Method 6020 - Summary Report

Sample ID: L1606154801DP WG574664-04
Sample Date/Time: Tuesday, July 05, 2016 12:39:17
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	113646.3	1.1				ug/L	59517	Standard
	Be	9	73.3	21.9	**0.0130**	0.009	72.0	ug/L	10	Standard
	Al	27	16000625.5	0.8	**55.0654**	0.525	1.0	ug/L	1872	Standard
	Sc	45	24182.6	2.6				ug/L	26715	Standard
	Ti	47	560.7	7.5	**2.2995**	0.168	7.3	ug/L	54	Standard
	V	51	15106.8	13.4	**2.0795**	0.267	12.8	ug/L	1419	Standard
	Cr	52	38429.7	1.5	**4.8626**	0.015	0.3	ug/L	7059	Standard
	Cr	53	8911.0	2.9	**10.4190**	0.432	4.1	ug/L	398	Standard
	Mn	55	61843.0	1.0	**10.4267**	0.151	1.4	ug/L	824	Standard
	Co	59	340977.8	1.2	**54.1889**	0.851	1.6	ug/L	167	Standard
	Ni	60	32125.4	0.3	**18.3525**	0.263	1.4	ug/L	391	Standard
	Cu	65	28023.2	0.4	**16.0507**	0.347	2.2	ug/L	147	Standard
	Zn	66	13078.0	7.1	**12.6508**	1.091	8.6	ug/L	184	Standard
>	Ge	72	391600.0	1.7				ug/L	422998	Standard
	As	75	4186.1	5.3	**4.0399**	0.266	6.6	ug/L	-58	Standard
	Se	82	743.1	17.4	**6.6507**	1.262	19.0	ug/L	15	Standard
	Se-1	77	647.3	3.5	**8.5526**	0.282	3.3	ug/L	58	Standard
>	Ga	71	713.4	7.1				mg/L	113	Standard
	Rb	85	98066.3	0.1				ug/L	27	Standard
	Y	89	355920.6	1.2				ug/L	383780	Standard
>	Rh	103	706.7	20.3				ug/L	18	Standard
	Mo	98	605173.1	0.9	**249.3210**	4.261	1.7	ug/L	31	Standard
	Ag	107	922.0	2.0	**0.1379**	0.002	1.4	ug/L	84	Standard
	Cd	111	-513.5	4.0	**-0.2683**	0.013	5.0	mg/L	4	Standard
	Cd	114	1053.3	11.4	**0.2185**	0.023	10.5	ug/L	15	Standard
>	In	115	470518.6	1.1				ug/L	515400	Standard
	Sn	118	1743.4	5.4	**0.1488**	0.017	11.1	ug/L	1043	Standard
	Sb	123	3149.4	11.6	**0.7376**	0.091	12.3	ug/L	227	Standard
	Ba	135	46884.4	0.1	**25.5264**	0.286	1.1	ug/L	31	Standard
	Ce	140	2751.9	1.6				ug/L	120	Standard
>	Tb	159	758916.3	0.9				ug/L	785817	Standard
	Ho	165	100.0	5.0				ug/L	7	Standard
	Tl	203	1257.7	15.9	**0.1725**	0.027	15.8	ug/L	6	Standard
	Tl	205	273.3	27.5	**0.0371**	0.012	31.8	ug/L	8	Standard
	Pb	206	1051.4	4.3	**0.1911**	0.009	4.7	ug/L	201	Standard
	Pb	207	950.4	5.3	**0.1887**	0.011	5.8	ug/L	177	Standard
	Pb	208	3820.2	5.4	**0.1882**	0.012	6.4	ug/L	722	Standard
	U	238	2666.6	2.8	**0.4324**	0.012	2.9	ug/L	8	Standard
>	Bi	209	396942.2	0.7				ug/L	444563	Standard

Sample ID: L1606154801DP WG574664-04
Report Date/Time: Tuesday, July 05, 2016 12:41:34
Page 1

Approved: July 06, 2016

Na	23	6.7	114.6	**88.0568**	101.921	115.7	mg/L	0	Standard
Mg	24	775596.7	0.9	**1076.2922**	19.585	1.8	mg/L	38	Standard
K	39	433.3	10.7	**1.9713**	0.282	14.3	mg/L	33	Standard
Ca	43	708.4	11.0	**117.4999**	16.145	13.7	mg/L	48	Standard
Fe	54	237.2	11.0	**0.0944**	0.019	19.7	mg/L	131	Standard
Fe	57	1321.7	5.5	**4.0486**	0.368	9.1	mg/L	153	Standard
> **Sc-1**	45	24182.6	2.6				mg/L	26715	Standard
Cl	35	1531298.9	0.8				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	46671.8	3.8				ug/L	1897	Standard
P	31	20070.0	0.6				ug/L	18491	Standard
S	34	5085.9	3.4				ug/L	3734	Standard
Sr	88	515.0	7.6				ug/L	47	Standard
C	12	153.3	27.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66265.0	19.8				mg/L	23	Standard
Dy	164	121.9	5.9				mg/L	23	Standard
Ho-1	165	100.0	5.0				mg/L	7	Standard
Er	166	100.0	43.6				mg/L	13	Standard
I	127	68625.3	4.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		190.949	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.577	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606154801DP WG574664-04
Report Date/Time: Tuesday, July 05, 2016 12:41:34
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.292
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.288
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606154801DP WG574664-04
Report Date/Time: Tuesday, July 05, 2016 12:41:34
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606154801S WG574664-05
Sample Date/Time: Tuesday, July 05, 2016 12:42:28
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	116707.8	1.1				ug/L	59517	Standard
	Be	9	50965.6	1.7	**29.8663**	0.769	2.6	ug/L	10	Standard
	Al	27	15490286.1	0.0	**51.9116**	0.578	1.1	ug/L	1872	Standard
	Sc	45	24122.5	2.1				ug/L	26715	Standard
	Ti	47	503.7	8.7	**2.0531**	0.202	9.8	ug/L	54	Standard
	V	51	264089.1	9.6	**39.5573**	3.828	9.7	ug/L	1419	Standard
	Cr	52	321372.3	0.9	**48.0974**	0.649	1.3	ug/L	7059	Standard
	Cr	53	44567.1	1.6	**54.0080**	1.083	2.0	ug/L	398	Standard
	Mn	55	306277.3	0.3	**52.4137**	0.237	0.5	ug/L	824	Standard
	Co	59	412199.1	0.3	**65.8367**	0.494	0.8	ug/L	167	Standard
	Ni	60	87046.7	0.5	**50.3165**	0.467	0.9	ug/L	391	Standard
	Cu	65	89984.8	0.7	**51.9651**	0.579	1.1	ug/L	147	Standard
	Zn	66	55356.0	1.9	**54.2884**	1.071	2.0	ug/L	184	Standard
>	Ge	72	389631.6	0.5				ug/L	422998	Standard
	As	75	55664.6	1.5	**53.3160**	0.533	1.0	ug/L	-58	Standard
	Se	82	6792.9	0.9	**62.6953**	0.620	1.0	ug/L	15	Standard
	Se-1	77	4453.3	0.6	**63.0867**	0.370	0.6	ug/L	58	Standard
>	Ga	71	578.3	9.6				mg/L	113	Standard
	Rb	85	93138.7	0.8				ug/L	27	Standard
	Y	89	353658.3	0.8				ug/L	383780	Standard
>	Rh	103	646.7	11.8				ug/L	18	Standard
	Mo	98	591259.3	0.8	**247.2748**	1.666	0.7	ug/L	31	Standard
	Ag	107	251673.7	0.4	**41.5216**	0.382	0.9	ug/L	84	Standard
	Cd	111	80293.8	0.5	**41.9213**	0.152	0.4	mg/L	4	Standard
	Cd	114	198936.8	0.8	**42.8027**	0.248	0.6	ug/L	15	Standard
>	In	115	463458.6	0.8				ug/L	515400	Standard
	Sn	118	1916.8	9.3	**0.1874**	0.037	19.8	ug/L	1043	Standard
	Sb	123	203709.3	0.1	**49.4745**	0.367	0.7	ug/L	227	Standard
	Ba	135	122179.0	0.4	**67.5697**	0.471	0.7	ug/L	31	Standard
	Ce	140	1566.7	4.3				ug/L	120	Standard
>	Tb	159	758591.8	0.5				ug/L	785817	Standard
	Ho	165	71.7	20.1				ug/L	7	Standard
	Tl	203	331241.5	0.8	**45.9568**	0.295	0.6	ug/L	6	Standard
	Tl	205	298590.3	1.0	**47.5536**	0.271	0.6	ug/L	8	Standard
	Pb	206	217722.5	0.4	**48.5241**	0.010	0.0	ug/L	201	Standard
	Pb	207	190227.0	0.2	**46.8923**	0.200	0.4	ug/L	177	Standard
	Pb	208	759297.7	0.5	**46.5949**	0.059	0.1	ug/L	722	Standard
	U	238	312651.3	0.9	**50.5186**	0.212	0.4	ug/L	8	Standard
>	Bi	209	400624.5	0.4				ug/L	444563	Standard

Sample ID: L1606154801S WG574664-05
Report Date/Time: Tuesday, July 05, 2016 12:44:45
Page 1

Approved: July 06, 2016

Na	23	6.7	114.6	**87.8877**	101.502	115.5	mg/L	0	Standard
Mg	24	763834.5	1.5	**1062.3626**	6.626	0.6	mg/L	38	Standard
K	39	460.0	1.1	**2.1017**	0.064	3.1	mg/L	33	Standard
Ca	43	625.0	15.2	**103.1755**	17.328	16.8	mg/L	48	Standard
Fe	54	188.7	2.0	**0.0520**	0.007	13.3	mg/L	131	Standard
Fe	57	1280.1	7.2	**3.9109**	0.309	7.9	mg/L	153	Standard
> **Sc-1**	45	24122.5	2.1				mg/L	26715	Standard
Cl	35	1497815.5	0.7				ug/L	102686	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	44792.9	4.5				ug/L	1897	Standard
P	31	19801.3	1.6				ug/L	18491	Standard
S	34	4824.1	1.5				ug/L	3734	Standard
Sr	88	493.3	8.6				ug/L	47	Standard
C	12	156.7	26.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	76863.2	12.6				mg/L	23	Standard
Dy	164	101.1	6.4				mg/L	23	Standard
Ho-1	165	71.7	20.1				mg/L	7	Standard
Er	166	46.7	32.7				mg/L	13	Standard
I	127	60604.4	4.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		196.092	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.112	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606154801S WG574664-05
Report Date/Time: Tuesday, July 05, 2016 12:44:45
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.922
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.117
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606154801S WG574664-05
Report Date/Time: Tuesday, July 05, 2016 12:44:45
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606154801SD WG574664-06
Sample Date/Time: Tuesday, July 05, 2016 12:45:40
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	122152.2	1.5				ug/L	59517	Standard
	Be	9	51898.7	0.6	**29.0575**	0.595	2.0	ug/L	10	Standard
	Al	27	16686740.4	1.6	**53.4391**	1.567	2.9	ug/L	1872	Standard
	Sc	45	23726.9	3.5				ug/L	26715	Standard
	Ti	47	565.7	5.9	**2.4006**	0.209	8.7	ug/L	54	Standard
	V	51	296548.7	6.0	**45.5396**	3.320	7.3	ug/L	1419	Standard
	Cr	52	322327.4	1.1	**49.4402**	1.655	3.3	ug/L	7059	Standard
	Cr	53	45294.3	1.2	**56.2307**	1.347	2.4	ug/L	398	Standard
	Mn	55	310626.6	0.8	**54.4552**	1.631	3.0	ug/L	824	Standard
	Co	59	478283.3	1.5	**78.2582**	2.794	3.6	ug/L	167	Standard
	Ni	60	91943.1	1.0	**54.4538**	1.640	3.0	ug/L	391	Standard
	Cu	65	92185.6	0.4	**54.5243**	1.036	1.9	ug/L	147	Standard
	Zn	66	55221.5	1.6	**55.4643**	1.194	2.2	ug/L	184	Standard
>	Ge	72	380545.0	2.2				ug/L	422998	Standard
	As	75	56235.1	1.8	**55.1770**	2.076	3.8	ug/L	-58	Standard
	Se	82	6923.0	3.5	**65.4542**	2.855	4.4	ug/L	15	Standard
	Se-1	77	4510.0	1.2	**65.4697**	2.137	3.3	ug/L	58	Standard
>	Ga	71	618.3	3.4				mg/L	113	Standard
	Rb	85	97715.8	1.0				ug/L	27	Standard
	Y	89	348410.1	2.4				ug/L	383780	Standard
>	Rh	103	666.7	8.0				ug/L	18	Standard
	Mo	98	625221.6	1.9	**264.9901**	14.826	5.6	ug/L	31	Standard
	Ag	107	252716.6	0.8	**42.2386**	1.811	4.3	ug/L	84	Standard
	Cd	111	80758.9	1.2	**42.7174**	1.910	4.5	mg/L	4	Standard
	Cd	114	197407.2	2.0	**43.0463**	2.498	5.8	ug/L	15	Standard
>	In	115	457937.1	3.7				ug/L	515400	Standard
	Sn	118	1918.5	14.0	**0.1922**	0.052	26.9	ug/L	1043	Standard
	Sb	123	203577.0	1.4	**50.0969**	2.489	5.0	ug/L	227	Standard
	Ba	135	126982.0	1.8	**71.1666**	3.910	5.5	ug/L	31	Standard
	Ce	140	1641.8	1.4				ug/L	120	Standard
>	Tb	159	755317.6	2.5				ug/L	785817	Standard
	Ho	165	110.0	53.6				ug/L	7	Standard
	Tl	203	336457.4	1.2	**47.2137**	1.841	3.9	ug/L	6	Standard
	Tl	205	298957.7	1.5	**48.1551**	1.853	3.8	ug/L	8	Standard
	Pb	206	219760.4	1.1	**49.5387**	1.921	3.9	ug/L	201	Standard
	Pb	207	191583.1	1.3	**47.7674**	1.919	4.0	ug/L	177	Standard
	Pb	208	761373.0	0.7	**47.2534**	1.642	3.5	ug/L	722	Standard
	U	238	315757.2	1.1	**51.6027**	1.944	3.8	ug/L	8	Standard
>	Bi	209	396378.3	2.7				ug/L	444563	Standard

Sample ID: L1606154801SD WG574664-06
Report Date/Time: Tuesday, July 05, 2016 12:47:57
Page 1

Approved: July 06, 2016

Na	23	10.0	132.3	**136.1000**	182.647	134.2	mg/L	0	Standard
Mg	24	814161.4	0.9	**1152.3511**	51.439	4.5	mg/L	38	Standard
K	39	431.7	3.5	**2.0016**	0.143	7.1	mg/L	33	Standard
Ca	43	766.7	15.3	**130.2299**	22.306	17.1	mg/L	48	Standard
Fe	54	171.0	18.0	**0.0387**	0.028	71.6	mg/L	131	Standard
Fe	57	1328.4	4.5	**4.1581**	0.310	7.5	mg/L	153	Standard
> **Sc-1**	45	23726.9	3.5				mg/L	26715	Standard
Cl	35	1551098.4	1.3				ug/L	102686	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	43194.9	4.1				ug/L	1897	Standard
P	31	19153.8	1.7				ug/L	18491	Standard
S	34	5039.2	3.1				ug/L	3734	Standard
Sr	88	543.3	13.1				ug/L	47	Standard
C	12	126.7	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90117.9	6.4				mg/L	23	Standard
Dy	164	93.5	37.6				mg/L	23	Standard
Ho-1	165	110.0	53.6				mg/L	7	Standard
Er	166	66.7	8.7				mg/L	13	Standard
I	127	71170.4	5.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		205.240	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.964	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606154801SD WG574664-06
Report Date/Time: Tuesday, July 05, 2016 12:47:57
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.851
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.161
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606154801SD WG574664-06
Report Date/Time: Tuesday, July 05, 2016 12:47:57
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606154401
Sample Date/Time: Tuesday, July 05, 2016 12:48:51
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90670.5	1.7				ug/L	59517	Standard
	Be	9	36.7	20.8	**-0.0034**	0.006	178.5	ug/L	10	Standard
	Al	27	4021825.0	0.9	**17.3406**	0.175	1.0	ug/L	1872	Standard
	Sc	45	26107.5	3.4				ug/L	26715	Standard
	Ti	47	108.3	9.8	**0.1931**	0.044	22.8	ug/L	54	Standard
	V	51	9044.3	32.6	**1.0310**	0.396	38.4	ug/L	1419	Standard
	Cr	52	9139.4	0.7	**0.2648**	0.012	4.7	ug/L	7059	Standard
	Cr	53	2621.9	2.5	**2.4360**	0.074	3.1	ug/L	398	Standard
	Mn	55	3405.7	1.5	**0.3885**	0.006	1.5	ug/L	824	Standard
	Co	59	2467.9	1.7	**0.3255**	0.005	1.7	ug/L	167	Standard
	Ni	60	1846.4	0.9	**0.7528**	0.011	1.4	ug/L	391	Standard
	Cu	65	4850.5	26.2	**2.4140**	0.646	26.7	ug/L	147	Standard
	Zn	66	6624.2	29.1	**5.6308**	1.668	29.6	ug/L	184	Standard
>	**Ge**	72	438247.4	0.3				ug/L	422998	Standard
	As	75	1127.8	58.8	**1.0103**	0.561	55.5	ug/L	-58	Standard
	Se	82	480.8	57.1	**3.7490**	2.247	59.9	ug/L	15	Standard
	Se-1	77	214.3	4.7	**2.0595**	0.119	5.8	ug/L	58	Standard
>	**Ga**	71	75.0	37.1				mg/L	113	Standard
	Rb	85	430.0	17.2				ug/L	27	Standard
	Y	89	391064.5	2.5				ug/L	383780	Standard
>	**Rh**	103	323.3	25.6				ug/L	18	Standard
	Mo	98	12371.3	1.5	**4.4046**	0.072	1.6	ug/L	31	Standard
	Ag	107	143.0	9.6	**0.0081**	0.002	23.9	ug/L	84	Standard
	Cd	111	15.1	60.8	**0.0026**	0.004	157.5	mg/L	4	Standard
	Cd	114	56.1	20.0	**0.0057**	0.002	34.5	ug/L	15	Standard
>	**In**	115	543338.8	0.8				ug/L	515400	Standard
	Sn	118	891.7	19.5	**-0.0348**	0.029	84.1	ug/L	1043	Standard
	Sb	123	795.2	10.6	**0.1485**	0.018	12.1	ug/L	227	Standard
	Ba	135	41945.3	1.6	**19.7692**	0.234	1.2	ug/L	31	Standard
	Ce	140	113.3	28.4				ug/L	120	Standard
>	**Tb**	159	861658.0	1.4				ug/L	785817	Standard
	Ho	165	20.0	75.0				ug/L	7	Standard
	Tl	203	195.0	5.7	**0.0181**	0.001	6.8	ug/L	6	Standard
	Tl	205	120.0	16.7	**0.0085**	0.003	30.2	ug/L	8	Standard
	Pb	206	455.3	1.9	**0.0358**	0.002	4.2	ug/L	201	Standard
	Pb	207	407.7	8.1	**0.0327**	0.006	19.9	ug/L	177	Standard
	Pb	208	1585.4	4.2	**0.0294**	0.003	11.1	ug/L	722	Standard
	U	238	411.0	11.4	**0.0507**	0.006	11.8	ug/L	8	Standard
>	**Bi**	209	500271.5	0.2				ug/L	444563	Standard

Sample ID: L1606154401
Report Date/Time: Tuesday, July 05, 2016 12:51:08
Page 1

Approved: July 06, 2016

Na	23	3.3	173.2	**41.2794**	71.489	173.2	mg/L	0	Standard
Mg	24	6431.4	3.4	**8.2432**	0.558	6.8	mg/L	38	Standard
K	39	113.3	18.4	**0.3809**	0.109	28.7	mg/L	33	Standard
Ca	43	90.0	19.2	**8.6207**	2.810	32.6	mg/L	48	Standard
Fe	54	139.0	17.9	**-0.0021**	0.020	937.9	mg/L	131	Standard
Fe	57	250.0	9.2	**0.3117**	0.085	27.2	mg/L	153	Standard
> **Sc-1**	45	26107.5	3.4				mg/L	26715	Standard
Cl	35	138579.6	1.4				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	5831.1	7.6				ug/L	1897	Standard
P	31	20567.3	5.0				ug/L	18491	Standard
S	34	3718.8	6.3				ug/L	3734	Standard
Sr	88	120.0	12.5				ug/L	47	Standard
C	12	116.7	32.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	5931.2	20.4				mg/L	23	Standard
Dy	164	22.5	68.3				mg/L	23	Standard
Ho-1	165	20.0	75.0				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	18529.7	1.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		152.345	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606154401
Report Date/Time: Tuesday, July 05, 2016 12:51:08
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.421
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.531
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606154401PS WG575052-01
Sample Date/Time: Tuesday, July 05, 2016 12:52:03
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	86030.2	0.5				ug/L	59517	Standard
	Be	9	58365.6	2.6	**46.4067**	1.086	2.3	ug/L	10	Standard
	Al	27	3923361.4	2.2	**17.8260**	0.316	1.8	ug/L	1872	Standard
	Sc	45	25120.8	2.2				ug/L	26715	Standard
	Ti	47	105.0	15.0	**0.1838**	0.061	33.3	ug/L	54	Standard
	V	51	364478.3	1.0	**49.1167**	0.604	1.2	ug/L	1419	Standard
	Cr	52	346577.6	1.1	**46.5983**	0.941	2.0	ug/L	7059	Standard
	Cr	53	44667.4	1.1	**48.6182**	0.977	2.0	ug/L	398	Standard
	Mn	55	305672.6	1.4	**47.0073**	0.627	1.3	ug/L	824	Standard
	Co	59	355593.4	1.7	**51.0531**	1.308	2.6	ug/L	167	Standard
	Ni	60	90913.3	1.2	**47.2298**	0.999	2.1	ug/L	391	Standard
	Cu	65	92601.8	1.7	**48.0687**	1.246	2.6	ug/L	147	Standard
	Zn	66	61772.4	1.7	**54.4625**	1.414	2.6	ug/L	184	Standard
>	Ge	72	433466.4	0.9				ug/L	422998	Standard
	As	75	55589.3	0.5	**47.8699**	0.626	1.3	ug/L	-58	Standard
	Se	82	6045.2	1.2	**50.1105**	0.516	1.0	ug/L	15	Standard
	Se-1	77	3871.5	2.0	**49.1602**	1.448	2.9	ug/L	58	Standard
>	Ga	71	60.0	38.2				mg/L	113	Standard
	Rb	85	441.7	4.7				ug/L	27	Standard
	Y	89	381599.3	1.0				ug/L	383780	Standard
>	Rh	103	140.0	19.9				ug/L	18	Standard
	Mo	98	11472.0	0.5	**4.2015**	0.019	0.5	ug/L	31	Standard
	Ag	107	323477.3	0.3	**46.8334**	0.353	0.8	ug/L	84	Standard
	Cd	111	103414.0	0.8	**47.3820**	0.524	1.1	mg/L	4	Standard
	Cd	114	254980.1	1.1	**48.1452**	0.744	1.5	ug/L	15	Standard
>	In	115	528128.6	0.4				ug/L	515400	Standard
	Sn	118	1173.4	17.6	**0.0167**	0.034	203.4	ug/L	1043	Standard
	Sb	123	225967.1	2.8	**48.1617**	1.533	3.2	ug/L	227	Standard
	Ba	135	136334.0	0.7	**66.1637**	0.578	0.9	ug/L	31	Standard
	Ce	140	165.0	21.2				ug/L	120	Standard
>	Tb	159	829145.3	1.4				ug/L	785817	Standard
	Ho	165	15.0	0.0				ug/L	7	Standard
	Tl	203	418729.5	0.3	**47.6494**	0.152	0.3	ug/L	6	Standard
	Tl	205	380867.8	0.9	**49.7515**	0.379	0.8	ug/L	8	Standard
	Pb	206	275400.8	0.6	**50.3450**	0.450	0.9	ug/L	201	Standard
	Pb	207	238374.2	0.4	**48.1962**	0.217	0.4	ug/L	177	Standard
	Pb	208	975428.0	0.6	**49.0976**	0.164	0.3	ug/L	722	Standard
	U	238	373390.3	0.4	**49.4854**	0.229	0.5	ug/L	8	Standard
>	Bi	209	488451.8	0.3				ug/L	444563	Standard

Sample ID: L1606154401PS WG575052-01
Report Date/Time: Tuesday, July 05, 2016 12:54:20
Page 1

Approved: July 06, 2016

Na	23	6.7	114.6	**82.3857**	94.821	115.1	mg/L	0	Standard
Mg	24	6061.2	4.6	**8.0591**	0.240	3.0	mg/L	38	Standard
K	39	85.0	44.4	**0.2685**	0.184	68.7	mg/L	33	Standard
Ca	43	78.3	16.1	**7.2488**	2.220	30.6	mg/L	48	Standard
Fe	54	132.0	13.6	**-0.0034**	0.016	469.3	mg/L	131	Standard
Fe	57	340.0	15.6	**0.6409**	0.199	31.0	mg/L	153	Standard
> **Sc-1**	45	25120.8	2.2				mg/L	26715	Standard
Cl	35	145839.9	0.3				ug/L	102686	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	5150.9	4.2				ug/L	1897	Standard
P	31	20655.7	1.3				ug/L	18491	Standard
S	34	4023.9	6.4				ug/L	3734	Standard
Sr	88	110.0	19.8				ug/L	47	Standard
C	12	100.0	36.1				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	4133.9	13.4				mg/L	23	Standard
Dy	164	18.9	93.2				mg/L	23	Standard
Ho-1	165	15.0	0.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	13	Standard
I	127	16777.6	3.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.548	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.475	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606154401PS WG575052-01
Report Date/Time: Tuesday, July 05, 2016 12:54:20
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.470
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.872
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606154401SDL WG575052-02
Sample Date/Time: Tuesday, July 05, 2016 12:55:14
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79811.4	2.0				ug/L	59517	Standard
	Be	9	40.0	97.6	**0.0028**	0.032	1166.4	ug/L	10	Standard
	Al	27	733638.6	0.6	**3.5840**	0.051	1.4	ug/L	1872	Standard
	Sc	45	23543.3	2.5				ug/L	26715	Standard
	Ti	47	40.3	25.8	**-0.0711**	0.047	66.5	ug/L	54	Standard
	V	51	2186.5	6.0	**0.1337**	0.016	11.8	ug/L	1419	Standard
	Cr	52	6597.4	1.0	**-0.0166**	0.013	80.4	ug/L	7059	Standard
	Cr	53	1415.1	5.2	**1.2358**	0.102	8.3	ug/L	398	Standard
	Mn	55	975.0	7.3	**0.0284**	0.013	47.2	ug/L	824	Standard
	Co	59	638.7	7.9	**0.0722**	0.009	12.1	ug/L	167	Standard
	Ni	60	917.7	5.8	**0.3075**	0.034	11.2	ug/L	391	Standard
	Cu	65	969.7	6.6	**0.4553**	0.041	9.0	ug/L	147	Standard
	Zn	66	1592.1	3.3	**1.3324**	0.065	4.9	ug/L	184	Standard
>	**Ge**	72	409160.1	1.1				ug/L	422998	Standard
	As	75	68.9	55.0	**0.1147**	0.035	30.8	ug/L	-58	Standard
	Se	82	44.9	21.5	**0.1905**	0.090	47.0	ug/L	15	Standard
	Se-1	77	107.3	7.0	**0.7955**	0.113	14.2	ug/L	58	Standard
>	**Ga**	71	30.0	44.1				mg/L	113	Standard
	Rb	85	108.3	10.7				ug/L	27	Standard
	Y	89	350663.1	0.2				ug/L	383780	Standard
>	**Rh**	103	61.7	40.8				ug/L	18	Standard
	Mo	98	2316.8	3.2	**0.8917**	0.034	3.9	ug/L	31	Standard
	Ag	107	167.0	21.8	**0.0137**	0.006	45.3	ug/L	84	Standard
	Cd	111	24.9	77.2	**0.0081**	0.010	119.9	mg/L	4	Standard
	Cd	114	73.7	46.5	**0.0103**	0.007	70.0	ug/L	15	Standard
>	**In**	115	498759.0	2.2				ug/L	515400	Standard
	Sn	118	483.3	15.5	**-0.0948**	0.012	13.1	ug/L	1043	Standard
	Sb	123	1238.3	26.3	**0.2623**	0.068	26.1	ug/L	227	Standard
	Ba	135	7724.6	0.8	**3.9482**	0.076	1.9	ug/L	31	Standard
	Ce	140	31.7	24.1				ug/L	120	Standard
>	**Tb**	159	788075.4	1.1				ug/L	785817	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	189.0	31.4	**0.0189**	0.007	38.1	ug/L	6	Standard
	Tl	205	121.7	80.8	**0.0099**	0.014	137.0	ug/L	8	Standard
	Pb	206	461.7	11.6	**0.0428**	0.011	25.4	ug/L	201	Standard
	Pb	207	380.0	14.0	**0.0326**	0.012	36.1	ug/L	177	Standard
	Pb	208	1523.0	9.2	**0.0317**	0.008	24.8	ug/L	722	Standard
	U	238	164.7	24.9	**0.0204**	0.006	28.7	ug/L	8	Standard
>	**Bi**	209	467061.6	0.8				ug/L	444563	Standard

Sample ID: L1606154401SDL WG575052-02
Report Date/Time: Tuesday, July 05, 2016 12:57:31
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**22.5739**	39.091	173.2	mg/L	0	Standard
Mg	24	1246.7	8.3	**1.7417**	0.117	6.7	mg/L	38	Standard
K	39	31.7	32.9	**0.0280**	0.052	185.8	mg/L	33	Standard
Ca	43	30.0	28.9	**-0.5449**	1.396	256.2	mg/L	48	Standard
Fe	54	82.8	38.8	**-0.0413**	0.028	66.8	mg/L	131	Standard
Fe	57	196.7	35.3	**0.2095**	0.246	117.6	mg/L	153	Standard
Sc-1	45	23543.3	2.5				mg/L	26715	Standard
Cl	35	142093.4	2.1				ug/L	102686	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2240.2	6.7				ug/L	1897	Standard
P	31	9116.1	3.2				ug/L	18491	Standard
S	34	4057.2	6.7				ug/L	3734	Standard
Sr	88	53.3	27.1				ug/L	47	Standard
C	12	63.3	18.2				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3803.8	30.2				mg/L	23	Standard
Dy	164	9.2	108.7				mg/L	23	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	27015.7	0.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.099	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.729	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606154401SDL WG575052-02
Report Date/Time: Tuesday, July 05, 2016 12:57:31
Page 2

Approved: July 06, 2016

Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	96.771
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	105.061
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606154401SDL WG575052-02
Sample Date/Time: Tuesday, July 05, 2016 12:58:26
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75494.3	1.1				ug/L	59517	Standard
	Be	9	38.3	79.7	**0.0035**	0.028	781.9	ug/L	10	Standard
	Al	27	147949.4	3.4	**0.7542**	0.025	3.3	ug/L	1872	Standard
	Sc	45	23154.4	2.4				ug/L	26715	Standard
	Ti	47	28.7	22.4	**-0.1170**	0.032	27.4	ug/L	54	Standard
	V	51	1805.3	13.6	**0.0886**	0.031	35.2	ug/L	1419	Standard
	Cr	52	6163.6	0.9	**-0.0457**	0.012	25.4	ug/L	7059	Standard
	Cr	53	1195.0	9.3	**1.0338**	0.161	15.5	ug/L	398	Standard
	Mn	55	485.0	20.9	**-0.0489**	0.016	32.9	ug/L	824	Standard
	Co	59	366.0	37.3	**0.0326**	0.021	64.4	ug/L	167	Standard
	Ni	60	673.0	11.5	**0.1859**	0.041	22.0	ug/L	391	Standard
	Cu	65	465.0	8.8	**0.1870**	0.026	14.0	ug/L	147	Standard
	Zn	66	1105.0	7.2	**0.9156**	0.088	9.6	ug/L	184	Standard
>	**Ge**	72	394250.9	2.1				ug/L	422998	Standard
	As	75	22.2	278.3	**0.0723**	0.058	80.5	ug/L	-58	Standard
	Se	82	35.8	27.5	**0.1213**	0.087	71.4	ug/L	15	Standard
	Se-1	77	94.7	14.3	**0.6689**	0.165	24.7	ug/L	58	Standard
>	**Ga**	71	23.3	86.6				mg/L	113	Standard
	Rb	85	58.3	38.7				ug/L	27	Standard
	Y	89	342667.4	1.9				ug/L	383780	Standard
>	**Rh**	103	35.0	14.3				ug/L	18	Standard
	Mo	98	955.5	24.7	**0.3700**	0.087	23.4	ug/L	31	Standard
	Ag	107	160.0	56.1	**0.0130**	0.014	106.3	ug/L	84	Standard
	Cd	111	28.0	106.2	**0.0097**	0.015	151.2	mg/L	4	Standard
	Cd	114	56.0	87.6	**0.0068**	0.010	146.5	ug/L	15	Standard
>	**In**	115	487131.3	2.6				ug/L	515400	Standard
	Sn	118	335.0	34.2	**-0.1200**	0.019	16.2	ug/L	1043	Standard
	Sb	123	368.8	24.2	**0.0686**	0.019	27.8	ug/L	227	Standard
	Ba	135	1513.1	3.5	**0.7726**	0.017	2.2	ug/L	31	Standard
	Ce	140	15.0	66.7				ug/L	120	Standard
>	**Tb**	159	759939.4	2.6				ug/L	785817	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	194.0	52.9	**0.0200**	0.012	62.3	ug/L	6	Standard
	Tl	205	130.0	103.4	**0.0113**	0.019	165.4	ug/L	8	Standard
	Pb	206	305.7	21.0	**0.0140**	0.012	86.0	ug/L	201	Standard
	Pb	207	258.0	26.9	**0.0078**	0.015	189.9	ug/L	177	Standard
	Pb	208	1034.3	21.9	**0.0070**	0.012	171.8	ug/L	722	Standard
	U	238	97.7	93.2	**0.0113**	0.013	114.0	ug/L	8	Standard
>	**Bi**	209	457866.6	2.8				ug/L	444563	Standard

Sample ID: L1606154401SDL WG575052-02
Report Date/Time: Tuesday, July 05, 2016 13:00:43
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	410.0	52.5	**0.5590**	0.311	55.6	mg/L	38	Standard
K	39	25.0	34.6	**-0.0036**	0.040	1131.6	mg/L	33	Standard
Ca	43	28.3	10.2	**-0.7395**	0.441	59.6	mg/L	48	Standard
Fe	54	46.1	34.9	**-0.0736**	0.016	21.6	mg/L	131	Standard
Fe	57	203.3	16.4	**0.2438**	0.108	44.5	mg/L	153	Standard
> **Sc-1**	45	23154.4	2.4				mg/L	26715	Standard
Cl	35	144656.0	1.2				ug/L	102686	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1726.8	11.0				ug/L	1897	Standard
P	31	6544.7	3.7				ug/L	18491	Standard
S	34	4280.6	2.1				ug/L	3734	Standard
Sr	88	70.0	24.7				ug/L	47	Standard
C	12	23.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3640.5	36.6				mg/L	23	Standard
Dy	164	23.0	67.5				mg/L	23	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	29403.5	1.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.845	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.204	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606154401SDL WG575052-02
Report Date/Time: Tuesday, July 05, 2016 13:00:43
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.515
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.993
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1606154401SDL WG575052-02
Report Date/Time: Tuesday, July 05, 2016 13:00:43
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 13:01:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79100.9	0.3				ug/L	59517	Standard
	Be	9	53082.8	1.6	**45.9058**	0.778	1.7	ug/L	10	Standard
	Al	27	7776884.1	1.6	**38.4468**	0.629	1.6	ug/L	1872	Standard
	Sc	45	24795.3	2.1				ug/L	26715	Standard
	Ti	47	21780.3	1.6	**90.8533**	1.880	2.1	ug/L	54	Standard
	V	51	350042.4	1.4	**48.0675**	0.901	1.9	ug/L	1419	Standard
	Cr	52	336005.0	0.8	**46.0237**	0.722	1.6	ug/L	7059	Standard
	Cr	53	41889.5	0.7	**46.4425**	0.618	1.3	ug/L	398	Standard
	Mn	55	287933.2	0.4	**45.1191**	0.495	1.1	ug/L	824	Standard
	Co	59	341033.7	0.1	**49.8891**	0.336	0.7	ug/L	167	Standard
	Ni	60	87343.1	1.5	**46.2347**	1.048	2.3	ug/L	391	Standard
	Cu	65	87383.3	0.7	**46.2168**	0.641	1.4	ug/L	147	Standard
	Zn	66	53405.6	0.4	**47.9592**	0.504	1.1	ug/L	184	Standard
>	Ge	72	425361.7	0.7				ug/L	422998	Standard
	As	75	53628.6	0.7	**47.0620**	0.670	1.4	ug/L	-58	Standard
	Se	82	5718.9	1.3	**48.3057**	1.008	2.1	ug/L	15	Standard
	Se-1	77	3793.8	2.4	**49.0874**	1.418	2.9	ug/L	58	Standard
>	Ga	71	58.3	26.2				mg/L	113	Standard
	Rb	85	806.7	5.8				ug/L	27	Standard
	Y	89	373675.3	0.8				ug/L	383780	Standard
>	Rh	103	38.3	41.9				ug/L	18	Standard
	Mo	98	260085.3	0.6	**96.0295**	1.236	1.3	ug/L	31	Standard
	Ag	107	324543.7	0.5	**47.2727**	0.388	0.8	ug/L	84	Standard
	Cd	111	100926.0	1.9	**46.5169**	0.402	0.9	mg/L	4	Standard
	Cd	114	250750.0	0.6	**47.6316**	0.267	0.6	ug/L	15	Standard
>	In	115	524964.9	1.1				ug/L	515400	Standard
	Sn	118	280046.9	3.8	**47.2954**	1.290	2.7	ug/L	1043	Standard
	Sb	123	227427.1	0.8	**48.7626**	0.250	0.5	ug/L	227	Standard
	Ba	135	93619.7	0.9	**45.7028**	0.535	1.2	ug/L	31	Standard
	Ce	140	83.3	21.1				ug/L	120	Standard
>	Tb	159	817284.5	1.4				ug/L	785817	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	410838.3	0.5	**47.6298**	0.679	1.4	ug/L	6	Standard
	Tl	205	361524.9	1.8	**48.1144**	1.233	2.6	ug/L	8	Standard
	Pb	206	259235.6	0.4	**48.2758**	0.391	0.8	ug/L	201	Standard
	Pb	207	234786.1	0.4	**48.3622**	0.605	1.3	ug/L	177	Standard
	Pb	208	945450.8	0.8	**48.4835**	0.835	1.7	ug/L	722	Standard
	U	238	365383.7	1.4	**49.3375**	1.181	2.4	ug/L	8	Standard
>	Bi	209	479486.6	1.0				ug/L	444563	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 13:03:55
Page 1

Approved: July 06, 2016

Na	23	3.3	86.6	**41.6819**	36.101	86.6	mg/L	0	Standard
Mg	24	4162.2	3.0	**5.5976**	0.090	1.6	mg/L	38	Standard
K	39	773.4	1.6	**3.5190**	0.068	1.9	mg/L	33	Standard
Ca	43	50.0	26.5	**2.5798**	2.153	83.5	mg/L	48	Standard
Fe	54	5941.7	2.5	**5.0456**	0.187	3.7	mg/L	131	Standard
Fe	57	1678.4	4.5	**5.1262**	0.366	7.1	mg/L	153	Standard
> **Sc-1**	45	24795.3	2.1				mg/L	26715	Standard
Cl	35	133808.6	5.2				ug/L	102686	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1796.8	13.9				ug/L	1897	Standard
P	31	21567.0	3.7				ug/L	18491	Standard
S	34	4557.4	5.9				ug/L	3734	Standard
Sr	88	60.0	14.4				ug/L	47	Standard
C	12	56.7	10.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1123.4	37.7				mg/L	23	Standard
Dy	164	12.5	127.7				mg/L	23	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	12318.3	1.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	91.812		
Al	27	76.894		
Sc	45			
Ti	47	90.853		
V	51	96.135		
Cr	52	92.047		
Cr	53			
Mn	55	90.238		
Co	59	99.778		
Ni	60	92.469		
Cu	65	92.434		
Zn	66	95.918		
> Ge	72		100.559	
As	75	94.124		
Se	82	96.611		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 13:03:55
Page 2

Approved: July 06, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	96.030		
Ag	107	94.545		
Cd	111	93.034		
Cd	114			
> In	115			101.856
Sn	118	94.591		
Sb	123	97.525		
Ba	135	91.406		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.260		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.967		
U	238	98.675		
> Bi	209			107.856
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 13:03:55
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 13:04:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73476.2	3.2				ug/L	59517	Standard
	Be	9	38.3	27.2	**0.0044**	0.009	192.4	ug/L	10	Standard
	Al	27	2978.7	35.1	**0.0033**	0.005	151.0	ug/L	1872	Standard
	Sc	45	23760.3	3.5				ug/L	26715	Standard
	Ti	47	33.7	15.0	**-0.0998**	0.021	21.5	ug/L	54	Standard
	V	51	1936.0	11.0	**0.0993**	0.031	31.7	ug/L	1419	Standard
	Cr	52	5778.4	3.7	**-0.1320**	0.028	20.9	ug/L	7059	Standard
	Cr	53	1023.4	4.4	**0.7850**	0.051	6.4	ug/L	398	Standard
	Mn	55	561.7	13.1	**-0.0388**	0.012	30.4	ug/L	824	Standard
	Co	59	266.0	11.8	**0.0156**	0.005	29.8	ug/L	167	Standard
	Ni	60	571.3	1.9	**0.1173**	0.005	4.5	ug/L	391	Standard
	Cu	65	303.7	10.6	**0.0890**	0.018	19.8	ug/L	147	Standard
	Zn	66	348.3	6.9	**0.1684**	0.022	12.8	ug/L	184	Standard
>	Ge	72	407314.3	0.5				ug/L	422998	Standard
	As	75	-13.9	114.2	**0.0389**	0.014	37.2	ug/L	-58	Standard
	Se	82	26.4	27.2	**0.0277**	0.063	225.5	ug/L	15	Standard
	Se-1	77	74.7	21.2	**0.3546**	0.220	62.0	ug/L	58	Standard
>	Ga	71	35.0	51.5				mg/L	113	Standard
	Rb	85	28.3	40.8				ug/L	27	Standard
	Y	89	353296.6	0.4				ug/L	383780	Standard
>	Rh	103	30.0	0.0				ug/L	18	Standard
	Mo	98	367.3	3.5	**0.1333**	0.006	4.5	ug/L	31	Standard
	Ag	107	140.3	15.9	**0.0094**	0.003	32.7	ug/L	84	Standard
	Cd	111	16.0	74.4	**0.0036**	0.006	158.2	mg/L	4	Standard
	Cd	114	60.5	50.3	**0.0074**	0.006	79.6	ug/L	15	Standard
>	In	115	500724.6	1.5				ug/L	515400	Standard
	Sn	118	1160.0	31.9	**0.0260**	0.068	263.4	ug/L	1043	Standard
	Sb	123	1100.6	32.9	**0.2320**	0.085	36.6	ug/L	227	Standard
	Ba	135	47.3	32.8	**0.0004**	0.008	1710.6	ug/L	31	Standard
	Ce	140	15.0	57.7				ug/L	120	Standard
>	Tb	159	776939.6	0.9				ug/L	785817	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	121.0	28.1	**0.0110**	0.004	34.8	ug/L	6	Standard
	Tl	205	80.0	34.8	**0.0043**	0.004	84.3	ug/L	8	Standard
	Pb	206	290.3	15.2	**0.0108**	0.007	67.0	ug/L	201	Standard
	Pb	207	254.3	20.0	**0.0067**	0.010	144.2	ug/L	177	Standard
	Pb	208	1035.3	12.9	**0.0067**	0.006	86.9	ug/L	722	Standard
	U	238	85.0	46.9	**0.0094**	0.005	56.1	ug/L	8	Standard
>	Bi	209	459819.3	2.2				ug/L	444563	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 13:07:07
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	95.0	22.9	**0.1013**	0.036	35.6	mg/L	38	Standard
K	39	26.7	10.8	**0.0019**	0.012	627.7	mg/L	33	Standard
Ca	43	16.7	45.8	**-2.8974**	1.474	50.9	mg/L	48	Standard
Fe	54	147.8	10.4	**0.0178**	0.019	104.5	mg/L	131	Standard
Fe	57	160.0	6.3	**0.0758**	0.038	50.1	mg/L	153	Standard
> **Sc-1**	45	23760.3	3.5				mg/L	26715	Standard
Cl	35	130478.1	0.7				ug/L	102686	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1590.1	8.6				ug/L	1897	Standard
P	31	20639.0	1.4				ug/L	18491	Standard
S	34	4565.7	0.8				ug/L	3734	Standard
Sr	88	60.0	36.3				ug/L	47	Standard
C	12	63.3	39.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	736.7	39.7				mg/L	23	Standard
Dy	164	6.0	200.9				mg/L	23	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	8025.5	3.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.292	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 13:07:07
Page 2

Approved: July 06, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.153
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.432
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 13:07:07
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606154601
Sample Date/Time: Tuesday, July 05, 2016 13:08:02
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76633.4	2.9				ug/L	59517	Standard
	Be	9	51.7	73.3	**0.0146**	0.032	221.6	ug/L	10	Standard
	Al	27	4801288.0	0.9	**24.5119**	0.840	3.4	ug/L	1872	Standard
	Sc	45	25142.5	0.5				ug/L	26715	Standard
	Ti	47	88.3	3.3	**0.1296**	0.017	13.0	ug/L	54	Standard
	V	51	3152.4	20.1	**0.2626**	0.084	32.1	ug/L	1419	Standard
	Cr	52	8822.9	2.9	**0.2812**	0.050	17.7	ug/L	7059	Standard
	Cr	53	2911.9	11.2	**2.9080**	0.387	13.3	ug/L	398	Standard
	Mn	55	7676.6	3.0	**1.0977**	0.039	3.6	ug/L	824	Standard
	Co	59	1498.1	11.5	**0.1982**	0.024	12.3	ug/L	167	Standard
	Ni	60	1773.4	2.9	**0.7606**	0.040	5.3	ug/L	391	Standard
	Cu	65	1483.1	0.7	**0.7212**	0.013	1.8	ug/L	147	Standard
	Zn	66	9710.4	0.6	**8.7523**	0.190	2.2	ug/L	184	Standard
>	**Ge**	72	417698.7	2.0				ug/L	422998	Standard
	As	75	252.0	24.1	**0.2771**	0.058	20.8	ug/L	-58	Standard
	Se	82	52.8	8.7	**0.2502**	0.042	16.9	ug/L	15	Standard
	Se-1	77	177.3	7.7	**1.6991**	0.158	9.3	ug/L	58	Standard
>	**Ga**	71	40.0	25.0				mg/L	113	Standard
	Rb	85	655.0	12.3				ug/L	27	Standard
	Y	89	366708.6	1.5				ug/L	383780	Standard
>	**Rh**	103	36.7	20.8				ug/L	18	Standard
	Mo	98	12925.5	2.6	**4.9040**	0.232	4.7	ug/L	31	Standard
	Ag	107	293.3	64.0	**0.0318**	0.028	86.5	ug/L	84	Standard
	Cd	111	132.8	40.1	**0.0587**	0.025	41.9	mg/L	4	Standard
	Cd	114	314.4	26.2	**0.0569**	0.016	28.0	ug/L	15	Standard
>	**In**	115	510317.3	2.5				ug/L	515400	Standard
	Sn	118	1015.0	18.0	**-0.0041**	0.030	723.1	ug/L	1043	Standard
	Sb	123	2630.6	3.5	**0.5644**	0.029	5.1	ug/L	227	Standard
	Ba	135	60571.5	0.8	**30.4202**	0.739	2.4	ug/L	31	Standard
	Ce	140	281.7	9.8				ug/L	120	Standard
>	**Tb**	159	788203.9	3.3				ug/L	785817	Standard
	Ho	165	31.7	18.2				ug/L	7	Standard
	Tl	203	326.7	70.1	**0.0353**	0.027	76.3	ug/L	6	Standard
	Tl	205	215.0	66.6	**0.0226**	0.019	85.5	ug/L	8	Standard
	Pb	206	634.0	19.9	**0.0763**	0.024	31.2	ug/L	201	Standard
	Pb	207	523.7	22.6	**0.0634**	0.025	38.7	ug/L	177	Standard
	Pb	208	2154.7	16.6	**0.0654**	0.018	28.1	ug/L	722	Standard
	U	238	1239.1	9.0	**0.1700**	0.015	8.6	ug/L	8	Standard
>	**Bi**	209	464962.6	1.4				ug/L	444563	Standard

Sample ID: L1606154601
Report Date/Time: Tuesday, July 05, 2016 13:10:19
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	9416.3	3.0	**12.5299**	0.322	2.6	mg/L	38	Standard
K	39	111.7	5.2	**0.3901**	0.024	6.3	mg/L	33	Standard
Ca	43	138.3	17.1	**17.2656**	4.064	23.5	mg/L	48	Standard
Fe	54	158.7	16.8	**0.0194**	0.024	121.5	mg/L	131	Standard
Fe	57	328.3	15.6	**0.5985**	0.164	27.4	mg/L	153	Standard
Sc-1	45	25142.5	0.5				mg/L	26715	Standard
Cl	35	142763.5	0.7				ug/L	102686	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	7081.7	6.3				ug/L	1897	Standard
P	31	22705.3	1.9				ug/L	18491	Standard
S	34	4310.6	1.6				ug/L	3734	Standard
Sr	88	140.0	6.2				ug/L	47	Standard
C	12	100.0	26.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	2320.2	15.4				mg/L	23	Standard
Dy	164	15.1	74.9				mg/L	23	Standard
Ho-1	165	31.7	18.2				mg/L	7	Standard
Er	166	33.3	34.6				mg/L	13	Standard
I	127	19487.5	5.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.759	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.747	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606154601
Report Date/Time: Tuesday, July 05, 2016 13:10:19
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.014
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.589
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606154701
Sample Date/Time: Tuesday, July 05, 2016 13:11:14
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78243.2	0.5				ug/L	59517	Standard
	Be	9	50.0	36.1	**0.0127**	0.016	126.0	ug/L	10	Standard
	Al	27	5391131.7	2.6	**26.9386**	0.570	2.1	ug/L	1872	Standard
	Sc	45	25486.4	2.9				ug/L	26715	Standard
	Ti	47	82.3	12.3	**0.0906**	0.041	44.9	ug/L	54	Standard
	V	51	2761.0	25.3	**0.1931**	0.093	48.0	ug/L	1419	Standard
	Cr	52	9238.5	1.9	**0.2903**	0.032	10.9	ug/L	7059	Standard
	Cr	53	3508.7	3.0	**3.4355**	0.137	4.0	ug/L	398	Standard
	Mn	55	3629.1	6.6	**0.4278**	0.036	8.5	ug/L	824	Standard
	Co	59	6301.6	5.0	**0.8788**	0.048	5.4	ug/L	167	Standard
	Ni	60	1731.8	2.3	**0.7022**	0.020	2.8	ug/L	391	Standard
	Cu	65	1675.8	3.0	**0.7910**	0.032	4.0	ug/L	147	Standard
	Zn	66	4565.4	1.4	**3.8716**	0.092	2.4	ug/L	184	Standard
>	**Ge**	72	434104.2	0.9				ug/L	422998	Standard
	As	75	198.1	13.9	**0.2219**	0.024	10.9	ug/L	-58	Standard
	Se	82	56.5	17.3	**0.2629**	0.078	29.8	ug/L	15	Standard
	Se-1	77	192.0	6.3	**1.7993**	0.166	9.2	ug/L	58	Standard
>	**Ga**	71	48.3	52.1				mg/L	113	Standard
	Rb	85	731.7	9.9				ug/L	27	Standard
	Y	89	373744.2	1.6				ug/L	383780	Standard
>	**Rh**	103	40.0	33.1				ug/L	18	Standard
	Mo	98	18608.8	1.1	**6.8320**	0.046	0.7	ug/L	31	Standard
	Ag	107	165.3	87.3	**0.0119**	0.021	173.9	ug/L	84	Standard
	Cd	111	69.6	54.4	**0.0277**	0.017	61.5	mg/L	4	Standard
	Cd	114	237.0	44.5	**0.0402**	0.020	49.0	ug/L	15	Standard
>	**In**	115	527257.4	0.8				ug/L	515400	Standard
	Sn	118	918.4	24.6	**-0.0261**	0.037	140.8	ug/L	1043	Standard
	Sb	123	1250.0	19.1	**0.2503**	0.049	19.4	ug/L	227	Standard
	Ba	135	67353.4	0.7	**32.7313**	0.509	1.6	ug/L	31	Standard
	Ce	140	241.7	8.4				ug/L	120	Standard
>	**Tb**	159	802121.7	1.2				ug/L	785817	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	184.7	77.1	**0.0179**	0.016	91.7	ug/L	6	Standard
	Tl	205	155.0	120.4	**0.0139**	0.025	178.5	ug/L	8	Standard
	Pb	206	785.0	13.7	**0.1021**	0.019	18.8	ug/L	201	Standard
	Pb	207	651.3	22.7	**0.0875**	0.029	33.6	ug/L	177	Standard
	Pb	208	2644.4	18.4	**0.0883**	0.024	27.3	ug/L	722	Standard
	U	238	1363.4	14.9	**0.1833**	0.027	14.5	ug/L	8	Standard
>	**Bi**	209	474894.4	1.4				ug/L	444563	Standard

Sample ID: L1606154701
Report Date/Time: Tuesday, July 05, 2016 13:13:31
Page 1

Approved: July 06, 2016

Na	23	10.0	86.6	**122.3030**	104.935	85.8	mg/L	0	Standard
Mg	24	8729.2	4.3	**11.4650**	0.629	5.5	mg/L	38	Standard
K	39	113.3	29.4	**0.3912**	0.152	38.8	mg/L	33	Standard
Ca	43	133.3	9.4	**16.0891**	1.458	9.1	mg/L	48	Standard
Fe	54	140.8	11.4	**0.0024**	0.013	551.1	mg/L	131	Standard
Fe	57	268.3	23.1	**0.3874**	0.183	47.2	mg/L	153	Standard
> **Sc-1**	45	25486.4	2.9				mg/L	26715	Standard
Cl	35	148684.1	1.4				ug/L	102686	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	6984.9	3.6				ug/L	1897	Standard
P	31	23055.9	2.4				ug/L	18491	Standard
S	34	4565.7	2.8				ug/L	3734	Standard
Sr	88	121.7	15.6				ug/L	47	Standard
C	12	116.7	17.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1940.1	9.4				mg/L	23	Standard
Dy	164	15.7	31.5				mg/L	23	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	20236.9	5.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.464	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.626	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606154701
Report Date/Time: Tuesday, July 05, 2016 13:13:31
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.301
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.823
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606131302
Sample Date/Time: Tuesday, July 05, 2016 13:14:25
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78667.0	0.6				ug/L	59517	Standard
	Be	9	35.0	37.8	**-0.0006**	0.012	1899.5	ug/L	10	Standard
	Al	27	36159.8	4.3	**0.1674**	0.009	5.2	ug/L	1872	Standard
	Sc	45	27211.1	1.2				ug/L	26715	Standard
	Ti	47	472.7	9.7	**1.7540**	0.219	12.5	ug/L	54	Standard
	V	51	145888.9	1.0	**20.1543**	0.251	1.2	ug/L	1419	Standard
	Cr	52	12885.8	0.9	**0.8469**	0.042	5.0	ug/L	7059	Standard
	Cr	53	3248.7	3.1	**3.2654**	0.167	5.1	ug/L	398	Standard
	Mn	55	5070.5	1.0	**0.6749**	0.012	1.8	ug/L	824	Standard
	Co	59	632.7	3.0	**0.0686**	0.004	6.0	ug/L	167	Standard
	Ni	60	1301.1	2.8	**0.4997**	0.028	5.6	ug/L	391	Standard
	Cu	65	3966.2	1.5	**2.0457**	0.008	0.4	ug/L	147	Standard
	Zn	66	2060.5	2.6	**1.7177**	0.027	1.5	ug/L	184	Standard
>	**Ge**	72	420648.3	1.4				ug/L	422998	Standard
	As	75	21444.8	0.3	**19.0612**	0.212	1.1	ug/L	-58	Standard
	Se	82	174.7	4.7	**1.2920**	0.051	3.9	ug/L	15	Standard
	Se-1	77	229.0	3.4	**2.3694**	0.135	5.7	ug/L	58	Standard
>	**Ga**	71	16232.0	1.5				mg/L	113	Standard
	Rb	85	3548.7	6.1				ug/L	27	Standard
	Y	89	375171.2	2.2				ug/L	383780	Standard
>	**Rh**	103	30.0	16.7				ug/L	18	Standard
	Mo	98	25927.7	0.5	**9.8421**	0.165	1.7	ug/L	31	Standard
	Ag	107	95.3	9.7	**0.0023**	0.001	63.6	ug/L	84	Standard
	Cd	111	23.4	17.8	**0.0070**	0.002	29.7	mg/L	4	Standard
	Cd	114	142.6	6.9	**0.0233**	0.002	7.5	ug/L	15	Standard
>	**In**	115	510225.5	1.2				ug/L	515400	Standard
	Sn	118	1641.8	4.5	**0.1054**	0.010	9.3	ug/L	1043	Standard
	Sb	123	3275.0	3.6	**0.7064**	0.029	4.1	ug/L	227	Standard
	Ba	135	8027.5	0.5	**4.0105**	0.044	1.1	ug/L	31	Standard
	Ce	140	2166.8	4.9				ug/L	120	Standard
>	**Tb**	159	797509.3	1.3				ug/L	785817	Standard
	Ho	165	66.7	8.7				ug/L	7	Standard
	Tl	203	77.0	11.9	**0.0058**	0.001	18.2	ug/L	6	Standard
	Tl	205	58.3	47.2	**0.0014**	0.004	278.3	ug/L	8	Standard
	Pb	206	883.0	3.0	**0.1277**	0.004	2.8	ug/L	201	Standard
	Pb	207	733.0	5.0	**0.1113**	0.008	7.5	ug/L	177	Standard
	Pb	208	3026.8	1.0	**0.1150**	0.003	2.7	ug/L	722	Standard
	U	238	159.3	21.7	**0.0202**	0.005	25.5	ug/L	8	Standard
>	**Bi**	209	455391.3	1.0				ug/L	444563	Standard

Sample ID: L1606131302
Report Date/Time: Tuesday, July 05, 2016 13:16:42
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**19.0149**	32.926	173.2	mg/L	0	Standard
Mg	24	73444.3	1.9	**90.5378**	2.813	3.1	mg/L	38	Standard
K	39	73.3	3.9	**0.1860**	0.015	8.0	mg/L	33	Standard
Ca	43	38.3	27.2	**0.0423**	1.593	3766.8	mg/L	48	Standard
Fe	54	185.4	5.4	**0.0301**	0.006	20.8	mg/L	131	Standard
Fe	57	218.3	22.0	**0.1819**	0.143	78.7	mg/L	153	Standard
> **Sc-1**	45	27211.1	1.2				mg/L	26715	Standard
Cl	35	152609.5	1.6				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	11000.7	9.0				ug/L	1897	Standard
P	31	36507.3	4.1				ug/L	18491	Standard
S	34	4153.9	4.8				ug/L	3734	Standard
Sr	88	108.3	27.0				ug/L	47	Standard
C	12	80.0	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	543.3	16.6				mg/L	23	Standard
Dy	164	90.3	46.3				mg/L	23	Standard
Ho-1	165	66.7	8.7				mg/L	7	Standard
Er	166	63.3	65.7				mg/L	13	Standard
I	127	28625.4	5.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.176	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.445	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131302
Report Date/Time: Tuesday, July 05, 2016 13:16:42
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.996
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.436
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606131303
Sample Date/Time: Tuesday, July 05, 2016 13:17:37
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78167.8	1.6				ug/L	59517	Standard
	Be	9	35.0	24.7	**-0.0004**	0.008	2008.5	ug/L	10	Standard
	Al	27	16235.4	1.0	**0.0688**	0.001	1.7	ug/L	1872	Standard
	Sc	45	27434.8	1.4				ug/L	26715	Standard
	Ti	47	395.7	6.7	**1.4092**	0.110	7.8	ug/L	54	Standard
	V	51	139325.4	0.9	**19.0364**	0.145	0.8	ug/L	1419	Standard
	Cr	52	12138.9	1.6	**0.7232**	0.035	4.9	ug/L	7059	Standard
	Cr	53	2491.9	5.2	**2.3788**	0.146	6.1	ug/L	398	Standard
	Mn	55	3284.4	1.9	**0.3856**	0.013	3.3	ug/L	824	Standard
	Co	59	690.7	4.5	**0.0761**	0.004	5.9	ug/L	167	Standard
	Ni	60	1085.7	6.3	**0.3779**	0.041	10.7	ug/L	391	Standard
	Cu	65	3931.5	0.4	**2.0053**	0.021	1.1	ug/L	147	Standard
	Zn	66	1651.8	2.4	**1.3298**	0.027	2.0	ug/L	184	Standard
>	**Ge**	72	425061.1	0.7				ug/L	422998	Standard
	As	75	21504.8	1.3	**18.9163**	0.369	2.0	ug/L	-58	Standard
	Se	82	137.9	4.7	**0.9642**	0.058	6.0	ug/L	15	Standard
	Se-1	77	171.0	6.6	**1.5763**	0.162	10.3	ug/L	58	Standard
>	**Ga**	71	12828.8	2.6				mg/L	113	Standard
	Rb	85	2203.5	2.3				ug/L	27	Standard
	Y	89	365644.8	1.2				ug/L	383780	Standard
>	**Rh**	103	28.3	44.4				ug/L	18	Standard
	Mo	98	20240.4	0.6	**7.7133**	0.083	1.1	ug/L	31	Standard
	Ag	107	72.0	10.8	**-0.0011**	0.001	109.4	ug/L	84	Standard
	Cd	111	6.6	55.7	**-0.0010**	0.002	170.0	mg/L	4	Standard
	Cd	114	96.5	8.5	**0.0144**	0.002	10.8	ug/L	15	Standard
>	**In**	115	508063.2	0.7				ug/L	515400	Standard
	Sn	118	3423.7	2.5	**0.4189**	0.012	2.9	ug/L	1043	Standard
	Sb	123	3621.5	1.2	**0.7862**	0.008	1.1	ug/L	227	Standard
	Ba	135	4657.7	1.4	**2.3270**	0.048	2.1	ug/L	31	Standard
	Ce	140	840.0	12.5				ug/L	120	Standard
>	**Tb**	159	802833.7	0.9				ug/L	785817	Standard
	Ho	165	30.0	60.1				ug/L	7	Standard
	Tl	203	41.7	32.6	**0.0015**	0.002	111.7	ug/L	6	Standard
	Tl	205	36.7	20.8	**-0.0017**	0.001	67.0	ug/L	8	Standard
	Pb	206	598.7	7.1	**0.0716**	0.007	10.0	ug/L	201	Standard
	Pb	207	523.3	5.0	**0.0655**	0.006	8.4	ug/L	177	Standard
	Pb	208	2103.4	1.4	**0.0649**	0.001	1.4	ug/L	722	Standard
	U	238	85.0	3.5	**0.0096**	0.000	4.6	ug/L	8	Standard
>	**Bi**	209	456285.7	1.1				ug/L	444563	Standard

Sample ID: L1606131303
Report Date/Time: Tuesday, July 05, 2016 13:19:54
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**18.9113**	32.747	173.2	mg/L	0	Standard
Mg	24	70085.1	1.9	**85.6658**	0.604	0.7	mg/L	38	Standard
K	39	48.3	15.8	**0.0768**	0.033	42.4	mg/L	33	Standard
Ca	43	20.0	25.0	**-2.8154**	0.755	26.8	mg/L	48	Standard
Fe	54	179.1	7.3	**0.0240**	0.011	44.6	mg/L	131	Standard
Fe	57	178.3	12.6	**0.0561**	0.067	120.0	mg/L	153	Standard
> **Sc-1**	45	27434.8	1.4				mg/L	26715	Standard
Cl	35	151459.3	0.7				ug/L	102686	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	7481.8	1.3				ug/L	1897	Standard
P	31	34716.4	2.8				ug/L	18491	Standard
S	34	4028.9	2.6				ug/L	3734	Standard
Sr	88	91.7	20.7				ug/L	47	Standard
C	12	130.0	33.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	480.0	15.0				mg/L	23	Standard
Dy	164	31.9	67.5				mg/L	23	Standard
Ho-1	165	30.0	60.1				mg/L	7	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	24636.7	4.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.338	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.488	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131303
Report Date/Time: Tuesday, July 05, 2016 13:19:54
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.577
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.637
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 13:20:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77279.9	1.5				ug/L	59517	Standard
	Be	9	53777.0	3.0	**47.5968**	0.851	1.8	ug/L	10	Standard
	Al	27	7708258.9	1.1	**39.0068**	0.154	0.4	ug/L	1872	Standard
	Sc	45	24800.3	1.9				ug/L	26715	Standard
	Ti	47	22227.6	0.6	**92.0240**	0.601	0.7	ug/L	54	Standard
	V	51	351889.5	1.4	**47.9563**	0.611	1.3	ug/L	1419	Standard
	Cr	52	342816.9	0.2	**46.6156**	0.227	0.5	ug/L	7059	Standard
	Cr	53	43276.7	1.2	**47.6302**	0.591	1.2	ug/L	398	Standard
	Mn	55	294860.0	1.7	**45.8586**	0.698	1.5	ug/L	824	Standard
	Co	59	347316.5	0.9	**50.4274**	0.375	0.7	ug/L	167	Standard
	Ni	60	89058.0	1.2	**46.7900**	0.788	1.7	ug/L	391	Standard
	Cu	65	88901.1	0.5	**46.6679**	0.492	1.1	ug/L	147	Standard
	Zn	66	54606.2	0.6	**48.6722**	0.419	0.9	ug/L	184	Standard
>	Ge	72	428562.2	0.5				ug/L	422998	Standard
	As	75	54688.5	0.1	**47.6305**	0.211	0.4	ug/L	-58	Standard
	Se	82	5723.2	1.1	**47.9774**	0.742	1.5	ug/L	15	Standard
	Se-1	77	3837.2	0.2	**49.2755**	0.166	0.3	ug/L	58	Standard
>	Ga	71	53.3	19.5				mg/L	113	Standard
	Rb	85	731.7	8.7				ug/L	27	Standard
	Y	89	372760.3	1.4				ug/L	383780	Standard
>	Rh	103	35.0	62.3				ug/L	18	Standard
	Mo	98	263563.3	0.7	**98.6156**	1.700	1.7	ug/L	31	Standard
	Ag	107	327977.8	0.4	**48.4125**	0.670	1.4	ug/L	84	Standard
	Cd	111	102274.1	1.0	**47.7734**	0.685	1.4	mg/L	4	Standard
	Cd	114	251291.9	0.8	**48.3732**	0.660	1.4	ug/L	15	Standard
>	In	115	518052.7	1.0				ug/L	515400	Standard
	Sn	118	288284.1	2.0	**49.3576**	1.118	2.3	ug/L	1043	Standard
	Sb	123	230660.4	0.9	**50.1205**	0.888	1.8	ug/L	227	Standard
	Ba	135	94724.2	0.5	**46.8615**	0.694	1.5	ug/L	31	Standard
	Ce	140	80.0	27.2				ug/L	120	Standard
>	Tb	159	799343.7	1.2				ug/L	785817	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	411834.4	0.5	**48.5837**	0.788	1.6	ug/L	6	Standard
	Tl	205	366998.2	0.5	**49.7011**	1.033	2.1	ug/L	8	Standard
	Pb	206	261625.5	0.2	**49.5786**	0.671	1.4	ug/L	201	Standard
	Pb	207	236614.4	1.1	**49.5960**	0.918	1.9	ug/L	177	Standard
	Pb	208	951807.7	0.8	**49.6651**	0.691	1.4	ug/L	722	Standard
	U	238	367873.3	1.0	**50.5477**	1.302	2.6	ug/L	8	Standard
>	Bi	209	471246.4	1.6				ug/L	444563	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 13:23:07
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4195.6	3.3	**5.6446**	0.262	4.6	mg/L	38	Standard
K	39	825.0	5.0	**3.7638**	0.250	6.7	mg/L	33	Standard
Ca	43	60.0	44.1	**4.2384**	4.339	102.4	mg/L	48	Standard
Fe	54	6081.6	5.0	**5.1678**	0.344	6.6	mg/L	131	Standard
Fe	57	1670.1	7.4	**5.0981**	0.510	10.0	mg/L	153	Standard
Sc-1	45	24800.3	1.9				mg/L	26715	Standard
Cl	35	131008.1	2.1				ug/L	102686	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1596.8	13.5				ug/L	1897	Standard
P	31	21889.1	1.3				ug/L	18491	Standard
S	34	4429.0	2.1				ug/L	3734	Standard
Sr	88	70.0	31.1				ug/L	47	Standard
C	12	56.7	53.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	360.0	57.7				mg/L	23	Standard
Dy	164	16.3	67.3				mg/L	23	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	11344.2	0.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	95.194		
Al	27	78.014		
Sc	45			
Ti	47	92.024		
V	51	95.913		
Cr	52	93.231		
Cr	53			
Mn	55	91.717		
Co	59	100.855		
Ni	60	93.580		
Cu	65	93.336		
Zn	66	97.344		
Ge	72		101.316	
As	75	95.261		
Se	82	95.955		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 13:23:07
Page 2

Approved: July 06, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.616		
Ag	107	96.825		
Cd	111	95.547		
Cd	114			
In	115			100.515
Sn	118	98.715		
Sb	123	100.241		
Ba	135	93.723		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.167		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.330		
U	238	101.095		
Bi	209			106.002
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 13:23:07
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 13:24:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77248.1	0.5				ug/L	59517	Standard
	Be	9	35.0	65.5	**-0.0001**	0.020	15219.5	ug/L	10	Standard
	Al	27	2498.5	19.2	**0.0002**	0.002	1111.1	ug/L	1872	Standard
	Sc	45	25149.2	1.9				ug/L	26715	Standard
	Ti	47	32.7	26.4	**-0.1113**	0.034	30.6	ug/L	54	Standard
	V	51	1540.0	3.7	**0.0313**	0.006	20.6	ug/L	1419	Standard
	Cr	52	5901.1	0.9	**-0.1562**	0.006	4.2	ug/L	7059	Standard
	Cr	53	921.7	8.2	**0.6137**	0.086	14.0	ug/L	398	Standard
	Mn	55	561.3	6.2	**-0.0433**	0.007	15.6	ug/L	824	Standard
	Co	59	212.0	8.6	**0.0057**	0.002	43.4	ug/L	167	Standard
	Ni	60	468.7	2.1	**0.0477**	0.008	17.4	ug/L	391	Standard
	Cu	65	208.0	5.0	**0.0305**	0.007	22.9	ug/L	147	Standard
	Zn	66	235.7	15.1	**0.0518**	0.034	65.7	ug/L	184	Standard
>	Ge	72	428296.6	1.5				ug/L	422998	Standard
	As	75	-36.4	108.4	**0.0197**	0.035	177.8	ug/L	-58	Standard
	Se	82	19.0	50.5	**-0.0463**	0.080	171.6	ug/L	15	Standard
	Se-1	77	74.7	5.4	**0.3048**	0.067	22.0	ug/L	58	Standard
>	Ga	71	30.0	72.6				mg/L	113	Standard
	Rb	85	25.0	20.0				ug/L	27	Standard
	Y	89	374392.9	1.2				ug/L	383780	Standard
>	Rh	103	10.0	50.0				ug/L	18	Standard
	Mo	98	261.5	7.1	**0.0873**	0.006	6.5	ug/L	31	Standard
	Ag	107	126.7	16.6	**0.0064**	0.003	44.8	ug/L	84	Standard
	Cd	111	16.2	39.1	**0.0033**	0.003	85.0	mg/L	4	Standard
	Cd	114	52.9	33.8	**0.0054**	0.003	61.0	ug/L	15	Standard
>	In	115	526400.0	1.5				ug/L	515400	Standard
	Sn	118	1133.4	25.4	**0.0103**	0.046	446.2	ug/L	1043	Standard
	Sb	123	778.2	35.3	**0.1496**	0.057	37.8	ug/L	227	Standard
	Ba	135	42.7	38.1	**-0.0029**	0.008	281.0	ug/L	31	Standard
	Ce	140	18.3	15.7				ug/L	120	Standard
>	Tb	159	808183.5	1.4				ug/L	785817	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	94.0	21.3	**0.0072**	0.002	31.6	ug/L	6	Standard
	Tl	205	66.7	58.3	**0.0020**	0.005	250.8	ug/L	8	Standard
	Pb	206	301.3	10.9	**0.0104**	0.006	59.0	ug/L	201	Standard
	Pb	207	248.0	9.5	**0.0030**	0.005	154.8	ug/L	177	Standard
	Pb	208	1028.3	9.2	**0.0040**	0.005	118.6	ug/L	722	Standard
	U	238	79.3	13.9	**0.0082**	0.001	17.8	ug/L	8	Standard
>	Bi	209	481290.0	0.3				ug/L	444563	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 13:26:18
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	41.8	**0.0306**	0.026	83.9	mg/L	38	Standard
K	39	21.7	70.5	**-0.0287**	0.071	248.9	mg/L	33	Standard
Ca	43	35.0	65.5	**-0.0715**	3.697	5169.8	mg/L	48	Standard
Fe	54	137.5	14.0	**0.0010**	0.014	1468.5	mg/L	131	Standard
Fe	57	171.7	6.1	**0.0836**	0.044	53.0	mg/L	153	Standard
Sc-1	45	25149.2	1.9				mg/L	26715	Standard
Cl	35	131293.1	0.9				ug/L	102686	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1543.4	4.7				ug/L	1897	Standard
P	31	20780.9	1.4				ug/L	18491	Standard
S	34	4420.6	1.7				ug/L	3734	Standard
Sr	88	56.7	18.4				ug/L	47	Standard
C	12	53.3	60.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	326.7	35.9				mg/L	23	Standard
Dy	164	9.5	177.6				mg/L	23	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	7296.8	2.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.253	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 13:26:18
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.134
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.261
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 13:26:18
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: PBW A3 WG574733-02
Sample Date/Time: Tuesday, July 05, 2016 13:27:14
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72265.4	3.1				ug/L	59517	Standard
	Be	9	28.3	36.7	**-0.0041**	0.010	248.9	ug/L	10	Standard
	Al	27	4012.2	3.3	**0.0093**	0.000	0.4	ug/L	1872	Standard
	Sc	45	23902.2	1.4				ug/L	26715	Standard
	Ti	47	27.3	23.8	**-0.1266**	0.028	22.4	ug/L	54	Standard
	V	51	1207.2	8.4	**-0.0047**	0.013	269.8	ug/L	1419	Standard
	Cr	52	5280.9	1.4	**-0.1997**	0.013	6.4	ug/L	7059	Standard
	Cr	53	853.4	7.8	**0.5926**	0.073	12.3	ug/L	398	Standard
	Mn	55	536.7	2.0	**-0.0423**	0.001	3.3	ug/L	824	Standard
	Co	59	197.0	2.2	**0.0052**	0.000	5.5	ug/L	167	Standard
	Ni	60	507.0	6.1	**0.0834**	0.017	20.0	ug/L	391	Standard
	Cu	65	155.7	8.0	**0.0077**	0.008	105.4	ug/L	147	Standard
	Zn	66	897.0	2.3	**0.6902**	0.025	3.6	ug/L	184	Standard
>	**Ge**	72	404765.5	1.3				ug/L	422998	Standard
	As	75	-16.9	74.1	**0.0360**	0.012	32.7	ug/L	-58	Standard
	Se	82	14.0	26.9	**-0.0814**	0.033	41.0	ug/L	15	Standard
	Se-1	77	67.7	13.7	**0.2653**	0.141	53.0	ug/L	58	Standard
>	**Ga**	71	36.7	43.8				mg/L	113	Standard
	Rb	85	33.3	45.8				ug/L	27	Standard
	Y	89	352186.3	2.7				ug/L	383780	Standard
>	**Rh**	103	16.7	69.3				ug/L	18	Standard
	Mo	98	126.8	14.3	**0.0405**	0.007	18.0	ug/L	31	Standard
	Ag	107	93.7	15.2	**0.0024**	0.002	93.9	ug/L	84	Standard
	Cd	111	8.8	22.6	**0.0001**	0.001	723.6	mg/L	4	Standard
	Cd	114	24.1	3.4	**0.0003**	0.000	72.3	ug/L	15	Standard
>	**In**	115	497809.9	0.7				ug/L	515400	Standard
	Sn	118	591.7	27.6	**-0.0751**	0.030	39.4	ug/L	1043	Standard
	Sb	123	272.2	30.3	**0.0453**	0.019	41.7	ug/L	227	Standard
	Ba	135	35.7	16.4	**-0.0053**	0.003	58.6	ug/L	31	Standard
	Ce	140	28.3	44.4				ug/L	120	Standard
>	**Tb**	159	770709.7	0.8				ug/L	785817	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	38.3	12.3	**0.0010**	0.001	57.0	ug/L	6	Standard
	Tl	205	33.3	22.9	**-0.0022**	0.001	47.3	ug/L	8	Standard
	Pb	206	247.0	1.1	**0.0023**	0.000	16.6	ug/L	201	Standard
	Pb	207	214.7	5.4	**-0.0019**	0.002	126.0	ug/L	177	Standard
	Pb	208	845.0	2.2	**-0.0035**	0.001	28.3	ug/L	722	Standard
	U	238	21.7	2.7	**0.0006**	0.000	16.5	ug/L	8	Standard
>	**Bi**	209	461147.0	0.7				ug/L	444563	Standard

Sample ID: PBW A3 WG574733-02
Report Date/Time: Tuesday, July 05, 2016 13:29:31
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**22.1611**	38.375	173.2	mg/L	0	Standard
Mg	24	51.7	43.6	**0.0390**	0.032	81.4	mg/L	38	Standard
K	39	18.3	56.8	**-0.0397**	0.051	127.4	mg/L	33	Standard
Ca	43	18.3	31.5	**-2.6620**	0.974	36.6	mg/L	48	Standard
Fe	54	59.4	36.8	**-0.0629**	0.020	32.0	mg/L	131	Standard
Fe	57	215.0	20.3	**0.2616**	0.143	54.5	mg/L	153	Standard
> **Sc-1**	45	23902.2	1.4				mg/L	26715	Standard
Cl	35	126188.0	1.4				ug/L	102686	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1403.4	7.9				ug/L	1897	Standard
P	31	10745.5	1.7				ug/L	18491	Standard
S	34	4509.0	5.4				ug/L	3734	Standard
Sr	88	73.3	23.9				ug/L	47	Standard
C	12	60.0	16.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	286.7	27.1				mg/L	23	Standard
Dy	164	13.3	43.3				mg/L	23	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	0.0					mg/L	13	Standard
I	127	24391.3	3.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.420	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.690	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW A3 WG574733-02
Report Date/Time: Tuesday, July 05, 2016 13:29:31
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.587
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.730
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: PBW A3 WG574733-02
Report Date/Time: Tuesday, July 05, 2016 13:29:31
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: LCSW A3 WG574733-03
Sample Date/Time: Tuesday, July 05, 2016 13:30:26
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75253.1	1.1				ug/L	59517	Standard
	Be	9	52465.7	0.9	**47.6942**	0.407	0.9	ug/L	10	Standard
	Al	27	19457.6	13.1	**0.0887**	0.013	14.8	ug/L	1872	Standard
	Sc	45	26219.3	0.7				ug/L	26715	Standard
	Ti	47	42.3	8.3	**-0.0755**	0.015	19.6	ug/L	54	Standard
	V	51	347185.9	1.1	**46.0879**	0.577	1.3	ug/L	1419	Standard
	Cr	52	344813.3	1.5	**45.6555**	0.590	1.3	ug/L	7059	Standard
	Cr	53	42641.6	1.5	**45.7019**	0.578	1.3	ug/L	398	Standard
	Mn	55	291641.8	0.8	**44.1834**	0.386	0.9	ug/L	824	Standard
	Co	59	337541.5	0.6	**47.7421**	0.301	0.6	ug/L	167	Standard
	Ni	60	89955.9	0.4	**46.0367**	0.248	0.5	ug/L	391	Standard
	Cu	65	90196.7	0.6	**46.1235**	0.303	0.7	ug/L	147	Standard
	Zn	66	54716.3	1.1	**47.5069**	0.557	1.2	ug/L	184	Standard
>	Ge	72	439917.4	0.4				ug/L	422998	Standard
	As	75	54401.3	0.8	**46.1577**	0.219	0.5	ug/L	-58	Standard
	Se	82	5653.7	1.8	**46.1601**	0.747	1.6	ug/L	15	Standard
	Se-1	77	3791.8	1.1	**47.4122**	0.680	1.4	ug/L	58	Standard
>	Ga	71	46.7	27.0				mg/L	113	Standard
	Rb	85	58.3	17.8				ug/L	27	Standard
	Y	89	386389.0	1.7				ug/L	383780	Standard
>	Rh	103	36.7	7.9				ug/L	18	Standard
	Mo	98	233.4	25.1	**0.0751**	0.021	28.0	ug/L	31	Standard
	Ag	107	328195.8	0.3	**46.6035**	0.407	0.9	ug/L	84	Standard
	Cd	111	101238.3	1.6	**45.4924**	0.734	1.6	mg/L	4	Standard
	Cd	114	246610.1	0.9	**45.6678**	0.398	0.9	ug/L	15	Standard
>	In	115	538481.9	0.6				ug/L	515400	Standard
	Sn	118	1036.7	17.8	**-0.0095**	0.031	328.0	ug/L	1043	Standard
	Sb	123	220923.7	2.5	**46.1783**	1.215	2.6	ug/L	227	Standard
	Ba	135	93612.6	0.7	**44.5490**	0.173	0.4	ug/L	31	Standard
	Ce	140	61.7	38.3				ug/L	120	Standard
>	Tb	159	815528.9	0.9				ug/L	785817	Standard
	Ho	165	16.7	17.3				ug/L	7	Standard
	Tl	203	406531.5	0.8	**46.1202**	0.317	0.7	ug/L	6	Standard
	Tl	205	360394.5	1.1	**46.9336**	0.473	1.0	ug/L	8	Standard
	Pb	206	262399.8	0.8	**47.8193**	0.324	0.7	ug/L	201	Standard
	Pb	207	229918.1	0.8	**46.3432**	0.384	0.8	ug/L	177	Standard
	Pb	208	946627.3	0.3	**47.5019**	0.176	0.4	ug/L	722	Standard
	U	238	352757.6	0.5	**46.6085**	0.236	0.5	ug/L	8	Standard
>	Bi	209	489940.7	0.1				ug/L	444563	Standard

Sample ID: LCSW A3 WG574733-03
Report Date/Time: Tuesday, July 05, 2016 13:32:43
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	128.3	56.2	**0.1310**	0.093	71.1	mg/L	38	Standard
K	39	8.3	91.7	**-0.0919**	0.034	37.2	mg/L	33	Standard
Ca	43	18.3	83.3	**-2.9311**	2.464	84.1	mg/L	48	Standard
Fe	54	119.4	11.4	**-0.0185**	0.011	61.6	mg/L	131	Standard
Fe	57	161.7	9.4	**0.0286**	0.051	179.9	mg/L	153	Standard
Sc-1	45	26219.3	0.7				mg/L	26715	Standard
Cl	35	136075.7	1.0				ug/L	102686	Standard
Kr	83	2.7	94.4				ug/L	2	Standard
Br	81	1740.1	13.0				ug/L	1897	Standard
P	31	21206.5	1.7				ug/L	18491	Standard
S	34	4559.0	4.6				ug/L	3734	Standard
Sr	88	63.3	12.1				ug/L	47	Standard
C	12	106.7	30.1				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	373.3	30.9				mg/L	23	Standard
Dy	164	9.4	3.0				mg/L	23	Standard
Ho-1	165	16.7	17.3				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	12173.2	2.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.440	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.000	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW A3 WG574733-03
Report Date/Time: Tuesday, July 05, 2016 13:32:43
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.478
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.207
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: LCSW A3 WG574733-03
Report Date/Time: Tuesday, July 05, 2016 13:32:43
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606155606 WG574733-01
Sample Date/Time: Tuesday, July 05, 2016 13:33:37
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76619.9	1.8				ug/L	59517	Standard
	Be	9	18.3	31.5	**-0.0148**	0.005	32.8	ug/L	10	Standard
	Al	27	3910896.6	0.4	**19.9576**	0.286	1.4	ug/L	1872	Standard
	Sc	45	26187.6	1.6				ug/L	26715	Standard
	Ti	47	216.7	3.9	**0.6322**	0.037	5.9	ug/L	54	Standard
	V	51	2156.8	18.0	**0.1088**	0.051	47.3	ug/L	1419	Standard
	Cr	52	8854.9	1.9	**0.2252**	0.017	7.6	ug/L	7059	Standard
	Cr	53	3685.4	6.8	**3.5869**	0.261	7.3	ug/L	398	Standard
	Mn	55	188641.4	2.2	**28.6195**	0.584	2.0	ug/L	824	Standard
	Co	59	891.4	6.8	**0.1015**	0.009	8.8	ug/L	167	Standard
	Ni	60	1898.1	3.8	**0.7786**	0.032	4.1	ug/L	391	Standard
	Cu	65	5241.9	1.3	**2.6142**	0.027	1.0	ug/L	147	Standard
	Zn	66	15313.7	1.4	**13.2221**	0.195	1.5	ug/L	184	Standard
>	**Ge**	72	438583.0	0.6				ug/L	422998	Standard
	As	75	190.6	13.9	**0.2138**	0.023	10.9	ug/L	-58	Standard
	Se	82	59.3	14.4	**0.2816**	0.072	25.7	ug/L	15	Standard
	Se-1	77	189.0	1.4	**1.7354**	0.021	1.2	ug/L	58	Standard
>	**Ga**	71	75.0	6.7				mg/L	113	Standard
	Rb	85	20624.0	2.3				ug/L	27	Standard
	Y	89	378479.1	0.9				ug/L	383780	Standard
>	**Rh**	103	45.0	22.2				ug/L	18	Standard
	Mo	98	258.8	6.7	**0.0864**	0.007	7.7	ug/L	31	Standard
	Ag	107	231.0	8.2	**0.0216**	0.003	13.8	ug/L	84	Standard
	Cd	111	26.2	5.8	**0.0079**	0.001	7.7	mg/L	4	Standard
	Cd	114	86.1	15.5	**0.0117**	0.002	20.0	ug/L	15	Standard
>	**In**	115	525997.4	1.0				ug/L	515400	Standard
	Sn	118	1326.7	8.1	**0.0437**	0.020	44.8	ug/L	1043	Standard
	Sb	123	2784.8	25.2	**0.5796**	0.150	25.9	ug/L	227	Standard
	Ba	135	38616.5	0.6	**18.8006**	0.193	1.0	ug/L	31	Standard
	Ce	140	261.7	12.3				ug/L	120	Standard
>	**Tb**	159	806665.6	0.7				ug/L	785817	Standard
	Ho	165	35.0	57.1				ug/L	7	Standard
	Tl	203	190.3	8.2	**0.0185**	0.002	10.3	ug/L	6	Standard
	Tl	205	181.7	16.1	**0.0174**	0.004	22.6	ug/L	8	Standard
	Pb	206	1160.7	2.5	**0.1708**	0.004	2.4	ug/L	201	Standard
	Pb	207	969.4	2.3	**0.1520**	0.004	2.8	ug/L	177	Standard
	Pb	208	4053.9	2.2	**0.1595**	0.003	2.0	ug/L	722	Standard
	U	238	140.0	14.3	**0.0164**	0.003	16.0	ug/L	8	Standard
>	**Bi**	209	479439.2	0.6				ug/L	444563	Standard

Sample ID: L1606155606 WG574733-01
Report Date/Time: Tuesday, July 05, 2016 13:35:54
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	12810.4	0.3	**16.3809**	0.300	1.8	mg/L	38	Standard
K	39	416.7	14.1	**1.7325**	0.269	15.5	mg/L	33	Standard
Ca	43	133.3	18.9	**15.4999**	3.812	24.6	mg/L	48	Standard
Fe	54	182.3	5.9	**0.0333**	0.008	24.2	mg/L	131	Standard
Fe	57	325.0	8.0	**0.5460**	0.093	17.0	mg/L	153	Standard
> **Sc-1**	45	26187.6	1.6				mg/L	26715	Standard
Cl	35	143270.9	0.6				ug/L	102686	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	9549.7	3.1				ug/L	1897	Standard
P	31	23338.0	0.5				ug/L	18491	Standard
S	34	4283.9	1.4				ug/L	3734	Standard
Sr	88	161.7	12.5				ug/L	47	Standard
C	12	90.0	40.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	350.0	28.6				mg/L	23	Standard
Dy	164	44.8	33.5				mg/L	23	Standard
Ho-1	165	35.0	57.1				mg/L	7	Standard
Er	166	40.0	50.0				mg/L	13	Standard
I	127	21006.2	2.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.737	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.685	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606155606 WG574733-01
Report Date/Time: Tuesday, July 05, 2016 13:35:54
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.056
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.845
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606155606DP WG574733-04
Sample Date/Time: Tuesday, July 05, 2016 13:36:49
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75933.1	1.2				ug/L	59517	Standard
	Be	9	35.0	37.8	**0.0004**	0.012	3160.2	ug/L	10	Standard
	Al	27	4030525.5	1.9	**20.7518**	0.376	1.8	ug/L	1872	Standard
	Sc	45	26191.0	3.1				ug/L	26715	Standard
	Ti	47	223.3	0.9	**0.6703**	0.011	1.7	ug/L	54	Standard
	V	51	2211.3	10.7	**0.1197**	0.030	25.3	ug/L	1419	Standard
	Cr	52	9125.1	1.2	**0.2772**	0.021	7.5	ug/L	7059	Standard
	Cr	53	3940.5	0.6	**3.9170**	0.052	1.3	ug/L	398	Standard
	Mn	55	191919.3	1.3	**29.4820**	0.525	1.8	ug/L	824	Standard
	Co	59	912.7	3.8	**0.1061**	0.005	4.7	ug/L	167	Standard
	Ni	60	1899.1	0.3	**0.7913**	0.007	0.9	ug/L	391	Standard
	Cu	65	5124.5	0.7	**2.5866**	0.042	1.6	ug/L	147	Standard
	Zn	66	14606.7	1.3	**12.7631**	0.293	2.3	ug/L	184	Standard
>	**Ge**	72	433247.6	1.0				ug/L	422998	Standard
	As	75	222.2	17.0	**0.2430**	0.034	14.0	ug/L	-58	Standard
	Se	82	57.5	11.7	**0.2732**	0.056	20.6	ug/L	15	Standard
	Se-1	77	192.0	7.7	**1.8033**	0.182	10.1	ug/L	58	Standard
>	**Ga**	71	51.7	39.1				mg/L	113	Standard
	Rb	85	21695.5	0.6				ug/L	27	Standard
	Y	89	374664.2	2.4				ug/L	383780	Standard
>	**Rh**	103	30.0	50.0				ug/L	18	Standard
	Mo	98	172.6	20.9	**0.0554**	0.015	26.4	ug/L	31	Standard
	Ag	107	158.7	6.7	**0.0113**	0.002	16.0	ug/L	84	Standard
	Cd	111	22.3	2.5	**0.0062**	0.001	8.3	mg/L	4	Standard
	Cd	114	38.0	66.0	**0.0027**	0.005	179.1	ug/L	15	Standard
>	**In**	115	521684.0	2.5				ug/L	515400	Standard
	Sn	118	1256.7	9.1	**0.0339**	0.025	72.5	ug/L	1043	Standard
	Sb	123	1042.2	23.3	**0.2095**	0.057	27.4	ug/L	227	Standard
	Ba	135	40481.0	0.1	**19.8796**	0.481	2.4	ug/L	31	Standard
	Ce	140	203.3	13.5				ug/L	120	Standard
>	**Tb**	159	813776.6	1.4				ug/L	785817	Standard
	Ho	165	30.0	28.9				ug/L	7	Standard
	Tl	203	111.3	20.0	**0.0094**	0.003	27.1	ug/L	6	Standard
	Tl	205	95.0	18.2	**0.0060**	0.002	36.8	ug/L	8	Standard
	Pb	206	1017.0	5.1	**0.1458**	0.008	5.3	ug/L	201	Standard
	Pb	207	878.7	4.6	**0.1351**	0.010	7.2	ug/L	177	Standard
	Pb	208	3806.5	1.6	**0.1487**	0.002	1.3	ug/L	722	Standard
	U	238	103.0	16.6	**0.0116**	0.002	19.0	ug/L	8	Standard
>	**Bi**	209	474764.8	1.2				ug/L	444563	Standard

Sample ID: L1606155606DP WG574733-04
Report Date/Time: Tuesday, July 05, 2016 13:39:06
Page 1

Approved: July 06, 2016

Na	23	5.0	100.0	**58.6080**	57.735	98.5	mg/L	0	Standard
Mg	24	13511.0	1.2	**17.2878**	0.715	4.1	mg/L	38	Standard
K	39	463.3	5.3	**1.9393**	0.076	3.9	mg/L	33	Standard
Ca	43	138.3	5.5	**16.3195**	0.701	4.3	mg/L	48	Standard
Fe	54	209.1	15.1	**0.0554**	0.027	48.7	mg/L	131	Standard
Fe	57	301.7	11.3	**0.4732**	0.127	26.9	mg/L	153	Standard
> **Sc-1**	45	26191.0	3.1				mg/L	26715	Standard
Cl	35	146984.2	1.1				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	9146.1	7.4				ug/L	1897	Standard
P	31	24466.4	0.2				ug/L	18491	Standard
S	34	4520.7	2.5				ug/L	3734	Standard
Sr	88	166.7	4.6				ug/L	47	Standard
C	12	113.3	31.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	370.0	37.5				mg/L	23	Standard
Dy	164	36.2	42.2				mg/L	23	Standard
Ho-1	165	30.0	28.9				mg/L	7	Standard
Er	166	10.0					mg/L	13	Standard
I	127	21368.4	3.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.583	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.423	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606155606DP WG574733-04
Report Date/Time: Tuesday, July 05, 2016 13:39:06
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.219
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.794
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1606155606DP WG574733-04
Report Date/Time: Tuesday, July 05, 2016 13:39:06
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606155606S WG574733-05
Sample Date/Time: Tuesday, July 05, 2016 13:40:00
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75055.5	1.7				ug/L	59517	Standard
	Be	9	51427.1	1.3	**46.8865**	1.403	3.0	ug/L	10	Standard
	Al	27	3867228.5	0.6	**20.1455**	0.239	1.2	ug/L	1872	Standard
	Sc	45	25756.9	0.4				ug/L	26715	Standard
	Ti	47	229.7	13.8	**0.7070**	0.125	17.7	ug/L	54	Standard
	V	51	342494.9	0.4	**46.7262**	0.577	1.2	ug/L	1419	Standard
	Cr	52	335758.4	1.1	**45.6872**	0.479	1.0	ug/L	7059	Standard
	Cr	53	44709.2	1.8	**49.2730**	0.606	1.2	ug/L	398	Standard
	Mn	55	465754.2	1.2	**72.6026**	1.516	2.1	ug/L	824	Standard
	Co	59	330302.5	0.6	**48.0126**	0.688	1.4	ug/L	167	Standard
	Ni	60	87200.9	0.9	**45.8624**	0.759	1.7	ug/L	391	Standard
	Cu	65	90478.0	0.4	**47.5490**	0.240	0.5	ug/L	147	Standard
	Zn	66	65640.9	0.8	**58.6059**	0.684	1.2	ug/L	184	Standard
>	Ge	72	428091.7	0.9				ug/L	422998	Standard
	As	75	54750.9	0.8	**47.7393**	0.622	1.3	ug/L	-58	Standard
	Se	82	5672.5	0.9	**47.6028**	0.560	1.2	ug/L	15	Standard
	Se-1	77	3846.5	0.9	**49.4522**	0.346	0.7	ug/L	58	Standard
>	Ga	71	90.0	9.6				mg/L	113	Standard
	Rb	85	20437.1	1.6				ug/L	27	Standard
	Y	89	377705.9	1.8				ug/L	383780	Standard
>	Rh	103	50.0	34.6				ug/L	18	Standard
	Mo	98	196.9	21.6	**0.0640**	0.017	26.4	ug/L	31	Standard
	Ag	107	310531.6	0.4	**45.2367**	1.075	2.4	ug/L	84	Standard
	Cd	111	98557.9	1.3	**45.4258**	0.329	0.7	mg/L	4	Standard
	Cd	114	236318.7	1.7	**44.8838**	0.149	0.3	ug/L	15	Standard
>	In	115	525039.2	2.0				ug/L	515400	Standard
	Sn	118	1146.7	23.4	**0.0141**	0.049	351.3	ug/L	1043	Standard
	Sb	123	218019.3	1.5	**46.7404**	0.319	0.7	ug/L	227	Standard
	Ba	135	129898.5	0.9	**63.4192**	0.714	1.1	ug/L	31	Standard
	Ce	140	213.3	10.6				ug/L	120	Standard
>	Tb	159	817213.0	1.0				ug/L	785817	Standard
	Ho	165	41.7	48.5				ug/L	7	Standard
	Tl	203	395148.4	0.1	**46.2564**	0.513	1.1	ug/L	6	Standard
	Tl	205	352198.1	0.4	**47.3280**	0.693	1.5	ug/L	8	Standard
	Pb	206	255969.8	0.5	**48.1345**	0.718	1.5	ug/L	201	Standard
	Pb	207	224158.3	0.2	**46.6218**	0.613	1.3	ug/L	177	Standard
	Pb	208	922656.6	1.4	**47.7783**	1.195	2.5	ug/L	722	Standard
	U	238	350569.7	1.3	**47.7978**	1.075	2.2	ug/L	8	Standard
>	Bi	209	474862.1	1.1				ug/L	444563	Standard

Sample ID: L1606155606S WG574733-05
Report Date/Time: Tuesday, July 05, 2016 13:42:17
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	12988.9	3.1	**16.8862**	0.587	3.5	mg/L	38	Standard
K	39	443.3	11.8	**1.8832**	0.231	12.3	mg/L	33	Standard
Ca	43	115.0	15.7	**12.8997**	3.006	23.3	mg/L	48	Standard
Fe	54	209.4	20.6	**0.0585**	0.036	62.3	mg/L	131	Standard
Fe	57	328.3	11.2	**0.5732**	0.119	20.8	mg/L	153	Standard
Sc-1	45	25756.9	0.4				mg/L	26715	Standard
Cl	35	147627.8	0.9				ug/L	102686	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	8559.1	5.5				ug/L	1897	Standard
P	31	24342.9	2.3				ug/L	18491	Standard
S	34	4492.3	1.5				ug/L	3734	Standard
Sr	88	155.0	11.2				ug/L	47	Standard
C	12	103.3	20.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	356.7	17.1				mg/L	23	Standard
Dy	164	40.8	23.2				mg/L	23	Standard
Ho-1	165	41.7	48.5				mg/L	7	Standard
Er	166	53.3	103.3				mg/L	13	Standard
I	127	20824.3	1.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.108	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.204	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606155606S WG574733-05
Report Date/Time: Tuesday, July 05, 2016 13:42:17
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.870
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.816
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1606155606S WG574733-05
Report Date/Time: Tuesday, July 05, 2016 13:42:17
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606155606SD WG574733-06
Sample Date/Time: Tuesday, July 05, 2016 13:43:12
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75425.6	1.6				ug/L	59517	Standard
	Be	9	52229.9	0.7	**47.3741**	0.466	1.0	ug/L	10	Standard
	Al	27	3941314.0	0.6	**20.4304**	0.209	1.0	ug/L	1872	Standard
	Sc	45	26341.2	2.2				ug/L	26715	Standard
	Ti	47	227.0	11.1	**0.6980**	0.102	14.6	ug/L	54	Standard
	V	51	338759.1	0.8	**46.2904**	0.608	1.3	ug/L	1419	Standard
	Cr	52	337347.3	1.4	**45.9861**	0.730	1.6	ug/L	7059	Standard
	Cr	53	44196.1	2.1	**48.7900**	1.277	2.6	ug/L	398	Standard
	Mn	55	470097.8	1.0	**73.3990**	1.224	1.7	ug/L	824	Standard
	Co	59	332055.0	0.9	**48.3460**	0.680	1.4	ug/L	167	Standard
	Ni	60	87689.4	0.9	**46.1956**	0.660	1.4	ug/L	391	Standard
	Cu	65	91602.1	0.1	**48.2208**	0.386	0.8	ug/L	147	Standard
	Zn	66	66594.0	0.5	**59.5555**	0.165	0.3	ug/L	184	Standard
>	Ge	72	427385.4	0.7				ug/L	422998	Standard
	As	75	55710.5	0.4	**48.6539**	0.402	0.8	ug/L	-58	Standard
	Se	82	5710.0	0.6	**47.9965**	0.138	0.3	ug/L	15	Standard
	Se-1	77	3844.5	1.2	**49.5126**	0.967	2.0	ug/L	58	Standard
>	Ga	71	86.7	33.3				mg/L	113	Standard
	Rb	85	20790.9	1.5				ug/L	27	Standard
	Y	89	372329.3	0.5				ug/L	383780	Standard
>	Rh	103	38.3	49.4				ug/L	18	Standard
	Mo	98	161.9	10.8	**0.0517**	0.007	13.3	ug/L	31	Standard
	Ag	107	311512.2	1.5	**45.9589**	0.594	1.3	ug/L	84	Standard
	Cd	111	97931.9	1.3	**45.7253**	0.707	1.5	mg/L	4	Standard
	Cd	114	239848.4	1.3	**46.1512**	0.820	1.8	ug/L	15	Standard
>	In	115	518257.6	0.7				ug/L	515400	Standard
	Sn	118	1211.7	13.0	**0.0273**	0.028	102.7	ug/L	1043	Standard
	Sb	123	223032.8	2.0	**48.4363**	0.778	1.6	ug/L	227	Standard
	Ba	135	130867.1	1.2	**64.7237**	1.155	1.8	ug/L	31	Standard
	Ce	140	210.0	8.6				ug/L	120	Standard
>	Tb	159	810581.7	0.8				ug/L	785817	Standard
	Ho	165	33.3	31.2				ug/L	7	Standard
	Tl	203	395593.1	0.1	**46.4862**	0.433	0.9	ug/L	6	Standard
	Tl	205	350046.0	1.0	**47.2197**	0.799	1.7	ug/L	8	Standard
	Pb	206	257494.3	0.7	**48.6056**	0.475	1.0	ug/L	201	Standard
	Pb	207	224688.5	1.1	**46.9098**	0.560	1.2	ug/L	177	Standard
	Pb	208	927682.5	0.4	**48.2177**	0.395	0.8	ug/L	722	Standard
	U	238	351394.1	0.5	**48.0896**	0.352	0.7	ug/L	8	Standard
>	Bi	209	473032.2	0.8				ug/L	444563	Standard

Sample ID: L1606155606SD WG574733-06
Report Date/Time: Tuesday, July 05, 2016 13:45:29
Page 1

Approved: July 06, 2016

Na	23	3.3	86.6	**40.0618**	34.696	86.6	mg/L	0	Standard
Mg	24	13270.8	0.6	**16.8737**	0.385	2.3	mg/L	38	Standard
K	39	443.3	4.3	**1.8399**	0.099	5.4	mg/L	33	Standard
Ca	43	145.0	24.1	**17.2615**	5.557	32.2	mg/L	48	Standard
Fe	54	189.1	12.3	**0.0380**	0.019	49.4	mg/L	131	Standard
Fe	57	331.7	11.3	**0.5606**	0.120	21.4	mg/L	153	Standard
> **Sc-1**	45	26341.2	2.2				mg/L	26715	Standard
Cl	35	145578.7	0.6				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	9316.2	7.5				ug/L	1897	Standard
P	31	23783.7	1.2				ug/L	18491	Standard
S	34	4490.7	1.7				ug/L	3734	Standard
Sr	88	178.3	10.6				ug/L	47	Standard
C	12	130.0	15.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	270.0	22.5				mg/L	23	Standard
Dy	164	65.4	24.2				mg/L	23	Standard
Ho-1	165	33.3	31.2				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	13	Standard
I	127	20488.9	4.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.730	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.037	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606155606SD WG574733-06
Report Date/Time: Tuesday, July 05, 2016 13:45:29
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.554
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1606155606SD WG574733-06
Report Date/Time: Tuesday, July 05, 2016 13:45:29
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606164401
Sample Date/Time: Tuesday, July 05, 2016 13:46:23
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76616.6	1.4				ug/L	59517	Standard
	Be	9	48.3	15.8	**0.0121**	0.007	55.5	ug/L	10	Standard
	Al	27	5829715.8	1.0	**29.7579**	0.675	2.3	ug/L	1872	Standard
	Sc	45	25778.6	2.5				ug/L	26715	Standard
	Ti	47	312.0	19.2	**1.0256**	0.243	23.7	ug/L	54	Standard
	V	51	6216.1	0.7	**0.6560**	0.005	0.8	ug/L	1419	Standard
	Cr	52	9024.0	0.2	**0.2548**	0.007	2.7	ug/L	7059	Standard
	Cr	53	2746.9	3.1	**2.5854**	0.085	3.3	ug/L	398	Standard
	Mn	55	59663.6	0.9	**9.0117**	0.099	1.1	ug/L	824	Standard
	Co	59	827.7	4.2	**0.0930**	0.004	4.7	ug/L	167	Standard
	Ni	60	1883.5	2.6	**0.7763**	0.020	2.6	ug/L	391	Standard
	Cu	65	1566.1	3.7	**0.7300**	0.031	4.3	ug/L	147	Standard
	Zn	66	3020.3	2.5	**2.4939**	0.051	2.0	ug/L	184	Standard
>	Ge	72	436222.3	0.6				ug/L	422998	Standard
	As	75	1773.0	1.9	**1.5670**	0.022	1.4	ug/L	-58	Standard
	Se	82	71.3	12.9	**0.3841**	0.080	20.9	ug/L	15	Standard
	Se-1	77	170.7	3.2	**1.5138**	0.060	3.9	ug/L	58	Standard
>	Ga	71	300.0	5.8				mg/L	113	Standard
	Rb	85	8899.3	2.8				ug/L	27	Standard
	Y	89	377425.4	1.5				ug/L	383780	Standard
>	Rh	103	51.7	34.0				ug/L	18	Standard
	Mo	98	1955.3	0.8	**0.7051**	0.003	0.4	ug/L	31	Standard
	Ag	107	180.0	28.9	**0.0139**	0.007	53.4	ug/L	84	Standard
	Cd	111	36.5	64.6	**0.0125**	0.011	85.8	mg/L	4	Standard
	Cd	114	100.6	38.0	**0.0143**	0.007	49.9	ug/L	15	Standard
>	In	115	530790.9	1.2				ug/L	515400	Standard
	Sn	118	785.0	19.4	**-0.0491**	0.027	55.5	ug/L	1043	Standard
	Sb	123	2988.8	25.6	**0.6184**	0.167	27.0	ug/L	227	Standard
	Ba	135	37944.8	0.3	**18.3068**	0.216	1.2	ug/L	31	Standard
	Ce	140	2498.5	3.6				ug/L	120	Standard
>	Tb	159	810955.6	2.0				ug/L	785817	Standard
	Ho	165	63.3	4.6				ug/L	7	Standard
	Tl	203	358.0	16.7	**0.0379**	0.007	18.5	ug/L	6	Standard
	Tl	205	328.3	7.7	**0.0369**	0.003	9.1	ug/L	8	Standard
	Pb	206	741.0	8.2	**0.0926**	0.011	12.3	ug/L	201	Standard
	Pb	207	623.7	8.6	**0.0807**	0.011	13.4	ug/L	177	Standard
	Pb	208	2525.4	7.7	**0.0811**	0.010	12.2	ug/L	722	Standard
	U	238	728.7	3.0	**0.0959**	0.003	3.0	ug/L	8	Standard
>	Bi	209	479285.7	0.6				ug/L	444563	Standard

Sample ID: L1606164401
Report Date/Time: Tuesday, July 05, 2016 13:48:40
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	7551.9	2.4	**9.7998**	0.390	4.0	mg/L	38	Standard
K	39	140.0	24.7	**0.5081**	0.168	33.0	mg/L	33	Standard
Ca	43	110.0	18.2	**12.0854**	3.380	28.0	mg/L	48	Standard
Fe	54	250.8	20.1	**0.0937**	0.048	50.9	mg/L	131	Standard
Fe	57	298.3	17.2	**0.4766**	0.167	34.9	mg/L	153	Standard
Sc-1	45	25778.6	2.5				mg/L	26715	Standard
Cl	35	161383.6	0.5				ug/L	102686	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	9316.2	3.5				ug/L	1897	Standard
P	31	21900.8	2.3				ug/L	18491	Standard
S	34	4459.0	2.4				ug/L	3734	Standard
Sr	88	183.3	4.2				ug/L	47	Standard
C	12	60.0	76.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	193.3	57.0				mg/L	23	Standard
Dy	164	98.1	6.4				mg/L	23	Standard
Ho-1	165	63.3	4.6				mg/L	7	Standard
Er	166	110.0	15.7				mg/L	13	Standard
I	127	26261.1	7.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.731	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.126	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606164401
Report Date/Time: Tuesday, July 05, 2016 13:48:40
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.986
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606164401PS WG575054-01
Sample Date/Time: Tuesday, July 05, 2016 13:49:35
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74516.1	1.5				ug/L	59517	Standard
	Be	9	52569.4	1.7	**48.2676**	1.145	2.4	ug/L	10	Standard
	Al	27	5749522.0	1.3	**30.1713**	0.276	0.9	ug/L	1872	Standard
	Sc	45	26155.9	1.0				ug/L	26715	Standard
	Ti	47	312.7	6.8	**1.0288**	0.086	8.4	ug/L	54	Standard
	V	51	357064.7	0.4	**47.8252**	0.554	1.2	ug/L	1419	Standard
	Cr	52	349180.8	0.4	**46.6641**	0.365	0.8	ug/L	7059	Standard
	Cr	53	44301.3	1.5	**47.9175**	0.409	0.9	ug/L	398	Standard
	Mn	55	351316.0	0.6	**53.7226**	0.574	1.1	ug/L	824	Standard
	Co	59	337927.7	0.8	**48.2184**	0.424	0.9	ug/L	167	Standard
	Ni	60	89777.9	0.5	**46.3520**	0.323	0.7	ug/L	391	Standard
	Cu	65	90155.1	1.1	**46.5092**	0.540	1.2	ug/L	147	Standard
	Zn	66	57145.9	1.6	**50.0611**	0.688	1.4	ug/L	184	Standard
>	Ge	72	436081.8	0.8				ug/L	422998	Standard
	As	75	56601.2	0.3	**48.4476**	0.544	1.1	ug/L	-58	Standard
	Se	82	5814.0	0.2	**47.8968**	0.298	0.6	ug/L	15	Standard
	Se-1	77	3881.8	2.4	**48.9914**	1.474	3.0	ug/L	58	Standard
>	Ga	71	301.7	9.7				mg/L	113	Standard
	Rb	85	9021.0	2.0				ug/L	27	Standard
	Y	89	372541.7	1.5				ug/L	383780	Standard
>	Rh	103	61.7	32.8				ug/L	18	Standard
	Mo	98	2021.6	2.3	**0.7260**	0.017	2.3	ug/L	31	Standard
	Ag	107	320775.0	0.2	**46.0038**	0.388	0.8	ug/L	84	Standard
	Cd	111	102438.4	0.6	**46.4916**	0.431	0.9	mg/L	4	Standard
	Cd	114	249134.9	1.6	**46.5943**	0.639	1.4	ug/L	15	Standard
>	In	115	533169.9	0.8				ug/L	515400	Standard
	Sn	118	1023.4	15.4	**-0.0102**	0.025	244.2	ug/L	1043	Standard
	Sb	123	226043.3	1.8	**47.7236**	1.168	2.4	ug/L	227	Standard
	Ba	135	131818.6	0.9	**63.3696**	0.912	1.4	ug/L	31	Standard
	Ce	140	3230.4	36.1				ug/L	120	Standard
>	Tb	159	819316.9	1.4				ug/L	785817	Standard
	Ho	165	58.3	24.7				ug/L	7	Standard
	Tl	203	408530.0	0.2	**47.3939**	0.288	0.6	ug/L	6	Standard
	Tl	205	362908.7	1.4	**48.3261**	0.425	0.9	ug/L	8	Standard
	Pb	206	265717.8	0.6	**49.5188**	0.296	0.6	ug/L	201	Standard
	Pb	207	231564.8	0.1	**47.7312**	0.412	0.9	ug/L	177	Standard
	Pb	208	954451.3	0.7	**48.9780**	0.546	1.1	ug/L	722	Standard
	U	238	362163.7	0.8	**48.9344**	0.751	1.5	ug/L	8	Standard
>	Bi	209	479135.9	0.8				ug/L	444563	Standard

Sample ID: L1606164401PS WG575054-01
Report Date/Time: Tuesday, July 05, 2016 13:51:52
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**20.1707**	34.928	173.2	mg/L	0	Standard
Mg	24	7863.7	3.4	**10.0541**	0.387	3.9	mg/L	38	Standard
K	39	158.3	10.2	**0.5788**	0.073	12.7	mg/L	33	Standard
Ca	43	93.3	16.4	**9.1144**	2.369	26.0	mg/L	48	Standard
Fe	54	232.2	13.8	**0.0746**	0.027	36.1	mg/L	131	Standard
Fe	57	300.0	1.7	**0.4675**	0.020	4.2	mg/L	153	Standard
> **Sc-1**	45	26155.9	1.0				mg/L	26715	Standard
Cl	35	164562.9	0.4				ug/L	102686	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	9466.3	3.3				ug/L	1897	Standard
P	31	22162.9	1.5				ug/L	18491	Standard
S	34	4625.7	2.3				ug/L	3734	Standard
Sr	88	186.7	19.0				ug/L	47	Standard
C	12	110.0	9.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	34.6				mg/L	23	Standard
Dy	164	139.7	33.2				mg/L	23	Standard
Ho-1	165	58.3	24.7				mg/L	7	Standard
Er	166	76.7	41.9				mg/L	13	Standard
I	127	26352.9	4.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.202	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.093	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606164401PS WG575054-01
Report Date/Time: Tuesday, July 05, 2016 13:51:52
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.448
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.777
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606164401SDL WG575054-02
Sample Date/Time: Tuesday, July 05, 2016 13:52:46
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68968.5	4.9				ug/L	59517	Standard
	Be	9	33.3	37.7	**0.0022**	0.014	615.4	ug/L	10	Standard
	Al	27	1114648.2	0.5	**6.3195**	0.306	4.8	ug/L	1872	Standard
	Sc	45	22653.6	4.2				ug/L	26715	Standard
	Ti	47	78.0	25.0	**0.0994**	0.094	94.4	ug/L	54	Standard
	V	51	2308.2	5.7	**0.1572**	0.026	16.4	ug/L	1419	Standard
	Cr	52	6212.9	0.3	**-0.0570**	0.021	37.5	ug/L	7059	Standard
	Cr	53	1163.4	5.9	**0.9668**	0.109	11.3	ug/L	398	Standard
	Mn	55	11627.5	1.5	**1.8009**	0.012	0.7	ug/L	824	Standard
	Co	59	335.3	3.5	**0.0268**	0.003	9.8	ug/L	167	Standard
	Ni	60	706.3	3.8	**0.1971**	0.014	7.3	ug/L	391	Standard
	Cu	65	564.7	7.5	**0.2374**	0.026	10.9	ug/L	147	Standard
	Zn	66	1475.4	2.7	**1.2466**	0.053	4.3	ug/L	184	Standard
>	**Ge**	72	402341.3	2.0				ug/L	422998	Standard
	As	75	346.7	7.2	**0.3728**	0.020	5.4	ug/L	-58	Standard
	Se	82	30.8	16.5	**0.0704**	0.049	69.7	ug/L	15	Standard
	Se-1	77	80.0	11.5	**0.4427**	0.150	33.9	ug/L	58	Standard
>	**Ga**	71	76.7	16.4				mg/L	113	Standard
	Rb	85	1805.1	3.4				ug/L	27	Standard
	Y	89	343575.6	3.9				ug/L	383780	Standard
>	**Rh**	103	18.3	56.8				ug/L	18	Standard
	Mo	98	390.6	5.7	**0.1463**	0.012	8.5	ug/L	31	Standard
	Ag	107	130.3	10.0	**0.0085**	0.003	29.8	ug/L	84	Standard
	Cd	111	14.9	21.8	**0.0032**	0.001	45.3	mg/L	4	Standard
	Cd	114	66.1	51.2	**0.0089**	0.007	75.4	ug/L	15	Standard
>	**In**	115	488341.3	2.3				ug/L	515400	Standard
	Sn	118	456.7	15.4	**-0.0975**	0.015	15.1	ug/L	1043	Standard
	Sb	123	1419.7	28.0	**0.3122**	0.098	31.4	ug/L	227	Standard
	Ba	135	7415.1	1.3	**3.8708**	0.105	2.7	ug/L	31	Standard
	Ce	140	438.3	21.2				ug/L	120	Standard
>	**Tb**	159	753437.8	2.2				ug/L	785817	Standard
	Ho	165	16.7	34.6				ug/L	7	Standard
	Tl	203	164.7	10.7	**0.0165**	0.002	14.7	ug/L	6	Standard
	Tl	205	158.3	19.3	**0.0154**	0.004	27.8	ug/L	8	Standard
	Pb	206	707.3	2.3	**0.0931**	0.004	4.1	ug/L	201	Standard
	Pb	207	608.3	6.5	**0.0840**	0.009	11.1	ug/L	177	Standard
	Pb	208	2434.7	3.4	**0.0828**	0.004	5.2	ug/L	722	Standard
	U	238	168.7	13.2	**0.0215**	0.003	16.2	ug/L	8	Standard
>	**Bi**	209	456099.5	1.6				ug/L	444563	Standard

Sample ID: L1606164401SDL WG575054-02
Report Date/Time: Tuesday, July 05, 2016 13:55:03
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	1440.1	3.2	**2.1032**	0.153	7.3	mg/L	38	Standard
K	39	50.0	45.8	**0.1317**	0.124	94.3	mg/L	33	Standard
Ca	43	25.0	20.0	**-1.2510**	0.805	64.3	mg/L	48	Standard
Fe	54	91.1	22.5	**-0.0294**	0.023	77.1	mg/L	131	Standard
Fe	57	236.7	18.0	**0.3852**	0.170	44.1	mg/L	153	Standard
> **Sc-1**	45	22653.6	4.2				mg/L	26715	Standard
Cl	35	143186.7	0.5				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3040.3	5.4				ug/L	1897	Standard
P	31	9531.3	3.5				ug/L	18491	Standard
S	34	4564.0	1.2				ug/L	3734	Standard
Sr	88	95.0	38.0				ug/L	47	Standard
C	12	70.0	14.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	210.0	90.9				mg/L	23	Standard
Dy	164	41.7	61.5				mg/L	23	Standard
Ho-1	165	16.7	34.6				mg/L	7	Standard
Er	166	33.3	34.6				mg/L	13	Standard
I	127	24177.6	2.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.881	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.117	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606164401SDL WG575054-02
Report Date/Time: Tuesday, July 05, 2016 13:55:03
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.750
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.595
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606144507
Sample Date/Time: Tuesday, July 05, 2016 13:57:19
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63521.5	6.2				ug/L	59517	Standard
	Be	9	121.7	36.8	**0.0989**	0.044	44.5	ug/L	10	Standard
	Al	27	1470998.0	0.4	**9.0695**	0.565	6.2	ug/L	1872	Standard
	Sc	45	21784.0	2.8				ug/L	26715	Standard
	Ti	47	269.0	3.9	**1.0072**	0.056	5.6	ug/L	54	Standard
	V	51	12908.8	1.8	**1.8031**	0.024	1.3	ug/L	1419	Standard
	Cr	52	18170.6	1.7	**1.8560**	0.032	1.7	ug/L	7059	Standard
	Cr	53	2371.9	2.8	**2.5458**	0.078	3.1	ug/L	398	Standard
	Mn	55	243743.4	0.9	**42.5527**	0.134	0.3	ug/L	824	Standard
	Co	59	5371.6	1.2	**0.8510**	0.007	0.8	ug/L	167	Standard
	Ni	60	3932.5	1.1	**2.1296**	0.020	0.9	ug/L	391	Standard
	Cu	65	4206.6	2.2	**2.4046**	0.064	2.7	ug/L	147	Standard
	Zn	66	10256.5	1.5	**10.1390**	0.214	2.1	ug/L	184	Standard
>	Ge	72	381705.7	0.6				ug/L	422998	Standard
	As	75	1072.0	0.6	**1.0988**	0.010	0.9	ug/L	-58	Standard
	Se	82	18.4	14.1	**-0.0324**	0.024	73.1	ug/L	15	Standard
	Se-1	77	64.3	9.5	**0.2719**	0.091	33.5	ug/L	58	Standard
>	Ga	71	1465.1	2.7				mg/L	113	Standard
	Rb	85	14720.5	3.8				ug/L	27	Standard
	Y	89	341301.8	1.4				ug/L	383780	Standard
>	Rh	103	8.3	91.7				ug/L	18	Standard
	Mo	98	126.5	26.8	**0.0443**	0.014	32.5	ug/L	31	Standard
	Ag	107	192.7	28.1	**0.0200**	0.009	43.7	ug/L	84	Standard
	Cd	111	199.8	13.5	**0.1008**	0.013	13.2	mg/L	4	Standard
	Cd	114	462.8	4.8	**0.0956**	0.004	4.5	ug/L	15	Standard
>	In	115	460541.5	0.9				ug/L	515400	Standard
	Sn	118	393.3	37.6	**-0.1049**	0.029	27.2	ug/L	1043	Standard
	Sb	123	768.9	15.0	**0.1717**	0.029	16.8	ug/L	227	Standard
	Ba	135	30655.0	0.9	**17.0437**	0.237	1.4	ug/L	31	Standard
	Ce	140	100441.8	0.3				ug/L	120	Standard
>	Tb	159	713512.5	1.9				ug/L	785817	Standard
	Ho	165	1641.8	4.9				ug/L	7	Standard
	Tl	203	255.0	31.6	**0.0288**	0.010	33.3	ug/L	6	Standard
	Tl	205	215.0	25.9	**0.0247**	0.008	32.9	ug/L	8	Standard
	Pb	206	47750.5	0.9	**9.7593**	0.090	0.9	ug/L	201	Standard
	Pb	207	40492.7	0.4	**9.1496**	0.125	1.4	ug/L	177	Standard
	Pb	208	169051.4	0.1	**9.5110**	0.155	1.6	ug/L	722	Standard
	U	238	456.7	13.8	**0.0653**	0.008	12.5	ug/L	8	Standard
>	Bi	209	435291.5	1.8				ug/L	444563	Standard

Sample ID: L1606144507
Report Date/Time: Tuesday, July 05, 2016 13:59:36
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**23.9102**	41.405	173.2	mg/L	0	Standard
Mg	24	50.0	65.6	**0.0425**	0.049	114.5	mg/L	38	Standard
K	39	58.3	17.8	**0.1831**	0.047	25.8	mg/L	33	Standard
Ca	43	36.7	15.7	**1.2184**	1.271	104.3	mg/L	48	Standard
Fe	54	1380.0	4.8	**1.2483**	0.076	6.1	mg/L	131	Standard
Fe	57	561.7	6.7	**1.6561**	0.203	12.3	mg/L	153	Standard
> **Sc-1**	45	21784.0	2.8				mg/L	26715	Standard
Cl	35	131328.1	1.7				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1660.1	10.6				ug/L	1897	Standard
P	31	7797.0	2.3				ug/L	18491	Standard
S	34	4805.8	1.6				ug/L	3734	Standard
Sr	88	70.0	18.9				ug/L	47	Standard
C	12	80.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	336.7	14.0				mg/L	23	Standard
Dy	164	2717.3	1.8				mg/L	23	Standard
Ho-1	165	1641.8	4.9				mg/L	7	Standard
Er	166	1453.4	5.8				mg/L	13	Standard
I	127	32399.6	1.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.729	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.238	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144507
Report Date/Time: Tuesday, July 05, 2016 13:59:36
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.356
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.915
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 14:00:31
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67757.9	1.8				ug/L	59517	Standard
	Be	9	51348.6	3.3	**51.8648**	2.335	4.5	ug/L	10	Standard
	Al	27	7621998.1	2.1	**44.0094**	1.636	3.7	ug/L	1872	Standard
	Sc	45	24693.5	3.6				ug/L	26715	Standard
	Ti	47	23062.5	2.0	**99.1503**	4.254	4.3	ug/L	54	Standard
	V	51	355505.6	0.6	**50.3020**	1.544	3.1	ug/L	1419	Standard
	Cr	52	353114.3	1.0	**49.9109**	1.659	3.3	ug/L	7059	Standard
	Cr	53	43550.9	2.2	**49.7846**	2.242	4.5	ug/L	398	Standard
	Mn	55	297019.5	0.9	**47.9583**	1.466	3.1	ug/L	824	Standard
	Co	59	345904.2	0.4	**52.1299**	1.326	2.5	ug/L	167	Standard
	Ni	60	91689.3	0.5	**50.0161**	1.492	3.0	ug/L	391	Standard
	Cu	65	91403.5	0.7	**49.8114**	1.544	3.1	ug/L	147	Standard
	Zn	66	56107.0	0.8	**51.9208**	1.537	3.0	ug/L	184	Standard
>	**Ge**	72	413059.9	2.5				ug/L	422998	Standard
	As	75	55612.3	0.5	**50.2736**	1.464	2.9	ug/L	-58	Standard
	Se	82	5824.0	1.0	**50.6914**	1.693	3.3	ug/L	15	Standard
	Se-1	77	3883.8	1.3	**51.8087**	1.837	3.5	ug/L	58	Standard
>	**Ga**	71	53.3	43.3				mg/L	113	Standard
	Rb	85	813.4	9.8				ug/L	27	Standard
	Y	89	358489.2	3.2				ug/L	383780	Standard
>	**Rh**	103	21.7	13.3				ug/L	18	Standard
	Mo	98	263577.3	0.3	**101.3483**	2.301	2.3	ug/L	31	Standard
	Ag	107	331634.8	0.2	**50.3100**	1.279	2.5	ug/L	84	Standard
	Cd	111	104385.1	1.2	**50.1206**	1.775	3.5	mg/L	4	Standard
	Cd	114	255614.1	1.7	**50.5557**	0.378	0.7	ug/L	15	Standard
>	**In**	115	504233.8	2.4				ug/L	515400	Standard
	Sn	118	291319.5	1.7	**51.2599**	1.107	2.2	ug/L	1043	Standard
	Sb	123	235740.2	0.6	**52.6475**	1.543	2.9	ug/L	227	Standard
	Ba	135	96626.9	2.0	**49.1379**	1.968	4.0	ug/L	31	Standard
	Ce	140	161.7	26.3				ug/L	120	Standard
>	**Tb**	159	769316.8	2.5				ug/L	785817	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	415299.7	1.0	**51.2811**	1.884	3.7	ug/L	6	Standard
	Tl	205	365223.5	1.7	**51.7541**	1.379	2.7	ug/L	8	Standard
	Pb	206	258799.9	0.5	**51.3320**	1.634	3.2	ug/L	201	Standard
	Pb	207	236247.6	0.6	**51.8281**	1.569	3.0	ug/L	177	Standard
	Pb	208	967184.3	0.3	**52.8180**	1.304	2.5	ug/L	722	Standard
	U	238	366702.8	1.0	**52.7295**	1.699	3.2	ug/L	8	Standard
>	**Bi**	209	450443.1	2.7				ug/L	444563	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 14:02:48
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4182.2	3.8	**5.6572**	0.390	6.9	mg/L	38	Standard
K	39	761.7	2.3	**3.4796**	0.082	2.3	mg/L	33	Standard
Ca	43	70.0	14.3	**6.0874**	2.097	34.5	mg/L	48	Standard
Fe	54	5966.7	0.5	**5.0917**	0.206	4.0	mg/L	131	Standard
Fe	57	1856.8	9.4	**5.7502**	0.680	11.8	mg/L	153	Standard
> **Sc-1**	45	24693.5	3.6				mg/L	26715	Standard
Cl	35	138849.4	1.1				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1746.8	4.1				ug/L	1897	Standard
P	31	23454.8	4.5				ug/L	18491	Standard
S	34	5267.6	3.3				ug/L	3734	Standard
Sr	88	63.3	22.8				ug/L	47	Standard
C	12	70.0	51.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	256.7	34.0				mg/L	23	Standard
Dy	164	6.2	193.7				mg/L	23	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	13	Standard
I	127	10712.1	1.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.730		
Al	27	88.019		
Sc	45			
Ti	47	99.150		
V	51	100.604		
Cr	52	99.822		
Cr	53			
Mn	55	95.917		
Co	59	104.260		
Ni	60	100.032		
Cu	65	99.623		
Zn	66	103.842		
> Ge	72		97.651	
As	75	100.547		
Se	82	101.383		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 14:02:48
Page 2

Approved: July 06, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	101.348		
Ag	107	100.620		
Cd	111	100.241		
Cd	114			
> In	115			97.834
Sn	118	102.520		
Sb	123	105.295		
Ba	135	98.276		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.562		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.636		
U	238	105.459		
> Bi	209			101.323
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 14:02:48
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 14:03:43
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71836.6	1.0				ug/L	59517	Standard
	Be	9	46.7	22.3	**0.0134**	0.010	75.4	ug/L	10	Standard
	Al	27	2153.5	20.6	**-0.0007**	0.002	324.8	ug/L	1872	Standard
	Sc	45	25955.5	0.7				ug/L	26715	Standard
	Ti	47	27.7	23.0	**-0.1334**	0.026	19.8	ug/L	54	Standard
	V	51	1210.6	12.8	**-0.0160**	0.022	135.1	ug/L	1419	Standard
	Cr	52	5807.4	1.9	**-0.1804**	0.015	8.3	ug/L	7059	Standard
	Cr	53	761.7	13.4	**0.4244**	0.115	27.1	ug/L	398	Standard
	Mn	55	578.3	11.2	**-0.0420**	0.010	23.1	ug/L	824	Standard
	Co	59	244.3	10.9	**0.0099**	0.004	38.7	ug/L	167	Standard
	Ni	60	364.7	7.3	**-0.0100**	0.013	131.6	ug/L	391	Standard
	Cu	65	151.0	10.7	**-0.0007**	0.008	1210.2	ug/L	147	Standard
	Zn	66	189.7	4.4	**0.0081**	0.008	98.9	ug/L	184	Standard
>	**Ge**	72	434316.3	0.4				ug/L	422998	Standard
	As	75	-29.8	33.5	**0.0260**	0.009	33.1	ug/L	-58	Standard
	Se	82	20.7	31.3	**-0.0341**	0.053	155.5	ug/L	15	Standard
	Se-1	77	71.0	2.8	**0.2436**	0.029	11.7	ug/L	58	Standard
>	**Ga**	71	45.0	80.1				mg/L	113	Standard
	Rb	85	25.0	52.9				ug/L	27	Standard
	Y	89	376507.9	2.8				ug/L	383780	Standard
>	**Rh**	103	18.3	41.7				ug/L	18	Standard
	Mo	98	217.2	16.7	**0.0705**	0.013	18.2	ug/L	31	Standard
	Ag	107	117.3	9.2	**0.0049**	0.001	30.0	ug/L	84	Standard
	Cd	111	17.6	50.3	**0.0039**	0.004	102.1	mg/L	4	Standard
	Cd	114	44.4	68.4	**0.0038**	0.006	150.0	ug/L	15	Standard
>	**In**	115	529709.6	0.9				ug/L	515400	Standard
	Sn	118	1080.0	18.1	**0.0007**	0.034	4714.7	ug/L	1043	Standard
	Sb	123	1033.2	31.3	**0.2037**	0.071	34.6	ug/L	227	Standard
	Ba	135	53.0	25.5	**0.0019**	0.006	334.1	ug/L	31	Standard
	Ce	140	48.3	11.9				ug/L	120	Standard
>	**Tb**	159	798188.7	0.6				ug/L	785817	Standard
	Ho	165	5.0	0.0				ug/L	7	Standard
	Tl	203	79.7	28.0	**0.0056**	0.003	45.6	ug/L	6	Standard
	Tl	205	76.7	13.6	**0.0034**	0.001	40.7	ug/L	8	Standard
	Pb	206	285.7	1.7	**0.0077**	0.001	12.5	ug/L	201	Standard
	Pb	207	242.0	1.1	**0.0021**	0.001	31.2	ug/L	177	Standard
	Pb	208	1060.7	2.4	**0.0059**	0.001	22.6	ug/L	722	Standard
	U	238	68.7	20.4	**0.0068**	0.002	27.7	ug/L	8	Standard
>	**Bi**	209	479070.9	0.2				ug/L	444563	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 14:06:00
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	41.7	6.9	**0.0202**	0.003	16.8	mg/L	38	Standard
K	39	11.7	137.8	**-0.0766**	0.072	94.6	mg/L	33	Standard
Ca	43	13.3	21.7	**-3.7180**	0.479	12.9	mg/L	48	Standard
Fe	54	152.6	10.5	**0.0100**	0.013	134.0	mg/L	131	Standard
Fe	57	200.0	9.0	**0.1557**	0.056	35.9	mg/L	153	Standard
> **Sc-1**	45	25955.5	0.7				mg/L	26715	Standard
Cl	35	136482.8	1.9				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1623.4	10.6				ug/L	1897	Standard
P	31	21728.9	1.3				ug/L	18491	Standard
S	34	4927.5	1.5				ug/L	3734	Standard
Sr	88	68.3	11.2				ug/L	47	Standard
C	12	50.0	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	213.3	15.1				mg/L	23	Standard
Dy	164	6.2	106.7				mg/L	23	Standard
Ho-1	165	5.0	0.0				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	13	Standard
I	127	6891.6	4.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.676	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 14:06:00
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.776
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.762
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 14:06:00
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606155901
Sample Date/Time: Tuesday, July 05, 2016 14:06:55
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69152.5	1.4				ug/L	59517	Standard
	Be	9	35.0	37.8	**0.0037**	0.014	373.5	ug/L	10	Standard
	Al	27	25728276.7	1.4	**145.5486**	3.106	2.1	ug/L	1872	Standard
	Sc	45	24993.9	2.0				ug/L	26715	Standard
	Ti	47	585.3	2.4	**2.4081**	0.073	3.0	ug/L	54	Standard
	V	51	4262.4	6.2	**0.4577**	0.042	9.1	ug/L	1419	Standard
	Cr	52	16617.4	1.7	**1.5442**	0.032	2.1	ug/L	7059	Standard
	Cr	53	23595.0	1.5	**28.2058**	0.479	1.7	ug/L	398	Standard
	Mn	55	108515.6	1.5	**18.3599**	0.187	1.0	ug/L	824	Standard
	Co	59	4934.1	0.6	**0.7580**	0.001	0.1	ug/L	167	Standard
	Ni	60	3810.8	1.0	**1.9968**	0.026	1.3	ug/L	391	Standard
	Cu	65	1518.4	4.5	**0.7931**	0.036	4.5	ug/L	147	Standard
	Zn	66	6691.1	2.1	**6.3780**	0.160	2.5	ug/L	184	Standard
>	**Ge**	72	392270.4	0.5				ug/L	422998	Standard
	As	75	1410.9	7.8	**1.3924**	0.100	7.2	ug/L	-58	Standard
	Se	82	508.7	5.2	**4.4716**	0.223	5.0	ug/L	15	Standard
	Se-1	77	1330.7	5.7	**18.2515**	1.007	5.5	ug/L	58	Standard
>	**Ga**	71	71.7	22.4				mg/L	113	Standard
	Rb	85	8397.3	3.9				ug/L	27	Standard
	Y	89	345517.4	1.4				ug/L	383780	Standard
>	**Rh**	103	125.0	18.3				ug/L	18	Standard
	Mo	98	615.7	4.2	**0.2461**	0.011	4.6	ug/L	31	Standard
	Ag	107	206.7	16.9	**0.0218**	0.006	26.8	ug/L	84	Standard
	Cd	111	98.2	35.6	**0.0467**	0.018	39.0	mg/L	4	Standard
	Cd	114	249.7	37.3	**0.0487**	0.020	41.1	ug/L	15	Standard
>	**In**	115	468026.2	0.4				ug/L	515400	Standard
	Sn	118	941.7	10.8	**-0.0019**	0.019	1023.1	ug/L	1043	Standard
	Sb	123	955.3	16.3	**0.2134**	0.037	17.1	ug/L	227	Standard
	Ba	135	200669.6	1.1	**109.9045**	0.869	0.8	ug/L	31	Standard
	Ce	140	528.3	2.4				ug/L	120	Standard
>	**Tb**	159	739969.2	1.4				ug/L	785817	Standard
	Ho	165	36.7	28.4				ug/L	7	Standard
	Tl	203	280.0	32.2	**0.0340**	0.012	36.1	ug/L	6	Standard
	Tl	205	216.7	36.8	**0.0266**	0.012	46.7	ug/L	8	Standard
	Pb	206	383.0	15.8	**0.0371**	0.013	35.9	ug/L	201	Standard
	Pb	207	328.0	22.5	**0.0305**	0.018	59.2	ug/L	177	Standard
	Pb	208	1357.0	13.0	**0.0321**	0.011	33.7	ug/L	722	Standard
	U	238	2170.5	4.0	**0.3367**	0.014	4.1	ug/L	8	Standard
>	**Bi**	209	414234.4	0.8				ug/L	444563	Standard

Sample ID: L1606155901
Report Date/Time: Tuesday, July 05, 2016 14:09:12
Page 1

Approved: July 06, 2016

Na	23	8.3	91.7	**105.6065**	96.932	91.8	mg/L	0	Standard
Mg	24	128699.3	1.1	**172.7681**	4.384	2.5	mg/L	38	Standard
K	39	120.0	15.0	**0.4333**	0.094	21.6	mg/L	33	Standard
Ca	43	103.3	11.2	**11.4920**	1.767	15.4	mg/L	48	Standard
Fe	54	201.1	5.1	**0.0568**	0.012	20.6	mg/L	131	Standard
Fe	57	388.3	12.4	**0.8024**	0.134	16.7	mg/L	153	Standard
> **Sc-1**	45	24993.9	2.0				mg/L	26715	Standard
Cl	35	156183.5	0.7				ug/L	102686	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	111086.0	3.4				ug/L	1897	Standard
P	31	29116.3	0.5				ug/L	18491	Standard
S	34	4552.4	4.6				ug/L	3734	Standard
Sr	88	473.3	11.6				ug/L	47	Standard
C	12	170.0	5.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	180.0	9.6				mg/L	23	Standard
Dy	164	31.3	16.7				mg/L	23	Standard
Ho-1	165	36.7	28.4				mg/L	7	Standard
Er	166	43.3	66.6				mg/L	13	Standard
I	127	686659.7	8.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.190	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.736	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606155901
Report Date/Time: Tuesday, July 05, 2016 14:09:12
Page 2

Approved: July 06, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	90.808
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.178
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606155901
Report Date/Time: Tuesday, July 05, 2016 14:09:12
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606155902
Sample Date/Time: Tuesday, July 05, 2016 14:10:21
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65948.2	1.4				ug/L	59517	Standard
	Be	9	33.3	22.9	**0.0036**	0.008	234.8	ug/L	10	Standard
	Al	27	27594479.1	0.9	**163.6877**	2.708	1.7	ug/L	1872	Standard
	Sc	45	23224.5	2.0				ug/L	26715	Standard
	Ti	47	589.7	4.0	**2.6594**	0.193	7.3	ug/L	54	Standard
	V	51	3235.5	10.0	**0.3447**	0.039	11.4	ug/L	1419	Standard
	Cr	52	17007.2	1.2	**1.8254**	0.090	4.9	ug/L	7059	Standard
	Cr	53	22389.9	2.8	**29.0652**	0.336	1.2	ug/L	398	Standard
	Mn	55	109150.1	1.1	**20.0703**	0.692	3.4	ug/L	824	Standard
	Co	59	4624.7	1.5	**0.7722**	0.034	4.4	ug/L	167	Standard
	Ni	60	4113.9	2.4	**2.3744**	0.038	1.6	ug/L	391	Standard
	Cu	65	1490.4	2.1	**0.8506**	0.023	2.7	ug/L	147	Standard
	Zn	66	7051.3	2.7	**7.3203**	0.209	2.9	ug/L	184	Standard
>	**Ge**	72	361388.9	2.8				ug/L	422998	Standard
	As	75	1420.7	7.1	**1.5162**	0.064	4.2	ug/L	-58	Standard
	Se	82	556.6	4.2	**5.3493**	0.116	2.2	ug/L	15	Standard
	Se-1	77	1390.1	3.9	**20.7870**	0.582	2.8	ug/L	58	Standard
>	**Ga**	71	75.0	20.0				mg/L	113	Standard
	Rb	85	8187.2	1.9				ug/L	27	Standard
	Y	89	316357.0	2.9				ug/L	383780	Standard
>	**Rh**	103	118.3	2.4				ug/L	18	Standard
	Mo	98	586.8	1.7	**0.2579**	0.007	2.6	ug/L	31	Standard
	Ag	107	84.7	13.0	**0.0032**	0.002	50.9	ug/L	84	Standard
	Cd	111	51.3	14.8	**0.0250**	0.004	17.5	mg/L	4	Standard
	Cd	114	127.1	20.3	**0.0251**	0.005	21.3	ug/L	15	Standard
>	**In**	115	426472.6	2.7				ug/L	515400	Standard
	Sn	118	915.0	16.4	**0.0100**	0.030	304.1	ug/L	1043	Standard
	Sb	123	844.7	13.5	**0.2063**	0.025	12.3	ug/L	227	Standard
	Ba	135	210070.3	0.6	**126.3213**	2.993	2.4	ug/L	31	Standard
	Ce	140	528.3	3.9				ug/L	120	Standard
>	**Tb**	159	678013.8	3.6				ug/L	785817	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	140.3	15.1	**0.0171**	0.003	19.3	ug/L	6	Standard
	Tl	205	135.0	19.2	**0.0160**	0.004	25.8	ug/L	8	Standard
	Pb	206	387.3	1.1	**0.0461**	0.004	8.7	ug/L	201	Standard
	Pb	207	344.0	3.0	**0.0421**	0.003	7.4	ug/L	177	Standard
	Pb	208	1451.0	3.3	**0.0459**	0.001	2.2	ug/L	722	Standard
	U	238	2000.8	2.1	**0.3406**	0.016	4.6	ug/L	8	Standard
>	**Bi**	209	377919.6	3.2				ug/L	444563	Standard

Sample ID: L1606155902
Report Date/Time: Tuesday, July 05, 2016 14:12:38
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	130274.4	1.0	**188.1859**	2.827	1.5	mg/L	38	Standard
K	39	105.0	29.0	**0.3981**	0.147	37.0	mg/L	33	Standard
Ca	43	115.0	21.7	**14.8858**	4.110	27.6	mg/L	48	Standard
Fe	54	191.0	13.9	**0.0608**	0.028	45.8	mg/L	131	Standard
Fe	57	336.7	13.0	**0.7202**	0.179	24.8	mg/L	153	Standard
> **Sc-1**	45	23224.5	2.0				mg/L	26715	Standard
Cl	35	165841.4	1.0				ug/L	102686	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	113315.8	3.6				ug/L	1897	Standard
P	31	29363.4	1.0				ug/L	18491	Standard
S	34	4409.0	4.5				ug/L	3734	Standard
Sr	88	501.7	5.5				ug/L	47	Standard
C	12	256.7	11.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	193.3	19.6				mg/L	23	Standard
Dy	164	28.1	96.5				mg/L	23	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	40.0	66.1				mg/L	13	Standard
I	127	768006.2	8.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.806	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.435	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606155902
Report Date/Time: Tuesday, July 05, 2016 14:12:38
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		82.746
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.009
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606155902
Report Date/Time: Tuesday, July 05, 2016 14:12:38
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

L1606158103

Sample ID: ~~L1606155903~~
Sample Date/Time: Tuesday, July 05, 2016 14:13:32
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71806.4	0.5				ug/L	59517	Standard
	Be	9	50.0	60.8	**0.0165**	0.029	174.7	ug/L	10	Standard
	Al	27	26576213.3	1.4	**144.7656**	1.889	1.3	ug/L	1872	Standard
	Sc	45	25124.1	1.3				ug/L	26715	Standard
	Ti	47	1745.1	2.7	**7.3312**	0.182	2.5	ug/L	54	Standard
	V	51	-1776327.5	52.9	**-254.7063**	134.752	52.9	ug/L	1419	Standard
	Cr	52	264630891.2	0.6	**38432.6999**	541.921	1.4	ug/L	7059	Standard
	Cr	53	33210973.0	1.3	**38565.6449**	357.942	0.9	ug/L	398	Standard
	Mn	55	264561.8	0.7	**43.0373**	0.299	0.7	ug/L	824	Standard
	Co	59	6367.3	2.5	**0.9426**	0.029	3.1	ug/L	167	Standard
	Ni	60	50565.6	0.1	**27.7107**	0.311	1.1	ug/L	391	Standard
	Cu	65	840469.7	1.4	**462.2125**	3.015	0.7	ug/L	147	Standard
	Zn	66	22859.9	1.2	**21.2260**	0.281	1.3	ug/L	184	Standard
>	Ge	72	409676.7	1.0				ug/L	422998	Standard
	As	75	1419.1	3.3	**1.3431**	0.037	2.7	ug/L	-58	Standard
	Se	82	101.4	7.3	**0.6865**	0.056	8.2	ug/L	15	Standard
	Se-1	77	112.0	24.7	**0.8592**	0.391	45.5	ug/L	58	Standard
>	Ga	71	543.3	5.1				mg/L	113	Standard
	Rb	85	4007.2	1.8				ug/L	27	Standard
	Y	89	357481.5	0.8				ug/L	383780	Standard
>	Rh	103	126.7	31.9				ug/L	18	Standard
	Mo	98	11690.1	0.9	**4.6141**	0.034	0.7	ug/L	31	Standard
	Ag	107	9762.5	2.0	**1.5114**	0.033	2.2	ug/L	84	Standard
	Cd	111	69.0	6.7	**0.0299**	0.002	8.3	mg/L	4	Standard
	Cd	114	641.2	13.3	**0.1258**	0.017	13.3	ug/L	15	Standard
>	In	115	490142.9	0.6				ug/L	515400	Standard
	Sn	118	124543.2	1.7	**22.4367**	0.286	1.3	ug/L	1043	Standard
	Sb	123	11809.4	1.6	**2.6965**	0.048	1.8	ug/L	227	Standard
	Ba	135	11034.4	1.4	**5.7482**	0.062	1.1	ug/L	31	Standard
	Ce	140	6016.2	0.3				ug/L	120	Standard
>	Tb	159	765597.8	1.2				ug/L	785817	Standard
	Ho	165	326.7	17.7				ug/L	7	Standard
	Tl	203	84.0	9.0	**0.0071**	0.001	14.3	ug/L	6	Standard
	Tl	205	73.3	10.4	**0.0039**	0.001	30.4	ug/L	8	Standard
	Pb	206	33541.4	1.6	**6.8138**	0.052	0.8	ug/L	201	Standard
	Pb	207	27830.9	0.6	**6.2481**	0.026	0.4	ug/L	177	Standard
	Pb	208	117846.9	1.0	**6.5882**	0.030	0.5	ug/L	722	Standard
	U	238	4204.6	1.3	**0.6204**	0.008	1.2	ug/L	8	Standard
>	Bi	209	436998.4	1.0				ug/L	444563	Standard

Sample ID: ~~L1606155903~~
Report Date/Time: Tuesday, July 05, 2016 14:15:49
Page 1

Approved: July 06, 2016

Na	23	8.3	91.7	**104.5310**	96.313	92.1	mg/L	0	Standard
Mg	24	46086.7	0.2	**61.5134**	0.792	1.3	mg/L	38	Standard
K	39	61.7	16.9	**0.1579**	0.049	30.9	mg/L	33	Standard
Ca	43	483.3	23.8	**75.0512**	19.366	25.8	mg/L	48	Standard
Fe	54	-1449.8	25.4	**-1.3619**	0.333	24.5	mg/L	131	Standard
Fe	57	1263.4	1.2	**3.6805**	0.029	0.8	mg/L	153	Standard
> **Sc-1**	45	25124.1	1.3				mg/L	26715	Standard
Cl	35	342766.6	0.7				ug/L	102686	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	6001.2	6.4				ug/L	1897	Standard
P	31	24015.7	1.6				ug/L	18491	Standard
S	34	4530.7	3.1				ug/L	3734	Standard
Sr	88	140.0	21.4				ug/L	47	Standard
C	12	113.3	35.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	196.7	30.6				mg/L	23	Standard
Dy	164	442.1	6.8				mg/L	23	Standard
Ho-1	165	326.7	17.7				mg/L	7	Standard
Er	166	303.3	10.1				mg/L	13	Standard
I	127	31388.2	33.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.649	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.851	
As	75			
Se	82			
Se-1	77			
> Ga	71			

L1606158103

Sample ID: ~~**L1606155903**~~
Report Date/Time: Tuesday, July 05, 2016 14:15:49
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.100
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.298
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

L1606158103

Sample ID: ~~L1606155903~~
Report Date/Time: Tuesday, July 05, 2016 14:15:49
Page 3

Approved: July 06, 2016

Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Cu 65 Upper, S, EEE	Cu	65

L1606158103

Sample ID: ~~L1606155903~~
Report Date/Time: Tuesday, July 05, 2016 14:15:49
Page 4

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606154801 WG574664-01
Sample Date/Time: Tuesday, July 05, 2016 14:16:44
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83281.6	1.8				ug/L	59517	Standard
	Be	9	25.0	40.0	**-0.0105**	0.009	81.8	ug/L	10	Standard
	Al	27	7750906.6	1.0	**36.4007**	0.686	1.9	ug/L	1872	Standard
	Sc	45	20311.9	3.0				ug/L	26715	Standard
	Ti	47	229.7	16.0	**0.9694**	0.199	20.6	ug/L	54	Standard
	V	51	6202.5	18.9	**0.9031**	0.209	23.2	ug/L	1419	Standard
	Cr	52	72474.0	25.9	**11.8631**	3.391	28.6	ug/L	7059	Standard
	Cr	53	11486.1	20.4	**15.8580**	3.392	21.4	ug/L	398	Standard
	Mn	55	26390.0	1.3	**5.1174**	0.054	1.1	ug/L	824	Standard
	Co	59	63990.9	1.3	**11.8276**	0.152	1.3	ug/L	167	Standard
	Ni	60	8613.8	0.4	**5.5952**	0.050	0.9	ug/L	391	Standard
	Cu	65	13023.9	4.2	**8.6527**	0.352	4.1	ug/L	147	Standard
	Zn	66	6543.1	7.1	**7.2997**	0.497	6.8	ug/L	184	Standard
>	Ge	72	336103.7	0.5				ug/L	422998	Standard
	As	75	1894.0	10.7	**2.1520**	0.215	10.0	ug/L	-58	Standard
	Se	82	286.9	29.1	**2.8708**	0.881	30.7	ug/L	15	Standard
	Se-1	77	403.0	4.1	**6.0192**	0.246	4.1	ug/L	58	Standard
>	Ga	71	310.0	5.6				mg/L	113	Standard
	Rb	85	49081.0	0.2				ug/L	27	Standard
	Y	89	299105.5	1.4				ug/L	383780	Standard
>	Rh	103	363.3	36.0				ug/L	18	Standard
	Mo	98	293013.9	0.9	**139.9675**	3.552	2.5	ug/L	31	Standard
	Ag	107	495.3	4.4	**0.0814**	0.006	7.0	ug/L	84	Standard
	Cd	111	-233.9	5.3	**-0.1436**	0.007	4.9	mg/L	4	Standard
	Cd	114	514.1	1.8	**0.1218**	0.003	2.4	ug/L	15	Standard
>	In	115	405881.5	2.1				ug/L	515400	Standard
	Sn	118	1088.4	14.0	**0.0574**	0.028	49.2	ug/L	1043	Standard
	Sb	123	1450.9	7.9	**0.3859**	0.025	6.5	ug/L	227	Standard
	Ba	135	23480.5	0.8	**14.8140**	0.392	2.6	ug/L	31	Standard
	Ce	140	796.7	14.3				ug/L	120	Standard
>	Tb	159	661959.9	1.5				ug/L	785817	Standard
	Ho	165	30.0	66.7				ug/L	7	Standard
	Tl	203	548.0	16.0	**0.0810**	0.014	17.3	ug/L	6	Standard
	Tl	205	138.3	2.1	**0.0177**	0.001	4.8	ug/L	8	Standard
	Pb	206	636.7	3.6	**0.1125**	0.006	5.6	ug/L	201	Standard
	Pb	207	559.7	10.1	**0.1059**	0.017	16.0	ug/L	177	Standard
	Pb	208	2260.4	0.3	**0.1059**	0.002	2.2	ug/L	722	Standard
	U	238	1336.4	2.7	**0.2378**	0.007	3.1	ug/L	8	Standard
>	Bi	209	360105.3	1.5				ug/L	444563	Standard

Sample ID: L1606154801 WG574664-01
Report Date/Time: Tuesday, July 05, 2016 14:19:01
Page 1

Approved: July 06, 2016

Na	23	6.7	86.6	**101.3670**	87.825	86.6	mg/L	0	Standard
Mg	24	390484.5	0.4	**645.3542**	21.753	3.4	mg/L	38	Standard
K	39	231.7	7.6	**1.2034**	0.061	5.1	mg/L	33	Standard
Ca	43	468.3	10.8	**91.3126**	12.977	14.2	mg/L	48	Standard
Fe	54	115.2	39.8	**0.0064**	0.052	815.4	mg/L	131	Standard
Fe	57	816.7	5.1	**2.8486**	0.210	7.4	mg/L	153	Standard
> **Sc-1**	45	20311.9	3.0				mg/L	26715	Standard
Cl	35	869294.9	0.5				ug/L	102686	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	21425.2	8.3				ug/L	1897	Standard
P	31	14375.2	5.7				ug/L	18491	Standard
S	34	4839.1	4.4				ug/L	3734	Standard
Sr	88	273.3	14.7				ug/L	47	Standard
C	12	86.7	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	25552.2	21.2				mg/L	23	Standard
Dy	164	28.2	97.0				mg/L	23	Standard
Ho-1	165	30.0	66.7				mg/L	7	Standard
Er	166	36.7	78.7				mg/L	13	Standard
I	127	49557.7	5.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.930	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		79.458	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606154801 WG574664-01
Report Date/Time: Tuesday, July 05, 2016 14:19:01
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	78.751	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	81.002	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606154801 WG574664-01
Report Date/Time: Tuesday, July 05, 2016 14:19:01
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606154801DP WG574664-04
Sample Date/Time: Tuesday, July 05, 2016 14:19:55
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89693.1	2.1				ug/L	59517	Standard
	Be	9	25.0	52.9	**-0.0121**	0.010	81.7	ug/L	10	Standard
	Al	27	7455350.5	0.8	**32.5098**	0.583	1.8	ug/L	1872	Standard
	Sc	45	21144.8	2.9				ug/L	26715	Standard
	Ti	47	346.7	11.1	**1.4463**	0.198	13.7	ug/L	54	Standard
	V	51	8769.1	5.8	**1.2306**	0.062	5.0	ug/L	1419	Standard
	Cr	52	46977.1	18.7	**6.6829**	1.347	20.2	ug/L	7059	Standard
	Cr	53	7948.8	12.9	**9.9577**	1.233	12.4	ug/L	398	Standard
	Mn	55	28821.4	0.6	**5.1560**	0.083	1.6	ug/L	824	Standard
	Co	59	162210.1	1.1	**27.6895**	0.647	2.3	ug/L	167	Standard
	Ni	60	15845.9	1.1	**9.6320**	0.098	1.0	ug/L	391	Standard
	Cu	65	16409.5	0.9	**10.0681**	0.102	1.0	ug/L	147	Standard
	Zn	66	7567.9	4.9	**7.7999**	0.411	5.3	ug/L	184	Standard
>	Ge	72	364441.8	1.4				ug/L	422998	Standard
	As	75	2146.6	5.6	**2.2471**	0.101	4.5	ug/L	-58	Standard
	Se	82	414.0	12.2	**3.8910**	0.484	12.4	ug/L	15	Standard
	Se-1	77	413.7	7.8	**5.6664**	0.550	9.7	ug/L	58	Standard
>	Ga	71	306.7	17.4				mg/L	113	Standard
	Rb	85	48530.9	0.8				ug/L	27	Standard
	Y	89	321692.6	0.8				ug/L	383780	Standard
>	Rh	103	465.0	3.9				ug/L	18	Standard
	Mo	98	291110.2	0.5	**127.5407**	2.485	1.9	ug/L	31	Standard
	Ag	107	485.7	3.2	**0.0720**	0.003	3.7	ug/L	84	Standard
	Cd	111	-221.9	5.6	**-0.1256**	0.009	7.2	mg/L	4	Standard
	Cd	114	464.0	6.6	**0.0999**	0.005	4.6	ug/L	15	Standard
>	In	115	442515.5	2.3				ug/L	515400	Standard
	Sn	118	1033.4	2.7	**0.0270**	0.009	31.6	ug/L	1043	Standard
	Sb	123	1426.2	8.3	**0.3465**	0.028	8.1	ug/L	227	Standard
	Ba	135	23305.6	1.0	**13.4851**	0.382	2.8	ug/L	31	Standard
	Ce	140	1306.7	1.2				ug/L	120	Standard
>	Tb	159	710759.8	1.6				ug/L	785817	Standard
	Ho	165	30.0	44.1				ug/L	7	Standard
	Tl	203	693.3	13.4	**0.0954**	0.014	14.6	ug/L	6	Standard
	Tl	205	138.3	38.0	**0.0158**	0.008	52.0	ug/L	8	Standard
	Pb	206	688.0	6.6	**0.1122**	0.008	7.0	ug/L	201	Standard
	Pb	207	586.0	3.9	**0.1009**	0.007	6.8	ug/L	177	Standard
	Pb	208	2451.7	6.4	**0.1063**	0.008	7.2	ug/L	722	Standard
	U	238	1331.4	3.0	**0.2188**	0.003	1.6	ug/L	8	Standard
>	Bi	209	389435.9	1.8				ug/L	444563	Standard

Sample ID: L1606154801DP WG574664-04
Report Date/Time: Tuesday, July 05, 2016 14:22:12
Page 1

Approved: July 06, 2016

Na	23	5.0	0.0	**74.0550**	2.145	2.9	mg/L	0	Standard
Mg	24	379270.0	0.6	**602.0001**	14.280	2.4	mg/L	38	Standard
K	39	236.7	10.6	**1.1780**	0.106	9.0	mg/L	33	Standard
Ca	43	438.3	4.6	**81.4025**	6.382	7.8	mg/L	48	Standard
Fe	54	162.5	9.6	**0.0487**	0.012	24.6	mg/L	131	Standard
Fe	57	775.0	6.2	**2.5561**	0.252	9.9	mg/L	153	Standard
> **Sc-1**	45	21144.8	2.9				mg/L	26715	Standard
Cl	35	853806.1	2.0				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	22964.1	2.5				ug/L	1897	Standard
P	31	14385.2	3.2				ug/L	18491	Standard
S	34	5045.8	6.0				ug/L	3734	Standard
Sr	88	225.0	12.4				ug/L	47	Standard
C	12	110.0	24.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36751.8	14.9				mg/L	23	Standard
Dy	164	36.5	49.4				mg/L	23	Standard
Ho-1	165	30.0	44.1				mg/L	7	Standard
Er	166	73.3	20.8				mg/L	13	Standard
I	127	52000.9	4.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.702	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.157	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606154801DP WG574664-04
Report Date/Time: Tuesday, July 05, 2016 14:22:12
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	85.859	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	87.600	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606154801DP WG574664-04
Report Date/Time: Tuesday, July 05, 2016 14:22:12
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606154801S WG574664-05
Sample Date/Time: Tuesday, July 05, 2016 14:23:14
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87696.4	0.3				ug/L	59517	Standard
	Be	9	24077.5	2.7	**18.7634**	0.550	2.9	ug/L	10	Standard
	Al	27	7241422.2	0.8	**32.2890**	0.336	1.0	ug/L	1872	Standard
	Sc	45	21054.6	1.4				ug/L	26715	Standard
	Ti	47	297.3	4.0	**1.2366**	0.049	3.9	ug/L	54	Standard
	V	51	130851.6	6.6	**21.3465**	1.646	7.7	ug/L	1419	Standard
	Cr	52	170369.6	4.9	**27.4433**	1.005	3.7	ug/L	7059	Standard
	Cr	53	23585.1	5.9	**31.0408**	1.267	4.1	ug/L	398	Standard
	Mn	55	143381.2	0.5	**26.7541**	0.543	2.0	ug/L	824	Standard
	Co	59	192178.1	0.7	**33.5376**	0.823	2.5	ug/L	167	Standard
	Ni	60	42994.2	0.7	**27.0683**	0.386	1.4	ug/L	391	Standard
	Cu	65	46793.5	0.2	**29.5008**	0.627	2.1	ug/L	147	Standard
	Zn	66	29200.1	0.7	**31.2325**	0.712	2.3	ug/L	184	Standard
>	Ge	72	356577.4	2.0				ug/L	422998	Standard
	As	75	27113.4	1.0	**28.4055**	0.299	1.1	ug/L	-58	Standard
	Se	82	3200.3	3.5	**32.1793**	1.171	3.6	ug/L	15	Standard
	Se-1	77	2150.5	1.4	**32.9868**	1.116	3.4	ug/L	58	Standard
>	Ga	71	283.3	7.1				mg/L	113	Standard
	Rb	85	46322.4	1.4				ug/L	27	Standard
	Y	89	314897.4	1.4				ug/L	383780	Standard
>	Rh	103	550.0	19.7				ug/L	18	Standard
	Mo	98	279130.2	0.5	**127.9643**	2.057	1.6	ug/L	31	Standard
	Ag	107	125206.9	0.4	**22.6375**	0.283	1.3	ug/L	84	Standard
	Cd	111	41117.4	0.4	**23.5307**	0.349	1.5	mg/L	4	Standard
	Cd	114	101866.9	1.3	**24.0265**	0.627	2.6	ug/L	15	Standard
>	In	115	422837.3	1.4				ug/L	515400	Standard
	Sn	118	1103.4	11.0	**0.0514**	0.027	52.0	ug/L	1043	Standard
	Sb	123	101851.3	1.0	**27.1061**	0.249	0.9	ug/L	227	Standard
	Ba	135	60983.8	0.3	**36.9596**	0.546	1.5	ug/L	31	Standard
	Ce	140	868.4	5.5				ug/L	120	Standard
>	Tb	159	682088.8	0.6				ug/L	785817	Standard
	Ho	165	46.7	34.4				ug/L	7	Standard
	Tl	203	166181.0	0.6	**24.3358**	0.469	1.9	ug/L	6	Standard
	Tl	205	148186.1	0.5	**24.9075**	0.349	1.4	ug/L	8	Standard
	Pb	206	109184.3	0.4	**25.6628**	0.261	1.0	ug/L	201	Standard
	Pb	207	95337.7	0.4	**24.7829**	0.298	1.2	ug/L	177	Standard
	Pb	208	392568.3	0.7	**25.4043**	0.211	0.8	ug/L	722	Standard
	U	238	155815.1	1.0	**26.5729**	0.362	1.4	ug/L	8	Standard
>	Bi	209	379600.0	1.4				ug/L	444563	Standard

Sample ID: L1606154801S WG574664-05
Report Date/Time: Tuesday, July 05, 2016 14:25:31
Page 1

Approved: July 06, 2016

Na	23	5.0	173.2	**74.1008**	128.338	173.2	mg/L	0	Standard
Mg	24	362752.8	0.6	**578.0832**	11.244	1.9	mg/L	38	Standard
K	39	233.3	8.9	**1.1674**	0.125	10.7	mg/L	33	Standard
Ca	43	393.3	12.2	**72.7672**	10.713	14.7	mg/L	48	Standard
Fe	54	140.7	14.5	**0.0272**	0.020	73.2	mg/L	131	Standard
Fe	57	716.7	5.1	**2.3348**	0.114	4.9	mg/L	153	Standard
Sc-1	45	21054.6	1.4				mg/L	26715	Standard
Cl	35	836041.0	1.3				ug/L	102686	Standard
Kr	83	4.0	0.0				ug/L	2	Standard
Br	81	21555.4	7.5				ug/L	1897	Standard
P	31	14208.3	1.4				ug/L	18491	Standard
S	34	4980.8	2.5				ug/L	3734	Standard
Sr	88	248.3	9.1				ug/L	47	Standard
C	12	93.3	53.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40180.2	10.2				mg/L	23	Standard
Dy	164	54.8	63.6				mg/L	23	Standard
Ho-1	165	46.7	34.4				mg/L	7	Standard
Er	166	40.0	25.0				mg/L	13	Standard
I	127	46476.2	3.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.347	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		84.298	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606154801S WG574664-05
Report Date/Time: Tuesday, July 05, 2016 14:25:31
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		82.041
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.387
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606154801S WG574664-05
Report Date/Time: Tuesday, July 05, 2016 14:25:31
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606154801SD WG574664-06
Sample Date/Time: Tuesday, July 05, 2016 14:26:26
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	91103.2	2.8				ug/L	59517	Standard
	Be	9	25499.8	2.3	**19.1379**	0.674	3.5	ug/L	10	Standard
	Al	27	7742757.6	0.9	**33.2546**	1.157	3.5	ug/L	1872	Standard
	Sc	45	21460.2	1.2				ug/L	26715	Standard
	Ti	47	331.0	15.2	**1.3877**	0.195	14.0	ug/L	54	Standard
	V	51	139107.1	5.3	**22.5506**	1.837	8.1	ug/L	1419	Standard
	Cr	52	166529.7	1.6	**26.6216**	1.309	4.9	ug/L	7059	Standard
	Cr	53	23087.6	2.4	**30.1899**	1.702	5.6	ug/L	398	Standard
	Mn	55	145292.1	1.7	**26.9230**	1.329	4.9	ug/L	824	Standard
	Co	59	227835.2	1.8	**39.4869**	1.982	5.0	ug/L	167	Standard
	Ni	60	45936.2	0.5	**28.7238**	0.980	3.4	ug/L	391	Standard
	Cu	65	48966.0	1.0	**30.6540**	1.320	4.3	ug/L	147	Standard
	Zn	66	30397.1	1.3	**32.2832**	1.299	4.0	ug/L	184	Standard
>	Ge	72	359374.4	3.3				ug/L	422998	Standard
	As	75	27838.9	1.7	**28.9606**	1.284	4.4	ug/L	-58	Standard
	Se	82	3279.4	1.6	**32.7375**	1.067	3.3	ug/L	15	Standard
	Se-1	77	2203.8	2.7	**33.5782**	1.904	5.7	ug/L	58	Standard
>	Ga	71	300.0	8.7				mg/L	113	Standard
	Rb	85	48029.4	1.6				ug/L	27	Standard
	Y	89	318018.3	4.2				ug/L	383780	Standard
>	Rh	103	636.7	14.1				ug/L	18	Standard
	Mo	98	297904.0	0.4	**133.2901**	3.714	2.8	ug/L	31	Standard
	Ag	107	128413.2	0.5	**22.6633**	0.784	3.5	ug/L	84	Standard
	Cd	111	41733.4	1.6	**23.3149**	0.960	4.1	mg/L	4	Standard
	Cd	114	103202.4	2.1	**23.7659**	1.213	5.1	ug/L	15	Standard
>	In	115	433445.5	3.3				ug/L	515400	Standard
	Sn	118	986.7	7.8	**0.0215**	0.009	41.8	ug/L	1043	Standard
	Sb	123	103107.3	0.2	**26.7856**	0.865	3.2	ug/L	227	Standard
	Ba	135	62842.7	1.1	**37.1803**	1.470	4.0	ug/L	31	Standard
	Ce	140	863.4	16.9				ug/L	120	Standard
>	Tb	159	706354.6	3.8				ug/L	785817	Standard
	Ho	165	35.0	24.7				ug/L	7	Standard
	Tl	203	169682.2	0.8	**24.3222**	0.911	3.7	ug/L	6	Standard
	Tl	205	149206.1	1.0	**24.5460**	0.800	3.3	ug/L	8	Standard
	Pb	206	110798.6	0.1	**25.4909**	0.866	3.4	ug/L	201	Standard
	Pb	207	96425.9	0.3	**24.5359**	0.891	3.6	ug/L	177	Standard
	Pb	208	392591.1	0.7	**24.8716**	1.012	4.1	ug/L	722	Standard
	U	238	157236.4	1.1	**26.2538**	1.155	4.4	ug/L	8	Standard
>	Bi	209	388072.5	3.5				ug/L	444563	Standard

Sample ID: L1606154801SD WG574664-06
Report Date/Time: Tuesday, July 05, 2016 14:28:43
Page 1

Approved: July 06, 2016

Na	23	3.3	173.2	**47.9694**	83.077	173.2	mg/L	0	Standard
Mg	24	388282.8	1.3	**607.0626**	13.373	2.2	mg/L	38	Standard
K	39	205.0	11.2	**0.9886**	0.133	13.5	mg/L	33	Standard
Ca	43	441.7	6.4	**80.7027**	6.473	8.0	mg/L	48	Standard
Fe	54	108.3	54.5	**-0.0078**	0.060	768.0	mg/L	131	Standard
Fe	57	811.7	8.1	**2.6491**	0.259	9.8	mg/L	153	Standard
> **Sc-1**	45	21460.2	1.2				mg/L	26715	Standard
Cl	35	868495.4	0.4				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	20861.0	4.6				ug/L	1897	Standard
P	31	14647.1	4.7				ug/L	18491	Standard
S	34	4709.1	2.5				ug/L	3734	Standard
Sr	88	251.7	17.8				ug/L	47	Standard
C	12	90.0	50.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	47635.1	7.9				mg/L	23	Standard
Dy	164	47.6	73.7				mg/L	23	Standard
Ho-1	165	35.0	24.7				mg/L	7	Standard
Er	166	50.0	52.9				mg/L	13	Standard
I	127	51621.5	8.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		153.072	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		84.959	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606154801SD WG574664-06
Report Date/Time: Tuesday, July 05, 2016 14:28:43
Page 2

Approved: July 06, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	84.099
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.293
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606154801SD WG574664-06
Report Date/Time: Tuesday, July 05, 2016 14:28:43
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 14:29:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79525.0	3.5				ug/L	59517	Standard
	Be	9	57321.6	3.5	**49.3141**	0.945	1.9	ug/L	10	Standard
	Al	27	7808418.4	1.8	**38.4119**	0.675	1.8	ug/L	1872	Standard
	Sc	45	24626.7	0.5				ug/L	26715	Standard
	Ti	47	22257.0	0.6	**92.8520**	0.781	0.8	ug/L	54	Standard
	V	51	353921.2	1.3	**48.6021**	0.168	0.3	ug/L	1419	Standard
	Cr	52	353541.3	4.5	**48.4659**	1.764	3.6	ug/L	7059	Standard
	Cr	53	43793.3	5.6	**48.5585**	2.235	4.6	ug/L	398	Standard
	Mn	55	287933.0	1.8	**45.1192**	0.533	1.2	ug/L	824	Standard
	Co	59	342819.5	1.5	**50.1520**	0.433	0.9	ug/L	167	Standard
	Ni	60	88764.6	1.9	**46.9876**	0.585	1.2	ug/L	391	Standard
	Cu	65	91271.5	1.8	**48.2754**	0.384	0.8	ug/L	147	Standard
	Zn	66	56746.1	3.0	**50.9644**	1.019	2.0	ug/L	184	Standard
>	Ge	72	425325.5	1.0				ug/L	422998	Standard
	As	75	55312.3	2.3	**48.5350**	0.660	1.4	ug/L	-58	Standard
	Se	82	6135.7	4.0	**51.8359**	1.777	3.4	ug/L	15	Standard
	Se-1	77	3848.8	2.4	**49.8080**	1.094	2.2	ug/L	58	Standard
>	Ga	71	76.7	21.0				mg/L	113	Standard
	Rb	85	1226.7	7.4				ug/L	27	Standard
	Y	89	372119.8	1.5				ug/L	383780	Standard
>	Rh	103	301.7	36.8				ug/L	18	Standard
	Mo	98	268418.6	2.2	**99.5612**	1.628	1.6	ug/L	31	Standard
	Ag	107	328314.8	0.9	**48.0586**	1.406	2.9	ug/L	84	Standard
	Cd	111	102079.2	0.7	**47.2767**	0.709	1.5	mg/L	4	Standard
	Cd	114	251185.3	0.7	**47.9444**	0.987	2.1	ug/L	15	Standard
>	In	115	522576.0	2.2				ug/L	515400	Standard
	Sn	118	282525.7	2.3	**47.9450**	0.403	0.8	ug/L	1043	Standard
	Sb	123	232623.8	1.1	**50.1123**	0.569	1.1	ug/L	227	Standard
	Ba	135	94708.1	0.5	**46.4551**	0.808	1.7	ug/L	31	Standard
	Ce	140	126.7	16.0				ug/L	120	Standard
>	Tb	159	805972.4	1.0				ug/L	785817	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	412366.6	0.5	**47.7977**	0.362	0.8	ug/L	6	Standard
	Tl	205	367031.1	1.3	**48.8343**	0.521	1.1	ug/L	8	Standard
	Pb	206	262093.2	0.9	**48.8018**	0.632	1.3	ug/L	201	Standard
	Pb	207	238051.9	1.0	**49.0282**	0.739	1.5	ug/L	177	Standard
	Pb	208	966231.5	0.7	**49.5396**	0.425	0.9	ug/L	722	Standard
	U	238	372626.1	0.2	**50.3023**	0.329	0.7	ug/L	8	Standard
>	Bi	209	479544.7	0.5				ug/L	444563	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 14:31:56
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4445.7	8.8	**6.0230**	0.535	8.9	mg/L	38	Standard
K	39	686.7	16.2	**3.1328**	0.538	17.2	mg/L	33	Standard
Ca	43	48.3	6.0	**2.3726**	0.500	21.1	mg/L	48	Standard
Fe	54	5897.4	1.5	**5.0404**	0.093	1.9	mg/L	131	Standard
Fe	57	1736.8	2.3	**5.3560**	0.152	2.8	mg/L	153	Standard
> **Sc-1**	45	24626.7	0.5				mg/L	26715	Standard
Cl	35	129361.0	3.3				ug/L	102686	Standard
Kr	83	2.7	94.4				ug/L	2	Standard
Br	81	2606.9	21.1				ug/L	1897	Standard
P	31	22595.2	2.8				ug/L	18491	Standard
S	34	4407.3	2.4				ug/L	3734	Standard
Sr	88	76.7	13.6				ug/L	47	Standard
C	12	60.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	2756.9	22.5				mg/L	23	Standard
Dy	164	6.5	179.6				mg/L	23	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	10975.7	7.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.628		
Al	27	76.824		
Sc	45			
Ti	47	92.852		
V	51	97.204		
Cr	52	96.932		
Cr	53			
Mn	55	90.238		
Co	59	100.304		
Ni	60	93.975		
Cu	65	96.551		
Zn	66	101.929		
> Ge	72		100.550	
As	75	97.070		
Se	82	103.672		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 14:31:56
Page 2

Approved: July 06, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	99.561		
Ag	107	96.117		
Cd	111	94.553		
Cd	114			
> In	115			101.392
Sn	118	95.890		
Sb	123	100.225		
Ba	135	92.910		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.595		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.079		
U	238	100.605		
> Bi	209			107.869
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 14:31:56
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 14:32:51
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76152.6	1.3				ug/L	59517	Standard
	Be	9	33.3	31.2	**-0.0011**	0.009	833.8	ug/L	10	Standard
	Al	27	5467.9	66.7	**0.0158**	0.019	121.0	ug/L	1872	Standard
	Sc	45	24304.5	1.8				ug/L	26715	Standard
	Ti	47	46.7	18.2	**-0.0466**	0.039	82.7	ug/L	54	Standard
	V	51	2531.1	22.8	**0.1781**	0.083	46.6	ug/L	1419	Standard
	Cr	52	8329.7	20.4	**0.2150**	0.229	106.7	ug/L	7059	Standard
	Cr	53	1173.4	20.1	**0.9319**	0.259	27.7	ug/L	398	Standard
	Mn	55	582.0	4.1	**-0.0373**	0.005	13.2	ug/L	824	Standard
	Co	59	300.3	24.3	**0.0199**	0.011	52.9	ug/L	167	Standard
	Ni	60	463.7	10.6	**0.0524**	0.025	48.4	ug/L	391	Standard
	Cu	65	862.4	8.7	**0.3884**	0.036	9.1	ug/L	147	Standard
	Zn	66	823.7	10.0	**0.5999**	0.068	11.3	ug/L	184	Standard
>	**Ge**	72	415641.0	2.6				ug/L	422998	Standard
	As	75	163.1	21.1	**0.1982**	0.032	16.1	ug/L	-58	Standard
	Se	82	102.2	24.2	**0.6817**	0.213	31.2	ug/L	15	Standard
	Se-1	77	83.7	2.8	**0.4553**	0.054	11.9	ug/L	58	Standard
>	**Ga**	71	35.0	28.6				mg/L	113	Standard
	Rb	85	220.0	13.6				ug/L	27	Standard
	Y	89	364078.2	1.7				ug/L	383780	Standard
>	**Rh**	103	136.7	10.6				ug/L	18	Standard
	Mo	98	565.4	30.6	**0.2032**	0.063	31.1	ug/L	31	Standard
	Ag	107	191.7	31.0	**0.0163**	0.008	51.2	ug/L	84	Standard
	Cd	111	27.3	80.4	**0.0086**	0.010	116.9	mg/L	4	Standard
	Cd	114	71.8	55.7	**0.0093**	0.007	80.9	ug/L	15	Standard
>	**In**	115	516122.7	2.2				ug/L	515400	Standard
	Sn	118	1298.4	26.1	**0.0429**	0.057	133.8	ug/L	1043	Standard
	Sb	123	792.5	38.0	**0.1564**	0.065	41.2	ug/L	227	Standard
	Ba	135	76.0	40.3	**0.0138**	0.014	104.8	ug/L	31	Standard
	Ce	140	15.0	0.0				ug/L	120	Standard
>	**Tb**	159	791960.1	1.5				ug/L	785817	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	161.3	44.6	**0.0152**	0.008	53.5	ug/L	6	Standard
	Tl	205	133.3	45.2	**0.0111**	0.008	71.6	ug/L	8	Standard
	Pb	206	361.3	14.6	**0.0223**	0.009	39.9	ug/L	201	Standard
	Pb	207	278.7	10.9	**0.0100**	0.006	55.9	ug/L	177	Standard
	Pb	208	1253.7	9.8	**0.0163**	0.005	33.5	ug/L	722	Standard
	U	238	130.0	40.7	**0.0152**	0.007	45.7	ug/L	8	Standard
>	**Bi**	209	475380.7	1.7				ug/L	444563	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 14:35:08
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**21.3179**	36.915	173.2	mg/L	0	Standard
Mg	24	191.7	54.7	**0.2327**	0.151	64.8	mg/L	38	Standard
K	39	15.0	33.3	**-0.0573**	0.023	40.0	mg/L	33	Standard
Ca	43	21.7	58.1	**-2.1294**	2.161	101.5	mg/L	48	Standard
Fe	54	130.7	28.9	**-0.0010**	0.032	3090.5	mg/L	131	Standard
Fe	57	196.7	12.8	**0.1886**	0.095	50.3	mg/L	153	Standard
> **Sc-1**	45	24304.5	1.8				mg/L	26715	Standard
Cl	35	131261.5	0.2				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1913.5	9.2				ug/L	1897	Standard
P	31	22438.3	4.7				ug/L	18491	Standard
S	34	4360.6	2.2				ug/L	3734	Standard
Sr	88	56.7	18.4				ug/L	47	Standard
C	12	83.3	36.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1346.7	23.8				mg/L	23	Standard
Dy	164	-1.3	78.1				mg/L	23	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	26.7	78.1				mg/L	13	Standard
I	127	6931.6	4.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.261	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 14:35:08
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.140
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.932
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 14:35:08
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, July 05, 2016 14:36:03
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74315.2	3.0				ug/L	59517	Standard
	Be	9	215.0	8.4	**0.1672**	0.020	12.0	ug/L	10	Standard
	Al	27	1745.1	13.4	**-0.0033**	0.001	31.3	ug/L	1872	Standard
	Sc	45	23546.6	1.1				ug/L	26715	Standard
	Ti	47	37.0	2.7	**-0.0863**	0.005	5.9	ug/L	54	Standard
	V	51	4025.5	6.4	**0.3960**	0.043	10.9	ug/L	1419	Standard
	Cr	52	11308.2	1.5	**0.6638**	0.031	4.6	ug/L	7059	Standard
	Cr	53	1508.4	9.6	**1.3386**	0.165	12.3	ug/L	398	Standard
	Mn	55	3025.0	1.9	**0.3618**	0.005	1.4	ug/L	824	Standard
	Co	59	2572.2	0.3	**0.3652**	0.003	0.9	ug/L	167	Standard
	Ni	60	2970.6	2.0	**1.4374**	0.041	2.9	ug/L	391	Standard
	Cu	65	1850.8	2.8	**0.9374**	0.027	2.9	ug/L	147	Standard
	Zn	66	7135.3	1.0	**6.5052**	0.008	0.1	ug/L	184	Standard
>	Ge	72	410313.7	1.1				ug/L	422998	Standard
	As	75	466.6	14.5	**0.4752**	0.058	12.2	ug/L	-58	Standard
	Se	82	105.2	9.3	**0.7183**	0.079	11.0	ug/L	15	Standard
	Se-1	77	97.7	14.5	**0.6609**	0.208	31.5	ug/L	58	Standard
>	Ga	71	31.7	32.9				mg/L	113	Standard
	Rb	85	158.3	16.2				ug/L	27	Standard
	Y	89	349258.4	1.4				ug/L	383780	Standard
>	Rh	103	110.0	34.3				ug/L	18	Standard
	Mo	98	228.8	17.6	**0.0796**	0.017	20.9	ug/L	31	Standard
	Ag	107	2424.9	2.0	**0.3575**	0.004	1.0	ug/L	84	Standard
	Cd	111	449.3	4.2	**0.2126**	0.012	5.5	mg/L	4	Standard
	Cd	114	1010.5	11.1	**0.1964**	0.025	12.6	ug/L	15	Standard
>	In	115	501932.9	1.4				ug/L	515400	Standard
	Sn	118	603.3	18.3	**-0.0738**	0.021	28.7	ug/L	1043	Standard
	Sb	123	1708.8	1.7	**0.3670**	0.007	1.8	ug/L	227	Standard
	Ba	135	1277.1	1.4	**0.6286**	0.002	0.3	ug/L	31	Standard
	Ce	140	15.0	33.3				ug/L	120	Standard
>	Tb	159	776264.7	0.9				ug/L	785817	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	657.7	1.9	**0.0750**	0.001	1.6	ug/L	6	Standard
	Tl	205	641.7	10.8	**0.0813**	0.010	12.7	ug/L	8	Standard
	Pb	206	1266.1	0.6	**0.1977**	0.002	0.9	ug/L	201	Standard
	Pb	207	1032.4	1.5	**0.1715**	0.002	1.4	ug/L	177	Standard
	Pb	208	4357.9	1.4	**0.1820**	0.002	1.3	ug/L	722	Standard
	U	238	2722.2	1.9	**0.3764**	0.010	2.6	ug/L	8	Standard
>	Bi	209	465192.1	0.9				ug/L	444563	Standard

Sample ID: QC Std 8
Report Date/Time: Tuesday, July 05, 2016 14:38:23
Page 1

Approved: July 06, 2016

Na	23	3.3	173.2	**44.6113**	77.260	173.2	mg/L	0	Standard
Mg	24	106.7	10.8	**0.1182**	0.015	12.4	mg/L	38	Standard
K	39	21.7	35.3	**-0.0214**	0.039	181.2	mg/L	33	Standard
Ca	43	21.7	53.3	**-2.0263**	2.004	98.9	mg/L	48	Standard
Fe	54	105.6	37.0	**-0.0199**	0.036	181.9	mg/L	131	Standard
Fe	57	176.7	14.2	**0.1386**	0.083	59.8	mg/L	153	Standard
Sc-1	45	23546.6	1.1				mg/L	26715	Standard
Cl	35	130681.2	0.6				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1653.4	6.3				ug/L	1897	Standard
P	31	15352.8	2.1				ug/L	18491	Standard
S	34	4439.0	2.4				ug/L	3734	Standard
Sr	88	55.0	18.2				ug/L	47	Standard
C	12	66.7	22.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	913.4	10.5				mg/L	23	Standard
Dy	164	6.3	86.6				mg/L	23	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1548.4	13.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	83.607		
Al	27			
Sc	45			
Ti	47			
V	51	99.008		
Cr	52	82.978		
Cr	53			
Mn	55	72.361		
Co	59	91.304		
Ni	60	89.836		
Cu	65	117.179		
Zn	66	104.082		
Ge	72		97.001	
As	75	118.806		
Se	82	179.568		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
Report Date/Time: Tuesday, July 05, 2016 14:38:23
Page 2

Approved: July 06, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	89.370		
Cd	111	88.567		
Cd	114			
> In	115			97.387
Sn	118			
Sb	123	91.745		
Ba	135	83.815		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	93.725		
Tl	205			
Pb	206			
Pb	207			
Pb	208	90.976		
U	238	94.102		
> Bi	209			104.640
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Se	82	

Sample ID: QC Std 8
Report Date/Time: Tuesday, July 05, 2016 14:38:23
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: PBW 53 WG573653-03
Sample Date/Time: Tuesday, July 05, 2016 14:39:43
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76442.4	1.5				ug/L	59517	Standard
	Be	9	16.7	75.5	**-0.0162**	0.011	68.3	ug/L	10	Standard
	Al	27	12373.4	6.5	**0.0509**	0.003	6.9	ug/L	1872	Standard
	Sc	45	25174.3	4.4				ug/L	26715	Standard
	Ti	47	35.0	31.4	**-0.0989**	0.045	45.4	ug/L	54	Standard
	V	51	1730.7	12.7	**0.0619**	0.028	45.5	ug/L	1419	Standard
	Cr	52	8813.2	0.8	**0.2722**	0.025	9.1	ug/L	7059	Standard
	Cr	53	1045.0	7.5	**0.7739**	0.102	13.2	ug/L	398	Standard
	Mn	55	1606.8	2.6	**0.1246**	0.004	3.3	ug/L	824	Standard
	Co	59	195.3	3.9	**0.0039**	0.001	29.7	ug/L	167	Standard
	Ni	60	543.7	0.1	**0.0928**	0.004	3.8	ug/L	391	Standard
	Cu	65	541.0	5.0	**0.2113**	0.018	8.5	ug/L	147	Standard
	Zn	66	1323.7	0.4	**1.0482**	0.009	0.9	ug/L	184	Standard
>	**Ge**	72	420130.0	1.2				ug/L	422998	Standard
	As	75	18.1	85.9	**0.0676**	0.014	20.3	ug/L	-58	Standard
	Se	82	46.9	11.7	**0.1970**	0.046	23.2	ug/L	15	Standard
	Se-1	77	60.0	14.5	**0.1283**	0.115	89.8	ug/L	58	Standard
>	**Ga**	71	35.0	49.5				mg/L	113	Standard
	Rb	85	130.0	7.7				ug/L	27	Standard
	Y	89	363841.0	3.1				ug/L	383780	Standard
>	**Rh**	103	61.7	12.4				ug/L	18	Standard
	Mo	98	187.6	30.5	**0.0609**	0.021	34.3	ug/L	31	Standard
	Ag	107	79.0	19.1	**-0.0004**	0.002	547.7	ug/L	84	Standard
	Cd	111	5.4	56.3	**-0.0017**	0.001	84.5	mg/L	4	Standard
	Cd	114	4.8	258.1	**-0.0036**	0.002	64.8	ug/L	15	Standard
>	**In**	115	520366.8	0.7				ug/L	515400	Standard
	Sn	118	940.0	20.1	**-0.0203**	0.031	153.6	ug/L	1043	Standard
	Sb	123	324.4	36.2	**0.0537**	0.025	46.4	ug/L	227	Standard
	Ba	135	58.0	1.7	**0.0049**	0.000	7.6	ug/L	31	Standard
	Ce	140	55.0	32.8				ug/L	120	Standard
>	**Tb**	159	798503.8	1.5				ug/L	785817	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	25.0	13.9	**-0.0007**	0.000	59.8	ug/L	6	Standard
	Tl	205	15.0	33.3	**-0.0048**	0.001	14.5	ug/L	8	Standard
	Pb	206	248.7	10.1	**0.0010**	0.005	480.6	ug/L	201	Standard
	Pb	207	220.7	7.4	**-0.0022**	0.003	128.7	ug/L	177	Standard
	Pb	208	923.0	3.6	**-0.0010**	0.001	125.5	ug/L	722	Standard
	U	238	10.0	36.1	**-0.0011**	0.000	42.5	ug/L	8	Standard
>	**Bi**	209	477056.6	1.3				ug/L	444563	Standard

Sample ID: PBW 53 WG573653-03
Report Date/Time: Tuesday, July 05, 2016 14:42:00
Page 1

Approved: July 06, 2016

Na	23	3.3	86.6	**40.5359**	35.121	86.6	mg/L	0	Standard
Mg	24	58.3	9.9	**0.0442**	0.008	18.3	mg/L	38	Standard
K	39	25.0	20.0	**-0.0137**	0.018	132.9	mg/L	33	Standard
Ca	43	23.3	32.7	**-2.0048**	1.190	59.4	mg/L	48	Standard
Fe	54	160.7	23.4	**0.0209**	0.031	150.6	mg/L	131	Standard
Fe	57	170.0	7.8	**0.0774**	0.044	56.4	mg/L	153	Standard
> **Sc-1**	45	25174.3	4.4				mg/L	26715	Standard
Cl	35	139834.3	0.3				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1790.1	3.4				ug/L	1897	Standard
P	31	22082.7	1.5				ug/L	18491	Standard
S	34	4349.0	3.5				ug/L	3734	Standard
Sr	88	50.0	43.6				ug/L	47	Standard
C	12	106.7	32.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	800.0	21.9				mg/L	23	Standard
Dy	164	16.2	71.3				mg/L	23	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	10.0					mg/L	13	Standard
I	127	1423.4	5.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.438	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.322	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 53 WG573653-03
Report Date/Time: Tuesday, July 05, 2016 14:42:00
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.964
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.309
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: PBW 53 WG573653-03
Report Date/Time: Tuesday, July 05, 2016 14:42:00
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: LCSW 53 WG573653-04
Sample Date/Time: Tuesday, July 05, 2016 14:42:54
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72829.7	2.3				ug/L	59517	Standard
	Be	9	53064.5	2.0	**49.8504**	0.844	1.7	ug/L	10	Standard
	Al	27	14845.6	3.4	**0.0673**	0.001	1.2	ug/L	1872	Standard
	Sc	45	24080.8	2.1				ug/L	26715	Standard
	Ti	47	34.3	1.7	**-0.0989**	0.007	6.6	ug/L	54	Standard
	V	51	334119.1	0.3	**47.2395**	1.450	3.1	ug/L	1419	Standard
	Cr	52	330681.3	1.7	**46.6350**	0.640	1.4	ug/L	7059	Standard
	Cr	53	41714.1	3.7	**47.6059**	1.259	2.6	ug/L	398	Standard
	Mn	55	282840.6	0.6	**45.6343**	1.181	2.6	ug/L	824	Standard
	Co	59	329662.8	0.4	**49.6576**	1.475	3.0	ug/L	167	Standard
	Ni	60	86597.5	2.1	**47.1845**	0.708	1.5	ug/L	391	Standard
	Cu	65	88615.7	1.0	**48.2528**	0.945	2.0	ug/L	147	Standard
	Zn	66	53747.5	1.3	**49.6950**	1.077	2.2	ug/L	184	Standard
>	Ge	72	413319.8	2.9				ug/L	422998	Standard
	As	75	53948.1	0.7	**48.7473**	1.611	3.3	ug/L	-58	Standard
	Se	82	5640.8	0.3	**49.0638**	1.606	3.3	ug/L	15	Standard
	Se-1	77	3669.1	1.2	**48.8845**	1.884	3.9	ug/L	58	Standard
>	Ga	71	38.3	65.7				mg/L	113	Standard
	Rb	85	106.7	35.2				ug/L	27	Standard
	Y	89	356854.9	2.3				ug/L	383780	Standard
>	Rh	103	66.7	21.7				ug/L	18	Standard
	Mo	98	173.8	21.3	**0.0579**	0.015	26.4	ug/L	31	Standard
	Ag	107	316041.4	1.1	**47.8345**	0.814	1.7	ug/L	84	Standard
	Cd	111	99255.7	1.1	**47.5492**	1.318	2.8	mg/L	4	Standard
	Cd	114	241340.9	2.2	**47.6278**	0.203	0.4	ug/L	15	Standard
>	In	115	505261.0	1.8				ug/L	515400	Standard
	Sn	118	1008.4	8.8	**-0.0031**	0.018	584.8	ug/L	1043	Standard
	Sb	123	229069.4	0.3	**51.0387**	0.792	1.6	ug/L	227	Standard
	Ba	135	91766.4	0.6	**46.5491**	0.537	1.2	ug/L	31	Standard
	Ce	140	66.7	17.3				ug/L	120	Standard
>	Tb	159	766383.9	1.1				ug/L	785817	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	398909.4	0.4	**48.5022**	1.142	2.4	ug/L	6	Standard
	Tl	205	355362.8	1.2	**49.6047**	1.609	3.2	ug/L	8	Standard
	Pb	206	258456.8	0.1	**50.4839**	1.287	2.5	ug/L	201	Standard
	Pb	207	224639.8	0.8	**48.5274**	1.058	2.2	ug/L	177	Standard
	Pb	208	940715.8	0.3	**50.5991**	1.458	2.9	ug/L	722	Standard
	U	238	349408.0	0.7	**49.4858**	1.628	3.3	ug/L	8	Standard
>	Bi	209	457338.7	2.7				ug/L	444563	Standard

Sample ID: LCSW 53 WG573653-04
Report Date/Time: Tuesday, July 05, 2016 14:45:11
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	75.0	48.1	**0.0704**	0.049	69.3	mg/L	38	Standard
K	39	11.7	89.2	**-0.0719**	0.051	71.2	mg/L	33	Standard
Ca	43	26.7	28.6	**-1.2202**	1.363	111.7	mg/L	48	Standard
Fe	54	132.6	9.0	**0.0021**	0.013	598.4	mg/L	131	Standard
Fe	57	206.7	20.6	**0.2294**	0.154	67.1	mg/L	153	Standard
Sc-1	45	24080.8	2.1				mg/L	26715	Standard
Cl	35	141591.2	0.9				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	11694.5	4.2				ug/L	1897	Standard
P	31	22062.7	2.5				ug/L	18491	Standard
S	34	4484.0	4.9				ug/L	3734	Standard
Sr	88	63.3	18.2				ug/L	47	Standard
C	12	136.7	53.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	603.3	23.7				mg/L	23	Standard
Dy	164	6.2	186.6				mg/L	23	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	10.0					mg/L	13	Standard
I	127	1251.7	15.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		122.368	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.712	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: LCSW 53 WG573653-04
Report Date/Time: Tuesday, July 05, 2016 14:45:11
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.033
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.874
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: LCSW 53 WG573653-04
Report Date/Time: Tuesday, July 05, 2016 14:45:11
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

WG573653-01

Sample ID: L1606076404 ~~WG574653-01~~
Sample Date/Time: Tuesday, July 05, 2016 14:46:06
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71175.2	2.2				ug/L	59517	Standard
	Be	9	36.7	39.4	**0.0044**	0.014	331.6	ug/L	10	Standard
	Al	27	9937898.1	2.0	**54.6258**	1.733	3.2	ug/L	1872	Standard
	Sc	45	23775.3	2.7				ug/L	26715	Standard
	Ti	47	166.3	8.3	**0.5006**	0.048	9.6	ug/L	54	Standard
	V	51	1882.8	13.9	**0.0991**	0.032	32.4	ug/L	1419	Standard
	Cr	52	35548.7	3.2	**4.3758**	0.322	7.4	ug/L	7059	Standard
	Cr	53	6499.7	7.7	**7.4015**	0.475	6.4	ug/L	398	Standard
	Mn	55	266982.5	1.1	**45.0127**	1.877	4.2	ug/L	824	Standard
	Co	59	781.0	13.6	**0.0981**	0.019	19.8	ug/L	167	Standard
	Ni	60	3495.7	3.5	**1.7995**	0.104	5.8	ug/L	391	Standard
	Cu	65	14960.7	1.1	**8.4462**	0.235	2.8	ug/L	147	Standard
	Zn	66	2194.8	1.1	**1.9680**	0.073	3.7	ug/L	184	Standard
>	Ge	72	395669.8	3.2				ug/L	422998	Standard
	As	75	69.8	59.7	**0.1180**	0.041	34.6	ug/L	-58	Standard
	Se	82	46.6	21.3	**0.2194**	0.097	44.0	ug/L	15	Standard
	Se-1	77	216.0	2.8	**2.3797**	0.155	6.5	ug/L	58	Standard
>	Ga	71	93.3	56.3				mg/L	113	Standard
	Rb	85	37090.3	0.2				ug/L	27	Standard
	Y	89	345634.2	4.3				ug/L	383780	Standard
>	Rh	103	76.7	21.0				ug/L	18	Standard
	Mo	98	787.9	7.0	**0.3042**	0.016	5.4	ug/L	31	Standard
	Ag	107	199.7	13.1	**0.0194**	0.004	23.1	ug/L	84	Standard
	Cd	111	100.3	8.1	**0.0457**	0.005	10.9	mg/L	4	Standard
	Cd	114	241.7	25.5	**0.0450**	0.013	29.5	ug/L	15	Standard
>	In	115	487563.5	2.8				ug/L	515400	Standard
	Sn	118	1178.4	13.9	**0.0337**	0.024	70.2	ug/L	1043	Standard
	Sb	123	5253.1	1.1	**1.1973**	0.031	2.6	ug/L	227	Standard
	Ba	135	7746.6	1.1	**4.0530**	0.159	3.9	ug/L	31	Standard
	Ce	140	1191.7	8.6				ug/L	120	Standard
>	Tb	159	749213.7	3.0				ug/L	785817	Standard
	Ho	165	38.3	30.1				ug/L	7	Standard
	Tl	203	379.0	14.2	**0.0445**	0.006	12.8	ug/L	6	Standard
	Tl	205	358.3	13.4	**0.0454**	0.006	13.2	ug/L	8	Standard
	Pb	206	5479.7	1.4	**1.0749**	0.033	3.1	ug/L	201	Standard
	Pb	207	4664.4	2.0	**1.0070**	0.034	3.3	ug/L	177	Standard
	Pb	208	19759.1	0.8	**1.0639**	0.029	2.7	ug/L	722	Standard
	U	238	379.7	9.2	**0.0538**	0.006	11.7	ug/L	8	Standard
>	Bi	209	437249.1	2.2				ug/L	444563	Standard

Sample ID: L1606076404 ~~WG574653-01~~
Report Date/Time: Tuesday, July 05, 2016 14:48:23
Page 1

Approved: July 06, 2016

Na	23	3.3	86.6	**44.5737**	38.598	86.6	mg/L	0	Standard
Mg	24	12962.2	1.2	**18.2672**	0.606	3.3	mg/L	38	Standard
K	39	340.0	21.4	**1.5497**	0.396	25.6	mg/L	33	Standard
Ca	43	135.0	31.6	**18.1347**	8.105	44.7	mg/L	48	Standard
Fe	54	385.1	8.8	**0.2321**	0.028	12.2	mg/L	131	Standard
Fe	57	338.3	9.8	**0.6978**	0.137	19.7	mg/L	153	Standard
> **Sc-1**	45	23775.3	2.7				mg/L	26715	Standard
Cl	35	142774.3	1.4				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	4300.6	3.7				ug/L	1897	Standard
P	31	24379.6	2.3				ug/L	18491	Standard
S	34	4440.7	2.9				ug/L	3734	Standard
Sr	88	188.3	8.1				ug/L	47	Standard
C	12	80.0	66.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	553.3	34.1				mg/L	23	Standard
Dy	164	50.9	25.1				mg/L	23	Standard
Ho-1	165	38.3	30.1				mg/L	7	Standard
Er	166	50.0	52.9				mg/L	13	Standard
I	127	7683.6	8.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.588	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.540	
As	75			
Se	82			
Se-1	77			
> Ga	71			

WG573653-01

Sample ID: L1606076404 ~~WG574653-01~~
Report Date/Time: Tuesday, July 05, 2016 14:48:23
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.599
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.355
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

WG573653-01

Sample ID: L1606076404 ~~WG574653-01~~
Report Date/Time: Tuesday, July 05, 2016 14:48:23
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

WG573653-05

Sample ID: L1606076405S ~~WG574653-05~~
Sample Date/Time: Tuesday, July 05, 2016 14:49:17
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73881.4	1.3				ug/L	59517	Standard
	Be	9	53541.1	1.4	**49.5748**	0.021	0.0	ug/L	10	Standard
	Al	27	10370691.0	1.2	**54.8997**	0.606	1.1	ug/L	1872	Standard
	Sc	45	25097.4	2.9				ug/L	26715	Standard
	Ti	47	244.3	3.0	**0.7819**	0.043	5.5	ug/L	54	Standard
	V	51	342336.0	1.4	**47.2980**	0.354	0.7	ug/L	1419	Standard
	Cr	52	363457.3	1.0	**50.1799**	0.239	0.5	ug/L	7059	Standard
	Cr	53	47628.1	2.1	**53.1892**	0.608	1.1	ug/L	398	Standard
	Mn	55	553579.9	1.3	**87.4205**	1.900	2.2	ug/L	824	Standard
	Co	59	324099.8	0.8	**47.7087**	0.324	0.7	ug/L	167	Standard
	Ni	60	89126.7	1.5	**47.4737**	0.160	0.3	ug/L	391	Standard
	Cu	65	86471.1	1.1	**46.0190**	0.284	0.6	ug/L	147	Standard
	Zn	66	55202.1	1.8	**49.8874**	0.669	1.3	ug/L	184	Standard
>	Ge	72	422715.6	1.4				ug/L	422998	Standard
	As	75	54996.5	1.0	**48.5632**	0.588	1.2	ug/L	-58	Standard
	Se	82	5622.0	1.3	**47.7779**	0.096	0.2	ug/L	15	Standard
	Se-1	77	3853.5	1.2	**50.1920**	1.229	2.4	ug/L	58	Standard
>	Ga	71	125.0	6.9				mg/L	113	Standard
	Rb	85	37045.2	1.5				ug/L	27	Standard
	Y	89	366083.7	1.4				ug/L	383780	Standard
>	Rh	103	96.7	16.6				ug/L	18	Standard
	Mo	98	835.9	10.7	**0.3060**	0.034	11.0	ug/L	31	Standard
	Ag	107	312322.9	0.6	**46.4163**	0.489	1.1	ug/L	84	Standard
	Cd	111	99306.9	1.0	**46.7049**	0.565	1.2	mg/L	4	Standard
	Cd	114	241612.4	1.4	**46.8293**	0.864	1.8	ug/L	15	Standard
>	In	115	514506.0	0.5				ug/L	515400	Standard
	Sn	118	1226.7	11.9	**0.0313**	0.025	79.8	ug/L	1043	Standard
	Sb	123	223567.3	2.4	**48.9114**	1.349	2.8	ug/L	227	Standard
	Ba	135	98832.3	0.8	**49.2280**	0.444	0.9	ug/L	31	Standard
	Ce	140	1928.5	4.2				ug/L	120	Standard
>	Tb	159	776966.1	1.0				ug/L	785817	Standard
	Ho	165	70.0	12.4				ug/L	7	Standard
	Tl	203	392749.9	0.4	**47.3414**	0.101	0.2	ug/L	6	Standard
	Tl	205	347331.5	1.4	**48.0611**	0.828	1.7	ug/L	8	Standard
	Pb	206	260197.9	1.5	**50.3854**	0.903	1.8	ug/L	201	Standard
	Pb	207	225756.5	0.7	**48.3511**	0.498	1.0	ug/L	177	Standard
	Pb	208	938620.3	0.3	**50.0460**	0.143	0.3	ug/L	722	Standard
	U	238	348413.4	1.2	**48.9126**	0.702	1.4	ug/L	8	Standard
>	Bi	209	461125.6	0.4				ug/L	444563	Standard

WG573653-05

Sample ID: L1606076405S ~~WG574653-05~~
Report Date/Time: Tuesday, July 05, 2016 14:51:34
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	13434.3	2.0	**17.9314**	0.499	2.8	mg/L	38	Standard
K	39	326.7	6.2	**1.3942**	0.114	8.2	mg/L	33	Standard
Ca	43	105.0	17.2	**11.7541**	3.389	28.8	mg/L	48	Standard
Fe	54	417.7	13.6	**0.2417**	0.046	19.2	mg/L	131	Standard
Fe	57	368.3	18.4	**0.7302**	0.202	27.7	mg/L	153	Standard
> **Sc-1**	45	25097.4	2.9				mg/L	26715	Standard
Cl	35	147257.0	2.0				ug/L	102686	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	3960.5	7.9				ug/L	1897	Standard
P	31	24618.3	1.2				ug/L	18491	Standard
S	34	4632.4	3.9				ug/L	3734	Standard
Sr	88	208.3	7.7				ug/L	47	Standard
C	12	96.7	46.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	510.0	32.6				mg/L	23	Standard
Dy	164	67.3	1.1				mg/L	23	Standard
Ho-1	165	70.0	12.4				mg/L	7	Standard
Er	166	56.7	27.0				mg/L	13	Standard
I	127	9292.9	9.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.135	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.933	
As	75			
Se	82			
Se-1	77			
> Ga	71	WG573653-05		

Sample ID: L1606076405S ~~WG574653-05~~
Report Date/Time: Tuesday, July 05, 2016 14:51:34
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.827
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.726
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

WG573653-05

Sample ID: L1606076405S ~~WG574653-05~~
Report Date/Time: Tuesday, July 05, 2016 14:51:34
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

WG573653-06

Sample ID: L1606076406SD ~~WG574653-06~~
Sample Date/Time: Tuesday, July 05, 2016 14:52:29
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74422.3	1.0				ug/L	59517	Standard
	Be	9	52612.9	1.7	**48.3617**	0.773	1.6	ug/L	10	Standard
	Al	27	10662289.8	0.4	**56.0355**	0.765	1.4	ug/L	1872	Standard
	Sc	45	25504.8	1.2				ug/L	26715	Standard
	Ti	47	389.3	8.0	**1.3782**	0.122	8.8	ug/L	54	Standard
	V	51	346003.7	0.8	**47.4205**	0.652	1.4	ug/L	1419	Standard
	Cr	52	364419.8	0.4	**49.9003**	0.476	1.0	ug/L	7059	Standard
	Cr	53	47999.3	1.3	**53.1770**	1.086	2.0	ug/L	398	Standard
	Mn	55	562585.1	0.6	**88.1177**	1.317	1.5	ug/L	824	Standard
	Co	59	325705.1	1.0	**47.5580**	0.821	1.7	ug/L	167	Standard
	Ni	60	87862.4	0.9	**46.4170**	0.147	0.3	ug/L	391	Standard
	Cu	65	85392.0	1.1	**45.0775**	0.826	1.8	ug/L	147	Standard
	Zn	66	54460.0	1.5	**48.8181**	0.992	2.0	ug/L	184	Standard
>	**Ge**	72	426170.4	0.9				ug/L	422998	Standard
	As	75	54500.5	0.6	**47.7351**	0.547	1.1	ug/L	-58	Standard
	Se	82	5586.5	0.8	**47.0924**	0.760	1.6	ug/L	15	Standard
	Se-1	77	3874.5	1.2	**50.0457**	0.647	1.3	ug/L	58	Standard
>	**Ga**	71	120.0	7.2				mg/L	113	Standard
	Rb	85	39546.5	1.2				ug/L	27	Standard
	Y	89	373355.3	2.1				ug/L	383780	Standard
>	**Rh**	103	73.3	23.9				ug/L	18	Standard
	Mo	98	795.8	3.3	**0.2868**	0.005	1.9	ug/L	31	Standard
	Ag	107	309917.0	0.9	**45.4478**	1.091	2.4	ug/L	84	Standard
	Cd	111	98925.2	0.6	**45.9045**	0.713	1.6	mg/L	4	Standard
	Cd	114	241997.9	0.2	**46.2774**	0.724	1.6	ug/L	15	Standard
>	**In**	115	521524.2	1.5				ug/L	515400	Standard
	Sn	118	1111.7	12.6	**0.0086**	0.021	246.7	ug/L	1043	Standard
	Sb	123	225106.8	1.5	**48.5953**	1.404	2.9	ug/L	227	Standard
	Ba	135	98668.6	0.2	**48.4902**	0.643	1.3	ug/L	31	Standard
	Ce	140	2568.6	4.2				ug/L	120	Standard
>	**Tb**	159	797441.7	1.0				ug/L	785817	Standard
	Ho	165	75.0	20.0				ug/L	7	Standard
	Tl	203	390077.0	0.7	**46.6876**	0.512	1.1	ug/L	6	Standard
	Tl	205	343975.9	0.9	**47.2579**	0.323	0.7	ug/L	8	Standard
	Pb	206	258001.2	0.8	**49.6043**	0.401	0.8	ug/L	201	Standard
	Pb	207	225133.4	0.9	**47.8742**	0.235	0.5	ug/L	177	Standard
	Pb	208	933282.1	0.3	**49.4092**	0.309	0.6	ug/L	722	Standard
	U	238	345766.6	0.7	**48.1960**	0.247	0.5	ug/L	8	Standard
>	**Bi**	209	464412.0	0.4				ug/L	444563	Standard

Sample ID: L1606076406SD ~~WG574653-06~~
Report Date/Time: Tuesday, July 05, 2016 14:54:46
Page 1

Approved: July 06, 2016

Na	23	5.0	100.0	**61.8389**	62.186	100.6	mg/L	0	Standard
Mg	24	13541.0	1.0	**17.7808**	0.362	2.0	mg/L	38	Standard
K	39	336.7	13.7	**1.4163**	0.231	16.3	mg/L	33	Standard
Ca	43	163.3	12.4	**21.0248**	3.038	14.4	mg/L	48	Standard
Fe	54	331.1	16.3	**0.1634**	0.049	30.1	mg/L	131	Standard
Fe	57	365.0	10.9	**0.7037**	0.144	20.4	mg/L	153	Standard
> **Sc-1**	45	25504.8	1.2				mg/L	26715	Standard
Cl	35	148112.6	1.9				ug/L	102686	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	4067.2	10.6				ug/L	1897	Standard
P	31	25134.2	3.5				ug/L	18491	Standard
S	34	4587.4	0.7				ug/L	3734	Standard
Sr	88	206.7	17.0				ug/L	47	Standard
C	12	126.7	12.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	463.3	40.4				mg/L	23	Standard
Dy	164	95.7	47.7				mg/L	23	Standard
Ho-1	165	75.0	20.0				mg/L	7	Standard
Er	166	90.0	19.2				mg/L	13	Standard
I	127	8594.1	8.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.044	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.750	
As	75			
Se	82			
Se-1	77			
> Ga	71			

WG573653-06

Sample ID: L1606076406SD ~~WG574653-06~~
Report Date/Time: Tuesday, July 05, 2016 14:54:46
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.188
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.465
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

WG573653-06

Sample ID: L1606076406SD ~~**WG574653-06**~~
Report Date/Time: Tuesday, July 05, 2016 14:54:46
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606084001
Sample Date/Time: Tuesday, July 05, 2016 14:55:58
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73804.4	3.3				ug/L	59517	Standard
	Be	9	80.0	70.4	**0.0442**	0.056	125.5	ug/L	10	Standard
	Al	27	8489555.7	0.5	**45.0129**	1.328	2.9	ug/L	1872	Standard
	Sc	45	25484.8	3.6				ug/L	26715	Standard
	Ti	47	154.3	2.6	**0.3865**	0.027	7.1	ug/L	54	Standard
	V	51	2503.4	14.7	**0.1596**	0.056	35.1	ug/L	1419	Standard
	Cr	52	10775.9	12.7	**0.5041**	0.212	42.1	ug/L	7059	Standard
	Cr	53	2146.8	9.6	**1.9471**	0.267	13.7	ug/L	398	Standard
	Mn	55	2369263.0	1.3	**364.9819**	1.892	0.5	ug/L	824	Standard
	Co	59	4486.3	4.7	**0.6192**	0.041	6.6	ug/L	167	Standard
	Ni	60	2284.5	7.7	**0.9922**	0.111	11.2	ug/L	391	Standard
	Cu	65	1142.7	11.3	**0.5155**	0.078	15.1	ug/L	147	Standard
	Zn	66	2986.6	2.5	**2.4804**	0.106	4.3	ug/L	184	Standard
>	**Ge**	72	433785.6	1.8				ug/L	422998	Standard
	As	75	177.5	55.8	**0.2052**	0.088	43.1	ug/L	-58	Standard
	Se	82	46.2	24.6	**0.1793**	0.102	56.7	ug/L	15	Standard
	Se-1	77	121.0	11.9	**0.8887**	0.199	22.3	ug/L	58	Standard
>	**Ga**	71	143.3	5.3				mg/L	113	Standard
	Rb	85	2161.8	5.7				ug/L	27	Standard
	Y	89	373866.2	2.2				ug/L	383780	Standard
>	**Rh**	103	56.7	10.2				ug/L	18	Standard
	Mo	98	462.6	27.9	**0.1609**	0.052	32.3	ug/L	31	Standard
	Ag	107	302.3	82.4	**0.0322**	0.038	116.5	ug/L	84	Standard
	Cd	111	832.1	12.7	**0.3763**	0.058	15.4	mg/L	4	Standard
	Cd	114	1975.9	10.1	**0.3675**	0.046	12.4	ug/L	15	Standard
>	**In**	115	530560.2	2.4				ug/L	515400	Standard
	Sn	118	966.7	7.2	**-0.0185**	0.016	85.4	ug/L	1043	Standard
	Sb	123	2536.3	36.0	**0.5250**	0.208	39.6	ug/L	227	Standard
	Ba	135	26459.8	1.1	**12.7704**	0.461	3.6	ug/L	31	Standard
	Ce	140	1171.7	2.6				ug/L	120	Standard
>	**Tb**	159	799320.6	1.1				ug/L	785817	Standard
	Ho	165	61.7	33.8				ug/L	7	Standard
	Tl	203	488.7	74.2	**0.0546**	0.044	81.3	ug/L	6	Standard
	Tl	205	371.7	59.2	**0.0439**	0.031	70.8	ug/L	8	Standard
	Pb	206	560.0	30.2	**0.0611**	0.035	56.5	ug/L	201	Standard
	Pb	207	476.0	31.8	**0.0524**	0.034	65.1	ug/L	177	Standard
	Pb	208	1881.4	22.6	**0.0500**	0.024	48.8	ug/L	722	Standard
	U	238	1450.1	13.8	**0.1971**	0.032	16.1	ug/L	8	Standard
>	**Bi**	209	471326.7	1.9				ug/L	444563	Standard

Sample ID: L1606084001
Report Date/Time: Tuesday, July 05, 2016 14:58:14
Page 1

Approved: July 06, 2016

Na	23	5.0	173.2	**63.8783**	110.632	173.2	mg/L	0	Standard
Mg	24	1873.4	9.6	**2.4401**	0.325	13.3	mg/L	38	Standard
K	39	73.3	20.8	**0.2067**	0.063	30.6	mg/L	33	Standard
Ca	43	151.7	6.9	**19.1813**	2.267	11.8	mg/L	48	Standard
Fe	54	293.7	10.3	**0.1320**	0.029	22.2	mg/L	131	Standard
Fe	57	395.0	7.9	**0.8043**	0.144	17.9	mg/L	153	Standard
Sc-1	45	25484.8	3.6				mg/L	26715	Standard
Cl	35	149788.9	1.6				ug/L	102686	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	5010.8	5.4				ug/L	1897	Standard
P	31	24675.1	3.6				ug/L	18491	Standard
S	34	4759.1	2.6				ug/L	3734	Standard
Sr	88	280.0	6.4				ug/L	47	Standard
C	12	90.0	19.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	453.3	42.6				mg/L	23	Standard
Dy	164	83.3	46.7				mg/L	23	Standard
Ho-1	165	61.7	33.8				mg/L	7	Standard
Er	166	70.0	49.5				mg/L	13	Standard
I	127	21228.3	9.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		124.006	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.550	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606084001
Report Date/Time: Tuesday, July 05, 2016 14:58:14
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.941
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.020
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606084002
Sample Date/Time: Tuesday, July 05, 2016 14:59:09
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73534.7	2.3				ug/L	59517	Standard
	Be	9	46.7	34.4	**0.0121**	0.014	114.1	ug/L	10	Standard
	Al	27	8187725.8	1.3	**43.5592**	1.194	2.7	ug/L	1872	Standard
	Sc	45	26271.1	1.2				ug/L	26715	Standard
	Ti	47	223.0	9.7	**0.6706**	0.091	13.5	ug/L	54	Standard
	V	51	2966.2	2.7	**0.2226**	0.011	5.0	ug/L	1419	Standard
	Cr	52	8960.6	1.5	**0.2566**	0.021	8.3	ug/L	7059	Standard
	Cr	53	1191.7	1.3	**0.9006**	0.016	1.8	ug/L	398	Standard
	Mn	55	1837757.3	1.3	**283.8849**	2.469	0.9	ug/L	824	Standard
	Co	59	1825.8	3.8	**0.2377**	0.011	4.5	ug/L	167	Standard
	Ni	60	2559.2	4.9	**1.1382**	0.069	6.0	ug/L	391	Standard
	Cu	65	589.3	6.4	**0.2281**	0.021	9.1	ug/L	147	Standard
	Zn	66	2365.2	3.8	**1.9364**	0.080	4.1	ug/L	184	Standard
>	**Ge**	72	432512.8	0.4				ug/L	422998	Standard
	As	75	2595.3	0.9	**2.2889**	0.011	0.5	ug/L	-58	Standard
	Se	82	30.9	13.8	**0.0514**	0.036	70.4	ug/L	15	Standard
	Se-1	77	85.0	16.2	**0.4275**	0.174	40.6	ug/L	58	Standard
>	**Ga**	71	93.3	34.9				mg/L	113	Standard
	Rb	85	13424.3	2.4				ug/L	27	Standard
	Y	89	376160.8	1.1				ug/L	383780	Standard
>	**Rh**	103	116.7	28.5				ug/L	18	Standard
	Mo	98	1567.8	2.8	**0.5699**	0.022	3.9	ug/L	31	Standard
	Ag	107	212.7	2.9	**0.0190**	0.001	5.1	ug/L	84	Standard
	Cd	111	289.9	4.8	**0.1295**	0.006	4.7	mg/L	4	Standard
	Cd	114	700.0	14.3	**0.1283**	0.018	14.1	ug/L	15	Standard
>	**In**	115	525136.6	1.0				ug/L	515400	Standard
	Sn	118	931.7	13.7	**-0.0229**	0.023	100.6	ug/L	1043	Standard
	Sb	123	986.6	31.1	**0.1955**	0.068	34.5	ug/L	227	Standard
	Ba	135	86104.0	0.8	**42.0207**	0.751	1.8	ug/L	31	Standard
	Ce	140	2473.5	0.8				ug/L	120	Standard
>	**Tb**	159	801459.3	0.2				ug/L	785817	Standard
	Ho	165	165.0	12.1				ug/L	7	Standard
	Tl	203	164.3	6.7	**0.0162**	0.001	7.5	ug/L	6	Standard
	Tl	205	141.7	21.3	**0.0128**	0.004	33.3	ug/L	8	Standard
	Pb	206	448.7	6.8	**0.0413**	0.006	13.9	ug/L	201	Standard
	Pb	207	369.3	9.5	**0.0312**	0.007	23.9	ug/L	177	Standard
	Pb	208	1619.7	1.2	**0.0378**	0.001	3.4	ug/L	722	Standard
	U	238	195.3	3.3	**0.0249**	0.001	4.0	ug/L	8	Standard
>	**Bi**	209	461393.3	0.6				ug/L	444563	Standard

Sample ID: L1606084002
Report Date/Time: Tuesday, July 05, 2016 15:01:26
Page 1

Approved: July 06, 2016

Na	23	5.0	0.0	**59.5775**	0.717	1.2	mg/L	0	Standard
Mg	24	1966.8	4.0	**2.4790**	0.126	5.1	mg/L	38	Standard
K	39	335.0	10.4	**1.3626**	0.163	12.0	mg/L	33	Standard
Ca	43	360.0	9.7	**51.6989**	4.886	9.4	mg/L	48	Standard
Fe	54	24851.2	4.1	**20.2624**	1.076	5.3	mg/L	131	Standard
Fe	57	6913.2	4.3	**21.2950**	0.672	3.2	mg/L	153	Standard
> **Sc-1**	45	26271.1	1.2				mg/L	26715	Standard
Cl	35	135831.0	2.2				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3930.5	0.7				ug/L	1897	Standard
P	31	29929.5	1.3				ug/L	18491	Standard
S	34	5092.5	5.4				ug/L	3734	Standard
Sr	88	550.0	1.8				ug/L	47	Standard
C	12	170.0	15.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	310.0	12.9				mg/L	23	Standard
Dy	164	189.5	9.1				mg/L	23	Standard
Ho-1	165	165.0	12.1				mg/L	7	Standard
Er	166	150.0	26.7				mg/L	13	Standard
I	127	27391.6	9.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.553	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.249	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606084002
Report Date/Time: Tuesday, July 05, 2016 15:01:26
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.889
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.786
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606084002
Report Date/Time: Tuesday, July 05, 2016 15:01:26
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606084002PS WG574236-03
Sample Date/Time: Tuesday, July 05, 2016 15:02:21
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71215.3	1.4				ug/L	59517	Standard
	Be	9	53419.0	1.9	**51.3238**	1.363	2.7	ug/L	10	Standard
	Al	27	8290601.7	0.9	**45.5292**	0.318	0.7	ug/L	1872	Standard
	Sc	45	26044.0	1.5				ug/L	26715	Standard
	Ti	47	229.0	3.5	**0.6998**	0.026	3.7	ug/L	54	Standard
	V	51	363098.5	0.9	**49.2882**	0.825	1.7	ug/L	1419	Standard
	Cr	52	354517.3	1.6	**48.0396**	1.076	2.2	ug/L	7059	Standard
	Cr	53	44481.9	1.3	**48.7680**	1.031	2.1	ug/L	398	Standard
	Mn	55	2103514.7	1.3	**326.6363**	6.876	2.1	ug/L	824	Standard
	Co	59	342433.5	0.8	**49.5153**	0.729	1.5	ug/L	167	Standard
	Ni	60	92183.3	1.2	**48.2373**	0.753	1.6	ug/L	391	Standard
	Cu	65	90169.9	2.3	**47.1410**	1.279	2.7	ug/L	147	Standard
	Zn	66	57443.7	1.3	**50.9979**	0.828	1.6	ug/L	184	Standard
>	Ge	72	430347.2	0.8				ug/L	422998	Standard
	As	75	60006.0	1.2	**52.0449**	1.032	2.0	ug/L	-58	Standard
	Se	82	5966.5	2.0	**49.8222**	1.418	2.8	ug/L	15	Standard
	Se-1	77	3969.5	1.8	**50.7854**	0.990	1.9	ug/L	58	Standard
>	Ga	71	108.3	17.5				mg/L	113	Standard
	Rb	85	13110.7	1.4				ug/L	27	Standard
	Y	89	368244.6	2.4				ug/L	383780	Standard
>	Rh	103	140.0	27.9				ug/L	18	Standard
	Mo	98	1562.2	4.4	**0.5743**	0.030	5.2	ug/L	31	Standard
	Ag	107	322969.4	1.0	**47.5591**	1.199	2.5	ug/L	84	Standard
	Cd	111	105328.1	0.5	**49.0777**	0.715	1.5	mg/L	4	Standard
	Cd	114	259310.4	0.4	**49.7961**	1.008	2.0	ug/L	15	Standard
>	In	115	519403.4	1.9				ug/L	515400	Standard
	Sn	118	1065.0	7.2	**0.0017**	0.014	864.7	ug/L	1043	Standard
	Sb	123	226012.3	1.8	**48.9921**	1.467	3.0	ug/L	227	Standard
	Ba	135	180354.7	0.4	**89.0278**	1.833	2.1	ug/L	31	Standard
	Ce	140	2526.9	1.2				ug/L	120	Standard
>	Tb	159	786353.1	1.7				ug/L	785817	Standard
	Ho	165	170.0	5.9				ug/L	7	Standard
	Tl	203	409495.4	0.7	**49.2029**	1.011	2.1	ug/L	6	Standard
	Tl	205	365021.3	0.2	**50.3454**	0.883	1.8	ug/L	8	Standard
	Pb	206	262864.3	0.2	**50.7361**	0.790	1.6	ug/L	201	Standard
	Pb	207	230244.9	0.2	**49.1550**	0.951	1.9	ug/L	177	Standard
	Pb	208	959277.6	0.6	**50.9866**	1.127	2.2	ug/L	722	Standard
	U	238	361444.1	0.4	**50.5801**	1.062	2.1	ug/L	8	Standard
>	Bi	209	462702.5	1.8				ug/L	444563	Standard

Sample ID: L1606084002PS WG574236-03
Report Date/Time: Tuesday, July 05, 2016 15:04:37
Page 1

Approved: July 06, 2016

Na	23	3.3	86.6	**40.2572**	34.868	86.6	mg/L	0	Standard
Mg	24	1976.8	6.8	**2.5149**	0.213	8.5	mg/L	38	Standard
K	39	321.7	3.2	**1.3157**	0.065	4.9	mg/L	33	Standard
Ca	43	363.3	14.1	**52.8359**	8.792	16.6	mg/L	48	Standard
Fe	54	24940.0	2.8	**20.5071**	0.609	3.0	mg/L	131	Standard
Fe	57	7271.7	1.5	**22.6330**	0.470	2.1	mg/L	153	Standard
Sc-1	45	26044.0	1.5				mg/L	26715	Standard
Cl	35	132076.5	0.5				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3577.1	8.2				ug/L	1897	Standard
P	31	28488.4	1.2				ug/L	18491	Standard
S	34	4909.1	3.3				ug/L	3734	Standard
Sr	88	605.0	5.0				ug/L	47	Standard
C	12	166.7	21.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	306.7	6.8				mg/L	23	Standard
Dy	164	181.1	23.8				mg/L	23	Standard
Ho-1	165	170.0	5.9				mg/L	7	Standard
Er	166	186.7	20.3				mg/L	13	Standard
I	127	27692.1	9.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.656	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.738	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606084002PS WG574236-03
Report Date/Time: Tuesday, July 05, 2016 15:04:37
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.777
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.080
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606084002PS WG574236-03
Report Date/Time: Tuesday, July 05, 2016 15:04:37
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606084002SDL WG574236-04
Sample Date/Time: Tuesday, July 05, 2016 15:05:32
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66808.8	4.3				ug/L	59517	Standard
	Be	9	20.0	66.1	**-0.0105**	0.014	131.7	ug/L	10	Standard
	Al	27	1604187.7	2.3	**9.3858**	0.195	2.1	ug/L	1872	Standard
	Sc	45	23339.6	2.1				ug/L	26715	Standard
	Ti	47	54.3	22.5	**-0.0080**	0.052	642.7	ug/L	54	Standard
	V	51	1357.6	7.8	**0.0174**	0.015	86.9	ug/L	1419	Standard
	Cr	52	4989.2	2.0	**-0.2418**	0.005	2.2	ug/L	7059	Standard
	Cr	53	575.0	11.8	**0.2660**	0.075	28.0	ug/L	398	Standard
	Mn	55	348087.7	0.3	**57.4299**	0.924	1.6	ug/L	824	Standard
	Co	59	538.0	7.7	**0.0578**	0.006	10.1	ug/L	167	Standard
	Ni	60	688.0	2.4	**0.1850**	0.010	5.3	ug/L	391	Standard
	Cu	65	448.3	7.8	**0.1710**	0.022	12.8	ug/L	147	Standard
	Zn	66	1052.7	2.4	**0.8387**	0.027	3.2	ug/L	184	Standard
>	**Ge**	72	404283.3	1.3				ug/L	422998	Standard
	As	75	518.8	4.7	**0.5303**	0.028	5.4	ug/L	-58	Standard
	Se	82	24.9	27.5	**0.0169**	0.064	378.2	ug/L	15	Standard
	Se-1	77	56.3	10.7	**0.1083**	0.073	67.6	ug/L	58	Standard
>	**Ga**	71	40.0	12.5				mg/L	113	Standard
	Rb	85	2571.9	9.6				ug/L	27	Standard
	Y	89	339736.3	2.3				ug/L	383780	Standard
>	**Rh**	103	43.3	24.0				ug/L	18	Standard
	Mo	98	363.2	6.5	**0.1354**	0.010	7.3	ug/L	31	Standard
	Ag	107	180.0	28.9	**0.0163**	0.008	50.9	ug/L	84	Standard
	Cd	111	92.3	46.9	**0.0417**	0.022	51.9	mg/L	4	Standard
	Cd	114	221.2	39.2	**0.0406**	0.018	43.6	ug/L	15	Standard
>	**In**	115	487819.8	1.2				ug/L	515400	Standard
	Sn	118	451.7	15.1	**-0.0985**	0.013	13.5	ug/L	1043	Standard
	Sb	123	1293.7	23.2	**0.2823**	0.070	24.8	ug/L	227	Standard
	Ba	135	16562.4	0.8	**8.6817**	0.068	0.8	ug/L	31	Standard
	Ce	140	460.0	7.6				ug/L	120	Standard
>	**Tb**	159	753284.7	2.7				ug/L	785817	Standard
	Ho	165	40.0	25.0				ug/L	7	Standard
	Tl	203	154.7	59.6	**0.0156**	0.012	74.3	ug/L	6	Standard
	Tl	205	111.7	66.0	**0.0091**	0.011	116.4	ug/L	8	Standard
	Pb	206	331.7	18.9	**0.0205**	0.013	61.2	ug/L	201	Standard
	Pb	207	280.0	20.4	**0.0139**	0.013	95.3	ug/L	177	Standard
	Pb	208	1183.4	17.4	**0.0163**	0.012	71.9	ug/L	722	Standard
	U	238	105.7	45.2	**0.0128**	0.007	54.6	ug/L	8	Standard
>	**Bi**	209	448863.0	1.5				ug/L	444563	Standard

Sample ID: L1606084002SDL WG574236-04
Report Date/Time: Tuesday, July 05, 2016 15:07:49
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	368.3	12.9	**0.4967**	0.077	15.6	mg/L	38	Standard
K	39	110.0	18.2	**0.4234**	0.112	26.4	mg/L	33	Standard
Ca	43	85.0	15.6	**9.4329**	2.342	24.8	mg/L	48	Standard
Fe	54	4825.2	4.1	**4.3363**	0.190	4.4	mg/L	131	Standard
Fe	57	1545.1	3.4	**4.9980**	0.164	3.3	mg/L	153	Standard
> **Sc-1**	45	23339.6	2.1				mg/L	26715	Standard
Cl	35	122729.7	0.7				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1810.1	1.9				ug/L	1897	Standard
P	31	11342.6	3.4				ug/L	18491	Standard
S	34	4615.7	4.3				ug/L	3734	Standard
Sr	88	140.0	14.3				ug/L	47	Standard
C	12	116.7	32.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	780.0	17.3				mg/L	23	Standard
Dy	164	47.9	23.5				mg/L	23	Standard
Ho-1	165	40.0	25.0				mg/L	7	Standard
Er	166	43.3	74.2				mg/L	13	Standard
I	127	29927.9	1.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.252	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.576	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606084002SDL WG574236-04
Report Date/Time: Tuesday, July 05, 2016 15:07:49
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.649
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.967
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606158103
Sample Date/Time: Tuesday, July 05, 2016 15:08:43
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70716.3	0.9				ug/L	59517	Standard
	Be	9	58.3	55.1	**0.0253**	0.031	122.6	ug/L	10	Standard
	Al	27	42897.4	41.1	**0.2249**	0.097	43.3	ug/L	1872	Standard
	Sc	45	25408.0	2.7				ug/L	26715	Standard
	Ti	47	31.0	5.6	**-0.1208**	0.008	6.5	ug/L	54	Standard
	V	51	-179.8	554.2	**-0.2029**	0.134	65.8	ug/L	1419	Standard
	Cr	52	298992.0	7.5	**39.6203**	2.659	6.7	ug/L	7059	Standard
	Cr	53	36901.6	5.6	**39.6589**	1.862	4.7	ug/L	398	Standard
	Mn	55	2327.8	3.5	**0.2242**	0.010	4.4	ug/L	824	Standard
	Co	59	223.0	13.1	**0.0066**	0.004	58.2	ug/L	167	Standard
	Ni	60	517.0	20.7	**0.0667**	0.052	78.5	ug/L	391	Standard
	Cu	65	1519.7	11.4	**0.7024**	0.082	11.6	ug/L	147	Standard
	Zn	66	2715.9	2.3	**2.2168**	0.034	1.5	ug/L	184	Standard
>	Ge	72	437998.6	0.9				ug/L	422998	Standard
	As	75	-10.3	656.9	**0.0426**	0.057	134.8	ug/L	-58	Standard
	Se	82	18.7	46.7	**-0.0523**	0.071	135.8	ug/L	15	Standard
	Se-1	77	64.0	21.5	**0.1460**	0.170	116.4	ug/L	58	Standard
>	Ga	71	38.3	41.9				mg/L	113	Standard
	Rb	85	78.3	31.5				ug/L	27	Standard
	Y	89	376340.8	1.8				ug/L	383780	Standard
>	Rh	103	21.7	13.3				ug/L	18	Standard
	Mo	98	88.2	43.9	**0.0229**	0.014	59.7	ug/L	31	Standard
	Ag	107	150.7	39.4	**0.0095**	0.008	86.9	ug/L	84	Standard
	Cd	111	24.1	73.8	**0.0067**	0.008	117.6	mg/L	4	Standard
	Cd	114	79.2	86.7	**0.0101**	0.013	124.4	ug/L	15	Standard
>	In	115	535108.9	1.3				ug/L	515400	Standard
	Sn	118	960.0	15.3	**-0.0214**	0.023	107.5	ug/L	1043	Standard
	Sb	123	1408.8	30.3	**0.2794**	0.087	31.1	ug/L	227	Standard
	Ba	135	138.7	37.3	**0.0427**	0.025	57.5	ug/L	31	Standard
	Ce	140	55.0	9.1				ug/L	120	Standard
>	Tb	159	802622.4	1.3				ug/L	785817	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	84.7	82.8	**0.0063**	0.008	129.4	ug/L	6	Standard
	Tl	205	46.7	64.6	**-0.0005**	0.004	815.4	ug/L	8	Standard
	Pb	206	348.3	8.2	**0.0203**	0.005	25.5	ug/L	201	Standard
	Pb	207	305.0	8.1	**0.0159**	0.005	31.7	ug/L	177	Standard
	Pb	208	1252.4	9.7	**0.0166**	0.006	36.9	ug/L	722	Standard
	U	238	44.7	78.3	**0.0036**	0.005	131.3	ug/L	8	Standard
>	Bi	209	472703.3	0.4				ug/L	444563	Standard

Sample ID: L1606158103
Report Date/Time: Tuesday, July 05, 2016 15:11:00
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	110.0	15.7	**0.1114**	0.020	18.4	mg/L	38	Standard
K	39	20.0	43.3	**-0.0370**	0.041	109.8	mg/L	33	Standard
Ca	43	26.7	54.1	**-1.4746**	2.376	161.1	mg/L	48	Standard
Fe	54	138.7	32.3	**0.0017**	0.041	2400.4	mg/L	131	Standard
Fe	57	200.0	22.2	**0.1699**	0.147	86.6	mg/L	153	Standard
> **Sc-1**	45	25408.0	2.7				mg/L	26715	Standard
Cl	35	133606.5	0.4				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1703.4	11.0				ug/L	1897	Standard
P	31	22500.0	2.5				ug/L	18491	Standard
S	34	4699.1	3.4				ug/L	3734	Standard
Sr	88	73.3	15.7				ug/L	47	Standard
C	12	73.3	47.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	343.3	20.7				mg/L	23	Standard
Dy	164	6.2	186.8				mg/L	23	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	10947.3	2.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.818	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.546	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606158103
Report Date/Time: Tuesday, July 05, 2016 15:11:00
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.824
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.330
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 15:11:57
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70125.3	1.4				ug/L	59517	Standard
	Be	9	50979.0	1.1	**49.7422**	1.221	2.5	ug/L	10	Standard
	Al	27	7402692.3	0.9	**41.2860**	0.584	1.4	ug/L	1872	Standard
	Sc	45	25895.4	1.7				ug/L	26715	Standard
	Ti	47	22492.7	1.0	**90.6468**	2.240	2.5	ug/L	54	Standard
	V	51	346331.1	1.1	**45.9316**	0.454	1.0	ug/L	1419	Standard
	Cr	52	345071.9	0.3	**45.6548**	0.872	1.9	ug/L	7059	Standard
	Cr	53	42666.7	3.5	**45.7103**	2.374	5.2	ug/L	398	Standard
	Mn	55	292380.5	0.4	**44.2590**	0.710	1.6	ug/L	824	Standard
	Co	59	335216.6	1.1	**47.3692**	0.361	0.8	ug/L	167	Standard
	Ni	60	90320.1	1.0	**46.1899**	1.153	2.5	ug/L	391	Standard
	Cu	65	91027.6	0.6	**46.5142**	1.042	2.2	ug/L	147	Standard
	Zn	66	55299.7	0.5	**47.9761**	0.845	1.8	ug/L	184	Standard
>	Ge	72	440353.6	1.7				ug/L	422998	Standard
	As	75	55509.2	0.2	**47.0595**	0.806	1.7	ug/L	-58	Standard
	Se	82	5709.7	0.9	**46.5853**	1.035	2.2	ug/L	15	Standard
	Se-1	77	3754.1	1.0	**46.8933**	0.806	1.7	ug/L	58	Standard
>	Ga	71	41.7	6.9				mg/L	113	Standard
	Rb	85	823.4	11.7				ug/L	27	Standard
	Y	89	378666.9	0.7				ug/L	383780	Standard
>	Rh	103	30.0	28.9				ug/L	18	Standard
	Mo	98	259050.1	0.8	**94.9592**	0.317	0.3	ug/L	31	Standard
	Ag	107	322011.3	0.7	**46.5677**	0.155	0.3	ug/L	84	Standard
	Cd	111	102107.2	0.2	**46.7310**	0.360	0.8	mg/L	4	Standard
	Cd	114	246801.9	1.7	**46.5443**	0.480	1.0	ug/L	15	Standard
>	In	115	528722.8	0.7				ug/L	515400	Standard
	Sn	118	280329.7	1.1	**47.0151**	0.442	0.9	ug/L	1043	Standard
	Sb	123	231421.3	0.7	**49.2655**	0.224	0.5	ug/L	227	Standard
	Ba	135	93945.7	0.2	**45.5349**	0.382	0.8	ug/L	31	Standard
	Ce	140	63.3	4.6				ug/L	120	Standard
>	Tb	159	806908.6	1.0				ug/L	785817	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	399831.4	0.8	**47.4349**	0.148	0.3	ug/L	6	Standard
	Tl	205	357473.0	0.8	**48.6872**	0.827	1.7	ug/L	8	Standard
	Pb	206	250546.9	0.5	**47.7504**	0.571	1.2	ug/L	201	Standard
	Pb	207	228022.7	0.4	**48.0667**	0.391	0.8	ug/L	177	Standard
	Pb	208	940296.6	0.4	**49.3466**	0.540	1.1	ug/L	722	Standard
	U	238	357474.6	0.7	**49.3966**	0.801	1.6	ug/L	8	Standard
>	Bi	209	468519.3	1.0				ug/L	444563	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 15:14:14
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4000.5	4.9	**5.1488**	0.225	4.4	mg/L	38	Standard
K	39	763.4	3.4	**3.3202**	0.175	5.3	mg/L	33	Standard
Ca	43	86.7	23.3	**8.1704**	3.118	38.2	mg/L	48	Standard
Fe	54	5999.9	2.0	**4.8749**	0.179	3.7	mg/L	131	Standard
Fe	57	1865.1	7.1	**5.4851**	0.515	9.4	mg/L	153	Standard
Sc-1	45	25895.4	1.7				mg/L	26715	Standard
Cl	35	131320.0	0.9				ug/L	102686	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1483.4	3.0				ug/L	1897	Standard
P	31	23344.6	1.7				ug/L	18491	Standard
S	34	4880.8	4.3				ug/L	3734	Standard
Sr	88	65.0	26.6				ug/L	47	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	246.7	18.3				mg/L	23	Standard
Dy	164	12.7	124.5				mg/L	23	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	8469.0	2.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.484		
Al	27	82.572		
Sc	45			
Ti	47	90.647		
V	51	91.863		
Cr	52	91.310		
Cr	53			
Mn	55	88.518		
Co	59	94.738		
Ni	60	92.380		
Cu	65	93.028		
Zn	66	95.952		
Ge	72		104.103	
As	75	94.119		
Se	82	93.171		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 15:14:14
Page 2

Approved: July 06, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	94.959		
Ag	107	93.135		
Cd	111	93.462		
Cd	114			
> In	115			102.585
Sn	118	94.030		
Sb	123	98.531		
Ba	135	91.070		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.870		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.693		
U	238	98.793		
> Bi	209			105.389
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Mn	55	

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 15:14:14
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 15:15:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68916.4	0.8				ug/L	59517	Standard
	Be	9	40.0	50.0	**0.0086**	0.020	229.1	ug/L	10	Standard
	Al	27	3637.2	54.9	**0.0082**	0.011	136.9	ug/L	1872	Standard
	Sc	45	24850.4	4.6				ug/L	26715	Standard
	Ti	47	27.3	21.4	**-0.1319**	0.022	16.8	ug/L	54	Standard
	V	51	1207.5	6.4	**-0.0116**	0.014	116.9	ug/L	1419	Standard
	Cr	52	5805.8	3.0	**-0.1575**	0.037	23.8	ug/L	7059	Standard
	Cr	53	606.7	8.8	**0.2731**	0.055	20.3	ug/L	398	Standard
	Mn	55	828.0	30.5	**0.0006**	0.042	7136.5	ug/L	824	Standard
	Co	59	262.3	35.1	**0.0137**	0.014	102.8	ug/L	167	Standard
	Ni	60	336.0	4.2	**-0.0198**	0.011	55.4	ug/L	391	Standard
	Cu	65	176.3	6.5	**0.0151**	0.005	36.3	ug/L	147	Standard
	Zn	66	233.3	17.5	**0.0527**	0.039	74.1	ug/L	184	Standard
>	**Ge**	72	422253.9	2.0				ug/L	422998	Standard
	As	75	-8.3	378.0	**0.0446**	0.028	61.7	ug/L	-58	Standard
	Se	82	22.4	43.9	**-0.0138**	0.087	629.8	ug/L	15	Standard
	Se-1	77	55.7	13.5	**0.0684**	0.112	163.8	ug/L	58	Standard
>	**Ga**	71	31.7	48.2				mg/L	113	Standard
	Rb	85	25.0	20.0				ug/L	27	Standard
	Y	89	370201.5	0.8				ug/L	383780	Standard
>	**Rh**	103	16.7	34.6				ug/L	18	Standard
	Mo	98	215.7	29.8	**0.0705**	0.024	33.7	ug/L	31	Standard
	Ag	107	168.0	31.5	**0.0124**	0.008	62.4	ug/L	84	Standard
	Cd	111	33.6	82.0	**0.0113**	0.013	112.0	mg/L	4	Standard
	Cd	114	74.8	40.4	**0.0096**	0.006	59.9	ug/L	15	Standard
>	**In**	115	526419.5	0.3				ug/L	515400	Standard
	Sn	118	1126.7	24.4	**0.0095**	0.046	484.9	ug/L	1043	Standard
	Sb	123	894.6	29.9	**0.1749**	0.057	32.5	ug/L	227	Standard
	Ba	135	65.3	53.5	**0.0081**	0.017	210.3	ug/L	31	Standard
	Ce	140	20.0	43.3				ug/L	120	Standard
>	**Tb**	159	785550.2	0.8				ug/L	785817	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	138.0	55.1	**0.0128**	0.009	70.0	ug/L	6	Standard
	Tl	205	120.0	58.8	**0.0096**	0.010	99.6	ug/L	8	Standard
	Pb	206	300.7	15.7	**0.0120**	0.009	74.4	ug/L	201	Standard
	Pb	207	261.3	11.7	**0.0074**	0.006	86.9	ug/L	177	Standard
	Pb	208	1162.7	18.1	**0.0127**	0.011	86.7	ug/L	722	Standard
	U	238	113.7	44.6	**0.0133**	0.007	52.6	ug/L	8	Standard
>	**Bi**	209	467045.2	1.0				ug/L	444563	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 15:17:34
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**20.0774**	34.766	173.2	mg/L	0	Standard
Mg	24	63.3	59.8	**0.0505**	0.049	96.0	mg/L	38	Standard
K	39	25.0	20.0	**-0.0107**	0.029	271.0	mg/L	33	Standard
Ca	43	30.0	44.1	**-0.8471**	2.017	238.1	mg/L	48	Standard
Fe	54	124.4	10.8	**-0.0084**	0.016	194.3	mg/L	131	Standard
Fe	57	228.3	23.4	**0.2797**	0.180	64.5	mg/L	153	Standard
> **Sc-1**	45	24850.4	4.6				mg/L	26715	Standard
Cl	35	129750.5	0.7				ug/L	102686	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1493.4	8.4				ug/L	1897	Standard
P	31	22802.2	2.4				ug/L	18491	Standard
S	34	4805.8	1.6				ug/L	3734	Standard
Sr	88	70.0	12.4				ug/L	47	Standard
C	12	53.3	39.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	253.3	12.1				mg/L	23	Standard
Dy	164	9.7	105.8				mg/L	23	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	6014.5	0.8				mg/L	12398	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.824	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 15:17:34
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.138
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.057
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 15:17:34
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606084003
Sample Date/Time: Tuesday, July 05, 2016 15:18:39
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69247.9	1.9				ug/L	59517	Standard
	Be	9	28.3	20.4	**-0.0031**	0.005	168.6	ug/L	10	Standard
	Al	27	7792341.0	1.8	**44.0069**	0.228	0.5	ug/L	1872	Standard
	Sc	45	26012.3	1.7				ug/L	26715	Standard
	Ti	47	226.0	4.2	**0.6862**	0.036	5.2	ug/L	54	Standard
	V	51	2895.4	4.8	**0.2146**	0.022	10.4	ug/L	1419	Standard
	Cr	52	8614.8	1.1	**0.2135**	0.004	2.0	ug/L	7059	Standard
	Cr	53	988.4	7.9	**0.6804**	0.071	10.5	ug/L	398	Standard
	Mn	55	1737468.5	0.6	**269.4090**	2.046	0.8	ug/L	824	Standard
	Co	59	1656.8	4.1	**0.2143**	0.010	4.6	ug/L	167	Standard
	Ni	60	2359.2	2.3	**1.0380**	0.020	1.9	ug/L	391	Standard
	Cu	65	1053.7	4.4	**0.4719**	0.019	4.0	ug/L	147	Standard
	Zn	66	2213.2	1.3	**1.8091**	0.029	1.6	ug/L	184	Standard
>	**Ge**	72	430908.3	1.3				ug/L	422998	Standard
	As	75	2580.9	3.2	**2.2846**	0.061	2.7	ug/L	-58	Standard
	Se	82	39.1	25.3	**0.1208**	0.079	65.8	ug/L	15	Standard
	Se-1	77	65.0	23.2	**0.1716**	0.184	107.5	ug/L	58	Standard
>	**Ga**	71	81.7	23.2				mg/L	113	Standard
	Rb	85	11964.7	1.9				ug/L	27	Standard
	Y	89	378115.5	1.4				ug/L	383780	Standard
>	**Rh**	103	136.7	30.7				ug/L	18	Standard
	Mo	98	1610.9	0.7	**0.5957**	0.008	1.3	ug/L	31	Standard
	Ag	107	128.7	13.7	**0.0071**	0.003	37.9	ug/L	84	Standard
	Cd	111	323.8	10.4	**0.1475**	0.015	10.0	mg/L	4	Standard
	Cd	114	833.9	5.6	**0.1564**	0.008	5.2	ug/L	15	Standard
>	**In**	115	516455.5	0.6				ug/L	515400	Standard
	Sn	118	975.0	23.9	**-0.0131**	0.039	300.1	ug/L	1043	Standard
	Sb	123	687.7	30.0	**0.1335**	0.044	33.2	ug/L	227	Standard
	Ba	135	84784.2	0.9	**42.0673**	0.326	0.8	ug/L	31	Standard
	Ce	140	2595.2	2.9				ug/L	120	Standard
>	**Tb**	159	790454.6	1.1				ug/L	785817	Standard
	Ho	165	141.7	2.0				ug/L	7	Standard
	Tl	203	65.7	35.1	**0.0044**	0.003	61.5	ug/L	6	Standard
	Tl	205	60.0	16.7	**0.0017**	0.001	85.7	ug/L	8	Standard
	Pb	206	344.3	0.4	**0.0224**	0.001	3.0	ug/L	201	Standard
	Pb	207	279.0	2.2	**0.0130**	0.001	11.1	ug/L	177	Standard
	Pb	208	1154.0	7.8	**0.0141**	0.004	29.0	ug/L	722	Standard
	U	238	98.7	20.1	**0.0116**	0.003	23.0	ug/L	8	Standard
>	**Bi**	209	452902.8	1.4				ug/L	444563	Standard

Sample ID: L1606084003
Report Date/Time: Tuesday, July 05, 2016 15:20:55
Page 1

Approved: July 06, 2016

Na	23	13.3	78.1	**161.7099**	128.098	79.2	mg/L	0	Standard
Mg	24	2013.5	4.3	**2.5629**	0.091	3.5	mg/L	38	Standard
K	39	326.7	21.4	**1.3363**	0.291	21.8	mg/L	33	Standard
Ca	43	328.3	5.3	**47.1714**	1.997	4.2	mg/L	48	Standard
Fe	54	23350.4	3.1	**19.2109**	0.275	1.4	mg/L	131	Standard
Fe	57	6899.9	3.9	**21.4874**	1.207	5.6	mg/L	153	Standard
Sc-1	45	26012.3	1.7				mg/L	26715	Standard
Cl	35	129356.5	0.8				ug/L	102686	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	4580.7	5.6				ug/L	1897	Standard
P	31	27484.9	1.2				ug/L	18491	Standard
S	34	4719.1	2.4				ug/L	3734	Standard
Sr	88	548.3	5.6				ug/L	47	Standard
C	12	146.7	3.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	253.3	18.7				mg/L	23	Standard
Dy	164	220.9	13.5				mg/L	23	Standard
Ho-1	165	141.7	2.0				mg/L	7	Standard
Er	166	190.0	5.3				mg/L	13	Standard
I	127	24882.2	8.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		116.350	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.870	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606084003
Report Date/Time: Tuesday, July 05, 2016 15:20:55
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.205
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.876
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606084004
Sample Date/Time: Tuesday, July 05, 2016 15:21:50
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70614.2	2.1				ug/L	59517	Standard
	Be	9	28.3	53.9	**-0.0038**	0.014	368.5	ug/L	10	Standard
	Al	27	7900249.7	1.1	**43.7608**	0.720	1.6	ug/L	1872	Standard
	Sc	45	26782.0	0.8				ug/L	26715	Standard
	Ti	47	3588.1	0.4	**14.1935**	0.090	0.6	ug/L	54	Standard
	V	51	6693.1	2.6	**0.7082**	0.020	2.9	ug/L	1419	Standard
	Cr	52	12111.5	1.4	**0.6541**	0.018	2.8	ug/L	7059	Standard
	Cr	53	1506.7	2.0	**1.2114**	0.035	2.9	ug/L	398	Standard
	Mn	55	17581452.8	0.3	**2658.4373**	3.806	0.1	ug/L	824	Standard
	Co	59	4243.6	2.2	**0.5726**	0.015	2.7	ug/L	167	Standard
	Ni	60	2745.6	2.2	**1.2045**	0.027	2.2	ug/L	391	Standard
	Cu	65	1202.7	3.6	**0.5341**	0.024	4.6	ug/L	147	Standard
	Zn	66	3754.1	1.6	**3.0952**	0.039	1.2	ug/L	184	Standard
>	**Ge**	72	442050.2	0.4				ug/L	422998	Standard
	As	75	2909.7	3.0	**2.5057**	0.070	2.8	ug/L	-58	Standard
	Se	82	31.9	12.9	**0.0539**	0.033	60.5	ug/L	15	Standard
	Se-1	77	67.7	16.6	**0.1852**	0.138	74.8	ug/L	58	Standard
>	**Ga**	71	776.7	3.0				mg/L	113	Standard
	Rb	85	9377.9	1.3				ug/L	27	Standard
	Y	89	383556.3	1.3				ug/L	383780	Standard
>	**Rh**	103	100.0	32.8				ug/L	18	Standard
	Mo	98	672.2	2.0	**0.2388**	0.005	2.0	ug/L	31	Standard
	Ag	107	98.7	10.8	**0.0024**	0.002	64.7	ug/L	84	Standard
	Cd	111	30.8	23.2	**0.0100**	0.003	33.1	mg/L	4	Standard
	Cd	114	108.3	7.7	**0.0160**	0.002	9.5	ug/L	15	Standard
>	**In**	115	525957.1	0.3				ug/L	515400	Standard
	Sn	118	935.0	11.2	**-0.0227**	0.018	80.5	ug/L	1043	Standard
	Sb	123	434.5	28.0	**0.0767**	0.026	34.3	ug/L	227	Standard
	Ba	135	66229.1	0.7	**32.2618**	0.264	0.8	ug/L	31	Standard
	Ce	140	20473.8	2.0				ug/L	120	Standard
>	**Tb**	159	804202.4	0.2				ug/L	785817	Standard
	Ho	165	543.3	11.0				ug/L	7	Standard
	Tl	203	78.0	6.8	**0.0057**	0.001	10.8	ug/L	6	Standard
	Tl	205	91.7	22.0	**0.0058**	0.003	46.8	ug/L	8	Standard
	Pb	206	1137.0	4.5	**0.1729**	0.009	5.0	ug/L	201	Standard
	Pb	207	964.7	6.0	**0.1571**	0.012	7.6	ug/L	177	Standard
	Pb	208	4026.9	0.3	**0.1645**	0.002	1.1	ug/L	722	Standard
	U	238	170.0	1.6	**0.0212**	0.000	2.2	ug/L	8	Standard
>	**Bi**	209	465104.5	0.5				ug/L	444563	Standard

Sample ID: L1606084004
Report Date/Time: Tuesday, July 05, 2016 15:24:07
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	2243.5	4.3	**2.7768**	0.124	4.5	mg/L	38	Standard
K	39	158.3	20.5	**0.5629**	0.147	26.2	mg/L	33	Standard
Ca	43	271.7	10.5	**36.7513**	4.176	11.4	mg/L	48	Standard
Fe	54	8004.2	3.6	**6.3207**	0.284	4.5	mg/L	131	Standard
Fe	57	2493.5	2.3	**7.2247**	0.163	2.2	mg/L	153	Standard
> **Sc-1**	45	26782.0	0.8				mg/L	26715	Standard
Cl	35	130933.3	0.6				ug/L	102686	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	3853.8	3.7				ug/L	1897	Standard
P	31	27030.8	4.1				ug/L	18491	Standard
S	34	4770.8	5.3				ug/L	3734	Standard
Sr	88	390.0	11.0				ug/L	47	Standard
C	12	123.3	23.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	210.0	21.8				mg/L	23	Standard
Dy	164	725.6	12.5				mg/L	23	Standard
Ho-1	165	543.3	11.0				mg/L	7	Standard
Er	166	440.0	4.5				mg/L	13	Standard
I	127	39830.8	7.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.646	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.504	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606084004
Report Date/Time: Tuesday, July 05, 2016 15:24:07
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.048
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.621
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606084005
Sample Date/Time: Tuesday, July 05, 2016 15:25:02
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70286.1	3.0				ug/L	59517	Standard
	Be	9	30.0	44.1	**-0.0016**	0.014	836.8	ug/L	10	Standard
	Al	27	6569109.5	0.8	**36.5651**	0.868	2.4	ug/L	1872	Standard
	Sc	45	26915.6	1.1				ug/L	26715	Standard
	Ti	47	139.7	5.0	**0.3210**	0.027	8.4	ug/L	54	Standard
	V	51	3378.0	7.5	**0.2731**	0.032	11.7	ug/L	1419	Standard
	Cr	52	8922.3	0.6	**0.2372**	0.012	5.1	ug/L	7059	Standard
	Cr	53	1061.7	6.3	**0.7437**	0.063	8.5	ug/L	398	Standard
	Mn	55	16201115.9	0.2	**2474.9371**	27.874	1.1	ug/L	824	Standard
	Co	59	2782.6	0.9	**0.3708**	0.005	1.3	ug/L	167	Standard
	Ni	60	2064.5	2.0	**0.8669**	0.011	1.2	ug/L	391	Standard
	Cu	65	433.7	4.5	**0.1443**	0.008	5.5	ug/L	147	Standard
	Zn	66	3295.0	0.3	**2.7268**	0.037	1.4	ug/L	184	Standard
>	Ge	72	437575.4	1.0				ug/L	422998	Standard
	As	75	746.7	2.2	**0.6879**	0.008	1.1	ug/L	-58	Standard
	Se	82	29.8	30.3	**0.0401**	0.076	189.0	ug/L	15	Standard
	Se-1	77	74.7	7.6	**0.2837**	0.076	26.7	ug/L	58	Standard
>	Ga	71	300.0	28.9				mg/L	113	Standard
	Rb	85	2610.2	6.0				ug/L	27	Standard
	Y	89	380521.2	1.3				ug/L	383780	Standard
>	Rh	103	110.0	12.0				ug/L	18	Standard
	Mo	98	5055.0	0.1	**1.8310**	0.027	1.5	ug/L	31	Standard
	Ag	107	74.3	20.4	**-0.0013**	0.002	162.1	ug/L	84	Standard
	Cd	111	555.1	3.4	**0.2481**	0.011	4.3	mg/L	4	Standard
	Cd	114	1406.2	2.6	**0.2588**	0.008	2.9	ug/L	15	Standard
>	In	115	532594.0	1.4				ug/L	515400	Standard
	Sn	118	826.7	16.3	**-0.0426**	0.024	57.6	ug/L	1043	Standard
	Sb	123	364.4	31.1	**0.0609**	0.025	41.2	ug/L	227	Standard
	Ba	135	116980.9	0.0	**56.2986**	0.772	1.4	ug/L	31	Standard
	Ce	140	12707.0	1.3				ug/L	120	Standard
>	Tb	159	802921.4	1.4				ug/L	785817	Standard
	Ho	165	365.0	9.0				ug/L	7	Standard
	Tl	203	37.7	17.7	**0.0009**	0.001	95.5	ug/L	6	Standard
	Tl	205	26.7	10.8	**-0.0031**	0.000	10.8	ug/L	8	Standard
	Pb	206	340.7	7.0	**0.0197**	0.004	19.1	ug/L	201	Standard
	Pb	207	291.3	7.6	**0.0138**	0.004	28.6	ug/L	177	Standard
	Pb	208	1299.7	4.4	**0.0200**	0.004	19.8	ug/L	722	Standard
	U	238	543.3	5.1	**0.0730**	0.005	6.9	ug/L	8	Standard
>	Bi	209	466590.6	1.6				ug/L	444563	Standard

Sample ID: L1606084005
Report Date/Time: Tuesday, July 05, 2016 15:27:19
Page 1

Approved: July 06, 2016

Na	23	5.0	173.2	**58.2683**	100.915	173.2	mg/L	0	Standard
Mg	24	1950.1	5.9	**2.3964**	0.121	5.0	mg/L	38	Standard
K	39	181.7	15.2	**0.6596**	0.113	17.2	mg/L	33	Standard
Ca	43	243.3	5.9	**32.1489**	2.613	8.1	mg/L	48	Standard
Fe	54	4522.9	3.3	**3.5015**	0.081	2.3	mg/L	131	Standard
Fe	57	1733.4	8.9	**4.8519**	0.520	10.7	mg/L	153	Standard
Sc-1	45	26915.6	1.1				mg/L	26715	Standard
Cl	35	133931.4	0.9				ug/L	102686	Standard
Kr	83	3.7	126.0				ug/L	2	Standard
Br	81	3950.5	9.9				ug/L	1897	Standard
P	31	25736.8	2.5				ug/L	18491	Standard
S	34	4660.7	4.2				ug/L	3734	Standard
Sr	88	356.7	5.8				ug/L	47	Standard
C	12	186.7	27.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	260.0	19.2				mg/L	23	Standard
Dy	164	469.1	7.4				mg/L	23	Standard
Ho-1	165	365.0	9.0				mg/L	7	Standard
Er	166	366.7	32.5				mg/L	13	Standard
I	127	41420.1	8.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.095	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.446	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606084005
Report Date/Time: Tuesday, July 05, 2016 15:27:19
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.336
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.955
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606084005
Report Date/Time: Tuesday, July 05, 2016 15:27:19
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606084006
Sample Date/Time: Tuesday, July 05, 2016 15:28:13
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70401.6	2.0				ug/L	59517	Standard
	Be	9	25.0	40.0	**-0.0067**	0.010	147.7	ug/L	10	Standard
	Al	27	21602.2	11.4	**0.1076**	0.014	12.9	ug/L	1872	Standard
	Sc	45	25968.9	1.1				ug/L	26715	Standard
	Ti	47	31.7	20.3	**-0.1203**	0.027	22.6	ug/L	54	Standard
	V	51	1430.8	4.7	**0.0086**	0.008	94.6	ug/L	1419	Standard
	Cr	52	8858.9	1.9	**0.2055**	0.010	4.9	ug/L	7059	Standard
	Cr	53	940.0	6.7	**0.5925**	0.070	11.8	ug/L	398	Standard
	Mn	55	8257.4	30.8	**1.1051**	0.374	33.9	ug/L	824	Standard
	Co	59	246.0	6.3	**0.0092**	0.002	18.9	ug/L	167	Standard
	Ni	60	727.4	1.9	**0.1689**	0.011	6.7	ug/L	391	Standard
	Cu	65	1591.4	1.5	**0.7251**	0.022	3.0	ug/L	147	Standard
	Zn	66	1719.8	6.8	**1.3179**	0.091	6.9	ug/L	184	Standard
>	**Ge**	72	446069.6	1.2				ug/L	422998	Standard
	As	75	-39.0	55.1	**0.0191**	0.018	92.9	ug/L	-58	Standard
	Se	82	16.3	19.7	**-0.0737**	0.028	37.6	ug/L	15	Standard
	Se-1	77	61.3	7.5	**0.0990**	0.064	65.1	ug/L	58	Standard
>	**Ga**	71	135.0	22.5				mg/L	113	Standard
	Rb	85	96.7	10.8				ug/L	27	Standard
	Y	89	383121.3	2.0				ug/L	383780	Standard
>	**Rh**	103	16.7	62.4				ug/L	18	Standard
	Mo	98	77.2	18.7	**0.0188**	0.005	26.5	ug/L	31	Standard
	Ag	107	83.3	34.0	**-0.0002**	0.004	2335.8	ug/L	84	Standard
	Cd	111	259.5	2.9	**0.1125**	0.004	3.8	mg/L	4	Standard
	Cd	114	596.2	8.2	**0.1058**	0.009	8.8	ug/L	15	Standard
>	**In**	115	538732.9	1.0				ug/L	515400	Standard
	Sn	118	1510.1	10.0	**0.0684**	0.023	33.5	ug/L	1043	Standard
	Sb	123	258.8	32.4	**0.0376**	0.017	45.6	ug/L	227	Standard
	Ba	135	293.7	18.7	**0.1160**	0.026	22.2	ug/L	31	Standard
	Ce	140	73.3	7.9				ug/L	120	Standard
>	**Tb**	159	804262.2	1.2				ug/L	785817	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	34.7	80.2	**0.0004**	0.003	724.0	ug/L	6	Standard
	Tl	205	16.7	91.7	**-0.0045**	0.002	45.4	ug/L	8	Standard
	Pb	206	336.7	4.0	**0.0179**	0.002	13.4	ug/L	201	Standard
	Pb	207	284.7	0.9	**0.0115**	0.001	5.4	ug/L	177	Standard
	Pb	208	1203.0	4.0	**0.0139**	0.002	15.2	ug/L	722	Standard
	U	238	23.7	85.0	**0.0007**	0.003	365.8	ug/L	8	Standard
>	**Bi**	209	473887.9	0.7				ug/L	444563	Standard

Sample ID: L1606084006
Report Date/Time: Tuesday, July 05, 2016 15:30:30
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	95.0	39.7	**0.0892**	0.049	55.4	mg/L	38	Standard
K	39	23.3	53.9	**-0.0238**	0.057	240.4	mg/L	33	Standard
Ca	43	23.3	53.9	**-2.1117**	2.005	94.9	mg/L	48	Standard
Fe	54	145.8	10.7	**0.0042**	0.012	280.5	mg/L	131	Standard
Fe	57	218.3	14.9	**0.2133**	0.097	45.4	mg/L	153	Standard
> **Sc-1**	45	25968.9	1.1				mg/L	26715	Standard
Cl	35	135407.1	0.9				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1873.4	7.1				ug/L	1897	Standard
P	31	21912.5	0.9				ug/L	18491	Standard
S	34	4872.5	4.0				ug/L	3734	Standard
Sr	88	70.0	32.7				ug/L	47	Standard
C	12	116.7	17.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	216.7	31.4				mg/L	23	Standard
Dy	164	6.2	180.0				mg/L	23	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	2120.2	35.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.289	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.454	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606084006
Report Date/Time: Tuesday, July 05, 2016 15:30:30
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.527
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.596
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606129101
Sample Date/Time: Tuesday, July 05, 2016 15:31:25
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63646.8	2.2				ug/L	59517	Standard
	Be	9	31.7	92.5	**0.0033**	0.032	967.2	ug/L	10	Standard
	Al	27	53765.7	18.2	**0.3187**	0.066	20.7	ug/L	1872	Standard
	Sc	45	23524.9	1.7				ug/L	26715	Standard
	Ti	47	234.3	6.9	**0.7824**	0.083	10.6	ug/L	54	Standard
	V	51	1949.8	10.5	**0.1024**	0.026	25.5	ug/L	1419	Standard
	Cr	52	10261.1	75.5	**0.5220**	1.113	213.3	ug/L	7059	Standard
	Cr	53	1066.7	79.4	**0.8346**	0.975	116.8	ug/L	398	Standard
	Mn	55	53661.3	8.2	**8.7139**	0.625	7.2	ug/L	824	Standard
	Co	59	439.0	33.5	**0.0422**	0.022	51.5	ug/L	167	Standard
	Ni	60	538.0	10.7	**0.1001**	0.029	29.0	ug/L	391	Standard
	Cu	65	15148.9	1.4	**8.3430**	0.087	1.0	ug/L	147	Standard
	Zn	66	13656.5	1.9	**12.7517**	0.091	0.7	ug/L	184	Standard
>	**Ge**	72	405337.8	1.2				ug/L	422998	Standard
	As	75	337.3	12.8	**0.3616**	0.036	10.0	ug/L	-58	Standard
	Se	82	29.0	4.3	**0.0519**	0.011	20.6	ug/L	15	Standard
	Se-1	77	61.0	7.5	**0.1717**	0.073	42.5	ug/L	58	Standard
>	**Ga**	71	693.3	3.0				mg/L	113	Standard
	Rb	85	351.7	7.0				ug/L	27	Standard
	Y	89	343360.2	2.5				ug/L	383780	Standard
>	**Rh**	103	25.0	20.0				ug/L	18	Standard
	Mo	98	611.6	24.4	**0.2333**	0.057	24.2	ug/L	31	Standard
	Ag	107	355.0	24.2	**0.0435**	0.013	29.3	ug/L	84	Standard
	Cd	111	43.6	63.8	**0.0173**	0.013	77.4	mg/L	4	Standard
	Cd	114	117.6	87.5	**0.0193**	0.021	106.7	ug/L	15	Standard
>	**In**	115	488694.8	1.2				ug/L	515400	Standard
	Sn	118	585.0	18.2	**-0.0745**	0.018	24.5	ug/L	1043	Standard
	Sb	123	331.5	27.2	**0.0599**	0.020	33.1	ug/L	227	Standard
	Ba	135	12675.3	3.7	**6.6286**	0.314	4.7	ug/L	31	Standard
	Ce	140	686.7	53.3				ug/L	120	Standard
>	**Tb**	159	741586.5	0.0				ug/L	785817	Standard
	Ho	165	18.3	103.3				ug/L	7	Standard
	Tl	203	137.7	85.0	**0.0135**	0.014	107.5	ug/L	6	Standard
	Tl	205	135.0	128.3	**0.0124**	0.025	198.2	ug/L	8	Standard
	Pb	206	1043.7	6.2	**0.1627**	0.013	8.1	ug/L	201	Standard
	Pb	207	867.0	9.5	**0.1435**	0.019	13.1	ug/L	177	Standard
	Pb	208	3832.5	8.9	**0.1619**	0.019	11.5	ug/L	722	Standard
	U	238	1146.4	14.2	**0.1631**	0.023	14.2	ug/L	8	Standard
>	**Bi**	209	448001.8	0.3				ug/L	444563	Standard

Sample ID: L1606129101
Report Date/Time: Tuesday, July 05, 2016 15:33:42
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**22.1470**	38.351	173.2	mg/L	0	Standard
Mg	24	111.7	116.1	**0.1252**	0.185	147.5	mg/L	38	Standard
K	39	11.7	24.7	**-0.0711**	0.015	21.6	mg/L	33	Standard
Ca	43	41.7	48.5	**1.5351**	3.480	226.7	mg/L	48	Standard
Fe	54	160.5	34.6	**0.0310**	0.053	172.5	mg/L	131	Standard
Fe	57	231.7	10.6	**0.3333**	0.088	26.3	mg/L	153	Standard
> **Sc-1**	45	23524.9	1.7				mg/L	26715	Standard
Cl	35	122569.1	0.7				ug/L	102686	Standard
Kr	83	2.7	142.0				ug/L	2	Standard
Br	81	1326.7	5.8				ug/L	1897	Standard
P	31	7213.4	2.6				ug/L	18491	Standard
S	34	4440.7	3.2				ug/L	3734	Standard
Sr	88	78.3	20.5				ug/L	47	Standard
C	12	83.3	61.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	2456.9	31.3				mg/L	23	Standard
Dy	164	58.4	59.1				mg/L	23	Standard
Ho-1	165	18.3	103.3				mg/L	7	Standard
Er	166	33.3	17.3				mg/L	13	Standard
I	127	28306.4	1.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.939	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.825	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129101
Report Date/Time: Tuesday, July 05, 2016 15:33:42
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.819
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.774
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129101
Report Date/Time: Tuesday, July 05, 2016 15:33:42
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606153304
Sample Date/Time: Tuesday, July 05, 2016 15:34:36
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68338.8	1.8				ug/L	59517	Standard
	Be	9	16.7	45.8	**-0.0143**	0.008	55.4	ug/L	10	Standard
	Al	27	13387.6	4.3	**0.0642**	0.002	3.8	ug/L	1872	Standard
	Sc	45	26509.8	1.2				ug/L	26715	Standard
	Ti	47	30.0	3.3	**-0.1250**	0.003	2.1	ug/L	54	Standard
	V	51	1501.4	7.0	**0.0215**	0.016	76.2	ug/L	1419	Standard
	Cr	52	8561.1	5.0	**0.1856**	0.045	24.1	ug/L	7059	Standard
	Cr	53	915.0	8.8	**0.5828**	0.088	15.0	ug/L	398	Standard
	Mn	55	1949.1	22.8	**0.1657**	0.064	38.5	ug/L	824	Standard
	Co	59	193.0	13.3	**0.0023**	0.003	148.5	ug/L	167	Standard
	Ni	60	1444.4	2.9	**0.5451**	0.015	2.7	ug/L	391	Standard
	Cu	65	371.0	2.8	**0.1117**	0.006	5.8	ug/L	147	Standard
	Zn	66	1649.1	1.1	**1.2825**	0.023	1.8	ug/L	184	Standard
>	**Ge**	72	438377.0	1.3				ug/L	422998	Standard
	As	75	-56.5	47.5	**0.0034**	0.023	673.7	ug/L	-58	Standard
	Se	82	15.5	15.8	**-0.0783**	0.020	25.2	ug/L	15	Standard
	Se-1	77	63.0	11.4	**0.1340**	0.099	74.2	ug/L	58	Standard
>	**Ga**	71	81.7	24.7				mg/L	113	Standard
	Rb	85	88.3	27.9				ug/L	27	Standard
	Y	89	382120.6	1.2				ug/L	383780	Standard
>	**Rh**	103	26.7	47.2				ug/L	18	Standard
	Mo	98	81.3	27.8	**0.0205**	0.008	40.0	ug/L	31	Standard
	Ag	107	89.0	11.8	**0.0007**	0.001	206.9	ug/L	84	Standard
	Cd	111	7.5	28.1	**-0.0008**	0.001	123.7	mg/L	4	Standard
	Cd	114	62.5	54.3	**0.0071**	0.006	89.4	ug/L	15	Standard
>	**In**	115	536240.2	0.5				ug/L	515400	Standard
	Sn	118	7298.4	3.2	**1.0305**	0.033	3.2	ug/L	1043	Standard
	Sb	123	205.7	19.4	**0.0269**	0.009	32.0	ug/L	227	Standard
	Ba	135	278.0	9.1	**0.1092**	0.011	10.5	ug/L	31	Standard
	Ce	140	103.3	19.6				ug/L	120	Standard
>	**Tb**	159	799407.5	1.8				ug/L	785817	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	20.0	13.2	**-0.0013**	0.000	22.2	ug/L	6	Standard
	Tl	205	20.0	90.1	**-0.0041**	0.002	58.3	ug/L	8	Standard
	Pb	206	285.3	5.7	**0.0086**	0.004	44.0	ug/L	201	Standard
	Pb	207	251.0	5.0	**0.0048**	0.002	42.1	ug/L	177	Standard
	Pb	208	1059.3	2.8	**0.0067**	0.002	25.0	ug/L	722	Standard
	U	238	33.3	25.9	**0.0021**	0.001	58.5	ug/L	8	Standard
>	**Bi**	209	471120.6	1.4				ug/L	444563	Standard

Sample ID: L1606153304
Report Date/Time: Tuesday, July 05, 2016 15:36:53
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**19.6052**	33.949	173.2	mg/L	0	Standard
Mg	24	66.7	41.3	**0.0505**	0.034	67.3	mg/L	38	Standard
K	39	15.0	66.7	**-0.0630**	0.044	69.8	mg/L	33	Standard
Ca	43	16.7	45.8	**-3.2400**	1.191	36.8	mg/L	48	Standard
Fe	54	124.0	37.0	**-0.0161**	0.037	227.1	mg/L	131	Standard
Fe	57	211.7	21.9	**0.1796**	0.150	83.4	mg/L	153	Standard
> **Sc-1**	45	26509.8	1.2				mg/L	26715	Standard
Cl	35	137357.1	0.3				ug/L	102686	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1750.1	2.1				ug/L	1897	Standard
P	31	22443.3	1.3				ug/L	18491	Standard
S	34	4854.1	1.4				ug/L	3734	Standard
Sr	88	71.7	24.5				ug/L	47	Standard
C	12	83.3	70.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	353.3	41.2				mg/L	23	Standard
Dy	164	9.4	177.7				mg/L	23	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	8485.7	3.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.823	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.636	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153304
Report Date/Time: Tuesday, July 05, 2016 15:36:53
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.044
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.974
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606153305
Sample Date/Time: Tuesday, July 05, 2016 15:37:48
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67992.2	1.8				ug/L	59517	Standard
	Be	9	23.3	12.4	**-0.0076**	0.003	38.2	ug/L	10	Standard
	Al	27	13816.3	0.4	**0.0671**	0.001	1.8	ug/L	1872	Standard
	Sc	45	25523.1	1.7				ug/L	26715	Standard
	Ti	47	41.7	6.0	**-0.0740**	0.010	13.0	ug/L	54	Standard
	V	51	2533.9	9.6	**0.1670**	0.034	20.3	ug/L	1419	Standard
	Cr	52	21672.5	1.2	**2.0303**	0.043	2.1	ug/L	7059	Standard
	Cr	53	2710.2	5.1	**2.5964**	0.167	6.4	ug/L	398	Standard
	Mn	55	9948.3	0.6	**1.4195**	0.017	1.2	ug/L	824	Standard
	Co	59	565.7	7.5	**0.0570**	0.007	11.4	ug/L	167	Standard
	Ni	60	801.7	8.2	**0.2227**	0.032	14.5	ug/L	391	Standard
	Cu	65	474.0	5.3	**0.1700**	0.012	7.0	ug/L	147	Standard
	Zn	66	1631.1	7.0	**1.2979**	0.099	7.6	ug/L	184	Standard
>	**Ge**	72	428907.1	0.5				ug/L	422998	Standard
	As	75	-61.8	29.3	**-0.0020**	0.016	777.3	ug/L	-58	Standard
	Se	82	14.7	57.8	**-0.0823**	0.072	87.6	ug/L	15	Standard
	Se-1	77	60.3	4.2	**0.1162**	0.030	25.5	ug/L	58	Standard
>	**Ga**	71	110.0	25.3				mg/L	113	Standard
	Rb	85	223.3	8.5				ug/L	27	Standard
	Y	89	374882.7	2.3				ug/L	383780	Standard
>	**Rh**	103	20.0	0.0				ug/L	18	Standard
	Mo	98	2832.6	0.8	**1.0442**	0.014	1.3	ug/L	31	Standard
	Ag	107	68.7	18.8	**-0.0019**	0.002	101.5	ug/L	84	Standard
	Cd	111	2.9	213.3	**-0.0028**	0.003	104.2	mg/L	4	Standard
	Cd	114	29.8	49.4	**0.0011**	0.003	249.1	ug/L	15	Standard
>	**In**	115	521375.8	0.5				ug/L	515400	Standard
	Sn	118	815.0	13.4	**-0.0418**	0.019	45.5	ug/L	1043	Standard
	Sb	123	182.8	19.5	**0.0232**	0.008	34.0	ug/L	227	Standard
	Ba	135	402.7	3.8	**0.1743**	0.008	4.5	ug/L	31	Standard
	Ce	140	413.3	11.2				ug/L	120	Standard
>	**Tb**	159	790305.3	1.5				ug/L	785817	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	14.0	51.5	**-0.0019**	0.001	43.7	ug/L	6	Standard
	Tl	205	11.7	49.5	**-0.0052**	0.001	15.3	ug/L	8	Standard
	Pb	206	310.3	6.5	**0.0139**	0.004	30.2	ug/L	201	Standard
	Pb	207	273.0	2.6	**0.0100**	0.002	18.6	ug/L	177	Standard
	Pb	208	1141.0	3.2	**0.0116**	0.002	14.2	ug/L	722	Standard
	U	238	14.3	33.0	**-0.0005**	0.001	133.0	ug/L	8	Standard
>	**Bi**	209	466384.0	0.6				ug/L	444563	Standard

Sample ID: L1606153305
Report Date/Time: Tuesday, July 05, 2016 15:40:05
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**20.0658**	34.746	173.2	mg/L	0	Standard
Mg	24	95.0	22.9	**0.0910**	0.026	29.0	mg/L	38	Standard
K	39	15.0	100.0	**-0.0608**	0.069	113.6	mg/L	33	Standard
Ca	43	28.3	53.9	**-1.2399**	2.424	195.5	mg/L	48	Standard
Fe	54	256.6	6.1	**0.1001**	0.016	16.3	mg/L	131	Standard
Fe	57	175.0	5.7	**0.0855**	0.031	36.3	mg/L	153	Standard
> **Sc-1**	45	25523.1	1.7				mg/L	26715	Standard
Cl	35	135224.2	1.5				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1630.1	6.5				ug/L	1897	Standard
P	31	20115.0	2.0				ug/L	18491	Standard
S	34	4715.7	4.1				ug/L	3734	Standard
Sr	88	66.7	15.6				ug/L	47	Standard
C	12	106.7	37.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	320.0	9.4				mg/L	23	Standard
Dy	164	9.2	3.0				mg/L	23	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	10665.4	1.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.241	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.397	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153305
Report Date/Time: Tuesday, July 05, 2016 15:40:05
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.160
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.908
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 15:41:00
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66612.8	0.6				ug/L	59517	Standard
	Be	9	47027.9	1.9	**48.2937**	0.785	1.6	ug/L	10	Standard
	Al	27	7224641.6	1.3	**42.4166**	0.805	1.9	ug/L	1872	Standard
	Sc	45	25438.0	1.1				ug/L	26715	Standard
	Ti	47	22557.1	0.8	**92.8260**	0.965	1.0	ug/L	54	Standard
	V	51	343145.2	0.7	**46.4771**	0.395	0.8	ug/L	1419	Standard
	Cr	52	343399.3	0.6	**46.4071**	0.117	0.3	ug/L	7059	Standard
	Cr	53	43268.4	1.2	**47.3313**	0.706	1.5	ug/L	398	Standard
	Mn	55	292389.5	1.1	**45.1968**	0.164	0.4	ug/L	824	Standard
	Co	59	332481.0	1.2	**47.9792**	0.357	0.7	ug/L	167	Standard
	Ni	60	89376.5	1.1	**46.6712**	0.595	1.3	ug/L	391	Standard
	Cu	65	90279.8	0.5	**47.1054**	0.468	1.0	ug/L	147	Standard
	Zn	66	56672.8	2.1	**50.2127**	1.032	2.1	ug/L	184	Standard
>	**Ge**	72	431174.9	0.7				ug/L	422998	Standard
	As	75	54582.7	1.1	**47.2491**	0.210	0.4	ug/L	-58	Standard
	Se	82	5648.3	1.5	**47.0559**	0.531	1.1	ug/L	15	Standard
	Se-1	77	3791.5	1.9	**48.3787**	0.566	1.2	ug/L	58	Standard
>	**Ga**	71	81.7	33.7				mg/L	113	Standard
	Rb	85	771.7	8.3				ug/L	27	Standard
	Y	89	373080.9	0.8				ug/L	383780	Standard
>	**Rh**	103	35.0	24.7				ug/L	18	Standard
	Mo	98	256854.6	1.1	**96.3048**	0.483	0.5	ug/L	31	Standard
	Ag	107	320474.0	1.1	**47.4109**	1.019	2.1	ug/L	84	Standard
	Cd	111	100999.2	0.4	**47.2807**	0.448	0.9	mg/L	4	Standard
	Cd	114	248889.9	0.7	**48.0148**	0.518	1.1	ug/L	15	Standard
>	**In**	115	516921.0	1.1				ug/L	515400	Standard
	Sn	118	279374.0	1.0	**47.9286**	0.272	0.6	ug/L	1043	Standard
	Sb	123	226360.5	0.9	**49.2887**	0.151	0.3	ug/L	227	Standard
	Ba	135	93112.2	0.4	**46.1644**	0.641	1.4	ug/L	31	Standard
	Ce	140	76.7	44.4				ug/L	120	Standard
>	**Tb**	159	786336.0	0.8				ug/L	785817	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	391848.1	0.5	**47.7503**	0.180	0.4	ug/L	6	Standard
	Tl	205	348079.7	0.7	**48.6909**	0.352	0.7	ug/L	8	Standard
	Pb	206	248393.6	0.5	**48.6247**	0.453	0.9	ug/L	201	Standard
	Pb	207	224648.2	0.4	**48.6429**	0.648	1.3	ug/L	177	Standard
	Pb	208	924846.1	0.3	**49.8525**	0.347	0.7	ug/L	722	Standard
	U	238	346936.1	0.2	**49.2388**	0.382	0.8	ug/L	8	Standard
>	**Bi**	209	456136.9	0.9				ug/L	444563	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 15:43:17
Page 1

Approved: July 06, 2016

Na	23	3.3	86.6	**40.7875**	35.320	86.6	mg/L	0	Standard
Mg	24	3838.8	1.5	**5.0299**	0.116	2.3	mg/L	38	Standard
K	39	721.7	0.8	**3.1887**	0.017	0.5	mg/L	33	Standard
Ca	43	56.7	39.8	**3.5037**	3.811	108.8	mg/L	48	Standard
Fe	54	5972.1	4.4	**4.9384**	0.195	3.9	mg/L	131	Standard
Fe	57	1740.1	6.5	**5.1809**	0.376	7.3	mg/L	153	Standard
Sc-1	45	25438.0	1.1				mg/L	26715	Standard
Cl	35	131973.0	1.7				ug/L	102686	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1536.7	8.4				ug/L	1897	Standard
P	31	23600.0	3.7				ug/L	18491	Standard
S	34	4877.5	0.6				ug/L	3734	Standard
Sr	88	75.0	52.1				ug/L	47	Standard
C	12	76.7	58.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	216.7	29.7				mg/L	23	Standard
Dy	164	16.0	65.1				mg/L	23	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	13.3	173.2				mg/L	13	Standard
I	127	7593.6	1.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.587		
Al	27	84.833		
Sc	45			
Ti	47	92.826		
V	51	92.954		
Cr	52	92.814		
Cr	53			
Mn	55	90.394		
Co	59	95.958		
Ni	60	93.342		
Cu	65	94.211		
Zn	66	100.425		
Ge	72		101.933	
As	75	94.498		
Se	82	94.112		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 15:43:17
Page 2

Approved: July 06, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	96.305		
Ag	107	94.822		
Cd	111	94.561		
Cd	114			
> In	115			100.295
Sn	118	95.857		
Sb	123	98.577		
Ba	135	92.329		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.501		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.705		
U	238	98.478		
> Bi	209			102.603
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 15:43:17
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 15:44:11
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66241.2	1.7				ug/L	59517	Standard
	Be	9	16.7	45.8	**-0.0139**	0.008	56.7	ug/L	10	Standard
	Al	27	2862.0	33.8	**0.0045**	0.006	132.7	ug/L	1872	Standard
	Sc	45	25524.8	0.9				ug/L	26715	Standard
	Ti	47	30.0	24.0	**-0.1211**	0.030	24.4	ug/L	54	Standard
	V	51	1178.3	2.6	**-0.0166**	0.006	34.9	ug/L	1419	Standard
	Cr	52	5714.4	2.7	**-0.1751**	0.014	7.8	ug/L	7059	Standard
	Cr	53	581.7	4.4	**0.2417**	0.027	11.0	ug/L	398	Standard
	Mn	55	1101.7	4.5	**0.0426**	0.009	20.8	ug/L	824	Standard
	Co	59	236.7	6.2	**0.0096**	0.002	21.3	ug/L	167	Standard
	Ni	60	318.3	8.3	**-0.0302**	0.016	52.4	ug/L	391	Standard
	Cu	65	160.0	11.0	**0.0059**	0.009	148.5	ug/L	147	Standard
	Zn	66	532.0	6.3	**0.3210**	0.029	9.1	ug/L	184	Standard
>	**Ge**	72	424434.4	1.0				ug/L	422998	Standard
	As	75	-74.8	24.5	**-0.0142**	0.017	118.8	ug/L	-58	Standard
	Se	82	9.6	69.2	**-0.1245**	0.056	45.1	ug/L	15	Standard
	Se-1	77	54.3	15.3	**0.0461**	0.112	243.8	ug/L	58	Standard
>	**Ga**	71	76.7	32.2				mg/L	113	Standard
	Rb	85	20.0	90.1				ug/L	27	Standard
	Y	89	366092.8	2.0				ug/L	383780	Standard
>	**Rh**	103	21.7	70.5				ug/L	18	Standard
	Mo	98	225.0	12.4	**0.0755**	0.010	13.1	ug/L	31	Standard
	Ag	107	140.3	21.2	**0.0087**	0.004	46.8	ug/L	84	Standard
	Cd	111	22.3	29.9	**0.0063**	0.003	47.6	mg/L	4	Standard
	Cd	114	37.8	50.4	**0.0027**	0.004	134.7	ug/L	15	Standard
>	**In**	115	516750.7	1.4				ug/L	515400	Standard
	Sn	118	1075.0	19.1	**0.0045**	0.037	826.3	ug/L	1043	Standard
	Sb	123	779.4	29.5	**0.1538**	0.051	33.4	ug/L	227	Standard
	Ba	135	49.7	13.4	**0.0009**	0.003	335.6	ug/L	31	Standard
	Ce	140	25.0	52.9				ug/L	120	Standard
>	**Tb**	159	780351.8	1.9				ug/L	785817	Standard
	Ho	165	15.0	145.3				ug/L	7	Standard
	Tl	203	118.3	22.8	**0.0107**	0.003	29.6	ug/L	6	Standard
	Tl	205	88.3	19.9	**0.0055**	0.003	46.5	ug/L	8	Standard
	Pb	206	302.7	10.8	**0.0132**	0.006	48.9	ug/L	201	Standard
	Pb	207	248.0	10.9	**0.0053**	0.005	103.1	ug/L	177	Standard
	Pb	208	1038.0	6.8	**0.0069**	0.003	49.2	ug/L	722	Standard
	U	238	74.3	14.1	**0.0080**	0.001	17.5	ug/L	8	Standard
>	**Bi**	209	460561.8	1.0				ug/L	444563	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 15:46:28
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	28.3	27.0	**0.0037**	0.010	281.1	mg/L	38	Standard
K	39	18.3	103.3	**-0.0452**	0.087	192.7	mg/L	33	Standard
Ca	43	20.0	66.1	**-2.5745**	2.208	85.8	mg/L	48	Standard
Fe	54	127.5	15.7	**-0.0091**	0.016	177.1	mg/L	131	Standard
Fe	57	208.3	16.0	**0.1930**	0.102	52.6	mg/L	153	Standard
> **Sc-1**	45	25524.8	0.9				mg/L	26715	Standard
Cl	35	132498.8	0.7				ug/L	102686	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1603.4	10.0				ug/L	1897	Standard
P	31	22954.1	3.7				ug/L	18491	Standard
S	34	5014.2	3.3				ug/L	3734	Standard
Sr	88	90.0	14.7				ug/L	47	Standard
C	12	100.0	26.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	230.0	37.1				mg/L	23	Standard
Dy	164	-0.5	100.0				mg/L	23	Standard
Ho-1	165	15.0	145.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	5571.0	2.6				mg/L	12398	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.340	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 15:46:28
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.262
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.599
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 15:46:28
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: PBW 7 WG573548-02
Sample Date/Time: Tuesday, July 05, 2016 15:49:36
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66520.7	1.8				ug/L	59517	Standard
	Be	9	35.0	37.8	**0.0051**	0.014	282.2	ug/L	10	Standard
	Al	27	83491.2	3.1	**0.4785**	0.007	1.4	ug/L	1872	Standard
	Sc	45	25349.5	4.3				ug/L	26715	Standard
	Ti	47	40.7	18.6	**-0.0785**	0.030	38.7	ug/L	54	Standard
	V	51	1518.1	5.9	**0.0280**	0.016	58.4	ug/L	1419	Standard
	Cr	52	8198.9	0.7	**0.1598**	0.031	19.2	ug/L	7059	Standard
	Cr	53	878.4	8.5	**0.5622**	0.075	13.4	ug/L	398	Standard
	Mn	55	6629.1	1.1	**0.9008**	0.029	3.2	ug/L	824	Standard
	Co	59	333.3	4.7	**0.0233**	0.003	13.8	ug/L	167	Standard
	Ni	60	463.0	4.0	**0.0438**	0.005	11.7	ug/L	391	Standard
	Cu	65	222.3	11.3	**0.0375**	0.012	32.4	ug/L	147	Standard
	Zn	66	1679.4	1.1	**1.3390**	0.017	1.2	ug/L	184	Standard
>	**Ge**	72	429615.7	2.1				ug/L	422998	Standard
	As	75	75.3	27.3	**0.1171**	0.018	15.7	ug/L	-58	Standard
	Se	82	62.8	4.4	**0.3213**	0.020	6.3	ug/L	15	Standard
	Se-1	77	62.3	20.6	**0.1414**	0.170	120.1	ug/L	58	Standard
>	**Ga**	71	110.0	7.9				mg/L	113	Standard
	Rb	85	413.3	3.5				ug/L	27	Standard
	Y	89	371011.7	3.0				ug/L	383780	Standard
>	**Rh**	103	18.3	15.7				ug/L	18	Standard
	Mo	98	91.8	10.0	**0.0255**	0.003	12.8	ug/L	31	Standard
	Ag	107	1551.1	3.1	**0.2173**	0.003	1.5	ug/L	84	Standard
	Cd	111	16.8	23.7	**0.0038**	0.002	52.5	mg/L	4	Standard
	Cd	114	43.3	33.7	**0.0038**	0.003	72.1	ug/L	15	Standard
>	**In**	115	517301.5	1.9				ug/L	515400	Standard
	Sn	118	1058.4	22.3	**0.0017**	0.044	2609.6	ug/L	1043	Standard
	Sb	123	452.9	29.0	**0.0826**	0.030	36.6	ug/L	227	Standard
	Ba	135	919.7	1.1	**0.4322**	0.006	1.3	ug/L	31	Standard
	Ce	140	1653.4	5.7				ug/L	120	Standard
>	**Tb**	159	778038.6	1.4				ug/L	785817	Standard
	Ho	165	26.7	71.0				ug/L	7	Standard
	Tl	203	82.3	7.9	**0.0063**	0.001	11.8	ug/L	6	Standard
	Tl	205	70.0	25.8	**0.0030**	0.003	91.2	ug/L	8	Standard
	Pb	206	349.0	7.1	**0.0222**	0.004	16.3	ug/L	201	Standard
	Pb	207	297.3	4.5	**0.0160**	0.002	10.6	ug/L	177	Standard
	Pb	208	1239.0	4.7	**0.0177**	0.003	15.2	ug/L	722	Standard
	U	238	50.0	3.5	**0.0046**	0.000	3.9	ug/L	8	Standard
>	**Bi**	209	460253.9	1.9				ug/L	444563	Standard

Sample ID: PBW 7 WG573548-02
Report Date/Time: Tuesday, July 05, 2016 15:51:53
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**21.6141**	37.428	173.2	mg/L	0	Standard
Mg	24	95.0	19.0	**0.0926**	0.027	29.6	mg/L	38	Standard
K	39	36.7	55.1	**0.0427**	0.103	240.5	mg/L	33	Standard
Ca	43	21.7	66.6	**-2.3492**	2.304	98.1	mg/L	48	Standard
Fe	54	199.1	26.1	**0.0518**	0.038	74.1	mg/L	131	Standard
Fe	57	246.7	12.4	**0.3218**	0.069	21.4	mg/L	153	Standard
> **Sc-1**	45	25349.5	4.3				mg/L	26715	Standard
Cl	35	134121.8	1.5				ug/L	102686	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	12398.4	1.8				ug/L	1897	Standard
P	31	21764.0	1.9				ug/L	18491	Standard
S	34	4890.8	6.1				ug/L	3734	Standard
Sr	88	91.7	13.7				ug/L	47	Standard
C	12	113.3	39.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	316.7	49.1				mg/L	23	Standard
Dy	164	48.9	39.4				mg/L	23	Standard
Ho-1	165	26.7	71.0				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	1676.8	3.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.768	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.565	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 7 WG573548-02
Report Date/Time: Tuesday, July 05, 2016 15:51:53
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.369
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.530
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 7 WG573548-02
Report Date/Time: Tuesday, July 05, 2016 15:51:53
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: LCSW 7 WG573548-03
Sample Date/Time: Tuesday, July 05, 2016 15:52:47
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66939.3	3.6				ug/L	59517	Standard
	Be	9	47303.7	1.2	**48.3743**	1.434	3.0	ug/L	10	Standard
	Al	27	94049.3	0.5	**0.5377**	0.021	4.0	ug/L	1872	Standard
	Sc	45	25830.3	3.0				ug/L	26715	Standard
	Ti	47	43.0	14.0	**-0.0737**	0.023	30.7	ug/L	54	Standard
	V	51	334038.7	0.8	**44.1681**	0.214	0.5	ug/L	1419	Standard
	Cr	52	339444.4	0.8	**44.7579**	0.242	0.5	ug/L	7059	Standard
	Cr	53	41866.1	1.5	**44.6918**	0.280	0.6	ug/L	398	Standard
	Mn	55	301848.9	1.0	**45.5609**	0.065	0.1	ug/L	824	Standard
	Co	59	325072.3	0.9	**45.8043**	0.279	0.6	ug/L	167	Standard
	Ni	60	88336.8	1.2	**45.0331**	0.390	0.9	ug/L	391	Standard
	Cu	65	89193.5	1.7	**45.4348**	0.387	0.9	ug/L	147	Standard
	Zn	66	55448.6	0.6	**47.9634**	0.234	0.5	ug/L	184	Standard
>	Ge	72	441584.5	1.0				ug/L	422998	Standard
	As	75	51258.2	0.9	**43.3308**	0.179	0.4	ug/L	-58	Standard
	Se	82	5509.4	0.5	**44.8099**	0.412	0.9	ug/L	15	Standard
	Se-1	77	3718.5	1.1	**46.3036**	0.442	1.0	ug/L	58	Standard
>	Ga	71	326.7	20.7				mg/L	113	Standard
	Rb	85	1798.4	1.0				ug/L	27	Standard
	Y	89	372589.6	1.6				ug/L	383780	Standard
>	Rh	103	30.0	28.9				ug/L	18	Standard
	Mo	98	247.5	18.2	**0.0817**	0.017	20.8	ug/L	31	Standard
	Ag	107	316350.4	1.1	**45.6551**	0.065	0.1	ug/L	84	Standard
	Cd	111	98239.1	0.9	**44.8706**	0.620	1.4	mg/L	4	Standard
	Cd	114	238884.8	1.7	**44.9622**	0.690	1.5	ug/L	15	Standard
>	In	115	529809.0	1.2				ug/L	515400	Standard
	Sn	118	1033.4	7.9	**-0.0073**	0.015	205.1	ug/L	1043	Standard
	Sb	123	212668.3	2.9	**45.1746**	0.929	2.1	ug/L	227	Standard
	Ba	135	91872.7	0.6	**44.4394**	0.422	0.9	ug/L	31	Standard
	Ce	140	3028.6	4.2				ug/L	120	Standard
>	Tb	159	801904.5	0.8				ug/L	785817	Standard
	Ho	165	90.0	9.6				ug/L	7	Standard
	Tl	203	385483.2	0.5	**45.5864**	0.643	1.4	ug/L	6	Standard
	Tl	205	339301.2	1.8	**46.0624**	1.204	2.6	ug/L	8	Standard
	Pb	206	248831.3	0.5	**47.2664**	0.351	0.7	ug/L	201	Standard
	Pb	207	217162.3	0.8	**45.6250**	0.503	1.1	ug/L	177	Standard
	Pb	208	916373.1	0.8	**47.9305**	0.352	0.7	ug/L	722	Standard
	U	238	334714.4	0.2	**46.0987**	0.553	1.2	ug/L	8	Standard
>	Bi	209	470065.0	1.2				ug/L	444563	Standard

Sample ID: LCSW 7 WG573548-03
Report Date/Time: Tuesday, July 05, 2016 15:55:04
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	50.0	10.0	**0.0312**	0.005	16.0	mg/L	38	Standard
K	39	21.7	96.1	**-0.0329**	0.090	273.5	mg/L	33	Standard
Ca	43	30.0	28.9	**-1.0058**	1.366	135.9	mg/L	48	Standard
Fe	54	476.7	12.4	**0.2807**	0.046	16.5	mg/L	131	Standard
Fe	57	286.7	8.6	**0.4380**	0.096	22.0	mg/L	153	Standard
> Sc-1	45	25830.3	3.0				mg/L	26715	Standard
Cl	35	132039.6	1.5				ug/L	102686	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1736.8	5.3				ug/L	1897	Standard
P	31	22071.1	2.5				ug/L	18491	Standard
S	34	4849.1	2.6				ug/L	3734	Standard
Sr	88	56.7	10.2				ug/L	47	Standard
C	12	96.7	11.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	143.3	26.4				mg/L	23	Standard
Dy	164	148.4	29.4				mg/L	23	Standard
Ho-1	165	90.0	9.6				mg/L	7	Standard
Er	166	103.3	29.6				mg/L	13	Standard
I	127	1288.4	3.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.471	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.394	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 7 WG573548-03
Report Date/Time: Tuesday, July 05, 2016 15:55:04
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.796
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.736
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 7 WG573548-03
Report Date/Time: Tuesday, July 05, 2016 15:55:04
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606098623 WG573548-01
Sample Date/Time: Tuesday, July 05, 2016 15:55:59
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64507.0	1.2				ug/L	59517	Standard
	Be	9	130.0	33.5	**0.1065**	0.045	41.8	ug/L	10	Standard
	Al	27	46753398.1	1.5	**283.5010**	1.990	0.7	ug/L	1872	Standard
	Sc	45	22501.7	3.6				ug/L	26715	Standard
	Ti	47	145.0	5.9	**0.4122**	0.025	6.0	ug/L	54	Standard
	V	51	2185.8	4.1	**0.1481**	0.012	8.2	ug/L	1419	Standard
	Cr	52	9841.9	1.0	**0.5214**	0.050	9.5	ug/L	7059	Standard
	Cr	53	2008.5	6.8	**2.0356**	0.228	11.2	ug/L	398	Standard
	Mn	55	1168222.5	0.9	**199.5253**	4.799	2.4	ug/L	824	Standard
	Co	59	1797.4	1.6	**0.2610**	0.006	2.4	ug/L	167	Standard
	Ni	60	5305.6	3.5	**2.8679**	0.145	5.1	ug/L	391	Standard
	Cu	65	18589.7	0.9	**10.6304**	0.172	1.6	ug/L	147	Standard
	Zn	66	6211.3	1.6	**5.9256**	0.084	1.4	ug/L	184	Standard
>	**Ge**	72	391261.0	2.5				ug/L	422998	Standard
	As	75	663.9	7.9	**0.6853**	0.065	9.4	ug/L	-58	Standard
	Se	82	380.5	2.6	**3.3056**	0.175	5.3	ug/L	15	Standard
	Se-1	77	195.3	7.3	**2.1205**	0.269	12.7	ug/L	58	Standard
>	**Ga**	71	96.7	10.8				mg/L	113	Standard
	Rb	85	4460.7	3.6				ug/L	27	Standard
	Y	89	337387.4	1.7				ug/L	383780	Standard
>	**Rh**	103	313.3	9.6				ug/L	18	Standard
	Mo	98	932.7	3.1	**0.3798**	0.008	2.2	ug/L	31	Standard
	Ag	107	151.3	12.4	**0.0129**	0.003	25.3	ug/L	84	Standard
	Cd	111	75.7	7.3	**0.0353**	0.003	9.4	mg/L	4	Standard
	Cd	114	208.2	17.4	**0.0401**	0.008	20.3	ug/L	15	Standard
>	**In**	115	465057.5	1.3				ug/L	515400	Standard
	Sn	118	1186.7	1.4	**0.0462**	0.005	10.7	ug/L	1043	Standard
	Sb	123	2824.5	30.0	**0.6673**	0.205	30.8	ug/L	227	Standard
	Ba	135	19611.7	0.2	**10.7896**	0.131	1.2	ug/L	31	Standard
	Ce	140	1303.4	1.5				ug/L	120	Standard
>	**Tb**	159	715621.9	1.4				ug/L	785817	Standard
	Ho	165	60.0	44.1				ug/L	7	Standard
	Tl	203	189.7	9.3	**0.0223**	0.002	10.3	ug/L	6	Standard
	Tl	205	168.3	27.4	**0.0196**	0.007	37.0	ug/L	8	Standard
	Pb	206	558.7	0.5	**0.0773**	0.001	1.6	ug/L	201	Standard
	Pb	207	465.7	1.6	**0.0654**	0.002	3.5	ug/L	177	Standard
	Pb	208	1977.1	3.1	**0.0711**	0.004	5.3	ug/L	722	Standard
	U	238	25920.5	0.4	**4.1254**	0.038	0.9	ug/L	8	Standard
>	**Bi**	209	406538.7	1.2				ug/L	444563	Standard

Sample ID: L1606098623 WG573548-01
Report Date/Time: Tuesday, July 05, 2016 15:58:15
Page 1

Approved: July 06, 2016

Na	23	20.0	0.0	**278.4268**	10.150	3.6	mg/L	0	Standard
Mg	24	22616.9	0.5	**33.7129**	1.105	3.3	mg/L	38	Standard
K	39	421.7	4.2	**2.0625**	0.056	2.7	mg/L	33	Standard
Ca	43	666.7	3.8	**118.8974**	8.912	7.5	mg/L	48	Standard
Fe	54	140.8	16.2	**0.0182**	0.022	120.2	mg/L	131	Standard
Fe	57	908.4	6.8	**2.8572**	0.123	4.3	mg/L	153	Standard
> **Sc-1**	45	22501.7	3.6				mg/L	26715	Standard
Cl	35	396084.6	0.9				ug/L	102686	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	55545.0	2.3				ug/L	1897	Standard
P	31	21932.5	3.3				ug/L	18491	Standard
S	34	4782.4	3.3				ug/L	3734	Standard
Sr	88	1156.7	3.6				ug/L	47	Standard
C	12	143.3	24.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	156.7	36.3				mg/L	23	Standard
Dy	164	54.6	44.2				mg/L	23	Standard
Ho-1	165	60.0	44.1				mg/L	7	Standard
Er	166	43.3	74.2				mg/L	13	Standard
I	127	141237.3	7.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.385	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.497	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606098623 WG573548-01
Report Date/Time: Tuesday, July 05, 2016 15:58:15
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	90.232	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	91.447	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606098623 WG573548-01
Report Date/Time: Tuesday, July 05, 2016 15:58:15
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606098635S WG573548-04
Sample Date/Time: Tuesday, July 05, 2016 15:59:10
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66865.7	3.6				ug/L	59517	Standard
	Be	9	47830.4	0.7	**48.9838**	2.121	4.3	ug/L	10	Standard
	Al	27	50036532.6	1.5	**293.0611**	14.824	5.1	ug/L	1872	Standard
	Sc	45	22905.6	0.4				ug/L	26715	Standard
	Ti	47	171.0	12.7	**0.5413**	0.096	17.7	ug/L	54	Standard
	V	51	322182.3	1.0	**48.7713**	0.958	2.0	ug/L	1419	Standard
	Cr	52	321498.9	0.8	**48.6111**	1.781	3.7	ug/L	7059	Standard
	Cr	53	41528.5	2.5	**50.8018**	1.999	3.9	ug/L	398	Standard
	Mn	55	1448076.7	1.1	**250.8257**	9.931	4.0	ug/L	824	Standard
	Co	59	302580.5	0.6	**48.8078**	1.668	3.4	ug/L	167	Standard
	Ni	60	85959.8	0.7	**50.1882**	1.780	3.5	ug/L	391	Standard
	Cu	65	105187.2	0.8	**61.3638**	1.877	3.1	ug/L	147	Standard
	Zn	66	56481.1	0.6	**55.9522**	1.833	3.3	ug/L	184	Standard
>	Ge	72	385990.6	2.8				ug/L	422998	Standard
	As	75	53914.3	0.4	**52.1536**	1.300	2.5	ug/L	-58	Standard
	Se	82	5952.3	1.2	**55.4528**	1.278	2.3	ug/L	15	Standard
	Se-1	77	3836.5	1.9	**54.8004**	1.761	3.2	ug/L	58	Standard
>	Ga	71	111.7	14.4				mg/L	113	Standard
	Rb	85	4890.8	6.3				ug/L	27	Standard
	Y	89	336399.3	5.0				ug/L	383780	Standard
>	Rh	103	290.0	13.7				ug/L	18	Standard
	Mo	98	1148.2	1.1	**0.4717**	0.010	2.0	ug/L	31	Standard
	Ag	107	104643.1	0.3	**17.2764**	0.511	3.0	ug/L	84	Standard
	Cd	111	92696.7	1.3	**48.4627**	1.970	4.1	mg/L	4	Standard
	Cd	114	222801.9	2.2	**48.0113**	2.405	5.0	ug/L	15	Standard
>	In	115	463176.5	2.8				ug/L	515400	Standard
	Sn	118	1443.4	8.7	**0.0961**	0.017	17.5	ug/L	1043	Standard
	Sb	123	218741.2	0.3	**53.1869**	1.624	3.1	ug/L	227	Standard
	Ba	135	108485.0	0.5	**60.0641**	1.936	3.2	ug/L	31	Standard
	Ce	140	1400.1	20.5				ug/L	120	Standard
>	Tb	159	729794.0	2.1				ug/L	785817	Standard
	Ho	165	58.3	27.6				ug/L	7	Standard
	Tl	203	362012.1	0.6	**49.9147**	1.833	3.7	ug/L	6	Standard
	Tl	205	320443.3	0.9	**50.7233**	2.080	4.1	ug/L	8	Standard
	Pb	206	232238.3	0.4	**51.4361**	1.667	3.2	ug/L	201	Standard
	Pb	207	202991.1	0.6	**49.7280**	1.710	3.4	ug/L	177	Standard
	Pb	208	841514.2	0.1	**51.3205**	1.666	3.2	ug/L	722	Standard
	U	238	347348.8	0.7	**55.7704**	1.724	3.1	ug/L	8	Standard
>	Bi	209	403438.1	3.2				ug/L	444563	Standard

Sample ID: L1606098635S WG573548-04
Report Date/Time: Tuesday, July 05, 2016 16:01:27
Page 1

Approved: July 06, 2016

Na	23	11.7	65.5	**159.4947**	104.754	65.7	mg/L	0	Standard
Mg	24	24434.7	2.0	**35.7535**	0.630	1.8	mg/L	38	Standard
K	39	436.7	14.6	**2.0995**	0.316	15.1	mg/L	33	Standard
Ca	43	651.7	8.6	**113.7501**	10.355	9.1	mg/L	48	Standard
Fe	54	184.9	18.7	**0.0572**	0.032	55.7	mg/L	131	Standard
Fe	57	1000.0	10.1	**3.1327**	0.378	12.1	mg/L	153	Standard
> **Sc-1**	45	22905.6	0.4				mg/L	26715	Standard
Cl	35	414775.3	0.4				ug/L	102686	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	57619.4	1.5				ug/L	1897	Standard
P	31	20834.3	0.8				ug/L	18491	Standard
S	34	4487.3	6.5				ug/L	3734	Standard
Sr	88	1356.7	8.5				ug/L	47	Standard
C	12	146.7	32.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	18.2				mg/L	23	Standard
Dy	164	64.0	16.6				mg/L	23	Standard
Ho-1	165	58.3	27.6				mg/L	7	Standard
Er	166	56.7	56.7				mg/L	13	Standard
I	127	153107.0	3.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.348	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.251	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606098635S WG573548-04
Report Date/Time: Tuesday, July 05, 2016 16:01:27
Page 2

Approved: July 06, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	89.867
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	90.749
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606098635S WG573548-04
Report Date/Time: Tuesday, July 05, 2016 16:01:27
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606098637SD WG573548-05
Sample Date/Time: Tuesday, July 05, 2016 16:02:21
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71356.0	1.0				ug/L	59517	Standard
	Be	9	50422.1	1.6	**48.3366**	0.286	0.6	ug/L	10	Standard
	Al	27	51068324.9	1.0	**279.9532**	2.318	0.8	ug/L	1872	Standard
	Sc	45	24501.5	3.0				ug/L	26715	Standard
	Ti	47	154.0	11.8	**0.4168**	0.070	16.8	ug/L	54	Standard
	V	51	329538.6	1.2	**46.6549**	0.245	0.5	ug/L	1419	Standard
	Cr	52	325873.0	0.9	**46.0287**	0.739	1.6	ug/L	7059	Standard
	Cr	53	40652.8	2.7	**46.4722**	1.035	2.2	ug/L	398	Standard
	Mn	55	1473143.8	0.7	**238.6115**	3.538	1.5	ug/L	824	Standard
	Co	59	313293.6	0.3	**47.2618**	0.598	1.3	ug/L	167	Standard
	Ni	60	88507.1	1.2	**48.3155**	0.248	0.5	ug/L	391	Standard
	Cu	65	90758.4	1.3	**49.5010**	0.299	0.6	ug/L	147	Standard
	Zn	66	53901.0	0.9	**49.9197**	0.463	0.9	ug/L	184	Standard
>	Ge	72	412512.9	1.5				ug/L	422998	Standard
	As	75	55770.4	0.7	**50.4628**	0.426	0.8	ug/L	-58	Standard
	Se	82	6139.8	1.0	**53.4965**	0.426	0.8	ug/L	15	Standard
	Se-1	77	3955.5	0.8	**52.8292**	1.121	2.1	ug/L	58	Standard
>	Ga	71	80.0	41.0				mg/L	113	Standard
	Rb	85	4982.5	1.1				ug/L	27	Standard
	Y	89	349323.8	2.1				ug/L	383780	Standard
>	Rh	103	330.0	9.9				ug/L	18	Standard
	Mo	98	844.2	4.7	**0.3278**	0.014	4.4	ug/L	31	Standard
	Ag	107	99314.8	0.3	**15.6219**	0.112	0.7	ug/L	84	Standard
	Cd	111	94366.8	0.3	**46.9980**	0.290	0.6	mg/L	4	Standard
	Cd	114	228866.6	1.0	**46.9717**	0.363	0.8	ug/L	15	Standard
>	In	115	485865.2	0.8				ug/L	515400	Standard
	Sn	118	1226.7	11.8	**0.0439**	0.027	62.4	ug/L	1043	Standard
	Sb	123	222948.4	0.5	**51.6510**	0.492	1.0	ug/L	227	Standard
	Ba	135	108277.2	0.9	**57.1144**	0.060	0.1	ug/L	31	Standard
	Ce	140	1090.0	1.6				ug/L	120	Standard
>	Tb	159	754184.5	1.2				ug/L	785817	Standard
	Ho	165	55.0	18.2				ug/L	7	Standard
	Tl	203	367763.1	0.5	**48.2429**	0.854	1.8	ug/L	6	Standard
	Tl	205	323449.4	0.4	**48.7027**	0.519	1.1	ug/L	8	Standard
	Pb	206	237226.4	0.3	**49.9879**	0.602	1.2	ug/L	201	Standard
	Pb	207	205652.0	0.6	**47.9284**	0.487	1.0	ug/L	177	Standard
	Pb	208	853109.7	0.5	**49.5009**	0.818	1.7	ug/L	722	Standard
	U	238	355118.6	0.8	**54.2491**	0.508	0.9	ug/L	8	Standard
>	Bi	209	423788.7	1.4				ug/L	444563	Standard

Sample ID: L1606098637SD WG573548-05
Report Date/Time: Tuesday, July 05, 2016 16:04:38
Page 1

Approved: July 06, 2016

Na	23	18.3	68.6	**231.3341**	154.328	66.7	mg/L	0	Standard
Mg	24	24386.3	1.2	**33.3849**	1.379	4.1	mg/L	38	Standard
K	39	456.7	5.4	**2.0496**	0.060	2.9	mg/L	33	Standard
Ca	43	691.7	8.5	**112.7698**	8.639	7.7	mg/L	48	Standard
Fe	54	153.3	27.4	**0.0175**	0.033	186.8	mg/L	131	Standard
Fe	57	915.0	3.6	**2.6129**	0.190	7.3	mg/L	153	Standard
Sc-1	45	24501.5	3.0				mg/L	26715	Standard
Cl	35	430316.2	1.1				ug/L	102686	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	60319.9	2.4				ug/L	1897	Standard
P	31	20186.8	3.2				ug/L	18491	Standard
S	34	4342.3	4.0				ug/L	3734	Standard
Sr	88	1325.1	8.4				ug/L	47	Standard
C	12	143.3	10.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	52.1				mg/L	23	Standard
Dy	164	90.6	7.2				mg/L	23	Standard
Ho-1	165	55.0	18.2				mg/L	7	Standard
Er	166	56.7	36.7				mg/L	13	Standard
I	127	152569.8	3.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.892	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.521	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606098637SD WG573548-05
Report Date/Time: Tuesday, July 05, 2016 16:04:38
Page 2

Approved: July 06, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.270
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.327
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606098637SD WG573548-05
Report Date/Time: Tuesday, July 05, 2016 16:04:38
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606102602
Sample Date/Time: Tuesday, July 05, 2016 16:05:33
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66033.7	3.5				ug/L	59517	Standard
	Be	9	66.7	21.7	**0.0384**	0.017	44.2	ug/L	10	Standard
	Al	27	4008822.4	1.5	**23.7468**	0.503	2.1	ug/L	1872	Standard
	Sc	45	21772.3	2.4				ug/L	26715	Standard
	Ti	47	32.3	9.9	**-0.0977**	0.014	14.1	ug/L	54	Standard
	V	51	-3776.6	52.8	**-0.7532**	0.300	39.9	ug/L	1419	Standard
	Cr	52	642309.0	0.2	**98.0945**	1.349	1.4	ug/L	7059	Standard
	Cr	53	81532.1	1.2	**100.1374**	0.488	0.5	ug/L	398	Standard
	Mn	55	361428.3	1.1	**62.4970**	0.126	0.2	ug/L	824	Standard
	Co	59	44138.9	2.1	**7.0985**	0.155	2.2	ug/L	167	Standard
	Ni	60	487701.1	1.6	**285.7153**	7.502	2.6	ug/L	391	Standard
	Cu	65	28478.7	1.9	**16.5593**	0.434	2.6	ug/L	147	Standard
	Zn	66	4753.1	0.8	**4.5628**	0.041	0.9	ug/L	184	Standard
>	Ge	72	385765.0	1.3				ug/L	422998	Standard
	As	75	163.7	35.9	**0.2094**	0.055	26.4	ug/L	-58	Standard
	Se	82	110.6	7.8	**0.8278**	0.071	8.6	ug/L	15	Standard
	Se-1	77	220.0	15.3	**2.5168**	0.524	20.8	ug/L	58	Standard
>	Ga	71	53.3	5.4				mg/L	113	Standard
	Rb	85	695.0	7.6				ug/L	27	Standard
	Y	89	324960.6	2.2				ug/L	383780	Standard
>	Rh	103	35.0	65.5				ug/L	18	Standard
	Mo	98	2519.5	1.4	**1.0464**	0.012	1.1	ug/L	31	Standard
	Ag	107	132.0	8.7	**0.0098**	0.002	20.3	ug/L	84	Standard
	Cd	111	262.2	2.7	**0.1330**	0.004	2.8	mg/L	4	Standard
	Cd	114	640.1	4.9	**0.1334**	0.007	5.3	ug/L	15	Standard
>	In	115	462724.9	0.4				ug/L	515400	Standard
	Sn	118	493.3	5.2	**-0.0861**	0.005	5.7	ug/L	1043	Standard
	Sb	123	345.5	14.6	**0.0677**	0.012	18.3	ug/L	227	Standard
	Ba	135	6152.9	1.0	**3.3855**	0.019	0.6	ug/L	31	Standard
	Ce	140	3777.1	15.0				ug/L	120	Standard
>	Tb	159	712525.9	1.4				ug/L	785817	Standard
	Ho	165	196.7	42.6				ug/L	7	Standard
	Tl	203	134.0	21.6	**0.0142**	0.004	27.8	ug/L	6	Standard
	Tl	205	110.0	16.4	**0.0100**	0.003	28.6	ug/L	8	Standard
	Pb	206	338.3	9.9	**0.0266**	0.008	28.6	ug/L	201	Standard
	Pb	207	277.7	6.3	**0.0176**	0.005	26.5	ug/L	177	Standard
	Pb	208	1090.7	6.1	**0.0154**	0.004	25.7	ug/L	722	Standard
	U	238	255.0	12.2	**0.0369**	0.005	12.9	ug/L	8	Standard
>	Bi	209	419164.2	0.8				ug/L	444563	Standard

Sample ID: L1606102602
Report Date/Time: Tuesday, July 05, 2016 16:07:50
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	8624.1	3.0	**13.2539**	0.102	0.8	mg/L	38	Standard
K	39	58.3	17.8	**0.1850**	0.063	34.2	mg/L	33	Standard
Ca	43	46.7	22.3	**3.1609**	2.157	68.2	mg/L	48	Standard
Fe	54	466.1	4.8	**0.3444**	0.016	4.7	mg/L	131	Standard
Fe	57	350.0	12.2	**0.8500**	0.177	20.8	mg/L	153	Standard
Sc-1	45	21772.3	2.4				mg/L	26715	Standard
Cl	35	140039.0	1.6				ug/L	102686	Standard
Kr	83	4.0	25.0				ug/L	2	Standard
Br	81	16989.5	2.8				ug/L	1897	Standard
P	31	7613.6	3.5				ug/L	18491	Standard
S	34	4200.6	4.5				ug/L	3734	Standard
Sr	88	143.3	10.1				ug/L	47	Standard
C	12	60.0	57.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	556.7	2.7				mg/L	23	Standard
Dy	164	240.9	67.5				mg/L	23	Standard
Ho-1	165	196.7	42.6				mg/L	7	Standard
Er	166	190.0	29.3				mg/L	13	Standard
I	127	39920.9	1.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		110.950	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.198	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606102602
Report Date/Time: Tuesday, July 05, 2016 16:07:50
Page 2

Approved: July 06, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	89.780
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.287
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Cr 53 Upper, S, EEE	Cr	53	
Ni 60 Upper, S, EEE	Ni	60	

Sample ID: L1606102602
Report Date/Time: Tuesday, July 05, 2016 16:07:50
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606102602
Sample Date/Time: Tuesday, July 05, 2016 16:08:45
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 200
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64041.7	1.5				ug/L	59517	Standard
	Be	9	43.3	40.5	**0.0154**	0.019	126.2	ug/L	10	Standard
	Al	27	443970.0	1.5	**2.7002**	0.082	3.0	ug/L	1872	Standard
	Sc	45	22515.1	1.8				ug/L	26715	Standard
	Ti	47	22.7	2.5	**-0.1447**	0.002	1.1	ug/L	54	Standard
	V	51	1583.5	10.0	**0.0555**	0.021	38.3	ug/L	1419	Standard
	Cr	52	48688.3	17.2	**6.3685**	1.341	21.1	ug/L	7059	Standard
	Cr	53	6294.7	18.6	**7.1832**	1.494	20.8	ug/L	398	Standard
	Mn	55	37613.6	1.2	**6.2359**	0.021	0.3	ug/L	824	Standard
	Co	59	4677.4	1.5	**0.7123**	0.004	0.5	ug/L	167	Standard
	Ni	60	50400.7	1.1	**28.6604**	0.390	1.4	ug/L	391	Standard
	Cu	65	2432.2	9.3	**1.3098**	0.144	11.0	ug/L	147	Standard
	Zn	66	986.0	1.1	**0.7977**	0.018	2.3	ug/L	184	Standard
>	**Ge**	72	394895.6	1.1				ug/L	422998	Standard
	As	75	-14.8	96.6	**0.0378**	0.013	35.5	ug/L	-58	Standard
	Se	82	28.6	14.9	**0.0551**	0.038	68.3	ug/L	15	Standard
	Se-1	77	76.7	18.3	**0.4146**	0.197	47.4	ug/L	58	Standard
>	**Ga**	71	35.0	28.6				mg/L	113	Standard
	Rb	85	111.7	24.7				ug/L	27	Standard
	Y	89	330463.8	1.5				ug/L	383780	Standard
>	**Rh**	103	16.7	17.3				ug/L	18	Standard
	Mo	98	511.2	19.9	**0.1998**	0.042	21.1	ug/L	31	Standard
	Ag	107	141.0	44.2	**0.0107**	0.010	93.0	ug/L	84	Standard
	Cd	111	99.4	68.1	**0.0464**	0.034	73.8	mg/L	4	Standard
	Cd	114	247.9	77.2	**0.0474**	0.040	84.2	ug/L	15	Standard
>	**In**	115	475028.5	0.5				ug/L	515400	Standard
	Sn	118	263.3	4.8	**-0.1316**	0.003	1.9	ug/L	1043	Standard
	Sb	123	395.5	36.7	**0.0774**	0.035	44.6	ug/L	227	Standard
	Ba	135	375.0	20.7	**0.1786**	0.041	22.9	ug/L	31	Standard
	Ce	140	181.7	35.1				ug/L	120	Standard
>	**Tb**	159	723676.4	0.7				ug/L	785817	Standard
	Ho	165	25.0	34.6				ug/L	7	Standard
	Tl	203	280.7	56.3	**0.0323**	0.020	62.4	ug/L	6	Standard
	Tl	205	146.7	44.4	**0.0148**	0.010	65.8	ug/L	8	Standard
	Pb	206	315.0	18.2	**0.0192**	0.012	63.2	ug/L	201	Standard
	Pb	207	261.3	16.1	**0.0115**	0.010	85.1	ug/L	177	Standard
	Pb	208	1032.3	20.7	**0.0098**	0.012	126.8	ug/L	722	Standard
	U	238	118.0	56.9	**0.0151**	0.010	66.7	ug/L	8	Standard
>	**Bi**	209	435214.7	0.9				ug/L	444563	Standard

Sample ID: L1606102602
Report Date/Time: Tuesday, July 05, 2016 16:11:01
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	850.0	0.0	**1.2332**	0.023	1.8	mg/L	38	Standard
K	39	28.3	36.7	**0.0186**	0.057	307.5	mg/L	33	Standard
Ca	43	33.3	45.8	**0.3337**	2.785	834.6	mg/L	48	Standard
Fe	54	57.2	5.8	**-0.0618**	0.004	6.8	mg/L	131	Standard
Fe	57	251.7	29.9	**0.4438**	0.276	62.2	mg/L	153	Standard
> **Sc-1**	45	22515.1	1.8				mg/L	26715	Standard
Cl	35	146273.5	1.8				ug/L	102686	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	3323.7	2.4				ug/L	1897	Standard
P	31	6721.5	2.7				ug/L	18491	Standard
S	34	4434.0	3.9				ug/L	3734	Standard
Sr	88	66.7	15.6				ug/L	47	Standard
C	12	60.0	16.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3310.4	10.8				mg/L	23	Standard
Dy	164	45.9	32.7				mg/L	23	Standard
Ho-1	165	25.0	34.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	31768.3	1.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.603	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.356	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606102602
Report Date/Time: Tuesday, July 05, 2016 16:11:01
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.167
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.897
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606102602
Report Date/Time: Tuesday, July 05, 2016 16:11:01
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606102604
Sample Date/Time: Tuesday, July 05, 2016 16:11:56
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66130.7	1.1				ug/L	59517	Standard
	Be	9	61.7	28.5	**0.0327**	0.018	54.9	ug/L	10	Standard
	Al	27	5956114.8	1.1	**35.2197**	0.270	0.8	ug/L	1872	Standard
	Sc	45	26690.2	3.8				ug/L	26715	Standard
	Ti	47	1240.7	3.2	**5.4190**	0.255	4.7	ug/L	54	Standard
	V	51	6991.8	13.2	**0.8712**	0.124	14.2	ug/L	1419	Standard
	Cr	52	16728.6	4.5	**1.5782**	0.125	7.9	ug/L	7059	Standard
	Cr	53	15167.6	1.7	**18.1041**	0.174	1.0	ug/L	398	Standard
	Mn	55	100787.5	0.9	**17.1593**	0.420	2.4	ug/L	824	Standard
	Co	59	4720.7	2.4	**0.7292**	0.026	3.5	ug/L	167	Standard
	Ni	60	5679.4	2.0	**3.0962**	0.113	3.7	ug/L	391	Standard
	Cu	65	1677.1	2.5	**0.8910**	0.037	4.1	ug/L	147	Standard
	Zn	66	5144.2	1.4	**4.8991**	0.015	0.3	ug/L	184	Standard
>	**Ge**	72	389749.5	1.7				ug/L	422998	Standard
	As	75	407.1	24.2	**0.4407**	0.091	20.6	ug/L	-58	Standard
	Se	82	166.3	20.5	**1.3328**	0.309	23.2	ug/L	15	Standard
	Se-1	77	630.0	2.9	**8.3517**	0.375	4.5	ug/L	58	Standard
>	**Ga**	71	298.3	6.8				mg/L	113	Standard
	Rb	85	7621.9	1.5				ug/L	27	Standard
	Y	89	338156.0	1.8				ug/L	383780	Standard
>	**Rh**	103	45.0	40.1				ug/L	18	Standard
	Mo	98	168.0	7.6	**0.0614**	0.005	8.1	ug/L	31	Standard
	Ag	107	103.3	3.7	**0.0051**	0.000	3.3	ug/L	84	Standard
	Cd	111	321.4	1.7	**0.1639**	0.005	3.3	mg/L	4	Standard
	Cd	114	741.6	11.8	**0.1549**	0.016	10.2	ug/L	15	Standard
>	**In**	115	463189.5	2.7				ug/L	515400	Standard
	Sn	118	1806.8	7.3	**0.1666**	0.030	17.9	ug/L	1043	Standard
	Sb	123	663.4	9.2	**0.1452**	0.018	12.3	ug/L	227	Standard
	Ba	135	229221.6	0.2	**126.9270**	3.740	2.9	ug/L	31	Standard
	Ce	140	43881.8	1.4				ug/L	120	Standard
>	**Tb**	159	709647.9	1.6				ug/L	785817	Standard
	Ho	165	620.0	8.7				ug/L	7	Standard
	Tl	203	160.0	5.0	**0.0182**	0.001	5.4	ug/L	6	Standard
	Tl	205	143.3	16.5	**0.0156**	0.003	21.6	ug/L	8	Standard
	Pb	206	2013.5	0.7	**0.3952**	0.004	1.0	ug/L	201	Standard
	Pb	207	1666.4	0.5	**0.3557**	0.007	2.1	ug/L	177	Standard
	Pb	208	7287.0	0.9	**0.3907**	0.008	2.0	ug/L	722	Standard
	U	238	308.0	11.6	**0.0464**	0.006	13.5	ug/L	8	Standard
>	**Bi**	209	408252.0	1.4				ug/L	444563	Standard

Sample ID: L1606102604
Report Date/Time: Tuesday, July 05, 2016 16:14:13
Page 1

Approved: July 06, 2016

Na	23	3.3	173.2	**37.4640**	64.881	173.2	mg/L	0	Standard
Mg	24	42477.8	1.0	**53.4216**	2.479	4.6	mg/L	38	Standard
K	39	40.0	54.5	**0.0485**	0.100	206.2	mg/L	33	Standard
Ca	43	45.0	29.4	**1.1659**	1.791	153.7	mg/L	48	Standard
Fe	54	543.5	5.5	**0.3219**	0.020	6.1	mg/L	131	Standard
Fe	57	361.7	13.1	**0.6420**	0.168	26.2	mg/L	153	Standard
> **Sc-1**	45	26690.2	3.8				mg/L	26715	Standard
Cl	35	139131.8	3.6				ug/L	102686	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	33988.2	7.1				ug/L	1897	Standard
P	31	39982.7	0.5				ug/L	18491	Standard
S	34	4414.0	7.1				ug/L	3734	Standard
Sr	88	255.0	9.0				ug/L	47	Standard
C	12	93.3	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	536.7	23.6				mg/L	23	Standard
Dy	164	1078.1	6.0				mg/L	23	Standard
Ho-1	165	620.0	8.7				mg/L	7	Standard
Er	166	596.7	16.1				mg/L	13	Standard
I	127	84655.1	7.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.113	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.140	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606102604
Report Date/Time: Tuesday, July 05, 2016 16:14:13
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.870
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.832
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606102604
Sample Date/Time: Tuesday, July 05, 2016 16:15:08
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63747.2	2.0				ug/L	59517	Standard
	Be	9	31.7	18.2	**0.0028**	0.006	201.6	ug/L	10	Standard
	Al	27	291714.1	2.3	**1.7780**	0.048	2.7	ug/L	1872	Standard
	Sc	45	22303.1	4.0				ug/L	26715	Standard
	Ti	47	74.7	12.7	**0.0943**	0.053	56.5	ug/L	54	Standard
	V	51	1656.0	2.6	**0.0692**	0.010	14.2	ug/L	1419	Standard
	Cr	52	5616.4	0.9	**-0.1201**	0.032	26.4	ug/L	7059	Standard
	Cr	53	1373.4	4.6	**1.2616**	0.024	1.9	ug/L	398	Standard
	Mn	55	6195.0	14.8	**0.9314**	0.177	19.0	ug/L	824	Standard
	Co	59	419.0	15.9	**0.0419**	0.012	28.9	ug/L	167	Standard
	Ni	60	546.0	6.9	**0.1166**	0.029	24.7	ug/L	391	Standard
	Cu	65	616.7	4.5	**0.2768**	0.017	6.1	ug/L	147	Standard
	Zn	66	1198.4	4.3	**1.0177**	0.081	8.0	ug/L	184	Standard
>	**Ge**	72	390719.3	3.3				ug/L	422998	Standard
	As	75	-13.0	324.5	**0.0389**	0.041	106.0	ug/L	-58	Standard
	Se	82	21.2	30.5	**-0.0094**	0.063	670.1	ug/L	15	Standard
	Se-1	77	90.7	12.7	**0.6238**	0.127	20.3	ug/L	58	Standard
>	**Ga**	71	45.0	33.3				mg/L	113	Standard
	Rb	85	346.7	20.3				ug/L	27	Standard
	Y	89	327118.5	3.8				ug/L	383780	Standard
>	**Rh**	103	31.7	36.5				ug/L	18	Standard
	Mo	98	103.9	28.7	**0.0337**	0.011	32.4	ug/L	31	Standard
	Ag	107	92.3	40.0	**0.0031**	0.006	204.7	ug/L	84	Standard
	Cd	111	35.5	42.9	**0.0143**	0.008	58.5	mg/L	4	Standard
	Cd	114	90.5	47.3	**0.0148**	0.010	65.0	ug/L	15	Standard
>	**In**	115	469756.9	3.0				ug/L	515400	Standard
	Sn	118	415.0	9.6	**-0.1023**	0.007	7.3	ug/L	1043	Standard
	Sb	123	153.0	15.0	**0.0204**	0.006	30.0	ug/L	227	Standard
	Ba	135	10774.8	0.8	**5.8615**	0.217	3.7	ug/L	31	Standard
	Ce	140	1340.1	34.4				ug/L	120	Standard
>	**Tb**	159	715229.2	2.9				ug/L	785817	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	97.3	60.4	**0.0090**	0.008	88.2	ug/L	6	Standard
	Tl	205	80.0	66.1	**0.0052**	0.008	159.1	ug/L	8	Standard
	Pb	206	354.7	11.1	**0.0278**	0.010	36.3	ug/L	201	Standard
	Pb	207	263.0	16.5	**0.0124**	0.012	94.3	ug/L	177	Standard
	Pb	208	1164.4	9.7	**0.0177**	0.008	46.7	ug/L	722	Standard
	U	238	61.7	78.3	**0.0069**	0.008	109.9	ug/L	8	Standard
>	**Bi**	209	433127.0	3.1				ug/L	444563	Standard

Sample ID: L1606102604
Report Date/Time: Tuesday, July 05, 2016 16:17:24
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	1996.8	6.0	**2.9779**	0.300	10.1	mg/L	38	Standard
K	39	18.3	41.7	**-0.0320**	0.044	136.0	mg/L	33	Standard
Ca	43	16.7	34.6	**-2.7351**	1.098	40.1	mg/L	48	Standard
Fe	54	67.8	22.6	**-0.0508**	0.017	33.3	mg/L	131	Standard
Fe	57	225.0	8.0	**0.3522**	0.035	9.8	mg/L	153	Standard
> **Sc-1**	45	22303.1	4.0				mg/L	26715	Standard
Cl	35	130242.2	2.0				ug/L	102686	Standard
Kr	83	4.7	44.6				ug/L	2	Standard
Br	81	3250.3	4.6				ug/L	1897	Standard
P	31	8779.2	6.2				ug/L	18491	Standard
S	34	4113.9	2.4				ug/L	3734	Standard
Sr	88	91.7	27.5				ug/L	47	Standard
C	12	60.0	60.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	253.3	35.6				mg/L	23	Standard
Dy	164	21.9	94.6				mg/L	23	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	13	Standard
I	127	33014.3	1.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.108	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.369	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606102604
Report Date/Time: Tuesday, July 05, 2016 16:17:24
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.144
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.428
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 16:18:20
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67744.5	2.5				ug/L	59517	Standard
	Be	9	49067.7	2.3	**49.5502**	0.264	0.5	ug/L	10	Standard
	Al	27	7373446.9	3.1	**42.5611**	0.476	1.1	ug/L	1872	Standard
	Sc	45	24488.1	1.8				ug/L	26715	Standard
	Ti	47	22651.6	1.1	**93.9908**	0.450	0.5	ug/L	54	Standard
	V	51	344298.9	0.7	**47.0256**	0.567	1.2	ug/L	1419	Standard
	Cr	52	347287.7	1.2	**47.3420**	0.247	0.5	ug/L	7059	Standard
	Cr	53	43687.9	1.6	**48.1936**	0.604	1.3	ug/L	398	Standard
	Mn	55	297238.3	0.6	**46.3340**	0.107	0.2	ug/L	824	Standard
	Co	59	337254.2	0.4	**49.0780**	0.593	1.2	ug/L	167	Standard
	Ni	60	89551.9	0.8	**47.1539**	0.285	0.6	ug/L	391	Standard
	Cu	65	90767.4	0.8	**47.7569**	0.674	1.4	ug/L	147	Standard
	Zn	66	54920.7	0.7	**49.0639**	0.544	1.1	ug/L	184	Standard
>	Ge	72	427609.3	0.8				ug/L	422998	Standard
	As	75	54895.2	0.5	**47.9182**	0.487	1.0	ug/L	-58	Standard
	Se	82	5726.1	0.9	**48.1115**	0.814	1.7	ug/L	15	Standard
	Se-1	77	3820.8	2.4	**49.1811**	1.559	3.2	ug/L	58	Standard
>	Ga	71	70.0	18.9				mg/L	113	Standard
	Rb	85	800.0	18.0				ug/L	27	Standard
	Y	89	375282.4	0.1				ug/L	383780	Standard
>	Rh	103	25.0	60.0				ug/L	18	Standard
	Mo	98	257719.3	0.1	**96.0927**	1.387	1.4	ug/L	31	Standard
	Ag	107	317574.0	0.5	**46.7127**	0.553	1.2	ug/L	84	Standard
	Cd	111	101271.0	0.8	**47.1388**	0.382	0.8	mg/L	4	Standard
	Cd	114	244235.4	1.7	**46.8529**	1.053	2.2	ug/L	15	Standard
>	In	115	519870.6	1.4				ug/L	515400	Standard
	Sn	118	281434.6	3.0	**48.0049**	1.121	2.3	ug/L	1043	Standard
	Sb	123	220403.7	2.2	**47.7185**	0.836	1.8	ug/L	227	Standard
	Ba	135	92504.5	0.4	**45.6023**	0.471	1.0	ug/L	31	Standard
	Ce	140	120.0	19.1				ug/L	120	Standard
>	Tb	159	785067.8	0.8				ug/L	785817	Standard
	Ho	165	13.3	57.3				ug/L	7	Standard
	Tl	203	392463.6	0.3	**47.8637**	0.139	0.3	ug/L	6	Standard
	Tl	205	349858.2	0.6	**48.9789**	0.320	0.7	ug/L	8	Standard
	Pb	206	248380.0	0.3	**48.6600**	0.180	0.4	ug/L	201	Standard
	Pb	207	225105.3	0.8	**48.7784**	0.387	0.8	ug/L	177	Standard
	Pb	208	936532.7	0.7	**50.5228**	0.354	0.7	ug/L	722	Standard
	U	238	350081.9	0.0	**49.7240**	0.009	0.0	ug/L	8	Standard
>	Bi	209	455760.8	0.0				ug/L	444563	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 16:20:37
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4013.9	1.6	**5.4660**	0.090	1.6	mg/L	38	Standard
K	39	725.0	11.5	**3.3342**	0.408	12.2	mg/L	33	Standard
Ca	43	46.7	24.7	**2.1540**	2.119	98.4	mg/L	48	Standard
Fe	54	6016.2	4.0	**5.1744**	0.205	4.0	mg/L	131	Standard
Fe	57	1795.1	4.0	**5.5862**	0.232	4.2	mg/L	153	Standard
> **Sc-1**	45	24488.1	1.8				mg/L	26715	Standard
Cl	35	141990.3	1.6				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2076.8	5.5				ug/L	1897	Standard
P	31	23853.8	1.3				ug/L	18491	Standard
S	34	4897.5	3.2				ug/L	3734	Standard
Sr	88	58.3	21.6				ug/L	47	Standard
C	12	66.7	31.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	286.7	54.5				mg/L	23	Standard
Dy	164	12.9	122.5				mg/L	23	Standard
Ho-1	165	13.3	57.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	11285.9	2.7				mg/L	12398	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	99.100		
	Al	27	85.122		
	Sc	45			
	Ti	47	93.991		
	V	51	94.051		
	Cr	52	94.684		
	Cr	53			
	Mn	55	92.668		
	Co	59	98.156		
	Ni	60	94.308		
	Cu	65	95.514		
	Zn	66	98.128		
>	Ge	72		101.090	
	As	75	95.836		
	Se	82	96.223		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 16:20:37
Page 2

Approved: July 06, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	96.093		
Ag	107	93.425		
Cd	111	94.278		
Cd	114			
> In	115		100.867	
Sn	118	96.010		
Sb	123	95.437		
Ba	135	91.205		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.727		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.046		
U	238	99.448		
> Bi	209		102.519	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 16:20:37
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 16:21:32
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67135.1	1.2				ug/L	59517	Standard
	Be	9	40.0	57.3	**0.0095**	0.023	239.5	ug/L	10	Standard
	Al	27	2406.9	12.7	**0.0016**	0.002	102.7	ug/L	1872	Standard
	Sc	45	24908.8	1.6				ug/L	26715	Standard
	Ti	47	29.3	15.7	**-0.1247**	0.018	14.6	ug/L	54	Standard
	V	51	1334.0	1.6	**0.0037**	0.004	108.9	ug/L	1419	Standard
	Cr	52	6094.6	2.0	**-0.1271**	0.014	10.9	ug/L	7059	Standard
	Cr	53	643.3	2.5	**0.3065**	0.028	9.3	ug/L	398	Standard
	Mn	55	687.0	4.0	**-0.0234**	0.006	25.1	ug/L	824	Standard
	Co	59	237.7	4.3	**0.0096**	0.002	20.6	ug/L	167	Standard
	Ni	60	272.7	7.4	**-0.0554**	0.012	22.0	ug/L	391	Standard
	Cu	65	495.0	3.9	**0.1822**	0.014	7.6	ug/L	147	Standard
	Zn	66	213.7	6.5	**0.0324**	0.013	40.0	ug/L	184	Standard
>	**Ge**	72	427179.7	1.5				ug/L	422998	Standard
	As	75	-16.7	194.6	**0.0368**	0.028	77.0	ug/L	-58	Standard
	Se	82	21.2	29.1	**-0.0277**	0.049	178.2	ug/L	15	Standard
	Se-1	77	54.3	18.2	**0.0425**	0.138	325.5	ug/L	58	Standard
>	**Ga**	71	55.0	55.3				mg/L	113	Standard
	Rb	85	18.3	41.7				ug/L	27	Standard
	Y	89	369586.9	1.0				ug/L	383780	Standard
>	**Rh**	103	15.0	33.3				ug/L	18	Standard
	Mo	98	218.9	6.8	**0.0734**	0.007	9.6	ug/L	31	Standard
	Ag	107	134.0	7.8	**0.0079**	0.002	23.7	ug/L	84	Standard
	Cd	111	18.3	20.6	**0.0045**	0.002	42.4	mg/L	4	Standard
	Cd	114	61.1	50.4	**0.0073**	0.006	84.0	ug/L	15	Standard
>	**In**	115	516030.8	1.8				ug/L	515400	Standard
	Sn	118	1138.4	19.2	**0.0150**	0.034	226.4	ug/L	1043	Standard
	Sb	123	854.2	33.4	**0.1694**	0.059	35.1	ug/L	227	Standard
	Ba	135	54.0	20.0	**0.0031**	0.006	180.9	ug/L	31	Standard
	Ce	140	28.3	10.2				ug/L	120	Standard
>	**Tb**	159	770282.2	1.9				ug/L	785817	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	98.7	5.6	**0.0083**	0.001	6.8	ug/L	6	Standard
	Tl	205	111.7	23.0	**0.0087**	0.004	41.5	ug/L	8	Standard
	Pb	206	272.0	6.5	**0.0071**	0.004	50.7	ug/L	201	Standard
	Pb	207	240.3	15.7	**0.0036**	0.008	224.8	ug/L	177	Standard
	Pb	208	1043.7	6.6	**0.0071**	0.004	52.3	ug/L	722	Standard
	U	238	95.3	16.1	**0.0109**	0.002	19.8	ug/L	8	Standard
>	**Bi**	209	461261.7	1.0				ug/L	444563	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 16:23:49
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	56.7	18.4	**0.0427**	0.014	32.4	mg/L	38	Standard
K	39	11.7	65.5	**-0.0748**	0.035	46.5	mg/L	33	Standard
Ca	43	15.0	33.3	**-3.3400**	0.874	26.2	mg/L	48	Standard
Fe	54	142.7	7.7	**0.0068**	0.011	160.1	mg/L	131	Standard
Fe	57	196.7	1.5	**0.1717**	0.017	10.1	mg/L	153	Standard
Sc-1	45	24908.8	1.6				mg/L	26715	Standard
Cl	35	140717.8	1.1				ug/L	102686	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1590.1	7.7				ug/L	1897	Standard
P	31	22909.0	1.2				ug/L	18491	Standard
S	34	4957.5	3.4				ug/L	3734	Standard
Sr	88	60.0	28.9				ug/L	47	Standard
C	12	40.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	226.7	38.0				mg/L	23	Standard
Dy	164	9.2	113.9				mg/L	23	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	7967.1	1.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.989	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 16:23:49
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.122
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.756
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 16:23:49
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606102606
Sample Date/Time: Tuesday, July 05, 2016 16:30:34
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74363.7	1.6				ug/L	59517	Standard
	Be	9	150.0	18.6	**0.1068**	0.024	22.9	ug/L	10	Standard
	Al	27	4154249.6	1.3	**21.8438**	0.451	2.1	ug/L	1872	Standard
	Sc	45	28810.7	2.1				ug/L	26715	Standard
	Ti	47	3698.1	3.0	**15.6431**	0.318	2.0	ug/L	54	Standard
	V	51	26578.3	2.3	**3.5840**	0.050	1.4	ug/L	1419	Standard
	Cr	52	34515.9	1.0	**3.9850**	0.091	2.3	ug/L	7059	Standard
	Cr	53	19344.0	2.8	**21.8249**	0.842	3.9	ug/L	398	Standard
	Mn	55	387642.6	0.5	**62.4660**	0.870	1.4	ug/L	824	Standard
	Co	59	40237.0	0.1	**6.0262**	0.063	1.0	ug/L	167	Standard
	Ni	60	48394.8	0.7	**26.2341**	0.244	0.9	ug/L	391	Standard
	Cu	65	3555.4	0.7	**1.8563**	0.006	0.3	ug/L	147	Standard
	Zn	66	26025.0	0.5	**23.9339**	0.205	0.9	ug/L	184	Standard
>	**Ge**	72	413981.7	1.0				ug/L	422998	Standard
	As	75	1371.7	3.1	**1.2870**	0.034	2.7	ug/L	-58	Standard
	Se	82	306.8	5.3	**2.4691**	0.166	6.7	ug/L	15	Standard
	Se-1	77	865.7	2.5	**10.9986**	0.397	3.6	ug/L	58	Standard
>	**Ga**	71	1628.4	10.8				mg/L	113	Standard
	Rb	85	24080.8	2.1				ug/L	27	Standard
	Y	89	370747.4	2.1				ug/L	383780	Standard
>	**Rh**	103	50.0	17.3				ug/L	18	Standard
	Mo	98	2448.1	0.5	**0.9701**	0.005	0.5	ug/L	31	Standard
	Ag	107	221.0	4.1	**0.0229**	0.001	6.5	ug/L	84	Standard
	Cd	111	179.4	8.7	**0.0855**	0.008	9.9	mg/L	4	Standard
	Cd	114	453.9	24.6	**0.0890**	0.024	26.7	ug/L	15	Standard
>	**In**	115	484695.2	0.9				ug/L	515400	Standard
	Sn	118	1531.7	4.7	**0.1003**	0.011	11.3	ug/L	1043	Standard
	Sb	123	878.4	23.3	**0.1875**	0.046	24.7	ug/L	227	Standard
	Ba	135	32213.5	1.1	**17.0174**	0.241	1.4	ug/L	31	Standard
	Ce	140	71206.9	1.2				ug/L	120	Standard
>	**Tb**	159	757690.0	0.5				ug/L	785817	Standard
	Ho	165	1326.7	6.7				ug/L	7	Standard
	Tl	203	283.0	13.2	**0.0335**	0.005	16.3	ug/L	6	Standard
	Tl	205	215.0	16.3	**0.0255**	0.005	19.9	ug/L	8	Standard
	Pb	206	3258.7	0.7	**0.6413**	0.013	2.1	ug/L	201	Standard
	Pb	207	2668.9	0.7	**0.5743**	0.009	1.6	ug/L	177	Standard
	Pb	208	11405.4	0.2	**0.6134**	0.011	1.7	ug/L	722	Standard
	U	238	733.4	4.4	**0.1095**	0.006	5.5	ug/L	8	Standard
>	**Bi**	209	424084.4	1.7				ug/L	444563	Standard

Sample ID: L1606102606
Report Date/Time: Tuesday, July 05, 2016 16:32:51
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	91872.8	2.6	**107.0182**	5.008	4.7	mg/L	38	Standard
K	39	105.0	24.7	**0.2958**	0.099	33.4	mg/L	33	Standard
Ca	43	33.3	56.8	**-1.0499**	2.645	251.9	mg/L	48	Standard
Fe	54	1318.5	5.4	**0.8699**	0.071	8.2	mg/L	131	Standard
Fe	57	525.0	5.8	**1.0269**	0.094	9.2	mg/L	153	Standard
> **Sc-1**	45	28810.7	2.1				mg/L	26715	Standard
Cl	35	165770.7	1.7				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	44652.5	4.6				ug/L	1897	Standard
P	31	44054.0	3.3				ug/L	18491	Standard
S	34	4137.2	4.9				ug/L	3734	Standard
Sr	88	138.3	29.4				ug/L	47	Standard
C	12	130.0	42.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	230.0	45.4				mg/L	23	Standard
Dy	164	1852.6	11.5				mg/L	23	Standard
Ho-1	165	1326.7	6.7				mg/L	7	Standard
Er	166	1410.1	5.1				mg/L	13	Standard
I	127	3057873.8	7.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.946	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.869	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606102606
Report Date/Time: Tuesday, July 05, 2016 16:32:51
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.043
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.394
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1606102606
Report Date/Time: Tuesday, July 05, 2016 16:32:51
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606102607
Sample Date/Time: Tuesday, July 05, 2016 16:34:40
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68266.8	2.4				ug/L	59517	Standard
	Be	9	63.3	52.6	**0.0324**	0.034	104.1	ug/L	10	Standard
	Al	27	2930466.5	2.0	**16.7807**	0.104	0.6	ug/L	1872	Standard
	Sc	45	25488.1	1.9				ug/L	26715	Standard
	Ti	47	1257.1	6.0	**5.0393**	0.338	6.7	ug/L	54	Standard
	V	51	7294.0	1.6	**0.8311**	0.016	1.9	ug/L	1419	Standard
	Cr	52	11120.1	2.2	**0.5877**	0.043	7.3	ug/L	7059	Standard
	Cr	53	1945.1	5.6	**1.7771**	0.133	7.5	ug/L	398	Standard
	Mn	55	35777.2	0.6	**5.5211**	0.049	0.9	ug/L	824	Standard
	Co	59	6971.3	0.5	**1.0006**	0.004	0.4	ug/L	167	Standard
	Ni	60	2202.2	2.4	**0.9771**	0.035	3.6	ug/L	391	Standard
	Cu	65	1306.4	1.5	**0.6167**	0.012	2.0	ug/L	147	Standard
	Zn	66	3961.5	0.9	**3.4287**	0.022	0.7	ug/L	184	Standard
>	**Ge**	72	423130.4	0.5				ug/L	422998	Standard
	As	75	262.4	3.0	**0.2829**	0.008	2.9	ug/L	-58	Standard
	Se	82	109.1	5.4	**0.7244**	0.050	7.0	ug/L	15	Standard
	Se-1	77	155.0	3.6	**1.3748**	0.064	4.6	ug/L	58	Standard
>	**Ga**	71	630.0	5.2				mg/L	113	Standard
	Rb	85	9908.2	3.8				ug/L	27	Standard
	Y	89	382429.5	2.3				ug/L	383780	Standard
>	**Rh**	103	40.0	33.1				ug/L	18	Standard
	Mo	98	479.3	3.9	**0.1722**	0.007	3.9	ug/L	31	Standard
	Ag	107	89.7	8.7	**0.0014**	0.001	78.9	ug/L	84	Standard
	Cd	111	116.2	14.2	**0.0507**	0.008	16.1	mg/L	4	Standard
	Cd	114	283.8	13.5	**0.0506**	0.007	14.1	ug/L	15	Standard
>	**In**	115	512796.7	0.8				ug/L	515400	Standard
	Sn	118	1660.1	1.8	**0.1072**	0.003	2.8	ug/L	1043	Standard
	Sb	123	701.1	18.3	**0.1377**	0.029	21.1	ug/L	227	Standard
	Ba	135	99318.1	0.9	**49.6340**	0.204	0.4	ug/L	31	Standard
	Ce	140	55534.9	1.9				ug/L	120	Standard
>	**Tb**	159	769952.4	1.4				ug/L	785817	Standard
	Ho	165	1206.7	8.3				ug/L	7	Standard
	Tl	203	109.7	12.8	**0.0098**	0.002	17.6	ug/L	6	Standard
	Tl	205	73.3	14.2	**0.0035**	0.001	41.1	ug/L	8	Standard
	Pb	206	2462.2	1.6	**0.4389**	0.009	2.0	ug/L	201	Standard
	Pb	207	1933.8	1.6	**0.3730**	0.008	2.1	ug/L	177	Standard
	Pb	208	8386.2	1.2	**0.4058**	0.007	1.6	ug/L	722	Standard
	U	238	575.3	1.1	**0.0795**	0.001	0.9	ug/L	8	Standard
>	**Bi**	209	454222.6	0.3				ug/L	444563	Standard

Sample ID: L1606102607
Report Date/Time: Tuesday, July 05, 2016 16:36:57
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	7945.4	2.8	**10.4234**	0.091	0.9	mg/L	38	Standard
K	39	66.7	8.7	**0.1770**	0.031	17.6	mg/L	33	Standard
Ca	43	31.7	39.7	**-0.6281**	2.185	347.9	mg/L	48	Standard
Fe	54	644.1	11.8	**0.4285**	0.073	17.1	mg/L	131	Standard
Fe	57	375.0	12.7	**0.7346**	0.136	18.5	mg/L	153	Standard
> **Sc-1**	45	25488.1	1.9				mg/L	26715	Standard
Cl	35	129104.4	0.9				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3330.4	3.4				ug/L	1897	Standard
P	31	23366.3	1.9				ug/L	18491	Standard
S	34	3877.2	5.1				ug/L	3734	Standard
Sr	88	161.7	30.4				ug/L	47	Standard
C	12	123.3	41.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	116.7	35.7				mg/L	23	Standard
Dy	164	1896.0	6.7				mg/L	23	Standard
Ho-1	165	1206.7	8.3				mg/L	7	Standard
Er	166	1130.0	14.6				mg/L	13	Standard
I	127	82785.0	8.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.702	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.031	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606102607
Report Date/Time: Tuesday, July 05, 2016 16:36:57
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.495	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.173	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606102607PS WG574572-03
Sample Date/Time: Tuesday, July 05, 2016 16:37:51
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69227.8	0.6				ug/L	59517	Standard
	Be	9	49726.5	1.1	**49.1370**	0.352	0.7	ug/L	10	Standard
	Al	27	2873878.5	1.0	**16.2277**	0.259	1.6	ug/L	1872	Standard
	Sc	45	24993.9	1.8				ug/L	26715	Standard
	Ti	47	1335.7	1.8	**5.3372**	0.204	3.8	ug/L	54	Standard
	V	51	348953.5	0.9	**47.8884**	1.383	2.9	ug/L	1419	Standard
	Cr	52	346150.6	0.7	**47.4076**	1.034	2.2	ug/L	7059	Standard
	Cr	53	44179.4	3.2	**48.9894**	2.582	5.3	ug/L	398	Standard
	Mn	55	331330.4	0.8	**51.9089**	1.505	2.9	ug/L	824	Standard
	Co	59	335823.3	1.8	**49.1046**	1.851	3.8	ug/L	167	Standard
	Ni	60	90637.6	0.4	**47.9523**	1.179	2.5	ug/L	391	Standard
	Cu	65	91750.3	0.7	**48.4945**	0.941	1.9	ug/L	147	Standard
	Zn	66	58861.8	0.1	**52.8388**	1.118	2.1	ug/L	184	Standard
>	Ge	72	425755.9	2.1				ug/L	422998	Standard
	As	75	55535.3	0.4	**48.6965**	0.863	1.8	ug/L	-58	Standard
	Se	82	5786.5	1.8	**48.8455**	1.453	3.0	ug/L	15	Standard
	Se-1	77	3933.5	1.8	**50.8739**	0.923	1.8	ug/L	58	Standard
>	Ga	71	585.0	3.4				mg/L	113	Standard
	Rb	85	10123.4	1.5				ug/L	27	Standard
	Y	89	374806.0	0.6				ug/L	383780	Standard
>	Rh	103	48.3	15.8				ug/L	18	Standard
	Mo	98	462.5	8.0	**0.1682**	0.016	9.6	ug/L	31	Standard
	Ag	107	312584.6	0.9	**47.1836**	0.858	1.8	ug/L	84	Standard
	Cd	111	100998.9	0.1	**48.2434**	0.483	1.0	mg/L	4	Standard
	Cd	114	246161.8	2.0	**48.4514**	0.702	1.4	ug/L	15	Standard
>	In	115	506609.9	1.1				ug/L	515400	Standard
	Sn	118	2041.8	4.6	**0.1777**	0.013	7.2	ug/L	1043	Standard
	Sb	123	215448.5	3.5	**47.8823**	2.207	4.6	ug/L	227	Standard
	Ba	135	189283.4	0.8	**95.7834**	1.705	1.8	ug/L	31	Standard
	Ce	140	55208.8	1.7				ug/L	120	Standard
>	Tb	159	779660.2	0.5				ug/L	785817	Standard
	Ho	165	1243.4	8.2				ug/L	7	Standard
	Tl	203	392705.8	0.4	**47.8220**	0.152	0.3	ug/L	6	Standard
	Tl	205	346945.8	0.8	**48.4993**	0.446	0.9	ug/L	8	Standard
	Pb	206	256971.8	0.2	**50.2701**	0.195	0.4	ug/L	201	Standard
	Pb	207	223445.9	0.1	**48.3466**	0.160	0.3	ug/L	177	Standard
	Pb	208	929479.1	0.4	**50.0670**	0.111	0.2	ug/L	722	Standard
	U	238	342768.2	0.4	**48.6127**	0.085	0.2	ug/L	8	Standard
>	Bi	209	456439.8	0.2				ug/L	444563	Standard

Sample ID: L1606102607PS WG574572-03
Report Date/Time: Tuesday, July 05, 2016 16:40:08
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**21.3266**	36.930	173.2	mg/L	0	Standard
Mg	24	7968.8	0.8	**10.6659**	0.274	2.6	mg/L	38	Standard
K	39	56.7	13.5	**0.1356**	0.032	23.7	mg/L	33	Standard
Ca	43	55.0	32.8	**3.3469**	2.908	86.9	mg/L	48	Standard
Fe	54	665.1	11.4	**0.4572**	0.073	16.0	mg/L	131	Standard
Fe	57	348.3	18.1	**0.6715**	0.204	30.4	mg/L	153	Standard
> **Sc-1**	45	24993.9	1.8				mg/L	26715	Standard
Cl	35	128485.8	0.8				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	3127.0	1.8				ug/L	1897	Standard
P	31	23651.8	1.8				ug/L	18491	Standard
S	34	3930.5	2.8				ug/L	3734	Standard
Sr	88	155.0	14.1				ug/L	47	Standard
C	12	130.0	20.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	146.7	51.2				mg/L	23	Standard
Dy	164	1925.4	9.6				mg/L	23	Standard
Ho-1	165	1243.4	8.2				mg/L	7	Standard
Er	166	1143.4	19.4				mg/L	13	Standard
I	127	63996.6	2.1				mg/L	12398	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		116.317	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.652	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606102607PS WG574572-03
Report Date/Time: Tuesday, July 05, 2016 16:40:08
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.295
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.672
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606102607SDL WG574572-04
Sample Date/Time: Tuesday, July 05, 2016 16:41:03
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60370.2	4.6				ug/L	59517	Standard
	Be	9	50.0	26.5	**0.0259**	0.017	65.9	ug/L	10	Standard
	Al	27	564742.7	0.8	**3.6512**	0.143	3.9	ug/L	1872	Standard
	Sc	45	21306.6	3.3				ug/L	26715	Standard
	Ti	47	257.3	11.6	**0.9663**	0.163	16.9	ug/L	54	Standard
	V	51	2385.0	5.6	**0.1906**	0.024	12.4	ug/L	1419	Standard
	Cr	52	5925.8	2.9	**-0.0430**	0.042	98.8	ug/L	7059	Standard
	Cr	53	776.7	6.5	**0.5680**	0.080	14.1	ug/L	398	Standard
	Mn	55	7209.7	5.9	**1.1444**	0.088	7.7	ug/L	824	Standard
	Co	59	1479.1	3.6	**0.2184**	0.006	2.9	ug/L	167	Standard
	Ni	60	619.3	5.2	**0.1705**	0.018	10.3	ug/L	391	Standard
	Cu	65	407.7	4.8	**0.1641**	0.014	8.3	ug/L	147	Standard
	Zn	66	1500.4	1.7	**1.3616**	0.006	0.4	ug/L	184	Standard
>	**Ge**	72	378082.1	2.1				ug/L	422998	Standard
	As	75	16.9	56.7	**0.0684**	0.010	14.2	ug/L	-58	Standard
	Se	82	30.9	12.4	**0.0892**	0.038	42.2	ug/L	15	Standard
	Se-1	77	77.0	16.3	**0.4701**	0.204	43.3	ug/L	58	Standard
>	**Ga**	71	160.0	18.8				mg/L	113	Standard
	Rb	85	1916.8	2.0				ug/L	27	Standard
	Y	89	324870.0	1.8				ug/L	383780	Standard
>	**Rh**	103	23.3	65.5				ug/L	18	Standard
	Mo	98	134.3	6.7	**0.0491**	0.005	9.8	ug/L	31	Standard
	Ag	107	162.0	36.9	**0.0156**	0.010	66.0	ug/L	84	Standard
	Cd	111	48.8	35.0	**0.0221**	0.009	41.7	mg/L	4	Standard
	Cd	114	91.0	34.4	**0.0156**	0.007	44.1	ug/L	15	Standard
>	**In**	115	449365.4	1.6				ug/L	515400	Standard
	Sn	118	585.0	7.3	**-0.0650**	0.009	13.9	ug/L	1043	Standard
	Sb	123	1421.5	27.7	**0.3409**	0.103	30.3	ug/L	227	Standard
	Ba	135	19042.0	0.8	**10.8436**	0.250	2.3	ug/L	31	Standard
	Ce	140	10421.9	2.4				ug/L	120	Standard
>	**Tb**	159	686168.7	1.5				ug/L	785817	Standard
	Ho	165	228.3	2.5				ug/L	7	Standard
	Tl	203	166.3	55.1	**0.0188**	0.012	66.0	ug/L	6	Standard
	Tl	205	91.7	22.7	**0.0074**	0.003	46.0	ug/L	8	Standard
	Pb	206	682.3	7.4	**0.1022**	0.011	11.1	ug/L	201	Standard
	Pb	207	581.7	11.0	**0.0914**	0.015	16.8	ug/L	177	Standard
	Pb	208	2389.1	3.4	**0.0939**	0.005	5.3	ug/L	722	Standard
	U	238	170.3	14.0	**0.0243**	0.004	16.4	ug/L	8	Standard
>	**Bi**	209	412736.9	1.8				ug/L	444563	Standard

Sample ID: L1606102607SDL WG574572-04
Report Date/Time: Tuesday, July 05, 2016 16:43:19
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	1556.7	2.3	**2.4204**	0.133	5.5	mg/L	38	Standard
K	39	31.7	18.2	**0.0451**	0.035	77.8	mg/L	33	Standard
Ca	43	40.0	21.7	**2.0573**	2.006	97.5	mg/L	48	Standard
Fe	54	167.3	15.2	**0.0532**	0.031	59.0	mg/L	131	Standard
Fe	57	253.3	2.3	**0.5027**	0.030	6.0	mg/L	153	Standard
Sc-1	45	21306.6	3.3				mg/L	26715	Standard
Cl	35	121441.5	1.9				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1806.8	1.2				ug/L	1897	Standard
P	31	9739.8	1.6				ug/L	18491	Standard
S	34	4012.2	4.8				ug/L	3734	Standard
Sr	88	75.0	43.7				ug/L	47	Standard
C	12	66.7	22.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	43.8				mg/L	23	Standard
Dy	164	428.7	10.7				mg/L	23	Standard
Ho-1	165	228.3	2.5				mg/L	7	Standard
Er	166	236.7	20.8				mg/L	13	Standard
I	127	36522.3	2.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.434	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.382	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606102607SDL WG574572-04
Report Date/Time: Tuesday, July 05, 2016 16:43:19
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.188
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.841
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606102607SDL WG574572-04
Report Date/Time: Tuesday, July 05, 2016 16:43:19
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606102607SDL WG574572-04
Sample Date/Time: Tuesday, July 05, 2016 16:44:14
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56547.3	7.0				ug/L	59517	Standard
	Be	9	15.0	33.3	**-0.0130**	0.005	41.0	ug/L	10	Standard
	Al	27	111715.5	2.1	**0.7629**	0.057	7.5	ug/L	1872	Standard
	Sc	45	20160.1	4.7				ug/L	26715	Standard
	Ti	47	65.3	24.4	**0.0852**	0.091	106.9	ug/L	54	Standard
	V	51	1365.5	3.7	**0.0478**	0.010	20.2	ug/L	1419	Standard
	Cr	52	4827.1	1.9	**-0.1600**	0.053	33.3	ug/L	7059	Standard
	Cr	53	535.0	1.9	**0.3121**	0.020	6.5	ug/L	398	Standard
	Mn	55	1722.8	3.0	**0.1961**	0.019	9.7	ug/L	824	Standard
	Co	59	424.0	3.6	**0.0499**	0.004	7.4	ug/L	167	Standard
	Ni	60	336.7	8.6	**0.0157**	0.009	57.2	ug/L	391	Standard
	Cu	65	207.3	6.4	**0.0535**	0.007	12.3	ug/L	147	Standard
	Zn	66	822.4	1.2	**0.7360**	0.052	7.1	ug/L	184	Standard
>	**Ge**	72	352653.2	4.6				ug/L	422998	Standard
	As	75	-30.3	68.6	**0.0188**	0.024	126.1	ug/L	-58	Standard
	Se	82	16.8	10.3	**-0.0350**	0.010	28.8	ug/L	15	Standard
	Se-1	77	61.7	17.3	**0.3116**	0.196	62.8	ug/L	58	Standard
>	**Ga**	71	46.7	24.7				mg/L	113	Standard
	Rb	85	406.7	3.1				ug/L	27	Standard
	Y	89	303018.9	6.7				ug/L	383780	Standard
>	**Rh**	103	11.7	65.5				ug/L	18	Standard
	Mo	98	139.5	43.4	**0.0551**	0.029	53.0	ug/L	31	Standard
	Ag	107	76.3	8.7	**0.0017**	0.001	71.6	ug/L	84	Standard
	Cd	111	7.1	58.3	**-0.0002**	0.002	1385.8	mg/L	4	Standard
	Cd	114	27.8	46.5	**0.0019**	0.003	155.3	ug/L	15	Standard
>	**In**	115	426532.5	3.1				ug/L	515400	Standard
	Sn	118	266.7	16.8	**-0.1251**	0.011	8.6	ug/L	1043	Standard
	Sb	123	341.8	4.3	**0.0739**	0.001	1.6	ug/L	227	Standard
	Ba	135	3516.4	4.1	**2.0897**	0.030	1.4	ug/L	31	Standard
	Ce	140	1066.7	53.9				ug/L	120	Standard
>	**Tb**	159	653783.4	4.3				ug/L	785817	Standard
	Ho	165	25.0	20.0				ug/L	7	Standard
	Tl	203	39.3	19.7	**0.0019**	0.001	45.6	ug/L	6	Standard
	Tl	205	36.7	15.7	**-0.0008**	0.001	138.7	ug/L	8	Standard
	Pb	206	271.7	5.8	**0.0161**	0.001	6.5	ug/L	201	Standard
	Pb	207	202.7	2.8	**0.0030**	0.001	29.9	ug/L	177	Standard
	Pb	208	920.7	8.2	**0.0089**	0.002	26.6	ug/L	722	Standard
	U	238	28.7	21.0	**0.0022**	0.001	40.1	ug/L	8	Standard
>	**Bi**	209	393512.4	4.1				ug/L	444563	Standard

Sample ID: L1606102607SDL WG574572-04
Report Date/Time: Tuesday, July 05, 2016 16:46:31
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	365.0	6.0	**0.5755**	0.060	10.4	mg/L	38	Standard
K	39	8.3	91.7	**-0.0803**	0.046	57.4	mg/L	33	Standard
Ca	43	28.3	27.0	**0.0860**	1.855	2156.4	mg/L	48	Standard
Fe	54	52.4	29.2	**-0.0604**	0.017	27.8	mg/L	131	Standard
Fe	57	250.0	6.0	**0.5471**	0.100	18.3	mg/L	153	Standard
> **Sc-1**	45	20160.1	4.7				mg/L	26715	Standard
Cl	35	121018.0	0.5				ug/L	102686	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1350.1	3.0				ug/L	1897	Standard
P	31	6893.2	5.4				ug/L	18491	Standard
S	34	4118.9	1.6				ug/L	3734	Standard
Sr	88	85.0	11.8				ug/L	47	Standard
C	12	46.7	65.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	313.3	25.6				mg/L	23	Standard
Dy	164	15.4	39.2				mg/L	23	Standard
Ho-1	165	25.0	20.0				mg/L	7	Standard
Er	166	26.7	94.4				mg/L	13	Standard
I	127	31698.1	1.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.011	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		83.370	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606102607SDL WG574572-04
Report Date/Time: Tuesday, July 05, 2016 16:46:31
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		82.758
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.517
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606102607SDL WG574572-04
Report Date/Time: Tuesday, July 05, 2016 16:46:31
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 16:47:27
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63287.0	4.1				ug/L	59517	Standard
	Be	9	48781.8	2.6	**52.8292**	3.590	6.8	ug/L	10	Standard
	Al	27	7278196.0	0.1	**45.0246**	1.857	4.1	ug/L	1872	Standard
	Sc	45	24029.0	2.1				ug/L	26715	Standard
	Ti	47	22471.3	1.2	**96.8775**	3.777	3.9	ug/L	54	Standard
	V	51	343885.5	0.1	**48.7956**	1.633	3.3	ug/L	1419	Standard
	Cr	52	347192.2	0.5	**49.2101**	1.958	4.0	ug/L	7059	Standard
	Cr	53	43056.1	1.0	**49.3458**	1.557	3.2	ug/L	398	Standard
	Mn	55	298346.7	0.4	**48.3205**	1.813	3.8	ug/L	824	Standard
	Co	59	332601.8	1.0	**50.2799**	1.902	3.8	ug/L	167	Standard
	Ni	60	89484.2	2.0	**48.9766**	2.689	5.5	ug/L	391	Standard
	Cu	65	89926.8	0.9	**49.1562**	1.980	4.0	ug/L	147	Standard
	Zn	66	54907.3	0.6	**50.9634**	1.929	3.8	ug/L	184	Standard
>	Ge	72	411946.4	3.4				ug/L	422998	Standard
	As	75	55039.6	0.9	**49.9150**	2.169	4.3	ug/L	-58	Standard
	Se	82	5623.8	1.7	**49.1008**	2.424	4.9	ug/L	15	Standard
	Se-1	77	3806.8	2.9	**50.9513**	3.264	6.4	ug/L	58	Standard
>	Ga	71	71.7	17.6				mg/L	113	Standard
	Rb	85	785.0	8.0				ug/L	27	Standard
	Y	89	353808.2	3.5				ug/L	383780	Standard
>	Rh	103	20.0	50.0				ug/L	18	Standard
	Mo	98	258507.7	1.3	**100.9509**	4.847	4.8	ug/L	31	Standard
	Ag	107	319526.0	1.2	**49.2298**	2.422	4.9	ug/L	84	Standard
	Cd	111	101828.4	1.4	**49.6336**	1.940	3.9	mg/L	4	Standard
	Cd	114	249891.2	2.0	**50.1890**	1.846	3.7	ug/L	15	Standard
>	In	115	496896.1	3.8				ug/L	515400	Standard
	Sn	118	280043.8	2.6	**50.0406**	2.457	4.9	ug/L	1043	Standard
	Sb	123	227476.6	1.6	**51.5870**	2.445	4.7	ug/L	227	Standard
	Ba	135	92947.2	1.1	**47.9711**	1.382	2.9	ug/L	31	Standard
	Ce	140	175.0	25.7				ug/L	120	Standard
>	Tb	159	750029.8	4.4				ug/L	785817	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	396270.0	0.8	**50.0251**	1.865	3.7	ug/L	6	Standard
	Tl	205	347977.3	0.7	**50.4288**	1.971	3.9	ug/L	8	Standard
	Pb	206	248623.0	0.8	**50.4233**	2.033	4.0	ug/L	201	Standard
	Pb	207	225206.7	0.4	**50.5142**	1.798	3.6	ug/L	177	Standard
	Pb	208	933140.7	0.3	**52.1017**	1.582	3.0	ug/L	722	Standard
	U	238	348929.5	0.5	**51.2907**	1.413	2.8	ug/L	8	Standard
>	Bi	209	440643.5	3.2				ug/L	444563	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 16:49:44
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**21.8635**	37.860	173.2	mg/L	0	Standard
Mg	24	4025.5	5.3	**5.5921**	0.407	7.3	mg/L	38	Standard
K	39	720.0	6.4	**3.3763**	0.241	7.1	mg/L	33	Standard
Ca	43	58.3	35.7	**4.2871**	3.478	81.1	mg/L	48	Standard
Fe	54	5961.1	1.1	**5.2279**	0.165	3.2	mg/L	131	Standard
Fe	57	1791.8	8.6	**5.6971**	0.630	11.1	mg/L	153	Standard
> **Sc-1**	45	24029.0	2.1				mg/L	26715	Standard
Cl	35	133996.6	0.1				ug/L	102686	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1503.4	6.7				ug/L	1897	Standard
P	31	23019.1	1.4				ug/L	18491	Standard
S	34	4850.8	4.7				ug/L	3734	Standard
Sr	88	58.3	13.1				ug/L	47	Standard
C	12	76.7	58.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	180.0	20.0				mg/L	23	Standard
Dy	164	3.0	187.1				mg/L	23	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	13045.6	2.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.658		
Al	27	90.049		
Sc	45			
Ti	47	96.878		
V	51	97.591		
Cr	52	98.420		
Cr	53			
Mn	55	96.641		
Co	59	100.560		
Ni	60	97.953		
Cu	65	98.312		
Zn	66	101.927		
> Ge	72		97.387	
As	75	99.830		
Se	82	98.202		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 16:49:44
Page 2

Approved: July 06, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.951		
Ag	107	98.460		
Cd	111	99.267		
Cd	114			
In	115			96.410
Sn	118	100.081		
Sb	123	103.174		
Ba	135	95.942		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.050		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.203		
U	238	102.581		
Bi	209			99.118
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 16:49:44
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 16:50:39
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65914.7	0.7				ug/L	59517	Standard
	Be	9	38.3	32.8	**0.0087**	0.013	152.0	ug/L	10	Standard
	Al	27	2835.3	23.2	**0.0044**	0.004	89.6	ug/L	1872	Standard
	Sc	45	24731.8	1.2				ug/L	26715	Standard
	Ti	47	27.7	11.0	**-0.1319**	0.013	9.8	ug/L	54	Standard
	V	51	1248.8	0.4	**-0.0087**	0.003	38.6	ug/L	1419	Standard
	Cr	52	5910.5	0.3	**-0.1558**	0.017	11.2	ug/L	7059	Standard
	Cr	53	631.7	10.0	**0.2910**	0.077	26.5	ug/L	398	Standard
	Mn	55	659.7	8.9	**-0.0280**	0.011	39.3	ug/L	824	Standard
	Co	59	272.0	12.1	**0.0145**	0.005	37.1	ug/L	167	Standard
	Ni	60	249.7	0.2	**-0.0682**	0.003	4.1	ug/L	391	Standard
	Cu	65	210.3	2.0	**0.0316**	0.004	13.7	ug/L	147	Standard
	Zn	66	193.3	14.0	**0.0138**	0.028	200.2	ug/L	184	Standard
>	**Ge**	72	428861.8	1.9				ug/L	422998	Standard
	As	75	-18.7	111.8	**0.0354**	0.018	51.1	ug/L	-58	Standard
	Se	82	15.9	37.8	**-0.0719**	0.053	74.2	ug/L	15	Standard
	Se-1	77	57.3	11.6	**0.0768**	0.077	100.0	ug/L	58	Standard
>	**Ga**	71	48.3	15.8				mg/L	113	Standard
	Rb	85	23.3	53.9				ug/L	27	Standard
	Y	89	372049.4	1.0				ug/L	383780	Standard
>	**Rh**	103	16.7	75.5				ug/L	18	Standard
	Mo	98	242.3	21.6	**0.0825**	0.020	24.1	ug/L	31	Standard
	Ag	107	146.0	18.2	**0.0097**	0.004	40.5	ug/L	84	Standard
	Cd	111	26.6	26.1	**0.0084**	0.003	38.7	mg/L	4	Standard
	Cd	114	52.6	36.2	**0.0056**	0.004	64.6	ug/L	15	Standard
>	**In**	115	513746.8	0.8				ug/L	515400	Standard
	Sn	118	1021.7	21.3	**-0.0038**	0.039	1011.7	ug/L	1043	Standard
	Sb	123	1064.8	34.4	**0.2172**	0.081	37.2	ug/L	227	Standard
	Ba	135	59.3	30.0	**0.0059**	0.009	151.1	ug/L	31	Standard
	Ce	140	81.7	24.7				ug/L	120	Standard
>	**Tb**	159	775896.6	1.5				ug/L	785817	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	132.7	19.5	**0.0124**	0.003	26.1	ug/L	6	Standard
	Tl	205	108.3	7.1	**0.0082**	0.001	15.1	ug/L	8	Standard
	Pb	206	293.7	12.4	**0.0114**	0.007	61.5	ug/L	201	Standard
	Pb	207	276.7	8.3	**0.0115**	0.005	46.6	ug/L	177	Standard
	Pb	208	1088.7	6.3	**0.0096**	0.004	42.9	ug/L	722	Standard
	U	238	112.3	34.8	**0.0133**	0.006	41.5	ug/L	8	Standard
>	**Bi**	209	460888.6	1.3				ug/L	444563	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 16:52:56
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	53.3	27.1	**0.0386**	0.019	48.8	mg/L	38	Standard
K	39	15.0	66.7	**-0.0580**	0.048	83.2	mg/L	33	Standard
Ca	43	25.0	40.0	**-1.6427**	1.653	100.6	mg/L	48	Standard
Fe	54	144.3	33.4	**0.0093**	0.043	465.5	mg/L	131	Standard
Fe	57	231.7	11.9	**0.2932**	0.089	30.4	mg/L	153	Standard
> **Sc-1**	45	24731.8	1.2				mg/L	26715	Standard
Cl	35	135156.2	0.8				ug/L	102686	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1553.4	2.4				ug/L	1897	Standard
P	31	21515.3	1.8				ug/L	18491	Standard
S	34	4654.0	3.4				ug/L	3734	Standard
Sr	88	70.0	25.8				ug/L	47	Standard
C	12	36.7	41.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	156.7	43.4				mg/L	23	Standard
Dy	164	15.2	98.4				mg/L	23	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	9586.4	1.4				mg/L	12398	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.386	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 16:52:56
Page 2

Approved: July 06, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.679
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.672
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 16:52:56
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: PBS M8 WG575144-02
Sample Date/Time: Tuesday, July 05, 2016 16:53:52
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65518.1	3.1				ug/L	59517	Standard
	Be	9	23.3	53.9	**-0.0065**	0.014	211.9	ug/L	10	Standard
	Al	27	11077.4	4.9	**0.0538**	0.005	8.4	ug/L	1872	Standard
	Sc	45	25219.3	2.5				ug/L	26715	Standard
	Ti	47	23.7	21.7	**-0.1471**	0.020	13.9	ug/L	54	Standard
	V	51	1197.4	5.8	**-0.0128**	0.012	94.4	ug/L	1419	Standard
	Cr	52	7436.2	2.1	**0.0733**	0.014	19.7	ug/L	7059	Standard
	Cr	53	711.7	8.8	**0.3926**	0.066	16.7	ug/L	398	Standard
	Mn	55	742.7	3.3	**-0.0132**	0.006	46.4	ug/L	824	Standard
	Co	59	218.7	17.9	**0.0073**	0.006	88.4	ug/L	167	Standard
	Ni	60	328.0	8.0	**-0.0237**	0.018	74.1	ug/L	391	Standard
	Cu	65	140.0	25.1	**-0.0044**	0.018	407.1	ug/L	147	Standard
	Zn	66	1200.4	2.3	**0.9322**	0.041	4.4	ug/L	184	Standard
>	**Ge**	72	421648.6	1.9				ug/L	422998	Standard
	As	75	-31.3	123.5	**0.0244**	0.034	138.5	ug/L	-58	Standard
	Se	82	10.9	56.6	**-0.1120**	0.055	49.2	ug/L	15	Standard
	Se-1	77	49.7	13.7	**-0.0104**	0.098	936.8	ug/L	58	Standard
>	**Ga**	71	58.3	35.7				mg/L	113	Standard
	Rb	85	110.0	34.3				ug/L	27	Standard
	Y	89	363229.8	1.7				ug/L	383780	Standard
>	**Rh**	103	8.3	91.7				ug/L	18	Standard
	Mo	98	78.7	32.3	**0.0208**	0.010	48.2	ug/L	31	Standard
	Ag	107	78.3	13.3	**-0.0004**	0.001	409.2	ug/L	84	Standard
	Cd	111	6.9	38.3	**-0.0009**	0.001	143.9	mg/L	4	Standard
	Cd	114	11.3	212.6	**-0.0023**	0.005	200.6	ug/L	15	Standard
>	**In**	115	514924.6	1.4				ug/L	515400	Standard
	Sn	118	698.3	13.7	**-0.0601**	0.018	29.9	ug/L	1043	Standard
	Sb	123	612.8	29.7	**0.1179**	0.041	34.8	ug/L	227	Standard
	Ba	135	106.3	11.5	**0.0293**	0.007	23.1	ug/L	31	Standard
	Ce	140	108.3	25.4				ug/L	120	Standard
>	**Tb**	159	777244.7	1.5				ug/L	785817	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	29.0	22.6	**-0.0000**	0.001	1910.2	ug/L	6	Standard
	Tl	205	33.3	31.2	**-0.0021**	0.001	65.9	ug/L	8	Standard
	Pb	206	270.3	6.9	**0.0078**	0.004	57.0	ug/L	201	Standard
	Pb	207	230.3	2.2	**0.0024**	0.000	12.4	ug/L	177	Standard
	Pb	208	951.3	7.8	**0.0032**	0.005	153.6	ug/L	722	Standard
	U	238	31.7	35.5	**0.0021**	0.002	81.6	ug/L	8	Standard
>	**Bi**	209	452794.0	1.7				ug/L	444563	Standard

Sample ID: PBS M8 WG575144-02
Report Date/Time: Tuesday, July 05, 2016 16:56:09
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**20.9409**	36.262	173.2	mg/L	0	Standard
Mg	24	55.0	50.6	**0.0395**	0.037	94.8	mg/L	38	Standard
K	39	21.7	48.0	**-0.0280**	0.050	178.6	mg/L	33	Standard
Ca	43	23.3	53.9	**-2.0181**	2.011	99.7	mg/L	48	Standard
Fe	54	116.0	35.2	**-0.0180**	0.032	179.4	mg/L	131	Standard
Fe	57	183.3	20.8	**0.1202**	0.129	107.4	mg/L	153	Standard
> **Sc-1**	45	25219.3	2.5				mg/L	26715	Standard
Cl	35	133506.3	0.9				ug/L	102686	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1620.1	10.4				ug/L	1897	Standard
P	31	20794.3	2.4				ug/L	18491	Standard
S	34	4577.4	1.9				ug/L	3734	Standard
Sr	88	86.7	21.8				ug/L	47	Standard
C	12	60.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	140.0	44.6				mg/L	23	Standard
Dy	164	2.9	187.9				mg/L	23	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	7161.7	2.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.084	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.681	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBS M8 WG575144-02
Report Date/Time: Tuesday, July 05, 2016 16:56:09
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.908	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.852	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M8 WG575144-02
Report Date/Time: Tuesday, July 05, 2016 16:56:09
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: LCSS M8 WG575144-03
Sample Date/Time: Tuesday, July 05, 2016 16:57:03
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67019.6	2.0				ug/L	59517	Standard
	Be	9	22960.7	1.4	**23.4223**	0.188	0.8	ug/L	10	Standard
	Al	27	9476.3	1.7	**0.0429**	0.001	3.2	ug/L	1872	Standard
	Sc	45	24710.1	2.4				ug/L	26715	Standard
	Ti	47	31.7	15.9	**-0.1153**	0.020	17.3	ug/L	54	Standard
	V	51	165986.6	0.4	**22.5472**	0.179	0.8	ug/L	1419	Standard
	Cr	52	169421.0	0.7	**22.5660**	0.341	1.5	ug/L	7059	Standard
	Cr	53	21138.1	1.6	**23.0772**	0.511	2.2	ug/L	398	Standard
	Mn	55	144135.4	0.7	**22.3703**	0.102	0.5	ug/L	824	Standard
	Co	59	158965.6	0.5	**23.0878**	0.146	0.6	ug/L	167	Standard
	Ni	60	44010.5	2.0	**23.0414**	0.475	2.1	ug/L	391	Standard
	Cu	65	43762.8	0.4	**22.9540**	0.313	1.4	ug/L	147	Standard
	Zn	66	27478.6	0.9	**24.4347**	0.181	0.7	ug/L	184	Standard
>	Ge	72	428192.7	1.1				ug/L	422998	Standard
	As	75	26501.3	1.6	**23.1266**	0.177	0.8	ug/L	-58	Standard
	Se	82	2682.5	1.2	**22.3960**	0.051	0.2	ug/L	15	Standard
	Se-1	77	1800.4	1.8	**22.7847**	0.209	0.9	ug/L	58	Standard
>	Ga	71	60.0	22.0				mg/L	113	Standard
	Rb	85	65.0	40.7				ug/L	27	Standard
	Y	89	369502.0	1.6				ug/L	383780	Standard
>	Rh	103	25.0	52.9				ug/L	18	Standard
	Mo	98	69.8	12.3	**0.0173**	0.003	18.7	ug/L	31	Standard
	Ag	107	154053.3	1.2	**22.8133**	0.290	1.3	ug/L	84	Standard
	Cd	111	48479.3	0.6	**22.7239**	0.277	1.2	mg/L	4	Standard
	Cd	114	118015.3	0.3	**22.7955**	0.096	0.4	ug/L	15	Standard
>	In	115	516201.3	0.7				ug/L	515400	Standard
	Sn	118	660.0	18.2	**-0.0671**	0.021	31.9	ug/L	1043	Standard
	Sb	123	110745.6	0.8	**24.1395**	0.177	0.7	ug/L	227	Standard
	Ba	135	44449.4	0.6	**22.0541**	0.063	0.3	ug/L	31	Standard
	Ce	140	85.0	17.6				ug/L	120	Standard
>	Tb	159	778858.9	0.6				ug/L	785817	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	188466.3	0.8	**22.7800**	0.280	1.2	ug/L	6	Standard
	Tl	205	167949.1	1.2	**23.3039**	0.570	2.4	ug/L	8	Standard
	Pb	206	123211.0	0.8	**23.9062**	0.621	2.6	ug/L	201	Standard
	Pb	207	107007.5	0.0	**22.9597**	0.441	1.9	ug/L	177	Standard
	Pb	208	448701.7	0.5	**23.9681**	0.403	1.7	ug/L	722	Standard
	U	238	163510.2	0.7	**23.0183**	0.313	1.4	ug/L	8	Standard
>	Bi	209	459892.6	2.0				ug/L	444563	Standard

Sample ID: LCSS M8 WG575144-03
Report Date/Time: Tuesday, July 05, 2016 16:59:20
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	41.7	6.9	**0.0229**	0.003	13.2	mg/L	38	Standard
K	39	30.0	44.1	**0.0122**	0.060	491.3	mg/L	33	Standard
Ca	43	25.0	40.0	**-1.6431**	1.650	100.4	mg/L	48	Standard
Fe	54	141.4	12.1	**0.0065**	0.014	209.6	mg/L	131	Standard
Fe	57	195.0	20.5	**0.1708**	0.129	75.3	mg/L	153	Standard
> **Sc-1**	45	24710.1	2.4				mg/L	26715	Standard
Cl	35	133297.9	1.3				ug/L	102686	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1546.7	16.5				ug/L	1897	Standard
P	31	20772.6	2.1				ug/L	18491	Standard
S	34	4287.3	4.1				ug/L	3734	Standard
Sr	88	66.7	34.6				ug/L	47	Standard
C	12	50.0	52.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	26.4				mg/L	23	Standard
Dy	164	6.0	93.6				mg/L	23	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	6786.5	2.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.606	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.228	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSS M8 WG575144-03
Report Date/Time: Tuesday, July 05, 2016 16:59:20
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.156
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.448
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M8 WG575144-03
Report Date/Time: Tuesday, July 05, 2016 16:59:20
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1607008801 WG575144-01
Sample Date/Time: Tuesday, July 05, 2016 17:00:15
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67310.9	2.5				ug/L	59517	Standard
	Be	9	131.7	19.1	**0.1030**	0.027	26.7	ug/L	10	Standard
	Al	27	375349.3	0.9	**2.1695**	0.034	1.6	ug/L	1872	Standard
	Sc	45	25337.9	3.4				ug/L	26715	Standard
	Ti	47	9964.6	1.4	**40.6386**	0.350	0.9	ug/L	54	Standard
	V	51	32593.8	0.9	**4.2277**	0.042	1.0	ug/L	1419	Standard
	Cr	52	25304.1	1.1	**2.4968**	0.083	3.3	ug/L	7059	Standard
	Cr	53	2950.3	5.7	**2.8269**	0.182	6.5	ug/L	398	Standard
	Mn	55	48918.5	0.6	**7.4115**	0.117	1.6	ug/L	824	Standard
	Co	59	7642.3	1.7	**1.0723**	0.025	2.3	ug/L	167	Standard
	Ni	60	4560.4	1.0	**2.1785**	0.036	1.7	ug/L	391	Standard
	Cu	65	2696.6	2.0	**1.3223**	0.008	0.6	ug/L	147	Standard
	Zn	66	11632.5	1.2	**10.1246**	0.274	2.7	ug/L	184	Standard
>	**Ge**	72	433600.8	1.6				ug/L	422998	Standard
	As	75	1058.1	3.7	**0.9615**	0.031	3.2	ug/L	-58	Standard
	Se	82	26.7	13.0	**0.0166**	0.031	187.3	ug/L	15	Standard
	Se-1	77	78.0	23.1	**0.3375**	0.245	72.5	ug/L	58	Standard
>	**Ga**	71	4562.4	1.3				mg/L	113	Standard
	Rb	85	15681.4	2.0				ug/L	27	Standard
	Y	89	382488.4	2.8				ug/L	383780	Standard
>	**Rh**	103	5.0	100.0				ug/L	18	Standard
	Mo	98	1999.8	0.9	**0.7407**	0.011	1.5	ug/L	31	Standard
	Ag	107	167.0	21.4	**0.0127**	0.005	42.5	ug/L	84	Standard
	Cd	111	110.1	9.2	**0.0474**	0.005	10.7	mg/L	4	Standard
	Cd	114	311.0	33.0	**0.0555**	0.020	36.3	ug/L	15	Standard
>	**In**	115	517152.4	0.7				ug/L	515400	Standard
	Sn	118	460.0	11.5	**-0.1017**	0.010	9.5	ug/L	1043	Standard
	Sb	123	813.1	35.5	**0.1610**	0.064	39.8	ug/L	227	Standard
	Ba	135	25995.0	1.5	**12.8647**	0.238	1.9	ug/L	31	Standard
	Ce	140	283703.3	0.9				ug/L	120	Standard
>	**Tb**	159	787236.7	1.6				ug/L	785817	Standard
	Ho	165	1310.1	5.3				ug/L	7	Standard
	Tl	203	371.3	24.4	**0.0416**	0.012	27.9	ug/L	6	Standard
	Tl	205	301.7	10.1	**0.0353**	0.005	13.5	ug/L	8	Standard
	Pb	206	11962.4	0.8	**2.2894**	0.024	1.1	ug/L	201	Standard
	Pb	207	9702.1	0.7	**2.0468**	0.014	0.7	ug/L	177	Standard
	Pb	208	42264.2	0.7	**2.2231**	0.019	0.9	ug/L	722	Standard
	U	238	1081.7	4.4	**0.1505**	0.008	5.6	ug/L	8	Standard
>	**Bi**	209	457892.2	1.2				ug/L	444563	Standard

Sample ID: L1607008801 WG575144-01
Report Date/Time: Tuesday, July 05, 2016 17:02:32
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	70.0	35.7	**0.0594**	0.034	56.9	mg/L	38	Standard
K	39	40.0	69.6	**0.0540**	0.123	227.6	mg/L	33	Standard
Ca	43	26.7	65.8	**-1.4815**	2.794	188.6	mg/L	48	Standard
Fe	54	2357.7	4.2	**1.8902**	0.143	7.6	mg/L	131	Standard
Fe	57	785.0	8.3	**2.0895**	0.302	14.4	mg/L	153	Standard
> **Sc-1**	45	25337.9	3.4				mg/L	26715	Standard
Cl	35	125408.3	1.9				ug/L	102686	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1916.8	9.5				ug/L	1897	Standard
P	31	20230.2	4.4				ug/L	18491	Standard
S	34	4068.9	1.2				ug/L	3734	Standard
Sr	88	98.3	19.3				ug/L	47	Standard
C	12	130.0	23.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	166.7	28.4				mg/L	23	Standard
Dy	164	2356.0	6.0				mg/L	23	Standard
Ho-1	165	1310.1	5.3				mg/L	7	Standard
Er	166	1410.1	5.6				mg/L	13	Standard
I	127	11649.5	1.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.507	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607008801 WG575144-01
Report Date/Time: Tuesday, July 05, 2016 17:02:32
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.340
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.998
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1607008801S WG575144-04
Sample Date/Time: Tuesday, July 05, 2016 17:03:26
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67900.2	2.5				ug/L	59517	Standard
	Be	9	23598.4	3.2	**23.7729**	1.126	4.7	ug/L	10	Standard
	Al	27	386567.9	1.1	**2.2152**	0.035	1.6	ug/L	1872	Standard
	Sc	45	25246.0	2.8				ug/L	26715	Standard
	Ti	47	10490.6	0.5	**43.2293**	0.194	0.4	ug/L	54	Standard
	V	51	195273.1	1.9	**26.4898**	0.604	2.3	ug/L	1419	Standard
	Cr	52	191879.4	0.6	**25.6178**	0.243	0.9	ug/L	7059	Standard
	Cr	53	23802.0	2.0	**25.9713**	0.741	2.9	ug/L	398	Standard
	Mn	55	188070.4	0.3	**29.1550**	0.200	0.7	ug/L	824	Standard
	Co	59	164776.6	1.6	**23.8701**	0.201	0.8	ug/L	167	Standard
	Ni	60	47687.6	0.8	**24.9203**	0.379	1.5	ug/L	391	Standard
	Cu	65	46834.9	0.9	**24.5076**	0.336	1.4	ug/L	147	Standard
	Zn	66	41388.5	1.2	**36.7899**	0.364	1.0	ug/L	184	Standard
>	Ge	72	429279.9	0.8				ug/L	422998	Standard
	As	75	26335.6	0.8	**22.9250**	0.011	0.0	ug/L	-58	Standard
	Se	82	2664.3	1.5	**22.1851**	0.164	0.7	ug/L	15	Standard
	Se-1	77	1834.8	3.4	**23.1768**	0.964	4.2	ug/L	58	Standard
>	Ga	71	5252.6	1.9				mg/L	113	Standard
	Rb	85	16167.0	3.4				ug/L	27	Standard
	Y	89	379736.3	2.3				ug/L	383780	Standard
>	Rh	103	6.7	43.3				ug/L	18	Standard
	Mo	98	2166.1	1.4	**0.7947**	0.004	0.5	ug/L	31	Standard
	Ag	107	150726.7	0.7	**22.0545**	0.322	1.5	ug/L	84	Standard
	Cd	111	48574.9	0.7	**22.4967**	0.303	1.3	mg/L	4	Standard
	Cd	114	118872.5	0.9	**22.6871**	0.276	1.2	ug/L	15	Standard
>	In	115	522451.8	1.0				ug/L	515400	Standard
	Sn	118	515.0	16.8	**-0.0931**	0.016	16.7	ug/L	1043	Standard
	Sb	123	70679.7	3.1	**15.2136**	0.327	2.1	ug/L	227	Standard
	Ba	135	71414.2	0.2	**35.0249**	0.350	1.0	ug/L	31	Standard
	Ce	140	285982.4	1.5				ug/L	120	Standard
>	Tb	159	793691.4	0.6				ug/L	785817	Standard
	Ho	165	1121.7	2.7				ug/L	7	Standard
	Tl	203	189225.4	1.1	**22.7266**	0.429	1.9	ug/L	6	Standard
	Tl	205	167950.7	0.6	**23.1524**	0.275	1.2	ug/L	8	Standard
	Pb	206	133524.8	0.5	**25.7408**	0.300	1.2	ug/L	201	Standard
	Pb	207	115432.7	0.6	**24.6105**	0.305	1.2	ug/L	177	Standard
	Pb	208	483051.9	0.5	**25.6402**	0.314	1.2	ug/L	722	Standard
	U	238	163793.9	0.6	**22.9102**	0.219	1.0	ug/L	8	Standard
>	Bi	209	462801.0	0.8				ug/L	444563	Standard

Sample ID: L1607008801S WG575144-04
Report Date/Time: Tuesday, July 05, 2016 17:05:43
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	65.0	23.1	**0.0529**	0.021	40.2	mg/L	38	Standard
K	39	41.7	36.7	**0.0626**	0.066	105.5	mg/L	33	Standard
Ca	43	40.0	12.5	**0.7911**	0.931	117.7	mg/L	48	Standard
Fe	54	2118.1	2.6	**1.6910**	0.069	4.1	mg/L	131	Standard
Fe	57	758.4	2.1	**2.0051**	0.051	2.5	mg/L	153	Standard
> **Sc-1**	45	25246.0	2.8				mg/L	26715	Standard
Cl	35	122934.7	0.6				ug/L	102686	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	1963.5	6.1				ug/L	1897	Standard
P	31	19874.7	2.0				ug/L	18491	Standard
S	34	3900.5	3.9				ug/L	3734	Standard
Sr	88	68.3	51.4				ug/L	47	Standard
C	12	86.7	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	50.6				mg/L	23	Standard
Dy	164	2165.6	10.4				mg/L	23	Standard
Ho-1	165	1121.7	2.7				mg/L	7	Standard
Er	166	1000.0	13.5				mg/L	13	Standard
I	127	11070.7	1.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.086	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.485	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607008801S WG575144-04
Report Date/Time: Tuesday, July 05, 2016 17:05:43
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.368
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.103
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1607008801SD WG575144-05
Sample Date/Time: Tuesday, July 05, 2016 17:06:38
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67953.8	3.2				ug/L	59517	Standard
	Be	9	23817.0	1.9	**23.9672**	0.355	1.5	ug/L	10	Standard
	Al	27	375808.6	0.5	**2.1522**	0.059	2.8	ug/L	1872	Standard
	Sc	45	26107.5	1.1				ug/L	26715	Standard
	Ti	47	11505.7	1.3	**47.2005**	0.731	1.5	ug/L	54	Standard
	V	51	194202.3	1.0	**26.2104**	0.232	0.9	ug/L	1419	Standard
	Cr	52	188631.9	0.1	**25.0377**	0.152	0.6	ug/L	7059	Standard
	Cr	53	23007.5	0.9	**24.9605**	0.144	0.6	ug/L	398	Standard
	Mn	55	184295.1	0.6	**28.4240**	0.088	0.3	ug/L	824	Standard
	Co	59	164370.8	1.0	**23.6938**	0.120	0.5	ug/L	167	Standard
	Ni	60	47214.1	0.6	**24.5466**	0.269	1.1	ug/L	391	Standard
	Cu	65	46768.7	0.3	**24.3505**	0.181	0.7	ug/L	147	Standard
	Zn	66	41604.0	0.5	**36.7989**	0.296	0.8	ug/L	184	Standard
>	Ge	72	431415.1	0.5				ug/L	422998	Standard
	As	75	26112.6	0.8	**22.6193**	0.206	0.9	ug/L	-58	Standard
	Se	82	2724.5	1.2	**22.5786**	0.229	1.0	ug/L	15	Standard
	Se-1	77	1810.4	4.2	**22.7372**	0.873	3.8	ug/L	58	Standard
>	Ga	71	5085.9	1.0				mg/L	113	Standard
	Rb	85	16475.6	2.2				ug/L	27	Standard
	Y	89	387347.8	1.5				ug/L	383780	Standard
>	Rh	103	25.0	0.0				ug/L	18	Standard
	Mo	98	2103.2	1.3	**0.7774**	0.012	1.6	ug/L	31	Standard
	Ag	107	150901.4	0.9	**22.2475**	0.240	1.1	ug/L	84	Standard
	Cd	111	48577.7	0.6	**22.6687**	0.192	0.8	mg/L	4	Standard
	Cd	114	117980.0	2.6	**22.6882**	0.607	2.7	ug/L	15	Standard
>	In	115	518488.0	0.3				ug/L	515400	Standard
	Sn	118	478.3	28.3	**-0.0988**	0.023	23.5	ug/L	1043	Standard
	Sb	123	71145.8	2.8	**15.4336**	0.446	2.9	ug/L	227	Standard
	Ba	135	70389.1	1.4	**34.7845**	0.566	1.6	ug/L	31	Standard
	Ce	140	262343.7	1.6				ug/L	120	Standard
>	Tb	159	789356.9	0.6				ug/L	785817	Standard
	Ho	165	1166.7	0.7				ug/L	7	Standard
	Tl	203	189224.6	0.4	**22.7097**	0.032	0.1	ug/L	6	Standard
	Tl	205	164722.3	1.3	**22.6908**	0.201	0.9	ug/L	8	Standard
	Pb	206	131539.6	0.9	**25.3392**	0.116	0.5	ug/L	201	Standard
	Pb	207	113870.3	0.1	**24.2600**	0.134	0.6	ug/L	177	Standard
	Pb	208	482782.8	0.1	**25.6082**	0.147	0.6	ug/L	722	Standard
	U	238	163029.8	0.7	**22.7879**	0.180	0.8	ug/L	8	Standard
>	Bi	209	463100.5	0.5				ug/L	444563	Standard

Sample ID: L1607008801SD WG575144-05
Report Date/Time: Tuesday, July 05, 2016 17:08:55
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	66.7	28.4	**0.0519**	0.024	45.5	mg/L	38	Standard
K	39	40.0	25.0	**0.0499**	0.044	88.6	mg/L	33	Standard
Ca	43	26.7	10.8	**-1.5859**	0.451	28.5	mg/L	48	Standard
Fe	54	2238.1	5.0	**1.7302**	0.111	6.4	mg/L	131	Standard
Fe	57	738.4	5.5	**1.8600**	0.154	8.3	mg/L	153	Standard
> **Sc-1**	45	26107.5	1.1				mg/L	26715	Standard
Cl	35	121406.5	0.8				ug/L	102686	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2096.8	4.3				ug/L	1897	Standard
P	31	20266.9	3.5				ug/L	18491	Standard
S	34	3825.5	5.5				ug/L	3734	Standard
Sr	88	81.7	7.1				ug/L	47	Standard
C	12	116.7	27.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	126.7	38.9				mg/L	23	Standard
Dy	164	2141.6	3.5				mg/L	23	Standard
Ho-1	165	1166.7	0.7				mg/L	7	Standard
Er	166	1083.4	3.7				mg/L	13	Standard
I	127	11385.9	3.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.176	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.990	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607008801SD WG575144-05
Report Date/Time: Tuesday, July 05, 2016 17:08:55
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.599
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.170
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1607008801PS WG575217-01
Sample Date/Time: Tuesday, July 05, 2016 17:09:49
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66924.2	2.1				ug/L	59517	Standard
	Be	9	47544.5	1.8	**48.6090**	1.112	2.3	ug/L	10	Standard
	Al	27	375557.5	0.1	**2.1834**	0.049	2.2	ug/L	1872	Standard
	Sc	45	25059.0	1.0				ug/L	26715	Standard
	Ti	47	9859.9	1.6	**41.0316**	0.232	0.6	ug/L	54	Standard
	V	51	374261.9	0.8	**51.4579**	0.501	1.0	ug/L	1419	Standard
	Cr	52	362966.8	0.1	**49.8478**	0.592	1.2	ug/L	7059	Standard
	Cr	53	45073.7	3.2	**50.0659**	2.091	4.2	ug/L	398	Standard
	Mn	55	345797.4	1.1	**54.2684**	0.634	1.2	ug/L	824	Standard
	Co	59	335496.8	1.2	**49.1282**	0.402	0.8	ug/L	167	Standard
	Ni	60	93581.5	0.7	**49.6018**	0.760	1.5	ug/L	391	Standard
	Cu	65	94299.5	0.6	**49.9328**	0.567	1.1	ug/L	147	Standard
	Zn	66	65654.6	0.6	**59.0561**	0.402	0.7	ug/L	184	Standard
>	Ge	72	424923.9	1.1				ug/L	422998	Standard
	As	75	56769.3	0.3	**49.8677**	0.682	1.4	ug/L	-58	Standard
	Se	82	5666.9	1.1	**47.9122**	0.605	1.3	ug/L	15	Standard
	Se-1	77	3810.8	3.1	**49.3651**	1.822	3.7	ug/L	58	Standard
>	Ga	71	4452.3	0.5				mg/L	113	Standard
	Rb	85	15718.1	1.4				ug/L	27	Standard
	Y	89	376977.6	1.3				ug/L	383780	Standard
>	Rh	103	20.0	66.1				ug/L	18	Standard
	Mo	98	1951.5	0.7	**0.7343**	0.007	1.0	ug/L	31	Standard
	Ag	107	318051.3	0.7	**47.7822**	0.378	0.8	ug/L	84	Standard
	Cd	111	102330.9	0.5	**48.6530**	0.587	1.2	mg/L	4	Standard
	Cd	114	250237.0	1.7	**49.0273**	0.781	1.6	ug/L	15	Standard
>	In	115	508965.4	0.9				ug/L	515400	Standard
	Sn	118	615.0	17.4	**-0.0733**	0.019	26.3	ug/L	1043	Standard
	Sb	123	219849.4	2.2	**48.6193**	1.054	2.2	ug/L	227	Standard
	Ba	135	118070.6	0.4	**59.4569**	0.446	0.7	ug/L	31	Standard
	Ce	140	282681.0	0.8				ug/L	120	Standard
>	Tb	159	771843.4	1.4				ug/L	785817	Standard
	Ho	165	1366.7	5.6				ug/L	7	Standard
	Tl	203	399064.4	0.4	**48.6784**	0.624	1.3	ug/L	6	Standard
	Tl	205	348671.6	1.2	**48.8205**	0.637	1.3	ug/L	8	Standard
	Pb	206	267317.2	0.4	**52.3821**	0.425	0.8	ug/L	201	Standard
	Pb	207	231516.4	0.6	**50.1769**	0.399	0.8	ug/L	177	Standard
	Pb	208	962927.7	0.5	**51.9582**	0.676	1.3	ug/L	722	Standard
	U	238	341935.3	0.4	**48.5749**	0.372	0.8	ug/L	8	Standard
>	Bi	209	455704.5	0.9				ug/L	444563	Standard

Sample ID: L1607008801PS WG575217-01
Report Date/Time: Tuesday, July 05, 2016 17:12:06
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	65.0	40.0	**0.0536**	0.036	66.8	mg/L	38	Standard
K	39	23.3	32.7	**-0.0202**	0.036	180.8	mg/L	33	Standard
Ca	43	16.7	17.3	**-3.0801**	0.515	16.7	mg/L	48	Standard
Fe	54	2332.3	7.8	**1.8882**	0.165	8.7	mg/L	131	Standard
Fe	57	813.4	10.4	**2.2062**	0.300	13.6	mg/L	153	Standard
> **Sc-1**	45	25059.0	1.0				mg/L	26715	Standard
Cl	35	118448.5	0.5				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1940.1	3.6				ug/L	1897	Standard
P	31	19035.3	1.5				ug/L	18491	Standard
S	34	3733.8	1.7				ug/L	3734	Standard
Sr	88	60.0	43.3				ug/L	47	Standard
C	12	100.0	43.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	133.3	22.9				mg/L	23	Standard
Dy	164	2332.4	13.7				mg/L	23	Standard
Ho-1	165	1366.7	5.6				mg/L	7	Standard
Er	166	1206.7	2.7				mg/L	13	Standard
I	127	10098.4	4.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.446	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.455	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607008801PS WG575217-01
Report Date/Time: Tuesday, July 05, 2016 17:12:06
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.752	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.506	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1607008801PS WG575217-01
Report Date/Time: Tuesday, July 05, 2016 17:12:06
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1607008801SDL WG575217-02
Sample Date/Time: Tuesday, July 05, 2016 17:13:01
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61872.8	2.7				ug/L	59517	Standard
	Be	9	61.7	24.8	**0.0373**	0.018	48.3	ug/L	10	Standard
	Al	27	69700.0	2.5	**0.4282**	0.002	0.4	ug/L	1872	Standard
	Sc	45	22605.2	5.3				ug/L	26715	Standard
	Ti	47	1817.4	2.0	**7.9224**	0.182	2.3	ug/L	54	Standard
	V	51	6918.1	1.2	**0.8455**	0.030	3.5	ug/L	1419	Standard
	Cr	52	8074.5	1.0	**0.2382**	0.045	18.8	ug/L	7059	Standard
	Cr	53	858.4	9.0	**0.6205**	0.075	12.1	ug/L	398	Standard
	Mn	55	9521.7	1.0	**1.4775**	0.047	3.2	ug/L	824	Standard
	Co	59	1614.8	4.6	**0.2290**	0.014	6.3	ug/L	167	Standard
	Ni	60	1275.4	1.9	**0.5288**	0.019	3.6	ug/L	391	Standard
	Cu	65	932.0	3.2	**0.4520**	0.029	6.4	ug/L	147	Standard
	Zn	66	3304.4	1.7	**3.0401**	0.050	1.6	ug/L	184	Standard
>	**Ge**	72	395937.7	3.2				ug/L	422998	Standard
	As	75	207.3	9.2	**0.2473**	0.024	9.7	ug/L	-58	Standard
	Se	82	16.6	31.9	**-0.0535**	0.052	96.7	ug/L	15	Standard
	Se-1	77	51.0	8.5	**0.0502**	0.059	116.7	ug/L	58	Standard
>	**Ga**	71	915.0	10.4				mg/L	113	Standard
	Rb	85	2967.0	4.3				ug/L	27	Standard
	Y	89	335150.0	3.0				ug/L	383780	Standard
>	**Rh**	103	16.7	34.6				ug/L	18	Standard
	Mo	98	389.4	4.8	**0.1504**	0.012	8.2	ug/L	31	Standard
	Ag	107	147.3	15.7	**0.0118**	0.004	36.3	ug/L	84	Standard
	Cd	111	44.9	14.5	**0.0188**	0.004	18.8	mg/L	4	Standard
	Cd	114	132.8	26.4	**0.0234**	0.008	33.8	ug/L	15	Standard
>	**In**	115	474581.2	3.5				ug/L	515400	Standard
	Sn	118	268.3	27.7	**-0.1309**	0.012	9.2	ug/L	1043	Standard
	Sb	123	1446.5	29.5	**0.3252**	0.091	28.1	ug/L	227	Standard
	Ba	135	4908.8	1.9	**2.6296**	0.068	2.6	ug/L	31	Standard
	Ce	140	54332.3	1.5				ug/L	120	Standard
>	**Tb**	159	723981.1	3.2				ug/L	785817	Standard
	Ho	165	258.3	3.0				ug/L	7	Standard
	Tl	203	152.7	7.7	**0.0160**	0.002	11.8	ug/L	6	Standard
	Tl	205	131.7	12.2	**0.0127**	0.003	21.2	ug/L	8	Standard
	Pb	206	2548.9	2.0	**0.4810**	0.022	4.5	ug/L	201	Standard
	Pb	207	2040.1	1.1	**0.4182**	0.015	3.5	ug/L	177	Standard
	Pb	208	8741.0	0.2	**0.4485**	0.010	2.3	ug/L	722	Standard
	U	238	256.7	6.2	**0.0359**	0.003	8.5	ug/L	8	Standard
>	**Bi**	209	432872.6	2.2				ug/L	444563	Standard

Sample ID: L1607008801SDL WG575217-02
Report Date/Time: Tuesday, July 05, 2016 17:15:17
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**23.3844**	40.494	173.2	mg/L	0	Standard
Mg	24	51.7	39.1	**0.0422**	0.025	60.3	mg/L	38	Standard
K	39	13.3	114.6	**-0.0588**	0.083	141.8	mg/L	33	Standard
Ca	43	33.3	8.7	**0.3174**	0.379	119.3	mg/L	48	Standard
Fe	54	472.6	8.8	**0.3356**	0.062	18.4	mg/L	131	Standard
Fe	57	351.7	9.1	**0.8117**	0.176	21.7	mg/L	153	Standard
> **Sc-1**	45	22605.2	5.3				mg/L	26715	Standard
Cl	35	111390.7	1.3				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1400.1	10.1				ug/L	1897	Standard
P	31	8570.8	0.9				ug/L	18491	Standard
S	34	3565.4	2.5				ug/L	3734	Standard
Sr	88	68.3	23.5				ug/L	47	Standard
C	12	60.0	60.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	65.5				mg/L	23	Standard
Dy	164	412.2	14.0				mg/L	23	Standard
Ho-1	165	258.3	3.0				mg/L	7	Standard
Er	166	233.3	23.6				mg/L	13	Standard
I	127	22758.8	2.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.959	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.603	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607008801SDL WG575217-02
Report Date/Time: Tuesday, July 05, 2016 17:15:17
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.080
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.370
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1607008801SDL WG575217-02
Sample Date/Time: Tuesday, July 05, 2016 17:16:12
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61777.5	4.3				ug/L	59517	Standard
	Be	9	15.0	33.3	**-0.0143**	0.006	42.8	ug/L	10	Standard
	Al	27	14712.1	2.1	**0.0809**	0.006	7.1	ug/L	1872	Standard
	Sc	45	23034.2	0.6				ug/L	26715	Standard
	Ti	47	390.7	7.3	**1.4801**	0.132	8.9	ug/L	54	Standard
	V	51	2233.4	1.4	**0.1459**	0.006	4.4	ug/L	1419	Standard
	Cr	52	5208.9	3.3	**-0.2062**	0.022	10.6	ug/L	7059	Standard
	Cr	53	446.7	19.0	**0.1176**	0.100	85.4	ug/L	398	Standard
	Mn	55	2151.2	2.4	**0.2262**	0.008	3.7	ug/L	824	Standard
	Co	59	485.0	3.8	**0.0499**	0.002	4.7	ug/L	167	Standard
	Ni	60	438.3	3.2	**0.0464**	0.008	18.0	ug/L	391	Standard
	Cu	65	377.7	1.6	**0.1324**	0.004	2.8	ug/L	147	Standard
	Zn	66	1272.7	1.9	**1.0524**	0.024	2.3	ug/L	184	Standard
>	**Ge**	72	402537.9	0.6				ug/L	422998	Standard
	As	75	17.7	149.3	**0.0680**	0.024	35.9	ug/L	-58	Standard
	Se	82	15.7	64.9	**-0.0656**	0.090	137.7	ug/L	15	Standard
	Se-1	77	48.3	11.4	**0.0017**	0.080	4630.2	ug/L	58	Standard
>	**Ga**	71	176.7	30.0				mg/L	113	Standard
	Rb	85	591.7	2.7				ug/L	27	Standard
	Y	89	340797.4	1.6				ug/L	383780	Standard
>	**Rh**	103	8.3	34.6				ug/L	18	Standard
	Mo	98	159.5	35.2	**0.0550**	0.022	39.5	ug/L	31	Standard
	Ag	107	110.3	21.5	**0.0055**	0.004	64.5	ug/L	84	Standard
	Cd	111	18.7	43.6	**0.0052**	0.004	76.8	mg/L	4	Standard
	Cd	114	31.4	60.6	**0.0019**	0.004	204.4	ug/L	15	Standard
>	**In**	115	481776.6	1.5				ug/L	515400	Standard
	Sn	118	258.3	27.8	**-0.1333**	0.013	9.5	ug/L	1043	Standard
	Sb	123	416.5	8.3	**0.0809**	0.007	8.3	ug/L	227	Standard
	Ba	135	978.0	2.5	**0.4970**	0.020	4.1	ug/L	31	Standard
	Ce	140	7280.1	16.0				ug/L	120	Standard
>	**Tb**	159	732273.7	0.9				ug/L	785817	Standard
	Ho	165	26.7	75.8				ug/L	7	Standard
	Tl	203	72.7	33.6	**0.0055**	0.003	55.9	ug/L	6	Standard
	Tl	205	95.0	41.1	**0.0069**	0.006	81.6	ug/L	8	Standard
	Pb	206	575.0	2.8	**0.0706**	0.003	4.1	ug/L	201	Standard
	Pb	207	489.3	6.7	**0.0615**	0.008	12.5	ug/L	177	Standard
	Pb	208	2190.1	2.0	**0.0732**	0.002	3.1	ug/L	722	Standard
	U	238	88.0	45.4	**0.0104**	0.006	55.9	ug/L	8	Standard
>	**Bi**	209	442463.3	0.3				ug/L	444563	Standard

Sample ID: L1607008801SDL WG575217-02
Report Date/Time: Tuesday, July 05, 2016 17:18:29
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**22.5251**	39.006	173.2	mg/L	0	Standard
Mg	24	21.7	53.3	**-0.0020**	0.017	848.2	mg/L	38	Standard
K	39	20.0	50.0	**-0.0278**	0.050	181.1	mg/L	33	Standard
Ca	43	26.7	47.2	**-1.0170**	2.274	223.6	mg/L	48	Standard
Fe	54	134.2	30.2	**0.0088**	0.037	425.4	mg/L	131	Standard
Fe	57	241.7	10.2	**0.3868**	0.094	24.2	mg/L	153	Standard
> **Sc-1**	45	23034.2	0.6				mg/L	26715	Standard
Cl	35	111809.7	1.3				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1356.7	8.6				ug/L	1897	Standard
P	31	6941.6	0.8				ug/L	18491	Standard
S	34	3845.5	0.9				ug/L	3734	Standard
Sr	88	81.7	9.4				ug/L	47	Standard
C	12	53.3	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	206.7	39.1				mg/L	23	Standard
Dy	164	61.1	52.0				mg/L	23	Standard
Ho-1	165	26.7	75.8				mg/L	7	Standard
Er	166	46.7	49.5				mg/L	13	Standard
I	127	25935.5	2.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.799	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.163	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607008801SDL WG575217-02
Report Date/Time: Tuesday, July 05, 2016 17:18:29
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.476
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.528
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1607008801SDL WG575217-02
Report Date/Time: Tuesday, July 05, 2016 17:18:29
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 17:19:25
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62095.4	2.4				ug/L	59517	Standard
	Be	9	46370.9	0.1	**51.1063**	1.236	2.4	ug/L	10	Standard
	Al	27	7148391.3	1.7	**45.0289**	0.823	1.8	ug/L	1872	Standard
	Sc	45	24504.8	2.0				ug/L	26715	Standard
	Ti	47	22243.7	1.4	**93.0810**	1.634	1.8	ug/L	54	Standard
	V	51	340029.4	1.1	**46.8315**	0.428	0.9	ug/L	1419	Standard
	Cr	52	343246.8	1.1	**47.1844**	0.521	1.1	ug/L	7059	Standard
	Cr	53	43052.8	1.0	**47.8948**	0.756	1.6	ug/L	398	Standard
	Mn	55	293652.7	0.6	**46.1607**	0.144	0.3	ug/L	824	Standard
	Co	59	329691.0	0.2	**48.3808**	0.427	0.9	ug/L	167	Standard
	Ni	60	89203.2	0.9	**47.3700**	0.697	1.5	ug/L	391	Standard
	Cu	65	89349.4	0.8	**47.4037**	0.110	0.2	ug/L	147	Standard
	Zn	66	54487.5	0.6	**49.0869**	0.429	0.9	ug/L	184	Standard
>	Ge	72	424032.9	0.8				ug/L	422998	Standard
	As	75	54417.2	0.7	**47.9003**	0.344	0.7	ug/L	-58	Standard
	Se	82	5621.3	2.2	**47.6193**	0.673	1.4	ug/L	15	Standard
	Se-1	77	3798.5	1.1	**49.2988**	0.147	0.3	ug/L	58	Standard
>	Ga	71	45.0	29.4				mg/L	113	Standard
	Rb	85	835.0	4.1				ug/L	27	Standard
	Y	89	362071.8	0.3				ug/L	383780	Standard
>	Rh	103	43.3	29.0				ug/L	18	Standard
	Mo	98	255133.2	1.0	**97.7947**	1.272	1.3	ug/L	31	Standard
	Ag	107	314462.5	0.7	**47.5514**	0.161	0.3	ug/L	84	Standard
	Cd	111	100786.0	1.1	**48.2291**	0.373	0.8	mg/L	4	Standard
	Cd	114	247586.3	1.0	**48.8252**	0.423	0.9	ug/L	15	Standard
>	In	115	505645.9	0.3				ug/L	515400	Standard
	Sn	118	277679.9	0.9	**48.7028**	0.449	0.9	ug/L	1043	Standard
	Sb	123	222886.4	1.7	**49.6126**	0.703	1.4	ug/L	227	Standard
	Ba	135	92084.3	0.1	**46.6687**	0.110	0.2	ug/L	31	Standard
	Ce	140	431.7	14.7				ug/L	120	Standard
>	Tb	159	768951.5	0.5				ug/L	785817	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	386576.1	0.1	**48.4098**	0.128	0.3	ug/L	6	Standard
	Tl	205	344959.7	1.2	**49.5883**	0.630	1.3	ug/L	8	Standard
	Pb	206	243178.4	1.0	**48.9194**	0.603	1.2	ug/L	201	Standard
	Pb	207	221326.1	0.3	**49.2460**	0.265	0.5	ug/L	177	Standard
	Pb	208	916317.1	0.5	**50.7581**	0.358	0.7	ug/L	722	Standard
	U	238	344164.5	1.0	**50.1951**	0.638	1.3	ug/L	8	Standard
>	Bi	209	443861.9	0.3				ug/L	444563	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 17:21:42
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3800.5	2.3	**5.1723**	0.216	4.2	mg/L	38	Standard
K	39	755.0	2.3	**3.4760**	0.150	4.3	mg/L	33	Standard
Ca	43	56.7	13.5	**3.8403**	1.271	33.1	mg/L	48	Standard
Fe	54	5869.6	1.5	**5.0426**	0.108	2.1	mg/L	131	Standard
Fe	57	1800.1	7.3	**5.6048**	0.548	9.8	mg/L	153	Standard
Sc-1	45	24504.8	2.0				mg/L	26715	Standard
Cl	35	131374.5	1.1				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1550.1	4.5				ug/L	1897	Standard
P	31	22149.5	0.6				ug/L	18491	Standard
S	34	5015.8	5.8				ug/L	3734	Standard
Sr	88	85.0	31.1				ug/L	47	Standard
C	12	53.3	60.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	150.0	13.3				mg/L	23	Standard
Dy	164	2.7	204.0				mg/L	23	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	9831.5	4.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.213		
Al	27	90.058		
Sc	45			
Ti	47	93.081		
V	51	93.663		
Cr	52	94.369		
Cr	53			
Mn	55	92.321		
Co	59	96.762		
Ni	60	94.740		
Cu	65	94.807		
Zn	66	98.174		
Ge	72		100.245	
As	75	95.801		
Se	82	95.239		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 17:21:42
Page 2

Approved: July 06, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	97.795		
Ag	107	95.103		
Cd	111	96.458		
Cd	114			
In	115			98.108
Sn	118	97.406		
Sb	123	99.225		
Ba	135	93.337		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.820		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.516		
U	238	100.390		
Bi	209			99.842
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 17:21:42
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 17:22:36
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62637.5	0.8				ug/L	59517	Standard
	Be	9	43.3	69.6	**0.0163**	0.033	202.1	ug/L	10	Standard
	Al	27	3467.3	85.0	**0.0092**	0.018	199.5	ug/L	1872	Standard
	Sc	45	24937.2	1.1				ug/L	26715	Standard
	Ti	47	29.0	28.2	**-0.1258**	0.033	26.5	ug/L	54	Standard
	V	51	1260.1	24.9	**-0.0062**	0.042	669.0	ug/L	1419	Standard
	Cr	52	5772.8	1.0	**-0.1696**	0.011	6.4	ug/L	7059	Standard
	Cr	53	555.0	11.3	**0.2093**	0.065	31.1	ug/L	398	Standard
	Mn	55	769.7	36.2	**-0.0104**	0.043	409.3	ug/L	824	Standard
	Co	59	366.0	54.4	**0.0283**	0.029	101.1	ug/L	167	Standard
	Ni	60	292.7	17.8	**-0.0446**	0.026	59.0	ug/L	391	Standard
	Cu	65	178.7	20.0	**0.0154**	0.018	117.7	ug/L	147	Standard
	Zn	66	212.3	23.3	**0.0316**	0.043	135.9	ug/L	184	Standard
>	**Ge**	72	425929.7	0.8				ug/L	422998	Standard
	As	75	24.8	383.5	**0.0729**	0.083	113.6	ug/L	-58	Standard
	Se	82	20.8	68.3	**-0.0307**	0.119	388.0	ug/L	15	Standard
	Se-1	77	56.3	22.2	**0.0687**	0.159	231.8	ug/L	58	Standard
>	**Ga**	71	40.0	43.3				mg/L	113	Standard
	Rb	85	45.0	22.2				ug/L	27	Standard
	Y	89	359083.6	0.4				ug/L	383780	Standard
>	**Rh**	103	13.3	21.7				ug/L	18	Standard
	Mo	98	237.7	33.6	**0.0814**	0.030	36.9	ug/L	31	Standard
	Ag	107	280.3	90.8	**0.0300**	0.038	126.7	ug/L	84	Standard
	Cd	111	74.6	132.2	**0.0311**	0.047	149.5	mg/L	4	Standard
	Cd	114	186.0	137.3	**0.0317**	0.050	156.9	ug/L	15	Standard
>	**In**	115	509942.2	0.6				ug/L	515400	Standard
	Sn	118	956.7	34.3	**-0.0142**	0.057	399.4	ug/L	1043	Standard
	Sb	123	1103.5	36.2	**0.2270**	0.087	38.4	ug/L	227	Standard
	Ba	135	129.7	102.5	**0.0413**	0.066	160.9	ug/L	31	Standard
	Ce	140	288.3	78.0				ug/L	120	Standard
>	**Tb**	159	765571.5	1.7				ug/L	785817	Standard
	Ho	165	13.3	142.0				ug/L	7	Standard
	Tl	203	285.3	115.3	**0.0311**	0.040	127.7	ug/L	6	Standard
	Tl	205	171.7	80.2	**0.0172**	0.019	110.3	ug/L	8	Standard
	Pb	206	387.0	51.8	**0.0305**	0.038	126.3	ug/L	201	Standard
	Pb	207	332.0	48.8	**0.0243**	0.034	141.6	ug/L	177	Standard
	Pb	208	1293.0	41.1	**0.0214**	0.028	130.6	ug/L	722	Standard
	U	238	159.0	87.9	**0.0201**	0.020	97.6	ug/L	8	Standard
>	**Bi**	209	453389.3	1.0				ug/L	444563	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 17:24:53
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	28.3	97.2	**0.0045**	0.037	822.2	mg/L	38	Standard
K	39	13.3	86.6	**-0.0670**	0.054	80.4	mg/L	33	Standard
Ca	43	18.3	15.7	**-2.7853**	0.515	18.5	mg/L	48	Standard
Fe	54	140.6	13.9	**0.0048**	0.016	341.7	mg/L	131	Standard
Fe	57	226.7	12.1	**0.2704**	0.091	33.8	mg/L	153	Standard
Sc-1	45	24937.2	1.1				mg/L	26715	Standard
Cl	35	127732.2	1.0				ug/L	102686	Standard
Kr	83	2.7	114.6				ug/L	2	Standard
Br	81	1460.1	2.4				ug/L	1897	Standard
P	31	20876.0	3.4				ug/L	18491	Standard
S	34	4664.1	6.1				ug/L	3734	Standard
Sr	88	63.3	16.4				ug/L	47	Standard
C	12	70.0	37.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	49.8				mg/L	23	Standard
Dy	164	2.5	205.9				mg/L	23	Standard
Ho-1	165	13.3	142.0				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	7196.7	6.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.693	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 17:24:53
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.941
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.985
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 17:24:53
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: PBW 32 WG573662-03
Sample Date/Time: Tuesday, July 05, 2016 17:25:49
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63124.6	0.9				ug/L	59517	Standard
	Be	9	35.0	0.0	**0.0068**	0.000	4.7	ug/L	10	Standard
	Al	27	11134.1	3.7	**0.0566**	0.002	4.0	ug/L	1872	Standard
	Sc	45	24993.9	3.4				ug/L	26715	Standard
	Ti	47	27.0	9.8	**-0.1314**	0.012	9.0	ug/L	54	Standard
	V	51	1235.6	12.4	**-0.0056**	0.020	364.6	ug/L	1419	Standard
	Cr	52	8428.7	1.3	**0.2284**	0.013	5.8	ug/L	7059	Standard
	Cr	53	898.4	5.3	**0.6160**	0.047	7.6	ug/L	398	Standard
	Mn	55	10099.4	1.8	**1.4904**	0.027	1.8	ug/L	824	Standard
	Co	59	374.7	13.2	**0.0309**	0.007	23.0	ug/L	167	Standard
	Ni	60	524.0	3.2	**0.0847**	0.008	9.3	ug/L	391	Standard
	Cu	65	722.4	1.3	**0.3119**	0.002	0.6	ug/L	147	Standard
	Zn	66	36483.2	1.4	**33.4231**	0.705	2.1	ug/L	184	Standard
>	**Ge**	72	416378.9	0.8				ug/L	422998	Standard
	As	75	-4.3	123.2	**0.0478**	0.005	9.8	ug/L	-58	Standard
	Se	82	12.8	22.7	**-0.0953**	0.025	25.9	ug/L	15	Standard
	Se-1	77	50.3	13.5	**0.0058**	0.089	1538.2	ug/L	58	Standard
>	**Ga**	71	28.3	44.4				mg/L	113	Standard
	Rb	85	31.7	36.5				ug/L	27	Standard
	Y	89	362712.1	1.1				ug/L	383780	Standard
>	**Rh**	103	8.3	34.6				ug/L	18	Standard
	Mo	98	80.4	34.3	**0.0216**	0.011	49.5	ug/L	31	Standard
	Ag	107	185.3	24.7	**0.0158**	0.007	44.8	ug/L	84	Standard
	Cd	111	24.2	70.6	**0.0073**	0.008	111.4	mg/L	4	Standard
	Cd	114	49.7	138.9	**0.0052**	0.014	262.0	ug/L	15	Standard
>	**In**	115	511336.7	0.9				ug/L	515400	Standard
	Sn	118	881.7	13.9	**-0.0273**	0.023	82.7	ug/L	1043	Standard
	Sb	123	605.3	34.3	**0.1172**	0.047	39.8	ug/L	227	Standard
	Ba	135	128.0	25.3	**0.0406**	0.017	41.4	ug/L	31	Standard
	Ce	140	170.0	33.9				ug/L	120	Standard
>	**Tb**	159	761463.3	1.1				ug/L	785817	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	76.3	89.9	**0.0057**	0.008	145.9	ug/L	6	Standard
	Tl	205	68.3	85.7	**0.0028**	0.008	291.1	ug/L	8	Standard
	Pb	206	283.3	14.5	**0.0103**	0.008	76.7	ug/L	201	Standard
	Pb	207	264.0	23.0	**0.0097**	0.013	134.6	ug/L	177	Standard
	Pb	208	1047.3	13.7	**0.0083**	0.008	91.9	ug/L	722	Standard
	U	238	65.3	87.7	**0.0068**	0.008	119.0	ug/L	8	Standard
>	**Bi**	209	453127.9	0.3				ug/L	444563	Standard

Sample ID: PBW 32 WG573662-03
Report Date/Time: Tuesday, July 05, 2016 17:28:06
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	43.3	35.3	**0.0244**	0.020	80.1	mg/L	38	Standard
K	39	21.7	26.6	**-0.0276**	0.028	103.3	mg/L	33	Standard
Ca	43	20.0	25.0	**-2.4970**	0.950	38.1	mg/L	48	Standard
Fe	54	184.5	13.6	**0.0430**	0.027	63.0	mg/L	131	Standard
Fe	57	220.0	2.3	**0.2475**	0.040	16.3	mg/L	153	Standard
> **Sc-1**	45	24993.9	3.4				mg/L	26715	Standard
Cl	35	127699.9	0.6				ug/L	102686	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1566.7	3.2				ug/L	1897	Standard
P	31	20333.6	2.8				ug/L	18491	Standard
S	34	4599.0	2.0				ug/L	3734	Standard
Sr	88	91.7	11.4				ug/L	47	Standard
C	12	60.0	16.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	83.3	6.9				mg/L	23	Standard
Dy	164	5.4	102.4				mg/L	23	Standard
Ho-1	165	18.3	56.8				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	13	Standard
I	127	1263.4	10.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.062	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.435	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 32 WG573662-03
Report Date/Time: Tuesday, July 05, 2016 17:28:06
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.212
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.927
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 32 WG573662-03
Report Date/Time: Tuesday, July 05, 2016 17:28:06
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: LCSW 32 WG573662-04
Sample Date/Time: Tuesday, July 05, 2016 17:29:01
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64195.7	1.5				ug/L	59517	Standard
	Be	9	45775.7	2.6	**48.7754**	0.685	1.4	ug/L	10	Standard
	Al	27	10818.9	3.4	**0.0535**	0.001	2.3	ug/L	1872	Standard
	Sc	45	24802.0	4.1				ug/L	26715	Standard
	Ti	47	29.7	13.6	**-0.1227**	0.018	15.0	ug/L	54	Standard
	V	51	331905.5	1.2	**45.5096**	0.047	0.1	ug/L	1419	Standard
	Cr	52	339438.2	0.7	**46.4495**	0.807	1.7	ug/L	7059	Standard
	Cr	53	42579.8	2.7	**47.1689**	1.819	3.9	ug/L	398	Standard
	Mn	55	298410.5	1.0	**46.7098**	0.548	1.2	ug/L	824	Standard
	Co	59	321381.0	1.3	**46.9595**	0.836	1.8	ug/L	167	Standard
	Ni	60	87595.1	0.3	**46.3125**	0.637	1.4	ug/L	391	Standard
	Cu	65	88454.5	0.4	**46.7313**	0.776	1.7	ug/L	147	Standard
	Zn	66	53588.3	1.1	**48.0725**	1.129	2.3	ug/L	184	Standard
>	Ge	72	425875.9	1.3				ug/L	422998	Standard
	As	75	51384.9	0.3	**45.0413**	0.434	1.0	ug/L	-58	Standard
	Se	82	5484.1	1.2	**46.2630**	1.150	2.5	ug/L	15	Standard
	Se-1	77	3598.8	2.7	**46.4832**	1.845	4.0	ug/L	58	Standard
>	Ga	71	40.0	21.7				mg/L	113	Standard
	Rb	85	36.7	15.7				ug/L	27	Standard
	Y	89	359186.1	0.8				ug/L	383780	Standard
>	Rh	103	31.7	18.2				ug/L	18	Standard
	Mo	98	60.3	6.9	**0.0137**	0.002	12.4	ug/L	31	Standard
	Ag	107	309984.9	0.6	**45.8602**	0.513	1.1	ug/L	84	Standard
	Cd	111	98309.5	1.3	**46.0267**	0.742	1.6	mg/L	4	Standard
	Cd	114	241300.7	0.5	**46.5552**	0.311	0.7	ug/L	15	Standard
>	In	115	516853.3	0.8				ug/L	515400	Standard
	Sn	118	843.4	21.1	**-0.0359**	0.029	81.9	ug/L	1043	Standard
	Sb	123	210568.7	1.3	**45.8592**	0.951	2.1	ug/L	227	Standard
	Ba	135	90287.9	0.7	**44.7660**	0.344	0.8	ug/L	31	Standard
	Ce	140	93.3	34.4				ug/L	120	Standard
>	Tb	159	767230.4	1.1				ug/L	785817	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	381970.3	0.7	**46.8534**	0.212	0.5	ug/L	6	Standard
	Tl	205	332986.0	0.4	**46.8871**	0.316	0.7	ug/L	8	Standard
	Pb	206	246905.5	0.4	**48.6517**	0.275	0.6	ug/L	201	Standard
	Pb	207	214932.1	0.8	**46.8428**	0.498	1.1	ug/L	177	Standard
	Pb	208	902420.3	0.3	**48.9635**	0.296	0.6	ug/L	722	Standard
	U	238	330256.2	0.7	**47.1808**	0.499	1.1	ug/L	8	Standard
>	Bi	209	453143.2	0.7				ug/L	444563	Standard

Sample ID: LCSW 32 WG573662-04
Report Date/Time: Tuesday, July 05, 2016 17:31:18
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	6.0	**0.0319**	0.006	19.8	mg/L	38	Standard
K	39	26.7	65.8	**-0.0024**	0.084	3460.4	mg/L	33	Standard
Ca	43	36.7	47.9	**0.3895**	3.200	821.6	mg/L	48	Standard
Fe	54	144.5	22.4	**0.0093**	0.031	330.1	mg/L	131	Standard
Fe	57	230.0	4.3	**0.2860**	0.033	11.4	mg/L	153	Standard
> **Sc-1**	45	24802.0	4.1				mg/L	26715	Standard
Cl	35	127182.9	1.2				ug/L	102686	Standard
Kr	83	2.7	86.6				ug/L	2	Standard
Br	81	1456.7	10.1				ug/L	1897	Standard
P	31	20180.1	0.5				ug/L	18491	Standard
S	34	4512.3	3.8				ug/L	3734	Standard
Sr	88	91.7	13.7				ug/L	47	Standard
C	12	70.0	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	23	Standard
Dy	164	22.7	22.4				mg/L	23	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	1176.7	10.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.862	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.680	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 32 WG573662-04
Report Date/Time: Tuesday, July 05, 2016 17:31:18
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.282
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.930
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 32 WG573662-04
Report Date/Time: Tuesday, July 05, 2016 17:31:18
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090701
Sample Date/Time: Tuesday, July 05, 2016 17:32:12
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57769.9	1.7				ug/L	59517	Standard
	Be	9	38.3	19.9	**0.0144**	0.010	67.7	ug/L	10	Standard
	Al	27	20697.5	0.6	**0.1278**	0.003	2.4	ug/L	1872	Standard
	Sc	45	21345.0	3.7				ug/L	26715	Standard
	Ti	47	1803.1	1.9	**8.2825**	0.389	4.7	ug/L	54	Standard
	V	51	23407.0	1.8	**3.4676**	0.097	2.8	ug/L	1419	Standard
	Cr	52	10794.2	3.5	**0.7318**	0.098	13.4	ug/L	7059	Standard
	Cr	53	1460.1	1.7	**1.4355**	0.019	1.3	ug/L	398	Standard
	Mn	55	787.0	4.9	**0.0089**	0.009	100.8	ug/L	824	Standard
	Co	59	854.4	4.4	**0.1164**	0.010	8.5	ug/L	167	Standard
	Ni	60	3388.4	1.9	**1.8368**	0.073	4.0	ug/L	391	Standard
	Cu	65	302.0	7.2	**0.1016**	0.008	8.2	ug/L	147	Standard
	Zn	66	1436.1	0.7	**1.3036**	0.040	3.0	ug/L	184	Standard
>	Ge	72	376385.0	2.6				ug/L	422998	Standard
	As	75	33062.1	0.7	**32.8186**	0.947	2.9	ug/L	-58	Standard
	Se	82	22.0	45.1	**0.0035**	0.092	2595.5	ug/L	15	Standard
	Se-1	77	64.7	10.1	**0.2910**	0.106	36.3	ug/L	58	Standard
>	Ga	71	78.3	3.7				mg/L	113	Standard
	Rb	85	93.3	20.3				ug/L	27	Standard
	Y	89	319642.0	1.5				ug/L	383780	Standard
>	Rh	103	33.3	8.7				ug/L	18	Standard
	Mo	98	1062.0	7.8	**0.4504**	0.026	5.8	ug/L	31	Standard
	Ag	107	175.0	20.8	**0.0179**	0.006	33.8	ug/L	84	Standard
	Cd	111	23.5	19.9	**0.0086**	0.003	31.6	mg/L	4	Standard
	Cd	114	55.1	47.8	**0.0078**	0.006	78.8	ug/L	15	Standard
>	In	115	447820.8	2.2				ug/L	515400	Standard
	Sn	118	866.7	5.2	**-0.0085**	0.013	151.4	ug/L	1043	Standard
	Sb	123	2790.3	2.5	**0.6857**	0.033	4.8	ug/L	227	Standard
	Ba	135	2815.9	5.2	**1.5902**	0.118	7.4	ug/L	31	Standard
	Ce	140	420.0	67.0				ug/L	120	Standard
>	Tb	159	691896.4	1.7				ug/L	785817	Standard
	Ho	165	31.7	50.8				ug/L	7	Standard
	Tl	203	158.3	25.4	**0.0183**	0.006	31.4	ug/L	6	Standard
	Tl	205	131.7	9.6	**0.0141**	0.002	17.5	ug/L	8	Standard
	Pb	206	279.0	15.1	**0.0164**	0.011	65.2	ug/L	201	Standard
	Pb	207	227.0	8.8	**0.0077**	0.004	54.8	ug/L	177	Standard
	Pb	208	952.7	9.0	**0.0096**	0.007	67.9	ug/L	722	Standard
	U	238	3270.4	7.8	**0.5233**	0.053	10.1	ug/L	8	Standard
>	Bi	209	403265.3	2.3				ug/L	444563	Standard

Sample ID: L1606090701
Report Date/Time: Tuesday, July 05, 2016 17:34:29
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	36111.3	2.4	**56.8068**	3.427	6.0	mg/L	38	Standard
K	39	30.0	50.0	**0.0350**	0.080	228.5	mg/L	33	Standard
Ca	43	31.7	18.2	**0.3807**	1.281	336.4	mg/L	48	Standard
Fe	54	60.6	18.6	**-0.0553**	0.012	22.0	mg/L	131	Standard
Fe	57	218.3	5.8	**0.3658**	0.063	17.3	mg/L	153	Standard
> **Sc-1**	45	21345.0	3.7				mg/L	26715	Standard
Cl	35	116735.4	1.6				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1833.4	6.0				ug/L	1897	Standard
P	31	6746.5	1.5				ug/L	18491	Standard
S	34	4118.9	3.4				ug/L	3734	Standard
Sr	88	51.7	20.1				ug/L	47	Standard
C	12	56.7	36.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	303.3	13.3				mg/L	23	Standard
Dy	164	40.9	74.5				mg/L	23	Standard
Ho-1	165	31.7	50.8				mg/L	7	Standard
Er	166	50.0	69.3				mg/L	13	Standard
I	127	24933.8	3.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.065	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.980	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090701
Report Date/Time: Tuesday, July 05, 2016 17:34:29
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.888
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.711
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090702
Sample Date/Time: Tuesday, July 05, 2016 17:35:23
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57935.7	3.8				ug/L	59517	Standard
	Be	9	33.3	48.2	**0.0081**	0.019	227.5	ug/L	10	Standard
	Al	27	11662.8	3.9	**0.0663**	0.000	0.2	ug/L	1872	Standard
	Sc	45	22101.1	2.7				ug/L	26715	Standard
	Ti	47	1254.4	1.2	**5.5089**	0.110	2.0	ug/L	54	Standard
	V	51	25065.3	2.1	**3.6104**	0.088	2.4	ug/L	1419	Standard
	Cr	52	9503.6	2.9	**0.4823**	0.047	9.7	ug/L	7059	Standard
	Cr	53	1281.7	7.0	**1.1627**	0.118	10.2	ug/L	398	Standard
	Mn	55	780.0	10.5	**0.0036**	0.015	422.4	ug/L	824	Standard
	Co	59	866.7	7.1	**0.1141**	0.011	9.5	ug/L	167	Standard
	Ni	60	3773.8	0.5	**2.0008**	0.014	0.7	ug/L	391	Standard
	Cu	65	272.0	10.5	**0.0792**	0.018	22.6	ug/L	147	Standard
	Zn	66	1350.4	3.6	**1.1757**	0.058	4.9	ug/L	184	Standard
>	Ge	72	387753.6	0.9				ug/L	422998	Standard
	As	75	33881.7	0.7	**32.6308**	0.063	0.2	ug/L	-58	Standard
	Se	82	26.4	31.1	**0.0403**	0.078	193.8	ug/L	15	Standard
	Se-1	77	63.7	5.5	**0.2475**	0.050	20.3	ug/L	58	Standard
>	Ga	71	68.3	4.2				mg/L	113	Standard
	Rb	85	131.7	36.5				ug/L	27	Standard
	Y	89	326299.5	0.2				ug/L	383780	Standard
>	Rh	103	51.7	14.8				ug/L	18	Standard
	Mo	98	1030.1	4.7	**0.4292**	0.023	5.3	ug/L	31	Standard
	Ag	107	112.0	9.1	**0.0068**	0.002	23.8	ug/L	84	Standard
	Cd	111	12.8	29.4	**0.0027**	0.002	75.7	mg/L	4	Standard
	Cd	114	24.6	53.0	**0.0008**	0.003	353.3	ug/L	15	Standard
>	In	115	455824.5	0.5				ug/L	515400	Standard
	Sn	118	948.4	8.5	**0.0043**	0.016	379.8	ug/L	1043	Standard
	Sb	123	2750.6	6.3	**0.6631**	0.043	6.5	ug/L	227	Standard
	Ba	135	2248.5	3.2	**1.2411**	0.042	3.4	ug/L	31	Standard
	Ce	140	243.3	62.2				ug/L	120	Standard
>	Tb	159	712509.2	1.0				ug/L	785817	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	63.0	9.7	**0.0049**	0.001	16.1	ug/L	6	Standard
	Tl	205	113.3	100.6	**0.0109**	0.018	164.5	ug/L	8	Standard
	Pb	206	227.3	4.8	**0.0039**	0.002	63.6	ug/L	201	Standard
	Pb	207	196.3	7.4	**-0.0007**	0.003	475.6	ug/L	177	Standard
	Pb	208	1004.7	31.2	**0.0116**	0.019	166.4	ug/L	722	Standard
	U	238	3174.7	8.3	**0.4976**	0.045	9.1	ug/L	8	Standard
>	Bi	209	411146.6	0.8				ug/L	444563	Standard

Sample ID: L1606090702
Report Date/Time: Tuesday, July 05, 2016 17:37:40
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**24.2270**	41.954	173.2	mg/L	0	Standard
Mg	24	36445.5	2.0	**55.3026**	1.084	2.0	mg/L	38	Standard
K	39	25.0	34.6	**0.0023**	0.042	1798.5	mg/L	33	Standard
Ca	43	33.3	45.8	**0.4521**	2.901	641.6	mg/L	48	Standard
Fe	54	55.7	21.9	**-0.0622**	0.013	20.2	mg/L	131	Standard
Fe	57	226.7	16.6	**0.3648**	0.117	32.1	mg/L	153	Standard
> **Sc-1**	45	22101.1	2.7				mg/L	26715	Standard
Cl	35	120330.0	1.1				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1793.4	11.6				ug/L	1897	Standard
P	31	6566.4	2.3				ug/L	18491	Standard
S	34	4022.2	2.1				ug/L	3734	Standard
Sr	88	60.0	8.3				ug/L	47	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	273.3	43.6				mg/L	23	Standard
Dy	164	32.5	36.0				mg/L	23	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	25720.2	2.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.343	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.668	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090702
Report Date/Time: Tuesday, July 05, 2016 17:37:40
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.441
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.483
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606090702
Report Date/Time: Tuesday, July 05, 2016 17:37:40
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090704
Sample Date/Time: Tuesday, July 05, 2016 17:38:35
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66740.1	2.3				ug/L	59517	Standard
	Be	9	21.7	53.3	-0.0087	0.012	143.3	ug/L	10	Standard
	Al	27	42354058.2	1.4	248.2754	3.051	1.2	ug/L	1872	Standard
	Sc	45	25443.0	0.8				ug/L	26715	Standard
	Ti	47	476.0	2.4	1.8230	0.025	1.4	ug/L	54	Standard
	V	51	3408.7	11.2	0.3087	0.050	16.1	ug/L	1419	Standard
	Cr	52	11205.1	1.3	0.6536	0.019	2.9	ug/L	7059	Standard
	Cr	53	12795.4	7.7	14.4733	1.212	8.4	ug/L	398	Standard
	Mn	55	387539.1	0.7	63.2030	1.504	2.4	ug/L	824	Standard
	Co	59	1821.1	1.1	0.2521	0.006	2.2	ug/L	167	Standard
	Ni	60	3573.4	2.2	1.7758	0.074	4.2	ug/L	391	Standard
	Cu	65	1397.7	2.5	0.6911	0.029	4.2	ug/L	147	Standard
	Zn	66	3017.3	0.5	2.6674	0.036	1.3	ug/L	184	Standard
>	Ge	72	409126.8	1.7				ug/L	422998	Standard
	As	75	3602.3	2.7	3.3345	0.068	2.0	ug/L	-58	Standard
	Se	82	141.5	13.8	1.0406	0.156	15.0	ug/L	15	Standard
	Se-1	77	913.0	8.0	11.7792	0.953	8.1	ug/L	58	Standard
>	Ga	71	196.7	10.6				mg/L	113	Standard
	Rb	85	9236.1	2.3				ug/L	27	Standard
	Y	89	354002.8	0.6				ug/L	383780	Standard
>	Rh	103	433.3	7.4				ug/L	18	Standard
	Mo	98	1196.3	2.6	0.4658	0.010	2.1	ug/L	31	Standard
	Ag	107	96.3	4.8	0.0031	0.001	22.3	ug/L	84	Standard
	Cd	111	14.2	28.3	0.0029	0.002	68.9	mg/L	4	Standard
	Cd	114	55.1	62.3	0.0067	0.007	104.0	ug/L	15	Standard
>	In	115	488398.9	0.5				ug/L	515400	Standard
	Sn	118	1423.4	11.8	0.0784	0.030	38.4	ug/L	1043	Standard
	Sb	123	645.9	20.0	0.1325	0.029	22.0	ug/L	227	Standard
	Ba	135	45878.7	0.5	24.0617	0.235	1.0	ug/L	31	Standard
	Ce	140	3393.7	0.9				ug/L	120	Standard
>	Tb	159	754882.9	1.7				ug/L	785817	Standard
	Ho	165	111.7	17.0				ug/L	7	Standard
	Tl	203	129.0	6.2	0.0134	0.001	7.2	ug/L	6	Standard
	Tl	205	111.7	22.1	0.0101	0.004	35.5	ug/L	8	Standard
	Pb	206	1191.4	2.9	0.2074	0.009	4.4	ug/L	201	Standard
	Pb	207	947.7	3.6	0.1746	0.008	4.4	ug/L	177	Standard
	Pb	208	4202.6	2.0	0.1971	0.004	1.8	ug/L	722	Standard
	U	238	9029.0	2.0	1.3860	0.032	2.3	ug/L	8	Standard
>	Bi	209	421013.1	0.8				ug/L	444563	Standard

Sample ID: L1606090704
Report Date/Time: Tuesday, July 05, 2016 17:40:52
Page 1

Approved: July 06, 2016

Na	23	5.0	100.0	**61.4567**	61.162	99.5	mg/L	0	Standard
Mg	24	46925.9	1.2	**61.8476**	1.169	1.9	mg/L	38	Standard
K	39	251.7	10.9	**1.0277**	0.129	12.5	mg/L	33	Standard
Ca	43	420.0	12.6	**63.5091**	8.465	13.3	mg/L	48	Standard
Fe	54	673.5	4.8	**0.4533**	0.024	5.2	mg/L	131	Standard
Fe	57	813.4	9.0	**2.1634**	0.224	10.4	mg/L	153	Standard
> **Sc-1**	45	25443.0	0.8				mg/L	26715	Standard
Cl	35	185184.2	0.7				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	29856.1	5.0				ug/L	1897	Standard
P	31	24117.5	1.5				ug/L	18491	Standard
S	34	4847.4	5.2				ug/L	3734	Standard
Sr	88	1728.4	3.0				ug/L	47	Standard
C	12	90.0	19.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	163.3	44.3				mg/L	23	Standard
Dy	164	123.6	20.8				mg/L	23	Standard
Ho-1	165	111.7	17.0				mg/L	7	Standard
Er	166	133.3	18.9				mg/L	13	Standard
I	127	303849.2	8.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.721	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090704
Report Date/Time: Tuesday, July 05, 2016 17:40:52
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.761
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.703
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606090704
Report Date/Time: Tuesday, July 05, 2016 17:40:52
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090705
Sample Date/Time: Tuesday, July 05, 2016 17:41:47
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69827.3	3.2				ug/L	59517	Standard
	Be	9	13.3	57.3	**-0.0179**	0.008	42.5	ug/L	10	Standard
	Al	27	45523796.3	0.9	**255.2109**	9.545	3.7	ug/L	1872	Standard
	Sc	45	26135.9	2.4				ug/L	26715	Standard
	Ti	47	121.0	9.2	**0.2692**	0.046	16.9	ug/L	54	Standard
	V	51	2836.0	15.9	**0.2192**	0.064	29.3	ug/L	1419	Standard
	Cr	52	10432.3	1.2	**0.5120**	0.029	5.6	ug/L	7059	Standard
	Cr	53	14708.8	3.2	**16.3699**	0.727	4.4	ug/L	398	Standard
	Mn	55	399226.3	0.6	**63.8474**	0.930	1.5	ug/L	824	Standard
	Co	59	1635.8	5.8	**0.2190**	0.014	6.2	ug/L	167	Standard
	Ni	60	3580.1	1.6	**1.7411**	0.051	2.9	ug/L	391	Standard
	Cu	65	913.7	3.4	**0.4145**	0.015	3.6	ug/L	147	Standard
	Zn	66	2237.8	1.8	**1.8970**	0.060	3.2	ug/L	184	Standard
>	**Ge**	72	417153.8	1.2				ug/L	422998	Standard
	As	75	3875.2	1.9	**3.5156**	0.084	2.4	ug/L	-58	Standard
	Se	82	175.4	7.4	**1.3099**	0.094	7.2	ug/L	15	Standard
	Se-1	77	1060.4	3.8	**13.5157**	0.689	5.1	ug/L	58	Standard
>	**Ga**	71	66.7	15.6				mg/L	113	Standard
	Rb	85	7635.3	6.8				ug/L	27	Standard
	Y	89	356655.2	2.2				ug/L	383780	Standard
>	**Rh**	103	468.3	11.4				ug/L	18	Standard
	Mo	98	1226.5	2.4	**0.4726**	0.016	3.5	ug/L	31	Standard
	Ag	107	83.3	12.8	**0.0009**	0.002	199.7	ug/L	84	Standard
	Cd	111	10.8	31.9	**0.0012**	0.002	148.7	mg/L	4	Standard
	Cd	114	10.2	131.7	**-0.0025**	0.003	111.9	ug/L	15	Standard
>	**In**	115	493822.7	1.6				ug/L	515400	Standard
	Sn	118	800.0	16.7	**-0.0365**	0.026	70.2	ug/L	1043	Standard
	Sb	123	505.4	22.7	**0.0991**	0.027	27.5	ug/L	227	Standard
	Ba	135	48002.6	0.8	**24.9029**	0.402	1.6	ug/L	31	Standard
	Ce	140	150.0	6.7				ug/L	120	Standard
>	**Tb**	159	762436.1	1.3				ug/L	785817	Standard
	Ho	165	51.7	14.8				ug/L	7	Standard
	Tl	203	65.7	11.4	**0.0049**	0.001	20.8	ug/L	6	Standard
	Tl	205	65.0	27.7	**0.0029**	0.003	95.9	ug/L	8	Standard
	Pb	206	283.3	7.8	**0.0133**	0.004	31.8	ug/L	201	Standard
	Pb	207	219.7	8.5	**0.0026**	0.005	177.1	ug/L	177	Standard
	Pb	208	985.3	2.8	**0.0078**	0.002	25.6	ug/L	722	Standard
	U	238	9272.5	1.2	**1.3933**	0.027	1.9	ug/L	8	Standard
>	**Bi**	209	430095.2	0.7				ug/L	444563	Standard

Sample ID: L1606090705
Report Date/Time: Tuesday, July 05, 2016 17:44:04
Page 1

Approved: July 06, 2016

Na	23	3.3	86.6	**40.4522**	35.031	86.6	mg/L	0	Standard
Mg	24	51149.6	2.3	**65.6709**	3.020	4.6	mg/L	38	Standard
K	39	313.3	4.0	**1.2730**	0.052	4.1	mg/L	33	Standard
Ca	43	416.7	3.7	**61.2077**	3.801	6.2	mg/L	48	Standard
Fe	54	621.9	9.1	**0.3959**	0.047	11.9	mg/L	131	Standard
Fe	57	768.4	7.8	**1.9494**	0.130	6.7	mg/L	153	Standard
> **Sc-1**	45	26135.9	2.4				mg/L	26715	Standard
Cl	35	194040.7	0.8				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	38188.1	3.1				ug/L	1897	Standard
P	31	24469.7	2.0				ug/L	18491	Standard
S	34	4885.8	1.1				ug/L	3734	Standard
Sr	88	1780.1	2.1				ug/L	47	Standard
C	12	100.0	26.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	120.0	60.1				mg/L	23	Standard
Dy	164	30.5	19.0				mg/L	23	Standard
Ho-1	165	51.7	14.8				mg/L	7	Standard
Er	166	60.0	16.7				mg/L	13	Standard
I	127	369484.6	7.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.324	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.618	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090705
Report Date/Time: Tuesday, July 05, 2016 17:44:04
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.814
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.746
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606090705
Report Date/Time: Tuesday, July 05, 2016 17:44:04
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090707
Sample Date/Time: Tuesday, July 05, 2016 17:44:58
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69147.5	2.8				ug/L	59517	Standard
	Be	9	21.7	74.2	**-0.0095**	0.016	173.0	ug/L	10	Standard
	Al	27	4929369.2	1.5	**27.8804**	0.372	1.3	ug/L	1872	Standard
	Sc	45	24564.9	2.8				ug/L	26715	Standard
	Ti	47	182.3	5.4	**0.5539**	0.036	6.5	ug/L	54	Standard
	V	51	4368.3	21.7	**0.4531**	0.138	30.5	ug/L	1419	Standard
	Cr	52	11867.3	3.0	**0.7670**	0.038	4.9	ug/L	7059	Standard
	Cr	53	26429.7	2.1	**30.6342**	0.686	2.2	ug/L	398	Standard
	Mn	55	44815.9	0.9	**7.2652**	0.042	0.6	ug/L	824	Standard
	Co	59	1280.1	2.7	**0.1717**	0.006	3.6	ug/L	167	Standard
	Ni	60	1392.7	1.4	**0.5778**	0.019	3.3	ug/L	391	Standard
	Cu	65	1098.0	10.4	**0.5322**	0.067	12.6	ug/L	147	Standard
	Zn	66	2737.6	5.3	**2.4321**	0.166	6.8	ug/L	184	Standard
>	**Ge**	72	405041.7	1.2				ug/L	422998	Standard
	As	75	319099.3	0.3	**293.8120**	3.818	1.3	ug/L	-58	Standard
	Se	82	161.5	5.4	**1.2324**	0.061	5.0	ug/L	15	Standard
	Se-1	77	1849.1	1.7	**24.8015**	0.675	2.7	ug/L	58	Standard
>	**Ga**	71	86.7	14.5				mg/L	113	Standard
	Rb	85	1268.4	7.1				ug/L	27	Standard
	Y	89	349244.5	1.1				ug/L	383780	Standard
>	**Rh**	103	185.0	21.1				ug/L	18	Standard
	Mo	98	3348.0	3.5	**1.3692**	0.064	4.7	ug/L	31	Standard
	Ag	107	87.7	13.0	**0.0023**	0.002	86.5	ug/L	84	Standard
	Cd	111	14.7	28.5	**0.0034**	0.002	60.8	mg/L	4	Standard
	Cd	114	52.5	42.5	**0.0066**	0.005	73.7	ug/L	15	Standard
>	**In**	115	471060.8	1.3				ug/L	515400	Standard
	Sn	118	1895.1	10.6	**0.1770**	0.035	19.7	ug/L	1043	Standard
	Sb	123	513.5	19.3	**0.1064**	0.023	22.0	ug/L	227	Standard
	Ba	135	52851.4	0.5	**28.7452**	0.330	1.1	ug/L	31	Standard
	Ce	140	1061.7	3.3				ug/L	120	Standard
>	**Tb**	159	744855.4	1.5				ug/L	785817	Standard
	Ho	165	55.0	47.2				ug/L	7	Standard
	Tl	203	52.3	23.1	**0.0034**	0.002	48.0	ug/L	6	Standard
	Tl	205	50.0	17.3	**0.0009**	0.001	156.5	ug/L	8	Standard
	Pb	206	1679.4	2.6	**0.3153**	0.008	2.6	ug/L	201	Standard
	Pb	207	1442.1	1.2	**0.2949**	0.005	1.6	ug/L	177	Standard
	Pb	208	6023.8	1.8	**0.3079**	0.010	3.3	ug/L	722	Standard
	U	238	444.3	2.3	**0.0667**	0.001	1.2	ug/L	8	Standard
>	**Bi**	209	415883.2	1.1				ug/L	444563	Standard

Sample ID: L1606090707
Report Date/Time: Tuesday, July 05, 2016 17:47:15
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	211479.1	1.0	**288.9459**	9.015	3.1	mg/L	38	Standard
K	39	168.3	38.3	**0.6693**	0.296	44.2	mg/L	33	Standard
Ca	43	36.7	68.6	**0.4729**	4.479	947.2	mg/L	48	Standard
Fe	54	215.4	15.6	**0.0728**	0.034	46.8	mg/L	131	Standard
Fe	57	293.3	6.0	**0.5068**	0.062	12.2	mg/L	153	Standard
> **Sc-1**	45	24564.9	2.8				mg/L	26715	Standard
Cl	35	199341.0	1.6				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	35354.6	3.2				ug/L	1897	Standard
P	31	22533.4	0.3				ug/L	18491	Standard
S	34	4607.4	3.9				ug/L	3734	Standard
Sr	88	411.7	4.6				ug/L	47	Standard
C	12	76.7	41.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	76.9				mg/L	23	Standard
Dy	164	82.4	36.1				mg/L	23	Standard
Ho-1	165	55.0	47.2				mg/L	7	Standard
Er	166	90.0	19.2				mg/L	13	Standard
I	127	249295.2	6.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.182	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.755	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090707
Report Date/Time: Tuesday, July 05, 2016 17:47:15
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.397
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.549
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
As 75 Upper, S, EEE	As	75	

Sample ID: L1606090707
Report Date/Time: Tuesday, July 05, 2016 17:47:15
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090707PS WG574822-01
Sample Date/Time: Tuesday, July 05, 2016 17:48:10
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68404.1	2.8				ug/L	59517	Standard
	Be	9	46041.5	2.6	**46.0440**	0.140	0.3	ug/L	10	Standard
	Al	27	4971741.2	1.4	**28.4276**	0.533	1.9	ug/L	1872	Standard
	Sc	45	24398.0	0.9				ug/L	26715	Standard
	Ti	47	193.0	7.5	**0.6101**	0.072	11.7	ug/L	54	Standard
	V	51	335621.5	0.4	**48.9033**	0.547	1.1	ug/L	1419	Standard
	Cr	52	331382.7	0.5	**48.2066**	0.633	1.3	ug/L	7059	Standard
	Cr	53	62863.5	0.8	**74.1947**	1.085	1.5	ug/L	398	Standard
	Mn	55	325320.2	0.7	**54.1175**	0.833	1.5	ug/L	824	Standard
	Co	59	307783.4	0.4	**47.7741**	0.579	1.2	ug/L	167	Standard
	Ni	60	82859.3	0.3	**46.5378**	0.528	1.1	ug/L	391	Standard
	Cu	65	83223.9	0.8	**46.7025**	0.311	0.7	ug/L	147	Standard
	Zn	66	53630.4	0.9	**51.1142**	0.918	1.8	ug/L	184	Standard
>	Ge	72	400890.2	0.9				ug/L	422998	Standard
	As	75	370881.7	0.0	**345.0018**	2.946	0.9	ug/L	-58	Standard
	Se	82	5342.2	0.1	**47.8745**	0.458	1.0	ug/L	15	Standard
	Se-1	77	5234.6	0.4	**72.1700**	0.711	1.0	ug/L	58	Standard
>	Ga	71	70.0	37.1				mg/L	113	Standard
	Rb	85	1365.1	5.5				ug/L	27	Standard
	Y	89	346038.7	0.8				ug/L	383780	Standard
>	Rh	103	180.0	10.0				ug/L	18	Standard
	Mo	98	3359.2	1.2	**1.3805**	0.020	1.4	ug/L	31	Standard
	Ag	107	270709.1	0.9	**44.1668**	0.504	1.1	ug/L	84	Standard
	Cd	111	93244.7	0.3	**48.1468**	0.718	1.5	mg/L	4	Standard
	Cd	114	226573.3	0.7	**48.2085**	0.286	0.6	ug/L	15	Standard
>	In	115	468674.8	1.2				ug/L	515400	Standard
	Sn	118	1825.1	9.1	**0.1656**	0.029	17.7	ug/L	1043	Standard
	Sb	123	204162.4	2.0	**49.0376**	1.260	2.6	ug/L	227	Standard
	Ba	135	137435.2	0.4	**75.1669**	0.695	0.9	ug/L	31	Standard
	Ce	140	1030.0	5.1				ug/L	120	Standard
>	Tb	159	739655.5	1.2				ug/L	785817	Standard
	Ho	165	55.0	39.6				ug/L	7	Standard
	Tl	203	360735.5	0.5	**48.7186**	0.226	0.5	ug/L	6	Standard
	Tl	205	315732.4	0.4	**48.9496**	0.505	1.0	ug/L	8	Standard
	Pb	206	236175.2	0.6	**51.2399**	0.246	0.5	ug/L	201	Standard
	Pb	207	206500.0	0.4	**49.5554**	0.667	1.3	ug/L	177	Standard
	Pb	208	855893.0	0.3	**51.1339**	0.635	1.2	ug/L	722	Standard
	U	238	329007.8	0.5	**51.7512**	0.629	1.2	ug/L	8	Standard
>	Bi	209	411577.2	1.0				ug/L	444563	Standard

Sample ID: L1606090707PS WG574822-01
Report Date/Time: Tuesday, July 05, 2016 17:50:27
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	211561.8	0.6	**290.8905**	2.789	1.0	mg/L	38	Standard
K	39	146.7	10.4	**0.5734**	0.067	11.7	mg/L	33	Standard
Ca	43	46.7	16.4	**2.1554**	1.247	57.9	mg/L	48	Standard
Fe	54	196.9	20.7	**0.0574**	0.038	65.6	mg/L	131	Standard
Fe	57	315.0	5.5	**0.5870**	0.066	11.3	mg/L	153	Standard
> **Sc-1**	45	24398.0	0.9				mg/L	26715	Standard
Cl	35	197297.6	0.7				ug/L	102686	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	35093.9	0.5				ug/L	1897	Standard
P	31	23279.5	2.5				ug/L	18491	Standard
S	34	4770.8	1.3				ug/L	3734	Standard
Sr	88	465.0	2.8				ug/L	47	Standard
C	12	90.0	44.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	24.0				mg/L	23	Standard
Dy	164	33.8	86.8				mg/L	23	Standard
Ho-1	165	55.0	39.6				mg/L	7	Standard
Er	166	60.0	60.1				mg/L	13	Standard
I	127	246653.3	8.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.933	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.774	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090707PS WG574822-01
Report Date/Time: Tuesday, July 05, 2016 17:50:27
Page 2

Approved: July 06, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	90.934
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.580
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
As 75 Upper, S, EEE	As	75	

Sample ID: L1606090707PS WG574822-01
Report Date/Time: Tuesday, July 05, 2016 17:50:27
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090707SDL WG574822-02
Sample Date/Time: Tuesday, July 05, 2016 17:51:21
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63348.8	1.6				ug/L	59517	Standard
	Be	9	23.3	32.7	**-0.0059**	0.008	135.6	ug/L	10	Standard
	Al	27	998974.5	1.8	**6.1561**	0.023	0.4	ug/L	1872	Standard
	Sc	45	23137.7	2.3				ug/L	26715	Standard
	Ti	47	56.3	8.4	**0.0040**	0.021	521.8	ug/L	54	Standard
	V	51	2154.3	16.6	**0.1368**	0.055	40.1	ug/L	1419	Standard
	Cr	52	7061.3	2.0	**0.0753**	0.029	38.0	ug/L	7059	Standard
	Cr	53	6126.2	3.5	**6.8813**	0.216	3.1	ug/L	398	Standard
	Mn	55	9134.1	2.5	**1.3969**	0.047	3.3	ug/L	824	Standard
	Co	59	486.7	16.7	**0.0508**	0.013	26.2	ug/L	167	Standard
	Ni	60	512.0	5.6	**0.0899**	0.018	19.5	ug/L	391	Standard
	Cu	65	450.3	7.5	**0.1750**	0.020	11.5	ug/L	147	Standard
	Zn	66	1233.4	1.3	**1.0235**	0.021	2.1	ug/L	184	Standard
>	Ge	72	399665.1	0.8				ug/L	422998	Standard
	As	75	66032.6	0.5	**61.6563**	0.747	1.2	ug/L	-58	Standard
	Se	82	50.5	4.2	**0.2500**	0.022	9.0	ug/L	15	Standard
	Se-1	77	469.7	3.8	**5.8880**	0.288	4.9	ug/L	58	Standard
>	Ga	71	45.0	11.1				mg/L	113	Standard
	Rb	85	300.0	6.7				ug/L	27	Standard
	Y	89	335354.7	1.8				ug/L	383780	Standard
>	Rh	103	95.0	22.9				ug/L	18	Standard
	Mo	98	679.6	3.8	**0.2716**	0.010	3.7	ug/L	31	Standard
	Ag	107	190.0	66.1	**0.0189**	0.020	107.4	ug/L	84	Standard
	Cd	111	47.1	108.4	**0.0201**	0.026	130.4	mg/L	4	Standard
	Cd	114	124.7	113.2	**0.0218**	0.030	136.5	ug/L	15	Standard
>	In	115	469611.4	0.3				ug/L	515400	Standard
	Sn	118	508.3	4.4	**-0.0846**	0.005	5.4	ug/L	1043	Standard
	Sb	123	1516.3	19.0	**0.3474**	0.070	20.2	ug/L	227	Standard
	Ba	135	10544.7	2.2	**5.7331**	0.109	1.9	ug/L	31	Standard
	Ce	140	245.0	14.7				ug/L	120	Standard
>	Tb	159	720920.2	2.1				ug/L	785817	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	194.0	83.6	**0.0219**	0.021	97.0	ug/L	6	Standard
	Tl	205	170.0	64.1	**0.0189**	0.016	86.6	ug/L	8	Standard
	Pb	206	619.0	15.5	**0.0857**	0.020	22.9	ug/L	201	Standard
	Pb	207	525.3	17.4	**0.0754**	0.021	27.7	ug/L	177	Standard
	Pb	208	2159.7	15.9	**0.0776**	0.019	25.0	ug/L	722	Standard
	U	238	198.7	52.6	**0.0280**	0.016	56.8	ug/L	8	Standard
>	Bi	209	421060.6	1.2				ug/L	444563	Standard

Sample ID: L1606090707SDL WG574822-02
Report Date/Time: Tuesday, July 05, 2016 17:53:38
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	40911.9	3.5	**59.3310**	3.255	5.5	mg/L	38	Standard
K	39	31.7	24.1	**0.0305**	0.036	117.4	mg/L	33	Standard
Ca	43	16.7	96.4	**-2.8855**	2.829	98.0	mg/L	48	Standard
Fe	54	80.9	14.2	**-0.0412**	0.012	29.9	mg/L	131	Standard
Fe	57	256.7	12.7	**0.4375**	0.130	29.7	mg/L	153	Standard
> **Sc-1**	45	23137.7	2.3				mg/L	26715	Standard
Cl	35	151958.3	1.0				ug/L	102686	Standard
Kr	83	2.7	94.4				ug/L	2	Standard
Br	81	7942.1	3.4				ug/L	1897	Standard
P	31	10213.4	2.1				ug/L	18491	Standard
S	34	4539.0	8.1				ug/L	3734	Standard
Sr	88	150.0	11.5				ug/L	47	Standard
C	12	46.7	75.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	23	Standard
Dy	164	21.9	30.9				mg/L	23	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	30.0	115.5				mg/L	13	Standard
I	127	74052.3	2.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.439	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.484	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090707SDL WG574822-02
Report Date/Time: Tuesday, July 05, 2016 17:53:38
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.116
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.713
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606090707SDL WG574822-02
Report Date/Time: Tuesday, July 05, 2016 17:53:38
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090707SDL WG574822-02
Sample Date/Time: Tuesday, July 05, 2016 17:54:33
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61308.9	3.1				ug/L	59517	Standard
	Be	9	11.7	24.7	**-0.0180**	0.004	19.5	ug/L	10	Standard
	Al	27	199741.3	0.7	**1.2630**	0.047	3.7	ug/L	1872	Standard
	Sc	45	23279.5	1.9				ug/L	26715	Standard
	Ti	47	30.3	9.5	**-0.1126**	0.012	10.9	ug/L	54	Standard
	V	51	1527.8	19.5	**0.0437**	0.046	105.1	ug/L	1419	Standard
	Cr	52	6258.6	1.1	**-0.0498**	0.012	23.5	ug/L	7059	Standard
	Cr	53	1985.1	3.9	**1.9394**	0.112	5.8	ug/L	398	Standard
	Mn	55	2073.1	4.0	**0.2138**	0.016	7.7	ug/L	824	Standard
	Co	59	250.3	5.3	**0.0137**	0.002	11.9	ug/L	167	Standard
	Ni	60	300.3	4.1	**-0.0309**	0.007	21.4	ug/L	391	Standard
	Cu	65	206.0	4.8	**0.0365**	0.006	17.1	ug/L	147	Standard
	Zn	66	851.0	0.4	**0.6520**	0.012	1.8	ug/L	184	Standard
>	**Ge**	72	402053.4	1.2				ug/L	422998	Standard
	As	75	13254.1	1.2	**12.3428**	0.020	0.2	ug/L	-58	Standard
	Se	82	24.0	26.8	**0.0086**	0.055	636.7	ug/L	15	Standard
	Se-1	77	151.0	8.5	**1.4283**	0.202	14.1	ug/L	58	Standard
>	**Ga**	71	53.3	37.9				mg/L	113	Standard
	Rb	85	71.7	39.7				ug/L	27	Standard
	Y	89	339468.0	1.5				ug/L	383780	Standard
>	**Rh**	103	61.7	12.4				ug/L	18	Standard
	Mo	98	180.5	19.5	**0.0649**	0.014	22.2	ug/L	31	Standard
	Ag	107	76.3	16.2	**0.0004**	0.002	631.5	ug/L	84	Standard
	Cd	111	6.6	54.1	**-0.0007**	0.002	263.1	mg/L	4	Standard
	Cd	114	11.7	94.5	**-0.0021**	0.002	115.5	ug/L	15	Standard
>	**In**	115	473911.9	1.8				ug/L	515400	Standard
	Sn	118	246.7	10.2	**-0.1347**	0.004	3.0	ug/L	1043	Standard
	Sb	123	425.8	7.9	**0.0849**	0.010	11.4	ug/L	227	Standard
	Ba	135	2056.1	4.9	**1.0893**	0.068	6.3	ug/L	31	Standard
	Ce	140	28.3	50.9				ug/L	120	Standard
>	**Tb**	159	720634.0	1.1				ug/L	785817	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	75.3	25.0	**0.0061**	0.002	40.1	ug/L	6	Standard
	Tl	205	56.7	5.1	**0.0016**	0.001	32.0	ug/L	8	Standard
	Pb	206	270.3	10.2	**0.0102**	0.005	49.3	ug/L	201	Standard
	Pb	207	232.3	11.0	**0.0051**	0.005	102.2	ug/L	177	Standard
	Pb	208	984.0	1.6	**0.0074**	0.001	19.1	ug/L	722	Standard
	U	238	35.3	11.4	**0.0028**	0.001	19.6	ug/L	8	Standard
>	**Bi**	209	432839.3	1.1				ug/L	444563	Standard

Sample ID: L1606090707SDL WG574822-02
Report Date/Time: Tuesday, July 05, 2016 17:56:50
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	8197.2	2.0	**11.7815**	0.277	2.4	mg/L	38	Standard
K	39	28.3	36.7	**0.0125**	0.049	394.6	mg/L	33	Standard
Ca	43	16.7	45.8	**-2.8562**	1.419	49.7	mg/L	48	Standard
Fe	54	51.1	37.0	**-0.0691**	0.018	26.4	mg/L	131	Standard
Fe	57	221.7	11.1	**0.3068**	0.095	30.9	mg/L	153	Standard
> **Sc-1**	45	23279.5	1.9				mg/L	26715	Standard
Cl	35	146752.7	1.2				ug/L	102686	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2770.3	4.4				ug/L	1897	Standard
P	31	7563.6	4.2				ug/L	18491	Standard
S	34	4602.4	3.6				ug/L	3734	Standard
Sr	88	100.0	5.0				ug/L	47	Standard
C	12	56.7	53.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	49.3				mg/L	23	Standard
Dy	164	13.0	43.3				mg/L	23	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	35114.0	0.7				mg/L	12398	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.011	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.049	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606090707SDL WG574822-02
Report Date/Time: Tuesday, July 05, 2016 17:56:50
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.950
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.363
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606090707SDL WG574822-02
Report Date/Time: Tuesday, July 05, 2016 17:56:50
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 17:57:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63117.9	3.2				ug/L	59517	Standard
	Be	9	46683.5	1.4	**50.6190**	1.097	2.2	ug/L	10	Standard
	Al	27	7160552.7	2.5	**44.3715**	0.291	0.7	ug/L	1872	Standard
	Sc	45	24508.1	2.7				ug/L	26715	Standard
	Ti	47	22098.8	1.9	**92.5132**	0.678	0.7	ug/L	54	Standard
	V	51	339356.4	1.2	**46.7732**	1.165	2.5	ug/L	1419	Standard
	Cr	52	344605.2	1.3	**47.4001**	0.157	0.3	ug/L	7059	Standard
	Cr	53	43273.4	2.1	**48.1663**	0.868	1.8	ug/L	398	Standard
	Mn	55	296190.0	0.4	**46.5915**	0.743	1.6	ug/L	824	Standard
	Co	59	327302.3	1.0	**48.0612**	0.953	2.0	ug/L	167	Standard
	Ni	60	89111.6	1.3	**47.3434**	0.009	0.0	ug/L	391	Standard
	Cu	65	88837.7	0.7	**47.1597**	0.311	0.7	ug/L	147	Standard
	Zn	66	54603.5	0.2	**49.2215**	0.559	1.1	ug/L	184	Standard
>	Ge	72	423805.7	1.3				ug/L	422998	Standard
	As	75	53686.8	1.5	**47.2833**	0.469	1.0	ug/L	-58	Standard
	Se	82	5576.1	1.7	**47.2621**	0.196	0.4	ug/L	15	Standard
	Se-1	77	3758.1	0.6	**48.8035**	0.942	1.9	ug/L	58	Standard
>	Ga	71	53.3	19.5				mg/L	113	Standard
	Rb	85	843.4	2.5				ug/L	27	Standard
	Y	89	365956.5	2.3				ug/L	383780	Standard
>	Rh	103	41.7	36.7				ug/L	18	Standard
	Mo	98	251963.5	0.7	**97.0892**	1.135	1.2	ug/L	31	Standard
	Ag	107	313139.5	0.6	**47.6064**	0.890	1.9	ug/L	84	Standard
	Cd	111	100206.1	1.4	**48.2024**	0.063	0.1	mg/L	4	Standard
	Cd	114	244727.9	0.6	**48.5218**	0.934	1.9	ug/L	15	Standard
>	In	115	503021.5	1.3				ug/L	515400	Standard
	Sn	118	273484.8	1.5	**48.2158**	0.480	1.0	ug/L	1043	Standard
	Sb	123	223791.9	1.0	**50.0766**	0.144	0.3	ug/L	227	Standard
	Ba	135	91512.2	0.6	**46.6249**	0.579	1.2	ug/L	31	Standard
	Ce	140	95.0	5.3				ug/L	120	Standard
>	Tb	159	758621.5	0.5				ug/L	785817	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	390396.4	0.7	**48.5643**	0.147	0.3	ug/L	6	Standard
	Tl	205	343934.8	0.4	**49.1159**	0.600	1.2	ug/L	8	Standard
	Pb	206	246481.0	0.5	**49.2567**	0.483	1.0	ug/L	201	Standard
	Pb	207	222197.8	0.4	**49.1145**	0.538	1.1	ug/L	177	Standard
	Pb	208	924890.5	0.4	**50.8946**	0.342	0.7	ug/L	722	Standard
	U	238	345123.7	0.2	**50.0019**	0.286	0.6	ug/L	8	Standard
>	Bi	209	446823.0	0.8				ug/L	444563	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 18:00:02
Page 1

Approved: July 06, 2016

Na	23	3.3	173.2	**41.7844**	72.364	173.2	mg/L	0	Standard
Mg	24	3820.5	2.0	**5.1970**	0.057	1.1	mg/L	38	Standard
K	39	688.3	5.4	**3.1601**	0.266	8.4	mg/L	33	Standard
Ca	43	30.0	33.3	**-0.7268**	1.712	235.5	mg/L	48	Standard
Fe	54	5658.3	4.4	**4.8613**	0.350	7.2	mg/L	131	Standard
Fe	57	1785.1	3.2	**5.5483**	0.176	3.2	mg/L	153	Standard
> **Sc-1**	45	24508.1	2.7				mg/L	26715	Standard
Cl	35	140834.3	4.3				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1566.7	11.4				ug/L	1897	Standard
P	31	22929.0	0.4				ug/L	18491	Standard
S	34	4860.8	3.0				ug/L	3734	Standard
Sr	88	65.0	15.4				ug/L	47	Standard
C	12	86.7	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	133.3	35.4				mg/L	23	Standard
Dy	164	-0.3	173.2				mg/L	23	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	10655.4	5.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.238		
Al	27	88.743		
Sc	45			
Ti	47	92.513		
V	51	93.546		
Cr	52	94.800		
Cr	53			
Mn	55	93.183		
Co	59	96.122		
Ni	60	94.687		
Cu	65	94.319		
Zn	66	98.443		
> Ge	72		100.191	
As	75	94.567		
Se	82	94.524		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 18:00:02
Page 2

Approved: July 06, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	97.089		
Ag	107	95.213		
Cd	111	96.405		
Cd	114			
> In	115		97.598	
Sn	118	96.432		
Sb	123	100.153		
Ba	135	93.250		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.129		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.789		
U	238	100.004		
> Bi	209		100.508	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 18:00:02
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 18:00:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62329.6	1.5				ug/L	59517	Standard
	Be	9	33.3	31.2	**0.0056**	0.012	214.3	ug/L	10	Standard
	Al	27	5119.6	78.2	**0.0199**	0.026	129.3	ug/L	1872	Standard
	Sc	45	24099.2	2.0				ug/L	26715	Standard
	Ti	47	30.0	27.3	**-0.1181**	0.036	30.4	ug/L	54	Standard
	V	51	1183.2	1.3	**-0.0124**	0.003	24.0	ug/L	1419	Standard
	Cr	52	5876.5	2.5	**-0.1339**	0.029	21.7	ug/L	7059	Standard
	Cr	53	775.0	6.8	**0.4780**	0.069	14.5	ug/L	398	Standard
	Mn	55	597.3	4.6	**-0.0348**	0.004	12.1	ug/L	824	Standard
	Co	59	251.0	4.2	**0.0126**	0.002	14.7	ug/L	167	Standard
	Ni	60	262.7	5.8	**-0.0568**	0.009	16.4	ug/L	391	Standard
	Cu	65	168.0	13.8	**0.0121**	0.012	98.4	ug/L	147	Standard
	Zn	66	221.7	14.4	**0.0454**	0.031	67.5	ug/L	184	Standard
>	Ge	72	415302.5	1.0				ug/L	422998	Standard
	As	75	9.3	178.7	**0.0600**	0.015	25.0	ug/L	-58	Standard
	Se	82	19.1	28.9	**-0.0402**	0.046	115.1	ug/L	15	Standard
	Se-1	77	72.3	7.6	**0.3032**	0.074	24.4	ug/L	58	Standard
>	Ga	71	43.3	26.6				mg/L	113	Standard
	Rb	85	30.0	16.7				ug/L	27	Standard
	Y	89	358005.9	1.6				ug/L	383780	Standard
>	Rh	103	28.3	97.2				ug/L	18	Standard
	Mo	98	182.0	19.8	**0.0611**	0.014	22.8	ug/L	31	Standard
	Ag	107	137.7	3.4	**0.0089**	0.001	8.0	ug/L	84	Standard
	Cd	111	16.7	26.2	**0.0039**	0.002	54.2	mg/L	4	Standard
	Cd	114	71.1	22.2	**0.0095**	0.003	32.9	ug/L	15	Standard
>	In	115	503658.2	0.1				ug/L	515400	Standard
	Sn	118	891.7	11.2	**-0.0234**	0.018	75.9	ug/L	1043	Standard
	Sb	123	1043.9	36.9	**0.2170**	0.086	39.7	ug/L	227	Standard
	Ba	135	48.0	18.2	**0.0007**	0.004	622.9	ug/L	31	Standard
	Ce	140	28.3	36.7				ug/L	120	Standard
>	Tb	159	755449.9	1.1				ug/L	785817	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	94.0	14.9	**0.0080**	0.002	21.1	ug/L	6	Standard
	Tl	205	80.0	41.0	**0.0046**	0.005	102.6	ug/L	8	Standard
	Pb	206	266.3	7.3	**0.0073**	0.004	53.2	ug/L	201	Standard
	Pb	207	229.3	8.7	**0.0025**	0.005	189.7	ug/L	177	Standard
	Pb	208	958.3	11.1	**0.0038**	0.006	149.2	ug/L	722	Standard
	U	238	77.0	19.2	**0.0086**	0.002	24.4	ug/L	8	Standard
>	Bi	209	450350.5	0.8				ug/L	444563	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 18:03:14
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**21.1835**	36.682	173.2	mg/L	0	Standard
Mg	24	95.0	29.3	**0.0989**	0.040	40.8	mg/L	38	Standard
K	39	20.0	43.3	**-0.0326**	0.041	126.0	mg/L	33	Standard
Ca	43	11.7	49.5	**-3.8533**	0.988	25.6	mg/L	48	Standard
Fe	54	131.0	15.7	**0.0003**	0.016	5527.6	mg/L	131	Standard
Fe	57	225.0	7.7	**0.2918**	0.074	25.2	mg/L	153	Standard
Sc-1	45	24099.2	2.0				mg/L	26715	Standard
Cl	35	134288.5	0.9				ug/L	102686	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1623.4	1.9				ug/L	1897	Standard
P	31	22054.4	2.1				ug/L	18491	Standard
S	34	4775.8	1.3				ug/L	3734	Standard
Sr	88	65.0	15.4				ug/L	47	Standard
C	12	33.3	45.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	123.3	52.1				mg/L	23	Standard
Dy	164	8.9	17.3				mg/L	23	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	23.3	137.8				mg/L	13	Standard
I	127	7573.6	0.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.181	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 18:03:14
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.722	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.302	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 18:03:14
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

L1606090708

Sample ID: L~~1606090707~~
Sample Date/Time: Tuesday, July 05, 2016 18:04:10
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67239.0	4.3				ug/L	59517	Standard
	Be	9	16.7	45.8	-0.0141	0.008	56.6	ug/L	10	Standard
	Al	27	5719380.4	0.8	33.3082	1.639	4.9	ug/L	1872	Standard
	Sc	45	24324.5	2.6				ug/L	26715	Standard
	Ti	47	149.7	7.3	0.4409	0.052	11.7	ug/L	54	Standard
	V	51	4220.3	6.2	0.4595	0.041	9.0	ug/L	1419	Standard
	Cr	52	10037.3	1.0	0.5661	0.017	3.0	ug/L	7059	Standard
	Cr	53	30113.2	1.6	36.5837	0.621	1.7	ug/L	398	Standard
	Mn	55	53293.2	0.4	9.0681	0.037	0.4	ug/L	824	Standard
	Co	59	588.3	2.8	0.0695	0.002	3.4	ug/L	167	Standard
	Ni	60	1390.4	3.2	0.6119	0.024	4.0	ug/L	391	Standard
	Cu	65	1413.7	4.0	0.7436	0.034	4.5	ug/L	147	Standard
	Zn	66	3768.5	1.2	3.5701	0.046	1.3	ug/L	184	Standard
>	Ge	72	387251.4	0.3				ug/L	422998	Standard
	As	75	393832.6	0.9	379.2362	4.326	1.1	ug/L	-58	Standard
	Se	82	138.0	0.5	1.0798	0.006	0.6	ug/L	15	Standard
	Se-1	77	2139.5	2.0	30.1498	0.643	2.1	ug/L	58	Standard
>	Ga	71	95.0	15.8				mg/L	113	Standard
	Rb	85	1216.7	3.0				ug/L	27	Standard
	Y	89	333310.3	1.7				ug/L	383780	Standard
>	Rh	103	290.0	30.3				ug/L	18	Standard
	Mo	98	4428.9	2.1	1.8713	0.044	2.3	ug/L	31	Standard
	Ag	107	102.3	13.6	0.0051	0.002	43.9	ug/L	84	Standard
	Cd	111	6.3	104.9	-0.0008	0.004	443.3	mg/L	4	Standard
	Cd	114	34.7	68.9	0.0030	0.005	173.1	ug/L	15	Standard
>	In	115	456609.6	0.7				ug/L	515400	Standard
	Sn	118	1253.4	7.8	0.0634	0.018	29.0	ug/L	1043	Standard
	Sb	123	871.5	24.0	0.1984	0.051	25.8	ug/L	227	Standard
	Ba	135	64217.1	1.0	36.0347	0.187	0.5	ug/L	31	Standard
	Ce	140	203.3	5.1				ug/L	120	Standard
>	Tb	159	723064.9	0.7				ug/L	785817	Standard
	Ho	165	50.0	17.3				ug/L	7	Standard
	Tl	203	57.7	11.5	0.0044	0.001	20.5	ug/L	6	Standard
	Tl	205	53.3	10.8	0.0018	0.001	54.3	ug/L	8	Standard
	Pb	206	306.0	4.4	0.0231	0.003	11.2	ug/L	201	Standard
	Pb	207	233.7	11.1	0.0102	0.007	67.1	ug/L	177	Standard
	Pb	208	1056.3	3.3	0.0167	0.002	11.2	ug/L	722	Standard
	U	238	625.3	4.6	0.0992	0.005	5.0	ug/L	8	Standard
>	Bi	209	398116.8	0.7				ug/L	444563	Standard

Sample ID: L~~1606090707~~
Report Date/Time: Tuesday, July 05, 2016 18:06:27
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	260998.9	0.7	**360.1093**	10.305	2.9	mg/L	38	Standard
K	39	191.7	26.4	**0.7934**	0.249	31.3	mg/L	33	Standard
Ca	43	38.3	32.8	**0.7298**	2.075	284.3	mg/L	48	Standard
Fe	54	117.7	23.5	**-0.0120**	0.027	224.5	mg/L	131	Standard
Fe	57	295.0	3.4	**0.5227**	0.053	10.2	mg/L	153	Standard
> **Sc-1**	45	24324.5	2.6				mg/L	26715	Standard
Cl	35	194002.8	0.2				ug/L	102686	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	42001.6	5.4				ug/L	1897	Standard
P	31	23348.0	3.5				ug/L	18491	Standard
S	34	4402.3	5.5				ug/L	3734	Standard
Sr	88	455.0	11.2				ug/L	47	Standard
C	12	103.3	39.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	45.8				mg/L	23	Standard
Dy	164	38.1	25.0				mg/L	23	Standard
Ho-1	165	50.0	17.3				mg/L	7	Standard
Er	166	40.0	25.0				mg/L	13	Standard
I	127	291166.9	8.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.975	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.549	
As	75			
Se	82			
Se-1	77			
> Ga	71			

L1606090708

Sample ID: ~~L1606090707~~
Report Date/Time: Tuesday, July 05, 2016 18:06:27
Page 2

Approved: July 06, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.593
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	89.552
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
As 75 Upper, S, EEE	As	75	

L1606090708

Sample ID: L1606090707
Report Date/Time: Tuesday, July 05, 2016 18:06:27
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090710
Sample Date/Time: Tuesday, July 05, 2016 18:07:21
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67299.2	2.7				ug/L	59517	Standard
	Be	9	26.7	47.2	**-0.0042**	0.012	285.5	ug/L	10	Standard
	Al	27	5083593.4	1.1	**29.5561**	1.107	3.7	ug/L	1872	Standard
	Sc	45	24010.7	2.4				ug/L	26715	Standard
	Ti	47	204.3	0.7	**0.6811**	0.011	1.6	ug/L	54	Standard
	V	51	3989.4	20.8	**0.4170**	0.120	28.7	ug/L	1419	Standard
	Cr	52	10710.8	1.7	**0.6504**	0.018	2.7	ug/L	7059	Standard
	Cr	53	23955.6	1.2	**28.6794**	0.407	1.4	ug/L	398	Standard
	Mn	55	46074.3	0.8	**7.7301**	0.047	0.6	ug/L	824	Standard
	Co	59	1410.1	1.1	**0.1990**	0.004	1.8	ug/L	167	Standard
	Ni	60	1463.1	2.6	**0.6447**	0.027	4.2	ug/L	391	Standard
	Cu	65	1378.1	4.2	**0.7136**	0.031	4.4	ug/L	147	Standard
	Zn	66	2849.6	3.9	**2.6286**	0.125	4.8	ug/L	184	Standard
>	Ge	72	391781.8	0.7				ug/L	422998	Standard
	As	75	328318.2	1.0	**312.5008**	2.671	0.9	ug/L	-58	Standard
	Se	82	96.8	11.9	**0.6851**	0.103	15.0	ug/L	15	Standard
	Se-1	77	1755.1	1.8	**24.3218**	0.552	2.3	ug/L	58	Standard
>	Ga	71	98.3	11.7				mg/L	113	Standard
	Rb	85	1366.7	5.6				ug/L	27	Standard
	Y	89	336962.4	0.4				ug/L	383780	Standard
>	Rh	103	265.0	19.7				ug/L	18	Standard
	Mo	98	3474.5	1.3	**1.4573**	0.032	2.2	ug/L	31	Standard
	Ag	107	72.3	8.8	**0.0001**	0.001	2080.1	ug/L	84	Standard
	Cd	111	20.1	12.7	**0.0064**	0.001	20.1	mg/L	4	Standard
	Cd	114	43.4	58.3	**0.0048**	0.005	112.7	ug/L	15	Standard
>	In	115	459404.3	1.3				ug/L	515400	Standard
	Sn	118	2235.2	1.2	**0.2522**	0.010	3.9	ug/L	1043	Standard
	Sb	123	686.3	23.4	**0.1519**	0.039	25.9	ug/L	227	Standard
	Ba	135	54708.6	0.4	**30.5128**	0.467	1.5	ug/L	31	Standard
	Ce	140	1123.4	4.1				ug/L	120	Standard
>	Tb	159	730198.7	0.8				ug/L	785817	Standard
	Ho	165	53.3	27.1				ug/L	7	Standard
	Tl	203	60.7	14.0	**0.0048**	0.001	24.0	ug/L	6	Standard
	Tl	205	41.7	6.9	**-0.0001**	0.000	334.4	ug/L	8	Standard
	Pb	206	1727.4	2.0	**0.3399**	0.010	2.9	ug/L	201	Standard
	Pb	207	1534.1	1.4	**0.3307**	0.003	1.0	ug/L	177	Standard
	Pb	208	6227.2	1.7	**0.3340**	0.007	2.2	ug/L	722	Standard
	U	238	440.7	4.2	**0.0687**	0.003	3.8	ug/L	8	Standard
>	Bi	209	400573.2	0.5				ug/L	444563	Standard

Sample ID: L1606090710
Report Date/Time: Tuesday, July 05, 2016 18:09:38
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	220653.8	2.0	**308.4937**	13.678	4.4	mg/L	38	Standard
K	39	146.7	5.2	**0.5853**	0.038	6.5	mg/L	33	Standard
Ca	43	38.3	30.1	**0.8023**	1.886	235.1	mg/L	48	Standard
Fe	54	146.4	13.2	**0.0148**	0.019	127.3	mg/L	131	Standard
Fe	57	313.3	12.1	**0.5965**	0.106	17.7	mg/L	153	Standard
Sc-1	45	24010.7	2.4				mg/L	26715	Standard
Cl	35	186928.1	0.8				ug/L	102686	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	34368.9	1.7				ug/L	1897	Standard
P	31	22778.8	1.4				ug/L	18491	Standard
S	34	4212.3	2.7				ug/L	3734	Standard
Sr	88	443.3	10.5				ug/L	47	Standard
C	12	93.3	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	76.7	30.1				mg/L	23	Standard
Dy	164	58.1	36.5				mg/L	23	Standard
Ho-1	165	53.3	27.1				mg/L	7	Standard
Er	166	40.0	66.1				mg/L	13	Standard
I	127	231105.0	6.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.076	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.620	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090710
Report Date/Time: Tuesday, July 05, 2016 18:09:38
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.136
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.105
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
As 75 Upper, S, EEE	As	75	

Sample ID: L1606090710
Report Date/Time: Tuesday, July 05, 2016 18:09:38
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090711
Sample Date/Time: Tuesday, July 05, 2016 18:10:33
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70267.6	0.8				ug/L	59517	Standard
	Be	9	30.0	72.6	**-0.0018**	0.021	1156.1	ug/L	10	Standard
	Al	27	5033279.2	1.3	**28.0102**	0.557	2.0	ug/L	1872	Standard
	Sc	45	24715.2	3.3				ug/L	26715	Standard
	Ti	47	130.0	10.9	**0.3209**	0.055	17.2	ug/L	54	Standard
	V	51	4084.8	10.9	**0.4091**	0.067	16.5	ug/L	1419	Standard
	Cr	52	10418.6	0.3	**0.5467**	0.021	3.8	ug/L	7059	Standard
	Cr	53	22381.5	3.2	**25.7401**	0.567	2.2	ug/L	398	Standard
	Mn	55	45023.5	1.1	**7.2627**	0.160	2.2	ug/L	824	Standard
	Co	59	517.7	3.5	**0.0541**	0.004	6.9	ug/L	167	Standard
	Ni	60	1301.7	1.9	**0.5233**	0.022	4.1	ug/L	391	Standard
	Cu	65	1101.4	6.7	**0.5303**	0.034	6.3	ug/L	147	Standard
	Zn	66	2855.3	3.5	**2.5280**	0.060	2.4	ug/L	184	Standard
>	**Ge**	72	407114.6	1.3				ug/L	422998	Standard
	As	75	334939.4	0.7	**306.8207**	3.703	1.2	ug/L	-58	Standard
	Se	82	106.2	5.6	**0.7350**	0.041	5.6	ug/L	15	Standard
	Se-1	77	1705.8	1.7	**22.7035**	0.319	1.4	ug/L	58	Standard
>	**Ga**	71	73.3	30.7				mg/L	113	Standard
	Rb	85	1170.0	1.7				ug/L	27	Standard
	Y	89	352104.8	2.9				ug/L	383780	Standard
>	**Rh**	103	331.7	6.3				ug/L	18	Standard
	Mo	98	3850.0	1.1	**1.5493**	0.050	3.2	ug/L	31	Standard
	Ag	107	78.7	2.9	**0.0006**	0.001	87.9	ug/L	84	Standard
	Cd	111	6.7	97.0	**-0.0007**	0.003	434.4	mg/L	4	Standard
	Cd	114	43.7	90.4	**0.0045**	0.008	179.3	ug/L	15	Standard
>	**In**	115	479131.2	2.1				ug/L	515400	Standard
	Sn	118	916.7	19.1	**-0.0111**	0.029	263.7	ug/L	1043	Standard
	Sb	123	564.0	19.9	**0.1158**	0.024	20.5	ug/L	227	Standard
	Ba	135	54109.8	0.9	**28.9365**	0.351	1.2	ug/L	31	Standard
	Ce	140	213.3	22.8				ug/L	120	Standard
>	**Tb**	159	756430.9	1.3				ug/L	785817	Standard
	Ho	165	50.0	20.0				ug/L	7	Standard
	Tl	203	49.7	46.1	**0.0030**	0.003	100.5	ug/L	6	Standard
	Tl	205	25.0	34.6	**-0.0030**	0.001	44.0	ug/L	8	Standard
	Pb	206	300.3	6.2	**0.0191**	0.005	24.1	ug/L	201	Standard
	Pb	207	268.0	5.3	**0.0159**	0.004	25.8	ug/L	177	Standard
	Pb	208	1062.7	2.5	**0.0144**	0.001	10.2	ug/L	722	Standard
	U	238	512.3	4.8	**0.0774**	0.004	5.5	ug/L	8	Standard
>	**Bi**	209	415264.5	1.1				ug/L	444563	Standard

Sample ID: L1606090711
Report Date/Time: Tuesday, July 05, 2016 18:12:50
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	224626.5	1.7	**304.9960**	5.955	2.0	mg/L	38	Standard
K	39	193.3	21.7	**0.7847**	0.191	24.4	mg/L	33	Standard
Ca	43	28.3	20.4	**-1.0499**	1.044	99.5	mg/L	48	Standard
Fe	54	136.8	17.8	**0.0023**	0.019	808.3	mg/L	131	Standard
Fe	57	281.7	24.9	**0.4629**	0.246	53.2	mg/L	153	Standard
> **Sc-1**	45	24715.2	3.3				mg/L	26715	Standard
Cl	35	193383.7	0.7				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	34659.7	5.5				ug/L	1897	Standard
P	31	23411.4	2.0				ug/L	18491	Standard
S	34	4459.0	3.7				ug/L	3734	Standard
Sr	88	401.7	12.7				ug/L	47	Standard
C	12	113.3	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	57.7				mg/L	23	Standard
Dy	164	17.4	153.3				mg/L	23	Standard
Ho-1	165	50.0	20.0				mg/L	7	Standard
Er	166	53.3	28.6				mg/L	13	Standard
I	127	232999.0	6.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.064	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.245	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090711
Report Date/Time: Tuesday, July 05, 2016 18:12:50
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.963
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.410
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
As 75 Upper, S, EEE	As	75	

Sample ID: L1606090711
Report Date/Time: Tuesday, July 05, 2016 18:12:50
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090712
Sample Date/Time: Tuesday, July 05, 2016 18:13:44
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63238.5	3.2				ug/L	59517	Standard
	Be	9	26.7	94.4	**-0.0025**	0.027	1073.9	ug/L	10	Standard
	Al	27	84947.4	9.9	**0.5135**	0.056	10.9	ug/L	1872	Standard
	Sc	45	22697.0	3.1				ug/L	26715	Standard
	Ti	47	2033.1	2.9	**8.7272**	0.217	2.5	ug/L	54	Standard
	V	51	13488.9	1.1	**1.7827**	0.019	1.1	ug/L	1419	Standard
	Cr	52	41660.6	2.8	**5.1741**	0.181	3.5	ug/L	7059	Standard
	Cr	53	6331.3	6.9	**7.0624**	0.490	6.9	ug/L	398	Standard
	Mn	55	2951.0	1.8	**0.3585**	0.011	3.1	ug/L	824	Standard
	Co	59	322.7	6.4	**0.0248**	0.003	12.7	ug/L	167	Standard
	Ni	60	936.7	9.3	**0.3256**	0.048	14.7	ug/L	391	Standard
	Cu	65	1687.8	5.8	**0.8647**	0.055	6.4	ug/L	147	Standard
	Zn	66	9445.3	0.9	**8.8222**	0.090	1.0	ug/L	184	Standard
>	Ge	72	403026.3	0.5				ug/L	422998	Standard
	As	75	318.3	24.8	**0.3461**	0.073	21.0	ug/L	-58	Standard
	Se	82	28.9	10.9	**0.0523**	0.029	56.3	ug/L	15	Standard
	Se-1	77	135.0	4.4	**1.2004**	0.091	7.5	ug/L	58	Standard
>	Ga	71	81.7	15.4				mg/L	113	Standard
	Rb	85	531.7	18.0				ug/L	27	Standard
	Y	89	340348.8	1.0				ug/L	383780	Standard
>	Rh	103	101.7	24.3				ug/L	18	Standard
	Mo	98	497.1	7.2	**0.1905**	0.013	6.6	ug/L	31	Standard
	Ag	107	83.0	5.3	**0.0011**	0.001	53.2	ug/L	84	Standard
	Cd	111	325.1	5.9	**0.1587**	0.009	5.8	mg/L	4	Standard
	Cd	114	797.0	2.5	**0.1600**	0.004	2.8	ug/L	15	Standard
>	In	115	482978.5	1.0				ug/L	515400	Standard
	Sn	118	2038.5	11.4	**0.1950**	0.047	23.9	ug/L	1043	Standard
	Sb	123	482.9	14.8	**0.0961**	0.016	16.4	ug/L	227	Standard
	Ba	135	3710.1	2.8	**1.9462**	0.072	3.7	ug/L	31	Standard
	Ce	140	615.0	71.1				ug/L	120	Standard
>	Tb	159	740198.1	0.6				ug/L	785817	Standard
	Ho	165	23.3	75.3				ug/L	7	Standard
	Tl	203	51.0	29.6	**0.0029**	0.002	66.2	ug/L	6	Standard
	Tl	205	116.7	95.3	**0.0103**	0.016	158.3	ug/L	8	Standard
	Pb	206	3480.1	14.2	**0.6667**	0.104	15.6	ug/L	201	Standard
	Pb	207	2878.6	13.1	**0.6038**	0.088	14.6	ug/L	177	Standard
	Pb	208	12402.0	11.7	**0.6503**	0.084	12.9	ug/L	722	Standard
	U	238	278.3	43.0	**0.0388**	0.018	45.8	ug/L	8	Standard
>	Bi	209	436815.6	0.5				ug/L	444563	Standard

Sample ID: L1606090712
Report Date/Time: Tuesday, July 05, 2016 18:16:01
Page 1

Approved: July 06, 2016

Na	23	3.3	86.6	**45.5578**	39.489	86.7	mg/L	0	Standard
Mg	24	12321.7	2.4	**18.1974**	0.929	5.1	mg/L	38	Standard
K	39	23.3	24.7	**-0.0096**	0.026	267.5	mg/L	33	Standard
Ca	43	30.0	33.3	**-0.3169**	1.903	600.4	mg/L	48	Standard
Fe	54	106.9	4.9	**-0.0152**	0.003	20.4	mg/L	131	Standard
Fe	57	280.0	8.2	**0.5414**	0.113	20.8	mg/L	153	Standard
> **Sc-1**	45	22697.0	3.1				mg/L	26715	Standard
Cl	35	138615.9	1.3				ug/L	102686	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	2493.5	1.7				ug/L	1897	Standard
P	31	7305.1	8.6				ug/L	18491	Standard
S	34	4395.6	6.8				ug/L	3734	Standard
Sr	88	101.7	11.4				ug/L	47	Standard
C	12	40.0	50.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	290.0	37.3				mg/L	23	Standard
Dy	164	17.6	53.2				mg/L	23	Standard
Ho-1	165	23.3	75.3				mg/L	7	Standard
Er	166	50.0	60.0				mg/L	13	Standard
I	127	28102.8	6.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.253	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.279	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090712
Report Date/Time: Tuesday, July 05, 2016 18:16:01
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.709
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.257
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606090712
Report Date/Time: Tuesday, July 05, 2016 18:16:01
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090713
Sample Date/Time: Tuesday, July 05, 2016 18:16:56
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63692.0	2.3				ug/L	59517	Standard
	Be	9	16.7	45.8	**-0.0131**	0.009	66.2	ug/L	10	Standard
	Al	27	63512.9	3.3	**0.3779**	0.021	5.4	ug/L	1872	Standard
	Sc	45	23316.3	2.3				ug/L	26715	Standard
	Ti	47	1763.1	3.0	**7.4050**	0.348	4.7	ug/L	54	Standard
	V	51	10942.6	1.2	**1.3852**	0.039	2.8	ug/L	1419	Standard
	Cr	52	36788.3	3.7	**4.3630**	0.257	5.9	ug/L	7059	Standard
	Cr	53	5257.6	5.5	**5.6928**	0.424	7.5	ug/L	398	Standard
	Mn	55	905.4	2.7	**0.0166**	0.003	17.2	ug/L	824	Standard
	Co	59	265.3	7.1	**0.0152**	0.002	15.0	ug/L	167	Standard
	Ni	60	786.4	3.8	**0.2337**	0.015	6.4	ug/L	391	Standard
	Cu	65	449.3	5.0	**0.1678**	0.010	6.0	ug/L	147	Standard
	Zn	66	4768.4	1.1	**4.2979**	0.118	2.8	ug/L	184	Standard
>	**Ge**	72	410100.1	1.5				ug/L	422998	Standard
	As	75	300.6	27.5	**0.3251**	0.075	23.1	ug/L	-58	Standard
	Se	82	27.2	16.1	**0.0338**	0.040	118.9	ug/L	15	Standard
	Se-1	77	104.0	5.8	**0.7466**	0.088	11.8	ug/L	58	Standard
>	**Ga**	71	73.3	30.7				mg/L	113	Standard
	Rb	85	363.3	2.1				ug/L	27	Standard
	Y	89	342635.3	2.1				ug/L	383780	Standard
>	**Rh**	103	60.0	14.4				ug/L	18	Standard
	Mo	98	714.6	1.9	**0.2792**	0.005	1.8	ug/L	31	Standard
	Ag	107	86.3	7.0	**0.0017**	0.001	64.3	ug/L	84	Standard
	Cd	111	179.7	8.0	**0.0862**	0.005	6.2	mg/L	4	Standard
	Cd	114	447.3	14.6	**0.0881**	0.012	13.9	ug/L	15	Standard
>	**In**	115	480876.1	2.3				ug/L	515400	Standard
	Sn	118	1780.1	8.5	**0.1491**	0.036	24.0	ug/L	1043	Standard
	Sb	123	429.3	5.9	**0.0842**	0.006	6.6	ug/L	227	Standard
	Ba	135	2750.9	5.5	**1.4440**	0.099	6.9	ug/L	31	Standard
	Ce	140	306.7	64.0				ug/L	120	Standard
>	**Tb**	159	736152.1	2.7				ug/L	785817	Standard
	Ho	165	16.7	91.7				ug/L	7	Standard
	Tl	203	46.3	25.9	**0.0024**	0.002	65.8	ug/L	6	Standard
	Tl	205	25.0	20.0	**-0.0031**	0.001	26.0	ug/L	8	Standard
	Pb	206	961.4	12.2	**0.1535**	0.027	17.3	ug/L	201	Standard
	Pb	207	823.4	16.4	**0.1406**	0.032	23.1	ug/L	177	Standard
	Pb	208	3480.2	12.8	**0.1497**	0.026	17.7	ug/L	722	Standard
	U	238	226.3	7.2	**0.0314**	0.002	5.7	ug/L	8	Standard
>	**Bi**	209	432100.7	2.0				ug/L	444563	Standard

Sample ID: L1606090713
Report Date/Time: Tuesday, July 05, 2016 18:19:13
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**22.9114**	39.675	173.2	mg/L	0	Standard
Mg	24	11828.0	3.4	**16.9917**	0.734	4.3	mg/L	38	Standard
K	39	33.3	22.9	**0.0376**	0.036	96.5	mg/L	33	Standard
Ca	43	35.0	24.7	**0.4126**	1.454	352.4	mg/L	48	Standard
Fe	54	67.3	40.6	**-0.0548**	0.024	43.7	mg/L	131	Standard
Fe	57	220.0	17.8	**0.2995**	0.142	47.5	mg/L	153	Standard
> **Sc-1**	45	23316.3	2.3				mg/L	26715	Standard
Cl	35	140495.8	1.2				ug/L	102686	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1980.1	5.3				ug/L	1897	Standard
P	31	7436.8	2.8				ug/L	18491	Standard
S	34	4455.7	4.8				ug/L	3734	Standard
Sr	88	81.7	46.4				ug/L	47	Standard
C	12	70.0	51.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	186.7	25.3				mg/L	23	Standard
Dy	164	28.6	125.8				mg/L	23	Standard
Ho-1	165	16.7	91.7				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	13	Standard
I	127	24541.5	1.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.015	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.951	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090713
Report Date/Time: Tuesday, July 05, 2016 18:19:13
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.302
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.197
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090714 WG573662-01
Sample Date/Time: Tuesday, July 05, 2016 18:20:08
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68117.8	1.2				ug/L	59517	Standard
	Be	9	38.3	30.1	**0.0074**	0.011	155.1	ug/L	10	Standard
	Al	27	7773933.4	0.6	**44.6356**	0.680	1.5	ug/L	1872	Standard
	Sc	45	25920.5	1.3				ug/L	26715	Standard
	Ti	47	2725.9	1.3	**11.3211**	0.026	0.2	ug/L	54	Standard
	V	51	13049.7	1.6	**1.6454**	0.011	0.6	ug/L	1419	Standard
	Cr	52	15423.2	1.5	**1.2132**	0.051	4.2	ug/L	7059	Standard
	Cr	53	11466.0	3.8	**12.6073**	0.674	5.3	ug/L	398	Standard
	Mn	55	148817.3	1.1	**23.6010**	0.445	1.9	ug/L	824	Standard
	Co	59	983.4	6.2	**0.1209**	0.008	6.9	ug/L	167	Standard
	Ni	60	2065.8	1.2	**0.9146**	0.028	3.0	ug/L	391	Standard
	Cu	65	1462.4	3.6	**0.7074**	0.038	5.4	ug/L	147	Standard
	Zn	66	5466.7	1.4	**4.8393**	0.137	2.8	ug/L	184	Standard
>	**Ge**	72	419221.5	1.4				ug/L	422998	Standard
	As	75	2367.5	3.7	**2.1581**	0.105	4.9	ug/L	-58	Standard
	Se	82	365.0	1.8	**2.9356**	0.093	3.2	ug/L	15	Standard
	Se-1	77	808.7	4.7	**10.0971**	0.640	6.3	ug/L	58	Standard
>	**Ga**	71	143.3	13.2				mg/L	113	Standard
	Rb	85	26175.9	2.0				ug/L	27	Standard
	Y	89	361671.1	1.2				ug/L	383780	Standard
>	**Rh**	103	213.3	9.8				ug/L	18	Standard
	Mo	98	1040.0	4.6	**0.4022**	0.024	5.8	ug/L	31	Standard
	Ag	107	158.3	53.1	**0.0127**	0.013	102.5	ug/L	84	Standard
	Cd	111	47.4	66.8	**0.0193**	0.016	80.6	mg/L	4	Standard
	Cd	114	94.9	51.5	**0.0147**	0.010	66.9	ug/L	15	Standard
>	**In**	115	490470.0	1.1				ug/L	515400	Standard
	Sn	118	1866.8	6.1	**0.1579**	0.022	13.7	ug/L	1043	Standard
	Sb	123	465.7	10.2	**0.0906**	0.012	12.8	ug/L	227	Standard
	Ba	135	30934.5	0.2	**16.1485**	0.163	1.0	ug/L	31	Standard
	Ce	140	4832.4	4.6				ug/L	120	Standard
>	**Tb**	159	770228.8	1.2				ug/L	785817	Standard
	Ho	165	340.0	11.1				ug/L	7	Standard
	Tl	203	175.0	65.7	**0.0191**	0.015	78.4	ug/L	6	Standard
	Tl	205	101.7	35.6	**0.0084**	0.005	65.0	ug/L	8	Standard
	Pb	206	695.3	7.7	**0.0994**	0.012	11.7	ug/L	201	Standard
	Pb	207	573.7	9.4	**0.0844**	0.013	15.2	ug/L	177	Standard
	Pb	208	2479.7	4.3	**0.0937**	0.007	7.0	ug/L	722	Standard
	U	238	2046.1	2.3	**0.3064**	0.008	2.7	ug/L	8	Standard
>	**Bi**	209	428883.1	0.4				ug/L	444563	Standard

Sample ID: L1606090714 WG573662-01
Report Date/Time: Tuesday, July 05, 2016 18:22:25
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**20.0465**	34.713	173.2	mg/L	0	Standard
Mg	24	150731.2	2.0	**195.0958**	5.652	2.9	mg/L	38	Standard
K	39	521.7	8.4	**2.2264**	0.228	10.2	mg/L	33	Standard
Ca	43	201.7	22.2	**26.8813**	7.548	28.1	mg/L	48	Standard
Fe	54	463.1	19.2	**0.2687**	0.079	29.3	mg/L	131	Standard
Fe	57	513.3	4.8	**1.1577**	0.089	7.7	mg/L	153	Standard
> **Sc-1**	45	25920.5	1.3				mg/L	26715	Standard
Cl	35	220699.3	1.5				ug/L	102686	Standard
Kr	83	3.7	78.7				ug/L	2	Standard
Br	81	80942.4	3.0				ug/L	1897	Standard
P	31	24807.0	1.4				ug/L	18491	Standard
S	34	4594.0	1.3				ug/L	3734	Standard
Sr	88	515.0	18.4				ug/L	47	Standard
C	12	103.3	29.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	240.0	34.1				mg/L	23	Standard
Dy	164	434.4	3.9				mg/L	23	Standard
Ho-1	165	340.0	11.1				mg/L	7	Standard
Er	166	326.7	20.8				mg/L	13	Standard
I	127	55068.4	5.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.451	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.107	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090714 WG573662-01
Report Date/Time: Tuesday, July 05, 2016 18:22:25
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.163
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.473
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090715 WG573662-02
Sample Date/Time: Tuesday, July 05, 2016 18:23:19
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62893.7	2.9				ug/L	59517	Standard
	Be	9	43.3	65.6	**0.0165**	0.032	193.9	ug/L	10	Standard
	Al	27	7764915.7	0.6	**48.3070**	1.286	2.7	ug/L	1872	Standard
	Sc	45	23049.2	2.0				ug/L	26715	Standard
	Ti	47	1380.1	5.3	**6.3788**	0.344	5.4	ug/L	54	Standard
	V	51	9561.6	3.4	**1.3332**	0.047	3.5	ug/L	1419	Standard
	Cr	52	13671.5	1.3	**1.2192**	0.035	2.9	ug/L	7059	Standard
	Cr	53	11104.1	3.5	**13.8471**	0.533	3.8	ug/L	398	Standard
	Mn	55	154818.7	1.1	**27.7974**	0.262	0.9	ug/L	824	Standard
	Co	59	1321.1	4.1	**0.1969**	0.009	4.5	ug/L	167	Standard
	Ni	60	2095.5	0.6	**1.0789**	0.010	0.9	ug/L	391	Standard
	Cu	65	1348.1	2.0	**0.7408**	0.016	2.2	ug/L	147	Standard
	Zn	66	2589.9	1.5	**2.5192**	0.033	1.3	ug/L	184	Standard
>	**Ge**	72	370541.2	0.3				ug/L	422998	Standard
	As	75	1349.2	0.3	**1.4092**	0.001	0.1	ug/L	-58	Standard
	Se	82	110.8	0.9	**0.8724**	0.009	1.1	ug/L	15	Standard
	Se-1	77	791.0	3.7	**11.2401**	0.461	4.1	ug/L	58	Standard
>	**Ga**	71	231.7	13.2				mg/L	113	Standard
	Rb	85	26610.0	1.3				ug/L	27	Standard
	Y	89	324852.1	2.7				ug/L	383780	Standard
>	**Rh**	103	235.0	9.3				ug/L	18	Standard
	Mo	98	929.9	5.3	**0.4027**	0.019	4.8	ug/L	31	Standard
	Ag	107	84.0	6.6	**0.0027**	0.001	32.3	ug/L	84	Standard
	Cd	111	20.7	32.8	**0.0073**	0.004	50.2	mg/L	4	Standard
	Cd	114	77.8	39.6	**0.0132**	0.007	54.0	ug/L	15	Standard
>	**In**	115	437805.2	0.8				ug/L	515400	Standard
	Sn	118	3435.4	4.2	**0.5177**	0.035	6.7	ug/L	1043	Standard
	Sb	123	329.3	14.4	**0.0683**	0.012	17.8	ug/L	227	Standard
	Ba	135	33531.4	0.7	**19.6146**	0.255	1.3	ug/L	31	Standard
	Ce	140	5174.2	1.7				ug/L	120	Standard
>	**Tb**	159	678806.2	1.5				ug/L	785817	Standard
	Ho	165	218.3	12.6				ug/L	7	Standard
	Tl	203	93.7	15.3	**0.0100**	0.002	21.3	ug/L	6	Standard
	Tl	205	63.3	4.6	**0.0037**	0.000	12.8	ug/L	8	Standard
	Pb	206	1260.7	1.3	**0.2480**	0.004	1.6	ug/L	201	Standard
	Pb	207	1080.4	4.2	**0.2304**	0.012	5.2	ug/L	177	Standard
	Pb	208	4347.6	1.7	**0.2302**	0.005	2.1	ug/L	722	Standard
	U	238	1812.1	4.7	**0.3031**	0.013	4.3	ug/L	8	Standard
>	**Bi**	209	383815.0	0.6				ug/L	444563	Standard

Sample ID: L1606090715 WG573662-02
Report Date/Time: Tuesday, July 05, 2016 18:25:36
Page 1

Approved: July 06, 2016

Na	23	3.3	86.6	**44.7605**	38.760	86.6	mg/L	0	Standard
Mg	24	148739.8	0.1	**216.5230**	4.668	2.2	mg/L	38	Standard
K	39	435.0	13.9	**2.0787**	0.309	14.9	mg/L	33	Standard
Ca	43	173.3	16.4	**25.7181**	4.889	19.0	mg/L	48	Standard
Fe	54	614.9	6.9	**0.4575**	0.029	6.4	mg/L	131	Standard
Fe	57	578.3	9.5	**1.5962**	0.211	13.2	mg/L	153	Standard
> **Sc-1**	45	23049.2	2.0				mg/L	26715	Standard
Cl	35	211979.3	0.8				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	23027.5	1.6				ug/L	1897	Standard
P	31	23838.7	0.4				ug/L	18491	Standard
S	34	4467.3	5.2				ug/L	3734	Standard
Sr	88	506.7	6.3				ug/L	47	Standard
C	12	196.7	2.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	33.5				mg/L	23	Standard
Dy	164	292.2	12.6				mg/L	23	Standard
Ho-1	165	218.3	12.6				mg/L	7	Standard
Er	166	233.3	10.8				mg/L	13	Standard
I	127	71416.9	7.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.674	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		87.599	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090715 WG573662-02
Report Date/Time: Tuesday, July 05, 2016 18:25:36
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		84.945
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.335
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090717S WG573662-05
Sample Date/Time: Tuesday, July 05, 2016 18:26:31
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65685.4	1.8				ug/L	59517	Standard
	Be	9	45745.6	1.1	**47.6572**	1.371	2.9	ug/L	10	Standard
	Al	27	7763081.9	0.3	**46.2285**	0.797	1.7	ug/L	1872	Standard
	Sc	45	24312.8	0.2				ug/L	26715	Standard
	Ti	47	2754.3	0.6	**12.3499**	0.110	0.9	ug/L	54	Standard
	V	51	324382.5	1.2	**48.7110**	0.820	1.7	ug/L	1419	Standard
	Cr	52	312869.8	1.1	**46.8766**	0.509	1.1	ug/L	7059	Standard
	Cr	53	48420.6	1.9	**58.8023**	0.431	0.7	ug/L	398	Standard
	Mn	55	402985.8	0.1	**69.1228**	0.882	1.3	ug/L	824	Standard
	Co	59	290157.0	0.6	**46.4134**	0.408	0.9	ug/L	167	Standard
	Ni	60	78888.9	1.3	**45.6559**	0.433	0.9	ug/L	391	Standard
	Cu	65	78244.2	0.9	**45.2550**	1.013	2.2	ug/L	147	Standard
	Zn	66	53158.1	0.3	**52.2171**	0.862	1.7	ug/L	184	Standard
>	**Ge**	72	389009.1	1.4				ug/L	422998	Standard
	As	75	52463.4	1.3	**50.3385**	0.704	1.4	ug/L	-58	Standard
	Se	82	5142.1	1.8	**47.4924**	1.207	2.5	ug/L	15	Standard
	Se-1	77	4003.2	1.0	**56.7356**	0.210	0.4	ug/L	58	Standard
>	**Ga**	71	168.3	14.7				mg/L	113	Standard
	Rb	85	25786.9	3.8				ug/L	27	Standard
	Y	89	342356.0	2.4				ug/L	383780	Standard
>	**Rh**	103	188.3	12.3				ug/L	18	Standard
	Mo	98	1045.0	0.8	**0.4334**	0.000	0.1	ug/L	31	Standard
	Ag	107	259545.8	0.4	**43.3405**	0.270	0.6	ug/L	84	Standard
	Cd	111	87021.7	0.4	**45.9883**	0.495	1.1	mg/L	4	Standard
	Cd	114	214931.2	0.6	**46.8064**	0.169	0.4	ug/L	15	Standard
>	**In**	115	457893.4	0.7				ug/L	515400	Standard
	Sn	118	1358.4	8.3	**0.0832**	0.024	28.4	ug/L	1043	Standard
	Sb	123	208052.1	0.3	**51.1441**	0.465	0.9	ug/L	227	Standard
	Ba	135	111802.6	0.4	**62.5820**	0.649	1.0	ug/L	31	Standard
	Ce	140	4974.1	1.2				ug/L	120	Standard
>	**Tb**	159	720382.7	1.8				ug/L	785817	Standard
	Ho	165	296.7	11.5				ug/L	7	Standard
	Tl	203	343964.9	0.7	**47.6207**	0.345	0.7	ug/L	6	Standard
	Tl	205	299008.4	0.9	**47.5219**	0.720	1.5	ug/L	8	Standard
	Pb	206	222730.8	0.3	**49.5402**	0.841	1.7	ug/L	201	Standard
	Pb	207	194939.4	0.4	**47.9568**	0.840	1.8	ug/L	177	Standard
	Pb	208	803962.3	0.1	**49.2372**	0.720	1.5	ug/L	722	Standard
	U	238	312487.5	0.4	**50.3907**	0.927	1.8	ug/L	8	Standard
>	**Bi**	209	401505.3	1.4				ug/L	444563	Standard

Sample ID: L1606090717S WG573662-05
Report Date/Time: Tuesday, July 05, 2016 18:28:48
Page 1

Approved: July 06, 2016

Na	23	3.3	86.6	**42.8632**	37.116	86.6	mg/L	0	Standard
Mg	24	149319.0	1.6	**206.0045**	2.894	1.4	mg/L	38	Standard
K	39	510.0	18.7	**2.3246**	0.464	20.0	mg/L	33	Standard
Ca	43	156.7	3.7	**21.2153**	1.057	5.0	mg/L	48	Standard
Fe	54	455.9	12.6	**0.2872**	0.050	17.5	mg/L	131	Standard
Fe	57	520.0	12.6	**1.2882**	0.221	17.2	mg/L	153	Standard
> **Sc-1**	45	24312.8	0.2				mg/L	26715	Standard
Cl	35	216160.4	0.4				ug/L	102686	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	22039.4	3.7				ug/L	1897	Standard
P	31	24142.6	1.9				ug/L	18491	Standard
S	34	4497.3	4.7				ug/L	3734	Standard
Sr	88	463.3	2.7				ug/L	47	Standard
C	12	106.7	28.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	110.0	32.8				mg/L	23	Standard
Dy	164	373.4	25.9				mg/L	23	Standard
Ho-1	165	296.7	11.5				mg/L	7	Standard
Er	166	346.7	7.3				mg/L	13	Standard
I	127	50729.9	5.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.365	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.965	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090717S WG573662-05
Report Date/Time: Tuesday, July 05, 2016 18:28:48
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.842
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.315
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606090717S WG573662-05
Report Date/Time: Tuesday, July 05, 2016 18:28:48
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090718S WG573662-07
Sample Date/Time: Tuesday, July 05, 2016 18:29:42
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69177.6	1.4				ug/L	59517	Standard
	Be	9	46929.3	4.5	**46.4221**	2.493	5.4	ug/L	10	Standard
	Al	27	8132613.2	0.6	**45.9815**	0.738	1.6	ug/L	1872	Standard
	Sc	45	24039.1	1.4				ug/L	26715	Standard
	Ti	47	1100.7	3.9	**4.6868**	0.124	2.7	ug/L	54	Standard
	V	51	321140.4	0.6	**47.2715**	0.789	1.7	ug/L	1419	Standard
	Cr	52	313450.5	0.4	**46.0266**	0.822	1.8	ug/L	7059	Standard
	Cr	53	48286.9	2.9	**57.4741**	1.166	2.0	ug/L	398	Standard
	Mn	55	415707.7	0.5	**69.9013**	0.681	1.0	ug/L	824	Standard
	Co	59	292191.2	0.3	**45.8225**	0.797	1.7	ug/L	167	Standard
	Ni	60	79278.5	0.4	**44.9811**	0.790	1.8	ug/L	391	Standard
	Cu	65	78440.2	0.4	**44.4704**	0.592	1.3	ug/L	147	Standard
	Zn	66	50291.7	0.5	**48.4148**	0.485	1.0	ug/L	184	Standard
>	**Ge**	72	396819.2	1.4				ug/L	422998	Standard
	As	75	52474.4	1.3	**49.3680**	1.339	2.7	ug/L	-58	Standard
	Se	82	5147.1	1.3	**46.6031**	1.240	2.7	ug/L	15	Standard
	Se-1	77	4142.9	1.3	**57.5687**	0.141	0.2	ug/L	58	Standard
>	**Ga**	71	98.3	19.3				mg/L	113	Standard
	Rb	85	27182.7	2.3				ug/L	27	Standard
	Y	89	344887.8	0.4				ug/L	383780	Standard
>	**Rh**	103	231.7	30.6				ug/L	18	Standard
	Mo	98	725.8	4.3	**0.2908**	0.012	4.2	ug/L	31	Standard
	Ag	107	250602.2	0.9	**40.8298**	0.351	0.9	ug/L	84	Standard
	Cd	111	87621.3	0.4	**45.1808**	0.496	1.1	mg/L	4	Standard
	Cd	114	215615.2	1.0	**45.8178**	0.736	1.6	ug/L	15	Standard
>	**In**	115	469314.1	1.5				ug/L	515400	Standard
	Sn	118	943.4	6.1	**-0.0021**	0.010	472.1	ug/L	1043	Standard
	Sb	123	209597.2	0.4	**50.2760**	0.863	1.7	ug/L	227	Standard
	Ba	135	113632.9	0.5	**62.0619**	0.667	1.1	ug/L	31	Standard
	Ce	140	2095.1	7.2				ug/L	120	Standard
>	**Tb**	159	737670.0	1.1				ug/L	785817	Standard
	Ho	165	161.7	35.2				ug/L	7	Standard
	Tl	203	343354.1	1.0	**46.2542**	0.768	1.7	ug/L	6	Standard
	Tl	205	303156.3	0.9	**46.8769**	0.412	0.9	ug/L	8	Standard
	Pb	206	224361.7	0.9	**48.5480**	0.157	0.3	ug/L	201	Standard
	Pb	207	195041.3	0.3	**46.6807**	0.408	0.9	ug/L	177	Standard
	Pb	208	807407.4	0.6	**48.1087**	0.463	1.0	ug/L	722	Standard
	U	238	313931.9	0.3	**49.2512**	0.346	0.7	ug/L	8	Standard
>	**Bi**	209	412635.9	0.8				ug/L	444563	Standard

Sample ID: L1606090718S WG573662-07
Report Date/Time: Tuesday, July 05, 2016 18:31:59
Page 1

Approved: July 06, 2016

Na	23	5.0	173.2	**64.8458**	112.308	173.2	mg/L	0	Standard
Mg	24	154594.8	1.8	**215.7208**	2.637	1.2	mg/L	38	Standard
K	39	481.7	8.6	**2.2161**	0.232	10.5	mg/L	33	Standard
Ca	43	198.3	18.6	**28.8774**	6.993	24.2	mg/L	48	Standard
Fe	54	507.9	9.8	**0.3384**	0.044	12.9	mg/L	131	Standard
Fe	57	503.3	14.7	**1.2503**	0.243	19.4	mg/L	153	Standard
> **Sc-1**	45	24039.1	1.4				mg/L	26715	Standard
Cl	35	220684.2	0.3				ug/L	102686	Standard
Kr	83	2.7	108.3				ug/L	2	Standard
Br	81	23141.0	6.1				ug/L	1897	Standard
P	31	25581.6	4.5				ug/L	18491	Standard
S	34	4607.4	4.4				ug/L	3734	Standard
Sr	88	546.7	7.8				ug/L	47	Standard
C	12	136.7	16.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	100.0	62.5				mg/L	23	Standard
Dy	164	175.4	14.2				mg/L	23	Standard
Ho-1	165	161.7	35.2				mg/L	7	Standard
Er	166	166.7	3.5				mg/L	13	Standard
I	127	51280.2	6.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.232	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.811	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090718S WG573662-07
Report Date/Time: Tuesday, July 05, 2016 18:31:59
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.058
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.818
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090719SD WG573662-06
Sample Date/Time: Tuesday, July 05, 2016 18:32:54
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65362.4	1.8				ug/L	59517	Standard
	Be	9	46981.1	3.6	**49.1596**	0.915	1.9	ug/L	10	Standard
	Al	27	7677607.1	1.4	**45.9464**	1.074	2.3	ug/L	1872	Standard
	Sc	45	23398.1	3.0				ug/L	26715	Standard
	Ti	47	2684.9	1.4	**12.3400**	0.287	2.3	ug/L	54	Standard
	V	51	324120.2	1.0	**49.8902**	0.900	1.8	ug/L	1419	Standard
	Cr	52	314928.3	0.3	**48.3958**	0.760	1.6	ug/L	7059	Standard
	Cr	53	47469.3	1.6	**59.0887**	0.609	1.0	ug/L	398	Standard
	Mn	55	397979.9	0.7	**69.9725**	1.444	2.1	ug/L	824	Standard
	Co	59	287934.9	0.5	**47.2091**	0.739	1.6	ug/L	167	Standard
	Ni	60	78820.2	0.9	**46.7648**	0.988	2.1	ug/L	391	Standard
	Cu	65	78063.6	0.6	**46.2735**	0.643	1.4	ug/L	147	Standard
	Zn	66	52711.9	0.8	**53.0690**	0.655	1.2	ug/L	184	Standard
>	Ge	72	379551.5	1.4				ug/L	422998	Standard
	As	75	51651.5	1.3	**50.7912**	0.223	0.4	ug/L	-58	Standard
	Se	82	5118.6	1.5	**48.4495**	0.354	0.7	ug/L	15	Standard
	Se-1	77	4045.9	2.3	**58.7880**	0.674	1.1	ug/L	58	Standard
>	Ga	71	136.7	11.2				mg/L	113	Standard
	Rb	85	24873.7	0.1				ug/L	27	Standard
	Y	89	325494.9	1.9				ug/L	383780	Standard
>	Rh	103	265.0	14.7				ug/L	18	Standard
	Mo	98	1341.9	3.4	**0.5704**	0.028	4.9	ug/L	31	Standard
	Ag	107	259760.8	0.7	**44.2201**	0.291	0.7	ug/L	84	Standard
	Cd	111	87642.1	0.5	**47.2179**	0.615	1.3	mg/L	4	Standard
	Cd	114	214231.9	1.9	**47.5640**	1.042	2.2	ug/L	15	Standard
>	In	115	449175.0	1.4				ug/L	515400	Standard
	Sn	118	1286.7	0.6	**0.0741**	0.003	4.2	ug/L	1043	Standard
	Sb	123	207685.0	0.9	**52.0459**	0.454	0.9	ug/L	227	Standard
	Ba	135	111945.0	0.9	**63.8780**	0.307	0.5	ug/L	31	Standard
	Ce	140	4579.0	5.0				ug/L	120	Standard
>	Tb	159	706063.5	1.3				ug/L	785817	Standard
	Ho	165	243.3	8.3				ug/L	7	Standard
	Tl	203	343137.5	0.7	**48.5512**	0.333	0.7	ug/L	6	Standard
	Tl	205	301180.9	1.2	**48.9237**	1.076	2.2	ug/L	8	Standard
	Pb	206	224481.1	0.6	**51.0265**	0.632	1.2	ug/L	201	Standard
	Pb	207	194714.9	0.4	**48.9545**	0.677	1.4	ug/L	177	Standard
	Pb	208	810209.9	1.0	**50.7149**	1.053	2.1	ug/L	722	Standard
	U	238	314954.4	1.0	**51.9053**	1.030	2.0	ug/L	8	Standard
>	Bi	209	392857.5	1.3				ug/L	444563	Standard

Sample ID: L1606090719SD WG573662-06
Report Date/Time: Tuesday, July 05, 2016 18:35:10
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**21.8773**	37.884	173.2	mg/L	0	Standard
Mg	24	148191.3	1.3	**212.6371**	9.409	4.4	mg/L	38	Standard
K	39	471.7	2.2	**2.2301**	0.102	4.6	mg/L	33	Standard
Ca	43	146.7	17.5	**20.5821**	5.462	26.5	mg/L	48	Standard
Fe	54	483.1	20.5	**0.3283**	0.091	27.7	mg/L	131	Standard
Fe	57	470.0	5.6	**1.1804**	0.068	5.7	mg/L	153	Standard
> **Sc-1**	45	23398.1	3.0				mg/L	26715	Standard
Cl	35	215013.0	1.0				ug/L	102686	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	21515.3	6.2				ug/L	1897	Standard
P	31	23848.8	2.0				ug/L	18491	Standard
S	34	4570.7	2.5				ug/L	3734	Standard
Sr	88	528.3	9.1				ug/L	47	Standard
C	12	160.0	22.5				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	70.0	51.5				mg/L	23	Standard
Dy	164	440.6	7.3				mg/L	23	Standard
Ho-1	165	243.3	8.3				mg/L	7	Standard
Er	166	266.7	13.2				mg/L	13	Standard
I	127	50484.2	6.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.822	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.729	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090719SD WG573662-06
Report Date/Time: Tuesday, July 05, 2016 18:35:10
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.151
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.369
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606090719SD WG573662-06
Report Date/Time: Tuesday, July 05, 2016 18:35:10
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 18:36:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63164.8	2.2				ug/L	59517	Standard
	Be	9	49507.5	2.5	**53.6302**	1.436	2.7	ug/L	10	Standard
	Al	27	7385594.5	0.2	**45.7427**	1.103	2.4	ug/L	1872	Standard
	Sc	45	23012.5	2.5				ug/L	26715	Standard
	Ti	47	21953.2	0.9	**99.7998**	2.845	2.9	ug/L	54	Standard
	V	51	336016.3	0.5	**50.2733**	0.749	1.5	ug/L	1419	Standard
	Cr	52	339545.8	1.6	**50.7771**	1.837	3.6	ug/L	7059	Standard
	Cr	53	42141.9	2.6	**50.9574**	2.283	4.5	ug/L	398	Standard
	Mn	55	292841.4	1.1	**50.0057**	1.003	2.0	ug/L	824	Standard
	Co	59	328231.1	1.5	**52.3221**	1.722	3.3	ug/L	167	Standard
	Ni	60	88852.8	1.4	**51.2672**	1.623	3.2	ug/L	391	Standard
	Cu	65	88530.9	0.9	**51.0235**	1.317	2.6	ug/L	147	Standard
	Zn	66	54079.3	1.1	**52.9301**	1.480	2.8	ug/L	184	Standard
>	Ge	72	390515.5	2.0				ug/L	422998	Standard
	As	75	53554.9	1.6	**51.2063**	1.792	3.5	ug/L	-58	Standard
	Se	82	5569.3	0.3	**51.2611**	1.064	2.1	ug/L	15	Standard
	Se-1	77	3785.1	0.8	**53.4106**	1.070	2.0	ug/L	58	Standard
>	Ga	71	38.3	7.5				mg/L	113	Standard
	Rb	85	793.4	7.0				ug/L	27	Standard
	Y	89	339554.5	2.7				ug/L	383780	Standard
>	Rh	103	76.7	21.0				ug/L	18	Standard
	Mo	98	253287.4	1.3	**105.0170**	2.606	2.5	ug/L	31	Standard
	Ag	107	310815.0	0.4	**50.8376**	0.842	1.7	ug/L	84	Standard
	Cd	111	99324.7	1.3	**51.4144**	1.291	2.5	mg/L	4	Standard
	Cd	114	242796.1	2.4	**51.7992**	1.938	3.7	ug/L	15	Standard
>	In	115	467556.7	1.4				ug/L	515400	Standard
	Sn	118	269986.6	2.1	**51.2371**	1.812	3.5	ug/L	1043	Standard
	Sb	123	221627.3	1.4	**53.3618**	1.137	2.1	ug/L	227	Standard
	Ba	135	91273.8	0.3	**50.0354**	0.820	1.6	ug/L	31	Standard
	Ce	140	95.0	5.3				ug/L	120	Standard
>	Tb	159	724368.0	2.2				ug/L	785817	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	390449.0	0.5	**52.0724**	1.455	2.8	ug/L	6	Standard
	Tl	205	347432.9	2.3	**53.1998**	2.291	4.3	ug/L	8	Standard
	Pb	206	248216.7	0.6	**53.1743**	1.094	2.1	ug/L	201	Standard
	Pb	207	226475.4	0.6	**53.6677**	1.356	2.5	ug/L	177	Standard
	Pb	208	925407.0	0.8	**54.5986**	1.691	3.1	ug/L	722	Standard
	U	238	350966.1	0.8	**54.5145**	1.642	3.0	ug/L	8	Standard
>	Bi	209	416954.8	2.3				ug/L	444563	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 18:38:24
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3978.9	0.8	**5.7696**	0.167	2.9	mg/L	38	Standard
K	39	703.3	2.9	**3.4478**	0.174	5.1	mg/L	33	Standard
Ca	43	46.7	16.4	**2.6352**	1.274	48.4	mg/L	48	Standard
Fe	54	5751.7	3.1	**5.2664**	0.143	2.7	mg/L	131	Standard
Fe	57	1775.1	1.6	**5.9062**	0.214	3.6	mg/L	153	Standard
> **Sc-1**	45	23012.5	2.5				mg/L	26715	Standard
Cl	35	131265.7	2.1				ug/L	102686	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1803.4	13.8				ug/L	1897	Standard
P	31	22268.0	3.2				ug/L	18491	Standard
S	34	4509.0	3.4				ug/L	3734	Standard
Sr	88	68.3	15.2				ug/L	47	Standard
C	12	53.3	57.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	39.0				mg/L	23	Standard
Dy	164	6.3	86.9				mg/L	23	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	9496.3	9.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	107.260		
Al	27	91.485		
Sc	45			
Ti	47	99.800		
V	51	100.547		
Cr	52	101.554		
Cr	53			
Mn	55	100.011		
Co	59	104.644		
Ni	60	102.534		
Cu	65	102.047		
Zn	66	105.860		
> Ge	72		92.321	
As	75	102.413		
Se	82	102.522		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 18:38:24
Page 2

Approved: July 06, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	105.017		
Ag	107	101.675		
Cd	111	102.829		
Cd	114			
> In	115			90.717
Sn	118	102.474		
Sb	123	106.724		
Ba	135	100.071		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	104.145		
Tl	205			
Pb	206			
Pb	207			
Pb	208	109.197		
U	238	109.029		
> Bi	209			93.790
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 18:38:24
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 18:39:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63280.2	1.3				ug/L	59517	Standard
	Be	9	45.0	29.4	**0.0175**	0.014	80.4	ug/L	10	Standard
	Al	27	3657.2	66.8	**0.0101**	0.015	146.5	ug/L	1872	Standard
	Sc	45	22752.1	3.4				ug/L	26715	Standard
	Ti	47	27.3	23.8	**-0.1213**	0.029	24.0	ug/L	54	Standard
	V	51	1070.4	7.1	**-0.0173**	0.013	77.2	ug/L	1419	Standard
	Cr	52	5720.1	1.0	**-0.0973**	0.008	7.9	ug/L	7059	Standard
	Cr	53	768.4	15.5	**0.5324**	0.133	25.0	ug/L	398	Standard
	Mn	55	621.7	11.6	**-0.0237**	0.012	48.7	ug/L	824	Standard
	Co	59	261.3	23.8	**0.0169**	0.010	56.8	ug/L	167	Standard
	Ni	60	279.7	1.6	**-0.0366**	0.002	5.0	ug/L	391	Standard
	Cu	65	235.7	8.3	**0.0580**	0.010	16.4	ug/L	147	Standard
	Zn	66	254.3	7.6	**0.0922**	0.015	16.1	ug/L	184	Standard
>	Ge	72	387356.7	1.8				ug/L	422998	Standard
	As	75	-29.5	77.2	**0.0233**	0.022	92.9	ug/L	-58	Standard
	Se	82	20.0	13.1	**-0.0196**	0.028	142.8	ug/L	15	Standard
	Se-1	77	69.7	10.2	**0.3339**	0.085	25.4	ug/L	58	Standard
>	Ga	71	31.7	48.2				mg/L	113	Standard
	Rb	85	26.7	60.3				ug/L	27	Standard
	Y	89	332558.9	1.5				ug/L	383780	Standard
>	Rh	103	21.7	26.6				ug/L	18	Standard
	Mo	98	188.7	8.5	**0.0688**	0.007	9.8	ug/L	31	Standard
	Ag	107	138.7	25.3	**0.0106**	0.006	54.2	ug/L	84	Standard
	Cd	111	23.7	52.6	**0.0080**	0.006	79.3	mg/L	4	Standard
	Cd	114	69.4	82.7	**0.0101**	0.012	119.5	ug/L	15	Standard
>	In	115	470558.3	1.2				ug/L	515400	Standard
	Sn	118	953.4	23.2	**-0.0007**	0.041	5674.4	ug/L	1043	Standard
	Sb	123	763.8	34.6	**0.1664**	0.063	37.7	ug/L	227	Standard
	Ba	135	53.7	49.2	**0.0055**	0.014	259.6	ug/L	31	Standard
	Ce	140	21.7	58.1				ug/L	120	Standard
>	Tb	159	708664.5	1.9				ug/L	785817	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	105.7	17.8	**0.0102**	0.002	23.7	ug/L	6	Standard
	Tl	205	116.7	55.1	**0.0107**	0.010	89.0	ug/L	8	Standard
	Pb	206	262.3	14.3	**0.0097**	0.008	79.6	ug/L	201	Standard
	Pb	207	226.7	14.1	**0.0050**	0.007	147.4	ug/L	177	Standard
	Pb	208	1002.0	22.1	**0.0095**	0.013	131.9	ug/L	722	Standard
	U	238	118.3	58.6	**0.0156**	0.010	67.3	ug/L	8	Standard
>	Bi	209	423989.9	1.1				ug/L	444563	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 18:41:36
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**22.5106**	38.981	173.2	mg/L	0	Standard
Mg	24	125.0	6.9	**0.1507**	0.011	7.3	mg/L	38	Standard
K	39	18.3	31.5	**-0.0343**	0.034	98.1	mg/L	33	Standard
Ca	43	16.7	69.3	**-2.7476**	2.287	83.2	mg/L	48	Standard
Fe	54	144.2	9.2	**0.0197**	0.008	41.4	mg/L	131	Standard
Fe	57	228.3	3.3	**0.3488**	0.008	2.4	mg/L	153	Standard
Sc-1	45	22752.1	3.4				mg/L	26715	Standard
Cl	35	129815.8	1.4				ug/L	102686	Standard
Kr	83	4.0	43.3				ug/L	2	Standard
Br	81	1593.4	12.2				ug/L	1897	Standard
P	31	21201.5	1.6				ug/L	18491	Standard
S	34	4475.7	4.5				ug/L	3734	Standard
Sr	88	58.3	13.1				ug/L	47	Standard
C	12	60.0	44.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	88.8				mg/L	23	Standard
Dy	164	9.7	108.3				mg/L	23	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	6646.5	3.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.574	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 18:41:36
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.300
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.372
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 18:41:36
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090720SD WG573662-08
Sample Date/Time: Tuesday, July 05, 2016 18:42:32
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68070.9	1.3				ug/L	59517	Standard
	Be	9	44635.7	2.8	**44.8563**	1.247	2.8	ug/L	10	Standard
	Al	27	7670947.2	1.1	**44.0705**	0.255	0.6	ug/L	1872	Standard
	Sc	45	23900.5	2.3				ug/L	26715	Standard
	Ti	47	1211.4	1.4	**5.1641**	0.130	2.5	ug/L	54	Standard
	V	51	311777.4	1.2	**45.7046**	0.396	0.9	ug/L	1419	Standard
	Cr	52	305681.1	0.4	**44.6808**	0.463	1.0	ug/L	7059	Standard
	Cr	53	46023.1	0.9	**54.5605**	1.082	2.0	ug/L	398	Standard
	Mn	55	405260.2	1.6	**67.8694**	0.333	0.5	ug/L	824	Standard
	Co	59	284761.9	1.1	**44.4776**	0.097	0.2	ug/L	167	Standard
	Ni	60	77249.8	0.3	**43.6533**	0.664	1.5	ug/L	391	Standard
	Cu	65	76645.0	0.5	**43.2826**	0.644	1.5	ug/L	147	Standard
	Zn	66	49191.1	1.2	**47.1734**	1.144	2.4	ug/L	184	Standard
>	**Ge**	72	398357.6	1.3				ug/L	422998	Standard
	As	75	50828.8	0.2	**47.6289**	0.505	1.1	ug/L	-58	Standard
	Se	82	5048.4	1.2	**45.5197**	0.571	1.3	ug/L	15	Standard
	Se-1	77	3987.2	1.1	**55.1723**	1.228	2.2	ug/L	58	Standard
>	**Ga**	71	136.7	15.2				mg/L	113	Standard
	Rb	85	25374.6	1.9				ug/L	27	Standard
	Y	89	342654.1	3.4				ug/L	383780	Standard
>	**Rh**	103	195.0	5.1				ug/L	18	Standard
	Mo	98	798.4	5.9	**0.3219**	0.014	4.4	ug/L	31	Standard
	Ag	107	256606.1	0.5	**41.9609**	0.601	1.4	ug/L	84	Standard
	Cd	111	86461.2	0.3	**44.7429**	0.557	1.2	mg/L	4	Standard
	Cd	114	206117.6	0.7	**43.9573**	0.720	1.6	ug/L	15	Standard
>	**In**	115	467643.5	1.6				ug/L	515400	Standard
	Sn	118	1133.4	4.0	**0.0349**	0.012	33.5	ug/L	1043	Standard
	Sb	123	205271.1	0.5	**49.4120**	0.602	1.2	ug/L	227	Standard
	Ba	135	110586.4	0.1	**60.6176**	0.999	1.6	ug/L	31	Standard
	Ce	140	3960.5	5.8				ug/L	120	Standard
>	**Tb**	159	734857.3	0.6				ug/L	785817	Standard
	Ho	165	195.0	5.1				ug/L	7	Standard
	Tl	203	334400.3	0.4	**45.2344**	0.566	1.3	ug/L	6	Standard
	Tl	205	295733.4	1.0	**45.9174**	0.175	0.4	ug/L	8	Standard
	Pb	206	220983.5	0.1	**48.0173**	0.426	0.9	ug/L	201	Standard
	Pb	207	192607.8	0.5	**46.2897**	0.521	1.1	ug/L	177	Standard
	Pb	208	795444.4	0.5	**47.5930**	0.584	1.2	ug/L	722	Standard
	U	238	309842.7	0.1	**48.8117**	0.401	0.8	ug/L	8	Standard
>	**Bi**	209	410935.4	1.0				ug/L	444563	Standard

Sample ID: L1606090720SD WG573662-08
Report Date/Time: Tuesday, July 05, 2016 18:44:49
Page 1

Approved: July 06, 2016

Na	23	3.3	86.6	**43.3614**	37.569	86.6	mg/L	0	Standard
Mg	24	148395.0	1.7	**208.3279**	5.309	2.5	mg/L	38	Standard
K	39	498.3	6.1	**2.3096**	0.149	6.5	mg/L	33	Standard
Ca	43	143.3	38.4	**19.4664**	10.114	52.0	mg/L	48	Standard
Fe	54	545.3	8.7	**0.3750**	0.046	12.3	mg/L	131	Standard
Fe	57	513.3	5.4	**1.2978**	0.133	10.2	mg/L	153	Standard
> **Sc-1**	45	23900.5	2.3				mg/L	26715	Standard
Cl	35	209656.6	0.4				ug/L	102686	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	23174.5	8.0				ug/L	1897	Standard
P	31	24750.2	4.7				ug/L	18491	Standard
S	34	4427.3	2.9				ug/L	3734	Standard
Sr	88	483.3	2.6				ug/L	47	Standard
C	12	110.0	24.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	23	Standard
Dy	164	293.3	13.6				mg/L	23	Standard
Ho-1	165	195.0	5.1				mg/L	7	Standard
Er	166	210.0	12.6				mg/L	13	Standard
I	127	54247.3	7.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.373	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.175	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090720SD WG573662-08
Report Date/Time: Tuesday, July 05, 2016 18:44:49
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.734
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.436
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606090720SD WG573662-08
Report Date/Time: Tuesday, July 05, 2016 18:44:49
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090721
Sample Date/Time: Tuesday, July 05, 2016 18:45:43
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71160.1	1.1				ug/L	59517	Standard
	Be	9	28.3	50.9	**-0.0038**	0.014	368.2	ug/L	10	Standard
	Al	27	36542612.2	0.2	**200.8792**	1.721	0.9	ug/L	1872	Standard
	Sc	45	24958.9	2.6				ug/L	26715	Standard
	Ti	47	173.0	7.1	**0.5156**	0.069	13.5	ug/L	54	Standard
	V	51	2209.4	11.7	**0.1415**	0.043	30.3	ug/L	1419	Standard
	Cr	52	9652.7	1.6	**0.4449**	0.006	1.4	ug/L	7059	Standard
	Cr	53	7558.6	5.2	**8.4824**	0.292	3.4	ug/L	398	Standard
	Mn	55	91569.5	0.1	**15.0167**	0.323	2.2	ug/L	824	Standard
	Co	59	1483.4	7.0	**0.2037**	0.020	10.0	ug/L	167	Standard
	Ni	60	2273.5	0.7	**1.0722**	0.017	1.6	ug/L	391	Standard
	Cu	65	964.4	2.3	**0.4589**	0.023	5.0	ug/L	147	Standard
	Zn	66	20715.5	0.9	**19.4854**	0.304	1.6	ug/L	184	Standard
>	**Ge**	72	404195.4	2.0				ug/L	422998	Standard
	As	75	70264.9	0.5	**64.8847**	1.430	2.2	ug/L	-58	Standard
	Se	82	154.9	7.2	**1.1760**	0.076	6.4	ug/L	15	Standard
	Se-1	77	506.7	1.5	**6.3253**	0.144	2.3	ug/L	58	Standard
>	**Ga**	71	95.0	10.5				mg/L	113	Standard
	Rb	85	6216.3	1.4				ug/L	27	Standard
	Y	89	346807.1	2.2				ug/L	383780	Standard
>	**Rh**	103	461.7	8.8				ug/L	18	Standard
	Mo	98	2507.8	3.0	**1.0026**	0.042	4.2	ug/L	31	Standard
	Ag	107	119.7	22.9	**0.0071**	0.005	66.6	ug/L	84	Standard
	Cd	111	20.3	54.3	**0.0061**	0.006	92.3	mg/L	4	Standard
	Cd	114	53.3	40.9	**0.0065**	0.005	72.0	ug/L	15	Standard
>	**In**	115	480716.5	1.7				ug/L	515400	Standard
	Sn	118	870.0	9.0	**-0.0200**	0.012	59.5	ug/L	1043	Standard
	Sb	123	541.8	24.8	**0.1103**	0.030	27.2	ug/L	227	Standard
	Ba	135	34487.9	0.3	**18.3737**	0.272	1.5	ug/L	31	Standard
	Ce	140	468.3	10.7				ug/L	120	Standard
>	**Tb**	159	750745.5	2.8				ug/L	785817	Standard
	Ho	165	38.3	32.8				ug/L	7	Standard
	Tl	203	117.0	17.8	**0.0118**	0.003	27.0	ug/L	6	Standard
	Tl	205	113.3	20.4	**0.0103**	0.004	38.6	ug/L	8	Standard
	Pb	206	564.7	7.6	**0.0735**	0.012	16.8	ug/L	201	Standard
	Pb	207	444.0	9.2	**0.0557**	0.013	22.4	ug/L	177	Standard
	Pb	208	1939.7	4.2	**0.0640**	0.008	11.8	ug/L	722	Standard
	U	238	6045.9	1.3	**0.9199**	0.029	3.2	ug/L	8	Standard
>	**Bi**	209	424556.3	2.8				ug/L	444563	Standard

Sample ID: L1606090721
Report Date/Time: Tuesday, July 05, 2016 18:48:00
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**21.5560**	37.327	173.2	mg/L	0	Standard
Mg	24	47763.5	1.7	**64.2167**	2.789	4.3	mg/L	38	Standard
K	39	311.7	19.3	**1.3364**	0.322	24.1	mg/L	33	Standard
Ca	43	233.3	11.8	**33.4007**	4.121	12.3	mg/L	48	Standard
Fe	54	1753.0	4.7	**1.3977**	0.110	7.8	mg/L	131	Standard
Fe	57	810.0	20.1	**2.2150**	0.618	27.9	mg/L	153	Standard
> **Sc-1**	45	24958.9	2.6				mg/L	26715	Standard
Cl	35	195031.9	0.5				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	31957.0	2.3				ug/L	1897	Standard
P	31	25276.1	4.4				ug/L	18491	Standard
S	34	4530.7	3.8				ug/L	3734	Standard
Sr	88	1910.1	3.9				ug/L	47	Standard
C	12	93.3	52.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	9.1				mg/L	23	Standard
Dy	164	40.0	82.1				mg/L	23	Standard
Ho-1	165	38.3	32.8				mg/L	7	Standard
Er	166	70.0	37.8				mg/L	13	Standard
I	127	252947.4	6.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.563	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.555	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090721
Report Date/Time: Tuesday, July 05, 2016 18:48:00
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.271
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.500
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606090721
Report Date/Time: Tuesday, July 05, 2016 18:48:00
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090722
Sample Date/Time: Tuesday, July 05, 2016 18:48:55
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71307.4	1.3				ug/L	59517	Standard
	Be	9	26.7	21.7	-0.0056	0.005	94.8	ug/L	10	Standard
	Al	27	37163342.1	0.9	203.8654	1.006	0.5	ug/L	1872	Standard
	Sc	45	24888.8	2.5				ug/L	26715	Standard
	Ti	47	152.0	4.0	0.4222	0.031	7.4	ug/L	54	Standard
	V	51	1996.4	7.1	0.1099	0.018	16.6	ug/L	1419	Standard
	Cr	52	8984.3	1.1	0.3460	0.006	1.8	ug/L	7059	Standard
	Cr	53	8148.9	4.6	9.1814	0.536	5.8	ug/L	398	Standard
	Mn	55	88370.0	0.6	14.4795	0.123	0.8	ug/L	824	Standard
	Co	59	1397.4	2.1	0.1901	0.003	1.7	ug/L	167	Standard
	Ni	60	2238.5	2.1	1.0522	0.037	3.5	ug/L	391	Standard
	Cu	65	912.7	3.7	0.4297	0.018	4.1	ug/L	147	Standard
	Zn	66	3137.3	0.7	2.8147	0.049	1.8	ug/L	184	Standard
>	Ge	72	404316.9	1.0				ug/L	422998	Standard
	As	75	76260.2	0.7	70.3785	0.703	1.0	ug/L	-58	Standard
	Se	82	160.2	7.2	1.2237	0.104	8.5	ug/L	15	Standard
	Se-1	77	506.7	2.7	6.3235	0.254	4.0	ug/L	58	Standard
>	Ga	71	41.7	18.3				mg/L	113	Standard
	Rb	85	5846.1	1.4				ug/L	27	Standard
	Y	89	344889.7	1.0				ug/L	383780	Standard
>	Rh	103	506.7	9.0				ug/L	18	Standard
	Mo	98	2572.5	2.6	1.0319	0.026	2.5	ug/L	31	Standard
	Ag	107	86.7	8.7	0.0018	0.001	66.0	ug/L	84	Standard
	Cd	111	8.9	39.3	0.0004	0.002	492.7	mg/L	4	Standard
	Cd	114	20.3	45.3	-0.0003	0.002	575.2	ug/L	15	Standard
>	In	115	479091.4	0.6				ug/L	515400	Standard
	Sn	118	733.4	2.8	-0.0447	0.004	9.2	ug/L	1043	Standard
	Sb	123	365.9	30.8	0.0697	0.027	38.5	ug/L	227	Standard
	Ba	135	34539.3	0.8	18.4616	0.260	1.4	ug/L	31	Standard
	Ce	140	165.0	16.9				ug/L	120	Standard
>	Tb	159	750465.6	0.9				ug/L	785817	Standard
	Ho	165	33.3	22.9				ug/L	7	Standard
	Tl	203	74.7	21.8	0.0062	0.002	34.0	ug/L	6	Standard
	Tl	205	58.3	50.2	0.0021	0.004	216.3	ug/L	8	Standard
	Pb	206	252.0	11.1	0.0079	0.006	70.3	ug/L	201	Standard
	Pb	207	231.7	2.8	0.0065	0.001	19.9	ug/L	177	Standard
	Pb	208	977.7	2.0	0.0085	0.001	11.4	ug/L	722	Standard
	U	238	5851.1	0.2	0.8964	0.006	0.6	ug/L	8	Standard
>	Bi	209	421392.1	0.8				ug/L	444563	Standard

Sample ID: L1606090722
Report Date/Time: Tuesday, July 05, 2016 18:51:11
Page 1

Approved: July 06, 2016

Na	23	5.0	173.2	**61.2492**	106.078	173.2	mg/L	0	Standard
Mg	24	48969.0	0.5	**66.0017**	1.683	2.5	mg/L	38	Standard
K	39	346.7	8.2	**1.4989**	0.113	7.6	mg/L	33	Standard
Ca	43	271.7	8.3	**39.9948**	3.190	8.0	mg/L	48	Standard
Fe	54	1775.5	5.6	**1.4201**	0.092	6.4	mg/L	131	Standard
Fe	57	1006.7	3.7	**2.8654**	0.040	1.4	mg/L	153	Standard
> **Sc-1**	45	24888.8	2.5				mg/L	26715	Standard
Cl	35	198974.0	0.3				ug/L	102686	Standard
Kr	83	3.3	34.6				ug/L	2	Standard
Br	81	34148.5	3.2				ug/L	1897	Standard
P	31	25691.8	2.1				ug/L	18491	Standard
S	34	4387.3	1.9				ug/L	3734	Standard
Sr	88	1986.8	2.9				ug/L	47	Standard
C	12	100.0	26.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	57.3				mg/L	23	Standard
Dy	164	67.6	42.3				mg/L	23	Standard
Ho-1	165	33.3	22.9				mg/L	7	Standard
Er	166	50.0	69.3				mg/L	13	Standard
I	127	264900.4	7.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.811	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.584	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090722
Report Date/Time: Tuesday, July 05, 2016 18:51:11
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.788
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606090722
Report Date/Time: Tuesday, July 05, 2016 18:51:11
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606112801
Sample Date/Time: Tuesday, July 05, 2016 18:52:06
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68015.7	2.3				ug/L	59517	Standard
	Be	9	241.7	6.3	**0.2121**	0.014	6.5	ug/L	10	Standard
	Al	27	16250624.5	1.8	**93.4593**	1.014	1.1	ug/L	1872	Standard
	Sc	45	26524.9	1.2				ug/L	26715	Standard
	Ti	47	24427.3	1.0	**107.5447**	0.931	0.9	ug/L	54	Standard
	V	51	42915.2	0.4	**6.0611**	0.025	0.4	ug/L	1419	Standard
	Cr	52	31164.7	0.9	**3.6231**	0.036	1.0	ug/L	7059	Standard
	Cr	53	12400.1	2.5	**14.2227**	0.390	2.7	ug/L	398	Standard
	Mn	55	7470659.3	0.4	**1238.5359**	4.709	0.4	ug/L	824	Standard
	Co	59	24406.3	1.7	**3.7438**	0.071	1.9	ug/L	167	Standard
	Ni	60	8254.6	0.3	**4.4298**	0.026	0.6	ug/L	391	Standard
	Cu	65	10453.3	1.0	**5.7640**	0.068	1.2	ug/L	147	Standard
	Zn	66	24877.1	1.4	**23.4886**	0.319	1.4	ug/L	184	Standard
>	Ge	72	403151.8	0.3				ug/L	422998	Standard
	As	75	487.6	14.7	**0.5028**	0.068	13.4	ug/L	-58	Standard
	Se	82	61.5	13.5	**0.3444**	0.074	21.3	ug/L	15	Standard
	Se-1	77	681.7	2.9	**8.7640**	0.304	3.5	ug/L	58	Standard
>	Ga	71	4062.2	1.0				mg/L	113	Standard
	Rb	85	47561.2	0.3				ug/L	27	Standard
	Y	89	465027.3	1.1				ug/L	383780	Standard
>	Rh	103	60.0	22.0				ug/L	18	Standard
	Mo	98	302.6	6.5	**0.1133**	0.007	6.5	ug/L	31	Standard
	Ag	107	142.3	4.8	**0.0107**	0.001	10.9	ug/L	84	Standard
	Cd	111	280.5	5.1	**0.1373**	0.006	4.6	mg/L	4	Standard
	Cd	114	622.2	4.4	**0.1247**	0.006	4.5	ug/L	15	Standard
>	In	115	479859.4	0.6				ug/L	515400	Standard
	Sn	118	1473.4	6.6	**0.0923**	0.016	17.7	ug/L	1043	Standard
	Sb	123	765.9	10.9	**0.1633**	0.019	11.6	ug/L	227	Standard
	Ba	135	70429.6	0.4	**37.6079**	0.149	0.4	ug/L	31	Standard
	Ce	140	392211.6	0.5				ug/L	120	Standard
>	Tb	159	760784.6	0.7				ug/L	785817	Standard
	Ho	165	9402.9	3.3				ug/L	7	Standard
	Tl	203	291.3	9.0	**0.0345**	0.003	9.7	ug/L	6	Standard
	Tl	205	296.7	25.9	**0.0378**	0.012	31.0	ug/L	8	Standard
	Pb	206	10986.0	0.6	**2.2646**	0.019	0.8	ug/L	201	Standard
	Pb	207	9048.0	0.7	**2.0567**	0.018	0.9	ug/L	177	Standard
	Pb	208	39154.1	0.9	**2.2186**	0.021	0.9	ug/L	722	Standard
	U	238	2331.2	1.3	**0.3526**	0.004	1.1	ug/L	8	Standard
>	Bi	209	425015.3	0.3				ug/L	444563	Standard

Sample ID: L1606112801
Report Date/Time: Tuesday, July 05, 2016 18:54:23
Page 1

Approved: July 06, 2016

Na	23	5.0	0.0	**59.0072**	0.695	1.2	mg/L	0	Standard
Mg	24	55819.3	1.9	**70.5720**	1.519	2.2	mg/L	38	Standard
K	39	218.3	28.5	**0.8317**	0.263	31.6	mg/L	33	Standard
Ca	43	251.7	21.9	**34.0041**	8.657	25.5	mg/L	48	Standard
Fe	54	4025.9	0.5	**3.1521**	0.027	0.9	mg/L	131	Standard
Fe	57	1446.7	8.5	**4.0306**	0.343	8.5	mg/L	153	Standard
> **Sc-1**	45	26524.9	1.2				mg/L	26715	Standard
Cl	35	135407.8	1.7				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	7291.8	5.6				ug/L	1897	Standard
P	31	27661.9	0.5				ug/L	18491	Standard
S	34	4439.0	2.2				ug/L	3734	Standard
Sr	88	255.0	15.6				ug/L	47	Standard
C	12	126.7	9.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	83.3	42.1				mg/L	23	Standard
Dy	164	15387.7	3.0				mg/L	23	Standard
Ho-1	165	9402.9	3.3				mg/L	7	Standard
Er	166	8849.3	2.3				mg/L	13	Standard
I	127	21608.9	11.3				mg/L	12398	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		114.280	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.308	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606112801
Report Date/Time: Tuesday, July 05, 2016 18:54:23
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.104
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.603
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606112802
Sample Date/Time: Tuesday, July 05, 2016 18:55:18
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68240.0	1.1				ug/L	59517	Standard
	Be	9	21.7	35.3	-0.0094	0.007	78.6	ug/L	10	Standard
	Al	27	7408111.1	0.8	42.4549	0.259	0.6	ug/L	1872	Standard
	Sc	45	26266.1	0.8				ug/L	26715	Standard
	Ti	47	479.7	3.8	1.7797	0.055	3.1	ug/L	54	Standard
	V	51	2433.4	7.8	0.1593	0.024	15.3	ug/L	1419	Standard
	Cr	52	8501.1	0.5	0.2254	0.020	8.7	ug/L	7059	Standard
	Cr	53	4055.5	3.2	4.1736	0.192	4.6	ug/L	398	Standard
	Mn	55	1501406.5	0.6	238.2521	2.091	0.9	ug/L	824	Standard
	Co	59	7927.1	2.8	1.1472	0.039	3.4	ug/L	167	Standard
	Ni	60	2686.6	2.2	1.2432	0.041	3.3	ug/L	391	Standard
	Cu	65	783.7	3.2	0.3404	0.009	2.8	ug/L	147	Standard
	Zn	66	3162.7	2.6	2.7203	0.108	4.0	ug/L	184	Standard
>	Ge	72	421028.4	1.2				ug/L	422998	Standard
	As	75	12481.7	0.7	11.1053	0.077	0.7	ug/L	-58	Standard
	Se	82	35.2	10.6	0.0951	0.030	32.0	ug/L	15	Standard
	Se-1	77	308.7	7.5	3.4236	0.351	10.3	ug/L	58	Standard
>	Ga	71	156.7	33.2				mg/L	113	Standard
	Rb	85	5334.3	1.7				ug/L	27	Standard
	Y	89	361612.7	0.3				ug/L	383780	Standard
>	Rh	103	58.3	57.1				ug/L	18	Standard
	Mo	98	826.5	5.4	0.3120	0.019	6.1	ug/L	31	Standard
	Ag	107	80.3	12.5	0.0003	0.002	492.8	ug/L	84	Standard
	Cd	111	60.9	8.4	0.0254	0.002	9.5	mg/L	4	Standard
	Cd	114	163.6	15.8	0.0281	0.005	17.9	ug/L	15	Standard
>	In	115	499243.7	0.5				ug/L	515400	Standard
	Sn	118	1045.0	10.7	0.0054	0.021	381.5	ug/L	1043	Standard
	Sb	123	15521.8	1.6	3.4843	0.059	1.7	ug/L	227	Standard
	Ba	135	24398.0	0.7	12.5061	0.040	0.3	ug/L	31	Standard
	Ce	140	9211.1	1.5				ug/L	120	Standard
>	Tb	159	767985.8	1.7				ug/L	785817	Standard
	Ho	165	330.0	19.3				ug/L	7	Standard
	Tl	203	58.0	17.0	0.0036	0.001	32.0	ug/L	6	Standard
	Tl	205	61.7	12.4	0.0021	0.001	56.8	ug/L	8	Standard
	Pb	206	10747.5	0.6	2.1142	0.030	1.4	ug/L	201	Standard
	Pb	207	9219.5	0.2	2.0013	0.017	0.9	ug/L	177	Standard
	Pb	208	38797.9	0.2	2.0983	0.023	1.1	ug/L	722	Standard
	U	238	311.7	5.6	0.0429	0.003	6.7	ug/L	8	Standard
>	Bi	209	444778.3	1.0				ug/L	444563	Standard

Sample ID: L1606112802
Report Date/Time: Tuesday, July 05, 2016 18:57:34
Page 1

Approved: July 06, 2016

Na	23	3.3	173.2	**39.6230**	68.620	173.2	mg/L	0	Standard
Mg	24	34125.1	2.6	**43.5611**	1.483	3.4	mg/L	38	Standard
K	39	163.3	12.7	**0.5983**	0.096	16.0	mg/L	33	Standard
Ca	43	173.3	18.5	**21.8511**	4.988	22.8	mg/L	48	Standard
Fe	54	10008.4	0.8	**8.0890**	0.065	0.8	mg/L	131	Standard
Fe	57	3087.0	6.0	**9.2440**	0.519	5.6	mg/L	153	Standard
Sc-1	45	26266.1	0.8				mg/L	26715	Standard
Cl	35	131591.0	0.4				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	5994.5	1.8				ug/L	1897	Standard
P	31	26219.3	2.0				ug/L	18491	Standard
S	34	4602.4	1.0				ug/L	3734	Standard
Sr	88	248.3	5.1				ug/L	47	Standard
C	12	130.0	27.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	44.4				mg/L	23	Standard
Dy	164	456.6	10.5				mg/L	23	Standard
Ho-1	165	330.0	19.3				mg/L	7	Standard
Er	166	350.0	2.9				mg/L	13	Standard
I	127	22735.5	8.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.657	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.534	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606112802
Report Date/Time: Tuesday, July 05, 2016 18:57:34
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.865
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.048
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606112803
Sample Date/Time: Tuesday, July 05, 2016 18:58:29
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68528.0	2.2				ug/L	59517	Standard
	Be	9	321.7	10.3	**0.2904**	0.035	12.2	ug/L	10	Standard
	Al	27	19903152.5	1.3	**113.6455**	3.379	3.0	ug/L	1872	Standard
	Sc	45	28241.3	0.8				ug/L	26715	Standard
	Ti	47	30121.6	0.6	**128.6471**	2.710	2.1	ug/L	54	Standard
	V	51	57400.5	0.7	**7.9142**	0.140	1.8	ug/L	1419	Standard
	Cr	52	38875.8	0.6	**4.5867**	0.059	1.3	ug/L	7059	Standard
	Cr	53	11669.5	3.2	**12.9462**	0.612	4.7	ug/L	398	Standard
	Mn	55	8135939.6	1.3	**1307.7631**	10.379	0.8	ug/L	824	Standard
	Co	59	31645.0	2.9	**4.7119**	0.066	1.4	ug/L	167	Standard
	Ni	60	10941.6	2.4	**5.7497**	0.100	1.7	ug/L	391	Standard
	Cu	65	13655.8	0.4	**7.3223**	0.112	1.5	ug/L	147	Standard
	Zn	66	30194.1	0.8	**27.6741**	0.634	2.3	ug/L	184	Standard
>	Ge	72	415828.7	1.5				ug/L	422998	Standard
	As	75	809.1	5.0	**0.7773**	0.042	5.4	ug/L	-58	Standard
	Se	82	70.0	15.0	**0.4017**	0.094	23.5	ug/L	15	Standard
	Se-1	77	628.0	6.5	**7.7625**	0.676	8.7	ug/L	58	Standard
>	Ga	71	5797.8	7.3				mg/L	113	Standard
	Rb	85	57738.2	1.7				ug/L	27	Standard
	Y	89	584342.2	1.8				ug/L	383780	Standard
>	Rh	103	120.0	15.0				ug/L	18	Standard
	Mo	98	321.6	9.3	**0.1184**	0.012	9.8	ug/L	31	Standard
	Ag	107	305.7	58.2	**0.0358**	0.028	77.6	ug/L	84	Standard
	Cd	111	358.8	24.6	**0.1733**	0.044	25.2	mg/L	4	Standard
	Cd	114	944.7	23.0	**0.1880**	0.044	23.5	ug/L	15	Standard
>	In	115	489340.1	1.0				ug/L	515400	Standard
	Sn	118	1626.8	4.7	**0.1151**	0.017	14.4	ug/L	1043	Standard
	Sb	123	1063.8	25.5	**0.2287**	0.064	27.9	ug/L	227	Standard
	Ba	135	77464.9	0.3	**40.5662**	0.270	0.7	ug/L	31	Standard
	Ce	140	757693.3	0.4				ug/L	120	Standard
>	Tb	159	783021.1	1.5				ug/L	785817	Standard
	Ho	165	19098.7	0.6				ug/L	7	Standard
	Tl	203	517.0	47.8	**0.0631**	0.031	49.4	ug/L	6	Standard
	Tl	205	406.7	27.3	**0.0535**	0.016	29.6	ug/L	8	Standard
	Pb	206	16177.0	0.2	**3.3219**	0.049	1.5	ug/L	201	Standard
	Pb	207	12986.9	0.6	**2.9424**	0.042	1.4	ug/L	177	Standard
	Pb	208	56433.3	0.9	**3.1860**	0.014	0.4	ug/L	722	Standard
	U	238	3349.4	3.8	**0.5024**	0.015	2.9	ug/L	8	Standard
>	Bi	209	429380.4	1.3				ug/L	444563	Standard

Sample ID: L1606112803
Report Date/Time: Tuesday, July 05, 2016 19:00:46
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**18.3420**	31.761	173.2	mg/L	0	Standard
Mg	24	57947.3	1.9	**68.8027**	1.090	1.6	mg/L	38	Standard
K	39	223.3	3.4	**0.7958**	0.039	4.9	mg/L	33	Standard
Ca	43	290.0	15.0	**37.2732**	6.222	16.7	mg/L	48	Standard
Fe	54	5603.1	2.4	**4.1556**	0.079	1.9	mg/L	131	Standard
Fe	57	1868.4	2.9	**4.9955**	0.201	4.0	mg/L	153	Standard
Sc-1	45	28241.3	0.8				mg/L	26715	Standard
Cl	35	132011.3	1.3				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	6901.6	2.9				ug/L	1897	Standard
P	31	29086.2	0.9				ug/L	18491	Standard
S	34	4375.6	1.4				ug/L	3734	Standard
Sr	88	293.3	3.9				ug/L	47	Standard
C	12	110.0	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	28.6				mg/L	23	Standard
Dy	164	28579.5	0.6				mg/L	23	Standard
Ho-1	165	19098.7	0.6				mg/L	7	Standard
Er	166	17446.7	3.7				mg/L	13	Standard
I	127	19102.0	3.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.141	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.305	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606112803
Report Date/Time: Tuesday, July 05, 2016 19:00:46
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.944
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.585
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606112803
Report Date/Time: Tuesday, July 05, 2016 19:00:46
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606112804
Sample Date/Time: Tuesday, July 05, 2016 19:01:41
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69114.0	1.3				ug/L	59517	Standard
	Be	9	26.7	21.7	**-0.0046**	0.006	129.3	ug/L	10	Standard
	Al	27	28505.6	16.0	**0.1489**	0.026	17.3	ug/L	1872	Standard
	Sc	45	25503.1	0.7				ug/L	26715	Standard
	Ti	47	47.3	26.8	**-0.0505**	0.053	104.7	ug/L	54	Standard
	V	51	1473.0	9.6	**0.0218**	0.020	92.8	ug/L	1419	Standard
	Cr	52	8660.8	1.7	**0.2246**	0.024	10.5	ug/L	7059	Standard
	Cr	53	1540.1	8.2	**1.2967**	0.136	10.5	ug/L	398	Standard
	Mn	55	4797.1	24.8	**0.6164**	0.186	30.2	ug/L	824	Standard
	Co	59	272.3	5.5	**0.0144**	0.002	16.4	ug/L	167	Standard
	Ni	60	550.0	5.3	**0.0899**	0.016	17.8	ug/L	391	Standard
	Cu	65	2261.8	2.2	**1.1086**	0.028	2.5	ug/L	147	Standard
	Zn	66	2892.3	1.0	**2.4234**	0.036	1.5	ug/L	184	Standard
>	Ge	72	429189.2	0.5				ug/L	422998	Standard
	As	75	-38.1	39.8	**0.0185**	0.013	72.1	ug/L	-58	Standard
	Se	82	17.0	3.5	**-0.0634**	0.005	7.3	ug/L	15	Standard
	Se-1	77	74.7	3.4	**0.3020**	0.029	9.6	ug/L	58	Standard
>	Ga	71	63.3	4.6				mg/L	113	Standard
	Rb	85	290.0	15.3				ug/L	27	Standard
	Y	89	370686.7	1.1				ug/L	383780	Standard
>	Rh	103	48.3	59.7				ug/L	18	Standard
	Mo	98	65.0	16.6	**0.0155**	0.004	27.6	ug/L	31	Standard
	Ag	107	103.0	10.8	**0.0033**	0.002	57.2	ug/L	84	Standard
	Cd	111	29.2	31.8	**0.0096**	0.004	46.4	mg/L	4	Standard
	Cd	114	71.3	32.2	**0.0092**	0.005	50.3	ug/L	15	Standard
>	In	115	517291.4	1.5				ug/L	515400	Standard
	Sn	118	1381.7	7.3	**0.0569**	0.019	33.6	ug/L	1043	Standard
	Sb	123	392.9	24.4	**0.0691**	0.020	29.3	ug/L	227	Standard
	Ba	135	412.3	5.8	**0.1808**	0.014	8.0	ug/L	31	Standard
	Ce	140	520.0	22.4				ug/L	120	Standard
>	Tb	159	776650.5	1.9				ug/L	785817	Standard
	Ho	165	23.3	53.9				ug/L	7	Standard
	Tl	203	53.7	43.2	**0.0029**	0.003	98.8	ug/L	6	Standard
	Tl	205	46.7	32.7	**-0.0003**	0.002	741.9	ug/L	8	Standard
	Pb	206	353.3	6.9	**0.0231**	0.005	21.3	ug/L	201	Standard
	Pb	207	294.3	12.0	**0.0154**	0.008	53.4	ug/L	177	Standard
	Pb	208	1221.0	6.6	**0.0167**	0.005	30.6	ug/L	722	Standard
	U	238	47.3	48.0	**0.0042**	0.003	77.9	ug/L	8	Standard
>	Bi	209	460262.0	1.3				ug/L	444563	Standard

Sample ID: L1606112804
Report Date/Time: Tuesday, July 05, 2016 19:03:58
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	195.0	14.3	**0.2231**	0.039	17.3	mg/L	38	Standard
K	39	15.0	33.3	**-0.0604**	0.023	38.7	mg/L	33	Standard
Ca	43	25.0	40.0	**-1.7526**	1.674	95.5	mg/L	48	Standard
Fe	54	132.6	45.1	**-0.0046**	0.050	1095.7	mg/L	131	Standard
Fe	57	215.0	12.3	**0.2155**	0.082	38.0	mg/L	153	Standard
> **Sc-1**	45	25503.1	0.7				mg/L	26715	Standard
Cl	35	131683.8	0.6				ug/L	102686	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	1790.1	11.3				ug/L	1897	Standard
P	31	20472.2	3.4				ug/L	18491	Standard
S	34	4570.7	2.6				ug/L	3734	Standard
Sr	88	90.0	33.8				ug/L	47	Standard
C	12	93.3	34.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	23	Standard
Dy	164	21.3	76.5				mg/L	23	Standard
Ho-1	165	23.3	53.9				mg/L	7	Standard
Er	166	43.3	48.0				mg/L	13	Standard
I	127	2041.8	17.0				mg/L	12398	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		116.125	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.464	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606112804
Report Date/Time: Tuesday, July 05, 2016 19:03:58
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.367
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.531
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606112804
Sample Date/Time: Tuesday, July 05, 2016 19:04:52
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63934.7	2.7				ug/L	59517	Standard
	Be	9	15.0	0.0	**-0.0150**	0.000	2.9	ug/L	10	Standard
	Al	27	1775.1	51.0	**-0.0017**	0.005	310.4	ug/L	1872	Standard
	Sc	45	23010.8	1.0				ug/L	26715	Standard
	Ti	47	14.0	50.0	**-0.1836**	0.032	17.3	ug/L	54	Standard
	V	51	1162.3	14.8	**-0.0068**	0.026	382.2	ug/L	1419	Standard
	Cr	52	4690.7	3.1	**-0.2691**	0.020	7.3	ug/L	7059	Standard
	Cr	53	615.0	4.9	**0.3311**	0.040	12.0	ug/L	398	Standard
	Mn	55	772.4	52.8	**-0.0000**	0.07(	195833.7	ug/L	824	Standard
	Co	59	170.3	9.5	**0.0018**	0.003	149.4	ug/L	167	Standard
	Ni	60	278.0	3.9	**-0.0406**	0.006	15.7	ug/L	391	Standard
	Cu	65	104.3	6.8	**-0.0194**	0.004	22.1	ug/L	147	Standard
	Zn	66	481.0	6.5	**0.3077**	0.031	10.0	ug/L	184	Standard
>	**Ge**	72	394759.5	0.6				ug/L	422998	Standard
	As	75	3.2	857.4	**0.0546**	0.026	46.9	ug/L	-58	Standard
	Se	82	21.0	26.1	**-0.0147**	0.049	331.2	ug/L	15	Standard
	Se-1	77	64.3	6.3	**0.2409**	0.061	25.2	ug/L	58	Standard
>	**Ga**	71	96.7	31.2				mg/L	113	Standard
	Rb	85	31.7	24.1				ug/L	27	Standard
	Y	89	335798.3	2.4				ug/L	383780	Standard
>	**Rh**	103	35.0	24.7				ug/L	18	Standard
	Mo	98	164.2	36.7	**0.0585**	0.024	40.9	ug/L	31	Standard
	Ag	107	73.7	2.1	**-0.0000**	0.000	1059.5	ug/L	84	Standard
	Cd	111	3.1	21.3	**-0.0026**	0.000	13.7	mg/L	4	Standard
	Cd	114	12.5	52.3	**-0.0019**	0.001	72.8	ug/L	15	Standard
>	**In**	115	470757.3	1.3				ug/L	515400	Standard
	Sn	118	156.7	27.1	**-0.1513**	0.008	5.5	ug/L	1043	Standard
	Sb	123	349.4	14.3	**0.0672**	0.012	17.2	ug/L	227	Standard
	Ba	135	13.3	88.8	**-0.0164**	0.007	39.8	ug/L	31	Standard
	Ce	140	31.7	105.1				ug/L	120	Standard
>	**Tb**	159	729419.5	1.0				ug/L	785817	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	39.7	46.6	**0.0014**	0.002	164.0	ug/L	6	Standard
	Tl	205	20.0	173.2	**-0.0039**	0.005	131.8	ug/L	8	Standard
	Pb	206	208.0	5.5	**-0.0030**	0.002	82.0	ug/L	201	Standard
	Pb	207	177.3	8.2	**-0.0077**	0.003	44.5	ug/L	177	Standard
	Pb	208	748.7	4.5	**-0.0064**	0.002	32.8	ug/L	722	Standard
	U	238	6.0	86.6	**-0.0016**	0.001	48.8	ug/L	8	Standard
>	**Bi**	209	436801.5	0.5				ug/L	444563	Standard

Sample ID: L1606112804
Report Date/Time: Tuesday, July 05, 2016 19:07:09
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	56.7	35.7	**0.0489**	0.029	59.1	mg/L	38	Standard
K	39	23.3	44.6	**-0.0103**	0.054	526.8	mg/L	33	Standard
Ca	43	26.7	28.6	**-1.0080**	1.384	137.3	mg/L	48	Standard
Fe	54	37.8	15.3	**-0.0812**	0.006	7.1	mg/L	131	Standard
Fe	57	225.0	17.6	**0.3278**	0.146	44.4	mg/L	153	Standard
Sc-1	45	23010.8	1.0				mg/L	26715	Standard
Cl	35	123854.2	1.5				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1296.7	11.8				ug/L	1897	Standard
P	31	6888.2	1.8				ug/L	18491	Standard
S	34	4277.3	2.3				ug/L	3734	Standard
Sr	88	73.3	21.9				ug/L	47	Standard
C	12	46.7	32.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1063.4	3.6				mg/L	23	Standard
Dy	164	6.2	100.1				mg/L	23	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	19397.4	2.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.423	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606112804
Report Date/Time: Tuesday, July 05, 2016 19:07:09
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.338
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.254
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, July 05, 2016 19:08:04
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62649.3	2.6				ug/L	59517	Standard
	Be	9	20.0	25.0	**-0.0092**	0.006	63.9	ug/L	10	Standard
	Al	27	6447867.3	0.7	**40.2630**	0.940	2.3	ug/L	1872	Standard
	Sc	45	22590.2	0.3				ug/L	26715	Standard
	Ti	47	21677.5	0.9	**98.1800**	0.535	0.5	ug/L	54	Standard
	V	51	1429.8	22.9	**0.0345**	0.049	142.3	ug/L	1419	Standard
	Cr	52	5089.5	3.7	**-0.2032**	0.026	12.8	ug/L	7059	Standard
	Cr	53	6709.8	4.8	**7.7359**	0.356	4.6	ug/L	398	Standard
	Mn	55	7902.7	1.4	**1.2173**	0.016	1.3	ug/L	824	Standard
	Co	59	309.3	4.4	**0.0241**	0.002	8.1	ug/L	167	Standard
	Ni	60	662.0	5.7	**0.1821**	0.020	10.9	ug/L	391	Standard
	Cu	65	523.3	6.4	**0.2220**	0.020	9.0	ug/L	147	Standard
	Zn	66	1658.1	0.9	**1.4626**	0.019	1.3	ug/L	184	Standard
>	**Ge**	72	391806.0	0.4				ug/L	422998	Standard
	As	75	-24.0	222.6	**0.0287**	0.051	177.9	ug/L	-58	Standard
	Se	82	17.8	12.8	**-0.0425**	0.021	49.7	ug/L	15	Standard
	Se-1	77	451.0	5.0	**5.7522**	0.309	5.4	ug/L	58	Standard
>	**Ga**	71	133.3	11.5				mg/L	113	Standard
	Rb	85	746.7	2.2				ug/L	27	Standard
	Y	89	333376.4	1.2				ug/L	383780	Standard
>	**Rh**	103	26.7	21.7				ug/L	18	Standard
	Mo	98	218836.0	1.1	**90.6622**	1.439	1.6	ug/L	31	Standard
	Ag	107	190.0	6.1	**0.0191**	0.002	10.2	ug/L	84	Standard
	Cd	111	-160.7	5.1	**-0.0872**	0.004	4.1	mg/L	4	Standard
	Cd	114	331.8	11.7	**0.0662**	0.009	13.5	ug/L	15	Standard
>	**In**	115	467852.6	1.1				ug/L	515400	Standard
	Sn	118	1175.0	6.8	**0.0427**	0.016	37.7	ug/L	1043	Standard
	Sb	123	358.8	35.0	**0.0698**	0.029	42.1	ug/L	227	Standard
	Ba	135	31.7	12.8	**-0.0064**	0.002	37.9	ug/L	31	Standard
	Ce	140	60.0	52.0				ug/L	120	Standard
>	**Tb**	159	726666.0	0.6				ug/L	785817	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	39.7	12.4	**0.0015**	0.001	41.6	ug/L	6	Standard
	Tl	205	38.3	27.2	**-0.0011**	0.002	142.5	ug/L	8	Standard
	Pb	206	290.0	7.5	**0.0148**	0.004	28.8	ug/L	201	Standard
	Pb	207	253.7	2.6	**0.0105**	0.001	13.8	ug/L	177	Standard
	Pb	208	1056.7	3.1	**0.0120**	0.002	17.3	ug/L	722	Standard
	U	238	6.0	28.9	**-0.0016**	0.000	16.8	ug/L	8	Standard
>	**Bi**	209	429462.8	0.4				ug/L	444563	Standard

Sample ID: QC Std 4
Report Date/Time: Tuesday, July 05, 2016 19:10:21
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**23.0482**	39.912	173.2	mg/L	0	Standard
Mg	24	8540.7	2.6	**12.6502**	0.326	2.6	mg/L	38	Standard
K	39	775.0	2.2	**3.8831**	0.097	2.5	mg/L	33	Standard
Ca	43	120.0	23.2	**16.4641**	5.240	31.8	mg/L	48	Standard
Fe	54	12711.2	1.6	**12.0006**	0.195	1.6	mg/L	131	Standard
Fe	57	3457.1	6.0	**12.1851**	0.743	6.1	mg/L	153	Standard
> **Sc-1**	45	22590.2	0.3				mg/L	26715	Standard
Cl	35	124086.1	1.3				ug/L	102686	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1313.4	8.4				ug/L	1897	Standard
P	31	7560.2	1.0				ug/L	18491	Standard
S	34	4455.7	0.4				ug/L	3734	Standard
Sr	88	78.3	32.1				ug/L	47	Standard
C	12	103.3	20.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	14.3				mg/L	23	Standard
Dy	164	6.3	93.2				mg/L	23	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	4088.9	4.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.805		
Sc	45			
Ti	47	98.180		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.626	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 4
Report Date/Time: Tuesday, July 05, 2016 19:10:21
Page 2

Approved: July 06, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	90.662		
Ag	107			
Cd	111			
Cd	114			
In	115			90.775
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			96.603
Na	23	184.386		
Mg	24	253.003		
K	39	77.663		
Ca	43	109.761		
Fe	54	96.004		
Fe	57	97.481		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Mn	55	
QC Std 4	Na	23	

Sample ID: QC Std 4
Report Date/Time: Tuesday, July 05, 2016 19:10:21
Page 3

Approved: July 06, 2016

QC Std 4	Mg	24
QC Std 4	K	39

Sample ID: QC Std 4
Report Date/Time: Tuesday, July 05, 2016 19:10:21
Page 4

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, July 05, 2016 19:11:16
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66781.9	1.5				ug/L	59517	Standard
	Be	9	96788.2	0.6	**99.1852**	0.896	0.9	ug/L	10	Standard
	Al	27	6087601.8	0.4	**35.6495**	0.381	1.1	ug/L	1872	Standard
	Sc	45	25761.9	4.3				ug/L	26715	Standard
	Ti	47	20578.0	0.6	**86.6812**	0.985	1.1	ug/L	54	Standard
	V	51	663752.5	0.6	**92.2234**	1.571	1.7	ug/L	1419	Standard
	Cr	52	656459.3	0.8	**91.7617**	1.070	1.2	ug/L	7059	Standard
	Cr	53	90960.6	0.7	**102.3483**	1.843	1.8	ug/L	398	Standard
	Mn	55	575203.1	0.5	**91.1706**	1.400	1.5	ug/L	824	Standard
	Co	59	649137.5	0.6	**95.9364**	1.401	1.5	ug/L	167	Standard
	Ni	60	171928.5	1.8	**92.1002**	0.857	0.9	ug/L	391	Standard
	Cu	65	174197.1	1.5	**93.1219**	0.491	0.5	ug/L	147	Standard
	Zn	66	104952.6	0.4	**95.3496**	1.325	1.4	ug/L	184	Standard
>	Ge	72	421172.8	1.3				ug/L	422998	Standard
	As	75	104985.8	0.6	**93.0042**	1.677	1.8	ug/L	-58	Standard
	Se	82	10464.4	0.8	**89.4391**	0.554	0.6	ug/L	15	Standard
	Se-1	77	7323.1	2.6	**96.3501**	3.689	3.8	ug/L	58	Standard
>	Ga	71	220.0	2.3				mg/L	113	Standard
	Rb	85	788.4	7.6				ug/L	27	Standard
	Y	89	364912.4	1.1				ug/L	383780	Standard
>	Rh	103	51.7	14.8				ug/L	18	Standard
	Mo	98	204523.3	0.4	**78.2554**	1.061	1.4	ug/L	31	Standard
	Ag	107	190920.7	0.6	**28.8155**	0.424	1.5	ug/L	84	Standard
	Cd	111	192857.4	0.7	**92.1295**	0.954	1.0	mg/L	4	Standard
	Cd	114	468513.0	3.0	**92.2123**	1.399	1.5	ug/L	15	Standard
>	In	115	506590.5	1.5				ug/L	515400	Standard
	Sn	118	3117.0	7.7	**0.3672**	0.049	13.5	ug/L	1043	Standard
	Sb	123	452716.7	0.7	**100.6137**	1.365	1.4	ug/L	227	Standard
	Ba	135	180498.8	0.2	**91.3409**	1.194	1.3	ug/L	31	Standard
	Ce	140	1315.1	16.0				ug/L	120	Standard
>	Tb	159	773233.4	0.7				ug/L	785817	Standard
	Ho	165	35.0	14.3				ug/L	7	Standard
	Tl	203	753738.9	0.4	**93.9903**	1.085	1.2	ug/L	6	Standard
	Tl	205	669053.2	0.7	**95.7730**	1.154	1.2	ug/L	8	Standard
	Pb	206	478085.3	0.5	**95.8092**	1.331	1.4	ug/L	201	Standard
	Pb	207	435755.6	0.1	**96.5900**	0.980	1.0	ug/L	177	Standard
	Pb	208	1786672.4	0.6	**98.5957**	1.376	1.4	ug/L	722	Standard
	U	238	675880.2	0.5	**98.1538**	0.852	0.9	ug/L	8	Standard
>	Bi	209	445789.4	1.0				ug/L	444563	Standard

Sample ID: QC Std 5
Report Date/Time: Tuesday, July 05, 2016 19:13:32
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**20.4037**	35.332	173.2	mg/L	0	Standard
Mg	24	8377.3	2.2	**10.8826**	0.234	2.2	mg/L	38	Standard
K	39	633.3	9.5	**2.7468**	0.262	9.5	mg/L	33	Standard
Ca	43	100.0	18.0	**10.4483**	2.953	28.3	mg/L	48	Standard
Fe	54	11875.5	3.6	**9.8156**	0.327	3.3	mg/L	131	Standard
Fe	57	3413.7	1.5	**10.5047**	0.628	6.0	mg/L	153	Standard
Sc-1	45	25761.9	4.3				mg/L	26715	Standard
Cl	35	130231.6	2.7				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1666.8	3.0				ug/L	1897	Standard
P	31	32677.0	6.2				ug/L	18491	Standard
S	34	4260.6	2.0				ug/L	3734	Standard
Sr	88	73.3	15.7				ug/L	47	Standard
C	12	83.3	18.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	410.0	30.5				mg/L	23	Standard
Dy	164	28.2	1.0				mg/L	23	Standard
Ho-1	165	35.0	14.3				mg/L	7	Standard
Er	166	36.7	15.7				mg/L	13	Standard
I	127	1318.4	13.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.185		
Al	27	0.713		
Sc	45			
Ti	47	86.681		
V	51	92.223		
Cr	52	91.762		
Cr	53			
Mn	55	91.171		
Co	59	95.936		
Ni	60	92.100		
Cu	65	93.122		
Zn	66	95.350		
Ge	72		99.569	
As	75	93.004		
Se	82	89.439		
Se-1	77			
Ga	71			

Sample ID: QC Std 5
Report Date/Time: Tuesday, July 05, 2016 19:13:32
Page 2

Approved: July 06, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	78.255		
Ag	107	28.815		
Cd	111	92.130		
Cd	114			
In	115		98.291	
Sn	118			
Sb	123	100.614		
Ba	135	91.341		
Ce	140			
Tb	159			
Ho	165			
Tl	203	93.990		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.596		
U	238	98.154		
Bi	209		100.276	
Na	23	163.230		
Mg	24	217.651		
K	39	54.935		
Ca	43	69.655		
Fe	54	78.525		
Fe	57	84.038		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Mo	98	
QC Std 5	Ag	107	

Sample ID: QC Std 5
Report Date/Time: Tuesday, July 05, 2016 19:13:32
Page 3

Approved: July 06, 2016

QC Std 5	Na	23
QC Std 5	Mg	24
QC Std 5	K	39
QC Std 5	Ca	43
QC Std 5	Fe	54

Sample ID: QC Std 5
Report Date/Time: Tuesday, July 05, 2016 19:13:32
Page 4

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 19:14:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65585.1	2.9				ug/L	59517	Standard
	Be	9	48611.2	1.9	**50.7190**	0.952	1.9	ug/L	10	Standard
	Al	27	7103206.4	1.2	**42.3704**	0.920	2.2	ug/L	1872	Standard
	Sc	45	24623.3	1.3				ug/L	26715	Standard
	Ti	47	21440.5	1.4	**92.8029**	1.249	1.3	ug/L	54	Standard
	V	51	331185.0	0.5	**47.1852**	0.301	0.6	ug/L	1419	Standard
	Cr	52	330677.2	0.1	**47.0179**	0.263	0.6	ug/L	7059	Standard
	Cr	53	41231.0	1.1	**47.4395**	0.345	0.7	ug/L	398	Standard
	Mn	55	285786.1	0.1	**46.4717**	0.205	0.4	ug/L	824	Standard
	Co	59	320440.7	0.3	**48.6411**	0.326	0.7	ug/L	167	Standard
	Ni	60	85861.9	0.5	**47.1614**	0.062	0.1	ug/L	391	Standard
	Cu	65	86497.9	0.9	**47.4711**	0.403	0.8	ug/L	147	Standard
	Zn	66	52695.5	1.2	**49.1046**	0.403	0.8	ug/L	184	Standard
>	Ge	72	409919.8	0.4				ug/L	422998	Standard
	As	75	52451.6	0.3	**47.7597**	0.306	0.6	ug/L	-58	Standard
	Se	82	5371.0	1.0	**47.0681**	0.632	1.3	ug/L	15	Standard
	Se-1	77	3641.1	3.7	**48.8770**	1.764	3.6	ug/L	58	Standard
>	Ga	71	45.0	11.1				mg/L	113	Standard
	Rb	85	798.4	10.3				ug/L	27	Standard
	Y	89	357605.3	2.0				ug/L	383780	Standard
>	Rh	103	23.3	44.6				ug/L	18	Standard
	Mo	98	248121.1	0.3	**96.9026**	1.567	1.6	ug/L	31	Standard
	Ag	107	306169.9	0.8	**47.1716**	0.681	1.4	ug/L	84	Standard
	Cd	111	97701.7	0.4	**47.6365**	0.626	1.3	mg/L	4	Standard
	Cd	114	241201.5	2.3	**48.4655**	1.356	2.8	ug/L	15	Standard
>	In	115	496333.9	1.4				ug/L	515400	Standard
	Sn	118	265572.4	0.9	**47.4577**	1.062	2.2	ug/L	1043	Standard
	Sb	123	220394.1	0.9	**49.9883**	1.030	2.1	ug/L	227	Standard
	Ba	135	89412.0	0.5	**46.1696**	0.647	1.4	ug/L	31	Standard
	Ce	140	110.0	4.5				ug/L	120	Standard
>	Tb	159	754917.1	0.8				ug/L	785817	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	381859.9	0.6	**48.4174**	0.314	0.6	ug/L	6	Standard
	Tl	205	340217.3	0.3	**49.5179**	0.112	0.2	ug/L	8	Standard
	Pb	206	241805.9	0.5	**49.2514**	0.319	0.6	ug/L	201	Standard
	Pb	207	220139.0	0.5	**49.5948**	0.295	0.6	ug/L	177	Standard
	Pb	208	903800.8	0.3	**50.6904**	0.067	0.1	ug/L	722	Standard
	U	238	341525.3	0.6	**50.4323**	0.287	0.6	ug/L	8	Standard
>	Bi	209	438377.7	0.2				ug/L	444563	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 19:16:46
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**21.4716**	37.181	173.2	mg/L	0	Standard
Mg	24	3943.8	3.1	**5.3417**	0.235	4.4	mg/L	38	Standard
K	39	703.3	7.0	**3.2117**	0.238	7.4	mg/L	33	Standard
Ca	43	45.0	0.0	**1.8050**	0.097	5.4	mg/L	48	Standard
Fe	54	5628.8	2.7	**4.8063**	0.133	2.8	mg/L	131	Standard
Fe	57	1661.8	3.8	**5.1054**	0.243	4.8	mg/L	153	Standard
Sc-1	45	24623.3	1.3				mg/L	26715	Standard
Cl	35	124244.0	0.6				ug/L	102686	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1410.1	1.2				ug/L	1897	Standard
P	31	20362.0	1.3				ug/L	18491	Standard
S	34	4645.7	6.6				ug/L	3734	Standard
Sr	88	91.7	19.2				ug/L	47	Standard
C	12	73.3	55.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	170.0	57.9				mg/L	23	Standard
Dy	164	20.0	50.0				mg/L	23	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	0.0					mg/L	13	Standard
I	127	7435.2	2.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.438		
Al	27	84.741		
Sc	45			
Ti	47	92.803		
V	51	94.370		
Cr	52	94.036		
Cr	53			
Mn	55	92.943		
Co	59	97.282		
Ni	60	94.323		
Cu	65	94.942		
Zn	66	98.209		
Ge	72		96.908	
As	75	95.519		
Se	82	94.136		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 19:16:46
Page 2

Approved: July 06, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	96.903		
Ag	107	94.343		
Cd	111	95.273		
Cd	114			
> In	115			96.301
Sn	118	94.915		
Sb	123	99.977		
Ba	135	92.339		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.835		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.381		
U	238	100.865		
> Bi	209			98.609
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 19:16:46
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 19:17:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65871.2	1.2				ug/L	59517	Standard
	Be	9	46.7	40.6	**0.0174**	0.020	113.4	ug/L	10	Standard
	Al	27	3468.8	34.1	**0.0082**	0.007	88.5	ug/L	1872	Standard
	Sc	45	23605.0	0.8				ug/L	26715	Standard
	Ti	47	33.0	10.5	**-0.1031**	0.014	13.8	ug/L	54	Standard
	V	51	1146.1	4.6	**-0.0149**	0.008	55.4	ug/L	1419	Standard
	Cr	52	5409.0	2.2	**-0.1882**	0.024	12.6	ug/L	7059	Standard
	Cr	53	738.4	13.9	**0.4492**	0.116	25.8	ug/L	398	Standard
	Mn	55	821.0	29.6	**0.0036**	0.041	1148.9	ug/L	824	Standard
	Co	59	291.0	15.8	**0.0193**	0.007	38.2	ug/L	167	Standard
	Ni	60	301.3	3.8	**-0.0331**	0.007	21.0	ug/L	391	Standard
	Cu	65	158.3	8.1	**0.0083**	0.007	89.8	ug/L	147	Standard
	Zn	66	188.0	2.7	**0.0170**	0.003	19.6	ug/L	184	Standard
>	Ge	72	408542.9	0.8				ug/L	422998	Standard
	As	75	-3.5	976.9	**0.0483**	0.032	65.5	ug/L	-58	Standard
	Se	82	21.8	4.5	**-0.0138**	0.007	51.7	ug/L	15	Standard
	Se-1	77	69.7	3.6	**0.2829**	0.034	11.9	ug/L	58	Standard
>	Ga	71	51.7	20.1				mg/L	113	Standard
	Rb	85	25.0	40.0				ug/L	27	Standard
	Y	89	348274.1	0.8				ug/L	383780	Standard
>	Rh	103	18.3	103.3				ug/L	18	Standard
	Mo	98	289.8	9.2	**0.1053**	0.010	9.7	ug/L	31	Standard
	Ag	107	155.7	18.2	**0.0122**	0.004	35.3	ug/L	84	Standard
	Cd	111	41.8	64.1	**0.0164**	0.013	80.0	mg/L	4	Standard
	Cd	114	121.5	54.1	**0.0200**	0.013	66.1	ug/L	15	Standard
>	In	115	491491.7	0.7				ug/L	515400	Standard
	Sn	118	876.7	25.1	**-0.0221**	0.040	182.0	ug/L	1043	Standard
	Sb	123	777.9	36.7	**0.1619**	0.066	40.5	ug/L	227	Standard
	Ba	135	66.3	43.8	**0.0108**	0.015	138.6	ug/L	31	Standard
	Ce	140	48.3	39.2				ug/L	120	Standard
>	Tb	159	747711.3	1.0				ug/L	785817	Standard
	Ho	165	6.7	173.2				ug/L	7	Standard
	Tl	203	171.0	50.2	**0.0179**	0.011	60.5	ug/L	6	Standard
	Tl	205	121.7	52.8	**0.0108**	0.009	86.3	ug/L	8	Standard
	Pb	206	327.0	16.5	**0.0207**	0.011	53.5	ug/L	201	Standard
	Pb	207	276.7	11.6	**0.0141**	0.007	51.7	ug/L	177	Standard
	Pb	208	1094.0	10.3	**0.0124**	0.006	51.1	ug/L	722	Standard
	U	238	134.0	28.9	**0.0172**	0.006	33.3	ug/L	8	Standard
>	Bi	209	441238.6	0.2				ug/L	444563	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 19:19:57
Page 1

Approved: July 06, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	53.3	5.4	**0.0422**	0.004	8.3	mg/L	38	Standard
K	39	8.3	124.9	**-0.0877**	0.052	59.4	mg/L	33	Standard
Ca	43	15.0	66.7	**-3.2158**	1.769	55.0	mg/L	48	Standard
Fe	54	152.8	10.0	**0.0229**	0.015	66.1	mg/L	131	Standard
Fe	57	245.0	2.0	**0.3773**	0.024	6.4	mg/L	153	Standard
Sc-1	45	23605.0	0.8				mg/L	26715	Standard
Cl	35	124785.1	1.1				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1483.4	5.7				ug/L	1897	Standard
P	31	20018.2	2.1				ug/L	18491	Standard
S	34	4625.7	1.5				ug/L	3734	Standard
Sr	88	66.7	22.9				ug/L	47	Standard
C	12	43.3	48.0				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	96.7	52.1				mg/L	23	Standard
Dy	164	2.4	278.0				mg/L	23	Standard
Ho-1	165	6.7	173.2				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	5481.0	1.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.583	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 19:19:57
Page 2

Approved: July 06, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.361
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.252
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 19:19:57
Page 3

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, July 05, 2016 19:20:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63216.7	2.8				ug/L	59517	Standard
	Be	9	183.3	6.9	**0.1677**	0.018	10.8	ug/L	10	Standard
	Al	27	3557.2	59.8	**0.0097**	0.013	137.9	ug/L	1872	Standard
	Sc	45	22621.9	0.4				ug/L	26715	Standard
	Ti	47	22.7	22.2	**-0.1456**	0.022	15.1	ug/L	54	Standard
	V	51	3372.6	5.9	**0.3170**	0.033	10.6	ug/L	1419	Standard
	Cr	52	10014.6	0.7	**0.5196**	0.007	1.4	ug/L	7059	Standard
	Cr	53	1163.4	4.4	**0.9791**	0.063	6.4	ug/L	398	Standard
	Mn	55	3302.7	7.3	**0.4230**	0.037	8.6	ug/L	824	Standard
	Co	59	2480.5	2.5	**0.3626**	0.012	3.3	ug/L	167	Standard
	Ni	60	2675.2	4.1	**1.3188**	0.068	5.2	ug/L	391	Standard
	Cu	65	1339.7	3.5	**0.6788**	0.026	3.8	ug/L	147	Standard
	Zn	66	6392.7	1.3	**5.9911**	0.134	2.2	ug/L	184	Standard
>	Ge	72	398382.1	1.0				ug/L	422998	Standard
	As	75	341.1	11.2	**0.3708**	0.035	9.3	ug/L	-58	Standard
	Se	82	51.2	10.2	**0.2571**	0.046	18.0	ug/L	15	Standard
	Se-1	77	80.0	6.5	**0.4523**	0.084	18.5	ug/L	58	Standard
>	Ga	71	33.3	43.3				mg/L	113	Standard
	Rb	85	38.3	52.7				ug/L	27	Standard
	Y	89	340594.2	1.0				ug/L	383780	Standard
>	Rh	103	13.3	21.7				ug/L	18	Standard
	Mo	98	117.2	33.7	**0.0383**	0.016	41.1	ug/L	31	Standard
	Ag	107	2222.5	1.5	**0.3416**	0.003	1.0	ug/L	84	Standard
	Cd	111	435.1	2.1	**0.2149**	0.004	2.1	mg/L	4	Standard
	Cd	114	1047.1	6.2	**0.2126**	0.013	6.1	ug/L	15	Standard
>	In	115	480720.6	0.6				ug/L	515400	Standard
	Sn	118	481.7	23.5	**-0.0917**	0.021	23.4	ug/L	1043	Standard
	Sb	123	1650.0	2.2	**0.3701**	0.007	2.0	ug/L	227	Standard
	Ba	135	1222.0	2.7	**0.6281**	0.019	3.1	ug/L	31	Standard
	Ce	140	23.3	32.7				ug/L	120	Standard
>	Tb	159	736065.7	1.9				ug/L	785817	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	627.3	8.5	**0.0766**	0.007	8.9	ug/L	6	Standard
	Tl	205	526.7	9.9	**0.0705**	0.008	10.8	ug/L	8	Standard
	Pb	206	1182.0	1.4	**0.1974**	0.003	1.7	ug/L	201	Standard
	Pb	207	968.7	3.7	**0.1724**	0.008	4.8	ug/L	177	Standard
	Pb	208	4122.6	1.7	**0.1848**	0.004	2.1	ug/L	722	Standard
	U	238	2501.2	3.6	**0.3700**	0.014	3.7	ug/L	8	Standard
>	Bi	209	434742.2	0.1				ug/L	444563	Standard

Sample ID: QC Std 8
Report Date/Time: Tuesday, July 05, 2016 19:23:10
Page 1

Approved: July 06, 2016

Na	23	1.7	173.2	**23.0840**	39.974	173.2	mg/L	0	Standard
Mg	24	60.0	25.0	**0.0554**	0.022	40.5	mg/L	38	Standard
K	39	20.0	43.3	**-0.0260**	0.045	171.5	mg/L	33	Standard
Ca	43	23.3	32.7	**-1.5449**	1.409	91.2	mg/L	48	Standard
Fe	54	102.3	12.2	**-0.0191**	0.012	64.3	mg/L	131	Standard
Fe	57	248.3	28.5	**0.4260**	0.255	59.8	mg/L	153	Standard
Sc-1	45	22621.9	0.4				mg/L	26715	Standard
Cl	35	122327.2	1.1				ug/L	102686	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1383.4	13.4				ug/L	1897	Standard
P	31	14837.3	1.2				ug/L	18491	Standard
S	34	4564.0	3.3				ug/L	3734	Standard
Sr	88	71.7	4.0				ug/L	47	Standard
C	12	43.3	48.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	23	Standard
Dy	164	6.3	93.2				mg/L	23	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1116.7	16.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	83.854		
Al	27			
Sc	45			
Ti	47			
V	51	79.261		
Cr	52	64.956		
Cr	53			
Mn	55	84.607		
Co	59	90.651		
Ni	60	82.423		
Cu	65	84.851		
Zn	66	95.858		
Ge	72		94.181	
As	75	92.692		
Se	82	64.282		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
Report Date/Time: Tuesday, July 05, 2016 19:23:10
Page 2

Approved: July 06, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	85.397		
Cd	111	89.545		
Cd	114			
> In	115			93.271
Sn	118			
Sb	123	92.522		
Ba	135	83.747		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.756		
Tl	205			
Pb	206			
Pb	207			
Pb	208	92.388		
U	238	92.495		
> Bi	209			97.791
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Cr	52	
QC Std 8	Se	82	

Sample ID: QC Std 8
Report Date/Time: Tuesday, July 05, 2016 19:23:10
Page 3

Approved: July 06, 2016

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Wednesday, July 06, 2016 08:21:13

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1322	2024	0.699	
Mg	23.985	23.975	4499	2020	0.703	
Co	58.933	58.975	11698	2022	0.697	
In	114.904	114.925	22867	2028	0.681	
U	238.050	238.025	47456	2043	0.679	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	7.506
5.575	4.469
5.625	3.902
5.675	3.617
5.725	2.863
5.775	3.021
5.825	2.553
5.875	2.316
5.925	1.940
5.975	0.827
6.025	4.248
6.075	3.274
6.125	3.495
6.175	2.397
6.225	3.309
6.275	9.100
6.325	39.123
6.375	122.475
6.425	108.653
6.475	38.030
6.525	8.438
6.575	5.734
6.625	2.237
6.675	4.130
6.725	3.041
6.775	1.849
6.825	2.089

Report Date/Time: Wednesday, July 06, 2016 08:24:24
Page 1

Approved: July 07, 2016

6.875	1.604
6.925	1.546
6.975	1.019
7.025	1.680
7.075	1.373
7.125	1.509
7.175	0.253
7.225	2.144
7.275	3.742
7.325	4.451
7.375	14.816
7.425	136.931
7.475	70.711
7.525	81.441
7.575	136.931
7.625	70.711
7.675	63.888
7.725	136.931
7.775	81.441
7.825	0.000
7.875	106.863
7.925	91.287
7.975	149.071
8.025	94.786
8.075	94.786
8.125	69.722
8.175	91.287
8.225	71.261
8.275	149.071
8.325	94.786
8.375	69.722
8.425	83.853
8.475	91.287
22.525	55.902
22.575	66.667
22.625	43.241
22.675	34.247
22.725	34.468
22.775	17.538
22.825	28.037
22.875	26.503
22.925	31.944
22.975	34.035
23.025	38.640
23.075	42.482
23.125	22.745
23.175	17.030

Report Date/Time: Wednesday, July 06, 2016 08:24:24
Page 2

Approved: July 07, 2016

23.225	8.299
23.275	38.640
23.325	15.901
23.375	54.149
23.425	24.362
23.475	23.662
23.525	4.832
23.575	1.945
23.625	1.762
23.675	1.706
23.725	2.179
23.775	1.159
23.825	1.275
23.875	2.153
23.925	1.699
23.975	1.547
24.025	2.386
24.075	2.257
24.125	1.922
24.175	1.969
24.225	2.068
24.275	3.253
24.325	14.263
24.375	45.166
24.425	16.090
24.475	14.626
24.525	4.879
24.575	2.669
24.625	3.297
24.675	1.542
24.725	1.374
24.775	1.161
24.825	1.917
24.875	1.099
24.925	1.386
24.975	1.467
25.025	1.383
25.075	1.643
25.125	1.214
25.175	2.083
25.225	1.572
25.275	7.023
25.325	53.429
25.375	51.349
25.425	53.429
25.475	17.365
57.525	8.189

Report Date/Time: Wednesday, July 06, 2016 08:24:24
Page 3

Approved: July 07, 2016

57.575	5.482
57.625	1.288
57.675	3.060
57.725	2.372
57.775	3.546
57.825	3.557
57.875	0.921
57.925	1.535
57.975	2.136
58.025	1.988
58.075	2.269
58.125	1.198
58.175	2.819
58.225	1.616
58.275	11.771
58.325	55.902
58.375	50.000
58.425	33.756
58.475	10.537
58.525	1.691
58.575	3.576
58.625	2.704
58.675	2.648
58.725	2.851
58.775	2.040
58.825	2.525
58.875	1.600
58.925	1.367
58.975	1.255
59.025	1.984
59.075	0.805
59.125	1.290
59.175	2.562
59.225	1.649
59.275	23.116
59.325	64.359
59.375	149.071
59.425	44.605
59.475	17.497
59.525	17.371
59.575	9.220
59.625	5.948
59.675	4.790
59.725	1.831
59.775	1.473
59.825	2.719
59.875	2.952

Report Date/Time: Wednesday, July 06, 2016 08:24:24
Page 4

Approved: July 07, 2016

59.925	2.544
59.975	1.515
60.025	4.044
60.075	0.979
60.125	3.516
60.175	6.310
60.225	5.968
60.275	42.077
60.325	70.711
60.375	75.691
60.425	47.507
60.475	51.349
113.525	6.288
113.575	3.130
113.625	3.198
113.675	2.645
113.725	2.546
113.775	2.125
113.825	1.842
113.875	2.200
113.925	1.850
113.975	1.503
114.025	2.156
114.075	1.585
114.125	1.928
114.175	4.533
114.225	6.911
114.275	18.744
114.325	37.029
114.375	48.104
114.425	13.303
114.475	6.306
114.525	2.291
114.575	1.817
114.625	2.253
114.675	1.979
114.725	1.922
114.775	2.210
114.825	1.277
114.875	1.344
114.925	1.630
114.975	0.972
115.025	0.572
115.075	1.624
115.125	0.868
115.175	2.441
115.225	1.854

Report Date/Time: Wednesday, July 06, 2016 08:24:24
Page 5

Approved: July 07, 2016

115.275	5.953
115.325	30.901
115.375	61.237
115.425	59.266
115.475	15.759
115.525	11.392
115.575	9.132
115.625	8.051
115.675	3.987
115.725	6.967
115.775	3.133
115.825	4.834
115.875	2.873
115.925	2.983
115.975	3.736
116.025	2.700
116.075	2.834
116.125	4.969
116.175	5.942
116.225	7.717
116.275	28.287
116.325	58.630
116.375	22.822
116.425	67.748
116.475	37.268
236.525	
236.575	37.982
236.625	28.022
236.675	14.286
236.725	37.982
236.775	48.627
236.825	23.981
236.875	70.833
236.925	24.491
236.975	20.494
237.025	17.496
237.075	24.845
237.125	33.333
237.175	31.672
237.225	28.287
237.275	23.458
237.325	18.109
237.375	43.257
237.425	28.315
237.475	36.056
237.525	17.496
237.575	15.180

Report Date/Time: Wednesday, July 06, 2016 08:24:24
Page 6

Approved: July 07, 2016

237.625	5.747
237.675	2.292
237.725	2.524
237.775	2.139
237.825	1.921
237.875	1.117
237.925	1.502
237.975	1.060
238.025	0.360
238.075	1.407
238.125	0.752
238.175	1.378
238.225	1.386
238.275	0.645
238.325	2.690
238.375	2.608
238.425	2.380
238.475	12.679
238.525	20.738
238.575	36.422
238.625	37.611
238.675	26.517
238.725	10.002
238.775	24.499
238.825	17.876
238.875	26.770
238.925	25.620
238.975	15.408
239.025	16.767
239.075	18.744
239.125	33.378
239.175	26.504
239.225	37.982
239.275	41.406
239.325	24.686
239.375	10.756
239.425	28.748
239.475	26.770

Approved: July 07, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 7/6/2016 8:26:00 AM
End Time: 7/6/2016 8:28:13 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 5151.01
        Obtained Intensity (Mg 23.985): 336885.79
        Obtained Intensity (In 114.904): 62602.53
        Obtained Intensity (U 238.05): 130540.54
        Obtained Intensity (Bkgd 220): 0.20
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=3575.29 / 184430.85)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2032.07 / 184430.85)
```

Report Date/Time: Wednesday, July 06, 2016 08:28:13
Page 1

Approved: July 07, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 7/6/2016 8:26:00 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 5151.01
                Obtained Intensity (Mg 23.985): 336885.79
                Obtained Intensity (In 114.904): 62602.53
                Obtained Intensity (U 238.05): 130540.54
                Obtained Intensity (Bkgd 220): 0.20
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=3575.29 / 184430.85)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2032.07 / 184430.85)
[Passed]  Optimum value(s): N/A

End Time: 7/6/2016 8:28:13 AM
```


Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Wednesday, July 06, 2016 09:04:52
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68501.2	1.5				ug/L		Standard
	Be	9	8.3	34.6				ug/L		Standard
	Al	27	1396.7	1.3				ug/L		Standard
	Sc	45	38814.7	3.0				ug/L		Standard
	Ti	47	35.7	18.2				ug/L		Standard
	V	51	1283.9	3.1				ug/L		Standard
	Cr	52	6502.7	0.5				ug/L		Standard
	Cr	53	491.7	16.7				ug/L		Standard
	Mn	55	840.7	3.2				ug/L		Standard
	Co	59	229.3	4.0				ug/L		Standard
	Ni	60	344.0	2.2				ug/L		Standard
	Cu	65	114.7	4.1				ug/L		Standard
	Zn	66	190.0	5.0				ug/L		Standard
>	**Ge**	72	409858.0	0.8				ug/L		Standard
	As	75	-22.4	191.8				ug/L		Standard
	Se	82	17.6	39.5				ug/L		Standard
	Se-1	77	49.7	13.7				ug/L		Standard
>	**Ga**	71	96.7	43.4				mg/L		Standard
	Rb	85	25.0	40.0				ug/L		Standard
	Y	89	376763.4	2.3				ug/L		Standard
>	**Rh**	103	20.0	0.0				ug/L		Standard
	Mo	98	51.1	11.8				ug/L		Standard
	Ag	107	76.3	9.8				ug/L		Standard
	Cd	111	5.9	58.3				mg/L		Standard
	Cd	114	18.3	38.1				ug/L		Standard
>	**In**	115	507260.6	2.6				ug/L		Standard
	Sn	118	683.3	6.6				ug/L		Standard
	Sb	123	446.3	31.9				ug/L		Standard
	Ba	135	28.0	28.6				ug/L		Standard
	Ce	140	33.3	45.8				ug/L		Standard
>	**Tb**	159	800802.7	2.0				ug/L		Standard
	Ho	165	10.0	86.6				ug/L		Standard
	Tl	203	13.0	26.6				ug/L		Standard
	Tl	205	13.3	43.3				ug/L		Standard
	Pb	206	226.0	4.2				ug/L		Standard
	Pb	207	204.3	0.3				ug/L		Standard
	Pb	208	851.7	6.8				ug/L		Standard
	U	238	13.0	63.0				ug/L		Standard
>	**Bi**	209	449044.0	1.5				ug/L		Standard

Sample ID: Blank
Report Date/Time: Wednesday, July 06, 2016 09:07:09
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	mg/L	Standard
Mg	24	58.3	9.9	mg/L	Standard
K	39	26.7	39.0	mg/L	Standard
Ca	43	20.0	66.1	mg/L	Standard
Fe	54	157.5	14.3	mg/L	Standard
Fe	57	266.7	9.2	mg/L	Standard
> **Sc-1**	45	38814.7	3.0	mg/L	Standard
Cl	35	57611.3	0.9	ug/L	Standard
Kr	83	2.0	50.0	ug/L	Standard
Br	81	1616.8	9.4	ug/L	Standard
P	31	19243.9	3.3	ug/L	Standard
S	34	3557.1	1.2	ug/L	Standard
Sr	88	65.0	20.4	ug/L	Standard
C	12	63.3	24.1	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	23.3	89.2	mg/L	Standard
Dy	164	12.7	43.5	mg/L	Standard
Ho-1	165	10.0	86.6	mg/L	Standard
Er	166	13.3	86.6	mg/L	Standard
I	127	9569.7	3.0	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Blank
Report Date/Time: Wednesday, July 06, 2016 09:07:09
Page 2

Approved: July 07, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Wednesday, July 06, 2016 09:07:09
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, July 06, 2016 09:08:03
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69462.2	0.6				ug/L	68501	Standard
	Be	9	13.3	78.1				ug/L	8	Standard
	Al	27	1441.7	6.4				ug/L	1397	Standard
	Sc	45	39327.7	2.4				ug/L	38815	Standard
	Ti	47	37.3	15.2				ug/L	36	Standard
	V	51	1277.1	1.5				ug/L	1284	Standard
	Cr	52	6679.8	1.3				ug/L	6503	Standard
	Cr	53	478.3	7.9				ug/L	492	Standard
	Mn	55	811.7	3.1				ug/L	841	Standard
	Co	59	225.7	8.9				ug/L	229	Standard
	Ni	60	363.7	3.9				ug/L	344	Standard
	Cu	65	110.0	16.7				ug/L	115	Standard
	Zn	66	186.0	6.7				ug/L	190	Standard
>	**Ge**	72	427573.4	1.2				ug/L	409858	Standard
	As	75	-74.4	2.7				ug/L	-22	Standard
	Se	82	12.0	28.1				ug/L	18	Standard
	Se-1	77	50.7	10.9				ug/L	50	Standard
>	**Ga**	71	113.3	13.5				mg/L	97	Standard
	Rb	85	35.0	28.6				ug/L	25	Standard
	Y	89	359688.5	1.8				ug/L	376763	Standard
>	**Rh**	103	18.3	15.7				ug/L	20	Standard
	Mo	98	39.3	4.5				ug/L	51	Standard
	Ag	107	71.3	10.3				ug/L	76	Standard
	Cd	111	4.3	59.0				mg/L	6	Standard
	Cd	114	20.2	77.8				ug/L	18	Standard
>	**In**	115	495968.3	1.0				ug/L	507261	Standard
	Sn	118	615.0	19.2				ug/L	683	Standard
	Sb	123	280.4	35.1				ug/L	446	Standard
	Ba	135	25.7	17.6				ug/L	28	Standard
	Ce	140	23.3	68.9				ug/L	33	Standard
>	**Tb**	159	809139.9	1.5				ug/L	800803	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	9.7	31.6				ug/L	13	Standard
	Tl	205	5.0	100.0				ug/L	13	Standard
	Pb	206	228.0	14.1				ug/L	226	Standard
	Pb	207	184.0	4.3				ug/L	204	Standard
	Pb	208	774.0	0.5				ug/L	852	Standard
	U	238	9.3	61.9				ug/L	13	Standard
>	**Bi**	209	461034.0	1.4				ug/L	449044	Standard

Sample ID: Standard 1
Report Date/Time: Wednesday, July 06, 2016 09:10:20
Page 1

Approved: July 07, 2016

	Na	23	0.0		mg/L	2	Standard
	Mg	24	38.3	7.5	mg/L	58	Standard
	K	39	38.3	30.1	mg/L	27	Standard
	Ca	43	35.0	37.8	mg/L	20	Standard
	Fe	54	132.7	18.5	mg/L	158	Standard
	Fe	57	250.0	9.2	mg/L	267	Standard
>	**Sc-1**	45	39327.7	2.4	mg/L	38815	Standard
	Cl	35	57177.7	0.6	ug/L	57611	Standard
	Kr	83	2.0	86.6	ug/L	2	Standard
	Br	81	1573.4	4.2	ug/L	1617	Standard
	P	31	19260.6	0.8	ug/L	19244	Standard
	S	34	3472.1	1.0	ug/L	3557	Standard
	Sr	88	65.0	38.5	ug/L	65	Standard
	C	12	76.7	30.1	mg/L	63	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	20.0	0.0	mg/L	23	Standard
	Dy	164	19.5	50.0	mg/L	13	Standard
	Ho-1	165	13.3	21.7	mg/L	10	Standard
	Er	166	10.0	100.0	mg/L	13	Standard
	I	127	9743.1	1.2	mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 1
Report Date/Time: Wednesday, July 06, 2016 09:10:20
Page 2

Approved: July 07, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Wednesday, July 06, 2016 09:10:20
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Wednesday, July 06, 2016 09:11:15
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69986.3	1.7				ug/L	68501	Standard
	Be	9	28.3	20.4				ug/L	8	Standard
	Al	27	2175.2	56.8				ug/L	1397	Standard
	Sc	45	40447.3	0.7				ug/L	38815	Standard
	Ti	47	43.0	44.9				ug/L	36	Standard
	V	51	1366.5	10.5				ug/L	1284	Standard
	Cr	52	6767.8	1.5				ug/L	6503	Standard
	Cr	53	401.7	17.9				ug/L	492	Standard
	Mn	55	892.4	9.9				ug/L	841	Standard
	Co	59	269.0	32.5				ug/L	229	Standard
	Ni	60	348.3	2.9				ug/L	344	Standard
	Cu	65	106.0	18.0				ug/L	115	Standard
	Zn	66	164.7	5.2				ug/L	190	Standard
>	**Ge**	72	409754.2	1.2				ug/L	409858	Standard
	As	75	-50.4	62.0				ug/L	-22	Standard
	Se	82	10.7	41.8				ug/L	18	Standard
	Se-1	77	55.7	4.5				ug/L	50	Standard
>	**Ga**	71	90.0	14.7				mg/L	97	Standard
	Rb	85	25.0	40.0				ug/L	25	Standard
	Y	89	368884.0	1.8				ug/L	376763	Standard
>	**Rh**	103	28.3	36.7				ug/L	20	Standard
	Mo	98	70.2	78.1				ug/L	51	Standard
	Ag	107	171.7	101.6				ug/L	76	Standard
	Cd	111	21.6	125.9				mg/L	6	Standard
	Cd	114	62.7	126.2				ug/L	18	Standard
>	**In**	115	517968.4	0.2				ug/L	507261	Standard
	Sn	118	895.0	18.8				ug/L	683	Standard
	Sb	123	308.2	14.0				ug/L	446	Standard
	Ba	135	66.7	99.4				ug/L	28	Standard
	Ce	140	60.0	88.2				ug/L	33	Standard
>	**Tb**	159	835902.7	0.3				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	133.7	156.4				ug/L	13	Standard
	Tl	205	51.7	114.6				ug/L	13	Standard
	Pb	206	275.3	38.0				ug/L	226	Standard
	Pb	207	236.3	37.0				ug/L	204	Standard
	Pb	208	923.0	26.3				ug/L	852	Standard
	U	238	51.0	124.2				ug/L	13	Standard
>	**Bi**	209	464909.5	1.4				ug/L	449044	Standard

Sample ID: Standard 2
Report Date/Time: Wednesday, July 06, 2016 09:13:32
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	mg/L	2	Standard
Mg	24	33.3	31.2	mg/L	58	Standard
K	39	38.3	52.7	mg/L	27	Standard
Ca	43	18.3	87.7	mg/L	20	Standard
Fe	54	155.9	10.5	mg/L	158	Standard
Fe	57	213.3	22.5	mg/L	267	Standard
> **Sc-1**	45	40447.3	0.7	mg/L	38815	Standard
Cl	35	57383.8	0.6	ug/L	57611	Standard
Kr	83	4.0	25.0	ug/L	2	Standard
Br	81	1603.4	7.2	ug/L	1617	Standard
P	31	19110.4	2.4	ug/L	19244	Standard
S	34	3323.7	4.3	ug/L	3557	Standard
Sr	88	48.3	39.2	ug/L	65	Standard
C	12	66.7	56.8	mg/L	63	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	33.3	17.3	mg/L	23	Standard
Dy	164	19.5	53.7	mg/L	13	Standard
Ho-1	165	6.7	43.3	mg/L	10	Standard
Er	166	10.0	100.0	mg/L	13	Standard
I	127	9463.0	1.4	mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 2
Report Date/Time: Wednesday, July 06, 2016 09:13:32
Page 2

Approved: July 07, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Wednesday, July 06, 2016 09:13:32
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Wednesday, July 06, 2016 09:14:26
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65866.4	4.4				ug/L	68501	Standard
	Be	9	43758.1	2.1	**50.0000**	2.126	4.3	ug/L	8	Standard
	Al	27	6851690.7	2.5	**50.0000**	1.133	2.3	ug/L	1397	Standard
	Sc	45	38365.2	3.2				ug/L	38815	Standard
	Ti	47	33502.0	1.0	**100.0000**	2.335	2.3	ug/L	36	Standard
	V	51	354123.4	1.5	**50.0000**	0.807	1.6	ug/L	1284	Standard
	Cr	52	353474.9	1.0	**50.0000**	1.058	2.1	ug/L	6503	Standard
	Cr	53	43696.3	2.4	**50.0000**	1.919	3.8	ug/L	492	Standard
	Mn	55	312268.8	0.3	**50.0000**	0.524	1.0	ug/L	841	Standard
	Co	59	306115.4	0.4	**50.0000**	0.635	1.3	ug/L	229	Standard
	Ni	60	84632.4	1.9	**50.0000**	1.629	3.3	ug/L	344	Standard
	Cu	65	84106.2	1.3	**50.0000**	1.315	2.6	ug/L	115	Standard
	Zn	66	50654.5	0.9	**50.0000**	1.152	2.3	ug/L	190	Standard
>	**Ge**	72	412166.9	1.4				ug/L	409858	Standard
	As	75	52045.3	0.4	**50.0000**	0.886	1.8	ug/L	-22	Standard
	Se	82	5394.9	1.2	**50.0000**	0.077	0.2	ug/L	18	Standard
	Se-1	77	3526.7	2.1	**50.0000**	1.755	3.5	ug/L	50	Standard
>	**Ga**	71	143.3	16.1				mg/L	97	Standard
	Rb	85	768.4	16.3				ug/L	25	Standard
	Y	89	372269.2	3.3				ug/L	376763	Standard
>	**Rh**	103	36.7	43.8				ug/L	20	Standard
	Mo	98	230812.3	1.4	**100.0000**	1.677	1.7	ug/L	51	Standard
	Ag	107	300268.2	0.5	**50.0000**	0.604	1.2	ug/L	76	Standard
	Cd	111	97215.6	1.2	**50.0000**	0.313	0.6	mg/L	6	Standard
	Cd	114	238532.4	1.1	**50.0000**	0.702	1.4	ug/L	18	Standard
>	**In**	115	495991.8	1.6				ug/L	507261	Standard
	Sn	118	265345.1	0.9	**50.0000**	0.957	1.9	ug/L	683	Standard
	Sb	123	201515.8	1.9	**50.0000**	0.380	0.8	ug/L	446	Standard
	Ba	135	92475.7	0.4	**50.0000**	0.633	1.3	ug/L	28	Standard
	Ce	140	98.3	15.5				ug/L	33	Standard
>	**Tb**	159	786281.1	2.6				ug/L	800803	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	380657.7	0.9	**50.0000**	0.500	1.0	ug/L	13	Standard
	Tl	205	330146.0	2.3	**50.0000**	0.875	1.7	ug/L	13	Standard
	Pb	206	242582.5	0.3	**50.0000**	0.221	0.4	ug/L	226	Standard
	Pb	207	220711.3	0.8	**50.0000**	0.034	0.1	ug/L	204	Standard
	Pb	208	894041.3	0.2	**50.0000**	0.321	0.6	ug/L	852	Standard
	U	238	326852.4	1.0	**50.0000**	0.354	0.7	ug/L	13	Standard
>	**Bi**	209	440295.0	0.7				ug/L	449044	Standard

Sample ID: Standard 3
Report Date/Time: Wednesday, July 06, 2016 09:16:43
Page 1

Approved: July 07, 2016

Na	23	3.3	173.2	**5.0000**	16.319	326.4	mg/L	2	Standard
Mg	24	3670.4	2.3	**5.0000**	0.168	3.4	mg/L	58	Standard
K	39	1323.4	3.2	**5.0000**	0.149	3.0	mg/L	27	Standard
Ca	43	88.3	11.8	**5.0000**	0.808	16.2	mg/L	20	Standard
Fe	54	6179.3	2.3	**5.0000**	0.141	2.8	mg/L	158	Standard
Fe	57	1725.1	6.9	**5.0000**	0.273	5.5	mg/L	267	Standard
> **Sc-1**	45	38365.2	3.2				mg/L	38815	Standard
Cl	35	58419.8	1.9				ug/L	57611	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1690.1	3.1				ug/L	1617	Standard
P	31	20316.9	1.2				ug/L	19244	Standard
S	34	3730.5	4.5				ug/L	3557	Standard
Sr	88	81.7	19.7				ug/L	65	Standard
C	12	70.0	37.8				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	9.8	2.8				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	17104.7	2.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Standard 3
Report Date/Time: Wednesday, July 06, 2016 09:16:43
Page 2

Approved: July 07, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
Report Date/Time: Wednesday, July 06, 2016 09:16:43
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Wednesday, July 06, 2016 09:17:38
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66884.0	0.1				ug/L	68501	Standard
	Be	9	88224.6	3.2	**99.5740**	3.306	3.3	ug/L	8	Standard
	Al	27	13788828.6	0.3	**99.4964**	0.194	0.2	ug/L	1397	Standard
	Sc	45	39158.9	0.7				ug/L	38815	Standard
	Ti	47	68919.1	0.6	**201.5379**	1.843	0.9	ug/L	36	Standard
	V	51	719296.6	1.5	**100.2019**	0.102	0.1	ug/L	1284	Standard
	Cr	52	705385.2	0.5	**99.7044**	1.740	1.7	ug/L	6503	Standard
	Cr	53	87203.6	1.1	**99.4514**	2.654	2.7	ug/L	492	Standard
	Mn	55	615004.9	1.8	**98.6300**	0.309	0.3	ug/L	841	Standard
	Co	59	609072.6	1.8	**99.0923**	0.921	0.9	ug/L	229	Standard
	Ni	60	170911.2	0.3	**99.9152**	1.711	1.7	ug/L	344	Standard
	Cu	65	170582.3	0.9	**100.0576**	0.984	1.0	ug/L	115	Standard
	Zn	66	103031.8	1.2	**100.2529**	1.311	1.3	ug/L	190	Standard
>	Ge	72	417484.4	1.5				ug/L	409858	Standard
	As	75	105421.3	1.9	**99.9351**	0.523	0.5	ug/L	-22	Standard
	Se	82	10609.1	1.1	**98.5413**	0.717	0.7	ug/L	18	Standard
	Se-1	77	7041.6	1.7	**99.6311**	0.902	0.9	ug/L	50	Standard
>	Ga	71	120.0	22.0				mg/L	97	Standard
	Rb	85	1431.7	9.1				ug/L	25	Standard
	Y	89	347235.8	1.1				ug/L	376763	Standard
>	Rh	103	50.0	40.0				ug/L	20	Standard
	Mo	98	472903.2	1.9	**204.0734**	7.868	3.9	ug/L	51	Standard
	Ag	107	609290.7	0.4	**101.5465**	1.842	1.8	ug/L	76	Standard
	Cd	111	190186.3	0.3	**99.7182**	2.132	2.1	mg/L	6	Standard
	Cd	114	463334.3	1.9	**99.3479**	0.949	1.0	ug/L	18	Standard
>	In	115	487825.7	2.0				ug/L	507261	Standard
	Sn	118	532387.4	0.9	**101.0517**	2.398	2.4	ug/L	683	Standard
	Sb	123	428675.4	0.6	**103.9403**	2.689	2.6	ug/L	446	Standard
	Ba	135	183999.9	1.0	**100.5640**	1.058	1.1	ug/L	28	Standard
	Ce	140	121.7	24.8				ug/L	33	Standard
>	Tb	159	797848.9	1.9				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	758741.0	0.7	**98.4092**	0.290	0.3	ug/L	13	Standard
	Tl	205	656065.4	1.0	**98.2593**	1.296	1.3	ug/L	13	Standard
	Pb	206	490776.8	0.9	**99.1731**	1.193	1.2	ug/L	226	Standard
	Pb	207	444826.7	1.6	**98.9819**	1.805	1.8	ug/L	204	Standard
	Pb	208	1755326.8	0.8	**97.6712**	0.884	0.9	ug/L	852	Standard
	U	238	658871.7	1.7	**98.9710**	1.946	2.0	ug/L	13	Standard
>	Bi	209	452838.5	0.5				ug/L	449044	Standard

Sample ID: Standard 4
Report Date/Time: Wednesday, July 06, 2016 09:19:55
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.1636**	15.495	9469.0	mg/L	2	Standard
Mg	24	7491.9	4.0	**10.0159**	0.397	4.0	mg/L	58	Standard
K	39	2466.9	4.5	**9.6061**	0.448	4.7	mg/L	27	Standard
Ca	43	150.0	8.8	**9.5397**	1.008	10.6	mg/L	20	Standard
Fe	54	11922.4	5.3	**9.7701**	0.472	4.8	mg/L	158	Standard
Fe	57	3127.0	4.3	**9.6894**	0.495	5.1	mg/L	267	Standard
> **Sc-1**	45	39158.9	0.7				mg/L	38815	Standard
Cl	35	56905.3	1.1				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1556.7	6.9				ug/L	1617	Standard
P	31	20498.9	2.2				ug/L	19244	Standard
S	34	3742.1	6.2				ug/L	3557	Standard
Sr	88	81.7	19.7				ug/L	65	Standard
C	12	83.3	18.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	6.0	87.0				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	1631.8	7.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Standard 4
Report Date/Time: Wednesday, July 06, 2016 09:19:55
Page 2

Approved: July 07, 2016

	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Wednesday, July 06, 2016 09:19:55
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Wednesday, July 06, 2016 09:20:51
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66356.7	1.4				ug/L	68501	Standard
	Be	9	43475.6	2.2	**49.4638**	0.458	0.9	ug/L	8	Standard
	Al	27	7054643.4	2.9	**51.3289**	1.450	2.8	ug/L	1397	Standard
	Sc	45	38495.5	1.3				ug/L	38815	Standard
	Ti	47	34184.5	1.1	**99.3657**	1.944	2.0	ug/L	36	Standard
	V	51	366676.1	1.6	**50.7082**	0.578	1.1	ug/L	1284	Standard
	Cr	52	360229.4	1.7	**50.1586**	1.359	2.7	ug/L	6503	Standard
	Cr	53	44777.8	2.1	**50.5577**	1.541	3.0	ug/L	492	Standard
	Mn	55	318282.5	2.3	**50.7079**	1.592	3.1	ug/L	841	Standard
	Co	59	313631.6	2.7	**50.7369**	1.677	3.3	ug/L	229	Standard
	Ni	60	85664.2	1.3	**49.7047**	1.124	2.3	ug/L	344	Standard
	Cu	65	85779.5	0.3	**50.0130**	0.649	1.3	ug/L	115	Standard
	Zn	66	52022.2	0.4	**50.2627**	0.310	0.6	ug/L	190	Standard
>	**Ge**	72	419951.3	1.0				ug/L	409858	Standard
	As	75	53198.3	0.4	**50.1862**	0.299	0.6	ug/L	-22	Standard
	Se	82	5468.0	1.7	**50.4702**	1.293	2.6	ug/L	18	Standard
	Se-1	77	3629.1	2.1	**50.6717**	0.631	1.2	ug/L	50	Standard
>	**Ga**	71	115.0	15.1				mg/L	97	Standard
	Rb	85	778.4	9.3				ug/L	25	Standard
	Y	89	357538.5	1.7				ug/L	376763	Standard
>	**Rh**	103	33.3	22.9				ug/L	20	Standard
	Mo	98	239539.0	1.4	**103.1272**	1.538	1.5	ug/L	51	Standard
	Ag	107	306299.6	0.9	**50.9387**	0.703	1.4	ug/L	76	Standard
	Cd	111	97069.3	1.3	**50.7873**	0.404	0.8	mg/L	6	Standard
	Cd	114	234626.7	1.1	**50.2178**	0.829	1.6	ug/L	18	Standard
>	**In**	115	488900.7	0.6				ug/L	507261	Standard
	Sn	118	263207.0	1.9	**49.7800**	1.006	2.0	ug/L	683	Standard
	Sb	123	214060.8	1.6	**51.7618**	0.833	1.6	ug/L	446	Standard
	Ba	135	93668.6	0.5	**51.0843**	0.522	1.0	ug/L	28	Standard
	Ce	140	71.7	24.5				ug/L	33	Standard
>	**Tb**	159	790633.0	1.4				ug/L	800803	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	386612.8	0.6	**50.2968**	0.791	1.6	ug/L	13	Standard
	Tl	205	338341.7	1.7	**50.8334**	1.347	2.7	ug/L	13	Standard
	Pb	206	249116.9	0.4	**50.4726**	0.709	1.4	ug/L	226	Standard
	Pb	207	225878.3	0.4	**50.3950**	0.604	1.2	ug/L	204	Standard
	Pb	208	910277.1	0.9	**50.7865**	0.810	1.6	ug/L	852	Standard
	U	238	332181.4	0.8	**50.0553**	1.080	2.2	ug/L	13	Standard
>	**Bi**	209	451671.8	1.3				ug/L	449044	Standard

Sample ID: QC Std 1
Report Date/Time: Wednesday, July 06, 2016 09:23:08
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.4126**	15.927	3859.7	mg/L	2	Standard
Mg	24	3910.5	3.2	**5.3019**	0.233	4.4	mg/L	58	Standard
K	39	1270.1	5.5	**4.9629**	0.272	5.5	mg/L	27	Standard
Ca	43	80.0	22.5	**4.5990**	1.376	29.9	mg/L	20	Standard
Fe	54	6189.1	5.7	**5.1014**	0.233	4.6	mg/L	158	Standard
Fe	57	1740.1	3.2	**5.1884**	0.136	2.6	mg/L	267	Standard
Sc-1	45	38495.5	1.3				mg/L	38815	Standard
Cl	35	57189.1	1.2				ug/L	57611	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1483.4	3.7				ug/L	1617	Standard
P	31	20629.0	2.5				ug/L	19244	Standard
S	34	3698.8	3.4				ug/L	3557	Standard
Sr	88	71.7	10.7				ug/L	65	Standard
C	12	63.3	18.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	6.0	94.2				mg/L	13	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	16258.7	1.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.928		
Al	27	102.658		
Sc	45			
Ti	47	99.366		
V	51	101.416		
Cr	52	100.317		
Cr	53			
Mn	55	101.416		
Co	59	101.474		
Ni	60	99.409		
Cu	65	100.026		
Zn	66	100.525		
Ge	72		102.463	
As	75	100.372		
Se	82	100.940		
Se-1	77			
Ga	71			

Sample ID: QC Std 1
Report Date/Time: Wednesday, July 06, 2016 09:23:08
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	103.127		
Ag	107	101.877		
Cd	111	101.575		
Cd	114			
In	115		96.381	
Sn	118	99.560		
Sb	123	103.524		
Ba	135	102.169		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.594		
Tl	205			
Pb	206	100.945		
Pb	207	100.790		
Pb	208	101.573		
U	238	100.111		
Bi	209		100.585	
Na	23	8.253		
Mg	24	106.038		
K	39	99.259		
Ca	43	91.981		
Fe	54	102.028		
Fe	57	103.769		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
Report Date/Time: Wednesday, July 06, 2016 09:23:08
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Wednesday, July 06, 2016 09:24:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67100.0	2.8				ug/L	68501	Standard
	Be	9	23.3	44.6	**0.0459**	0.012	26.8	ug/L	8	Standard
	Al	27	2183.5	5.5	**0.0508**	0.001	1.9	ug/L	1397	Standard
	Sc	45	38350.2	1.8				ug/L	38815	Standard
	Ti	47	45.0	10.2	**0.1079**	0.013	11.8	ug/L	36	Standard
	V	51	1197.9	4.5	**0.0284**	0.009	33.2	ug/L	1284	Standard
	Cr	52	6091.2	0.6	**-0.0369**	0.012	32.3	ug/L	6503	Standard
	Cr	53	483.3	2.6	**0.1526**	0.017	11.3	ug/L	492	Standard
	Mn	55	1339.7	3.7	**0.1261**	0.010	8.2	ug/L	841	Standard
	Co	59	302.7	6.8	**0.0563**	0.004	6.7	ug/L	229	Standard
	Ni	60	363.3	5.5	**0.0617**	0.010	16.0	ug/L	344	Standard
	Cu	65	140.0	3.7	**0.0715**	0.003	4.8	ug/L	115	Standard
	Zn	66	330.3	4.9	**0.2188**	0.020	8.9	ug/L	190	Standard
>	**Ge**	72	404498.0	1.0				ug/L	409858	Standard
	As	75	-54.7	81.6	**0.0457**	0.043	94.2	ug/L	-22	Standard
	Se	82	15.5	9.6	**0.0976**	0.016	16.1	ug/L	18	Standard
	Se-1	77	49.7	14.8	**-0.0288**	0.101	349.5	ug/L	50	Standard
>	**Ga**	71	81.7	23.2				mg/L	97	Standard
	Rb	85	16.7	45.8				ug/L	25	Standard
	Y	89	369622.9	1.1				ug/L	376763	Standard
>	**Rh**	103	16.7	62.4				ug/L	20	Standard
	Mo	98	227.3	14.0	**0.1640**	0.015	8.9	ug/L	51	Standard
	Ag	107	151.0	33.0	**0.0469**	0.008	17.6	ug/L	76	Standard
	Cd	111	28.2	76.8	**0.0534**	0.011	20.6	mg/L	6	Standard
	Cd	114	78.0	111.0	**0.0533**	0.018	33.5	ug/L	18	Standard
>	**In**	115	517958.4	1.8				ug/L	507261	Standard
	Sn	118	1193.4	27.5	**0.1041**	0.062	59.9	ug/L	683	Standard
	Sb	123	1119.5	34.5	**0.2362**	0.092	38.9	ug/L	446	Standard
	Ba	135	62.7	17.1	**0.0481**	0.006	12.7	ug/L	28	Standard
	Ce	140	18.3	31.5				ug/L	33	Standard
>	**Tb**	159	802322.5	1.8				ug/L	800803	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	124.7	67.7	**0.0496**	0.011	22.5	ug/L	13	Standard
	Tl	205	53.3	42.3	**0.0506**	0.003	6.9	ug/L	13	Standard
	Pb	206	298.0	8.1	**0.0563**	0.006	10.3	ug/L	226	Standard
	Pb	207	230.3	14.6	**0.0502**	0.008	15.3	ug/L	204	Standard
	Pb	208	1030.3	4.7	**0.0574**	0.003	4.4	ug/L	852	Standard
	U	238	66.0	13.5	**0.0525**	0.001	2.7	ug/L	13	Standard
>	**Bi**	209	452580.9	1.6				ug/L	449044	Standard

Sample ID: QC Std 2
Report Date/Time: Wednesday, July 06, 2016 09:26:21
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	51.7	20.1	**0.0326**	0.015	47.2	mg/L	58	Standard
K	39	26.7	28.6	**-0.0338**	0.033	97.4	mg/L	27	Standard
Ca	43	25.0	34.6	**0.5702**	0.676	118.6	mg/L	20	Standard
Fe	54	150.9	33.4	**0.0073**	0.041	560.9	mg/L	158	Standard
Fe	57	226.7	20.0	**0.0891**	0.161	181.3	mg/L	267	Standard
> **Sc-1**	45	38350.2	1.8				mg/L	38815	Standard
Cl	35	56957.5	0.7				ug/L	57611	Standard
Kr	83	2.7	94.4				ug/L	2	Standard
Br	81	1566.7	7.6				ug/L	1617	Standard
P	31	19928.1	2.3				ug/L	19244	Standard
S	34	3602.1	6.0				ug/L	3557	Standard
Sr	88	55.0	15.7				ug/L	65	Standard
C	12	60.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	23	Standard
Dy	164	13.0	89.8				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	9436.3	0.8				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.692	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 2
Report Date/Time: Wednesday, July 06, 2016 09:26:21
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.109
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.788
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Tl	203	
QC Std 2	Na	23	

Sample ID: QC Std 2
Report Date/Time: Wednesday, July 06, 2016 09:26:21
Page 3

Approved: July 07, 2016

QC Std 2	Ca	43

Sample ID: QC Std 2
Report Date/Time: Wednesday, July 06, 2016 09:26:21
Page 4

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Wednesday, July 06, 2016 09:27:17
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65417.6	1.3				ug/L	68501	Standard
	Be	9	186.7	5.6	**0.2348**	0.012	5.3	ug/L	8	Standard
	Al	27	2355.2	45.5	**0.0524**	0.008	14.6	ug/L	1397	Standard
	Sc	45	37294.2	0.1				ug/L	38815	Standard
	Ti	47	42.7	24.1	**0.0989**	0.031	31.6	ug/L	36	Standard
	V	51	3828.2	3.6	**0.3978**	0.022	5.6	ug/L	1284	Standard
	Cr	52	11586.1	1.6	**0.7432**	0.033	4.5	ug/L	6503	Standard
	Cr	53	1166.7	5.5	**0.9370**	0.082	8.8	ug/L	492	Standard
	Mn	55	3627.4	3.0	**0.4950**	0.021	4.2	ug/L	841	Standard
	Co	59	2526.2	0.4	**0.4225**	0.004	0.8	ug/L	229	Standard
	Ni	60	2915.6	1.9	**1.5740**	0.024	1.5	ug/L	344	Standard
	Cu	65	1393.7	0.1	**0.8162**	0.004	0.5	ug/L	115	Standard
	Zn	66	6625.1	1.8	**6.4340**	0.109	1.7	ug/L	190	Standard
>	**Ge**	72	411474.6	0.6				ug/L	409858	Standard
	As	75	332.4	3.7	**0.4184**	0.013	3.2	ug/L	-22	Standard
	Se	82	50.5	10.9	**0.4250**	0.052	12.2	ug/L	18	Standard
	Se-1	77	77.0	7.2	**0.3547**	0.078	22.0	ug/L	50	Standard
>	**Ga**	71	86.7	29.0				mg/L	97	Standard
	Rb	85	31.7	24.1				ug/L	25	Standard
	Y	89	346988.1	2.4				ug/L	376763	Standard
>	**Rh**	103	26.7	10.8				ug/L	20	Standard
	Mo	98	119.3	16.3	**0.1236**	0.010	7.7	ug/L	51	Standard
	Ag	107	2405.2	1.0	**0.4282**	0.008	1.8	ug/L	76	Standard
	Cd	111	441.8	10.7	**0.2737**	0.030	10.8	mg/L	6	Standard
	Cd	114	1119.1	2.0	**0.2799**	0.008	2.7	ug/L	18	Standard
>	**In**	115	482554.7	1.9				ug/L	507261	Standard
	Sn	118	655.0	25.2	**0.0153**	0.029	191.7	ug/L	683	Standard
	Sb	123	1858.9	4.6	**0.4351**	0.013	3.0	ug/L	446	Standard
	Ba	135	1308.4	0.6	**0.7386**	0.014	1.9	ug/L	28	Standard
	Ce	140	8.3	69.3				ug/L	33	Standard
>	**Tb**	159	783468.8	1.6				ug/L	800803	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	676.0	5.5	**0.1197**	0.006	5.2	ug/L	13	Standard
	Tl	205	601.7	15.4	**0.1314**	0.015	11.6	ug/L	13	Standard
	Pb	206	1247.7	7.0	**0.2445**	0.022	8.9	ug/L	226	Standard
	Pb	207	1033.4	4.7	**0.2255**	0.015	6.5	ug/L	204	Standard
	Pb	208	4382.9	3.6	**0.2404**	0.013	5.4	ug/L	852	Standard
	U	238	2536.5	4.5	**0.4179**	0.023	5.6	ug/L	13	Standard
>	**Bi**	209	459865.4	1.7				ug/L	449044	Standard

Sample ID: QC Std 3
Report Date/Time: Wednesday, July 06, 2016 09:29:34
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	10.0	**0.0321**	0.007	21.9	mg/L	58	Standard
K	39	20.0	50.0	**-0.0588**	0.042	70.7	mg/L	27	Standard
Ca	43	26.7	10.8	**0.7405**	0.217	29.3	mg/L	20	Standard
Fe	54	103.7	16.3	**-0.0299**	0.015	49.0	mg/L	158	Standard
Fe	57	241.7	33.6	**0.1616**	0.283	174.8	mg/L	267	Standard
> **Sc-1**	45	37294.2	0.1				mg/L	38815	Standard
Cl	35	54505.2	0.8				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1563.4	7.1				ug/L	1617	Standard
P	31	13631.1	2.5				ug/L	19244	Standard
S	34	3488.7	2.2				ug/L	3557	Standard
Sr	88	75.0	23.1				ug/L	65	Standard
C	12	66.7	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	23	Standard
Dy	164	6.2	193.4				mg/L	13	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1130.0	12.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	117.422		
Al	27	5.237		
Sc	45			
Ti	47			
V	51	99.451		
Cr	52	92.904		
Cr	53			
Mn	55	98.996		
Co	59	105.620		
Ni	60	98.374		
Cu	65	102.028		
Zn	66	102.944		
> Ge	72		100.394	
As	75	104.589		
Se	82	106.246		
Se-1	77			
> Ga	71			

Sample ID: QC Std 3
Report Date/Time: Wednesday, July 06, 2016 09:29:34
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	107.059		
Cd	111	114.057		
Cd	114			
> In	115			95.130
Sn	118			
Sb	123	108.770		
Ba	135	98.481		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	149.655		
Tl	205			
Pb	206			
Pb	207			
Pb	208	120.192		
U	238	104.477		
> Bi	209			102.410
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	
QC Std 3	Tl	203	

Sample ID: QC Std 3
Report Date/Time: Wednesday, July 06, 2016 09:29:34
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, July 06, 2016 09:30:29
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61360.7	2.7				ug/L	68501	Standard
	Be	9	15.0	0.0	**0.0379**	0.000	1.3	ug/L	8	Standard
	Al	27	6080942.0	0.8	**47.8630**	0.940	2.0	ug/L	1397	Standard
	Sc	45	35434.7	2.4				ug/L	38815	Standard
	Ti	47	33819.4	1.1	**108.9282**	1.555	1.4	ug/L	36	Standard
	V	51	1377.9	9.8	**0.0677**	0.022	32.9	ug/L	1284	Standard
	Cr	52	5607.7	0.5	**-0.0525**	0.010	18.8	ug/L	6503	Standard
	Cr	53	2843.6	7.6	**3.1694**	0.297	9.4	ug/L	492	Standard
	Mn	55	2265.8	2.0	**0.3048**	0.005	1.6	ug/L	841	Standard
	Co	59	371.0	7.9	**0.0720**	0.005	7.5	ug/L	229	Standard
	Ni	60	730.4	5.2	**0.3134**	0.028	9.0	ug/L	344	Standard
	Cu	65	524.3	4.8	**0.3256**	0.018	5.6	ug/L	115	Standard
	Zn	66	828.7	1.3	**0.7759**	0.017	2.1	ug/L	190	Standard
>	Ge	72	378975.5	0.8				ug/L	409858	Standard
	As	75	-44.0	48.2	**0.0530**	0.022	41.2	ug/L	-22	Standard
	Se	82	14.2	49.4	**0.0934**	0.070	75.2	ug/L	18	Standard
	Se-1	77	280.7	4.8	**3.6481**	0.177	4.9	ug/L	50	Standard
>	Ga	71	138.3	17.8				mg/L	97	Standard
	Rb	85	721.7	0.8				ug/L	25	Standard
	Y	89	331853.6	3.0				ug/L	376763	Standard
>	Rh	103	13.3	21.7				ug/L	20	Standard
	Mo	98	199402.1	1.4	**89.6813**	1.424	1.6	ug/L	51	Standard
	Ag	107	208.0	7.5	**0.0592**	0.003	4.4	ug/L	76	Standard
	Cd	111	-165.0	5.5	**-0.0508**	0.005	10.6	mg/L	6	Standard
	Cd	114	386.9	16.9	**0.1238**	0.015	11.9	ug/L	18	Standard
>	In	115	468051.7	0.5				ug/L	507261	Standard
	Sn	118	676.7	22.2	**0.0239**	0.030	124.4	ug/L	683	Standard
	Sb	123	1910.7	40.1	**0.4622**	0.193	41.7	ug/L	446	Standard
	Ba	135	45.0	14.6	**0.0414**	0.004	8.9	ug/L	28	Standard
	Ce	140	46.7	22.3				ug/L	33	Standard
>	Tb	159	757530.1	1.7				ug/L	800803	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	92.7	26.0	**0.0459**	0.003	6.8	ug/L	13	Standard
	Tl	205	90.0	49.4	**0.0566**	0.007	12.3	ug/L	13	Standard
	Pb	206	335.3	13.1	**0.0669**	0.009	14.2	ug/L	226	Standard
	Pb	207	277.7	7.6	**0.0636**	0.005	8.5	ug/L	204	Standard
	Pb	208	1135.7	5.8	**0.0662**	0.004	6.7	ug/L	852	Standard
	U	238	21.0	79.3	**0.0459**	0.003	5.8	ug/L	13	Standard
>	Bi	209	432940.1	1.1				ug/L	449044	Standard

Sample ID: QC Std 4
Report Date/Time: Wednesday, July 06, 2016 09:32:46
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**10.8562**	17.008	156.7	mg/L	2	Standard
Mg	24	8482.4	1.3	**12.5439**	0.150	1.2	mg/L	58	Standard
K	39	1155.0	6.5	**4.9086**	0.447	9.1	mg/L	27	Standard
Ca	43	233.3	21.1	**17.2901**	3.698	21.4	mg/L	20	Standard
Fe	54	13645.3	0.6	**12.3970**	0.377	3.0	mg/L	158	Standard
Fe	57	3633.8	2.3	**12.6445**	0.637	5.0	mg/L	267	Standard
> **Sc-1**	45	35434.7	2.4				mg/L	38815	Standard
Cl	35	51675.3	0.7				ug/L	57611	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1330.1	8.5				ug/L	1617	Standard
P	31	6708.2	2.1				ug/L	19244	Standard
S	34	3120.3	1.5				ug/L	3557	Standard
Sr	88	66.7	33.8				ug/L	65	Standard
C	12	96.7	26.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	66.1				mg/L	23	Standard
Dy	164	12.7	119.6				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	5110.9	1.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.957		
Sc	45			
Ti	47	108.928		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.465	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 4
Report Date/Time: Wednesday, July 06, 2016 09:32:46
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	89.681		
Ag	107			
Cd	111			
Cd	114			
> In	115			92.270
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			96.414
Na	23	86.849		
Mg	24	250.878		
K	39	98.171		
Ca	43	115.267		
Fe	54	99.176		
Fe	57	101.156		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Mn	55	
QC Std 4	Sb	123	

Sample ID: QC Std 4
Report Date/Time: Wednesday, July 06, 2016 09:32:46
Page 3

Approved: July 07, 2016

QC Std 4	Tl	203
QC Std 4	Mg	24

Sample ID: QC Std 4
Report Date/Time: Wednesday, July 06, 2016 09:32:46
Page 4

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, July 06, 2016 09:33:40
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64567.3	2.5				ug/L	68501	Standard
	Be	9	91125.1	3.2	**106.5212**	0.809	0.8	ug/L	8	Standard
	Al	27	5841463.6	2.0	**43.6871**	0.390	0.9	ug/L	1397	Standard
	Sc	45	37758.7	1.0				ug/L	38815	Standard
	Ti	47	31558.5	0.9	**93.8751**	2.819	3.0	ug/L	36	Standard
	V	51	722341.4	0.7	**102.3673**	1.700	1.7	ug/L	1284	Standard
	Cr	52	704068.9	1.5	**101.2574**	3.373	3.3	ug/L	6503	Standard
	Cr	53	89332.6	1.3	**103.6555**	3.522	3.4	ug/L	492	Standard
	Mn	55	628105.6	1.2	**102.4937**	2.947	2.9	ug/L	841	Standard
	Co	59	608757.5	0.2	**100.7586**	2.068	2.1	ug/L	229	Standard
	Ni	60	168811.6	0.8	**100.3826**	2.213	2.2	ug/L	344	Standard
	Cu	65	170633.5	1.2	**101.8171**	2.544	2.5	ug/L	115	Standard
	Zn	66	104159.9	1.6	**103.1127**	3.201	3.1	ug/L	190	Standard
>	Ge	72	410487.5	2.1				ug/L	409858	Standard
	As	75	106667.7	1.2	**102.8884**	3.381	3.3	ug/L	-22	Standard
	Se	82	10891.4	0.5	**102.9229**	2.705	2.6	ug/L	18	Standard
	Se-1	77	7297.8	0.3	**105.0915**	2.607	2.5	ug/L	50	Standard
>	Ga	71	166.7	16.5				mg/L	97	Standard
	Rb	85	588.3	10.8				ug/L	25	Standard
	Y	89	358285.2	0.9				ug/L	376763	Standard
>	Rh	103	51.7	34.0				ug/L	20	Standard
	Mo	98	193849.3	1.5	**83.7046**	1.699	2.0	ug/L	51	Standard
	Ag	107	512024.5	0.8	**85.3915**	2.560	3.0	ug/L	76	Standard
	Cd	111	192888.4	1.5	**101.1583**	0.926	0.9	mg/L	6	Standard
	Cd	114	469964.6	2.8	**100.8180**	2.635	2.6	ug/L	18	Standard
>	In	115	487630.1	2.2				ug/L	507261	Standard
	Sn	118	1078.4	11.5	**0.0947**	0.021	22.4	ug/L	683	Standard
	Sb	123	417338.3	2.0	**101.2012**	0.566	0.6	ug/L	446	Standard
	Ba	135	184015.1	1.0	**100.6250**	1.956	1.9	ug/L	28	Standard
	Ce	140	75.0	30.6				ug/L	33	Standard
>	Tb	159	776420.3	0.7				ug/L	800803	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	765644.3	1.1	**101.4362**	1.960	1.9	ug/L	13	Standard
	Tl	205	667667.3	1.5	**102.1249**	0.931	0.9	ug/L	13	Standard
	Pb	206	500852.9	0.2	**103.3724**	0.899	0.9	ug/L	226	Standard
	Pb	207	436808.9	0.8	**99.2777**	1.432	1.4	ug/L	204	Standard
	Pb	208	1811126.3	0.8	**102.9331**	1.386	1.3	ug/L	852	Standard
	U	238	659589.2	0.9	**101.1936**	1.228	1.2	ug/L	13	Standard
>	Bi	209	443371.5	0.9				ug/L	449044	Standard

Sample ID: QC Std 5
Report Date/Time: Wednesday, July 06, 2016 09:35:57
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**10.0106**	16.275	162.6	mg/L	2	Standard
Mg	24	7865.4	1.0	**10.9091**	0.136	1.2	mg/L	58	Standard
K	39	1000.0	5.3	**3.9554**	0.187	4.7	mg/L	27	Standard
Ca	43	148.3	19.5	**9.8082**	2.124	21.7	mg/L	20	Standard
Fe	54	12345.4	1.8	**10.5037**	0.262	2.5	mg/L	158	Standard
Fe	57	3278.7	4.2	**10.5976**	0.579	5.5	mg/L	267	Standard
Sc-1	45	37758.7	1.0				mg/L	38815	Standard
Cl	35	56009.4	2.9				ug/L	57611	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	1560.1	10.6				ug/L	1617	Standard
P	31	17989.0	3.4				ug/L	19244	Standard
S	34	3142.0	3.8				ug/L	3557	Standard
Sr	88	61.7	30.7				ug/L	65	Standard
C	12	113.3	28.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0					mg/L	23	Standard
Dy	164	16.2	33.1				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	8464.0	3.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.521		
Al	27	0.874		
Sc	45			
Ti	47	93.875		
V	51	102.367		
Cr	52	101.257		
Cr	53			
Mn	55	102.494		
Co	59	100.759		
Ni	60	100.383		
Cu	65	101.817		
Zn	66	103.113		
Ge	72		100.154	
As	75	102.888		
Se	82	102.923		
Se-1	77			
Ga	71			

Sample ID: QC Std 5
Report Date/Time: Wednesday, July 06, 2016 09:35:57
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	83.705		
Ag	107	85.392		
Cd	111	101.158		
Cd	114			
In	115		96.130	
Sn	118			
Sb	123	101.201		
Ba	135	100.625		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.436		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.933		
U	238	101.194		
Bi	209		98.737	
Na	23	80.085		
Mg	24	218.182		
K	39	79.108		
Ca	43	65.388		
Fe	54	84.030		
Fe	57	84.781		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
Report Date/Time: Wednesday, July 06, 2016 09:35:57
Page 3

Approved: July 07, 2016

QC Std 5	K	39
QC Std 5	Ca	43

Sample ID: QC Std 5
Report Date/Time: Wednesday, July 06, 2016 09:35:57
Page 4

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 09:36:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66505.7	2.0				ug/L	68501	Standard
	Be	9	44953.3	3.2	**51.0275**	0.926	1.8	ug/L	8	Standard
	Al	27	6996524.9	1.6	**50.7955**	0.749	1.5	ug/L	1397	Standard
	Sc	45	38022.7	1.7				ug/L	38815	Standard
	Ti	47	33782.0	1.4	**100.5626**	2.963	2.9	ug/L	36	Standard
	V	51	357671.8	0.9	**50.6587**	1.245	2.5	ug/L	1284	Standard
	Cr	52	354246.5	1.3	**50.5178**	1.460	2.9	ug/L	6503	Standard
	Cr	53	43226.6	2.1	**49.9696**	1.458	2.9	ug/L	492	Standard
	Mn	55	314552.6	0.4	**51.3140**	0.983	1.9	ug/L	841	Standard
	Co	59	307541.5	1.8	**50.9392**	1.094	2.1	ug/L	229	Standard
	Ni	60	84538.5	1.1	**50.2327**	1.339	2.7	ug/L	344	Standard
	Cu	65	84460.4	0.1	**50.4258**	0.835	1.7	ug/L	115	Standard
	Zn	66	51209.1	0.6	**50.6642**	0.504	1.0	ug/L	190	Standard
>	Ge	72	410145.3	1.6				ug/L	409858	Standard
	As	75	52298.5	0.3	**50.5211**	0.645	1.3	ug/L	-22	Standard
	Se	82	5387.6	0.7	**50.9166**	0.695	1.4	ug/L	18	Standard
	Se-1	77	3526.4	1.5	**50.4307**	1.547	3.1	ug/L	50	Standard
>	Ga	71	90.0	9.6				mg/L	97	Standard
	Rb	85	696.7	6.5				ug/L	25	Standard
	Y	89	365798.1	0.7				ug/L	376763	Standard
>	Rh	103	33.3	48.2				ug/L	20	Standard
	Mo	98	235366.3	0.5	**98.5044**	2.325	2.4	ug/L	51	Standard
	Ag	107	305020.7	0.3	**49.3129**	1.388	2.8	ug/L	76	Standard
	Cd	111	97013.5	1.7	**49.3321**	0.528	1.1	mg/L	6	Standard
	Cd	114	235858.1	1.3	**49.0627**	0.748	1.5	ug/L	18	Standard
>	In	115	503155.0	2.8				ug/L	507261	Standard
	Sn	118	267872.4	1.1	**49.2399**	0.827	1.7	ug/L	683	Standard
	Sb	123	217573.7	0.6	**51.1402**	1.098	2.1	ug/L	446	Standard
	Ba	135	92365.7	1.0	**48.9616**	0.896	1.8	ug/L	28	Standard
	Ce	140	65.0	48.0				ug/L	33	Standard
>	Tb	159	792588.9	2.6				ug/L	800803	Standard
	Ho	165	10.0					ug/L	10	Standard
	Tl	203	384594.0	0.3	**50.4727**	0.329	0.7	ug/L	13	Standard
	Tl	205	336187.3	0.9	**50.9472**	0.055	0.1	ug/L	13	Standard
	Pb	206	247875.6	0.9	**50.6606**	0.314	0.6	ug/L	226	Standard
	Pb	207	224269.3	0.7	**50.4752**	0.242	0.5	ug/L	204	Standard
	Pb	208	908021.7	0.7	**51.1061**	0.556	1.1	ug/L	852	Standard
	U	238	333822.0	1.2	**50.7390**	0.560	1.1	ug/L	13	Standard
>	Bi	209	447704.5	0.9				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 09:39:10
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3780.5	3.8	**5.1881**	0.227	4.4	mg/L	58	Standard
K	39	1228.4	12.1	**4.8519**	0.530	10.9	mg/L	27	Standard
Ca	43	108.3	37.3	**6.7544**	2.939	43.5	mg/L	20	Standard
Fe	54	5918.1	5.4	**4.9348**	0.198	4.0	mg/L	158	Standard
Fe	57	1796.8	5.7	**5.4534**	0.272	5.0	mg/L	267	Standard
> **Sc-1**	45	38022.7	1.7				mg/L	38815	Standard
Cl	35	56907.4	1.6				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1520.1	14.0				ug/L	1617	Standard
P	31	19652.7	3.0				ug/L	19244	Standard
S	34	3582.1	6.2				ug/L	3557	Standard
Sr	88	58.3	35.7				ug/L	65	Standard
C	12	83.3	48.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	2.5	222.5				mg/L	13	Standard
Ho-1	165	10.0					mg/L	10	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	16659.2	0.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.055		
Al	27	101.591		
Sc	45			
Ti	47	100.563		
V	51	101.317		
Cr	52	101.036		
Cr	53			
Mn	55	102.628		
Co	59	101.878		
Ni	60	100.465		
Cu	65	100.852		
Zn	66	101.328		
> Ge	72		100.070	
As	75	101.042		
Se	82	101.833		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 09:39:10
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.504		
Ag	107	98.626		
Cd	111	98.664		
Cd	114			
In	115			99.191
Sn	118	98.480		
Sb	123	102.280		
Ba	135	97.923		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.945		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.212		
U	238	101.478		
Bi	209			99.702
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 09:39:10
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 09:40:05
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66617.8	0.8				ug/L	68501	Standard
	Be	9	33.3	74.0	**0.0573**	0.028	48.9	ug/L	8	Standard
	Al	27	2161.8	25.3	**0.0507**	0.004	7.7	ug/L	1397	Standard
	Sc	45	38288.3	3.0				ug/L	38815	Standard
	Ti	47	35.7	16.4	**0.0742**	0.017	23.1	ug/L	36	Standard
	V	51	1261.9	1.4	**0.0280**	0.003	9.9	ug/L	1284	Standard
	Cr	52	6321.3	1.3	**-0.0523**	0.014	26.2	ug/L	6503	Standard
	Cr	53	518.3	8.0	**0.1616**	0.049	30.1	ug/L	492	Standard
	Mn	55	1281.1	5.7	**0.1051**	0.012	11.5	ug/L	841	Standard
	Co	59	281.7	13.9	**0.0503**	0.006	12.7	ug/L	229	Standard
	Ni	60	349.7	5.0	**0.0424**	0.011	25.7	ug/L	344	Standard
	Cu	65	134.3	2.3	**0.0637**	0.001	2.3	ug/L	115	Standard
	Zn	66	339.7	5.5	**0.2101**	0.019	9.0	ug/L	190	Standard
>	**Ge**	72	427105.9	0.4				ug/L	409858	Standard
	As	75	-33.1	67.2	**0.0683**	0.021	30.1	ug/L	-22	Standard
	Se	82	22.7	11.6	**0.1545**	0.025	15.9	ug/L	18	Standard
	Se-1	77	55.0	19.7	**0.0077**	0.152	1983.6	ug/L	50	Standard
>	**Ga**	71	78.3	13.3				mg/L	97	Standard
	Rb	85	18.3	103.3				ug/L	25	Standard
	Y	89	350460.3	0.9				ug/L	376763	Standard
>	**Rh**	103	20.0	50.0				ug/L	20	Standard
	Mo	98	275.0	5.1	**0.1892**	0.006	3.3	ug/L	51	Standard
	Ag	107	134.3	23.5	**0.0453**	0.005	11.8	ug/L	76	Standard
	Cd	111	12.2	37.2	**0.0457**	0.002	5.3	mg/L	6	Standard
	Cd	114	38.5	33.1	**0.0456**	0.003	6.2	ug/L	18	Standard
>	**In**	115	491789.1	1.5				ug/L	507261	Standard
	Sn	118	988.4	21.5	**0.0758**	0.037	48.9	ug/L	683	Standard
	Sb	123	1592.3	35.2	**0.3614**	0.130	35.9	ug/L	446	Standard
	Ba	135	53.3	21.9	**0.0447**	0.007	15.0	ug/L	28	Standard
	Ce	140	16.7	62.4				ug/L	33	Standard
>	**Tb**	159	781565.5	1.5				ug/L	800803	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	98.7	20.5	**0.0461**	0.003	6.2	ug/L	13	Standard
	Tl	205	86.7	8.8	**0.0554**	0.001	2.4	ug/L	13	Standard
	Pb	206	292.7	16.7	**0.0548**	0.011	19.9	ug/L	226	Standard
	Pb	207	246.3	10.8	**0.0535**	0.007	12.6	ug/L	204	Standard
	Pb	208	1017.0	10.2	**0.0564**	0.007	11.9	ug/L	852	Standard
	U	238	61.7	31.6	**0.0519**	0.003	6.0	ug/L	13	Standard
>	**Bi**	209	455909.4	1.7				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 09:42:22
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	17.3	**0.0301**	0.010	32.4	mg/L	58	Standard
K	39	36.7	34.3	**0.0056**	0.047	830.8	mg/L	27	Standard
Ca	43	26.7	21.7	**0.6975**	0.476	68.2	mg/L	20	Standard
Fe	54	127.9	32.7	**-0.0110**	0.038	345.5	mg/L	158	Standard
Fe	57	243.3	9.7	**0.1461**	0.086	58.8	mg/L	267	Standard
Sc-1	45	38288.3	3.0				mg/L	38815	Standard
Cl	35	57568.5	0.3				ug/L	57611	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1590.1	4.4				ug/L	1617	Standard
P	31	19429.1	3.6				ug/L	19244	Standard
S	34	3620.4	4.4				ug/L	3557	Standard
Sr	88	75.0	29.1				ug/L	65	Standard
C	12	53.3	65.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	3.2	186.4				mg/L	13	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	9119.4	0.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.208	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 09:42:22
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.950
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.529
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 09:42:22
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: PBW M1 WG574195-02
Sample Date/Time: Wednesday, July 06, 2016 09:43:17
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67511.8	3.1				ug/L	68501	Standard
	Be	9	25.0	34.6	**0.0476**	0.010	21.9	ug/L	8	Standard
	Al	27	5334.3	10.5	**0.0732**	0.004	5.8	ug/L	1397	Standard
	Sc	45	39065.3	1.5				ug/L	38815	Standard
	Ti	47	49.7	15.4	**0.1167**	0.022	18.5	ug/L	36	Standard
	V	51	1253.3	6.8	**0.0300**	0.013	44.6	ug/L	1284	Standard
	Cr	52	6631.5	2.9	**0.0081**	0.037	458.1	ug/L	6503	Standard
	Cr	53	545.0	6.4	**0.2024**	0.035	17.4	ug/L	492	Standard
	Mn	55	1151.7	3.0	**0.0881**	0.004	4.1	ug/L	841	Standard
	Co	59	268.0	15.0	**0.0489**	0.006	13.0	ug/L	229	Standard
	Ni	60	392.3	2.3	**0.0709**	0.007	9.6	ug/L	344	Standard
	Cu	65	185.3	9.7	**0.0949**	0.010	10.2	ug/L	115	Standard
	Zn	66	1260.4	3.9	**1.1090**	0.058	5.3	ug/L	190	Standard
>	**Ge**	72	419416.9	1.1				ug/L	409858	Standard
	As	75	-28.0	41.9	**0.0725**	0.011	14.9	ug/L	-22	Standard
	Se	82	14.4	17.6	**0.0816**	0.025	30.3	ug/L	18	Standard
	Se-1	77	63.0	6.3	**0.1348**	0.050	36.9	ug/L	50	Standard
>	**Ga**	71	83.3	12.5				mg/L	97	Standard
	Rb	85	50.0	26.5				ug/L	25	Standard
	Y	89	366616.6	3.0				ug/L	376763	Standard
>	**Rh**	103	25.0	0.0				ug/L	20	Standard
	Mo	98	259.4	6.9	**0.1805**	0.007	3.8	ug/L	51	Standard
	Ag	107	900.4	144.5	**0.1721**	0.216	125.8	ug/L	76	Standard
	Cd	111	19.2	57.3	**0.0491**	0.005	11.1	mg/L	6	Standard
	Cd	114	41.4	108.1	**0.0459**	0.009	20.2	ug/L	18	Standard
>	**In**	115	500661.9	2.1				ug/L	507261	Standard
	Sn	118	693.3	21.9	**0.0183**	0.028	154.4	ug/L	683	Standard
	Sb	123	868.0	28.9	**0.1846**	0.059	31.7	ug/L	446	Standard
	Ba	135	81.7	11.6	**0.0592**	0.004	7.1	ug/L	28	Standard
	Ce	140	48.3	31.6				ug/L	33	Standard
>	**Tb**	159	787550.5	1.0				ug/L	800803	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	87.3	46.5	**0.0445**	0.005	11.5	ug/L	13	Standard
	Tl	205	70.0	57.1	**0.0529**	0.006	11.1	ug/L	13	Standard
	Pb	206	294.0	2.6	**0.0548**	0.001	2.1	ug/L	226	Standard
	Pb	207	248.3	8.8	**0.0536**	0.004	8.3	ug/L	204	Standard
	Pb	208	1043.0	5.5	**0.0576**	0.003	5.1	ug/L	852	Standard
	U	238	64.3	49.6	**0.0522**	0.005	9.0	ug/L	13	Standard
>	**Bi**	209	457274.9	0.7				ug/L	449044	Standard

Sample ID: PBW M1 WG574195-02
Report Date/Time: Wednesday, July 06, 2016 09:45:34
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	54.3	**0.0135**	0.029	211.6	mg/L	58	Standard
K	39	30.0	28.9	**-0.0233**	0.032	138.1	mg/L	27	Standard
Ca	43	26.7	28.6	**0.6510**	0.565	86.9	mg/L	20	Standard
Fe	54	144.3	12.0	**-0.0003**	0.012	4299.2	mg/L	158	Standard
Fe	57	236.7	16.4	**0.1078**	0.137	126.8	mg/L	267	Standard
> **Sc-1**	45	39065.3	1.5				mg/L	38815	Standard
Cl	35	56649.7	2.0				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1773.4	8.5				ug/L	1617	Standard
P	31	19510.9	3.7				ug/L	19244	Standard
S	34	3373.7	3.5				ug/L	3557	Standard
Sr	88	70.0	37.8				ug/L	65	Standard
C	12	56.7	79.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	-0.5	173.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	13	Standard
I	127	1906.8	8.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.556	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.332	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW M1 WG574195-02
Report Date/Time: Wednesday, July 06, 2016 09:45:34
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.699
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.833
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW M1 WG574195-02
Report Date/Time: Wednesday, July 06, 2016 09:45:34
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: LCSW M1 WG574195-03
Sample Date/Time: Wednesday, July 06, 2016 09:46:29
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68496.1	0.5				ug/L	68501	Standard
	Be	9	24005.7	1.0	**26.4702**	0.318	1.2	ug/L	8	Standard
	Al	27	5384.3	9.0	**0.0730**	0.004	4.9	ug/L	1397	Standard
	Sc	45	39459.6	0.3				ug/L	38815	Standard
	Ti	47	44.3	22.8	**0.0982**	0.029	29.9	ug/L	36	Standard
	V	51	191587.8	2.1	**25.8119**	0.349	1.4	ug/L	1284	Standard
	Cr	52	195533.7	0.9	**26.1567**	0.385	1.5	ug/L	6503	Standard
	Cr	53	23463.2	1.3	**25.6742**	0.534	2.1	ug/L	492	Standard
	Mn	55	166985.2	1.0	**25.9384**	0.101	0.4	ug/L	841	Standard
	Co	59	161701.1	1.7	**25.5536**	0.326	1.3	ug/L	229	Standard
	Ni	60	46464.5	0.6	**26.2616**	0.311	1.2	ug/L	344	Standard
	Cu	65	46697.9	0.8	**26.5916**	0.321	1.2	ug/L	115	Standard
	Zn	66	30683.7	0.6	**28.9142**	0.287	1.0	ug/L	190	Standard
>	**Ge**	72	429866.2	0.7				ug/L	409858	Standard
	As	75	28274.1	0.3	**26.1056**	0.217	0.8	ug/L	-22	Standard
	Se	82	2809.8	1.6	**25.3083**	0.494	2.0	ug/L	18	Standard
	Se-1	77	1919.8	1.7	**25.8234**	0.529	2.0	ug/L	50	Standard
>	**Ga**	71	70.0	14.3				mg/L	97	Standard
	Rb	85	66.7	28.4				ug/L	25	Standard
	Y	89	355323.3	0.9				ug/L	376763	Standard
>	**Rh**	103	16.7	17.3				ug/L	20	Standard
	Mo	98	139.0	24.6	**0.1292**	0.014	10.9	ug/L	51	Standard
	Ag	107	166696.7	0.8	**26.7524**	0.342	1.3	ug/L	76	Standard
	Cd	111	50998.1	0.5	**25.7594**	0.240	0.9	mg/L	6	Standard
	Cd	114	124785.9	0.5	**25.7810**	0.268	1.0	ug/L	18	Standard
>	**In**	115	506853.5	1.3				ug/L	507261	Standard
	Sn	118	908.4	17.6	**0.0558**	0.028	49.9	ug/L	683	Standard
	Sb	123	116535.5	0.8	**27.1742**	0.404	1.5	ug/L	446	Standard
	Ba	135	49242.6	0.4	**25.9131**	0.241	0.9	ug/L	28	Standard
	Ce	140	70.0	56.7				ug/L	33	Standard
>	**Tb**	159	811640.4	1.1				ug/L	800803	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	206095.2	0.4	**25.6991**	0.189	0.7	ug/L	13	Standard
	Tl	205	179392.4	0.6	**25.8371**	0.331	1.3	ug/L	13	Standard
	Pb	206	136480.6	0.7	**26.4857**	0.287	1.1	ug/L	226	Standard
	Pb	207	117386.7	1.1	**25.0888**	0.493	2.0	ug/L	204	Standard
	Pb	208	482062.4	0.4	**25.7636**	0.312	1.2	ug/L	852	Standard
	U	238	172135.6	0.5	**24.8666**	0.302	1.2	ug/L	13	Standard
>	**Bi**	209	471496.3	1.1				ug/L	449044	Standard

Sample ID: LCSW M1 WG574195-03
Report Date/Time: Wednesday, July 06, 2016 09:48:46
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.1364**	15.448	11323.2	mg/L	2	Standard
Mg	24	50.0	43.6	**0.0282**	0.029	102.6	mg/L	58	Standard
K	39	30.0	33.3	**-0.0243**	0.039	160.8	mg/L	27	Standard
Ca	43	30.0	57.7	**0.8667**	1.233	142.3	mg/L	20	Standard
Fe	54	161.8	19.7	**0.0131**	0.027	202.7	mg/L	158	Standard
Fe	57	228.3	11.2	**0.0717**	0.085	118.9	mg/L	267	Standard
Sc-1	45	39459.6	0.3				mg/L	38815	Standard
Cl	35	56892.0	1.3				ug/L	57611	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1570.1	5.4				ug/L	1617	Standard
P	31	19504.2	1.8				ug/L	19244	Standard
S	34	3253.7	4.3				ug/L	3557	Standard
Sr	88	65.0	7.7				ug/L	65	Standard
C	12	66.7	45.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	137.8				mg/L	23	Standard
Dy	164	6.0	187.0				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	973.4	5.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.993	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.882	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW M1 WG574195-03
Report Date/Time: Wednesday, July 06, 2016 09:48:46
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.920
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.000
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW M1 WG574195-03
Report Date/Time: Wednesday, July 06, 2016 09:48:46
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129411 WG574195-01
Sample Date/Time: Wednesday, July 06, 2016 09:49:40
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72468.0	2.9				ug/L	68501	Standard
	Be	9	838.4	11.5	**0.8913**	0.077	8.6	ug/L	8	Standard
	Al	27	24118733.2	0.5	**160.6931**	4.688	2.9	ug/L	1397	Standard
	Sc	45	45896.2	4.1				ug/L	38815	Standard
	Ti	47	6542.7	1.3	**19.5752**	0.441	2.3	ug/L	36	Standard
	V	51	189622.3	0.5	**26.9564**	0.349	1.3	ug/L	1284	Standard
	Cr	52	105498.7	1.5	**14.4822**	0.146	1.0	ug/L	6503	Standard
	Cr	53	12621.9	2.1	**14.3841**	0.164	1.1	ug/L	492	Standard
	Mn	55	8444960.4	0.5	**1388.7517**	15.304	1.1	ug/L	841	Standard
	Co	59	76520.1	1.2	**12.7587**	0.215	1.7	ug/L	229	Standard
	Ni	60	41268.1	1.0	**24.5928**	0.389	1.6	ug/L	344	Standard
	Cu	65	22723.7	0.6	**13.6423**	0.169	1.2	ug/L	115	Standard
	Zn	66	39079.3	1.2	**38.8816**	0.541	1.4	ug/L	190	Standard
>	**Ge**	72	407547.5	1.1				ug/L	409858	Standard
	As	75	6744.2	1.2	**6.6419**	0.070	1.0	ug/L	-22	Standard
	Se	82	53.4	3.9	**0.4571**	0.019	4.2	ug/L	18	Standard
	Se-1	77	106.0	7.7	**0.7900**	0.135	17.1	ug/L	50	Standard
>	**Ga**	71	14186.6	1.1				mg/L	97	Standard
	Rb	85	143686.7	2.5				ug/L	25	Standard
	Y	89	592181.2	0.9				ug/L	376763	Standard
>	**Rh**	103	50.0	34.6				ug/L	20	Standard
	Mo	98	1134.4	17.7	**0.5416**	0.081	14.9	ug/L	51	Standard
	Ag	107	444.0	11.5	**0.0942**	0.008	8.1	ug/L	76	Standard
	Cd	111	281.0	4.9	**0.1809**	0.006	3.1	mg/L	6	Standard
	Cd	114	665.5	15.8	**0.1745**	0.021	12.1	ug/L	18	Standard
>	**In**	115	507307.4	1.0				ug/L	507261	Standard
	Sn	118	603.3	23.2	**0.0003**	0.027	9117.7	ug/L	683	Standard
	Sb	123	1266.0	41.2	**0.2753**	0.124	44.9	ug/L	446	Standard
	Ba	135	622999.9	1.6	**327.3489**	4.840	1.5	ug/L	28	Standard
	Ce	140	1075128.4	1.0				ug/L	33	Standard
>	**Tb**	159	829871.9	0.8				ug/L	800803	Standard
	Ho	165	19584.3	1.4				ug/L	10	Standard
	Tl	203	1193.7	2.0	**0.1895**	0.005	2.8	ug/L	13	Standard
	Tl	205	1121.7	20.4	**0.2119**	0.035	16.3	ug/L	13	Standard
	Pb	206	53355.4	0.7	**10.8718**	0.172	1.6	ug/L	226	Standard
	Pb	207	43593.3	0.4	**9.7833**	0.118	1.2	ug/L	204	Standard
	Pb	208	186716.4	1.0	**10.4802**	0.205	2.0	ug/L	852	Standard
	U	238	6176.3	2.7	**0.9782**	0.035	3.6	ug/L	13	Standard
>	**Bi**	209	448991.8	1.5				ug/L	449044	Standard

Sample ID: L1606129411 WG574195-01
Report Date/Time: Wednesday, July 06, 2016 09:51:57
Page 1

Approved: July 07, 2016

Na	23	8.3	69.3	**29.4738**	26.013	88.3	mg/L	2	Standard
Mg	24	170.0	5.9	**0.1564**	0.012	7.9	mg/L	58	Standard
K	39	311.7	6.7	**0.9085**	0.040	4.4	mg/L	27	Standard
Ca	43	735.0	13.0	**44.1374**	7.681	17.4	mg/L	20	Standard
Fe	54	16726.8	2.4	**11.7320**	0.498	4.2	mg/L	158	Standard
Fe	57	4742.4	1.4	**12.7487**	0.502	3.9	mg/L	267	Standard
> **Sc-1**	45	45896.2	4.1				mg/L	38815	Standard
Cl	35	60129.7	0.7				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	2350.2	1.5				ug/L	1617	Standard
P	31	19891.4	3.5				ug/L	19244	Standard
S	34	3662.1	0.8				ug/L	3557	Standard
Sr	88	230.0	11.3				ug/L	65	Standard
C	12	83.3	18.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	23	Standard
Dy	164	32118.6	3.8				mg/L	13	Standard
Ho-1	165	19584.3	1.4				mg/L	10	Standard
Er	166	17687.0	1.6				mg/L	13	Standard
I	127	33436.9	4.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.436	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129411 WG574195-01
Report Date/Time: Wednesday, July 06, 2016 09:51:57
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.009
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.988
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129412S WG574195-04
Sample Date/Time: Wednesday, July 06, 2016 09:52:52
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71379.5	2.4				ug/L	68501	Standard
	Be	9	24005.7	2.5	**25.4053**	0.572	2.3	ug/L	8	Standard
	Al	27	24844186.7	1.3	**167.9938**	2.966	1.8	ug/L	1397	Standard
	Sc	45	44933.2	1.9				ug/L	38815	Standard
	Ti	47	8623.8	2.1	**25.2583**	0.810	3.2	ug/L	36	Standard
	V	51	337850.6	1.6	**47.1062**	1.004	2.1	ug/L	1284	Standard
	Cr	52	288250.4	0.4	**40.2878**	0.627	1.6	ug/L	6503	Standard
	Cr	53	35092.3	2.3	**39.8625**	1.183	3.0	ug/L	492	Standard
	Mn	55	4458345.0	1.2	**717.4502**	15.793	2.2	ug/L	841	Standard
	Co	59	218275.5	1.1	**35.6060**	0.740	2.1	ug/L	229	Standard
	Ni	60	81696.3	0.6	**47.7891**	0.713	1.5	ug/L	344	Standard
	Cu	65	61917.9	0.2	**36.3980**	0.465	1.3	ug/L	115	Standard
	Zn	66	66485.2	0.4	**64.8054**	0.538	0.8	ug/L	190	Standard
>	**Ge**	72	416485.7	1.2				ug/L	409858	Standard
	As	75	29163.0	0.5	**27.7871**	0.422	1.5	ug/L	-22	Standard
	Se	82	2062.4	4.0	**19.1665**	0.962	5.0	ug/L	18	Standard
	Se-1	77	1420.7	4.7	**19.5403**	0.802	4.1	ug/L	50	Standard
>	**Ga**	71	16622.5	3.9				mg/L	97	Standard
	Rb	85	157231.7	1.2				ug/L	25	Standard
	Y	89	556704.4	1.6				ug/L	376763	Standard
>	**Rh**	103	53.3	19.5				ug/L	20	Standard
	Mo	98	5295.4	1.7	**2.3233**	0.055	2.4	ug/L	51	Standard
	Ag	107	149191.9	0.4	**24.5321**	0.145	0.6	ug/L	76	Standard
	Cd	111	48845.6	0.7	**25.2776**	0.073	0.3	mg/L	6	Standard
	Cd	114	119846.2	1.3	**25.3672**	0.198	0.8	ug/L	18	Standard
>	**In**	115	494691.5	0.7				ug/L	507261	Standard
	Sn	118	601.7	29.0	**0.0027**	0.033	1216.4	ug/L	683	Standard
	Sb	123	4145.4	11.6	**0.9712**	0.122	12.5	ug/L	446	Standard
	Ba	135	534743.0	0.7	**288.1358**	0.094	0.0	ug/L	28	Standard
	Ce	140	1105320.7	0.5				ug/L	33	Standard
>	**Tb**	159	810154.6	1.3				ug/L	800803	Standard
	Ho	165	17460.1	1.2				ug/L	10	Standard
	Tl	203	187358.6	0.3	**24.9354**	0.231	0.9	ug/L	13	Standard
	Tl	205	164522.0	1.9	**25.2874**	0.349	1.4	ug/L	13	Standard
	Pb	206	172133.7	1.2	**35.6536**	0.610	1.7	ug/L	226	Standard
	Pb	207	147229.9	0.8	**33.5805**	0.218	0.6	ug/L	204	Standard
	Pb	208	622593.9	0.8	**35.5101**	0.117	0.3	ug/L	852	Standard
	U	238	167263.3	1.4	**25.7841**	0.204	0.8	ug/L	13	Standard
>	**Bi**	209	441779.8	1.0				ug/L	449044	Standard

Sample ID: L1606129412S WG574195-04
Report Date/Time: Wednesday, July 06, 2016 09:55:09
Page 1

Approved: July 07, 2016

Na	23	6.7	114.6	**23.0095**	36.857	160.2	mg/L	2	Standard
Mg	24	140.0	25.0	**0.1259**	0.044	35.0	mg/L	58	Standard
K	39	343.3	8.8	**1.0395**	0.083	8.0	mg/L	27	Standard
Ca	43	513.3	4.8	**30.9870**	1.755	5.7	mg/L	20	Standard
Fe	54	16123.8	3.0	**11.5373**	0.198	1.7	mg/L	158	Standard
Fe	57	4545.7	4.6	**12.4590**	0.686	5.5	mg/L	267	Standard
Sc-1	45	44933.2	1.9				mg/L	38815	Standard
Cl	35	59329.3	1.7				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2126.8	3.8				ug/L	1617	Standard
P	31	19344.0	2.4				ug/L	19244	Standard
S	34	3730.5	4.4				ug/L	3557	Standard
Sr	88	158.3	22.2				ug/L	65	Standard
C	12	136.7	23.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	29079.7	2.5				mg/L	13	Standard
Ho-1	165	17460.1	1.2				mg/L	10	Standard
Er	166	15441.2	1.2				mg/L	13	Standard
I	127	29974.6	0.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.202	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.617	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129412S WG574195-04
Report Date/Time: Wednesday, July 06, 2016 09:55:09
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.522
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.382
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129412S WG574195-04
Report Date/Time: Wednesday, July 06, 2016 09:55:09
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129413SD WG574195-05
Sample Date/Time: Wednesday, July 06, 2016 09:56:03
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72831.3	1.3				ug/L	68501	Standard
	Be	9	23353.0	2.6	**24.2164**	0.331	1.4	ug/L	8	Standard
	Al	27	26299464.7	0.5	**174.2675**	2.567	1.5	ug/L	1397	Standard
	Sc	45	46263.9	3.4				ug/L	38815	Standard
	Ti	47	9118.4	0.8	**26.3638**	0.080	0.3	ug/L	36	Standard
	V	51	363027.1	1.3	**49.9784**	0.413	0.8	ug/L	1284	Standard
	Cr	52	308874.7	0.7	**42.6748**	0.454	1.1	ug/L	6503	Standard
	Cr	53	37989.2	0.7	**42.6306**	0.345	0.8	ug/L	492	Standard
	Mn	55	3682118.5	0.5	**584.9336**	0.933	0.2	ug/L	841	Standard
	Co	59	209516.8	1.3	**33.7396**	0.279	0.8	ug/L	229	Standard
	Ni	60	82810.7	0.2	**47.8243**	0.234	0.5	ug/L	344	Standard
	Cu	65	66683.1	0.2	**38.7015**	0.257	0.7	ug/L	115	Standard
	Zn	66	72946.5	0.3	**70.2106**	0.380	0.5	ug/L	190	Standard
>	Ge	72	421818.9	0.5				ug/L	409858	Standard
	As	75	30008.5	1.5	**28.2255**	0.275	1.0	ug/L	-22	Standard
	Se	82	1989.7	3.1	**18.2473**	0.473	2.6	ug/L	18	Standard
	Se-1	77	1346.7	2.1	**18.2444**	0.457	2.5	ug/L	50	Standard
>	Ga	71	18431.2	0.1				mg/L	97	Standard
	Rb	85	169978.4	2.0				ug/L	25	Standard
	Y	89	579521.5	2.2				ug/L	376763	Standard
>	Rh	103	53.3	30.1				ug/L	20	Standard
	Mo	98	5343.2	0.9	**2.3481**	0.025	1.1	ug/L	51	Standard
	Ag	107	148415.0	0.2	**24.4547**	0.081	0.3	ug/L	76	Standard
	Cd	111	48146.0	0.3	**24.9682**	0.161	0.6	mg/L	6	Standard
	Cd	114	116774.8	0.1	**24.7701**	0.107	0.4	ug/L	18	Standard
>	In	115	493665.2	0.5				ug/L	507261	Standard
	Sn	118	630.0	13.5	**0.0081**	0.015	190.3	ug/L	683	Standard
	Sb	123	4401.6	9.3	**1.0338**	0.094	9.1	ug/L	446	Standard
	Ba	135	582527.1	0.9	**314.5430**	3.725	1.2	ug/L	28	Standard
	Ce	140	1171295.4	1.5				ug/L	33	Standard
>	Tb	159	825665.3	1.1				ug/L	800803	Standard
	Ho	165	18960.2	1.2				ug/L	10	Standard
	Tl	203	184321.0	0.4	**24.0012**	0.378	1.6	ug/L	13	Standard
	Tl	205	159170.0	0.3	**23.9407**	0.483	2.0	ug/L	13	Standard
	Pb	206	178149.6	0.4	**36.1008**	0.654	1.8	ug/L	226	Standard
	Pb	207	151969.3	0.3	**33.9143**	0.708	2.1	ug/L	204	Standard
	Pb	208	627878.2	0.8	**35.0419**	0.898	2.6	ug/L	852	Standard
	U	238	164029.8	0.8	**24.7449**	0.648	2.6	ug/L	13	Standard
>	Bi	209	451616.5	1.8				ug/L	449044	Standard

Sample ID: L1606129413SD WG574195-05
Report Date/Time: Wednesday, July 06, 2016 09:58:20
Page 1

Approved: July 07, 2016

Na	23	8.3	124.9	**28.5858**	46.635	163.1	mg/L	2	Standard
Mg	24	161.7	18.9	**0.1448**	0.030	20.8	mg/L	58	Standard
K	39	418.3	11.1	**1.2557**	0.123	9.8	mg/L	27	Standard
Ca	43	583.3	6.4	**34.3754**	3.109	9.0	mg/L	20	Standard
Fe	54	18610.4	2.0	**12.9636**	0.665	5.1	mg/L	158	Standard
Fe	57	4875.8	3.0	**13.0227**	0.874	6.7	mg/L	267	Standard
> **Sc-1**	45	46263.9	3.4				mg/L	38815	Standard
Cl	35	57891.1	0.8				ug/L	57611	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	3103.7	7.4				ug/L	1617	Standard
P	31	19415.8	3.3				ug/L	19244	Standard
S	34	3603.8	4.8				ug/L	3557	Standard
Sr	88	181.7	16.8				ug/L	65	Standard
C	12	60.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	23	Standard
Dy	164	31854.1	2.7				mg/L	13	Standard
Ho-1	165	18960.2	1.2				mg/L	10	Standard
Er	166	17002.9	2.9				mg/L	13	Standard
I	127	35720.4	1.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.321	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.918	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129413SD WG574195-05
Report Date/Time: Wednesday, July 06, 2016 09:58:20
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.320
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.573
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129413SD WG574195-05
Report Date/Time: Wednesday, July 06, 2016 09:58:20
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129401
Sample Date/Time: Wednesday, July 06, 2016 09:59:15
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73682.1	1.2				ug/L	68501	Standard
	Be	9	1030.0	8.5	**1.0739**	0.077	7.2	ug/L	8	Standard
	Al	27	13290595.5	0.8	**87.0650**	1.191	1.4	ug/L	1397	Standard
	Sc	45	47437.5	0.7				ug/L	38815	Standard
	Ti	47	4990.5	1.4	**14.2485**	0.251	1.8	ug/L	36	Standard
	V	51	180397.8	1.0	**24.4727**	0.141	0.6	ug/L	1284	Standard
	Cr	52	242660.8	0.5	**32.9279**	0.475	1.4	ug/L	6503	Standard
	Cr	53	29079.5	1.0	**32.1489**	0.248	0.8	ug/L	492	Standard
	Mn	55	7362758.4	0.8	**1156.1744**	19.675	1.7	ug/L	841	Standard
	Co	59	69098.9	0.5	**11.0023**	0.167	1.5	ug/L	229	Standard
	Ni	60	43958.4	1.4	**25.0166**	0.492	2.0	ug/L	344	Standard
	Cu	65	51089.3	0.3	**29.3027**	0.329	1.1	ug/L	115	Standard
	Zn	66	60489.8	1.0	**57.5198**	0.337	0.6	ug/L	190	Standard
>	**Ge**	72	426820.6	1.3				ug/L	409858	Standard
	As	75	8341.5	1.9	**7.8256**	0.054	0.7	ug/L	-22	Standard
	Se	82	77.1	12.2	**0.6491**	0.084	12.9	ug/L	18	Standard
	Se-1	77	127.7	6.7	**1.0210**	0.110	10.8	ug/L	50	Standard
>	**Ga**	71	17471.7	2.2				mg/L	97	Standard
	Rb	85	185880.1	1.5				ug/L	25	Standard
	Y	89	588549.2	2.5				ug/L	376763	Standard
>	**Rh**	103	25.0	60.0				ug/L	20	Standard
	Mo	98	4483.5	0.1	**1.8887**	0.016	0.8	ug/L	51	Standard
	Ag	107	655.0	0.7	**0.1257**	0.000	0.4	ug/L	76	Standard
	Cd	111	833.4	2.1	**0.4499**	0.012	2.6	mg/L	6	Standard
	Cd	114	2033.9	4.6	**0.4472**	0.021	4.6	ug/L	18	Standard
>	**In**	115	518979.9	0.9				ug/L	507261	Standard
	Sn	118	1725.1	20.0	**0.1976**	0.059	30.0	ug/L	683	Standard
	Sb	123	1001.7	29.8	**0.2076**	0.067	32.1	ug/L	446	Standard
	Ba	135	421477.8	0.1	**216.4902**	1.764	0.8	ug/L	28	Standard
	Ce	140	1169592.3	1.9				ug/L	33	Standard
>	**Tb**	159	854236.8	1.4				ug/L	800803	Standard
	Ho	165	18486.3	1.1				ug/L	10	Standard
	Tl	203	1043.0	4.2	**0.1644**	0.005	3.0	ug/L	13	Standard
	Tl	205	993.4	12.3	**0.1868**	0.019	10.0	ug/L	13	Standard
	Pb	206	165846.1	0.2	**32.4826**	0.323	1.0	ug/L	226	Standard
	Pb	207	137795.4	0.8	**29.7211**	0.399	1.3	ug/L	204	Standard
	Pb	208	592158.9	0.5	**31.9408**	0.508	1.6	ug/L	852	Standard
	U	238	3515.1	1.0	**0.5542**	0.000	0.1	ug/L	13	Standard
>	**Bi**	209	467184.8	1.1				ug/L	449044	Standard

Sample ID: L1606129401
Report Date/Time: Wednesday, July 06, 2016 10:01:32
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.2863**	12.984	1009.4	mg/L	2	Standard
Mg	24	115.0	8.7	**0.0890**	0.011	11.8	mg/L	58	Standard
K	39	420.0	15.6	**1.2278**	0.210	17.1	mg/L	27	Standard
Ca	43	98.3	20.5	**4.5711**	1.181	25.8	mg/L	20	Standard
Fe	54	19064.5	0.9	**12.9379**	0.207	1.6	mg/L	158	Standard
Fe	57	5190.9	2.0	**13.5281**	0.322	2.4	mg/L	267	Standard
> **Sc-1**	45	47437.5	0.7				mg/L	38815	Standard
Cl	35	56647.7	0.4				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2906.9	8.5				ug/L	1617	Standard
P	31	18855.1	1.9				ug/L	19244	Standard
S	34	3488.7	1.5				ug/L	3557	Standard
Sr	88	103.3	19.6				ug/L	65	Standard
C	12	170.0	5.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	47.9				mg/L	23	Standard
Dy	164	30420.1	1.6				mg/L	13	Standard
Ho-1	165	18486.3	1.1				mg/L	10	Standard
Er	166	16812.7	3.4				mg/L	13	Standard
I	127	22007.7	6.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.563	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.139	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129401
Report Date/Time: Wednesday, July 06, 2016 10:01:32
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.310
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.040
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129401
Report Date/Time: Wednesday, July 06, 2016 10:01:32
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129402
Sample Date/Time: Wednesday, July 06, 2016 10:02:26
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69770.3	2.7				ug/L	68501	Standard
	Be	9	603.3	12.4	**0.6715**	0.072	10.7	ug/L	8	Standard
	Al	27	18634515.4	2.1	**128.9831**	5.673	4.4	ug/L	1397	Standard
	Sc	45	45031.9	3.1				ug/L	38815	Standard
	Ti	47	5305.3	0.3	**15.4010**	0.263	1.7	ug/L	36	Standard
	V	51	102823.9	0.6	**14.1200**	0.158	1.1	ug/L	1284	Standard
	Cr	52	80459.1	0.7	**10.4790**	0.093	0.9	ug/L	6503	Standard
	Cr	53	9304.5	2.4	**10.1728**	0.095	0.9	ug/L	492	Standard
	Mn	55	3002380.4	1.6	**479.2805**	14.394	3.0	ug/L	841	Standard
	Co	59	39944.9	0.5	**6.4682**	0.131	2.0	ug/L	229	Standard
	Ni	60	26855.8	0.6	**15.4770**	0.252	1.6	ug/L	344	Standard
	Cu	65	17773.8	1.6	**10.3533**	0.060	0.6	ug/L	115	Standard
	Zn	66	28972.0	0.7	**27.9482**	0.257	0.9	ug/L	190	Standard
>	**Ge**	72	419879.9	1.5				ug/L	409858	Standard
	As	75	3489.5	3.3	**3.3844**	0.075	2.2	ug/L	-22	Standard
	Se	82	43.4	3.4	**0.3496**	0.009	2.6	ug/L	18	Standard
	Se-1	77	96.7	5.7	**0.6121**	0.093	15.2	ug/L	50	Standard
>	**Ga**	71	10525.3	2.1				mg/L	97	Standard
	Rb	85	104171.9	0.6				ug/L	25	Standard
	Y	89	559755.6	0.0				ug/L	376763	Standard
>	**Rh**	103	46.7	16.4				ug/L	20	Standard
	Mo	98	1814.3	7.2	**0.8132**	0.063	7.8	ug/L	51	Standard
	Ag	107	490.3	42.0	**0.1008**	0.034	33.4	ug/L	76	Standard
	Cd	111	197.3	46.2	**0.1377**	0.047	33.9	mg/L	6	Standard
	Cd	114	447.4	33.4	**0.1284**	0.032	24.5	ug/L	18	Standard
>	**In**	115	514913.6	1.5				ug/L	507261	Standard
	Sn	118	656.7	28.2	**0.0082**	0.034	417.1	ug/L	683	Standard
	Sb	123	698.8	47.6	**0.1409**	0.079	55.9	ug/L	446	Standard
	Ba	135	312392.7	0.7	**161.7435**	2.379	1.5	ug/L	28	Standard
	Ce	140	864888.3	1.5				ug/L	33	Standard
>	**Tb**	159	822173.2	1.2				ug/L	800803	Standard
	Ho	165	15349.4	4.8				ug/L	10	Standard
	Tl	203	741.0	39.5	**0.1305**	0.038	29.3	ug/L	13	Standard
	Tl	205	868.4	47.2	**0.1743**	0.063	36.1	ug/L	13	Standard
	Pb	206	39366.1	0.3	**8.0469**	0.057	0.7	ug/L	226	Standard
	Pb	207	31988.4	0.9	**7.2028**	0.097	1.4	ug/L	204	Standard
	Pb	208	138578.0	1.0	**7.8042**	0.123	1.6	ug/L	852	Standard
	U	238	3824.8	11.0	**0.6240**	0.067	10.7	ug/L	13	Standard
>	**Bi**	209	447448.6	0.5				ug/L	449044	Standard

Sample ID: L1606129402
Report Date/Time: Wednesday, July 06, 2016 10:04:43
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**6.6902**	13.409	200.4	mg/L	2	Standard
Mg	24	141.7	7.3	**0.1271**	0.013	10.6	mg/L	58	Standard
K	39	201.7	9.4	**0.5528**	0.084	15.2	mg/L	27	Standard
Ca	43	420.0	10.9	**25.0115**	2.030	8.1	mg/L	20	Standard
Fe	54	10150.0	4.1	**7.2017**	0.124	1.7	mg/L	158	Standard
Fe	57	2942.0	5.9	**7.8182**	0.761	9.7	mg/L	267	Standard
> **Sc-1**	45	45031.9	3.1				mg/L	38815	Standard
Cl	35	60466.4	1.3				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2043.5	15.4				ug/L	1617	Standard
P	31	20015.0	9.4				ug/L	19244	Standard
S	34	3783.8	2.4				ug/L	3557	Standard
Sr	88	133.3	23.8				ug/L	65	Standard
C	12	100.0	0.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	45.8				mg/L	23	Standard
Dy	164	25927.1	0.7				mg/L	13	Standard
Ho-1	165	15349.4	4.8				mg/L	10	Standard
Er	166	13699.5	2.6				mg/L	13	Standard
I	127	6994.9	3.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.853	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.445	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129402
Report Date/Time: Wednesday, July 06, 2016 10:04:43
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.509	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.645	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129402
Report Date/Time: Wednesday, July 06, 2016 10:04:43
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129402PS WG574825-01
Sample Date/Time: Wednesday, July 06, 2016 10:05:38
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68660.2	1.7				ug/L	68501	Standard
	Be	9	47238.5	1.5	**51.9624**	1.650	3.2	ug/L	8	Standard
	Al	27	17645053.8	2.0	**124.0488**	3.629	2.9	ug/L	1397	Standard
	Sc	45	44393.3	1.5				ug/L	38815	Standard
	Ti	47	5174.6	1.0	**14.5192**	0.263	1.8	ug/L	36	Standard
	V	51	480583.9	0.5	**64.3037**	0.719	1.1	ug/L	1284	Standard
	Cr	52	456632.8	0.9	**61.6831**	1.025	1.7	ug/L	6503	Standard
	Cr	53	55255.6	2.0	**60.4016**	1.686	2.8	ug/L	492	Standard
	Mn	55	3239150.0	0.5	**499.7629**	6.042	1.2	ug/L	841	Standard
	Co	59	358691.1	1.1	**56.0957**	0.252	0.4	ug/L	229	Standard
	Ni	60	116099.1	1.0	**65.1802**	1.162	1.8	ug/L	344	Standard
	Cu	65	107464.1	0.7	**60.5842**	0.821	1.4	ug/L	115	Standard
	Zn	66	84653.2	0.4	**79.1485**	0.728	0.9	ug/L	190	Standard
>	Ge	72	434325.4	0.8				ug/L	409858	Standard
	As	75	60813.5	1.2	**55.4628**	0.921	1.7	ug/L	-22	Standard
	Se	82	5759.0	0.5	**51.3914**	0.208	0.4	ug/L	18	Standard
	Se-1	77	3893.8	0.5	**52.6044**	0.696	1.3	ug/L	50	Standard
>	Ga	71	10653.7	2.6				mg/L	97	Standard
	Rb	85	102591.2	1.5				ug/L	25	Standard
	Y	89	535588.1	1.5				ug/L	376763	Standard
>	Rh	103	46.7	24.7				ug/L	20	Standard
	Mo	98	1766.5	0.3	**0.8230**	0.008	0.9	ug/L	51	Standard
	Ag	107	318491.4	0.7	**52.3682**	0.640	1.2	ug/L	76	Standard
	Cd	111	100179.3	1.3	**51.8239**	0.626	1.2	mg/L	6	Standard
	Cd	114	247094.5	1.7	**52.2845**	0.780	1.5	ug/L	18	Standard
>	In	115	494482.3	0.9				ug/L	507261	Standard
	Sn	118	673.3	10.2	**0.0160**	0.012	75.5	ug/L	683	Standard
	Sb	123	214161.7	2.5	**51.2081**	1.584	3.1	ug/L	446	Standard
	Ba	135	400257.7	1.2	**215.7761**	3.076	1.4	ug/L	28	Standard
	Ce	140	853144.8	1.8				ug/L	33	Standard
>	Tb	159	808923.6	1.5				ug/L	800803	Standard
	Ho	165	14924.0	2.3				ug/L	10	Standard
	Tl	203	396573.2	1.4	**51.2178**	0.222	0.4	ug/L	13	Standard
	Tl	205	350752.1	1.1	**52.3188**	1.052	2.0	ug/L	13	Standard
	Pb	206	298080.1	1.0	**59.9592**	0.559	0.9	ug/L	226	Standard
	Pb	207	257790.9	0.5	**57.1026**	0.285	0.5	ug/L	204	Standard
	Pb	208	1062037.4	0.6	**58.8278**	0.401	0.7	ug/L	852	Standard
	U	238	335964.8	1.0	**50.2574**	0.421	0.8	ug/L	13	Standard
>	Bi	209	454901.3	1.0				ug/L	449044	Standard

Sample ID: L1606129402PS WG574825-01
Report Date/Time: Wednesday, July 06, 2016 10:07:55
Page 1

Approved: July 07, 2016

Na	23	5.0	100.0	**14.9604**	23.882	159.6	mg/L	2	Standard
Mg	24	148.3	13.6	**0.1371**	0.022	16.1	mg/L	58	Standard
K	39	255.0	38.6	**0.7487**	0.347	46.4	mg/L	27	Standard
Ca	43	421.7	2.5	**25.5491**	1.057	4.1	mg/L	20	Standard
Fe	54	9962.2	2.1	**7.1713**	0.153	2.1	mg/L	158	Standard
Fe	57	2848.6	3.1	**7.6545**	0.361	4.7	mg/L	267	Standard
> **Sc-1**	45	44393.3	1.5				mg/L	38815	Standard
Cl	35	58795.9	1.0				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1830.1	7.2				ug/L	1617	Standard
P	31	18659.8	0.5				ug/L	19244	Standard
S	34	3737.1	4.2				ug/L	3557	Standard
Sr	88	115.0	30.4				ug/L	65	Standard
C	12	86.7	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	23	Standard
Dy	164	24731.8	2.8				mg/L	13	Standard
Ho-1	165	14924.0	2.3				mg/L	10	Standard
Er	166	13766.3	3.2				mg/L	13	Standard
I	127	6604.8	6.0				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.232	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.970	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606129402PS WG574825-01
Report Date/Time: Wednesday, July 06, 2016 10:07:55
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.481	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.304	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129402PS WG574825-01
Report Date/Time: Wednesday, July 06, 2016 10:07:55
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129402SDL WG574825-02
Sample Date/Time: Wednesday, July 06, 2016 10:08:49
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65026.0	3.7				ug/L	68501	Standard
	Be	9	160.0	24.8	**0.2043**	0.040	19.8	ug/L	8	Standard
	Al	27	3521178.9	2.2	**26.1792**	0.963	3.7	ug/L	1397	Standard
	Sc	45	38574.1	2.0				ug/L	38815	Standard
	Ti	47	1016.4	1.0	**3.0526**	0.023	0.8	ug/L	36	Standard
	V	51	20323.7	1.2	**2.7944**	0.038	1.4	ug/L	1284	Standard
	Cr	52	19540.6	0.6	**1.9556**	0.065	3.3	ug/L	6503	Standard
	Cr	53	1953.5	10.5	**1.9018**	0.277	14.6	ug/L	492	Standard
	Mn	55	573279.4	0.2	**95.2960**	1.841	1.9	ug/L	841	Standard
	Co	59	7720.3	0.6	**1.3072**	0.015	1.2	ug/L	229	Standard
	Ni	60	5511.0	2.5	**3.1857**	0.068	2.1	ug/L	344	Standard
	Cu	65	3651.8	1.5	**2.2072**	0.064	2.9	ug/L	115	Standard
	Zn	66	6637.1	2.1	**6.5869**	0.147	2.2	ug/L	190	Standard
>	Ge	72	402861.2	1.7				ug/L	409858	Standard
	As	75	691.5	2.6	**0.7775**	0.011	1.5	ug/L	-22	Standard
	Se	82	21.3	32.8	**0.1535**	0.066	42.9	ug/L	18	Standard
	Se-1	77	58.7	8.6	**0.1073**	0.064	60.1	ug/L	50	Standard
>	Ga	71	2141.8	0.8				mg/L	97	Standard
	Rb	85	19642.7	1.5				ug/L	25	Standard
	Y	89	375531.6	2.2				ug/L	376763	Standard
>	Rh	103	20.0	25.0				ug/L	20	Standard
	Mo	98	350.4	1.1	**0.2239**	0.002	0.8	ug/L	51	Standard
	Ag	107	155.0	19.2	**0.0492**	0.005	10.4	ug/L	76	Standard
	Cd	111	46.6	26.2	**0.0640**	0.006	10.1	mg/L	6	Standard
	Cd	114	89.6	22.2	**0.0567**	0.004	7.4	ug/L	18	Standard
>	In	115	483847.7	1.6				ug/L	507261	Standard
	Sn	118	325.0	39.3	**-0.0480**	0.024	49.2	ug/L	683	Standard
	Sb	123	1870.5	35.4	**0.4352**	0.156	35.8	ug/L	446	Standard
	Ba	135	60714.1	0.5	**33.4657**	0.378	1.1	ug/L	28	Standard
	Ce	140	169920.8	0.4				ug/L	33	Standard
>	Tb	159	785790.2	0.6				ug/L	800803	Standard
	Ho	165	2823.6	6.7				ug/L	10	Standard
	Tl	203	203.3	12.3	**0.0597**	0.003	5.2	ug/L	13	Standard
	Tl	205	190.0	19.0	**0.0710**	0.005	7.5	ug/L	13	Standard
	Pb	206	7878.7	2.0	**1.5878**	0.016	1.0	ug/L	226	Standard
	Pb	207	6443.7	2.0	**1.4326**	0.025	1.7	ug/L	204	Standard
	Pb	208	27612.9	1.6	**1.5367**	0.039	2.5	ug/L	852	Standard
	U	238	730.4	5.8	**0.1523**	0.006	4.1	ug/L	13	Standard
>	Bi	209	452878.1	1.1				ug/L	449044	Standard

Sample ID: L1606129402SDL WG574825-02
Report Date/Time: Wednesday, July 06, 2016 10:11:06
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	10.8	**0.0342**	0.007	20.3	mg/L	58	Standard
K	39	65.0	7.7	**0.1187**	0.015	12.9	mg/L	27	Standard
Ca	43	121.7	4.7	**7.6311**	0.513	6.7	mg/L	20	Standard
Fe	54	2015.2	1.4	**1.5775**	0.034	2.2	mg/L	158	Standard
Fe	57	840.0	8.3	**2.1509**	0.284	13.2	mg/L	267	Standard
> **Sc-1**	45	38574.1	2.0				mg/L	38815	Standard
Cl	35	56866.5	2.1				ug/L	57611	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1540.1	7.2				ug/L	1617	Standard
P	31	8800.9	1.2				ug/L	19244	Standard
S	34	3415.4	3.3				ug/L	3557	Standard
Sr	88	70.0	37.8				ug/L	65	Standard
C	12	73.3	70.0				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	4905.3	1.6				mg/L	13	Standard
Ho-1	165	2823.6	6.7				mg/L	10	Standard
Er	166	2620.2	5.0				mg/L	13	Standard
I	127	8869.3	4.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.927	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.293	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129402SDL WG574825-02
Report Date/Time: Wednesday, July 06, 2016 10:11:06
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	95.384	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.854	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129402SDL WG574825-02
Report Date/Time: Wednesday, July 06, 2016 10:11:06
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129402SDL WG574825-02
Sample Date/Time: Wednesday, July 06, 2016 10:12:01
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60917.3	3.2				ug/L	68501	Standard
	Be	9	58.3	17.8	**0.0915**	0.011	11.6	ug/L	8	Standard
	Al	27	711598.7	3.1	**5.6709**	0.047	0.8	ug/L	1397	Standard
	Sc	45	36463.8	0.9				ug/L	38815	Standard
	Ti	47	207.0	2.6	**0.6014**	0.017	2.9	ug/L	36	Standard
	V	51	5032.5	7.0	**0.5856**	0.052	8.8	ug/L	1284	Standard
	Cr	52	8230.6	1.6	**0.2866**	0.019	6.7	ug/L	6503	Standard
	Cr	53	590.0	23.4	**0.2839**	0.167	58.7	ug/L	492	Standard
	Mn	55	118569.1	0.5	**19.6884**	0.105	0.5	ug/L	841	Standard
	Co	59	1799.1	8.5	**0.3097**	0.026	8.5	ug/L	229	Standard
	Ni	60	1413.4	3.6	**0.7024**	0.034	4.8	ug/L	344	Standard
	Cu	65	858.0	6.8	**0.5099**	0.037	7.2	ug/L	115	Standard
	Zn	66	1996.8	2.1	**1.9081**	0.036	1.9	ug/L	190	Standard
>	**Ge**	72	401660.3	0.4				ug/L	409858	Standard
	As	75	114.2	19.3	**0.2113**	0.021	10.0	ug/L	-22	Standard
	Se	82	11.3	54.8	**0.0580**	0.060	102.6	ug/L	18	Standard
	Se-1	77	52.0	8.8	**0.0116**	0.068	586.4	ug/L	50	Standard
>	**Ga**	71	495.0	9.0				mg/L	97	Standard
	Rb	85	3982.2	2.1				ug/L	25	Standard
	Y	89	350852.9	1.4				ug/L	376763	Standard
>	**Rh**	103	28.3	44.4				ug/L	20	Standard
	Mo	98	175.0	23.0	**0.1481**	0.018	11.8	ug/L	51	Standard
	Ag	107	212.7	91.3	**0.0591**	0.033	55.5	ug/L	76	Standard
	Cd	111	67.0	127.8	**0.0750**	0.045	60.7	mg/L	6	Standard
	Cd	114	161.8	141.0	**0.0726**	0.050	68.4	ug/L	18	Standard
>	**In**	115	480384.8	0.4				ug/L	507261	Standard
	Sn	118	306.7	18.0	**-0.0510**	0.011	20.7	ug/L	683	Standard
	Sb	123	1358.2	24.6	**0.3141**	0.083	26.4	ug/L	446	Standard
	Ba	135	12314.7	3.9	**6.8485**	0.262	3.8	ug/L	28	Standard
	Ce	140	33590.6	4.0				ug/L	33	Standard
>	**Tb**	159	756520.4	0.6				ug/L	800803	Standard
	Ho	165	583.3	9.4				ug/L	10	Standard
	Tl	203	223.0	115.4	**0.0635**	0.035	54.9	ug/L	13	Standard
	Tl	205	126.7	112.0	**0.0623**	0.022	35.6	ug/L	13	Standard
	Pb	206	1869.8	9.6	**0.3893**	0.039	10.0	ug/L	226	Standard
	Pb	207	1543.1	13.1	**0.3564**	0.048	13.4	ug/L	204	Standard
	Pb	208	6514.6	6.8	**0.3774**	0.027	7.0	ug/L	852	Standard
	U	238	235.7	51.0	**0.0795**	0.019	23.8	ug/L	13	Standard
>	**Bi**	209	435034.5	0.5				ug/L	449044	Standard

Sample ID: L1606129402SDL WG574825-02
Report Date/Time: Wednesday, July 06, 2016 10:14:18
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	44.7	**0.0504**	0.039	77.8	mg/L	58	Standard
K	39	35.0	14.3	**0.0067**	0.022	320.5	mg/L	27	Standard
Ca	43	48.3	68.9	**2.4797**	2.619	105.6	mg/L	20	Standard
Fe	54	394.3	9.9	**0.2309**	0.032	13.9	mg/L	158	Standard
Fe	57	383.3	10.0	**0.6861**	0.149	21.7	mg/L	267	Standard
> **Sc-1**	45	36463.8	0.9				mg/L	38815	Standard
Cl	35	57415.9	1.8				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1380.1	8.4				ug/L	1617	Standard
P	31	6508.1	3.2				ug/L	19244	Standard
S	34	3533.7	5.2				ug/L	3557	Standard
Sr	88	55.0	48.1				ug/L	65	Standard
C	12	73.3	75.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	906.6	11.9				mg/L	13	Standard
Ho-1	165	583.3	9.4				mg/L	10	Standard
Er	166	490.0	5.4				mg/L	13	Standard
I	127	9633.1	1.7				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		88.929	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.000	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606129402SDL WG574825-02
Report Date/Time: Wednesday, July 06, 2016 10:14:18
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.702
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.880
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 10:15:14
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66001.9	3.1				ug/L	68501	Standard
	Be	9	45061.9	1.7	**51.5669**	1.142	2.2	ug/L	8	Standard
	Al	27	7134699.3	2.4	**52.2005**	1.042	2.0	ug/L	1397	Standard
	Sc	45	40683.0	4.5				ug/L	38815	Standard
	Ti	47	36220.6	2.3	**104.8904**	2.700	2.6	ug/L	36	Standard
	V	51	373417.3	1.4	**51.4577**	1.129	2.2	ug/L	1284	Standard
	Cr	52	378042.0	1.7	**52.4836**	1.277	2.4	ug/L	6503	Standard
	Cr	53	45578.5	1.0	**51.2685**	0.474	0.9	ug/L	492	Standard
	Mn	55	329890.2	1.6	**52.3621**	1.192	2.3	ug/L	841	Standard
	Co	59	319170.0	1.3	**51.4393**	1.091	2.1	ug/L	229	Standard
	Ni	60	89955.3	1.3	**52.0068**	1.073	2.1	ug/L	344	Standard
	Cu	65	89397.0	1.4	**51.9298**	1.024	2.0	ug/L	115	Standard
	Zn	66	53744.8	1.2	**51.7403**	0.925	1.8	ug/L	190	Standard
>	Ge	72	421512.3	0.8				ug/L	409858	Standard
	As	75	55019.2	1.7	**51.7131**	1.248	2.4	ug/L	-22	Standard
	Se	82	5625.3	2.5	**51.7261**	1.382	2.7	ug/L	18	Standard
	Se-1	77	3720.1	1.2	**51.7754**	1.031	2.0	ug/L	50	Standard
>	Ga	71	106.7	14.3				mg/L	97	Standard
	Rb	85	821.7	3.6				ug/L	25	Standard
	Y	89	380274.8	0.7				ug/L	376763	Standard
>	Rh	103	36.7	20.8				ug/L	20	Standard
	Mo	98	245508.8	0.8	**98.7047**	0.609	0.6	ug/L	51	Standard
	Ag	107	315964.3	0.6	**49.0682**	0.371	0.8	ug/L	76	Standard
	Cd	111	102381.2	0.8	**50.0236**	0.282	0.6	mg/L	6	Standard
	Cd	114	253936.6	1.4	**50.7540**	0.965	1.9	ug/L	18	Standard
>	In	115	523570.5	1.4				ug/L	507261	Standard
	Sn	118	272308.6	0.5	**48.0899**	0.442	0.9	ug/L	683	Standard
	Sb	123	220790.6	1.2	**49.8541**	0.372	0.7	ug/L	446	Standard
	Ba	135	96752.3	1.8	**49.2687**	0.234	0.5	ug/L	28	Standard
	Ce	140	778.4	25.9				ug/L	33	Standard
>	Tb	159	803102.2	1.8				ug/L	800803	Standard
	Ho	165	21.7	58.1				ug/L	10	Standard
	Tl	203	391560.5	1.3	**50.8731**	0.347	0.7	ug/L	13	Standard
	Tl	205	343478.2	1.0	**51.5364**	0.693	1.3	ug/L	13	Standard
	Pb	206	249862.7	0.4	**50.5602**	0.390	0.8	ug/L	226	Standard
	Pb	207	226415.5	0.5	**50.4529**	0.494	1.0	ug/L	204	Standard
	Pb	208	934421.6	0.6	**52.0705**	0.743	1.4	ug/L	852	Standard
	U	238	338848.7	1.0	**50.9911**	0.566	1.1	ug/L	13	Standard
>	Bi	209	452206.8	1.0				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 10:17:31
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.2847**	15.705	5516.7	mg/L	2	Standard
Mg	24	3878.8	2.1	**4.9818**	0.327	6.6	mg/L	58	Standard
K	39	1331.7	2.5	**4.9336**	0.350	7.1	mg/L	27	Standard
Ca	43	86.7	8.8	**4.7338**	0.396	8.4	mg/L	20	Standard
Fe	54	6551.9	2.8	**5.1174**	0.223	4.4	mg/L	158	Standard
Fe	57	1748.4	4.5	**4.9031**	0.224	4.6	mg/L	267	Standard
> **Sc-1**	45	40683.0	4.5				mg/L	38815	Standard
Cl	35	64144.2	2.4				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1633.4	4.8				ug/L	1617	Standard
P	31	21161.4	1.7				ug/L	19244	Standard
S	34	4028.9	2.1				ug/L	3557	Standard
Sr	88	75.0	23.1				ug/L	65	Standard
C	12	90.0	38.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	23	Standard
Dy	164	42.5	35.8				mg/L	13	Standard
Ho-1	165	21.7	58.1				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	15686.5	2.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.134		
Al	27	104.401		
Sc	45			
Ti	47	104.890		
V	51	102.915		
Cr	52	104.967		
Cr	53			
Mn	55	104.724		
Co	59	102.879		
Ni	60	104.014		
Cu	65	103.860		
Zn	66	103.481		
> Ge	72		102.843	
As	75	103.426		
Se	82	103.452		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 10:17:31
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.705		
Ag	107	98.136		
Cd	111	100.047		
Cd	114			
In	115			103.215
Sn	118	96.180		
Sb	123	99.708		
Ba	135	98.537		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.746		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.141		
U	238	101.982		
Bi	209			100.704
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 10:17:31
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 10:18:25
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66092.2	0.5				ug/L	68501	Standard
	Be	9	33.3	22.9	**0.0575**	0.009	15.0	ug/L	8	Standard
	Al	27	2433.5	28.1	**0.0528**	0.005	9.3	ug/L	1397	Standard
	Sc	45	39765.5	3.8				ug/L	38815	Standard
	Ti	47	34.7	8.8	**0.0699**	0.009	12.3	ug/L	36	Standard
	V	51	1342.2	6.2	**0.0363**	0.010	27.6	ug/L	1284	Standard
	Cr	52	6819.5	0.7	**0.0038**	0.011	298.6	ug/L	6503	Standard
	Cr	53	426.7	10.6	**0.0524**	0.052	99.9	ug/L	492	Standard
	Mn	55	1487.4	7.9	**0.1343**	0.019	14.5	ug/L	841	Standard
	Co	59	248.0	8.5	**0.0444**	0.004	8.0	ug/L	229	Standard
	Ni	60	317.3	4.3	**0.0213**	0.006	29.2	ug/L	344	Standard
	Cu	65	131.3	6.7	**0.0610**	0.005	8.1	ug/L	115	Standard
	Zn	66	348.0	9.0	**0.2133**	0.030	14.1	ug/L	190	Standard
>	**Ge**	72	433193.0	0.8				ug/L	409858	Standard
	As	75	-15.4	176.5	**0.0847**	0.025	29.3	ug/L	-22	Standard
	Se	82	17.5	29.8	**0.1051**	0.046	43.4	ug/L	18	Standard
	Se-1	77	52.7	18.6	**-0.0360**	0.128	356.8	ug/L	50	Standard
>	**Ga**	71	76.7	26.4				mg/L	97	Standard
	Rb	85	38.3	15.1				ug/L	25	Standard
	Y	89	375706.7	1.5				ug/L	376763	Standard
>	**Rh**	103	21.7	74.2				ug/L	20	Standard
	Mo	98	180.5	2.9	**0.1457**	0.001	1.0	ug/L	51	Standard
	Ag	107	119.3	33.3	**0.0420**	0.006	14.5	ug/L	76	Standard
	Cd	111	16.0	65.5	**0.0473**	0.005	10.9	mg/L	6	Standard
	Cd	114	58.8	46.0	**0.0494**	0.006	11.4	ug/L	18	Standard
>	**In**	115	511865.2	1.0				ug/L	507261	Standard
	Sn	118	851.7	20.2	**0.0442**	0.032	71.8	ug/L	683	Standard
	Sb	123	1054.3	34.6	**0.2237**	0.086	38.5	ug/L	446	Standard
	Ba	135	65.3	36.7	**0.0497**	0.012	24.6	ug/L	28	Standard
	Ce	140	343.3	20.8				ug/L	33	Standard
>	**Tb**	159	792368.1	0.6				ug/L	800803	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	67.3	29.7	**0.0420**	0.003	6.2	ug/L	13	Standard
	Tl	205	51.7	72.6	**0.0502**	0.006	11.1	ug/L	13	Standard
	Pb	206	273.7	16.0	**0.0508**	0.009	17.0	ug/L	226	Standard
	Pb	207	243.0	7.5	**0.0525**	0.004	7.6	ug/L	204	Standard
	Pb	208	1024.7	7.7	**0.0566**	0.004	7.7	ug/L	852	Standard
	U	238	59.3	29.6	**0.0515**	0.003	5.1	ug/L	13	Standard
>	**Bi**	209	456938.6	1.0				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 10:20:42
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.4914**	16.063	3268.8	mg/L	2	Standard
Mg	24	36.7	83.3	**0.0111**	0.043	384.8	mg/L	58	Standard
K	39	38.3	45.8	**0.0058**	0.064	1099.0	mg/L	27	Standard
Ca	43	33.3	52.7	**1.0606**	1.177	111.0	mg/L	20	Standard
Fe	54	149.4	25.3	**0.0028**	0.036	1300.5	mg/L	158	Standard
Fe	57	260.0	19.5	**0.1697**	0.163	96.1	mg/L	267	Standard
Sc-1	45	39765.5	3.8				mg/L	38815	Standard
Cl	35	61423.6	2.2				ug/L	57611	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	1656.8	1.9				ug/L	1617	Standard
P	31	19836.3	2.1				ug/L	19244	Standard
S	34	3835.5	3.2				ug/L	3557	Standard
Sr	88	55.0					ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	5.7	109.1				mg/L	13	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	8767.5	0.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.693	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 10:20:42
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.908
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.758
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 10:20:42
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129404
Sample Date/Time: Wednesday, July 06, 2016 10:21:39
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70980.9	1.6				ug/L	68501	Standard
	Be	9	941.7	5.0	**1.0213**	0.064	6.3	ug/L	8	Standard
	Al	27	15182692.6	1.8	**103.2556**	2.951	2.9	ug/L	1397	Standard
	Sc	45	45760.7	3.0				ug/L	38815	Standard
	Ti	47	5887.5	1.3	**16.7741**	0.207	1.2	ug/L	36	Standard
	V	51	191874.8	0.3	**25.9807**	0.495	1.9	ug/L	1284	Standard
	Cr	52	151639.7	0.5	**20.1776**	0.386	1.9	ug/L	6503	Standard
	Cr	53	18564.7	1.2	**20.3258**	0.407	2.0	ug/L	492	Standard
	Mn	55	4033113.1	0.2	**631.7956**	10.894	1.7	ug/L	841	Standard
	Co	59	68367.9	0.6	**10.8599**	0.118	1.1	ug/L	229	Standard
	Ni	60	42585.1	0.6	**24.1738**	0.459	1.9	ug/L	344	Standard
	Cu	65	33802.0	0.3	**19.3378**	0.287	1.5	ug/L	115	Standard
	Zn	66	65062.1	0.3	**61.7346**	0.851	1.4	ug/L	190	Standard
>	Ge	72	427844.3	1.7				ug/L	409858	Standard
	As	75	7611.4	0.2	**7.1339**	0.108	1.5	ug/L	-22	Standard
	Se	82	69.8	14.5	**0.5816**	0.088	15.2	ug/L	18	Standard
	Se-1	77	111.7	16.1	**0.7937**	0.244	30.7	ug/L	50	Standard
>	Ga	71	17678.6	1.8				mg/L	97	Standard
	Rb	85	180600.5	2.7				ug/L	25	Standard
	Y	89	603483.2	1.9				ug/L	376763	Standard
>	Rh	103	31.7	32.9				ug/L	20	Standard
	Mo	98	1109.1	5.0	**0.5244**	0.022	4.3	ug/L	51	Standard
	Ag	107	635.7	1.7	**0.1234**	0.001	1.2	ug/L	76	Standard
	Cd	111	1307.6	1.9	**0.6883**	0.013	1.9	mg/L	6	Standard
	Cd	114	3051.9	1.6	**0.6569**	0.010	1.6	ug/L	18	Standard
>	In	115	515076.3	0.5				ug/L	507261	Standard
	Sn	118	746.7	14.1	**0.0242**	0.019	77.4	ug/L	683	Standard
	Sb	123	1094.8	34.5	**0.2309**	0.086	37.3	ug/L	446	Standard
	Ba	135	326094.1	1.1	**168.7671**	2.405	1.4	ug/L	28	Standard
	Ce	140	1186847.0	1.3				ug/L	33	Standard
>	Tb	159	825489.7	1.2				ug/L	800803	Standard
	Ho	165	18656.5	3.3				ug/L	10	Standard
	Tl	203	872.0	1.0	**0.1461**	0.001	0.6	ug/L	13	Standard
	Tl	205	783.4	4.7	**0.1595**	0.006	3.6	ug/L	13	Standard
	Pb	206	246082.6	0.4	**49.5727**	0.064	0.1	ug/L	226	Standard
	Pb	207	207802.3	0.7	**46.0977**	0.241	0.5	ug/L	204	Standard
	Pb	208	892853.5	1.6	**49.5287**	0.671	1.4	ug/L	852	Standard
	U	238	3537.7	0.5	**0.5722**	0.004	0.7	ug/L	13	Standard
>	Bi	209	454213.0	0.3				ug/L	449044	Standard

Sample ID: L1606129404
Report Date/Time: Wednesday, July 06, 2016 10:23:56
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.8168**	13.797	1689.1	mg/L	2	Standard
Mg	24	141.7	12.4	**0.1247**	0.024	19.4	mg/L	58	Standard
K	39	438.3	2.4	**1.3406**	0.019	1.5	mg/L	27	Standard
Ca	43	261.7	16.7	**14.8449**	2.408	16.2	mg/L	20	Standard
Fe	54	19300.1	0.1	**13.5908**	0.404	3.0	mg/L	158	Standard
Fe	57	5104.2	4.4	**13.8164**	0.933	6.8	mg/L	267	Standard
> **Sc-1**	45	45760.7	3.0				mg/L	38815	Standard
Cl	35	60781.0	1.1				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2653.6	2.2				ug/L	1617	Standard
P	31	19624.4	2.1				ug/L	19244	Standard
S	34	3567.1	3.8				ug/L	3557	Standard
Sr	88	95.0	13.9				ug/L	65	Standard
C	12	136.7	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	100.0	17.3				mg/L	23	Standard
Dy	164	32528.3	1.4				mg/L	13	Standard
Ho-1	165	18656.5	3.3				mg/L	10	Standard
Er	166	17363.3	1.1				mg/L	13	Standard
I	127	20472.2	3.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.620	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.388	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129404
Report Date/Time: Wednesday, July 06, 2016 10:23:56
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.541	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.151	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129404
Report Date/Time: Wednesday, July 06, 2016 10:23:56
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129405
Sample Date/Time: Wednesday, July 06, 2016 10:24:50
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68867.9	1.7				ug/L	68501	Standard
	Be	9	631.7	9.2	**0.7119**	0.067	9.4	ug/L	8	Standard
	Al	27	18119901.6	2.3	**126.9628**	0.897	0.7	ug/L	1397	Standard
	Sc	45	46202.0	1.4				ug/L	38815	Standard
	Ti	47	6581.8	1.2	**18.6554**	0.304	1.6	ug/L	36	Standard
	V	51	128283.2	1.6	**17.2275**	0.351	2.0	ug/L	1284	Standard
	Cr	52	95154.5	0.9	**12.2409**	0.037	0.3	ug/L	6503	Standard
	Cr	53	11357.6	3.5	**12.2012**	0.334	2.7	ug/L	492	Standard
	Mn	55	3063159.4	0.6	**477.2229**	6.179	1.3	ug/L	841	Standard
	Co	59	44098.7	0.3	**6.9692**	0.072	1.0	ug/L	229	Standard
	Ni	60	31534.8	0.9	**17.7609**	0.056	0.3	ug/L	344	Standard
	Cu	65	16659.5	1.2	**9.4718**	0.076	0.8	ug/L	115	Standard
	Zn	66	34055.9	1.4	**32.0827**	0.219	0.7	ug/L	190	Standard
>	**Ge**	72	430125.8	0.9				ug/L	409858	Standard
	As	75	4082.9	0.7	**3.8521**	0.034	0.9	ug/L	-22	Standard
	Se	82	46.9	20.6	**0.3716**	0.089	23.9	ug/L	18	Standard
	Se-1	77	94.3	6.8	**0.5461**	0.081	14.7	ug/L	50	Standard
>	**Ga**	71	12415.1	2.0				mg/L	97	Standard
	Rb	85	110669.4	0.7				ug/L	25	Standard
	Y	89	534317.2	1.1				ug/L	376763	Standard
>	**Rh**	103	28.3	20.4				ug/L	20	Standard
	Mo	98	6324.1	1.9	**2.7032**	0.069	2.5	ug/L	51	Standard
	Ag	107	374.3	9.7	**0.0832**	0.005	6.2	ug/L	76	Standard
	Cd	111	152.6	9.1	**0.1166**	0.008	6.6	mg/L	6	Standard
	Cd	114	371.0	12.0	**0.1141**	0.009	7.9	ug/L	18	Standard
>	**In**	115	505513.3	1.1				ug/L	507261	Standard
	Sn	118	583.3	10.5	**-0.0032**	0.010	309.7	ug/L	683	Standard
	Sb	123	794.6	40.7	**0.1651**	0.074	44.8	ug/L	446	Standard
	Ba	135	227039.1	0.3	**119.7363**	1.491	1.2	ug/L	28	Standard
	Ce	140	871470.1	0.3				ug/L	33	Standard
>	**Tb**	159	829470.2	0.6				ug/L	800803	Standard
	Ho	165	14672.1	2.6				ug/L	10	Standard
	Tl	203	639.7	8.1	**0.1153**	0.007	5.7	ug/L	13	Standard
	Tl	205	520.0	16.7	**0.1195**	0.013	10.6	ug/L	13	Standard
	Pb	206	39238.4	0.8	**7.8343**	0.052	0.7	ug/L	226	Standard
	Pb	207	31985.1	0.4	**7.0346**	0.037	0.5	ug/L	204	Standard
	Pb	208	135887.5	0.7	**7.4745**	0.031	0.4	ug/L	852	Standard
	U	238	3977.2	1.1	**0.6329**	0.006	1.0	ug/L	13	Standard
>	**Bi**	209	458083.0	0.3				ug/L	449044	Standard

Sample ID: L1606129405
Report Date/Time: Wednesday, July 06, 2016 10:27:07
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	258.3	7.8	**0.2554**	0.022	8.5	mg/L	58	Standard
K	39	331.7	6.3	**0.9690**	0.070	7.2	mg/L	27	Standard
Ca	43	426.7	10.5	**24.8165**	3.005	12.1	mg/L	20	Standard
Fe	54	13735.2	0.5	**9.5401**	0.174	1.8	mg/L	158	Standard
Fe	57	3647.1	3.0	**9.5698**	0.314	3.3	mg/L	267	Standard
Sc-1	45	46202.0	1.4				mg/L	38815	Standard
Cl	35	61570.9	1.0				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	3077.0	3.1				ug/L	1617	Standard
P	31	19200.5	1.6				ug/L	19244	Standard
S	34	3863.8	5.2				ug/L	3557	Standard
Sr	88	136.7	36.8				ug/L	65	Standard
C	12	116.7	34.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	23	Standard
Dy	164	25279.8	1.5				mg/L	13	Standard
Ho-1	165	14672.1	2.6				mg/L	10	Standard
Er	166	13549.4	4.5				mg/L	13	Standard
I	127	7708.6	5.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		100.535	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.945	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129405
Report Date/Time: Wednesday, July 06, 2016 10:27:07
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.656	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.013	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129405
Report Date/Time: Wednesday, July 06, 2016 10:27:07
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129406
Sample Date/Time: Wednesday, July 06, 2016 10:28:02
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73539.8	2.1				ug/L	68501	Standard
	Be	9	1236.7	9.5	**1.2875**	0.097	7.5	ug/L	8	Standard
	Al	27	19354398.4	0.5	**127.0365**	2.230	1.8	ug/L	1397	Standard
	Sc	45	49311.8	1.2				ug/L	38815	Standard
	Ti	47	6260.3	0.2	**17.8301**	0.279	1.6	ug/L	36	Standard
	V	51	197286.6	0.9	**26.7008**	0.334	1.3	ug/L	1284	Standard
	Cr	52	171609.2	1.4	**22.9421**	0.255	1.1	ug/L	6503	Standard
	Cr	53	21012.9	4.7	**23.0380**	0.738	3.2	ug/L	492	Standard
	Mn	55	5714579.9	0.8	**894.6958**	9.873	1.1	ug/L	841	Standard
	Co	59	85556.9	1.3	**13.5808**	0.106	0.8	ug/L	229	Standard
	Ni	60	55476.4	0.3	**31.5218**	0.503	1.6	ug/L	344	Standard
	Cu	65	46747.0	0.8	**26.7323**	0.179	0.7	ug/L	115	Standard
	Zn	66	113215.8	0.4	**107.4550**	1.729	1.6	ug/L	190	Standard
>	**Ge**	72	428063.9	1.5				ug/L	409858	Standard
	As	75	12392.8	0.8	**11.5468**	0.171	1.5	ug/L	-22	Standard
	Se	82	94.3	8.8	**0.8042**	0.088	10.9	ug/L	18	Standard
	Se-1	77	139.3	14.7	**1.1807**	0.309	26.2	ug/L	50	Standard
>	**Ga**	71	23456.5	4.0				mg/L	97	Standard
	Rb	85	264884.0	1.5				ug/L	25	Standard
	Y	89	662178.0	1.0				ug/L	376763	Standard
>	**Rh**	103	98.3	7.8				ug/L	20	Standard
	Mo	98	445.2	2.9	**0.2498**	0.006	2.6	ug/L	51	Standard
	Ag	107	3066.0	2.3	**0.4972**	0.011	2.2	ug/L	76	Standard
	Cd	111	1459.2	2.5	**0.7492**	0.021	2.8	mg/L	6	Standard
	Cd	114	3508.2	2.8	**0.7355**	0.025	3.4	ug/L	18	Standard
>	**In**	115	525518.1	1.1				ug/L	507261	Standard
	Sn	118	1388.4	7.6	**0.1349**	0.021	15.6	ug/L	683	Standard
	Sb	123	878.9	35.3	**0.1776**	0.071	39.9	ug/L	446	Standard
	Ba	135	561499.6	0.6	**284.8150**	1.354	0.5	ug/L	28	Standard
	Ce	140	1487894.8	1.2				ug/L	33	Standard
>	**Tb**	159	846767.6	0.8				ug/L	800803	Standard
	Ho	165	23945.6	0.4				ug/L	10	Standard
	Tl	203	1256.4	3.5	**0.1952**	0.004	2.0	ug/L	13	Standard
	Tl	205	1130.0	7.8	**0.2109**	0.017	8.2	ug/L	13	Standard
	Pb	206	1770271.4	0.4	**355.6542**	7.848	2.2	ug/L	226	Standard
	Pb	207	1435552.0	0.6	**317.5703**	6.461	2.0	ug/L	204	Standard
	Pb	208	6260085.1	0.5	**346.3567**	10.592	3.1	ug/L	852	Standard
	U	238	5247.9	0.1	**0.8260**	0.020	2.4	ug/L	13	Standard
>	**Bi**	209	455646.6	2.6				ug/L	449044	Standard

Sample ID: L1606129406
Report Date/Time: Wednesday, July 06, 2016 10:30:19
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.7220**	12.229	710.2	mg/L	2	Standard
Mg	24	143.3	14.5	**0.1144**	0.022	19.5	mg/L	58	Standard
K	39	646.7	10.5	**1.8867**	0.203	10.8	mg/L	27	Standard
Ca	43	151.7	18.2	**7.4176**	1.670	22.5	mg/L	20	Standard
Fe	54	24152.4	1.4	**15.7960**	0.407	2.6	mg/L	158	Standard
Fe	57	6299.6	1.7	**15.9098**	0.455	2.9	mg/L	267	Standard
> **Sc-1**	45	49311.8	1.2				mg/L	38815	Standard
Cl	35	60605.6	1.3				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	4874.1	2.4				ug/L	1617	Standard
P	31	19729.5	1.9				ug/L	19244	Standard
S	34	3847.2	5.9				ug/L	3557	Standard
Sr	88	80.0	31.3				ug/L	65	Standard
C	12	223.3	22.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	213.3	30.5				mg/L	23	Standard
Dy	164	39817.0	0.8				mg/L	13	Standard
Ho-1	165	23945.6	0.4				mg/L	10	Standard
Er	166	21181.5	1.1				mg/L	13	Standard
I	127	37849.0	6.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.355	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.442	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129406
Report Date/Time: Wednesday, July 06, 2016 10:30:19
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.599
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606129406
Report Date/Time: Wednesday, July 06, 2016 10:30:19
Page 3

Approved: July 07, 2016

Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129407
Sample Date/Time: Wednesday, July 06, 2016 10:31:13
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73692.1	0.5				ug/L	68501	Standard
	Be	9	1216.7	6.2	**1.2655**	0.077	6.1	ug/L	8	Standard
	Al	27	21068113.9	0.7	**137.9685**	1.604	1.2	ug/L	1397	Standard
	Sc	45	49278.3	1.2				ug/L	38815	Standard
	Ti	47	4630.0	0.5	**12.8504**	0.202	1.6	ug/L	36	Standard
	V	51	168296.1	0.8	**22.1871**	0.442	2.0	ug/L	1284	Standard
	Cr	52	162616.0	0.1	**21.1287**	0.300	1.4	ug/L	6503	Standard
	Cr	53	19561.0	0.9	**20.8821**	0.318	1.5	ug/L	492	Standard
	Mn	55	3012326.9	1.2	**459.8828**	11.572	2.5	ug/L	841	Standard
	Co	59	80823.4	1.3	**12.5119**	0.282	2.3	ug/L	229	Standard
	Ni	60	54628.0	0.8	**30.2569**	0.181	0.6	ug/L	344	Standard
	Cu	65	31768.6	1.0	**17.7106**	0.287	1.6	ug/L	115	Standard
	Zn	66	64232.9	0.7	**59.3902**	0.606	1.0	ug/L	190	Standard
>	Ge	72	439001.8	1.3				ug/L	409858	Standard
	As	75	4630.0	1.3	**4.2692**	0.074	1.7	ug/L	-22	Standard
	Se	82	59.1	11.4	**0.4718**	0.064	13.6	ug/L	18	Standard
	Se-1	77	133.3	9.3	**1.0503**	0.190	18.1	ug/L	50	Standard
>	Ga	71	23105.9	1.6				mg/L	97	Standard
	Rb	85	235088.1	0.5				ug/L	25	Standard
	Y	89	638379.7	2.1				ug/L	376763	Standard
>	Rh	103	48.3	41.8				ug/L	20	Standard
	Mo	98	407.1	1.2	**0.2423**	0.006	2.4	ug/L	51	Standard
	Ag	107	561.3	1.7	**0.1141**	0.003	2.7	ug/L	76	Standard
	Cd	111	296.3	10.1	**0.1906**	0.019	9.8	mg/L	6	Standard
	Cd	114	649.1	7.9	**0.1726**	0.010	5.7	ug/L	18	Standard
>	In	115	501705.0	2.5				ug/L	507261	Standard
	Sn	118	5997.9	0.4	**0.9982**	0.028	2.8	ug/L	683	Standard
	Sb	123	662.1	37.4	**0.1367**	0.062	45.2	ug/L	446	Standard
	Ba	135	404621.6	0.5	**215.0734**	5.716	2.7	ug/L	28	Standard
	Ce	140	1501488.9	0.3				ug/L	33	Standard
>	Tb	159	823762.5	0.4				ug/L	800803	Standard
	Ho	165	22473.3	1.8				ug/L	10	Standard
	Tl	203	1153.0	0.6	**0.1835**	0.001	0.6	ug/L	13	Standard
	Tl	205	1021.7	4.8	**0.1961**	0.007	3.7	ug/L	13	Standard
	Pb	206	79343.2	0.5	**16.0985**	0.167	1.0	ug/L	226	Standard
	Pb	207	65263.3	1.2	**14.5843**	0.286	2.0	ug/L	204	Standard
	Pb	208	280672.4	0.9	**15.6850**	0.240	1.5	ug/L	852	Standard
	U	238	4937.1	2.5	**0.7871**	0.022	2.8	ug/L	13	Standard
>	Bi	209	450912.1	0.7				ug/L	449044	Standard

Sample ID: L1606129407
Report Date/Time: Wednesday, July 06, 2016 10:33:30
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**5.5830**	12.443	222.9	mg/L	2	Standard
Mg	24	130.0	37.1	**0.1007**	0.053	53.0	mg/L	58	Standard
K	39	498.3	2.5	**1.4228**	0.024	1.7	mg/L	27	Standard
Ca	43	138.3	7.5	**6.6525**	0.690	10.4	mg/L	20	Standard
Fe	54	23569.3	0.6	**15.4199**	0.090	0.6	mg/L	158	Standard
Fe	57	6081.2	2.7	**15.3422**	0.389	2.5	mg/L	267	Standard
Sc-1	45	49278.3	1.2				mg/L	38815	Standard
Cl	35	59773.0	1.9				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2826.9	2.9				ug/L	1617	Standard
P	31	19067.0	1.9				ug/L	19244	Standard
S	34	3487.1	4.7				ug/L	3557	Standard
Sr	88	111.7	27.4				ug/L	65	Standard
C	12	113.3	45.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	57.7				mg/L	23	Standard
Dy	164	38647.6	1.9				mg/L	13	Standard
Ho-1	165	22473.3	1.8				mg/L	10	Standard
Er	166	20056.6	4.5				mg/L	13	Standard
I	127	13512.7	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.578	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.111	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129407
Report Date/Time: Wednesday, July 06, 2016 10:33:30
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.905
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.416
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129407
Report Date/Time: Wednesday, July 06, 2016 10:33:30
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129408
Sample Date/Time: Wednesday, July 06, 2016 10:34:25
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70959.1	1.3				ug/L	68501	Standard
	Be	9	756.7	4.3	**0.8243**	0.033	4.1	ug/L	8	Standard
	Al	27	14159270.0	0.8	**96.3094**	0.910	0.9	ug/L	1397	Standard
	Sc	45	47111.5	0.8				ug/L	38815	Standard
	Ti	47	6499.7	0.7	**18.2590**	0.454	2.5	ug/L	36	Standard
	V	51	134886.9	0.7	**17.9581**	0.352	2.0	ug/L	1284	Standard
	Cr	52	147858.4	1.3	**19.3579**	0.550	2.8	ug/L	6503	Standard
	Cr	53	17798.8	1.6	**19.1853**	0.468	2.4	ug/L	492	Standard
	Mn	55	2435019.9	0.3	**375.9486**	6.829	1.8	ug/L	841	Standard
	Co	59	48552.7	1.1	**7.6035**	0.118	1.6	ug/L	229	Standard
	Ni	60	34586.8	1.2	**19.3198**	0.357	1.8	ug/L	344	Standard
	Cu	65	24621.3	1.1	**13.8825**	0.410	3.0	ug/L	115	Standard
	Zn	66	46239.5	1.2	**43.2092**	0.491	1.1	ug/L	190	Standard
>	**Ge**	72	434087.5	2.1				ug/L	409858	Standard
	As	75	9868.8	1.7	**9.0890**	0.151	1.7	ug/L	-22	Standard
	Se	82	49.3	2.7	**0.3894**	0.021	5.3	ug/L	18	Standard
	Se-1	77	92.0	6.5	**0.5020**	0.065	12.9	ug/L	50	Standard
>	**Ga**	71	15012.4	1.7				mg/L	97	Standard
	Rb	85	152672.0	0.8				ug/L	25	Standard
	Y	89	553523.8	1.3				ug/L	376763	Standard
>	**Rh**	103	20.0	66.1				ug/L	20	Standard
	Mo	98	1703.3	1.9	**0.7619**	0.024	3.2	ug/L	51	Standard
	Ag	107	394.7	6.0	**0.0849**	0.003	3.2	ug/L	76	Standard
	Cd	111	290.6	2.3	**0.1825**	0.006	3.1	mg/L	6	Standard
	Cd	114	764.2	6.2	**0.1912**	0.008	4.3	ug/L	18	Standard
>	**In**	115	519157.2	1.7				ug/L	507261	Standard
	Sn	118	405.0	28.2	**-0.0378**	0.021	54.3	ug/L	683	Standard
	Sb	123	529.8	35.5	**0.1001**	0.042	42.3	ug/L	446	Standard
	Ba	135	216547.7	1.4	**111.2307**	3.352	3.0	ug/L	28	Standard
	Ce	140	1039615.1	0.1				ug/L	33	Standard
>	**Tb**	159	843551.3	0.3				ug/L	800803	Standard
	Ho	165	16031.8	1.8				ug/L	10	Standard
	Tl	203	744.0	1.1	**0.1266**	0.003	2.1	ug/L	13	Standard
	Tl	205	701.7	2.9	**0.1441**	0.002	1.3	ug/L	13	Standard
	Pb	206	53258.1	0.9	**10.4016**	0.208	2.0	ug/L	226	Standard
	Pb	207	43508.7	1.3	**9.3600**	0.237	2.5	ug/L	204	Standard
	Pb	208	187957.8	0.8	**10.1115**	0.165	1.6	ug/L	852	Standard
	U	238	3675.4	2.9	**0.5763**	0.023	4.0	ug/L	13	Standard
>	**Bi**	209	468453.7	1.8				ug/L	449044	Standard

Sample ID: L1606129408
Report Date/Time: Wednesday, July 06, 2016 10:36:42
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.2267**	13.087	1066.9	mg/L	2	Standard
Mg	24	125.0	26.2	**0.1012**	0.037	36.5	mg/L	58	Standard
K	39	365.0	11.9	**1.0569**	0.141	13.3	mg/L	27	Standard
Ca	43	155.0	27.9	**8.0246**	2.680	33.4	mg/L	20	Standard
Fe	54	15935.4	1.6	**10.8701**	0.219	2.0	mg/L	158	Standard
Fe	57	4223.9	3.5	**10.9607**	0.389	3.5	mg/L	267	Standard
Sc-1	45	47111.5	0.8				mg/L	38815	Standard
Cl	35	59515.3	1.4				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3090.3	5.6				ug/L	1617	Standard
P	31	18973.5	2.2				ug/L	19244	Standard
S	34	3442.1	0.9				ug/L	3557	Standard
Sr	88	105.0	20.8				ug/L	65	Standard
C	12	116.7	9.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	44.1				mg/L	23	Standard
Dy	164	26399.3	4.0				mg/L	13	Standard
Ho-1	165	16031.8	1.8				mg/L	10	Standard
Er	166	14089.9	1.7				mg/L	13	Standard
I	127	8477.4	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.588	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.912	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129408
Report Date/Time: Wednesday, July 06, 2016 10:36:42
Page 2

Approved: July 07, 2016

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	102.345
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.322
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129409
Sample Date/Time: Wednesday, July 06, 2016 10:37:37
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69708.4	2.7				ug/L	68501	Standard
	Be	9	870.0	2.0	**0.9619**	0.032	3.4	ug/L	8	Standard
	Al	27	19202159.7	1.2	**132.9728**	2.381	1.8	ug/L	1397	Standard
	Sc	45	46678.5	2.3				ug/L	38815	Standard
	Ti	47	6642.5	1.4	**19.0258**	0.085	0.4	ug/L	36	Standard
	V	51	160686.5	0.8	**21.8455**	0.248	1.1	ug/L	1284	Standard
	Cr	52	156704.6	1.0	**20.9936**	0.232	1.1	ug/L	6503	Standard
	Cr	53	18536.3	2.0	**20.3975**	0.180	0.9	ug/L	492	Standard
	Mn	55	3756081.6	0.3	**591.4032**	6.380	1.1	ug/L	841	Standard
	Co	59	59706.1	0.8	**9.5336**	0.097	1.0	ug/L	229	Standard
	Ni	60	39640.8	2.1	**22.6045**	0.292	1.3	ug/L	344	Standard
	Cu	65	29127.6	0.6	**16.7474**	0.180	1.1	ug/L	115	Standard
	Zn	66	54582.1	0.6	**52.0381**	0.301	0.6	ug/L	190	Standard
>	**Ge**	72	425619.0	1.1				ug/L	409858	Standard
	As	75	6984.3	0.1	**6.5874**	0.071	1.1	ug/L	-22	Standard
	Se	82	63.7	16.3	**0.5290**	0.094	17.8	ug/L	18	Standard
	Se-1	77	105.3	9.4	**0.7132**	0.123	17.2	ug/L	50	Standard
>	**Ga**	71	16687.5	1.5				mg/L	97	Standard
	Rb	85	168766.4	0.6				ug/L	25	Standard
	Y	89	597263.8	1.9				ug/L	376763	Standard
>	**Rh**	103	46.7	27.0				ug/L	20	Standard
	Mo	98	1999.8	2.4	**0.8916**	0.023	2.6	ug/L	51	Standard
	Ag	107	515.7	0.2	**0.1048**	0.000	0.4	ug/L	76	Standard
	Cd	111	596.6	3.7	**0.3367**	0.013	3.9	mg/L	6	Standard
	Cd	114	1494.2	1.8	**0.3419**	0.007	2.1	ug/L	18	Standard
>	**In**	115	512996.6	0.7				ug/L	507261	Standard
	Sn	118	1833.4	8.5	**0.2212**	0.030	13.8	ug/L	683	Standard
	Sb	123	606.4	28.4	**0.1195**	0.040	33.7	ug/L	446	Standard
	Ba	135	423500.0	0.9	**220.0532**	0.580	0.3	ug/L	28	Standard
	Ce	140	1120040.8	0.8				ug/L	33	Standard
>	**Tb**	159	826961.8	2.3				ug/L	800803	Standard
	Ho	165	18092.5	3.7				ug/L	10	Standard
	Tl	203	838.7	4.6	**0.1446**	0.005	3.8	ug/L	13	Standard
	Tl	205	770.0	5.6	**0.1605**	0.007	4.1	ug/L	13	Standard
	Pb	206	100483.1	0.8	**20.7696**	0.061	0.3	ug/L	226	Standard
	Pb	207	83275.9	1.1	**18.9560**	0.043	0.2	ug/L	204	Standard
	Pb	208	356830.1	0.7	**20.3142**	0.281	1.4	ug/L	852	Standard
	U	238	4663.1	1.9	**0.7589**	0.013	1.7	ug/L	13	Standard
>	**Bi**	209	442634.9	1.0				ug/L	449044	Standard

Sample ID: L1606129409
Report Date/Time: Wednesday, July 06, 2016 10:39:53
Page 1

Approved: July 07, 2016

Na	23	3.3	173.2	**6.1400**	25.847	421.0	mg/L	2	Standard
Mg	24	140.0	22.3	**0.1197**	0.038	31.7	mg/L	58	Standard
K	39	373.3	22.8	**1.0948**	0.271	24.8	mg/L	27	Standard
Ca	43	445.0	10.0	**25.6355**	2.557	10.0	mg/L	20	Standard
Fe	54	17573.1	2.3	**12.1156**	0.397	3.3	mg/L	158	Standard
Fe	57	4757.4	2.3	**12.5607**	0.567	4.5	mg/L	267	Standard
Sc-1	45	46678.5	2.3				mg/L	38815	Standard
Cl	35	62395.6	1.3				ug/L	57611	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	3323.7	5.8				ug/L	1617	Standard
P	31	20153.4	2.6				ug/L	19244	Standard
S	34	3810.5	2.1				ug/L	3557	Standard
Sr	88	126.7	20.3				ug/L	65	Standard
C	12	123.3	16.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	28.6				mg/L	23	Standard
Dy	164	30012.3	1.2				mg/L	13	Standard
Ho-1	165	18092.5	3.7				mg/L	10	Standard
Er	166	16609.1	2.2				mg/L	13	Standard
I	127	29072.9	4.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.762	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.845	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129409
Report Date/Time: Wednesday, July 06, 2016 10:39:53
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.131	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.573	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129409
Report Date/Time: Wednesday, July 06, 2016 10:39:53
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129410
Sample Date/Time: Wednesday, July 06, 2016 10:40:48
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69616.3	2.3				ug/L	68501	Standard
	Be	9	961.7	5.5	**1.0616**	0.034	3.2	ug/L	8	Standard
	Al	27	18281916.3	1.2	**126.7524**	1.430	1.1	ug/L	1397	Standard
	Sc	45	47290.4	1.8				ug/L	38815	Standard
	Ti	47	6362.0	1.3	**17.8782**	0.265	1.5	ug/L	36	Standard
	V	51	159242.7	1.1	**21.2363**	0.280	1.3	ug/L	1284	Standard
	Cr	52	141025.6	0.9	**18.4273**	0.214	1.2	ug/L	6503	Standard
	Cr	53	17441.7	0.8	**18.8006**	0.170	0.9	ug/L	492	Standard
	Mn	55	3246732.0	1.4	**501.5321**	8.138	1.6	ug/L	841	Standard
	Co	59	62555.9	1.5	**9.8001**	0.170	1.7	ug/L	229	Standard
	Ni	60	41094.7	0.2	**22.9958**	0.072	0.3	ug/L	344	Standard
	Cu	65	31150.3	1.3	**17.5726**	0.242	1.4	ug/L	115	Standard
	Zn	66	58549.2	0.6	**54.7724**	0.308	0.6	ug/L	190	Standard
>	**Ge**	72	433790.5	0.2				ug/L	409858	Standard
	As	75	9785.0	0.1	**9.0175**	0.026	0.3	ug/L	-22	Standard
	Se	82	60.3	4.9	**0.4878**	0.025	5.2	ug/L	18	Standard
	Se-1	77	120.7	9.5	**0.8965**	0.155	17.3	ug/L	50	Standard
>	**Ga**	71	18277.7	3.5				mg/L	97	Standard
	Rb	85	196232.6	0.8				ug/L	25	Standard
	Y	89	583639.1	0.9				ug/L	376763	Standard
>	**Rh**	103	36.7	55.1				ug/L	20	Standard
	Mo	98	443.5	1.6	**0.2589**	0.003	1.4	ug/L	51	Standard
	Ag	107	462.0	1.3	**0.0985**	0.001	1.0	ug/L	76	Standard
	Cd	111	685.9	3.7	**0.3915**	0.015	3.9	mg/L	6	Standard
	Cd	114	1702.1	8.7	**0.3949**	0.033	8.5	ug/L	18	Standard
>	**In**	115	497941.4	0.7				ug/L	507261	Standard
	Sn	118	670.0	12.0	**0.0147**	0.016	107.7	ug/L	683	Standard
	Sb	123	469.6	32.9	**0.0912**	0.037	40.3	ug/L	446	Standard
	Ba	135	410847.6	0.8	**219.9427**	2.300	1.0	ug/L	28	Standard
	Ce	140	1208330.0	0.4				ug/L	33	Standard
>	**Tb**	159	813546.8	1.1				ug/L	800803	Standard
	Ho	165	18953.5	2.7				ug/L	10	Standard
	Tl	203	963.0	4.3	**0.1584**	0.004	2.8	ug/L	13	Standard
	Tl	205	828.4	3.8	**0.1667**	0.005	2.9	ug/L	13	Standard
	Pb	206	92666.8	0.3	**18.7524**	0.223	1.2	ug/L	226	Standard
	Pb	207	77103.7	0.6	**17.1840**	0.253	1.5	ug/L	204	Standard
	Pb	208	327107.5	0.6	**18.2311**	0.267	1.5	ug/L	852	Standard
	U	238	4511.0	0.2	**0.7210**	0.005	0.7	ug/L	13	Standard
>	**Bi**	209	452130.4	0.9				ug/L	449044	Standard

Sample ID: L1606129410
Report Date/Time: Wednesday, July 06, 2016 10:43:05
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**6.0368**	12.838	212.7	mg/L	2	Standard
Mg	24	135.0	3.7	**0.1117**	0.006	5.2	mg/L	58	Standard
K	39	476.7	12.4	**1.4188**	0.205	14.4	mg/L	27	Standard
Ca	43	226.7	17.8	**12.2322**	2.188	17.9	mg/L	20	Standard
Fe	54	18678.3	2.4	**12.7127**	0.243	1.9	mg/L	158	Standard
Fe	57	4979.2	4.0	**12.9867**	0.314	2.4	mg/L	267	Standard
> **Sc-1**	45	47290.4	1.8				mg/L	38815	Standard
Cl	35	60490.5	1.5				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	4444.0	5.0				ug/L	1617	Standard
P	31	19914.7	1.5				ug/L	19244	Standard
S	34	3688.8	4.4				ug/L	3557	Standard
Sr	88	118.3	10.6				ug/L	65	Standard
C	12	103.3	39.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	39.7				mg/L	23	Standard
Dy	164	30943.8	4.0				mg/L	13	Standard
Ho-1	165	18953.5	2.7				mg/L	10	Standard
Er	166	16829.3	3.2				mg/L	13	Standard
I	127	10401.9	3.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.628	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.839	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129410
Report Date/Time: Wednesday, July 06, 2016 10:43:05
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.163
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.687
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129410
Report Date/Time: Wednesday, July 06, 2016 10:43:05
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129414
Sample Date/Time: Wednesday, July 06, 2016 10:44:00
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71637.3	1.7				ug/L	68501	Standard
	Be	9	1021.7	6.3	**1.0968**	0.085	7.8	ug/L	8	Standard
	Al	27	18055854.1	2.0	**121.6784**	4.280	3.5	ug/L	1397	Standard
	Sc	45	48614.6	2.4				ug/L	38815	Standard
	Ti	47	6128.9	2.4	**17.3770**	0.672	3.9	ug/L	36	Standard
	V	51	159400.6	0.8	**21.4446**	0.369	1.7	ug/L	1284	Standard
	Cr	52	144599.1	0.6	**19.0917**	0.345	1.8	ug/L	6503	Standard
	Cr	53	16966.2	3.0	**18.4464**	0.876	4.7	ug/L	492	Standard
	Mn	55	4530173.8	0.5	**705.9322**	10.338	1.5	ug/L	841	Standard
	Co	59	69310.2	0.1	**10.9526**	0.185	1.7	ug/L	229	Standard
	Ni	60	46644.7	1.0	**26.3537**	0.542	2.1	ug/L	344	Standard
	Cu	65	36918.3	0.5	**21.0110**	0.308	1.5	ug/L	115	Standard
	Zn	66	85868.7	1.1	**81.0791**	0.514	0.6	ug/L	190	Standard
>	**Ge**	72	430095.7	1.6				ug/L	409858	Standard
	As	75	8396.3	0.2	**7.8187**	0.112	1.4	ug/L	-22	Standard
	Se	82	71.3	12.7	**0.5922**	0.083	13.9	ug/L	18	Standard
	Se-1	77	110.7	2.3	**0.7729**	0.049	6.4	ug/L	50	Standard
>	**Ga**	71	17934.0	4.5				mg/L	97	Standard
	Rb	85	189570.3	0.9				ug/L	25	Standard
	Y	89	609959.0	0.6				ug/L	376763	Standard
>	**Rh**	103	83.3	6.9				ug/L	20	Standard
	Mo	98	442.0	4.5	**0.2506**	0.007	2.9	ug/L	51	Standard
	Ag	107	670.0	5.1	**0.1281**	0.008	6.4	ug/L	76	Standard
	Cd	111	1213.9	1.2	**0.6372**	0.021	3.3	mg/L	6	Standard
	Cd	114	2971.9	12.0	**0.6347**	0.055	8.7	ug/L	18	Standard
>	**In**	115	519347.8	2.9				ug/L	507261	Standard
	Sn	118	811.7	22.8	**0.0342**	0.029	83.8	ug/L	683	Standard
	Sb	123	508.7	27.5	**0.0950**	0.029	30.5	ug/L	446	Standard
	Ba	135	407137.2	1.3	**209.0293**	3.304	1.6	ug/L	28	Standard
	Ce	140	1173511.2	0.8				ug/L	33	Standard
>	**Tb**	159	846889.3	0.9				ug/L	800803	Standard
	Ho	165	19894.7	3.2				ug/L	10	Standard
	Tl	203	874.7	4.5	**0.1445**	0.005	3.4	ug/L	13	Standard
	Tl	205	866.7	11.7	**0.1697**	0.015	8.7	ug/L	13	Standard
	Pb	206	768270.5	1.0	**152.1393**	1.787	1.2	ug/L	226	Standard
	Pb	207	586001.6	0.8	**127.7835**	1.154	0.9	ug/L	204	Standard
	Pb	208	2574173.5	0.5	**140.3658**	0.873	0.6	ug/L	852	Standard
	U	238	4434.3	1.5	**0.6951**	0.010	1.4	ug/L	13	Standard
>	**Bi**	209	462087.8	0.2				ug/L	449044	Standard

Sample ID: L1606129414
Report Date/Time: Wednesday, July 06, 2016 10:46:17
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	150.0	6.7	**0.1237**	0.009	7.3	mg/L	58	Standard
K	39	496.7	13.7	**1.4403**	0.227	15.8	mg/L	27	Standard
Ca	43	398.3	15.5	**21.8095**	3.086	14.2	mg/L	20	Standard
Fe	54	17527.3	1.2	**11.5979**	0.308	2.7	mg/L	158	Standard
Fe	57	4700.7	2.8	**11.8845**	0.644	5.4	mg/L	267	Standard
Sc-1	45	48614.6	2.4				mg/L	38815	Standard
Cl	35	61146.5	0.2				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	3377.0	5.9				ug/L	1617	Standard
P	31	19879.7	2.4				ug/L	19244	Standard
S	34	3838.8	2.6				ug/L	3557	Standard
Sr	88	200.0	11.5				ug/L	65	Standard
C	12	170.0	25.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	23	Standard
Dy	164	32365.0	1.1				mg/L	13	Standard
Ho-1	165	19894.7	3.2				mg/L	10	Standard
Er	166	17843.8	2.1				mg/L	13	Standard
I	127	16912.8	4.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		104.578	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.938	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129414
Report Date/Time: Wednesday, July 06, 2016 10:46:17
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.383
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.905
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129414
Report Date/Time: Wednesday, July 06, 2016 10:46:17
Page 3

Approved: July 07, 2016

Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129415
Sample Date/Time: Wednesday, July 06, 2016 10:47:11
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69356.8	2.8				ug/L	68501	Standard
	Be	9	655.0	2.6	**0.7323**	0.009	1.2	ug/L	8	Standard
	Al	27	18722279.1	2.0	**130.2889**	1.214	0.9	ug/L	1397	Standard
	Sc	45	46070.0	2.2				ug/L	38815	Standard
	Ti	47	6073.9	1.6	**17.2616**	0.359	2.1	ug/L	36	Standard
	V	51	127231.3	0.8	**17.1322**	0.226	1.3	ug/L	1284	Standard
	Cr	52	102182.4	1.4	**13.2537**	0.247	1.9	ug/L	6503	Standard
	Cr	53	12315.0	1.3	**13.3055**	0.220	1.7	ug/L	492	Standard
	Mn	55	3021759.4	0.7	**472.0520**	3.826	0.8	ug/L	841	Standard
	Co	59	47565.2	1.0	**7.5376**	0.131	1.7	ug/L	229	Standard
	Ni	60	32362.9	1.1	**18.2823**	0.173	0.9	ug/L	344	Standard
	Cu	65	17677.0	0.6	**10.0795**	0.120	1.2	ug/L	115	Standard
	Zn	66	34602.8	0.5	**32.6930**	0.405	1.2	ug/L	190	Standard
>	**Ge**	72	428940.5	0.7				ug/L	409858	Standard
	As	75	3941.9	1.4	**3.7324**	0.045	1.2	ug/L	-22	Standard
	Se	82	46.5	7.4	**0.3694**	0.033	8.9	ug/L	18	Standard
	Se-1	77	100.3	7.0	**0.6338**	0.107	16.9	ug/L	50	Standard
>	**Ga**	71	13047.3	4.0				mg/L	97	Standard
	Rb	85	118624.5	2.9				ug/L	25	Standard
	Y	89	560951.0	2.5				ug/L	376763	Standard
>	**Rh**	103	48.3	6.0				ug/L	20	Standard
	Mo	98	828.1	2.5	**0.4116**	0.010	2.5	ug/L	51	Standard
	Ag	107	345.0	5.2	**0.0778**	0.003	3.9	ug/L	76	Standard
	Cd	111	144.7	12.8	**0.1116**	0.010	8.7	mg/L	6	Standard
	Cd	114	424.5	6.8	**0.1240**	0.007	5.5	ug/L	18	Standard
>	**In**	115	512359.1	1.3				ug/L	507261	Standard
	Sn	118	641.7	0.4	**0.0060**	0.002	32.8	ug/L	683	Standard
	Sb	123	464.7	24.6	**0.0871**	0.028	31.9	ug/L	446	Standard
	Ba	135	304537.9	0.9	**158.4527**	1.532	1.0	ug/L	28	Standard
	Ce	140	927061.5	1.4				ug/L	33	Standard
>	**Tb**	159	815658.1	0.5				ug/L	800803	Standard
	Ho	165	15122.5	1.3				ug/L	10	Standard
	Tl	203	665.3	5.7	**0.1217**	0.004	3.6	ug/L	13	Standard
	Tl	205	626.7	3.3	**0.1387**	0.004	2.8	ug/L	13	Standard
	Pb	206	41069.9	0.7	**8.5027**	0.083	1.0	ug/L	226	Standard
	Pb	207	33682.7	0.3	**7.6813**	0.070	0.9	ug/L	204	Standard
	Pb	208	146067.2	0.1	**8.3310**	0.095	1.1	ug/L	852	Standard
	U	238	3682.8	0.5	**0.6094**	0.005	0.7	ug/L	13	Standard
>	**Bi**	209	441819.7	1.2				ug/L	449044	Standard

Sample ID: L1606129415
Report Date/Time: Wednesday, July 06, 2016 10:49:28
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	121.7	9.5	**0.1005**	0.014	13.8	mg/L	58	Standard
K	39	275.0	20.0	**0.7805**	0.172	22.0	mg/L	27	Standard
Ca	43	448.3	8.4	**26.1815**	1.967	7.5	mg/L	20	Standard
Fe	54	13969.2	1.8	**9.7320**	0.102	1.0	mg/L	158	Standard
Fe	57	3810.5	1.6	**10.0601**	0.130	1.3	mg/L	267	Standard
> **Sc-1**	45	46070.0	2.2				mg/L	38815	Standard
Cl	35	63382.3	0.4				ug/L	57611	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2136.8	4.5				ug/L	1617	Standard
P	31	20200.1	2.8				ug/L	19244	Standard
S	34	3783.8	2.6				ug/L	3557	Standard
Sr	88	146.7	29.8				ug/L	65	Standard
C	12	96.7	11.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	23	Standard
Dy	164	25849.2	4.7				mg/L	13	Standard
Ho-1	165	15122.5	1.3				mg/L	10	Standard
Er	166	13792.9	3.2				mg/L	13	Standard
I	127	16515.7	1.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.249	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.656	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129415
Report Date/Time: Wednesday, July 06, 2016 10:49:28
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.005	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.391	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129415
Report Date/Time: Wednesday, July 06, 2016 10:49:28
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606138108
Sample Date/Time: Wednesday, July 06, 2016 10:50:23
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72486.3	0.9				ug/L	68501	Standard
	Be	9	1533.4	3.3	**1.6163**	0.062	3.8	ug/L	8	Standard
	Al	27	25400427.9	2.0	**169.1086**	4.148	2.5	ug/L	1397	Standard
	Sc	45	51156.2	0.2				ug/L	38815	Standard
	Ti	47	8899.9	0.5	**24.3466**	0.343	1.4	ug/L	36	Standard
	V	51	344234.9	1.1	**44.8316**	0.962	2.1	ug/L	1284	Standard
	Cr	52	232795.5	0.9	**30.1671**	0.645	2.1	ug/L	6503	Standard
	Cr	53	28976.0	1.1	**30.6491**	0.369	1.2	ug/L	492	Standard
	Mn	55	7977455.3	1.5	**1199.3630**	32.576	2.7	ug/L	841	Standard
	Co	59	107887.7	3.2	**16.4465**	0.723	4.4	ug/L	229	Standard
	Ni	60	66407.2	1.3	**36.2534**	0.900	2.5	ug/L	344	Standard
	Cu	65	42270.9	0.8	**23.2092**	0.454	2.0	ug/L	115	Standard
	Zn	66	75366.6	0.5	**68.6374**	1.149	1.7	ug/L	190	Standard
>	**Ge**	72	445840.4	1.3				ug/L	409858	Standard
	As	75	12308.2	0.8	**11.0147**	0.102	0.9	ug/L	-22	Standard
	Se	82	70.7	6.0	**0.5638**	0.038	6.8	ug/L	18	Standard
	Se-1	77	145.0	4.8	**1.1765**	0.081	6.9	ug/L	50	Standard
>	**Ga**	71	31280.6	2.9				mg/L	97	Standard
	Rb	85	327883.6	1.5				ug/L	25	Standard
	Y	89	719377.2	0.7				ug/L	376763	Standard
>	**Rh**	103	35.0	0.0				ug/L	20	Standard
	Mo	98	765.6	2.9	**0.3992**	0.010	2.6	ug/L	51	Standard
	Ag	107	679.3	4.1	**0.1354**	0.005	3.6	ug/L	76	Standard
	Cd	111	351.6	7.7	**0.2222**	0.013	5.9	mg/L	6	Standard
	Cd	114	823.2	4.8	**0.2125**	0.009	4.1	ug/L	18	Standard
>	**In**	115	491492.2	0.5				ug/L	507261	Standard
	Sn	118	440.0	20.8	**-0.0272**	0.017	62.7	ug/L	683	Standard
	Sb	123	423.3	31.3	**0.0814**	0.031	38.5	ug/L	446	Standard
	Ba	135	714828.5	0.3	**387.6768**	1.440	0.4	ug/L	28	Standard
	Ce	140	1832498.4	0.5				ug/L	33	Standard
>	**Tb**	159	823866.0	2.2				ug/L	800803	Standard
	Ho	165	29406.8	0.1				ug/L	10	Standard
	Tl	203	1665.8	2.3	**0.2517**	0.010	3.8	ug/L	13	Standard
	Tl	205	1446.7	2.9	**0.2613**	0.003	1.1	ug/L	13	Standard
	Pb	206	93784.4	0.6	**19.1491**	0.463	2.4	ug/L	226	Standard
	Pb	207	76969.3	0.3	**17.3077**	0.404	2.3	ug/L	204	Standard
	Pb	208	332050.1	0.7	**18.6735**	0.512	2.7	ug/L	852	Standard
	U	238	6413.7	2.1	**1.0160**	0.040	3.9	ug/L	13	Standard
>	**Bi**	209	448223.1	2.1				ug/L	449044	Standard

Sample ID: L1606138108
Report Date/Time: Wednesday, July 06, 2016 10:52:40
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**5.0083**	11.943	238.5	mg/L	2	Standard
Mg	24	171.7	13.1	**0.1380**	0.023	17.0	mg/L	58	Standard
K	39	886.7	6.3	**2.5401**	0.168	6.6	mg/L	27	Standard
Ca	43	226.7	5.6	**11.2306**	0.672	6.0	mg/L	20	Standard
Fe	54	40072.0	2.9	**25.3299**	0.732	2.9	mg/L	158	Standard
Fe	57	9864.9	1.0	**24.3568**	0.264	1.1	mg/L	267	Standard
> **Sc-1**	45	51156.2	0.2				mg/L	38815	Standard
Cl	35	59691.4	1.9				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	3077.0	6.1				ug/L	1617	Standard
P	31	20130.0	0.4				ug/L	19244	Standard
S	34	3668.8	1.0				ug/L	3557	Standard
Sr	88	105.0	8.2				ug/L	65	Standard
C	12	73.3	15.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	45.8				mg/L	23	Standard
Dy	164	48237.7	1.2				mg/L	13	Standard
Ho-1	165	29406.8	0.1				mg/L	10	Standard
Er	166	25948.9	3.5				mg/L	13	Standard
I	127	15698.1	2.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.818	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.779	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138108
Report Date/Time: Wednesday, July 06, 2016 10:52:40
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.891
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.817
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606138108
Report Date/Time: Wednesday, July 06, 2016 10:52:40
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 10:53:36
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64259.4	3.3				ug/L	68501	Standard
	Be	9	43841.7	3.1	**51.5527**	2.497	4.8	ug/L	8	Standard
	Al	27	6953353.2	1.9	**52.2651**	1.444	2.8	ug/L	1397	Standard
	Sc	45	39743.7	0.4				ug/L	38815	Standard
	Ti	47	35704.4	1.0	**101.8805**	1.285	1.3	ug/L	36	Standard
	V	51	371494.8	0.5	**50.4382**	0.543	1.1	ug/L	1284	Standard
	Cr	52	375402.7	0.3	**51.3335**	0.715	1.4	ug/L	6503	Standard
	Cr	53	45456.4	2.6	**50.3879**	1.853	3.7	ug/L	492	Standard
	Mn	55	334501.2	2.2	**52.3232**	1.695	3.2	ug/L	841	Standard
	Co	59	318609.4	1.7	**50.6018**	1.412	2.8	ug/L	229	Standard
	Ni	60	90509.5	0.4	**51.5582**	0.574	1.1	ug/L	344	Standard
	Cu	65	90191.6	0.5	**51.6222**	0.305	0.6	ug/L	115	Standard
	Zn	66	54118.1	0.1	**51.3362**	0.581	1.1	ug/L	190	Standard
>	Ge	72	427773.7	1.1				ug/L	409858	Standard
	As	75	55742.6	0.4	**51.6238**	0.555	1.1	ug/L	-22	Standard
	Se	82	5706.7	1.4	**51.7084**	0.981	1.9	ug/L	18	Standard
	Se-1	77	3670.4	2.7	**50.3081**	1.140	2.3	ug/L	50	Standard
>	Ga	71	88.3	17.3				mg/L	97	Standard
	Rb	85	1076.7	35.5				ug/L	25	Standard
	Y	89	377618.5	2.9				ug/L	376763	Standard
>	Rh	103	46.7	32.7				ug/L	20	Standard
	Mo	98	243549.3	0.8	**100.3006**	1.362	1.4	ug/L	51	Standard
	Ag	107	315759.3	0.5	**50.2284**	0.464	0.9	ug/L	76	Standard
	Cd	111	100684.0	1.0	**50.3922**	0.736	1.5	mg/L	6	Standard
	Cd	114	247087.6	1.9	**50.5807**	0.776	1.5	ug/L	18	Standard
>	In	115	511123.8	0.7				ug/L	507261	Standard
	Sn	118	271706.3	0.8	**49.1505**	0.193	0.4	ug/L	683	Standard
	Sb	123	219531.9	1.2	**50.7744**	0.262	0.5	ug/L	446	Standard
	Ba	135	95238.1	0.7	**49.6818**	0.458	0.9	ug/L	28	Standard
	Ce	140	2296.9	75.4				ug/L	33	Standard
>	Tb	159	795428.0	0.9				ug/L	800803	Standard
	Ho	165	46.7	80.4				ug/L	10	Standard
	Tl	203	386058.6	0.7	**50.5931**	0.842	1.7	ug/L	13	Standard
	Tl	205	345836.6	1.9	**52.3425**	1.620	3.1	ug/L	13	Standard
	Pb	206	245468.8	0.5	**50.0966**	0.548	1.1	ug/L	226	Standard
	Pb	207	223245.4	0.8	**50.1748**	0.874	1.7	ug/L	204	Standard
	Pb	208	926108.0	0.5	**52.0498**	0.851	1.6	ug/L	852	Standard
	U	238	330446.1	0.9	**50.1569**	0.936	1.9	ug/L	13	Standard
>	Bi	209	448378.0	1.2				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 10:55:53
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3747.1	4.1	**4.9169**	0.220	4.5	mg/L	58	Standard
K	39	1196.7	2.7	**4.5173**	0.126	2.8	mg/L	27	Standard
Ca	43	96.7	16.6	**5.5890**	1.145	20.5	mg/L	20	Standard
Fe	54	6243.1	4.3	**4.9840**	0.237	4.8	mg/L	158	Standard
Fe	57	1828.4	4.2	**5.2938**	0.264	5.0	mg/L	267	Standard
Sc-1	45	39743.7	0.4				mg/L	38815	Standard
Cl	35	62133.8	0.9				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1636.8	2.5				ug/L	1617	Standard
P	31	20235.2	4.1				ug/L	19244	Standard
S	34	3792.1	1.3				ug/L	3557	Standard
Sr	88	61.7	33.8				ug/L	65	Standard
C	12	60.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	54.9	100.7				mg/L	13	Standard
Ho-1	165	46.7	80.4				mg/L	10	Standard
Er	166	36.7	31.5				mg/L	13	Standard
I	127	14628.7	3.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.105		
Al	27	104.530		
Sc	45			
Ti	47	101.880		
V	51	100.876		
Cr	52	102.667		
Cr	53			
Mn	55	104.646		
Co	59	101.204		
Ni	60	103.116		
Cu	65	103.244		
Zn	66	102.672		
Ge	72		104.371	
As	75	103.248		
Se	82	103.417		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 10:55:53
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.301		
Ag	107	100.457		
Cd	111	100.784		
Cd	114			
In	115			100.762
Sn	118	98.301		
Sb	123	101.549		
Ba	135	99.364		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.186		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.100		
U	238	100.314		
Bi	209			99.852
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 10:55:53
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 11:42:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68099.4	1.8				ug/L	68501	Standard
	Be	9	8.3	34.6	**0.0287**	0.003	11.1	ug/L	8	Standard
	Al	27	14163.5	24.2	**0.1355**	0.025	18.2	ug/L	1397	Standard
	Sc	45	44045.6	0.7				ug/L	38815	Standard
	Ti	47	40.3	21.7	**0.0838**	0.025	29.8	ug/L	36	Standard
	V	51	1647.2	9.4	**0.0730**	0.019	26.1	ug/L	1284	Standard
	Cr	52	8280.6	0.3	**0.1828**	0.011	5.9	ug/L	6503	Standard
	Cr	53	536.7	3.8	**0.1623**	0.024	15.0	ug/L	492	Standard
	Mn	55	3121.3	36.4	**0.3770**	0.169	44.9	ug/L	841	Standard
	Co	59	314.3	17.6	**0.0538**	0.008	15.3	ug/L	229	Standard
	Ni	60	2758.9	10.6	**1.3694**	0.170	12.4	ug/L	344	Standard
	Cu	65	169.0	22.3	**0.0803**	0.020	25.2	ug/L	115	Standard
	Zn	66	390.3	4.0	**0.2459**	0.012	4.8	ug/L	190	Standard
>	**Ge**	72	441689.0	0.7				ug/L	409858	Standard
	As	75	-29.8	41.1	**0.0722**	0.011	15.1	ug/L	-22	Standard
	Se	82	23.9	27.0	**0.1591**	0.058	36.6	ug/L	18	Standard
	Se-1	77	59.0	5.1	**0.0362**	0.043	119.3	ug/L	50	Standard
>	**Ga**	71	210.0	2.4				mg/L	97	Standard
	Rb	85	41.7	42.1				ug/L	25	Standard
	Y	89	382520.5	1.2				ug/L	376763	Standard
>	**Rh**	103	40.0	12.5				ug/L	20	Standard
	Mo	98	49.0	35.4	**0.0912**	0.007	7.5	ug/L	51	Standard
	Ag	107	101.7	48.1	**0.0389**	0.007	19.3	ug/L	76	Standard
	Cd	111	8.6	82.2	**0.0436**	0.003	7.9	mg/L	6	Standard
	Cd	114	29.0	107.5	**0.0431**	0.006	14.4	ug/L	18	Standard
>	**In**	115	523091.2	1.5				ug/L	507261	Standard
	Sn	118	720.0	15.6	**0.0173**	0.018	105.5	ug/L	683	Standard
	Sb	123	259.1	31.9	**0.0381**	0.018	47.4	ug/L	446	Standard
	Ba	135	102.7	54.1	**0.0679**	0.028	41.1	ug/L	28	Standard
	Ce	140	168.3	80.9				ug/L	33	Standard
>	**Tb**	159	833236.8	0.4				ug/L	800803	Standard
	Ho	165	16.7	96.4				ug/L	10	Standard
	Tl	203	41.3	123.5	**0.0386**	0.006	16.8	ug/L	13	Standard
	Tl	205	26.7	94.4	**0.0464**	0.004	7.9	ug/L	13	Standard
	Pb	206	344.3	44.0	**0.0642**	0.030	46.5	ug/L	226	Standard
	Pb	207	291.7	32.9	**0.0626**	0.021	33.1	ug/L	204	Standard
	Pb	208	1108.0	29.9	**0.0606**	0.018	29.5	ug/L	852	Standard
	U	238	20.0	103.3	**0.0456**	0.003	6.7	ug/L	13	Standard
>	**Bi**	209	461326.7	1.1				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 11:44:48
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	39.6	**0.0272**	0.026	94.5	mg/L	58	Standard
K	39	20.0	66.1	**-0.0714**	0.047	66.1	mg/L	27	Standard
Ca	43	36.7	15.7	**1.0732**	0.378	35.3	mg/L	20	Standard
Fe	54	157.3	15.0	**-0.0043**	0.017	399.4	mg/L	158	Standard
Fe	57	200.0	21.8	**-0.0897**	0.131	146.0	mg/L	267	Standard
Sc-1	45	44045.6	0.7				mg/L	38815	Standard
Cl	35	61661.9	0.1				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1826.8	9.6				ug/L	1617	Standard
P	31	18439.5	1.1				ug/L	19244	Standard
S	34	3442.1	6.8				ug/L	3557	Standard
Sr	88	61.7	32.8				ug/L	65	Standard
C	12	60.0	33.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	23	Standard
Dy	164	15.9	77.1				mg/L	13	Standard
Ho-1	165	16.7	96.4				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	7533.5	4.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.766	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 11:44:48
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.121
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.735
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ni	60	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 11:44:48
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 11:45:47
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64830.1	1.9				ug/L	68501	Standard
	Be	9	46499.6	1.1	**54.1704**	1.537	2.8	ug/L	8	Standard
	Al	27	7388448.8	0.7	**55.0275**	0.812	1.5	ug/L	1397	Standard
	Sc	45	44033.9	0.5				ug/L	38815	Standard
	Ti	47	39812.6	1.5	**107.6904**	3.488	3.2	ug/L	36	Standard
	V	51	400075.3	1.3	**51.4790**	0.650	1.3	ug/L	1284	Standard
	Cr	52	408299.6	1.0	**52.9448**	1.233	2.3	ug/L	6503	Standard
	Cr	53	50147.9	1.3	**52.6875**	0.621	1.2	ug/L	492	Standard
	Mn	55	360204.4	0.5	**53.3920**	0.801	1.5	ug/L	841	Standard
	Co	59	341155.0	0.4	**51.3459**	0.958	1.9	ug/L	229	Standard
	Ni	60	97475.9	0.6	**52.6264**	0.719	1.4	ug/L	344	Standard
	Cu	65	95563.8	0.6	**51.8385**	0.701	1.4	ug/L	115	Standard
	Zn	66	56825.4	0.6	**51.0848**	0.696	1.4	ug/L	190	Standard
>	Ge	72	451415.0	1.8				ug/L	409858	Standard
	As	75	58322.2	1.2	**51.1856**	0.404	0.8	ug/L	-22	Standard
	Se	82	5813.6	0.9	**49.9195**	0.668	1.3	ug/L	18	Standard
	Se-1	77	3959.5	0.2	**51.4577**	0.905	1.8	ug/L	50	Standard
>	Ga	71	216.7	13.1				mg/L	97	Standard
	Rb	85	860.0	6.2				ug/L	25	Standard
	Y	89	386323.2	0.5				ug/L	376763	Standard
>	Rh	103	43.3	33.3				ug/L	20	Standard
	Mo	98	258715.6	0.8	**102.9203**	0.336	0.3	ug/L	51	Standard
	Ag	107	334664.2	1.1	**51.4249**	0.335	0.7	ug/L	76	Standard
	Cd	111	105295.3	0.9	**50.9078**	0.378	0.7	mg/L	6	Standard
	Cd	114	257697.7	1.4	**50.9614**	0.474	0.9	ug/L	18	Standard
>	In	115	529086.9	0.5				ug/L	507261	Standard
	Sn	118	288808.4	1.0	**50.4733**	0.434	0.9	ug/L	683	Standard
	Sb	123	231526.0	1.7	**51.7299**	0.605	1.2	ug/L	446	Standard
	Ba	135	102698.6	0.9	**51.7546**	0.698	1.3	ug/L	28	Standard
	Ce	140	91.7	31.0				ug/L	33	Standard
>	Tb	159	843940.5	0.4				ug/L	800803	Standard
	Ho	165	13.3	86.6				ug/L	10	Standard
	Tl	203	410176.2	0.9	**51.5014**	0.241	0.5	ug/L	13	Standard
	Tl	205	368257.4	1.7	**53.4038**	1.508	2.8	ug/L	13	Standard
	Pb	206	259254.8	1.4	**50.6945**	0.235	0.5	ug/L	226	Standard
	Pb	207	235956.1	0.7	**50.8112**	0.400	0.8	ug/L	204	Standard
	Pb	208	952282.8	0.7	**51.2827**	0.741	1.4	ug/L	852	Standard
	U	238	350690.0	0.2	**51.0014**	0.550	1.1	ug/L	13	Standard
>	Bi	209	467938.8	1.3				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 11:48:04
Page 1

Approved: July 07, 2016

Na	23	5.0	100.0	**15.2758**	24.130	158.0	mg/L	2	Standard
Mg	24	4247.3	2.7	**5.0303**	0.122	2.4	mg/L	58	Standard
K	39	1463.4	3.7	**5.0009**	0.207	4.1	mg/L	27	Standard
Ca	43	111.7	2.6	**5.8810**	0.155	2.6	mg/L	20	Standard
Fe	54	6589.6	4.9	**4.7411**	0.215	4.5	mg/L	158	Standard
Fe	57	2028.5	2.5	**5.3009**	0.131	2.5	mg/L	267	Standard
Sc-1	45	44033.9	0.5				mg/L	38815	Standard
Cl	35	63287.2	0.5				ug/L	57611	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1883.5	7.5				ug/L	1617	Standard
P	31	20448.8	4.2				ug/L	19244	Standard
S	34	4120.6	1.7				ug/L	3557	Standard
Sr	88	73.3	33.6				ug/L	65	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	23	Standard
Dy	164	16.5	68.3				mg/L	13	Standard
Ho-1	165	13.3	86.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	13826.3	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	108.341		
Al	27	110.055		
Sc	45			
Ti	47	107.690		
V	51	102.958		
Cr	52	105.890		
Cr	53			
Mn	55	106.784		
Co	59	102.692		
Ni	60	105.253		
Cu	65	103.677		
Zn	66	102.170		
Ge	72		110.139	
As	75	102.371		
Se	82	99.839		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 11:48:04
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	102.920		
Ag	107	102.850		
Cd	111	101.816		
Cd	114			
In	115		104.303	
Sn	118	100.947		
Sb	123	103.460		
Ba	135	103.509		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.003		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.565		
U	238	102.003		
Bi	209		104.208	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 11:48:04
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 11:48:58
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64903.7	1.0				ug/L	68501	Standard
	Be	9	28.3	36.7	**0.0525**	0.012	23.6	ug/L	8	Standard
	Al	27	7001.6	13.5	**0.0871**	0.007	7.5	ug/L	1397	Standard
	Sc	45	43998.8	0.7				ug/L	38815	Standard
	Ti	47	51.7	3.0	**0.1132**	0.004	3.4	ug/L	36	Standard
	V	51	1411.2	9.5	**0.0396**	0.017	43.4	ug/L	1284	Standard
	Cr	52	7190.0	0.5	**0.0233**	0.007	30.8	ug/L	6503	Standard
	Cr	53	545.0	0.9	**0.1637**	0.005	3.0	ug/L	492	Standard
	Mn	55	1551.1	1.7	**0.1364**	0.003	2.3	ug/L	841	Standard
	Co	59	297.0	6.7	**0.0506**	0.003	5.9	ug/L	229	Standard
	Ni	60	2058.1	4.1	**0.9665**	0.043	4.5	ug/L	344	Standard
	Cu	65	146.0	7.2	**0.0666**	0.006	8.5	ug/L	115	Standard
	Zn	66	251.0	6.0	**0.1147**	0.013	11.2	ug/L	190	Standard
>	**Ge**	72	447411.5	0.4				ug/L	409858	Standard
	As	75	-12.9	47.7	**0.0875**	0.005	6.3	ug/L	-22	Standard
	Se	82	22.1	36.9	**0.1400**	0.070	50.1	ug/L	18	Standard
	Se-1	77	60.7	5.0	**0.0480**	0.038	78.8	ug/L	50	Standard
>	**Ga**	71	171.7	25.4				mg/L	97	Standard
	Rb	85	20.0	50.0				ug/L	25	Standard
	Y	89	382893.6	1.7				ug/L	376763	Standard
>	**Rh**	103	40.0	21.7				ug/L	20	Standard
	Mo	98	207.8	17.4	**0.1541**	0.014	8.9	ug/L	51	Standard
	Ag	107	130.0	34.3	**0.0430**	0.007	15.5	ug/L	76	Standard
	Cd	111	19.9	46.2	**0.0490**	0.004	8.9	mg/L	6	Standard
	Cd	114	48.1	27.0	**0.0469**	0.003	5.5	ug/L	18	Standard
>	**In**	115	529271.7	1.2				ug/L	507261	Standard
	Sn	118	1003.4	25.2	**0.0659**	0.046	69.3	ug/L	683	Standard
	Sb	123	765.7	27.3	**0.1510**	0.048	31.7	ug/L	446	Standard
	Ba	135	54.0	26.7	**0.0429**	0.007	16.7	ug/L	28	Standard
	Ce	140	33.3	37.7				ug/L	33	Standard
>	**Tb**	159	837656.9	1.4				ug/L	800803	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	93.0	31.8	**0.0452**	0.004	8.2	ug/L	13	Standard
	Tl	205	85.0	27.0	**0.0550**	0.003	6.0	ug/L	13	Standard
	Pb	206	283.0	15.5	**0.0520**	0.008	16.1	ug/L	226	Standard
	Pb	207	240.7	10.4	**0.0514**	0.005	10.1	ug/L	204	Standard
	Pb	208	1007.7	11.0	**0.0550**	0.006	10.5	ug/L	852	Standard
	U	238	64.0	46.2	**0.0520**	0.004	8.3	ug/L	13	Standard
>	**Bi**	209	461835.8	0.6				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 11:51:15
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	28.6	**0.0035**	0.012	350.5	mg/L	58	Standard
K	39	30.0	50.0	**-0.0366**	0.052	142.4	mg/L	27	Standard
Ca	43	35.0	14.3	**0.9689**	0.334	34.4	mg/L	20	Standard
Fe	54	151.0	6.9	**-0.0087**	0.008	88.1	mg/L	158	Standard
Fe	57	270.0	6.7	**0.1168**	0.048	40.8	mg/L	267	Standard
> **Sc-1**	45	43998.8	0.7				mg/L	38815	Standard
Cl	35	62661.3	0.2				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1796.8	4.9				ug/L	1617	Standard
P	31	19843.0	5.4				ug/L	19244	Standard
S	34	3858.8	4.3				ug/L	3557	Standard
Sr	88	63.3	31.9				ug/L	65	Standard
C	12	43.3	26.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	23	Standard
Dy	164	16.3	36.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	9319.5	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.163	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 11:51:15
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.339
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.849
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ni	60	
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 11:51:15
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129411 WG574195-01
Sample Date/Time: Wednesday, July 06, 2016 11:53:43
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58019.3	3.2				ug/L	68501	Standard
	Be	9	35.0	24.7	**0.0649**	0.011	16.2	ug/L	8	Standard
	Al	27	474743.5	2.2	**3.9838**	0.068	1.7	ug/L	1397	Standard
	Sc	45	39008.5	1.4				ug/L	38815	Standard
	Ti	47	164.3	9.1	**0.4624**	0.049	10.7	ug/L	36	Standard
	V	51	4968.3	2.7	**0.5626**	0.026	4.5	ug/L	1284	Standard
	Cr	52	7215.1	1.3	**0.1154**	0.011	9.7	ug/L	6503	Standard
	Cr	53	503.3	9.5	**0.1691**	0.060	35.2	ug/L	492	Standard
	Mn	55	185079.6	0.7	**30.1945**	0.512	1.7	ug/L	841	Standard
	Co	59	1774.1	4.3	**0.2998**	0.016	5.2	ug/L	229	Standard
	Ni	60	2550.5	1.9	**1.3643**	0.017	1.2	ug/L	344	Standard
	Cu	65	594.7	3.1	**0.3424**	0.014	4.1	ug/L	115	Standard
	Zn	66	2211.8	2.7	**2.0827**	0.051	2.4	ug/L	190	Standard
>	**Ge**	72	409552.4	1.1				ug/L	409858	Standard
	As	75	79.4	41.0	**0.1757**	0.032	18.3	ug/L	-22	Standard
	Se	82	16.9	22.9	**0.1092**	0.038	34.9	ug/L	18	Standard
	Se-1	77	59.7	21.2	**0.1093**	0.192	175.9	ug/L	50	Standard
>	**Ga**	71	408.3	11.4				mg/L	97	Standard
	Rb	85	2811.9	1.6				ug/L	25	Standard
	Y	89	360686.6	1.5				ug/L	376763	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	190.8	18.3	**0.1553**	0.015	9.7	ug/L	51	Standard
	Ag	107	81.7	25.2	**0.0370**	0.004	9.9	ug/L	76	Standard
	Cd	111	12.4	33.2	**0.0460**	0.002	4.9	mg/L	6	Standard
	Cd	114	39.8	47.8	**0.0461**	0.004	9.2	ug/L	18	Standard
>	**In**	115	479231.5	1.3				ug/L	507261	Standard
	Sn	118	381.7	13.8	**-0.0364**	0.009	25.3	ug/L	683	Standard
	Sb	123	1280.6	34.2	**0.2949**	0.105	35.5	ug/L	446	Standard
	Ba	135	12423.8	2.1	**6.9252**	0.057	0.8	ug/L	28	Standard
	Ce	140	21718.9	2.2				ug/L	33	Standard
>	**Tb**	159	765153.7	1.5				ug/L	800803	Standard
	Ho	165	430.0	4.2				ug/L	10	Standard
	Tl	203	43.7	44.5	**0.0392**	0.003	6.6	ug/L	13	Standard
	Tl	205	68.3	70.3	**0.0531**	0.007	14.0	ug/L	13	Standard
	Pb	206	1332.4	11.7	**0.2741**	0.033	11.9	ug/L	226	Standard
	Pb	207	1104.4	15.9	**0.2528**	0.040	16.0	ug/L	204	Standard
	Pb	208	4566.3	9.0	**0.2626**	0.024	9.0	ug/L	852	Standard
	U	238	135.0	22.4	**0.0636**	0.005	7.4	ug/L	13	Standard
>	**Bi**	209	438315.9	0.2				ug/L	449044	Standard

Sample ID: L1606129411 WG574195-01
Report Date/Time: Wednesday, July 06, 2016 11:56:00
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	55.6	**0.0225**	0.035	153.4	mg/L	58	Standard
K	39	30.0	16.7	**-0.0230**	0.018	79.7	mg/L	27	Standard
Ca	43	43.3	37.1	**1.8646**	1.188	63.7	mg/L	20	Standard
Fe	54	366.2	11.4	**0.1848**	0.036	19.3	mg/L	158	Standard
Fe	57	350.0	13.6	**0.4863**	0.168	34.5	mg/L	267	Standard
> **Sc-1**	45	39008.5	1.4				mg/L	38815	Standard
Cl	35	57580.6	2.7				ug/L	57611	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	1560.1	16.4				ug/L	1617	Standard
P	31	6503.1	5.8				ug/L	19244	Standard
S	34	3723.8	4.7				ug/L	3557	Standard
Sr	88	90.0	16.7				ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	114.6				mg/L	23	Standard
Dy	164	602.9	11.8				mg/L	13	Standard
Ho-1	165	430.0	4.2				mg/L	10	Standard
Er	166	356.7	8.6				mg/L	13	Standard
I	127	9731.5	3.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.698	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129411 WG574195-01
Report Date/Time: Wednesday, July 06, 2016 11:56:00
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.474
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.611
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129411 WG574195-01
Report Date/Time: Wednesday, July 06, 2016 11:56:00
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129412S WG574195-04
Sample Date/Time: Wednesday, July 06, 2016 11:56:54
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57445.4	3.1				ug/L	68501	Standard
	Be	9	450.0	8.9	**0.6107**	0.050	8.2	ug/L	8	Standard
	Al	27	489039.7	3.5	**4.1454**	0.215	5.2	ug/L	1397	Standard
	Sc	45	38891.5	1.7				ug/L	38815	Standard
	Ti	47	205.7	0.7	**0.5755**	0.003	0.5	ug/L	36	Standard
	V	51	7736.8	1.4	**0.9385**	0.011	1.2	ug/L	1284	Standard
	Cr	52	11112.1	4.1	**0.6564**	0.067	10.2	ug/L	6503	Standard
	Cr	53	923.4	3.3	**0.6419**	0.036	5.7	ug/L	492	Standard
	Mn	55	94357.0	1.7	**15.0987**	0.276	1.8	ug/L	841	Standard
	Co	59	4340.3	0.5	**0.7138**	0.006	0.8	ug/L	229	Standard
	Ni	60	3373.7	0.8	**1.8234**	0.010	0.6	ug/L	344	Standard
	Cu	65	1478.4	3.3	**0.8566**	0.027	3.1	ug/L	115	Standard
	Zn	66	2772.6	3.5	**2.5958**	0.102	3.9	ug/L	190	Standard
>	**Ge**	72	416194.8	0.3				ug/L	409858	Standard
	As	75	581.8	5.1	**0.6516**	0.029	4.4	ug/L	-22	Standard
	Se	82	62.8	11.0	**0.5338**	0.065	12.3	ug/L	18	Standard
	Se-1	77	71.3	3.2	**0.2612**	0.036	13.7	ug/L	50	Standard
>	**Ga**	71	405.0	5.7				mg/L	97	Standard
	Rb	85	3103.7	2.6				ug/L	25	Standard
	Y	89	356798.1	1.9				ug/L	376763	Standard
>	**Rh**	103	36.7	15.7				ug/L	20	Standard
	Mo	98	194.5	26.1	**0.1553**	0.021	13.8	ug/L	51	Standard
	Ag	107	3072.6	2.0	**0.5346**	0.010	1.9	ug/L	76	Standard
	Cd	111	1016.1	1.3	**0.5714**	0.009	1.6	mg/L	6	Standard
	Cd	114	2471.5	5.7	**0.5668**	0.031	5.5	ug/L	18	Standard
>	**In**	115	488176.1	0.5				ug/L	507261	Standard
	Sn	118	325.0	24.2	**-0.0484**	0.015	30.2	ug/L	683	Standard
	Sb	123	885.7	32.9	**0.1941**	0.070	36.2	ug/L	446	Standard
	Ba	135	10791.5	1.6	**5.9077**	0.080	1.4	ug/L	28	Standard
	Ce	140	21298.3	1.1				ug/L	33	Standard
>	**Tb**	159	768109.5	1.5				ug/L	800803	Standard
	Ho	165	291.7	8.1				ug/L	10	Standard
	Tl	203	3662.1	2.8	**0.5212**	0.015	2.9	ug/L	13	Standard
	Tl	205	3343.7	5.7	**0.5567**	0.029	5.1	ug/L	13	Standard
	Pb	206	3389.4	1.8	**0.6996**	0.014	2.0	ug/L	226	Standard
	Pb	207	2918.9	3.2	**0.6662**	0.023	3.5	ug/L	204	Standard
	Pb	208	12527.7	1.1	**0.7162**	0.009	1.3	ug/L	852	Standard
	U	238	3021.3	1.0	**0.5086**	0.005	1.0	ug/L	13	Standard
>	**Bi**	209	440798.1	0.3				ug/L	449044	Standard

Sample ID: L1606129412S WG574195-04
Report Date/Time: Wednesday, July 06, 2016 11:59:11
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	70.3	**0.0184**	0.041	222.1	mg/L	58	Standard
K	39	41.7	45.4	**0.0247**	0.077	313.0	mg/L	27	Standard
Ca	43	33.3	31.2	**1.1341**	0.714	62.9	mg/L	20	Standard
Fe	54	394.1	7.9	**0.2092**	0.029	13.7	mg/L	158	Standard
Fe	57	353.3	16.3	**0.5014**	0.206	41.2	mg/L	267	Standard
Sc-1	45	38891.5	1.7				mg/L	38815	Standard
Cl	35	58025.6	2.4				ug/L	57611	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	1313.4	11.6				ug/L	1617	Standard
P	31	6468.0	2.6				ug/L	19244	Standard
S	34	3742.1	3.8				ug/L	3557	Standard
Sr	88	71.7	14.5				ug/L	65	Standard
C	12	23.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	23	Standard
Dy	164	608.7	0.8				mg/L	13	Standard
Ho-1	165	291.7	8.1				mg/L	10	Standard
Er	166	306.7	8.2				mg/L	13	Standard
I	127	9468.0	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.860	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.546	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129412S WG574195-04
Report Date/Time: Wednesday, July 06, 2016 11:59:11
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.238
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.164
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129413SD WG574195-05
Sample Date/Time: Wednesday, July 06, 2016 12:00:05
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56752.8	1.9				ug/L	68501	Standard
	Be	9	448.3	6.1	**0.6159**	0.040	6.5	ug/L	8	Standard
	Al	27	511667.1	1.4	**4.3864**	0.140	3.2	ug/L	1397	Standard
	Sc	45	38462.1	2.2				ug/L	38815	Standard
	Ti	47	206.3	7.1	**0.5882**	0.043	7.3	ug/L	36	Standard
	V	51	8013.4	0.7	**0.9972**	0.010	1.0	ug/L	1284	Standard
	Cr	52	11427.3	0.6	**0.7305**	0.007	0.9	ug/L	6503	Standard
	Cr	53	1048.4	8.9	**0.8067**	0.106	13.1	ug/L	492	Standard
	Mn	55	78050.9	0.3	**12.6966**	0.037	0.3	ug/L	841	Standard
	Co	59	4297.9	0.9	**0.7194**	0.005	0.7	ug/L	229	Standard
	Ni	60	3335.0	1.4	**1.8356**	0.029	1.6	ug/L	344	Standard
	Cu	65	1437.4	1.5	**0.8476**	0.012	1.4	ug/L	115	Standard
	Zn	66	2975.3	3.4	**2.8454**	0.097	3.4	ug/L	190	Standard
>	**Ge**	72	408909.0	0.3				ug/L	409858	Standard
	As	75	580.4	0.8	**0.6601**	0.006	0.8	ug/L	-22	Standard
	Se	82	59.9	9.3	**0.5172**	0.052	10.0	ug/L	18	Standard
	Se-1	77	83.7	8.4	**0.4588**	0.100	21.8	ug/L	50	Standard
>	**Ga**	71	438.3	8.7				mg/L	97	Standard
	Rb	85	3395.4	4.4				ug/L	25	Standard
	Y	89	352479.5	0.3				ug/L	376763	Standard
>	**Rh**	103	40.0	12.5				ug/L	20	Standard
	Mo	98	131.0	10.1	**0.1291**	0.006	4.7	ug/L	51	Standard
	Ag	107	2956.6	1.2	**0.5245**	0.006	1.1	ug/L	76	Standard
	Cd	111	1000.4	2.1	**0.5729**	0.006	1.1	mg/L	6	Standard
	Cd	114	2389.3	8.1	**0.5591**	0.050	9.0	ug/L	18	Standard
>	**In**	115	479271.2	1.6				ug/L	507261	Standard
	Sn	118	283.3	26.8	**-0.0552**	0.015	27.5	ug/L	683	Standard
	Sb	123	772.6	30.8	**0.1703**	0.059	34.7	ug/L	446	Standard
	Ba	135	11636.8	1.8	**6.4887**	0.171	2.6	ug/L	28	Standard
	Ce	140	22873.9	1.1				ug/L	33	Standard
>	**Tb**	159	762982.8	1.4				ug/L	800803	Standard
	Ho	165	351.7	3.0				ug/L	10	Standard
	Tl	203	3533.4	1.4	**0.5094**	0.008	1.6	ug/L	13	Standard
	Tl	205	3240.3	5.3	**0.5465**	0.026	4.8	ug/L	13	Standard
	Pb	206	3471.7	1.2	**0.7249**	0.002	0.3	ug/L	226	Standard
	Pb	207	2933.0	1.8	**0.6770**	0.010	1.4	ug/L	204	Standard
	Pb	208	12661.4	1.9	**0.7320**	0.010	1.4	ug/L	852	Standard
	U	238	3053.3	1.9	**0.5190**	0.011	2.2	ug/L	13	Standard
>	**Bi**	209	435840.4	0.9				ug/L	449044	Standard

Sample ID: L1606129413SD WG574195-05
Report Date/Time: Wednesday, July 06, 2016 12:02:22
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	17.3	**0.0299**	0.011	36.1	mg/L	58	Standard
K	39	56.7	31.0	**0.0855**	0.068	79.4	mg/L	27	Standard
Ca	43	58.3	21.6	**3.0174**	1.012	33.5	mg/L	20	Standard
Fe	54	355.6	17.8	**0.1811**	0.060	33.4	mg/L	158	Standard
Fe	57	335.0	21.7	**0.4491**	0.230	51.3	mg/L	267	Standard
> **Sc-1**	45	38462.1	2.2				mg/L	38815	Standard
Cl	35	57937.9	1.3				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1543.4	5.5				ug/L	1617	Standard
P	31	6171.3	2.7				ug/L	19244	Standard
S	34	3643.8	4.4				ug/L	3557	Standard
Sr	88	58.3	13.1				ug/L	65	Standard
C	12	30.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	23	Standard
Dy	164	619.5	6.4				mg/L	13	Standard
Ho-1	165	351.7	3.0				mg/L	10	Standard
Er	166	290.0	17.2				mg/L	13	Standard
I	127	9638.1	1.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.849	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.768	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129413SD WG574195-05
Report Date/Time: Wednesday, July 06, 2016 12:02:22
Page 2

Approved: July 07, 2016

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.482
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	97.060
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129413SD WG574195-05
Report Date/Time: Wednesday, July 06, 2016 12:02:22
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129401
Sample Date/Time: Wednesday, July 06, 2016 12:03:17
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56856.6	3.5				ug/L	68501	Standard
	Be	9	21.7	48.0	**0.0483**	0.014	29.2	ug/L	8	Standard
	Al	27	253447.2	0.5	**2.1874**	0.075	3.4	ug/L	1397	Standard
	Sc	45	38660.9	1.6				ug/L	38815	Standard
	Ti	47	129.0	7.6	**0.3545**	0.029	8.3	ug/L	36	Standard
	V	51	4706.0	3.1	**0.5213**	0.027	5.2	ug/L	1284	Standard
	Cr	52	10002.3	1.0	**0.5122**	0.018	3.4	ug/L	6503	Standard
	Cr	53	778.4	3.5	**0.4845**	0.031	6.4	ug/L	492	Standard
	Mn	55	153072.8	1.4	**24.8062**	0.265	1.1	ug/L	841	Standard
	Co	59	1522.4	4.0	**0.2564**	0.008	3.2	ug/L	229	Standard
	Ni	60	2542.5	1.5	**1.3506**	0.013	0.9	ug/L	344	Standard
	Cu	65	1174.7	1.6	**0.6850**	0.006	0.8	ug/L	115	Standard
	Zn	66	2512.2	1.7	**2.3665**	0.048	2.0	ug/L	190	Standard
>	**Ge**	72	411973.4	1.0				ug/L	409858	Standard
	As	75	130.2	39.7	**0.2239**	0.050	22.2	ug/L	-22	Standard
	Se	82	17.1	59.3	**0.1098**	0.096	87.8	ug/L	18	Standard
	Se-1	77	59.0	1.7	**0.0935**	0.015	15.6	ug/L	50	Standard
>	**Ga**	71	395.0	12.7				mg/L	97	Standard
	Rb	85	3442.1	5.5				ug/L	25	Standard
	Y	89	354531.6	0.5				ug/L	376763	Standard
>	**Rh**	103	18.3	68.6				ug/L	20	Standard
	Mo	98	119.9	20.6	**0.1232**	0.011	8.9	ug/L	51	Standard
	Ag	107	69.3	12.1	**0.0346**	0.001	4.1	ug/L	76	Standard
	Cd	111	21.4	9.8	**0.0506**	0.001	2.0	mg/L	6	Standard
	Cd	114	57.3	13.3	**0.0496**	0.002	3.5	ug/L	18	Standard
>	**In**	115	488808.1	0.8				ug/L	507261	Standard
	Sn	118	286.7	31.3	**-0.0557**	0.017	30.8	ug/L	683	Standard
	Sb	123	646.7	31.9	**0.1363**	0.051	37.3	ug/L	446	Standard
	Ba	135	8374.3	0.1	**4.5823**	0.034	0.7	ug/L	28	Standard
	Ce	140	22243.0	1.7				ug/L	33	Standard
>	**Tb**	159	773372.9	1.1				ug/L	800803	Standard
	Ho	165	331.7	11.1				ug/L	10	Standard
	Tl	203	31.7	3.6	**0.0376**	0.000	0.5	ug/L	13	Standard
	Tl	205	13.3	43.3	**0.0446**	0.001	2.0	ug/L	13	Standard
	Pb	206	3214.7	0.3	**0.6685**	0.007	1.0	ug/L	226	Standard
	Pb	207	2629.9	4.6	**0.6047**	0.025	4.1	ug/L	204	Standard
	Pb	208	11610.4	0.6	**0.6689**	0.008	1.1	ug/L	852	Standard
	U	238	65.7	4.9	**0.0528**	0.000	0.8	ug/L	13	Standard
>	**Bi**	209	437427.3	0.7				ug/L	449044	Standard

Sample ID: L1606129401
Report Date/Time: Wednesday, July 06, 2016 12:05:34
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	29.0	**0.0205**	0.017	83.1	mg/L	58	Standard
K	39	40.0	50.0	**0.0176**	0.078	440.7	mg/L	27	Standard
Ca	43	40.0	25.0	**1.6363**	0.685	41.9	mg/L	20	Standard
Fe	54	384.1	18.3	**0.2031**	0.063	31.1	mg/L	158	Standard
Fe	57	356.7	5.7	**0.5190**	0.086	16.6	mg/L	267	Standard
> **Sc-1**	45	38660.9	1.6				mg/L	38815	Standard
Cl	35	57370.4	1.2				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1486.7	8.8				ug/L	1617	Standard
P	31	6338.0	0.8				ug/L	19244	Standard
S	34	3500.4	1.6				ug/L	3557	Standard
Sr	88	70.0	24.7				ug/L	65	Standard
C	12	20.0	50.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	23	Standard
Dy	164	573.9	11.5				mg/L	13	Standard
Ho-1	165	331.7	11.1				mg/L	10	Standard
Er	166	266.7	19.2				mg/L	13	Standard
I	127	9404.6	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.001	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.516	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129401
Report Date/Time: Wednesday, July 06, 2016 12:05:34
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.362
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.413
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129401
Report Date/Time: Wednesday, July 06, 2016 12:05:34
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129402
Sample Date/Time: Wednesday, July 06, 2016 12:06:28
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55727.4	2.9				ug/L	68501	Standard
	Be	9	26.7	71.0	**0.0554**	0.025	45.6	ug/L	8	Standard
	Al	27	355208.9	0.6	**3.1116**	0.073	2.4	ug/L	1397	Standard
	Sc	45	38490.5	1.6				ug/L	38815	Standard
	Ti	47	137.0	7.2	**0.3805**	0.026	6.8	ug/L	36	Standard
	V	51	3181.2	2.4	**0.3083**	0.013	4.2	ug/L	1284	Standard
	Cr	52	7046.6	1.5	**0.0910**	0.007	8.1	ug/L	6503	Standard
	Cr	53	445.0	7.9	**0.1007**	0.038	37.9	ug/L	492	Standard
	Mn	55	62149.5	0.5	**10.0758**	0.126	1.3	ug/L	841	Standard
	Co	59	990.7	3.1	**0.1698**	0.006	3.6	ug/L	229	Standard
	Ni	60	2008.5	3.0	**1.0412**	0.045	4.3	ug/L	344	Standard
	Cu	65	501.7	4.6	**0.2868**	0.015	5.3	ug/L	115	Standard
	Zn	66	1399.4	3.9	**1.2760**	0.045	3.5	ug/L	190	Standard
>	**Ge**	72	409521.5	0.8				ug/L	409858	Standard
	As	75	12.5	172.1	**0.1110**	0.021	18.8	ug/L	-22	Standard
	Se	82	10.5	43.9	**0.0481**	0.043	89.6	ug/L	18	Standard
	Se-1	77	56.3	5.4	**0.0596**	0.039	65.9	ug/L	50	Standard
>	**Ga**	71	276.7	15.4				mg/L	97	Standard
	Rb	85	1983.5	4.3				ug/L	25	Standard
	Y	89	351546.8	1.0				ug/L	376763	Standard
>	**Rh**	103	28.3	66.8				ug/L	20	Standard
	Mo	98	63.3	18.4	**0.0992**	0.005	4.9	ug/L	51	Standard
	Ag	107	73.0	2.4	**0.0354**	0.000	0.5	ug/L	76	Standard
	Cd	111	9.5	59.4	**0.0444**	0.003	6.7	mg/L	6	Standard
	Cd	114	7.7	41.1	**0.0390**	0.001	1.7	ug/L	18	Standard
>	**In**	115	480900.1	0.8				ug/L	507261	Standard
	Sn	118	273.3	30.7	**-0.0575**	0.016	27.5	ug/L	683	Standard
	Sb	123	545.0	29.4	**0.1135**	0.038	33.9	ug/L	446	Standard
	Ba	135	6151.2	0.6	**3.4251**	0.011	0.3	ug/L	28	Standard
	Ce	140	16228.7	3.1				ug/L	33	Standard
>	**Tb**	159	762988.8	1.0				ug/L	800803	Standard
	Ho	165	260.0	5.8				ug/L	10	Standard
	Tl	203	21.0	21.8	**0.0362**	0.001	1.7	ug/L	13	Standard
	Tl	205	16.7	45.8	**0.0451**	0.001	2.6	ug/L	13	Standard
	Pb	206	954.4	5.5	**0.1966**	0.011	5.6	ug/L	226	Standard
	Pb	207	774.4	6.6	**0.1781**	0.012	6.6	ug/L	204	Standard
	Pb	208	3303.8	1.1	**0.1913**	0.002	1.1	ug/L	852	Standard
	U	238	67.3	16.4	**0.0531**	0.002	3.2	ug/L	13	Standard
>	**Bi**	209	435406.8	0.0				ug/L	449044	Standard

Sample ID: L1606129402
Report Date/Time: Wednesday, July 06, 2016 12:08:45
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	30.0	**0.0438**	0.026	59.2	mg/L	58	Standard
K	39	53.3	19.5	**0.0725**	0.042	57.3	mg/L	27	Standard
Ca	43	35.0	86.9	**1.2893**	2.236	173.4	mg/L	20	Standard
Fe	54	235.9	19.0	**0.0786**	0.036	45.3	mg/L	158	Standard
Fe	57	275.0	6.6	**0.2477**	0.053	21.5	mg/L	267	Standard
> **Sc-1**	45	38490.5	1.6				mg/L	38815	Standard
Cl	35	56979.6	1.6				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1446.7	8.9				ug/L	1617	Standard
P	31	6057.9	4.7				ug/L	19244	Standard
S	34	3533.7	1.3				ug/L	3557	Standard
Sr	88	60.0	38.2				ug/L	65	Standard
C	12	53.3	47.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	23	Standard
Dy	164	461.8	9.9				mg/L	13	Standard
Ho-1	165	260.0	5.8				mg/L	10	Standard
Er	166	240.0	15.0				mg/L	13	Standard
I	127	9427.9	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.352	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.918	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129402
Report Date/Time: Wednesday, July 06, 2016 12:08:45
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.803
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.963
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129402
Report Date/Time: Wednesday, July 06, 2016 12:08:45
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129402PS WG574825-01
Sample Date/Time: Wednesday, July 06, 2016 12:09:40
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54790.6	1.6				ug/L	68501	Standard
	Be	9	39210.7	2.1	**54.0276**	0.299	0.6	ug/L	8	Standard
	Al	27	349919.9	1.2	**3.1165**	0.040	1.3	ug/L	1397	Standard
	Sc	45	38071.1	1.5				ug/L	38815	Standard
	Ti	47	139.3	7.7	**0.3905**	0.032	8.3	ug/L	36	Standard
	V	51	357198.1	0.5	**51.0105**	0.499	1.0	ug/L	1284	Standard
	Cr	52	374242.3	0.6	**53.8691**	0.605	1.1	ug/L	6503	Standard
	Cr	53	44929.9	1.3	**52.3904**	0.872	1.7	ug/L	492	Standard
	Mn	55	385613.1	1.2	**63.4541**	1.113	1.8	ug/L	841	Standard
	Co	59	296804.1	1.8	**49.5762**	1.152	2.3	ug/L	229	Standard
	Ni	60	90550.8	1.5	**54.2626**	1.046	1.9	ug/L	344	Standard
	Cu	65	89722.9	0.9	**54.0167**	0.809	1.5	ug/L	115	Standard
	Zn	66	60871.4	1.6	**60.7556**	1.323	2.2	ug/L	190	Standard
>	Ge	72	406696.1	0.6				ug/L	409858	Standard
	As	75	57014.1	0.8	**55.5263**	0.338	0.6	ug/L	-22	Standard
	Se	82	6157.5	2.0	**58.6840**	0.934	1.6	ug/L	18	Standard
	Se-1	77	4118.6	1.0	**59.5136**	0.313	0.5	ug/L	50	Standard
>	Ga	71	278.3	7.5				mg/L	97	Standard
	Rb	85	2040.1	11.2				ug/L	25	Standard
	Y	89	353428.2	1.1				ug/L	376763	Standard
>	Rh	103	26.7	57.3				ug/L	20	Standard
	Mo	98	64.1	32.2	**0.0994**	0.009	9.5	ug/L	51	Standard
	Ag	107	307132.7	0.5	**51.4044**	1.091	2.1	ug/L	76	Standard
	Cd	111	102209.5	1.3	**53.8173**	1.067	2.0	mg/L	6	Standard
	Cd	114	247369.8	2.7	**53.2740**	1.402	2.6	ug/L	18	Standard
>	In	115	485872.2	1.6				ug/L	507261	Standard
	Sn	118	406.7	28.8	**-0.0323**	0.024	73.6	ug/L	683	Standard
	Sb	123	165974.2	9.4	**40.3528**	3.311	8.2	ug/L	446	Standard
	Ba	135	100406.3	1.0	**55.1115**	1.426	2.6	ug/L	28	Standard
	Ce	140	17148.0	2.3				ug/L	33	Standard
>	Tb	159	762062.0	1.0				ug/L	800803	Standard
	Ho	165	298.3	11.2				ug/L	10	Standard
	Tl	203	380011.9	0.5	**51.1742**	0.679	1.3	ug/L	13	Standard
	Tl	205	332491.0	1.8	**51.7103**	1.465	2.8	ug/L	13	Standard
	Pb	206	244455.9	0.3	**51.2687**	0.650	1.3	ug/L	226	Standard
	Pb	207	213518.0	0.6	**49.3099**	0.355	0.7	ug/L	204	Standard
	Pb	208	895635.4	1.1	**51.7280**	1.052	2.0	ug/L	852	Standard
	U	238	304258.0	0.7	**47.4576**	0.682	1.4	ug/L	13	Standard
>	Bi	209	436323.4	1.0				ug/L	449044	Standard

Sample ID: L1606129402PS WG574825-01
Report Date/Time: Wednesday, July 06, 2016 12:11:57
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	43.3	**0.0262**	0.029	109.0	mg/L	58	Standard
K	39	21.7	48.0	**-0.0536**	0.043	80.3	mg/L	27	Standard
Ca	43	38.3	19.9	**1.5703**	0.606	38.6	mg/L	20	Standard
Fe	54	229.0	24.0	**0.0748**	0.044	58.9	mg/L	158	Standard
Fe	57	328.3	26.3	**0.4430**	0.310	69.9	mg/L	267	Standard
Sc-1	45	38071.1	1.5				mg/L	38815	Standard
Cl	35	57080.7	0.6				ug/L	57611	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	1353.4	3.7				ug/L	1617	Standard
P	31	6239.6	1.0				ug/L	19244	Standard
S	34	3545.4	3.4				ug/L	3557	Standard
Sr	88	58.3	17.8				ug/L	65	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	23	Standard
Dy	164	519.0	13.5				mg/L	13	Standard
Ho-1	165	298.3	11.2				mg/L	10	Standard
Er	166	230.0	13.0				mg/L	13	Standard
I	127	8790.9	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		79.985	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.229	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129402PS WG574825-01
Report Date/Time: Wednesday, July 06, 2016 12:11:57
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.784
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.167
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129402SDL WG574825-02
Sample Date/Time: Wednesday, July 06, 2016 12:12:51
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54700.3	2.3				ug/L	68501	Standard
	Be	9	28.3	40.8	**0.0584**	0.015	26.5	ug/L	8	Standard
	Al	27	73412.6	3.4	**0.6828**	0.029	4.2	ug/L	1397	Standard
	Sc	45	38520.6	1.2				ug/L	38815	Standard
	Ti	47	44.0	15.9	**0.1062**	0.021	20.1	ug/L	36	Standard
	V	51	1855.2	4.9	**0.1254**	0.011	9.1	ug/L	1284	Standard
	Cr	52	5931.8	1.1	**-0.0525**	0.011	20.6	ug/L	6503	Standard
	Cr	53	220.0	6.0	**-0.1563**	0.014	8.9	ug/L	492	Standard
	Mn	55	13278.8	8.4	**2.1236**	0.179	8.4	ug/L	841	Standard
	Co	59	439.0	11.4	**0.0798**	0.008	10.1	ug/L	229	Standard
	Ni	60	1383.1	2.0	**0.6854**	0.014	2.0	ug/L	344	Standard
	Cu	65	176.0	2.8	**0.0942**	0.002	2.6	ug/L	115	Standard
	Zn	66	955.7	4.6	**0.8559**	0.041	4.8	ug/L	190	Standard
>	**Ge**	72	400899.4	0.7				ug/L	409858	Standard
	As	75	-14.9	238.7	**0.0840**	0.035	42.1	ug/L	-22	Standard
	Se	82	23.4	28.9	**0.1750**	0.064	36.6	ug/L	18	Standard
	Se-1	77	53.3	4.7	**0.0331**	0.043	130.4	ug/L	50	Standard
>	**Ga**	71	101.7	12.4				mg/L	97	Standard
	Rb	85	461.7	6.2				ug/L	25	Standard
	Y	89	350361.9	1.6				ug/L	376763	Standard
>	**Rh**	103	28.3	10.2				ug/L	20	Standard
	Mo	98	91.5	56.2	**0.1114**	0.022	20.1	ug/L	51	Standard
	Ag	107	144.0	18.7	**0.0473**	0.004	9.4	ug/L	76	Standard
	Cd	111	29.2	12.8	**0.0548**	0.002	3.7	mg/L	6	Standard
	Cd	114	54.0	33.8	**0.0490**	0.004	7.9	ug/L	18	Standard
>	**In**	115	483201.8	0.5				ug/L	507261	Standard
	Sn	118	223.3	32.2	**-0.0673**	0.014	20.4	ug/L	683	Standard
	Sb	123	4340.8	19.8	**1.0427**	0.214	20.6	ug/L	446	Standard
	Ba	135	1163.7	5.0	**0.6576**	0.030	4.6	ug/L	28	Standard
	Ce	140	1280.1	25.4				ug/L	33	Standard
>	**Tb**	159	755371.6	0.4				ug/L	800803	Standard
	Ho	165	23.3	12.4				ug/L	10	Standard
	Tl	203	202.3	18.7	**0.0608**	0.005	8.5	ug/L	13	Standard
	Tl	205	188.3	38.1	**0.0720**	0.011	15.7	ug/L	13	Standard
	Pb	206	349.7	10.7	**0.0698**	0.008	11.6	ug/L	226	Standard
	Pb	207	301.0	10.7	**0.0689**	0.008	11.1	ug/L	204	Standard
	Pb	208	1311.7	14.2	**0.0763**	0.011	14.4	ug/L	852	Standard
	U	238	138.3	31.6	**0.0643**	0.007	10.7	ug/L	13	Standard
>	**Bi**	209	433563.8	0.3				ug/L	449044	Standard

Sample ID: L1606129402SDL WG574825-02
Report Date/Time: Wednesday, July 06, 2016 12:15:08
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	12.5	**0.0162**	0.007	41.8	mg/L	58	Standard
K	39	35.0	14.3	**-0.0012**	0.021	1708.5	mg/L	27	Standard
Ca	43	16.7	17.3	**-0.0559**	0.217	388.7	mg/L	20	Standard
Fe	54	72.9	24.0	**-0.0586**	0.015	26.1	mg/L	158	Standard
Fe	57	255.0	9.0	**0.1794**	0.069	38.3	mg/L	267	Standard
Sc-1	45	38520.6	1.2				mg/L	38815	Standard
Cl	35	57567.2	1.3				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	1493.4	3.9				ug/L	1617	Standard
P	31	5902.8	2.7				ug/L	19244	Standard
S	34	3515.4	7.2				ug/L	3557	Standard
Sr	88	65.0	35.3				ug/L	65	Standard
C	12	53.3	54.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	64.4				mg/L	23	Standard
Dy	164	39.0	76.2				mg/L	13	Standard
Ho-1	165	23.3	12.4				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	9352.9	2.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		79.853	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.814	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129402SDL WG574825-02
Report Date/Time: Wednesday, July 06, 2016 12:15:08
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.257
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.553
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129404
Sample Date/Time: Wednesday, July 06, 2016 12:16:03
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55356.0	2.8				ug/L	68501	Standard
	Be	9	35.0	37.8	**0.0670**	0.017	26.0	ug/L	8	Standard
	Al	27	288380.7	1.7	**2.5498**	0.086	3.4	ug/L	1397	Standard
	Sc	45	37910.7	1.6				ug/L	38815	Standard
	Ti	47	133.3	4.5	**0.3737**	0.020	5.3	ug/L	36	Standard
	V	51	4846.3	0.6	**0.5519**	0.007	1.3	ug/L	1284	Standard
	Cr	52	8450.0	0.8	**0.3072**	0.012	4.0	ug/L	6503	Standard
	Cr	53	633.3	6.4	**0.3281**	0.051	15.4	ug/L	492	Standard
	Mn	55	81458.4	0.3	**13.3665**	0.080	0.6	ug/L	841	Standard
	Co	59	1490.1	4.7	**0.2551**	0.012	4.9	ug/L	229	Standard
	Ni	60	1995.8	2.9	**1.0452**	0.038	3.7	ug/L	344	Standard
	Cu	65	792.0	2.3	**0.4650**	0.011	2.4	ug/L	115	Standard
	Zn	66	2804.3	1.6	**2.6986**	0.046	1.7	ug/L	190	Standard
>	**Ge**	72	405530.8	0.5				ug/L	409858	Standard
	As	75	91.8	10.5	**0.1884**	0.009	4.8	ug/L	-22	Standard
	Se	82	14.0	22.9	**0.0821**	0.030	36.5	ug/L	18	Standard
	Se-1	77	50.3	22.2	**-0.0198**	0.167	845.0	ug/L	50	Standard
>	**Ga**	71	443.3	8.8				mg/L	97	Standard
	Rb	85	3478.7	3.6				ug/L	25	Standard
	Y	89	346530.8	2.1				ug/L	376763	Standard
>	**Rh**	103	21.7	53.3				ug/L	20	Standard
	Mo	98	38.5	9.1	**0.0883**	0.002	1.9	ug/L	51	Standard
	Ag	107	90.7	4.5	**0.0384**	0.001	1.4	ug/L	76	Standard
	Cd	111	32.2	12.9	**0.0564**	0.002	3.6	mg/L	6	Standard
	Cd	114	56.3	46.1	**0.0496**	0.006	11.3	ug/L	18	Standard
>	**In**	115	482585.2	1.1				ug/L	507261	Standard
	Sn	118	261.7	29.4	**-0.0598**	0.015	24.8	ug/L	683	Standard
	Sb	123	1752.1	30.8	**0.4084**	0.130	31.8	ug/L	446	Standard
	Ba	135	6403.0	2.4	**3.5521**	0.068	1.9	ug/L	28	Standard
	Ce	140	22207.9	2.6				ug/L	33	Standard
>	**Tb**	159	747679.0	1.3				ug/L	800803	Standard
	Ho	165	328.3	8.4				ug/L	10	Standard
	Tl	203	70.0	40.8	**0.0429**	0.004	9.2	ug/L	13	Standard
	Tl	205	61.7	32.8	**0.0523**	0.003	6.2	ug/L	13	Standard
	Pb	206	4676.4	2.0	**0.9892**	0.018	1.8	ug/L	226	Standard
	Pb	207	3935.8	4.2	**0.9193**	0.033	3.6	ug/L	204	Standard
	Pb	208	16777.7	1.0	**0.9813**	0.004	0.4	ug/L	852	Standard
	U	238	97.3	10.3	**0.0580**	0.002	2.7	ug/L	13	Standard
>	**Bi**	209	430847.5	0.8				ug/L	449044	Standard

Sample ID: L1606129404
Report Date/Time: Wednesday, July 06, 2016 12:18:19
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**9.9759**	16.247	162.9	mg/L	2	Standard
Mg	24	53.3	21.7	**0.0357**	0.017	47.3	mg/L	58	Standard
K	39	38.3	19.9	**0.0150**	0.034	224.3	mg/L	27	Standard
Ca	43	21.7	48.0	**0.3274**	0.754	230.2	mg/L	20	Standard
Fe	54	375.8	5.4	**0.2018**	0.014	7.1	mg/L	158	Standard
Fe	57	395.0	11.0	**0.6746**	0.165	24.5	mg/L	267	Standard
> **Sc-1**	45	37910.7	1.6				mg/L	38815	Standard
Cl	35	57027.1	0.7				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1433.4	12.3				ug/L	1617	Standard
P	31	6096.2	1.4				ug/L	19244	Standard
S	34	3193.7	7.5				ug/L	3557	Standard
Sr	88	73.3	17.2				ug/L	65	Standard
C	12	46.7	32.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	120.2				mg/L	23	Standard
Dy	164	569.8	11.8				mg/L	13	Standard
Ho-1	165	328.3	8.4				mg/L	10	Standard
Er	166	283.3	8.2				mg/L	13	Standard
I	127	9558.0	0.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.810	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.944	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129404
Report Date/Time: Wednesday, July 06, 2016 12:18:19
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.136
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.948
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129404
Report Date/Time: Wednesday, July 06, 2016 12:18:19
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129405
Sample Date/Time: Wednesday, July 06, 2016 12:19:14
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55280.7	2.4				ug/L	68501	Standard
	Be	9	28.3	56.7	**0.0578**	0.021	36.8	ug/L	8	Standard
	Al	27	345100.5	2.3	**3.0477**	0.083	2.7	ug/L	1397	Standard
	Sc	45	37553.2	2.4				ug/L	38815	Standard
	Ti	47	159.0	8.7	**0.4458**	0.044	9.9	ug/L	36	Standard
	V	51	3623.9	1.5	**0.3706**	0.009	2.5	ug/L	1284	Standard
	Cr	52	7451.5	0.4	**0.1485**	0.012	7.7	ug/L	6503	Standard
	Cr	53	463.3	5.0	**0.1216**	0.030	25.1	ug/L	492	Standard
	Mn	55	63417.4	0.9	**10.2694**	0.142	1.4	ug/L	841	Standard
	Co	59	1040.7	2.7	**0.1779**	0.005	2.9	ug/L	229	Standard
	Ni	60	1672.4	3.0	**0.8389**	0.023	2.8	ug/L	344	Standard
	Cu	65	436.3	8.4	**0.2473**	0.022	8.9	ug/L	115	Standard
	Zn	66	3256.0	1.8	**3.1159**	0.080	2.6	ug/L	190	Standard
>	**Ge**	72	410064.5	0.7				ug/L	409858	Standard
	As	75	32.7	78.6	**0.1303**	0.025	18.8	ug/L	-22	Standard
	Se	82	12.7	55.9	**0.0690**	0.066	96.2	ug/L	18	Standard
	Se-1	77	48.3	10.4	**-0.0572**	0.076	132.7	ug/L	50	Standard
>	**Ga**	71	286.7	11.6				mg/L	97	Standard
	Rb	85	2041.8	2.1				ug/L	25	Standard
	Y	89	353144.0	1.9				ug/L	376763	Standard
>	**Rh**	103	23.3	24.7				ug/L	20	Standard
	Mo	98	117.0	7.9	**0.1233**	0.004	3.6	ug/L	51	Standard
	Ag	107	97.3	22.3	**0.0397**	0.004	9.1	ug/L	76	Standard
	Cd	111	7.7	46.1	**0.0435**	0.002	4.3	mg/L	6	Standard
	Cd	114	27.9	69.2	**0.0435**	0.004	9.8	ug/L	18	Standard
>	**In**	115	475836.3	0.7				ug/L	507261	Standard
	Sn	118	265.0	46.3	**-0.0586**	0.024	40.3	ug/L	683	Standard
	Sb	123	1332.7	26.2	**0.3107**	0.086	27.6	ug/L	446	Standard
	Ba	135	4395.0	1.0	**2.4776**	0.020	0.8	ug/L	28	Standard
	Ce	140	16080.2	3.1				ug/L	33	Standard
>	**Tb**	159	747297.9	2.3				ug/L	800803	Standard
	Ho	165	211.7	8.9				ug/L	10	Standard
	Tl	203	56.3	21.2	**0.0410**	0.002	3.8	ug/L	13	Standard
	Tl	205	50.0	52.9	**0.0503**	0.004	8.1	ug/L	13	Standard
	Pb	206	931.0	1.2	**0.1925**	0.004	1.9	ug/L	226	Standard
	Pb	207	757.7	5.6	**0.1750**	0.009	5.0	ug/L	204	Standard
	Pb	208	3295.8	1.2	**0.1916**	0.001	0.7	ug/L	852	Standard
	U	238	95.3	30.7	**0.0575**	0.004	7.8	ug/L	13	Standard
>	**Bi**	209	433596.0	0.9				ug/L	449044	Standard

Sample ID: L1606129405
Report Date/Time: Wednesday, July 06, 2016 12:21:31
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.4926**	16.065	3261.2	mg/L	2	Standard
Mg	24	33.3	8.7	**0.0082**	0.003	35.8	mg/L	58	Standard
K	39	46.7	16.4	**0.0504**	0.031	60.9	mg/L	27	Standard
Ca	43	40.0	21.7	**1.7196**	0.586	34.1	mg/L	20	Standard
Fe	54	261.0	22.4	**0.1060**	0.053	49.9	mg/L	158	Standard
Fe	57	340.0	11.5	**0.4952**	0.122	24.6	mg/L	267	Standard
> **Sc-1**	45	37553.2	2.4				mg/L	38815	Standard
Cl	35	58030.3	1.0				ug/L	57611	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1506.7	7.7				ug/L	1617	Standard
P	31	5954.5	2.4				ug/L	19244	Standard
S	34	3350.4	3.7				ug/L	3557	Standard
Sr	88	71.7	35.8				ug/L	65	Standard
C	12	60.0	16.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	405.5	13.8				mg/L	13	Standard
Ho-1	165	211.7	8.9				mg/L	10	Standard
Er	166	233.3	23.6				mg/L	13	Standard
I	127	8981.0	4.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.700	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.050	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129405
Report Date/Time: Wednesday, July 06, 2016 12:21:31
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.805
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.560
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129406
Sample Date/Time: Wednesday, July 06, 2016 12:22:25
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54210.2	3.2				ug/L	68501	Standard
	Be	9	31.7	55.5	**0.0640**	0.026	39.9	ug/L	8	Standard
	Al	27	346229.8	1.0	**3.1189**	0.121	3.9	ug/L	1397	Standard
	Sc	45	38104.5	1.7				ug/L	38815	Standard
	Ti	47	141.3	13.3	**0.3972**	0.060	15.0	ug/L	36	Standard
	V	51	4813.8	1.8	**0.5459**	0.016	2.9	ug/L	1284	Standard
	Cr	52	8692.8	0.7	**0.3404**	0.024	6.9	ug/L	6503	Standard
	Cr	53	671.7	4.2	**0.3715**	0.031	8.3	ug/L	492	Standard
	Mn	55	113579.2	2.1	**18.6402**	0.592	3.2	ug/L	841	Standard
	Co	59	1764.8	1.1	**0.3005**	0.003	0.9	ug/L	229	Standard
	Ni	60	2134.8	3.7	**1.1263**	0.050	4.4	ug/L	344	Standard
	Cu	65	981.4	6.5	**0.5779**	0.032	5.5	ug/L	115	Standard
	Zn	66	4410.6	3.1	**4.3008**	0.155	3.6	ug/L	190	Standard
>	**Ge**	72	406370.9	1.1				ug/L	409858	Standard
	As	75	172.2	15.0	**0.2662**	0.024	9.0	ug/L	-22	Standard
	Se	82	14.0	50.3	**0.0817**	0.066	80.7	ug/L	18	Standard
	Se-1	77	54.7	22.6	**0.0405**	0.173	426.3	ug/L	50	Standard
>	**Ga**	71	473.3	14.3				mg/L	97	Standard
	Rb	85	4915.8	3.7				ug/L	25	Standard
	Y	89	347860.3	1.6				ug/L	376763	Standard
>	**Rh**	103	15.0	33.3				ug/L	20	Standard
	Mo	98	31.2	15.5	**0.0853**	0.002	2.6	ug/L	51	Standard
	Ag	107	124.7	3.2	**0.0442**	0.001	2.0	ug/L	76	Standard
	Cd	111	28.3	20.6	**0.0545**	0.003	6.0	mg/L	6	Standard
	Cd	114	49.9	18.0	**0.0482**	0.002	3.9	ug/L	18	Standard
>	**In**	115	479551.2	1.0				ug/L	507261	Standard
	Sn	118	253.3	47.1	**-0.0610**	0.024	38.7	ug/L	683	Standard
	Sb	123	1266.8	28.3	**0.2922**	0.090	30.7	ug/L	446	Standard
	Ba	135	10588.4	1.5	**5.9016**	0.132	2.2	ug/L	28	Standard
	Ce	140	27012.4	1.1				ug/L	33	Standard
>	**Tb**	159	753343.1	0.8				ug/L	800803	Standard
	Ho	165	453.3	2.3				ug/L	10	Standard
	Tl	203	43.0	12.9	**0.0392**	0.001	2.2	ug/L	13	Standard
	Tl	205	45.0	50.9	**0.0496**	0.003	7.1	ug/L	13	Standard
	Pb	206	32257.3	1.7	**6.8313**	0.126	1.8	ug/L	226	Standard
	Pb	207	26033.3	0.6	**6.0737**	0.104	1.7	ug/L	204	Standard
	Pb	208	113526.9	0.9	**6.6251**	0.168	2.5	ug/L	852	Standard
	U	238	100.0	9.2	**0.0584**	0.002	2.7	ug/L	13	Standard
>	**Bi**	209	431894.1	1.7				ug/L	449044	Standard

Sample ID: L1606129406
Report Date/Time: Wednesday, July 06, 2016 12:24:42
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.3340**	15.790	4727.5	mg/L	2	Standard
Mg	24	41.7	36.7	**0.0192**	0.021	111.2	mg/L	58	Standard
K	39	50.0	55.7	**0.0600**	0.110	182.6	mg/L	27	Standard
Ca	43	43.3	46.6	**1.9169**	1.459	76.1	mg/L	20	Standard
Fe	54	447.4	10.1	**0.2615**	0.041	15.9	mg/L	158	Standard
Fe	57	348.3	8.4	**0.5065**	0.084	16.5	mg/L	267	Standard
> **Sc-1**	45	38104.5	1.7				mg/L	38815	Standard
Cl	35	57337.6	1.4				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1443.4	10.1				ug/L	1617	Standard
P	31	6067.9	5.1				ug/L	19244	Standard
S	34	3453.7	2.9				ug/L	3557	Standard
Sr	88	78.3	18.4				ug/L	65	Standard
C	12	26.7	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	696.9	13.4				mg/L	13	Standard
Ho-1	165	453.3	2.3				mg/L	10	Standard
Er	166	413.3	7.4				mg/L	13	Standard
I	127	9544.7	1.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.149	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129406
Report Date/Time: Wednesday, July 06, 2016 12:24:42
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.537
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.181
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 12:25:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57713.1	1.9				ug/L	68501	Standard
	Be	9	40562.6	2.7	**53.0591**	0.703	1.3	ug/L	8	Standard
	Al	27	6854351.8	1.5	**57.3384**	0.709	1.2	ug/L	1397	Standard
	Sc	45	42252.2	1.6				ug/L	38815	Standard
	Ti	47	37981.5	0.7	**106.4757**	1.580	1.5	ug/L	36	Standard
	V	51	384974.2	1.1	**51.3482**	0.405	0.8	ug/L	1284	Standard
	Cr	52	390659.1	1.7	**52.4957**	0.804	1.5	ug/L	6503	Standard
	Cr	53	48342.0	1.8	**52.6513**	1.045	2.0	ug/L	492	Standard
	Mn	55	343119.1	1.5	**52.7154**	0.588	1.1	ug/L	841	Standard
	Co	59	321661.9	1.7	**50.1749**	0.347	0.7	ug/L	229	Standard
	Ni	60	94210.3	1.1	**52.7236**	0.659	1.3	ug/L	344	Standard
	Cu	65	93051.5	1.1	**52.3212**	0.523	1.0	ug/L	115	Standard
	Zn	66	55785.5	1.2	**51.9842**	0.406	0.8	ug/L	190	Standard
>	Ge	72	435468.8	1.8				ug/L	409858	Standard
	As	75	56447.7	0.8	**51.3598**	0.923	1.8	ug/L	-22	Standard
	Se	82	5642.5	0.7	**50.2241**	0.550	1.1	ug/L	18	Standard
	Se-1	77	3846.2	0.6	**51.8162**	0.606	1.2	ug/L	50	Standard
>	Ga	71	93.3	34.0				mg/L	97	Standard
	Rb	85	855.0	10.7				ug/L	25	Standard
	Y	89	372043.3	1.8				ug/L	376763	Standard
>	Rh	103	28.3	44.4				ug/L	20	Standard
	Mo	98	247417.0	1.8	**100.6981**	2.037	2.0	ug/L	51	Standard
	Ag	107	322886.9	0.5	**50.7596**	0.429	0.8	ug/L	76	Standard
	Cd	111	103380.1	1.6	**51.1323**	0.753	1.5	mg/L	6	Standard
	Cd	114	249642.6	2.1	**50.5060**	0.965	1.9	ug/L	18	Standard
>	In	115	517180.3	0.5				ug/L	507261	Standard
	Sn	118	281599.6	1.0	**50.3463**	0.451	0.9	ug/L	683	Standard
	Sb	123	224090.9	2.0	**51.2237**	1.019	2.0	ug/L	446	Standard
	Ba	135	98293.2	0.9	**50.6730**	0.371	0.7	ug/L	28	Standard
	Ce	140	388.3	61.7				ug/L	33	Standard
>	Tb	159	803119.0	1.6				ug/L	800803	Standard
	Ho	165	13.3	78.1				ug/L	10	Standard
	Tl	203	393332.7	0.4	**51.3833**	0.224	0.4	ug/L	13	Standard
	Tl	205	344323.2	2.3	**51.9430**	1.227	2.4	ug/L	13	Standard
	Pb	206	250518.2	1.0	**50.9688**	0.598	1.2	ug/L	226	Standard
	Pb	207	226786.0	0.6	**50.8099**	0.417	0.8	ug/L	204	Standard
	Pb	208	934502.9	1.1	**52.3560**	0.613	1.2	ug/L	852	Standard
	U	238	332727.2	0.8	**50.3434**	0.503	1.0	ug/L	13	Standard
>	Bi	209	449742.2	0.2				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 12:27:55
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3997.2	1.2	**4.9337**	0.066	1.3	mg/L	58	Standard
K	39	1391.7	1.8	**4.9566**	0.172	3.5	mg/L	27	Standard
Ca	43	85.0	20.4	**4.3924**	1.093	24.9	mg/L	20	Standard
Fe	54	6751.6	4.8	**5.0714**	0.234	4.6	mg/L	158	Standard
Fe	57	1835.1	3.3	**4.9621**	0.274	5.5	mg/L	267	Standard
> **Sc-1**	45	42252.2	1.6				mg/L	38815	Standard
Cl	35	66109.3	1.9				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1836.8	15.6				ug/L	1617	Standard
P	31	20357.0	3.6				ug/L	19244	Standard
S	34	4018.9	2.4				ug/L	3557	Standard
Sr	88	78.3	7.4				ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	63.0				mg/L	23	Standard
Dy	164	15.4	100.9				mg/L	13	Standard
Ho-1	165	13.3	78.1				mg/L	10	Standard
Er	166	26.7	86.6				mg/L	13	Standard
I	127	12523.5	3.0				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	106.118		
	Al	27	114.677		
	Sc	45			
	Ti	47	106.476		
	V	51	102.696		
	Cr	52	104.991		
	Cr	53			
	Mn	55	105.431		
	Co	59	100.350		
	Ni	60	105.447		
	Cu	65	104.642		
	Zn	66	103.968		
>	Ge	72		106.249	
	As	75	102.720		
	Se	82	100.448		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 12:27:55
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.698		
Ag	107	101.519		
Cd	111	102.265		
Cd	114			
In	115		101.956	
Sn	118	100.693		
Sb	123	102.447		
Ba	135	101.346		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.767		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.712		
U	238	100.687		
Bi	209		100.156	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 12:27:55
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 12:28:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58365.5	1.3				ug/L	68501	Standard
	Be	9	20.0	66.1	**0.0452**	0.017	37.0	ug/L	8	Standard
	Al	27	3228.7	16.1	**0.0617**	0.004	6.5	ug/L	1397	Standard
	Sc	45	41531.9	1.8				ug/L	38815	Standard
	Ti	47	37.0	11.8	**0.0760**	0.013	16.9	ug/L	36	Standard
	V	51	1351.4	2.0	**0.0367**	0.005	12.3	ug/L	1284	Standard
	Cr	52	7169.4	2.1	**0.0470**	0.012	26.2	ug/L	6503	Standard
	Cr	53	401.7	8.5	**0.0227**	0.041	182.3	ug/L	492	Standard
	Mn	55	1129.0	3.0	**0.0779**	0.004	5.1	ug/L	841	Standard
	Co	59	288.7	8.3	**0.0505**	0.003	6.6	ug/L	229	Standard
	Ni	60	1071.7	1.9	**0.4440**	0.010	2.2	ug/L	344	Standard
	Cu	65	122.7	12.6	**0.0557**	0.008	14.8	ug/L	115	Standard
	Zn	66	225.0	0.4	**0.0968**	0.003	2.8	ug/L	190	Standard
>	**Ge**	72	435313.2	0.9				ug/L	409858	Standard
	As	75	-55.3	38.4	**0.0486**	0.019	39.7	ug/L	-22	Standard
	Se	82	13.9	51.6	**0.0725**	0.064	88.6	ug/L	18	Standard
	Se-1	77	56.0	26.4	**0.0064**	0.200	3125.0	ug/L	50	Standard
>	**Ga**	71	55.0	27.3				mg/L	97	Standard
	Rb	85	13.3	43.3				ug/L	25	Standard
	Y	89	378425.9	0.5				ug/L	376763	Standard
>	**Rh**	103	18.3	110.2				ug/L	20	Standard
	Mo	98	181.0	20.1	**0.1454**	0.014	9.6	ug/L	51	Standard
	Ag	107	120.0	21.0	**0.0420**	0.004	9.1	ug/L	76	Standard
	Cd	111	18.7	38.4	**0.0486**	0.003	7.1	mg/L	6	Standard
	Cd	114	41.8	72.4	**0.0458**	0.006	13.2	ug/L	18	Standard
>	**In**	115	514592.2	1.2				ug/L	507261	Standard
	Sn	118	928.4	24.2	**0.0574**	0.043	74.2	ug/L	683	Standard
	Sb	123	912.7	31.3	**0.1899**	0.068	35.7	ug/L	446	Standard
	Ba	135	47.7	19.0	**0.0404**	0.004	10.9	ug/L	28	Standard
	Ce	140	65.0	13.3				ug/L	33	Standard
>	**Tb**	159	797771.6	1.0				ug/L	800803	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	79.0	26.2	**0.0436**	0.003	6.0	ug/L	13	Standard
	Tl	205	80.0	16.5	**0.0546**	0.002	3.6	ug/L	13	Standard
	Pb	206	267.3	21.0	**0.0502**	0.011	21.9	ug/L	226	Standard
	Pb	207	232.0	12.4	**0.0508**	0.006	12.0	ug/L	204	Standard
	Pb	208	975.0	8.5	**0.0546**	0.004	7.8	ug/L	852	Standard
	U	238	65.3	37.9	**0.0525**	0.004	7.0	ug/L	13	Standard
>	**Bi**	209	450418.1	0.7				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 12:31:07
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	17.6	**0.0166**	0.011	63.9	mg/L	58	Standard
K	39	35.0	37.8	**-0.0108**	0.052	481.1	mg/L	27	Standard
Ca	43	45.0	58.8	**1.7629**	1.770	100.4	mg/L	20	Standard
Fe	54	129.3	20.6	**-0.0188**	0.022	116.1	mg/L	158	Standard
Fe	57	218.3	7.4	**0.0034**	0.059	1711.1	mg/L	267	Standard
Sc-1	45	41531.9	1.8				mg/L	38815	Standard
Cl	35	65165.8	0.5				ug/L	57611	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	1780.1	4.4				ug/L	1617	Standard
P	31	19916.4	1.9				ug/L	19244	Standard
S	34	3963.9	7.0				ug/L	3557	Standard
Sr	88	71.7	8.1				ug/L	65	Standard
C	12	43.3	81.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	19.0	51.3				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	8842.6	1.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.211	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 12:31:07
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.445
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.306
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 12:31:07
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129407
Sample Date/Time: Wednesday, July 06, 2016 12:32:02
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54571.5	2.9				ug/L	68501	Standard
	Be	9	46.7	32.7	**0.0837**	0.019	23.3	ug/L	8	Standard
	Al	27	387342.3	1.0	**3.4619**	0.131	3.8	ug/L	1397	Standard
	Sc	45	37803.8	0.7				ug/L	38815	Standard
	Ti	47	113.3	7.3	**0.3159**	0.024	7.5	ug/L	36	Standard
	V	51	4062.2	2.2	**0.4437**	0.011	2.4	ug/L	1284	Standard
	Cr	52	8232.2	2.9	**0.2844**	0.031	10.8	ug/L	6503	Standard
	Cr	53	635.0	7.2	**0.3355**	0.052	15.5	ug/L	492	Standard
	Mn	55	59198.8	1.4	**9.7624**	0.126	1.3	ug/L	841	Standard
	Co	59	1666.4	3.6	**0.2867**	0.010	3.5	ug/L	229	Standard
	Ni	60	2062.8	3.2	**1.0951**	0.044	4.0	ug/L	344	Standard
	Cu	65	728.7	9.0	**0.4300**	0.038	8.9	ug/L	115	Standard
	Zn	66	2828.3	2.6	**2.7445**	0.082	3.0	ug/L	190	Standard
>	**Ge**	72	402452.6	0.5				ug/L	409858	Standard
	As	75	60.0	38.6	**0.1578**	0.023	14.3	ug/L	-22	Standard
	Se	82	13.7	6.1	**0.0805**	0.008	9.4	ug/L	18	Standard
	Se-1	77	48.3	10.6	**-0.0442**	0.075	170.0	ug/L	50	Standard
>	**Ga**	71	525.0	16.3				mg/L	97	Standard
	Rb	85	4585.7	1.5				ug/L	25	Standard
	Y	89	348985.7	1.6				ug/L	376763	Standard
>	**Rh**	103	23.3	12.4				ug/L	20	Standard
	Mo	98	114.4	13.2	**0.1222**	0.007	5.6	ug/L	51	Standard
	Ag	107	90.7	24.0	**0.0386**	0.004	10.0	ug/L	76	Standard
	Cd	111	16.4	22.8	**0.0482**	0.002	4.3	mg/L	6	Standard
	Cd	114	48.9	72.6	**0.0482**	0.008	16.5	ug/L	18	Standard
>	**In**	115	474745.8	0.8				ug/L	507261	Standard
	Sn	118	475.0	40.2	**-0.0173**	0.037	215.3	ug/L	683	Standard
	Sb	123	1751.0	31.8	**0.4164**	0.141	33.8	ug/L	446	Standard
	Ba	135	7868.7	1.7	**4.4335**	0.060	1.3	ug/L	28	Standard
	Ce	140	27979.1	1.8				ug/L	33	Standard
>	**Tb**	159	753238.8	1.1				ug/L	800803	Standard
	Ho	165	351.7	20.6				ug/L	10	Standard
	Tl	203	62.3	20.9	**0.0418**	0.002	4.3	ug/L	13	Standard
	Tl	205	43.3	37.1	**0.0493**	0.003	5.1	ug/L	13	Standard
	Pb	206	1664.1	6.4	**0.3491**	0.020	5.6	ug/L	226	Standard
	Pb	207	1361.1	5.1	**0.3171**	0.016	5.0	ug/L	204	Standard
	Pb	208	5716.1	0.9	**0.3342**	0.003	0.9	ug/L	852	Standard
	U	238	108.3	8.3	**0.0597**	0.002	2.6	ug/L	13	Standard
>	**Bi**	209	431049.9	0.9				ug/L	449044	Standard

Sample ID: L1606129407
Report Date/Time: Wednesday, July 06, 2016 12:34:19
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	57.3	**0.0174**	0.032	185.7	mg/L	58	Standard
K	39	36.7	43.8	**0.0080**	0.065	811.5	mg/L	27	Standard
Ca	43	28.3	44.4	**0.8400**	0.949	113.0	mg/L	20	Standard
Fe	54	487.1	6.7	**0.2984**	0.026	8.7	mg/L	158	Standard
Fe	57	365.0	6.8	**0.5742**	0.091	15.9	mg/L	267	Standard
> **Sc-1**	45	37803.8	0.7				mg/L	38815	Standard
Cl	35	58008.8	0.8				ug/L	57611	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1390.1	5.6				ug/L	1617	Standard
P	31	6723.2	3.1				ug/L	19244	Standard
S	34	3855.5	4.2				ug/L	3557	Standard
Sr	88	63.3	4.6				ug/L	65	Standard
C	12	33.3	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	604.3	2.5				mg/L	13	Standard
Ho-1	165	351.7	20.6				mg/L	10	Standard
Er	166	396.7	19.3				mg/L	13	Standard
I	127	8490.7	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.665	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.193	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129407
Report Date/Time: Wednesday, July 06, 2016 12:34:19
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.590
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.993
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129407
Report Date/Time: Wednesday, July 06, 2016 12:34:19
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129408
Sample Date/Time: Wednesday, July 06, 2016 12:35:14
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53967.6	2.0				ug/L	68501	Standard
	Be	9	36.7	90.8	**0.0713**	0.048	67.1	ug/L	8	Standard
	Al	27	260417.3	3.5	**2.3639**	0.101	4.3	ug/L	1397	Standard
	Sc	45	38027.7	2.1				ug/L	38815	Standard
	Ti	47	160.0	7.6	**0.4572**	0.036	7.8	ug/L	36	Standard
	V	51	3667.6	1.6	**0.3863**	0.010	2.7	ug/L	1284	Standard
	Cr	52	8066.5	2.2	**0.2591**	0.022	8.5	ug/L	6503	Standard
	Cr	53	521.7	6.4	**0.2007**	0.041	20.4	ug/L	492	Standard
	Mn	55	48587.5	1.9	**7.9901**	0.137	1.7	ug/L	841	Standard
	Co	59	1120.0	7.7	**0.1944**	0.014	7.2	ug/L	229	Standard
	Ni	60	1576.1	3.3	**0.7989**	0.035	4.4	ug/L	344	Standard
	Cu	65	583.7	2.0	**0.3417**	0.008	2.4	ug/L	115	Standard
	Zn	66	2526.5	2.7	**2.4378**	0.065	2.7	ug/L	190	Standard
>	**Ge**	72	402701.4	0.4				ug/L	409858	Standard
	As	75	163.7	17.4	**0.2597**	0.028	10.9	ug/L	-22	Standard
	Se	82	19.0	37.8	**0.1322**	0.070	52.7	ug/L	18	Standard
	Se-1	77	47.7	2.4	**-0.0545**	0.015	27.3	ug/L	50	Standard
>	**Ga**	71	363.3	5.2				mg/L	97	Standard
	Rb	85	2791.9	5.5				ug/L	25	Standard
	Y	89	350903.9	1.1				ug/L	376763	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	87.0	11.7	**0.1099**	0.004	4.0	ug/L	51	Standard
	Ag	107	79.7	1.9	**0.0367**	0.000	0.7	ug/L	76	Standard
	Cd	111	10.8	33.4	**0.0452**	0.002	4.3	mg/L	6	Standard
	Cd	114	19.7	33.6	**0.0417**	0.001	3.5	ug/L	18	Standard
>	**In**	115	476250.4	0.2				ug/L	507261	Standard
	Sn	118	320.0	28.2	**-0.0479**	0.017	36.3	ug/L	683	Standard
	Sb	123	1247.0	34.2	**0.2892**	0.105	36.5	ug/L	446	Standard
	Ba	135	4132.6	3.6	**2.3285**	0.078	3.3	ug/L	28	Standard
	Ce	140	19167.1	2.8				ug/L	33	Standard
>	**Tb**	159	745961.4	1.0				ug/L	800803	Standard
	Ho	165	288.3	7.0				ug/L	10	Standard
	Tl	203	28.0	25.0	**0.0372**	0.001	2.6	ug/L	13	Standard
	Tl	205	36.7	61.5	**0.0483**	0.004	7.4	ug/L	13	Standard
	Pb	206	1164.0	3.0	**0.2435**	0.008	3.2	ug/L	226	Standard
	Pb	207	928.4	2.8	**0.2163**	0.006	2.9	ug/L	204	Standard
	Pb	208	4144.6	2.1	**0.2428**	0.005	2.2	ug/L	852	Standard
	U	238	88.7	22.2	**0.0566**	0.003	5.5	ug/L	13	Standard
>	**Bi**	209	430308.6	0.2				ug/L	449044	Standard

Sample ID: L1606129408
Report Date/Time: Wednesday, July 06, 2016 12:37:31
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	60.1	**0.0029**	0.024	833.5	mg/L	58	Standard
K	39	36.7	51.6	**0.0083**	0.079	949.7	mg/L	27	Standard
Ca	43	36.7	15.7	**1.4456**	0.439	30.4	mg/L	20	Standard
Fe	54	322.3	20.3	**0.1558**	0.060	38.7	mg/L	158	Standard
Fe	57	341.7	9.5	**0.4863**	0.100	20.6	mg/L	267	Standard
> **Sc-1**	45	38027.7	2.1				mg/L	38815	Standard
Cl	35	58256.5	1.5				ug/L	57611	Standard
Kr	83	3.7	31.5				ug/L	2	Standard
Br	81	1490.1	7.9				ug/L	1617	Standard
P	31	6151.2	2.7				ug/L	19244	Standard
S	34	3462.1	4.7				ug/L	3557	Standard
Sr	88	65.0	7.7				ug/L	65	Standard
C	12	56.7	66.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	23	Standard
Dy	164	456.8	15.1				mg/L	13	Standard
Ho-1	165	288.3	7.0				mg/L	10	Standard
Er	166	276.7	11.0				mg/L	13	Standard
I	127	8354.0	1.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.784	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.254	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129408
Report Date/Time: Wednesday, July 06, 2016 12:37:31
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.887
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.828
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129408
Report Date/Time: Wednesday, July 06, 2016 12:37:31
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129409
Sample Date/Time: Wednesday, July 06, 2016 12:38:25
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54002.8	2.0				ug/L	68501	Standard
	Be	9	26.7	39.0	**0.0569**	0.015	26.3	ug/L	8	Standard
	Al	27	355774.4	1.8	**3.2137**	0.037	1.2	ug/L	1397	Standard
	Sc	45	37870.6	1.0				ug/L	38815	Standard
	Ti	47	155.3	6.4	**0.4407**	0.029	6.6	ug/L	36	Standard
	V	51	4291.3	2.7	**0.4733**	0.016	3.5	ug/L	1284	Standard
	Cr	52	8425.7	1.8	**0.3059**	0.026	8.4	ug/L	6503	Standard
	Cr	53	601.7	11.3	**0.2919**	0.080	27.6	ug/L	492	Standard
	Mn	55	74360.1	1.5	**12.2164**	0.218	1.8	ug/L	841	Standard
	Co	59	1332.1	3.0	**0.2290**	0.007	2.9	ug/L	229	Standard
	Ni	60	1608.8	1.4	**0.8136**	0.011	1.4	ug/L	344	Standard
	Cu	65	689.0	4.4	**0.4036**	0.018	4.4	ug/L	115	Standard
	Zn	66	2706.2	1.2	**2.6054**	0.035	1.3	ug/L	190	Standard
>	**Ge**	72	404779.3	0.2				ug/L	409858	Standard
	As	75	99.4	24.9	**0.1959**	0.024	12.2	ug/L	-22	Standard
	Se	82	14.7	23.1	**0.0894**	0.032	36.3	ug/L	18	Standard
	Se-1	77	47.3	8.8	**-0.0630**	0.060	95.1	ug/L	50	Standard
>	**Ga**	71	375.0	6.7				mg/L	97	Standard
	Rb	85	3093.6	2.9				ug/L	25	Standard
	Y	89	349363.7	0.6				ug/L	376763	Standard
>	**Rh**	103	21.7	74.2				ug/L	20	Standard
	Mo	98	73.5	9.1	**0.1039**	0.003	3.1	ug/L	51	Standard
	Ag	107	87.0	23.9	**0.0379**	0.004	9.8	ug/L	76	Standard
	Cd	111	24.2	46.8	**0.0523**	0.006	11.9	mg/L	6	Standard
	Cd	114	44.8	59.1	**0.0472**	0.006	12.5	ug/L	18	Standard
>	**In**	115	478695.7	1.2				ug/L	507261	Standard
	Sn	118	316.7	14.6	**-0.0487**	0.010	19.9	ug/L	683	Standard
	Sb	123	1033.1	29.1	**0.2353**	0.077	32.6	ug/L	446	Standard
	Ba	135	8158.2	1.0	**4.5590**	0.096	2.1	ug/L	28	Standard
	Ce	140	20727.5	4.7				ug/L	33	Standard
>	**Tb**	159	748176.5	0.9				ug/L	800803	Standard
	Ho	165	301.7	5.3				ug/L	10	Standard
	Tl	203	38.0	43.8	**0.0385**	0.002	5.8	ug/L	13	Standard
	Tl	205	25.0	20.0	**0.0464**	0.001	1.7	ug/L	13	Standard
	Pb	206	1980.1	3.6	**0.4139**	0.012	3.0	ug/L	226	Standard
	Pb	207	1697.4	4.2	**0.3935**	0.015	3.7	ug/L	204	Standard
	Pb	208	7219.0	0.8	**0.4197**	0.000	0.1	ug/L	852	Standard
	U	238	87.3	10.6	**0.0563**	0.002	2.8	ug/L	13	Standard
>	**Bi**	209	433469.7	0.7				ug/L	449044	Standard

Sample ID: L1606129409
Report Date/Time: Wednesday, July 06, 2016 12:40:42
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	37.8	**0.0103**	0.019	181.6	mg/L	58	Standard
K	39	28.3	62.0	**-0.0265**	0.071	267.8	mg/L	27	Standard
Ca	43	43.3	6.7	**1.9512**	0.183	9.4	mg/L	20	Standard
Fe	54	372.4	10.3	**0.1991**	0.030	15.0	mg/L	158	Standard
Fe	57	348.3	14.7	**0.5158**	0.189	36.6	mg/L	267	Standard
Sc-1	45	37870.6	1.0				mg/L	38815	Standard
Cl	35	57598.0	1.7				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1430.1	3.7				ug/L	1617	Standard
P	31	6121.2	3.1				ug/L	19244	Standard
S	34	3705.5	5.3				ug/L	3557	Standard
Sr	88	80.0	6.3				ug/L	65	Standard
C	12	30.0	57.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	487.1	10.2				mg/L	13	Standard
Ho-1	165	301.7	5.3				mg/L	10	Standard
Er	166	270.0	39.0				mg/L	13	Standard
I	127	8914.3	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.761	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129409
Report Date/Time: Wednesday, July 06, 2016 12:40:42
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.369
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.532
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129409
Report Date/Time: Wednesday, July 06, 2016 12:40:42
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129410
Sample Date/Time: Wednesday, July 06, 2016 12:41:37
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52887.2	1.8				ug/L	68501	Standard
	Be	9	35.0	49.5	**0.0693**	0.024	35.3	ug/L	8	Standard
	Al	27	340518.6	2.3	**3.1422**	0.100	3.2	ug/L	1397	Standard
	Sc	45	37329.3	1.2				ug/L	38815	Standard
	Ti	47	155.7	8.7	**0.4476**	0.042	9.3	ug/L	36	Standard
	V	51	4098.4	2.5	**0.4530**	0.016	3.5	ug/L	1284	Standard
	Cr	52	8107.5	2.5	**0.2742**	0.033	12.0	ug/L	6503	Standard
	Cr	53	540.0	14.7	**0.2273**	0.096	42.4	ug/L	492	Standard
	Mn	55	64857.5	0.9	**10.7783**	0.125	1.2	ug/L	841	Standard
	Co	59	1397.1	3.7	**0.2429**	0.009	3.7	ug/L	229	Standard
	Ni	60	1640.4	2.0	**0.8452**	0.018	2.1	ug/L	344	Standard
	Cu	65	730.0	2.4	**0.4339**	0.009	2.1	ug/L	115	Standard
	Zn	66	2844.9	1.6	**2.7808**	0.051	1.8	ug/L	190	Standard
>	**Ge**	72	399739.8	0.3				ug/L	409858	Standard
	As	75	150.8	4.3	**0.2480**	0.007	2.7	ug/L	-22	Standard
	Se	82	16.8	16.3	**0.1118**	0.027	24.2	ug/L	18	Standard
	Se-1	77	46.7	10.8	**-0.0641**	0.075	117.7	ug/L	50	Standard
>	**Ga**	71	411.7	9.7				mg/L	97	Standard
	Rb	85	3715.5	3.6				ug/L	25	Standard
	Y	89	349263.3	1.1				ug/L	376763	Standard
>	**Rh**	103	33.3	45.8				ug/L	20	Standard
	Mo	98	68.3	41.2	**0.1017**	0.012	12.2	ug/L	51	Standard
	Ag	107	125.7	38.0	**0.0445**	0.008	18.3	ug/L	76	Standard
	Cd	111	35.2	63.7	**0.0582**	0.012	20.7	mg/L	6	Standard
	Cd	114	65.6	64.7	**0.0517**	0.009	18.0	ug/L	18	Standard
>	**In**	115	476516.9	0.8				ug/L	507261	Standard
	Sn	118	290.0	40.4	**-0.0538**	0.023	42.0	ug/L	683	Standard
	Sb	123	913.9	33.0	**0.2061**	0.074	35.7	ug/L	446	Standard
	Ba	135	7815.7	1.2	**4.3874**	0.031	0.7	ug/L	28	Standard
	Ce	140	22171.2	2.0				ug/L	33	Standard
>	**Tb**	159	745014.1	0.6				ug/L	800803	Standard
	Ho	165	338.3	7.0				ug/L	10	Standard
	Tl	203	93.0	73.2	**0.0459**	0.009	19.9	ug/L	13	Standard
	Tl	205	58.3	9.9	**0.0517**	0.001	1.6	ug/L	13	Standard
	Pb	206	1839.8	0.9	**0.3856**	0.008	2.0	ug/L	226	Standard
	Pb	207	1528.7	1.0	**0.3554**	0.002	0.6	ug/L	204	Standard
	Pb	208	6653.9	1.0	**0.3880**	0.007	1.7	ug/L	852	Standard
	U	238	118.7	34.7	**0.0613**	0.006	10.4	ug/L	13	Standard
>	**Bi**	209	432197.8	1.2				ug/L	449044	Standard

Sample ID: L1606129410
Report Date/Time: Wednesday, July 06, 2016 12:43:53
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	22.9	**0.0085**	0.010	120.9	mg/L	58	Standard
K	39	45.0	19.2	**0.0446**	0.035	78.7	mg/L	27	Standard
Ca	43	16.7	62.4	**-0.0167**	0.785	4697.8	mg/L	20	Standard
Fe	54	374.1	9.5	**0.2053**	0.029	14.4	mg/L	158	Standard
Fe	57	340.0	19.9	**0.5012**	0.223	44.4	mg/L	267	Standard
Sc-1	45	37329.3	1.2				mg/L	38815	Standard
Cl	35	57528.4	1.2				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1460.1	4.3				ug/L	1617	Standard
P	31	6161.3	2.2				ug/L	19244	Standard
S	34	3503.7	2.5				ug/L	3557	Standard
Sr	88	90.0	29.4				ug/L	65	Standard
C	12	40.0	25.0				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	527.1	16.0				mg/L	13	Standard
Ho-1	165	338.3	7.0				mg/L	10	Standard
Er	166	270.0	7.4				mg/L	13	Standard
I	127	8217.2	2.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		77.206	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.531	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129410
Report Date/Time: Wednesday, July 06, 2016 12:43:53
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.939
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.248
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129414
Sample Date/Time: Wednesday, July 06, 2016 12:44:48
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53690.0	2.0				ug/L	68501	Standard
	Be	9	20.0	0.0	**0.0476**	0.001	1.2	ug/L	8	Standard
	Al	27	331712.6	1.9	**3.0171**	0.105	3.5	ug/L	1397	Standard
	Sc	45	37394.4	2.5				ug/L	38815	Standard
	Ti	47	127.3	9.9	**0.3586**	0.037	10.3	ug/L	36	Standard
	V	51	4142.5	1.3	**0.4557**	0.010	2.3	ug/L	1284	Standard
	Cr	52	8322.6	1.1	**0.2984**	0.018	6.0	ug/L	6503	Standard
	Cr	53	555.0	4.1	**0.2408**	0.025	10.2	ug/L	492	Standard
	Mn	55	93280.6	0.9	**15.4453**	0.177	1.1	ug/L	841	Standard
	Co	59	1455.1	2.3	**0.2512**	0.006	2.5	ug/L	229	Standard
	Ni	60	1657.4	3.5	**0.8492**	0.031	3.6	ug/L	344	Standard
	Cu	65	862.0	3.3	**0.5115**	0.017	3.4	ug/L	115	Standard
	Zn	66	3313.7	0.9	**3.2364**	0.043	1.3	ug/L	190	Standard
>	**Ge**	72	402275.0	0.4				ug/L	409858	Standard
	As	75	118.9	36.8	**0.2157**	0.043	19.9	ug/L	-22	Standard
	Se	82	16.6	28.2	**0.1090**	0.045	41.5	ug/L	18	Standard
	Se-1	77	47.7	6.4	**-0.0538**	0.042	78.2	ug/L	50	Standard
>	**Ga**	71	391.7	11.4				mg/L	97	Standard
	Rb	85	3747.1	3.7				ug/L	25	Standard
	Y	89	345576.8	1.0				ug/L	376763	Standard
>	**Rh**	103	18.3	15.7				ug/L	20	Standard
	Mo	98	44.0	23.2	**0.0909**	0.005	5.1	ug/L	51	Standard
	Ag	107	79.0	5.5	**0.0365**	0.001	1.8	ug/L	76	Standard
	Cd	111	24.2	10.4	**0.0523**	0.001	2.6	mg/L	6	Standard
	Cd	114	73.2	46.7	**0.0534**	0.008	14.1	ug/L	18	Standard
>	**In**	115	478607.8	0.7				ug/L	507261	Standard
	Sn	118	251.7	25.3	**-0.0613**	0.013	20.5	ug/L	683	Standard
	Sb	123	792.2	33.5	**0.1757**	0.067	37.9	ug/L	446	Standard
	Ba	135	7870.7	0.5	**4.3991**	0.031	0.7	ug/L	28	Standard
	Ce	140	22131.2	0.9				ug/L	33	Standard
>	**Tb**	159	749864.4	0.1				ug/L	800803	Standard
	Ho	165	340.0	10.2				ug/L	10	Standard
	Tl	203	23.0	32.8	**0.0365**	0.001	2.8	ug/L	13	Standard
	Tl	205	30.0	33.3	**0.0472**	0.002	3.3	ug/L	13	Standard
	Pb	206	14608.4	1.3	**3.0830**	0.023	0.8	ug/L	226	Standard
	Pb	207	10978.6	2.2	**2.5535**	0.043	1.7	ug/L	204	Standard
	Pb	208	49268.3	1.0	**2.8669**	0.016	0.5	ug/L	852	Standard
	U	238	88.0	5.0	**0.0564**	0.001	1.1	ug/L	13	Standard
>	**Bi**	209	433017.9	0.5				ug/L	449044	Standard

Sample ID: L1606129414
Report Date/Time: Wednesday, July 06, 2016 12:47:05
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.9237**	16.812	1820.0	mg/L	2	Standard
Mg	24	31.7	18.2	**0.0060**	0.007	118.5	mg/L	58	Standard
K	39	35.0	14.3	**0.0034**	0.024	720.1	mg/L	27	Standard
Ca	43	16.7	17.3	**-0.0157**	0.252	1610.8	mg/L	20	Standard
Fe	54	313.9	9.8	**0.1522**	0.020	13.3	mg/L	158	Standard
Fe	57	301.7	18.8	**0.3670**	0.187	50.9	mg/L	267	Standard
Sc-1	45	37394.4	2.5				mg/L	38815	Standard
Cl	35	58101.9	0.6				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1443.4	4.6				ug/L	1617	Standard
P	31	6066.2	5.4				ug/L	19244	Standard
S	34	3347.0	3.0				ug/L	3557	Standard
Sr	88	83.3	40.8				ug/L	65	Standard
C	12	43.3	53.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	23	Standard
Dy	164	599.9	19.0				mg/L	13	Standard
Ho-1	165	340.0	10.2				mg/L	10	Standard
Er	166	350.0	10.3				mg/L	13	Standard
I	127	8285.6	5.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.378	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.150	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129414
Report Date/Time: Wednesday, July 06, 2016 12:47:05
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.351
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.431
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129414
Report Date/Time: Wednesday, July 06, 2016 12:47:05
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129415
Sample Date/Time: Wednesday, July 06, 2016 12:47:59
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54170.0	2.0				ug/L	68501	Standard
	Be	9	26.7	28.6	**0.0565**	0.010	17.6	ug/L	8	Standard
	Al	27	359573.2	2.4	**3.2386**	0.111	3.4	ug/L	1397	Standard
	Sc	45	37168.9	1.3				ug/L	38815	Standard
	Ti	47	145.3	6.2	**0.4119**	0.030	7.3	ug/L	36	Standard
	V	51	3535.1	1.8	**0.3660**	0.006	1.5	ug/L	1284	Standard
	Cr	52	7574.2	1.6	**0.1840**	0.024	12.9	ug/L	6503	Standard
	Cr	53	406.7	13.5	**0.0634**	0.069	108.4	ug/L	492	Standard
	Mn	55	61648.2	0.7	**10.1421**	0.149	1.5	ug/L	841	Standard
	Co	59	1089.0	4.5	**0.1888**	0.009	4.8	ug/L	229	Standard
	Ni	60	1346.1	2.3	**0.6575**	0.025	3.8	ug/L	344	Standard
	Cu	65	439.0	4.3	**0.2531**	0.013	5.1	ug/L	115	Standard
	Zn	66	2221.8	1.3	**2.1252**	0.014	0.7	ug/L	190	Standard
>	**Ge**	72	403591.8	0.7				ug/L	409858	Standard
	As	75	37.7	18.1	**0.1358**	0.007	4.9	ug/L	-22	Standard
	Se	82	20.1	10.3	**0.1419**	0.020	14.4	ug/L	18	Standard
	Se-1	77	48.7	17.5	**-0.0418**	0.121	288.3	ug/L	50	Standard
>	**Ga**	71	316.7	12.9				mg/L	97	Standard
	Rb	85	2226.8	3.0				ug/L	25	Standard
	Y	89	347784.9	1.1				ug/L	376763	Standard
>	**Rh**	103	25.0	40.0				ug/L	20	Standard
	Mo	98	33.3	21.8	**0.0862**	0.003	3.7	ug/L	51	Standard
	Ag	107	67.7	8.5	**0.0347**	0.001	2.9	ug/L	76	Standard
	Cd	111	6.3	51.4	**0.0427**	0.002	4.0	mg/L	6	Standard
	Cd	114	12.7	48.1	**0.0402**	0.001	3.4	ug/L	18	Standard
>	**In**	115	476216.8	0.5				ug/L	507261	Standard
	Sn	118	271.7	24.0	**-0.0573**	0.013	21.9	ug/L	683	Standard
	Sb	123	683.1	27.9	**0.1492**	0.047	31.4	ug/L	446	Standard
	Ba	135	5862.1	0.1	**3.2969**	0.020	0.6	ug/L	28	Standard
	Ce	140	16595.8	3.6				ug/L	33	Standard
>	**Tb**	159	744111.5	0.7				ug/L	800803	Standard
	Ho	165	248.3	13.1				ug/L	10	Standard
	Tl	203	19.0	9.1	**0.0359**	0.000	0.7	ug/L	13	Standard
	Tl	205	11.7	49.5	**0.0444**	0.001	2.1	ug/L	13	Standard
	Pb	206	921.0	2.0	**0.1925**	0.005	2.6	ug/L	226	Standard
	Pb	207	774.4	3.3	**0.1808**	0.005	2.9	ug/L	204	Standard
	Pb	208	3329.1	2.3	**0.1956**	0.005	2.8	ug/L	852	Standard
	U	238	55.0	25.0	**0.0513**	0.002	4.2	ug/L	13	Standard
>	**Bi**	209	429010.4	0.8				ug/L	449044	Standard

Sample ID: L1606129415
Report Date/Time: Wednesday, July 06, 2016 12:50:16
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	17.6	**0.0229**	0.010	45.8	mg/L	58	Standard
K	39	45.0	22.2	**0.0459**	0.044	95.9	mg/L	27	Standard
Ca	43	35.0	42.9	**1.3865**	1.153	83.2	mg/L	20	Standard
Fe	54	281.0	14.5	**0.1257**	0.038	30.3	mg/L	158	Standard
Fe	57	395.0	5.8	**0.7009**	0.097	13.9	mg/L	267	Standard
> **Sc-1**	45	37168.9	1.3				mg/L	38815	Standard
Cl	35	58603.8	1.1				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1436.7	1.8				ug/L	1617	Standard
P	31	7160.1	19.7				ug/L	19244	Standard
S	34	3277.0	5.3				ug/L	3557	Standard
Sr	88	80.0	6.3				ug/L	65	Standard
C	12	33.3	75.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	23	Standard
Dy	164	447.9	36.2				mg/L	13	Standard
Ho-1	165	248.3	13.1				mg/L	10	Standard
Er	166	253.3	24.1				mg/L	13	Standard
I	127	8542.4	2.3				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		79.079	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.471	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606129415
Report Date/Time: Wednesday, July 06, 2016 12:50:16
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.880
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.539
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129415
Report Date/Time: Wednesday, July 06, 2016 12:50:16
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606138108
Sample Date/Time: Wednesday, July 06, 2016 12:51:11
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54233.6	3.5				ug/L	68501	Standard
	Be	9	30.0	28.9	**0.0612**	0.012	19.1	ug/L	8	Standard
	Al	27	458746.7	1.0	**4.1197**	0.165	4.0	ug/L	1397	Standard
	Sc	45	38214.8	1.8				ug/L	38815	Standard
	Ti	47	191.7	8.8	**0.5499**	0.046	8.4	ug/L	36	Standard
	V	51	7374.6	0.8	**0.9167**	0.006	0.6	ug/L	1284	Standard
	Cr	52	9768.5	2.0	**0.5031**	0.030	6.0	ug/L	6503	Standard
	Cr	53	703.3	8.3	**0.4117**	0.068	16.6	ug/L	492	Standard
	Mn	55	157025.5	0.1	**25.8971**	0.172	0.7	ug/L	841	Standard
	Co	59	2139.2	2.3	**0.3643**	0.008	2.2	ug/L	229	Standard
	Ni	60	2664.9	2.1	**1.4510**	0.037	2.6	ug/L	344	Standard
	Cu	65	1293.7	2.7	**0.7692**	0.019	2.5	ug/L	115	Standard
	Zn	66	3107.0	2.1	**3.0074**	0.079	2.6	ug/L	190	Standard
>	**Ge**	72	404886.3	0.7				ug/L	409858	Standard
	As	75	199.8	21.5	**0.2941**	0.043	14.5	ug/L	-22	Standard
	Se	82	16.0	51.6	**0.1025**	0.080	78.0	ug/L	18	Standard
	Se-1	77	49.0	14.3	**-0.0383**	0.106	277.2	ug/L	50	Standard
>	**Ga**	71	690.0	10.9				mg/L	97	Standard
	Rb	85	6126.2	5.8				ug/L	25	Standard
	Y	89	355822.1	1.8				ug/L	376763	Standard
>	**Rh**	103	20.0	75.0				ug/L	20	Standard
	Mo	98	37.1	35.1	**0.0878**	0.006	6.6	ug/L	51	Standard
	Ag	107	81.3	8.2	**0.0368**	0.001	2.8	ug/L	76	Standard
	Cd	111	8.9	29.5	**0.0441**	0.001	3.2	mg/L	6	Standard
	Cd	114	16.7	60.7	**0.0410**	0.002	5.4	ug/L	18	Standard
>	**In**	115	480767.7	0.8				ug/L	507261	Standard
	Sn	118	248.3	36.1	**-0.0621**	0.018	28.5	ug/L	683	Standard
	Sb	123	730.9	30.4	**0.1597**	0.056	35.0	ug/L	446	Standard
	Ba	135	13856.3	0.6	**7.6978**	0.013	0.2	ug/L	28	Standard
	Ce	140	35568.4	3.3				ug/L	33	Standard
>	**Tb**	159	750147.1	0.9				ug/L	800803	Standard
	Ho	165	496.7	9.5				ug/L	10	Standard
	Tl	203	43.3	7.4	**0.0392**	0.000	1.2	ug/L	13	Standard
	Tl	205	26.7	39.0	**0.0467**	0.002	3.5	ug/L	13	Standard
	Pb	206	1867.1	1.5	**0.3894**	0.009	2.2	ug/L	226	Standard
	Pb	207	1558.4	1.6	**0.3606**	0.008	2.1	ug/L	204	Standard
	Pb	208	6678.9	0.9	**0.3876**	0.004	1.2	ug/L	852	Standard
	U	238	113.7	2.7	**0.0604**	0.001	0.9	ug/L	13	Standard
>	**Bi**	209	434266.7	0.7				ug/L	449044	Standard

Sample ID: L1606138108
Report Date/Time: Wednesday, July 06, 2016 12:53:28
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	60.4	**0.0193**	0.035	182.4	mg/L	58	Standard
K	39	61.7	36.6	**0.1070**	0.087	81.4	mg/L	27	Standard
Ca	43	36.7	15.7	**1.4281**	0.401	28.0	mg/L	20	Standard
Fe	54	769.2	13.0	**0.5330**	0.076	14.2	mg/L	158	Standard
Fe	57	460.0	10.4	**0.8848**	0.183	20.7	mg/L	267	Standard
> **Sc-1**	45	38214.8	1.8				mg/L	38815	Standard
Cl	35	57334.9	0.4				ug/L	57611	Standard
Kr	83	3.0	145.3				ug/L	2	Standard
Br	81	1536.7	5.0				ug/L	1617	Standard
P	31	6094.6	1.6				ug/L	19244	Standard
S	34	3535.4	4.0				ug/L	3557	Standard
Sr	88	58.3	64.3				ug/L	65	Standard
C	12	26.7	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	896.4	9.8				mg/L	13	Standard
Ho-1	165	496.7	9.5				mg/L	10	Standard
Er	166	563.3	10.1				mg/L	13	Standard
I	127	8010.5	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.172	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.787	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138108
Report Date/Time: Wednesday, July 06, 2016 12:53:28
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.777
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.709
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606138108
Report Date/Time: Wednesday, July 06, 2016 12:53:28
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 12:54:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56752.8	1.7				ug/L	68501	Standard
	Be	9	41092.3	2.3	**54.6692**	1.162	2.1	ug/L	8	Standard
	Al	27	6751186.4	2.0	**57.4251**	0.440	0.8	ug/L	1397	Standard
	Sc	45	42482.8	2.4				ug/L	38815	Standard
	Ti	47	37579.6	2.3	**105.5354**	1.586	1.5	ug/L	36	Standard
	V	51	382333.4	1.2	**51.0931**	0.241	0.5	ug/L	1284	Standard
	Cr	52	391883.4	2.2	**52.7636**	0.793	1.5	ug/L	6503	Standard
	Cr	53	47835.4	0.2	**52.1976**	0.572	1.1	ug/L	492	Standard
	Mn	55	344317.1	1.3	**53.0012**	0.174	0.3	ug/L	841	Standard
	Co	59	325311.2	1.3	**50.8445**	0.267	0.5	ug/L	229	Standard
	Ni	60	93170.6	1.4	**52.2381**	0.359	0.7	ug/L	344	Standard
	Cu	65	92504.9	1.5	**52.1124**	0.483	0.9	ug/L	115	Standard
	Zn	66	55580.4	0.5	**51.8949**	0.362	0.7	ug/L	190	Standard
>	Ge	72	434601.8	1.2				ug/L	409858	Standard
	As	75	56578.8	0.7	**51.5738**	0.350	0.7	ug/L	-22	Standard
	Se	82	5647.5	1.8	**50.3603**	0.378	0.7	ug/L	18	Standard
	Se-1	77	3845.5	1.2	**51.9136**	1.176	2.3	ug/L	50	Standard
>	Ga	71	88.3	22.9				mg/L	97	Standard
	Rb	85	756.7	12.0				ug/L	25	Standard
	Y	89	367973.7	1.4				ug/L	376763	Standard
>	Rh	103	40.0	12.5				ug/L	20	Standard
	Mo	98	247770.2	0.4	**100.8550**	1.105	1.1	ug/L	51	Standard
	Ag	107	318642.7	1.1	**50.1013**	0.860	1.7	ug/L	76	Standard
	Cd	111	102680.4	0.6	**50.7935**	0.304	0.6	mg/L	6	Standard
	Cd	114	251457.4	1.9	**50.8827**	1.163	2.3	ug/L	18	Standard
>	In	115	517125.0	0.9				ug/L	507261	Standard
	Sn	118	279794.8	0.3	**50.0313**	0.520	1.0	ug/L	683	Standard
	Sb	123	221090.7	1.6	**50.5448**	0.872	1.7	ug/L	446	Standard
	Ba	135	98648.8	0.3	**50.8641**	0.342	0.7	ug/L	28	Standard
	Ce	140	283.3	6.7				ug/L	33	Standard
>	Tb	159	800642.8	0.2				ug/L	800803	Standard
	Ho	165	20.0	50.0				ug/L	10	Standard
	Tl	203	393462.9	0.9	**51.5261**	0.198	0.4	ug/L	13	Standard
	Tl	205	343273.5	0.6	**51.9120**	0.122	0.2	ug/L	13	Standard
	Pb	206	248406.7	0.2	**50.6641**	0.317	0.6	ug/L	226	Standard
	Pb	207	226320.8	0.2	**50.8305**	0.138	0.3	ug/L	204	Standard
	Pb	208	939047.0	1.1	**52.7397**	0.483	0.9	ug/L	852	Standard
	U	238	332825.8	0.4	**50.4825**	0.314	0.6	ug/L	13	Standard
>	Bi	209	448636.6	0.5				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 12:56:40
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3842.2	4.2	**4.7135**	0.114	2.4	mg/L	58	Standard
K	39	1238.4	8.3	**4.3703**	0.386	8.8	mg/L	27	Standard
Ca	43	76.7	29.4	**3.8418**	1.628	42.4	mg/L	20	Standard
Fe	54	6532.7	3.0	**4.8761**	0.107	2.2	mg/L	158	Standard
Fe	57	1771.8	2.6	**4.7386**	0.249	5.3	mg/L	267	Standard
> **Sc-1**	45	42482.8	2.4				mg/L	38815	Standard
Cl	35	66120.0	1.5				ug/L	57611	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	1616.8	14.2				ug/L	1617	Standard
P	31	20527.2	2.3				ug/L	19244	Standard
S	34	4075.5	3.0				ug/L	3557	Standard
Sr	88	65.0	23.1				ug/L	65	Standard
C	12	66.7	37.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	23	Standard
Dy	164	-0.5	0.0				mg/L	13	Standard
Ho-1	165	20.0	50.0				mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	11891.3	1.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.338		
Al	27	114.850		
Sc	45			
Ti	47	105.535		
V	51	102.186		
Cr	52	105.527		
Cr	53			
Mn	55	106.002		
Co	59	101.689		
Ni	60	104.476		
Cu	65	104.225		
Zn	66	103.790		
> Ge	72		106.037	
As	75	103.148		
Se	82	100.721		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 12:56:40
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	100.855		
Ag	107	100.203		
Cd	111	101.587		
Cd	114			
> In	115		101.945	
Sn	118	100.063		
Sb	123	101.090		
Ba	135	101.728		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.052		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.479		
U	238	100.965		
> Bi	209		99.909	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 12:56:40
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 12:57:35
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58173.1	0.9				ug/L	68501	Standard
	Be	9	16.7	62.4	**0.0411**	0.014	33.0	ug/L	8	Standard
	Al	27	2846.9	23.0	**0.0586**	0.005	8.9	ug/L	1397	Standard
	Sc	45	41419.9	4.2				ug/L	38815	Standard
	Ti	47	45.3	22.5	**0.1003**	0.029	28.7	ug/L	36	Standard
	V	51	1392.0	8.0	**0.0435**	0.015	35.5	ug/L	1284	Standard
	Cr	52	7010.6	2.2	**0.0324**	0.022	67.0	ug/L	6503	Standard
	Cr	53	413.3	1.4	**0.0386**	0.005	13.3	ug/L	492	Standard
	Mn	55	993.7	2.9	**0.0582**	0.005	8.5	ug/L	841	Standard
	Co	59	252.0	16.8	**0.0451**	0.007	14.5	ug/L	229	Standard
	Ni	60	638.3	0.7	**0.2033**	0.004	1.9	ug/L	344	Standard
	Cu	65	123.0	9.2	**0.0564**	0.006	11.0	ug/L	115	Standard
	Zn	66	222.3	5.3	**0.0958**	0.010	10.6	ug/L	190	Standard
>	**Ge**	72	432136.6	0.4				ug/L	409858	Standard
	As	75	-22.5	131.6	**0.0783**	0.027	34.6	ug/L	-22	Standard
	Se	82	22.9	5.7	**0.1545**	0.012	7.9	ug/L	18	Standard
	Se-1	77	53.3	16.9	**-0.0242**	0.125	515.8	ug/L	50	Standard
>	**Ga**	71	58.3	19.8				mg/L	97	Standard
	Rb	85	23.3	65.5				ug/L	25	Standard
	Y	89	371942.5	1.8				ug/L	376763	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	175.2	11.7	**0.1433**	0.007	5.1	ug/L	51	Standard
	Ag	107	108.7	20.6	**0.0403**	0.003	8.6	ug/L	76	Standard
	Cd	111	12.7	69.7	**0.0457**	0.004	9.6	mg/L	6	Standard
	Cd	114	61.2	41.0	**0.0498**	0.005	9.9	ug/L	18	Standard
>	**In**	115	513109.5	2.2				ug/L	507261	Standard
	Sn	118	888.4	17.9	**0.0506**	0.031	60.4	ug/L	683	Standard
	Sb	123	783.2	29.8	**0.1604**	0.056	34.6	ug/L	446	Standard
	Ba	135	35.7	15.4	**0.0343**	0.003	7.8	ug/L	28	Standard
	Ce	140	75.0	35.3				ug/L	33	Standard
>	**Tb**	159	797797.7	0.9				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	62.3	30.4	**0.0414**	0.002	5.9	ug/L	13	Standard
	Tl	205	41.7	38.6	**0.0488**	0.002	4.9	ug/L	13	Standard
	Pb	206	251.3	8.2	**0.0468**	0.004	8.7	ug/L	226	Standard
	Pb	207	237.7	5.0	**0.0519**	0.002	4.4	ug/L	204	Standard
	Pb	208	934.0	13.6	**0.0521**	0.007	13.0	ug/L	852	Standard
	U	238	57.0	50.8	**0.0512**	0.004	8.5	ug/L	13	Standard
>	**Bi**	209	452413.7	0.8				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 12:59:52
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.1481**	14.955	10096.3	mg/L	2	Standard
Mg	24	30.0	28.9	**-0.0002**	0.012	6433.4	mg/L	58	Standard
K	39	30.0	60.1	**-0.0297**	0.069	231.4	mg/L	27	Standard
Ca	43	23.3	12.4	**0.3104**	0.162	52.3	mg/L	20	Standard
Fe	54	169.0	5.8	**0.0125**	0.011	84.9	mg/L	158	Standard
Fe	57	230.0	13.6	**0.0408**	0.089	218.6	mg/L	267	Standard
Sc-1	45	41419.9	4.2				mg/L	38815	Standard
Cl	35	64416.7	1.6				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1666.8	5.1				ug/L	1617	Standard
P	31	19791.3	3.6				ug/L	19244	Standard
S	34	3802.1	3.9				ug/L	3557	Standard
Sr	88	75.0	6.7				ug/L	65	Standard
C	12	36.7	41.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	23	Standard
Dy	164	6.0	100.4				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	8088.8	1.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.436	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 12:59:52
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.750
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 12:59:52
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131306
Sample Date/Time: Wednesday, July 06, 2016 13:04:40
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57723.1	2.8				ug/L	68501	Standard
	Be	9	53.3	37.9	**0.0891**	0.026	29.2	ug/L	8	Standard
	Al	27	180289.7	0.5	**1.5427**	0.041	2.7	ug/L	1397	Standard
	Sc	45	41478.4	1.2				ug/L	38815	Standard
	Ti	47	1970.8	0.7	**5.6501**	0.108	1.9	ug/L	36	Standard
	V	51	47130.6	0.5	**6.3329**	0.078	1.2	ug/L	1284	Standard
	Cr	52	13127.7	2.7	**0.9112**	0.063	6.9	ug/L	6503	Standard
	Cr	53	2163.5	13.1	**2.0244**	0.352	17.4	ug/L	492	Standard
	Mn	55	24005.0	1.8	**3.6998**	0.025	0.7	ug/L	841	Standard
	Co	59	2263.2	1.0	**0.3682**	0.006	1.6	ug/L	229	Standard
	Ni	60	2942.3	2.6	**1.5389**	0.037	2.4	ug/L	344	Standard
	Cu	65	2666.9	0.5	**1.5278**	0.021	1.4	ug/L	115	Standard
	Zn	66	24175.6	1.3	**23.0819**	0.110	0.5	ug/L	190	Standard
>	**Ge**	72	423851.7	1.6				ug/L	409858	Standard
	As	75	21610.2	1.6	**20.2585**	0.239	1.2	ug/L	-22	Standard
	Se	82	171.9	10.5	**1.5230**	0.183	12.0	ug/L	18	Standard
	Se-1	77	168.3	8.9	**1.6075**	0.250	15.6	ug/L	50	Standard
>	**Ga**	71	1233.4	11.2				mg/L	97	Standard
	Rb	85	18406.2	1.8				ug/L	25	Standard
	Y	89	373385.9	1.9				ug/L	376763	Standard
>	**Rh**	103	136.7	32.0				ug/L	20	Standard
	Mo	98	197428.1	1.3	**83.4331**	0.661	0.8	ug/L	51	Standard
	Ag	107	113.3	9.7	**0.0416**	0.002	4.6	ug/L	76	Standard
	Cd	111	101.4	12.4	**0.0914**	0.006	6.8	mg/L	6	Standard
	Cd	114	1017.6	7.1	**0.2510**	0.016	6.4	ug/L	18	Standard
>	**In**	115	498128.4	0.6				ug/L	507261	Standard
	Sn	118	2950.3	4.8	**0.4389**	0.029	6.6	ug/L	683	Standard
	Sb	123	1594.2	12.3	**0.3583**	0.049	13.6	ug/L	446	Standard
	Ba	135	34883.1	0.8	**18.6813**	0.138	0.7	ug/L	28	Standard
	Ce	140	16956.2	2.0				ug/L	33	Standard
>	**Tb**	159	784060.2	1.2				ug/L	800803	Standard
	Ho	165	340.0	7.4				ug/L	10	Standard
	Tl	203	172.0	8.2	**0.0569**	0.002	3.1	ug/L	13	Standard
	Tl	205	160.0	9.4	**0.0679**	0.003	3.7	ug/L	13	Standard
	Pb	206	2934.0	0.9	**0.6227**	0.008	1.3	ug/L	226	Standard
	Pb	207	2315.2	1.5	**0.5435**	0.010	1.9	ug/L	204	Standard
	Pb	208	10260.4	1.0	**0.6036**	0.005	0.8	ug/L	852	Standard
	U	238	3112.7	1.7	**0.5366**	0.008	1.5	ug/L	13	Standard
>	**Bi**	209	428381.7	0.9				ug/L	449044	Standard

Sample ID: L1606131306
Report Date/Time: Wednesday, July 06, 2016 13:06:57
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	60549.1	1.3	**76.6878**	1.707	2.2	mg/L	58	Standard
K	39	128.3	2.2	**0.3369**	0.012	3.7	mg/L	27	Standard
Ca	43	146.7	19.4	**8.6910**	1.829	21.0	mg/L	20	Standard
Fe	54	590.3	17.9	**0.3427**	0.087	25.3	mg/L	158	Standard
Fe	57	436.7	7.4	**0.6872**	0.100	14.6	mg/L	267	Standard
> **Sc-1**	45	41478.4	1.2				mg/L	38815	Standard
Cl	35	63464.0	2.9				ug/L	57611	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	29495.4	4.8				ug/L	1617	Standard
P	31	22338.1	1.2				ug/L	19244	Standard
S	34	3658.8	8.4				ug/L	3557	Standard
Sr	88	95.0	19.0				ug/L	65	Standard
C	12	90.0	48.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	23	Standard
Dy	164	578.4	10.6				mg/L	13	Standard
Ho-1	165	340.0	7.4				mg/L	10	Standard
Er	166	243.3	12.6				mg/L	13	Standard
I	127	234795.7	5.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.266	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.414	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131306
Report Date/Time: Wednesday, July 06, 2016 13:06:57
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.200
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.399
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606131306
Report Date/Time: Wednesday, July 06, 2016 13:06:57
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131307
Sample Date/Time: Wednesday, July 06, 2016 13:07:52
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58787.2	3.0				ug/L	68501	Standard
	Be	9	21.7	35.3	**0.0472**	0.010	20.4	ug/L	8	Standard
	Al	27	32170.8	2.3	**0.2994**	0.014	4.7	ug/L	1397	Standard
	Sc	45	40791.5	1.3				ug/L	38815	Standard
	Ti	47	455.7	9.2	**1.3061**	0.131	10.0	ug/L	36	Standard
	V	51	30069.6	2.2	**4.0535**	0.114	2.8	ug/L	1284	Standard
	Cr	52	9306.9	0.9	**0.3948**	0.031	7.9	ug/L	6503	Standard
	Cr	53	2293.5	7.2	**2.2101**	0.212	9.6	ug/L	492	Standard
	Mn	55	3385.7	0.8	**0.4479**	0.008	1.7	ug/L	841	Standard
	Co	59	676.3	3.4	**0.1156**	0.005	4.5	ug/L	229	Standard
	Ni	60	1130.4	2.9	**0.5044**	0.018	3.5	ug/L	344	Standard
	Cu	65	1215.0	4.0	**0.6996**	0.013	1.9	ug/L	115	Standard
	Zn	66	1554.4	4.0	**1.4018**	0.069	4.9	ug/L	190	Standard
>	**Ge**	72	417314.7	2.2				ug/L	409858	Standard
	As	75	14441.7	1.3	**13.7878**	0.455	3.3	ug/L	-22	Standard
	Se	82	149.1	1.8	**1.3351**	0.052	3.9	ug/L	18	Standard
	Se-1	77	180.3	7.9	**1.8165**	0.258	14.2	ug/L	50	Standard
>	**Ga**	71	601.7	10.6				mg/L	97	Standard
	Rb	85	5239.2	1.8				ug/L	25	Standard
	Y	89	358062.8	2.2				ug/L	376763	Standard
>	**Rh**	103	165.0	16.0				ug/L	20	Standard
	Mo	98	206408.8	1.4	**88.5714**	1.056	1.2	ug/L	51	Standard
	Ag	107	79.3	17.8	**0.0362**	0.002	6.4	ug/L	76	Standard
	Cd	111	-128.2	9.7	**-0.0275**	0.007	27.1	mg/L	6	Standard
	Cd	114	441.2	1.2	**0.1314**	0.002	1.5	ug/L	18	Standard
>	**In**	115	490588.1	1.5				ug/L	507261	Standard
	Sn	118	950.0	9.6	**0.0693**	0.017	24.1	ug/L	683	Standard
	Sb	123	1528.0	9.2	**0.3484**	0.039	11.2	ug/L	446	Standard
	Ba	135	7029.0	1.2	**3.8355**	0.097	2.5	ug/L	28	Standard
	Ce	140	2000.1	10.1				ug/L	33	Standard
>	**Tb**	159	781482.7	1.4				ug/L	800803	Standard
	Ho	165	31.7	39.7				ug/L	10	Standard
	Tl	203	103.7	18.0	**0.0476**	0.003	5.7	ug/L	13	Standard
	Tl	205	90.0	9.6	**0.0568**	0.001	1.9	ug/L	13	Standard
	Pb	206	490.7	1.2	**0.1012**	0.001	1.4	ug/L	226	Standard
	Pb	207	398.0	8.8	**0.0930**	0.010	10.2	ug/L	204	Standard
	Pb	208	1670.4	2.7	**0.0987**	0.002	1.8	ug/L	852	Standard
	U	238	2792.6	0.6	**0.4878**	0.013	2.7	ug/L	13	Standard
>	**Bi**	209	426654.8	2.3				ug/L	449044	Standard

Sample ID: L1606131307
Report Date/Time: Wednesday, July 06, 2016 13:10:08
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.1322**	14.983	11333.2	mg/L	2	Standard
Mg	24	62671.0	0.6	**80.7120**	1.324	1.6	mg/L	58	Standard
K	39	93.3	12.4	**0.2122**	0.044	20.7	mg/L	27	Standard
Ca	43	48.3	26.0	**2.0631**	0.852	41.3	mg/L	20	Standard
Fe	54	193.6	22.1	**0.0342**	0.035	102.9	mg/L	158	Standard
Fe	57	265.0	14.7	**0.1630**	0.116	71.3	mg/L	267	Standard
Sc-1	45	40791.5	1.3				mg/L	38815	Standard
Cl	35	64717.9	0.6				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	26954.1	8.2				ug/L	1617	Standard
P	31	21436.8	2.7				ug/L	19244	Standard
S	34	3510.4	3.2				ug/L	3557	Standard
Sr	88	73.3	30.7				ug/L	65	Standard
C	12	60.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	44.6				mg/L	23	Standard
Dy	164	34.8	81.9				mg/L	13	Standard
Ho-1	165	31.7	39.7				mg/L	10	Standard
Er	166	40.0	25.0				mg/L	13	Standard
I	127	224703.9	3.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		85.819	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.819	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606131307
Report Date/Time: Wednesday, July 06, 2016 13:10:08
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.713
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.014
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131308
Sample Date/Time: Wednesday, July 06, 2016 13:11:03
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	98735.9	3.3				ug/L	68501	Standard
	Be	9	58.3	13.1	**0.0640**	0.004	6.9	ug/L	8	Standard
	Al	27	51788511.2	2.3	**253.1524**	3.815	1.5	ug/L	1397	Standard
	Sc	45	41498.4	1.6				ug/L	38815	Standard
	Ti	47	3931.8	1.1	**11.5935**	0.069	0.6	ug/L	36	Standard
	V	51	21071.2	0.6	**2.8272**	0.045	1.6	ug/L	1284	Standard
	Cr	52	24687.4	1.3	**2.6256**	0.034	1.3	ug/L	6503	Standard
	Cr	53	2983.6	1.1	**3.0340**	0.005	0.2	ug/L	492	Standard
	Mn	55	1699805.7	0.4	**275.7234**	3.638	1.3	ug/L	841	Standard
	Co	59	8628.5	0.7	**1.4243**	0.010	0.7	ug/L	229	Standard
	Ni	60	7274.1	0.7	**4.1465**	0.043	1.0	ug/L	344	Standard
	Cu	65	4390.6	0.8	**2.5899**	0.030	1.2	ug/L	115	Standard
	Zn	66	25222.0	1.8	**24.7202**	0.623	2.5	ug/L	190	Standard
>	Ge	72	413063.1	1.0				ug/L	409858	Standard
	As	75	638.5	11.5	**0.7099**	0.068	9.6	ug/L	-22	Standard
	Se	82	163.0	16.8	**1.4794**	0.255	17.2	ug/L	18	Standard
	Se-1	77	91.7	9.4	**0.5625**	0.134	23.8	ug/L	50	Standard
>	Ga	71	2932.0	4.6				mg/L	97	Standard
	Rb	85	15868.3	1.8				ug/L	25	Standard
	Y	89	380333.5	1.6				ug/L	376763	Standard
>	Rh	103	393.3	8.5				ug/L	20	Standard
	Mo	98	89251.1	1.2	**38.3286**	0.514	1.3	ug/L	51	Standard
	Ag	107	106.3	8.5	**0.0407**	0.001	3.4	ug/L	76	Standard
	Cd	111	94.4	11.3	**0.0885**	0.005	6.1	mg/L	6	Standard
	Cd	114	588.6	13.1	**0.1629**	0.017	10.6	ug/L	18	Standard
>	In	115	490708.4	0.7				ug/L	507261	Standard
	Sn	118	1108.4	12.3	**0.0991**	0.025	25.0	ug/L	683	Standard
	Sb	123	526.3	24.2	**0.1063**	0.030	28.1	ug/L	446	Standard
	Ba	135	56034.1	1.2	**30.4523**	0.347	1.1	ug/L	28	Standard
	Ce	140	32763.7	1.0				ug/L	33	Standard
>	Tb	159	795920.7	1.3				ug/L	800803	Standard
	Ho	165	1490.1	6.0				ug/L	10	Standard
	Tl	203	1153.0	2.9	**0.1924**	0.005	2.8	ug/L	13	Standard
	Tl	205	1041.7	17.1	**0.2084**	0.028	13.6	ug/L	13	Standard
	Pb	206	9848.9	2.0	**2.1134**	0.031	1.5	ug/L	226	Standard
	Pb	207	8248.6	1.8	**1.9517**	0.020	1.0	ug/L	204	Standard
	Pb	208	34195.5	0.8	**2.0245**	0.016	0.8	ug/L	852	Standard
	U	238	19291.3	1.0	**3.1243**	0.008	0.3	ug/L	13	Standard
>	Bi	209	425624.2	1.2				ug/L	449044	Standard

Sample ID: L1606131308
Report Date/Time: Wednesday, July 06, 2016 13:13:20
Page 1

Approved: July 07, 2016

Na	23	11.7	24.7	**50.8395**	15.486	30.5	mg/L	2	Standard
Mg	24	70599.2	2.2	**89.3675**	1.571	1.8	mg/L	58	Standard
K	39	696.7	9.4	**2.4576**	0.269	10.9	mg/L	27	Standard
Ca	43	1303.4	8.1	**87.3396**	5.961	6.8	mg/L	20	Standard
Fe	54	3302.4	5.0	**2.4661**	0.145	5.9	mg/L	158	Standard
Fe	57	1820.1	6.9	**5.0122**	0.320	6.4	mg/L	267	Standard
> **Sc-1**	45	41498.4	1.6				mg/L	38815	Standard
Cl	35	155745.8	0.9				ug/L	57611	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	21044.6	6.1				ug/L	1617	Standard
P	31	23146.0	0.9				ug/L	19244	Standard
S	34	3535.4	4.1				ug/L	3557	Standard
Sr	88	1208.4	2.4				ug/L	65	Standard
C	12	123.3	49.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	86.6				mg/L	23	Standard
Dy	164	2373.5	4.1				mg/L	13	Standard
Ho-1	165	1490.1	6.0				mg/L	10	Standard
Er	166	1113.4	3.4				mg/L	13	Standard
I	127	189431.0	7.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.782	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131308
Report Date/Time: Wednesday, July 06, 2016 13:13:20
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	96.737	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.785	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606131308
Report Date/Time: Wednesday, July 06, 2016 13:13:20
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131309
Sample Date/Time: Wednesday, July 06, 2016 13:14:15
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112009.2	1.2				ug/L	68501	Standard
	Be	9	11.7	89.2	**0.0273**	0.007	25.8	ug/L	8	Standard
	Al	27	60416903.1	0.9	**260.2685**	0.699	0.3	ug/L	1397	Standard
	Sc	45	40617.7	2.9				ug/L	38815	Standard
	Ti	47	233.7	12.0	**0.6551**	0.079	12.0	ug/L	36	Standard
	V	51	2902.2	5.1	**0.2606**	0.020	7.8	ug/L	1284	Standard
	Cr	52	10576.4	0.2	**0.5745**	0.006	1.0	ug/L	6503	Standard
	Cr	53	935.0	8.0	**0.6514**	0.081	12.4	ug/L	492	Standard
	Mn	55	366630.7	1.4	**58.7416**	0.775	1.3	ug/L	841	Standard
	Co	59	1672.1	6.1	**0.2774**	0.017	6.1	ug/L	229	Standard
	Ni	60	5612.4	2.4	**3.1269**	0.078	2.5	ug/L	344	Standard
	Cu	65	3260.7	3.2	**1.8987**	0.055	2.9	ug/L	115	Standard
	Zn	66	2963.3	1.2	**2.7722**	0.047	1.7	ug/L	190	Standard
>	**Ge**	72	417618.5	0.4				ug/L	409858	Standard
	As	75	338.7	3.7	**0.4195**	0.011	2.6	ug/L	-22	Standard
	Se	82	165.1	4.0	**1.4829**	0.064	4.3	ug/L	18	Standard
	Se-1	77	92.0	7.5	**0.5522**	0.098	17.7	ug/L	50	Standard
>	**Ga**	71	76.7	32.2				mg/L	97	Standard
	Rb	85	9524.7	2.8				ug/L	25	Standard
	Y	89	362464.7	1.2				ug/L	376763	Standard
>	**Rh**	103	398.3	9.4				ug/L	20	Standard
	Mo	98	52319.0	0.7	**22.4021**	0.342	1.5	ug/L	51	Standard
	Ag	107	111.0	7.0	**0.0414**	0.001	2.8	ug/L	76	Standard
	Cd	111	66.3	40.6	**0.0737**	0.014	18.5	mg/L	6	Standard
	Cd	114	308.8	11.5	**0.1029**	0.008	7.4	ug/L	18	Standard
>	**In**	115	492839.5	0.9				ug/L	507261	Standard
	Sn	118	665.0	17.0	**0.0148**	0.020	136.3	ug/L	683	Standard
	Sb	123	764.7	12.4	**0.1630**	0.021	13.0	ug/L	446	Standard
	Ba	135	9741.8	0.6	**5.2844**	0.019	0.4	ug/L	28	Standard
	Ce	140	305.0	27.4				ug/L	33	Standard
>	**Tb**	159	798779.4	1.0				ug/L	800803	Standard
	Ho	165	31.7	39.7				ug/L	10	Standard
	Tl	203	781.0	0.8	**0.1406**	0.001	0.7	ug/L	13	Standard
	Tl	205	756.7	10.9	**0.1626**	0.013	8.1	ug/L	13	Standard
	Pb	206	357.0	22.6	**0.0724**	0.017	23.9	ug/L	226	Standard
	Pb	207	331.7	30.7	**0.0771**	0.024	31.2	ug/L	204	Standard
	Pb	208	1314.7	25.2	**0.0776**	0.020	25.3	ug/L	852	Standard
	U	238	20801.9	1.6	**3.3517**	0.050	1.5	ug/L	13	Standard
>	**Bi**	209	427402.4	0.1				ug/L	449044	Standard

Sample ID: L1606131309
Report Date/Time: Wednesday, July 06, 2016 13:16:31
Page 1

Approved: July 07, 2016

Na	23	13.3	114.6	**62.0110**	82.574	133.2	mg/L	2	Standard
Mg	24	78283.4	0.8	**101.3167**	3.674	3.6	mg/L	58	Standard
K	39	796.7	7.0	**2.8989**	0.304	10.5	mg/L	27	Standard
Ca	43	1360.1	8.5	**93.1611**	5.461	5.9	mg/L	20	Standard
Fe	54	138.6	19.3	**-0.0090**	0.023	257.3	mg/L	158	Standard
Fe	57	1113.4	5.6	**2.8774**	0.101	3.5	mg/L	267	Standard
> **Sc-1**	45	40617.7	2.9				mg/L	38815	Standard
Cl	35	174591.6	1.3				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	22737.1	1.6				ug/L	1617	Standard
P	31	22062.7	1.2				ug/L	19244	Standard
S	34	3545.4	4.9				ug/L	3557	Standard
Sr	88	1375.1	2.5				ug/L	65	Standard
C	12	143.3	17.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	35.1	42.2				mg/L	13	Standard
Ho-1	165	31.7	39.7				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	13	Standard
I	127	145904.3	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		163.514	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.893	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131309
Report Date/Time: Wednesday, July 06, 2016 13:16:31
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.157
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.181
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606131309
Report Date/Time: Wednesday, July 06, 2016 13:16:31
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131310
Sample Date/Time: Wednesday, July 06, 2016 13:17:26
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	106268.1	1.4				ug/L	68501	Standard
	Be	9	63.3	38.9	**0.0644**	0.017	26.8	ug/L	8	Standard
	Al	27	52095911.6	1.1	**236.5686**	3.641	1.5	ug/L	1397	Standard
	Sc	45	39504.8	2.4				ug/L	38815	Standard
	Ti	47	3313.4	1.4	**9.7590**	0.120	1.2	ug/L	36	Standard
	V	51	18247.3	0.4	**2.4270**	0.009	0.4	ug/L	1284	Standard
	Cr	52	21880.5	1.2	**2.2188**	0.034	1.6	ug/L	6503	Standard
	Cr	53	2420.2	1.3	**2.3803**	0.041	1.7	ug/L	492	Standard
	Mn	55	1489117.7	1.3	**241.3594**	3.092	1.3	ug/L	841	Standard
	Co	59	7567.6	1.7	**1.2490**	0.022	1.8	ug/L	229	Standard
	Ni	60	6846.2	2.0	**3.8905**	0.085	2.2	ug/L	344	Standard
	Cu	65	3759.5	2.6	**2.2142**	0.059	2.6	ug/L	115	Standard
	Zn	66	21879.1	1.2	**21.4117**	0.233	1.1	ug/L	190	Standard
>	**Ge**	72	413331.3	0.2				ug/L	409858	Standard
	As	75	501.1	13.5	**0.5781**	0.064	11.1	ug/L	-22	Standard
	Se	82	133.9	9.5	**1.2055**	0.119	9.9	ug/L	18	Standard
	Se-1	77	81.7	12.7	**0.4168**	0.148	35.4	ug/L	50	Standard
>	**Ga**	71	2415.2	7.5				mg/L	97	Standard
	Rb	85	13447.6	2.0				ug/L	25	Standard
	Y	89	375082.1	2.0				ug/L	376763	Standard
>	**Rh**	103	300.0	16.9				ug/L	20	Standard
	Mo	98	77032.6	1.1	**32.9500**	0.312	0.9	ug/L	51	Standard
	Ag	107	104.0	8.3	**0.0403**	0.001	3.4	ug/L	76	Standard
	Cd	111	84.0	6.5	**0.0830**	0.003	3.8	mg/L	6	Standard
	Cd	114	521.9	11.1	**0.1480**	0.011	7.6	ug/L	18	Standard
>	**In**	115	492807.2	0.8				ug/L	507261	Standard
	Sn	118	923.4	10.2	**0.0635**	0.017	26.7	ug/L	683	Standard
	Sb	123	509.4	21.5	**0.1018**	0.026	25.1	ug/L	446	Standard
	Ba	135	49536.5	1.3	**26.8113**	0.563	2.1	ug/L	28	Standard
	Ce	140	27353.0	2.7				ug/L	33	Standard
>	**Tb**	159	798757.9	0.8				ug/L	800803	Standard
	Ho	165	1208.4	4.8				ug/L	10	Standard
	Tl	203	1080.7	2.6	**0.1803**	0.004	2.2	ug/L	13	Standard
	Tl	205	941.7	9.1	**0.1904**	0.013	7.0	ug/L	13	Standard
	Pb	206	8916.3	0.4	**1.8863**	0.006	0.3	ug/L	226	Standard
	Pb	207	7376.8	1.2	**1.7210**	0.025	1.4	ug/L	204	Standard
	Pb	208	30608.2	0.4	**1.7869**	0.009	0.5	ug/L	852	Standard
	U	238	18463.6	1.5	**2.9510**	0.048	1.6	ug/L	13	Standard
>	**Bi**	209	431634.5	0.2				ug/L	449044	Standard

Sample ID: L1606131310
Report Date/Time: Wednesday, July 06, 2016 13:19:43
Page 1

Approved: July 07, 2016

Na	23	13.3	57.3	**62.5936**	41.262	65.9	mg/L	2	Standard
Mg	24	69025.2	2.0	**91.8053**	2.126	2.3	mg/L	58	Standard
K	39	646.7	2.5	**2.3927**	0.113	4.7	mg/L	27	Standard
Ca	43	1190.0	3.7	**83.7533**	1.325	1.6	mg/L	20	Standard
Fe	54	2913.4	1.1	**2.2771**	0.083	3.6	mg/L	158	Standard
Fe	57	1741.8	2.1	**5.0459**	0.132	2.6	mg/L	267	Standard
> **Sc-1**	45	39504.8	2.4				mg/L	38815	Standard
Cl	35	159194.6	0.7				ug/L	57611	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	17703.7	0.6				ug/L	1617	Standard
P	31	21099.7	2.5				ug/L	19244	Standard
S	34	3588.8	1.7				ug/L	3557	Standard
Sr	88	1331.7	11.3				ug/L	65	Standard
C	12	116.7	9.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	13.3				mg/L	23	Standard
Dy	164	2016.1	16.6				mg/L	13	Standard
Ho-1	165	1208.4	4.8				mg/L	10	Standard
Er	166	920.0	8.6				mg/L	13	Standard
I	127	174842.2	7.9				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		155.133	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.847	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606131310
Report Date/Time: Wednesday, July 06, 2016 13:19:43
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.151
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.123
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606131310
Report Date/Time: Wednesday, July 06, 2016 13:19:43
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131311
Sample Date/Time: Wednesday, July 06, 2016 13:20:37
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	118945.1	1.5				ug/L	68501	Standard
	Be	9	20.0	75.0	**0.0321**	0.009	29.1	ug/L	8	Standard
	Al	27	59847300.9	2.0	**242.8152**	6.040	2.5	ug/L	1397	Standard
	Sc	45	40133.1	1.7				ug/L	38815	Standard
	Ti	47	250.0	3.8	**0.7024**	0.019	2.7	ug/L	36	Standard
	V	51	2763.5	2.9	**0.2410**	0.007	2.7	ug/L	1284	Standard
	Cr	52	10665.1	1.1	**0.5862**	0.006	1.1	ug/L	6503	Standard
	Cr	53	901.7	5.9	**0.6125**	0.051	8.3	ug/L	492	Standard
	Mn	55	321677.0	3.2	**51.4864**	0.989	1.9	ug/L	841	Standard
	Co	59	1652.1	4.6	**0.2739**	0.009	3.4	ug/L	229	Standard
	Ni	60	5762.4	1.4	**3.2127**	0.047	1.5	ug/L	344	Standard
	Cu	65	3074.6	2.7	**1.7884**	0.032	1.8	ug/L	115	Standard
	Zn	66	2723.6	3.0	**2.5374**	0.093	3.7	ug/L	190	Standard
>	**Ge**	72	417885.3	1.3				ug/L	409858	Standard
	As	75	346.6	6.8	**0.4267**	0.019	4.6	ug/L	-22	Standard
	Se	82	150.0	1.7	**1.3415**	0.014	1.1	ug/L	18	Standard
	Se-1	77	80.3	7.3	**0.3848**	0.073	18.9	ug/L	50	Standard
>	**Ga**	71	56.7	25.5				mg/L	97	Standard
	Rb	85	9339.5	2.6				ug/L	25	Standard
	Y	89	365791.3	0.7				ug/L	376763	Standard
>	**Rh**	103	375.0	15.0				ug/L	20	Standard
	Mo	98	48799.1	2.4	**20.6077**	0.295	1.4	ug/L	51	Standard
	Ag	107	106.3	18.5	**0.0404**	0.003	7.0	ug/L	76	Standard
	Cd	111	51.0	31.1	**0.0653**	0.008	11.7	mg/L	6	Standard
	Cd	114	304.0	25.3	**0.1009**	0.016	15.7	ug/L	18	Standard
>	**In**	115	499809.1	2.0				ug/L	507261	Standard
	Sn	118	658.3	6.1	**0.0119**	0.005	43.2	ug/L	683	Standard
	Sb	123	517.5	16.7	**0.1024**	0.023	22.2	ug/L	446	Standard
	Ba	135	9295.5	1.5	**4.9733**	0.035	0.7	ug/L	28	Standard
	Ce	140	326.7	10.2				ug/L	33	Standard
>	**Tb**	159	803773.3	0.9				ug/L	800803	Standard
	Ho	165	38.3	66.9				ug/L	10	Standard
	Tl	203	761.0	2.1	**0.1360**	0.001	1.0	ug/L	13	Standard
	Tl	205	746.7	8.7	**0.1588**	0.009	5.9	ug/L	13	Standard
	Pb	206	396.3	12.6	**0.0792**	0.010	12.4	ug/L	226	Standard
	Pb	207	324.7	4.8	**0.0741**	0.003	4.6	ug/L	204	Standard
	Pb	208	1389.7	4.7	**0.0805**	0.003	3.8	ug/L	852	Standard
	U	238	20230.2	0.9	**3.2026**	0.028	0.9	ug/L	13	Standard
>	**Bi**	209	435285.7	0.8				ug/L	449044	Standard

Sample ID: L1606131311
Report Date/Time: Wednesday, July 06, 2016 13:22:54
Page 1

Approved: July 07, 2016

Na	23	8.3	69.3	**35.2289**	30.621	86.9	mg/L	2	Standard
Mg	24	76150.9	0.8	**99.6881**	0.997	1.0	mg/L	58	Standard
K	39	673.3	8.3	**2.4572**	0.258	10.5	mg/L	27	Standard
Ca	43	1470.1	6.0	**102.1100**	5.109	5.0	mg/L	20	Standard
Fe	54	163.6	6.0	**0.0122**	0.008	61.6	mg/L	158	Standard
Fe	57	1090.0	8.3	**2.8493**	0.334	11.7	mg/L	267	Standard
> **Sc-1**	45	40133.1	1.7				mg/L	38815	Standard
Cl	35	175348.2	1.1				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	22723.7	4.9				ug/L	1617	Standard
P	31	22189.6	0.9				ug/L	19244	Standard
S	34	3623.8	1.4				ug/L	3557	Standard
Sr	88	1358.4	7.2				ug/L	65	Standard
C	12	133.3	38.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	23	Standard
Dy	164	55.7	38.2				mg/L	13	Standard
Ho-1	165	38.3	66.9				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	135084.6	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		173.640	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.959	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131311
Report Date/Time: Wednesday, July 06, 2016 13:22:54
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.531	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.936	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606131311
Report Date/Time: Wednesday, July 06, 2016 13:22:54
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131312
Sample Date/Time: Wednesday, July 06, 2016 13:23:49
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74687.0	2.1				ug/L	68501	Standard
	Be	9	21.7	58.1	**0.0412**	0.012	30.1	ug/L	8	Standard
	Al	27	121226.9	4.1	**0.8180**	0.021	2.6	ug/L	1397	Standard
	Sc	45	46195.4	5.0				ug/L	38815	Standard
	Ti	47	1765.8	3.6	**5.0716**	0.166	3.3	ug/L	36	Standard
	V	51	952242.6	1.1	**131.0501**	0.792	0.6	ug/L	1284	Standard
	Cr	52	25163.5	1.1	**2.6112**	0.016	0.6	ug/L	6503	Standard
	Cr	53	3345.4	2.9	**3.3642**	0.111	3.3	ug/L	492	Standard
	Mn	55	22524.4	1.1	**3.4752**	0.031	0.9	ug/L	841	Standard
	Co	59	1867.8	4.0	**0.3055**	0.010	3.4	ug/L	229	Standard
	Ni	60	2889.9	0.3	**1.5131**	0.005	0.3	ug/L	344	Standard
	Cu	65	15427.2	0.5	**8.9242**	0.052	0.6	ug/L	115	Standard
	Zn	66	2837.6	3.0	**2.6163**	0.082	3.1	ug/L	190	Standard
>	**Ge**	72	422725.3	0.6				ug/L	409858	Standard
	As	75	83342.9	0.8	**78.0495**	0.213	0.3	ug/L	-22	Standard
	Se	82	1406.5	2.7	**12.8586**	0.427	3.3	ug/L	18	Standard
	Se-1	77	976.4	1.2	**12.9889**	0.247	1.9	ug/L	50	Standard
>	**Ga**	71	7822.0	4.1				mg/L	97	Standard
	Rb	85	9009.3	3.0				ug/L	25	Standard
	Y	89	365311.7	1.0				ug/L	376763	Standard
>	**Rh**	103	25.0	103.9				ug/L	20	Standard
	Mo	98	102838.5	0.2	**43.0255**	0.171	0.4	ug/L	51	Standard
	Ag	107	207.7	3.4	**0.0566**	0.001	2.0	ug/L	76	Standard
	Cd	111	-42.9	18.2	**0.0176**	0.004	22.6	mg/L	6	Standard
	Cd	114	287.6	3.5	**0.0971**	0.002	2.3	ug/L	18	Standard
>	**In**	115	503572.6	0.2				ug/L	507261	Standard
	Sn	118	1271.7	5.8	**0.1239**	0.014	11.4	ug/L	683	Standard
	Sb	123	6992.3	1.3	**1.6218**	0.024	1.5	ug/L	446	Standard
	Ba	135	6974.3	1.1	**3.7072**	0.039	1.0	ug/L	28	Standard
	Ce	140	9868.2	2.8				ug/L	33	Standard
>	**Tb**	159	803443.7	0.1				ug/L	800803	Standard
	Ho	165	190.0	16.4				ug/L	10	Standard
	Tl	203	56.3	5.7	**0.0407**	0.000	1.1	ug/L	13	Standard
	Tl	205	45.0	48.4	**0.0493**	0.003	6.6	ug/L	13	Standard
	Pb	206	1400.1	2.2	**0.2825**	0.008	2.8	ug/L	226	Standard
	Pb	207	1130.4	1.0	**0.2536**	0.002	0.8	ug/L	204	Standard
	Pb	208	4754.6	0.4	**0.2680**	0.003	1.1	ug/L	852	Standard
	U	238	139.3	1.5	**0.0638**	0.000	0.3	ug/L	13	Standard
>	**Bi**	209	447272.3	0.8				ug/L	449044	Standard

Sample ID: L1606131312
Report Date/Time: Wednesday, July 06, 2016 13:26:06
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.5275**	12.566	822.6	mg/L	2	Standard
Mg	24	80273.8	0.4	**91.4367**	4.664	5.1	mg/L	58	Standard
K	39	151.7	22.0	**0.3638**	0.088	24.1	mg/L	27	Standard
Ca	43	53.3	28.6	**2.0171**	1.102	54.7	mg/L	20	Standard
Fe	54	330.9	19.8	**0.1145**	0.058	50.5	mg/L	158	Standard
Fe	57	306.7	7.4	**0.1824**	0.050	27.7	mg/L	267	Standard
> **Sc-1**	45	46195.4	5.0				mg/L	38815	Standard
Cl	35	70691.9	1.4				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	6874.9	2.4				ug/L	1617	Standard
P	31	43087.9	1.6				ug/L	19244	Standard
S	34	3130.3	1.7				ug/L	3557	Standard
Sr	88	113.3	11.1				ug/L	65	Standard
C	12	116.7	38.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	23	Standard
Dy	164	362.7	17.1				mg/L	13	Standard
Ho-1	165	190.0	16.4				mg/L	10	Standard
Er	166	153.3	7.5				mg/L	13	Standard
I	127	18636.5	0.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.030	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.139	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131312
Report Date/Time: Wednesday, July 06, 2016 13:26:06
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.605
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	

Sample ID: L1606131312
Report Date/Time: Wednesday, July 06, 2016 13:26:06
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131313
Sample Date/Time: Wednesday, July 06, 2016 13:27:00
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74881.2	0.3				ug/L	68501	Standard
	Be	9	18.3	56.8	**0.0379**	0.010	27.6	ug/L	8	Standard
	Al	27	15759.9	6.9	**0.1366**	0.007	5.1	ug/L	1397	Standard
	Sc	45	44047.3	0.7				ug/L	38815	Standard
	Ti	47	750.4	1.3	**2.1655**	0.009	0.4	ug/L	36	Standard
	V	51	807233.0	1.0	**112.4283**	1.823	1.6	ug/L	1284	Standard
	Cr	52	22355.5	1.3	**2.2538**	0.026	1.1	ug/L	6503	Standard
	Cr	53	2878.6	7.2	**2.8773**	0.265	9.2	ug/L	492	Standard
	Mn	55	2539.5	0.9	**0.3116**	0.003	1.1	ug/L	841	Standard
	Co	59	1098.0	3.2	**0.1840**	0.005	2.8	ug/L	229	Standard
	Ni	60	2191.8	3.9	**1.1252**	0.061	5.4	ug/L	344	Standard
	Cu	65	13147.4	0.4	**7.6957**	0.046	0.6	ug/L	115	Standard
	Zn	66	1622.1	3.7	**1.4659**	0.055	3.8	ug/L	190	Standard
>	**Ge**	72	417667.4	0.9				ug/L	409858	Standard
	As	75	65646.2	1.0	**62.2459**	0.908	1.5	ug/L	-22	Standard
	Se	82	1281.5	2.7	**11.8523**	0.347	2.9	ug/L	18	Standard
	Se-1	77	877.4	3.0	**11.7424**	0.290	2.5	ug/L	50	Standard
>	**Ga**	71	7043.3	2.2				mg/L	97	Standard
	Rb	85	6473.1	4.8				ug/L	25	Standard
	Y	89	361539.6	1.0				ug/L	376763	Standard
>	**Rh**	103	35.0	28.6				ug/L	20	Standard
	Mo	98	91857.5	1.2	**38.8302**	0.319	0.8	ug/L	51	Standard
	Ag	107	120.0	5.2	**0.0427**	0.001	2.5	ug/L	76	Standard
	Cd	111	-68.2	22.5	**0.0044**	0.008	181.8	mg/L	6	Standard
	Cd	114	168.6	5.8	**0.0727**	0.002	2.6	ug/L	18	Standard
>	**In**	115	498500.3	1.2				ug/L	507261	Standard
	Sn	118	985.0	10.5	**0.0729**	0.018	24.8	ug/L	683	Standard
	Sb	123	5971.7	3.5	**1.3968**	0.062	4.5	ug/L	446	Standard
	Ba	135	5602.4	1.3	**3.0115**	0.051	1.7	ug/L	28	Standard
	Ce	140	348.3	13.0				ug/L	33	Standard
>	**Tb**	159	797835.4	0.2				ug/L	800803	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	31.3	7.4	**0.0375**	0.000	0.8	ug/L	13	Standard
	Tl	205	36.7	34.3	**0.0482**	0.002	4.0	ug/L	13	Standard
	Pb	206	352.7	5.6	**0.0690**	0.004	5.6	ug/L	226	Standard
	Pb	207	319.7	1.3	**0.0718**	0.001	1.6	ug/L	204	Standard
	Pb	208	1334.7	4.5	**0.0761**	0.004	4.8	ug/L	852	Standard
	U	238	71.3	19.4	**0.0536**	0.002	4.0	ug/L	13	Standard
>	**Bi**	209	442170.6	0.3				ug/L	449044	Standard

Sample ID: L1606131313
Report Date/Time: Wednesday, July 06, 2016 13:29:17
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.8330**	13.769	1652.9	mg/L	2	Standard
Mg	24	73682.1	1.9	**87.8782**	2.088	2.4	mg/L	58	Standard
K	39	131.7	28.8	**0.3201**	0.130	40.5	mg/L	27	Standard
Ca	43	48.3	39.2	**1.8220**	1.221	67.0	mg/L	20	Standard
Fe	54	173.2	27.4	**0.0076**	0.035	465.1	mg/L	158	Standard
Fe	57	268.3	19.1	**0.1117**	0.154	137.8	mg/L	267	Standard
> **Sc-1**	45	44047.3	0.7				mg/L	38815	Standard
Cl	35	68623.1	1.0				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	6154.6	8.4				ug/L	1617	Standard
P	31	39404.5	1.6				ug/L	19244	Standard
S	34	3313.7	8.1				ug/L	3557	Standard
Sr	88	98.3	14.7				ug/L	65	Standard
C	12	103.3	59.1				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	93.3	27.0				mg/L	23	Standard
Dy	164	16.0	73.0				mg/L	13	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	16884.4	1.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.314	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.905	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131313
Report Date/Time: Wednesday, July 06, 2016 13:29:17
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.469
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	

Sample ID: L1606131313
Report Date/Time: Wednesday, July 06, 2016 13:29:17
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131314
Sample Date/Time: Wednesday, July 06, 2016 13:30:12
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75656.9	2.8				ug/L	68501	Standard
	Be	9	15.0	33.3	**0.0345**	0.005	15.6	ug/L	8	Standard
	Al	27	14080.0	14.5	**0.1247**	0.011	8.5	ug/L	1397	Standard
	Sc	45	41217.7	1.6				ug/L	38815	Standard
	Ti	47	52.3	16.0	**0.1193**	0.023	19.3	ug/L	36	Standard
	V	51	1921.9	1.9	**0.1137**	0.005	4.1	ug/L	1284	Standard
	Cr	52	10025.0	1.0	**0.4416**	0.001	0.3	ug/L	6503	Standard
	Cr	53	720.0	11.6	**0.3743**	0.092	24.7	ug/L	492	Standard
	Mn	55	2755.6	1.7	**0.3296**	0.011	3.2	ug/L	841	Standard
	Co	59	220.0	2.7	**0.0399**	0.001	3.1	ug/L	229	Standard
	Ni	60	727.0	7.2	**0.2514**	0.026	10.3	ug/L	344	Standard
	Cu	65	392.3	0.5	**0.2081**	0.003	1.5	ug/L	115	Standard
	Zn	66	1867.1	2.7	**1.6357**	0.048	2.9	ug/L	190	Standard
>	**Ge**	72	434092.3	1.0				ug/L	409858	Standard
	As	75	-44.4	23.2	**0.0584**	0.009	16.0	ug/L	-22	Standard
	Se	82	16.6	20.7	**0.0974**	0.032	32.9	ug/L	18	Standard
	Se-1	77	53.7	22.5	**-0.0223**	0.171	769.3	ug/L	50	Standard
>	**Ga**	71	60.0					mg/L	97	Standard
	Rb	85	51.7	20.1				ug/L	25	Standard
	Y	89	374010.2	1.0				ug/L	376763	Standard
>	**Rh**	103	26.7	39.0				ug/L	20	Standard
	Mo	98	123.9	8.7	**0.1214**	0.005	3.7	ug/L	51	Standard
	Ag	107	66.0	4.0	**0.0334**	0.000	1.2	ug/L	76	Standard
	Cd	111	8.1	26.0	**0.0433**	0.001	2.4	mg/L	6	Standard
	Cd	114	20.3	63.2	**0.0414**	0.003	6.3	ug/L	18	Standard
>	**In**	115	522826.6	0.6				ug/L	507261	Standard
	Sn	118	671.7	15.4	**0.0090**	0.019	209.6	ug/L	683	Standard
	Sb	123	373.8	29.8	**0.0643**	0.026	39.9	ug/L	446	Standard
	Ba	135	367.3	10.7	**0.2030**	0.020	10.1	ug/L	28	Standard
	Ce	140	70.0	24.7				ug/L	33	Standard
>	**Tb**	159	816297.7	0.4				ug/L	800803	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	12.7	43.5	**0.0349**	0.001	2.0	ug/L	13	Standard
	Tl	205	10.0	86.6	**0.0440**	0.001	2.8	ug/L	13	Standard
	Pb	206	293.7	4.0	**0.0530**	0.003	4.9	ug/L	226	Standard
	Pb	207	253.3	4.7	**0.0531**	0.003	5.5	ug/L	204	Standard
	Pb	208	1091.0	0.9	**0.0584**	0.000	0.3	ug/L	852	Standard
	U	238	6.3	39.7	**0.0435**	0.000	0.8	ug/L	13	Standard
>	**Bi**	209	471129.2	0.7				ug/L	449044	Standard

Sample ID: L1606131314
Report Date/Time: Wednesday, July 06, 2016 13:32:29
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	81.7	9.4	**0.0659**	0.011	17.4	mg/L	58	Standard
K	39	40.0	33.1	**0.0087**	0.051	587.7	mg/L	27	Standard
Ca	43	40.0	33.1	**1.4722**	0.959	65.1	mg/L	20	Standard
Fe	54	165.4	13.6	**0.0102**	0.017	169.3	mg/L	158	Standard
Fe	57	263.3	9.6	**0.1498**	0.077	51.2	mg/L	267	Standard
> **Sc-1**	45	41217.7	1.6				mg/L	38815	Standard
Cl	35	74398.3	2.1				ug/L	57611	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1870.1	8.9				ug/L	1617	Standard
P	31	20320.3	3.0				ug/L	19244	Standard
S	34	3478.7	2.9				ug/L	3557	Standard
Sr	88	58.3	13.1				ug/L	65	Standard
C	12	96.7	26.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	23	Standard
Dy	164	9.4	186.5				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	11277.5	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.446	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.913	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131314
Report Date/Time: Wednesday, July 06, 2016 13:32:29
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.069
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.918
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 13:33:25
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71032.9	3.2				ug/L	68501	Standard
	Be	9	49644.6	3.8	**52.7590**	0.376	0.7	ug/L	8	Standard
	Al	27	7276045.0	3.6	**49.4520**	0.759	1.5	ug/L	1397	Standard
	Sc	45	40617.7	1.7				ug/L	38815	Standard
	Ti	47	36592.1	1.5	**104.2643**	1.312	1.3	ug/L	36	Standard
	V	51	380028.6	1.4	**51.5285**	0.926	1.8	ug/L	1284	Standard
	Cr	52	378060.1	1.4	**51.6245**	0.410	0.8	ug/L	6503	Standard
	Cr	53	45820.9	0.9	**50.7151**	0.800	1.6	ug/L	492	Standard
	Mn	55	335783.4	1.7	**52.4367**	0.457	0.9	ug/L	841	Standard
	Co	59	330610.2	0.8	**52.4262**	0.501	1.0	ug/L	229	Standard
	Ni	60	89641.1	1.9	**50.9842**	0.470	0.9	ug/L	344	Standard
	Cu	65	88949.4	1.9	**50.8351**	0.479	0.9	ug/L	115	Standard
	Zn	66	54236.6	1.5	**51.3717**	0.389	0.8	ug/L	190	Standard
>	Ge	72	428368.8	1.0				ug/L	409858	Standard
	As	75	55183.0	1.9	**51.0293**	0.514	1.0	ug/L	-22	Standard
	Se	82	5609.7	2.2	**50.7497**	0.648	1.3	ug/L	18	Standard
	Se-1	77	3726.5	0.8	**51.0205**	0.660	1.3	ug/L	50	Standard
>	Ga	71	75.0	26.7				mg/L	97	Standard
	Rb	85	798.4	0.7				ug/L	25	Standard
	Y	89	365913.3	1.8				ug/L	376763	Standard
>	Rh	103	31.7	45.6				ug/L	20	Standard
	Mo	98	252415.2	0.3	**103.5648**	0.413	0.4	ug/L	51	Standard
	Ag	107	322419.8	1.3	**51.0968**	0.426	0.8	ug/L	76	Standard
	Cd	111	102425.7	0.7	**51.0729**	0.119	0.2	mg/L	6	Standard
	Cd	114	248750.6	1.3	**50.7350**	0.434	0.9	ug/L	18	Standard
>	In	115	512998.2	0.5				ug/L	507261	Standard
	Sn	118	281858.1	1.8	**50.8022**	0.706	1.4	ug/L	683	Standard
	Sb	123	224590.4	2.0	**51.7546**	0.851	1.6	ug/L	446	Standard
	Ba	135	96967.3	0.4	**50.3975**	0.124	0.2	ug/L	28	Standard
	Ce	140	76.7	22.9				ug/L	33	Standard
>	Tb	159	807610.1	1.2				ug/L	800803	Standard
	Ho	165	13.3	108.3				ug/L	10	Standard
	Tl	203	402371.9	0.7	**51.2061**	0.338	0.7	ug/L	13	Standard
	Tl	205	361232.2	0.6	**53.0904**	0.997	1.9	ug/L	13	Standard
	Pb	206	258336.1	0.4	**51.2021**	0.466	0.9	ug/L	226	Standard
	Pb	207	236173.9	1.0	**51.5463**	0.597	1.2	ug/L	204	Standard
	Pb	208	955448.1	0.9	**52.1465**	0.509	1.0	ug/L	852	Standard
	U	238	353176.6	0.8	**52.0549**	0.397	0.8	ug/L	13	Standard
>	Bi	209	461695.2	1.3				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 13:35:42
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.0060**	15.20	254926.2	mg/L	2	Standard
Mg	24	3982.2	7.2	**5.1131**	0.347	6.8	mg/L	58	Standard
K	39	1251.7	4.8	**4.6283**	0.271	5.8	mg/L	27	Standard
Ca	43	98.3	10.6	**5.5607**	0.773	13.9	mg/L	20	Standard
Fe	54	6182.6	4.1	**4.8281**	0.276	5.7	mg/L	158	Standard
Fe	57	1796.8	8.3	**5.0597**	0.384	7.6	mg/L	267	Standard
> **Sc-1**	45	40617.7	1.7				mg/L	38815	Standard
Cl	35	71016.7	1.7				ug/L	57611	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1816.8	11.3				ug/L	1617	Standard
P	31	20987.9	2.4				ug/L	19244	Standard
S	34	3898.8	3.0				ug/L	3557	Standard
Sr	88	63.3	88.7				ug/L	65	Standard
C	12	73.3	20.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	23	Standard
Dy	164	12.5	122.8				mg/L	13	Standard
Ho-1	165	13.3	108.3				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	9928.3	0.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.518		
Al	27	98.904		
Sc	45			
Ti	47	104.264		
V	51	103.057		
Cr	52	103.249		
Cr	53			
Mn	55	104.873		
Co	59	104.852		
Ni	60	101.968		
Cu	65	101.670		
Zn	66	102.743		
> Ge	72		104.516	
As	75	102.059		
Se	82	101.499		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 13:35:42
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	103.565		
Ag	107	102.194		
Cd	111	102.146		
Cd	114			
In	115			101.131
Sn	118	101.604		
Sb	123	103.509		
Ba	135	100.795		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.412		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.293		
U	238	104.110		
Bi	209			102.817
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 13:35:42
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 13:36:36
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70170.6	3.6				ug/L	68501	Standard
	Be	9	20.0	66.1	**0.0408**	0.014	34.6	ug/L	8	Standard
	Al	27	4097.2	22.8	**0.0631**	0.005	8.6	ug/L	1397	Standard
	Sc	45	40888.4	1.6				ug/L	38815	Standard
	Ti	47	36.7	15.0	**0.0775**	0.016	20.6	ug/L	36	Standard
	V	51	1298.2	6.1	**0.0337**	0.009	26.1	ug/L	1284	Standard
	Cr	52	6730.8	1.5	**0.0096**	0.023	239.8	ug/L	6503	Standard
	Cr	53	421.7	5.3	**0.0558**	0.029	51.7	ug/L	492	Standard
	Mn	55	951.7	0.7	**0.0542**	0.001	2.6	ug/L	841	Standard
	Co	59	222.3	4.9	**0.0410**	0.001	3.3	ug/L	229	Standard
	Ni	60	546.3	4.0	**0.1564**	0.009	5.7	ug/L	344	Standard
	Cu	65	169.3	14.7	**0.0843**	0.015	17.4	ug/L	115	Standard
	Zn	66	237.0	4.9	**0.1134**	0.013	11.2	ug/L	190	Standard
>	**Ge**	72	425017.2	1.2				ug/L	409858	Standard
	As	75	-56.5	37.0	**0.0462**	0.020	43.5	ug/L	-22	Standard
	Se	82	18.8	28.9	**0.1200**	0.050	41.3	ug/L	18	Standard
	Se-1	77	56.7	22.1	**0.0358**	0.184	513.5	ug/L	50	Standard
>	**Ga**	71	38.3	32.8				mg/L	97	Standard
	Rb	85	21.7	58.1				ug/L	25	Standard
	Y	89	373106.6	0.9				ug/L	376763	Standard
>	**Rh**	103	11.7	24.7				ug/L	20	Standard
	Mo	98	207.2	6.5	**0.1549**	0.006	3.9	ug/L	51	Standard
	Ag	107	99.7	6.4	**0.0386**	0.001	2.3	ug/L	76	Standard
	Cd	111	12.3	44.5	**0.0454**	0.003	5.9	mg/L	6	Standard
	Cd	114	43.6	27.2	**0.0461**	0.002	5.3	ug/L	18	Standard
>	**In**	115	523036.2	0.7				ug/L	507261	Standard
	Sn	118	858.4	20.1	**0.0421**	0.032	74.9	ug/L	683	Standard
	Sb	123	696.7	34.3	**0.1374**	0.055	40.1	ug/L	446	Standard
	Ba	135	33.3	29.6	**0.0327**	0.005	15.2	ug/L	28	Standard
	Ce	140	15.0	100.0				ug/L	33	Standard
>	**Tb**	159	811648.4	1.8				ug/L	800803	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	53.3	18.0	**0.0400**	0.001	3.2	ug/L	13	Standard
	Tl	205	50.0	43.6	**0.0498**	0.003	6.2	ug/L	13	Standard
	Pb	206	260.0	8.8	**0.0469**	0.005	10.7	ug/L	226	Standard
	Pb	207	224.7	4.5	**0.0473**	0.002	3.4	ug/L	204	Standard
	Pb	208	928.0	6.1	**0.0501**	0.003	6.3	ug/L	852	Standard
	U	238	46.7	34.8	**0.0494**	0.002	5.0	ug/L	13	Standard
>	**Bi**	209	467536.0	1.3				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 13:38:53
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	68.3	33.0	**0.0494**	0.029	58.3	mg/L	58	Standard
K	39	21.7	74.2	**-0.0604**	0.059	97.8	mg/L	27	Standard
Ca	43	16.7	34.6	**-0.1281**	0.396	308.9	mg/L	20	Standard
Fe	54	142.5	13.4	**-0.0070**	0.016	223.0	mg/L	158	Standard
Fe	57	210.0	13.3	**-0.0128**	0.088	687.9	mg/L	267	Standard
Sc-1	45	40888.4	1.6				mg/L	38815	Standard
Cl	35	70304.7	0.6				ug/L	57611	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1736.8	5.0				ug/L	1617	Standard
P	31	20357.0	2.1				ug/L	19244	Standard
S	34	3848.8	1.9				ug/L	3557	Standard
Sr	88	75.0	40.6				ug/L	65	Standard
C	12	76.7	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	23	Standard
Dy	164	6.5	179.6				mg/L	13	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	8040.5	0.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.699	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 13:38:53
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.110
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.118
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 13:38:53
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: PBS M3 WG574881-02
Sample Date/Time: Wednesday, July 06, 2016 13:40:17
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68772.5	2.8				ug/L	68501	Standard
	Be	9	26.7	57.3	**0.0485**	0.016	33.3	ug/L	8	Standard
	Al	27	26492.7	43.2	**0.2195**	0.074	33.7	ug/L	1397	Standard
	Sc	45	40814.9	1.9				ug/L	38815	Standard
	Ti	47	68.7	38.8	**0.1678**	0.076	45.2	ug/L	36	Standard
	V	51	1431.9	6.0	**0.0505**	0.012	23.3	ug/L	1284	Standard
	Cr	52	8678.2	2.2	**0.2724**	0.025	9.3	ug/L	6503	Standard
	Cr	53	668.3	1.7	**0.3270**	0.012	3.7	ug/L	492	Standard
	Mn	55	1096.7	5.7	**0.0756**	0.010	12.7	ug/L	841	Standard
	Co	59	218.7	2.3	**0.0401**	0.001	2.1	ug/L	229	Standard
	Ni	60	676.7	1.4	**0.2282**	0.006	2.5	ug/L	344	Standard
	Cu	65	164.7	17.5	**0.0808**	0.016	20.4	ug/L	115	Standard
	Zn	66	1225.4	4.5	**1.0496**	0.052	5.0	ug/L	190	Standard
>	**Ge**	72	428471.9	0.1				ug/L	409858	Standard
	As	75	-34.2	102.1	**0.0673**	0.032	47.9	ug/L	-22	Standard
	Se	82	14.4	31.5	**0.0792**	0.041	51.8	ug/L	18	Standard
	Se-1	77	60.7	4.8	**0.0838**	0.040	47.3	ug/L	50	Standard
>	**Ga**	71	43.3	17.6				mg/L	97	Standard
	Rb	85	50.0	36.1				ug/L	25	Standard
	Y	89	374156.8	0.0				ug/L	376763	Standard
>	**Rh**	103	23.3	32.7				ug/L	20	Standard
	Mo	98	104.8	6.5	**0.1142**	0.003	2.3	ug/L	51	Standard
	Ag	107	77.3	10.5	**0.0353**	0.001	3.5	ug/L	76	Standard
	Cd	111	15.8	51.6	**0.0472**	0.004	8.5	mg/L	6	Standard
	Cd	114	30.5	128.3	**0.0435**	0.008	18.1	ug/L	18	Standard
>	**In**	115	517117.7	0.3				ug/L	507261	Standard
	Sn	118	726.7	15.9	**0.0202**	0.021	104.7	ug/L	683	Standard
	Sb	123	449.3	32.2	**0.0824**	0.033	40.5	ug/L	446	Standard
	Ba	135	85.3	19.1	**0.0597**	0.008	13.9	ug/L	28	Standard
	Ce	140	66.7	18.9				ug/L	33	Standard
>	**Tb**	159	816139.1	1.5				ug/L	800803	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	45.0	46.2	**0.0391**	0.003	6.8	ug/L	13	Standard
	Tl	205	38.3	7.5	**0.0482**	0.000	0.8	ug/L	13	Standard
	Pb	206	268.0	2.2	**0.0490**	0.001	2.8	ug/L	226	Standard
	Pb	207	225.0	13.5	**0.0479**	0.007	14.2	ug/L	204	Standard
	Pb	208	928.3	1.6	**0.0506**	0.000	0.9	ug/L	852	Standard
	U	238	21.7	42.9	**0.0458**	0.001	3.0	ug/L	13	Standard
>	**Bi**	209	462790.3	1.0				ug/L	449044	Standard

Sample ID: PBS M3 WG574881-02
Report Date/Time: Wednesday, July 06, 2016 13:42:34
Page 1

Approved: July 07, 2016

Na	23	3.3	173.2	**8.7117**	30.301	347.8	mg/L	2	Standard
Mg	24	56.7	44.4	**0.0345**	0.033	94.3	mg/L	58	Standard
K	39	21.7	74.2	**-0.0592**	0.062	105.0	mg/L	27	Standard
Ca	43	21.7	26.6	**0.2183**	0.387	177.5	mg/L	20	Standard
Fe	54	122.4	12.5	**-0.0227**	0.013	56.3	mg/L	158	Standard
Fe	57	196.7	8.2	**-0.0536**	0.057	106.8	mg/L	267	Standard
Sc-1	45	40814.9	1.9				mg/L	38815	Standard
Cl	35	70365.0	0.8				ug/L	57611	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1806.8	3.1				ug/L	1617	Standard
P	31	20176.8	1.0				ug/L	19244	Standard
S	34	3830.5	2.6				ug/L	3557	Standard
Sr	88	81.7	30.2				ug/L	65	Standard
C	12	63.3	48.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	9.2	114.0				mg/L	13	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	13672.8	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.396	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.542	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBS M3 WG574881-02
Report Date/Time: Wednesday, July 06, 2016 13:42:34
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.943
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.061
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M3 WG574881-02
Report Date/Time: Wednesday, July 06, 2016 13:42:34
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: LCSS M3 WG574881-03
Sample Date/Time: Wednesday, July 06, 2016 13:43:29
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68990.1	1.8				ug/L	68501	Standard
	Be	9	24376.3	2.4	**26.6849**	0.365	1.4	ug/L	8	Standard
	Al	27	11726.2	9.6	**0.1171**	0.008	6.9	ug/L	1397	Standard
	Sc	45	40908.5	1.7				ug/L	38815	Standard
	Ti	47	51.0	12.2	**0.1170**	0.017	14.3	ug/L	36	Standard
	V	51	192004.5	0.9	**25.8862**	0.288	1.1	ug/L	1284	Standard
	Cr	52	196880.6	0.7	**26.3586**	0.223	0.8	ug/L	6503	Standard
	Cr	53	23802.0	3.1	**26.0705**	1.067	4.1	ug/L	492	Standard
	Mn	55	172021.4	0.9	**26.7397**	0.133	0.5	ug/L	841	Standard
	Co	59	167427.5	2.0	**26.4724**	0.266	1.0	ug/L	229	Standard
	Ni	60	46631.0	1.6	**26.3691**	0.164	0.6	ug/L	344	Standard
	Cu	65	46298.6	0.5	**26.3794**	0.223	0.8	ug/L	115	Standard
	Zn	66	28692.8	0.8	**27.0456**	0.053	0.2	ug/L	190	Standard
>	**Ge**	72	429617.8	1.0				ug/L	409858	Standard
	As	75	28228.4	0.8	**26.0779**	0.089	0.3	ug/L	-22	Standard
	Se	82	2890.3	2.2	**26.0545**	0.832	3.2	ug/L	18	Standard
	Se-1	77	1885.8	3.0	**25.3705**	0.938	3.7	ug/L	50	Standard
>	**Ga**	71	55.0	24.1				mg/L	97	Standard
	Rb	85	66.7	51.1				ug/L	25	Standard
	Y	89	370054.8	1.0				ug/L	376763	Standard
>	**Rh**	103	15.0	57.7				ug/L	20	Standard
	Mo	98	60.8	28.4	**0.0961**	0.007	7.2	ug/L	51	Standard
	Ag	107	164778.6	1.2	**25.7565**	0.385	1.5	ug/L	76	Standard
	Cd	111	52128.6	0.9	**25.6456**	0.390	1.5	mg/L	6	Standard
	Cd	114	126625.7	0.7	**25.4800**	0.270	1.1	ug/L	18	Standard
>	**In**	115	520385.2	0.7				ug/L	507261	Standard
	Sn	118	611.7	22.6	**-0.0013**	0.024	1875.5	ug/L	683	Standard
	Sb	123	117175.1	0.7	**26.6109**	0.351	1.3	ug/L	446	Standard
	Ba	135	49858.9	0.6	**25.5546**	0.293	1.1	ug/L	28	Standard
	Ce	140	111.7	40.6				ug/L	33	Standard
>	**Tb**	159	817750.1	0.7				ug/L	800803	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	204537.7	0.5	**25.7502**	0.134	0.5	ug/L	13	Standard
	Tl	205	183705.4	1.0	**26.7105**	0.250	0.9	ug/L	13	Standard
	Pb	206	134972.9	1.2	**26.4449**	0.332	1.3	ug/L	226	Standard
	Pb	207	117902.7	1.0	**25.4395**	0.259	1.0	ug/L	204	Standard
	Pb	208	484818.2	0.4	**26.1594**	0.107	0.4	ug/L	852	Standard
	U	238	173966.7	0.5	**25.3714**	0.152	0.6	ug/L	13	Standard
>	**Bi**	209	466979.8	0.1				ug/L	449044	Standard

Sample ID: LCSS M3 WG574881-03
Report Date/Time: Wednesday, July 06, 2016 13:45:45
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.2919**	14.706	5037.9	mg/L	2	Standard
Mg	24	43.3	59.2	**0.0177**	0.034	191.1	mg/L	58	Standard
K	39	26.7	47.2	**-0.0406**	0.049	121.2	mg/L	27	Standard
Ca	43	23.3	81.1	**0.3327**	1.302	391.4	mg/L	20	Standard
Fe	54	183.2	34.4	**0.0249**	0.048	191.5	mg/L	158	Standard
Fe	57	246.7	15.2	**0.1047**	0.132	126.6	mg/L	267	Standard
> **Sc-1**	45	40908.5	1.7				mg/L	38815	Standard
Cl	35	71227.7	0.6				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1863.4	2.7				ug/L	1617	Standard
P	31	21552.1	8.9				ug/L	19244	Standard
S	34	3725.5	3.2				ug/L	3557	Standard
Sr	88	56.7	20.4				ug/L	65	Standard
C	12	63.3	65.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	16.2	126.5				mg/L	13	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	3618.8	4.0				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.714	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.821	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: LCSS M3 WG574881-03
Report Date/Time: Wednesday, July 06, 2016 13:45:45
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.587
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.994
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M3 WG574881-03
Report Date/Time: Wednesday, July 06, 2016 13:45:45
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606153303 WG574881-01
Sample Date/Time: Wednesday, July 06, 2016 13:46:40
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71784.8	3.3				ug/L	68501	Standard
	Be	9	791.7	9.0	**0.8524**	0.078	9.2	ug/L	8	Standard
	Al	27	9689691.6	1.4	**65.1923**	1.739	2.7	ug/L	1397	Standard
	Sc	45	46471.2	2.1				ug/L	38815	Standard
	Ti	47	6104.2	0.6	**17.2565**	0.240	1.4	ug/L	36	Standard
	V	51	142596.3	1.0	**19.1176**	0.362	1.9	ug/L	1284	Standard
	Cr	52	105517.2	0.7	**13.6401**	0.218	1.6	ug/L	6503	Standard
	Cr	53	12873.8	0.5	**13.8523**	0.056	0.4	ug/L	492	Standard
	Mn	55	2385498.8	0.3	**370.6799**	2.478	0.7	ug/L	841	Standard
	Co	59	48892.4	1.4	**7.7061**	0.041	0.5	ug/L	229	Standard
	Ni	60	30595.9	0.8	**17.1852**	0.278	1.6	ug/L	344	Standard
	Cu	65	20807.6	0.9	**11.8042**	0.131	1.1	ug/L	115	Standard
	Zn	66	37430.8	0.4	**35.1878**	0.440	1.3	ug/L	190	Standard
>	**Ge**	72	431211.0	0.9				ug/L	409858	Standard
	As	75	4224.0	0.7	**3.9722**	0.059	1.5	ug/L	-22	Standard
	Se	82	51.8	22.7	**0.4155**	0.110	26.5	ug/L	18	Standard
	Se-1	77	104.0		**0.6766**	0.012	1.8	ug/L	50	Standard
>	**Ga**	71	14602.0	2.0				mg/L	97	Standard
	Rb	85	144001.5	3.2				ug/L	25	Standard
	Y	89	554219.3	0.4				ug/L	376763	Standard
>	**Rh**	103	38.3	37.7				ug/L	20	Standard
	Mo	98	491.5	7.3	**0.2735**	0.016	5.9	ug/L	51	Standard
	Ag	107	436.7	7.8	**0.0924**	0.006	6.2	ug/L	76	Standard
	Cd	111	251.4	8.5	**0.1649**	0.011	6.9	mg/L	6	Standard
	Cd	114	651.7	7.7	**0.1704**	0.010	6.0	ug/L	18	Standard
>	**In**	115	512072.0	0.7				ug/L	507261	Standard
	Sn	118	560.0	17.6	**-0.0088**	0.018	202.0	ug/L	683	Standard
	Sb	123	551.5	29.4	**0.1068**	0.037	34.4	ug/L	446	Standard
	Ba	135	204633.9	0.3	**106.5325**	0.500	0.5	ug/L	28	Standard
	Ce	140	1043824.3	0.6				ug/L	33	Standard
>	**Tb**	159	829436.7	0.5				ug/L	800803	Standard
	Ho	165	16388.9	2.6				ug/L	10	Standard
	Tl	203	873.4	3.5	**0.1439**	0.003	2.4	ug/L	13	Standard
	Tl	205	835.0	6.8	**0.1645**	0.007	4.5	ug/L	13	Standard
	Pb	206	174627.9	0.8	**34.4509**	0.503	1.5	ug/L	226	Standard
	Pb	207	146187.5	0.8	**31.7593**	0.420	1.3	ug/L	204	Standard
	Pb	208	624158.0	1.4	**33.9102**	0.683	2.0	ug/L	852	Standard
	U	238	4147.6	4.4	**0.6507**	0.030	4.6	ug/L	13	Standard
>	**Bi**	209	463820.1	0.7				ug/L	449044	Standard

Sample ID: L1606153303 WG574881-01
Report Date/Time: Wednesday, July 06, 2016 13:48:57
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	135.0	12.8	**0.1146**	0.022	19.4	mg/L	58	Standard
K	39	315.0	4.2	**0.9068**	0.031	3.4	mg/L	27	Standard
Ca	43	76.7	22.9	**3.3661**	0.968	28.8	mg/L	20	Standard
Fe	54	15252.4	1.7	**10.5440**	0.100	0.9	mg/L	158	Standard
Fe	57	4027.2	4.2	**10.5813**	0.706	6.7	mg/L	267	Standard
> **Sc-1**	45	46471.2	2.1				mg/L	38815	Standard
Cl	35	67899.1	0.4				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3187.0	8.5				ug/L	1617	Standard
P	31	19424.1	0.8				ug/L	19244	Standard
S	34	3938.8	4.5				ug/L	3557	Standard
Sr	88	103.3	18.3				ug/L	65	Standard
C	12	96.7	33.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	66.7	22.9				mg/L	23	Standard
Dy	164	27319.0	2.3				mg/L	13	Standard
Ho-1	165	16388.9	2.6				mg/L	10	Standard
Er	166	14617.0	1.4				mg/L	13	Standard
I	127	15192.6	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.793	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.210	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153303 WG574881-01
Report Date/Time: Wednesday, July 06, 2016 13:48:57
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.949
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.291
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606153303S WG574881-04
Sample Date/Time: Wednesday, July 06, 2016 13:49:51
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71635.7	2.1				ug/L	68501	Standard
	Be	9	24508.1	0.6	**25.8454**	0.409	1.6	ug/L	8	Standard
	Al	27	8935502.9	3.1	**60.2062**	0.708	1.2	ug/L	1397	Standard
	Sc	45	46611.6	1.6				ug/L	38815	Standard
	Ti	47	7709.0	2.2	**21.4214**	0.368	1.7	ug/L	36	Standard
	V	51	320903.9	2.5	**42.4517**	1.035	2.4	ug/L	1284	Standard
	Cr	52	282285.7	1.5	**37.3800**	0.540	1.4	ug/L	6503	Standard
	Cr	53	34678.0	2.7	**37.3607**	1.069	2.9	ug/L	492	Standard
	Mn	55	2822174.7	1.6	**430.9768**	6.120	1.4	ug/L	841	Standard
	Co	59	210055.8	0.7	**32.5207**	0.190	0.6	ug/L	229	Standard
	Ni	60	74054.9	1.2	**41.0920**	0.339	0.8	ug/L	344	Standard
	Cu	65	61255.9	1.3	**34.1760**	0.431	1.3	ug/L	115	Standard
	Zn	66	61088.9	0.6	**56.5039**	0.401	0.7	ug/L	190	Standard
>	Ge	72	438770.2	0.5				ug/L	409858	Standard
	As	75	29378.1	1.7	**26.5713**	0.390	1.5	ug/L	-22	Standard
	Se	82	2240.3	0.6	**19.7570**	0.095	0.5	ug/L	18	Standard
	Se-1	77	1512.1	2.0	**19.7511**	0.299	1.5	ug/L	50	Standard
>	Ga	71	14647.1	3.0				mg/L	97	Standard
	Rb	85	135624.3	1.0				ug/L	25	Standard
	Y	89	555533.5	1.1				ug/L	376763	Standard
>	Rh	103	46.7	65.5				ug/L	20	Standard
	Mo	98	390.1	7.1	**0.2288**	0.011	5.0	ug/L	51	Standard
	Ag	107	155710.4	1.2	**24.2735**	0.361	1.5	ug/L	76	Standard
	Cd	111	51031.4	0.2	**25.0372**	0.235	0.9	mg/L	6	Standard
	Cd	114	122987.6	0.6	**24.6803**	0.081	0.3	ug/L	18	Standard
>	In	115	521819.8	0.7				ug/L	507261	Standard
	Sn	118	673.3	13.7	**0.0095**	0.017	174.9	ug/L	683	Standard
	Sb	123	4402.7	3.1	**0.9775**	0.034	3.5	ug/L	446	Standard
	Ba	135	235513.0	0.9	**120.3159**	1.166	1.0	ug/L	28	Standard
	Ce	140	908964.0	1.9				ug/L	33	Standard
>	Tb	159	835671.6	1.8				ug/L	800803	Standard
	Ho	165	15187.6	2.1				ug/L	10	Standard
	Tl	203	194649.0	0.4	**24.6275**	0.265	1.1	ug/L	13	Standard
	Tl	205	174462.0	0.6	**25.4936**	0.299	1.2	ug/L	13	Standard
	Pb	206	271068.0	0.8	**53.3729**	0.261	0.5	ug/L	226	Standard
	Pb	207	231576.7	0.5	**50.2120**	0.216	0.4	ug/L	204	Standard
	Pb	208	974786.8	0.9	**52.8532**	0.298	0.6	ug/L	852	Standard
	U	238	172945.8	1.1	**25.3460**	0.283	1.1	ug/L	13	Standard
>	Bi	209	464715.4	0.8				ug/L	449044	Standard

Sample ID: L1606153303S WG574881-04
Report Date/Time: Wednesday, July 06, 2016 13:52:08
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	140.0	24.7	**0.1199**	0.042	35.0	mg/L	58	Standard
K	39	246.7	28.8	**0.6783**	0.242	35.7	mg/L	27	Standard
Ca	43	106.7	28.6	**5.2041**	1.969	37.8	mg/L	20	Standard
Fe	54	13845.9	5.5	**9.5323**	0.545	5.7	mg/L	158	Standard
Fe	57	3610.4	7.4	**9.3762**	0.715	7.6	mg/L	267	Standard
Sc-1	45	46611.6	1.6				mg/L	38815	Standard
Cl	35	67005.2	1.4				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2923.6	6.4				ug/L	1617	Standard
P	31	20552.3	2.8				ug/L	19244	Standard
S	34	3690.4	4.4				ug/L	3557	Standard
Sr	88	98.3	37.5				ug/L	65	Standard
C	12	156.7	30.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	48.2				mg/L	23	Standard
Dy	164	25034.1	3.0				mg/L	13	Standard
Ho-1	165	15187.6	2.1				mg/L	10	Standard
Er	166	13729.6	2.1				mg/L	13	Standard
I	127	15666.4	3.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.576	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.054	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153303S WG574881-04
Report Date/Time: Wednesday, July 06, 2016 13:52:08
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.870
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.490
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606153304SD WG574881-05
Sample Date/Time: Wednesday, July 06, 2016 13:53:03
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70716.4	3.2				ug/L	68501	Standard
	Be	9	24144.2	3.0	**25.7886**	0.154	0.6	ug/L	8	Standard
	Al	27	7663846.1	3.2	**52.3201**	0.024	0.0	ug/L	1397	Standard
	Sc	45	45911.1	1.9				ug/L	38815	Standard
	Ti	47	7610.9	2.1	**21.3112**	0.418	2.0	ug/L	36	Standard
	V	51	300171.5	0.6	**40.0063**	0.532	1.3	ug/L	1284	Standard
	Cr	52	273409.5	0.7	**36.4591**	0.295	0.8	ug/L	6503	Standard
	Cr	53	33261.5	0.8	**36.0945**	0.455	1.3	ug/L	492	Standard
	Mn	55	1970137.4	0.8	**303.1298**	1.288	0.4	ug/L	841	Standard
	Co	59	199356.3	0.9	**31.0997**	0.116	0.4	ug/L	229	Standard
	Ni	60	69404.3	1.6	**38.7962**	0.444	1.1	ug/L	344	Standard
	Cu	65	58317.0	0.6	**32.7842**	0.142	0.4	ug/L	115	Standard
	Zn	66	56590.2	1.5	**52.7315**	0.372	0.7	ug/L	190	Standard
>	**Ge**	72	435454.2	0.9				ug/L	409858	Standard
	As	75	28521.3	0.6	**25.9959**	0.102	0.4	ug/L	-22	Standard
	Se	82	2258.1	0.6	**20.0673**	0.180	0.9	ug/L	18	Standard
	Se-1	77	1570.7	5.6	**20.7187**	1.401	6.8	ug/L	50	Standard
>	**Ga**	71	13471.0	2.5				mg/L	97	Standard
	Rb	85	126714.4	1.6				ug/L	25	Standard
	Y	89	546387.0	2.7				ug/L	376763	Standard
>	**Rh**	103	26.7	28.6				ug/L	20	Standard
	Mo	98	406.5	7.2	**0.2358**	0.011	4.8	ug/L	51	Standard
	Ag	107	157043.0	0.6	**24.5389**	0.267	1.1	ug/L	76	Standard
	Cd	111	50615.0	0.7	**24.8953**	0.579	2.3	mg/L	6	Standard
	Cd	114	122865.8	1.8	**24.7200**	0.777	3.1	ug/L	18	Standard
>	**In**	115	520626.2	1.6				ug/L	507261	Standard
	Sn	118	831.7	9.5	**0.0379**	0.012	32.9	ug/L	683	Standard
	Sb	123	5047.0	1.4	**1.1262**	0.007	0.6	ug/L	446	Standard
	Ba	135	215146.1	0.2	**110.1816**	1.809	1.6	ug/L	28	Standard
	Ce	140	844813.7	0.2				ug/L	33	Standard
>	**Tb**	159	836023.1	1.3				ug/L	800803	Standard
	Ho	165	14603.7	1.6				ug/L	10	Standard
	Tl	203	192463.7	0.7	**24.2350**	0.335	1.4	ug/L	13	Standard
	Tl	205	170559.7	1.0	**24.8059**	0.448	1.8	ug/L	13	Standard
	Pb	206	218685.4	1.3	**42.8560**	0.907	2.1	ug/L	226	Standard
	Pb	207	186119.5	0.7	**40.1644**	0.622	1.5	ug/L	204	Standard
	Pb	208	790383.4	0.9	**42.6511**	0.562	1.3	ug/L	852	Standard
	U	238	169425.8	1.3	**24.7144**	0.534	2.2	ug/L	13	Standard
>	**Bi**	209	466956.4	0.8				ug/L	449044	Standard

Sample ID: L1606153304SD WG574881-05
Report Date/Time: Wednesday, July 06, 2016 13:55:20
Page 1

Approved: July 07, 2016

Na	23	8.3	34.6	**29.4785**	12.738	43.2	mg/L	2	Standard
Mg	24	111.7	38.1	**0.0901**	0.052	57.2	mg/L	58	Standard
K	39	305.0	19.9	**0.8870**	0.210	23.7	mg/L	27	Standard
Ca	43	85.0	36.7	**3.9473**	1.895	48.0	mg/L	20	Standard
Fe	54	12091.5	0.9	**8.4377**	0.104	1.2	mg/L	158	Standard
Fe	57	3287.0	5.2	**8.6117**	0.314	3.6	mg/L	267	Standard
> **Sc-1**	45	45911.1	1.9				mg/L	38815	Standard
Cl	35	66770.8	1.3				ug/L	57611	Standard
Kr	83	3.7	31.5				ug/L	2	Standard
Br	81	2370.2	6.7				ug/L	1617	Standard
P	31	19586.0	2.8				ug/L	19244	Standard
S	34	3682.1	1.9				ug/L	3557	Standard
Sr	88	90.0	16.7				ug/L	65	Standard
C	12	103.3	36.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	145.3				mg/L	23	Standard
Dy	164	24871.6	1.2				mg/L	13	Standard
Ho-1	165	14603.7	1.6				mg/L	10	Standard
Er	166	13219.1	1.9				mg/L	13	Standard
I	127	16539.0	1.8				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.234	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		106.245	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606153304SD WG574881-05
Report Date/Time: Wednesday, July 06, 2016 13:55:20
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.635
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.989
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606148801
Sample Date/Time: Wednesday, July 06, 2016 13:56:14
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73357.2	0.4				ug/L	68501	Standard
	Be	9	1408.4	5.6	**1.4686**	0.086	5.9	ug/L	8	Standard
	Al	27	4909182.8	0.1	**32.3215**	0.095	0.3	ug/L	1397	Standard
	Sc	45	49124.5	1.0				ug/L	38815	Standard
	Ti	47	14209.0	0.8	**39.1648**	0.336	0.9	ug/L	36	Standard
	V	51	261146.3	1.2	**34.2175**	0.380	1.1	ug/L	1284	Standard
	Cr	52	189098.4	0.5	**24.5084**	0.136	0.6	ug/L	6503	Standard
	Cr	53	22658.6	1.5	**24.0508**	0.402	1.7	ug/L	492	Standard
	Mn	55	11231230.2	1.1	**1700.4825**	20.100	1.2	ug/L	841	Standard
	Co	59	183788.7	1.1	**28.2069**	0.325	1.2	ug/L	229	Standard
	Ni	60	45196.3	0.8	**24.7984**	0.212	0.9	ug/L	344	Standard
	Cu	65	36381.0	0.5	**20.1154**	0.113	0.6	ug/L	115	Standard
	Zn	66	87683.0	0.2	**80.4422**	0.249	0.3	ug/L	190	Standard
>	Ge	72	442627.6	0.1				ug/L	409858	Standard
	As	75	15335.5	1.0	**13.7975**	0.156	1.1	ug/L	-22	Standard
	Se	82	128.8	8.6	**1.0772**	0.098	9.1	ug/L	18	Standard
	Se-1	77	152.7	9.5	**1.2940**	0.197	15.2	ug/L	50	Standard
>	Ga	71	28750.6	0.9				mg/L	97	Standard
	Rb	85	247795.0	1.2				ug/L	25	Standard
	Y	89	608680.2	2.0				ug/L	376763	Standard
>	Rh	103	46.7	32.7				ug/L	20	Standard
	Mo	98	4400.7	0.8	**1.8278**	0.010	0.6	ug/L	51	Standard
	Ag	107	658.3	6.4	**0.1246**	0.007	5.4	ug/L	76	Standard
	Cd	111	633.7	3.7	**0.3467**	0.011	3.1	mg/L	6	Standard
	Cd	114	1538.9	7.7	**0.3426**	0.022	6.5	ug/L	18	Standard
>	In	115	527046.7	0.4				ug/L	507261	Standard
	Sn	118	666.7	18.6	**0.0071**	0.022	303.7	ug/L	683	Standard
	Sb	123	511.6	32.6	**0.0943**	0.037	39.3	ug/L	446	Standard
	Ba	135	351130.5	0.5	**177.5923**	1.124	0.6	ug/L	28	Standard
	Ce	140	1219612.4	0.4				ug/L	33	Standard
>	Tb	159	850998.1	0.7				ug/L	800803	Standard
	Ho	165	20655.7	1.1				ug/L	10	Standard
	Tl	203	2286.5	1.5	**0.3205**	0.003	0.8	ug/L	13	Standard
	Tl	205	2111.8	1.5	**0.3488**	0.003	0.9	ug/L	13	Standard
	Pb	206	198517.4	0.6	**38.8584**	0.398	1.0	ug/L	226	Standard
	Pb	207	163761.6	0.7	**35.3001**	0.431	1.2	ug/L	204	Standard
	Pb	208	697965.4	0.2	**37.6228**	0.271	0.7	ug/L	852	Standard
	U	238	11299.5	1.2	**1.6862**	0.031	1.8	ug/L	13	Standard
>	Bi	209	467460.9	0.8				ug/L	449044	Standard

Sample ID: L1606148801
Report Date/Time: Wednesday, July 06, 2016 13:58:31
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	858.4	12.6	**0.8792**	0.107	12.1	mg/L	58	Standard
K	39	243.3	19.1	**0.6247**	0.147	23.5	mg/L	27	Standard
Ca	43	75.0	11.5	**3.0298**	0.465	15.4	mg/L	20	Standard
Fe	54	51419.1	3.0	**33.8886**	1.056	3.1	mg/L	158	Standard
Fe	57	12892.1	0.9	**33.3949**	0.427	1.3	mg/L	267	Standard
Sc-1	45	49124.5	1.0				mg/L	38815	Standard
Cl	35	64920.1	0.4				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	4657.4	5.5				ug/L	1617	Standard
P	31	21221.5	1.2				ug/L	19244	Standard
S	34	3662.1	1.3				ug/L	3557	Standard
Sr	88	81.7	24.7				ug/L	65	Standard
C	12	186.7	15.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	32.8				mg/L	23	Standard
Dy	164	33674.7	0.9				mg/L	13	Standard
Ho-1	165	20655.7	1.1				mg/L	10	Standard
Er	166	18397.8	1.0				mg/L	13	Standard
I	127	43973.7	2.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.089	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.995	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606148801
Report Date/Time: Wednesday, July 06, 2016 13:58:31
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.101
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606148801
Report Date/Time: Wednesday, July 06, 2016 13:58:31
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606148802
Sample Date/Time: Wednesday, July 06, 2016 13:59:26
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72174.9	2.1				ug/L	68501	Standard
	Be	9	1363.4	2.0	**1.4452**	0.016	1.1	ug/L	8	Standard
	Al	27	5016443.5	2.2	**33.5756**	0.975	2.9	ug/L	1397	Standard
	Sc	45	49604.4	2.2				ug/L	38815	Standard
	Ti	47	13329.2	0.7	**36.5911**	0.221	0.6	ug/L	36	Standard
	V	51	271044.6	1.6	**35.3787**	0.645	1.8	ug/L	1284	Standard
	Cr	52	198790.4	1.2	**25.7054**	0.289	1.1	ug/L	6503	Standard
	Cr	53	24150.9	1.3	**25.5582**	0.352	1.4	ug/L	492	Standard
	Mn	55	11513450.8	0.6	**1736.2656**	13.109	0.8	ug/L	841	Standard
	Co	59	196653.4	1.0	**30.0609**	0.361	1.2	ug/L	229	Standard
	Ni	60	45854.3	1.1	**25.0607**	0.284	1.1	ug/L	344	Standard
	Cu	65	39818.3	0.9	**21.9288**	0.143	0.7	ug/L	115	Standard
	Zn	66	95918.7	0.5	**87.6568**	0.438	0.5	ug/L	190	Standard
>	**Ge**	72	444401.8	0.3				ug/L	409858	Standard
	As	75	16440.4	0.6	**14.7259**	0.127	0.9	ug/L	-22	Standard
	Se	82	139.3	7.0	**1.1645**	0.084	7.2	ug/L	18	Standard
	Se-1	77	176.7	9.1	**1.6071**	0.214	13.3	ug/L	50	Standard
>	**Ga**	71	29804.3	1.7				mg/L	97	Standard
	Rb	85	250326.1	0.9				ug/L	25	Standard
	Y	89	612201.9	0.7				ug/L	376763	Standard
>	**Rh**	103	30.0	16.7				ug/L	20	Standard
	Mo	98	4155.8	2.6	**1.7430**	0.057	3.3	ug/L	51	Standard
	Ag	107	726.0	6.2	**0.1359**	0.006	4.5	ug/L	76	Standard
	Cd	111	824.8	3.0	**0.4424**	0.009	2.1	mg/L	6	Standard
	Cd	114	1869.7	3.7	**0.4111**	0.011	2.6	ug/L	18	Standard
>	**In**	115	523048.0	0.9				ug/L	507261	Standard
	Sn	118	761.7	20.6	**0.0247**	0.027	107.5	ug/L	683	Standard
	Sb	123	582.5	17.5	**0.1112**	0.022	19.6	ug/L	446	Standard
	Ba	135	359493.1	0.4	**183.2153**	0.988	0.5	ug/L	28	Standard
	Ce	140	1224075.1	1.2				ug/L	33	Standard
>	**Tb**	159	837617.0	0.4				ug/L	800803	Standard
	Ho	165	19946.5	2.5				ug/L	10	Standard
	Tl	203	2243.5	3.6	**0.3187**	0.011	3.4	ug/L	13	Standard
	Tl	205	1978.5	3.9	**0.3331**	0.011	3.2	ug/L	13	Standard
	Pb	206	201103.2	0.9	**39.8610**	0.478	1.2	ug/L	226	Standard
	Pb	207	165612.9	0.9	**36.1489**	0.408	1.1	ug/L	204	Standard
	Pb	208	712328.8	0.4	**38.8804**	0.069	0.2	ug/L	852	Standard
	U	238	11780.6	2.0	**1.7777**	0.038	2.2	ug/L	13	Standard
>	**Bi**	209	461635.2	0.6				ug/L	449044	Standard

Sample ID: L1606148802
Report Date/Time: Wednesday, July 06, 2016 14:01:43
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**5.6198**	12.473	221.9	mg/L	2	Standard
Mg	24	811.7	6.0	**0.8224**	0.066	8.0	mg/L	58	Standard
K	39	266.7	3.9	**0.6899**	0.024	3.5	mg/L	27	Standard
Ca	43	78.3	20.5	**3.1770**	0.895	28.2	mg/L	20	Standard
Fe	54	51703.8	1.6	**33.7475**	0.264	0.8	mg/L	158	Standard
Fe	57	13155.7	2.5	**33.7514**	0.118	0.3	mg/L	267	Standard
Sc-1	45	49604.4	2.2				mg/L	38815	Standard
Cl	35	64079.3	2.1				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	4820.8	8.0				ug/L	1617	Standard
P	31	20555.6	1.7				ug/L	19244	Standard
S	34	3685.4	3.7				ug/L	3557	Standard
Sr	88	80.0	12.5				ug/L	65	Standard
C	12	210.0	12.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	143.3	29.0				mg/L	23	Standard
Dy	164	33047.7	1.8				mg/L	13	Standard
Ho-1	165	19946.5	2.5				mg/L	10	Standard
Er	166	18027.4	2.6				mg/L	13	Standard
I	127	49079.4	3.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.363	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.428	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606148802
Report Date/Time: Wednesday, July 06, 2016 14:01:43
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.112
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.804
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606148802
Report Date/Time: Wednesday, July 06, 2016 14:01:43
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606148802PS WG575023-01
Sample Date/Time: Wednesday, July 06, 2016 14:03:18
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70967.5	1.3				ug/L	68501	Standard
	Be	9	50019.1	1.4	**53.2137**	0.442	0.8	ug/L	8	Standard
	Al	27	4943736.8	2.2	**33.6473**	0.870	2.6	ug/L	1397	Standard
	Sc	45	49438.9	1.5				ug/L	38815	Standard
	Ti	47	13311.2	1.7	**36.5309**	0.490	1.3	ug/L	36	Standard
	V	51	666714.3	1.8	**87.2147**	1.927	2.2	ug/L	1284	Standard
	Cr	52	595393.9	0.7	**78.8320**	0.260	0.3	ug/L	6503	Standard
	Cr	53	73718.9	1.6	**78.8501**	0.957	1.2	ug/L	492	Standard
	Mn	55	11846150.9	0.6	**1786.0047**	17.199	1.0	ug/L	841	Standard
	Co	59	539486.4	0.6	**82.4367**	0.844	1.0	ug/L	229	Standard
	Ni	60	141497.6	0.4	**77.6414**	0.318	0.4	ug/L	344	Standard
	Cu	65	136279.5	1.3	**75.0688**	1.236	1.6	ug/L	115	Standard
	Zn	66	155918.3	1.5	**142.5288**	2.656	1.9	ug/L	190	Standard
>	**Ge**	72	444516.8	0.4				ug/L	409858	Standard
	As	75	76484.3	0.4	**68.1297**	0.511	0.7	ug/L	-22	Standard
	Se	82	6120.7	0.4	**53.3679**	0.273	0.5	ug/L	18	Standard
	Se-1	77	4216.9	2.2	**55.7069**	1.453	2.6	ug/L	50	Standard
>	**Ga**	71	29956.3	2.2				mg/L	97	Standard
	Rb	85	245433.6	0.4				ug/L	25	Standard
	Y	89	607565.5	0.4				ug/L	376763	Standard
>	**Rh**	103	43.3	13.3				ug/L	20	Standard
	Mo	98	4207.7	1.7	**1.7539**	0.024	1.4	ug/L	51	Standard
	Ag	107	334603.0	0.3	**51.7151**	0.283	0.5	ug/L	76	Standard
	Cd	111	107468.9	0.8	**52.2597**	0.482	0.9	mg/L	6	Standard
	Cd	114	260778.0	1.3	**51.8721**	0.850	1.6	ug/L	18	Standard
>	**In**	115	526034.8	0.3				ug/L	507261	Standard
	Sn	118	906.7	9.2	**0.0497**	0.015	30.6	ug/L	683	Standard
	Sb	123	228637.4	2.2	**51.3808**	0.943	1.8	ug/L	446	Standard
	Ba	135	461661.6	0.5	**233.9378**	0.796	0.3	ug/L	28	Standard
	Ce	140	1241223.1	0.6				ug/L	33	Standard
>	**Tb**	159	845221.1	0.7				ug/L	800803	Standard
	Ho	165	19689.5	2.4				ug/L	10	Standard
	Tl	203	418679.3	0.7	**52.5517**	0.300	0.6	ug/L	13	Standard
	Tl	205	374864.0	0.5	**54.3340**	0.313	0.6	ug/L	13	Standard
	Pb	206	469240.7	0.1	**91.7326**	0.118	0.1	ug/L	226	Standard
	Pb	207	401720.1	1.0	**86.4784**	0.812	0.9	ug/L	204	Standard
	Pb	208	1685835.2	0.3	**90.7511**	0.393	0.4	ug/L	852	Standard
	U	238	363435.6	0.6	**52.8339**	0.348	0.7	ug/L	13	Standard
>	**Bi**	209	468069.6	0.1				ug/L	449044	Standard

Sample ID: L1606148802PS WG575023-01
Report Date/Time: Wednesday, July 06, 2016 14:05:35
Page 1

Approved: July 07, 2016

Na	23	3.3	173.2	**5.7365**	25.148	438.4	mg/L	2	Standard
Mg	24	811.7	3.2	**0.8244**	0.021	2.6	mg/L	58	Standard
K	39	260.0	10.0	**0.6728**	0.094	14.0	mg/L	27	Standard
Ca	43	73.3	27.6	**2.9214**	1.221	41.8	mg/L	20	Standard
Fe	54	53337.6	2.0	**34.9297**	0.220	0.6	mg/L	158	Standard
Fe	57	13099.0	0.8	**33.7266**	0.746	2.2	mg/L	267	Standard
Sc-1	45	49438.9	1.5				mg/L	38815	Standard
Cl	35	63709.7	1.4				ug/L	57611	Standard
Kr	83	4.0	25.0				ug/L	2	Standard
Br	81	4744.1	1.6				ug/L	1617	Standard
P	31	20497.2	1.0				ug/L	19244	Standard
S	34	3630.4	3.0				ug/L	3557	Standard
Sr	88	100.0	39.1				ug/L	65	Standard
C	12	173.3	31.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	26.7				mg/L	23	Standard
Dy	164	33116.1	1.2				mg/L	13	Standard
Ho-1	165	19689.5	2.4				mg/L	10	Standard
Er	166	17226.5	1.3				mg/L	13	Standard
I	127	48460.8	5.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.600	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.456	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606148802PS WG575023-01
Report Date/Time: Wednesday, July 06, 2016 14:05:35
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.701
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.237
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606148802PS WG575023-01
Report Date/Time: Wednesday, July 06, 2016 14:05:35
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606148802SDL WG575023-02
Sample Date/Time: Wednesday, July 06, 2016 14:06:30
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63548.1	3.0				ug/L	68501	Standard
	Be	9	288.3	10.6	**0.3615**	0.028	7.7	ug/L	8	Standard
	Al	27	982443.2	1.9	**7.5000**	0.333	4.4	ug/L	1397	Standard
	Sc	45	40199.9	2.0				ug/L	38815	Standard
	Ti	47	2527.5	2.7	**7.3731**	0.269	3.6	ug/L	36	Standard
	V	51	51751.0	0.8	**7.0830**	0.038	0.5	ug/L	1284	Standard
	Cr	52	41542.9	0.5	**4.9988**	0.076	1.5	ug/L	6503	Standard
	Cr	53	4679.1	3.2	**4.9436**	0.129	2.6	ug/L	492	Standard
	Mn	55	2192799.4	0.8	**352.2976**	2.787	0.8	ug/L	841	Standard
	Co	59	37114.1	0.7	**6.0504**	0.107	1.8	ug/L	229	Standard
	Ni	60	9289.5	1.4	**5.2864**	0.076	1.4	ug/L	344	Standard
	Cu	65	8027.8	0.9	**4.7012**	0.083	1.8	ug/L	115	Standard
	Zn	66	20879.4	1.1	**20.2468**	0.335	1.7	ug/L	190	Standard
>	Ge	72	417056.1	1.1				ug/L	409858	Standard
	As	75	3262.2	0.9	**3.1917**	0.033	1.0	ug/L	-22	Standard
	Se	82	44.0	21.0	**0.3588**	0.090	25.1	ug/L	18	Standard
	Se-1	77	65.0	4.1	**0.1687**	0.036	21.3	ug/L	50	Standard
>	Ga	71	5822.8	3.2				mg/L	97	Standard
	Rb	85	47444.2	2.6				ug/L	25	Standard
	Y	89	396491.1	1.0				ug/L	376763	Standard
>	Rh	103	18.3	15.7				ug/L	20	Standard
	Mo	98	797.0	2.4	**0.4100**	0.007	1.6	ug/L	51	Standard
	Ag	107	247.7	14.2	**0.0638**	0.006	9.4	ug/L	76	Standard
	Cd	111	188.8	16.4	**0.1369**	0.016	12.0	mg/L	6	Standard
	Cd	114	455.1	14.7	**0.1335**	0.014	10.7	ug/L	18	Standard
>	In	115	495215.4	0.6				ug/L	507261	Standard
	Sn	118	306.7	21.2	**-0.0527**	0.012	22.6	ug/L	683	Standard
	Sb	123	1584.6	32.4	**0.3576**	0.121	33.8	ug/L	446	Standard
	Ba	135	69337.3	0.6	**37.3369**	0.445	1.2	ug/L	28	Standard
	Ce	140	240398.8	0.7				ug/L	33	Standard
>	Tb	159	781869.4	2.0				ug/L	800803	Standard
	Ho	165	3793.8	3.7				ug/L	10	Standard
	Tl	203	541.0	11.5	**0.1045**	0.008	7.3	ug/L	13	Standard
	Tl	205	446.7	1.7	**0.1104**	0.001	1.2	ug/L	13	Standard
	Pb	206	39320.3	1.2	**8.0618**	0.009	0.1	ug/L	226	Standard
	Pb	207	32613.1	1.3	**7.3654**	0.019	0.3	ug/L	204	Standard
	Pb	208	139704.5	0.1	**7.8917**	0.091	1.1	ug/L	852	Standard
	U	238	2243.8	4.7	**0.3846**	0.014	3.7	ug/L	13	Standard
>	Bi	209	446092.5	1.1				ug/L	449044	Standard

Sample ID: L1606148802SDL WG575023-02
Report Date/Time: Wednesday, July 06, 2016 14:08:47
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.0852**	15.064	17690.3	mg/L	2	Standard
Mg	24	178.3	16.4	**0.1952**	0.042	21.4	mg/L	58	Standard
K	39	71.7	21.3	**0.1333**	0.054	40.3	mg/L	27	Standard
Ca	43	21.7	35.3	**0.2417**	0.521	215.7	mg/L	20	Standard
Fe	54	9922.9	1.2	**7.9026**	0.239	3.0	mg/L	158	Standard
Fe	57	2586.9	3.4	**7.6807**	0.443	5.8	mg/L	267	Standard
> **Sc-1**	45	40199.9	2.0				mg/L	38815	Standard
Cl	35	59757.0	1.6				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2373.5	8.5				ug/L	1617	Standard
P	31	8939.3	3.6				ug/L	19244	Standard
S	34	3305.4	5.9				ug/L	3557	Standard
Sr	88	70.0	12.4				ug/L	65	Standard
C	12	83.3	30.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	66.1				mg/L	23	Standard
Dy	164	6234.0	6.6				mg/L	13	Standard
Ho-1	165	3793.8	3.7				mg/L	10	Standard
Er	166	3353.7	1.4				mg/L	13	Standard
I	127	17223.1	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.769	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.756	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606148802SDL WG575023-02
Report Date/Time: Wednesday, July 06, 2016 14:08:47
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.625
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.343
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606148802SDL WG575023-02
Report Date/Time: Wednesday, July 06, 2016 14:08:47
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606148802SDL WG575023-02
Sample Date/Time: Wednesday, July 06, 2016 14:09:41
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61153.3	3.7				ug/L	68501	Standard
	Be	9	65.0	42.8	**0.1004**	0.036	36.0	ug/L	8	Standard
	Al	27	208272.0	1.9	**1.6804**	0.091	5.4	ug/L	1397	Standard
	Sc	45	38433.7	1.9				ug/L	38815	Standard
	Ti	47	530.0	5.2	**1.5456**	0.076	4.9	ug/L	36	Standard
	V	51	11816.6	2.0	**1.5294**	0.026	1.7	ug/L	1284	Standard
	Cr	52	12533.2	2.1	**0.8813**	0.029	3.3	ug/L	6503	Standard
	Cr	53	1153.4	3.5	**0.9224**	0.056	6.1	ug/L	492	Standard
	Mn	55	487303.2	1.1	**79.3278**	0.956	1.2	ug/L	841	Standard
	Co	59	8144.2	1.6	**1.3507**	0.025	1.8	ug/L	229	Standard
	Ni	60	2325.5	3.0	**1.2243**	0.032	2.6	ug/L	344	Standard
	Cu	65	1801.8	1.3	**1.0597**	0.011	1.0	ug/L	115	Standard
	Zn	66	5046.8	1.1	**4.8774**	0.028	0.6	ug/L	190	Standard
>	**Ge**	72	411214.4	0.8				ug/L	409858	Standard
	As	75	641.0	4.9	**0.7152**	0.032	4.5	ug/L	-22	Standard
	Se	82	22.5	31.9	**0.1611**	0.067	41.8	ug/L	18	Standard
	Se-1	77	60.7	21.2	**0.1202**	0.192	160.1	ug/L	50	Standard
>	**Ga**	71	1250.1	4.5				mg/L	97	Standard
	Rb	85	10276.8	2.8				ug/L	25	Standard
	Y	89	358834.8	1.2				ug/L	376763	Standard
>	**Rh**	103	21.7	93.3				ug/L	20	Standard
	Mo	98	214.8	13.2	**0.1640**	0.012	7.2	ug/L	51	Standard
	Ag	107	100.7	16.5	**0.0398**	0.003	6.9	ug/L	76	Standard
	Cd	111	42.6	17.8	**0.0617**	0.004	6.7	mg/L	6	Standard
	Cd	114	96.9	24.7	**0.0581**	0.005	9.0	ug/L	18	Standard
>	**In**	115	488527.0	0.6				ug/L	507261	Standard
	Sn	118	241.7	24.7	**-0.0643**	0.011	17.6	ug/L	683	Standard
	Sb	123	892.5	39.9	**0.1955**	0.086	43.8	ug/L	446	Standard
	Ba	135	14870.6	2.2	**8.1290**	0.162	2.0	ug/L	28	Standard
	Ce	140	51485.7	0.7				ug/L	33	Standard
>	**Tb**	159	761353.5	0.5				ug/L	800803	Standard
	Ho	165	790.0	5.5				ug/L	10	Standard
	Tl	203	118.7	1.9	**0.0491**	0.000	0.6	ug/L	13	Standard
	Tl	205	93.3	16.4	**0.0569**	0.002	4.2	ug/L	13	Standard
	Pb	206	8500.1	0.7	**1.7547**	0.014	0.8	ug/L	226	Standard
	Pb	207	6935.9	1.5	**1.5792**	0.031	2.0	ug/L	204	Standard
	Pb	208	29923.0	0.5	**1.7048**	0.006	0.3	ug/L	852	Standard
	U	238	485.7	4.5	**0.1173**	0.004	3.1	ug/L	13	Standard
>	**Bi**	209	442277.7	0.5				ug/L	449044	Standard

Sample ID: L1606148802SDL WG575023-02
Report Date/Time: Wednesday, July 06, 2016 14:11:58
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	8.3	**0.0437**	0.008	18.1	mg/L	58	Standard
K	39	36.7	20.8	**0.0061**	0.033	544.1	mg/L	27	Standard
Ca	43	10.0	50.0	**-0.5414**	0.370	68.3	mg/L	20	Standard
Fe	54	2058.4	6.6	**1.6217**	0.147	9.0	mg/L	158	Standard
Fe	57	700.0	4.7	**1.6862**	0.138	8.2	mg/L	267	Standard
> **Sc-1**	45	38433.7	1.9				mg/L	38815	Standard
Cl	35	58499.4	1.0				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1713.4	5.1				ug/L	1617	Standard
P	31	6586.4	1.7				ug/L	19244	Standard
S	34	3485.4	1.6				ug/L	3557	Standard
Sr	88	75.0	29.1				ug/L	65	Standard
C	12	86.7	54.5				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	1243.5	11.8				mg/L	13	Standard
Ho-1	165	790.0	5.5				mg/L	10	Standard
Er	166	693.3	5.5				mg/L	13	Standard
I	127	12079.8	0.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.273	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.331	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606148802SDL WG575023-02
Report Date/Time: Wednesday, July 06, 2016 14:11:58
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.307
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.493
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606148802SDL WG575023-02
Report Date/Time: Wednesday, July 06, 2016 14:11:58
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 14:12:54
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63738.8	1.7				ug/L	68501	Standard
	Be	9	45163.9	1.6	**53.5049**	1.125	2.1	ug/L	8	Standard
	Al	27	7084192.1	1.1	**53.6599**	0.327	0.6	ug/L	1397	Standard
	Sc	45	42454.4	2.4				ug/L	38815	Standard
	Ti	47	37910.4	1.3	**105.6465**	0.728	0.7	ug/L	36	Standard
	V	51	387318.4	1.9	**51.3574**	0.599	1.2	ug/L	1284	Standard
	Cr	52	391741.5	0.8	**52.3323**	0.346	0.7	ug/L	6503	Standard
	Cr	53	47810.3	0.9	**51.7616**	0.626	1.2	ug/L	492	Standard
	Mn	55	346050.2	2.0	**52.8532**	0.639	1.2	ug/L	841	Standard
	Co	59	335311.7	0.2	**52.0055**	0.542	1.0	ug/L	229	Standard
	Ni	60	93758.6	1.2	**52.1631**	0.630	1.2	ug/L	344	Standard
	Cu	65	93201.8	0.3	**52.1020**	0.486	0.9	ug/L	115	Standard
	Zn	66	55967.5	1.2	**51.8489**	0.246	0.5	ug/L	190	Standard
>	Ge	72	437984.2	0.8				ug/L	409858	Standard
	As	75	56734.5	0.8	**51.3146**	0.032	0.1	ug/L	-22	Standard
	Se	82	5730.9	1.4	**50.7103**	0.310	0.6	ug/L	18	Standard
	Se-1	77	3929.8	1.6	**52.6431**	0.552	1.0	ug/L	50	Standard
>	Ga	71	86.7	40.5				mg/L	97	Standard
	Rb	85	845.0	5.4				ug/L	25	Standard
	Y	89	374490.1	0.9				ug/L	376763	Standard
>	Rh	103	40.0	45.1				ug/L	20	Standard
	Mo	98	255896.5	1.3	**102.3860**	1.426	1.4	ug/L	51	Standard
	Ag	107	327414.9	0.7	**50.6019**	0.494	1.0	ug/L	76	Standard
	Cd	111	104466.1	0.8	**50.7976**	0.478	0.9	mg/L	6	Standard
	Cd	114	256849.9	0.9	**51.0868**	0.503	1.0	ug/L	18	Standard
>	In	115	526066.0	0.3				ug/L	507261	Standard
	Sn	118	288924.0	1.2	**50.7835**	0.489	1.0	ug/L	683	Standard
	Sb	123	230814.7	0.8	**51.8699**	0.499	1.0	ug/L	446	Standard
	Ba	135	99108.1	0.2	**50.2309**	0.251	0.5	ug/L	28	Standard
	Ce	140	848.4	30.5				ug/L	33	Standard
>	Tb	159	811893.2	1.1				ug/L	800803	Standard
	Ho	165	20.0	25.0				ug/L	10	Standard
	Tl	203	398961.7	0.3	**51.0576**	0.167	0.3	ug/L	13	Standard
	Tl	205	353593.5	0.8	**52.2552**	0.467	0.9	ug/L	13	Standard
	Pb	206	253241.8	0.6	**50.4734**	0.317	0.6	ug/L	226	Standard
	Pb	207	230608.0	0.3	**50.6138**	0.209	0.4	ug/L	204	Standard
	Pb	208	952060.4	0.8	**52.2535**	0.454	0.9	ug/L	852	Standard
	U	238	344272.4	0.3	**51.0286**	0.202	0.4	ug/L	13	Standard
>	Bi	209	459089.4	0.1				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 14:15:11
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.5144**	14.321	2783.9	mg/L	2	Standard
Mg	24	3913.8	1.8	**4.8089**	0.175	3.6	mg/L	58	Standard
K	39	1278.4	11.0	**4.5125**	0.420	9.3	mg/L	27	Standard
Ca	43	80.0	27.2	**4.0653**	1.588	39.1	mg/L	20	Standard
Fe	54	6825.0	1.6	**5.1062**	0.211	4.1	mg/L	158	Standard
Fe	57	1940.1	4.8	**5.2575**	0.365	6.9	mg/L	267	Standard
Sc-1	45	42454.4	2.4				mg/L	38815	Standard
Cl	35	68210.5	0.3				ug/L	57611	Standard
Kr	83	3.0	100.0				ug/L	2	Standard
Br	81	1940.1	4.2				ug/L	1617	Standard
P	31	20874.4	2.4				ug/L	19244	Standard
S	34	4085.6	5.9				ug/L	3557	Standard
Sr	88	61.7	20.4				ug/L	65	Standard
C	12	33.3	45.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	45.8				mg/L	23	Standard
Dy	164	35.5	65.8				mg/L	13	Standard
Ho-1	165	20.0	25.0				mg/L	10	Standard
Er	166	23.3	89.2				mg/L	13	Standard
I	127	9708.1	1.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.010		
Al	27	107.320		
Sc	45			
Ti	47	105.646		
V	51	102.715		
Cr	52	104.665		
Cr	53			
Mn	55	105.706		
Co	59	104.011		
Ni	60	104.326		
Cu	65	104.204		
Zn	66	103.698		
Ge	72		106.862	
As	75	102.629		
Se	82	101.421		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 14:15:11
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	102.386		
Ag	107	101.204		
Cd	111	101.595		
Cd	114			
In	115			103.707
Sn	118	101.567		
Sb	123	103.740		
Ba	135	100.462		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.115		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.507		
U	238	102.057		
Bi	209			102.237
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 14:15:11
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 14:16:06
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64190.7	0.9				ug/L	68501	Standard
	Be	9	26.7	65.8	**0.0509**	0.021	40.7	ug/L	8	Standard
	Al	27	2635.2	25.2	**0.0549**	0.005	9.3	ug/L	1397	Standard
	Sc	45	41592.0	2.0				ug/L	38815	Standard
	Ti	47	36.7	15.0	**0.0752**	0.016	21.4	ug/L	36	Standard
	V	51	1268.1	2.4	**0.0258**	0.006	23.1	ug/L	1284	Standard
	Cr	52	6579.4	1.7	**-0.0325**	0.005	16.6	ug/L	6503	Standard
	Cr	53	420.0	13.4	**0.0428**	0.057	133.5	ug/L	492	Standard
	Mn	55	1455.1	37.2	**0.1289**	0.086	66.7	ug/L	841	Standard
	Co	59	261.3	5.7	**0.0463**	0.003	5.8	ug/L	229	Standard
	Ni	60	441.3	5.5	**0.0905**	0.016	18.0	ug/L	344	Standard
	Cu	65	137.0	7.6	**0.0639**	0.007	10.5	ug/L	115	Standard
	Zn	66	238.0	11.0	**0.1094**	0.027	24.7	ug/L	190	Standard
>	**Ge**	72	434760.5	1.1				ug/L	409858	Standard
	As	75	-27.5	109.6	**0.0740**	0.027	36.9	ug/L	-22	Standard
	Se	82	16.6	21.2	**0.0970**	0.033	34.0	ug/L	18	Standard
	Se-1	77	54.7	20.1	**-0.0094**	0.159	1680.0	ug/L	50	Standard
>	**Ga**	71	66.7	31.2				mg/L	97	Standard
	Rb	85	81.7	12.7				ug/L	25	Standard
	Y	89	378186.4	2.2				ug/L	376763	Standard
>	**Rh**	103	20.0	50.0				ug/L	20	Standard
	Mo	98	153.7	3.6	**0.1334**	0.003	2.2	ug/L	51	Standard
	Ag	107	127.3	10.2	**0.0429**	0.002	5.0	ug/L	76	Standard
	Cd	111	17.1	59.0	**0.0478**	0.005	10.5	mg/L	6	Standard
	Cd	114	45.6	53.1	**0.0465**	0.005	10.6	ug/L	18	Standard
>	**In**	115	522609.3	1.2				ug/L	507261	Standard
	Sn	118	908.4	22.2	**0.0513**	0.037	72.9	ug/L	683	Standard
	Sb	123	878.6	35.9	**0.1790**	0.073	41.1	ug/L	446	Standard
	Ba	135	58.0	51.9	**0.0454**	0.016	34.5	ug/L	28	Standard
	Ce	140	331.7	19.9				ug/L	33	Standard
>	**Tb**	159	810828.6	0.2				ug/L	800803	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	80.0	40.2	**0.0435**	0.004	9.5	ug/L	13	Standard
	Tl	205	55.0	47.2	**0.0506**	0.004	7.6	ug/L	13	Standard
	Pb	206	272.3	12.8	**0.0499**	0.007	14.3	ug/L	226	Standard
	Pb	207	234.3	3.4	**0.0500**	0.002	3.4	ug/L	204	Standard
	Pb	208	1043.0	5.0	**0.0570**	0.003	5.6	ug/L	852	Standard
	U	238	68.3	34.1	**0.0527**	0.003	6.5	ug/L	13	Standard
>	**Bi**	209	461986.5	0.9				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 14:18:23
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	25.5	**0.0334**	0.019	57.4	mg/L	58	Standard
K	39	33.3	22.9	**-0.0174**	0.031	176.3	mg/L	27	Standard
Ca	43	15.0	57.7	**-0.2614**	0.582	222.6	mg/L	20	Standard
Fe	54	152.4	21.9	**-0.0009**	0.028	3226.3	mg/L	158	Standard
Fe	57	235.0	9.3	**0.0532**	0.054	101.4	mg/L	267	Standard
Sc-1	45	41592.0	2.0				mg/L	38815	Standard
Cl	35	67828.8	1.6				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1916.8	3.7				ug/L	1617	Standard
P	31	20525.6	1.1				ug/L	19244	Standard
S	34	3962.2	2.2				ug/L	3557	Standard
Sr	88	60.0	30.0				ug/L	65	Standard
C	12	70.0	65.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	23	Standard
Dy	164	19.5	52.5				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	7308.4	3.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.076	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 14:18:23
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.026
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.882
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 14:18:23
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606148803
Sample Date/Time: Wednesday, July 06, 2016 14:20:24
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68964.9	1.0				ug/L	68501	Standard
	Be	9	1430.1	4.1	**1.5844**	0.061	3.9	ug/L	8	Standard
	Al	27	4479340.7	0.7	**31.3738**	0.508	1.6	ug/L	1397	Standard
	Sc	45	50281.6	1.3				ug/L	38815	Standard
	Ti	47	12786.1	2.2	**35.4002**	0.626	1.8	ug/L	36	Standard
	V	51	245283.9	0.7	**32.2795**	0.259	0.8	ug/L	1284	Standard
	Cr	52	185195.4	1.3	**24.0973**	0.220	0.9	ug/L	6503	Standard
	Cr	53	22409.9	1.6	**23.8925**	0.264	1.1	ug/L	492	Standard
	Mn	55	13045244.9	0.7	**1984.2182**	4.943	0.2	ug/L	841	Standard
	Co	59	203887.4	1.0	**31.4350**	0.326	1.0	ug/L	229	Standard
	Ni	60	45030.8	0.2	**24.8217**	0.122	0.5	ug/L	344	Standard
	Cu	65	36415.4	1.0	**20.2279**	0.287	1.4	ug/L	115	Standard
	Zn	66	89164.3	0.6	**82.1810**	0.549	0.7	ug/L	190	Standard
>	Ge	72	440601.3	0.6				ug/L	409858	Standard
	As	75	13472.2	0.2	**12.1886**	0.074	0.6	ug/L	-22	Standard
	Se	82	159.2	6.3	**1.3506**	0.096	7.1	ug/L	18	Standard
	Se-1	77	180.7	12.1	**1.6818**	0.299	17.8	ug/L	50	Standard
>	Ga	71	27493.3	2.0				mg/L	97	Standard
	Rb	85	255486.1	0.8				ug/L	25	Standard
	Y	89	620644.7	1.4				ug/L	376763	Standard
>	Rh	103	36.7	41.7				ug/L	20	Standard
	Mo	98	4260.2	4.6	**1.7838**	0.088	4.9	ug/L	51	Standard
	Ag	107	692.3	11.4	**0.1306**	0.012	9.5	ug/L	76	Standard
	Cd	111	567.0	10.9	**0.3164**	0.032	10.0	mg/L	6	Standard
	Cd	114	1370.0	2.6	**0.3110**	0.006	1.8	ug/L	18	Standard
>	In	115	523416.4	1.0				ug/L	507261	Standard
	Sn	118	871.7	16.6	**0.0442**	0.026	57.7	ug/L	683	Standard
	Sb	123	1006.4	24.1	**0.2069**	0.054	26.1	ug/L	446	Standard
	Ba	135	368283.0	0.9	**187.5586**	0.267	0.1	ug/L	28	Standard
	Ce	140	1316437.2	1.5				ug/L	33	Standard
>	Tb	159	838738.9	0.8				ug/L	800803	Standard
	Ho	165	20597.3	3.2				ug/L	10	Standard
	Tl	203	2287.2	4.0	**0.3245**	0.009	2.9	ug/L	13	Standard
	Tl	205	2041.8	8.7	**0.3428**	0.028	8.2	ug/L	13	Standard
	Pb	206	194756.4	0.4	**38.6453**	0.250	0.6	ug/L	226	Standard
	Pb	207	160861.5	1.1	**35.1512**	0.495	1.4	ug/L	204	Standard
	Pb	208	691666.3	0.4	**37.7954**	0.298	0.8	ug/L	852	Standard
	U	238	13502.7	0.9	**2.0337**	0.035	1.7	ug/L	13	Standard
>	Bi	209	461132.8	1.0				ug/L	449044	Standard

Sample ID: L1606148803
Report Date/Time: Wednesday, July 06, 2016 14:22:41
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.7326**	12.211	704.7	mg/L	2	Standard
Mg	24	543.3	3.7	**0.5297**	0.028	5.3	mg/L	58	Standard
K	39	225.0	27.8	**0.5493**	0.186	33.8	mg/L	27	Standard
Ca	43	70.0	56.7	**2.6354**	2.167	82.2	mg/L	20	Standard
Fe	54	48868.5	1.4	**31.4625**	0.788	2.5	mg/L	158	Standard
Fe	57	12516.8	1.7	**31.6469**	0.919	2.9	mg/L	267	Standard
Sc-1	45	50281.6	1.3				mg/L	38815	Standard
Cl	35	64480.9	1.3				ug/L	57611	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	5207.6	4.9				ug/L	1617	Standard
P	31	20347.0	4.2				ug/L	19244	Standard
S	34	3723.8	2.7				ug/L	3557	Standard
Sr	88	93.3	25.3				ug/L	65	Standard
C	12	180.0	25.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	126.7	24.1				mg/L	23	Standard
Dy	164	34149.5	0.7				mg/L	13	Standard
Ho-1	165	20597.3	3.2				mg/L	10	Standard
Er	166	18180.9	3.1				mg/L	13	Standard
I	127	51178.1	4.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		100.677	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.501	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606148803
Report Date/Time: Wednesday, July 06, 2016 14:22:41
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.185
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.692
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606148803
Report Date/Time: Wednesday, July 06, 2016 14:22:41
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606148804
Sample Date/Time: Wednesday, July 06, 2016 14:23:36
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70455.2	2.5				ug/L	68501	Standard
	Be	9	1626.8	3.8	**1.7617**	0.027	1.5	ug/L	8	Standard
	Al	27	7885247.8	2.0	**54.0384**	0.819	1.5	ug/L	1397	Standard
	Sc	45	53661.5	0.5				ug/L	38815	Standard
	Ti	47	11445.7	1.5	**31.6092**	0.269	0.9	ug/L	36	Standard
	V	51	210519.3	1.1	**27.6148**	0.047	0.2	ug/L	1284	Standard
	Cr	52	229151.0	1.1	**29.9626**	0.113	0.4	ug/L	6503	Standard
	Cr	53	28164.5	1.2	**30.0635**	0.512	1.7	ug/L	492	Standard
	Mn	55	5437614.7	1.0	**824.9869**	1.318	0.2	ug/L	841	Standard
	Co	59	122777.2	1.3	**18.8851**	0.187	1.0	ug/L	229	Standard
	Ni	60	93939.7	0.8	**51.8238**	0.133	0.3	ug/L	344	Standard
	Cu	65	81336.1	1.0	**45.0835**	0.163	0.4	ug/L	115	Standard
	Zn	66	135372.5	1.5	**124.5154**	0.758	0.6	ug/L	190	Standard
>	**Ge**	72	441688.5	1.0				ug/L	409858	Standard
	As	75	11413.4	2.1	**10.3148**	0.117	1.1	ug/L	-22	Standard
	Se	82	92.0	7.7	**0.7569**	0.057	7.6	ug/L	18	Standard
	Se-1	77	150.3	6.9	**1.2665**	0.131	10.4	ug/L	50	Standard
>	**Ga**	71	36022.8	0.3				mg/L	97	Standard
	Rb	85	260976.9	1.1				ug/L	25	Standard
	Y	89	737452.6	1.5				ug/L	376763	Standard
>	**Rh**	103	23.3	32.7				ug/L	20	Standard
	Mo	98	2377.3	0.4	**1.0254**	0.007	0.7	ug/L	51	Standard
	Ag	107	577.7	3.2	**0.1127**	0.003	2.7	ug/L	76	Standard
	Cd	111	456.4	3.3	**0.2619**	0.006	2.3	mg/L	6	Standard
	Cd	114	1138.8	4.7	**0.2645**	0.009	3.5	ug/L	18	Standard
>	**In**	115	524213.1	0.7				ug/L	507261	Standard
	Sn	118	543.3	24.0	**-0.0140**	0.023	166.6	ug/L	683	Standard
	Sb	123	503.1	37.6	**0.0932**	0.043	46.3	ug/L	446	Standard
	Ba	135	536592.0	1.6	**272.8382**	2.586	0.9	ug/L	28	Standard
	Ce	140	1270636.3	1.2				ug/L	33	Standard
>	**Tb**	159	849609.4	0.3				ug/L	800803	Standard
	Ho	165	27800.5	1.7				ug/L	10	Standard
	Tl	203	1988.8	1.5	**0.2853**	0.004	1.5	ug/L	13	Standard
	Tl	205	1725.1	5.5	**0.2949**	0.014	4.8	ug/L	13	Standard
	Pb	206	129785.5	0.5	**25.6264**	0.046	0.2	ug/L	226	Standard
	Pb	207	107864.6	0.4	**23.4549**	0.043	0.2	ug/L	204	Standard
	Pb	208	464868.0	0.1	**25.2790**	0.193	0.8	ug/L	852	Standard
	U	238	12298.7	1.6	**1.8471**	0.019	1.0	ug/L	13	Standard
>	**Bi**	209	463372.4	0.6				ug/L	449044	Standard

Sample ID: L1606148804
Report Date/Time: Wednesday, July 06, 2016 14:25:53
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	698.3	14.5	**0.6452**	0.096	14.8	mg/L	58	Standard
K	39	333.3	20.4	**0.8199**	0.200	24.4	mg/L	27	Standard
Ca	43	106.7	16.5	**4.3315**	0.899	20.8	mg/L	20	Standard
Fe	54	57795.6	2.6	**34.8751**	1.045	3.0	mg/L	158	Standard
Fe	57	14308.4	2.2	**33.9418**	0.935	2.8	mg/L	267	Standard
> **Sc-1**	45	53661.5	0.5				mg/L	38815	Standard
Cl	35	64031.0	0.5				ug/L	57611	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	4340.6	6.3				ug/L	1617	Standard
P	31	20407.1	0.3				ug/L	19244	Standard
S	34	3852.2	0.9				ug/L	3557	Standard
Sr	88	138.3	14.6				ug/L	65	Standard
C	12	113.3	18.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	40.7				mg/L	23	Standard
Dy	164	46817.8	1.5				mg/L	13	Standard
Ho-1	165	27800.5	1.7				mg/L	10	Standard
Er	166	24663.4	1.1				mg/L	13	Standard
I	127	21059.6	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.852	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.766	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606148804
Report Date/Time: Wednesday, July 06, 2016 14:25:53
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.342
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.191
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606148804
Report Date/Time: Wednesday, July 06, 2016 14:25:53
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606153301
Sample Date/Time: Wednesday, July 06, 2016 14:26:47
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68147.9	1.7				ug/L	68501	Standard
	Be	9	771.7	9.4	**0.8747**	0.088	10.0	ug/L	8	Standard
	Al	27	12416267.7	1.3	**87.9634**	2.577	2.9	ug/L	1397	Standard
	Sc	45	47710.0	1.2				ug/L	38815	Standard
	Ti	47	7376.1	1.1	**20.2551**	0.367	1.8	ug/L	36	Standard
	V	51	162623.9	0.2	**21.1879**	0.259	1.2	ug/L	1284	Standard
	Cr	52	163391.7	0.9	**20.9810**	0.252	1.2	ug/L	6503	Standard
	Cr	53	20403.7	2.8	**21.5523**	0.880	4.1	ug/L	492	Standard
	Mn	55	2250867.1	1.6	**339.6230**	1.651	0.5	ug/L	841	Standard
	Co	59	55901.3	1.7	**8.5555**	0.031	0.4	ug/L	229	Standard
	Ni	60	36823.0	1.7	**20.1135**	0.523	2.6	ug/L	344	Standard
	Cu	65	25825.3	0.5	**14.2313**	0.219	1.5	ug/L	115	Standard
	Zn	66	93990.6	0.8	**85.9661**	0.695	0.8	ug/L	190	Standard
>	**Ge**	72	444050.8	1.4				ug/L	409858	Standard
	As	75	4736.3	1.7	**4.3159**	0.012	0.3	ug/L	-22	Standard
	Se	82	75.0	10.7	**0.6032**	0.062	10.3	ug/L	18	Standard
	Se-1	77	104.3	17.3	**0.6382**	0.227	35.6	ug/L	50	Standard
>	**Ga**	71	16657.5	2.6				mg/L	97	Standard
	Rb	85	168562.8	2.3				ug/L	25	Standard
	Y	89	576458.9	1.1				ug/L	376763	Standard
>	**Rh**	103	53.3	23.6				ug/L	20	Standard
	Mo	98	1965.0	3.3	**0.8634**	0.018	2.1	ug/L	51	Standard
	Ag	107	631.3	4.3	**0.1214**	0.003	2.5	ug/L	76	Standard
	Cd	111	1012.4	2.3	**0.5352**	0.005	1.0	mg/L	6	Standard
	Cd	114	2475.0	2.2	**0.5334**	0.017	3.1	ug/L	18	Standard
>	**In**	115	521855.9	1.3				ug/L	507261	Standard
	Sn	118	2306.8	5.0	**0.2998**	0.026	8.7	ug/L	683	Standard
	Sb	123	509.0	29.8	**0.0952**	0.035	37.2	ug/L	446	Standard
	Ba	135	490095.6	1.4	**250.3317**	0.859	0.3	ug/L	28	Standard
	Ce	140	1104772.4	2.2				ug/L	33	Standard
>	**Tb**	159	830689.6	0.7				ug/L	800803	Standard
	Ho	165	16939.5	1.9				ug/L	10	Standard
	Tl	203	806.0	2.3	**0.1371**	0.003	2.2	ug/L	13	Standard
	Tl	205	756.7	4.5	**0.1550**	0.005	3.1	ug/L	13	Standard
	Pb	206	256607.5	1.0	**51.4795**	1.086	2.1	ug/L	226	Standard
	Pb	207	212619.8	0.6	**46.9700**	0.785	1.7	ug/L	204	Standard
	Pb	208	921038.1	0.5	**50.8782**	0.603	1.2	ug/L	852	Standard
	U	238	4276.6	4.5	**0.6802**	0.035	5.1	ug/L	13	Standard
>	**Bi**	209	456168.6	1.1				ug/L	449044	Standard

Sample ID: L1606153301
Report Date/Time: Wednesday, July 06, 2016 14:29:04
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	461.7	6.3	**0.4703**	0.034	7.2	mg/L	58	Standard
K	39	460.0	2.2	**1.3504**	0.049	3.6	mg/L	27	Standard
Ca	43	195.0	13.6	**10.2687**	1.651	16.1	mg/L	20	Standard
Fe	54	17929.3	3.8	**12.0874**	0.347	2.9	mg/L	158	Standard
Fe	57	4672.4	2.6	**12.0353**	0.317	2.6	mg/L	267	Standard
> **Sc-1**	45	47710.0	1.2				mg/L	38815	Standard
Cl	35	66407.9	0.5				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	5230.9	3.6				ug/L	1617	Standard
P	31	20996.2	0.8				ug/L	19244	Standard
S	34	3925.5	4.1				ug/L	3557	Standard
Sr	88	201.7	18.6				ug/L	65	Standard
C	12	120.0	0.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	28.6				mg/L	23	Standard
Dy	164	27810.2	4.4				mg/L	13	Standard
Ho-1	165	16939.5	1.9				mg/L	10	Standard
Er	166	15100.9	0.7				mg/L	13	Standard
I	127	13139.0	1.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.484	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.343	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153301
Report Date/Time: Wednesday, July 06, 2016 14:29:04
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.877
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.587
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606153301
Report Date/Time: Wednesday, July 06, 2016 14:29:04
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606153302
Sample Date/Time: Wednesday, July 06, 2016 14:29:58
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69505.8	1.9				ug/L	68501	Standard
	Be	9	856.7	3.2	**0.9501**	0.043	4.5	ug/L	8	Standard
	Al	27	18425399.3	2.6	**127.9163**	0.913	0.7	ug/L	1397	Standard
	Sc	45	48345.3	1.0				ug/L	38815	Standard
	Ti	47	8361.0	2.5	**23.2865**	0.575	2.5	ug/L	36	Standard
	V	51	163202.5	0.9	**21.5655**	0.254	1.2	ug/L	1284	Standard
	Cr	52	141504.8	1.1	**18.3140**	0.301	1.6	ug/L	6503	Standard
	Cr	53	17246.5	1.5	**18.4104**	0.344	1.9	ug/L	492	Standard
	Mn	55	3248037.2	1.4	**497.1143**	9.755	2.0	ug/L	841	Standard
	Co	59	64929.8	0.9	**10.0780**	0.141	1.4	ug/L	229	Standard
	Ni	60	40681.2	0.4	**22.5514**	0.203	0.9	ug/L	344	Standard
	Cu	65	26231.7	0.4	**14.6587**	0.056	0.4	ug/L	115	Standard
	Zn	66	59371.1	1.2	**55.0294**	0.757	1.4	ug/L	190	Standard
>	Ge	72	437841.6	0.5				ug/L	409858	Standard
	As	75	3819.1	1.3	**3.5477**	0.051	1.4	ug/L	-22	Standard
	Se	82	63.2	15.3	**0.5090**	0.087	17.2	ug/L	18	Standard
	Se-1	77	114.7	10.2	**0.7996**	0.156	19.5	ug/L	50	Standard
>	Ga	71	17126.3	2.1				mg/L	97	Standard
	Rb	85	174436.8	1.0				ug/L	25	Standard
	Y	89	589810.1	1.2				ug/L	376763	Standard
>	Rh	103	46.7	22.3				ug/L	20	Standard
	Mo	98	807.3	1.4	**0.3999**	0.004	1.0	ug/L	51	Standard
	Ag	107	589.0	14.0	**0.1156**	0.013	10.8	ug/L	76	Standard
	Cd	111	588.8	3.3	**0.3304**	0.006	2.0	mg/L	6	Standard
	Cd	114	1476.5	2.1	**0.3360**	0.010	2.9	ug/L	18	Standard
>	In	115	517084.2	1.2				ug/L	507261	Standard
	Sn	118	753.4	15.5	**0.0248**	0.019	78.5	ug/L	683	Standard
	Sb	123	464.2	27.6	**0.0856**	0.028	33.1	ug/L	446	Standard
	Ba	135	439401.4	0.4	**226.5278**	2.065	0.9	ug/L	28	Standard
	Ce	140	1185543.6	1.0				ug/L	33	Standard
>	Tb	159	826809.9	1.0				ug/L	800803	Standard
	Ho	165	18733.2	1.7				ug/L	10	Standard
	Tl	203	866.7	5.6	**0.1458**	0.007	4.6	ug/L	13	Standard
	Tl	205	758.4	2.7	**0.1562**	0.003	2.2	ug/L	13	Standard
	Pb	206	95906.3	1.6	**19.3933**	0.272	1.4	ug/L	226	Standard
	Pb	207	79499.0	1.3	**17.7046**	0.235	1.3	ug/L	204	Standard
	Pb	208	341366.3	0.2	**19.0116**	0.119	0.6	ug/L	852	Standard
	U	238	4789.8	2.5	**0.7624**	0.020	2.6	ug/L	13	Standard
>	Bi	209	452435.1	0.4				ug/L	449044	Standard

Sample ID: L1606153302
Report Date/Time: Wednesday, July 06, 2016 14:32:15
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.5685**	12.495	796.6	mg/L	2	Standard
Mg	24	160.0	16.5	**0.1354**	0.027	19.9	mg/L	58	Standard
K	39	441.7	8.0	**1.2712**	0.100	7.8	mg/L	27	Standard
Ca	43	336.7	4.5	**18.3838**	0.917	5.0	mg/L	20	Standard
Fe	54	18193.1	1.4	**12.1065**	0.180	1.5	mg/L	158	Standard
Fe	57	5070.8	1.9	**12.9392**	0.314	2.4	mg/L	267	Standard
> **Sc-1**	45	48345.3	1.0				mg/L	38815	Standard
Cl	35	67048.7	0.3				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3283.7	4.1				ug/L	1617	Standard
P	31	21121.4	2.3				ug/L	19244	Standard
S	34	4137.2	5.8				ug/L	3557	Standard
Sr	88	201.7	17.9				ug/L	65	Standard
C	12	140.0	25.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	15.7				mg/L	23	Standard
Dy	164	31095.7	1.2				mg/L	13	Standard
Ho-1	165	18733.2	1.7				mg/L	10	Standard
Er	166	16796.0	2.1				mg/L	13	Standard
I	127	12917.2	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.467	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153302
Report Date/Time: Wednesday, July 06, 2016 14:32:15
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.937
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.755
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606153302
Report Date/Time: Wednesday, July 06, 2016 14:32:15
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606164301
Sample Date/Time: Wednesday, July 06, 2016 14:33:10
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69428.8	2.6				ug/L	68501	Standard
	Be	9	1636.8	2.5	**1.7991**	0.043	2.4	ug/L	8	Standard
	Al	27	39500793.5	2.5	**274.5277**	1.455	0.5	ug/L	1397	Standard
	Sc	45	53986.0	1.4				ug/L	38815	Standard
	Ti	47	691754.6	0.6	**2204.8276**	20.610	0.9	ug/L	36	Standard
	V	51	699452.5	0.9	**106.2143**	1.985	1.9	ug/L	1284	Standard
	Cr	52	809923.1	0.9	**124.9852**	1.160	0.9	ug/L	6503	Standard
	Cr	53	99527.5	0.8	**123.7822**	1.570	1.3	ug/L	492	Standard
	Mn	55	8147594.7	0.9	**1425.4572**	14.550	1.0	ug/L	841	Standard
	Co	59	124493.7	1.1	**22.0821**	0.488	2.2	ug/L	229	Standard
	Ni	60	113209.8	1.5	**72.0728**	0.756	1.0	ug/L	344	Standard
	Cu	65	118972.0	1.6	**76.0424**	0.278	0.4	ug/L	115	Standard
	Zn	66	977529.9	1.7	**1037.5458**	5.451	0.5	ug/L	190	Standard
>	**Ge**	72	383077.6	1.4				ug/L	409858	Standard
	As	75	7978.6	0.8	**8.3342**	0.070	0.8	ug/L	-22	Standard
	Se	82	147.2	5.6	**1.4400**	0.093	6.5	ug/L	18	Standard
	Se-1	77	136.0	10.2	**1.3561**	0.241	17.8	ug/L	50	Standard
>	**Ga**	71	64701.3	2.8				mg/L	97	Standard
	Rb	85	943143.2	0.2				ug/L	25	Standard
	Y	89	702387.7	2.1				ug/L	376763	Standard
>	**Rh**	103	1626.8	7.8				ug/L	20	Standard
	Mo	98	7031.4	1.4	**3.3995**	0.013	0.4	ug/L	51	Standard
	Ag	107	4514.3	1.1	**0.8488**	0.018	2.1	ug/L	76	Standard
	Cd	111	293.3	7.2	**0.2082**	0.014	6.7	mg/L	6	Standard
	Cd	114	505.6	12.8	**0.1562**	0.013	8.4	ug/L	18	Standard
>	**In**	115	444413.1	1.7				ug/L	507261	Standard
	Sn	118	9111.1	1.5	**1.7898**	0.024	1.4	ug/L	683	Standard
	Sb	123	891.2	18.5	**0.2170**	0.046	21.2	ug/L	446	Standard
	Ba	135	515064.5	1.4	**308.9390**	0.851	0.3	ug/L	28	Standard
	Ce	140	1739811.5	1.9				ug/L	33	Standard
>	**Tb**	159	758128.4	1.9				ug/L	800803	Standard
	Ho	165	26984.0	3.1				ug/L	10	Standard
	Tl	203	51.3	14.6	**0.0413**	0.001	2.8	ug/L	13	Standard
	Tl	205	46.7	37.6	**0.0509**	0.003	6.1	ug/L	13	Standard
	Pb	206	99318.1	0.4	**24.0923**	0.176	0.7	ug/L	226	Standard
	Pb	207	82369.3	0.9	**22.0041**	0.206	0.9	ug/L	204	Standard
	Pb	208	340801.2	1.0	**22.7675**	0.282	1.2	ug/L	852	Standard
	U	238	15059.5	0.6	**2.7573**	0.009	0.3	ug/L	13	Standard
>	**Bi**	209	377183.0	0.9				ug/L	449044	Standard

Sample ID: L1606164301
Report Date/Time: Wednesday, July 06, 2016 14:35:27
Page 1

Approved: July 07, 2016

Na	23	78.3	22.4	**298.4994**	69.283	23.2	mg/L	2	Standard
Mg	24	3415.4	0.4	**3.2866**	0.036	1.1	mg/L	58	Standard
K	39	4233.9	1.4	**11.9963**	0.339	2.8	mg/L	27	Standard
Ca	43	11469.3	1.3	**598.6185**	13.178	2.2	mg/L	20	Standard
Fe	54	41027.6	1.7	**24.5701**	0.110	0.4	mg/L	158	Standard
Fe	57	17586.9	0.5	**41.6189**	0.442	1.1	mg/L	267	Standard
> **Sc-1**	45	53986.0	1.4				mg/L	38815	Standard
Cl	35	87387.3	0.7				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	6948.3	7.7				ug/L	1617	Standard
P	31	19342.3	1.6				ug/L	19244	Standard
S	34	3842.2	3.5				ug/L	3557	Standard
Sr	88	6896.6	5.2				ug/L	65	Standard
C	12	66.7	52.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	39507.9	2.2				mg/L	13	Standard
Ho-1	165	26984.0	3.1				mg/L	10	Standard
Er	166	26867.1	2.1				mg/L	13	Standard
I	127	8078.8	2.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.354	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.466	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606164301
Report Date/Time: Wednesday, July 06, 2016 14:35:27
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.610
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.997
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

Sample ID: L1606164301
Report Date/Time: Wednesday, July 06, 2016 14:35:27
Page 3

Approved: July 07, 2016

Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606164302
Sample Date/Time: Wednesday, July 06, 2016 14:36:21
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68074.3	3.1				ug/L	68501	Standard
	Be	9	1676.8	1.0	**1.8798**	0.070	3.7	ug/L	8	Standard
	Al	27	36487885.7	1.0	**258.8300**	9.964	3.8	ug/L	1397	Standard
	Sc	45	54253.7	2.1				ug/L	38815	Standard
	Ti	47	713173.1	0.2	**2239.9907**	37.989	1.7	ug/L	36	Standard
	V	51	784062.8	1.0	**117.3418**	2.757	2.3	ug/L	1284	Standard
	Cr	52	1058816.2	0.3	**161.2792**	2.118	1.3	ug/L	6503	Standard
	Cr	53	128302.6	1.0	**157.3675**	3.831	2.4	ug/L	492	Standard
	Mn	55	9336934.6	1.6	**1610.0137**	50.338	3.1	ug/L	841	Standard
	Co	59	128111.4	1.0	**22.3925**	0.580	2.6	ug/L	229	Standard
	Ni	60	125551.8	1.3	**78.7899**	1.983	2.5	ug/L	344	Standard
	Cu	65	139849.8	0.4	**88.0931**	1.328	1.5	ug/L	115	Standard
	Zn	66	1090011.4	0.8	**1140.1019**	9.125	0.8	ug/L	190	Standard
>	Ge	72	388774.8	1.6				ug/L	409858	Standard
	As	75	7748.3	0.5	**7.9803**	0.149	1.9	ug/L	-22	Standard
	Se	82	129.2	7.5	**1.2374**	0.092	7.5	ug/L	18	Standard
	Se-1	77	141.7	10.4	**1.4093**	0.214	15.2	ug/L	50	Standard
>	Ga	71	64269.4	0.9				mg/L	97	Standard
	Rb	85	903484.1	1.4				ug/L	25	Standard
	Y	89	691327.0	0.5				ug/L	376763	Standard
>	Rh	103	1586.7	6.2				ug/L	20	Standard
	Mo	98	9576.0	1.4	**4.5403**	0.058	1.3	ug/L	51	Standard
	Ag	107	4941.8	1.4	**0.9141**	0.012	1.3	ug/L	76	Standard
	Cd	111	288.9	5.1	**0.2032**	0.008	4.0	mg/L	6	Standard
	Cd	114	581.5	10.2	**0.1723**	0.014	8.0	ug/L	18	Standard
>	In	115	450717.4	0.1				ug/L	507261	Standard
	Sn	118	12807.1	1.6	**2.5230**	0.040	1.6	ug/L	683	Standard
	Sb	123	677.8	18.9	**0.1575**	0.034	21.4	ug/L	446	Standard
	Ba	135	495414.8	0.4	**292.9882**	1.099	0.4	ug/L	28	Standard
	Ce	140	1637103.7	0.8				ug/L	33	Standard
>	Tb	159	767161.8	1.6				ug/L	800803	Standard
	Ho	165	25913.8	1.5				ug/L	10	Standard
	Tl	203	48.0	24.0	**0.0407**	0.002	4.4	ug/L	13	Standard
	Tl	205	53.3	28.6	**0.0520**	0.003	5.2	ug/L	13	Standard
	Pb	206	78980.0	0.3	**18.8920**	0.060	0.3	ug/L	226	Standard
	Pb	207	65462.4	0.2	**17.2450**	0.059	0.3	ug/L	204	Standard
	Pb	208	274937.4	1.0	**18.1124**	0.167	0.9	ug/L	852	Standard
	U	238	14384.5	2.0	**2.5996**	0.049	1.9	ug/L	13	Standard
>	Bi	209	382475.3	0.1				ug/L	449044	Standard

Sample ID: L1606164302
Report Date/Time: Wednesday, July 06, 2016 14:38:38
Page 1

Approved: July 07, 2016

Na	23	78.3	13.3	**296.5126**	36.423	12.3	mg/L	2	Standard
Mg	24	3305.4	5.9	**3.1653**	0.224	7.1	mg/L	58	Standard
K	39	4055.5	3.2	**11.4256**	0.339	3.0	mg/L	27	Standard
Ca	43	11172.5	2.0	**580.2218**	13.558	2.3	mg/L	20	Standard
Fe	54	41719.4	1.1	**24.8710**	0.620	2.5	mg/L	158	Standard
Fe	57	17573.5	0.4	**41.3869**	0.919	2.2	mg/L	267	Standard
Sc-1	45	54253.7	2.1				mg/L	38815	Standard
Cl	35	87803.0	1.0				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	6821.5	3.6				ug/L	1617	Standard
P	31	19047.0	1.8				ug/L	19244	Standard
S	34	3895.5	3.5				ug/L	3557	Standard
Sr	88	6293.0	3.0				ug/L	65	Standard
C	12	76.7	30.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	137.8				mg/L	23	Standard
Dy	164	38633.3	1.4				mg/L	13	Standard
Ho-1	165	25913.8	1.5				mg/L	10	Standard
Er	166	26426.4	1.5				mg/L	13	Standard
I	127	8060.5	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.377	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.856	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606164302
Report Date/Time: Wednesday, July 06, 2016 14:38:38
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	88.853	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	85.175	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

Sample ID: L1606164302
Report Date/Time: Wednesday, July 06, 2016 14:38:38
Page 3

Approved: July 07, 2016

Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606168701
Sample Date/Time: Wednesday, July 06, 2016 14:39:33
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65198.3	0.3				ug/L	68501	Standard
	Be	9	1203.4	5.3	**1.4124**	0.070	5.0	ug/L	8	Standard
	Al	27	8002436.2	0.7	**59.2503**	0.304	0.5	ug/L	1397	Standard
	Sc	45	54516.2	1.1				ug/L	38815	Standard
	Ti	47	4355.0	3.4	**11.9055**	0.476	4.0	ug/L	36	Standard
	V	51	172515.9	1.4	**22.4049**	0.478	2.1	ug/L	1284	Standard
	Cr	52	187973.8	0.1	**24.1888**	0.362	1.5	ug/L	6503	Standard
	Cr	53	22812.2	3.1	**24.0476**	0.569	2.4	ug/L	492	Standard
	Mn	55	702950.0	1.2	**105.6433**	2.666	2.5	ug/L	841	Standard
	Co	59	51718.1	1.6	**7.8896**	0.229	2.9	ug/L	229	Standard
	Ni	60	55454.0	0.9	**30.2604**	0.655	2.2	ug/L	344	Standard
	Cu	65	88613.7	0.9	**48.6862**	0.625	1.3	ug/L	115	Standard
	Zn	66	118159.3	0.7	**107.7164**	1.479	1.4	ug/L	190	Standard
>	**Ge**	72	445650.1	1.4				ug/L	409858	Standard
	As	75	4148.8	2.4	**3.7802**	0.107	2.8	ug/L	-22	Standard
	Se	82	64.4	6.6	**0.5094**	0.043	8.5	ug/L	18	Standard
	Se-1	77	139.3	4.1	**1.1025**	0.091	8.3	ug/L	50	Standard
>	**Ga**	71	24242.7	5.2				mg/L	97	Standard
	Rb	85	141026.7	1.5				ug/L	25	Standard
	Y	89	763474.6	0.4				ug/L	376763	Standard
>	**Rh**	103	46.7	48.3				ug/L	20	Standard
	Mo	98	184.5	10.6	**0.1457**	0.007	4.9	ug/L	51	Standard
	Ag	107	1242.4	5.7	**0.2161**	0.011	5.3	ug/L	76	Standard
	Cd	111	699.4	2.5	**0.3810**	0.006	1.5	mg/L	6	Standard
	Cd	114	1744.0	5.9	**0.3858**	0.018	4.5	ug/L	18	Standard
>	**In**	115	523267.4	0.9				ug/L	507261	Standard
	Sn	118	786.7	19.9	**0.0294**	0.029	98.1	ug/L	683	Standard
	Sb	123	369.0	28.6	**0.0632**	0.025	38.8	ug/L	446	Standard
	Ba	135	302502.8	1.1	**154.1018**	0.436	0.3	ug/L	28	Standard
	Ce	140	1768629.8	1.3				ug/L	33	Standard
>	**Tb**	159	852268.4	0.8				ug/L	800803	Standard
	Ho	165	30797.9	0.5				ug/L	10	Standard
	Tl	203	1307.4	0.4	**0.2006**	0.001	0.5	ug/L	13	Standard
	Tl	205	1103.4	7.1	**0.2055**	0.011	5.5	ug/L	13	Standard
	Pb	206	198522.1	0.7	**39.5866**	0.197	0.5	ug/L	226	Standard
	Pb	207	158834.2	0.5	**34.8785**	0.060	0.2	ug/L	204	Standard
	Pb	208	698105.2	0.3	**38.3353**	0.192	0.5	ug/L	852	Standard
	U	238	7948.1	2.5	**1.2203**	0.026	2.1	ug/L	13	Standard
>	**Bi**	209	458856.3	0.6				ug/L	449044	Standard

Sample ID: L1606168701
Report Date/Time: Wednesday, July 06, 2016 14:41:50
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	120.0	16.7	**0.0774**	0.020	26.2	mg/L	58	Standard
K	39	231.7	10.9	**0.5161**	0.076	14.8	mg/L	27	Standard
Ca	43	146.7	7.1	**6.3201**	0.584	9.2	mg/L	20	Standard
Fe	54	26063.7	2.4	**15.4120**	0.269	1.7	mg/L	158	Standard
Fe	57	6638.1	2.2	**15.1289**	0.287	1.9	mg/L	267	Standard
> **Sc-1**	45	54516.2	1.1				mg/L	38815	Standard
Cl	35	64574.7	2.3				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	2150.2	3.8				ug/L	1617	Standard
P	31	19699.5	1.2				ug/L	19244	Standard
S	34	3850.5	8.7				ug/L	3557	Standard
Sr	88	93.3	41.6				ug/L	65	Standard
C	12	103.3	24.4				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	120.0	22.0				mg/L	23	Standard
Dy	164	49394.7	1.6				mg/L	13	Standard
Ho-1	165	30797.9	0.5				mg/L	10	Standard
Er	166	29024.5	3.2				mg/L	13	Standard
I	127	21525.3	2.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.178	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.733	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606168701
Report Date/Time: Wednesday, July 06, 2016 14:41:50
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.156
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.185
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606168701
Report Date/Time: Wednesday, July 06, 2016 14:41:50
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129601
Sample Date/Time: Wednesday, July 06, 2016 14:42:44
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56620.6	2.4				ug/L	68501	Standard
	Be	9	20.0	50.0	**0.0459**	0.013	27.6	ug/L	8	Standard
	Al	27	5728922.0	1.3	**48.8606**	0.848	1.7	ug/L	1397	Standard
	Sc	45	39332.7	0.5				ug/L	38815	Standard
	Ti	47	250.7	40.1	**0.7210**	0.296	41.0	ug/L	36	Standard
	V	51	5583.3	1.1	**0.6527**	0.007	1.1	ug/L	1284	Standard
	Cr	52	6924.9	7.8	**0.0771**	0.083	107.9	ug/L	6503	Standard
	Cr	53	828.4	12.4	**0.5513**	0.117	21.2	ug/L	492	Standard
	Mn	55	39639.9	5.7	**6.4122**	0.323	5.0	ug/L	841	Standard
	Co	59	636.3	9.7	**0.1113**	0.009	8.5	ug/L	229	Standard
	Ni	60	1640.1	10.3	**0.8248**	0.105	12.8	ug/L	344	Standard
	Cu	65	1729.4	1.9	**1.0246**	0.025	2.4	ug/L	115	Standard
	Zn	66	1474.4	4.9	**1.3554**	0.062	4.5	ug/L	190	Standard
>	**Ge**	72	408109.4	0.7				ug/L	409858	Standard
	As	75	1683.3	3.0	**1.7299**	0.056	3.2	ug/L	-22	Standard
	Se	82	50.4	6.7	**0.4278**	0.029	6.7	ug/L	18	Standard
	Se-1	77	99.0	13.7	**0.6840**	0.188	27.4	ug/L	50	Standard
>	**Ga**	71	166.7	27.7				mg/L	97	Standard
	Rb	85	7700.3	2.6				ug/L	25	Standard
	Y	89	351613.9	1.8				ug/L	376763	Standard
>	**Rh**	103	36.7	20.8				ug/L	20	Standard
	Mo	98	1713.4	1.7	**0.8237**	0.007	0.8	ug/L	51	Standard
	Ag	107	91.7	52.6	**0.0387**	0.008	21.3	ug/L	76	Standard
	Cd	111	14.1	4.0	**0.0469**	0.000	0.7	mg/L	6	Standard
	Cd	114	55.2	43.3	**0.0495**	0.005	10.8	ug/L	18	Standard
>	**In**	115	479114.4	0.9				ug/L	507261	Standard
	Sn	118	240.0	21.1	**-0.0637**	0.009	14.8	ug/L	683	Standard
	Sb	123	897.3	23.2	**0.2010**	0.050	25.0	ug/L	446	Standard
	Ba	135	36392.7	1.3	**20.2618**	0.198	1.0	ug/L	28	Standard
	Ce	140	1328.4	93.1				ug/L	33	Standard
>	**Tb**	159	753581.0	0.7				ug/L	800803	Standard
	Ho	165	46.7	83.2				ug/L	10	Standard
	Tl	203	318.0	7.7	**0.0770**	0.004	4.6	ug/L	13	Standard
	Tl	205	243.3	7.2	**0.0811**	0.003	3.7	ug/L	13	Standard
	Pb	206	459.0	35.8	**0.0943**	0.036	37.7	ug/L	226	Standard
	Pb	207	393.0	33.0	**0.0916**	0.031	33.8	ug/L	204	Standard
	Pb	208	1558.0	19.6	**0.0919**	0.018	20.0	ug/L	852	Standard
	U	238	568.7	6.1	**0.1330**	0.006	4.4	ug/L	13	Standard
>	**Bi**	209	427650.1	0.7				ug/L	449044	Standard

Sample ID: L1606129601
Report Date/Time: Wednesday, July 06, 2016 14:45:01
Page 1

Approved: July 07, 2016

Na	23	3.3	173.2	**9.1076**	30.987	340.2	mg/L	2	Standard
Mg	24	7790.3	1.4	**10.3704**	0.153	1.5	mg/L	58	Standard
K	39	265.0	21.3	**0.9004**	0.219	24.3	mg/L	27	Standard
Ca	43	261.7	8.0	**17.5007**	1.426	8.2	mg/L	20	Standard
Fe	54	72.7	37.5	**-0.0601**	0.023	38.1	mg/L	158	Standard
Fe	57	375.0	6.1	**0.5580**	0.070	12.6	mg/L	267	Standard
> **Sc-1**	45	39332.7	0.5				mg/L	38815	Standard
Cl	35	70004.8	3.9				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	3617.1	4.1				ug/L	1617	Standard
P	31	6836.5	0.9				ug/L	19244	Standard
S	34	3590.4	5.8				ug/L	3557	Standard
Sr	88	210.0	23.0				ug/L	65	Standard
C	12	153.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	54.4	85.8				mg/L	13	Standard
Ho-1	165	46.7	83.2				mg/L	10	Standard
Er	166	46.7	24.7				mg/L	13	Standard
I	127	20814.3	4.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.656	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.573	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129601
Report Date/Time: Wednesday, July 06, 2016 14:45:01
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.451
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.236
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129601
Report Date/Time: Wednesday, July 06, 2016 14:45:01
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131308
Sample Date/Time: Wednesday, July 06, 2016 14:45:56
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60497.3	3.0				ug/L	68501	Standard
	Be	9	15.0	88.2	**0.0379**	0.016	41.5	ug/L	8	Standard
	Al	27	5083469.3	2.6	**40.5780**	0.231	0.6	ug/L	1397	Standard
	Sc	45	38739.5	1.9				ug/L	38815	Standard
	Ti	47	412.0	7.8	**1.1968**	0.101	8.4	ug/L	36	Standard
	V	51	3464.8	0.7	**0.3471**	0.005	1.4	ug/L	1284	Standard
	Cr	52	8692.2	1.2	**0.3263**	0.023	7.2	ug/L	6503	Standard
	Cr	53	598.3	7.3	**0.2774**	0.047	17.0	ug/L	492	Standard
	Mn	55	171328.2	0.3	**27.8533**	0.134	0.5	ug/L	841	Standard
	Co	59	1006.4	6.9	**0.1718**	0.011	6.3	ug/L	229	Standard
	Ni	60	1056.4	6.2	**0.4705**	0.035	7.3	ug/L	344	Standard
	Cu	65	541.3	4.5	**0.3095**	0.017	5.4	ug/L	115	Standard
	Zn	66	3408.4	0.5	**3.2604**	0.045	1.4	ug/L	190	Standard
>	**Ge**	72	410842.2	0.8				ug/L	409858	Standard
	As	75	28.9	66.4	**0.1266**	0.018	14.5	ug/L	-22	Standard
	Se	82	24.9	24.0	**0.1836**	0.054	29.6	ug/L	18	Standard
	Se-1	77	64.7	7.6	**0.1778**	0.069	38.8	ug/L	50	Standard
>	**Ga**	71	391.7	10.7				mg/L	97	Standard
	Rb	85	1593.4	5.4				ug/L	25	Standard
	Y	89	352039.8	1.1				ug/L	376763	Standard
>	**Rh**	103	45.0	11.1				ug/L	20	Standard
	Mo	98	8222.6	1.1	**3.6505**	0.031	0.8	ug/L	51	Standard
	Ag	107	73.7	8.2	**0.0355**	0.001	2.8	ug/L	76	Standard
	Cd	111	17.4	50.3	**0.0486**	0.005	9.5	mg/L	6	Standard
	Cd	114	57.8	14.9	**0.0499**	0.002	3.7	ug/L	18	Standard
>	**In**	115	483224.8	0.3				ug/L	507261	Standard
	Sn	118	266.7	2.9	**-0.0590**	0.002	2.7	ug/L	683	Standard
	Sb	123	167.3	27.5	**0.0206**	0.011	54.5	ug/L	446	Standard
	Ba	135	5694.1	2.5	**3.1566**	0.082	2.6	ug/L	28	Standard
	Ce	140	3217.0	6.3				ug/L	33	Standard
>	**Tb**	159	754978.3	0.8				ug/L	800803	Standard
	Ho	165	158.3	9.6				ug/L	10	Standard
	Tl	203	120.0	0.8	**0.0497**	0.000	0.2	ug/L	13	Standard
	Tl	205	133.3	11.5	**0.0636**	0.002	3.9	ug/L	13	Standard
	Pb	206	1150.0	3.7	**0.2410**	0.009	3.5	ug/L	226	Standard
	Pb	207	967.0	3.1	**0.2258**	0.007	3.2	ug/L	204	Standard
	Pb	208	4211.2	0.6	**0.2471**	0.000	0.1	ug/L	852	Standard
	U	238	1898.1	1.9	**0.3431**	0.007	2.1	ug/L	13	Standard
>	**Bi**	209	429522.8	0.4				ug/L	449044	Standard

Sample ID: L1606131308
Report Date/Time: Wednesday, July 06, 2016 14:48:12
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	7080.0	1.9	**9.5693**	0.314	3.3	mg/L	58	Standard
K	39	105.0	14.3	**0.2779**	0.063	22.6	mg/L	27	Standard
Ca	43	131.7	17.9	**8.2986**	1.559	18.8	mg/L	20	Standard
Fe	54	415.2	7.8	**0.2279**	0.024	10.7	mg/L	158	Standard
Fe	57	483.3	3.2	**0.9402**	0.043	4.5	mg/L	267	Standard
> **Sc-1**	45	38739.5	1.9				mg/L	38815	Standard
Cl	35	77637.7	0.8				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	3303.7	2.7				ug/L	1617	Standard
P	31	7910.4	3.8				ug/L	19244	Standard
S	34	3723.8	0.9				ug/L	3557	Standard
Sr	88	186.7	14.8				ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	224.4	22.2				mg/L	13	Standard
Ho-1	165	158.3	9.6				mg/L	10	Standard
Er	166	116.7	17.8				mg/L	13	Standard
I	127	29163.1	5.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.316	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.240	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131308
Report Date/Time: Wednesday, July 06, 2016 14:48:12
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.262
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.653
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606131308
Report Date/Time: Wednesday, July 06, 2016 14:48:12
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131310
Sample Date/Time: Wednesday, July 06, 2016 14:49:07
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60284.7	0.7				ug/L	68501	Standard
	Be	9	16.7	96.4	**0.0402**	0.020	49.5	ug/L	8	Standard
	Al	27	4773931.6	0.4	**38.2412**	0.333	0.9	ug/L	1397	Standard
	Sc	45	38686.0	1.6				ug/L	38815	Standard
	Ti	47	382.3	5.5	**1.1093**	0.058	5.3	ug/L	36	Standard
	V	51	3331.3	3.4	**0.3285**	0.015	4.5	ug/L	1284	Standard
	Cr	52	8364.3	1.3	**0.2800**	0.022	8.0	ug/L	6503	Standard
	Cr	53	436.7	3.5	**0.0900**	0.018	19.6	ug/L	492	Standard
	Mn	55	151915.9	1.7	**24.7109**	0.509	2.1	ug/L	841	Standard
	Co	59	908.4	1.9	**0.1558**	0.002	1.3	ug/L	229	Standard
	Ni	60	1009.0	5.0	**0.4432**	0.034	7.7	ug/L	344	Standard
	Cu	65	498.0	5.2	**0.2839**	0.017	6.0	ug/L	115	Standard
	Zn	66	2894.9	3.3	**2.7552**	0.112	4.1	ug/L	190	Standard
>	**Ge**	72	410454.1	0.7				ug/L	409858	Standard
	As	75	10.9	361.4	**0.1096**	0.038	35.0	ug/L	-22	Standard
	Se	82	22.6	41.6	**0.1626**	0.091	55.7	ug/L	18	Standard
	Se-1	77	58.3	4.0	**0.0868**	0.029	33.7	ug/L	50	Standard
>	**Ga**	71	321.7	15.6				mg/L	97	Standard
	Rb	85	1441.7	6.2				ug/L	25	Standard
	Y	89	347697.6	0.5				ug/L	376763	Standard
>	**Rh**	103	43.3	24.0				ug/L	20	Standard
	Mo	98	7063.4	0.4	**3.1412**	0.026	0.8	ug/L	51	Standard
	Ag	107	62.7	8.8	**0.0336**	0.001	3.0	ug/L	76	Standard
	Cd	111	6.0	35.2	**0.0425**	0.001	2.6	mg/L	6	Standard
	Cd	114	70.1	22.4	**0.0525**	0.003	6.5	ug/L	18	Standard
>	**In**	115	484013.8	1.0				ug/L	507261	Standard
	Sn	118	245.0	7.4	**-0.0632**	0.004	5.8	ug/L	683	Standard
	Sb	123	172.0	39.0	**0.0218**	0.017	77.0	ug/L	446	Standard
	Ba	135	5035.5	0.9	**2.7890**	0.049	1.7	ug/L	28	Standard
	Ce	140	2850.3	7.9				ug/L	33	Standard
>	**Tb**	159	754149.8	0.6				ug/L	800803	Standard
	Ho	165	116.7	32.5				ug/L	10	Standard
	Tl	203	121.3	6.4	**0.0500**	0.001	2.3	ug/L	13	Standard
	Tl	205	91.7	20.7	**0.0570**	0.003	5.2	ug/L	13	Standard
	Pb	206	1035.0	3.4	**0.2170**	0.007	3.5	ug/L	226	Standard
	Pb	207	864.7	5.6	**0.2022**	0.012	5.7	ug/L	204	Standard
	Pb	208	3790.9	3.4	**0.2229**	0.007	3.1	ug/L	852	Standard
	U	238	1786.8	0.6	**0.3261**	0.002	0.6	ug/L	13	Standard
>	**Bi**	209	428583.4	0.4				ug/L	449044	Standard

Sample ID: L1606131310
Report Date/Time: Wednesday, July 06, 2016 14:51:24
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	6726.5	2.4	**9.0996**	0.200	2.2	mg/L	58	Standard
K	39	83.3	19.3	**0.1919**	0.067	34.9	mg/L	27	Standard
Ca	43	153.3	10.5	**9.9211**	1.276	12.9	mg/L	20	Standard
Fe	54	335.5	13.4	**0.1612**	0.033	20.7	mg/L	158	Standard
Fe	57	411.7	5.1	**0.7028**	0.090	12.8	mg/L	267	Standard
> **Sc-1**	45	38686.0	1.6				mg/L	38815	Standard
Cl	35	78795.0	1.3				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3103.7	2.3				ug/L	1617	Standard
P	31	7433.5	0.4				ug/L	19244	Standard
S	34	3570.4	2.2				ug/L	3557	Standard
Sr	88	160.0	21.9				ug/L	65	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	257.9	19.0				mg/L	13	Standard
Ho-1	165	116.7	32.5				mg/L	10	Standard
Er	166	113.3	41.7				mg/L	13	Standard
I	127	27441.5	5.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.005	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.145	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131310
Report Date/Time: Wednesday, July 06, 2016 14:51:24
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.417
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.444
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 14:52:20
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60043.8	2.8				ug/L	68501	Standard
	Be	9	43534.1	0.6	**54.7667**	1.524	2.8	ug/L	8	Standard
	Al	27	6869395.1	1.4	**55.2466**	1.005	1.8	ug/L	1397	Standard
	Sc	45	41879.5	0.9				ug/L	38815	Standard
	Ti	47	38239.2	2.0	**105.8766**	2.401	2.3	ug/L	36	Standard
	V	51	382889.2	1.6	**50.4416**	0.931	1.8	ug/L	1284	Standard
	Cr	52	391303.2	1.4	**51.9269**	0.799	1.5	ug/L	6503	Standard
	Cr	53	47750.1	2.0	**51.3561**	1.104	2.1	ug/L	492	Standard
	Mn	55	349156.6	1.1	**52.9861**	0.731	1.4	ug/L	841	Standard
	Co	59	328642.6	1.2	**50.6387**	0.762	1.5	ug/L	229	Standard
	Ni	60	93736.4	1.3	**51.8094**	0.651	1.3	ug/L	344	Standard
	Cu	65	92724.5	1.0	**51.4957**	0.451	0.9	ug/L	115	Standard
	Zn	66	55630.9	0.6	**51.2018**	0.296	0.6	ug/L	190	Standard
>	**Ge**	72	440847.9	0.3				ug/L	409858	Standard
	As	75	56533.3	0.5	**50.8018**	0.319	0.6	ug/L	-22	Standard
	Se	82	5695.8	1.1	**50.0727**	0.446	0.9	ug/L	18	Standard
	Se-1	77	3910.2	3.6	**52.0362**	2.090	4.0	ug/L	50	Standard
>	**Ga**	71	91.7	64.6				mg/L	97	Standard
	Rb	85	1126.7	27.5				ug/L	25	Standard
	Y	89	379803.2	0.9				ug/L	376763	Standard
>	**Rh**	103	20.0	50.0				ug/L	20	Standard
	Mo	98	249542.6	0.2	**100.9076**	1.379	1.4	ug/L	51	Standard
	Ag	107	319216.6	1.3	**49.8601**	0.930	1.9	ug/L	76	Standard
	Cd	111	103382.2	1.9	**50.8051**	1.171	2.3	mg/L	6	Standard
	Cd	114	253145.9	2.3	**50.8792**	0.856	1.7	ug/L	18	Standard
>	**In**	115	520581.4	1.3				ug/L	507261	Standard
	Sn	118	282841.0	1.7	**50.2425**	1.007	2.0	ug/L	683	Standard
	Sb	123	225633.6	2.0	**51.2453**	1.238	2.4	ug/L	446	Standard
	Ba	135	97427.9	0.9	**49.9049**	0.789	1.6	ug/L	28	Standard
	Ce	140	1405.1	39.8				ug/L	33	Standard
>	**Tb**	159	796311.9	0.5				ug/L	800803	Standard
	Ho	165	20.0	75.0				ug/L	10	Standard
	Tl	203	391045.0	0.3	**50.8324**	0.261	0.5	ug/L	13	Standard
	Tl	205	349650.5	1.2	**52.4891**	0.998	1.9	ug/L	13	Standard
	Pb	206	248507.1	0.9	**50.3121**	0.815	1.6	ug/L	226	Standard
	Pb	207	225788.4	1.2	**50.3393**	0.932	1.9	ug/L	204	Standard
	Pb	208	942000.4	0.7	**52.5165**	0.637	1.2	ug/L	852	Standard
	U	238	335311.4	0.3	**50.4845**	0.512	1.0	ug/L	13	Standard
>	**Bi**	209	451983.7	0.7				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 14:54:37
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.3266**	14.646	4484.3	mg/L	2	Standard
Mg	24	3847.2	3.9	**4.7894**	0.192	4.0	mg/L	58	Standard
K	39	1318.4	11.8	**4.7296**	0.581	12.3	mg/L	27	Standard
Ca	43	100.0	13.2	**5.4608**	0.861	15.8	mg/L	20	Standard
Fe	54	6717.0	2.9	**5.0904**	0.124	2.4	mg/L	158	Standard
Fe	57	1981.8	8.3	**5.4666**	0.546	10.0	mg/L	267	Standard
> **Sc-1**	45	41879.5	0.9				mg/L	38815	Standard
Cl	35	72953.3	2.7				ug/L	57611	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	1906.8	5.6				ug/L	1617	Standard
P	31	20882.7	2.6				ug/L	19244	Standard
S	34	4390.6	2.4				ug/L	3557	Standard
Sr	88	61.7	44.7				ug/L	65	Standard
C	12	83.3	50.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	35.5	69.8				mg/L	13	Standard
Ho-1	165	20.0	75.0				mg/L	10	Standard
Er	166	23.3	137.8				mg/L	13	Standard
I	127	9009.4	6.4				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	109.533		
	Al	27	110.493		
	Sc	45			
	Ti	47	105.877		
	V	51	100.883		
	Cr	52	103.854		
	Cr	53			
	Mn	55	105.972		
	Co	59	101.277		
	Ni	60	103.619		
	Cu	65	102.991		
	Zn	66	102.404		
>	Ge	72		107.561	
	As	75	101.604		
	Se	82	100.145		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 14:54:37
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.908		
Ag	107	99.720		
Cd	111	101.610		
Cd	114			
In	115		102.626	
Sn	118	100.485		
Sb	123	102.491		
Ba	135	99.810		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.665		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.033		
U	238	100.969		
Bi	209		100.655	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 14:54:37
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 14:55:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60231.2	2.6				ug/L	68501	Standard
	Be	9	25.0	72.1	**0.0504**	0.022	42.9	ug/L	8	Standard
	Al	27	19713.1	109.9	**0.1901**	0.168	88.3	ug/L	1397	Standard
	Sc	45	42006.5	3.8				ug/L	38815	Standard
	Ti	47	224.3	111.3	**0.5966**	0.692	116.0	ug/L	36	Standard
	V	51	1431.0	15.4	**0.0464**	0.029	61.7	ug/L	1284	Standard
	Cr	52	7221.1	7.9	**0.0495**	0.073	147.8	ug/L	6503	Standard
	Cr	53	473.3	16.7	**0.0985**	0.084	84.9	ug/L	492	Standard
	Mn	55	3357.1	60.7	**0.4180**	0.310	74.1	ug/L	841	Standard
	Co	59	281.3	22.2	**0.0492**	0.010	19.4	ug/L	229	Standard
	Ni	60	409.3	34.9	**0.0709**	0.079	111.3	ug/L	344	Standard
	Cu	65	212.7	66.8	**0.1056**	0.079	74.7	ug/L	115	Standard
	Zn	66	585.0	81.2	**0.4294**	0.438	102.1	ug/L	190	Standard
>	**Ge**	72	437279.0	0.5				ug/L	409858	Standard
	As	75	-8.2	295.3	**0.0914**	0.022	23.9	ug/L	-22	Standard
	Se	82	22.9	23.0	**0.1520**	0.046	30.1	ug/L	18	Standard
	Se-1	77	50.7	10.1	**-0.0694**	0.069	99.2	ug/L	50	Standard
>	**Ga**	71	63.3	37.3				mg/L	97	Standard
	Rb	85	270.0	77.0				ug/L	25	Standard
	Y	89	377259.1	0.6				ug/L	376763	Standard
>	**Rh**	103	11.7	89.2				ug/L	20	Standard
	Mo	98	200.5	13.9	**0.1523**	0.011	7.1	ug/L	51	Standard
	Ag	107	134.3	29.4	**0.0440**	0.006	13.7	ug/L	76	Standard
	Cd	111	21.9	94.6	**0.0501**	0.010	20.1	mg/L	6	Standard
	Cd	114	56.4	104.5	**0.0486**	0.012	24.1	ug/L	18	Standard
>	**In**	115	521770.5	0.7				ug/L	507261	Standard
	Sn	118	940.0	16.5	**0.0570**	0.029	50.1	ug/L	683	Standard
	Sb	123	649.8	29.0	**0.1271**	0.044	34.3	ug/L	446	Standard
	Ba	135	254.7	83.5	**0.1453**	0.107	73.9	ug/L	28	Standard
	Ce	140	905.0	72.4				ug/L	33	Standard
>	**Tb**	159	799280.8	1.7				ug/L	800803	Standard
	Ho	165	16.7	91.7				ug/L	10	Standard
	Tl	203	96.7	77.0	**0.0458**	0.010	21.1	ug/L	13	Standard
	Tl	205	83.3	39.0	**0.0549**	0.005	8.9	ug/L	13	Standard
	Pb	206	346.3	28.6	**0.0653**	0.020	30.9	ug/L	226	Standard
	Pb	207	300.0	24.3	**0.0650**	0.016	25.2	ug/L	204	Standard
	Pb	208	1153.4	25.6	**0.0636**	0.017	26.2	ug/L	852	Standard
	U	238	71.7	52.3	**0.0533**	0.006	10.6	ug/L	13	Standard
>	**Bi**	209	457657.2	0.6				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 14:57:48
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	30.2	**0.0135**	0.015	107.6	mg/L	58	Standard
K	39	38.3	32.8	**-0.0006**	0.046	8155.2	mg/L	27	Standard
Ca	43	23.3	101.3	**0.2596**	1.533	590.5	mg/L	20	Standard
Fe	54	159.4	14.2	**0.0035**	0.021	599.5	mg/L	158	Standard
Fe	57	215.0	16.8	**-0.0121**	0.133	1100.9	mg/L	267	Standard
Sc-1	45	42006.5	3.8				mg/L	38815	Standard
Cl	35	71083.7	1.4				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1720.1	9.7				ug/L	1617	Standard
P	31	20742.5	3.1				ug/L	19244	Standard
S	34	4203.9	4.9				ug/L	3557	Standard
Sr	88	78.3	19.5				ug/L	65	Standard
C	12	50.0	40.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	45.5	74.5				mg/L	13	Standard
Ho-1	165	16.7	91.7				mg/L	10	Standard
Er	166	23.3	107.9				mg/L	13	Standard
I	127	6801.5	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.690	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 14:57:48
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.860
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.918
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	
QC Std 7	Mn	55	
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 14:57:48
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606090708
Sample Date/Time: Wednesday, July 06, 2016 15:07:31
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56123.9	4.1				ug/L	68501	Standard
	Be	9	6.7	173.2	**0.0286**	0.016	55.2	ug/L	8	Standard
	Al	27	66942.6	2.6	**0.6112**	0.031	5.0	ug/L	1397	Standard
	Sc	45	36869.8	1.5				ug/L	38815	Standard
	Ti	47	31.0	25.2	**0.0658**	0.025	37.8	ug/L	36	Standard
	V	51	1339.2	5.0	**0.0485**	0.012	24.6	ug/L	1284	Standard
	Cr	52	5285.6	3.9	**-0.1571**	0.018	11.6	ug/L	6503	Standard
	Cr	53	546.7	13.8	**0.2255**	0.079	34.9	ug/L	492	Standard
	Mn	55	1303.4	5.1	**0.1198**	0.014	11.8	ug/L	841	Standard
	Co	59	203.3	12.1	**0.0396**	0.004	10.4	ug/L	229	Standard
	Ni	60	359.0	4.4	**0.0588**	0.010	17.7	ug/L	344	Standard
	Cu	65	113.3	13.5	**0.0553**	0.010	18.4	ug/L	115	Standard
	Zn	66	768.7	2.8	**0.6582**	0.025	3.8	ug/L	190	Standard
>	**Ge**	72	405192.6	1.5				ug/L	409858	Standard
	As	75	4918.3	2.2	**4.8977**	0.034	0.7	ug/L	-22	Standard
	Se	82	13.5	76.0	**0.0775**	0.096	124.3	ug/L	18	Standard
	Se-1	77	71.0	7.5	**0.2844**	0.084	29.4	ug/L	50	Standard
>	**Ga**	71	28.3	10.2				mg/L	97	Standard
	Rb	85	61.7	32.8				ug/L	25	Standard
	Y	89	345042.0	1.8				ug/L	376763	Standard
>	**Rh**	103	21.7	53.3				ug/L	20	Standard
	Mo	98	142.5	28.0	**0.1346**	0.017	12.8	ug/L	51	Standard
	Ag	107	76.3	5.5	**0.0362**	0.001	2.1	ug/L	76	Standard
	Cd	111	6.7	54.8	**0.0430**	0.002	4.7	mg/L	6	Standard
	Cd	114	12.5	52.3	**0.0401**	0.001	3.5	ug/L	18	Standard
>	**In**	115	474459.0	1.3				ug/L	507261	Standard
	Sn	118	216.7	17.9	**-0.0677**	0.008	11.7	ug/L	683	Standard
	Sb	123	745.2	27.2	**0.1651**	0.049	29.8	ug/L	446	Standard
	Ba	135	790.0	3.4	**0.4596**	0.016	3.5	ug/L	28	Standard
	Ce	140	65.0	78.1				ug/L	33	Standard
>	**Tb**	159	739678.8	0.7				ug/L	800803	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	93.0	10.3	**0.0460**	0.001	2.8	ug/L	13	Standard
	Tl	205	83.3	39.0	**0.0557**	0.005	9.2	ug/L	13	Standard
	Pb	206	252.3	10.6	**0.0497**	0.006	11.9	ug/L	226	Standard
	Pb	207	211.7	8.9	**0.0486**	0.005	9.5	ug/L	204	Standard
	Pb	208	860.0	6.9	**0.0505**	0.003	6.7	ug/L	852	Standard
	U	238	14.7	30.7	**0.0449**	0.001	1.6	ug/L	13	Standard
>	**Bi**	209	429750.5	0.4				ug/L	449044	Standard

Sample ID: L1606090708
Report Date/Time: Wednesday, July 06, 2016 15:09:48
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3003.6	1.6	**4.2430**	0.057	1.3	mg/L	58	Standard
K	39	36.7	43.8	**0.0119**	0.066	559.7	mg/L	27	Standard
Ca	43	21.7	35.3	**0.3805**	0.578	151.8	mg/L	20	Standard
Fe	54	55.9	13.9	**-0.0709**	0.008	10.7	mg/L	158	Standard
Fe	57	308.3	16.4	**0.4073**	0.188	46.1	mg/L	267	Standard
> **Sc-1**	45	36869.8	1.5				mg/L	38815	Standard
Cl	35	66431.3	1.6				ug/L	57611	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	2016.8	5.6				ug/L	1617	Standard
P	31	6839.9	2.1				ug/L	19244	Standard
S	34	4038.9	3.4				ug/L	3557	Standard
Sr	88	80.0	32.5				ug/L	65	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	23	Standard
Dy	164	12.5	45.3				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	15781.6	6.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.931	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.862	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090708
Report Date/Time: Wednesday, July 06, 2016 15:09:48
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.534
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.703
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606090708
Report Date/Time: Wednesday, July 06, 2016 15:09:48
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606090710
Sample Date/Time: Wednesday, July 06, 2016 15:10:42
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55767.5	3.1				ug/L	68501	Standard
	Be	9	15.0	33.3	**0.0396**	0.006	15.5	ug/L	8	Standard
	Al	27	57067.4	4.0	**0.5293**	0.032	6.0	ug/L	1397	Standard
	Sc	45	37737.0	2.8				ug/L	38815	Standard
	Ti	47	27.0	11.1	**0.0534**	0.009	16.5	ug/L	36	Standard
	V	51	1378.9	8.7	**0.0540**	0.019	35.6	ug/L	1284	Standard
	Cr	52	5384.0	1.6	**-0.1434**	0.011	7.6	ug/L	6503	Standard
	Cr	53	555.0	6.5	**0.2351**	0.036	15.1	ug/L	492	Standard
	Mn	55	1200.4	3.4	**0.1025**	0.009	8.7	ug/L	841	Standard
	Co	59	202.3	5.0	**0.0394**	0.001	3.3	ug/L	229	Standard
	Ni	60	349.3	8.9	**0.0527**	0.019	35.2	ug/L	344	Standard
	Cu	65	113.0	24.1	**0.0551**	0.017	31.4	ug/L	115	Standard
	Zn	66	816.4	3.2	**0.7051**	0.033	4.7	ug/L	190	Standard
>	**Ge**	72	405693.9	1.3				ug/L	409858	Standard
	As	75	4000.4	1.6	**3.9982**	0.091	2.3	ug/L	-22	Standard
	Se	82	17.3	50.2	**0.1136**	0.082	71.8	ug/L	18	Standard
	Se-1	77	68.7	10.9	**0.2488**	0.115	46.4	ug/L	50	Standard
>	**Ga**	71	28.3	36.7				mg/L	97	Standard
	Rb	85	40.0	45.1				ug/L	25	Standard
	Y	89	346549.0	3.0				ug/L	376763	Standard
>	**Rh**	103	16.7	17.3				ug/L	20	Standard
	Mo	98	97.7	27.5	**0.1145**	0.012	10.9	ug/L	51	Standard
	Ag	107	72.7	8.4	**0.0354**	0.001	3.2	ug/L	76	Standard
	Cd	111	4.8	40.9	**0.0420**	0.001	2.6	mg/L	6	Standard
	Cd	114	2.8	127.9	**0.0380**	0.001	2.1	ug/L	18	Standard
>	**In**	115	479824.6	1.7				ug/L	507261	Standard
	Sn	118	205.0	16.0	**-0.0705**	0.007	9.5	ug/L	683	Standard
	Sb	123	434.3	26.7	**0.0870**	0.030	34.6	ug/L	446	Standard
	Ba	135	658.3	5.7	**0.3813**	0.014	3.8	ug/L	28	Standard
	Ce	140	16.7	62.4				ug/L	33	Standard
>	**Tb**	159	748992.8	2.4				ug/L	800803	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	71.3	13.3	**0.0431**	0.001	3.4	ug/L	13	Standard
	Tl	205	60.0	65.1	**0.0521**	0.006	12.2	ug/L	13	Standard
	Pb	206	267.3	9.0	**0.0528**	0.006	11.2	ug/L	226	Standard
	Pb	207	234.3	3.4	**0.0538**	0.003	5.1	ug/L	204	Standard
	Pb	208	992.7	7.2	**0.0582**	0.004	7.5	ug/L	852	Standard
	U	238	5.7	53.9	**0.0435**	0.000	1.1	ug/L	13	Standard
>	**Bi**	209	430634.6	1.8				ug/L	449044	Standard

Sample ID: L1606090710
Report Date/Time: Wednesday, July 06, 2016 15:12:59
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	2340.2	3.7	**3.2200**	0.031	1.0	mg/L	58	Standard
K	39	35.0	37.8	**0.0008**	0.051	6246.2	mg/L	27	Standard
Ca	43	15.0	33.3	**-0.1583**	0.367	231.7	mg/L	20	Standard
Fe	54	62.8	31.4	**-0.0660**	0.018	27.6	mg/L	158	Standard
Fe	57	236.7	3.2	**0.1352**	0.041	30.0	mg/L	267	Standard
> **Sc-1**	45	37737.0	2.8				mg/L	38815	Standard
Cl	35	66671.0	0.2				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2100.1	1.6				ug/L	1617	Standard
P	31	6753.2	3.3				ug/L	19244	Standard
S	34	4090.6	7.3				ug/L	3557	Standard
Sr	88	83.3	12.5				ug/L	65	Standard
C	12	30.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	12.7	119.6				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	15177.6	3.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.411	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.984	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090710
Report Date/Time: Wednesday, July 06, 2016 15:12:59
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.591
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.900
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606090711
Sample Date/Time: Wednesday, July 06, 2016 15:13:54
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54814.1	3.8				ug/L	68501	Standard
	Be	9	16.7	62.4	**0.0422**	0.014	32.8	ug/L	8	Standard
	Al	27	52699.8	1.6	**0.4995**	0.024	4.8	ug/L	1397	Standard
	Sc	45	38356.9	3.4				ug/L	38815	Standard
	Ti	47	29.7	14.0	**0.0612**	0.013	21.0	ug/L	36	Standard
	V	51	1298.7	4.2	**0.0417**	0.008	18.1	ug/L	1284	Standard
	Cr	52	5448.0	3.0	**-0.1368**	0.021	15.5	ug/L	6503	Standard
	Cr	53	526.7	9.4	**0.1996**	0.054	27.2	ug/L	492	Standard
	Mn	55	966.0	3.4	**0.0631**	0.005	7.8	ug/L	841	Standard
	Co	59	192.7	2.3	**0.0376**	0.001	2.1	ug/L	229	Standard
	Ni	60	332.3	7.6	**0.0417**	0.014	33.8	ug/L	344	Standard
	Cu	65	107.0	4.9	**0.0511**	0.004	7.0	ug/L	115	Standard
	Zn	66	673.7	5.7	**0.5595**	0.037	6.6	ug/L	190	Standard
>	**Ge**	72	407073.7	0.6				ug/L	409858	Standard
	As	75	3936.4	1.8	**3.9222**	0.063	1.6	ug/L	-22	Standard
	Se	82	12.1	66.2	**0.0641**	0.076	118.6	ug/L	18	Standard
	Se-1	77	60.7	18.2	**0.1275**	0.157	123.2	ug/L	50	Standard
>	**Ga**	71	41.7	50.0				mg/L	97	Standard
	Rb	85	40.0	45.1				ug/L	25	Standard
	Y	89	345252.8	0.9				ug/L	376763	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	101.1	24.4	**0.1158**	0.011	9.9	ug/L	51	Standard
	Ag	107	60.3	15.9	**0.0333**	0.002	5.0	ug/L	76	Standard
	Cd	111	2.5	44.5	**0.0407**	0.001	1.5	mg/L	6	Standard
	Cd	114	12.2	59.9	**0.0400**	0.002	4.1	ug/L	18	Standard
>	**In**	115	481188.3	1.3				ug/L	507261	Standard
	Sn	118	168.3	9.5	**-0.0777**	0.003	4.4	ug/L	683	Standard
	Sb	123	324.9	34.4	**0.0597**	0.028	47.6	ug/L	446	Standard
	Ba	135	608.7	5.5	**0.3529**	0.019	5.4	ug/L	28	Standard
	Ce	140	8.3	34.6				ug/L	33	Standard
>	**Tb**	159	745199.8	0.8				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	72.3	21.5	**0.0432**	0.002	5.0	ug/L	13	Standard
	Tl	205	55.0	39.6	**0.0512**	0.003	6.8	ug/L	13	Standard
	Pb	206	221.3	7.7	**0.0430**	0.004	9.0	ug/L	226	Standard
	Pb	207	189.0	5.0	**0.0431**	0.002	5.7	ug/L	204	Standard
	Pb	208	789.3	5.2	**0.0462**	0.003	5.7	ug/L	852	Standard
	U	238	4.3	81.0	**0.0433**	0.001	1.3	ug/L	13	Standard
>	**Bi**	209	431209.2	0.7				ug/L	449044	Standard

Sample ID: L1606090711
Report Date/Time: Wednesday, July 06, 2016 15:16:10
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	2360.2	3.7	**3.2002**	0.221	6.9	mg/L	58	Standard
K	39	20.0	86.6	**-0.0601**	0.072	120.5	mg/L	27	Standard
Ca	43	25.0	20.0	**0.5647**	0.390	69.0	mg/L	20	Standard
Fe	54	59.1	42.1	**-0.0702**	0.021	30.3	mg/L	158	Standard
Fe	57	290.0	10.5	**0.3038**	0.121	40.0	mg/L	267	Standard
> **Sc-1**	45	38356.9	3.4				mg/L	38815	Standard
Cl	35	66762.1	1.2				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1850.1	7.8				ug/L	1617	Standard
P	31	6509.7	3.4				ug/L	19244	Standard
S	34	3905.5	1.3				ug/L	3557	Standard
Sr	88	58.3	4.9				ug/L	65	Standard
C	12	43.3	70.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	23	Standard
Dy	164	6.5	179.6				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	14775.5	3.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.019	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.321	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090711
Report Date/Time: Wednesday, July 06, 2016 15:16:10
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.860
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.028
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606090712
Sample Date/Time: Wednesday, July 06, 2016 15:17:05
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59136.9	1.9				ug/L	68501	Standard
	Be	9	100.0	0.0	**0.1471**	0.002	1.6	ug/L	8	Standard
	Al	27	3735465.7	0.2	**30.5168**	0.591	1.9	ug/L	1397	Standard
	Sc	45	39907.5	1.6				ug/L	38815	Standard
	Ti	47	188106.0	1.6	**592.5898**	9.341	1.6	ug/L	36	Standard
	V	51	727880.7	2.1	**109.2334**	0.828	0.8	ug/L	1284	Standard
	Cr	52	2147459.5	0.6	**329.0918**	4.735	1.4	ug/L	6503	Standard
	Cr	53	294234.5	0.7	**362.5456**	7.204	2.0	ug/L	492	Standard
	Mn	55	136764.2	1.0	**23.5558**	0.108	0.5	ug/L	841	Standard
	Co	59	7595.9	0.5	**1.3368**	0.018	1.4	ug/L	229	Standard
	Ni	60	30975.0	0.9	**19.3783**	0.287	1.5	ug/L	344	Standard
	Cu	65	63388.3	1.8	**40.0459**	0.878	2.2	ug/L	115	Standard
	Zn	66	366901.8	1.0	**384.8805**	2.395	0.6	ug/L	190	Standard
>	Ge	72	387555.3	1.4				ug/L	409858	Standard
	As	75	11510.2	1.9	**11.8429**	0.269	2.3	ug/L	-22	Standard
	Se	82	113.3	57.4	**1.0824**	0.654	60.4	ug/L	18	Standard
	Se-1	77	1337.7	1.3	**19.7866**	0.288	1.5	ug/L	50	Standard
>	Ga	71	3715.5	1.3				mg/L	97	Standard
	Rb	85	24456.4	1.2				ug/L	25	Standard
	Y	89	367766.8	1.0				ug/L	376763	Standard
>	Rh	103	636.7	41.6				ug/L	20	Standard
	Mo	98	20218.7	0.2	**9.5016**	0.081	0.9	ug/L	51	Standard
	Ag	107	1395.4	2.2	**0.2746**	0.007	2.5	ug/L	76	Standard
	Cd	111	15436.6	1.1	**8.7889**	0.145	1.6	mg/L	6	Standard
	Cd	114	36990.0	1.0	**8.6137**	0.136	1.6	ug/L	18	Standard
>	In	115	450987.5	0.7				ug/L	507261	Standard
	Sn	118	123207.3	0.8	**25.2064**	0.206	0.8	ug/L	683	Standard
	Sb	123	4061.0	3.4	**1.0445**	0.031	3.0	ug/L	446	Standard
	Ba	135	211456.5	1.1	**124.9888**	0.973	0.8	ug/L	28	Standard
	Ce	140	95684.5	0.7				ug/L	33	Standard
>	Tb	159	728548.4	1.4				ug/L	800803	Standard
	Ho	165	2620.2	2.6				ug/L	10	Standard
	Tl	203	268.7	6.6	**0.0756**	0.003	4.2	ug/L	13	Standard
	Tl	205	228.3	5.1	**0.0840**	0.002	2.8	ug/L	13	Standard
	Pb	206	246609.4	0.5	**60.3899**	0.539	0.9	ug/L	226	Standard
	Pb	207	209210.9	0.8	**56.4141**	0.211	0.4	ug/L	204	Standard
	Pb	208	889009.1	1.9	**59.9416**	0.514	0.9	ug/L	852	Standard
	U	238	12374.1	0.4	**2.2942**	0.018	0.8	ug/L	13	Standard
>	Bi	209	373680.6	1.1				ug/L	449044	Standard

Sample ID: L1606090712
Report Date/Time: Wednesday, July 06, 2016 15:19:22
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	627460.5	0.3	**826.3355**	10.138	1.2	mg/L	58	Standard
K	39	891.7	12.4	**3.3152**	0.420	12.7	mg/L	27	Standard
Ca	43	85.0	25.6	**4.7327**	1.524	32.2	mg/L	20	Standard
Fe	54	2238.8	0.7	**1.7027**	0.033	1.9	mg/L	158	Standard
Fe	57	931.7	3.2	**2.3514**	0.086	3.7	mg/L	267	Standard
> **Sc-1**	45	39907.5	1.6				mg/L	38815	Standard
Cl	35	105249.6	0.7				ug/L	57611	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	33069.4	2.9				ug/L	1617	Standard
P	31	23598.4	1.5				ug/L	19244	Standard
S	34	3327.0	1.9				ug/L	3557	Standard
Sr	88	1011.7	3.7				ug/L	65	Standard
C	12	380.0	11.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1216.7	6.6				mg/L	23	Standard
Dy	164	3819.8	3.9				mg/L	13	Standard
Ho-1	165	2620.2	2.6				mg/L	10	Standard
Er	166	2590.2	4.1				mg/L	13	Standard
I	127	159962.4	8.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.330	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090712
Report Date/Time: Wednesday, July 06, 2016 15:19:22
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	88.906	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	83.217	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	
Cr 52 Upper, S, EEE	Cr	52	

Sample ID: L1606090712
Report Date/Time: Wednesday, July 06, 2016 15:19:22
Page 3

Approved: July 07, 2016

Cr 53 Upper, S, EEE	Cr	53
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606090713
Sample Date/Time: Wednesday, July 06, 2016 15:20:17
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62142.2	2.7				ug/L	68501	Standard
	Be	9	75.0	11.5	**0.1107**	0.012	10.9	ug/L	8	Standard
	Al	27	3038140.7	0.5	**23.6329**	0.622	2.6	ug/L	1397	Standard
	Sc	45	40017.8	2.7				ug/L	38815	Standard
	Ti	47	163885.9	0.8	**513.6032**	3.518	0.7	ug/L	36	Standard
	V	51	602537.0	0.8	**89.9411**	0.844	0.9	ug/L	1284	Standard
	Cr	52	1965909.2	0.6	**299.6143**	3.300	1.1	ug/L	6503	Standard
	Cr	53	263656.0	0.8	**323.1168**	4.959	1.5	ug/L	492	Standard
	Mn	55	23201.4	1.5	**3.8959**	0.074	1.9	ug/L	841	Standard
	Co	59	4269.3	1.9	**0.7498**	0.008	1.1	ug/L	229	Standard
	Ni	60	23944.9	1.0	**14.8649**	0.057	0.4	ug/L	344	Standard
	Cu	65	10740.1	1.4	**6.7382**	0.053	0.8	ug/L	115	Standard
	Zn	66	144279.7	1.0	**150.4939**	0.640	0.4	ug/L	190	Standard
>	**Ge**	72	389560.3	0.8				ug/L	409858	Standard
	As	75	11554.1	2.0	**11.8265**	0.285	2.4	ug/L	-22	Standard
	Se	82	21.7	113.6	**0.1655**	0.247	149.4	ug/L	18	Standard
	Se-1	77	1182.7	5.8	**17.3115**	1.052	6.1	ug/L	50	Standard
>	**Ga**	71	2596.9	4.5				mg/L	97	Standard
	Rb	85	17209.8	0.9				ug/L	25	Standard
	Y	89	365815.6	1.4				ug/L	376763	Standard
>	**Rh**	103	1266.7	9.5				ug/L	20	Standard
	Mo	98	37661.3	0.8	**17.4867**	0.129	0.7	ug/L	51	Standard
	Ag	107	1201.4	1.7	**0.2377**	0.003	1.5	ug/L	76	Standard
	Cd	111	8334.2	0.6	**4.7227**	0.028	0.6	mg/L	6	Standard
	Cd	114	20677.6	2.4	**4.7904**	0.113	2.4	ug/L	18	Standard
>	**In**	115	454857.0	0.1				ug/L	507261	Standard
	Sn	118	108567.6	1.5	**22.0081**	0.314	1.4	ug/L	683	Standard
	Sb	123	8996.4	2.4	**2.3188**	0.059	2.5	ug/L	446	Standard
	Ba	135	159685.7	0.2	**93.5896**	0.278	0.3	ug/L	28	Standard
	Ce	140	50972.3	0.2				ug/L	33	Standard
>	**Tb**	159	740846.9	0.5				ug/L	800803	Standard
	Ho	165	1838.4	7.4				ug/L	10	Standard
	Tl	203	115.0	7.4	**0.0513**	0.001	2.8	ug/L	13	Standard
	Tl	205	115.0	11.5	**0.0632**	0.002	3.6	ug/L	13	Standard
	Pb	206	61112.0	0.3	**14.8501**	0.069	0.5	ug/L	226	Standard
	Pb	207	52034.5	0.1	**13.9261**	0.103	0.7	ug/L	204	Standard
	Pb	208	219213.3	1.2	**14.6715**	0.162	1.1	ug/L	852	Standard
	U	238	13518.0	1.2	**2.4841**	0.046	1.9	ug/L	13	Standard
>	**Bi**	209	376481.4	0.7				ug/L	449044	Standard

Sample ID: L1606090713
Report Date/Time: Wednesday, July 06, 2016 15:22:34
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.2091**	14.850	7100.1	mg/L	2	Standard
Mg	24	652049.2	1.0	**856.5114**	15.399	1.8	mg/L	58	Standard
K	39	871.7	10.5	**3.2293**	0.355	11.0	mg/L	27	Standard
Ca	43	33.3	17.3	**1.0753**	0.417	38.8	mg/L	20	Standard
Fe	54	940.9	10.2	**0.6444**	0.085	13.1	mg/L	158	Standard
Fe	57	590.0	8.3	**1.2381**	0.210	16.9	mg/L	267	Standard
Sc-1	45	40017.8	2.7				mg/L	38815	Standard
Cl	35	107621.5	0.7				ug/L	57611	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	33026.0	3.0				ug/L	1617	Standard
P	31	22977.4	2.0				ug/L	19244	Standard
S	34	3573.8	1.9				ug/L	3557	Standard
Sr	88	981.7	8.2				ug/L	65	Standard
C	12	476.7	10.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	473.3	11.6				mg/L	23	Standard
Dy	164	2439.4	1.3				mg/L	13	Standard
Ho-1	165	1838.4	7.4				mg/L	10	Standard
Er	166	1896.8	12.1				mg/L	13	Standard
I	127	172276.0	5.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		90.717	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.048	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606090713
Report Date/Time: Wednesday, July 06, 2016 15:22:34
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	89.669
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	83.841
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

Sample ID: L1606090713
Report Date/Time: Wednesday, July 06, 2016 15:22:34
Page 3

Approved: July 07, 2016

Zn 66 Upper, S, EEE	Zn	66

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606102602
Sample Date/Time: Wednesday, July 06, 2016 15:23:28
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59909.9	2.1				ug/L	68501	Standard
	Be	9	50.0	20.0	**0.0823**	0.012	14.0	ug/L	8	Standard
	Al	27	4054931.1	0.6	**32.6975**	0.624	1.9	ug/L	1397	Standard
	Sc	45	38943.3	1.5				ug/L	38815	Standard
	Ti	47	155.7	35.2	**0.4319**	0.159	36.8	ug/L	36	Standard
	V	51	1895.1	102.8	**0.1241**	0.276	222.3	ug/L	1284	Standard
	Cr	52	788614.2	0.5	**112.8373**	0.952	0.8	ug/L	6503	Standard
	Cr	53	99272.7	3.0	**114.5378**	3.777	3.3	ug/L	492	Standard
	Mn	55	467403.8	1.8	**75.7860**	1.140	1.5	ug/L	841	Standard
	Co	59	46321.0	0.9	**7.6267**	0.075	1.0	ug/L	229	Standard
	Ni	60	543017.8	1.4	**321.3449**	4.568	1.4	ug/L	344	Standard
	Cu	65	30865.4	1.3	**18.2968**	0.119	0.7	ug/L	115	Standard
	Zn	66	4929.8	3.6	**4.7423**	0.151	3.2	ug/L	190	Standard
>	**Ge**	72	412808.8	0.6				ug/L	409858	Standard
	As	75	190.7	12.5	**0.2816**	0.024	8.4	ug/L	-22	Standard
	Se	82	121.8	12.3	**1.0936**	0.147	13.4	ug/L	18	Standard
	Se-1	77	250.0	5.6	**2.8454**	0.195	6.9	ug/L	50	Standard
>	**Ga**	71	66.7	37.0				mg/L	97	Standard
	Rb	85	911.7	9.3				ug/L	25	Standard
	Y	89	356017.5	0.3				ug/L	376763	Standard
>	**Rh**	103	295.0	2.9				ug/L	20	Standard
	Mo	98	2507.9	2.1	**1.1659**	0.032	2.8	ug/L	51	Standard
	Ag	107	115.3	4.1	**0.0426**	0.001	2.3	ug/L	76	Standard
	Cd	111	280.0	2.5	**0.1878**	0.004	2.0	mg/L	6	Standard
	Cd	114	681.9	2.0	**0.1853**	0.004	2.4	ug/L	18	Standard
>	**In**	115	482113.9	1.0				ug/L	507261	Standard
	Sn	118	426.7	9.5	**-0.0281**	0.007	24.6	ug/L	683	Standard
	Sb	123	379.3	24.4	**0.0725**	0.022	30.2	ug/L	446	Standard
	Ba	135	7036.6	1.4	**3.9062**	0.063	1.6	ug/L	28	Standard
	Ce	140	5290.9	3.8				ug/L	33	Standard
>	**Tb**	159	759964.6	0.4				ug/L	800803	Standard
	Ho	165	306.7	9.6				ug/L	10	Standard
	Tl	203	71.3	11.7	**0.0430**	0.001	2.7	ug/L	13	Standard
	Tl	205	78.3	13.3	**0.0547**	0.002	3.2	ug/L	13	Standard
	Pb	206	322.0	17.6	**0.0637**	0.013	19.6	ug/L	226	Standard
	Pb	207	276.0	19.8	**0.0629**	0.013	21.1	ug/L	204	Standard
	Pb	208	1167.0	11.9	**0.0676**	0.009	12.7	ug/L	852	Standard
	U	238	240.0	4.2	**0.0801**	0.002	2.4	ug/L	13	Standard
>	**Bi**	209	435576.2	0.8				ug/L	449044	Standard

Sample ID: L1606102602
Report Date/Time: Wednesday, July 06, 2016 15:25:45
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.3081**	15.746	5110.4	mg/L	2	Standard
Mg	24	9246.2	5.3	**12.4378**	0.612	4.9	mg/L	58	Standard
K	39	103.3	36.6	**0.2687**	0.151	56.1	mg/L	27	Standard
Ca	43	96.7	10.8	**5.7243**	0.667	11.7	mg/L	20	Standard
Fe	54	584.2	1.4	**0.3673**	0.013	3.7	mg/L	158	Standard
Fe	57	408.3	5.7	**0.6812**	0.058	8.4	mg/L	267	Standard
Sc-1	45	38943.3	1.5				mg/L	38815	Standard
Cl	35	65179.9	1.4				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	17183.1	2.9				ug/L	1617	Standard
P	31	7878.7	4.8				ug/L	19244	Standard
S	34	3810.5	4.5				ug/L	3557	Standard
Sr	88	171.7	24.8				ug/L	65	Standard
C	12	30.0	57.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	473.7	16.7				mg/L	13	Standard
Ho-1	165	306.7	9.6				mg/L	10	Standard
Er	166	270.0	23.1				mg/L	13	Standard
I	127	24579.9	4.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		87.458	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.720	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606102602
Report Date/Time: Wednesday, July 06, 2016 15:25:45
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.043
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.001
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Ni 60 Upper, S, EEE	Ni	60	

Sample ID: L1606102602
Report Date/Time: Wednesday, July 06, 2016 15:25:45
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606102602
Sample Date/Time: Wednesday, July 06, 2016 15:27:52
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 200
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59652.3	3.2				ug/L	68501	Standard
	Be	9	20.0	90.1	**0.0451**	0.023	51.8	ug/L	8	Standard
	Al	27	418604.7	3.4	**3.4231**	0.167	4.9	ug/L	1397	Standard
	Sc	45	38361.8	1.8				ug/L	38815	Standard
	Ti	47	48.0	17.1	**0.1155**	0.025	21.3	ug/L	36	Standard
	V	51	1557.5	16.7	**0.0776**	0.037	47.4	ug/L	1284	Standard
	Cr	52	69895.5	5.2	**9.2442**	0.610	6.6	ug/L	6503	Standard
	Cr	53	8322.3	4.2	**9.3078**	0.491	5.3	ug/L	492	Standard
	Mn	55	46163.3	3.7	**7.4663**	0.256	3.4	ug/L	841	Standard
	Co	59	4716.7	3.2	**0.7886**	0.025	3.2	ug/L	229	Standard
	Ni	60	53355.9	3.6	**31.7146**	0.955	3.0	ug/L	344	Standard
	Cu	65	2976.0	1.8	**1.7684**	0.046	2.6	ug/L	115	Standard
	Zn	66	1005.0	2.7	**0.8857**	0.031	3.5	ug/L	190	Standard
>	**Ge**	72	409101.3	0.8				ug/L	409858	Standard
	As	75	-25.1	69.7	**0.0745**	0.017	23.1	ug/L	-22	Standard
	Se	82	28.0	12.9	**0.2140**	0.032	15.1	ug/L	18	Standard
	Se-1	77	74.7	8.1	**0.3270**	0.081	24.7	ug/L	50	Standard
>	**Ga**	71	36.7	55.1				mg/L	97	Standard
	Rb	85	145.0	21.0				ug/L	25	Standard
	Y	89	351461.6	1.1				ug/L	376763	Standard
>	**Rh**	103	78.3	24.2				ug/L	20	Standard
	Mo	98	270.6	12.5	**0.1889**	0.015	7.9	ug/L	51	Standard
	Ag	107	67.0	25.1	**0.0343**	0.003	8.3	ug/L	76	Standard
	Cd	111	22.5	15.3	**0.0512**	0.002	3.6	mg/L	6	Standard
	Cd	114	64.7	40.1	**0.0513**	0.006	11.0	ug/L	18	Standard
>	**In**	115	485128.4	0.5				ug/L	507261	Standard
	Sn	118	258.3	11.7	**-0.0608**	0.006	9.1	ug/L	683	Standard
	Sb	123	528.0	32.4	**0.1083**	0.042	38.5	ug/L	446	Standard
	Ba	135	657.0	3.1	**0.3767**	0.010	2.6	ug/L	28	Standard
	Ce	140	241.7	34.1				ug/L	33	Standard
>	**Tb**	159	760299.8	0.9				ug/L	800803	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	60.0	11.7	**0.0413**	0.001	2.2	ug/L	13	Standard
	Tl	205	45.0	19.2	**0.0494**	0.001	2.7	ug/L	13	Standard
	Pb	206	227.7	7.2	**0.0431**	0.003	8.1	ug/L	226	Standard
	Pb	207	180.3	9.6	**0.0401**	0.004	9.9	ug/L	204	Standard
	Pb	208	797.0	7.7	**0.0455**	0.003	7.5	ug/L	852	Standard
	U	238	16.7	30.2	**0.0452**	0.001	1.7	ug/L	13	Standard
>	**Bi**	209	441832.6	0.2				ug/L	449044	Standard

Sample ID: L1606102602
Report Date/Time: Wednesday, July 06, 2016 15:30:09
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.3058**	15.741	5148.3	mg/L	2	Standard
Mg	24	908.4	5.6	**1.2054**	0.048	4.0	mg/L	58	Standard
K	39	36.7	39.4	**0.0054**	0.056	1043.3	mg/L	27	Standard
Ca	43	40.0	12.5	**1.6623**	0.322	19.4	mg/L	20	Standard
Fe	54	67.9	4.4	**-0.0627**	0.002	2.4	mg/L	158	Standard
Fe	57	248.3	12.1	**0.1622**	0.117	72.3	mg/L	267	Standard
Sc-1	45	38361.8	1.8				mg/L	38815	Standard
Cl	35	69584.8	2.6				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3120.3	5.7				ug/L	1617	Standard
P	31	6753.2	0.8				ug/L	19244	Standard
S	34	3768.8	1.3				ug/L	3557	Standard
Sr	88	76.7	7.5				ug/L	65	Standard
C	12	16.7	124.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	39.0	0.0				mg/L	13	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	13	Standard
I	127	14281.7	3.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.082	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.815	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606102602
Report Date/Time: Wednesday, July 06, 2016 15:30:09
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.637
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.394
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 15:31:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62510.4	1.5				ug/L	68501	Standard
	Be	9	45265.9	1.1	**54.6732**	0.331	0.6	ug/L	8	Standard
	Al	27	7101979.2	2.0	**54.8496**	0.969	1.8	ug/L	1397	Standard
	Sc	45	42855.5	1.1				ug/L	38815	Standard
	Ti	47	38254.6	0.4	**105.6282**	1.379	1.3	ug/L	36	Standard
	V	51	389890.4	0.9	**51.2225**	0.409	0.8	ug/L	1284	Standard
	Cr	52	394953.7	1.4	**52.2714**	0.664	1.3	ug/L	6503	Standard
	Cr	53	49295.1	1.9	**52.8778**	0.470	0.9	ug/L	492	Standard
	Mn	55	355133.0	1.5	**53.7409**	0.198	0.4	ug/L	841	Standard
	Co	59	338270.8	0.6	**51.9779**	0.514	1.0	ug/L	229	Standard
	Ni	60	95167.3	1.8	**52.4560**	0.799	1.5	ug/L	344	Standard
	Cu	65	94410.2	0.3	**52.2916**	0.811	1.6	ug/L	115	Standard
	Zn	66	56526.3	1.3	**51.8812**	0.251	0.5	ug/L	190	Standard
>	Ge	72	442099.8	1.5				ug/L	409858	Standard
	As	75	57168.4	1.7	**51.2247**	0.117	0.2	ug/L	-22	Standard
	Se	82	5880.4	1.8	**51.5509**	0.555	1.1	ug/L	18	Standard
	Se-1	77	3935.5	1.6	**52.2257**	0.689	1.3	ug/L	50	Standard
>	Ga	71	56.7	35.7				mg/L	97	Standard
	Rb	85	830.0	10.6				ug/L	25	Standard
	Y	89	383309.8	0.5				ug/L	376763	Standard
>	Rh	103	65.0	13.3				ug/L	20	Standard
	Mo	98	258034.7	0.3	**102.2558**	0.442	0.4	ug/L	51	Standard
	Ag	107	328084.2	0.8	**50.2200**	0.076	0.2	ug/L	76	Standard
	Cd	111	104954.0	1.1	**50.5459**	0.249	0.5	mg/L	6	Standard
	Cd	114	257205.6	1.2	**50.6685**	0.423	0.8	ug/L	18	Standard
>	In	115	531139.6	0.6				ug/L	507261	Standard
	Sn	118	287869.1	1.0	**50.1137**	0.324	0.6	ug/L	683	Standard
	Sb	123	226343.7	0.7	**50.3782**	0.153	0.3	ug/L	446	Standard
	Ba	135	98602.1	0.7	**49.4969**	0.088	0.2	ug/L	28	Standard
	Ce	140	105.0	29.0				ug/L	33	Standard
>	Tb	159	805440.7	1.6				ug/L	800803	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	401097.9	1.2	**51.3040**	0.273	0.5	ug/L	13	Standard
	Tl	205	355854.2	1.4	**52.5682**	1.130	2.1	ug/L	13	Standard
	Pb	206	254786.8	0.7	**50.7595**	0.728	1.4	ug/L	226	Standard
	Pb	207	230315.6	0.2	**50.5265**	0.425	0.8	ug/L	204	Standard
	Pb	208	963927.7	0.8	**52.8789**	0.356	0.7	ug/L	852	Standard
	U	238	345757.3	0.5	**51.2253**	0.548	1.1	ug/L	13	Standard
>	Bi	209	459318.8	0.8				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 15:33:22
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**7.7717**	14.337	184.5	mg/L	2	Standard
Mg	24	3975.5	6.9	**4.8346**	0.283	5.8	mg/L	58	Standard
K	39	1343.4	5.6	**4.7102**	0.312	6.6	mg/L	27	Standard
Ca	43	80.0	12.5	**3.9950**	0.686	17.2	mg/L	20	Standard
Fe	54	6635.7	2.5	**4.9103**	0.105	2.1	mg/L	158	Standard
Fe	57	1878.4	2.2	**5.0116**	0.137	2.7	mg/L	267	Standard
Sc-1	45	42855.5	1.1				mg/L	38815	Standard
Cl	35	74232.2	2.7				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2200.2	12.5				ug/L	1617	Standard
P	31	22027.7	0.8				ug/L	19244	Standard
S	34	4434.0	2.1				ug/L	3557	Standard
Sr	88	70.0	43.4				ug/L	65	Standard
C	12	53.3	60.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	23	Standard
Dy	164	6.3	86.9				mg/L	13	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	13556.1	3.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.346		
Al	27	109.699		
Sc	45			
Ti	47	105.628		
V	51	102.445		
Cr	52	104.543		
Cr	53			
Mn	55	107.482		
Co	59	103.956		
Ni	60	104.912		
Cu	65	104.583		
Zn	66	103.762		
Ge	72		107.867	
As	75	102.449		
Se	82	103.102		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 15:33:22
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	102.256		
Ag	107	100.440		
Cd	111	101.092		
Cd	114			
In	115			104.707
Sn	118	100.227		
Sb	123	100.756		
Ba	135	98.994		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.608		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.758		
U	238	102.451		
Bi	209			102.288
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 15:33:22
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 15:34:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61561.6	3.3				ug/L	68501	Standard
	Be	9	28.3	10.2	**0.0542**	0.003	6.0	ug/L	8	Standard
	Al	27	2803.6	30.9	**0.0569**	0.006	11.2	ug/L	1397	Standard
	Sc	45	42046.6	2.5				ug/L	38815	Standard
	Ti	47	62.0	4.3	**0.1464**	0.006	4.0	ug/L	36	Standard
	V	51	1620.5	26.0	**0.0735**	0.059	79.9	ug/L	1284	Standard
	Cr	52	6965.3	2.5	**0.0210**	0.012	56.9	ug/L	6503	Standard
	Cr	53	605.0	6.6	**0.2469**	0.038	15.2	ug/L	492	Standard
	Mn	55	1194.1	59.5	**0.0889**	0.112	125.6	ug/L	841	Standard
	Co	59	316.0	35.1	**0.0550**	0.018	32.3	ug/L	229	Standard
	Ni	60	524.0	11.7	**0.1368**	0.031	22.5	ug/L	344	Standard
	Cu	65	203.7	7.4	**0.1015**	0.007	7.2	ug/L	115	Standard
	Zn	66	198.3	8.9	**0.0722**	0.015	21.3	ug/L	190	Standard
>	**Ge**	72	434423.2	1.3				ug/L	409858	Standard
	As	75	6.5	179.2	**0.1047**	0.011	10.1	ug/L	-22	Standard
	Se	82	30.2	4.2	**0.2183**	0.008	3.5	ug/L	18	Standard
	Se-1	77	61.7	3.4	**0.0858**	0.019	22.0	ug/L	50	Standard
>	**Ga**	71	23.3	53.9				mg/L	97	Standard
	Rb	85	55.0	18.2				ug/L	25	Standard
	Y	89	380097.4	1.2				ug/L	376763	Standard
>	**Rh**	103	41.7	66.1				ug/L	20	Standard
	Mo	98	226.8	44.6	**0.1626**	0.040	24.7	ug/L	51	Standard
	Ag	107	177.7	32.6	**0.0506**	0.009	17.4	ug/L	76	Standard
	Cd	111	18.4	27.8	**0.0483**	0.002	5.1	mg/L	6	Standard
	Cd	114	45.5	94.0	**0.0464**	0.008	18.1	ug/L	18	Standard
>	**In**	115	523505.1	2.0				ug/L	507261	Standard
	Sn	118	850.0	23.5	**0.0404**	0.035	87.4	ug/L	683	Standard
	Sb	123	632.5	33.7	**0.1228**	0.049	39.7	ug/L	446	Standard
	Ba	135	56.0	36.1	**0.0443**	0.011	23.8	ug/L	28	Standard
	Ce	140	53.3	43.3				ug/L	33	Standard
>	**Tb**	159	800127.8	1.0				ug/L	800803	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	113.3	28.9	**0.0477**	0.004	8.6	ug/L	13	Standard
	Tl	205	96.7	62.4	**0.0567**	0.009	15.5	ug/L	13	Standard
	Pb	206	352.3	41.0	**0.0657**	0.028	43.1	ug/L	226	Standard
	Pb	207	330.3	42.9	**0.0709**	0.031	43.2	ug/L	204	Standard
	Pb	208	1337.7	38.2	**0.0729**	0.028	37.8	ug/L	852	Standard
	U	238	139.0	62.6	**0.0630**	0.013	20.1	ug/L	13	Standard
>	**Bi**	209	462113.9	1.9				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 15:36:33
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	215.0	89.1	**0.2268**	0.230	101.4	mg/L	58	Standard
K	39	25.0	20.0	**-0.0496**	0.020	40.1	mg/L	27	Standard
Ca	43	25.0	69.3	**0.3967**	1.159	292.2	mg/L	20	Standard
Fe	54	166.1	29.4	**0.0075**	0.034	454.2	mg/L	158	Standard
Fe	57	271.7	18.9	**0.1597**	0.163	102.1	mg/L	267	Standard
> **Sc-1**	45	42046.6	2.5				mg/L	38815	Standard
Cl	35	72320.2	1.4				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1920.1	8.2				ug/L	1617	Standard
P	31	21066.3	3.1				ug/L	19244	Standard
S	34	4195.6	5.6				ug/L	3557	Standard
Sr	88	68.3	11.2				ug/L	65	Standard
C	12	40.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	9.5	107.6				mg/L	13	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	10325.2	3.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.994	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 15:36:33
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.202
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.911
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 15:36:33
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: PBS M4 WG574306-02
Sample Date/Time: Wednesday, July 06, 2016 15:50:33
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60321.5	1.7				ug/L	68501	Standard
	Be	9	10.0	50.0	**0.0319**	0.006	19.1	ug/L	8	Standard
	Al	27	4340.6	5.6	**0.0698**	0.002	2.5	ug/L	1397	Standard
	Sc	45	39145.5	1.2				ug/L	38815	Standard
	Ti	47	32.0	13.6	**0.0648**	0.013	19.6	ug/L	36	Standard
	V	51	1399.3	2.8	**0.0491**	0.007	14.5	ug/L	1284	Standard
	Cr	52	6817.5	0.4	**0.0288**	0.009	30.6	ug/L	6503	Standard
	Cr	53	396.7	5.8	**0.0309**	0.026	84.0	ug/L	492	Standard
	Mn	55	677.0	5.0	**0.0117**	0.006	54.9	ug/L	841	Standard
	Co	59	186.7	9.5	**0.0355**	0.003	8.2	ug/L	229	Standard
	Ni	60	465.3	4.8	**0.1119**	0.014	12.9	ug/L	344	Standard
	Cu	65	161.3	5.2	**0.0804**	0.006	7.2	ug/L	115	Standard
	Zn	66	946.4	3.1	**0.7988**	0.024	3.0	ug/L	190	Standard
>	**Ge**	72	421846.3	1.0				ug/L	409858	Standard
	As	75	-69.8	37.3	**0.0336**	0.024	70.9	ug/L	-22	Standard
	Se	82	12.6	46.4	**0.0646**	0.055	84.5	ug/L	18	Standard
	Se-1	77	60.0	12.6	**0.0881**	0.111	126.1	ug/L	50	Standard
>	**Ga**	71	30.0	16.7				mg/L	97	Standard
	Rb	85	28.3	88.8				ug/L	25	Standard
	Y	89	365994.3	0.0				ug/L	376763	Standard
>	**Rh**	103	16.7	34.6				ug/L	20	Standard
	Mo	98	75.8	22.7	**0.1031**	0.007	6.8	ug/L	51	Standard
	Ag	107	68.0	16.4	**0.0340**	0.002	5.1	ug/L	76	Standard
	Cd	111	6.5	46.8	**0.0427**	0.002	3.6	mg/L	6	Standard
	Cd	114	7.1	121.2	**0.0388**	0.002	4.6	ug/L	18	Standard
>	**In**	115	505408.1	0.5				ug/L	507261	Standard
	Sn	118	480.0	14.7	**-0.0221**	0.013	57.1	ug/L	683	Standard
	Sb	123	394.1	24.4	**0.0718**	0.022	30.9	ug/L	446	Standard
	Ba	135	54.0	8.5	**0.0442**	0.002	5.3	ug/L	28	Standard
	Ce	140	33.3	34.6				ug/L	33	Standard
>	**Tb**	159	771411.9	1.2				ug/L	800803	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	7.7	41.9	**0.0343**	0.000	1.2	ug/L	13	Standard
	Tl	205	5.0	100.0	**0.0433**	0.001	1.7	ug/L	13	Standard
	Pb	206	241.3	5.2	**0.0451**	0.002	5.2	ug/L	226	Standard
	Pb	207	212.7	12.1	**0.0466**	0.006	12.9	ug/L	204	Standard
	Pb	208	890.0	2.3	**0.0499**	0.001	2.7	ug/L	852	Standard
	U	238	5.0	0.0	**0.0434**	0.000	0.0	ug/L	13	Standard
>	**Bi**	209	449902.0	0.5				ug/L	449044	Standard

Sample ID: PBS M4 WG574306-02
Report Date/Time: Wednesday, July 06, 2016 15:52:50
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.3470**	15.813	4556.7	mg/L	2	Standard
Mg	24	53.3	14.3	**0.0332**	0.009	28.5	mg/L	58	Standard
K	39	23.3	24.7	**-0.0497**	0.022	44.0	mg/L	27	Standard
Ca	43	35.0	14.3	**1.2473**	0.369	29.6	mg/L	20	Standard
Fe	54	97.6	24.1	**-0.0391**	0.021	52.6	mg/L	158	Standard
Fe	57	258.3	21.3	**0.1767**	0.178	100.7	mg/L	267	Standard
> **Sc-1**	45	39145.5	1.2				mg/L	38815	Standard
Cl	35	72061.6	0.7				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2043.5	4.9				ug/L	1617	Standard
P	31	12745.4	1.4				ug/L	19244	Standard
S	34	4235.6	4.4				ug/L	3557	Standard
Sr	88	66.7	48.2				ug/L	65	Standard
C	12	56.7	79.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	19.4	90.2				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	6898.2	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.059	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBS M4 WG574306-02
Report Date/Time: Wednesday, July 06, 2016 15:52:50
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.635	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.191	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M4 WG574306-02
Report Date/Time: Wednesday, July 06, 2016 15:52:50
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: LCSS M4 WG574306-03
Sample Date/Time: Wednesday, July 06, 2016 15:53:45
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61943.1	2.3				ug/L	68501	Standard
	Be	9	22788.8	2.5	**27.7900**	0.695	2.5	ug/L	8	Standard
	Al	27	9251.2	3.3	**0.1071**	0.002	1.6	ug/L	1397	Standard
	Sc	45	42504.5	0.8				ug/L	38815	Standard
	Ti	47	40.7	16.4	**0.0847**	0.019	22.5	ug/L	36	Standard
	V	51	197378.2	0.5	**25.8881**	0.107	0.4	ug/L	1284	Standard
	Cr	52	203716.1	0.7	**26.5392**	0.082	0.3	ug/L	6503	Standard
	Cr	53	24791.9	0.3	**26.4178**	0.193	0.7	ug/L	492	Standard
	Mn	55	180941.1	1.4	**27.3648**	0.262	1.0	ug/L	841	Standard
	Co	59	170099.0	1.8	**26.1669**	0.414	1.6	ug/L	229	Standard
	Ni	60	48290.2	1.5	**26.5688**	0.339	1.3	ug/L	344	Standard
	Cu	65	47767.2	0.9	**26.4765**	0.075	0.3	ug/L	115	Standard
	Zn	66	29860.1	0.4	**27.3841**	0.124	0.5	ug/L	190	Standard
>	**Ge**	72	441594.3	0.7				ug/L	409858	Standard
	As	75	28851.8	0.7	**25.9316**	0.203	0.8	ug/L	-22	Standard
	Se	82	2909.4	1.3	**25.5079**	0.168	0.7	ug/L	18	Standard
	Se-1	77	1983.1	1.3	**25.9713**	0.453	1.7	ug/L	50	Standard
>	**Ga**	71	40.0	25.0				mg/L	97	Standard
	Rb	85	45.0	22.2				ug/L	25	Standard
	Y	89	378682.1	0.2				ug/L	376763	Standard
>	**Rh**	103	58.3	17.8				ug/L	20	Standard
	Mo	98	80.9	10.8	**0.1038**	0.003	3.3	ug/L	51	Standard
	Ag	107	168208.2	0.7	**25.9425**	0.038	0.1	ug/L	76	Standard
	Cd	111	52395.3	0.4	**25.4346**	0.241	0.9	mg/L	6	Standard
	Cd	114	129575.9	0.9	**25.7262**	0.071	0.3	ug/L	18	Standard
>	**In**	115	527384.1	0.8				ug/L	507261	Standard
	Sn	118	595.0	11.9	**-0.0055**	0.012	224.7	ug/L	683	Standard
	Sb	123	110230.2	2.2	**24.6989**	0.538	2.2	ug/L	446	Standard
	Ba	135	50026.8	0.7	**25.2997**	0.128	0.5	ug/L	28	Standard
	Ce	140	40.0	25.0				ug/L	33	Standard
>	**Tb**	159	818911.5	0.3				ug/L	800803	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	202774.2	0.8	**25.6253**	0.275	1.1	ug/L	13	Standard
	Tl	205	180453.3	0.7	**26.3379**	0.254	1.0	ug/L	13	Standard
	Pb	206	132149.2	1.1	**25.9889**	0.213	0.8	ug/L	226	Standard
	Pb	207	115159.0	0.9	**24.9410**	0.164	0.7	ug/L	204	Standard
	Pb	208	485832.8	0.3	**26.3134**	0.103	0.4	ug/L	852	Standard
	U	238	171207.5	0.5	**25.0637**	0.032	0.1	ug/L	13	Standard
>	**Bi**	209	465221.6	0.3				ug/L	449044	Standard

Sample ID: LCSS M4 WG574306-03
Report Date/Time: Wednesday, July 06, 2016 15:56:02
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	73.3	19.7	**0.0522**	0.017	32.6	mg/L	58	Standard
K	39	20.0	43.3	**-0.0690**	0.032	46.1	mg/L	27	Standard
Ca	43	20.0	0.0	**0.0504**	0.011	22.1	mg/L	20	Standard
Fe	54	135.8	35.4	**-0.0166**	0.036	215.7	mg/L	158	Standard
Fe	57	223.3	9.0	**0.0024**	0.060	2457.7	mg/L	267	Standard
> **Sc-1**	45	42504.5	0.8				mg/L	38815	Standard
Cl	35	74399.6	2.0				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1826.8	5.9				ug/L	1617	Standard
P	31	21475.2	2.0				ug/L	19244	Standard
S	34	3890.5	2.7				ug/L	3557	Standard
Sr	88	60.0	28.9				ug/L	65	Standard
C	12	73.3	7.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	23	Standard
Dy	164	19.2	54.6				mg/L	13	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	986.7	12.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.426	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.743	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSS M4 WG574306-03
Report Date/Time: Wednesday, July 06, 2016 15:56:02
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.967
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.603
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M4 WG574306-03
Report Date/Time: Wednesday, July 06, 2016 15:56:02
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129701
Sample Date/Time: Wednesday, July 06, 2016 15:56:56
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63174.8	1.0				ug/L	68501	Standard
	Be	9	473.3	11.9	**0.5854**	0.073	12.4	ug/L	8	Standard
	Al	27	12963863.6	1.0	**99.0412**	1.266	1.3	ug/L	1397	Standard
	Sc	45	46787.1	1.7				ug/L	38815	Standard
	Ti	47	2854.9	1.5	**7.7964**	0.128	1.6	ug/L	36	Standard
	V	51	64534.0	0.8	**8.2932**	0.120	1.4	ug/L	1284	Standard
	Cr	52	48530.6	0.9	**5.5538**	0.041	0.7	ug/L	6503	Standard
	Cr	53	5602.7	1.4	**5.5927**	0.038	0.7	ug/L	492	Standard
	Mn	55	1656218.8	1.2	**249.0852**	4.524	1.8	ug/L	841	Standard
	Co	59	22515.4	0.2	**3.4383**	0.034	1.0	ug/L	229	Standard
	Ni	60	14536.6	0.7	**7.8173**	0.023	0.3	ug/L	344	Standard
	Cu	65	15589.0	1.3	**8.5559**	0.041	0.5	ug/L	115	Standard
	Zn	66	14797.9	0.3	**13.3947**	0.133	1.0	ug/L	190	Standard
>	**Ge**	72	445500.3	0.9				ug/L	409858	Standard
	As	75	1680.8	1.7	**1.5905**	0.019	1.2	ug/L	-22	Standard
	Se	82	44.1	2.8	**0.3324**	0.009	2.6	ug/L	18	Standard
	Se-1	77	86.7	6.8	**0.3989**	0.076	19.1	ug/L	50	Standard
>	**Ga**	71	5177.6	2.2				mg/L	97	Standard
	Rb	85	61377.4	2.5				ug/L	25	Standard
	Y	89	546818.1	1.0				ug/L	376763	Standard
>	**Rh**	103	41.7	27.7				ug/L	20	Standard
	Mo	98	385.0	8.4	**0.2247**	0.014	6.4	ug/L	51	Standard
	Ag	107	262.3	9.1	**0.0634**	0.004	6.3	ug/L	76	Standard
	Cd	111	147.3	2.4	**0.1106**	0.002	2.1	mg/L	6	Standard
	Cd	114	389.3	18.3	**0.1143**	0.014	12.0	ug/L	18	Standard
>	**In**	115	529068.3	1.1				ug/L	507261	Standard
	Sn	118	523.3	19.7	**-0.0183**	0.019	102.0	ug/L	683	Standard
	Sb	123	1234.0	36.4	**0.2562**	0.103	40.2	ug/L	446	Standard
	Ba	135	251951.3	0.7	**126.9549**	1.383	1.1	ug/L	28	Standard
	Ce	140	741746.7	2.0				ug/L	33	Standard
>	**Tb**	159	829704.7	1.4				ug/L	800803	Standard
	Ho	165	14426.9	0.8				ug/L	10	Standard
	Tl	203	395.0	2.9	**0.0846**	0.002	2.0	ug/L	13	Standard
	Tl	205	333.3	8.8	**0.0924**	0.004	4.1	ug/L	13	Standard
	Pb	206	37568.5	0.8	**7.5872**	0.046	0.6	ug/L	226	Standard
	Pb	207	30719.8	0.7	**6.8349**	0.128	1.9	ug/L	204	Standard
	Pb	208	133956.4	0.3	**7.4538**	0.109	1.5	ug/L	852	Standard
	U	238	2766.3	1.8	**0.4579**	0.009	1.9	ug/L	13	Standard
>	**Bi**	209	452887.3	1.3				ug/L	449044	Standard

Sample ID: L1606129701
Report Date/Time: Wednesday, July 06, 2016 15:59:13
Page 1

Approved: July 07, 2016

Na	23	5.0	100.0	**13.8021**	22.785	165.1	mg/L	2	Standard
Mg	24	116.7	20.3	**0.0930**	0.029	30.7	mg/L	58	Standard
K	39	146.7	20.0	**0.3435**	0.099	28.9	mg/L	27	Standard
Ca	43	471.7	5.0	**27.1766**	1.103	4.1	mg/L	20	Standard
Fe	54	4043.0	2.7	**2.6886**	0.120	4.5	mg/L	158	Standard
Fe	57	1505.1	10.2	**3.5022**	0.490	14.0	mg/L	267	Standard
> **Sc-1**	45	46787.1	1.7				mg/L	38815	Standard
Cl	35	75827.3	1.6				ug/L	57611	Standard
Kr	83	3.3	69.3				ug/L	2	Standard
Br	81	2300.2	6.3				ug/L	1617	Standard
P	31	21613.7	1.2				ug/L	19244	Standard
S	34	4237.3	7.4				ug/L	3557	Standard
Sr	88	135.0	22.2				ug/L	65	Standard
C	12	83.3	6.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	36.7				mg/L	23	Standard
Dy	164	23454.8	2.1				mg/L	13	Standard
Ho-1	165	14426.9	0.8				mg/L	10	Standard
Er	166	12475.1	2.4				mg/L	13	Standard
I	127	30869.8	6.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.224	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.696	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129701
Report Date/Time: Wednesday, July 06, 2016 15:59:13
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.299
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.856
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129702
Sample Date/Time: Wednesday, July 06, 2016 16:00:08
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62448.5	2.1				ug/L	68501	Standard
	Be	9	608.3	3.9	**0.7548**	0.029	3.8	ug/L	8	Standard
	Al	27	6425419.7	0.6	**49.6924**	1.257	2.5	ug/L	1397	Standard
	Sc	45	46516.3	2.2				ug/L	38815	Standard
	Ti	47	2114.1	0.3	**5.7561**	0.071	1.2	ug/L	36	Standard
	V	51	99038.6	0.2	**12.7815**	0.178	1.4	ug/L	1284	Standard
	Cr	52	73702.5	0.2	**8.9021**	0.153	1.7	ug/L	6503	Standard
	Cr	53	8640.8	2.1	**8.8356**	0.138	1.6	ug/L	492	Standard
	Mn	55	3399995.6	0.6	**510.5494**	9.401	1.8	ug/L	841	Standard
	Co	59	39995.4	1.5	**6.0929**	0.144	2.4	ug/L	229	Standard
	Ni	60	19123.7	0.6	**10.3160**	0.152	1.5	ug/L	344	Standard
	Cu	65	22636.2	1.2	**12.4080**	0.116	0.9	ug/L	115	Standard
	Zn	66	34261.7	0.2	**31.1072**	0.396	1.3	ug/L	190	Standard
>	**Ge**	72	446311.5	1.4				ug/L	409858	Standard
	As	75	5487.0	1.7	**4.9603**	0.106	2.1	ug/L	-22	Standard
	Se	82	64.7	18.6	**0.5105**	0.101	19.7	ug/L	18	Standard
	Se-1	77	119.3	10.5	**0.8342**	0.188	22.6	ug/L	50	Standard
>	**Ga**	71	6746.5	3.9				mg/L	97	Standard
	Rb	85	67168.6	2.7				ug/L	25	Standard
	Y	89	576416.9	0.8				ug/L	376763	Standard
>	**Rh**	103	25.0	40.0				ug/L	20	Standard
	Mo	98	316.3	8.4	**0.1968**	0.010	5.1	ug/L	51	Standard
	Ag	107	622.3	4.9	**0.1183**	0.004	3.3	ug/L	76	Standard
	Cd	111	1170.1	2.9	**0.6028**	0.021	3.6	mg/L	6	Standard
	Cd	114	2831.4	7.2	**0.5947**	0.035	5.8	ug/L	18	Standard
>	**In**	115	530969.0	0.9				ug/L	507261	Standard
	Sn	118	826.7	11.4	**0.0343**	0.017	50.9	ug/L	683	Standard
	Sb	123	887.8	24.2	**0.1772**	0.047	26.5	ug/L	446	Standard
	Ba	135	307580.0	0.5	**154.4232**	1.212	0.8	ug/L	28	Standard
	Ce	140	898326.7	0.8				ug/L	33	Standard
>	**Tb**	159	824712.1	0.3				ug/L	800803	Standard
	Ho	165	16273.7	1.2				ug/L	10	Standard
	Tl	203	381.3	11.6	**0.0815**	0.006	6.8	ug/L	13	Standard
	Tl	205	301.7	12.4	**0.0866**	0.006	6.5	ug/L	13	Standard
	Pb	206	268899.5	0.4	**52.9720**	0.278	0.5	ug/L	226	Standard
	Pb	207	225053.4	0.2	**48.8212**	0.186	0.4	ug/L	204	Standard
	Pb	208	970125.3	0.5	**52.6267**	0.336	0.6	ug/L	852	Standard
	U	238	2932.0	0.9	**0.4718**	0.005	1.0	ug/L	13	Standard
>	**Bi**	209	464484.9	0.4				ug/L	449044	Standard

Sample ID: L1606129702
Report Date/Time: Wednesday, July 06, 2016 16:02:25
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.0199**	13.445	1318.3	mg/L	2	Standard
Mg	24	86.7	23.3	**0.0599**	0.025	41.5	mg/L	58	Standard
K	39	201.7	8.7	**0.5298**	0.070	13.2	mg/L	27	Standard
Ca	43	88.3	40.9	**4.1135**	2.328	56.6	mg/L	20	Standard
Fe	54	6704.1	3.0	**4.5654**	0.231	5.1	mg/L	158	Standard
Fe	57	1951.8	5.0	**4.7665**	0.192	4.0	mg/L	267	Standard
> **Sc-1**	45	46516.3	2.2				mg/L	38815	Standard
Cl	35	72128.6	1.7				ug/L	57611	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	3473.7	2.6				ug/L	1617	Standard
P	31	21530.3	0.6				ug/L	19244	Standard
S	34	4282.3	1.4				ug/L	3557	Standard
Sr	88	103.3	19.6				ug/L	65	Standard
C	12	130.0	30.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	24.0				mg/L	23	Standard
Dy	164	26856.5	1.1				mg/L	13	Standard
Ho-1	165	16273.7	1.2				mg/L	10	Standard
Er	166	14303.4	1.1				mg/L	13	Standard
I	127	19058.7	4.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.164	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.894	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129702
Report Date/Time: Wednesday, July 06, 2016 16:02:25
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.674
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129702
Report Date/Time: Wednesday, July 06, 2016 16:02:25
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129703
Sample Date/Time: Wednesday, July 06, 2016 16:03:19
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64073.5	1.5				ug/L	68501	Standard
	Be	9	488.3	11.8	**0.5945**	0.065	10.9	ug/L	8	Standard
	Al	27	15365624.4	1.2	**115.7621**	3.069	2.7	ug/L	1397	Standard
	Sc	45	47029.6	3.1				ug/L	38815	Standard
	Ti	47	3571.8	3.3	**9.7737**	0.346	3.5	ug/L	36	Standard
	V	51	87368.0	0.8	**11.2921**	0.054	0.5	ug/L	1284	Standard
	Cr	52	51636.8	0.5	**5.9777**	0.036	0.6	ug/L	6503	Standard
	Cr	53	5932.8	2.8	**5.9551**	0.175	2.9	ug/L	492	Standard
	Mn	55	2674680.4	0.3	**402.7958**	2.485	0.6	ug/L	841	Standard
	Co	59	24903.4	0.4	**3.8070**	0.028	0.7	ug/L	229	Standard
	Ni	60	15225.3	1.5	**8.2054**	0.092	1.1	ug/L	344	Standard
	Cu	65	11942.7	0.4	**6.5600**	0.017	0.3	ug/L	115	Standard
	Zn	66	18930.8	1.4	**17.1883**	0.221	1.3	ug/L	190	Standard
>	**Ge**	72	444933.7	0.4				ug/L	409858	Standard
	As	75	2651.5	1.9	**2.4550**	0.037	1.5	ug/L	-22	Standard
	Se	82	42.3	10.6	**0.3172**	0.041	12.8	ug/L	18	Standard
	Se-1	77	92.3	10.9	**0.4762**	0.134	28.1	ug/L	50	Standard
>	**Ga**	71	5626.0	1.8				mg/L	97	Standard
	Rb	85	70065.0	0.9				ug/L	25	Standard
	Y	89	547830.0	0.7				ug/L	376763	Standard
>	**Rh**	103	41.7	66.1				ug/L	20	Standard
	Mo	98	346.8	7.1	**0.2100**	0.010	4.9	ug/L	51	Standard
	Ag	107	260.7	7.0	**0.0633**	0.003	4.6	ug/L	76	Standard
	Cd	111	151.1	5.0	**0.1127**	0.004	3.5	mg/L	6	Standard
	Cd	114	305.5	8.0	**0.0980**	0.005	4.8	ug/L	18	Standard
>	**In**	115	526795.7	0.4				ug/L	507261	Standard
	Sn	118	728.4	17.9	**0.0180**	0.023	126.5	ug/L	683	Standard
	Sb	123	456.1	40.3	**0.0819**	0.041	49.8	ug/L	446	Standard
	Ba	135	321937.8	0.9	**162.9100**	2.079	1.3	ug/L	28	Standard
	Ce	140	745612.3	0.4				ug/L	33	Standard
>	**Tb**	159	836768.9	0.5				ug/L	800803	Standard
	Ho	165	13641.1	0.6				ug/L	10	Standard
	Tl	203	454.0	2.2	**0.0918**	0.001	1.6	ug/L	13	Standard
	Tl	205	421.7	1.8	**0.1052**	0.001	0.8	ug/L	13	Standard
	Pb	206	37397.8	1.0	**7.5039**	0.094	1.3	ug/L	226	Standard
	Pb	207	30975.0	1.9	**6.8467**	0.160	2.3	ug/L	204	Standard
	Pb	208	134337.6	0.8	**7.4262**	0.090	1.2	ug/L	852	Standard
	U	238	3398.4	2.4	**0.5496**	0.015	2.7	ug/L	13	Standard
>	**Bi**	209	455822.4	0.5				ug/L	449044	Standard

Sample ID: L1606129703
Report Date/Time: Wednesday, July 06, 2016 16:05:36
Page 1

Approved: July 07, 2016

Na	23	3.3	173.2	**5.7906**	25.242	435.9	mg/L	2	Standard
Mg	24	116.7	6.5	**0.0919**	0.005	5.1	mg/L	58	Standard
K	39	116.7	13.8	**0.2413**	0.042	17.4	mg/L	27	Standard
Ca	43	616.7	11.5	**35.8509**	5.371	15.0	mg/L	20	Standard
Fe	54	6215.4	1.8	**4.1752**	0.098	2.3	mg/L	158	Standard
Fe	57	2093.5	3.0	**5.1002**	0.085	1.7	mg/L	267	Standard
> **Sc-1**	45	47029.6	3.1				mg/L	38815	Standard
Cl	35	76435.7	0.6				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2476.9	7.5				ug/L	1617	Standard
P	31	21748.9	2.3				ug/L	19244	Standard
S	34	4344.0	5.1				ug/L	3557	Standard
Sr	88	190.0	16.0				ug/L	65	Standard
C	12	80.0	50.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	24.7				mg/L	23	Standard
Dy	164	22508.9	3.2				mg/L	13	Standard
Ho-1	165	13641.1	0.6				mg/L	10	Standard
Er	166	11941.4	2.7				mg/L	13	Standard
I	127	22788.8	3.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.536	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129703
Report Date/Time: Wednesday, July 06, 2016 16:05:36
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.851
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.510
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129703
Report Date/Time: Wednesday, July 06, 2016 16:05:36
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129704
Sample Date/Time: Wednesday, July 06, 2016 16:06:31
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63111.2	1.9				ug/L	68501	Standard
	Be	9	405.0	3.3	**0.5041**	0.025	4.9	ug/L	8	Standard
	Al	27	14440748.1	0.6	**110.4469**	1.680	1.5	ug/L	1397	Standard
	Sc	45	46800.5	2.4				ug/L	38815	Standard
	Ti	47	3445.7	2.3	**9.4186**	0.270	2.9	ug/L	36	Standard
	V	51	92403.7	0.4	**11.9391**	0.031	0.3	ug/L	1284	Standard
	Cr	52	56856.5	0.5	**6.6687**	0.062	0.9	ug/L	6503	Standard
	Cr	53	6406.4	1.9	**6.4568**	0.128	2.0	ug/L	492	Standard
	Mn	55	2848070.2	1.3	**428.4666**	4.579	1.1	ug/L	841	Standard
	Co	59	25663.7	0.9	**3.9191**	0.042	1.1	ug/L	229	Standard
	Ni	60	17112.0	0.7	**9.2328**	0.115	1.2	ug/L	344	Standard
	Cu	65	13470.0	0.7	**7.3933**	0.074	1.0	ug/L	115	Standard
	Zn	66	18281.4	1.3	**16.5792**	0.322	1.9	ug/L	190	Standard
>	**Ge**	72	445391.0	0.7				ug/L	409858	Standard
	As	75	2839.7	2.5	**2.6195**	0.053	2.0	ug/L	-22	Standard
	Se	82	42.5	11.2	**0.3192**	0.042	13.2	ug/L	18	Standard
	Se-1	77	89.7	5.6	**0.4395**	0.071	16.1	ug/L	50	Standard
>	**Ga**	71	6004.5	4.9				mg/L	97	Standard
	Rb	85	64888.7	1.6				ug/L	25	Standard
	Y	89	547330.6	1.7				ug/L	376763	Standard
>	**Rh**	103	36.7	34.3				ug/L	20	Standard
	Mo	98	863.5	1.4	**0.4161**	0.007	1.6	ug/L	51	Standard
	Ag	107	246.7	2.8	**0.0611**	0.001	2.1	ug/L	76	Standard
	Cd	111	146.5	7.6	**0.1104**	0.005	4.9	mg/L	6	Standard
	Cd	114	392.6	2.3	**0.1152**	0.003	2.4	ug/L	18	Standard
>	**In**	115	527277.1	1.4				ug/L	507261	Standard
	Sn	118	525.0	11.9	**-0.0179**	0.010	53.9	ug/L	683	Standard
	Sb	123	402.9	30.5	**0.0700**	0.028	39.4	ug/L	446	Standard
	Ba	135	399609.8	0.2	**202.0498**	3.263	1.6	ug/L	28	Standard
	Ce	140	769293.1	0.4				ug/L	33	Standard
>	**Tb**	159	836566.5	0.5				ug/L	800803	Standard
	Ho	165	13921.4	3.2				ug/L	10	Standard
	Tl	203	408.0	3.2	**0.0858**	0.002	2.1	ug/L	13	Standard
	Tl	205	323.3	16.7	**0.0906**	0.008	9.2	ug/L	13	Standard
	Pb	206	37067.0	0.2	**7.4216**	0.029	0.4	ug/L	226	Standard
	Pb	207	30343.0	0.2	**6.6925**	0.054	0.8	ug/L	204	Standard
	Pb	208	133022.6	0.7	**7.3378**	0.057	0.8	ug/L	852	Standard
	U	238	3191.3	1.0	**0.5176**	0.003	0.5	ug/L	13	Standard
>	**Bi**	209	456789.9	0.6				ug/L	449044	Standard

Sample ID: L1606129704
Report Date/Time: Wednesday, July 06, 2016 16:08:47
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**6.3700**	13.132	206.2	mg/L	2	Standard
Mg	24	128.3	14.8	**0.1061**	0.025	23.5	mg/L	58	Standard
K	39	143.3	10.7	**0.3315**	0.041	12.4	mg/L	27	Standard
Ca	43	511.7	6.9	**29.5725**	1.591	5.4	mg/L	20	Standard
Fe	54	6320.5	3.8	**4.2715**	0.264	6.2	mg/L	158	Standard
Fe	57	2060.1	4.0	**5.0347**	0.146	2.9	mg/L	267	Standard
Sc-1	45	46800.5	2.4				mg/L	38815	Standard
Cl	35	76096.0	1.2				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2130.2	8.0				ug/L	1617	Standard
P	31	21824.0	1.6				ug/L	19244	Standard
S	34	4499.0	2.5				ug/L	3557	Standard
Sr	88	190.0	22.5				ug/L	65	Standard
C	12	116.7	13.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	34.3				mg/L	23	Standard
Dy	164	23701.7	2.6				mg/L	13	Standard
Ho-1	165	13921.4	3.2				mg/L	10	Standard
Er	166	12548.5	3.2				mg/L	13	Standard
I	127	21098.0	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.132	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.670	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129704
Report Date/Time: Wednesday, July 06, 2016 16:08:47
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.946
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.725
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129704
Report Date/Time: Wednesday, July 06, 2016 16:08:47
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129705
Sample Date/Time: Wednesday, July 06, 2016 16:09:42
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62980.8	4.4				ug/L	68501	Standard
	Be	9	241.7	15.3	**0.3086**	0.039	12.6	ug/L	8	Standard
	Al	27	8184375.2	3.0	**62.7980**	3.036	4.8	ug/L	1397	Standard
	Sc	45	45461.4	1.7				ug/L	38815	Standard
	Ti	47	2327.2	1.1	**6.2933**	0.241	3.8	ug/L	36	Standard
	V	51	39700.9	1.0	**4.9997**	0.179	3.6	ug/L	1284	Standard
	Cr	52	37108.7	1.5	**3.9823**	0.167	4.2	ug/L	6503	Standard
	Cr	53	4053.9	1.9	**3.8931**	0.198	5.1	ug/L	492	Standard
	Mn	55	1570873.5	1.2	**234.1318**	8.981	3.8	ug/L	841	Standard
	Co	59	16607.1	2.1	**2.5154**	0.122	4.9	ug/L	229	Standard
	Ni	60	11198.5	1.8	**5.9319**	0.267	4.5	ug/L	344	Standard
	Cu	65	5955.8	0.8	**3.2313**	0.106	3.3	ug/L	115	Standard
	Zn	66	12788.4	0.9	**11.4529**	0.260	2.3	ug/L	190	Standard
>	**Ge**	72	449788.7	2.7				ug/L	409858	Standard
	As	75	1755.0	2.5	**1.6418**	0.024	1.5	ug/L	-22	Standard
	Se	82	35.2	7.0	**0.2524**	0.026	10.5	ug/L	18	Standard
	Se-1	77	82.3	13.7	**0.3325**	0.167	50.3	ug/L	50	Standard
>	**Ga**	71	3890.5	2.5				mg/L	97	Standard
	Rb	85	35301.1	1.9				ug/L	25	Standard
	Y	89	468000.1	2.2				ug/L	376763	Standard
>	**Rh**	103	28.3	27.0				ug/L	20	Standard
	Mo	98	787.1	2.4	**0.3831**	0.014	3.6	ug/L	51	Standard
	Ag	107	180.0	4.3	**0.0506**	0.001	1.2	ug/L	76	Standard
	Cd	111	90.5	11.3	**0.0829**	0.005	5.4	mg/L	6	Standard
	Cd	114	247.4	18.0	**0.0862**	0.010	11.5	ug/L	18	Standard
>	**In**	115	531650.1	2.4				ug/L	507261	Standard
	Sn	118	468.3	13.2	**-0.0284**	0.012	41.2	ug/L	683	Standard
	Sb	123	293.4	31.1	**0.0451**	0.021	46.7	ug/L	446	Standard
	Ba	135	101024.0	0.5	**50.6871**	1.476	2.9	ug/L	28	Standard
	Ce	140	396222.3	2.3				ug/L	33	Standard
>	**Tb**	159	820450.8	2.1				ug/L	800803	Standard
	Ho	165	7663.6	3.4				ug/L	10	Standard
	Tl	203	202.0	8.6	**0.0593**	0.002	3.7	ug/L	13	Standard
	Tl	205	163.3	23.4	**0.0667**	0.005	7.8	ug/L	13	Standard
	Pb	206	15664.1	0.4	**3.1305**	0.070	2.2	ug/L	226	Standard
	Pb	207	13014.6	1.2	**2.8667**	0.073	2.6	ug/L	204	Standard
	Pb	208	56294.6	0.6	**3.1020**	0.075	2.4	ug/L	852	Standard
	U	238	1239.1	1.5	**0.2268**	0.001	0.7	ug/L	13	Standard
>	**Bi**	209	457425.1	1.9				ug/L	449044	Standard

Sample ID: L1606129705
Report Date/Time: Wednesday, July 06, 2016 16:11:59
Page 1

Approved: July 07, 2016

Na	23	5.0	0.0	**14.5008**	0.406	2.8	mg/L	2	Standard
Mg	24	86.7	3.3	**0.0619**	0.005	8.0	mg/L	58	Standard
K	39	118.3	10.6	**0.2605**	0.036	13.8	mg/L	27	Standard
Ca	43	278.3	10.5	**15.9906**	1.553	9.7	mg/L	20	Standard
Fe	54	4712.4	4.0	**3.2496**	0.185	5.7	mg/L	158	Standard
Fe	57	1498.4	9.3	**3.5981**	0.364	10.1	mg/L	267	Standard
Sc-1	45	45461.4	1.7				mg/L	38815	Standard
Cl	35	74689.7	1.1				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2046.8	4.4				ug/L	1617	Standard
P	31	21545.3	1.7				ug/L	19244	Standard
S	34	4452.3	4.6				ug/L	3557	Standard
Sr	88	106.7	7.2				ug/L	65	Standard
C	12	86.7	6.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	23	Standard
Dy	164	12824.6	3.4				mg/L	13	Standard
Ho-1	165	7663.6	3.4				mg/L	10	Standard
Er	166	6424.7	4.2				mg/L	13	Standard
I	127	6124.6	5.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		91.941	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.743	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129705
Report Date/Time: Wednesday, July 06, 2016 16:11:59
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.808
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.866
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606129705
Report Date/Time: Wednesday, July 06, 2016 16:11:59
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129706
Sample Date/Time: Wednesday, July 06, 2016 16:13:18
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64657.7	2.5				ug/L	68501	Standard
	Be	9	596.7	3.8	**0.7167**	0.043	6.1	ug/L	8	Standard
	Al	27	18962129.8	1.5	**141.5551**	2.522	1.8	ug/L	1397	Standard
	Sc	45	48390.5	1.6				ug/L	38815	Standard
	Ti	47	5454.0	2.9	**14.7696**	0.651	4.4	ug/L	36	Standard
	V	51	114915.0	1.1	**14.7253**	0.322	2.2	ug/L	1284	Standard
	Cr	52	97543.3	1.1	**11.9723**	0.286	2.4	ug/L	6503	Standard
	Cr	53	11629.5	1.9	**11.9313**	0.316	2.7	ug/L	492	Standard
	Mn	55	2838609.2	0.2	**422.5630**	7.353	1.7	ug/L	841	Standard
	Co	59	46821.9	1.5	**7.0698**	0.102	1.4	ug/L	229	Standard
	Ni	60	31539.5	0.9	**16.9679**	0.340	2.0	ug/L	344	Standard
	Cu	65	17669.0	0.7	**9.6004**	0.216	2.2	ug/L	115	Standard
	Zn	66	32520.2	0.6	**29.2655**	0.447	1.5	ug/L	190	Standard
>	**Ge**	72	450193.7	1.6				ug/L	409858	Standard
	As	75	3232.5	2.7	**2.9388**	0.110	3.7	ug/L	-22	Standard
	Se	82	40.5	15.8	**0.2979**	0.061	20.4	ug/L	18	Standard
	Se-1	77	106.0	12.3	**0.6444**	0.195	30.3	ug/L	50	Standard
>	**Ga**	71	12046.5	0.5				mg/L	97	Standard
	Rb	85	121075.3	2.3				ug/L	25	Standard
	Y	89	581582.5	1.1				ug/L	376763	Standard
>	**Rh**	103	45.0	40.1				ug/L	20	Standard
	Mo	98	459.1	2.0	**0.2547**	0.001	0.5	ug/L	51	Standard
	Ag	107	359.0	2.9	**0.0785**	0.001	1.1	ug/L	76	Standard
	Cd	111	176.8	9.6	**0.1252**	0.009	7.3	mg/L	6	Standard
	Cd	114	436.3	8.6	**0.1240**	0.008	6.8	ug/L	18	Standard
>	**In**	115	527081.5	1.5				ug/L	507261	Standard
	Sn	118	510.0	17.0	**-0.0203**	0.016	79.6	ug/L	683	Standard
	Sb	123	349.7	39.3	**0.0582**	0.031	53.2	ug/L	446	Standard
	Ba	135	303281.6	0.5	**153.4065**	2.551	1.7	ug/L	28	Standard
	Ce	140	891716.1	1.3				ug/L	33	Standard
>	**Tb**	159	842437.6	1.7				ug/L	800803	Standard
	Ho	165	15568.0	0.8				ug/L	10	Standard
	Tl	203	681.3	6.5	**0.1212**	0.007	5.6	ug/L	13	Standard
	Tl	205	580.0	11.6	**0.1289**	0.011	8.5	ug/L	13	Standard
	Pb	206	40420.2	0.2	**8.1176**	0.115	1.4	ug/L	226	Standard
	Pb	207	33350.0	1.0	**7.3771**	0.048	0.7	ug/L	204	Standard
	Pb	208	144996.6	0.8	**8.0229**	0.180	2.2	ug/L	852	Standard
	U	238	3286.4	1.0	**0.5332**	0.008	1.6	ug/L	13	Standard
>	**Bi**	209	455484.6	1.5				ug/L	449044	Standard

Sample ID: L1606129706
Report Date/Time: Wednesday, July 06, 2016 16:15:34
Page 1

Approved: July 07, 2016

Na	23	6.7	43.3	**20.4143**	12.774	62.6	mg/L	2	Standard
Mg	24	121.7	22.6	**0.0937**	0.029	31.3	mg/L	58	Standard
K	39	271.7	9.4	**0.7277**	0.094	13.0	mg/L	27	Standard
Ca	43	496.7	3.1	**27.7114**	1.278	4.6	mg/L	20	Standard
Fe	54	12166.7	5.7	**8.0532**	0.562	7.0	mg/L	158	Standard
Fe	57	3530.4	5.6	**8.7932**	0.532	6.0	mg/L	267	Standard
> **Sc-1**	45	48390.5	1.6				mg/L	38815	Standard
Cl	35	75046.1	0.8				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2516.9	8.4				ug/L	1617	Standard
P	31	22914.0	1.9				ug/L	19244	Standard
S	34	4679.1	4.3				ug/L	3557	Standard
Sr	88	175.0	11.4				ug/L	65	Standard
C	12	103.3	11.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	61.9				mg/L	23	Standard
Dy	164	26276.7	2.8				mg/L	13	Standard
Ho-1	165	15568.0	0.8				mg/L	10	Standard
Er	166	14557.0	1.8				mg/L	13	Standard
I	127	10100.0	3.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.389	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.841	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129706
Report Date/Time: Wednesday, July 06, 2016 16:15:34
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.434
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129706
Report Date/Time: Wednesday, July 06, 2016 16:15:34
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129706PS WG574306-03
Sample Date/Time: Wednesday, July 06, 2016 16:16:29
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65638.6	1.3				ug/L	68501	Standard
	Be	9	47235.2	3.7	**54.3206**	1.379	2.5	ug/L	8	Standard
	Al	27	18835675.6	1.4	**138.4866**	2.016	1.5	ug/L	1397	Standard
	Sc	45	49333.5	1.1				ug/L	38815	Standard
	Ti	47	5414.0	2.5	**14.5933**	0.391	2.7	ug/L	36	Standard
	V	51	522594.2	1.1	**67.1805**	0.866	1.3	ug/L	1284	Standard
	Cr	52	505801.0	1.2	**65.6951**	0.946	1.4	ug/L	6503	Standard
	Cr	53	61240.2	0.9	**64.3307**	0.679	1.1	ug/L	492	Standard
	Mn	55	3170347.7	0.4	**469.8912**	2.616	0.6	ug/L	841	Standard
	Co	59	390409.0	1.3	**58.6580**	0.869	1.5	ug/L	229	Standard
	Ni	60	128704.0	1.0	**69.4198**	0.572	0.8	ug/L	344	Standard
	Cu	65	114667.3	0.7	**62.1001**	0.353	0.6	ug/L	115	Standard
	Zn	66	90999.1	0.5	**81.7384**	0.460	0.6	ug/L	190	Standard
>	Ge	72	452095.1	0.2				ug/L	409858	Standard
	As	75	63497.9	0.5	**55.6305**	0.152	0.3	ug/L	-22	Standard
	Se	82	6044.8	0.4	**51.8208**	0.084	0.2	ug/L	18	Standard
	Se-1	77	4081.5	2.1	**52.9750**	1.154	2.2	ug/L	50	Standard
>	Ga	71	12565.2	1.9				mg/L	97	Standard
	Rb	85	120846.7	0.6				ug/L	25	Standard
	Y	89	582495.4	1.4				ug/L	376763	Standard
>	Rh	103	46.7	6.2				ug/L	20	Standard
	Mo	98	465.3	6.4	**0.2542**	0.012	4.5	ug/L	51	Standard
	Ag	107	334602.4	0.8	**50.7827**	0.439	0.9	ug/L	76	Standard
	Cd	111	107601.5	0.9	**51.3814**	0.550	1.1	mg/L	6	Standard
	Cd	114	265146.9	0.4	**51.7884**	0.150	0.3	ug/L	18	Standard
>	In	115	535693.2	0.2				ug/L	507261	Standard
	Sn	118	681.7	4.0	**0.0078**	0.005	61.1	ug/L	683	Standard
	Sb	123	227133.0	2.2	**50.1244**	1.130	2.3	ug/L	446	Standard
	Ba	135	404136.5	0.0	**201.0985**	0.320	0.2	ug/L	28	Standard
	Ce	140	893510.7	1.3				ug/L	33	Standard
>	Tb	159	845372.4	0.6				ug/L	800803	Standard
	Ho	165	15911.7	2.3				ug/L	10	Standard
	Tl	203	408287.9	0.2	**51.8952**	0.240	0.5	ug/L	13	Standard
	Tl	205	364142.3	0.8	**53.4457**	0.113	0.2	ug/L	13	Standard
	Pb	206	300773.2	1.0	**59.5377**	0.256	0.4	ug/L	226	Standard
	Pb	207	260929.3	0.7	**56.8780**	0.098	0.2	ug/L	204	Standard
	Pb	208	1108705.4	0.8	**60.4375**	0.635	1.1	ug/L	852	Standard
	U	238	349519.1	1.2	**51.4517**	0.353	0.7	ug/L	13	Standard
>	Bi	209	462240.9	0.6				ug/L	449044	Standard

Sample ID: L1606129706PS WG574306-03
Report Date/Time: Wednesday, July 06, 2016 16:18:46
Page 1

Approved: July 07, 2016

Na	23	5.0	173.2	**12.6704**	37.158	293.3	mg/L	2	Standard
Mg	24	160.0	0.0	**0.1321**	0.002	1.4	mg/L	58	Standard
K	39	288.3	24.0	**0.7615**	0.209	27.5	mg/L	27	Standard
Ca	43	518.3	15.0	**28.3825**	4.388	15.5	mg/L	20	Standard
Fe	54	12155.2	2.2	**7.8853**	0.184	2.3	mg/L	158	Standard
Fe	57	3485.4	4.5	**8.4918**	0.357	4.2	mg/L	267	Standard
Sc-1	45	49333.5	1.1				mg/L	38815	Standard
Cl	35	74319.2	1.8				ug/L	57611	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	2610.2	11.1				ug/L	1617	Standard
P	31	22970.8	4.6				ug/L	19244	Standard
S	34	4464.0	3.1				ug/L	3557	Standard
Sr	88	186.7	5.6				ug/L	65	Standard
C	12	90.0	0.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	23	Standard
Dy	164	26019.7	0.4				mg/L	13	Standard
Ho-1	165	15911.7	2.3				mg/L	10	Standard
Er	166	14136.6	1.7				mg/L	13	Standard
I	127	10356.9	0.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.821	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.305	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129706PS WG574306-03
Report Date/Time: Wednesday, July 06, 2016 16:18:46
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.605
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.939
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129706PS WG574306-03
Report Date/Time: Wednesday, July 06, 2016 16:18:46
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129706SDL WG574306-04
Sample Date/Time: Wednesday, July 06, 2016 16:19:40
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59394.6	4.0				ug/L	68501	Standard
	Be	9	136.7	15.2	**0.1928**	0.021	11.0	ug/L	8	Standard
	Al	27	3625047.6	2.3	**29.4976**	0.752	2.5	ug/L	1397	Standard
	Sc	45	41548.6	2.0				ug/L	38815	Standard
	Ti	47	1013.7	1.7	**2.8782**	0.035	1.2	ug/L	36	Standard
	V	51	22627.7	0.9	**2.9504**	0.021	0.7	ug/L	1284	Standard
	Cr	52	22779.8	0.8	**2.2518**	0.032	1.4	ug/L	6503	Standard
	Cr	53	2320.2	8.0	**2.1856**	0.208	9.5	ug/L	492	Standard
	Mn	55	561370.1	1.9	**88.2489**	1.740	2.0	ug/L	841	Standard
	Co	59	8994.3	1.2	**1.4399**	0.020	1.4	ug/L	229	Standard
	Ni	60	6379.0	0.4	**3.5032**	0.010	0.3	ug/L	344	Standard
	Cu	65	3582.1	2.8	**2.0468**	0.068	3.3	ug/L	115	Standard
	Zn	66	7592.9	3.0	**7.1367**	0.210	2.9	ug/L	190	Standard
>	**Ge**	72	425871.9	0.5				ug/L	409858	Standard
	As	75	602.1	4.6	**0.6579**	0.027	4.1	ug/L	-22	Standard
	Se	82	22.0	4.8	**0.1488**	0.010	7.0	ug/L	18	Standard
	Se-1	77	64.7	19.5	**0.1443**	0.172	119.0	ug/L	50	Standard
>	**Ga**	71	2455.2	8.8				mg/L	97	Standard
	Rb	85	23403.1	1.2				ug/L	25	Standard
	Y	89	404683.9	1.4				ug/L	376763	Standard
>	**Rh**	103	18.3	83.3				ug/L	20	Standard
	Mo	98	98.4	1.8	**0.1127**	0.001	0.7	ug/L	51	Standard
	Ag	107	188.3	8.0	**0.0536**	0.003	4.8	ug/L	76	Standard
	Cd	111	50.1	14.7	**0.0649**	0.004	5.9	mg/L	6	Standard
	Cd	114	129.9	32.1	**0.0644**	0.009	13.3	ug/L	18	Standard
>	**In**	115	502656.9	0.5				ug/L	507261	Standard
	Sn	118	251.7	4.1	**-0.0637**	0.002	2.7	ug/L	683	Standard
	Sb	123	1461.3	35.9	**0.3234**	0.124	38.2	ug/L	446	Standard
	Ba	135	59210.5	0.9	**31.4134**	0.327	1.0	ug/L	28	Standard
	Ce	140	176180.2	1.5				ug/L	33	Standard
>	**Tb**	159	789797.5	0.7				ug/L	800803	Standard
	Ho	165	3095.3	2.0				ug/L	10	Standard
	Tl	203	197.3	15.5	**0.0592**	0.004	6.7	ug/L	13	Standard
	Tl	205	206.7	20.6	**0.0739**	0.007	8.8	ug/L	13	Standard
	Pb	206	8175.2	1.2	**1.6680**	0.016	1.0	ug/L	226	Standard
	Pb	207	6752.8	0.9	**1.5198**	0.017	1.1	ug/L	204	Standard
	Pb	208	29344.5	0.8	**1.6527**	0.018	1.1	ug/L	852	Standard
	U	238	683.3	7.1	**0.1464**	0.007	4.8	ug/L	13	Standard
>	**Bi**	209	447412.8	0.4				ug/L	449044	Standard

Sample ID: L1606129706SDL WG574306-04
Report Date/Time: Wednesday, July 06, 2016 16:21:57
Page 1

Approved: July 07, 2016

Na	23	3.3	173.2	**8.0243**	29.110	362.8	mg/L	2	Standard
Mg	24	58.3	51.7	**0.0354**	0.038	106.4	mg/L	58	Standard
K	39	88.3	23.6	**0.1879**	0.082	43.7	mg/L	27	Standard
Ca	43	123.3	25.7	**7.1346**	2.357	33.0	mg/L	20	Standard
Fe	54	2352.8	8.6	**1.7214**	0.183	10.7	mg/L	158	Standard
Fe	57	870.0	5.7	**2.0416**	0.207	10.1	mg/L	267	Standard
> **Sc-1**	45	41548.6	2.0				mg/L	38815	Standard
Cl	35	69353.0	0.5				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1813.4	2.8				ug/L	1617	Standard
P	31	9801.5	0.5				ug/L	19244	Standard
S	34	4442.3	5.0				ug/L	3557	Standard
Sr	88	86.7	17.6				ug/L	65	Standard
C	12	30.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	5101.7	4.2				mg/L	13	Standard
Ho-1	165	3095.3	2.0				mg/L	10	Standard
Er	166	2906.9	10.0				mg/L	13	Standard
I	127	9299.5	6.4				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		86.706	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.907	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606129706SDL WG574306-04
Report Date/Time: Wednesday, July 06, 2016 16:21:57
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.092
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.637
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129706SDL WG574306-04
Report Date/Time: Wednesday, July 06, 2016 16:21:57
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 16:22:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60746.5	0.9				ug/L	68501	Standard
	Be	9	45232.5	3.1	**56.2087**	1.203	2.1	ug/L	8	Standard
	Al	27	7025646.2	1.4	**55.8398**	1.243	2.2	ug/L	1397	Standard
	Sc	45	43885.1	1.6				ug/L	38815	Standard
	Ti	47	39346.4	1.8	**105.0322**	1.452	1.4	ug/L	36	Standard
	V	51	399771.6	1.8	**50.7770**	0.685	1.3	ug/L	1284	Standard
	Cr	52	408680.4	1.5	**52.2946**	0.501	1.0	ug/L	6503	Standard
	Cr	53	49651.2	1.7	**51.4861**	0.632	1.2	ug/L	492	Standard
	Mn	55	365429.9	1.0	**53.4684**	0.344	0.6	ug/L	841	Standard
	Co	59	342619.4	1.5	**50.8981**	0.508	1.0	ug/L	229	Standard
	Ni	60	97635.3	1.3	**52.0312**	0.392	0.8	ug/L	344	Standard
	Cu	65	96633.6	1.5	**51.7429**	0.498	1.0	ug/L	115	Standard
	Zn	66	58073.1	0.4	**51.5362**	0.092	0.2	ug/L	190	Standard
>	Ge	72	457224.4	0.5				ug/L	409858	Standard
	As	75	58758.4	1.3	**50.9081**	0.396	0.8	ug/L	-22	Standard
	Se	82	5908.8	1.4	**50.0836**	0.538	1.1	ug/L	18	Standard
	Se-1	77	4046.2	1.7	**51.9099**	0.667	1.3	ug/L	50	Standard
>	Ga	71	71.7	35.8				mg/L	97	Standard
	Rb	85	925.0	5.2				ug/L	25	Standard
	Y	89	386855.1	1.1				ug/L	376763	Standard
>	Rh	103	26.7	39.0				ug/L	20	Standard
	Mo	98	260548.6	1.7	**101.5059**	1.231	1.2	ug/L	51	Standard
	Ag	107	333857.6	0.8	**50.2422**	0.230	0.5	ug/L	76	Standard
	Cd	111	106896.1	1.3	**50.6138**	0.586	1.2	mg/L	6	Standard
	Cd	114	261895.3	0.9	**50.7223**	0.238	0.5	ug/L	18	Standard
>	In	115	540248.5	0.5				ug/L	507261	Standard
	Sn	118	287622.8	1.0	**49.2241**	0.242	0.5	ug/L	683	Standard
	Sb	123	234354.1	0.2	**51.2826**	0.225	0.4	ug/L	446	Standard
	Ba	135	100660.9	0.4	**49.6785**	0.054	0.1	ug/L	28	Standard
	Ce	140	903.4	31.1				ug/L	33	Standard
>	Tb	159	825556.3	1.2				ug/L	800803	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	403211.3	0.9	**51.3846**	0.184	0.4	ug/L	13	Standard
	Tl	205	358156.0	1.6	**52.7071**	0.732	1.4	ug/L	13	Standard
	Pb	206	253695.6	0.3	**50.3526**	0.142	0.3	ug/L	226	Standard
	Pb	207	230829.7	0.2	**50.4514**	0.278	0.6	ug/L	204	Standard
	Pb	208	973141.8	0.3	**53.1876**	0.234	0.4	ug/L	852	Standard
	U	238	345863.7	0.5	**51.0501**	0.177	0.3	ug/L	13	Standard
>	Bi	209	461018.5	0.6				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 16:25:10
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3902.2	4.8	**4.6351**	0.229	4.9	mg/L	58	Standard
K	39	1138.4	5.1	**3.8705**	0.145	3.7	mg/L	27	Standard
Ca	43	88.3	21.4	**4.4183**	1.316	29.8	mg/L	20	Standard
Fe	54	6708.1	2.0	**4.8466**	0.111	2.3	mg/L	158	Standard
Fe	57	1900.1	10.0	**4.9466**	0.629	12.7	mg/L	267	Standard
Sc-1	45	43885.1	1.6				mg/L	38815	Standard
Cl	35	75193.5	0.6				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2086.8	6.4				ug/L	1617	Standard
P	31	23875.5	3.4				ug/L	19244	Standard
S	34	4587.4	2.6				ug/L	3557	Standard
Sr	88	76.7	13.6				ug/L	65	Standard
C	12	56.7	66.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	15.5	75.3				mg/L	13	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	11913.0	0.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	112.417		
Al	27	111.680		
Sc	45			
Ti	47	105.032		
V	51	101.554		
Cr	52	104.589		
Cr	53			
Mn	55	106.937		
Co	59	101.796		
Ni	60	104.062		
Cu	65	103.486		
Zn	66	103.072		
Ge	72		111.557	
As	75	101.816		
Se	82	100.167		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 16:25:10
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	101.506		
Ag	107	100.484		
Cd	111	101.228		
Cd	114			
In	115		106.503	
Sn	118	98.448		
Sb	123	102.565		
Ba	135	99.357		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.769		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.375		
U	238	102.100		
Bi	209		102.667	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 16:25:10
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 16:26:05
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59652.3	2.7				ug/L	68501	Standard
	Be	9	23.3	32.7	**0.0490**	0.010	20.4	ug/L	8	Standard
	Al	27	2736.9	29.7	**0.0571**	0.006	10.5	ug/L	1397	Standard
	Sc	45	42310.7	3.3				ug/L	38815	Standard
	Ti	47	47.7	12.8	**0.1017**	0.018	17.3	ug/L	36	Standard
	V	51	1321.9	6.0	**0.0271**	0.012	43.3	ug/L	1284	Standard
	Cr	52	7227.1	0.7	**0.0231**	0.007	30.2	ug/L	6503	Standard
	Cr	53	390.0	9.0	**-0.0040**	0.039	981.7	ug/L	492	Standard
	Mn	55	829.7	10.8	**0.0277**	0.014	49.4	ug/L	841	Standard
	Co	59	226.7	8.5	**0.0397**	0.003	7.1	ug/L	229	Standard
	Ni	60	355.7	6.2	**0.0355**	0.010	29.2	ug/L	344	Standard
	Cu	65	127.3	6.1	**0.0561**	0.005	8.3	ug/L	115	Standard
	Zn	66	147.3	6.4	**0.0198**	0.007	37.3	ug/L	190	Standard
>	**Ge**	72	449813.6	0.9				ug/L	409858	Standard
	As	75	-43.7	96.3	**0.0603**	0.037	61.7	ug/L	-22	Standard
	Se	82	20.9	21.2	**0.1285**	0.037	28.5	ug/L	18	Standard
	Se-1	77	65.3	19.3	**0.1056**	0.167	158.4	ug/L	50	Standard
>	**Ga**	71	53.3	32.9				mg/L	97	Standard
	Rb	85	36.7	31.5				ug/L	25	Standard
	Y	89	387520.9	1.9				ug/L	376763	Standard
>	**Rh**	103	31.7	36.5				ug/L	20	Standard
	Mo	98	158.1	15.1	**0.1336**	0.009	6.9	ug/L	51	Standard
	Ag	107	129.3	17.4	**0.0427**	0.003	7.9	ug/L	76	Standard
	Cd	111	12.7	34.3	**0.0454**	0.002	4.6	mg/L	6	Standard
	Cd	114	30.1	98.8	**0.0432**	0.006	13.3	ug/L	18	Standard
>	**In**	115	535496.2	0.5				ug/L	507261	Standard
	Sn	118	930.0	12.9	**0.0509**	0.021	42.1	ug/L	683	Standard
	Sb	123	953.8	32.5	**0.1905**	0.069	36.3	ug/L	446	Standard
	Ba	135	46.3	44.9	**0.0388**	0.010	26.4	ug/L	28	Standard
	Ce	140	301.7	26.9				ug/L	33	Standard
>	**Tb**	159	813211.4	0.3				ug/L	800803	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	60.0	30.9	**0.0409**	0.002	5.7	ug/L	13	Standard
	Tl	205	63.3	19.9	**0.0518**	0.002	3.6	ug/L	13	Standard
	Pb	206	249.0	7.2	**0.0449**	0.004	8.0	ug/L	226	Standard
	Pb	207	210.3	18.0	**0.0445**	0.008	18.6	ug/L	204	Standard
	Pb	208	921.7	7.5	**0.0500**	0.004	7.6	ug/L	852	Standard
	U	238	50.7	31.7	**0.0500**	0.002	4.7	ug/L	13	Standard
>	**Bi**	209	465283.4	0.2				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 16:28:22
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.1598**	14.935	9348.2	mg/L	2	Standard
Mg	24	43.3	63.5	**0.0158**	0.036	224.9	mg/L	58	Standard
K	39	35.0	28.6	**-0.0142**	0.035	248.6	mg/L	27	Standard
Ca	43	31.7	39.7	**0.8179**	0.767	93.7	mg/L	20	Standard
Fe	54	157.8	13.1	**0.0007**	0.012	1779.7	mg/L	158	Standard
Fe	57	258.3	17.6	**0.1106**	0.114	103.0	mg/L	267	Standard
> **Sc-1**	45	42310.7	3.3				mg/L	38815	Standard
Cl	35	73706.2	0.7				ug/L	57611	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1970.1	7.7				ug/L	1617	Standard
P	31	23151.0	1.4				ug/L	19244	Standard
S	34	4444.0	2.1				ug/L	3557	Standard
Sr	88	86.7	14.5				ug/L	65	Standard
C	12	40.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	9.5	105.0				mg/L	13	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	9379.6	1.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.749	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 16:28:22
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.566
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.616
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 16:28:22
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129707 WG574306-01
Sample Date/Time: Wednesday, July 06, 2016 16:29:17
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62286.1	0.5				ug/L	68501	Standard
	Be	9	590.0	8.1	**0.7344**	0.059	8.0	ug/L	8	Standard
	Al	27	5802855.8	2.1	**44.9798**	0.730	1.6	ug/L	1397	Standard
	Sc	45	47460.9	0.8				ug/L	38815	Standard
	Ti	47	2622.6	0.7	**6.9832**	0.015	0.2	ug/L	36	Standard
	V	51	118742.6	1.7	**14.9984**	0.176	1.2	ug/L	1284	Standard
	Cr	52	68916.1	1.6	**8.0526**	0.088	1.1	ug/L	6503	Standard
	Cr	53	7815.4	3.9	**7.7623**	0.350	4.5	ug/L	492	Standard
	Mn	55	3441228.5	0.4	**504.9305**	4.973	1.0	ug/L	841	Standard
	Co	59	38475.8	1.4	**5.7274**	0.052	0.9	ug/L	229	Standard
	Ni	60	19435.1	0.7	**10.2433**	0.008	0.1	ug/L	344	Standard
	Cu	65	70101.8	0.8	**37.5778**	0.219	0.6	ug/L	115	Standard
	Zn	66	89509.6	0.3	**79.5911**	0.747	0.9	ug/L	190	Standard
>	**Ge**	72	456693.8	0.8				ug/L	409858	Standard
	As	75	4972.9	0.2	**4.4043**	0.033	0.8	ug/L	-22	Standard
	Se	82	91.2	4.0	**0.7235**	0.025	3.5	ug/L	18	Standard
	Se-1	77	143.3	10.9	**1.1097**	0.212	19.1	ug/L	50	Standard
>	**Ga**	71	7243.4	0.8				mg/L	97	Standard
	Rb	85	78332.0	0.4				ug/L	25	Standard
	Y	89	577179.6	1.5				ug/L	376763	Standard
>	**Rh**	103	28.3	71.3				ug/L	20	Standard
	Mo	98	515.5	2.9	**0.2739**	0.006	2.0	ug/L	51	Standard
	Ag	107	799.7	1.9	**0.1444**	0.002	1.1	ug/L	76	Standard
	Cd	111	871.4	1.4	**0.4552**	0.009	2.0	mg/L	6	Standard
	Cd	114	2093.9	5.3	**0.4460**	0.018	4.1	ug/L	18	Standard
>	**In**	115	535671.5	0.9				ug/L	507261	Standard
	Sn	118	976.7	8.8	**0.0588**	0.014	23.2	ug/L	683	Standard
	Sb	123	802.4	23.2	**0.1566**	0.040	25.4	ug/L	446	Standard
	Ba	135	402037.3	0.8	**200.0633**	0.694	0.3	ug/L	28	Standard
	Ce	140	877863.7	0.2				ug/L	33	Standard
>	**Tb**	159	837773.6	0.3				ug/L	800803	Standard
	Ho	165	15416.2	0.4				ug/L	10	Standard
	Tl	203	410.0	8.3	**0.0849**	0.004	5.1	ug/L	13	Standard
	Tl	205	346.7	13.4	**0.0929**	0.007	7.3	ug/L	13	Standard
	Pb	206	205127.3	1.0	**40.2103**	0.531	1.3	ug/L	226	Standard
	Pb	207	170744.1	1.2	**36.8573**	0.439	1.2	ug/L	204	Standard
	Pb	208	743612.6	0.6	**40.1400**	0.046	0.1	ug/L	852	Standard
	U	238	2929.6	1.6	**0.4694**	0.010	2.0	ug/L	13	Standard
>	**Bi**	209	466785.1	0.7				ug/L	449044	Standard

Sample ID: L1606129707 WG574306-01
Report Date/Time: Wednesday, July 06, 2016 16:31:34
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	75.0	43.7	**0.0448**	0.037	81.9	mg/L	58	Standard
K	39	176.7	14.5	**0.4343**	0.086	19.8	mg/L	27	Standard
Ca	43	93.3	17.2	**4.2717**	0.936	21.9	mg/L	20	Standard
Fe	54	7751.6	1.4	**5.1861**	0.045	0.9	mg/L	158	Standard
Fe	57	2096.8	4.7	**5.0575**	0.302	6.0	mg/L	267	Standard
> **Sc-1**	45	47460.9	0.8				mg/L	38815	Standard
Cl	35	71723.4	0.6				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	3453.7	11.2				ug/L	1617	Standard
P	31	22111.1	2.8				ug/L	19244	Standard
S	34	4340.6	3.7				ug/L	3557	Standard
Sr	88	108.3	18.7				ug/L	65	Standard
C	12	240.0	42.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	66.1				mg/L	23	Standard
Dy	164	25701.8	3.3				mg/L	13	Standard
Ho-1	165	15416.2	0.4				mg/L	10	Standard
Er	166	14290.1	3.2				mg/L	13	Standard
I	127	14562.0	5.1				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		90.927	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.427	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606129707 WG574306-01
Report Date/Time: Wednesday, July 06, 2016 16:31:34
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.601
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.951
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129707 WG574306-01
Report Date/Time: Wednesday, July 06, 2016 16:31:34
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129708S WG574306-04
Sample Date/Time: Wednesday, July 06, 2016 16:32:29
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65139.8	3.2				ug/L	68501	Standard
	Be	9	23027.5	2.6	**26.7153**	1.021	3.8	ug/L	8	Standard
	Al	27	19735456.9	0.7	**146.2945**	4.400	3.0	ug/L	1397	Standard
	Sc	45	50831.8	1.5				ug/L	38815	Standard
	Ti	47	7097.0	1.6	**19.2848**	0.355	1.8	ug/L	36	Standard
	V	51	396965.1	2.0	**51.3808**	0.553	1.1	ug/L	1284	Standard
	Cr	52	346805.3	1.3	**45.0983**	0.535	1.2	ug/L	6503	Standard
	Cr	53	42561.4	1.9	**44.9217**	0.536	1.2	ug/L	492	Standard
	Mn	55	6042160.1	0.9	**902.5000**	12.755	1.4	ug/L	841	Standard
	Co	59	253173.7	1.6	**38.3278**	0.245	0.6	ug/L	229	Standard
	Ni	60	99179.6	0.7	**53.8687**	0.256	0.5	ug/L	344	Standard
	Cu	65	82472.5	0.7	**45.0035**	0.499	1.1	ug/L	115	Standard
	Zn	66	93214.5	0.6	**84.3712**	0.399	0.5	ug/L	190	Standard
>	**Ge**	72	448680.5	1.0				ug/L	409858	Standard
	As	75	30784.9	0.5	**27.2279**	0.215	0.8	ug/L	-22	Standard
	Se	82	2057.5	0.8	**17.7407**	0.303	1.7	ug/L	18	Standard
	Se-1	77	1452.1	0.9	**18.5033**	0.080	0.4	ug/L	50	Standard
>	**Ga**	71	22316.4	1.0				mg/L	97	Standard
	Rb	85	222447.8	1.1				ug/L	25	Standard
	Y	89	643588.6	0.9				ug/L	376763	Standard
>	**Rh**	103	50.0	60.8				ug/L	20	Standard
	Mo	98	517.5	2.0	**0.2780**	0.005	1.8	ug/L	51	Standard
	Ag	107	156492.7	0.3	**24.1422**	0.180	0.7	ug/L	76	Standard
	Cd	111	51764.0	0.6	**25.1322**	0.102	0.4	mg/L	6	Standard
	Cd	114	125131.9	1.0	**24.8510**	0.352	1.4	ug/L	18	Standard
>	**In**	115	527283.7	0.4				ug/L	507261	Standard
	Sn	118	791.7	15.9	**0.0290**	0.022	74.9	ug/L	683	Standard
	Sb	123	3550.1	4.8	**0.7758**	0.036	4.7	ug/L	446	Standard
	Ba	135	543933.7	1.1	**274.9734**	2.917	1.1	ug/L	28	Standard
	Ce	140	1333014.6	0.2				ug/L	33	Standard
>	**Tb**	159	846765.5	0.7				ug/L	800803	Standard
	Ho	165	21213.2	1.0				ug/L	10	Standard
	Tl	203	192947.1	0.4	**24.8377**	0.074	0.3	ug/L	13	Standard
	Tl	205	170482.1	0.3	**25.3468**	0.072	0.3	ug/L	13	Standard
	Pb	206	246709.2	1.1	**49.4262**	0.596	1.2	ug/L	226	Standard
	Pb	207	210661.0	1.7	**46.4760**	0.864	1.9	ug/L	204	Standard
	Pb	208	904086.0	0.3	**49.8775**	0.217	0.4	ug/L	852	Standard
	U	238	170509.8	1.1	**25.4257**	0.301	1.2	ug/L	13	Standard
>	**Bi**	209	456722.4	0.1				ug/L	449044	Standard

Sample ID: L1606129708S WG574306-04
Report Date/Time: Wednesday, July 06, 2016 16:34:46
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	125.0	14.4	**0.0910**	0.020	22.1	mg/L	58	Standard
K	39	506.7	4.1	**1.4005**	0.060	4.3	mg/L	27	Standard
Ca	43	278.3	16.7	**14.1761**	2.506	17.7	mg/L	20	Standard
Fe	54	22365.1	4.7	**14.1739**	0.605	4.3	mg/L	158	Standard
Fe	57	5997.9	3.3	**14.6419**	0.543	3.7	mg/L	267	Standard
Sc-1	45	50831.8	1.5				mg/L	38815	Standard
Cl	35	71146.0	0.3				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2550.2	3.4				ug/L	1617	Standard
P	31	21758.9	0.6				ug/L	19244	Standard
S	34	4350.6	3.0				ug/L	3557	Standard
Sr	88	115.0	13.0				ug/L	65	Standard
C	12	76.7	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	72.6				mg/L	23	Standard
Dy	164	36109.1	2.3				mg/L	13	Standard
Ho-1	165	21213.2	1.0				mg/L	10	Standard
Er	166	19612.7	2.0				mg/L	13	Standard
I	127	14929.0	5.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.093	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.472	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129708S WG574306-04
Report Date/Time: Wednesday, July 06, 2016 16:34:46
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.947
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.710
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129708S WG574306-04
Report Date/Time: Wednesday, July 06, 2016 16:34:46
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129709SD WG574306-05
Sample Date/Time: Wednesday, July 06, 2016 16:35:40
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62165.6	0.8				ug/L	68501	Standard
	Be	9	22977.4	1.3	**27.9141**	0.157	0.6	ug/L	8	Standard
	Al	27	5977445.6	0.9	**46.4267**	0.626	1.3	ug/L	1397	Standard
	Sc	45	46502.9	1.1				ug/L	38815	Standard
	Ti	47	4422.6	1.5	**11.7578**	0.201	1.7	ug/L	36	Standard
	V	51	293762.5	0.4	**37.1989**	0.125	0.3	ug/L	1284	Standard
	Cr	52	242440.6	0.2	**30.5796**	0.135	0.4	ug/L	6503	Standard
	Cr	53	29553.8	1.4	**30.4146**	0.403	1.3	ug/L	492	Standard
	Mn	55	1745341.1	1.0	**255.2154**	2.554	1.0	ug/L	841	Standard
	Co	59	200410.1	0.8	**29.7146**	0.215	0.7	ug/L	229	Standard
	Ni	60	64660.7	0.2	**34.3358**	0.159	0.5	ug/L	344	Standard
	Cu	65	77163.7	1.0	**41.2321**	0.418	1.0	ug/L	115	Standard
	Zn	66	63624.0	0.3	**56.3574**	0.253	0.4	ug/L	190	Standard
>	**Ge**	72	458159.9	0.2				ug/L	409858	Standard
	As	75	34584.2	0.5	**29.9440**	0.087	0.3	ug/L	-22	Standard
	Se	82	2480.9	2.2	**20.9556**	0.422	2.0	ug/L	18	Standard
	Se-1	77	1708.8	1.4	**21.4388**	0.252	1.2	ug/L	50	Standard
>	**Ga**	71	6708.2	4.2				mg/L	97	Standard
	Rb	85	76939.9	2.2				ug/L	25	Standard
	Y	89	570101.8	2.0				ug/L	376763	Standard
>	**Rh**	103	36.7	51.6				ug/L	20	Standard
	Mo	98	447.6	4.3	**0.2470**	0.005	2.1	ug/L	51	Standard
	Ag	107	160361.2	0.4	**24.3127**	0.260	1.1	ug/L	76	Standard
	Cd	111	52812.1	0.4	**25.1997**	0.264	1.0	mg/L	6	Standard
	Cd	114	128280.5	1.6	**25.0410**	0.737	2.9	ug/L	18	Standard
>	**In**	115	536567.6	1.4				ug/L	507261	Standard
	Sn	118	1265.1	9.3	**0.1086**	0.023	21.5	ug/L	683	Standard
	Sb	123	19496.0	0.7	**4.2771**	0.044	1.0	ug/L	446	Standard
	Ba	135	268259.3	0.0	**133.2908**	1.869	1.4	ug/L	28	Standard
	Ce	140	797112.1	1.2				ug/L	33	Standard
>	**Tb**	159	844790.9	0.3				ug/L	800803	Standard
	Ho	165	14488.6	0.9				ug/L	10	Standard
	Tl	203	189672.5	0.4	**23.9754**	0.103	0.4	ug/L	13	Standard
	Tl	205	168670.4	1.0	**24.6251**	0.301	1.2	ug/L	13	Standard
	Pb	206	211717.6	0.5	**41.6489**	0.491	1.2	ug/L	226	Standard
	Pb	207	180603.7	0.8	**39.1231**	0.361	0.9	ug/L	204	Standard
	Pb	208	773838.1	0.2	**41.9198**	0.337	0.8	ug/L	852	Standard
	U	238	167844.2	0.7	**24.5765**	0.189	0.8	ug/L	13	Standard
>	**Bi**	209	465149.6	0.7				ug/L	449044	Standard

Sample ID: L1606129709SD WG574306-05
Report Date/Time: Wednesday, July 06, 2016 16:37:57
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	81.7	7.1	**0.0539**	0.007	12.4	mg/L	58	Standard
K	39	186.7	7.7	**0.4794**	0.049	10.3	mg/L	27	Standard
Ca	43	85.0	17.6	**3.8866**	0.950	24.4	mg/L	20	Standard
Fe	54	6828.4	0.4	**4.6510**	0.070	1.5	mg/L	158	Standard
Fe	57	1968.5	1.7	**4.8161**	0.074	1.5	mg/L	267	Standard
> **Sc-1**	45	46502.9	1.1				mg/L	38815	Standard
Cl	35	69530.5	0.8				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	2346.8	1.8				ug/L	1617	Standard
P	31	22379.9	1.8				ug/L	19244	Standard
S	34	4130.6	6.2				ug/L	3557	Standard
Sr	88	100.0	13.2				ug/L	65	Standard
C	12	93.3	22.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	53.9				mg/L	23	Standard
Dy	164	23262.7	2.3				mg/L	13	Standard
Ho-1	165	14488.6	0.9				mg/L	10	Standard
Er	166	13002.2	3.7				mg/L	13	Standard
I	127	6032.9	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.751	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.785	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129709SD WG574306-05
Report Date/Time: Wednesday, July 06, 2016 16:37:57
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.778
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.587
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129709SD WG574306-05
Report Date/Time: Wednesday, July 06, 2016 16:37:57
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129710
Sample Date/Time: Wednesday, July 06, 2016 16:38:52
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61658.5	1.1				ug/L	68501	Standard
	Be	9	316.7	10.7	**0.4069**	0.038	9.5	ug/L	8	Standard
	Al	27	11438871.0	0.8	**89.5399**	0.292	0.3	ug/L	1397	Standard
	Sc	45	47305.4	2.4				ug/L	38815	Standard
	Ti	47	2888.9	1.5	**7.7475**	0.158	2.0	ug/L	36	Standard
	V	51	65037.6	1.0	**8.2058**	0.107	1.3	ug/L	1284	Standard
	Cr	52	41695.6	0.6	**4.5400**	0.052	1.1	ug/L	6503	Standard
	Cr	53	4632.4	3.3	**4.4625**	0.170	3.8	ug/L	492	Standard
	Mn	55	3373933.1	1.4	**498.3465**	6.643	1.3	ug/L	841	Standard
	Co	59	22272.7	1.1	**3.3401**	0.042	1.2	ug/L	229	Standard
	Ni	60	13505.0	1.3	**7.1185**	0.133	1.9	ug/L	344	Standard
	Cu	65	8779.5	1.7	**4.7263**	0.092	1.9	ug/L	115	Standard
	Zn	66	14455.2	1.4	**12.8447**	0.245	1.9	ug/L	190	Standard
>	**Ge**	72	453660.4	0.7				ug/L	409858	Standard
	As	75	2368.1	1.0	**2.1628**	0.015	0.7	ug/L	-22	Standard
	Se	82	36.2	24.0	**0.2586**	0.077	29.7	ug/L	18	Standard
	Se-1	77	83.0	13.0	**0.3306**	0.149	44.9	ug/L	50	Standard
>	**Ga**	71	4710.7	2.3				mg/L	97	Standard
	Rb	85	48778.4	1.7				ug/L	25	Standard
	Y	89	519310.4	2.7				ug/L	376763	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	355.6	6.9	**0.2104**	0.009	4.3	ug/L	51	Standard
	Ag	107	213.0	13.9	**0.0552**	0.004	7.9	ug/L	76	Standard
	Cd	111	153.3	5.2	**0.1121**	0.004	3.3	mg/L	6	Standard
	Cd	114	308.2	15.1	**0.0972**	0.009	9.1	ug/L	18	Standard
>	**In**	115	538651.6	0.3				ug/L	507261	Standard
	Sn	118	1185.0	5.3	**0.0938**	0.011	12.2	ug/L	683	Standard
	Sb	123	504.2	33.5	**0.0904**	0.037	41.4	ug/L	446	Standard
	Ba	135	168151.0	0.7	**83.2208**	0.364	0.4	ug/L	28	Standard
	Ce	140	555700.4	0.4				ug/L	33	Standard
>	**Tb**	159	826502.3	1.1				ug/L	800803	Standard
	Ho	165	10727.1	1.4				ug/L	10	Standard
	Tl	203	298.3	5.8	**0.0715**	0.002	3.3	ug/L	13	Standard
	Tl	205	258.3	24.5	**0.0806**	0.009	11.5	ug/L	13	Standard
	Pb	206	25876.7	1.2	**5.1492**	0.086	1.7	ug/L	226	Standard
	Pb	207	21503.6	1.1	**4.7143**	0.066	1.4	ug/L	204	Standard
	Pb	208	94054.5	0.9	**5.1574**	0.064	1.2	ug/L	852	Standard
	U	238	2598.9	1.6	**0.4272**	0.008	1.8	ug/L	13	Standard
>	**Bi**	209	459527.8	0.4				ug/L	449044	Standard

Sample ID: L1606129710
Report Date/Time: Wednesday, July 06, 2016 16:41:09
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.1163**	13.278	1189.5	mg/L	2	Standard
Mg	24	101.7	15.0	**0.0744**	0.014	19.5	mg/L	58	Standard
K	39	90.0	28.9	**0.1540**	0.093	60.5	mg/L	27	Standard
Ca	43	258.3	9.5	**14.1618**	1.744	12.3	mg/L	20	Standard
Fe	54	5464.4	2.8	**3.6325**	0.017	0.5	mg/L	158	Standard
Fe	57	1618.4	2.2	**3.7627**	0.073	1.9	mg/L	267	Standard
> **Sc-1**	45	47305.4	2.4				mg/L	38815	Standard
Cl	35	72933.2	1.9				ug/L	57611	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	2110.1	3.1				ug/L	1617	Standard
P	31	21301.6	3.6				ug/L	19244	Standard
S	34	4172.2	7.4				ug/L	3557	Standard
Sr	88	111.7	9.3				ug/L	65	Standard
C	12	113.3	51.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	43.3				mg/L	23	Standard
Dy	164	17720.6	1.8				mg/L	13	Standard
Ho-1	165	10727.1	1.4				mg/L	10	Standard
Er	166	9609.7	2.4				mg/L	13	Standard
I	127	5551.0	2.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.011	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.687	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129710
Report Date/Time: Wednesday, July 06, 2016 16:41:09
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.188
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.335
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606129710
Report Date/Time: Wednesday, July 06, 2016 16:41:09
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129711
Sample Date/Time: Wednesday, July 06, 2016 16:42:03
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61509.7	3.8				ug/L	68501	Standard
	Be	9	421.7	11.9	**0.5360**	0.044	8.3	ug/L	8	Standard
	Al	27	10093377.0	0.1	**79.2770**	2.936	3.7	ug/L	1397	Standard
	Sc	45	47273.6	1.6				ug/L	38815	Standard
	Ti	47	2244.8	4.6	**5.9961**	0.328	5.5	ug/L	36	Standard
	V	51	64690.3	3.2	**8.1339**	0.229	2.8	ug/L	1284	Standard
	Cr	52	41467.0	1.1	**4.4925**	0.049	1.1	ug/L	6503	Standard
	Cr	53	4380.6	4.0	**4.1841**	0.234	5.6	ug/L	492	Standard
	Mn	55	1967568.3	1.0	**289.6495**	0.452	0.2	ug/L	841	Standard
	Co	59	21596.7	2.2	**3.2283**	0.050	1.5	ug/L	229	Standard
	Ni	60	13599.1	0.4	**7.1457**	0.060	0.8	ug/L	344	Standard
	Cu	65	11548.7	0.5	**6.2013**	0.045	0.7	ug/L	115	Standard
	Zn	66	32738.0	1.3	**29.1384**	0.231	0.8	ug/L	190	Standard
>	**Ge**	72	455117.1	1.2				ug/L	409858	Standard
	As	75	1894.3	1.2	**1.7445**	0.001	0.1	ug/L	-22	Standard
	Se	82	34.2	19.1	**0.2399**	0.054	22.3	ug/L	18	Standard
	Se-1	77	89.7	7.9	**0.4132**	0.082	19.9	ug/L	50	Standard
>	**Ga**	71	4574.0	4.3				mg/L	97	Standard
	Rb	85	42773.6	1.6				ug/L	25	Standard
	Y	89	524642.6	2.0				ug/L	376763	Standard
>	**Rh**	103	38.3	41.9				ug/L	20	Standard
	Mo	98	280.4	4.0	**0.1822**	0.004	2.2	ug/L	51	Standard
	Ag	107	290.0	6.2	**0.0673**	0.003	3.9	ug/L	76	Standard
	Cd	111	303.1	4.7	**0.1849**	0.008	4.1	mg/L	6	Standard
	Cd	114	713.7	10.5	**0.1775**	0.016	8.7	ug/L	18	Standard
>	**In**	115	532671.1	0.6				ug/L	507261	Standard
	Sn	118	545.0	4.2	**-0.0153**	0.004	24.1	ug/L	683	Standard
	Sb	123	363.0	29.1	**0.0603**	0.024	39.6	ug/L	446	Standard
	Ba	135	135054.2	0.2	**67.5967**	0.490	0.7	ug/L	28	Standard
	Ce	140	604058.3	1.0				ug/L	33	Standard
>	**Tb**	159	835508.5	0.3				ug/L	800803	Standard
	Ho	165	11549.4	3.1				ug/L	10	Standard
	Tl	203	238.3	7.6	**0.0638**	0.002	3.4	ug/L	13	Standard
	Tl	205	201.7	7.6	**0.0723**	0.002	3.1	ug/L	13	Standard
	Pb	206	26825.1	0.3	**5.3397**	0.042	0.8	ug/L	226	Standard
	Pb	207	22029.7	1.2	**4.8311**	0.044	0.9	ug/L	204	Standard
	Pb	208	95852.2	1.1	**5.2576**	0.032	0.6	ug/L	852	Standard
	U	238	1621.4	2.0	**0.2826**	0.005	1.9	ug/L	13	Standard
>	**Bi**	209	459368.4	0.5				ug/L	449044	Standard

Sample ID: L1606129711
Report Date/Time: Wednesday, July 06, 2016 16:44:20
Page 1

Approved: July 07, 2016

Na	23	3.3	173.2	**5.9880**	25.583	427.2	mg/L	2	Standard
Mg	24	116.7	6.5	**0.0913**	0.008	8.9	mg/L	58	Standard
K	39	153.3	5.0	**0.3603**	0.032	8.8	mg/L	27	Standard
Ca	43	206.7	11.4	**11.0522**	1.238	11.2	mg/L	20	Standard
Fe	54	4403.2	3.1	**2.9074**	0.141	4.9	mg/L	158	Standard
Fe	57	1453.4	5.7	**3.3122**	0.223	6.7	mg/L	267	Standard
> **Sc-1**	45	47273.6	1.6				mg/L	38815	Standard
Cl	35	73026.9	1.1				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2326.8	3.5				ug/L	1617	Standard
P	31	21620.4	3.9				ug/L	19244	Standard
S	34	4283.9	3.4				ug/L	3557	Standard
Sr	88	91.7	25.2				ug/L	65	Standard
C	12	113.3	22.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	74.2				mg/L	23	Standard
Dy	164	18872.5	1.8				mg/L	13	Standard
Ho-1	165	11549.4	3.1				mg/L	10	Standard
Er	166	10086.7	2.7				mg/L	13	Standard
I	127	5506.0	1.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.794	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.043	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129711
Report Date/Time: Wednesday, July 06, 2016 16:44:20
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.009
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.299
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606129711
Report Date/Time: Wednesday, July 06, 2016 16:44:20
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129712
Sample Date/Time: Wednesday, July 06, 2016 16:45:15
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62284.5	2.8				ug/L	68501	Standard
	Be	9	626.7	11.2	**0.7777**	0.063	8.1	ug/L	8	Standard
	Al	27	11858606.3	0.2	**91.9349**	2.408	2.6	ug/L	1397	Standard
	Sc	45	48037.8	3.3				ug/L	38815	Standard
	Ti	47	2357.2	0.2	**6.3474**	0.073	1.2	ug/L	36	Standard
	V	51	114692.2	1.3	**14.6525**	0.138	0.9	ug/L	1284	Standard
	Cr	52	59864.0	0.2	**6.9640**	0.100	1.4	ug/L	6503	Standard
	Cr	53	6913.2	4.7	**6.8996**	0.276	4.0	ug/L	492	Standard
	Mn	55	2523368.3	1.4	**374.5058**	1.280	0.3	ug/L	841	Standard
	Co	59	39749.1	0.9	**5.9856**	0.007	0.1	ug/L	229	Standard
	Ni	60	20932.8	0.7	**11.1753**	0.077	0.7	ug/L	344	Standard
	Cu	65	16367.5	0.7	**8.8658**	0.064	0.7	ug/L	115	Standard
	Zn	66	22188.6	1.2	**19.8731**	0.049	0.2	ug/L	190	Standard
>	**Ge**	72	451446.6	1.0				ug/L	409858	Standard
	As	75	4917.0	1.1	**4.4055**	0.055	1.3	ug/L	-22	Standard
	Se	82	53.2	6.3	**0.4054**	0.024	6.0	ug/L	18	Standard
	Se-1	77	117.0	9.6	**0.7828**	0.135	17.2	ug/L	50	Standard
>	**Ga**	71	7840.4	2.3				mg/L	97	Standard
	Rb	85	81734.9	2.0				ug/L	25	Standard
	Y	89	590877.9	1.6				ug/L	376763	Standard
>	**Rh**	103	21.7	74.2				ug/L	20	Standard
	Mo	98	218.0	6.9	**0.1585**	0.006	3.5	ug/L	51	Standard
	Ag	107	377.3	2.6	**0.0813**	0.001	1.8	ug/L	76	Standard
	Cd	111	204.3	7.9	**0.1384**	0.008	5.9	mg/L	6	Standard
	Cd	114	447.0	7.9	**0.1260**	0.007	5.6	ug/L	18	Standard
>	**In**	115	527105.5	0.6				ug/L	507261	Standard
	Sn	118	735.0	14.8	**0.0192**	0.020	103.9	ug/L	683	Standard
	Sb	123	336.6	35.8	**0.0552**	0.027	49.6	ug/L	446	Standard
	Ba	135	247544.5	0.6	**125.1941**	1.145	0.9	ug/L	28	Standard
	Ce	140	1027087.5	0.1				ug/L	33	Standard
>	**Tb**	159	835383.6	1.9				ug/L	800803	Standard
	Ho	165	16989.5	1.8				ug/L	10	Standard
	Tl	203	540.3	4.1	**0.1026**	0.003	2.8	ug/L	13	Standard
	Tl	205	516.7	13.6	**0.1190**	0.010	8.4	ug/L	13	Standard
	Pb	206	50080.3	1.0	**10.0053**	0.065	0.7	ug/L	226	Standard
	Pb	207	41332.3	1.0	**9.0954**	0.067	0.7	ug/L	204	Standard
	Pb	208	181531.5	0.5	**9.9907**	0.076	0.8	ug/L	852	Standard
	U	238	3604.8	1.5	**0.5780**	0.011	1.8	ug/L	13	Standard
>	**Bi**	209	457841.6	0.5				ug/L	449044	Standard

Sample ID: L1606129712
Report Date/Time: Wednesday, July 06, 2016 16:47:31
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.4320**	12.732	889.1	mg/L	2	Standard
Mg	24	88.3	18.2	**0.0586**	0.020	33.9	mg/L	58	Standard
K	39	208.3	5.5	**0.5297**	0.044	8.2	mg/L	27	Standard
Ca	43	198.3	3.9	**10.3900**	0.688	6.6	mg/L	20	Standard
Fe	54	10183.2	1.4	**6.7705**	0.172	2.5	mg/L	158	Standard
Fe	57	2888.6	4.0	**7.1262**	0.052	0.7	mg/L	267	Standard
Sc-1	45	48037.8	3.3				mg/L	38815	Standard
Cl	35	71743.5	1.2				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2346.8	1.7				ug/L	1617	Standard
P	31	22069.4	3.2				ug/L	19244	Standard
S	34	4567.4	1.3				ug/L	3557	Standard
Sr	88	123.3	24.8				ug/L	65	Standard
C	12	66.7	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	21.7				mg/L	23	Standard
Dy	164	28481.1	1.9				mg/L	13	Standard
Ho-1	165	16989.5	1.8				mg/L	10	Standard
Er	166	15664.8	7.4				mg/L	13	Standard
I	127	16987.9	6.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		90.925	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.147	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129712
Report Date/Time: Wednesday, July 06, 2016 16:47:31
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.912
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.959
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129712
Report Date/Time: Wednesday, July 06, 2016 16:47:31
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129713
Sample Date/Time: Wednesday, July 06, 2016 16:48:26
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62081.9	1.3				ug/L	68501	Standard
	Be	9	588.3	10.8	**0.7344**	0.072	9.8	ug/L	8	Standard
	Al	27	6441179.9	0.6	**50.0948**	0.588	1.2	ug/L	1397	Standard
	Sc	45	46996.1	0.3				ug/L	38815	Standard
	Ti	47	4702.4	3.0	**12.5186**	0.330	2.6	ug/L	36	Standard
	V	51	126562.6	0.7	**15.9663**	0.222	1.4	ug/L	1284	Standard
	Cr	52	86983.0	1.8	**10.3879**	0.247	2.4	ug/L	6503	Standard
	Cr	53	10093.4	2.8	**10.1257**	0.297	2.9	ug/L	492	Standard
	Mn	55	2761878.1	1.1	**404.4912**	8.928	2.2	ug/L	841	Standard
	Co	59	32009.4	1.1	**4.7569**	0.065	1.4	ug/L	229	Standard
	Ni	60	18023.4	1.2	**9.4702**	0.190	2.0	ug/L	344	Standard
	Cu	65	36669.7	2.1	**19.6142**	0.495	2.5	ug/L	115	Standard
	Zn	66	64542.2	1.0	**57.2489**	0.809	1.4	ug/L	190	Standard
>	**Ge**	72	457586.6	1.3				ug/L	409858	Standard
	As	75	5767.8	0.7	**5.0828**	0.039	0.8	ug/L	-22	Standard
	Se	82	73.1	7.8	**0.5680**	0.044	7.8	ug/L	18	Standard
	Se-1	77	124.7	9.4	**0.8629**	0.154	17.9	ug/L	50	Standard
>	**Ga**	71	6903.2	3.8				mg/L	97	Standard
	Rb	85	75785.8	2.6				ug/L	25	Standard
	Y	89	556387.3	2.0				ug/L	376763	Standard
>	**Rh**	103	41.7	18.3				ug/L	20	Standard
	Mo	98	811.4	4.0	**0.3881**	0.011	2.9	ug/L	51	Standard
	Ag	107	1541.1	3.9	**0.2555**	0.010	4.0	ug/L	76	Standard
	Cd	111	1561.6	1.3	**0.7799**	0.014	1.8	mg/L	6	Standard
	Cd	114	3866.0	5.7	**0.7876**	0.050	6.4	ug/L	18	Standard
>	**In**	115	539012.8	1.0				ug/L	507261	Standard
	Sn	118	1225.0	9.7	**0.1005**	0.021	20.4	ug/L	683	Standard
	Sb	123	611.7	14.4	**0.1138**	0.019	16.8	ug/L	446	Standard
	Ba	135	285012.1	0.7	**140.9593**	1.156	0.8	ug/L	28	Standard
	Ce	140	825628.1	1.9				ug/L	33	Standard
>	**Tb**	159	838546.8	0.7				ug/L	800803	Standard
	Ho	165	13836.3	2.6				ug/L	10	Standard
	Tl	203	403.0	17.3	**0.0841**	0.008	9.8	ug/L	13	Standard
	Tl	205	401.7	15.2	**0.1009**	0.008	8.4	ug/L	13	Standard
	Pb	206	251264.0	0.4	**49.3384**	0.673	1.4	ug/L	226	Standard
	Pb	207	212218.9	0.6	**45.8892**	0.707	1.5	ug/L	204	Standard
	Pb	208	913725.3	0.8	**49.4054**	0.501	1.0	ug/L	852	Standard
	U	238	2752.6	2.3	**0.4442**	0.005	1.2	ug/L	13	Standard
>	**Bi**	209	466022.1	1.0				ug/L	449044	Standard

Sample ID: L1606129713
Report Date/Time: Wednesday, July 06, 2016 16:50:43
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	115.0	15.7	**0.0903**	0.020	22.6	mg/L	58	Standard
K	39	278.3	12.6	**0.7745**	0.115	14.8	mg/L	27	Standard
Ca	43	168.3	19.8	**8.8314**	1.980	22.4	mg/L	20	Standard
Fe	54	7282.0	1.6	**4.9140**	0.076	1.6	mg/L	158	Standard
Fe	57	2116.8	11.8	**5.1693**	0.700	13.5	mg/L	267	Standard
> **Sc-1**	45	46996.1	0.3				mg/L	38815	Standard
Cl	35	71568.0	0.9				ug/L	57611	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	3147.0	7.8				ug/L	1617	Standard
P	31	22919.0	2.6				ug/L	19244	Standard
S	34	4474.0	1.6				ug/L	3557	Standard
Sr	88	126.7	22.4				ug/L	65	Standard
C	12	176.7	13.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	760.0	23.3				mg/L	23	Standard
Dy	164	23022.3	1.6				mg/L	13	Standard
Ho-1	165	13836.3	2.6				mg/L	10	Standard
Er	166	12234.9	4.5				mg/L	13	Standard
I	127	16075.2	5.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.629	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.645	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129713
Report Date/Time: Wednesday, July 06, 2016 16:50:43
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.260
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.781
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129713
Report Date/Time: Wednesday, July 06, 2016 16:50:43
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129714
Sample Date/Time: Wednesday, July 06, 2016 16:51:37
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64485.3	1.7				ug/L	68501	Standard
	Be	9	643.3	12.9	**0.7736**	0.109	14.1	ug/L	8	Standard
	Al	27	16270383.4	0.8	**121.7751**	1.183	1.0	ug/L	1397	Standard
	Sc	45	49480.7	0.7				ug/L	38815	Standard
	Ti	47	7625.3	2.0	**20.4654**	0.223	1.1	ug/L	36	Standard
	V	51	152406.4	1.4	**19.3979**	0.334	1.7	ug/L	1284	Standard
	Cr	52	112572.0	1.3	**13.8245**	0.074	0.5	ug/L	6503	Standard
	Cr	53	13571.1	1.6	**13.8632**	0.302	2.2	ug/L	492	Standard
	Mn	55	3345367.4	0.6	**493.5133**	5.656	1.1	ug/L	841	Standard
	Co	59	51653.3	1.9	**7.7286**	0.128	1.7	ug/L	229	Standard
	Ni	60	34920.2	0.7	**18.6317**	0.182	1.0	ug/L	344	Standard
	Cu	65	19504.5	1.4	**10.5020**	0.112	1.1	ug/L	115	Standard
	Zn	66	37327.3	0.6	**33.3035**	0.247	0.7	ug/L	190	Standard
>	**Ge**	72	454248.1	0.9				ug/L	409858	Standard
	As	75	5161.1	0.9	**4.5913**	0.045	1.0	ug/L	-22	Standard
	Se	82	41.2	27.1	**0.3007**	0.097	32.2	ug/L	18	Standard
	Se-1	77	113.0	5.3	**0.7222**	0.092	12.7	ug/L	50	Standard
>	**Ga**	71	14894.0	0.4				mg/L	97	Standard
	Rb	85	120504.0	0.8				ug/L	25	Standard
	Y	89	585057.3	0.9				ug/L	376763	Standard
>	**Rh**	103	31.7	32.9				ug/L	20	Standard
	Mo	98	934.2	6.2	**0.4430**	0.022	5.1	ug/L	51	Standard
	Ag	107	442.7	30.5	**0.0912**	0.021	23.1	ug/L	76	Standard
	Cd	111	177.9	31.7	**0.1254**	0.028	22.0	mg/L	6	Standard
	Cd	114	466.6	45.4	**0.1297**	0.042	32.6	ug/L	18	Standard
>	**In**	115	528910.4	1.0				ug/L	507261	Standard
	Sn	118	500.0	36.8	**-0.0224**	0.033	146.1	ug/L	683	Standard
	Sb	123	298.8	51.6	**0.0464**	0.035	74.6	ug/L	446	Standard
	Ba	135	213503.8	0.4	**107.6130**	0.595	0.6	ug/L	28	Standard
	Ce	140	982054.3	1.4				ug/L	33	Standard
>	**Tb**	159	834048.4	0.7				ug/L	800803	Standard
	Ho	165	16108.6	2.7				ug/L	10	Standard
	Tl	203	791.0	23.1	**0.1346**	0.024	17.7	ug/L	13	Standard
	Tl	205	631.7	12.1	**0.1359**	0.012	8.6	ug/L	13	Standard
	Pb	206	43066.1	0.7	**8.5804**	0.077	0.9	ug/L	226	Standard
	Pb	207	35289.1	1.2	**7.7451**	0.149	1.9	ug/L	204	Standard
	Pb	208	154795.7	0.5	**8.4963**	0.061	0.7	ug/L	852	Standard
	U	238	3394.7	2.0	**0.5454**	0.012	2.2	ug/L	13	Standard
>	**Bi**	209	459082.4	0.7				ug/L	449044	Standard

Sample ID: L1606129714
Report Date/Time: Wednesday, July 06, 2016 16:53:54
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	123.3	22.3	**0.0927**	0.029	31.6	mg/L	58	Standard
K	39	355.0	20.7	**0.9694**	0.239	24.7	mg/L	27	Standard
Ca	43	303.3	12.6	**16.0400**	2.304	14.4	mg/L	20	Standard
Fe	54	17039.6	2.1	**11.0689**	0.263	2.4	mg/L	158	Standard
Fe	57	4547.3	1.5	**11.2525**	0.203	1.8	mg/L	267	Standard
Sc-1	45	49480.7	0.7				mg/L	38815	Standard
Cl	35	71902.9	0.6				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2206.8	5.3				ug/L	1617	Standard
P	31	21572.0	0.5				ug/L	19244	Standard
S	34	4592.4	3.0				ug/L	3557	Standard
Sr	88	108.3	17.5				ug/L	65	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	26618.0	1.8				mg/L	13	Standard
Ho-1	165	16108.6	2.7				mg/L	10	Standard
Er	166	14123.2	0.7				mg/L	13	Standard
I	127	4255.6	6.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.831	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129714
Report Date/Time: Wednesday, July 06, 2016 16:53:54
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.268
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.236
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129714
Report Date/Time: Wednesday, July 06, 2016 16:53:54
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129715
Sample Date/Time: Wednesday, July 06, 2016 16:54:49
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62682.8	1.8				ug/L	68501	Standard
	Be	9	538.3	13.5	**0.6670**	0.078	11.7	ug/L	8	Standard
	Al	27	8483295.7	2.3	**65.3309**	1.261	1.9	ug/L	1397	Standard
	Sc	45	48000.9	1.9				ug/L	38815	Standard
	Ti	47	2220.8	1.9	**5.8672**	0.116	2.0	ug/L	36	Standard
	V	51	95825.1	1.7	**11.9905**	0.267	2.2	ug/L	1284	Standard
	Cr	52	53975.7	1.5	**6.0545**	0.065	1.1	ug/L	6503	Standard
	Cr	53	6017.9	2.1	**5.8357**	0.149	2.6	ug/L	492	Standard
	Mn	55	1814367.2	1.0	**264.2710**	0.941	0.4	ug/L	841	Standard
	Co	59	32503.5	1.0	**4.8051**	0.055	1.1	ug/L	229	Standard
	Ni	60	18362.5	1.6	**9.5997**	0.169	1.8	ug/L	344	Standard
	Cu	65	21373.4	0.6	**11.3667**	0.082	0.7	ug/L	115	Standard
	Zn	66	29953.3	1.6	**26.3688**	0.448	1.7	ug/L	190	Standard
>	**Ge**	72	459957.3	0.6				ug/L	409858	Standard
	As	75	3998.2	0.8	**3.5358**	0.038	1.1	ug/L	-22	Standard
	Se	82	59.0	6.1	**0.4460**	0.030	6.7	ug/L	18	Standard
	Se-1	77	107.7	2.3	**0.6343**	0.031	4.9	ug/L	50	Standard
>	**Ga**	71	6808.2	1.8				mg/L	97	Standard
	Rb	85	56838.1	3.0				ug/L	25	Standard
	Y	89	574047.0	2.1				ug/L	376763	Standard
>	**Rh**	103	26.7	10.8				ug/L	20	Standard
	Mo	98	310.7	1.4	**0.1928**	0.003	1.7	ug/L	51	Standard
	Ag	107	486.0	4.2	**0.0964**	0.004	4.0	ug/L	76	Standard
	Cd	111	347.1	4.1	**0.2040**	0.007	3.5	mg/L	6	Standard
	Cd	114	922.3	3.8	**0.2163**	0.008	3.8	ug/L	18	Standard
>	**In**	115	538984.3	1.4				ug/L	507261	Standard
	Sn	118	660.0	8.6	**0.0033**	0.008	248.6	ug/L	683	Standard
	Sb	123	305.2	20.5	**0.0465**	0.013	27.9	ug/L	446	Standard
	Ba	135	215332.4	0.7	**106.5103**	0.948	0.9	ug/L	28	Standard
	Ce	140	882731.2	1.5				ug/L	33	Standard
>	**Tb**	159	841647.7	1.0				ug/L	800803	Standard
	Ho	165	15134.2	4.0				ug/L	10	Standard
	Tl	203	293.0	7.2	**0.0705**	0.003	4.2	ug/L	13	Standard
	Tl	205	273.3	21.4	**0.0825**	0.009	10.8	ug/L	13	Standard
	Pb	206	60251.9	1.3	**11.8850**	0.195	1.6	ug/L	226	Standard
	Pb	207	49982.3	0.2	**10.8591**	0.117	1.1	ug/L	204	Standard
	Pb	208	217106.5	0.8	**11.7955**	0.057	0.5	ug/L	852	Standard
	U	238	2425.2	0.7	**0.3982**	0.003	0.8	ug/L	13	Standard
>	**Bi**	209	463776.3	0.9				ug/L	449044	Standard

Sample ID: L1606129715
Report Date/Time: Wednesday, July 06, 2016 16:57:06
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.4158**	12.760	901.2	mg/L	2	Standard
Mg	24	95.0	27.9	**0.0656**	0.028	43.3	mg/L	58	Standard
K	39	300.0	6.0	**0.8260**	0.072	8.7	mg/L	27	Standard
Ca	43	156.7	22.4	**7.9262**	2.009	25.4	mg/L	20	Standard
Fe	54	6886.5	4.2	**4.5396**	0.113	2.5	mg/L	158	Standard
Fe	57	2083.5	2.4	**4.9568**	0.163	3.3	mg/L	267	Standard
Sc-1	45	48000.9	1.9				mg/L	38815	Standard
Cl	35	71939.7	0.8				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2656.9	9.5				ug/L	1617	Standard
P	31	21992.6	2.8				ug/L	19244	Standard
S	34	4395.6	4.3				ug/L	3557	Standard
Sr	88	90.0	11.1				ug/L	65	Standard
C	12	133.3	15.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	57.3				mg/L	23	Standard
Dy	164	26288.0	3.3				mg/L	13	Standard
Ho-1	165	15134.2	4.0				mg/L	10	Standard
Er	166	13973.1	2.6				mg/L	13	Standard
I	127	9231.2	7.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.506	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.224	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129715
Report Date/Time: Wednesday, July 06, 2016 16:57:06
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.254
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.281
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129716
Sample Date/Time: Wednesday, July 06, 2016 16:58:00
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63096.1	1.7				ug/L	68501	Standard
	Be	9	386.7	6.4	**0.4820**	0.030	6.2	ug/L	8	Standard
	Al	27	12937858.5	0.6	**98.9797**	1.758	1.8	ug/L	1397	Standard
	Sc	45	48714.9	0.8				ug/L	38815	Standard
	Ti	47	5477.7	1.0	**14.5444**	0.163	1.1	ug/L	36	Standard
	V	51	88820.6	0.9	**11.1277**	0.088	0.8	ug/L	1284	Standard
	Cr	52	76178.4	0.5	**8.9516**	0.065	0.7	ug/L	6503	Standard
	Cr	53	8680.8	4.0	**8.6226**	0.356	4.1	ug/L	492	Standard
	Mn	55	1630364.2	1.5	**237.9886**	2.912	1.2	ug/L	841	Standard
	Co	59	33074.4	1.8	**4.9001**	0.076	1.6	ug/L	229	Standard
	Ni	60	24834.7	1.6	**13.0681**	0.216	1.7	ug/L	344	Standard
	Cu	65	11549.7	0.5	**6.1498**	0.016	0.3	ug/L	115	Standard
	Zn	66	25965.9	1.2	**22.8939**	0.212	0.9	ug/L	190	Standard
>	**Ge**	72	458933.8	0.3				ug/L	409858	Standard
	As	75	2635.7	3.3	**2.3695**	0.072	3.1	ug/L	-22	Standard
	Se	82	39.0	10.2	**0.2785**	0.034	12.2	ug/L	18	Standard
	Se-1	77	99.7	9.1	**0.5334**	0.114	21.4	ug/L	50	Standard
>	**Ga**	71	9593.0	4.0				mg/L	97	Standard
	Rb	85	78841.3	0.9				ug/L	25	Standard
	Y	89	536495.1	0.8				ug/L	376763	Standard
>	**Rh**	103	36.7	28.4				ug/L	20	Standard
	Mo	98	2152.4	3.2	**0.9206**	0.036	3.9	ug/L	51	Standard
	Ag	107	274.7	3.4	**0.0650**	0.002	3.0	ug/L	76	Standard
	Cd	111	138.7	8.4	**0.1059**	0.005	5.2	mg/L	6	Standard
	Cd	114	352.4	1.6	**0.1064**	0.001	1.1	ug/L	18	Standard
>	**In**	115	533377.1	1.3				ug/L	507261	Standard
	Sn	118	720.0	12.1	**0.0149**	0.014	92.3	ug/L	683	Standard
	Sb	123	207.4	30.5	**0.0257**	0.014	55.5	ug/L	446	Standard
	Ba	135	126797.7	0.9	**63.3864**	1.016	1.6	ug/L	28	Standard
	Ce	140	703196.5	0.5				ug/L	33	Standard
>	**Tb**	159	828490.0	1.1				ug/L	800803	Standard
	Ho	165	12056.5	2.6				ug/L	10	Standard
	Tl	203	401.7	6.8	**0.0849**	0.003	3.6	ug/L	13	Standard
	Tl	205	353.3	15.1	**0.0948**	0.007	7.8	ug/L	13	Standard
	Pb	206	26317.8	0.7	**5.2595**	0.080	1.5	ug/L	226	Standard
	Pb	207	21590.4	0.4	**4.7535**	0.039	0.8	ug/L	204	Standard
	Pb	208	95620.4	0.7	**5.2655**	0.020	0.4	ug/L	852	Standard
	U	238	2673.9	0.9	**0.4400**	0.007	1.5	ug/L	13	Standard
>	**Bi**	209	457582.5	0.9				ug/L	449044	Standard

Sample ID: L1606129716
Report Date/Time: Wednesday, July 06, 2016 17:00:17
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.6111**	12.421	771.0	mg/L	2	Standard
Mg	24	158.3	9.6	**0.1325**	0.017	12.8	mg/L	58	Standard
K	39	220.0	19.4	**0.5570**	0.137	24.5	mg/L	27	Standard
Ca	43	283.3	9.1	**15.1368**	1.384	9.1	mg/L	20	Standard
Fe	54	9746.1	3.5	**6.3807**	0.257	4.0	mg/L	158	Standard
Fe	57	2695.2	3.4	**6.5045**	0.279	4.3	mg/L	267	Standard
> **Sc-1**	45	48714.9	0.8				mg/L	38815	Standard
Cl	35	72318.2	1.6				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	2336.8	8.3				ug/L	1617	Standard
P	31	22189.6	1.5				ug/L	19244	Standard
S	34	4620.7	2.9				ug/L	3557	Standard
Sr	88	90.0	33.8				ug/L	65	Standard
C	12	106.7	32.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	23	Standard
Dy	164	20294.5	0.9				mg/L	13	Standard
Ho-1	165	12056.5	2.6				mg/L	10	Standard
Er	166	10990.7	3.8				mg/L	13	Standard
I	127	4535.7	3.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.110	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.974	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129716
Report Date/Time: Wednesday, July 06, 2016 17:00:17
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.149
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.901
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606129716
Report Date/Time: Wednesday, July 06, 2016 17:00:17
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 17:01:13
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60376.8	2.6				ug/L	68501	Standard
	Be	9	44512.0	1.5	**55.6704**	0.695	1.2	ug/L	8	Standard
	Al	27	7120483.4	2.5	**56.9325**	0.062	0.1	ug/L	1397	Standard
	Sc	45	43315.2	1.8				ug/L	38815	Standard
	Ti	47	39751.1	0.4	**106.1099**	0.782	0.7	ug/L	36	Standard
	V	51	401647.2	0.6	**51.0142**	0.378	0.7	ug/L	1284	Standard
	Cr	52	408076.6	1.9	**52.2101**	0.647	1.2	ug/L	6503	Standard
	Cr	53	50005.7	0.6	**51.8569**	0.658	1.3	ug/L	492	Standard
	Mn	55	369517.4	2.0	**54.0603**	0.738	1.4	ug/L	841	Standard
	Co	59	348277.1	0.6	**51.7368**	0.391	0.8	ug/L	229	Standard
	Ni	60	97436.0	1.6	**51.9218**	0.797	1.5	ug/L	344	Standard
	Cu	65	95915.0	1.3	**51.3579**	0.881	1.7	ug/L	115	Standard
	Zn	66	57969.4	1.5	**51.4363**	0.236	0.5	ug/L	190	Standard
>	Ge	72	457275.6	1.0				ug/L	409858	Standard
	As	75	58788.3	2.0	**50.9283**	0.742	1.5	ug/L	-22	Standard
	Se	82	5911.7	2.9	**50.0997**	1.103	2.2	ug/L	18	Standard
	Se-1	77	4074.2	1.9	**52.2687**	0.612	1.2	ug/L	50	Standard
>	Ga	71	96.7	23.3				mg/L	97	Standard
	Rb	85	1058.4	6.9				ug/L	25	Standard
	Y	89	392635.2	2.0				ug/L	376763	Standard
>	Rh	103	21.7	48.0				ug/L	20	Standard
	Mo	98	260641.0	0.5	**102.7583**	1.540	1.5	ug/L	51	Standard
	Ag	107	333266.2	0.9	**50.7538**	0.981	1.9	ug/L	76	Standard
	Cd	111	106013.6	0.7	**50.7968**	0.877	1.7	mg/L	6	Standard
	Cd	114	258297.0	0.9	**50.6190**	0.162	0.3	ug/L	18	Standard
>	In	115	533927.7	1.1				ug/L	507261	Standard
	Sn	118	285746.1	0.7	**49.4885**	0.793	1.6	ug/L	683	Standard
	Sb	123	232642.5	0.9	**51.5176**	1.036	2.0	ug/L	446	Standard
	Ba	135	100593.6	1.7	**50.2427**	1.379	2.7	ug/L	28	Standard
	Ce	140	2383.6	81.0				ug/L	33	Standard
>	Tb	159	816962.9	1.4				ug/L	800803	Standard
	Ho	165	35.0	93.7				ug/L	10	Standard
	Tl	203	397625.7	0.5	**51.1513**	0.555	1.1	ug/L	13	Standard
	Tl	205	354455.7	1.9	**52.6519**	0.879	1.7	ug/L	13	Standard
	Pb	206	250509.7	0.6	**50.1879**	0.498	1.0	ug/L	226	Standard
	Pb	207	228549.6	0.8	**50.4213**	0.378	0.7	ug/L	204	Standard
	Pb	208	952303.1	0.4	**52.5370**	0.233	0.4	ug/L	852	Standard
	U	238	343600.4	0.5	**51.1931**	0.467	0.9	ug/L	13	Standard
>	Bi	209	456734.7	0.7				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 17:03:30
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3950.5	6.0	**4.7562**	0.311	6.5	mg/L	58	Standard
K	39	1280.1	6.4	**4.4296**	0.249	5.6	mg/L	27	Standard
Ca	43	98.3	12.8	**5.1241**	0.729	14.2	mg/L	20	Standard
Fe	54	7039.2	1.9	**5.1600**	0.075	1.5	mg/L	158	Standard
Fe	57	2025.1	7.5	**5.3968**	0.562	10.4	mg/L	267	Standard
Sc-1	45	43315.2	1.8				mg/L	38815	Standard
Cl	35	73434.9	1.8				ug/L	57611	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	2060.1	7.2				ug/L	1617	Standard
P	31	23247.8	2.5				ug/L	19244	Standard
S	34	4565.7	3.9				ug/L	3557	Standard
Sr	88	55.0	15.7				ug/L	65	Standard
C	12	40.0	86.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	23	Standard
Dy	164	91.3	86.7				mg/L	13	Standard
Ho-1	165	35.0	93.7				mg/L	10	Standard
Er	166	43.3	81.0				mg/L	13	Standard
I	127	11119.1	0.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	111.341		
Al	27	113.865		
Sc	45			
Ti	47	106.110		
V	51	102.028		
Cr	52	104.420		
Cr	53			
Mn	55	108.121		
Co	59	103.474		
Ni	60	103.844		
Cu	65	102.716		
Zn	66	102.873		
Ge	72		111.569	
As	75	101.857		
Se	82	100.199		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 17:03:30
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	102.758		
Ag	107	101.508		
Cd	111	101.594		
Cd	114			
In	115		105.257	
Sn	118	98.977		
Sb	123	103.035		
Ba	135	100.485		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.303		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.074		
U	238	102.386		
Bi	209		101.713	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 17:03:30
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 17:04:25
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60135.8	3.0				ug/L	68501	Standard
	Be	9	20.0	25.0	**0.0445**	0.006	13.7	ug/L	8	Standard
	Al	27	4068.9	40.2	**0.0675**	0.012	17.8	ug/L	1397	Standard
	Sc	45	43684.6	2.9				ug/L	38815	Standard
	Ti	47	31.7	9.6	**0.0570**	0.008	13.6	ug/L	36	Standard
	V	51	1454.7	5.9	**0.0417**	0.010	22.9	ug/L	1284	Standard
	Cr	52	7266.7	1.7	**0.0155**	0.022	144.6	ug/L	6503	Standard
	Cr	53	398.3	22.0	**-0.0005**	0.095	18388.9	ug/L	492	Standard
	Mn	55	872.4	17.7	**0.0322**	0.022	68.2	ug/L	841	Standard
	Co	59	220.0	3.6	**0.0383**	0.001	2.7	ug/L	229	Standard
	Ni	60	339.7	0.6	**0.0243**	0.001	6.1	ug/L	344	Standard
	Cu	65	116.7	6.9	**0.0494**	0.004	7.9	ug/L	115	Standard
	Zn	66	152.0	6.7	**0.0221**	0.008	36.6	ug/L	190	Standard
>	**Ge**	72	455933.5	0.8				ug/L	409858	Standard
	As	75	-68.9	29.1	**0.0392**	0.017	43.5	ug/L	-22	Standard
	Se	82	11.7	48.5	**0.0481**	0.049	101.1	ug/L	18	Standard
	Se-1	77	57.3	9.9	**-0.0102**	0.078	766.6	ug/L	50	Standard
>	**Ga**	71	33.3	17.3				mg/L	97	Standard
	Rb	85	41.7	45.4				ug/L	25	Standard
	Y	89	385104.6	1.0				ug/L	376763	Standard
>	**Rh**	103	13.3	57.3				ug/L	20	Standard
	Mo	98	140.6	2.9	**0.1263**	0.002	1.2	ug/L	51	Standard
	Ag	107	97.3	14.0	**0.0377**	0.002	5.3	ug/L	76	Standard
	Cd	111	6.4	55.2	**0.0424**	0.002	4.0	mg/L	6	Standard
	Cd	114	30.5	14.6	**0.0433**	0.001	2.0	ug/L	18	Standard
>	**In**	115	540459.8	0.5				ug/L	507261	Standard
	Sn	118	913.4	16.4	**0.0466**	0.027	57.0	ug/L	683	Standard
	Sb	123	642.8	37.4	**0.1205**	0.053	44.1	ug/L	446	Standard
	Ba	135	50.3	16.5	**0.0406**	0.004	9.8	ug/L	28	Standard
	Ce	140	301.7	26.9				ug/L	33	Standard
>	**Tb**	159	814839.3	0.6				ug/L	800803	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	55.3	13.6	**0.0404**	0.001	2.2	ug/L	13	Standard
	Tl	205	38.3	19.9	**0.0482**	0.001	2.3	ug/L	13	Standard
	Pb	206	233.0	9.0	**0.0423**	0.004	9.3	ug/L	226	Standard
	Pb	207	226.7	5.1	**0.0486**	0.003	5.8	ug/L	204	Standard
	Pb	208	902.7	4.3	**0.0495**	0.002	4.5	ug/L	852	Standard
	U	238	45.7	27.4	**0.0494**	0.002	3.8	ug/L	13	Standard
>	**Bi**	209	459869.9	1.0				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 17:06:41
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**7.0995**	13.754	193.7	mg/L	2	Standard
Mg	24	40.0	25.0	**0.0098**	0.012	121.3	mg/L	58	Standard
K	39	30.0	28.9	**-0.0361**	0.028	77.7	mg/L	27	Standard
Ca	43	23.3	65.5	**0.2490**	1.044	419.1	mg/L	20	Standard
Fe	54	149.1	34.9	**-0.0096**	0.037	384.5	mg/L	158	Standard
Fe	57	258.3	22.4	**0.0918**	0.196	213.6	mg/L	267	Standard
Sc-1	45	43684.6	2.9				mg/L	38815	Standard
Cl	35	72508.4	1.4				ug/L	57611	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1963.5	7.1				ug/L	1617	Standard
P	31	22001.0	3.1				ug/L	19244	Standard
S	34	4517.3	1.1				ug/L	3557	Standard
Sr	88	58.3	4.9				ug/L	65	Standard
C	12	60.0	60.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	86.6				mg/L	23	Standard
Dy	164	-0.6	86.6				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	8687.5	0.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		111.242	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 17:06:41
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.545
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.411
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 17:06:41
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129717
Sample Date/Time: Wednesday, July 06, 2016 17:07:37
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60512.3	2.0				ug/L	68501	Standard
	Be	9	250.0	13.9	**0.3317**	0.048	14.5	ug/L	8	Standard
	Al	27	9127879.8	0.8	**72.8313**	1.774	2.4	ug/L	1397	Standard
	Sc	45	47044.6	2.2				ug/L	38815	Standard
	Ti	47	2194.2	2.3	**5.8566**	0.188	3.2	ug/L	36	Standard
	V	51	44194.1	1.4	**5.5087**	0.044	0.8	ug/L	1284	Standard
	Cr	52	31815.4	1.1	**3.2274**	0.004	0.1	ug/L	6503	Standard
	Cr	53	3368.7	1.5	**3.1179**	0.053	1.7	ug/L	492	Standard
	Mn	55	1436494.1	1.3	**211.3511**	2.993	1.4	ug/L	841	Standard
	Co	59	14124.2	0.5	**2.1125**	0.030	1.4	ug/L	229	Standard
	Ni	60	10017.3	2.5	**5.2188**	0.093	1.8	ug/L	344	Standard
	Cu	65	5555.4	1.2	**2.9746**	0.020	0.7	ug/L	115	Standard
	Zn	66	12515.5	1.3	**11.0639**	0.068	0.6	ug/L	190	Standard
>	**Ge**	72	455331.3	1.0				ug/L	409858	Standard
	As	75	1273.2	2.2	**1.2046**	0.032	2.7	ug/L	-22	Standard
	Se	82	33.8	7.8	**0.2365**	0.025	10.6	ug/L	18	Standard
	Se-1	77	77.0	7.9	**0.2473**	0.074	30.1	ug/L	50	Standard
>	**Ga**	71	3477.1	5.3				mg/L	97	Standard
	Rb	85	29470.3	4.4				ug/L	25	Standard
	Y	89	504672.2	1.8				ug/L	376763	Standard
>	**Rh**	103	21.7	48.0				ug/L	20	Standard
	Mo	98	162.5	13.2	**0.1360**	0.008	6.2	ug/L	51	Standard
	Ag	107	184.7	11.1	**0.0514**	0.003	5.6	ug/L	76	Standard
	Cd	111	116.7	0.9	**0.0956**	0.000	0.2	mg/L	6	Standard
	Cd	114	300.7	13.5	**0.0966**	0.007	7.7	ug/L	18	Standard
>	**In**	115	530453.6	1.0				ug/L	507261	Standard
	Sn	118	595.0	16.1	**-0.0061**	0.017	280.1	ug/L	683	Standard
	Sb	123	364.2	29.0	**0.0609**	0.024	39.6	ug/L	446	Standard
	Ba	135	104851.9	0.7	**52.7028**	0.330	0.6	ug/L	28	Standard
	Ce	140	465635.4	0.9				ug/L	33	Standard
>	**Tb**	159	824090.2	0.7				ug/L	800803	Standard
	Ho	165	9299.5	0.7				ug/L	10	Standard
	Tl	203	170.7	6.7	**0.0554**	0.002	2.8	ug/L	13	Standard
	Tl	205	143.3	10.7	**0.0639**	0.002	3.6	ug/L	13	Standard
	Pb	206	18810.3	1.3	**3.7880**	0.037	1.0	ug/L	226	Standard
	Pb	207	15556.0	1.1	**3.4522**	0.034	1.0	ug/L	204	Standard
	Pb	208	67949.4	0.5	**3.7721**	0.028	0.8	ug/L	852	Standard
	U	238	1726.8	1.0	**0.3013**	0.003	0.8	ug/L	13	Standard
>	**Bi**	209	453909.1	0.3				ug/L	449044	Standard

Sample ID: L1606129717
Report Date/Time: Wednesday, July 06, 2016 17:09:54
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**6.4032**	13.152	205.4	mg/L	2	Standard
Mg	24	106.7	21.1	**0.0812**	0.028	34.1	mg/L	58	Standard
K	39	105.0	8.2	**0.2040**	0.036	17.4	mg/L	27	Standard
Ca	43	343.3	12.4	**19.3079**	2.257	11.7	mg/L	20	Standard
Fe	54	2967.9	3.2	**1.9306**	0.096	5.0	mg/L	158	Standard
Fe	57	1078.4	0.5	**2.2974**	0.071	3.1	mg/L	267	Standard
Sc-1	45	47044.6	2.2				mg/L	38815	Standard
Cl	35	74756.6	0.2				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2176.8	7.6				ug/L	1617	Standard
P	31	21623.8	0.7				ug/L	19244	Standard
S	34	4430.6	2.9				ug/L	3557	Standard
Sr	88	118.3	10.6				ug/L	65	Standard
C	12	80.0	12.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	23	Standard
Dy	164	15003.4	3.0				mg/L	13	Standard
Ho-1	165	9299.5	0.7				mg/L	10	Standard
Er	166	8652.5	3.3				mg/L	13	Standard
I	127	4919.1	6.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		88.338	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		111.095	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129717
Report Date/Time: Wednesday, July 06, 2016 17:09:54
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.572
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.083
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606129717
Report Date/Time: Wednesday, July 06, 2016 17:09:54
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129718
Sample Date/Time: Wednesday, July 06, 2016 17:10:49
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61002.6	0.7				ug/L	68501	Standard
	Be	9	386.7	8.4	**0.4980**	0.044	8.7	ug/L	8	Standard
	Al	27	11064224.1	1.9	**87.5342**	1.217	1.4	ug/L	1397	Standard
	Sc	45	47497.7	2.4				ug/L	38815	Standard
	Ti	47	2700.2	0.1	**7.2287**	0.073	1.0	ug/L	36	Standard
	V	51	75721.1	0.9	**9.5634**	0.159	1.7	ug/L	1284	Standard
	Cr	52	48504.5	0.5	**5.4244**	0.053	1.0	ug/L	6503	Standard
	Cr	53	5401.0	0.6	**5.2639**	0.061	1.2	ug/L	492	Standard
	Mn	55	2606946.8	1.3	**384.5071**	8.038	2.1	ug/L	841	Standard
	Co	59	24500.5	0.6	**3.6683**	0.045	1.2	ug/L	229	Standard
	Ni	60	16206.3	0.4	**8.5606**	0.051	0.6	ug/L	344	Standard
	Cu	65	11319.2	0.3	**6.0884**	0.078	1.3	ug/L	115	Standard
	Zn	66	16272.4	0.9	**14.4512**	0.062	0.4	ug/L	190	Standard
>	Ge	72	454337.4	1.0				ug/L	409858	Standard
	As	75	3766.5	1.0	**3.3768**	0.043	1.3	ug/L	-22	Standard
	Se	82	38.2	18.9	**0.2748**	0.058	21.2	ug/L	18	Standard
	Se-1	77	92.7	8.1	**0.4557**	0.110	24.0	ug/L	50	Standard
>	Ga	71	5367.6	4.1				mg/L	97	Standard
	Rb	85	50199.7	1.5				ug/L	25	Standard
	Y	89	528757.6	1.4				ug/L	376763	Standard
>	Rh	103	41.7	30.2				ug/L	20	Standard
	Mo	98	628.2	4.9	**0.3208**	0.014	4.2	ug/L	51	Standard
	Ag	107	249.3	11.6	**0.0613**	0.005	7.6	ug/L	76	Standard
	Cd	111	202.2	4.6	**0.1368**	0.004	2.9	mg/L	6	Standard
	Cd	114	542.1	7.4	**0.1443**	0.007	5.1	ug/L	18	Standard
>	In	115	530184.6	0.5				ug/L	507261	Standard
	Sn	118	480.0	21.8	**-0.0261**	0.019	71.3	ug/L	683	Standard
	Sb	123	306.2	37.7	**0.0480**	0.026	54.3	ug/L	446	Standard
	Ba	135	151848.5	0.9	**76.3535**	0.309	0.4	ug/L	28	Standard
	Ce	140	632673.3	1.1				ug/L	33	Standard
>	Tb	159	826901.6	0.1				ug/L	800803	Standard
	Ho	165	11909.7	2.7				ug/L	10	Standard
	Tl	203	275.7	6.5	**0.0692**	0.002	3.3	ug/L	13	Standard
	Tl	205	261.7	21.3	**0.0818**	0.008	10.1	ug/L	13	Standard
	Pb	206	30210.1	0.2	**6.1134**	0.033	0.5	ug/L	226	Standard
	Pb	207	25026.0	0.9	**5.5792**	0.065	1.2	ug/L	204	Standard
	Pb	208	109142.1	0.7	**6.0856**	0.048	0.8	ug/L	852	Standard
	U	238	2218.8	3.0	**0.3764**	0.010	2.5	ug/L	13	Standard
>	Bi	209	451902.1	0.3				ug/L	449044	Standard

Sample ID: L1606129718
Report Date/Time: Wednesday, July 06, 2016 17:13:06
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	85.0	21.2	**0.0555**	0.018	32.7	mg/L	58	Standard
K	39	141.7	2.0	**0.3200**	0.021	6.5	mg/L	27	Standard
Ca	43	346.7	12.0	**19.2981**	2.044	10.6	mg/L	20	Standard
Fe	54	6583.4	6.0	**4.3806**	0.177	4.0	mg/L	158	Standard
Fe	57	2040.1	4.5	**4.9012**	0.343	7.0	mg/L	267	Standard
> **Sc-1**	45	47497.7	2.4				mg/L	38815	Standard
Cl	35	74496.0	0.9				ug/L	57611	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	2060.1	5.8				ug/L	1617	Standard
P	31	21615.4	2.3				ug/L	19244	Standard
S	34	4407.3	3.3				ug/L	3557	Standard
Sr	88	146.7	22.2				ug/L	65	Standard
C	12	80.0	12.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	74.2				mg/L	23	Standard
Dy	164	20267.7	1.2				mg/L	13	Standard
Ho-1	165	11909.7	2.7				mg/L	10	Standard
Er	166	10853.9	1.7				mg/L	13	Standard
I	127	5491.0	3.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.053	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.852	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129718
Report Date/Time: Wednesday, July 06, 2016 17:13:06
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.519
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.637
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606129718
Report Date/Time: Wednesday, July 06, 2016 17:13:06
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129719
Sample Date/Time: Wednesday, July 06, 2016 17:14:00
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63665.1	0.4				ug/L	68501	Standard
	Be	9	740.0	0.7	**0.8967**	0.007	0.8	ug/L	8	Standard
	Al	27	10091474.2	0.2	**76.5080**	0.424	0.6	ug/L	1397	Standard
	Sc	45	49554.3	2.7				ug/L	38815	Standard
	Ti	47	4880.5	4.1	**13.0100**	0.620	4.8	ug/L	36	Standard
	V	51	140318.8	0.3	**17.7350**	0.174	1.0	ug/L	1284	Standard
	Cr	52	211034.0	1.3	**26.5622**	0.505	1.9	ug/L	6503	Standard
	Cr	53	25681.8	2.5	**26.4393**	0.783	3.0	ug/L	492	Standard
	Mn	55	2842033.0	1.3	**416.5880**	2.843	0.7	ug/L	841	Standard
	Co	59	55629.6	1.1	**8.2712**	0.092	1.1	ug/L	229	Standard
	Ni	60	34092.3	1.7	**18.0725**	0.426	2.4	ug/L	344	Standard
	Cu	65	61233.5	0.2	**32.7936**	0.273	0.8	ug/L	115	Standard
	Zn	66	88786.7	1.0	**78.8718**	0.401	0.5	ug/L	190	Standard
>	**Ge**	72	457106.3	0.6				ug/L	409858	Standard
	As	75	6665.3	1.7	**5.8642**	0.105	1.8	ug/L	-22	Standard
	Se	82	74.8	1.4	**0.5833**	0.008	1.4	ug/L	18	Standard
	Se-1	77	116.0	23.7	**0.7520**	0.363	48.2	ug/L	50	Standard
>	**Ga**	71	14478.6	1.2				mg/L	97	Standard
	Rb	85	153343.8	1.1				ug/L	25	Standard
	Y	89	584906.0	1.5				ug/L	376763	Standard
>	**Rh**	103	63.3	50.1				ug/L	20	Standard
	Mo	98	921.9	3.1	**0.4300**	0.010	2.3	ug/L	51	Standard
	Ag	107	1490.7	1.6	**0.2471**	0.003	1.4	ug/L	76	Standard
	Cd	111	12899.8	1.4	**6.1352**	0.119	1.9	mg/L	6	Standard
	Cd	114	31602.1	1.1	**6.1457**	0.066	1.1	ug/L	18	Standard
>	**In**	115	540935.6	0.6				ug/L	507261	Standard
	Sn	118	2395.2	5.4	**0.3002**	0.022	7.2	ug/L	683	Standard
	Sb	123	506.3	17.8	**0.0902**	0.019	21.2	ug/L	446	Standard
	Ba	135	402882.8	0.3	**198.5336**	0.517	0.3	ug/L	28	Standard
	Ce	140	1001355.4	1.2				ug/L	33	Standard
>	**Tb**	159	839605.9	0.3				ug/L	800803	Standard
	Ho	165	16278.7	1.4				ug/L	10	Standard
	Tl	203	762.4	2.3	**0.1303**	0.002	1.9	ug/L	13	Standard
	Tl	205	646.7	4.5	**0.1375**	0.004	3.0	ug/L	13	Standard
	Pb	206	722382.1	0.3	**143.1625**	0.699	0.5	ug/L	226	Standard
	Pb	207	605458.0	1.1	**132.1283**	1.402	1.1	ug/L	204	Standard
	Pb	208	2619914.0	0.5	**142.9705**	0.450	0.3	ug/L	852	Standard
	U	238	3167.0	3.3	**0.5090**	0.016	3.1	ug/L	13	Standard
>	**Bi**	209	461727.1	0.2				ug/L	449044	Standard

Sample ID: L1606129719
Report Date/Time: Wednesday, July 06, 2016 17:16:17
Page 1

Approved: July 07, 2016

Na	23	3.3	173.2	**5.7695**	25.205	436.9	mg/L	2	Standard
Mg	24	183.3	8.3	**0.1563**	0.019	12.4	mg/L	58	Standard
K	39	323.3	6.4	**0.8694**	0.091	10.5	mg/L	27	Standard
Ca	43	148.3	18.6	**7.1496**	1.328	18.6	mg/L	20	Standard
Fe	54	14825.9	2.7	**9.6082**	0.482	5.0	mg/L	158	Standard
Fe	57	4082.2	1.4	**10.0200**	0.287	2.9	mg/L	267	Standard
Sc-1	45	49554.3	2.7				mg/L	38815	Standard
Cl	35	70608.8	1.1				ug/L	57611	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	5050.8	4.7				ug/L	1617	Standard
P	31	22351.5	1.7				ug/L	19244	Standard
S	34	4362.3	8.2				ug/L	3557	Standard
Sr	88	115.0	13.0				ug/L	65	Standard
C	12	230.0	28.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	176.7	31.2				mg/L	23	Standard
Dy	164	26663.3	1.8				mg/L	13	Standard
Ho-1	165	16278.7	1.4				mg/L	10	Standard
Er	166	14503.6	3.7				mg/L	13	Standard
I	127	13963.1	5.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.940	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.528	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129719
Report Date/Time: Wednesday, July 06, 2016 17:16:17
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.639
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.824
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	
Pb 206 Upper, S, EEE	Pb	206	

Sample ID: L1606129719
Report Date/Time: Wednesday, July 06, 2016 17:16:17
Page 3

Approved: July 07, 2016

Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129720
Sample Date/Time: Wednesday, July 06, 2016 17:17:12
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62043.4	0.8				ug/L	68501	Standard
	Be	9	535.0	5.2	**0.6704**	0.036	5.4	ug/L	8	Standard
	Al	27	16466441.8	1.0	**128.0760**	0.413	0.3	ug/L	1397	Standard
	Sc	45	47537.8	1.8				ug/L	38815	Standard
	Ti	47	3601.8	1.1	**9.7028**	0.127	1.3	ug/L	36	Standard
	V	51	114496.1	0.8	**14.6114**	0.083	0.6	ug/L	1284	Standard
	Cr	52	66045.0	1.4	**7.7705**	0.194	2.5	ug/L	6503	Standard
	Cr	53	7416.8	1.1	**7.4262**	0.092	1.2	ug/L	492	Standard
	Mn	55	2745613.9	0.3	**407.0973**	4.419	1.1	ug/L	841	Standard
	Co	59	34784.6	1.7	**5.2334**	0.108	2.1	ug/L	229	Standard
	Ni	60	22063.1	1.1	**11.7754**	0.232	2.0	ug/L	344	Standard
	Cu	65	16897.4	1.0	**9.1435**	0.112	1.2	ug/L	115	Standard
	Zn	66	22892.0	2.0	**20.4833**	0.194	0.9	ug/L	190	Standard
>	**Ge**	72	451935.2	1.0				ug/L	409858	Standard
	As	75	3957.0	1.3	**3.5607**	0.038	1.1	ug/L	-22	Standard
	Se	82	48.3	15.3	**0.3639**	0.066	18.3	ug/L	18	Standard
	Se-1	77	89.0	3.9	**0.4130**	0.038	9.3	ug/L	50	Standard
>	**Ga**	71	8247.2	1.1				mg/L	97	Standard
	Rb	85	77169.4	1.5				ug/L	25	Standard
	Y	89	561968.7	0.4				ug/L	376763	Standard
>	**Rh**	103	36.7	41.7				ug/L	20	Standard
	Mo	98	835.4	2.8	**0.4040**	0.010	2.5	ug/L	51	Standard
	Ag	107	320.7	6.4	**0.0724**	0.003	3.8	ug/L	76	Standard
	Cd	111	190.8	4.2	**0.1316**	0.003	2.5	mg/L	6	Standard
	Cd	114	457.1	0.9	**0.1278**	0.000	0.1	ug/L	18	Standard
>	**In**	115	528583.4	0.8				ug/L	507261	Standard
	Sn	118	668.3	6.0	**0.0070**	0.006	88.1	ug/L	683	Standard
	Sb	123	238.4	30.1	**0.0330**	0.016	49.2	ug/L	446	Standard
	Ba	135	413766.5	1.3	**208.6575**	1.840	0.9	ug/L	28	Standard
	Ce	140	816123.1	1.5				ug/L	33	Standard
>	**Tb**	159	818775.6	1.8				ug/L	800803	Standard
	Ho	165	14605.4	0.2				ug/L	10	Standard
	Tl	203	529.0	5.3	**0.1022**	0.004	3.5	ug/L	13	Standard
	Tl	205	483.3	6.3	**0.1152**	0.005	4.0	ug/L	13	Standard
	Pb	206	38689.3	1.6	**7.8483**	0.117	1.5	ug/L	226	Standard
	Pb	207	31946.0	0.6	**7.1384**	0.036	0.5	ug/L	204	Standard
	Pb	208	139239.2	0.4	**7.7816**	0.049	0.6	ug/L	852	Standard
	U	238	4116.2	1.0	**0.6633**	0.006	1.0	ug/L	13	Standard
>	**Bi**	209	450865.9	0.2				ug/L	449044	Standard

Sample ID: L1606129720
Report Date/Time: Wednesday, July 06, 2016 17:19:29
Page 1

Approved: July 07, 2016

Na	23	5.0	100.0	**13.6788**	22.396	163.7	mg/L	2	Standard
Mg	24	173.3	26.8	**0.1527**	0.048	31.1	mg/L	58	Standard
K	39	153.3	13.6	**0.3567**	0.061	17.0	mg/L	27	Standard
Ca	43	540.0	15.4	**30.7921**	4.937	16.0	mg/L	20	Standard
Fe	54	8837.8	2.1	**5.9199**	0.065	1.1	mg/L	158	Standard
Fe	57	2686.9	4.2	**6.6633**	0.423	6.3	mg/L	267	Standard
> **Sc-1**	45	47537.8	1.8				mg/L	38815	Standard
Cl	35	73158.9	1.0				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2540.2	9.3				ug/L	1617	Standard
P	31	21500.3	3.4				ug/L	19244	Standard
S	34	4425.6	2.7				ug/L	3557	Standard
Sr	88	181.7	13.6				ug/L	65	Standard
C	12	100.0	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	25202.4	7.2				mg/L	13	Standard
Ho-1	165	14605.4	0.2				mg/L	10	Standard
Er	166	13145.7	4.6				mg/L	13	Standard
I	127	7560.2	2.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.573	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.266	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129720
Report Date/Time: Wednesday, July 06, 2016 17:19:29
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.204
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.406
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129720
Report Date/Time: Wednesday, July 06, 2016 17:19:29
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129701
Sample Date/Time: Wednesday, July 06, 2016 17:20:23
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54705.3	3.3				ug/L	68501	Standard
	Be	9	20.0	75.0	**0.0471**	0.021	44.9	ug/L	8	Standard
	Al	27	254394.6	0.7	**2.2805**	0.089	3.9	ug/L	1397	Standard
	Sc	45	38919.9	0.3				ug/L	38815	Standard
	Ti	47	76.0	1.3	**0.1928**	0.003	1.6	ug/L	36	Standard
	V	51	2687.0	2.1	**0.2280**	0.008	3.3	ug/L	1284	Standard
	Cr	52	6953.6	2.9	**0.0509**	0.028	55.7	ug/L	6503	Standard
	Cr	53	256.7	13.0	**-0.1269**	0.038	29.7	ug/L	492	Standard
	Mn	55	32697.3	3.6	**5.1146**	0.183	3.6	ug/L	841	Standard
	Co	59	591.3	9.7	**0.1010**	0.009	9.1	ug/L	229	Standard
	Ni	60	630.7	6.1	**0.2088**	0.022	10.6	ug/L	344	Standard
	Cu	65	421.7	12.1	**0.2323**	0.030	12.8	ug/L	115	Standard
	Zn	66	1478.1	4.0	**1.3158**	0.058	4.4	ug/L	190	Standard
>	**Ge**	72	420563.3	0.1				ug/L	409858	Standard
	As	75	-15.5	83.8	**0.0843**	0.012	14.5	ug/L	-22	Standard
	Se	82	13.0	43.8	**0.0690**	0.053	76.4	ug/L	18	Standard
	Se-1	77	54.7	13.5	**0.0147**	0.104	707.4	ug/L	50	Standard
>	**Ga**	71	123.3	20.8				mg/L	97	Standard
	Rb	85	1151.7	4.4				ug/L	25	Standard
	Y	89	361203.1	0.5				ug/L	376763	Standard
>	**Rh**	103	13.3	43.3				ug/L	20	Standard
	Mo	98	68.7	38.7	**0.1009**	0.011	11.2	ug/L	51	Standard
	Ag	107	80.0	25.1	**0.0363**	0.003	9.1	ug/L	76	Standard
	Cd	111	10.5	68.1	**0.0448**	0.004	8.3	mg/L	6	Standard
	Cd	114	35.2	40.1	**0.0449**	0.003	6.7	ug/L	18	Standard
>	**In**	115	492416.3	0.6				ug/L	507261	Standard
	Sn	118	241.7	18.8	**-0.0646**	0.009	13.4	ug/L	683	Standard
	Sb	123	498.9	38.1	**0.0993**	0.045	45.6	ug/L	446	Standard
	Ba	135	4886.5	2.1	**2.6610**	0.070	2.6	ug/L	28	Standard
	Ce	140	13354.2	3.4				ug/L	33	Standard
>	**Tb**	159	765708.7	0.7				ug/L	800803	Standard
	Ho	165	263.3	11.6				ug/L	10	Standard
	Tl	203	36.7	55.6	**0.0383**	0.003	7.2	ug/L	13	Standard
	Tl	205	40.0	33.1	**0.0487**	0.002	4.2	ug/L	13	Standard
	Pb	206	956.0	8.3	**0.1957**	0.017	8.7	ug/L	226	Standard
	Pb	207	823.4	8.4	**0.1883**	0.016	8.8	ug/L	204	Standard
	Pb	208	3454.8	7.4	**0.1989**	0.016	8.0	ug/L	852	Standard
	U	238	55.3	15.2	**0.0512**	0.001	2.6	ug/L	13	Standard
>	**Bi**	209	438088.3	0.6				ug/L	449044	Standard

Sample ID: L1606129701
Report Date/Time: Wednesday, July 06, 2016 17:22:40
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.2882**	15.711	5451.7	mg/L	2	Standard
Mg	24	71.7	16.1	**0.0584**	0.016	26.8	mg/L	58	Standard
K	39	21.7	35.3	**-0.0557**	0.030	54.0	mg/L	27	Standard
Ca	43	33.3	60.6	**1.1412**	1.472	128.9	mg/L	20	Standard
Fe	54	127.5	9.8	**-0.0137**	0.011	78.4	mg/L	158	Standard
Fe	57	326.7	25.5	**0.4101**	0.278	67.8	mg/L	267	Standard
> **Sc-1**	45	38919.9	0.3				mg/L	38815	Standard
Cl	35	69819.9	1.7				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1756.8	7.7				ug/L	1617	Standard
P	31	7073.3	2.3				ug/L	19244	Standard
S	34	4202.2	2.7				ug/L	3557	Standard
Sr	88	83.3	15.1				ug/L	65	Standard
C	12	36.7	31.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	23	Standard
Dy	164	443.9	18.5				mg/L	13	Standard
Ho-1	165	263.3	11.6				mg/L	10	Standard
Er	166	266.7	18.5				mg/L	13	Standard
I	127	7595.2	3.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.860	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.612	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129701
Report Date/Time: Wednesday, July 06, 2016 17:22:40
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.074
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.560
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129702
Sample Date/Time: Wednesday, July 06, 2016 17:23:34
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53813.8	3.3				ug/L	68501	Standard
	Be	9	20.0	25.0	**0.0474**	0.006	12.9	ug/L	8	Standard
	Al	27	123757.2	3.7	**1.1460**	0.073	6.3	ug/L	1397	Standard
	Sc	45	40009.4	1.7				ug/L	38815	Standard
	Ti	47	75.7	14.5	**0.1929**	0.030	15.3	ug/L	36	Standard
	V	51	3286.9	6.1	**0.3136**	0.023	7.3	ug/L	1284	Standard
	Cr	52	7502.9	1.7	**0.1350**	0.010	7.1	ug/L	6503	Standard
	Cr	53	293.3	39.6	**-0.0841**	0.129	153.1	ug/L	492	Standard
	Mn	55	65790.6	3.2	**10.4491**	0.229	2.2	ug/L	841	Standard
	Co	59	905.0	7.8	**0.1525**	0.011	7.0	ug/L	229	Standard
	Ni	60	746.0	5.8	**0.2783**	0.022	7.9	ug/L	344	Standard
	Cu	65	536.7	2.7	**0.3011**	0.007	2.5	ug/L	115	Standard
	Zn	66	1996.5	2.1	**1.8285**	0.039	2.1	ug/L	190	Standard
>	**Ge**	72	418080.4	1.1				ug/L	409858	Standard
	As	75	56.1	91.8	**0.1516**	0.048	31.6	ug/L	-22	Standard
	Se	82	15.2	60.8	**0.0892**	0.084	94.3	ug/L	18	Standard
	Se-1	77	55.0	22.3	**0.0229**	0.166	724.1	ug/L	50	Standard
>	**Ga**	71	163.3	29.4				mg/L	97	Standard
	Rb	85	1311.7	19.5				ug/L	25	Standard
	Y	89	361563.3	0.7				ug/L	376763	Standard
>	**Rh**	103	16.7	62.4				ug/L	20	Standard
	Mo	98	51.7	65.1	**0.0937**	0.014	15.4	ug/L	51	Standard
	Ag	107	124.7	52.2	**0.0437**	0.011	24.6	ug/L	76	Standard
	Cd	111	51.5	87.7	**0.0662**	0.024	35.5	mg/L	6	Standard
	Cd	114	122.3	87.7	**0.0634**	0.023	36.0	ug/L	18	Standard
>	**In**	115	491187.9	0.1				ug/L	507261	Standard
	Sn	118	286.7	14.1	**-0.0560**	0.008	13.6	ug/L	683	Standard
	Sb	123	388.5	44.1	**0.0731**	0.041	56.3	ug/L	446	Standard
	Ba	135	5842.1	6.6	**3.1859**	0.208	6.5	ug/L	28	Standard
	Ce	140	16594.1	7.9				ug/L	33	Standard
>	**Tb**	159	754328.2	0.4				ug/L	800803	Standard
	Ho	165	276.7	4.2				ug/L	10	Standard
	Tl	203	81.0	143.3	**0.0443**	0.016	35.4	ug/L	13	Standard
	Tl	205	25.0	121.7	**0.0464**	0.005	10.2	ug/L	13	Standard
	Pb	206	4919.1	2.0	**1.0313**	0.021	2.0	ug/L	226	Standard
	Pb	207	4164.2	1.0	**0.9640**	0.011	1.1	ug/L	204	Standard
	Pb	208	17566.3	0.6	**1.0181**	0.006	0.6	ug/L	852	Standard
	U	238	66.0	41.2	**0.0529**	0.004	8.1	ug/L	13	Standard
>	**Bi**	209	434793.9	0.1				ug/L	449044	Standard

Sample ID: L1606129702
Report Date/Time: Wednesday, July 06, 2016 17:25:51
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	44.1	**0.0012**	0.018	1479.1	mg/L	58	Standard
K	39	31.7	48.2	**-0.0200**	0.057	286.5	mg/L	27	Standard
Ca	43	21.7	13.3	**0.2504**	0.197	78.6	mg/L	20	Standard
Fe	54	164.3	5.3	**0.0132**	0.007	50.9	mg/L	158	Standard
Fe	57	281.7	17.2	**0.2361**	0.173	73.2	mg/L	267	Standard
> **Sc-1**	45	40009.4	1.7				mg/L	38815	Standard
Cl	35	68860.1	0.4				ug/L	57611	Standard
Kr	83	3.7	68.6				ug/L	2	Standard
Br	81	1723.4	1.5				ug/L	1617	Standard
P	31	6801.5	2.1				ug/L	19244	Standard
S	34	4285.6	1.1				ug/L	3557	Standard
Sr	88	58.3	13.1				ug/L	65	Standard
C	12	50.0	20.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	521.0	31.1				mg/L	13	Standard
Ho-1	165	276.7	4.2				mg/L	10	Standard
Er	166	256.7	18.0				mg/L	13	Standard
I	127	7405.1	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.559	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.006	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129702
Report Date/Time: Wednesday, July 06, 2016 17:25:51
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.831
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.827
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129703
Sample Date/Time: Wednesday, July 06, 2016 17:26:46
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52977.6	3.9				ug/L	68501	Standard
	Be	9	23.3	53.9	**0.0523**	0.017	32.0	ug/L	8	Standard
	Al	27	286352.9	1.9	**2.6464**	0.144	5.4	ug/L	1397	Standard
	Sc	45	39770.5	0.9				ug/L	38815	Standard
	Ti	47	84.7	11.6	**0.2173**	0.027	12.6	ug/L	36	Standard
	V	51	2934.4	1.9	**0.2613**	0.009	3.4	ug/L	1284	Standard
	Cr	52	6753.2	1.5	**0.0203**	0.012	59.4	ug/L	6503	Standard
	Cr	53	273.3	5.3	**-0.1087**	0.015	14.0	ug/L	492	Standard
	Mn	55	51194.3	0.4	**8.0434**	0.033	0.4	ug/L	841	Standard
	Co	59	633.0	5.9	**0.1075**	0.006	5.9	ug/L	229	Standard
	Ni	60	612.3	1.2	**0.1973**	0.007	3.6	ug/L	344	Standard
	Cu	65	360.0	4.6	**0.1959**	0.011	5.8	ug/L	115	Standard
	Zn	66	1592.1	2.9	**1.4225**	0.048	3.4	ug/L	190	Standard
>	**Ge**	72	421549.0	0.8				ug/L	409858	Standard
	As	75	16.0	110.0	**0.1138**	0.016	14.5	ug/L	-22	Standard
	Se	82	20.4	24.4	**0.1361**	0.045	33.3	ug/L	18	Standard
	Se-1	77	48.7	33.0	**-0.0726**	0.223	307.4	ug/L	50	Standard
>	**Ga**	71	180.0	2.8				mg/L	97	Standard
	Rb	85	1370.1	4.2				ug/L	25	Standard
	Y	89	356859.6	1.9				ug/L	376763	Standard
>	**Rh**	103	16.7	34.6				ug/L	20	Standard
	Mo	98	41.0	28.5	**0.0892**	0.005	5.8	ug/L	51	Standard
	Ag	107	61.7	14.2	**0.0333**	0.001	4.3	ug/L	76	Standard
	Cd	111	7.9	65.9	**0.0435**	0.003	6.2	mg/L	6	Standard
	Cd	114	13.8	66.1	**0.0403**	0.002	4.8	ug/L	18	Standard
>	**In**	115	489951.3	1.2				ug/L	507261	Standard
	Sn	118	230.0	17.0	**-0.0666**	0.007	10.4	ug/L	683	Standard
	Sb	123	297.8	34.1	**0.0515**	0.024	47.0	ug/L	446	Standard
	Ba	135	6056.2	1.2	**3.3108**	0.061	1.8	ug/L	28	Standard
	Ce	140	13239.1	4.5				ug/L	33	Standard
>	**Tb**	159	754124.2	0.9				ug/L	800803	Standard
	Ho	165	233.3	12.2				ug/L	10	Standard
	Tl	203	23.3	23.6	**0.0365**	0.001	2.0	ug/L	13	Standard
	Tl	205	23.3	32.7	**0.0462**	0.001	2.6	ug/L	13	Standard
	Pb	206	897.0	2.3	**0.1837**	0.002	1.3	ug/L	226	Standard
	Pb	207	712.0	3.3	**0.1630**	0.005	3.0	ug/L	204	Standard
	Pb	208	3193.5	2.8	**0.1841**	0.007	3.7	ug/L	852	Standard
	U	238	62.0	10.6	**0.0523**	0.001	2.0	ug/L	13	Standard
>	**Bi**	209	437276.0	1.1				ug/L	449044	Standard

Sample ID: L1606129703
Report Date/Time: Wednesday, July 06, 2016 17:29:03
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.0658**	15.326	23301.0	mg/L	2	Standard
Mg	24	45.0	33.3	**0.0212**	0.020	96.0	mg/L	58	Standard
K	39	33.3	37.7	**-0.0122**	0.049	398.1	mg/L	27	Standard
Ca	43	31.7	71.2	**0.9607**	1.582	164.7	mg/L	20	Standard
Fe	54	142.5	25.0	**-0.0039**	0.028	714.0	mg/L	158	Standard
Fe	57	326.7	9.8	**0.3869**	0.106	27.4	mg/L	267	Standard
> **Sc-1**	45	39770.5	0.9				mg/L	38815	Standard
Cl	35	68774.4	1.1				ug/L	57611	Standard
Kr	83	3.7	56.8				ug/L	2	Standard
Br	81	1646.8	11.9				ug/L	1617	Standard
P	31	7296.8	6.4				ug/L	19244	Standard
S	34	4085.6	2.8				ug/L	3557	Standard
Sr	88	73.3	43.8				ug/L	65	Standard
C	12	40.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	359.6	15.9				mg/L	13	Standard
Ho-1	165	233.3	12.2				mg/L	10	Standard
Er	166	216.7	41.6				mg/L	13	Standard
I	127	7513.5	3.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.338	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.852	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129703
Report Date/Time: Wednesday, July 06, 2016 17:29:03
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.588
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.379
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129703
Report Date/Time: Wednesday, July 06, 2016 17:29:03
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129704
Sample Date/Time: Wednesday, July 06, 2016 17:29:57
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53208.3	2.9				ug/L	68501	Standard
	Be	9	20.0	43.3	**0.0481**	0.013	26.7	ug/L	8	Standard
	Al	27	267589.1	1.1	**2.4624**	0.062	2.5	ug/L	1397	Standard
	Sc	45	38983.4	0.9				ug/L	38815	Standard
	Ti	47	86.3	13.4	**0.2222**	0.033	14.9	ug/L	36	Standard
	V	51	2971.7	1.5	**0.2666**	0.009	3.5	ug/L	1284	Standard
	Cr	52	6861.9	1.4	**0.0360**	0.021	57.2	ug/L	6503	Standard
	Cr	53	280.0	12.5	**-0.1010**	0.040	39.2	ug/L	492	Standard
	Mn	55	53663.9	0.6	**8.4379**	0.069	0.8	ug/L	841	Standard
	Co	59	633.0	1.9	**0.1075**	0.003	2.4	ug/L	229	Standard
	Ni	60	604.7	3.8	**0.1930**	0.015	7.6	ug/L	344	Standard
	Cu	65	1370.7	3.8	**0.7831**	0.024	3.0	ug/L	115	Standard
	Zn	66	1720.1	1.0	**1.5462**	0.005	0.3	ug/L	190	Standard
>	**Ge**	72	421463.7	0.8				ug/L	409858	Standard
	As	75	0.2	24746.5	**0.0992**	0.037	37.7	ug/L	-22	Standard
	Se	82	13.7	9.8	**0.0749**	0.012	16.5	ug/L	18	Standard
	Se-1	77	47.7	15.2	**-0.0857**	0.103	120.6	ug/L	50	Standard
>	**Ga**	71	165.0	10.9				mg/L	97	Standard
	Rb	85	1178.4	10.0				ug/L	25	Standard
	Y	89	361176.9	2.0				ug/L	376763	Standard
>	**Rh**	103	31.7	32.9				ug/L	20	Standard
	Mo	98	43.7	31.8	**0.0901**	0.006	6.7	ug/L	51	Standard
	Ag	107	67.7	0.9	**0.0342**	0.000	0.2	ug/L	76	Standard
	Cd	111	7.6	42.4	**0.0433**	0.002	3.8	mg/L	6	Standard
	Cd	114	24.9	40.0	**0.0426**	0.002	4.8	ug/L	18	Standard
>	**In**	115	496890.3	0.8				ug/L	507261	Standard
	Sn	118	191.7	25.7	**-0.0744**	0.009	12.2	ug/L	683	Standard
	Sb	123	273.9	35.3	**0.0449**	0.023	52.2	ug/L	446	Standard
	Ba	135	7247.4	1.8	**3.9038**	0.095	2.4	ug/L	28	Standard
	Ce	140	13307.5	2.3				ug/L	33	Standard
>	**Tb**	159	749231.7	0.8				ug/L	800803	Standard
	Ho	165	201.7	18.6				ug/L	10	Standard
	Tl	203	6.7	22.9	**0.0342**	0.000	0.6	ug/L	13	Standard
	Tl	205	10.0	50.0	**0.0441**	0.001	1.8	ug/L	13	Standard
	Pb	206	890.4	2.0	**0.1845**	0.003	1.6	ug/L	226	Standard
	Pb	207	785.4	5.0	**0.1821**	0.008	4.6	ug/L	204	Standard
	Pb	208	3319.8	2.1	**0.1937**	0.005	2.5	ug/L	852	Standard
	U	238	55.0	18.5	**0.0513**	0.002	3.1	ug/L	13	Standard
>	**Bi**	209	432108.8	0.5				ug/L	449044	Standard

Sample ID: L1606129704
Report Date/Time: Wednesday, July 06, 2016 17:32:14
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	28.9	**0.0020**	0.011	565.0	mg/L	58	Standard
K	39	33.3	8.7	**-0.0095**	0.013	132.2	mg/L	27	Standard
Ca	43	43.3	33.3	**1.8622**	1.056	56.7	mg/L	20	Standard
Fe	54	149.2	13.7	**0.0041**	0.017	410.4	mg/L	158	Standard
Fe	57	290.0	7.5	**0.2863**	0.075	26.2	mg/L	267	Standard
Sc-1	45	38983.4	0.9				mg/L	38815	Standard
Cl	35	68125.5	1.5				ug/L	57611	Standard
Kr	83	3.3	69.3				ug/L	2	Standard
Br	81	1650.1	13.3				ug/L	1617	Standard
P	31	6829.9	0.8				ug/L	19244	Standard
S	34	3992.2	2.3				ug/L	3557	Standard
Sr	88	71.7	49.0				ug/L	65	Standard
C	12	33.3	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	23	Standard
Dy	164	349.8	7.3				mg/L	13	Standard
Ho-1	165	201.7	18.6				mg/L	10	Standard
Er	166	213.3	15.1				mg/L	13	Standard
I	127	7331.8	5.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.675	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.832	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129704
Report Date/Time: Wednesday, July 06, 2016 17:32:14
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.956
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.229
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129704
Report Date/Time: Wednesday, July 06, 2016 17:32:14
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129705
Sample Date/Time: Wednesday, July 06, 2016 17:33:09
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52218.3	4.1				ug/L	68501	Standard
	Be	9	18.3	78.7	**0.0455**	0.020	42.9	ug/L	8	Standard
	Al	27	149022.9	2.3	**1.4135**	0.067	4.7	ug/L	1397	Standard
	Sc	45	38976.7	1.1				ug/L	38815	Standard
	Ti	47	70.7	9.6	**0.1786**	0.020	11.0	ug/L	36	Standard
	V	51	2061.2	2.6	**0.1432**	0.008	5.3	ug/L	1284	Standard
	Cr	52	6495.4	1.3	**-0.0080**	0.014	176.0	ug/L	6503	Standard
	Cr	53	245.0	15.4	**-0.1382**	0.044	31.6	ug/L	492	Standard
	Mn	55	28846.8	1.0	**4.5310**	0.050	1.1	ug/L	841	Standard
	Co	59	501.0	2.5	**0.0869**	0.002	2.6	ug/L	229	Standard
	Ni	60	539.7	1.9	**0.1579**	0.005	3.3	ug/L	344	Standard
	Cu	65	193.7	9.7	**0.1002**	0.011	10.8	ug/L	115	Standard
	Zn	66	1393.1	2.6	**1.2423**	0.034	2.7	ug/L	190	Standard
>	**Ge**	72	417845.3	0.3				ug/L	409858	Standard
	As	75	-2.6	310.6	**0.0964**	0.008	8.0	ug/L	-22	Standard
	Se	82	19.2	21.8	**0.1273**	0.039	30.3	ug/L	18	Standard
	Se-1	77	49.7	23.3	**-0.0512**	0.167	325.4	ug/L	50	Standard
>	**Ga**	71	116.7	28.5				mg/L	97	Standard
	Rb	85	655.0	8.8				ug/L	25	Standard
	Y	89	354001.3	0.9				ug/L	376763	Standard
>	**Rh**	103	11.7	137.8				ug/L	20	Standard
	Mo	98	34.3	48.2	**0.0864**	0.007	8.2	ug/L	51	Standard
	Ag	107	63.0	11.4	**0.0336**	0.001	3.7	ug/L	76	Standard
	Cd	111	4.3	26.6	**0.0416**	0.001	1.4	mg/L	6	Standard
	Cd	114	13.3	81.4	**0.0402**	0.002	5.8	ug/L	18	Standard
>	**In**	115	485890.6	0.5				ug/L	507261	Standard
	Sn	118	188.3	10.1	**-0.0742**	0.003	4.6	ug/L	683	Standard
	Sb	123	256.5	30.4	**0.0420**	0.019	44.8	ug/L	446	Standard
	Ba	135	1863.4	2.6	**1.0379**	0.025	2.4	ug/L	28	Standard
	Ce	140	6439.7	6.3				ug/L	33	Standard
>	**Tb**	159	741477.9	1.2				ug/L	800803	Standard
	Ho	165	126.7	14.9				ug/L	10	Standard
	Tl	203	7.7	27.2	**0.0344**	0.000	0.8	ug/L	13	Standard
	Tl	205	3.3	173.2	**0.0431**	0.001	2.1	ug/L	13	Standard
	Pb	206	453.0	6.6	**0.0915**	0.006	6.3	ug/L	226	Standard
	Pb	207	371.3	12.6	**0.0852**	0.011	13.3	ug/L	204	Standard
	Pb	208	1656.7	2.1	**0.0963**	0.003	2.6	ug/L	852	Standard
	U	238	22.0	35.5	**0.0461**	0.001	2.6	ug/L	13	Standard
>	**Bi**	209	433929.8	0.5				ug/L	449044	Standard

Sample ID: L1606129705
Report Date/Time: Wednesday, July 06, 2016 17:35:26
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	25.0	**0.0157**	0.014	90.0	mg/L	58	Standard
K	39	31.7	24.1	**-0.0163**	0.029	176.8	mg/L	27	Standard
Ca	43	23.3	44.6	**0.4103**	0.749	182.7	mg/L	20	Standard
Fe	54	135.9	5.4	**-0.0069**	0.007	104.0	mg/L	158	Standard
Fe	57	293.3	12.9	**0.2967**	0.118	39.6	mg/L	267	Standard
> **Sc-1**	45	38976.7	1.1				mg/L	38815	Standard
Cl	35	68355.2	0.1				ug/L	57611	Standard
Kr	83	3.0	115.5				ug/L	2	Standard
Br	81	1733.4	2.8				ug/L	1617	Standard
P	31	6756.5	5.8				ug/L	19244	Standard
S	34	3932.2	2.4				ug/L	3557	Standard
Sr	88	61.7	12.4				ug/L	65	Standard
C	12	33.3	69.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	212.0	14.5				mg/L	13	Standard
Ho-1	165	126.7	14.9				mg/L	10	Standard
Er	166	96.7	15.8				mg/L	13	Standard
I	127	7300.1	1.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.230	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.949	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129705
Report Date/Time: Wednesday, July 06, 2016 17:35:26
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.787
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.634
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129705
Report Date/Time: Wednesday, July 06, 2016 17:35:26
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129706
Sample Date/Time: Wednesday, July 06, 2016 17:36:20
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53041.1	3.6				ug/L	68501	Standard
	Be	9	13.3	114.6	**0.0381**	0.021	54.7	ug/L	8	Standard
	Al	27	347063.6	1.2	**3.1948**	0.126	4.0	ug/L	1397	Standard
	Sc	45	38433.7	1.1				ug/L	38815	Standard
	Ti	47	110.7	14.1	**0.2971**	0.045	15.1	ug/L	36	Standard
	V	51	3417.2	1.2	**0.3346**	0.008	2.5	ug/L	1284	Standard
	Cr	52	7571.6	1.1	**0.1508**	0.016	10.6	ug/L	6503	Standard
	Cr	53	368.3	9.6	**0.0050**	0.042	843.9	ug/L	492	Standard
	Mn	55	57046.2	0.1	**9.1002**	0.105	1.2	ug/L	841	Standard
	Co	59	1016.0	2.9	**0.1715**	0.006	3.6	ug/L	229	Standard
	Ni	60	913.4	2.1	**0.3792**	0.012	3.3	ug/L	344	Standard
	Cu	65	438.0	0.8	**0.2447**	0.003	1.1	ug/L	115	Standard
	Zn	66	2260.5	1.5	**2.0975**	0.023	1.1	ug/L	190	Standard
>	**Ge**	72	415785.3	1.3				ug/L	409858	Standard
	As	75	14.0	101.9	**0.1122**	0.013	12.0	ug/L	-22	Standard
	Se	82	15.4	23.0	**0.0925**	0.032	34.2	ug/L	18	Standard
	Se-1	77	54.3	4.3	**0.0192**	0.043	224.5	ug/L	50	Standard
>	**Ga**	71	248.3	18.2				mg/L	97	Standard
	Rb	85	2065.1	7.2				ug/L	25	Standard
	Y	89	358556.5	0.8				ug/L	376763	Standard
>	**Rh**	103	25.0	34.6				ug/L	20	Standard
	Mo	98	36.2	30.2	**0.0870**	0.005	5.4	ug/L	51	Standard
	Ag	107	65.3	10.2	**0.0339**	0.001	2.9	ug/L	76	Standard
	Cd	111	7.9	21.9	**0.0435**	0.001	2.0	mg/L	6	Standard
	Cd	114	31.5	18.6	**0.0440**	0.001	2.8	ug/L	18	Standard
>	**In**	115	493442.8	1.0				ug/L	507261	Standard
	Sn	118	191.7	8.0	**-0.0741**	0.003	3.6	ug/L	683	Standard
	Sb	123	249.1	35.2	**0.0392**	0.020	52.2	ug/L	446	Standard
	Ba	135	5603.4	2.9	**3.0428**	0.102	3.3	ug/L	28	Standard
	Ce	140	15599.7	2.1				ug/L	33	Standard
>	**Tb**	159	754515.5	0.5				ug/L	800803	Standard
	Ho	165	246.7	8.4				ug/L	10	Standard
	Tl	203	18.0	50.9	**0.0358**	0.001	3.5	ug/L	13	Standard
	Tl	205	16.7	34.6	**0.0451**	0.001	2.0	ug/L	13	Standard
	Pb	206	895.7	5.4	**0.1853**	0.010	5.5	ug/L	226	Standard
	Pb	207	758.4	5.5	**0.1754**	0.010	5.5	ug/L	204	Standard
	Pb	208	3314.1	2.3	**0.1929**	0.004	2.3	ug/L	852	Standard
	U	238	57.0	6.1	**0.0516**	0.001	1.0	ug/L	13	Standard
>	**Bi**	209	433029.8	0.1				ug/L	449044	Standard

Sample ID: L1606129706
Report Date/Time: Wednesday, July 06, 2016 17:38:37
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	45.8	**0.0139**	0.024	170.6	mg/L	58	Standard
K	39	25.0	34.6	**-0.0412**	0.035	84.9	mg/L	27	Standard
Ca	43	23.3	24.7	**0.4358**	0.423	97.0	mg/L	20	Standard
Fe	54	232.5	14.5	**0.0765**	0.031	40.0	mg/L	158	Standard
Fe	57	305.0	15.6	**0.3518**	0.173	49.1	mg/L	267	Standard
> **Sc-1**	45	38433.7	1.1				mg/L	38815	Standard
Cl	35	68301.6	0.8				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1563.4	12.6				ug/L	1617	Standard
P	31	6891.6	2.4				ug/L	19244	Standard
S	34	4058.9	3.0				ug/L	3557	Standard
Sr	88	76.7	22.9				ug/L	65	Standard
C	12	50.0	87.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	43.3				mg/L	23	Standard
Dy	164	429.6	3.2				mg/L	13	Standard
Ho-1	165	246.7	8.4				mg/L	10	Standard
Er	166	216.7	43.9				mg/L	13	Standard
I	127	6868.2	5.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.431	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.446	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129706
Report Date/Time: Wednesday, July 06, 2016 17:38:37
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.276
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.434
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129706
Report Date/Time: Wednesday, July 06, 2016 17:38:37
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 17:39:34
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56184.0	1.5				ug/L	68501	Standard
	Be	9	42193.7	3.3	**56.7110**	2.227	3.9	ug/L	8	Standard
	Al	27	6758921.7	1.6	**58.0837**	1.381	2.4	ug/L	1397	Standard
	Sc	45	43373.7	1.8				ug/L	38815	Standard
	Ti	47	38978.7	1.6	**104.3602**	2.100	2.0	ug/L	36	Standard
	V	51	395536.0	0.9	**50.3846**	0.381	0.8	ug/L	1284	Standard
	Cr	52	403664.8	1.3	**51.7924**	0.179	0.3	ug/L	6503	Standard
	Cr	53	49393.7	0.7	**51.3707**	0.694	1.4	ug/L	492	Standard
	Mn	55	360638.8	1.5	**52.9155**	0.083	0.2	ug/L	841	Standard
	Co	59	340505.3	2.0	**50.7269**	0.441	0.9	ug/L	229	Standard
	Ni	60	97629.2	1.0	**52.1793**	0.372	0.7	ug/L	344	Standard
	Cu	65	97262.5	1.2	**52.2313**	0.507	1.0	ug/L	115	Standard
	Zn	66	57699.0	0.4	**51.3545**	0.692	1.3	ug/L	190	Standard
>	Ge	72	455947.2	1.7				ug/L	409858	Standard
	As	75	58327.6	1.2	**50.6820**	0.482	1.0	ug/L	-22	Standard
	Se	82	5895.0	1.3	**50.1103**	0.397	0.8	ug/L	18	Standard
	Se-1	77	4006.5	1.7	**51.5470**	0.957	1.9	ug/L	50	Standard
>	Ga	71	46.7	6.2				mg/L	97	Standard
	Rb	85	828.4	2.7				ug/L	25	Standard
	Y	89	382174.2	1.8				ug/L	376763	Standard
>	Rh	103	36.7	43.8				ug/L	20	Standard
	Mo	98	258222.6	0.8	**102.3410**	1.203	1.2	ug/L	51	Standard
	Ag	107	329212.7	1.1	**50.4028**	1.029	2.0	ug/L	76	Standard
	Cd	111	104910.2	1.3	**50.5299**	0.587	1.2	mg/L	6	Standard
	Cd	114	258679.1	1.2	**50.9671**	0.928	1.8	ug/L	18	Standard
>	In	115	531108.2	1.0				ug/L	507261	Standard
	Sn	118	291168.3	1.7	**50.6915**	0.534	1.1	ug/L	683	Standard
	Sb	123	228289.4	1.3	**50.8183**	0.854	1.7	ug/L	446	Standard
	Ba	135	99147.7	1.1	**49.7738**	0.251	0.5	ug/L	28	Standard
	Ce	140	468.3	31.0				ug/L	33	Standard
>	Tb	159	796348.2	1.9				ug/L	800803	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	393824.6	0.3	**51.5142**	0.264	0.5	ug/L	13	Standard
	Tl	205	351893.0	1.0	**53.1532**	0.636	1.2	ug/L	13	Standard
	Pb	206	246206.3	0.6	**50.1555**	0.275	0.5	ug/L	226	Standard
	Pb	207	224054.8	0.7	**50.2623**	0.350	0.7	ug/L	204	Standard
	Pb	208	951155.7	0.9	**53.3579**	0.526	1.0	ug/L	852	Standard
	U	238	334629.8	1.0	**50.6959**	0.518	1.0	ug/L	13	Standard
>	Bi	209	449162.8	0.3				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 17:41:51
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3925.5	6.4	**4.7180**	0.298	6.3	mg/L	58	Standard
K	39	1286.7	7.2	**4.4497**	0.350	7.9	mg/L	27	Standard
Ca	43	105.0	20.8	**5.5423**	1.295	23.4	mg/L	20	Standard
Fe	54	6872.9	4.1	**5.0279**	0.184	3.7	mg/L	158	Standard
Fe	57	2058.5	4.5	**5.4851**	0.346	6.3	mg/L	267	Standard
Sc-1	45	43373.7	1.8				mg/L	38815	Standard
Cl	35	75336.2	1.2				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1873.4	7.7				ug/L	1617	Standard
P	31	23039.2	2.9				ug/L	19244	Standard
S	34	4664.1	1.7				ug/L	3557	Standard
Sr	88	71.7	10.7				ug/L	65	Standard
C	12	43.3	26.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	57.7				mg/L	23	Standard
Dy	164	19.4	52.9				mg/L	13	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	9819.8	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	113.422		
Al	27	116.167		
Sc	45			
Ti	47	104.360		
V	51	100.769		
Cr	52	103.585		
Cr	53			
Mn	55	105.831		
Co	59	101.454		
Ni	60	104.359		
Cu	65	104.463		
Zn	66	102.709		
Ge	72		111.245	
As	75	101.364		
Se	82	100.221		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 17:41:51
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	102.341		
Ag	107	100.806		
Cd	111	101.060		
Cd	114			
In	115		104.701	
Sn	118	101.383		
Sb	123	101.637		
Ba	135	99.548		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.028		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.716		
U	238	101.392		
Bi	209		100.026	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 17:41:51
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 17:42:45
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56496.8	1.6				ug/L	68501	Standard
	Be	9	30.0	33.3	**0.0595**	0.013	22.5	ug/L	8	Standard
	Al	27	2731.9	35.8	**0.0583**	0.008	13.6	ug/L	1397	Standard
	Sc	45	43056.1	0.8				ug/L	38815	Standard
	Ti	47	37.3	11.2	**0.0731**	0.011	14.7	ug/L	36	Standard
	V	51	1366.4	11.2	**0.0320**	0.018	57.7	ug/L	1284	Standard
	Cr	52	7206.4	0.8	**0.0165**	0.004	24.9	ug/L	6503	Standard
	Cr	53	368.3	21.1	**-0.0286**	0.083	288.7	ug/L	492	Standard
	Mn	55	773.7	9.9	**0.0188**	0.010	55.7	ug/L	841	Standard
	Co	59	257.7	14.0	**0.0442**	0.005	11.6	ug/L	229	Standard
	Ni	60	301.3	5.7	**0.0053**	0.008	154.5	ug/L	344	Standard
	Cu	65	113.7	8.1	**0.0484**	0.005	10.4	ug/L	115	Standard
	Zn	66	152.3	7.9	**0.0237**	0.010	43.4	ug/L	190	Standard
>	**Ge**	72	451631.1	0.7				ug/L	409858	Standard
	As	75	-25.4	107.4	**0.0766**	0.024	31.2	ug/L	-22	Standard
	Se	82	21.4	50.9	**0.1323**	0.094	70.7	ug/L	18	Standard
	Se-1	77	52.0	6.9	**-0.0734**	0.052	71.2	ug/L	50	Standard
>	**Ga**	71	55.0	55.3				mg/L	97	Standard
	Rb	85	26.7	71.0				ug/L	25	Standard
	Y	89	391397.9	1.1				ug/L	376763	Standard
>	**Rh**	103	21.7	26.6				ug/L	20	Standard
	Mo	98	187.7	19.7	**0.1465**	0.015	10.1	ug/L	51	Standard
	Ag	107	145.3	17.2	**0.0455**	0.004	8.7	ug/L	76	Standard
	Cd	111	26.0	68.7	**0.0520**	0.009	16.8	mg/L	6	Standard
	Cd	114	76.7	36.2	**0.0526**	0.006	10.6	ug/L	18	Standard
>	**In**	115	527013.5	0.4				ug/L	507261	Standard
	Sn	118	870.0	8.1	**0.0429**	0.012	27.7	ug/L	683	Standard
	Sb	123	613.8	28.1	**0.1173**	0.038	32.6	ug/L	446	Standard
	Ba	135	45.3	19.0	**0.0387**	0.004	11.5	ug/L	28	Standard
	Ce	140	195.0	30.8				ug/L	33	Standard
>	**Tb**	159	800215.4	0.9				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	88.7	35.2	**0.0448**	0.004	8.8	ug/L	13	Standard
	Tl	205	81.7	78.7	**0.0547**	0.009	17.3	ug/L	13	Standard
	Pb	206	256.3	10.8	**0.0475**	0.005	10.8	ug/L	226	Standard
	Pb	207	223.0	12.5	**0.0483**	0.006	11.9	ug/L	204	Standard
	Pb	208	989.0	13.1	**0.0548**	0.007	12.3	ug/L	852	Standard
	U	238	68.3	61.3	**0.0528**	0.006	11.7	ug/L	13	Standard
>	**Bi**	209	454884.7	0.8				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 17:45:02
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	63.3	37.3	**0.0388**	0.028	72.5	mg/L	58	Standard
K	39	23.3	44.6	**-0.0579**	0.038	65.5	mg/L	27	Standard
Ca	43	15.0	66.7	**-0.2912**	0.662	227.5	mg/L	20	Standard
Fe	54	129.2	8.0	**-0.0227**	0.007	31.7	mg/L	158	Standard
Fe	57	245.0	9.4	**0.0588**	0.063	107.5	mg/L	267	Standard
Sc-1	45	43056.1	0.8				mg/L	38815	Standard
Cl	35	74182.5	1.6				ug/L	57611	Standard
Kr	83	3.7	41.7				ug/L	2	Standard
Br	81	2006.8	7.6				ug/L	1617	Standard
P	31	22273.0	1.7				ug/L	19244	Standard
S	34	4494.0	2.4				ug/L	3557	Standard
Sr	88	88.3	14.2				ug/L	65	Standard
C	12	43.3	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	16.2	74.0				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	13	Standard
I	127	7897.1	3.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.192	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 17:45:02
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.894
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.301
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 17:45:02
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129706PS WG574306-03
Sample Date/Time: Wednesday, July 06, 2016 17:45:59
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52061.0	2.5				ug/L	68501	Standard
	Be	9	39322.6	1.8	**57.0313**	0.436	0.8	ug/L	8	Standard
	Al	27	346882.7	0.8	**3.2506**	0.058	1.8	ug/L	1397	Standard
	Sc	45	38510.6	2.1				ug/L	38815	Standard
	Ti	47	121.3	8.1	**0.3306**	0.030	9.1	ug/L	36	Standard
	V	51	352822.0	0.3	**49.5734**	0.278	0.6	ug/L	1284	Standard
	Cr	52	363360.0	0.0	**51.4224**	0.353	0.7	ug/L	6503	Standard
	Cr	53	45331.1	2.6	**52.0070**	1.381	2.7	ug/L	492	Standard
	Mn	55	374762.9	0.5	**60.6733**	0.366	0.6	ug/L	841	Standard
	Co	59	297322.9	0.4	**48.8649**	0.481	1.0	ug/L	229	Standard
	Ni	60	88030.0	0.4	**51.8970**	0.116	0.2	ug/L	344	Standard
	Cu	65	89235.3	0.1	**52.8603**	0.282	0.5	ug/L	115	Standard
	Zn	66	60863.7	0.8	**59.7714**	0.851	1.4	ug/L	190	Standard
>	Ge	72	413319.4	0.6				ug/L	409858	Standard
	As	75	56179.5	0.5	**53.8413**	0.457	0.8	ug/L	-22	Standard
	Se	82	6037.9	1.1	**56.6258**	0.899	1.6	ug/L	18	Standard
	Se-1	77	4065.5	1.4	**57.7863**	0.843	1.5	ug/L	50	Standard
>	Ga	71	251.7	12.0				mg/L	97	Standard
	Rb	85	2095.1	9.1				ug/L	25	Standard
	Y	89	352123.4	1.2				ug/L	376763	Standard
>	Rh	103	28.3	20.4				ug/L	20	Standard
	Mo	98	95.7	30.9	**0.1128**	0.013	11.3	ug/L	51	Standard
	Ag	107	302025.2	0.4	**50.3381**	0.232	0.5	ug/L	76	Standard
	Cd	111	100050.8	1.2	**52.4626**	0.368	0.7	mg/L	6	Standard
	Cd	114	244946.2	1.7	**52.5392**	0.964	1.8	ug/L	18	Standard
>	In	115	487818.7	0.7				ug/L	507261	Standard
	Sn	118	375.0	20.8	**-0.0389**	0.014	36.6	ug/L	683	Standard
	Sb	123	169126.9	9.0	**40.9955**	3.876	9.5	ug/L	446	Standard
	Ba	135	96142.1	0.9	**52.5481**	0.525	1.0	ug/L	28	Standard
	Ce	140	16108.6	1.5				ug/L	33	Standard
>	Tb	159	748604.8	0.6				ug/L	800803	Standard
	Ho	165	316.7	22.1				ug/L	10	Standard
	Tl	203	370203.1	1.1	**50.1188**	0.294	0.6	ug/L	13	Standard
	Tl	205	328523.9	1.5	**51.3627**	0.905	1.8	ug/L	13	Standard
	Pb	206	239461.5	0.5	**50.4918**	0.662	1.3	ug/L	226	Standard
	Pb	207	209364.6	0.7	**48.6110**	0.316	0.6	ug/L	204	Standard
	Pb	208	876451.2	0.8	**50.8881**	0.419	0.8	ug/L	852	Standard
	U	238	298587.8	0.7	**46.8254**	0.729	1.6	ug/L	13	Standard
>	Bi	209	433980.1	0.9				ug/L	449044	Standard

Sample ID: L1606129706PS WG574306-03
Report Date/Time: Wednesday, July 06, 2016 17:48:15
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.5802**	16.217	2794.9	mg/L	2	Standard
Mg	24	35.0	51.5	**0.0091**	0.024	262.2	mg/L	58	Standard
K	39	45.0	33.3	**0.0382**	0.056	148.0	mg/L	27	Standard
Ca	43	38.3	30.1	**1.5431**	0.889	57.6	mg/L	20	Standard
Fe	54	291.6	10.8	**0.1255**	0.022	17.4	mg/L	158	Standard
Fe	57	300.0	13.2	**0.3303**	0.113	34.2	mg/L	267	Standard
Sc-1	45	38510.6	2.1				mg/L	38815	Standard
Cl	35	65285.7	1.5				ug/L	57611	Standard
Kr	83	4.0	25.0				ug/L	2	Standard
Br	81	1633.4	20.9				ug/L	1617	Standard
P	31	7273.4	2.6				ug/L	19244	Standard
S	34	4210.6	2.8				ug/L	3557	Standard
Sr	88	91.7	25.8				ug/L	65	Standard
C	12	33.3	69.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	23	Standard
Dy	164	472.9	17.3				mg/L	13	Standard
Ho-1	165	316.7	22.1				mg/L	10	Standard
Er	166	286.7	16.5				mg/L	13	Standard
I	127	6766.5	5.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.000	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.845	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129706PS WG574306-03
Report Date/Time: Wednesday, July 06, 2016 17:48:15
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		96.167
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		96.645
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129706PS WG574306-03
Report Date/Time: Wednesday, July 06, 2016 17:48:15
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129706SDL WG574306-04
Sample Date/Time: Wednesday, July 06, 2016 17:49:10
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51079.4	3.4				ug/L	68501	Standard
	Be	9	31.7	39.7	**0.0660**	0.017	25.9	ug/L	8	Standard
	Al	27	69767.0	1.7	**0.6945**	0.024	3.4	ug/L	1397	Standard
	Sc	45	38154.7	3.2				ug/L	38815	Standard
	Ti	47	41.3	10.1	**0.0953**	0.013	13.3	ug/L	36	Standard
	V	51	1741.8	2.9	**0.1034**	0.007	6.6	ug/L	1284	Standard
	Cr	52	5536.7	1.4	**-0.1292**	0.008	6.3	ug/L	6503	Standard
	Cr	53	206.7	14.8	**-0.1774**	0.037	20.7	ug/L	492	Standard
	Mn	55	11490.7	2.8	**1.7831**	0.047	2.7	ug/L	841	Standard
	Co	59	425.0	3.3	**0.0759**	0.002	2.7	ug/L	229	Standard
	Ni	60	431.7	6.7	**0.0997**	0.016	16.5	ug/L	344	Standard
	Cu	65	174.3	11.2	**0.0909**	0.011	12.5	ug/L	115	Standard
	Zn	66	890.4	7.9	**0.7699**	0.066	8.6	ug/L	190	Standard
>	**Ge**	72	409835.0	0.5				ug/L	409858	Standard
	As	75	-30.4	24.5	**0.0696**	0.007	10.1	ug/L	-22	Standard
	Se	82	18.9	10.9	**0.1272**	0.019	14.6	ug/L	18	Standard
	Se-1	77	53.0	16.8	**0.0104**	0.126	1205.9	ug/L	50	Standard
>	**Ga**	71	66.7	45.8				mg/L	97	Standard
	Rb	85	433.3	9.3				ug/L	25	Standard
	Y	89	346927.3	1.3				ug/L	376763	Standard
>	**Rh**	103	11.7	49.5				ug/L	20	Standard
	Mo	98	94.2	43.0	**0.1127**	0.017	15.4	ug/L	51	Standard
	Ag	107	153.7	12.9	**0.0491**	0.003	7.1	ug/L	76	Standard
	Cd	111	33.5	14.8	**0.0572**	0.002	4.3	mg/L	6	Standard
	Cd	114	58.8	25.2	**0.0502**	0.003	6.3	ug/L	18	Standard
>	**In**	115	479890.1	1.0				ug/L	507261	Standard
	Sn	118	170.0	10.6	**-0.0773**	0.003	4.3	ug/L	683	Standard
	Sb	123	3081.4	22.4	**0.7379**	0.163	22.1	ug/L	446	Standard
	Ba	135	1088.4	1.0	**0.6203**	0.005	0.8	ug/L	28	Standard
	Ce	140	1321.7	27.0				ug/L	33	Standard
>	**Tb**	159	738085.9	0.9				ug/L	800803	Standard
	Ho	165	26.7	39.0				ug/L	10	Standard
	Tl	203	221.3	14.1	**0.0633**	0.004	6.7	ug/L	13	Standard
	Tl	205	156.7	43.3	**0.0670**	0.011	15.8	ug/L	13	Standard
	Pb	206	350.0	3.9	**0.0698**	0.003	4.2	ug/L	226	Standard
	Pb	207	313.7	4.7	**0.0718**	0.003	4.7	ug/L	204	Standard
	Pb	208	1331.7	5.9	**0.0774**	0.005	6.0	ug/L	852	Standard
	U	238	140.0	38.9	**0.0646**	0.009	13.3	ug/L	13	Standard
>	**Bi**	209	433783.9	0.1				ug/L	449044	Standard

Sample ID: L1606129706SDL WG574306-04
Report Date/Time: Wednesday, July 06, 2016 17:51:27
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	12.5	**0.0167**	0.006	38.2	mg/L	58	Standard
K	39	35.0	14.3	**0.0005**	0.024	5012.0	mg/L	27	Standard
Ca	43	15.0	120.2	**-0.1387**	1.386	999.3	mg/L	20	Standard
Fe	54	70.8	18.4	**-0.0600**	0.010	17.1	mg/L	158	Standard
Fe	57	256.7	14.4	**0.1917**	0.099	51.9	mg/L	267	Standard
> **Sc-1**	45	38154.7	3.2				mg/L	38815	Standard
Cl	35	65026.6	1.2				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1630.1	9.5				ug/L	1617	Standard
P	31	6834.9	2.7				ug/L	19244	Standard
S	34	4033.9	3.6				ug/L	3557	Standard
Sr	88	63.3	4.6				ug/L	65	Standard
C	12	43.3	48.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	23	Standard
Dy	164	60.9	17.6				mg/L	13	Standard
Ho-1	165	26.7	39.0				mg/L	10	Standard
Er	166	50.0	40.0				mg/L	13	Standard
I	127	7083.3	2.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.567	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.994	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129706SDL WG574306-04
Report Date/Time: Wednesday, July 06, 2016 17:51:27
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.604
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.602
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129706SDL WG574306-04
Report Date/Time: Wednesday, July 06, 2016 17:51:27
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129707 WG574306-01
Sample Date/Time: Wednesday, July 06, 2016 17:52:22
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51248.2	2.7				ug/L	68501	Standard
	Be	9	23.3	89.2	**0.0533**	0.030	56.3	ug/L	8	Standard
	Al	27	111147.5	7.0	**1.0806**	0.044	4.1	ug/L	1397	Standard
	Sc	45	38983.5	3.6				ug/L	38815	Standard
	Ti	47	82.7	39.8	**0.2157**	0.100	46.2	ug/L	36	Standard
	V	51	3332.5	0.9	**0.3229**	0.010	3.0	ug/L	1284	Standard
	Cr	52	6723.5	1.3	**0.0297**	0.023	76.2	ug/L	6503	Standard
	Cr	53	306.7	17.6	**-0.0659**	0.063	95.1	ug/L	492	Standard
	Mn	55	63863.7	1.1	**10.2010**	0.042	0.4	ug/L	841	Standard
	Co	59	882.0	4.7	**0.1496**	0.008	5.0	ug/L	229	Standard
	Ni	60	685.7	6.3	**0.2455**	0.028	11.5	ug/L	344	Standard
	Cu	65	1373.7	4.0	**0.7963**	0.041	5.1	ug/L	115	Standard
	Zn	66	3122.3	2.6	**2.9407**	0.042	1.4	ug/L	190	Standard
>	Ge	72	415681.5	1.2				ug/L	409858	Standard
	As	75	58.1	52.9	**0.1541**	0.029	18.8	ug/L	-22	Standard
	Se	82	16.9	11.8	**0.1058**	0.017	15.9	ug/L	18	Standard
	Se-1	77	56.7	10.3	**0.0523**	0.082	156.6	ug/L	50	Standard
>	Ga	71	146.7	7.9				mg/L	97	Standard
	Rb	85	1408.4	7.1				ug/L	25	Standard
	Y	89	353972.1	0.5				ug/L	376763	Standard
>	Rh	103	18.3	41.7				ug/L	20	Standard
	Mo	98	33.9	22.9	**0.0862**	0.004	4.1	ug/L	51	Standard
	Ag	107	107.3	11.7	**0.0409**	0.002	4.7	ug/L	76	Standard
	Cd	111	26.3	31.1	**0.0531**	0.004	7.8	mg/L	6	Standard
	Cd	114	65.6	39.2	**0.0514**	0.005	10.4	ug/L	18	Standard
>	In	115	488687.7	1.4				ug/L	507261	Standard
	Sn	118	226.7	19.0	**-0.0671**	0.008	12.4	ug/L	683	Standard
	Sb	123	1265.3	27.9	**0.2867**	0.089	31.2	ug/L	446	Standard
	Ba	135	7176.7	1.4	**3.9306**	0.084	2.1	ug/L	28	Standard
	Ce	140	15084.2	4.7				ug/L	33	Standard
>	Tb	159	743253.1	1.0				ug/L	800803	Standard
	Ho	165	210.0	6.3				ug/L	10	Standard
	Tl	203	75.0	26.3	**0.0436**	0.003	6.2	ug/L	13	Standard
	Tl	205	78.3	16.1	**0.0549**	0.002	3.7	ug/L	13	Standard
	Pb	206	3721.1	3.6	**0.7888**	0.029	3.7	ug/L	226	Standard
	Pb	207	3091.0	2.2	**0.7241**	0.015	2.1	ug/L	204	Standard
	Pb	208	13585.7	0.7	**0.7971**	0.007	0.9	ug/L	852	Standard
	U	238	98.0	3.7	**0.0581**	0.001	0.9	ug/L	13	Standard
>	Bi	209	429509.1	0.3				ug/L	449044	Standard

Sample ID: L1606129707 WG574306-01
Report Date/Time: Wednesday, July 06, 2016 17:54:38
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.6077**	16.264	2676.3	mg/L	2	Standard
Mg	24	46.7	16.4	**0.0248**	0.013	50.9	mg/L	58	Standard
K	39	26.7	78.1	**-0.0373**	0.078	209.9	mg/L	27	Standard
Ca	43	31.7	50.8	**0.9958**	1.079	108.3	mg/L	20	Standard
Fe	54	169.2	19.3	**0.0214**	0.030	140.6	mg/L	158	Standard
Fe	57	311.7	19.4	**0.3547**	0.164	46.2	mg/L	267	Standard
> **Sc-1**	45	38983.5	3.6				mg/L	38815	Standard
Cl	35	65585.6	0.8				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1850.1	11.7				ug/L	1617	Standard
P	31	6584.8	4.1				ug/L	19244	Standard
S	34	3993.9	4.2				ug/L	3557	Standard
Sr	88	60.0	38.2				ug/L	65	Standard
C	12	63.3	50.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	407.2	18.9				mg/L	13	Standard
Ho-1	165	210.0	6.3				mg/L	10	Standard
Er	166	266.7	14.2				mg/L	13	Standard
I	127	6713.2	3.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.421	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129707 WG574306-01
Report Date/Time: Wednesday, July 06, 2016 17:54:38
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.339
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.650
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129708S WG574306-04
Sample Date/Time: Wednesday, July 06, 2016 17:55:33
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51191.4	2.1				ug/L	68501	Standard
	Be	9	456.7	14.9	**0.6931**	0.104	14.9	ug/L	8	Standard
	Al	27	368531.9	1.3	**3.5098**	0.114	3.2	ug/L	1397	Standard
	Sc	45	38654.3	2.0				ug/L	38815	Standard
	Ti	47	150.0	13.3	**0.4155**	0.059	14.1	ug/L	36	Standard
	V	51	8279.9	2.7	**1.0233**	0.024	2.3	ug/L	1284	Standard
	Cr	52	11886.0	0.7	**0.7800**	0.019	2.4	ug/L	6503	Standard
	Cr	53	971.7	9.1	**0.7058**	0.100	14.2	ug/L	492	Standard
	Mn	55	116648.0	0.9	**18.8323**	0.300	1.6	ug/L	841	Standard
	Co	59	4758.4	1.0	**0.7880**	0.011	1.5	ug/L	229	Standard
	Ni	60	2198.5	3.1	**1.1434**	0.051	4.4	ug/L	344	Standard
	Cu	65	1677.8	2.9	**0.9813**	0.022	2.2	ug/L	115	Standard
	Zn	66	3428.7	2.7	**3.2624**	0.100	3.1	ug/L	190	Standard
>	Ge	72	413053.1	0.8				ug/L	409858	Standard
	As	75	557.0	5.7	**0.6320**	0.027	4.2	ug/L	-22	Standard
	Se	82	59.8	8.9	**0.5102**	0.047	9.1	ug/L	18	Standard
	Se-1	77	79.3	14.3	**0.3834**	0.155	40.3	ug/L	50	Standard
>	Ga	71	475.0	14.8				mg/L	97	Standard
	Rb	85	4023.9	0.7				ug/L	25	Standard
	Y	89	354538.7	1.1				ug/L	376763	Standard
>	Rh	103	16.7	34.6				ug/L	20	Standard
	Mo	98	38.8	30.7	**0.0883**	0.005	6.1	ug/L	51	Standard
	Ag	107	3068.3	0.7	**0.5322**	0.005	1.0	ug/L	76	Standard
	Cd	111	1011.0	4.4	**0.5671**	0.029	5.1	mg/L	6	Standard
	Cd	114	2379.9	1.4	**0.5454**	0.011	2.0	ug/L	18	Standard
>	In	115	489876.3	1.6				ug/L	507261	Standard
	Sn	118	198.3	31.3	**-0.0724**	0.012	17.2	ug/L	683	Standard
	Sb	123	1135.1	32.9	**0.2543**	0.093	36.6	ug/L	446	Standard
	Ba	135	10341.9	0.8	**5.6440**	0.127	2.3	ug/L	28	Standard
	Ce	140	25015.6	2.1				ug/L	33	Standard
>	Tb	159	748391.4	0.7				ug/L	800803	Standard
	Ho	165	353.3	14.3				ug/L	10	Standard
	Tl	203	3619.4	1.4	**0.5242**	0.010	1.8	ug/L	13	Standard
	Tl	205	3225.3	2.9	**0.5476**	0.017	3.2	ug/L	13	Standard
	Pb	206	4699.4	4.3	**0.9890**	0.036	3.7	ug/L	226	Standard
	Pb	207	3997.5	2.3	**0.9292**	0.017	1.9	ug/L	204	Standard
	Pb	208	17494.3	1.6	**1.0181**	0.011	1.1	ug/L	852	Standard
	U	238	3047.3	0.6	**0.5211**	0.002	0.4	ug/L	13	Standard
>	Bi	209	432971.0	0.6				ug/L	449044	Standard

Sample ID: L1606129708S WG574306-04
Report Date/Time: Wednesday, July 06, 2016 17:57:50
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.4512**	15.993	3544.3	mg/L	2	Standard
Mg	24	48.3	39.2	**0.0276**	0.027	96.6	mg/L	58	Standard
K	39	61.7	41.6	**0.1038**	0.097	93.7	mg/L	27	Standard
Ca	43	36.7	15.7	**1.3979**	0.400	28.6	mg/L	20	Standard
Fe	54	485.5	18.9	**0.2870**	0.069	23.9	mg/L	158	Standard
Fe	57	386.7	11.0	**0.6194**	0.147	23.7	mg/L	267	Standard
> **Sc-1**	45	38654.3	2.0				mg/L	38815	Standard
Cl	35	66229.1	0.6				ug/L	57611	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1640.1	1.1				ug/L	1617	Standard
P	31	7413.5	5.4				ug/L	19244	Standard
S	34	4038.9	0.8				ug/L	3557	Standard
Sr	88	83.3	9.2				ug/L	65	Standard
C	12	26.7	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	99.0				mg/L	23	Standard
Dy	164	691.3	10.8				mg/L	13	Standard
Ho-1	165	353.3	14.3				mg/L	10	Standard
Er	166	390.0	13.6				mg/L	13	Standard
I	127	6844.9	3.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.731	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.780	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129708S WG574306-04
Report Date/Time: Wednesday, July 06, 2016 17:57:50
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.573
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.421
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129708S WG574306-04
Report Date/Time: Wednesday, July 06, 2016 17:57:50
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129709SD WG574306-05
Sample Date/Time: Wednesday, July 06, 2016 17:58:44
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50474.0	3.7				ug/L	68501	Standard
	Be	9	410.0	12.7	**0.6334**	0.085	13.4	ug/L	8	Standard
	Al	27	110523.8	4.2	**1.0928**	0.068	6.2	ug/L	1397	Standard
	Sc	45	38594.1	2.2				ug/L	38815	Standard
	Ti	47	104.0	5.4	**0.2765**	0.018	6.6	ug/L	36	Standard
	V	51	6697.0	1.6	**0.7904**	0.016	2.1	ug/L	1284	Standard
	Cr	52	9874.2	1.2	**0.4752**	0.026	5.4	ug/L	6503	Standard
	Cr	53	716.7	5.9	**0.4021**	0.047	11.6	ug/L	492	Standard
	Mn	55	32613.7	2.7	**5.1415**	0.174	3.4	ug/L	841	Standard
	Co	59	3776.8	1.7	**0.6201**	0.014	2.3	ug/L	229	Standard
	Ni	60	1462.1	1.1	**0.6984**	0.005	0.8	ug/L	344	Standard
	Cu	65	1586.7	1.5	**0.9177**	0.017	1.8	ug/L	115	Standard
	Zn	66	2979.0	1.6	**2.7891**	0.060	2.2	ug/L	190	Standard
>	**Ge**	72	417395.3	0.7				ug/L	409858	Standard
	As	75	608.0	6.0	**0.6750**	0.037	5.5	ug/L	-22	Standard
	Se	82	67.3	11.2	**0.5741**	0.074	12.9	ug/L	18	Standard
	Se-1	77	82.7	9.8	**0.4197**	0.112	26.7	ug/L	50	Standard
>	**Ga**	71	180.0	12.1				mg/L	97	Standard
	Rb	85	1421.7	5.1				ug/L	25	Standard
	Y	89	354281.1	1.0				ug/L	376763	Standard
>	**Rh**	103	13.3	43.3				ug/L	20	Standard
	Mo	98	40.9	50.3	**0.0891**	0.009	9.8	ug/L	51	Standard
	Ag	107	3037.6	5.9	**0.5279**	0.026	4.9	ug/L	76	Standard
	Cd	111	1061.0	6.0	**0.5939**	0.029	4.8	mg/L	6	Standard
	Cd	114	2592.4	5.7	**0.5917**	0.027	4.6	ug/L	18	Standard
>	**In**	115	488883.1	0.9				ug/L	507261	Standard
	Sn	118	291.7	30.7	**-0.0549**	0.017	30.3	ug/L	683	Standard
	Sb	123	1181.2	24.2	**0.2650**	0.067	25.2	ug/L	446	Standard
	Ba	135	5083.9	4.4	**2.7871**	0.107	3.8	ug/L	28	Standard
	Ce	140	14129.9	2.8				ug/L	33	Standard
>	**Tb**	159	743713.8	1.2				ug/L	800803	Standard
	Ho	165	243.3	11.3				ug/L	10	Standard
	Tl	203	3550.1	4.9	**0.5153**	0.021	4.0	ug/L	13	Standard
	Tl	205	3118.7	2.7	**0.5315**	0.016	3.1	ug/L	13	Standard
	Pb	206	4004.2	1.4	**0.8433**	0.006	0.7	ug/L	226	Standard
	Pb	207	3411.7	1.3	**0.7940**	0.016	2.0	ug/L	204	Standard
	Pb	208	14769.9	0.5	**0.8607**	0.008	0.9	ug/L	852	Standard
	U	238	2870.9	1.4	**0.4941**	0.010	2.0	ug/L	13	Standard
>	**Bi**	209	432422.4	0.8				ug/L	449044	Standard

Sample ID: L1606129709SD WG574306-05
Report Date/Time: Wednesday, July 06, 2016 18:01:01
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.5319**	16.133	3033.1	mg/L	2	Standard
Mg	24	38.3	19.9	**0.0138**	0.010	71.2	mg/L	58	Standard
K	39	35.0	57.1	**-0.0026**	0.077	2940.7	mg/L	27	Standard
Ca	43	30.0	50.0	**0.9064**	1.056	116.5	mg/L	20	Standard
Fe	54	176.0	9.1	**0.0280**	0.015	53.5	mg/L	158	Standard
Fe	57	306.7	10.5	**0.3522**	0.110	31.3	mg/L	267	Standard
> **Sc-1**	45	38594.1	2.2				mg/L	38815	Standard
Cl	35	65870.2	1.0				ug/L	57611	Standard
Kr	83	3.7	41.7				ug/L	2	Standard
Br	81	1676.8	6.4				ug/L	1617	Standard
P	31	6811.5	4.4				ug/L	19244	Standard
S	34	3892.2	5.0				ug/L	3557	Standard
Sr	88	63.3	35.6				ug/L	65	Standard
C	12	40.0	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	23	Standard
Dy	164	400.9	15.7				mg/L	13	Standard
Ho-1	165	243.3	11.3				mg/L	10	Standard
Er	166	190.0	32.0				mg/L	13	Standard
I	127	6444.7	3.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		73.683	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.839	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129709SD WG574306-05
Report Date/Time: Wednesday, July 06, 2016 18:01:01
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.377
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.298
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129710
Sample Date/Time: Wednesday, July 06, 2016 18:01:56
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50694.8	5.0				ug/L	68501	Standard
	Be	9	23.3	44.6	**0.0544**	0.017	30.4	ug/L	8	Standard
	Al	27	211106.2	2.8	**2.0456**	0.049	2.4	ug/L	1397	Standard
	Sc	45	38264.9	1.5				ug/L	38815	Standard
	Ti	47	83.7	9.1	**0.2178**	0.022	10.1	ug/L	36	Standard
	V	51	2417.0	1.9	**0.1944**	0.007	3.8	ug/L	1284	Standard
	Cr	52	6348.3	0.6	**-0.0247**	0.006	22.6	ug/L	6503	Standard
	Cr	53	258.3	17.5	**-0.1216**	0.053	43.2	ug/L	492	Standard
	Mn	55	63628.7	0.8	**10.1580**	0.084	0.8	ug/L	841	Standard
	Co	59	574.3	2.6	**0.0993**	0.002	2.3	ug/L	229	Standard
	Ni	60	527.7	5.4	**0.1523**	0.016	10.8	ug/L	344	Standard
	Cu	65	252.3	5.2	**0.1353**	0.008	6.0	ug/L	115	Standard
	Zn	66	1691.8	2.2	**1.5409**	0.039	2.5	ug/L	190	Standard
>	Ge	72	415881.7	0.3				ug/L	409858	Standard
	As	75	-24.7	122.3	**0.0754**	0.029	38.2	ug/L	-22	Standard
	Se	82	17.5	32.4	**0.1117**	0.053	47.4	ug/L	18	Standard
	Se-1	77	56.7	18.9	**0.0522**	0.155	295.9	ug/L	50	Standard
>	Ga	71	123.3	10.2				mg/L	97	Standard
	Rb	85	903.4	10.2				ug/L	25	Standard
	Y	89	349426.8	0.6				ug/L	376763	Standard
>	Rh	103	15.0	57.7				ug/L	20	Standard
	Mo	98	37.0	15.6	**0.0875**	0.002	2.8	ug/L	51	Standard
	Ag	107	85.3	14.5	**0.0373**	0.002	5.5	ug/L	76	Standard
	Cd	111	9.9	46.2	**0.0446**	0.002	5.4	mg/L	6	Standard
	Cd	114	20.2	56.9	**0.0417**	0.002	5.9	ug/L	18	Standard
>	In	115	488396.8	0.4				ug/L	507261	Standard
	Sn	118	241.7	16.7	**-0.0643**	0.008	11.8	ug/L	683	Standard
	Sb	123	676.4	23.5	**0.1434**	0.038	26.8	ug/L	446	Standard
	Ba	135	3064.6	1.1	**1.6882**	0.015	0.9	ug/L	28	Standard
	Ce	140	9409.6	3.5				ug/L	33	Standard
>	Tb	159	744362.4	1.0				ug/L	800803	Standard
	Ho	165	175.0	9.9				ug/L	10	Standard
	Tl	203	42.7	34.8	**0.0392**	0.002	5.1	ug/L	13	Standard
	Tl	205	30.0	33.3	**0.0473**	0.002	3.3	ug/L	13	Standard
	Pb	206	661.3	6.5	**0.1366**	0.008	6.0	ug/L	226	Standard
	Pb	207	567.7	4.1	**0.1319**	0.005	3.6	ug/L	204	Standard
	Pb	208	2453.4	2.1	**0.1438**	0.002	1.6	ug/L	852	Standard
	U	238	68.7	7.3	**0.0535**	0.001	1.6	ug/L	13	Standard
>	Bi	209	430131.5	0.6				ug/L	449044	Standard

Sample ID: L1606129710
Report Date/Time: Wednesday, July 06, 2016 18:04:13
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	65.0	33.5	**0.0511**	0.031	60.0	mg/L	58	Standard
K	39	28.3	27.0	**-0.0270**	0.032	120.1	mg/L	27	Standard
Ca	43	20.0	75.0	**0.2066**	1.119	541.6	mg/L	20	Standard
Fe	54	127.8	19.6	**-0.0119**	0.020	165.0	mg/L	158	Standard
Fe	57	263.3	4.4	**0.2137**	0.033	15.5	mg/L	267	Standard
> **Sc-1**	45	38264.9	1.5				mg/L	38815	Standard
Cl	35	65564.9	1.1				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1613.4	6.0				ug/L	1617	Standard
P	31	6929.9	2.6				ug/L	19244	Standard
S	34	3928.8	1.5				ug/L	3557	Standard
Sr	88	76.7	22.9				ug/L	65	Standard
C	12	36.7	15.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	23	Standard
Dy	164	234.6	36.6				mg/L	13	Standard
Ho-1	165	175.0	9.9				mg/L	10	Standard
Er	166	183.3	35.1				mg/L	13	Standard
I	127	6321.3	1.3				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		74.006	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.470	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606129710
Report Date/Time: Wednesday, July 06, 2016 18:04:13
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.281
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.788
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129710
Report Date/Time: Wednesday, July 06, 2016 18:04:13
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129711
Sample Date/Time: Wednesday, July 06, 2016 18:05:07
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50754.9	2.2				ug/L	68501	Standard
	Be	9	15.0	33.3	**0.0419**	0.008	18.8	ug/L	8	Standard
	Al	27	183332.5	0.4	**1.7784**	0.046	2.6	ug/L	1397	Standard
	Sc	45	37919.1	1.8				ug/L	38815	Standard
	Ti	47	69.7	10.1	**0.1784**	0.021	11.6	ug/L	36	Standard
	V	51	2453.4	3.6	**0.2024**	0.014	6.8	ug/L	1284	Standard
	Cr	52	6402.0	1.2	**-0.0091**	0.014	151.7	ug/L	6503	Standard
	Cr	53	266.7	6.6	**-0.1094**	0.021	19.0	ug/L	492	Standard
	Mn	55	36825.0	0.9	**5.8894**	0.074	1.2	ug/L	841	Standard
	Co	59	582.3	7.8	**0.1014**	0.008	7.6	ug/L	229	Standard
	Ni	60	536.3	5.0	**0.1602**	0.017	10.5	ug/L	344	Standard
	Cu	65	306.7	13.1	**0.1689**	0.024	14.4	ug/L	115	Standard
	Zn	66	2348.8	3.0	**2.2031**	0.076	3.5	ug/L	190	Standard
>	**Ge**	72	412357.7	0.3				ug/L	409858	Standard
	As	75	-25.4	36.6	**0.0746**	0.009	11.8	ug/L	-22	Standard
	Se	82	13.4	35.5	**0.0744**	0.045	60.1	ug/L	18	Standard
	Se-1	77	51.3	15.7	**-0.0182**	0.115	632.7	ug/L	50	Standard
>	**Ga**	71	115.0	30.1				mg/L	97	Standard
	Rb	85	766.7	3.1				ug/L	25	Standard
	Y	89	352987.1	1.9				ug/L	376763	Standard
>	**Rh**	103	11.7	49.5				ug/L	20	Standard
	Mo	98	33.6	40.7	**0.0860**	0.006	6.8	ug/L	51	Standard
	Ag	107	103.0	24.8	**0.0402**	0.004	10.5	ug/L	76	Standard
	Cd	111	15.3	49.9	**0.0474**	0.004	8.3	mg/L	6	Standard
	Cd	114	50.3	53.6	**0.0481**	0.006	11.9	ug/L	18	Standard
>	**In**	115	488095.7	0.6				ug/L	507261	Standard
	Sn	118	175.0	20.6	**-0.0769**	0.007	8.8	ug/L	683	Standard
	Sb	123	600.2	31.8	**0.1249**	0.045	36.4	ug/L	446	Standard
	Ba	135	2511.9	2.3	**1.3873**	0.023	1.6	ug/L	28	Standard
	Ce	140	10036.7	3.1				ug/L	33	Standard
>	**Tb**	159	743862.7	0.4				ug/L	800803	Standard
	Ho	165	233.3	12.2				ug/L	10	Standard
	Tl	203	53.3	68.4	**0.0405**	0.005	12.1	ug/L	13	Standard
	Tl	205	48.3	110.6	**0.0501**	0.008	16.7	ug/L	13	Standard
	Pb	206	710.4	11.0	**0.1459**	0.016	11.2	ug/L	226	Standard
	Pb	207	563.0	9.3	**0.1298**	0.012	9.0	ug/L	204	Standard
	Pb	208	2506.1	5.9	**0.1457**	0.008	5.7	ug/L	852	Standard
	U	238	57.0	28.2	**0.0516**	0.002	4.8	ug/L	13	Standard
>	**Bi**	209	433560.5	0.7				ug/L	449044	Standard

Sample ID: L1606129711
Report Date/Time: Wednesday, July 06, 2016 18:07:24
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	36.7	15.7	**0.0124**	0.007	59.7	mg/L	58	Standard
K	39	40.0	25.0	**0.0209**	0.038	181.0	mg/L	27	Standard
Ca	43	31.7	24.1	**1.0837**	0.598	55.2	mg/L	20	Standard
Fe	54	129.3	10.3	**-0.0095**	0.010	101.4	mg/L	158	Standard
Fe	57	325.0	11.6	**0.4318**	0.109	25.3	mg/L	267	Standard
> **Sc-1**	45	37919.1	1.8				mg/L	38815	Standard
Cl	35	65636.5	0.4				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1646.8	7.3				ug/L	1617	Standard
P	31	6866.6	2.8				ug/L	19244	Standard
S	34	4128.9	4.7				ug/L	3557	Standard
Sr	88	71.7	35.8				ug/L	65	Standard
C	12	33.3	17.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	276.8	15.7				mg/L	13	Standard
Ho-1	165	233.3	12.2				mg/L	10	Standard
Er	166	206.7	34.0				mg/L	13	Standard
I	127	6129.6	0.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.093	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.610	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129711
Report Date/Time: Wednesday, July 06, 2016 18:07:24
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.222
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.552
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129712
Sample Date/Time: Wednesday, July 06, 2016 18:08:18
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50335.2	2.7				ug/L	68501	Standard
	Be	9	18.3	15.7	**0.0470**	0.005	10.6	ug/L	8	Standard
	Al	27	215415.6	1.0	**2.1004**	0.037	1.7	ug/L	1397	Standard
	Sc	45	38381.9	1.8				ug/L	38815	Standard
	Ti	47	60.3	5.3	**0.1507**	0.008	5.4	ug/L	36	Standard
	V	51	3357.9	2.5	**0.3301**	0.014	4.2	ug/L	1284	Standard
	Cr	52	6864.9	1.2	**0.0575**	0.017	30.3	ug/L	6503	Standard
	Cr	53	286.7	22.8	**-0.0866**	0.075	86.1	ug/L	492	Standard
	Mn	55	47490.3	1.4	**7.6213**	0.154	2.0	ug/L	841	Standard
	Co	59	909.0	0.9	**0.1552**	0.001	0.4	ug/L	229	Standard
	Ni	60	721.0	3.8	**0.2695**	0.016	5.9	ug/L	344	Standard
	Cu	65	403.0	1.3	**0.2260**	0.005	2.4	ug/L	115	Standard
	Zn	66	1975.8	1.6	**1.8347**	0.040	2.2	ug/L	190	Standard
>	**Ge**	72	412470.3	1.0				ug/L	409858	Standard
	As	75	31.9	13.5	**0.1295**	0.004	3.3	ug/L	-22	Standard
	Se	82	17.4	8.7	**0.1126**	0.015	13.5	ug/L	18	Standard
	Se-1	77	45.0	25.6	**-0.1084**	0.173	159.5	ug/L	50	Standard
>	**Ga**	71	148.3	15.9				mg/L	97	Standard
	Rb	85	1413.4	1.1				ug/L	25	Standard
	Y	89	355079.6	1.3				ug/L	376763	Standard
>	**Rh**	103	21.7	35.3				ug/L	20	Standard
	Mo	98	20.8	25.7	**0.0806**	0.002	2.8	ug/L	51	Standard
	Ag	107	73.0	9.6	**0.0354**	0.001	3.2	ug/L	76	Standard
	Cd	111	6.6	8.6	**0.0429**	0.000	0.7	mg/L	6	Standard
	Cd	114	20.9	33.3	**0.0419**	0.002	3.6	ug/L	18	Standard
>	**In**	115	483721.6	0.7				ug/L	507261	Standard
	Sn	118	213.3	19.9	**-0.0693**	0.008	11.5	ug/L	683	Standard
	Sb	123	539.2	27.8	**0.1113**	0.036	32.3	ug/L	446	Standard
	Ba	135	4478.0	0.8	**2.4832**	0.009	0.3	ug/L	28	Standard
	Ce	140	17977.3	3.2				ug/L	33	Standard
>	**Tb**	159	746978.8	0.4				ug/L	800803	Standard
	Ho	165	251.7	13.5				ug/L	10	Standard
	Tl	203	17.3	17.6	**0.0357**	0.000	1.2	ug/L	13	Standard
	Tl	205	23.3	61.9	**0.0462**	0.002	5.0	ug/L	13	Standard
	Pb	206	1045.0	1.4	**0.2194**	0.003	1.4	ug/L	226	Standard
	Pb	207	882.0	2.6	**0.2066**	0.005	2.6	ug/L	204	Standard
	Pb	208	3909.9	0.4	**0.2303**	0.000	0.1	ug/L	852	Standard
	U	238	73.3	9.1	**0.0543**	0.001	2.0	ug/L	13	Standard
>	**Bi**	209	427989.3	0.3				ug/L	449044	Standard

Sample ID: L1606129712
Report Date/Time: Wednesday, July 06, 2016 18:10:35
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	30.2	**0.0188**	0.018	96.0	mg/L	58	Standard
K	39	33.3	70.9	**-0.0063**	0.098	1546.5	mg/L	27	Standard
Ca	43	15.0	66.7	**-0.1831**	0.717	391.6	mg/L	20	Standard
Fe	54	209.2	17.9	**0.0570**	0.033	57.1	mg/L	158	Standard
Fe	57	285.0	7.6	**0.2853**	0.087	30.4	mg/L	267	Standard
> **Sc-1**	45	38381.9	1.8				mg/L	38815	Standard
Cl	35	64770.8	1.6				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	1600.1	5.6				ug/L	1617	Standard
P	31	6721.5	5.0				ug/L	19244	Standard
S	34	3827.2	4.3				ug/L	3557	Standard
Sr	88	76.7	13.6				ug/L	65	Standard
C	12	23.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	426.8	9.3				mg/L	13	Standard
Ho-1	165	251.7	13.5				mg/L	10	Standard
Er	166	276.7	32.6				mg/L	13	Standard
I	127	6603.1	2.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		73.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.637	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129712
Report Date/Time: Wednesday, July 06, 2016 18:10:35
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.360
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.311
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129713
Sample Date/Time: Wednesday, July 06, 2016 18:11:30
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49761.6	2.9				ug/L	68501	Standard
	Be	9	16.7	17.3	**0.0447**	0.004	8.0	ug/L	8	Standard
	Al	27	115065.3	0.5	**1.1513**	0.034	2.9	ug/L	1397	Standard
	Sc	45	37810.5	0.3				ug/L	38815	Standard
	Ti	47	105.3	4.9	**0.2866**	0.015	5.4	ug/L	36	Standard
	V	51	3530.3	1.5	**0.3586**	0.009	2.5	ug/L	1284	Standard
	Cr	52	7133.3	2.4	**0.1049**	0.027	25.4	ug/L	6503	Standard
	Cr	53	420.0	21.7	**0.0724**	0.107	148.4	ug/L	492	Standard
	Mn	55	50677.6	0.5	**8.2081**	0.064	0.8	ug/L	841	Standard
	Co	59	768.4	0.7	**0.1331**	0.001	0.7	ug/L	229	Standard
	Ni	60	628.0	4.0	**0.2175**	0.015	6.7	ug/L	344	Standard
	Cu	65	765.7	2.5	**0.4451**	0.010	2.2	ug/L	115	Standard
	Zn	66	3143.0	1.5	**3.0116**	0.058	1.9	ug/L	190	Standard
>	**Ge**	72	409013.8	0.4				ug/L	409858	Standard
	As	75	56.6	69.8	**0.1536**	0.038	24.9	ug/L	-22	Standard
	Se	82	14.1	32.3	**0.0827**	0.043	52.2	ug/L	18	Standard
	Se-1	77	48.7	8.3	**-0.0506**	0.061	121.0	ug/L	50	Standard
>	**Ga**	71	178.3	9.0				mg/L	97	Standard
	Rb	85	1400.1	8.4				ug/L	25	Standard
	Y	89	346257.1	1.1				ug/L	376763	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	39.5	18.5	**0.0886**	0.003	3.5	ug/L	51	Standard
	Ag	107	102.3	20.3	**0.0402**	0.004	8.7	ug/L	76	Standard
	Cd	111	61.3	15.2	**0.0716**	0.005	7.0	mg/L	6	Standard
	Cd	114	112.7	18.4	**0.0616**	0.004	7.2	ug/L	18	Standard
>	**In**	115	485884.7	0.3				ug/L	507261	Standard
	Sn	118	211.7	20.1	**-0.0697**	0.008	11.5	ug/L	683	Standard
	Sb	123	494.9	23.2	**0.1000**	0.028	27.5	ug/L	446	Standard
	Ba	135	5100.2	1.4	**2.8135**	0.039	1.4	ug/L	28	Standard
	Ce	140	13969.8	3.7				ug/L	33	Standard
>	**Tb**	159	740578.5	1.6				ug/L	800803	Standard
	Ho	165	228.3	7.0				ug/L	10	Standard
	Tl	203	33.3	49.9	**0.0379**	0.002	6.1	ug/L	13	Standard
	Tl	205	23.3	81.1	**0.0462**	0.003	6.5	ug/L	13	Standard
	Pb	206	4522.7	3.0	**0.9547**	0.035	3.7	ug/L	226	Standard
	Pb	207	3741.1	1.9	**0.8721**	0.023	2.7	ug/L	204	Standard
	Pb	208	16474.8	2.1	**0.9616**	0.028	2.9	ug/L	852	Standard
	U	238	62.0	21.8	**0.0524**	0.002	4.1	ug/L	13	Standard
>	**Bi**	209	431770.2	0.8				ug/L	449044	Standard

Sample ID: L1606129713
Report Date/Time: Wednesday, July 06, 2016 18:13:47
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	9.1	**0.0381**	0.007	18.2	mg/L	58	Standard
K	39	51.7	14.8	**0.0696**	0.031	44.3	mg/L	27	Standard
Ca	43	35.0	14.3	**1.3352**	0.372	27.8	mg/L	20	Standard
Fe	54	132.7	26.7	**-0.0061**	0.031	500.8	mg/L	158	Standard
Fe	57	271.7	4.6	**0.2533**	0.046	18.1	mg/L	267	Standard
> **Sc-1**	45	37810.5	0.3				mg/L	38815	Standard
Cl	35	65102.2	0.6				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1543.4	1.0				ug/L	1617	Standard
P	31	6598.1	0.9				ug/L	19244	Standard
S	34	3738.8	4.5				ug/L	3557	Standard
Sr	88	60.0	28.9				ug/L	65	Standard
C	12	40.0	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	23	Standard
Dy	164	348.0	17.2				mg/L	13	Standard
Ho-1	165	228.3	7.0				mg/L	10	Standard
Er	166	180.0	41.9				mg/L	13	Standard
I	127	6603.1	2.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.643	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.794	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129713
Report Date/Time: Wednesday, July 06, 2016 18:13:47
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.786
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.153
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129713
Report Date/Time: Wednesday, July 06, 2016 18:13:47
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129714
Sample Date/Time: Wednesday, July 06, 2016 18:14:41
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50039.2	2.4				ug/L	68501	Standard
	Be	9	13.3	94.4	**0.0397**	0.019	48.8	ug/L	8	Standard
	Al	27	298991.3	0.5	**2.9188**	0.070	2.4	ug/L	1397	Standard
	Sc	45	38122.9	0.7				ug/L	38815	Standard
	Ti	47	166.7	6.2	**0.4716**	0.032	6.7	ug/L	36	Standard
	V	51	3977.0	4.8	**0.4242**	0.024	5.7	ug/L	1284	Standard
	Cr	52	7631.6	1.3	**0.1818**	0.022	12.3	ug/L	6503	Standard
	Cr	53	421.7	6.1	**0.0761**	0.031	40.8	ug/L	492	Standard
	Mn	55	62384.2	1.3	**10.1648**	0.070	0.7	ug/L	841	Standard
	Co	59	1085.4	5.6	**0.1864**	0.009	4.9	ug/L	229	Standard
	Ni	60	966.4	3.8	**0.4220**	0.026	6.2	ug/L	344	Standard
	Cu	65	440.0	5.6	**0.2511**	0.013	5.2	ug/L	115	Standard
	Zn	66	2042.1	4.2	**1.9247**	0.087	4.5	ug/L	190	Standard
>	Ge	72	407467.1	0.7				ug/L	409858	Standard
	As	75	39.9	63.0	**0.1377**	0.025	17.9	ug/L	-22	Standard
	Se	82	20.6	24.9	**0.1454**	0.050	34.3	ug/L	18	Standard
	Se-1	77	51.0	9.8	**-0.0143**	0.068	476.2	ug/L	50	Standard
>	Ga	71	275.0	4.8				mg/L	97	Standard
	Rb	85	2116.8	7.7				ug/L	25	Standard
	Y	89	347005.1	2.4				ug/L	376763	Standard
>	Rh	103	13.3	21.7				ug/L	20	Standard
	Mo	98	39.7	31.0	**0.0889**	0.005	5.9	ug/L	51	Standard
	Ag	107	79.3	14.1	**0.0365**	0.002	5.0	ug/L	76	Standard
	Cd	111	3.3	35.1	**0.0411**	0.001	1.5	mg/L	6	Standard
	Cd	114	13.4	19.7	**0.0403**	0.001	1.4	ug/L	18	Standard
>	In	115	481126.5	1.0				ug/L	507261	Standard
	Sn	118	183.3	26.9	**-0.0748**	0.009	12.4	ug/L	683	Standard
	Sb	123	489.1	28.0	**0.0996**	0.033	32.8	ug/L	446	Standard
	Ba	135	3839.5	1.3	**2.1428**	0.020	0.9	ug/L	28	Standard
	Ce	140	17111.3	4.6				ug/L	33	Standard
>	Tb	159	731912.0	0.9				ug/L	800803	Standard
	Ho	165	248.3	22.6				ug/L	10	Standard
	Tl	203	18.0	20.0	**0.0358**	0.000	1.3	ug/L	13	Standard
	Tl	205	36.7	92.8	**0.0483**	0.005	10.9	ug/L	13	Standard
	Pb	206	988.0	8.2	**0.2061**	0.015	7.2	ug/L	226	Standard
	Pb	207	789.4	4.2	**0.1839**	0.006	3.4	ug/L	204	Standard
	Pb	208	3493.2	5.0	**0.2047**	0.008	3.9	ug/L	852	Standard
	U	238	71.0	33.8	**0.0538**	0.004	6.8	ug/L	13	Standard
>	Bi	209	429968.6	1.1				ug/L	449044	Standard

Sample ID: L1606129714
Report Date/Time: Wednesday, July 06, 2016 18:16:58
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.3994**	15.904	3981.5	mg/L	2	Standard
Mg	24	36.7	56.8	**0.0121**	0.028	234.3	mg/L	58	Standard
K	39	36.7	7.9	**0.0069**	0.011	154.1	mg/L	27	Standard
Ca	43	26.7	47.2	**0.6938**	0.919	132.4	mg/L	20	Standard
Fe	54	318.9	15.1	**0.1514**	0.039	25.9	mg/L	158	Standard
Fe	57	351.7	13.5	**0.5176**	0.156	30.2	mg/L	267	Standard
> **Sc-1**	45	38122.9	0.7				mg/L	38815	Standard
Cl	35	64778.2	1.0				ug/L	57611	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1553.4	14.8				ug/L	1617	Standard
P	31	6536.4	3.0				ug/L	19244	Standard
S	34	3808.8	6.3				ug/L	3557	Standard
Sr	88	81.7	40.8				ug/L	65	Standard
C	12	40.0	90.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	398.3	4.1				mg/L	13	Standard
Ho-1	165	248.3	22.6				mg/L	10	Standard
Er	166	313.3	13.3				mg/L	13	Standard
I	127	6079.6	3.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		73.049	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.417	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129714
Report Date/Time: Wednesday, July 06, 2016 18:16:58
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.848
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.752
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 18:17:55
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54024.5	1.3				ug/L	68501	Standard
	Be	9	40169.9	2.9	**56.1283**	0.922	1.6	ug/L	8	Standard
	Al	27	6551308.5	0.6	**58.5425**	0.397	0.7	ug/L	1397	Standard
	Sc	45	42979.2	3.3				ug/L	38815	Standard
	Ti	47	38471.8	2.2	**105.7272**	1.558	1.5	ug/L	36	Standard
	V	51	387365.7	0.3	**50.6573**	0.316	0.6	ug/L	1284	Standard
	Cr	52	393336.6	1.6	**51.8098**	0.574	1.1	ug/L	6503	Standard
	Cr	53	48883.7	0.9	**52.1960**	0.426	0.8	ug/L	492	Standard
	Mn	55	351248.3	1.5	**52.9139**	0.978	1.8	ug/L	841	Standard
	Co	59	330751.7	0.9	**50.5900**	0.617	1.2	ug/L	229	Standard
	Ni	60	94988.8	0.8	**52.1212**	0.782	1.5	ug/L	344	Standard
	Cu	65	94496.8	0.9	**52.0968**	0.601	1.2	ug/L	115	Standard
	Zn	66	56465.0	1.0	**51.5913**	0.693	1.3	ug/L	190	Standard
>	**Ge**	72	444111.1	0.9				ug/L	409858	Standard
	As	75	56881.0	0.2	**50.7406**	0.409	0.8	ug/L	-22	Standard
	Se	82	5659.7	1.3	**49.3953**	1.039	2.1	ug/L	18	Standard
	Se-1	77	3934.8	1.9	**51.9754**	0.965	1.9	ug/L	50	Standard
>	**Ga**	71	63.3	12.1				mg/L	97	Standard
	Rb	85	791.7	16.0				ug/L	25	Standard
	Y	89	378356.6	1.6				ug/L	376763	Standard
>	**Rh**	103	31.7	9.1				ug/L	20	Standard
	Mo	98	250588.8	1.2	**101.8789**	1.315	1.3	ug/L	51	Standard
	Ag	107	320660.5	1.6	**50.3603**	1.102	2.2	ug/L	76	Standard
	Cd	111	103525.7	0.4	**51.1518**	0.364	0.7	mg/L	6	Standard
	Cd	114	252584.7	0.9	**51.0493**	0.583	1.1	ug/L	18	Standard
>	**In**	115	517728.7	0.8				ug/L	507261	Standard
	Sn	118	283510.6	2.4	**50.6309**	0.871	1.7	ug/L	683	Standard
	Sb	123	222186.6	0.8	**50.7357**	0.494	1.0	ug/L	446	Standard
	Ba	135	97423.9	1.0	**50.1717**	0.147	0.3	ug/L	28	Standard
	Ce	140	245.0	5.4				ug/L	33	Standard
>	**Tb**	159	787196.4	1.1				ug/L	800803	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	390883.9	0.5	**51.3380**	0.249	0.5	ug/L	13	Standard
	Tl	205	344356.0	0.7	**52.2281**	0.549	1.1	ug/L	13	Standard
	Pb	206	242793.9	0.2	**49.6623**	0.143	0.3	ug/L	226	Standard
	Pb	207	219389.0	1.0	**49.4158**	0.332	0.7	ug/L	204	Standard
	Pb	208	936979.2	0.8	**52.7777**	0.597	1.1	ug/L	852	Standard
	U	238	329537.5	0.4	**50.1290**	0.317	0.6	ug/L	13	Standard
>	**Bi**	209	447337.3	0.3				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 18:20:12
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.2714**	14.742	5432.3	mg/L	2	Standard
Mg	24	3770.5	0.9	**4.5762**	0.194	4.2	mg/L	58	Standard
K	39	1251.7	8.8	**4.3649**	0.370	8.5	mg/L	27	Standard
Ca	43	105.0	26.5	**5.6632**	2.047	36.2	mg/L	20	Standard
Fe	54	6656.7	3.8	**4.9191**	0.344	7.0	mg/L	158	Standard
Fe	57	1763.4	5.5	**4.6571**	0.458	9.8	mg/L	267	Standard
> **Sc-1**	45	42979.2	3.3				mg/L	38815	Standard
Cl	35	73216.5	0.1				ug/L	57611	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1880.1	6.8				ug/L	1617	Standard
P	31	22333.1	1.9				ug/L	19244	Standard
S	34	4467.3	1.5				ug/L	3557	Standard
Sr	88	61.7	20.4				ug/L	65	Standard
C	12	36.7	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	86.6				mg/L	23	Standard
Dy	164	9.4	3.0				mg/L	13	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	9071.0	1.0				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	112.257		
	Al	27	117.085		
	Sc	45			
	Ti	47	105.727		
	V	51	101.315		
	Cr	52	103.620		
	Cr	53			
	Mn	55	105.828		
	Co	59	101.180		
	Ni	60	104.242		
	Cu	65	104.194		
	Zn	66	103.183		
>	Ge	72		108.357	
	As	75	101.481		
	Se	82	98.791		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 18:20:12
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	101.879		
Ag	107	100.721		
Cd	111	102.304		
Cd	114			
In	115		102.064	
Sn	118	101.262		
Sb	123	101.471		
Ba	135	100.343		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.676		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.555		
U	238	100.258		
Bi	209		99.620	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 18:20:12
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 18:21:06
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53853.9	2.1				ug/L	68501	Standard
	Be	9	15.0	33.3	**0.0404**	0.007	16.8	ug/L	8	Standard
	Al	27	1768.4	11.1	**0.0509**	0.002	3.4	ug/L	1397	Standard
	Sc	45	40911.9	2.8				ug/L	38815	Standard
	Ti	47	37.3	10.1	**0.0755**	0.011	15.1	ug/L	36	Standard
	V	51	1313.5	5.0	**0.0293**	0.011	37.3	ug/L	1284	Standard
	Cr	52	7003.6	1.7	**0.0114**	0.018	158.3	ug/L	6503	Standard
	Cr	53	368.3	10.2	**-0.0194**	0.043	223.1	ug/L	492	Standard
	Mn	55	702.7	6.6	**0.0108**	0.006	59.0	ug/L	841	Standard
	Co	59	223.7	10.0	**0.0399**	0.004	9.9	ug/L	229	Standard
	Ni	60	302.0	2.3	**0.0095**	0.002	20.4	ug/L	344	Standard
	Cu	65	109.0	1.8	**0.0472**	0.001	3.1	ug/L	115	Standard
	Zn	66	139.3	9.0	**0.0149**	0.010	66.2	ug/L	190	Standard
>	**Ge**	72	441370.6	1.5				ug/L	409858	Standard
	As	75	-46.1	48.3	**0.0575**	0.020	35.0	ug/L	-22	Standard
	Se	82	9.6	47.9	**0.0324**	0.039	121.7	ug/L	18	Standard
	Se-1	77	57.0	0.0	**0.0098**	0.011	116.4	ug/L	50	Standard
>	**Ga**	71	38.3	27.2				mg/L	97	Standard
	Rb	85	30.0	28.9				ug/L	25	Standard
	Y	89	377601.0	1.0				ug/L	376763	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	144.9	13.3	**0.1298**	0.007	5.7	ug/L	51	Standard
	Ag	107	94.0	11.1	**0.0377**	0.002	4.1	ug/L	76	Standard
	Cd	111	11.7	44.9	**0.0451**	0.003	5.7	mg/L	6	Standard
	Cd	114	44.2	78.5	**0.0462**	0.007	15.0	ug/L	18	Standard
>	**In**	115	523143.8	0.8				ug/L	507261	Standard
	Sn	118	836.7	10.2	**0.0382**	0.016	41.2	ug/L	683	Standard
	Sb	123	689.1	33.4	**0.1356**	0.053	39.0	ug/L	446	Standard
	Ba	135	32.0	12.5	**0.0321**	0.002	6.4	ug/L	28	Standard
	Ce	140	78.3	25.8				ug/L	33	Standard
>	**Tb**	159	783160.6	1.3				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	56.7	8.9	**0.0407**	0.001	1.5	ug/L	13	Standard
	Tl	205	43.3	33.3	**0.0491**	0.002	4.4	ug/L	13	Standard
	Pb	206	250.3	3.1	**0.0469**	0.002	3.3	ug/L	226	Standard
	Pb	207	202.3	12.0	**0.0442**	0.005	11.8	ug/L	204	Standard
	Pb	208	864.7	5.7	**0.0485**	0.003	5.2	ug/L	852	Standard
	U	238	41.7	42.1	**0.0489**	0.003	5.4	ug/L	13	Standard
>	**Bi**	209	449825.1	0.5				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 18:23:23
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	44.4	**0.0195**	0.025	130.1	mg/L	58	Standard
K	39	28.3	20.4	**-0.0342**	0.025	73.9	mg/L	27	Standard
Ca	43	18.3	68.6	**0.0010**	0.903	88278.4	mg/L	20	Standard
Fe	54	179.1	16.9	**0.0223**	0.027	118.7	mg/L	158	Standard
Fe	57	268.3	2.2	**0.1727**	0.043	24.9	mg/L	267	Standard
> **Sc-1**	45	40911.9	2.8				mg/L	38815	Standard
Cl	35	71267.2	1.2				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1836.8	5.5				ug/L	1617	Standard
P	31	21515.3	2.4				ug/L	19244	Standard
S	34	4337.3	1.0				ug/L	3557	Standard
Sr	88	85.0	17.6				ug/L	65	Standard
C	12	46.7	61.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	19.4	88.0				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	7335.1	3.5				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		107.689	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 18:23:23
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.131
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.174
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 18:23:23
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129715
Sample Date/Time: Wednesday, July 06, 2016 18:24:19
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51096.1	3.4				ug/L	68501	Standard
	Be	9	26.7	39.0	**0.0592**	0.016	27.6	ug/L	8	Standard
	Al	27	148208.1	1.5	**1.4356**	0.057	3.9	ug/L	1397	Standard
	Sc	45	37817.2	2.3				ug/L	38815	Standard
	Ti	47	67.3	15.5	**0.1741**	0.030	17.0	ug/L	36	Standard
	V	51	2738.4	3.5	**0.2479**	0.012	4.9	ug/L	1284	Standard
	Cr	52	5883.1	4.0	**-0.0725**	0.032	44.2	ug/L	6503	Standard
	Cr	53	275.0	16.2	**-0.0957**	0.050	51.8	ug/L	492	Standard
	Mn	55	31313.0	0.6	**5.0634**	0.058	1.2	ug/L	841	Standard
	Co	59	696.0	7.5	**0.1217**	0.009	7.3	ug/L	229	Standard
	Ni	60	595.3	3.5	**0.2000**	0.014	7.1	ug/L	344	Standard
	Cu	65	462.0	6.3	**0.2649**	0.019	7.3	ug/L	115	Standard
	Zn	66	1771.8	2.4	**1.6578**	0.039	2.4	ug/L	190	Standard
>	**Ge**	72	406781.1	0.8				ug/L	409858	Standard
	As	75	-2.5	307.1	**0.0964**	0.008	7.9	ug/L	-22	Standard
	Se	82	14.4	23.6	**0.0856**	0.032	37.8	ug/L	18	Standard
	Se-1	77	49.7	10.1	**-0.0320**	0.077	241.4	ug/L	50	Standard
>	**Ga**	71	133.3	15.2				mg/L	97	Standard
	Rb	85	1070.0	12.2				ug/L	25	Standard
	Y	89	342977.7	1.9				ug/L	376763	Standard
>	**Rh**	103	10.0	86.6				ug/L	20	Standard
	Mo	98	69.0	6.1	**0.1021**	0.002	1.8	ug/L	51	Standard
	Ag	107	75.0	15.1	**0.0359**	0.002	5.1	ug/L	76	Standard
	Cd	111	10.5	22.1	**0.0450**	0.001	2.9	mg/L	6	Standard
	Cd	114	30.6	59.6	**0.0441**	0.004	9.2	ug/L	18	Standard
>	**In**	115	475398.0	0.9				ug/L	507261	Standard
	Sn	118	288.3	20.8	**-0.0540**	0.011	20.7	ug/L	683	Standard
	Sb	123	904.8	33.4	**0.2044**	0.074	36.3	ug/L	446	Standard
	Ba	135	3854.2	0.5	**2.1767**	0.015	0.7	ug/L	28	Standard
	Ce	140	14745.5	3.6				ug/L	33	Standard
>	**Tb**	159	732486.7	1.4				ug/L	800803	Standard
	Ho	165	231.7	6.6				ug/L	10	Standard
	Tl	203	26.3	32.7	**0.0370**	0.001	3.2	ug/L	13	Standard
	Tl	205	26.7	75.8	**0.0468**	0.003	6.8	ug/L	13	Standard
	Pb	206	1241.1	6.3	**0.2624**	0.017	6.3	ug/L	226	Standard
	Pb	207	1051.0	1.6	**0.2474**	0.003	1.0	ug/L	204	Standard
	Pb	208	4456.3	3.3	**0.2635**	0.008	2.9	ug/L	852	Standard
	U	238	51.3	13.8	**0.0508**	0.001	2.1	ug/L	13	Standard
>	**Bi**	209	426274.4	0.6				ug/L	449044	Standard

Sample ID: L1606129715
Report Date/Time: Wednesday, July 06, 2016 18:26:36
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	37.7	**0.0152**	0.021	140.9	mg/L	58	Standard
K	39	41.7	42.1	**0.0281**	0.069	245.2	mg/L	27	Standard
Ca	43	38.3	27.2	**1.5938**	0.839	52.6	mg/L	20	Standard
Fe	54	157.6	18.0	**0.0155**	0.027	174.3	mg/L	158	Standard
Fe	57	308.3	20.9	**0.3760**	0.197	52.3	mg/L	267	Standard
> **Sc-1**	45	37817.2	2.3				mg/L	38815	Standard
Cl	35	64603.4	0.9				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1573.4	6.8				ug/L	1617	Standard
P	31	6883.2	4.2				ug/L	19244	Standard
S	34	4027.2	3.2				ug/L	3557	Standard
Sr	88	95.0	13.9				ug/L	65	Standard
C	12	16.7	69.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	23	Standard
Dy	164	343.9	15.8				mg/L	13	Standard
Ho-1	165	231.7	6.6				mg/L	10	Standard
Er	166	266.7	12.1				mg/L	13	Standard
I	127	5834.5	3.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.592	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.249	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129715
Report Date/Time: Wednesday, July 06, 2016 18:26:36
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.719
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.929
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129715
Report Date/Time: Wednesday, July 06, 2016 18:26:36
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129716
Sample Date/Time: Wednesday, July 06, 2016 18:27:31
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49923.8	3.3				ug/L	68501	Standard
	Be	9	18.3	56.8	**0.0475**	0.017	35.4	ug/L	8	Standard
	Al	27	230733.6	0.6	**2.2666**	0.081	3.6	ug/L	1397	Standard
	Sc	45	37661.8	1.0				ug/L	38815	Standard
	Ti	47	113.7	12.5	**0.3124**	0.041	13.3	ug/L	36	Standard
	V	51	2650.5	1.4	**0.2344**	0.006	2.6	ug/L	1284	Standard
	Cr	52	6503.1	1.7	**0.0160**	0.013	79.2	ug/L	6503	Standard
	Cr	53	336.7	7.6	**-0.0240**	0.029	120.3	ug/L	492	Standard
	Mn	55	28933.6	2.8	**4.6595**	0.134	2.9	ug/L	841	Standard
	Co	59	727.0	2.8	**0.1266**	0.004	3.0	ug/L	229	Standard
	Ni	60	734.0	4.0	**0.2822**	0.019	6.7	ug/L	344	Standard
	Cu	65	281.7	2.1	**0.1559**	0.003	2.0	ug/L	115	Standard
	Zn	66	1718.8	0.7	**1.6006**	0.010	0.6	ug/L	190	Standard
>	**Ge**	72	407782.6	0.3				ug/L	409858	Standard
	As	75	29.7	102.1	**0.1278**	0.030	23.1	ug/L	-22	Standard
	Se	82	15.2	18.7	**0.0932**	0.027	29.3	ug/L	18	Standard
	Se-1	77	49.3	15.5	**-0.0391**	0.109	279.2	ug/L	50	Standard
>	**Ga**	71	208.3	25.2				mg/L	97	Standard
	Rb	85	1360.1	2.6				ug/L	25	Standard
	Y	89	349773.2	1.1				ug/L	376763	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	77.6	13.8	**0.1054**	0.005	4.4	ug/L	51	Standard
	Ag	107	74.3	11.2	**0.0356**	0.001	3.8	ug/L	76	Standard
	Cd	111	4.9	41.3	**0.0419**	0.001	2.5	mg/L	6	Standard
	Cd	114	14.6	85.5	**0.0405**	0.003	6.7	ug/L	18	Standard
>	**In**	115	482015.0	1.1				ug/L	507261	Standard
	Sn	118	201.7	20.8	**-0.0713**	0.008	11.8	ug/L	683	Standard
	Sb	123	673.6	33.4	**0.1453**	0.057	39.1	ug/L	446	Standard
	Ba	135	2231.8	3.5	**1.2502**	0.051	4.1	ug/L	28	Standard
	Ce	140	11809.6	4.9				ug/L	33	Standard
>	**Tb**	159	735033.6	0.2				ug/L	800803	Standard
	Ho	165	191.7	30.5				ug/L	10	Standard
	Tl	203	24.3	43.6	**0.0367**	0.001	4.0	ug/L	13	Standard
	Tl	205	21.7	35.3	**0.0460**	0.001	2.7	ug/L	13	Standard
	Pb	206	652.0	1.7	**0.1367**	0.003	2.2	ug/L	226	Standard
	Pb	207	554.0	8.6	**0.1306**	0.011	8.3	ug/L	204	Standard
	Pb	208	2402.7	3.9	**0.1429**	0.006	4.1	ug/L	852	Standard
	U	238	57.7	18.7	**0.0519**	0.002	3.4	ug/L	13	Standard
>	**Bi**	209	424036.1	0.4				ug/L	449044	Standard

Sample ID: L1606129716
Report Date/Time: Wednesday, July 06, 2016 18:29:48
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	22.3	**0.0268**	0.015	55.3	mg/L	58	Standard
K	39	35.0	37.8	**0.0023**	0.056	2456.1	mg/L	27	Standard
Ca	43	26.7	57.3	**0.7245**	1.158	159.8	mg/L	20	Standard
Fe	54	184.2	20.5	**0.0385**	0.032	82.0	mg/L	158	Standard
Fe	57	346.7	0.8	**0.5155**	0.007	1.4	mg/L	267	Standard
> **Sc-1**	45	37661.8	1.0				mg/L	38815	Standard
Cl	35	64539.9	1.7				ug/L	57611	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	1656.8	7.8				ug/L	1617	Standard
P	31	6881.6	2.3				ug/L	19244	Standard
S	34	4020.5	2.0				ug/L	3557	Standard
Sr	88	70.0	18.9				ug/L	65	Standard
C	12	23.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	23	Standard
Dy	164	317.2	20.1				mg/L	13	Standard
Ho-1	165	191.7	30.5				mg/L	10	Standard
Er	166	196.7	29.8				mg/L	13	Standard
I	127	5742.8	1.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.880	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.494	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129716
Report Date/Time: Wednesday, July 06, 2016 18:29:48
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.023
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.431
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129716
Report Date/Time: Wednesday, July 06, 2016 18:29:48
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129717
Sample Date/Time: Wednesday, July 06, 2016 18:30:42
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49927.2	4.0				ug/L	68501	Standard
	Be	9	6.7	86.6	**0.0295**	0.009	29.5	ug/L	8	Standard
	Al	27	176079.0	1.1	**1.7381**	0.061	3.5	ug/L	1397	Standard
	Sc	45	37752.0	1.9				ug/L	38815	Standard
	Ti	47	66.7	17.6	**0.1708**	0.035	20.7	ug/L	36	Standard
	V	51	2034.0	1.8	**0.1449**	0.004	2.4	ug/L	1284	Standard
	Cr	52	5892.5	3.0	**-0.0777**	0.022	28.4	ug/L	6503	Standard
	Cr	53	233.3	5.4	**-0.1465**	0.014	9.9	ug/L	492	Standard
	Mn	55	27870.3	0.4	**4.4613**	0.044	1.0	ug/L	841	Standard
	Co	59	460.7	4.3	**0.0818**	0.004	4.5	ug/L	229	Standard
	Ni	60	475.3	4.0	**0.1257**	0.013	10.3	ug/L	344	Standard
	Cu	65	199.0	7.8	**0.1056**	0.009	8.7	ug/L	115	Standard
	Zn	66	1356.7	2.9	**1.2325**	0.031	2.5	ug/L	190	Standard
>	**Ge**	72	409883.6	0.6				ug/L	409858	Standard
	As	75	-13.7	138.1	**0.0856**	0.018	21.4	ug/L	-22	Standard
	Se	82	18.9	14.6	**0.1275**	0.025	19.9	ug/L	18	Standard
	Se-1	77	45.7	12.6	**-0.0955**	0.087	91.6	ug/L	50	Standard
>	**Ga**	71	91.7	39.5				mg/L	97	Standard
	Rb	85	566.7	12.2				ug/L	25	Standard
	Y	89	345220.3	0.5				ug/L	376763	Standard
>	**Rh**	103	25.0	40.0				ug/L	20	Standard
	Mo	98	35.3	42.3	**0.0869**	0.007	7.5	ug/L	51	Standard
	Ag	107	78.7	26.0	**0.0364**	0.003	9.5	ug/L	76	Standard
	Cd	111	6.3	97.1	**0.0427**	0.003	7.6	mg/L	6	Standard
	Cd	114	16.3	120.1	**0.0409**	0.004	10.4	ug/L	18	Standard
>	**In**	115	482875.6	0.6				ug/L	507261	Standard
	Sn	118	201.7	24.1	**-0.0714**	0.009	13.1	ug/L	683	Standard
	Sb	123	493.0	35.1	**0.1003**	0.042	42.1	ug/L	446	Standard
	Ba	135	2040.1	1.5	**1.1419**	0.022	1.9	ug/L	28	Standard
	Ce	140	8042.1	7.0				ug/L	33	Standard
>	**Tb**	159	739223.8	0.5				ug/L	800803	Standard
	Ho	165	156.7	24.8				ug/L	10	Standard
	Tl	203	24.3	80.8	**0.0367**	0.003	7.4	ug/L	13	Standard
	Tl	205	16.7	124.9	**0.0452**	0.003	7.3	ug/L	13	Standard
	Pb	206	573.0	3.0	**0.1186**	0.004	3.5	ug/L	226	Standard
	Pb	207	492.3	5.0	**0.1149**	0.006	5.4	ug/L	204	Standard
	Pb	208	2010.1	6.7	**0.1185**	0.008	7.0	ug/L	852	Standard
	U	238	45.0	35.3	**0.0498**	0.003	5.1	ug/L	13	Standard
>	**Bi**	209	427779.3	0.6				ug/L	449044	Standard

Sample ID: L1606129717
Report Date/Time: Wednesday, July 06, 2016 18:32:59
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	52.0	**0.0221**	0.031	142.3	mg/L	58	Standard
K	39	25.0	52.9	**-0.0397**	0.053	132.2	mg/L	27	Standard
Ca	43	40.0	33.1	**1.7146**	0.988	57.6	mg/L	20	Standard
Fe	54	87.6	38.5	**-0.0445**	0.030	67.3	mg/L	158	Standard
Fe	57	243.3	8.3	**0.1569**	0.062	39.5	mg/L	267	Standard
Sc-1	45	37752.0	1.9				mg/L	38815	Standard
Cl	35	64779.5	1.0				ug/L	57611	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	1533.4	1.5				ug/L	1617	Standard
P	31	7010.0	1.3				ug/L	19244	Standard
S	34	4125.6	2.1				ug/L	3557	Standard
Sr	88	75.0	41.6				ug/L	65	Standard
C	12	30.0	57.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	23	Standard
Dy	164	253.9	13.7				mg/L	13	Standard
Ho-1	165	156.7	24.8				mg/L	10	Standard
Er	166	126.7	27.7				mg/L	13	Standard
I	127	5844.5	1.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		72.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.006	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129717
Report Date/Time: Wednesday, July 06, 2016 18:32:59
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.193
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.264
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129718
Sample Date/Time: Wednesday, July 06, 2016 18:33:53
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49219.9	3.6				ug/L	68501	Standard
	Be	9	21.7	48.0	**0.0524**	0.015	29.0	ug/L	8	Standard
	Al	27	198461.6	1.9	**1.9826**	0.097	4.9	ug/L	1397	Standard
	Sc	45	37516.4	1.7				ug/L	38815	Standard
	Ti	47	71.3	2.1	**0.1863**	0.005	2.7	ug/L	36	Standard
	V	51	2505.0	3.4	**0.2146**	0.013	6.0	ug/L	1284	Standard
	Cr	52	6002.2	1.2	**-0.0548**	0.018	32.5	ug/L	6503	Standard
	Cr	53	295.0	2.9	**-0.0719**	0.012	17.2	ug/L	492	Standard
	Mn	55	48746.3	0.9	**7.9365**	0.123	1.6	ug/L	841	Standard
	Co	59	629.0	5.7	**0.1105**	0.005	4.7	ug/L	229	Standard
	Ni	60	634.3	3.6	**0.2235**	0.015	6.7	ug/L	344	Standard
	Cu	65	303.3	2.5	**0.1694**	0.006	3.6	ug/L	115	Standard
	Zn	66	1702.4	1.3	**1.5886**	0.017	1.1	ug/L	190	Standard
>	**Ge**	72	406757.2	0.8				ug/L	409858	Standard
	As	75	26.9	60.5	**0.1251**	0.016	12.8	ug/L	-22	Standard
	Se	82	15.2	34.0	**0.0937**	0.050	53.0	ug/L	18	Standard
	Se-1	77	48.0	21.8	**-0.0562**	0.155	275.7	ug/L	50	Standard
>	**Ga**	71	121.7	29.7				mg/L	97	Standard
	Rb	85	888.4	3.7				ug/L	25	Standard
	Y	89	349047.3	1.9				ug/L	376763	Standard
>	**Rh**	103	21.7	26.6				ug/L	20	Standard
	Mo	98	40.6	35.4	**0.0894**	0.006	7.0	ug/L	51	Standard
	Ag	107	68.3	1.7	**0.0347**	0.000	0.5	ug/L	76	Standard
	Cd	111	7.6	27.3	**0.0434**	0.001	2.6	mg/L	6	Standard
	Cd	114	11.2	115.1	**0.0398**	0.003	7.0	ug/L	18	Standard
>	**In**	115	477932.0	0.3				ug/L	507261	Standard
	Sn	118	205.0	16.0	**-0.0704**	0.006	9.0	ug/L	683	Standard
	Sb	123	472.3	24.8	**0.0965**	0.029	29.8	ug/L	446	Standard
	Ba	135	2835.6	3.8	**1.5971**	0.059	3.7	ug/L	28	Standard
	Ce	140	10725.5	3.5				ug/L	33	Standard
>	**Tb**	159	732266.0	0.3				ug/L	800803	Standard
	Ho	165	195.0	10.3				ug/L	10	Standard
	Tl	203	22.7	26.6	**0.0365**	0.001	2.3	ug/L	13	Standard
	Tl	205	18.3	31.5	**0.0455**	0.001	2.0	ug/L	13	Standard
	Pb	206	728.7	6.0	**0.1531**	0.010	6.5	ug/L	226	Standard
	Pb	207	589.7	3.5	**0.1389**	0.005	3.8	ug/L	204	Standard
	Pb	208	2571.8	4.1	**0.1528**	0.006	4.0	ug/L	852	Standard
	U	238	45.7	19.9	**0.0499**	0.001	3.0	ug/L	13	Standard
>	**Bi**	209	424407.0	0.4				ug/L	449044	Standard

Sample ID: L1606129718
Report Date/Time: Wednesday, July 06, 2016 18:36:10
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.5085**	16.093	3164.5	mg/L	2	Standard
Mg	24	58.3	32.5	**0.0436**	0.028	64.4	mg/L	58	Standard
K	39	28.3	10.2	**-0.0249**	0.013	52.9	mg/L	27	Standard
Ca	43	46.7	16.4	**2.2408**	0.637	28.4	mg/L	20	Standard
Fe	54	164.4	5.2	**0.0222**	0.006	27.5	mg/L	158	Standard
Fe	57	271.7	12.0	**0.2595**	0.099	38.0	mg/L	267	Standard
> **Sc-1**	45	37516.4	1.7				mg/L	38815	Standard
Cl	35	64231.2	0.9				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	1653.4	10.1				ug/L	1617	Standard
P	31	6803.2	2.7				ug/L	19244	Standard
S	34	4030.5	4.2				ug/L	3557	Standard
Sr	88	73.3	20.8				ug/L	65	Standard
C	12	36.7	83.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	291.2	29.4				mg/L	13	Standard
Ho-1	165	195.0	10.3				mg/L	10	Standard
Er	166	183.3	13.7				mg/L	13	Standard
I	127	5851.1	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		71.853	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.243	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129718
Report Date/Time: Wednesday, July 06, 2016 18:36:10
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.218
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.513
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129718
Report Date/Time: Wednesday, July 06, 2016 18:36:10
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129719
Sample Date/Time: Wednesday, July 06, 2016 18:37:05
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49597.7	1.7				ug/L	68501	Standard
	Be	9	20.0	50.0	**0.0498**	0.015	29.6	ug/L	8	Standard
	Al	27	178365.5	1.1	**1.7702**	0.019	1.1	ug/L	1397	Standard
	Sc	45	38361.8	1.5				ug/L	38815	Standard
	Ti	47	106.3	3.9	**0.2933**	0.013	4.4	ug/L	36	Standard
	V	51	3584.6	1.2	**0.3723**	0.006	1.7	ug/L	1284	Standard
	Cr	52	8956.0	2.3	**0.3854**	0.023	6.0	ug/L	6503	Standard
	Cr	53	613.3	13.7	**0.3062**	0.095	31.0	ug/L	492	Standard
	Mn	55	52415.2	1.1	**8.5929**	0.076	0.9	ug/L	841	Standard
	Co	59	1118.7	2.1	**0.1934**	0.005	2.8	ug/L	229	Standard
	Ni	60	857.4	3.9	**0.3605**	0.017	4.8	ug/L	344	Standard
	Cu	65	1218.0	1.7	**0.7246**	0.017	2.4	ug/L	115	Standard
	Zn	66	2914.9	3.0	**2.8183**	0.075	2.7	ug/L	190	Standard
>	**Ge**	72	404299.3	0.7				ug/L	409858	Standard
	As	75	83.7	20.3	**0.1808**	0.017	9.4	ug/L	-22	Standard
	Se	82	20.3	22.4	**0.1438**	0.044	30.9	ug/L	18	Standard
	Se-1	77	47.7	20.2	**-0.0567**	0.146	256.9	ug/L	50	Standard
>	**Ga**	71	268.3	13.5				mg/L	97	Standard
	Rb	85	2543.5	5.6				ug/L	25	Standard
	Y	89	349884.6	1.8				ug/L	376763	Standard
>	**Rh**	103	15.0	57.7				ug/L	20	Standard
	Mo	98	40.2	17.9	**0.0892**	0.003	3.4	ug/L	51	Standard
	Ag	107	86.0	9.5	**0.0377**	0.001	3.4	ug/L	76	Standard
	Cd	111	242.6	4.4	**0.1687**	0.007	3.9	mg/L	6	Standard
	Cd	114	556.3	15.0	**0.1587**	0.018	11.6	ug/L	18	Standard
>	**In**	115	479494.0	0.9				ug/L	507261	Standard
	Sn	118	201.7	12.5	**-0.0711**	0.005	7.3	ug/L	683	Standard
	Sb	123	449.3	33.4	**0.0905**	0.037	41.0	ug/L	446	Standard
	Ba	135	7131.3	1.5	**3.9802**	0.073	1.8	ug/L	28	Standard
	Ce	140	17274.8	3.3				ug/L	33	Standard
>	**Tb**	159	731573.9	0.5				ug/L	800803	Standard
	Ho	165	271.7	13.3				ug/L	10	Standard
	Tl	203	22.0	4.5	**0.0364**	0.000	0.4	ug/L	13	Standard
	Tl	205	21.7	26.6	**0.0460**	0.001	2.0	ug/L	13	Standard
	Pb	206	12640.9	1.7	**2.7274**	0.067	2.5	ug/L	226	Standard
	Pb	207	10629.1	0.7	**2.5278**	0.032	1.3	ug/L	204	Standard
	Pb	208	45996.3	0.4	**2.7365**	0.011	0.4	ug/L	852	Standard
	U	238	52.7	14.3	**0.0511**	0.001	2.2	ug/L	13	Standard
>	**Bi**	209	423536.2	0.7				ug/L	449044	Standard

Sample ID: L1606129719
Report Date/Time: Wednesday, July 06, 2016 18:39:22
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	16.7	**0.0028**	0.007	265.9	mg/L	58	Standard
K	39	33.3	60.6	**-0.0076**	0.080	1062.8	mg/L	27	Standard
Ca	43	35.0	24.7	**1.2944**	0.612	47.3	mg/L	20	Standard
Fe	54	275.8	22.7	**0.1135**	0.054	47.1	mg/L	158	Standard
Fe	57	321.7	11.9	**0.4080**	0.116	28.3	mg/L	267	Standard
Sc-1	45	38361.8	1.5				mg/L	38815	Standard
Cl	35	63609.3	1.6				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1613.4	3.4				ug/L	1617	Standard
P	31	6818.2	1.7				ug/L	19244	Standard
S	34	3835.5	3.1				ug/L	3557	Standard
Sr	88	88.3	18.2				ug/L	65	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	23	Standard
Dy	164	365.0	17.7				mg/L	13	Standard
Ho-1	165	271.7	13.3				mg/L	10	Standard
Er	166	243.3	16.6				mg/L	13	Standard
I	127	5821.1	6.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.404	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.644	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129719
Report Date/Time: Wednesday, July 06, 2016 18:39:22
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.320
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129719
Report Date/Time: Wednesday, July 06, 2016 18:39:22
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129720
Sample Date/Time: Wednesday, July 06, 2016 18:40:16
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49808.5	3.5				ug/L	68501	Standard
	Be	9	18.3	31.5	**0.0471**	0.008	16.3	ug/L	8	Standard
	Al	27	322343.2	1.3	**3.1588**	0.066	2.1	ug/L	1397	Standard
	Sc	45	38503.9	1.9				ug/L	38815	Standard
	Ti	47	85.7	8.8	**0.2272**	0.020	8.8	ug/L	36	Standard
	V	51	3356.6	1.5	**0.3328**	0.012	3.6	ug/L	1284	Standard
	Cr	52	6512.4	1.2	**0.0124**	0.010	83.1	ug/L	6503	Standard
	Cr	53	368.3	14.5	**0.0105**	0.058	554.5	ug/L	492	Standard
	Mn	55	54600.9	0.9	**8.8309**	0.108	1.2	ug/L	841	Standard
	Co	59	857.4	4.2	**0.1475**	0.006	4.2	ug/L	229	Standard
	Ni	60	713.4	0.7	**0.2676**	0.004	1.6	ug/L	344	Standard
	Cu	65	474.0	6.3	**0.2699**	0.018	6.8	ug/L	115	Standard
	Zn	66	1859.8	2.3	**1.7316**	0.052	3.0	ug/L	190	Standard
>	**Ge**	72	409950.0	1.0				ug/L	409858	Standard
	As	75	28.0	87.6	**0.1258**	0.023	18.6	ug/L	-22	Standard
	Se	82	16.9	34.9	**0.1084**	0.055	50.7	ug/L	18	Standard
	Se-1	77	47.3	10.8	**-0.0712**	0.082	115.0	ug/L	50	Standard
>	**Ga**	71	210.0	13.3				mg/L	97	Standard
	Rb	85	1438.4	5.3				ug/L	25	Standard
	Y	89	348052.6	1.2				ug/L	376763	Standard
>	**Rh**	103	11.7	24.7				ug/L	20	Standard
	Mo	98	34.6	40.8	**0.0867**	0.006	7.3	ug/L	51	Standard
	Ag	107	66.7	5.7	**0.0343**	0.001	2.1	ug/L	76	Standard
	Cd	111	11.6	17.9	**0.0455**	0.001	2.5	mg/L	6	Standard
	Cd	114	40.9	25.9	**0.0462**	0.002	5.2	ug/L	18	Standard
>	**In**	115	482584.0	1.5				ug/L	507261	Standard
	Sn	118	216.7	34.6	**-0.0684**	0.015	21.8	ug/L	683	Standard
	Sb	123	404.8	28.3	**0.0791**	0.029	37.1	ug/L	446	Standard
	Ba	135	8081.8	0.6	**4.4800**	0.057	1.3	ug/L	28	Standard
	Ce	140	15314.4	4.4				ug/L	33	Standard
>	**Tb**	159	724958.7	0.5				ug/L	800803	Standard
	Ho	165	230.0	12.1				ug/L	10	Standard
	Tl	203	18.3	34.6	**0.0359**	0.001	2.4	ug/L	13	Standard
	Tl	205	25.0	34.6	**0.0465**	0.001	2.9	ug/L	13	Standard
	Pb	206	948.7	3.6	**0.1994**	0.007	3.4	ug/L	226	Standard
	Pb	207	786.0	2.5	**0.1846**	0.005	2.6	ug/L	204	Standard
	Pb	208	3433.5	2.8	**0.2028**	0.005	2.5	ug/L	852	Standard
	U	238	79.0	5.1	**0.0552**	0.001	1.1	ug/L	13	Standard
>	**Bi**	209	426681.8	0.3				ug/L	449044	Standard

Sample ID: L1606129720
Report Date/Time: Wednesday, July 06, 2016 18:42:33
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	37.8	**0.0096**	0.019	193.4	mg/L	58	Standard
K	39	35.0	37.8	**-0.0016**	0.051	3125.7	mg/L	27	Standard
Ca	43	36.7	43.8	**1.3977**	1.125	80.5	mg/L	20	Standard
Fe	54	200.7	14.4	**0.0489**	0.022	45.4	mg/L	158	Standard
Fe	57	295.0	12.2	**0.3148**	0.117	37.0	mg/L	267	Standard
> **Sc-1**	45	38503.9	1.9				mg/L	38815	Standard
Cl	35	64110.0	0.9				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1486.7	6.9				ug/L	1617	Standard
P	31	6881.6	0.9				ug/L	19244	Standard
S	34	3978.9	4.5				ug/L	3557	Standard
Sr	88	86.7	27.3				ug/L	65	Standard
C	12	50.0	60.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	457.7	22.7				mg/L	13	Standard
Ho-1	165	230.0	12.1				mg/L	10	Standard
Er	166	256.7	25.9				mg/L	13	Standard
I	127	5424.3	2.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.712	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.022	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129720
Report Date/Time: Wednesday, July 06, 2016 18:42:33
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.135
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.020
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606145201
Sample Date/Time: Wednesday, July 06, 2016 18:43:28
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49942.2	2.4				ug/L	68501	Standard
	Be	9	13.3	21.7	**0.0396**	0.004	10.5	ug/L	8	Standard
	Al	27	301632.8	0.2	**2.9500**	0.071	2.4	ug/L	1397	Standard
	Sc	45	37337.6	0.6				ug/L	38815	Standard
	Ti	47	30.0	25.2	**0.0620**	0.022	36.3	ug/L	36	Standard
	V	51	1297.4	5.0	**0.0413**	0.011	25.7	ug/L	1284	Standard
	Cr	52	5952.5	2.6	**-0.0642**	0.028	43.2	ug/L	6503	Standard
	Cr	53	440.0	7.1	**0.0973**	0.038	38.6	ug/L	492	Standard
	Mn	55	44039.2	0.4	**7.1434**	0.022	0.3	ug/L	841	Standard
	Co	59	640.3	1.6	**0.1122**	0.002	1.7	ug/L	229	Standard
	Ni	60	375.0	10.2	**0.0671**	0.024	35.3	ug/L	344	Standard
	Cu	65	91.7	13.2	**0.0417**	0.007	16.5	ug/L	115	Standard
	Zn	66	1720.1	1.2	**1.6022**	0.016	1.0	ug/L	190	Standard
>	Ge	72	407710.2	0.7				ug/L	409858	Standard
	As	75	-3.9	410.5	**0.0951**	0.015	16.3	ug/L	-22	Standard
	Se	82	21.0	19.7	**0.1485**	0.041	27.6	ug/L	18	Standard
	Se-1	77	56.0	7.1	**0.0584**	0.054	92.0	ug/L	50	Standard
>	Ga	71	38.3	15.1				mg/L	97	Standard
	Rb	85	16589.1	3.8				ug/L	25	Standard
	Y	89	346930.8	1.5				ug/L	376763	Standard
>	Rh	103	26.7	75.8				ug/L	20	Standard
	Mo	98	27.0	22.1	**0.0835**	0.003	3.3	ug/L	51	Standard
	Ag	107	65.0	10.1	**0.0342**	0.001	3.1	ug/L	76	Standard
	Cd	111	5.9	60.9	**0.0426**	0.002	4.5	mg/L	6	Standard
	Cd	114	14.7	56.1	**0.0406**	0.002	4.5	ug/L	18	Standard
>	In	115	476390.2	0.6				ug/L	507261	Standard
	Sn	118	196.7	16.1	**-0.0718**	0.006	8.8	ug/L	683	Standard
	Sb	123	314.0	20.5	**0.0577**	0.016	28.4	ug/L	446	Standard
	Ba	135	9508.6	1.0	**5.3362**	0.084	1.6	ug/L	28	Standard
	Ce	140	66.7	30.3				ug/L	33	Standard
>	Tb	159	730152.5	1.3				ug/L	800803	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	59.7	25.7	**0.0416**	0.002	5.1	ug/L	13	Standard
	Tl	205	63.3	40.5	**0.0527**	0.004	7.8	ug/L	13	Standard
	Pb	206	213.0	1.4	**0.0419**	0.001	1.5	ug/L	226	Standard
	Pb	207	186.7	5.2	**0.0433**	0.002	5.4	ug/L	204	Standard
	Pb	208	800.0	4.8	**0.0476**	0.002	4.7	ug/L	852	Standard
	U	238	11.0	32.8	**0.0444**	0.001	1.3	ug/L	13	Standard
>	Bi	209	424235.5	0.1				ug/L	449044	Standard

Sample ID: L1606145201
Report Date/Time: Wednesday, July 06, 2016 18:45:45
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	1208.4	11.8	**1.6626**	0.203	12.2	mg/L	58	Standard
K	39	188.3	4.1	**0.6388**	0.037	5.7	mg/L	27	Standard
Ca	43	23.3	32.7	**0.4852**	0.572	117.8	mg/L	20	Standard
Fe	54	82.1	2.7	**-0.0488**	0.002	3.8	mg/L	158	Standard
Fe	57	270.0	10.3	**0.2595**	0.101	38.9	mg/L	267	Standard
> **Sc-1**	45	37337.6	0.6				mg/L	38815	Standard
Cl	35	64590.7	1.0				ug/L	57611	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	3110.3	5.6				ug/L	1617	Standard
P	31	6779.9	4.1				ug/L	19244	Standard
S	34	3923.8	3.9				ug/L	3557	Standard
Sr	88	75.0	17.6				ug/L	65	Standard
C	12	33.3	62.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	23	Standard
Dy	164	22.5	71.0				mg/L	13	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	9886.6	5.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.907	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.476	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145201
Report Date/Time: Wednesday, July 06, 2016 18:45:45
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.914
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.475
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145201
Report Date/Time: Wednesday, July 06, 2016 18:45:45
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606145301
Sample Date/Time: Wednesday, July 06, 2016 18:46:39
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49236.5	1.5				ug/L	68501	Standard
	Be	9	10.0	50.0	**0.0348**	0.008	21.9	ug/L	8	Standard
	Al	27	563111.7	0.5	**5.5538**	0.103	1.8	ug/L	1397	Standard
	Sc	45	37698.5	2.4				ug/L	38815	Standard
	Ti	47	34.3	24.8	**0.0744**	0.025	33.3	ug/L	36	Standard
	V	51	1482.7	2.4	**0.0667**	0.006	9.1	ug/L	1284	Standard
	Cr	52	6641.8	2.5	**0.0318**	0.030	94.7	ug/L	6503	Standard
	Cr	53	711.7	9.4	**0.4118**	0.079	19.3	ug/L	492	Standard
	Mn	55	100193.2	1.3	**16.2941**	0.290	1.8	ug/L	841	Standard
	Co	59	2670.6	2.7	**0.4482**	0.011	2.6	ug/L	229	Standard
	Ni	60	847.0	5.6	**0.3476**	0.029	8.5	ug/L	344	Standard
	Cu	65	98.3	6.5	**0.0455**	0.004	9.1	ug/L	115	Standard
	Zn	66	2172.5	1.8	**2.0427**	0.029	1.4	ug/L	190	Standard
>	**Ge**	72	409724.8	0.7				ug/L	409858	Standard
	As	75	27.9	65.5	**0.1259**	0.018	14.1	ug/L	-22	Standard
	Se	82	13.4	6.0	**0.0753**	0.008	11.1	ug/L	18	Standard
	Se-1	77	77.7	0.7	**0.3694**	0.016	4.2	ug/L	50	Standard
>	**Ga**	71	48.3	26.0				mg/L	97	Standard
	Rb	85	333.3	17.9				ug/L	25	Standard
	Y	89	346517.9	0.9				ug/L	376763	Standard
>	**Rh**	103	30.0	16.7				ug/L	20	Standard
	Mo	98	26.6	22.6	**0.0831**	0.003	3.1	ug/L	51	Standard
	Ag	107	75.3	9.3	**0.0358**	0.001	3.4	ug/L	76	Standard
	Cd	111	9.9	79.8	**0.0446**	0.004	9.4	mg/L	6	Standard
	Cd	114	11.8	57.5	**0.0399**	0.001	3.7	ug/L	18	Standard
>	**In**	115	483775.2	0.4				ug/L	507261	Standard
	Sn	118	181.7	20.8	**-0.0753**	0.007	9.4	ug/L	683	Standard
	Sb	123	311.7	20.4	**0.0558**	0.015	27.5	ug/L	446	Standard
	Ba	135	38280.0	1.1	**21.1061**	0.144	0.7	ug/L	28	Standard
	Ce	140	506.7	16.0				ug/L	33	Standard
>	**Tb**	159	726142.8	1.1				ug/L	800803	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	87.3	10.6	**0.0454**	0.001	2.7	ug/L	13	Standard
	Tl	205	61.7	12.4	**0.0524**	0.001	2.4	ug/L	13	Standard
	Pb	206	228.3	5.6	**0.0453**	0.003	6.1	ug/L	226	Standard
	Pb	207	166.7	4.4	**0.0385**	0.002	3.9	ug/L	204	Standard
	Pb	208	789.0	2.6	**0.0470**	0.001	3.1	ug/L	852	Standard
	U	238	3.0	0.0	**0.0431**	0.000	0.0	ug/L	13	Standard
>	**Bi**	209	423989.3	0.6				ug/L	449044	Standard

Sample ID: L1606145301
Report Date/Time: Wednesday, July 06, 2016 18:48:56
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	1283.4	3.1	**1.7513**	0.066	3.8	mg/L	58	Standard
K	39	31.7	36.5	**-0.0116**	0.049	419.3	mg/L	27	Standard
Ca	43	35.0	49.5	**1.3299**	1.268	95.4	mg/L	20	Standard
Fe	54	124.2	10.3	**-0.0133**	0.009	68.8	mg/L	158	Standard
Fe	57	296.7	5.1	**0.3432**	0.074	21.6	mg/L	267	Standard
> **Sc-1**	45	37698.5	2.4				mg/L	38815	Standard
Cl	35	64298.8	0.9				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2353.5	6.6				ug/L	1617	Standard
P	31	7038.3	3.1				ug/L	19244	Standard
S	34	3735.5	4.2				ug/L	3557	Standard
Sr	88	108.3	21.8				ug/L	65	Standard
C	12	20.0	132.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	23	Standard
Dy	164	15.7	34.1				mg/L	13	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	25099.2	7.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		71.877	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.967	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145301
Report Date/Time: Wednesday, July 06, 2016 18:48:56
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.370
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.420
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145301
Report Date/Time: Wednesday, July 06, 2016 18:48:56
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 18:49:52
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52878.8	1.7				ug/L	68501	Standard
	Be	9	38918.3	1.6	**55.5825**	1.619	2.9	ug/L	8	Standard
	Al	27	6450514.7	0.4	**58.8972**	0.887	1.5	ug/L	1397	Standard
	Sc	45	41904.5	0.1				ug/L	38815	Standard
	Ti	47	37711.9	1.5	**103.7687**	1.613	1.6	ug/L	36	Standard
	V	51	378872.4	1.5	**49.6055**	1.127	2.3	ug/L	1284	Standard
	Cr	52	391857.7	0.8	**51.6770**	0.688	1.3	ug/L	6503	Standard
	Cr	53	48258.4	3.2	**51.5823**	1.577	3.1	ug/L	492	Standard
	Mn	55	349488.5	0.5	**52.7116**	0.800	1.5	ug/L	841	Standard
	Co	59	325919.6	1.0	**49.9129**	0.956	1.9	ug/L	229	Standard
	Ni	60	93953.1	0.7	**51.6102**	0.592	1.1	ug/L	344	Standard
	Cu	65	93092.5	0.7	**51.3818**	0.426	0.8	ug/L	115	Standard
	Zn	66	55991.6	1.2	**51.2143**	0.257	0.5	ug/L	190	Standard
>	Ge	72	443597.8	1.1				ug/L	409858	Standard
	As	75	56348.9	1.0	**50.3269**	0.784	1.6	ug/L	-22	Standard
	Se	82	5647.5	1.0	**49.3431**	0.684	1.4	ug/L	18	Standard
	Se-1	77	3836.5	3.0	**50.7225**	1.760	3.5	ug/L	50	Standard
>	Ga	71	73.3	37.6				mg/L	97	Standard
	Rb	85	758.4	7.1				ug/L	25	Standard
	Y	89	378699.5	0.9				ug/L	376763	Standard
>	Rh	103	25.0	34.6				ug/L	20	Standard
	Mo	98	248808.2	0.6	**100.1033**	1.976	2.0	ug/L	51	Standard
	Ag	107	315179.5	0.6	**48.9768**	0.482	1.0	ug/L	76	Standard
	Cd	111	102466.1	0.8	**50.0968**	0.522	1.0	mg/L	6	Standard
	Cd	114	249854.1	0.9	**49.9651**	0.245	0.5	ug/L	18	Standard
>	In	115	523251.4	1.3				ug/L	507261	Standard
	Sn	118	278121.1	0.6	**49.1520**	0.859	1.7	ug/L	683	Standard
	Sb	123	219592.2	1.7	**49.6144**	0.799	1.6	ug/L	446	Standard
	Ba	135	96411.8	0.1	**49.1334**	0.712	1.4	ug/L	28	Standard
	Ce	140	196.7	54.3				ug/L	33	Standard
>	Tb	159	777653.8	1.1				ug/L	800803	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	386233.1	0.9	**50.7844**	0.429	0.8	ug/L	13	Standard
	Tl	205	341495.9	1.1	**51.8522**	0.626	1.2	ug/L	13	Standard
	Pb	206	240491.9	0.2	**49.2471**	0.244	0.5	ug/L	226	Standard
	Pb	207	217886.1	0.3	**49.1333**	0.157	0.3	ug/L	204	Standard
	Pb	208	926190.9	0.5	**52.2285**	0.416	0.8	ug/L	852	Standard
	U	238	325513.2	0.6	**49.5735**	0.460	0.9	ug/L	13	Standard
>	Bi	209	446834.5	0.4				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 18:52:09
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3653.8	1.5	**4.5438**	0.069	1.5	mg/L	58	Standard
K	39	1298.4	0.6	**4.6524**	0.027	0.6	mg/L	27	Standard
Ca	43	101.7	11.4	**5.5715**	0.778	14.0	mg/L	20	Standard
Fe	54	6427.7	3.3	**4.8634**	0.168	3.5	mg/L	158	Standard
Fe	57	1803.4	4.2	**4.9080**	0.240	4.9	mg/L	267	Standard
Sc-1	45	41904.5	0.1				mg/L	38815	Standard
Cl	35	72444.1	0.6				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1936.8	7.3				ug/L	1617	Standard
P	31	22136.2	2.7				ug/L	19244	Standard
S	34	4570.7	1.6				ug/L	3557	Standard
Sr	88	60.0	8.3				ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	40.0				mg/L	23	Standard
Dy	164	19.4	92.4				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	13	Standard
I	127	8907.6	4.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	111.165		
Al	27	117.794		
Sc	45			
Ti	47	103.769		
V	51	99.211		
Cr	52	103.354		
Cr	53			
Mn	55	105.423		
Co	59	99.826		
Ni	60	103.220		
Cu	65	102.764		
Zn	66	102.429		
Ge	72		108.232	
As	75	100.654		
Se	82	98.686		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 18:52:09
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.103		
Ag	107	97.954		
Cd	111	100.194		
Cd	114			
In	115		103.152	
Sn	118	98.304		
Sb	123	99.229		
Ba	135	98.267		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.569		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.457		
U	238	99.147		
Bi	209		99.508	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 18:52:09
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 18:53:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53059.4	1.6				ug/L	68501	Standard
	Be	9	26.7	71.0	**0.0575**	0.027	47.3	ug/L	8	Standard
	Al	27	2088.5	29.0	**0.0540**	0.005	9.8	ug/L	1397	Standard
	Sc	45	42618.2	0.4				ug/L	38815	Standard
	Ti	47	37.3	8.2	**0.0766**	0.009	12.0	ug/L	36	Standard
	V	51	1299.1	5.0	**0.0291**	0.009	31.1	ug/L	1284	Standard
	Cr	52	6942.9	2.8	**0.0128**	0.010	76.9	ug/L	6503	Standard
	Cr	53	380.0	9.5	**-0.0026**	0.042	1611.2	ug/L	492	Standard
	Mn	55	723.4	5.7	**0.0151**	0.007	43.4	ug/L	841	Standard
	Co	59	245.0	10.0	**0.0436**	0.003	7.4	ug/L	229	Standard
	Ni	60	278.7	11.0	**-0.0020**	0.014	725.8	ug/L	344	Standard
	Cu	65	100.3	5.7	**0.0429**	0.002	5.4	ug/L	115	Standard
	Zn	66	141.0	3.8	**0.0179**	0.003	17.3	ug/L	190	Standard
>	**Ge**	72	436796.5	1.7				ug/L	409858	Standard
	As	75	-37.4	66.6	**0.0652**	0.022	33.9	ug/L	-22	Standard
	Se	82	18.8	25.6	**0.1159**	0.045	39.0	ug/L	18	Standard
	Se-1	77	56.0	6.2	**0.0042**	0.048	1131.8	ug/L	50	Standard
>	**Ga**	71	40.0	33.1				mg/L	97	Standard
	Rb	85	26.7	21.7				ug/L	25	Standard
	Y	89	376465.2	1.4				ug/L	376763	Standard
>	**Rh**	103	13.3	57.3				ug/L	20	Standard
	Mo	98	184.3	20.1	**0.1468**	0.015	10.1	ug/L	51	Standard
	Ag	107	117.3	17.5	**0.0416**	0.003	7.7	ug/L	76	Standard
	Cd	111	17.7	40.5	**0.0481**	0.004	7.3	mg/L	6	Standard
	Cd	114	55.7	53.6	**0.0487**	0.006	12.4	ug/L	18	Standard
>	**In**	115	515275.6	0.4				ug/L	507261	Standard
	Sn	118	845.0	18.4	**0.0419**	0.028	67.9	ug/L	683	Standard
	Sb	123	650.4	23.7	**0.1290**	0.036	27.9	ug/L	446	Standard
	Ba	135	44.7	20.1	**0.0388**	0.005	11.8	ug/L	28	Standard
	Ce	140	48.3	23.9				ug/L	33	Standard
>	**Tb**	159	772663.9	0.8				ug/L	800803	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	68.7	35.0	**0.0424**	0.003	7.6	ug/L	13	Standard
	Tl	205	53.3	19.5	**0.0507**	0.002	3.2	ug/L	13	Standard
	Pb	206	240.3	15.2	**0.0454**	0.008	16.8	ug/L	226	Standard
	Pb	207	202.0	9.9	**0.0447**	0.004	10.0	ug/L	204	Standard
	Pb	208	909.3	5.6	**0.0516**	0.003	6.0	ug/L	852	Standard
	U	238	47.7	45.2	**0.0499**	0.003	6.7	ug/L	13	Standard
>	**Bi**	209	445177.1	0.5				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 18:55:20
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.5415**	14.274	2635.8	mg/L	2	Standard
Mg	24	30.0	28.9	**-0.0014**	0.011	783.2	mg/L	58	Standard
K	39	25.0	34.6	**-0.0511**	0.031	61.4	mg/L	27	Standard
Ca	43	30.0	33.3	**0.7081**	0.656	92.7	mg/L	20	Standard
Fe	54	142.5	14.4	**-0.0116**	0.015	132.3	mg/L	158	Standard
Fe	57	271.7	19.7	**0.1479**	0.162	109.7	mg/L	267	Standard
> **Sc-1**	45	42618.2	0.4				mg/L	38815	Standard
Cl	35	70856.0	1.2				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1870.1	16.2				ug/L	1617	Standard
P	31	21663.8	0.6				ug/L	19244	Standard
S	34	4233.9	6.1				ug/L	3557	Standard
Sr	88	65.0	23.1				ug/L	65	Standard
C	12	56.7	44.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	33.3				mg/L	23	Standard
Dy	164	4.9	129.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	36.7	41.7				mg/L	13	Standard
I	127	6878.2	1.9				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		106.573	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 18:55:20
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.580	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.139	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 18:55:20
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606145303
Sample Date/Time: Wednesday, July 06, 2016 18:56:16
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50022.5	3.7				ug/L	68501	Standard
	Be	9	18.3	41.7	**0.0469**	0.011	22.7	ug/L	8	Standard
	Al	27	192424.3	1.2	**1.8923**	0.056	3.0	ug/L	1397	Standard
	Sc	45	37018.5	2.6				ug/L	38815	Standard
	Ti	47	106.3	105.8	**0.2939**	0.339	115.2	ug/L	36	Standard
	V	51	1360.1	13.7	**0.0532**	0.028	52.4	ug/L	1284	Standard
	Cr	52	5062.5	2.5	**-0.1831**	0.020	10.7	ug/L	6503	Standard
	Cr	53	318.3	8.9	**-0.0399**	0.031	78.4	ug/L	492	Standard
	Mn	55	28813.0	2.0	**4.7119**	0.100	2.1	ug/L	841	Standard
	Co	59	362.0	33.1	**0.0668**	0.021	30.8	ug/L	229	Standard
	Ni	60	329.0	9.1	**0.0425**	0.018	43.4	ug/L	344	Standard
	Cu	65	104.7	14.9	**0.0506**	0.010	19.4	ug/L	115	Standard
	Zn	66	1040.4	1.6	**0.9400**	0.022	2.3	ug/L	190	Standard
>	**Ge**	72	401656.7	0.7				ug/L	409858	Standard
	As	75	102.1	29.0	**0.1995**	0.030	14.9	ug/L	-22	Standard
	Se	82	22.0	21.0	**0.1618**	0.046	28.3	ug/L	18	Standard
	Se-1	77	58.0	7.9	**0.1003**	0.062	62.1	ug/L	50	Standard
>	**Ga**	71	36.7	7.9				mg/L	97	Standard
	Rb	85	1030.0	7.3				ug/L	25	Standard
	Y	89	344398.5	0.4				ug/L	376763	Standard
>	**Rh**	103	16.7	45.8				ug/L	20	Standard
	Mo	98	141.0	55.3	**0.1337**	0.034	25.4	ug/L	51	Standard
	Ag	107	118.7	35.0	**0.0433**	0.007	15.9	ug/L	76	Standard
	Cd	111	15.5	16.2	**0.0477**	0.001	2.7	mg/L	6	Standard
	Cd	114	35.3	65.1	**0.0451**	0.005	11.0	ug/L	18	Standard
>	**In**	115	476321.1	1.0				ug/L	507261	Standard
	Sn	118	363.3	12.5	**-0.0394**	0.009	22.9	ug/L	683	Standard
	Sb	123	965.8	23.1	**0.2197**	0.057	26.1	ug/L	446	Standard
	Ba	135	12744.7	0.5	**7.1481**	0.108	1.5	ug/L	28	Standard
	Ce	140	156.7	18.7				ug/L	33	Standard
>	**Tb**	159	727969.7	0.5				ug/L	800803	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	101.7	19.3	**0.0475**	0.003	5.7	ug/L	13	Standard
	Tl	205	131.7	61.7	**0.0637**	0.013	20.4	ug/L	13	Standard
	Pb	206	310.7	47.9	**0.0633**	0.032	50.8	ug/L	226	Standard
	Pb	207	272.7	44.1	**0.0640**	0.029	44.6	ug/L	204	Standard
	Pb	208	1044.7	27.1	**0.0624**	0.017	26.8	ug/L	852	Standard
	U	238	87.0	107.3	**0.0566**	0.015	26.5	ug/L	13	Standard
>	**Bi**	209	422240.6	0.2				ug/L	449044	Standard

Sample ID: L1606145303
Report Date/Time: Wednesday, July 06, 2016 18:58:33
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	511.7	4.4	**0.6878**	0.013	1.9	mg/L	58	Standard
K	39	38.3	54.3	**0.0182**	0.086	471.7	mg/L	27	Standard
Ca	43	26.7	54.1	**0.7577**	1.106	145.9	mg/L	20	Standard
Fe	54	417.6	4.7	**0.2468**	0.027	10.9	mg/L	158	Standard
Fe	57	390.0	22.4	**0.6933**	0.341	49.2	mg/L	267	Standard
> **Sc-1**	45	37018.5	2.6				mg/L	38815	Standard
Cl	35	62864.2	1.3				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2226.8	14.5				ug/L	1617	Standard
P	31	7123.3	3.9				ug/L	19244	Standard
S	34	4055.5	5.8				ug/L	3557	Standard
Sr	88	70.0	18.9				ug/L	65	Standard
C	12	20.0	86.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	34.6				mg/L	23	Standard
Dy	164	19.4	1.4				mg/L	13	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	8815.9	10.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		73.024	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.999	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145303
Report Date/Time: Wednesday, July 06, 2016 18:58:33
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.031
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145303
Report Date/Time: Wednesday, July 06, 2016 18:58:33
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129601
Sample Date/Time: Wednesday, July 06, 2016 18:59:28
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54200.1	1.0				ug/L	68501	Standard
	Be	9	18.3	41.7	**0.0451**	0.011	24.0	ug/L	8	Standard
	Al	27	5857472.0	1.8	**52.1721**	0.567	1.1	ug/L	1397	Standard
	Sc	45	41752.5	1.3				ug/L	38815	Standard
	Ti	47	188.3	12.3	**0.4941**	0.065	13.1	ug/L	36	Standard
	V	51	5597.3	1.8	**0.5958**	0.017	2.9	ug/L	1284	Standard
	Cr	52	10278.8	4.1	**0.4558**	0.064	14.0	ug/L	6503	Standard
	Cr	53	1303.4	22.2	**0.9965**	0.321	32.2	ug/L	492	Standard
	Mn	55	40819.6	0.2	**6.1131**	0.025	0.4	ug/L	841	Standard
	Co	59	685.3	1.4	**0.1111**	0.002	1.7	ug/L	229	Standard
	Ni	60	1914.1	2.2	**0.9041**	0.028	3.1	ug/L	344	Standard
	Cu	65	1543.4	2.5	**0.8445**	0.017	2.0	ug/L	115	Standard
	Zn	66	2332.2	1.7	**2.0391**	0.041	2.0	ug/L	190	Standard
>	**Ge**	72	440615.0	0.5				ug/L	409858	Standard
	As	75	1763.0	4.5	**1.6810**	0.077	4.6	ug/L	-22	Standard
	Se	82	71.3	8.5	**0.5761**	0.052	9.1	ug/L	18	Standard
	Se-1	77	95.7	7.1	**0.5337**	0.098	18.4	ug/L	50	Standard
>	**Ga**	71	226.7	25.4				mg/L	97	Standard
	Rb	85	8287.3	3.3				ug/L	25	Standard
	Y	89	371654.7	0.3				ug/L	376763	Standard
>	**Rh**	103	51.7	11.2				ug/L	20	Standard
	Mo	98	2079.3	2.8	**0.9217**	0.019	2.1	ug/L	51	Standard
	Ag	107	84.3	10.7	**0.0364**	0.001	3.8	ug/L	76	Standard
	Cd	111	17.6	21.2	**0.0481**	0.002	3.9	mg/L	6	Standard
	Cd	114	47.7	27.6	**0.0471**	0.003	5.8	ug/L	18	Standard
>	**In**	115	514374.2	0.8				ug/L	507261	Standard
	Sn	118	583.3	13.2	**-0.0050**	0.014	280.1	ug/L	683	Standard
	Sb	123	620.8	8.9	**0.1224**	0.013	11.0	ug/L	446	Standard
	Ba	135	37233.0	0.6	**19.3102**	0.212	1.1	ug/L	28	Standard
	Ce	140	788.4	3.0				ug/L	33	Standard
>	**Tb**	159	776406.0	1.3				ug/L	800803	Standard
	Ho	165	36.7	7.9				ug/L	10	Standard
	Tl	203	275.0	8.4	**0.0703**	0.003	4.3	ug/L	13	Standard
	Tl	205	258.3	22.0	**0.0827**	0.009	10.8	ug/L	13	Standard
	Pb	206	392.7	8.6	**0.0783**	0.007	8.7	ug/L	226	Standard
	Pb	207	321.0	5.6	**0.0730**	0.004	5.5	ug/L	204	Standard
	Pb	208	1419.7	2.7	**0.0820**	0.002	2.4	ug/L	852	Standard
	U	238	725.7	4.2	**0.1557**	0.005	2.9	ug/L	13	Standard
>	**Bi**	209	436491.8	0.4				ug/L	449044	Standard

Sample ID: L1606129601
Report Date/Time: Wednesday, July 06, 2016 19:01:45
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	7728.6	0.1	**9.6904**	0.119	1.2	mg/L	58	Standard
K	39	243.3	9.5	**0.7593**	0.074	9.7	mg/L	27	Standard
Ca	43	238.3	12.8	**14.8303**	1.960	13.2	mg/L	20	Standard
Fe	54	205.9	12.2	**0.0401**	0.020	50.5	mg/L	158	Standard
Fe	57	403.3	6.4	**0.5753**	0.093	16.2	mg/L	267	Standard
> **Sc-1**	45	41752.5	1.3				mg/L	38815	Standard
Cl	35	80815.0	2.6				ug/L	57611	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	8709.2	1.9				ug/L	1617	Standard
P	31	20899.4	2.9				ug/L	19244	Standard
S	34	3923.8	3.6				ug/L	3557	Standard
Sr	88	181.7	25.6				ug/L	65	Standard
C	12	66.7	37.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	52.9				mg/L	23	Standard
Dy	164	54.4	29.0				mg/L	13	Standard
Ho-1	165	36.7	7.9				mg/L	10	Standard
Er	166	46.7	24.7				mg/L	13	Standard
I	127	22747.1	6.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.123	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.504	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129601
Report Date/Time: Wednesday, July 06, 2016 19:01:45
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.402	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.205	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129601
Report Date/Time: Wednesday, July 06, 2016 19:01:45
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606145303
Sample Date/Time: Wednesday, July 06, 2016 19:02:39
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54932.8	2.5				ug/L	68501	Standard
	Be	9	16.7	34.6	**0.0423**	0.008	18.4	ug/L	8	Standard
	Al	27	25593.4	8.7	**0.2596**	0.014	5.4	ug/L	1397	Standard
	Sc	45	41463.3	1.5				ug/L	38815	Standard
	Ti	47	35.0	2.9	**0.0701**	0.002	3.4	ug/L	36	Standard
	V	51	1967.8	3.8	**0.1185**	0.012	9.8	ug/L	1284	Standard
	Cr	52	9177.1	2.0	**0.3186**	0.035	11.0	ug/L	6503	Standard
	Cr	53	426.7	14.0	**0.0491**	0.069	141.4	ug/L	492	Standard
	Mn	55	3966.2	3.7	**0.5132**	0.026	5.1	ug/L	841	Standard
	Co	59	221.7	8.5	**0.0400**	0.003	8.1	ug/L	229	Standard
	Ni	60	278.7	5.0	**-0.0017**	0.009	557.7	ug/L	344	Standard
	Cu	65	121.7	21.6	**0.0551**	0.015	27.9	ug/L	115	Standard
	Zn	66	1492.4	2.4	**1.2770**	0.032	2.5	ug/L	190	Standard
>	**Ge**	72	436481.1	0.9				ug/L	409858	Standard
	As	75	-38.2	37.5	**0.0644**	0.013	19.7	ug/L	-22	Standard
	Se	82	15.9	48.3	**0.0903**	0.069	75.9	ug/L	18	Standard
	Se-1	77	53.0	21.4	**-0.0353**	0.160	454.4	ug/L	50	Standard
>	**Ga**	71	30.0	16.7				mg/L	97	Standard
	Rb	85	160.0	13.6				ug/L	25	Standard
	Y	89	379621.3	1.9				ug/L	376763	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	41.5	24.0	**0.0884**	0.004	4.4	ug/L	51	Standard
	Ag	107	87.7	27.9	**0.0369**	0.004	10.1	ug/L	76	Standard
	Cd	111	10.3	66.1	**0.0444**	0.003	7.4	mg/L	6	Standard
	Cd	114	24.7	126.4	**0.0423**	0.006	14.8	ug/L	18	Standard
>	**In**	115	515985.1	0.9				ug/L	507261	Standard
	Sn	118	508.3	20.2	**-0.0188**	0.019	100.1	ug/L	683	Standard
	Sb	123	235.4	13.7	**0.0336**	0.008	23.5	ug/L	446	Standard
	Ba	135	1419.4	6.6	**0.7487**	0.042	5.6	ug/L	28	Standard
	Ce	140	46.7	22.3				ug/L	33	Standard
>	**Tb**	159	782731.4	0.8				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	38.7	73.8	**0.0384**	0.004	9.8	ug/L	13	Standard
	Tl	205	28.3	36.7	**0.0469**	0.002	3.4	ug/L	13	Standard
	Pb	206	226.7	4.3	**0.0426**	0.002	4.3	ug/L	226	Standard
	Pb	207	202.3	12.6	**0.0447**	0.006	12.5	ug/L	204	Standard
	Pb	208	847.0	1.7	**0.0480**	0.001	1.3	ug/L	852	Standard
	U	238	34.3	65.1	**0.0479**	0.003	7.1	ug/L	13	Standard
>	**Bi**	209	445218.2	0.4				ug/L	449044	Standard

Sample ID: L1606145303
Report Date/Time: Wednesday, July 06, 2016 19:04:56
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.2487**	14.781	5944.3	mg/L	2	Standard
Mg	24	75.0	13.3	**0.0566**	0.012	20.7	mg/L	58	Standard
K	39	33.3	67.6	**-0.0172**	0.085	496.8	mg/L	27	Standard
Ca	43	20.0	50.0	**0.0907**	0.700	772.0	mg/L	20	Standard
Fe	54	202.2	8.8	**0.0382**	0.013	33.1	mg/L	158	Standard
Fe	57	280.0	17.0	**0.1987**	0.161	81.0	mg/L	267	Standard
Sc-1	45	41463.3	1.5				mg/L	38815	Standard
Cl	35	79616.6	0.3				ug/L	57611	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1973.5	13.7				ug/L	1617	Standard
P	31	20081.6	2.2				ug/L	19244	Standard
S	34	4032.2	1.1				ug/L	3557	Standard
Sr	88	75.0	13.3				ug/L	65	Standard
C	12	33.3	17.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	23	Standard
Dy	164	3.0	200.7				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	6319.7	6.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		80.192	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.496	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145303
Report Date/Time: Wednesday, July 06, 2016 19:04:56
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.720
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.148
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, July 06, 2016 19:05:51
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49574.4	3.4				ug/L	68501	Standard
	Be	9	8.3	91.7	**0.0319**	0.012	36.0	ug/L	8	Standard
	Al	27	5564328.9	0.3	**54.2268**	1.817	3.4	ug/L	1397	Standard
	Sc	45	35692.0	2.4				ug/L	38815	Standard
	Ti	47	36104.0	1.5	**112.1954**	1.361	1.2	ug/L	36	Standard
	V	51	1644.2	9.1	**0.0998**	0.025	24.6	ug/L	1284	Standard
	Cr	52	5783.1	2.0	**-0.0569**	0.013	23.5	ug/L	6503	Standard
	Cr	53	3715.5	10.2	**4.1060**	0.499	12.2	ug/L	492	Standard
	Mn	55	2312.2	2.1	**0.2987**	0.012	4.0	ug/L	841	Standard
	Co	59	338.3	2.8	**0.0640**	0.002	2.4	ug/L	229	Standard
	Ni	60	699.0	3.7	**0.2774**	0.021	7.6	ug/L	344	Standard
	Cu	65	516.7	2.9	**0.3089**	0.012	4.0	ug/L	115	Standard
	Zn	66	966.4	1.2	**0.8872**	0.018	2.1	ug/L	190	Standard
>	Ge	72	392789.0	1.2				ug/L	409858	Standard
	As	75	8.9	378.2	**0.1077**	0.034	31.7	ug/L	-22	Standard
	Se	82	9.6	1.0	**0.0433**	0.001	1.2	ug/L	18	Standard
	Se-1	77	298.3	4.0	**3.7633**	0.228	6.0	ug/L	50	Standard
>	Ga	71	140.0	3.6				mg/L	97	Standard
	Rb	85	681.7	11.0				ug/L	25	Standard
	Y	89	328443.5	0.8				ug/L	376763	Standard
>	Rh	103	10.0	50.0				ug/L	20	Standard
	Mo	98	206890.0	0.3	**95.0894**	0.233	0.2	ug/L	51	Standard
	Ag	107	198.0	5.6	**0.0582**	0.002	3.5	ug/L	76	Standard
	Cd	111	-148.1	17.9	**-0.0433**	0.015	34.5	mg/L	6	Standard
	Cd	114	374.7	10.7	**0.1229**	0.009	7.4	ug/L	18	Standard
>	In	115	457975.9	0.3				ug/L	507261	Standard
	Sn	118	506.7	15.7	**-0.0076**	0.016	214.4	ug/L	683	Standard
	Sb	123	654.2	44.4	**0.1485**	0.075	50.3	ug/L	446	Standard
	Ba	135	41.7	8.4	**0.0400**	0.002	5.2	ug/L	28	Standard
	Ce	140	56.7	18.4				ug/L	33	Standard
>	Tb	159	724034.0	1.2				ug/L	800803	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	61.0	16.4	**0.0420**	0.001	3.4	ug/L	13	Standard
	Tl	205	80.0	22.5	**0.0557**	0.003	5.3	ug/L	13	Standard
	Pb	206	274.7	5.6	**0.0570**	0.003	6.1	ug/L	226	Standard
	Pb	207	244.0	2.6	**0.0586**	0.002	2.6	ug/L	204	Standard
	Pb	208	992.0	1.0	**0.0608**	0.000	0.8	ug/L	852	Standard
	U	238	3.3	17.3	**0.0432**	0.000	0.2	ug/L	13	Standard
>	Bi	209	411885.0	0.3				ug/L	449044	Standard

Sample ID: QC Std 4
Report Date/Time: Wednesday, July 06, 2016 19:08:08
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**10.9828**	17.131	156.0	mg/L	2	Standard
Mg	24	8128.8	1.7	**11.9344**	0.323	2.7	mg/L	58	Standard
K	39	1198.4	13.9	**5.0665**	0.841	16.6	mg/L	27	Standard
Ca	43	223.3	20.8	**16.4476**	4.028	24.5	mg/L	20	Standard
Fe	54	13775.4	2.0	**12.4240**	0.399	3.2	mg/L	158	Standard
Fe	57	3787.1	3.0	**13.1073**	0.728	5.6	mg/L	267	Standard
Sc-1	45	35692.0	2.4				mg/L	38815	Standard
Cl	35	64987.8	1.8				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1570.1	6.7				ug/L	1617	Standard
P	31	7198.4	1.3				ug/L	19244	Standard
S	34	3923.8	4.6				ug/L	3557	Standard
Sr	88	86.7	29.6				ug/L	65	Standard
C	12	60.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	23	Standard
Dy	164	9.8	99.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	1970.1	5.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	1.085		
Sc	45			
Ti	47	112.195		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.835	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 4
Report Date/Time: Wednesday, July 06, 2016 19:08:08
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	95.089		
Ag	107			
Cd	111			
Cd	114			
In	115			90.284
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			91.725
Na	23	87.862		
Mg	24	238.688		
K	39	101.331		
Ca	43	109.651		
Fe	54	99.392		
Fe	57	104.859		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Mn	55	
QC Std 4	Tl	203	

Sample ID: QC Std 4
Report Date/Time: Wednesday, July 06, 2016 19:08:08
Page 3

Approved: July 07, 2016

QC Std 4	Mg	24

Sample ID: QC Std 4
Report Date/Time: Wednesday, July 06, 2016 19:08:08
Page 4

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, July 06, 2016 19:09:02
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53800.4	2.4				ug/L	68501	Standard
	Be	9	80136.4	0.3	**112.4788**	2.820	2.5	ug/L	8	Standard
	Al	27	5345078.2	1.5	**47.9732**	0.520	1.1	ug/L	1397	Standard
	Sc	45	40047.9	2.3				ug/L	38815	Standard
	Ti	47	33763.2	0.9	**96.4504**	1.307	1.4	ug/L	36	Standard
	V	51	728137.8	0.7	**99.1068**	0.604	0.6	ug/L	1284	Standard
	Cr	52	735138.4	0.1	**101.5294**	0.486	0.5	ug/L	6503	Standard
	Cr	53	93405.4	1.5	**104.0804**	2.037	2.0	ug/L	492	Standard
	Mn	55	670391.6	0.5	**105.0574**	0.041	0.0	ug/L	841	Standard
	Co	59	625211.3	0.7	**99.3861**	0.375	0.4	ug/L	229	Standard
	Ni	60	177152.0	0.7	**101.1772**	1.070	1.1	ug/L	344	Standard
	Cu	65	176839.4	0.8	**101.3457**	1.271	1.3	ug/L	115	Standard
	Zn	66	108752.9	0.7	**103.3905**	1.002	1.0	ug/L	190	Standard
>	**Ge**	72	427279.4	0.5				ug/L	409858	Standard
	As	75	110602.5	0.2	**102.4449**	0.341	0.3	ug/L	-22	Standard
	Se	82	10923.0	1.3	**99.1236**	0.756	0.8	ug/L	18	Standard
	Se-1	77	7617.9	1.9	**105.3511**	1.540	1.5	ug/L	50	Standard
>	**Ga**	71	150.0	20.3				mg/L	97	Standard
	Rb	85	640.0	9.0				ug/L	25	Standard
	Y	89	365147.7	0.6				ug/L	376763	Standard
>	**Rh**	103	38.3	27.2				ug/L	20	Standard
	Mo	98	200476.5	0.5	**83.7342**	0.804	1.0	ug/L	51	Standard
	Ag	107	373410.5	4.9	**60.2577**	3.748	6.2	ug/L	76	Standard
	Cd	111	196845.2	0.6	**99.8684**	1.157	1.2	mg/L	6	Standard
	Cd	114	474901.6	0.3	**98.5610**	1.581	1.6	ug/L	18	Standard
>	**In**	115	504053.2	1.4				ug/L	507261	Standard
	Sn	118	878.4	8.3	**0.0514**	0.013	25.9	ug/L	683	Standard
	Sb	123	423194.9	2.3	**99.2653**	0.897	0.9	ug/L	446	Standard
	Ba	135	184944.3	0.6	**97.8210**	0.904	0.9	ug/L	28	Standard
	Ce	140	98.3	26.1				ug/L	33	Standard
>	**Tb**	159	781877.2	0.7				ug/L	800803	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	756201.8	0.3	**101.0466**	0.150	0.1	ug/L	13	Standard
	Tl	205	668626.3	1.4	**103.1658**	1.578	1.5	ug/L	13	Standard
	Pb	206	486910.7	0.4	**101.3655**	0.440	0.4	ug/L	226	Standard
	Pb	207	424759.6	0.9	**97.3740**	1.059	1.1	ug/L	204	Standard
	Pb	208	1806310.1	0.5	**103.5475**	0.667	0.6	ug/L	852	Standard
	U	238	638520.7	0.1	**98.8114**	0.143	0.1	ug/L	13	Standard
>	**Bi**	209	439542.4	0.2				ug/L	449044	Standard

Sample ID: QC Std 5
Report Date/Time: Wednesday, July 06, 2016 19:11:19
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	7566.9	1.1	**9.8964**	0.338	3.4	mg/L	58	Standard
K	39	965.0	7.5	**3.5840**	0.202	5.6	mg/L	27	Standard
Ca	43	173.3	4.4	**10.9529**	0.788	7.2	mg/L	20	Standard
Fe	54	13008.8	3.3	**10.4391**	0.487	4.7	mg/L	158	Standard
Fe	57	3495.4	1.2	**10.6564**	0.312	2.9	mg/L	267	Standard
Sc-1	45	40047.9	2.3				mg/L	38815	Standard
Cl	35	68148.9	1.5				ug/L	57611	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1856.8	10.6				ug/L	1617	Standard
P	31	18643.1	3.8				ug/L	19244	Standard
S	34	3855.5	1.5				ug/L	3557	Standard
Sr	88	75.0	11.5				ug/L	65	Standard
C	12	76.7	32.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	12.5	45.0				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	2608.6	3.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	112.479		
Al	27	0.959		
Sc	45			
Ti	47	96.450		
V	51	99.107		
Cr	52	101.529		
Cr	53			
Mn	55	105.057		
Co	59	99.386		
Ni	60	101.177		
Cu	65	101.346		
Zn	66	103.390		
Ge	72		104.251	
As	75	102.445		
Se	82	99.124		
Se-1	77			
Ga	71			

Sample ID: QC Std 5
Report Date/Time: Wednesday, July 06, 2016 19:11:19
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	83.734		
Ag	107	60.258		
Cd	111	99.868		
Cd	114			
In	115		99.368	
Sn	118			
Sb	123	99.265		
Ba	135	97.821		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.047		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.548		
U	238	98.811		
Bi	209		97.884	
Na	23	-70.261		
Mg	24	197.928		
K	39	71.680		
Ca	43	73.019		
Fe	54	83.513		
Fe	57	85.251		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Ag	107	
QC Std 5	Na	23	

Sample ID: QC Std 5
Report Date/Time: Wednesday, July 06, 2016 19:11:19
Page 3

Approved: July 07, 2016

QC Std 5	Mg	24
QC Std 5	K	39
QC Std 5	Ca	43

Sample ID: QC Std 5
Report Date/Time: Wednesday, July 06, 2016 19:11:19
Page 4

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 19:12:15
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56160.6	1.8				ug/L	68501	Standard
	Be	9	40845.0	2.6	**54.9047**	0.516	0.9	ug/L	8	Standard
	Al	27	6551970.4	1.3	**56.3392**	1.670	3.0	ug/L	1397	Standard
	Sc	45	41572.0	1.7				ug/L	38815	Standard
	Ti	47	36365.9	0.5	**103.4324**	2.154	2.1	ug/L	36	Standard
	V	51	373639.8	1.0	**50.5673**	1.295	2.6	ug/L	1284	Standard
	Cr	52	379248.9	0.8	**51.6976**	1.271	2.5	ug/L	6503	Standard
	Cr	53	46753.7	2.6	**51.6544**	1.526	3.0	ug/L	492	Standard
	Mn	55	339745.6	0.4	**52.9632**	1.088	2.1	ug/L	841	Standard
	Co	59	324073.7	1.0	**51.2920**	0.893	1.7	ug/L	229	Standard
	Ni	60	90518.2	0.2	**51.3924**	0.862	1.7	ug/L	344	Standard
	Cu	65	89968.0	0.9	**51.3303**	1.278	2.5	ug/L	115	Standard
	Zn	66	54219.2	0.3	**51.2630**	0.968	1.9	ug/L	190	Standard
>	**Ge**	72	429235.1	1.6				ug/L	409858	Standard
	As	75	54773.7	0.3	**50.5602**	0.755	1.5	ug/L	-22	Standard
	Se	82	5564.8	1.1	**50.2523**	0.837	1.7	ug/L	18	Standard
	Se-1	77	3822.5	2.6	**52.2437**	1.024	2.0	ug/L	50	Standard
>	**Ga**	71	50.0	43.6				mg/L	97	Standard
	Rb	85	710.0	7.8				ug/L	25	Standard
	Y	89	370978.9	2.7				ug/L	376763	Standard
>	**Rh**	103	28.3	27.0				ug/L	20	Standard
	Mo	98	248182.1	1.3	**102.1495**	2.550	2.5	ug/L	51	Standard
	Ag	107	315228.1	1.3	**50.1230**	1.611	3.2	ug/L	76	Standard
	Cd	111	101311.6	0.8	**50.6817**	1.416	2.8	mg/L	6	Standard
	Cd	114	244330.1	1.0	**49.9947**	1.328	2.7	ug/L	18	Standard
>	**In**	115	511526.4	1.9				ug/L	507261	Standard
	Sn	118	274865.9	1.0	**49.7021**	1.424	2.9	ug/L	683	Standard
	Sb	123	227715.3	0.9	**52.6442**	1.349	2.6	ug/L	446	Standard
	Ba	135	94984.1	0.2	**49.5208**	0.934	1.9	ug/L	28	Standard
	Ce	140	70.0	32.7				ug/L	33	Standard
>	**Tb**	159	779844.1	2.6				ug/L	800803	Standard
	Ho	165	8.3	124.9				ug/L	10	Standard
	Tl	203	387182.7	1.1	**51.2437**	1.689	3.3	ug/L	13	Standard
	Tl	205	339494.8	2.7	**51.8947**	2.431	4.7	ug/L	13	Standard
	Pb	206	244515.0	0.9	**50.3913**	1.162	2.3	ug/L	226	Standard
	Pb	207	222226.5	0.3	**50.4333**	1.116	2.2	ug/L	204	Standard
	Pb	208	917872.5	1.1	**52.0981**	1.678	3.2	ug/L	852	Standard
	U	238	329693.9	0.7	**50.5295**	1.103	2.2	ug/L	13	Standard
>	**Bi**	209	444129.6	2.2				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 19:14:32
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3783.8	2.4	**4.7446**	0.059	1.2	mg/L	58	Standard
K	39	1246.7	9.1	**4.5032**	0.493	10.9	mg/L	27	Standard
Ca	43	88.3	21.4	**4.7358**	1.393	29.4	mg/L	20	Standard
Fe	54	6374.5	1.5	**4.8625**	0.107	2.2	mg/L	158	Standard
Fe	57	1813.4	8.2	**4.9797**	0.369	7.4	mg/L	267	Standard
Sc-1	45	41572.0	1.7				mg/L	38815	Standard
Cl	35	68583.5	0.6				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1763.4	8.9				ug/L	1617	Standard
P	31	20635.7	1.1				ug/L	19244	Standard
S	34	4107.2	3.8				ug/L	3557	Standard
Sr	88	65.0	23.1				ug/L	65	Standard
C	12	40.0	66.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	99.0				mg/L	23	Standard
Dy	164	2.4	243.1				mg/L	13	Standard
Ho-1	165	8.3	124.9				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	13	Standard
I	127	7728.6	2.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.809		
Al	27	112.678		
Sc	45			
Ti	47	103.432		
V	51	101.135		
Cr	52	103.395		
Cr	53			
Mn	55	105.926		
Co	59	102.584		
Ni	60	102.785		
Cu	65	102.661		
Zn	66	102.526		
Ge	72		104.728	
As	75	101.120		
Se	82	100.505		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 19:14:32
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	102.150		
Ag	107	100.246		
Cd	111	101.363		
Cd	114			
In	115		100.841	
Sn	118	99.404		
Sb	123	105.288		
Ba	135	99.042		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.487		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.196		
U	238	101.059		
Bi	209		98.906	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 19:14:32
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 19:15:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54942.8	0.8				ug/L	68501	Standard
	Be	9	45.0	58.8	**0.0811**	0.036	44.1	ug/L	8	Standard
	Al	27	2566.9	14.5	**0.0576**	0.003	5.7	ug/L	1397	Standard
	Sc	45	40367.0	1.9				ug/L	38815	Standard
	Ti	47	43.7	19.1	**0.0971**	0.023	23.6	ug/L	36	Standard
	V	51	1287.9	1.2	**0.0318**	0.001	4.5	ug/L	1284	Standard
	Cr	52	6591.1	1.2	**-0.0129**	0.006	47.5	ug/L	6503	Standard
	Cr	53	453.3	8.3	**0.0900**	0.045	50.2	ug/L	492	Standard
	Mn	55	728.4	5.6	**0.0186**	0.006	32.9	ug/L	841	Standard
	Co	59	301.7	1.7	**0.0536**	0.001	2.0	ug/L	229	Standard
	Ni	60	268.7	8.4	**-0.0036**	0.014	384.2	ug/L	344	Standard
	Cu	65	137.7	7.5	**0.0658**	0.006	8.9	ug/L	115	Standard
	Zn	66	149.7	3.3	**0.0294**	0.004	14.0	ug/L	190	Standard
>	**Ge**	72	426278.5	0.7				ug/L	409858	Standard
	As	75	-60.6	31.8	**0.0426**	0.018	42.7	ug/L	-22	Standard
	Se	82	12.3	13.8	**0.0602**	0.015	25.5	ug/L	18	Standard
	Se-1	77	61.3	12.3	**0.0978**	0.110	112.6	ug/L	50	Standard
>	**Ga**	71	30.0	76.4				mg/L	97	Standard
	Rb	85	28.3	81.5				ug/L	25	Standard
	Y	89	363777.1	0.9				ug/L	376763	Standard
>	**Rh**	103	21.7	35.3				ug/L	20	Standard
	Mo	98	237.6	7.5	**0.1704**	0.006	3.3	ug/L	51	Standard
	Ag	107	180.0	7.3	**0.0521**	0.002	3.0	ug/L	76	Standard
	Cd	111	26.5	12.9	**0.0528**	0.002	2.9	mg/L	6	Standard
	Cd	114	73.9	24.0	**0.0526**	0.003	6.3	ug/L	18	Standard
>	**In**	115	505090.7	2.8				ug/L	507261	Standard
	Sn	118	850.0	27.6	**0.0452**	0.040	87.7	ug/L	683	Standard
	Sb	123	1365.7	35.3	**0.2977**	0.106	35.6	ug/L	446	Standard
	Ba	135	52.7	11.0	**0.0436**	0.003	8.0	ug/L	28	Standard
	Ce	140	15.0	33.3				ug/L	33	Standard
>	**Tb**	159	772979.8	1.0				ug/L	800803	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	117.7	17.4	**0.0490**	0.003	5.3	ug/L	13	Standard
	Tl	205	106.7	25.8	**0.0589**	0.004	7.1	ug/L	13	Standard
	Pb	206	279.7	3.0	**0.0539**	0.002	4.1	ug/L	226	Standard
	Pb	207	242.7	5.0	**0.0543**	0.002	3.8	ug/L	204	Standard
	Pb	208	992.3	1.7	**0.0567**	0.001	1.3	ug/L	852	Standard
	U	238	100.3	19.8	**0.0580**	0.003	5.0	ug/L	13	Standard
>	**Bi**	209	441868.4	1.5				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 19:17:43
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.2018**	14.862	7363.8	mg/L	2	Standard
Mg	24	58.3	21.6	**0.0377**	0.017	45.5	mg/L	58	Standard
K	39	43.3	17.6	**0.0241**	0.028	114.8	mg/L	27	Standard
Ca	43	16.7	45.8	**-0.1077**	0.555	515.1	mg/L	20	Standard
Fe	54	119.4	36.2	**-0.0244**	0.033	134.8	mg/L	158	Standard
Fe	57	231.7	10.2	**0.0663**	0.086	129.4	mg/L	267	Standard
> **Sc-1**	45	40367.0	1.9				mg/L	38815	Standard
Cl	35	68330.4	0.6				ug/L	57611	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	1713.4	13.1				ug/L	1617	Standard
P	31	20178.4	0.4				ug/L	19244	Standard
S	34	4103.9	3.9				ug/L	3557	Standard
Sr	88	90.0	25.5				ug/L	65	Standard
C	12	50.0	52.9				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0					mg/L	23	Standard
Dy	164	3.3	173.2				mg/L	13	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	0.0					mg/L	13	Standard
I	127	6669.8	2.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.006	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 19:17:43
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.572
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.402
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 19:17:43
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, July 06, 2016 19:18:39
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54098.1	3.3				ug/L	68501	Standard
	Be	9	163.3	29.7	**0.2472**	0.068	27.4	ug/L	8	Standard
	Al	27	1381.7	7.5	**0.0474**	0.001	1.4	ug/L	1397	Standard
	Sc	45	39292.6	1.5				ug/L	38815	Standard
	Ti	47	34.0	18.4	**0.0714**	0.018	24.9	ug/L	36	Standard
	V	51	3870.1	3.3	**0.3951**	0.013	3.3	ug/L	1284	Standard
	Cr	52	12230.6	2.3	**0.8091**	0.053	6.6	ug/L	6503	Standard
	Cr	53	1161.7	5.5	**0.9103**	0.080	8.8	ug/L	492	Standard
	Mn	55	3706.1	1.4	**0.4983**	0.003	0.6	ug/L	841	Standard
	Co	59	2545.5	1.1	**0.4192**	0.008	2.0	ug/L	229	Standard
	Ni	60	2951.0	3.0	**1.5680**	0.059	3.8	ug/L	344	Standard
	Cu	65	1450.1	4.3	**0.8366**	0.044	5.2	ug/L	115	Standard
	Zn	66	6995.9	1.6	**6.6934**	0.141	2.1	ug/L	190	Standard
>	**Ge**	72	417981.6	0.9				ug/L	409858	Standard
	As	75	357.8	10.2	**0.4371**	0.031	7.2	ug/L	-22	Standard
	Se	82	58.2	14.0	**0.4880**	0.071	14.6	ug/L	18	Standard
	Se-1	77	83.3	10.3	**0.4273**	0.117	27.3	ug/L	50	Standard
>	**Ga**	71	23.3	12.4				mg/L	97	Standard
	Rb	85	20.0	25.0				ug/L	25	Standard
	Y	89	356946.8	2.1				ug/L	376763	Standard
>	**Rh**	103	18.3	56.8				ug/L	20	Standard
	Mo	98	97.8	17.1	**0.1129**	0.007	6.1	ug/L	51	Standard
	Ag	107	2415.2	3.0	**0.4182**	0.014	3.2	ug/L	76	Standard
	Cd	111	473.5	8.0	**0.2829**	0.018	6.5	mg/L	6	Standard
	Cd	114	1005.4	9.2	**0.2490**	0.020	8.2	ug/L	18	Standard
>	**In**	115	496796.7	0.5				ug/L	507261	Standard
	Sn	118	420.0	26.1	**-0.0318**	0.020	63.4	ug/L	683	Standard
	Sb	123	1980.8	7.1	**0.4511**	0.032	7.0	ug/L	446	Standard
	Ba	135	1323.4	2.0	**0.7257**	0.012	1.7	ug/L	28	Standard
	Ce	140	11.7	49.5				ug/L	33	Standard
>	**Tb**	159	765291.8	0.8				ug/L	800803	Standard
	Ho	165	0.0					ug/L	10	Standard
	Tl	203	599.7	3.3	**0.1133**	0.003	2.3	ug/L	13	Standard
	Tl	205	568.3	2.8	**0.1301**	0.002	1.9	ug/L	13	Standard
	Pb	206	1184.7	1.2	**0.2423**	0.003	1.1	ug/L	226	Standard
	Pb	207	965.7	3.9	**0.2200**	0.009	4.0	ug/L	204	Standard
	Pb	208	4239.9	0.9	**0.2428**	0.002	0.9	ug/L	852	Standard
	U	238	2448.2	1.2	**0.4208**	0.005	1.2	ug/L	13	Standard
>	**Bi**	209	440163.0	0.1				ug/L	449044	Standard

Sample ID: QC Std 8
Report Date/Time: Wednesday, July 06, 2016 19:20:56
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	38.6	**0.0174**	0.022	123.7	mg/L	58	Standard
K	39	18.3	31.5	**-0.0697**	0.023	32.5	mg/L	27	Standard
Ca	43	33.3	8.7	**1.1191**	0.237	21.2	mg/L	20	Standard
Fe	54	95.2	14.9	**-0.0415**	0.012	28.6	mg/L	158	Standard
Fe	57	223.3	9.0	**0.0577**	0.056	96.4	mg/L	267	Standard
Sc-1	45	39292.6	1.5				mg/L	38815	Standard
Cl	35	66674.4	1.3				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1723.4	3.8				ug/L	1617	Standard
P	31	15454.6	10.5				ug/L	19244	Standard
S	34	4087.2	4.8				ug/L	3557	Standard
Sr	88	58.3	17.8				ug/L	65	Standard
C	12	66.7	17.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	12.9	48.2				mg/L	13	Standard
Ho-1	165	0.0					mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	761.7	2.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	123.590		
Al	27			
Sc	45			
Ti	47			
V	51	98.765		
Cr	52	101.142		
Cr	53			
Mn	55	99.663		
Co	59	104.792		
Ni	60	97.997		
Cu	65	104.570		
Zn	66	107.094		
Ge	72		101.982	
As	75	109.275		
Se	82	122.008		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
Report Date/Time: Wednesday, July 06, 2016 19:20:56
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	104.554		
Cd	111	117.890		
Cd	114			
> In	115			97.937
Sn	118			
Sb	123	112.777		
Ba	135	96.767		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	141.665		
Tl	205			
Pb	206			
Pb	207			
Pb	208	121.398		
U	238	105.196		
> Bi	209			98.022
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Tl	203	

Sample ID: QC Std 8
Report Date/Time: Wednesday, July 06, 2016 19:20:56
Page 3

Approved: July 07, 2016

2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW16F-061616	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 12:47
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/24/2016 11:43
Workgroup #:	WG573634	**Analyst:**	AMA	**Run Date:**	06/24/2016 12:18
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	M7.062416.121852
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	129-061616	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 12:47
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/24/2016 11:43
Workgroup #:	WG573634	**Analyst:**	AMA	**Run Date:**	06/24/2016 12:26
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	M7.062416.122629
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	120F-061616	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 12:47
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/24/2016 11:43
Workgroup #:	WG573634	**Analyst:**	AMA	**Run Date:**	06/24/2016 12:31
Collect Date:	06/16/2016 09:25	**Dilution:**	1	**File ID:**	M7.062416.123133
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	123-061616	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 12:47
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/24/2016 11:43
Workgroup #:	WG573634	**Analyst:**	AMA	**Run Date:**	06/24/2016 12:34
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	M7.062416.123404
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

TCLP Non-Volatile

Analyst(s): AMA
Date: 06/20/2016
Filter Lot #: 94860030
Microbac SOP: TCLP 01 Rev #: 12

Analyst / Date		Analyst / Date	
AMA/CPD 6/20/16		CPD	6/21/16
Time On	Temp On °C	Time Off	Temp Off °C
1538	24.9	0832	23.1

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	6-0946-01	ME	1311	F1-182	S	100	6.50	1.88	100.44	2008	4.81
D	6-0924-01	ME					10.49	2.51	100.70	2014	11.53
2	6-0990-01	Herb.					9.30	1.92	100.51	2010	5.65
D	6-1050-01	ME		F2-380			12.73	12.23	25.51	510	10.95
31	6-1005-01	Herb.					10.98	6.97	25.20	504	7.33
D	6-0964-01	300	1312	SPLPF1.63	S	100	NA	NA	25.60	512	9.17
D	-02								25.63	512	8.34
D	-03								25.53	510	9.44
D	-04								25.46	509	8.90
D	-05								25.68	513	9.55
D	-06								25.43	508	8.69
D	6-1069-01	ME wet lab	1311	F2-380	S	100	8.60	5.06	50.40	~~1008~~ AMA	6.19
D	6-1071-01		1311	F1-182	S	100	8.75	4.97	50.58	1012	8.51
D	6-1073-01						8.63	4.83	50.60	1012	8.46
D	6-1075-01						9.40	4.56	50.50	1010	5.98
D	6-1080-01						9.39	4.28	50.26	1005	6.53
D	6-1082-01						9.16	2.35	50.33	1007	6.13
D	6-1084-01						9.42	2.34	50.69	1014	8.80
D	6-1086-01						9.31	2.55	50.86	1016	5.67
D	6-1088-01						9.54	3.18	50.96	1019	6.46
NA	FBIK1	ME wet lab	1311	F1-182	NA	NA	NA	NA	100	100	4.90
	FBIK2			F2-380							2.80
	SPLP FBIK1	300	1312	SPLPF1.63							~~4.25~~ ~~1.90~~ CPD 6/21
			CPD 6/20/16								

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: N/A

Peer Review By: [signature]

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG573569
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/21/2016 12:47
Hotblock Start Temp: 95.6 @ 12:40
Hotblock End Temp: 95.5 @ 14:40
Instrument: HB6

SOP: ME404 Revison 17
Spike Solution: STD76734
Spike Witness: VC
H2SO4 Lot #: COA18359
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
K2S2O8 1:1 Lot #: RGT37046
KMnO4 1:1 Lot #: RGT37082
Mercury Water ICV Lot #: STD76727
HG H2O STDS 10PPM Lot #: STD76733

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG573569-02	BLANK	1	40 mL	40 mL		
2	WG573353-01	FBLK1	17	4 mL	40 mL		
3	WG573353-02	FBLK2	17	4 mL	40 mL		
4	WG573569-03	LCS	1	40 mL	40 mL	4 mL	
5	L16060924-01	SAMP	17	4 mL	40 mL		06/23/16
6	WG573569-01	REF	17	4 mL	40 mL		
7	L16060946-01	SAMP	17	4 mL	40 mL		06/22/16
8	L16061026-02	SAMP	1	40 mL	40 mL		06/28/16
9	L16061026-04	SAMP	1	40 mL	40 mL		06/28/16
10	L16061026-06	SAMP	1	40 mL	40 mL		06/28/16
11	L16061026-07	SAMP	1	40 mL	40 mL		06/28/16
12	L16061050-01	SAMP	17	4 mL	40 mL		06/24/16
13	L16061069-01	SAMP	17	4 mL	40 mL		06/24/16
14	L16061071-01	SAMP	17	4 mL	40 mL		06/24/16
15	L16061073-01	SAMP	17	4 mL	40 mL		06/24/16
16	L16061075-01	SAMP	17	4 mL	40 mL		06/24/16
17	L16061080-01	SAMP	17	4 mL	40 mL		06/24/16
18	L16061082-01	SAMP	17	4 mL	40 mL		06/24/16
19	L16061084-01	SAMP	17	4 mL	40 mL		06/24/16
20	L16061086-01	SAMP	17	4 mL	40 mL		06/24/16
21	L16061088-01	SAMP	17	4 mL	40 mL		06/24/16
22	WG573569-04	MS	1	4 mL	40 mL	4 mL	
23	WG573569-05	MSD	1	4 mL	40 mL	4 mL	

Analyst: [signature]

Reviewer: [signature]

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4817129
Report generated: 06/21/2016 15:16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062416C.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76733 ICV Std: STD76727 Post Spike: STD76733

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573634

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.062416.113041	WG574110-01	Calibration Point		1		06/24/16 11:30
2	M7.062416.113312	WG574110-02	Calibration Point		1		06/24/16 11:33
3	M7.062416.113544	WG574110-03	Calibration Point		1		06/24/16 11:35
4	M7.062416.113817	WG574110-04	Calibration Point		1		06/24/16 11:38
5	M7.062416.114050	WG574110-05	Calibration Point		1		06/24/16 11:40
6	M7.062416.114323	WG574110-06	Calibration Point		1		06/24/16 11:43
7	M7.062416.114558	WG574110-07	Initial Calibration Verification		1		06/24/16 11:45
8	M7.062416.114828	WG574110-08	Initial Calib Blank		1		06/24/16 11:48
9	M7.062416.115100	WG574110-09	CCV		1		06/24/16 11:51
10	M7.062416.115331	WG574110-10	CCB		1		06/24/16 11:53
11	M7.062416.115602	WG573569-02	Method/Prep Blank	40/40	1		06/24/16 11:56
12	M7.062416.115833	WG573569-03	Laboratory Control S	40/40	1		06/24/16 11:58
13	M7.062416.120104	WG573353-01	Fluid Blank 1		1		06/24/16 12:01
14	M7.062416.120336	WG573353-02	Fluid Blank 2		1		06/24/16 12:03
15	M7.062416.120608	L16060924-01	K6F0495-01	4/40	1		06/24/16 12:06
16	M7.062416.120840	WG573634-01	Post Digestion Spike		1	L16060924-01	06/24/16 12:08
17	M7.062416.121113	WG573569-01	Reference Sample	4/40	1	L16060946-01	06/24/16 12:11
18	M7.062416.121345	WG573569-04	Matrix Spike	4/40	1	L16060946-01	06/24/16 12:13
19	M7.062416.121618	WG573569-05	Matrix Spike Duplica	4/40	1	L16060946-01	06/24/16 12:16
20	M7.062416.121852	L16061026-02	18WW16F-061616	40/40	1		06/24/16 12:18
21	M7.062416.122124	WG574110-11	CCV		1		06/24/16 12:21
22	M7.062416.122355	WG574110-12	CCB		1		06/24/16 12:23
23	M7.062416.122629	L16061026-04	129-061616	40/40	1		06/24/16 12:26
24	M7.062416.122903	WG573634-02	Post Digestion Spike		1	L16061026-04	06/24/16 12:29
25	M7.062416.123133	L16061026-06	120F-061616	40/40	1		06/24/16 12:31
26	M7.062416.123404	L16061026-07	123-061616	40/40	1		06/24/16 12:34
27	M7.062416.123635	L16061050-01	AWV 32 BAGS	4/40	1		06/24/16 12:36
28	M7.062416.123906	L16061069-01	MIX 8	4/40	1		06/24/16 12:39
29	M7.062416.124137	L16061071-01	380 SC 10	4/40	1		06/24/16 12:41
30	M7.062416.124409	L16061073-01	MIX 10	4/40	1		06/24/16 12:44
31	M7.062416.124641	L16061075-01	IMP 10	4/40	1		06/24/16 12:46
32	M7.062416.124913	L16061080-01	380 SALTCAKE	4/40	1		06/24/16 12:49
33	M7.062416.125146	WG574110-13	CCV		1		06/24/16 12:51
34	M7.062416.125416	WG574110-14	CCB		1		06/24/16 12:54

Page: 1 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062416C.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76733 ICV Std: STD76727 Post Spike: STD76733

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573634

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.062416.125649	L16061082-01	REG SALTCAKE	4/40	1		06/24/16 12:56
36	M7.062416.125922	L16061084-01	ALOCA SALTCAKE	4/40	1		06/24/16 12:59
37	M7.062416.130155	L16061086-01	IMP 8	4/40	1		06/24/16 13:01
38	M7.062416.130428	L16061088-01	URV 8	4/40	1		06/24/16 13:04
39	M7.062416.130659	L0-25	025		1		06/24/16 13:06
40	M7.062416.130930	L0-26	026		1		06/24/16 13:09
41	M7.062416.131201	L0-27	027		1		06/24/16 13:12
42	M7.062416.131432	L0-28	028		1		06/24/16 13:14
43	M7.062416.131703	L0-29	029		1		06/24/16 13:17
44	M7.062416.131935	L0-30	030		1		06/24/16 13:19
45	M7.062416.132207	WG574110-15	CCV		1		06/24/16 13:22
46	M7.062416.132438	WG574110-16	CCB		1		06/24/16 13:24

Page: 2 Approved: June 24, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 574110
Runlog ID: 75910
Analytical Workgroups: 573634

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1026
Client Forms	X
Level X	
Level 3	
Level 4	1026
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
24-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
24-JUN-2016
Kym H. Rhoden

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 16:45:41

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG573634

Login Number: L16061026

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW16F-061616	02	06/16/16					06/21/2016	5.2	28		06/24/16	8.2	28	
129-061616	04	06/16/16					06/21/2016	5.2	28		06/24/16	8.1	28	
120F-061616	06	06/16/16					06/21/2016	5.1	28		06/24/16	8.1	28	
123-061616	07	06/16/16					06/21/2016	5.1	28		06/24/16	8.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4823372
Report generated 06/24/2016 13:39

METHOD BLANK SUMMARY

Login Number: L16061026
Blank File ID: M7.062416.115602
Prep Date: 06/21/16 12:47
Analyzed Date: 06/24/16 11:56
Analyst: AMA

Work Group: WG573634
Blank Sample ID: WG573569-02
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573569-03	M7.062416.115833	06/24/16 11:58	01
18WW16F-061616	L16061026-02	M7.062416.121852	06/24/16 12:18	01
129-061616	L16061026-04	M7.062416.122629	06/24/16 12:26	01
120F-061616	L16061026-06	M7.062416.123133	06/24/16 12:31	01
123-061616	L16061026-07	M7.062416.123404	06/24/16 12:34	01

Report Name: BLANK_SUMMARY
PDF File ID: 4823373
Report generated 06/24/2016 13:39

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061026 Prep Date: 06/21/16 12:47 Sample ID: WG573569-02
Instrument ID: CVAA1 Run Date: 06/24/16 11:56 Prep Method: 7470A
File ID: M7.062416.115602 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573634 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-24-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4823374
24-JUN-2016 13:39

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061026 Run Date: 06/24/2016 Sample ID: WG573569-03
Instrument ID: CVAA1 Run Time: 11:58 Prep Method: 7470A
File ID: M7.062416.115833 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573634 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76734 Cal ID: CVAA1-24-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00410	103	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4823375
Report generated: 06/24/2016 13:40

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061026 Cal ID: CVAA1 - Worknum: WG573634
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG573569-01 File ID: M7.062416.121113 Dil: 1 Matrix: WATER
Sample ID: WG573569-04 MS File ID: M7.062416.121345 Dil: 1 Units: mg/L
Sample ID: WG573569-05 MSD File ID: M7.062416.121618 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.0400	0.0414	103	0.0400	0.0422	105	1.96	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4823376
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061026 **Worknum:** WG573634
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG573634-02 **File ID:** M7.062416.122903 **Dil:** 1 **Units:** ug/L
Sample ID: L16061026-04 **File ID:** M7.062416.122629 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.12		0	U	1	111.7	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4823371
Report generated: 06/24/2016 13:39

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061026
Analytical Method: 7470A
ICAL Worknum: WG574110

Workgroup (AAB#): WG573634
Instrument ID: CVAA1
Initial Calibration Date: 06/24/2016 11:43

Analyte	WG574110-01		WG574110-02		WG574110-03		WG574110-04		WG574110-05		WG574110-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	-123.7	0.200	2497	1.00	13190	2.00	25900	5.00	62740	10.0	123100

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4823377
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061026
Analytical Method: 7470A
ICAL Worknum: WG574110

Workgroup (AAB#): WG573634
Instrument ID: CVAA1
Initial Calibration Date: 06/24/2016 11:43

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4823377
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061026
Run Date: 06/24/2016
Sample ID: WG574110-08
Instrument ID: CVAA1
Run Time: 11:48
Method: 7470A
File ID: M7.062416.114828
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573634
Cal ID: CVAA1 - 24-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4823379
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/24/2016
Sample ID: WG574110-10
Instrument ID: CVAA1
Run Time: 11:53
Method: 7470A
File ID: M7.062416.115331
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573634
Cal ID: CVAA1 - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823381
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/24/2016
Sample ID: WG574110-12
Instrument ID: CVAA1
Run Time: 12:23
Method: 7470A
File ID: M7.062416.122355
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573634
Cal ID: CVAA1 - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823381
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/24/2016
Sample ID: WG574110-14
Instrument ID: CVAA1
Run Time: 12:54
Method: 7470A
File ID: M7.062416.125416
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573634
Cal ID: CVAA1 - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823381
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061026 Run Date: 06/24/2016 Sample ID: WG574110-07
Instrument ID: CVAA1 Run Time: 11:45 Method: 7470A
File ID: M7.062416.114558 Analyst: AMA Units: ug/L
Workgroup (AAB#): WG573634 Cal ID: CVAA1 - 24-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.12	106	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4823378
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/24/2016
Sample ID: WG574110-09
Instrument ID: CVAA1
Run Time: 11:51
Method: 7470A
File ID: M7.062416.115100
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573634
Cal ID: CVAA1 - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00208	mg/L	104	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823380
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/24/2016
Sample ID: WG574110-11
Instrument ID: CVAA1
Run Time: 12:21
Method: 7470A
File ID: M7.062416.122124
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573634
Cal ID: CVAA1 - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00209	mg/L	104	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823380
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/24/2016
Sample ID: WG574110-13
Instrument ID: CVAA1
Run Time: 12:51
Method: 7470A
File ID: M7.062416.125146
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573634
Cal ID: CVAA1 - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00210	mg/L	105	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823380
Report generated 06/24/2016 13:40

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\062416C.wsz
Date Started: 6/24/2016 10:42:42 AM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/24/16 11:30:41 am	0.0000	-124	6.50		1.00
Replicates	-125.6	-120.7	-114.7	-133.7							
Standard #1 (0.2 ug/L)					STD	06/24/16 11:33:12 am	0.2000	2497	1.03		1.00
Replicates	2532.4	2495.4	2485.2	2473.0							
Standard #2 (1.0 ug/L)					STD	06/24/16 11:35:44 am	1.0000	13188	0.20		1.00
Replicates	13156.9	13204.2	13176.2	13216.7							
Standard #3 (2.0 ug/L)					STD	06/24/16 11:38:17 am	2.0000	25902	0.19		1.00
Replicates	25832.1	25909.2	25919.1	25947.6							
Standard #4 (5.0 ug/L)					STD	06/24/16 11:40:50 am	5.0000	62743	0.07		1.00
Replicates	62774.8	62784.3	62720.3	62693.3							
Standard #5 (10.0 ug/L)					STD	06/24/16 11:43:23 am	10.0000	123113	0.05		1.00
Replicates	123114.0	123195.4	123091.9	123051.0							

Calibration

Equation: A = 562.316 + 12304.710C
R2: 0.99982
SEE: 718.1607
Flags:

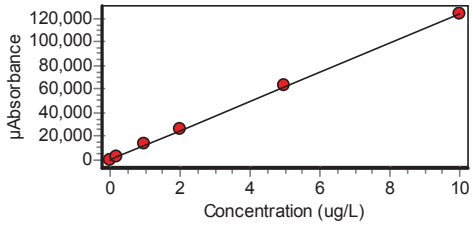

ICV					ICV	06/24/16 11:45:58 am	2.1200	26644	0.08		1.00
Replicates	26667.3	26648.5	26644.8	26613.7							
% Recovery	105.98										

Approved: June 24, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	06/24/16 11:48:28 am	-0.0565	-133	13.15		1.00
Replicates	-108.7	-130.8	-146.4	-144.6							
CCV					CCV	06/24/16 11:51:00 am	2.0750	26090	0.11		1.00
Replicates	26047.2	26112.0	26096.1	26105.0							
% Recovery	103.73										
CCB					CCB	06/24/16 11:53:31 am	-0.0565	-133	19.09		1.00
Replicates	-104.5	-135.1	-165.3	-125.1							
WG573569-02					MB	06/24/16 11:56:02 am	-0.0519	-76	32.96		1.00
Replicates	-68.9	-49.0	-109.2	-76.8							
WG573569-03					LCS	06/24/16 11:58:33 am	4.1010	51028	0.27		1.00
Replicates	51167.9	51113.4	50952.9	50877.9							
% Recovery	102.53										
WG573353-01					UNK	06/24/16 12:01:04 pm	-0.0539	-100	17.95		1.00
Replicates	-110.8	-94.0	-78.3	-118.8							
WG573353-02					UNK	06/24/16 12:03:36 pm	-0.0522	-80	23.40		1.00
Replicates	-65.6	-64.0	-88.5	-102.8							
L1606092401					UNK	06/24/16 12:06:08 pm	-0.0500	-53	43.61		1.00
Replicates	-45.8	-23.2	-73.7	-67.4							
WG573634-01					SPK	06/24/16 12:08:40 pm	1.0160	13067	0.05		1.00
Replicates	13062.7	13073.7	13072.7	13060.1							
% Recovery	106.62										
L1606094601					UNK	06/24/16 12:11:13 pm	-0.0515	-71	18.47		1.00
Replicates	-61.7	-83.9	-81.5	-58.4							
WG573569-04					MSK	06/24/16 12:13:45 pm	4.1370	51465	0.26		1.00
Replicates	51584.9	51566.1	51401.3	51308.1							
% Recovery	104.71										
WG573569-05					MSDUP	06/24/16 12:16:18 pm	4.2190	52479	0.25		1.00
Replicates	52616.2	52552.9	52417.8	52330.6							
% Recovery	106.77	RPD 1.97									

Approved: June 24, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606102602					UNK	06/24/16 12:18:52 pm	-0.0127	406	3.31		1.00
Replicates	419.5	412.0	405.9	388.0							
CCV					CCV	06/24/16 12:21:24 pm	2.0880	26260	0.11		1.00
Replicates	26221.2	26256.1	26279.1	26282.6							
% Recovery	104.42										
CCB					CCB	06/24/16 12:23:55 pm	-0.0508	-63	26.93		1.00
Replicates	-51.4	-74.7	-79.8	-45.5							
L1606102604					UNK	06/24/16 12:26:29 pm	0.0578	1274	0.97		1.00
Replicates	1286.3	1277.8	1274.3	1257.0							
WG573634-02					SPK	06/24/16 12:29:03 pm	1.1170	14301	0.43		1.00
Replicates	14377.4	14319.1	14276.8	14231.6							
% Recovery	105.87										
L1606102606					UNK	06/24/16 12:31:33 pm	-0.0171	352	3.68		1.00
Replicates	357.3	364.0	352.5	333.8							
L1606102607					UNK	06/24/16 12:34:04 pm	-0.0371	105	17.82		1.00
Replicates	77.9	117.1	108.3	117.9							
L1606105001					UNK	06/24/16 12:36:35 pm	-0.0459	-2	358.28		1.00
Replicates	6.4	-11.0	-4.5	0.8							
L1606106901					UNK	06/24/16 12:39:06 pm	-0.0485	-34	55.27		1.00
Replicates	-23.9	-40.3	-14.9	-57.9							
L1606107101					UNK	06/24/16 12:41:37 pm	-0.0481	-29	48.26		1.00
Replicates	-41.6	-39.6	-12.8	-21.8							
L1606107301					UNK	06/24/16 12:44:09 pm	-0.0488	-39	41.51		1.00
Replicates	-28.6	-57.0	-46.4	-22.2							
L1606107501					UNK	06/24/16 12:46:41 pm	-0.0480	-29	76.76		1.00
Replicates	-26.3	-25.9	-4.4	-57.5							

Approved: June 24, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606108001					UNK	06/24/16 12:49:13 pm	-0.0462	-7	88.87		1.00
Replicates	-6.5	-6.5	0.5	-13.8							
CCV					CCV	06/24/16 12:51:46 pm	2.1040	26453	0.22		1.00
Replicates	26375.1	26443.2	26484.2	26510.7							
% Recovery	105.21										
CCB					CCB	06/24/16 12:54:16 pm	-0.0485	-34	24.78		1.00
Replicates	-46.2	-26.8	-34.0	-30.0							
L1606108201					UNK	06/24/16 12:56:49 pm	-0.0472	-18	62.97		1.00
Replicates	-12.7	-11.4	-35.1	-13.1							
L1606108401					UNK	06/24/16 12:59:22 pm	-0.0485	-35	50.45		1.00
Replicates	-42.3	-9.0	-48.2	-39.8							
L1606108601					UNK	06/24/16 01:01:55 pm	-0.0481	-29	81.30		1.00
Replicates	-31.3	-23.7	-2.0	-59.2							
L1606108801					UNK	06/24/16 01:04:28 pm	-0.0474	-21	90.18		1.00
Replicates	-31.9	-30.0	-27.8	7.2							
025					UNK	06/24/16 01:06:59 pm	-0.0468	-13	51.82		1.00
Replicates	-22.1	-6.8	-15.0	-9.0							
026					UNK	06/24/16 01:09:30 pm	-0.0454	4	505.74		1.00
Replicates	-14.7	16.4	-13.5	29.0							
027					UNK	06/24/16 01:12:01 pm	-0.0485	-34	28.66		1.00
Replicates	-21.1	-34.6	-35.5	-44.8							
028					UNK	06/24/16 01:14:32 pm	-0.0467	-12	134.10		1.00
Replicates	-8.5	-20.3	-29.3	8.9							
029					UNK	06/24/16 01:17:03 pm	-0.0486	-35	64.66		1.00
Replicates	-43.5	-15.5	-63.2	-17.9							

Approved: June 24, 2016
Alexandra M. Alfred

Sample Name						Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
030						UNK	06/24/16 01:19:35 pm	-0.0481	-30	59.77		1.00
	Replicates	-41.5	-3.9	-31.8	-41.1							
CCV						CCV	06/24/16 01:22:07 pm	2.1150	26592	0.19		1.00
	Replicates	26521.3	26594.8	26640.8	26612.1							
	% Recovery	105.77										
CCB						CCB	06/24/16 01:24:38 pm	-0.0484	-33	62.87		1.00
	Replicates	-59.1	-18.7	-14.2	-39.5							

Approved: June 24, 2016

Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 12, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - Hanah D. Coe
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 12, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 12, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18WW16-061616			6/16/16	0755		✓	W	4	✓	✓											
	18WW16F-061616			6/16/16	0755		✓	W	1			✓										
	102-061616			6/16/16	0840		✓	W	4	✓	✓											
	129-061616			6/16/16	0905		✓	W	7	✓	✓	✓	✓									
	120-061616			6/16/16	0925		✓	W	6	✓	✓		✓									
	120F-061616			6/16/16	0925		✓	W	1			✓										
	123-061616			6/16/16	0955		✓	W	7	✓	✓	✓	✓									
	TRIP BLANK			6/16/16			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 6/16/16	Time 1545	Received by: (Signature)	Received by: (Signature)	Time	Relinquished by: (Signature)	
Relinquished by: (Signature)	Date	Time	Received for (Signature)			Remarks:	

Microbac OVD
Received: 06/17/2016 09:48
By: BRENDA GREGORY
221000087344
Brenda Gregory

*Homogenize all composite samples prior to analysis

ink QA/QC Manager

00717109

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061026
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 28-JUN-2016

Samplenum	Container ID	Products
L16061026-01	762826	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Samplenum	Container ID	Products
L16061026-01	762827	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16061026-02	762828	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	PREP	W1	DIG	18-JUN-2016 08:03	ERP	BRG	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:29	AMA	ERP	
4	STORE	DIG	A1	22-JUN-2016 12:31	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061026
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 28-JUN-2016

Samplenum	Container ID	Products
L16061026-03	762829	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Samplenum	Container ID	Products
L16061026-03	762830	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061026
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 28-JUN-2016

Samplenum	Container ID	Products
L16061026-04	762831	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Samplenum	Container ID	Products
L16061026-04	762832	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	PREP	W1	EXT	20-JUN-2016 16:36	CPD	BRG	
3	ANALYZ*	EXT	SEMI	23-JUN-2016 09:21	SCB	CPD	
4	DISP	EXT	DISP	24-JUN-2016 11:59	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	STORE	W1	A1	24-JUN-2016 08:45	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061026
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 28-JUN-2016

Samplenum	Container ID	Products
L16061026-04	762833	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16061026-04	762834	K MG MN-MS NA NI-MS PB-MS SB-MS SE-AX TL-MS V-

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	PREP	W1	DIG	18-JUN-2016 08:03	ERP	BRG	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:29	AMA	ERP	
4	STORE	DIG	A1	22-JUN-2016 12:31	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061026-05	762835	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061026
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 28-JUN-2016

Samplenum	Container ID	Products
L16061026-05	762836	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	PREP	W1	EXT	20-JUN-2016 16:36	CPD	BRG	
3	ANALYZ*	EXT	SEMI	23-JUN-2016 09:21	SCB	CPD	
4	DISP	EXT	DISP	24-JUN-2016 11:59	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	STORE	W1	A1	24-JUN-2016 08:22	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061026-05	762837	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16061026-06	762838	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	PREP	W1	DIG	18-JUN-2016 08:03	ERP	BRG	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:29	AMA	ERP	
4	STORE	DIG	A1	22-JUN-2016 12:31	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061026
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 28-JUN-2016

Samplenum	Container ID	Products
L16061026-07	762839	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Samplenum	Container ID	Products
L16061026-07	762840	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	PREP	W1	EXT	20-JUN-2016 16:36	CPD	BRG	
3	ANALYZ*	EXT	SEMI	23-JUN-2016 09:21	SCB	CPD	
4	DISP	EXT	DISP	24-JUN-2016 11:59	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061026
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 28-JUN-2016

Samplenum	Container ID	Products
L16061026-07	762841	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16061026-07	762842	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	PREP	W1	DIG	18-JUN-2016 08:03	ERP	BRG	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:29	AMA	ERP	
4	STORE	DIG	A1	22-JUN-2016 12:31	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061026-08	762843	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16061068

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 12 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
Sample ID per COC: MW18F-061716. Label reads: MW18-061716. BRG Sample ID: MW18MS-061716. No analyses marked on COC. Received VOC's and Perchlorate. BRG Sample ID per COC: MW18FMS-061716. Label reads: MW18-061716. BRG Sample ID per COC: MW18FMSD-061716. Label reads: MW18-061716. BRG	Sample ID per COC: MW18F-061716. Label reads: MW18-061716. MW18F-061716 should only be for metals, if the F is not on the label please add. Sample ID: MW18MS-061716. No analyses marked on COC. Received VOC's and Perchlorate. Please check VOCs and perchlorate on COC Sample ID per COC: MW18FMS-061716. Label reads: MW18-061716. Please add F if for metals Sample ID per COC: MW18FMSD-061716. Label reads: MW18-061716. Please add F is for metals
Sample ID: MW19-061716. 1 of 3 voa vials received w/headspace. BRG	Please log and proceed. MRT

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113044	H	6.0		J2317164966	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	No
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	No

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
MW23-061716	L16061068-01	06/17/2016 07:30	06/18/2016 10:41
MW23MS-061716	L16061068-02	06/17/2016 07:30	06/18/2016 10:41
MW23MSD-061716	L16061068-03	06/17/2016 07:30	06/18/2016 10:41
C01-061716	L16061068-04	06/17/2016 08:35	06/18/2016 10:41
C01FD-061716	L16061068-05	06/17/2016 08:35	06/18/2016 10:41
MW13-061716	L16061068-06	06/17/2016 09:45	06/18/2016 10:41
C02-061716	L16061068-07	06/17/2016 10:45	06/18/2016 10:41
C02MS-061716	L16061068-08	06/17/2016 10:45	06/18/2016 10:41
C02MSD-061716	L16061068-09	06/17/2016 10:45	06/18/2016 10:41
MW19-061716	L16061068-10	06/17/2016 13:10	06/18/2016 10:41
MW19F-061716	L16061068-11	06/17/2016 13:10	06/18/2016 10:41
MW18-061716	L16061068-12	06/17/2016 14:20	06/18/2016 10:41
MW18F-061716	L16061068-13	06/17/2016 14:20	06/18/2016 10:41
MW18MS-061716	L16061068-14	06/17/2016 14:20	06/18/2016 10:41
MW18FMS-061716	L16061068-15	06/17/2016 14:20	06/18/2016 10:41
MW18MSD-061716	L16061068-16	06/17/2016 14:20	06/18/2016 10:41
MW18FMSD-061716	L16061068-17	06/17/2016 14:20	06/18/2016 10:41
TRIP BLANK	L16061068-18	06/17/2016 00:01	06/18/2016 10:41

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16061068
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 37
2.0 Full Sample Data Package 112
2.1 Volatiles Data 113
2.1.1 Volatiles GCMS Data (8260) 114
2.1.1.1 Summary Data 115
2.1.1.2 QC Summary Data 155
2.1.1.3 Sample Data 238
2.1.1.4 Standards Data 285
2.1.1.5 Raw QC Data 382
2.2 General Chromatography Data 416
2.2.1 6850 LC/MS Data 417
2.2.1.1 Summary Data 418
2.2.1.2 QC Summary Data 428
2.2.1.3 Sample Data 510
2.2.1.4 Standards Data 537
2.2.1.5 Raw QC Data 598
2.3 Metals Data 603
2.3.1 Metals I C P Data 604
2.3.1.1 Summary Data 605
2.3.1.2 QC Summary Data 617
2.3.1.3 Raw Data 680
2.3.2 Metals ICP-MS Data 1295
2.3.2.1 Summary Data 1296
2.3.2.2 QC Summary Data 1310
2.3.2.3 Raw Data 1369
2.3.3 Metals CVAA Data (Mercury) 2454
2.3.3.1 Summary Data 2455
2.3.3.2 QC Summary 2461
2.3.3.3 Raw Data 2482
3.0 Attachments 2487

1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	8260
Prep Batch Number(s):	573991, 574227, 574410, 574736	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-07-11 20:26:47

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	8260
Prep Batch Number(s):	573991, 574227, 574410, 574736	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	8260
Prep Batch Number(s):	573991, 574227, 574410, 574736	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				2
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	8260
Prep Batch Number(s):	573991, 574227, 574410, 574736	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			3
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	8260
Prep Batch Number(s):	573991, 574227, 574410, 574736	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	8260
Prep Batch Number(s):	573991, 574227, 574410, 574736	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)1,2-Dichloroethane-d4 exceeded the UCL in the surrogate standards.
2) Bromodichloromethane exceeded the UCL for % recovery in the MS/MSD.
3)2,2-Dichloropropane exceeded the UCL in the CCV analyzed 06/23/16 on HPMS8. 2,2-Dichloropropane exceeded the UCL in the CCV analyzed 06/26/16 on HPMS8. Acetone, Carbon Tetrachloride, 1,2-Dichloroethane, 2,2-Dichloropropane, 1,1,1-Trichloroethane, and Trichlorofluoromethane exceeded the UCL in the CCV analyzed on 06/27/16 on HPMS8. Dichlorodifluoromethane and 2,2-Dichloropropane exceeded the UCL in the CCV analyzed 06/30/16 on HPMS8.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-01 12:55:51

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER1 Recoveries in the MS and MSD are out of range due to high level of target analyte in the reference sample and required dilutions to obtain results within the calibration range for Sample 01. Acceptable recoveries were observed in the MS/MSD performed on Sample 07 and Sample 12.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573869	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-07 21:59:12

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573869	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#3
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573869	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			ER#2
Were MS/MSD RPDs within laboratory QC limits?		X			ER#2
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573869	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573869	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573869	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Due to continuing calibration verification failure on 27-JUN-2016 at 20:09, the post digestion spike was reanalyzed on 28-Jun-2016 and met all acceptance criteria.

ER#2 - Sample 13 was chosen by the client for MS/MSD analysis. Samples 15 (MS) and 17 (MSD) yielded noncompliant recoveries for three analytes and a noncompliant RPD for one analyte.

ER#3 - Client samples 04 and 05 required dilution analyses in order to obtain results for calcium, magnesium, and sodium within the calibration range. Client sample 11 required dilution analysis in order to obtain results for aluminum and iron within the calibration range. Client samples 13, 15, and 17 required dilution analyses in order to obtain results for iron and sodium within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573840	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-07 21:55:26

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573840	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#2
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573840	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			ER#1
Were MS/MSD RPDs within laboratory QC limits?		X			ER#1
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573840	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573840	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573840	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Sample 13 was chosen by the client for MS/MSD analysis. Samples 15 (MS) and 17 (MSD) yielded noncompliant recoveries and RPD's for three analytes.

ER#2 - Client samples 04, 05, 11, and 17 required dilution analyses in order to obtain results for barium within the calibration range. For consistency with the batch QC sample 17 (MSD), the reference 13 and batch QC sample 15 (MS) were also reanalyzed at dilutions for barium. Client samples 11, 13, 15, and 17 required dilution analyses in order to obtain results for manganese within the calibration range. Client sample 11 required dilution analysis in order to obtain result for zinc within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573482	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-07 21:53:27

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573482	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573482	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573482	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573482	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573482	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW23-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 05:15
Collect Date:	06/17/2016 07:30	**Dilution:**	10	**File ID:**	8M413209
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	4.78	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	50.5		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	10.0	U	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	7.33	J	10.0	5.00	2.50
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
Trichloroethene	79-01-6	1170		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW23-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 19:11
Collect Date:	06/17/2016 07:30	**Dilution:**	10000	**File ID:**	1LM.LM35524
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	65200		4000	2000	1000

Certificate of Analysis

Sample #:	L16061068-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW23MS-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 05:44
Collect Date:	06/17/2016 07:30	**Dilution:**	10	**File ID:**	8M413210
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	242	J	100	50.0	25.0
Benzene	71-43-2	222	J	10.0	2.50	1.25
Bromobenzene	108-86-1	189	J	10.0	2.50	1.25
Bromochloromethane	74-97-5	230	J	10.0	4.00	2.00
Bromodichloromethane	75-27-4	245	J	10.0	5.00	2.50
Bromoform	75-25-2	208	J	20.0	10.0	5.00
Bromomethane	74-83-9	117	J	20.0	10.0	5.00
2-Butanone	78-93-3	205	J	100	50.0	25.0
n-Butylbenzene	104-51-8	190	J	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	203	J	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	196	J	10.0	5.00	2.50
Carbon disulfide	75-15-0	212	J	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	259	J	10.0	5.00	2.50
Chlorobenzene	108-90-7	208	J	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	211	J	10.0	5.00	2.50
Chloroethane	75-00-3	227	J	20.0	10.0	5.00
Chloroform	67-66-3	236	J	10.0	2.50	1.25
Chloromethane	74-87-3	228	J	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	181	J	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	222	J	10.0	5.00	2.50

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	185	J	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	201	J	10.0	5.00	2.50
Dibromomethane	74-95-3	218	J	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	196	J	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	199	J	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	197	J	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	293	J	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	219	J	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	309	J	10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	226	J	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	234	J	10.0	5.00	2.50
trans-1,2-Dichloroethene	156-60-5	224	J	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	215	J	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	210	J	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	226	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	244	J	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	214	J	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	225	J	10.0	5.00	2.50
Ethylbenzene	100-41-4	203	J	10.0	5.00	2.50
2-Hexanone	591-78-6	168	J	100	50.0	25.0
Hexachlorobutadiene	87-68-3	202	J	10.0	5.00	2.50
Isopropylbenzene	98-82-8	222	J	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	199	J	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	188	J	100	50.0	25.0
Methylene chloride	75-09-2	216	J	10.0	5.00	2.50
Naphthalene	91-20-3	157	J	10.0	4.00	2.00
n-Propylbenzene	103-65-1	205	J	10.0	2.50	1.25
Styrene	100-42-5	210	J	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	215	J	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	173	J	10.0	4.00	2.00
Tetrachloroethene	127-18-4	210	J	10.0	5.00	2.50
Toluene	108-88-3	205	J	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	175	J	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	186	J	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	249	J	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	197	J	10.0	5.00	2.50
Trichloroethene	79-01-6	1390	J	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	257	J	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	189	J	20.0	10.0	5.00

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	198	J	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	204	J	10.0	5.00	2.50
Vinyl chloride	75-01-4	281	J	10.0	5.00	2.50
o-Xylene	95-47-6	212	J	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	422	J	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	102	85	120	
4-Bromofluorobenzene	100	75	120	

J	The reported result is an estimated value.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW23MS-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 19:30
Collect Date:	06/17/2016 07:30	**Dilution:**	10000	**File ID:**	1LM.LM35525
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	66700		4000	2000	1000

Certificate of Analysis

Sample #:	L16061068-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW23MSD-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 06:13
Collect Date:	06/17/2016 07:30	**Dilution:**	10	**File ID:**	8M413211
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	247		100	50.0	25.0
Benzene	71-43-2	218		10.0	2.50	1.25
Bromobenzene	108-86-1	190		10.0	2.50	1.25
Bromochloromethane	74-97-5	214		10.0	4.00	2.00
Bromodichloromethane	75-27-4	237		10.0	5.00	2.50
Bromoform	75-25-2	195		20.0	10.0	5.00
Bromomethane	74-83-9	138		20.0	10.0	5.00
2-Butanone	78-93-3	193		100	50.0	25.0
n-Butylbenzene	104-51-8	189		10.0	5.00	2.50
sec-Butylbenzene	135-98-8	199		10.0	5.00	2.50
tert-Butylbenzene	98-06-6	200		10.0	5.00	2.50
Carbon disulfide	75-15-0	208		20.0	10.0	5.00
Carbon tetrachloride	56-23-5	247		10.0	5.00	2.50
Chlorobenzene	108-90-7	205		10.0	2.50	1.25
Chlorodibromomethane	124-48-1	208		10.0	5.00	2.50
Chloroethane	75-00-3	225		20.0	10.0	5.00
Chloroform	67-66-3	233		10.0	2.50	1.25
Chloromethane	74-87-3	228		20.0	10.0	5.00
2-Chlorotoluene	95-49-8	204		10.0	2.50	1.25
4-Chlorotoluene	106-43-4	194		10.0	5.00	2.50

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	195		50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	202		10.0	5.00	2.50
Dibromomethane	74-95-3	214		10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	198		10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	201		10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	201		10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	288		10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	211		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	299		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	220		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	226		10.0	5.00	2.50
trans-1,2-Dichloroethene	156-60-5	224		10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	212		10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	210		10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	217	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	231		10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	205		20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	220		10.0	5.00	2.50
Ethylbenzene	100-41-4	192		10.0	5.00	2.50
2-Hexanone	591-78-6	168		100	50.0	25.0
Hexachlorobutadiene	87-68-3	204		10.0	5.00	2.50
Isopropylbenzene	98-82-8	213		10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	197		10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	186		100	50.0	25.0
Methylene chloride	75-09-2	210		10.0	5.00	2.50
Naphthalene	91-20-3	167		10.0	4.00	2.00
n-Propylbenzene	103-65-1	204		10.0	2.50	1.25
Styrene	100-42-5	207		10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	207		10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	177		10.0	4.00	2.00
Tetrachloroethene	127-18-4	202		10.0	5.00	2.50
Toluene	108-88-3	199		10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	180		10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	191		10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	246		10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	194		10.0	5.00	2.50
Trichloroethene	79-01-6	1350		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	248		10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	196		20.0	10.0	5.00

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	200		10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	206		10.0	5.00	2.50
Vinyl chloride	75-01-4	276		10.0	5.00	2.50
o-Xylene	95-47-6	203		10.0	5.00	2.50
m-,p-Xylene	179601-23-1	405		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW23MSD-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 19:49
Collect Date:	06/17/2016 07:30	**Dilution:**	10000	**File ID:**	1LM.LM35526
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	65600		4000	2000	1000

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C01-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574736	**Analyst:**	TMB	**Run Date:**	06/30/2016 13:53
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	8M413367
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	108	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C01-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 20:08
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	1LM.LM35527
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.15		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C01-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:21
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	T3.062716.182149
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.189	J	0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.11		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C01-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:11
Collect Date:	06/17/2016 08:35	**Dilution:**	20	**File ID:**	T3.062816.131108
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	91.0		10.0	5.00	2.50
Magnesium, Total	7439-95-4	68.5		20.0	10.0	5.00
Sodium, Total	7440-23-5	334		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C01-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 18:09
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	NI.063016.180913
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00438		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000345	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00251	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00101	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00135	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0324		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00428	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00242		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C01-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 13:57
Collect Date:	06/17/2016 08:35	**Dilution:**	50	**File ID:**	NI.070116.135751
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.441		0.300	0.150	0.0750

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C01-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:31
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	M7.063016.183105
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C01FD-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 00:18
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	8M413263
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	117	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C01FD-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 20:26
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	1LM.LM35528
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.02		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C01FD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:25
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	T3.062716.182543
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.180	J	0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.16		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C01FD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:15
Collect Date:	06/17/2016 08:35	**Dilution:**	20	**File ID:**	T3.062816.131503
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	90.3		10.0	5.00	2.50
Magnesium, Total	7439-95-4	66.6		20.0	10.0	5.00
Sodium, Total	7440-23-5	336		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C01FD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 18:12
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	NI.063016.181225
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00431		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000340	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00247	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.000974	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00128	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0318		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00424	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00266		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C01FD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:01
Collect Date:	06/17/2016 08:35	**Dilution:**	50	**File ID:**	NI.070116.140103
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.471		0.300	0.150	0.0750

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C01FD-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:33
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	M7.063016.183335
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW13-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 00:47
Collect Date:	06/17/2016 09:45	**Dilution:**	1	**File ID:**	8M413264
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW13-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 20:45
Collect Date:	06/17/2016 09:45	**Dilution:**	1	**File ID:**	1LM.LM35529
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C02-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 01:16
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	8M413265
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	99.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C02-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 22:01
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	1LM.LM35533
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C02MS-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/26/2016 19:29
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	8M413253
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.6		10.0	5.00	2.50
Benzene	71-43-2	22.0		1.00	0.250	0.125
Bromobenzene	108-86-1	19.5		1.00	0.250	0.125
Bromochloromethane	74-97-5	22.2		1.00	0.400	0.200
Bromodichloromethane	75-27-4	23.0		1.00	0.500	0.250
Bromoform	75-25-2	20.1		2.00	1.00	0.500
Bromomethane	74-83-9	16.5		2.00	1.00	0.500
2-Butanone	78-93-3	22.0		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.7		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.4		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.6		1.00	0.500	0.250
Carbon disulfide	75-15-0	20.7		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	23.3		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.6		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.2		1.00	0.500	0.250
Chloroethane	75-00-3	23.4		2.00	1.00	0.500
Chloroform	67-66-3	22.4		1.00	0.250	0.125
Chloromethane	74-87-3	22.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.2		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	19.1		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	18.3		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.9		1.00	0.500	0.250
Dibromomethane	74-95-3	20.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.2		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.0		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.8		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.1		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	24.1		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	21.4		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	22.0		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	22.0		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.6		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	21.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	24.6	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.7		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.8		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.6		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.6		1.00	0.500	0.250
2-Hexanone	591-78-6	18.2		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	20.0		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.2		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.4		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.9		10.0	5.00	2.50
Methylene chloride	75-09-2	21.5		1.00	0.500	0.250
Naphthalene	91-20-3	16.3		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.2		1.00	0.250	0.125
Styrene	100-42-5	20.8		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.5		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.3		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.9		1.00	0.500	0.250
Toluene	108-88-3	20.0		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	17.7		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.8		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	23.2		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.8		1.00	0.500	0.250
Trichloroethene	79-01-6	22.9		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.5		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.7		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.3		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	26.0		1.00	0.500	0.250
o-Xylene	95-47-6	21.0		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.1		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	98.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C02MS-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 22:20
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	1LM.LM35534
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.216	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C02MSD-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/26/2016 19:58
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	8M413254
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.5		10.0	5.00	2.50
Benzene	71-43-2	21.4		1.00	0.250	0.125
Bromobenzene	108-86-1	18.9		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.1		1.00	0.400	0.200
Bromodichloromethane	75-27-4	22.2		1.00	0.500	0.250
Bromoform	75-25-2	18.8		2.00	1.00	0.500
Bromomethane	74-83-9	16.6		2.00	1.00	0.500
2-Butanone	78-93-3	19.8		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.5		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.9		1.00	0.500	0.250
Carbon disulfide	75-15-0	21.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	22.4		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.1		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.4		1.00	0.500	0.250
Chloroethane	75-00-3	23.2		2.00	1.00	0.500
Chloroform	67-66-3	22.1		1.00	0.250	0.125
Chloromethane	74-87-3	23.0		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	17.9		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	21.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	16.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.1		1.00	0.500	0.250
Dibromomethane	74-95-3	20.0		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	18.9		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.6		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.2		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.4		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.0		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.0		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	21.0		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.7		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	21.7		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.3		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	23.7	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	23.8		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.2		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.1		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.2		1.00	0.500	0.250
2-Hexanone	591-78-6	18.9		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	19.9		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.9		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.3		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.3		10.0	5.00	2.50
Methylene chloride	75-09-2	21.1		1.00	0.500	0.250
Naphthalene	91-20-3	15.8		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.0		1.00	0.250	0.125
Styrene	100-42-5	20.2		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.0		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.0		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.0		1.00	0.500	0.250
Toluene	108-88-3	19.9		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	17.4		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.9		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	22.9		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.2		1.00	0.500	0.250
Trichloroethene	79-01-6	22.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.3		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	17.9		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.2		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	19.7		1.00	0.500	0.250
Vinyl chloride	75-01-4	26.1		1.00	0.500	0.250
o-Xylene	95-47-6	20.5		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.5		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C02MSD-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 22:39
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	1LM.LM35535
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.220	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW19-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 01:45
Collect Date:	06/17/2016 13:10	**Dilution:**	1	**File ID:**	8M413266
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.345	J	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.82		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	99.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW19-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 13:53
Collect Date:	06/17/2016 13:10	**Dilution:**	5	**File ID:**	1LM.LM35555
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	11.4		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW19F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:29
Collect Date:	06/17/2016 13:10	**Dilution:**	1	**File ID:**	T3.062716.182935
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Beryllium, Total	7440-41-7	0.00575	J	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	18.9		0.500	0.250	0.125
Magnesium, Total	7439-95-4	9.83		1.00	0.500	0.250
Potassium, Total	7440-09-7	3.84		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	20.5		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW19F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:22
Collect Date:	06/17/2016 13:10	**Dilution:**	20	**File ID:**	T3.062816.132234
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	35.6		4.00	2.00	1.00
Iron, Total	7439-89-6	50.0		4.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW19F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 18:15
Collect Date:	06/17/2016 13:10	**Dilution:**	1	**File ID:**	NI.063016.181536
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0130		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00495		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.116		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0274		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.127		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.0706		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0997		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000821		0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.152		0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW19F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:04
Collect Date:	06/17/2016 13:10	**Dilution:**	10	**File ID:**	NI.070116.140414
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.695		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	1.09		0.0400	0.0200	0.0100
Zinc, Total	7440-66-6	1.09		0.500	0.250	0.125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW19F-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:36
Collect Date:	06/17/2016 13:10	**Dilution:**	1	**File ID:**	M7.063016.183606
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000381	J	0.000400	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW18-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 02:14
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	8M413267
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.11		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	14.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	115	85	115	
1,2-Dichloroethane-d4	119	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW18-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 23:17
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	1LM.LM35537
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:33
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	T3.062716.183322
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.91		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	14.1		0.500	0.250	0.125
Magnesium, Total	7439-95-4	6.42		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.19		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:26
Collect Date:	06/17/2016 14:20	**Dilution:**	20	**File ID:**	T3.062816.132628
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	12.6		4.00	2.00	1.00
Sodium, Total	7440-23-5	249		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 17:18
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	NI.063016.171806
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00149	J	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00583		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00225		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0138		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00915		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00447		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00227		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0630		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000127	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0105		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0491	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:07
Collect Date:	06/17/2016 14:20	**Dilution:**	10	**File ID:**	NI.070116.140725
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.157		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.360		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW18F-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:38
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	M7.063016.183837
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW18MS-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/26/2016 20:27
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	8M413255
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	23.9		10.0	5.00	2.50
Benzene	71-43-2	21.9		1.00	0.250	0.125
Bromobenzene	108-86-1	19.7		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.5		1.00	0.400	0.200
Bromodichloromethane	75-27-4	22.5		1.00	0.500	0.250
Bromoform	75-25-2	18.7		2.00	1.00	0.500
Bromomethane	74-83-9	17.9		2.00	1.00	0.500
2-Butanone	78-93-3	19.6		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.8		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	20.1		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.4		1.00	0.500	0.250
Carbon disulfide	75-15-0	21.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	22.8		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.4		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.4		1.00	0.500	0.250
Chloroethane	75-00-3	23.9		2.00	1.00	0.500
Chloroform	67-66-3	22.2		1.00	0.250	0.125
Chloromethane	74-87-3	23.3		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	19.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	17.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.3		1.00	0.500	0.250
Dibromomethane	74-95-3	20.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.6		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.0		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.9		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.6		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.8		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	21.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	22.8		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	22.4		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.5		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	24.3	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.2		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.2		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.8		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.7		1.00	0.500	0.250
2-Hexanone	591-78-6	17.7		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	20.1		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.1		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.6		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.4		10.0	5.00	2.50
Methylene chloride	75-09-2	20.9		1.00	0.500	0.250
Naphthalene	91-20-3	16.1		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.6		1.00	0.250	0.125
Styrene	100-42-5	20.4		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.2		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.8		1.00	0.500	0.250
Toluene	108-88-3	20.2		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	17.4		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.4		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	23.3		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	18.8		1.00	0.500	0.250
Trichloroethene	79-01-6	34.8		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.4		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	17.8		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.6		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.5		1.00	0.500	0.250
Vinyl chloride	75-01-4	26.3		1.00	0.500	0.250
o-Xylene	95-47-6	20.4		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.9		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.1	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW18MS-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 23:36
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	1LM.LM35538
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.196	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18FMS-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:37
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	T3.062716.183713
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	10.7		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0300		0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	19.7		0.500	0.250	0.125
Magnesium, Total	7439-95-4	12.6		1.00	0.500	0.250
Potassium, Total	7440-09-7	32.4		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.226		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18FMS-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:30
Collect Date:	06/17/2016 14:20	**Dilution:**	20	**File ID:**	T3.062816.133023
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	15.1		4.00	2.00	1.00
Sodium, Total	7440-23-5	281		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18FMS-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 17:21
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	NI.063016.172118
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.117		0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.131		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.125		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.141		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.127		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.125		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.133		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.170		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.116		0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.125		0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.131		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.160		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18FMS-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:17
Collect Date:	06/17/2016 14:20	**Dilution:**	10	**File ID:**	NI.070116.141703
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.245		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.408		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW18FMS-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:41
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	M7.063016.184109
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.00481		0.000444	0.000222	0.000111

Certificate of Analysis

Sample #:	L16061068-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW18MSD-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/26/2016 20:56
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	8M413256
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	26.3		10.0	5.00	2.50
Benzene	71-43-2	22.1		1.00	0.250	0.125
Bromobenzene	108-86-1	19.1		1.00	0.250	0.125
Bromochloromethane	74-97-5	22.1		1.00	0.400	0.200
Bromodichloromethane	75-27-4	22.6		1.00	0.500	0.250
Bromoform	75-25-2	18.9		2.00	1.00	0.500
Bromomethane	74-83-9	17.6		2.00	1.00	0.500
2-Butanone	78-93-3	19.8		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.7		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.7		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.5		1.00	0.500	0.250
Carbon disulfide	75-15-0	21.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	23.1		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.7		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.5		1.00	0.500	0.250
Chloroethane	75-00-3	23.3		2.00	1.00	0.500
Chloroform	67-66-3	22.4		1.00	0.250	0.125
Chloromethane	74-87-3	23.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.7		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	17.5		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.2		1.00	0.500	0.250
Dibromomethane	74-95-3	20.1		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.4		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.0		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.8		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.6		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.7		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	21.8		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	23.1		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	22.2		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.6		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	23.9	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	23.9		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.0		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.7		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.0		1.00	0.500	0.250
2-Hexanone	591-78-6	17.8		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	20.5		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.0		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.7		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.4		10.0	5.00	2.50
Methylene chloride	75-09-2	21.8		1.00	0.500	0.250
Naphthalene	91-20-3	16.2		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.1		1.00	0.250	0.125
Styrene	100-42-5	20.4		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.3		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.1		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.2		1.00	0.500	0.250
Toluene	108-88-3	20.0		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	18.1		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.2		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	23.3		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	18.8		1.00	0.500	0.250
Trichloroethene	79-01-6	35.0		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.4		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.3		2.00	1.00	0.500

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	19.5		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	26.6		1.00	0.500	0.250
o-Xylene	95-47-6	20.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.6		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	98.5	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-16	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW18MSD-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 23:55
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	1LM.LM35539
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.207	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18FMSD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:40
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	T3.062716.184051
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	12.8		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0287		0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	19.2		0.500	0.250	0.125
Magnesium, Total	7439-95-4	12.1		1.00	0.500	0.250
Potassium, Total	7440-09-7	31.0		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.215		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18FMSD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:34
Collect Date:	06/17/2016 14:20	**Dilution:**	20	**File ID:**	T3.062816.133415
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	19.5		4.00	2.00	1.00
Sodium, Total	7440-23-5	264		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18FMSD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 17:24
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	NI.063016.172429
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.111		0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.133		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.126		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.180		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.133		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.130		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.133		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.195		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.116		0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.125		0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.147		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.181		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18FMSD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:20
Collect Date:	06/17/2016 14:20	**Dilution:**	10	**File ID:**	NI.070116.142015
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.311		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.521		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW18FMSD-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:43
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	M7.063016.184340
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.00483		0.000444	0.000222	0.000111

Certificate of Analysis

Sample #:	L16061068-18	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/27/2016 22:06
Collect Date:	06/17/2016 00:01	**Dilution:**	1	**File ID:**	8M413284
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW23-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 05:15
Collect Date:	06/17/2016 07:30	**Dilution:**	10	**File ID:**	8M413209
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	4.78	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	50.5		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	10.0	U	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	7.33	J	10.0	5.00	2.50
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
Trichloroethene	79-01-6	1170		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW23MS-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 05:44
Collect Date:	06/17/2016 07:30	**Dilution:**	10	**File ID:**	8M413210
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	242	J	100	50.0	25.0
Benzene	71-43-2	222	J	10.0	2.50	1.25
Bromobenzene	108-86-1	189	J	10.0	2.50	1.25
Bromochloromethane	74-97-5	230	J	10.0	4.00	2.00
Bromodichloromethane	75-27-4	245	J	10.0	5.00	2.50
Bromoform	75-25-2	208	J	20.0	10.0	5.00
Bromomethane	74-83-9	117	J	20.0	10.0	5.00
2-Butanone	78-93-3	205	J	100	50.0	25.0
n-Butylbenzene	104-51-8	190	J	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	203	J	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	196	J	10.0	5.00	2.50
Carbon disulfide	75-15-0	212	J	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	259	J	10.0	5.00	2.50
Chlorobenzene	108-90-7	208	J	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	211	J	10.0	5.00	2.50
Chloroethane	75-00-3	227	J	20.0	10.0	5.00
Chloroform	67-66-3	236	J	10.0	2.50	1.25
Chloromethane	74-87-3	228	J	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	181	J	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	222	J	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	185	J	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	201	J	10.0	5.00	2.50
Dibromomethane	74-95-3	218	J	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	196	J	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	199	J	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	197	J	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	293	J	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	219	J	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	309	J	10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	226	J	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	234	J	10.0	5.00	2.50

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	224	J	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	215	J	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	210	J	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	226	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	244	J	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	214	J	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	225	J	10.0	5.00	2.50
Ethylbenzene	100-41-4	203	J	10.0	5.00	2.50
2-Hexanone	591-78-6	168	J	100	50.0	25.0
Hexachlorobutadiene	87-68-3	202	J	10.0	5.00	2.50
Isopropylbenzene	98-82-8	222	J	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	199	J	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	188	J	100	50.0	25.0
Methylene chloride	75-09-2	216	J	10.0	5.00	2.50
Naphthalene	91-20-3	157	J	10.0	4.00	2.00
n-Propylbenzene	103-65-1	205	J	10.0	2.50	1.25
Styrene	100-42-5	210	J	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	215	J	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	173	J	10.0	4.00	2.00
Tetrachloroethene	127-18-4	210	J	10.0	5.00	2.50
Toluene	108-88-3	205	J	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	175	J	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	186	J	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	249	J	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	197	J	10.0	5.00	2.50
Trichloroethene	79-01-6	1390	J	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	257	J	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	189	J	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	198	J	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	204	J	10.0	5.00	2.50
Vinyl chloride	75-01-4	281	J	10.0	5.00	2.50
o-Xylene	95-47-6	212	J	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	422	J	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	102	85	120	
4-Bromofluorobenzene	100	75	120	

J	The reported result is an estimated value.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW23MSD-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 06:13
Collect Date:	06/17/2016 07:30	**Dilution:**	10	**File ID:**	8M413211
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	247		100	50.0	25.0
Benzene	71-43-2	218		10.0	2.50	1.25
Bromobenzene	108-86-1	190		10.0	2.50	1.25
Bromochloromethane	74-97-5	214		10.0	4.00	2.00
Bromodichloromethane	75-27-4	237		10.0	5.00	2.50
Bromoform	75-25-2	195		20.0	10.0	5.00
Bromomethane	74-83-9	138		20.0	10.0	5.00
2-Butanone	78-93-3	193		100	50.0	25.0
n-Butylbenzene	104-51-8	189		10.0	5.00	2.50
sec-Butylbenzene	135-98-8	199		10.0	5.00	2.50
tert-Butylbenzene	98-06-6	200		10.0	5.00	2.50
Carbon disulfide	75-15-0	208		20.0	10.0	5.00
Carbon tetrachloride	56-23-5	247		10.0	5.00	2.50
Chlorobenzene	108-90-7	205		10.0	2.50	1.25
Chlorodibromomethane	124-48-1	208		10.0	5.00	2.50
Chloroethane	75-00-3	225		20.0	10.0	5.00
Chloroform	67-66-3	233		10.0	2.50	1.25
Chloromethane	74-87-3	228		20.0	10.0	5.00
2-Chlorotoluene	95-49-8	204		10.0	2.50	1.25
4-Chlorotoluene	106-43-4	194		10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	195		50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	202		10.0	5.00	2.50
Dibromomethane	74-95-3	214		10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	198		10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	201		10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	201		10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	288		10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	211		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	299		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	220		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	226		10.0	5.00	2.50

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	224		10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	212		10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	210		10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	217	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	231		10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	205		20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	220		10.0	5.00	2.50
Ethylbenzene	100-41-4	192		10.0	5.00	2.50
2-Hexanone	591-78-6	168		100	50.0	25.0
Hexachlorobutadiene	87-68-3	204		10.0	5.00	2.50
Isopropylbenzene	98-82-8	213		10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	197		10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	186		100	50.0	25.0
Methylene chloride	75-09-2	210		10.0	5.00	2.50
Naphthalene	91-20-3	167		10.0	4.00	2.00
n-Propylbenzene	103-65-1	204		10.0	2.50	1.25
Styrene	100-42-5	207		10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	207		10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	177		10.0	4.00	2.00
Tetrachloroethene	127-18-4	202		10.0	5.00	2.50
Toluene	108-88-3	199		10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	180		10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	191		10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	246		10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	194		10.0	5.00	2.50
Trichloroethene	79-01-6	1350		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	248		10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	196		20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	200		10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	206		10.0	5.00	2.50
Vinyl chloride	75-01-4	276		10.0	5.00	2.50
o-Xylene	95-47-6	203		10.0	5.00	2.50
m-,p-Xylene	179601-23-1	405		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C01-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574736	**Analyst:**	TMB	**Run Date:**	06/30/2016 13:53
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	8M413367
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	108	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C01FD-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 00:18
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	8M413263
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	117	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW13-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 00:47
Collect Date:	06/17/2016 09:45	**Dilution:**	1	**File ID:**	8M413264
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C02-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 01:16
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	8M413265
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	99.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C02MS-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/26/2016 19:29
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	8M413253
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.6		10.0	5.00	2.50
Benzene	71-43-2	22.0		1.00	0.250	0.125
Bromobenzene	108-86-1	19.5		1.00	0.250	0.125
Bromochloromethane	74-97-5	22.2		1.00	0.400	0.200
Bromodichloromethane	75-27-4	23.0		1.00	0.500	0.250
Bromoform	75-25-2	20.1		2.00	1.00	0.500
Bromomethane	74-83-9	16.5		2.00	1.00	0.500
2-Butanone	78-93-3	22.0		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.7		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.4		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.6		1.00	0.500	0.250
Carbon disulfide	75-15-0	20.7		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	23.3		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.6		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.2		1.00	0.500	0.250
Chloroethane	75-00-3	23.4		2.00	1.00	0.500
Chloroform	67-66-3	22.4		1.00	0.250	0.125
Chloromethane	74-87-3	22.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.2		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	19.1		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	18.3		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.9		1.00	0.500	0.250
Dibromomethane	74-95-3	20.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.2		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.0		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.8		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.1		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	24.1		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	21.4		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	22.0		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	22.0		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.6		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	21.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	24.6	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.7		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.8		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.6		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.6		1.00	0.500	0.250
2-Hexanone	591-78-6	18.2		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	20.0		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.2		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.4		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.9		10.0	5.00	2.50
Methylene chloride	75-09-2	21.5		1.00	0.500	0.250
Naphthalene	91-20-3	16.3		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.2		1.00	0.250	0.125
Styrene	100-42-5	20.8		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.5		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.3		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.9		1.00	0.500	0.250
Toluene	108-88-3	20.0		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	17.7		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.8		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	23.2		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.8		1.00	0.500	0.250
Trichloroethene	79-01-6	22.9		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.5		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.7		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.3		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	26.0		1.00	0.500	0.250
o-Xylene	95-47-6	21.0		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.1		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	98.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C02MSD-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/26/2016 19:58
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	8M413254
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.5		10.0	5.00	2.50
Benzene	71-43-2	21.4		1.00	0.250	0.125
Bromobenzene	108-86-1	18.9		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.1		1.00	0.400	0.200
Bromodichloromethane	75-27-4	22.2		1.00	0.500	0.250
Bromoform	75-25-2	18.8		2.00	1.00	0.500
Bromomethane	74-83-9	16.6		2.00	1.00	0.500
2-Butanone	78-93-3	19.8		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.5		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.9		1.00	0.500	0.250
Carbon disulfide	75-15-0	21.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	22.4		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.1		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.4		1.00	0.500	0.250
Chloroethane	75-00-3	23.2		2.00	1.00	0.500
Chloroform	67-66-3	22.1		1.00	0.250	0.125
Chloromethane	74-87-3	23.0		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	17.9		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	21.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	16.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.1		1.00	0.500	0.250
Dibromomethane	74-95-3	20.0		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	18.9		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.6		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.2		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.4		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.0		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.0		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	21.0		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.7		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	21.7		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.3		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	23.7	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	23.8		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.2		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.1		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.2		1.00	0.500	0.250
2-Hexanone	591-78-6	18.9		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	19.9		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.9		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.3		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.3		10.0	5.00	2.50
Methylene chloride	75-09-2	21.1		1.00	0.500	0.250
Naphthalene	91-20-3	15.8		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.0		1.00	0.250	0.125
Styrene	100-42-5	20.2		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.0		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.0		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.0		1.00	0.500	0.250
Toluene	108-88-3	19.9		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	17.4		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.9		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	22.9		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.2		1.00	0.500	0.250
Trichloroethene	79-01-6	22.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.3		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	17.9		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.2		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	19.7		1.00	0.500	0.250
Vinyl chloride	75-01-4	26.1		1.00	0.500	0.250
o-Xylene	95-47-6	20.5		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.5		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW19-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 01:45
Collect Date:	06/17/2016 13:10	**Dilution:**	1	**File ID:**	8M413266
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.345	J	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.82		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	99.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW18-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 02:14
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	8M413267
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.11		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	14.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	115	85	115	
1,2-Dichloroethane-d4	119	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW18MS-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/26/2016 20:27
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	8M413255
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	23.9		10.0	5.00	2.50
Benzene	71-43-2	21.9		1.00	0.250	0.125
Bromobenzene	108-86-1	19.7		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.5		1.00	0.400	0.200
Bromodichloromethane	75-27-4	22.5		1.00	0.500	0.250
Bromoform	75-25-2	18.7		2.00	1.00	0.500
Bromomethane	74-83-9	17.9		2.00	1.00	0.500
2-Butanone	78-93-3	19.6		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.8		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	20.1		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.4		1.00	0.500	0.250
Carbon disulfide	75-15-0	21.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	22.8		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.4		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.4		1.00	0.500	0.250
Chloroethane	75-00-3	23.9		2.00	1.00	0.500
Chloroform	67-66-3	22.2		1.00	0.250	0.125
Chloromethane	74-87-3	23.3		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	19.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	17.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.3		1.00	0.500	0.250
Dibromomethane	74-95-3	20.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.6		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.0		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.9		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.6		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.8		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	21.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	22.8		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	22.4		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.5		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	24.3	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.2		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.2		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.8		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.7		1.00	0.500	0.250
2-Hexanone	591-78-6	17.7		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	20.1		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.1		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.6		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.4		10.0	5.00	2.50
Methylene chloride	75-09-2	20.9		1.00	0.500	0.250
Naphthalene	91-20-3	16.1		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.6		1.00	0.250	0.125
Styrene	100-42-5	20.4		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.2		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.8		1.00	0.500	0.250
Toluene	108-88-3	20.2		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	17.4		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.4		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	23.3		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	18.8		1.00	0.500	0.250
Trichloroethene	79-01-6	34.8		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.4		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	17.8		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.6		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.5		1.00	0.500	0.250
Vinyl chloride	75-01-4	26.3		1.00	0.500	0.250
o-Xylene	95-47-6	20.4		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.9		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.1	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW18MSD-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/26/2016 20:56
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	8M413256
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	26.3		10.0	5.00	2.50
Benzene	71-43-2	22.1		1.00	0.250	0.125
Bromobenzene	108-86-1	19.1		1.00	0.250	0.125
Bromochloromethane	74-97-5	22.1		1.00	0.400	0.200
Bromodichloromethane	75-27-4	22.6		1.00	0.500	0.250
Bromoform	75-25-2	18.9		2.00	1.00	0.500
Bromomethane	74-83-9	17.6		2.00	1.00	0.500
2-Butanone	78-93-3	19.8		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.7		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.7		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.5		1.00	0.500	0.250
Carbon disulfide	75-15-0	21.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	23.1		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.7		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.5		1.00	0.500	0.250
Chloroethane	75-00-3	23.3		2.00	1.00	0.500
Chloroform	67-66-3	22.4		1.00	0.250	0.125
Chloromethane	74-87-3	23.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.7		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	17.5		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.2		1.00	0.500	0.250
Dibromomethane	74-95-3	20.1		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.4		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.0		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.8		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.6		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.7		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	21.8		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	23.1		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	22.2		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.6		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	23.9	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	23.9		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.0		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.7		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.0		1.00	0.500	0.250
2-Hexanone	591-78-6	17.8		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	20.5		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.0		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.7		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.4		10.0	5.00	2.50
Methylene chloride	75-09-2	21.8		1.00	0.500	0.250
Naphthalene	91-20-3	16.2		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.1		1.00	0.250	0.125
Styrene	100-42-5	20.4		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.3		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.1		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.2		1.00	0.500	0.250
Toluene	108-88-3	20.0		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	18.1		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.2		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	23.3		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	18.8		1.00	0.500	0.250
Trichloroethene	79-01-6	35.0		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.4		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.3		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.5		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	26.6		1.00	0.500	0.250
o-Xylene	95-47-6	20.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.6		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	98.5	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-18	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/27/2016 22:06
Collect Date:	06/17/2016 00:01	**Dilution:**	1	**File ID:**	8M413284
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Analyst(s): CPD
Date: 6/22/16
Filter Lot #: 9697607

Agitator Speed 30 ± 2 rpm ☑

Analyst / Date		Analyst / Date	
CPD	6/22/16	CPD	6/23/16
Time On	Temp On °C	Time Off	Temp Off °C
1457	23.1	0812	21.7

ZHE	Sample #	Pressure √	PSI ON	PSI OFF	Method	Fluid #	Matrix*	%Solid	Size Reduction Yes	Size Reduction No	Int. Wt. (g)	Fluid Vol. (mL)
A												
B												
C												
D												
E												
F												
G	06-1164-11	✓	10	10	1311	FI-182	S	100		✓	25.00	500
H												
I												
J												
K												
L												
M												
N												
O												
P												
Q												
R												
S												
NA	FBIK1	NA	NA	NA	1311	FI-182	NA	NA	NA	NA	40	40

CPD 6/22/16

*Matrix Code = (S-solid) (SS-sand, soil or sludge) (P-paint) (O-organic) (W-water or waste)

Comments: N/A

Peer Review By: Allie Alfred 06/23/2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016
Sarah Vandenberg

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016
Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062316
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76715 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573991

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413190	WG573990-01 BFB 50ng 8260	NA	1	1	STD76496	06/23/16 19:56
8M413191	WG573990-02 50ug/L CCV 8260	NA	1	1	STD76715	06/23/16 20:24
8M413192	WG573990-02 50ug/L CCV 8260	NA	1	1	STD76715	06/23/16 21:00
8M413193	WG573XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	06/23/16 21:30
8M413194	WG573991-01 BLANK 8260	NA	1	1		06/23/16 21:59
8M413195	WG573991-02 20ug/L LCS 8260	NA	1	1	STD76744	06/23/16 22:28
8M413196	L16060927-02 200X C 826-LOW D1	<2	1	200		06/23/16 22:56
8M413197	L16060978-05 A 826-SPE	<2	1	1		06/23/16 23:26
8M413198	L16060992-01 A 826-SPE	<2	1	1		06/23/16 23:55
8M413199	L16060927-01 C 826-LOW	<2	1	1		06/24/16 00:24
8M413200	L16060927-03 C 826-LOW	<2	1	1		06/24/16 00:53
8M413201	L16060992-04 A 826-SPE	<2	1	1		06/24/16 01:22
8M413202	L16061095-12 A 826-SPE	<2	1	1		06/24/16 01:51
8M413203	L16061095-13 A 826-SPE	<2	1	1		06/24/16 02:20
8M413204	L16060896-06 B 826-SPE	<2	1	1		06/24/16 02:49
8M413205	L16060896-07 B 826-SPE	<2	1	1		06/24/16 03:18
8M413206	L16060930-03 B+C 826-SPE	7	1	1	SEDIMENT	06/24/16 03:47
8M413207	L16060730-03 B 826-LOW A1	<2	1	1		06/24/16 04:16
8M413208	L16060823-04 B 826-LOW A1	<2	1	1		06/24/16 04:46
8M413209	L16061068-01 REF 10X A 826-LOW	NA	1	10		06/24/16 05:15
8M413210	L16061068-02 MS 10X A 826-LOW	NA	1	10	STD76744	06/24/16 05:44
8M413211	L16061068-03 MSD 10X A 826-LOW	NA	1	10	STD76744	06/24/16 06:13
8M413212	L16060978-03 10X A 826-SPE	11	1	10		06/24/16 06:42
8M413213	L16060978-04 10X A 826-SPE	11	1	10		06/24/16 07:11
8M413214	L16061068-04 A 826-LOW	<2	1	1		06/24/16 07:40
8M413215	RINSE	NA	1	1		06/24/16 08:09
8M413216	RINSE	NA	1	1		06/24/16 08:38
8M413217	GROUNDWATER	NA	1	1		06/24/16 09:07

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M413191				

Approved: June 29, 2016

Sarah Vandenberg

Microbac

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062316
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76715 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573991

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	DNR.			
4				
File ID: 8M413193				
	Not needed, DNR.			
23	X	100	Over Calibration Range	TOLUENE
File ID: 8M413212				
25			Carry-over contamination	
File ID: 8M413214				

Approved: June 29, 2016

Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574227

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413247	WG574226-01 BFB 50ng 8260	NA	1	1	STD76496	06/26/16 16:40
8M413248	WG574226-02 50ug/L CCV 8260	NA	1	1	STD76578	06/26/16 17:05
8M413249	WG574226-02 50ug/L CCV 8260	NA	1	1	STD76578	06/26/16 17:34
8M413250	WG574XXX-01 100ug/L CCV A9	NA	1	1	STD7XXXX	06/26/16 18:03
8M413251	WG574227-01 BLANK 8260	NA	1	1		06/26/16 18:32
8M413252	WG574227-02 20ug/L LCS 8260	NA	1	1	STD76744	06/26/16 19:00
8M413253	L16061068-08 A MS 826-LOW	NA	1	1	STD76744	06/26/16 19:29
8M413254	L16061068-09 A MSD 826-LOW	NA	1	1	STD76744	06/26/16 19:58
8M413255	L16061068-14 A MS 826-LOW	NA	1	1	STD76744	06/26/16 20:27
8M413256	L16061068-16 A MSD 826-LOW	NA	1	1	STD76744	06/26/16 20:56
8M413257	L16061055-04 B 1000X 826-SPE D1	NA	1	1000		06/26/16 21:25
8M413258	L16061055-07 B 100X 826-SPE D1	NA	1	100		06/26/16 21:54
8M413259	L16061068-18 A 826-LOW TB	<2	1	1		06/26/16 22:22
8M413260	L16061148-03 A 826-SPE TB	<2	1	1		06/26/16 22:51
8M413261	L16061232-03 A 826-SPE TB	<2	1	1		06/26/16 23:20
8M413262	L16061096-01 B 826-SPE	<2	1	1		06/26/16 23:49
8M413263	L16061068-05 A 826-SPE	<2	1	1		06/27/16 00:18
8M413264	L16061068-06 A 826-SPE	<2	1	1		06/27/16 00:47
8M413265	L16061068-07 A 826-SPE	NA	1	1		06/27/16 01:16
8M413266	L16061068-10 A 826-SPE	<2	1	1		06/27/16 01:45
8M413267	L16061068-12 A 826-SPE	NA	1	1		06/27/16 02:14
8M413268	L16061148-01 A 826-SPE	<2	1	1		06/27/16 02:42
8M413269	L16061148-02 A 826-SPE	<2	1	1		06/27/16 03:12
8M413270	L16061232-02 A 826-SPE	<2	1	1		06/27/16 03:41
8M413271	L16061232-01 A 826-SPE	<2	1	1		06/27/16 04:10
8M413272	RINSE	NA	1	1		06/27/16 04:38
8M413273	RINSE	NA	1	1		06/27/16 05:07

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M413248				
VC was high, DNR.				

Approved: June 29, 2016

Sarah Vandenberg

Microbac

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574227

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
4				
File ID: 8M413250				
	Not needed, DNR.			
11				
File ID: 8M413257				
	Sample was too dirty to read pH.			
12	X	1000	Over Calibration Range	ben, cb
File ID: 8M413258				
	Sample was too dirty to read pH.			
13	X	1	Carry-over contamination	
File ID: 8M413259				
	Possible CB carry over. DNR.			
14	X	1	Carry-over contamination	
File ID: 8M413260				
	Possible CB carry over. DNR.			

Approved: June 29, 2016

Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062716
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76715 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574410

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413275	WG574409-01 BFB 50ng 8260	NA	1	1	STD76496	06/27/16 17:45
8M413276	WG574409-02 50ug/L CCV 8260	NA	1	1	STD76715	06/27/16 18:10
8M413277	WG574409-02 50ug/L CCV 8260	NA	1	1	STD76578	06/27/16 18:40
8M413278	WG574XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	06/27/16 19:13
8M413279	WG574410-01 BLANK 8260	NA	1	1		06/27/16 19:42
8M413280	WG574410-02 20ug/L LCS 8260	NA	1	1	STD76744	06/27/16 20:11
8M413281	L16061055-07 1000X C 826-SPE D2	NA	1	1000		06/27/16 20:39
8M413282	L16061144-04 TB A 826-LOW	<2	1	1		06/27/16 21:08
8M413283	L16061151-06 TB A 826-SPE	<2	1	1		06/27/16 21:37
8M413284	L16061068-18 TB B 826-SPE	<2	1	1		06/27/16 22:06
8M413285	L16061148-03 TB B 826-SPE	<2	1	1		06/27/16 22:35
8M413286	L16061151-03 MS A 826-SPE	<2	1	1	STD76744	06/27/16 23:04
8M413287	L16061151-04 MSD A 826-SPE	<2	1	1	STD76744	06/27/16 23:34
8M413288	L16061164-11 10X 826-TC	NA	17	10		06/28/16 00:02
8M413289	L16061151-02 A 826-SPE	<2	1	1		06/28/16 00:31
8M413290	L16061151-01 REF A 826-SPE	<2	1	1		06/28/16 01:00
8M413291	L16061151-05 A 826-SPE	<2	1	1		06/28/16 01:29
8M413292	L16061150-01 A 826-SPE	<2	1	1		06/28/16 01:58
8M413293	L16061150-02 A 826-SPE	<2	1	1		06/28/16 02:27
8M413294	L16061155-01 A 826-SPE	<2	1	1		06/28/16 02:56
8M413295	L16061155-02 A 826-SPE	<2	1	1		06/28/16 03:25
8M413296	L16061155-03 A 826-SPE	<2	1	1		06/28/16 03:54
8M413297	L16061144-01 A 826-LOW	<2	1	1		06/28/16 04:23
8M413298	L16061144-02 A 826-LOW	<2	1	1		06/28/16 04:52
8M413299	L16061144-03 A 826-LOW	<2	1	1		06/28/16 05:21
8M413300	CCV	NA	1	1		06/28/16 05:50
8M413301	RINSE	NA	1	1		06/28/16 06:19
8M413302	RINSE	NA	1	1		06/28/16 06:48
8M413303	WG573693-01 10X FBLK	NA	17	10		06/28/16 07:17

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			

Approved: July 08, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062716
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76715 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574410

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 8M413276				
	VC was high, DNR.			
4				
File ID: 8M413278				
	Not needed, DNR.			
7				
File ID: 8M413281				
	Could not read the pH because the sample was too dark.			
21	X	1	Surrogate standard failure	
File ID: 8M413295				

Approved: July 08, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 063016
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53797

Internal Standard: STD76893 Surrogate Standard: STD76893
CCV: STD76892 LCS: STD76744 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574736

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413360	WG574735-01 50ng BFB STD 8260	NA	1	1	STD76496	06/30/16 08:38
8M413361	WG574735-02 50ug/L CCV STD 8260	NA	1	1	STD76715	06/30/16 09:03
8M413362	WG574735-02 50ug/L CCV STD 8260	NA	1	1	STD76892	06/30/16 09:33
8M413363	WG574735-01 50ng BFB STD 8260	NA	1	1	STD76496	06/30/16 12:03
8M413364	WG574735-02 50ug/L CCV STD 8260	NA	1	1	STD76892	06/30/16 12:27
8M413365	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	06/30/16 12:56
8M413366	WG574736-01 VBLK0630 BLANK STD 826	NA	1	1		06/30/16 13:24
8M413367	L16061068-04 B 826-LOW	<2	1	1		06/30/16 13:53
8M413368	WG574736-02 20ug/L LCS STD 8260	NA	1	1	STD76744	06/30/16 14:22
8M413369	WG574736-03 20ug/L LCS2 STD 8260	NA	1	1	STD76744	06/30/16 14:51
8M413370	L16060974-10 B TB 826-SPE	<2	1	1		06/30/16 15:21
8M413371	L16061275-01 B 826-SPE	<2	1	1		06/30/16 15:50
8M413372	L16061275-02 B 826-SPE	<2	1	1		06/30/16 16:19
8M413373	L16061276-01 B 826-SPE	<2	1	1		06/30/16 16:48
8M413374	L16061589-08 B 826-SPE	<2	1	1		06/30/16 17:17
8M413375	L16061589-11 B 826-SPE	<2	1	1		06/30/16 17:46
8M413376	L16061589-13 B 826-SPE	<2	1	1		06/30/16 18:15
8M413377	L16061589-14 B 826-SPE	<2	1	1		06/30/16 18:43
8M413378	L16061589-15 B 826-SPE	<2	1	1		06/30/16 19:12
8M413379	L16061589-16 B 826-SPE	<2	1	1		06/30/16 19:41
8M413380	L16061589-19 B 826-SPE	<2	1	1		06/30/16 20:10
8M413381	L16061589-20 B 826-SPE	<2	1	1		06/30/16 20:39
8M413382	L16061589-21 A 826-SPE	<2	1	1		06/30/16 21:08
8M413383	L16061278-01 B 100X 826-SPE	<2	1	100		06/30/16 21:37
8M413384	L16061589-17 B 826-LOW	<2	1	1		06/30/16 22:06
8M413385	L16061589-18 B 826-LOW	<2	1	1		06/30/16 22:35
8M413386	L16061589-12 B 2.5X 826-LOW	<2	1	2.5		06/30/16 23:04
8M413387	L16061589-09 B 2000X 826-LOW D1	<2	1	2000		06/30/16 23:32
8M413388	CCV	NA	1	1		07/01/16 00:01
8M413389	RINSE	NA	1	1		07/01/16 00:30
8M413390	RINSE	NA	1	1		07/01/16 00:58

Comments

Approved: July 05, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 063016
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53797

Internal Standard: STD76893 Surrogate Standard: STD76893
CCV: STD76892 LCS: STD76744 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574736

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M413361				
	VC was high, DNR.			
3	X			
File ID: 8M413362				
	VC was high, DNR. Baked the instrument and increased the voltage.			
6				
File ID: 8M413365				
	Not needed, DNR.			
26	X	1	Carry-over contamination	
File ID: 8M413385				
	Possible CB carry over.			

Approved: July 05, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 76008
Analytical Workgroups: WG573991

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-JUN-2016
Tiffany Bailey

Secondary Reviewer:
29-JUN-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 14:37:11

Microbac Laboratories Inc.

Data Checklist

Date: 26-JUN-2016
Analyst: ADC
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75995
Analytical Workgroups: WG574227

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-JUN-2016
Tiffany Bailey

Secondary Reviewer:
29-JUN-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 13:01:31

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 76035
Analytical Workgroups: WG574410

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	ADC
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
30-JUN-2016
Tiffany Bailey

Secondary Reviewer:
08-JUL-2016
Cathy Cater

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-08-2016 12:26:26

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 76058
Analytical Workgroups: WG574736

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
30-JUN-2016
Tiffany Bailey

Secondary Reviewer:
05-JUL-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 09:40:07

Microbac

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573991

Login Number: L16061068

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW23-061716	01	06/17/16					06/24/2016	6.9	14		06/24/16	6.9	14	
MW23MS-061716	02	06/17/16					06/24/2016	6.9	14		06/24/16	6.9	14	
MW23MSD-061716	03	06/17/16					06/24/2016	6.9	14		06/24/16	6.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4830410
Report generated 07/11/2016 16:24

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B AAB#: WG574227

Login Number: L16061068

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
C01FD-061716	05	06/17/16					06/27/2016	9.7	14		06/27/16	9.7	14	
MW13-061716	06	06/17/16					06/27/2016	9.6	14		06/27/16	9.6	14	
C02-061716	07	06/17/16					06/27/2016	9.6	14		06/27/16	9.6	14	
C02MS-061716	08	06/17/16					06/26/2016	9.4	14		06/26/16	9.4	14	
C02MSD-061716	09	06/17/16					06/26/2016	9.4	14		06/26/16	9.4	14	
MW19-061716	10	06/17/16					06/27/2016	9.5	14		06/27/16	9.5	14	
MW18-061716	12	06/17/16					06/27/2016	9.5	14		06/27/16	9.5	14	
MW18MS-061716	14	06/17/16					06/26/2016	9.3	14		06/26/16	9.3	14	
MW18MSD-061716	16	06/17/16					06/26/2016	9.3	14		06/26/16	9.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4830410
Report generated 07/11/2016 16:24

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG574410

Login Number: L16061068

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
TRIP BLANK	18	06/17/16					06/27/2016	10.9	14		06/27/16	10.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4830410
Report generated 07/11/2016 16:24

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG574736

Login Number: L16061068

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
C01-061716	04	06/17/16					06/30/2016	13.2	14		06/30/16	13.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4830410
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061068
Instrument Id: HPMS8
Workgroup (AAB#): WG574227

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061068-05	1.00	01	117	112	101	101
L16061068-06	1.00	01	115	114	101	101
L16061068-07	1.00	01	118	112	99.8	102
L16061068-08	1.00	01	108	107	98.0	103
L16061068-09	1.00	01	108	108	100	102
L16061068-10	1.00	01	118	111	99.7	102
L16061068-12	1.00	01	119	115	101	102
L16061068-14	1.00	01	109	107	99.1	101
L16061068-16	1.00	01	109	109	98.5	101
WG574227-01	1.00	01	109	111	97.9	102
WG574227-02	1.00	01	108	108	99.2	103

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4830419
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061068
Instrument Id: HPMS8
Workgroup (AAB#): WG574410

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061068-18	1.00	01	118	114	101	102
WG574410-01	1.00	01	114	113	100	103
WG574410-02	1.00	01	114	110	99.3	103

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4830419
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061068
Instrument Id: HPMS8
Workgroup (AAB#): WG573991

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061068-01	10.0	DL01	118	111	100	103
L16061068-02	10.0	DL01	121	111	100	102
L16061068-03	10.0	DL01	118	110	101	103
WG573991-01	1.00	01	115	113	102	102
WG573991-02	1.00	01	113	110	98.9	103

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4830419
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061068
Instrument Id: HPMS8
Workgroup (AAB#): WG574736

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061068-04	1.00	02	113	107	100	108
WG574736-01	1.00	01	115	109	102	108
WG574736-02	1.00	01	112	106	99.9	109
WG574736-03	1.00	01	112	107	99.9	107

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4830419
Report generated: 07/11/2016 16:24

METHOD BLANK SUMMARY

Login Number: L16061068
Blank File ID: 8M413194
Prep Date: 06/23/16 21:59
Analyzed Date: 06/23/16 21:59
Analyst: FJB

Work Group: WG573991
Blank Sample ID: WG573991-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573991-02	8M413195	06/23/16 22:28	01
MW23-061716	L16061068-01	8M413209	06/24/16 05:15	DL01
MW23MS-061716	L16061068-02	8M413210	06/24/16 05:44	DL01
MW23MSD-061716	L16061068-03	8M413211	06/24/16 06:13	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4845051
Report generated 07/11/2016 16:24

METHOD BLANK SUMMARY

Login Number: L16061068
Blank File ID: 8M413251
Prep Date: 06/26/16 18:32
Analyzed Date: 06/26/16 18:32
Analyst: ADC

Work Group: WG574227
Blank Sample ID: WG574227-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574227-02	8M413252	06/26/16 19:00	01
C02MS-061716	L16061068-08	8M413253	06/26/16 19:29	01
C02MSD-061716	L16061068-09	8M413254	06/26/16 19:58	01
MW18MS-061716	L16061068-14	8M413255	06/26/16 20:27	01
MW18MSD-061716	L16061068-16	8M413256	06/26/16 20:56	01
C01FD-061716	L16061068-05	8M413263	06/27/16 00:18	01
MW13-061716	L16061068-06	8M413264	06/27/16 00:47	01
C02-061716	L16061068-07	8M413265	06/27/16 01:16	01
MW19-061716	L16061068-10	8M413266	06/27/16 01:45	01
MW18-061716	L16061068-12	8M413267	06/27/16 02:14	01

Report Name: BLANK_SUMMARY
PDF File ID: 4845051
Report generated 07/11/2016 16:24

METHOD BLANK SUMMARY

Login Number: L16061068
Blank File ID: 8M413279
Prep Date: 06/27/16 19:42
Analyzed Date: 06/27/16 19:42
Analyst: FJB

Work Group: WG574410
Blank Sample ID: WG574410-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574410-02	8M413280	06/27/16 20:11	01
TRIP BLANK	L16061068-18	8M413284	06/27/16 22:06	01

Report Name: BLANK_SUMMARY
PDF File ID: 4845051
Report generated 07/11/2016 16:24

METHOD BLANK SUMMARY

Login Number: L16061068
Blank File ID: 8M413366
Prep Date: 06/30/16 13:24
Analyzed Date: 06/30/16 13:24
Analyst: TMB

Work Group: WG574736
Blank Sample ID: WG574736-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
C01-061716	L16061068-04	8M413367	06/30/16 13:53	02
LCS	WG574736-02	8M413368	06/30/16 14:22	01
LCS2	WG574736-03	8M413369	06/30/16 14:51	01

Report Name: BLANK_SUMMARY
PDF File ID: 4845051
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/23/16 21:59 Sample ID: WG573991-01
Instrument ID: HPMS8 Run Date: 06/23/16 21:59 Prep Method: 5030B/5030C/503
File ID: 8M413194 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573991 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4830412
11-JUL-2016 16:24

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/23/16 21:59 Sample ID: WG573991-01
Instrument ID: HPMS8 Run Date: 06/23/16 21:59 Prep Method: 5030B/5030C/503
File ID: 8M413194 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573991 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	113	85 - 115	PASS
1,2-Dichloroethane-d4	115	70 - 120	PASS
Toluene-d8	102	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4830412
11-JUL-2016 16:24

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/26/16 18:32 Sample ID: WG574227-01
Instrument ID: HPMS8 Run Date: 06/26/16 18:32 Prep Method: 5030B/5030C/503
File ID: 8M413251 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG574227 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.128	1	J
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4830412
11-JUL-2016 16:24

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/26/16 18:32 Sample ID: WG574227-01
Instrument ID: HPMS8 Run Date: 06/26/16 18:32 Prep Method: 5030B/5030C/503
File ID: 8M413251 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG574227 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	111	85 - 115	PASS
1,2-Dichloroethane-d4	109	70 - 120	PASS
Toluene-d8	102	85 - 120	PASS
4-Bromofluorobenzene	97.9	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4830412
11-JUL-2016 16:24

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/27/16 19:42 Sample ID: WG574410-01
Instrument ID: HPMS8 Run Date: 06/27/16 19:42 Prep Method: 5030B/5030C/503
File ID: 8M413279 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG574410 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4830412
11-JUL-2016 16:24

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/27/16 19:42 Sample ID: WG574410-01
Instrument ID: HPMS8 Run Date: 06/27/16 19:42 Prep Method: 5030B/5030C/503
File ID: 8M413279 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG574410 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	113	85 - 115	PASS
1,2-Dichloroethane-d4	114	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	100	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4830412
11-JUL-2016 16:24

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/30/16 13:24 Sample ID: WG574736-01
Instrument ID: HPMS8 Run Date: 06/30/16 13:24 Prep Method: 5030B/5030C/503
File ID: 8M413366 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG574736 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4830412
11-JUL-2016 16:24

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/30/16 13:24 Sample ID: WG574736-01
Instrument ID: HPMS8 Run Date: 06/30/16 13:24 Prep Method: 5030B/5030C/503
File ID: 8M413366 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG574736 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	109	85 - 115	PASS
1,2-Dichloroethane-d4	115	70 - 120	PASS
Toluene-d8	108	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4830412
11-JUL-2016 16:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 | Run Date: 06/23/2016 | Sample ID: WG573991-02
Instrument ID: HPMS8 | Run Time: 22:28 | Prep Method: 5030B/5030C/503
File ID: 8M413195 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG573991 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	24.0	120	40 - 140	
Benzene	20.0	21.8	109	80 - 120	
Bromobenzene	20.0	19.4	97.1	75 - 125	
Bromochloromethane	20.0	21.6	108	65 - 130	
Bromodichloromethane	20.0	23.4	117	75 - 120	
Bromoform	20.0	19.1	95.6	70 - 130	
Bromomethane	20.0	17.2	86.1	30 - 145	
2-Butanone	20.0	21.2	106	30 - 150	
n-Butylbenzene	20.0	19.0	94.8	70 - 135	
sec-Butylbenzene	20.0	20.2	101	70 - 125	
tert-Butylbenzene	20.0	20.0	99.8	70 - 130	
Carbon disulfide	20.0	20.9	104	35 - 160	
Carbon tetrachloride	20.0	24.4	122	65 - 140	
Chlorobenzene	20.0	20.7	104	80 - 120	
Chlorodibromomethane	20.0	20.4	102	60 - 135	
Chloroethane	20.0	23.4	117	60 - 135	
Chloroform	20.0	22.7	114	65 - 135	
Chloromethane	20.0	23.0	115	40 - 125	
2-Chlorotoluene	20.0	18.4	92.0	75 - 125	
4-Chlorotoluene	20.0	22.2	111	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	17.1	85.6	50 - 130	
1,2-Dibromoethane	20.0	19.8	98.9	80 - 120	
Dibromomethane	20.0	20.7	104	75 - 125	
1,2-Dichlorobenzene	20.0	19.4	96.9	70 - 120	
1,3-Dichlorobenzene	20.0	20.2	101	75 - 125	
1,4-Dichlorobenzene	20.0	19.8	99.0	75 - 125	
Dichlorodifluoromethane	20.0	28.6	143	30 - 155	
1,1-Dichloroethane	20.0	21.4	107	70 - 135	
1,2-Dichloroethane	20.0	24.7	123	70 - 130	
1,1-Dichloroethene	20.0	22.4	112	70 - 130	
cis-1,2-Dichloroethene	20.0	22.0	110	70 - 125	
trans-1,2-Dichloroethene	20.0	22.1	111	60 - 140	
1,2-Dichloropropane	20.0	21.6	108	75 - 125	
1,3-Dichloropropane	20.0	21.4	107	75 - 125	
2,2-Dichloropropane	20.0	25.6	128	70 - 135	
cis-1,3-Dichloropropene	20.0	24.5	122	70 - 130	
trans-1,3-Dichloropropene	20.0	21.2	106	55 - 140	
1,1-Dichloropropene	20.0	21.8	109	75 - 130	
Ethylbenzene	20.0	20.1	100	75 - 125	
2-Hexanone	20.0	17.3	86.5	55 - 130	
Hexachlorobutadiene	20.0	20.7	103	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4830413
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 Run Date: 06/23/2016 Sample ID: WG573991-02
Instrument ID: HPMS8 Run Time: 22:28 Prep Method: 5030B/5030C/503
File ID: 8M413195 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573991 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76744 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.7	109	75 - 125	
p-Isopropyltoluene	20.0	19.8	98.9	75 - 130	
4-Methyl-2-pentanone	20.0	19.9	99.3	60 - 135	
Methylene chloride	20.0	21.3	107	55 - 140	
Naphthalene	20.0	15.2	76.1	55 - 140	
n-Propylbenzene	20.0	20.9	104	70 - 130	
Styrene	20.0	21.1	105	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.9	105	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	17.1	85.3	65 - 130	
Tetrachloroethene	20.0	20.9	105	45 - 150	
Toluene	20.0	20.6	103	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.5	87.3	55 - 140	
1,2,4-Trichlorobenzene	20.0	18.5	92.5	65 - 135	
1,1,1-Trichloroethane	20.0	24.7	123	65 - 130	
1,1,2-Trichloroethane	20.0	19.2	95.9	75 - 125	
Trichloroethene	20.0	23.4	117	70 - 125	
Trichlorofluoromethane	20.0	24.5	123	60 - 145	
1,2,3-Trichloropropane	20.0	19.1	95.6	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.9	99.5	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.8	104	75 - 130	
Vinyl chloride	20.0	27.9	139	50 - 145	
o-Xylene	20.0	21.2	106	80 - 120	
m-,p-Xylene	40.0	42.0	105	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	113	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	98.9	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4830413
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 | Run Date: 06/26/2016 | Sample ID: WG574227-02
Instrument ID: HPMS8 | Run Time: 19:00 | Prep Method: 5030B/5030C/503
File ID: 8M413252 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG574227 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	24.0	120	40 - 140	
Benzene	20.0	22.3	112	80 - 120	
Bromobenzene	20.0	19.6	97.9	75 - 125	
Bromochloromethane	20.0	22.7	113	65 - 130	
Bromodichloromethane	20.0	22.9	114	75 - 120	
Bromoform	20.0	20.6	103	70 - 130	
Bromomethane	20.0	15.3	76.7	30 - 145	
2-Butanone	20.0	22.9	114	30 - 150	
n-Butylbenzene	20.0	18.7	93.3	70 - 135	
sec-Butylbenzene	20.0	20.1	101	70 - 125	
tert-Butylbenzene	20.0	19.8	99.1	70 - 130	
Carbon disulfide	20.0	21.8	109	35 - 160	
Carbon tetrachloride	20.0	24.2	121	65 - 140	
Chlorobenzene	20.0	21.1	105	80 - 120	
Chlorodibromomethane	20.0	20.5	103	60 - 135	
Chloroethane	20.0	24.1	121	60 - 135	
Chloroform	20.0	22.7	114	65 - 135	
Chloromethane	20.0	23.4	117	40 - 125	
2-Chlorotoluene	20.0	20.6	103	75 - 125	
4-Chlorotoluene	20.0	19.4	97.0	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	18.0	90.2	50 - 130	
1,2-Dibromoethane	20.0	19.9	99.4	80 - 120	
Dibromomethane	20.0	20.0	100	75 - 125	
1,2-Dichlorobenzene	20.0	19.5	97.4	70 - 120	
1,3-Dichlorobenzene	20.0	20.0	100	75 - 125	
1,4-Dichlorobenzene	20.0	19.9	99.3	75 - 125	
Dichlorodifluoromethane	20.0	26.4	132	30 - 155	
1,1-Dichloroethane	20.0	21.6	108	70 - 135	
1,2-Dichloroethane	20.0	23.5	117	70 - 130	
1,1-Dichloroethene	20.0	22.0	110	70 - 130	
cis-1,2-Dichloroethene	20.0	22.8	114	70 - 125	
trans-1,2-Dichloroethene	20.0	22.3	111	60 - 140	
1,2-Dichloropropane	20.0	21.5	108	75 - 125	
1,3-Dichloropropane	20.0	21.2	106	75 - 125	
2,2-Dichloropropane	20.0	24.3	122	70 - 135	
cis-1,3-Dichloropropene	20.0	24.7	124	70 - 130	
trans-1,3-Dichloropropene	20.0	21.0	105	55 - 140	
1,1-Dichloropropene	20.0	22.3	112	75 - 130	
Ethylbenzene	20.0	20.2	101	75 - 125	
2-Hexanone	20.0	18.9	94.7	55 - 130	
Hexachlorobutadiene	20.0	20.0	100	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4830413
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 Run Date: 06/26/2016 Sample ID: WG574227-02
Instrument ID: HPMS8 Run Time: 19:00 Prep Method: 5030B/5030C/503
File ID: 8M413252 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG574227 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76744 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.9	110	75 - 125	
p-Isopropyltoluene	20.0	19.8	99.2	75 - 130	
4-Methyl-2-pentanone	20.0	20.2	101	60 - 135	
Methylene chloride	20.0	22.1	111	55 - 140	
Naphthalene	20.0	15.8	79.0	55 - 140	
n-Propylbenzene	20.0	20.6	103	70 - 130	
Styrene	20.0	21.1	105	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.4	107	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	17.2	85.8	65 - 130	
Tetrachloroethene	20.0	21.8	109	45 - 150	
Toluene	20.0	21.0	105	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.6	88.0	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.0	94.9	65 - 135	
1,1,1-Trichloroethane	20.0	23.8	119	65 - 130	
1,1,2-Trichloroethane	20.0	19.6	97.9	75 - 125	
Trichloroethene	20.0	24.2	121	70 - 125	
Trichlorofluoromethane	20.0	24.3	121	60 - 145	
1,2,3-Trichloropropane	20.0	19.2	95.9	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.8	99.1	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.2	101	75 - 130	
Vinyl chloride	20.0	27.4	137	50 - 145	
o-Xylene	20.0	21.7	109	80 - 120	
m-,p-Xylene	40.0	42.4	106	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	108	85 - 115	PASS
1,2-Dichloroethane-d4	108	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	99.2	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4830413
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 | Run Date: 06/27/2016 | Sample ID: WG574410-02
Instrument ID: HPMS8 | Run Time: 20:11 | Prep Method: 5030B/5030C/503
File ID: 8M413280 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG574410 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	25.4	127	40 - 140	
Benzene	20.0	21.6	108	80 - 120	
Bromobenzene	20.0	19.0	94.8	75 - 125	
Bromochloromethane	20.0	21.5	108	65 - 130	
Bromodichloromethane	20.0	23.5	118	75 - 120	
Bromoform	20.0	19.9	99.5	70 - 130	
Bromomethane	20.0	16.9	84.7	30 - 145	
2-Butanone	20.0	20.5	103	30 - 150	
n-Butylbenzene	20.0	18.7	93.6	70 - 135	
sec-Butylbenzene	20.0	19.6	98.1	70 - 125	
tert-Butylbenzene	20.0	19.5	97.5	70 - 130	
Carbon disulfide	20.0	20.6	103	35 - 160	
Carbon tetrachloride	20.0	24.3	121	65 - 140	
Chlorobenzene	20.0	20.3	101	80 - 120	
Chlorodibromomethane	20.0	20.4	102	60 - 135	
Chloroethane	20.0	23.1	115	60 - 135	
Chloroform	20.0	23.0	115	65 - 135	
Chloromethane	20.0	22.5	113	40 - 125	
2-Chlorotoluene	20.0	18.2	90.8	75 - 125	
4-Chlorotoluene	20.0	21.4	107	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	17.9	89.4	50 - 130	
1,2-Dibromoethane	20.0	19.6	97.8	80 - 120	
Dibromomethane	20.0	20.3	102	75 - 125	
1,2-Dichlorobenzene	20.0	19.0	95.1	70 - 120	
1,3-Dichlorobenzene	20.0	19.7	98.4	75 - 125	
1,4-Dichlorobenzene	20.0	19.3	96.7	75 - 125	
Dichlorodifluoromethane	20.0	25.4	127	30 - 155	
1,1-Dichloroethane	20.0	21.2	106	70 - 135	
1,2-Dichloroethane	20.0	24.7	124	70 - 130	
1,1-Dichloroethene	20.0	21.6	108	70 - 130	
cis-1,2-Dichloroethene	20.0	21.9	109	70 - 125	
trans-1,2-Dichloroethene	20.0	22.3	112	60 - 140	
1,2-Dichloropropane	20.0	20.8	104	75 - 125	
1,3-Dichloropropane	20.0	20.7	103	75 - 125	
2,2-Dichloropropane	20.0	24.5	123	70 - 135	
cis-1,3-Dichloropropene	20.0	24.2	121	70 - 130	
trans-1,3-Dichloropropene	20.0	20.8	104	55 - 140	
1,1-Dichloropropene	20.0	22.1	110	75 - 130	
Ethylbenzene	20.0	19.8	98.8	75 - 125	
2-Hexanone	20.0	17.1	85.3	55 - 130	
Hexachlorobutadiene	20.0	19.8	98.9	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4830413
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 | Run Date: 06/27/2016 | Sample ID: WG574410-02
Instrument ID: HPMS8 | Run Time: 20:11 | Prep Method: 5030B/5030C/503
File ID: 8M413280 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG574410 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.5	107	75 - 125	
p-Isopropyltoluene	20.0	19.6	98.0	75 - 130	
4-Methyl-2-pentanone	20.0	18.3	91.7	60 - 135	
Methylene chloride	20.0	20.9	105	55 - 140	
Naphthalene	20.0	15.6	77.9	55 - 140	
n-Propylbenzene	20.0	20.1	101	70 - 130	
Styrene	20.0	20.7	104	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.6	103	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	16.6	83.2	65 - 130	
Tetrachloroethene	20.0	20.5	103	45 - 150	
Toluene	20.0	19.8	99.2	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.1	85.4	55 - 140	
1,2,4-Trichlorobenzene	20.0	18.2	90.9	65 - 135	
1,1,1-Trichloroethane	20.0	24.0	120	65 - 130	
1,1,2-Trichloroethane	20.0	19.3	96.7	75 - 125	
Trichloroethene	20.0	23.3	117	70 - 125	
Trichlorofluoromethane	20.0	24.4	122	60 - 145	
1,2,3-Trichloropropane	20.0	18.4	92.2	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.7	98.6	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.2	101	75 - 130	
Vinyl chloride	20.0	26.2	131	50 - 145	
o-Xylene	20.0	20.5	102	80 - 120	
m-,p-Xylene	40.0	41.3	103	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	114	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	99.3	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4830413
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG574736 Units: ug/L
QC Key: DOD4 Lot #: STD76744

Sample ID: WG574736-02 LCS File ID: 8M413368 Run Date: 06/30/2016 14:22
Sample ID: WG574736-03 LCS2 File ID: 8M413369 Run Date: 06/30/2016 14:51

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.6	108	20.0	21.0	105	2.76	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.6	113	20.0	22.1	111	2.16	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	17.3	86.5	20.0	18.0	90.2	4.30	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.8	98.8	20.0	19.1	95.7	3.13	75 - 125	30	
1,1-Dichloroethane	20.0	19.4	97.2	20.0	19.4	97.2	0.0357	70 - 135	30	
1,1-Dichloroethene	20.0	19.5	97.6	20.0	18.5	92.3	5.53	70 - 130	30	
1,1-Dichloropropene	20.0	20.2	101	20.0	19.9	99.3	1.54	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	18.7	93.7	20.0	19.2	95.9	2.28	55 - 140	30	
1,2,3-Trichloropropane	20.0	20.2	101	20.0	19.4	96.9	4.08	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.8	98.9	20.0	19.9	99.7	0.829	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	21.1	105	20.0	20.7	104	1.75	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	20.4	102	20.0	20.9	105	2.54	50 - 130	30	
1,2-Dibromoethane	20.0	20.1	101	20.0	20.1	100	0.259	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.7	104	20.0	20.8	104	0.450	70 - 120	30	
1,2-Dichloroethane	20.0	22.6	113	20.0	22.5	113	0.420	70 - 130	30	
1,2-Dichloropropane	20.0	19.5	97.3	20.0	19.7	98.6	1.32	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	22.0	110	20.0	21.4	107	2.84	75 - 130	30	
1,3-Dichlorobenzene	20.0	21.0	105	20.0	20.9	105	0.447	75 - 125	30	
1,3-Dichloropropane	20.0	21.5	107	20.0	20.7	104	3.58	75 - 125	30	
1,4-Dichlorobenzene	20.0	20.9	104	20.0	20.8	104	0.370	75 - 125	30	
2,2-Dichloropropane	20.0	21.5	107	20.0	22.6	113	4.95	70 - 135	30	
2-Butanone	20.0	19.0	95.2	20.0	18.8	94.1	1.16	30 - 150	30	
2-Chlorotoluene	20.0	22.1	110	20.0	21.5	107	2.70	75 - 125	30	
2-Hexanone	20.0	18.2	91.2	20.0	17.4	86.8	4.97	55 - 130	30	
4-Chlorotoluene	20.0	20.6	103	20.0	20.3	101	1.79	75 - 130	30	
4-Methyl-2-pentanone	20.0	16.8	84.1	20.0	17.3	86.6	2.99	60 - 135	30	
Acetone	20.0	22.7	114	20.0	21.4	107	6.16	40 - 140	30	
Benzene	20.0	20.2	101	20.0	19.8	99.2	1.88	80 - 120	30	
Bromobenzene	20.0	20.4	102	20.0	20.1	101	1.53	75 - 125	30	
Bromochloromethane	20.0	19.4	96.8	20.0	19.2	95.9	0.964	65 - 130	30	
Bromodichloromethane	20.0	22.0	110	20.0	21.6	108	1.75	75 - 120	30	
Bromoform	20.0	20.7	104	20.0	20.1	100	3.00	70 - 130	30	
Bromomethane	20.0	15.0	74.8	20.0	15.6	77.8	3.90	30 - 145	30	
Carbon disulfide	20.0	18.4	92.0	20.0	17.9	89.5	2.73	35 - 160	30	
Carbon tetrachloride	20.0	22.6	113	20.0	21.7	109	4.10	65 - 140	30	
Chlorobenzene	20.0	21.1	106	20.0	20.9	105	0.908	80 - 120	30	
Chloroethane	20.0	20.8	104	20.0	19.6	98.1	5.64	60 - 135	30	
Chloroform	20.0	21.0	105	20.0	21.0	105	0.367	65 - 135	30	
Chloromethane	20.0	20.4	102	20.0	19.6	97.9	4.03	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.4	102	20.0	20.3	102	0.228	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4837275
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG574736 Units: ug/L
QC Key: DOD4 Lot #: STD76744

Sample ID: WG574736-02 LCS File ID: 8M413368 Run Date: 06/30/2016 14:22
Sample ID: WG574736-03 LCS2 File ID: 8M413369 Run Date: 06/30/2016 14:51

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.2	111	20.0	22.8	114	2.36	70 - 130	30	
Chlorodibromomethane	20.0	21.1	106	20.0	20.7	103	2.38	60 - 135	30	
Dibromomethane	20.0	18.2	91.2	20.0	18.1	90.6	0.657	75 - 125	30	
Dichlorodifluoromethane	20.0	19.0	95.2	20.0	18.2	90.9	4.59	30 - 155	30	
Ethylbenzene	20.0	20.7	103	20.0	19.9	99.7	3.58	75 - 125	30	
Hexachlorobutadiene	20.0	20.9	105	20.0	21.5	108	2.81	50 - 140	30	
Isopropylbenzene	20.0	22.5	113	20.0	21.9	109	2.87	75 - 125	30	
m-,p-Xylene	40.0	43.2	108	40.0	41.8	104	3.27	75 - 130	30	
Methylene chloride	20.0	19.2	95.8	20.0	19.0	95.1	0.689	55 - 140	30	
n-Butylbenzene	20.0	19.9	99.7	20.0	19.9	99.5	0.203	70 - 135	30	
n-Propylbenzene	20.0	21.7	109	20.0	21.4	107	1.29	70 - 130	30	
Naphthalene	20.0	16.9	84.7	20.0	17.1	85.4	0.774	55 - 140	30	
o-Xylene	20.0	21.8	109	20.0	21.4	107	1.86	80 - 120	30	
p-Isopropyltoluene	20.0	20.8	104	20.0	20.9	105	0.485	75 - 130	30	
sec-Butylbenzene	20.0	21.1	105	20.0	21.1	106	0.0455	70 - 125	30	
Styrene	20.0	21.4	107	20.0	21.3	107	0.489	65 - 135	30	
tert-Butylbenzene	20.0	20.9	104	20.0	20.5	103	1.88	70 - 130	30	
Tetrachloroethene	20.0	21.6	108	20.0	20.7	103	4.28	45 - 150	30	
Toluene	20.0	20.8	104	20.0	20.3	101	2.61	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.4	96.9	20.0	19.5	97.7	0.783	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.4	107	20.0	21.0	105	1.76	55 - 140	30	
Trichloroethene	20.0	22.0	110	20.0	20.9	105	4.95	70 - 125	30	
Trichlorofluoromethane	20.0	22.2	111	20.0	20.7	104	6.88	60 - 145	30	
Vinyl chloride	20.0	24.0	120	20.0	22.8	114	4.86	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	112	112	70 - 120	PASS
Dibromofluoromethane	106	107	85 - 115	PASS
4-Bromofluorobenzene	99.9	99.9	75 - 120	PASS
Toluene-d8	109	107	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4837275
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: HPMS8- 13-MAY-16 Worknum: WG573991

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16061068-01 File ID: 8M413209 Dil: 10 Method: 5035A

Sample ID: L16061068-02 MS File ID: 8M413210 Dil: 10 Matrix: 8260B

Sample ID: L16061068-03 MSD File ID: 8M413211 Dil: 10 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	200	215	108	200	207	104	3.69	80 - 130	30	
1,1,1-Trichloroethane	U	200	249	125	200	246	123	1.53	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	200	173	86.6	200	177	88.6	2.30	65 - 130	30	
1,1,2-Trichloroethane	U	200	197	98.7	200	194	96.8	1.97	75 - 125	30	
1,1-Dichloroethane	U	200	219	110	200	211	105	3.89	70 - 135	30	
1,1-Dichloroethene	U	200	226	113	200	220	110	2.81	70 - 130	30	
1,1-Dichloropropene	U	200	225	112	200	220	110	2.22	75 - 130	30	
1,2,3-Trichlorobenzene	U	200	175	87.4	200	180	89.8	2.74	55 - 140	30	
1,2,3-Trichloropropane	U	200	189	94.4	200	196	98.1	3.87	75 - 125	30	
1,2,4-Trichlorobenzene	U	200	186	92.8	200	191	95.7	3.04	65 - 135	30	
1,2,4-Trimethylbenzene	U	200	198	98.9	200	200	99.9	0.966	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	200	185	92.5	200	195	97.3	5.08	50 - 130	30	
1,2-Dibromoethane	U	200	201	101	200	202	101	0.140	80 - 120	30	
1,2-Dichlorobenzene	U	200	196	98.2	200	198	99.2	0.939	70 - 120	30	
1,2-Dichloroethane	50.5	200	309	129	200	299	124	3.23	70 - 130	30	
1,2-Dichloropropane	U	200	215	107	200	212	106	1.41	75 - 125	30	
1,3,5-Trimethylbenzene	U	200	204	102	200	206	103	1.28	75 - 130	30	
1,3-Dichlorobenzene	U	200	199	99.4	200	201	100	0.933	75 - 125	30	
1,3-Dichloropropane	U	200	210	105	200	210	105	0.347	75 - 125	30	
1,4-Dichlorobenzene	U	200	197	98.5	200	201	100	1.97	75 - 125	30	
2,2-Dichloropropane	U	200	226	113	200	217	109	4.07	70 - 135	30	
2-Butanone	U	200	205	103	200	193	96.7	5.99	30 - 150	30	
2-Chlorotoluene	U	200	181	90.6	200	204	102	11.9	75 - 125	30	
2-Hexanone	U	200	168	84	200	168	83.9	0.0407	55 - 130	30	
4-Chlorotoluene	U	200	222	111	200	194	97	13.4	75 - 130	30	
4-Methyl-2-pentanone	U	200	188	93.9	200	186	92.8	1.11	60 - 135	30	
Acetone	U	200	242	121	200	247	123	2.02	40 - 140	30	
Benzene	U	200	222	111	200	218	109	1.73	80 - 120	30	
Bromobenzene	U	200	189	94.7	200	190	95.1	0.436	75 - 125	30	
Bromochloromethane	U	200	230	115	200	214	107	7.27	65 - 130	30	
Bromodichloromethane	U	200	245	123	200	237	118	3.66	75 - 120	30	*
Bromoform	U	200	208	104	200	195	97.5	6.47	70 - 130	30	
Bromomethane	U	200	117	58.5	200	138	69.1	16.7	30 - 145	30	
Carbon disulfide	U	200	212	106	200	208	104	1.91	35 - 160	30	
Carbon tetrachloride	U	200	259	129	200	247	124	4.57	65 - 140	30	
Chlorobenzene	U	200	208	104	200	205	103	1.67	80 - 120	30	
Chloroethane	U	200	227	113	200	225	112	0.898	60 - 135	30	
Chloroform	4.78	200	236	116	200	233	114	1.29	65 - 135	30	
Chloromethane	U	200	228	114	200	228	114	0.0175	40 - 125	30	
cis-1,2-Dichloroethene	7.33	200	234	113	200	226	109	3.42	70 - 125	30	
cis-1,3-Dichloropropene	U	200	244	122	200	231	115	5.66	70 - 130	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4830414
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: HPMS8 13-MAY-16 Worknum: WG573991

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16061068-01 File ID: 8M413209 Dil: 10 Method: 5035A

Sample ID: L16061068-02 MS File ID: 8M413210 Dil: 10 Matrix: 8260B

Sample ID: L16061068-03 MSD File ID: 8M413211 Dil: 10 Units: Water

ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	200	211	106	200	208	104	1.38	60 - 135	30	
Dibromomethane	U	200	218	109	200	214	107	1.86	75 - 125	30	
Dichlorodifluoromethane	U	200	293	147	200	288	144	1.81	30 - 155	30	
Ethylbenzene	U	200	203	102	200	192	95.9	5.82	75 - 125	30	
Hexachlorobutadiene	U	200	202	101	200	204	102	1.32	50 - 140	30	
Isopropylbenzene	U	200	222	111	200	213	107	4.19	75 - 125	30	
m-,p-Xylene	U	400	422	106	400	405	101	4.22	75 - 130	30	
Methylene chloride	U	200	216	108	200	210	105	2.79	55 - 140	30	
n-Butylbenzene	U	200	190	95	200	189	94.6	0.383	70 - 135	30	
n-Propylbenzene	U	200	205	103	200	204	102	0.752	70 - 130	30	
Naphthalene	U	200	157	78.7	200	167	83.5	5.96	55 - 140	30	
o-Xylene	U	200	212	106	200	203	101	4.53	80 - 120	30	
p-Isopropyltoluene	U	200	199	99.5	200	197	98.6	0.991	75 - 130	30	
sec-Butylbenzene	U	200	203	101	200	199	99.6	1.65	70 - 125	30	
Styrene	U	200	210	105	200	207	104	1.08	65 - 135	30	
tert-Butylbenzene	U	200	196	97.9	200	200	100	2.27	70 - 130	30	
Tetrachloroethene	U	200	210	105	200	202	101	3.91	45 - 150	30	
Toluene	U	200	205	103	200	199	99.5	3.11	75 - 120	30	
trans-1,2-Dichloroethene	U	200	224	112	200	224	112	0.102	60 - 140	30	
trans-1,3-Dichloropropene	U	200	214	107	200	205	102	4.18	55 - 140	30	
Trichloroethene	1170	200	1390	108	200	1350	90.5	2.62	70 - 125	30	
Trichlorofluoromethane	U	200	257	128	200	248	124	3.38	60 - 145	30	
Vinyl chloride	U	200	281	140	200	276	138	1.57	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4830414
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: HPMS8- 13-MAY-16 Worknum: WG574227

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16061068-07 File ID: 8M413265 Dil: 1 Method: 5035A

Sample ID: L16061068-08 MS File ID: 8M413253 Dil: 1 Matrix: 8260B

Sample ID: L16061068-09 MSD File ID: 8M413254 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	20.5	103	20.0	20.0	100	2.68	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	23.2	116	20.0	22.9	114	1.21	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	17.3	86.7	20.0	17.0	85.1	1.89	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	19.8	99.1	20.0	19.2	96	3.13	75 - 125	30	
1,1-Dichloroethane	U	20.0	21.2	106	20.0	21.0	105	1.02	70 - 135	30	
1,1-Dichloroethene	U	20.0	21.4	107	20.0	21.0	105	2.12	70 - 130	30	
1,1-Dichloropropene	U	20.0	21.6	108	20.0	21.1	106	2.22	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	17.7	88.4	20.0	17.4	87.2	1.41	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	18.7	93.3	20.0	17.9	89.3	4.35	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	18.8	94.2	20.0	18.9	94.3	0.145	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	19.3	96.6	20.0	19.2	96	0.545	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	18.3	91.7	20.0	16.6	82.8	10.2	50 - 130	30	
1,2-Dibromoethane	U	20.0	19.9	99.5	20.0	19.1	95.5	4.14	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	19.2	96.2	20.0	18.9	94.4	1.86	70 - 120	30	
1,2-Dichloroethane	U	20.0	24.1	121	20.0	23.0	115	4.85	70 - 130	30	
1,2-Dichloropropane	U	20.0	21.6	108	20.0	21.3	107	1.42	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	20.0	99.9	20.0	19.7	98.3	1.63	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	20.0	99.8	20.0	19.6	98.2	1.68	75 - 125	30	
1,3-Dichloropropane	U	20.0	21.2	106	20.0	20.2	101	5.02	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	19.8	99	20.0	19.2	95.9	3.20	75 - 125	30	
2,2-Dichloropropane	U	20.0	24.6	123	20.0	23.7	119	3.69	70 - 135	30	
2-Butanone	U	20.0	22.0	110	20.0	19.8	99.1	10.2	30 - 150	30	
2-Chlorotoluene	U	20.0	20.2	101	20.0	17.9	89.6	12.2	75 - 125	30	
2-Hexanone	U	20.0	18.2	90.8	20.0	18.9	94.6	4.06	55 - 130	30	
4-Chlorotoluene	U	20.0	19.1	95.5	20.0	21.4	107	11.4	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	19.9	99.4	20.0	19.3	96.4	3.13	60 - 135	30	
Acetone	U	20.0	24.6	123	20.0	24.5	123	0.0686	40 - 140	30	
Benzene	U	20.0	22.0	110	20.0	21.4	107	2.57	80 - 120	30	
Bromobenzene	U	20.0	19.5	97.4	20.0	18.9	94.5	3.11	75 - 125	30	
Bromochloromethane	U	20.0	22.2	111	20.0	21.1	106	4.74	65 - 130	30	
Bromodichloromethane	U	20.0	23.0	115	20.0	22.2	111	3.34	75 - 120	30	
Bromoform	U	20.0	20.1	100	20.0	18.8	94.1	6.39	70 - 130	30	
Bromomethane	U	20.0	16.5	82.6	20.0	16.6	82.9	0.354	30 - 145	30	
Carbon disulfide	U	20.0	20.7	103	20.0	21.2	106	2.34	35 - 160	30	
Carbon tetrachloride	U	20.0	23.3	117	20.0	22.4	112	4.01	65 - 140	30	
Chlorobenzene	U	20.0	20.6	103	20.0	20.1	100	2.37	80 - 120	30	
Chloroethane	U	20.0	23.4	117	20.0	23.2	116	0.594	60 - 135	30	
Chloroform	U	20.0	22.4	112	20.0	22.1	110	1.43	65 - 135	30	
Chloromethane	U	20.0	22.9	115	20.0	23.0	115	0.552	40 - 125	30	
cis-1,2-Dichloroethene	U	20.0	22.0	110	20.0	21.7	108	1.80	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	24.7	124	20.0	23.8	119	3.69	70 - 130	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4830414
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: HPMS8 13-MAY-16 Worknum: WG574227

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16061068-07 File ID: 8M413265 Dil: 1 Method: 5035A

Sample ID: L16061068-08 MS File ID: 8M413253 Dil: 1 Matrix: 8260B

Sample ID: L16061068-09 MSD File ID: 8M413254 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	20.2	101	20.0	19.4	97.1	3.74	60 - 135	30	
Dibromomethane	U	20.0	20.4	102	20.0	20.0	100	1.69	75 - 125	30	
Dichlorodifluoromethane	U	20.0	25.1	126	20.0	25.4	127	0.938	30 - 155	30	
Ethylbenzene	U	20.0	19.6	98.2	20.0	19.2	96.2	2.03	75 - 125	30	
Hexachlorobutadiene	U	20.0	20.0	100	20.0	19.9	99.3	0.839	50 - 140	30	
Isopropylbenzene	U	20.0	21.2	106	20.0	20.9	105	1.51	75 - 125	30	
m-,p-Xylene	U	40.0	41.1	103	40.0	40.5	101	1.51	75 - 130	30	
Methylene chloride	U	20.0	21.5	107	20.0	21.1	105	1.91	55 - 140	30	
n-Butylbenzene	U	20.0	18.7	93.3	20.0	18.5	92.3	1.02	70 - 135	30	
n-Propylbenzene	U	20.0	20.2	101	20.0	20.0	99.8	1.14	70 - 130	30	
Naphthalene	U	20.0	16.3	81.4	20.0	15.8	79.2	2.69	55 - 140	30	
o-Xylene	U	20.0	21.0	105	20.0	20.5	102	2.61	80 - 120	30	
p-Isopropyltoluene	U	20.0	19.4	96.9	20.0	19.3	96.6	0.273	75 - 130	30	
sec-Butylbenzene	U	20.0	19.4	97.2	20.0	19.5	97.5	0.321	70 - 125	30	
Styrene	U	20.0	20.8	104	20.0	20.2	101	2.56	65 - 135	30	
tert-Butylbenzene	U	20.0	19.6	98.2	20.0	18.9	94.7	3.55	70 - 130	30	
Tetrachloroethene	U	20.0	20.9	105	20.0	20.0	100	4.32	45 - 150	30	
Toluene	U	20.0	20.0	100	20.0	19.9	99.5	0.672	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	22.0	110	20.0	21.7	109	1.42	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	20.8	104	20.0	20.2	101	3.14	55 - 140	30	
Trichloroethene	U	20.0	22.9	114	20.0	22.7	114	0.752	70 - 125	30	
Trichlorofluoromethane	U	20.0	23.5	117	20.0	23.3	116	0.747	60 - 145	30	
Vinyl chloride	U	20.0	26.0	130	20.0	26.1	130	0.432	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4830414
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: HPMS8- 13-MAY-16 Worknum: WG574227

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16061068-12 File ID: 8M413267 Dil: 1 Method: 5035A

Sample ID: L16061068-14 MS File ID: 8M413255 Dil: 1 Matrix: 8260B

Sample ID: L16061068-16 MSD File ID: 8M413256 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	20.1	100	20.0	20.3	102	1.27	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	23.3	117	20.0	23.3	116	0.342	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	17.2	86.1	20.0	17.1	85.4	0.774	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	18.8	93.9	20.0	18.8	94.2	0.343	75 - 125	30	
1,1-Dichloroethane	U	20.0	21.2	106	20.0	21.2	106	0.0614	70 - 135	30	
1,1-Dichloroethene	U	20.0	21.6	108	20.0	21.8	109	0.698	70 - 130	30	
1,1-Dichloropropene	U	20.0	21.8	109	20.0	21.7	108	0.601	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	17.4	87	20.0	18.1	90.4	3.73	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	17.8	89.2	20.0	18.3	91.4	2.41	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	18.4	91.9	20.0	19.2	96	4.37	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	19.6	97.9	20.0	19.5	97.3	0.672	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	17.6	88.2	20.0	17.5	87.7	0.477	50 - 130	30	
1,2-Dibromoethane	U	20.0	19.3	96.3	20.0	19.2	96.2	0.128	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	19.6	98	20.0	19.4	97	1.03	70 - 120	30	
1,2-Dichloroethane	U	20.0	23.8	119	20.0	23.7	118	0.505	70 - 130	30	
1,2-Dichloropropane	U	20.0	21.8	109	20.0	21.8	109	0.0428	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	20.5	102	20.0	20.0	99.8	2.62	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	20.0	99.8	20.0	20.0	99.8	0.0383	75 - 125	30	
1,3-Dichloropropane	U	20.0	20.5	102	20.0	20.6	103	0.548	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	19.9	99.7	20.0	19.8	98.8	0.979	75 - 125	30	
2,2-Dichloropropane	U	20.0	24.3	122	20.0	23.9	120	1.76	70 - 135	30	
2-Butanone	U	20.0	19.6	97.8	20.0	19.8	98.8	1.00	30 - 150	30	
2-Chlorotoluene	U	20.0	20.6	103	20.0	20.6	103	0.110	75 - 125	30	
2-Hexanone	U	20.0	17.7	88.5	20.0	17.8	89.1	0.733	55 - 130	30	
4-Chlorotoluene	U	20.0	19.4	96.8	20.0	18.7	93.7	3.30	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	19.4	96.9	20.0	20.4	102	5.26	60 - 135	30	
Acetone	U	20.0	23.9	120	20.0	26.3	132	9.73	40 - 140	30	
Benzene	U	20.0	21.9	109	20.0	22.1	111	1.14	80 - 120	30	
Bromobenzene	U	20.0	19.7	98.5	20.0	19.1	95.6	2.98	75 - 125	30	
Bromochloromethane	U	20.0	21.5	107	20.0	22.1	111	2.80	65 - 130	30	
Bromodichloromethane	U	20.0	22.5	113	20.0	22.6	113	0.277	75 - 120	30	
Bromoform	U	20.0	18.7	93.4	20.0	18.9	94.6	1.34	70 - 130	30	
Bromomethane	U	20.0	17.9	89.6	20.0	17.6	87.9	1.91	30 - 145	30	
Carbon disulfide	U	20.0	21.2	106	20.0	21.2	106	0.114	35 - 160	30	
Carbon tetrachloride	U	20.0	22.8	114	20.0	23.1	115	1.28	65 - 140	30	
Chlorobenzene	U	20.0	20.4	102	20.0	20.7	104	1.69	80 - 120	30	
Chloroethane	U	20.0	23.9	119	20.0	23.3	116	2.53	60 - 135	30	
Chloroform	U	20.0	22.2	111	20.0	22.4	112	1.07	65 - 135	30	
Chloromethane	U	20.0	23.3	116	20.0	23.9	120	2.81	40 - 125	30	
cis-1,2-Dichloroethene	1.11	20.0	22.8	109	20.0	23.1	110	1.22	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	24.2	121	20.0	23.9	119	1.07	70 - 130	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4830414
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: HPMS8 13-MAY-16 Worknum: WG574227

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16061068-12 File ID: 8M413267 Dil: 1 Method: 5035A

Sample ID: L16061068-14 MS File ID: 8M413255 Dil: 1 Matrix: 8260B

Sample ID: L16061068-16 MSD File ID: 8M413256 Dil: 1 Units: Water

ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	19.4	97.1	20.0	19.5	97.3	0.230	60 - 135	30	
Dibromomethane	U	20.0	20.4	102	20.0	20.1	101	1.31	75 - 125	30	
Dichlorodifluoromethane	U	20.0	25.6	128	20.0	25.6	128	0.117	30 - 155	30	
Ethylbenzene	U	20.0	19.7	98.4	20.0	19.0	95.2	3.34	75 - 125	30	
Hexachlorobutadiene	U	20.0	20.1	100	20.0	20.5	103	2.17	50 - 140	30	
Isopropylbenzene	U	20.0	21.1	106	20.0	21.0	105	0.525	75 - 125	30	
m-,p-Xylene	U	40.0	40.9	102	40.0	40.6	102	0.630	75 - 130	30	
Methylene chloride	U	20.0	20.9	105	20.0	21.8	109	4.05	55 - 140	30	
n-Butylbenzene	U	20.0	18.8	93.8	20.0	18.7	93.3	0.504	70 - 135	30	
n-Propylbenzene	U	20.0	20.6	103	20.0	20.1	101	2.44	70 - 130	30	
Naphthalene	U	20.0	16.1	80.3	20.0	16.2	81.1	0.998	55 - 140	30	
o-Xylene	U	20.0	20.4	102	20.0	20.6	103	0.704	80 - 120	30	
p-Isopropyltoluene	U	20.0	19.6	97.8	20.0	19.7	98.7	0.969	75 - 130	30	
sec-Butylbenzene	U	20.0	20.1	101	20.0	19.7	98.4	2.16	70 - 125	30	
Styrene	U	20.0	20.4	102	20.0	20.4	102	0.259	65 - 135	30	
tert-Butylbenzene	U	20.0	19.4	97.2	20.0	19.5	97.5	0.244	70 - 130	30	
Tetrachloroethene	U	20.0	20.8	104	20.0	20.2	101	2.57	45 - 150	30	
Toluene	U	20.0	20.2	101	20.0	20.0	99.9	0.940	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	22.4	112	20.0	22.2	111	0.974	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	20.2	101	20.0	20.0	99.8	1.02	55 - 140	30	
Trichloroethene	14.1	20.0	34.8	103	20.0	35.0	104	0.541	70 - 125	30	
Trichlorofluoromethane	U	20.0	23.4	117	20.0	23.4	117	0.199	60 - 145	30	
Vinyl chloride	U	20.0	26.3	132	20.0	26.6	133	0.980	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4830414
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061068
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4830417
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061068
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4830417
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061068
Instrument: HPMS8
Analyst: FJB
Workgroup: WG573990

Tune ID: WG573990-01
Run Date: 06/23/2016
Run Time: 19:56
File ID: 8M413190
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.0	10373	PASS
75.0	95.0	30.0	60.0	58.1	31797	PASS
95.0	95.0	100	100	100	54685	PASS
96.0	95.0	5.00	9.00	6.95	3803	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.1	41629	PASS
175	174	5.00	9.00	7.18	2991	PASS
176	174	95.0	101	95.9	39941	PASS
177	176	5.00	9.00	6.76	2702	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573990-02	CCV	01	06/23/2016 21:00	
WG573991-01	BLANK	01	06/23/2016 21:59	
WG573991-02	LCS	01	06/23/2016 22:28	
L16061068-01	MW23-061716	DL01	06/24/2016 05:15	
L16061068-02	MW23MS-061716	DL01	06/24/2016 05:44	
L16061068-03	MW23MSD-061716	DL01	06/24/2016 06:13	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4830417
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061068
Instrument: HPMS8
Analyst: ADC
Workgroup: WG574226

Tune ID: WG574226-01
Run Date: 06/26/2016
Run Time: 16:40
File ID: 8M413247
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.3	7413	PASS
75.0	95.0	30.0	60.0	56.2	22773	PASS
95.0	95.0	100	100	100	40520	PASS
96.0	95.0	5.00	9.00	6.64	2692	PASS
173	174	0	2.00	0.568	192	PASS
174	95.0	50.0	100	83.4	33789	PASS
175	174	5.00	9.00	8.64	2920	PASS
176	174	95.0	101	98.3	33202	PASS
177	176	5.00	9.00	7.17	2381	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574226-02	CCV	01	06/26/2016 17:34	
WG574227-01	BLANK	01	06/26/2016 18:32	
WG574227-02	LCS	01	06/26/2016 19:00	
L16061068-08	C02MS-061716	01	06/26/2016 19:29	
L16061068-09	C02MSD-061716	01	06/26/2016 19:58	
L16061068-14	MW18MS-061716	01	06/26/2016 20:27	
L16061068-16	MW18MSD-061716	01	06/26/2016 20:56	
L16061068-05	C01FD-061716	01	06/27/2016 00:18	
L16061068-06	MW13-061716	01	06/27/2016 00:47	
L16061068-07	C02-061716	01	06/27/2016 01:16	
L16061068-10	MW19-061716	01	06/27/2016 01:45	
L16061068-12	MW18-061716	01	06/27/2016 02:14	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4830417
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061068
Instrument: HPMS8
Analyst: FJB
Workgroup: WG574409

Tune ID: WG574409-01
Run Date: 06/27/2016
Run Time: 17:45
File ID: 8M413275
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.5	9667	PASS
75.0	95.0	30.0	60.0	57.7	30122	PASS
95.0	95.0	100	100	100	52181	PASS
96.0	95.0	5.00	9.00	6.82	3559	PASS
173	174	0	2.00	0.363	160	PASS
174	95.0	50.0	100	84.5	44069	PASS
175	174	5.00	9.00	7.30	3216	PASS
176	174	95.0	101	98.9	43568	PASS
177	176	5.00	9.00	6.07	2646	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574409-02	CCV	01	06/27/2016 18:40	
WG574410-01	BLANK	01	06/27/2016 19:42	
WG574410-02	LCS	01	06/27/2016 20:11	
L16061068-18	TRIP BLANK	01	06/27/2016 22:06	
WG573693-01	FBLK1	DL01	06/28/2016 07:17	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4830417
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061068
Instrument: HPMS8
Analyst: TMB
Workgroup: WG574735

Tune ID: WG574735-01
Run Date: 06/30/2016
Run Time: 12:03
File ID: 8M413363
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.1	9775	PASS
75.0	95.0	30.0	60.0	58.1	31346	PASS
95.0	95.0	100	100	100	53981	PASS
96.0	95.0	5.00	9.00	6.34	3423	PASS
173	174	0	2.00	0.380	157	PASS
174	95.0	50.0	100	76.6	41338	PASS
175	174	5.00	9.00	8.57	3544	PASS
176	174	95.0	101	96.8	40000	PASS
177	176	5.00	9.00	6.66	2662	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574735-02	CCV	01	06/30/2016 12:27	
WG574736-01	BLANK	01	06/30/2016 13:24	
L16061068-04	C01-061716	02	06/30/2016 13:53	
WG574736-02	LCS	01	06/30/2016 14:22	
WG574736-03	LCS2	01	06/30/2016 14:51	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4830417
Report generated 07/11/2016 16:24

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061068 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4830416
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061068 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4830416
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/23/2016 Sample ID: WG573990-02
Instrument ID: HPMS8 Run Time: 21:00 Method: 8260B
File ID: 8M413192 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573991 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	54.9	ug/L	0.598	9.72	20	
1,1-Dichloroethene	CCC	50.0	54.2	ug/L	0.439	8.49	20	
1,2-Dichloropropane	CCC	50.0	49.4	ug/L	0.226	1.11	20	
Ethylbenzene	CCC	50.0	46.8	ug/L	0.536	6.46	20	
Toluene	CCC	50.0	47.3	ug/L	1.47	5.48	20	
Vinyl Chloride	CCC	50.0	56.0	ug/L	0.325	12.0	20	
Bromoform	SPCC	50.0	50.5	ug/L	0.214	0.904	20	
Chlorobenzene	SPCC	50.0	47.1	ug/L	0.986	5.76	20	
Chloromethane	SPCC	50.0	47.4	ug/L	0.232	5.29	20	
1,1-Dichloroethane	SPCC	50.0	53.1	ug/L	0.490	6.25	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	43.2	ug/L	0.433	13.7	20	
Xylenes		150	143	ug/L	0.633	4.33	20	
Acetone		50.0	55.7	ug/L	0.0313	11.4	20	
Benzene		50.0	51.7	ug/L	1.06	3.36	20	
Bromobenzene		50.0	48.2	ug/L	0.773	3.63	20	
Bromochloromethane		50.0	53.3	ug/L	0.157	6.63	20	
Bromodichloromethane		50.0	56.3	ug/L	0.452	12.6	20	
Bromomethane		50.0	44.2	ug/L	0.154	11.6	20	
2-Butanone		50.0	47.8	ug/L	0.0395	4.39	20	
n-Butylbenzene		50.0	47.6	ug/L	2.67	4.73	20	
sec-Butylbenzene		50.0	48.0	ug/L	3.21	3.91	20	
tert-Butylbenzene		50.0	46.7	ug/L	0.520	6.51	20	
Carbon Disulfide		50.0	55.6	ug/L	0.940	11.2	20	
Carbon Tetrachloride		50.0	60.0	ug/L	0.551	19.9	20	
Dibromochloromethane		50.0	49.7	ug/L	0.356	0.505	20	
Chloroethane		50.0	49.8	ug/L	0.159	0.424	20	
2-Chlorotoluene		50.0	47.6	ug/L	2.59	4.80	20	
4-Chlorotoluene		50.0	47.6	ug/L	2.34	4.71	20	
1,2-Dibromo-3-Chloropropane		50.0	44.8	ug/L	0.0902	10.5	20	
1,2-Dibromoethane		50.0	47.7	ug/L	0.233	4.68	20	
Dibromomethane		50.0	50.5	ug/L	0.137	0.985	20	
1,2-Dichlorobenzene		50.0	46.5	ug/L	1.28	7.08	20	
1,3-Dichlorobenzene		50.0	48.2	ug/L	1.49	3.65	20	
1,4-Dichlorobenzene		50.0	47.0	ug/L	1.46	5.94	20	
Dichlorodifluoromethane		50.0	52.4	ug/L	0.439	4.74	20	
1,2-Dichloroethane		50.0	58.3	ug/L	0.409	16.6	20	
cis-1,2-Dichloroethene		50.0	52.0	ug/L	0.298	3.98	20	
trans-1,2-Dichloroethene		50.0	52.6	ug/L	0.391	5.23	20	
1,3-Dichloropropane		50.0	46.4	ug/L	0.405	7.22	20	
2,2-Dichloropropane		50.0	61.6	ug/L	0.599	23.3	20	*
cis-1,3-Dichloropropene		50.0	54.4	ug/L	0.445	8.81	20	
trans-1,3-Dichloropropene		50.0	49.5	ug/L	0.515	0.990	20	

CCV - Modified 03/05/2008
PDF File ID: 4830418
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/23/2016 Sample ID: WG573990-02
Instrument ID: HPMS8 Run Time: 21:00 Method: 8260B
File ID: 8M413192 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573991 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	54.7	ug/L	0.431	9.40	20	
2-Hexanone		50.0	42.6	ug/L	0.0438	14.9	20	
Hexachlorobutadiene		50.0	49.1	ug/L	0.471	1.81	20	
Isopropylbenzene		50.0	49.8	ug/L	1.74	0.478	20	
p-Isopropyltoluene		50.0	48.6	ug/L	2.76	2.77	20	
4-Methyl-2-Pentanone		50.0	48.0	ug/L	0.0386	3.95	20	
Methylene Chloride		50.0	50.2	ug/L	0.258	0.364	20	
Naphthalene		50.0	43.5	ug/L	1.33	13.1	20	
n-Propylbenzene		50.0	48.3	ug/L	3.77	3.46	20	
Styrene		50.0	48.6	ug/L	1.05	2.85	20	
1,1,1,2-Tetrachloroethane		50.0	49.6	ug/L	0.402	0.773	20	
Tetrachloroethene		50.0	49.7	ug/L	0.331	0.579	20	
1,2,3-Trichlorobenzene		50.0	43.5	ug/L	0.754	13.0	20	
1,2,4-Trichlorobenzene		50.0	46.2	ug/L	0.949	7.59	20	
1,1,1-Trichloroethane		50.0	58.9	ug/L	0.609	17.8	20	
1,1,2-Trichloroethane		50.0	45.7	ug/L	0.224	8.57	20	
Trichloroethene		50.0	54.4	ug/L	0.298	8.88	20	
Trichlorofluoromethane		50.0	58.4	ug/L	0.630	16.7	20	
1,2,3-Trichloropropane		50.0	44.8	ug/L	0.139	10.3	20	
1,2,4-Trimethylbenzene		50.0	48.5	ug/L	2.84	2.95	20	
1,3,5-Trimethylbenzene		50.0	49.0	ug/L	2.78	2.08	20	
o-Xylene		50.0	47.1	ug/L	0.619	5.74	20	
m-,p-Xylene		100	96.4	ug/L	0.647	3.63	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4830418
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/26/2016 Sample ID: WG574226-02
Instrument ID: HPMS8 Run Time: 17:34 Method: 8260B
File ID: 8M413249 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG574227 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	55.9	ug/L	0.609	11.9	20	
1,1-Dichloroethene	CCC	50.0	56.1	ug/L	0.454	12.2	20	
1,2-Dichloropropane	CCC	50.0	52.4	ug/L	0.240	4.89	20	
Ethylbenzene	CCC	50.0	49.0	ug/L	0.561	2.06	20	
Toluene	CCC	50.0	50.1	ug/L	1.55	0.159	20	
Vinyl Chloride	CCC	50.0	56.2	ug/L	0.327	12.5	20	
Bromoform	SPCC	50.0	50.9	ug/L	0.216	1.77	20	
Chlorobenzene	SPCC	50.0	50.1	ug/L	1.05	0.119	20	
Chloromethane	SPCC	50.0	46.9	ug/L	0.229	6.23	20	
1,1-Dichloroethane	SPCC	50.0	55.5	ug/L	0.512	11.0	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	44.5	ug/L	0.447	11.0	20	
Xylenes		150	150	ug/L	0.665	0.0458	20	
Acetone		50.0	55.8	ug/L	0.0314	11.6	20	
Benzene		50.0	54.5	ug/L	1.12	9.05	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.01	20	
Bromochloromethane		50.0	55.3	ug/L	0.163	10.6	20	
Bromodichloromethane		50.0	57.1	ug/L	0.459	14.2	20	
Bromomethane		50.0	45.3	ug/L	0.158	9.47	20	
2-Butanone		50.0	49.6	ug/L	0.0410	0.854	20	
n-Butylbenzene		50.0	47.9	ug/L	2.69	4.21	20	
sec-Butylbenzene		50.0	48.3	ug/L	3.23	3.38	20	
tert-Butylbenzene		50.0	47.9	ug/L	0.533	4.18	20	
Carbon Disulfide		50.0	59.3	ug/L	1.00	18.5	20	
Carbon Tetrachloride		50.0	59.9	ug/L	0.550	19.8	20	
Dibromochloromethane		50.0	51.2	ug/L	0.367	2.50	20	
Chloroethane		50.0	53.4	ug/L	0.171	6.82	20	
2-Chlorotoluene		50.0	45.6	ug/L	2.48	8.80	20	
4-Chlorotoluene		50.0	51.5	ug/L	2.53	2.97	20	
1,2-Dibromo-3-Chloropropane		50.0	44.8	ug/L	0.0902	10.5	20	
1,2-Dibromoethane		50.0	49.2	ug/L	0.240	1.67	20	
Dibromomethane		50.0	52.5	ug/L	0.142	5.09	20	
1,2-Dichlorobenzene		50.0	47.1	ug/L	1.29	5.75	20	
1,3-Dichlorobenzene		50.0	49.3	ug/L	1.52	1.39	20	
1,4-Dichlorobenzene		50.0	48.1	ug/L	1.50	3.83	20	
Dichlorodifluoromethane		50.0	45.0	ug/L	0.377	10.0	20	
1,2-Dichloroethane		50.0	57.5	ug/L	0.403	15.1	20	
cis-1,2-Dichloroethene		50.0	54.9	ug/L	0.315	9.77	20	
trans-1,2-Dichloroethene		50.0	54.4	ug/L	0.404	8.86	20	
1,3-Dichloropropane		50.0	48.1	ug/L	0.420	3.78	20	
2,2-Dichloropropane		50.0	63.2	ug/L	0.614	26.4	20	*
cis-1,3-Dichloropropene		50.0	56.0	ug/L	0.458	12.1	20	
trans-1,3-Dichloropropene		50.0	50.6	ug/L	0.527	1.28	20	

CCV - Modified 03/05/2008
PDF File ID: 4830418
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/26/2016 Sample ID: WG574226-02
Instrument ID: HPMS8 Run Time: 17:34 Method: 8260B
File ID: 8M413249 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG574227 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	56.4	ug/L	0.445	12.9	20	
2-Hexanone		50.0	44.8	ug/L	0.0462	10.3	20	
Hexachlorobutadiene		50.0	49.7	ug/L	0.477	0.640	20	
Isopropylbenzene		50.0	51.6	ug/L	1.80	3.24	20	
p-Isopropyltoluene		50.0	48.6	ug/L	2.76	2.74	20	
4-Methyl-2-Pentanone		50.0	47.7	ug/L	0.0383	4.61	20	
Methylene Chloride		50.0	53.3	ug/L	0.274	6.51	20	
Naphthalene		50.0	44.2	ug/L	1.35	11.6	20	
n-Propylbenzene		50.0	49.0	ug/L	3.82	2.08	20	
Styrene		50.0	51.0	ug/L	1.10	2.00	20	
1,1,1,2-Tetrachloroethane		50.0	51.5	ug/L	0.418	3.08	20	
Tetrachloroethene		50.0	53.5	ug/L	0.356	7.10	20	
1,2,3-Trichlorobenzene		50.0	44.7	ug/L	0.775	10.5	20	
1,2,4-Trichlorobenzene		50.0	47.4	ug/L	0.974	5.21	20	
1,1,1-Trichloroethane		50.0	59.0	ug/L	0.611	18.1	20	
1,1,2-Trichloroethane		50.0	47.6	ug/L	0.233	4.77	20	
Trichloroethene		50.0	57.0	ug/L	0.312	14.0	20	
Trichlorofluoromethane		50.0	58.6	ug/L	0.633	17.2	20	
1,2,3-Trichloropropane		50.0	46.0	ug/L	0.142	7.95	20	
1,2,4-Trimethylbenzene		50.0	48.6	ug/L	2.84	2.82	20	
1,3,5-Trimethylbenzene		50.0	49.6	ug/L	2.82	0.811	20	
o-Xylene		50.0	50.2	ug/L	0.659	0.406	20	
m-,p-Xylene		100	99.9	ug/L	0.671	0.135	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4830418
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/27/2016 Sample ID: WG574409-02
Instrument ID: HPMS8 Run Time: 18:40 Method: 8260B
File ID: 8M413277 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG574410 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	56.5	ug/L	0.615	13.0	20	
1,1-Dichloroethene	CCC	50.0	55.7	ug/L	0.450	11.3	20	
1,2-Dichloropropane	CCC	50.0	51.2	ug/L	0.234	2.31	20	
Ethylbenzene	CCC	50.0	48.1	ug/L	0.550	3.89	20	
Toluene	CCC	50.0	48.6	ug/L	1.51	2.82	20	
Vinyl Chloride	CCC	50.0	55.4	ug/L	0.321	10.7	20	
Bromoform	SPCC	50.0	53.4	ug/L	0.227	6.82	20	
Chlorobenzene	SPCC	50.0	48.6	ug/L	1.02	2.71	20	
Chloromethane	SPCC	50.0	47.4	ug/L	0.232	5.15	20	
1,1-Dichloroethane	SPCC	50.0	54.2	ug/L	0.500	8.46	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	44.4	ug/L	0.446	11.2	20	
Xylenes		150	147	ug/L	0.647	2.29	20	
Acetone		50.0	61.8	ug/L	0.0348	23.5	20	*
Benzene		50.0	52.9	ug/L	1.09	5.84	20	
Bromobenzene		50.0	47.6	ug/L	0.765	4.71	20	
Bromochloromethane		50.0	54.7	ug/L	0.161	9.36	20	
Bromodichloromethane		50.0	58.1	ug/L	0.467	16.2	20	
Bromomethane		50.0	44.9	ug/L	0.157	10.1	20	
2-Butanone		50.0	52.3	ug/L	0.0432	4.63	20	
n-Butylbenzene		50.0	47.3	ug/L	2.65	5.48	20	
sec-Butylbenzene		50.0	47.6	ug/L	3.18	4.82	20	
tert-Butylbenzene		50.0	46.6	ug/L	0.518	6.82	20	
Carbon Disulfide		50.0	59.1	ug/L	1.00	18.2	20	
Carbon Tetrachloride		50.0	61.6	ug/L	0.566	23.2	20	*
Dibromochloromethane		50.0	50.8	ug/L	0.363	1.57	20	
Chloroethane		50.0	50.8	ug/L	0.162	1.69	20	
2-Chlorotoluene		50.0	48.6	ug/L	2.65	2.74	20	
4-Chlorotoluene		50.0	44.8	ug/L	2.21	10.3	20	
1,2-Dibromo-3-Chloropropane		50.0	46.0	ug/L	0.0927	7.99	20	
1,2-Dibromoethane		50.0	48.7	ug/L	0.238	2.57	20	
Dibromomethane		50.0	54.0	ug/L	0.146	7.97	20	
1,2-Dichlorobenzene		50.0	46.4	ug/L	1.28	7.10	20	
1,3-Dichlorobenzene		50.0	48.0	ug/L	1.48	4.07	20	
1,4-Dichlorobenzene		50.0	46.6	ug/L	1.45	6.70	20	
Dichlorodifluoromethane		50.0	45.5	ug/L	0.382	8.98	20	
1,2-Dichloroethane		50.0	60.2	ug/L	0.422	20.3	20	*
cis-1,2-Dichloroethene		50.0	52.9	ug/L	0.304	5.75	20	
trans-1,2-Dichloroethene		50.0	54.0	ug/L	0.401	8.05	20	
1,3-Dichloropropane		50.0	48.0	ug/L	0.418	4.07	20	
2,2-Dichloropropane		50.0	64.1	ug/L	0.623	28.2	20	*
cis-1,3-Dichloropropene		50.0	56.3	ug/L	0.461	12.7	20	
trans-1,3-Dichloropropene		50.0	52.1	ug/L	0.542	4.14	20	

CCV - Modified 03/05/2008
PDF File ID: 4830418
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/27/2016 Sample ID: WG574409-02
Instrument ID: HPMS8 Run Time: 18:40 Method: 8260B
File ID: 8M413277 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG574410 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	56.7	ug/L	0.447	13.3	20	
2-Hexanone		50.0	47.2	ug/L	0.0486	5.63	20	
Hexachlorobutadiene		50.0	49.1	ug/L	0.472	1.72	20	
Isopropylbenzene		50.0	50.9	ug/L	1.78	1.84	20	
p-Isopropyltoluene		50.0	47.7	ug/L	2.71	4.55	20	
4-Methyl-2-Pentanone		50.0	50.6	ug/L	0.0406	1.24	20	
Methylene Chloride		50.0	52.3	ug/L	0.269	4.59	20	
Naphthalene		50.0	44.8	ug/L	1.37	10.4	20	
n-Propylbenzene		50.0	47.7	ug/L	3.72	4.64	20	
Styrene		50.0	50.0	ug/L	1.08	0.0298	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/L	0.414	1.98	20	
Tetrachloroethene		50.0	52.5	ug/L	0.349	4.93	20	
1,2,3-Trichlorobenzene		50.0	44.5	ug/L	0.771	11.1	20	
1,2,4-Trichlorobenzene		50.0	47.6	ug/L	0.977	4.90	20	
1,1,1-Trichloroethane		50.0	60.8	ug/L	0.629	21.5	20	*
1,1,2-Trichloroethane		50.0	46.9	ug/L	0.230	6.12	20	
Trichloroethene		50.0	55.0	ug/L	0.301	9.96	20	
Trichlorofluoromethane		50.0	60.2	ug/L	0.650	20.4	20	*
1,2,3-Trichloropropane		50.0	47.0	ug/L	0.145	5.96	20	
1,2,4-Trimethylbenzene		50.0	48.2	ug/L	2.82	3.51	20	
1,3,5-Trimethylbenzene		50.0	48.3	ug/L	2.75	3.32	20	
o-Xylene		50.0	48.3	ug/L	0.635	3.34	20	
m-,p-Xylene		100	98.2	ug/L	0.660	1.76	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4830418
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG574735-02
Instrument ID: HPMS8 Run Time: 12:27 Method: 8260B
File ID: 8M413364 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG574736 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	54.5	ug/L	0.593	8.92	20	
1,1-Dichloroethene	CCC	50.0	55.9	ug/L	0.452	11.8	20	
1,2-Dichloropropane	CCC	50.0	49.0	ug/L	0.224	2.08	20	
Ethylbenzene	CCC	50.0	51.6	ug/L	0.591	3.26	20	
Toluene	CCC	50.0	51.6	ug/L	1.60	3.21	20	
Vinyl Chloride	CCC	50.0	59.9	ug/L	0.348	19.8	20	
Bromoform	SPCC	50.0	54.4	ug/L	0.231	8.84	20	
Chlorobenzene	SPCC	50.0	50.8	ug/L	1.06	1.64	20	
Chloromethane	SPCC	50.0	55.8	ug/L	0.273	11.5	20	
1,1-Dichloroethane	SPCC	50.0	52.8	ug/L	0.487	5.59	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.5	ug/L	0.467	7.01	20	
Xylenes		150	156	ug/L	0.691	4.13	20	
Acetone		50.0	56.3	ug/L	0.0316	12.5	20	
Benzene		50.0	51.6	ug/L	1.06	3.15	20	
Bromobenzene		50.0	52.8	ug/L	0.847	5.62	20	
Bromochloromethane		50.0	53.8	ug/L	0.158	7.52	20	
Bromodichloromethane		50.0	55.5	ug/L	0.446	10.9	20	
Bromomethane		50.0	45.8	ug/L	0.160	8.41	20	
2-Butanone		50.0	50.1	ug/L	0.0414	0.266	20	
n-Butylbenzene		50.0	50.6	ug/L	2.84	1.25	20	
sec-Butylbenzene		50.0	51.7	ug/L	3.46	3.42	20	
tert-Butylbenzene		50.0	51.4	ug/L	0.572	2.86	20	
Carbon Disulfide		50.0	51.2	ug/L	0.867	2.43	20	
Carbon Tetrachloride		50.0	58.8	ug/L	0.541	17.7	20	
Dibromochloromethane		50.0	53.3	ug/L	0.381	6.58	20	
Chloroethane		50.0	52.6	ug/L	0.168	5.25	20	
2-Chlorotoluene		50.0	46.9	ug/L	2.55	6.21	20	
4-Chlorotoluene		50.0	56.3	ug/L	2.77	12.7	20	
1,2-Dibromo-3-Chloropropane		50.0	48.4	ug/L	0.0975	3.16	20	
1,2-Dibromoethane		50.0	49.1	ug/L	0.240	1.77	20	
Dibromomethane		50.0	49.9	ug/L	0.135	0.263	20	
1,2-Dichlorobenzene		50.0	50.0	ug/L	1.37	0.0616	20	
1,3-Dichlorobenzene		50.0	52.4	ug/L	1.62	4.82	20	
1,4-Dichlorobenzene		50.0	50.4	ug/L	1.57	0.872	20	
Dichlorodifluoromethane		50.0	65.9	ug/L	0.553	31.8	20	*
1,2-Dichloroethane		50.0	57.2	ug/L	0.401	14.4	20	
cis-1,2-Dichloroethene		50.0	51.4	ug/L	0.295	2.71	20	
trans-1,2-Dichloroethene		50.0	52.9	ug/L	0.393	5.77	20	
1,3-Dichloropropane		50.0	50.9	ug/L	0.444	1.79	20	
2,2-Dichloropropane		50.0	62.0	ug/L	0.602	23.9	20	*
cis-1,3-Dichloropropene		50.0	54.3	ug/L	0.444	8.55	20	
trans-1,3-Dichloropropene		50.0	54.1	ug/L	0.563	8.22	20	

CCV - Modified 03/05/2008
PDF File ID: 4830418
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG574735-02
Instrument ID: HPMS8 Run Time: 12:27 Method: 8260B
File ID: 8M413364 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG574736 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	54.6	ug/L	0.430	9.15	20	
2-Hexanone		50.0	46.0	ug/L	0.0474	7.93	20	
Hexachlorobutadiene		50.0	54.8	ug/L	0.526	9.57	20	
Isopropylbenzene		50.0	53.4	ug/L	1.86	6.87	20	
p-Isopropyltoluene		50.0	52.8	ug/L	3.00	5.60	20	
4-Methyl-2-Pentanone		50.0	48.1	ug/L	0.0386	3.79	20	
Methylene Chloride		50.0	50.4	ug/L	0.259	0.824	20	
Naphthalene		50.0	47.0	ug/L	1.43	5.98	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.85	20	
Styrene		50.0	52.5	ug/L	1.13	4.99	20	
1,1,1,2-Tetrachloroethane		50.0	54.1	ug/L	0.439	8.14	20	
Tetrachloroethene		50.0	54.8	ug/L	0.365	9.64	20	
1,2,3-Trichlorobenzene		50.0	48.8	ug/L	0.845	2.42	20	
1,2,4-Trichlorobenzene		50.0	50.9	ug/L	1.05	1.83	20	
1,1,1-Trichloroethane		50.0	58.0	ug/L	0.600	16.0	20	
1,1,2-Trichloroethane		50.0	49.4	ug/L	0.242	1.15	20	
Trichloroethene		50.0	53.8	ug/L	0.295	7.60	20	
Trichlorofluoromethane		50.0	59.7	ug/L	0.645	19.4	20	
1,2,3-Trichloropropane		50.0	47.8	ug/L	0.148	4.31	20	
1,2,4-Trimethylbenzene		50.0	52.2	ug/L	3.05	4.45	20	
1,3,5-Trimethylbenzene		50.0	53.3	ug/L	3.03	6.68	20	
o-Xylene		50.0	51.9	ug/L	0.682	3.85	20	
m-,p-Xylene		100	104	ug/L	0.700	4.27	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4830418
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061068
Instrument ID: HPMS8
Workgroup (AAB#): WG573991

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16061068-01	10.0	DL01	279888	503387	650326
L16061068-02	10.0	DL01	292191	505106	651724
L16061068-03	10.0	DL01	293205	524870	676034
WG573991-01	1.00	01	300577	547838	695599
WG573991-02	1.00	01	307359	541017	709070

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4845052
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061068
Instrument ID: HPMS8
Workgroup (AAB#): WG574227

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16061068-05	1.00	01	310736	551592	692629
L16061068-06	1.00	01	298976	537883	675327
L16061068-07	1.00	01	300171	528229	668576
L16061068-08	1.00	01	335628	591220	763805
L16061068-09	1.00	01	333917	593148	767625
L16061068-10	1.00	01	297560	526953	664459
L16061068-12	1.00	01	289542	522236	654571
L16061068-14	1.00	01	332656	598726	768288
L16061068-16	1.00	01	335549	595198	759205
WG574227-01	1.00	01	335642	592099	754008
WG574227-02	1.00	01	335103	585678	766171

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4845052
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061068
Instrument ID: HPMS8
Workgroup (AAB#): WG574410

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16061068-18	1.00	01	284359	510260	642856
WG574410-01	1.00	01	302642	539767	679552
WG574410-02	1.00	01	303369	528164	681082

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4845052
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061068
Instrument ID: HPMS8
Workgroup (AAB#): WG574736

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16061068-04	1.00	02	377951	698148	992774
WG574736-01	1.00	01	391003	714298	1024963
WG574736-02	1.00	01	381905	693194	1003043
WG574736-03	1.00	01	385162	697382	981508

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4845052
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061068
Instrument ID: HPMS8
Workgroup (AAB#): WG573991

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16061068-01	10.0	DL01	17.6	14.57	10.71
L16061068-02	10.0	DL01	17.6	14.57	10.71
L16061068-03	10.0	DL01	17.6	14.57	10.71
WG573991-01	1.00	01	17.6	14.57	10.71
WG573991-02	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4845053
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061068
Instrument ID: HPMS8
Workgroup (AAB#): WG574227

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16061068-05	1.00	01	17.59	14.58	10.71
L16061068-06	1.00	01	17.6	14.57	10.71
L16061068-07	1.00	01	17.6	14.57	10.71
L16061068-08	1.00	01	17.6	14.57	10.71
L16061068-09	1.00	01	17.6	14.57	10.71
L16061068-10	1.00	01	17.6	14.57	10.71
L16061068-12	1.00	01	17.6	14.58	10.71
L16061068-14	1.00	01	17.6	14.57	10.71
L16061068-16	1.00	01	17.6	14.57	10.71
WG574227-01	1.00	01	17.6	14.57	10.71
WG574227-02	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4845053
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061068
Instrument ID: HPMS8
Workgroup (AAB#): WG574410

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16061068-18	1.00	01	17.6	14.57	10.71
WG574410-01	1.00	01	17.6	14.57	10.71
WG574410-02	1.00	01	17.6	14.58	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4845053
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061068
Instrument ID: HPMS8
Workgroup (AAB#): WG574736

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16061068-04	1.00	02	17.6	14.58	10.71
WG574736-01	1.00	01	17.6	14.58	10.7
WG574736-02	1.00	01	17.6	14.57	10.71
WG574736-03	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4845053
Report generated: 07/11/2016 16:24

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413209.D Vial: 20
Acq On : 24 Jun 2016 5:15 Operator: FJB
Sample : L16061068-01 REF 10X A 826-LOW Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 05:37:03 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	650326	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	503387	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	279888	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	193349	27.6719 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.68%		
43) 1,2-Dichloroethane-d4	10.30	65	220551	29.4381 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.76%		
58) Toluene-d8	12.68	98	679698	25.7999 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	16.07	95	289736	25.0002 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.00%		
Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	438166	66.3433 ug/L	95
13) Acetone	6.15	43	5122	7.0004 ug/L #	50
32) cis-1,2-Dichloroethene	9.17	96	5469	0.7326 ug/L	80
33) Chloroform	9.38	83	6776	0.4783 ug/L	95
36) Tetrahydrofuran	9.63	42	456	0.6440 ug/L #	60
45) 1,2-Dichloroethane	10.42	62	46032	5.0485 ug/L	91
47) Trichloroethene	11.22	130	833915	117.0435 ug/L	100
48) Methylcyclohexane	11.21	83	11521	1.0644 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M413209.D 8260WT.M Mon Jun 27 12:42:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413209.D Vial: 20
Acq On : 24 Jun 2016 5:15 Operator: FJB
Sample : L16061068-01 REF 10X A 826-LOW Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 5:37 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

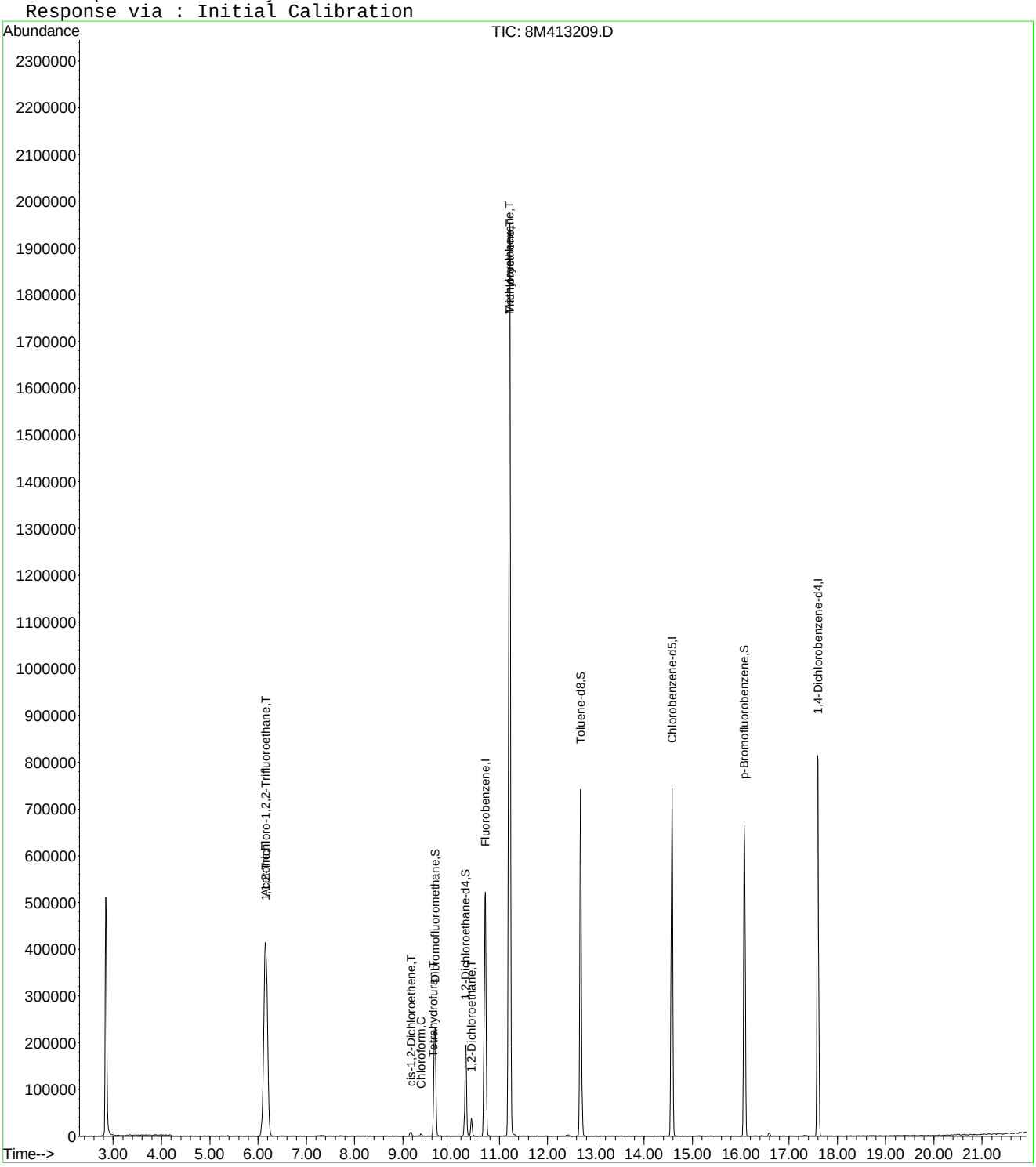

8M413209.D 8260WT.M Mon Jun 27 12:42:38 2016 Page 2

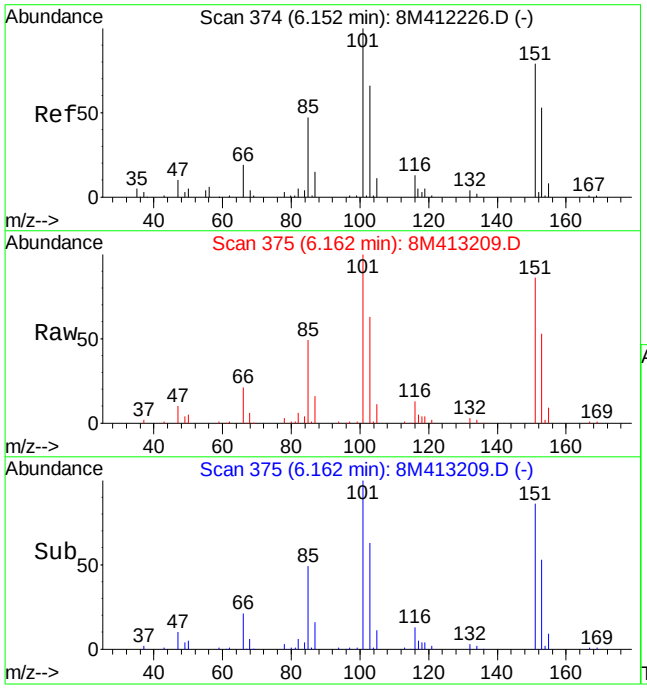

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 66.34 ug/L
RT: 6.16 min Scan# 375
Delta R.T. 0.01 min
Lab File: 8M413209.D
Acq: 24 Jun 2016 5:15

Tgt Ion:101 Resp: 438166

Ion	Ratio	Lower	Upper
101	100		
151	84.6	40.2	120.2

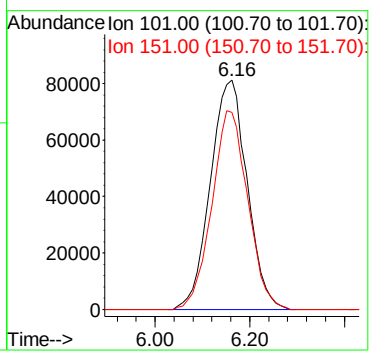

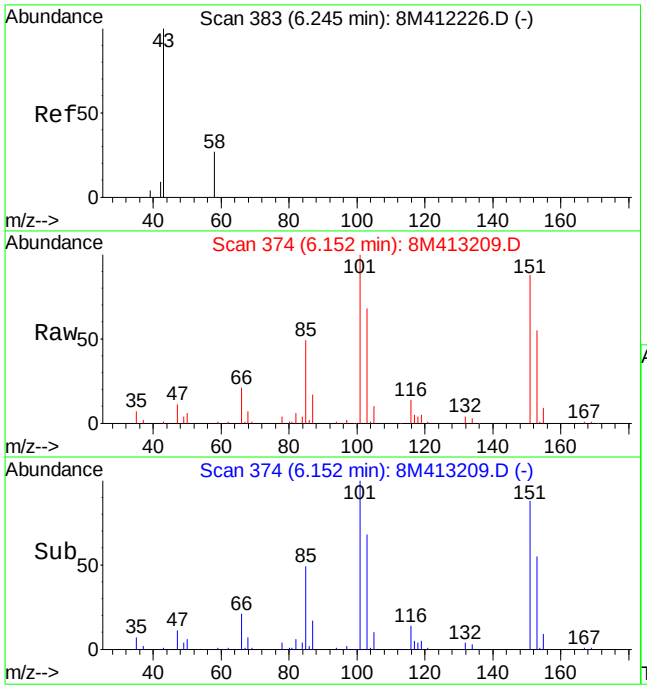

#13
Acetone
Concen: 7.00 ug/L
RT: 6.15 min Scan# 374
Delta R.T. -0.09 min
Lab File: 8M413209.D
Acq: 24 Jun 2016 5:15

Tgt Ion: 43 Resp: 5122

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

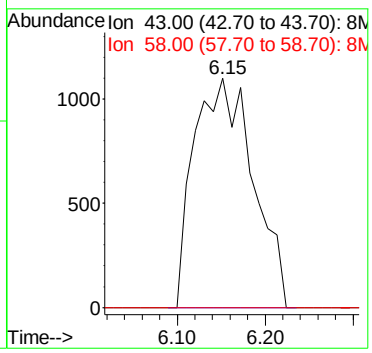

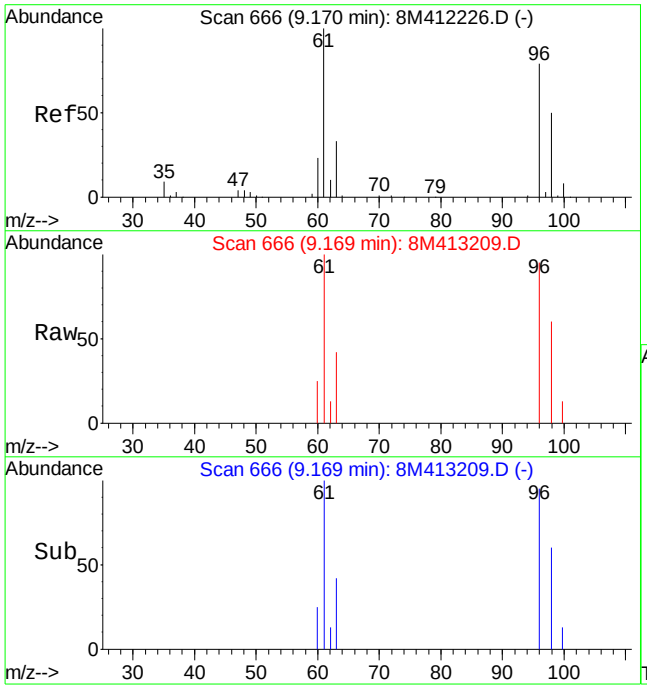

#32
cis-1,2-Dichloroethene
Concen: 0.73 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M413209.D
Acq: 24 Jun 2016 5:15

Tgt Ion: 96 Resp: 5469

Ion	Ratio	Lower	Upper
96	100		
61	126.7	91.5	213.5

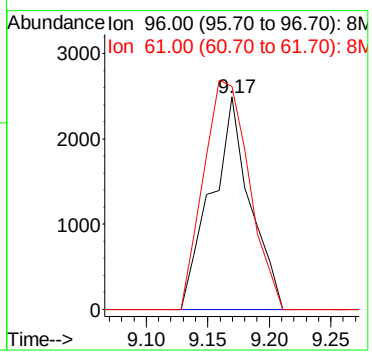

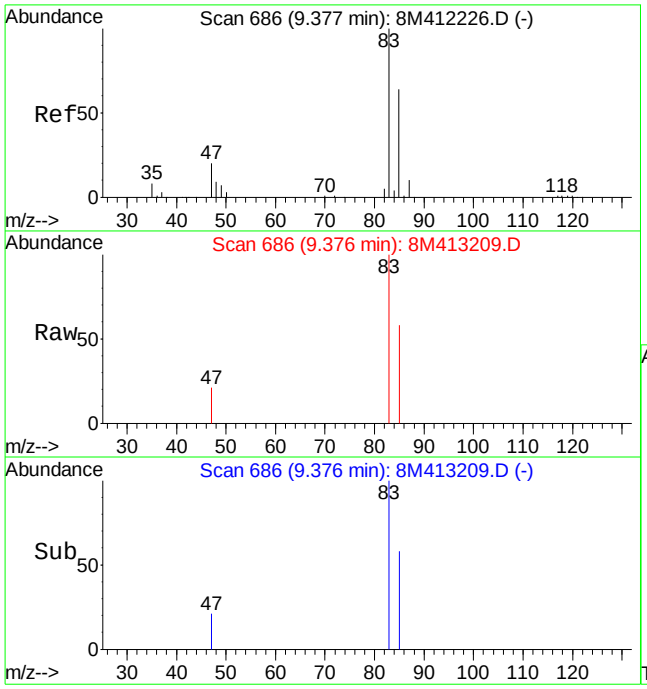

#33
Chloroform
Concen: 0.48 ug/L
RT: 9.38 min Scan# 686
Delta R.T. -0.00 min
Lab File: 8M413209.D
Acq: 24 Jun 2016 5:15

Tgt Ion: 83 Resp: 6776

Ion	Ratio	Lower	Upper
83	100		
85	58.7	37.5	87.5

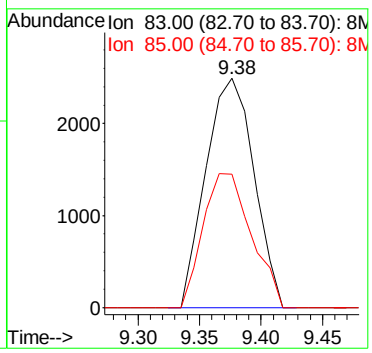

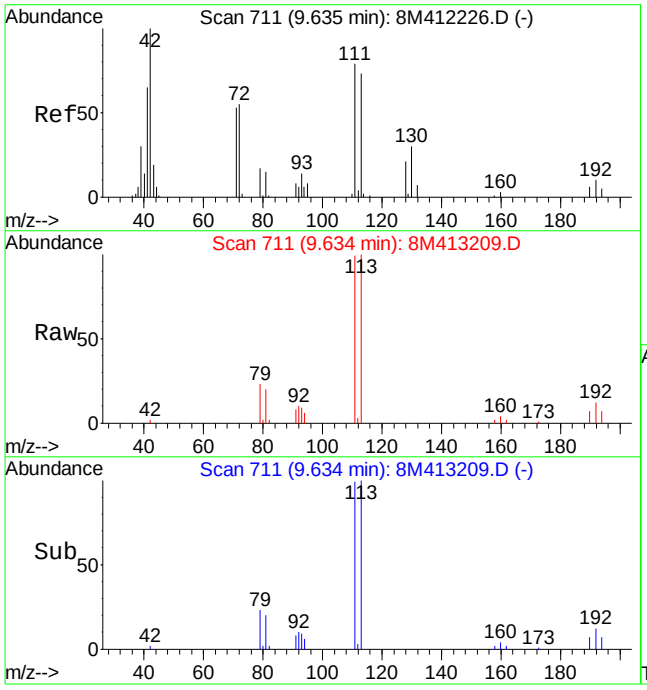

#36
Tetrahydrofuran
Concen: 0.64 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M413209.D
Acq: 24 Jun 2016 5:15

Tgt Ion: 42 Resp: 456

Ion	Ratio	Lower	Upper
42	100		
72	51.5	33.8	78.8
71	0.0	32.0	74.8#

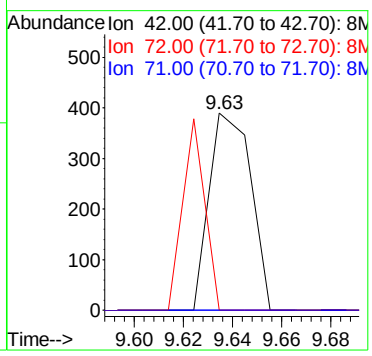

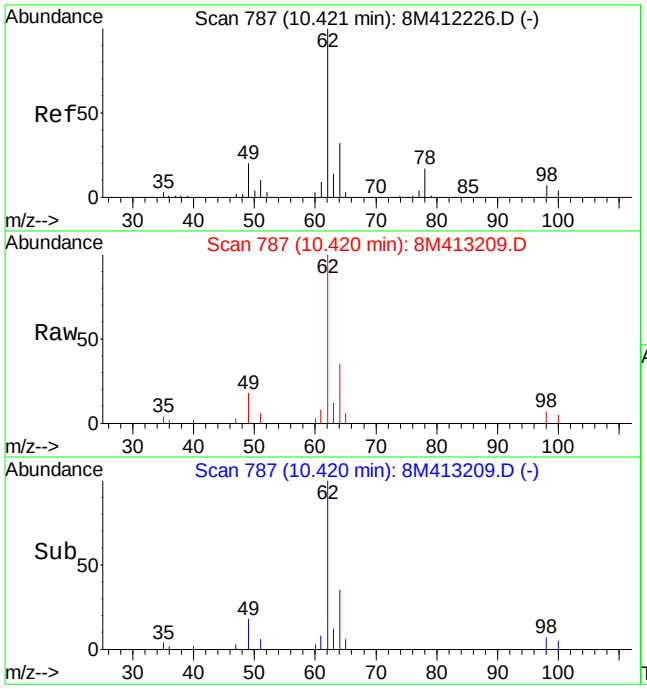

#45
1,2-Dichloroethane
Concen: 5.05 ug/L
RT: 10.42 min Scan# 787
Delta R.T. -0.00 min
Lab File: 8M413209.D
Acq: 24 Jun 2016 5:15

Tgt Ion: 62 Resp: 46032

Ion	Ratio	Lower	Upper
62	100		
64	31.5	19.6	45.6
49	16.8	15.5	36.1

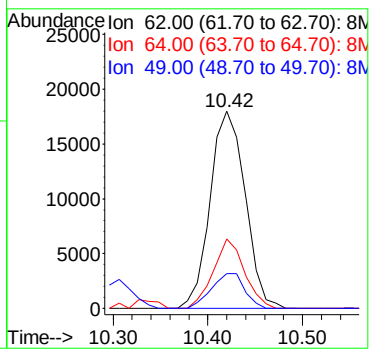

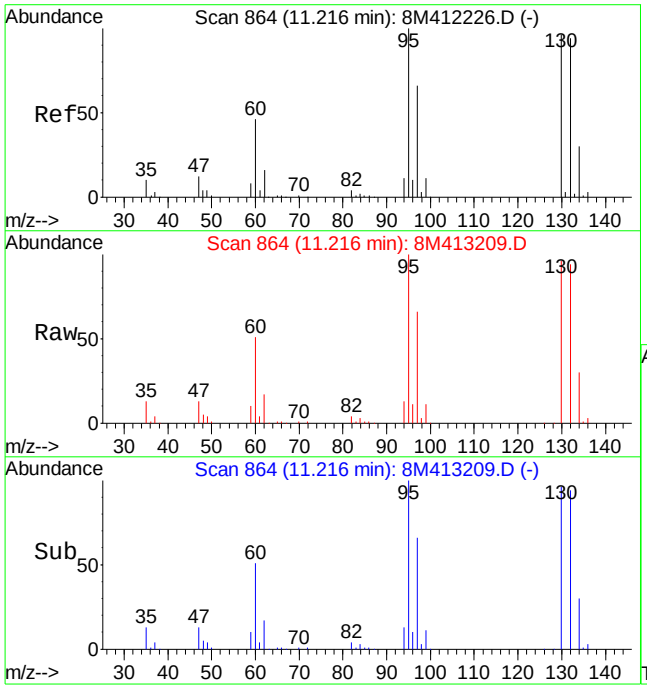

#47
Trichloroethene
Concen: 117.04 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413209.D
Acq: 24 Jun 2016 5:15

Tgt Ion:130 Resp: 833915

Ion	Ratio	Lower	Upper
130	100		
132	96.9	58.0	135.2
95	108.1	64.9	151.5

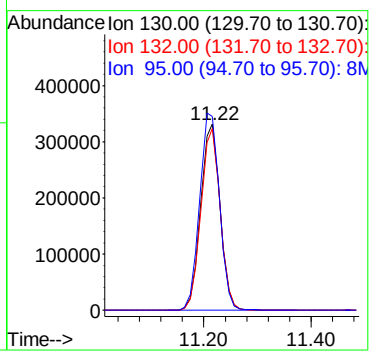

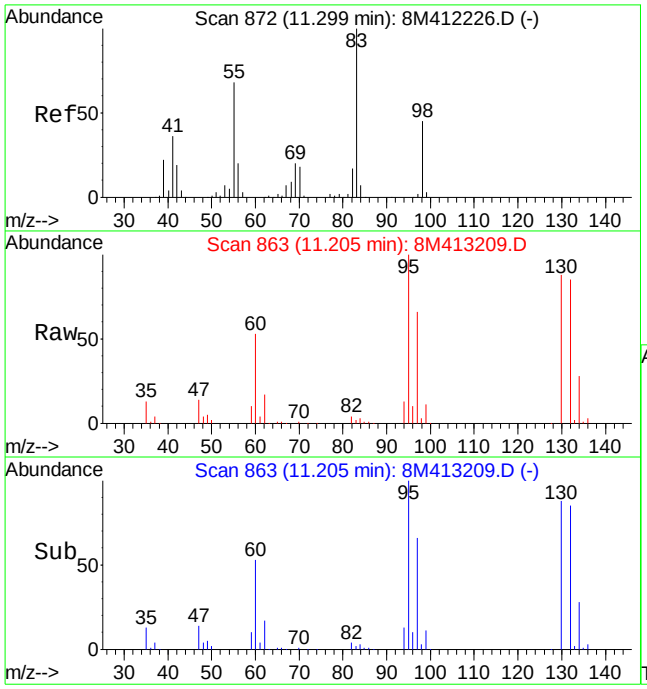

#48
Methylcyclohexane
Concen: 1.06 ug/L
RT: 11.21 min Scan# 863
Delta R.T. -0.09 min
Lab File: 8M413209.D
Acq: 24 Jun 2016 5:15

Tgt Ion: 83 Resp: 11521

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	219.7	28.1	65.7#

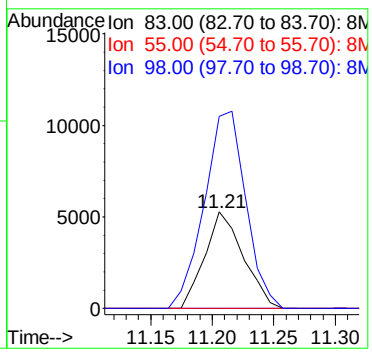

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413210.D Vial: 21
Acq On : 24 Jun 2016 5:44 Operator: FJB
Sample : L16061068-02 MS 10X A 826-LOW Inst : HPMS8
Misc : 1,10 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 06:06:14 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	651724	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	505106	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	292191	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	194982	27.8457 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.40%		
43) 1,2-Dichloroethane-d4	10.31	65	227227	30.2641 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 121.04%#		
58) Toluene-d8	12.68	98	674074	25.4994 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.00%		
80) p-Bromofluorobenzene	16.07	95	303828	25.1123 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	320323	29.3154 ug/L	99
3) Chloromethane	3.62	50	145557	22.8210 ug/L	100
4) Vinyl Chloride	3.84	62	212305	28.0554 ug/L	98
5) 1,3-Butadiene	3.88	54	131598	20.7370 ug/L	98
6) Bromomethane	4.72	94	50296	11.7007 ug/L	99
7) Chloroethane	4.89	64	94337	22.6559 ug/L	94
8) Trichlorofluoromethane	5.38	101	361849	25.6982 ug/L	99
9) Diethyl ether	5.90	59	356943	106.1847 ug/L	96
10) Isoprene	5.94	67	209611	24.5138 ug/L	98
11) Acrolein	6.14	56	23023	76.4949 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	566941	85.6572 ug/L	96
13) Acetone	6.23	43	17747	24.2032 ug/L	100
14) 1,1-Dichloroethene	6.46	61	238221	22.6049 ug/L	96
15) Tert-Butyl Alcohol	6.58	59	41290	175.7202 ug/L	98
16) Dimethyl Sulfide	6.73	62	143673	38.1291 ug/L	100
17) Iodomethane	6.98	142	43483	17.0112 ug/L	99
18) Methyl acetate	7.00	43	38868	19.6101 ug/L	95
19) Methylene Chloride	7.25	84	144969	21.6162 ug/L	100
20) Carbon Disulfide	7.29	76	467149	21.1823 ug/L	99
21) Acrylonitrile	7.43	53	18680	19.6346 ug/L	95
22) Methyl Tert Butyl Ether	7.46	73	349606	24.0861 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	216859	22.3987 ug/L	99
24) n-Hexane	7.78	57	144364	20.0804 ug/L	96
25) Diisopropyl ether	8.12	45	1538667	101.9548 ug/L	94
26) Vinyl Acetate	8.29	43	142437	20.6139 ug/L	99
27) 1,1-Dichloroethane	8.32	63	263449	21.9106 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1711594	105.8534 ug/L	98
29) 2-Butanone	8.88	43	22122	20.5343 ug/L	96
30) Propionitrile	8.98	54	28906	92.0721 ug/L	96
31) 2,2-Dichloropropane	9.10	77	286679	22.6249 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	174779	23.3632 ug/L	98
33) Chloroform	9.38	83	335373	23.6229 ug/L	100
34) 1-Bromopropane	9.51	122	35973	33.5709 ug/L	92
35) Bromochloromethane	9.60	130	88282	23.0129 ug/L	90
36) Tetrahydrofuran	9.63	42	59800	84.2779 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	336291	24.9374 ug/L	99
39) Cyclohexane	9.93	56	195068	20.8934 ug/L	94
40) 1,1-Dichloropropene	10.10	75	231073	22.4805 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1671556	113.8203 ug/L	99
42) Carbon Tetrachloride	10.24	117	309661	25.8592 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M413210.D 8260WT.M Mon Jun 27 12:31:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413210.D Vial: 21
Acq On : 24 Jun 2016 5:44 Operator: FJB
Sample : L16061068-02 MS 10X A 826-LOW Inst : HPMS8
Misc : 1,10 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 06:06:14 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	282540	30.9205 ug/L		97
46)	Benzene	10.46	78	594716	22.2148 ug/L		99
47)	Trichloroethene	11.21	130	990550	138.7296 ug/L		99
48)	Methylcyclohexane	11.30	83	244924	22.5795 ug/L		98
49)	1,2-Dichloropropane	11.42	63	128104	21.4956 ug/L		86
50)	Bromodichloromethane	11.72	83	257000	24.5359 ug/L		99
51)	1,4-Dioxane	11.72	88	3278	109.4983 ug/L		92
52)	Dibromomethane	11.81	93	76922	21.8048 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	19647	18.7772 ug/L		88
55)	cis-1,3-Dichloropropene	12.36	75	260621	24.4450 ug/L		99
56)	Dimethyl Disulfide	12.62	79	124755	21.9236 ug/L		92
59)	Toluene	12.79	91	643970	20.5362 ug/L		99
60)	Ethyl Methacrylate	12.88	69	124883	20.7373 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	224368	21.3509 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	97691	19.7429 ug/L		100
64)	2-Hexanone	13.12	58	17465	16.7963 ug/L	#	87
65)	1,3-Dichloropropane	13.48	76	184754	20.9717 ug/L		94
66)	Tetrachloroethene	13.60	164	141165	21.0117 ug/L		98
67)	Dibromochloromethane	13.86	129	152579	21.1183 ug/L		99
68)	1,2-Dibromoethane	14.12	107	99281	20.1320 ug/L		99
69)	1-Chlorohexane	14.21	91	213003	19.8993 ug/L		98
70)	Chlorobenzene	14.63	112	440851	20.8484 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	176217	21.5107 ug/L		99
72)	Ethylbenzene	14.66	106	235268	20.3356 ug/L		97
73)	m-,p-Xylene	14.74	106	572908	42.2183 ug/L		96
74)	o-Xylene	15.31	106	281501	21.2179 ug/L		95
75)	Styrene	15.34	104	456094	20.9600 ug/L		94
76)	Bromoform	15.83	173	89176	20.8092 ug/L		99
77)	Isopropylbenzene	15.73	105	783014	22.2165 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	101606	17.3236 ug/L		98
81)	1,2,3-Trichloropropane	16.13	110	34087	18.8732 ug/L		73
82)	trans-1,4-Dichloro-2-Buten	16.19	53	28513	15.9122 ug/L		87
83)	n-Propylbenzene	16.24	91	936340	20.5405 ug/L		100
84)	Bromobenzene	16.36	156	177579	18.9391 ug/L		98
85)	1,3,5-Trimethylbenzene	16.42	105	675918	20.3554 ug/L		100
86)	2-Chlorotoluene	16.51	91	576904	18.1266 ug/L		93
87)	4-Chlorotoluene	16.56	91	637659	22.1807 ug/L		92
88)	a-Methylstyrene	16.83	118	325480	20.6599 ug/L		99
89)	tert-Butylbenzene	16.89	134	127149	19.5726 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	675349	19.7792 ug/L		100
91)	sec-Butylbenzene	17.16	105	791102	20.2512 ug/L		99
92)	p-Isopropyltoluene	17.32	119	660281	19.9067 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	358801	19.8732 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	358494	19.6952 ug/L		99
95)	n-Butylbenzene	17.84	91	622717	18.9905 ug/L		100
96)	1,2-Dichlorobenzene	18.14	146	315528	19.6498 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	21781	18.5004 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	222767	18.5600 ug/L		99
99)	Hexachlorobutadiene	20.43	225	113030	20.1549 ug/L		98
100)	Naphthalene	20.64	128	280513	15.7305 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	176996	17.4793 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413210.D 8260WT.M Mon Jun 27 12:31:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413210.D Vial: 21
Acq On : 24 Jun 2016 5:44 Operator: FJB
Sample : L16061068-02 MS 10X A 826-LOW Inst : HPMS8
Misc : 1,10 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 6:06 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

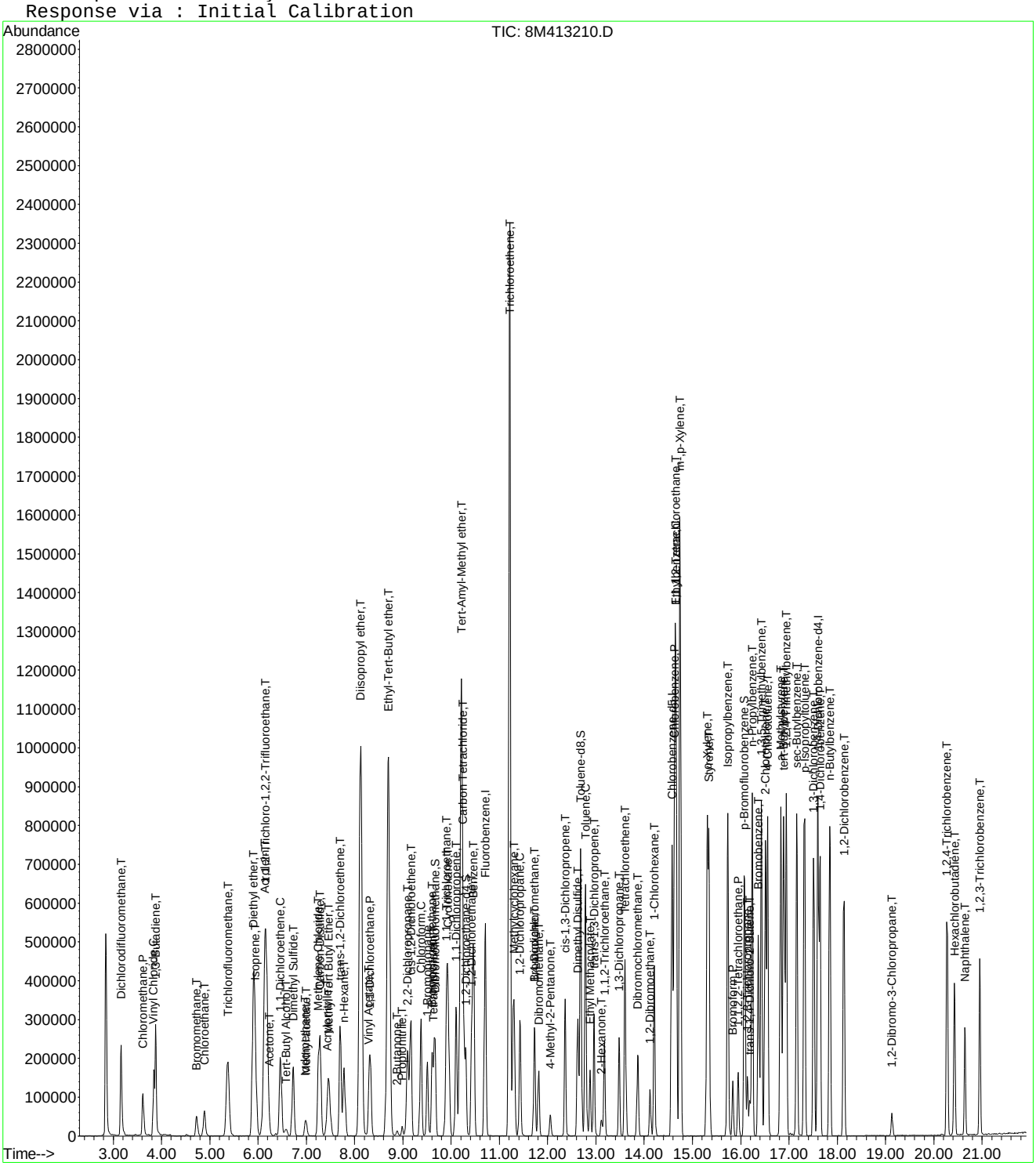

8M413210.D 8260WT.M Mon Jun 27 12:31:45 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413211.D Vial: 22
Acq On : 24 Jun 2016 6:13 Operator: FJB
Sample : L16061068-03 MSD 10X A 826-LOW Inst : HPMS8
Misc : 1,10 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 06:35:06 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	676034	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	524870	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	293205	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	199005	27.3983 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.60%		
43) 1,2-Dichloroethane-d4	10.30	65	230083	29.5426 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 118.16%		
58) Toluene-d8	12.68	98	706978	25.7371 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.96%		
80) p-Bromofluorobenzene	16.07	95	305554	25.1676 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.68%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	326322	28.7905 ug/L	99
3) Chloromethane	3.62	50	150960	22.8170 ug/L	98
4) Vinyl Chloride	3.84	62	216793	27.6183 ug/L	100
5) 1,3-Butadiene	3.87	54	139137	21.1366 ug/L	98
6) Bromomethane	4.73	94	62141	13.8260 ug/L	99
7) Chloroethane	4.89	64	96981	22.4533 ug/L	95
8) Trichlorofluoromethane	5.37	101	362857	24.8432 ug/L	98
9) Diethyl ether	5.90	59	361006	103.5316 ug/L	97
10) Isoprene	5.93	67	212184	23.9224 ug/L	96
11) Acrolein	6.14	56	25662	82.1971 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	566797	82.5560 ug/L	94
13) Acetone	6.24	43	18784	24.6963 ug/L	92
14) 1,1-Dichloroethene	6.46	61	240263	21.9788 ug/L	97
15) Tert-Butyl Alcohol	6.56	59	47934	196.6598 ug/L	97
16) Dimethyl Sulfide	6.73	62	145857	37.3167 ug/L	100
17) Iodomethane	6.98	142	61548	22.1566 ug/L	96
18) Methyl acetate	7.00	43	41941	20.3996 ug/L	96
19) Methylene Chloride	7.24	84	146238	21.0213 ug/L	98
20) Carbon Disulfide	7.29	76	475408	20.7816 ug/L	99
21) Acrylonitrile	7.43	53	19232	19.4879 ug/L	91
22) Methyl Tert Butyl Ether	7.46	73	353827	23.5003 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	224718	22.3758 ug/L	99
24) n-Hexane	7.78	57	142535	19.1130 ug/L	99
25) Diisopropyl ether	8.12	45	1605626	102.5658 ug/L	95
26) Vinyl Acetate	8.30	43	142981	19.9485 ug/L	100
27) 1,1-Dichloroethane	8.32	63	262837	21.0736 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1759122	104.8806 ug/L	98
29) 2-Butanone	8.88	43	21613	19.3404 ug/L	100
30) Propionitrile	8.98	54	30429	93.4379 ug/L	99
31) 2,2-Dichloropropane	9.09	77	285523	21.7234 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	175194	22.5766 ug/L	98
33) Chloroform	9.37	83	343437	23.3210 ug/L	100
34) 1-Bromopropane	9.51	122	34917	31.4136 ug/L	99
35) Bromochloromethane	9.60	130	85148	21.3977 ug/L	95
36) Tetrahydrofuran	9.63	42	61340	83.3396 ug/L	92
38) 1,1,1-Trichloroethane	9.90	97	343549	24.5595 ug/L	99
39) Cyclohexane	9.93	56	205174	21.1856 ug/L	95
40) 1,1-Dichloropropene	10.11	75	234426	21.9866 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1693164	111.1458 ug/L	100
42) Carbon Tetrachloride	10.25	117	306848	24.7029 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413211.D 8260WT.M Mon Jun 27 12:31:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413211.D Vial: 22
Acq On : 24 Jun 2016 6:13 Operator: FJB
Sample : L16061068-03 MSD 10X A 826-LOW Inst : HPMS8
Misc : 1,10 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 06:35:06 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	283774	29.9388	ug/L		97
46)	Benzene	10.46	78	606295	21.8330	ug/L		98
47)	Trichloroethene	11.21	130	1000912	135.1400	ug/L		99
48)	Methylcyclohexane	11.30	83	243668	21.6559	ug/L		100
49)	1,2-Dichloropropane	11.43	63	131017	21.1938	ug/L		86
50)	Bromodichloromethane	11.73	83	256999	23.6535	ug/L		99
51)	1,4-Dioxane	11.71	88	4978	160.3055	ug/L		80
52)	Dibromomethane	11.81	93	78322	21.4033	ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	20155	18.5700	ug/L		89
55)	cis-1,3-Dichloropropene	12.36	75	255460	23.0993	ug/L		98
56)	Dimethyl Disulfide	12.62	79	130561	22.1189	ug/L		94
59)	Toluene	12.78	91	648657	19.9067	ug/L		100
60)	Ethyl Methacrylate	12.88	69	126871	20.2741	ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	223601	20.4767	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	99529	19.3570	ug/L		99
64)	2-Hexanone	13.11	58	18141	16.7895	ug/L	#	93
65)	1,3-Dichloropropane	13.48	76	192651	21.0446	ug/L		96
66)	Tetrachloroethene	13.60	164	141066	20.2063	ug/L		99
67)	Dibromochloromethane	13.87	129	156375	20.8287	ug/L		97
68)	1,2-Dibromoethane	14.13	107	103310	20.1602	ug/L		99
69)	1-Chlorohexane	14.21	91	213378	19.1837	ug/L		96
70)	Chlorobenzene	14.62	112	450496	20.5023	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.65	131	176473	20.7308	ug/L		98
72)	Ethylbenzene	14.65	106	230653	19.1859	ug/L		95
73)	m-,p-Xylene	14.75	106	570696	40.4717	ug/L		94
74)	o-Xylene	15.31	106	279564	20.2784	ug/L		94
75)	Styrene	15.35	104	468869	20.7357	ug/L		95
76)	Bromoform	15.83	173	86855	19.5045	ug/L		100
77)	Isopropylbenzene	15.73	105	780239	21.3041	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	104331	17.7267	ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	35554	19.6173	ug/L		75
82)	trans-1,4-Dichloro-2-Buten	16.18	53	25467	14.2307	ug/L		92
83)	n-Propylbenzene	16.24	91	932554	20.3867	ug/L		100
84)	Bromobenzene	16.37	156	178973	19.0218	ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	687010	20.6178	ug/L		98
86)	2-Chlorotoluene	16.50	91	652439	20.4290	ug/L		99
87)	4-Chlorotoluene	16.56	91	559711	19.4020	ug/L		100
88)	a-Methylstyrene	16.82	118	319513	20.2110	ug/L		98
89)	tert-Butylbenzene	16.89	134	130520	20.0220	ug/L		99
90)	1,2,4-Trimethylbenzene	16.94	105	684268	19.9711	ug/L		99
91)	sec-Butylbenzene	17.16	105	780840	19.9194	ug/L		99
92)	p-Isopropyltoluene	17.32	119	656039	19.7104	ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	363421	20.0595	ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	366894	20.0869	ug/L		99
95)	n-Butylbenzene	17.85	91	622492	18.9180	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	319610	19.8352	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	22996	19.4649	ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	230434	19.1323	ug/L		99
99)	Hexachlorobutadiene	20.43	225	114934	20.4236	ug/L		99
100)	Naphthalene	20.65	128	298769	16.6963	ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	182550	17.9654	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413211.D 8260WT.M Mon Jun 27 12:31:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413211.D Vial: 22
Acq On : 24 Jun 2016 6:13 Operator: FJB
Sample : L16061068-03 MSD 10X A 826-LOW Inst : HPMS8
Misc : 1,10 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 6:35 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

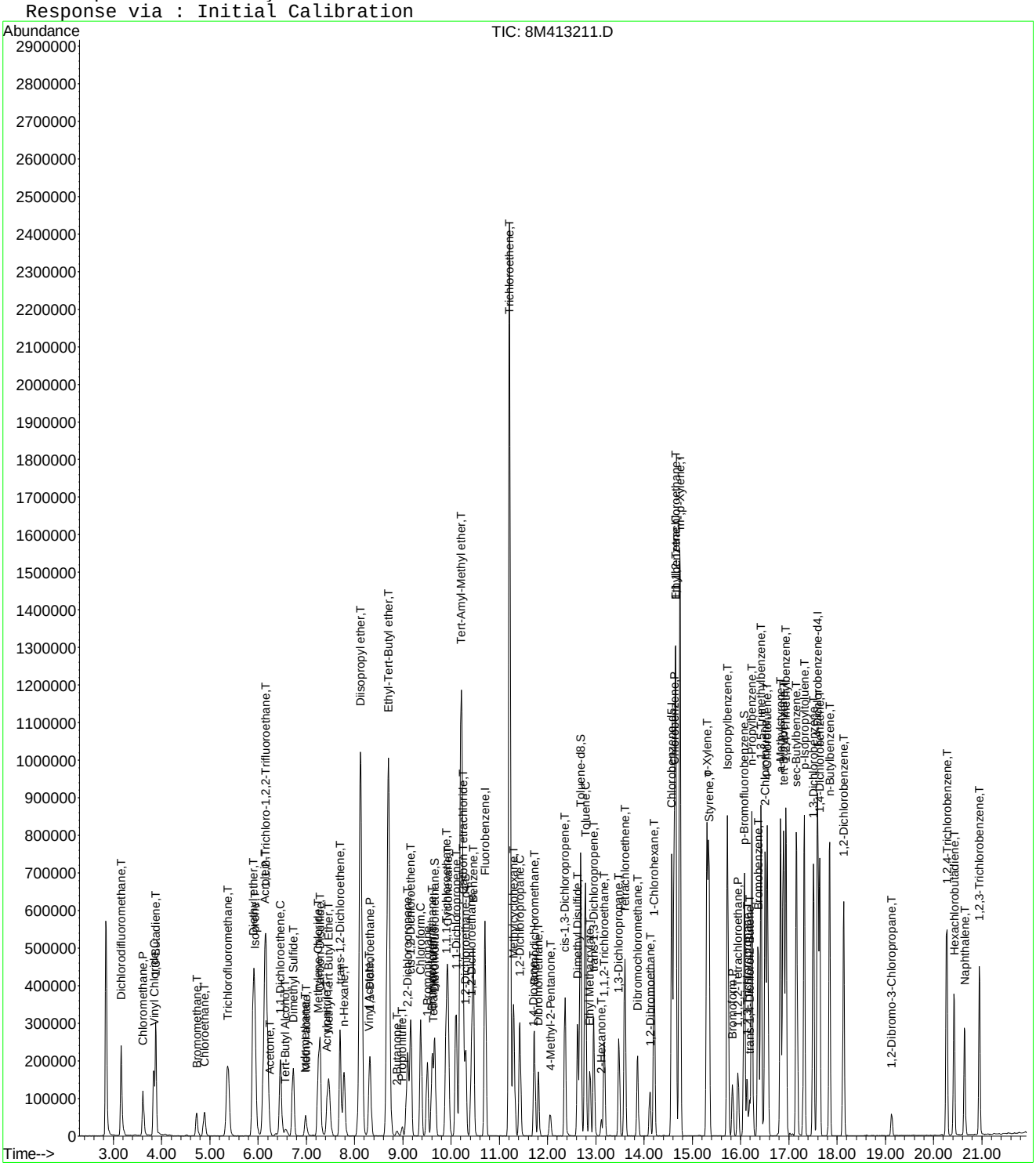

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413367.D Vial: 5
Acq On : 30 Jun 2016 13:53 Operator: TMB
Sample : L16061068-04 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 09:22:21 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	992774	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	698148	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	377951	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	286599	26.8690 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.48%		
43) 1,2-Dichloroethane-d4	10.31	65	323234	28.2617 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.04%		
58) Toluene-d8	12.68	98	987440	27.0251 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 108.12%		
80) p-Bromofluorobenzene	16.07	95	392895	25.1053 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.44%		
Target Compounds					Qvalue
3) Chloromethane	3.61	50	1443	0.1485 ug/L	81

(#) = qualifier out of range (m) = manual integration
8M413367.D 8260WT.M Fri Jul 01 09:22:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413367.D Vial: 5
Acq On : 30 Jun 2016 13:53 Operator: TMB
Sample : L16061068-04 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 9:22 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

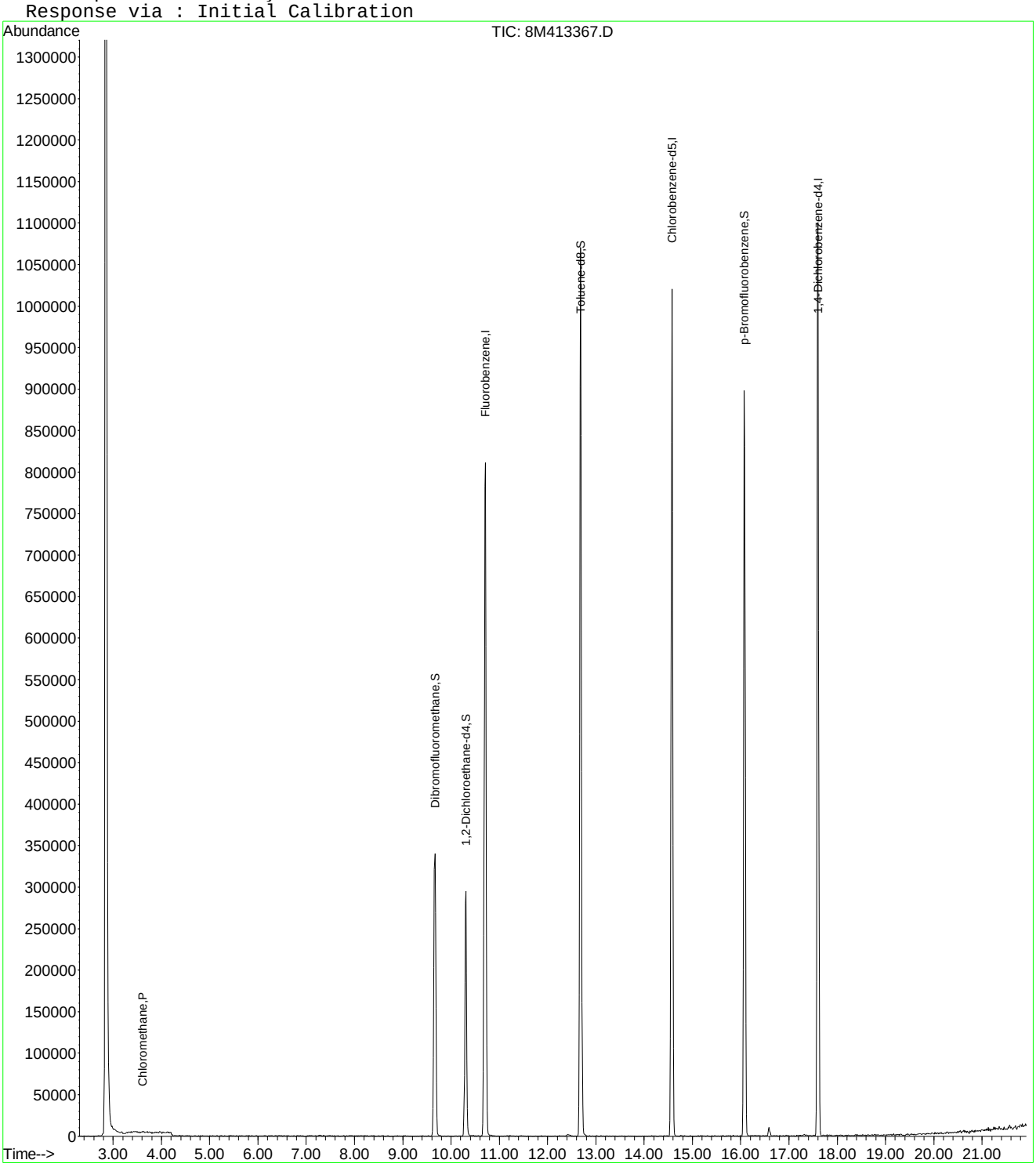

8M413367.D 8260WT.M Fri Jul 01 09:22:24 2016 Page 2

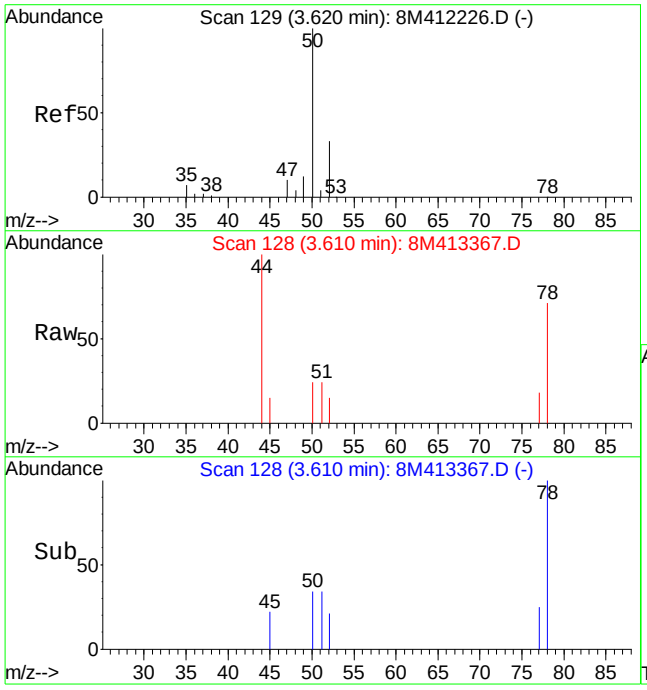

#3
Chloromethane
Concen: 0.15 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M413367.D
Acq: 30 Jun 2016 13:53

Tgt Ion: 50 Resp: 1443

Ion	Ratio	Lower	Upper
50	100		
52	44.0	19.9	46.3

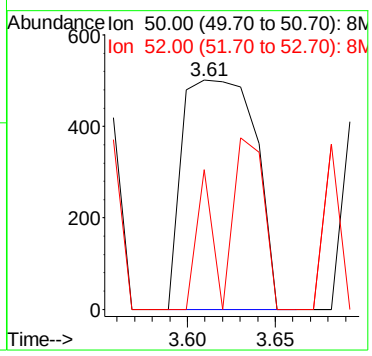

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413263.D Vial: 16
Acq On : 27 Jun 2016 00:18 Operator: ADC
Sample : L16061068-05 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	692629	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	551592	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	310736	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	209140	28.1038 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.40%		
43) 1,2-Dichloroethane-d4	10.30	65	232567	29.1460 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 116.60%		
58) Toluene-d8	12.68	98	726566	25.1688 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.68%		
80) p-Bromofluorobenzene	16.07	95	323554	25.1466 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.60%		

Target Compounds

					Qvalue
3) Chloromethane	3.61	50	1037	0.1530 ug/L #	42
70) Chlorobenzene	14.63	112	3075	0.1332 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M413263.D 8260WT.M Mon Jun 27 12:45:23 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413263.D Vial: 16
Acq On : 27 Jun 2016 00:18 Operator: ADC
Sample : L16061068-05 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

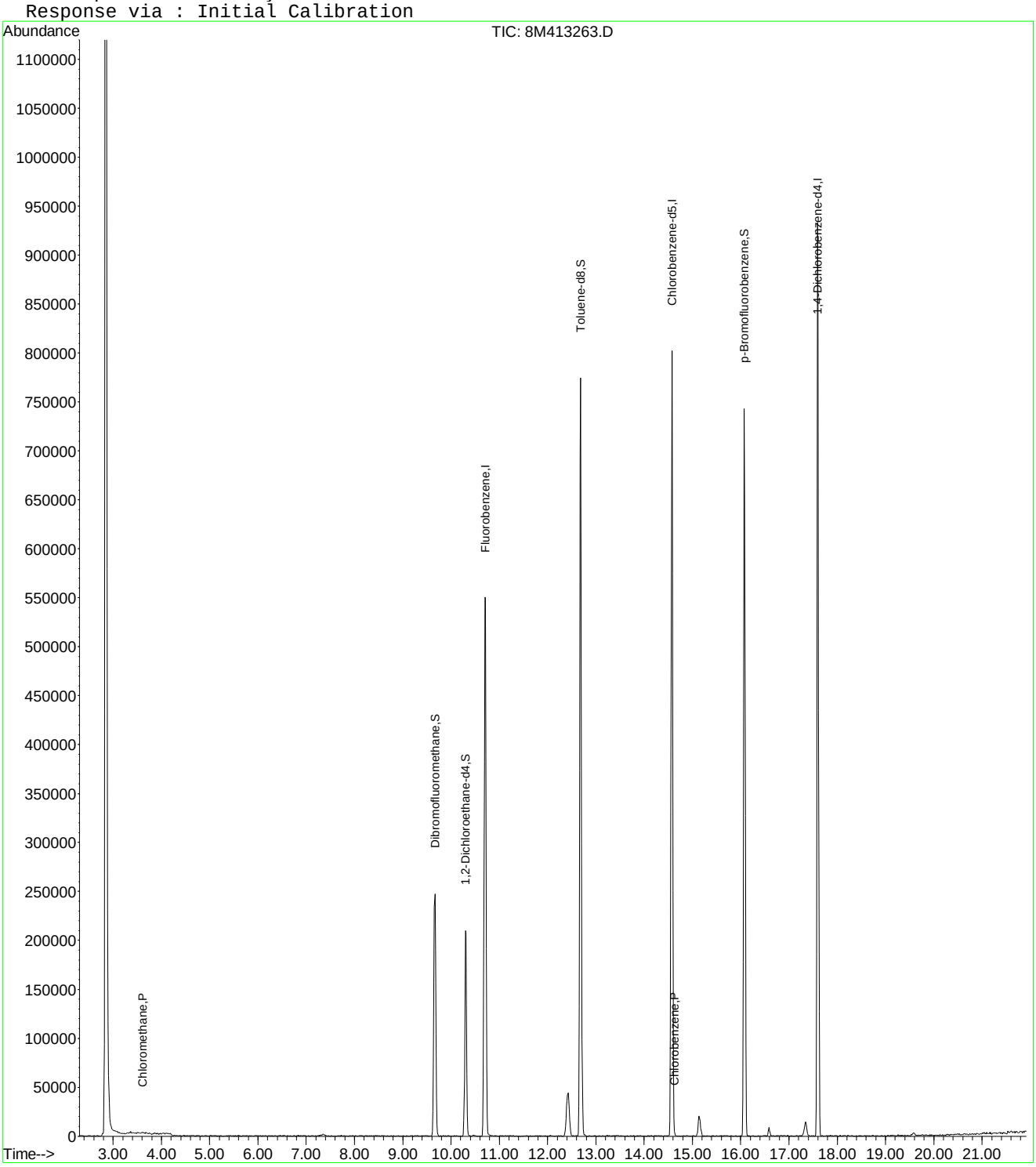

8M413263.D 8260WT.M Mon Jun 27 12:45:23 2016 Page 2

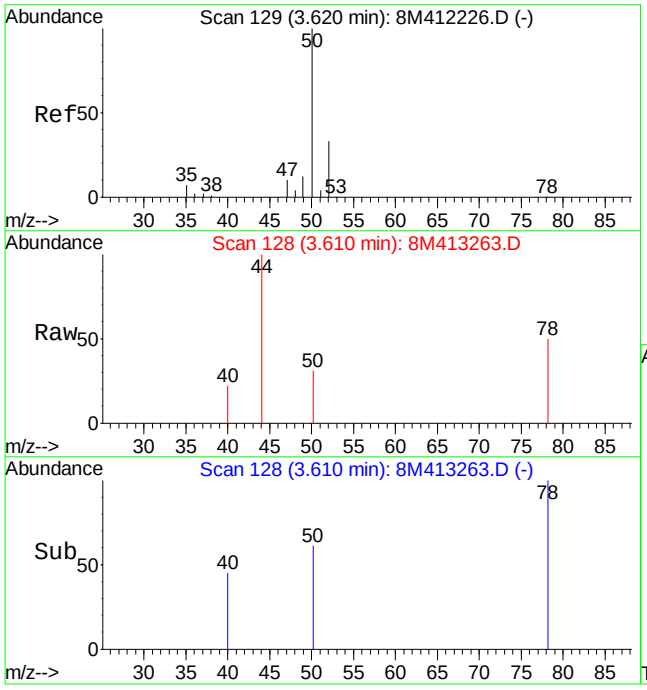

#3
Chloromethane
Concen: 0.15 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M413263.D
Acq: 27 Jun 2016 00:18

Tgt Ion: 50 Resp: 1037

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.9	46.3#

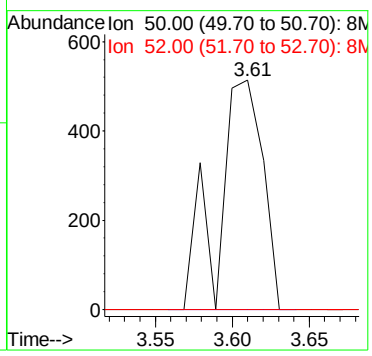

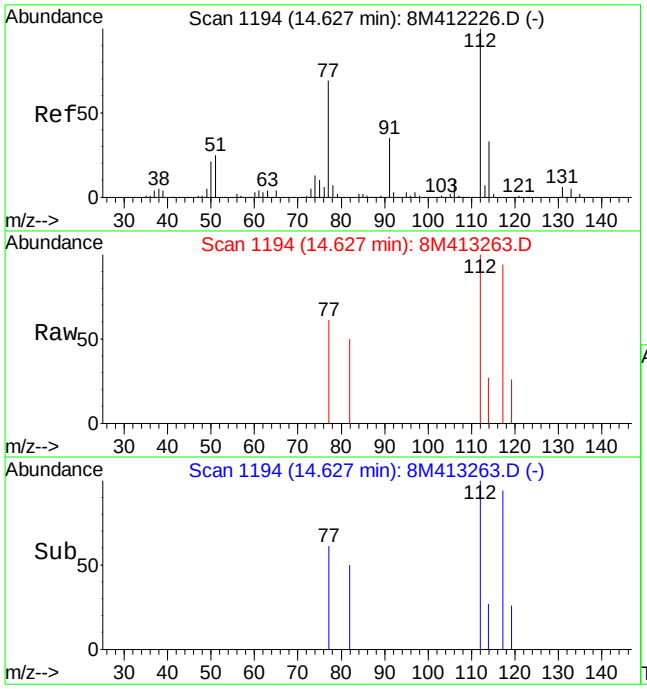

#70
Chlorobenzene
Concen: 0.13 ug/L
RT: 14.63 min Scan# 1194
Delta R.T. 0.00 min
Lab File: 8M413263.D
Acq: 27 Jun 2016 00:18

Tgt Ion:112 Resp: 3075

Ion	Ratio	Lower	Upper
112	100		
77	260.7	49.7	115.9#

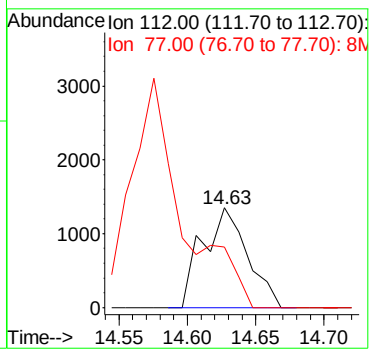

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413264.D Vial: 17
Acq On : 27 Jun 2016 00:47 Operator: ADC
Sample : L16061068-06 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:46 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	675327	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	537883	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	298976	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	206326	28.4360 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.76%		
43) 1,2-Dichloroethane-d4	10.30	65	223625	28.7434 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.96%		
58) Toluene-d8	12.68	98	712643	25.3156 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.28%		
80) p-Bromofluorobenzene	16.08	95	312110	25.2114 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.84%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M413264.D 8260WT.M Mon Jun 27 12:45:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413264.D Vial: 17
Acq On : 27 Jun 2016 00:47 Operator: ADC
Sample : L16061068-06 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

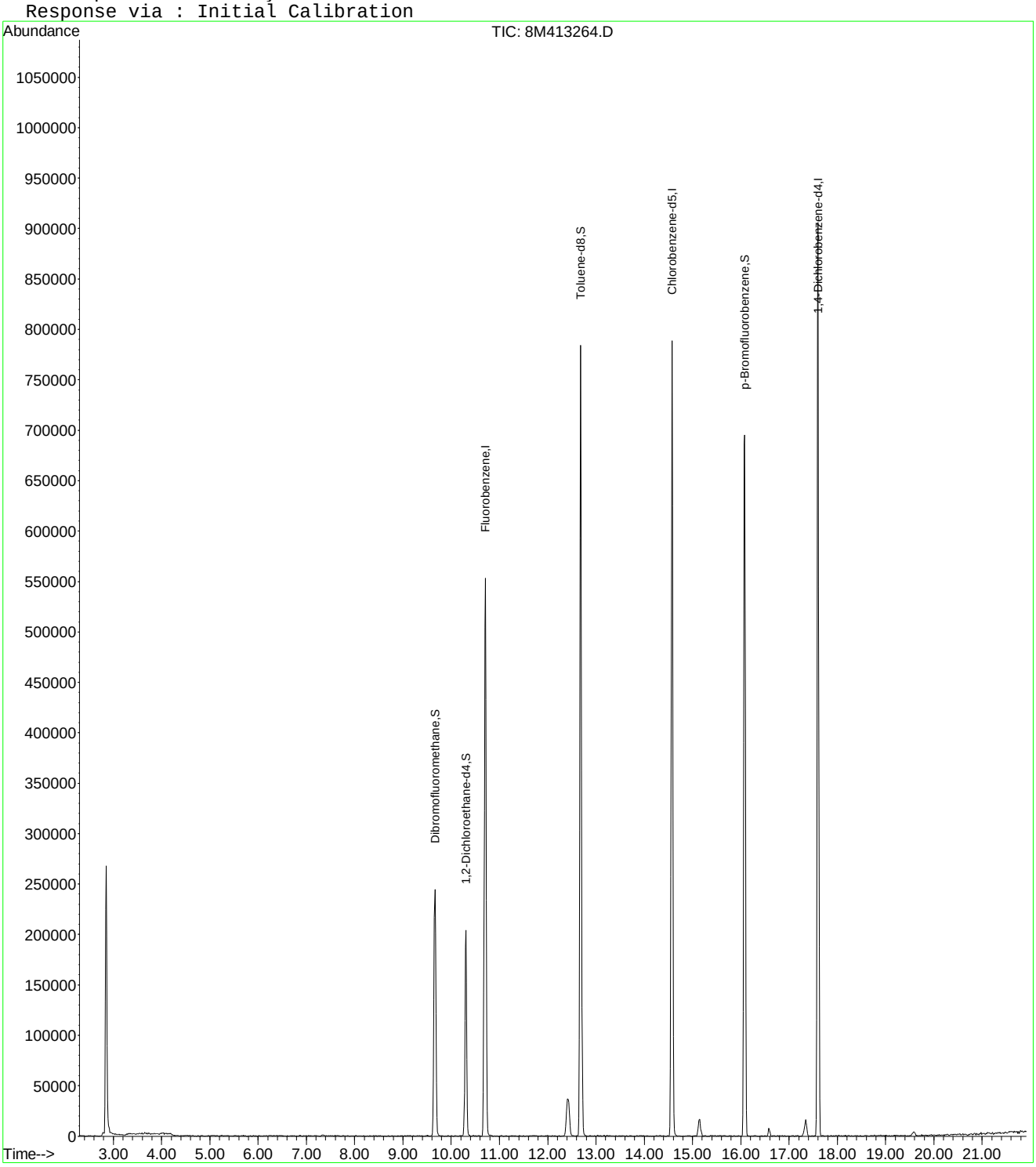

8M413264.D 8260WT.M Mon Jun 27 12:45:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413265.D Vial: 18
Acq On : 27 Jun 2016 1:16 Operator: ADC
Sample : L16061068-07 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:46 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	668576	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	528229	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	300171	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	201025	27.9851 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.96%		
43) 1,2-Dichloroethane-d4	10.30	65	226540	29.4121 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.64%		
58) Toluene-d8	12.68	98	703254	25.4387 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.76%		
80) p-Bromofluorobenzene	16.08	95	310053	24.9455 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.80%		

Target Compounds					Qvalue
3) Chloromethane	3.63	50	928	0.1418 ug/L #	40
13) Acetone	6.24	43	602	0.8003 ug/L #	50

(#) = qualifier out of range (m) = manual integration
8M413265.D 8260WT.M Mon Jun 27 12:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413265.D Vial: 18
Acq On : 27 Jun 2016 1:16 Operator: ADC
Sample : L16061068-07 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

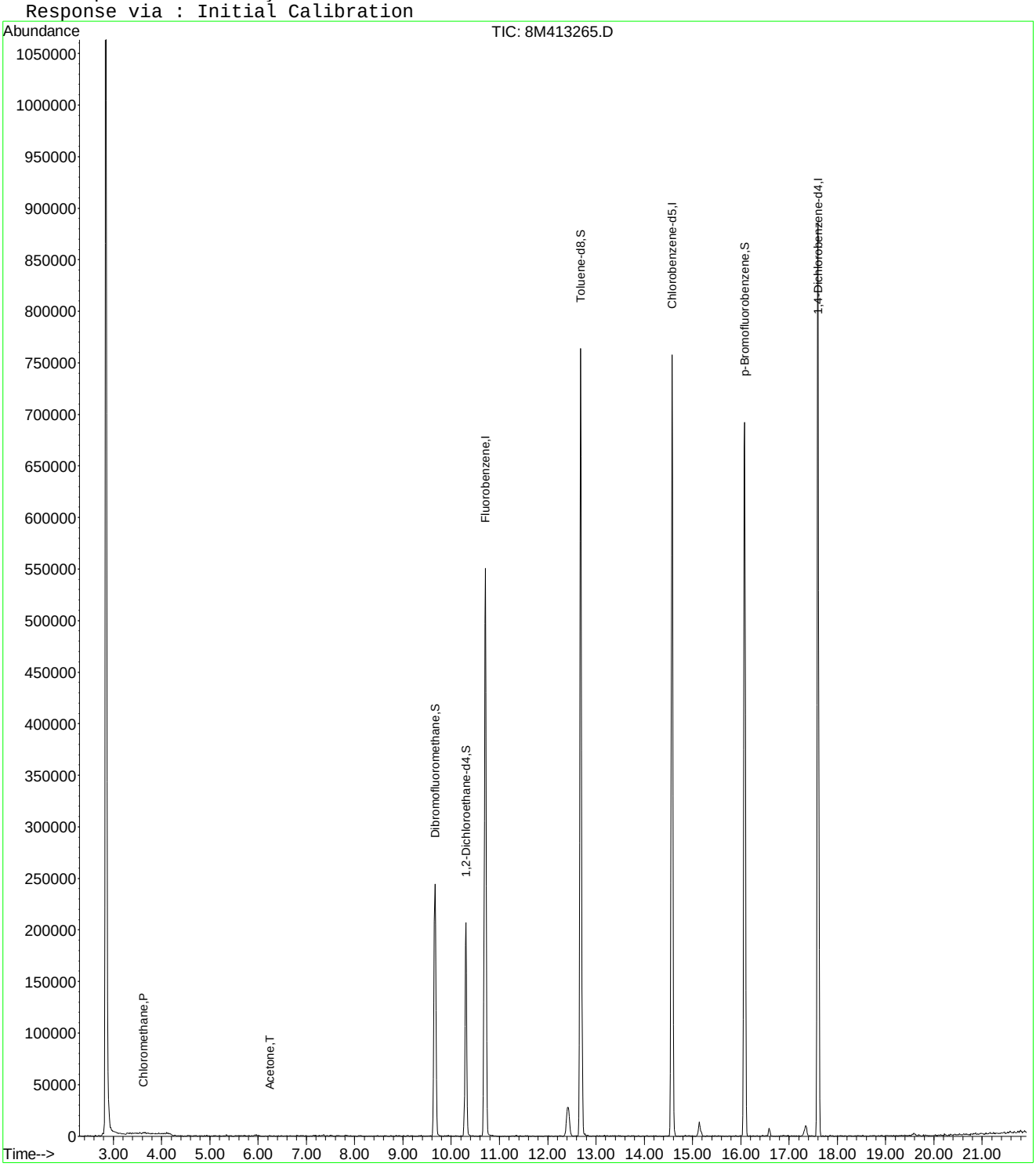

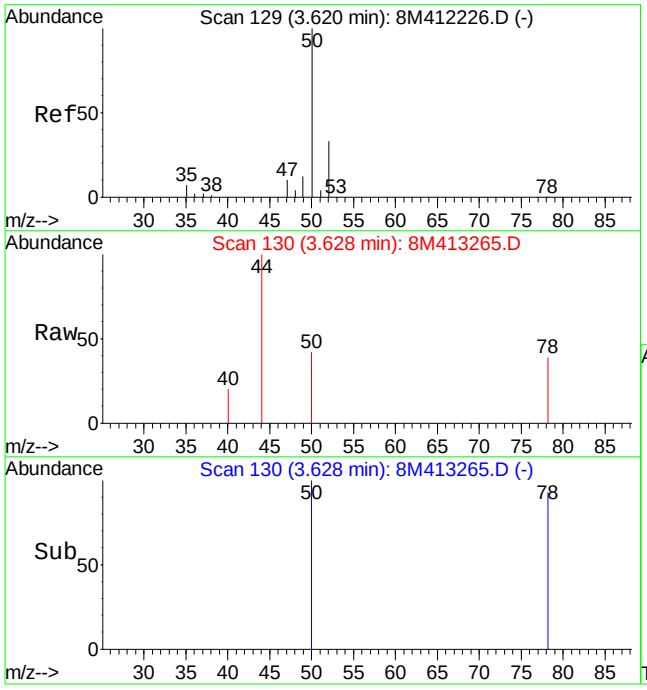

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M413265.D
Acq: 27 Jun 2016 1:16

Tgt Ion: 50 Resp: 928

Ion	Ratio	Lower	Upper
50	100		
52	66.8	19.9	46.3#

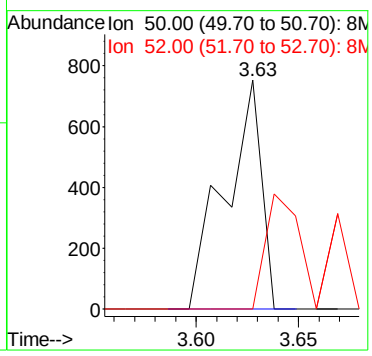

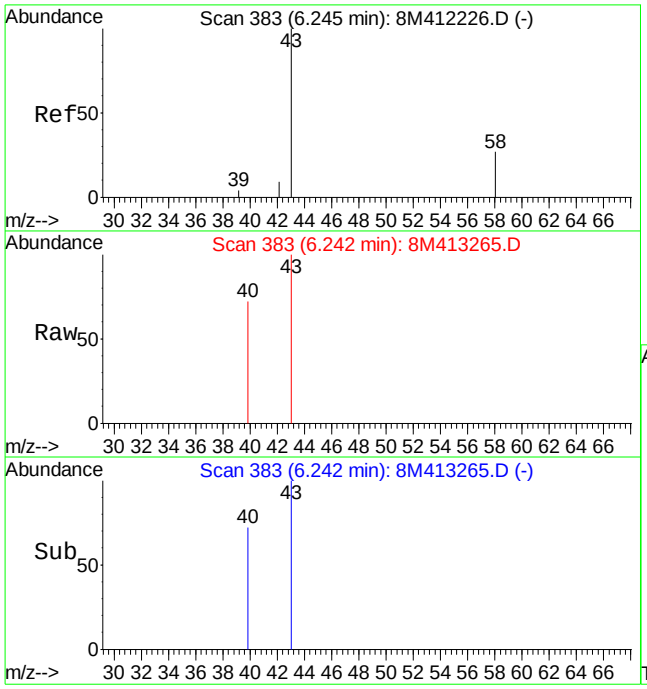

#13
Acetone
Concen: 0.80 ug/L
RT: 6.24 min Scan# 383
Delta R.T. -0.00 min
Lab File: 8M413265.D
Acq: 27 Jun 2016 1:16

Tgt Ion: 43 Resp: 602

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

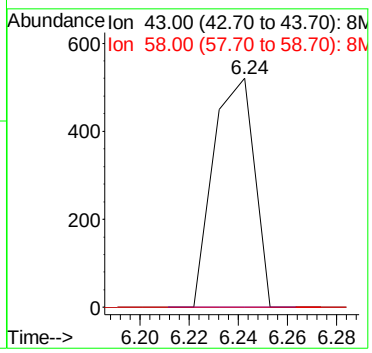

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413253.D Vial: 6
Acq On : 26 Jun 2016 19:29 Operator: ADC
Sample : L16061068-08 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	763805	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	591220	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	335628	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	220310	26.8460 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.40%		
43) 1,2-Dichloroethane-d4	10.30	65	238397	27.0926 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.36%		
58) Toluene-d8	12.68	98	793921	25.6586 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.64%		
80) p-Bromofluorobenzene	16.08	95	340409	24.4945 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	321699	25.1211 ug/L	99
3) Chloromethane	3.62	50	171350	22.9228 ug/L	100
4) Vinyl Chloride	3.84	62	230274	25.9647 ug/L	100
5) 1,3-Butadiene	3.89	54	1281	0.1722 ug/L #	2
6) Bromomethane	4.73	94	84539	16.5187 ug/L	97
7) Chloroethane	4.89	64	114019	23.3645 ug/L	96
8) Trichlorofluoromethane	5.37	101	387213	23.4643 ug/L	99
9) Diethyl ether	5.91	59	1793	0.4551 ug/L #	48
10) Isoprene	5.94	67	240790	24.0280 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	173777	22.4026 ug/L	93
13) Acetone	6.23	43	21103	24.5569 ug/L	95
14) 1,1-Dichloroethene	6.46	61	264312	21.4003 ug/L	97
15) Tert-Butyl Alcohol	6.58	59	204	0.7408 ug/L #	62
16) Dimethyl Sulfide	6.73	62	167322	37.8892 ug/L	97
17) Iodomethane	6.98	142	77343	24.3089 ug/L	98
18) Methyl acetate	7.00	43	45373	19.5329 ug/L	100
19) Methylene Chloride	7.24	84	168936	21.4935 ug/L	99
20) Carbon Disulfide	7.29	76	534331	20.6733 ug/L	100
21) Acrylonitrile	7.43	53	24885	22.3185 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	398679	23.4364 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	249877	22.0218 ug/L	99
24) n-Hexane	7.78	57	186030	22.0789 ug/L	99
27) 1,1-Dichloroethane	8.32	63	298810	21.2048 ug/L	99
29) 2-Butanone	8.88	43	27720	21.9548 ug/L	98
31) 2,2-Dichloropropane	9.09	77	365890	24.6390 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	193321	22.0497 ug/L	99
33) Chloroform	9.37	83	372389	22.3812 ug/L	100
34) 1-Bromopropane	9.51	122	40141	31.9636 ug/L	98
35) Bromochloromethane	9.60	130	99646	22.1636 ug/L	95
38) 1,1,1-Trichloroethane	9.91	97	365883	23.1505 ug/L	100
39) Cyclohexane	9.94	56	235079	21.4842 ug/L	99
40) 1,1-Dichloropropene	10.11	75	260412	21.6172 ug/L	99
42) Carbon Tetrachloride	10.25	117	327244	23.3175 ug/L	98
45) 1,2-Dichloroethane	10.42	62	258204	24.1108 ug/L	98
46) Benzene	10.46	78	689253	21.9681 ug/L	100
47) Trichloroethene	11.21	130	191583	22.8945 ug/L	99
48) Methylcyclohexane	11.30	83	281966	22.1800 ug/L	99
49) 1,2-Dichloropropane	11.43	63	150916	21.6074 ug/L	93
50) Bromodichloromethane	11.73	83	282216	22.9896 ug/L	99
52) Dibromomethane	11.81	93	84226	20.3717 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M413253.D 8260WT.M Mon Jun 27 12:33:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413253.D Vial: 6
Acq On : 26 Jun 2016 19:29 Operator: ADC
Sample : L16061068-08 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
54)	4-Methyl-2-Pentanone	12.05	58	24388	19.8880 ug/L		91
55)	cis-1,3-Dichloropropene	12.36	75	308901	24.7219 ug/L		100
56)	Dimethyl Disulfide	12.62	79	148191	22.2207 ug/L		91
59)	Toluene	12.78	91	735293	20.0331 ug/L		100
60)	Ethyl Methacrylate	12.88	69	148038	21.0018 ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	256022	20.8145 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	114767	19.8156 ug/L		97
64)	2-Hexanone	13.11	58	22099	18.1573 ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	218761	21.2150 ug/L		97
66)	Tetrachloroethene	13.60	164	164436	20.9105 ug/L		95
67)	Dibromochloromethane	13.87	129	170414	20.1513 ug/L		98
68)	1,2-Dibromoethane	14.12	107	114882	19.9025 ug/L		99
69)	1-Chlorohexane	14.21	91	251822	20.0992 ug/L		98
70)	Chlorobenzene	14.62	112	509036	20.5667 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.65	131	196944	20.5392 ug/L		100
72)	Ethylbenzene	14.65	106	265897	19.6354 ug/L		97
73)	m-,p-Xylene	14.74	106	653080	41.1164 ug/L		96
74)	o-Xylene	15.31	106	326154	21.0029 ug/L		100
75)	Styrene	15.35	104	528715	20.7583 ug/L		96
76)	Bromoform	15.83	173	100659	20.0675 ug/L		98
77)	Isopropylbenzene	15.73	105	875597	21.2248 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	116819	17.3397 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	38702	18.6551 ug/L		77
82)	trans-1,4-Dichloro-2-Buten	16.18	53	30400	14.8137 ug/L		95
83)	n-Propylbenzene	16.24	91	1057475	20.1956 ug/L		100
84)	Bromobenzene	16.37	156	209896	19.4886 ug/L		96
85)	1,3,5-Trimethylbenzene	16.42	105	762383	19.9879 ug/L		100
86)	2-Chlorotoluene	16.50	91	739904	20.2394 ug/L		99
87)	4-Chlorotoluene	16.56	91	630633	19.0973 ug/L		99
88)	a-Methylstyrene	16.83	118	369447	20.4157 ug/L		99
89)	tert-Butylbenzene	16.89	134	146504	19.6333 ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	757424	19.3120 ug/L		99
91)	sec-Butylbenzene	17.16	105	872611	19.4468 ug/L		100
92)	p-Isopropyltoluene	17.32	119	738215	19.3759 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	414015	19.9636 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	413912	19.7968 ug/L		99
95)	n-Butylbenzene	17.85	91	702475	18.6503 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	354912	19.2419 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24803	18.3407 ug/L		100
98)	1,2,4-Trichlorobenzene	20.28	180	259697	18.8366 ug/L		98
99)	Hexachlorobutadiene	20.43	225	128992	20.0244 ug/L		97
100)	Naphthalene	20.65	128	333353	16.2743 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	205673	17.6826 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413253.D 8260WT.M Mon Jun 27 12:33:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413253.D Vial: 6
Acq On : 26 Jun 2016 19:29 Operator: ADC
Sample : L16061068-08 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

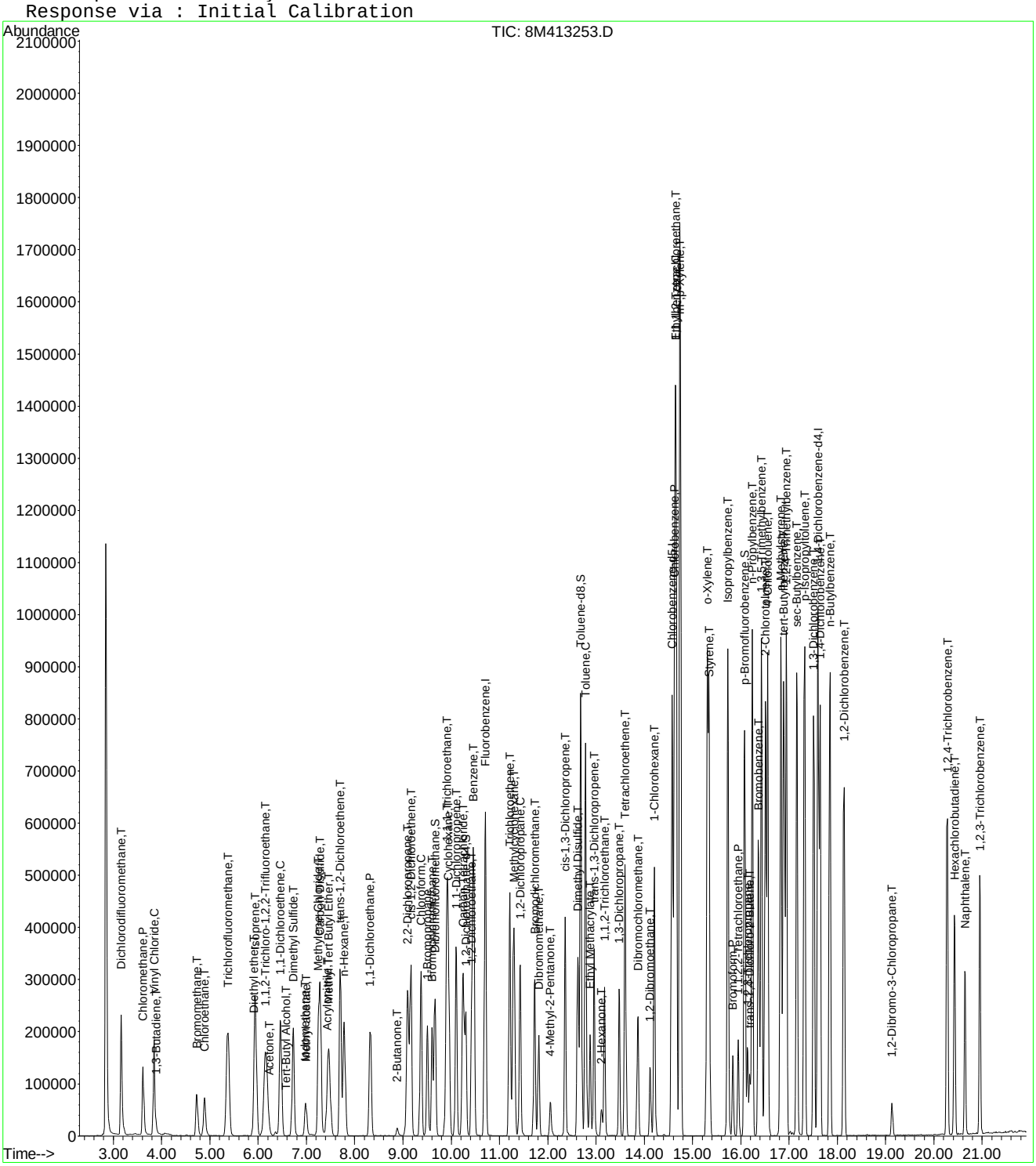

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413254.D Vial: 7
Acq On : 26 Jun 2016 19:58 Operator: ADC
Sample : L16061068-09 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	767625	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	593148	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	333917	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	221850	26.8991 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.60%		
43) 1,2-Dichloroethane-d4	10.31	65	237908	26.9025 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.60%		
58) Toluene-d8	12.68	98	792003	25.5134 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.04%		
80) p-Bromofluorobenzene	16.07	95	346027	25.0263 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	326356	25.3580 ug/L	99
3) Chloromethane	3.62	50	173160	23.0497 ug/L	100
4) Vinyl Chloride	3.84	62	232428	26.0771 ug/L	99
6) Bromomethane	4.72	94	85276	16.5773 ug/L	99
7) Chloroethane	4.89	64	113911	23.2262 ug/L	96
8) Trichlorofluoromethane	5.37	101	386254	23.2897 ug/L	99
9) Diethyl ether	5.91	59	1616	0.4081 ug/L #	46
10) Isoprene	5.94	67	239864	23.8164 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	177782	22.8049 ug/L	94
13) Acetone	6.23	43	21194	24.5400 ug/L	100
14) 1,1-Dichloroethene	6.46	61	260070	20.9521 ug/L	99
16) Dimethyl Sulfide	6.73	62	170923	38.5120 ug/L	100
17) Iodomethane	6.98	142	82917	25.7294 ug/L	100
18) Methyl acetate	6.99	43	42881	18.3682 ug/L	99
19) Methylene Chloride	7.25	84	166576	21.0878 ug/L	97
20) Carbon Disulfide	7.29	76	549713	21.1626 ug/L	100
21) Acrylonitrile	7.43	53	23400	20.8822 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	387529	22.6676 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	247587	21.7114 ug/L	99
24) n-Hexane	7.78	57	186661	22.0435 ug/L	98
27) 1,1-Dichloroethane	8.32	63	297270	20.9905 ug/L	99
29) 2-Butanone	8.88	43	25150	19.8202 ug/L	94
31) 2,2-Dichloropropane	9.11	77	354399	23.7464 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	190827	21.6570 ug/L	99
33) Chloroform	9.38	83	368944	22.0638 ug/L	99
34) 1-Bromopropane	9.51	122	39361	31.1865 ug/L	99
35) Bromochloromethane	9.60	130	95505	21.1368 ug/L	95
38) 1,1,1-Trichloroethane	9.90	97	363284	22.8716 ug/L	99
39) Cyclohexane	9.93	56	236537	21.5099 ug/L	98
40) 1,1-Dichloropropene	10.10	75	255968	21.1425 ug/L	99
42) Carbon Tetrachloride	10.24	117	315945	22.4003 ug/L	99
45) 1,2-Dichloroethane	10.42	62	247215	22.9697 ug/L	99
46) Benzene	10.46	78	675101	21.4100 ug/L	100
47) Trichloroethene	11.22	130	191098	22.7229 ug/L	98
48) Methylcyclohexane	11.30	83	283199	22.1661 ug/L	99
49) 1,2-Dichloropropane	11.42	63	149537	21.3035 ug/L	93
50) Bromodichloromethane	11.72	83	274304	22.2339 ug/L	100
52) Dibromomethane	11.80	93	83231	20.0309 ug/L	98
54) 4-Methyl-2-Pentanone	12.05	58	23754	19.2746 ug/L	95
55) cis-1,3-Dichloropropene	12.36	75	299193	23.8258 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413254.D 8260WT.M Mon Jun 27 12:33:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413254.D Vial: 7
Acq On : 26 Jun 2016 19:58 Operator: ADC
Sample : L16061068-09 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
56)	Dimethyl Disulfide	12.62	79	148888	22.2141	ug/L		96
59)	Toluene	12.79	91	732751	19.8989	ug/L		99
60)	Ethyl Methacrylate	12.88	69	145255	20.5400	ug/L		100
62)	trans-1,3-Dichloropropene	12.96	75	248915	20.1709	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	111596	19.2055	ug/L		99
64)	2-Hexanone	13.12	58	23091	18.9107	ug/L	#	92
65)	1,3-Dichloropropane	13.48	76	208736	20.1770	ug/L		99
66)	Tetrachloroethene	13.60	164	158001	20.0269	ug/L		98
67)	Dibromochloromethane	13.86	129	164690	19.4112	ug/L		98
68)	1,2-Dibromoethane	14.12	107	110586	19.0959	ug/L		98
69)	1-Chlorohexane	14.21	91	248637	19.7805	ug/L		96
70)	Chlorobenzene	14.63	112	498754	20.0857	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	192359	19.9958	ug/L		100
72)	Ethylbenzene	14.66	106	261407	19.2411	ug/L		96
73)	m-,p-Xylene	14.74	106	645378	40.4995	ug/L		96
74)	o-Xylene	15.31	106	318777	20.4611	ug/L		98
75)	Styrene	15.34	104	517045	20.2341	ug/L		98
76)	Bromoform	15.84	173	94738	18.8257	ug/L		99
77)	Isopropylbenzene	15.73	105	865277	20.9064	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.94	83	114050	17.0155	ug/L		100
81)	1,2,3-Trichloropropane	16.13	110	36865	17.8607	ug/L		73
82)	trans-1,4-Dichloro-2-Buten	16.19	53	32714	15.9728	ug/L		83
83)	n-Propylbenzene	16.24	91	1040183	19.9672	ug/L		100
84)	Bromobenzene	16.36	156	202429	18.8916	ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	746245	19.6650	ug/L		100
86)	2-Chlorotoluene	16.51	91	651552	17.9139	ug/L		93
87)	4-Chlorotoluene	16.56	91	703077	21.4002	ug/L		91
88)	a-Methylstyrene	16.83	118	359596	19.9732	ug/L		100
89)	tert-Butylbenzene	16.89	134	140673	18.9485	ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	749465	19.2070	ug/L		99
91)	sec-Butylbenzene	17.16	105	870957	19.5094	ug/L		100
92)	p-Isopropyltoluene	17.32	119	732449	19.3231	ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	405043	19.6310	ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	398831	19.1732	ug/L		99
95)	n-Butylbenzene	17.84	91	691800	18.4610	ug/L		100
96)	1,2-Dichlorobenzene	18.14	146	346601	18.8876	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	22276	16.5565	ug/L		97
98)	1,2,4-Trichlorobenzene	20.28	180	258748	18.8639	ug/L		99
99)	Hexachlorobutadiene	20.42	225	127262	19.8571	ug/L		99
100)	Naphthalene	20.64	128	322837	15.8417	ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	201766	17.4356	ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413254.D 8260WT.M Mon Jun 27 12:33:07 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413254.D Vial: 7
Acq On : 26 Jun 2016 19:58 Operator: ADC
Sample : L16061068-09 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

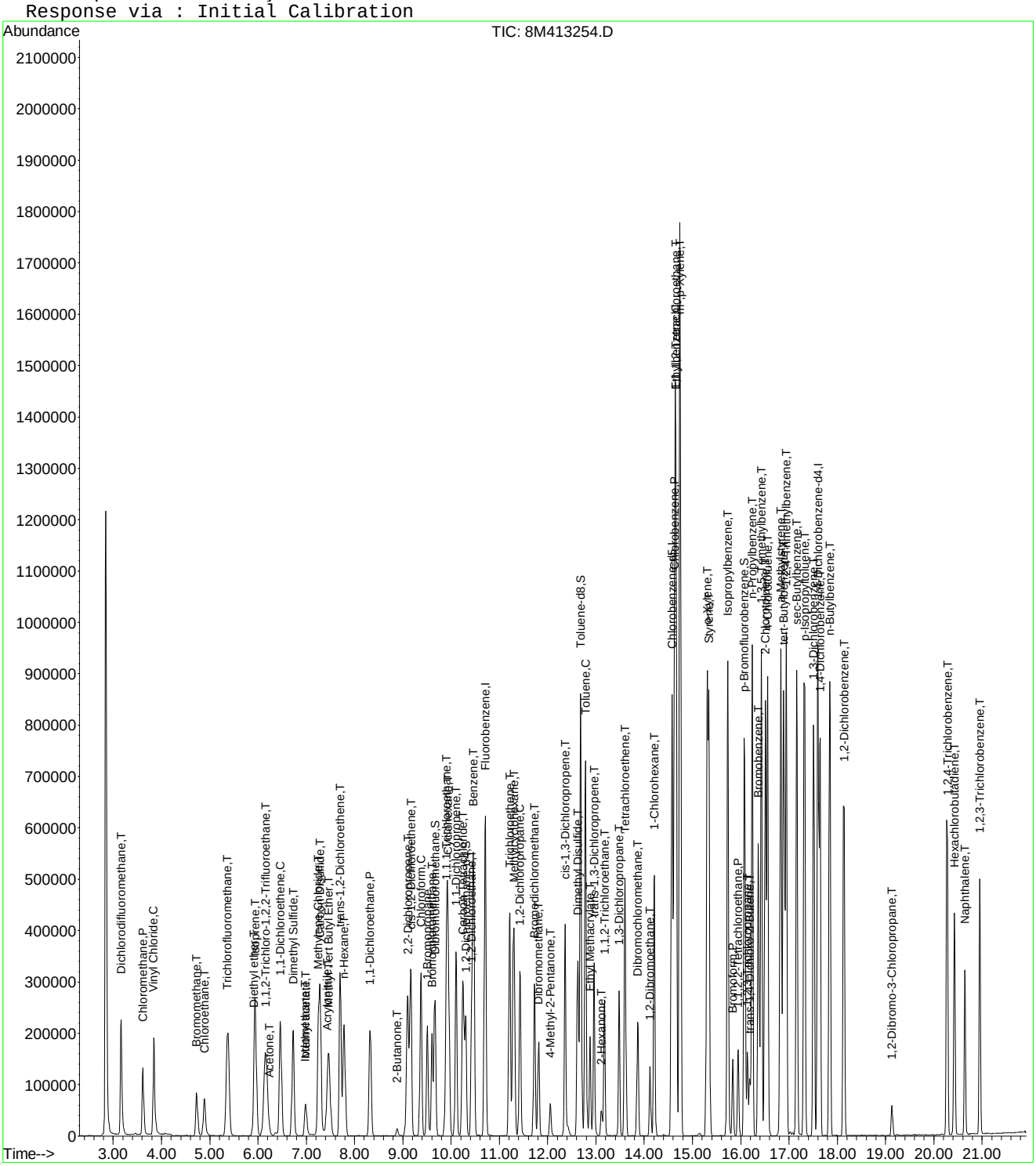

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413266.D Vial: 19
Acq On : 27 Jun 2016 1:45 Operator: ADC
Sample : L16061068-10 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:46 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	664459	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	526953	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	297560	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	198803	27.8473 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.40%		
43) 1,2-Dichloroethane-d4	10.31	65	226182	29.5476 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 118.20%		
58) Toluene-d8	12.68	98	702679	25.4794 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.92%		
80) p-Bromofluorobenzene	16.07	95	307015	24.9178 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.68%		
Target Compounds					Qvalue
3) Chloromethane	3.61	50	1274	0.1959 ug/L	99
13) Acetone	6.24	43	1761	2.3556 ug/L #	50
32) cis-1,2-Dichloroethene	9.16	96	2628	0.3446 ug/L	86
47) Trichloroethene	11.21	130	13238	1.8185 ug/L	90

(#) = qualifier out of range (m) = manual integration
8M413266.D 8260WT.M Mon Jun 27 12:45:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413266.D Vial: 19
Acq On : 27 Jun 2016 1:45 Operator: ADC
Sample : L16061068-10 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

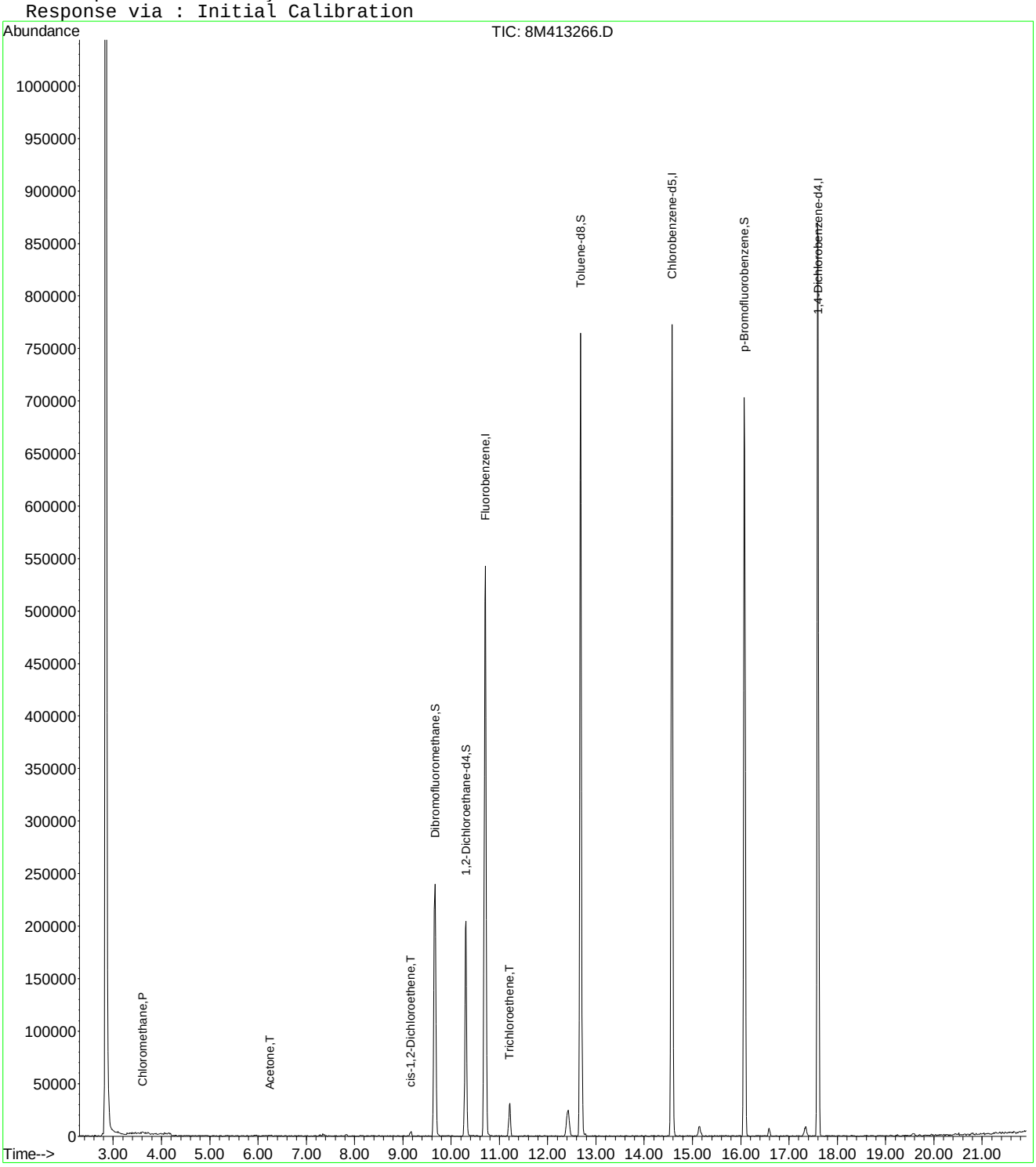

8M413266.D 8260WT.M Mon Jun 27 12:45:36 2016 Page 2

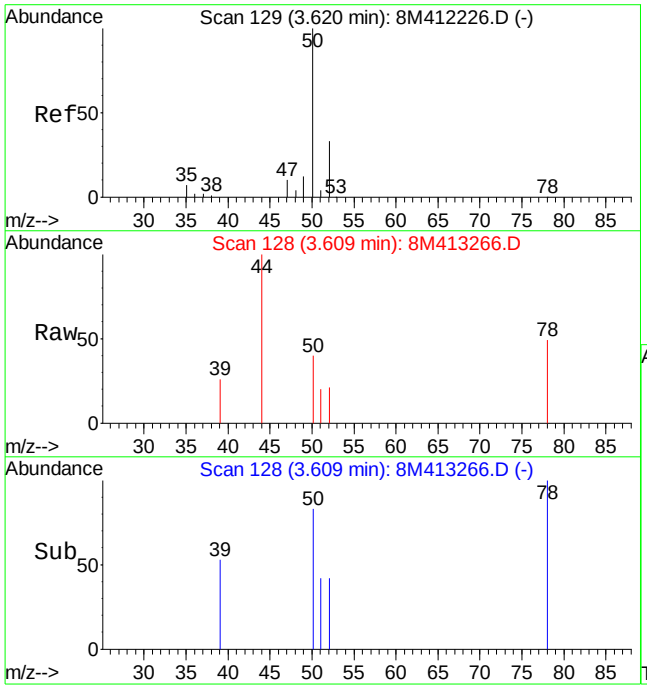

#3
Chloromethane
Concen: 0.20 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M413266.D
Acq: 27 Jun 2016 1:45

Tgt Ion: 50 Resp: 1274

Ion	Ratio	Lower	Upper
50	100		
52	32.4	19.9	46.3

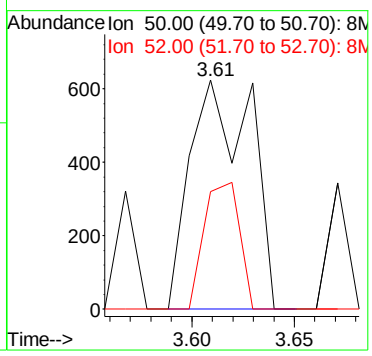

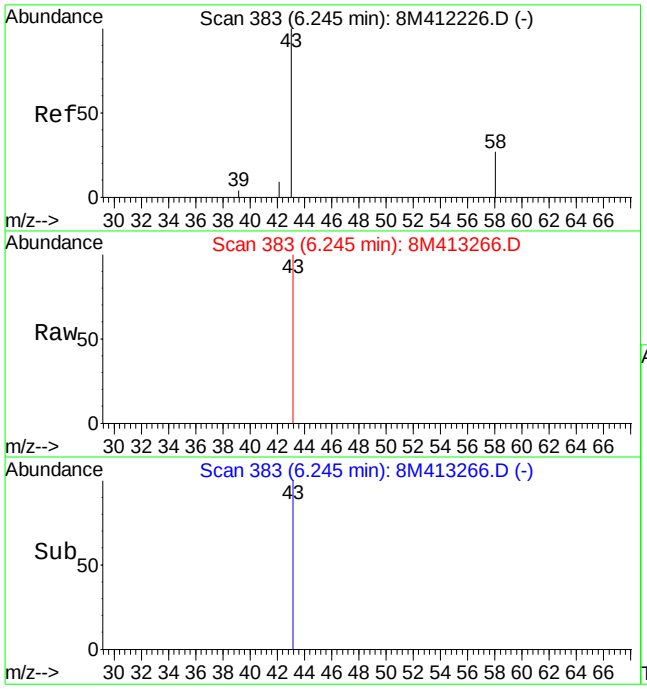

#13
Acetone
Concen: 2.36 ug/L
RT: 6.24 min Scan# 383
Delta R.T. -0.00 min
Lab File: 8M413266.D
Acq: 27 Jun 2016 1:45

Tgt Ion: 43 Resp: 1761

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

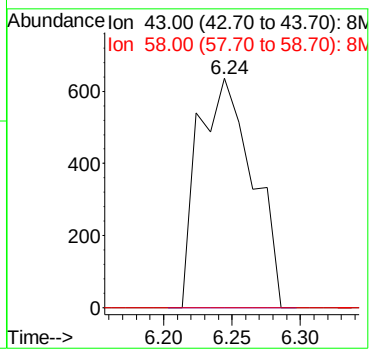

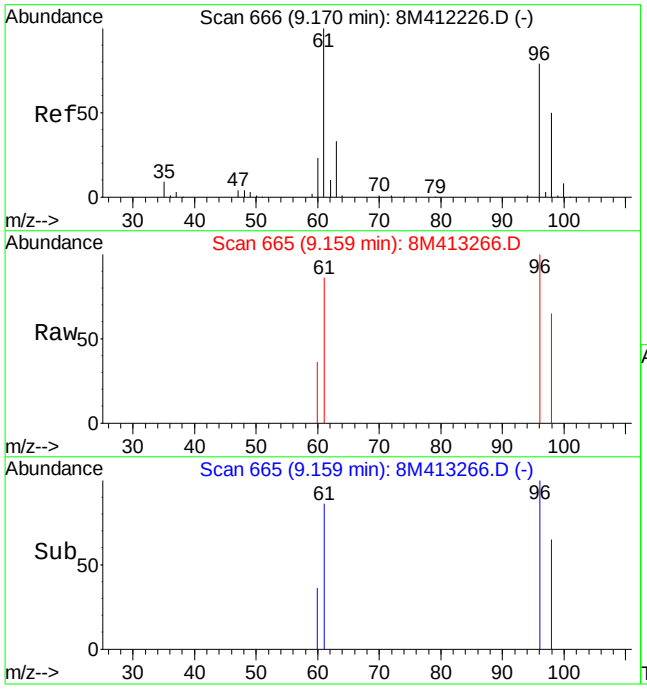

#32
cis-1,2-Dichloroethene
Concen: 0.34 ug/L
RT: 9.16 min Scan# 665
Delta R.T. -0.01 min
Lab File: 8M413266.D
Acq: 27 Jun 2016 1:45

Tgt Ion: 96 Resp: 2628

Ion	Ratio	Lower	Upper
96	100		
61	134.9	91.5	213.5

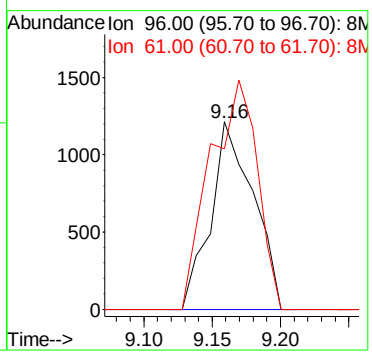

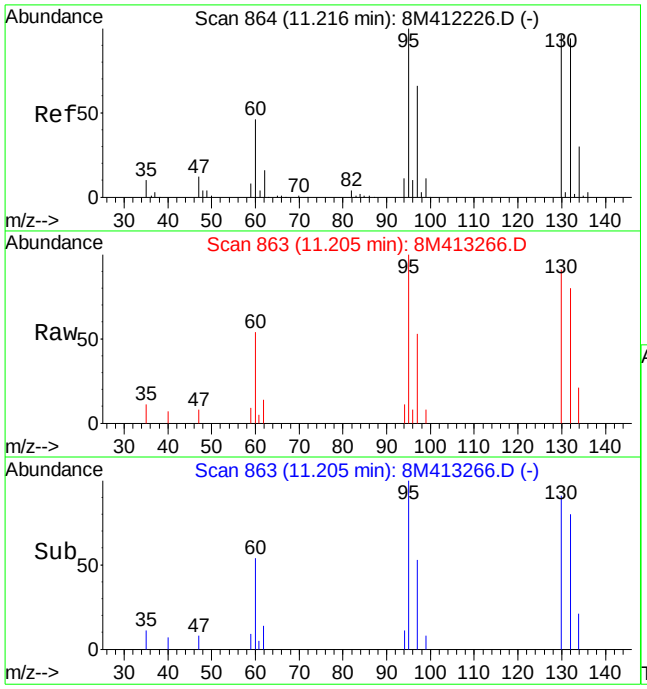

#47
Trichloroethene
Concen: 1.82 ug/L
RT: 11.21 min Scan# 863
Delta R.T. -0.01 min
Lab File: 8M413266.D
Acq: 27 Jun 2016 1:45

Tgt Ion:130 Resp: 13238

Ion	Ratio	Lower	Upper
130	100		
132	103.6	58.0	135.2
95	121.0	64.9	151.5

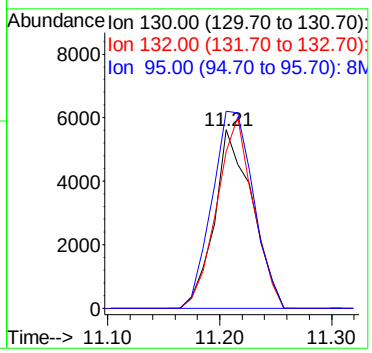

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413267.D Vial: 20
Acq On : 27 Jun 2016 2:14 Operator: ADC
Sample : L16061068-12 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:47 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	654571	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	522236	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	289542	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	201696	28.6793 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 114.72%		
43) 1,2-Dichloroethane-d4	10.31	65	224477	29.7678 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 119.08%		
58) Toluene-d8	12.68	98	693597	25.3773 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.52%		
80) p-Bromofluorobenzene	16.07	95	303192	25.2890 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.16%		

Target Compounds					Qvalue
3) Chloromethane	3.62	50	770	0.1202 ug/L	95
13) Acetone	6.22	43	521	0.7074 ug/L #	50
32) cis-1,2-Dichloroethene	9.16	96	8375	1.1146 ug/L	90
47) Trichloroethene	11.21	130	101357	14.1336 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M413267.D 8260WT.M Mon Jun 27 12:45:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413267.D Vial: 20
Acq On : 27 Jun 2016 2:14 Operator: ADC
Sample : L16061068-12 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

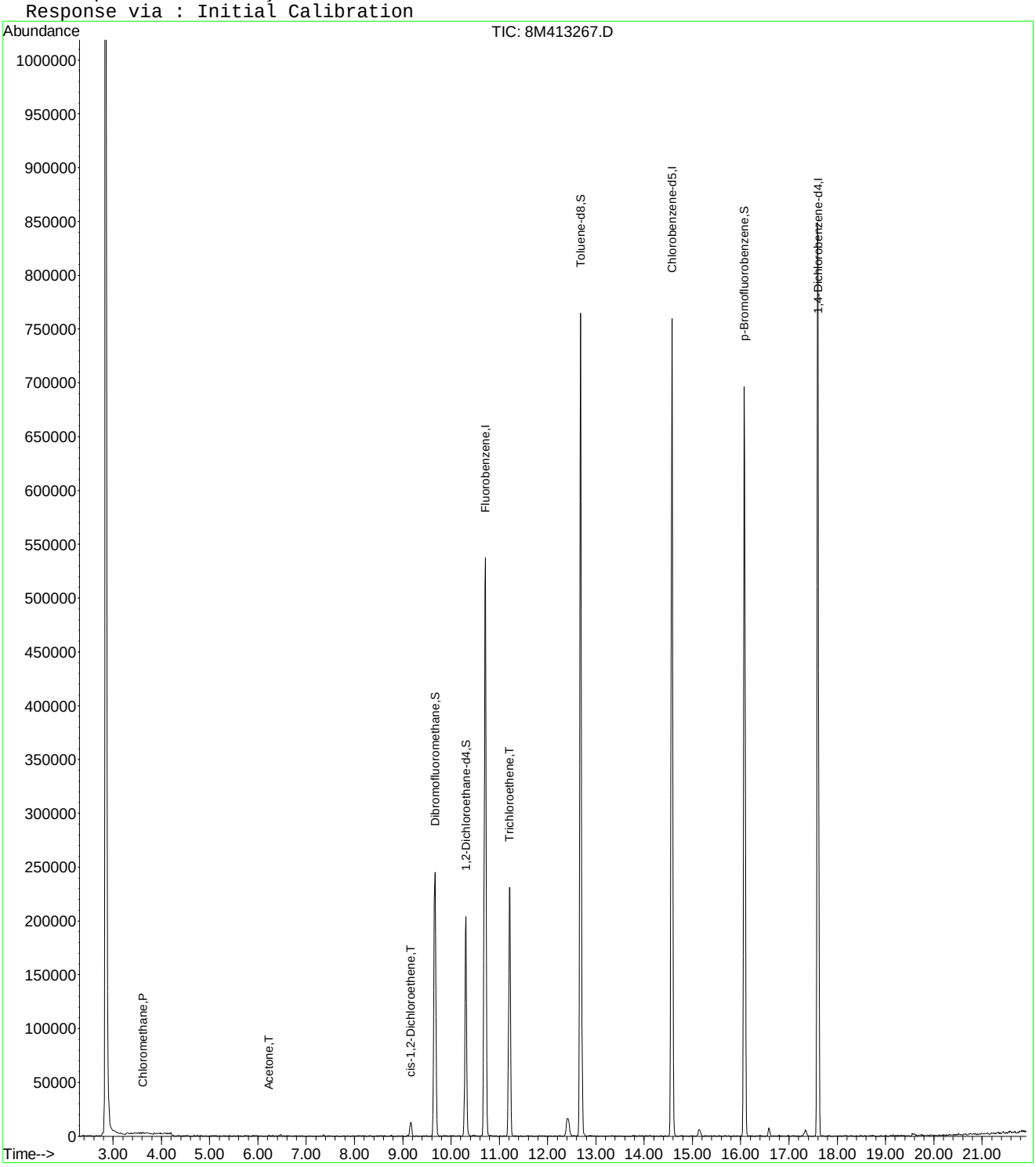

8M413267.D 8260WT.M Mon Jun 27 12:45:42 2016 Page 2

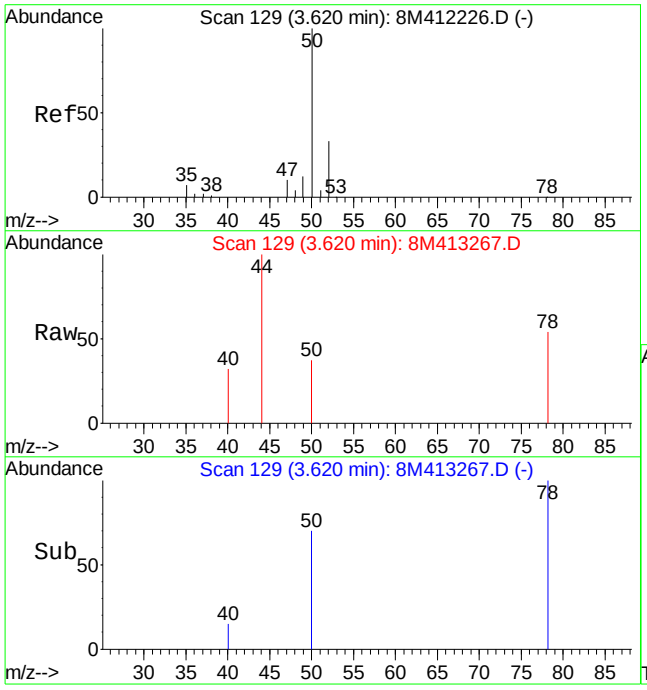

#3
Chloromethane
Concen: 0.12 ug/L
RT: 3.62 min Scan# 129
Delta R.T. -0.00 min
Lab File: 8M413267.D
Acq: 27 Jun 2016 2:14

Tgt Ion: 50 Resp: 770

Ion	Ratio	Lower	Upper
50	100		
52	30.1	19.9	46.3

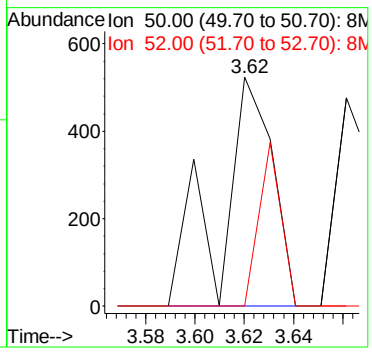

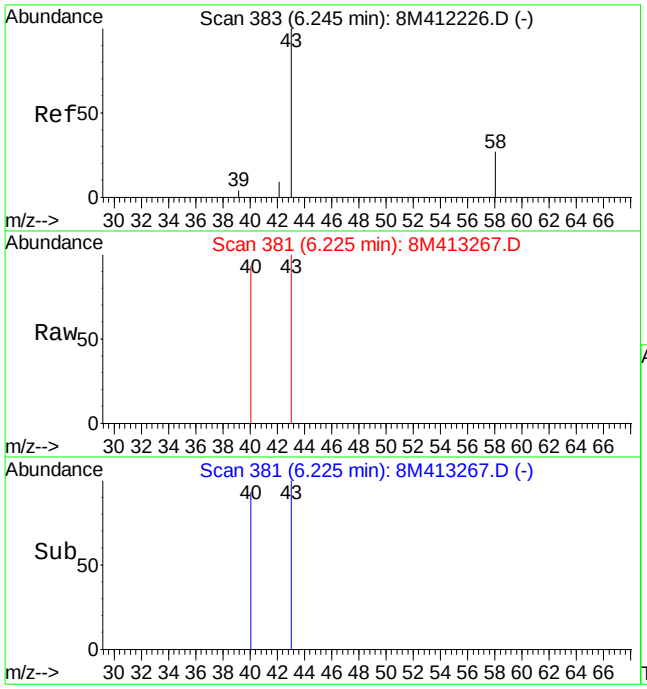

#13
Acetone
Concen: 0.71 ug/L
RT: 6.22 min Scan# 381
Delta R.T. -0.02 min
Lab File: 8M413267.D
Acq: 27 Jun 2016 2:14

Tgt Ion: 43 Resp: 521

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

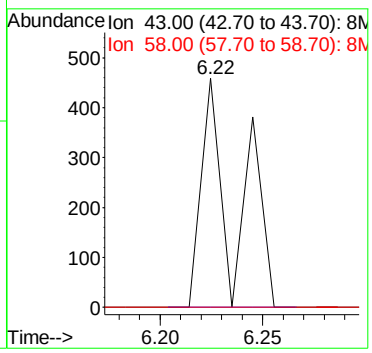

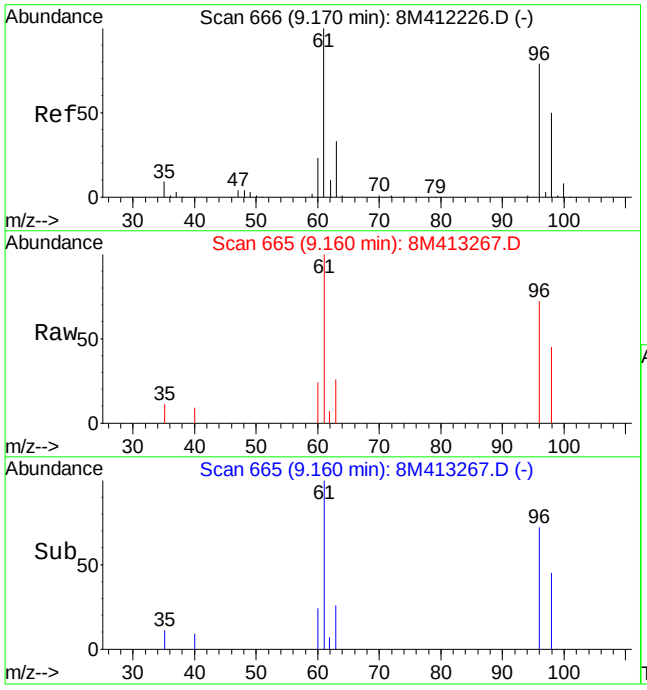

#32
cis-1,2-Dichloroethene
Concen: 1.11 ug/L
RT: 9.16 min Scan# 665
Delta R.T. -0.01 min
Lab File: 8M413267.D
Acq: 27 Jun 2016 2:14

Tgt Ion: 96 Resp: 8375

Ion	Ratio	Lower	Upper
96	100		
61	139.3	91.5	213.5

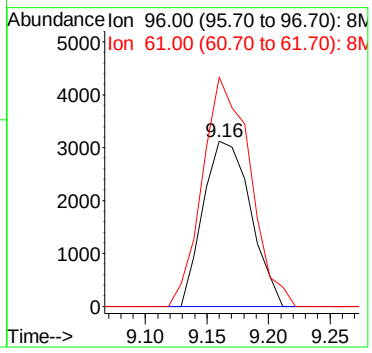

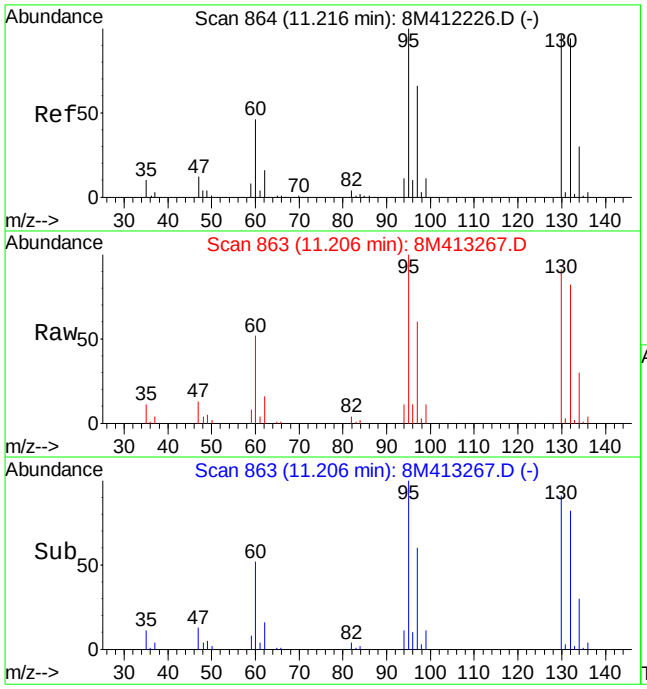

#47
Trichloroethene
Concen: 14.13 ug/L
RT: 11.21 min Scan# 863
Delta R.T. -0.01 min
Lab File: 8M413267.D
Acq: 27 Jun 2016 2:14

Tgt Ion:130 Resp: 101357

Ion	Ratio	Lower	Upper
130	100		
132	95.3	58.0	135.2
95	105.5	64.9	151.5

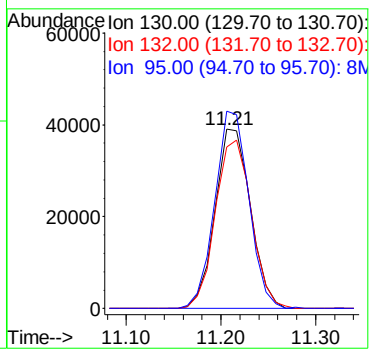

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413255.D Vial: 8
Acq On : 26 Jun 2016 20:27 Operator: ADC
Sample : L16061068-14 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:43 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768288	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	598726	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	332656	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	220105	26.6645 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.64%		
43) 1,2-Dichloroethane-d4	10.30	65	240720	27.1970 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.80%		
58) Toluene-d8	12.68	98	789197	25.1862 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.76%		
80) p-Bromofluorobenzene	16.08	95	341223	24.7724 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	330232	25.6370 ug/L	100
3) Chloromethane	3.62	50	174892	23.2601 ug/L	99
4) Vinyl Chloride	3.84	62	234877	26.3291 ug/L	100
6) Bromomethane	4.73	94	92592	17.9254 ug/L	98
7) Chloroethane	4.89	64	117119	23.8597 ug/L	98
8) Trichlorofluoromethane	5.37	101	387616	23.3516 ug/L	100
9) Diethyl ether	5.91	59	2363	0.5963 ug/L #	6
10) Isoprene	5.94	67	246185	24.4230 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	184614	23.6608 ug/L	94
13) Acetone	6.24	43	20661	23.9022 ug/L	96
14) 1,1-Dichloroethene	6.46	61	268927	21.6469 ug/L	98
16) Dimethyl Sulfide	6.73	62	171706	38.6550 ug/L	100
17) Iodomethane	6.98	142	90063	27.6612 ug/L	99
18) Methyl acetate	7.00	43	42061	18.0014 ug/L	97
19) Methylene Chloride	7.24	84	165508	20.9345 ug/L	100
20) Carbon Disulfide	7.29	76	550489	21.1742 ug/L	100
21) Acrylonitrile	7.43	53	25014	22.3033 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	385520	22.5306 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	255473	22.3836 ug/L	99
24) n-Hexane	7.78	57	187781	22.1566 ug/L	99
27) 1,1-Dichloroethane	8.32	63	300756	21.2184 ug/L	99
29) 2-Butanone	8.88	43	24835	19.5550 ug/L	99
31) 2,2-Dichloropropane	9.10	77	363408	24.3291 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	201216	22.8163 ug/L	99
33) Chloroform	9.37	83	371497	22.1973 ug/L	99
34) 1-Bromopropane	9.51	122	41091	32.5291 ug/L	99
35) Bromochloromethane	9.60	130	97225	21.4989 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	371180	23.3486 ug/L	99
39) Cyclohexane	9.94	56	241298	21.9239 ug/L	99
40) 1,1-Dichloropropene	10.11	75	264254	21.8081 ug/L	99
42) Carbon Tetrachloride	10.25	117	321354	22.7642 ug/L	99
45) 1,2-Dichloroethane	10.42	62	256476	23.8097 ug/L	98
46) Benzene	10.46	78	690778	21.8883 ug/L	99
47) Trichloroethene	11.21	130	293082	34.8194 ug/L	98
48) Methylcyclohexane	11.30	83	290926	22.7512 ug/L	98
49) 1,2-Dichloropropane	11.43	63	153163	21.8012 ug/L	94
50) Bromodichloromethane	11.73	83	278029	22.5164 ug/L	97
52) Dibromomethane	11.81	93	84843	20.4012 ug/L	95
54) 4-Methyl-2-Pentanone	12.05	58	23915	19.3885 ug/L	94
55) cis-1,3-Dichloropropene	12.36	75	303574	24.1538 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413255.D 8260WT.M Mon Jun 27 12:33:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413255.D Vial: 8
Acq On : 26 Jun 2016 20:27 Operator: ADC
Sample : L16061068-14 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:43 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
56)	Dimethyl Disulfide	12.63	79	147933	22.0525	ug/L		91
59)	Toluene	12.78	91	749732	20.1704	ug/L		100
60)	Ethyl Methacrylate	12.88	69	145657	20.4049	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	251075	20.1564	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	110126	18.7759	ug/L		98
64)	2-Hexanone	13.11	58	21811	17.6960	ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	213687	20.4631	ug/L		99
66)	Tetrachloroethene	13.60	164	165312	20.7584	ug/L		95
67)	Dibromochloromethane	13.87	129	166303	19.4187	ug/L		100
68)	1,2-Dibromoethane	14.12	107	112579	19.2590	ug/L		100
69)	1-Chlorohexane	14.21	91	256476	20.2140	ug/L		99
70)	Chlorobenzene	14.62	112	510762	20.3777	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.65	131	195000	20.0815	ug/L		99
72)	Ethylbenzene	14.65	106	269866	19.6787	ug/L		99
73)	m-,p-Xylene	14.74	106	657387	40.8687	ug/L		97
74)	o-Xylene	15.31	106	321173	20.4228	ug/L		96
75)	Styrene	15.35	104	527287	20.4427	ug/L		97
76)	Bromoform	15.83	173	94861	18.6746	ug/L		99
77)	Isopropylbenzene	15.73	105	881700	21.1048	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	114958	17.2159	ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	36689	17.8428	ug/L	#	45
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33306	16.3100	ug/L	#	37
83)	n-Propylbenzene	16.24	91	1071204	20.6406	ug/L		100
84)	Bromobenzene	16.37	156	210272	19.6979	ug/L		93
85)	1,3,5-Trimethylbenzene	16.42	105	774668	20.4914	ug/L		99
86)	2-Chlorotoluene	16.50	91	746640	20.6061	ug/L		98
87)	4-Chlorotoluene	16.56	91	633851	19.3663	ug/L		99
88)	a-Methylstyrene	16.82	118	368251	20.5314	ug/L		99
89)	tert-Butylbenzene	16.89	134	143837	19.4481	ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	761359	19.5858	ug/L		100
91)	sec-Butylbenzene	17.16	105	893981	20.1010	ug/L		99
92)	p-Isopropyltoluene	17.32	119	738265	19.5503	ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	410449	19.9685	ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	413414	19.9496	ug/L		98
95)	n-Butylbenzene	17.85	91	700112	18.7536	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	358470	19.6085	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23632	17.6309	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	251174	18.3811	ug/L		98
99)	Hexachlorobutadiene	20.43	225	128164	20.0736	ug/L		98
100)	Naphthalene	20.65	128	325850	16.0502	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	200707	17.4098	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M413255.D 8260WT.M Mon Jun 27 12:33:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413255.D Vial: 8
Acq On : 26 Jun 2016 20:27 Operator: ADC
Sample : L16061068-14 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

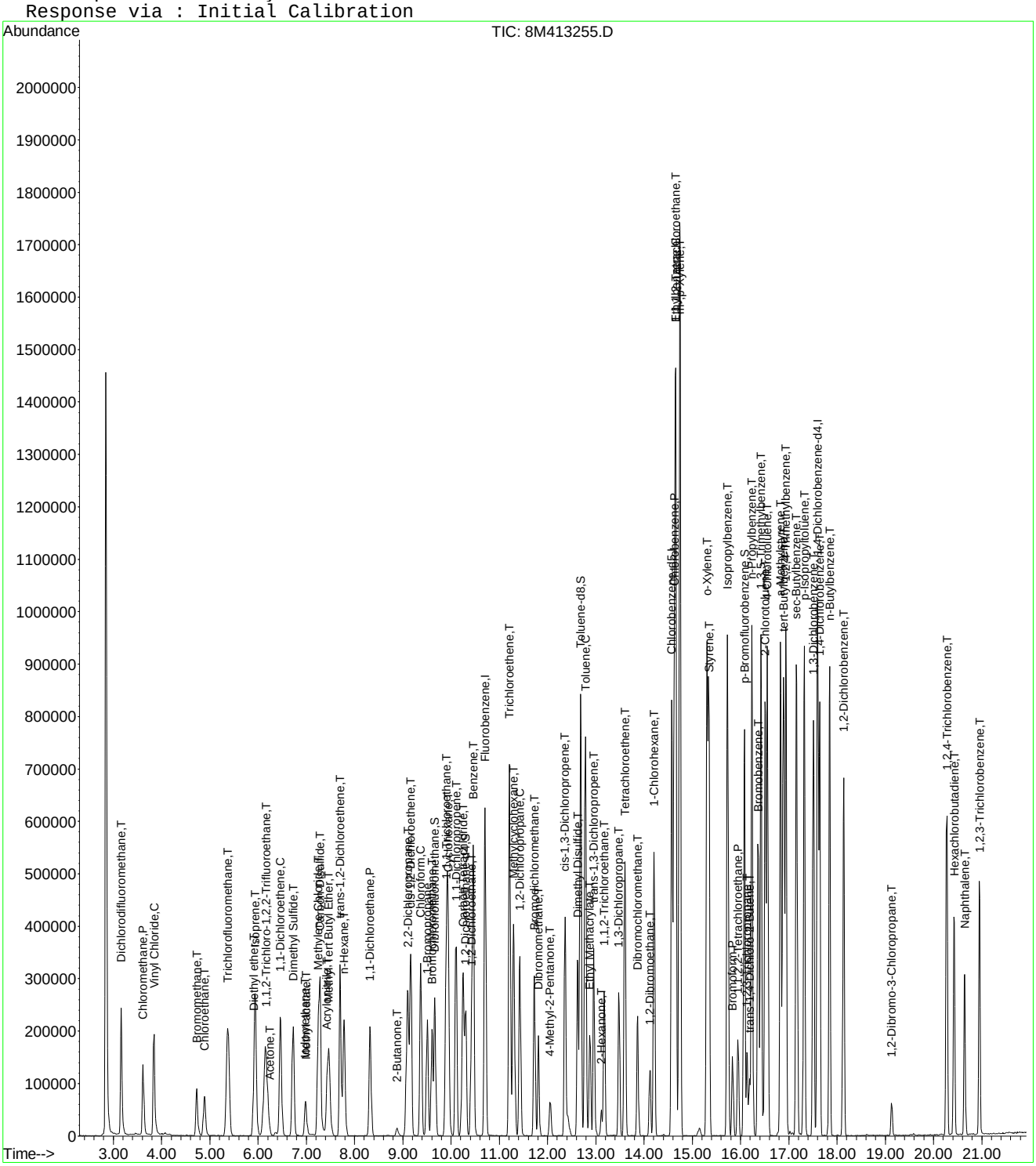

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413256.D Vial: 9
Acq On : 26 Jun 2016 20:56 Operator: ADC
Sample : L16061068-16 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:43 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	759205	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	595198	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	335549	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	221559	27.1618 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.64%		
43) 1,2-Dichloroethane-d4	10.30	65	238244	27.2392 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.96%		
58) Toluene-d8	12.68	98	787777	25.2899 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.16%		
80) p-Bromofluorobenzene	16.08	95	342219	24.6305 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.52%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	325946	25.6070 ug/L	100
3) Chloromethane	3.62	50	177749	23.9229 ug/L	99
4) Vinyl Chloride	3.84	62	234387	26.5885 ug/L	100
6) Bromomethane	4.73	94	89694	17.5860 ug/L	98
7) Chloroethane	4.89	64	112846	23.2643 ug/L	99
8) Trichlorofluoromethane	5.37	101	383797	23.3982 ug/L	99
9) Diethyl ether	5.90	59	1801	0.4599 ug/L #	48
10) Isoprene	5.94	67	236744	23.7674 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	177696	23.0467 ug/L	93
13) Acetone	6.24	43	22506	26.3482 ug/L	94
14) 1,1-Dichloroethene	6.47	61	267609	21.7985 ug/L	99
16) Dimethyl Sulfide	6.73	62	166451	37.9203 ug/L	98
17) Iodomethane	6.98	142	89185	27.7127 ug/L	99
18) Methyl acetate	7.00	43	41632	18.0310 ug/L	97
19) Methylene Chloride	7.24	84	170314	21.8001 ug/L	96
20) Carbon Disulfide	7.29	76	543362	21.1501 ug/L	99
21) Acrylonitrile	7.43	53	23486	21.1914 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	382187	22.6031 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	250005	22.1665 ug/L	100
24) n-Hexane	7.78	57	181767	21.7036 ug/L	100
27) 1,1-Dichloroethane	8.32	63	297018	21.2054 ug/L	99
29) 2-Butanone	8.88	43	24788	19.7516 ug/L	92
31) 2,2-Dichloropropane	9.11	77	352855	23.9052 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	201279	23.0965 ug/L	99
33) Chloroform	9.37	83	371072	22.4372 ug/L	99
34) 1-Bromopropane	9.51	122	38857	31.1286 ug/L	98
35) Bromochloromethane	9.60	130	98805	22.1096 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	365538	23.2688 ug/L	99
39) Cyclohexane	9.94	56	237297	21.8183 ug/L	98
40) 1,1-Dichloropropene	10.10	75	259566	21.6775 ug/L	99
42) Carbon Tetrachloride	10.25	117	321640	23.0570 ug/L	99
45) 1,2-Dichloroethane	10.42	62	252167	23.6897 ug/L	98
46) Benzene	10.46	78	690412	22.1384 ug/L	100
47) Trichloroethene	11.21	130	291187	35.0082 ug/L	98
48) Methylcyclohexane	11.30	83	285042	22.5578 ug/L	100
49) 1,2-Dichloropropane	11.42	63	151417	21.8105 ug/L	94
50) Bromodichloromethane	11.72	83	275504	22.5788 ug/L	99
52) Dibromomethane	11.81	93	82748	20.1355 ug/L	96
54) 4-Methyl-2-Pentanone	12.05	58	24910	20.4368 ug/L	96
55) cis-1,3-Dichloropropene	12.36	75	296785	23.8961 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413256.D Vial: 9
Acq On : 26 Jun 2016 20:56 Operator: ADC
Sample : L16061068-16 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:43 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
56)	Dimethyl Disulfide	12.62	79	145242	21.9104 ug/L		92
59)	Toluene	12.78	91	738343	19.9817 ug/L		100
60)	Ethyl Methacrylate	12.88	69	142589	20.0935 ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	247066	19.9522 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	109853	18.8404 ug/L		98
64)	2-Hexanone	13.12	58	21842	17.8262 ug/L	#	99
65)	1,3-Dichloropropane	13.48	76	213595	20.5755 ug/L		99
66)	Tetrachloroethene	13.60	164	160165	20.2313 ug/L		97
67)	Dibromochloromethane	13.87	129	165704	19.4634 ug/L		99
68)	1,2-Dibromoethane	14.12	107	111772	19.2343 ug/L		99
69)	1-Chlorohexane	14.21	91	252444	20.0142 ug/L		98
70)	Chlorobenzene	14.62	112	516418	20.7255 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.66	131	196324	20.3377 ug/L		98
72)	Ethylbenzene	14.66	106	259466	19.0324 ug/L		94
73)	m-,p-Xylene	14.74	106	649408	40.6120 ug/L		97
74)	o-Xylene	15.31	106	321537	20.5672 ug/L		99
75)	Styrene	15.35	104	522822	20.3897 ug/L		98
76)	Bromoform	15.83	173	95570	18.9257 ug/L		99
77)	Isopropylbenzene	15.73	105	871912	20.9942 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	115064	17.0832 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	37910	18.2777 ug/L	#	23
82)	trans-1,4-Dichloro-2-Buten	16.18	53	32210	15.6627 ug/L	#	2
83)	n-Propylbenzene	16.24	91	1054438	20.1423 ug/L		99
84)	Bromobenzene	16.37	156	205876	19.1199 ug/L		96
85)	1,3,5-Trimethylbenzene	16.42	105	761208	19.9618 ug/L		99
86)	2-Chlorotoluene	16.51	91	753965	20.6288 ug/L		98
87)	4-Chlorotoluene	16.56	91	618628	18.7382 ug/L		99
88)	a-Methylstyrene	16.83	118	360182	19.9084 ug/L		100
89)	tert-Butylbenzene	16.89	134	145442	19.4956 ug/L		100
90)	1,2,4-Trimethylbenzene	16.94	105	762834	19.4545 ug/L		99
91)	sec-Butylbenzene	17.16	105	882487	19.6715 ug/L		100
92)	p-Isopropyltoluene	17.32	119	751938	19.7407 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	413860	19.9608 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	412948	19.7553 ug/L		98
95)	n-Butylbenzene	17.85	91	702648	18.6593 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	357890	19.4080 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23724	17.5470 ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	264677	19.2023 ug/L		99
99)	Hexachlorobutadiene	20.43	225	132113	20.5137 ug/L		100
100)	Naphthalene	20.65	128	331982	16.2112 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	210152	18.0719 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413256.D 8260WT.M Mon Jun 27 12:33:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413256.D Vial: 9
Acq On : 26 Jun 2016 20:56 Operator: ADC
Sample : L16061068-16 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

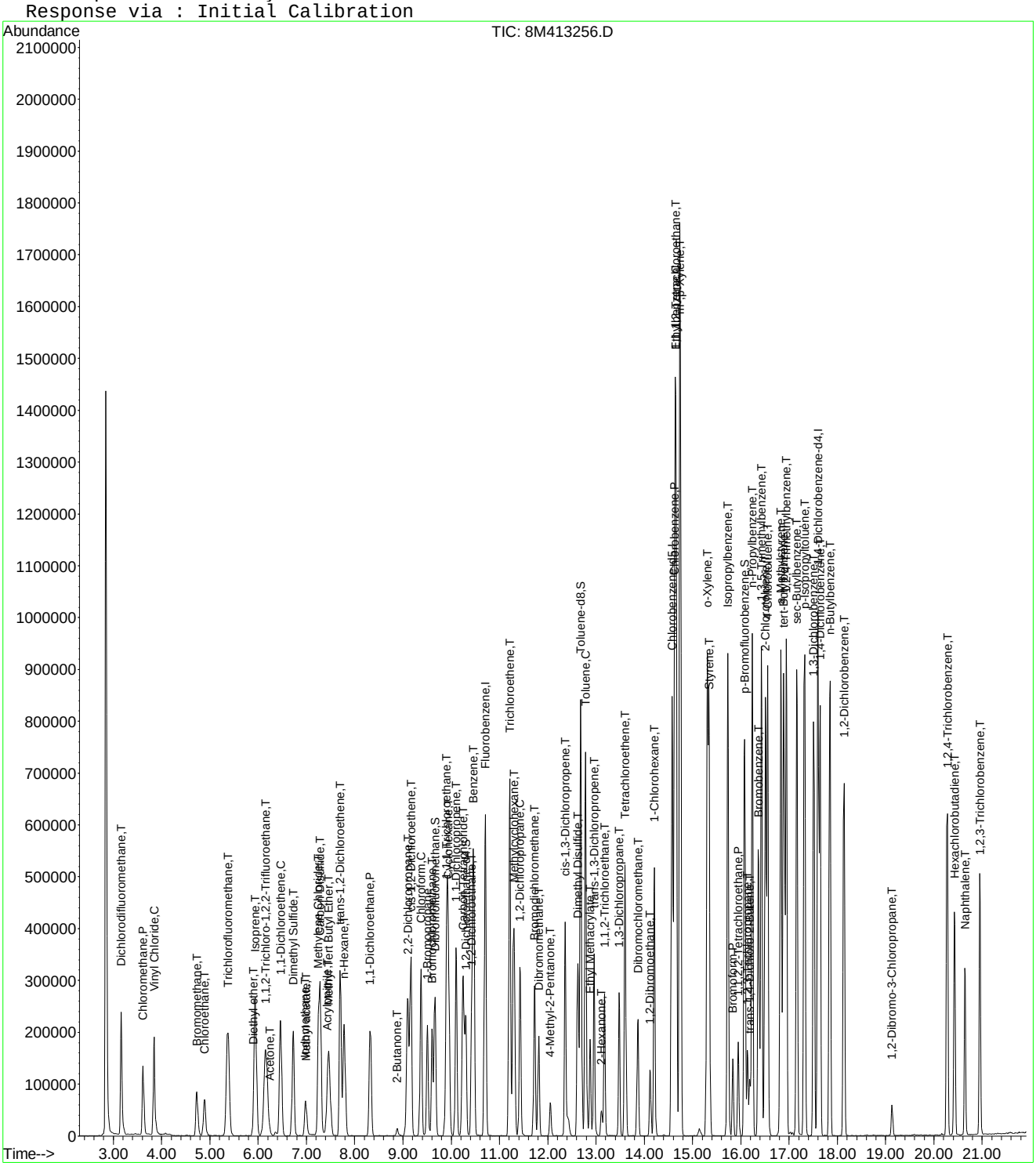

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413284.D Vial: 10
Acq On : 27 Jun 2016 22:06 Operator: FJB
Sample : L16061068-18 TB B 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:57:29 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	642856	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	510260	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	284359	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	196356	28.4288 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.72%		
43) 1,2-Dichloroethane-d4	10.30	65	217905	29.4229 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.68%		
58) Toluene-d8	12.68	98	683658	25.6007 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.40%		
80) p-Bromofluorobenzene	16.08	95	298576	25.3579 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.44%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.64	42	558	0.7973 ug/L #	50

(#) = qualifier out of range (m) = manual integration
8M413284.D 8260WT.M Wed Jun 29 08:57:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413284.D Vial: 10
Acq On : 27 Jun 2016 22:06 Operator: FJB
Sample : L16061068-18 TB B 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:57 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

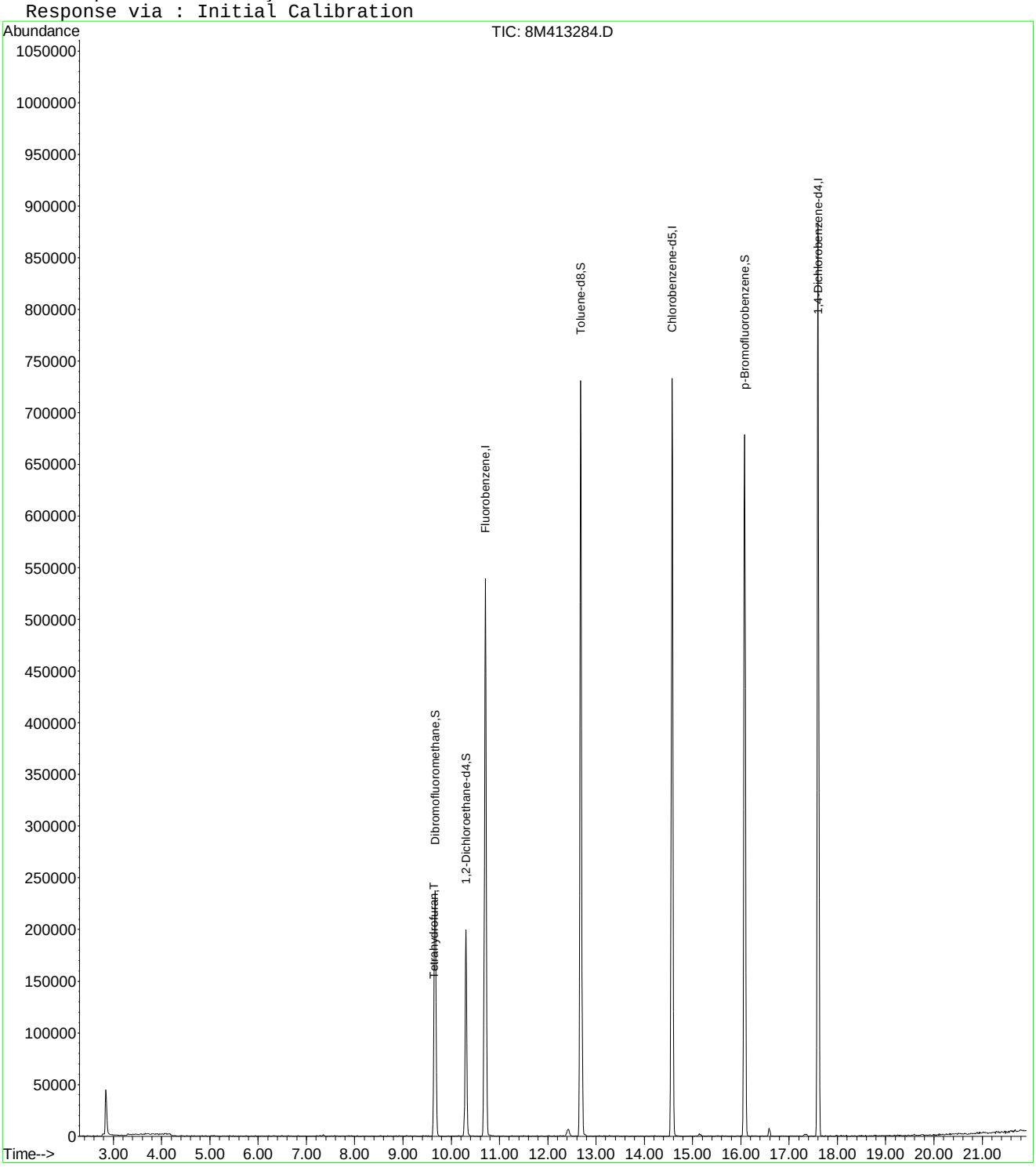

8M413284.D 8260WT.M Wed Jun 29 08:57:32 2016 Page 2

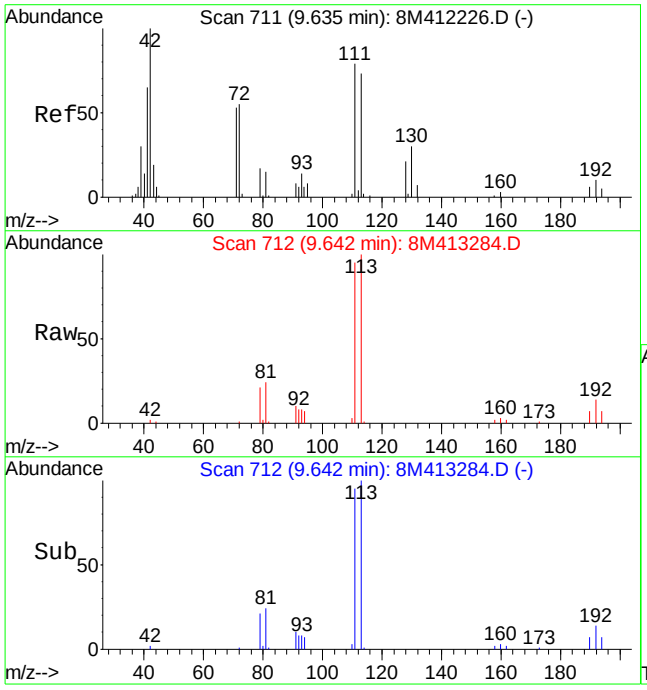

#36
Tetrahydrofuran
Concen: 0.80 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M413284.D
Acq: 27 Jun 2016 22:06

Tgt Ion: 42 Resp: 558

Ion	Ratio	Lower	Upper
42	100		
72	76.2	33.8	78.8
71	0.0	32.0	74.8#

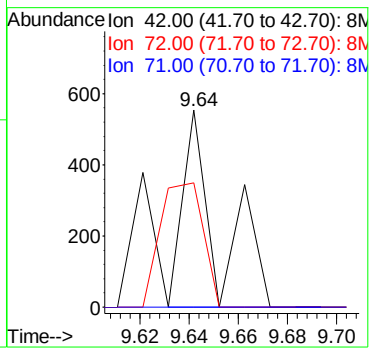

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:55 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

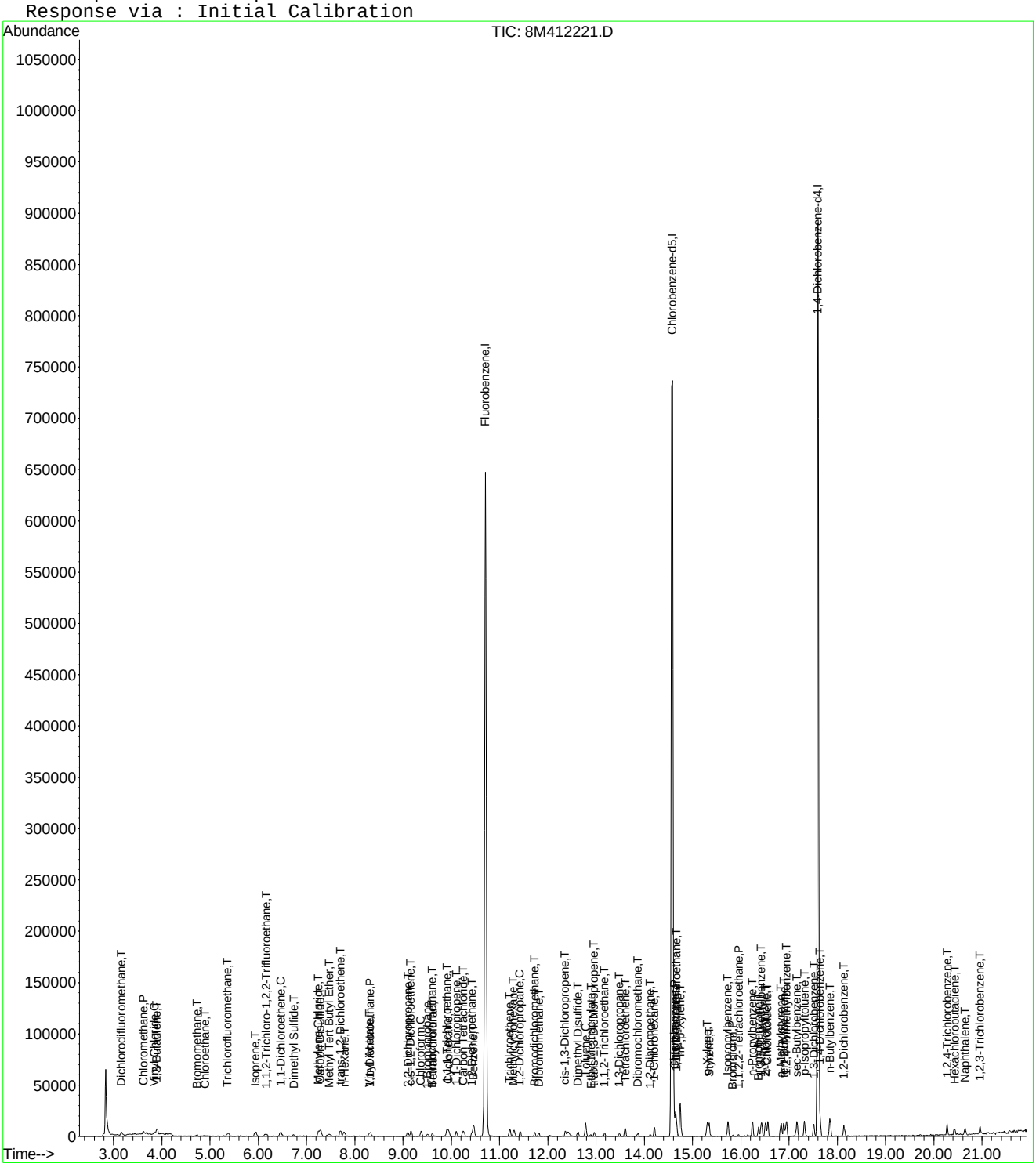

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

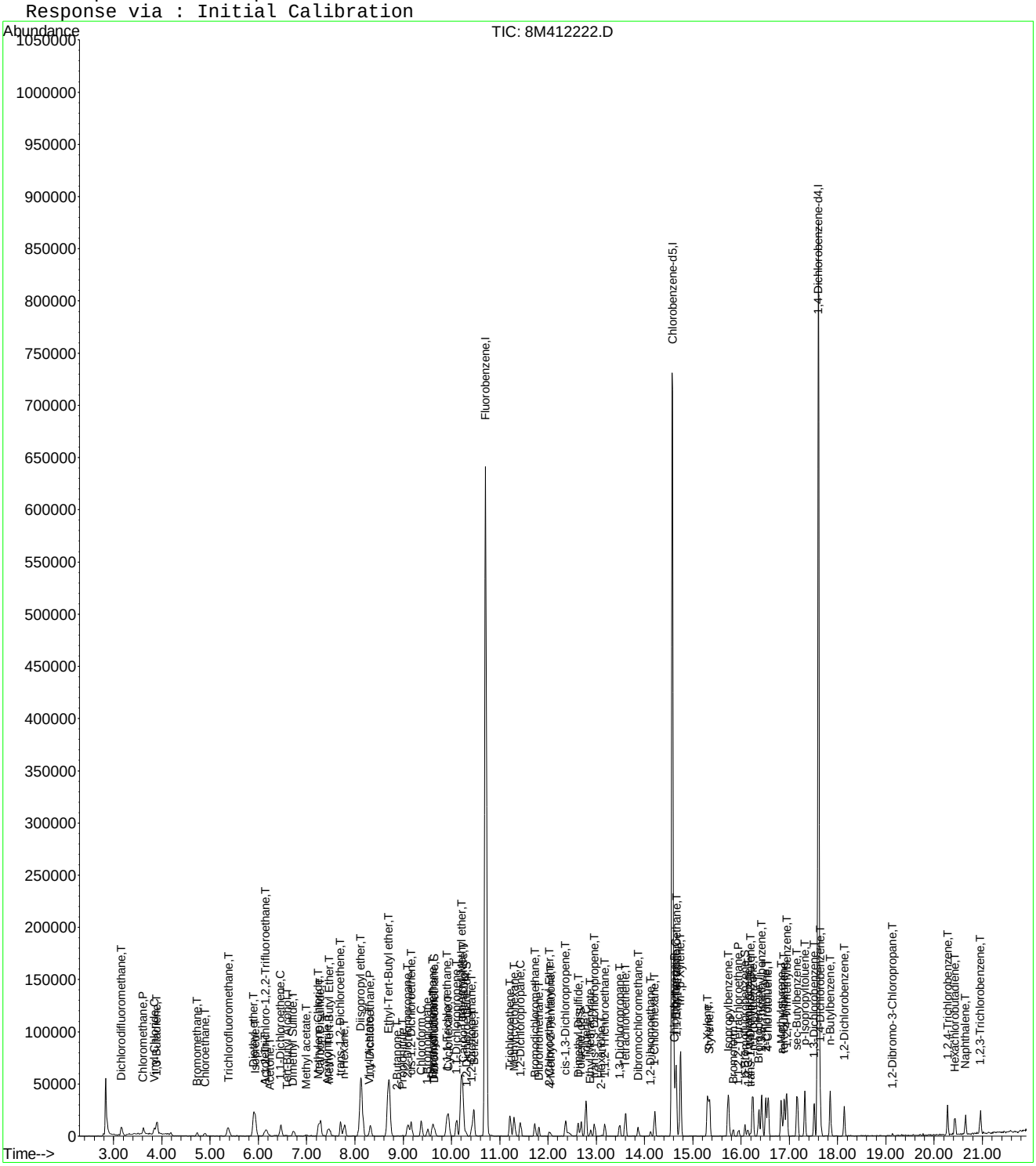

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412222.D 8260WT.M Sat May 14 18:05:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#		
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#		
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#		
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

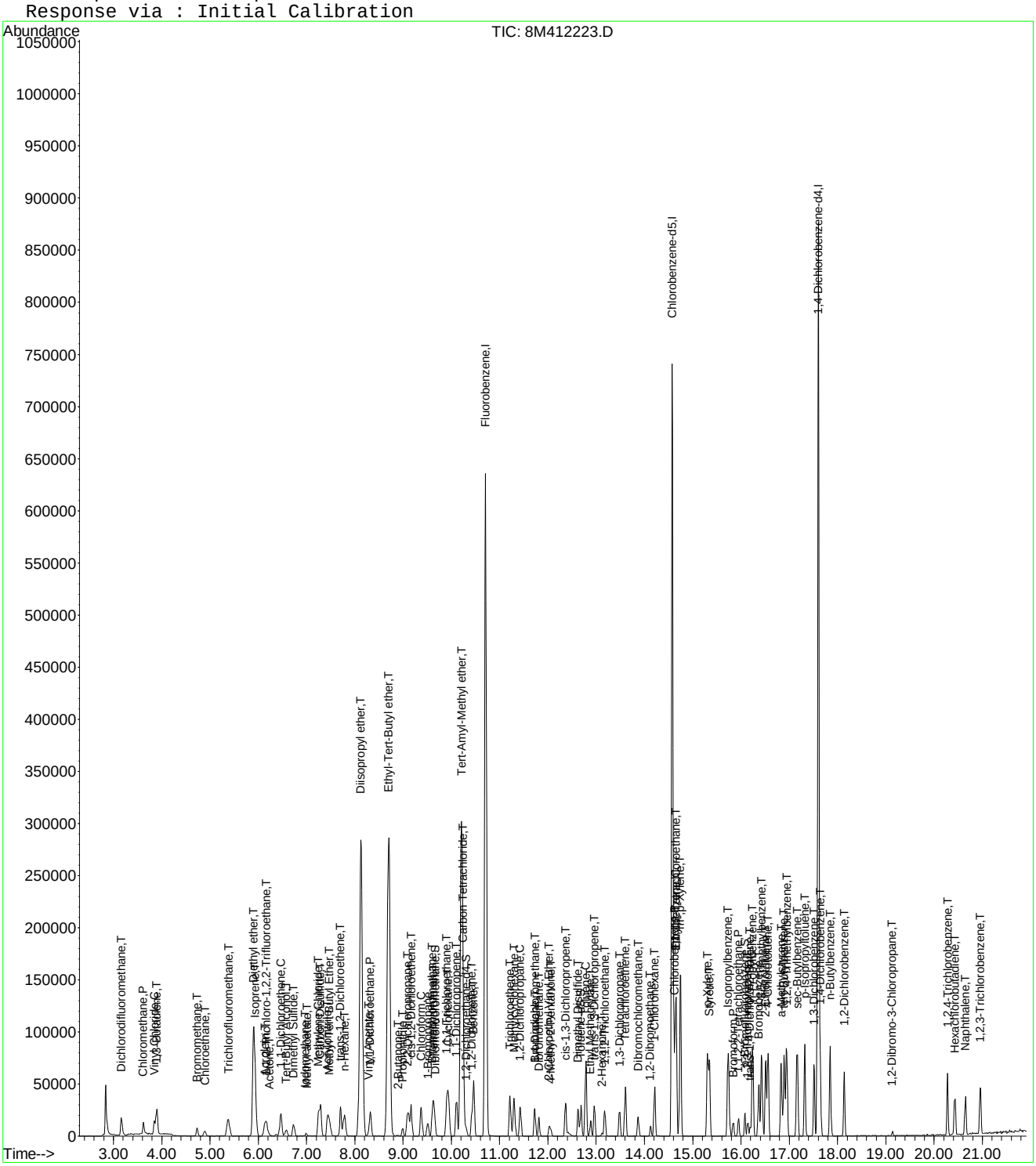

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412223.D 8260WT.M Sat May 14 18:08:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	19775	2.0496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750 ug/L	99
3) Chloromethane	3.62	50	34194	2.2538 ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488 ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976 ug/L	93
6) Bromomethane	4.72	94	19582	3.4204 ug/L	94
7) Chloroethane	4.90	64	22000	3.2814 ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212 ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955 ug/L	79
10) Isoprene	5.94	67	44975	4.3218 ug/L	78
11) Acrolein	6.15	56	7712	13.9568 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591 ug/L	99
13) Acetone	6.24	43	3578	1.8967 ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897 ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597 ug/L	77
17) Iodomethane	6.99	142	3667	1.8964 ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398 ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823 ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097 ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108 ug/L	94
24) n-Hexane	7.78	57	40758	2.7480 ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337 ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113 ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852 ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738 ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726 ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950 ug/L	89
33) Chloroform	9.37	83	78227	4.3116 ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986 ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009 ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633 ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958 ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

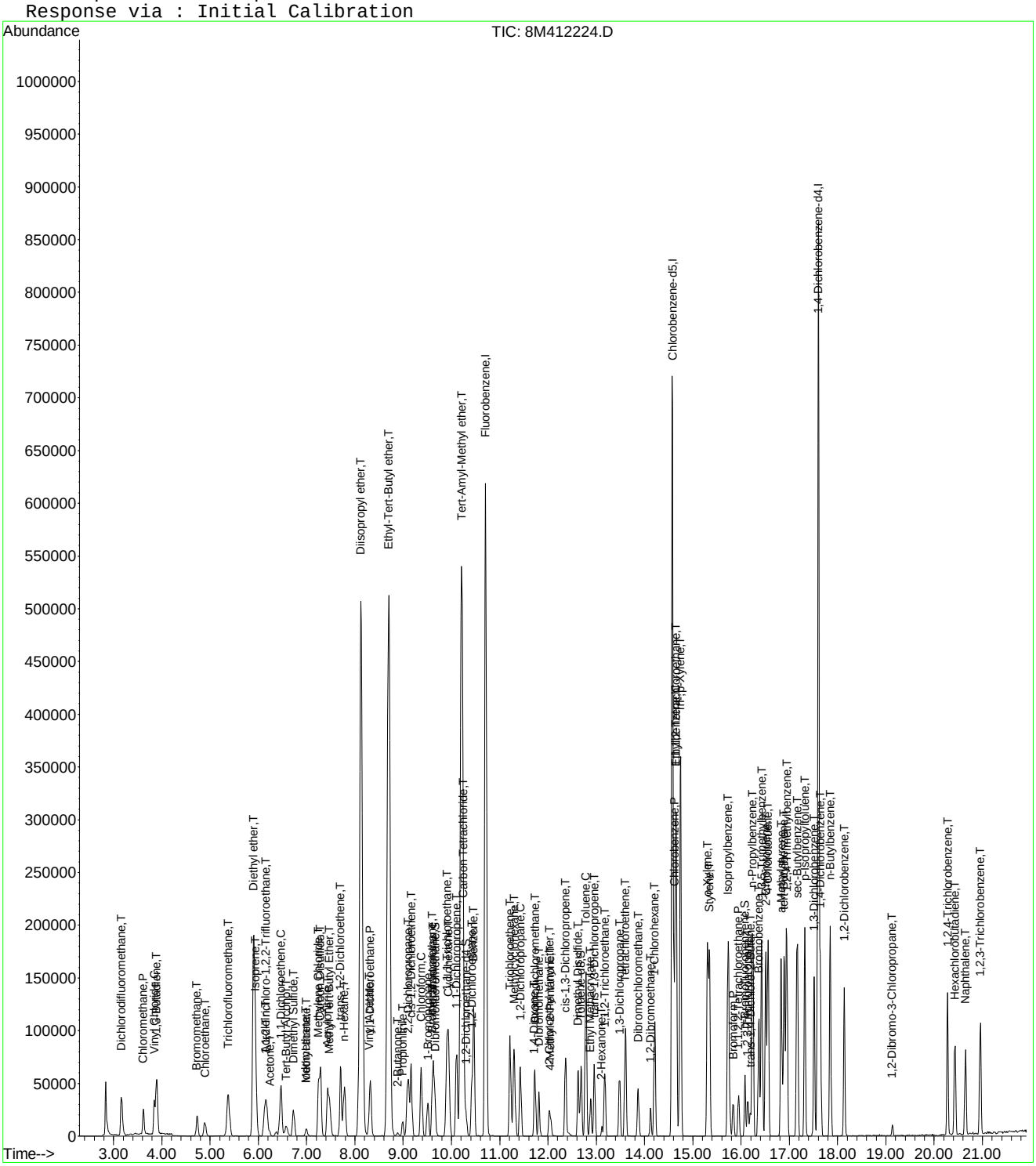

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403 ug/L		85
46)	Benzene	10.46	78	668449	20.3769 ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980 ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887 ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883 ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986 ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837 ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600 ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531 ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841 ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412 ug/L		100
59)	Toluene	12.78	91	700473	20.1722 ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216 ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093 ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491 ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055 ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695 ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366 ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591 ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095 ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289 ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308 ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106 ug/L		90
75)	Styrene	15.35	104	492781	21.8207 ug/L		89
76)	Bromoform	15.83	173	95911	23.8070 ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779 ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513 ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511 ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033 ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615 ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155 ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225 ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680 ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705 ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783 ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802 ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492 ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126 ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874 ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419 ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863 ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523 ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

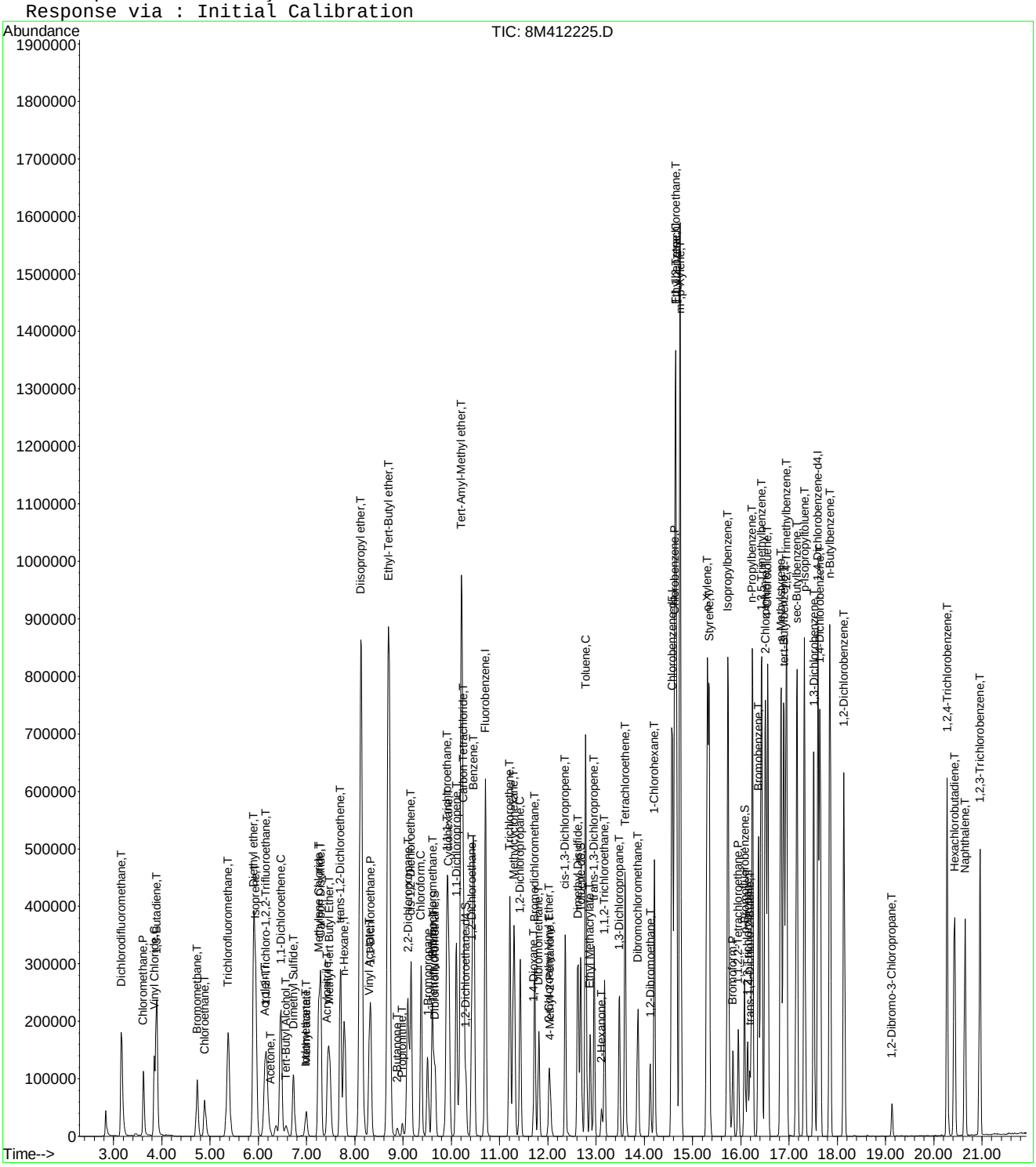

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

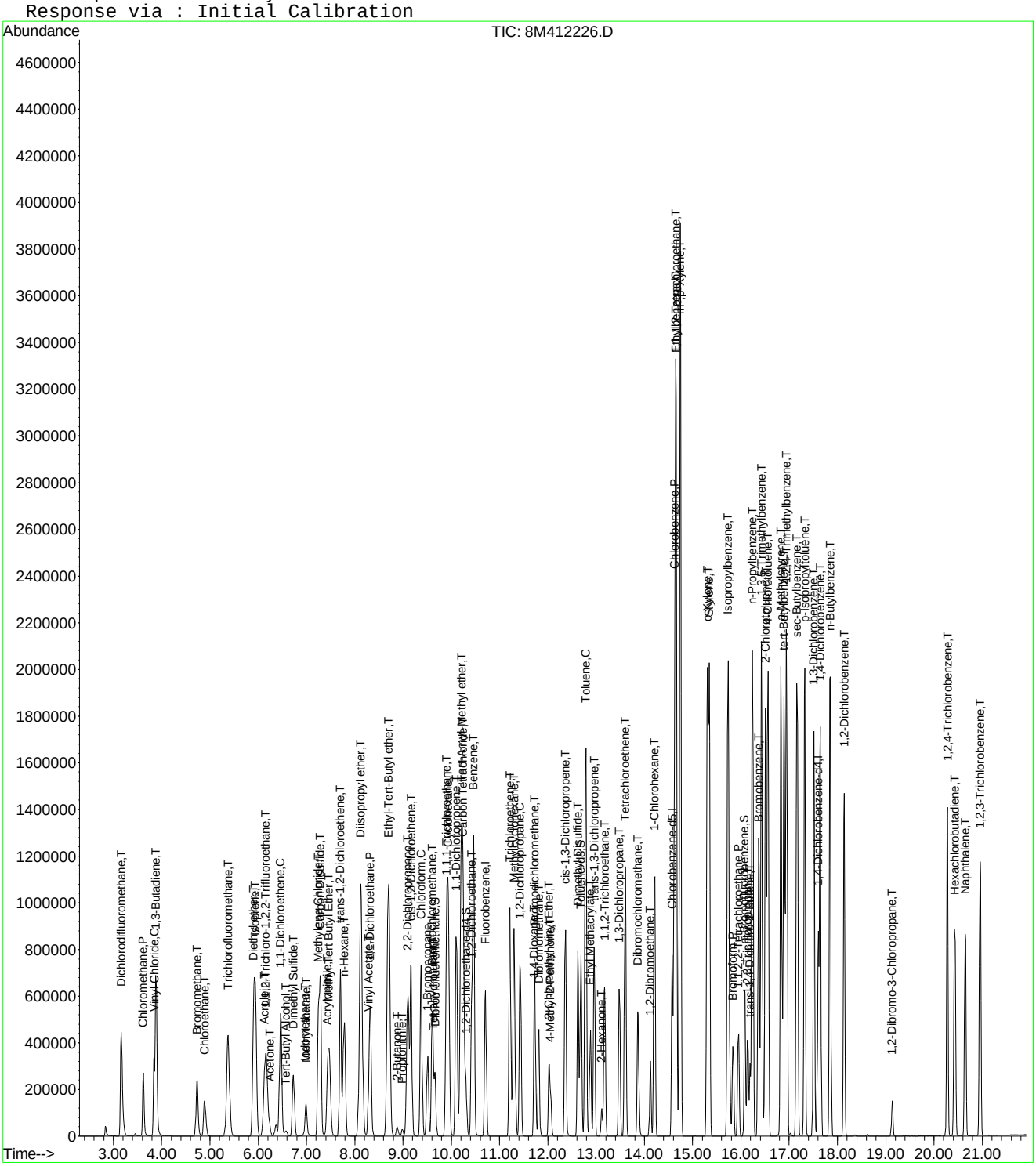

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

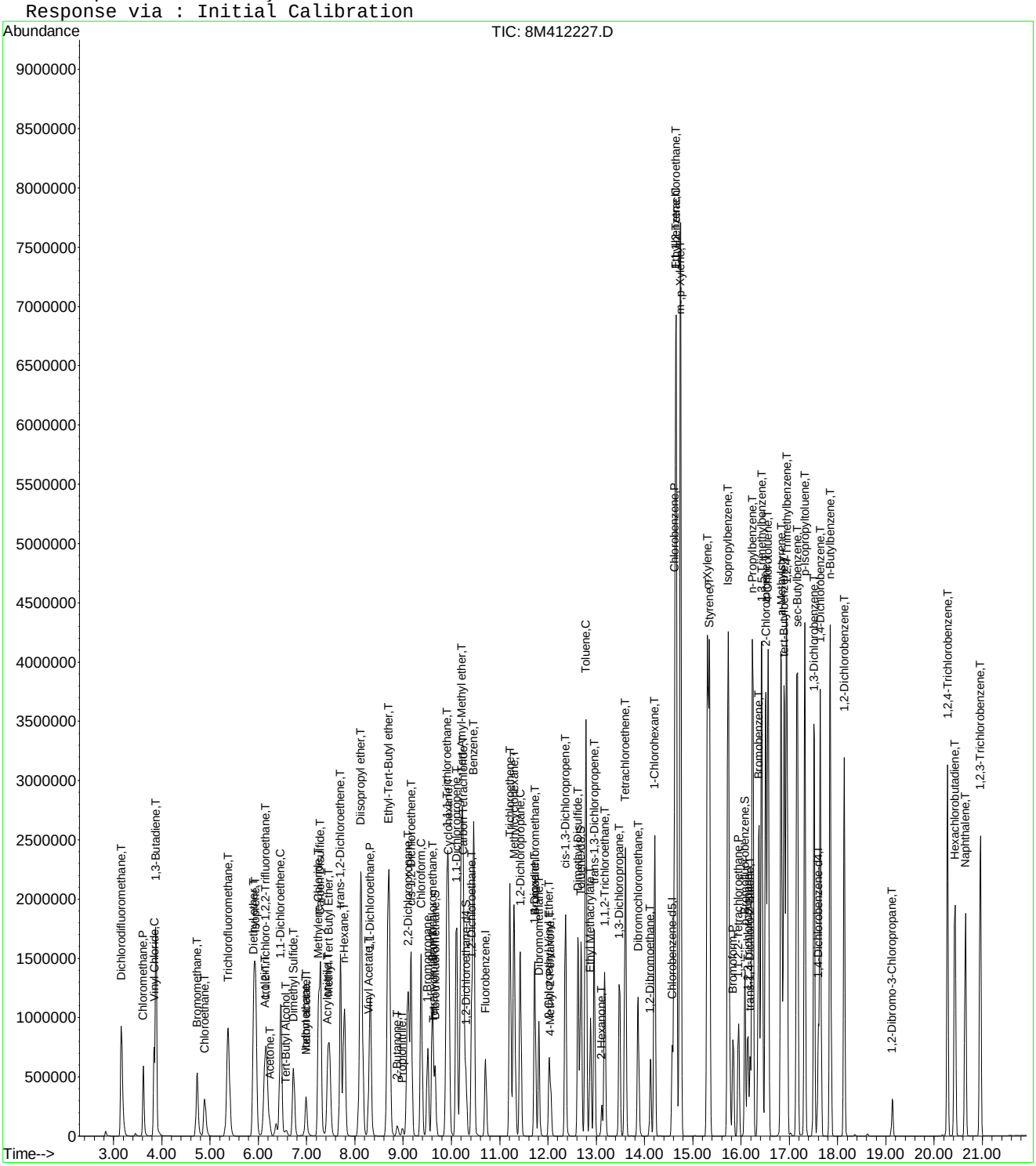

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

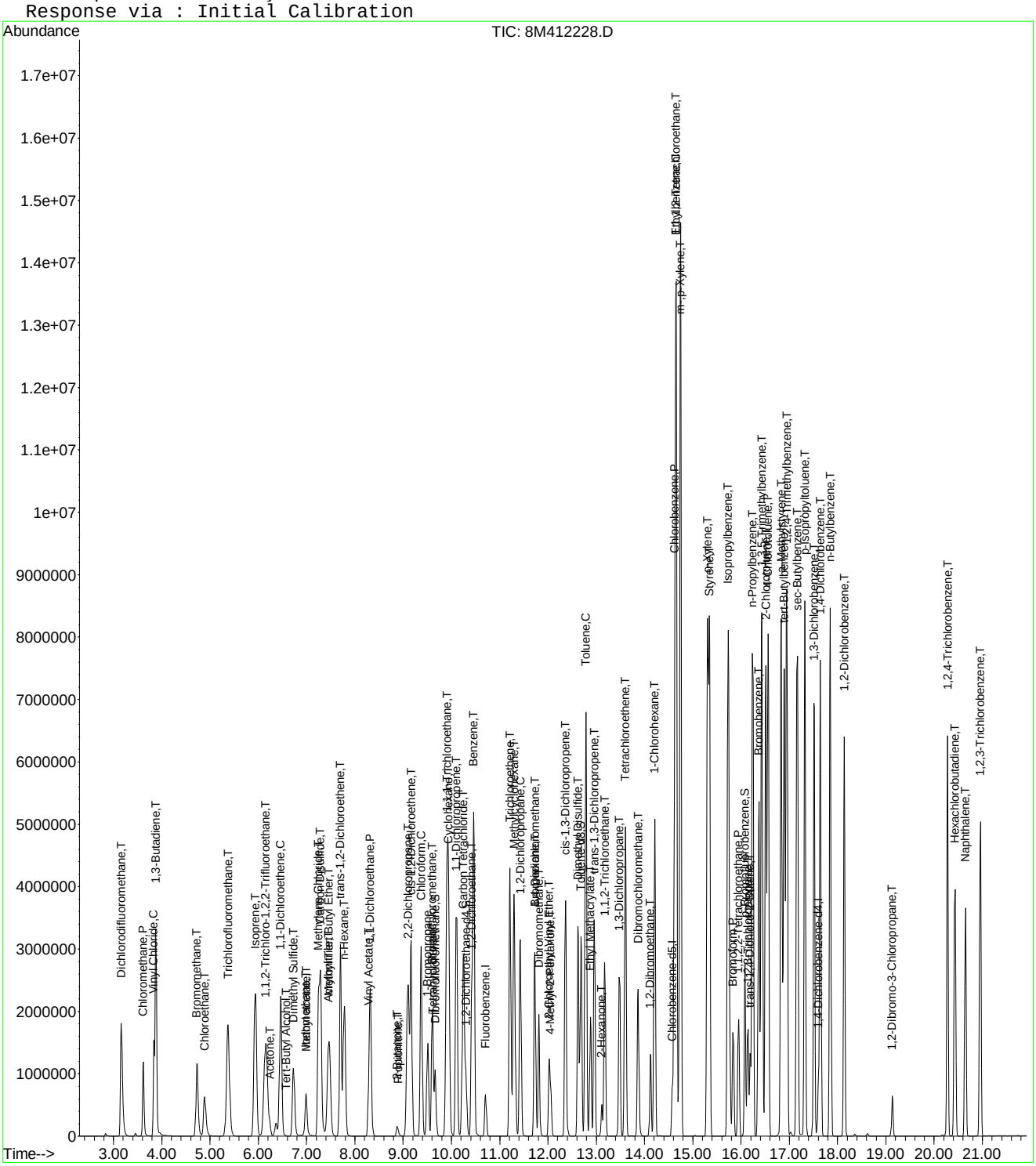

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726	ug/L		86
46)	Benzene	10.46	78	9065861	250.7462	ug/L		93
47)	Trichloroethene	11.21	130	2772282	295.1106	ug/L		97
48)	Methylcyclohexane	11.30	83	4327357	304.8748	ug/L		84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718	ug/L		74
50)	Bromodichloromethane	11.73	83	4051493	294.7973	ug/L		99
51)	1,4-Dioxane	11.72	88	26614	699.8767	ug/L		67
52)	Dibromomethane	11.81	93	1369945	295.3776	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917	ug/L		90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522	ug/L	#	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431	ug/L		97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911	ug/L		94
59)	Toluene	12.78	91	9135213	236.4669	ug/L		90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240	ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104	ug/L		100
64)	2-Hexanone	13.11	58	381967	311.8816	ug/L	#	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141	ug/L		76
66)	Tetrachloroethene	13.60	164	2374435	297.7522	ug/L		96
67)	Dibromochloromethane	13.87	129	2638145	310.7838	ug/L		100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085	ug/L		99
69)	1-Chlorohexane	14.21	91	3712592	290.5924	ug/L		84
70)	Chlorobenzene	14.63	112	6754240	263.7433	ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001	ug/L		100
72)	Ethylbenzene	14.65	106	4014412	290.7661	ug/L		70
73)	m-,p-Xylene	14.75	106	8357822	505.3514	ug/L		70
74)	o-Xylene	15.31	106	4530840	285.4488	ug/L		88
75)	Styrene	15.35	104	7050702	269.0641	ug/L		82
76)	Bromoform	15.84	173	1602587	321.7373	ug/L		99
77)	Isopropylbenzene	15.73	105	9900817	226.7477	ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861	ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176	ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601	ug/L		82
83)	n-Propylbenzene	16.25	91	10768378	214.4110	ug/L		86
84)	Bromobenzene	16.37	156	2947671	300.5290	ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580	ug/L		92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449	ug/L		92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687	ug/L		93
88)	a-Methylstyrene	16.84	118	4955768	300.9205	ug/L		86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701	ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932	ug/L		89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051	ug/L		91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155	ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806	ug/L		87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593	ug/L		88
95)	n-Butylbenzene	17.85	91	8408157	234.6279	ug/L		92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787	ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741	ug/L		91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206	ug/L		98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378	ug/L		96
100)	Naphthalene	20.65	128	5216751	275.8542	ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

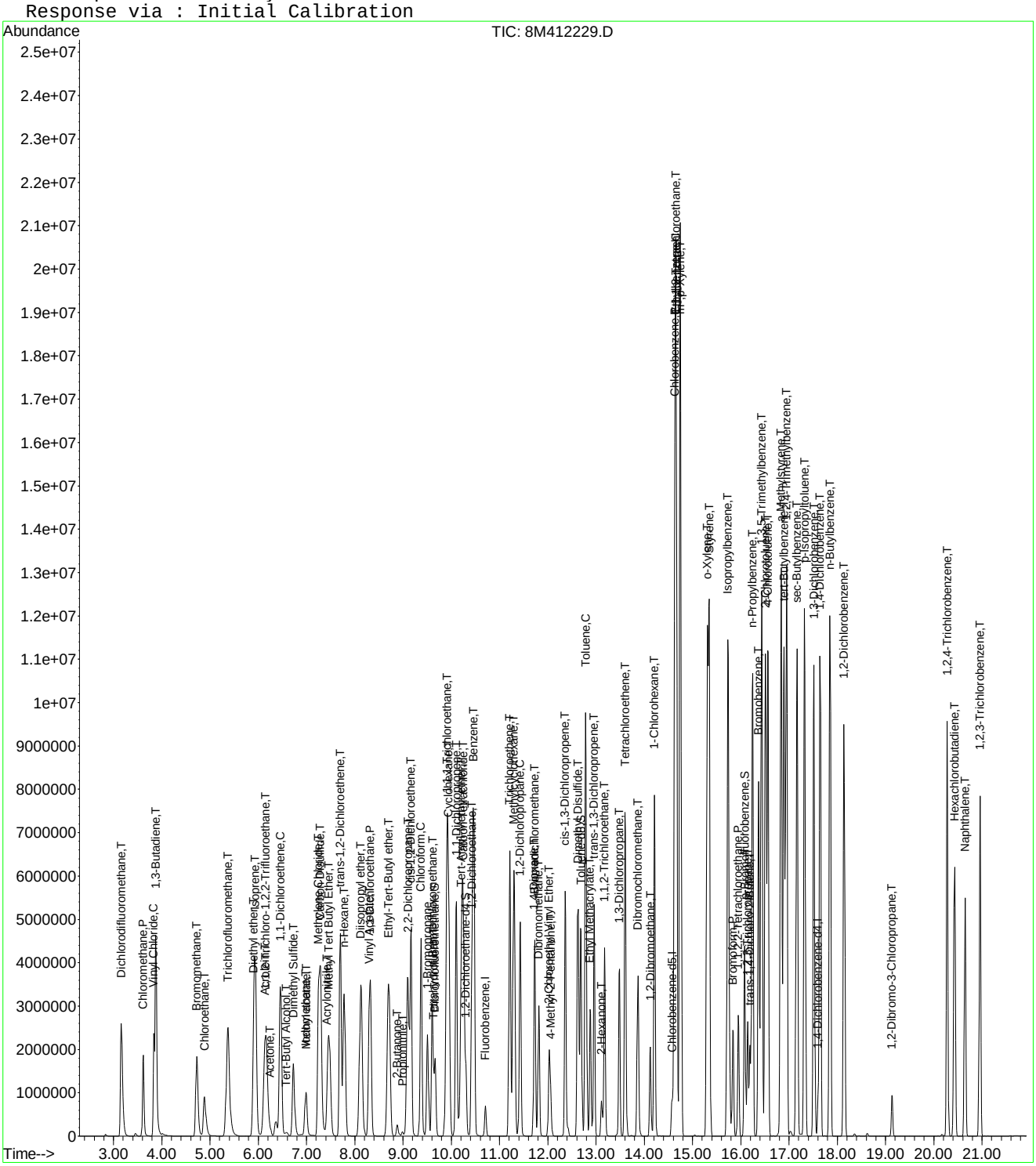

8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 3

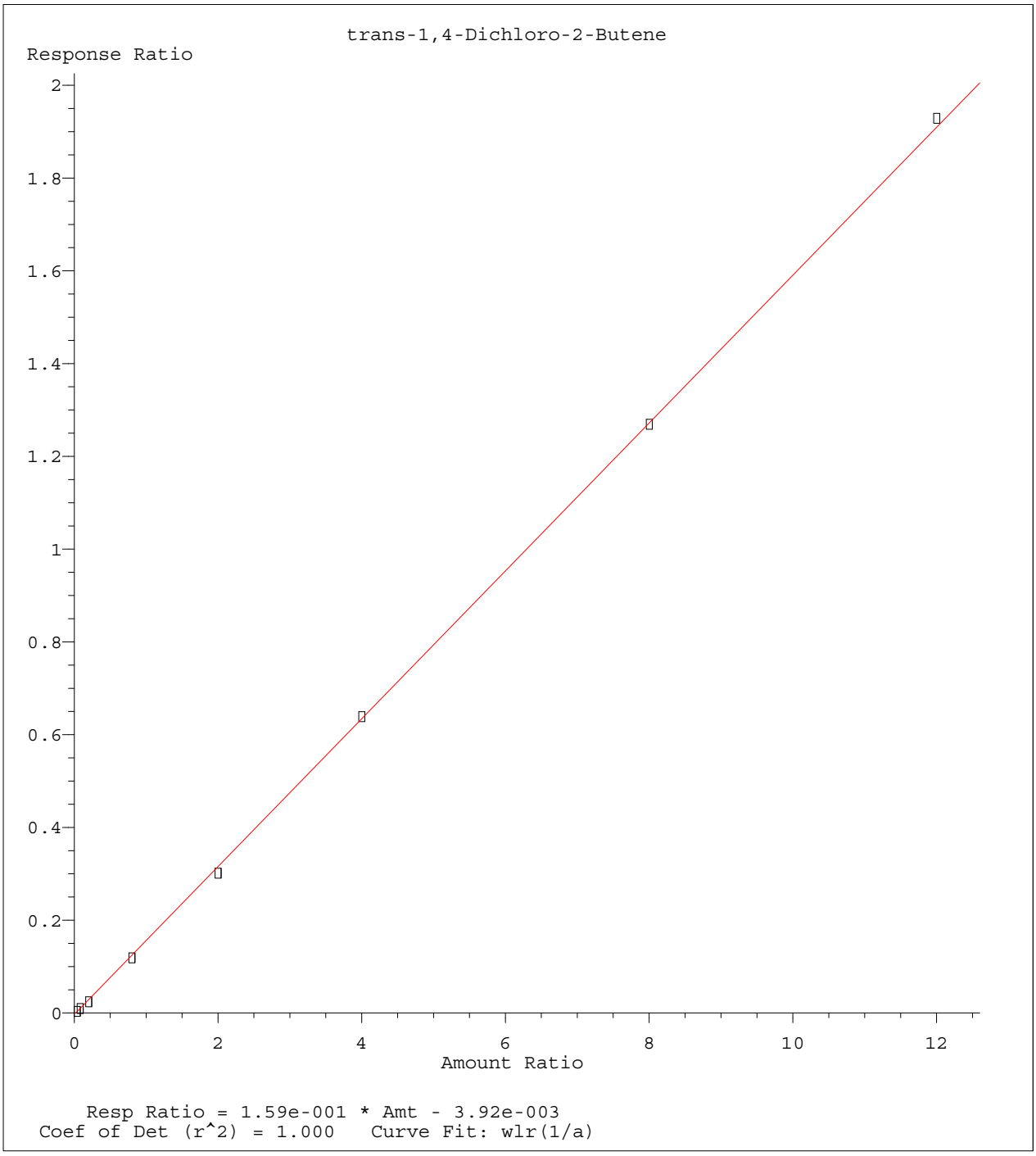

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

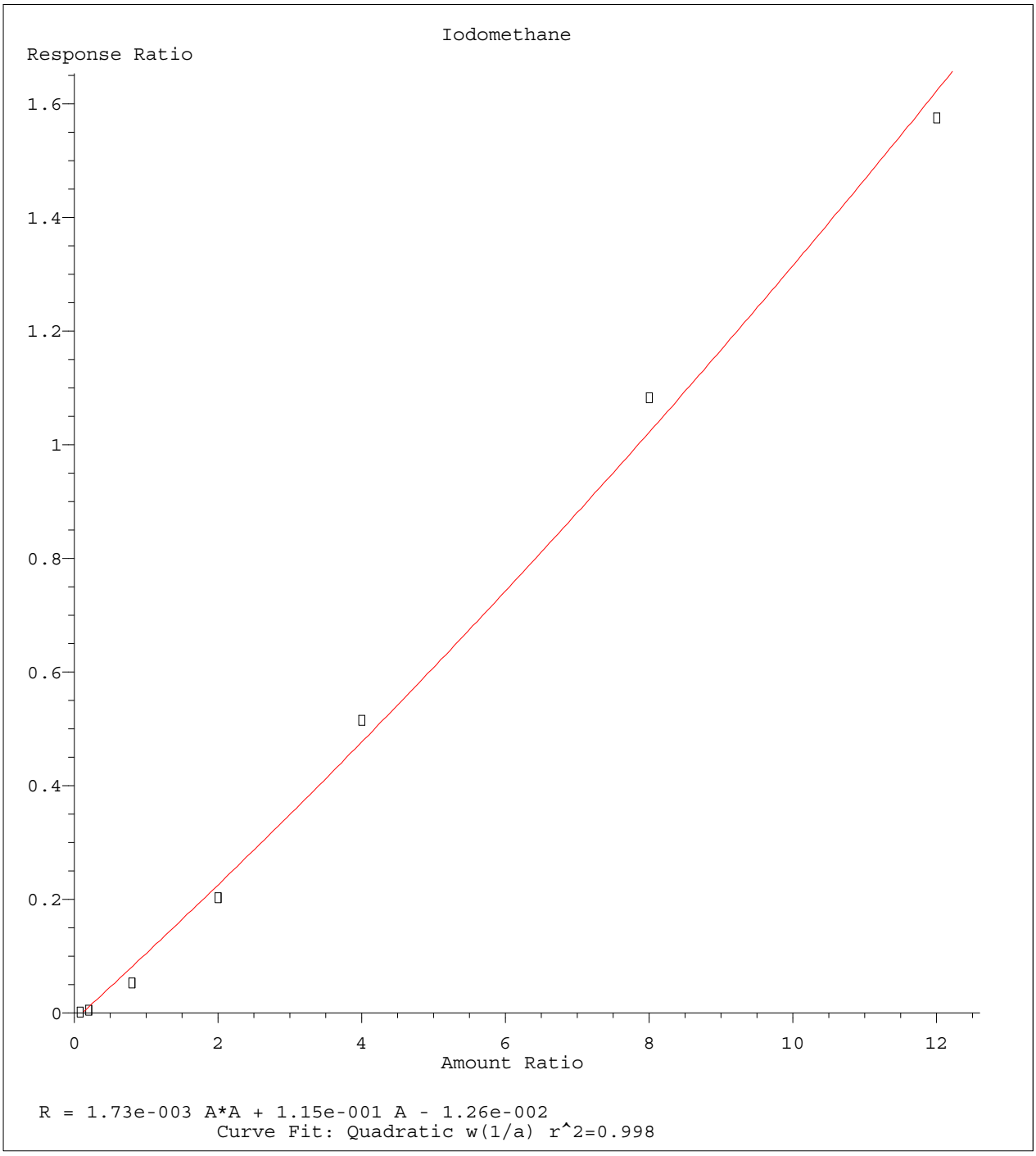

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

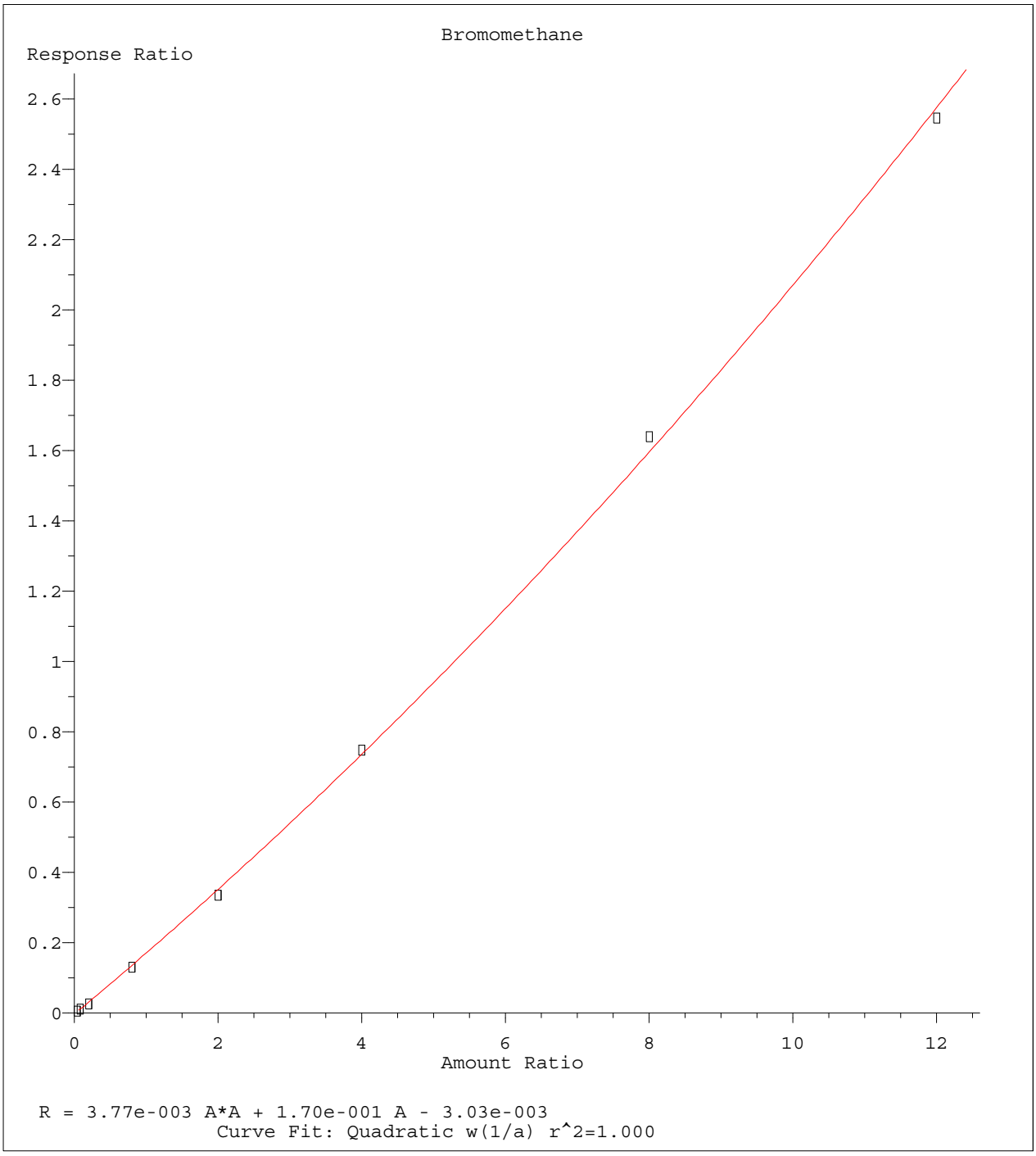

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

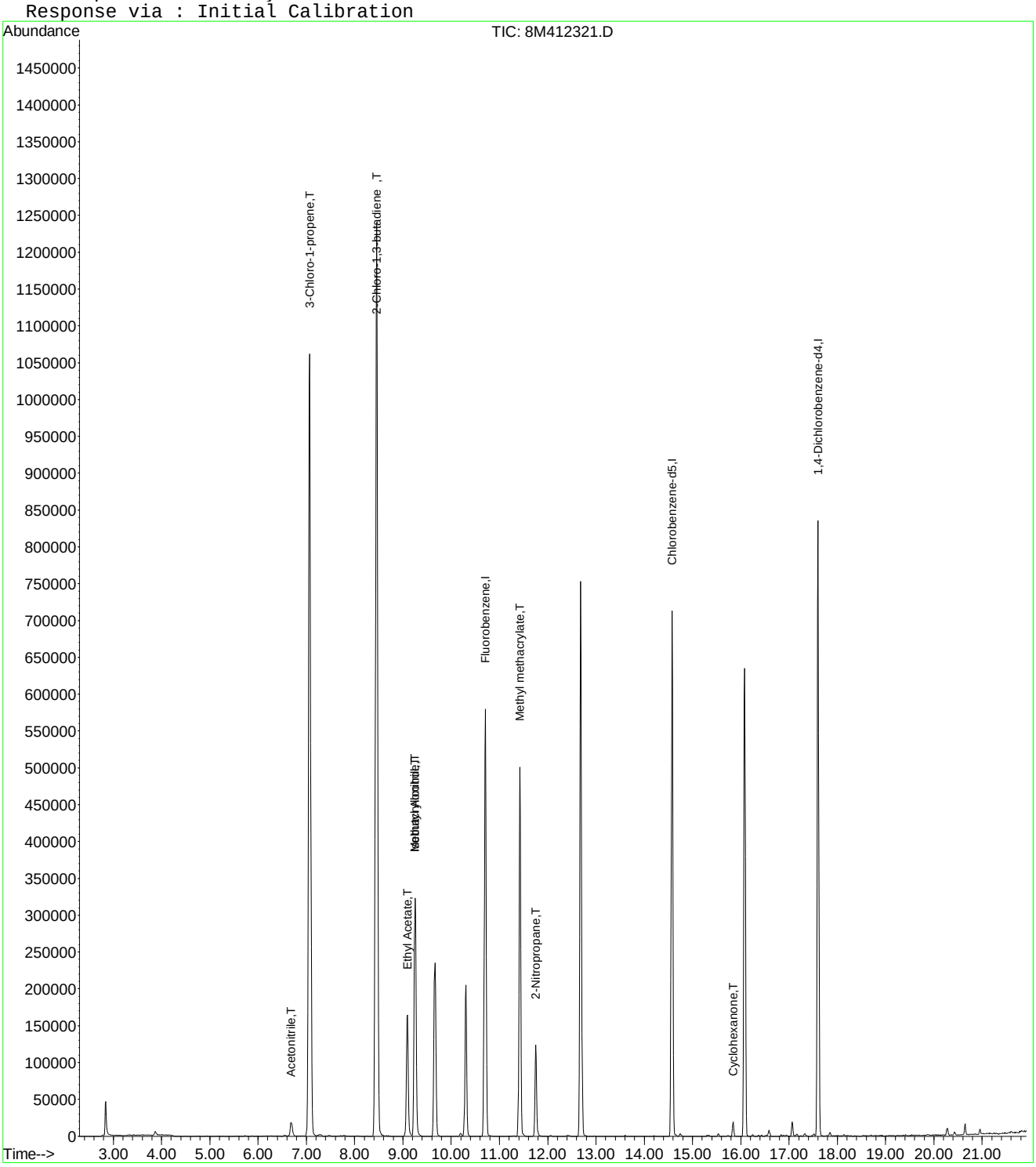

8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

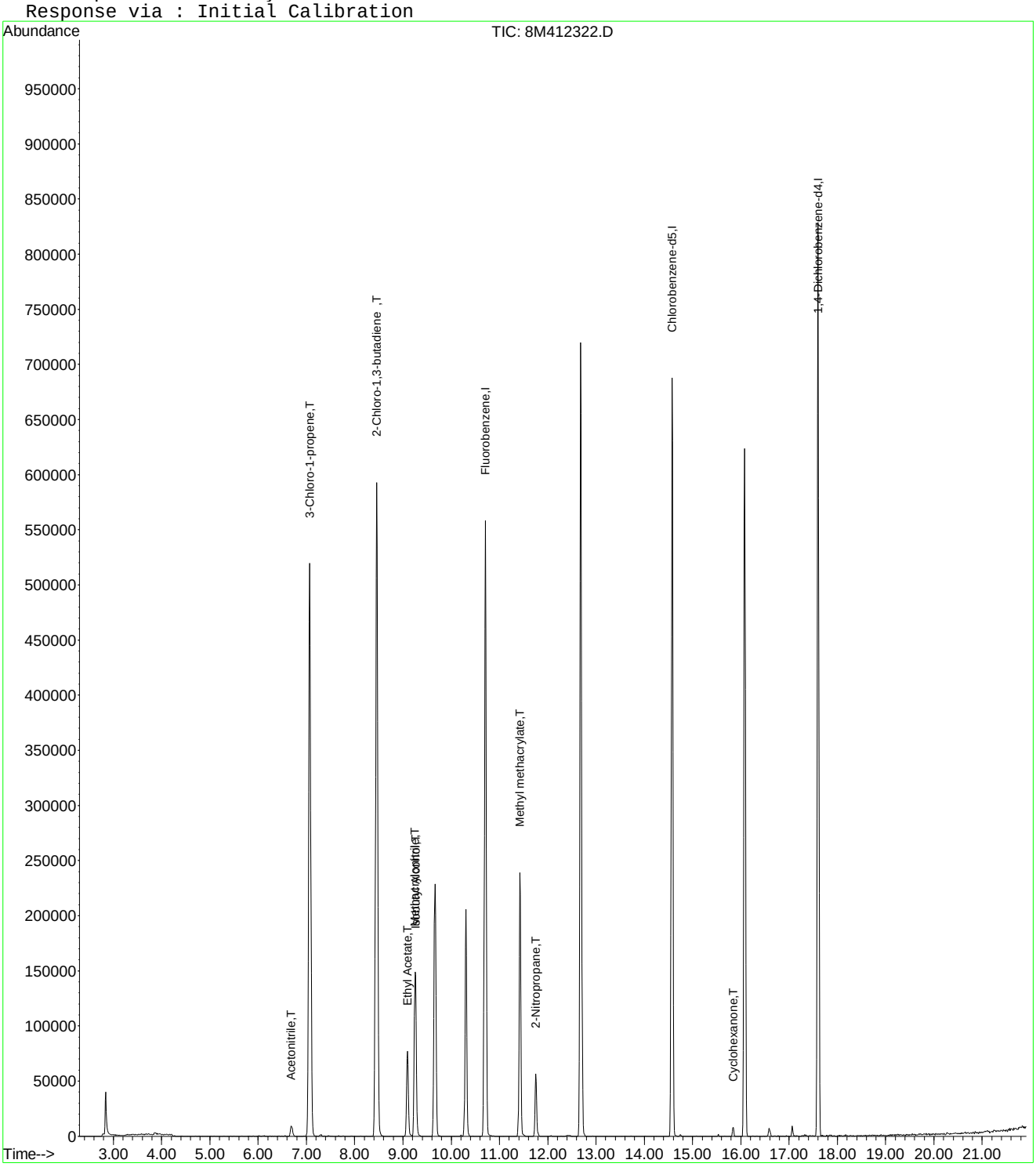

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

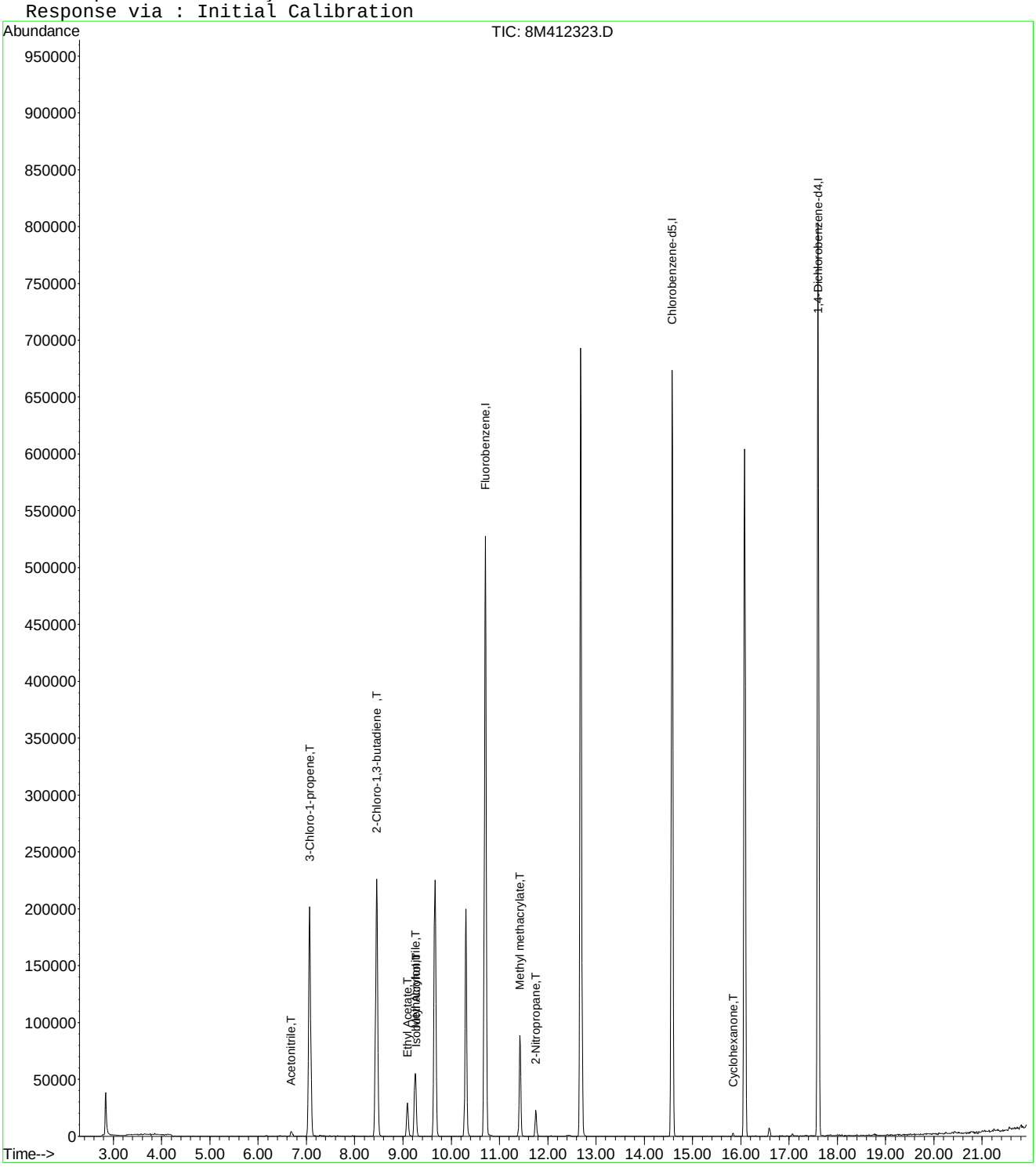

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

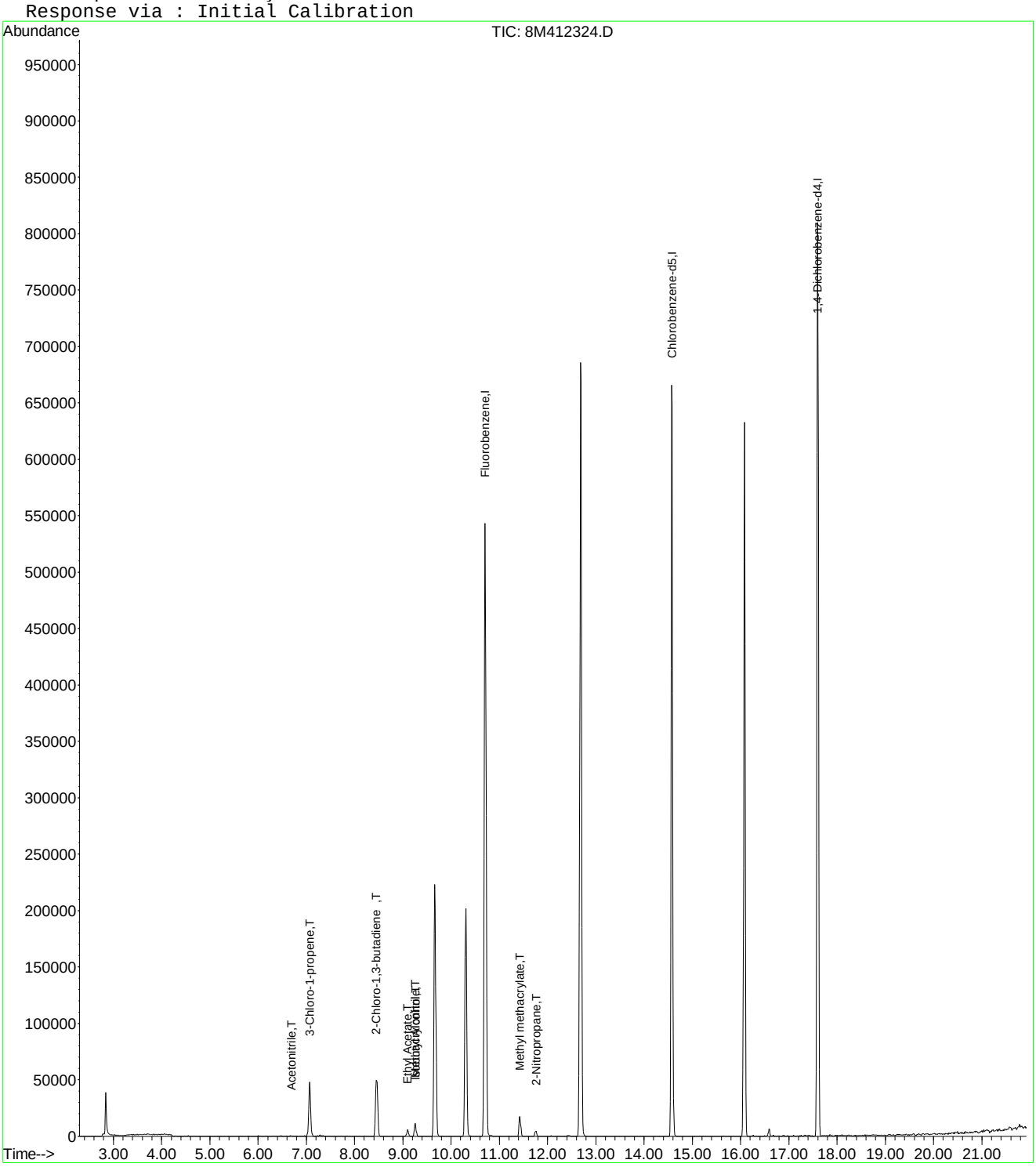

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

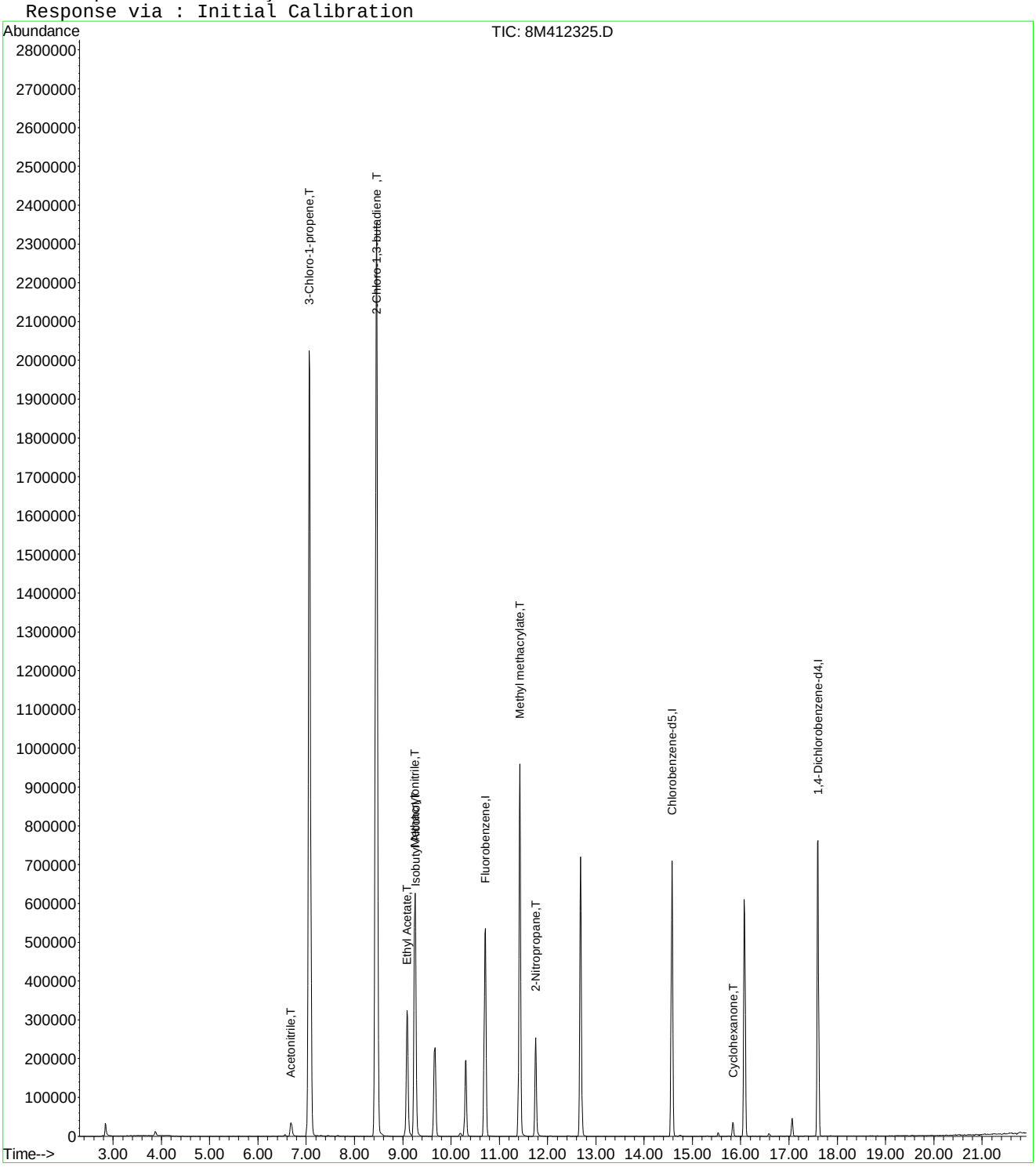

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	81471	303.8636	ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084	ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562	ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424	ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374	ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836	ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132	ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456	ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233	ug/L #	61

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

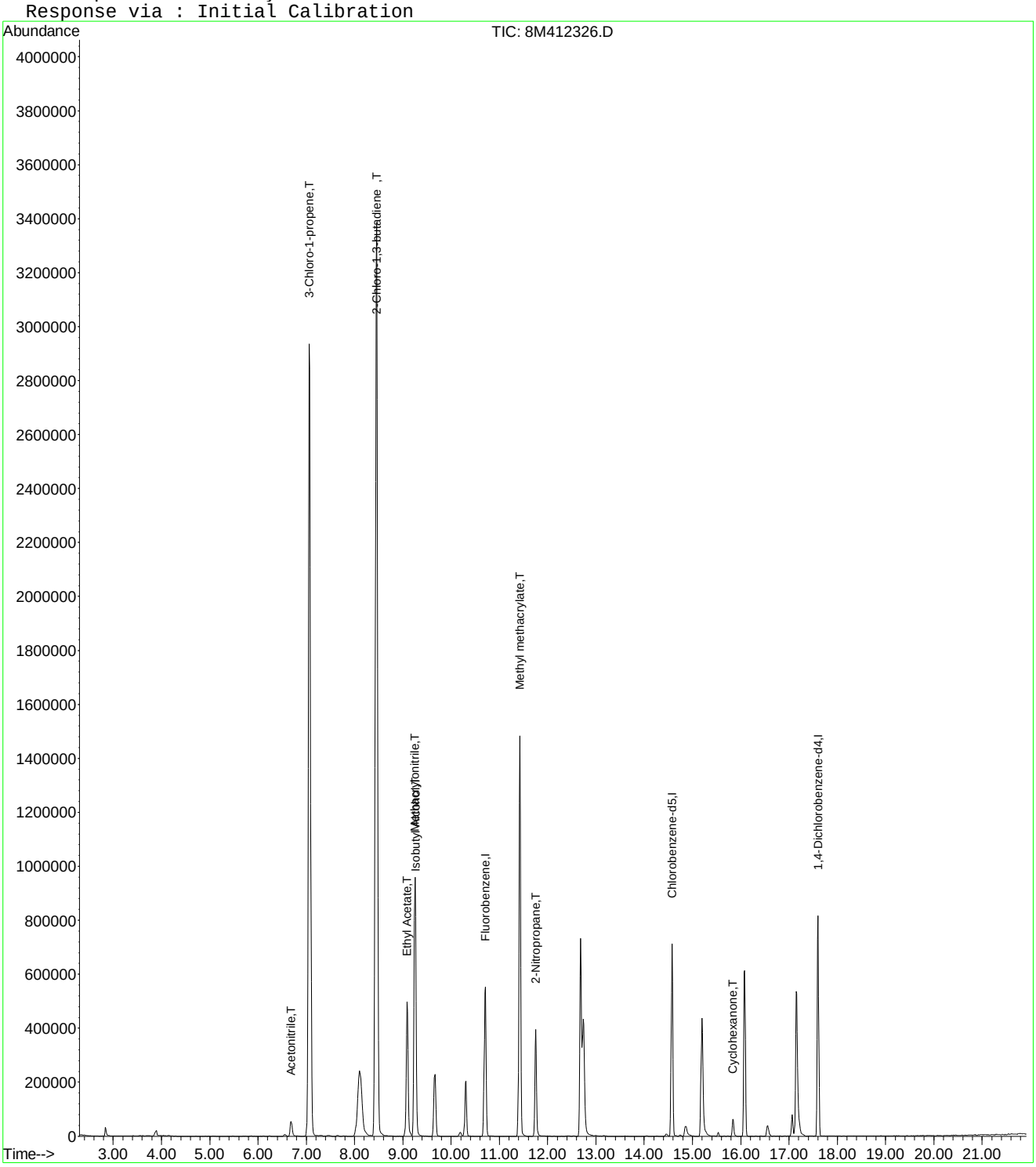

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

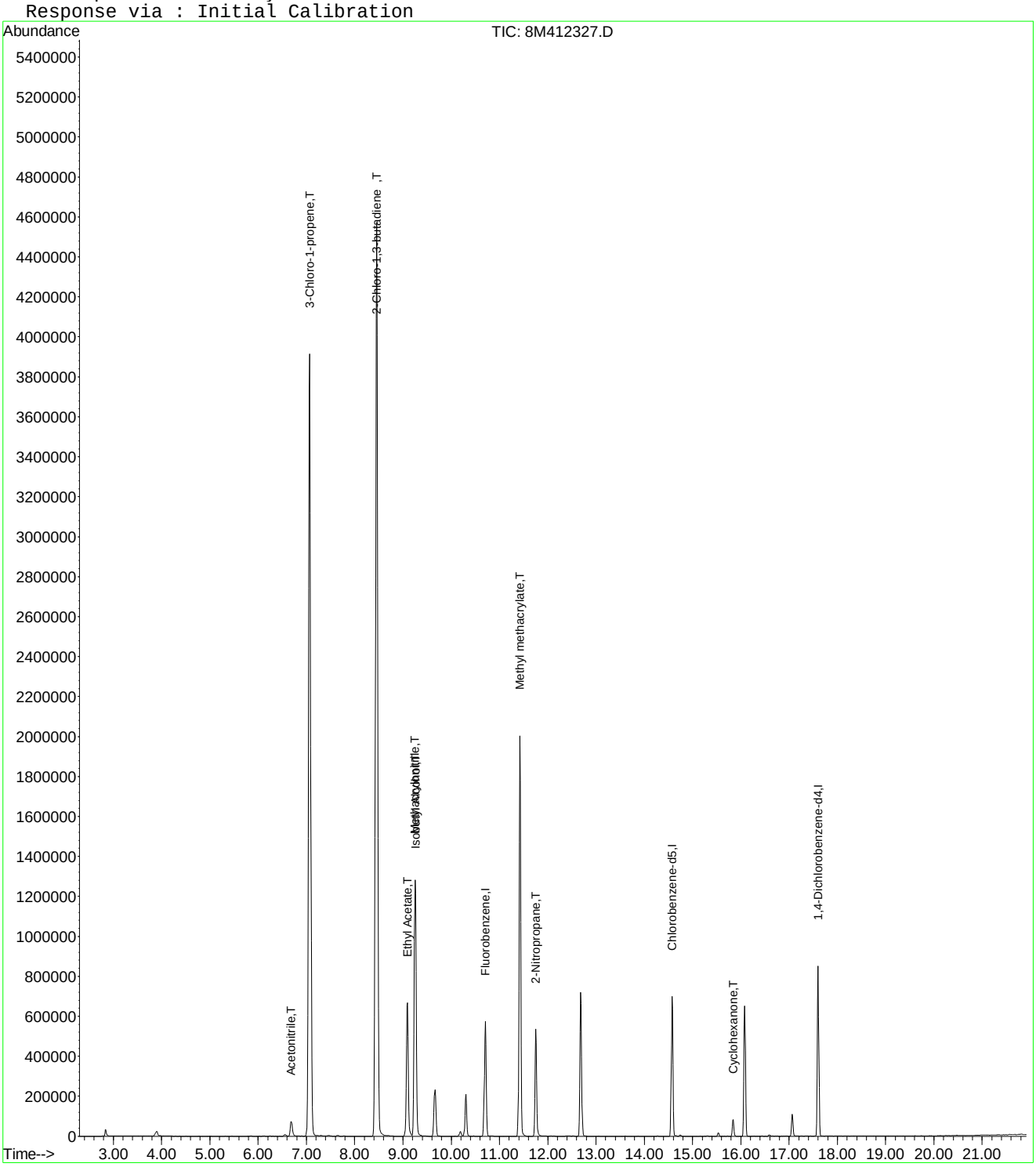

8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	132245	492.6753	ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834	ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693	ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017	ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083	ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367	ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877	ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956	ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160	ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

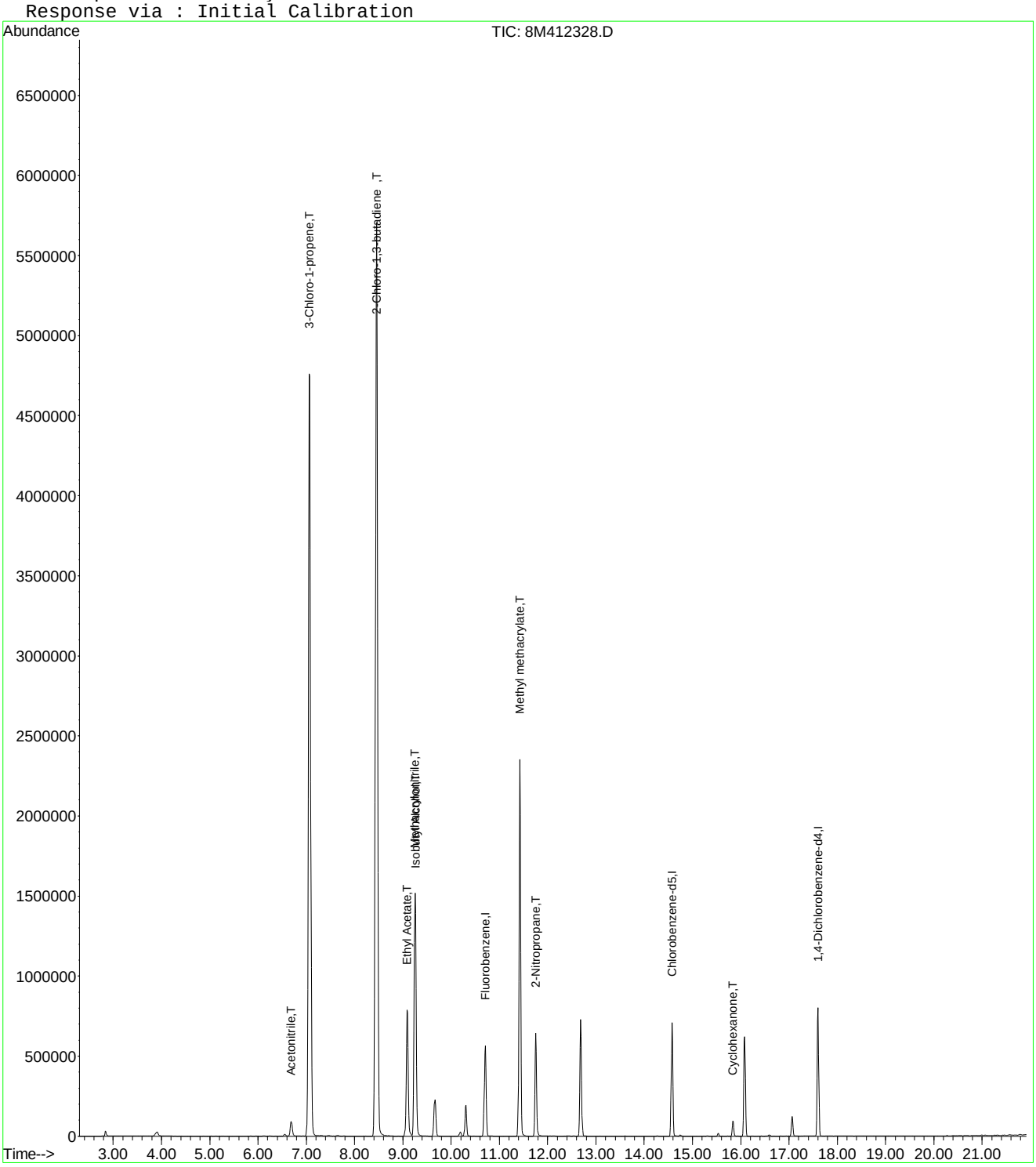

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

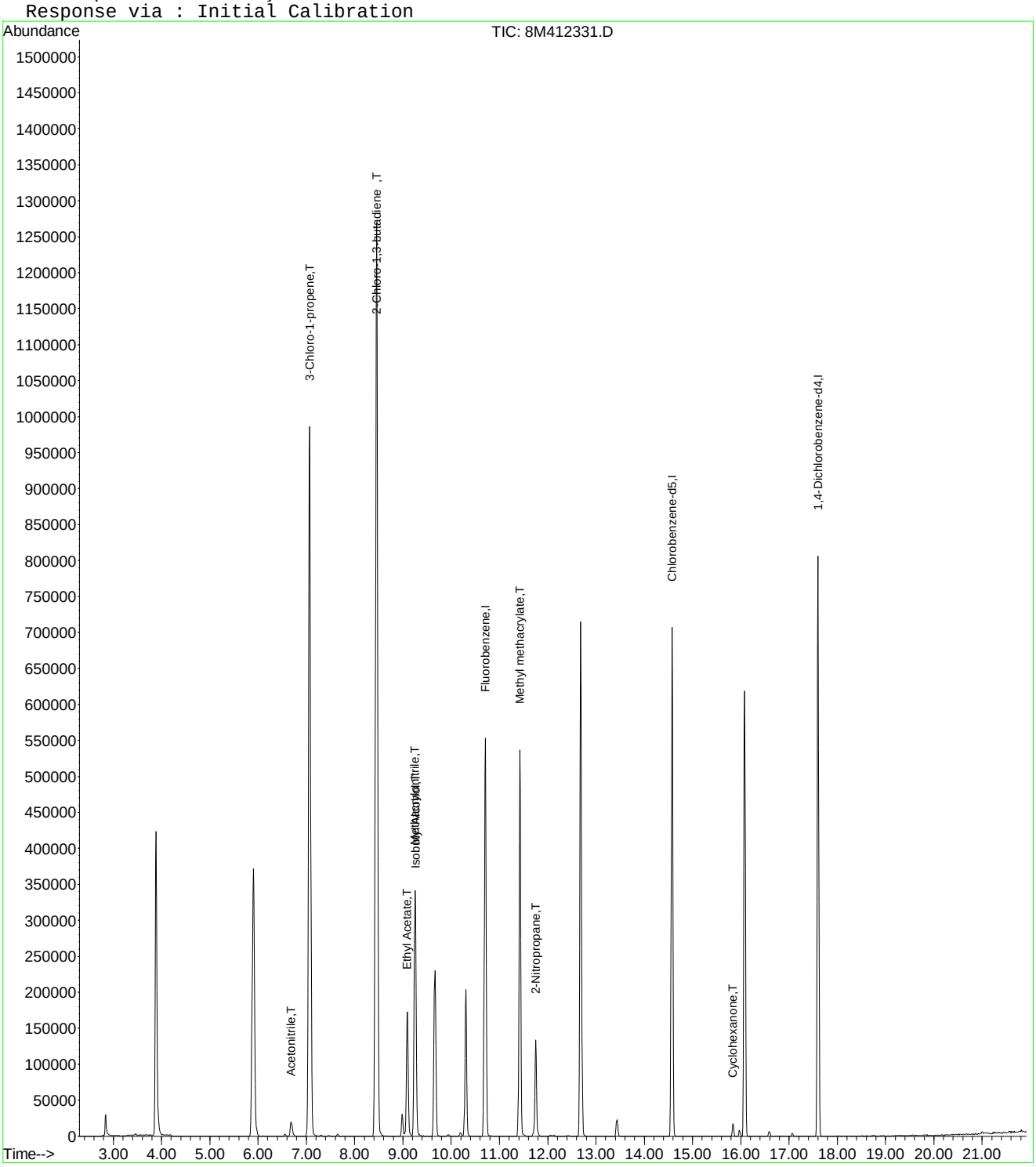

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 21:22:50 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	725028	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	565784	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	309614	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	215407	27.6524 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.60%		
43) 1,2-Dichloroethane-d4	10.30	65	235972	28.2513 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.00%		
58) Toluene-d8	12.68	98	743592	25.1124 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.44%		
80) p-Bromofluorobenzene	16.08	95	325934	25.4234 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.68%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	636587	52.3691 ug/L	100
3) Chloromethane	3.62	50	336005	47.3540 ug/L	99
4) Vinyl Chloride	3.84	62	471297	55.9835 ug/L	99
5) 1,3-Butadiene	3.88	54	466509	66.0793 ug/L	94
6) Bromomethane	4.73	94	223807	44.2082 ug/L	96
7) Chloroethane	4.89	64	230630	49.7879 ug/L	97
8) Trichlorofluoromethane	5.37	101	914053	58.3521 ug/L	99
9) Diethyl ether	5.90	59	365966	97.8617 ug/L	97
10) Isoprene	5.94	67	528954	55.6063 ug/L	97
11) Acrolein	6.14	56	12820	38.2884 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	398018	54.0552 ug/L	94
13) Acetone	6.23	43	45416	55.6757 ug/L	96
14) 1,1-Dichloroethene	6.47	61	635976	54.2465 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	52882	202.2989 ug/L	98
16) Dimethyl Sulfide	6.73	62	202068	48.2045 ug/L	99
17) Iodomethane	6.99	142	143986	44.5471 ug/L	100
18) Methyl acetate	7.00	43	125266	56.8107 ug/L	98
19) Methylene Chloride	7.25	84	374398	50.1818 ug/L	100
20) Carbon Disulfide	7.29	76	1363583	55.5787 ug/L	100
21) Acrylonitrile	7.43	53	52604	49.7020 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	871485	53.9704 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	566696	52.6143 ug/L	100
24) n-Hexane	7.78	57	459061	57.3974 ug/L	99
25) Diisopropyl ether	8.12	45	1678736	99.9895 ug/L	96
26) Vinyl Acetate	8.30	43	314225	40.8778 ug/L	100
27) 1,1-Dichloroethane	8.33	63	710629	53.1263 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1931789	107.3922 ug/L	98
29) 2-Butanone	8.88	43	57296	47.8066 ug/L	96
30) Propionitrile	8.98	54	34033	97.4427 ug/L	94
31) 2,2-Dichloropropane	9.10	77	868732	61.6292 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	432671	51.9888 ug/L	98
33) Chloroform	9.37	83	866433	54.8591 ug/L	100
34) 1-Bromopropane	9.51	122	73212	61.4154 ug/L	100
35) Bromochloromethane	9.61	130	227524	53.3132 ug/L	95
36) Tetrahydrofuran	9.63	42	69393	87.9098 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	883344	58.8810 ug/L	100
39) Cyclohexane	9.94	56	560595	53.9737 ug/L	97
40) 1,1-Dichloropropene	10.11	75	625468	54.6979 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1774358	108.6048 ug/L	100
42) Carbon Tetrachloride	10.25	117	798795	59.9616 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 21:22:50 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	592395	58.2757 ug/L	98
46)	Benzene	10.46	78	1539106	51.6786 ug/L	99
47)	Trichloroethene	11.21	130	432431	54.4401 ug/L	99
48)	Methylcyclohexane	11.30	83	686795	56.9140 ug/L	99
49)	1,2-Dichloropropane	11.43	63	327801	49.4432 ug/L	91
50)	Bromodichloromethane	11.73	83	655856	56.2842 ug/L	100
51)	1,4-Dioxane	11.72	88	6670	200.2779 ug/L	83
52)	Dibromomethane	11.81	93	198160	50.4924 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	128306	45.0262 ug/L	95
54)	4-Methyl-2-Pentanone	12.06	58	55902	48.0253 ug/L	91
55)	cis-1,3-Dichloropropene	12.36	75	645256	54.4029 ug/L	100
56)	Dimethyl Disulfide	12.63	79	358712	56.6642 ug/L	98
59)	Toluene	12.78	91	1659929	47.2580 ug/L	99
60)	Ethyl Methacrylate	12.88	69	327740	48.5859 ug/L	95
62)	trans-1,3-Dichloropropene	12.96	75	582725	49.5052 ug/L	99
63)	1,1,2-Trichloroethane	13.18	97	253367	45.7129 ug/L	100
64)	2-Hexanone	13.11	58	49571	42.5602 ug/L #	95
65)	1,3-Dichloropropane	13.49	76	457785	46.3909 ug/L	96
66)	Tetrachloroethene	13.60	164	374094	49.7104 ug/L	98
67)	Dibromochloromethane	13.87	129	402599	49.7473 ug/L	98
68)	1,2-Dibromoethane	14.13	107	263257	47.6577 ug/L	98
69)	1-Chlorohexane	14.21	91	606471	50.5817 ug/L	98
70)	Chlorobenzene	14.62	112	1116015	47.1177 ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.65	131	455262	49.6136 ug/L	99
72)	Ethylbenzene	14.65	106	606126	46.7722 ug/L	99
73)	m-,p-Xylene	14.75	106	1464859	96.3703 ug/L	98
74)	o-Xylene	15.31	106	700366	47.1280 ug/L	96
75)	Styrene	15.35	104	1184000	48.5758 ug/L	95
76)	Bromoform	15.83	173	242179	50.4518 ug/L	99
77)	Isopropylbenzene	15.73	105	1964495	49.7609 ug/L	99
79)	1,1,2,2-Tetrachloroethane	15.95	83	268196	43.1537 ug/L	99
81)	1,2,3-Trichloropropane	16.14	110	85820	44.8426 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	16.18	53	93736	48.0756 ug/L	75
83)	n-Propylbenzene	16.24	91	2331548	48.2690 ug/L	99
84)	Bromobenzene	16.37	156	478746	48.1858 ug/L	95
85)	1,3,5-Trimethylbenzene	16.42	105	1722684	48.9595 ug/L	99
86)	2-Chlorotoluene	16.51	91	1605346	47.6022 ug/L	99
87)	4-Chlorotoluene	16.56	91	1451412	47.6458 ug/L	100
88)	a-Methylstyrene	16.83	118	820053	49.1238 ug/L	100
89)	tert-Butylbenzene	16.90	134	321775	46.7449 ug/L	97
90)	1,2,4-Trimethylbenzene	16.94	105	1755727	48.5269 ug/L	100
91)	sec-Butylbenzene	17.17	105	1988839	48.0468 ug/L	99
92)	p-Isopropyltoluene	17.32	119	1708694	48.6162 ug/L	99
93)	1,3-Dichlorobenzene	17.52	146	921602	48.1730 ug/L	98
94)	1,4-Dichlorobenzene	17.64	146	907047	47.0277 ug/L	99
95)	n-Butylbenzene	17.85	91	1655056	47.6327 ug/L	99
96)	1,2-Dichlorobenzene	18.14	146	790507	46.4592 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	55858	44.7749 ug/L	98
98)	1,2,4-Trichlorobenzene	20.28	180	587639	46.2043 ug/L	98
99)	Hexachlorobutadiene	20.43	225	291731	49.0927 ug/L	98
100)	Naphthalene	20.65	128	821061	43.4522 ug/L	98
101)	1,2,3-Trichlorobenzene	20.96	180	466895	43.5136 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413192.D 8260WT.M Mon Jun 27 12:30:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 21:22 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

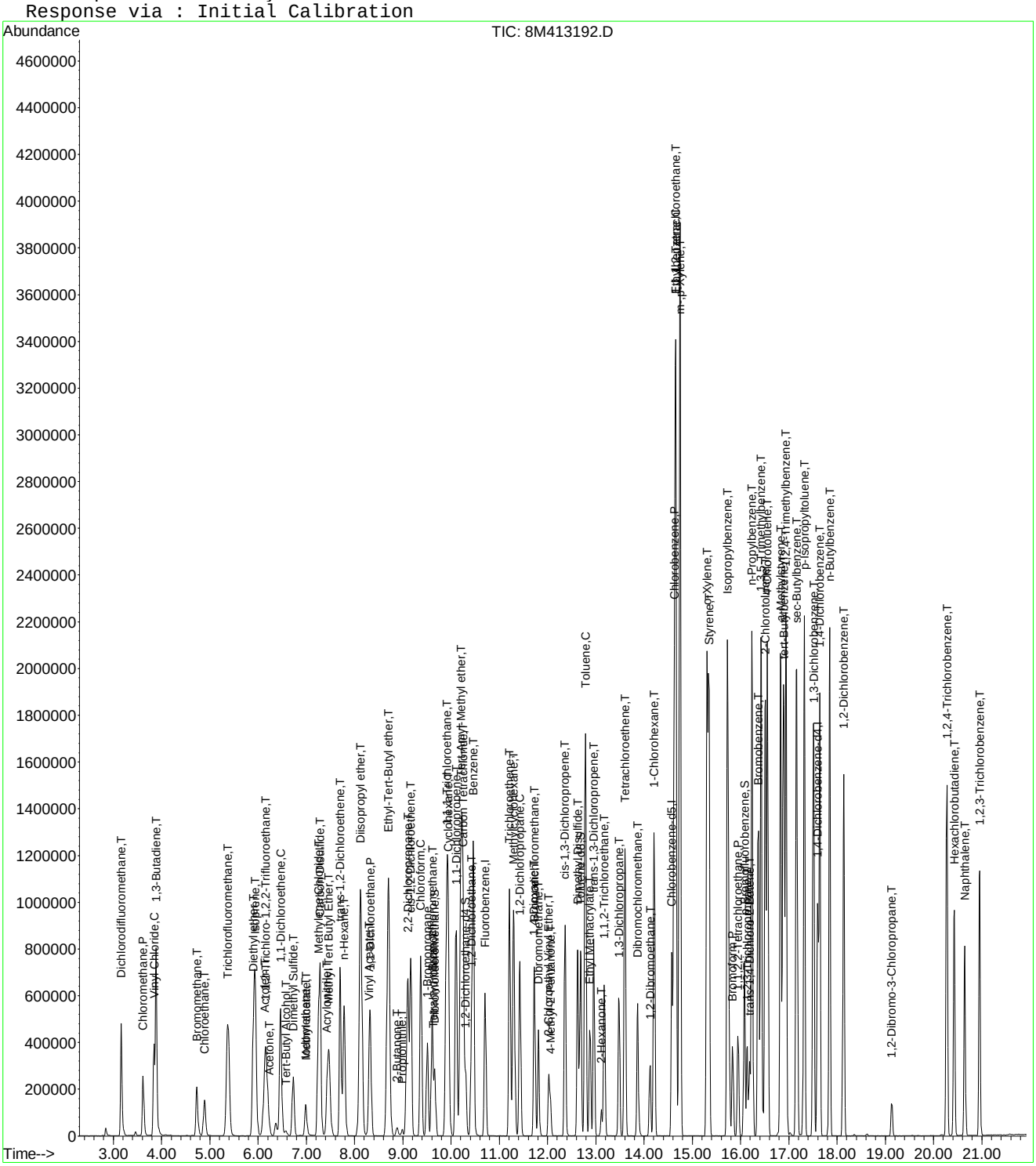

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	93	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4390	-4.7	93	0.00
3	P	Chloromethane	0.2447	0.2317	5.3	90	0.00
4	C	Vinyl Chloride	0.2903	0.3250	-12.0	104	0.00
5	T	1,3-Butadiene	0.2434	0.3217	-32.2#	119	0.00
6	T	Bromomethane	0.1654	0.1543	6.7	86	0.00
7	T	Chloroethane	0.1597	0.1591	0.4	94	0.00
8	T	Trichlorofluoromethane	0.5401	0.6304	-16.7	109	0.00
9	T	Diethyl ether	0.1290	0.1262	2.1	94	0.00
10	T	Isoprene	0.3280	0.3648	-11.2	106	0.00
11	T	Acrolein	0.0116	0.0088	23.5	73	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2745	-8.1	103	0.00
13	T	Acetone	0.0281	0.0313	-11.3	99	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4386	-8.5	103	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0091	-1.2	95	0.00
16	T	Dimethyl Sulfide	0.1445	0.1394	3.6	91	0.00
17	T	Iodomethane	0.0866	0.0993	-14.7	91	0.00
18	T	Methyl acetate	0.0760	0.0864	-13.6	109	0.00
19	T	Methylene Chloride	0.2573	0.2582	-0.4	96	0.00
20	T	Carbon Disulfide	0.8460	0.9404	-11.2	107	0.00
21	T	Acrylonitrile	0.0365	0.0363	0.6	88	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.6010	-7.9	97	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3908	-5.2	99	0.00
24	T	n-Hexane	0.2758	0.3166	-14.8	109	0.00
25	T	Diisopropyl ether	0.5789	0.5788	0.0	94	0.00
26	T	Vinyl Acetate	0.2651	0.2167	18.2	73	0.00
27	P	1,1-Dichloroethane	0.4612	0.4901	-6.3	98	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6661	-7.4	99	0.00
29	T	2-Butanone	0.0413	0.0395	4.4	86	0.00
30	T	Propionitrile	0.0120	0.0117	2.5	89	0.00
31	T	2,2-Dichloropropane	0.4860	0.5991	-23.3	113	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2984	-4.0	98	0.00
33	C	Chloroform	0.5446	0.5975	-9.7	103	0.00
34		1-Bromopropane	0.0411	0.0505	-22.8	115	0.00
35	T	Bromochloromethane	0.1472	0.1569	-6.6	99	0.00
36	T	Tetrahydrofuran	0.0272	0.0239	12.1	87	0.00
37	S	Dibromofluoromethane	0.2686	0.2971	-10.6	102	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6092	-17.8	108	0.00
39	T	Cyclohexane	0.3581	0.3866	-7.9	105	0.00
40	T	1,1-Dichloropropene	0.3943	0.4313	-9.4	102	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.6118	-8.6	100	0.00
42	T	Carbon Tetrachloride	0.4593	0.5509	-19.9	110	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3255	-13.0	103	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.4085	-16.5	106	0.00
46	T	Benzene	1.0269	1.0614	-3.4	96	0.00
47	T	Trichloroethene	0.2739	0.2982	-8.9	102	0.00
48	T	Methylcyclohexane	0.4161	0.4736	-13.8	108	0.00
49	C	1,2-Dichloropropane	0.2286	0.2261	1.1	93	0.00
50	T	Bromodichloromethane	0.4018	0.4523	-12.6	100	0.00
51	T	1,4-Dioxane	0.0012	0.0012	0.0	88	0.00
52	T	Dibromomethane	0.1353	0.1367	-1.0	95	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0885	10.0	79	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0386	4.0	86	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4450	-8.8	97	0.00
56	T	Dimethyl Disulfide	0.2183	0.2474	-13.3	104	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	105	0.00
58	S	Toluene-d8	1.3084	1.3143	-0.5	103	0.00
59	C	Toluene	1.5520	1.4669	5.5	99	0.00
60	T	Ethyl Methacrylate	0.2981	0.2896	2.8	97	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5150	1.0	98	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2239	8.6	94	0.00
64	T	2-Hexanone	0.0515	0.0438	14.9	87	0.00
65	T	1,3-Dichloropropane	0.4360	0.4046	7.2	94	0.00
66	T	Tetrachloroethene	0.3325	0.3306	0.6	107	0.00
67	T	Dibromochloromethane	0.3576	0.3558	0.5	100	0.00
68	T	1,2-Dibromoethane	0.2441	0.2327	4.7	96	0.00
69	T	1-Chlorohexane	0.5298	0.5360	-1.2	108	0.00
70	P	Chlorobenzene	1.0466	0.9863	5.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4023	0.8	102	0.00
72	C	Ethylbenzene	0.5726	0.5356	6.5	101	0.00
73	T	m-,p-Xylene	0.6716	0.6473	3.6	101	0.00
74	T	o-Xylene	0.6566	0.6189	5.7	99	0.00
75	T	Styrene	1.0770	1.0463	2.8	98	0.00
76	P	Bromoform	0.2121	0.2140	-0.9	102	0.00
77	T	Isopropylbenzene	1.7444	1.7361	0.5	102	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4331	13.7	91	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0527	-1.7	111	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1386	10.3	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1514	-10.0	108	0.00
83	T	n-Propylbenzene	3.9003	3.7653	3.5	102	0.00
84	T	Bromobenzene	0.8022	0.7731	3.6	104	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.7820	2.1	104	0.00
86	T	2-Chlorotoluene	2.7231	2.5925	4.8	100	0.00
87	T	4-Chlorotoluene	2.4597	2.3439	4.7	108	0.00
88	T	a-Methylstyrene	1.3479	1.3243	1.8	106	0.00
89	T	tert-Butylbenzene	0.5558	0.5196	6.5	105	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8354	2.9	105	0.00
91	T	sec-Butylbenzene	3.3424	3.2118	3.9	103	0.00
92	T	p-Isopropyltoluene	2.8379	2.7594	2.8	105	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.4883	3.7	104	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4648	5.9	104	0.00
95	T	n-Butylbenzene	2.8056	2.6728	4.7	103	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2766	7.1	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0902	10.4	94	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9490	7.6	101	0.00
99	T	Hexachlorobutadiene	0.4798	0.4711	1.8	110	0.00
100	T	Naphthalene	1.5257	1.3259	13.1	92	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7540	13.0	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413192.D 8260WT.M Mon Jun 27 12:37:25 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	93	0.00
2	T	Dichlorodifluoromethane	50.0000	52.3691	-4.7	93	0.00
3	P	Chloromethane	50.0000	47.3540	5.3	90	0.00
4	C	Vinyl Chloride	50.0000	55.9835	-12.0	104	0.00
5	T	1,3-Butadiene	50.0000	66.0793	-32.2#	119	0.00
6	T	Bromomethane	50.0000	44.2082	11.6	86	0.00
7	T	Chloroethane	50.0000	49.7878	0.4	94	0.00
8	T	Trichlorofluoromethane	50.0000	58.3521	-16.7	109	0.00
9	T	Diethyl ether	100.0000	97.8617	2.1	94	0.00
10	T	Isoprene	50.0000	55.6063	-11.2	106	0.00
11	T	Acrolein	50.0000	38.2884	23.4	73	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.0552	-8.1	103	0.00
13	T	Acetone	50.0000	55.6757	-11.4	99	-0.01
14	C	1,1-Dichloroethene	50.0000	54.2465	-8.5	103	0.00
15	T	Tert-Butyl Alcohol	200.0000	202.2989	-1.1	95	0.00
16	T	Dimethyl Sulfide	50.0000	48.2045	3.6	91	0.00
17	T	Iodomethane	50.0000	44.5471	10.9	91	0.00
18	T	Methyl acetate	50.0000	56.8107	-13.6	109	0.00
19	T	Methylene Chloride	50.0000	50.1818	-0.4	96	0.00
20	T	Carbon Disulfide	50.0000	55.5787	-11.2	107	0.00
21	T	Acrylonitrile	50.0000	49.7020	0.6	88	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.9704	-7.9	97	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.6143	-5.2	99	0.00
24	T	n-Hexane	50.0000	57.3974	-14.8	109	0.00
25	T	Diisopropyl ether	100.0000	99.9895	0.0	94	0.00
26	T	Vinyl Acetate	50.0000	40.8778	18.2	73	0.00
27	P	1,1-Dichloroethane	50.0000	53.1264	-6.3	98	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	107.3922	-7.4	99	0.00
29	T	2-Butanone	50.0000	47.8066	4.4	86	0.00
30	T	Propionitrile	100.0000	97.4427	2.6	89	0.00
31	T	2,2-Dichloropropane	50.0000	61.6292	-23.3	113	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.9888	-4.0	98	0.00
33	C	Chloroform	50.0000	54.8591	-9.7	103	0.00
34		1-Bromopropane	50.0000	61.4154	-22.8	115	0.00
35	T	Bromochloromethane	50.0000	53.3132	-6.6	99	0.00
36	T	Tetrahydrofuran	100.0000	87.9098	12.1	87	0.00
37	S	Dibromofluoromethane	25.0000	27.6524	-10.6	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	58.8810	-17.8	108	0.00
39	T	Cyclohexane	50.0000	53.9737	-7.9	105	0.00
40	T	1,1-Dichloropropene	50.0000	54.6979	-9.4	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	108.6048	-8.6	100	0.00
42	T	Carbon Tetrachloride	50.0000	59.9616	-19.9	110	0.00
43	S	1,2-Dichloroethane-d4	25.0000	28.2513	-13.0	103	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	58.2756	-16.6	106	0.00
46	T	Benzene	50.0000	51.6786	-3.4	96	0.00
47	T	Trichloroethene	50.0000	54.4400	-8.9	102	0.00
48	T	Methylcyclohexane	50.0000	56.9140	-13.8	108	0.00
49	C	1,2-Dichloropropane	50.0000	49.4432	1.1	93	0.00
50	T	Bromodichloromethane	50.0000	56.2841	-12.6	100	0.00
51	T	1,4-Dioxane	200.0000	200.2779	-0.1	88	0.00
52	T	Dibromomethane	50.0000	50.4924	-1.0	95	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.0262	9.9	79	0.00
54	T	4-Methyl-2-Pentanone	50.0000	48.0253	3.9	86	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.4029	-8.8	97	0.00
56	T	Dimethyl Disulfide	50.0000	56.6642	-13.3	104	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
58	S	Toluene-d8	25.0000	25.1124	-0.4	103	0.00
59	C	Toluene	50.0000	47.2580	5.5	99	0.00
60	T	Ethyl Methacrylate	50.0000	48.5859	2.8	97	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	49.5052	1.0	98	0.00
63	T	1,1,2-Trichloroethane	50.0000	45.7129	8.6	94	0.00
64	T	2-Hexanone	50.0000	42.5602	14.9	87	0.00
65	T	1,3-Dichloropropane	50.0000	46.3909	7.2	94	0.00
66	T	Tetrachloroethene	50.0000	49.7104	0.6	107	0.00
67	T	Dibromochloromethane	50.0000	49.7473	0.5	100	0.00
68	T	1,2-Dibromoethane	50.0000	47.6577	4.7	96	0.00
69	T	1-Chlorohexane	50.0000	50.5817	-1.2	108	0.00
70	P	Chlorobenzene	50.0000	47.1177	5.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.6136	0.8	102	0.00
72	C	Ethylbenzene	50.0000	46.7722	6.5	101	0.00
73	T	m-,p-Xylene	100.0000	96.3703	3.6	101	0.00
74	T	o-Xylene	50.0000	47.1280	5.7	99	0.00
75	T	Styrene	50.0000	48.5758	2.8	98	0.00
76	P	Bromoform	50.0000	50.4518	-0.9	102	0.00
77	T	Isopropylbenzene	50.0000	49.7609	0.5	102	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	43.1537	13.7	91	0.00
80	S	p-Bromofluorobenzene	25.0000	25.4234	-1.7	111	0.00
81	T	1,2,3-Trichloropropane	50.0000	44.8426	10.3	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	48.0756	3.8	108	0.00
83	T	n-Propylbenzene	50.0000	48.2690	3.5	102	0.00
84	T	Bromobenzene	50.0000	48.1858	3.6	104	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.9595	2.1	104	0.00
86	T	2-Chlorotoluene	50.0000	47.6022	4.8	100	0.00
87	T	4-Chlorotoluene	50.0000	47.6458	4.7	108	0.00
88	T	a-Methylstyrene	50.0000	49.1238	1.8	106	0.00
89	T	tert-Butylbenzene	50.0000	46.7449	6.5	105	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.5269	2.9	105	0.00
91	T	sec-Butylbenzene	50.0000	48.0468	3.9	103	0.00
92	T	p-Isopropyltoluene	50.0000	48.6162	2.8	105	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.1730	3.7	104	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.0277	5.9	104	0.00
95	T	n-Butylbenzene	50.0000	47.6327	4.7	103	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.4592	7.1	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	44.7749	10.5	94	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	46.2043	7.6	101	0.00
99	T	Hexachlorobutadiene	50.0000	49.0927	1.8	110	0.00
100	T	Naphthalene	50.0000	43.4522	13.1	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	43.5136	13.0	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413192.D 8260WT.M Mon Jun 27 12:37:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413249.D Vial: 3
Acq On : 26 Jun 2016 17:34 Operator: ADC
Sample : WG574226-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 17:56:49 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	792305	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	610141	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	338425	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	230766	27.1086 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.44%		
43) 1,2-Dichloroethane-d4	10.30	65	246217	26.9748 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.88%		
58) Toluene-d8	12.68	98	812451	25.4432 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.76%		
80) p-Bromofluorobenzene	16.07	95	349944	24.9724 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	597625	44.9892 ug/L	99
3) Chloromethane	3.62	50	363564	46.8872 ug/L	97
4) Vinyl Chloride	3.84	62	517399	56.2410 ug/L	99
5) 1,3-Butadiene	3.88	54	528523	68.5065 ug/L	96
6) Bromomethane	4.73	94	250718	45.2668 ug/L	100
7) Chloroethane	4.89	64	270358	53.4084 ug/L	97
8) Trichlorofluoromethane	5.37	101	1003093	58.5988 ug/L	99
9) Diethyl ether	5.90	59	378264	92.5613 ug/L	97
10) Isoprene	5.94	67	612195	58.8923 ug/L	97
11) Acrolein	6.13	56	12656	34.5890 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	445293	55.3405 ug/L	93
13) Acetone	6.23	43	49719	55.7752 ug/L	97
14) 1,1-Dichloroethene	6.46	61	718821	56.1066 ug/L	99
15) Tert-Butyl Alcohol	6.57	59	69098	241.8875 ug/L	98
16) Dimethyl Sulfide	6.72	62	238832	52.1369 ug/L	99
17) Iodomethane	6.98	142	162623	45.9147 ug/L	94
18) Methyl acetate	7.00	43	143382	59.5050 ug/L	98
19) Methylene Chloride	7.25	84	434212	53.2570 ug/L	98
20) Carbon Disulfide	7.29	76	1588552	59.2503 ug/L	100
21) Acrylonitrile	7.42	53	61543	53.2103 ug/L	100
22) Methyl Tert Butyl Ether	7.46	73	965883	54.7372 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	640673	54.4318 ug/L	99
24) n-Hexane	7.77	57	536478	61.3813 ug/L	100
25) Diisopropyl ether	8.13	45	1888502	102.9323 ug/L	98
26) Vinyl Acetate	8.29	43	321982	38.3302 ug/L	100
27) 1,1-Dichloroethane	8.32	63	811567	55.5206 ug/L	100
28) Ethyl-Tert-Butyl ether	8.69	59	2126472	108.1770 ug/L	99
29) 2-Butanone	8.88	43	64926	49.5730 ug/L	95
30) Propionitrile	8.98	54	40143	105.1771 ug/L	98
31) 2,2-Dichloropropane	9.10	77	973346	63.1873 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	499140	54.8829 ug/L	99
33) Chloroform	9.38	83	965576	55.9452 ug/L	100
34) 1-Bromopropane	9.51	122	82820	63.5759 ug/L	96
35) Bromochloromethane	9.60	130	257964	55.3132 ug/L	95
36) Tetrahydrofuran	9.62	42	79638	92.3218 ug/L	95
38) 1,1,1-Trichloroethane	9.90	97	967940	59.0413 ug/L	99
39) Cyclohexane	9.93	56	654991	57.7073 ug/L	99
40) 1,1-Dichloropropene	10.10	75	705164	56.4311 ug/L	100
41) Tert-Amyl-Methyl ether	10.20	73	1932122	108.2193 ug/L	100
42) Carbon Tetrachloride	10.25	117	872237	59.9149 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M413249.D 8260WT.M Mon Jun 27 12:32:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413249.D Vial: 3
Acq On : 26 Jun 2016 17:34 Operator: ADC
Sample : WG574226-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 17:56:49 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	639063	57.5283 ug/L		99
46)	Benzene	10.46	78	1774497	54.5230 ug/L		99
47)	Trichloroethene	11.22	130	494864	57.0099 ug/L		98
48)	Methylcyclohexane	11.30	83	778615	59.0442 ug/L		100
49)	1,2-Dichloropropane	11.42	63	379952	52.4429 ug/L		96
50)	Bromodichloromethane	11.72	83	727332	57.1180 ug/L		100
51)	1,4-Dioxane	11.71	88	8035	220.7779 ug/L		91
52)	Dibromomethane	11.82	93	225354	52.5457 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	144101	46.2752 ug/L		97
54)	4-Methyl-2-Pentanone	12.05	58	60672	47.6973 ug/L		92
55)	cis-1,3-Dichloropropene	12.36	75	726400	56.0439 ug/L		98
56)	Dimethyl Disulfide	12.62	79	407970	58.9730 ug/L		98
59)	Toluene	12.79	91	1896935	50.0794 ug/L		99
60)	Ethyl Methacrylate	12.88	69	372062	51.1466 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	642807	50.6394 ug/L		98
63)	1,1,2-Trichloroethane	13.17	97	284596	47.6143 ug/L		99
64)	2-Hexanone	13.11	58	56329	44.8465 ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	511977	48.1107 ug/L		97
66)	Tetrachloroethene	13.60	164	434567	53.5481 ug/L		95
67)	Dibromochloromethane	13.86	129	447268	51.2489 ug/L		99
68)	1,2-Dibromoethane	14.12	107	292866	49.1635 ug/L		99
69)	1-Chlorohexane	14.20	91	691416	53.4741 ug/L		99
70)	Chlorobenzene	14.63	112	1278650	50.0594 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	510017	51.5400 ug/L		99
72)	Ethylbenzene	14.65	106	684339	48.9685 ug/L		99
73)	m-,p-Xylene	14.74	106	1636996	99.8655 ug/L		99
74)	o-Xylene	15.31	106	804557	50.2032 ug/L		99
75)	Styrene	15.34	104	1340603	51.0022 ug/L		98
76)	Bromoform	15.84	173	263420	50.8873 ug/L		99
77)	Isopropylbenzene	15.73	105	2197573	51.6180 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	302300	44.5003 ug/L		100
81)	1,2,3-Trichloropropane	16.14	110	96277	46.0239 ug/L		92
82)	trans-1,4-Dichloro-2-Buten	16.19	53	99904	46.8922 ug/L		87
83)	n-Propylbenzene	16.24	91	2584981	48.9598 ug/L		99
84)	Bromobenzene	16.36	156	537510	49.4947 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1907417	49.5946 ug/L		99
86)	2-Chlorotoluene	16.51	91	1681016	45.6025 ug/L		99
87)	4-Chlorotoluene	16.56	91	1714274	51.4840 ug/L		99
88)	a-Methylstyrene	16.83	118	911301	49.9425 ug/L		98
89)	tert-Butylbenzene	16.89	134	360482	47.9097 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	1921664	48.5916 ug/L		99
91)	sec-Butylbenzene	17.16	105	2185788	48.3094 ug/L		99
92)	p-Isopropyltoluene	17.31	119	1868144	48.6279 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	1031016	49.3042 ug/L		98
94)	1,4-Dichlorobenzene	17.65	146	1013760	48.0858 ug/L		99
95)	n-Butylbenzene	17.84	91	1819119	47.8974 ug/L		98
96)	1,2-Dichlorobenzene	18.13	146	876436	47.1242 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	61037	44.7611 ug/L		95
98)	1,2,4-Trichlorobenzene	20.27	180	658890	47.3962 ug/L		100
99)	Hexachlorobutadiene	20.43	225	322692	49.6799 ug/L		98
100)	Naphthalene	20.64	128	912662	44.1880 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	524580	44.7276 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413249.D 8260WT.M Mon Jun 27 12:32:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413249.D Vial: 3
Acq On : 26 Jun 2016 17:34 Operator: ADC
Sample : WG574226-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 17:56 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

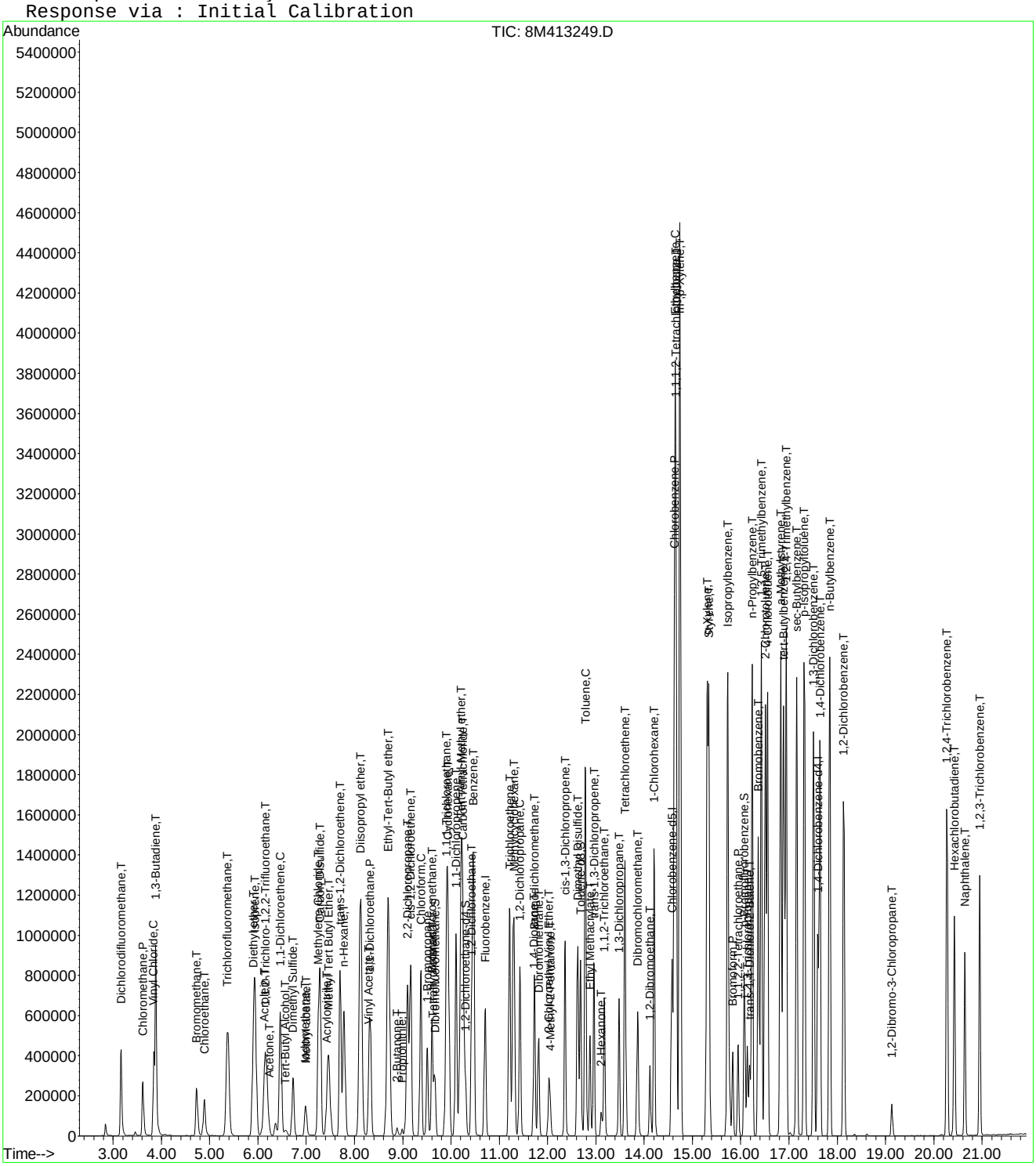

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413249.D Vial: 3
Acq On : 26 Jun 2016 17:34 Operator: ADC
Sample : WG574226-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	102	0.00
2	T	Dichlorodifluoromethane	0.4192	0.3771	10.0	88	0.00
3	P	Chloromethane	0.2447	0.2294	6.2	98	0.00
4	C	Vinyl Chloride	0.2903	0.3265	-12.5	114	-0.01
5	T	1,3-Butadiene	0.2434	0.3335	-37.0#	135	0.00
6	T	Bromomethane	0.1654	0.1582	4.4	96	0.00
7	T	Chloroethane	0.1597	0.1706	-6.8	111	0.00
8	T	Trichlorofluoromethane	0.5401	0.6330	-17.2	120	-0.01
9	T	Diethyl ether	0.1290	0.1194	7.4	97	0.00
10	T	Isoprene	0.3280	0.3863	-17.8	123	0.00
11	T	Acrolein	0.0116	0.0080	30.8#	72	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2810	-10.7	115	0.00
13	T	Acetone	0.0281	0.0314	-11.6	108	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4536	-12.2	116	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0109	-21.0	124	-0.01
16	T	Dimethyl Sulfide	0.1445	0.1507	-4.3	108	-0.01
17	T	Iodomethane	0.0866	0.1026	-18.6	103	0.00
18	T	Methyl acetate	0.0760	0.0905	-19.0	125	0.00
19	T	Methylene Chloride	0.2573	0.2740	-6.5	111	0.00
20	T	Carbon Disulfide	0.8460	1.0025	-18.5	125	0.00
21	T	Acrylonitrile	0.0365	0.0388	-6.4	103	-0.01
22	T	Methyl Tert Butyl Ether	0.5568	0.6095	-9.5	107	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.4043	-8.9	112	0.00
24	T	n-Hexane	0.2758	0.3386	-22.8	128	-0.01
25	T	Diisopropyl ether	0.5789	0.5959	-2.9	106	0.00
26	T	Vinyl Acetate	0.2651	0.2032	23.3	75	0.00
27	P	1,1-Dichloroethane	0.4612	0.5122	-11.0	112	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6710	-8.2	109	-0.01
29	T	2-Butanone	0.0413	0.0410	0.9	98	0.00
30	T	Propionitrile	0.0120	0.0127	-5.2	105	0.00
31	T	2,2-Dichloropropane	0.4860	0.6142	-26.4#	127	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.3150	-9.8	114	-0.01
33	C	Chloroform	0.5446	0.6093	-11.9	114	0.00
34		1-Bromopropane	0.0411	0.0523	-27.2#	131	0.00
35	T	Bromochloromethane	0.1472	0.1628	-10.6	112	0.00
36	T	Tetrahydrofuran	0.0272	0.0251	7.7	100	-0.01
37	S	Dibromofluoromethane	0.2686	0.2913	-8.4	109	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6108	-18.1	118	0.00
39	T	Cyclohexane	0.3581	0.4134	-15.4	122	0.00
40	T	1,1-Dichloropropene	0.3943	0.4450	-12.9	115	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.6097	-8.2	109	-0.01
42	T	Carbon Tetrachloride	0.4593	0.5504	-19.8	120	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3108	-7.9	107	-0.01
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.4033	-15.1	114	0.00
46	T	Benzene	1.0269	1.1198	-9.0	110	0.00
47	T	Trichloroethene	0.2739	0.3123	-14.0	116	0.00
48	T	Methylcyclohexane	0.4161	0.4914	-18.1	123	0.00
49	C	1,2-Dichloropropane	0.2286	0.2398	-4.9	108	0.00
50	T	Bromodichloromethane	0.4018	0.4590	-14.2	111	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-10.4	106	0.00
52	T	Dibromomethane	0.1353	0.1422	-5.1	108	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0909	7.4	89	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0383	4.6	93	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413249.D Vial: 3
Acq On : 26 Jun 2016 17:34 Operator: ADC
Sample : WG574226-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4584	-12.1	109	0.00
56	T	Dimethyl Disulfide	0.2183	0.2575	-17.9	119	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	113	0.00
58	S	Toluene-d8	1.3084	1.3316	-1.8	113	0.00
59	C	Toluene	1.5520	1.5545	-0.2	113	0.00
60	T	Ethyl Methacrylate	0.2981	0.3049	-2.3	110	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5268	-1.3	108	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2332	4.8	106	-0.01
64	T	2-Hexanone	0.0515	0.0462	10.3	99	-0.01
65	T	1,3-Dichloropropane	0.4360	0.4196	3.8	105	0.00
66	T	Tetrachloroethene	0.3325	0.3561	-7.1	124	0.00
67	T	Dibromochloromethane	0.3576	0.3665	-2.5	111	0.00
68	T	1,2-Dibromoethane	0.2441	0.2400	1.7	107	0.00
69	T	1-Chlorohexane	0.5298	0.5666	-6.9	123	-0.01
70	P	Chlorobenzene	1.0466	1.0478	-0.1	114	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4179	-3.1	114	0.00
72	C	Ethylbenzene	0.5726	0.5608	2.1	113	-0.01
73	T	m-,p-Xylene	0.6716	0.6707	0.1	113	0.00
74	T	o-Xylene	0.6566	0.6593	-0.4	113	0.00
75	T	Styrene	1.0770	1.0986	-2.0	111	0.00
76	P	Bromoform	0.2121	0.2159	-1.8	111	0.00
77	T	Isopropylbenzene	1.7444	1.8009	-3.2	114	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	117	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4466	11.0	103	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0340	0.1	120	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1422	8.0	108	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1476	-7.3	115	0.00
83	T	n-Propylbenzene	3.9003	3.8191	2.1	113	0.00
84	T	Bromobenzene	0.8022	0.7941	1.0	117	-0.01
85	T	1,3,5-Trimethylbenzene	2.8411	2.8181	0.8	115	0.00
86	T	2-Chlorotoluene	2.7231	2.4836	8.8	104	0.00
87	T	4-Chlorotoluene	2.4597	2.5327	-3.0	128	0.00
88	T	a-Methylstyrene	1.3479	1.3464	0.1	118	0.00
89	T	tert-Butylbenzene	0.5558	0.5326	4.2	117	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8391	2.8	114	0.00
91	T	sec-Butylbenzene	3.3424	3.2294	3.4	114	0.00
92	T	p-Isopropyltoluene	2.8379	2.7601	2.7	115	-0.01
93	T	1,3-Dichlorobenzene	1.5448	1.5233	1.4	117	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4978	3.8	116	0.00
95	T	n-Butylbenzene	2.8056	2.6876	4.2	113	-0.01
96	T	1,2-Dichlorobenzene	1.3739	1.2949	5.8	114	-0.01
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0902	10.5	102	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9735	5.2	113	-0.01
99	T	Hexachlorobutadiene	0.4798	0.4768	0.6	122	-0.01
100	T	Naphthalene	1.5257	1.3484	11.6	102	-0.01
101	T	1,2,3-Trichlorobenzene	0.8664	0.7750	10.5	110	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413249.D 8260WT.M Mon Jun 27 12:38:14 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413249.D Vial: 3
Acq On : 26 Jun 2016 17:34 Operator: ADC
Sample : WG574226-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	102	0.00
2	T	Dichlorodifluoromethane	50.0000	44.9892	10.0	88	0.00
3	P	Chloromethane	50.0000	46.8872	6.2	98	0.00
4	C	Vinyl Chloride	50.0000	56.2410	-12.5	114	-0.01
5	T	1,3-Butadiene	50.0000	68.5065	-37.0#	135	0.00
6	T	Bromomethane	50.0000	45.2668	9.5	96	0.00
7	T	Chloroethane	50.0000	53.4083	-6.8	111	0.00
8	T	Trichlorofluoromethane	50.0000	58.5988	-17.2	120	-0.01
9	T	Diethyl ether	100.0000	92.5613	7.4	97	0.00
10	T	Isoprene	50.0000	58.8923	-17.8	123	0.00
11	T	Acrolein	50.0000	34.5890	30.8#	72	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.3405	-10.7	115	0.00
13	T	Acetone	50.0000	55.7752	-11.6	108	-0.01
14	C	1,1-Dichloroethene	50.0000	56.1066	-12.2	116	0.00
15	T	Tert-Butyl Alcohol	200.0000	241.8875	-20.9	124	-0.01
16	T	Dimethyl Sulfide	50.0000	52.1369	-4.3	108	-0.01
17	T	Iodomethane	50.0000	45.9147	8.2	103	0.00
18	T	Methyl acetate	50.0000	59.5050	-19.0	125	0.00
19	T	Methylene Chloride	50.0000	53.2570	-6.5	111	0.00
20	T	Carbon Disulfide	50.0000	59.2503	-18.5	125	0.00
21	T	Acrylonitrile	50.0000	53.2103	-6.4	103	-0.01
22	T	Methyl Tert Butyl Ether	50.0000	54.7372	-9.5	107	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.4318	-8.9	112	0.00
24	T	n-Hexane	50.0000	61.3813	-22.8	128	-0.01
25	T	Diisopropyl ether	100.0000	102.9323	-2.9	106	0.00
26	T	Vinyl Acetate	50.0000	38.3302	23.3	75	0.00
27	P	1,1-Dichloroethane	50.0000	55.5206	-11.0	112	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	108.1770	-8.2	109	-0.01
29	T	2-Butanone	50.0000	49.5730	0.9	98	0.00
30	T	Propionitrile	100.0000	105.1771	-5.2	105	0.00
31	T	2,2-Dichloropropane	50.0000	63.1873	-26.4#	127	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.8829	-9.8	114	-0.01
33	C	Chloroform	50.0000	55.9452	-11.9	114	0.00
34		1-Bromopropane	50.0000	63.5759	-27.2#	131	0.00
35	T	Bromochloromethane	50.0000	55.3132	-10.6	112	0.00
36	T	Tetrahydrofuran	100.0000	92.3218	7.7	100	-0.01
37	S	Dibromofluoromethane	25.0000	27.1086	-8.4	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	59.0413	-18.1	118	0.00
39	T	Cyclohexane	50.0000	57.7073	-15.4	122	0.00
40	T	1,1-Dichloropropene	50.0000	56.4311	-12.9	115	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	108.2193	-8.2	109	-0.01
42	T	Carbon Tetrachloride	50.0000	59.9149	-19.8	120	0.00
43	S	1,2-Dichloroethane-d4	25.0000	26.9748	-7.9	107	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	57.5283	-15.1	114	0.00
46	T	Benzene	50.0000	54.5230	-9.0	110	0.00
47	T	Trichloroethene	50.0000	57.0099	-14.0	116	0.00
48	T	Methylcyclohexane	50.0000	59.0442	-18.1	123	0.00
49	C	1,2-Dichloropropane	50.0000	52.4429	-4.9	108	0.00
50	T	Bromodichloromethane	50.0000	57.1180	-14.2	111	0.00
51	T	1,4-Dioxane	200.0000	220.7779	-10.4	106	0.00
52	T	Dibromomethane	50.0000	52.5457	-5.1	108	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	46.2752	7.4	89	0.00
54	T	4-Methyl-2-Pentanone	50.0000	47.6972	4.6	93	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413249.D Vial: 3
Acq On : 26 Jun 2016 17:34 Operator: ADC
Sample : WG574226-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.0439	-12.1	109	0.00
56	T	Dimethyl Disulfide	50.0000	58.9730	-17.9	119	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	113	0.00
58	S	Toluene-d8	25.0000	25.4432	-1.8	113	0.00
59	C	Toluene	50.0000	50.0794	-0.2	113	0.00
60	T	Ethyl Methacrylate	50.0000	51.1466	-2.3	110	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6394	-1.3	108	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.6143	4.8	106	-0.01
64	T	2-Hexanone	50.0000	44.8465	10.3	99	-0.01
65	T	1,3-Dichloropropane	50.0000	48.1107	3.8	105	0.00
66	T	Tetrachloroethene	50.0000	53.5481	-7.1	124	0.00
67	T	Dibromochloromethane	50.0000	51.2489	-2.5	111	0.00
68	T	1,2-Dibromoethane	50.0000	49.1635	1.7	107	0.00
69	T	1-Chlorohexane	50.0000	53.4740	-6.9	123	-0.01
70	P	Chlorobenzene	50.0000	50.0594	-0.1	114	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.5400	-3.1	114	0.00
72	C	Ethylbenzene	50.0000	48.9685	2.1	113	-0.01
73	T	m-,p-Xylene	100.0000	99.8655	0.1	113	0.00
74	T	o-Xylene	50.0000	50.2032	-0.4	113	0.00
75	T	Styrene	50.0000	51.0022	-2.0	111	0.00
76	P	Bromoform	50.0000	50.8873	-1.8	111	0.00
77	T	Isopropylbenzene	50.0000	51.6180	-3.2	114	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	117	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	44.5003	11.0	103	0.00
80	S	p-Bromofluorobenzene	25.0000	24.9724	0.1	120	0.00
81	T	1,2,3-Trichloropropane	50.0000	46.0239	8.0	108	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	46.8922	6.2	115	0.00
83	T	n-Propylbenzene	50.0000	48.9598	2.1	113	0.00
84	T	Bromobenzene	50.0000	49.4947	1.0	117	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	49.5947	0.8	115	0.00
86	T	2-Chlorotoluene	50.0000	45.6025	8.8	104	0.00
87	T	4-Chlorotoluene	50.0000	51.4840	-3.0	128	0.00
88	T	a-Methylstyrene	50.0000	49.9425	0.1	118	0.00
89	T	tert-Butylbenzene	50.0000	47.9097	4.2	117	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.5916	2.8	114	0.00
91	T	sec-Butylbenzene	50.0000	48.3094	3.4	114	0.00
92	T	p-Isopropyltoluene	50.0000	48.6279	2.7	115	-0.01
93	T	1,3-Dichlorobenzene	50.0000	49.3042	1.4	117	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.0858	3.8	116	0.00
95	T	n-Butylbenzene	50.0000	47.8974	4.2	113	-0.01
96	T	1,2-Dichlorobenzene	50.0000	47.1242	5.8	114	-0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	44.7611	10.5	102	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.3962	5.2	113	-0.01
99	T	Hexachlorobutadiene	50.0000	49.6799	0.6	122	-0.01
100	T	Naphthalene	50.0000	44.1880	11.6	102	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	44.7276	10.5	110	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:23:32 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	708255	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	558123	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	315137	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	212502	27.9255 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.72%		
43) 1,2-Dichloroethane-d4	10.30	65	237357	29.0901 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 116.36%		
58) Toluene-d8	12.68	98	736182	25.2035 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.80%		
80) p-Bromofluorobenzene	16.07	95	333093	25.5265 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	540391	45.5083 ug/L	100
3) Chloromethane	3.62	50	328739	47.4272 ug/L	99
4) Vinyl Chloride	3.84	62	455331	55.3679 ug/L	99
5) 1,3-Butadiene	3.89	54	493105	71.5007 ug/L	97
6) Bromomethane	4.73	94	222431	44.9412 ug/L	98
7) Chloroethane	4.89	64	230089	50.8474 ug/L	97
8) Trichlorofluoromethane	5.37	101	921029	60.1899 ug/L	99
9) Diethyl ether	5.90	59	329176	90.1084 ug/L	97
10) Isoprene	5.94	67	543864	58.5277 ug/L	97
11) Acrolein	6.13	56	10450	31.9493 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	397606	55.2781 ug/L	96
13) Acetone	6.23	43	49224	61.7730 ug/L	95
14) 1,1-Dichloroethene	6.46	61	637496	55.6639 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	56211	220.1264 ug/L	96
16) Dimethyl Sulfide	6.73	62	208344	50.8787 ug/L	99
17) Iodomethane	6.98	142	170642	53.2063 ug/L	99
18) Methyl acetate	7.00	43	133012	61.7522 ug/L	99
19) Methylene Chloride	7.25	84	381140	52.2953 ug/L	99
20) Carbon Disulfide	7.29	76	1416153	59.0884 ug/L	100
21) Acrylonitrile	7.43	53	55176	53.3667 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	890658	56.4640 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	568436	54.0257 ug/L	100
24) n-Hexane	7.78	57	473111	60.5549 ug/L	100
25) Diisopropyl ether	8.12	45	1653566	100.8228 ug/L	96
26) Vinyl Acetate	8.29	43	289159	38.5078 ug/L	99
27) 1,1-Dichloroethane	8.32	63	708581	54.2278 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1927676	109.7014 ug/L	99
29) 2-Butanone	8.88	43	61250	52.3161 ug/L	94
30) Propionitrile	8.99	54	36343	106.5209 ug/L	100
31) 2,2-Dichloropropane	9.10	77	882692	64.1025 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	429873	52.8759 ug/L	96
33) Chloroform	9.37	83	871320	56.4751 ug/L	99
34) 1-Bromopropane	9.51	122	75427	64.7720 ug/L	98
35) Bromochloromethane	9.60	130	227968	54.6822 ug/L	94
36) Tetrahydrofuran	9.63	42	70838	91.8656 ug/L	95
38) 1,1,1-Trichloroethane	9.91	97	890583	60.7694 ug/L	100
39) Cyclohexane	9.94	56	583136	57.4735 ug/L	97
40) 1,1-Dichloropropene	10.10	75	632920	56.6604 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1794513	112.4396 ug/L	99
42) Carbon Tetrachloride	10.25	117	801759	61.6093 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413277.D 8260WT.M Wed Jun 29 08:23:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:23:32 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	597374	60.1571 ug/L		98
46)	Benzene	10.46	78	1539572	52.9185 ug/L		99
47)	Trichloroethene	11.21	130	426598	54.9776 ug/L		98
48)	Methylcyclohexane	11.30	83	704621	59.7740 ug/L		99
49)	1,2-Dichloropropane	11.43	63	331303	51.1548 ug/L		90
50)	Bromodichloromethane	11.72	83	661441	58.1077 ug/L		99
51)	1,4-Dioxane	11.72	88	7409	227.7362 ug/L		88
52)	Dibromomethane	11.81	93	206969	53.9859 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	130048	46.7184 ug/L		94
54)	4-Methyl-2-Pentanone	12.05	58	57560	50.6207 ug/L		92
55)	cis-1,3-Dichloropropene	12.36	75	652717	56.3352 ug/L		100
56)	Dimethyl Disulfide	12.62	79	371318	60.0446 ug/L		97
59)	Toluene	12.78	91	1683635	48.5909 ug/L		100
60)	Ethyl Methacrylate	12.88	69	348427	52.3617 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	604607	52.0693 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	256636	46.9382 ug/L		99
64)	2-Hexanone	13.12	58	54211	47.1829 ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	466904	47.9644 ug/L		98
66)	Tetrachloroethene	13.60	164	389465	52.4633 ug/L		97
67)	Dibromochloromethane	13.87	129	405413	50.7826 ug/L		100
68)	1,2-Dibromoethane	14.12	107	265443	48.7130 ug/L		99
69)	1-Chlorohexane	14.21	91	620553	52.4666 ug/L		95
70)	Chlorobenzene	14.62	112	1136584	48.6448 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	461555	50.9898 ug/L		100
72)	Ethylbenzene	14.66	106	614295	48.0532 ug/L		100
73)	m-,p-Xylene	14.74	106	1473086	98.2418 ug/L		98
74)	o-Xylene	15.31	106	708507	48.3302 ug/L		97
75)	Styrene	15.34	104	1201852	49.9851 ug/L		96
76)	Bromoform	15.83	173	252897	53.4078 ug/L		99
77)	Isopropylbenzene	15.73	105	1983006	50.9193 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	280807	44.3910 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	91595	47.0214 ug/L		84
82)	trans-1,4-Dichloro-2-Buten	16.18	53	97851	49.2908 ug/L		76
83)	n-Propylbenzene	16.24	91	2344121	47.6788 ug/L		99
84)	Bromobenzene	16.37	156	481835	47.6468 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	1731219	48.3397 ug/L		99
86)	2-Chlorotoluene	16.51	91	1669268	48.6302 ug/L		99
87)	4-Chlorotoluene	16.56	91	1390077	44.8326 ug/L		98
88)	a-Methylstyrene	16.83	118	838059	49.3226 ug/L		99
89)	tert-Butylbenzene	16.89	134	326432	46.5903 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	1776678	48.2454 ug/L		99
91)	sec-Butylbenzene	17.16	105	2005098	47.5907 ug/L		99
92)	p-Isopropyltoluene	17.32	119	1707286	47.7248 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	933961	47.9634 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	915806	46.6497 ug/L		100
95)	n-Butylbenzene	17.85	91	1671344	47.2585 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	804434	46.4491 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	58417	46.0055 ug/L		97
98)	1,2,4-Trichlorobenzene	20.28	180	615552	47.5508 ug/L		100
99)	Hexachlorobutadiene	20.43	225	297223	49.1403 ug/L		97
100)	Naphthalene	20.65	128	861244	44.7800 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	485630	44.4665 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M413277.D 8260WT.M Wed Jun 29 08:23:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:23 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

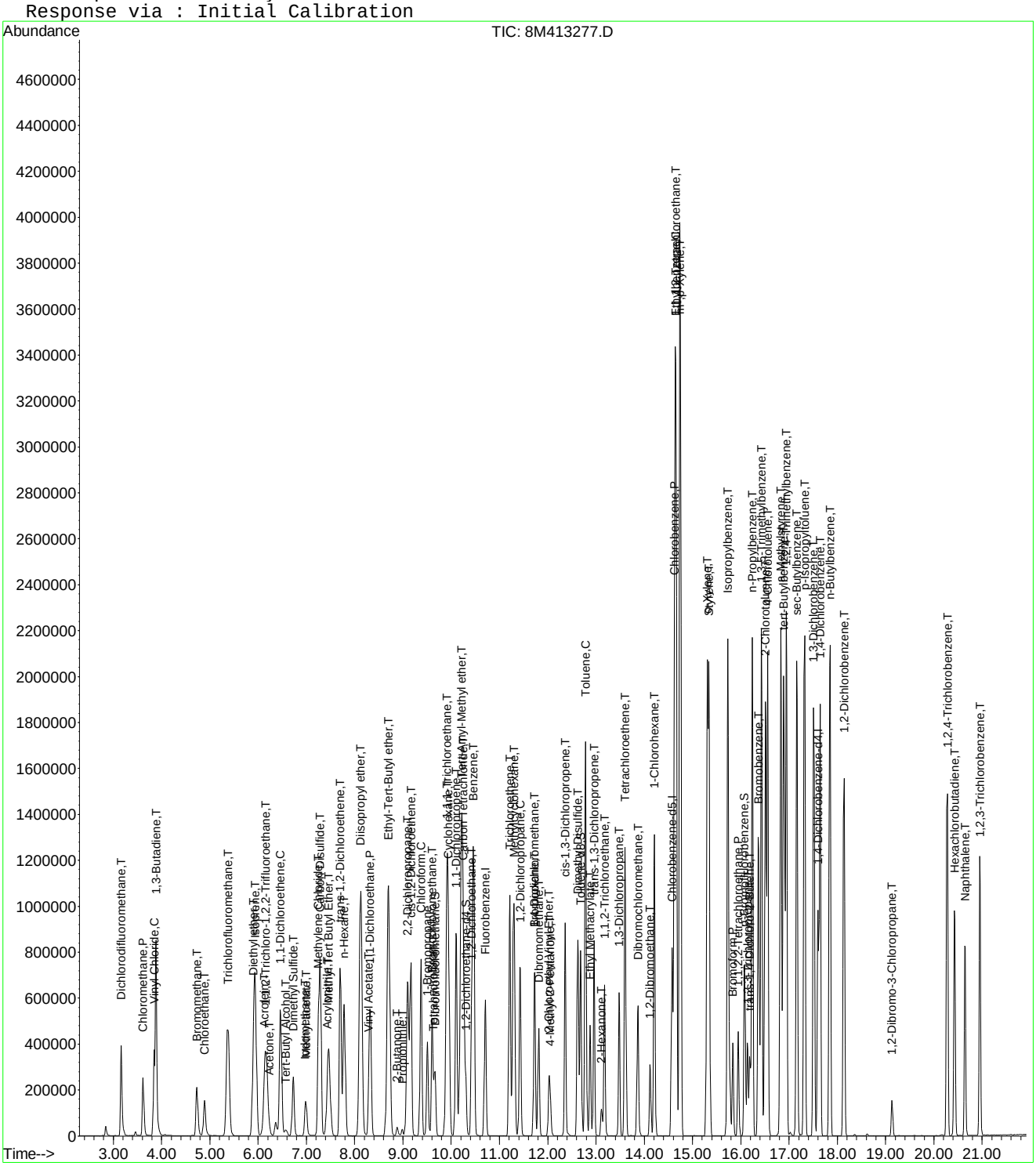

8M413277.D 8260WT.M Wed Jun 29 08:23:39 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	91	0.00
2	T	Dichlorodifluoromethane	0.4192	0.3815	9.0	79	0.00
3	P	Chloromethane	0.2447	0.2321	5.1	88	0.00
4	C	Vinyl Chloride	0.2903	0.3215	-10.7	100	0.00
5	T	1,3-Butadiene	0.2434	0.3481	-43.0#	126	0.00
6	T	Bromomethane	0.1654	0.1570	5.1	85	0.00
7	T	Chloroethane	0.1597	0.1624	-1.7	94	0.00
8	T	Trichlorofluoromethane	0.5401	0.6502	-20.4	110	0.00
9	T	Diethyl ether	0.1290	0.1162	9.9	85	0.00
10	T	Isoprene	0.3280	0.3840	-17.1	109	0.00
11	T	Acrolein	0.0116	0.0074	36.1#	59	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2807	-10.6	103	0.00
13	T	Acetone	0.0281	0.0348	-23.5	107	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4501	-11.3	103	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0099	-10.1	101	0.00
16	T	Dimethyl Sulfide	0.1445	0.1471	-1.8	94	0.00
17	T	Iodomethane	0.0866	0.1205	-39.2#	108	0.00
18	T	Methyl acetate	0.0760	0.0939	-23.5	116	0.00
19	T	Methylene Chloride	0.2573	0.2691	-4.6	98	0.00
20	T	Carbon Disulfide	0.8460	0.9998	-18.2	112	0.00
21	T	Acrylonitrile	0.0365	0.0389	-6.7	92	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.6288	-12.9	99	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.4013	-8.1	99	0.00
24	T	n-Hexane	0.2758	0.3340	-21.1	113	0.00
25	T	Diisopropyl ether	0.5789	0.5837	-0.8	93	0.00
26	T	Vinyl Acetate	0.2651	0.2041	23.0	67	0.00
27	P	1,1-Dichloroethane	0.4612	0.5002	-8.5	98	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6804	-9.7	99	0.00
29	T	2-Butanone	0.0413	0.0432	-4.6	92	0.00
30	T	Propionitrile	0.0120	0.0128	-6.6	95	0.00
31	T	2,2-Dichloropropane	0.4860	0.6231	-28.2#	115	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.3035	-5.7	98	0.00
33	C	Chloroform	0.5446	0.6151	-13.0	103	0.00
34		1-Bromopropane	0.0411	0.0532	-29.6#	119	0.00
35	T	Bromochloromethane	0.1472	0.1609	-9.4	99	0.00
36	T	Tetrahydrofuran	0.0272	0.0250	8.2	89	0.00
37	S	Dibromofluoromethane	0.2686	0.3000	-11.7	101	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6287	-21.5	109	0.00
39	T	Cyclohexane	0.3581	0.4117	-14.9	109	0.00
40	T	1,1-Dichloropropene	0.3943	0.4468	-13.3	103	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.6334	-12.4	101	0.00
42	T	Carbon Tetrachloride	0.4593	0.5660	-23.2	111	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3351	-16.4	103	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.4217	-20.3	106	0.00
46	T	Benzene	1.0269	1.0869	-5.8	96	0.00
47	T	Trichloroethene	0.2739	0.3012	-10.0	100	0.00
48	T	Methylcyclohexane	0.4161	0.4974	-19.5	111	0.00
49	C	1,2-Dichloropropane	0.2286	0.2339	-2.3	94	0.00
50	T	Bromodichloromethane	0.4018	0.4669	-16.2	101	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-13.9	98	0.00
52	T	Dibromomethane	0.1353	0.1461	-8.0	99	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0918	6.6	80	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0406	-1.2	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4608	-12.7	98	0.00
56	T	Dimethyl Disulfide	0.2183	0.2621	-20.1	108	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	104	0.00
58	S	Toluene-d8	1.3084	1.3190	-0.8	102	0.00
59	C	Toluene	1.5520	1.5083	2.8	100	0.00
60	T	Ethyl Methacrylate	0.2981	0.3121	-4.7	103	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5416	-4.1	102	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2299	6.1	96	0.00
64	T	2-Hexanone	0.0515	0.0486	5.6	95	0.00
65	T	1,3-Dichloropropane	0.4360	0.4183	4.1	95	0.00
66	T	Tetrachloroethene	0.3325	0.3489	-4.9	111	0.00
67	T	Dibromochloromethane	0.3576	0.3632	-1.6	101	0.00
68	T	1,2-Dibromoethane	0.2441	0.2378	2.6	97	0.00
69	T	1-Chlorohexane	0.5298	0.5559	-4.9	111	0.00
70	P	Chlorobenzene	1.0466	1.0182	2.7	102	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4135	-2.0	103	0.00
72	C	Ethylbenzene	0.5726	0.5503	3.9	102	0.00
73	T	m-,p-Xylene	0.6716	0.6598	1.8	102	0.00
74	T	o-Xylene	0.6566	0.6347	3.3	100	0.00
75	T	Styrene	1.0770	1.0767	0.0	99	0.00
76	P	Bromoform	0.2121	0.2266	-6.8	106	0.00
77	T	Isopropylbenzene	1.7444	1.7765	-1.8	103	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	109	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4455	11.2	95	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0570	-2.1	114	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1453	6.0	103	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1553	-12.9	113	0.00
83	T	n-Propylbenzene	3.9003	3.7192	4.6	103	0.00
84	T	Bromobenzene	0.8022	0.7645	4.7	105	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.7468	3.3	104	0.00
86	T	2-Chlorotoluene	2.7231	2.6485	2.7	104	0.00
87	T	4-Chlorotoluene	2.4597	2.2055	10.3	104	0.00
88	T	a-Methylstyrene	1.3479	1.3297	1.4	108	0.00
89	T	tert-Butylbenzene	0.5558	0.5179	6.8	106	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8189	3.5	106	0.00
91	T	sec-Butylbenzene	3.3424	3.1813	4.8	104	0.00
92	T	p-Isopropyltoluene	2.8379	2.7088	4.6	105	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.4818	4.1	106	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4530	6.7	105	0.00
95	T	n-Butylbenzene	2.8056	2.6518	5.5	104	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2763	7.1	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0927	8.0	98	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9766	4.9	105	0.00
99	T	Hexachlorobutadiene	0.4798	0.4716	1.7	112	0.00
100	T	Naphthalene	1.5257	1.3665	10.4	96	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7705	11.1	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413277.D 8260WT.M Wed Jun 29 08:37:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	91	0.00
2	T	Dichlorodifluoromethane	50.0000	45.5083	9.0	79	0.00
3	P	Chloromethane	50.0000	47.4272	5.1	88	0.00
4	C	Vinyl Chloride	50.0000	55.3678	-10.7	100	0.00
5	T	1,3-Butadiene	50.0000	71.5007	-43.0#	126	0.00
6	T	Bromomethane	50.0000	44.9412	10.1	85	0.00
7	T	Chloroethane	50.0000	50.8474	-1.7	94	0.00
8	T	Trichlorofluoromethane	50.0000	60.1899	-20.4	110	0.00
9	T	Diethyl ether	100.0000	90.1084	9.9	85	0.00
10	T	Isoprene	50.0000	58.5277	-17.1	109	0.00
11	T	Acrolein	50.0000	31.9493	36.1#	59	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.2781	-10.6	103	0.00
13	T	Acetone	50.0000	61.7730	-23.5	107	-0.01
14	C	1,1-Dichloroethene	50.0000	55.6639	-11.3	103	0.00
15	T	Tert-Butyl Alcohol	200.0000	220.1264	-10.1	101	0.00
16	T	Dimethyl Sulfide	50.0000	50.8787	-1.8	94	0.00
17	T	Iodomethane	50.0000	53.2063	-6.4	108	0.00
18	T	Methyl acetate	50.0000	61.7522	-23.5	116	0.00
19	T	Methylene Chloride	50.0000	52.2953	-4.6	98	0.00
20	T	Carbon Disulfide	50.0000	59.0884	-18.2	112	0.00
21	T	Acrylonitrile	50.0000	53.3667	-6.7	92	0.00
22	T	Methyl Tert Butyl Ether	50.0000	56.4641	-12.9	99	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.0257	-8.1	99	0.00
24	T	n-Hexane	50.0000	60.5549	-21.1	113	0.00
25	T	Diisopropyl ether	100.0000	100.8228	-0.8	93	0.00
26	T	Vinyl Acetate	50.0000	38.5078	23.0	67	0.00
27	P	1,1-Dichloroethane	50.0000	54.2278	-8.5	98	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	109.7014	-9.7	99	0.00
29	T	2-Butanone	50.0000	52.3161	-4.6	92	0.00
30	T	Propionitrile	100.0000	106.5209	-6.5	95	0.00
31	T	2,2-Dichloropropane	50.0000	64.1025	-28.2#	115	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.8759	-5.8	98	0.00
33	C	Chloroform	50.0000	56.4751	-13.0	103	0.00
34		1-Bromopropane	50.0000	64.7720	-29.5#	119	0.00
35	T	Bromochloromethane	50.0000	54.6822	-9.4	99	0.00
36	T	Tetrahydrofuran	100.0000	91.8656	8.1	89	0.00
37	S	Dibromofluoromethane	25.0000	27.9255	-11.7	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	60.7694	-21.5	109	0.00
39	T	Cyclohexane	50.0000	57.4735	-14.9	109	0.00
40	T	1,1-Dichloropropene	50.0000	56.6604	-13.3	103	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	112.4396	-12.4	101	0.00
42	T	Carbon Tetrachloride	50.0000	61.6093	-23.2	111	0.00
43	S	1,2-Dichloroethane-d4	25.0000	29.0901	-16.4	103	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	60.1572	-20.3	106	0.00
46	T	Benzene	50.0000	52.9185	-5.8	96	0.00
47	T	Trichloroethene	50.0000	54.9776	-10.0	100	0.00
48	T	Methylcyclohexane	50.0000	59.7741	-19.5	111	0.00
49	C	1,2-Dichloropropane	50.0000	51.1548	-2.3	94	0.00
50	T	Bromodichloromethane	50.0000	58.1077	-16.2	101	0.00
51	T	1,4-Dioxane	200.0000	227.7362	-13.9	98	0.00
52	T	Dibromomethane	50.0000	53.9859	-8.0	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	46.7184	6.6	80	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.6208	-1.2	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.3352	-12.7	98	0.00
56	T	Dimethyl Disulfide	50.0000	60.0446	-20.1	108	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	104	0.00
58	S	Toluene-d8	25.0000	25.2035	-0.8	102	0.00
59	C	Toluene	50.0000	48.5909	2.8	100	0.00
60	T	Ethyl Methacrylate	50.0000	52.3617	-4.7	103	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	52.0693	-4.1	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.9382	6.1	96	0.00
64	T	2-Hexanone	50.0000	47.1829	5.6	95	0.00
65	T	1,3-Dichloropropane	50.0000	47.9644	4.1	95	0.00
66	T	Tetrachloroethene	50.0000	52.4633	-4.9	111	0.00
67	T	Dibromochloromethane	50.0000	50.7826	-1.6	101	0.00
68	T	1,2-Dibromoethane	50.0000	48.7131	2.6	97	0.00
69	T	1-Chlorohexane	50.0000	52.4666	-4.9	111	0.00
70	P	Chlorobenzene	50.0000	48.6448	2.7	102	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.9898	-2.0	103	0.00
72	C	Ethylbenzene	50.0000	48.0532	3.9	102	0.00
73	T	m-,p-Xylene	100.0000	98.2418	1.8	102	0.00
74	T	o-Xylene	50.0000	48.3302	3.3	100	0.00
75	T	Styrene	50.0000	49.9851	0.0	99	0.00
76	P	Bromoform	50.0000	53.4078	-6.8	106	0.00
77	T	Isopropylbenzene	50.0000	50.9192	-1.8	103	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	109	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	44.3910	11.2	95	0.00
80	S	p-Bromofluorobenzene	25.0000	25.5265	-2.1	114	0.00
81	T	1,2,3-Trichloropropane	50.0000	47.0214	6.0	103	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	49.2908	1.4	113	0.00
83	T	n-Propylbenzene	50.0000	47.6788	4.6	103	0.00
84	T	Bromobenzene	50.0000	47.6468	4.7	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.3397	3.3	104	0.00
86	T	2-Chlorotoluene	50.0000	48.6302	2.7	104	0.00
87	T	4-Chlorotoluene	50.0000	44.8326	10.3	104	0.00
88	T	a-Methylstyrene	50.0000	49.3226	1.4	108	0.00
89	T	tert-Butylbenzene	50.0000	46.5903	6.8	106	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.2454	3.5	106	0.00
91	T	sec-Butylbenzene	50.0000	47.5907	4.8	104	0.00
92	T	p-Isopropyltoluene	50.0000	47.7248	4.6	105	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.9634	4.1	106	0.00
94	T	1,4-Dichlorobenzene	50.0000	46.6497	6.7	105	0.00
95	T	n-Butylbenzene	50.0000	47.2585	5.5	104	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.4491	7.1	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	46.0055	8.0	98	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.5508	4.9	105	0.00
99	T	Hexachlorobutadiene	50.0000	49.1403	1.7	112	0.00
100	T	Naphthalene	50.0000	44.7800	10.4	96	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	44.4665	11.1	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413277.D 8260WT.M Wed Jun 29 08:37:40 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413364.D Vial: 2
Acq On : 30 Jun 2016 12:27 Operator: TMB
Sample : WG574735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:20:44 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1033916	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	727817	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	393758	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	302234	27.2073 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.84%		
43) 1,2-Dichloroethane-d4	10.31	65	341161	28.6422 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.56%		
58) Toluene-d8	12.68	98	1037323	27.2331 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 108.92%		
80) p-Bromofluorobenzene	16.07	95	416886	25.5689 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	1142637	65.9166 ug/L	100
3) Chloromethane	3.62	50	564281	55.7669 ug/L	99
4) Vinyl Chloride	3.84	62	718835	59.8776 ug/L	99
5) 1,3-Butadiene	3.88	54	643584	63.9264 ug/L	97
6) Bromomethane	4.73	94	331175	45.7945 ug/L	97
7) Chloroethane	4.89	64	347615	52.6230 ug/L	97
8) Trichlorofluoromethane	5.38	101	1333463	59.6947 ug/L	99
9) Diethyl ether	5.90	59	518281	97.1867 ug/L	97
10) Isoprene	5.93	67	664451	48.9822 ug/L	96
11) Acrolein	6.13	56	29273	61.3079 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	570168	54.3009 ug/L	96
13) Acetone	6.23	43	65446	56.2612 ug/L	95
14) 1,1-Dichloroethene	6.46	61	934405	55.8902 ug/L	97
15) Tert-Butyl Alcohol	6.58	59	86054	230.8481 ug/L	99
16) Dimethyl Sulfide	6.72	62	279609	46.7747 ug/L	98
17) Iodomethane	6.98	142	190909	41.6759 ug/L	99
18) Methyl acetate	7.00	43	141159	44.8926 ug/L	99
19) Methylene Chloride	7.25	84	536355	50.4121 ug/L	100
20) Carbon Disulfide	7.29	76	1791767	51.2128 ug/L	99
21) Acrylonitrile	7.43	53	75343	49.9192 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	1230777	53.4496 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	812253	52.8828 ug/L	100
24) n-Hexane	7.77	57	600120	52.6174 ug/L	100
25) Diisopropyl ether	8.13	45	2313227	96.6184 ug/L	97
26) Vinyl Acetate	8.29	43	584271	53.3004 ug/L	99
27) 1,1-Dichloroethane	8.32	63	1007092	52.7966 ug/L	99
28) Ethyl-Tert-Butyl ether	8.69	59	2638560	102.8607 ug/L	99
29) 2-Butanone	8.87	43	85682	50.1329 ug/L	98
30) Propionitrile	8.98	54	47489	95.3480 ug/L	96
31) 2,2-Dichloropropane	9.10	77	1245750	61.9728 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	609482	51.3550 ug/L	97
33) Chloroform	9.38	83	1226607	54.4614 ug/L	100
34) 1-Bromopropane	9.51	122	96998	57.0594 ug/L	96
35) Bromochloromethane	9.60	130	327163	53.7577 ug/L	95
36) Tetrahydrofuran	9.63	42	97939	87.0055 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	1240815	57.9992 ug/L	99
39) Cyclohexane	9.93	56	737241	49.7751 ug/L	97
40) 1,1-Dichloropropene	10.10	75	889895	54.5725 ug/L	98
41) Tert-Amyl-Methyl ether	10.20	73	2369011	101.6820 ug/L	99
42) Carbon Tetrachloride	10.24	117	1117955	58.8480 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413364.D 8260WT.M Thu Jun 30 15:20:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413364.D Vial: 2
Acq On : 30 Jun 2016 12:27 Operator: TMB
Sample : WG574735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:20:44 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	828938	57.1831 ug/L		99
46)	Benzene	10.46	78	2190376	51.5740 ug/L		99
47)	Trichloroethene	11.22	130	609384	53.7975 ug/L		99
48)	Methylcyclohexane	11.30	83	882622	51.2904 ug/L		99
49)	1,2-Dichloropropane	11.42	63	462882	48.9594 ug/L		90
50)	Bromodichloromethane	11.72	83	921801	55.4733 ug/L		100
51)	1,4-Dioxane	11.71	88	11718	246.7347 ug/L		98
52)	Dibromomethane	11.82	93	279093	49.8687 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	176032	43.3191 ug/L		95
54)	4-Methyl-2-Pentanone	12.05	58	79853	48.1065 ug/L		95
55)	cis-1,3-Dichloropropene	12.36	75	918009	54.2758 ug/L		100
56)	Dimethyl Disulfide	12.62	79	472093	52.2950 ug/L		98
59)	Toluene	12.79	91	2331792	51.6065 ug/L		100
60)	Ethyl Methacrylate	12.88	69	435801	50.2224 ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	819334	54.1099 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	352411	49.4272 ug/L		100
64)	2-Hexanone	13.12	58	68974	46.0352 ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	646094	50.8974 ug/L		96
66)	Tetrachloroethene	13.60	164	530683	54.8189 ug/L		98
67)	Dibromochloromethane	13.86	129	554775	53.2895 ug/L		99
68)	1,2-Dibromoethane	14.12	107	348991	49.1129 ug/L		96
69)	1-Chlorohexane	14.21	91	789891	51.2128 ug/L		97
70)	Chlorobenzene	14.63	112	1548452	50.8206 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	638268	54.0718 ug/L		99
72)	Ethylbenzene	14.66	106	860652	51.6275 ug/L		98
73)	m-,p-Xylene	14.74	106	2038752	104.2654 ug/L		100
74)	o-Xylene	15.31	106	992611	51.9232 ug/L		98
75)	Styrene	15.34	104	1645890	52.4926 ug/L		94
76)	Bromoform	15.84	173	336048	54.4214 ug/L		100
77)	Isopropylbenzene	15.73	105	2713660	53.4344 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	367497	46.4955 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	116451	47.8451 ug/L		95
82)	trans-1,4-Dichloro-2-Buten	16.19	53	123515	49.7892 ug/L		86
83)	n-Propylbenzene	16.24	91	3189850	51.9261 ug/L		99
84)	Bromobenzene	16.36	156	667274	52.8092 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	2386869	53.3397 ug/L		100
86)	2-Chlorotoluene	16.51	91	2011298	46.8950 ug/L		91
87)	4-Chlorotoluene	16.56	91	2182986	56.3476 ug/L		92
88)	a-Methylstyrene	16.83	118	1037141	48.8516 ug/L		97
89)	tert-Butylbenzene	16.89	134	450238	51.4298 ug/L		99
90)	1,2,4-Trimethylbenzene	16.94	105	2402950	52.2230 ug/L		99
91)	sec-Butylbenzene	17.16	105	2722217	51.7105 ug/L		99
92)	p-Isopropyltoluene	17.32	119	2359980	52.7979 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	1275105	52.4080 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	1237165	50.4362 ug/L		99
95)	n-Butylbenzene	17.84	91	2236999	50.6232 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1082630	50.0308 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	76820	48.4189 ug/L		97
98)	1,2,4-Trichlorobenzene	20.28	180	823563	50.9167 ug/L		99
99)	Hexachlorobutadiene	20.44	225	414031	54.7846 ug/L		99
100)	Naphthalene	20.64	128	1129660	47.0084 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	665782	48.7898 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413364.D 8260WT.M Thu Jun 30 15:20:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413364.D Vial: 2
Acq On : 30 Jun 2016 12:27 Operator: TMB
Sample : WG574735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:20 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

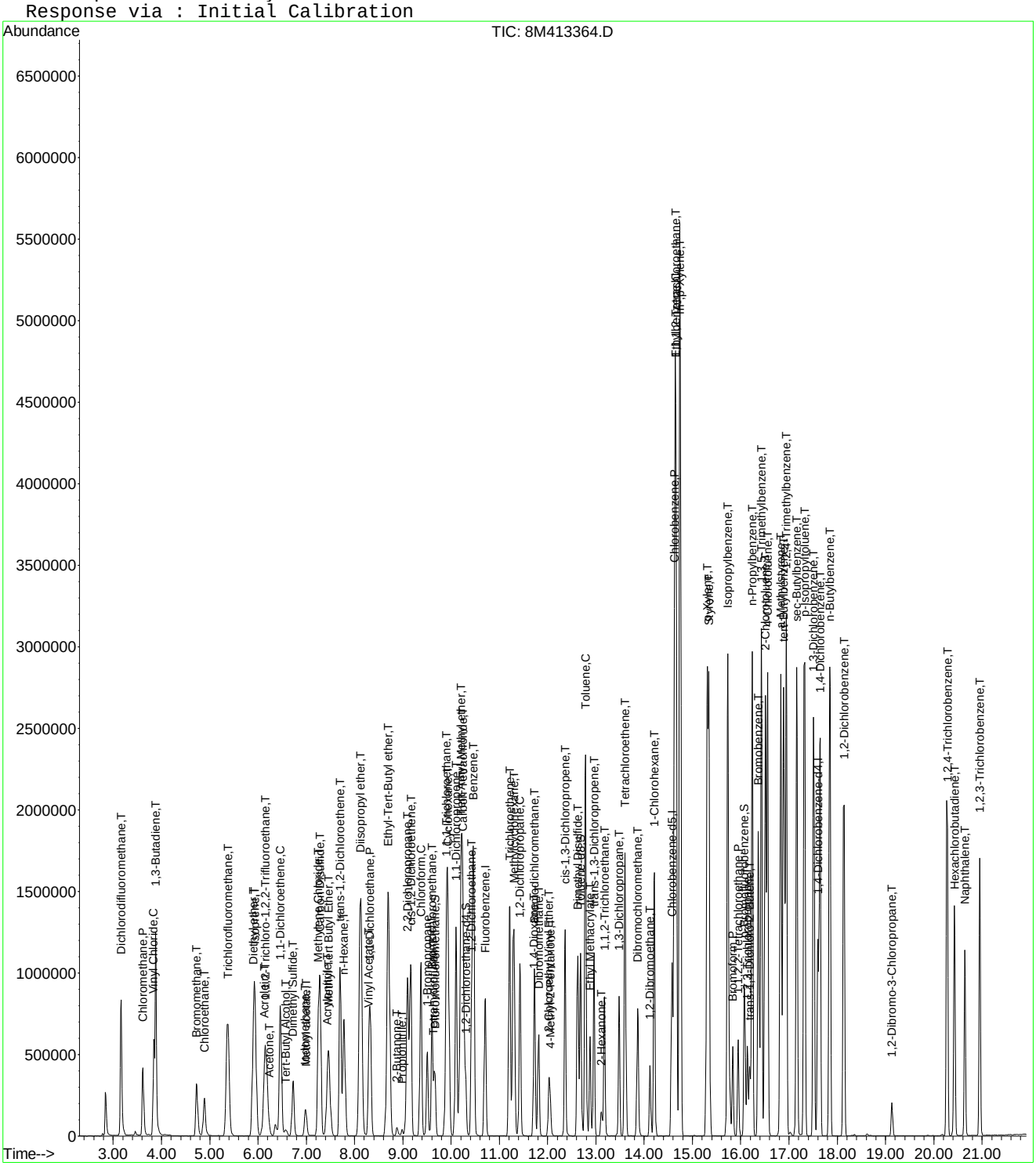

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413364.D Vial: 2
Acq On : 30 Jun 2016 12:27 Operator: TMB
Sample : WG574735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	133	0.00
2	T	Dichlorodifluoromethane	0.4192	0.5526	-31.8#	167#	0.00
3	P	Chloromethane	0.2447	0.2729	-11.5	151#	0.00
4	C	Vinyl Chloride	0.2903	0.3476	-19.8	158#	-0.01
5	T	1,3-Butadiene	0.2434	0.3112	-27.9#	165#	0.00
6	T	Bromomethane	0.1654	0.1602	3.2	127	-0.01
7	T	Chloroethane	0.1597	0.1681	-5.2	142	0.00
8	T	Trichlorofluoromethane	0.5401	0.6449	-19.4	159#	0.00
9	T	Diethyl ether	0.1290	0.1253	2.8	133	0.00
10	T	Isoprene	0.3280	0.3213	2.0	133	0.00
11	T	Acrolein	0.0116	0.0142	-22.6	166#	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2757	-8.6	147	0.00
13	T	Acetone	0.0281	0.0316	-12.5	143	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4519	-11.8	151#	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0104	-15.4	155#	0.00
16	T	Dimethyl Sulfide	0.1445	0.1352	6.4	126	-0.01
17	T	Iodomethane	0.0866	0.0923	-6.7	121	0.00
18	T	Methyl acetate	0.0760	0.0683	10.2	123	0.00
19	T	Methylene Chloride	0.2573	0.2594	-0.8	138	0.00
20	T	Carbon Disulfide	0.8460	0.8665	-2.4	141	0.00
21	T	Acrylonitrile	0.0365	0.0364	0.1	126	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5952	-6.9	137	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3928	-5.8	142	0.00
24	T	n-Hexane	0.2758	0.2902	-5.2	143	-0.01
25	T	Diisopropyl ether	0.5789	0.5593	3.4	130	0.00
26	T	Vinyl Acetate	0.2651	0.2826	-6.6	136	0.00
27	P	1,1-Dichloroethane	0.4612	0.4870	-5.6	139	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6380	-2.9	135	-0.01
29	T	2-Butanone	0.0413	0.0414	-0.3	129	-0.01
30	T	Propionitrile	0.0120	0.0115	4.7	124	0.00
31	T	2,2-Dichloropropane	0.4860	0.6024	-23.9	162#	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2947	-2.7	139	0.00
33	C	Chloroform	0.5446	0.5932	-8.9	145	0.00
34		1-Bromopropane	0.0411	0.0469	-14.1	153#	0.00
35	T	Bromochloromethane	0.1472	0.1582	-7.5	142	0.00
36	T	Tetrahydrofuran	0.0272	0.0237	13.0	123	0.00
37	S	Dibromofluoromethane	0.2686	0.2923	-8.8	143	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6001	-16.0	152#	0.00
39	T	Cyclohexane	0.3581	0.3565	0.4	138	0.00
40	T	1,1-Dichloropropene	0.3943	0.4304	-9.1	145	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5728	-1.7	134	-0.01
42	T	Carbon Tetrachloride	0.4593	0.5406	-17.7	154#	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3300	-14.6	149	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.4009	-14.4	148	0.00
46	T	Benzene	1.0269	1.0593	-3.1	136	0.00
47	T	Trichloroethene	0.2739	0.2947	-7.6	143	0.00
48	T	Methylcyclohexane	0.4161	0.4268	-2.6	139	0.00
49	C	1,2-Dichloropropane	0.2286	0.2238	2.1	132	0.00
50	T	Bromodichloromethane	0.4018	0.4458	-10.9	141	0.00
51	T	1,4-Dioxane	0.0012	0.0014	-23.5	155#	0.00
52	T	Dibromomethane	0.1353	0.1350	0.3	133	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0851	13.4	108	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0386	3.8	123	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413364.D Vial: 2
Acq On : 30 Jun 2016 12:27 Operator: TMB
Sample : WG574735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4440	-8.6	138	0.00
56	T	Dimethyl Disulfide	0.2183	0.2283	-4.6	137	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	135	0.00
58	S	Toluene-d8	1.3084	1.4252	-8.9	144	0.00
59	C	Toluene	1.5520	1.6019	-3.2	139	0.00
60	T	Ethyl Methacrylate	0.2981	0.2994	-0.4	129	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5629	-8.2	138	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2421	1.1	131	0.00
64	T	2-Hexanone	0.0515	0.0474	7.9	121	0.00
65	T	1,3-Dichloropropane	0.4360	0.4439	-1.8	132	0.00
66	T	Tetrachloroethene	0.3325	0.3646	-9.6	151#	0.00
67	T	Dibromochloromethane	0.3576	0.3811	-6.6	138	0.00
68	T	1,2-Dibromoethane	0.2441	0.2397	1.8	128	0.00
69	T	1-Chlorohexane	0.5298	0.5426	-2.4	141	0.00
70	P	Chlorobenzene	1.0466	1.0638	-1.6	139	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4385	-8.1	143	0.00
72	C	Ethylbenzene	0.5726	0.5913	-3.3	143	0.00
73	T	m-,p-Xylene	0.6716	0.7003	-4.3	141	0.00
74	T	o-Xylene	0.6566	0.6819	-3.8	140	0.00
75	T	Styrene	1.0770	1.1307	-5.0	136	0.00
76	P	Bromoform	0.2121	0.2309	-8.8	141	0.00
77	T	Isopropylbenzene	1.7444	1.8643	-6.9	141	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	137	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4667	7.0	125	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0587	-2.3	142	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1479	4.3	130	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1568	-14.0	142	0.00
83	T	n-Propylbenzene	3.9003	4.0505	-3.9	140	0.00
84	T	Bromobenzene	0.8022	0.8473	-5.6	145	-0.01
85	T	1,3,5-Trimethylbenzene	2.8411	3.0309	-6.7	144	0.00
86	T	2-Chlorotoluene	2.7231	2.5540	6.2	125	0.00
87	T	4-Chlorotoluene	2.4597	2.7720	-12.7	163#	0.00
88	T	a-Methylstyrene	1.3479	1.3170	2.3	134	0.00
89	T	tert-Butylbenzene	0.5558	0.5717	-2.9	146	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	3.0513	-4.4	143	0.00
91	T	sec-Butylbenzene	3.3424	3.4567	-3.4	141	0.00
92	T	p-Isopropyltoluene	2.8379	2.9967	-5.6	146	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.6192	-4.8	144	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.5710	-0.9	142	0.00
95	T	n-Butylbenzene	2.8056	2.8406	-1.2	139	-0.01
96	T	1,2-Dichlorobenzene	1.3739	1.3747	-0.1	141	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0975	3.2	129	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	1.0458	-1.8	141	0.00
99	T	Hexachlorobutadiene	0.4798	0.5257	-9.6	156#	0.00
100	T	Naphthalene	1.5257	1.4345	6.0	126	-0.01
101	T	1,2,3-Trichlorobenzene	0.8664	0.8454	2.4	140	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413364.D 8260WT.M Thu Jun 30 15:21:58 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413364.D Vial: 2
Acq On : 30 Jun 2016 12:27 Operator: TMB
Sample : WG574735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	133	0.00
2	T	Dichlorodifluoromethane	50.0000	65.9166	-31.8#	167	0.00
3	P	Chloromethane	50.0000	55.7669	-11.5	151	0.00
4	C	Vinyl Chloride	50.0000	59.8776	-19.8	158	-0.01
5	T	1,3-Butadiene	50.0000	63.9264	-27.9#	165	0.00
6	T	Bromomethane	50.0000	45.7945	8.4	127	-0.01
7	T	Chloroethane	50.0000	52.6230	-5.2	142	0.00
8	T	Trichlorofluoromethane	50.0000	59.6947	-19.4	159	0.00
9	T	Diethyl ether	100.0000	97.1867	2.8	133	0.00
10	T	Isoprene	50.0000	48.9822	2.0	133	0.00
11	T	Acrolein	50.0000	61.3079	-22.6	166	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.3009	-8.6	147	0.00
13	T	Acetone	50.0000	56.2612	-12.5	143	-0.01
14	C	1,1-Dichloroethene	50.0000	55.8902	-11.8	151	0.00
15	T	Tert-Butyl Alcohol	200.0000	230.8481	-15.4	155	0.00
16	T	Dimethyl Sulfide	50.0000	46.7747	6.5	126	-0.01
17	T	Iodomethane	50.0000	41.6759	16.6	121	0.00
18	T	Methyl acetate	50.0000	44.8926	10.2	123	0.00
19	T	Methylene Chloride	50.0000	50.4121	-0.8	138	0.00
20	T	Carbon Disulfide	50.0000	51.2128	-2.4	141	0.00
21	T	Acrylonitrile	50.0000	49.9192	0.2	126	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.4496	-6.9	137	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.8828	-5.8	142	0.00
24	T	n-Hexane	50.0000	52.6174	-5.2	143	-0.01
25	T	Diisopropyl ether	100.0000	96.6184	3.4	130	0.00
26	T	Vinyl Acetate	50.0000	53.3004	-6.6	136	0.00
27	P	1,1-Dichloroethane	50.0000	52.7966	-5.6	139	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.8607	-2.9	135	-0.01
29	T	2-Butanone	50.0000	50.1329	-0.3	129	-0.01
30	T	Propionitrile	100.0000	95.3480	4.7	124	0.00
31	T	2,2-Dichloropropane	50.0000	61.9728	-23.9	162	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.3550	-2.7	139	0.00
33	C	Chloroform	50.0000	54.4614	-8.9	145	0.00
34		1-Bromopropane	50.0000	57.0594	-14.1	153	0.00
35	T	Bromochloromethane	50.0000	53.7577	-7.5	142	0.00
36	T	Tetrahydrofuran	100.0000	87.0055	13.0	123	0.00
37	S	Dibromofluoromethane	25.0000	27.2073	-8.8	143	0.00
38	T	1,1,1-Trichloroethane	50.0000	57.9992	-16.0	152	0.00
39	T	Cyclohexane	50.0000	49.7751	0.4	138	0.00
40	T	1,1-Dichloropropene	50.0000	54.5725	-9.1	145	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	101.6821	-1.7	134	-0.01
42	T	Carbon Tetrachloride	50.0000	58.8480	-17.7	154	0.00
43	S	1,2-Dichloroethane-d4	25.0000	28.6422	-14.6	149	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	57.1831	-14.4	148	0.00
46	T	Benzene	50.0000	51.5740	-3.1	136	0.00
47	T	Trichloroethene	50.0000	53.7975	-7.6	143	0.00
48	T	Methylcyclohexane	50.0000	51.2904	-2.6	139	0.00
49	C	1,2-Dichloropropane	50.0000	48.9594	2.1	132	0.00
50	T	Bromodichloromethane	50.0000	55.4733	-10.9	141	0.00
51	T	1,4-Dioxane	200.0000	246.7347	-23.4	155	0.00
52	T	Dibromomethane	50.0000	49.8687	0.3	133	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.3191	13.4	108	0.00
54	T	4-Methyl-2-Pentanone	50.0000	48.1065	3.8	123	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413364.D Vial: 2
Acq On : 30 Jun 2016 12:27 Operator: TMB
Sample : WG574735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.2758	-8.6	138	0.00
56	T	Dimethyl Disulfide	50.0000	52.2950	-4.6	137	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	135	0.00
58	S	Toluene-d8	25.0000	27.2331	-8.9	144	0.00
59	C	Toluene	50.0000	51.6065	-3.2	139	0.00
60	T	Ethyl Methacrylate	50.0000	50.2224	-0.4	129	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	54.1099	-8.2	138	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.4272	1.1	131	0.00
64	T	2-Hexanone	50.0000	46.0352	7.9	121	0.00
65	T	1,3-Dichloropropane	50.0000	50.8974	-1.8	132	0.00
66	T	Tetrachloroethene	50.0000	54.8189	-9.6	151	0.00
67	T	Dibromochloromethane	50.0000	53.2895	-6.6	138	0.00
68	T	1,2-Dibromoethane	50.0000	49.1129	1.8	128	0.00
69	T	1-Chlorohexane	50.0000	51.2128	-2.4	141	0.00
70	P	Chlorobenzene	50.0000	50.8206	-1.6	139	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	54.0718	-8.1	143	0.00
72	C	Ethylbenzene	50.0000	51.6275	-3.3	143	0.00
73	T	m-,p-Xylene	100.0000	104.2654	-4.3	141	0.00
74	T	o-Xylene	50.0000	51.9232	-3.8	140	0.00
75	T	Styrene	50.0000	52.4926	-5.0	136	0.00
76	P	Bromoform	50.0000	54.4214	-8.8	141	0.00
77	T	Isopropylbenzene	50.0000	53.4344	-6.9	141	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	137	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	46.4955	7.0	125	0.00
80	S	p-Bromofluorobenzene	25.0000	25.5690	-2.3	142	0.00
81	T	1,2,3-Trichloropropane	50.0000	47.8451	4.3	130	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	49.7892	0.4	142	0.00
83	T	n-Propylbenzene	50.0000	51.9261	-3.9	140	0.00
84	T	Bromobenzene	50.0000	52.8092	-5.6	145	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	53.3397	-6.7	144	0.00
86	T	2-Chlorotoluene	50.0000	46.8950	6.2	125	0.00
87	T	4-Chlorotoluene	50.0000	56.3476	-12.7	163	0.00
88	T	a-Methylstyrene	50.0000	48.8516	2.3	134	0.00
89	T	tert-Butylbenzene	50.0000	51.4298	-2.9	146	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.2230	-4.4	143	0.00
91	T	sec-Butylbenzene	50.0000	51.7105	-3.4	141	0.00
92	T	p-Isopropyltoluene	50.0000	52.7979	-5.6	146	0.00
93	T	1,3-Dichlorobenzene	50.0000	52.4080	-4.8	144	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4362	-0.9	142	0.00
95	T	n-Butylbenzene	50.0000	50.6232	-1.2	139	-0.01
96	T	1,2-Dichlorobenzene	50.0000	50.0308	-0.1	141	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4189	3.2	129	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.9167	-1.8	141	0.00
99	T	Hexachlorobutadiene	50.0000	54.7846	-9.6	156	0.00
100	T	Naphthalene	50.0000	47.0084	6.0	126	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	48.7898	2.4	140	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D          Vial: 3
Acq On    : 13 May 2016  12:36                       Operator: TMB
Sample    : WG568561-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

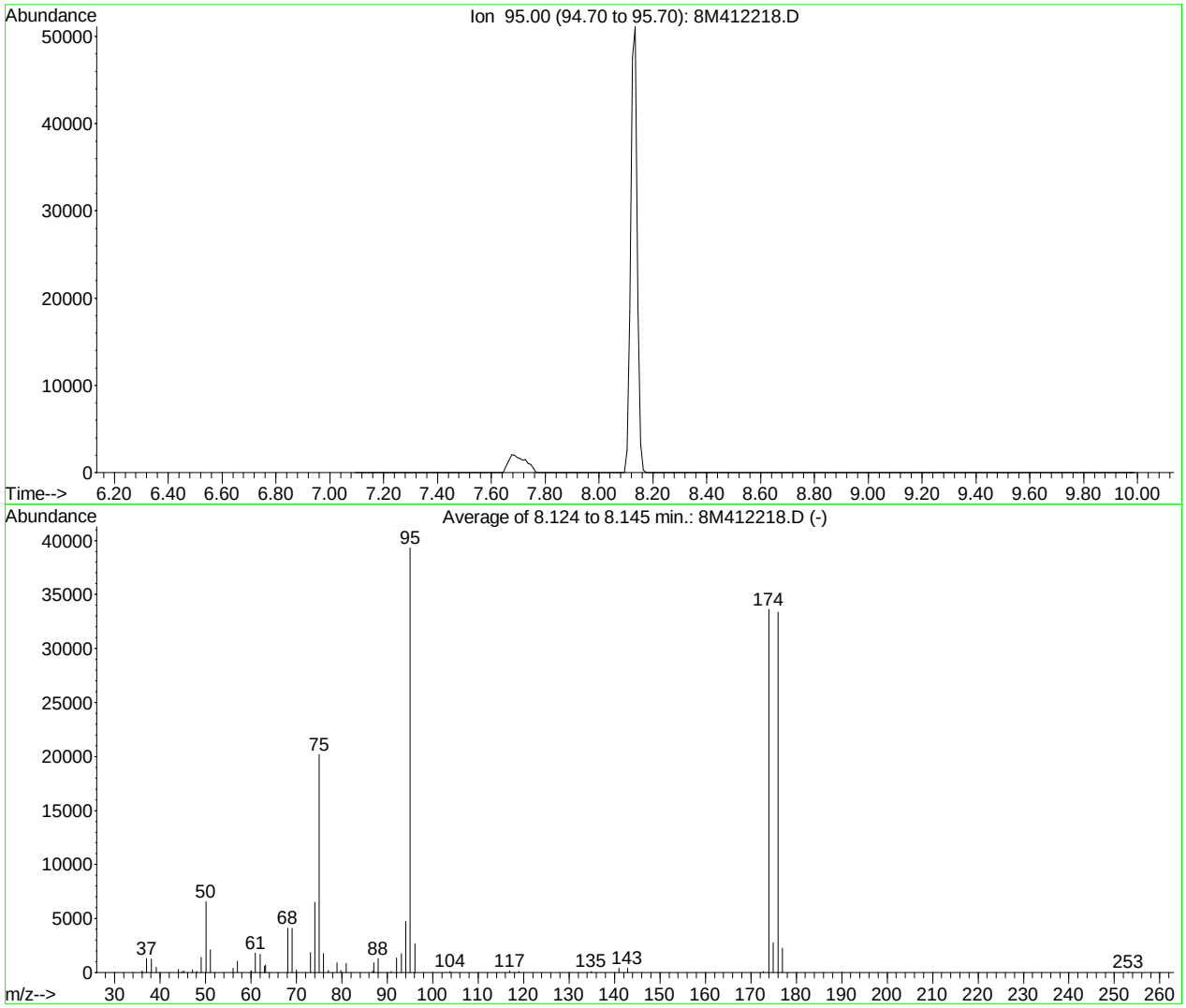

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413190.D Vial: 1
Acq On    : 23 Jun 2016  19:56                        Operator: FJB
Sample    : WG573990-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

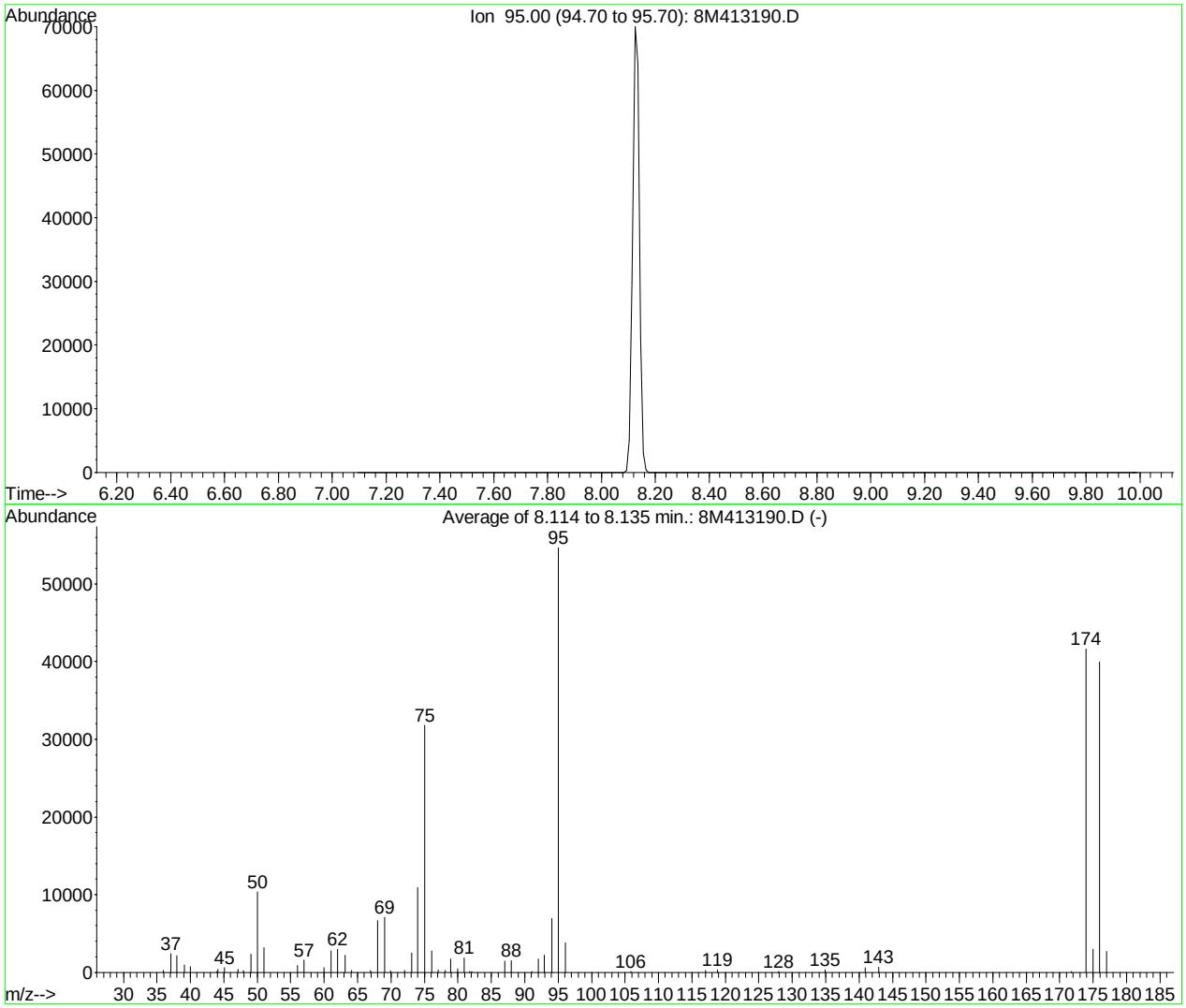

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.0	10373	PASS
75	95	30	60	58.1	31797	PASS
95	95	100	100	100.0	54685	PASS
96	95	5	9	7.0	3803	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.1	41629	PASS
175	174	5	9	7.2	2991	PASS
176	174	95	101	95.9	39941	PASS
177	176	5	9	6.8	2702	PASS

8M413190.D 8260WT.M Mon Jun 27 12:37:11 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413247.D Vial: 1
Acq On    : 26 Jun 2016  16:40                        Operator: ADC
Sample    : WG574226-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

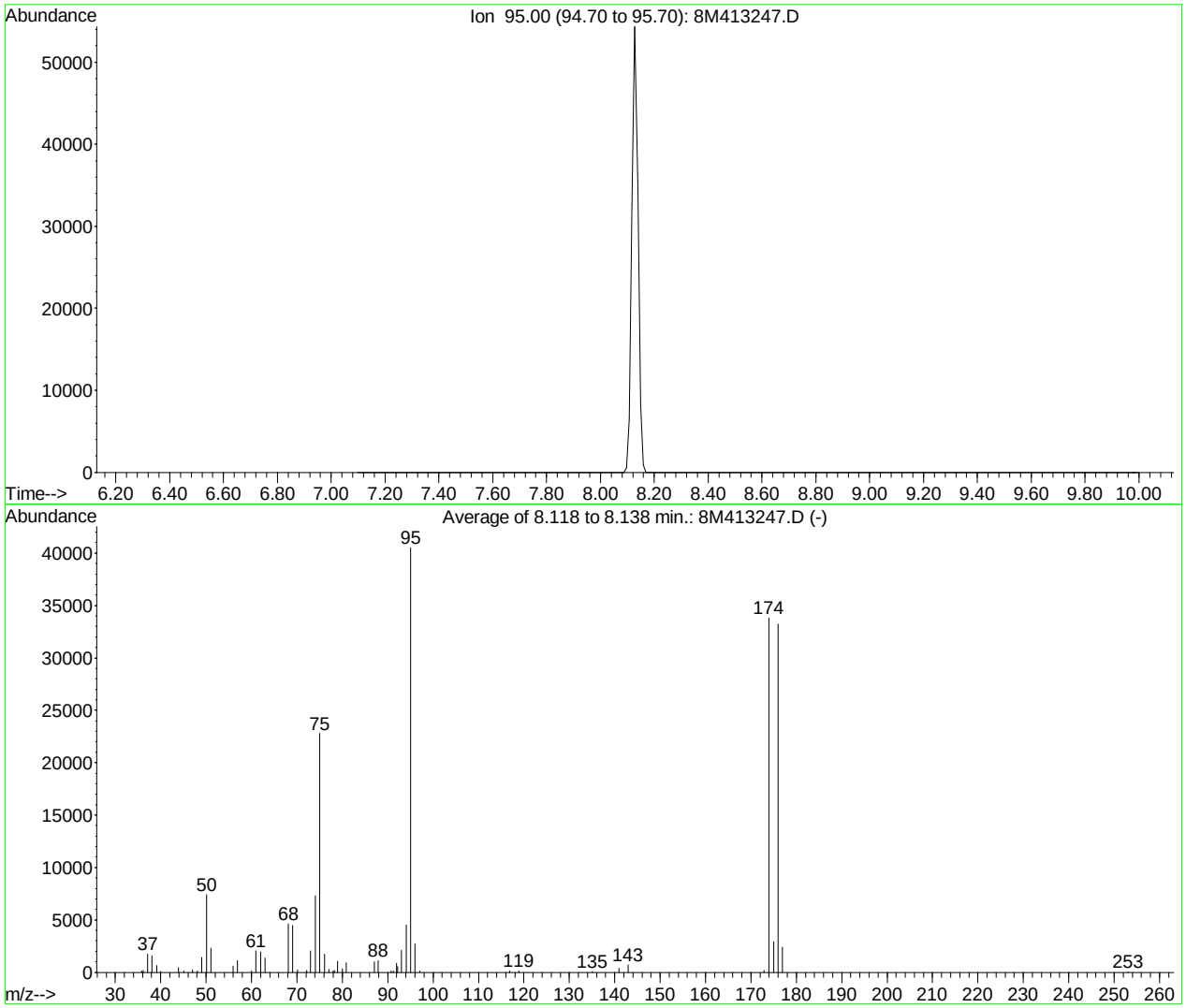

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.3	7413	PASS
75	95	30	60	56.2	22773	PASS
95	95	100	100	100.0	40520	PASS
96	95	5	9	6.6	2692	PASS
173	174	0.00	2	0.6	192	PASS
174	95	50	100	83.4	33789	PASS
175	174	5	9	8.6	2920	PASS
176	174	95	101	98.3	33202	PASS
177	176	5	9	7.2	2381	PASS

8M413247.D 8260WT.M Mon Jun 27 12:37:58 2016

BFB

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413275.D Vial: 1
Acq On : 27 Jun 2016 17:45 Operator: FJB
Sample : WG574409-01 BFB 50ng 8260 Inst : HPMS8
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8

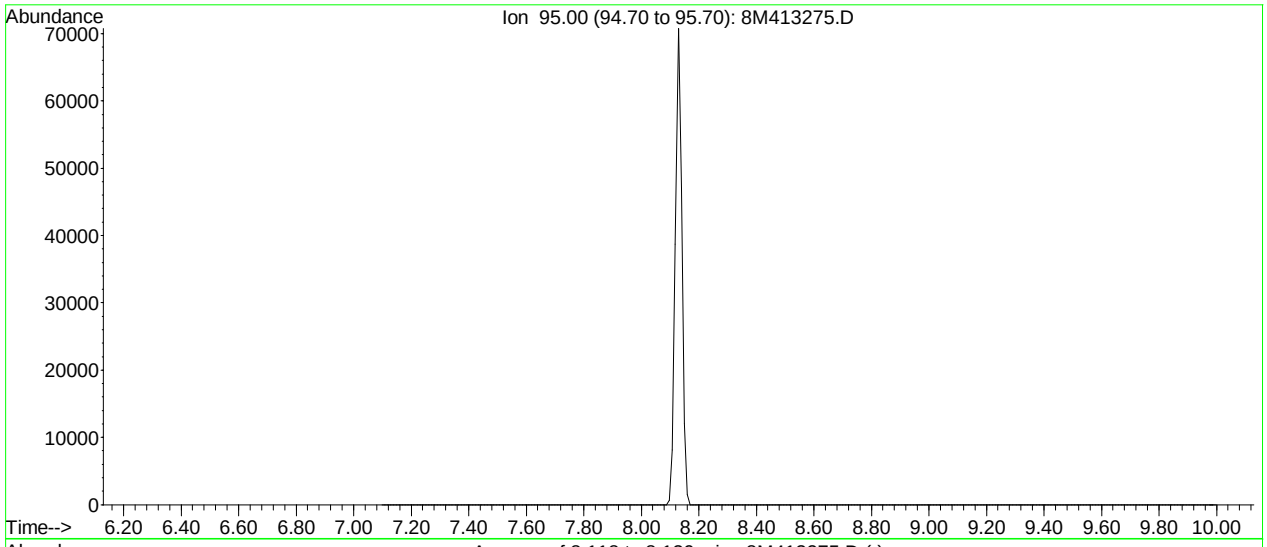

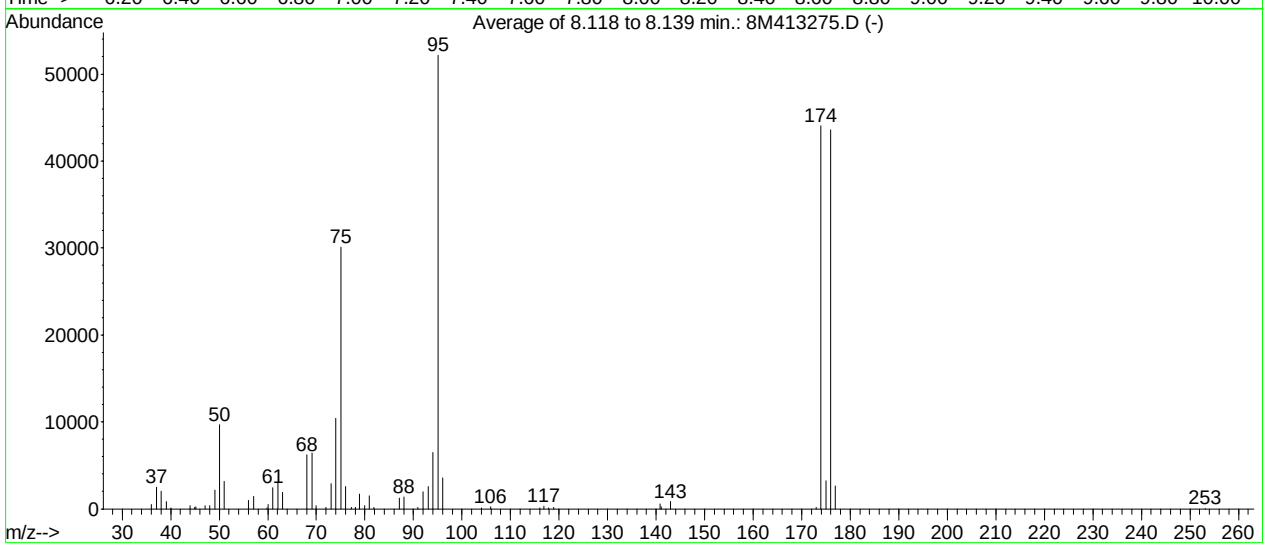

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.5	9667	PASS
75	95	30	60	57.7	30122	PASS
95	95	100	100	100.0	52181	PASS
96	95	5	9	6.8	3559	PASS
173	174	0.00	2	0.4	160	PASS
174	95	50	100	84.5	44069	PASS
175	174	5	9	7.3	3216	PASS
176	174	95	101	98.9	43568	PASS
177	176	5	9	6.1	2646	PASS

8M413275.D 8260WT.M Wed Jun 29 08:37:20 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413363.D Vial: 1
Acq On    : 30 Jun 2016  12:03                        Operator: TMB
Sample    : WG574735-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

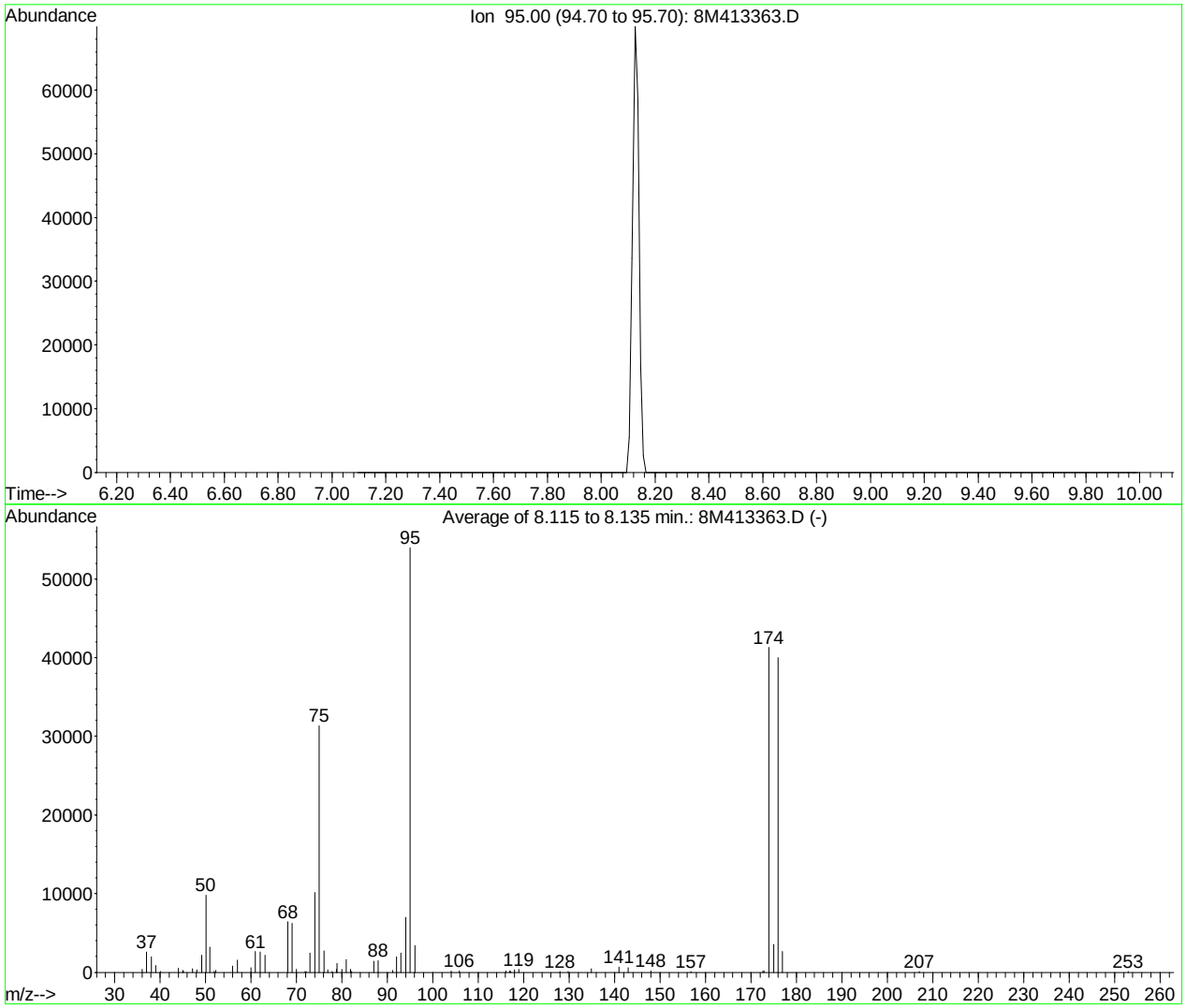

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.1	9775	PASS
75	95	30	60	58.1	31346	PASS
95	95	100	100	100.0	53981	PASS
96	95	5	9	6.3	3423	PASS
173	174	0.00	2	0.4	157	PASS
174	95	50	100	76.6	41338	PASS
175	174	5	9	8.6	3544	PASS
176	174	95	101	96.8	40000	PASS
177	176	5	9	6.7	2662	PASS

8M413363.D 8260WT.M Thu Jun 30 15:22:21 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413194.D Vial: 5
Acq On : 23 Jun 2016 21:59 Operator: FJB
Sample : WG573991-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:21:08 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	695599	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	547838	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	300577	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	210658	28.1869 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.76%		
43) 1,2-Dichloroethane-d4	10.30	65	230039	28.7061 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.84%		
58) Toluene-d8	12.68	98	731476	25.5125 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.04%		
80) p-Bromofluorobenzene	16.08	95	315963	25.3867 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.56%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.62	42	624	0.8240 ug/L	82

(#) = qualifier out of range (m) = manual integration
8M413194.D 8260WT.M Mon Jun 27 12:41:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413194.D Vial: 5
Acq On : 23 Jun 2016 21:59 Operator: FJB
Sample : WG573991-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:21 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

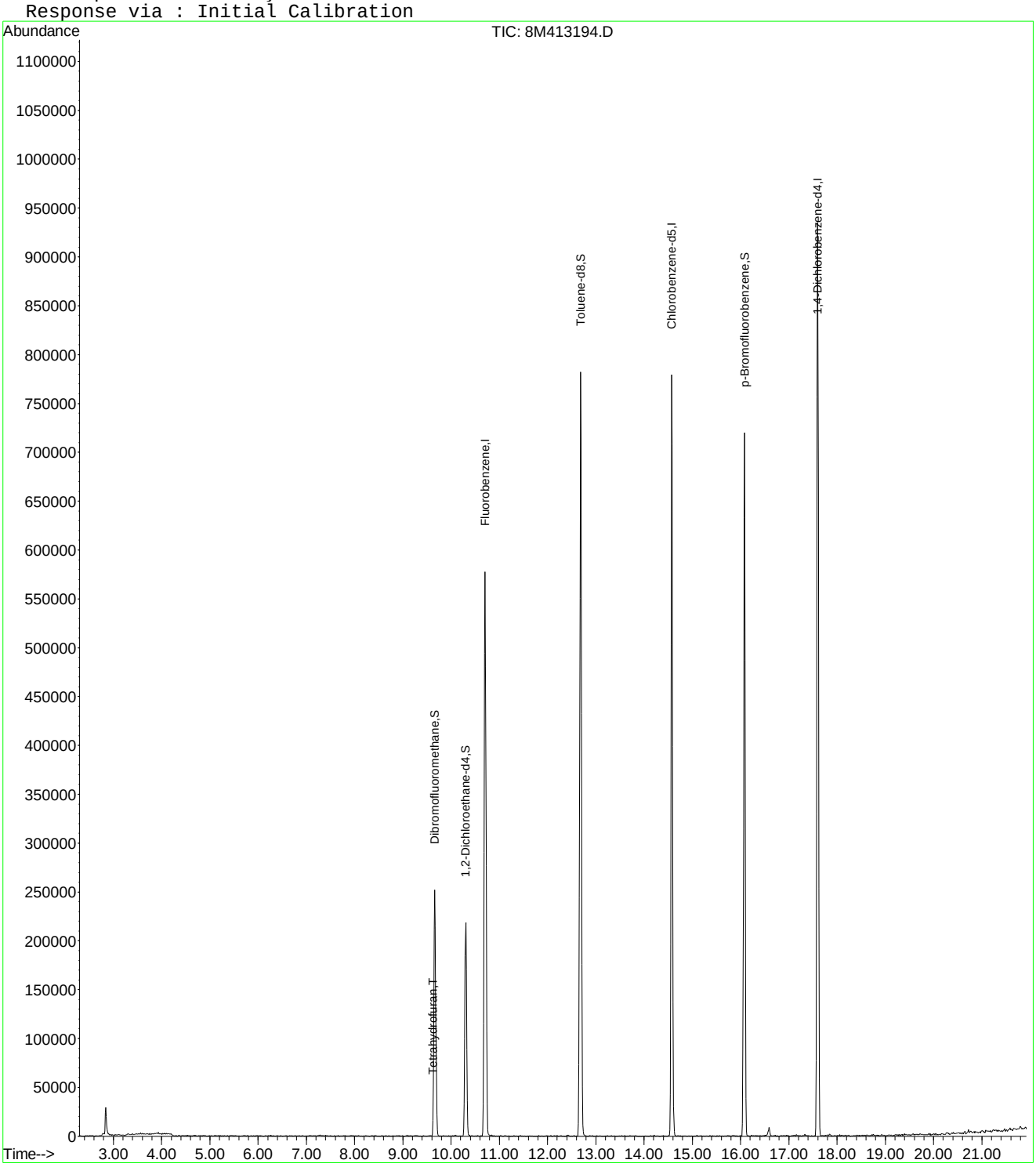

8M413194.D 8260WT.M Mon Jun 27 12:41:32 2016 Page 2

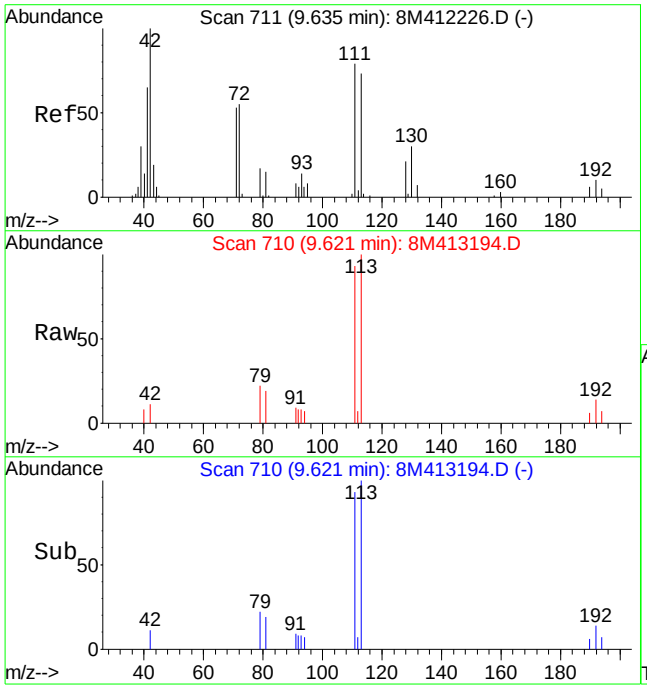

#36
Tetrahydrofuran
Concen: 0.82 ug/L
RT: 9.62 min Scan# 710
Delta R.T. -0.01 min
Lab File: 8M413194.D
Acq: 23 Jun 2016 21:59

Tgt Ion: 42 Resp: 624

Ion	Ratio	Lower	Upper
42	100		
72	65.5	33.8	78.8
71	70.5	32.0	74.8

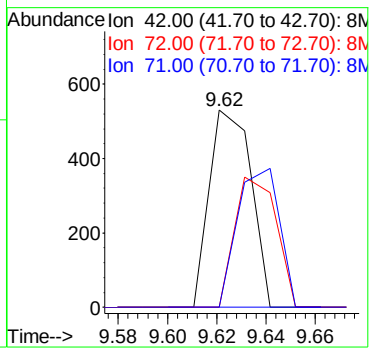

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413251.D Vial: 4
Acq On : 26 Jun 2016 18:32 Operator: ADC
Sample : WG574227-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	754008	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	592099	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	335642	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	224525	27.7151 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.88%		
43) 1,2-Dichloroethane-d4	10.31	65	237055	27.2901 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.16%		
58) Toluene-d8	12.68	98	792460	25.5734 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.28%		
80) p-Bromofluorobenzene	16.07	95	340162	24.4757 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.92%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	778	0.9477 ug/L #	58
70) Chlorobenzene	14.63	112	3179	0.1283 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M413251.D 8260WT.M Mon Jun 27 12:44:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413251.D Vial: 4
Acq On : 26 Jun 2016 18:32 Operator: ADC
Sample : WG574227-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

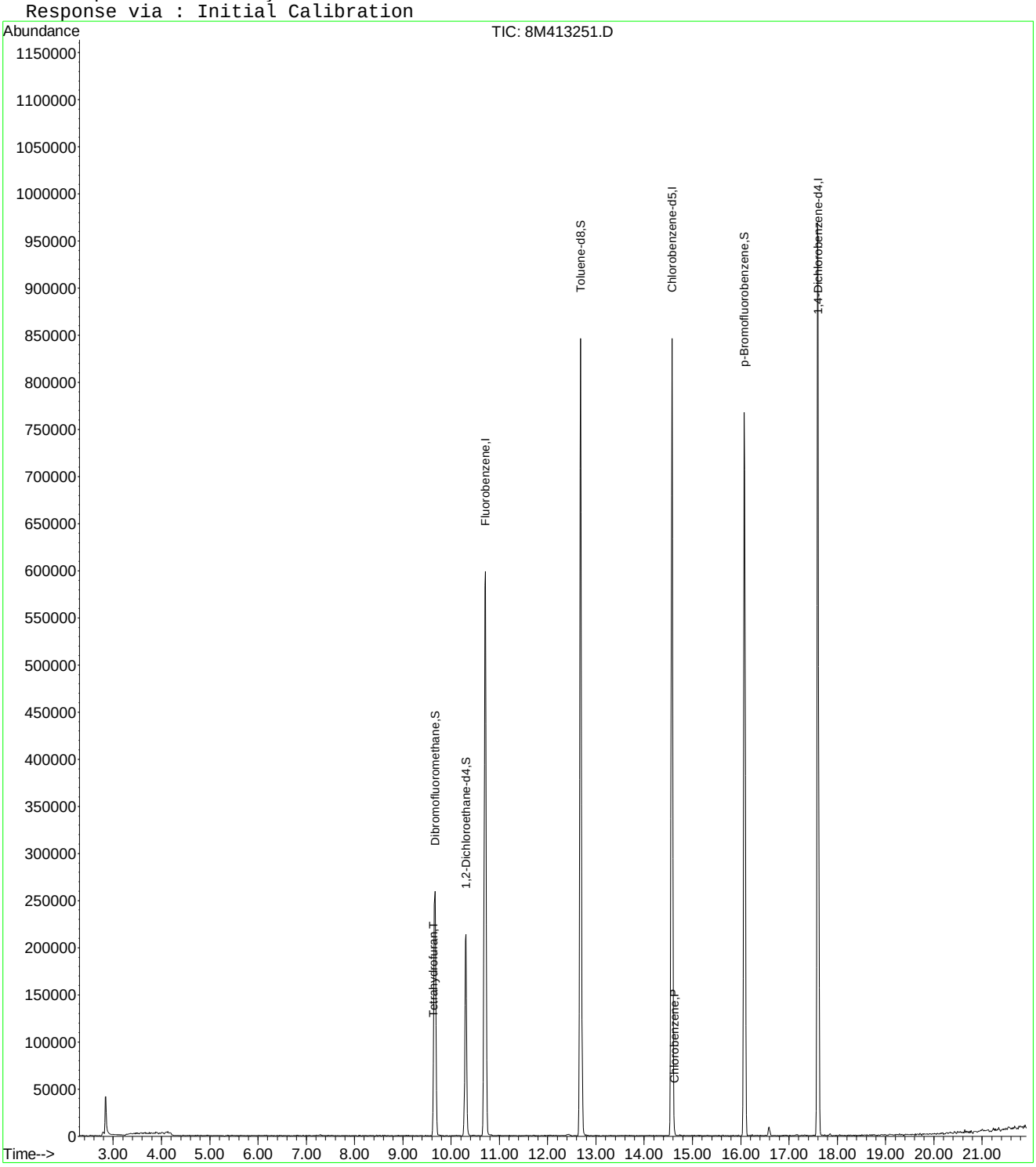

8M413251.D 8260WT.M Mon Jun 27 12:44:45 2016 Page 2

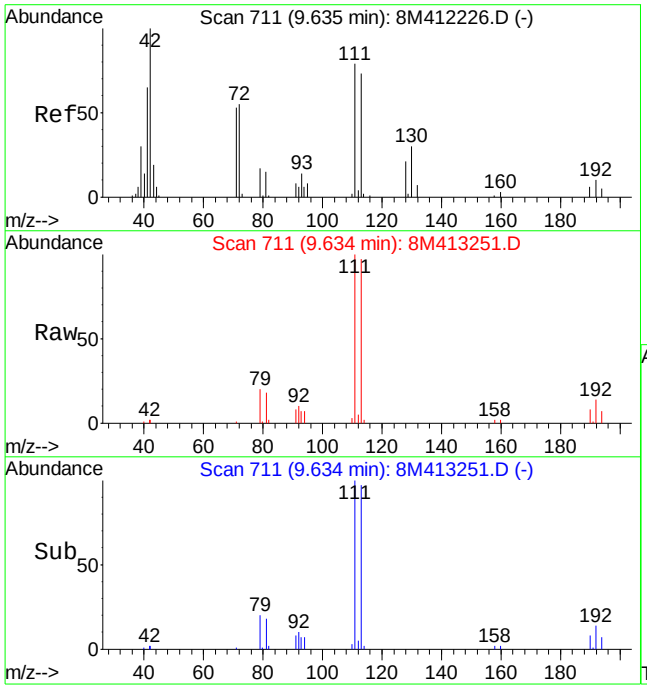

#36
Tetrahydrofuran
Concen: 0.95 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M413251.D
Acq: 26 Jun 2016 18:32

Tgt Ion: 42 Resp: 778

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	50.3	32.0	74.8

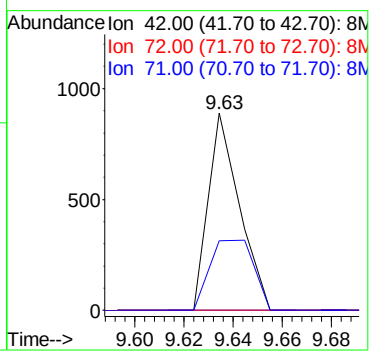

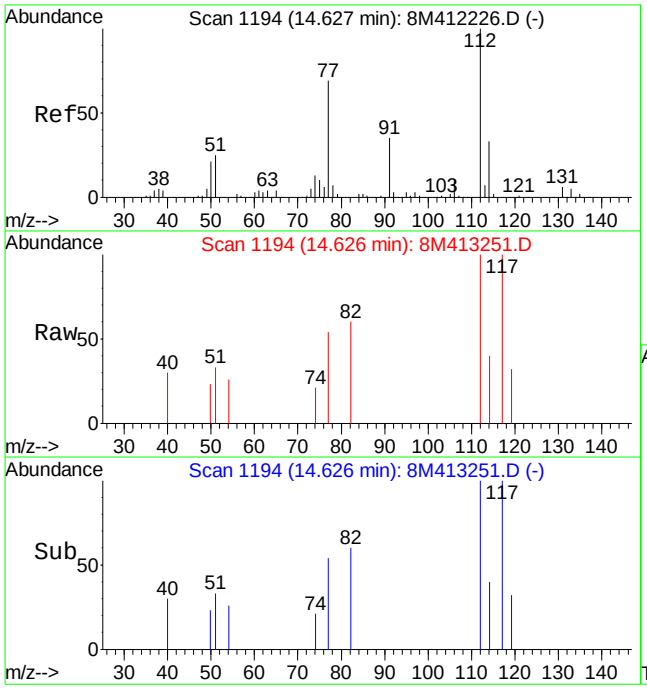

#70
Chlorobenzene
Concen: 0.13 ug/L
RT: 14.63 min Scan# 1194
Delta R.T. -0.00 min
Lab File: 8M413251.D
Acq: 26 Jun 2016 18:32

Tgt Ion:112 Resp: 3179

Ion	Ratio	Lower	Upper
112	100		
77	300.3	49.7	115.9#

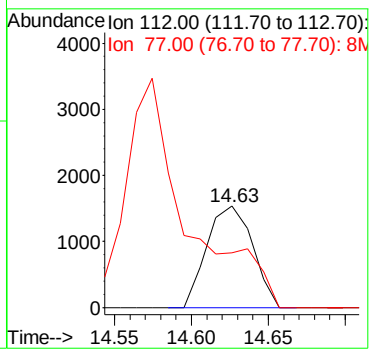

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413279.D Vial: 5
Acq On : 27 Jun 2016 19:42 Operator: FJB
Sample : WG574410-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:57:05 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	679552	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	539767	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	302642	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	205706	28.1742 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.68%		
43) 1,2-Dichloroethane-d4	10.30	65	222351	28.4020 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.60%		
58) Toluene-d8	12.68	98	726188	25.7068 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.84%		
80) p-Bromofluorobenzene	16.08	95	314092	25.0641 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.24%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.64	42	699	0.9448 ug/L #	56

(#) = qualifier out of range (m) = manual integration
8M413279.D 8260WT.M Wed Jun 29 08:57:08 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413279.D Vial: 5
Acq On : 27 Jun 2016 19:42 Operator: FJB
Sample : WG574410-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:57 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

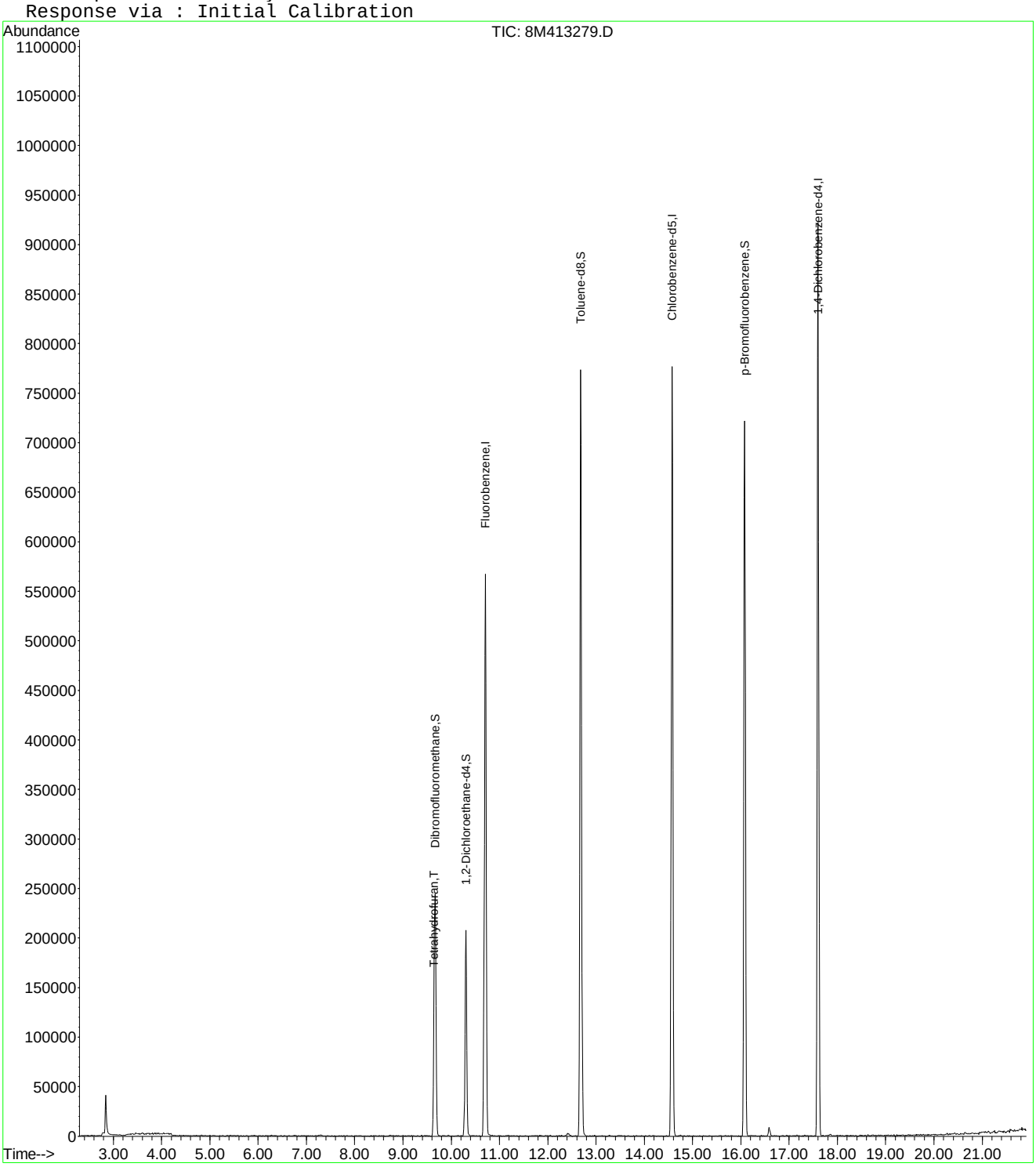

8M413279.D 8260WT.M Wed Jun 29 08:57:08 2016 Page 2

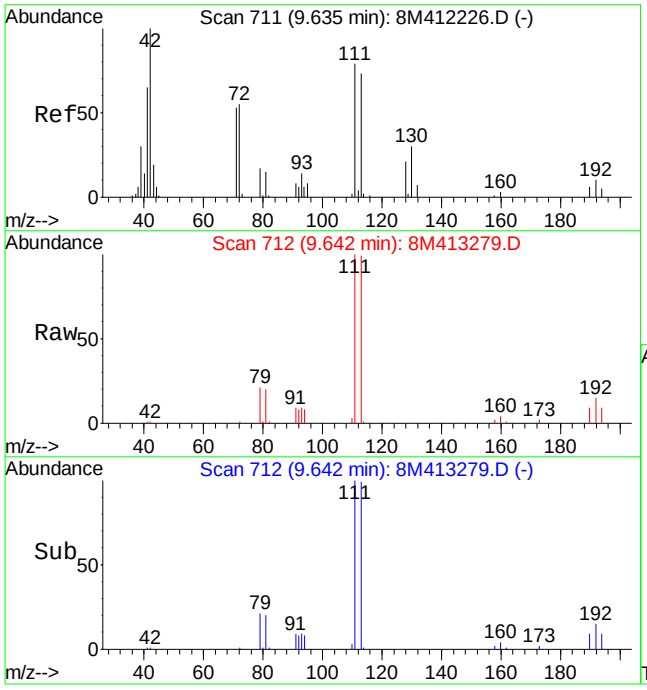

#36
Tetrahydrofuran
Concen: 0.94 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M413279.D
Acq: 27 Jun 2016 19:42

Tgt Ion: 42 Resp: 699

Ion	Ratio	Lower	Upper
42	100		
72	67.0	33.8	78.8
71	0.0	32.0	74.8#

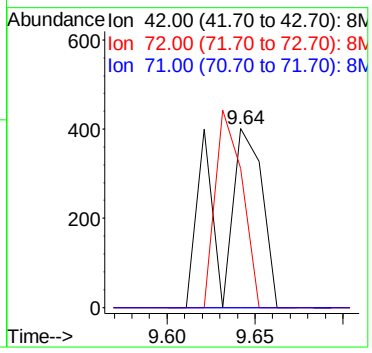

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413366.D Vial: 4
Acq On : 30 Jun 2016 13:24 Operator: TMB
Sample : WG574736-01 VBLK0630 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 16:59:17 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.70	96	1024963	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	714298	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	391003	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	298794	27.1326 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.52%		
43) 1,2-Dichloroethane-d4	10.30	65	338824	28.6945 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.76%		
58) Toluene-d8	12.68	98	1006984	26.9369 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 107.76%		
80) p-Bromofluorobenzene	16.07	95	413475	25.5384 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.16%		
Target Compounds					Qvalue
3) Chloromethane	3.65	50	2059	0.2053 ug/L	84
36) Tetrahydrofuran	9.65	42	932	0.8352 ug/L #	24
100) Naphthalene	20.65	128	3273	0.1372 ug/L #	67

(#) = qualifier out of range (m) = manual integration
8M413366.D 8260WT.M Thu Jun 30 16:59:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413366.D Vial: 4
Acq On : 30 Jun 2016 13:24 Operator: TMB
Sample : WG574736-01 VBLK0630 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 16:59 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

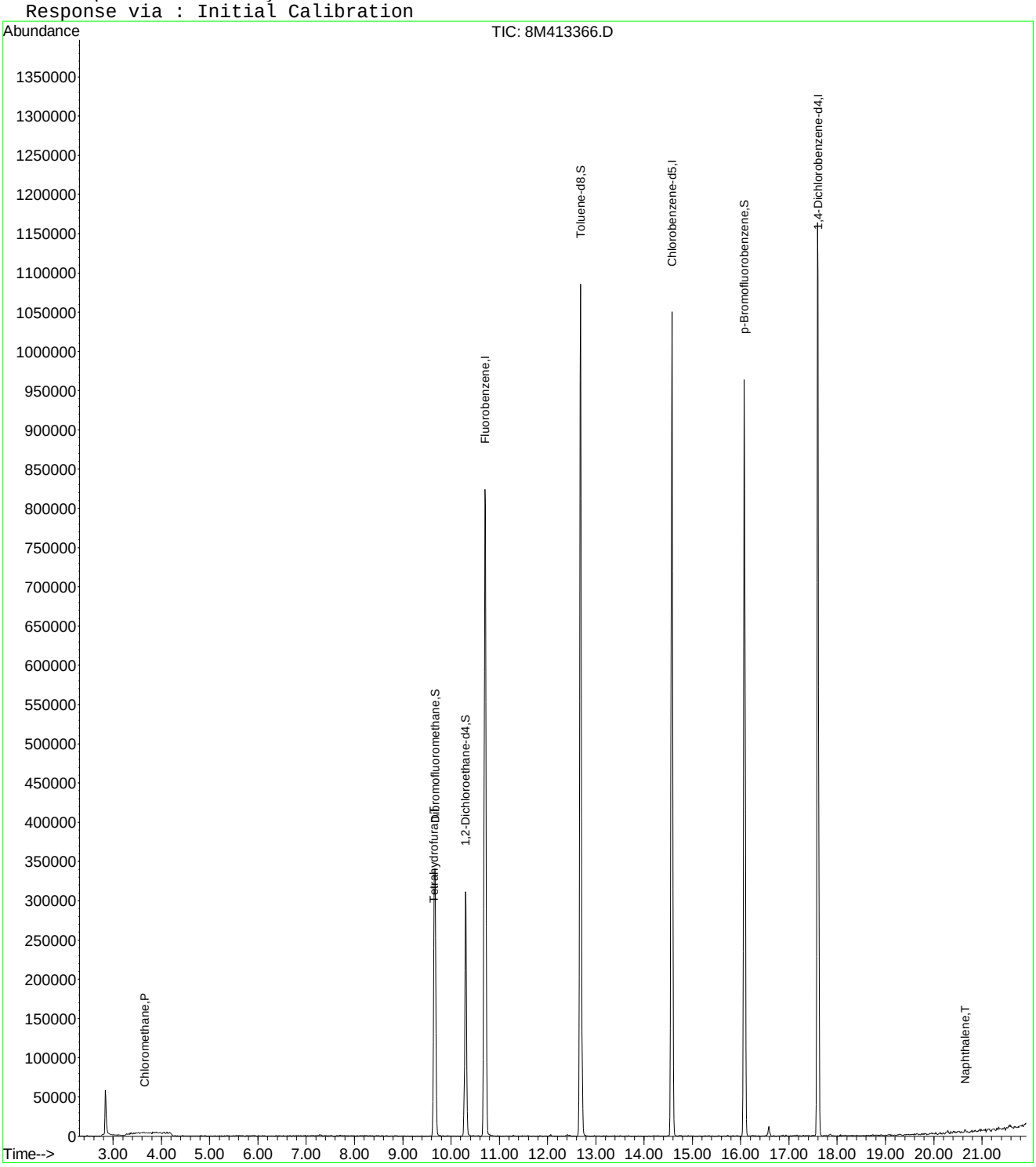

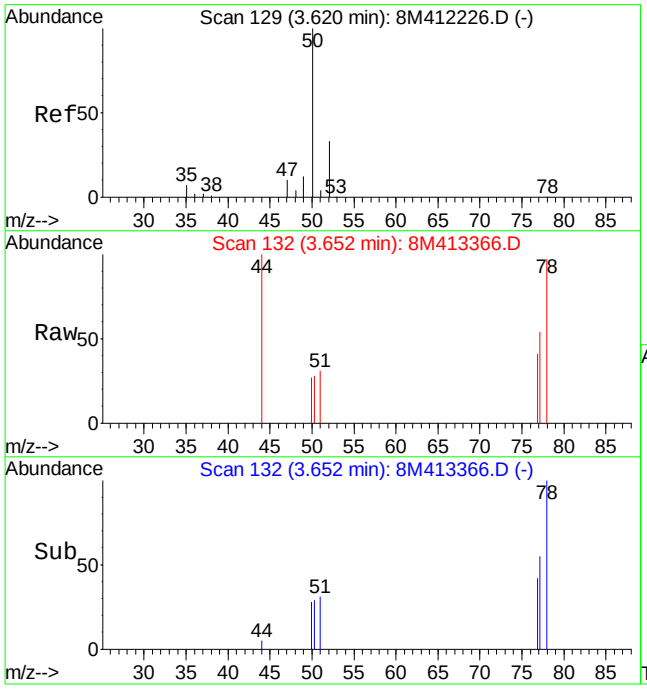

#3
Chloromethane
Concen: 0.21 ug/L
RT: 3.65 min Scan# 132
Delta R.T. 0.03 min
Lab File: 8M413366.D
Acq: 30 Jun 2016 13:24

Tgt Ion: 50 Resp: 2059

Ion	Ratio	Lower	Upper
50	100		
52	23.8	19.9	46.3

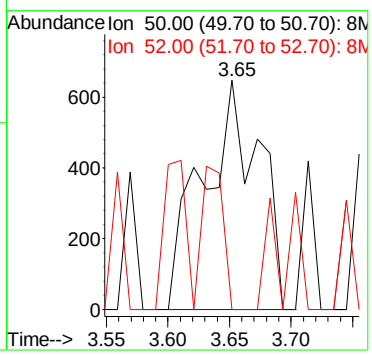

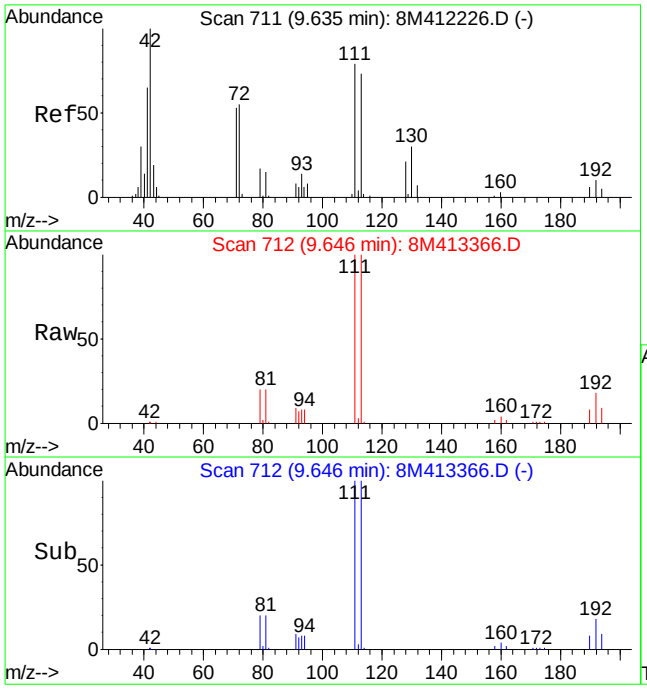

#36
Tetrahydrofuran
Concen: 0.84 ug/L
RT: 9.65 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M413366.D
Acq: 30 Jun 2016 13:24

Tgt Ion: 42 Resp: 932

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	0.0	32.0	74.8#

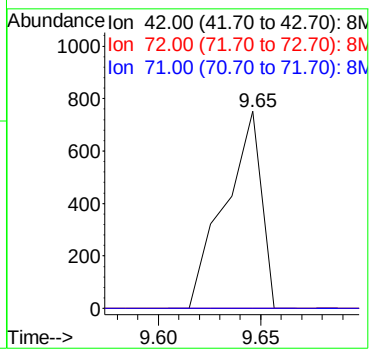

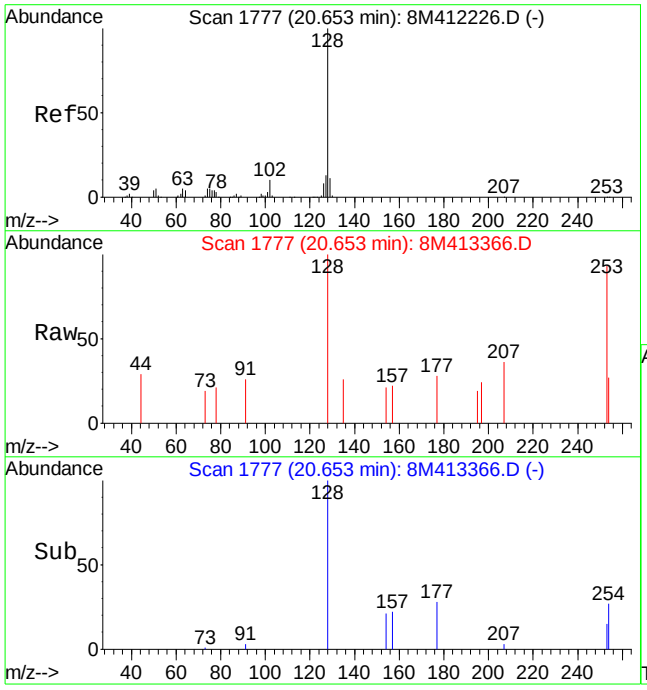

#100
Naphthalene
Concen: 0.14 ug/L
RT: 20.65 min Scan# 1777
Delta R.T. 0.00 min
Lab File: 8M413366.D
Acq: 30 Jun 2016 13:24

Tgt Ion:128 Resp: 3273

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.8	18.2#

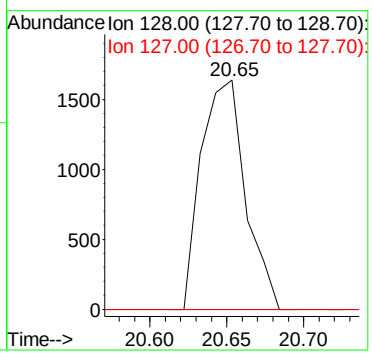

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413195.D Vial: 6
Acq On : 23 Jun 2016 22:28 Operator: FJB
Sample : WG573991-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:50:03 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709070	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	541017	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307359	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	209450	27.4928 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.96%		
43) 1,2-Dichloroethane-d4	10.31	65	229900	28.1438 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.56%		
58) Toluene-d8	12.68	98	729028	25.7477 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.00%		
80) p-Bromofluorobenzene	16.07	95	314680	24.7257 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.92%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	339836	28.5859 ug/L	99
3) Chloromethane	3.62	50	159886	23.0403 ug/L	100
4) Vinyl Chloride	3.84	62	229600	27.8871 ug/L	99
5) 1,3-Butadiene	3.88	54	140587	20.3618 ug/L	99
6) Bromomethane	4.72	94	81952	17.2192 ug/L	98
7) Chloroethane	4.89	64	105860	23.3671 ug/L	98
8) Trichlorofluoromethane	5.38	101	375940	24.5397 ug/L	99
9) Diethyl ether	5.90	59	379335	103.7196 ug/L	97
10) Isoprene	5.94	67	220602	23.7127 ug/L	96
11) Acrolein	6.13	56	25939	79.2134 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	164574	22.8540 ug/L	93
13) Acetone	6.24	43	19152	24.0069 ug/L	87
14) 1,1-Dichloroethene	6.46	61	256541	22.3745 ug/L	96
15) Tert-Butyl Alcohol	6.57	59	45376	177.4915 ug/L	96
16) Dimethyl Sulfide	6.73	62	153966	37.5561 ug/L	98
17) Iodomethane	6.98	142	63771	21.9232 ug/L	96
18) Methyl acetate	7.00	43	43450	20.1489 ug/L	98
19) Methylene Chloride	7.25	84	155667	21.3341 ug/L	99
20) Carbon Disulfide	7.29	76	500362	20.8534 ug/L	99
21) Acrylonitrile	7.43	53	20108	19.4263 ug/L	95
22) Methyl Tert Butyl Ether	7.46	73	358831	22.7223 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	233011	22.1205 ug/L	99
24) n-Hexane	7.78	57	168096	21.4904 ug/L	97
25) Diisopropyl ether	8.12	45	1709292	104.1008 ug/L	97
26) Vinyl Acetate	8.30	43	136128	18.1075 ug/L	99
27) 1,1-Dichloroethane	8.32	63	280479	21.4404 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1832290	104.1533 ug/L	98
29) 2-Butanone	8.88	43	24883	21.2291 ug/L	100
30) Propionitrile	8.98	54	32526	95.2238 ug/L	98
31) 2,2-Dichloropropane	9.10	77	352384	25.5613 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	179136	22.0090 ug/L	95
33) Chloroform	9.38	83	351389	22.7493 ug/L	99
34) 1-Bromopropane	9.51	122	39005	33.4565 ug/L	91
35) Bromochloromethane	9.60	130	90313	21.6383 ug/L	94
36) Tetrahydrofuran	9.63	42	64447	83.4814 ug/L	94
38) 1,1,1-Trichloroethane	9.90	97	361985	24.6718 ug/L	99
39) Cyclohexane	9.94	56	211867	20.8575 ug/L	96
40) 1,1-Dichloropropene	10.10	75	243522	21.7756 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1748040	109.4019 ug/L	100
42) Carbon Tetrachloride	10.24	117	317988	24.4070 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413195.D Vial: 6
Acq On : 23 Jun 2016 22:28 Operator: FJB
Sample : WG573991-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:50:03 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	245331	24.6771 ug/L		98
46)	Benzene	10.46	78	636186	21.8420 ug/L		99
47)	Trichloroethene	11.21	130	181612	23.3782 ug/L		99
48)	Methylcyclohexane	11.30	83	258623	21.9142 ug/L		99
49)	1,2-Dichloropropane	11.43	63	139989	21.5901 ug/L		90
50)	Bromodichloromethane	11.72	83	266207	23.3595 ug/L		100
51)	1,4-Dioxane	11.72	88	2551	78.3219 ug/L		94
52)	Dibromomethane	11.81	93	79612	20.7422 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.02	63	54338	19.4979 ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	22608	19.8596 ug/L		96
55)	cis-1,3-Dichloropropene	12.36	75	284141	24.4957 ug/L		100
56)	Dimethyl Disulfide	12.62	79	134379	21.7050 ug/L		88
59)	Toluene	12.79	91	690554	20.5600 ug/L		99
60)	Ethyl Methacrylate	12.88	69	136325	21.1347 ug/L		100
62)	trans-1,3-Dichloropropene	12.96	75	238780	21.2141 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	101653	19.1800 ug/L		99
64)	2-Hexanone	13.11	58	19262	17.2949 ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	201584	21.3632 ug/L		96
66)	Tetrachloroethene	13.60	164	150481	20.9116 ug/L		99
67)	Dibromochloromethane	13.86	129	157618	20.3677 ug/L		100
68)	1,2-Dibromoethane	14.12	107	104511	19.7859 ug/L		99
69)	1-Chlorohexane	14.21	91	228001	19.8866 ug/L		98
70)	Chlorobenzene	14.63	112	469098	20.7118 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	183570	20.9209 ug/L		99
72)	Ethylbenzene	14.66	106	248486	20.0524 ug/L		96
73)	m-,p-Xylene	14.74	106	610436	41.9979 ug/L		96
74)	o-Xylene	15.31	106	301773	21.2361 ug/L		97
75)	Styrene	15.34	104	491214	21.0756 ug/L		97
76)	Bromoform	15.83	173	87737	19.1145 ug/L		98
77)	Isopropylbenzene	15.73	105	820778	21.7422 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	105306	17.0684 ug/L		100
81)	1,2,3-Trichloropropane	16.13	110	36317	19.1156 ug/L	#	31
82)	trans-1,4-Dichloro-2-Buten	16.19	53	29611	15.7173 ug/L	#	4
83)	n-Propylbenzene	16.24	91	1001969	20.8955 ug/L		99
84)	Bromobenzene	16.37	156	191590	19.4250 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	724823	20.7509 ug/L		98
86)	2-Chlorotoluene	16.51	91	616163	18.4047 ug/L		92
87)	4-Chlorotoluene	16.56	91	670668	22.1777 ug/L		91
88)	a-Methylstyrene	16.83	118	336395	20.2990 ug/L		98
89)	tert-Butylbenzene	16.89	134	136372	19.9564 ug/L		99
90)	1,2,4-Trimethylbenzene	16.94	105	714803	19.9015 ug/L		99
91)	sec-Butylbenzene	17.16	105	828940	20.1726 ug/L		99
92)	p-Isopropyltoluene	17.32	119	690041	19.7773 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	383600	20.1982 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	379062	19.7974 ug/L		100
95)	n-Butylbenzene	17.84	91	654053	18.9618 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	327323	19.3784 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	21199	17.1175 ug/L		94
98)	1,2,4-Trichlorobenzene	20.27	180	233503	18.4944 ug/L		98
99)	Hexachlorobutadiene	20.43	225	122070	20.6927 ug/L		98
100)	Naphthalene	20.64	128	285406	15.2151 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	185957	17.4579 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413195.D 8260WT.M Mon Jun 27 12:30:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413195.D Vial: 6
Acq On : 23 Jun 2016 22:28 Operator: FJB
Sample : WG573991-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:50 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

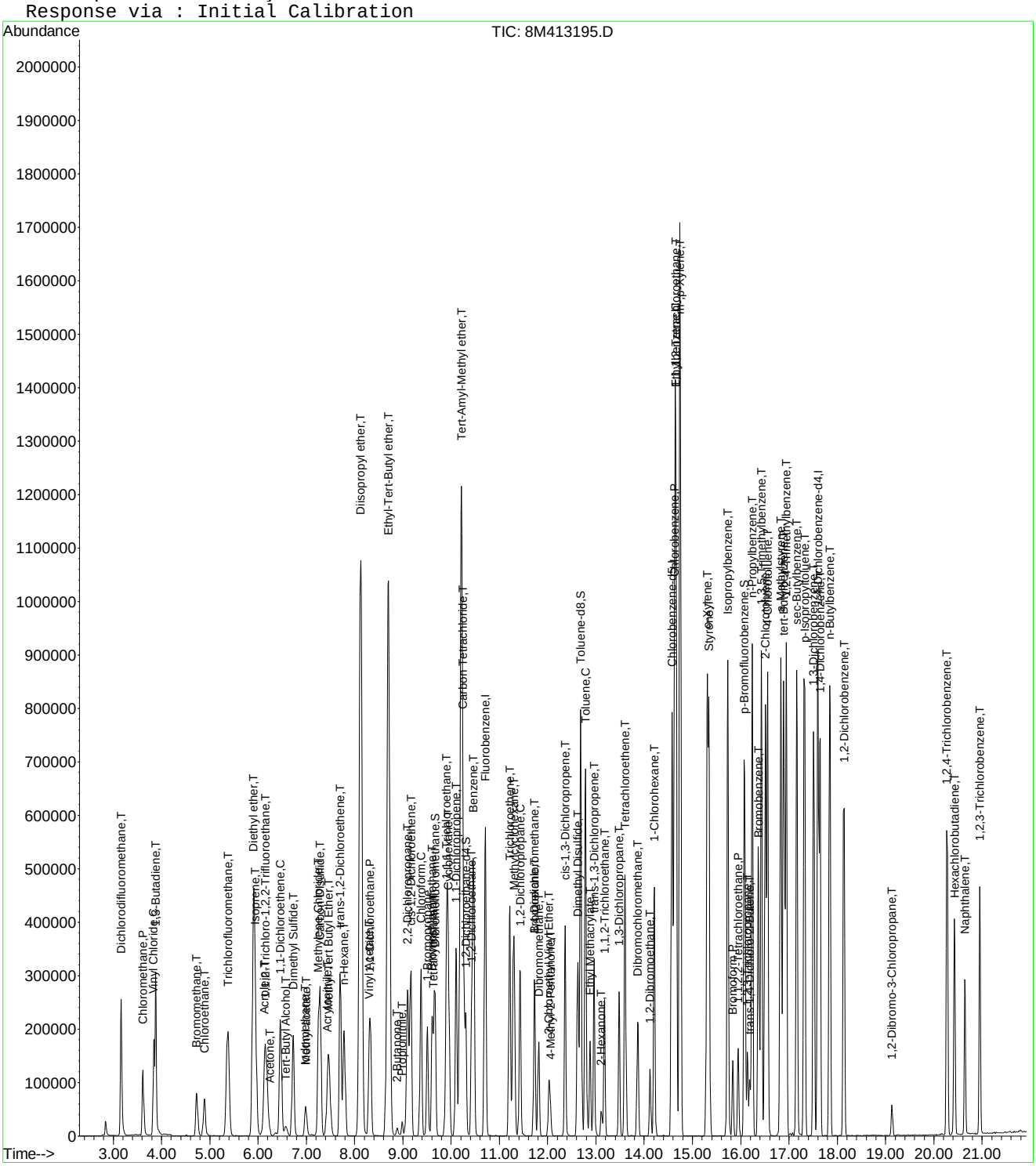

8M413195.D 8260WT.M Mon Jun 27 12:30:21 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413252.D Vial: 5
Acq On : 26 Jun 2016 19:00 Operator: ADC
Sample : WG574227-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	766171	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	585678	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	335103	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	221283	26.8813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.52%		
43) 1,2-Dichloroethane-d4	10.30	65	239133	27.0923 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.36%		
58) Toluene-d8	12.68	98	786503	25.6594 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.64%		
80) p-Bromofluorobenzene	16.08	95	344169	24.8038 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.20%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	338862	26.3797 ug/L	99
3) Chloromethane	3.62	50	175734	23.4367 ug/L	99
4) Vinyl Chloride	3.83	62	243382	27.3579 ug/L	99
5) 1,3-Butadiene	3.88	54	131327	17.6031 ug/L	98
6) Bromomethane	4.72	94	78450	15.3306 ug/L	99
7) Chloroethane	4.88	64	118084	24.1228 ug/L	95
8) Trichlorofluoromethane	5.37	101	401840	24.2754 ug/L	99
9) Diethyl ether	5.90	59	415938	105.2519 ug/L	98
10) Isoprene	5.94	67	251796	25.0486 ug/L	95
11) Acrolein	6.14	56	27320	77.2128 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	185493	23.8392 ug/L	93
13) Acetone	6.24	43	20652	23.9579 ug/L	96
14) 1,1-Dichloroethene	6.46	61	272759	22.0160 ug/L	99
15) Tert-Butyl Alcohol	6.58	59	65114	235.7160 ug/L	99
16) Dimethyl Sulfide	6.73	62	170716	38.5384 ug/L	100
17) Iodomethane	6.98	142	59651	19.3709 ug/L	100
18) Methyl acetate	7.00	43	50287	21.5815 ug/L	98
19) Methylene Chloride	7.24	84	174439	22.1251 ug/L	95
20) Carbon Disulfide	7.29	76	564628	21.7780 ug/L	99
21) Acrylonitrile	7.43	53	24204	21.6407 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	404143	23.6843 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	253351	22.2590 ug/L	97
24) n-Hexane	7.78	57	183762	21.7423 ug/L	100
25) Diisopropyl ether	8.12	45	1910194	107.6660 ug/L	98
26) Vinyl Acetate	8.29	43	137910	16.9774 ug/L	98
27) 1,1-Dichloroethane	8.32	63	305965	21.6455 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2021197	106.3288 ug/L	99
29) 2-Butanone	8.88	43	28979	22.8811 ug/L	98
30) Propionitrile	8.98	54	41997	113.7880 ug/L	99
31) 2,2-Dichloropropane	9.09	77	362213	24.3161 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	200557	22.8044 ug/L	98
33) Chloroform	9.37	83	379050	22.7112 ug/L	100
34) 1-Bromopropane	9.51	122	41286	32.7738 ug/L	98
35) Bromochloromethane	9.60	130	102152	22.6508 ug/L	94
36) Tetrahydrofuran	9.63	42	77202	92.5506 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	376553	23.7520 ug/L	99
39) Cyclohexane	9.93	56	243482	22.1834 ug/L	97
40) 1,1-Dichloropropene	10.10	75	269782	22.3258 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1928086	111.6769 ug/L	100
42) Carbon Tetrachloride	10.25	117	340579	24.1927 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M413252.D 8260WT.M Mon Jun 27 12:32:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413252.D Vial: 5
Acq On : 26 Jun 2016 19:00 Operator: ADC
Sample : WG574227-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	252195	23.4769	ug/L		99
46)	Benzene	10.46	78	701907	22.3024	ug/L		100
47)	Trichloroethene	11.21	130	202985	24.1821	ug/L		98
48)	Methylcyclohexane	11.30	83	291114	22.8289	ug/L		99
49)	1,2-Dichloropropane	11.42	63	150632	21.5002	ug/L		93
50)	Bromodichloromethane	11.72	83	281943	22.8964	ug/L		100
51)	1,4-Dioxane	11.71	88	7852	223.1088	ug/L		96
52)	Dibromomethane	11.81	93	83022	20.0185	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	63270	21.0109	ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	24855	20.2062	ug/L		90
55)	cis-1,3-Dichloropropene	12.36	75	310193	24.7486	ug/L		99
56)	Dimethyl Disulfide	12.62	79	150300	22.4673	ug/L		94
59)	Toluene	12.78	91	761843	20.9529	ug/L		99
60)	Ethyl Methacrylate	12.88	69	149138	21.3580	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	255554	20.9731	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	112359	19.5834	ug/L		96
64)	2-Hexanone	13.11	58	22830	18.9354	ug/L	#	100
65)	1,3-Dichloropropane	13.48	76	216827	21.2264	ug/L		97
66)	Tetrachloroethene	13.60	164	169664	21.7795	ug/L		96
67)	Dibromochloromethane	13.87	129	172003	20.5317	ug/L		99
68)	1,2-Dibromoethane	14.12	107	113650	19.8753	ug/L		100
69)	1-Chlorohexane	14.21	91	253628	20.4349	ug/L		97
70)	Chlorobenzene	14.62	112	517265	21.0969	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.65	131	202844	21.3547	ug/L		99
72)	Ethylbenzene	14.65	106	271332	20.2264	ug/L		99
73)	m-,p-Xylene	14.74	106	667243	42.4056	ug/L		98
74)	o-Xylene	15.31	106	334352	21.7345	ug/L		99
75)	Styrene	15.34	104	532349	21.0988	ug/L		97
76)	Bromoform	15.83	173	102126	20.5527	ug/L		98
77)	Isopropylbenzene	15.73	105	895519	21.9131	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	115393	17.1549	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	39747	19.1889	ug/L		71
82)	trans-1,4-Dichloro-2-Buten	16.18	53	29225	14.2863	ug/L		95
83)	n-Propylbenzene	16.24	91	1076549	20.5921	ug/L		100
84)	Bromobenzene	16.37	156	210653	19.5895	ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	770207	20.2246	ug/L		99
86)	2-Chlorotoluene	16.50	91	751307	20.5835	ug/L		99
87)	4-Chlorotoluene	16.56	91	639557	19.3979	ug/L		99
88)	a-Methylstyrene	16.82	118	373735	20.6850	ug/L		99
89)	tert-Butylbenzene	16.89	134	147666	19.8200	ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	776429	19.8276	ug/L		100
91)	sec-Butylbenzene	17.16	105	901299	20.1176	ug/L		100
92)	p-Isopropyltoluene	17.32	119	754487	19.8340	ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	414462	20.0165	ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	414489	19.8554	ug/L		99
95)	n-Butylbenzene	17.85	91	701849	18.6629	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	358659	19.4756	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24353	18.0362	ug/L		94
98)	1,2,4-Trichlorobenzene	20.28	180	261201	18.9753	ug/L		99
99)	Hexachlorobutadiene	20.43	225	128748	20.0178	ug/L		99
100)	Naphthalene	20.65	128	322977	15.7925	ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	204502	17.6094	ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413252.D 8260WT.M Mon Jun 27 12:32:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413252.D Vial: 5
Acq On : 26 Jun 2016 19:00 Operator: ADC
Sample : WG574227-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

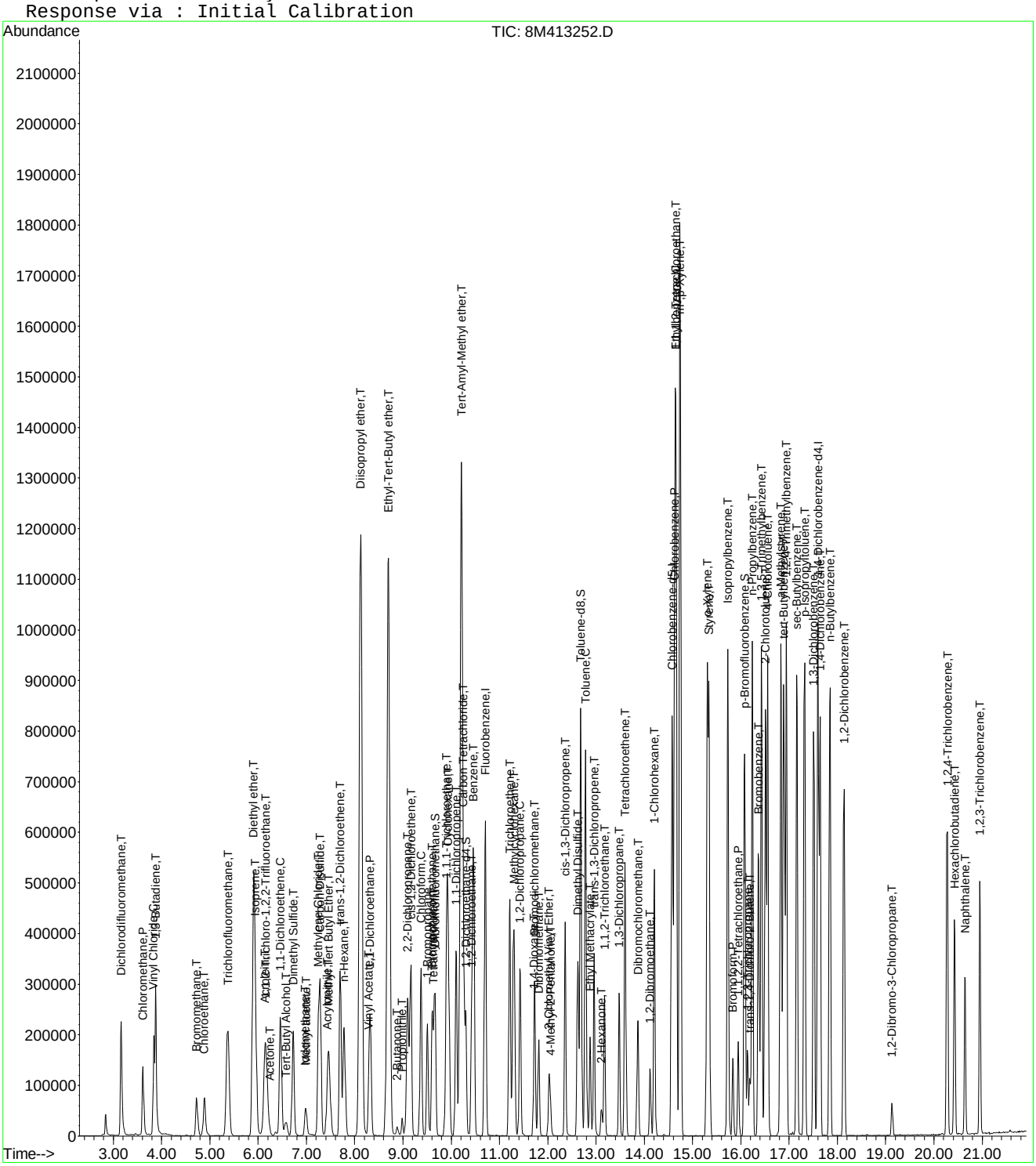

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413280.D Vial: 6
Acq On : 27 Jun 2016 20:11 Operator: FJB
Sample : WG574410-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:23:54 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	681082	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	528164	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	303369	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	201383	27.5202 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.08%		
43) 1,2-Dichloroethane-d4	10.31	65	224098	28.5608 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.24%		
58) Toluene-d8	12.68	98	715116	25.8710 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.48%		
80) p-Bromofluorobenzene	16.07	95	311755	24.8180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	290548	25.4443 ug/L	99
3) Chloromethane	3.62	50	150178	22.5306 ug/L	97
4) Vinyl Chloride	3.84	62	207577	26.2482 ug/L	98
5) 1,3-Butadiene	3.88	54	103786	15.6495 ug/L	98
6) Bromomethane	4.73	94	77353	16.9327 ug/L	98
7) Chloroethane	4.88	64	100493	23.0940 ug/L	97
8) Trichlorofluoromethane	5.37	101	358613	24.3706 ug/L	99
9) Diethyl ether	5.90	59	350742	99.8424 ug/L	98
10) Isoprene	5.94	67	214217	23.9726 ug/L	99
11) Acrolein	6.13	56	22309	70.9276 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	158184	22.8693 ug/L	95
13) Acetone	6.25	43	19484	25.4267 ug/L	94
14) 1,1-Dichloroethene	6.46	61	238182	21.6269 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	49065	199.8080 ug/L	98
16) Dimethyl Sulfide	6.73	62	144988	36.8195 ug/L	99
17) Iodomethane	6.98	142	69030	24.3285 ug/L	100
18) Methyl acetate	7.00	43	41707	20.1354 ug/L	95
19) Methylene Chloride	7.25	84	146530	20.9071 ug/L	99
20) Carbon Disulfide	7.29	76	474119	20.5717 ug/L	99
21) Acrylonitrile	7.43	53	20023	20.1391 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	349130	23.0165 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	225867	22.3235 ug/L	98
24) n-Hexane	7.79	57	160733	21.3935 ug/L	99
25) Diisopropyl ether	8.13	45	1611083	102.1516 ug/L	96
26) Vinyl Acetate	8.29	43	116387	16.1178 ug/L	100
27) 1,1-Dichloroethane	8.32	63	266239	21.1882 ug/L	99
28) Ethyl-Tert-Butyl ether	8.69	59	1732266	102.5140 ug/L	98
29) 2-Butanone	8.88	43	23100	20.5178 ug/L	100
30) Propionitrile	8.98	54	31306	95.4184 ug/L	98
31) 2,2-Dichloropropane	9.10	77	324518	24.5072 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	171028	21.8763 ug/L	99
33) Chloroform	9.38	83	341403	23.0111 ug/L	98
34) 1-Bromopropane	9.51	122	36558	32.6462 ug/L	98
35) Bromochloromethane	9.60	130	86317	21.5307 ug/L	96
36) Tetrahydrofuran	9.62	42	61031	82.3052 ug/L	94
38) 1,1,1-Trichloroethane	9.90	97	338469	24.0170 ug/L	100
39) Cyclohexane	9.93	56	201814	20.6842 ug/L	96
40) 1,1-Dichloropropene	10.10	75	236903	22.0542 ug/L	97
41) Tert-Amyl-Methyl ether	10.20	73	1661227	108.2411 ug/L	100
42) Carbon Tetrachloride	10.24	117	303524	24.2541 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413280.D 8260WT.M Wed Jun 29 08:23:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413280.D Vial: 6
Acq On : 27 Jun 2016 20:11 Operator: FJB
Sample : WG574410-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:23:54 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	236082	24.7226 ug/L		98
46)	Benzene	10.46	78	605519	21.6434 ug/L		99
47)	Trichloroethene	11.22	130	174082	23.3298 ug/L		99
48)	Methylcyclohexane	11.30	83	251982	22.2288 ug/L		100
49)	1,2-Dichloropropane	11.42	63	129626	20.8134 ug/L		88
50)	Bromodichloromethane	11.72	83	257769	23.5485 ug/L		99
51)	1,4-Dioxane	11.71	88	4652	148.6971 ug/L		93
52)	Dibromomethane	11.81	93	74844	20.3012 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	52144	19.4795 ug/L		93
54)	4-Methyl-2-Pentanone	12.06	58	20053	18.3391 ug/L		88
55)	cis-1,3-Dichloropropene	12.36	75	269581	24.1955 ug/L		98
56)	Dimethyl Disulfide	12.62	79	135405	22.7695 ug/L		93
59)	Toluene	12.79	91	650563	19.8407 ug/L		100
60)	Ethyl Methacrylate	12.88	69	126680	20.1174 ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	228531	20.7977 ug/L		100
63)	1,1,2-Trichloroethane	13.17	97	100026	19.3323 ug/L		98
64)	2-Hexanone	13.12	58	18558	17.0683 ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	190456	20.6751 ug/L		99
66)	Tetrachloroethene	13.60	164	144130	20.5165 ug/L		97
67)	Dibromochloromethane	13.86	129	153794	20.3572 ug/L		99
68)	1,2-Dibromoethane	14.12	107	100863	19.5599 ug/L		98
69)	1-Chlorohexane	14.21	91	225215	20.1216 ug/L		100
70)	Chlorobenzene	14.63	112	448084	20.2654 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	176797	20.6393 ug/L		100
72)	Ethylbenzene	14.65	106	239033	19.7590 ug/L		97
73)	m-,p-Xylene	14.74	106	586089	41.3041 ug/L		96
74)	o-Xylene	15.31	106	284203	20.4864 ug/L		94
75)	Styrene	15.34	104	471198	20.7088 ug/L		96
76)	Bromoform	15.84	173	89190	19.9039 ug/L		98
77)	Isopropylbenzene	15.73	105	790764	21.4569 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	101272	16.6305 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	34568	18.4343 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	30633	16.4440 ug/L		89
83)	n-Propylbenzene	16.24	91	952312	20.1212 ug/L		99
84)	Bromobenzene	16.36	156	184517	18.9540 ug/L		92
85)	1,3,5-Trimethylbenzene	16.43	105	697206	20.2228 ug/L		98
86)	2-Chlorotoluene	16.51	91	599994	18.1575 ug/L		93
87)	4-Chlorotoluene	16.56	91	640125	21.4461 ug/L		92
88)	a-Methylstyrene	16.83	118	338335	20.6846 ug/L		99
89)	tert-Butylbenzene	16.89	134	131548	19.5036 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	699066	19.7194 ug/L		98
91)	sec-Butylbenzene	17.16	105	795429	19.6117 ug/L		100
92)	p-Isopropyltoluene	17.32	119	675309	19.6096 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	368775	19.6730 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	365385	19.3341 ug/L		99
95)	n-Butylbenzene	17.84	91	637234	18.7172 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	316991	19.0135 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	21850	17.8752 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	226638	18.1867 ug/L		97
99)	Hexachlorobutadiene	20.43	225	115147	19.7759 ug/L		98
100)	Naphthalene	20.64	128	288316	15.5724 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	179526	17.0759 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413280.D 8260WT.M Wed Jun 29 08:23:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413280.D Vial: 6
Acq On : 27 Jun 2016 20:11 Operator: FJB
Sample : WG574410-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:23 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

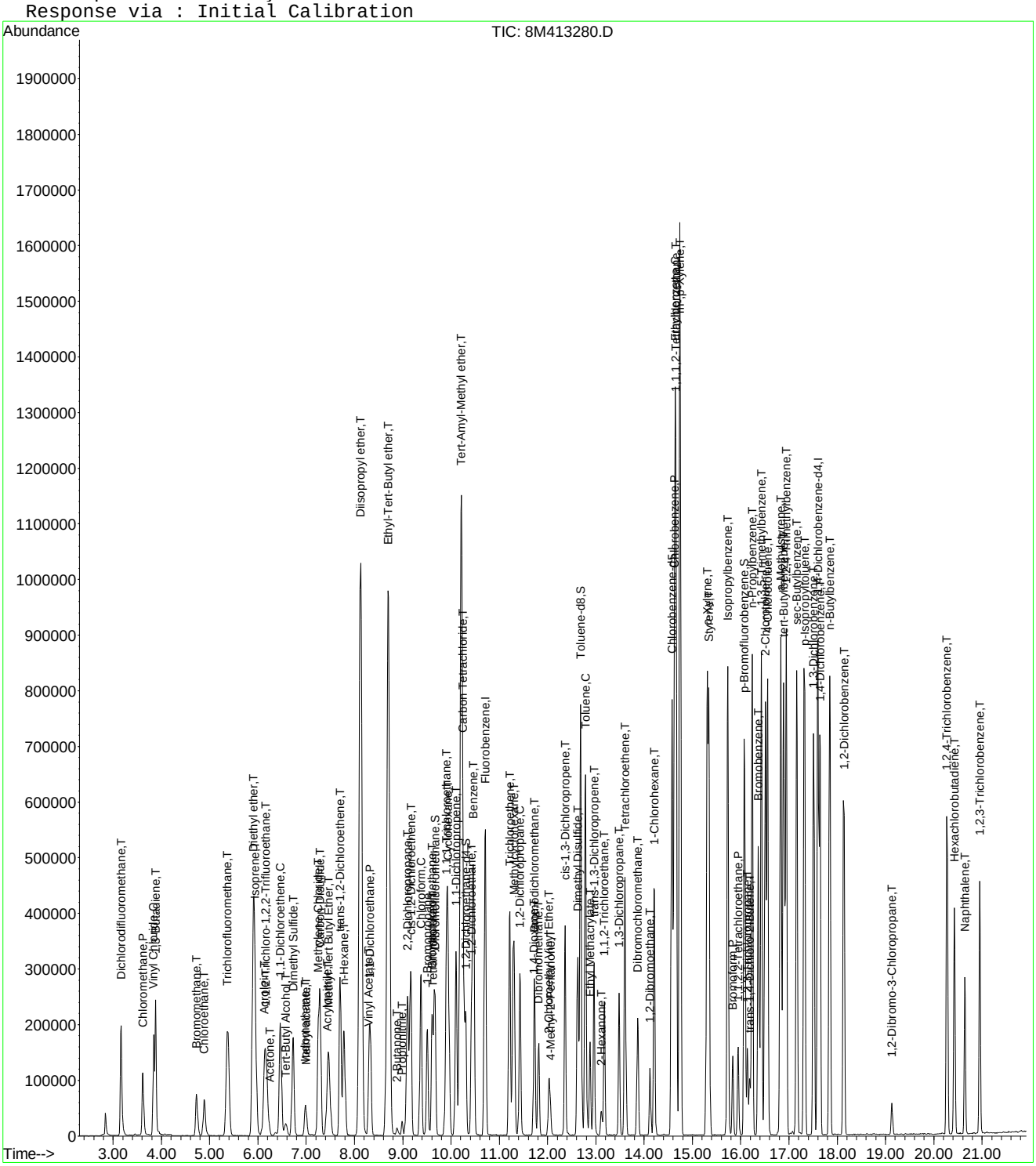

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413368.D Vial: 6
Acq On : 30 Jun 2016 14:22 Operator: TMB
Sample : WG574736-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:21:13 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1003043	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	693194	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	381905	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	285341	26.4772 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.92%		
43) 1,2-Dichloroethane-d4	10.30	65	322831	27.9375 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.76%		
58) Toluene-d8	12.68	98	985363	27.1610 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 108.64%		
80) p-Bromofluorobenzene	16.08	95	394950	24.9754 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.92%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	320051	19.0314 ug/L	98
3) Chloromethane	3.62	50	200110	20.3852 ug/L	99
4) Vinyl Chloride	3.83	62	279317	23.9827 ug/L	99
5) 1,3-Butadiene	3.88	54	205309	21.0208 ug/L	100
6) Bromomethane	4.72	94	100157	14.9661 ug/L	100
7) Chloroethane	4.89	64	133084	20.7668 ug/L	99
8) Trichlorofluoromethane	5.37	101	480849	22.1886 ug/L	98
9) Diethyl ether	5.90	59	454930	87.9330 ug/L	98
10) Isoprene	5.94	67	286335	21.7578 ug/L	96
11) Acrolein	6.14	56	56548	122.0765 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	210693	20.6833 ug/L	97
13) Acetone	6.24	43	25640	22.7201 ug/L	99
14) 1,1-Dichloroethene	6.46	61	316529	19.5155 ug/L	95
15) Tert-Butyl Alcohol	6.57	59	70645	195.3450 ug/L	97
16) Dimethyl Sulfide	6.73	62	193531	33.3715 ug/L	98
17) Iodomethane	6.98	142	99999	23.9797 ug/L	92
18) Methyl acetate	7.00	43	53547	17.5536 ug/L	96
19) Methylene Chloride	7.24	84	197749	19.1585 ug/L	98
20) Carbon Disulfide	7.29	76	624266	18.3921 ug/L	100
21) Acrylonitrile	7.43	53	26299	17.9610 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	468193	20.9583 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	288784	19.3804 ug/L	98
24) n-Hexane	7.78	57	192145	17.3654 ug/L	99
25) Diisopropyl ether	8.12	45	2190053	94.2892 ug/L	96
26) Vinyl Acetate	8.30	43	141278	13.2848 ug/L	99
27) 1,1-Dichloroethane	8.32	63	359781	19.4420 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2322530	93.3275 ug/L	99
29) 2-Butanone	8.88	43	31557	19.0325 ug/L	99
30) Propionitrile	8.99	54	42901	88.7875 ug/L	99
31) 2,2-Dichloropropane	9.09	77	419093	21.4905 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	234528	20.3696 ug/L	98
33) Chloroform	9.37	83	459909	21.0485 ug/L	100
34) 1-Bromopropane	9.51	122	47874	29.0289 ug/L	98
35) Bromochloromethane	9.60	130	114333	19.3648 ug/L	94
36) Tetrahydrofuran	9.63	42	84021	76.9387 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	469338	22.6134 ug/L	100
39) Cyclohexane	9.93	56	270126	18.7990 ug/L	97
40) 1,1-Dichloropropene	10.10	75	318948	20.1614 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	2235077	98.8861 ug/L	100
42) Carbon Tetrachloride	10.25	117	417402	22.6479 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M413368.D 8260WT.M Thu Jun 30 15:21:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413368.D Vial: 6
Acq On : 30 Jun 2016 14:22 Operator: TMB
Sample : WG574736-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:21:13 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	318446	22.6437 ug/L		96
46)	Benzene	10.46	78	832728	20.2107 ug/L		98
47)	Trichloroethene	11.21	130	241452	21.9719 ug/L		99
48)	Methylcyclohexane	11.30	83	326907	19.5817 ug/L		99
49)	1,2-Dichloropropane	11.43	63	178496	19.4608 ug/L		88
50)	Bromodichloromethane	11.73	83	354207	21.9720 ug/L		99
51)	1,4-Dioxane	11.71	88	7734	167.8598 ug/L		98
52)	Dibromomethane	11.81	93	99001	18.2341 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	69570	17.6472 ug/L		95
54)	4-Methyl-2-Pentanone	12.05	58	27074	16.8124 ug/L		91
55)	cis-1,3-Dichloropropene	12.36	75	365017	22.2453 ug/L		99
56)	Dimethyl Disulfide	12.62	79	173224	19.7791 ug/L		89
59)	Toluene	12.78	91	895938	20.8190 ug/L		99
60)	Ethyl Methacrylate	12.88	69	166138	20.1023 ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	308101	21.3637 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	134153	19.7554 ug/L		98
64)	2-Hexanone	13.12	58	26037	18.2458 ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	259628	21.4743 ug/L		96
66)	Tetrachloroethene	13.60	164	198904	21.5728 ug/L		98
67)	Dibromochloromethane	13.87	129	209695	21.1485 ug/L		97
68)	1,2-Dibromoethane	14.12	107	136192	20.1234 ug/L		100
69)	1-Chlorohexane	14.21	91	285915	19.4633 ug/L		95
70)	Chlorobenzene	14.62	112	613391	21.1372 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	243007	21.6149 ug/L		99
72)	Ethylbenzene	14.66	106	328055	20.6618 ug/L		100
73)	m-,p-Xylene	14.74	106	804332	43.1896 ug/L		96
74)	o-Xylene	15.31	106	397310	21.8212 ug/L		97
75)	Styrene	15.34	104	640525	21.4487 ug/L		95
76)	Bromoform	15.83	173	121776	20.7061 ug/L		99
77)	Isopropylbenzene	15.73	105	1088406	22.5022 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	132546	17.2901 ug/L		98
81)	1,2,3-Trichloropropane	16.13	110	47643	20.1821 ug/L		72
82)	trans-1,4-Dichloro-2-Buten	16.18	53	39790	16.9476 ug/L		86
83)	n-Propylbenzene	16.24	91	1293398	21.7081 ug/L		100
84)	Bromobenzene	16.37	156	250171	20.4135 ug/L		98
85)	1,3,5-Trimethylbenzene	16.42	105	954087	21.9829 ug/L		99
86)	2-Chlorotoluene	16.51	91	917588	22.0583 ug/L		98
87)	4-Chlorotoluene	16.56	91	775383	20.6355 ug/L		99
88)	a-Methylstyrene	16.83	118	434724	21.1120 ug/L		99
89)	tert-Butylbenzene	16.89	134	177418	20.8951 ug/L		96
90)	1,2,4-Trimethylbenzene	16.94	105	940536	21.0749 ug/L		100
91)	sec-Butylbenzene	17.16	105	1077208	21.0974 ug/L		100
92)	p-Isopropyltoluene	17.32	119	903068	20.8306 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	495786	21.0097 ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	496687	20.8772 ug/L		99
95)	n-Butylbenzene	17.85	91	854354	19.9341 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	434855	20.7193 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	31414	20.4145 ug/L		94
98)	1,2,4-Trichlorobenzene	20.28	180	310208	19.7738 ug/L		100
99)	Hexachlorobutadiene	20.43	225	153497	20.9411 ug/L		96
100)	Naphthalene	20.65	128	394926	16.9441 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	248035	18.7406 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M413368.D 8260WT.M Thu Jun 30 15:21:17 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413368.D Vial: 6
Acq On : 30 Jun 2016 14:22 Operator: TMB
Sample : WG574736-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:21 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

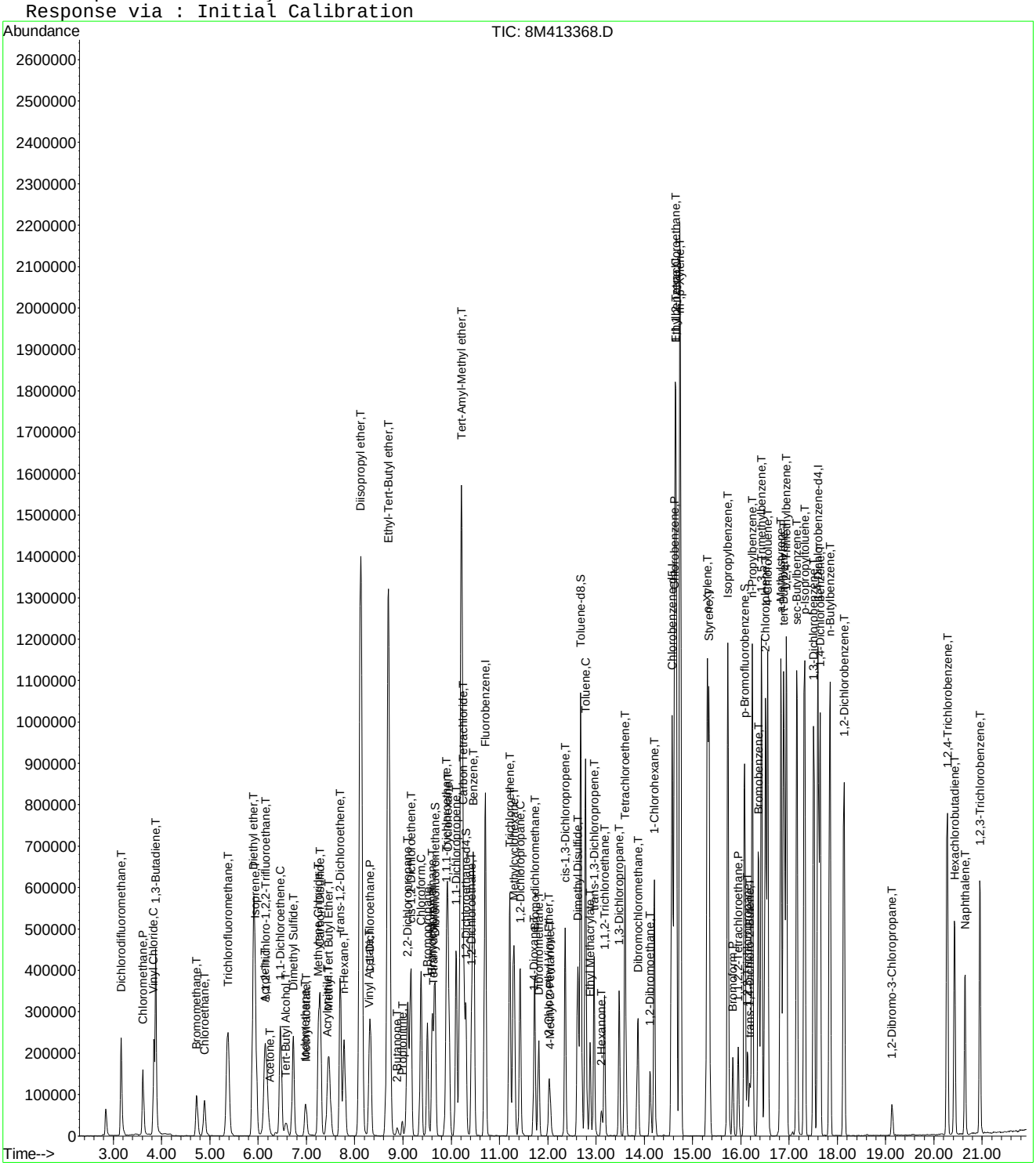

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413369.D Vial: 7
Acq On : 30 Jun 2016 14:51 Operator: TMB
Sample : WG574736-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:21:21 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	981508	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	697382	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	385162	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	281516	26.6954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.80%		
43) 1,2-Dichloroethane-d4	10.30	65	315441	27.8969 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.60%		
58) Toluene-d8	12.68	98	972254	26.6387 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.56%		
80) p-Bromofluorobenzene	16.08	95	398428	24.9822 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.92%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	299135	18.1780 ug/L	98
3) Chloromethane	3.62	50	188070	19.5791 ug/L	99
4) Vinyl Chloride	3.84	62	260357	22.8452 ug/L	99
5) 1,3-Butadiene	3.89	54	193751	20.2726 ug/L	97
6) Bromomethane	4.73	94	102081	15.5618 ug/L	96
7) Chloroethane	4.89	64	123079	19.6269 ug/L	97
8) Trichlorofluoromethane	5.37	101	439217	20.7121 ug/L	100
9) Diethyl ether	5.91	59	444357	87.7738 ug/L	99
10) Isoprene	5.93	67	266704	20.7108 ug/L	96
11) Acrolein	6.14	56	59363	130.9653 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	201187	20.1835 ug/L	95
13) Acetone	6.24	43	23591	21.3631 ug/L	95
14) 1,1-Dichloroethene	6.46	61	293069	18.4655 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	69175	195.4770 ug/L	97
16) Dimethyl Sulfide	6.73	62	192868	33.9869 ug/L	100
17) Iodomethane	6.99	142	118290	28.3510 ug/L	99
18) Methyl acetate	7.00	43	54146	18.1394 ug/L	97
19) Methylene Chloride	7.25	84	192175	19.0270 ug/L	98
20) Carbon Disulfide	7.29	76	594425	17.8972 ug/L	100
21) Acrylonitrile	7.43	53	27299	19.0530 ug/L	100
22) Methyl Tert Butyl Ether	7.46	73	453869	20.7629 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	284806	19.5328 ug/L	98
24) n-Hexane	7.78	57	200222	18.4924 ug/L	100
25) Diisopropyl ether	8.12	45	2158529	94.9710 ug/L	96
26) Vinyl Acetate	8.30	43	180686	17.3633 ug/L	99
27) 1,1-Dichloroethane	8.32	63	351931	19.4350 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2270455	93.2367 ug/L	98
29) 2-Butanone	8.88	43	30522	18.8121 ug/L	93
30) Propionitrile	8.99	54	44578	94.2824 ug/L	97
31) 2,2-Dichloropropane	9.10	77	430924	22.5820 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	228971	20.3233 ug/L	98
33) Chloroform	9.37	83	448388	20.9715 ug/L	100
34) 1-Bromopropane	9.52	122	49574	30.7192 ug/L	97
35) Bromochloromethane	9.60	130	110805	19.1791 ug/L	97
36) Tetrahydrofuran	9.63	42	84053	78.6567 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	449433	22.1295 ug/L	100
39) Cyclohexane	9.94	56	260387	18.5188 ug/L	96
40) 1,1-Dichloropropene	10.10	75	307344	19.8542 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	2205168	99.7035 ug/L	99
42) Carbon Tetrachloride	10.25	117	392024	21.7376 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413369.D 8260WT.M Thu Jun 30 15:21:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413369.D Vial: 7
Acq On : 30 Jun 2016 14:51 Operator: TMB
Sample : WG574736-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:21:21 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	310303	22.5488	ug/L		98
46)	Benzene	10.46	78	799699	19.8349	ug/L		99
47)	Trichloroethene	11.21	130	224851	20.9102	ug/L		99
48)	Methylcyclohexane	11.30	83	321920	19.7061	ug/L		99
49)	1,2-Dichloropropane	11.43	63	176984	19.7193	ug/L		88
50)	Bromodichloromethane	11.73	83	340575	21.5899	ug/L		99
51)	1,4-Dioxane	11.72	88	7755	172.0085	ug/L		89
52)	Dibromomethane	11.81	93	96241	18.1147	ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.02	63	69373	17.9833	ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	27298	17.3235	ug/L		89
55)	cis-1,3-Dichloropropene	12.36	75	365704	22.7762	ug/L		99
56)	Dimethyl Disulfide	12.62	79	173570	20.2534	ug/L		93
59)	Toluene	12.78	91	878108	20.2821	ug/L		98
60)	Ethyl Methacrylate	12.88	69	163067	19.6122	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	304545	20.9903	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	130807	19.1469	ug/L		99
64)	2-Hexanone	13.12	58	24923	17.3603	ug/L	#	94
65)	1,3-Dichloropropane	13.48	76	252000	20.7182	ug/L		95
66)	Tetrachloroethene	13.60	164	191722	20.6690	ug/L		99
67)	Dibromochloromethane	13.87	129	205995	20.6506	ug/L		99
68)	1,2-Dibromoethane	14.12	107	136661	20.0714	ug/L		99
69)	1-Chlorohexane	14.21	91	284877	19.2762	ug/L		97
70)	Chlorobenzene	14.62	112	611522	20.9462	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	237827	21.0271	ug/L		99
72)	Ethylbenzene	14.66	106	318436	19.9355	ug/L		98
73)	m-,p-Xylene	14.74	106	783124	41.7982	ug/L		95
74)	o-Xylene	15.31	106	392354	21.4196	ug/L		95
75)	Styrene	15.34	104	641249	21.3440	ug/L		95
76)	Bromoform	15.83	173	118885	20.0931	ug/L		99
77)	Isopropylbenzene	15.73	105	1064002	21.8655	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	139551	18.0500	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	46127	19.3747	ug/L		76
82)	trans-1,4-Dichloro-2-Buten	16.19	53	40738	17.1953	ug/L		86
83)	n-Propylbenzene	16.24	91	1287685	21.4295	ug/L		99
84)	Bromobenzene	16.37	156	248462	20.1026	ug/L		96
85)	1,3,5-Trimethylbenzene	16.42	105	935293	21.3676	ug/L		99
86)	2-Chlorotoluene	16.51	91	900735	21.4700	ug/L		99
87)	4-Chlorotoluene	16.56	91	768136	20.2698	ug/L		100
88)	a-Methylstyrene	16.83	118	440688	21.2206	ug/L		100
89)	tert-Butylbenzene	16.89	134	175590	20.5050	ug/L		96
90)	1,2,4-Trimethylbenzene	16.94	105	932065	20.7085	ug/L		99
91)	sec-Butylbenzene	17.16	105	1086889	21.1070	ug/L		100
92)	p-Isopropyltoluene	17.32	119	915197	20.9319	ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	497782	20.9159	ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	499074	20.8001	ug/L		99
95)	n-Butylbenzene	17.85	91	859897	19.8937	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	440540	20.8127	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	32498	20.9403	ug/L		95
98)	1,2,4-Trichlorobenzene	20.28	180	315459	19.9385	ug/L		99
99)	Hexachlorobutadiene	20.43	225	159216	21.5376	ug/L		98
100)	Naphthalene	20.65	128	401389	17.0757	ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	255932	19.1738	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413369.D 8260WT.M Thu Jun 30 15:21:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413369.D Vial: 7
Acq On : 30 Jun 2016 14:51 Operator: TMB
Sample : WG574736-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:21 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

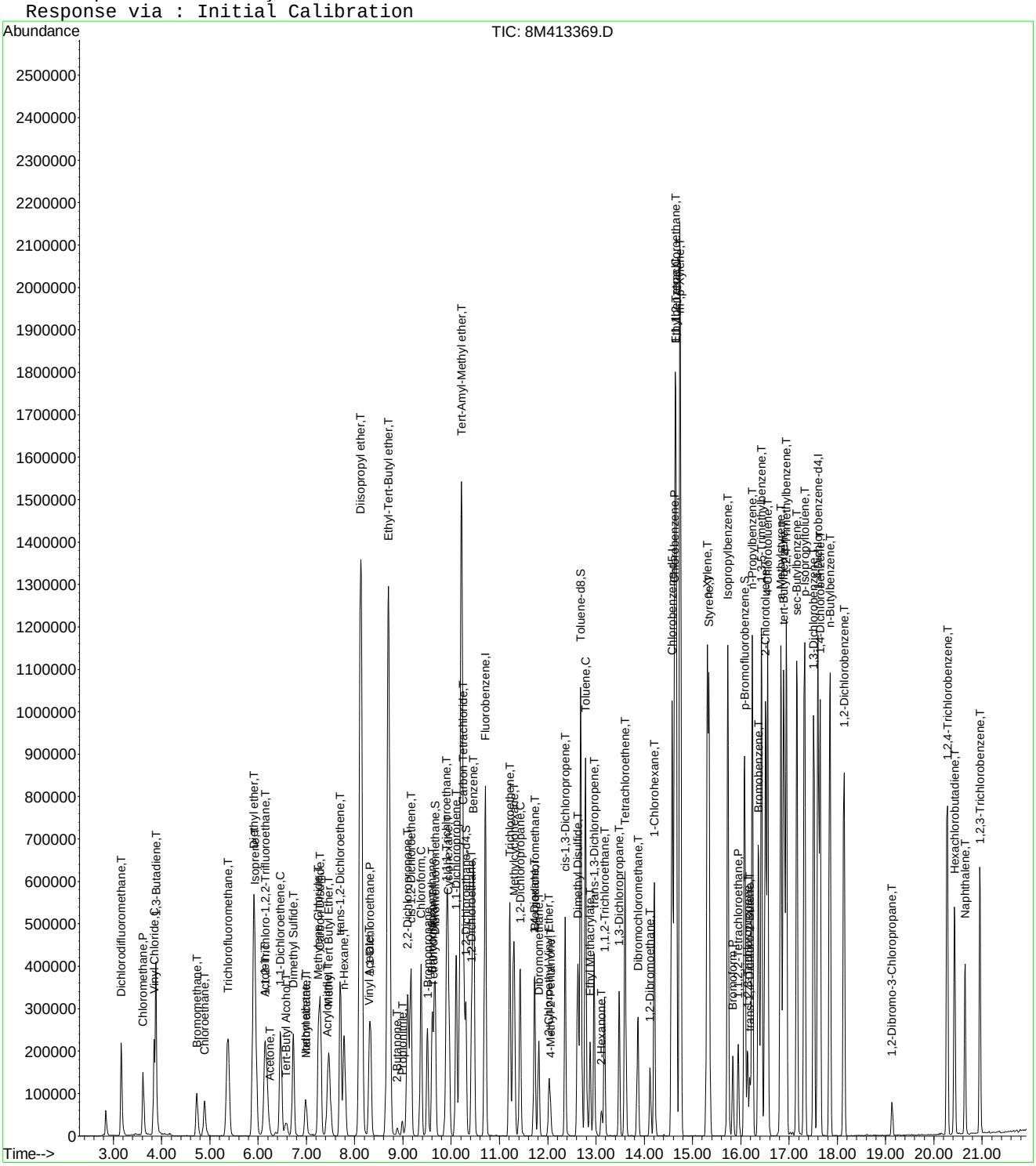

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW23-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 19:11
Collect Date:	06/17/2016 07:30	**Dilution:**	10000	**File ID:**	1LM.LM35524
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	65200		4000	2000	1000

Certificate of Analysis

Sample #:	L16061068-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW23MS-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 19:30
Collect Date:	06/17/2016 07:30	**Dilution:**	10000	**File ID:**	1LM.LM35525
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	66700		4000	2000	1000

Certificate of Analysis

Sample #:	L16061068-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW23MSD-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 19:49
Collect Date:	06/17/2016 07:30	**Dilution:**	10000	**File ID:**	1LM.LM35526
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	65600		4000	2000	1000

Certificate of Analysis

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C01-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 20:08
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	1LM.LM35527
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.15		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C01FD-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 20:26
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	1LM.LM35528
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.02		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061068-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW13-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 20:45
Collect Date:	06/17/2016 09:45	**Dilution:**	1	**File ID:**	1LM.LM35529
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C02-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 22:01
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	1LM.LM35533
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C02MS-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 22:20
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	1LM.LM35534
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.216	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C02MSD-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 22:39
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	1LM.LM35535
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.220	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW19-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 13:53
Collect Date:	06/17/2016 13:10	**Dilution:**	5	**File ID:**	1LM.LM35555
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	11.4		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L16061068-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW18-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 23:17
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	1LM.LM35537
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW18MS-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 23:36
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	1LM.LM35538
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.196	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-16	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW18MSD-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 23:55
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	1LM.LM35539
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.207	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1405 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG574701-01 MCT	10,030.	
-02 Blank	0.43	
-03 LCS	0.65	
L16061068-01 RS	1,959.	
-02 MS	1,957.	
-03 MSD	1,961.	
-04	3,020.	
-05	3,020.	
-06	170.3	
-07 RS	615.	
-08 MS	615.	
-09 MSD	607.	
-10	146.5	
-12 RS	1409.	
-14 MS	1412.	
-16 MSD	1398.	
L16061227-01	1242.	
-02	317.	
-04	317.	
-06	9,000.	
-07	1,645.	
-08	10,310.	
L16061549-01	3,090.	

Analyst: John Richards

Date/Time: 06/30/16 1430

DCN#119395

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062916_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574701 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: Samples L16061068(-01RS,-02MS,-03MSD) and L16061227-08 were analyzed at 10,000x dilutions based on their historical results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35517	WG574710-01 CCB	1	1		06/29/16 16:58
2	1LM.LM35518	WG574710-02 CCV (1.0ug/L)	1	1	STD75510	06/29/16 17:17
3	1LM.LM35519	WG574701-13 MRL (0.2ug/L)	1	1	STD75510	06/29/16 17:36
4	1LM.LM35520	WG574701-01 MCT (0.2ug/L)	1	1	STD75512	06/29/16 17:55
5	1LM.LM35521	WG574701-02 BLANK	1	1		06/29/16 18:14
6	1LM.LM35522	WG574701-03 LCS (0.2ug/L)	1	1	STD75512	06/29/16 18:33
7	1LM.LM35523	L16061549-01	1	1		06/29/16 18:52
8	1LM.LM35524	L16061068-01 RS (10.000x)	1	10000		06/29/16 19:11
9	1LM.LM35525	L16061068-02 MS (10.000x)	1	10000	STD75512	06/29/16 19:30
10	1LM.LM35526	L16061068-03 MSD (10.000x)	1	10000	STD75512	06/29/16 19:49
11	1LM.LM35527	L16061068-04	1	1		06/29/16 20:08
12	1LM.LM35528	L16061068-05	1	1		06/29/16 20:26
13	1LM.LM35529	L16061068-06	1	1		06/29/16 20:45
14	1LM.LM35530	WG574710-03 CCV (1.0ug/L)	1	1	STD75510	06/29/16 21:04
15	1LM.LM35531	WG574701-14 MRL (0.2ug/L)	1	1	STD75510	06/29/16 21:23
16	1LM.LM35532	WG574710-04 CCB	1	1		06/29/16 21:42
17	1LM.LM35533	L16061068-07 RS	1	1		06/29/16 22:01
18	1LM.LM35534	L16061068-08 MS	1	1	STD75512	06/29/16 22:20
19	1LM.LM35535	L16061068-09 MSD	1	1	STD75512	06/29/16 22:39
20	1LM.LM35536	L16061068-10 (NR)	1	1		06/29/16 22:58
21	1LM.LM35537	L16061068-12 RS	1	1		06/29/16 23:17
22	1LM.LM35538	L16061068-14 MS	1	1	STD75512	06/29/16 23:36
23	1LM.LM35539	L16061068-16 MSD	1	1	STD75512	06/29/16 23:55
24	1LM.LM35540	L16061227-01	1	1		06/30/16 00:14
25	1LM.LM35541	L16061227-02	1	1		06/30/16 00:33
26	1LM.LM35542	L16061227-04	1	1		06/30/16 00:52
27	1LM.LM35543	WG574710-05 CCV (1.0ug/L)	1	1	STD75510	06/30/16 01:11
28	1LM.LM35544	WG574701-15 MRL (0.2ug/L)	1	1	STD75510	06/30/16 01:29
29	1LM.LM35545	WG574710-06 CCB	1	1		06/30/16 01:48
30	1LM.LM35546	L16061227-06	1	1		06/30/16 02:07
31	1LM.LM35547	L16061227-07	1	1		06/30/16 02:26
32	1LM.LM35548	L16061227-08 (10,000x)	1	10000		06/30/16 02:45
33	1LM.LM35549	WG574710-07 CCV (1.0ug/L)	1	1	STD75510	06/30/16 03:04

Page: 1 Approved: 01-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062916_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574701 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35550	WG574701-16 MRL (0.2ug/L)	1	1	STD75510	06/30/16 03:23
35	1LM.LM35551	WG574710-08 CCB	1	1		06/30/16 03:42
36	1LM.LM35552	WG574710-09 CCV (1.0ug/L)	1	1	STD75510	06/30/16 12:56
37	1LM.LM35553	WG574701-17 MRL (0.2ug/L)	1	1	STD75510	06/30/16 13:15
38	1LM.LM35554	WG574710-10 CCB	1	1		06/30/16 13:34
39	1LM.LM35555	L16061068-10 (RR 5x)	1	5		06/30/16 13:53
40	1LM.LM35556	WG574710-11 CCV (1.0ug/L)	1	1	STD75510	06/30/16 14:12
41	1LM.LM35557	WG574701-18 MRL (0.2ug/L)	1	1	STD75510	06/30/16 14:31
42	1LM.LM35558	WG574710-12 CCB	1	1		06/30/16 14:50

Comments

Seq.	Rerun	Dil.	Reason	Analytes
9				
	L16061068-02 MS (10.000x) : The MS %Rec is above the advisory limit. At this level of dilution, the spiked amount added to the MS has been diluted below the method detection limit.			
10				
	L16061068-03 MSD (10.000x) : The MSD %Rec is above the advisory limit. At this level of dilution, the spiked amount added to the MSD has been diluted below the method detection limit.			
20	X	5	Over Calibration Range	
	L16061068-10 (NR) : This sample was reanalyzed at a 5x dilution on the end of this sequence.			

Page: 2 Approved: 01-JUL-16

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 04-MAY-2016 John Richards

Secondary Reviewer: 05-MAY-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 76038
Analytical Workgroups: L16061068, 1227, 1549

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 30-JUN-2016 John Richards

Secondary Reviewer: 01-JUL-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-01-2016 09:20:44

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG574701

Login Number: L16061068

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW23-061716	01	06/17/16					06/29/2016	12.3	28		06/29/16	.2	28	
MW23MS-061716	02	06/17/16					06/29/2016	12.3	28		06/29/16	.2	28	
MW23MSD-061716	03	06/17/16					06/29/2016	12.3	28		06/29/16	.2	28	
C01-061716	04	06/17/16					06/29/2016	12.3	28		06/29/16	.2	28	
C01FD-061716	05	06/17/16					06/29/2016	12.3	28		06/29/16	.2	28	
MW13-061716	06	06/17/16					06/29/2016	12.2	28		06/29/16	.2	28	
C02-061716	07	06/17/16					06/29/2016	12.2	28		06/29/16	.3	28	
C02MS-061716	08	06/17/16					06/29/2016	12.2	28		06/29/16	.3	28	
C02MSD-061716	09	06/17/16					06/29/2016	12.2	28		06/29/16	.3	28	
MW19-061716	10	06/17/16					06/29/2016	12.1	28		06/30/16	1	28	
MW18-061716	12	06/17/16					06/29/2016	12	28		06/29/16	.3	28	
MW18MS-061716	14	06/17/16					06/29/2016	12	28		06/29/16	.4	28	
MW18MSD-061716	16	06/17/16					06/29/2016	12	28		06/29/16	.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4834036
Report generated 06/30/2016 15:48

METHOD BLANK SUMMARY

Login Number: L16061068
Blank File ID: 1LM.LM35521
Prep Date: 06/29/16 15:00
Analyzed Date: 06/29/16 18:14
Analyst: JWR

Work Group: WG574701
Blank Sample ID: WG574701-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG574701-13	1LM.LM35519	06/29/16 17:36	01
MCT	WG574701-01	1LM.LM35520	06/29/16 17:55	01
LCS	WG574701-03	1LM.LM35522	06/29/16 18:33	01
MW23-061716	L16061068-01	1LM.LM35524	06/29/16 19:11	DL01
MW23MS-061716	L16061068-02	1LM.LM35525	06/29/16 19:30	DL01
MW23MSD-061716	L16061068-03	1LM.LM35526	06/29/16 19:49	DL01
C01-061716	L16061068-04	1LM.LM35527	06/29/16 20:08	01
C01FD-061716	L16061068-05	1LM.LM35528	06/29/16 20:26	01
MW13-061716	L16061068-06	1LM.LM35529	06/29/16 20:45	01
QCMRL	WG574701-14	1LM.LM35531	06/29/16 21:23	01
C02-061716	L16061068-07	1LM.LM35533	06/29/16 22:01	01
C02MS-061716	L16061068-08	1LM.LM35534	06/29/16 22:20	01
C02MSD-061716	L16061068-09	1LM.LM35535	06/29/16 22:39	01
MW18-061716	L16061068-12	1LM.LM35537	06/29/16 23:17	01
MW18MS-061716	L16061068-14	1LM.LM35538	06/29/16 23:36	01
MW18MSD-061716	L16061068-16	1LM.LM35539	06/29/16 23:55	01
QCMRL	WG574701-15	1LM.LM35544	06/30/16 01:29	01
QCMRL	WG574701-16	1LM.LM35550	06/30/16 03:23	01
QCMRL	WG574701-17	1LM.LM35553	06/30/16 13:15	01
MW19-061716	L16061068-10	1LM.LM35555	06/30/16 13:53	DL01
QCMRL	WG574701-18	1LM.LM35557	06/30/16 14:31	01

Report Name: BLANK_SUMMARY
PDF File ID: 4834037
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/29/16 15:00 Sample ID: WG574701-02
Instrument ID: LCMS1 Run Date: 06/29/16 18:14 Prep Method: 6850
File ID: 1LM.LM35521 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4834038
30-JUN-2016 15:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 Run Date: 06/29/2016 Sample ID: WG574701-03
Instrument ID: LCMS1 Run Time: 18:33 Prep Method: 6850
File ID: 1LM.LM35522 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.201	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4834039
Report generated: 06/30/2016 15:48

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: LCMS1- 03-MAY-16 Worknum: WG574701
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16061068-01 File ID: 1LM.LM35524 Dil: 10000 Method: 6850
Sample ID: L16061068-02 MS File ID: 1LM.LM35525 Dil: 10000 Matrix: Water
Sample ID: L16061068-03 MSD File ID: 1LM.LM35526 Dil: 10000 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	65200	0.200	66700	750000	0.200	65600	200000	1.66	80 - 120	15	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4834040
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: LCMS1- 03-MAY-16 Worknum: WG574701
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16061068-07 File ID: 1LM.LM35533 Dil: 1 Method: 6850
Sample ID: L16061068-08 MS File ID: 1LM.LM35534 Dil: 1 Matrix: Water
Sample ID: L16061068-09 MSD File ID: 1LM.LM35535 Dil: 1 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	U	0.200	0.216	108	0.200	0.220	110	1.83	80 - 120	15	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4834040
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: LCMS1- 03-MAY-16 Worknum: WG574701
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16061068-12 File ID: 1LM.LM35537 Dil: 1 Method: 6850
Sample ID: L16061068-14 MS File ID: 1LM.LM35538 Dil: 1 Matrix: Water
Sample ID: L16061068-16 MSD File ID: 1LM.LM35539 Dil: 1 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	U	0.200	0.196	98	0.200	0.207	104	5.46	80 - 120	15	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4834040
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061068
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4834630
Report generated 07/01/2016 08:59

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061068

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4834630
Report generated 07/01/2016 08:59

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061068

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4834630
Report generated 07/01/2016 08:59

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061068

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4834630
Report generated 07/01/2016 08:59

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061068 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4834638
Report generated 07/01/2016 08:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/29/2016
Sample ID: WG574710-01
Instrument ID: LCMS1
Run Time: 16:58
Method: 6850
File ID: 1LM.LM35517
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834043
Report generated 06/30/2016 15:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/29/2016
Sample ID: WG574710-04
Instrument ID: LCMS1
Run Time: 21:42
Method: 6850
File ID: 1LM.LM35532
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834043
Report generated 06/30/2016 15:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574710-06
Instrument ID: LCMS1
Run Time: 01:48
Method: 6850
File ID: 1LM.LM35545
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834043
Report generated 06/30/2016 15:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574710-08
Instrument ID: LCMS1
Run Time: 03:42
Method: 6850
File ID: 1LM.LM35551
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834043
Report generated 06/30/2016 15:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574710-10
Instrument ID: LCMS1
Run Time: 13:34
Method: 6850
File ID: 1LM.LM35554
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834043
Report generated 06/30/2016 15:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574710-12
Instrument ID: LCMS1
Run Time: 14:50
Method: 6850
File ID: 1LM.LM35558
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834043
Report generated 06/30/2016 15:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/29/2016 Sample ID: WG574710-02
Instrument ID: LCMS1 Run Time: 17:17 Method: 6850
File ID: 1LM.LM35518 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574701 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.73	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834042
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/29/2016 Sample ID: WG574710-03
Instrument ID: LCMS1 Run Time: 21:04 Method: 6850
File ID: 1LM.LM35530 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574701 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.996	ug/L	1.68	0.400	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834042
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574710-05
Instrument ID: LCMS1
Run Time: 01:11
Method: 6850
File ID: 1LM.LM35543
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834042
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574710-07
Instrument ID: LCMS1
Run Time: 03:04
Method: 6850
File ID: 1LM.LM35549
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834042
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574710-09
Instrument ID: LCMS1
Run Time: 12:56
Method: 6850
File ID: 1LM.LM35552
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834042
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574710-11
Instrument ID: LCMS1
Run Time: 14:12
Method: 6850
File ID: 1LM.LM35556
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834042
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061068 Run Date: 06/29/2016 Sample ID: WG574701-13
Instrument ID: LCMS1 Run Time: 17:36 Prep Method: 6850
File ID: 1LM.LM35519 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.203	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834041
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061068 Run Date: 06/29/2016 Sample ID: WG574701-14
Instrument ID: LCMS1 Run Time: 21:23 Prep Method: 6850
File ID: 1LM.LM35531 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834041
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG574701-15
Instrument ID: LCMS1 Run Time: 01:29 Prep Method: 6850
File ID: 1LM.LM35544 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834041
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG574701-16
Instrument ID: LCMS1 Run Time: 03:23 Prep Method: 6850
File ID: 1LM.LM35550 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.208	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834041
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG574701-17
Instrument ID: LCMS1 Run Time: 13:15 Prep Method: 6850
File ID: 1LM.LM35553 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.204	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834041
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG574701-18
Instrument ID: LCMS1 Run Time: 14:31 Prep Method: 6850
File ID: 1LM.LM35557 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834041
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061068
Instrument ID: LCMS1
Workgroup (AAB#): WG574701

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061068-01	10000	DL01	452000
L16061068-02	10000	DL01	450000
L16061068-03	10000	DL01	459000
L16061068-04	1.00	01	352000
L16061068-05	1.00	01	354000
L16061068-06	1.00	01	421000
L16061068-07	1.00	01	396000
L16061068-08	1.00	01	397000
L16061068-09	1.00	01	394000
L16061068-10	5.00	DL01	455000
L16061068-12	1.00	01	472000
L16061068-14	1.00	01	484000
L16061068-16	1.00	01	486000
WG574701-02	1.00	01	465000
WG574701-03	1.00	01	462000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4834044
Report generated 06/30/2016 15:49

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-01
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35524
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 19:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	991000	344000	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-02
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35525
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 19:30	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1010000	346000	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-03
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35526
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 19:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1010000	344000	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-04
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35527
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 20:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	374000	128000	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-05
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35528
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 20:26	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	359000	126000	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-06
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35529
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 20:45	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2950	1310	2.25	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-07
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35533
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 22:01	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3080	1370	2.25	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-08
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35534
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 22:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	29300	10200	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-09
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35535
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 22:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	29700	9590	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-10
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35555
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 13:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	349000	121000	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-12
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35537
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 23:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2130	1410	1.51	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-14
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35538
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 23:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32600	11900	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-16
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35539
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 23:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34400	11200	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	WG574701-01
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35520
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 17:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30100	11300	2.66	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	WG574701-02
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35521
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 18:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	WG574701-03
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35522
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 18:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31800	11300	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	WG574701-13
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35519
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 17:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32700	12200	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	WG574701-14
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35531
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 21:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37300	12900	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	WG574701-15
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35544
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 01:29	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38200	13200	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	WG574701-16
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35550
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 03:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38900	13900	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	WG574701-17
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35553
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 13:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32600	11300	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	WG574701-18
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35557
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 14:31	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34700	12600	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35517
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 16:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35518
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 17:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	162000	57400	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35530
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 21:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	59400	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35532
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 21:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35543
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 01:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	187000	65800	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35545
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 01:48	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	264	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35549
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 03:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	188000	65500	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35551
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 03:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35552
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 12:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	162000	55700	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35554
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 13:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	445	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35556
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 14:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	60800	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35558
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 14:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.1.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:31 PM

Data File	LM35524.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 7:11:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-01 RS (10.000x)	**Injection Vial**	8.00
Data File	LM35524.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 7:11:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-04	**Dilution Factor**	1.00
Sample Comment	1,10000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.520e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.910e+05	9.68	N/A	6.52
Perchlorate conf	3.440e+05	9.67	N/A	6.81

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

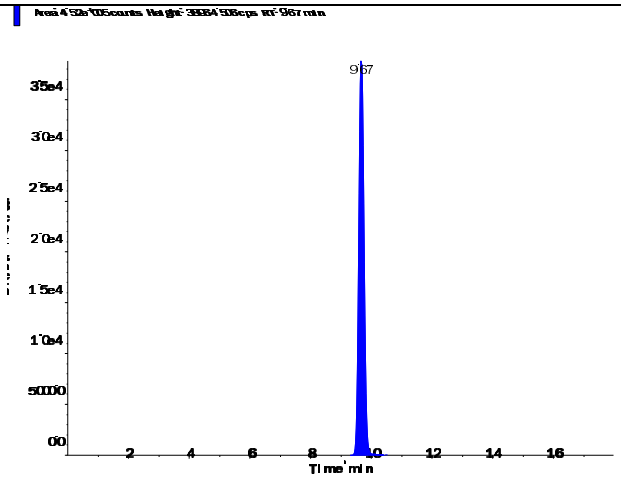

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	6.52 ng/ml
Area Ratio:	2.194
Sample Type:	(Unknown)

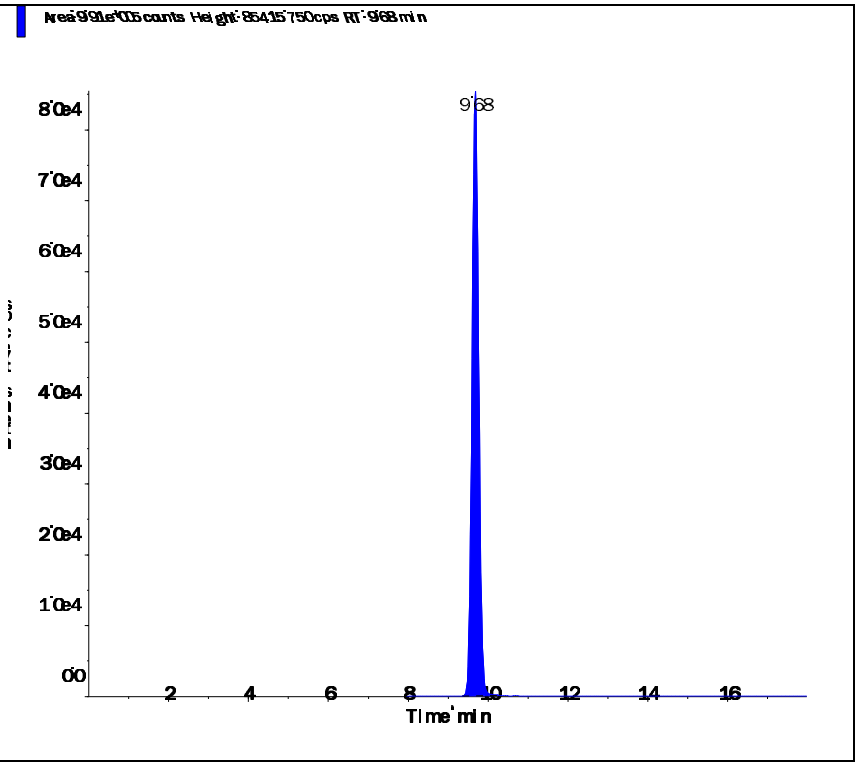

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	6.81 ng/ml
Area Ratio:	0.763
Sample Type:	(Unknown)

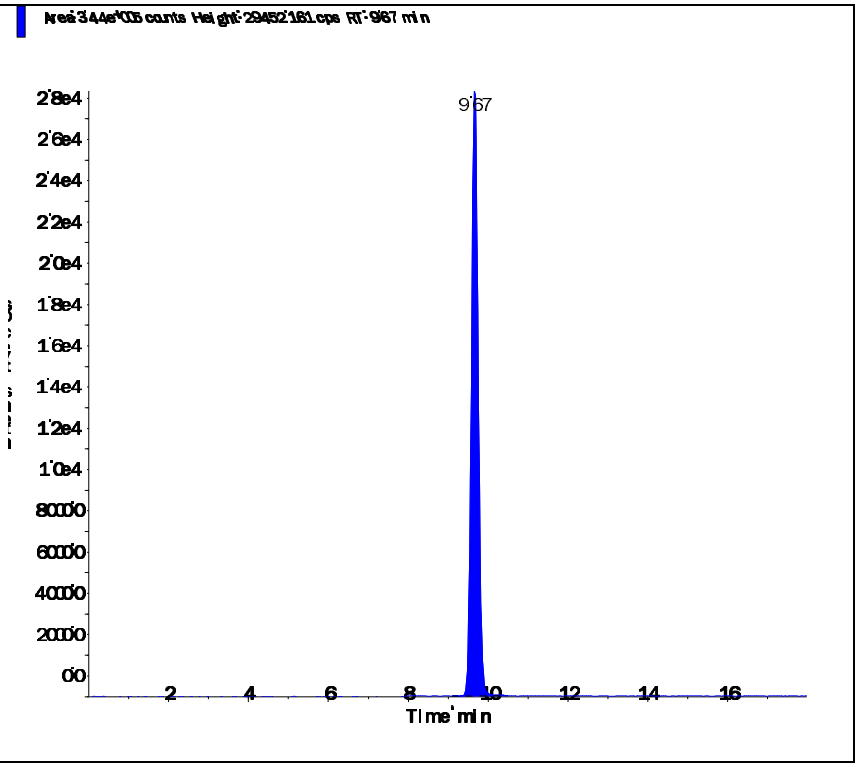

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:32 PM

Data File	LM35525.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 7:30:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-02 MS (10.000x)	**Injection Vial**	9.00
Data File	LM35525.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 7:30:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-05	**Dilution Factor**	1.00
Sample Comment	1,10000 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.010e+06	9.68	N/A	6.67
Perchlorate conf	3.460e+05	9.67	N/A	6.87

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

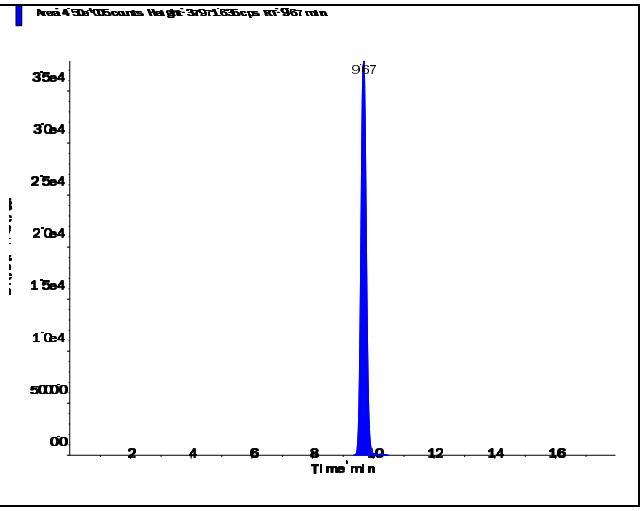

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:32 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	6.67 ng/ml
Area Ratio:	2.243
Sample Type:	(Unknown)

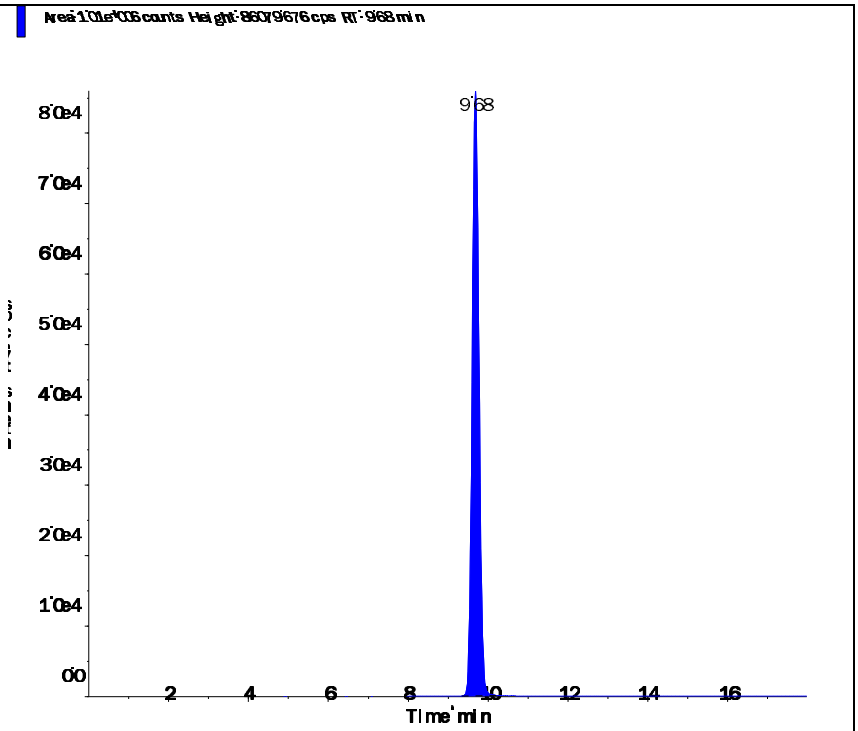

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	6.87 ng/ml
Area Ratio:	0.769
Sample Type:	(Unknown)

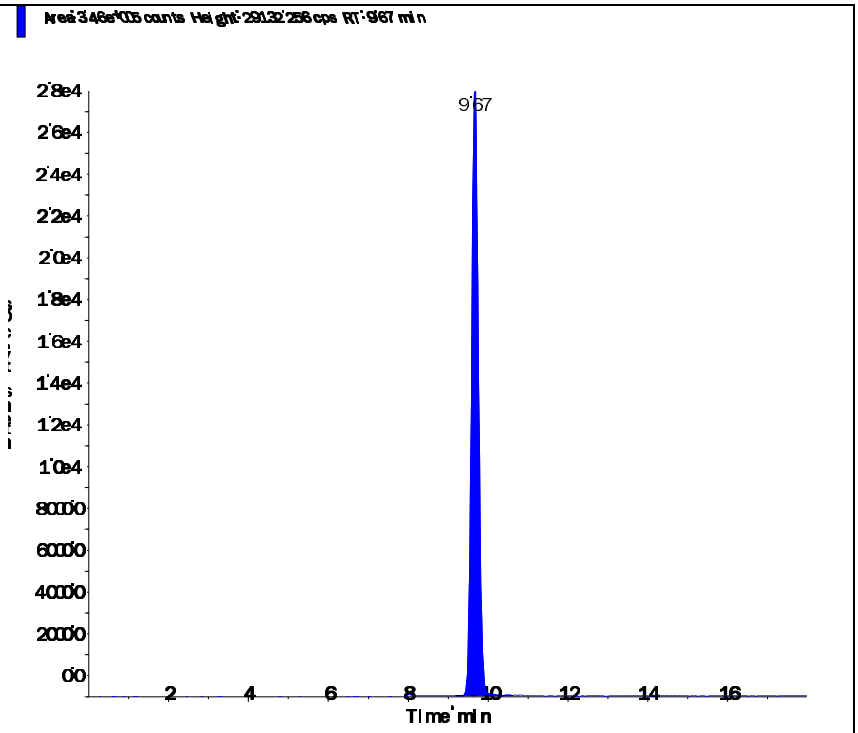

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:32 PM

Data File	LM35526.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 7:49:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-03 MSD (10.000x)	**Injection Vial**	10.00
Data File	LM35526.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 7:49:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-06	**Dilution Factor**	1.00
Sample Comment	1,10000 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.590e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.010e+06	9.68	N/A	6.56
Perchlorate conf	3.440e+05	9.67	N/A	6.68

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

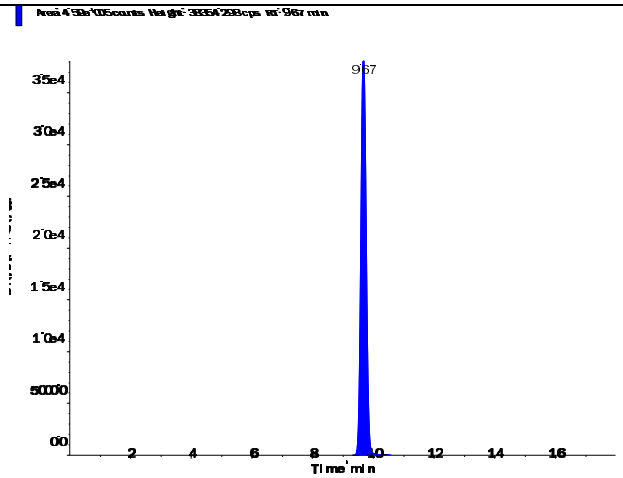

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	6.56 ng/ml
Area Ratio:	2.208
Sample Type:	(Unknown)

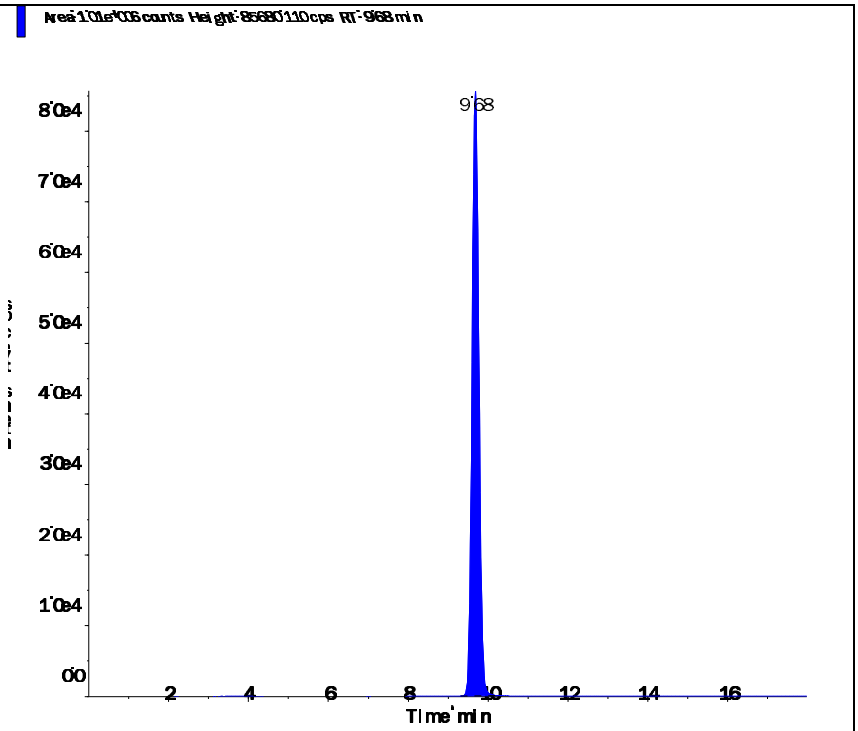

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	6.68 ng/ml
Area Ratio:	0.748
Sample Type:	(Unknown)

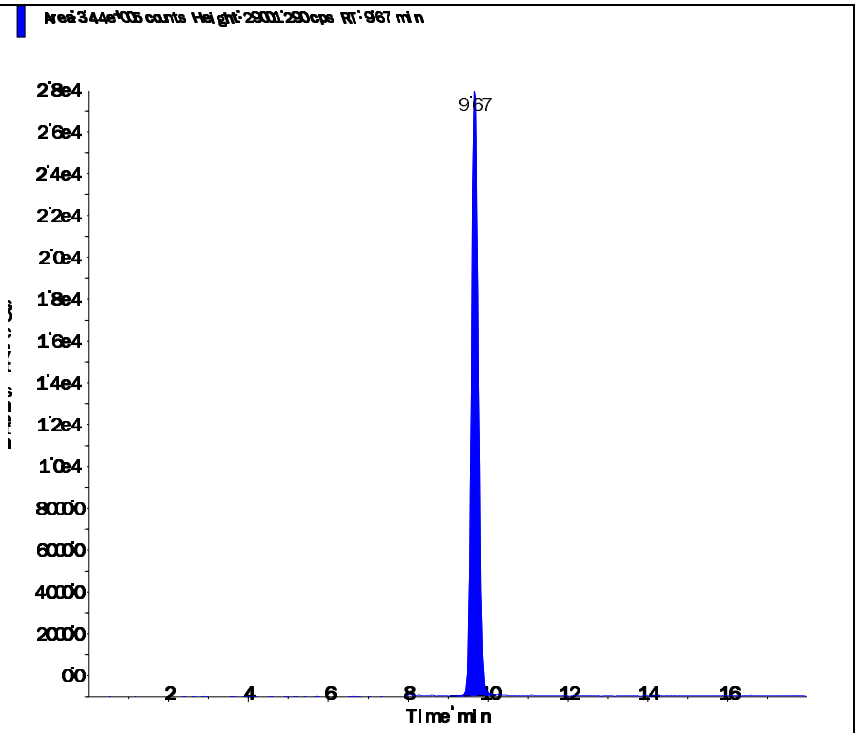

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:32 PM

Data File	LM35527.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 8:08:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-04	**Injection Vial**	11.00
Data File	LM35527.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 8:08:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061068-04	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.520e+05	9.24	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.740e+05	9.25	N/A	3.15
Perchlorate conf	1.280e+05	9.24	N/A	3.22

O18LP (Internal Standard)

RT (Exp. RT): 9.24(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

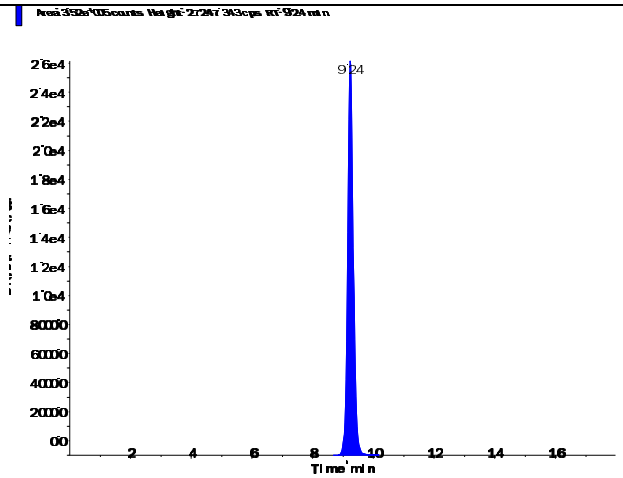

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:32 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.25 (9.84) min
Calculated conc:	3.15 ng/ml
Area Ratio:	1.06
Sample Type:	(Unknown)

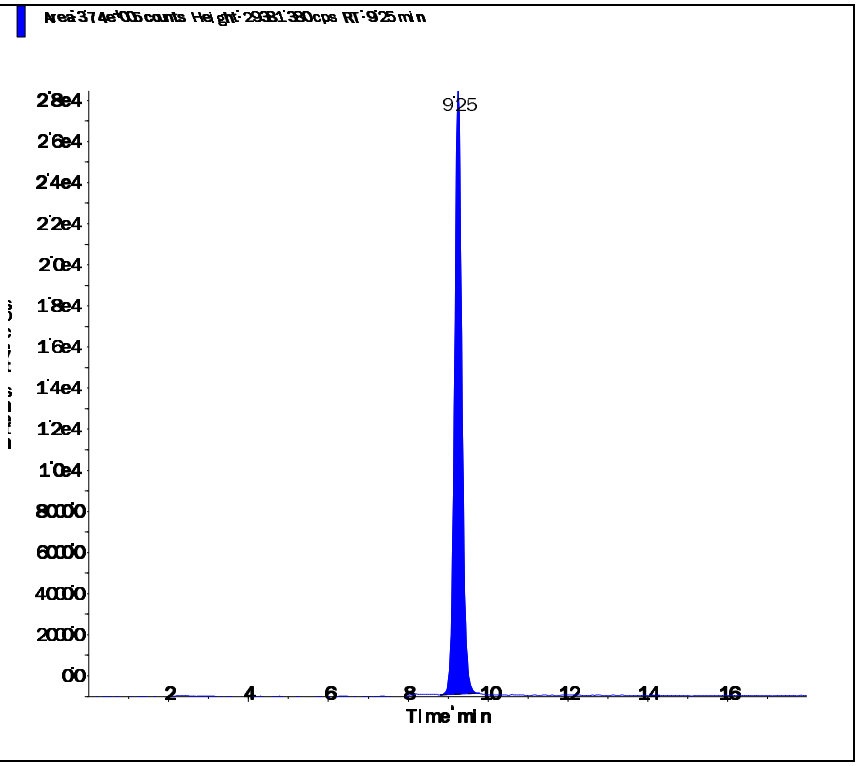

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.24 (9.84) min
Calculated conc:	3.22 ng/ml
Area Ratio:	0.362
Sample Type:	(Unknown)

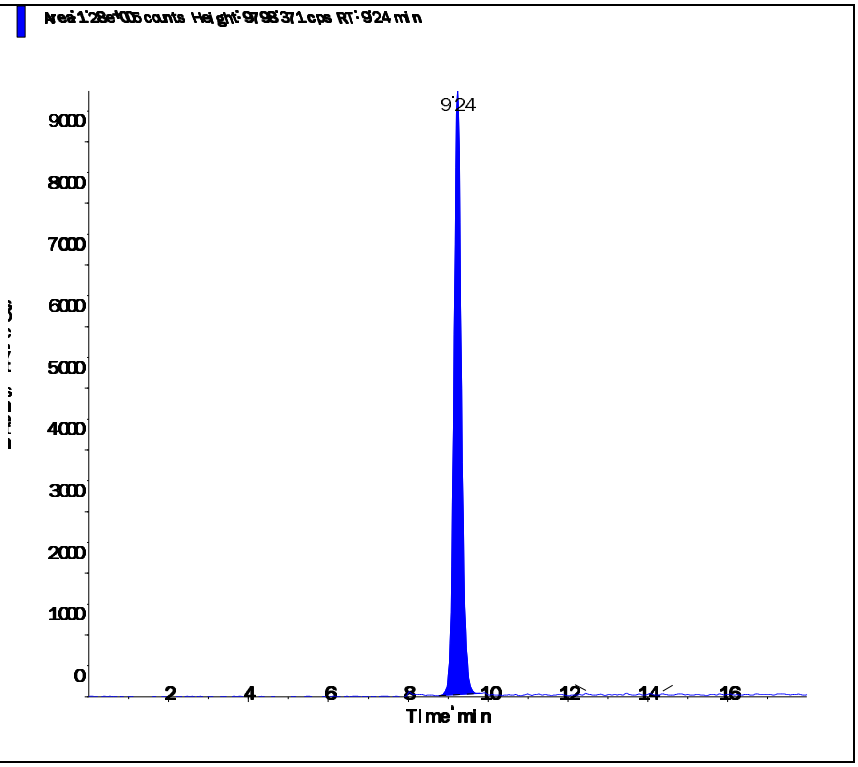

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:33 PM

Data File	LM35528.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 8:26:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-05	**Injection Vial**	12.00
Data File	LM35528.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 8:26:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061068-05	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.540e+05	9.25	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.590e+05	9.26	N/A	3.02
Perchlorate conf	1.260e+05	9.24	N/A	3.17

O18LP (Internal Standard)

RT (Exp. RT): 9.25(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

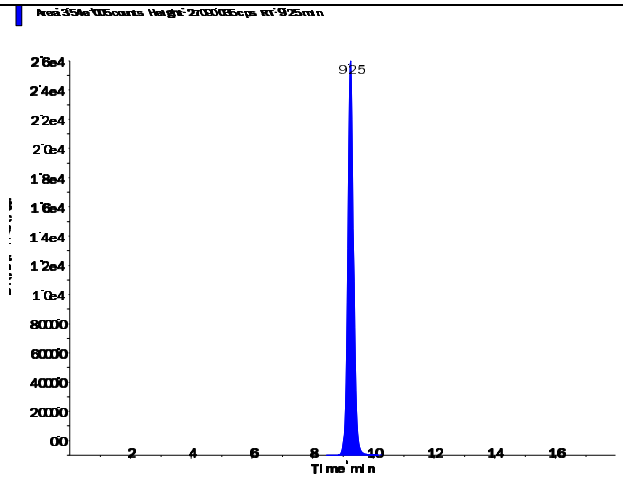

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.26 (9.84) min
Calculated conc:	3.02 ng/ml
Area Ratio:	1.016
Sample Type:	(Unknown)

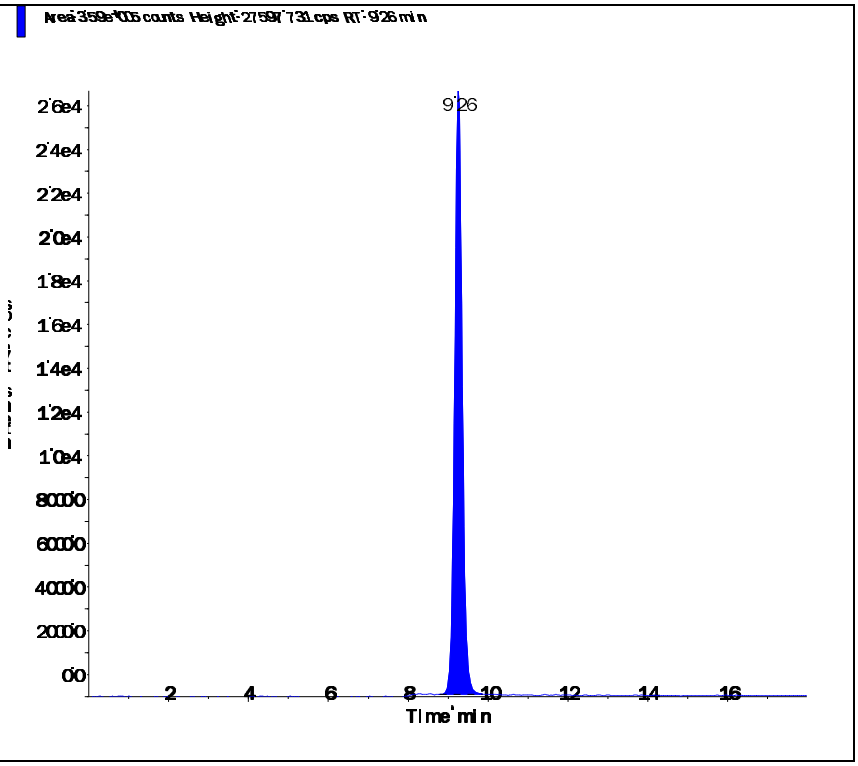

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.24 (9.84) min
Calculated conc:	3.17 ng/ml
Area Ratio:	0.356
Sample Type:	(Unknown)

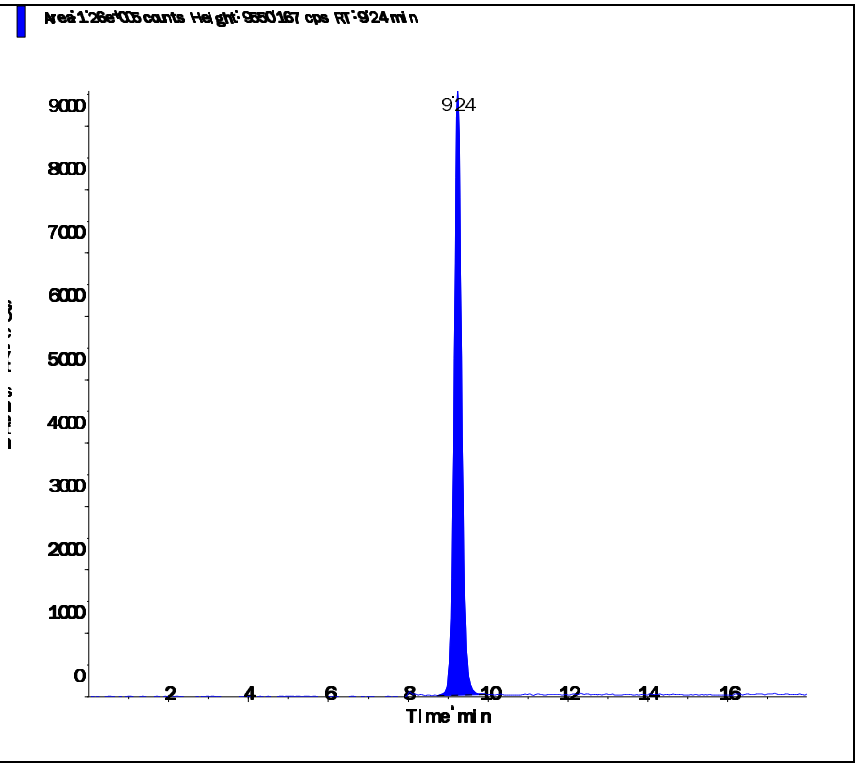

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:33 PM

Data File	LM35529.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 8:45:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-06	**Injection Vial**	13.00
Data File	LM35529.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 8:45:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061068-06	**Dilution Factor**	1.00
Sample Comment	1,1 (screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.210e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.950e+03	9.60	N/A	0.017
Perchlorate conf	1.310e+03	9.60	N/A	0.0074

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

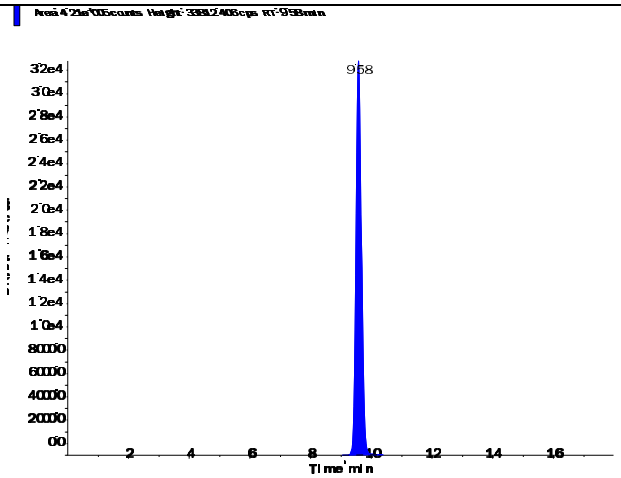

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	0.017 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)

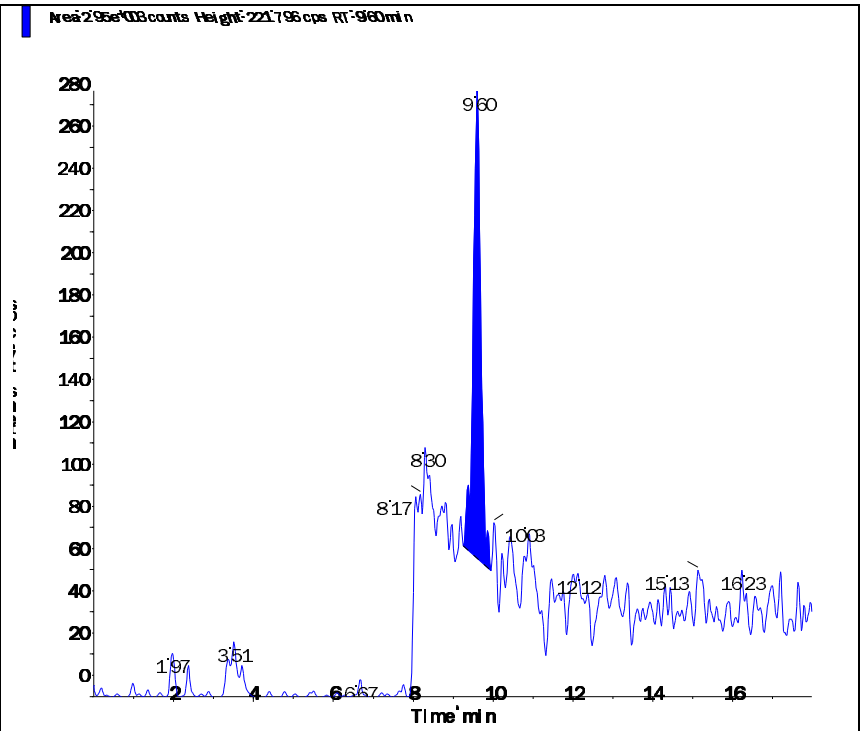

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	0.0074 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

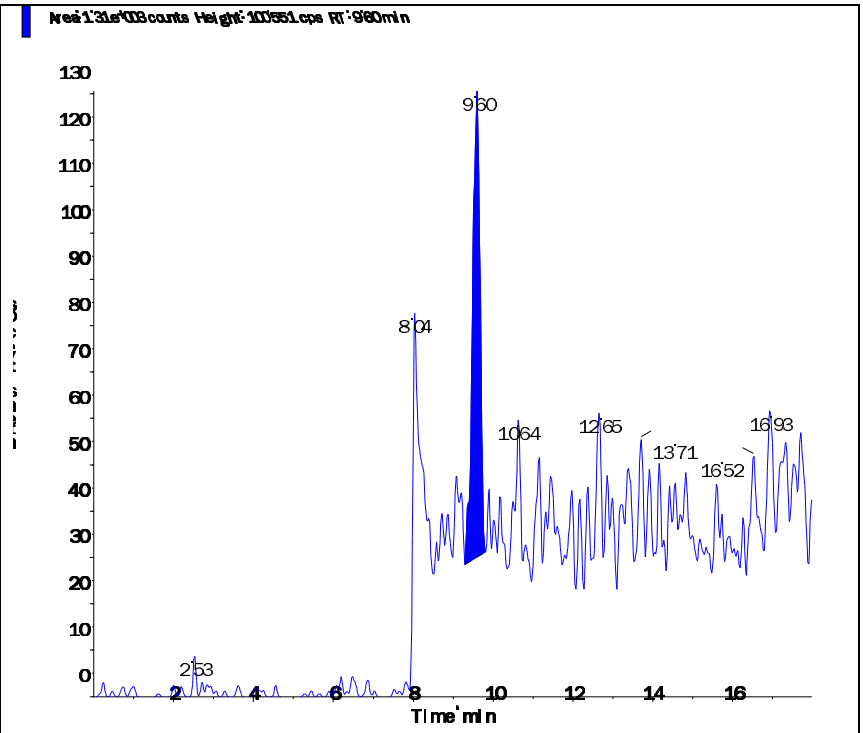

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:34 PM

Data File	LM35533.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 10:01:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-07 RS	**Injection Vial**	14.00
Data File	LM35533.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 10:01:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-07	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.960e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.080e+03	9.42	N/A	0.0194
Perchlorate conf	1.370e+03	9.41	N/A	0.0106

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

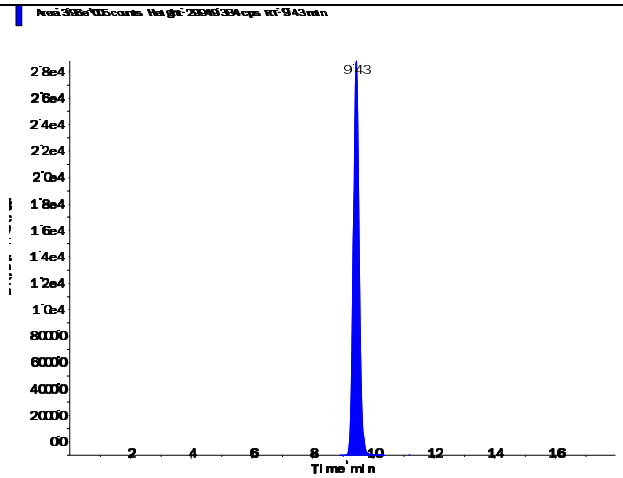

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	0.0194 ng/ml
Area Ratio:	0.008
Sample Type:	(Unknown)

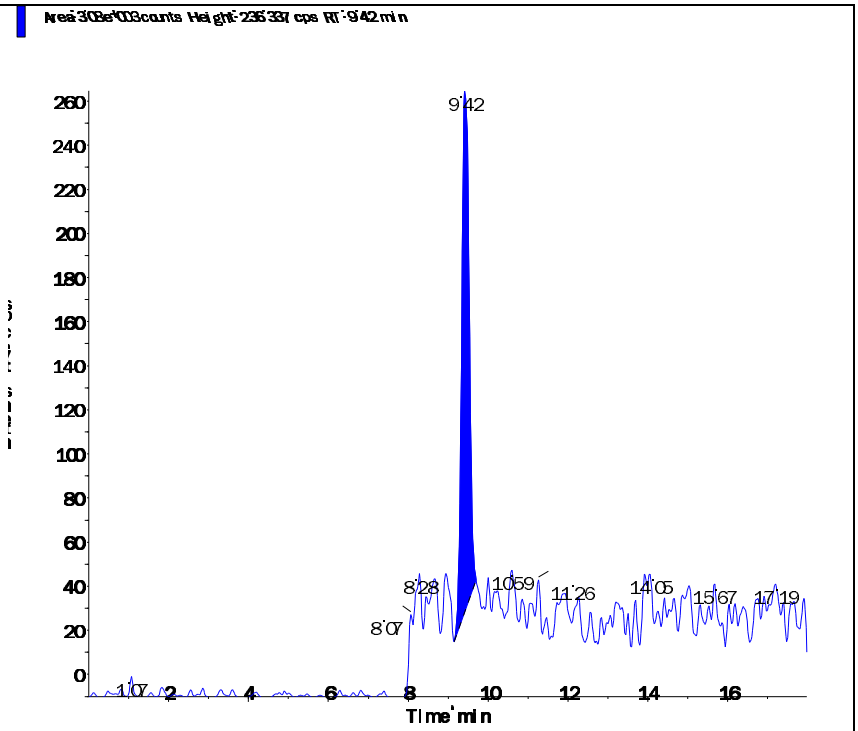

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.41 (9.84) min
Calculated conc:	0.0106 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

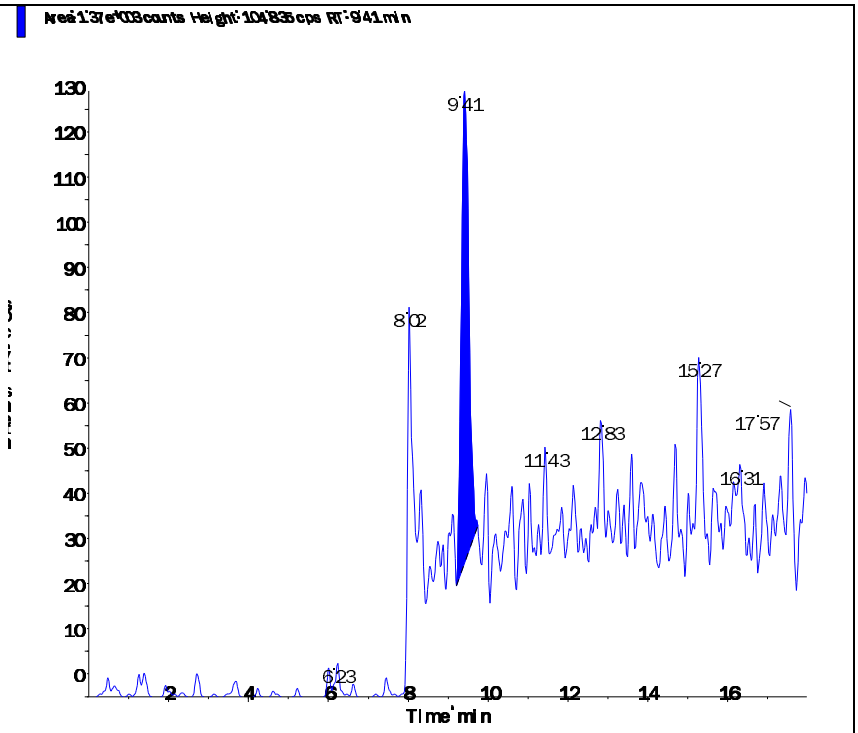

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:34 PM

Data File	LM35534.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 10:20:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-08 MS	**Injection Vial**	15.00
Data File	LM35534.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 10:20:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.970e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.930e+04	9.45	N/A	0.216
Perchlorate conf	1.020e+04	9.44	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

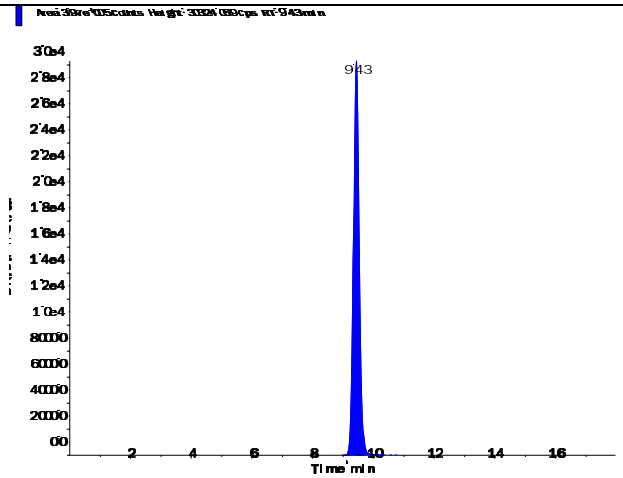

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:34 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

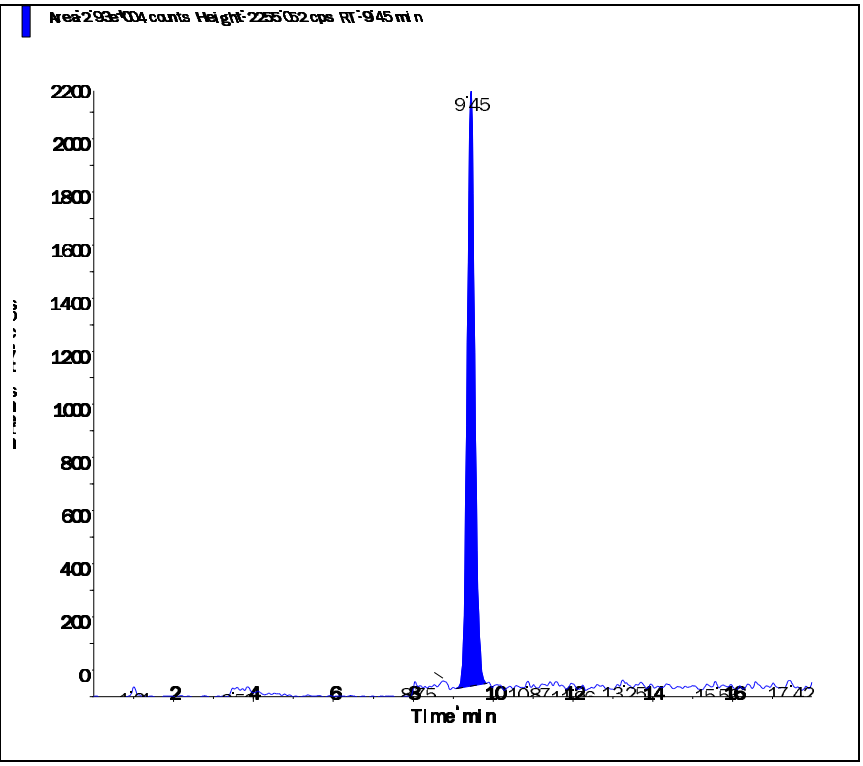

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

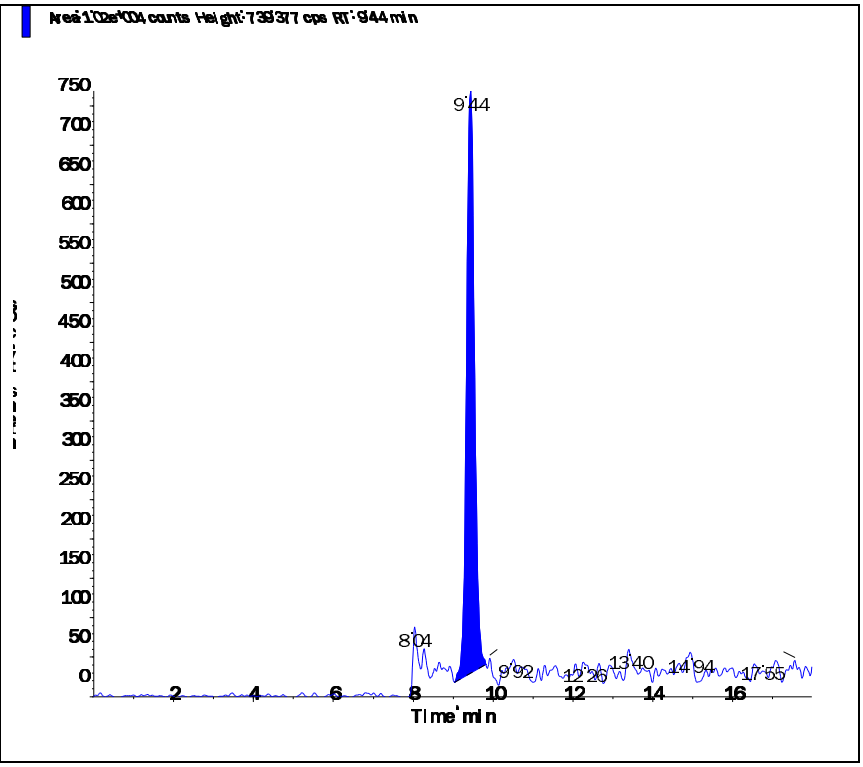

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:35 PM

Data File	LM35535.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 10:39:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-09 MSD	**Injection Vial**	16.00
Data File	LM35535.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 10:39:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.940e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.970e+04	9.45	N/A	0.22
Perchlorate conf	9.590e+03	9.42	N/A	0.198

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

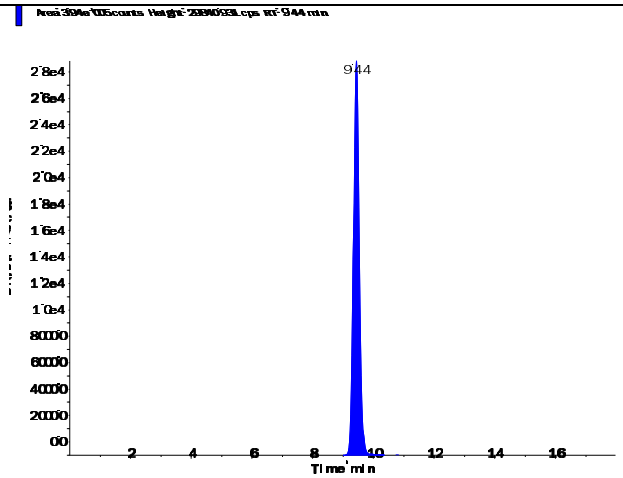

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.22 ng/ml
Area Ratio:	0.075
Sample Type:	(Unknown)

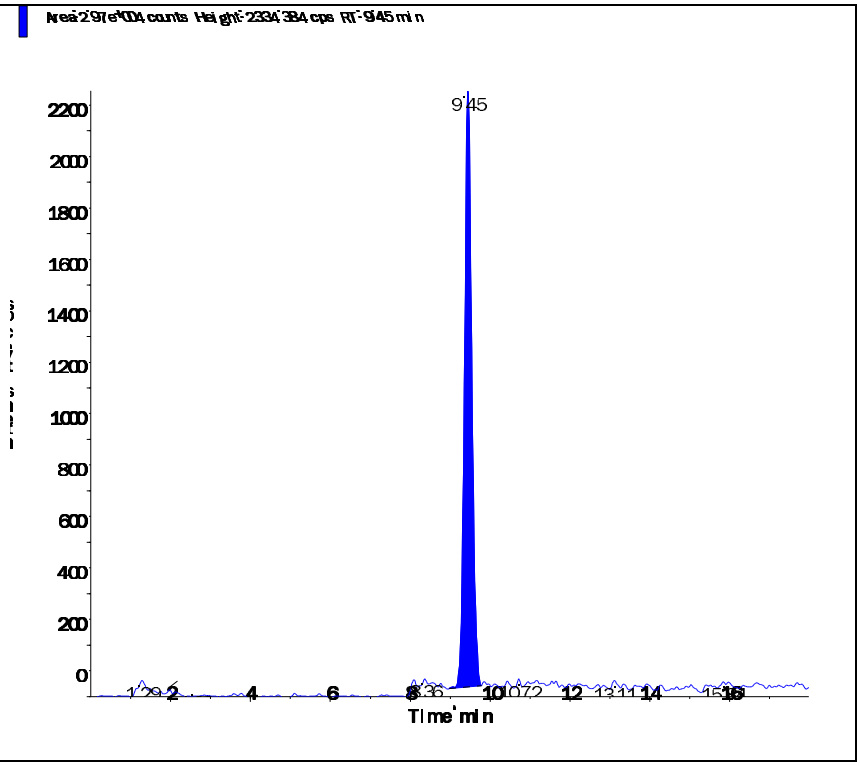

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

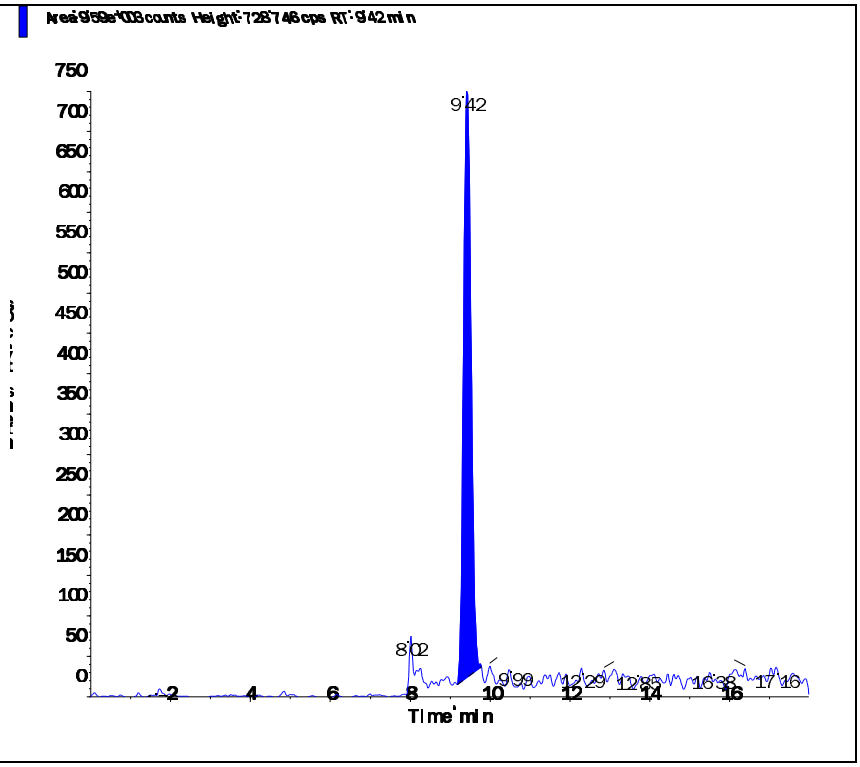

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:41 PM

Data File	LM35555.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:53:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-10 (RR 5x)	**Injection Vial**	27.00
Data File	LM35555.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:53:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061068-10	**Dilution Factor**	1.00
Sample Comment	15.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.550e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.490e+05	9.67	N/A	2.28
Perchlorate conf	1.210e+05	9.66	N/A	2.36

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

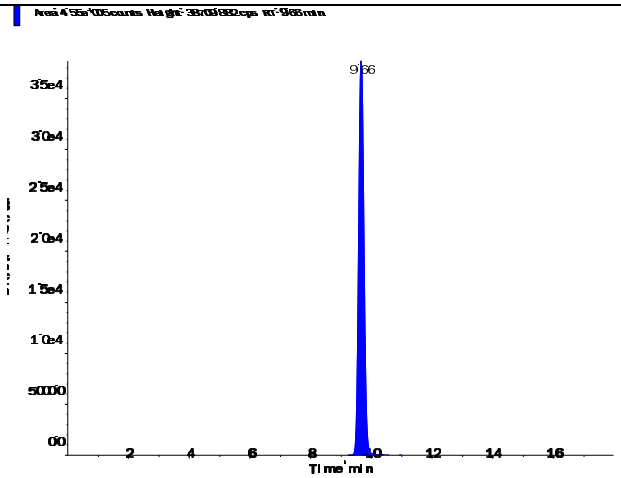

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:41 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.67 (9.84) min Calculated conc: 2.28 ng/ml Area Ratio: 0.769 Sample Type: (Unknown)	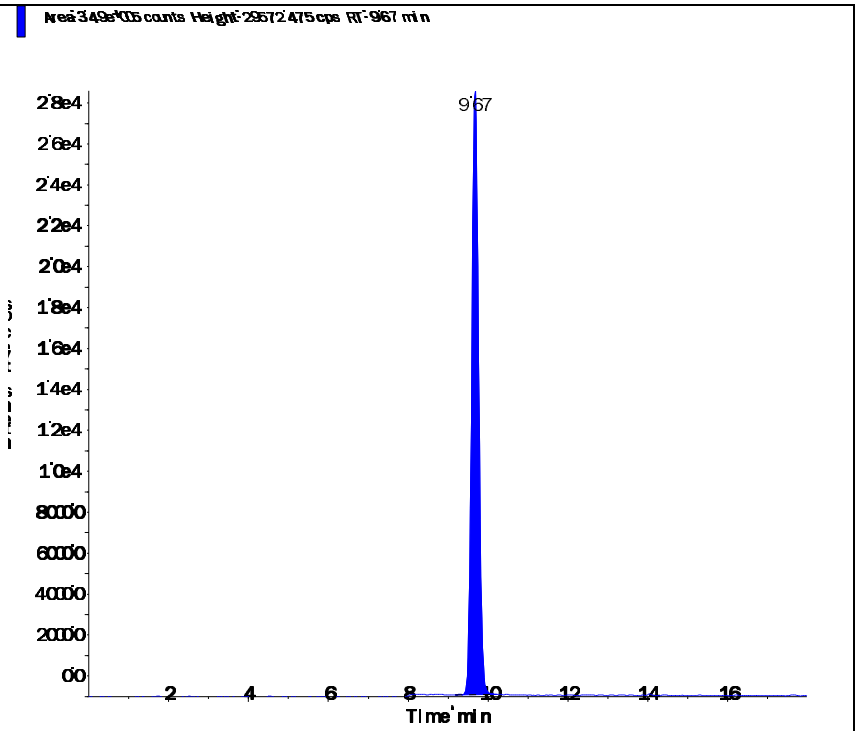
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.66 (9.84) min Calculated conc: 2.36 ng/ml Area Ratio: 0.266 Sample Type: (Unknown)	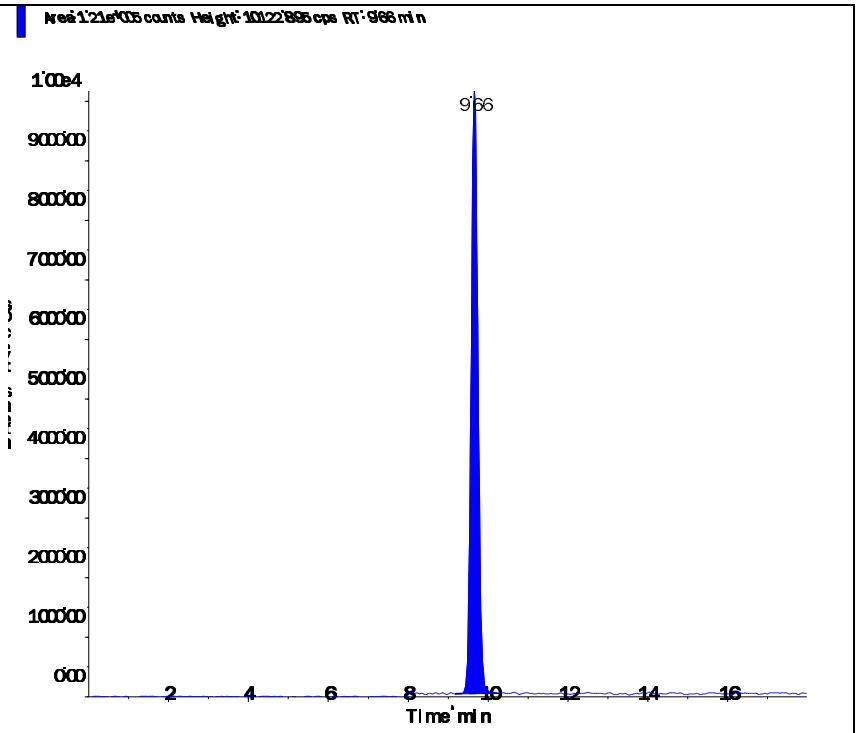

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:35 PM

Data File	LM35537.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 11:17:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-12 RS	**Injection Vial**	18.00
Data File	LM35537.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 11:17:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-10	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.130e+03	9.46	N/A	0.0096
Perchlorate conf	1.410e+03	9.45	N/A	0.0063

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

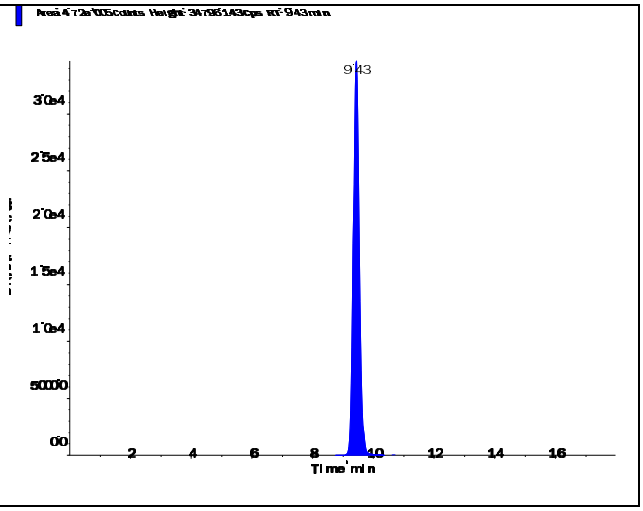

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.46 (9.84) min
Calculated conc:	0.0096 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

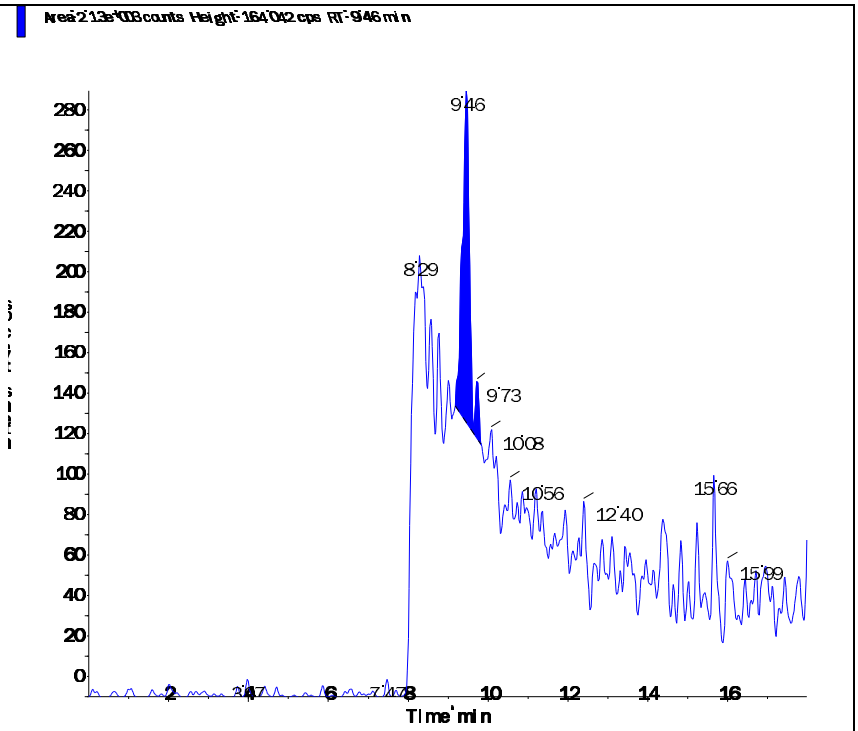

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.0063 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

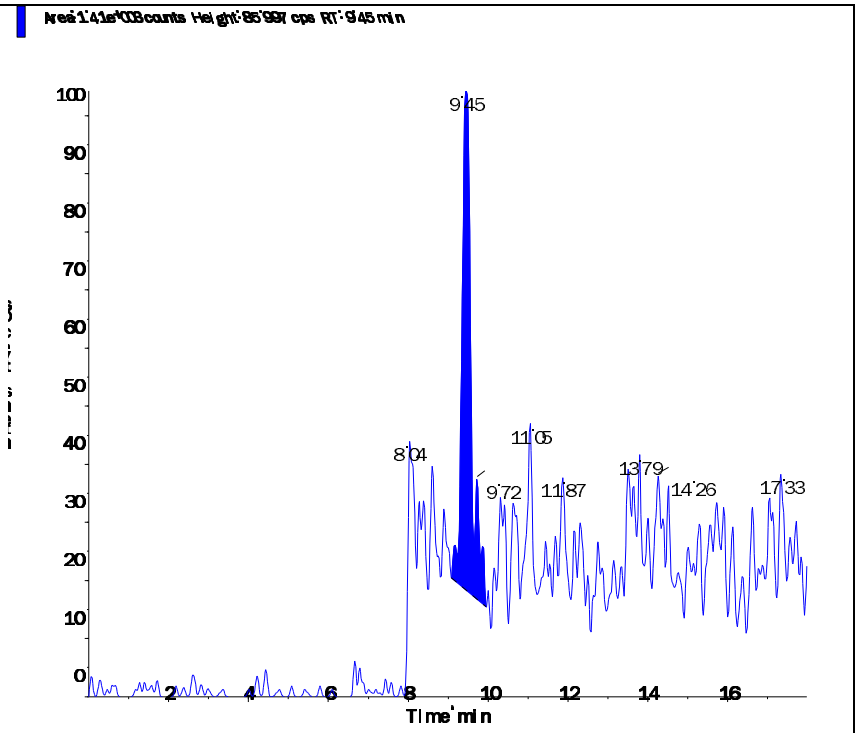

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:36 PM

Data File	LM35538.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 11:36:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-14 MS	**Injection Vial**	19.00
Data File	LM35538.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 11:36:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.45	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.260e+04	9.47	N/A	0.196
Perchlorate conf	1.190e+04	9.45	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.45(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

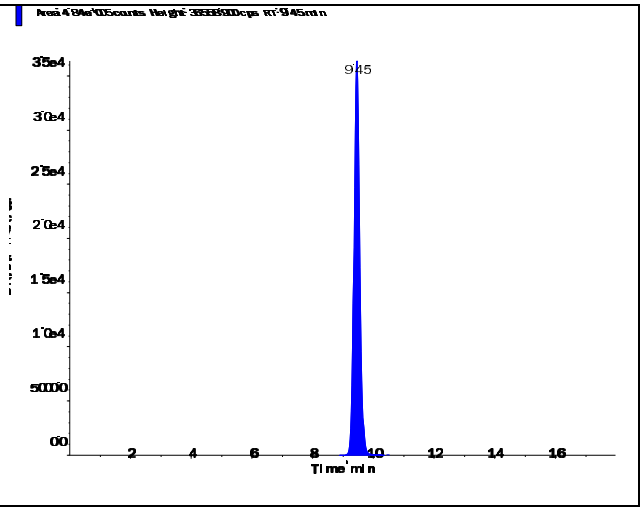

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:36 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.47 (9.84) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.067
Sample Type:	(Unknown)

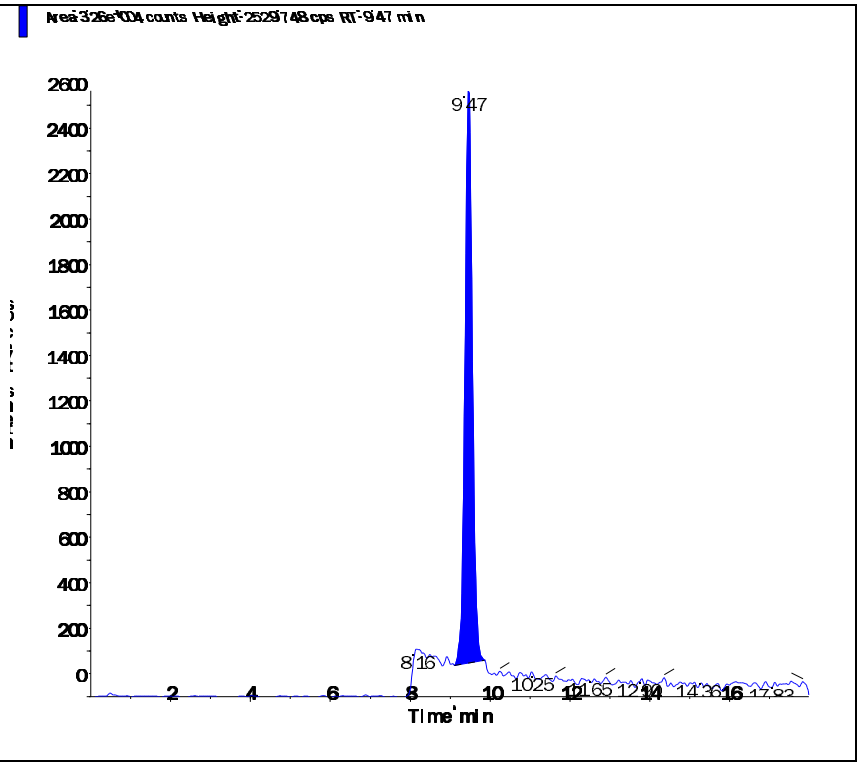

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

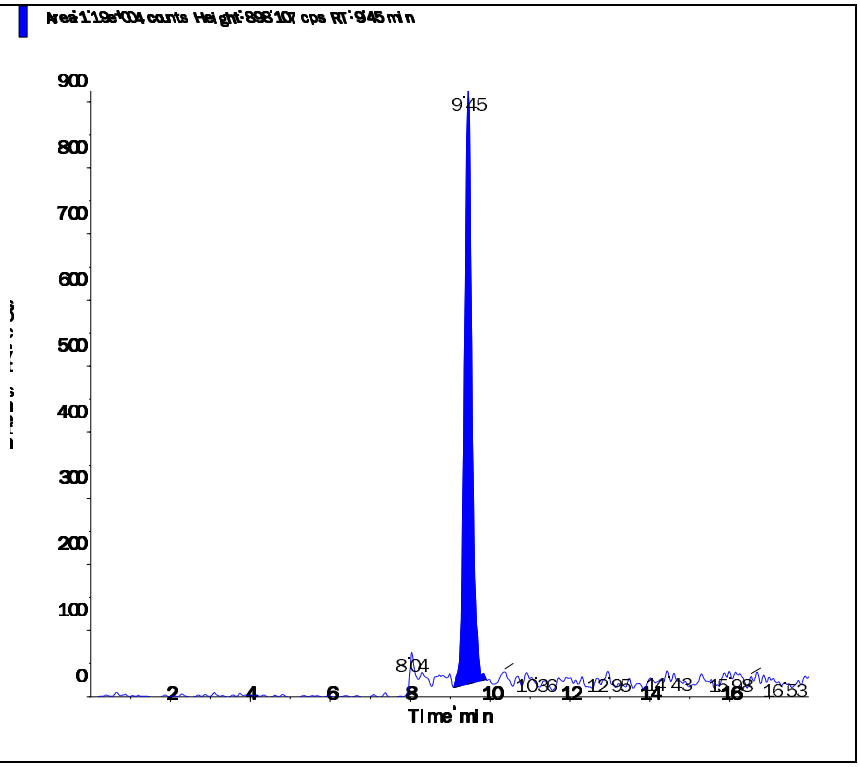

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:36 PM

Data File	LM35539.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 11:55:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-16 MSD	**Injection Vial**	20.00
Data File	LM35539.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 11:55:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-12	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.860e+05	9.45	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.440e+04	9.46	N/A	0.207
Perchlorate conf	1.120e+04	9.46	N/A	0.186

O18LP (Internal Standard)

RT (Exp. RT): 9.45(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

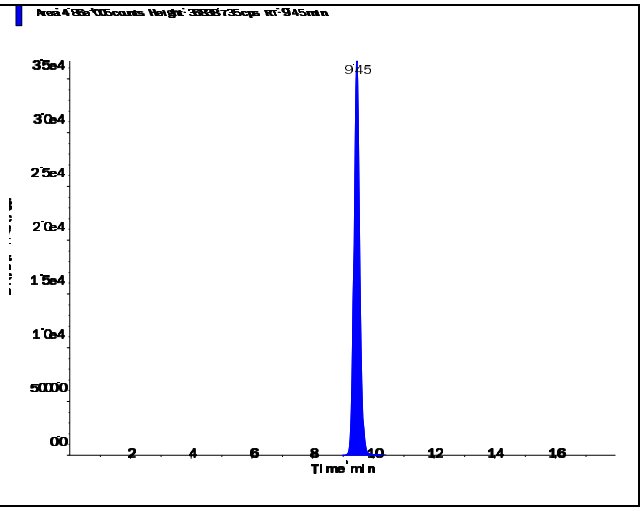

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.46 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

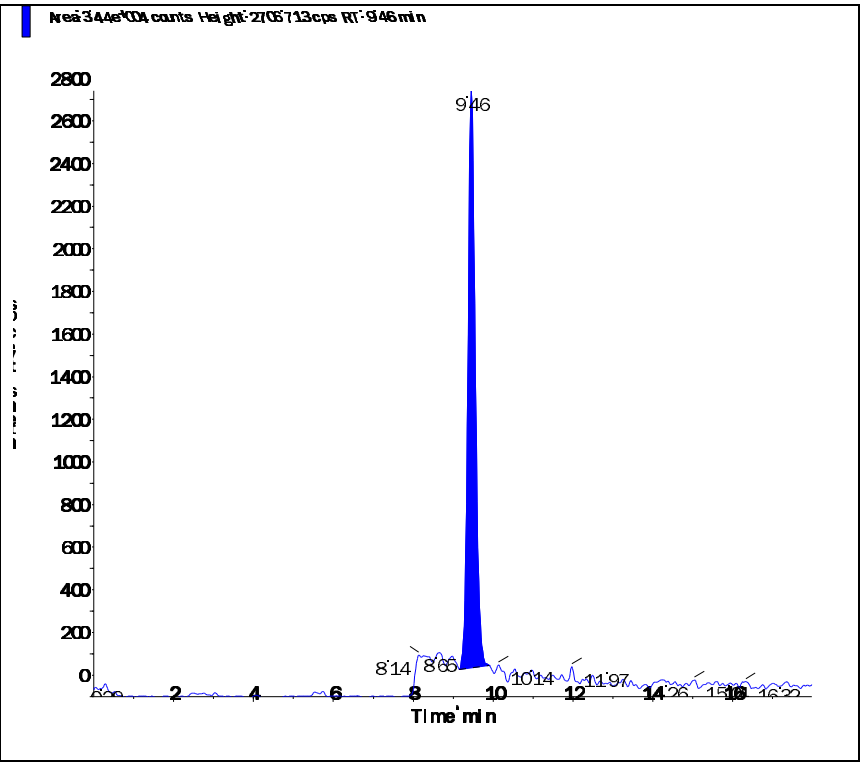

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.46 (9.84) min
Calculated conc:	0.186 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

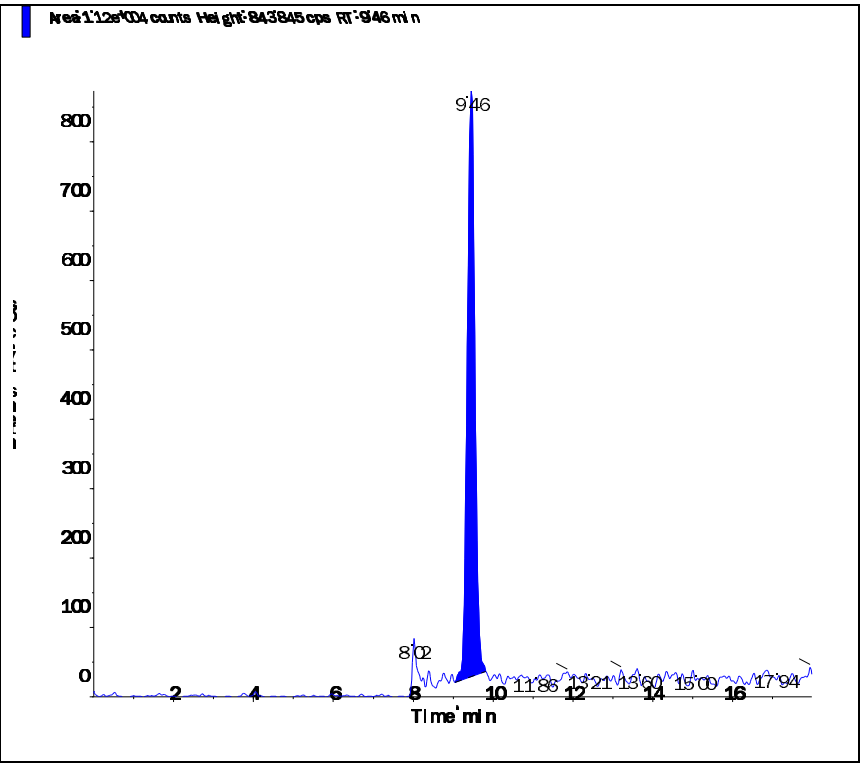

2.2.1.4 Standards Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:27 PM

Data File	LM34686.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

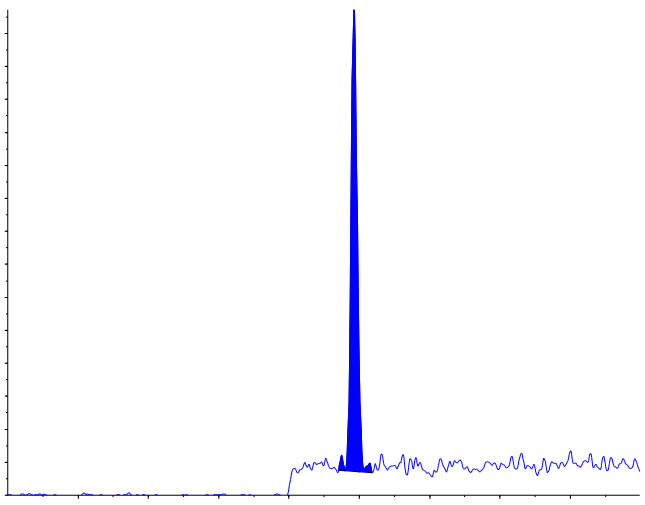

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:27 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	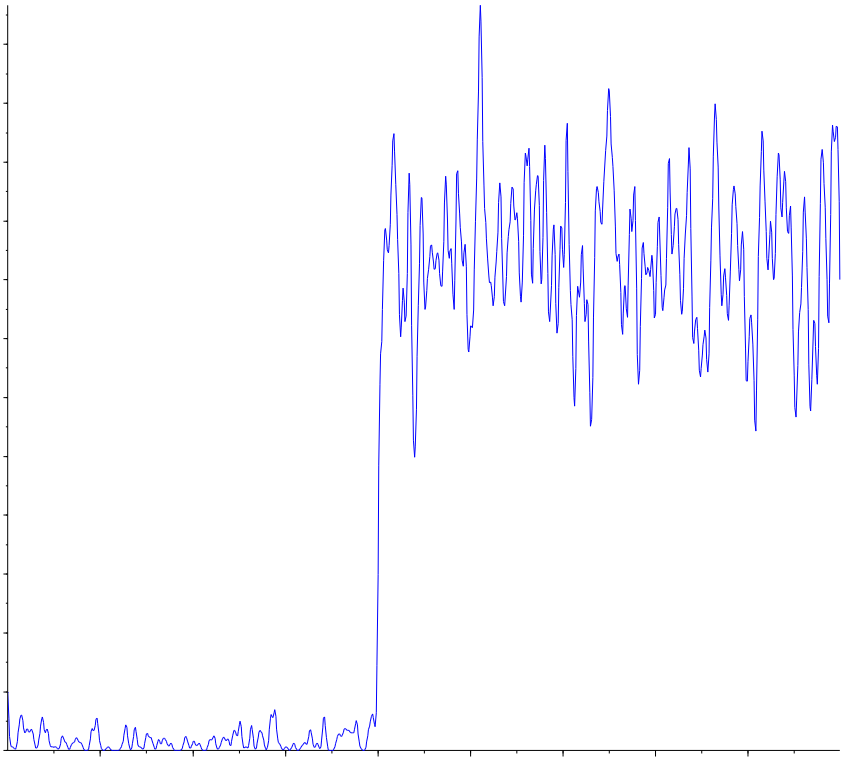
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	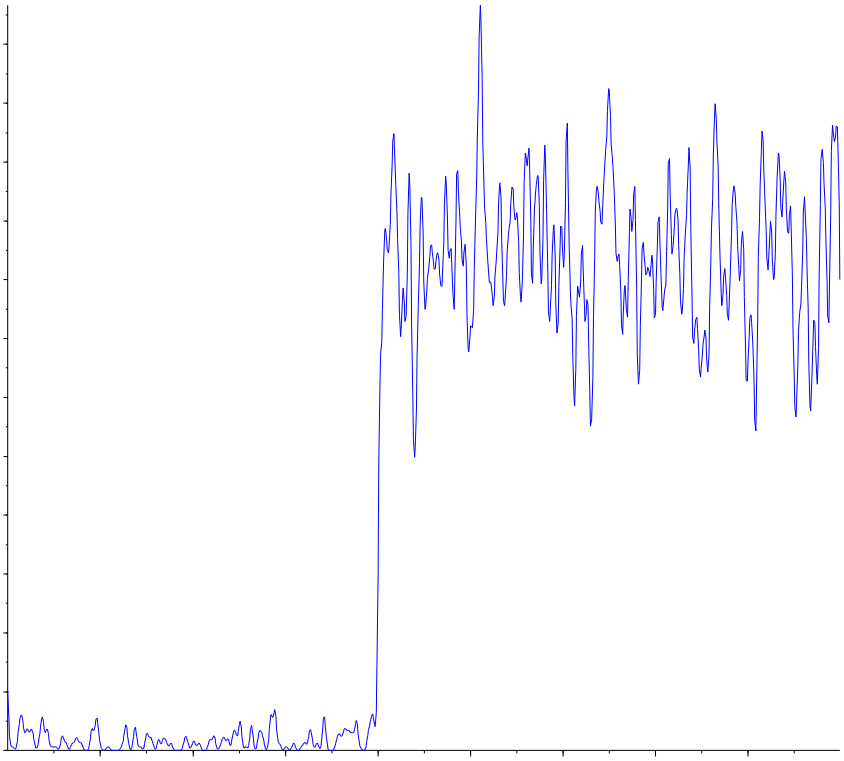

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

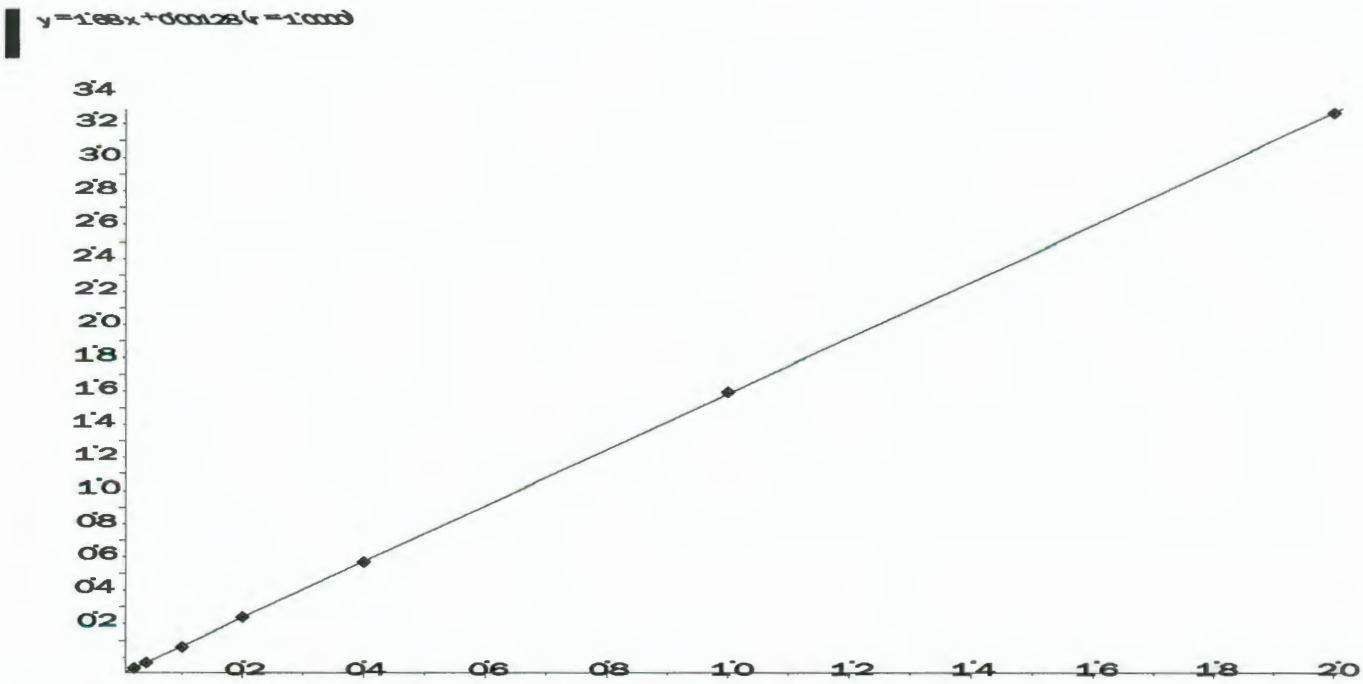

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

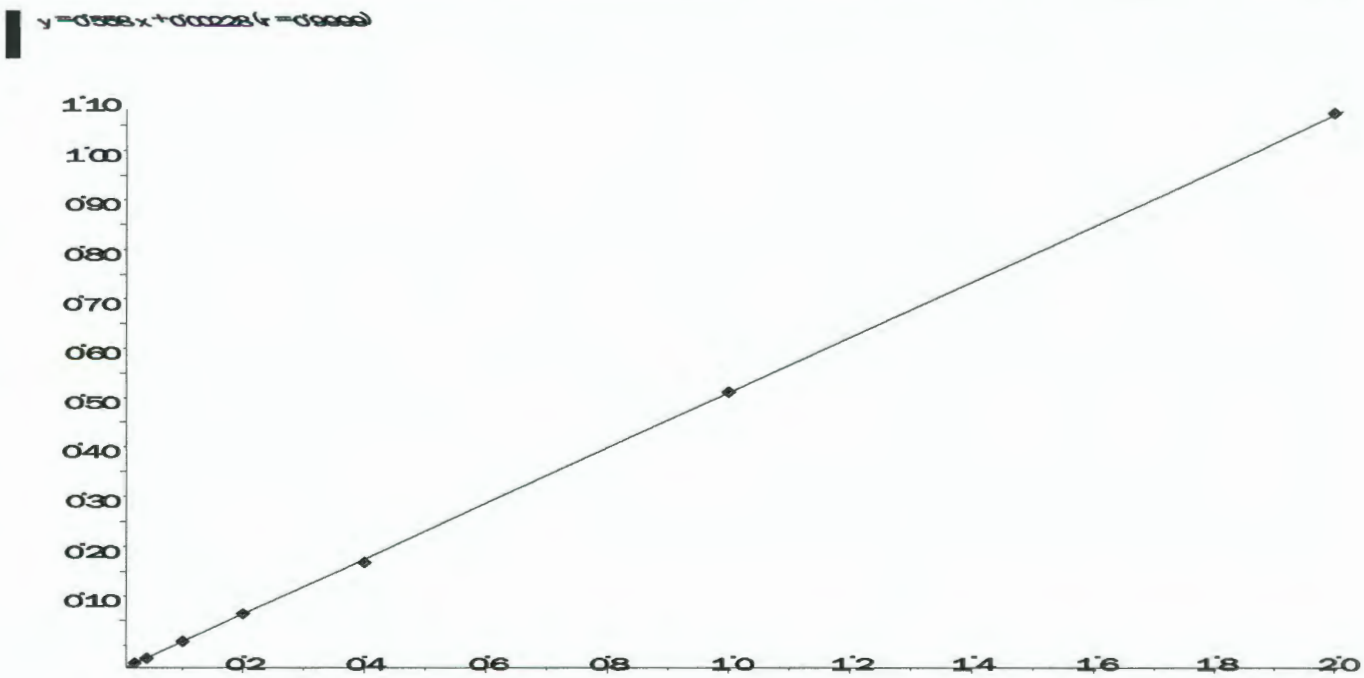

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:27 PM

Data File	LM34687.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

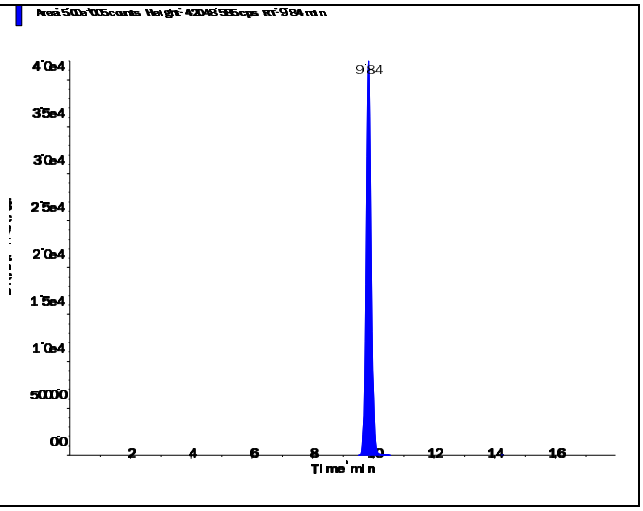

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:27 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

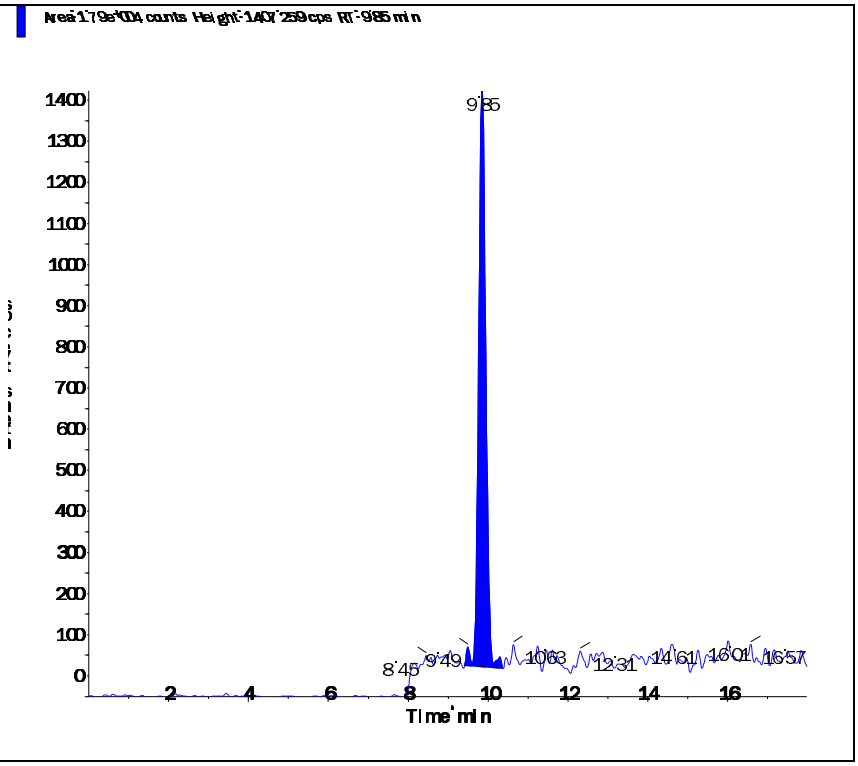

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

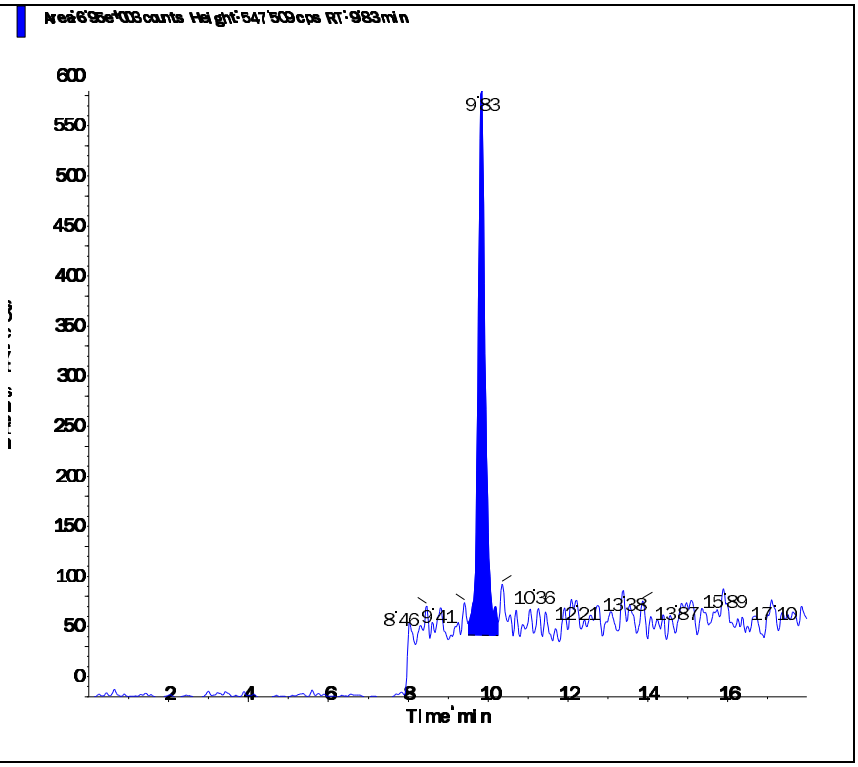

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:28 PM

Data File	LM34688.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

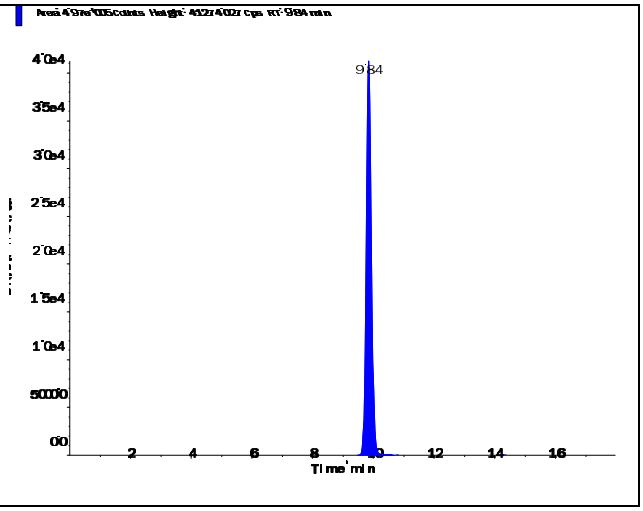

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:28 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

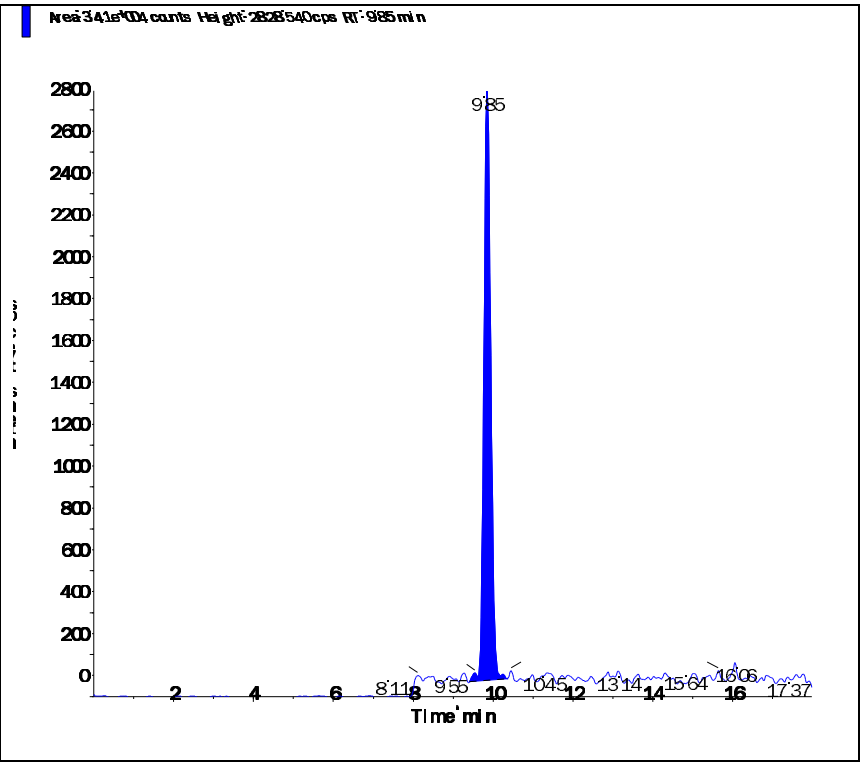

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

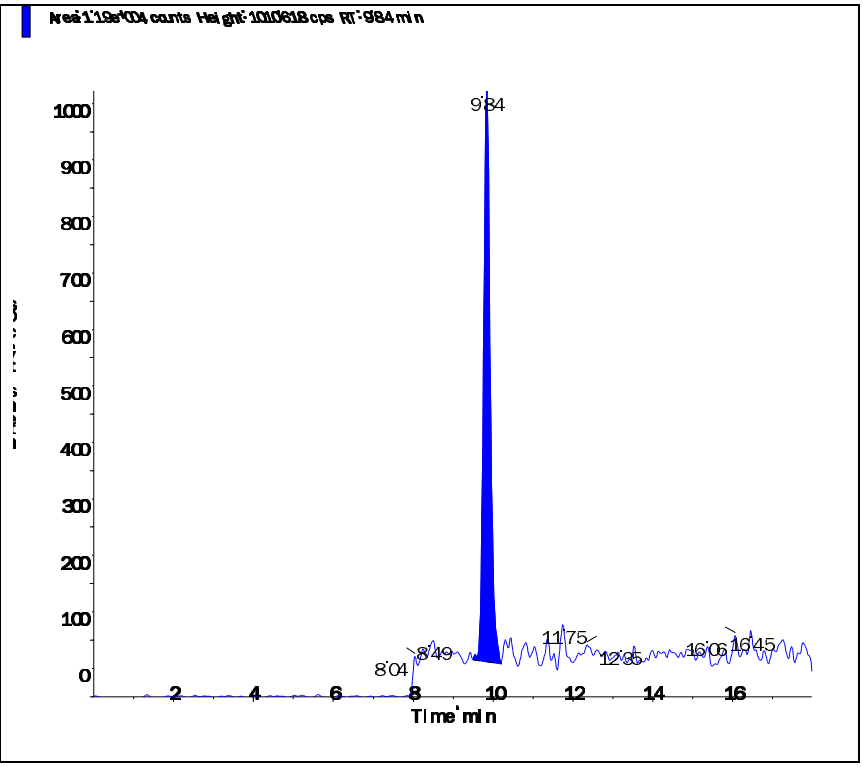

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:28 PM

Data File	LM34689.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

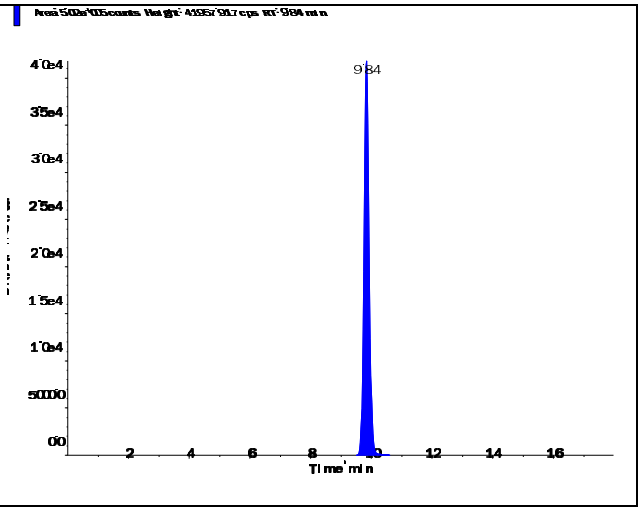

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

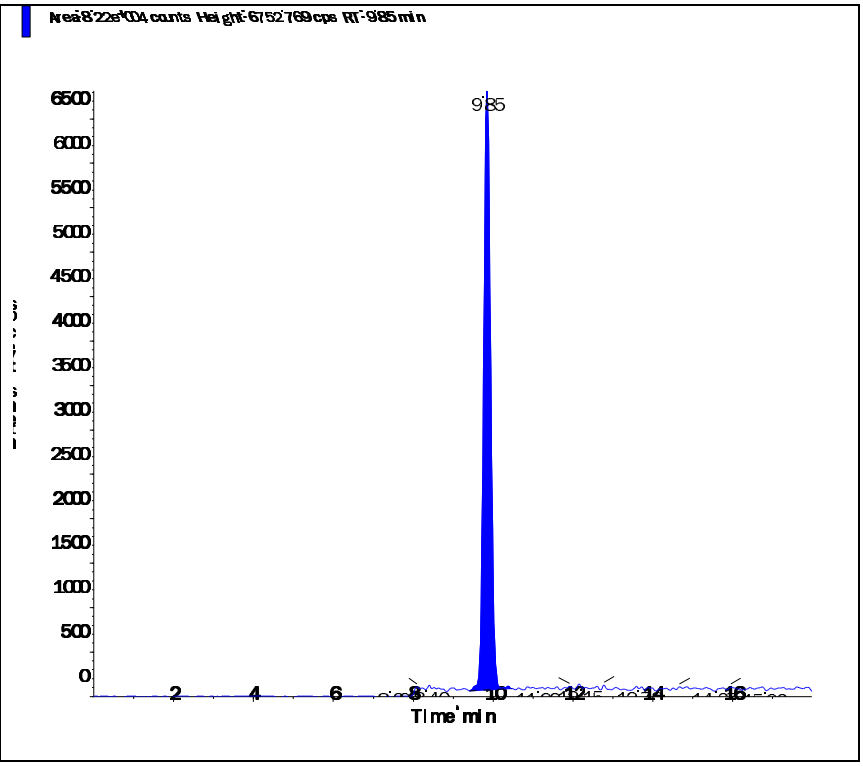

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

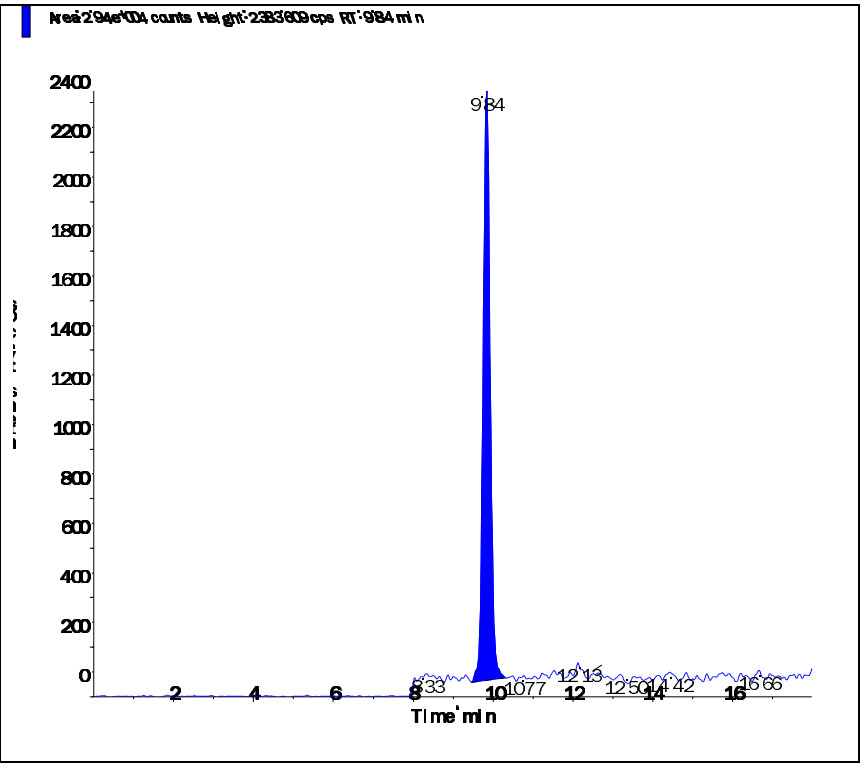

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:28 PM

Data File	LM34690.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

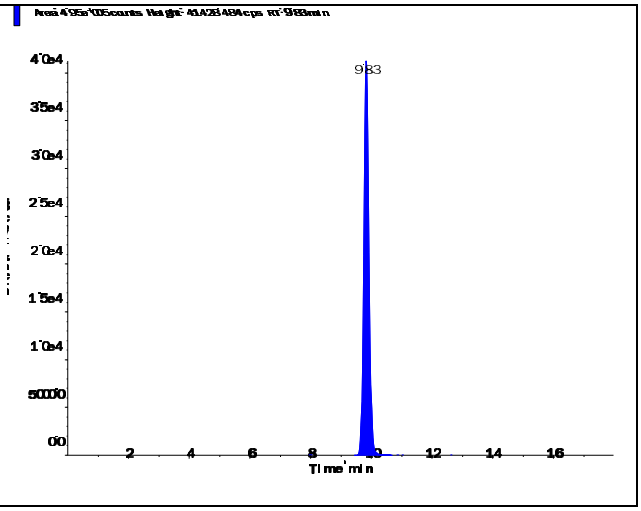

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

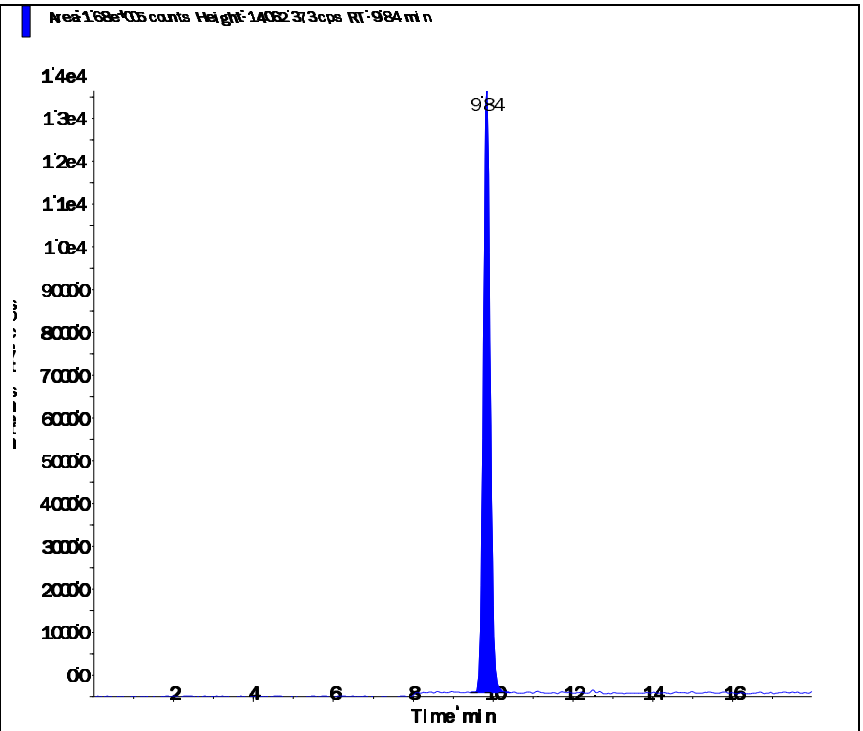

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

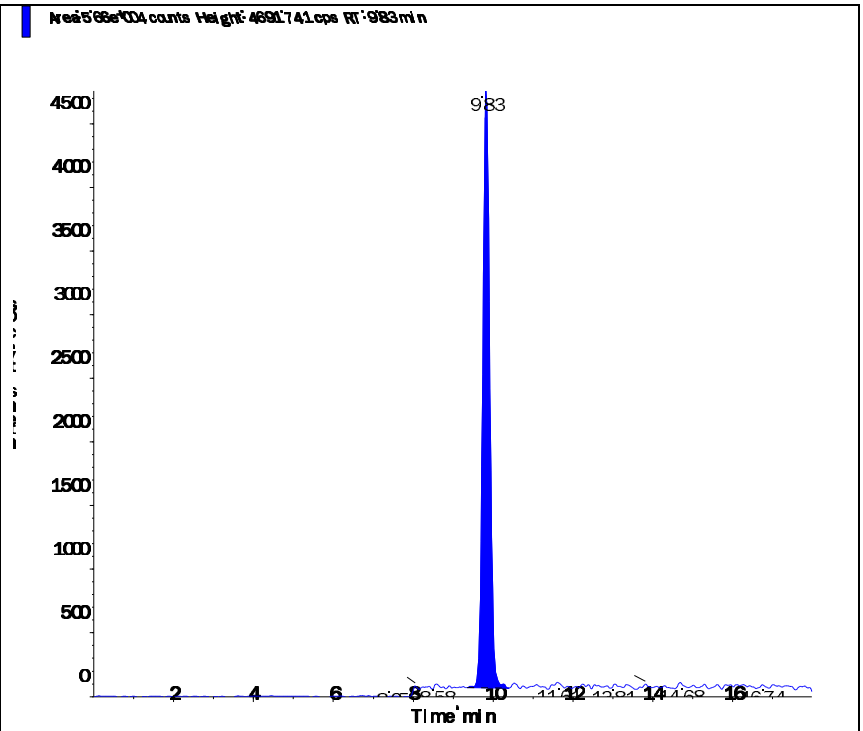

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:29 PM

Data File	LM34691.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

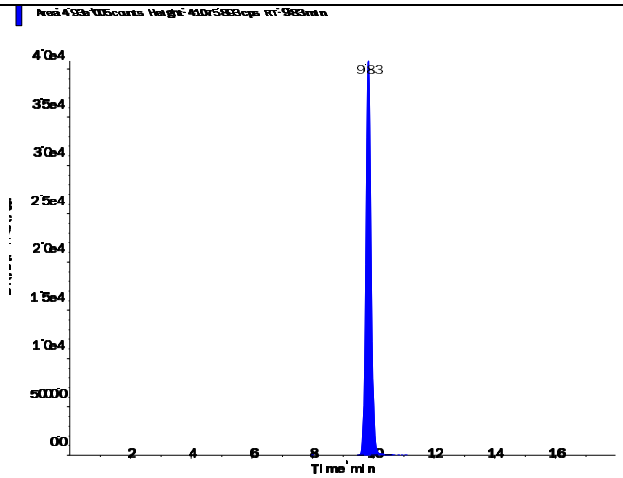

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:29 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	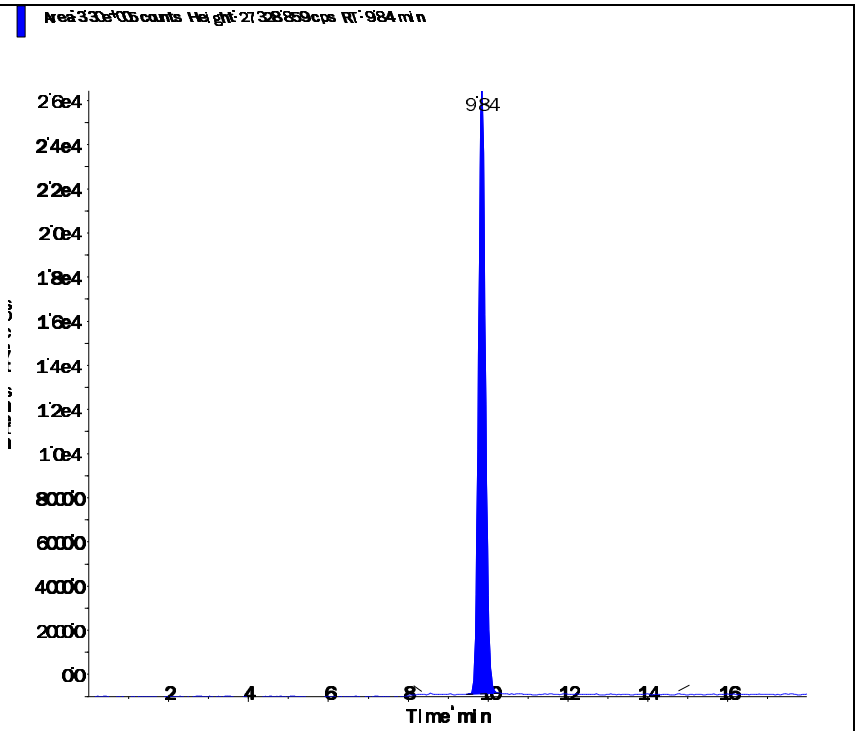
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	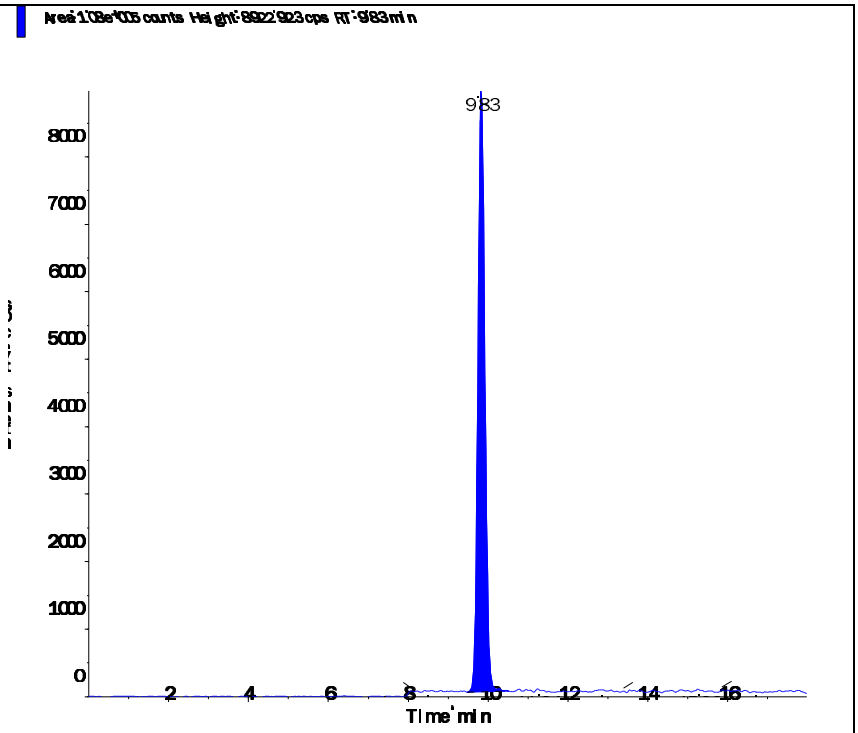

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:29 PM

Data File	LM34692.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

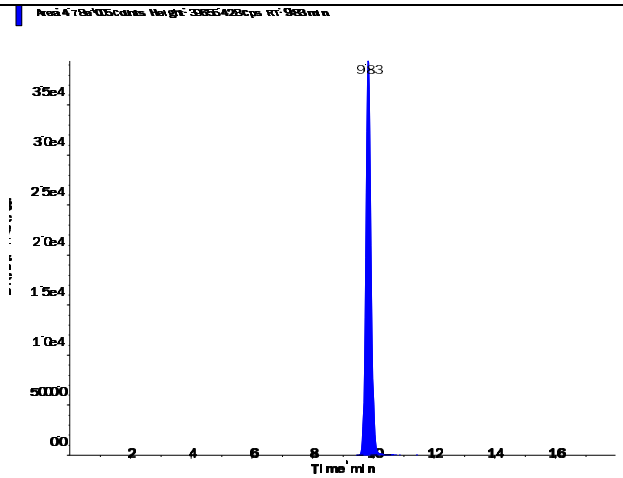

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:29 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

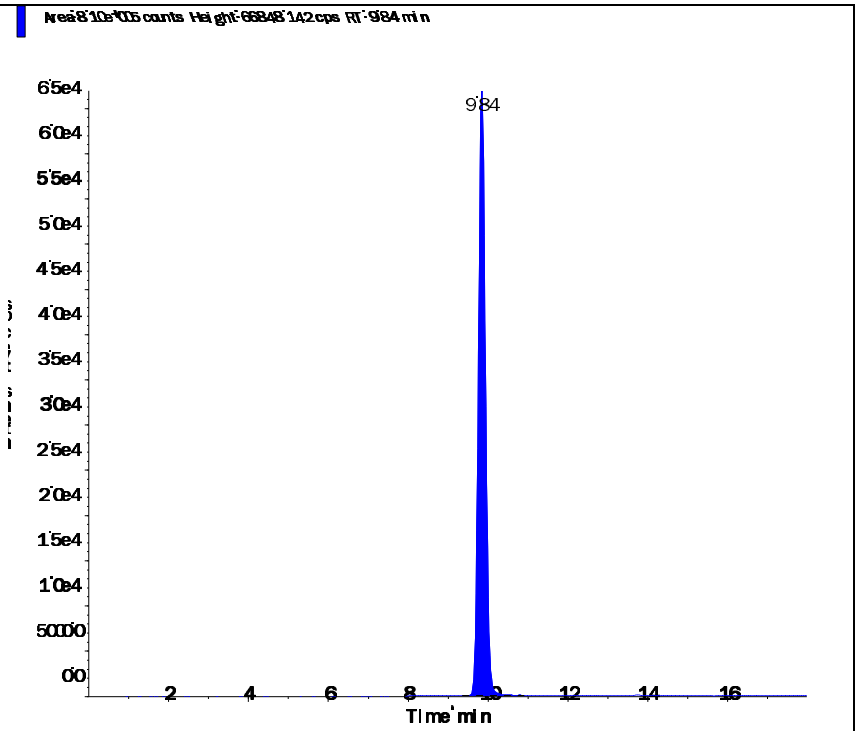

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

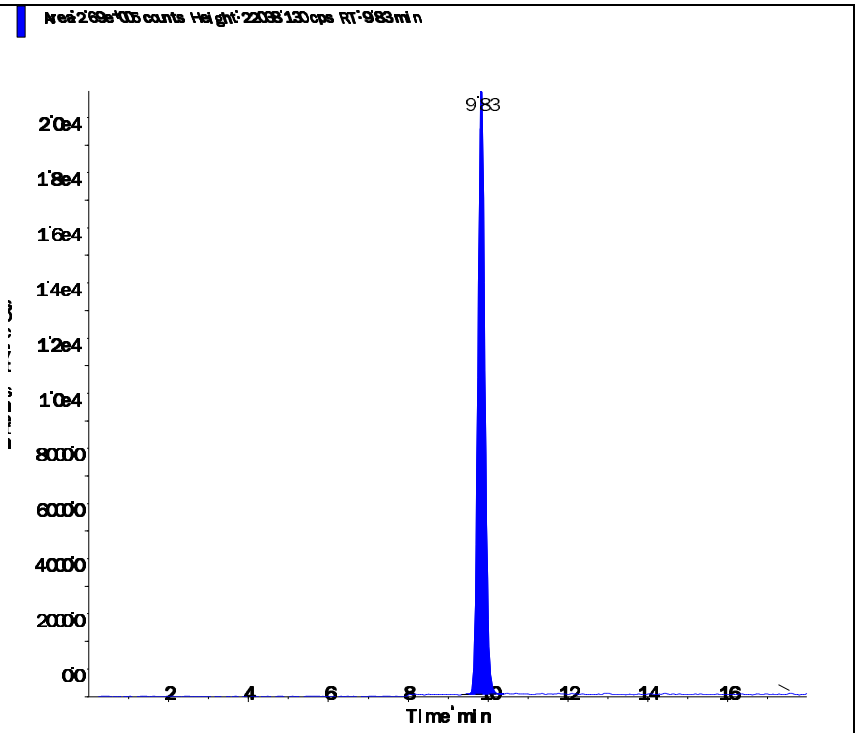

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:29 PM

Data File	LM34693.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

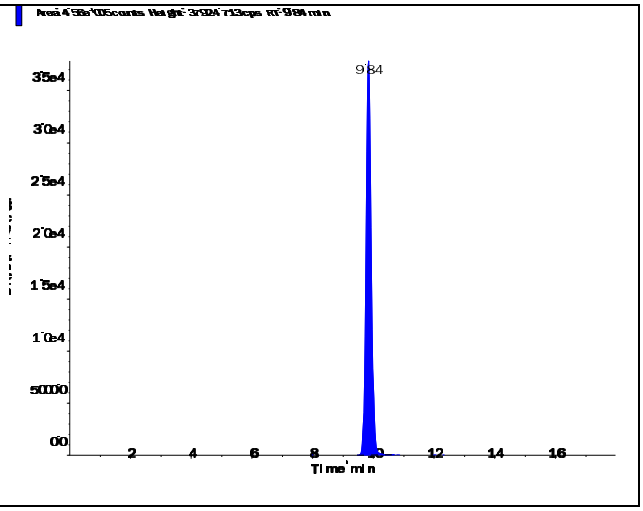

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:29 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	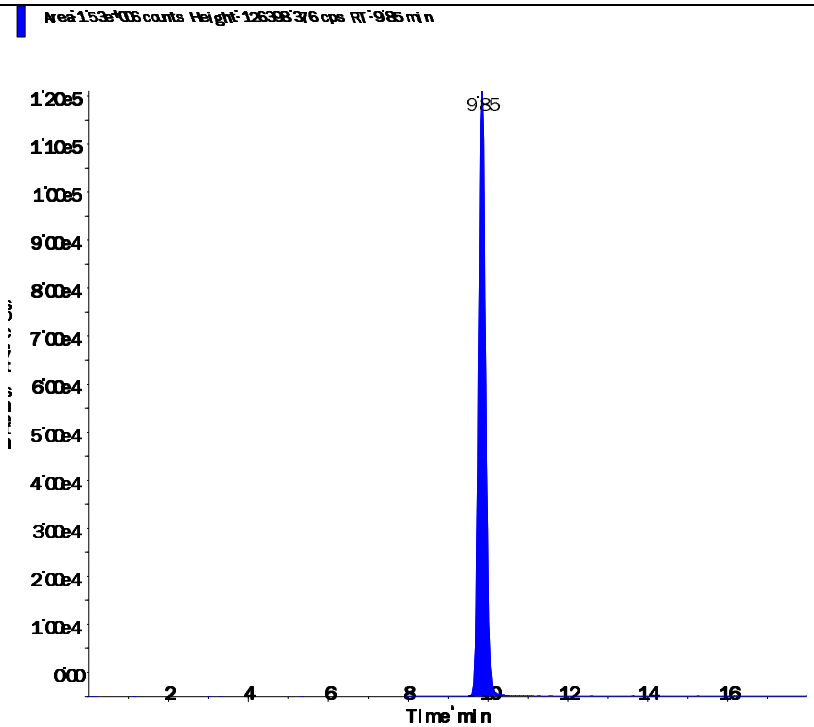
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	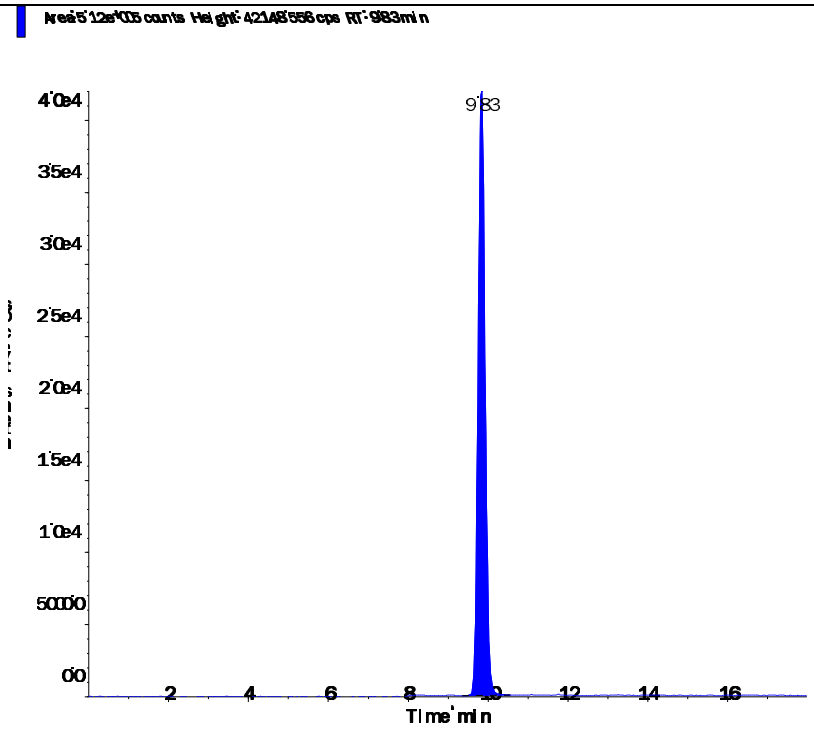

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

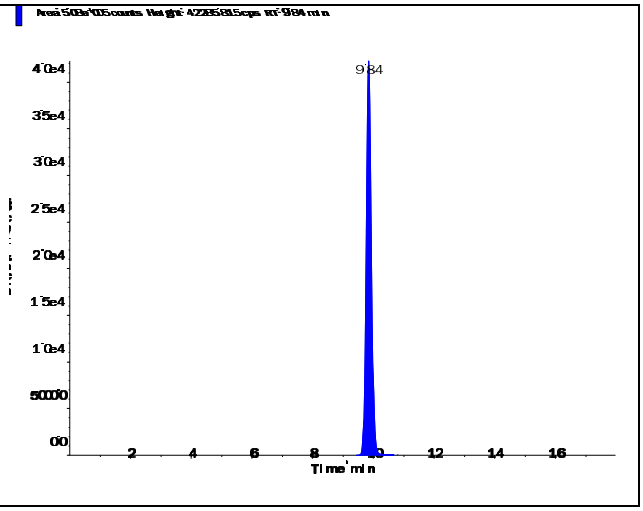

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

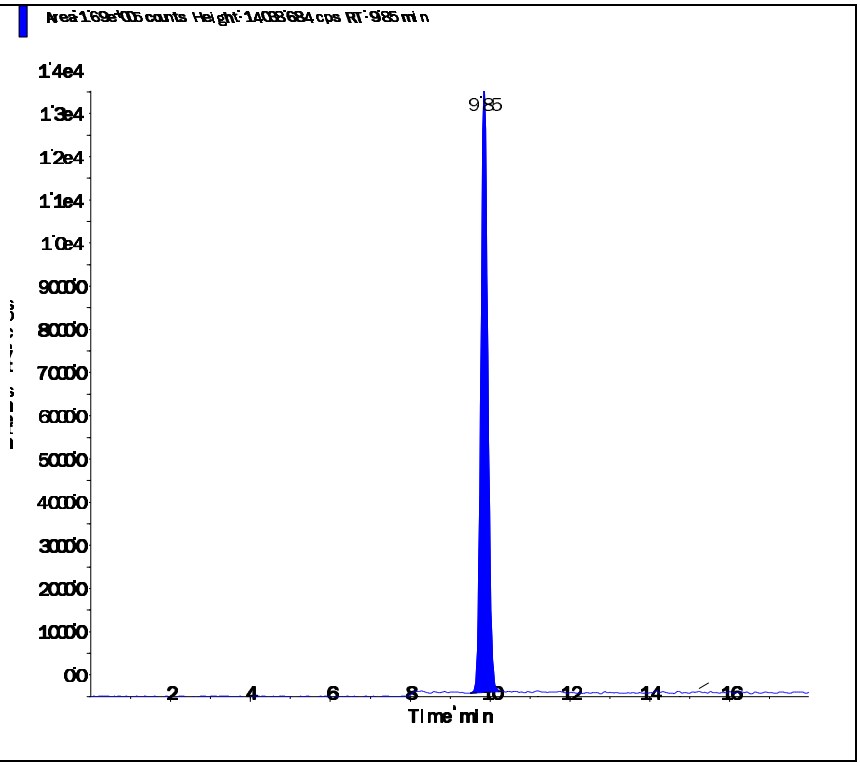

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

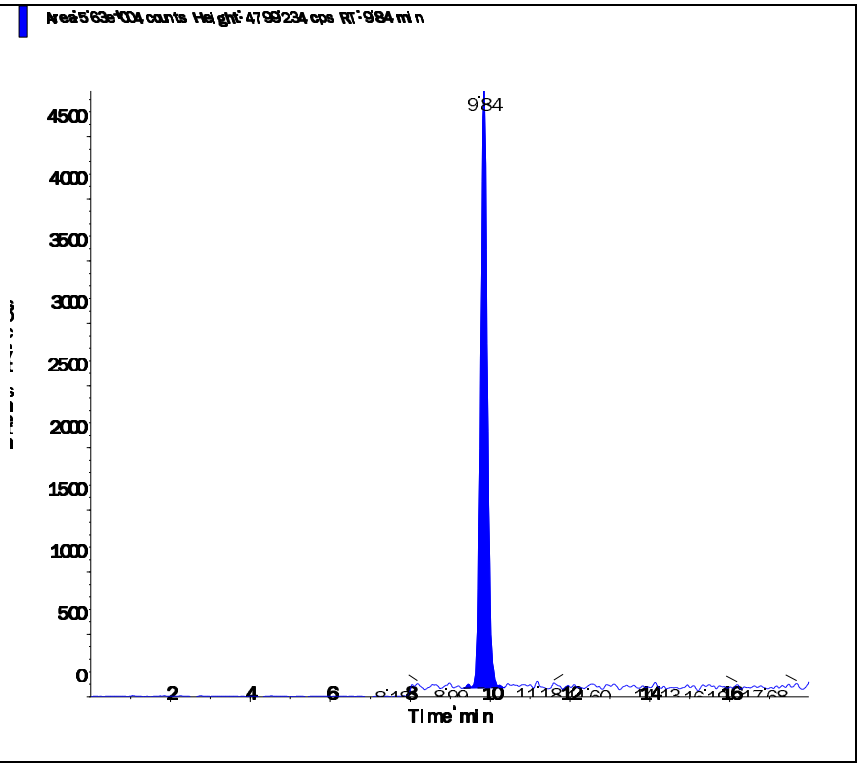

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:30 PM

Data File	LM35518.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 5:17:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35518.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 5:17:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.700e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+05	9.40	1.00	1.02
Perchlorate conf	5.740e+04	9.39	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

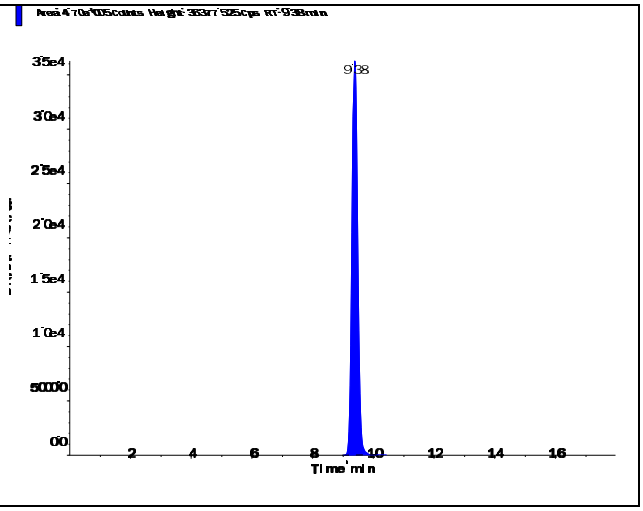

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

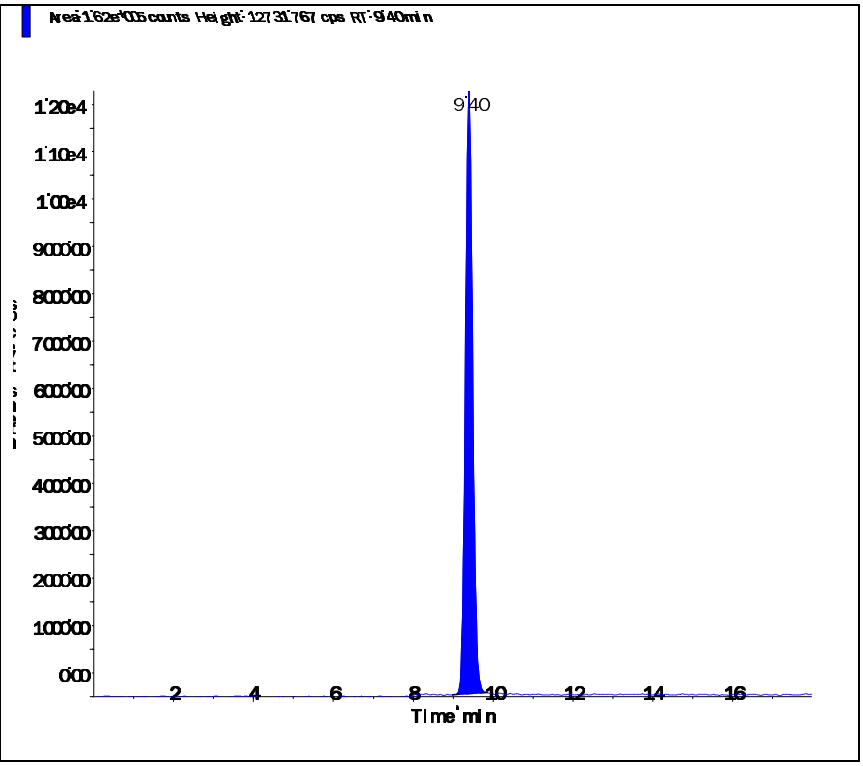

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.122
Sample Type:	(Quality Control)

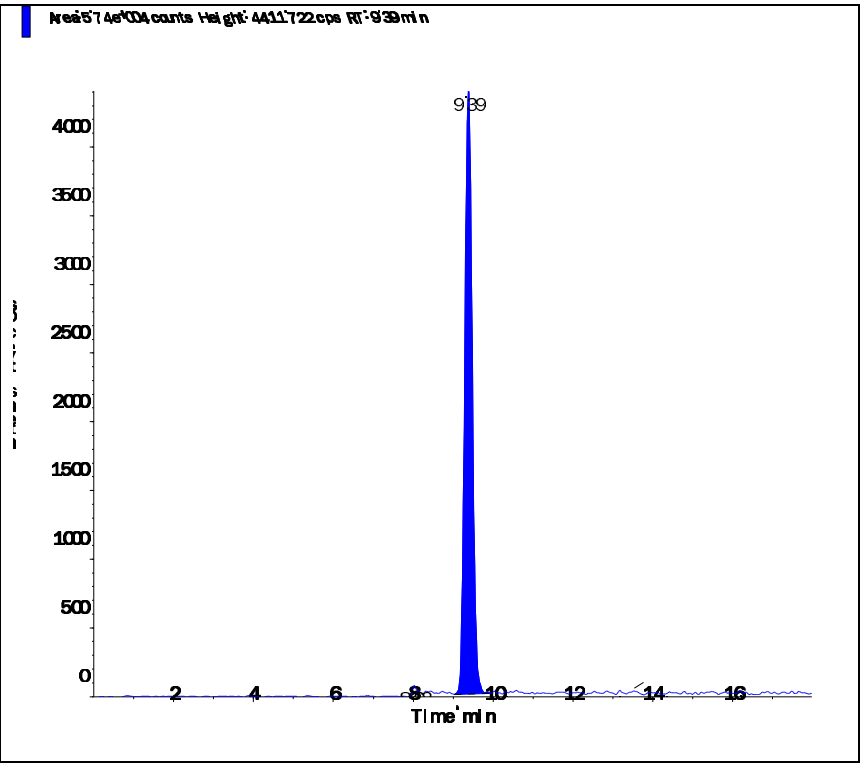

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:33 PM

Data File	LM35530.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 9:04:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35530.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 9:04:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.39	1.00	0.996
Perchlorate conf	5.940e+04	9.38	1.00	0.994

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

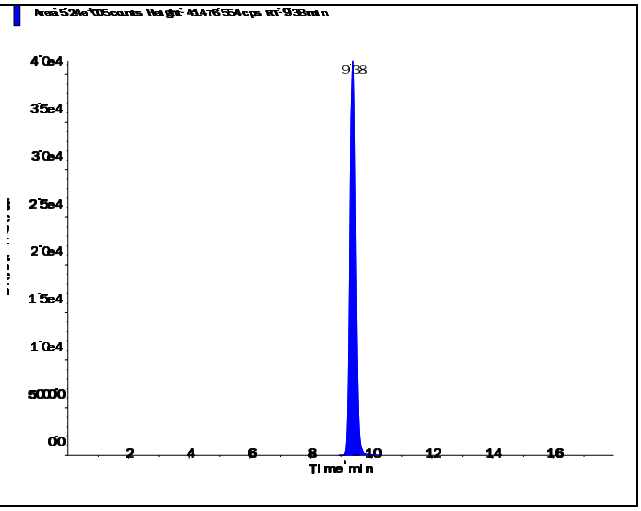

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.996 ng/ml
Area Ratio:	0.336
Sample Type:	(Quality Control)

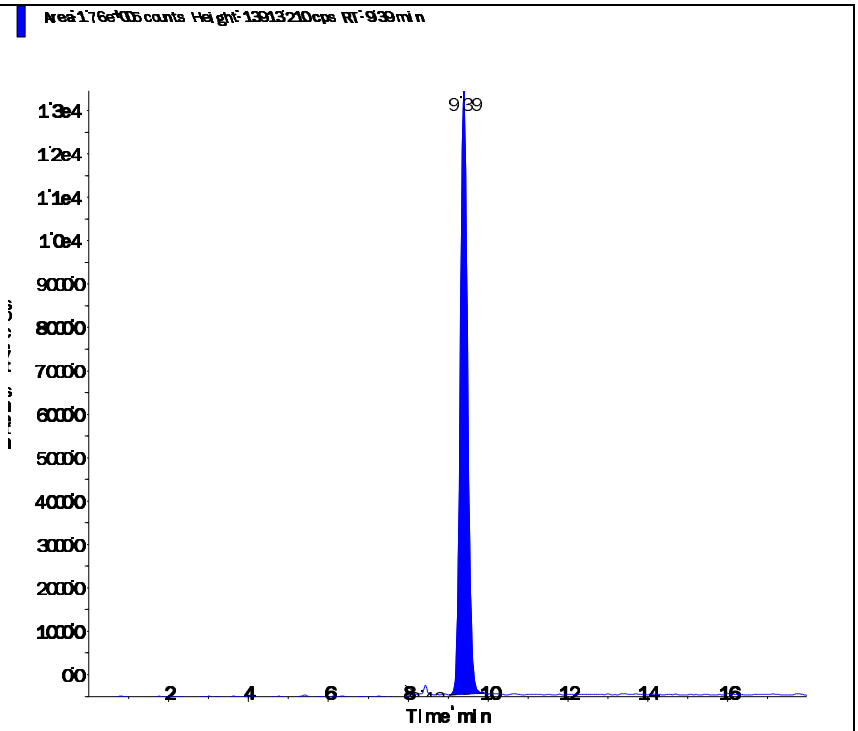

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.994 ng/ml
Area Ratio:	0.113
Sample Type:	(Quality Control)

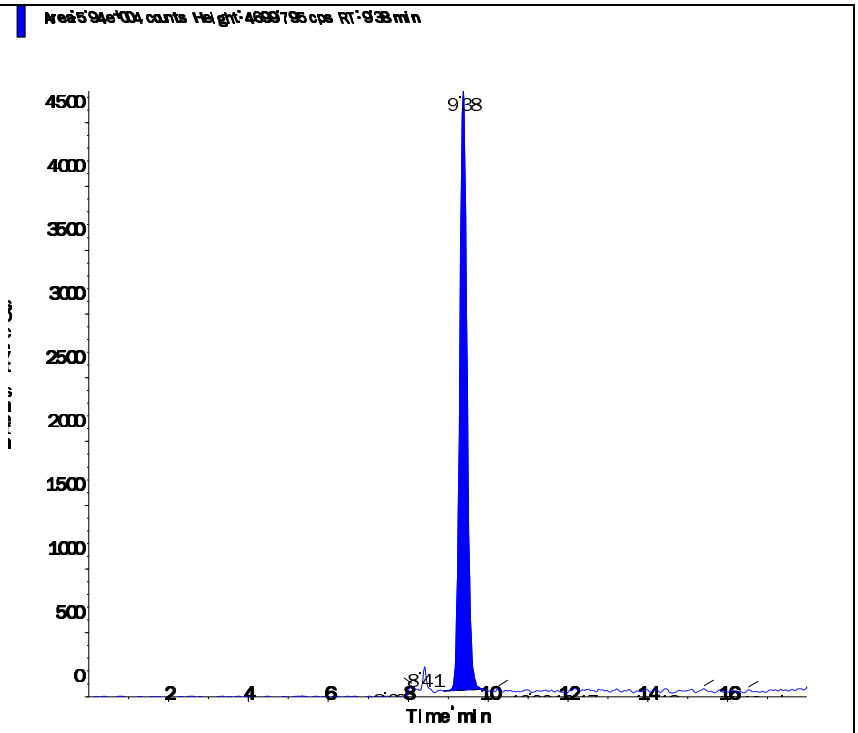

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:37 PM

Data File	LM35543.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:11:03 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35543.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:11:03 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.400e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.870e+05	9.38	1.00	1.03
Perchlorate conf	6.580e+04	9.37	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

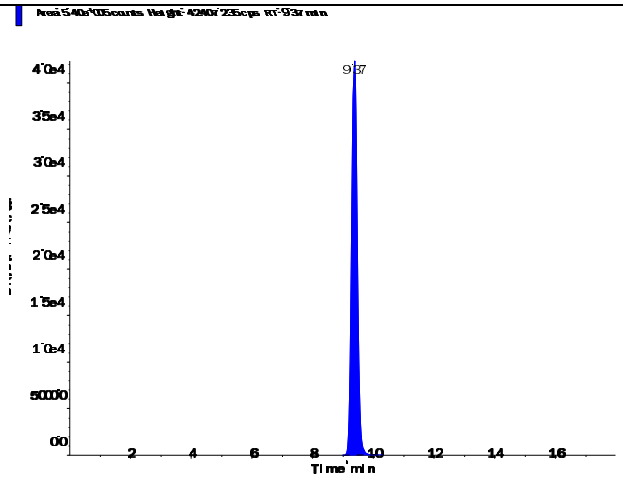

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:37 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.347
Sample Type:	(Quality Control)

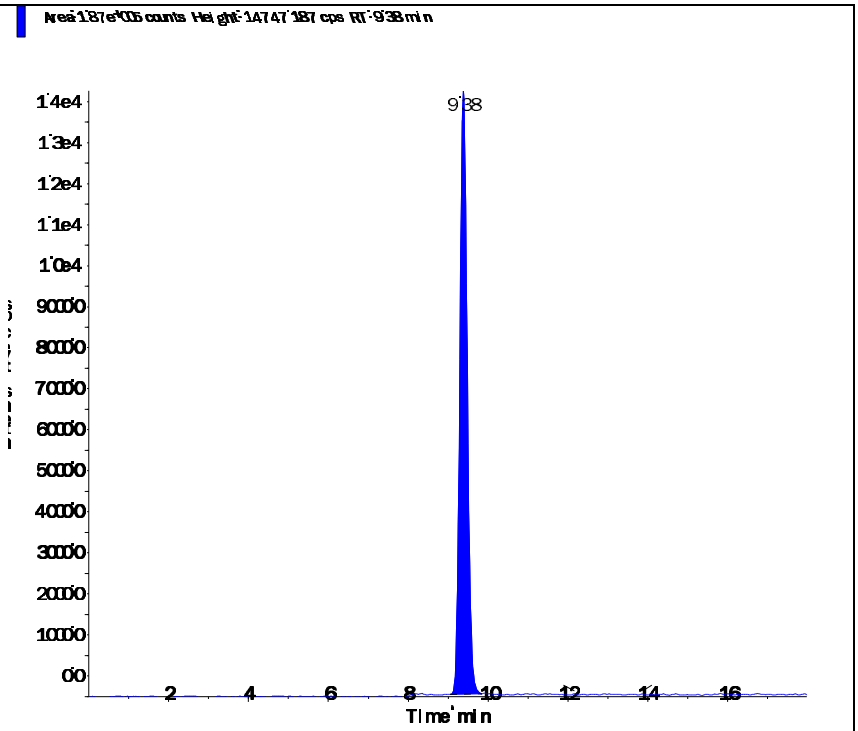

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.122
Sample Type:	(Quality Control)

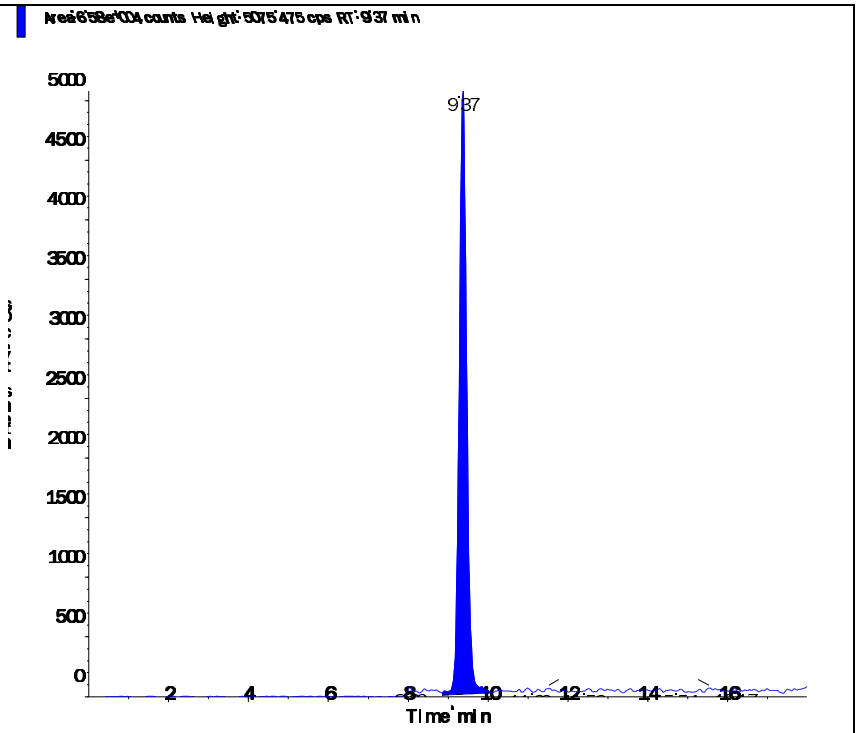

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:39 PM

Data File	LM35549.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 3:04:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35549.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 3:04:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.430e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.880e+05	9.38	1.00	1.03
Perchlorate conf	6.550e+04	9.37	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

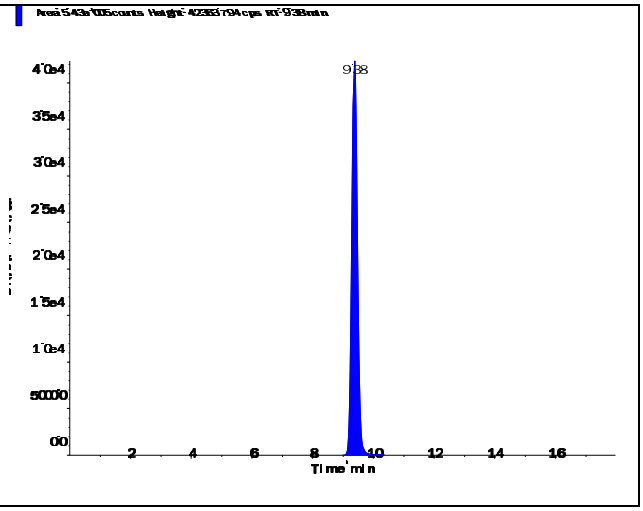

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:39 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

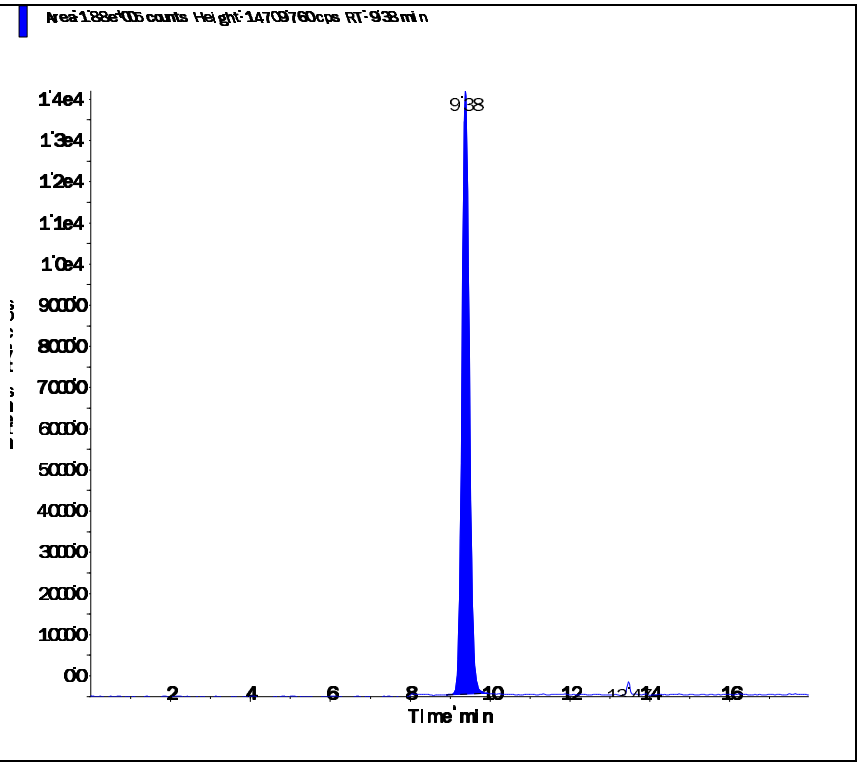

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

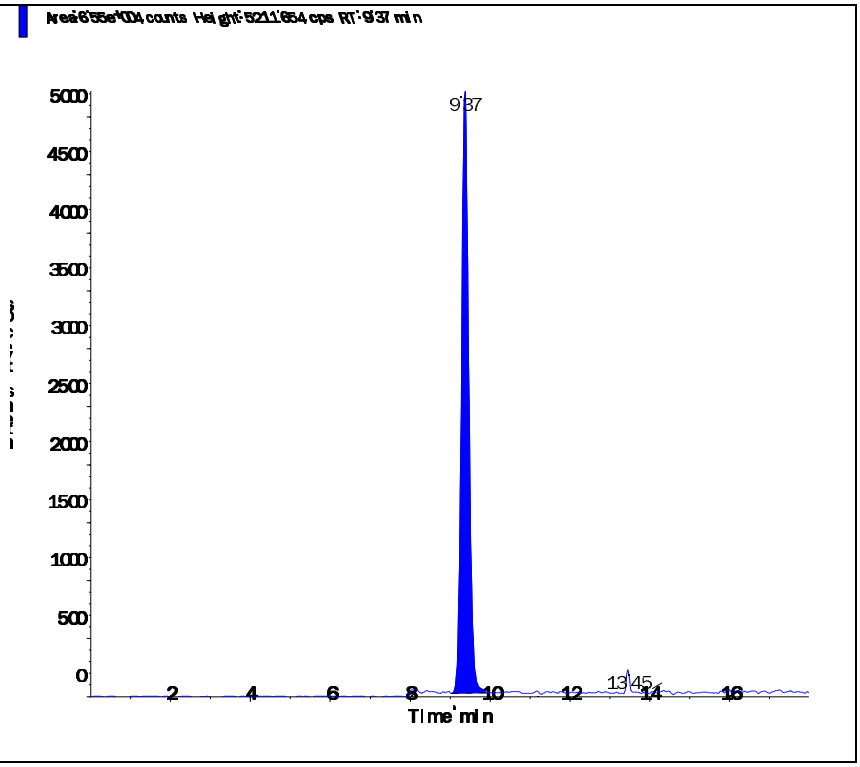

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:40 PM

Data File	LM35552.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 12:56:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35552.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 12:56:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+05	9.40	1.00	1.02
Perchlorate conf	5.570e+04	9.38	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

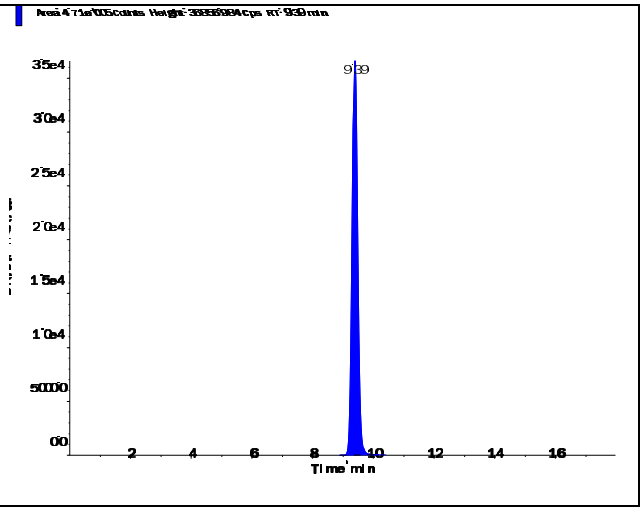

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.40 (9.84) min Calculated conc: 1.02 ng/ml Area Ratio: 0.344 Sample Type: (Quality Control)	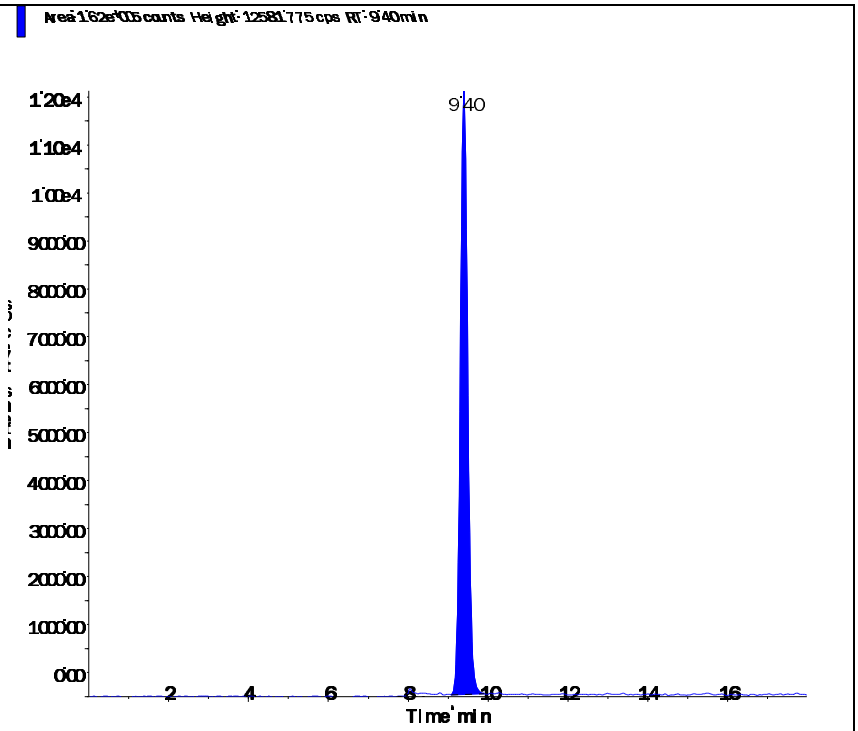
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.38 (9.84) min Calculated conc: 1.04 ng/ml Area Ratio: 0.118 Sample Type: (Quality Control)	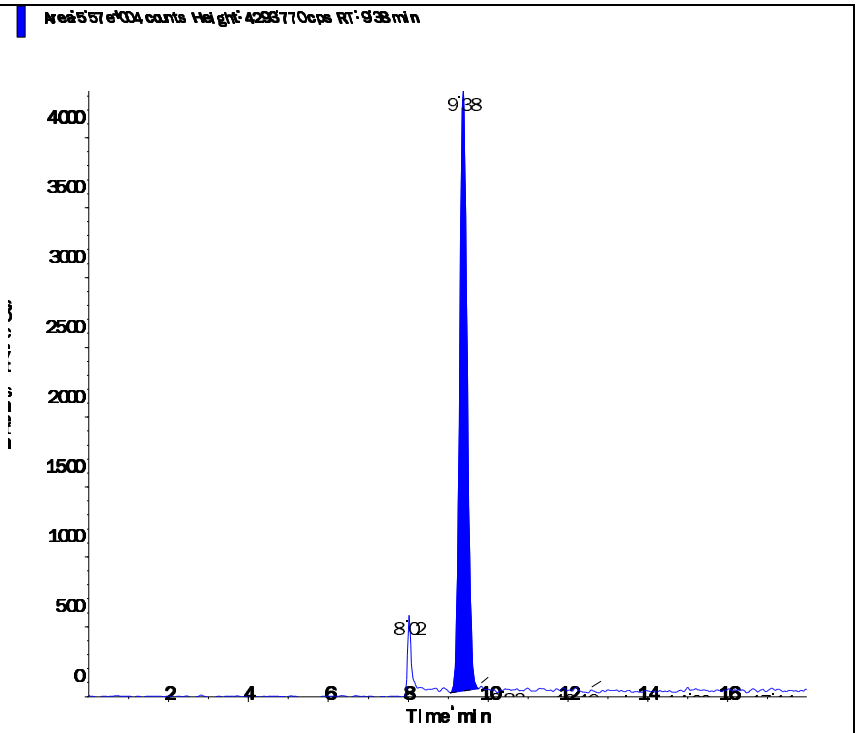

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:41 PM

Data File	LM35556.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 2:12:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35556.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 2:12:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.40	1.00	1.03
Perchlorate conf	6.080e+04	9.39	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

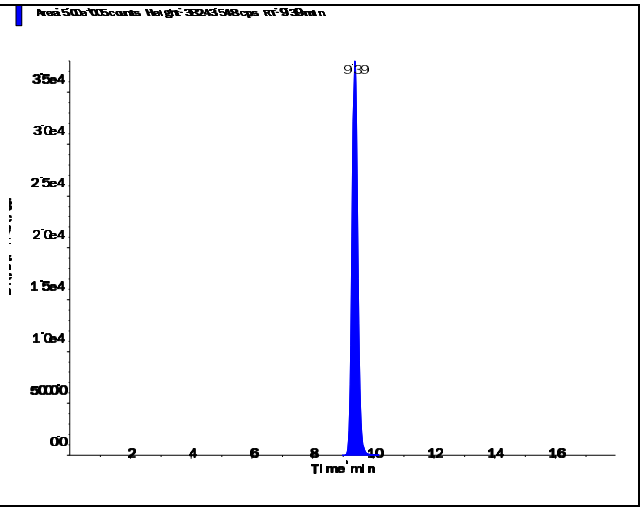

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:41 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

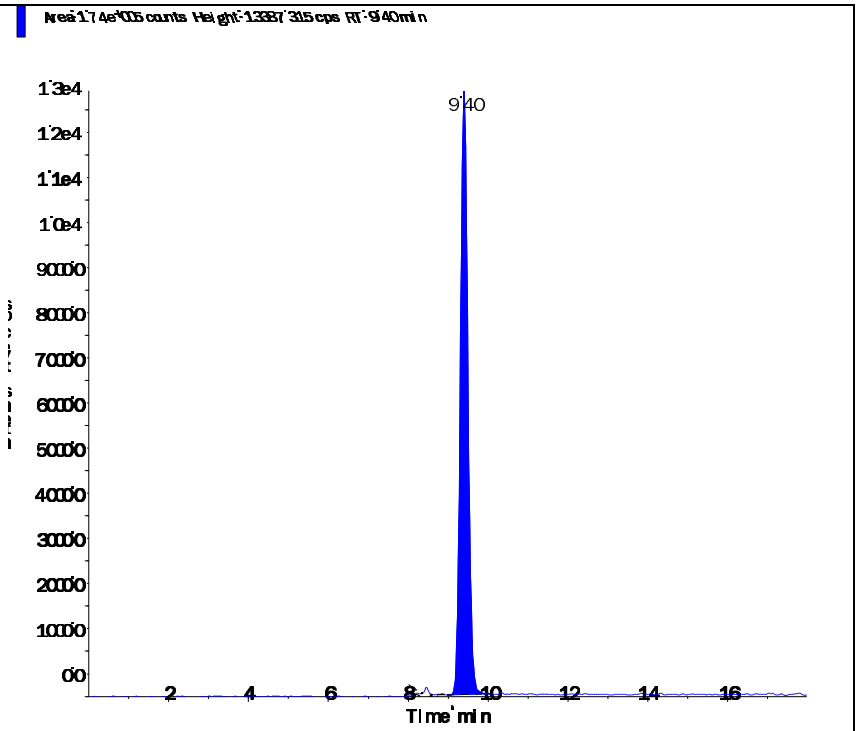

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

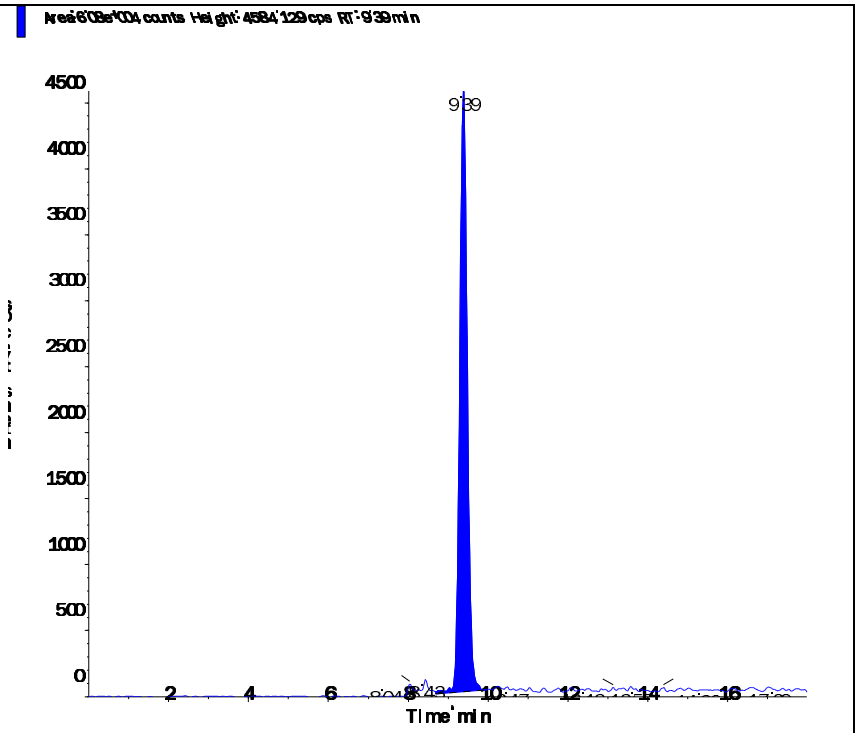

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:30 PM

Data File	LM35519.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 5:36:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-13 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35519.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 5:36:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.700e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.270e+04	9.44	N/A	0.203
Perchlorate conf	1.220e+04	9.43	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

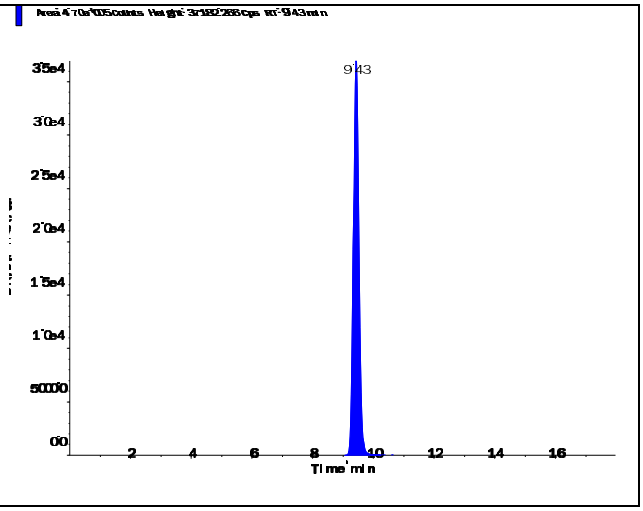

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

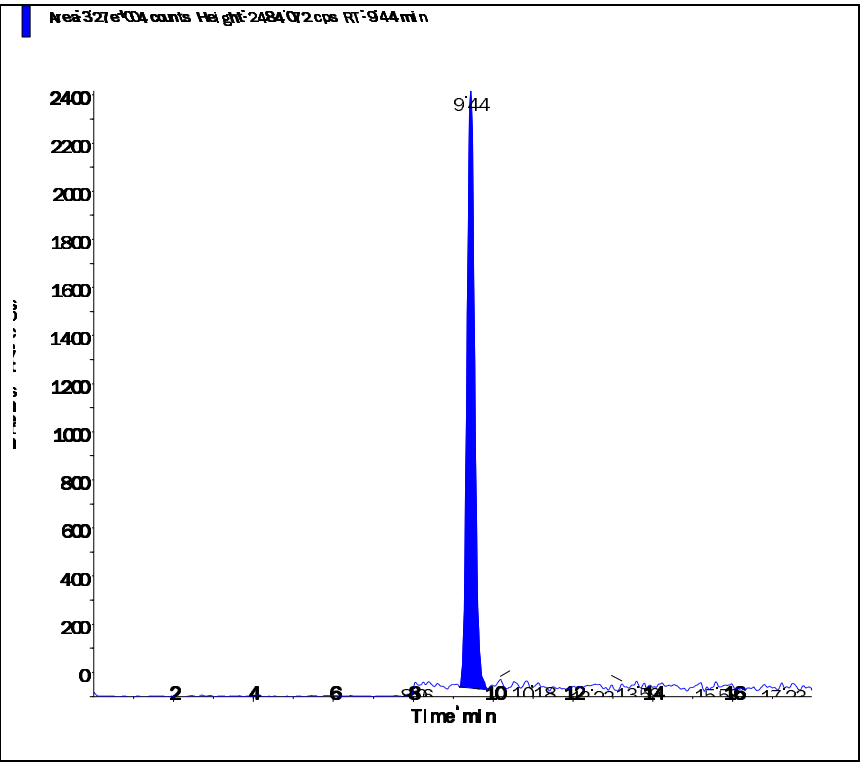

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

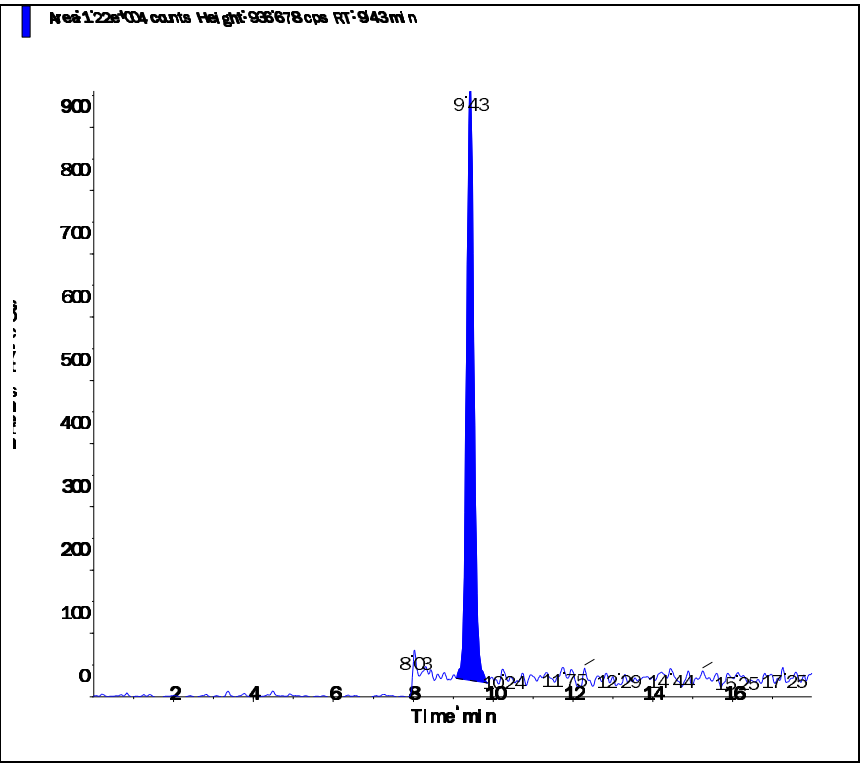

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:34 PM

Data File	LM35531.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 9:23:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-14 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35531.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 9:23:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-14	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.220e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.730e+04	9.43	N/A	0.209
Perchlorate conf	1.290e+04	9.43	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.42(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

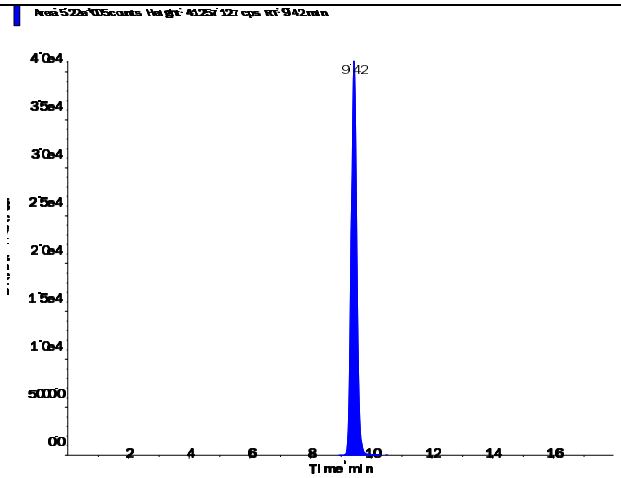

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

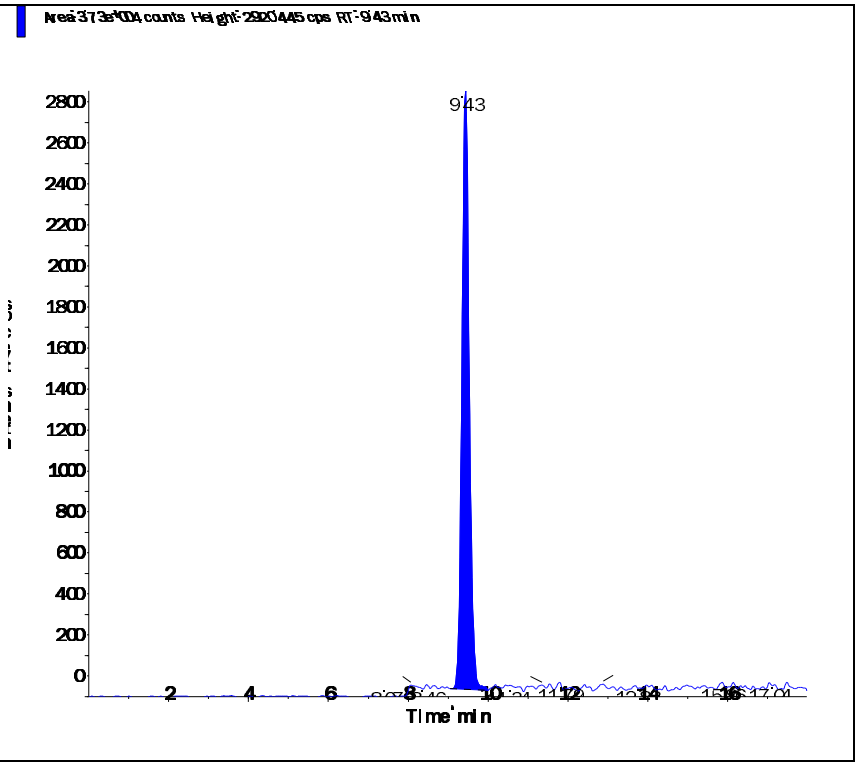

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

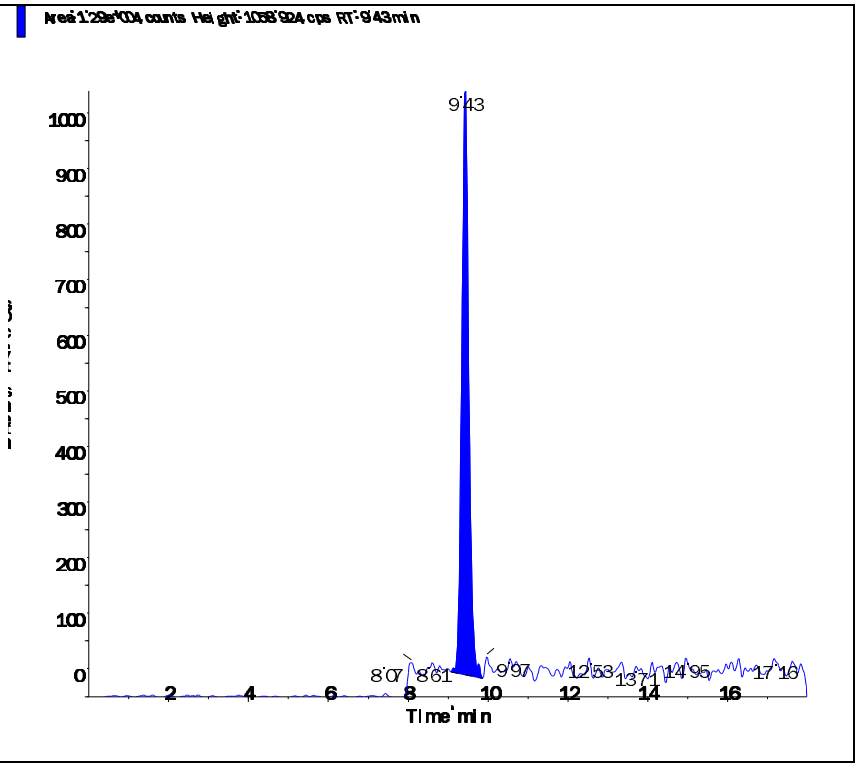

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:37 PM

Data File	LM35544.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:29:59 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-15 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35544.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:29:59 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-15	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.540e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.820e+04	9.43	N/A	0.201
Perchlorate conf	1.320e+04	9.42	N/A	0.193

O18LP (Internal Standard)

RT (Exp. RT): 9.42(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

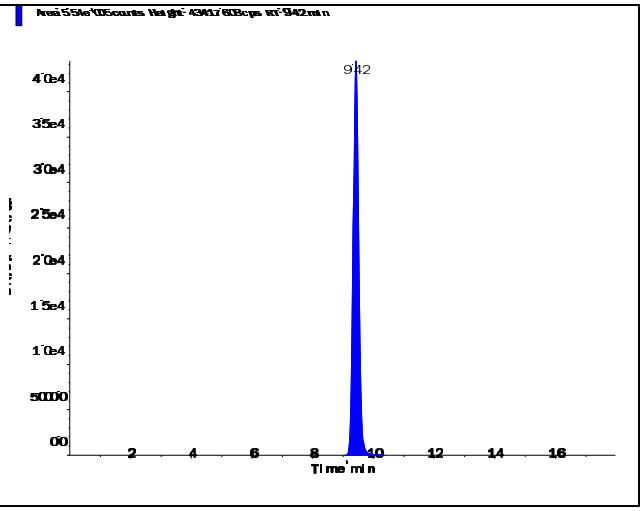

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:37 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

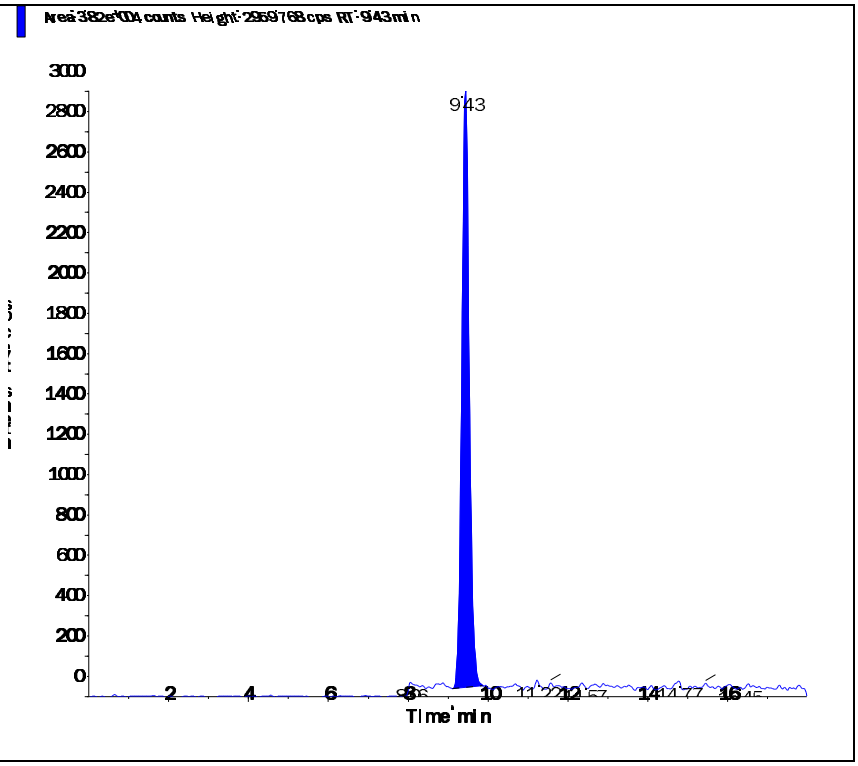

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

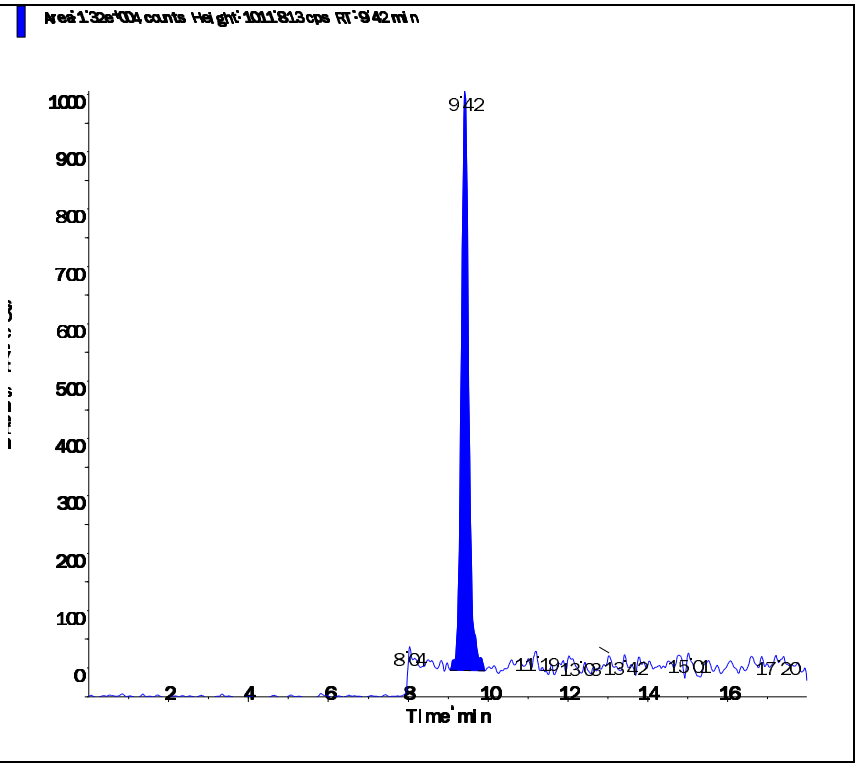

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:39 PM

Data File	LM35550.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 3:23:36 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-16 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35550.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 3:23:36 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-16	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.460e+05	9.41	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.890e+04	9.41	N/A	0.208
Perchlorate conf	1.390e+04	9.41	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.41(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

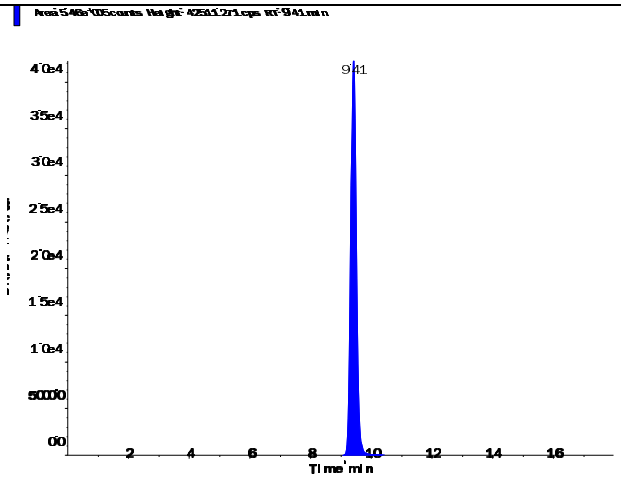

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:39 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.41 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

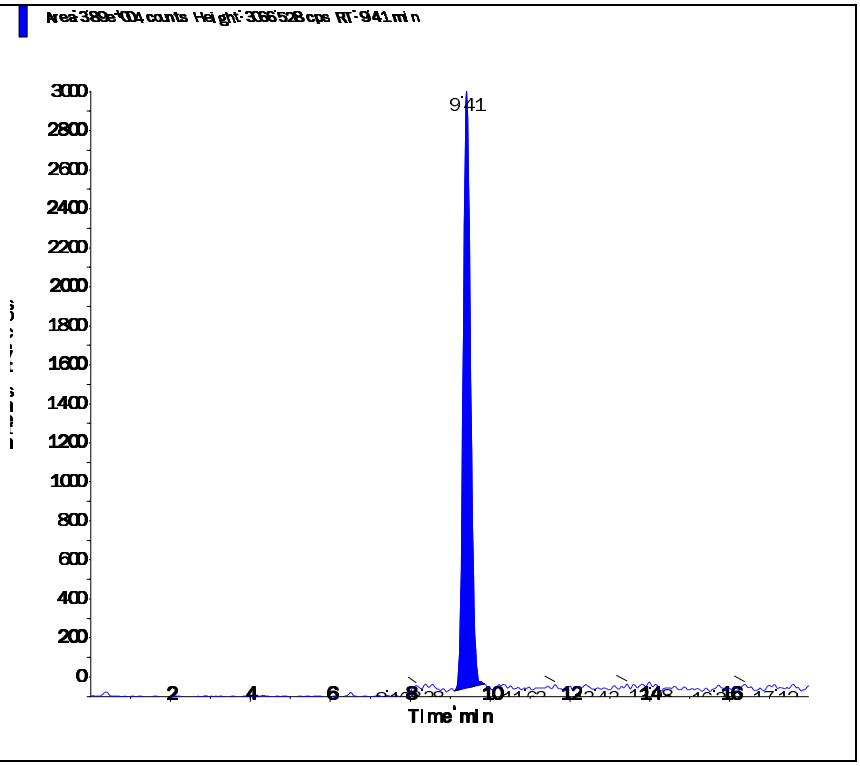

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.41 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

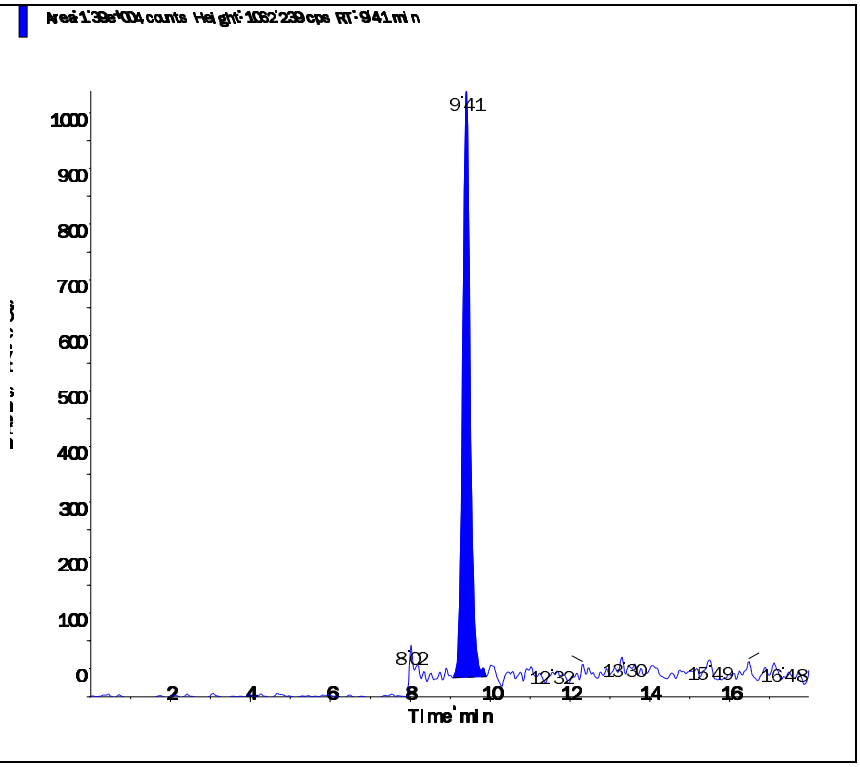

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:40 PM

Data File	LM35553.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:15:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-17 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35553.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:15:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-17	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.670e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.260e+04	9.45	N/A	0.204
Perchlorate conf	1.130e+04	9.44	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

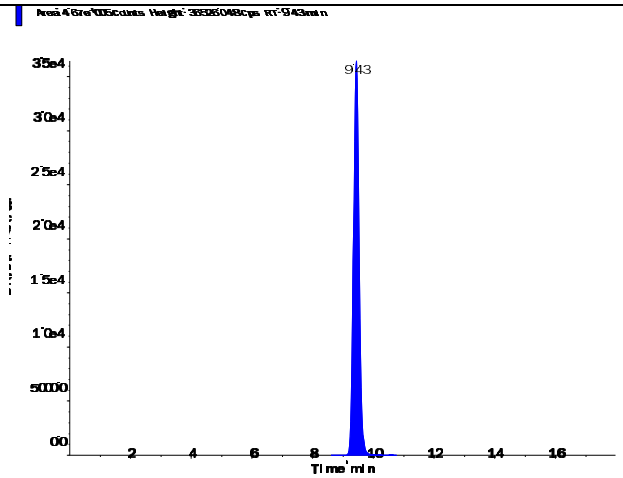

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

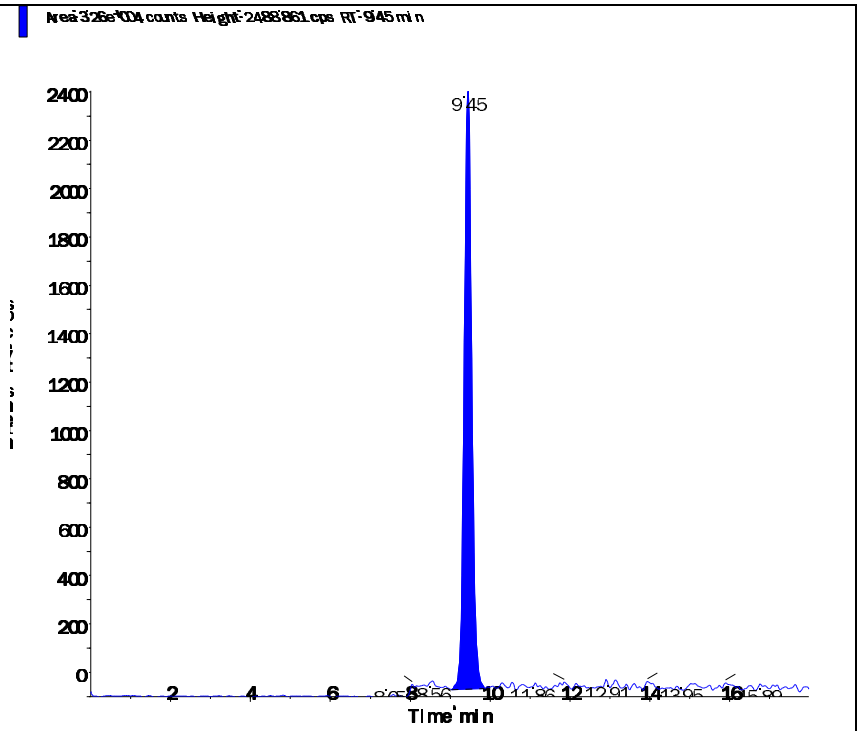

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

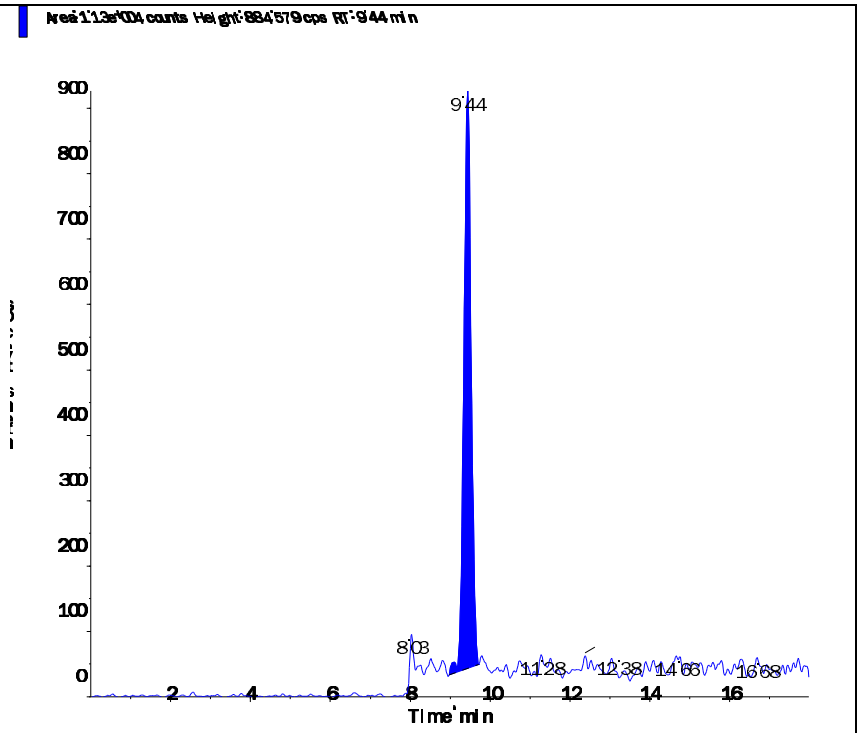

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:42 PM

Data File	LM35557.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 2:31:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-18 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35557.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 2:31:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-18	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.470e+04	9.44	N/A	0.206
Perchlorate conf	1.260e+04	9.43	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

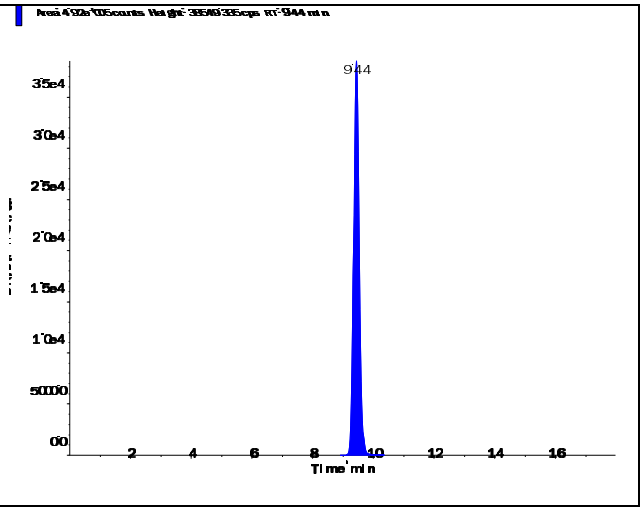

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

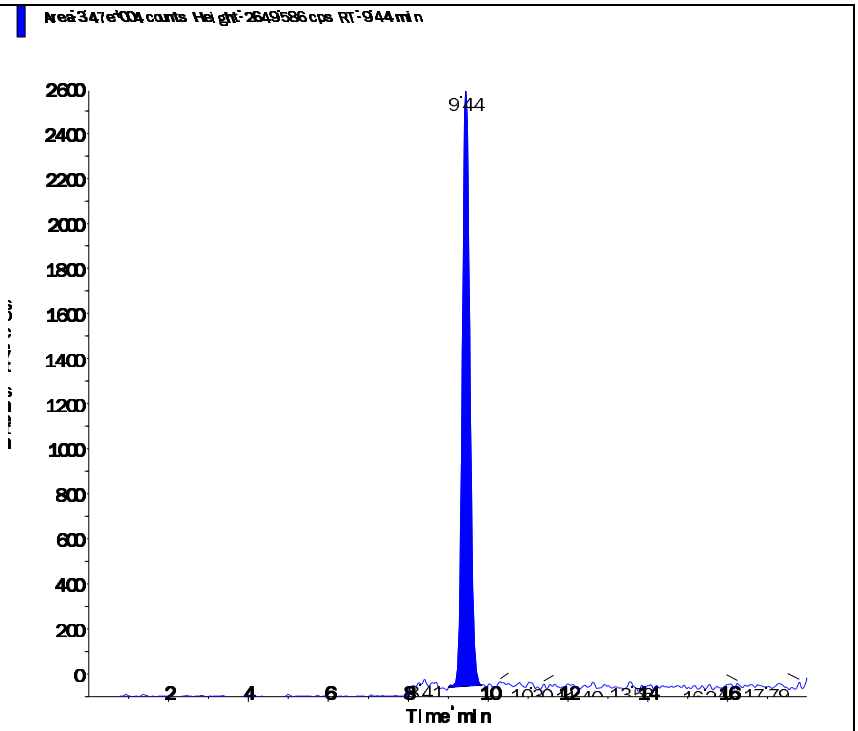

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

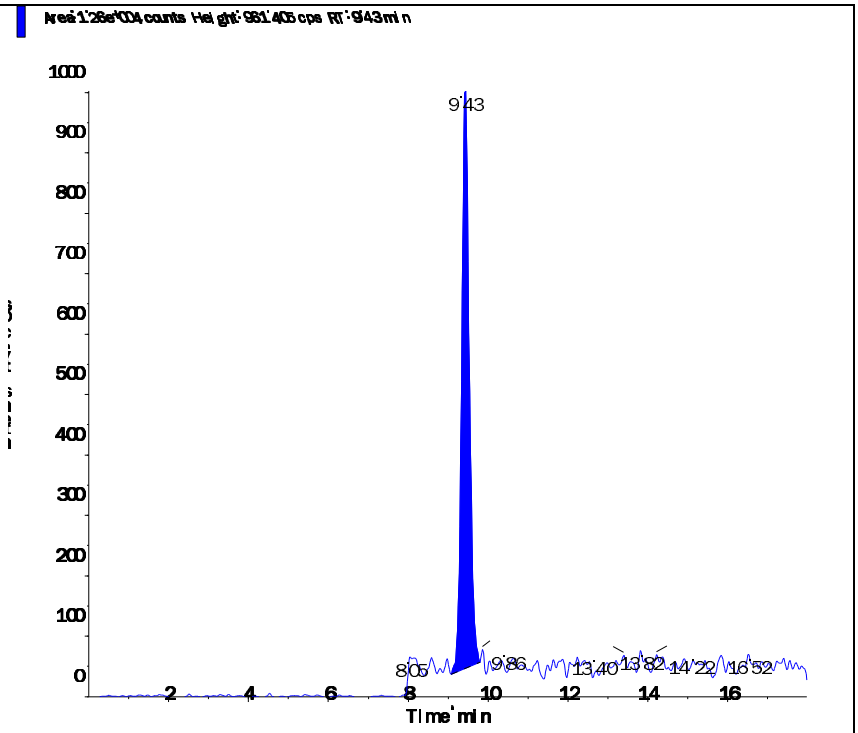

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:29 PM

Data File	LM35517.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 4:58:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-01 CCB	**Injection Vial**	1.00
Data File	LM35517.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 4:58:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

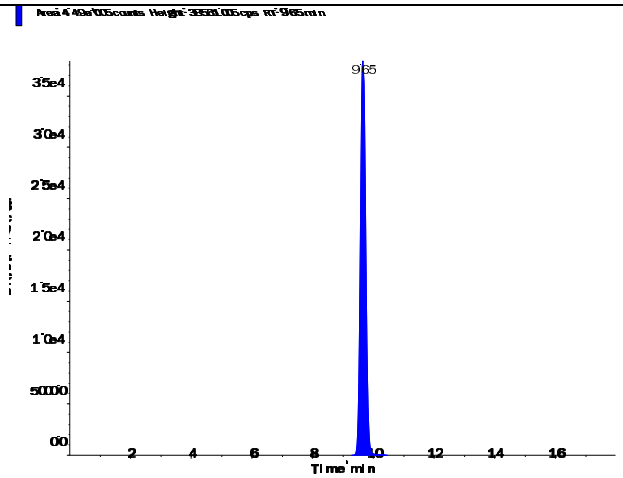

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:29 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

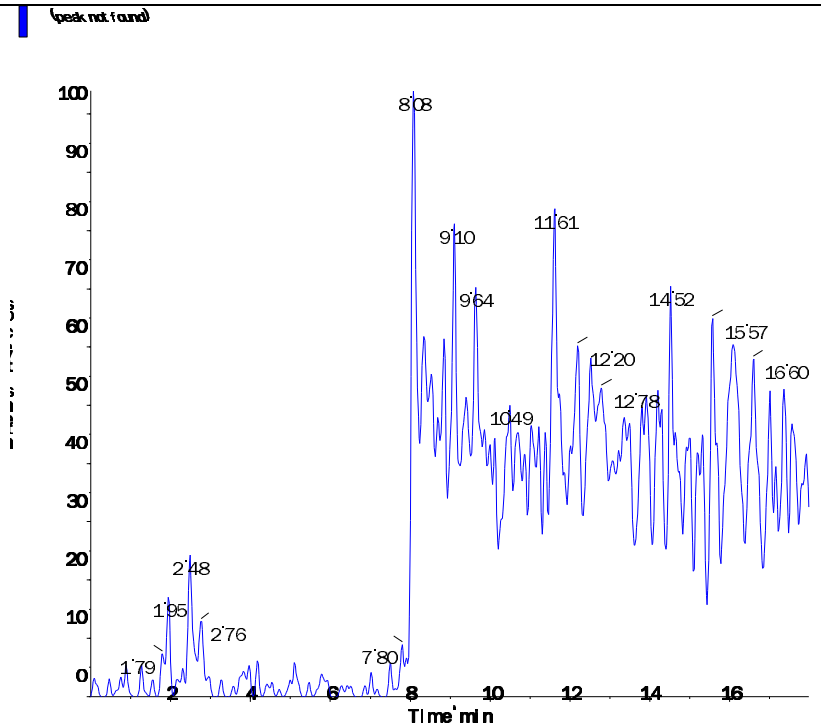

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

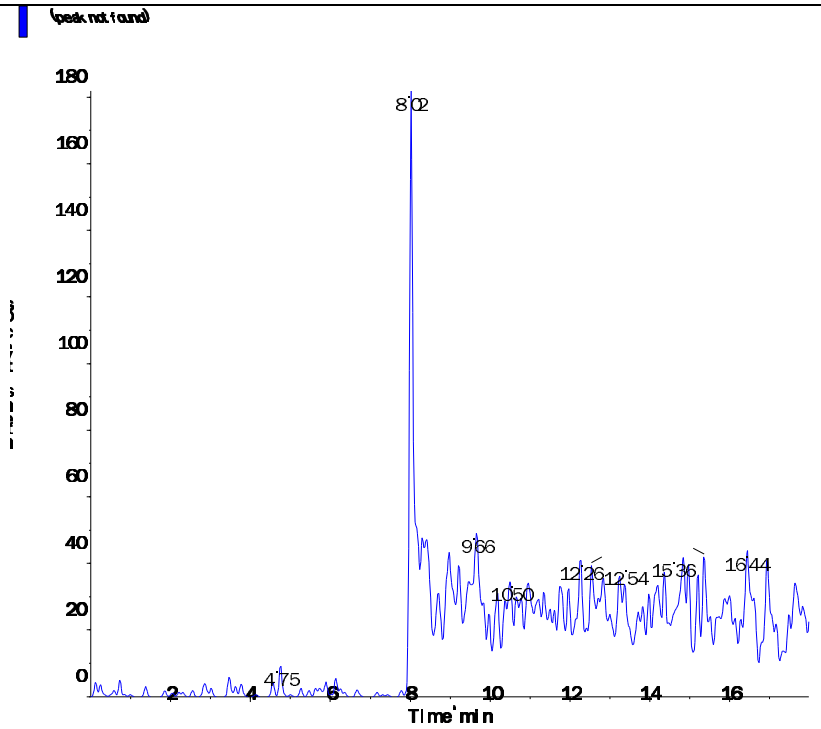

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:34 PM

Data File	LM35532.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 9:42:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-04 CCB	**Injection Vial**	1.00
Data File	LM35532.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 9:42:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

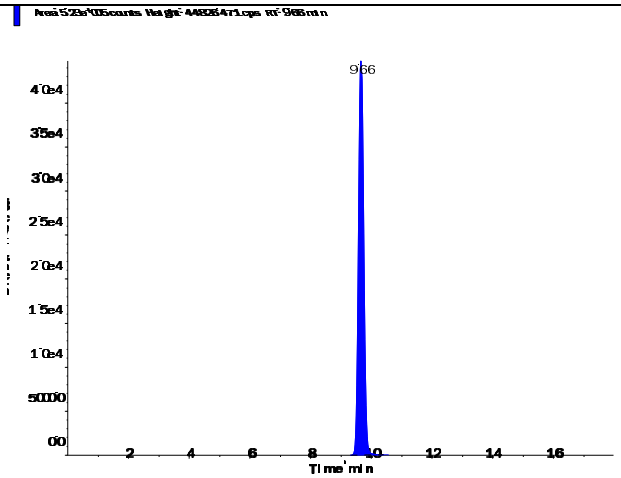

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:34 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

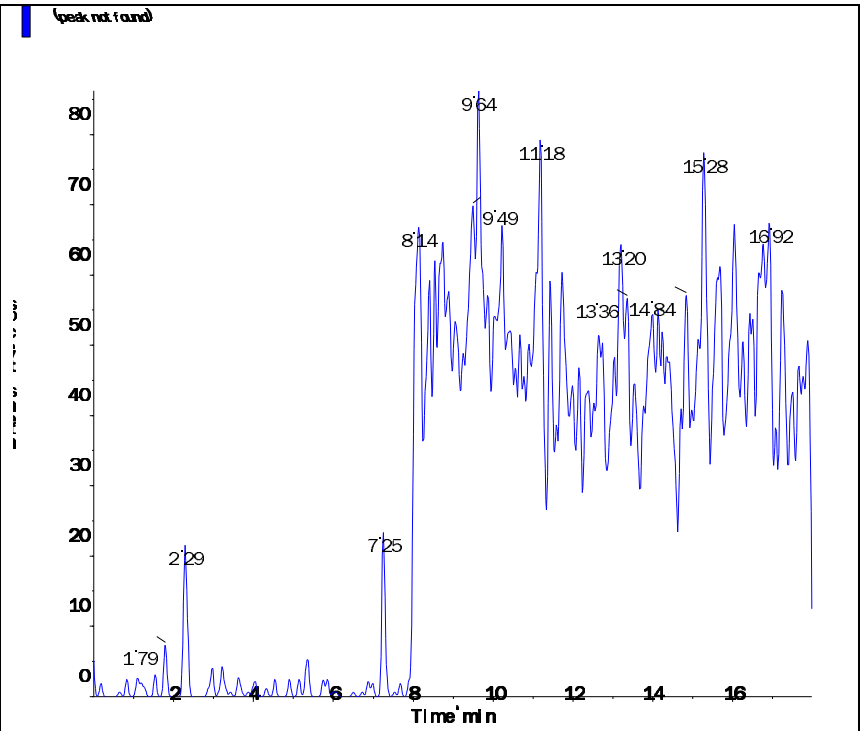

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

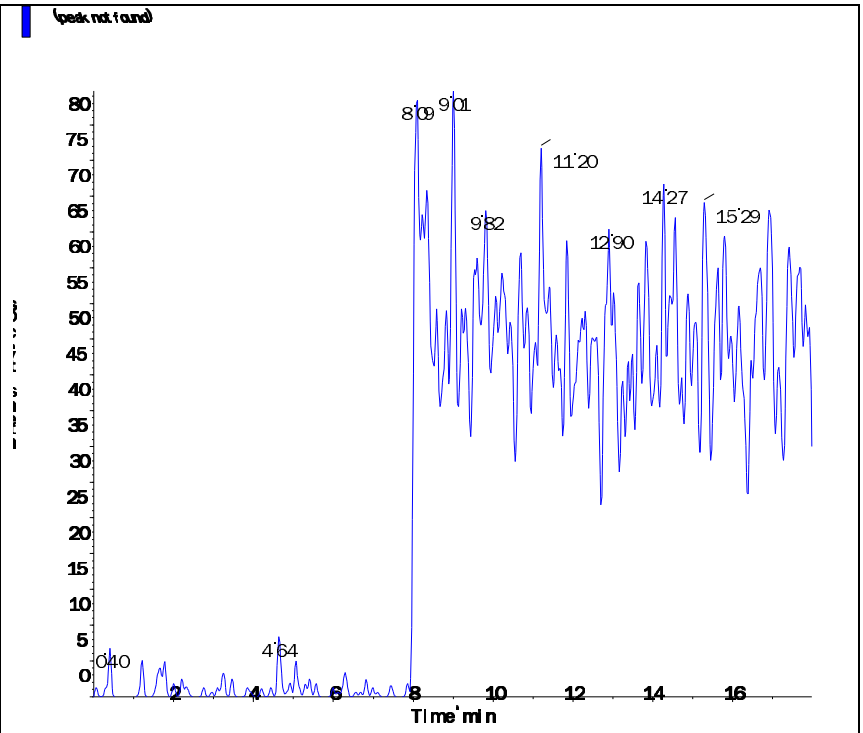

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:38 PM

Data File	LM35545.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:48:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-06 CCB	**Injection Vial**	1.00
Data File	LM35545.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:48:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.640e+02	9.60	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

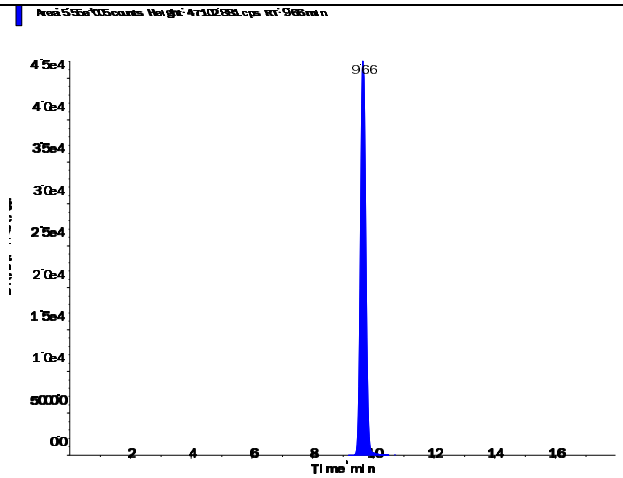

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:38 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

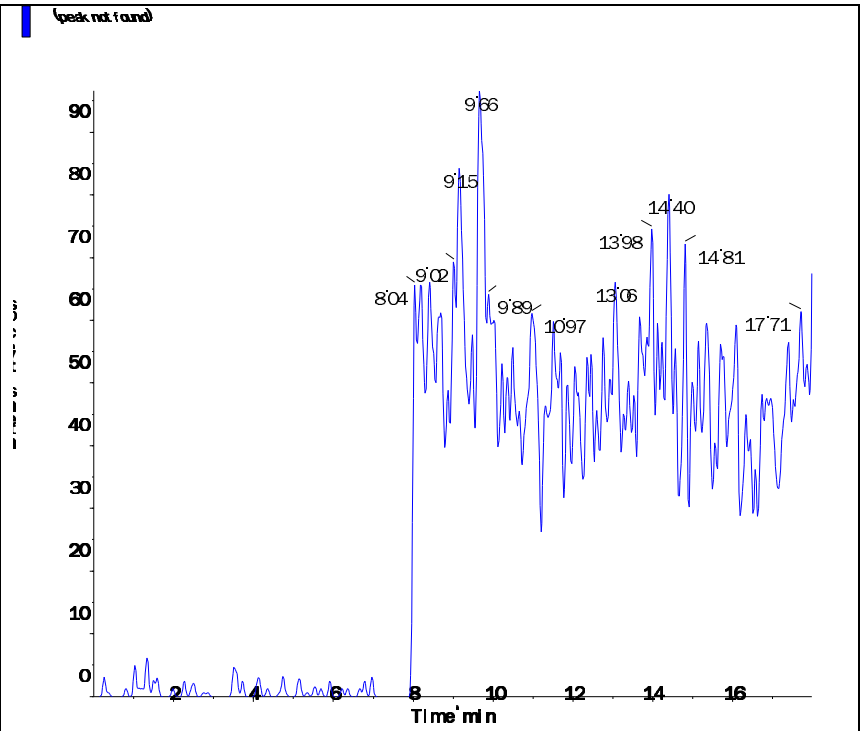

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

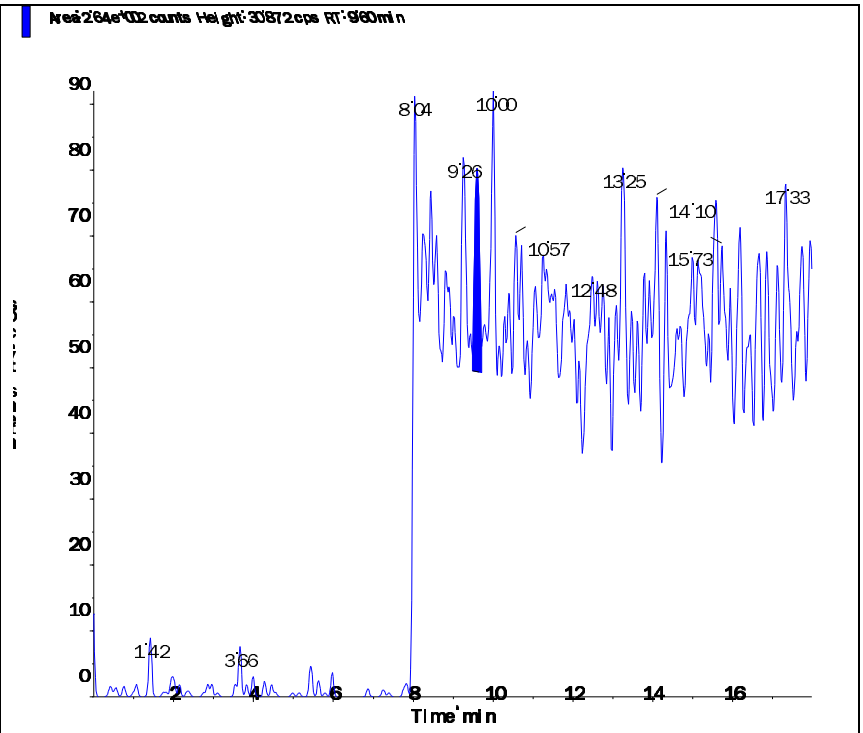

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:40 PM

Data File	LM35551.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 3:42:32 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-08 CCB	**Injection Vial**	1.00
Data File	LM35551.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 3:42:32 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.530e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

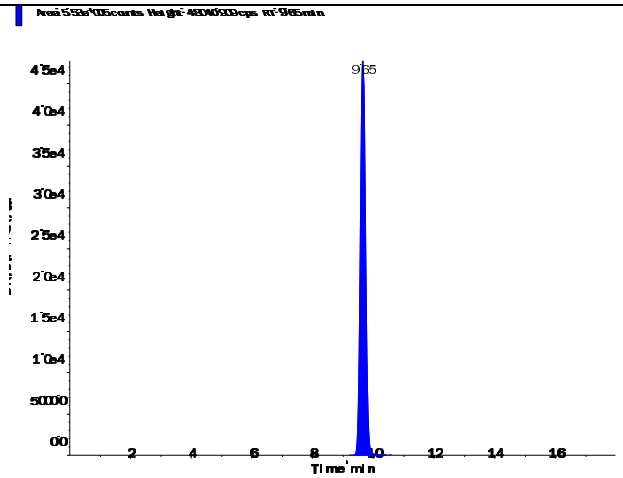

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

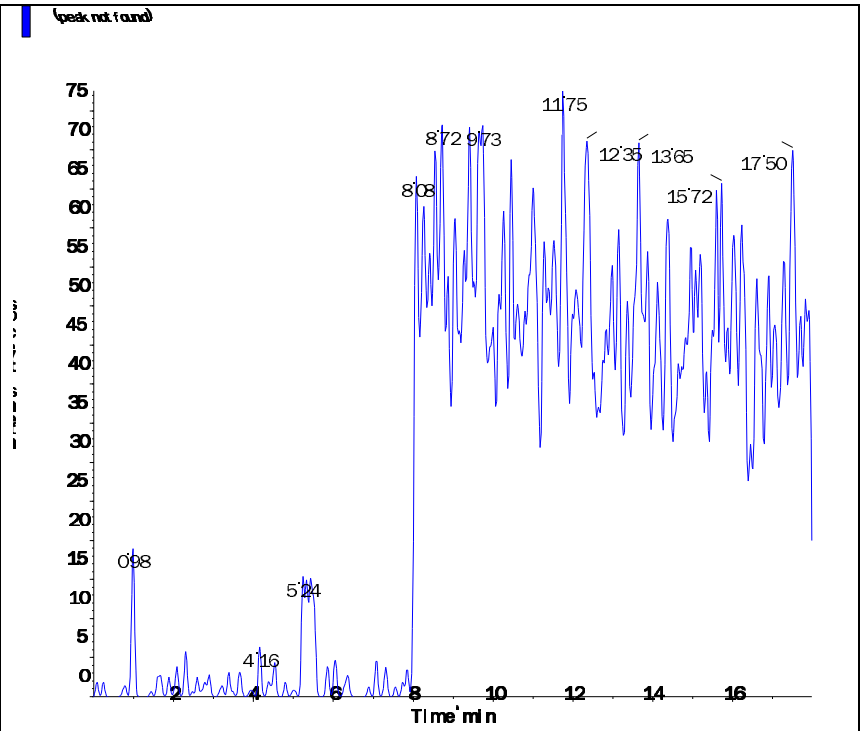

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

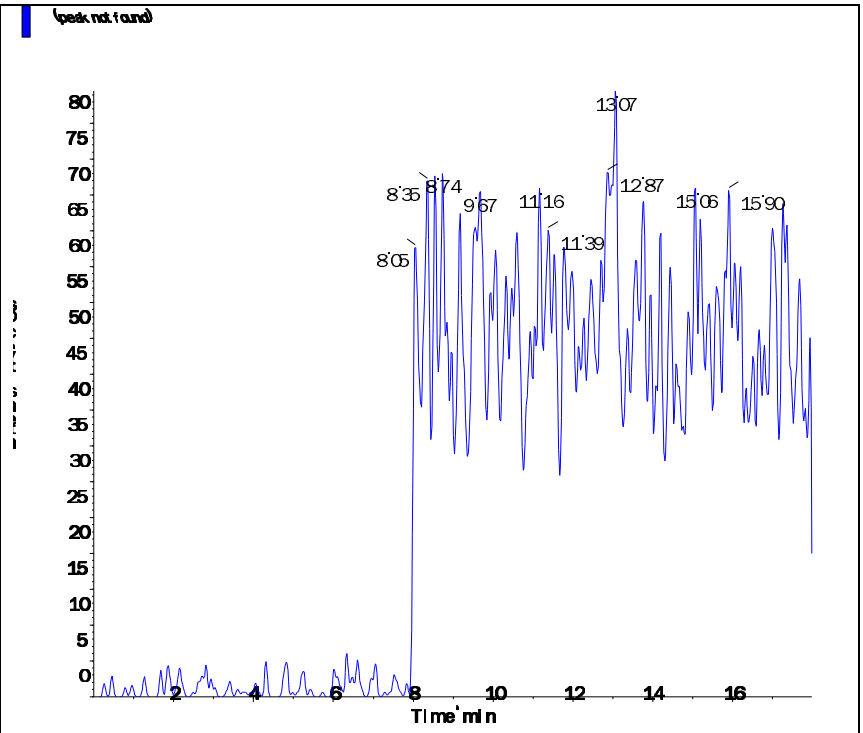

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:40 PM

Data File	LM35554.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:34:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-10 CCB	**Injection Vial**	1.00
Data File	LM35554.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:34:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.450e+02	9.65	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

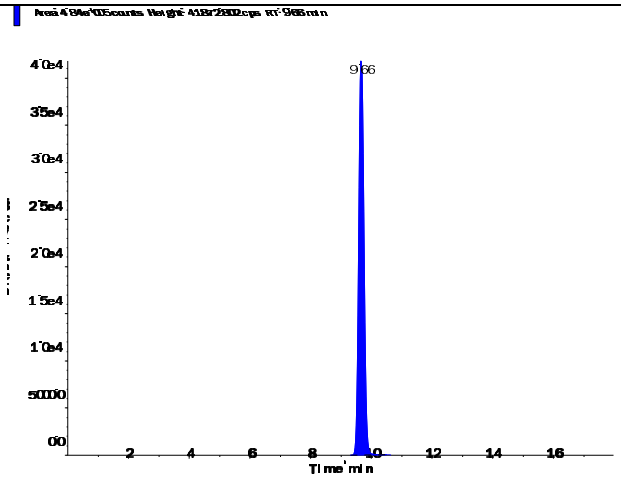

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

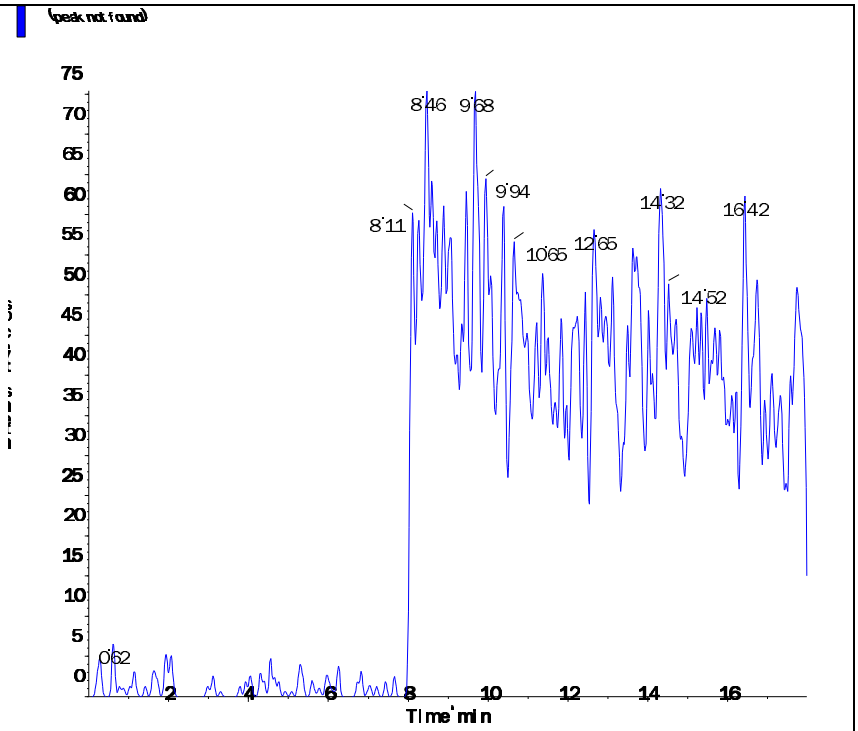

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

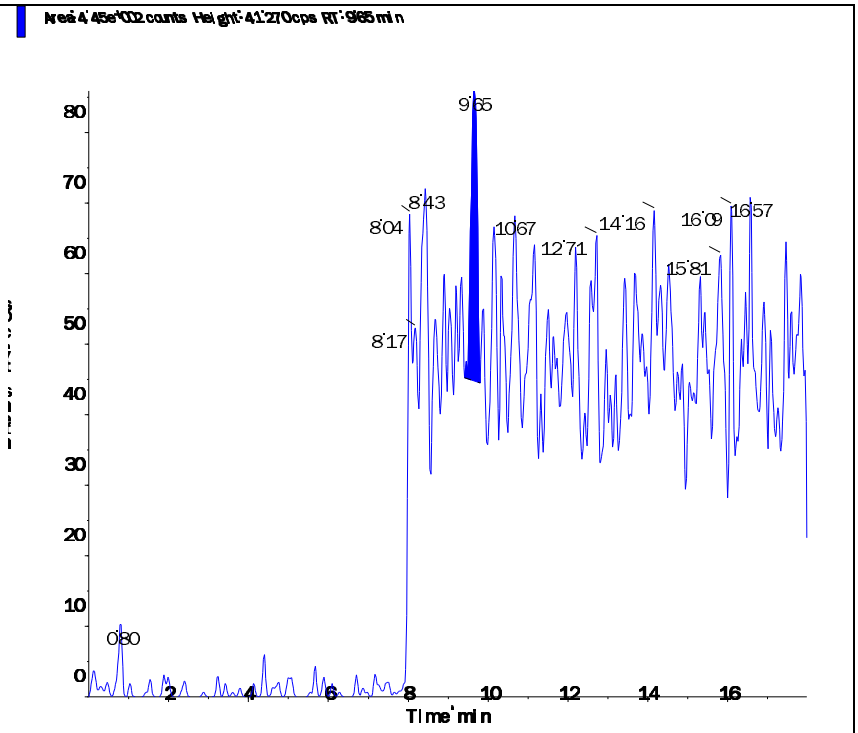

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:42 PM

Data File	LM35558.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 2:50:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-12 CCB	**Injection Vial**	1.00
Data File	LM35558.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 2:50:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

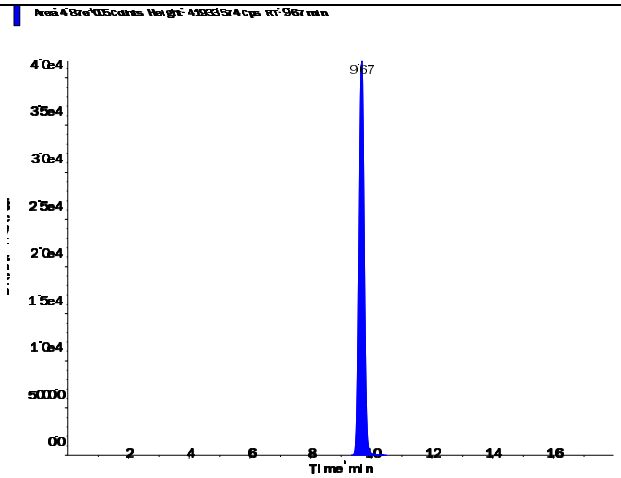

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:42 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

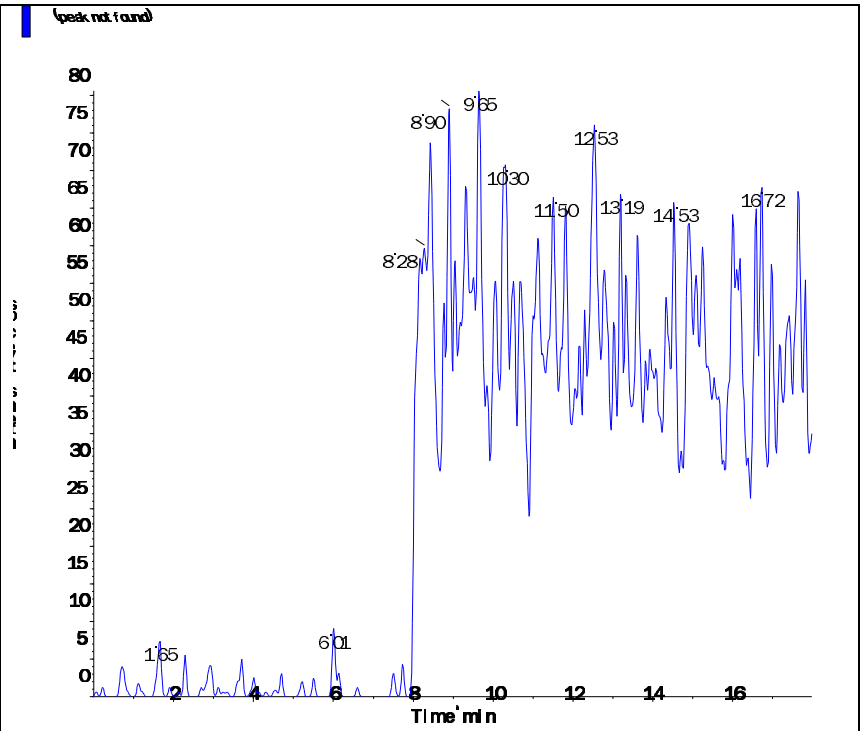

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

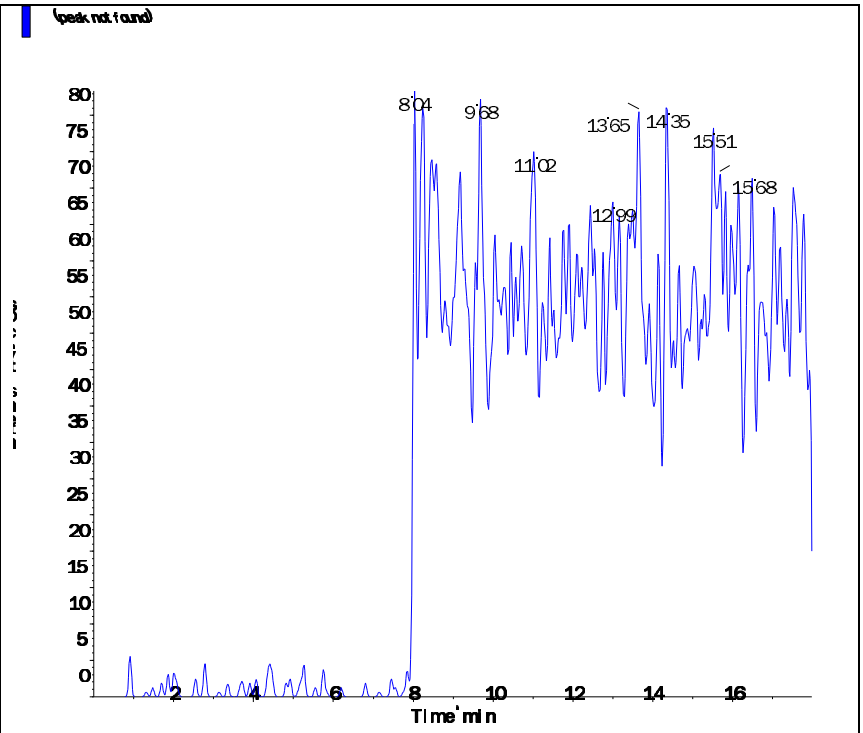

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:30 PM

Data File	LM35520.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 5:55:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35520.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 5:55:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.03	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.010e+04	9.04	N/A	0.197
Perchlorate conf	1.130e+04	9.03	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.03(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

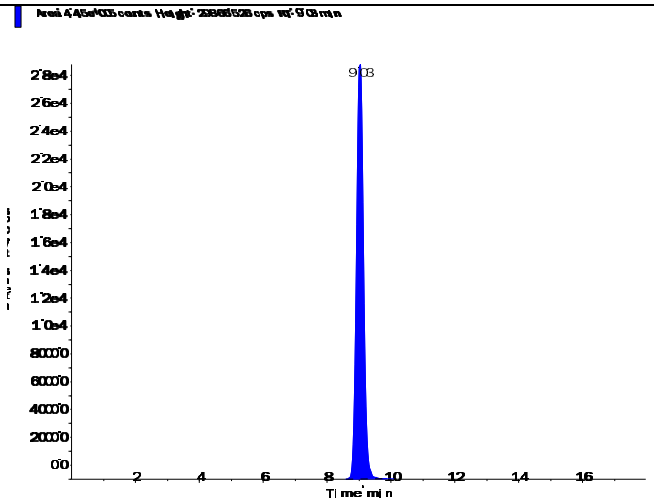

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:30 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.04 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

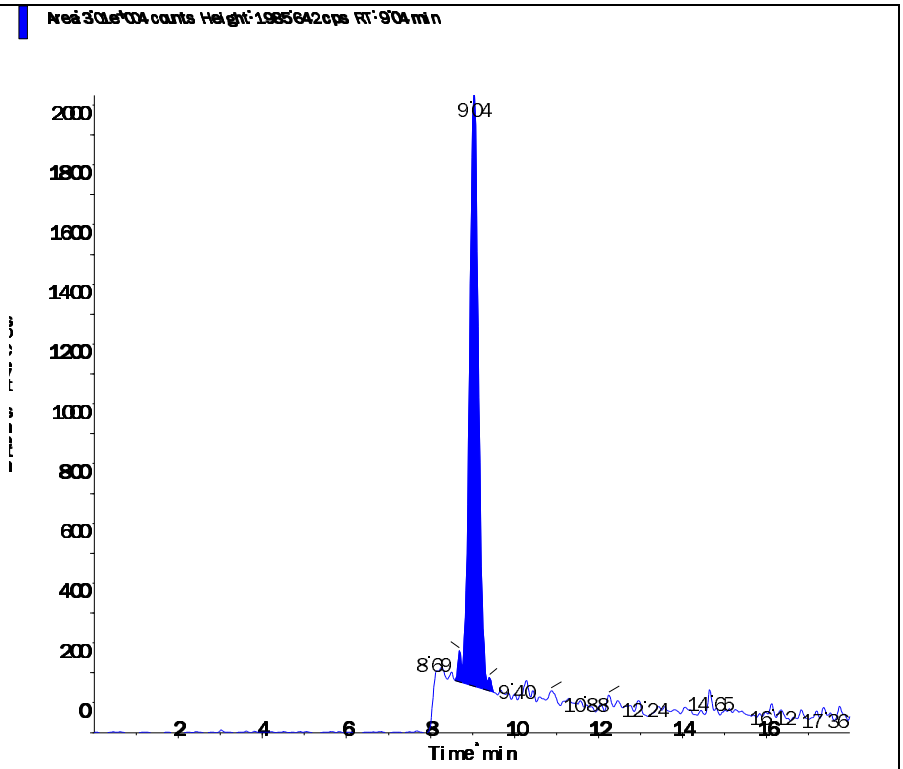

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.03 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

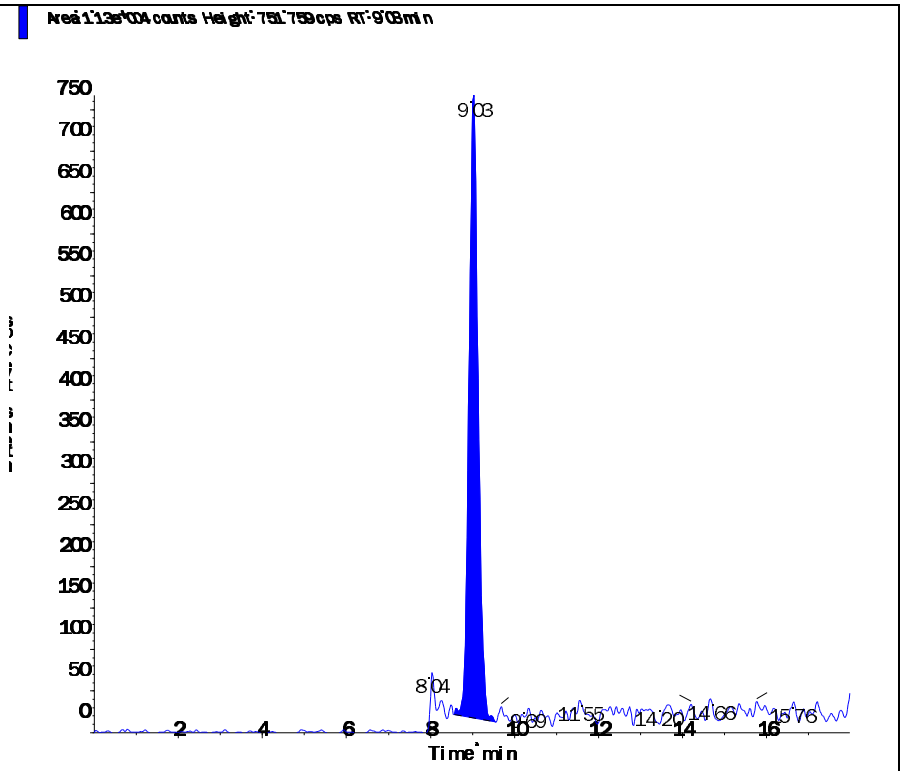

Printing Time: 2:10:45 PM
Printing Date: Thursday, June 30, 2016

Sample Name: "WG574701-01 MCT (0.2ug/L)" Sample ID: "WG574701-01" File: "LM35520.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.223 ug/L
Acq. Date: 6/29/2016
Acq. Time: 5:55:30 PM

Modified: No
Proc. Algorithm: Analyst Classic
Bunching Factor: 2
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Valley
Retention Time: 9.04 min
Area: 3.39e+004 counts
Height: 2055.212 cps
Start Time: 8.587 min
End Time: 9.579 min

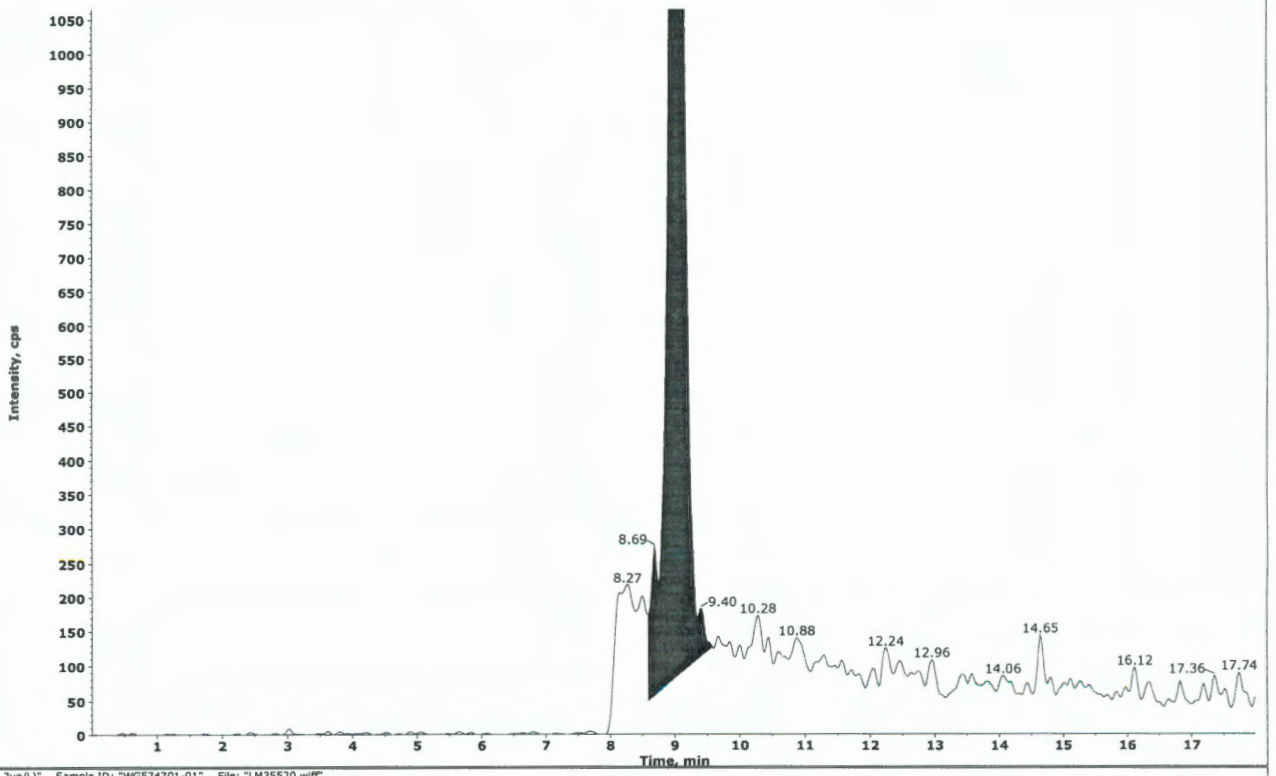

Sample Name: "WG574701-01 MCT (0.2ug/L)" Sample ID: "WG574701-01" File: "LM35520.wiff"
Peak Name: "Perchlorate conf" Mass(es): "100.8/85.2 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.220 ug/L
Acq. Date: 6/29/2016
Acq. Time: 5:55:30 PM

Modified: No
Proc. Algorithm: Analyst Classic
Bunching Factor: 2
Noise Threshold: 7.14 cps
Area Threshold: 35.71 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Valley
Retention Time: 9.03 min
Area: 1.20e+004 counts
Height: 760.490 cps
Start Time: 8.384 min
End Time: 9.538 min

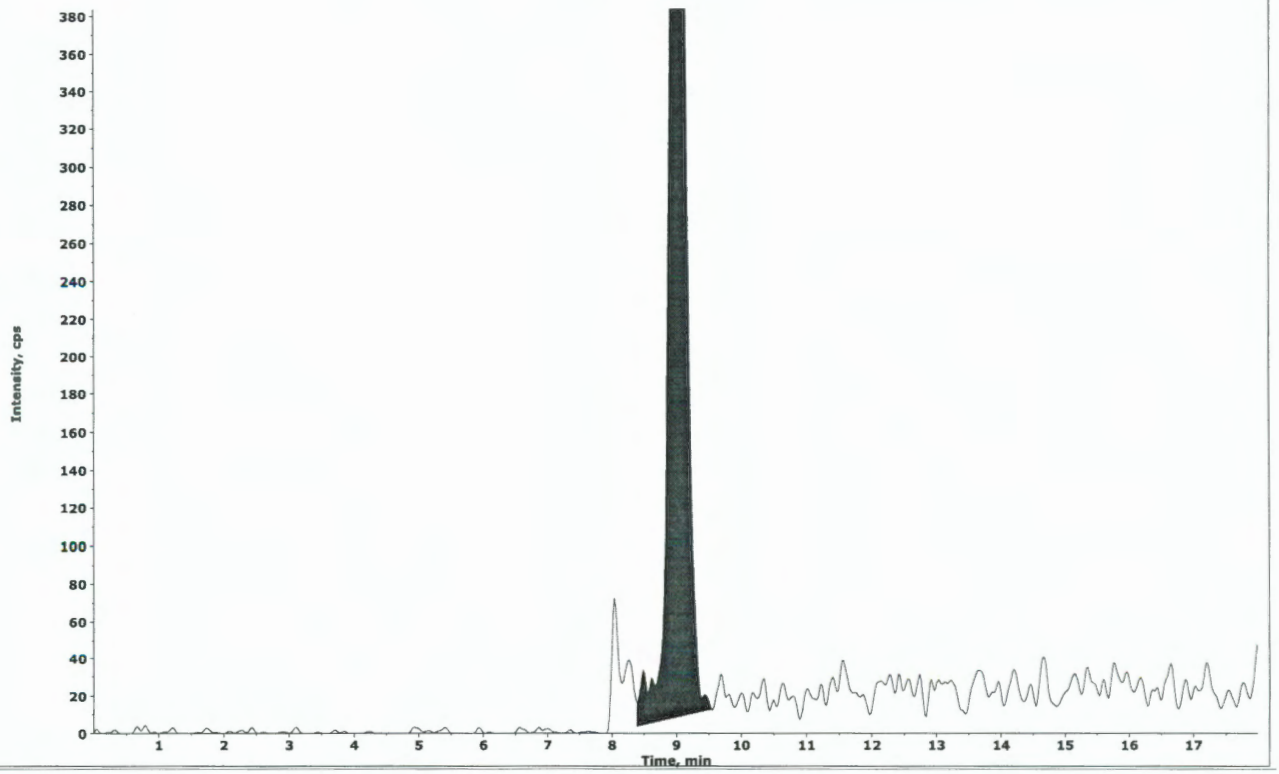

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 2:12:53 PM
Printing Date: Thursday, June 30, 2016

Sample Name: "WG574701-01 MCT (0.2ug/L)" Sample ID: "WG574701-01" File: "LM35520.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.197 ug/L
Acq. Date:	6/29/2016
Acq. Time:	5:55:30 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	9.04 min
Area:	3.01e+004 counts
Height:	1985.642 cps
Start Time:	8.587 min
End Time:	9.498 min

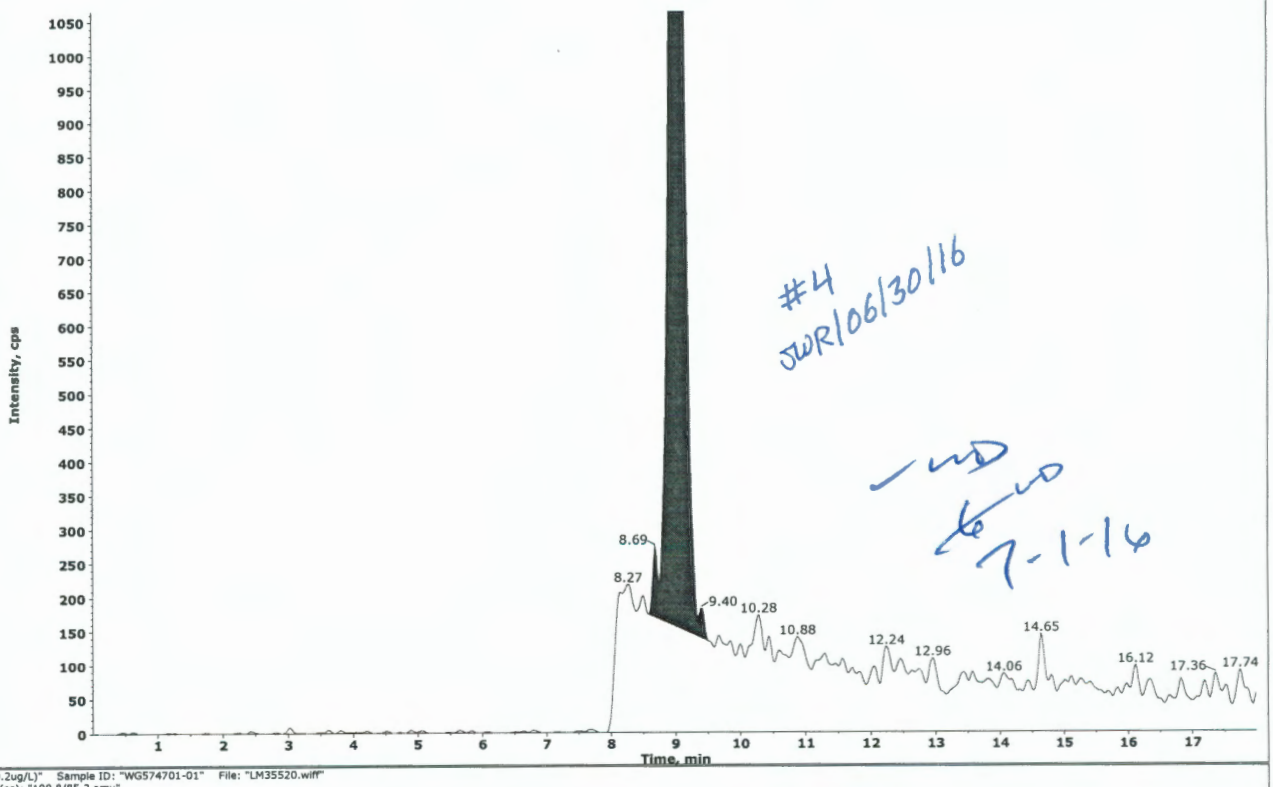

Sample Name: "WG574701-01 MCT (0.2ug/L)" Sample ID: "WG574701-01" File: "LM35520.wiff"
Peak Name: "Perchlorate conf" Mass(es): "100.8/85.2 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.206 ug/L
Acq. Date:	6/29/2016
Acq. Time:	5:55:30 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	7.14 cps
Area Threshold:	35.71 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	9.03 min
Area:	1.13e+004 counts
Height:	751.759 cps
Start Time:	8.566 min
End Time:	9.538 min

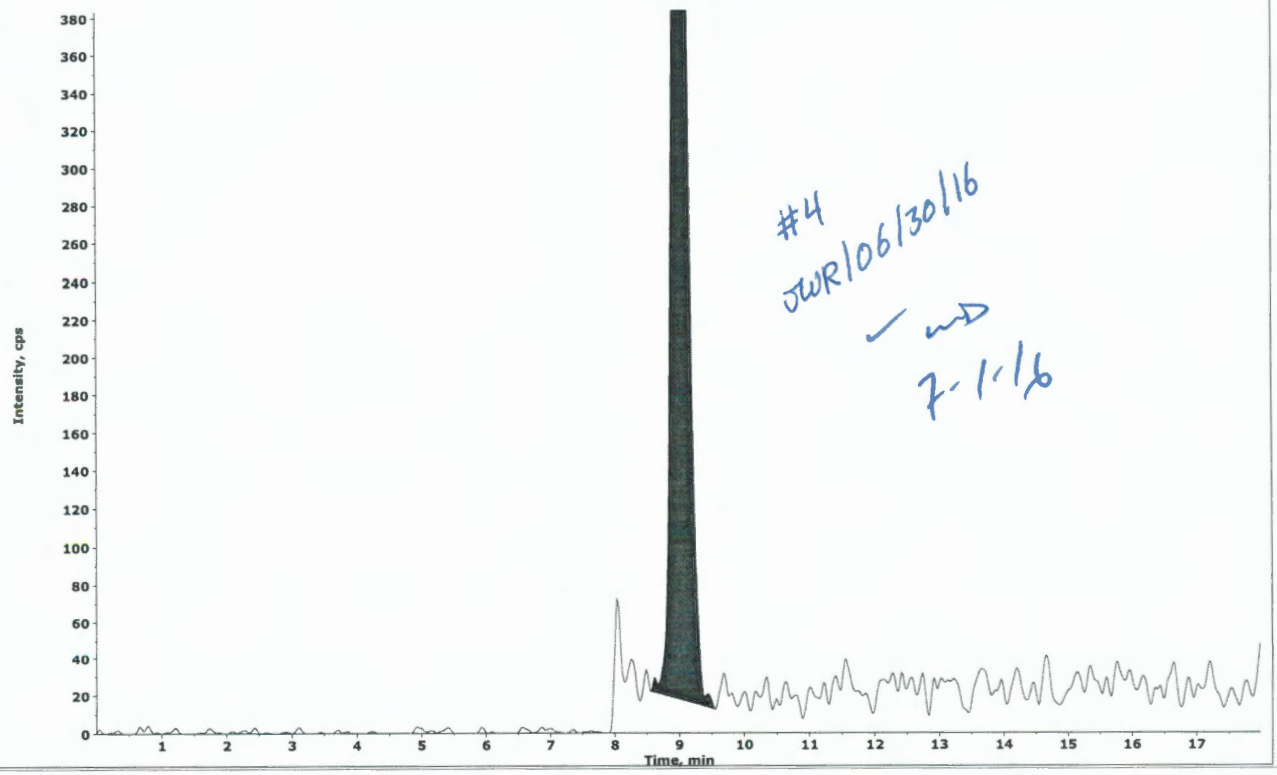

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.1.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:31 PM

Data File	LM35521.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 6:14:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-02 BLANK	**Injection Vial**	5.00
Data File	LM35521.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 6:14:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.56	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.56(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

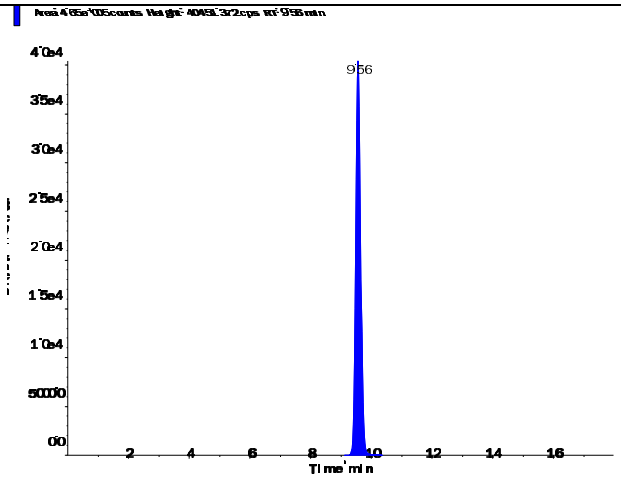

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:31 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

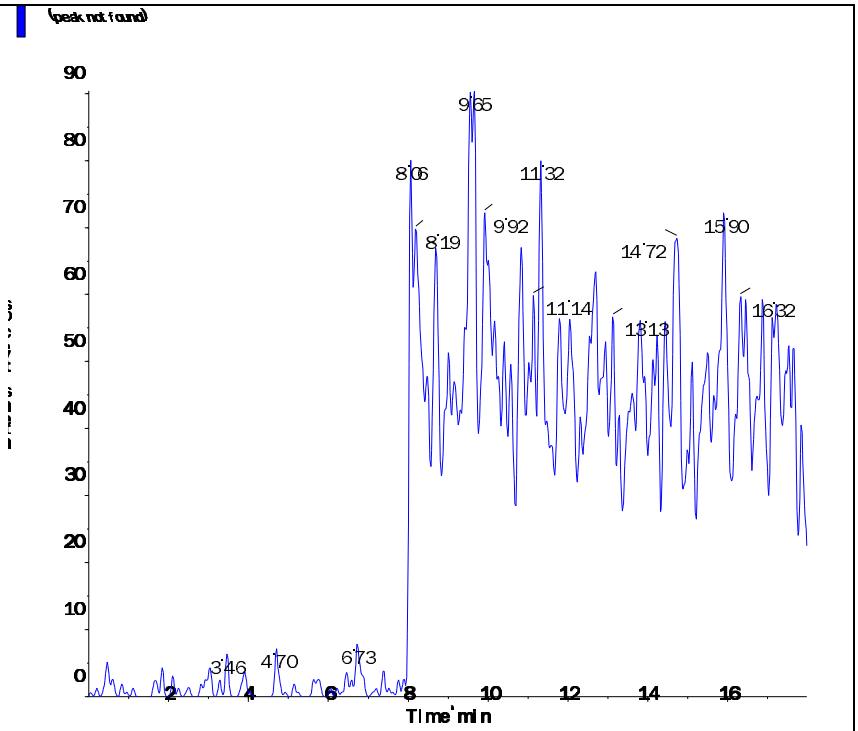

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

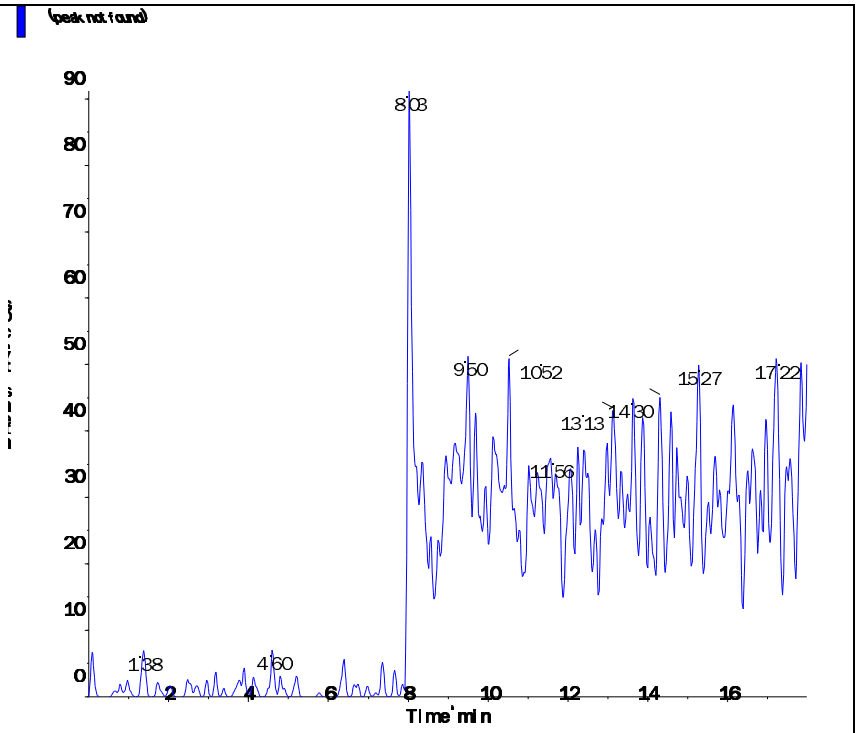

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:31 PM

Data File	LM35522.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 6:33:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35522.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 6:33:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.620e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.180e+04	9.60	N/A	0.201
Perchlorate conf	1.130e+04	9.58	N/A	0.199

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

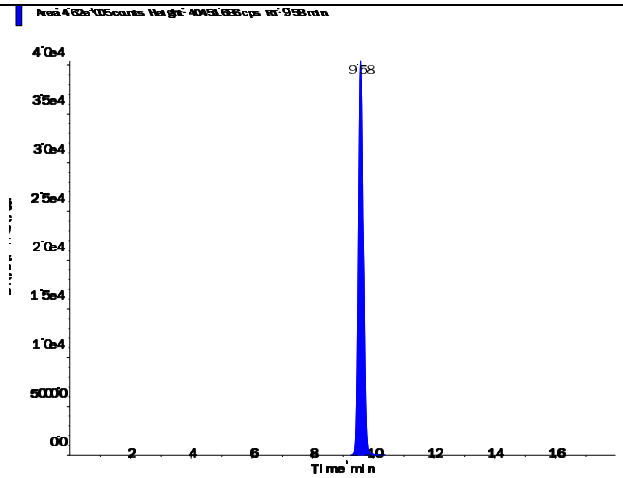

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:31 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

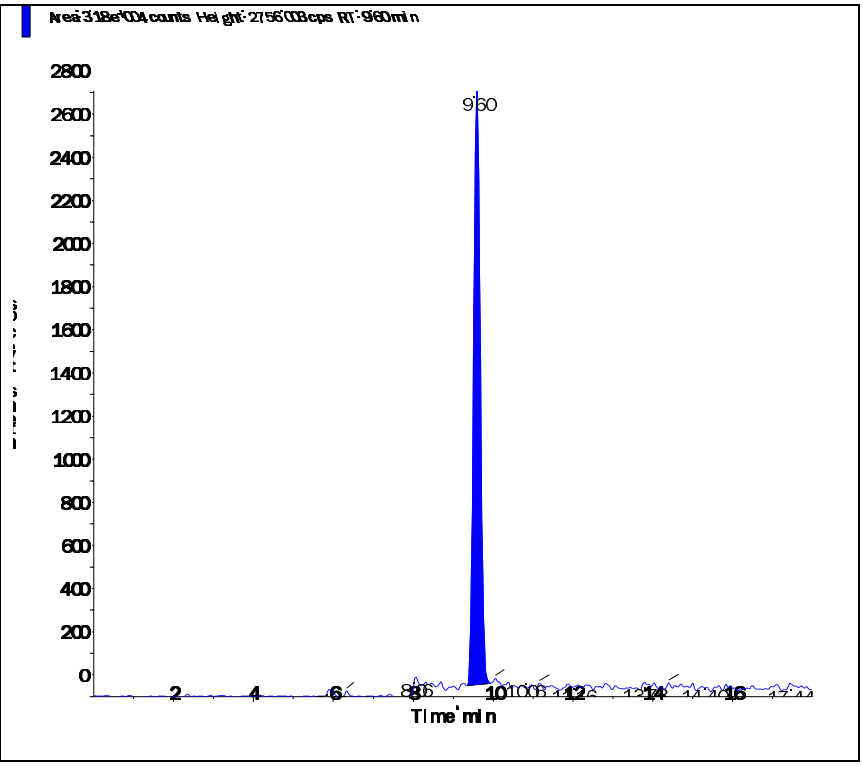

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.58 (9.84) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

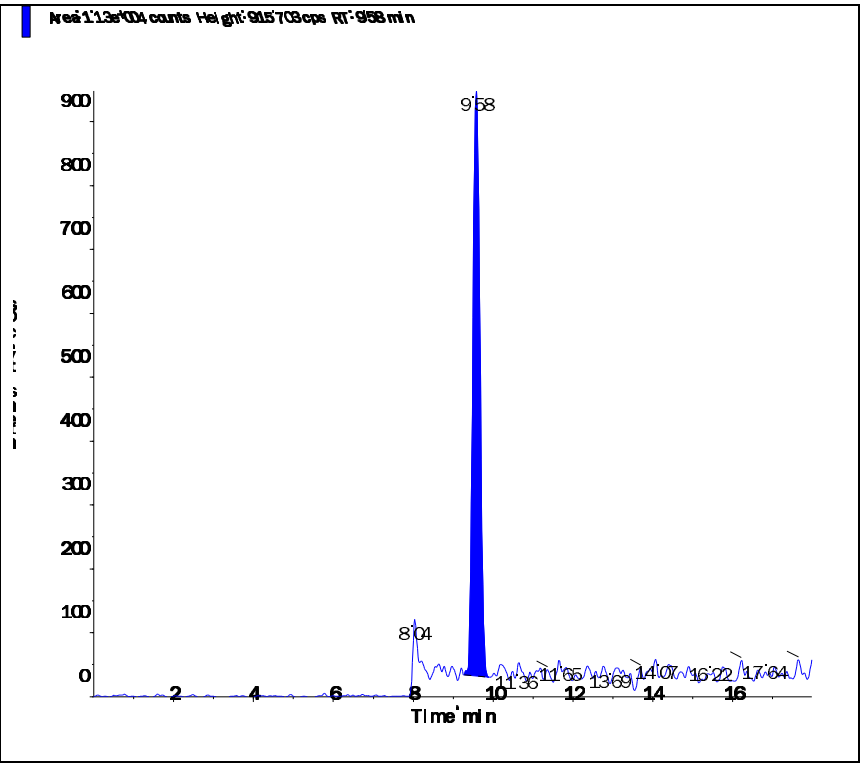

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C01-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:21
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	T3.062716.182149
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.189	J	0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.11		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C01-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:11
Collect Date:	06/17/2016 08:35	**Dilution:**	20	**File ID:**	T3.062816.131108
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	91.0		10.0	5.00	2.50
Magnesium, Total	7439-95-4	68.5		20.0	10.0	5.00
Sodium, Total	7440-23-5	334		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C01FD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:25
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	T3.062716.182543
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.180	J	0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.16		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C01FD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:15
Collect Date:	06/17/2016 08:35	**Dilution:**	20	**File ID:**	T3.062816.131503
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	90.3		10.0	5.00	2.50
Magnesium, Total	7439-95-4	66.6		20.0	10.0	5.00
Sodium, Total	7440-23-5	336		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW19F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:29
Collect Date:	06/17/2016 13:10	**Dilution:**	1	**File ID:**	T3.062716.182935
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Beryllium, Total	7440-41-7	0.00575	J	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	18.9		0.500	0.250	0.125
Magnesium, Total	7439-95-4	9.83		1.00	0.500	0.250
Potassium, Total	7440-09-7	3.84		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	20.5		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW19F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:22
Collect Date:	06/17/2016 13:10	**Dilution:**	20	**File ID:**	T3.062816.132234
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	35.6		4.00	2.00	1.00
Iron, Total	7439-89-6	50.0		4.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:33
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	T3.062716.183322
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.91		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	14.1		0.500	0.250	0.125
Magnesium, Total	7439-95-4	6.42		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.19		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:26
Collect Date:	06/17/2016 14:20	**Dilution:**	20	**File ID:**	T3.062816.132628
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	12.6		4.00	2.00	1.00
Sodium, Total	7440-23-5	249		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18FMS-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:37
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	T3.062716.183713
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	10.7		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0300		0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	19.7		0.500	0.250	0.125
Magnesium, Total	7439-95-4	12.6		1.00	0.500	0.250
Potassium, Total	7440-09-7	32.4		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.226		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18FMS-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:30
Collect Date:	06/17/2016 14:20	**Dilution:**	20	**File ID:**	T3.062816.133023
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	15.1		4.00	2.00	1.00
Sodium, Total	7440-23-5	281		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18FMSD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:40
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	T3.062716.184051
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	12.8		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0287		0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	19.2		0.500	0.250	0.125
Magnesium, Total	7439-95-4	12.1		1.00	0.500	0.250
Potassium, Total	7440-09-7	31.0		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.215		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18FMSD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:34
Collect Date:	06/17/2016 14:20	**Dilution:**	20	**File ID:**	T3.062816.133415
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	19.5		4.00	2.00	1.00
Sodium, Total	7440-23-5	264		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573869
Analyst: ERP
Spike Analyst: ERP
Run Date: 06/23/2016 09:40
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 06/23/2016 10:23

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: REK
HNO3 Lot #: COA18905
HCL Lot #: COA18769
40 & 50 ML. DIGESTION TU COA18987
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573869-02	BLANK	1	40 mL	50 mL	206.17 g	206.164 g		
2	WG573699-01	FBLK1	17	5 mL	50 mL	207.039 g	207.021 g		
3	WG573869-03	LCS	1	40 mL	50 mL	210.697 g	210.681 g	5 mL	
4	L16061068-04	SAMP	1	40 mL	50 mL	203.72 g	203.693 g		07/01/16
5	L16061068-05	SAMP	1	40 mL	50 mL	206.562 g	206.548 g		07/01/16
6	L16061068-11	SAMP	1	40 mL	50 mL	209.061 g	209.048 g		07/01/16
7	WG573869-01	REF	1	40 mL	50 mL	208.529 g	208.513 g		
8	L16061068-13	RS04	1	40 mL	50 mL	208.529 g	208.513 g		07/01/16
9	WG573869-04	MS	1	40 mL	50 mL	209.957 g	209.936 g	5 mL	
10	L16061068-15	MS04	1	40 mL	50 mL	209.957 g	209.936 g	5 mL	07/01/16
11	WG573869-05	MSD	1	40 mL	50 mL	211.799 g	211.786 g	5 mL	
12	L16061068-17	SD04	1	40 mL	50 mL	211.799 g	211.786 g	5 mL	07/01/16
13	L16061130-01	SAMP	1	40 mL	50 mL	207.57 g	207.559 g		07/05/16
14	L16061130-02	SAMP	1	40 mL	50 mL	206.701 g	206.688 g		07/05/16
15	L16061130-03	SAMP	1	40 mL	50 mL	205.872 g	205.863 g		07/05/16
16	L16061130-04	SAMP	1	40 mL	50 mL	208.397 g	208.37 g		07/05/16
17	L16061130-05	SAMP	1	40 mL	50 mL	206.702 g	206.676 g		07/05/16
18	L16061161-01	SAMP	1	40 mL	50 mL	207.423 g	207.406 g		07/01/16
19	L16061161-02	SAMP	1	40 mL	50 mL	205.856 g	205.838 g		07/01/16
20	L16061161-03	SAMP	1	40 mL	50 mL	208.076 g	208.055 g		07/01/16
21	L16061161-04	SAMP	1	40 mL	50 mL	205.022 g	205 g		07/01/16
22	L16061161-05	SAMP	1	40 mL	50 mL	204.502 g	204.478 g		07/01/16
23	L16061161-06	SAMP	1	40 mL	50 mL	208.227 g	208.215 g		07/01/16
24	L16061164-11	SAMP	17	5 mL	50 mL	205.786 g	205.759 g		06/28/16
25	L16061190-01	SAMP	1	40 mL	50 mL	206.107 g	206.088 g		06/28/16
26	L16061190-02	SAMP	1	40 mL	50 mL	208.256 g	208.239 g		06/28/16
27	L16061252-01	SAMP	1	40 mL	50 mL	206.193 g	206.172 g		07/01/16

L16061068-15	FILTERED DIGESTATE
L16061068-17	FILTERED DIGESTATE
L16061068-11	FILTERED DIGESTATE
L16061068-13	FILTERED DIGESTATE
WG573869-01	FILTERED DIGESTATE
WG573869-04	FILTERED DIGESTATE
WG573869-05	FILTERED DIGESTATE
L16061190-01	FILTERED DIGESTATE

MW_DIG - Modified 09/30/2009
PDF ID: 4820401
Report generated: 06/23/2016 11:03

Microbac Laboratories Inc.
Microwave Digestion Log

L16061190-02	FILTERED DIGESTATE	SOP:

Spike Solution:

Analyst: Erin Potter

Spike Witness:

Reviewer:

Method:

Balance:

Instrument:

Instrument Start:

MW_DIG - Modified 09/30/2009
PDF ID: 4820401
Report generated: 06/23/2016 11:03

TCLP Non-Volatile

Analyst(s): CPD
Date: 6/22/16
Filter Lot #: 9486030
Microbac SOP: TCLP 01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD 6/22/16		CPD 6/23/16	
Time On	Temp On °C	Time Off	Temp Off °C
1457	23.1	0812	21.7

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-1191-01	9056	1312	SPLP FI-63	S	100	NA	NA	25.57	511	9.82
	-02								25.51	510	10.98
	-03								25.61	512	9.12
	-04								25.95	519	9.83
	-05								25.81	516	10.48
	-06								25.77	515	9.88
	-07								25.76	515	10.66
	-08								25.68	514	10.66
	-09								25.56	511	11.01
67	06-1164-11	ME, SV, Post, Acid	1311	FI-182			7.27	3.78	100.99	2020	5.15
NA	FBIK1	ME, SV, Post, Acid	1311	FI-182	NA	NA	NA	NA	100	100	4.91
NA	SPLP FI	9056	1312	SPLP FI-63	NA	NA	NA	NA	100	100	4.18

CPD 6/22/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: N/A

Peer Review By: Allie Alfred 06/23/2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062716T3.5R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573560,574476

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062716.162728	WG574461-01	Calibration Point		1		06/27/16 16:27
2	T3.062716.163125	WG574461-02	Calibration Point		1		06/27/16 16:31
3	T3.062716.163522	WG574461-03	Calibration Point		1		06/27/16 16:35
4	T3.062716.163919	WG574461-04	Calibration Point		1		06/27/16 16:39
5	T3.062716.164256	WG574461-05	Calibration Point		1		06/27/16 16:42
6	T3.062716.164633	WG574461-06	Initial Calibration Verification		1		06/27/16 16:46
7	T3.062716.165010	WG574461-07	Initial Calib Blank		1		06/27/16 16:50
8	T3.062716.165407	WG574461-08	Low Level Initial Calibration V		1		06/27/16 16:54
9	T3.062716.165800	WG574461-09	Interference Check		1		06/27/16 16:58
10	T3.062716.170150	WG574461-10	Interference Check		1		06/27/16 17:01
11	T3.062716.170532	WG574461-11	CCV		1		06/27/16 17:05
12	T3.062716.170909	WG574461-12	CCB		1		06/27/16 17:09
13	T3.062716.171308	WG572929-02	Method/Prep Blank	40/50	1		06/27/16 17:13
14	T3.062716.171707	WG572929-03	Laboratory Control S	40/50	1		06/27/16 17:17
15	T3.062716.172046	WG572929-01	Reference Sample		1	L16060806-01	06/27/16 17:20
16	T3.062716.172440	WG572929-04	Matrix Spike	40/50	1	L16060806-01	06/27/16 17:24
17	T3.062716.172819	WG572929-05	Matrix Spike Duplica	40/50	1	L16060806-01	06/27/16 17:28
18	T3.062716.173158	L16060729-01	A09-MW10-Y1S2	40/50	1		06/27/16 17:31
19	T3.062716.173552	L16060729-02	A09-MW11-Y1S2	40/50	1		06/27/16 17:35
20	T3.062716.173946	L16060729-03	A09-MW12-Y1S2	40/50	1		06/27/16 17:39
21	T3.062716.174337	L16060643-03	15-13-8 S3	40/50	1		06/27/16 17:43
22	T3.062716.174728	WG573560-04	Serial Dilution		5	L16060643-03	06/27/16 17:47
23	T3.062716.175126	WG574461-13	CCV		1		06/27/16 17:51
24	T3.062716.175503	WG574461-14	CCB		1		06/27/16 17:55
25	T3.062716.175902	WG573560-03	Post Digestion Spike		1	L16060643-03	06/27/16 17:59
26	T3.062716.180241	WG574461-15	CCV		1		06/27/16 18:02
27	T3.062716.180618	WG574461-16	CCB		1		06/27/16 18:06
28	T3.062716.181016	WG573869-02	Method/Prep Blank	40/50	1		06/27/16 18:10
29	T3.062716.181413	WG573869-03	Laboratory Control S	40/50	1		06/27/16 18:14
30	T3.062716.181752	WG573699-01	Fluid Blank 1		1		06/27/16 18:17
31	T3.062716.182149	L16061068-04	C01-061716	40/50	1		06/27/16 18:21
32	T3.062716.182543	L16061068-05	C01FD-061716	40/50	1		06/27/16 18:25
33	T3.062716.182935	L16061068-11	MW19F-061716	40/50	1		06/27/16 18:29
34	T3.062716.183322	L16061068-13	MW18F-061716		1	WG573869-01	06/27/16 18:33

Page: 1 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062716T3.5R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 573560,574476

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062716.183713	L16061068-15	MW18FMS-061716	40/50	1	WG573869-04	06/27/16 18:37
36	T3.062716.184051	L16061068-17	MW18FMSD-061716	40/50	1	WG573869-05	06/27/16 18:40
37	T3.062716.184428	L16061130-01	MW-23-012	40/50	1		06/27/16 18:44
38	T3.062716.184824	WG574461-17	CCV		1		06/27/16 18:48
39	T3.062716.185157	WG574461-18	CCB		1		06/27/16 18:51
40	T3.062716.185555	L16061130-02	MW-23-003	40/50	1		06/27/16 18:55
41	T3.062716.185947	L16061130-03	MW-23-013	40/50	1		06/27/16 18:59
42	T3.062716.190341	L16061130-04	MW-23-001	40/50	1		06/27/16 19:03
43	T3.062716.190734	L16061130-05	EB (1) WATER A	40/50	1		06/27/16 19:07
44	T3.062716.191132	L16061161-01	062116-PS-CB021	40/50	1		06/27/16 19:11
45	T3.062716.191527	L16061161-02	062116-PS-CB021	40/50	1		06/27/16 19:15
46	T3.062716.191921	L16061161-03	062116-PS-OF2BS	40/50	1		06/27/16 19:19
47	T3.062716.192313	L16061161-04	062116-PS-OF2BS	40/50	1		06/27/16 19:23
48	T3.062716.192706	L16061161-05	062116-PS-CB022	40/50	1		06/27/16 19:27
49	T3.062716.193100	L16061161-06	062116-PS-CB022	40/50	1		06/27/16 19:31
50	T3.062716.193453	WG574461-19	CCV		1		06/27/16 19:34
51	T3.062716.193831	WG574461-20	CCB		1		06/27/16 19:38
52	T3.062716.194227	L16061190-01	USDA / 04/07/16	40/50	1		06/27/16 19:42
53	T3.062716.194623	L16061190-02	USDA / 05/06/16	40/50	1		06/27/16 19:46
54	T3.062716.195012	L16061252-01	35006822000-W-1-06-22-16	40/50	1		06/27/16 19:50
55	T3.062716.195404	L16061164-11	16F1336-11	5/50	1		06/27/16 19:54
56	T3.062716.195756	WG574276-01	Post Digestion Spike		1	L16061130-05	06/27/16 19:57
57	T3.062716.200134	WG574276-02	Serial Dilution		5	L16061130-05	06/27/16 20:01
58	T3.062716.200528	WG574276-02	Serial Dilution		25	L16061130-05	06/27/16 20:05
59	T3.062716.200924	WG574461-21	CCV		1		06/27/16 20:09
60	T3.062716.201301	WG574461-22	CCB		1		06/27/16 20:13
61	T3.062716.201659	WG574461-23	Low Level Continuing Calibra		1		06/27/16 20:16

Page: 2 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062816.091620	WG574512-01	Calibration Point		1		06/28/16 09:16
2	T3.062816.092018	WG574512-02	Calibration Point		1		06/28/16 09:20
3	T3.062816.092413	WG574512-03	Calibration Point		1		06/28/16 09:24
4	T3.062816.092811	WG574512-04	Calibration Point		1		06/28/16 09:28
5	T3.062816.093148	WG574512-05	Calibration Point		1		06/28/16 09:31
6	T3.062816.093524	WG574512-06	Initial Calibration Verification		1		06/28/16 09:35
7	T3.062816.093901	WG574512-07	Initial Calib Blank		1		06/28/16 09:39
8	T3.062816.094252	WG574512-08	Low Level Initial Calibration V		1		06/28/16 09:42
9	T3.062816.094645	WG574512-09	Interference Check		1		06/28/16 09:46
10	T3.062816.095036	WG574512-10	Interference Check		1		06/28/16 09:50
11	T3.062816.095416	WG574512-11	CCV		1		06/28/16 09:54
12	T3.062816.095753	WG574512-12	CCB		1		06/28/16 09:57
13	T3.062816.100445	L16060986-10	MW-03-11	40/50	1		06/28/16 10:04
14	T3.062816.100840	L16060986-12	MW-01-01	40/50	1		06/28/16 10:08
15	T3.062816.101220	L16060986-14	MW-03-09	40/50	1		06/28/16 10:12
16	T3.062816.101612	L16060986-16	MW-01-08	40/50	1		06/28/16 10:16
17	T3.062816.102001	L16060986-18	MW-03-06	40/50	1		06/28/16 10:20
18	T3.062816.102355	L16060986-20	MW-03-05	40/50	1		06/28/16 10:23
19	T3.062816.102749	WG573530-01	Reference Sample		1	L16060986-22	06/28/16 10:27
20	T3.062816.103142	WG573530-02	Reference Sample		1	L16060986-24	06/28/16 10:31
21	T3.062816.103535	L16060986-26	MW-01-02	40/50	1		06/28/16 10:35
22	T3.062816.103931	WG574512-13	CCV		1		06/28/16 10:39
23	T3.062816.104308	WG574512-14	CCB		1		06/28/16 10:43
24	T3.062816.104705	L16060986-28	DUP 1	40/50	1		06/28/16 10:47
25	T3.062816.105057	L16060986-30	DUP 2	40/50	1		06/28/16 10:50
26	T3.062816.105450	WG573530-06	Matrix Spike	40/50	1	L16060986-22	06/28/16 10:54
27	T3.062816.105829	WG573530-07	Matrix Spike Duplica	40/50	1	L16060986-22	06/28/16 10:58
28	T3.062816.110208	WG573530-08	Matrix Spike	40/50	1	L16060986-24	06/28/16 11:02
29	T3.062816.110547	WG573530-09	Matrix Spike Duplica	40/50	1	L16060986-24	06/28/16 11:05
30	T3.062816.110925	L16060986-40	EQUIP BLANK 1	40/50	1		06/28/16 11:09
31	T3.062816.111320	L16060986-42	EQUIP BLANK 2	40/50	1		06/28/16 11:13
32	T3.062816.111715	WG574512-15	CCV		1		06/28/16 11:17
33	T3.062816.112053	WG574512-16	CCB		1		06/28/16 11:20
34	T3.062816.112448	L16061190-01	USDA / 04/07/16		2		06/28/16 11:24

Page: 1 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062816.112835	L16061190-02	USDA / 05/06/16		1		06/28/16 11:28
36	T3.062816.113223	L16061130-02	MW-23-003		5		06/28/16 11:32
37	T3.062816.113618	L16061130-03	MW-23-013		5		06/28/16 11:36
38	T3.062816.114012	L16061130-04	MW-23-001		5		06/28/16 11:40
39	T3.062816.114405	L16061130-05	EB (1) WATER A		1		06/28/16 11:44
40	T3.062816.114802	L16061164-11	16F1336-11		1		06/28/16 11:48
41	T3.062816.115153	L16061252-01	35006822000-W-1-06-22-16		1		06/28/16 11:51
42	T3.062816.115545	WG574476-01	L1606125201PS		1		06/28/16 11:55
43	T3.062816.115924	WG574476-02	L1606125201SDL		5		06/28/16 11:59
44	T3.062816.120319	WG574512-17	CCV		1		06/28/16 12:03
45	T3.062816.120656	WG574512-18	CCV		1		06/28/16 12:06
46	T3.062816.121034	L16061068-04	C01-061716		20		06/28/16 12:10
47	T3.062816.121735	WG574512-19	CCV		1		06/28/16 12:17
48	T3.062816.122110	WG574512-20	CCB		1		06/28/16 12:21
49	T3.062816.122507	L16061190-01	USDA / 04/07/16	40/50	2		06/28/16 12:25
50	T3.062816.122854	L16061190-02	USDA / 05/06/16	40/50	2		06/28/16 12:28
51	T3.062816.123240	L16061130-02	MW-23-003	40/50	5		06/28/16 12:32
52	T3.062816.123633	L16061130-03	MW-23-013	40/50	5		06/28/16 12:36
53	T3.062816.124025	L16061130-04	MW-23-001	40/50	5		06/28/16 12:40
54	T3.062816.124418	L16061130-05	EB (1) WATER A	40/50	1		06/28/16 12:44
55	T3.062816.124814	L16061164-11	16F1336-11	5/50	1		06/28/16 12:48
56	T3.062816.125207	L16061252-01	35006822000-W-1-06-22-16	40/50	1		06/28/16 12:52
57	T3.062816.125559	WG574276-01	Post Digestion Spike		1	L16061130-05	06/28/16 12:55
58	T3.062816.125938	WG574276-02	Serial Dilution		5	L16061130-05	06/28/16 12:59
59	T3.062816.130335	WG574512-21	CCV		1		06/28/16 13:03
60	T3.062816.130712	WG574512-22	CCB		1		06/28/16 13:07
61	T3.062816.131108	L16061068-04	C01-061716	40/50	20		06/28/16 13:11
62	T3.062816.131503	L16061068-05	C01FD-061716	40/50	20		06/28/16 13:15
63	T3.062816.131855	WG574276-01	Post Digestion Spike		1	L16061130-05	06/28/16 13:18
64	T3.062816.132234	L16061068-11	MW19F-061716	40/50	20		06/28/16 13:22
65	T3.062816.132628	WG573869-01	Reference Sample		20	L16061068-13	06/28/16 13:26
66	T3.062816.133023	WG573869-04	Matrix Spike	40/50	20	L16061068-13	06/28/16 13:30
67	T3.062816.133415	WG573869-05	Matrix Spike Duplica	40/50	20	L16061068-13	06/28/16 13:34
68	T3.062816.133809	WG574512-23	CCV		1		06/28/16 13:38

Page: 2 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062816.134146	WG574512-24	CCB		1		06/28/16 13:41
70	T3.062816.134543	WG574512-25	Low Level Continuing Calibra		1		06/28/16 13:45
71	T3.062816.134937	WG573828-02	Method/Prep Blank	40/50	1		06/28/16 13:49
72	T3.062816.135333	WG573828-03	Laboratory Control S	40/50	1		06/28/16 13:53
73	T3.062816.135712	L16061142-01	18WW20-062016	40/50	1		06/28/16 13:57
74	T3.062816.140107	L16061142-03	18WW19F-062016	40/50	1		06/28/16 14:01
75	T3.062816.140501	L16061142-05	18WW19FFD-062016	40/50	1		06/28/16 14:05
76	T3.062816.140856	WG573828-01	Reference Sample		1	L16061177-01	06/28/16 14:08
77	T3.062816.141250	WG573828-04	Matrix Spike	40/50	1	L16061177-01	06/28/16 14:12
78	T3.062816.141630	WG573828-05	Matrix Spike Duplica	40/50	1	L16061177-01	06/28/16 14:16
79	T3.062816.142009	L16061185-01	2203-123 W1 (B)	40/50	1		06/28/16 14:20
80	T3.062816.142402	L16061185-02	2203-123 W1 (B)	40/50	1		06/28/16 14:24
81	T3.062816.142755	WG574512-26	CCV		1		06/28/16 14:27
82	T3.062816.143132	WG574512-27	CCB		1		06/28/16 14:31
83	T3.062816.143530	L16061185-03	2203-123 W1 (FF)	40/50	1		06/28/16 14:35
84	T3.062816.143922	L16061185-04	2203-123 W1 (FF)	40/50	1		06/28/16 14:39
85	T3.062816.144315	L16061228-01	SS007MWOB03-007	40/50	1		06/28/16 14:43
86	T3.062816.144709	L16061228-02	SS007MWN751-007	40/50	1		06/28/16 14:47
87	T3.062816.145057	L16061228-03	SS007MWN753-007	40/50	1		06/28/16 14:50
88	T3.062816.145448	L16061231-01	FT002MW0205-007	40/50	1		06/28/16 14:54
89	T3.062816.145841	L16061237-01	SS007MWN769-007	40/50	1		06/28/16 14:58
90	T3.062816.150234	L16061237-02	SS007MWN740-007	40/50	1		06/28/16 15:02
91	T3.062816.150626	L16061237-03	SS007MWN740-007 DUP	40/50	1		06/28/16 15:06
92	T3.062816.151019	L16061237-04	SS007MWN738-007	40/50	1		06/28/16 15:10
93	T3.062816.151411	WG574512-28	CCV		1		06/28/16 15:14
94	T3.062816.151749	WG574512-29	CCB		1		06/28/16 15:17
95	T3.062816.152146	L16061237-05	SS007MWN741-007	40/50	1		06/28/16 15:21
96	T3.062816.152539	L16061237-06	SS007MWNOB09-007	40/50	1		06/28/16 15:25
97	T3.062816.152932	L16061238-01	LF003MW0306-007	40/50	1		06/28/16 15:29
98	T3.062816.153324	L16061238-02	LF003MW0307-007	40/50	1		06/28/16 15:33
99	T3.062816.153717	WG574350-01	Post Digestion Spike		1	L16061238-01	06/28/16 15:37
100	T3.062816.154055	WG574350-02	Serial Dilution		5	L16061238-01	06/28/16 15:40
101	T3.062816.154446	WG574350-02	Serial Dilution		25	L16061238-01	06/28/16 15:44
102	T3.062816.154842	WG574512-30	CCV		1		06/28/16 15:48

Page: 3 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062816.155209	WG574512-31	CCB		1		06/28/16 15:52
104	T3.062816.155606	WG574512-32	Low Level Continuing Calibra		1		06/28/16 15:56
105	T3.062816.160000	WG574197-02	Method/Prep Blank	40/50	1		06/28/16 16:00
106	T3.062816.160356	WG574197-03	Laboratory Control S	40/50	1		06/28/16 16:03
107	T3.062816.160736	L16061378-01	11002-G05-WQ-W0080	40/50	1		06/28/16 16:07
108	T3.062816.161133	L16061378-02	11103-G08-WQ-W0017	40/50	1		06/28/16 16:11
109	T3.062816.161529	L16061378-03	18311-G02-WQ-W0010	40/50	1		06/28/16 16:15
110	T3.062816.161925	L16061378-04	18416-L04-WQ-W0025	40/50	1		06/28/16 16:19
111	T3.062816.162323	L16061380-01	XU936TW003A	40/50	1		06/28/16 16:23
112	T3.062816.162711	L16061380-02	XU936TW003C	40/50	1		06/28/16 16:27
113	T3.062816.163057	L16061381-06	EB02	40/50	1		06/28/16 16:30
114	T3.062816.163455	L16061401-01	DP005MW0501-007	40/50	1		06/28/16 16:34
115	T3.062816.163852	WG574512-33	CCV		1		06/28/16 16:38
116	T3.062816.164230	WG574512-34	CCB		1		06/28/16 16:42
117	T3.062816.164626	L16061402-01	SS007MW0715-007	40/50	1		06/28/16 16:46
118	T3.062816.165019	L16061404-01	DP005MW0503-007	40/50	1		06/28/16 16:50
119	T3.062816.165410	L16061408-01	DP005MW0508-007	40/50	1		06/28/16 16:54
120	T3.062816.165803	L16061409-01	ST008MW0818-007	40/50	1		06/28/16 16:58
121	T3.062816.170156	L16061410-01	SS007MW0704-007	40/50	1		06/28/16 17:01
122	T3.062816.170548	L16061417-01	SS007MW0B04-007	40/50	1		06/28/16 17:05
123	T3.062816.170940	L16061417-02	SS007MW0B06-007	40/50	1		06/28/16 17:09
124	T3.062816.171335	L16061417-03	SS007MW0B06-007DUP	40/50	1		06/28/16 17:13
125	T3.062816.171728	L16061417-04	SS007MW0B13-007	40/50	1		06/28/16 17:17
126	T3.062816.172123	WG574197-01	Reference Sample		1	L16061417-05	06/28/16 17:21
127	T3.062816.172517	WG574512-35	CCV		1		06/28/16 17:25
128	T3.062816.172854	WG574512-36	CCB		1		06/28/16 17:28
129	T3.062816.173251	WG574197-04	Matrix Spike	40/50	1	L16061417-05	06/28/16 17:32
130	T3.062816.173629	WG574197-05	Matrix Spike Duplica	40/50	1	L16061417-05	06/28/16 17:36
131	T3.062816.174008	L16061417-09	FQC-RB06221601-CC	40/50	1		06/28/16 17:40
132	T3.062816.174405	L16061417-08	SS007MWN748-007	40/50	1		06/28/16 17:44
133	T3.062816.174800	WG574351-01	Post Digestion Spike		1	L16061417-04	06/28/16 17:48
134	T3.062816.175139	WG574351-02	Serial Dilution		5	L16061417-04	06/28/16 17:51
135	T3.062816.175533	WG574351-02	Serial Dilution		25	L16061417-04	06/28/16 17:55
136	T3.062816.175929	WG574512-37	CCV		1		06/28/16 17:59

Page: 4 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.062816.180306	WG574512-38	CCB		1		06/28/16 18:03
138	T3.062816.180704	WG573861-03	Method/Prep Blank	40/50	1		06/28/16 18:07
139	T3.062816.181059	WG573861-04	Laboratory Control S	40/50	1		06/28/16 18:10
140	T3.062816.181438	L16061116-01	062016-PS-OF001	40/50	1		06/28/16 18:14
141	T3.062816.181827	L16061116-02	062016-PS-OF001	40/50	1		06/28/16 18:18
142	T3.062816.182218	L16061116-03	062016-PS-OF1BN	40/50	1		06/28/16 18:22
143	T3.062816.182609	L16061116-04	062016-PS-OF1BN	40/50	1		06/28/16 18:26
144	T3.062816.183001	L16061116-05	062016-PS-OF1BS	40/50	1		06/28/16 18:30
145	T3.062816.183352	L16061116-06	062016-PS-OF1BS	40/50	1		06/28/16 18:33
146	T3.062816.183743	L16061116-07	062016-PS-OF1BE	40/50	1		06/28/16 18:37
147	T3.062816.184134	L16061116-08	062016-PS-OF1BE	40/50	1		06/28/16 18:41
148	T3.062816.184525	WG574512-39	CCV		1		06/28/16 18:45
149	T3.062816.184903	WG574512-40	CCB		1		06/28/16 18:49
150	T3.062816.185258	L16061116-09	062016-PS-CB032	40/50	1		06/28/16 18:52
151	T3.062816.185648	L16061116-10	062016-PS-CB032	40/50	1		06/28/16 18:56
152	T3.062816.190038	WG573861-01	Reference Sample		1	L16061116-11	06/28/16 19:00
153	T3.062816.190429	WG573861-02	Reference Sample		1	L16061116-12	06/28/16 19:04
154	T3.062816.190819	WG573861-05	Matrix Spike	40/50	1	L16061116-11	06/28/16 19:08
155	T3.062816.191158	WG573861-06	Matrix Spike	40/50	1	L16061116-12	06/28/16 19:11
156	T3.062816.191537	WG573861-07	Matrix Spike Duplica	40/50	1	L16061116-11	06/28/16 19:15
157	T3.062816.191915	WG573861-08	Matrix Spike Duplica	40/50	1	L16061116-12	06/28/16 19:19
158	T3.062816.192255	L16061116-17	062016-PS-CB029	40/50	1		06/28/16 19:22
159	T3.062816.192645	L16061116-18	062016-PS-CB029	40/50	1		06/28/16 19:26
160	T3.062816.193036	WG574512-41	CCV		1		06/28/16 19:30
161	T3.062816.193413	WG574512-42	CCB		1		06/28/16 19:34
162	T3.062816.193810	L16061116-19	062016-PS-CB099	40/50	1		06/28/16 19:38
163	T3.062816.194200	L16061116-20	062016-PS-CB099	40/50	1		06/28/16 19:42
164	T3.062816.194549	L16061116-22	062016-PS-CB028	40/50	1		06/28/16 19:45
165	T3.062816.194939	L16061116-21	062016-PS-CB028	40/50	1		06/28/16 19:49
166	T3.062816.195330	WG574353-01	Post Digestion Spike		1	L16061116-21	06/28/16 19:53
167	T3.062816.195708	WG574353-02	Serial Dilution		5	L16061116-21	06/28/16 19:57
168	T3.062816.200100	WG574353-02	Serial Dilution		25	L16061116-21	06/28/16 20:01
169	T3.062816.200456	WG574512-43	CCV		1		06/28/16 20:04
170	T3.062816.200834	WG574512-44	CCB		1		06/28/16 20:08

Page: 5 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	T3.062816.201230	WG573661-02	Method/Prep Blank	40/50	1		06/28/16 20:12
172	T3.062816.201625	WG573661-03	Laboratory Control S	40/50	1		06/28/16 20:16
173	T3.062816.202004	L16061030-02	SW1A-322-14	40/50	1		06/28/16 20:20
174	T3.062816.202358	L16061030-05	SW1B-322-14	40/50	1		06/28/16 20:23
175	T3.062816.202753	L16061030-08	SW2A-322-14	40/50	1		06/28/16 20:27
176	T3.062816.203148	WG573661-01	Reference Sample		1	L16061030-13	06/28/16 20:31
177	T3.062816.203543	WG573661-04	Matrix Spike	40/50	1	L16061030-13	06/28/16 20:35
178	T3.062816.203922	WG573661-05	Matrix Spike Duplica	40/50	1	L16061030-13	06/28/16 20:39
179	T3.062816.204301	L16061030-20	SW4A-322-14	40/50	1		06/28/16 20:43
180	T3.062816.204657	L16061030-23	SW5A-322-14	40/50	1		06/28/16 20:46
181	T3.062816.205052	WG574512-45	CCV		1		06/28/16 20:50
182	T3.062816.205431	WG574512-46	CCB		1		06/28/16 20:54
183	T3.062816.205827	L16061065-01	MW-23-007	40/50	1		06/28/16 20:58
184	T3.062816.210220	L16061065-02	MW-23-006	40/50	1		06/28/16 21:02
185	T3.062816.210612	L16061065-03	MW-23-008	40/50	1		06/28/16 21:06
186	T3.062816.211004	L16061065-04	MW-23-009	40/50	1		06/28/16 21:10
187	T3.062816.211355	L16061065-05	MW-23-010	40/50	1		06/28/16 21:13
188	T3.062816.211749	L16061065-06	MW-23-011	40/50	1		06/28/16 21:17
189	T3.062816.212143	L16061066-01	ST1H16-SW-01	40/50	1		06/28/16 21:21
190	T3.062816.212535	L16061066-02	ST1H16-SW-05	40/50	1		06/28/16 21:25
191	T3.062816.212927	L16061066-03	ST1H16-SW-06	40/50	1		06/28/16 21:29
192	T3.062816.213320	L16061066-04	FB-	40/50	1		06/28/16 21:33
193	T3.062816.213718	WG574512-47	CCV		1		06/28/16 21:37
194	T3.062816.214055	WG574512-48	CCB		1		06/28/16 21:40
195	T3.062816.214452	L16061128-01	MW-23-104	40/50	1		06/28/16 21:44
196	T3.062816.214841	L16061128-02	MW-23-103	40/50	1		06/28/16 21:48
197	T3.062816.215232	L16061128-03	FD062016	40/50	1		06/28/16 21:52
198	T3.062816.215619	L16061128-04	EB WATER A	40/50	1		06/28/16 21:56
199	T3.062816.220016	WG574357-01	Post Digestion Spike		1	L16061128-03	06/28/16 22:00
200	T3.062816.220354	WG574357-02	Serial Dilution		5	L16061128-03	06/28/16 22:03
201	T3.062816.220747	WG574357-02	Serial Dilution		25	L16061128-03	06/28/16 22:07
202	T3.062816.221140	WG574512-49	CCV		1		06/28/16 22:11
203	T3.062816.221518	WG574512-50	CCB		1		06/28/16 22:15
204	T3.062816.221914	WG573685-03	Method/Prep Blank	40/50	1		06/28/16 22:19

Page: 6 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
205	T3.062816.222308	WG573685-04	Laboratory Control S	40/50	1		06/28/16 22:23
206	T3.062816.222647	L16060907-01	MW21-061516	40/50	5		06/28/16 22:26
207	T3.062816.223047	L16060907-02	MW21-061516	40/50	5		06/28/16 22:30
208	T3.062816.223447	L16060907-03	MW21-061516	40/50	5		06/28/16 22:34
209	T3.062816.223848	L16060907-04	MW35-061516	40/50	1		06/28/16 22:38
210	T3.062816.224241	L16060907-05	MW35-061516	40/50	1		06/28/16 22:42
211	T3.062816.224635	L16060907-06	MW35-061516	40/50	1		06/28/16 22:46
212	T3.062816.225029	L16060907-07	MW11S-061516	40/50	1		06/28/16 22:50
213	T3.062816.225430	L16060907-08	MW11S-061516	40/50	1		06/28/16 22:54
214	T3.062816.225832	WG574512-51	CCV		1		06/28/16 22:58
215	T3.062816.230210	WG574512-52	CCB		1		06/28/16 23:02
216	T3.062816.230607	L16060907-09	MW11S-061516	40/50	1		06/28/16 23:06
217	T3.062816.231008	L16060907-10	DUP-GW-061516	40/50	1		06/28/16 23:10
218	T3.062816.231410	L16060907-11	DUP-GW-061516	40/50	1		06/28/16 23:14
219	T3.062816.231813	L16060907-12	MW31-061516	40/50	5		06/28/16 23:18
220	T3.062816.232204	L16060907-13	MW31-061516	40/50	5		06/28/16 23:22
221	T3.062816.232555	L16060907-14	MW30-061516		1	WG573685-01	06/28/16 23:25
222	T3.062816.232948	L16060907-15	MW30-061516		1	WG573685-02	06/28/16 23:29
223	T3.062816.233341	L16060907-16	MW30-061516	40/50	1		06/28/16 23:33
224	T3.062816.233734	L16060907-17	MW30-061516-MS	40/50	1	WG573685-05	06/28/16 23:37
225	T3.062816.234116	L16060907-18	MW30-061516-MS	40/50	1	WG573685-07	06/28/16 23:41
226	T3.062816.234453	WG574512-53	CCV		1		06/28/16 23:44
227	T3.062816.234830	WG574512-54	CCB		1		06/28/16 23:48
228	T3.062816.235226	L16060907-19	MW30-061516-MSD	40/50	1	WG573685-06	06/28/16 23:52
229	T3.062816.235604	L16060907-20	MW30-061516-MSD	40/50	1	WG573685-08	06/28/16 23:56
230	T3.062816.235945	L16060907-21	MW36-061516	40/50	1		06/28/16 23:59
231	T3.062916.000336	WG574358-01	Post Digestion Spike		1	L16060907-22	06/29/16 00:03
232	T3.062916.000715	WG574358-02	Serial Dilution		5	L16060907-22	06/29/16 00:07
233	T3.062916.001107	WG574358-02	Serial Dilution		25	L16060907-22	06/29/16 00:11
234	T3.062916.001503	L16060907-22	MW36-061516	40/50	1		06/29/16 00:15
235	T3.062916.001856	L16060907-01	MW21-061516	40/50	500		06/29/16 00:18
236	T3.062916.002252	L16060907-02	MW21-061516		500		06/29/16 00:22
237	T3.062916.002650	L16060907-03	MW21-061516		500		06/29/16 00:26
238	T3.062916.003045	WG574512-55	CCV		1		06/29/16 00:30

Page: 7 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
239	T3.062916.003423	WG574512-56	CCB		1		06/29/16 00:34
240	T3.062916.003819	WG574512-57	Interference Check		1		06/29/16 00:38
241	T3.062916.004209	WG574512-58	Interference Check		1		06/29/16 00:42
242	T3.062916.004552	WG574512-59	CCV		1		06/29/16 00:45
243	T3.062916.004929	WG574512-60	CCB		1		06/29/16 00:49
244	T3.062916.005324	WG574512-61	Low Level Continuing Calibra		1		06/29/16 00:53

Comments

Seq.	Rerun	Dil.	Reason	Analytes
45			Operation error, CCB was not run. Rerun Seq.34-43 and 46. JYH	

Page: 8 Approved: June 30, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574461
Runlog ID: 75972
Analytical Workgroups: 573560,574476

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1130
Level 4	1068,729
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
29-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 13:55:52

Microbac Laboratories Inc.

Data Checklist

Date: 28-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574512
Runlog ID: 75979
Analytical Workgroups: 574216,574276,574350,574351,574353,574357,574358

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1177,1380,1381,1065,1128
Level 4	986,1142,1228,1231,1237,1238
	1378,1401,1402,1404,1409,1410
	1417,907
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
30-JUN-2016

Secondary Reviewer:
30-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-30-2016 14:08:10

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG574276

Login Number: L16061068

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
C01-061716	04	06/17/16					06/23/2016	6	180		06/27/16	10.4	180	
C01-061716	04	06/17/16					06/23/2016	6	180		06/28/16	11.2	180	
C01FD-061716	05	06/17/16					06/23/2016	6	180		06/27/16	10.4	180	
C01FD-061716	05	06/17/16					06/23/2016	6	180		06/28/16	11.2	180	
MW19F-061716	11	06/17/16					06/23/2016	5.9	180		06/27/16	10.2	180	
MW19F-061716	11	06/17/16					06/23/2016	5.9	180		06/28/16	11	180	
MW18F-061716	13	06/17/16					06/23/2016	5.8	180		06/27/16	10.2	180	
MW18F-061716	13	06/17/16					06/23/2016	5.8	180		06/28/16	11	180	
MW18FMS-061716	15	06/17/16					06/23/2016	5.8	180		06/28/16	11	180	
MW18FMS-061716	15	06/17/16					06/23/2016	5.8	180		06/27/16	10.2	180	
MW18FMSD-061716	17	06/17/16					06/23/2016	5.8	180		06/27/16	10.2	180	
MW18FMSD-061716	17	06/17/16					06/23/2016	5.8	180		06/28/16	11	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4828320
Report generated 06/28/2016 14:08

METHOD BLANK SUMMARY

Login Number: L16061068
Blank File ID: T3.062716.181016
Prep Date: 06/23/16 09:40
Analyzed Date: 06/27/16 18:10
Analyst: JYH

Work Group: WG574276
Blank Sample ID: WG573869-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573869-03	T3.062716.181413	06/27/16 18:14	01
C01-061716	L16061068-04	T3.062716.182149	06/27/16 18:21	01
C01FD-061716	L16061068-05	T3.062716.182543	06/27/16 18:25	01
MW19F-061716	L16061068-11	T3.062716.182935	06/27/16 18:29	01
MW18F-061716	L16061068-13	T3.062716.183322	06/27/16 18:33	01
MW18FMS-061716	L16061068-15	T3.062716.183713	06/27/16 18:37	01
MW18FMSD-061716	L16061068-17	T3.062716.184051	06/27/16 18:40	01
C01-061716	L16061068-04	T3.062816.131108	06/28/16 13:11	DL01
C01FD-061716	L16061068-05	T3.062816.131503	06/28/16 13:15	DL01
MW19F-061716	L16061068-11	T3.062816.132234	06/28/16 13:22	DL01
MW18F-061716	L16061068-13	T3.062816.132628	06/28/16 13:26	DL01
MW18FMS-061716	L16061068-15	T3.062816.133023	06/28/16 13:30	DL01
MW18FMSD-061716	L16061068-17	T3.062816.133415	06/28/16 13:34	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4828322
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/23/16 09:40 Sample ID: WG573869-02
Instrument ID: ICP-THERMO3 Run Date: 06/27/16 18:10 Prep Method: 3015
File ID: T3.062716.181016 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574276 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-27-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4828323
28-JUN-2016 14:08

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 Run Date: 06/27/2016 Sample ID: WG573869-03
Instrument ID: ICP-THERMO3 Run Time: 18:14 Prep Method: 3015
File ID: T3.062716.181413 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574276 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-27-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.17	98.7	80 - 120	
Beryllium, Total	0.0313	0.0304	97.1	80 - 120	
Calcium, Total	6.25	6.36	102	80 - 120	
Iron, Total	2.50	2.49	99.4	80 - 120	
Magnesium, Total	6.25	6.36	102	80 - 120	
Potassium, Total	31.3	30.8	98.5	80 - 120	
Selenium, Total	0.250	0.232	92.8	80 - 120	
Sodium, Total	31.3	31.2	99.9	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4828324
Report generated: 06/28/2016 14:08

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: ICP-THERMO3- 27-JUN-16 Worknum: WG574276
Instrument ID: ICP-THERMO3 Contract #: Prep Method: 3015
Parent ID: L16061068-13 File ID: T3.062716.183322 Dil: 1 Method: 6010B
Sample ID: L16061068-15 MS File ID: T3.062716.183713 Dil: 1 Matrix: Water
Sample ID: L16061068-17 MSD File ID: T3.062716.184051 Dil: 1 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum, Total	1.91	6.25	10.7	141	6.25	12.8	174	17.4	80 - 120	20	*
Beryllium, Total	U	0.0313	0.0300	96.1	0.0313	0.0287	91.8	4.60	80 - 120	20	
Calcium, Total	14.1	6.25	19.7	89.9	6.25	19.2	81.3	2.76	80 - 120	20	
Iron, Total	10.8	2.50	15.0	167	2.50	18.4	303	20.4	80 - 120	20	*#
Magnesium, Total	6.42	6.25	12.6	98.5	6.25	12.1	91.2	3.69	80 - 120	20	
Potassium, Total	2.19	31.3	32.4	96.7	31.3	31.0	92.1	4.48	80 - 120	20	
Selenium, Total	U	0.250	0.226	90.2	0.250	0.215	86.1	4.68	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4828325
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: ICP-THERMO3- 28-JUN-16 Worknum: WG574276
Instrument ID: ICP-THERMO3 Contract #: Prep Method: 3015
Parent ID: L16061068-13 File ID: T3.062816.132628 Dil: 20 Method: 6010B
Sample ID: L16061068-15 MS File ID: T3.062816.133023 Dil: 20 Matrix: Water
Sample ID: L16061068-17 MSD File ID: T3.062816.133415 Dil: 20 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Sodium, Total	249	31.3	281	103	31.3	264	48.5	6.21	80 - 120	20	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4828325
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061068 **Worknum:** WG574276
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574276-02 **File ID:** T3.062816.125938 **Dil:** 5 **Units:** ug/L
Sample: L16061130-05 **File ID:** T3.062816.124418 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	12.0		89.8		650.00	E
Beryllium			0.200			
Calcium	ND	U	ND	U		
Iron	ND	U	ND	U		
Magnesium	ND	U	248		6140.00	
Potassium	136		463		240.00	E
Selenium	2.81		11.0		291.00	E
Sodium	6.12		ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4828318
06/28/2016 14:08

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061068 **Worknum:** WG574276
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574276-01 **File ID:** T3.062816.131855 **Dil:** 1 **Units:** ug/L
Sample ID: L16061130-05 **File ID:** T3.062816.124418 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5520		0	U	5000	110.4	75 - 125	
BERYLLIUM	26.8		0		25	107.0	75 - 125	
CALCIUM	5380		0	U	5000	107.7	75 - 125	
IRON	2140		0	U	2000	107.1	75 - 125	
MAGNESIUM	5640		0	U	5000	112.7	75 - 125	
POTASSIUM	26600		0	U	25000	106.4	75 - 125	
SELENIUM	238		0	U	200	118.9	75 - 125	
SODIUM	27000		0	U	25000	108.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4828319
Report generated: 06/28/2016 14:08

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061068	Workgroup (AAB#):	WG574276
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574461	Initial Calibration Date:	27-JUN-2016 16:42

	WG574461-01		WG574461-02		WG574461-03		WG574461-04		WG574461-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000770	.1	0.00144	.2	0.00204	10	0.0801	20	0.161	.999991	
BERYLLIUM	0	0.000560	.0005	0.000950	.001	0.00129	.05	0.0471	.1	0.0946	.999982	
CALCIUM	0	0.00114	.1	0.00373	.2	0.00753	10	0.447	20	0.894	.999871	
IRON	0	-0.000540	.04	0.000400	.08	0.00174	4	0.0893	8	0.177	.998945	
MAGNESIUM	0	-0.0000300	NA	NA	.2	0.00122	10	0.0828	20	0.165	.999989	
POTASSIUM	0	-0.00533	.5	0.00567	1	0.0306	50	2.54	100	5.16	.999651	
SELENIUM	0	-0.000420	NA	NA	.008	-0.000330	.4	0.00627	.8	0.0130	.999938	
SODIUM	0	-0.0462	.5	0.0267	1	0.102	50	8.83	100	17.7	.999993	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4828328
Report generated: 29-JUN-2016 14:45

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061068	Workgroup (AAB#):	WG574276
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574512	Initial Calibration Date:	28-JUN-2016 09:31

	WG574512-01		WG574512-02		WG574512-03		WG574512-04		WG574512-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000630	.1	0.00126	.2	0.00193	10	0.0790	20	0.158	.999993	
BERYLLIUM	0	0.000750	.0005	0.00103	.001	0.00146	.05	0.0470	.1	0.0945	.999896	
CALCIUM	0	0.00165	.1	0.00358	.2	0.00723	10	0.437	20	0.881	.999618	
IRON	0	-0.000100	.04	0.000550	.08	0.00104	4	0.0851	8	0.170	.999924	
MAGNESIUM	0	-0.000900	NA	NA	.2	0.00127	10	0.0818	20	0.164	.998924	
POTASSIUM	0	-0.0173	.5	0.00427	1	0.0257	50	2.67	100	5.41	.999988	
SELENIUM	0	-0.000470	NA	NA	.008	-0.000390	.4	0.00576	.8	0.0121	.999816	
SODIUM	0	-0.0583	.5	0.0109	1	0.0824	50	8.61	100	17.5	.999988	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4828328
Report generated: 29-JUN-2016 14:45

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061068
Instrument ID: ICP-THERMO3
File ID: T3.062716.165010
Workgroup (AAB#): WG574276
Matrix: WATER

Run Date: 06/27/2016
Run Time: 16:50
Analyst: JYH
Cal ID: ICP-THERI - 27-JUN-16

Sample ID: WG574461-07
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4828330
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-07
Instrument ID: ICP-THERMO3
Run Time: 09:39
Method: 6010C
File ID: T3.062816.093901
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-THERI - 28-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4828330
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-12
Instrument ID: ICP-THERMO3
Run Time: 17:09
Method: 6010C
File ID: T3.062716.170909
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828333
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-16
Instrument ID: ICP-THERMO3
Run Time: 18:06
Method: 6010C
File ID: T3.062716.180618
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828333
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-18
Instrument ID: ICP-THERMO3
Run Time: 18:51
Method: 6010C
File ID: T3.062716.185157
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828333
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-20
Instrument ID: ICP-THERMO3
Run Time: 19:38
Method: 6010C
File ID: T3.062716.193831
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828333
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-22
Instrument ID: ICP-THERMO3
Run Time: 20:13
Method: 6010C
File ID: T3.062716.201301
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828333
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-12
Instrument ID: ICP-THERMO3
Run Time: 09:57
Method: 6010C
File ID: T3.062816.095753
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828333
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-20
Instrument ID: ICP-THERMO3
Run Time: 12:21
Method: 6010C
File ID: T3.062816.122110
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00687	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828333
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-22
Instrument ID: ICP-THERMO3
Run Time: 13:07
Method: 6010C
File ID: T3.062816.130712
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00634	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828333
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-24
Instrument ID: ICP-THERMO3
Run Time: 13:41
Method: 6010C
File ID: T3.062816.134146
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828333
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061068 Run Date: 06/28/2016 Sample ID: WG574512-06
Instrument ID: ICP-THERMO3 Run Time: 09:35 Method: 6010C
File ID: T3.062816.093524 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG574276 Cal ID: ICP-TH - 28-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.94	99.4	90 - 110	
Beryllium		.05	0.0494	98.9	90 - 110	
Calcium		10	9.88	98.8	90 - 110	
Iron		4	3.95	98.8	90 - 110	
Magnesium		10	10.0	100	90 - 110	
Potassium		50	49.4	98.7	90 - 110	
Selenium		.4	0.401	100	90 - 110	
Sodium		50	49.5	98.9	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4828329
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-06
Instrument ID: ICP-THERMO3
Run Time: 16:46
Method: 6010C
File ID: T3.062716.164633
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.97	99.7	90 - 110	
Beryllium		.05	0.0499	99.8	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.02	100	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.0	100	90 - 110	
Selenium		.4	0.399	99.6	90 - 110	
Sodium		50	50.2	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4828329
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-11
Instrument ID: ICP-THERMO3
Run Time: 17:05
Method: 6010C
File ID: T3.062716.170532
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0502	mg/L	100	90 - 110		
Calcium		10.0	10.3	mg/L	103	90 - 110		
Iron		4.00	4.12	mg/L	103	90 - 110		
Magnesium		10.0	10.4	mg/L	104	90 - 110		
Potassium		50.0	50.4	mg/L	101	90 - 110		
Selenium		0.400	0.396	mg/L	98.9	90 - 110		
Sodium		50.0	49.9	mg/L	99.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828332
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-15
Instrument ID: ICP-THERMO3
Run Time: 18:02
Method: 6010C
File ID: T3.062716.180241
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0495	mg/L	98.9	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.04	mg/L	101	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Potassium		50.0	50.1	mg/L	100	90 - 110		
Selenium		0.400	0.401	mg/L	100	90 - 110		
Sodium		50.0	50.3	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828332
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-17
Instrument ID: ICP-THERMO3
Run Time: 18:48
Method: 6010C
File ID: T3.062716.184824
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.87	mg/L	98.7	90 - 110		
Beryllium		0.0500	0.0488	mg/L	97.6	90 - 110		
Calcium		10.0	9.89	mg/L	98.9	90 - 110		
Iron		4.00	3.91	mg/L	97.7	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Potassium		50.0	49.5	mg/L	99.0	90 - 110		
Selenium		0.400	0.384	mg/L	96.1	90 - 110		
Sodium		50.0	49.0	mg/L	97.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828332
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-19
Instrument ID: ICP-THERMO3
Run Time: 19:34
Method: 6010C
File ID: T3.062716.193453
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.9	mg/L	109	90 - 110		
Beryllium		0.0500	0.0543	mg/L	109	90 - 110		
Calcium		10.0	10.8	mg/L	108	90 - 110		
Iron		4.00	4.26	mg/L	106	90 - 110		
Magnesium		10.0	11.1	mg/L	111	90 - 110		*
Potassium		50.0	54.5	mg/L	109	90 - 110		
Selenium		0.400	0.417	mg/L	104	90 - 110		
Sodium		50.0	53.2	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828332
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-21
Instrument ID: ICP-THERMO3
Run Time: 20:09
Method: 6010C
File ID: T3.062716.200924
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	11.2	mg/L	112	90 - 110		*
Beryllium		0.0500	0.0558	mg/L	112	90 - 110		*
Calcium		10.0	11.1	mg/L	111	90 - 110		*
Iron		4.00	4.44	mg/L	111	90 - 110		*
Magnesium		10.0	11.4	mg/L	114	90 - 110		*
Potassium		50.0	55.9	mg/L	112	90 - 110		*
Selenium		0.400	0.439	mg/L	110	90 - 110		
Sodium		50.0	54.6	mg/L	109	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828332
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-11
Instrument ID: ICP-THERMO3
Run Time: 09:54
Method: 6010C
File ID: T3.062816.095416
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.6	mg/L	106	90 - 110		
Beryllium		0.0500	0.0510	mg/L	102	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.07	mg/L	102	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	50.2	mg/L	100	90 - 110		
Selenium		0.400	0.412	mg/L	103	90 - 110		
Sodium		50.0	50.2	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828332
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-19
Instrument ID: ICP-THERMO3
Run Time: 12:17
Method: 6010C
File ID: T3.062816.121735
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.6	mg/L	106	90 - 110		
Beryllium		0.0500	0.0524	mg/L	105	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.15	mg/L	104	90 - 110		
Magnesium		10.0	10.6	mg/L	106	90 - 110		
Potassium		50.0	52.7	mg/L	105	90 - 110		
Selenium		0.400	0.420	mg/L	105	90 - 110		
Sodium		50.0	52.7	mg/L	105	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828332
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-21
Instrument ID: ICP-THERMO3
Run Time: 13:03
Method: 6010C
File ID: T3.062816.130335
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.91	mg/L	99.1	90 - 110		
Beryllium		0.0500	0.0491	mg/L	98.3	90 - 110		
Calcium		10.0	9.78	mg/L	97.8	90 - 110		
Iron		4.00	3.94	mg/L	98.5	90 - 110		
Magnesium		10.0	10.0	mg/L	100	90 - 110		
Potassium		50.0	49.3	mg/L	98.6	90 - 110		
Selenium		0.400	0.396	mg/L	99.0	90 - 110		
Sodium		50.0	49.3	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828332
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-23
Instrument ID: ICP-THERMO3
Run Time: 13:38
Method: 6010C
File ID: T3.062816.133809
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Beryllium		0.0500	0.0500	mg/L	100	90 - 110		
Calcium		10.0	9.99	mg/L	99.9	90 - 110		
Iron		4.00	4.01	mg/L	100	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	50.3	mg/L	101	90 - 110		
Selenium		0.400	0.409	mg/L	102	90 - 110		
Sodium		50.0	50.4	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828332
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-08
Instrument ID: ICP-THERMO3
Run Time: 16:54
Method: 6010C
File ID: T3.062716.165407
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.162	mg/L	101	70 - 130		
Beryllium		0.00160	0.00158	mg/L	98.8	70 - 130		
Calcium		0.400	0.387	mg/L	96.8	70 - 130		
Iron		0.0800	0.0883	mg/L	110	70 - 130		
Magnesium		0.400	0.341	mg/L	85.2	70 - 130		
Potassium		0.800	0.678	mg/L	84.7	70 - 130		
Selenium		0.0160	0.0133	mg/L	83.3	70 - 130		
Sodium		0.400	0.429	mg/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4828334
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-23
Instrument ID: ICP-THERMO3
Run Time: 20:16
Method: 6010C
File ID: T3.062716.201659
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.174	mg/L	109	70 - 130		
Beryllium		0.00160	0.00182	mg/L	114	70 - 130		
Calcium		0.400	0.440	mg/L	110	70 - 130		
Iron		0.0800	0.0915	mg/L	114	70 - 130		
Magnesium		0.400	0.436	mg/L	109	70 - 130		
Potassium		0.800	0.742	mg/L	92.7	70 - 130		
Selenium		0.0160	0.0164	mg/L	103	70 - 130		
Sodium		0.400	0.445	mg/L	111	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4828334
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-08
Instrument ID: ICP-THERMO3
Run Time: 09:42
Method: 6010C
File ID: T3.062816.094252
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.178	mg/L	111	70 - 130		
Beryllium		0.00160	0.00148	mg/L	92.5	70 - 130		
Calcium		0.400	0.354	mg/L	88.6	70 - 130		
Iron		0.0800	0.0839	mg/L	105	70 - 130		
Magnesium		0.400	0.487	mg/L	122	70 - 130		
Potassium		0.800	0.762	mg/L	95.2	70 - 130		
Selenium		0.0160	0.0178	mg/L	111	70 - 130		
Sodium		0.400	0.434	mg/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4828334
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-25
Instrument ID: ICP-THERMO3
Run Time: 13:45
Method: 6010C
File ID: T3.062816.134543
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.191	mg/L	119	70 - 130		
Beryllium		0.00160	0.00173	mg/L	108	70 - 130		
Calcium		0.400	0.426	mg/L	106	70 - 130		
Iron		0.0800	0.0666	mg/L	83.2	70 - 130		
Magnesium		0.400	0.500	mg/L	125	70 - 130		
Potassium		0.800	0.922	mg/L	115	70 - 130		
Selenium		0.0160	0.0142	mg/L	88.8	70 - 130		
Sodium		0.400	0.400	mg/L	100	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4828334
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061068
Instrument ID: ICP-THERMO3
Sol. A : WG574461-09 **File ID:** T3.062716.165800
Sol. AB : WG574461-10 **File ID:** T3.062716.170150

Workgroup (AAB#): WG574276
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	261	104	250	260	104	
Beryllium	NS	0.0000300	NS	0.250	0.238	95.2	
Calcium	250	244	97.6	250	245	98.0	
Iron	100	96.2	96.2	100	94.7	94.7	
Magnesium	250	249	99.6	250	246	98.4	
Potassium	NS	-0.0621	NS	5.00	5.06	101	
Selenium	NS	0.00507	NS	0.250	0.244	97.6	
Sodium	NS	0.0381	NS	5.00	5.33	107	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4828331
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061068
Instrument ID: ICP-THERMO3
Sol. A : WG574512-09 **File ID:** T3.062816.094645
Sol. AB : WG574512-10 **File ID:** T3.062816.095036

Workgroup (AAB#): WG574276
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	266	106	250	262	105	
Beryllium	NS	-0.0000500	NS	0.250	0.243	97.2	
Calcium	250	248	99.2	250	244	97.6	
Iron	100	98.7	98.7	100	95.1	95.1	
Magnesium	250	251	100	250	244	97.6	
Potassium	NS	0.0688	NS	5.00	5.25	105	
Selenium	NS	-0.00226	NS	0.250	0.249	99.6	
Sodium	NS	0.0593	NS	5.00	5.25	105	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4828331
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061068 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4828327
Report generated: 06/28/2016 14:08

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061068 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4828327
Report generated: 06/28/2016 14:08

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061068 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4828327
Report generated: 06/28/2016 14:08

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061068 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4828327
Report generated: 06/28/2016 14:08

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061068 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4828327
Report generated: 06/28/2016 14:08

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061068 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4828327
Report generated: 06/28/2016 14:08

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061068 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4828327
Report generated: 06/28/2016 14:08

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061068 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4828326
Report generated: 06/28/2016 14:08

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000196	0.050519	0.000000	1.000000
Al 308.215 {109}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.000769	0.007903	0.000000	1.000000
As 189.042 {478}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000004	0.024051	0.000000	1.000000
B 249.678 {135}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.000015	0.022924	0.000000	1.000000
Ba 455.403 { 74}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.048549	2.123209	0.000000	1.000000
Be 313.107 {108}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.000564	0.918734	0.000000	1.000000
Ca 422.673 { 80}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.001142	0.044563	0.000000	1.000000
Cd 228.802 {447}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000020	0.565155	0.000000	1.000000
Co 228.616 {447}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000150	0.354063	0.000000	1.000000
Cr 267.716 {126}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.000270	0.057317	0.000000	1.000000
Cu 224.700 {450}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000035	0.126338	0.000000	1.000000
Fe 261.187 {129}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000537	0.022398	0.000000	1.000000
K 766.490 { 44}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.005342	0.051358	0.000000	1.000000
Li 670.784 { 50}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.006300	1.507681	0.000000	1.000000
Mg 279.079 {121}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000025	0.008285	0.000000	1.000000
Mn 257.610 {131}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000506	0.275257	0.000000	1.000000
Mo 202.030 {467}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.000665	0.178173	0.000000	1.000000
Na 589.592 { 57}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.046169	0.177279	0.000000	1.000000
Ni 231.604 {446}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000789	0.132968	0.000000	1.000000
P 214.914 {457}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000087	0.013756	0.000000	1.000000
Pb 220.353 {453}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000973	0.062058	0.000000	1.000000
Sb 206.833 {463}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.000340	0.030133	0.000000	1.000000
Se 196.090 {472}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000420	0.016769	0.000000	1.000000
Si 212.412 {459}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.002496	0.039526	0.000000	1.000000
Sn 189.989 {477}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.000088	0.068709	0.000000	1.000000
Sr 407.771 { 83}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.002119	3.520376	0.000000	1.000000
Ti 337.280 {100}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.001743	0.094127	0.000000	1.000000
Tl 190.856 {477}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000356	0.028211	0.000000	1.000000
V 292.402 {115}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000041	0.067298	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.000768	0.415656	0.000000	1.000000
Zr 339.198 { 99}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.004839	3.355347	0.000000	1.000000

Approved: June 28, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999779	0.000003	0.002210	0.007368	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999991	0.000002	0.009704	0.032347	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999992	0.000000	0.003147	0.010490	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999856	0.000002	0.002882	0.009605	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999975	0.000096	0.001072	0.003575	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999982	0.000002	0.000098	0.000326	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999871	0.000045	0.042441	0.141472	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999878	0.000003	0.000270	0.000899	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999991	0.000002	0.000413	0.001377	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999966	0.000001	0.001232	0.004108	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999961	0.000004	0.001364	0.004545	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.998945	0.000026	0.027353	0.091178	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999651	0.000431	0.125366	0.417887	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999992	0.000057	0.004005	0.013351	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999989	0.000004	0.082718	0.275727	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.998675	0.000045	0.002623	0.008743	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999647	0.000030	0.000437	0.001457	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999993	0.000214	0.031747	0.105822	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999968	0.000003	0.001168	0.003894	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999993	0.000003	0.007033	0.023442	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999765	0.000004	0.003642	0.012140	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999816	0.000004	0.004417	0.014724	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999938	0.000001	0.006576	0.021920	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999974	0.000009	0.002316	0.007720	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999927	0.000005	0.000902	0.003006	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999993	0.000085	0.000447	0.001490	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999288	0.000022	0.008282	0.027606	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999810	0.000002	0.003166	0.010552	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999965	0.000004	0.001015	0.003385	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999960	0.000023	0.000202	0.000672	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999911	0.000284	0.000541	0.001802	OK.	1.000000	0.000000	1	0

Approved: June 28, 2016

Sample Name: S0 Acquired: 6/27/2016 16:27:28 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00020**	**.00077**	**-.00000**	**.00002**	**.04855**	**.00056**	**.00114**
Stddev	.00005	.00004	.00003	.00006	.00280	.00003	.00103
%RSD	24.843	4.9721	769.16	381.14	5.7735	5.1043	90.050
#1	-.00014	.00073	.00002	-.00004	.05095	.00053	.00115
#2	-.00024	.00081	.00001	.00008	.04547	.00057	.00011
#3	-.00021	.00076	-.00004	.00001	.04923	.00059	.00217

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00002**	**-.00015**	**.00027**	**-.00004**	**-.00054**	**-.00533**	**-.00630**
Stddev	.00011	.00013	.00005	.00008	.00028	.00342	.00133
%RSD	544.64	87.986	19.860	214.76	52.213	64.161	21.180
#1	-.00012	-.00003	.00031	-.00007	-.00047	-.00147	-.00593
#2	.00009	-.00029	.00021	-.00009	-.00030	-.00653	-.00519
#3	-.00003	-.00013	.00029	.00005	-.00085	-.00798	-.00778

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00003**	**-.00051**	**.00067**	**-.04617**	**-.00079**	**-.00009**	**-.00097**
Stddev	.00036	.00043	.00023	.00158	.00015	.00009	.00012
%RSD	1430.1	84.446	33.895	3.4274	19.059	108.38	12.114
#1	-.00038	-.00034	.00047	-.04794	-.00080	-.00019	-.00087
#2	.00033	-.00099	.00061	-.04490	-.00063	-.00005	-.00110
#3	-.00002	-.00019	.00091	-.04568	-.00093	-.00002	-.00095

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00034**	**-.00042**	**.00250**	**.00009**	**.00212**	**-.00174**	**-.00036**
Stddev	.00001	.00011	.00007	.00003	.00106	.00072	.00005
%RSD	1.6171	26.348	2.9748	30.290	50.207	41.266	12.918
#1	.00034	-.00044	.00241	.00006	.00188	-.00109	-.00039
#2	.00034	-.00030	.00252	.00008	.00328	-.00162	-.00030
#3	.00035	-.00052	.00255	.00012	.00119	-.00251	-.00037

Approved: June 28, 2016

Sample Name: S0 Acquired: 6/27/2016 16:27:28 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**-.00004**	**.00077**	**-.00483**
Stddev	.00001	.00012	.00235
%RSD	34.789	15.744	48.654
#1	-.00003	.00081	-.00753
#2	-.00004	.00063	-.00372
#3	-.00005	.00086	-.00324
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10141.**	**61964.**	**3157.7**
Stddev	13.	84.	13.2
%RSD	.12529	.13556	.41911
#1	10150.	61891.	3150.2
#2	10126.	62055.	3149.9
#3	10146.	61945.	3173.0

Approved: June 28, 2016

Sample Name: S1 Acquired: 6/27/2016 16:31:25 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00001**	**.00144**	**.06452**	**.00095**	**.00373**	**.00014**	**.00038**
Stddev	.00010	.00004	.00019	.00005	.00062	.00013	.00007
%RSD	1272.4	2.6441	.29043	4.9605	16.672	89.580	17.915
#1	-.00010	.00148	.06472	.00093	.00303	.00023	.00033
#2	.00008	.00141	.06434	.00092	.00422	-.00000	.00034
#3	.00004	.00142	.06450	.00100	.00394	.00019	.00045

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00053**	**.00045**	**.00040**	**.00567**	**.00122**	**.00152**	**.02671**
Stddev	.00001	.00007	.00049	.00559	.00083	.00003	.00605
%RSD	1.3143	15.364	124.34	98.514	68.218	1.9282	22.646
#1	.00052	.00053	.00033	-.00072	.00218	.00151	.02224
#2	.00053	.00040	.00092	.00965	.00080	.00155	.02431
#3	.00054	.00042	-.00006	.00809	.00068	.00149	.03359

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00019**	**.00093**	**-.00075**	**.00059**	**.00411**	**.00053**	**.03030**
Stddev	.00017	.00006	.00001	.00007	.00004	.00005	.00198
%RSD	90.323	6.8396	.98230	11.115	.90448	9.5626	6.5198
#1	-.00038	.00092	-.00074	.00057	.00407	.00058	.02807
#2	-.00005	.00088	-.00074	.00066	.00410	.00048	.03095
#3	-.00014	.00100	-.00075	.00054	.00415	.00052	.03186

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00140**	**.00054**	**.00367**	**.01597**
Stddev	.00014	.00005	.00002	.00090
%RSD	9.6619	9.1805	.62859	5.6397
#1	-.00138	.00051	.00364	.01504
#2	-.00154	.00060	.00369	.01683
#3	-.00128	.00052	.00367	.01605

Approved: June 28, 2016

Sample Name: S1 Acquired: 6/27/2016 16:31:25 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10143.**	**62124.**	**3206.0**
Stddev	11.	72.	19.9
%RSD	.10378	.11522	.62068
#1	10143.	62198.	3228.9
#2	10154.	62119.	3196.1
#3	10133.	62055.	3193.0

Approved: June 28, 2016

Sample Name: S2 Acquired: 6/27/2016 16:35:22 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00019**	**.00204**	**.00015**	**.00016**	**.07988**	**.00129**	**.00753**
Stddev	.00015	.00001	.00005	.00003	.00111	.00005	.00063
%RSD	76.400	.72668	34.821	16.692	1.3939	3.7663	8.3132
#1	.00014	.00202	.00014	.00014	.08117	.00125	.00706
#2	.00036	.00205	.00010	.00019	.07928	.00127	.00730
#3	.00008	.00205	.00020	.00015	.07920	.00134	.00824

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00053**	**.00102**	**.00074**	**.00109**	**.00174**	**.03060**	**.01658**
Stddev	.00011	.00012	.00002	.00012	.00025	.00438	.00264
%RSD	20.398	12.080	3.1396	11.485	14.384	14.310	15.916
#1	.00043	.00104	.00072	.00106	.00189	.02563	.01399
#2	.00053	.00113	.00073	.00122	.00188	.03228	.01649
#3	.00064	.00088	.00077	.00098	.00145	.03389	.01926

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00122**	**.00297**	**.00288**	**.10232**	**.00021**	**.00207**	**-.00033**
Stddev	.00025	.00037	.00005	.00210	.00012	.00004	.00024
%RSD	20.483	12.420	1.6057	2.0510	56.922	1.7394	72.208
#1	.00118	.00312	.00293	.10069	.00009	.00210	-.00043
#2	.00148	.00324	.00286	.10469	.00032	.00203	-.00006
#3	.00099	.00255	.00284	.10158	.00021	.00208	-.00050

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00077**	**-.00033**	**.00557**	**.00109**	**.05849**	**.00029**	**-.00009**
Stddev	.00005	.00002	.00003	.00007	.00142	.00027	.00005
%RSD	7.0396	4.8769	.59685	6.8444	2.4236	94.437	55.201
#1	.00071	-.00035	.00560	.00105	.05754	.00009	-.00005
#2	.00082	-.00032	.00555	.00117	.06012	.00059	-.00008
#3	.00077	-.00032	.00554	.00104	.05781	.00018	-.00015

Approved: June 28, 2016

Sample Name: S2 Acquired: 6/27/2016 16:35:22 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00099	.00689	.04576
Stddev	.00001	.00001	.00170
%RSD	.93447	.19571	3.7054
#1	.00098	.00689	.04458
#2	.00099	.00691	.04770
#3	.00100	.00688	.04499
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10149.	62108.	3182.3
Stddev	15.	64.	11.6
%RSD	.15093	.10354	.36544
#1	10134.	62148.	3186.5
#2	10149.	62034.	3169.1
#3	10165.	62142.	3191.2

Approved: June 28, 2016

Sample Name: S3 Acquired: 6/27/2016 16:39:19 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01977	.08011	.00950	.01136	2.1821	.04707	.44692	.03069
Stddev	.00007	.00014	.00004	.00006	.0115	.00010	.00291	.00010
%RSD	.37662	.17721	.39515	.53859	.52769	.21426	.65058	.31828
#1	.01986	.08021	.00955	.01134	2.1940	.04695	.44762	.03077
#2	.01973	.08016	.00948	.01132	2.1710	.04709	.44372	.03073
#3	.01972	.07995	.00949	.01143	2.1813	.04715	.44941	.03058

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07062	.02876	.06405	.08925	2.5439	1.5038	.08279	.13726
Stddev	.00014	.00006	.00014	.00091	.0092	.0108	.00054	.00104
%RSD	.19258	.22540	.21161	1.0216	.36207	.71942	.65735	.75848
#1	.07056	.02873	.06402	.09002	2.5492	1.5161	.08292	.13843
#2	.07077	.02884	.06420	.08825	2.5333	1.4959	.08219	.13643
#3	.07052	.02872	.06394	.08949	2.5493	1.4993	.08326	.13692

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.17987	8.8250	.06580	.13498	.03019	.03587	.00627	.20279
Stddev	.00049	.0429	.00007	.00030	.00007	.00013	.00010	.00037
%RSD	.27317	.48579	.11308	.22386	.22726	.36683	1.6735	.18491
#1	.18005	8.8691	.06583	.13512	.03017	.03588	.00637	.20240
#2	.18024	8.7835	.06586	.13519	.03013	.03599	.00616	.20315
#3	.17931	8.8223	.06572	.13464	.03026	.03573	.00627	.20283

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06882	3.5417	.09219	.01258	.06648	.41754	3.3774
Stddev	.00008	.0059	.00015	.00008	.00013	.00035	.0035
%RSD	.12264	.16580	.15815	.64131	.19316	.08426	.10337
#1	.06876	3.5484	.09213	.01253	.06633	.41715	3.3801
#2	.06892	3.5374	.09235	.01267	.06655	.41784	3.3786
#3	.06878	3.5392	.09208	.01253	.06655	.41763	3.3735

Approved: June 28, 2016

Sample Name: S3 Acquired: 6/27/2016 16:39:19 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9961.2**	**60849.**	**3164.1**
Stddev	24.5	76.	5.5
%RSD	.24609	.12516	.17292
#1	9975.5	60901.	3160.7
#2	9932.9	60762.	3161.1
#3	9975.2	60885.	3170.4

Approved: June 28, 2016

Sample Name: S4 Acquired: 6/27/2016 16:42:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04001	.16059	.01917	.02298	4.2883	.09460	.89396	.06192
Stddev	.00016	.00033	.00004	.00016	.0205	.00024	.00500	.00016
%RSD	.39050	.20296	.22035	.71015	.47915	.25587	.55875	.25604
#1	.03987	.16030	.01913	.02297	4.3042	.09433	.89843	.06208
#2	.04018	.16094	.01922	.02315	4.2956	.09468	.89487	.06190
#3	.03997	.16053	.01917	.02283	4.2651	.09479	.88857	.06177

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14117	.05778	.12698	.17736	5.1637	3.0079	.16510	.27284
Stddev	.00007	.00004	.00003	.00068	.0239	.0115	.00087	.00300
%RSD	.05131	.06413	.02518	.38417	.46255	.38110	.52414	1.1006
#1	.14125	.05777	.12697	.17785	5.1700	3.0175	.16425	.27344
#2	.14117	.05774	.12702	.17764	5.1839	3.0110	.16598	.27550
#3	.14111	.05782	.12696	.17658	5.1373	2.9952	.16505	.26959

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.35713	17.666	.13208	.27122	.06132	.07151	.01302	.39738
Stddev	.00068	.073	.00028	.00036	.00024	.00004	.00003	.00055
%RSD	.19168	.41191	.21506	.13273	.38512	.05984	.22776	.13831
#1	.35788	17.727	.13240	.27097	.06108	.07156	.01305	.39689
#2	.35698	17.686	.13196	.27163	.06156	.07151	.01299	.39727
#3	.35653	17.585	.13187	.27105	.06133	.07147	.01303	.39797

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13730	7.0241	.18587	.02541	.13481	.83123	6.6869
Stddev	.00024	.0199	.00094	.00007	.00021	.00076	.0539
%RSD	.17500	.28366	.50330	.26419	.15783	.09165	.80524
#1	.13741	7.0416	.18680	.02547	.13465	.83035	6.7411
#2	.13745	7.0283	.18587	.02534	.13505	.83172	6.6861
#3	.13702	7.0024	.18493	.02543	.13473	.83162	6.6334

Approved: June 28, 2016

Sample Name: S4 Acquired: 6/27/2016 16:42:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9856.7**	**59819.**	**3182.9**
Stddev	25.1	202.	18.4
%RSD	.25431	.33837	.57738
#1	9883.0	60053.	3164.0
#2	9853.9	59697.	3184.1
#3	9833.1	59707.	3200.7

Approved: June 28, 2016

Sample Name: ICV Acquired: 6/27/2016 16:46:33 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39681	9.9728	.39850	.50216	1.0074	.04989	10.080	.05002
Stddev	.00197	.0221	.00202	.00310	.0012	.00009	.071	.00025
%RSD	.49638	.22139	.50815	.61823	.12165	.17076	.70716	.49588
#1	.39557	9.9476	.39922	.50491	1.0072	.04987	10.144	.04994
#2	.39579	9.9820	.39621	.49879	1.0063	.04982	10.094	.04983
#3	.39909	9.9888	.40006	.50277	1.0088	.04999	10.003	.05030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20001	.49745	.50424	4.0154	49.997	1.0014	10.119	.50433
Stddev	.00026	.00261	.00051	.0089	.068	.0024	.078	.00319
%RSD	.12992	.52396	.10047	.22298	.13555	.24336	.77300	.63202
#1	.19972	.49948	.50383	4.0078	50.048	.99873	10.155	.50669
#2	.20009	.49451	.50481	4.0131	50.023	1.0035	10.174	.50070
#3	.20022	.49837	.50408	4.0253	49.920	1.0020	10.030	.50559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0126	50.216	.50377	9.9997	.50153	1.2052	.39856	5.0870
Stddev	.0015	.076	.00105	.0129	.00381	.0040	.00301	.0029
%RSD	.15346	.15078	.20747	.12858	.75928	.32752	.75620	.05666
#1	1.0136	50.301	.50341	10.009	.50085	1.2027	.40189	5.0837
#2	1.0134	50.156	.50495	10.006	.50564	1.2032	.39601	5.0882
#3	1.0108	50.190	.50295	9.9850	.49812	1.2098	.39778	5.0891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: ICV Acquired: 6/27/2016 16:46:33 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0029**	**1.0074**	**.99157**	**.50233**	**.99514**	**1.0076**	**1.0062**
Stddev	.0014	.0008	.00668	.00099	.00304	.0016	.0051
%RSD	.14359	.08284	.67385	.19644	.30577	.15863	.50391
#1	1.0045	1.0081	.98527	.50131	.99749	1.0071	1.0120
#2	1.0027	1.0065	.99086	.50239	.99170	1.0093	1.0026
#3	1.0016	1.0077	.99858	.50328	.99623	1.0062	1.0040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9922.2**	**60431.**	**3158.4**
Stddev	43.9	238.	14.3
%RSD	.44205	.39322	.45249
#1	9961.5	60566.	3146.4
#2	9874.9	60571.	3174.2
#3	9930.1	60157.	3154.6

Approved: June 28, 2016

Sample Name: ICB Acquired: 6/27/2016 16:50:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.00554	-.00115	.00276	.00110	.00009	.03225	-.00014
Stddev	.00257	.00430	.00329	.00225	.00039	.00002	.02084	.00024
%RSD	259.01	77.618	286.24	81.620	35.268	20.576	64.619	173.65
#1	-.00177	.00059	.00141	.00093	.00066	.00008	.01638	.00014
#2	.00332	.00765	-.00486	.00528	.00122	.00012	.05585	-.00026
#3	.00143	.00836	-.00000	.00207	.00140	.00008	.02452	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00084	.00077	.00357	-.01667	.00419	.00085	.00163
Stddev	.00026	.00054	.00169	.03849	.08556	.00418	.09571	.00297
%RSD	281.25	64.831	218.37	1078.3	513.20	99.882	11248.	182.06
#1	.00024	-.00045	-.00077	-.04052	.07661	.00428	-.05300	.00498
#2	-.00020	-.00060	.00258	.03052	-.03512	-.00004	-.05580	-.00067
#3	.00024	-.00145	.00050	.02070	-.09150	.00833	.11135	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00085	.12979	.00064	.00370	.00032	-.00065	.00306	.01702
Stddev	.00013	.01999	.00158	.00073	.00243	.00219	.00526	.00215
%RSD	15.046	15.405	244.30	19.815	762.96	338.70	171.50	12.657
#1	-.00091	.11829	.00230	.00310	.00007	-.00006	.00002	.01948
#2	-.00070	.11820	.00047	.00349	-.00198	.00119	.00004	.01608
#3	-.00093	.15287	-.00084	.00452	.00287	-.00307	.00913	.01549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: ICB Acquired: 6/27/2016 16:50:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00176**	**-.00246**	**-.00165**	**.00086**	**-.00023**	**.00144**
Stddev	.00069	.00016	.00837	.00252	.00144	.00034	.00007
%RSD	2189.1	9.3341	340.57	152.76	167.10	146.78	4.5591
#1	.00028	.00195	-.01133	-.00326	.00161	.00013	.00152
#2	.00045	.00170	-.00134	.00125	-.00080	-.00027	.00141
#3	-.00082	.00163	.00530	-.00294	.00178	-.00055	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10100.**	**61911.**	**3176.0**
Stddev	26.	142.	12.7
%RSD	.25830	.22955	.40027
#1	10129.	62065.	3161.5
#2	10079.	61884.	3181.4
#3	10093.	61784.	3185.2

Approved: June 28, 2016

Sample Name: LLICV Acquired: 6/27/2016 16:54:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01060**	**.16216**	**.00794**	**.08233**	**.00807**	**.00158**	**.38728**	**.00095**
Stddev	.00154	.00419	.00461	.00200	.00023	.00002	.05548	.00024
%RSD	14.552	2.5850	58.097	2.4343	2.8714	.96796	14.325	24.756
#1	.01238	.16647	.01159	.08216	.00807	.00157	.39614	.00117
#2	.00978	.15809	.00948	.08041	.00784	.00160	.32791	.00099
#3	.00965	.16193	.00275	.08441	.00831	.00158	.43780	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00421**	**.00369**	**.00520**	**.08834**	**.67797**	**.08124**	**.34077**	**.01248**
Stddev	.00021	.00046	.00095	.03850	.09873	.00296	.04304	.00174
%RSD	4.9476	12.429	18.247	43.579	14.563	3.6423	12.630	13.941
#1	.00398	.00363	.00528	.10429	.57905	.07907	.29881	.01430
#2	.00437	.00327	.00422	.04443	.67835	.08003	.33870	.01083
#3	.00430	.00418	.00611	.11629	.77651	.08461	.38481	.01232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00486**	**.42948**	**.01665**	**.78146**	**.00629**	**.07752**	**.01332**	**.81131**
Stddev	.00018	.00656	.00124	.01123	.00188	.00272	.00289	.00120
%RSD	3.7331	1.5266	7.4190	1.4366	29.819	3.5144	21.689	.14730
#1	.00472	.43588	.01583	.79374	.00553	.07443	.01075	.81250
#2	.00507	.42278	.01807	.77891	.00842	.07855	.01645	.81132
#3	.00480	.42978	.01606	.77173	.00491	.07958	.01277	.81011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LLICV Acquired: 6/27/2016 16:54:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40418**	**.04101**	**.02622**	**.15484**	**.00861**	**.01605**	**.04509**
Stddev	.00239	.00036	.00653	.00299	.00037	.00018	.00076
%RSD	.59159	.87009	24.888	1.9286	4.2794	1.1352	1.6837
#1	.40510	.04074	.02154	.15809	.00821	.01604	.04496
#2	.40599	.04088	.03367	.15222	.00870	.01624	.04440
#3	.40147	.04141	.02344	.15422	.00893	.01588	.04590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10083.**	**61787.**	**3161.8**
Stddev	13.	95.	9.0
%RSD	.12480	.15329	.28406
#1	10069.	61872.	3168.5
#2	10095.	61805.	3165.4
#3	10084.	61685.	3151.6

Approved: June 28, 2016

Sample Name: ICSA Acquired: 6/27/2016 16:58:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**260.59**	**.00067**	**-.01433**	**-.00064**	**.00003**	**244.07**	**-.00027**
Stddev	.00103	.04	.00184	.00207	.00114	.00004	.85	.00015
%RSD	104.15	.01672	273.35	14.427	177.38	125.03	.34666	54.518
#1	.00019	260.64	.00043	-.01264	.00066	.00001	244.74	-.00040
#2	-.00143	260.56	.00262	-.01371	-.00145	.00008	243.12	-.00030
#3	-.00171	260.57	-.00103	-.01663	-.00115	.00001	244.35	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00109**	**-.00064**	**.00038**	**96.225**	**-.06210**	**.00911**	**249.00**	**-.00014**
Stddev	.00026	.00059	.00203	.218	.13083	.00426	.50	.00324
%RSD	23.913	92.446	537.24	.22698	210.68	46.751	.20145	2364.2
#1	-.00120	-.00000	.00143	96.372	.07097	.01144	249.57	.00215
#2	-.00128	-.00117	.00167	95.974	-.19057	.01170	248.83	-.00385
#3	-.00080	-.00075	-.00196	96.328	-.06670	.00420	248.61	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00410**	**.03807**	**.00125**	**.00845**	**.00129**	**-.00295**	**.00507**	**-.01235**
Stddev	.00018	.01282	.00103	.00221	.00279	.00338	.00333	.00091
%RSD	4.4785	33.680	82.821	26.181	217.33	114.53	65.779	7.4017
#1	-.00395	.03046	.00230	.00621	-.00193	-.00152	.00805	-.01137
#2	-.00405	.05287	.00023	.01063	.00307	-.00681	.00147	-.01317
#3	-.00431	.03087	.00121	.00851	.00272	-.00052	.00568	-.01250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: ICSA Acquired: 6/27/2016 16:58:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00054**	**.02073**	**.00086**	**-.00239**	**-.00765**	**-.00325**
Stddev	.00049	.00006	.00554	.00418	.00062	.00009	.00028
%RSD	90.845	11.771	26.720	484.85	25.742	1.1964	8.6868
#1	-.00025	.00051	.02203	.00566	-.00203	-.00759	-.00328
#2	-.00111	.00050	.02550	-.00199	-.00204	-.00775	-.00352
#3	-.00027	.00062	.01465	-.00109	-.00310	-.00760	-.00296
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9590.6**	**58096.**	**3120.3**
Stddev	14.6	53.	20.2
%RSD	.15235	.09132	.64704
#1	9581.4	58077.	3098.1
#2	9607.4	58156.	3137.6
#3	9583.0	58056.	3125.2

Approved: June 28, 2016

Sample Name: ICSAB Acquired: 6/27/2016 17:01:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50690	260.11	.24859	-.01640	.24976	.23774	245.13	.48330
Stddev	.00189	.60	.00382	.00094	.00054	.00047	.96	.00078
%RSD	.37269	.23092	1.5352	5.7378	.21812	.19574	.39029	.16049
#1	.50805	259.80	.24535	-.01603	.24973	.23722	244.54	.48375
#2	.50792	260.80	.24762	-.01746	.25032	.23812	244.62	.48374
#3	.50472	259.72	.25280	-.01569	.24923	.23788	246.24	.48240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23513	.24427	.24409	94.716	5.0617	.00921	246.04	.24477
Stddev	.00073	.00027	.00276	.486	.0658	.00148	1.28	.00137
%RSD	.31164	.11038	1.1321	.51320	1.3006	16.119	.51967	.55902
#1	.23503	.24397	.24493	94.335	5.0116	.00886	245.48	.24320
#2	.23591	.24449	.24633	94.549	5.0371	.00793	245.14	.24569
#3	.23445	.24434	.24100	95.264	5.1362	.01084	247.50	.24543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00486	5.3310	.47130	.08050	.48396	.49560	.24381	-.02283
Stddev	.00015	.0330	.00066	.00153	.00431	.00280	.00827	.00213
%RSD	3.0857	.61898	.13932	1.9055	.89132	.56428	3.3914	9.3448
#1	-.00487	5.3040	.47187	.07931	.48866	.49579	.24220	-.02529
#2	-.00501	5.3678	.47144	.08223	.48018	.49830	.23647	-.02170
#3	-.00471	5.3211	.47058	.07995	.48304	.49272	.25277	-.02150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: ICSAB Acquired: 6/27/2016 17:01:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**.00035**	**.01993**	**.45058**	**.24659**	**.46536**	**-.00377**
Stddev	.00038	.00008	.00278	.00100	.00022	.00042	.00037
%RSD	79.283	22.066	13.970	.22111	.08877	.09081	9.8936
#1	-.00073	.00031	.02267	.44975	.24663	.46530	-.00403
#2	-.00004	.00030	.02004	.45168	.24679	.46581	-.00393
#3	-.00067	.00043	.01710	.45030	.24636	.46497	-.00334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9569.8**	**58094.**	**3117.7**
Stddev	15.5	235.	15.5
%RSD	.16148	.40421	.49683
#1	9554.0	58043.	3123.9
#2	9570.6	57889.	3129.1
#3	9584.9	58351.	3100.0

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 17:05:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39812**	**10.194**	**.39571**	**.49617**	**1.0047**	**.05015**	**10.320**	**.04983**
Stddev	.00099	.031	.00174	.00046	.0019	.00014	.042	.00049
%RSD	.24973	.29978	.43860	.09187	.19235	.28871	.41088	.97351
#1	.39738	10.228	.39635	.49590	1.0063	.05008	10.297	.05009
#2	.39773	10.181	.39375	.49592	1.0025	.05031	10.369	.05012
#3	.39925	10.171	.39704	.49670	1.0051	.05005	10.295	.04927
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19973**	**.50036**	**.50054**	**4.1240**	**50.411**	**1.0001**	**10.412**	**.50273**
Stddev	.00033	.00059	.00102	.0403	.210	.0056	.079	.00395
%RSD	.16441	.11801	.20367	.97754	.41667	.56171	.75919	.78628
#1	.19954	.50095	.50041	4.1590	50.628	1.0018	10.434	.49841
#2	.19953	.50036	.50162	4.1329	50.208	.99382	10.325	.50363
#3	.20011	.49977	.49959	4.0799	50.397	1.0047	10.478	.50616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0040**	**49.910**	**.49867**	**9.9408**	**.50190**	**1.1964**	**.39564**	**5.0119**
Stddev	.0034	.129	.00164	.0207	.00148	.0021	.00342	.0091
%RSD	.33672	.25901	.32901	.20775	.29456	.17193	.86336	.18204
#1	1.0078	49.996	.50020	9.9590	.50173	1.1973	.39659	5.0219
#2	1.0030	49.762	.49887	9.9451	.50346	1.1978	.39185	5.0101
#3	1.0012	49.973	.49693	9.9184	.50052	1.1940	.39848	5.0039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 17:05:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0002**	**1.0018**	**1.0016**	**.50197**	**1.0005**	**.99872**	**1.0136**
Stddev	.0024	.0021	.0061	.00116	.0006	.00151	.0037
%RSD	.24513	.21221	.61065	.23065	.05650	.15076	.36157
#1	1.0027	1.0033	1.0042	.50113	1.00000	.99977	1.0152
#2	1.0001	.99937	.99467	.50329	1.0011	.99940	1.0094
#3	.99776	1.0027	1.0061	.50150	1.0003	.99699	1.0162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10039.**	**60813.**	**3145.7**
Stddev	3.	208.	14.4
%RSD	.03010	.34163	.45770
#1	10036.	60702.	3129.8
#2	10042.	60684.	3157.8
#3	10038.	61053.	3149.4

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 17:09:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00137**	**.01673**	**.00109**	**.00206**	**.00086**	**.00010**	**.03042**	**-.00014**
Stddev	.00081	.00979	.00286	.00238	.00116	.00006	.04347	.00018
%RSD	58.981	58.522	261.70	115.49	135.64	61.421	142.88	134.69
#1	.00223	.02185	-.00012	.00406	.00200	.00014	.02498	.00008
#2	.00128	.00544	-.00096	.00270	-.00032	.00013	.07635	-.00025
#3	.00062	.02290	.00436	-.00057	.00089	.00003	-.01007	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**.00068**	**.00010**	**.01799**	**-.07860**	**-.00000**	**.03574**	**.00112**
Stddev	.00019	.00054	.00016	.01691	.10277	.00272	.01893	.00218
%RSD	59.090	78.804	160.89	93.958	130.74	167340.	52.981	194.22
#1	.00023	.00015	.00010	.00464	-.01285	.00047	.04208	.00279
#2	.00053	.00068	-.00006	.03700	-.19703	.00245	.05068	.00191
#3	.00020	.00122	.00026	.01235	-.02593	-.00293	.01445	-.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00165**	**.09131**	**.00047**	**.00133**	**-.00098**	**-.00375**	**-.00093**	**.00947**
Stddev	.00056	.03898	.00022	.00691	.00319	.00290	.00484	.00086
%RSD	34.173	42.696	47.090	517.43	326.90	77.233	517.65	9.1162
#1	-.00108	.07673	.00050	.00027	-.00287	-.00484	.00094	.01042
#2	-.00166	.13548	.00023	-.00497	.00271	-.00047	-.00643	.00925
#3	-.00220	.06171	.00067	.00871	-.00277	-.00595	.00269	.00874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 17:09:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00134**	**.00294**	**.00126**	**.00107**	**-.00118**	**.00127**
Stddev	.00038	.00047	.00825	.00251	.00076	.00007	.00026
%RSD	243.07	35.413	280.33	198.89	71.009	6.1199	20.447
#1	.00028	.00189	.00077	-.00145	.00019	-.00126	.00137
#2	-.00044	.00104	.01206	.00349	.00154	-.00114	.00097
#3	-.00031	.00110	-.00401	.00174	.00147	-.00114	.00146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10203.**	**62526.**	**3197.0**
Stddev	15.	54.	3.0
%RSD	.14233	.08586	.09413
#1	10188.	62582.	3193.5
#2	10217.	62520.	3198.4
#3	10206.	62475.	3199.0

Approved: June 28, 2016

Sample Name: PBW 02 Acquired: 6/27/2016 17:13:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**-.00881**	**.00095**	**.00019**	**-.00047**	**.00003**	**-.00616**	**-.00018**
Stddev	.00116	.00554	.00248	.00193	.00024	.00004	.03560	.00010
%RSD	390.35	62.878	261.95	998.89	52.384	149.57	577.96	59.781
#1	.00049	-.01170	-.00122	-.00172	-.00019	.00005	-.04135	-.00026
#2	-.00163	-.00242	.00041	.00015	-.00056	-.00002	.02984	-.00021
#3	.00025	-.01230	.00365	.00214	-.00065	.00005	-.00698	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00078**	**-.00058**	**.03013**	**-.14899**	**-.00152**	**.01432**	**.00153**
Stddev	.00010	.00102	.00108	.01394	.15583	.00301	.03037	.00216
%RSD	103.57	131.40	186.20	46.269	104.59	197.34	212.04	140.87
#1	.00011	-.00168	-.00178	.01414	-.00849	-.00181	-.00533	.00249
#2	-.00001	.00033	.00029	.03971	-.12189	-.00438	-.00101	-.00094
#3	.00020	-.00097	-.00024	.03656	-.31659	.00162	.04931	.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00363**	**.00444**	**.00008**	**.00404**	**.00187**	**-.00311**	**-.00416**	**-.02308**
Stddev	.00038	.01833	.00068	.00383	.00021	.00333	.00428	.00035
%RSD	10.400	413.25	879.56	94.791	11.348	107.14	102.83	1.4951
#1	-.00320	-.00716	.00073	.00046	.00206	-.00084	-.00453	-.02269
#2	-.00391	-.00509	.00013	.00808	.00164	-.00155	-.00825	-.02333
#3	-.00378	.02556	-.00063	.00359	.00189	-.00693	.00029	-.02323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: PBW 02 Acquired: 6/27/2016 17:13:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00119**	**-.00005**	**.00339**	**-.00129**	**.00012**	**-.00166**	**-.00032**
Stddev	.00066	.00044	.00302	.00334	.00053	.00009	.00052
%RSD	55.564	794.08	89.101	257.98	441.52	5.3649	162.89
#1	-.00143	.00007	.00475	-.00092	.00055	-.00174	-.00039
#2	-.00169	.00031	-.00007	.00184	.00028	-.00168	.00024
#3	-.00044	-.00054	.00549	-.00481	-.00047	-.00156	-.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10695.**	**65258.**	**3317.0**
Stddev	26.	67.	10.3
%RSD	.24550	.10262	.31041
#1	10724.	65229.	3328.8
#2	10685.	65211.	3311.2
#3	10674.	65335.	3310.8

Approved: June 28, 2016

Sample Name: LCSW 02 Acquired: 6/27/2016 17:17:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19571**	**4.8490**	**.19209**	**.95260**	**.49496**	**.02398**	**5.0421**	**.02419**
Stddev	.00111	.0129	.00279	.00437	.00076	.00005	.0485	.00044
%RSD	.56887	.26582	1.4534	.45858	.15291	.19806	.96135	1.8282
#1	.19681	4.8597	.18908	.95165	.49551	.02394	4.9862	.02470
#2	.19459	4.8527	.19257	.95737	.49410	.02397	5.0668	.02397
#3	.19572	4.8347	.19460	.94879	.49527	.02403	5.0732	.02390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09895**	**.24424**	**.24790**	**1.9821**	**24.454**	**.49863**	**4.8988**	**.24435**
Stddev	.00038	.00036	.00007	.0304	.036	.00321	.0550	.00167
%RSD	.37934	.14761	.02688	1.5339	.14581	.64407	1.1233	.68185
#1	.09935	.24452	.24794	2.0079	24.461	.49816	4.9440	.24337
#2	.09861	.24384	.24782	1.9486	24.415	.49568	4.8375	.24627
#3	.09888	.24438	.24793	1.9900	24.486	.50205	4.9148	.24340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49750**	**24.783**	**.24880**	**4.7583**	**.24566**	**.57847**	**.18598**	**2.2967**
Stddev	.00165	.055	.00020	.0071	.00321	.00254	.00362	.0031
%RSD	.33263	.22119	.07997	.14988	1.3070	.43860	1.9477	.13564
#1	.49941	24.839	.24866	4.7640	.24678	.58140	.18180	2.2995
#2	.49645	24.729	.24903	4.7607	.24204	.57705	.18822	2.2934
#3	.49664	24.780	.24872	4.7503	.24816	.57696	.18791	2.2971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LCSW 02 Acquired: 6/27/2016 17:17:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49159	.50204	.50144	.24674	.48932	.48878	.00532
Stddev	.00166	.00065	.00707	.00252	.00196	.00067	.00106
%RSD	.33693	.12972	1.4104	1.0206	.40010	.13751	20.007
#1	.49003	.50195	.50206	.24623	.48747	.48951	.00419
#2	.49332	.50272	.49408	.24947	.49137	.48866	.00547
#3	.49141	.50143	.50818	.24452	.48913	.48818	.00630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10147.	61787.	3228.2
Stddev	37.	110.	8.7
%RSD	.36126	.17761	.26817
#1	10110.	61660.	3218.3
#2	10148.	61854.	3234.2
#3	10184.	61846.	3232.2

Approved: June 28, 2016

Sample Name: L1606080601 Acquired: 6/27/2016 17:20:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.02060	-.00067	.02166	.01964	-.00003	39.024	.00036
Stddev	.00121	.01252	.00277	.00159	.00172	.00000	.405	.00015
%RSD	104.80	60.749	416.24	7.3609	8.7455	3.2878	1.0374	42.349
#1	-.00019	.02843	.00239	.01993	.02142	-.00003	39.191	.00018
#2	.00216	.00617	-.00302	.02196	.01799	-.00003	38.563	.00045
#3	.00151	.02721	-.00136	.02307	.01952	-.00003	39.319	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00061	.00065	.37457	2.1803	-.00098	6.8201	.03122
Stddev	.00007	.00064	.00085	.03063	.0659	.00198	.0589	.00141
%RSD	140.83	104.89	131.80	8.1773	3.0246	202.18	.86401	4.5043
#1	.00012	.00117	-.00033	.38487	2.1041	-.00090	6.7836	.03003
#2	.00004	-.00009	.00101	.34012	2.2194	.00096	6.7887	.03278
#3	-.00001	.00076	.00126	.39872	2.2173	-.00300	6.8881	.03086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00224	7.9243	.00121	.00966	.00454	.00356	-.00214	2.0660
Stddev	.00010	.0628	.00102	.00239	.00227	.00380	.00192	.0076
%RSD	4.6694	.79232	84.243	24.770	50.071	106.76	89.458	.36669
#1	-.00220	7.9968	.00004	.01147	.00645	.00782	-.00177	2.0732
#2	-.00235	7.8897	.00190	.01055	.00203	.00052	-.00422	2.0667
#3	-.00215	7.8865	.00170	.00695	.00514	.00234	-.00044	2.0581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606080601 Acquired: 6/27/2016 17:20:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**.14441**	**-.00334**	**-.00110**	**-.00005**	**.01269**	**-.00008**
Stddev	.00017	.00107	.00485	.00138	.00019	.00007	.00040
%RSD	40.179	.74183	145.18	125.66	394.47	.55580	499.78
#1	-.00061	.14527	-.00777	.00023	-.00019	.01275	-.00032
#2	-.00027	.14321	.00183	-.00252	.00017	.01261	-.00031
#3	-.00039	.14475	-.00407	-.00100	-.00012	.01271	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10064.**	**62041.**	**3235.9**
Stddev	24.	275.	7.2
%RSD	.23601	.44359	.22143
#1	10090.	62357.	3229.8
#2	10059.	61850.	3243.8
#3	10043.	61917.	3234.0

Approved: June 28, 2016

Sample Name: L1606080603S Acquired: 6/27/2016 17:24:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18868**	**4.7978**	**.19215**	**.95733**	**.50798**	**.02373**	**42.730**	**.02400**
Stddev	.00383	.0141	.00123	.00243	.00250	.00004	.161	.00036
%RSD	2.0316	.29475	.63755	.25426	.49208	.18406	.37756	1.5030
#1	.18503	4.7834	.19345	.95703	.51026	.02378	42.809	.02433
#2	.18835	4.7983	.19200	.95990	.50837	.02372	42.838	.02361
#3	.19267	4.8117	.19101	.95506	.50530	.02370	42.545	.02405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09709**	**.24438**	**.24122**	**2.2734**	**26.392**	**.49852**	**11.683**	**.26736**
Stddev	.00039	.00143	.00144	.0214	.111	.00409	.004	.00231
%RSD	.40610	.58323	.59889	.93939	.41934	.81977	.03681	.86328
#1	.09753	.24273	.24036	2.2674	26.519	.50112	11.683	.26624
#2	.09677	.24515	.24289	2.2557	26.337	.50063	11.679	.27001
#3	.09697	.24525	.24041	2.2971	26.319	.49381	11.688	.26582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49532**	**32.123**	**.24190**	**4.7490**	**.24151**	**.57560**	**.18260**	**4.3522**
Stddev	.00085	.181	.00103	.0073	.00375	.00173	.00128	.0086
%RSD	.17117	.56228	.42655	.15262	1.5524	.30096	.70043	.19708
#1	.49630	32.258	.24220	4.7506	.24413	.57400	.18403	4.3549
#2	.49484	32.194	.24076	4.7410	.23722	.57535	.18156	4.3426
#3	.49482	31.918	.24276	4.7553	.24319	.57744	.18221	4.3591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606080603S Acquired: 6/27/2016 17:24:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48392**	**.63166**	**.47797**	**.11312**	**.48669**	**.48272**	**.00177**
Stddev	.00182	.00737	.00275	.00269	.00040	.00100	.00069
%RSD	.37525	1.1667	.57509	2.3740	.08212	.20793	38.757
#1	.48524	.63710	.47480	.11502	.48676	.48342	.00148
#2	.48185	.63460	.47955	.11005	.48705	.48157	.00128
#3	.48468	.62327	.47957	.11429	.48626	.48316	.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9928.3**	**61031.**	**3189.4**
Stddev	9.2	124.	12.5
%RSD	.09293	.20381	.39199
#1	9917.7	61126.	3181.7
#2	9933.6	61078.	3182.6
#3	9933.7	60890.	3203.8

Approved: June 28, 2016

Sample Name: L1606080604SD Acquired: 6/27/2016 17:28:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19102	4.8382	.19433	.96593	.50967	.02395	43.216	.02415
Stddev	.00169	.0118	.00323	.00185	.00456	.00006	.345	.00019
%RSD	.88505	.24462	1.6639	.19102	.89440	.23583	.79902	.78496
#1	.18936	4.8295	.19111	.96765	.51436	.02390	43.567	.02393
#2	.19274	4.8517	.19431	.96398	.50938	.02401	43.203	.02428
#3	.19096	4.8335	.19758	.96617	.50526	.02396	42.877	.02423
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09757	.24569	.24197	2.4082	26.572	.50077	11.683	.27585
Stddev	.00013	.00151	.00041	.0256	.254	.00306	.149	.00299
%RSD	.13140	.61587	.17000	1.0630	.95428	.61193	1.2770	1.0836
#1	.09759	.24397	.24179	2.4160	26.850	.50303	11.852	.27486
#2	.09743	.24680	.24244	2.4290	26.513	.50199	11.631	.27921
#3	.09768	.24631	.24168	2.3796	26.353	.49728	11.567	.27348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50011	31.356	.24339	4.7797	.24121	.58153	.18374	4.3776
Stddev	.00108	.255	.00034	.0045	.00341	.00298	.00584	.0084
%RSD	.21609	.81394	.13903	.09467	1.4152	.51196	3.1762	.19113
#1	.50102	31.634	.24347	4.7825	.23728	.58495	.18112	4.3817
#2	.50040	31.305	.24368	4.7821	.24343	.57952	.17967	4.3680
#3	.49891	31.131	.24302	4.7745	.24291	.58012	.19043	4.3831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606080604SD Acquired: 6/27/2016 17:28:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48830	.62923	.48040	.12523	.49076	.49086	.00086
Stddev	.00100	.00990	.01133	.00260	.00121	.00041	.00059
%RSD	.20416	1.5740	2.3594	2.0756	.24672	.08420	69.005
#1	.48782	.64025	.48497	.12310	.49057	.49134	.00029
#2	.48945	.62635	.48874	.12813	.49205	.49058	.00148
#3	.48763	.62107	.46750	.12446	.48965	.49067	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9952.8	61100.	3205.8
Stddev	19.4	73.	20.3
%RSD	.19536	.11893	.63427
#1	9965.5	61024.	3201.6
#2	9962.6	61108.	3188.0
#3	9930.5	61168.	3228.0

Approved: June 28, 2016

Sample Name: L1606072901 Acquired: 6/27/2016 17:31:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00126	1.6254	.00181	.01071	.09412	.00028	3.1712	.00031
Stddev	.00092	.0153	.00348	.00115	.00125	.00008	.0788	.00021
%RSD	72.863	.93997	192.48	10.769	1.3261	29.024	2.4839	67.369
#1	-.00068	1.6406	.00453	.01113	.09539	.00037	3.0829	.00050
#2	-.00078	1.6100	.00300	.00941	.09407	.00023	3.2344	.00008
#3	-.00231	1.6256	-.00211	.01160	.09290	.00024	3.1962	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00601	.00400	.00545	7.4449	3.5070	.00094	2.1844	.17045
Stddev	.00011	.00088	.00036	.0210	.0322	.00203	.0563	.00068
%RSD	1.7799	22.070	6.6592	.28202	.91869	215.66	2.5756	.39846
#1	.00598	.00478	.00522	7.4322	3.4868	.00123	2.2429	.16979
#2	.00612	.00416	.00587	7.4691	3.5442	.00281	2.1795	.17115
#3	.00591	.00304	.00526	7.4334	3.4901	-.00122	2.1307	.17042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00251	7.7887	.00608	.07035	.00411	-.00221	.00028	6.1931
Stddev	.00020	.0229	.00075	.00127	.00357	.00204	.00486	.0088
%RSD	7.9372	.29408	12.322	1.8117	86.863	92.342	1741.5	.14225
#1	-.00271	7.7930	.00545	.07162	.00350	-.00109	-.00230	6.1945
#2	-.00251	7.7640	.00587	.06908	.00088	-.00097	-.00275	6.2011
#3	-.00231	7.8092	.00691	.07036	.00795	-.00457	.00588	6.1836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606072901 Acquired: 6/27/2016 17:31:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.03770	.03904	-.00171	.00877	.04031	.00004
Stddev	.00095	.00007	.00389	.00164	.00050	.00036	.00028
%RSD	1355.8	.19554	9.9681	96.012	5.6468	.89509	696.17
#1	-.00094	.03763	.04075	-.00193	.00824	.04070	.00005
#2	.00094	.03768	.03458	.00003	.00922	.04025	.00031
#3	.00021	.03778	.04177	-.00323	.00885	.03999	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10254.	63020.	3242.6
Stddev	22.	136.	20.5
%RSD	.21566	.21638	.63087
#1	10263.	63177.	3231.6
#2	10271.	62928.	3229.9
#3	10229.	62955.	3266.2

Approved: June 28, 2016

Sample Name: L1606072902 Acquired: 6/27/2016 17:35:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00128	1.5279	.00294	.00920	.09400	.00027	3.1337	-.00009
Stddev	.00143	.0023	.00152	.00102	.00017	.00008	.0194	.00027
%RSD	111.63	.14858	51.695	11.057	.18433	28.848	.61979	311.50
#1	-.00273	1.5264	.00204	.01036	.09402	.00030	3.1198	.00004
#2	.00014	1.5268	.00470	.00875	.09382	.00032	3.1254	-.00040
#3	-.00126	1.5305	.00209	.00848	.09416	.00018	3.1559	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00578	.00305	.00383	6.9357	3.6196	.00036	2.2247	.16079
Stddev	.00009	.00069	.00011	.0222	.0856	.00202	.0717	.00269
%RSD	1.6177	22.682	2.8626	.32082	2.3649	566.62	3.2222	1.6755
#1	.00583	.00231	.00379	6.9403	3.5666	-.00130	2.1889	.15775
#2	.00584	.00314	.00396	6.9553	3.5739	-.00023	2.1779	.16288
#3	.00568	.00369	.00375	6.9115	3.7184	.00260	2.3072	.16173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00316	7.8271	.00617	.06136	.00503	-.00395	-.00238	6.1065
Stddev	.00011	.0235	.00078	.00202	.00411	.00200	.00604	.0250
%RSD	3.4171	.30059	12.658	3.2964	81.711	50.696	254.06	.40948
#1	-.00328	7.8096	.00697	.06369	.00428	-.00186	.00226	6.1188
#2	-.00313	7.8538	.00541	.06033	.00947	-.00585	-.00018	6.1229
#3	-.00307	7.8178	.00612	.06006	.00135	-.00415	-.00921	6.0777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606072902 Acquired: 6/27/2016 17:35:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	**.03735**	**.04117**	**.00144**	**.00691**	**.04017**	**-.00009**
Stddev	.00061	.00088	.01014	.00158	.00065	.00019	.00036
%RSD	122.98	2.3434	24.633	110.03	9.4394	.48407	415.84
#1	-.00023	.03672	.05048	.00262	.00767	.04037	-.00035
#2	-.00006	.03835	.04268	.00205	.00650	.04014	.00033
#3	-.00119	.03698	.03036	-.00036	.00657	.03999	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10214.**	**62944.**	**3231.5**
Stddev	13.	159.	13.0
%RSD	.12414	.25254	.40292
#1	10201.	62804.	3216.5
#2	10215.	63117.	3238.7
#3	10227.	62911.	3239.3

Approved: June 28, 2016

Sample Name: L1606072903 Acquired: 6/27/2016 17:39:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	2.8993	.00024	.05090	.04272	.00242	48.903	.00044
Stddev	.00242	.0050	.00116	.00092	.00122	.00001	.251	.00029
%RSD	362.55	.17204	489.39	1.8154	2.8651	.52901	.51289	65.440
#1	-.00319	2.8982	-.00110	.05178	.04208	.00244	48.832	.00051
#2	.00164	2.8950	.00081	.04994	.04195	.00242	49.181	.00068
#3	-.00046	2.9048	.00100	.05100	.04413	.00241	48.695	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04849	.00140	.00749	3.0672	1.9831	.00232	14.704	.77098
Stddev	.00042	.00064	.00097	.0252	.0340	.00146	.045	.00786
%RSD	.86550	45.900	12.942	.82162	1.7160	62.964	.30575	1.0200
#1	.04824	.00074	.00639	3.0420	2.0045	.00249	14.747	.76450
#2	.04897	.00144	.00788	3.0673	2.0010	.00078	14.658	.77973
#3	.04825	.00202	.00822	3.0924	1.9439	.00368	14.707	.76872
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00364	5.7088	.02145	.00824	.00251	-.00129	-.00306	4.9636
Stddev	.00021	.0628	.00121	.00259	.00020	.00314	.00422	.0134
%RSD	5.7663	1.0997	5.6406	31.436	8.0705	242.36	137.85	.26944
#1	-.00341	5.7321	.02273	.01082	.00238	-.00123	-.00163	4.9731
#2	-.00369	5.7565	.02032	.00826	.00275	-.00446	-.00780	4.9694
#3	-.00382	5.6376	.02129	.00564	.00242	.00181	.00026	4.9483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606072903 Acquired: 6/27/2016 17:39:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**.44457**	**.00054**	**-.00117**	**.00062**	**.06031**	**.00044**
Stddev	.00082	.00282	.00416	.00123	.00028	.00015	.00054
%RSD	72.494	.63420	769.78	105.89	44.803	.25518	120.80
#1	-.00046	.44280	-.00184	-.00085	.00074	.06037	.00105
#2	-.00204	.44782	-.00188	-.00253	.00081	.06042	.00022
#3	-.00088	.44308	.00534	-.00012	.00030	.06013	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10214.**	**62764.**	**3251.9**
Stddev	15.	226.	30.0
%RSD	.14894	.36043	.92367
#1	10231.	62885.	3269.5
#2	10201.	62904.	3217.2
#3	10210.	62503.	3268.9

Approved: June 28, 2016

Sample Name: L1606064303 Acquired: 6/27/2016 17:43:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.04359	-.00038	.00804	.07142	-.00001	63.015	.00015
Stddev	.00107	.00439	.00112	.00188	.00050	.00002	.332	.00017
%RSD	197.47	10.071	294.88	23.434	.70180	200.01	.52652	108.50
#1	.00048	.04856	.00030	.00597	.07123	-.00002	63.389	.00034
#2	.00163	.04196	.00023	.00850	.07103	.00001	62.898	.00009
#3	-.00050	.04025	-.00167	.00965	.07198	-.00002	62.758	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00094	.00048	.07420	.46744	.00469	5.9191	.00737
Stddev	.00049	.00027	.00085	.01333	.03874	.00182	.0707	.00248
%RSD	364.97	28.500	178.88	17.963	8.2881	38.796	1.1953	33.604
#1	.00004	.00098	.00137	.06301	.51154	.00623	5.9807	.00533
#2	-.00069	.00118	-.00032	.08895	.43888	.00517	5.8418	.00665
#3	.00025	.00065	.00038	.07065	.45190	.00268	5.9348	.01013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00345	2.0614	.00079	.00378	.00074	-.00347	.00097	3.4640
Stddev	.00016	.0382	.00046	.00156	.00278	.00208	.00200	.0078
%RSD	4.6376	1.8549	57.890	41.293	376.00	59.886	206.13	.22468
#1	-.00326	2.1040	.00058	.00508	.00299	-.00460	-.00104	3.4696
#2	-.00352	2.0301	.00048	.00205	.00160	-.00475	.00296	3.4673
#3	-.00356	2.0501	.00132	.00420	-.00237	-.00107	.00098	3.4551
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606064303 Acquired: 6/27/2016 17:43:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**.15664**	**-.00009**	**-.00291**	**-.00002**	**-.00057**	**-.00001**
Stddev	.00011	.00086	.00155	.00390	.00031	.00003	.00025
%RSD	9.4705	.54870	1738.0	134.05	1699.1	5.0477	4249.3
#1	-.00112	.15763	-.00071	-.00083	.00034	-.00057	-.00026
#2	-.00103	.15623	-.00123	-.00049	-.00018	-.00054	.00024
#3	-.00124	.15606	.00168	-.00742	-.00022	-.00059	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10085.**	**61835.**	**3202.9**
Stddev	33.	33.	7.2
%RSD	.32599	.05277	.22534
#1	10060.	61810.	3199.6
#2	10073.	61824.	3197.8
#3	10122.	61872.	3211.1

Approved: June 28, 2016

Sample Name: L1606064303SDL Acquired: 6/27/2016 17:47:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573560-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00104**	**-.00182**	**.00057**	**.00138**	**.01420**	**.00000**	**12.930**	**.00004**
Stddev	.00099	.01165	.00136	.00056	.00049	.00002	.075	.00009
%RSD	94.909	639.42	237.36	40.936	3.4314	523.47	.57956	208.52
#1	-.00030	-.00277	.00186	.00073	.01467	-.00002	12.849	.00003
#2	-.00066	-.01297	.00069	.00164	.01423	.00001	12.996	-.00004
#3	-.00217	.01027	-.00084	.00176	.01370	.00002	12.947	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00013**	**-.00009**	**.03538**	**-.01742**	**-.00240**	**1.2370**	**.00326**
Stddev	.00037	.00026	.00087	.00737	.12475	.00125	.0784	.00249
%RSD	379.46	209.66	976.09	20.838	716.36	52.079	6.3337	76.471
#1	.00021	-.00015	-.00080	.03750	-.12221	-.00187	1.2692	.00272
#2	.00040	.00016	.00089	.04147	.12058	-.00151	1.2941	.00108
#3	-.00032	.00037	-.00035	.02719	-.05062	-.00383	1.1477	.00597
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00395**	**.41283**	**.00031**	**.00142**	**.00042**	**-.00181**	**.00041**	**.67743**
Stddev	.00039	.02396	.00075	.00696	.00065	.00114	.00402	.00193
%RSD	9.8684	5.8049	242.68	489.26	154.75	62.729	976.91	.28493
#1	-.00350	.43926	.00093	.00943	-.00030	-.00121	-.00187	.67920
#2	-.00414	.39251	.00052	-.00197	.00096	-.00313	-.00195	.67771
#3	-.00421	.40673	-.00052	-.00319	.00059	-.00110	.00505	.67537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606064303SDL Acquired: 6/27/2016 17:47:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573560-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00166**	**.03115**	**.00031**	**.00188**	**.00043**	**-.00103**	**-.00037**
Stddev	.00053	.00040	.00035	.00087	.00047	.00010	.00021
%RSD	31.650	1.2705	115.54	46.302	110.95	9.7399	56.928
#1	-.00183	.03085	.00007	.00118	.00094	-.00111	-.00017
#2	-.00107	.03160	.00013	.00286	.00031	-.00092	-.00058
#3	-.00208	.03101	.00071	.00160	.00002	-.00107	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10409.**	**64183.**	**3241.0**
Stddev	21.	213.	7.7
%RSD	.20588	.33131	.23753
#1	10429.	64320.	3246.3
#2	10412.	64291.	3232.2
#3	10387.	63938.	3244.6

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 17:51:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40066	10.072	.39812	.50122	1.0144	.04986	10.130	.05015
Stddev	.00156	.020	.00127	.00349	.0044	.00013	.030	.00030
%RSD	.39014	.19385	.31846	.69631	.43738	.26477	.29810	.59051
#1	.40225	10.051	.39688	.50371	1.0096	.04972	10.155	.04996
#2	.39913	10.077	.39941	.49723	1.0184	.04988	10.137	.05049
#3	.40059	10.089	.39807	.50271	1.0153	.04998	10.096	.04999
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20250	.50126	.50507	4.0583	50.216	1.0137	10.276	.50369
Stddev	.00053	.00189	.00136	.0124	.109	.0035	.157	.00318
%RSD	.26379	.37697	.27003	.30545	.21690	.34526	1.5238	.63046
#1	.20261	.50187	.50661	4.0726	50.159	1.0105	10.190	.50720
#2	.20297	.50277	.50455	4.0520	50.341	1.0175	10.457	.50285
#3	.20192	.49914	.50404	4.0504	50.147	1.0131	10.182	.50101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0149	50.606	.50435	10.008	.50479	1.2025	.40740	5.0370
Stddev	.0036	.139	.00024	.024	.00297	.0055	.00387	.0035
%RSD	.35766	.27559	.04774	.24116	.58880	.45529	.94974	.06874
#1	1.0188	50.492	.50462	10.015	.50786	1.2087	.40818	5.0389
#2	1.0145	50.761	.50426	10.027	.50459	1.2008	.41082	5.0390
#3	1.0115	50.564	.50416	9.9806	.50192	1.1981	.40320	5.0330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 17:51:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0100**	**1.0158**	**.99746**	**.50873**	**1.0039**	**1.0074**	**1.0255**
Stddev	.0023	.0055	.00576	.00190	.0007	.0011	.0062
%RSD	.22437	.54185	.57782	.37394	.07075	.10886	.60071
#1	1.0120	1.0120	1.0034	.51092	1.0031	1.0067	1.0218
#2	1.0104	1.0221	.99708	.50748	1.0041	1.0087	1.0221
#3	1.0075	1.0132	.99189	.50779	1.0044	1.0068	1.0326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9989.8**	**60538.**	**3114.3**
Stddev	18.8	207.	7.1
%RSD	.18819	.34214	.22805
#1	9976.7	60414.	3118.2
#2	9981.3	60422.	3118.5
#3	10011.	60777.	3106.1

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 17:55:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00184	.00256	.00249	.00155	.00059	.00012	.00773	-.00019
Stddev	.00286	.00382	.00129	.00250	.00044	.00005	.01707	.00028
%RSD	155.00	149.01	52.042	160.78	74.283	42.929	220.69	147.14
#1	-.00136	.00314	.00328	.00425	.00047	.00006	.02014	-.00048
#2	.00275	.00607	.00320	.00108	.00108	.00017	.01479	.00008
#3	.00414	-.00151	.00099	-.00067	.00023	.00014	-.01173	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00091	.00101	-.01248	-.12640	.00096	-.05209	.00366
Stddev	.00029	.00105	.00051	.01108	.15982	.00382	.06014	.00072
%RSD	289.78	114.87	50.593	88.731	126.44	399.34	115.45	19.561
#1	.00038	.00137	.00046	-.02519	.04185	-.00342	.00669	.00291
#2	.00011	-.00029	.00109	-.00484	-.14486	.00267	-.11351	.00373
#3	-.00020	.00165	.00146	-.00743	-.27619	.00361	-.04945	.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00153	.10016	.00117	.00628	-.00046	.00012	-.00491	.00658
Stddev	.00032	.02091	.00025	.00632	.00236	.00079	.00487	.00148
%RSD	20.891	20.881	21.265	100.71	514.88	646.91	99.143	22.567
#1	-.00157	.11337	.00146	.01235	.00103	.00103	-.00678	.00803
#2	-.00183	.07605	.00104	-.00027	-.00317	-.00031	-.00856	.00664
#3	-.00120	.11106	.00101	.00675	.00077	-.00035	.00062	.00506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 17:55:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00135**	**.00863**	**.00065**	**.00168**	**-.00125**	**.00145**
Stddev	.00107	.00032	.00418	.00249	.00015	.00014	.00009
%RSD	183.75	23.996	48.475	381.05	9.1355	11.194	5.8593
#1	-.00181	.00171	.00742	.00264	.00180	-.00113	.00151
#2	.00001	.00123	.00519	-.00214	.00175	-.00121	.00135
#3	.00006	.00110	.01328	.00145	.00151	-.00141	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10170.**	**62460.**	**3172.4**
Stddev	9.	55.	26.8
%RSD	.08999	.08761	.84511
#1	10173.	62515.	3163.3
#2	10160.	62458.	3202.6
#3	10177.	62406.	3151.3

Approved: June 28, 2016

Sample Name: L1606064303PS Acquired: 6/27/2016 17:59:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573560-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19569**	**4.9914**	**.20072**	**.97886**	**.56801**	**.02434**	**62.212**	**.02462**
Stddev	.00060	.0051	.00092	.00325	.00116	.00009	.181	.00017
%RSD	.30426	.10303	.45699	.33158	.20341	.35823	.29160	.70023
#1	.19543	4.9964	.20023	.97513	.56685	.02429	62.419	.02468
#2	.19527	4.9917	.20178	.98038	.56916	.02444	62.133	.02475
#3	.19637	4.9862	.20015	.98106	.56803	.02429	62.082	.02442
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10001**	**.24729**	**.24649**	**2.0559**	**25.490**	**.51532**	**10.387**	**.25202**
Stddev	.00006	.00053	.00128	.0305	.069	.00044	.068	.00174
%RSD	.06255	.21576	.51848	1.4856	.26883	.08487	.65089	.69065
#1	.09996	.24688	.24522	2.0268	25.547	.51506	10.443	.25312
#2	.09999	.24709	.24649	2.0531	25.414	.51508	10.312	.25292
#3	.10008	.24789	.24777	2.0877	25.509	.51583	10.408	.25001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50904**	**27.023**	**.24753**	**4.9289**	**.24651**	**.59560**	**.19532**	**5.4708**
Stddev	.00020	.028	.00106	.0156	.00279	.00196	.00625	.0073
%RSD	.04009	.10300	.42967	.31586	1.1336	.32886	3.1979	.13380
#1	.50885	27.050	.24860	4.9410	.24813	.59343	.19550	5.4789
#2	.50901	27.026	.24647	4.9342	.24328	.59611	.20148	5.4687
#3	.50926	26.994	.24753	4.9113	.24811	.59725	.18899	5.4647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606064303PS Acquired: 6/27/2016 17:59:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573560-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50394	.64361	.49760	.24837	.49949	.48811	.00423
Stddev	.00130	.00594	.00612	.00148	.00166	.00320	.00083
%RSD	.25740	.92299	1.2308	.59519	.33240	.65534	19.573
#1	.50479	.65032	.49391	.24734	.49759	.49176	.00365
#2	.50457	.64148	.50467	.24771	.50022	.48674	.00387
#3	.50244	.63903	.49423	.25006	.50066	.48582	.00518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10066.	61876.	3200.6
Stddev	5.	130.	24.7
%RSD	.04617	.21023	.77103
#1	10067.	61896.	3182.8
#2	10061.	61737.	3190.3
#3	10070.	61995.	3228.8

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 18:02:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39770**	**10.029**	**.39803**	**.50031**	**1.0114**	**.04947**	**10.110**	**.05021**
Stddev	.00318	.032	.00264	.00522	.0032	.00009	.070	.00020
%RSD	.79963	.31679	.66282	1.0434	.31904	.17697	.69075	.40440
#1	.39794	9.9960	.39576	.49494	1.0135	.04949	10.187	.05011
#2	.39440	10.059	.40092	.50536	1.0077	.04938	10.050	.05045
#3	.40075	10.031	.39740	.50063	1.0130	.04955	10.094	.05008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20230**	**.50114**	**.50470**	**4.0382**	**50.080**	**1.0090**	**10.103**	**.50267**
Stddev	.00019	.00208	.00095	.0353	.124	.0056	.086	.00501
%RSD	.09220	.41499	.18872	.87512	.24720	.55139	.84680	.99571
#1	.20223	.49915	.50494	4.0229	50.013	1.0029	10.130	.50807
#2	.20251	.50098	.50552	4.0787	50.222	1.0139	10.007	.49819
#3	.20216	.50330	.50366	4.0132	50.003	1.0101	10.171	.50174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0149**	**50.311**	**.50285**	**9.9782**	**.50366**	**1.1995**	**.40115**	**5.0158**
Stddev	.0028	.102	.00091	.0321	.00226	.0053	.00330	.0069
%RSD	.27273	.20359	.18152	.32169	.44945	.44323	.82206	.13740
#1	1.0157	50.423	.50384	9.9689	.50623	1.2051	.39950	5.0139
#2	1.0172	50.223	.50204	10.014	.50198	1.1991	.40495	5.0235
#3	1.0119	50.286	.50267	9.9517	.50275	1.1945	.39900	5.0101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 18:02:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0108**	**1.0111**	**.98797**	**.50534**	**.99931**	**1.0027**	**1.0150**
Stddev	.0013	.0020	.00224	.00122	.00181	.0005	.0078
%RSD	.13256	.19343	.22671	.24208	.18073	.04936	.76836
#1	1.0094	1.0123	.98711	.50418	.99723	1.0023	1.0060
#2	1.0110	1.0088	.99051	.50522	1.0002	1.0033	1.0193
#3	1.0121	1.0120	.98628	.50662	1.0005	1.0025	1.0196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10085.**	**61434.**	**3174.5**
Stddev	15.	119.	13.0
%RSD	.14840	.19385	.40870
#1	10072.	61321.	3188.2
#2	10102.	61422.	3162.5
#3	10082.	61558.	3172.9

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 18:06:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00061**	**.01087**	**.00101**	**.00354**	**.00081**	**.00011**	**-.01216**	**-.00005**
Stddev	.00291	.00181	.00125	.00222	.00081	.00003	.00734	.00018
%RSD	479.25	16.649	122.88	62.827	99.772	25.589	60.386	368.86
#1	.00256	.01280	.00224	.00608	.00073	.00014	-.00369	-.00007
#2	-.00318	.00921	.00106	.00197	.00005	.00008	-.01615	.00014
#3	-.00120	.01061	-.00025	.00256	.00167	.00010	-.01664	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.00097**	**.00013**	**.01338**	**.00793**	**-.00130**	**-.01349**	**.00353**
Stddev	.00022	.00044	.00115	.03749	.08421	.00162	.04683	.00277
%RSD	59.479	45.275	876.15	280.27	1061.5	124.61	347.06	78.447
#1	.00042	.00128	-.00097	.00494	.01373	-.00269	.01480	.00599
#2	.00058	.00047	.00132	-.01918	.08910	-.00167	-.06755	.00053
#3	.00014	.00118	.00004	.05437	-.07903	.00047	.01226	.00407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00136**	**.08312**	**.00113**	**.00069**	**.00081**	**.00032**	**-.00044**	**.00742**
Stddev	.00027	.03096	.00087	.00872	.00109	.00250	.00205	.00292
%RSD	20.022	37.244	76.387	1264.9	134.28	787.06	470.90	39.351
#1	-.00159	.11127	.00181	.00987	.00206	-.00000	-.00148	.01078
#2	-.00144	.08813	.00143	-.00747	.00032	.00296	.00193	.00560
#3	-.00106	.04996	.00016	-.00034	.00006	-.00200	-.00175	.00586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 18:06:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.00128**	**.00636**	**-.00137**	**.00109**	**-.00114**	**.00132**
Stddev	.00051	.00031	.00900	.00079	.00075	.00021	.00052
%RSD	187.40	24.464	141.50	57.378	68.713	18.529	39.786
#1	-.00004	.00163	.00791	-.00098	.00069	-.00097	.00113
#2	.00008	.00107	.01449	-.00086	.00062	-.00107	.00191
#3	-.00086	.00112	-.00332	-.00228	.00196	-.00138	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10207.**	**62751.**	**3218.3**
Stddev	3.	103.	20.1
%RSD	.02820	.16376	.62534
#1	10206.	62841.	3206.2
#2	10205.	62771.	3241.6
#3	10210.	62639.	3207.2

Approved: June 28, 2016

Sample Name: PBW 73 Acquired: 6/27/2016 18:10:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572869-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	-.00075	.00011	.00154	-.00165	.00003	.02758	.00000
Stddev	.00151	.00181	.00325	.00025	.00085	.00007	.00552	.00011
%RSD	394.48	239.58	2859.3	15.959	51.420	259.17	20.016	4420.2
#1	-.00092	-.00147	.00134	.00152	-.00094	.00009	.03389	-.00010
#2	.00203	-.00210	.00258	.00180	-.00259	-.00005	.02366	-.00002
#3	.00003	.00130	-.00357	.00131	-.00142	.00005	.02519	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00041	.00047	.02116	-.07592	-.00201	-.01973	.00565
Stddev	.00033	.00150	.00014	.03401	.11846	.00262	.05854	.00464
%RSD	207.88	365.99	29.367	160.76	156.05	130.26	296.68	82.093
#1	.00012	-.00038	.00062	.05189	-.20357	-.00080	-.03379	.00430
#2	-.00053	-.00193	.00045	.02697	.03048	-.00022	-.06996	.00184
#3	-.00008	.00108	.00034	-.01539	-.05465	-.00502	.04456	.01082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00287	.01923	.00104	-.00547	-.00013	.00089	-.00178	-.01207
Stddev	.00021	.03374	.00161	.00158	.00137	.00259	.00212	.00130
%RSD	7.4810	175.48	154.77	28.903	1027.6	289.82	119.05	10.782
#1	-.00311	.02811	-.00007	-.00641	.00079	-.00048	-.00048	-.01355
#2	-.00269	-.01807	.00288	-.00635	-.00170	-.00072	-.00422	-.01110
#3	-.00280	.04764	.00031	-.00364	.00051	.00388	-.00063	-.01157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: PBW 73 Acquired: 6/27/2016 18:10:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572869-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00007**	**.00533**	**-.00054**	**-.00005**	**-.00028**	**.00079**
Stddev	.00093	.00028	.00638	.00178	.00039	.00003	.00033
%RSD	375.87	423.03	119.65	331.68	768.32	9.5439	42.440
#1	-.00080	.00022	.00723	-.00231	.00004	-.00027	.00042
#2	.00082	-.00008	.01054	-.00055	-.00048	-.00026	.00107
#3	-.00077	-.00035	-.00178	.00125	.00028	-.00031	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10264.**	**63347.**	**3206.5**
Stddev	4.	85.	16.9
%RSD	.03641	.13480	.52651
#1	10260.	63248.	3198.9
#2	10265.	63392.	3225.9
#3	10267.	63399.	3194.8

Approved: June 28, 2016

Sample Name: LCSW 73 Acquired: 6/27/2016 18:14:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572869-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19635**	**4.9357**	**.19488**	**.95746**	**.50147**	**.02428**	**5.0882**	**.02441**
Stddev	.00250	.0158	.00193	.00113	.00243	.00008	.0281	.00021
%RSD	1.2733	.32044	.99170	.11774	.48526	.32756	.55194	.84332
#1	.19698	4.9532	.19687	.95855	.49867	.02435	5.0608	.02445
#2	.19847	4.9223	.19477	.95630	.50307	.02430	5.1170	.02459
#3	.19359	4.9317	.19300	.95752	.50267	.02419	5.0868	.02418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10119**	**.25111**	**.25058**	**1.9881**	**24.637**	**.50617**	**5.0850**	**.24902**
Stddev	.00018	.00140	.00049	.0278	.292	.00410	.0568	.00237
%RSD	.17479	.55709	.19647	1.3993	1.1832	.81093	1.1169	.95209
#1	.10104	.25265	.25067	1.9652	24.668	.50262	5.0516	.24699
#2	.10114	.24993	.25005	1.9801	24.912	.51067	5.0528	.24844
#3	.10138	.25074	.25102	2.0190	24.331	.50522	5.1506	.25163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50642**	**24.975**	**.25116**	**4.8012**	**.25191**	**.58652**	**.18566**	**2.3942**
Stddev	.00078	.120	.00194	.0109	.00135	.00287	.00470	.0006
%RSD	.15370	.48203	.77123	.22650	.53744	.48943	2.5329	.02515
#1	.50563	24.839	.25082	4.7908	.25201	.58360	.18058	2.3949
#2	.50718	25.016	.25324	4.8125	.25321	.58662	.18652	2.3941
#3	.50646	25.070	.24941	4.8003	.25051	.58934	.18987	2.3937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LCSW 73 Acquired: 6/27/2016 18:14:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572869-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50437	.50898	.49550	.25118	.49915	.49294	.00420
Stddev	.00186	.00140	.00878	.00096	.00125	.00238	.00094
%RSD	.36851	.27596	1.7728	.38021	.25115	.48366	22.404
#1	.50322	.50806	.49040	.25014	.49995	.49145	.00323
#2	.50651	.50829	.50564	.25202	.49771	.49168	.00428
#3	.50337	.51060	.49046	.25138	.49980	.49569	.00510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10089.	61872.	3186.4
Stddev	25.	165.	9.9
%RSD	.25115	.26715	.30972
#1	10098.	61700.	3191.7
#2	10061.	62029.	3192.5
#3	10109.	61887.	3175.0

Approved: June 28, 2016

Sample Name: F BLANK Acquired: 6/27/2016 18:17:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573699-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	.01321	.00063	.00493	.00009	.00009	.04598	-.00005
Stddev	.00159	.00599	.00256	.00101	.00066	.00004	.02907	.00006
%RSD	128.34	45.362	405.26	20.539	716.19	49.735	63.231	135.69
#1	.00005	.01979	-.00183	.00529	.00028	.00004	.03249	.00002
#2	.00062	.01179	.00328	.00572	-.00064	.00011	.07935	-.00006
#3	.00304	.00805	.00044	.00379	.00064	.00011	.02610	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00060	.00207	.05181	-.15252	-.00238	-.00617	.00453
Stddev	.00035	.00100	.00062	.02558	.05582	.00473	.02053	.00249
%RSD	114.01	165.01	29.869	49.372	36.598	198.48	332.93	55.067
#1	.00055	-.00024	.00143	.07830	-.21470	-.00632	-.02919	.00739
#2	.00046	.00171	.00266	.02725	-.13616	.00287	.00044	.00332
#3	-.00009	.00035	.00210	.04987	-.10671	-.00370	.01025	.00286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00297	137.79	.00092	-.00071	-.00109	-.00596	.00126	-.00996
Stddev	.00031	.52	.00064	.00249	.00423	.00374	.00098	.00036
%RSD	10.278	.37803	69.803	351.48	387.51	62.830	77.874	3.5925
#1	-.00323	137.24	.00159	.00156	.00326	-.00724	.00016	-.00957
#2	-.00305	137.85	.00031	-.00336	-.00135	-.00174	.00156	-.01004
#3	-.00264	138.28	.00085	-.00032	-.00518	-.00890	.00206	-.01027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: F BLANK Acquired: 6/27/2016 18:17:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573699-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.00076**	**.00006**	**-.00152**	**.00055**	**.00210**	**-.00025**
Stddev	.00037	.00021	.00270	.00283	.00080	.00016	.00046
%RSD	88.111	27.218	4578.1	186.49	144.84	7.5867	184.28
#1	-.00072	.00058	-.00210	.00164	.00057	.00225	-.00073
#2	-.00056	.00072	-.00081	-.00384	.00134	.00210	.00019
#3	-.00000	.00099	.00308	-.00235	-.00025	.00193	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10002.**	**60993.**	**3183.8**
Stddev	14.	72.	11.1
%RSD	.13662	.11819	.34926
#1	10014.	60921.	3193.9
#2	10003.	61065.	3171.9
#3	9987.1	60992.	3185.5

Approved: June 28, 2016

Sample Name: L1606106804 Acquired: 6/27/2016 18:21:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00108**	**.02957**	**.00249**	**.07802**	**.50993**	**.00006**	**69.494**	**.00009**
Stddev	.00057	.00679	.00097	.00232	.00249	.00011	.401	.00026
%RSD	52.710	22.964	39.161	2.9780	.48870	171.13	.57690	304.97
#1	.00064	.02814	.00291	.07765	.51257	.00015	69.917	-.00019
#2	.00173	.02361	.00318	.07591	.50762	.00010	69.119	.00032
#3	.00088	.03697	.00137	.08051	.50961	-.00006	69.445	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00106**	**.00146**	**.00167**	**.15126**	**1.6916**	**.03292**	**48.915**	**.02947**
Stddev	.00051	.00072	.00142	.01687	.0769	.00410	.153	.00038
%RSD	48.398	49.399	85.137	11.152	4.5469	12.443	.31260	1.2911
#1	.00098	.00190	.00016	.15737	1.7626	.02849	49.092	.02989
#2	.00058	.00185	.00297	.16422	1.6099	.03369	48.818	.02936
#3	.00160	.00063	.00187	.13219	1.7022	.03658	48.836	.02915
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00305**	**255.13**	**.00201**	**.05710**	**.00006**	**.00249**	**-.00499**	**15.418**
Stddev	.00007	1.53	.00032	.00778	.00252	.00286	.00385	.018
%RSD	2.1699	.59857	16.181	13.619	4187.9	114.98	77.155	.11530
#1	-.00311	256.87	.00168	.05751	.00110	.00075	-.00188	15.398
#2	-.00298	254.01	.00200	.04912	.00189	.00092	-.00929	15.430
#3	-.00306	254.52	.00233	.06466	-.00281	.00580	-.00379	15.427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606106804 Acquired: 6/27/2016 18:21:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00102**	**1.4679**	**-.00765**	**-.00142**	**.00053**	**.00425**	**-.00008**
Stddev	.00035	.0098	.00420	.00062	.00090	.00012	.00033
%RSD	34.227	.66697	54.924	43.957	170.48	2.7442	407.96
#1	-.00062	1.4791	-.01099	-.00213	.00074	.00414	.00011
#2	-.00123	1.4610	-.00293	-.00096	-.00046	.00437	-.00047
#3	-.00122	1.4635	-.00901	-.00116	.00131	.00424	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9703.1**	**59365.**	**3129.5**
Stddev	22.1	92.	27.8
%RSD	.22763	.15517	.88976
#1	9696.7	59367.	3097.7
#2	9727.7	59272.	3149.7
#3	9684.9	59456.	3141.1

Approved: June 28, 2016

Sample Name: L1606106805 Acquired: 6/27/2016 18:25:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.01323	.00092	.07799	.50248	.00011	68.385	.00038
Stddev	.00209	.00864	.00095	.00150	.00097	.00007	.304	.00013
%RSD	416.26	65.312	103.27	1.9292	.19274	66.114	.44423	33.490
#1	-.00165	.02273	.00132	.07957	.50161	.00006	68.037	.00032
#2	.00064	.01110	.00161	.07782	.50230	.00008	68.526	.00053
#3	.00252	.00585	-.00017	.07658	.50352	.00020	68.593	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00130	.00149	.00050	.14380	1.7292	.03180	48.310	.02630
Stddev	.00077	.00098	.00067	.02377	.0362	.00229	.047	.00113
%RSD	59.464	65.885	135.71	16.529	2.0933	7.1978	.09696	4.2783
#1	.00153	.00051	.00067	.12029	1.7679	.03276	48.332	.02693
#2	.00044	.00149	-.00025	.14330	1.6961	.03346	48.256	.02697
#3	.00193	.00247	.00107	.16782	1.7234	.02919	48.342	.02500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00343	250.44	.00269	.05365	-.00295	-.00140	-.00403	15.182
Stddev	.00006	1.04	.00060	.00528	.00256	.00230	.00109	.040
%RSD	1.6737	.41337	22.452	9.8331	86.650	164.62	27.005	.26378
#1	-.00348	249.45	.00202	.05340	-.00361	-.00227	-.00525	15.196
#2	-.00344	250.36	.00320	.04850	-.00512	-.00314	-.00316	15.214
#3	-.00336	251.51	.00284	.05904	-.00013	.00121	-.00367	15.137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606106805 Acquired: 6/27/2016 18:25:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00081**	**1.4437**	**-.00641**	**.00146**	**.00085**	**.00415**	**.00011**
Stddev	.00100	.0050	.00636	.00053	.00075	.00005	.00068
%RSD	123.92	.34575	99.338	36.530	87.873	1.2544	624.21
#1	.00030	1.4383	-.00642	.00101	.00171	.00417	-.00029
#2	-.00164	1.4446	-.00004	.00132	.00033	.00418	-.00028
#3	-.00108	1.4482	-.01277	.00205	.00051	.00409	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9704.2**	**58931.**	**3123.4**
Stddev	9.1	160.	16.8
%RSD	.09383	.27192	.53704
#1	9694.5	58843.	3140.7
#2	9705.3	59116.	3122.3
#3	9712.6	58834.	3107.2

Approved: June 28, 2016

Sample Name: L1606106811 Acquired: 6/27/2016 18:29:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	25.075	.00950	.00524	.49922	.00460	15.151	.00374
Stddev	.00169	.008	.00103	.00153	.00107	.00003	.008	.00006
%RSD	162.33	.03131	10.891	29.141	.21450	.71629	.05350	1.4755
#1	.00043	25.073	.00905	.00682	.50015	.00459	15.143	.00372
#2	-.00289	25.083	.00876	.00377	.49946	.00464	15.153	.00370
#3	-.00066	25.068	.01068	.00513	.49805	.00458	15.158	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01602	.05630	.09575	36.809	3.0725	.01827	7.8660	.88904
Stddev	.00026	.00038	.00192	.066	.1238	.00280	.1878	.00323
%RSD	1.6023	.67931	2.0010	.18045	4.0304	15.329	2.3876	.36317
#1	.01628	.05586	.09386	36.776	3.0616	.01860	7.8114	.89254
#2	.01599	.05658	.09769	36.766	2.9545	.01532	7.7115	.88619
#3	.01577	.05646	.09570	36.886	3.2014	.02089	8.0750	.88838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00281	16.437	.06368	.46654	.05236	-.00194	-.00387	34.225
Stddev	.00042	.089	.00022	.00061	.00230	.00144	.00442	.011
%RSD	15.085	.54220	.34877	.13013	4.4015	74.046	114.39	.03090
#1	-.00309	16.538	.06343	.46721	.05069	-.00141	-.00897	34.217
#2	-.00232	16.368	.06381	.46603	.05140	-.00357	-.00150	34.221
#3	-.00303	16.406	.06381	.46637	.05499	-.00084	-.00113	34.237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606106811 Acquired: 6/27/2016 18:29:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.24764	.13316	.00087	.07906	.17946	.00209
Stddev	.00077	.00054	.00778	.00120	.00058	.00015	.00027
%RSD	182.04	.21659	5.8458	138.84	.73464	.08561	12.984
#1	-.00002	.24822	.12442	-.00052	.07874	.17964	.00203
#2	.00131	.24754	.13934	.00150	.07973	.17936	.00186
#3	-.00003	.24716	.13573	.00162	.07870	.17938	.00239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10189.	62573.	3194.8
Stddev	9.	63.	4.5
%RSD	.08868	.09995	.13985
#1	10179.	62643.	3199.7
#2	10191.	62554.	3193.6
#3	10197.	62522.	3191.1

Approved: June 28, 2016

Sample Name: L1606106813 Acquired: 6/27/2016 18:33:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573869-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**1.5303**	**.00217**	**.00839**	**.14704**	**.00022**	**11.294**	**.00177**
Stddev	.00241	.0113	.00254	.00283	.00110	.00008	.074	.00003
%RSD	694.13	.73689	117.03	33.750	.74806	35.777	.65951	1.6660
#1	-.00256	1.5230	-.00071	.00839	.14738	.00019	11.378	.00179
#2	-.00070	1.5247	.00407	.00555	.14794	.00031	11.238	.00174
#3	.00222	1.5433	.00315	.01121	.14581	.00016	11.266	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00691**	**.00896**	**.00433**	**8.6282**	**1.7551**	**.00402**	**5.1369**	**.30052**
Stddev	.00051	.00008	.00151	.0543	.1378	.00076	.0254	.00220
%RSD	7.3380	.90220	34.798	.62977	7.8524	18.845	.49460	.73284
#1	.00749	.00891	.00607	8.6091	1.8812	.00346	5.1266	.30169
#2	.00665	.00905	.00338	8.6895	1.7761	.00488	5.1183	.29798
#3	.00658	.00891	.00354	8.5860	1.6080	.00372	5.1659	.30190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00222**	**190.23**	**.04940**	**.07457**	**.00064**	**-.00216**	**-.00058**	**8.5564**
Stddev	.00036	.82	.00113	.00391	.00261	.00192	.00280	.0188
%RSD	16.335	.42896	2.2806	5.2365	407.30	89.093	481.49	.21923
#1	-.00233	189.84	.05044	.07773	-.00078	-.00214	-.00376	8.5778
#2	-.00252	191.16	.04820	.07021	.00366	-.00024	.00045	8.5490
#3	-.00182	189.68	.04956	.07578	-.00096	-.00408	.00156	8.5425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606106813 Acquired: 6/27/2016 18:33:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573869-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00126**	**.16432**	**.01956**	**.00106**	**.00620**	**.24579**	**.00094**
Stddev	.00072	.00055	.00529	.00037	.00041	.00073	.00029
%RSD	57.439	.33516	27.054	35.249	6.5962	.29864	30.982
#1	-.00115	.16369	.01454	.00138	.00620	.24627	.00102
#2	-.00059	.16467	.02509	.00065	.00660	.24616	.00119
#3	-.00203	.16461	.01906	.00116	.00578	.24494	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9866.7**	**59971.**	**3125.5**
Stddev	21.0	118.	16.8
%RSD	.21290	.19611	.53601
#1	9865.5	60069.	3142.8
#2	9888.3	60002.	3124.3
#3	9846.4	59841.	3109.4

Approved: June 28, 2016

Sample Name: L1606106815S Acquired: 6/27/2016 18:37:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573869-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18624**	**8.5914**	**.19132**	**.93655**	**.62101**	**.02402**	**15.787**	**.02567**
Stddev	.00199	.0528	.00265	.00643	.00097	.00023	.072	.00002
%RSD	1.0690	.61495	1.3871	.68680	.15629	.94670	.45324	.08793
#1	.18853	8.6286	.19370	.93652	.62134	.02398	15.707	.02567
#2	.18490	8.6147	.19180	.94299	.61992	.02427	15.809	.02570
#3	.18531	8.5310	.18846	.93013	.62177	.02382	15.845	.02565
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10370**	**.25931**	**.24271**	**11.971**	**25.924**	**.49829**	**10.060**	**.53636**
Stddev	.00026	.00183	.00195	.152	.117	.00224	.043	.00156
%RSD	.24767	.70616	.80357	1.2677	.44958	.44864	.43223	.29058
#1	.10371	.25903	.24479	11.803	25.841	.50062	10.025	.53496
#2	.10344	.26127	.24244	12.099	26.057	.49809	10.109	.53804
#3	.10395	.25763	.24092	12.011	25.873	.49616	10.047	.53609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48472**	**210.62**	**.28605**	**4.7421**	**.23930**	**.54200**	**.18044**	**14.340**
Stddev	.00003	.48	.00161	.0043	.00592	.00076	.00442	.022
%RSD	.00690	.22789	.56307	.08970	2.4723	.14040	2.4510	.15333
#1	.48469	210.08	.28693	4.7375	.24208	.54125	.18551	14.356
#2	.48475	210.79	.28419	4.7431	.23251	.54198	.17738	14.349
#3	.48471	210.99	.28703	4.7458	.24331	.54277	.17843	14.315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606106815S Acquired: 6/27/2016 18:37:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573869-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48159	.63938	.50165	.23336	.49385	.68934	.00256
Stddev	.00152	.00468	.00170	.00185	.00176	.00048	.00034
%RSD	.31525	.73233	.33923	.79068	.35694	.07000	13.127
#1	.48100	.64476	.50068	.23395	.49444	.68920	.00225
#2	.48045	.63722	.50362	.23129	.49524	.68987	.00251
#3	.48331	.63617	.50065	.23484	.49187	.68893	.00292
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9792.4	59337.	3123.1
Stddev	17.9	265.	11.3
%RSD	.18300	.44714	.36098
#1	9792.7	59252.	3133.8
#2	9810.2	59125.	3111.3
#3	9774.3	59635.	3124.3

Approved: June 28, 2016

Sample Name: L1606106817SD Acquired: 6/27/2016 18:40:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573869-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.17704**	**10.231**	**.18237**	**.89365**	**.62895**	**.02294**	**15.357**	**.02593**
Stddev	.00289	.005	.00112	.00341	.00086	.00006	.040	.00022
%RSD	1.6334	.04420	.61630	.38165	.13728	.25467	.26220	.84276
#1	.17998	10.229	.18360	.89603	.62960	.02291	15.398	.02575
#2	.17420	10.228	.18214	.88974	.62929	.02289	15.354	.02618
#3	.17693	10.236	.18139	.89517	.62797	.02300	15.318	.02587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09998**	**.26700**	**.23276**	**14.685**	**24.789**	**.47424**	**9.6953**	**.52188**
Stddev	.00054	.00123	.00152	.033	.119	.00028	.1756	.00093
%RSD	.54228	.46008	.65312	.22415	.48105	.05888	1.8112	.17899
#1	.10055	.26588	.23240	14.715	24.902	.47403	9.4977	.52100
#2	.09991	.26832	.23146	14.690	24.665	.47456	9.8335	.52177
#3	.09947	.26681	.23443	14.650	24.801	.47414	9.7548	.52286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.46046**	**200.85**	**.27711**	**4.5264**	**.22652**	**.50376**	**.17219**	**16.579**
Stddev	.00030	.53	.00141	.0080	.00302	.00589	.00485	.015
%RSD	.06552	.26175	.50771	.17636	1.3343	1.1696	2.8150	.09310
#1	.46068	201.01	.27628	4.5205	.22372	.49855	.17655	16.568
#2	.46057	201.29	.27873	4.5354	.22613	.51015	.16697	16.597
#3	.46011	200.27	.27631	4.5232	.22973	.50259	.17305	16.573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606106817SD Acquired: 6/27/2016 18:40:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573869-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.45763**	**.61578**	**.47146**	**.21987**	**.47175**	**.83894**	**.00289**
Stddev	.00112	.00614	.00528	.00344	.00188	.00075	.00036
%RSD	.24458	.99736	1.1204	1.5638	.39933	.08952	12.527
#1	.45859	.62284	.47755	.21662	.47130	.83894	.00288
#2	.45790	.61277	.46805	.22347	.47013	.83969	.00326
#3	.45640	.61172	.46879	.21952	.47382	.83818	.00254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9802.2**	**59678.**	**3124.2**
Stddev	11.5	29.	6.7
%RSD	.11691	.04935	.21504
#1	9807.7	59701.	3118.5
#2	9809.8	59645.	3122.6
#3	9789.0	59688.	3131.6

Approved: June 28, 2016

Sample Name: L1606113001 Acquired: 6/27/2016 18:44:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.05806**	**.00281**	**.01439**	**.01757**	**.00005**	**42.874**	**.00025**
Stddev	.00148	.00400	.00314	.00071	.00092	.00006	.175	.00017
%RSD	1574.8	6.8942	111.52	4.9384	5.2313	125.74	.40919	67.476
#1	-.00174	.05761	.00588	.01521	.01785	-.00002	42.909	.00029
#2	.00033	.06228	-.00038	.01396	.01831	.00010	42.683	.00006
#3	.00113	.05431	.00294	.01400	.01654	.00007	43.029	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00135**	**.12325**	**.00536**	**1.0235**	**1.8661**	**-.00040**	**15.071**	**.16035**
Stddev	.00034	.00085	.00130	.0093	.0850	.00341	.109	.00314
%RSD	25.357	.68884	24.227	.90745	4.5559	863.98	.72331	1.9564
#1	.00174	.12401	.00392	1.0337	1.7732	.00213	15.162	.15924
#2	.00113	.12233	.00575	1.0210	1.8852	-.00428	15.100	.15793
#3	.00117	.12342	.00643	1.0156	1.9399	.00097	14.950	.16390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**24.224**	**.06008**	**.11609**	**.00388**	**.00535**	**.00169**	**6.0541**
Stddev	.00016	.022	.00178	.00782	.00037	.00215	.00584	.0185
%RSD	446.97	.08922	2.9695	6.7384	9.4563	40.270	345.10	.30530
#1	-.00015	24.240	.06214	.10718	.00346	.00322	-.00450	6.0716
#2	.00013	24.200	.05913	.12183	.00412	.00530	.00709	6.0558
#3	.00013	24.233	.05897	.11927	.00405	.00752	.00249	6.0347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606113001 Acquired: 6/27/2016 18:44:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00094**	**.29258**	**.00044**	**-.00121**	**.00131**	**.00468**	**-.00030**
Stddev	.00041	.00056	.00619	.00122	.00067	.00017	.00030
%RSD	44.265	.19205	1416.6	101.17	51.193	3.5319	98.900
#1	-.00080	.29303	-.00642	-.00024	.00054	.00484	-.00054
#2	-.00061	.29195	.00211	-.00080	.00167	.00467	-.00039
#3	-.00140	.29277	.00562	-.00258	.00172	.00451	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9929.1**	**60967.**	**3129.0**
Stddev	13.7	125.	3.3
%RSD	.13782	.20543	.10402
#1	9916.3	61033.	3132.7
#2	9943.5	60822.	3126.6
#3	9927.6	61045.	3127.7

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 18:48:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39013	9.8677	.38659	.48621	.98810	.04878	9.8929	.04908
Stddev	.00279	.0143	.00348	.00485	.00651	.00009	.0925	.00027
%RSD	.71515	.14503	.90007	.99787	.65924	.19316	.93488	.54123
#1	.38904	9.8758	.38421	.48065	.98892	.04870	9.9531	.04884
#2	.39330	9.8512	.39058	.48959	.98122	.04874	9.7864	.04904
#3	.38805	9.8762	.38497	.48839	.99417	.04888	9.9392	.04937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19932	.49486	.49370	3.9084	49.513	.99337	10.092	.48947
Stddev	.00051	.00362	.00070	.0234	.461	.00451	.090	.00401
%RSD	.25454	.73120	.14174	.59861	.93132	.45383	.89128	.81948
#1	.19874	.49093	.49319	3.9200	49.477	.99670	10.193	.49350
#2	.19970	.49558	.49341	3.8815	49.071	.98824	10.020	.48548
#3	.19952	.49806	.49450	3.9238	49.991	.99517	10.065	.48942
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99157	48.960	.48989	9.6786	.49165	1.1644	.38431	4.8424
Stddev	.00077	.344	.00140	.0024	.00036	.0058	.00336	.0391
%RSD	.07798	.70344	.28656	.02513	.07393	.49769	.87527	.80776
#1	.99079	49.157	.48958	9.6762	.49186	1.1578	.38753	4.7977
#2	.99233	48.562	.48867	9.6786	.49187	1.1683	.38082	4.8597
#3	.99160	49.160	.49143	9.6811	.49123	1.1673	.38457	4.8700
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 18:48:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99567	.98880	.97059	.49844	.98858	.97661	1.0086
Stddev	.00270	.00521	.01227	.00204	.00080	.00243	.0091
%RSD	.27165	.52706	1.2646	.40900	.08098	.24840	.90214
#1	.99356	.98920	.96440	.49777	.98767	.97393	1.0181
#2	.99472	.98340	.96264	.49681	.98889	.97866	.99993
#3	.99872	.99380	.98473	.50073	.98917	.97723	1.0078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10079.	61901.	3169.3
Stddev	50.	127.	23.0
%RSD	.49414	.20460	.72449
#1	10136.	62023.	3145.9
#2	10052.	61770.	3191.8
#3	10048.	61909.	3170.3

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 18:51:57 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.00359**	**.00207**	**.00359**	**.00257**	**.00019**	**.03731**	**-.00004**
Stddev	.00035	.00954	.00193	.00102	.00116	.00001	.02182	.00008
%RSD	76.934	265.49	93.139	28.267	45.261	6.4061	58.495	215.30
#1	.00035	.01028	.00199	.00475	.00378	.00020	.04492	-.00011
#2	.00018	.00783	.00404	.00283	.00246	.00018	.01270	-.00004
#3	.00085	-.00733	.00018	.00320	.00146	.00018	.05430	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00119**	**.00080**	**.02381**	**-.01887**	**-.00055**	**.00633**	**.00280**
Stddev	.00014	.00055	.00135	.02321	.09316	.00196	.06379	.00313
%RSD	61.583	46.529	167.68	97.508	493.80	355.42	1007.7	111.57
#1	.00009	.00056	.00235	-.00158	-.10377	.00169	-.00245	.00619
#2	.00037	.00144	.00014	.02906	.08080	-.00195	-.05261	.00003
#3	.00021	.00158	-.00008	.04394	-.03363	-.00139	.07406	.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**.10392**	**.00120**	**.00304**	**.00068**	**-.00052**	**-.00057**	**.00722**
Stddev	.00048	.04257	.00052	.00806	.00255	.00054	.00657	.00394
%RSD	36.677	40.966	43.104	265.08	374.37	103.35	1149.9	54.508
#1	-.00080	.05986	.00144	.00561	.00306	-.00107	.00605	.00990
#2	-.00134	.14483	.00155	-.00599	-.00201	-.00000	-.00710	.00906
#3	-.00176	.10707	.00061	.00950	.00100	-.00048	-.00067	.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 18:51:57 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.00130**	**.00596**	**.00026**	**.00083**	**-.00116**	**.00120**
Stddev	.00040	.00034	.01084	.00067	.00059	.00026	.00037
%RSD	97.107	26.030	181.89	256.89	70.336	22.820	31.199
#1	-.00007	.00169	.01823	.00014	.00134	-.00088	.00100
#2	-.00085	.00107	-.00234	-.00034	.00096	-.00119	.00163
#3	-.00031	.00114	.00200	.00098	.00019	-.00141	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10084.**	**61372.**	**3084.8**
Stddev	29.	187.	9.3
%RSD	.28766	.30413	.30074
#1	10055.	61476.	3086.1
#2	10085.	61157.	3074.9
#3	10113.	61483.	3093.3

Approved: June 28, 2016

Sample Name: L1606113002 Acquired: 6/27/2016 18:55:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00206	.01683	.00324	.01425	.02969	.00007	67.855	-.00018
Stddev	.00179	.00331	.00029	.00391	.00042	.00005	.103	.00023
%RSD	87.155	19.648	9.0689	27.453	1.4231	75.907	.15153	125.10
#1	-.00034	.01894	.00345	.01788	.03006	.00010	67.778	.00005
#2	-.00392	.01302	.00336	.01011	.02923	.00011	67.815	-.00019
#3	-.00191	.01854	.00290	.01476	.02978	.00001	67.972	-.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	-.00058	.00253	32.752	2.5698	.00262	13.354	1.0030
Stddev	.00038	.00067	.00156	.415	.1107	.00299	.012	.0055
%RSD	144.08	115.71	61.556	1.2677	4.3056	114.26	.09096	.54703
#1	.00019	.00019	.00314	32.844	2.5631	.00594	13.356	.99681
#2	.00068	-.00098	.00370	32.298	2.4627	.00179	13.365	1.0049
#3	-.00007	-.00094	.00076	33.113	2.6837	.00013	13.341	1.0073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00334	33.738	.00101	.13922	.00385	-.00174	-.00239	5.9434
Stddev	.00007	.117	.00071	.00740	.00030	.00240	.00275	.0130
%RSD	1.9596	.34556	70.152	5.3173	7.7687	137.46	115.28	.21905
#1	-.00341	33.655	.00180	.14774	.00409	-.00408	-.00341	5.9583
#2	-.00329	33.688	.00079	.13431	.00351	-.00187	.00073	5.9377
#3	-.00332	33.871	.00044	.13562	.00393	.00071	-.00448	5.9342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606113002 Acquired: 6/27/2016 18:55:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00092**	**.20587**	**.00950**	**.00252**	**-.00009**	**.00723**	**-.00022**
Stddev	.00040	.00178	.00301	.00127	.00108	.00012	.00027
%RSD	43.454	.86678	31.737	50.412	1275.0	1.6562	124.36
#1	-.00060	.20399	.00879	.00122	-.00043	.00736	-.00049
#2	-.00137	.20610	.01280	.00258	.00113	.00713	.00005
#3	-.00080	.20753	.00690	.00375	-.00095	.00720	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9826.6**	**60101.**	**3132.8**
Stddev	12.3	20.	10.3
%RSD	.12537	.03317	.32898
#1	9813.0	60112.	3143.5
#2	9830.0	60112.	3122.9
#3	9837.0	60078.	3132.0

Approved: June 28, 2016

Sample Name: L1606113003 Acquired: 6/27/2016 18:59:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.03067	.00078	.00899	.02053	.00011	48.308	.00030
Stddev	.00117	.00107	.00115	.00181	.00045	.00007	.475	.00010
%RSD	246.62	3.4960	146.03	20.144	2.1753	69.670	.98369	32.162
#1	.00014	.03079	.00016	.01107	.02104	.00002	48.780	.00041
#2	-.00049	.03167	.00009	.00813	.02022	.00016	48.315	.00028
#3	.00177	.02954	.00211	.00777	.02032	.00014	47.830	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	.10372	.00498	1.9040	1.4866	-.00165	16.540	.39638
Stddev	.00012	.00029	.00207	.0480	.0747	.00357	.190	.00202
%RSD	8.2227	.28069	41.497	2.5194	5.0252	217.19	1.1502	.50872
#1	.00132	.10393	.00546	1.9448	1.4705	.00050	16.647	.39857
#2	.00140	.10338	.00676	1.8511	1.4212	-.00577	16.321	.39459
#3	.00155	.10384	.00271	1.9161	1.5680	.00033	16.654	.39599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00138	41.621	.05090	.16052	.00342	.00001	.00007	5.1114
Stddev	.00033	.292	.00076	.00426	.00261	.00138	.00572	.0218
%RSD	23.932	.70109	1.4857	2.6522	76.237	16961.	8728.2	.42694
#1	-.00123	41.872	.05134	.15580	.00426	-.00148	-.00037	5.0863
#2	-.00176	41.301	.05134	.16408	.00050	.00127	.00599	5.1250
#3	-.00116	41.691	.05003	.16167	.00551	.00023	-.00542	5.1231
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606113003 Acquired: 6/27/2016 18:59:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00074**	**.28622**	**.00032**	**-.00071**	**.00062**	**.00336**	**.00012**
Stddev	.00055	.00159	.00953	.00184	.00073	.00018	.00028
%RSD	74.322	.55582	2940.1	257.31	117.89	5.2586	237.33
#1	-.00105	.28800	.00135	-.00246	.00145	.00355	-.00016
#2	-.00107	.28494	-.00968	-.00090	.00011	.00320	.00039
#3	-.00011	.28572	.00931	.00121	.00029	.00334	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9835.2**	**60242.**	**3121.9**
Stddev	17.0	21.	24.2
%RSD	.17269	.03467	.77578
#1	9828.5	60252.	3100.2
#2	9854.6	60257.	3148.0
#3	9822.7	60218.	3117.6

Approved: June 28, 2016

Sample Name: L1606113004 Acquired: 6/27/2016 19:03:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00160	.00974	.00729	-.00235	.03882	.00002	87.197	-.00025
Stddev	.00099	.00312	.00131	.00082	.00098	.00005	.277	.00002
%RSD	61.791	32.036	18.021	35.131	2.5244	267.24	.31745	8.6671
#1	-.00091	.00642	.00578	-.00267	.03887	.00007	86.926	-.00026
#2	-.00274	.01019	.00804	-.00141	.03978	.00003	87.479	-.00027
#3	-.00117	.01261	.00807	-.00296	.03782	-.00004	87.187	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00470	-.00143	.00274	57.871	1.7738	.00184	14.027	.86622
Stddev	.00022	.00036	.00111	.483	.0843	.00303	.115	.00691
%RSD	4.6428	25.091	40.577	.83428	4.7521	164.23	.81785	.79779
#1	.00464	-.00110	.00146	58.414	1.7163	.00518	13.895	.85824
#2	.00451	-.00181	.00340	57.706	1.7346	.00108	14.089	.87021
#3	.00494	-.00139	.00336	57.492	1.8706	-.00073	14.098	.87020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00387	16.969	.00455	-.00223	.00278	.00261	-.00695	7.0032
Stddev	.00047	.036	.00039	.00321	.00404	.00429	.00260	.0208
%RSD	12.210	.21283	8.4949	143.73	145.63	164.36	37.379	.29681
#1	-.00406	16.928	.00499	.00048	.00574	-.00221	-.00898	6.9812
#2	-.00333	16.995	.00429	-.00140	-.00183	.00401	-.00787	7.0061
#3	-.00421	16.984	.00436	-.00578	.00442	.00603	-.00402	7.0224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606113004 Acquired: 6/27/2016 19:03:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	.28736	.02551	-.00208	-.00082	.00411	-.00198
Stddev	.00062	.00169	.00865	.00371	.00099	.00025	.00051
%RSD	122.50	.58686	33.933	178.25	120.62	6.1307	25.715
#1	-.00033	.28545	.02255	-.00252	-.00074	.00392	-.00257
#2	.00001	.28864	.01871	.00183	-.00185	.00440	-.00166
#3	-.00120	.28799	.03525	-.00555	.00013	.00403	-.00172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9773.6	59615.	3085.6
Stddev	12.7	161.	17.0
%RSD	.13023	.26935	.55076
#1	9788.3	59435.	3101.8
#2	9767.7	59666.	3067.9
#3	9765.0	59743.	3087.3

Approved: June 28, 2016

Sample Name: L1606113005 Acquired: 6/27/2016 19:07:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	-.01113	.00084	-.00067	.00055	.00012	.11962	.00001
Stddev	.00193	.00065	.00037	.00189	.00016	.00001	.03094	.00015
%RSD	723.49	5.8142	44.243	280.16	28.687	9.9704	25.863	982.10
#1	.00151	-.01148	.00080	.00008	.00044	.00013	.12564	-.00004
#2	.00000	-.01038	.00122	.00072	.00047	.00011	.08611	.00018
#3	-.00231	-.01153	.00048	-.00282	.00073	.00011	.14710	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00003	.00202	.07284	-.29508	-.00061	.02918	.00259
Stddev	.00023	.00056	.00090	.00296	.07101	.00232	.05820	.00124
%RSD	163.94	1659.4	44.555	4.0585	24.066	383.54	199.45	47.956
#1	.00033	-.00050	.00282	.07103	-.37307	.00132	-.01973	.00400
#2	-.00012	-.00002	.00104	.07123	-.23416	-.00319	.01372	.00168
#3	.00022	.00062	.00221	.07625	-.27802	.00005	.09356	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00374	.18536	.00053	-.00095	.00104	-.00195	-.00649	.00077
Stddev	.00036	.01393	.00089	.00388	.00091	.00230	.00301	.00208
%RSD	9.5270	7.5151	167.45	406.71	87.694	118.09	46.348	268.59
#1	-.00415	.17003	.00155	.00339	.00029	.00053	-.00779	.00312
#2	-.00351	.18884	.00013	-.00218	.00205	-.00402	-.00863	-.00083
#3	-.00356	.19723	-.00009	-.00407	.00077	-.00236	-.00305	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606113005 Acquired: 6/27/2016 19:07:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**.00083**	**-.00070**	**-.00292**	**.00025**	**.00064**	**.00008**
Stddev	.00080	.00023	.00323	.00082	.00081	.00022	.00016
%RSD	109.58	27.426	463.93	27.970	325.67	34.210	195.96
#1	.00019	.00108	-.00304	-.00291	-.00053	.00053	-.00010
#2	-.00110	.00066	.00299	-.00211	.00110	.00050	.00017
#3	-.00129	.00073	-.00204	-.00375	.00018	.00090	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9968.0**	**61327.**	**3106.6**
Stddev	16.8	94.	25.1
%RSD	.16835	.15294	.80778
#1	9955.2	61288.	3083.4
#2	9987.0	61259.	3133.2
#3	9961.7	61434.	3103.1

Approved: June 28, 2016

Sample Name: L1606116101 Acquired: 6/27/2016 19:11:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.04860	.00214	.13190	.02157	.00009	31.053	.00011
Stddev	.00079	.00672	.00101	.00194	.00106	.00008	.417	.00022
%RSD	416.38	13.835	47.067	1.4723	4.9311	89.301	1.3429	197.25
#1	-.00053	.05633	.00167	.12979	.02271	.00002	31.430	-.00006
#2	.00071	.04535	.00330	.13230	.02060	.00019	31.123	.00036
#3	-.00075	.04412	.00145	.13362	.02139	.00007	30.605	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00069	.00412	.08470	2.9383	.01479	11.353	.00956
Stddev	.00023	.00068	.00036	.04777	.0762	.00526	.015	.00033
%RSD	907.19	99.351	8.8420	56.391	2.5922	35.520	.13537	3.4001
#1	-.00023	.00118	.00370	.06348	2.9493	.01019	11.365	.00953
#2	.00009	-.00009	.00436	.05123	3.0084	.01367	11.336	.00925
#3	.00021	.00097	.00431	.13941	2.8572	.02052	11.357	.00990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	92.171	.00236	.65331	-.00188	-.00478	-.00371	3.1163
Stddev	.00042	.452	.00150	.00157	.00056	.00255	.00955	.0067
%RSD	364.94	.48991	63.480	.23986	29.940	53.420	257.32	.21458
#1	-.00030	92.337	.00098	.65154	-.00253	-.00241	-.00739	3.1179
#2	.00054	92.515	.00214	.65387	-.00150	-.00445	-.01088	3.1221
#3	.00010	91.659	.00395	.65452	-.00162	-.00749	.00713	3.1090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116101 Acquired: 6/27/2016 19:11:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**.89893**	**-.00447**	**.00099**	**.01931**	**.01394**	**.00110**
Stddev	.00020	.00488	.00438	.00163	.00069	.00011	.00032
%RSD	29.854	.54316	98.089	164.15	3.5614	.75851	28.702
#1	-.00067	.90042	-.00838	.00182	.01895	.01405	.00146
#2	-.00048	.90290	-.00529	-.00088	.02011	.01393	.00098
#3	-.00089	.89348	.00027	.00203	.01888	.01384	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9553.5**	**58902.**	**3063.6**
Stddev	144.7	396.	17.8
%RSD	1.5141	.67216	.58108
#1	9502.6	59228.	3063.8
#2	9441.2	59017.	3045.8
#3	9716.8	58462.	3081.4

Approved: June 28, 2016

Sample Name: L1606116102 Acquired: 6/27/2016 19:15:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00577	.00204	.12784	.02200	.00011	29.944	-.00001
Stddev	.00045	.00626	.00168	.00092	.00058	.00003	.183	.00023
%RSD	1169.4	108.47	82.281	.72102	2.6575	27.365	.61271	2802.0
#1	-.00028	.00320	.00238	.12889	.02133	.00013	29.855	-.00014
#2	.00055	.00120	.00354	.12743	.02231	.00013	29.823	.00026
#3	-.00016	.01290	.00022	.12719	.02237	.00008	30.155	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00091	.00390	.02477	2.9495	.01753	10.866	.00532
Stddev	.00036	.00101	.00074	.03000	.1210	.00241	.038	.00370
%RSD	97.563	111.40	18.993	121.09	4.1038	13.722	.34772	69.494
#1	.00006	.00109	.00313	-.00494	3.0627	.01490	10.861	.00691
#2	.00029	.00182	.00396	.02422	2.8219	.01963	10.831	.00795
#3	.00077	-.00018	.00460	.05505	2.9640	.01806	10.906	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	89.022	.00229	.62553	.00008	-.00414	-.00448	2.9365
Stddev	.00031	.564	.00068	.00212	.00422	.00227	.00127	.0138
%RSD	124.45	.63346	29.845	.33853	5368.2	54.867	28.295	.47017
#1	.00011	88.808	.00181	.62797	-.00479	-.00191	-.00445	2.9505
#2	-.00042	88.595	.00198	.62425	.00230	-.00406	-.00576	2.9361
#3	-.00044	89.661	.00307	.62436	.00273	-.00646	-.00322	2.9229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116102 Acquired: 6/27/2016 19:15:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.86324**	**-.00129**	**-.00063**	**.01714**	**.01232**	**.00074**
Stddev	.00078	.00516	.00506	.00324	.00105	.00007	.00050
%RSD	510.95	.59816	391.60	515.49	6.1386	.57878	67.773
#1	-.00058	.86195	.00359	-.00139	.01713	.01224	.00104
#2	.00075	.85884	-.00095	-.00341	.01820	.01237	.00103
#3	-.00063	.86893	-.00652	.00292	.01609	.01236	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9752.3**	**59218.**	**3054.8**
Stddev	23.7	320.	14.4
%RSD	.24273	.54118	.47057
#1	9739.1	58898.	3055.3
#2	9779.7	59217.	3068.9
#3	9738.2	59539.	3040.2

Approved: June 28, 2016

Sample Name: L1606116103 Acquired: 6/27/2016 19:19:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.03506	.00712	.07551	.04188	.00158	20.508	-.00002
Stddev	.00084	.00807	.00171	.00181	.00069	.00004	.136	.00017
%RSD	651.77	23.006	23.996	2.3903	1.6575	2.7525	.66552	884.07
#1	-.00080	.03259	.00833	.07650	.04108	.00154	20.385	-.00021
#2	-.00041	.04407	.00787	.07343	.04238	.00162	20.483	.00012
#3	.00082	.02852	.00517	.07661	.04217	.00158	20.655	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00136	.00282	.06994	2.1985	-.00081	7.7606	.02966
Stddev	.00023	.00170	.00079	.01989	.0584	.00386	.0307	.00320
%RSD	61.219	125.12	27.894	28.440	2.6554	475.88	.39600	10.800
#1	.00033	.00164	.00219	.04755	2.1597	-.00296	7.7763	.02714
#2	.00017	-.00046	.00370	.08558	2.2656	-.00312	7.7802	.02857
#3	.00063	.00291	.00257	.07668	2.1702	.00365	7.7251	.03326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.58025	26.711	.01217	.02291	-.00168	-.00309	-.00198	.17020
Stddev	.00378	.134	.00096	.00393	.00016	.00223	.00721	.00343
%RSD	.65186	.50029	7.8825	17.170	9.4794	72.314	363.89	2.0125
#1	.58379	26.559	.01320	.01839	-.00157	-.00168	.00625	.17349
#2	.58070	26.764	.01199	.02484	-.00186	-.00567	-.00506	.17046
#3	.57627	26.811	.01131	.02552	-.00162	-.00192	-.00713	.16666
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116103 Acquired: 6/27/2016 19:19:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.15299	-.00551	.03505	.96728	.00426	.00074
Stddev	.00062	.00063	.00461	.00364	.00318	.00006	.00084
%RSD	2189.8	.41351	83.643	10.383	.32926	1.3697	114.29
#1	.00030	.15226	-.00242	.03087	.96516	.00420	.00169
#2	.00046	.15332	-.00330	.03683	.96573	.00430	.00007
#3	-.00068	.15339	-.01081	.03747	.97094	.00430	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9492.3	59716.	3042.3
Stddev	121.9	141.	16.5
%RSD	1.2846	.23579	.54287
#1	9632.0	59860.	3053.7
#2	9437.9	59578.	3049.9
#3	9407.1	59711.	3023.4

Approved: June 28, 2016

Sample Name: L1606116104 Acquired: 6/27/2016 19:23:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	-.01186	.00254	.07664	.04345	.00159	20.848	-.00007
Stddev	.00212	.00508	.00257	.00149	.00081	.00002	.094	.00009
%RSD	6307.4	42.870	101.27	1.9446	1.8755	1.5592	.45151	128.56
#1	-.00243	-.00640	.00537	.07503	.04295	.00161	20.915	.00003
#2	.00070	-.01646	.00033	.07691	.04439	.00156	20.741	-.00012
#3	.00162	-.01272	.00193	.07797	.04301	.00160	20.890	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00080	.00213	.01930	2.3034	.00354	8.0427	.01084
Stddev	.00018	.00136	.00121	.02471	.1464	.00201	.0307	.00142
%RSD	29.373	171.24	56.970	128.01	6.3535	56.767	.38175	13.097
#1	.00066	.00149	.00245	-.00582	2.1466	.00421	8.0464	.01073
#2	.00079	.00168	.00079	.02016	2.4364	.00128	8.0103	.00948
#3	.00043	-.00078	.00315	.04357	2.3271	.00512	8.0714	.01232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.59730	27.451	.00983	.00439	.00004	-.00026	.00060	.11481
Stddev	.00399	.139	.00086	.00724	.00084	.00311	.00348	.00090
%RSD	.66740	.50649	8.7293	164.88	2163.4	1183.9	579.54	.78293
#1	.59951	27.604	.01082	.01270	-.00049	-.00365	.00041	.11412
#2	.59969	27.332	.00935	.00109	-.00040	.00040	-.00278	.11583
#3	.59270	27.417	.00933	-.00061	.00101	.00246	.00417	.11449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116104 Acquired: 6/27/2016 19:23:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.15442	-.00693	.03739	.99876	.00017	.00109
Stddev	.00068	.00149	.00505	.00111	.00236	.00009	.00046
%RSD	189.83	.96644	72.868	2.9730	.23595	53.416	42.495
#1	-.00021	.15585	-.01154	.03856	.99714	.00016	.00110
#2	.00024	.15456	-.00774	.03635	.99769	.00027	.00156
#3	-.00111	.15287	-.00153	.03724	1.0015	.00009	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9800.5	58978.	2899.9
Stddev	52.8	743.	21.9
%RSD	.53851	1.2596	.75456
#1	9750.8	58120.	2889.0
#2	9794.8	59436.	2925.1
#3	9855.9	59376.	2885.6

Approved: June 28, 2016

Sample Name: L1606116105 Acquired: 6/27/2016 19:27:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.01946	.00390	.07448	.04284	.00157	21.027	.00011
Stddev	.00121	.00450	.00376	.00070	.00106	.00003	.137	.00024
%RSD	166.72	23.135	96.548	.93762	2.4757	2.0914	.65116	225.70
#1	.00212	.01950	.00420	.07527	.04197	.00158	21.024	-.00017
#2	.00008	.02394	.00749	.07423	.04253	.00159	21.165	.00025
#3	-.00002	.01494	-.00001	.07395	.04402	.00153	20.891	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00082	.00582	.04839	2.3850	.00098	7.8006	.02592
Stddev	.00048	.00123	.00109	.00332	.1850	.00303	.0803	.00225
%RSD	90.824	151.42	18.732	6.8604	7.7576	310.10	1.0289	8.6848
#1	.00020	.00174	.00474	.04637	2.3464	.00444	7.7080	.02815
#2	.00108	-.00059	.00579	.05222	2.5863	-.00035	7.8441	.02594
#3	.00031	.00130	.00692	.04657	2.2224	-.00116	7.8498	.02365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.57766	26.748	.01396	.02192	.00087	-.00481	-.00390	.17769
Stddev	.00537	.194	.00045	.00599	.00079	.00526	.00460	.00371
%RSD	.92972	.72401	3.2461	27.303	90.992	109.23	117.76	2.0884
#1	.58243	26.813	.01408	.01689	.00002	-.01088	.00128	.17674
#2	.57184	26.900	.01433	.02034	.00159	-.00146	-.00550	.17454
#3	.57870	26.530	.01345	.02854	.00100	-.00210	-.00749	.18178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116105 Acquired: 6/27/2016 19:27:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00048	.15363	-.00304	.03659	.96783	.00684	.00099
Stddev	.00101	.00148	.00056	.00403	.00503	.00018	.00013
%RSD	209.79	.96081	18.505	11.025	.52018	2.6762	12.705
#1	-.00072	.15477	-.00363	.03833	.96694	.00701	.00103
#2	-.00135	.15415	-.00250	.03198	.96330	.00665	.00085
#3	.00063	.15196	-.00299	.03946	.97325	.00686	.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9748.9	60685.	3093.7
Stddev	243.7	28.	20.2
%RSD	2.4999	.04568	.65339
#1	9877.2	60670.	3088.7
#2	9901.7	60717.	3076.4
#3	9467.9	60668.	3115.9

Approved: June 28, 2016

Sample Name: L1606116106 Acquired: 6/27/2016 19:31:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00080	.01157	.00342	.07354	.04483	.00161	21.274	.00006
Stddev	.00246	.00354	.00054	.00141	.00151	.00009	.202	.00021
%RSD	307.83	30.555	15.802	1.9238	3.3769	5.5529	.94716	363.40
#1	-.00348	.01552	.00300	.07499	.04579	.00168	21.474	.00030
#2	-.00029	.00870	.00324	.07345	.04562	.00151	21.071	-.00002
#3	.00137	.01049	.00403	.07217	.04309	.00165	21.276	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.00090	.00129	.03729	2.3919	.00402	7.9485	.00584
Stddev	.00024	.00059	.00132	.00163	.0287	.00460	.1698	.00272
%RSD	60.413	65.004	102.12	4.3716	1.1990	114.26	2.1361	46.550
#1	.00019	.00042	-.00005	.03899	2.4000	-.00014	8.1044	.00553
#2	.00066	.00073	.00133	.03714	2.3601	.00895	7.9734	.00870
#3	.00033	.00155	.00258	.03574	2.4157	.00326	7.7676	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.59193	27.362	.01055	.00242	-.00133	-.00014	.00057	.13995
Stddev	.00305	.108	.00093	.00502	.00202	.00238	.00354	.00201
%RSD	.51575	.39501	8.7943	207.40	151.87	1662.2	615.36	1.4379
#1	.59337	27.480	.01104	.00117	.00015	.00260	.00121	.14107
#2	.59400	27.268	.01114	.00795	-.00362	-.00171	-.00324	.14115
#3	.58842	27.337	.00948	-.00186	-.00051	-.00132	.00375	.13762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116106 Acquired: 6/27/2016 19:31:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.15575	.00576	.03450	.98791	.00504	.00042
Stddev	.00079	.00070	.00604	.00222	.00217	.00013	.00015
%RSD	414.83	.45086	104.94	6.4445	.21925	2.5112	36.586
#1	.00003	.15575	.00064	.03702	.98894	.00496	.00027
#2	.00104	.15505	.01242	.03282	.98938	.00497	.00041
#3	-.00051	.15646	.00421	.03366	.98543	.00518	.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9573.0	58310.	2922.1
Stddev	34.5	112.	49.3
%RSD	.36041	.19133	1.6864
#1	9533.1	58210.	2866.6
#2	9592.6	58430.	2939.0
#3	9593.2	58290.	2960.8

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 19:34:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42480**	**10.925**	**.41905**	**.52291**	**1.0821**	**.05427**	**10.818**
Stddev	.00025	.036	.00071	.00445	.0084	.00013	.033
%RSD	.05770	.32867	.16841	.85070	.77674	.24259	.30833
#1	.42451	10.965	.41861	.51777	1.0918	.05442	10.856
#2	.42491	10.897	.41987	.52560	1.0772	.05417	10.798
#3	.42496	10.912	.41868	.52535	1.0773	.05421	10.800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05366**	**.21786**	**.54850**	**.54061**	**4.2591**	**54.510**	**1.0808**
Stddev	.00024	.00059	.00176	.00043	.0572	.618	.0072
%RSD	.44655	.27207	.32034	.07869	1.3425	1.1329	.66469
#1	.05348	.21718	.55030	.54037	4.3131	55.125	1.0887
#2	.05357	.21816	.54679	.54110	4.2648	53.889	1.0747
#3	.05393	.21825	.54843	.54035	4.1992	54.516	1.0790
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **11.092**	**.53535**	**1.0844**	**53.246**	**.53574**	**10.501**	**.53340**
Stddev	.069	.00661	.0022	.395	.00192	.024	.00281
%RSD	.62293	1.2342	.20212	.74176	.35856	.23287	.52724
#1	11.048	.54186	1.0869	53.701	.53793	10.473	.53021
#2	11.172	.53555	1.0835	53.042	.53436	10.519	.53551
#3	11.057	.52865	1.0829	52.994	.53492	10.511	.53449
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	10.000						
Range	10.000%						

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 19:34:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2638**	**.41659**	**5.2616**	**1.0927**	**1.0780**	**1.0789**	**.54165**
Stddev	.0040	.00564	.0039	.0023	.0065	.0174	.00133
%RSD	.31495	1.3531	.07431	.21360	.59793	1.6123	.24593
#1	1.2631	.41067	5.2585	1.0946	1.0854	1.0888	.54011
#2	1.2680	.41720	5.2603	1.0935	1.0748	1.0890	.54233
#3	1.2601	.42189	5.2660	1.0901	1.0738	1.0588	.54250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0959**	**1.0702**	F **1.1185**
Stddev	.0023	.0015	.0115
%RSD	.20964	.14271	1.0288
#1	1.0971	1.0690	1.1297
#2	1.0933	1.0719	1.1067
#3	1.0974	1.0697	1.1190
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9147.0**	**55206.**	**2806.1**
Stddev	5.3	126.	31.2
%RSD	.05842	.22832	1.1121
#1	9148.3	55062.	2772.2
#2	9151.5	55260.	2833.6
#3	9141.1	55296.	2812.6

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 19:38:31 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.00490**	**.00178**	**.00111**	**.00453**	**.00019**	**.02320**
Stddev	.00284	.01177	.00323	.00118	.00039	.00011	.00727
%RSD	7519.4	240.39	180.93	106.68	8.5738	60.175	31.332
#1	-.00321	.01176	-.00056	.00211	.00408	.00031	.02151
#2	.00123	.01163	.00547	.00141	.00475	.00015	.03117
#3	.00209	-.00870	.00044	-.00020	.00475	.00010	.01692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00014**	**.00150**	**.00050**	**.02400**	**-.11989**	**.00036**
Stddev	.00014	.00036	.00102	.00134	.01343	.14193	.00349
%RSD	80.960	259.90	67.536	271.23	55.965	118.38	960.98
#1	-.00002	-.00001	.00043	.00055	.03387	.03234	.00264
#2	-.00030	.00055	.00245	-.00087	.02943	-.24858	-.00366
#3	-.00019	-.00013	.00162	.00181	.00871	-.14342	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.04459**	**.00163**	**-.00122**	**.05342**	**.00039**	**.00535**	F **-.00554**
Stddev	.08139	.00165	.00009	.01088	.00232	.00007	.00103
%RSD	182.52	101.48	7.5934	20.365	598.68	1.3864	18.619
#1	-.09630	-.00015	-.00115	.05278	.00044	.00528	-.00659
#2	-.08670	.00311	-.00133	.04288	.00268	.00534	-.00453
#3	.04922	.00192	-.00118	.06461	-.00196	.00542	-.00549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 19:38:31 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00058**	**-.00113**	**.00955**	**.00006**	**.00136**	**.00024**	**-.00107**
Stddev	.00153	.00375	.00095	.00046	.00025	.00745	.00262
%RSD	262.80	330.27	9.9279	792.93	18.125	3043.4	245.14
#1	-.00031	-.00111	.00846	-.00043	.00150	-.00489	-.00005
#2	.00235	.00260	.01008	.00048	.00150	-.00316	-.00404
#3	-.00030	-.00489	.01011	.00013	.00107	.00879	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00172**	**-.00099**	**.00103**
Stddev	.00022	.00020	.00053
%RSD	12.610	19.780	51.778
#1	.00153	-.00077	.00137
#2	.00196	-.00105	.00129
#3	.00167	-.00115	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9379.7**	**57325.**	**2865.6**
Stddev	48.0	139.	9.0
%RSD	.51141	.24290	.31554
#1	9434.2	57197.	2856.8
#2	9360.8	57306.	2865.2
#3	9344.0	57473.	2874.9

Approved: June 28, 2016

Sample Name: L1606119001 Acquired: 6/27/2016 19:42:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00267	8.0985	.01397	4.5540	1.9703	.00081	154.00
Stddev	.00156	.0820	.00323	.0037	.0095	.00006	.59
%RSD	58.285	1.0123	23.161	.08237	.48269	6.7891	.38249
#1	-.00220	8.0438	.01726	4.5498	1.9785	.00086	154.55
#2	-.00440	8.1927	.01384	4.5550	1.9598	.00075	153.38
#3	-.00140	8.0589	.01080	4.5571	1.9725	.00082	154.06
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.56192	.00830	.02341	1.5436	22.347	196.70	10.761
Stddev	.00306	.00015	.00048	.0071	.208	.61	.035
%RSD	.54460	1.8570	2.0293	.46142	.93140	.31175	.32796
#1	.56474	.00844	.02324	1.5506	22.480	197.41	10.795
#2	.56234	.00813	.02304	1.5438	22.455	196.32	10.725
#3	.55866	.00833	.02395	1.5363	22.107	196.38	10.762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.620	.86871	.00729	F 646.93	.06970	1.0488	.49194
Stddev	.092	.00438	.00012	3.64	.00076	.0020	.00257
%RSD	.63243	.50448	1.7062	.56327	1.0846	.19194	.52336
#1	14.727	.86962	.00739	648.56	.07057	1.0482	.49281
#2	14.566	.86394	.00733	642.75	.06919	1.0471	.49397
#3	14.568	.87256	.00715	649.47	.06934	1.0510	.48904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 28, 2016

Sample Name: L1606119001 Acquired: 6/27/2016 19:42:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00800	-.00729	16.893	.23145	.59674	.13690	.00082
Stddev	.00455	.00994	.050	.00157	.00160	.00899	.00155
%RSD	56.794	136.24	.29760	.67961	.26743	6.5681	187.98
#1	.01320	-.01798	16.947	.23175	.59744	.12980	.00158
#2	.00474	-.00557	16.885	.23286	.59492	.14701	-.00096
#3	.00608	.00167	16.847	.22975	.59788	.13390	.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.02457	1.0474	.00566
Stddev	.00037	.0061	.00112
%RSD	1.4885	.58616	19.843
#1	.02427	1.0513	.00466
#2	.02498	1.0506	.00543
#3	.02446	1.0403	.00687
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8891.1	52962.	2833.8
Stddev	14.4	126.	18.0
%RSD	.16209	.23784	.63488
#1	8875.4	52841.	2813.5
#2	8903.7	52953.	2847.6
#3	8894.3	53092.	2840.3

Approved: June 28, 2016

Sample Name: L1606119002 Acquired: 6/27/2016 19:46:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00057	9.9587	.00827	1.6822	.76061	.00071	267.34
Stddev	.00079	.0300	.00176	.0088	.00393	.00004	.52
%RSD	136.94	.30083	21.260	.52335	.51670	5.7257	.19513
#1	.00021	9.9872	.00769	1.6722	.75886	.00074	266.82
#2	-.00057	9.9275	.01025	1.6857	.76511	.00066	267.86
#3	-.00136	9.9615	.00688	1.6887	.75786	.00072	267.35
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.28134	.01324	.16749	6.0562	30.006	60.333	.94675
Stddev	.00045	.00010	.00146	.0045	.135	.207	.00522
%RSD	.16064	.74013	.87293	.07445	.44869	.34349	.55094
#1	.28137	.01313	.16915	6.0602	29.878	60.393	.95276
#2	.28178	.01332	.16643	6.0569	30.146	60.103	.94340
#3	.28088	.01327	.16687	6.0513	29.994	60.504	.94410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.909	4.1360	.02496	F 657.14	.14345	3.0382	.58038
Stddev	.097	.0122	.00048	3.20	.00024	.0093	.00064
%RSD	.34805	.29449	1.9237	.48739	.16716	.30583	.11086
#1	27.882	4.1229	.02550	653.49	.14351	3.0484	.58034
#2	28.016	4.1469	.02458	659.48	.14365	3.0362	.58104
#3	27.827	4.1382	.02481	658.46	.14318	3.0301	.57975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 28, 2016

Sample Name: L1606119002 Acquired: 6/27/2016 19:46:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00437	-.00113	14.639	.71103	1.9740	.14697	-.00318
Stddev	.00093	.00679	.009	.00456	.0023	.00671	.00395
%RSD	21.238	599.63	.06107	.64087	.11721	4.5657	124.38
#1	.00531	.00628	14.638	.71353	1.9732	.14888	-.00698
#2	.00434	-.00707	14.631	.71379	1.9766	.13951	.00091
#3	.00346	-.00261	14.649	.70577	1.9722	.15252	-.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.02961	.86049	.00530
Stddev	.00073	.00135	.00085
%RSD	2.4733	.15683	16.000
#1	.02909	.86204	.00478
#2	.02930	.85985	.00483
#3	.03045	.85958	.00628
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8764.1	53053.	2836.8
Stddev	18.0	107.	14.5
%RSD	.20589	.20218	.51289
#1	8771.9	53063.	2848.6
#2	8776.9	53155.	2820.5
#3	8743.4	52941.	2841.2

Approved: June 28, 2016

Sample Name: L1606125201 Acquired: 6/27/2016 19:50:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.00495	-.00095	.02860	.04479	.00005	61.384	.00017
Stddev	.00094	.00506	.00346	.00060	.00092	.00009	.422	.00012
%RSD	169.30	102.29	363.70	2.0982	2.0546	156.00	.68776	70.487
#1	-.00043	.00982	-.00248	.02929	.04573	-.00003	61.443	.00010
#2	.00145	-.00028	.00301	.02824	.04475	.00005	61.773	.00031
#3	.00065	.00530	-.00339	.02826	.04389	.00014	60.935	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00075	.01911	.10175	1.1286	.00201	12.422	.00989
Stddev	.00041	.00107	.00135	.03529	.0724	.00375	.123	.00190
%RSD	373.98	143.71	7.0668	34.684	6.4117	186.58	.99238	19.199
#1	-.00017	.00158	.02067	.09676	1.2037	.00634	12.387	.01195
#2	.00033	.00113	.01847	.13928	1.0593	-.00007	12.559	.00821
#3	-.00048	-.00046	.01820	.06922	1.1227	-.00024	12.319	.00950
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00193	13.644	.00073	.00105	-.00006	.00107	-.00136	4.4228
Stddev	.00034	.139	.00121	.00773	.00230	.00401	.00914	.0144
%RSD	17.500	1.0186	166.81	735.10	3736.7	373.25	673.05	.32612
#1	-.00157	13.779	.00160	.00989	.00067	.00196	.00648	4.4394
#2	-.00198	13.653	.00124	-.00224	.00178	-.00330	.00084	4.4140
#3	-.00225	13.501	-.00066	-.00449	-.00264	.00456	-.01140	4.4149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606125201 Acquired: 6/27/2016 19:50:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**.09784**	**-.00607**	**-.00328**	**-.00046**	**.14985**	**-.00007**
Stddev	.00058	.00084	.00670	.00447	.00081	.00083	.00029
%RSD	78.824	.86169	110.31	136.06	176.80	.55686	405.03
#1	-.00018	.09829	-.00120	-.00762	-.00136	.15081	-.00040
#2	-.00069	.09837	-.00331	-.00353	.00020	.14942	.00009
#3	-.00133	.09687	-.01372	.00130	-.00021	.14931	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9395.5**	**56788.**	**2851.0**
Stddev	80.1	323.	22.3
%RSD	.85229	.56921	.78277
#1	9314.4	57161.	2851.1
#2	9397.6	56614.	2828.6
#3	9474.5	56590.	2873.2

Approved: June 28, 2016

Sample Name: L1606116411 Acquired: 6/27/2016 19:54:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.14663	.00215	.03810	.02119	.00016	18.411	.00044
Stddev	.00221	.00912	.00176	.00137	.00092	.00001	.155	.00023
%RSD	681.83	6.2203	82.070	3.5904	4.3436	6.1555	.84062	51.747
#1	.00285	.14257	.00272	.03674	.02202	.00016	18.587	.00023
#2	-.00123	.15708	.00017	.03809	.02134	.00016	18.351	.00068
#3	-.00065	.14025	.00355	.03948	.02020	.00015	18.296	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00086	.01359	.02531	.94352	.00091	4.7712	.05655
Stddev	.00031	.00068	.00046	.01114	.02413	.00615	.0771	.00231
%RSD	111.85	79.360	3.3953	44.018	2.5576	674.67	1.6152	4.0836
#1	.00056	.00083	.01312	.03806	.95507	-.00497	4.7964	.05510
#2	-.00006	.00156	.01360	.01747	.91578	.00041	4.6847	.05921
#3	.00034	.00019	.01405	.02039	.95970	.00729	4.8326	.05534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00369	151.86	.00477	.17540	-.00130	-.00056	-.00670	2.8318
Stddev	.00037	.71	.00067	.00122	.00395	.00497	.00873	.0160
%RSD	9.9860	.46427	14.104	.69348	303.24	885.27	130.27	.56460
#1	-.00327	151.07	.00552	.17637	-.00268	-.00517	.00140	2.8353
#2	-.00390	152.08	.00454	.17403	-.00438	-.00122	-.01595	2.8457
#3	-.00391	152.43	.00423	.17578	.00315	.00471	-.00556	2.8143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116411 Acquired: 6/27/2016 19:54:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00092**	**.09946**	**-.00305**	**-.00422**	**.00095**	**.28204**	**-.00025**
Stddev	.00082	.00139	.00477	.00256	.00041	.00115	.00070
%RSD	89.145	1.3990	156.08	60.728	43.182	.40732	284.05
#1	-.00093	.09856	-.00779	-.00141	.00111	.28171	-.00063
#2	-.00172	.09876	.00175	-.00642	.00125	.28332	-.00067
#3	-.00009	.10107	-.00312	-.00483	.00048	.28109	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9116.8**	**55637.**	**2923.6**
Stddev	77.0	159.	39.2
%RSD	.84431	.28626	1.3395
#1	9205.6	55607.	2899.2
#2	9068.0	55494.	2968.8
#3	9077.0	55809.	2902.8

Approved: June 28, 2016

Sample Name: L1606116411PS Acquired: 6/27/2016 19:57:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574476-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19548**	**5.1804**	**.19851**	**1.0098**	**.52533**	**.02514**	**21.635**	**.02550**
Stddev	.00072	.0196	.00302	.0024	.00218	.00008	.081	.00008
%RSD	.36844	.37848	1.5199	.23408	.41510	.30949	.37298	.31943
#1	.19600	5.1775	.19968	1.0071	.52503	.02507	21.606	.02545
#2	.19466	5.2014	.19509	1.0111	.52331	.02512	21.573	.02560
#3	.19578	5.1625	.20078	1.0112	.52764	.02522	21.727	.02546
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10233**	**.25435**	**.25938**	**2.0153**	**26.667**	**.51197**	**9.4111**	**.30079**
Stddev	.00042	.00189	.00095	.0229	.082	.00391	.1325	.00486
%RSD	.41284	.74425	.36479	1.1341	.30756	.76337	1.4074	1.6164
#1	.10282	.25323	.25964	2.0043	26.628	.51123	9.3568	.29588
#2	.10215	.25653	.26017	2.0000	26.612	.50849	9.3144	.30089
#3	.10203	.25328	.25833	2.0416	26.761	.51620	9.5620	.30560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51225**	**162.42**	**.25362**	**5.0507**	**.25017**	**.58754**	**.18763**	**4.9804**
Stddev	.00132	.94	.00143	.0063	.00212	.00191	.00166	.0055
%RSD	.25761	.57595	.56580	.12433	.84901	.32427	.88323	.11061
#1	.51355	162.15	.25196	5.0549	.25259	.58603	.18591	4.9845
#2	.51091	161.65	.25441	5.0536	.24933	.58968	.18775	4.9741
#3	.51228	163.46	.25448	5.0434	.24860	.58691	.18922	4.9825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116411PS Acquired: 6/27/2016 19:57:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574476-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50914**	**.60179**	**.50308**	**.24664**	**.51403**	**.74148**	**.00215**
Stddev	.00198	.00284	.01244	.00364	.00263	.00112	.00047
%RSD	.38850	.47170	2.4725	1.4761	.51104	.15139	21.792
#1	.51105	.60080	.51068	.25053	.51179	.74270	.00175
#2	.50925	.59959	.48873	.24605	.51338	.74127	.00204
#3	.50710	.60500	.50984	.24332	.51692	.74048	.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9785.8**	**59525.**	**3089.6**
Stddev	5.3	128.	22.0
%RSD	.05398	.21481	.71061
#1	9780.5	59663.	3089.8
#2	9791.1	59411.	3111.4
#3	9785.9	59502.	3067.5

Approved: June 28, 2016

Sample Name: L1606116411DL Acquired: 6/27/2016 20:01:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574476-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01244**	**.00077**	**.00993**	**.00251**	**.00007**	**3.1652**	**.00003**
Stddev	.00165	.00684	.00240	.00167	.00051	.00004	.0405	.00004
%RSD	1706.3	55.017	310.90	16.791	20.376	59.493	1.2786	128.87
#1	-.00117	.02033	.00032	.01184	.00274	.00006	3.1186	.00005
#2	.00180	.00812	.00336	.00882	.00192	.00012	3.1857	-.00001
#3	-.00092	.00887	-.00137	.00912	.00286	.00004	3.1913	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**-.00011**	**.00239**	**.00360**	**.17739**	**-.00026**	**.83519**	**.01270**
Stddev	.00035	.00099	.00040	.01719	.06985	.00240	.07272	.00110
%RSD	305.66	864.19	16.756	476.98	39.374	931.69	8.7064	8.6367
#1	-.00024	.00042	.00275	-.01062	.18834	-.00207	.91669	.01326
#2	.00045	.00049	.00196	.02270	.10272	-.00117	.81196	.01143
#3	.00013	-.00126	.00245	-.00127	.24112	.00247	.77693	.01340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00366**	**26.217**	**.00180**	**.03157**	**.00020**	**-.00341**	**.00027**	**.46858**
Stddev	.00037	.099	.00067	.00088	.00266	.00308	.00201	.00038
%RSD	10.012	.37933	37.354	2.8031	1302.6	90.487	741.36	.08205
#1	-.00324	26.121	.00150	.03183	-.00284	-.00052	.00218	.46845
#2	-.00380	26.319	.00133	.03059	.00204	-.00304	-.00183	.46901
#3	-.00393	26.210	.00258	.03230	.00141	-.00666	.00046	.46828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116411DL Acquired: 6/27/2016 20:01:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574476-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.01749	.00168	.00173	.00076	.04891	.00027
Stddev	.00022	.00018	.00109	.00146	.00042	.00018	.00034
%RSD	34.942	1.0421	65.275	84.070	55.974	.37361	124.90
#1	-.00054	.01730	.00260	.00112	.00124	.04912	.00038
#2	-.00087	.01751	.00196	.00340	.00060	.04885	.00055
#3	-.00046	.01767	.00047	.00068	.00044	.04877	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11279.	68657.	3497.6
Stddev	17.	69.	2.3
%RSD	.14899	.10047	.06606
#1	11292.	68728.	3500.3
#2	11285.	68590.	3496.7
#3	11260.	68652.	3495.9

Approved: June 28, 2016

Sample Name: L1606116411DL Acquired: 6/27/2016 20:05:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574476-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	-.00734	.00074	.00368	.00025	.00001	.64489	-.00004
Stddev	.00197	.00503	.00031	.00116	.00074	.00006	.03948	.00007
%RSD	728.94	68.592	41.050	31.357	289.93	558.66	6.1212	200.47
#1	-.00218	-.00153	.00056	.00381	.00018	.00007	.60725	-.00011
#2	-.00038	-.01010	.00058	.00477	-.00044	-.00001	.64145	.00004
#3	.00175	-.01039	.00110	.00247	.00102	-.00004	.68598	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00038	.00085	.01781	-.08744	.00170	.17950	.00501
Stddev	.00008	.00066	.00051	.01400	.03108	.00242	.00980	.00644
%RSD	823.65	173.11	59.500	78.614	35.542	142.12	5.4604	128.55
#1	.00008	-.00018	.00032	.02136	-.05308	-.00006	.19028	.00935
#2	-.00005	-.00111	.00133	.00237	-.11360	.00070	.17711	-.00239
#3	-.00006	.00015	.00091	.02969	-.09563	.00447	.17112	.00806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00376	5.7425	.00188	.00910	.00218	-.00555	-.00021	.07533
Stddev	.00013	.0356	.00064	.00390	.00026	.00169	.00349	.00042
%RSD	3.5506	.61948	33.699	42.866	11.879	30.460	1674.1	.55103
#1	-.00365	5.7020	.00239	.00623	.00245	-.00375	.00346	.07486
#2	-.00391	5.7564	.00117	.00753	.00193	-.00582	-.00062	.07553
#3	-.00371	5.7689	.00209	.01354	.00216	-.00710	-.00347	.07561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116411DL Acquired: 6/27/2016 20:05:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574476-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00156**	**.00340**	**.00426**	**-.00055**	**.00003**	**.00937**	**-.00011**
Stddev	.00052	.00010	.00552	.00191	.00013	.00019	.00034
%RSD	33.470	2.8124	129.55	347.53	382.70	2.0726	312.23
#1	-.00178	.00330	.00902	.00003	-.00006	.00956	.00025
#2	-.00096	.00343	.00554	-.00268	-.00002	.00938	-.00043
#3	-.00193	.00348	-.00179	.00100	.00019	.00917	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11182.**	**67990.**	**3405.1**
Stddev	37.	86.	17.1
%RSD	.33184	.12588	.50329
#1	11145.	68081.	3418.8
#2	11180.	67979.	3410.6
#3	11219.	67911.	3385.8

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 20:09:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .44069	F 11.200	.43242	.54739	F 1.1113	F .05577	F 11.072
Stddev	.00222	.009	.00131	.00632	.0023	.00017	.079
%RSD	.50357	.07720	.30405	1.1552	.20831	.31151	.71280
#1	.43816	11.194	.43374	.54391	1.1132	.05565	11.159
#2	.44232	11.210	.43111	.54357	1.1087	.05569	11.005
#3	.44159	11.195	.43241	.55469	1.1120	.05597	11.051
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Fail
Value	.40000	10.000			1.0000	.05000	10.000
Range	10.000%	10.000%			10.000%	10.000%	10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .05545	F .22568	F .56356	F .55844	F 4.4391	F 55.893	F 1.1164
Stddev	.00016	.00045	.00127	.00115	.0315	.248	.0054
%RSD	.28698	.19850	.22503	.20674	.71028	.44419	.48233
#1	.05536	.22609	.56266	.55840	4.4051	56.087	1.1224
#2	.05563	.22575	.56301	.55961	4.4449	55.613	1.1144
#3	.05535	.22520	.56501	.55730	4.4674	55.980	1.1122
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 11.367	F .55144	F 1.1209	54.614	F .55389	10.904	F .55260
Stddev	.158	.00584	.0027	.214	.00054	.020	.00375
%RSD	1.3880	1.0583	.24184	.39223	.09781	.18521	.67848
#1	11.501	.55706	1.1241	54.769	.55378	10.927	.55692
#2	11.193	.54541	1.1195	54.369	.55448	10.897	.55018
#3	11.407	.55184	1.1192	54.702	.55341	10.888	.55070
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Fail
Value	10.000	.50000	1.0000		.50000		.50000
Range	10.000%	10.000%	10.000%		10.000%		10.000%

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 20:09:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.3086	.43877	5.4261	F 1.1279	F 1.1088	F 1.1123	F .56166
Stddev	.0051	.00573	.0415	.0022	.0045	.0044	.00292
%RSD	.38856	1.3068	.76504	.19783	.40842	.39203	.52039
#1	1.3028	.43891	5.4510	1.1299	1.1137	1.1166	.56243
#2	1.3116	.43296	5.4490	1.1255	1.1047	1.1079	.56412
#3	1.3115	.44443	5.3781	1.1283	1.1082	1.1125	.55843
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value				1.0000	1.0000	1.0000	.50000
Range				10.000%	10.000%	10.000%	10.000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F 1.1271	1.0978	F 1.1288
Stddev	.0048	.0014	.0022
%RSD	.42660	.12863	.19309
#1	1.1217	1.0990	1.1313
#2	1.1306	1.0963	1.1280
#3	1.1292	1.0981	1.1272
Check ?	Chk Fail	Chk Pass	Chk Fail
Value	1.0000		1.0000
Range	10.000%		10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9228.5	56095.	2911.7
Stddev	16.3	175.	11.1
%RSD	.17690	.31207	.38122
#1	9220.6	56196.	2908.4
#2	9247.3	56196.	2924.1
#3	9217.7	55893.	2902.7

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 20:13:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00661**	**.00137**	**.00153**	**.00460**	**.00020**	**-.00210**	**-.00012**
Stddev	.00222	.00658	.00585	.00041	.00121	.00004	.01482	.00037
%RSD	688.29	99.570	427.58	27.097	26.238	19.089	705.59	300.28
#1	-.00131	-.00099	.00065	.00106	.00324	.00024	.00206	-.00018
#2	.00222	.01056	.00755	.00184	.00554	.00016	.01020	-.00046
#3	-.00188	.01025	-.00409	.00168	.00501	.00019	-.01856	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.00086**	**.00058**	**.03443**	**-.06795**	**.00436**	**.02152**	**.00495**
Stddev	.00026	.00098	.00133	.02040	.08285	.00365	.05375	.00119
%RSD	128.39	114.27	230.64	59.259	121.94	83.674	249.75	24.120
#1	-.00006	-.00022	.00202	.01816	-.11674	.00568	.08294	.00365
#2	.00047	.00168	.00033	.05733	-.11482	.00717	-.00139	.00599
#3	.00020	.00111	-.00061	.02781	.02772	.00024	-.01698	.00521
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**.07511**	**.00016**	**.00691**	**.00038**	**-.00171**	**.00102**	**.01102**
Stddev	.00029	.02112	.00175	.00674	.00323	.00063	.00351	.00258
%RSD	29.118	28.116	1126.3	97.608	854.53	37.204	344.74	23.434
#1	-.00066	.05386	-.00159	.01011	.00043	-.00164	.00341	.01263
#2	-.00121	.09610	.00191	-.00084	.00358	-.00111	-.00301	.01239
#3	-.00110	.07538	.00014	.01145	-.00288	-.00237	.00266	.00804
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 20:13:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00133	.00669	.00147	.00207	-.00108	.00120
Stddev	.00059	.00028	.00303	.00106	.00038	.00016	.00069
%RSD	844.24	21.263	45.374	71.946	18.408	14.931	57.233
#1	-.00057	.00159	.00395	.00146	.00215	-.00100	.00051
#2	.00058	.00138	.00995	.00253	.00241	-.00097	.00121
#3	.00021	.00103	.00616	.00042	.00166	-.00126	.00189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9552.3	58406.	2934.9
Stddev	8.5	52.	18.5
%RSD	.08943	.08875	.63041
#1	9543.9	58378.	2946.0
#2	9552.1	58465.	2945.2
#3	9561.0	58373.	2913.6

Approved: June 28, 2016

Sample Name: LLCCV Acquired: 6/27/2016 20:16:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00784	.17392	.01068	.08482	.01013	.00182	.44020	.00060
Stddev	.00152	.00593	.00110	.00215	.00046	.00007	.05306	.00008
%RSD	19.329	3.4104	10.264	2.5304	4.5534	3.8318	12.053	13.379
#1	.00829	.17272	.00945	.08460	.01048	.00190	.39421	.00056
#2	.00907	.16869	.01154	.08279	.01030	.00179	.42813	.00069
#3	.00615	.18037	.01105	.08706	.00961	.00177	.49825	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00409	.00421	.00591	.09152	.74156	.08590	.43623	.01080
Stddev	.00045	.00094	.00042	.03057	.09740	.00212	.03100	.00098
%RSD	11.039	22.310	7.0885	33.399	13.134	2.4647	7.1073	9.0431
#1	.00439	.00325	.00633	.06572	.85188	.08408	.45979	.01103
#2	.00357	.00513	.00592	.08357	.70532	.08822	.40111	.00973
#3	.00430	.00425	.00549	.12528	.66748	.08540	.44779	.01164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00522	.44545	.01676	.80783	.00510	.08425	.01640	.83721
Stddev	.00026	.02096	.00053	.00259	.00287	.00281	.00859	.00198
%RSD	4.9680	4.7062	3.1762	.32073	56.273	3.3378	52.390	.23648
#1	.00517	.45426	.01625	.80698	.00804	.08266	.01043	.83557
#2	.00549	.42152	.01731	.81073	.00231	.08749	.01252	.83667
#3	.00498	.46057	.01671	.80576	.00494	.08259	.02625	.83941
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LLCCV Acquired: 6/27/2016 20:16:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43339**	**.04343**	**.02361**	**.15925**	**.00953**	**.02086**	**.04862**
Stddev	.00158	.00032	.00243	.00384	.00084	.00016	.00040
%RSD	.36406	.73560	10.313	2.4081	8.8401	.76226	.82816
#1	.43434	.04332	.02619	.16366	.00946	.02077	.04833
#2	.43426	.04379	.02328	.15743	.01041	.02077	.04844
#3	.43157	.04318	.02135	.15667	.00873	.02105	.04908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9578.4**	**58333.**	**2941.1**
Stddev	20.1	189.	15.3
%RSD	.20960	.32457	.52044
#1	9579.6	58549.	2923.8
#2	9597.9	58198.	2946.7
#3	9557.8	58251.	2952.9

Approved: June 28, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000232	0.049165	0.000000	1.000000
Al 308.215 {109}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000634	0.007803	0.000000	1.000000
As 189.042 {478}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000040	0.022231	0.000000	1.000000
B 249.678 {135}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000011	0.021528	0.000000	1.000000
Ba 455.403 { 74}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.057094	2.076352	0.000000	1.000000
Be 313.107 {108}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000750	0.915011	0.000000	1.000000
Ca 422.673 { 80}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.001646	0.043727	0.000000	1.000000
Cd 228.802 {447}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000087	0.541329	0.000000	1.000000
Co 228.616 {447}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000124	0.345900	0.000000	1.000000
Cr 267.716 {126}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000307	0.057253	0.000000	1.000000
Cu 224.700 {450}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000095	0.121091	0.000000	1.000000
Fe 261.187 {129}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000099	0.021228	0.000000	1.000000
K 766.490 { 44}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.017252	0.054111	0.000000	1.000000
Li 670.784 { 50}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.017716	1.541847	0.000000	1.000000
Mg 279.079 {121}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000903	0.008313	0.000000	1.000000
Mn 257.610 {131}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000352	0.261349	0.000000	1.000000
Mo 202.030 {467}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000019	0.173301	0.000000	1.000000
Na 589.592 { 57}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.058329	0.174631	0.000000	1.000000
Ni 231.604 {446}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000820	0.127033	0.000000	1.000000
P 214.914 {457}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000118	0.012842	0.000000	1.000000
Pb 220.353 {453}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.001076	0.059382	0.000000	1.000000
Sb 206.833 {463}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000235	0.028236	0.000000	1.000000
Se 196.090 {472}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000467	0.015624	0.000000	1.000000
Si 212.412 {459}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.002275	0.036630	0.000000	1.000000
Sn 189.989 {477}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000014	0.067208	0.000000	1.000000
Sr 407.771 { 83}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.002067	3.402056	0.000000	1.000000
Ti 337.280 {100}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.001900	0.093443	0.000000	1.000000
Tl 190.856 {477}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000364	0.027650	0.000000	1.000000
V 292.402 {115}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000001	0.067460	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000143	0.395720	0.000000	1.000000
Zr 339.198 { 99}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.005896	3.544760	0.000000	1.000000

Approved: June 29, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999853	0.000002	0.002445	0.008150	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999993	0.000002	0.010657	0.035523	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999959	0.000001	0.003594	0.011982	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999958	0.000001	0.003317	0.011056	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999927	0.000159	0.001217	0.004057	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999896	0.000004	0.000106	0.000355	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999618	0.000077	0.047958	0.159859	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999881	0.000003	0.000300	0.001001	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999934	0.000005	0.000451	0.001504	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999876	0.000003	0.001342	0.004472	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999948	0.000004	0.001515	0.005051	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999924	0.000007	0.031406	0.104688	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999988	0.000084	0.134248	0.447494	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999873	0.000241	0.004399	0.014664	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.998924	0.000038	0.090376	0.301254	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999918	0.000011	0.002982	0.009941	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999968	0.000009	0.000477	0.001591	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999988	0.000275	0.036379	0.121263	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999979	0.000003	0.001305	0.004351	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999991	0.000003	0.008026	0.026754	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999140	0.000008	0.004059	0.013529	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999877	0.000003	0.005017	0.016722	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999816	0.000001	0.007504	0.025013	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999953	0.000011	0.002658	0.008861	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999971	0.000003	0.000978	0.003261	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999990	0.000095	0.000514	0.001713	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999983	0.000003	0.009263	0.030877	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999987	0.000001	0.003426	0.011421	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999951	0.000004	0.001103	0.003675	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999989	0.000012	0.000225	0.000751	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999946	0.000234	0.000575	0.001916	OK.	1.000000	0.000000	1	0

Approved: June 29, 2016

Sample Name: S0 Acquired: 6/28/2016 9:16:20 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00023**	**.00063**	**.00004**	**.00001**	**.05709**	**.00075**	**.00165**
Stddev	.00004	.00000	.00006	.00004	.00140	.00001	.00175
%RSD	18.419	.66325	140.27	332.02	2.4545	1.9590	105.90
#1	-.00020	.00063	.00001	-.00001	.05868	.00075	.00362
#2	-.00028	.00063	.00011	.00005	.05658	.00077	.00103
#3	-.00021	.00064	.00001	-.00001	.05602	.00074	.00029

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00009**	**-.00012**	**.00031**	**.00009**	**-.00010**	**-.01725**	**-.01772**
Stddev	.00004	.00011	.00006	.00003	.00070	.00436	.00866
%RSD	42.371	86.096	18.227	29.654	708.02	25.277	48.862
#1	-.00013	-.00001	.00037	.00012	-.00045	-.02225	-.01094
#2	-.00006	-.00013	.00026	.00009	.00071	-.01424	-.01475
#3	-.00007	-.00022	.00029	.00007	-.00056	-.01526	-.02747

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00090**	**.00035**	**-.00002**	**-.05833**	**-.00082**	**-.00012**	**-.00108**
Stddev	.00031	.00041	.00003	.00617	.00011	.00009	.00011
%RSD	34.693	116.29	174.79	10.585	13.184	75.086	10.636
#1	-.00126	.00024	-.00001	-.06271	-.00070	-.00002	-.00106
#2	-.00067	.00001	-.00005	-.05127	-.00084	-.00018	-.00097
#3	-.00079	.00081	.00001	-.06101	-.00091	-.00016	-.00120

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00024**	**-.00047**	**.00228**	**.00001**	**.00207**	**-.00190**	**-.00036**
Stddev	.00009	.00015	.00006	.00003	.00122	.00047	.00004
%RSD	36.331	33.173	2.6350	196.75	58.814	24.571	11.950
#1	.00014	-.00032	.00223	-.00000	.00073	-.00184	-.00033
#2	.00029	-.00046	.00225	.00000	.00310	-.00239	-.00041
#3	.00027	-.00063	.00234	.00005	.00238	-.00147	-.00035

Approved: June 29, 2016

Sample Name: S0 Acquired: 6/28/2016 9:16:20 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00000	.00014	-.00589
Stddev	.00002	.00004	.00178
%RSD	4049.1	26.620	30.214
#1	.00001	.00014	-.00623
#2	.00002	.00018	-.00748
#3	-.00003	.00011	-.00397
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9714.8	58491.	2823.7
Stddev	16.7	110.	25.4
%RSD	.17193	.18886	.90073
#1	9720.2	58546.	2801.2
#2	9728.1	58564.	2818.6
#3	9696.1	58364.	2851.3

Approved: June 29, 2016

Sample Name: S1 Acquired: 6/28/2016 9:20:18 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00003**	**.00126**	**.07127**	**.00103**	**.00358**	**.00016**	**.00031**
Stddev	.00003	.00006	.00137	.00015	.00050	.00014	.00006
%RSD	125.85	5.1064	1.9277	14.298	14.086	85.616	20.693
#1	-.00003	.00132	.07141	.00093	.00380	.00017	.00036
#2	-.00006	.00119	.06983	.00097	.00300	.00002	.00024
#3	.00001	.00129	.07256	.00120	.00394	.00029	.00032

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00048**	**.00049**	**.00055**	**.00427**	**.00160**	**.00124**	**.01092**
Stddev	.00003	.00005	.00040	.00427	.00016	.00011	.00082
%RSD	5.3307	9.2632	73.814	99.979	9.7621	8.7281	7.5482
#1	.00050	.00044	.00022	-.00041	.00157	.00131	.01050
#2	.00048	.00050	.00100	.00797	.00147	.00129	.01187
#3	.00045	.00053	.00042	.00526	.00178	.00112	.01039

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00036**	**.00088**	**-.00103**	**.00046**	**.00356**	**.00049**	**.02743**
Stddev	.00012	.00002	.00015	.00009	.00009	.00003	.00119
%RSD	33.945	2.6105	14.271	18.586	2.5479	7.0434	4.3541
#1	-.00026	.00090	-.00097	.00039	.00354	.00052	.02869
#2	-.00032	.00085	-.00092	.00044	.00366	.00049	.02631
#3	-.00050	.00088	-.00120	.00055	.00348	.00045	.02730

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00122**	**.00048**	**.00307**	**.01800**
Stddev	.00014	.00002	.00019	.00142
%RSD	11.782	4.8775	6.2838	7.8748
#1	-.00137	.00048	.00311	.01754
#2	-.00108	.00050	.00324	.01687
#3	-.00121	.00046	.00286	.01959

Approved: June 29, 2016

Sample Name: S1 Acquired: 6/28/2016 9:20:18 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9700.9**	**58648.**	**2834.2**
Stddev	11.6	54.	2.3
%RSD	.11996	.09285	.08254
#1	9688.0	58595.	2831.5
#2	9710.7	58703.	2835.9
#3	9703.9	58646.	2835.0

Approved: June 29, 2016

Sample Name: S2 Acquired: 6/28/2016 9:24:13 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00009**	**.00193**	**.00017**	**.00017**	**.09454**	**.00146**	**.00723**
Stddev	.00008	.00006	.00006	.00004	.00278	.00004	.00160
%RSD	83.939	3.1358	35.753	24.828	2.9371	2.8533	22.087
#1	.00011	.00190	.00023	.00019	.09719	.00151	.00588
#2	.00016	.00200	.00011	.00012	.09477	.00143	.00900
#3	.00001	.00189	.00016	.00019	.09166	.00144	.00682

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00030**	**.00098**	**.00072**	**.00105**	**.00104**	**.02566**	**.01205**
Stddev	.00008	.00005	.00004	.00009	.00055	.01120	.00176
%RSD	26.659	5.3135	5.7558	8.1488	52.725	43.631	14.637
#1	.00039	.00103	.00070	.00107	.00130	.03847	.01331
#2	.00024	.00098	.00070	.00112	.00141	.02079	.01003
#3	.00028	.00092	.00077	.00096	.00041	.01773	.01281

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00127**	**.00261**	**.00256**	**.08239**	**.00025**	**.00182**	**-.00058**
Stddev	.00061	.00102	.00007	.00826	.00004	.00007	.00016
%RSD	48.074	39.234	2.6316	10.022	14.836	3.8680	28.275
#1	.00188	.00263	.00261	.07825	.00022	.00177	-.00077
#2	.00066	.00362	.00258	.09190	.00023	.00190	-.00050
#3	.00125	.00158	.00248	.07702	.00029	.00179	-.00047

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00067**	**-.00039**	**.00509**	**.00102**	**.05525**	**-.00033**	**-.00016**
Stddev	.00007	.00004	.00018	.00007	.00176	.00054	.00011
%RSD	10.832	9.8136	3.4524	6.4870	3.1861	162.21	68.603
#1	.00071	-.00038	.00503	.00109	.05600	-.00081	-.00013
#2	.00071	-.00036	.00529	.00102	.05324	-.00043	-.00028
#3	.00059	-.00044	.00495	.00096	.05652	.00025	-.00007

Approved: June 29, 2016

Sample Name: S2 Acquired: 6/28/2016 9:24:13 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00099	.00624	.04815
Stddev	.00002	.00020	.00347
%RSD	1.9896	3.2439	7.2147
#1	.00101	.00634	.05143
#2	.00097	.00637	.04451
#3	.00100	.00601	.04852
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9488.3	57374.	2740.7
Stddev	13.3	265.	16.1
%RSD	.14056	.46229	.58687
#1	9498.8	57303.	2735.4
#2	9492.7	57152.	2758.8
#3	9473.3	57668.	2728.0

Approved: June 29, 2016

Sample Name: S3 Acquired: 6/28/2016 9:28:11 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01916	.07899	.00881	.01065	2.1276	.04704	.43747	.02939
Stddev	.00009	.00021	.00004	.00008	.0188	.00004	.00572	.00012
%RSD	.48290	.26798	.41949	.72661	.88345	.07530	1.3084	.39245
#1	.01915	.07889	.00878	.01070	2.1392	.04705	.43801	.02929
#2	.01907	.07924	.00885	.01056	2.1376	.04700	.44291	.02935
#3	.01926	.07886	.00880	.01070	2.1059	.04707	.43150	.02951

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06899	.02881	.06128	.08514	2.6698	1.5114	.08181	.12999
Stddev	.00025	.00010	.00021	.00074	.0161	.0132	.00070	.00035
%RSD	.36800	.36413	.33638	.86441	.60241	.87096	.85392	.26989
#1	.06876	.02869	.06116	.08576	2.6757	1.5250	.08180	.13021
#2	.06894	.02886	.06152	.08533	2.6821	1.5103	.08252	.13017
#3	.06926	.02888	.06116	.08432	2.6516	1.4988	.08112	.12959

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.17433	8.6122	.06285	.12581	.02893	.03354	.00576	.18790
Stddev	.00031	.0732	.00005	.00024	.00024	.00003	.00001	.00028
%RSD	.17582	.84951	.08654	.19275	.83516	.09147	.09744	.15032
#1	.17399	8.6595	.06279	.12561	.02891	.03350	.00576	.18758
#2	.17443	8.6492	.06290	.12608	.02871	.03355	.00576	.18800
#3	.17457	8.5280	.06286	.12575	.02919	.03356	.00575	.18812

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06712	3.3956	.09127	.01239	.06680	.39577	3.5688
Stddev	.00013	.0315	.00072	.00006	.00018	.00037	.0461
%RSD	.19851	.92688	.79280	.51421	.27024	.09319	1.2920
#1	.06699	3.4194	.09199	.01232	.06671	.39600	3.5820
#2	.06711	3.4075	.09128	.01243	.06669	.39597	3.6069
#3	.06726	3.3599	.09055	.01243	.06701	.39535	3.5176

Approved: June 29, 2016

Sample Name: S3 Acquired: 6/28/2016 9:28:11 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9241.9**	**55260.**	**2668.0**
Stddev	19.7	48.	33.4
%RSD	.21369	.08737	1.2509
#1	9229.8	55276.	2646.9
#2	9231.3	55298.	2650.6
#3	9264.7	55205.	2706.4

Approved: June 29, 2016

Sample Name: S4 Acquired: 6/28/2016 9:31:48 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03898	.15838	.01780	.02157	4.2139	.09454	.88060	.05924
Stddev	.00003	.00023	.00001	.00010	.0233	.00025	.00662	.00020
%RSD	.08866	.14782	.07112	.46921	.55230	.26866	.75203	.34365
#1	.03894	.15829	.01779	.02152	4.1947	.09434	.87964	.05948
#2	.03900	.15864	.01780	.02151	4.2398	.09446	.88765	.05914
#3	.03900	.15820	.01781	.02169	4.2071	.09483	.87451	.05911

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13809	.05786	.12220	.16962	5.4128	3.0736	.16425	.26249
Stddev	.00033	.00011	.00045	.00080	.0435	.0280	.00229	.00125
%RSD	.24203	.19009	.36880	.47369	.80337	.91276	1.3953	.47581
#1	.13820	.05783	.12257	.16937	5.3823	3.0436	.16161	.26184
#2	.13836	.05797	.12233	.17052	5.4626	3.0991	.16579	.26393
#3	.13772	.05776	.12170	.16898	5.3936	3.0782	.16533	.26170

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.34580	17.465	.12606	.25335	.05863	.06689	.01208	.36847
Stddev	.00103	.089	.00054	.00060	.00028	.00018	.00008	.00027
%RSD	.29826	.51204	.42896	.23539	.46906	.26956	.69300	.07400
#1	.34674	17.386	.12620	.25381	.05870	.06700	.01218	.36872
#2	.34597	17.562	.12651	.25356	.05887	.06699	.01203	.36850
#3	.34470	17.448	.12546	.25268	.05833	.06668	.01204	.36818

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13428	6.8183	.18453	.02487	.13520	.79151	7.0595
Stddev	.00083	.0500	.00093	.00006	.00027	.00264	.0521
%RSD	.61918	.73271	.50222	.22755	.19752	.33404	.73814
#1	.13469	6.7844	.18348	.02491	.13496	.79350	7.0011
#2	.13482	6.8757	.18485	.02490	.13515	.79251	7.1011
#3	.13332	6.7948	.18525	.02481	.13549	.78851	7.0763

Approved: June 29, 2016

Sample Name: S4 Acquired: 6/28/2016 9:31:48 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9167.2**	**54335.**	**2654.7**
Stddev	38.1	122.	22.7
%RSD	.41612	.22434	.85400
#1	9143.1	54461.	2678.0
#2	9211.2	54218.	2632.7
#3	9147.4	54326.	2653.3

Approved: June 29, 2016

Sample Name: ICV Acquired: 6/28/2016 9:35:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39623	9.9377	.39889	.49732	.99363	.04944	9.8812	.04987
Stddev	.00106	.0076	.00708	.00191	.00263	.00011	.0536	.00024
%RSD	.26775	.07627	1.7741	.38466	.26478	.22215	.54207	.47368
#1	.39548	9.9303	.40454	.49713	.99097	.04941	9.8633	.05008
#2	.39577	9.9454	.39095	.49550	.99623	.04956	9.9414	.04961
#3	.39744	9.9373	.40117	.49932	.99370	.04935	9.8388	.04991
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19959	.49664	.50149	3.9513	49.374	.98661	10.034	.49580
Stddev	.00028	.00150	.00082	.0258	.237	.00181	.192	.00669
%RSD	.13960	.30233	.16435	.65329	.47968	.18320	1.9142	1.3487
#1	.19946	.49575	.50241	3.9273	49.179	.98559	9.9342	.48809
#2	.19940	.49837	.50124	3.9482	49.637	.98870	10.255	.49945
#3	.19991	.49580	.50081	3.9786	49.305	.98555	9.9118	.49988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0065	49.454	.49982	9.9830	.50183	1.1963	.40103	5.0777
Stddev	.0002	.121	.00152	.0155	.00322	.0016	.00482	.0052
%RSD	.02228	.24557	.30431	.15537	.64110	.13254	1.2016	.10217
#1	1.0068	49.335	.49901	9.9766	.49881	1.1979	.40328	5.0825
#2	1.0063	49.578	.50157	10.001	.50521	1.1962	.40432	5.0786
#3	1.0065	49.448	.49887	9.9716	.50146	1.1947	.39550	5.0722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: ICV Acquired: 6/28/2016 9:35:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0016**	**.99261**	**.99584**	**.50153**	**.98848**	**1.0048**	**.99997**
Stddev	.0014	.00354	.00789	.00098	.00445	.0012	.00652
%RSD	.13679	.35675	.79209	.19533	.45048	.12104	.65160
#1	1.0013	.98970	.98754	.50134	.98379	1.0059	.99456
#2	1.0032	.99655	1.0032	.50259	.98898	1.0050	1.0072
#3	1.0005	.99159	.99673	.50066	.99265	1.0035	.99814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9250.5**	**55131.**	**2679.3**
Stddev	20.5	128.	17.4
%RSD	.22138	.23235	.64777
#1	9233.7	55045.	2687.8
#2	9273.3	55070.	2659.3
#3	9244.5	55278.	2690.7

Approved: June 29, 2016

Sample Name: ICB Acquired: 6/28/2016 9:39:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	.01180	-.00119	.00063	.00251	.00001	-.00918	.00008
Stddev	.00181	.00703	.00094	.00081	.00066	.00006	.02928	.00031
%RSD	136.70	59.632	79.494	126.97	26.308	597.53	319.03	386.11
#1	-.00000	.01298	-.00012	.00058	.00242	.00008	.02412	.00032
#2	.00059	.00425	-.00191	-.00014	.00322	-.00002	-.03090	.00018
#3	.00338	.01816	-.00154	.00147	.00191	-.00003	-.02076	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00027	.00073	-.01933	.22486	.00161	-.02324	-.00042
Stddev	.00014	.00107	.00081	.05271	.09957	.00256	.03321	.00086
%RSD	166.85	404.59	111.23	272.68	44.280	159.67	142.93	202.90
#1	.00015	.00041	.00096	.00121	.27186	-.00060	-.05724	.00035
#2	.00017	.00126	.00140	.02002	.11049	.00442	.00912	-.00027
#3	-.00008	-.00087	-.00017	-.07922	.29222	.00100	-.02159	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.04470	.00005	.00699	.00132	.00357	.00008	.01683
Stddev	.00109	.04154	.00064	.00960	.00083	.00638	.00236	.00483
%RSD	272.72	92.940	1291.7	137.41	63.029	178.79	2974.4	28.717
#1	.00158	-.00292	.00078	.01781	.00208	.00712	.00108	.02228
#2	.00021	.06349	-.00026	-.00050	.00043	-.00380	.00178	.01513
#3	-.00058	.07352	-.00037	.00365	.00143	.00739	-.00262	.01308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICB Acquired: 6/28/2016 9:39:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00014	.00196	-.00125	-.00073	.00103	-.00010
Stddev	.00135	.00023	.00632	.00329	.00106	.00089	.00055
%RSD	236.56	168.90	323.11	262.65	146.43	86.352	567.67
#1	.00210	.00040	.00249	-.00348	-.00093	.00203	.00036
#2	-.00046	.00003	.00799	.00252	.00042	.00071	-.00070
#3	.00007	-.00002	-.00462	-.00279	-.00168	.00034	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9447.3	56860.	2718.2
Stddev	10.4	122.	12.5
%RSD	.11005	.21506	.45975
#1	9458.4	56769.	2709.1
#2	9437.8	56999.	2713.0
#3	9445.8	56813.	2732.4

Approved: June 29, 2016

Sample Name: LLICV Acquired: 6/28/2016 9:42:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00991	.17815	.00897	.07876	.00904	.00148	.35423	.00069
Stddev	.00104	.00704	.00226	.00139	.00049	.00009	.03506	.00011
%RSD	10.461	3.9500	25.189	1.7678	5.4305	6.3955	9.8986	16.368
#1	.01050	.18405	.01008	.07716	.00948	.00155	.38883	.00057
#2	.00871	.18003	.00637	.07946	.00851	.00152	.35515	.00072
#3	.01051	.17036	.01047	.07966	.00912	.00137	.31872	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00362	.00403	.00418	.08391	.76193	.08522	.48689	.00680
Stddev	.00017	.00112	.00111	.04090	.06478	.00043	.08244	.00161
%RSD	4.7207	27.688	26.526	48.748	8.5024	.50386	16.933	23.633
#1	.00366	.00518	.00483	.03807	.79397	.08473	.56288	.00695
#2	.00378	.00296	.00481	.11670	.68737	.08539	.39923	.00512
#3	.00344	.00395	.00290	.09695	.80445	.08554	.49855	.00832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00769	.43375	.01599	.75966	.00664	.08175	.01775	.80263
Stddev	.00020	.02121	.00136	.01273	.00191	.00204	.01011	.01097
%RSD	2.5737	4.8901	8.5264	1.6756	28.742	2.5008	56.975	1.3672
#1	.00787	.45781	.01609	.77125	.00884	.08189	.01142	.80967
#2	.00748	.41776	.01730	.76168	.00573	.08373	.01242	.80822
#3	.00770	.42567	.01458	.74604	.00536	.07964	.02942	.78998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLICV Acquired: 6/28/2016 9:42:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39622**	**.04016**	**.02914**	**.14830**	**.00783**	**.01683**	**.04076**
Stddev	.01031	.00026	.01007	.00332	.00030	.00028	.00052
%RSD	2.6017	.65964	34.548	2.2355	3.7875	1.6572	1.2881
#1	.40211	.04028	.04047	.15075	.00751	.01695	.04117
#2	.40223	.03985	.02123	.14964	.00809	.01703	.04094
#3	.38431	.04033	.02572	.14453	.00790	.01651	.04016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9378.4**	**56347.**	**2705.9**
Stddev	26.7	218.	8.1
%RSD	.28463	.38711	.29918
#1	9402.3	56567.	2704.5
#2	9349.6	56344.	2698.6
#3	9383.4	56131.	2714.6

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/28/2016 9:46:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00050	266.36	-.00152	-.01712	.00324	-.00005	247.98	-.00027
Stddev	.00037	.22	.00243	.00116	.00078	.00009	.43	.00011
%RSD	73.628	.08074	159.98	6.8032	24.071	185.53	.17248	39.233
#1	-.00041	266.18	-.00115	-.01623	.00235	.00002	248.46	-.00025
#2	-.00090	266.60	-.00411	-.01844	.00357	-.00002	247.82	-.00039
#3	-.00019	266.31	.00070	-.01669	.00379	-.00014	247.65	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00169	-.00144	.00013	98.701	.06883	.01603	250.89	-.00160
Stddev	.00026	.00067	.00548	.311	.12623	.00270	.87	.00294
%RSD	15.267	46.704	4143.6	.31529	183.41	16.858	.34767	183.10
#1	-.00143	-.00069	.00362	98.701	.00013	.01708	251.87	.00066
#2	-.00170	-.00165	.00296	99.012	-.00816	.01805	250.59	-.00056
#3	-.00194	-.00199	-.00618	98.390	.21451	.01296	250.20	-.00492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00105	.05927	.00061	.01849	-.00139	.00413	-.00226	.04009
Stddev	.00038	.02841	.00031	.00445	.00749	.00506	.00450	.00578
%RSD	36.274	47.924	51.490	24.054	538.59	122.61	198.89	14.425
#1	-.00079	.07985	.00085	.02340	.00046	.00063	-.00723	.04658
#2	-.00149	.02686	.00025	.01473	.00500	.00182	-.00111	.03819
#3	-.00089	.07110	.00072	.01735	-.00963	.00993	.00155	.03549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/28/2016 9:46:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00218	.00068	.00760	.00116	-.00333	-.00424	-.00339
Stddev	.00125	.00063	.00590	.00156	.00074	.00023	.00084
%RSD	57.532	93.689	77.648	134.06	22.180	5.4757	24.860
#1	.00360	.00138	.01052	.00203	-.00256	-.00418	-.00424
#2	.00168	.00049	.00081	.00210	-.00340	-.00449	-.00335
#3	.00125	.00016	.01147	-.00064	-.00403	-.00404	-.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8775.1	51967.	2616.3
Stddev	20.6	83.	2.5
%RSD	.23472	.16025	.09692
#1	8795.9	51991.	2614.2
#2	8774.7	51875.	2619.1
#3	8754.7	52036.	2615.7

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/28/2016 9:50:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50833	262.18	.25318	-.02181	.24986	.24306	244.26	.49106
Stddev	.00126	.58	.00122	.00145	.00044	.00020	.40	.00090
%RSD	.24874	.22306	.48164	6.6719	.17658	.08149	.16189	.18295
#1	.50757	261.68	.25459	-.02039	.25017	.24305	244.64	.49101
#2	.50979	262.82	.25250	-.02173	.25006	.24326	244.30	.49198
#3	.50763	262.05	.25246	-.02330	.24936	.24286	243.85	.49019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23788	.25163	.25229	95.063	5.2464	.00919	243.78	.24277
Stddev	.00015	.00059	.00181	.158	.1191	.00381	.56	.00046
%RSD	.06168	.23621	.71702	.16578	2.2694	41.482	.22832	.18874
#1	.23792	.25213	.25258	94.883	5.3322	.01222	244.21	.24224
#2	.23772	.25179	.25393	95.178	5.2964	.01044	243.98	.24295
#3	.23800	.25098	.25035	95.128	5.1104	.00491	243.15	.24310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	5.2460	.47642	.09011	.48731	.50360	.24875	-.01785
Stddev	.00037	.0122	.00205	.00129	.00428	.00481	.00501	.00607
%RSD	52.598	.23176	.42970	1.4289	.87800	.95448	2.0122	34.019
#1	-.00112	5.2480	.47501	.09145	.49090	.50915	.25453	-.01635
#2	-.00043	5.2330	.47877	.08998	.48258	.50104	.24582	-.01267
#3	-.00055	5.2571	.47549	.08889	.48845	.50062	.24591	-.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/28/2016 9:50:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00034**	**.01432**	**.45770**	**.25003**	**.47450**	**-.00411**
Stddev	.00066	.00044	.00471	.00381	.00123	.00039	.00022
%RSD	342.99	128.84	32.883	.83310	.49348	.08138	5.4415
#1	.00080	-.00016	.00974	.46183	.24862	.47464	-.00429
#2	.00027	.00065	.01408	.45695	.25056	.47407	-.00386
#3	-.00050	.00055	.01915	.45432	.25090	.47480	-.00418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8832.1**	**52417.**	**2628.2**
Stddev	21.0	68.	14.0
%RSD	.23726	.13011	.53298
#1	8814.6	52495.	2613.1
#2	8826.4	52369.	2631.0
#3	8855.3	52387.	2640.7

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 9:54:16 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40243**	**10.614**	**.40844**	**.50863**	**1.0121**	**.05102**	**10.217**	**.05116**
Stddev	.00112	.515	.00191	.00164	.0035	.00030	.043	.00068
%RSD	.27927	4.8494	.46671	.32182	.34959	.57927	.42277	1.3380
#1	.40130	11.204	.40953	.50971	1.0093	.05129	10.170	.05116
#2	.40355	10.382	.40955	.50943	1.0161	.05108	10.255	.05048
#3	.40244	10.257	.40624	.50675	1.0109	.05070	10.226	.05184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20478**	**.51148**	**.51464**	**4.0677**	**50.173**	**1.0065**	**10.314**	**.50732**
Stddev	.00051	.00296	.00045	.0473	.353	.0072	.034	.00544
%RSD	.24945	.57908	.08841	1.1625	.70448	.71712	.33086	1.0728
#1	.20423	.51005	.51506	4.0134	50.081	1.0002	10.321	.50516
#2	.20489	.51489	.51415	4.0899	50.563	1.0144	10.277	.50329
#3	.20523	.50951	.51470	4.0998	49.875	1.0048	10.345	.51351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0289**	**50.218**	**.51278**	**10.197**	**.51300**	**1.2267**	**.41248**	**5.1576**
Stddev	.0010	.142	.00154	.027	.00226	.0014	.00212	.0140
%RSD	.09444	.28181	.29952	.26129	.44099	.11533	.51455	.27050
#1	1.0300	50.065	.51438	10.173	.51371	1.2251	.41099	5.1524
#2	1.0287	50.345	.51264	10.193	.51047	1.2270	.41154	5.1469
#3	1.0281	50.245	.51132	10.226	.51482	1.2279	.41491	5.1734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 9:54:16 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0271**	**1.0127**	**1.0140**	**.50854**	**1.0159**	**1.0260**	**1.0267**
Stddev	.0031	.0018	.0068	.00377	.0037	.0011	.0023
%RSD	.30094	.17428	.66974	.74115	.36573	.10367	.22623
#1	1.0299	1.0107	1.0170	.50547	1.0121	1.0262	1.0241
#2	1.0238	1.0132	1.0062	.51275	1.0195	1.0270	1.0274
#3	1.0277	1.0141	1.0187	.50742	1.0160	1.0249	1.0286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9112.2**	**54490.**	**2638.0**
Stddev	42.3	229.	4.9
%RSD	.46371	.42014	.18716
#1	9071.0	54716.	2643.2
#2	9110.2	54259.	2637.5
#3	9155.4	54496.	2633.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 9:57:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00107	.01265	.00066	-.00059	.00133	.00005	-.02321
Stddev	.00172	.00739	.00480	.00117	.00044	.00009	.07069
%RSD	161.38	58.442	725.98	199.74	32.707	205.84	304.56
#1	-.00291	.01146	.00037	.00041	.00178	.00010	-.07158
#2	-.00078	.02057	-.00398	-.00188	.00091	.00010	-.05598
#3	.00050	.00593	.00560	-.00029	.00130	-.00006	.05792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	-.00001	.00070	.00064	-.01248	.01896	.00424
Stddev	.00008	.00024	.00052	.00024	.01697	.05567	.00356
%RSD	121.21	4578.5	75.209	37.753	135.92	293.58	84.012
#1	.00015	.00014	.00015	.00039	-.03204	-.04418	.00820
#2	.00001	-.00028	.00074	.00065	-.00181	.06099	.00129
#3	.00003	.00013	.00119	.00088	-.00359	.04008	.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07357	-.00184	.00007	-.01062	-.00011	F .01168	.00180
Stddev	.01112	.00228	.00054	.01276	.00016	.00984	.00196
%RSD	15.118	123.77	820.65	120.18	144.89	84.220	109.05
#1	.06409	.00072	.00068	-.02016	-.00025	.02234	.00377
#2	.07080	-.00365	-.00031	.00388	.00006	.00294	.00177
#3	.08581	-.00260	-.00018	-.01557	-.00014	.00977	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 9:57:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00297	-.00339	.01205	.00075	.00021	.00075	.00120
Stddev	.00590	.00357	.00514	.00126	.00040	.00784	.00102
%RSD	198.90	105.27	42.636	167.85	194.47	1051.9	85.165
#1	-.00142	-.00368	.01797	.00186	.00063	.00837	.00235
#2	.00967	.00031	.00882	.00102	.00016	.00116	.00040
#3	.00064	-.00682	.00935	-.00062	-.00017	-.00730	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00000	.00050	.00010
Stddev	.00121	.00044	.00035
%RSD	61027.	88.545	331.42
#1	.00084	.00101	.00002
#2	-.00139	.00027	-.00019
#3	.00055	.00022	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9271.3	55578.	2655.9
Stddev	51.6	74.	4.9
%RSD	.55665	.13326	.18372
#1	9329.9	55635.	2650.8
#2	9251.9	55603.	2660.5
#3	9232.3	55494.	2656.4

Approved: June 29, 2016

Sample Name: L1606098610 Acquired: 6/28/2016 10:04:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00145	.02181	-.00206	.00832	.01391	-.00004	122.67	.00047
Stddev	.00304	.00477	.00237	.00423	.00116	.00002	.55	.00028
%RSD	209.83	21.890	115.10	50.795	8.3057	52.478	.44893	58.626
#1	-.00139	.02678	-.00462	.01283	.01523	-.00006	123.13	.00055
#2	.00107	.01726	.00006	.00445	.01310	-.00005	122.82	.00016
#3	.00466	.02139	-.00162	.00768	.01340	-.00002	122.06	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.00086	.00144	.02058	.44789	.01086	31.049	.01682
Stddev	.00026	.00146	.00109	.06247	.10797	.00372	.048	.00056
%RSD	92.227	169.73	75.475	303.53	24.107	34.217	.15599	3.3113
#1	-.00039	.00185	.00045	.09233	.41216	.01516	31.103	.01727
#2	.00001	.00156	.00128	-.00884	.36231	.00882	31.011	.01699
#3	-.00048	-.00082	.00261	-.02175	.56920	.00862	31.031	.01620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	15.548	.00143	.00778	-.00125	.00088	-.00317	3.9825
Stddev	.00023	.062	.00093	.00138	.00116	.00443	.00234	.0926
%RSD	286.52	.39917	65.076	17.789	92.731	502.50	73.634	2.3256
#1	-.00018	15.614	.00107	.00849	-.00230	-.00088	-.00329	4.0331
#2	-.00025	15.539	.00249	.00867	-.00001	.00592	-.00078	4.0388
#3	.00019	15.491	.00074	.00619	-.00142	-.00240	-.00545	3.8756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098610 Acquired: 6/28/2016 10:04:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.56094**	**-.01734**	**-.00186**	**-.00096**	**.01161**	**.00025**
Stddev	.00056	.00226	.00672	.00164	.00046	.00049	.00009
%RSD	168.92	.40254	38.781	88.193	48.332	4.1942	34.377
#1	-.00041	.56174	-.00995	-.00027	-.00069	.01210	.00033
#2	-.00084	.56269	-.01895	-.00176	-.00070	.01160	.00016
#3	.00026	.55839	-.02311	-.00354	-.00150	.01113	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8920.2**	**53798.**	**2606.1**
Stddev	42.2	101.	6.7
%RSD	.47268	.18837	.25865
#1	8966.4	53714.	2598.6
#2	8910.3	53770.	2608.4
#3	8883.9	53911.	2611.5

Approved: June 29, 2016

Sample Name: L1606098612 Acquired: 6/28/2016 10:08:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00179**	**.01817**	**-.00173**	**.08964**	**.06989**	**.00028**	**149.00**
Stddev	.00100	.00210	.00123	.00064	.00163	.00007	1.41
%RSD	55.707	11.569	71.245	.71011	2.3276	25.194	.94738
#1	-.00244	.01934	-.00082	.08904	.07170	.00025	150.63
#2	-.00230	.01575	-.00313	.08958	.06943	.00036	148.08
#3	-.00064	.01943	-.00124	.09031	.06855	.00023	148.30
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00006**	**.00125**	**.04446**	F **-.02369**	**1.8466**	**.02203**
Stddev	.00018	.00028	.00145	.00051	.01758	.1274	.00321
%RSD	72.096	487.94	115.70	1.1501	74.200	6.9016	14.550
#1	.00022	.00027	.00182	.04416	-.01622	1.8634	.02058
#2	.00009	.00016	.00233	.04417	-.01108	1.7116	.02570
#3	.00045	-.00026	-.00039	.04505	-.04377	1.9648	.01981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**45.103**	**.03621**	**.00100**	**28.222**	**.00213**	**.00959**	**-.00001**
Stddev	.458	.00247	.00050	.258	.00087	.00880	.00083
%RSD	1.0159	6.8101	49.623	.91303	41.036	91.728	5820.7
#1	45.621	.03657	.00045	28.519	.00307	.00506	-.00095
#2	44.936	.03358	.00142	28.060	.00196	.00398	.00025
#3	44.752	.03847	.00113	28.087	.00135	.01973	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098612 Acquired: 6/28/2016 10:08:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	-.00578	2.4372	.00007	1.8293	-.02770	-.00171
Stddev	.00228	.00496	.0114	.00086	.0170	.00834	.00180
%RSD	301.69	85.805	.46813	1170.9	.92968	30.114	105.59
#1	.00125	-.00555	2.4456	-.00089	1.8486	-.01895	.00027
#2	-.00173	-.01085	2.4418	.00034	1.8168	-.03557	-.00325
#3	.00274	-.00094	2.4242	.00076	1.8224	-.02859	-.00214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00089	.05918	-.00043
Stddev	.00099	.00066	.00035
%RSD	111.24	1.1098	81.505
#1	-.00131	.05965	-.00004
#2	.00024	.05947	-.00071
#3	-.00160	.05843	-.00054
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9014.1	54047.	2633.3
Stddev	35.9	224.	16.2
%RSD	.39815	.41359	.61534
#1	8976.7	54004.	2620.2
#2	9017.5	54289.	2628.3
#3	9048.2	53848.	2651.4

Approved: June 29, 2016

Sample Name: L1606098614 Acquired: 6/28/2016 10:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.01902	.00012	.03801	.03323	.00008	204.88
Stddev	.00080	.00540	.00300	.00376	.00070	.00006	.99
%RSD	85.438	28.379	2423.6	9.8935	2.1045	69.928	.48308
#1	.00016	.02493	-.00300	.03753	.03371	.00002	204.76
#2	.00176	.01436	.00037	.03451	.03355	.00011	205.92
#3	.00089	.01776	.00299	.04199	.03243	.00011	203.95
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00056	.00150	.00728	.02142	3.2615	.02265
Stddev	.00057	.00060	.00108	.00027	.01165	.0798	.00129
%RSD	264.86	107.81	72.286	3.7643	54.407	2.4470	5.6835
#1	.00030	-.00037	.00047	.00737	.00797	3.2001	.02170
#2	.00074	-.00123	.00263	.00698	.02785	3.2326	.02412
#3	-.00040	-.00007	.00140	.00751	.02843	3.3517	.02214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	82.993	.04380	.00084	23.890	.00021	.01373	-.00122
Stddev	.436	.00413	.00032	.112	.00062	.00340	.00542
%RSD	.52569	9.4361	37.780	.47033	292.92	24.777	445.93
#1	82.807	.04136	.00050	23.898	-.00050	.01127	.00505
#2	83.491	.04857	.00113	23.997	.00047	.01231	-.00431
#3	82.680	.04147	.00090	23.773	.00067	.01761	-.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098614 Acquired: 6/28/2016 10:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00546**	**-.00344**	**3.4759**	**.00042**	**2.4733**	F **-.03075**	**-.00468**
Stddev	.00377	.00065	.0206	.00043	.0126	.00530	.00102
%RSD	69.101	18.985	.59208	103.39	.51047	17.253	21.736
#1	.00255	-.00418	3.4966	.00056	2.4736	-.02749	-.00377
#2	.00410	-.00321	3.4757	.00077	2.4857	-.02789	-.00578
#3	.00971	-.00293	3.4554	-.00007	2.4605	-.03687	-.00450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00073**	**.02393**	**-.00042**
Stddev	.00117	.00020	.00017
%RSD	159.68	.83679	38.969
#1	.00060	.02379	-.00032
#2	-.00161	.02385	-.00034
#3	-.00119	.02416	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8696.6**	**53360.**	**2635.3**
Stddev	53.3	123.	4.7
%RSD	.61278	.23073	.17646
#1	8705.6	53481.	2630.0
#2	8744.8	53363.	2637.4
#3	8639.3	53235.	2638.5

Approved: June 29, 2016

Sample Name: L1606098616 Acquired: 6/28/2016 10:16:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.04206**	**-.00224**	**.11946**	**.01583**	**.00019**	**231.26**
Stddev	.00241	.00928	.00150	.00213	.00097	.00003	2.09
%RSD	1408.6	22.062	66.850	1.7822	6.1387	16.849	.90274
#1	.00048	.04133	-.00337	.11784	.01688	.00018	233.06
#2	.00184	.05168	-.00054	.12187	.01496	.00017	228.97
#3	-.00284	.03317	-.00280	.11866	.01564	.00023	231.75
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**-.00016**	**.00227**	**.06476**	**-.01272**	**3.3820**	**.03902**
Stddev	.00014	.00007	.00186	.00299	.00289	.1857	.00289
%RSD	45.106	42.884	81.857	4.6169	22.742	5.4901	7.4164
#1	.00019	-.00024	.00395	.06819	-.00990	3.5637	.04149
#2	.00027	-.00014	.00028	.06274	-.01258	3.3897	.03974
#3	.00046	-.00010	.00258	.06334	-.01569	3.1925	.03584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**89.176**	**.29540**	**.00093**	**71.926**	**.00066**	**.02514**	**-.00152**
Stddev	.613	.00274	.00025	.659	.00227	.00577	.00426
%RSD	.68703	.92907	27.507	.91616	345.74	22.967	279.33
#1	89.667	.29671	.00072	72.457	-.00083	.02487	.00332
#2	88.490	.29224	.00085	71.188	.00327	.01951	-.00323
#3	89.371	.29724	.00121	72.131	-.00047	.03105	-.00466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098616 Acquired: 6/28/2016 10:16:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**-.00519**	**4.9238**	**-.00027**	**6.5296**	F **-.03371**	**-.00165**
Stddev	.00169	.00417	.0247	.00065	.0594	.00812	.00293
%RSD	216.35	80.222	.50103	244.32	.90963	24.078	177.80
#1	.00267	-.01000	4.9180	-.00088	6.5813	-.03699	.00082
#2	-.00061	-.00272	4.9024	-.00033	6.4647	-.03968	-.00088
#3	.00029	-.00285	4.9508	.00042	6.5427	-.02447	-.00488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00235**	**.08965**	**.00001**
Stddev	.00114	.00063	.00046
%RSD	48.572	.70222	6097.3
#1	-.00339	.09001	-.00002
#2	-.00113	.09001	.00048
#3	-.00252	.08892	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8519.2**	**51220.**	**2477.0**
Stddev	81.7	146.	20.1
%RSD	.95935	.28481	.81146
#1	8551.6	51098.	2469.4
#2	8426.3	51180.	2499.8
#3	8579.8	51381.	2461.8

Approved: June 29, 2016

Sample Name: L1606098618 Acquired: 6/28/2016 10:20:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00278**	**.01446**	**.00065**	**.04414**	**.02803**	**.00003**	**62.939**	**.00005**
Stddev	.00132	.00733	.00348	.00493	.00138	.00006	.433	.00030
%RSD	47.733	50.692	534.45	11.174	4.9100	229.60	.68765	604.20
#1	-.00152	.00830	-.00263	.04725	.02745	.00008	62.838	-.00003
#2	-.00416	.02256	.00029	.04672	.02704	.00004	62.565	-.00021
#3	-.00264	.01251	.00429	.03845	.02960	-.00004	63.413	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00082**	**.00223**	**-.00753**	**2.0170**	**.02393**	**21.554**	**.01082**
Stddev	.00031	.00057	.00204	.01101	.0505	.00515	.089	.00204
%RSD	220.03	69.016	91.162	146.17	2.5023	21.512	.41324	18.865
#1	-.00006	.00074	.00441	.00042	1.9589	.02045	21.554	.00997
#2	.00012	.00142	.00038	-.00291	2.0421	.02985	21.642	.01315
#3	-.00048	.00030	.00190	-.02010	2.0500	.02150	21.464	.00934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00081**	**26.450**	**.00031**	**.00548**	**-.00155**	**.00176**	**.00395**	**3.0409**
Stddev	.00060	.129	.00015	.00670	.00328	.00355	.00393	.0829
%RSD	74.514	.48686	47.432	122.31	212.16	202.06	99.431	2.7275
#1	.00092	26.577	.00018	.00890	.00028	.00578	.00301	3.0910
#2	.00135	26.453	.00027	-.00224	.00041	-.00094	.00827	3.0866
#3	.00016	26.320	.00047	.00977	-.00534	.00043	.00058	2.9452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098618 Acquired: 6/28/2016 10:20:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	1.4649	-.02108	-.00228	-.00070	.00804	.00001
Stddev	.00065	.0081	.00355	.00310	.00029	.00035	.00069
%RSD	189.54	.55254	16.835	135.99	41.071	4.3066	10757.
#1	-.00024	1.4741	-.02257	-.00444	-.00038	.00819	-.00033
#2	.00023	1.4620	-.02365	-.00366	-.00094	.00828	-.00045
#3	.00104	1.4587	-.01703	.00127	-.00077	.00764	.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9023.1	54498.	2583.2
Stddev	14.4	184.	12.5
%RSD	.15969	.33755	.48540
#1	9006.5	54286.	2572.4
#2	9030.9	54590.	2580.1
#3	9032.0	54618.	2596.9

Approved: June 29, 2016

Sample Name: L1606098620 Acquired: 6/28/2016 10:23:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.04817	-.00135	.07782	.03729	.00006	4.8405	.00006
Stddev	.00111	.00858	.00337	.00174	.00150	.00005	.2531	.00016
%RSD	136.72	17.805	248.80	2.2312	4.0209	85.004	5.2298	272.23
#1	-.00108	.04704	.00253	.07620	.03787	.00002	5.1119	.00014
#2	-.00176	.05726	-.00346	.07965	.03841	.00005	4.7988	.00016
#3	.00041	.04021	-.00313	.07760	.03559	.00012	4.6108	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.00046	.00221	-.01377	.52680	.01239	2.0518	.01543
Stddev	.00035	.00041	.00041	.01525	.03562	.00363	.1072	.00237
%RSD	54.061	87.558	18.325	110.70	6.7607	29.289	5.2228	15.371
#1	.00030	.00060	.00268	-.00834	.49605	.00892	2.1754	.01476
#2	.00099	.00001	.00194	-.03099	.51851	.01616	1.9958	.01806
#3	.00063	.00078	.00201	-.00199	.56582	.01209	1.9843	.01346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	258.51	.00049	.03608	-.00135	.00110	.00276	1.9678
Stddev	.00004	.62	.00088	.00106	.00357	.00320	.00409	.0632
%RSD	3.0038	.23936	179.30	2.9363	263.98	291.73	148.29	3.2116
#1	.00120	259.22	.00098	.03683	-.00547	-.00186	-.00133	2.0062
#2	.00121	258.20	-.00052	.03655	.00073	.00066	.00275	2.0024
#3	.00127	258.10	.00101	.03487	.00069	.00449	.00685	1.8949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098620 Acquired: 6/28/2016 10:23:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.15413	.00227	-.00087	-.00034	.02123	.00037
Stddev	.00049	.00610	.00348	.00169	.00126	.00088	.00059
%RSD	102.24	3.9587	153.49	194.91	370.40	4.1503	159.78
#1	-.00007	.16053	.00379	-.00050	-.00014	.02154	.00024
#2	.00066	.15347	.00472	-.00270	-.00169	.02192	-.00015
#3	.00086	.14838	-.00171	.00061	.00081	.02024	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8915.1	52786.	2597.1
Stddev	45.8	164.	11.0
%RSD	.51429	.31058	.42540
#1	8885.2	52710.	2592.9
#2	8967.9	52674.	2609.6
#3	8892.2	52974.	2588.8

Approved: June 29, 2016

Sample Name: L1606098622 Acquired: 6/28/2016 10:27:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.01654	-.00212	.05780	.02851	.00007	128.50
Stddev	.00221	.00540	.00112	.00139	.00140	.00008	.61
%RSD	309.11	32.673	53.037	2.3972	4.9093	109.84	.47424
#1	.00268	.01727	-.00108	.05667	.02774	.00013	128.79
#2	.00113	.01080	-.00331	.05935	.02767	.00011	127.80
#3	-.00167	.02153	-.00197	.05738	.03013	-.00002	128.91
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.00035	.00003	.00865	F -.02013	2.5823	.02626
Stddev	.00019	.00016	.00078	.00202	.02937	.0866	.00292
%RSD	53.805	45.705	2672.0	23.404	145.91	3.3518	11.104
#1	.00057	-.00046	-.00008	.00753	-.05397	2.5533	.02584
#2	.00019	-.00041	-.00070	.01099	-.00133	2.5140	.02357
#3	.00032	-.00017	.00086	.00744	-.00508	2.6797	.02936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	34.597	.04887	.00126	48.333	.00152	.00681	.00163
Stddev	.218	.00218	.00027	.227	.00088	.00369	.00090
%RSD	.63072	4.4551	21.418	.46900	57.830	54.237	55.351
#1	34.383	.05123	.00152	48.447	.00051	.00489	.00144
#2	34.589	.04693	.00098	48.072	.00204	.01107	.00084
#3	34.819	.04846	.00127	48.480	.00202	.00448	.00261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098622 Acquired: 6/28/2016 10:27:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00300	-.00363	3.4283	-.00015	1.8035	-.01458	-.00022
Stddev	.00517	.00367	.0159	.00066	.0069	.00510	.00189
%RSD	172.02	101.31	.46354	431.28	.38479	35.008	872.11
#1	.00363	-.00181	3.4416	-.00081	1.8070	-.00945	-.00025
#2	.00783	-.00785	3.4326	.00051	1.7956	-.01462	.00169
#3	-.00245	-.00121	3.4107	-.00016	1.8081	-.01966	-.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00041	.00960	-.00053
Stddev	.00135	.00013	.00033
%RSD	325.34	1.3960	61.890
#1	-.00062	.00974	-.00080
#2	.00102	.00959	-.00064
#3	-.00165	.00947	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9009.7	53993.	2581.9
Stddev	49.8	532.	16.6
%RSD	.55257	.98445	.64409
#1	9066.2	53507.	2574.9
#2	8972.3	53911.	2600.9
#3	8990.7	54561.	2570.0

Approved: June 29, 2016

Sample Name: L1606098624 Acquired: 6/28/2016 10:31:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	.01815	-.00167	.41043	.02519	.00017	236.59
Stddev	.00165	.00860	.00049	.00361	.00225	.00005	1.75
%RSD	78.365	47.395	29.692	.87850	8.9284	28.538	.73841
#1	.00350	.00823	-.00192	.40698	.02636	.00020	238.49
#2	.00028	.02269	-.00199	.41417	.02260	.00012	236.21
#3	.00255	.02352	-.00110	.41015	.02661	.00021	235.06
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00007	.00153	.02731	.01601	5.9761	.01623
Stddev	.00020	.00023	.00113	.00041	.03451	.1797	.00053
%RSD	49.211	326.20	73.951	1.5130	215.56	3.0065	3.2775
#1	.00029	-.00013	.00162	.02743	.05242	6.1344	.01570
#2	.00064	.00003	.00036	.02684	.01181	6.0132	.01623
#3	.00030	.00031	.00261	.02764	-.01621	5.7808	.01676
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	70.059	.32158	.00074	64.433	.00096	.01137	-.00087
Stddev	.188	.00511	.00049	.448	.00028	.00676	.00448
%RSD	.26817	1.5886	66.238	.69502	29.106	59.452	515.84
#1	70.206	.32391	.00122	64.934	.00127	.00901	.00428
#2	70.123	.32510	.00024	64.295	.00071	.00610	-.00300
#3	69.847	.31572	.00075	64.070	.00091	.01899	-.00388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098624 Acquired: 6/28/2016 10:31:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00110**	**.00013**	**3.2594**	**-.00019**	**1.6653**	F **-.04852**	**-.00220**
Stddev	.00114	.00630	.0380	.00073	.0105	.00857	.00107
%RSD	104.21	4773.5	1.1667	393.67	.63193	17.652	48.834
#1	-.00018	-.00673	3.2387	-.00082	1.6771	-.04225	-.00215
#2	.00203	.00564	3.2362	-.00035	1.6619	-.05828	-.00115
#3	.00144	.00149	3.3033	.00061	1.6569	-.04504	-.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00178**	**.00879**	**-.00005**
Stddev	.00106	.00026	.00053
%RSD	59.569	2.9138	1129.9
#1	-.00264	.00862	-.00059
#2	-.00060	.00868	.00046
#3	-.00210	.00909	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8997.1**	**53950.**	**2623.6**
Stddev	115.6	416.	17.2
%RSD	1.2846	.77044	.65487
#1	8946.4	53576.	2606.1
#2	8915.6	53878.	2640.4
#3	9129.4	54398.	2624.3

Approved: June 29, 2016

Sample Name: L1606098626 Acquired: 6/28/2016 10:35:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.02934	-.00299	.04282	.02918	-.00008	122.59	.00031
Stddev	.00120	.01200	.00108	.00189	.00069	.00004	3.30	.00024
%RSD	428.74	40.885	35.969	4.4087	2.3809	49.214	2.6919	77.572
#1	-.00145	.03984	-.00192	.04492	.02875	-.00008	118.95	.00057
#2	-.00034	.03192	-.00408	.04224	.02881	-.00012	123.44	.00009
#3	.00095	.01627	-.00298	.04128	.02998	-.00004	125.38	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00038	.00374	.00620	1.8137	.01464	39.490	.00270
Stddev	.00028	.00100	.00067	.03925	.1385	.00311	.817	.00349
%RSD	438.71	263.65	17.855	633.53	7.6349	21.247	2.0694	129.32
#1	.00016	.00133	.00448	.05110	1.6558	.01155	38.561	.00059
#2	.00003	.00048	.00318	-.01091	1.9146	.01461	39.811	.00673
#3	-.00038	-.00067	.00356	-.02160	1.8706	.01777	40.098	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	19.000	.00026	.00581	.00143	.00022	.00066	2.8563
Stddev	.00035	.513	.00086	.00438	.00335	.00426	.00443	.1067
%RSD	36.480	2.6998	327.05	75.398	234.01	1917.0	667.74	3.7341
#1	.00125	18.423	.00118	.00259	-.00228	.00258	.00540	2.9183
#2	.00109	19.169	.00011	.00403	.00234	.00279	-.00338	2.9176
#3	.00057	19.406	-.00051	.01080	.00423	-.00470	-.00003	2.7332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098626 Acquired: 6/28/2016 10:35:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	1.0049	-.01768	-.00157	-.00079	.00650	-.00003
Stddev	.00125	.0273	.00276	.00082	.00042	.00016	.00045
%RSD	736.86	2.7217	15.631	52.392	53.276	2.3973	1567.8
#1	.00079	.97482	-.02087	-.00077	-.00110	.00664	-.00010
#2	-.00127	1.0117	-.01607	-.00241	-.00031	.00653	-.00044
#3	.00099	1.0283	-.01609	-.00153	-.00097	.00633	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9200.3	55136.	2700.9
Stddev	51.6	162.	67.0
%RSD	.56114	.29336	2.4815
#1	9251.8	55033.	2629.7
#2	9200.4	55053.	2762.9
#3	9148.5	55323.	2710.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 10:39:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40316**	**10.167**	**.40001**	**.49776**	**1.0062**	**.05040**	**10.043**	**.05094**
Stddev	.00469	.048	.00207	.00593	.0065	.00018	.026	.00025
%RSD	1.1625	.47037	.51652	1.1910	.64434	.35492	.25579	.48606
#1	.39929	10.121	.40159	.49635	.99979	.05020	10.020	.05080
#2	.40837	10.217	.40076	.50427	1.0061	.05053	10.038	.05080
#3	.40182	10.164	.39767	.49267	1.0128	.05048	10.071	.05123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20379**	**.50933**	**.50963**	**3.9847**	**49.804**	**.99855**	**10.245**	**.49740**
Stddev	.00075	.00518	.00117	.0199	.296	.00583	.114	.00646
%RSD	.36648	1.0175	.23038	.49825	.59527	.58364	1.1171	1.2985
#1	.20447	.50484	.51099	3.9622	49.552	.99411	10.313	.49230
#2	.20299	.51500	.50900	3.9996	49.731	.99638	10.112	.49523
#3	.20392	.50814	.50891	3.9924	50.131	1.0051	10.309	.50466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0194**	**49.838**	**.50664**	**10.073**	**.50309**	**1.2101**	**.40117**	**5.0889**
Stddev	.0025	.220	.00264	.006	.00460	.0036	.00581	.0083
%RSD	.24924	.44233	.52114	.06246	.91484	.29951	1.4477	.16335
#1	1.0223	49.626	.50960	10.070	.50141	1.2135	.39633	5.0972
#2	1.0176	49.821	.50452	10.070	.50829	1.2063	.40761	5.0805
#3	1.0182	50.066	.50581	10.081	.49956	1.2105	.39956	5.0889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 10:39:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0195**	**1.0042**	**.99589**	**.50209**	**1.0096**	**1.0169**	**1.0180**
Stddev	.0017	.0067	.00461	.00153	.0035	.0027	.0027
%RSD	.16394	.66869	.46256	.30430	.34566	.26637	.26670
#1	1.0212	.99679	.99292	.50045	1.0057	1.0199	1.0193
#2	1.0196	1.0061	1.0012	.50348	1.0124	1.0159	1.0148
#3	1.0178	1.0098	.99355	.50234	1.0106	1.0148	1.0197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8953.2**	**53239.**	**2577.6**
Stddev	23.4	339.	5.2
%RSD	.26092	.63651	.20155
#1	8926.2	53533.	2582.1
#2	8967.5	52869.	2578.9
#3	8965.8	53316.	2571.9

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 10:43:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00123**	**.00119**	**-.00233**	**.00197**	**.00081**	**-.00003**	**-.00118**	**-.00001**
Stddev	.00124	.00937	.00168	.00233	.00089	.00007	.03680	.00041
%RSD	101.18	784.56	72.249	118.43	110.25	242.13	3131.7	3937.7
#1	.00020	-.00943	-.00396	.00429	.00168	-.00010	.01949	-.00043
#2	-.00188	.00831	-.00241	.00200	-.00010	.00003	.02065	.00038
#3	-.00200	.00470	-.00060	-.00038	.00085	-.00002	-.04366	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**-.00032**	**-.00018**	**-.00841**	**-.05157**	**.00253**	**.10335**	**.00001**
Stddev	.00014	.00088	.00159	.02756	.08915	.00185	.07359	.00304
%RSD	112.37	271.26	897.41	327.75	172.89	73.129	71.209	38148.
#1	.00010	-.00096	.00052	-.01693	-.00526	.00052	.04788	-.00301
#2	.00028	-.00070	.00095	-.03070	.00491	.00415	.18683	-.00003
#3	.00000	.00068	-.00200	.02240	-.15434	.00291	.07532	.00306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00291**	**.00020**	**.00111**	**.00124**	**.00025**	**-.00505**	**.00674**
Stddev	.00041	.04187	.00054	.00259	.00351	.00041	.00455	.00227
%RSD	156.26	1437.8	265.49	232.95	283.47	162.45	90.076	33.594
#1	.00004	.02857	.00067	.00385	.00454	.00007	-.00177	.00790
#2	.00074	-.04540	.00034	.00079	-.00245	.00072	-.01025	.00820
#3	.00002	.02557	-.00039	-.00130	.00163	-.00004	-.00314	.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 10:43:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00062	-.00008	-.00234	.00029	-.00011	.00048
Stddev	.00029	.00031	.00355	.00123	.00093	.00007	.00056
%RSD	94.778	49.380	4253.5	52.618	315.05	60.863	118.05
#1	.00048	.00088	-.00419	-.00246	.00016	-.00015	.00054
#2	-.00003	.00028	.00187	-.00105	-.00056	-.00003	-.00012
#3	.00045	.00070	.00207	-.00351	.00128	-.00015	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9397.7	55798.	2684.8
Stddev	44.8	443.	24.5
%RSD	.47711	.79465	.91327
#1	9351.5	55593.	2688.7
#2	9400.6	55494.	2707.1
#3	9441.1	56307.	2658.6

Approved: June 29, 2016

Sample Name: L1606098628 Acquired: 6/28/2016 10:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.01289	-.00450	.03718	.02822	.00000	209.02
Stddev	.00173	.00565	.00095	.00078	.00109	.00010	1.27
%RSD	229.23	43.846	21.152	2.0843	3.8710	5293.1	.60706
#1	-.00123	.01938	-.00381	.03806	.02943	-.00005	210.45
#2	.00156	.00899	-.00410	.03658	.02732	.00011	208.59
#3	.00195	.01032	-.00559	.03691	.02790	-.00005	208.03
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	-.00021	.00021	.00536	.02317	3.4262	.02729
Stddev	.00012	.00047	.00073	.00148	.01277	.1489	.00102
%RSD	44.425	218.43	358.22	27.667	55.118	4.3469	3.7448
#1	.00038	-.00004	.00086	.00388	.02959	3.3053	.02760
#2	.00027	.00014	-.00059	.00685	.03147	3.3808	.02615
#3	.00014	-.00074	.00035	.00535	.00846	3.5926	.02812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	85.261	.03463	.00082	23.989	.00048	.00818	-.00223
Stddev	.205	.00172	.00021	.129	.00033	.00315	.00320
%RSD	.24047	4.9805	26.329	.53970	67.997	38.475	143.54
#1	85.478	.03271	.00090	24.123	.00028	.00681	-.00384
#2	85.071	.03605	.00097	23.979	.00031	.01177	.00146
#3	85.235	.03513	.00057	23.865	.00086	.00594	-.00430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098628 Acquired: 6/28/2016 10:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00183**	**-.00402**	**3.5345**	**-.00007**	**2.5328**	F **-.03692**	**-.00256**
Stddev	.00348	.00068	.0862	.00082	.0182	.00467	.00334
%RSD	190.40	16.928	2.4394	1141.0	.71790	12.653	130.28
#1	.00212	-.00480	3.5847	.00072	2.5529	-.03669	.00110
#2	.00515	-.00362	3.5839	-.00002	2.5280	-.03237	-.00334
#3	-.00179	-.00363	3.4349	-.00092	2.5174	-.04170	-.00545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00175**	**.01366**	**.00039**
Stddev	.00082	.00040	.00061
%RSD	47.069	2.9163	156.65
#1	-.00224	.01395	.00082
#2	-.00220	.01381	.00067
#3	-.00080	.01320	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9020.9**	**54213.**	**2666.2**
Stddev	63.0	332.	24.9
%RSD	.69874	.61196	.93493
#1	8948.2	53830.	2642.0
#2	9059.3	54396.	2664.8
#3	9055.2	54413.	2691.8

Approved: June 29, 2016

Sample Name: L1606098630 Acquired: 6/28/2016 10:50:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00112**	**.06305**	**-.00208**	**.14294**	**.01941**	**.00005**	**247.94**
Stddev	.00418	.00320	.00118	.00341	.00034	.00004	1.16
%RSD	374.44	5.0732	57.040	2.3857	1.7709	83.190	.46966
#1	-.00594	.06207	-.00172	.14395	.01911	.00002	248.74
#2	.00155	.06046	-.00111	.13914	.01934	.00002	248.48
#3	.00104	.06663	-.00340	.14573	.01978	.00009	246.60
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.00009**	**.00160**	**.01136**	**-.00695**	**3.7319**	**.04659**
Stddev	.00054	.00031	.00100	.00046	.03558	.1216	.00224
%RSD	146.09	341.82	62.102	4.0522	512.15	3.2581	4.8143
#1	.00014	-.00027	.00197	.01085	-.04459	3.6608	.04457
#2	-.00002	.00027	.00237	.01175	-.00238	3.8723	.04620
#3	.00098	.00026	.00048	.01148	.02612	3.6627	.04901
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**99.425**	**.22627**	**.00078**	**83.428**	**.00189**	**.01477**	**.00041**
Stddev	.285	.00121	.00060	.359	.00084	.00647	.00324
%RSD	.28701	.53622	77.492	.43083	44.222	43.791	786.52
#1	99.365	.22489	.00068	83.673	.00183	.01186	-.00163
#2	99.736	.22719	.00143	83.596	.00276	.01026	-.00128
#3	99.175	.22671	.00023	83.016	.00109	.02218	.00415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098630 Acquired: 6/28/2016 10:50:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**-.00604**	**5.5242**	**-.00008**	**7.3387**	F **-.04842**	**-.00099**
Stddev	.00550	.00651	.1293	.00039	.0359	.00782	.00111
%RSD	956.70	107.88	2.3409	477.24	.48860	16.146	111.89
#1	-.00505	.00055	5.6118	.00017	7.3571	-.05406	.00009
#2	.00556	-.00619	5.5851	.00012	7.3615	-.05171	-.00094
#3	-.00223	-.01247	5.3757	-.00054	7.2973	-.03950	-.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00124**	**.02012**	**.00029**
Stddev	.00033	.00104	.00012
%RSD	26.862	5.1684	42.853
#1	-.00086	.02074	.00038
#2	-.00135	.02071	.00015
#3	-.00150	.01892	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8910.3**	**53758.**	**2664.2**
Stddev	38.9	307.	8.4
%RSD	.43613	.57080	.31523
#1	8941.3	53508.	2654.7
#2	8922.9	53664.	2667.2
#3	8866.7	54100.	2670.6

Approved: June 29, 2016

Sample Name: L1606098632S Acquired: 6/28/2016 10:54:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18846	4.8019	.19046	.99326	.50409	.02350	135.29	.02353
Stddev	.00068	.0071	.00255	.00360	.00221	.00005	.67	.00010
%RSD	.36110	.14839	1.3406	.36288	.43782	.20602	.49154	.44605
#1	.18832	4.8004	.18755	.99057	.50651	.02352	135.95	.02364
#2	.18786	4.7956	.19150	.99185	.50356	.02354	135.31	.02351
#3	.18920	4.8096	.19232	.99735	.50219	.02345	134.62	.02344
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09381	.23815	.24000	1.9130	26.640	.51162	39.895	.28319
Stddev	.00100	.00189	.00228	.0193	.074	.00286	.188	.00285
%RSD	1.0649	.79307	.95050	1.0075	.27942	.55998	.47192	1.0073
#1	.09414	.23597	.24247	1.9319	26.717	.50832	39.903	.28423
#2	.09460	.23915	.23954	1.8934	26.568	.51350	40.079	.27997
#3	.09269	.23933	.23798	1.9136	26.635	.51303	39.702	.28538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48664	72.566	.23006	4.7722	.22970	.57011	.17961	5.9299
Stddev	.00164	.276	.00122	.0198	.00405	.00461	.00446	.0220
%RSD	.33708	.38027	.53077	.41398	1.7643	.80832	2.4833	.37111
#1	.48809	72.880	.23128	4.7950	.22929	.56933	.17995	5.9451
#2	.48697	72.458	.23005	4.7606	.22586	.57506	.17499	5.9047
#3	.48486	72.361	.22884	4.7610	.23394	.56595	.18389	5.9400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098632S Acquired: 6/28/2016 10:54:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48032**	**2.3017**	**.44242**	**.23394**	**.48469**	**.47339**	**.00132**
Stddev	.00248	.0102	.00605	.00222	.00214	.00181	.00037
%RSD	.51666	.44364	1.3679	.95093	.44068	.38183	28.098
#1	.48314	2.3134	.43785	.23403	.48605	.47524	.00138
#2	.47932	2.2973	.44013	.23167	.48223	.47329	.00166
#3	.47849	2.2945	.44928	.23611	.48580	.47163	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8688.7**	**52383.**	**2561.5**
Stddev	20.4	122.	19.3
%RSD	.23454	.23294	.75227
#1	8695.7	52408.	2540.1
#2	8704.6	52491.	2567.0
#3	8665.7	52251.	2577.4

Approved: June 29, 2016

Sample Name: L1606098634SD Acquired: 6/28/2016 10:58:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19385**	**4.8954**	**.19343**	**1.0128**	**.51753**	**.02388**	**139.76**	**.02445**
Stddev	.00262	.0093	.00107	.0024	.00290	.00006	.52	.00008
%RSD	1.3538	.19080	.55216	.23927	.56012	.24808	.37032	.30805
#1	.19684	4.8863	.19374	1.0156	.52087	.02381	140.34	.02445
#2	.19279	4.8948	.19430	1.0111	.51582	.02391	139.58	.02437
#3	.19192	4.9050	.19224	1.0118	.51589	.02392	139.35	.02452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09545**	**.24302**	**.24613**	**1.9627**	**27.284**	**.52635**	**41.619**	**.28310**
Stddev	.00064	.00064	.00329	.0225	.313	.00748	.406	.00352
%RSD	.67403	.26200	1.3360	1.1470	1.1482	1.4202	.97438	1.2446
#1	.09594	.24255	.24524	1.9887	27.508	.53175	41.826	.28499
#2	.09569	.24375	.24338	1.9514	27.417	.52947	41.880	.28528
#3	.09473	.24277	.24977	1.9481	26.926	.51782	41.152	.27904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49748**	**77.859**	**.23713**	**4.8957**	**.23743**	**.58527**	**.18307**	**6.0698**
Stddev	.00174	.416	.00057	.0088	.00258	.00169	.00798	.0098
%RSD	.34891	.53439	.24187	.17976	1.0881	.28860	4.3602	.16074
#1	.49948	78.314	.23758	4.8994	.23444	.58557	.17919	6.0801
#2	.49658	77.767	.23648	4.8857	.23897	.58346	.19225	6.0608
#3	.49638	77.497	.23733	4.9021	.23886	.58679	.17777	6.0685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098634SD Acquired: 6/28/2016 10:58:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49219**	**2.3909**	**.46099**	**.23620**	**.49011**	**.49486**	**.00108**
Stddev	.00112	.0136	.00414	.00270	.00213	.00031	.00019
%RSD	.22718	.56755	.89815	1.1447	.43392	.06172	17.459
#1	.49342	2.4057	.45931	.23351	.49185	.49518	.00110
#2	.49125	2.3880	.46570	.23892	.49073	.49457	.00126
#3	.49188	2.3790	.45795	.23618	.48774	.49484	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8624.4**	**51785.**	**2507.5**
Stddev	34.6	103.	7.8
%RSD	.40116	.19897	.31044
#1	8586.0	51883.	2498.6
#2	8634.1	51794.	2512.9
#3	8653.1	51678.	2511.1

Approved: June 29, 2016

Sample Name: L1606098636S Acquired: 6/28/2016 11:02:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19772**	**5.0127**	**.19966**	**1.3850**	**.51214**	**.02480**	**245.86**	**.02477**
Stddev	.00596	.1383	.00099	.0339	.00319	.00076	.17	.00011
%RSD	3.0140	2.7597	.49707	2.4504	.62221	3.0708	.06737	.45242
#1	.19402	4.9072	.19852	1.3612	.50849	.02423	245.76	.02490
#2	.19456	4.9616	.20011	1.3699	.51358	.02450	245.78	.02470
#3	.20460	5.1693	.20034	1.4238	.51436	.02566	246.05	.02471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09581**	**.24802**	**.29870**	**1.9392**	**30.905**	**.51342**	**76.554**	**.61303**
Stddev	.00037	.00685	.00225	.0091	.082	.00243	.057	.00284
%RSD	.38833	2.7631	.75304	.46767	.26421	.47237	.07486	.46294
#1	.09581	.24194	.29785	1.9318	30.865	.51510	76.515	.60976
#2	.09544	.24668	.29700	1.9365	30.851	.51064	76.620	.61444
#3	.09618	.25545	.30125	1.9493	30.999	.51451	76.527	.61488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50074**	**91.350**	**.23694**	**4.9730**	**.23904**	**.58934**	**.18488**	**6.0814**
Stddev	.00390	.151	.00117	.0362	.00508	.00409	.00290	.0627
%RSD	.77792	.16492	.49565	.72715	2.1269	.69342	1.5687	1.0313
#1	.49883	91.182	.23828	4.9726	.24049	.59260	.18219	6.0847
#2	.49816	91.394	.23610	4.9370	.23339	.58475	.18448	6.0172
#3	.50522	91.474	.23644	5.0093	.24324	.59066	.18795	6.1425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098636S Acquired: 6/28/2016 11:02:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49354**	**2.1681**	**.44779**	**.23586**	**.50155**	**.49646**	**.00080**
Stddev	.00336	.0036	.01493	.00523	.01154	.00341	.00057
%RSD	.68125	.16648	3.3336	2.2166	2.3017	.68636	71.538
#1	.49311	2.1641	.44018	.24186	.49241	.49616	.00138
#2	.49041	2.1691	.46499	.23232	.49771	.49322	.00078
#3	.49709	2.1712	.43821	.23340	.51452	.50001	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8497.3**	**50908.**	**2509.3**
Stddev	53.2	719.	14.0
%RSD	.62617	1.4115	.55736
#1	8555.0	51320.	2495.2
#2	8486.6	51326.	2509.5
#3	8450.3	50078.	2523.2

Approved: June 29, 2016

Sample Name: L1606098638SD Acquired: 6/28/2016 11:05:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19461**	**5.0104**	**.19785**	**1.3932**	**.51464**	**.02415**	**242.84**	**.02509**
Stddev	.00205	.0136	.00122	.0024	.00243	.00017	.45	.00015
%RSD	1.0512	.27199	.61628	.17380	.47230	.71874	.18597	.59393
#1	.19352	5.0251	.19758	1.3915	.51540	.02406	242.69	.02519
#2	.19697	4.9981	.19918	1.3960	.51192	.02405	243.35	.02492
#3	.19334	5.0079	.19678	1.3921	.51660	.02436	242.49	.02515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09681**	**.24640**	**.24874**	**1.9227**	**30.934**	**.51907**	**74.733**	**.61185**
Stddev	.00041	.00117	.00213	.0127	.073	.00309	.315	.00169
%RSD	.41948	.47310	.85495	.66056	.23719	.59567	.42145	.27686
#1	.09707	.24697	.24714	1.9111	30.855	.51695	74.400	.61033
#2	.09701	.24718	.24794	1.9363	30.948	.51764	75.026	.61368
#3	.09634	.24506	.25116	1.9209	30.999	.52261	74.774	.61153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50496**	**89.306**	**.23899**	**5.0248**	**.24132**	**.60097**	**.18640**	**6.1693**
Stddev	.00099	.033	.00162	.0082	.00136	.00275	.00260	.0316
%RSD	.19543	.03715	.67633	.16292	.56193	.45730	1.3937	.51177
#1	.50490	89.343	.23842	5.0209	.24263	.60304	.18468	6.1440
#2	.50597	89.278	.24081	5.0342	.24141	.60202	.18939	6.1591
#3	.50400	89.298	.23773	5.0193	.23992	.59785	.18513	6.2046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098638SD Acquired: 6/28/2016 11:05:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49778**	**2.1733**	**.44248**	**.23628**	**.49700**	**.48274**	**.00039**
Stddev	.00133	.0033	.00419	.00330	.00105	.00040	.00032
%RSD	.26806	.15241	.94725	1.3974	.21218	.08361	80.302
#1	.49916	2.1747	.44732	.23753	.49767	.48239	.00025
#2	.49766	2.1756	.44019	.23254	.49578	.48318	.00017
#3	.49650	2.1695	.43994	.23878	.49754	.48266	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8832.1**	**52381.**	**2503.4**
Stddev	43.7	518.	14.9
%RSD	.49512	.98899	.59513
#1	8807.7	51789.	2505.9
#2	8806.1	52747.	2487.4
#3	8882.6	52609.	2516.9

Approved: June 29, 2016

Sample Name: L1606098640 Acquired: 6/28/2016 11:09:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00368**	**-.00222**	**.01141**	**.00216**	**-.00005**	**2.2430**
Stddev	.00288	.00455	.00278	.00149	.00149	.00004	.0120
%RSD	1876.7	123.61	125.40	13.107	68.951	89.131	.53399
#1	.00212	-.00155	.00099	.01182	.00231	.00000	2.2297
#2	.00149	.00669	-.00400	.01265	.00060	-.00007	2.2530
#3	-.00315	.00590	-.00364	.00975	.00356	-.00007	2.2463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00031**	**-.00074**	**.00067**	F **-.02010**	**.12601**	**.00716**
Stddev	.00037	.00033	.00115	.00024	.02550	.12950	.00076
%RSD	108380.	105.10	155.50	35.998	126.88	102.77	10.598
#1	-.00034	-.00043	.00014	.00085	-.03819	.06228	.00655
#2	.00040	-.00057	-.00204	.00039	-.03117	.27502	.00801
#3	-.00006	.00006	-.00032	.00076	.00907	.04072	.00691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.91287**	**.00205**	**.00013**	**1.3571**	**.00020**	**.00323**	**.00041**
Stddev	.06200	.00215	.00012	.0399	.00066	.00482	.00096
%RSD	6.7914	104.57	86.770	2.9418	320.37	149.47	236.42
#1	.98438	.00035	.00001	1.3860	-.00004	.00798	-.00051
#2	.88005	.00447	.00014	1.3115	.00095	-.00166	.00141
#3	.87419	.00135	.00025	1.3737	-.00030	.00336	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098640 Acquired: 6/28/2016 11:09:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00221	.00185	1.7777	.00057	.02861	-.00047	-.00375
Stddev	.00170	.00581	.0072	.00092	.00010	.00218	.00315
%RSD	76.838	313.71	.40541	163.27	.34066	460.98	84.031
#1	.00123	-.00324	1.7771	-.00035	.02870	-.00248	-.00217
#2	.00122	.00819	1.7852	.00150	.02863	.00184	-.00737
#3	.00417	.00061	1.7709	.00054	.02851	-.00078	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00006	.00283	-.00030
Stddev	.00069	.00010	.00048
%RSD	1079.8	3.5427	163.06
#1	-.00026	.00293	.00025
#2	-.00064	.00284	-.00049
#3	.00070	.00273	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9289.4	56423.	2690.4
Stddev	27.6	170.	4.0
%RSD	.29737	.30164	.14881
#1	9321.1	56618.	2691.8
#2	9276.4	56308.	2693.5
#3	9270.7	56341.	2685.9

Approved: June 29, 2016

Sample Name: L1606098642 Acquired: 6/28/2016 11:13:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.00480	-.00226	.00604	.00443	.00001	2.2648	-.00002
Stddev	.00055	.00920	.00193	.00047	.00218	.00005	.0520	.00023
%RSD	123.65	191.72	85.371	7.7247	49.175	647.11	2.2956	994.00
#1	-.00030	.00393	-.00387	.00657	.00289	-.00004	2.2275	.00024
#2	.00002	.01441	-.00279	.00586	.00347	.00000	2.2427	-.00020
#3	-.00105	-.00394	-.00012	.00569	.00692	.00006	2.3242	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	-.00035	.00052	-.01163	.26316	-.00051	.80762	-.00038
Stddev	.00019	.00021	.00043	.02440	.11608	.00572	.03343	.00041
%RSD	387.22	60.889	84.163	209.79	44.110	1124.5	4.1388	108.83
#1	.00017	-.00048	.00015	.00199	.20693	-.00220	.77340	-.00048
#2	-.00012	-.00045	.00040	.00292	.39664	-.00520	.84019	.00008
#3	-.00019	-.00010	.00100	-.03980	.18589	.00587	.80927	-.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	1.3652	-.00037	-.00442	.00066	.00257	-.00014	1.8170
Stddev	.00002	.0250	.00097	.00540	.00267	.00332	.00546	.0049
%RSD	11.711	1.8350	262.18	122.21	406.64	129.03	3833.7	.27083
#1	.00022	1.3435	.00047	-.00429	.00358	.00628	.00485	1.8126
#2	.00018	1.3926	-.00143	.00091	-.00166	.00155	.00069	1.8223
#3	.00023	1.3596	-.00015	-.00989	.00005	-.00012	-.00597	1.8161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098642 Acquired: 6/28/2016 11:13:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.02904**	**.00647**	**-.00118**	**-.00045**	**.00265**	**-.00055**
Stddev	.00078	.00075	.00403	.00186	.00068	.00009	.00024
%RSD	611.12	2.5787	62.343	157.68	153.74	3.2764	43.066
#1	-.00025	.02923	.01112	-.00164	-.00121	.00267	-.00035
#2	.00071	.02821	.00425	-.00276	.00011	.00273	-.00081
#3	-.00084	.02967	.00404	.00087	-.00024	.00256	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9188.1**	**55730.**	**2641.7**
Stddev	33.3	117.	26.1
%RSD	.36205	.20964	.98933
#1	9221.4	55818.	2623.5
#2	9188.1	55775.	2671.6
#3	9154.9	55598.	2630.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 11:17:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38793**	**9.8216**	**.38568**	**.48241**	**.97649**	**.04892**	**9.6575**	**.04905**
Stddev	.00173	.0104	.00606	.00258	.00599	.00017	.0817	.00054
%RSD	.44530	.10617	1.5701	.53397	.61359	.35505	.84634	1.1034
#1	.38989	9.8335	.38005	.48355	.98308	.04912	9.7295	.04916
#2	.38662	9.8141	.38489	.48422	.97502	.04879	9.6743	.04953
#3	.38729	9.8171	.39209	.47946	.97137	.04886	9.5686	.04846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19642**	**.49210**	**.49159**	**3.8879**	**49.158**	**.97992**	**9.9365**	**.48176**
Stddev	.00062	.00133	.00208	.0465	.286	.01938	.0224	.00474
%RSD	.31488	.26994	.42282	1.1966	.58105	1.9777	.22529	.98319
#1	.19623	.49213	.49102	3.9206	49.268	1.0012	9.9456	.48577
#2	.19711	.49342	.49389	3.8346	49.372	.97517	9.9530	.48297
#3	.19592	.49076	.48986	3.9083	48.833	.96335	9.9111	.47653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98549**	**48.425**	**.48820**	**9.6834**	**.49219**	**1.1658**	**.39200**	**4.9060**
Stddev	.00189	.277	.00164	.0239	.00612	.0064	.00693	.0198
%RSD	.19203	.57139	.33676	.24696	1.2434	.54907	1.7666	.40262
#1	.98469	48.726	.48865	9.6700	.48522	1.1587	.39787	4.8842
#2	.98765	48.367	.48957	9.7110	.49669	1.1709	.39376	4.9228
#3	.98412	48.182	.48637	9.6693	.49465	1.1680	.38436	4.9109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 11:17:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98346	.97426	.97669	.49225	.97791	.97750	.99577
Stddev	.00532	.00518	.00473	.00251	.00190	.00255	.00695
%RSD	.54046	.53167	.48472	.51088	.19391	.26059	.69772
#1	.97812	.97975	.97533	.49200	.98010	.97761	.99790
#2	.98875	.97359	.98196	.49488	.97671	.98000	1.0014
#3	.98352	.96945	.97279	.48987	.97693	.97491	.98801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9011.4	53420.	2554.4
Stddev	14.3	287.	21.0
%RSD	.15841	.53648	.82136
#1	9023.0	53101.	2539.8
#2	9015.8	53501.	2545.0
#3	8995.5	53657.	2578.4

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 11:20:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.01332	-.00300	.00111	.00410	.00008	-.01736	-.00010
Stddev	.00226	.00916	.00118	.00122	.00098	.00004	.05399	.00024
%RSD	699.99	68.781	39.157	109.28	23.888	50.210	311.03	239.48
#1	-.00228	.00555	-.00168	.00251	.00332	.00003	-.00609	-.00000
#2	.00145	.02343	-.00393	.00054	.00378	.00011	-.07609	-.00037
#3	.00179	.01099	-.00341	.00029	.00520	.00009	.03011	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.00110	.00006	.01011	.09868	.00495	.07318	.00116
Stddev	.00025	.00108	.00079	.01784	.17501	.00447	.04292	.00196
%RSD	68.981	98.497	1300.8	176.39	177.35	90.362	58.654	169.29
#1	-.00043	.00034	.00081	.02055	.15066	.00125	.10534	-.00110
#2	-.00008	.00234	-.00076	.02028	-.09643	.00992	.08977	.00218
#3	-.00056	.00062	.00013	-.01049	.24181	.00367	.02444	.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.02000	-.00044	.00549	-.00016	.00387	-.00237	.01323
Stddev	.00029	.01349	.00065	.00222	.00288	.00267	.00270	.00241
%RSD	229.41	67.461	146.65	40.388	1830.6	69.139	113.99	18.207
#1	-.00016	-.02660	-.00048	.00468	-.00328	.00695	-.00095	.01375
#2	.00041	-.00448	.00023	.00379	.00041	.00244	-.00067	.01533
#3	.00012	-.02893	-.00107	.00800	.00240	.00221	-.00547	.01060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 11:20:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00065**	**.00010**	**-.00014**	**-.00111**	**.00009**	**.00013**	**.00028**
Stddev	.00030	.00013	.00720	.00236	.00051	.00023	.00053
%RSD	46.135	130.04	5092.9	212.88	551.63	170.81	192.28
#1	.00099	.00011	-.00831	.00150	.00056	.00036	.00028
#2	.00056	.00023	.00527	-.00171	.00017	.00013	-.00025
#3	.00041	-.00004	.00262	-.00312	-.00045	-.00009	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9053.5**	**54352.**	**2576.2**
Stddev	33.1	114.	10.5
%RSD	.36561	.20997	.40893
#1	9016.7	54226.	2573.6
#2	9062.8	54383.	2567.2
#3	9080.9	54448.	2587.8

Approved: June 29, 2016

Sample Name: L1606119001 Acquired: 6/28/2016 11:24:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	4.0152	.00528	2.3259	.97175	.00033	76.368
Stddev	.00145	.0194	.00250	.0144	.00516	.00005	.270
%RSD	95608.	.48208	47.457	.61971	.53148	14.625	.35367
#1	-.00049	4.0240	.00561	2.3204	.97765	.00033	76.657
#2	.00163	3.9931	.00262	2.3150	.96956	.00039	76.325
#3	-.00113	4.0287	.00760	2.3422	.96804	.00029	76.122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.28502	.00428	.01113	.78990	11.216	94.553	5.2188
Stddev	.00690	.00052	.00063	.02058	.061	.313	.0182
%RSD	2.4193	12.177	5.6284	2.6050	.54549	.33117	.34821
#1	.28852	.00403	.01182	.80121	11.248	94.859	5.2386
#2	.28946	.00488	.01097	.80233	11.145	94.233	5.2147
#3	.27708	.00393	.01060	.76615	11.255	94.567	5.2030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.3151	.43401	.00500	F 331.07	.03574	.54738	.24924
Stddev	.0468	.00253	.00007	1.32	.00213	.01964	.00568
%RSD	.63935	.58333	1.3949	.39954	5.9585	3.5886	2.2783
#1	7.2826	.43190	.00497	332.57	.03794	.56696	.24923
#2	7.3687	.43331	.00508	330.56	.03559	.54753	.25493
#3	7.2939	.43682	.00496	330.08	.03368	.52767	.24357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606119001 Acquired: 6/28/2016 11:24:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00505	.00245	8.5723	.11492	.29561	.07288	-.00059
Stddev	.00259	.00222	.1258	.00299	.00020	.00814	.00245
%RSD	51.234	90.320	1.4673	2.6021	.06631	11.173	418.30
#1	.00505	.00304	8.6004	.11669	.29581	.06658	.00209
#2	.00763	.00432	8.6817	.11661	.29560	.08207	-.00273
#3	.00246	.00000	8.4349	.11147	.29542	.06998	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01057	.54262	.00107
Stddev	.00081	.00978	.00031
%RSD	7.6255	1.8021	29.122
#1	.01026	.54683	.00071
#2	.00995	.54959	.00123
#3	.01148	.53144	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8964.1	52749.	2647.9
Stddev	10.0	121.	22.5
%RSD	.11182	.22893	.85076
#1	8961.3	52886.	2630.7
#2	8955.9	52660.	2639.6
#3	8975.3	52700.	2673.4

Approved: June 29, 2016

Sample Name: L1606119002 Acquired: 6/28/2016 11:28:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00226	9.5586	.00773	1.6559	.73068	.00051	257.60
Stddev	.00052	.0101	.00172	.0111	.00315	.00004	1.13
%RSD	22.844	.10580	22.192	.66996	.43173	8.0795	.43961
#1	.00168	9.5657	.00865	1.6683	.73423	.00052	258.78
#2	.00243	9.5631	.00575	1.6469	.72960	.00055	257.50
#3	.00267	9.5470	.00879	1.6525	.72821	.00047	256.52
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.27201	.01208	.15894	5.8326	29.202	56.914	.89923
Stddev	.00800	.00051	.00172	.1763	.137	.111	.00962
%RSD	2.9395	4.2506	1.0801	3.0229	.46817	.19512	1.0694
#1	.27750	.01242	.16039	5.9433	29.059	57.042	.90987
#2	.27569	.01234	.15938	5.9253	29.332	56.857	.89667
#3	.26284	.01149	.15704	5.6293	29.213	56.842	.89116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.114	4.0320	.02706	F 641.62	.13792	2.9803	.56145
Stddev	.234	.0137	.00074	.68	.00389	.0818	.01198
%RSD	.89502	.33980	2.7478	.10649	2.8189	2.7454	2.1345
#1	26.329	4.0439	.02755	642.37	.14139	3.0362	.56756
#2	26.147	4.0170	.02743	641.44	.13863	3.0183	.56915
#3	25.865	4.0350	.02621	641.04	.13372	2.8863	.54765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606119002 Acquired: 6/28/2016 11:28:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00979	-.00034	14.513	.67159	1.9116	.14184	-.00066
Stddev	.00494	.00207	.288	.02476	.0087	.00052	.00174
%RSD	50.481	600.71	1.9859	3.6868	.45688	.36836	261.54
#1	.00442	.00077	14.679	.68753	1.9215	.14241	.00006
#2	.01414	.00093	14.679	.68417	1.9086	.14139	.00059
#3	.01081	-.00273	14.180	.64307	1.9048	.14170	-.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.02758	.83818	.00313
Stddev	.00126	.02623	.00047
%RSD	4.5579	3.1291	15.093
#1	.02770	.85462	.00293
#2	.02877	.85200	.00279
#3	.02627	.80794	.00367
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8763.8	51691.	2636.9
Stddev	54.5	455.	6.1
%RSD	.62147	.88063	.23063
#1	8706.8	51253.	2642.2
#2	8769.1	51659.	2630.3
#3	8815.4	52162.	2638.2

Approved: June 29, 2016

Sample Name: L1606113002 Acquired: 6/28/2016 11:32:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	.01380	-.00240	.00864	.00926	.00006	15.171	-.00018
Stddev	.00307	.00691	.00324	.00121	.00165	.00002	1.078	.00030
%RSD	455.23	50.094	135.19	14.049	17.829	34.170	7.1085	168.95
#1	.00371	.01054	-.00132	.00990	.01087	.00005	16.216	.00013
#2	.00073	.02174	-.00604	.00857	.00757	.00005	14.062	-.00047
#3	-.00242	.00912	.00017	.00747	.00933	.00008	15.233	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	-.00078	.00175	7.4035	.65514	.00126	3.1114	.22587
Stddev	.00041	.00010	.00078	.5798	.12316	.00237	.1931	.01787
%RSD	103.82	12.531	44.704	7.8320	18.799	187.66	6.2047	7.9098
#1	-.00077	-.00083	.00095	7.9945	.79583	-.00145	3.3337	.24355
#2	.00004	-.00083	.00179	6.8355	.60273	.00229	3.0148	.20782
#3	-.00044	-.00067	.00251	7.3806	.56685	.00294	2.9857	.22623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	7.8703	-.00110	.02647	.00010	.00317	-.00146	1.3559
Stddev	.00029	.5148	.00130	.00375	.00018	.00401	.00278	.0434
%RSD	105.72	6.5408	117.93	14.181	179.79	126.53	190.62	3.2002
#1	.00001	8.3807	.00026	.03049	.00025	.00397	.00071	1.3799
#2	.00057	7.3512	-.00123	.02306	.00015	-.00118	-.00460	1.3819
#3	.00023	7.8789	-.00233	.02587	-.00010	.00671	-.00049	1.3058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113002 Acquired: 6/28/2016 11:32:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.04585	.00437	.00135	-.00004	.00151	-.00058
Stddev	.00032	.00370	.00161	.00255	.00053	.00030	.00048
%RSD	366.92	8.0609	36.855	189.29	1464.5	19.895	82.203
#1	-.00028	.04933	.00574	-.00050	.00009	.00168	-.00060
#2	.00024	.04197	.00260	.00028	-.00062	.00169	-.00105
#3	.00030	.04625	.00477	.00426	.00042	.00116	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8887.2	54480.	2588.1
Stddev	8.3	105.	124.4
%RSD	.09307	.19333	4.8069
#1	8877.7	54601.	2466.9
#2	8891.0	54436.	2715.4
#3	8892.9	54405.	2581.9

Approved: June 29, 2016

Sample Name: L1606113003 Acquired: 6/28/2016 11:36:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00199	.01185	.00153	.00484	.00664	.00004	9.9420	.00012
Stddev	.00057	.00418	.00300	.00411	.00234	.00009	.0992	.00025
%RSD	28.803	35.249	195.88	84.950	35.328	255.34	.99760	201.23
#1	-.00137	.01667	.00500	.00870	.00401	-.00007	9.8294	.00023
#2	-.00250	.00939	-.00016	.00531	.00737	.00008	9.9801	-.00016
#3	-.00209	.00948	-.00024	.00051	.00853	.00010	10.016	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.02213	-.00028	.36601	.35983	.00751	3.5741	.08240
Stddev	.00036	.00055	.00099	.01258	.21039	.00239	.0830	.00265
%RSD	82.966	2.4851	349.65	3.4376	58.470	31.762	2.3219	3.2186
#1	.00005	.02193	-.00142	.36347	.26015	.00991	3.6265	.07933
#2	.00075	.02171	.00038	.35488	.21781	.00514	3.4784	.08395
#3	.00049	.02275	.00019	.37966	.60153	.00749	3.6174	.08391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	8.7826	.01128	.03643	-.00299	.00077	.00315	1.0910
Stddev	.00028	.1122	.00042	.00453	.00296	.00304	.00520	.0093
%RSD	64.641	1.2779	3.7546	12.430	98.761	393.00	164.71	.84873
#1	.00031	8.6590	.01174	.03424	.00033	.00008	.00433	1.0822
#2	.00023	8.8782	.01120	.04164	-.00532	.00410	-.00253	1.0901
#3	.00075	8.8106	.01090	.03342	-.00399	-.00186	.00766	1.1007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113003 Acquired: 6/28/2016 11:36:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00126**	**.05910**	**-.00486**	**-.00167**	**.00006**	**.00125**	**-.00028**
Stddev	.00101	.00068	.01199	.00195	.00033	.00009	.00031
%RSD	79.892	1.1523	246.70	116.87	522.92	7.2617	108.50
#1	-.00239	.05832	-.01255	.00057	.00043	.00116	-.00058
#2	-.00044	.05946	.00896	-.00295	-.00002	.00134	.00003
#3	-.00096	.05953	-.01099	-.00262	-.00022	.00124	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8931.3**	**53313.**	**2521.9**
Stddev	14.6	143.	15.7
%RSD	.16319	.26910	.62180
#1	8916.4	53341.	2539.7
#2	8945.5	53157.	2510.1
#3	8932.1	53440.	2516.0

Approved: June 29, 2016

Sample Name: L1606113004 Acquired: 6/28/2016 11:40:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00113	.02222	.00110	.00027	.01162	-.00003	18.226	-.00011
Stddev	.00136	.00709	.00170	.00161	.00137	.00004	.270	.00007
%RSD	119.92	31.895	155.12	594.93	11.803	130.22	1.4817	59.967
#1	-.00255	.01595	.00108	.00065	.01004	-.00002	18.002	-.00019
#2	-.00101	.02991	.00280	.00166	.01248	-.00007	18.526	-.00009
#3	.00016	.02079	-.00060	-.00150	.01235	.00000	18.151	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00113	.00050	12.248	.30126	.00680	2.9585	.18185
Stddev	.00033	.00029	.00150	.171	.15023	.00143	.1165	.00697
%RSD	47.931	25.751	303.47	1.3989	49.868	21.079	3.9387	3.8302
#1	.00103	.00109	.00212	12.067	.36563	.00839	2.8255	.17423
#2	.00063	.00143	.00021	12.407	.12957	.00562	3.0425	.18341
#3	.00039	.00085	-.00085	12.269	.40858	.00638	3.0074	.18790
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	3.5805	.00166	-.00089	.00199	.00216	-.00111	1.4748
Stddev	.00031	.0484	.00142	.01002	.00221	.00115	.00472	.0131
%RSD	56.104	1.3521	86.025	1120.2	111.08	53.382	426.06	.88890
#1	-.00024	3.5448	.00324	-.01222	-.00050	.00236	-.00656	1.4818
#2	-.00054	3.6356	.00047	.00271	.00273	.00319	.00167	1.4830
#3	-.00085	3.5610	.00126	.00683	.00373	.00092	.00156	1.4597
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113004 Acquired: 6/28/2016 11:40:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.05971**	**.00554**	**-.00232**	**.00022**	**.00127**	**-.00119**
Stddev	.00077	.00117	.00381	.00169	.00059	.00013	.00052
%RSD	1033.9	1.9573	68.806	72.951	263.47	9.9627	43.812
#1	-.00086	.05843	.00447	-.00042	.00027	.00122	-.00179
#2	-.00005	.05996	.00238	-.00366	.00078	.00117	-.00100
#3	.00069	.06073	.00977	-.00287	-.00039	.00141	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8958.9**	**53683.**	**2529.9**
Stddev	18.8	182.	9.0
%RSD	.20935	.33875	.35708
#1	8940.1	53478.	2539.9
#2	8977.6	53746.	2527.6
#3	8959.1	53825.	2522.2

Approved: June 29, 2016

Sample Name: L1606113005 Acquired: 6/28/2016 11:44:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00182**	**.01311**	**.00051**	**.00299**	**.00274**	**.00002**	**.01783**	**.00015**
Stddev	.00166	.01606	.00127	.00175	.00219	.00006	.07620	.00018
%RSD	91.021	122.54	248.12	58.424	80.129	245.90	427.38	117.06
#1	.00009	.00017	.00177	.00119	.00493	.00004	.05273	-.00005
#2	-.00271	.03109	-.00078	.00468	.00054	-.00004	.07033	.00024
#3	-.00285	.00807	.00055	.00311	.00275	.00008	-.06957	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00095**	**.00149**	**.02702**	**.10837**	**.00321**	**.11311**	**-.00002**
Stddev	.00036	.00069	.00082	.03091	.04208	.00286	.07473	.00053
%RSD	129.07	72.480	55.118	114.41	38.834	89.276	66.068	2828.5
#1	-.00066	.00072	.00241	.01040	.11048	-.00009	.02883	.00056
#2	.00006	.00172	.00083	.06268	.14936	.00460	.17128	-.00048
#3	-.00024	.00040	.00123	.00797	.06527	.00511	.13923	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.14703**	**-.00110**	**.00001**	**-.00405**	**.00493**	**-.00195**	**.00009**
Stddev	.00015	.00703	.00100	.00895	.00424	.00502	.00669	.00125
%RSD	397.74	4.7833	91.383	69819.	104.75	101.87	342.93	1350.1
#1	-.00013	.13899	-.00221	.00892	-.00839	.01054	-.00251	.00105
#2	.00007	.15007	-.00083	.00011	.00008	.00340	.00500	.00055
#3	.00017	.15203	-.00026	-.00899	-.00384	.00085	-.00835	-.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113005 Acquired: 6/28/2016 11:44:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00033	.00406	-.00662	-.00014	.00205	-.00081
Stddev	.00067	.00019	.00234	.00168	.00056	.00014	.00050
%RSD	289.31	57.588	57.746	25.401	396.40	6.6090	62.107
#1	.00035	.00053	.00524	-.00854	-.00067	.00221	-.00127
#2	.00084	.00030	.00136	-.00544	-.00020	.00198	-.00088
#3	-.00049	.00015	.00557	-.00587	.00045	.00197	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9124.4	55026.	2621.2
Stddev	17.1	95.	9.0
%RSD	.18749	.17295	.34452
#1	9106.9	54988.	2610.8
#2	9141.1	54956.	2626.5
#3	9125.3	55135.	2626.4

Approved: June 29, 2016

Sample Name: L1606116411 Acquired: 6/28/2016 11:48:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00116	.15574	-.00171	.03469	.02190	.00005	17.821	.00072
Stddev	.00249	.00517	.00262	.00295	.00047	.00004	.280	.00014
%RSD	214.69	3.3183	153.13	8.5097	2.1648	73.045	1.5685	20.189
#1	-.00013	.15599	.00126	.03787	.02218	.00010	18.080	.00083
#2	-.00400	.15045	-.00368	.03416	.02217	.00002	17.859	.00077
#3	.00065	.16078	-.00272	.03204	.02135	.00004	17.525	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00035	.01227	-.00191	1.2161	.00565	4.5909	.05471
Stddev	.00038	.00143	.00159	.00993	.1817	.00134	.0709	.00378
%RSD	72.627	412.52	12.998	520.76	14.943	23.688	1.5437	6.9078
#1	.00010	-.00130	.01325	.00952	1.3973	.00718	4.6629	.05221
#2	.00063	.00107	.01313	-.00839	1.2171	.00474	4.5886	.05906
#3	.00085	.00127	.01043	-.00684	1.0339	.00502	4.5212	.05287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	149.27	.00544	.18485	.00133	.00189	.00259	2.8294
Stddev	.00013	1.17	.00052	.00541	.00548	.00141	.00335	.0138
%RSD	244.26	.78109	9.5881	2.9257	410.94	74.968	129.26	.48586
#1	.00018	150.37	.00500	.18839	.00765	.00261	.00270	2.8383
#2	.00006	149.40	.00602	.18752	-.00158	.00279	.00589	2.8363
#3	-.00008	148.04	.00532	.17862	-.00207	.00026	-.00081	2.8135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606116411 Acquired: 6/28/2016 11:48:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.09608	-.00129	-.00451	-.00011	.28311	-.00011
Stddev	.00052	.00077	.00571	.00248	.00066	.00134	.00023
%RSD	725.00	.80553	444.09	55.074	621.07	.47167	205.12
#1	-.00008	.09641	-.00625	-.00208	.00066	.28404	.00010
#2	-.00058	.09664	-.00256	-.00704	-.00051	.28372	-.00008
#3	.00045	.09519	.00495	-.00441	-.00047	.28158	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8982.8	53771.	2629.9
Stddev	48.8	105.	30.6
%RSD	.54280	.19464	1.1632
#1	8959.8	53701.	2596.0
#2	8949.8	53720.	2638.3
#3	9038.8	53891.	2655.4

Approved: June 29, 2016

Sample Name: L1606125201 Acquired: 6/28/2016 11:51:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.00808	.00092	.01736	.04150	-.00001	59.752	.00004
Stddev	.00109	.00569	.00477	.00370	.00024	.00002	.163	.00026
%RSD	249.64	70.512	516.83	21.331	.58544	204.06	.27226	661.60
#1	.00028	.01318	.00124	.01758	.04162	-.00002	59.723	-.00013
#2	.00010	.00912	-.00400	.02095	.04122	-.00002	59.926	.00034
#3	-.00170	.00193	.00552	.01356	.04165	.00001	59.605	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00105	.01353	.02848	.98155	.01054	12.132	.00186
Stddev	.00040	.00059	.00094	.00603	.11795	.00844	.120	.00147
%RSD	167.20	55.860	6.9174	21.168	12.016	80.068	.99227	78.733
#1	.00020	.00042	.01338	.02633	1.0139	.01791	12.003	.00351
#2	-.00057	.00157	.01453	.03529	1.0799	.00134	12.241	.00136
#3	-.00035	.00116	.01268	.02382	.85080	.01237	12.153	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	12.528	-.00123	.00509	-.00134	-.00035	-.00136	4.3626
Stddev	.00032	.026	.00095	.01517	.00147	.00729	.00401	.1038
%RSD	20.620	.21109	76.599	298.19	110.07	2060.5	294.51	2.3803
#1	.00138	12.559	-.00213	-.00513	.00020	.00791	.00309	4.4196
#2	.00191	12.513	-.00025	-.00213	-.00274	-.00307	-.00249	4.4255
#3	.00134	12.513	-.00132	.02253	-.00148	-.00590	-.00469	4.2428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606125201 Acquired: 6/28/2016 11:51:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.09497	-.00811	-.00165	-.00065	.14615	.00006
Stddev	.00084	.00057	.01110	.00179	.00026	.00541	.00097
%RSD	275.55	.59736	136.87	108.47	39.705	3.7017	1589.8
#1	-.00036	.09453	-.02080	-.00192	-.00082	.14952	-.00035
#2	.00002	.09561	-.00026	-.00330	-.00076	.14903	-.00064
#3	.00125	.09477	-.00326	.00026	-.00035	.13991	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9050.9	54259.	2611.6
Stddev	24.4	120.	10.7
%RSD	.26996	.22034	.40861
#1	9055.7	54242.	2602.0
#2	9072.5	54149.	2609.9
#3	9024.4	54386.	2623.1

Approved: June 29, 2016

Sample Name: L1606125201PS Acquired: 6/28/2016 11:55:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574476-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19713**	**4.9850**	**.19938**	**.98259**	**.53606**	**.02430**	**58.735**	**.02467**
Stddev	.00252	.0319	.00165	.00595	.00044	.00011	.100	.00014
%RSD	1.2789	.63905	.82752	.60524	.08260	.44321	.17011	.54992
#1	.19699	5.0215	.20128	.98818	.53631	.02437	58.848	.02453
#2	.19468	4.9705	.19832	.97634	.53633	.02417	58.701	.02479
#3	.19971	4.9630	.19854	.98325	.53555	.02435	58.657	.02469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09853**	**.24959**	**.25779**	**1.9940**	**25.955**	**.51235**	**15.607**	**.24725**
Stddev	.00015	.00271	.00101	.0002	.163	.00380	.184	.00385
%RSD	.14890	1.0852	.39099	.01202	.62623	.74157	1.1781	1.5551
#1	.09836	.25245	.25808	1.9940	26.102	.51077	15.685	.25049
#2	.09861	.24927	.25667	1.9942	25.780	.51669	15.739	.24827
#3	.09861	.24706	.25862	1.9938	25.981	.50960	15.397	.24300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50641**	**36.138**	**.24471**	**4.9220**	**.24277**	**.59332**	**.18728**	**6.2893**
Stddev	.00201	.141	.00057	.0106	.00369	.00471	.00450	.0036
%RSD	.39673	.38951	.23146	.21453	1.5208	.79362	2.4037	.05782
#1	.50751	36.227	.24534	4.9234	.23851	.58972	.18452	6.2906
#2	.50763	36.211	.24424	4.9318	.24479	.59865	.19247	6.2920
#3	.50409	35.975	.24455	4.9109	.24500	.59159	.18484	6.2851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606125201PS Acquired: 6/28/2016 11:55:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574476-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50287**	**.59203**	**.48462**	**.24484**	**.49847**	**.62032**	**.00031**
Stddev	.00348	.00235	.01112	.00246	.00062	.00139	.00056
%RSD	.69291	.39643	2.2946	1.0047	.12404	.22456	180.38
#1	.50407	.59317	.49567	.24405	.49892	.62057	.00088
#2	.50560	.59358	.47343	.24759	.49776	.62157	-.00025
#3	.49894	.58933	.48477	.24287	.49872	.61882	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8956.0**	**53595.**	**2586.0**
Stddev	7.2	179.	8.2
%RSD	.08052	.33342	.31697
#1	8962.8	53389.	2589.0
#2	8948.4	53695.	2576.8
#3	8956.9	53701.	2592.3

Approved: June 29, 2016

Sample Name: L1606125201SDL Acquired: 6/28/2016 11:59:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574476-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.01671	-.00017	.00590	.01366	.00008	12.549	-.00003
Stddev	.00109	.00831	.00155	.00052	.00114	.00007	.147	.00014
%RSD	490.08	49.726	924.95	8.8632	8.3647	94.657	1.1712	436.97
#1	-.00120	.02324	.00142	.00599	.01298	.00012	12.397	-.00020
#2	-.00041	.00736	-.00168	.00637	.01498	-.00001	12.691	.00004
#3	.00095	.01951	-.00024	.00534	.01302	.00012	12.559	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	-.00055	.00330	.02155	.18221	.00169	2.6697	.00154
Stddev	.00046	.00062	.00153	.05047	.05382	.00357	.1664	.00168
%RSD	347.45	113.82	46.434	234.17	29.535	210.70	6.2340	108.73
#1	-.00043	.00016	.00428	.07981	.17328	.00202	2.4947	.00080
#2	-.00035	-.00077	.00409	-.00886	.13342	.00509	2.8260	.00036
#3	.00039	-.00103	.00153	-.00630	.23993	-.00203	2.6883	.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	2.6194	-.00013	.00061	-.00141	.00494	-.00552	.91317
Stddev	.00033	.0355	.00106	.00742	.00364	.00102	.00604	.02111
%RSD	105.42	1.3554	806.80	1223.5	258.10	20.595	109.34	2.3117
#1	.00054	2.5862	-.00081	.00846	-.00288	.00400	-.00758	.92321
#2	.00047	2.6151	-.00067	-.00627	.00274	.00482	.00127	.92739
#3	-.00007	2.6568	.00109	-.00037	-.00409	.00602	-.01027	.88892
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606125201SDL Acquired: 6/28/2016 11:59:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574476-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.02020**	**-.00216**	**-.00071**	**.00054**	**.03260**	**-.00049**
Stddev	.00123	.00015	.01450	.00185	.00070	.00071	.00047
%RSD	952.10	.73452	670.38	260.03	131.19	2.1790	95.648
#1	.00112	.02029	-.00037	-.00281	-.00027	.03290	-.00001
#2	.00052	.02003	-.01747	.00063	.00085	.03311	-.00052
#3	-.00125	.02028	.01135	.00006	.00104	.03179	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8880.0**	**53367.**	**2505.0**
Stddev	8.8	162.	12.6
%RSD	.09890	.30282	.50213
#1	8876.4	53181.	2518.5
#2	8890.0	53447.	2493.6
#3	8873.6	53474.	2502.8

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 12:03:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39604	9.9338	.39063	.49129	.99294	.04901	9.8191	.04975
Stddev	.00115	.0144	.00305	.00317	.01061	.00012	.1615	.00008
%RSD	.29058	.14522	.78082	.64570	1.0682	.24533	1.6444	.16252
#1	.39472	9.9394	.39301	.48784	.98919	.04914	9.7373	.04966
#2	.39680	9.9174	.39169	.49407	1.0049	.04899	10.005	.04978
#3	.39661	9.9446	.38719	.49197	.98472	.04890	9.7148	.04982
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19938	.49368	.49836	3.9588	49.592	1.0011	10.136	.49600
Stddev	.00076	.00169	.00055	.0389	.495	.0160	.209	.00324
%RSD	.38333	.34266	.11061	.98134	.99848	1.5991	2.0667	.65357
#1	.19915	.49541	.49812	3.9156	49.268	1.0040	10.062	.49281
#2	.20024	.49360	.49899	3.9910	50.162	1.0155	10.372	.49929
#3	.19876	.49203	.49797	3.9698	49.346	.98384	9.9735	.49590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99694	49.459	.49353	9.8429	.49371	1.1831	.39955	4.9585
Stddev	.00198	.418	.00311	.0260	.00213	.0043	.00974	.0151
%RSD	.19873	.84487	.62974	.26365	.43098	.36417	2.4372	.30413
#1	.99853	49.324	.49702	9.8721	.49533	1.1881	.41022	4.9686
#2	.99758	49.928	.49253	9.8341	.49450	1.1811	.39115	4.9656
#3	.99472	49.126	.49105	9.8225	.49130	1.1803	.39729	4.9411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 12:03:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99925	.99620	.98765	.49522	.98406	.99406	.99798
Stddev	.00409	.01037	.01478	.00173	.00289	.00196	.01227
%RSD	.40928	1.0406	1.4963	.35024	.29354	.19682	1.2297
#1	1.0037	.99304	.99034	.49484	.98708	.99630	1.0021
#2	.99836	1.0078	1.0009	.49371	.98377	.99319	1.0076
#3	.99567	.98778	.97171	.49712	.98132	.99269	.98417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8892.1	53022.	2559.8
Stddev	30.1	42.	27.6
%RSD	.33893	.07993	1.0776
#1	8879.1	53044.	2558.6
#2	8870.6	53049.	2532.8
#3	8926.5	52973.	2588.0

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 12:06:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .39465	F 9.9931	F .39555	F .49345	F 1.0003	F .04972	F 9.8499
Stddev	.00164	.0211	.00073	.00199	.0066	.00034	.0718
%RSD	.41653	.21167	.18546	.40249	.65578	.67878	.72872
#1	.39279	10.018	.39637	.49550	.99845	.05006	9.8255
#2	.39529	9.9815	.39494	.49331	.99483	.04970	9.7935
#3	.39589	9.9803	.39535	.49153	1.0076	.04939	9.9307
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	.01000	.40000	.01000	.10000	.01000	.00050	.20000
Low Limit	-.01000	-.40000	-.01000	-.10000	-.01000	-.00050	-.20000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .04977	F .19951	F .49879	F .49849	F 3.9395	F 49.977	F .99931
Stddev	.00024	.00059	.00324	.00096	.0630	.291	.00350
%RSD	.48691	.29607	.64977	.19182	1.6002	.58270	.34995
#1	.04951	.19997	.50244	.49760	3.8939	50.029	.99545
#2	.04979	.19971	.49625	.49837	3.9132	49.664	1.0002
#3	.05000	.19884	.49769	.49950	4.0115	50.239	1.0023
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	.00050	.00500	.00300	.00500	.06000	1.0000	.10000
Low Limit	-.00050	-.00500	-.00300	-.00500	-.06000	-1.0000	-.10000

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 10.183	F .49950	F .99809	F 49.556	F .49691	F 9.8570	F .49710
Stddev	.118	.00483	.00208	.300	.00135	.0031	.00340
%RSD	1.1579	.96758	.20882	.60573	.27181	.03173	.68461
#1	10.053	.49446	.99874	49.416	.49598	9.8551	.49386
#2	10.284	.49996	.99977	49.351	.49846	9.8552	.50064
#3	10.211	.50409	.99576	49.900	.49629	9.8606	.49679
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	.50000	.01000	.03000	.50000	.04000	.01000	.00500
Low Limit	-.50000	-.01000	-.03000	-.50000	-.04000	-.01000	-.00500

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 12:06:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.1874	F .39718	F 4.9738	F .99992	F .99471	F .98567	F .49751
Stddev	.0050	.00732	.0146	.00106	.00668	.00514	.00393
%RSD	.42134	1.8429	.29372	.10565	.67114	.52154	.78948
#1	1.1930	.38926	4.9571	1.0004	.99317	.98490	.49328
#2	1.1832	.40370	4.9798	.99871	.98893	.98096	.50105
#3	1.1861	.39859	4.9845	1.0006	1.0020	.99115	.49819
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	.02000	.02000	1.0000	.10000	.01000	.02000	.04000
Low Limit	-.02000	-.02000	-1.0000	-.10000	-.01000	-.02000	-.04000

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F .99162	F .99392	F 1.0151
Stddev	.00177	.00034	.0047
%RSD	.17898	.03404	.46771
#1	.99365	.99368	1.0097
#2	.99037	.99430	1.0182
#3	.99084	.99377	1.0176
Check ?	Chk Fail	Chk Fail	Chk Fail
High Limit	.01000	.02000	.04000
Low Limit	-.01000	-.02000	-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8914.6	52945.	2529.2
Stddev	18.8	191.	6.1
%RSD	.21085	.36073	.24217
#1	8900.5	52726.	2535.8
#2	8907.5	53030.	2528.2
#3	8936.0	53078.	2523.7

Approved: June 29, 2016

Sample Name: L1606106804 Acquired: 6/28/2016 12:10:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.01338	-.00121	.00508	.03185	.00009	3.6877	.00017
Stddev	.00142	.00661	.00402	.00517	.00094	.00009	.0388	.00010
%RSD	287.71	49.409	332.18	101.76	2.9404	100.39	1.0532	57.471
#1	.00152	.00668	.00324	.00758	.03253	.00003	3.6435	.00017
#2	.00108	.01355	-.00456	-.00086	.03078	.00020	3.7163	.00027
#3	-.00113	.01990	-.00231	.00853	.03224	.00005	3.7035	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00005	-.00076	-.00822	.13727	.00256	2.7340	.00095
Stddev	.00016	.00066	.00166	.01850	.10390	.00635	.0183	.00367
%RSD	87.960	1442.0	217.75	225.20	75.690	248.06	.67093	387.13
#1	.00023	-.00018	.00101	-.00312	.24997	.00152	2.7317	-.00127
#2	.00000	-.00047	-.00227	-.02873	.11656	-.00321	2.7534	.00519
#3	.00030	.00079	-.00103	.00721	.04529	.00937	2.7169	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	13.446	-.00128	.00796	-.00240	.00107	-.00749	.89476
Stddev	.00012	.159	.00147	.00634	.00286	.00190	.00205	.03670
%RSD	59.407	1.1832	114.59	79.680	118.77	177.46	27.322	4.1020
#1	.00020	13.262	-.00199	.00652	-.00435	-.00100	-.00730	.93379
#2	.00031	13.548	-.00227	.01489	-.00374	.00273	-.00963	.88955
#3	.00008	13.526	.00041	.00246	.00087	.00148	-.00555	.86094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106804 Acquired: 6/28/2016 12:10:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.07848	-.00729	-.00293	.00035	.00081	.00010
Stddev	.00072	.00144	.00861	.00420	.00095	.00031	.00071
%RSD	282.15	1.8402	118.03	143.58	272.65	37.884	750.18
#1	.00103	.07682	-.01705	-.00519	-.00013	.00046	.00016
#2	-.00038	.07946	-.00079	-.00551	-.00027	.00097	-.00065
#3	.00011	.07915	-.00403	.00192	.00145	.00101	.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8391.9	52991.	2480.9
Stddev	209.3	303.	24.4
%RSD	2.4937	.57243	.98306
#1	8150.7	53076.	2506.3
#2	8526.1	52655.	2457.7
#3	8498.7	53243.	2478.7

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 12:17:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41677	10.617	.42173	.52317	1.0592	.05242	10.437	.05320
Stddev	.00494	.006	.00167	.00113	.0024	.00005	.036	.00038
%RSD	1.1855	.05241	.39551	.21611	.22327	.08862	.34169	.71563
#1	.41695	10.610	.42174	.52446	1.0569	.05239	10.436	.05292
#2	.42162	10.620	.42006	.52234	1.0617	.05239	10.473	.05363
#3	.41174	10.619	.42339	.52271	1.0591	.05247	10.402	.05304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21389	.52863	.53349	4.1544	52.704	1.0582	10.637	.53232
Stddev	.00028	.00120	.00163	.0414	.159	.0081	.061	.00322
%RSD	.12990	.22697	.30630	.99750	.30078	.76528	.57767	.60508
#1	.21406	.52875	.53304	4.1924	52.536	1.0673	10.687	.53406
#2	.21405	.52737	.53531	4.1605	52.724	1.0519	10.655	.53429
#3	.21357	.52976	.53213	4.1102	52.851	1.0553	10.568	.52860
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0701	52.715	.53198	10.580	.52742	1.2754	.42001	5.3332
Stddev	.0021	.187	.00144	.031	.00604	.0052	.00192	.0057
%RSD	.19737	.35393	.27059	.29310	1.1458	.40749	.45755	.10679
#1	1.0717	52.536	.53285	10.596	.53320	1.2801	.42135	5.3376
#2	1.0708	52.909	.53032	10.599	.52791	1.2764	.42087	5.3352
#3	1.0677	52.701	.53278	10.544	.52114	1.2698	.41781	5.3267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 12:17:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0702**	**1.0585**	**1.0486**	**.53559**	**1.0520**	**1.0670**	**1.0704**
Stddev	.0023	.0014	.0170	.00247	.0005	.0014	.0016
%RSD	.21754	.13581	1.6184	.46078	.04785	.13170	.14621
#1	1.0727	1.0578	1.0679	.53720	1.0518	1.0683	1.0710
#2	1.0698	1.0602	1.0416	.53275	1.0526	1.0673	1.0686
#3	1.0681	1.0576	1.0362	.53683	1.0516	1.0655	1.0716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8530.1**	**50935.**	**2446.7**
Stddev	12.6	71.	7.1
%RSD	.14738	.13921	.28868
#1	8532.0	50877.	2439.2
#2	8516.7	50915.	2447.6
#3	8541.6	51014.	2453.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 12:21:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00052	.01757	.00051	.00060	.00555	.00009	-.03141	-.00004
Stddev	.00210	.00687	.00034	.00273	.00052	.00012	.03206	.00025
%RSD	401.46	39.083	66.709	452.47	9.4128	140.54	102.06	654.37
#1	-.00295	.02310	.00088	-.00156	.00610	.00020	.00184	-.00018
#2	.00077	.01972	.00044	.00368	.00548	.00010	-.03394	.00026
#3	.00061	.00988	.00021	-.00031	.00506	-.00004	-.06212	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	-.00085	.00138	-.03182	.02086	.00079	.04251	-.00303
Stddev	.00049	.00020	.00101	.01677	.06898	.00220	.02283	.00146
%RSD	858.17	23.008	73.388	52.718	330.70	279.06	53.713	48.237
#1	-.00026	-.00088	.00207	-.01272	.03691	-.00149	.04644	-.00330
#2	.00062	-.00065	.00022	-.03857	.08040	.00095	.01796	-.00145
#3	-.00019	-.00104	.00186	-.04417	-.05474	.00290	.06311	-.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.02638	-.00081	.00361	-.00013	.00136	-.00687	.00930
Stddev	.00014	.01940	.00088	.00797	.00371	.00249	.00684	.00129
%RSD	43.475	73.535	108.60	220.58	2776.3	182.43	99.588	13.921
#1	.00044	.01661	-.00035	.01274	-.00311	.00320	.00102	.00948
#2	.00034	.01381	-.00025	.00014	.00403	-.00147	-.01039	.01050
#3	.00017	.04873	-.00183	-.00203	-.00132	.00237	-.01124	.00792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 12:21:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00024	.00247	-.00209	.00076	-.00001	-.00016
Stddev	.00084	.00071	.00879	.00248	.00067	.00030	.00058
%RSD	360.61	300.56	355.79	118.51	88.280	3028.0	367.13
#1	.00120	.00076	-.00623	-.00494	.00143	.00027	-.00032
#2	-.00033	-.00057	.01135	-.00041	.00075	.00002	.00048
#3	-.00017	.00052	.00229	-.00093	.00009	-.00032	-.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9061.7	52464.	2475.1
Stddev	58.5	188.	6.2
%RSD	.64581	.35783	.25222
#1	8996.0	52260.	2481.3
#2	9081.3	52501.	2468.8
#3	9108.0	52630.	2475.3

Approved: June 29, 2016

Sample Name: L1606119001 Acquired: 6/28/2016 12:25:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**3.7898**	**.00843**	**2.2113**	**.93713**	**.00029**	**73.518**
Stddev	.00241	.0251	.00321	.0173	.00590	.00011	.465
%RSD	579.81	.66230	38.057	.78270	.62931	37.980	.63263
#1	.00245	3.7774	.00479	2.1961	.93518	.00037	73.330
#2	-.00224	3.8186	.01084	2.2301	.94376	.00016	74.048
#3	.00104	3.7732	.00967	2.2078	.93246	.00033	73.177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.26930**	**.00396**	**.01111**	**.74577**	**10.780**	**91.314**	**5.0388**
Stddev	.00689	.00019	.00105	.02017	.009	.389	.0316
%RSD	2.5572	4.6850	9.4166	2.7048	.08645	.42570	.62740
#1	.27369	.00414	.01045	.75841	10.787	91.342	5.0432
#2	.27284	.00377	.01232	.75638	10.785	91.689	5.0680
#3	.26136	.00397	.01057	.72250	10.770	90.913	5.0052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.9578**	**.41341**	**.00495**	F **322.00**	**.03245**	**.51167**	**.23733**
Stddev	.0388	.00209	.00010	1.98	.00092	.00738	.00526
%RSD	.55712	.50459	2.0546	.61452	2.8333	1.4421	2.2181
#1	6.9132	.41312	.00504	321.58	.03349	.51560	.24197
#2	6.9766	.41563	.00497	324.15	.03208	.51624	.23840
#3	6.9836	.41148	.00484	320.26	.03177	.50315	.23161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606119001 Acquired: 6/28/2016 12:25:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	-.00226	8.1164	.11006	.28460	.06459	.00103
Stddev	.00474	.00305	.1340	.00508	.00251	.00944	.00141
%RSD	2924.3	135.05	1.6510	4.6133	.88362	14.611	136.61
#1	-.00531	.00126	8.1898	.11381	.28615	.07364	.00264
#2	.00284	-.00383	8.1977	.11208	.28594	.05481	.00043
#3	.00295	-.00421	7.9618	.10428	.28170	.06533	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01031	.51297	.00088
Stddev	.00146	.01667	.00015
%RSD	14.174	3.2493	16.646
#1	.01173	.52302	.00102
#2	.01039	.52215	.00073
#3	.00881	.49373	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9087.8	53911.	2652.7
Stddev	11.1	101.	11.7
%RSD	.12235	.18748	.44077
#1	9076.3	53852.	2662.2
#2	9098.5	53854.	2639.7
#3	9088.6	54028.	2656.3

Approved: June 29, 2016

Sample Name: L1606119002 Acquired: 6/28/2016 12:28:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00050	4.7655	.00357	.82145	.35900	.00023	127.61
Stddev	.00210	.0202	.00173	.00700	.00172	.00005	.83
%RSD	418.70	.42476	48.395	.85203	.47811	21.405	.64918
#1	-.00103	4.7888	.00554	.82869	.35756	.00023	127.22
#2	-.00228	4.7535	.00228	.82094	.36090	.00028	128.56
#3	.00181	4.7541	.00290	.81472	.35853	.00018	127.04
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.13601	.00630	.07860	2.9711	14.514	28.078	.44975
Stddev	.00051	.00049	.00062	.0182	.129	.058	.00684
%RSD	.37797	7.8306	.79321	.61317	.88662	.20775	1.5205
#1	.13646	.00584	.07894	2.9863	14.410	28.114	.44275
#2	.13613	.00623	.07898	2.9761	14.658	28.010	.45641
#3	.13545	.00682	.07788	2.9509	14.474	28.108	.45009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.075	1.9805	.01310	F 322.69	.06978	1.5045	.28408
Stddev	.114	.0220	.00041	2.01	.00078	.0104	.00225
%RSD	.86971	1.1114	3.1207	.62252	1.1180	.69133	.79147
#1	12.950	1.9651	.01263	322.58	.07034	1.5043	.28667
#2	13.105	2.0058	.01333	324.75	.07012	1.5150	.28272
#3	13.171	1.9708	.01335	320.73	.06889	1.4942	.28283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606119002 Acquired: 6/28/2016 12:28:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00351	-.00222	7.1567	.34122	.93711	.07983	-.00060
Stddev	.00546	.00103	.0143	.00275	.00806	.00358	.00175
%RSD	155.33	46.531	.19985	.80486	.85994	4.4860	289.82
#1	-.00045	-.00104	7.1693	.34240	.93448	.07594	-.00003
#2	.00974	-.00267	7.1597	.34317	.94616	.08056	-.00257
#3	.00125	-.00296	7.1411	.33808	.93070	.08299	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01322	.43603	.00171
Stddev	.00064	.00396	.00089
%RSD	4.8731	.90805	51.957
#1	.01381	.43892	.00132
#2	.01331	.43765	.00108
#3	.01253	.43152	.00272
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8990.1	53592.	2679.4
Stddev	12.6	181.	12.2
%RSD	.14029	.33827	.45474
#1	9004.5	53800.	2682.8
#2	8981.0	53465.	2665.9
#3	8984.8	53512.	2689.5

Approved: June 29, 2016

Sample Name: L1606113002 Acquired: 6/28/2016 12:32:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.00964	.00218	.00589	.01061	.00005	14.366	.00022
Stddev	.00139	.00845	.00195	.00141	.00037	.00004	.110	.00037
%RSD	256.99	87.693	89.589	23.967	3.4831	65.158	.76837	164.56
#1	.00092	.00409	.00003	.00579	.01026	.00004	14.305	.00064
#2	-.00184	.01937	.00384	.00453	.01099	.00009	14.493	-.00002
#3	-.00070	.00546	.00265	.00735	.01059	.00003	14.299	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	-.00066	.00224	7.0016	.64344	-.00073	2.9261	.21249
Stddev	.00066	.00095	.00029	.0489	.12305	.00350	.1024	.00192
%RSD	1558.0	145.31	13.111	.69901	19.123	480.34	3.4986	.90146
#1	.00065	.00043	.00227	7.0215	.70582	.00331	2.9706	.21039
#2	-.00067	-.00136	.00251	7.0375	.50170	-.00263	2.9987	.21294
#3	-.00011	-.00104	.00193	6.9459	.72281	-.00287	2.8090	.21414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	7.4084	-.00034	.02764	-.00033	.00328	.00636	1.2813
Stddev	.00029	.0264	.00110	.00512	.00225	.00261	.00547	.0008
%RSD	86.515	.35650	327.89	18.533	676.62	79.623	86.012	.06472
#1	.00064	7.4354	.00065	.03157	-.00206	.00234	.01173	1.2807
#2	.00006	7.3826	-.00152	.02951	-.00115	.00126	.00657	1.2823
#3	.00032	7.4072	-.00014	.02185	.00222	.00622	.00079	1.2810
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113002 Acquired: 6/28/2016 12:32:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.04316	-.00341	-.00137	-.00043	.00134	-.00077
Stddev	.00044	.00035	.01120	.00427	.00126	.00015	.00075
%RSD	82.014	.80151	328.08	310.71	293.00	11.021	96.860
#1	.00105	.04344	.00282	-.00628	-.00096	.00117	.00009
#2	.00036	.04327	.00329	.00066	-.00133	.00146	-.00120
#3	.00021	.04278	-.01634	.00150	.00101	.00138	-.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8907.6	53531.	2524.4
Stddev	10.1	60.	6.0
%RSD	.11391	.11183	.23739
#1	8900.1	53468.	2527.8
#2	8903.7	53587.	2528.0
#3	8919.2	53538.	2517.5

Approved: June 29, 2016

Sample Name: L1606113003 Acquired: 6/28/2016 12:36:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.01861	-.00206	.00558	.00707	.00003	10.328	.00010
Stddev	.00106	.01054	.00074	.00327	.00096	.00005	.166	.00003
%RSD	1760.8	56.650	35.759	58.620	13.649	170.04	1.6032	27.231
#1	.00106	.00767	-.00130	.00838	.00816	-.00001	10.139	.00008
#2	.00016	.01945	-.00211	.00637	.00671	.00001	10.398	.00013
#3	-.00105	.02870	-.00277	.00199	.00633	.00009	10.447	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.02380	.00118	.43713	.30859	.00371	3.6737	.08669
Stddev	.00023	.00120	.00107	.03281	.13714	.00332	.0307	.00422
%RSD	110.49	5.0417	90.208	7.5052	44.440	89.431	.83598	4.8696
#1	-.00001	.02282	.00028	.47375	.37426	.00144	3.6555	.09075
#2	.00019	.02343	.00236	.42725	.40055	.00218	3.6565	.08700
#3	.00045	.02514	.00091	.41041	.15097	.00753	3.7092	.08232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	9.1912	.01331	.04027	-.00006	.00344	-.00704	1.2782
Stddev	.00026	.1694	.00203	.00077	.00185	.00489	.00234	.0259
%RSD	38.989	1.8436	15.245	1.9193	3027.6	142.10	33.280	2.0280
#1	.00094	9.0018	.01267	.04079	-.00200	.00905	-.00906	1.2518
#2	.00068	9.2436	.01168	.04064	.00170	.00010	-.00758	1.2792
#3	.00042	9.3283	.01558	.03938	.00011	.00117	-.00447	1.3037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113003 Acquired: 6/28/2016 12:36:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.06137	-.00305	-.00210	.00082	.00133	-.00058
Stddev	.00060	.00103	.00441	.00110	.00027	.00013	.00060
%RSD	439.98	1.6752	144.54	52.349	33.189	9.5496	104.64
#1	.00052	.06032	.00091	-.00241	.00105	.00145	-.00001
#2	-.00055	.06141	-.00226	-.00088	.00052	.00120	-.00050
#3	.00045	.06237	-.00781	-.00301	.00090	.00135	-.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8946.2	53500.	2545.9
Stddev	7.6	202.	12.1
%RSD	.08522	.37788	.47674
#1	8939.8	53704.	2554.9
#2	8944.2	53497.	2532.1
#3	8954.6	53300.	2550.7

Approved: June 29, 2016

Sample Name: L1606113004 Acquired: 6/28/2016 12:40:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.01809	-.00077	-.00297	.01150	-.00004	17.766	-.00020
Stddev	.00248	.00463	.00136	.00361	.00041	.00010	.240	.00018
%RSD	1046.0	25.617	176.90	121.87	3.5982	267.63	1.3496	89.328
#1	-.00243	.02260	-.00109	-.00662	.01167	-.00009	17.550	-.00001
#2	-.00073	.01334	-.00195	.00061	.01180	.00008	17.723	-.00036
#3	.00245	.01832	.00072	-.00289	.01103	-.00011	18.024	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	-.00049	.00113	11.978	.48918	.00583	2.9320	.17953
Stddev	.00016	.00104	.00263	.080	.02205	.00475	.1307	.00167
%RSD	29.412	210.00	231.85	.66571	4.5076	81.514	4.4592	.92948
#1	.00071	.00060	.00417	11.907	.46449	.00134	2.7961	.17819
#2	.00050	-.00062	-.00050	11.963	.50692	.01081	2.9429	.17900
#3	.00040	-.00146	-.00027	12.065	.49613	.00534	3.0569	.18140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	3.4886	.00079	.00034	-.00084	.00008	-.00358	1.4319
Stddev	.00037	.0303	.00108	.00465	.00493	.00454	.00459	.0399
%RSD	6980.2	.86819	137.12	1365.6	589.47	5537.2	127.98	2.7882
#1	-.00042	3.5017	.00204	.00553	-.00257	-.00483	-.00318	1.4507
#2	.00014	3.5101	.00028	-.00346	.00472	.00097	.00079	1.4590
#3	.00027	3.4540	.00006	-.00104	-.00466	.00411	-.00836	1.3861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113004 Acquired: 6/28/2016 12:40:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.05790	.00930	.00016	-.00139	.00147	-.00089
Stddev	.00098	.00075	.00706	.00120	.00037	.00013	.00021
%RSD	272.08	1.2926	75.921	741.78	26.600	8.7062	23.335
#1	-.00025	.05719	.01138	-.00002	-.00134	.00155	-.00101
#2	-.00016	.05868	.01508	-.00094	-.00104	.00132	-.00102
#3	.00150	.05784	.00143	.00144	-.00178	.00153	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8934.7	53539.	2547.3
Stddev	11.4	243.	6.4
%RSD	.12800	.45343	.25275
#1	8922.9	53678.	2554.2
#2	8935.5	53681.	2546.3
#3	8945.8	53259.	2541.4

Approved: June 29, 2016

Sample Name: L1606113005 Acquired: 6/28/2016 12:44:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.01198	-.00210	-.00164	.00301	-.00000	-.01159	-.00004
Stddev	.00141	.01055	.00136	.00247	.00082	.00009	.02499	.00026
%RSD	8281.9	88.039	64.731	150.47	27.174	3406.6	215.61	657.73
#1	-.00151	-.00013	-.00110	.00120	.00210	.00010	-.03630	.00007
#2	.00029	.01695	-.00155	-.00327	.00325	-.00006	.01366	.00015
#3	.00127	.01913	-.00365	-.00286	.00368	-.00005	-.01213	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00072	-.00086	-.00681	.13612	.00452	-.00411	-.00268
Stddev	.00035	.00054	.00121	.03393	.13157	.00463	.09255	.00149
%RSD	121.46	74.302	141.19	498.06	96.661	102.38	2250.3	55.603
#1	-.00047	.00035	-.00226	.03226	.24020	-.00067	-.10321	-.00194
#2	.00012	.00134	-.00019	-.02389	-.01177	.00603	.01080	-.00439
#3	-.00051	.00048	-.00012	-.02881	.17993	.00821	.08007	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00612	-.00010	-.00227	-.00119	.00203	.00281	-.01390
Stddev	.00016	.01574	.00083	.00326	.00065	.00303	.00207	.00142
%RSD	63.438	257.20	796.79	143.34	54.751	148.94	73.532	10.213
#1	-.00023	.01962	.00052	-.00416	-.00058	-.00145	.00097	-.01537
#2	-.00011	.00990	-.00104	-.00414	-.00188	.00405	.00505	-.01379
#3	-.00043	-.01116	.00021	.00149	-.00111	.00350	.00242	-.01254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113005 Acquired: 6/28/2016 12:44:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.00024	.00598	-.00423	-.00105	.00062	-.00054
Stddev	.00042	.00049	.01065	.00088	.00086	.00015	.00071
%RSD	166.82	202.02	177.94	20.764	82.165	23.770	132.28
#1	.00003	.00079	-.00224	-.00322	-.00048	.00048	-.00061
#2	.00074	-.00014	.00218	-.00482	-.00203	.00077	.00021
#3	-.00001	.00007	.01801	-.00465	-.00062	.00061	-.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9001.9	54024.	2557.5
Stddev	1.4	38.	4.0
%RSD	.01509	.07122	.15560
#1	9000.4	54033.	2562.1
#2	9002.0	54058.	2555.7
#3	9003.1	53982.	2554.8

Approved: June 29, 2016

Sample Name: L1606116411 Acquired: 6/28/2016 12:48:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.15451	-.00350	.03775	.01914	.00006	17.496	.00071
Stddev	.00064	.00207	.00555	.00311	.00096	.00006	.010	.00032
%RSD	895.05	1.3418	158.59	8.2436	5.0367	100.05	.05556	45.738
#1	.00036	.15691	-.00921	.03969	.01877	.00012	17.500	.00093
#2	.00023	.15334	-.00315	.03939	.02023	.00000	17.503	.00086
#3	-.00081	.15329	.00187	.03416	.01842	.00005	17.485	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	-.00079	.01211	.00467	1.2228	.00134	4.5617	.05182
Stddev	.00031	.00121	.00109	.02467	.0793	.00097	.0493	.00231
%RSD	37.826	152.51	8.9718	528.03	6.4818	72.554	1.0800	4.4566
#1	.00056	-.00158	.01238	.00794	1.2872	.00031	4.6166	.05236
#2	.00074	-.00139	.01092	-.02147	1.2470	.00223	4.5470	.04929
#3	.00116	.00060	.01304	.02754	1.1343	.00148	4.5214	.05381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	147.55	.00517	.17885	.00030	-.00139	-.00110	2.8258
Stddev	.00053	.34	.00060	.01359	.00349	.00151	.00321	.0017
%RSD	327.61	.23187	11.605	7.6006	1182.6	109.29	291.30	.06077
#1	.00045	147.36	.00485	.16363	.00281	-.00253	.00244	2.8278
#2	-.00045	147.95	.00586	.18316	.00177	.00033	-.00382	2.8246
#3	-.00049	147.35	.00479	.18977	-.00369	-.00196	-.00192	2.8252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606116411 Acquired: 6/28/2016 12:48:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.09596	-.00181	-.00373	.00021	.28203	.00032
Stddev	.00094	.00045	.00088	.00410	.00026	.00067	.00045
%RSD	349.19	.47142	48.709	109.75	123.26	.23930	138.59
#1	-.00080	.09544	-.00135	-.00237	.00002	.28265	.00011
#2	.00095	.09615	-.00283	-.00834	.00051	.28212	.00002
#3	.00066	.09628	-.00126	-.00049	.00011	.28131	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9005.5	53766.	2640.9
Stddev	16.7	224.	2.5
%RSD	.18548	.41670	.09612
#1	8990.9	53512.	2638.5
#2	9002.0	53850.	2640.7
#3	9023.7	53936.	2643.6

Approved: June 29, 2016

Sample Name: L1606125201 Acquired: 6/28/2016 12:52:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00129	.02165	-.00248	.01692	.04160	-.00001	59.586	.00010
Stddev	.00123	.00416	.00137	.00291	.00115	.00005	.518	.00026
%RSD	95.801	19.216	55.265	17.215	2.7688	473.44	.86976	263.07
#1	.00051	.02261	-.00142	.02017	.04292	-.00004	60.152	.00021
#2	.00271	.01709	-.00199	.01606	.04104	-.00004	59.136	-.00020
#3	.00064	.02524	-.00402	.01454	.04083	.00005	59.469	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00013	.01444	.02703	1.0062	.00850	11.899	.00064
Stddev	.00032	.00079	.00036	.02181	.0699	.00671	.190	.00094
%RSD	142.92	594.81	2.5182	80.678	6.9428	78.943	1.5983	147.02
#1	.00011	-.00078	.01433	.04967	1.0334	.01527	12.058	.00007
#2	-.00025	.00050	.01414	.00617	.92685	.00185	11.688	.00012
#3	-.00054	.00067	.01484	.02525	1.0584	.00837	11.951	.00173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	12.417	.00097	.00359	.00058	.00173	-.00540	4.4257
Stddev	.00023	.049	.00108	.00335	.00547	.00081	.00408	.0469
%RSD	14.809	.39598	110.69	93.301	945.36	46.838	75.601	1.0597
#1	.00130	12.360	.00206	.00037	-.00004	.00264	-.00697	4.4557
#2	.00176	12.443	.00096	.00706	.00633	.00146	-.00846	4.4497
#3	.00156	12.447	-.00010	.00334	-.00455	.00109	-.00076	4.3716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606125201 Acquired: 6/28/2016 12:52:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.09375	-.01059	-.00376	-.00096	.14846	-.00009
Stddev	.00046	.00020	.00430	.00170	.00027	.00282	.00014
%RSD	889.88	.21863	40.616	45.127	27.765	1.8964	162.80
#1	.00053	.09352	-.01507	-.00509	-.00082	.15050	-.00010
#2	-.00039	.09382	-.01019	-.00185	-.00079	.14964	.00006
#3	.00001	.09390	-.00650	-.00435	-.00127	.14525	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9046.7	54426.	2639.5
Stddev	5.6	47.	11.7
%RSD	.06203	.08606	.44426
#1	9047.5	54470.	2646.7
#2	9040.7	54430.	2645.8
#3	9051.9	54377.	2626.0

Approved: June 29, 2016

Sample Name: L1606113005PS Acquired: 6/28/2016 12:55:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574276-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.23710**	**6.1119**	**.25853**	**1.1827**	**.56629**	**.02969**	**5.7632**	**.03235**
Stddev	.00531	.1115	.00359	.0243	.00883	.00056	.1133	.00088
%RSD	2.2382	1.8239	1.3873	2.0549	1.5587	1.8898	1.9662	2.7146
#1	.23205	6.0117	.25594	1.1589	.55772	.02914	5.6706	.03134
#2	.23663	6.0922	.26262	1.1819	.56578	.02965	5.7294	.03278
#3	.24263	6.2320	.25703	1.2075	.57535	.03026	5.8895	.03293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12838**	**.29825**	**.32424**	**2.2596**	**28.378**	**.57291**	**5.7557**	**.27905**
Stddev	.00240	.00576	.00674	.0769	.298	.00617	.1009	.00395
%RSD	1.8707	1.9317	2.0773	3.4010	1.0488	1.0767	1.7530	1.4157
#1	.12561	.29278	.31691	2.2190	28.035	.56580	5.7393	.27488
#2	.12963	.29770	.32564	2.2116	28.539	.57612	5.6641	.27953
#3	.12989	.30426	.33016	2.3482	28.561	.57681	5.8639	.28273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.63702**	**28.482**	**.32021**	**6.3858**	**.32156**	**.76680**	**.26481**	**3.0255**
Stddev	.01158	.382	.00730	.1267	.00813	.01550	.00541	.0590
%RSD	1.8173	1.3412	2.2809	1.9843	2.5298	2.0212	2.0434	1.9491
#1	.62392	28.101	.31227	6.2466	.31241	.75013	.25870	2.9613
#2	.64128	28.479	.32173	6.4163	.32431	.76951	.26900	3.0381
#3	.64587	28.865	.32663	6.4945	.32797	.78077	.26672	3.0772
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113005PS Acquired: 6/28/2016 12:55:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574276-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.63969**	**.57282**	**.56662**	**.32033**	**.59043**	**.65161**	**.00037**
Stddev	.01089	.00891	.00918	.00410	.01004	.01220	.00038
%RSD	1.7019	1.5563	1.6202	1.2812	1.6999	1.8719	104.40
#1	.62840	.56390	.56153	.31578	.58130	.63808	.00013
#2	.64053	.57283	.56111	.32376	.58880	.65498	.00081
#3	.65013	.58173	.57721	.32144	.60118	.66177	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8751.7**	**53132.**	**2528.1**
Stddev	60.4	53.	3.0
%RSD	.69033	.09944	.11892
#1	8820.8	53193.	2527.4
#2	8725.4	53105.	2525.4
#3	8708.9	53099.	2531.3

Approved: June 29, 2016

Sample Name: L1606113005SDL Acquired: 6/28/2016 12:59:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574276-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**.01796**	**-.00051**	**.00421**	**.00435**	**.00004**	**-.04891**
Stddev	.00215	.00108	.00203	.00129	.00070	.00007	.03888
%RSD	208.21	6.0021	400.75	30.574	16.137	155.88	79.499
#1	-.00349	.01733	.00035	.00562	.00513	-.00001	-.08125
#2	-.00014	.01921	-.00283	.00310	.00377	.00012	-.00577
#3	.00053	.01735	.00096	.00392	.00414	.00002	-.05970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.00021**	**.00034**	**-.00130**	F **-.02855**	**.09256**	**-.00001**
Stddev	.00019	.00029	.00087	.00052	.03818	.11285	.00108
%RSD	135.21	139.53	256.35	40.003	133.73	121.92	12196.
#1	.00033	-.00017	.00003	-.00112	-.00187	-.03430	.00122
#2	.00015	.00006	-.00033	-.00089	-.07228	.18179	-.00043
#3	-.00005	-.00051	.00132	-.00188	-.01150	.13019	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04964**	**.00128**	**-.00009**	**-.03957**	**-.00092**	**.00133**	**.00059**
Stddev	.08575	.00365	.00020	.01448	.00047	.00474	.00362
%RSD	172.76	285.55	232.06	36.594	50.685	355.96	608.45
#1	-.01476	.00357	-.00013	-.03404	-.00146	.00407	-.00017
#2	.14698	-.00293	-.00026	-.02866	-.00064	-.00415	-.00258
#3	.01669	.00320	.00013	-.05599	-.00066	.00407	.00453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606113005SDL Acquired: 6/28/2016 12:59:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574276-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	.00220	-.01924	-.00065	-.00003	.00117	-.00175
Stddev	.00111	.00032	.00072	.00026	.00026	.00353	.00064
%RSD	96.818	14.545	3.7264	40.121	751.34	302.16	36.404
#1	.00179	.00256	-.01991	-.00045	-.00033	.00149	-.00246
#2	.00179	.00208	-.01848	-.00056	.00003	.00452	-.00122
#3	-.00014	.00195	-.01932	-.00095	.00019	-.00251	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00037	.00004	.00006
Stddev	.00133	.00016	.00091
%RSD	362.84	470.08	1572.9
#1	-.00190	.00017	.00111
#2	.00031	.00008	-.00050
#3	.00049	-.00015	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8934.0	53568.	2513.2
Stddev	29.7	195.	12.2
%RSD	.33241	.36323	.48531
#1	8968.0	53408.	2517.4
#2	8913.6	53784.	2499.4
#3	8920.3	53512.	2522.7

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 13:03:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39336	9.9130	.39284	.49276	.98996	.04913	9.7806	.04958
Stddev	.00206	.0250	.00280	.00453	.00775	.00022	.1020	.00017
%RSD	.52294	.25249	.71387	.91843	.78274	.45192	1.0426	.33908
#1	.39555	9.8943	.39549	.49271	.98476	.04924	9.7809	.04947
#2	.39146	9.9033	.39312	.48826	.99887	.04887	9.8824	.04950
#3	.39308	9.9415	.38991	.49731	.98626	.04928	9.6784	.04977
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19911	.49357	.49698	3.9417	49.290	.99570	10.037	.49012
Stddev	.00056	.00102	.00099	.0647	.405	.00934	.166	.00587
%RSD	.28371	.20597	.19976	1.6421	.82182	.93815	1.6489	1.1977
#1	.19976	.49455	.49812	3.8892	49.011	1.0015	9.9546	.48688
#2	.19874	.49365	.49630	4.0140	49.755	1.0007	10.228	.49689
#3	.19883	.49252	.49652	3.9218	49.104	.98492	9.9293	.48657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99761	49.317	.49464	9.8819	.49704	1.1821	.39600	4.9694
Stddev	.00067	.437	.00153	.0272	.00775	.0053	.00447	.0102
%RSD	.06677	.88655	.30937	.27532	1.5587	.45187	1.1292	.20589
#1	.99834	49.066	.49637	9.8946	.49017	1.1760	.39998	4.9688
#2	.99747	49.822	.49411	9.9004	.50544	1.1860	.39116	4.9799
#3	.99703	49.064	.49345	9.8506	.49550	1.1842	.39685	4.9594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 13:03:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99893	.98924	.97761	.49219	.98422	.99536	1.0005
Stddev	.00341	.00988	.00968	.00058	.00242	.00222	.0071
%RSD	.34152	.99831	.99030	.11778	.24579	.22340	.71326
#1	.99825	.98412	.97111	.49255	.98277	.99710	1.0023
#2	1.0026	1.0006	.98873	.49250	.98289	.99612	1.0065
#3	.99591	.98298	.97298	.49152	.98702	.99285	.99261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8808.6	52540.	2520.5
Stddev	22.0	62.	15.2
%RSD	.24977	.11782	.60493
#1	8791.2	52557.	2515.2
#2	8801.3	52592.	2508.6
#3	8833.3	52472.	2537.7

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 13:07:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00082**	**.01053**	**-.00036**	**.00015**	**.00380**	**.00002**	**-.02913**	**.00012**
Stddev	.00164	.00730	.00278	.00170	.00038	.00004	.01234	.00023
%RSD	200.52	69.374	782.83	1134.5	9.9196	215.17	42.362	195.21
#1	-.00230	.01885	.00098	.00123	.00338	-.00001	-.02250	.00039
#2	.00094	.00755	-.00355	.00103	.00412	.00000	-.04337	.00002
#3	-.00109	.00518	.00151	-.00181	.00390	.00006	-.02152	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**-.00040**	**-.00056**	**-.03142**	**-.08528**	**.00138**	**.09579**	**.00138**
Stddev	.00026	.00054	.00111	.03234	.05121	.00380	.04905	.00114
%RSD	288.69	133.86	197.52	102.92	60.056	275.21	51.203	82.972
#1	.00039	.00012	.00067	.00375	-.10959	-.00091	.09891	.00250
#2	-.00005	-.00095	-.00089	-.03814	-.02643	.00576	.04526	.00142
#3	-.00007	-.00038	-.00146	-.05988	-.11980	-.00071	.14320	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00034**	**-.00082**	**.00453**	**.00067**	**.00273**	**-.00634**	**.01081**
Stddev	.00046	.03322	.00172	.00246	.00130	.00263	.00099	.00066
%RSD	1443.9	9865.4	210.49	54.266	194.38	96.401	15.628	6.1253
#1	-.00027	-.03144	-.00223	.00385	.00158	.00481	-.00722	.01120
#2	-.00032	-.00239	.00110	.00726	-.00082	.00361	-.00654	.01118
#3	.00050	.03484	-.00133	.00249	.00126	-.00023	-.00526	.01004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 13:07:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	-.00004	-.00011	-.00239	.00051	-.00009	.00046
Stddev	.00048	.00052	.01049	.00287	.00057	.00022	.00015
%RSD	141.44	1176.3	9514.5	120.28	111.99	260.70	33.023
#1	-.00017	.00049	-.00485	.00091	-.00011	-.00034	.00063
#2	.00078	-.00055	-.00739	-.00378	.00102	.00002	.00034
#3	.00040	-.00008	.01191	-.00430	.00063	.00007	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8877.7	53504.	2525.8
Stddev	7.8	98.	6.9
%RSD	.08803	.18354	.27296
#1	8875.6	53546.	2517.8
#2	8871.1	53575.	2530.1
#3	8886.3	53392.	2529.4

Approved: June 29, 2016

Sample Name: L1606106804 Acquired: 6/28/2016 13:11:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**.01493**	**-.00423**	**.00176**	**.03015**	**-.00003**	**3.6405**
Stddev	.00270	.00745	.00413	.00110	.00128	.00004	.0379
%RSD	326.75	49.870	97.505	62.290	4.2618	148.88	1.0420
#1	.00091	.00665	-.00573	.00301	.03092	-.00007	3.6017
#2	.00055	.01707	.00043	.00096	.02867	.00002	3.6775
#3	-.00393	.02109	-.00740	.00132	.03086	-.00003	3.6422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.00015**	**.00129**	**-.00149**	F **-.02186**	**.05820**	**.00564**
Stddev	.00033	.00012	.00022	.00079	.02615	.09648	.00301
%RSD	152.41	81.233	16.848	53.239	119.66	165.77	53.430
#1	.00056	.00029	.00112	-.00106	-.02018	.07061	.00912
#2	.00018	.00006	.00122	-.00240	.00342	-.04388	.00405
#3	-.00009	.00011	.00154	-.00100	-.04881	.14787	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.7402**	**.00088**	**-.00022**	**13.379**	**-.00112**	**.00621**	**-.00255**
Stddev	.0825	.00130	.00029	.125	.00063	.00226	.00432
%RSD	3.0123	147.46	130.54	.93109	55.815	36.397	169.94
#1	2.8157	.00026	.00011	13.280	-.00075	.00378	-.00737
#2	2.6521	.00001	-.00042	13.519	-.00185	.00825	.00097
#3	2.7529	.00238	-.00035	13.339	-.00077	.00660	-.00123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606106804 Acquired: 6/28/2016 13:11:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00140	.80989	.00026	.07823	.00230	-.00078
Stddev	.00354	.00473	.00437	.00092	.00095	.00620	.00164
%RSD	688.84	338.79	.53928	348.19	1.2119	269.39	209.76
#1	.00452	.00191	.80963	.00121	.07773	.00423	-.00129
#2	-.00219	-.00357	.80566	.00020	.07932	.00731	-.00210
#3	-.00078	.00585	.81439	-.00062	.07763	-.00464	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00017	.00062	.00008
Stddev	.00072	.00005	.00089
%RSD	415.57	7.9078	1128.7
#1	.00052	.00060	-.00014
#2	-.00012	.00059	-.00068
#3	-.00092	.00068	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8814.1	52984.	2489.1
Stddev	14.5	171.	14.5
%RSD	.16454	.32216	.58377
#1	8813.1	52905.	2486.3
#2	8829.0	52867.	2476.2
#3	8800.1	53180.	2504.9

Approved: June 29, 2016

Sample Name: L1606106805 Acquired: 6/28/2016 13:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.01476	-.00335	.00279	.03196	.00016	3.6115	.00006
Stddev	.00013	.01355	.00295	.00275	.00100	.00003	.0684	.00038
%RSD	26.179	91.766	87.876	98.584	3.1228	20.664	1.8938	648.50
#1	.00036	.00536	-.00601	.00187	.03088	.00015	3.5339	-.00033
#2	.00061	.03030	-.00387	.00588	.03216	.00014	3.6376	.00008
#3	.00055	.00864	-.00018	.00062	.03285	.00020	3.6629	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00124	-.00037	.00663	-.09688	.00565	2.6653	-.00201
Stddev	.00033	.00034	.00106	.05088	.15873	.00409	.0912	.00124
%RSD	108.45	27.910	282.74	767.75	163.84	72.409	3.4234	61.642
#1	.00054	.00159	.00005	.06285	.02031	.00145	2.7282	-.00343
#2	.00045	.00122	.00040	-.03623	-.27753	.00963	2.5606	-.00143
#3	-.00007	.00090	-.00158	-.00674	-.03343	.00587	2.7071	-.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	13.446	-.00011	.00621	-.00083	.00412	-.00378	.79854
Stddev	.00033	.084	.00067	.00374	.00294	.00421	.00411	.02914
%RSD	125.20	.62581	624.45	60.274	353.08	102.24	108.59	3.6487
#1	-.00051	13.385	.00031	.00824	-.00270	.00007	-.00672	.81403
#2	-.00038	13.412	.00025	.00851	.00255	.00381	.00091	.81667
#3	.00011	13.542	-.00087	.00189	-.00235	.00848	-.00555	.76493
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106805 Acquired: 6/28/2016 13:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.07802	-.01175	-.00160	-.00071	.00064	-.00064
Stddev	.00080	.00057	.00450	.00481	.00018	.00029	.00100
%RSD	70.173	.73637	38.340	300.68	25.129	45.592	156.76
#1	.00154	.07777	-.01564	-.00402	-.00054	.00032	-.00059
#2	.00022	.07761	-.01279	-.00472	-.00068	.00071	-.00166
#3	.00167	.07867	-.00682	.00394	-.00090	.00089	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8812.1	52840.	2480.2
Stddev	18.2	110.	13.2
%RSD	.20629	.20796	.53284
#1	8829.9	52966.	2477.2
#2	8793.5	52795.	2494.7
#3	8813.1	52760.	2468.8

Approved: June 29, 2016

Sample Name: L1606113005PS Acquired: 6/28/2016 13:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574276-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21527**	**5.5207**	**.22885**	**1.0733**	**.53756**	**.02675**	**5.3843**	**.02798**
Stddev	.00177	.0241	.00604	.0068	.00866	.00017	.1256	.00062
%RSD	.82163	.43648	2.6407	.63358	1.6107	.62031	2.3326	2.2056
#1	.21494	5.4931	.22193	1.0693	.52821	.02656	5.2417	.02735
#2	.21370	5.5373	.23308	1.0694	.54530	.02683	5.4785	.02800
#3	.21719	5.5318	.23155	1.0812	.53918	.02687	5.4328	.02858
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11240**	**.26779**	**.28467**	**2.1409**	**26.588**	**.54010**	**5.6370**	**.26559**
Stddev	.00134	.00204	.00370	.0435	.354	.00874	.0613	.00133
%RSD	1.1923	.76133	1.2984	2.0304	1.3318	1.6179	1.0880	.50041
#1	.11114	.26666	.28128	2.0918	26.179	.53071	5.5700	.26421
#2	.11225	.27014	.28413	2.1745	26.784	.54800	5.6903	.26569
#3	.11381	.26657	.28861	2.1565	26.800	.54160	5.6507	.26686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55583**	**27.010**	**.28072**	**5.5936**	**.27785**	**.67635**	**.23788**	**2.6476**
Stddev	.00678	.332	.00179	.0702	.00294	.01038	.00437	.0376
%RSD	1.2200	1.2287	.63745	1.2556	1.0594	1.5353	1.8390	1.4181
#1	.54951	26.631	.27867	5.5246	.27615	.66586	.23509	2.6120
#2	.55500	27.250	.28160	5.5913	.27615	.67657	.23563	2.6439
#3	.56299	27.148	.28190	5.6650	.28125	.68663	.24292	2.6868
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113005PS Acquired: 6/28/2016 13:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574276-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55961	.54418	.52610	.27731	.53391	.57796	.00002
Stddev	.00665	.00642	.00644	.00532	.00205	.00443	.00061
%RSD	1.1882	1.1791	1.2246	1.9177	.38439	.76707	3254.2
#1	.55276	.53680	.51967	.27196	.53154	.57285	.00055
#2	.56005	.54842	.52608	.27737	.53509	.58036	-.00064
#3	.56603	.54733	.53256	.28260	.53511	.58068	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8721.8	52045.	2470.1
Stddev	12.9	159.	19.9
%RSD	.14792	.30493	.80385
#1	8712.6	52146.	2491.7
#2	8716.2	51863.	2452.6
#3	8736.5	52127.	2466.0

Approved: June 29, 2016

Sample Name: L1606106811 Acquired: 6/28/2016 13:22:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	1.4251	.00175	.00444	.02966	.00019	.75379	.00014
Stddev	.00254	.0230	.00237	.00185	.00178	.00007	.01953	.00030
%RSD	372.28	1.6113	134.90	41.704	5.9999	38.159	2.5915	208.89
#1	.00086	1.4176	.00360	.00231	.03158	.00013	.73878	.00028
#2	.00313	1.4068	.00258	.00562	.02807	.00027	.77588	-.00020
#3	-.00194	1.4508	-.00091	.00540	.02931	.00016	.74672	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	.00335	.00482	1.9991	.20881	.00441	.50207	.04768
Stddev	.00034	.00085	.00089	.0268	.14239	.00363	.02928	.00189
%RSD	37.329	25.343	18.412	1.3414	68.193	82.227	5.8325	3.9582
#1	.00066	.00431	.00413	2.0299	.05656	.00851	.48210	.04617
#2	.00080	.00306	.00583	1.9868	.23117	.00309	.48842	.04709
#3	.00131	.00269	.00451	1.9806	.33870	.00163	.53568	.04980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.82682	.00345	.02528	.00114	.00172	.00203	1.9469
Stddev	.00016	.02518	.00063	.00984	.00435	.00064	.00703	.0392
%RSD	106.86	3.0448	18.143	38.938	380.81	36.954	346.34	2.0118
#1	-.00021	.83413	.00274	.02291	.00446	.00124	-.00577	1.9065
#2	.00003	.84753	.00372	.03609	.00275	.00148	.00399	1.9496
#3	-.00028	.79880	.00390	.01684	-.00378	.00244	.00788	1.9846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106811 Acquired: 6/28/2016 13:22:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.01264**	**.01238**	**-.00117**	**.00334**	**.01101**	**-.00003**
Stddev	.00138	.00046	.00941	.00358	.00072	.00018	.00085
%RSD	320.63	3.6366	75.984	305.85	21.543	1.6013	2670.1
#1	-.00017	.01307	.00337	-.00435	.00366	.01090	.00070
#2	-.00193	.01271	.02213	.00271	.00383	.01092	-.00097
#3	.00080	.01215	.01164	-.00188	.00251	.01122	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8900.9**	**53614.**	**2515.0**
Stddev	10.3	101.	14.4
%RSD	.11598	.18784	.57294
#1	8911.7	53726.	2520.3
#2	8899.7	53531.	2498.6
#3	8891.2	53585.	2525.9

Approved: June 29, 2016

Sample Name: L1606106813 Acquired: 6/28/2016 13:26:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.08929**	**-.00063**	**.00006**	**.01168**	**.00007**	**.52951**
Stddev	.00235	.00667	.00336	.00302	.00069	.00007	.04393
%RSD	336.83	7.4648	536.52	4814.6	5.8717	106.69	8.2961
#1	.00033	.09297	.00116	-.00324	.01236	-.00001	.48000
#2	-.00338	.08159	.00146	.00268	.01099	.00008	.56380
#3	.00097	.09330	-.00450	.00075	.01168	.00014	.54475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00014**	**-.00032**	**-.00089**	**.50487**	**.06610**	**.00543**
Stddev	.00013	.00013	.00098	.00076	.03701	.02572	.00316
%RSD	54.751	94.669	310.30	85.305	7.3296	38.914	58.115
#1	.00037	-.00001	-.00100	-.00177	.54463	.05677	.00370
#2	.00011	.00024	.00081	-.00040	.47144	.04634	.00352
#3	.00023	.00017	-.00075	-.00051	.49854	.09518	.00907
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24782**	**.01542**	**-.00030**	**9.9493**	**.00196**	**.00299**	**-.00405**
Stddev	.06260	.00320	.00016	.0254	.00076	.00585	.00006
%RSD	25.260	20.782	55.007	.25544	38.518	195.64	1.5814
#1	.18176	.01748	-.00035	9.9649	.00283	-.00361	-.00412
#2	.30627	.01705	-.00011	9.9630	.00152	.00506	-.00399
#3	.25541	.01173	-.00043	9.9200	.00154	.00753	-.00403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606106813 Acquired: 6/28/2016 13:26:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	F -.01043	.44265	.00053	.00826	.00460	-.00109
Stddev	.00413	.00452	.00364	.00082	.00054	.00453	.00264
%RSD	281.76	43.304	.82158	152.78	6.5812	98.520	242.23
#1	-.00330	-.01335	.43851	-.00016	.00889	.00897	.00195
#2	.00406	-.01271	.44534	.00033	.00796	.00490	-.00281
#3	.00364	-.00523	.44409	.00143	.00793	-.00007	-.00241
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00066	.01438	-.00014
Stddev	.00142	.00018	.00049
%RSD	215.70	1.2745	349.23
#1	.00072	.01420	-.00057
#2	.00204	.01438	.00039
#3	-.00079	.01457	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8894.1	53345.	2527.6
Stddev	11.3	192.	9.0
%RSD	.12726	.35929	.35499
#1	8903.4	53287.	2524.9
#2	8897.4	53190.	2520.3
#3	8881.5	53560.	2537.6

Approved: June 29, 2016

Sample Name: L1606106815S Acquired: 6/28/2016 13:30:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01034	.48324	.01210	.05173	.03631	.00139	.81008	.00131
Stddev	.00168	.00913	.00454	.00211	.00077	.00002	.05542	.00034
%RSD	16.230	1.8901	37.543	4.0701	2.1243	1.7135	6.8408	26.091
#1	.00951	.48142	.01272	.04933	.03558	.00136	.84100	.00095
#2	.01227	.47515	.00728	.05327	.03711	.00140	.74610	.00163
#3	.00924	.49315	.01631	.05260	.03624	.00141	.84313	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00589	.01431	.01389	.60245	1.2703	.02598	.65226	.02740
Stddev	.00010	.00080	.00059	.02997	.1236	.00403	.12231	.00108
%RSD	1.6235	5.5726	4.2518	4.9754	9.7328	15.510	18.751	3.9595
#1	.00594	.01410	.01335	.62519	1.3214	.03061	.51621	.02751
#2	.00578	.01519	.01452	.61367	1.3602	.02401	.68749	.02626
#3	.00595	.01364	.01381	.56848	1.1293	.02331	.75309	.02842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02529	11.232	.01369	.25676	.01408	.03296	.00670	.76007
Stddev	.00074	.094	.00032	.00264	.00187	.00446	.00542	.01605
%RSD	2.9338	.83344	2.3164	1.0266	13.279	13.535	80.861	2.1112
#1	.02593	11.212	.01335	.25960	.01558	.03663	.00871	.76848
#2	.02547	11.334	.01397	.25627	.01467	.03425	.00057	.77017
#3	.02448	11.150	.01377	.25440	.01199	.02799	.01083	.74157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106815S Acquired: 6/28/2016 13:30:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02563**	**.03388**	**.01773**	**.01091**	**.02573**	**.03942**	**-.00028**
Stddev	.00095	.00028	.00659	.00373	.00028	.00077	.00015
%RSD	3.7070	.81921	37.144	34.158	1.0704	1.9567	52.633
#1	.02654	.03356	.02444	.01329	.02542	.03966	-.00019
#2	.02571	.03399	.01750	.01283	.02582	.04004	-.00020
#3	.02465	.03408	.01127	.00662	.02595	.03856	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8867.8**	**53225.**	**2534.6**
Stddev	20.8	148.	12.1
%RSD	.23412	.27882	.47921
#1	8887.9	53363.	2539.7
#2	8869.1	53068.	2520.7
#3	8846.4	53244.	2543.4

Approved: June 29, 2016

Sample Name: L1606106817SD Acquired: 6/28/2016 13:34:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00954	.55625	.00901	.04561	.03585	.00128	.75307	.00155
Stddev	.00085	.01106	.00306	.00213	.00056	.00014	.01847	.00025
%RSD	8.9440	1.9883	33.996	4.6764	1.5586	11.128	2.4524	16.149
#1	.00901	.54454	.01081	.04442	.03526	.00122	.75451	.00184
#2	.01052	.55769	.01075	.04434	.03593	.00144	.73392	.00139
#3	.00907	.56652	.00547	.04808	.03636	.00118	.77077	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00549	.01478	.01221	.77846	1.4049	.02129	.61217	.02711
Stddev	.00032	.00163	.00076	.01528	.1399	.00335	.01573	.00179
%RSD	5.8665	11.047	6.2537	1.9633	9.9619	15.732	2.5687	6.5920
#1	.00530	.01663	.01247	.78322	1.5650	.02299	.61554	.02504
#2	.00586	.01356	.01135	.79080	1.3061	.02345	.62594	.02816
#3	.00531	.01413	.01280	.76136	1.3434	.01743	.59504	.02812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02377	10.556	.01424	.23784	.01238	.03034	.00363	.87740
Stddev	.00044	.042	.00056	.00722	.00117	.00374	.01030	.00313
%RSD	1.8350	.39963	3.9141	3.0340	9.4640	12.322	283.48	.35703
#1	.02350	10.603	.01488	.24458	.01183	.02602	.00965	.87786
#2	.02427	10.521	.01398	.23870	.01159	.03248	-.00826	.88027
#3	.02354	10.545	.01386	.23023	.01373	.03252	.00951	.87406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106817SD Acquired: 6/28/2016 13:34:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02422	.03180	.02657	.00958	.02469	.04759	-.00024
Stddev	.00037	.00023	.00522	.00222	.00019	.00022	.00034
%RSD	1.5338	.72534	19.663	23.212	.77692	.46605	142.47
#1	.02456	.03201	.02173	.01169	.02478	.04734	.00013
#2	.02383	.03182	.02587	.00726	.02483	.04775	-.00054
#3	.02427	.03156	.03211	.00977	.02447	.04768	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8832.1	53126.	2512.3
Stddev	9.4	250.	6.6
%RSD	.10606	.47116	.26253
#1	8823.5	53414.	2505.6
#2	8830.8	53002.	2518.8
#3	8842.1	52962.	2512.4

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 13:38:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39992	10.123	.40264	.50115	1.0119	.05004	9.9930	.05061
Stddev	.00156	.020	.00072	.00146	.0056	.00004	.0193	.00069
%RSD	.38920	.19439	.17777	.29040	.55589	.08201	.19290	1.3554
#1	.40151	10.135	.40191	.50084	1.0167	.05004	10.012	.05093
#2	.39840	10.100	.40268	.50273	1.0057	.05009	9.9739	.05107
#3	.39986	10.133	.40334	.49987	1.0133	.05000	9.9927	.04982
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20347	.50495	.51127	4.0051	50.272	1.0063	10.156	.50245
Stddev	.00106	.00087	.00229	.0192	.057	.0069	.244	.00203
%RSD	.51854	.17321	.44767	.47891	.11298	.68238	2.4046	.40338
#1	.20248	.50414	.51231	4.0230	50.215	1.0132	9.9480	.50011
#2	.20458	.50482	.51284	4.0074	50.329	1.0062	10.425	.50357
#3	.20337	.50588	.50864	3.9849	50.271	.99951	10.095	.50368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0193	50.359	.50700	10.109	.50281	1.2148	.40917	5.0738
Stddev	.0035	.068	.00168	.015	.00071	.0017	.00995	.0074
%RSD	.34543	.13420	.33213	.14998	.14070	.14140	2.4316	.14602
#1	1.0203	50.417	.50661	10.106	.50215	1.2133	.40239	5.0667
#2	1.0222	50.285	.50884	10.125	.50356	1.2145	.42059	5.0815
#3	1.0154	50.374	.50554	10.095	.50271	1.2167	.40452	5.0731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 13:38:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0180**	**1.0116**	**1.0030**	**.50319**	**1.0036**	**1.0198**	**1.0177**
Stddev	.0017	.0008	.0100	.00318	.0045	.0016	.0066
%RSD	.16741	.07569	.99288	.63294	.45095	.15795	.65127
#1	1.0172	1.0125	1.0037	.50161	.99881	1.0184	1.0253
#2	1.0200	1.0110	1.0126	.50686	1.0078	1.0216	1.0148
#3	1.0168	1.0113	.99273	.50111	1.0043	1.0194	1.0130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8653.4**	**51777.**	**2497.9**
Stddev	13.9	203.	9.7
%RSD	.16072	.39139	.38989
#1	8647.5	52010.	2489.4
#2	8643.5	51649.	2495.7
#3	8669.3	51671.	2508.6

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 13:41:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	.00832	.00025	.00317	.00518	.00001	-.06282	-.00014
Stddev	.00113	.00232	.00379	.00237	.00098	.00007	.02008	.00018
%RSD	108.04	27.826	1523.1	74.803	18.875	1321.3	31.972	135.63
#1	-.00233	.00655	-.00397	.00515	.00475	.00008	-.08510	-.00031
#2	-.00027	.00747	.00339	.00383	.00450	-.00000	-.05722	.00006
#3	-.00052	.01094	.00133	.00054	.00631	-.00006	-.04612	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00005	.00000	.00765	.00800	.00105	.10373	-.00086
Stddev	.00041	.00054	.00032	.02751	.27697	.00210	.06003	.00167
%RSD	129.99	1044.3	24142.	359.43	3464.1	200.86	57.867	194.61
#1	-.00012	.00038	.00002	-.00198	-.22735	.00161	.13805	.00035
#2	.00037	-.00057	-.00033	-.01374	.31321	-.00128	.03442	-.00016
#3	.00069	.00035	.00032	.03868	-.06187	.00280	.13873	-.00277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.01774	-.00085	.00022	-.00383	.00347	-.00358	.01133
Stddev	.00023	.00564	.00091	.00322	.00198	.00075	.00308	.00240
%RSD	290.90	31.796	106.50	1451.8	51.642	21.670	86.137	21.191
#1	-.00018	-.02016	.00006	.00100	-.00507	.00310	-.00378	.01213
#2	.00018	-.01129	-.00176	.00298	-.00155	.00434	-.00040	.00863
#3	.00023	-.02177	-.00087	-.00331	-.00487	.00298	-.00656	.01323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 13:41:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	-.00020	-.00686	-.00117	-.00035	-.00007	-.00004
Stddev	.00093	.00056	.00673	.00291	.00054	.00018	.00058
%RSD	141.43	280.92	98.219	248.99	152.27	240.76	1409.3
#1	-.00040	-.00015	-.00234	.00198	.00011	-.00028	.00057
#2	.00138	-.00079	-.01460	-.00377	-.00094	.00005	-.00012
#3	.00100	.00034	-.00363	-.00172	-.00023	.00001	-.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8739.5	52609.	2487.4
Stddev	5.9	231.	25.7
%RSD	.06776	.43844	1.0317
#1	8738.4	52562.	2473.5
#2	8745.9	52406.	2471.8
#3	8734.2	52860.	2517.0

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/28/2016 13:45:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00736	.19083	.00295	.08111	.01169	.00173	.42567	.00083
Stddev	.00215	.00749	.00324	.00095	.00258	.00011	.07147	.00024
%RSD	29.248	3.9252	110.04	1.1726	22.036	6.3725	16.791	28.962
#1	.00643	.18891	.00590	.08220	.01078	.00161	.36982	.00072
#2	.00982	.19909	.00347	.08061	.01460	.00176	.50622	.00066
#3	.00583	.18448	-.00053	.08050	.00970	.00182	.40099	.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00405	.00421	.00347	.06656	.92169	.09021	.49979	.00778
Stddev	.00018	.00133	.00080	.01156	.07020	.00767	.10689	.00166
%RSD	4.4368	31.559	23.151	17.365	7.6164	8.4978	21.388	21.292
#1	.00387	.00286	.00290	.06880	.84213	.08382	.50249	.00852
#2	.00423	.00426	.00439	.05405	.97492	.09871	.60531	.00893
#3	.00404	.00551	.00313	.07683	.94800	.08810	.39157	.00588
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00824	.40026	.01713	.79167	.00734	.08280	.01420	.83284
Stddev	.00020	.05939	.00016	.00289	.00216	.00238	.00347	.00433
%RSD	2.4033	14.837	.95090	.36532	29.499	2.8801	24.464	.52024
#1	.00846	.37436	.01732	.79217	.00972	.08006	.01171	.83783
#2	.00811	.46821	.01704	.79429	.00549	.08442	.01272	.83000
#3	.00813	.35823	.01704	.78857	.00680	.08392	.01817	.83070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/28/2016 13:45:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41311**	**.04388**	**.02180**	**.15222**	**.00680**	**.01756**	**.04365**
Stddev	.00284	.00364	.00295	.00341	.00126	.00047	.00236
%RSD	.68722	8.3006	13.524	2.2432	18.554	2.6678	5.4105
#1	.41479	.04175	.01857	.15193	.00823	.01804	.04226
#2	.41472	.04809	.02246	.14896	.00635	.01755	.04638
#3	.40984	.04181	.02436	.15577	.00583	.01710	.04231
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8968.0**	**53610.**	**2478.4**
Stddev	17.5	218.	149.1
%RSD	.19522	.40702	6.0172
#1	8968.4	53836.	2571.5
#2	8985.3	53400.	2306.4
#3	8950.3	53594.	2557.4

Approved: June 29, 2016

Sample Name: PBW FB Acquired: 6/28/2016 13:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00087**	**.02038**	**.00047**	**-.00233**	**.00447**	**.00003**	**-.00809**
Stddev	.00077	.01026	.00092	.00070	.00161	.00010	.01414
%RSD	87.875	50.329	198.12	30.080	36.066	351.83	174.83
#1	.00102	.02586	.00110	-.00223	.00426	.00009	.00526
#2	.00004	.02673	.00089	-.00307	.00619	.00008	-.00661
#3	.00155	.00855	-.00059	-.00168	.00298	-.00009	-.02291
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**-.00013**	**-.00021**	**-.00020**	F **-.02980**	**-.06122**	**-.00080**
Stddev	.00011	.00037	.00090	.00203	.05319	.07805	.00227
%RSD	216.97	283.62	430.30	1027.0	178.53	127.49	282.96
#1	.00015	-.00011	-.00112	-.00202	-.00231	-.14344	-.00181
#2	-.00007	-.00051	-.00019	-.00056	.00403	-.05207	.00180
#3	.00007	.00023	.00068	.00199	-.09111	.01185	-.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05348**	**.00154**	**-.00031**	**-.01531**	**-.00101**	**.00072**	F **-.00564**
Stddev	.06861	.00047	.00024	.04577	.00073	.00883	.00089
%RSD	128.29	30.648	76.777	298.97	72.111	1223.2	15.852
#1	-.01835	.00108	-.00025	-.05048	-.00157	.01081	-.00509
#2	.06045	.00202	-.00011	-.03189	-.00019	-.00559	-.00667
#3	.11835	.00153	-.00058	.03644	-.00128	-.00306	-.00516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							225.00
Low Limit							-.00500

Approved: June 29, 2016

Sample Name: PBW FB Acquired: 6/28/2016 13:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	**-.00023**	**-.01671**	**.00024**	**-.00003**	**.00346**	**-.00227**
Stddev	.00348	.00224	.00217	.00048	.00014	.00679	.00206
%RSD	537.23	965.80	12.999	203.88	544.08	196.40	91.144
#1	-.00120	-.00236	-.01904	.00079	-.00017	.00308	-.00056
#2	.00308	.00211	-.01635	-.00008	.00010	.01042	-.00456
#3	-.00382	-.00045	-.01474	-.00000	-.00000	-.00313	-.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00131**	**-.00013**	**-.00037**
Stddev	.00074	.00032	.00054
%RSD	56.570	254.87	146.28
#1	-.00205	.00008	-.00061
#2	-.00057	-.00049	.00025
#3	-.00132	.00003	-.00075
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8902.6**	**52766.**	**2457.8**
Stddev	27.6	121.	33.4
%RSD	.30966	.22861	1.3598
#1	8874.6	52650.	2470.0
#2	8929.8	52756.	2420.0
#3	8903.5	52891.	2483.4

Approved: June 29, 2016

Sample Name: LCSW FB Acquired: 6/28/2016 13:53:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19900**	**5.0246**	**.20339**	**.97761**	**.50424**	**.02444**	**5.1220**	**.02524**
Stddev	.00408	.0181	.00015	.00343	.00078	.00018	.0265	.00018
%RSD	2.0517	.36103	.07344	.35073	.15497	.73251	.51681	.72858
#1	.19842	5.0082	.20346	.97720	.50470	.02423	5.1241	.02527
#2	.20334	5.0441	.20349	.98122	.50468	.02453	5.0945	.02541
#3	.19524	5.0216	.20322	.97440	.50334	.02455	5.1473	.02505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10172**	**.25359**	**.25466**	**1.9566**	**25.129**	**.51169**	**5.0823**	**.24884**
Stddev	.00117	.00149	.00174	.0183	.104	.00398	.0798	.00105
%RSD	1.1545	.58953	.68227	.93432	.41251	.77852	1.5695	.42348
#1	.10256	.25489	.25542	1.9763	25.248	.50761	5.1110	.24940
#2	.10222	.25196	.25590	1.9532	25.076	.51190	4.9922	.24950
#3	.10038	.25391	.25267	1.9402	25.063	.51556	5.1438	.24762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51178**	**25.253**	**.25676**	**4.9088**	**.25422**	**.59597**	**.18860**	**2.4342**
Stddev	.00524	.095	.00268	.0320	.00217	.01042	.00956	.0116
%RSD	1.0231	.37434	1.0420	.65246	.85430	1.7492	5.0693	.47799
#1	.51545	25.322	.25712	4.9122	.25650	.60794	.19825	2.4390
#2	.51410	25.145	.25924	4.9390	.25400	.59103	.17913	2.4426
#3	.50578	25.293	.25392	4.8752	.25217	.58893	.18842	2.4209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW FB Acquired: 6/28/2016 13:53:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50998**	**.51127**	**.49771**	**.25349**	**.50193**	**.50932**	**.00039**
Stddev	.00635	.00050	.01112	.00112	.00034	.00540	.00060
%RSD	1.2450	.09829	2.2341	.44241	.06687	1.0610	152.55
#1	.51302	.51172	.51004	.25380	.50215	.51193	.00030
#2	.51424	.51073	.49468	.25443	.50209	.51292	.00103
#3	.50268	.51135	.48843	.25225	.50154	.50310	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9046.0**	**54533.**	**2638.4**
Stddev	14.1	223.	12.5
%RSD	.15595	.40924	.47439
#1	9051.7	54651.	2624.5
#2	9030.0	54275.	2641.9
#3	9056.5	54672.	2648.8

Approved: June 29, 2016

Sample Name: L1606114201 Acquired: 6/28/2016 13:57:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.05867	-.00226	.01052	.07923	.00004	2.2270	.00045
Stddev	.00191	.00845	.00118	.00102	.00159	.00009	.0352	.00028
%RSD	281.54	14.410	52.249	9.6741	2.0032	236.41	1.5789	62.236
#1	-.00129	.05427	-.00108	.01155	.07914	.00005	2.1919	.00032
#2	.00253	.06842	-.00345	.01051	.07769	.00013	2.2622	.00026
#3	.00079	.05332	-.00227	.00951	.08086	-.00006	2.2269	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00611	.00086	.00022	4.6017	1.0549	.01036	1.7153	.22886
Stddev	.00021	.00091	.00108	.0366	.0934	.00385	.1156	.00109
%RSD	3.3884	105.55	488.55	.79525	8.8568	37.198	6.7381	.47751
#1	.00594	.00065	-.00085	4.5708	1.1252	.00825	1.8224	.23005
#2	.00634	.00008	.00131	4.5921	.94888	.01481	1.7306	.22791
#3	.00605	.00187	.00020	4.6421	1.0906	.00803	1.5928	.22861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	19.649	.00742	.06001	.00256	.00190	-.00560	15.630
Stddev	.00025	.047	.00125	.00498	.00162	.00400	.00341	.024
%RSD	36.725	.24068	16.819	8.3002	62.980	210.77	60.813	.15501
#1	.00039	19.680	.00649	.06119	.00330	-.00159	-.00593	15.642
#2	.00086	19.594	.00884	.05455	.00071	.00627	-.00204	15.602
#3	.00077	19.673	.00692	.06430	.00368	.00102	-.00884	15.646
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606114201 Acquired: 6/28/2016 13:57:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.04045	.00831	-.00411	-.00073	.00996	-.00035
Stddev	.00045	.00014	.00359	.00080	.00037	.00006	.00052
%RSD	311.96	.33991	43.132	19.576	51.383	.64259	148.00
#1	.00050	.04035	.00782	-.00352	-.00043	.00996	.00021
#2	-.00036	.04061	.01212	-.00378	-.00114	.01002	-.00081
#3	.00029	.04040	.00500	-.00502	-.00061	.00990	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9162.3	55345.	2645.7
Stddev	10.7	90.	11.1
%RSD	.11628	.16311	.41823
#1	9165.6	55439.	2634.7
#2	9171.0	55259.	2656.9
#3	9150.4	55338.	2645.6

Approved: June 29, 2016

Sample Name: L1606114203 Acquired: 6/28/2016 14:01:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.27324	.00028	.01119	.05232	.00009	6.9241	.00031
Stddev	.00101	.00614	.00251	.00136	.00133	.00010	.0879	.00018
%RSD	266.07	2.2463	905.28	12.143	2.5487	105.81	1.2689	57.110
#1	-.00028	.27239	.00087	.01128	.05314	.00018	6.9787	.00052
#2	-.00013	.27976	.00243	.00979	.05078	-.00001	6.8228	.00022
#3	.00154	.26758	-.00247	.01250	.05303	.00011	6.9709	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.00109	.00195	3.8878	1.4786	.00534	1.2697	.19674
Stddev	.00032	.00129	.00126	.0500	.0652	.00341	.0789	.00271
%RSD	41.154	117.52	64.945	1.2853	4.4076	63.859	6.2160	1.3769
#1	.00045	.00238	.00086	3.9201	1.4084	.00927	1.1830	.19458
#2	.00080	-.00019	.00334	3.8303	1.4901	.00355	1.2887	.19586
#3	.00109	.00110	.00164	3.9131	1.5372	.00319	1.3374	.19978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	4.0555	.00376	.09011	.00040	.00452	.00674	5.1074
Stddev	.00026	.0801	.00092	.00618	.00366	.00529	.00378	.0076
%RSD	43.606	1.9741	24.497	6.8539	912.10	116.99	56.046	.14975
#1	.00088	4.1283	.00348	.09257	-.00281	.00886	.01094	5.1157
#2	.00053	3.9698	.00480	.08308	-.00037	-.00137	.00566	5.1006
#3	.00037	4.0683	.00302	.09467	.00438	.00607	.00362	5.1060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606114203 Acquired: 6/28/2016 14:01:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.05564	.00818	-.00403	.00143	.00405	-.00066
Stddev	.00051	.00078	.00097	.00126	.00045	.00015	.00091
%RSD	99.768	1.3964	11.885	31.161	31.303	3.6828	139.20
#1	.00041	.05588	.00755	-.00404	.00187	.00404	-.00037
#2	.00106	.05477	.00930	-.00277	.00145	.00420	.00008
#3	.00006	.05627	.00769	-.00529	.00097	.00390	-.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9201.0	55505.	2656.0
Stddev	2.7	216.	28.0
%RSD	.02917	.38837	1.0526
#1	9204.0	55434.	2638.8
#2	9200.5	55334.	2688.3
#3	9198.7	55747.	2641.0

Approved: June 29, 2016

Sample Name: L1606114205 Acquired: 6/28/2016 14:05:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.29510	-.00399	.00877	.05188	-.00004	6.7570	.00011
Stddev	.00067	.00175	.00127	.00194	.00134	.00008	.0441	.00013
%RSD	252.45	.59391	31.797	22.120	2.5800	189.17	.65263	119.13
#1	.00002	.29353	-.00540	.01064	.05066	-.00012	6.7835	.00001
#2	.00022	.29699	-.00295	.00677	.05331	-.00003	6.7815	.00005
#3	-.00104	.29478	-.00362	.00890	.05166	.00003	6.7061	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00134	.00069	3.9328	1.3894	.00419	1.1700	.19925
Stddev	.00032	.00079	.00081	.0387	.1354	.00230	.0806	.00367
%RSD	36.699	59.423	117.74	.98304	9.7482	54.930	6.8871	1.8408
#1	.00124	.00156	.00082	3.9719	1.3019	.00307	1.2435	.19866
#2	.00081	.00045	-.00018	3.9318	1.5454	.00266	1.0838	.19590
#3	.00060	.00199	.00142	3.8946	1.3208	.00683	1.1826	.20317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	3.8918	.00306	.08988	-.00133	.00008	.00151	5.0348
Stddev	.00026	.0463	.00151	.00143	.00236	.00278	.01136	.0439
%RSD	31.031	1.1889	49.164	1.5872	177.57	3618.7	749.90	.87231
#1	.00109	3.8662	.00383	.09149	.00045	.00019	-.00515	5.0503
#2	.00058	3.8641	.00133	.08876	-.00400	.00280	.01463	5.0688
#3	.00081	3.9452	.00403	.08939	-.00043	-.00276	-.00494	4.9852
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606114205 Acquired: 6/28/2016 14:05:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.05416	.00822	-.00288	.00086	.00400	.00007
Stddev	.00016	.00040	.00287	.00338	.00029	.00007	.00049
%RSD	21.082	.73417	34.929	117.45	33.623	1.7284	732.53
#1	.00096	.05384	.01137	.00094	.00052	.00392	.00060
#2	.00065	.05403	.00754	-.00410	.00104	.00406	-.00038
#3	.00071	.05460	.00574	-.00548	.00100	.00401	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9201.1	55778.	2648.2
Stddev	37.4	65.	11.1
%RSD	.40596	.11714	.41951
#1	9204.5	55810.	2639.2
#2	9236.6	55821.	2660.6
#3	9162.1	55702.	2644.7

Approved: June 29, 2016

Sample Name: L1606117701 Acquired: 6/28/2016 14:08:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.02633	.00391	.09124	.00216	-.00001	.04445	.00021
Stddev	.00357	.00399	.00273	.00180	.00064	.00008	.02994	.00017
%RSD	633.00	15.134	69.874	1.9731	29.489	753.28	67.370	80.852
#1	.00209	.02913	.00092	.08925	.00161	-.00006	.02918	.00014
#2	-.00351	.02177	.00451	.09276	.00286	.00008	.02521	.00041
#3	.00311	.02809	.00628	.09171	.00201	-.00005	.07895	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00061	.00088	-.00762	.14322	.00304	.00749	-.00130
Stddev	.00014	.00092	.00010	.01515	.07780	.00086	.11866	.00374
%RSD	135.34	149.59	11.631	198.87	54.324	28.196	1585.3	287.00
#1	-.00026	.00164	.00082	.00409	.16832	.00379	.14380	.00278
#2	-.00007	.00031	.00100	-.00221	.20536	.00324	-.04864	-.00213
#3	.00002	-.00012	.00083	-.02474	.05596	.00210	-.07270	-.00457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00618	114.73	-.00098	.00713	-.00154	-.00199	-.00540	4.0889
Stddev	.00069	.24	.00089	.00359	.00371	.00107	.00275	.0405
%RSD	11.161	.20894	90.679	50.357	240.96	53.790	50.915	.99133
#1	.00671	114.98	-.00155	.00652	.00272	-.00177	-.00432	4.1112
#2	.00642	114.51	.00004	.00389	-.00331	-.00316	-.00853	4.1134
#3	.00540	114.71	-.00143	.01099	-.00403	-.00105	-.00335	4.0421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117701 Acquired: 6/28/2016 14:08:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.00049	-.00033	-.00039	.00002	.04431	-.00003
Stddev	.00033	.00085	.00164	.00116	.00035	.00083	.00029
%RSD	37.100	171.33	490.65	296.81	2057.2	1.8684	1114.3
#1	.00128	-.00025	.00001	.00095	-.00011	.04496	-.00018
#2	.00068	.00031	.00110	-.00114	-.00025	.04459	-.00021
#3	.00074	.00142	-.00212	-.00098	.00042	.04338	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8994.7	53956.	2615.7
Stddev	16.7	185.	5.8
%RSD	.18524	.34302	.22052
#1	9004.1	53789.	2622.2
#2	8975.4	53925.	2611.4
#3	9004.5	54155.	2613.3

Approved: June 29, 2016

Sample Name: L1606117702S Acquired: 6/28/2016 14:12:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18856**	**4.8322**	**.19823**	**1.0372**	**.48497**	**.02389**	**4.8901**	**.02419**
Stddev	.00126	.0224	.00385	.0034	.00200	.00009	.0917	.00033
%RSD	.66628	.46355	1.9424	.32332	.41215	.38786	1.8745	1.3800
#1	.18738	4.8110	.20072	1.0333	.48716	.02398	4.9959	.02380
#2	.18843	4.8299	.20017	1.0396	.48325	.02391	4.8365	.02440
#3	.18988	4.8556	.19379	1.0386	.48450	.02379	4.8378	.02436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09773**	**.24028**	**.24429**	**1.9433**	**24.096**	**.49868**	**4.8729**	**.24053**
Stddev	.00042	.00128	.00172	.0409	.182	.00260	.0127	.00377
%RSD	.42582	.53446	.70316	2.1030	.75545	.52233	.26047	1.5680
#1	.09729	.23949	.24430	1.9193	24.200	.50110	4.8876	.23932
#2	.09777	.23959	.24600	1.9905	24.203	.49592	4.8649	.23751
#3	.09812	.24176	.24257	1.9202	23.886	.49901	4.8663	.24476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49903**	**133.30**	**.24372**	**4.7766**	**.24190**	**.58145**	**.19108**	**6.2503**
Stddev	.00177	.44	.00088	.0144	.00430	.00207	.00466	.0076
%RSD	.35510	.32916	.36129	.30177	1.7763	.35588	2.4370	.12137
#1	.49709	133.73	.24391	4.7678	.23751	.58233	.19481	6.2453
#2	.50057	133.32	.24450	4.7933	.24610	.58293	.19258	6.2590
#3	.49944	132.86	.24276	4.7689	.24208	.57908	.18586	6.2464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117702S Acquired: 6/28/2016 14:12:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49123	.49119	.47597	.23865	.48318	.53456	.00014
Stddev	.00207	.00091	.01591	.00292	.00064	.00399	.00041
%RSD	.42144	.18556	3.3435	1.2227	.13247	.74582	297.24
#1	.48887	.49089	.46600	.23578	.48356	.53549	.00061
#2	.49273	.49048	.49433	.24161	.48244	.53800	-.00012
#3	.49210	.49222	.46759	.23856	.48353	.53019	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9062.2	54261.	2652.5
Stddev	15.4	248.	3.2
%RSD	.16948	.45726	.12250
#1	9046.5	54417.	2651.6
#2	9063.0	54391.	2649.8
#3	9077.1	53975.	2656.1

Approved: June 29, 2016

Sample Name: L1606117703SD Acquired: 6/28/2016 14:16:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19356	4.9188	.20421	1.0578	.49216	.02440	4.9691	.02479
Stddev	.00895	.1866	.00113	.0433	.00110	.00088	.0385	.00041
%RSD	4.6250	3.7942	.55157	4.0894	.22408	3.5915	.77489	1.6672
#1	.18329	4.7033	.20392	1.0080	.49332	.02338	4.9851	.02437
#2	.19968	5.0258	.20546	1.0792	.49113	.02490	4.9252	.02481
#3	.19771	5.0273	.20327	1.0862	.49201	.02491	4.9970	.02520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10078	.24659	.25170	1.9836	24.515	.50071	4.9089	.24206
Stddev	.00071	.00855	.00324	.0197	.194	.00317	.0729	.00081
%RSD	.70462	3.4653	1.2865	.99364	.79032	.63278	1.4848	.33473
#1	.09996	.23678	.24814	1.9956	24.736	.50021	4.8669	.24188
#2	.10125	.25241	.25448	1.9609	24.376	.50410	4.8667	.24135
#3	.10112	.25058	.25247	1.9944	24.433	.49782	4.9931	.24294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51266	134.43	.24903	4.8929	.24866	.59669	.19110	6.3693
Stddev	.00471	.21	.00178	.0290	.00195	.00618	.00196	.0537
%RSD	.91932	.15842	.71645	.59312	.78413	1.0357	1.0265	.84288
#1	.50722	134.58	.24697	4.8597	.24684	.59011	.19121	6.3079
#2	.51547	134.19	.24998	4.9131	.25072	.59760	.19300	6.3927
#3	.51529	134.54	.25013	4.9060	.24842	.60237	.18908	6.4074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117703SD Acquired: 6/28/2016 14:16:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50534**	**.49778**	**.47860**	**.24351**	**.49461**	**.54919**	**.00063**
Stddev	.00438	.00222	.00954	.00352	.02044	.00714	.00039
%RSD	.86690	.44590	1.9934	1.4471	4.1324	1.2998	61.841
#1	.50028	.49612	.47958	.23954	.47101	.54095	.00098
#2	.50788	.49692	.46861	.24475	.50647	.55304	.00021
#3	.50786	.50030	.48762	.24625	.50636	.55358	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8931.1**	**53527.**	**2625.0**
Stddev	64.6	1463.	5.1
%RSD	.72334	2.7322	.19309
#1	9005.7	55214.	2624.2
#2	8895.3	52620.	2620.4
#3	8892.4	52747.	2630.5

Approved: June 29, 2016

Sample Name: L1606118501 Acquired: 6/28/2016 14:20:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.01981**	**.00181**	**.02105**	**.20719**	**-.00013**	**36.631**	**-.00001**
Stddev	.00036	.00473	.00377	.00300	.00054	.00006	.042	.00033
%RSD	398.51	23.884	207.88	14.263	.26264	47.225	.11494	2546.0
#1	-.00016	.01435	-.00154	.02364	.20768	-.00019	36.658	.00036
#2	-.00041	.02230	.00590	.01776	.20660	-.00012	36.653	-.00025
#3	.00030	.02278	.00108	.02176	.20727	-.00007	36.583	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00085**	**.00210**	**.31623**	**1.4446**	**.01015**	**11.970**	**.18513**
Stddev	.00005	.00052	.00100	.01586	.0492	.00660	.209	.00173
%RSD	16.614	61.255	47.788	5.0151	3.4040	64.996	1.7496	.93595
#1	-.00038	.00138	.00318	.33404	1.4096	.01149	12.203	.18396
#2	-.00030	.00083	.00192	.30365	1.5008	.01598	11.910	.18712
#3	-.00028	.00034	.00120	.31100	1.4233	.00299	11.797	.18431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**4.4335**	**-.00023**	**.01231**	**-.00295**	**.00236**	**-.00468**	**4.3495**
Stddev	.00021	.0505	.00048	.00514	.00078	.00525	.00740	.0503
%RSD	43.336	1.1395	208.73	41.760	26.533	222.86	158.18	1.1577
#1	.00045	4.4850	.00005	.01702	-.00294	-.00332	-.00133	4.3685
#2	.00031	4.4315	.00005	.01308	-.00218	.00703	-.01316	4.3876
#3	.00073	4.3840	-.00078	.00682	-.00375	.00336	.00045	4.2924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606118501 Acquired: 6/28/2016 14:20:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.11439	-.00457	-.00192	-.00064	.00598	-.00008
Stddev	.00103	.00003	.00727	.00266	.00040	.00009	.00041
%RSD	320.31	.02290	159.11	138.96	63.165	1.5139	518.32
#1	.00044	.11442	-.01291	.00082	-.00076	.00593	-.00003
#2	-.00076	.11438	.00037	-.00206	-.00019	.00608	-.00051
#3	.00129	.11438	-.00116	-.00451	-.00097	.00592	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9080.6	54899.	2621.2
Stddev	26.5	80.	9.7
%RSD	.29154	.14617	.37101
#1	9071.9	54981.	2610.3
#2	9059.5	54897.	2628.8
#3	9110.3	54820.	2624.7

Approved: June 29, 2016

Sample Name: L1606118502 Acquired: 6/28/2016 14:24:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00183	.01781	-.00212	.01875	.20094	-.00005	36.701	.00026
Stddev	.00200	.00542	.00366	.00101	.00099	.00005	.201	.00011
%RSD	109.47	30.421	172.60	5.3632	.49395	109.70	.54766	41.230
#1	-.00099	.01285	-.00403	.01780	.20067	-.00004	36.930	.00018
#2	-.00038	.01699	-.00444	.01864	.20204	-.00010	36.622	.00038
#3	-.00412	.02359	.00210	.01980	.20011	-.00000	36.552	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	-.00029	.00156	-.00426	1.2802	.01013	12.015	.03565
Stddev	.00024	.00202	.00090	.01892	.1572	.00074	.100	.00090
%RSD	112.56	697.40	58.083	443.63	12.278	7.3510	.83356	2.5284
#1	-.00005	.00204	.00230	.01500	1.4475	.01081	12.082	.03464
#2	.00042	-.00155	.00182	-.02282	1.1357	.00933	11.900	.03639
#3	.00026	-.00136	.00055	-.00497	1.2574	.01025	12.063	.03591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	4.3567	.00008	.01630	.00178	.00663	.00318	4.3819
Stddev	.00047	.0319	.00036	.00510	.00496	.00405	.01096	.0031
%RSD	39.998	.73095	427.54	31.262	278.16	61.058	344.17	.06952
#1	.00164	4.3274	-.00016	.01074	-.00009	.00272	.01572	4.3834
#2	.00071	4.3906	.00050	.02076	.00741	.01080	-.00457	4.3838
#3	.00116	4.3521	-.00009	.01740	-.00197	.00638	-.00160	4.3783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606118502 Acquired: 6/28/2016 14:24:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.11567	-.00542	-.00245	-.00068	.00475	-.00073
Stddev	.00075	.00034	.00321	.00261	.00124	.00014	.00075
%RSD	138.82	.29531	59.328	106.53	183.90	3.0145	102.93
#1	.00127	.11569	-.00887	-.00098	-.00123	.00461	-.00010
#2	-.00024	.11600	-.00251	-.00547	-.00155	.00490	-.00156
#3	.00060	.11532	-.00488	-.00091	.00075	.00475	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9004.4	54315.	2596.8
Stddev	6.0	163.	7.5
%RSD	.06714	.30096	.28851
#1	8998.9	54182.	2588.9
#2	9003.4	54266.	2597.7
#3	9010.9	54497.	2603.8

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 14:27:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40478**	**10.178**	**.40422**	**.50272**	**1.0182**	**.05010**	**10.117**	**.05116**
Stddev	.00143	.039	.00189	.00370	.0036	.00010	.084	.00013
%RSD	.35403	.38613	.46653	.73542	.35070	.20789	.83028	.24807
#1	.40641	10.169	.40280	.50476	1.0158	.05021	10.021	.05130
#2	.40420	10.144	.40349	.49845	1.0223	.05006	10.175	.05112
#3	.40372	10.221	.40636	.50495	1.0166	.05001	10.156	.05105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20477**	**.50603**	**.51383**	**4.0435**	**50.597**	**1.0187**	**10.217**	**.50703**
Stddev	.00037	.00132	.00209	.0422	.398	.0115	.070	.00204
%RSD	.18089	.26016	.40633	1.0446	.78750	1.1266	.68585	.40329
#1	.20497	.50590	.51513	4.0309	50.226	1.0132	10.286	.50533
#2	.20499	.50478	.51142	4.0906	51.018	1.0319	10.145	.50646
#3	.20434	.50740	.51493	4.0091	50.545	1.0110	10.219	.50930
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0275**	**51.068**	**.51117**	**10.186**	**.50920**	**1.2210**	**.40575**	**5.1330**
Stddev	.0029	.260	.00076	.004	.00283	.0039	.00479	.0071
%RSD	.28249	.50917	.14897	.03557	.55508	.32091	1.1813	.13907
#1	1.0300	50.879	.51205	10.187	.50593	1.2169	.40023	5.1345
#2	1.0243	51.364	.51075	10.181	.51093	1.2247	.40878	5.1252
#3	1.0281	50.959	.51071	10.188	.51072	1.2213	.40825	5.1392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 14:27:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0262**	**1.0196**	**1.0035**	**.51029**	**1.0039**	**1.0274**	**1.0303**
Stddev	.0014	.0055	.0092	.00045	.0019	.0011	.0016
%RSD	.13372	.54345	.91866	.08898	.18612	.10889	.15402
#1	1.0260	1.0143	1.0059	.51073	1.0034	1.0271	1.0321
#2	1.0249	1.0254	1.0113	.51031	1.0024	1.0265	1.0292
#3	1.0277	1.0193	.99336	.50982	1.0060	1.0287	1.0296
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8845.5**	**52891.**	**2530.2**
Stddev	13.0	259.	2.3
%RSD	.14752	.48995	.09114
#1	8830.5	52920.	2531.0
#2	8853.6	53135.	2531.9
#3	8852.5	52619.	2527.6

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 14:31:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.01926	-.00013	.00341	.00468	-.00000	-.05543	-.00005
Stddev	.00124	.00642	.00202	.00053	.00158	.00004	.03472	.00018
%RSD	221.71	33.309	1579.8	15.620	33.778	1830.7	62.635	343.75
#1	.00075	.01319	-.00158	.00365	.00623	.00003	-.09510	-.00016
#2	-.00077	.01863	.00218	.00379	.00307	-.00005	-.04067	-.00015
#3	.00170	.02597	-.00098	.00280	.00476	.00001	-.03054	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	-.00003	.00065	-.03110	.00840	.00435	.07075	-.00353
Stddev	.00025	.00039	.00086	.05263	.04476	.00220	.05753	.00211
%RSD	170.85	1476.6	131.66	169.21	533.20	50.700	81.315	59.738
#1	-.00012	.00034	.00149	-.04084	-.04327	.00596	.13712	-.00186
#2	.00038	.00001	-.00022	-.07818	.03553	.00184	.03511	-.00590
#3	.00018	-.00043	.00068	.02571	.03293	.00525	.04002	-.00283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	-.00211	-.00140	.00654	-.00110	.00555	-.00142	.01151
Stddev	.00020	.02131	.00149	.00778	.00433	.00338	.00909	.00299
%RSD	53.690	1009.3	106.58	118.96	393.61	60.927	639.97	25.955
#1	.00016	.01887	-.00251	.00779	-.00569	.00828	-.01172	.01441
#2	.00056	-.02373	.00030	-.00179	-.00050	.00177	.00552	.01167
#3	.00042	-.00147	-.00200	.01362	.00290	.00661	.00193	.00844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 14:31:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00035	.00367	-.00382	-.00046	-.00011	.00019
Stddev	.00063	.00026	.00803	.00073	.00113	.00004	.00026
%RSD	443.88	75.185	218.90	19.094	247.43	37.683	132.20
#1	.00085	.00054	-.00558	-.00315	.00076	-.00006	-.00004
#2	-.00032	.00005	.00769	-.00370	-.00064	-.00014	.00015
#3	-.00011	.00044	.00889	-.00460	-.00149	-.00012	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8886.0	53560.	2532.4
Stddev	4.5	43.	39.0
%RSD	.05032	.07981	1.5390
#1	8890.3	53608.	2500.9
#2	8881.4	53525.	2520.3
#3	8886.2	53548.	2576.0

Approved: June 29, 2016

Sample Name: L1606118503 Acquired: 6/28/2016 14:35:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00202	.02161	.00180	.02007	.23617	-.00001	40.887	.00011
Stddev	.00099	.00769	.00222	.00262	.00121	.00007	.146	.00021
%RSD	48.705	35.578	123.21	13.077	.51256	1215.3	.35637	192.07
#1	.00244	.01680	.00349	.01716	.23640	.00004	41.054	-.00012
#2	.00090	.03047	.00262	.02077	.23725	-.00009	40.826	.00018
#3	.00273	.01755	-.00071	.02227	.23486	.00003	40.782	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.00109	.00511	.34655	1.1428	.00647	13.092	.53400
Stddev	.00026	.00045	.00092	.03444	.1788	.00519	.108	.00237
%RSD	72.904	41.467	17.980	9.9383	15.642	80.280	.82692	.44381
#1	-.00021	.00100	.00602	.30680	1.3477	.01159	13.138	.53641
#2	-.00065	.00158	.00418	.36745	1.0183	.00121	13.170	.53167
#3	-.00020	.00069	.00514	.36540	1.0626	.00661	12.968	.53391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	4.1492	-.00102	.01805	-.00349	.00349	.00192	5.3671
Stddev	.00011	.0311	.00076	.00623	.00340	.00523	.01036	.0746
%RSD	21.373	.74966	74.891	34.520	97.453	149.86	540.47	1.3897
#1	.00064	4.1661	-.00189	.02426	.00044	.00952	-.00363	5.3789
#2	.00041	4.1681	-.00053	.01807	-.00541	.00085	.01386	5.4352
#3	.00054	4.1133	-.00063	.01180	-.00550	.00011	-.00448	5.2874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606118503 Acquired: 6/28/2016 14:35:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.13606	.00942	-.00266	-.00026	.00502	-.00020
Stddev	.00060	.00122	.00692	.00135	.00016	.00014	.00047
%RSD	357.61	.89434	73.452	50.899	63.957	2.8606	234.85
#1	-.00048	.13568	.00705	-.00366	-.00039	.00516	-.00074
#2	.00030	.13742	.01721	-.00112	-.00030	.00503	.00008
#3	.00069	.13508	.00399	-.00321	-.00007	.00487	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8985.1	54141.	2607.5
Stddev	68.9	113.	9.9
%RSD	.76704	.20860	.37944
#1	8959.9	54010.	2596.2
#2	8932.3	54202.	2614.5
#3	9063.1	54210.	2611.9

Approved: June 29, 2016

Sample Name: L1606118504 Acquired: 6/28/2016 14:39:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00281	.01231	-.00378	.01715	.18396	.00002	39.241	.00007
Stddev	.00284	.01379	.00266	.00198	.00123	.00005	.068	.00012
%RSD	101.00	111.99	70.399	11.565	.67073	292.22	.17321	167.01
#1	.00318	.00084	-.00177	.01844	.18277	.00007	39.281	-.00007
#2	.00544	.00848	-.00679	.01486	.18523	-.00001	39.279	.00017
#3	-.00020	.02761	-.00277	.01813	.18389	-.00001	39.162	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00041	.00009	.02781	1.1592	.00635	12.544	.03306
Stddev	.00039	.00039	.00050	.00876	.0640	.00197	.136	.00335
%RSD	188.82	92.921	540.86	31.508	5.5188	31.058	1.0804	10.119
#1	.00008	.00055	.00066	.03789	1.2110	.00841	12.549	.02924
#2	-.00064	.00071	-.00009	.02355	1.1790	.00616	12.405	.03545
#3	-.00005	-.00002	-.00029	.02200	1.0877	.00448	12.676	.03450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	4.1142	-.00138	.00594	-.00243	.00156	-.00599	5.1014
Stddev	.00034	.0254	.00175	.00327	.00106	.00331	.00095	.0198
%RSD	45.159	.61799	126.82	55.033	43.497	212.54	15.883	.38751
#1	.00078	4.1406	-.00335	.00906	-.00309	.00514	-.00609	5.1189
#2	.00107	4.1121	-.00000	.00254	-.00299	-.00138	-.00499	5.1053
#3	.00040	4.0899	-.00079	.00621	-.00121	.00092	-.00688	5.0799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606118504 Acquired: 6/28/2016 14:39:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.13051	.00208	-.00195	-.00027	.00509	.00059
Stddev	.00121	.00032	.00140	.00224	.00072	.00006	.00068
%RSD	369.81	.24768	67.178	114.92	265.56	1.1916	116.72
#1	-.00071	.13048	.00143	.00041	-.00103	.00516	.00001
#2	.00166	.13085	.00368	-.00404	-.00020	.00504	.00040
#3	.00003	.13021	.00112	-.00222	.00041	.00508	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9024.1	54546.	2625.6
Stddev	23.0	44.	4.3
%RSD	.25529	.08000	.16349
#1	9001.2	54496.	2624.5
#2	9023.7	54565.	2622.0
#3	9047.3	54578.	2630.4

Approved: June 29, 2016

Sample Name: L1606122801 Acquired: 6/28/2016 14:43:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.05529	-.00070	.36414	.30012	-.00001	46.892	.00009
Stddev	.00151	.00695	.00227	.00169	.00185	.00017	.188	.00014
%RSD	346.68	12.576	323.44	.46322	.61527	1421.4	.40185	155.59
#1	.00087	.04779	-.00274	.36355	.29800	-.00020	46.812	.00026
#2	-.00009	.06153	-.00112	.36605	.30092	.00002	46.756	-.00001
#3	-.00208	.05656	.00175	.36283	.30142	.00014	47.107	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00032	.00146	.30139	.17266	.01007	27.595	.49689
Stddev	.00012	.00126	.00054	.02974	.11841	.00327	.189	.00972
%RSD	91.374	395.93	36.671	9.8684	68.580	32.469	.68458	1.9568
#1	.00001	-.00006	.00093	.33490	.15184	.00696	27.710	.49002
#2	.00013	-.00071	.00200	.27814	.30010	.01348	27.377	.49263
#3	.00024	.00172	.00146	.29113	.06604	.00977	27.698	.50801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	237.01	-.00001	.02821	-.00020	.00213	-.00175	7.7102
Stddev	.00031	.46	.00127	.00726	.00178	.00151	.00237	.2440
%RSD	83.135	.19280	12415.	25.738	882.16	71.025	135.79	3.1645
#1	.00029	236.67	.00144	.02218	.00151	.00387	-.00385	7.8512
#2	.00072	236.84	-.00093	.03627	-.00204	.00139	.00083	7.8510
#3	.00012	237.53	-.00054	.02617	-.00007	.00113	-.00222	7.4285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606122801 Acquired: 6/28/2016 14:43:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.34455**	**-.00087**	**-.00253**	**-.00056**	**.00291**	**.00028**
Stddev	.00021	.00144	.00857	.00209	.00024	.00016	.00019
%RSD	2796.0	.41714	985.87	82.630	43.945	5.4136	67.279
#1	-.00004	.34469	.00782	-.00199	-.00033	.00306	.00007
#2	-.00020	.34305	-.00111	-.00076	-.00082	.00291	.00033
#3	.00021	.34591	-.00931	-.00484	-.00053	.00275	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8828.3**	**52599.**	**2598.8**
Stddev	14.2	203.	6.7
%RSD	.16104	.38684	.25611
#1	8812.1	52510.	2599.4
#2	8834.0	52831.	2605.2
#3	8838.8	52454.	2591.9

Approved: June 29, 2016

Sample Name: L1606122802 Acquired: 6/28/2016 14:47:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00080**	**.24773**	**.00384**	**.73133**	**.01985**	**-.00002**	**122.11**
Stddev	.00047	.00814	.00183	.00266	.00172	.00008	.32
%RSD	59.094	3.2873	47.707	.36367	8.6676	533.02	.26379
#1	.00082	.25291	.00446	.72855	.02000	.00007	122.07
#2	.00127	.25194	.00178	.73385	.01805	-.00009	121.80
#3	.00032	.23835	.00528	.73160	.02148	-.00002	122.44
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00061**	**.00364**	**.00024**	**.13406**	**2.9490**	**.06033**
Stddev	.00015	.00056	.00089	.00194	.02548	.0972	.00576
%RSD	117.68	90.548	24.400	804.45	19.009	3.2942	9.5438
#1	.00004	.00114	.00268	.00118	.11925	2.9091	.05431
#2	-.00018	.00003	.00380	-.00199	.16349	2.8781	.06090
#3	-.00025	.00067	.00443	.00154	.11945	3.0597	.06579
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**83.351**	**.00470**	**.00909**	F **494.48**	**.00080**	**.00391**	**-.00095**
Stddev	.200	.00054	.00063	6.35	.00043	.00506	.00498
%RSD	.23940	11.426	6.9165	1.2837	54.026	129.43	524.42
#1	83.122	.00411	.00921	489.88	.00098	.00975	-.00345
#2	83.439	.00515	.00964	491.83	.00112	.00093	.00479
#3	83.491	.00484	.00840	501.72	.00031	.00104	-.00419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606122802 Acquired: 6/28/2016 14:47:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00358**	**.01899**	**6.7737**	**-.00038**	**1.8734**	**-.00742**	**-.00303**
Stddev	.00218	.00536	.3560	.00123	.0049	.00344	.00249
%RSD	60.879	28.229	5.2554	326.02	.26130	46.410	82.258
#1	.00385	.01350	6.9788	.00081	1.8729	-.00828	-.00125
#2	.00128	.02421	6.9797	-.00164	1.8688	-.01034	-.00196
#3	.00562	.01925	6.3627	-.00030	1.8786	-.00362	-.00587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00623**	**.00598**	**.00041**
Stddev	.00042	.00040	.00025
%RSD	6.8000	6.6498	61.221
#1	.00579	.00621	.00070
#2	.00628	.00620	.00024
#3	.00663	.00552	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8633.2**	**51179.**	**2574.8**
Stddev	3.5	175.	6.3
%RSD	.04019	.34160	.24339
#1	8636.7	51327.	2574.2
#2	8629.7	50986.	2581.4
#3	8633.1	51225.	2568.9

Approved: June 29, 2016

Sample Name: L1606122803 Acquired: 6/28/2016 14:50:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.70132	.00035	.02798	.05264	.00002	26.376	.00018
Stddev	.00162	.00440	.00311	.00147	.00140	.00003	.041	.00006
%RSD	184.77	.62782	894.60	5.2466	2.6558	152.86	.15454	34.633
#1	-.00094	.70274	-.00320	.02633	.05125	.00004	26.414	.00011
#2	.00141	.70484	.00260	.02849	.05405	-.00002	26.380	.00021
#3	.00217	.69638	.00165	.02913	.05261	.00004	26.333	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00205	.00225	.73691	10.431	.00316	4.0316	.01712
Stddev	.00044	.00223	.00120	.04104	.098	.00487	.0254	.00164
%RSD	87.419	109.09	53.600	5.5690	.94063	154.18	.63069	9.5496
#1	.00051	.00418	.00086	.72309	10.533	.00879	4.0148	.01636
#2	.00006	-.00027	.00302	.78307	10.423	.00024	4.0190	.01900
#3	.00093	.00223	.00287	.70456	10.338	.00045	4.0608	.01601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	3.6299	.00133	1.2655	.00018	.00234	-.00022	8.3262
Stddev	.00034	.0325	.00036	.0046	.00169	.00165	.00811	.0240
%RSD	44.819	.89431	26.962	.36391	940.84	70.433	3610.5	.28865
#1	.00046	3.6655	.00158	1.2659	-.00144	.00203	.00041	8.3324
#2	.00114	3.6221	.00149	1.2607	.00004	.00412	-.00863	8.3466
#3	.00071	3.6020	.00092	1.2699	.00194	.00087	.00755	8.2997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606122803 Acquired: 6/28/2016 14:50:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.16996	-.00049	-.00267	.00668	.02497	.00072
Stddev	.00041	.00057	.00459	.00213	.00167	.00013	.00052
%RSD	349.75	.33502	936.91	79.854	24.954	.51527	71.969
#1	-.00021	.16934	-.00062	-.00249	.00555	.02487	.00102
#2	-.00002	.17046	-.00501	-.00489	.00860	.02512	.00012
#3	.00058	.17007	.00416	-.00063	.00589	.02492	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9083.7	54994.	2625.8
Stddev	32.1	280.	15.6
%RSD	.35308	.50892	.59429
#1	9098.6	54788.	2630.5
#2	9105.6	54881.	2608.4
#3	9046.9	55313.	2638.5

Approved: June 29, 2016

Sample Name: L1606123101 Acquired: 6/28/2016 14:54:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00130	.03358	.00504	.10022	.06249	-.00004	40.181
Stddev	.00232	.01017	.00297	.00077	.00087	.00007	.051
%RSD	178.17	30.295	58.852	.77176	1.3950	168.73	.12715
#1	-.00102	.02445	.00772	.10047	.06331	.00000	40.179
#2	.00086	.04455	.00186	.09935	.06257	-.00012	40.233
#3	-.00374	.03174	.00554	.10084	.06157	-.00000	40.131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00050	.00076	.00060	.30063	.48774	.01354
Stddev	.00020	.00048	.00020	.00057	.02412	.07259	.00046
%RSD	61.093	95.301	26.045	94.150	8.0217	14.882	3.3817
#1	.00041	.00018	.00054	.00046	.32254	.40562	.01388
#2	.00010	.00105	.00083	.00012	.27479	.51432	.01372
#3	.00049	.00027	.00092	.00123	.30457	.54330	.01302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.461	.03824	.00059	F 356.14	.00012	.01554	-.00275
Stddev	.028	.00192	.00017	.68	.00104	.00351	.00164
%RSD	.11535	5.0184	29.467	.19191	857.75	22.597	59.838
#1	24.458	.03687	.00073	356.91	.00045	.01950	-.00190
#2	24.490	.03740	.00063	355.90	-.00104	.01431	-.00464
#3	24.434	.04043	.00040	355.61	.00096	.01280	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606123101 Acquired: 6/28/2016 14:54:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00131	7.6287	-.00030	.19994	.00193	-.00240
Stddev	.00444	.00542	.0664	.00070	.00063	.00368	.00183
%RSD	1440.4	414.59	.87064	236.14	.31690	190.57	76.335
#1	-.00481	.00201	7.6562	.00049	.19949	.00094	-.00434
#2	.00299	.00635	7.6769	-.00085	.19966	-.00115	-.00216
#3	.00274	-.00443	7.5529	-.00053	.20066	.00600	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01511	.00218	.00108
Stddev	.00115	.00003	.00059
%RSD	7.6271	1.5101	54.589
#1	.01378	.00217	.00040
#2	.01567	.00214	.00135
#3	.01587	.00221	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8764.2	51928.	2582.3
Stddev	13.1	149.	6.1
%RSD	.14999	.28773	.23656
#1	8779.2	52076.	2575.3
#2	8754.5	51777.	2586.0
#3	8759.0	51929.	2585.7

Approved: June 29, 2016

Sample Name: L1606123701 Acquired: 6/28/2016 14:58:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.86220	.00030	.02608	.10905	.00003	34.347	.00012
Stddev	.00174	.00170	.00301	.00186	.00127	.00006	.194	.00018
%RSD	564.65	.19754	1005.2	7.1209	1.1623	218.75	.56366	147.95
#1	-.00044	.86036	.00377	.02779	.11041	.00007	34.570	-.00000
#2	-.00093	.86249	-.00168	.02410	.10791	.00007	34.244	.00004
#3	.00230	.86373	-.00119	.02634	.10883	-.00004	34.227	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00221	.00193	1.0236	4.3467	.00729	4.7415	.08453
Stddev	.00030	.00072	.00043	.0191	.1897	.00550	.1021	.00257
%RSD	57.812	32.448	22.265	1.8647	4.3649	75.413	2.1527	3.0439
#1	.00031	.00244	.00238	1.0286	4.3693	.01127	4.7874	.08637
#2	.00087	.00279	.00153	1.0397	4.5240	.00960	4.8126	.08159
#3	.00039	.00141	.00188	1.0025	4.1466	.00102	4.6246	.08563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	6.7097	.00118	.75592	.00235	.00295	-.00415	8.7205
Stddev	.00023	.0742	.00086	.00849	.00308	.00098	.01006	.0164
%RSD	20.336	1.1057	73.223	1.1232	131.32	33.198	242.49	.18770
#1	.00107	6.7845	.00024	.76557	.00254	.00408	.00346	8.7339
#2	.00140	6.7083	.00193	.74963	-.00083	.00246	-.01555	8.7254
#3	.00096	6.6362	.00135	.75255	.00533	.00232	-.00036	8.7023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123701 Acquired: 6/28/2016 14:58:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.11631	.00910	.00032	.00557	.01002	.00056
Stddev	.00036	.00123	.00292	.00117	.00030	.00021	.00026
%RSD	527.06	1.0585	32.124	361.94	5.3880	2.1043	46.899
#1	.00026	.11720	.01159	-.00065	.00522	.01006	.00074
#2	-.00045	.11490	.00984	-.00001	.00572	.01021	.00069
#3	-.00001	.11683	.00588	.00162	.00576	.00979	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9045.5	54231.	2595.0
Stddev	15.9	47.	9.4
%RSD	.17556	.08717	.36382
#1	9027.4	54250.	2589.5
#2	9057.2	54265.	2589.7
#3	9051.8	54177.	2605.9

Approved: June 29, 2016

Sample Name: L1606123702 Acquired: 6/28/2016 15:02:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.35806	.00336	.05941	.10822	.00002	46.389	.00046
Stddev	.00125	.00967	.00137	.00155	.00090	.00006	.192	.00013
%RSD	482.05	2.7000	40.919	2.6148	.82997	317.17	.41342	27.749
#1	.00170	.36784	.00416	.05847	.10724	.00007	46.592	.00034
#2	-.00055	.34851	.00177	.05857	.10841	.00004	46.363	.00060
#3	-.00037	.35782	.00414	.06121	.10900	-.00005	46.212	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00145	-.00046	.00560	.25357	4.1249	.00811	8.4816	.40128
Stddev	.00040	.00126	.00080	.02259	.0851	.00405	.1416	.00234
%RSD	27.841	272.27	14.300	8.9081	2.0630	49.986	1.6691	.58357
#1	.00190	-.00083	.00652	.27800	4.0582	.00353	8.6301	.40195
#2	.00111	-.00150	.00510	.24927	4.2207	.01125	8.4664	.39868
#3	.00135	.00094	.00517	.23344	4.0957	.00953	8.3482	.40322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00897	49.739	.00323	1.1073	-.00122	.00595	-.00099	5.6031
Stddev	.00051	.226	.00083	.0035	.00339	.00416	.00714	.0065
%RSD	5.6716	.45382	25.644	.31913	277.57	69.947	722.21	.11513
#1	.00839	49.978	.00408	1.1111	.00163	.00612	-.00288	5.6106
#2	.00931	49.708	.00243	1.1068	-.00033	.01001	-.00699	5.5999
#3	.00922	49.530	.00318	1.1041	-.00497	.00170	.00691	5.5990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123702 Acquired: 6/28/2016 15:02:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**.20899**	**-.00484**	**-.00144**	**.01646**	**.01361**	**.00051**
Stddev	.00087	.00138	.00675	.00158	.00136	.00002	.00021
%RSD	203.97	.66158	139.51	109.79	8.2556	.18253	41.907
#1	-.00125	.21009	.00106	-.00321	.01502	.01359	.00038
#2	-.00051	.20944	-.00337	-.00019	.01772	.01362	.00039
#3	.00048	.20744	-.01221	-.00091	.01665	.01364	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8952.5**	**53938.**	**2591.9**
Stddev	13.8	60.	26.8
%RSD	.15432	.11034	1.0332
#1	8944.8	53877.	2561.4
#2	8944.3	53996.	2602.6
#3	8968.5	53941.	2611.7

Approved: June 29, 2016

Sample Name: L1606123703 Acquired: 6/28/2016 15:06:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.59752	.00235	.05887	.10953	.00010	45.449	.00061
Stddev	.00188	.01442	.00188	.00217	.00084	.00004	.107	.00021
%RSD	196.78	2.4125	80.080	3.6777	.76588	42.343	.23638	33.550
#1	.00313	.58363	.00149	.05668	.11041	.00011	45.572	.00080
#2	-.00012	.59652	.00451	.05892	.10874	.00014	45.399	.00039
#3	-.00015	.61241	.00105	.06101	.10945	.00006	45.375	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00197	.00107	.00451	.49836	4.3315	.00593	8.2564	.42750
Stddev	.00043	.00053	.00112	.03371	.0594	.00283	.1112	.00160
%RSD	21.959	49.735	24.752	6.7645	1.3702	47.678	1.3470	.37326
#1	.00240	.00061	.00515	.52558	4.3292	.00740	8.1328	.42566
#2	.00199	.00166	.00515	.50884	4.2733	.00773	8.3484	.42847
#3	.00153	.00095	.00322	.46065	4.3920	.00267	8.2880	.42838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00832	48.038	.00480	1.1170	.00156	.00449	.00211	5.9008
Stddev	.00018	.210	.00083	.0297	.00244	.00459	.00289	.1999
%RSD	2.1323	.43630	17.412	2.6556	156.67	102.18	136.97	3.3885
#1	.00840	48.278	.00408	1.1340	.00424	.00399	.00211	5.9955
#2	.00811	47.891	.00571	1.1343	.00096	.00932	.00500	6.0359
#3	.00843	47.944	.00459	1.0828	-.00053	.00018	-.00078	5.6711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123703 Acquired: 6/28/2016 15:06:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.20626	.00356	-.00259	.01810	.01007	.00072
Stddev	.00090	.00051	.00462	.00066	.00064	.00040	.00057
%RSD	217.27	.24848	129.94	25.342	3.5305	4.0008	79.254
#1	-.00027	.20622	-.00030	-.00198	.01883	.01026	.00015
#2	.00008	.20577	.00229	-.00252	.01778	.01034	.00071
#3	.00144	.20680	.00868	-.00328	.01768	.00961	.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8956.7	54106.	2597.5
Stddev	12.8	517.	14.5
%RSD	.14242	.95624	.55787
#1	8942.2	54146.	2581.2
#2	8966.2	54602.	2609.0
#3	8961.7	53569.	2602.4

Approved: June 29, 2016

Sample Name: L1606123704 Acquired: 6/28/2016 15:10:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.30584	.00022	.07806	.04631	-.00007	86.838	.00042
Stddev	.00185	.00268	.00345	.00265	.00063	.00003	.629	.00015
%RSD	374.03	.87790	1532.5	3.3999	1.3692	39.237	.72380	35.608
#1	.00256	.30452	-.00375	.07670	.04704	-.00006	87.235	.00033
#2	-.00102	.30893	.00199	.08111	.04591	-.00004	86.113	.00033
#3	-.00005	.30407	.00243	.07636	.04597	-.00010	87.164	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00311	.00019	.19183	1.3796	.02014	16.870	.00347
Stddev	.00041	.00038	.00119	.02141	.0940	.00375	.172	.00343
%RSD	112.87	12.382	625.05	11.160	6.8113	18.636	1.0218	99.013
#1	.00069	.00287	-.00117	.18943	1.4866	.02403	16.673	.00364
#2	.00049	.00289	.00103	.17172	1.3417	.01985	16.946	.00681
#3	-.00010	.00355	.00071	.21434	1.3105	.01654	16.992	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	124.13	.00130	.01394	-.00088	.00294	-.00088	8.2953
Stddev	.00049	.75	.00059	.00298	.00182	.00383	.00750	.1384
%RSD	85.759	.60252	45.422	21.349	207.01	130.44	850.09	1.6682
#1	.00111	124.41	.00134	.01734	-.00106	.00099	-.00390	8.4027
#2	.00013	123.28	.00069	.01271	-.00260	.00735	.00766	8.3442
#3	.00050	124.70	.00187	.01178	.00102	.00047	-.00640	8.1392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123704 Acquired: 6/28/2016 15:10:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.35168	-.01564	-.00152	.00864	.00392	.00056
Stddev	.00088	.00194	.00581	.00323	.00030	.00024	.00024
%RSD	61.207	.55033	37.169	212.41	3.4817	6.0324	43.195
#1	.00222	.35267	-.01694	-.00180	.00893	.00407	.00065
#2	.00162	.34945	-.00929	.00184	.00864	.00404	.00075
#3	.00048	.35293	-.02070	-.00461	.00833	.00365	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8830.3	52874.	2585.9
Stddev	30.5	305.	19.1
%RSD	.34580	.57739	.73803
#1	8801.9	53154.	2563.9
#2	8862.6	52918.	2596.7
#3	8826.4	52548.	2597.1

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 15:14:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42851	10.904	.43202	.53365	1.0713	.05416	10.632	.05436
Stddev	.00833	.207	.00698	.01060	.0092	.00113	.051	.00087
%RSD	1.9443	1.8987	1.6150	1.9855	.86162	2.0806	.48126	1.5946
#1	.43201	10.956	.42597	.53474	1.0624	.05432	10.627	.05433
#2	.43451	11.081	.43965	.54367	1.0708	.05520	10.583	.05525
#3	.41900	10.676	.43045	.52256	1.0808	.05296	10.685	.05351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21691	.54305	.54534	4.2422	53.589	1.0743	10.753	.53540
Stddev	.00265	.01079	.00663	.0250	.605	.0074	.243	.00955
%RSD	1.2229	1.9867	1.2161	.58983	1.1288	.68793	2.2611	1.7829
#1	.21785	.54548	.54617	4.2292	53.055	1.0693	10.485	.52508
#2	.21896	.55241	.55152	4.2264	53.466	1.0707	10.814	.54392
#3	.21391	.53125	.53833	4.2711	54.246	1.0827	10.959	.53721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0888	53.402	.54101	10.808	.54113	1.2945	.42478	5.4312
Stddev	.0125	.411	.00747	.101	.00400	.0128	.00597	.0423
%RSD	1.1472	.76993	1.3802	.93509	.73884	.98633	1.4059	.77953
#1	1.0938	53.143	.54400	10.826	.54038	1.2910	.42653	5.4334
#2	1.0980	53.187	.54652	10.899	.54546	1.3087	.42968	5.4724
#3	1.0746	53.876	.53251	10.699	.53757	1.2839	.41813	5.3878
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 15:14:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0880**	**1.0698**	**1.0587**	**.53918**	**1.0803**	**1.0912**	**1.0905**
Stddev	.0165	.0081	.0156	.00244	.0234	.0149	.0071
%RSD	1.5142	.75461	1.4705	.45291	2.1646	1.3620	.64790
#1	1.0951	1.0636	1.0407	.54192	1.0838	1.0967	1.0880
#2	1.0997	1.0668	1.0667	.53723	1.1018	1.1025	1.0984
#3	1.0692	1.0789	1.0686	.53839	1.0554	1.0744	1.0849
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8324.0**	**49682.**	**2402.2**
Stddev	17.8	544.	12.3
%RSD	.21421	1.0943	.51191
#1	8331.2	49629.	2414.5
#2	8303.7	49167.	2402.2
#3	8337.1	50251.	2389.9

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 15:17:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.02128**	**-.00359**	**.00020**	**.00645**	**.00016**	**.03104**	**-.00001**
Stddev	.00368	.00954	.00134	.00133	.00115	.00007	.03317	.00021
%RSD	2417.2	44.820	37.242	679.78	17.837	43.650	106.87	1643.1
#1	.00382	.03228	-.00217	-.00019	.00525	.00009	.04970	-.00011
#2	-.00083	.01540	-.00483	.00168	.00754	.00023	-.00726	.00022
#3	-.00345	.01615	-.00378	-.00090	.00658	.00016	.05067	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00009**	**.00060**	**-.00539**	**.06178**	**.00365**	**.11492**	**-.00042**
Stddev	.00027	.00249	.00114	.03062	.06298	.00114	.06730	.00281
%RSD	19519.	2863.7	188.91	568.14	101.95	31.357	58.557	670.16
#1	-.00023	-.00274	.00064	-.03327	.02851	.00462	.17314	-.00124
#2	-.00006	.00029	.00173	-.01028	.13442	.00395	.13040	-.00273
#3	.00029	.00220	-.00056	.02738	.02240	.00239	.04124	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.01334**	**-.00085**	**.00345**	**-.00265**	**-.00015**	**-.00929**	**.01410**
Stddev	.00037	.04028	.00161	.01368	.00462	.00549	.00635	.00099
%RSD	1184.4	301.84	190.56	396.12	174.30	3544.8	68.343	7.0250
#1	-.00012	-.03144	-.00246	-.00423	-.00155	.00467	-.00204	.01504
#2	.00038	.02488	.00077	.01925	.00132	.00100	-.01384	.01419
#3	-.00035	.04660	-.00085	-.00466	-.00772	-.00613	-.01201	.01306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 15:17:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00052	-.00203	-.00342	.00076	-.00006	-.00039
Stddev	.00127	.00033	.00700	.00165	.00110	.00011	.00067
%RSD	172.70	63.242	344.78	48.219	143.65	179.28	173.07
#1	.00181	.00076	.00234	-.00524	.00041	-.00010	.00036
#2	.00105	.00064	.00167	-.00201	.00199	.00006	-.00094
#3	-.00066	.00015	-.01010	-.00302	-.00011	-.00014	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8189.4	49088.	2337.5
Stddev	22.9	596.	43.0
%RSD	.28011	1.2145	1.8391
#1	8163.8	49132.	2317.2
#2	8196.5	48471.	2308.4
#3	8208.0	49661.	2386.9

Approved: June 29, 2016

Sample Name: L1606123705 Acquired: 6/28/2016 15:21:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00108	.04623	.00085	.21038	.07029	.00001	79.469	.00017
Stddev	.00222	.00535	.00227	.00117	.00065	.00009	.518	.00002
%RSD	204.79	11.577	266.22	.55809	.91995	677.50	.65241	13.277
#1	-.00065	.04058	.00026	.21146	.07103	.00002	80.066	.00020
#2	.00089	.05122	-.00106	.20913	.06992	.00010	79.135	.00015
#3	-.00348	.04691	.00336	.21054	.06991	-.00008	79.206	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.00131	.00140	.02187	.23359	.01641	19.643	.17357
Stddev	.00058	.00117	.00106	.01644	.12348	.00424	.180	.00442
%RSD	62.558	89.144	75.582	75.195	52.861	25.842	.91849	2.5439
#1	.00116	.00119	.00047	.03944	.34002	.01444	19.847	.17668
#2	.00027	.00021	.00119	.01931	.26254	.02128	19.578	.16852
#3	.00135	.00254	.00256	.00685	.09821	.01352	19.504	.17552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00508	130.27	.00168	.03531	-.00111	.00448	.00147	6.5007
Stddev	.00041	.61	.00031	.00544	.00373	.00088	.00174	.0441
%RSD	8.1653	.46503	18.265	15.412	336.79	19.641	118.95	.67865
#1	.00460	130.96	.00141	.03231	-.00538	.00518	.00241	6.5208
#2	.00530	130.06	.00163	.04159	.00057	.00349	.00254	6.5312
#3	.00533	129.80	.00202	.03203	.00149	.00478	-.00055	6.4501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123705 Acquired: 6/28/2016 15:21:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.29132**	**-.00812**	**-.00078**	**.00450**	**.01669**	**.00021**
Stddev	.00083	.00110	.00185	.00384	.00049	.00043	.00026
%RSD	188.82	.37699	22.765	492.55	10.842	2.5630	124.73
#1	-.00001	.29259	-.00799	-.00430	.00476	.01696	.00036
#2	-.00139	.29065	-.00634	.00332	.00394	.01692	-.00009
#3	.00009	.29073	-.01003	-.00136	.00481	.01620	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8582.9**	**51393.**	**2509.2**
Stddev	5.4	178.	27.4
%RSD	.06333	.34690	1.0927
#1	8588.2	51452.	2477.8
#2	8577.3	51534.	2521.9
#3	8583.3	51192.	2528.0

Approved: June 29, 2016

Sample Name: L1606123706 Acquired: 6/28/2016 15:25:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.05590	-.00086	.15524	.06415	.00015	38.707	.00004
Stddev	.00068	.00750	.00333	.00467	.00118	.00008	.048	.00037
%RSD	120.74	13.417	386.55	3.0061	1.8367	51.500	.12271	1019.0
#1	.00007	.06166	.00220	.16020	.06535	.00010	38.737	-.00020
#2	-.00048	.05862	-.00037	.15094	.06300	.00024	38.653	-.00015
#3	-.00127	.04742	-.00441	.15457	.06411	.00011	38.732	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00124	.00088	.04193	.59026	.01156	14.181	.00907
Stddev	.00030	.00041	.00134	.00712	.11627	.00296	.079	.00052
%RSD	1211.0	33.302	152.35	16.990	19.697	25.640	.55724	5.7259
#1	-.00010	.00169	.00098	.03411	.69162	.00926	14.090	.00959
#2	.00031	.00116	-.00051	.04804	.46334	.01050	14.233	.00905
#3	-.00028	.00087	.00216	.04365	.61583	.01490	14.220	.00856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01006	117.62	.00066	.02208	-.00217	.00519	-.00038	5.6043
Stddev	.00042	.67	.00047	.00386	.00193	.00564	.00551	.1074
%RSD	4.2259	.57374	71.751	17.493	88.780	108.55	1433.6	1.9158
#1	.01015	118.19	.00038	.02111	-.00386	-.00129	.00182	5.6411
#2	.01043	116.87	.00039	.02633	-.00257	.00795	-.00666	5.6884
#3	.00959	117.78	.00120	.01879	-.00007	.00892	.00368	5.4833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123706 Acquired: 6/28/2016 15:25:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.22497**	**-.00316**	**-.00133**	**.00900**	**.00431**	**-.00007**
Stddev	.00019	.00151	.00967	.00273	.00049	.00016	.00052
%RSD	80.655	.67150	306.39	204.69	5.4393	3.8183	767.12
#1	-.00029	.22594	-.01079	-.00244	.00856	.00434	.00052
#2	-.00002	.22323	.00772	.00177	.00890	.00446	-.00046
#3	-.00038	.22574	-.00641	-.00334	.00952	.00413	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8541.3**	**51659.**	**2526.2**
Stddev	32.8	370.	23.2
%RSD	.38388	.71629	.91927
#1	8579.1	51926.	2501.9
#2	8523.7	51815.	2548.1
#3	8521.0	51237.	2528.6

Approved: June 29, 2016

Sample Name: L1606123801 Acquired: 6/28/2016 15:29:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.02841	.00066	.32177	.09038	.00009	100.82	.00016
Stddev	.00404	.00560	.00333	.00725	.00172	.00003	.53	.00014
%RSD	31331.	19.726	502.38	2.2540	1.9010	27.369	.52928	84.386
#1	.00443	.03482	.00403	.31699	.08868	.00012	100.36	.00001
#2	-.00348	.02597	.00059	.33011	.09211	.00007	101.41	.00028
#3	-.00099	.02444	-.00263	.31820	.09034	.00009	100.71	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00165	-.00011	.04282	.34758	.02236	50.725	.10043
Stddev	.00006	.00110	.00050	.02588	.08170	.00650	.406	.00197
%RSD	8.7231	66.713	438.66	60.445	23.504	29.071	.80019	1.9636
#1	.00069	.00189	-.00059	.04711	.25812	.02918	50.261	.10255
#2	.00060	.00261	-.00015	.01506	.41822	.02165	51.011	.09864
#3	.00070	.00045	.00040	.06629	.36641	.01624	50.904	.10012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	135.14	-.00138	.02281	.00531	.00297	-.00440	7.8806
Stddev	.00015	.52	.00074	.00601	.00255	.00266	.00697	.1292
%RSD	39.646	.38483	53.444	26.359	47.957	89.611	158.44	1.6396
#1	.00055	134.83	-.00221	.02166	.00433	.00262	-.00926	7.9875
#2	.00030	135.74	-.00109	.01746	.00340	.00579	-.00753	7.9174
#3	.00028	134.84	-.00083	.02932	.00820	.00050	.00359	7.7370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123801 Acquired: 6/28/2016 15:29:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.69804	-.01792	-.00350	.00631	.00306	-.00006
Stddev	.00089	.00322	.00937	.00240	.00064	.00010	.00062
%RSD	534.48	.46184	52.294	68.655	10.123	3.4173	981.45
#1	.00078	.69567	-.02467	-.00611	.00575	.00313	.00007
#2	-.00029	.70171	-.00722	-.00301	.00700	.00294	.00048
#3	-.00098	.69675	-.02186	-.00138	.00616	.00311	-.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8519.0	50868.	2492.0
Stddev	24.4	171.	15.6
%RSD	.28672	.33552	.62561
#1	8492.6	50879.	2508.7
#2	8523.7	50692.	2489.6
#3	8540.8	51032.	2477.8

Approved: June 29, 2016

Sample Name: L1606123802 Acquired: 6/28/2016 15:33:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.10980	.00392	.94724	.02557	.00003	77.218
Stddev	.00183	.00971	.00125	.00776	.00106	.00007	.742
%RSD	329.00	8.8394	31.885	.81970	4.1264	245.57	.96108
#1	-.00056	.11256	.00341	.95373	.02525	.00004	76.910
#2	.00128	.11783	.00534	.94934	.02472	.00009	76.680
#3	-.00238	.09902	.00300	.93864	.02675	-.00005	78.065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00030	.00389	-.00035	.22634	2.6762	.04857
Stddev	.00016	.00014	.00093	.00186	.01305	.0714	.00761
%RSD	84.843	47.925	23.820	529.18	5.7658	2.6678	15.667
#1	.00027	.00025	.00485	-.00233	.22844	2.6021	.05624
#2	.00000	.00019	.00379	-.00009	.23821	2.6819	.04845
#3	.00030	.00046	.00301	.00137	.21237	2.7445	.04102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	46.632	.00252	.01010	F 345.47	-.00062	.00983	-.00176
Stddev	.509	.00191	.00020	2.85	.00048	.00266	.00080
%RSD	1.0915	75.779	1.9903	.82504	77.205	27.047	45.354
#1	46.118	.00384	.01033	344.78	-.00007	.00722	-.00125
#2	46.641	.00339	.00999	343.03	-.00083	.00973	-.00135
#3	47.136	.00033	.00998	348.60	-.00097	.01254	-.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606123802 Acquired: 6/28/2016 15:33:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00328**	**.00554**	**6.7719**	**-.00021**	**1.5406**	**-.01434**	**-.00073**
Stddev	.00167	.00590	.0156	.00147	.0167	.00367	.00386
%RSD	50.891	106.49	.22993	707.84	1.0842	25.593	526.75
#1	.00142	-.00114	6.7795	.00002	1.5371	-.01055	-.00140
#2	.00377	.01005	6.7823	-.00177	1.5260	-.01461	.00342
#3	.00466	.00771	6.7540	.00113	1.5588	-.01787	-.00422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01112**	**.00460**	**.00044**
Stddev	.00050	.00012	.00055
%RSD	4.4846	2.6197	123.27
#1	.01110	.00466	.00008
#2	.01163	.00446	.00107
#3	.01063	.00468	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8395.4**	**49805.**	**2522.8**
Stddev	34.6	239.	37.5
%RSD	.41206	.48030	1.4877
#1	8419.9	49616.	2519.8
#2	8410.5	49725.	2561.7
#3	8355.9	50074.	2486.8

Approved: June 29, 2016

Sample Name: L1606123801PS Acquired: 6/28/2016 15:37:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574350-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20566	5.2613	.20977	1.3242	.59672	.02593	94.859	.02633
Stddev	.00128	.0235	.00601	.0130	.00240	.00012	.490	.00065
%RSD	.62377	.44726	2.8645	.98473	.40146	.45189	.51690	2.4555
#1	.20632	5.2753	.21194	1.3337	.59396	.02581	94.339	.02662
#2	.20419	5.2745	.21440	1.3296	.59799	.02605	94.923	.02678
#3	.20649	5.2342	.20298	1.3094	.59822	.02592	95.313	.02559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10300	.26033	.25484	2.0703	26.313	.53993	50.042	.34483
Stddev	.00282	.00213	.00508	.0309	.165	.00242	.323	.00158
%RSD	2.7370	.81790	1.9951	1.4940	.62590	.44906	.64515	.45837
#1	.10411	.26128	.25729	2.0499	26.123	.54130	49.789	.34643
#2	.10509	.26182	.25823	2.0552	26.411	.54136	49.932	.34327
#3	.09979	.25789	.24899	2.1059	26.406	.53713	50.406	.34477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53067	146.32	.25190	5.2586	.25990	.62316	.19247	9.5907
Stddev	.01382	.46	.00596	.1176	.00198	.01383	.00658	.1798
%RSD	2.6034	.31765	2.3647	2.2364	.76171	2.2199	3.4177	1.8743
#1	.53819	146.01	.25439	5.3290	.26193	.63457	.18659	9.6888
#2	.53909	146.08	.25620	5.3239	.25979	.62714	.19124	9.7000
#3	.51472	146.85	.24510	5.1228	.25797	.60777	.19957	9.3832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123801PS Acquired: 6/28/2016 15:37:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574350-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52525	1.1214	.49433	.25598	.53086	.51942	.00057
Stddev	.01294	.0042	.01033	.00462	.00191	.01218	.00063
%RSD	2.4638	.36967	2.0899	1.8038	.35889	2.3458	110.78
#1	.53113	1.1189	.48240	.25460	.53295	.52541	.00036
#2	.53421	1.1192	.49999	.26112	.53042	.52746	.00007
#3	.51041	1.1262	.50059	.25220	.52921	.50540	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8305.6	49994.	2441.9
Stddev	60.9	85.	13.6
%RSD	.73304	.17028	.55805
#1	8315.5	49940.	2454.5
#2	8240.4	49950.	2443.9
#3	8360.9	50092.	2427.4

Approved: June 29, 2016

Sample Name: L1606123801SDL Acquired: 6/28/2016 15:40:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574350-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.02473**	**-.00212**	**.07147**	**.02347**	**.00005**	**20.928**
Stddev	.00109	.00054	.00149	.00334	.00066	.00008	.186
%RSD	959.81	2.1896	70.454	4.6683	2.8226	151.78	.88836
#1	-.00121	.02419	-.00043	.06839	.02351	.00006	20.873
#2	.00098	.02528	-.00266	.07501	.02410	-.00003	20.775
#3	-.00011	.02472	-.00327	.07101	.02278	.00013	21.135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00020**	**.00129**	**-.00091**	F **-.02170**	**.07079**	**.00330**
Stddev	.00020	.00019	.00149	.00070	.02117	.10620	.00513
%RSD	152.92	96.557	115.37	76.358	97.585	150.02	155.31
#1	.00028	.00042	-.00040	-.00157	-.03475	.08932	-.00056
#2	-.00010	.00010	.00240	-.00018	-.03307	.16651	.00912
#3	.00022	.00008	.00187	-.00098	.00273	-.04346	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.841**	**.01654**	**-.00003**	**27.860**	**.00069**	**.00399**	**-.00141**
Stddev	.023	.00153	.00042	.220	.00116	.00351	.00048
%RSD	.21249	9.2697	1543.8	.79051	169.21	87.841	33.856
#1	10.864	.01533	-.00031	27.785	-.00065	.00007	-.00151
#2	10.840	.01604	-.00023	27.686	.00126	.00682	-.00183
#3	10.818	.01827	.00046	28.107	.00145	.00508	-.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606123801SDL Acquired: 6/28/2016 15:40:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574350-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00343**	**-.00608**	**1.6380**	**-.00029**	**.14366**	**-.00165**	**-.00327**
Stddev	.00269	.01052	.1152	.00086	.00186	.00409	.00319
%RSD	78.400	173.02	7.0326	294.81	1.2945	248.67	97.486
#1	.00612	-.01199	1.7682	-.00089	.14229	.00192	-.00269
#2	.00074	.00606	1.5494	.00069	.14292	-.00612	-.00041
#3	.00343	-.01230	1.5964	-.00067	.14578	-.00074	-.00670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00179**	**.00210**	**-.00083**
Stddev	.00019	.00035	.00068
%RSD	10.525	16.568	81.540
#1	.00157	.00187	-.00059
#2	.00190	.00193	-.00160
#3	.00189	.00250	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8980.6**	**51089.**	**2404.2**
Stddev	513.4	106.	3.2
%RSD	5.7168	.20814	.13357
#1	8390.5	50977.	2401.4
#2	9324.8	51188.	2403.4
#3	9226.6	51103.	2407.7

Approved: June 29, 2016

Sample Name: L1606123801SDL Acquired: 6/28/2016 15:44:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574350-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.00544	-.00466	.01306	.00527	.00004	3.9791	-.00005
Stddev	.00192	.00294	.00175	.00317	.00104	.00003	.0275	.00007
%RSD	192.17	54.006	37.652	24.284	19.652	67.711	.69174	155.22
#1	.00265	.00880	-.00547	.01616	.00425	.00007	3.9526	.00002
#2	.00146	.00337	-.00586	.01321	.00523	.00005	4.0075	-.00005
#3	-.00111	.00414	-.00264	.00982	.00632	.00001	3.9771	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00008	.00135	.00570	-.18715	-.00195	2.1695	.00167
Stddev	.00035	.00105	.00042	.01759	.08574	.00312	.1088	.00211
%RSD	329.62	1341.6	31.025	308.32	45.816	160.03	5.0156	125.86
#1	-.00043	-.00123	.00169	-.01195	-.20685	-.00263	2.0731	-.00042
#2	.00026	.00020	.00088	.02322	-.26133	.00145	2.2875	.00379
#3	-.00015	.00080	.00149	.00585	-.09327	-.00466	2.1479	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	5.4403	-.00105	.00422	.00008	.00091	-.00076	.31889
Stddev	.00014	.0432	.00018	.00137	.00143	.00279	.00380	.00752
%RSD	53.477	.79435	17.170	32.493	1733.1	305.96	502.20	2.3587
#1	-.00039	5.4024	-.00085	.00350	-.00067	.00351	.00289	.31022
#2	-.00012	5.4873	-.00118	.00336	.00173	.00127	-.00470	.32275
#3	-.00026	5.4311	-.00114	.00580	-.00081	-.00204	-.00046	.32370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123801SDL Acquired: 6/28/2016 15:44:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574350-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.02709**	**-.00343**	**.00004**	**-.00020**	**.00057**	**-.00020**
Stddev	.00007	.00027	.00150	.00159	.00059	.00007	.00002
%RSD	30.681	.98959	43.744	4248.5	287.84	11.467	11.328
#1	-.00016	.02726	-.00241	.00171	.00045	.00064	-.00022
#2	-.00025	.02722	-.00516	-.00145	-.00070	.00056	-.00019
#3	-.00030	.02678	-.00273	-.00015	-.00037	.00051	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9310.6**	**56752.**	**2686.9**
Stddev	63.1	308.	17.7
%RSD	.67723	.54199	.65719
#1	9346.3	56469.	2690.1
#2	9347.7	57079.	2667.9
#3	9237.8	56710.	2702.7

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 15:48:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37803**	**9.4509**	**.37927**	**.47338**	**.93970**	**.04711**	**9.3479**	**.04781**
Stddev	.00060	.0265	.00353	.00198	.00337	.00046	.0483	.00035
%RSD	.15821	.28063	.93117	.41832	.35812	.97758	.51686	.74077
#1	.37812	9.4602	.37661	.47340	.93759	.04659	9.2929	.04782
#2	.37857	9.4210	.38328	.47139	.94358	.04729	9.3677	.04744
#3	.37739	9.4716	.37792	.47535	.93794	.04746	9.3833	.04815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19084**	**.47601**	**.47860**	**3.7082**	**47.404**	**.94988**	**9.4725**	**.46603**
Stddev	.00018	.00437	.00180	.0182	.243	.00785	.0656	.00569
%RSD	.09392	.91738	.37524	.49034	.51322	.82606	.69243	1.2217
#1	.19064	.47138	.47677	3.7162	47.463	.95871	9.4046	.45960
#2	.19097	.47661	.48036	3.6874	47.613	.94719	9.5356	.47043
#3	.19092	.48005	.47868	3.7211	47.137	.94372	9.4773	.46806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95641**	**46.996**	**.47435**	**9.5039**	**.47492**	**1.1385**	**.37881**	**4.7730**
Stddev	.00103	.185	.00298	.0141	.00194	.0048	.00807	.0182
%RSD	.10794	.39464	.62734	.14807	.40903	.42443	2.1306	.38085
#1	.95599	46.794	.47098	9.4895	.47674	1.1343	.37621	4.7554
#2	.95758	47.158	.47546	9.5046	.47515	1.1438	.38785	4.7720
#3	.95565	47.035	.47662	9.5176	.47288	1.1374	.37235	4.7917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 15:48:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95895	.93858	.93355	.47987	.94590	.95388	.94289
Stddev	.00233	.00125	.00061	.00084	.00826	.00045	.00708
%RSD	.24329	.13351	.06579	.17523	.87309	.04728	.75040
#1	.95863	.93915	.93330	.48029	.94284	.95418	.93557
#2	.95678	.93945	.93311	.48041	.93960	.95408	.94341
#3	.96142	.93715	.93425	.47890	.95525	.95336	.94969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9128.8	54572.	2652.9
Stddev	10.8	125.	12.9
%RSD	.11881	.22890	.48483
#1	9120.0	54520.	2667.7
#2	9125.3	54480.	2647.0
#3	9140.9	54714.	2644.1

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 15:52:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.01657	-.00127	.00115	.00250	-.00001	-.01570	-.00008
Stddev	.00036	.00130	.00303	.00289	.00094	.00001	.05663	.00022
%RSD	176.13	7.8679	239.02	251.46	37.681	146.04	360.65	289.87
#1	-.00012	.01564	.00223	.00292	.00336	-.00002	.04213	-.00032
#2	.00015	.01600	-.00298	.00271	.00149	.00001	-.01819	.00011
#3	.00058	.01806	-.00306	-.00219	.00266	-.00002	-.07104	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.00043	-.00012	-.00756	.11853	.00019	.11865	-.00072
Stddev	.00021	.00071	.00013	.01917	.08400	.00373	.04872	.00393
%RSD	170.38	164.98	107.35	253.73	70.863	1929.0	41.059	547.65
#1	-.00008	.00011	-.00028	-.00923	.10917	-.00410	.07959	.00173
#2	.00010	-.00017	-.00004	.01240	.20682	.00202	.10312	-.00525
#3	.00034	-.00124	-.00005	-.02583	.03961	.00266	.17324	.00137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.03861	-.00041	-.00107	-.00082	.00445	-.00040	.00468
Stddev	.00011	.02350	.00123	.00234	.00156	.00285	.00220	.00283
%RSD	12754.	60.879	299.90	219.01	189.95	64.010	547.51	60.452
#1	-.00002	.01230	.00092	.00084	.00098	.00164	-.00293	.00399
#2	-.00009	.04600	-.00152	-.00368	-.00166	.00734	.00063	.00778
#3	.00012	.05752	-.00063	-.00036	-.00178	.00437	.00110	.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 15:52:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00014	-.00244	-.00182	-.00043	-.00006	.00022
Stddev	.00074	.00027	.01113	.00188	.00034	.00016	.00053
%RSD	275.25	191.71	456.10	103.32	79.604	249.56	242.25
#1	.00006	.00024	.00647	-.00399	-.00080	.00004	-.00010
#2	-.00034	.00035	-.01492	-.00065	-.00014	-.00025	.00084
#3	.00109	-.00016	.00112	-.00082	-.00034	.00002	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9233.0	55737.	2640.6
Stddev	13.3	35.	14.4
%RSD	.14406	.06308	.54390
#1	9239.5	55725.	2651.8
#2	9241.9	55777.	2645.7
#3	9217.7	55710.	2624.4

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/28/2016 15:56:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00768	.16617	.00778	.07829	.00901	.00151	.38054	.00078
Stddev	.00059	.00295	.00193	.00097	.00103	.00007	.07318	.00003
%RSD	7.6710	1.7771	24.811	1.2403	11.419	4.7078	19.231	3.8071
#1	.00795	.16515	.00562	.07934	.01014	.00143	.38882	.00081
#2	.00809	.16949	.00841	.07742	.00877	.00153	.30357	.00075
#3	.00701	.16386	.00933	.07809	.00813	.00156	.44923	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00392	.00406	.00277	.07220	.88839	.07750	.42309	.00647
Stddev	.00041	.00101	.00161	.00675	.06165	.00672	.10881	.00245
%RSD	10.423	24.871	58.208	9.3419	6.9397	8.6651	25.717	37.928
#1	.00348	.00448	.00393	.06545	.94580	.07065	.50818	.00416
#2	.00428	.00291	.00346	.07222	.82323	.07776	.30049	.00620
#3	.00399	.00479	.00093	.07894	.89615	.08408	.46061	.00904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00734	.42612	.01516	.74724	.00671	.07731	.01024	.78186
Stddev	.00014	.02288	.00056	.02937	.00279	.00543	.00225	.02095
%RSD	1.9299	5.3700	3.7208	3.9305	41.642	7.0266	22.010	2.6791
#1	.00738	.40444	.01558	.75304	.00961	.07477	.00846	.78889
#2	.00745	.42388	.01452	.77328	.00647	.07361	.00950	.79839
#3	.00718	.45004	.01539	.71540	.00404	.08355	.01278	.75830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/28/2016 15:56:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38759**	**.03962**	**.02473**	**.14477**	**.00726**	**.01644**	**.04043**
Stddev	.01743	.00052	.00802	.00281	.00047	.00057	.00036
%RSD	4.4976	1.3110	32.414	1.9392	6.4568	3.4888	.88409
#1	.39748	.04019	.03053	.14368	.00780	.01686	.04002
#2	.39782	.03951	.02808	.14796	.00696	.01668	.04064
#3	.36746	.03916	.01558	.14267	.00701	.01579	.04063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9278.8**	**55862.**	**2662.5**
Stddev	17.4	75.	12.2
%RSD	.18739	.13429	.45669
#1	9298.8	55917.	2661.6
#2	9268.8	55892.	2650.8
#3	9268.6	55777.	2675.0

Approved: June 29, 2016

Sample Name: PBW E3 Acquired: 6/28/2016 16:00:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**.00550**	**-.00520**	**-.00061**	**.00284**	**-.00002**	**-.01393**	**.00001**
Stddev	.00056	.00246	.00322	.00129	.00065	.00007	.02787	.00025
%RSD	83.137	44.655	61.978	212.48	22.799	453.28	200.02	1981.0
#1	-.00080	.00747	-.00760	.00073	.00209	-.00004	-.03036	.00018
#2	-.00115	.00275	-.00154	-.00183	.00313	.00006	.01824	.00014
#3	-.00006	.00629	-.00646	-.00072	.00328	-.00007	-.02968	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**-.00175**	**-.00007**	**-.01889**	**-.01522**	**.00715**	**.05791**	**-.00024**
Stddev	.00026	.00044	.00113	.02013	.06900	.00186	.02945	.00354
%RSD	1112.4	25.112	1698.9	106.58	453.40	25.993	50.851	1450.7
#1	-.00014	-.00137	.00024	-.02736	-.08990	.00755	.04372	-.00331
#2	-.00020	-.00164	-.00131	-.03340	-.00194	.00878	.09176	.00364
#3	.00027	-.00223	.00088	.00410	.04618	.00513	.03824	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.01548**	**.00101**	**-.00415**	**.00067**	**.00583**	**-.00128**	**.00641**
Stddev	.00066	.03272	.00114	.00104	.00400	.00217	.00175	.00141
%RSD	198.80	211.42	113.35	25.146	598.17	37.322	136.61	22.043
#1	.00000	-.00039	.00079	-.00336	-.00328	.00401	-.00289	.00803
#2	.00109	-.00628	.00224	-.00533	.00056	.00824	-.00152	.00541
#3	-.00010	.05311	-.00001	-.00375	.00473	.00523	.00058	.00580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW E3 Acquired: 6/28/2016 16:00:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00018	.00251	-.00111	-.00059	.00005	-.00000
Stddev	.00088	.00063	.00518	.00198	.00079	.00012	.00017
%RSD	418.04	345.63	206.19	177.70	134.04	250.99	18380.
#1	-.00080	.00059	-.00302	-.00206	-.00103	-.00003	-.00020
#2	.00081	-.00055	.00332	-.00244	-.00106	.00019	.00007
#3	.00062	.00051	.00724	.00116	.00032	-.00002	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9302.4	56171.	2670.9
Stddev	30.2	35.	11.1
%RSD	.32472	.06178	.41452
#1	9337.2	56185.	2670.8
#2	9286.1	56197.	2659.9
#3	9283.7	56132.	2682.0

Approved: June 29, 2016

Sample Name: LCSW E3 Acquired: 6/28/2016 16:03:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19164**	**4.8348**	**.19399**	**.96238**	**.48851**	**.02340**	**4.9583**	**.02409**
Stddev	.00070	.0039	.00200	.00191	.00160	.00019	.0273	.00005
%RSD	.36607	.08097	1.0288	.19845	.32724	.81759	.55135	.21374
#1	.19241	4.8320	.19461	.96035	.48786	.02338	4.9331	.02405
#2	.19147	4.8332	.19175	.96264	.49033	.02360	4.9545	.02415
#3	.19104	4.8393	.19560	.96414	.48733	.02321	4.9874	.02408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09838**	**.24122**	**.24571**	**1.9415**	**24.306**	**.49959**	**5.0727**	**.23822**
Stddev	.00032	.00119	.00094	.0510	.052	.00122	.0794	.00107
%RSD	.32120	.49389	.38434	2.6263	.21259	.24402	1.5660	.44936
#1	.09855	.24092	.24516	1.9035	24.363	.49831	5.0865	.23888
#2	.09857	.24254	.24680	1.9995	24.262	.50073	5.1444	.23698
#3	.09802	.24022	.24517	1.9216	24.293	.49974	4.9873	.23879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49267**	**24.636**	**.24311**	**4.7132**	**.24277**	**.57388**	**.18611**	**2.4298**
Stddev	.00071	.059	.00031	.0018	.00139	.00584	.00559	.0037
%RSD	.14398	.24026	.12844	.03776	.57264	1.0177	3.0019	.15241
#1	.49330	24.611	.24347	4.7116	.24222	.57387	.19001	2.4294
#2	.49280	24.594	.24294	4.7151	.24173	.56804	.18862	2.4264
#3	.49190	24.704	.24293	4.7129	.24435	.57973	.17971	2.4338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW E3 Acquired: 6/28/2016 16:03:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48900**	**.49567**	**.46962**	**.24399**	**.47814**	**.48958**	**.00062**
Stddev	.00125	.00161	.00327	.00133	.00046	.00034	.00090
%RSD	.25648	.32520	.69633	.54666	.09619	.06849	146.54
#1	.49015	.49753	.46715	.24325	.47797	.48939	.00087
#2	.48919	.49488	.46839	.24318	.47866	.48996	-.00039
#3	.48766	.49462	.47333	.24553	.47779	.48937	.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9097.3**	**54813.**	**2632.8**
Stddev	16.7	109.	5.1
%RSD	.18401	.19922	.19486
#1	9101.7	54693.	2627.8
#2	9078.9	54840.	2638.1
#3	9111.5	54906.	2632.5

Approved: June 29, 2016

Sample Name: L1606137801 Acquired: 6/28/2016 16:07:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00133**	**.02995**	**-.00247**	**.00497**	**.00313**	**-.00004**	**.12563**	**.00022**
Stddev	.00136	.01041	.00165	.00241	.00128	.00001	.07525	.00023
%RSD	102.23	34.771	66.713	48.415	40.906	37.046	59.900	104.72
#1	-.00291	.04066	-.00357	.00738	.00449	-.00003	.04003	.00049
#2	-.00050	.01986	-.00058	.00257	.00293	-.00005	.15547	.00013
#3	-.00059	.02933	-.00326	.00495	.00196	-.00004	.18138	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00067**	**.00962**	**.06701**	**.11243**	**.00301**	**.16999**	**-.00022**
Stddev	.00042	.00098	.00044	.01189	.09990	.00323	.01565	.00390
%RSD	524.67	146.04	4.5944	17.737	88.858	107.10	9.2056	1768.4
#1	.00003	-.00046	.00945	.05635	.22726	.00117	.15968	.00351
#2	.00027	.00129	.01011	.06486	.04543	.00674	.18799	.00009
#3	-.00054	.00119	.00928	.07983	.06460	.00113	.16229	-.00427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**.10552**	**.00028**	**.00468**	**.00047**	**.00320**	**-.00427**	**.00402**
Stddev	.00036	.03871	.00041	.00975	.00165	.00377	.00708	.00338
%RSD	82.113	36.686	145.32	208.23	350.78	117.78	165.76	84.059
#1	.00083	.13385	.00075	-.00374	.00130	-.00089	-.01229	.00792
#2	.00032	.12132	-.00004	.01536	-.00143	.00652	-.00163	.00220
#3	.00015	.06141	.00014	.00242	.00155	.00397	.00111	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606137801 Acquired: 6/28/2016 16:07:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00119	.00220	-.00184	.00011	.00305	-.00009
Stddev	.00064	.00024	.00451	.00322	.00006	.00008	.00007
%RSD	1633.7	19.830	204.62	175.10	57.970	2.4756	76.127
#1	.00052	.00132	-.00187	-.00536	.00004	.00303	-.00003
#2	-.00069	.00133	.00704	-.00111	.00016	.00314	-.00016
#3	.00028	.00092	.00144	.00096	.00014	.00299	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9255.0	55896.	2662.5
Stddev	31.8	116.	12.9
%RSD	.34321	.20711	.48455
#1	9275.2	55940.	2674.4
#2	9271.5	55764.	2648.8
#3	9218.4	55982.	2664.3

Approved: June 29, 2016

Sample Name: L1606137802 Acquired: 6/28/2016 16:11:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.24127	-.00216	.00978	.00727	-.00000	.91725	.00010
Stddev	.00151	.00761	.00236	.00115	.00053	.00003	.01367	.00033
%RSD	154.09	3.1538	109.31	11.785	7.2310	5360.9	1.4902	319.09
#1	.00169	.23297	.00049	.01008	.00771	.00001	.91395	.00028
#2	-.00075	.24791	-.00403	.00851	.00741	.00002	.93226	.00031
#3	.00200	.24294	-.00293	.01075	.00669	-.00003	.90553	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00034	.02208	.19804	.10104	.00364	.28039	.00749
Stddev	.00057	.00062	.00090	.05727	.01689	.00502	.07826	.00133
%RSD	613.93	179.99	4.0773	28.920	16.719	137.96	27.912	17.702
#1	.00065	.00032	.02216	.21210	.11978	.00411	.20842	.00717
#2	.00012	-.00091	.02294	.13505	.09634	.00840	.36371	.00635
#3	-.00049	-.00043	.02114	.24698	.08699	-.00160	.26905	.00895
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.36176	.00023	.01940	.00079	.00029	-.00783	.41959
Stddev	.00014	.03222	.00168	.00181	.00348	.00484	.00345	.01536
%RSD	353.07	8.9077	738.46	9.3468	437.79	1683.6	44.023	3.6610
#1	.00018	.39404	.00214	.02073	.00068	.00448	-.00387	.42485
#2	.00004	.32959	-.00043	.02013	.00433	-.00501	-.00950	.43163
#3	-.00010	.36167	-.00103	.01733	-.00263	.00139	-.01012	.40229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606137802 Acquired: 6/28/2016 16:11:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.00639	.00238	-.00432	.00102	.00723	.00044
Stddev	.00074	.00025	.00737	.00078	.00072	.00034	.00043
%RSD	114.39	3.9538	310.16	18.130	70.551	4.6981	98.173
#1	.00125	.00616	.01079	-.00520	.00020	.00754	.00086
#2	-.00017	.00666	-.00073	-.00370	.00152	.00727	-.00001
#3	.00085	.00634	-.00293	-.00405	.00134	.00686	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9157.6	55840.	2649.1
Stddev	8.8	126.	16.6
%RSD	.09618	.22561	.62530
#1	9166.4	55974.	2664.8
#2	9157.6	55724.	2631.8
#3	9148.8	55822.	2650.6

Approved: June 29, 2016

Sample Name: L1606137803 Acquired: 6/28/2016 16:15:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00123	.03613	-.00107	.00717	.00261	.00001	.20229	.00004
Stddev	.00057	.00887	.00175	.00045	.00128	.00005	.03288	.00045
%RSD	46.612	24.549	164.26	6.2941	49.199	461.39	16.255	1093.4
#1	-.00154	.02644	-.00104	.00692	.00113	.00007	.18429	-.00031
#2	-.00158	.04384	.00067	.00689	.00338	-.00002	.24024	.00054
#3	-.00057	.03813	-.00284	.00769	.00331	-.00002	.18234	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.00125	.02974	.02446	.22250	.00496	.03287	.00243
Stddev	.00024	.00034	.00035	.03617	.07798	.00081	.11336	.00308
%RSD	66.571	27.354	1.1617	147.86	35.048	16.433	344.85	126.87
#1	.00058	-.00164	.02957	-.01471	.31086	.00411	.05459	.00539
#2	.00010	-.00107	.03014	.05658	.19336	.00574	.13379	-.00077
#3	.00041	-.00102	.02952	.03151	.16329	.00502	-.08977	.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.32876	.00072	.01481	.00334	.00498	-.00272	.03276
Stddev	.00069	.00872	.00029	.00640	.00320	.00234	.00271	.00135
%RSD	2428.7	2.6516	40.869	43.182	95.766	46.923	99.661	4.1065
#1	.00029	.31874	.00103	.00985	.00172	.00230	-.00358	.03164
#2	.00054	.33460	.00067	.02203	.00702	.00601	.00032	.03238
#3	-.00075	.33295	.00045	.01256	.00127	.00662	-.00489	.03425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606137803 Acquired: 6/28/2016 16:15:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00147	.00034	-.00167	-.00043	.00872	-.00013
Stddev	.00054	.00056	.00466	.00220	.00123	.00025	.00095
%RSD	56.877	37.984	1386.8	131.84	288.10	2.8588	736.06
#1	.00095	.00178	-.00140	-.00136	.00013	.00853	.00094
#2	.00041	.00083	.00561	.00036	-.00184	.00862	-.00047
#3	.00148	.00180	-.00321	-.00401	.00043	.00900	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9279.4	55188.	2617.5
Stddev	5.8	62.	13.4
%RSD	.06281	.11260	.51339
#1	9277.1	55217.	2631.1
#2	9286.0	55116.	2617.1
#3	9275.0	55230.	2604.2

Approved: June 29, 2016

Sample Name: L1606137804 Acquired: 6/28/2016 16:19:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.00583	-.00362	.00297	.00220	-.00003	.01525	.00015
Stddev	.00186	.01048	.00045	.00162	.00081	.00003	.03382	.00030
%RSD	567.99	179.69	12.428	54.580	36.950	109.52	221.79	195.99
#1	.00129	.00783	-.00389	.00475	.00158	-.00003	-.00321	.00012
#2	-.00236	.01516	-.00310	.00260	.00191	-.00005	.05427	-.00013
#3	.00008	-.00550	-.00387	.00157	.00312	.00001	-.00532	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00006	.00038	-.00080	.11004	.00434	.10714	-.00234
Stddev	.00015	.00068	.00115	.02641	.13143	.00212	.11999	.00115
%RSD	120.12	1104.2	304.96	3316.9	119.44	48.731	111.99	49.262
#1	.00030	.00084	.00160	.00792	.21872	.00201	.24567	-.00135
#2	.00003	-.00025	.00020	-.03047	.14744	.00615	.03567	-.00360
#3	.00004	-.00041	-.00068	.02016	-.03603	.00487	.04008	-.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.07562	.00088	-.00216	-.00036	.00498	.00348	-.02142
Stddev	.00039	.01403	.00154	.00376	.00510	.00407	.00646	.00069
%RSD	153.47	18.559	175.49	173.82	1407.8	81.770	185.82	3.2242
#1	-.00003	.08160	.00250	.00183	-.00607	.00888	.00840	-.02216
#2	-.00003	.05959	-.00057	-.00267	.00126	.00532	.00587	-.02080
#3	-.00070	.08568	.00071	-.00565	.00373	.00075	-.00384	-.02131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606137804 Acquired: 6/28/2016 16:19:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00029	.00515	-.00424	-.00024	.00234	.00012
Stddev	.00145	.00038	.00994	.00233	.00166	.00018	.00028
%RSD	2444.3	128.27	193.09	54.933	684.71	7.6940	243.78
#1	.00093	.00057	.01372	-.00155	.00160	.00213	.00004
#2	.00087	.00045	-.00575	-.00568	-.00070	.00247	-.00012
#3	-.00162	-.00014	.00748	-.00547	-.00163	.00241	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9250.6	56270.	2671.7
Stddev	7.7	175.	15.8
%RSD	.08274	.31170	.59260
#1	9250.0	56071.	2667.9
#2	9258.6	56337.	2658.1
#3	9243.3	56403.	2689.1

Approved: June 29, 2016

Sample Name: L1606138001 Acquired: 6/28/2016 16:23:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	18.881	.01121	.04582	.29039	.00157	84.977	.00008
Stddev	.00214	.028	.00257	.00283	.00147	.00003	.069	.00009
%RSD	760.43	.15027	22.957	6.1732	.50732	2.0312	.08124	101.89
#1	.00044	18.907	.01411	.04268	.28883	.00155	84.906	.00014
#2	-.00194	18.851	.00920	.04662	.29058	.00155	85.044	.00013
#3	.00234	18.884	.01031	.04817	.29175	.00161	84.981	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01286	.02713	.02544	25.071	4.7884	.04041	29.287	1.3847
Stddev	.00023	.00057	.00272	.102	.0770	.00278	.109	.0090
%RSD	1.7707	2.0963	10.709	.40653	1.6080	6.8777	.37299	.64781
#1	.01290	.02753	.02636	25.088	4.8757	.03765	29.161	1.3860
#2	.01306	.02648	.02759	24.961	4.7300	.04036	29.341	1.3751
#3	.01261	.02739	.02238	25.163	4.7596	.04321	29.358	1.3929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00487	6.5012	.02834	.77361	.03577	-.00040	-.00445	24.324
Stddev	.00048	.0395	.00143	.01408	.00193	.00077	.00299	.309
%RSD	9.7902	.60716	5.0582	1.8200	5.4033	194.49	67.253	1.2710
#1	.00474	6.4671	.02787	.77271	.03771	.00030	-.00208	24.356
#2	.00448	6.4920	.02995	.78811	.03385	-.00122	-.00346	24.616
#3	.00540	6.5445	.02721	.76000	.03574	-.00026	-.00782	24.000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138001 Acquired: 6/28/2016 16:23:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	.32243	.11171	-.00130	.03430	.48738	.00279
Stddev	.00095	.00109	.00577	.00271	.00009	.01023	.00049
%RSD	69.999	.33711	5.1618	208.64	.26249	2.0990	17.473
#1	.00224	.32130	.11837	-.00291	.03420	.49075	.00224
#2	.00148	.32253	.10821	.00183	.03437	.49550	.00298
#3	.00035	.32346	.10856	-.00282	.03432	.47589	.00316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9127.1	55258.	2659.8
Stddev	31.6	168.	9.9
%RSD	.34567	.30373	.37056
#1	9162.7	55122.	2666.0
#2	9102.6	55206.	2665.1
#3	9116.0	55446.	2648.5

Approved: June 29, 2016

Sample Name: L1606138002 Acquired: 6/28/2016 16:27:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	23.052	.01041	.04995	.27455	.00176	89.804	.00018
Stddev	.00155	.082	.00437	.00204	.00194	.00013	.487	.00012
%RSD	125.65	.35572	42.002	4.0787	.70771	7.3034	.54236	68.679
#1	.00299	23.127	.01537	.05225	.27502	.00178	89.890	.00009
#2	.00062	22.965	.00710	.04925	.27241	.00188	89.280	.00012
#3	.00009	23.063	.00876	.04836	.27621	.00162	90.243	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01514	.03329	.04031	30.770	5.4790	.04939	32.771	1.4662
Stddev	.00034	.00089	.00429	.139	.0866	.00299	.215	.0056
%RSD	2.2702	2.6859	10.637	.45045	1.5804	6.0611	.65743	.38355
#1	.01483	.03431	.04248	30.753	5.5759	.05008	32.805	1.4652
#2	.01507	.03264	.04307	30.640	5.4517	.05198	32.541	1.4611
#3	.01551	.03294	.03537	30.916	5.4093	.04611	32.968	1.4722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00568	6.9225	.04829	.81670	.03824	.00474	-.00326	28.829
Stddev	.00022	.0247	.00159	.00954	.00261	.00036	.00176	.340
%RSD	3.8794	.35719	3.2983	1.1676	6.8251	7.6137	53.869	1.1781
#1	.00542	6.9011	.04906	.82661	.03980	.00485	-.00372	29.055
#2	.00582	6.9168	.04936	.81588	.03970	.00503	-.00474	28.994
#3	.00579	6.9496	.04646	.80759	.03523	.00433	-.00132	28.438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138002 Acquired: 6/28/2016 16:27:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.34526	.13497	-.00119	.04001	.16840	.00274
Stddev	.00067	.00143	.00550	.00167	.00032	.00291	.00035
%RSD	41.910	.41554	4.0771	139.98	.79480	1.7261	12.734
#1	.00103	.34567	.14130	-.00077	.04036	.16974	.00234
#2	.00142	.34366	.13131	-.00303	.03974	.17040	.00288
#3	.00233	.34644	.13231	.00023	.03992	.16507	.00299
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8969.2	53823.	2585.6
Stddev	28.5	121.	22.8
%RSD	.31768	.22430	.88148
#1	8943.3	53758.	2563.7
#2	8964.7	53962.	2609.2
#3	8999.7	53748.	2583.9

Approved: June 29, 2016

Sample Name: L1606138106 Acquired: 6/28/2016 16:30:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.02671	-.00035	.00219	.00470	.00004	.11044	-.00004
Stddev	.00038	.00978	.00157	.00132	.00024	.00006	.05141	.00009
%RSD	165.88	36.629	453.87	60.161	5.0940	180.89	46.554	218.04
#1	-.00009	.02052	-.00215	.00221	.00459	-.00002	.11853	.00006
#2	.00006	.03798	.00042	.00086	.00497	.00010	.15733	-.00007
#3	-.00066	.02162	.00070	.00350	.00453	.00002	.05546	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00005	.00232	.03313	-.06208	.00365	.11571	.00058
Stddev	.00026	.00107	.00141	.04609	.12036	.00290	.06176	.00147
%RSD	301.01	2205.9	60.777	139.12	193.89	79.577	53.372	255.27
#1	.00021	-.00039	.00332	-.01338	-.04214	.00473	.04833	.00099
#2	-.00027	-.00073	.00071	.03397	-.19116	.00585	.16963	-.00106
#3	-.00021	.00127	.00293	.07879	.04707	.00036	.12917	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	.24481	.00038	-.00234	-.00159	.00016	-.00878	.09592
Stddev	.00097	.01784	.00090	.00446	.00039	.00135	.00458	.00474
%RSD	88.792	7.2876	235.47	190.19	24.402	834.50	52.202	4.9452
#1	-.00001	.23411	.00143	-.00495	-.00164	.00032	-.00992	.10032
#2	.00182	.23491	-.00009	-.00489	-.00194	-.00126	-.00373	.09654
#3	.00146	.26540	-.00018	.00280	-.00117	.00142	-.01269	.09090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138106 Acquired: 6/28/2016 16:30:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00062	.00178	-.00320	-.00041	.00111	.00044
Stddev	.00070	.00028	.00840	.00027	.00016	.00005	.00090
%RSD	1472.0	44.552	471.90	8.3543	38.969	4.6667	202.68
#1	.00057	.00039	.01143	-.00294	-.00023	.00107	.00025
#2	.00032	.00054	-.00218	-.00347	-.00044	.00117	.00143
#3	-.00075	.00092	-.00391	-.00320	-.00054	.00111	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9023.2	54420.	2586.9
Stddev	15.6	552.	19.1
%RSD	.17278	1.0141	.73711
#1	9027.4	54765.	2565.0
#2	9005.9	53783.	2600.1
#3	9036.3	54711.	2595.6

Approved: June 29, 2016

Sample Name: L1606140101 Acquired: 6/28/2016 16:34:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00218	.03485	-.00002	.15342	.05582	.00004	124.06
Stddev	.00377	.00379	.00309	.00144	.00081	.00010	.59
%RSD	173.24	10.886	14926.	.93675	1.4530	248.52	.47866
#1	-.00649	.03170	-.00302	.15179	.05540	-.00004	124.70
#2	.00049	.03906	-.00019	.15398	.05530	.00001	123.52
#3	-.00053	.03380	.00315	.15449	.05676	.00015	123.97
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00081	.00157	.00148	-.00402	4.6678	.03748
Stddev	.00028	.00030	.00094	.00090	.03288	.1961	.00193
%RSD	74.186	37.448	59.598	60.764	818.25	4.2000	5.1617
#1	.00032	.00047	.00131	.00240	-.04194	4.8019	.03666
#2	.00067	.00091	.00079	.00144	.01346	4.4428	.03610
#3	.00013	.00106	.00261	.00060	.01643	4.7587	.03969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	68.192	.05341	.00048	F 466.83	.00047	.03766	-.00231
Stddev	.481	.00218	.00034	3.88	.00102	.00627	.00128
%RSD	.70585	4.0834	70.291	.83087	216.30	16.655	55.400
#1	68.743	.05536	.00077	470.23	-.00050	.04431	-.00303
#2	67.983	.05105	.00011	462.61	.00152	.03184	-.00308
#3	67.851	.05382	.00058	467.64	.00039	.03685	-.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606140101 Acquired: 6/28/2016 16:34:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00400	-.00182	8.1478	-.00033	.59118	-.01873	-.00283
Stddev	.00606	.00359	.2322	.00009	.00171	.00223	.00229
%RSD	151.32	197.31	2.8496	28.393	.28995	11.927	80.664
#1	.00315	.00214	8.2785	-.00022	.59313	-.01787	-.00251
#2	.01044	-.00486	8.2851	-.00038	.58988	-.01706	-.00073
#3	-.00158	-.00274	7.8797	-.00039	.59054	-.02127	-.00526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01052	.00862	-.00010
Stddev	.00054	.00045	.00005
%RSD	5.1636	5.2265	48.833
#1	.01088	.00862	-.00007
#2	.00990	.00907	-.00016
#3	.01079	.00817	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8570.3	50744.	2512.0
Stddev	3.6	222.	16.8
%RSD	.04183	.43745	.66696
#1	8571.5	50750.	2499.4
#2	8573.2	50964.	2505.5
#3	8566.3	50520.	2531.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 16:38:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37743**	**9.5469**	**.37580**	**.46956**	**.96306**	**.04732**	**9.5900**	**.04763**
Stddev	.00032	.0457	.00153	.00617	.00655	.00061	.1412	.00029
%RSD	.08532	.47855	.40663	1.3148	.67978	1.2795	1.4727	.59955
#1	.37735	9.5820	.37757	.47612	.95760	.04798	9.4341	.04791
#2	.37715	9.4952	.37489	.46387	.97032	.04680	9.7095	.04764
#3	.37778	9.5634	.37495	.46868	.96126	.04718	9.6262	.04734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19060**	**.47605**	**.47829**	**3.8107**	**47.965**	**.96689**	**9.5619**	**.47181**
Stddev	.00024	.00645	.00177	.0548	.355	.00545	.1009	.00470
%RSD	.12427	1.3544	.36908	1.4378	.74026	.56386	1.0554	.99639
#1	.19054	.48349	.47931	3.7975	47.711	.97312	9.5140	.46713
#2	.19086	.47251	.47932	3.7637	48.370	.96453	9.6779	.47176
#3	.19040	.47215	.47626	3.8709	47.812	.96301	9.4939	.47654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95597**	**48.254**	**.47535**	**9.4451**	**.47197**	**1.1388**	**.37546**	**4.7416**
Stddev	.00130	.258	.00091	.0048	.00087	.0031	.00351	.0044
%RSD	.13561	.53539	.19143	.05067	.18424	.27052	.93376	.09185
#1	.95741	48.008	.47561	9.4415	.47108	1.1390	.37327	4.7366
#2	.95559	48.523	.47610	9.4505	.47281	1.1357	.37950	4.7447
#3	.95491	48.230	.47434	9.4432	.47203	1.1419	.37360	4.7435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 16:38:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95500	.96146	.94728	.47529	.94833	.95572	.95903
Stddev	.00332	.00652	.00706	.00206	.01224	.00202	.01434
%RSD	.34717	.67854	.74512	.43417	1.2902	.21119	1.4950
#1	.95726	.95688	.93938	.47767	.96203	.95768	.97550
#2	.95654	.96893	.95296	.47401	.93850	.95585	.95225
#3	.95119	.95858	.94951	.47419	.94446	.95365	.94934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8735.1	52223.	2511.8
Stddev	63.3	525.	1.7
%RSD	.72433	1.0049	.06962
#1	8662.4	52817.	2513.3
#2	8778.0	52030.	2509.9
#3	8764.8	51821.	2512.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 16:42:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01470**	**-.00025**	**.00262**	**.00329**	**.00012**	**-.02149**	**-.00003**
Stddev	.00154	.00095	.00292	.00132	.00173	.00009	.02627	.00031
%RSD	1544.9	6.4296	1158.7	50.561	52.631	76.669	122.21	1035.2
#1	-.00164	.01568	-.00292	.00112	.00524	.00002	.00862	.00001
#2	.00145	.01379	.00286	.00311	.00269	.00015	-.03344	-.00036
#3	-.00011	.01463	-.00070	.00362	.00193	.00019	-.03967	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00016**	**.00034**	**-.02214**	**.02979**	**.00145**	**.10931**	**.00271**
Stddev	.00051	.00066	.00090	.02571	.04548	.00077	.07392	.00140
%RSD	2067.0	426.18	262.93	116.12	152.66	52.848	67.621	51.511
#1	.00053	-.00060	-.00060	-.02698	.06941	.00057	.09763	.00431
#2	-.00012	.00064	.00044	.00564	-.01988	.00197	.04193	.00177
#3	-.00048	.00043	.00119	-.04508	.03985	.00181	.18838	.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.03000**	**-.00064**	**.00171**	**-.00372**	**.00640**	**-.00145**	**.00449**
Stddev	.00010	.02671	.00081	.00257	.00221	.00555	.00310	.00229
%RSD	83.710	89.031	127.20	149.94	59.483	86.786	214.27	50.847
#1	.00001	.05832	-.00087	.00364	-.00239	.01032	.00214	.00691
#2	.00015	.02642	.00026	-.00120	-.00627	.00882	-.00323	.00237
#3	.00022	.00526	-.00130	.00270	-.00250	.00004	-.00325	.00420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 16:42:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00049**	**-.01452**	**-.00036**	**-.00012**	**.00009**	**.00041**
Stddev	.00126	.00017	.00425	.00086	.00052	.00022	.00068
%RSD	855.56	34.806	29.266	240.24	446.61	242.31	167.64
#1	-.00110	.00067	-.01245	.00044	.00047	.00034	-.00033
#2	.00142	.00033	-.01941	-.00024	-.00053	-.00002	.00101
#3	.00012	.00048	-.01171	-.00127	-.00029	-.00005	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8858.9**	**52799.**	**2450.2**
Stddev	49.1	64.	4.8
%RSD	.55389	.12185	.19423
#1	8802.7	52841.	2455.1
#2	8893.3	52831.	2449.9
#3	8880.6	52725.	2445.6

Approved: June 29, 2016

Sample Name: L1606140201 Acquired: 6/28/2016 16:46:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00181	.18513	.02928	.14134	.38651	.00004	73.568
Stddev	.00241	.01412	.00193	.00546	.00425	.00001	.573
%RSD	133.09	7.6297	6.5893	3.8601	1.0993	29.408	.77835
#1	.00291	.20114	.02830	.14308	.39084	.00005	74.208
#2	-.00095	.17441	.03150	.13522	.38635	.00004	73.392
#3	.00347	.17984	.02803	.14571	.38234	.00003	73.104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00063	.00146	.00109	3.0011	.94204	.01461
Stddev	.00046	.00060	.00093	.00074	.0567	.07130	.00110
%RSD	261.16	95.173	63.756	68.332	1.8895	7.5684	7.5102
#1	-.00032	.00116	.00051	.00142	3.0614	.97099	.01585
#2	.00058	.00073	.00149	.00024	2.9931	.99432	.01377
#3	.00027	-.00002	.00237	.00161	2.9488	.86083	.01420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.058	.43706	.00004	F 295.60	.00193	.05522	.01773
Stddev	.228	.00233	.00047	2.46	.00047	.00807	.00162
%RSD	.59975	.53242	1121.0	.83240	24.555	14.612	9.1557
#1	38.300	.43535	.00053	298.43	.00156	.06449	.01703
#2	37.846	.43971	-.00002	294.41	.00176	.05148	.01657
#3	38.030	.43611	-.00039	293.96	.00247	.04971	.01958
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606140201 Acquired: 6/28/2016 16:46:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00237	8.7308	.00015	.49039	-.00143	-.00119
Stddev	.00063	.00758	.1924	.00050	.00229	.01348	.00163
%RSD	85.658	319.42	2.2032	321.51	.46707	942.90	137.19
#1	.00129	.00959	8.8327	.00016	.49271	.00974	-.00033
#2	.00085	-.00552	8.8507	.00065	.48813	.00238	-.00306
#3	.00005	.00305	8.5089	-.00035	.49034	-.01641	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00028	.03320	.00085
Stddev	.00126	.00113	.00030
%RSD	444.68	3.4045	35.186
#1	.00111	.03408	.00089
#2	-.00135	.03360	.00053
#3	-.00061	.03193	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8382.1	49791.	2432.6
Stddev	7.8	183.	38.6
%RSD	.09266	.36744	1.5885
#1	8375.1	49580.	2390.7
#2	8380.9	49886.	2440.4
#3	8390.4	49908.	2466.7

Approved: June 29, 2016

Sample Name: L1606140401 Acquired: 6/28/2016 16:50:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.03821**	**-.00140**	**.26467**	**.10202**	**.00005**	**50.693**
Stddev	.00024	.00694	.00356	.00502	.00099	.00006	.236
%RSD	804.72	18.151	253.62	1.8972	.97072	117.83	.46459
#1	.00030	.03117	.00222	.26303	.10113	.00002	50.662
#2	-.00006	.04503	-.00153	.26068	.10308	.00001	50.943
#3	-.00015	.03843	-.00490	.27031	.10184	.00011	50.475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00001**	**.00112**	**.06878**	F **-.02326**	**1.5239**	**.00630**
Stddev	.00003	.00031	.00147	.00150	.05164	.0926	.00419
%RSD	44.836	2286.3	131.16	2.1829	222.07	6.0793	66.532
#1	.00010	-.00018	.00053	.06940	-.04001	1.5675	.00989
#2	.00007	-.00020	.00280	.06987	-.06444	1.4175	.00733
#3	.00004	.00035	.00004	.06707	.03469	1.5866	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**44.442**	**.00063**	**.00036**	**72.140**	**.00050**	**.05225**	**-.00268**
Stddev	.059	.00064	.00040	.335	.00098	.00445	.00289
%RSD	.13305	101.22	111.41	.46490	195.38	8.5261	107.94
#1	44.502	.00028	.00021	72.178	-.00051	.05651	-.00492
#2	44.384	.00024	.00005	72.455	.00146	.04762	-.00370
#3	44.442	.00137	.00081	71.788	.00057	.05261	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606140401 Acquired: 6/28/2016 16:50:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00458	.00271	7.5828	-.00004	.40719	-.00830	-.00459
Stddev	.00339	.00160	.1230	.00105	.00129	.01300	.00404
%RSD	74.002	59.221	1.6221	2834.0	.31705	156.70	88.066
#1	.00766	.00090	7.6391	-.00054	.40835	-.01367	-.00740
#2	.00095	.00327	7.6675	.00116	.40742	.00653	.00004
#3	.00513	.00396	7.4417	-.00074	.40580	-.01775	-.00642
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00580	.09151	-.00012
Stddev	.00045	.00280	.00032
%RSD	7.8121	3.0615	257.30
#1	.00536	.09306	.00004
#2	.00577	.09320	-.00049
#3	.00626	.08828	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8505.3	50949.	2448.3
Stddev	4.7	97.	7.2
%RSD	.05529	.19049	.29577
#1	8510.2	50847.	2451.9
#2	8504.8	51040.	2439.9
#3	8500.9	50960.	2453.0

Approved: June 29, 2016

Sample Name: L1606140801 Acquired: 6/28/2016 16:54:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00269	.05550	.00124	.10441	.03467	.00011	48.037	.00033
Stddev	.00032	.00542	.00441	.00240	.00077	.00017	.480	.00014
%RSD	12.026	9.7675	356.84	2.2960	2.2111	152.00	.99969	41.534
#1	-.00273	.05194	.00607	.10284	.03551	.00004	48.584	.00021
#2	-.00235	.05283	.00021	.10717	.03401	.00031	47.685	.00029
#3	-.00299	.06174	-.00257	.10322	.03449	-.00001	47.842	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00133	.00196	.02831	.61212	.01738	25.614	.03236
Stddev	.00024	.00079	.00030	.03168	.08741	.00355	.200	.00047
%RSD	139.58	59.723	15.107	111.90	14.280	20.412	.77912	1.4530
#1	.00039	.00162	.00174	-.00239	.54855	.01510	25.399	.03211
#2	-.00008	.00043	.00185	.02644	.57601	.01556	25.793	.03291
#3	.00020	.00194	.00230	.06087	.71180	.02146	25.650	.03207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	206.01	-.00120	.01021	-.00101	.00550	.00259	8.6735
Stddev	.00042	.68	.00076	.00625	.00147	.00271	.00758	.1899
%RSD	138.54	.32826	63.036	61.251	146.18	49.218	292.32	2.1896
#1	.00029	206.21	-.00200	.00303	.00017	.00243	-.00099	8.8411
#2	.00073	205.26	-.00109	.01314	-.00266	.00755	-.00253	8.7122
#3	-.00011	206.57	-.00050	.01446	-.00053	.00651	.01130	8.4672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606140801 Acquired: 6/28/2016 16:54:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.27833	-.01037	-.00392	.01481	.00801	.00028
Stddev	.00091	.00026	.01132	.00271	.00106	.00023	.00098
%RSD	440.50	.09448	109.12	69.013	7.1866	2.8324	351.91
#1	-.00123	.27804	.00144	-.00081	.01601	.00808	.00139
#2	.00012	.27839	-.02112	-.00572	.01398	.00819	-.00008
#3	.00049	.27855	-.01143	-.00524	.01444	.00775	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8483.8	50357.	2436.1
Stddev	58.6	54.	14.0
%RSD	.69075	.10730	.57272
#1	8442.5	50404.	2437.2
#2	8550.9	50298.	2449.4
#3	8458.1	50369.	2421.6

Approved: June 29, 2016

Sample Name: L1606140901 Acquired: 6/28/2016 16:58:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.04882	.00371	.20045	.03867	.00009	59.705	.00007
Stddev	.00072	.01173	.00262	.00323	.00088	.00009	.777	.00015
%RSD	72.631	24.027	70.725	1.6092	2.2861	93.237	1.3014	220.09
#1	.00019	.06057	.00264	.20394	.03863	.00006	60.594	-.00007
#2	.00118	.04879	.00670	.19758	.03957	.00003	59.158	.00005
#3	.00159	.03711	.00179	.19984	.03781	.00019	59.361	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00403	.00250	.01083	1.0006	.02725	29.385	-.00066
Stddev	.00047	.00069	.00086	.02070	.0638	.00443	.111	.00203
%RSD	152.21	17.223	34.415	191.17	6.3737	16.261	.37652	304.79
#1	.00046	.00463	.00157	.03441	1.0394	.02239	29.323	-.00206
#2	.00069	.00419	.00266	.00242	1.0354	.02829	29.320	-.00159
#3	-.00022	.00327	.00326	-.00435	.92699	.03107	29.513	.00166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	217.82	.00187	.00952	-.00078	.00397	.00052	12.937
Stddev	.00043	.68	.00072	.00413	.00349	.00593	.00750	.288
%RSD	36.550	.31139	38.549	43.374	445.42	149.39	1452.8	2.2279
#1	.00074	218.59	.00267	.00652	.00255	.00869	.00583	13.115
#2	.00160	217.56	.00168	.01423	-.00442	-.00268	.00378	13.092
#3	.00118	217.31	.00126	.00781	-.00049	.00590	-.00806	12.605
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606140901 Acquired: 6/28/2016 16:58:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.41800	-.01150	-.00534	.01663	.00273	-.00008
Stddev	.00115	.00113	.01412	.00229	.00053	.00022	.00050
%RSD	163.28	.27095	122.73	42.869	3.1942	7.9309	605.21
#1	.00042	.41714	.00226	-.00301	.01717	.00278	-.00039
#2	-.00028	.41928	-.01083	-.00542	.01611	.00292	-.00035
#3	.00197	.41759	-.02595	-.00759	.01661	.00250	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8381.2	49920.	2427.7
Stddev	31.2	187.	3.4
%RSD	.37235	.37554	.13931
#1	8401.2	49725.	2426.3
#2	8397.2	50098.	2425.3
#3	8345.2	49937.	2431.6

Approved: June 29, 2016

Sample Name: L1606141001 Acquired: 6/28/2016 17:01:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.02510	.00497	.20581	.20983	.00003	102.14	.00026
Stddev	.00030	.00820	.00130	.00289	.00164	.00004	.41	.00020
%RSD	132.67	32.679	26.145	1.4058	.78174	121.97	.39842	78.906
#1	-.00038	.02965	.00419	.20299	.20986	-.00001	102.16	.00008
#2	-.00042	.03003	.00425	.20877	.21146	.00008	102.53	.00047
#3	.00012	.01563	.00647	.20568	.20818	.00003	101.72	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00216	.00155	.00164	3.1291	.47793	.01373	63.988	1.5385
Stddev	.00048	.00052	.00154	.0242	.07621	.00416	.332	.0084
%RSD	22.492	33.181	93.521	.77254	15.946	30.274	.51854	.54910
#1	.00229	.00213	.00024	3.1377	.39525	.01480	63.844	1.5384
#2	.00256	.00113	.00328	3.1477	.49319	.01724	64.367	1.5470
#3	.00162	.00140	.00141	3.1017	.54536	.00914	63.752	1.5301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	24.785	.00318	.06025	-.00071	.00159	-.00450	8.1780
Stddev	.00021	.166	.00156	.01067	.00149	.00213	.00703	.0115
%RSD	21.778	.67072	48.863	17.704	209.43	133.71	156.14	.14010
#1	.00082	24.747	.00140	.05953	-.00225	.00279	-.01157	8.1903
#2	.00088	24.967	.00391	.07127	-.00060	.00285	.00248	8.1761
#3	.00122	24.640	.00424	.04997	.00072	-.00087	-.00441	8.1677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141001 Acquired: 6/28/2016 17:01:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.83498**	**-.01138**	**-.00652**	**-.00046**	**.00246**	**.00022**
Stddev	.00032	.01215	.00763	.00068	.00064	.00003	.00013
%RSD	732.85	1.4548	67.036	10.406	137.93	1.1193	58.335
#1	.00030	.84711	-.01222	-.00631	-.00099	.00248	.00014
#2	-.00009	.83502	-.00337	-.00728	-.00063	.00243	.00015
#3	-.00034	.82281	-.01855	-.00597	.00024	.00247	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8519.7**	**50943.**	**2455.8**
Stddev	41.5	104.	11.2
%RSD	.48695	.20482	.45529
#1	8476.0	50829.	2457.0
#2	8524.5	50968.	2444.1
#3	8558.5	51034.	2466.4

Approved: June 29, 2016

Sample Name: L1606141701 Acquired: 6/28/2016 17:05:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00052	.03393	-.00177	.10053	.08448	-.00004	53.590	.00002
Stddev	.00097	.00124	.00310	.00010	.00185	.00008	.041	.00011
%RSD	187.14	3.6575	175.63	.10167	2.1911	190.60	.07628	441.87
#1	-.00070	.03279	-.00174	.10063	.08240	-.00001	53.548	.00011
#2	.00053	.03374	.00132	.10054	.08594	-.00013	53.593	.00006
#3	-.00138	.03525	-.00488	.10042	.08511	.00002	53.630	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00044	.00128	-.00110	.33167	.01186	38.029	-.00243
Stddev	.00036	.00064	.00035	.02584	.15378	.00271	.064	.00614
%RSD	150.55	144.37	27.302	2350.8	46.367	22.894	.16857	253.12
#1	.00006	.00102	.00169	.02694	.15662	.01278	37.963	.00451
#2	-.00014	.00055	.00113	-.00629	.39337	.01399	38.033	-.00718
#3	-.00064	-.00024	.00104	-.02395	.44502	.00880	38.091	-.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	33.333	-.00018	.03468	-.00253	.00442	-.00992	5.5877
Stddev	.00036	.145	.00111	.00200	.00379	.00454	.00714	.0097
%RSD	59.623	.43463	614.27	5.7635	149.78	102.72	72.013	.17278
#1	.00028	33.231	.00062	.03279	-.00669	-.00040	-.01801	5.5766
#2	.00098	33.270	.00028	.03677	-.00163	.00861	-.00730	5.5928
#3	.00052	33.499	-.00144	.03448	.00073	.00504	-.00446	5.5938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141701 Acquired: 6/28/2016 17:05:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.44744**	**.00486**	**-.00242**	**.00397**	**.00215**	**-.00019**
Stddev	.00115	.00102	.01325	.00158	.00124	.00030	.00081
%RSD	273.06	.22830	272.58	65.278	31.160	14.124	423.65
#1	.00148	.44860	.01694	-.00104	.00255	.00245	.00001
#2	.00059	.44670	.00696	-.00207	.00454	.00184	-.00109
#3	-.00081	.44700	-.00931	-.00414	.00482	.00217	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8516.7**	**51136.**	**2430.8**
Stddev	5.8	216.	3.4
%RSD	.06805	.42159	.13898
#1	8511.4	51374.	2427.1
#2	8515.8	50955.	2431.5
#3	8522.9	51079.	2433.8

Approved: June 29, 2016

Sample Name: L1606141702 Acquired: 6/28/2016 17:09:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00121	.03639	-.00063	.10512	.02263	.00004	92.101
Stddev	.00265	.00570	.00129	.00214	.00133	.00009	.123
%RSD	218.85	15.676	205.46	2.0348	5.8751	237.61	.13318
#1	-.00148	.03441	-.00194	.10701	.02405	-.00003	92.180
#2	.00156	.04282	-.00060	.10554	.02243	.00000	91.959
#3	-.00372	.03194	.00065	.10280	.02142	.00015	92.163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00043	.00230	.00145	.01095	.92150	.01897
Stddev	.00016	.00030	.00101	.00055	.01537	.06607	.00536
%RSD	60.469	71.156	43.805	38.203	140.44	7.1694	28.272
#1	.00040	.00074	.00197	.00195	.00404	.99360	.01602
#2	.00009	.00013	.00344	.00085	.00024	.86385	.01572
#3	.00028	.00041	.00150	.00154	.02856	.90706	.02516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.394	-.00128	.00072	F 328.03	-.00024	.01343	-.00378
Stddev	.208	.00450	.00025	.24	.00131	.00969	.00030
%RSD	.76042	352.14	34.308	.07448	557.20	72.100	7.9547
#1	27.591	.00141	.00093	327.78	-.00038	.02137	-.00366
#2	27.176	-.00648	.00078	328.27	-.00147	.00264	-.00356
#3	27.416	.00124	.00045	328.04	.00114	.01629	-.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141702 Acquired: 6/28/2016 17:09:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00068**	**.00807**	**6.3322**	**.00006**	**.43551**	**-.01380**	**-.00128**
Stddev	.00415	.00304	.0529	.00114	.00058	.00955	.00057
%RSD	614.28	37.628	.83619	2038.7	.13254	69.207	44.382
#1	-.00042	.00804	6.2743	.00129	.43554	-.01279	-.00131
#2	-.00282	.00505	6.3439	-.00094	.43492	-.00480	-.00070
#3	.00526	.01112	6.3783	-.00018	.43608	-.02382	-.00184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00632**	**.00278**	**.00030**
Stddev	.00160	.00015	.00099
%RSD	25.307	5.4480	328.68
#1	.00451	.00293	.00136
#2	.00691	.00278	-.00061
#3	.00754	.00263	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8506.3**	**50580.**	**2460.8**
Stddev	18.6	37.	28.4
%RSD	.21858	.07230	1.1552
#1	8522.2	50576.	2432.4
#2	8485.9	50619.	2460.7
#3	8510.9	50546.	2489.2

Approved: June 29, 2016

Sample Name: L1606141703 Acquired: 6/28/2016 17:13:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.06301	-.00157	.10756	.02273	.00003	93.540
Stddev	.00063	.00870	.00342	.00417	.00053	.00004	.787
%RSD	81.445	13.806	217.64	3.8746	2.3136	138.93	.84165
#1	.00056	.06732	.00238	.10359	.02331	.00007	94.370
#2	.00147	.06870	-.00350	.10719	.02260	-.00001	93.445
#3	.00027	.05299	-.00360	.11190	.02228	.00003	92.804
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00058	.00377	.00076	.04301	1.0274	.02683
Stddev	.00022	.00022	.00232	.00027	.02476	.0852	.00237
%RSD	83.493	38.162	61.441	35.871	57.574	8.2920	8.8258
#1	.00023	.00040	.00271	.00068	.03982	1.0581	.02443
#2	.00006	.00082	.00217	.00106	.06921	1.0929	.02690
#3	.00049	.00051	.00643	.00053	.02000	.93107	.02916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.770	.00313	.00061	F 332.81	-.00044	.01690	-.00176
Stddev	.423	.00058	.00038	3.06	.00040	.00623	.00193
%RSD	1.5234	18.415	63.127	.91936	91.512	36.876	109.22
#1	28.198	.00356	.00025	336.04	.00001	.01696	-.00039
#2	27.758	.00247	.00101	332.45	-.00075	.02309	-.00397
#3	27.352	.00335	.00056	329.95	-.00058	.01063	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141703 Acquired: 6/28/2016 17:13:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00858	.01098	6.5142	.00063	.44020	-.01426	-.00360
Stddev	.00279	.00554	.1057	.00026	.00270	.00856	.00203
%RSD	32.540	50.432	1.6223	41.814	.61389	60.018	56.525
#1	.00962	.01118	6.3931	.00093	.44308	-.01059	-.00516
#2	.01070	.00535	6.5621	.00043	.43979	-.02404	-.00433
#3	.00542	.01642	6.5875	.00053	.43772	-.00815	-.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00669	.00204	-.00040
Stddev	.00083	.00018	.00060
%RSD	12.431	8.6576	149.18
#1	.00573	.00187	-.00046
#2	.00724	.00205	.00022
#3	.00709	.00222	-.00098
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8495.4	50392.	2471.0
Stddev	66.1	29.	28.9
%RSD	.77818	.05745	1.1711
#1	8420.9	50365.	2455.1
#2	8518.1	50387.	2453.4
#3	8547.1	50423.	2504.4

Approved: June 29, 2016

Sample Name: L1606141704 Acquired: 6/28/2016 17:17:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	.02482	-.00058	.24745	.03445	.00011	46.133	.00013
Stddev	.00193	.01764	.00214	.00411	.00146	.00007	.158	.00013
%RSD	147.77	71.076	366.90	1.6599	4.2502	65.051	.34241	99.279
#1	-.00177	.00897	-.00061	.25084	.03426	.00013	46.315	.00028
#2	.00081	.04383	-.00271	.24288	.03309	.00018	46.057	.00008
#3	-.00297	.02167	.00157	.24864	.03600	.00003	46.028	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.00119	.00162	-.00306	.52222	.01059	18.887	-.00098
Stddev	.00017	.00069	.00127	.00742	.12961	.00196	.293	.00125
%RSD	37.399	57.908	78.405	242.24	24.820	18.472	1.5517	128.58
#1	.00027	.00063	.00172	-.01046	.43642	.00841	19.107	-.00051
#2	.00051	.00196	.00284	-.00310	.45891	.01218	18.554	-.00002
#3	.00061	.00099	.00030	.00437	.67132	.01118	18.999	-.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00251	211.55	.00005	.09692	-.00255	.00520	.00074	5.8088
Stddev	.00031	1.48	.00154	.00855	.00138	.00793	.00785	.0129
%RSD	12.444	.69803	3150.4	8.8176	54.182	152.43	1053.9	.22195
#1	.00230	213.19	-.00158	.08800	-.00410	-.00390	.00629	5.8189
#2	.00287	210.31	.00147	.10504	-.00145	.00891	-.00823	5.8132
#3	.00236	211.16	.00025	.09771	-.00210	.01060	.00418	5.7943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141704 Acquired: 6/28/2016 17:17:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00087**	**.24315**	**-.00010**	**.00005**	**.02598**	**.00233**	**-.00026**
Stddev	.00079	.00119	.00743	.00177	.00061	.00010	.00030
%RSD	90.563	.49112	7319.3	3564.4	2.3394	4.3126	117.95
#1	-.00043	.24447	-.00795	.00163	.02643	.00244	-.00018
#2	-.00040	.24280	.00683	-.00186	.02529	.00223	-.00059
#3	-.00178	.24216	.00082	.00037	.02622	.00233	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8783.8**	**51975.**	**2512.3**
Stddev	55.8	116.	24.2
%RSD	.63563	.22378	.96215
#1	8722.3	51847.	2485.1
#2	8798.0	52074.	2520.4
#3	8831.2	52004.	2531.4

Approved: June 29, 2016

Sample Name: L1606141705 Acquired: 6/28/2016 17:21:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.11762**	**.00112**	**.10521**	**.06752**	**.00001**	**96.827**
Stddev	.00144	.00687	.00475	.00641	.00069	.00009	.209
%RSD	266.03	5.8421	425.10	6.0937	1.0190	779.17	.21573
#1	.00025	.12457	.00638	.10747	.06826	-.00009	97.016
#2	-.00220	.11083	-.00017	.11018	.06690	.00006	96.862
#3	.00033	.11745	-.00286	.09797	.06740	.00006	96.602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.00042**	**.00173**	**.00085**	**.07794**	**1.1917**	**.02902**
Stddev	.00013	.00033	.00044	.00109	.03187	.0495	.00258
%RSD	266.30	77.268	25.434	127.96	40.886	4.1514	8.8807
#1	-.00005	.00044	.00124	.00186	.09460	1.1478	.03156
#2	.00000	.00009	.00207	.00099	.09803	1.1821	.02911
#3	.00019	.00074	.00190	-.00030	.04120	1.2453	.02640
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**26.446**	**.00090**	**.00036**	F **307.46**	**.00034**	**.04921**	**.00215**
Stddev	.192	.00233	.00015	.43	.00044	.00674	.00302
%RSD	.72707	257.45	43.349	.13955	128.77	13.697	140.25
#1	26.224	-.00095	.00040	307.47	.00021	.05695	.00186
#2	26.549	.00352	.00048	307.88	-.00002	.04463	-.00071
#3	26.565	.00014	.00018	307.02	.00082	.04604	.00531
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141705 Acquired: 6/28/2016 17:21:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00223**	**.01012**	**6.7901**	**.00005**	**.42714**	**-.01174**	**-.00258**
Stddev	.00151	.00578	.1318	.00082	.00162	.00247	.00377
%RSD	67.939	57.128	1.9417	1493.3	.37951	21.069	146.44
#1	.00395	.00984	6.8579	.00068	.42786	-.01002	.00062
#2	.00163	.00449	6.8743	-.00087	.42528	-.01457	-.00161
#3	.00110	.01604	6.6382	.00036	.42827	-.01063	-.00674
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00811**	**.00497**	**.00003**
Stddev	.00068	.00032	.00018
%RSD	8.4177	6.3841	661.65
#1	.00813	.00521	.00024
#2	.00742	.00509	-.00009
#3	.00878	.00461	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9194.6**	**53158.**	**2688.0**
Stddev	76.3	238.	10.9
%RSD	.83016	.44694	.40654
#1	9130.2	52915.	2686.1
#2	9174.7	53169.	2699.8
#3	9278.9	53389.	2678.2

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 17:25:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41063**	**10.434**	**.41428**	**.51216**	**1.0413**	**.05168**	**10.315**	**.05208**
Stddev	.00142	.012	.00197	.00241	.0092	.00008	.139	.00046
%RSD	.34482	.11024	.47507	.46985	.88353	.15858	1.3488	.87992
#1	.40968	10.421	.41378	.50971	1.0318	.05172	10.241	.05259
#2	.41226	10.438	.41644	.51224	1.0501	.05159	10.475	.05195
#3	.40996	10.443	.41260	.51453	1.0420	.05174	10.228	.05171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20970**	**.52123**	**.52471**	**4.0931**	**52.107**	**1.0384**	**10.427**	**.51647**
Stddev	.00019	.00093	.00318	.0350	.543	.0086	.193	.01133
%RSD	.09137	.17808	.60593	.85548	1.0418	.83105	1.8528	2.1946
#1	.20971	.52017	.52700	4.0605	51.502	1.0310	10.245	.50418
#2	.20989	.52190	.52606	4.1301	52.552	1.0479	10.630	.52652
#3	.20951	.52163	.52108	4.0888	52.265	1.0363	10.407	.51870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0482**	**51.967**	**.51895**	**10.327**	**.51794**	**1.2481**	**.41250**	**5.1601**
Stddev	.0026	.422	.00111	.039	.00260	.0051	.00656	.0088
%RSD	.24430	.81231	.21458	.37322	.50188	.41057	1.5909	.16973
#1	1.0496	51.513	.51962	10.370	.52089	1.2510	.40521	5.1697
#2	1.0497	52.348	.51956	10.315	.51696	1.2512	.41433	5.1579
#3	1.0452	52.039	.51766	10.296	.51597	1.2422	.41795	5.1526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 17:25:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0508**	**1.0412**	**1.0262**	**.51737**	**1.0382**	**1.0416**	**1.0509**
Stddev	.0050	.0079	.0142	.00345	.0016	.0036	.0045
%RSD	.47886	.76203	1.3860	.66661	.15530	.34623	.42861
#1	1.0543	1.0324	1.0107	.52109	1.0370	1.0443	1.0488
#2	1.0530	1.0478	1.0385	.51427	1.0400	1.0430	1.0561
#3	1.0450	1.0435	1.0296	.51675	1.0375	1.0375	1.0479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8847.3**	**52671.**	**2540.6**
Stddev	20.9	44.	7.8
%RSD	.23606	.08261	.30650
#1	8856.9	52626.	2545.5
#2	8823.3	52713.	2531.6
#3	8861.6	52672.	2544.7

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 17:28:54 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	.00864	.00114	-.00129	.00127	-.00000	-.01842	.00016
Stddev	.00208	.01298	.00369	.00160	.00030	.00002	.02089	.00015
%RSD	151.69	150.30	323.38	123.51	23.213	416.07	113.36	96.218
#1	.00296	.01546	.00540	-.00214	.00094	.00000	-.03653	.00004
#2	.00212	-.00633	-.00086	.00055	.00137	.00001	.00443	.00033
#3	-.00098	.01679	-.00111	-.00229	.00151	-.00003	-.02317	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00001	-.00021	-.02327	.02556	.00089	.03301	-.00177
Stddev	.00011	.00022	.00156	.02043	.19953	.00092	.03673	.00050
%RSD	58.035	3375.3	728.02	87.786	780.71	103.42	111.26	28.440
#1	-.00007	-.00024	-.00110	-.02841	.00357	.00171	.07479	-.00121
#2	-.00029	.00018	-.00114	-.04064	.23518	-.00011	.00581	-.00190
#3	-.00022	.00008	.00159	-.00076	-.16207	.00108	.01843	-.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.06157	-.00058	.00198	-.00199	.00000	.00086	.00395
Stddev	.00050	.00743	.00023	.00447	.00074	.00175	.00619	.00169
%RSD	183.95	12.061	39.085	225.38	37.403	67237.	719.77	42.864
#1	.00033	.06954	-.00076	.00470	-.00248	.00162	.00734	.00430
#2	-.00025	.05484	-.00065	-.00318	-.00235	.00025	.00023	.00543
#3	.00073	.06032	-.00032	.00443	-.00113	-.00186	-.00499	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 17:28:54 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	-.00008	-.01040	-.00139	-.00079	.00004	.00033
Stddev	.00046	.00033	.00366	.00282	.00058	.00008	.00063
%RSD	63.012	430.45	35.254	202.56	72.599	178.70	188.25
#1	.00097	.00029	-.00635	-.00462	-.00069	.00001	.00060
#2	.00104	-.00036	-.01349	-.00012	-.00141	-.00001	.00078
#3	.00020	-.00016	-.01135	.00056	-.00027	.00013	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9498.1	57616.	2748.5
Stddev	20.5	444.	8.5
%RSD	.21556	.76995	.30872
#1	9518.0	57981.	2752.3
#2	9477.1	57746.	2754.4
#3	9499.4	57122.	2738.8

Approved: June 29, 2016

Sample Name: L1606141706S Acquired: 6/28/2016 17:32:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19808	5.1906	.20655	1.1063	.57218	.02520	102.15
Stddev	.00320	.0196	.00418	.0036	.00217	.00008	.64
%RSD	1.6176	.37720	2.0223	.32409	.37887	.32992	.62171
#1	.19656	5.2063	.20695	1.1061	.57455	.02521	102.72
#2	.20176	5.1967	.20219	1.1100	.57029	.02512	102.28
#3	.19591	5.1687	.21052	1.1028	.57171	.02528	101.46
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02536	.10182	.25402	.25166	2.0225	26.938	.54649
Stddev	.00023	.00059	.00225	.00113	.0134	.195	.00157
%RSD	.90274	.57849	.88493	.45019	.66474	.72444	.28645
#1	.02538	.10156	.25429	.25139	2.0225	26.994	.54509
#2	.02512	.10141	.25164	.25291	2.0090	26.721	.54621
#3	.02558	.10250	.25611	.25069	2.0359	27.099	.54818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.531	.24839	.51920	F 332.57	.24791	5.1748	.24660
Stddev	.247	.00395	.00098	1.46	.00066	.0118	.00293
%RSD	.78179	1.5908	.18966	.43910	.26478	.22818	1.1879
#1	31.335	.25082	.52003	334.01	.24863	5.1884	.24946
#2	31.808	.25052	.51945	332.62	.24776	5.1669	.24361
#3	31.450	.24383	.51811	331.09	.24734	5.1692	.24672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141706S Acquired: 6/28/2016 17:32:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.61097**	**.20159**	**9.3307**	**.51429**	**.92047**	**.49095**	**.24148**
Stddev	.00187	.00312	.0070	.00177	.00593	.00874	.00358
%RSD	.30591	1.5463	.07478	.34390	.64371	1.7794	1.4806
#1	.61249	.20339	9.3354	.51622	.92365	.50103	.24486
#2	.60888	.20339	9.3340	.51274	.92414	.48612	.24184
#3	.61152	.19799	9.3227	.51392	.91364	.48569	.23774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51988**	**.50708**	**.00128**
Stddev	.00090	.00063	.00024
%RSD	.17257	.12519	18.835
#1	.51899	.50720	.00124
#2	.52079	.50640	.00105
#3	.51985	.50765	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8731.6**	**52119.**	**2623.8**
Stddev	22.2	108.	5.5
%RSD	.25407	.20627	.21124
#1	8715.2	51996.	2617.7
#2	8722.7	52171.	2625.3
#3	8756.8	52191.	2628.5

Approved: June 29, 2016

Sample Name: L1606141707SD Acquired: 6/28/2016 17:36:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19904**	**5.1577**	**.20660**	**1.1125**	**.57944**	**.02527**	**106.96**
Stddev	.00340	.0324	.00258	.0072	.00374	.00015	.93
%RSD	1.7077	.62831	1.2482	.64388	.64630	.60260	.86711
#1	.20153	5.1918	.20939	1.1207	.58341	.02544	107.96
#2	.19517	5.1540	.20430	1.1077	.57895	.02523	106.79
#3	.20043	5.1273	.20611	1.1090	.57596	.02514	106.12
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02530**	**.10083**	**.25465**	**.25033**	**2.0157**	**27.093**	**.55071**
Stddev	.00018	.00022	.00034	.00103	.0346	.134	.00560
%RSD	.70257	.22081	.13182	.41222	1.7175	.49434	1.0172
#1	.02513	.10089	.25485	.25054	2.0488	27.229	.55640
#2	.02549	.10058	.25426	.25124	2.0186	27.089	.55053
#3	.02527	.10101	.25483	.24921	1.9797	26.961	.54520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**32.784**	**.25113**	**.51748**	F **347.90**	**.24681**	**5.1621**	**.24360**
Stddev	.318	.00113	.00098	2.92	.00070	.0064	.00204
%RSD	.96981	.45137	.18933	.83831	.28316	.12380	.83787
#1	33.099	.25131	.51706	350.96	.24677	5.1662	.24508
#2	32.463	.24992	.51678	347.61	.24753	5.1653	.24127
#3	32.791	.25217	.51860	345.15	.24614	5.1547	.24444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141707SD Acquired: 6/28/2016 17:36:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.60853	.20159	9.5063	.51055	.94598	.48772	.24112
Stddev	.00227	.00218	.0161	.00183	.00572	.00698	.00257
%RSD	.37335	1.0822	.16904	.35915	.60455	1.4306	1.0676
#1	.61075	.19909	9.5194	.50854	.95255	.48242	.24016
#2	.60861	.20252	9.5110	.51099	.94327	.49562	.23916
#3	.60621	.20315	9.4883	.51212	.94213	.48511	.24404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.52390	.50579	.00079
Stddev	.00181	.00036	.00028
%RSD	.34515	.07203	35.877
#1	.52594	.50600	.00091
#2	.52251	.50601	.00100
#3	.52323	.50537	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8701.2	52153.	2588.8
Stddev	22.5	132.	32.1
%RSD	.25813	.25395	1.2418
#1	8722.7	52088.	2562.7
#2	8703.0	52067.	2578.9
#3	8677.9	52306.	2624.7

Approved: June 29, 2016

Sample Name: L1606141709 Acquired: 6/28/2016 17:40:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**.02204**	**-.00015**	**.00568**	**.00369**	**.00002**	**.47478**	**.00028**
Stddev	.00045	.00870	.00406	.00129	.00006	.00006	.02804	.00019
%RSD	43.527	39.495	2684.0	22.677	1.7207	230.26	5.9059	67.226
#1	-.00109	.03207	-.00068	.00707	.00366	.00007	.49930	.00006
#2	-.00145	.01651	.00415	.00452	.00376	.00004	.44421	.00040
#3	-.00056	.01753	-.00393	.00546	.00365	-.00004	.48083	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.02074**	**.00159**	**.09814**	**.12915**	**.00263**	**.17253**	**.00183**
Stddev	.00019	.00087	.00109	.02609	.10413	.00216	.05728	.00183
%RSD	330.23	4.1809	68.745	26.582	80.624	82.131	33.199	99.777
#1	.00015	.01977	.00259	.09334	.07504	.00025	.14881	.00162
#2	-.00024	.02105	.00042	.07478	.06322	.00447	.13091	.00012
#3	-.00009	.02142	.00176	.12629	.24919	.00317	.23785	.00376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00330**	**.41183**	**.01258**	**.00202**	**.00096**	**-.00040**	**-.00693**	**.16243**
Stddev	.00024	.05071	.00143	.00577	.00237	.00111	.00365	.00635
%RSD	7.1652	12.314	11.384	285.46	247.83	277.45	52.696	3.9090
#1	.00340	.46553	.01410	-.00056	-.00071	-.00008	-.00639	.16499
#2	.00347	.40521	.01126	.00862	-.00009	-.00164	-.00357	.16710
#3	.00303	.36476	.01237	-.00200	.00367	.00051	-.01081	.15520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141709 Acquired: 6/28/2016 17:40:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.00211	-.00432	-.00552	-.00015	.00799	.00005
Stddev	.00091	.00055	.00239	.00248	.00116	.00023	.00041
%RSD	78.681	25.991	55.399	44.889	756.12	2.9356	786.44
#1	.00192	.00181	-.00182	-.00838	-.00117	.00818	-.00009
#2	.00142	.00275	-.00659	-.00412	.00112	.00805	-.00027
#3	.00015	.00178	-.00454	-.00406	-.00041	.00773	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9048.9	54685.	2582.3
Stddev	39.5	183.	15.2
%RSD	.43628	.33548	.58820
#1	9076.5	54575.	2577.5
#2	9066.5	54583.	2599.3
#3	9003.7	54897.	2570.1

Approved: June 29, 2016

Sample Name: L1606141708 Acquired: 6/28/2016 17:44:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00243**	**.04088**	**.00267**	**.26401**	**.02074**	**.00004**	**47.847**
Stddev	.00156	.00747	.00452	.00205	.00069	.00006	.211
%RSD	64.389	18.266	169.40	.77531	3.3096	146.55	.44118
#1	.00245	.04279	-.00253	.26335	.02076	.00000	47.982
#2	.00398	.04720	.00490	.26237	.02005	.00001	47.955
#3	.00085	.03264	.00564	.26630	.02142	.00010	47.604
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00028**	**.00060**	**.00322**	**.00115**	**.00871**	**1.4455**	**.03114**
Stddev	.00026	.00038	.00063	.00167	.01045	.0814	.00316
%RSD	92.339	63.370	19.723	144.37	119.94	5.6330	10.156
#1	.00029	.00050	.00255	.00254	.00807	1.5394	.02833
#2	.00053	.00102	.00329	.00161	.01948	1.3939	.03051
#3	.00002	.00028	.00381	-.00069	-.00140	1.4033	.03456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**26.580**	**.00101**	**.00380**	F **309.24**	**.00068**	**.01262**	**.00097**
Stddev	.048	.00103	.00020	2.61	.00100	.00203	.00350
%RSD	.18102	102.63	5.2895	.84510	146.78	16.065	362.04
#1	26.525	-.00017	.00403	311.99	.00029	.01371	.00191
#2	26.602	.00179	.00375	308.94	-.00007	.01387	.00390
#3	26.613	.00140	.00364	306.79	.00182	.01028	-.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141708 Acquired: 6/28/2016 17:44:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00603	-.00211	10.769	-.00049	.45330	.00227	.00090
Stddev	.00610	.00730	.105	.00096	.00324	.00961	.00040
%RSD	101.14	346.44	.97867	196.72	.71523	422.80	43.933
#1	.01107	-.00689	10.832	.00052	.45646	-.00118	.00055
#2	-.00075	.00629	10.827	-.00058	.45347	.01314	.00083
#3	.00777	-.00572	10.647	-.00140	.44998	-.00514	.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.02416	.00349	-.00002
Stddev	.00018	.00017	.00027
%RSD	.72781	4.8721	1121.0
#1	.02432	.00336	-.00019
#2	.02418	.00368	-.00016
#3	.02397	.00343	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8723.1	51951.	2551.9
Stddev	8.7	67.	17.3
%RSD	.09932	.12929	.67853
#1	8714.7	51875.	2544.1
#2	8722.7	51978.	2539.9
#3	8732.0	52001.	2571.8

Approved: June 29, 2016

Sample Name: L1606141708PS Acquired: 6/28/2016 17:48:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574351-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20259**	**5.1687**	**.21063**	**1.2212**	**.54196**	**.02561**	**44.961**	**.02555**
Stddev	.00156	.0084	.00541	.0004	.00321	.00011	.062	.00021
%RSD	.77095	.16245	2.5702	.03511	.59146	.43676	.13812	.83840
#1	.20436	5.1784	.21685	1.2216	.54096	.02570	44.969	.02567
#2	.20201	5.1643	.20696	1.2207	.54555	.02549	45.019	.02531
#3	.20140	5.1635	.20807	1.2214	.53937	.02565	44.896	.02568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10323**	**.25884**	**.25619**	**2.0636**	**26.644**	**.53793**	**21.729**	**.25488**
Stddev	.00046	.00092	.00047	.0109	.087	.00284	.132	.00399
%RSD	.44581	.35703	.18334	.52827	.32624	.52750	.60733	1.5672
#1	.10353	.25833	.25664	2.0633	26.595	.54042	21.633	.25244
#2	.10270	.25829	.25623	2.0528	26.745	.53851	21.880	.25949
#3	.10346	.25991	.25571	2.0746	26.593	.53484	21.675	.25271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52668**	**211.46**	**.25296**	**5.1993**	**.25070**	**.61175**	**.19559**	**7.5114**
Stddev	.00057	.61	.00083	.0189	.00209	.00406	.00531	.0237
%RSD	.10810	.29018	.32665	.36271	.83523	.66301	2.7154	.31540
#1	.52639	211.92	.25279	5.2151	.25160	.61155	.19173	7.5159
#2	.52734	211.69	.25223	5.1784	.24831	.60780	.20165	7.4857
#3	.52632	210.76	.25385	5.2044	.25219	.61590	.19340	7.5324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141708PS Acquired: 6/28/2016 17:48:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574351-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52241	.73587	.50781	.25087	.54413	.51477	.00060
Stddev	.00290	.00286	.00391	.00293	.00166	.00074	.00075
%RSD	.55542	.38921	.77060	1.1694	.30456	.14412	124.36
#1	.52548	.73778	.50331	.25358	.54423	.51470	-.00018
#2	.51972	.73725	.50974	.25127	.54243	.51407	.00132
#3	.52202	.73258	.51039	.24775	.54574	.51555	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8718.0	52220.	2556.6
Stddev	23.7	196.	14.1
%RSD	.27134	.37526	.55135
#1	8736.2	52007.	2546.0
#2	8726.6	52260.	2551.3
#3	8691.3	52392.	2572.6

Approved: June 29, 2016

Sample Name: L1606141708SDL Acquired: 6/28/2016 17:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574351-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.01090	-.00177	.05174	.01000	.00001	8.8372	-.00021
Stddev	.00417	.00346	.00166	.00113	.00148	.00006	.1364	.00021
%RSD	5352.3	31.779	93.638	2.1803	14.756	761.48	1.5432	99.645
#1	.00017	.00731	-.00114	.05151	.01145	.00003	8.8881	-.00044
#2	.00421	.01117	-.00365	.05297	.00850	-.00006	8.6827	-.00014
#3	-.00414	.01422	-.00052	.05075	.01005	.00005	8.9409	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00002	-.00037	.00887	.07836	.00595	3.7843	.00093
Stddev	.00016	.00091	.00083	.02803	.17140	.00666	.0653	.00243
%RSD	242.29	5773.0	224.03	316.15	218.73	111.94	1.7261	261.96
#1	.00012	.00086	.00008	.02549	.25974	-.00139	3.8020	-.00110
#2	-.00018	.00013	.00013	.02462	.05625	.01163	3.7120	.00361
#3	-.00014	-.00095	-.00132	-.02350	-.08091	.00762	3.8391	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	40.985	-.00098	.02316	-.00046	.00112	-.00399	1.1071
Stddev	.00050	.143	.00145	.00549	.00197	.00317	.00369	.0032
%RSD	158.02	.34971	148.07	23.714	432.35	283.73	92.483	.28900
#1	.00038	40.844	-.00095	.02909	-.00059	.00328	-.00185	1.1065
#2	.00079	41.130	-.00244	.01825	-.00236	-.00252	-.00825	1.1106
#3	-.00021	40.981	.00046	.02213	.00158	.00260	-.00187	1.1042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141708SDL Acquired: 6/28/2016 17:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574351-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.04740	-.00415	.00232	.00509	.00125	.00026
Stddev	.00038	.00027	.00885	.00316	.00105	.00019	.00028
%RSD	55.625	.56719	213.10	136.27	20.717	14.844	108.09
#1	.00036	.04714	.00557	.00596	.00466	.00104	.00057
#2	.00059	.04739	-.01172	.00027	.00432	.00135	.00002
#3	.00110	.04768	-.00631	.00073	.00629	.00137	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9108.9	55839.	2680.3
Stddev	144.9	45.	11.8
%RSD	1.5908	.07970	.44130
#1	9276.0	55823.	2679.3
#2	9017.9	55805.	2669.0
#3	9032.9	55889.	2692.6

Approved: June 29, 2016

Sample Name: L1606141708SDL Acquired: 6/28/2016 17:55:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574351-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00126**	**.00679**	**-.00461**	**.01048**	**.00757**	**.00011**	**2.0282**	**.00002**
Stddev	.00171	.00662	.00192	.00130	.00164	.00004	.0721	.00039
%RSD	135.72	97.538	41.786	12.376	21.676	33.161	3.5542	1576.6
#1	-.00322	.01267	-.00428	.00936	.00767	.00014	1.9808	-.00023
#2	-.00010	.00808	-.00667	.01019	.00916	.00013	1.9926	.00048
#3	-.00045	-.00038	-.00287	.01190	.00588	.00007	2.1111	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**-.00063**	**.00029**	**-.00169**	**-.06458**	**.00324**	**.94026**	**-.00186**
Stddev	.00030	.00093	.00186	.00633	.11707	.00642	.04956	.00422
%RSD	519.60	146.77	651.58	374.87	181.27	198.03	5.2707	227.50
#1	-.00038	-.00149	.00071	-.00880	-.05117	.01066	.99743	.00249
#2	.00001	-.00076	-.00175	.00336	-.18778	-.00040	.90962	-.00211
#3	.00020	.00035	.00190	.00037	.04520	-.00053	.91371	-.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**9.3983**	**.00052**	**.00643**	**-.00278**	**.00377**	**-.00358**	**.23575**
Stddev	.00058	.0421	.00029	.00838	.00339	.00244	.00209	.00590
%RSD	5118.0	.44773	56.366	130.29	121.91	64.746	58.308	2.5017
#1	.00064	9.3497	.00078	.01272	-.00577	.00122	-.00340	.23326
#2	-.00047	9.4246	.00057	.00965	-.00346	.00609	-.00159	.24249
#3	-.00020	9.4204	.00020	-.00308	.00090	.00400	-.00576	.23152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141708SDL Acquired: 6/28/2016 17:55:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574351-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**.01067**	**-.00653**	**-.00309**	**.00097**	**.00051**	**-.00036**
Stddev	.00026	.00020	.00256	.00383	.00052	.00006	.00045
%RSD	104.08	1.8650	39.262	124.14	53.131	10.829	124.08
#1	-.00034	.01058	-.00528	-.00684	.00060	.00050	-.00083
#2	.00004	.01054	-.00948	-.00325	.00157	.00046	.00006
#3	-.00045	.01090	-.00483	.00082	.00076	.00057	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8810.1**	**51837.**	**2375.6**
Stddev	22.4	803.	12.2
%RSD	.25452	1.5500	.51506
#1	8798.7	50934.	2387.5
#2	8795.7	52105.	2376.5
#3	8835.9	52472.	2363.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 17:59:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40953	10.358	.40325	.50569	1.0377	.05127	10.173	.05163
Stddev	.00263	.030	.00244	.00340	.0049	.00005	.046	.00026
%RSD	.64327	.29367	.60614	.67192	.46748	.10702	.44991	.49526
#1	.41131	10.365	.40190	.50898	1.0429	.05127	10.218	.05188
#2	.41078	10.384	.40178	.50219	1.0369	.05133	10.173	.05137
#3	.40651	10.324	.40607	.50590	1.0333	.05122	10.126	.05164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20801	.51774	.51845	4.0570	51.916	1.0358	10.380	.51050
Stddev	.00080	.00113	.00121	.0359	.257	.0087	.109	.00365
%RSD	.38296	.21789	.23327	.88438	.49446	.84111	1.0481	.71493
#1	.20753	.51704	.51738	4.0712	51.951	1.0448	10.412	.51462
#2	.20757	.51713	.51821	4.0836	52.154	1.0274	10.470	.50765
#3	.20893	.51904	.51976	4.0162	51.644	1.0352	10.259	.50923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0353	51.313	.51142	10.168	.51109	1.2278	.40810	5.0792
Stddev	.0016	.308	.00212	.020	.00397	.0065	.00283	.0118
%RSD	.15321	.60001	.41391	.19194	.77733	.52512	.69386	.23247
#1	1.0334	51.668	.50929	10.152	.51162	1.2205	.41062	5.0661
#2	1.0361	51.140	.51353	10.163	.50688	1.2303	.40503	5.0828
#3	1.0362	51.129	.51144	10.190	.51477	1.2327	.40864	5.0889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 17:59:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0405**	**1.0319**	**1.0258**	**.51595**	**1.0303**	**1.0251**	**1.0489**
Stddev	.0014	.0058	.0056	.00284	.0033	.0006	.0073
%RSD	.13748	.56547	.54363	.55091	.32022	.05544	.69634
#1	1.0389	1.0385	1.0307	.51844	1.0265	1.0248	1.0547
#2	1.0411	1.0296	1.0270	.51655	1.0327	1.0248	1.0513
#3	1.0416	1.0275	1.0197	.51285	1.0317	1.0258	1.0407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8637.3**	**51278.**	**2447.4**
Stddev	8.2	60.	15.8
%RSD	.09533	.11663	.64353
#1	8627.9	51221.	2433.5
#2	8641.0	51271.	2444.2
#3	8643.1	51341.	2464.5

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 18:03:06 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.01080	-.00271	.00248	.00477	.00007	-.01292	.00019
Stddev	.00093	.01033	.00298	.00158	.00062	.00003	.03053	.00023
%RSD	167.94	95.684	110.04	63.788	13.065	47.480	236.25	120.92
#1	-.00037	.02131	.00021	.00086	.00529	.00005	.01946	-.00005
#2	.00055	.00066	-.00259	.00256	.00494	.00011	-.01705	.00041
#3	.00149	.01043	-.00574	.00402	.00408	.00005	-.04118	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00071	-.00033	-.00673	.08495	.00461	-.03119	-.00165
Stddev	.00027	.00104	.00159	.02679	.11097	.00127	.02914	.00031
%RSD	626.90	146.32	486.02	398.01	130.63	27.579	93.428	18.937
#1	.00002	.00124	-.00155	-.03370	.21293	.00585	-.05176	-.00140
#2	.00019	-.00049	.00147	-.00638	.02640	.00467	-.04395	-.00200
#3	-.00034	.00140	-.00090	.01989	.01551	.00331	.00215	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.02578	-.00088	.00040	-.00098	-.00036	-.00052	.01027
Stddev	.00021	.03313	.00045	.00299	.00110	.00141	.00278	.00190
%RSD	46.697	128.47	50.984	754.22	112.15	395.94	532.06	18.530
#1	.00030	.06378	-.00037	-.00306	-.00117	-.00054	-.00113	.01167
#2	.00035	.01063	-.00119	.00206	-.00198	-.00167	-.00295	.01105
#3	.00068	.00295	-.00107	.00219	.00020	.00114	.00251	.00811
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 18:03:06 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00044**	**.00810**	**-.00323**	**.00026**	**-.00003**	**-.00076**
Stddev	.00017	.00061	.00298	.00109	.00047	.00016	.00056
%RSD	206.40	138.10	36.823	33.645	180.38	466.73	74.263
#1	.00022	.00021	.00523	-.00378	.00040	.00014	-.00039
#2	-.00011	.00113	.01118	-.00394	.00064	-.00017	-.00141
#3	.00015	-.00002	.00788	-.00198	-.00026	-.00007	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9036.2**	**53954.**	**2557.7**
Stddev	26.9	80.	23.2
%RSD	.29811	.14859	.90574
#1	9037.5	53990.	2536.5
#2	9008.6	53862.	2554.3
#3	9062.4	54009.	2582.4

Approved: June 29, 2016

Sample Name: PBW B2 Acquired: 6/28/2016 18:07:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00170	.01043	-.00052	-.00011	.00401	.00007	-.00778	-.00022
Stddev	.00200	.00199	.00155	.00108	.00075	.00012	.01103	.00049
%RSD	117.21	19.061	298.33	973.04	18.651	166.11	141.79	229.43
#1	.00033	.01227	.00099	.00098	.00488	.00019	-.00668	-.00044
#2	-.00177	.01070	-.00043	-.00014	.00355	-.00004	.00266	-.00056
#3	-.00366	.00832	-.00211	-.00118	.00361	.00007	-.01931	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00016	-.00003	-.00729	-.08053	.00362	.00599	-.00068
Stddev	.00020	.00072	.00044	.04593	.12257	.00210	.05243	.00472
%RSD	1586.2	448.35	1436.5	630.15	152.21	57.897	875.90	696.56
#1	.00025	-.00030	.00028	-.00464	.04618	.00556	-.04922	.00095
#2	-.00010	-.00021	.00017	-.05448	-.08928	.00391	.05511	.00302
#3	-.00011	.00099	-.00054	.03726	-.19848	.00140	.01207	-.00600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	-.04423	-.00022	.00531	-.00089	-.00119	.00160	-.02066
Stddev	.00010	.03208	.00087	.00542	.00193	.00297	.00550	.00313
%RSD	415.26	72.525	401.96	101.93	217.31	249.65	344.45	15.170
#1	-.00009	-.00833	-.00050	.00397	-.00247	-.00230	.00628	-.01727
#2	.00010	-.05429	.00076	.01128	.00126	.00217	.00297	-.02345
#3	.00005	-.07006	-.00091	.00070	-.00146	-.00344	-.00446	-.02126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW B2 Acquired: 6/28/2016 18:07:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00015	-.00225	-.00154	-.00086	.00116	.00006
Stddev	.00083	.00033	.00560	.00109	.00062	.00019	.00059
%RSD	296.10	220.11	249.29	70.822	71.238	16.407	922.03
#1	.00057	-.00047	-.00793	-.00227	-.00023	.00104	-.00013
#2	.00092	.00019	-.00209	-.00207	-.00091	.00107	-.00041
#3	-.00066	-.00017	.00327	-.00029	-.00146	.00138	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9262.0	55509.	2596.5
Stddev	18.3	93.	16.0
%RSD	.19752	.16788	.61454
#1	9274.8	55517.	2609.7
#2	9270.0	55412.	2600.9
#3	9241.0	55598.	2578.7

Approved: June 29, 2016

Sample Name: LCSW B2 Acquired: 6/28/2016 18:10:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19908**	**5.0837**	**.19736**	**.97686**	**.51693**	**.02483**	**5.1160**	**.02576**
Stddev	.00333	.0233	.00330	.00209	.00312	.00008	.0362	.00019
%RSD	1.6735	.45847	1.6711	.21444	.60374	.33692	.70721	.74443
#1	.20187	5.1093	.19698	.97458	.51353	.02488	5.0743	.02555
#2	.19539	5.0782	.19426	.97732	.51761	.02473	5.1397	.02592
#3	.19996	5.0637	.20083	.97869	.51966	.02488	5.1340	.02583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10460**	**.25742**	**.25769**	**2.0140**	**25.917**	**.52465**	**5.3350**	**.25267**
Stddev	.00067	.00235	.00084	.0526	.053	.00613	.0905	.00627
%RSD	.63742	.91298	.32425	2.6137	.20278	1.1691	1.6966	2.4834
#1	.10462	.25478	.25712	2.0495	25.966	.51774	5.4250	.24876
#2	.10392	.25819	.25865	1.9535	25.922	.52675	5.3359	.24934
#3	.10526	.25929	.25731	2.0391	25.861	.52946	5.2440	.25991
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51758**	**25.584**	**.25454**	**4.9065**	**.25584**	**.59881**	**.19289**	**2.4365**
Stddev	.00117	.139	.00175	.0056	.00447	.00308	.00511	.0047
%RSD	.22594	.54341	.68580	.11407	1.7469	.51446	2.6494	.19215
#1	.51794	25.441	.25346	4.9066	.25810	.60066	.18701	2.4311
#2	.51627	25.594	.25361	4.9121	.25069	.59525	.19551	2.4392
#3	.51853	25.718	.25655	4.9009	.25872	.60051	.19617	2.4392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW B2 Acquired: 6/28/2016 18:10:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51885**	**.51980**	**.51295**	**.25574**	**.51101**	**.50971**	**.00042**
Stddev	.00154	.00188	.00585	.00184	.00161	.00098	.00030
%RSD	.29738	.36262	1.1413	.71911	.31603	.19237	71.457
#1	.51820	.51785	.50904	.25411	.51259	.50924	.00060
#2	.51773	.51992	.51968	.25538	.51108	.50904	.00007
#3	.52061	.52162	.51013	.25773	.50936	.51083	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8877.1**	**53509.**	**2551.3**
Stddev	31.9	97.	7.5
%RSD	.35911	.18077	.29508
#1	8840.7	53429.	2556.0
#2	8900.2	53617.	2555.2
#3	8890.4	53481.	2542.6

Approved: June 29, 2016

Sample Name: L1606111601 Acquired: 6/28/2016 18:14:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00175	.75194	-.00188	.32623	.17213	.00042	25.558	.00036
Stddev	.00238	.00520	.00227	.00208	.00077	.00003	.203	.00028
%RSD	136.60	.69204	120.67	.63750	.44552	6.9430	.79597	78.709
#1	.00443	.75721	-.00276	.32666	.17289	.00039	25.699	.00066
#2	.00095	.74680	-.00356	.32806	.17213	.00044	25.649	.00033
#3	-.00014	.75181	.00070	.32397	.17136	.00044	25.324	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00162	.00161	.43834	3.6149	.00818	8.6223	1.3794
Stddev	.00029	.00043	.00106	.01562	.1050	.00271	.0664	.0124
%RSD	66.289	26.509	65.893	3.5643	2.9055	33.115	.76954	.89552
#1	.00018	.00211	.00097	.42430	3.6132	.00657	8.6870	1.3840
#2	.00037	.00131	.00283	.43554	3.7208	.00667	8.5544	1.3888
#3	.00075	.00144	.00102	.45517	3.5108	.01131	8.6255	1.3654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.82237	61.256	.01056	.10449	-.00054	.00079	-.00339	1.3032
Stddev	.01556	.433	.00155	.00880	.00214	.00072	.00094	.0137
%RSD	1.8916	.70641	14.638	8.4251	399.33	91.364	27.639	1.0523
#1	.82848	61.393	.00878	.10322	-.00275	-.00004	-.00252	1.3043
#2	.83394	61.603	.01153	.11386	.00153	.00114	-.00439	1.3164
#3	.80468	60.771	.01138	.09639	-.00039	.00126	-.00327	1.2890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111601 Acquired: 6/28/2016 18:14:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.12519	.00073	.00973	.28446	.03296	.00120
Stddev	.00125	.00052	.01152	.00045	.00234	.00077	.00065
%RSD	240.46	.41609	1586.8	4.5963	.82348	2.3343	53.563
#1	.00060	.12497	.00089	.01024	.28676	.03326	.00114
#2	-.00077	.12578	-.01088	.00945	.28455	.03352	.00188
#3	.00173	.12482	.01216	.00948	.28207	.03208	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8934.8	53164.	2570.5
Stddev	63.4	236.	32.6
%RSD	.70947	.44424	1.2681
#1	8865.2	53054.	2563.3
#2	8949.9	53003.	2542.1
#3	8989.3	53435.	2606.1

Approved: June 29, 2016

Sample Name: L1606111602 Acquired: 6/28/2016 18:18:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00167	.05684	-.00343	.33210	.01181	.00032	25.192	.00026
Stddev	.00070	.00702	.00218	.00119	.00056	.00011	.210	.00018
%RSD	41.704	12.357	63.446	.35804	4.7323	34.511	.83422	71.792
#1	-.00245	.04934	-.00499	.33083	.01149	.00038	24.963	.00046
#2	-.00144	.06326	-.00094	.33231	.01149	.00020	25.377	.00010
#3	-.00112	.05791	-.00437	.33318	.01246	.00039	25.236	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00054	.00098	.05399	3.4614	.00763	8.3315	1.1868
Stddev	.00037	.00050	.00047	.02106	.0611	.00138	.1473	.0089
%RSD	43.361	91.231	48.453	39.004	1.7663	18.129	1.7684	.75103
#1	.00123	.00086	.00114	.07669	3.4270	.00610	8.4685	1.1955
#2	.00088	.00080	.00135	.05019	3.5320	.00879	8.3503	1.1873
#3	.00048	-.00003	.00045	.03509	3.4252	.00801	8.1757	1.1777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.77485	61.289	.00273	.00726	-.00250	.00670	-.00397	.99945
Stddev	.02513	.173	.00112	.00756	.00399	.00495	.00812	.02573
%RSD	3.2436	.28163	41.035	104.18	159.14	73.879	204.64	2.5740
#1	.78995	61.413	.00210	.01493	-.00616	.01227	-.00779	1.0114
#2	.78875	61.363	.00402	.00703	.00175	.00505	.00536	1.0171
#3	.74583	61.092	.00207	-.00019	-.00310	.00279	-.00947	.96993
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111602 Acquired: 6/28/2016 18:18:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.11618	-.00756	.00607	.22798	.00125	.00119
Stddev	.00051	.00073	.00385	.00060	.00039	.00028	.00063
%RSD	167.15	.62850	50.905	9.9696	.17155	22.072	53.253
#1	.00088	.11591	-.00950	.00538	.22834	.00093	.00056
#2	-.00010	.11563	-.01005	.00634	.22804	.00143	.00118
#3	.00014	.11701	-.00313	.00649	.22756	.00138	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8986.7	53984.	2599.1
Stddev	18.2	25.	10.7
%RSD	.20235	.04593	.41189
#1	8972.4	53975.	2586.8
#2	8980.5	54013.	2604.3
#3	9007.1	53966.	2606.2

Approved: June 29, 2016

Sample Name: L1606111603 Acquired: 6/28/2016 18:22:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00223	1.1464	-.00441	.28841	.02792	.00827	8.9601	.00016
Stddev	.00052	.0149	.00268	.00355	.00152	.00004	.1383	.00022
%RSD	23.436	1.2979	60.747	1.2309	5.4320	.50015	1.5440	137.57
#1	.00165	1.1556	-.00488	.29186	.02923	.00831	8.9131	-.00009
#2	.00238	1.1543	-.00153	.28860	.02626	.00826	9.1158	.00031
#3	.00267	1.1292	-.00682	.28477	.02827	.00823	8.8514	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	-.00064	.00258	.07504	4.0785	.00681	3.0877	.00503
Stddev	.00006	.00074	.00165	.01492	.0121	.00176	.0490	.00383
%RSD	5.5066	116.09	64.203	19.881	.29670	25.819	1.5852	76.094
#1	.00112	-.00064	.00420	.07009	4.0833	.00756	3.1337	.00894
#2	.00102	.00010	.00263	.09181	4.0647	.00807	3.0931	.00128
#3	.00112	-.00138	.00089	.06323	4.0874	.00480	3.0363	.00488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0749	53.201	.00601	.03502	-.00442	.00758	.00168	.47187
Stddev	.0024	.169	.00041	.00508	.00342	.00227	.00368	.00413
%RSD	.11769	.31689	6.7944	14.494	77.276	29.913	219.34	.87606
#1	2.0777	53.286	.00597	.03074	-.00237	.00807	-.00232	.47663
#2	2.0732	53.311	.00644	.04063	-.00253	.00511	.00245	.46976
#3	2.0738	53.007	.00563	.03371	-.00837	.00956	.00491	.46922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111603 Acquired: 6/28/2016 18:22:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.07044	-.00406	.19724	5.3313	.00345	.00238
Stddev	.00044	.00089	.00986	.00504	.0090	.00003	.00019
%RSD	41.969	1.2705	243.00	2.5534	.16898	.76249	7.7882
#1	.00085	.07098	.00719	.20246	5.3414	.00348	.00217
#2	.00155	.06941	-.01123	.19241	5.3281	.00342	.00253
#3	.00074	.07094	-.00814	.19686	5.3242	.00346	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9079.8	54344.	2576.4
Stddev	20.1	201.	12.9
%RSD	.22108	.37061	.50181
#1	9060.8	54116.	2567.7
#2	9077.8	54415.	2570.1
#3	9100.8	54499.	2591.2

Approved: June 29, 2016

Sample Name: L1606111604 Acquired: 6/28/2016 18:26:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00128	1.0608	.00027	.29379	.02626	.00838	8.9222	.00022
Stddev	.00216	.0148	.00204	.00040	.00119	.00001	.1772	.00016
%RSD	168.06	1.3915	765.02	.13570	4.5474	.16575	1.9866	70.345
#1	.00245	1.0777	.00249	.29425	.02614	.00839	9.1266	.00005
#2	.00261	1.0543	-.00017	.29358	.02751	.00837	8.8113	.00036
#3	-.00121	1.0505	-.00152	.29355	.02513	.00837	8.8286	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	-.00107	.00202	.01618	4.0008	.00398	2.9400	.00197
Stddev	.00046	.00041	.00114	.04826	.0713	.00315	.1370	.00199
%RSD	39.980	38.272	56.060	298.24	1.7824	79.084	4.6586	101.16
#1	.00066	-.00124	.00325	.00768	3.9409	.00747	2.9887	.00363
#2	.00157	-.00060	.00101	.06812	3.9817	.00310	2.7854	.00251
#3	.00122	-.00135	.00181	-.02726	4.0797	.00137	3.0460	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0707	53.672	.00227	.01864	.00250	.00843	.00429	.39329
Stddev	.0652	.416	.00124	.00348	.00202	.00309	.00847	.00926
%RSD	3.1464	.77539	54.674	18.645	80.869	36.635	197.40	2.3550
#1	2.1089	54.149	.00341	.01565	.00353	.01005	.01388	.39850
#2	2.1078	53.380	.00245	.02245	.00379	.01038	-.00217	.39878
#3	1.9955	53.488	.00095	.01781	.00017	.00487	.00116	.38260
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111604 Acquired: 6/28/2016 18:26:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**.07097**	**-.00020**	**.19980**	**5.4078**	**.00087**	**.00220**
Stddev	.00049	.00096	.00857	.00144	.0032	.00009	.00030
%RSD	88.077	1.3536	4391.4	.71878	.05937	10.899	13.574
#1	-.00002	.07208	.00167	.19930	5.4115	.00076	.00250
#2	-.00098	.07035	-.00954	.20141	5.4060	.00094	.00220
#3	-.00067	.07048	.00729	.19867	5.4059	.00090	.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9098.1**	**54839.**	**2634.9**
Stddev	10.8	84.	19.7
%RSD	.11843	.15302	.74728
#1	9087.3	54934.	2612.4
#2	9098.3	54808.	2643.3
#3	9108.9	54775.	2649.1

Approved: June 29, 2016

Sample Name: L1606111605 Acquired: 6/28/2016 18:30:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	1.1046	-.00047	.29401	.02674	.00837	9.0902	.00018
Stddev	.00051	.0068	.00195	.00276	.00055	.00013	.1597	.00025
%RSD	183.66	.61449	418.42	.93718	2.0449	1.5797	1.7571	141.92
#1	.00052	1.1045	-.00089	.29719	.02618	.00851	9.2744	.00038
#2	.00062	1.1115	-.00216	.29244	.02678	.00825	9.0057	.00026
#3	-.00031	1.0979	.00166	.29240	.02727	.00833	8.9905	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.00036	.00344	-.00021	4.1151	.00307	3.0707	.00584
Stddev	.00007	.00085	.00090	.00481	.0581	.00406	.0774	.00070
%RSD	7.8761	232.39	26.094	2293.5	1.4117	132.06	2.5207	12.039
#1	.00097	-.00039	.00248	-.00372	4.1757	.00772	3.0599	.00646
#2	.00083	.00021	.00426	-.00219	4.0599	.00023	3.1530	.00598
#3	.00090	.00128	.00357	.00528	4.1097	.00126	2.9993	.00507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.1147	54.076	.00459	.02783	.00092	.00817	.00379	.45224
Stddev	.0030	.380	.00072	.00802	.00370	.00274	.00228	.00672
%RSD	.13986	.70301	15.787	28.835	402.73	33.495	60.194	1.4856
#1	2.1120	54.403	.00376	.02582	-.00328	.00502	.00533	.44893
#2	2.1143	54.165	.00509	.02100	.00372	.00962	.00117	.45997
#3	2.1179	53.659	.00493	.03667	.00232	.00988	.00488	.44781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111605 Acquired: 6/28/2016 18:30:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.07120**	**-.00047**	**.19870**	**5.4024**	**.00245**	**.00289**
Stddev	.00042	.00060	.00634	.00473	.0163	.00006	.00013
%RSD	119.85	.83776	1355.6	2.3784	.30238	2.3257	4.5179
#1	.00035	.07164	-.00580	.19939	5.4209	.00245	.00275
#2	-.00007	.07052	.00654	.19367	5.3901	.00251	.00301
#3	.00076	.07144	-.00215	.20304	5.3963	.00240	.00292
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9105.6**	**54691.**	**2624.7**
Stddev	15.2	82.	15.9
%RSD	.16696	.14967	.60539
#1	9119.5	54648.	2613.5
#2	9108.0	54785.	2617.8
#3	9089.3	54640.	2642.9

Approved: June 29, 2016

Sample Name: L1606111606 Acquired: 6/28/2016 18:33:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00148	1.0362	.00000	.29254	.02502	.00843	8.7484	.00005
Stddev	.00312	.0077	.00375	.00301	.00132	.00005	.0697	.00043
%RSD	211.26	.74553	75583.	1.0288	5.2832	.58296	.79709	890.62
#1	.00415	1.0304	-.00385	.29524	.02349	.00848	8.6784	.00054
#2	.00222	1.0450	.00023	.29310	.02572	.00839	8.7490	-.00026
#3	-.00195	1.0333	.00364	.28930	.02584	.00841	8.8179	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.00056	.00206	-.00926	3.9257	.00283	2.8857	.00118
Stddev	.00030	.00120	.00133	.03110	.1203	.00120	.1392	.00270
%RSD	18.711	214.76	64.670	335.83	3.0638	42.265	4.8225	229.65
#1	.00171	-.00081	.00219	.00883	3.9102	.00360	2.9016	-.00067
#2	.00185	.00144	.00067	-.04518	3.8138	.00345	3.0163	.00428
#3	.00127	.00105	.00332	.00856	4.0529	.00145	2.7393	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0536	53.544	.00308	.01428	-.00163	.00492	.00033	.39787
Stddev	.0614	.064	.00025	.00557	.00089	.00226	.00282	.00762
%RSD	2.9907	.12002	8.0178	39.006	54.415	45.871	859.62	1.9160
#1	2.0891	53.487	.00286	.00796	-.00119	.00750	-.00270	.40196
#2	2.0891	53.531	.00335	.01849	-.00105	.00334	.00287	.40259
#3	1.9827	53.613	.00302	.01638	-.00266	.00392	.00082	.38908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111606 Acquired: 6/28/2016 18:33:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.06946	.00006	.19289	5.3081	.00068	.00210
Stddev	.00064	.00041	.00383	.00136	.0126	.00024	.00069
%RSD	629.49	.59397	6372.8	.70403	.23798	34.528	32.797
#1	.00028	.06986	-.00421	.19344	5.3225	.00055	.00130
#2	-.00061	.06949	.00119	.19134	5.3025	.00054	.00247
#3	.00063	.06904	.00319	.19388	5.2992	.00096	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9170.7	54866.	2633.7
Stddev	6.0	273.	8.6
%RSD	.06522	.49683	.32757
#1	9164.6	54558.	2643.7
#2	9176.5	55078.	2628.0
#3	9171.0	54961.	2629.5

Approved: June 29, 2016

Sample Name: L1606111607 Acquired: 6/28/2016 18:37:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	1.1117	.00162	.28972	.02692	.00835	9.0280	.00021
Stddev	.00194	.0108	.00405	.00301	.00121	.00002	.1291	.00015
%RSD	92.265	.97432	250.36	1.0374	4.4977	.29176	1.4303	70.337
#1	.00010	1.1122	.00562	.28943	.02812	.00832	9.1025	.00016
#2	.00223	1.1223	.00172	.29286	.02570	.00836	8.8789	.00037
#3	.00398	1.1007	-.00249	.28687	.02693	.00836	9.1026	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	-.00114	.00389	.07623	4.0957	.00739	2.9495	.00442
Stddev	.00011	.00129	.00096	.01157	.0445	.00783	.0540	.00109
%RSD	8.1592	112.30	24.657	15.180	1.0873	106.06	1.8298	24.709
#1	.00140	-.00250	.00399	.08950	4.0447	.00034	2.9996	.00516
#2	.00120	-.00099	.00479	.06828	4.1157	.00599	2.8924	.00494
#3	.00137	.00006	.00288	.07090	4.1268	.01582	2.9566	.00317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0386	53.529	.00507	.03227	-.00061	.00632	.00043	.44078
Stddev	.0621	.302	.00017	.00294	.00248	.00399	.00658	.01514
%RSD	3.0463	.56438	3.4047	9.0970	405.64	63.116	1540.8	3.4349
#1	2.0762	53.822	.00487	.02889	.00186	.00185	-.00148	.44888
#2	2.0727	53.218	.00515	.03376	-.00310	.00759	.00775	.45015
#3	1.9669	53.546	.00518	.03416	-.00059	.00951	-.00499	.42332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111607 Acquired: 6/28/2016 18:37:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.07058	.00030	.20096	5.4024	.00417	.00203
Stddev	.00130	.00048	.01325	.00141	.0090	.00022	.00037
%RSD	1062.3	.67593	4477.7	.70349	.16631	5.2101	18.227
#1	-.00089	.07107	.00038	.19936	5.4094	.00435	.00234
#2	-.00033	.07054	.01350	.20205	5.4055	.00424	.00162
#3	.00158	.07012	-.01300	.20146	5.3923	.00393	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9201.6	55034.	2642.1
Stddev	7.1	79.	26.3
%RSD	.07703	.14385	.99526
#1	9205.8	54943.	2626.0
#2	9193.5	55085.	2672.5
#3	9205.7	55075.	2627.9

Approved: June 29, 2016

Sample Name: L1606111608 Acquired: 6/28/2016 18:41:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	1.0836	.00155	.29561	.02737	.00841	8.9137	-.00007
Stddev	.00156	.0090	.00338	.00146	.00064	.00008	.0643	.00007
%RSD	4624.4	.83043	217.43	.49435	2.3557	.95212	.72145	103.03
#1	.00100	1.0803	.00289	.29408	.02794	.00850	8.9526	-.00007
#2	-.00177	1.0767	-.00229	.29699	.02667	.00839	8.9490	.00000
#3	.00087	1.0938	.00407	.29576	.02749	.00834	8.8395	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	-.00027	.00315	-.00654	4.0822	.00491	2.9725	.00152
Stddev	.00045	.00163	.00123	.01841	.1560	.00365	.0835	.00117
%RSD	48.428	601.30	39.073	281.52	3.8212	74.269	2.8076	77.224
#1	.00143	.00001	.00352	.00348	4.1388	.00247	2.9149	.00036
#2	.00068	-.00203	.00414	-.02779	4.2020	.00911	3.0682	.00271
#3	.00064	.00120	.00177	.00468	3.9058	.00316	2.9344	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0716	54.124	.00334	.01569	-.00178	.00730	.00009	.38883
Stddev	.0672	.212	.00081	.00676	.00119	.00610	.00096	.00730
%RSD	3.2436	.39123	24.294	43.076	67.031	83.462	1099.7	1.8783
#1	2.1038	54.235	.00342	.00933	-.00315	.01434	-.00098	.39366
#2	2.1167	54.257	.00250	.01495	-.00107	.00369	.00088	.39241
#3	1.9944	53.880	.00412	.02278	-.00111	.00388	.00036	.38043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111608 Acquired: 6/28/2016 18:41:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.07040	-.00406	.20156	5.4999	.00103	.00270
Stddev	.00025	.00061	.01483	.00093	.0053	.00022	.00040
%RSD	48.871	.86374	364.91	.46232	.09575	21.050	14.848
#1	.00078	.06990	.01194	.20238	5.5013	.00078	.00314
#2	.00049	.07022	-.01733	.20055	5.5043	.00112	.00236
#3	.00028	.07108	-.00680	.20175	5.4940	.00118	.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9087.9	54467.	2610.4
Stddev	38.8	90.	2.9
%RSD	.42699	.16539	.10989
#1	9131.5	54444.	2612.9
#2	9057.3	54566.	2611.1
#3	9074.7	54390.	2607.3

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 18:45:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39229	9.9415	.39105	.49054	.99686	.04957	9.8857	.04959
Stddev	.00335	.0095	.00513	.00388	.00176	.00023	.0395	.00014
%RSD	.85319	.09541	1.3130	.79016	.17667	.46681	.39949	.28298
#1	.39521	9.9524	.38973	.48964	.99784	.04938	9.8418	.04971
#2	.38864	9.9353	.39671	.48720	.99791	.04983	9.9182	.04961
#3	.39302	9.9368	.38670	.49479	.99482	.04950	9.8972	.04943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19995	.49831	.49568	3.9005	50.426	1.0075	9.9621	.48878
Stddev	.00185	.00270	.00320	.0383	.052	.0078	.0603	.00225
%RSD	.92562	.54191	.64620	.98241	.10382	.77658	.60485	.46087
#1	.20112	.50117	.49741	3.9444	50.472	1.0071	9.9738	.49127
#2	.20092	.49581	.49765	3.8837	50.369	.99982	10.016	.48690
#3	.19782	.49794	.49199	3.8735	50.435	1.0155	9.8969	.48816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99302	49.356	.49108	9.7656	.49096	1.1720	.39192	4.8719
Stddev	.00566	.139	.00280	.0493	.00323	.0138	.00972	.0103
%RSD	.57015	.28252	.57000	.50534	.65722	1.1784	2.4806	.21075
#1	.99726	49.251	.49381	9.7998	.49123	1.1824	.39913	4.8781
#2	.99521	49.515	.49123	9.7879	.48761	1.1774	.39576	4.8777
#3	.98659	49.303	.48822	9.7090	.49404	1.1564	.38086	4.8601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 18:45:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99872	.99343	.98950	.50063	.99718	.98347	.99916
Stddev	.00591	.00326	.01354	.00208	.00090	.00598	.00568
%RSD	.59190	.32803	1.3679	.41514	.09036	.60831	.56812
#1	1.0032	.99072	.98506	.49978	.99708	.98808	.99430
#2	1.0009	.99705	.97874	.50300	.99813	.98561	.99778
#3	.99203	.99253	1.0047	.49911	.99633	.97671	1.0054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9221.9	54639.	2638.4
Stddev	13.6	202.	11.2
%RSD	.14695	.37013	.42347
#1	9211.2	54552.	2650.8
#2	9237.1	54495.	2629.1
#3	9217.4	54870.	2635.2

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 18:49:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.00990	-.00013	.00158	.00622	.00015	-.03448	-.00005
Stddev	.00201	.00440	.00170	.00465	.00108	.00012	.06651	.00006
%RSD	284.08	44.487	1351.7	293.28	17.312	75.433	192.88	107.88
#1	-.00024	.01493	.00061	.00689	.00663	.00014	.00916	-.00005
#2	-.00065	.00802	-.00207	-.00177	.00703	.00028	-.11104	.00000
#3	.00301	.00675	.00108	-.00037	.00500	.00005	-.00158	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	-.00059	-.00069	-.03680	.10197	.00489	.05898	.00047
Stddev	.00049	.00057	.00083	.01990	.12028	.00273	.03828	.00209
%RSD	250.97	96.139	120.16	54.083	117.96	55.806	64.899	448.61
#1	.00032	-.00064	.00011	-.05829	.13290	.00716	.01495	.00055
#2	-.00024	-.00000	-.00063	-.01900	.20376	.00186	.07761	-.00167
#3	-.00065	-.00113	-.00155	-.03311	-.03076	.00564	.08437	.00251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.03142	.00040	-.00674	.00048	.00402	.00227	.00817
Stddev	.00075	.00727	.00091	.00301	.00387	.00356	.00433	.00283
%RSD	299.38	23.154	227.74	44.575	805.42	88.468	190.77	34.630
#1	-.00012	-.03106	-.00003	-.01019	.00167	.00785	.00618	.01078
#2	-.00024	-.03887	.00145	-.00468	.00362	.00082	.00301	.00858
#3	.00112	-.02433	-.00022	-.00536	-.00385	.00340	-.00238	.00516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 18:49:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.00016**	**-.00514**	**-.00296**	**-.00003**	**-.00004**	**-.00000**
Stddev	.00082	.00022	.01243	.00218	.00079	.00006	.00076
%RSD	35165.	134.62	241.93	73.509	2857.6	158.73	314340.
#1	-.00095	.00039	-.01930	-.00352	.00021	-.00010	-.00021
#2	.00045	.00012	.00396	-.00481	-.00091	.00002	.00084
#3	.00049	-.00003	-.00008	-.00056	.00062	-.00004	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8657.8**	**52038.**	**2416.2**
Stddev	9.1	416.	5.6
%RSD	.10560	.80031	.23071
#1	8648.4	51987.	2418.7
#2	8666.6	52477.	2420.0
#3	8658.5	51649.	2409.8

Approved: June 29, 2016

Sample Name: L1606111609 Acquired: 6/28/2016 18:52:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00169	F -.24671	.00229	.31259	.02791	.01137	34.044
Stddev	.00182	.00332	.00272	.00627	.00207	.00015	.034
%RSD	108.17	1.3465	118.72	2.0066	7.4142	1.3347	.09998
#1	.00061	-.24434	.00262	.30730	.02980	.01136	34.020
#2	.00379	-.24528	-.00058	.31952	.02570	.01123	34.083
#3	.00066	-.25051	.00484	.31094	.02824	.01153	34.030
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00					
Low Limit		-.10000					

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00211	-.00014	.01058	.02927	8.1895	.00744
Stddev	.00018	.00013	.00056	.00103	.01880	.0223	.00285
%RSD	63.443	5.9452	413.29	9.7235	64.214	.27208	38.275
#1	.00044	.00214	-.00068	.01172	.05095	8.1784	.00919
#2	.00030	.00221	.00044	.00972	.01751	8.2152	.00415
#3	.00009	.00197	-.00017	.01030	.01936	8.1750	.00898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.085	.00986	3.4753	73.279	.01200	.10844	-.00023
Stddev	.146	.00193	.0933	.091	.00073	.01049	.00052
%RSD	1.1124	19.578	2.6833	.12431	6.1213	9.6747	220.87
#1	13.015	.01182	3.5272	73.382	.01266	.10696	.00034
#2	13.253	.00982	3.5310	73.212	.01121	.11959	-.00040
#3	12.988	.00796	3.3676	73.241	.01214	.09876	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606111609 Acquired: 6/28/2016 18:52:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01341**	**.00048**	**1.8767**	**.00012**	**.18806**	**-.01559**	**.26285**
Stddev	.00215	.00285	.0302	.00117	.00070	.00849	.00279
%RSD	16.054	593.98	1.6105	1001.4	.37260	54.468	1.0632
#1	.01137	.00362	1.9013	.00122	.18745	-.02478	.26486
#2	.01320	-.00195	1.8860	.00025	.18882	-.00803	.26404
#3	.01566	-.00023	1.8430	-.00111	.18791	-.01396	.25966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**7.1565**	**.01706**	**.00390**
Stddev	.0080	.00047	.00028
%RSD	.11254	2.7742	7.1930
#1	7.1473	.01735	.00373
#2	7.1594	.01731	.00422
#3	7.1626	.01651	.00374
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8637.3**	**51686.**	**2438.8**
Stddev	25.5	111.	18.4
%RSD	.29499	.21405	.75414
#1	8657.6	51701.	2418.8
#2	8645.7	51569.	2442.5
#3	8608.7	51789.	2455.0

Approved: June 29, 2016

Sample Name: L1606111610 Acquired: 6/28/2016 18:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00186**	F **-.26089**	**.00361**	**.32094**	**.02805**	**.01175**	**34.227**
Stddev	.00286	.00497	.00209	.00164	.00119	.00004	.119
%RSD	153.61	1.9054	57.885	.50971	4.2395	.35073	.34827
#1	.00418	-.26319	.00600	.32229	.02668	.01176	34.342
#2	-.00133	-.25518	.00273	.32140	.02867	.01178	34.236
#3	.00273	-.26429	.00211	.31912	.02880	.01170	34.104
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00					
Low Limit		-.10000					

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00133**	**.00023**	**.00630**	**.00366**	**8.0682**	**.00998**
Stddev	.00013	.00007	.00098	.00212	.02782	.0640	.00247
%RSD	59.800	5.5704	427.48	33.690	759.07	.79377	24.736
#1	.00035	.00141	-.00091	.00835	-.01455	8.1226	.00792
#2	.00022	.00127	.00077	.00411	-.01014	8.0843	.01271
#3	.00009	.00130	.00082	.00645	.03568	7.9976	.00929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**13.124**	**.00493**	**3.5460**	**74.032**	**.00990**	**.11211**	**-.00262**
Stddev	.040	.00133	.0477	.229	.00101	.00704	.00448
%RSD	.30775	26.938	1.3453	.30869	10.165	6.2824	171.27
#1	13.104	.00643	3.5704	74.144	.01095	.11324	.00151
#2	13.170	.00443	3.5766	74.183	.00982	.10457	-.00739
#3	13.097	.00392	3.4910	73.769	.00894	.11852	-.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606111610 Acquired: 6/28/2016 18:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01102**	**.00507**	**1.8845**	**.00126**	**.18824**	**.00050**	**.26949**
Stddev	.00429	.00618	.0149	.00056	.00018	.00574	.00545
%RSD	38.980	121.81	.79273	44.228	.09495	1156.8	2.0221
#1	.01018	.01016	1.8905	.00172	.18843	.00529	.26417
#2	.00720	-.00180	1.8955	.00064	.18807	.00206	.26925
#3	.01567	.00685	1.8675	.00140	.18821	-.00586	.27506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**7.2308**	**.01161**	**.00445**
Stddev	.0079	.00013	.00036
%RSD	.10869	1.0937	8.2072
#1	7.2225	.01163	.00451
#2	7.2316	.01172	.00405
#3	7.2381	.01147	.00477
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8565.6**	**51126.**	**2443.1**
Stddev	32.1	49.	10.7
%RSD	.37452	.09590	.43979
#1	8602.6	51159.	2447.6
#2	8546.8	51149.	2430.8
#3	8547.3	51069.	2450.8

Approved: June 29, 2016

Sample Name: L1606111611 Acquired: 6/28/2016 19:00:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.15531	.00139	.28793	.01827	.01349	24.276	.00009
Stddev	.00107	.01241	.00393	.00635	.00086	.00004	.280	.00036
%RSD	103.35	7.9927	283.58	2.2043	4.7272	.32117	1.1547	390.92
#1	.00070	.14804	-.00256	.29526	.01783	.01353	24.198	.00026
#2	.00018	.14825	.00142	.28441	.01927	.01344	24.587	-.00032
#3	.00224	.16965	.00531	.28413	.01772	.01350	24.043	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	.00300	.00201	.00864	6.5616	.01000	6.1571	.00075
Stddev	.00028	.00060	.00288	.05988	.1467	.00381	.1385	.00265
%RSD	17.628	19.937	142.86	693.02	2.2358	38.125	2.2501	355.75
#1	.00142	.00238	-.00123	.07744	6.6406	.01428	6.0978	-.00228
#2	.00141	.00307	.00426	-.01970	6.3924	.00877	6.0580	.00268
#3	.00189	.00357	.00301	-.03181	6.6519	.00695	6.3154	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.7556	61.390	.01872	.08689	.00039	.00398	.00545	3.8083
Stddev	.0037	.059	.00102	.00595	.00183	.00284	.00115	.0067
%RSD	.13597	.09548	5.4741	6.8505	472.50	71.316	21.148	.17711
#1	2.7593	61.416	.01989	.09312	-.00124	.00695	.00540	3.8145
#2	2.7559	61.431	.01827	.08126	.00237	.00367	.00432	3.8011
#3	2.7518	61.323	.01799	.08629	.00003	.00131	.00662	3.8092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111611 Acquired: 6/28/2016 19:00:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.11645	-.00318	.29346	7.9427	.02210	.00268
Stddev	.00089	.00042	.00288	.00285	.0190	.00021	.00040
%RSD	424.15	.35948	90.314	.97028	.23929	.95091	14.963
#1	-.00007	.11631	-.00534	.29241	7.9282	.02188	.00233
#2	.00120	.11692	-.00429	.29668	7.9358	.02230	.00312
#3	-.00050	.11612	.00008	.29129	7.9642	.02211	.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8640.4	51497.	2440.2
Stddev	.7	35.	3.8
%RSD	.00807	.06819	.15410
#1	8641.2	51534.	2436.1
#2	8640.2	51493.	2441.0
#3	8639.9	51464.	2443.5

Approved: June 29, 2016

Sample Name: L1606111612 Acquired: 6/28/2016 19:04:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00383	.04912	.00056	.28402	.01911	.01326	24.157	.00025
Stddev	.00060	.00917	.00387	.00359	.00131	.00019	.121	.00011
%RSD	15.694	18.661	688.23	1.2647	6.8730	1.4327	.50040	45.926
#1	.00354	.05967	-.00073	.28770	.01856	.01347	24.092	.00016
#2	.00452	.04305	.00491	.28053	.01816	.01310	24.082	.00038
#3	.00343	.04465	-.00250	.28382	.02061	.01321	24.296	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.00207	.00162	.00171	6.7063	.01259	6.4107	-.00251
Stddev	.00050	.00113	.00240	.00914	.0591	.00141	.1102	.00295
%RSD	39.655	54.778	148.14	535.36	.88143	11.226	1.7192	117.53
#1	.00128	.00310	.00395	.01079	6.6558	.01417	6.3134	-.00541
#2	.00075	.00085	-.00084	-.00748	6.7713	.01145	6.5304	.00048
#3	.00174	.00226	.00174	.00181	6.6917	.01215	6.3883	-.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.7810	60.169	.00746	.07950	-.00097	.00332	.01301	3.5713
Stddev	.0078	.217	.00129	.00746	.00078	.00182	.00602	.0121
%RSD	.28149	.36015	17.286	9.3799	80.451	54.684	46.276	.34028
#1	2.7863	60.279	.00610	.08231	-.00184	.00537	.00606	3.5680
#2	2.7847	60.308	.00763	.07105	-.00077	.00266	.01661	3.5847
#3	2.7720	59.919	.00866	.08515	-.00031	.00192	.01637	3.5611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111612 Acquired: 6/28/2016 19:04:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.11823	-.01269	.28756	7.9060	.00211	.00306
Stddev	.00060	.00069	.00639	.00445	.0044	.00031	.00049
%RSD	79.968	.58467	50.323	1.5482	.05612	14.573	16.027
#1	.00138	.11902	-.01137	.28902	7.9062	.00229	.00348
#2	.00018	.11773	-.01964	.28257	7.9103	.00227	.00320
#3	.00069	.11794	-.00707	.29111	7.9015	.00175	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8559.9	51268.	2442.1
Stddev	44.0	211.	7.2
%RSD	.51415	.41125	.29469
#1	8531.4	51489.	2434.3
#2	8537.7	51069.	2443.4
#3	8610.6	51245.	2448.5

Approved: June 29, 2016

Sample Name: L1606111613S Acquired: 6/28/2016 19:08:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19477**	**5.0228**	**.18939**	**1.2073**	**.49579**	**.03691**	**28.766**	**.02419**
Stddev	.00338	.0209	.00300	.0033	.00412	.00009	.267	.00009
%RSD	1.7336	.41639	1.5864	.27651	.83112	.24129	.92755	.35345
#1	.19088	5.0294	.18741	1.2112	.50051	.03686	29.074	.02421
#2	.19696	5.0396	.19284	1.2050	.49391	.03685	28.615	.02427
#3	.19647	4.9994	.18791	1.2058	.49294	.03701	28.608	.02410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09931**	**.24662**	**.24317**	**1.8719**	**31.139**	**.50428**	**11.097**	**.23993**
Stddev	.00047	.00109	.00134	.0365	.322	.00060	.031	.00147
%RSD	.47574	.44006	.55302	1.9526	1.0333	.11928	.28144	.61370
#1	.09976	.24549	.24417	1.8725	31.459	.50401	11.061	.24152
#2	.09882	.24765	.24370	1.9082	30.816	.50497	11.121	.23964
#3	.09936	.24674	.24164	1.8351	31.142	.50386	11.108	.23862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2182**	**84.368**	**.25735**	**4.7443**	**.23955**	**.56662**	**.19040**	**6.0686**
Stddev	.0227	.847	.00146	.0198	.00289	.00283	.00282	.0236
%RSD	.70479	1.0036	.56858	.41773	1.2060	.49958	1.4787	.38948
#1	3.2303	85.345	.25712	4.7563	.23856	.56753	.19307	6.0767
#2	3.2323	83.860	.25891	4.7552	.23729	.56889	.19066	6.0871
#3	3.1921	83.897	.25601	4.7214	.24281	.56345	.18746	6.0419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111613S Acquired: 6/28/2016 19:08:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48813	.60214	.48390	.53165	8.4149	.50011	.00340
Stddev	.00470	.00482	.00480	.00148	.0070	.00378	.00043
%RSD	.96282	.80038	.99193	.27906	.08316	.75545	12.759
#1	.49143	.60762	.48857	.52994	8.4205	.50262	.00309
#2	.49021	.59858	.48417	.53261	8.4071	.50196	.00321
#3	.48275	.60020	.47898	.53240	8.4172	.49577	.00389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8510.8	50989.	2449.9
Stddev	6.3	114.	33.0
%RSD	.07397	.22271	1.3464
#1	8503.9	50891.	2415.0
#2	8512.3	50963.	2454.1
#3	8516.3	51114.	2480.6

Approved: June 29, 2016

Sample Name: L1606111614S Acquired: 6/28/2016 19:11:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19976**	**5.1117**	**.20033**	**1.2397**	**.51862**	**.03817**	**29.160**	**.02517**
Stddev	.00238	.0040	.00143	.0029	.00064	.00013	.036	.00013
%RSD	1.1919	.07822	.71462	.23398	.12376	.34613	.12271	.50966
#1	.19785	5.1103	.19976	1.2364	.51935	.03832	29.152	.02502
#2	.20243	5.1086	.20196	1.2408	.51837	.03812	29.199	.02526
#3	.19900	5.1163	.19927	1.2419	.51815	.03807	29.129	.02522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10267**	**.25542**	**.25111**	**1.9749**	**32.092**	**.51979**	**11.538**	**.24636**
Stddev	.00038	.00140	.00135	.0226	.087	.00342	.033	.00382
%RSD	.36984	.54933	.53776	1.1454	.27022	.65811	.28987	1.5500
#1	.10308	.25694	.25257	2.0009	32.157	.51648	11.576	.24780
#2	.10260	.25514	.24991	1.9599	32.125	.52332	11.525	.24203
#3	.10233	.25417	.25084	1.9639	31.994	.51957	11.512	.24924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2930**	**85.625**	**.25474**	**4.9054**	**.24911**	**.58625**	**.19523**	**5.9056**
Stddev	.0102	.114	.00008	.0176	.00426	.00482	.00530	.0210
%RSD	.30930	.13280	.03193	.35965	1.7112	.82238	2.7172	.35590
#1	3.3047	85.748	.25482	4.9258	.24475	.58430	.19918	5.9288
#2	3.2880	85.523	.25466	4.8957	.25327	.59174	.18920	5.8877
#3	3.2862	85.605	.25475	4.8948	.24930	.58270	.19731	5.9004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111614S Acquired: 6/28/2016 19:11:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50712**	**.62989**	**.48967**	**.54077**	**8.4652**	**.49980**	**.00375**
Stddev	.00290	.00007	.00896	.00153	.0082	.00166	.00086
%RSD	.57187	.01071	1.8306	.28317	.09739	.33159	22.982
#1	.51044	.62981	.48549	.54245	8.4713	.50169	.00283
#2	.50507	.62993	.49996	.54041	8.4558	.49912	.00454
#3	.50584	.62992	.48355	.53945	8.4685	.49860	.00388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8539.3**	**50582.**	**2414.9**
Stddev	42.3	178.	.8
%RSD	.49581	.35193	.03111
#1	8490.5	50389.	2414.0
#2	8561.9	50739.	2415.4
#3	8565.6	50619.	2415.2

Approved: June 29, 2016

Sample Name: L1606111615SD Acquired: 6/28/2016 19:15:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19483**	**5.0631**	**.19408**	**1.2283**	**.50358**	**.03725**	**28.794**	**.02439**
Stddev	.00134	.0103	.00311	.0052	.00068	.00010	.078	.00026
%RSD	.68665	.20360	1.6033	.42015	.13592	.27409	.26967	1.0469
#1	.19572	5.0522	.19292	1.2310	.50432	.03719	28.759	.02459
#2	.19329	5.0727	.19172	1.2223	.50297	.03737	28.739	.02448
#3	.19549	5.0645	.19761	1.2315	.50343	.03719	28.883	.02410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10051**	**.25222**	**.24531**	**1.9227**	**31.387**	**.50736**	**11.086**	**.24417**
Stddev	.00036	.00165	.00180	.0406	.232	.00434	.198	.00465
%RSD	.35572	.65305	.73217	2.1114	.74000	.85470	1.7857	1.9034
#1	.10011	.25331	.24577	1.9166	31.361	.50253	10.859	.23883
#2	.10066	.25302	.24683	1.9661	31.168	.51091	11.218	.24727
#3	.10078	.25033	.24333	1.8856	31.631	.50863	11.182	.24642
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2181**	**85.276**	**.26287**	**4.8382**	**.24342**	**.57943**	**.19535**	**6.0855**
Stddev	.0060	.153	.00086	.0107	.00115	.00114	.00430	.0514
%RSD	.18621	.17890	.32739	.22191	.47258	.19717	2.1988	.84430
#1	3.2234	85.200	.26251	4.8499	.24473	.58070	.19814	6.1440
#2	3.2191	85.176	.26386	4.8357	.24298	.57910	.19751	6.0647
#3	3.2116	85.451	.26226	4.8289	.24256	.57849	.19040	6.0477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111615SD Acquired: 6/28/2016 19:15:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49741**	**.60939**	**.48961**	**.53564**	**8.4041**	**.50988**	**.00349**
Stddev	.00079	.00397	.00999	.00166	.0095	.00077	.00075
%RSD	.15965	.65174	2.0396	.30908	.11341	.15171	21.486
#1	.49688	.60498	.48083	.53444	8.3943	.51072	.00337
#2	.49832	.61049	.50047	.53753	8.4133	.50974	.00280
#3	.49703	.61269	.48751	.53496	8.4047	.50919	.00429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8539.4**	**50792.**	**2446.6**
Stddev	44.7	29.	15.5
%RSD	.52366	.05646	.63223
#1	8497.6	50788.	2447.9
#2	8534.2	50765.	2461.4
#3	8586.5	50822.	2430.5

Approved: June 29, 2016

Sample Name: L1606111616SD Acquired: 6/28/2016 19:19:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19566**	**5.0340**	**.19553**	**1.2462**	**.51633**	**.03826**	**29.342**	**.02460**
Stddev	.00296	.0138	.00253	.0064	.00627	.00019	.244	.00026
%RSD	1.5107	.27370	1.2962	.51335	1.2136	.50612	.83044	1.0564
#1	.19547	5.0283	.19831	1.2494	.52271	.03808	29.613	.02477
#2	.19280	5.0497	.19492	1.2503	.51019	.03846	29.141	.02474
#3	.19870	5.0240	.19335	1.2388	.51609	.03824	29.271	.02430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10113**	**.25397**	**.24998**	**1.9550**	**32.109**	**.51960**	**11.565**	**.24878**
Stddev	.00115	.00165	.00206	.0245	.390	.00560	.094	.00225
%RSD	1.1409	.65005	.82441	1.2540	1.2158	1.0784	.81447	.90305
#1	.10149	.25518	.24986	1.9783	32.535	.51825	11.457	.25104
#2	.10207	.25209	.25210	1.9294	31.767	.51479	11.631	.24655
#3	.09984	.25464	.24798	1.9572	32.026	.52575	11.608	.24874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2885**	**85.842**	**.25247**	**4.8800**	**.24597**	**.58377**	**.19459**	**5.8979**
Stddev	.0263	.672	.00277	.0334	.00227	.00367	.00306	.0457
%RSD	.80102	.78328	1.0953	.68517	.92218	.62874	1.5723	.77555
#1	3.2998	86.565	.25353	4.9123	.24665	.58202	.19353	5.9262
#2	3.3073	85.235	.25454	4.8822	.24782	.58799	.19220	5.9224
#3	3.2584	85.728	.24933	4.8456	.24344	.58131	.19804	5.8451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111616SD Acquired: 6/28/2016 19:19:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50068**	**.62675**	**.49003**	**.54097**	**8.4762**	**.49546**	**.00325**
Stddev	.00490	.00349	.00592	.00219	.0243	.00502	.00063
%RSD	.97814	.55741	1.2076	.40406	.28687	1.0134	19.262
#1	.50340	.62999	.48564	.54178	8.4602	.49873	.00394
#2	.50361	.62305	.48768	.54264	8.5042	.49797	.00312
#3	.49503	.62722	.49676	.53850	8.4642	.48968	.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8528.3**	**50976.**	**2438.2**
Stddev	27.5	232.	22.5
%RSD	.32190	.45566	.92424
#1	8510.6	51237.	2412.6
#2	8514.4	50792.	2454.8
#3	8559.9	50900.	2447.3

Approved: June 29, 2016

Sample Name: L1606111617 Acquired: 6/28/2016 19:22:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	1.0730	.00243	.94456	.02345	.00664	17.171	.00021
Stddev	.00060	.0107	.00330	.00310	.00170	.00011	.205	.00052
%RSD	48.268	.99365	135.53	.32796	7.2297	1.6862	1.1957	249.35
#1	.00156	1.0648	.00541	.94322	.02195	.00655	16.934	.00026
#2	.00163	1.0691	.00299	.94810	.02529	.00661	17.299	-.00034
#3	.00055	1.0851	-.00111	.94236	.02311	.00677	17.280	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00191	.00281	.25427	4.8595	.00560	5.8034	.00933
Stddev	.00016	.00103	.00070	.00526	.1531	.00470	.0236	.00159
%RSD	14.503	53.864	25.013	2.0678	3.1508	83.930	.40616	17.040
#1	.00127	.00295	.00200	.25974	4.7953	.00368	5.8137	.01117
#2	.00101	.00187	.00320	.24926	4.7490	.00216	5.7764	.00848
#3	.00097	.00090	.00323	.25382	5.0343	.01095	5.8200	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8732	108.42	.01899	.06575	.00152	.00875	-.00339	2.6514
Stddev	.0510	.52	.00065	.00357	.00326	.00209	.00602	.0593
%RSD	2.7232	.47845	3.4259	5.4245	214.84	23.862	177.37	2.2363
#1	1.9089	108.16	.01967	.06171	.00070	.00991	-.00992	2.6947
#2	1.8959	108.08	.01894	.06707	-.00126	.00999	-.00219	2.6757
#3	1.8147	109.02	.01837	.06847	.00511	.00634	.00193	2.5838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111617 Acquired: 6/28/2016 19:22:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.10483	.00185	.15786	4.3684	.01245	.00245
Stddev	.00024	.00064	.00471	.00205	.0215	.00016	.00037
%RSD	56.363	.60720	254.36	1.2973	.49093	1.2926	14.916
#1	.00019	.10503	.00197	.15899	4.3753	.01255	.00229
#2	.00043	.10411	-.00292	.15910	4.3855	.01252	.00287
#3	.00068	.10534	.00651	.15550	4.3443	.01226	.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8650.9	51835.	2476.1
Stddev	44.0	196.	5.9
%RSD	.50891	.37736	.23711
#1	8623.8	51739.	2476.2
#2	8701.7	51706.	2482.0
#3	8627.2	52060.	2470.2

Approved: June 29, 2016

Sample Name: L1606111618 Acquired: 6/28/2016 19:26:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**.56274**	**.00067**	**.98109**	**.02095**	**.00642**	**16.310**
Stddev	.00331	.00447	.00274	.01353	.00114	.00010	.137
%RSD	394.10	.79427	408.71	1.3790	5.4340	1.4834	.83691
#1	-.00455	.55904	.00292	.97246	.02155	.00652	16.441
#2	.00181	.56149	.00148	.97414	.01964	.00642	16.322
#3	.00022	.56771	-.00238	.99669	.02167	.00633	16.169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00100**	**.00142**	**.00119**	F **-.03203**	**4.7407**	**.00634**
Stddev	.00008	.00008	.00165	.00103	.02107	.2217	.00377
%RSD	96.854	7.8871	116.18	86.889	65.774	4.6773	59.434
#1	-.00016	.00103	-.00048	.00236	-.03693	4.9721	.00557
#2	-.00000	.00106	.00229	.00077	-.05021	4.5301	.00302
#3	-.00007	.00091	.00247	.00043	-.00894	4.7199	.01044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.7406**	**-.00088**	**1.9276**	**110.50**	**.00879**	**.04672**	**-.00257**
Stddev	.0231	.00321	.0069	.44	.00089	.00711	.00272
%RSD	.40167	363.18	.35848	.39919	10.179	15.225	105.97
#1	5.7191	-.00006	1.9325	110.73	.00978	.05410	-.00278
#2	5.7650	-.00442	1.9306	110.77	.00855	.03990	-.00517
#3	5.7377	.00183	1.9197	109.99	.00803	.04617	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606111618 Acquired: 6/28/2016 19:26:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00562**	**.00319**	**2.4858**	**.00030**	**.10363**	**-.00481**	**.15781**
Stddev	.00632	.00265	.0011	.00117	.00034	.00601	.00138
%RSD	112.44	83.121	.04373	394.14	.32381	124.77	.87536
#1	-.00139	.00622	2.4870	.00161	.10345	-.00946	.15828
#2	.00737	.00205	2.4854	-.00063	.10401	.00197	.15625
#3	.01088	.00129	2.4849	-.00009	.10341	-.00695	.15889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**4.3243**	**.00293**	**.00203**
Stddev	.0040	.00018	.00019
%RSD	.09253	6.0250	9.2239
#1	4.3200	.00309	.00196
#2	4.3251	.00274	.00224
#3	4.3278	.00296	.00188
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8649.2**	**51256.**	**2459.2**
Stddev	26.4	33.	12.7
%RSD	.30519	.06388	.51770
#1	8619.7	51249.	2448.1
#2	8670.6	51291.	2456.2
#3	8657.2	51227.	2473.1

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 19:30:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39393	9.9883	.38526	.48583	.99716	.04966	9.8788	.04935
Stddev	.00274	.0657	.00281	.00348	.00753	.00030	.0948	.00070
%RSD	.69453	.65784	.72864	.71673	.75560	.60690	.95943	1.4215
#1	.39152	9.9183	.38763	.48958	.99649	.04943	9.9453	.04941
#2	.39338	9.9981	.38600	.48519	1.0050	.04954	9.9209	.05002
#3	.39691	10.049	.38216	.48271	.98999	.05000	9.7703	.04862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19983	.49932	.49547	3.9046	50.536	1.0022	10.054	.48961
Stddev	.00147	.00411	.00502	.0586	.237	.0052	.125	.00704
%RSD	.73720	.82307	1.0132	1.4999	.46996	.51863	1.2450	1.4380
#1	.20016	.49579	.49771	3.8488	50.432	1.0027	9.9795	.48796
#2	.20111	.49833	.49897	3.8995	50.808	1.0072	10.199	.49733
#3	.19822	.50383	.48972	3.9656	50.368	.99679	9.9842	.48355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99313	49.311	.48871	9.7009	.48971	1.1713	.38503	4.8337
Stddev	.00735	.281	.00306	.0472	.00373	.0075	.00878	.0139
%RSD	.74006	.57071	.62643	.48696	.76211	.63694	2.2792	.28793
#1	.99583	49.366	.49104	9.7306	.49397	1.1682	.38711	4.8340
#2	.99875	49.561	.48985	9.7256	.48702	1.1798	.39257	4.8476
#3	.98481	49.006	.48524	9.6464	.48815	1.1659	.37540	4.8197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 19:30:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99640**	**.99015**	**.99144**	**.49657**	**1.0014**	**.98139**	**1.0163**
Stddev	.00750	.00955	.01096	.00546	.0032	.00618	.0028
%RSD	.75223	.96471	1.1057	1.1003	.32191	.62995	.27980
#1	.99975	.98887	.98824	.50220	.99790	.98458	1.0194
#2	1.0016	1.0003	1.0036	.49622	1.0022	.98533	1.0138
#3	.98781	.98130	.98243	.49129	1.0042	.97427	1.0157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8569.8**	**50820.**	**2413.3**
Stddev	22.8	215.	10.0
%RSD	.26631	.42243	.41304
#1	8596.2	51061.	2401.8
#2	8557.1	50752.	2419.5
#3	8556.2	50649.	2418.7

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 19:34:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.01126	-.00191	.00369	.00601	.00008	-.03261	.00023
Stddev	.00083	.00295	.00043	.00344	.00076	.00009	.04958	.00007
%RSD	2485.5	26.217	22.615	93.254	12.676	109.00	152.07	30.275
#1	-.00036	.01071	-.00159	.00497	.00514	.00011	-.00746	.00016
#2	.00091	.00862	-.00240	.00631	.00653	.00015	-.08972	.00029
#3	-.00065	.01445	-.00173	-.00021	.00638	-.00002	-.00063	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00036	.00042	-.02542	.08850	.00754	.02716	-.00001
Stddev	.00032	.00072	.00077	.03243	.07274	.00155	.02996	.00286
%RSD	101.42	198.05	182.72	127.59	82.190	20.545	110.27	20010.
#1	-.00001	-.00045	-.00017	.00826	.17224	.00907	.06169	-.00167
#2	-.00065	.00061	.00129	-.05644	.05213	.00598	.01173	-.00167
#3	-.00029	.00093	.00014	-.02808	.04111	.00758	.00807	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.02218	-.00022	.00390	-.00185	.00471	-.00735	.00643
Stddev	.00026	.02297	.00070	.00522	.00292	.00099	.00270	.00027
%RSD	72.849	103.55	318.05	133.94	157.68	20.938	36.741	4.2724
#1	.00022	-.00188	.00014	-.00158	-.00179	.00386	-.00755	.00620
#2	.00020	-.04711	.00023	.00445	.00104	.00446	-.00455	.00635
#3	.00066	-.01756	-.00102	.00882	-.00480	.00579	-.00994	.00673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 19:34:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.00011**	**-.00295**	**-.00216**	**-.00011**	**-.00020**	**.00008**
Stddev	.00025	.00026	.01036	.00538	.00059	.00009	.00023
%RSD	103.56	243.90	351.50	249.36	558.75	45.397	304.65
#1	-.00048	.00011	-.01053	-.00797	-.00074	-.00021	.00016
#2	-.00025	-.00016	-.00717	-.00113	.00043	-.00010	-.00018
#3	.00001	.00036	.00886	.00263	-.00001	-.00028	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8584.9**	**51861.**	**2415.8**
Stddev	34.0	193.	3.9
%RSD	.39651	.37302	.16307
#1	8587.6	51689.	2412.4
#2	8617.5	51822.	2415.0
#3	8549.6	52070.	2420.1

Approved: June 29, 2016

Sample Name: L1606111619 Acquired: 6/28/2016 19:38:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00160	.68300	.00298	.94890	.02124	.00623	16.028	.00009
Stddev	.00153	.00929	.00216	.00311	.00159	.00004	.199	.00019
%RSD	95.469	1.3607	72.654	.32754	7.4787	.64700	1.2441	212.75
#1	-.00316	.69092	.00048	.94760	.02211	.00626	15.949	-.00013
#2	-.00154	.67277	.00421	.94665	.02219	.00618	16.255	.00019
#3	-.00011	.68530	.00424	.95245	.01940	.00624	15.880	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.00146	.00101	.06660	4.6769	.00611	5.5653	.00232
Stddev	.00038	.00087	.00102	.04994	.1055	.00291	.0608	.00117
%RSD	45.388	59.327	101.31	74.984	2.2547	47.587	1.0918	50.494
#1	.00042	.00046	.00001	.11500	4.7788	.00549	5.5199	.00343
#2	.00116	.00202	.00096	.06957	4.5682	.00927	5.6344	.00110
#3	.00091	.00190	.00205	.01524	4.6836	.00356	5.5417	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8655	106.18	.00945	.05932	-.00122	.00524	-.00087	2.5232
Stddev	.0051	.51	.00068	.00476	.00312	.00511	.00330	.0070
%RSD	.27431	.48054	7.1517	8.0194	256.67	97.554	378.34	.27855
#1	1.8613	105.69	.00978	.05706	-.00065	-.00032	.00289	2.5222
#2	1.8712	106.71	.00990	.05612	-.00459	.00631	-.00330	2.5307
#3	1.8639	106.14	.00867	.06479	.00159	.00973	-.00221	2.5168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111619 Acquired: 6/28/2016 19:38:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.10012	.00178	.15139	4.1196	.00540	.00233
Stddev	.00072	.00064	.00812	.00311	.0202	.00029	.00034
%RSD	74.194	.63498	455.71	2.0563	.49052	5.3242	14.549
#1	.00180	.09940	-.00592	.14827	4.1171	.00540	.00271
#2	.00065	.10061	.00100	.15450	4.1410	.00569	.00204
#3	.00047	.10035	.01027	.15138	4.1008	.00511	.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8557.6	51294.	2452.0
Stddev	21.8	241.	14.5
%RSD	.25502	.47029	.58949
#1	8579.3	51378.	2467.4
#2	8535.6	51022.	2438.8
#3	8557.8	51482.	2449.8

Approved: June 29, 2016

Sample Name: L1606111620 Acquired: 6/28/2016 19:42:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00295	.56244	.00280	.96687	.02135	.00630	16.074
Stddev	.00131	.01105	.00379	.00718	.00109	.00014	.120
%RSD	44.380	1.9644	135.37	.74234	5.1103	2.2934	.74460
#1	.00309	.56666	.00701	.96071	.02019	.00645	16.211
#2	.00158	.54991	-.00033	.96515	.02236	.00617	15.989
#3	.00419	.57076	.00172	.97476	.02150	.00629	16.022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00106	.00163	.00111	F -.02581	4.8505	.00840
Stddev	.00013	.00035	.00059	.00204	.01590	.1029	.00879
%RSD	305.99	32.498	35.872	184.93	61.610	2.1216	104.57
#1	-.00005	.00072	.00103	-.00124	-.02373	4.9502	.01854
#2	.00018	.00106	.00219	.00204	-.04264	4.7447	.00303
#3	-.00001	.00141	.00167	.00251	-.01105	4.8565	.00364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.6738	.00004	1.9119	109.76	.00809	.05682	-.00029
Stddev	.0837	.00164	.0022	.23	.00072	.00469	.00702
%RSD	1.4744	4418.1	.11247	.21081	8.8910	8.2569	2392.1
#1	5.5837	.00127	1.9095	109.90	.00791	.05158	.00755
#2	5.6886	-.00183	1.9135	109.49	.00889	.06062	-.00243
#3	5.7491	.00068	1.9128	109.89	.00748	.05828	-.00599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606111620 Acquired: 6/28/2016 19:42:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00855	.00850	2.4320	.00016	.10308	-.00383	.15782
Stddev	.00505	.00431	.0076	.00051	.00112	.00965	.00176
%RSD	59.103	50.745	.31126	313.39	1.0892	251.80	1.1132
#1	.01045	.00709	2.4269	.00075	.10291	-.01059	.15635
#2	.00282	.00507	2.4407	-.00017	.10206	.00722	.15734
#3	.01237	.01334	2.4285	-.00009	.10428	-.00812	.15976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	4.3294	.00391	.00237
Stddev	.0135	.00010	.00041
%RSD	.31202	2.6141	17.073
#1	4.3261	.00389	.00284
#2	4.3179	.00402	.00222
#3	4.3443	.00381	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8570.2	51185.	2431.1
Stddev	16.8	144.	4.2
%RSD	.19595	.28147	.17452
#1	8558.1	51035.	2427.6
#2	8563.2	51197.	2429.8
#3	8589.4	51322.	2435.8

Approved: June 29, 2016

Sample Name: L1606111622 Acquired: 6/28/2016 19:45:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.87307	.00376	1.0028	.01970	.00516	16.701	.00008
Stddev	.00275	.01177	.00328	.0087	.00207	.00001	.349	.00017
%RSD	453.56	1.3482	87.385	.86913	10.519	.21170	2.0900	213.70
#1	.00209	.88302	.00024	1.0005	.02079	.00517	17.020	-.00007
#2	.00229	.87610	.00674	1.0124	.01731	.00514	16.328	.00027
#3	-.00256	.86008	.00430	.99542	.02099	.00516	16.755	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00168	.00105	-.01952	4.8292	.00792	5.5250	.00337
Stddev	.00071	.00046	.00224	.03206	.0356	.00332	.0079	.00274
%RSD	108.36	27.467	213.78	164.20	.73811	41.960	.14350	81.451
#1	.00145	.00177	.00318	-.03204	4.8246	.00856	5.5330	.00028
#2	.00045	.00209	.00123	-.04344	4.7960	.01087	5.5172	.00553
#3	.00007	.00118	-.00128	.01691	4.8668	.00432	5.5248	.00429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8436	107.62	.00865	.05049	.00159	.00599	.00234	3.1978
Stddev	.0496	.66	.00102	.00782	.00359	.00355	.00678	.0507
%RSD	2.6901	.60916	11.825	15.489	225.27	59.251	290.12	1.5846
#1	1.8729	108.36	.00855	.05950	.00195	.00379	.00343	3.2178
#2	1.8715	107.10	.00972	.04548	.00500	.01009	.00851	3.2354
#3	1.7863	107.41	.00768	.04648	-.00216	.00410	-.00492	3.1402
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111622 Acquired: 6/28/2016 19:45:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.10520	.00129	.12933	3.5297	.00382	.00225
Stddev	.00032	.00026	.00903	.00111	.0124	.00014	.00048
%RSD	92.272	.24564	702.47	.85816	.35251	3.5780	21.396
#1	.00031	.10501	-.00520	.13061	3.5439	.00398	.00258
#2	.00067	.10509	-.00254	.12863	3.5204	.00376	.00169
#3	.00004	.10549	.01159	.12875	3.5250	.00373	.00247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8557.6	50978.	2435.4
Stddev	16.4	192.	22.1
%RSD	.19149	.37612	.90601
#1	8544.4	50773.	2411.3
#2	8575.9	51152.	2454.7
#3	8552.3	51009.	2440.1

Approved: June 29, 2016

Sample Name: L1606111621 Acquired: 6/28/2016 19:49:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**1.2480**	**.00198**	**1.0327**	**.02264**	**.00547**	**18.182**	**.00013**
Stddev	.00194	.0178	.00129	.0087	.00195	.00004	.071	.00017
%RSD	1582.9	1.4252	65.077	.84575	8.6101	.76334	.39323	128.92
#1	-.00236	1.2432	.00313	1.0426	.02486	.00547	18.264	.00009
#2	.00108	1.2677	.00059	1.0293	.02122	.00551	18.132	-.00001
#3	.00091	1.2332	.00222	1.0261	.02183	.00542	18.150	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00131**	**.00266**	**.00073**	**.14945**	**4.9265**	**.00587**	**5.7574**	**.00778**
Stddev	.00006	.00060	.00074	.03015	.0708	.00362	.0112	.00237
%RSD	4.8967	22.584	100.47	20.173	1.4368	61.782	.19527	30.414
#1	.00126	.00302	.00026	.16463	4.9515	.00548	5.7647	.00815
#2	.00138	.00197	.00035	.16899	4.8466	.00967	5.7445	.00525
#3	.00128	.00299	.00158	.11473	4.9815	.00245	5.7631	.00994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.8844**	**110.24**	**.02602**	**.05230**	**-.00137**	**.00278**	**.00257**	**3.3575**
Stddev	.0044	.94	.00041	.00319	.00128	.00231	.00425	.0100
%RSD	.23212	.85470	1.5924	6.1014	93.257	83.383	164.92	.29688
#1	1.8827	111.32	.02618	.05018	-.00027	.00406	-.00182	3.3660
#2	1.8812	109.79	.02554	.05597	-.00278	.00416	.00665	3.3599
#3	1.8894	109.61	.02632	.05075	-.00107	.00010	.00289	3.3465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111621 Acquired: 6/28/2016 19:49:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.10916**	**-.00035**	**.13194**	**3.5926**	**.02298**	**.00262**
Stddev	.00020	.00060	.00601	.00115	.0085	.00025	.00068
%RSD	658.00	.55090	1712.3	.87434	.23753	1.1059	25.841
#1	.00019	.10966	-.00350	.13204	3.5910	.02275	.00189
#2	-.00009	.10932	.00657	.13305	3.6018	.02325	.00322
#3	-.00019	.10849	-.00412	.13075	3.5849	.02293	.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8585.5**	**51290.**	**2447.3**
Stddev	16.4	232.	31.9
%RSD	.19058	.45271	1.3052
#1	8593.8	51548.	2410.7
#2	8596.0	51097.	2470.0
#3	8566.6	51224.	2461.0

Approved: June 29, 2016

Sample Name: L1606111621PS Acquired: 6/28/2016 19:53:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574353-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19468**	**6.0660**	**.19521**	**1.8722**	**.51246**	**.02949**	**20.753**	**.02465**
Stddev	.00142	.0372	.00389	.0114	.00429	.00037	.018	.00028
%RSD	.73007	.61388	1.9931	.60821	.83688	1.2477	.08755	1.1435
#1	.19470	6.0400	.19605	1.8777	.51629	.02940	20.759	.02497
#2	.19609	6.1086	.19862	1.8798	.51325	.02989	20.733	.02442
#3	.19325	6.0492	.19097	1.8591	.50782	.02917	20.768	.02457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10096**	**.25313**	**.24800**	**2.0910**	**29.458**	**.51484**	**10.216**	**.25050**
Stddev	.00033	.00389	.00199	.0653	.254	.00462	.022	.00499
%RSD	.32385	1.5373	.80283	3.1231	.86080	.89712	.21194	1.9907
#1	.10132	.25558	.25029	2.0630	29.743	.50967	10.211	.24512
#2	.10090	.25518	.24664	2.1657	29.378	.51857	10.240	.25143
#3	.10067	.24865	.24708	2.0444	29.255	.51628	10.197	.25496
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.1652**	**122.67**	**.26701**	**4.8421**	**.24685**	**.59094**	**.18681**	**5.2988**
Stddev	.0048	.55	.00141	.0071	.00697	.00238	.00199	.0076
%RSD	.22092	.45123	.52961	.14579	2.8222	.40196	1.0655	.14396
#1	2.1706	123.02	.26692	4.8361	.25240	.59112	.18463	5.3029
#2	2.1635	122.97	.26565	4.8499	.24912	.59322	.18854	5.3035
#3	2.1615	122.03	.26847	4.8402	.23904	.58848	.18724	5.2900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111621PS Acquired: 6/28/2016 19:53:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574353-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50175**	**.59885**	**.49702**	**.36149**	**3.6922**	**.51455**	**.00306**
Stddev	.00351	.00245	.00463	.00462	.0323	.00120	.00082
%RSD	.70040	.40928	.93221	1.2780	.87500	.23340	26.856
#1	.50530	.60156	.49256	.36198	3.6891	.51562	.00379
#2	.50167	.59818	.50181	.36585	3.7259	.51478	.00321
#3	.49827	.59680	.49668	.35664	3.6616	.51325	.00217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8416.7**	**50775.**	**2421.5**
Stddev	30.8	95.	12.5
%RSD	.36629	.18680	.51774
#1	8445.0	50804.	2409.6
#2	8421.4	50669.	2434.6
#3	8383.9	50852.	2420.4

Approved: June 29, 2016

Sample Name: L1606111621SDL Acquired: 6/28/2016 19:57:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574353-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00239**	**.31622**	**-.00231**	**.24437**	**.01409**	**.00137**	**4.1117**	**-.00020**
Stddev	.00194	.00515	.00245	.00449	.00108	.00004	.0487	.00022
%RSD	81.142	1.6301	106.06	1.8354	7.6473	2.7793	1.1848	106.31
#1	-.00074	.31773	-.00306	.24074	.01311	.00133	4.0568	-.00039
#2	-.00453	.31048	-.00429	.24299	.01392	.00138	4.1285	.00003
#3	-.00192	.32045	.00043	.24939	.01524	.00140	4.1497	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00147**	**-.00005**	**.04410**	**1.1455**	**.00290**	**1.4672**	**.00303**
Stddev	.00040	.00051	.00157	.01165	.0954	.00211	.0292	.00333
%RSD	310.14	34.335	3202.6	26.411	8.3248	72.704	1.9920	110.07
#1	.00038	.00191	-.00187	.05253	1.2446	.00496	1.4876	.00346
#2	-.00033	.00092	.00084	.04895	1.1376	.00075	1.4804	-.00050
#3	.00033	.00158	.00088	.03081	1.0544	.00298	1.4337	.00612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.44321**	**25.209**	**.00584**	**.01782**	**-.00254**	**.00758**	**-.00250**	**.77100**
Stddev	.00496	.261	.00097	.00869	.00142	.00840	.00573	.00711
%RSD	1.1184	1.0350	16.619	48.769	55.674	110.84	229.02	.92249
#1	.43981	24.910	.00677	.01707	-.00383	.00045	-.00909	.76316
#2	.44889	25.390	.00593	.02686	-.00103	.01683	.00129	.77702
#3	.44092	25.327	.00483	.00953	-.00278	.00544	.00030	.77283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111621SDL Acquired: 6/28/2016 19:57:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574353-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.02516**	**.00409**	**.02933**	**.84357**	**.00687**	**-.00052**
Stddev	.00046	.00033	.00903	.00490	.01043	.00013	.00018
%RSD	170.41	1.3067	221.08	16.711	1.2366	1.8237	34.157
#1	.00024	.02524	.00944	.03021	.84518	.00685	-.00063
#2	-.00039	.02544	-.00634	.02405	.83243	.00701	-.00032
#3	-.00066	.02480	.00916	.03373	.85310	.00676	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7962.9**	**47699.**	**2191.2**
Stddev	49.3	397.	19.0
%RSD	.61886	.83205	.86731
#1	8016.6	47547.	2212.4
#2	7952.4	48149.	2175.8
#3	7919.7	47400.	2185.5

Approved: June 29, 2016

Sample Name: L1606111621SDL Acquired: 6/28/2016 20:01:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574353-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00220	.08412	-.00098	.05898	.01353	.00054	.91615	.00008
Stddev	.00227	.00966	.00332	.00253	.00093	.00007	.00736	.00009
%RSD	102.97	11.484	337.90	4.2843	6.8634	12.877	.80313	114.45
#1	-.00454	.08593	-.00444	.06030	.01321	.00062	.91854	.00012
#2	-.00204	.09274	-.00069	.05606	.01457	.00052	.92201	-.00003
#3	-.00002	.07368	.00218	.06056	.01280	.00048	.90789	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	-.00003	.00020	.02649	.07159	-.00408	.31593	.00066
Stddev	.00029	.00145	.00079	.05924	.07718	.00166	.07825	.00318
%RSD	94.515	4957.5	402.59	223.60	107.81	40.645	24.770	481.89
#1	-.00055	.00121	-.00002	.02143	-.01732	-.00422	.38108	-.00178
#2	-.00037	-.00163	.00107	.08811	.11070	-.00567	.33757	.00425
#3	.00001	.00034	-.00046	-.03005	.12139	-.00236	.22913	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09882	5.7701	-.00007	.00258	-.00340	.00808	-.00626	.16219
Stddev	.00415	.0571	.00075	.01108	.00322	.00231	.00531	.00906
%RSD	4.2025	.99020	1059.0	429.05	94.662	28.564	84.871	5.5866
#1	.10108	5.7401	-.00079	-.00895	-.00365	.00648	-.00734	.16783
#2	.10135	5.8360	.00071	.00355	-.00007	.00703	-.00049	.16700
#3	.09403	5.7342	-.00014	.01314	-.00649	.01073	-.01095	.15174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111621SDL Acquired: 6/28/2016 20:01:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574353-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00540	-.00624	.00071	.19156	.00163	-.00080
Stddev	.00127	.00048	.01474	.00471	.00154	.00020	.00062
%RSD	695.58	8.9416	236.32	662.29	.80152	12.201	77.554
#1	-.00105	.00588	.01064	-.00385	.19251	.00153	-.00143
#2	.00148	.00492	-.01281	.00043	.18979	.00187	-.00018
#3	.00012	.00540	-.01655	.00555	.19238	.00151	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7627.8	45454.	2086.8
Stddev	55.0	364.	20.9
%RSD	.72101	.80095	.99922
#1	7592.7	45203.	2110.3
#2	7599.6	45872.	2070.5
#3	7691.2	45288.	2079.6

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 20:04:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39468**	**9.9919**	**.38524**	**.49000**	**.99891**	**.04984**	**9.8622**	**.04970**
Stddev	.00284	.1069	.00529	.00663	.01100	.00082	.0586	.00006
%RSD	.72016	1.0695	1.3730	1.3520	1.1013	1.6424	.59433	.12719
#1	.39781	10.110	.38107	.49549	1.0050	.05079	9.8740	.04967
#2	.39225	9.9017	.39119	.49187	1.0056	.04935	9.9141	.04978
#3	.39399	9.9640	.38346	.48265	.98621	.04939	9.7986	.04966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20024**	**.50366**	**.49874**	**3.9042**	**50.609**	**1.0132**	**10.196**	**.49110**
Stddev	.00088	.00890	.00204	.0671	.360	.0175	.032	.00179
%RSD	.43996	1.7676	.40940	1.7179	.71095	1.7241	.31502	.36464
#1	.20059	.51378	.49900	3.9752	50.665	1.0320	10.174	.49303
#2	.20090	.50017	.50064	3.8956	50.938	1.0101	10.180	.49076
#3	.19924	.49703	.49658	3.8419	50.225	.99743	10.233	.48950
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99465**	**49.418**	**.48986**	**9.7317**	**.48767**	**1.1715**	**.38878**	**4.8485**
Stddev	.00335	.439	.00143	.0238	.00502	.0005	.00867	.0081
%RSD	.33685	.88754	.29263	.24474	1.0289	.04616	2.2296	.16675
#1	.99612	49.767	.49149	9.7202	.48543	1.1710	.37885	4.8466
#2	.99702	49.562	.48882	9.7590	.49341	1.1720	.39482	4.8574
#3	.99082	48.926	.48926	9.7158	.48416	1.1714	.39268	4.8415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 20:04:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0012**	**.99258**	**.98461**	**.49932**	**1.0047**	**.98518**	**1.0223**
Stddev	.0045	.00906	.01093	.00400	.0132	.00322	.0184
%RSD	.44880	.91273	1.1097	.80100	1.3181	.32655	1.8040
#1	1.0037	1.0004	.98097	.49605	1.0199	.98533	1.0410
#2	1.0040	.99468	.99690	.49812	.99898	.98832	1.0218
#3	.99605	.98265	.97597	.50378	.99532	.98189	1.0041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8343.7**	**49686.**	**2335.7**
Stddev	14.5	349.	32.0
%RSD	.17419	.70159	1.3697
#1	8333.7	49418.	2308.4
#2	8337.0	50080.	2327.9
#3	8360.4	49561.	2370.9

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 20:08:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.01307	.00097	.00455	.00820	.00010	-.02755	-.00021
Stddev	.00104	.01247	.00311	.00169	.00066	.00010	.03058	.00032
%RSD	296.10	95.448	320.02	37.046	8.0349	101.30	111.00	150.49
#1	.00149	.01497	-.00146	.00413	.00751	-.00001	-.02714	-.00053
#2	.00012	.02448	.00448	.00311	.00827	.00011	.00282	.00010
#3	-.00055	-.00025	-.00010	.00641	.00882	.00020	-.05835	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	-.00000	.00043	-.00987	-.13623	.00296	.02443	-.00127
Stddev	.00015	.00108	.00133	.02618	.16437	.00209	.07510	.00308
%RSD	37.578	222640.	306.60	265.31	120.65	70.680	307.46	241.97
#1	-.00035	-.00108	.00185	.01077	-.32571	.00231	.09619	-.00058
#2	-.00027	.00109	.00025	-.00105	-.03196	.00127	.03072	-.00464
#3	-.00056	-.00000	-.00079	-.03932	-.05103	.00530	-.05362	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	-.05415	-.00143	-.00451	-.00388	-.00043	.00021	.01035
Stddev	.00026	.03602	.00084	.00344	.00352	.00440	.01010	.00223
%RSD	51.899	66.528	58.470	76.294	90.757	1022.8	4717.4	21.569
#1	.00080	-.06463	-.00126	-.00419	-.00562	-.00551	-.00141	.01131
#2	.00032	-.01405	-.00234	-.00124	.00017	.00213	.01103	.00779
#3	.00038	-.08377	-.00070	-.00809	-.00620	.00209	-.00897	.01193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 20:08:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00039	.00182	-.00334	-.00065	-.00015	-.00062
Stddev	.00038	.00037	.00698	.00141	.00068	.00014	.00057
%RSD	65.200	93.117	384.19	42.173	104.96	95.152	92.632
#1	.00019	.00056	.00413	-.00255	-.00075	-.00020	-.00054
#2	.00096	.00065	.00734	-.00497	-.00127	.00001	-.00122
#3	.00061	-.00003	-.00603	-.00250	.00008	-.00025	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8377.9	50066.	2322.8
Stddev	11.8	39.	3.8
%RSD	.14096	.07868	.16426
#1	8391.1	50022.	2322.0
#2	8374.2	50099.	2326.9
#3	8368.4	50077.	2319.4

Approved: June 29, 2016

Sample Name: PBW 99 Acquired: 6/28/2016 20:12:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00088**	**.00750**	**-.00134**	**-.00155**	**.00809**	**.00007**	**-.02153**
Stddev	.00149	.00464	.00181	.00288	.00105	.00013	.04471
%RSD	169.29	61.817	134.89	186.22	12.953	183.95	207.73
#1	.00260	.00497	.00020	.00175	.00727	-.00007	-.01747
#2	-.00006	.00468	-.00089	-.00282	.00772	.00018	-.06813
#3	.00010	.01285	-.00333	-.00356	.00927	.00011	.02102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00026**	**.00092**	**.00045**	**-.01278**	**-.04738**	**.00421**
Stddev	.00009	.00055	.00029	.00138	.01257	.08734	.00306
%RSD	1683.4	210.81	31.581	306.14	98.384	184.34	72.672
#1	.00009	-.00085	.00096	-.00059	-.02606	-.10158	.00388
#2	-.00009	-.00016	.00061	-.00008	-.00106	-.09393	.00133
#3	-.00002	.00023	.00118	.00202	-.01122	.05337	.00743
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03706**	**-.00091**	**-.00010**	**-.03674**	**.00010**	**.00484**	F **-.00585**
Stddev	.09839	.00348	.00042	.04472	.00066	.00464	.00307
%RSD	265.47	380.96	421.16	121.74	644.83	95.895	52.587
#1	.06275	.00046	-.00036	-.08692	.00085	.00827	-.00286
#2	.12006	.00167	.00039	-.00107	-.00011	.00670	-.00900
#3	-.07162	-.00487	-.00033	-.02223	-.00043	-.00044	-.00569
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							225.00
Low Limit							-.00500

Approved: June 29, 2016

Sample Name: PBW 99 Acquired: 6/28/2016 20:12:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	-.00579	-.02078	-.00075	.00054	-.01132	-.00160
Stddev	.00341	.00609	.00098	.00105	.00081	.01400	.00202
%RSD	246.45	105.24	4.6969	139.55	148.11	123.66	126.66
#1	-.00243	.00090	-.01984	-.00028	.00065	.00478	-.00303
#2	.00243	-.01101	-.02072	-.00003	-.00031	-.01809	-.00248
#3	.00414	-.00726	-.02179	-.00195	.00130	-.02066	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00011	.00156	.00019
Stddev	.00141	.00019	.00025
%RSD	1303.5	12.265	129.05
#1	-.00167	.00153	.00046
#2	.00109	.00176	.00015
#3	.00025	.00138	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8356.4	50399.	2322.9
Stddev	8.3	118.	3.0
%RSD	.09907	.23470	.12985
#1	8347.2	50294.	2324.0
#2	8363.3	50377.	2325.3
#3	8358.7	50527.	2319.5

Approved: June 29, 2016

Sample Name: LCSW 99 Acquired: 6/28/2016 20:16:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19995	5.0912	.19748	.95968	.51139	.02486	5.1037	.02526
Stddev	.00032	.0354	.00084	.00286	.00382	.00010	.0403	.00037
%RSD	.15788	.69540	.42347	.29829	.74601	.41008	.78855	1.4664
#1	.19968	5.0507	.19653	.95642	.50904	.02497	5.0799	.02550
#2	.19986	5.1067	.19807	.96179	.50933	.02479	5.0811	.02546
#3	.20029	5.1162	.19785	.96084	.51579	.02480	5.1502	.02484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10303	.25830	.25596	2.0188	25.751	.52228	5.1309	.25135
Stddev	.00022	.00109	.00033	.0408	.160	.00512	.1085	.00253
%RSD	.21109	.42113	.12736	2.0199	.62027	.98007	2.1152	1.0066
#1	.10303	.25833	.25623	2.0032	25.831	.52616	5.0847	.25064
#2	.10325	.25719	.25607	1.9882	25.567	.51648	5.0530	.24926
#3	.10282	.25937	.25560	2.0651	25.854	.52419	5.2548	.25416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51177	25.309	.25293	4.8448	.25021	.59893	.18799	2.3541
Stddev	.00075	.047	.00239	.0104	.00425	.00108	.00919	.0027
%RSD	.14617	.18756	.94684	.21420	1.6966	.18076	4.8881	.11542
#1	.51116	25.262	.25394	4.8393	.24722	.59977	.17738	2.3529
#2	.51261	25.308	.25465	4.8568	.24835	.59930	.19305	2.3572
#3	.51156	25.357	.25020	4.8383	.25507	.59771	.19354	2.3522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW 99 Acquired: 6/28/2016 20:16:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51396**	**.51437**	**.50259**	**.25425**	**.51004**	**.50528**	**.00005**
Stddev	.00065	.00349	.00644	.00254	.00151	.00067	.00071
%RSD	.12647	.67931	1.2807	1.0005	.29615	.13296	1399.5
#1	.51408	.51338	.50618	.25171	.50839	.50499	.00085
#2	.51325	.51147	.50643	.25680	.51037	.50605	-.00049
#3	.51454	.51825	.49516	.25426	.51135	.50481	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8481.5**	**50727.**	**2391.5**
Stddev	11.9	137.	2.9
%RSD	.14054	.27002	.12169
#1	8473.9	50817.	2394.5
#2	8475.3	50570.	2388.7
#3	8495.2	50795.	2391.3

Approved: June 29, 2016

Sample Name: L1606103002 Acquired: 6/28/2016 20:20:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.08224	.00197	.00534	.01469	.00012	1.9817	.00031
Stddev	.00055	.00471	.00244	.00304	.00144	.00010	.0399	.00021
%RSD	63.865	5.7266	123.81	56.929	9.8322	85.543	2.0151	68.281
#1	-.00059	.08517	-.00019	.00319	.01626	.00019	1.9365	.00050
#2	-.00050	.08474	.00148	.00401	.01343	.00016	1.9965	.00034
#3	-.00149	.07681	.00462	.00882	.01437	.00000	2.0122	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	-.00045	.00074	.30708	.34575	.00631	.89402	.01274
Stddev	.00014	.00051	.00098	.04097	.11046	.00210	.02638	.00322
%RSD	184.58	113.87	132.95	13.342	31.947	33.270	2.9503	25.299
#1	.00012	-.00029	.00089	.28127	.35693	.00620	.87221	.01522
#2	.00018	-.00004	.00163	.35432	.45019	.00847	.88652	.01390
#3	-.00008	-.00103	-.00031	.28565	.23013	.00427	.92334	.00910
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	1.3755	.00035	.00032	-.00145	.00301	-.00742	3.3833
Stddev	.00021	.0193	.00083	.00254	.00345	.00433	.00137	.0020
%RSD	539.25	1.4022	233.79	793.81	238.34	143.91	18.400	.05809
#1	.00010	1.3556	-.00060	-.00199	.00238	-.00106	-.00608	3.3841
#2	-.00020	1.3942	.00076	-.00009	-.00242	.00756	-.00881	3.3848
#3	.00021	1.3766	.00090	.00305	-.00430	.00253	-.00738	3.3811
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103002 Acquired: 6/28/2016 20:20:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.01298	.00036	-.00177	-.00034	.00350	-.00071
Stddev	.00042	.00073	.01327	.00171	.00090	.00026	.00044
%RSD	81.181	5.6431	3661.7	96.392	259.96	7.4203	63.034
#1	.00034	.01321	.00513	-.00316	.00067	.00330	-.00071
#2	.00021	.01357	.01059	-.00230	-.00067	.00340	-.00115
#3	.00100	.01216	-.01464	.00014	-.00103	.00379	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8609.6	51561.	2393.0
Stddev	10.5	208.	9.5
%RSD	.12240	.40391	.39514
#1	8618.0	51346.	2384.4
#2	8597.8	51575.	2391.5
#3	8613.0	51762.	2403.2

Approved: June 29, 2016

Sample Name: L1606103005 Acquired: 6/28/2016 20:23:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00092	.07338	.00108	.00414	.01584	.00008	1.8416	.00020
Stddev	.00203	.00510	.00353	.00309	.00055	.00009	.0159	.00025
%RSD	220.00	6.9546	327.84	74.566	3.4564	105.80	.86203	127.67
#1	-.00182	.07796	-.00226	.00228	.01647	.00008	1.8588	.00043
#2	.00140	.07431	.00071	.00244	.01548	.00017	1.8275	-.00008
#3	-.00235	.06788	.00477	.00770	.01558	-.00000	1.8385	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00090	.00159	.27024	.13061	-.00133	.82130	.01111
Stddev	.00022	.00107	.00044	.03951	.12301	.00128	.07164	.00263
%RSD	139.18	119.00	27.684	14.621	94.178	95.818	8.7221	23.653
#1	.00038	.00192	.00121	.24967	.00755	-.00155	.90350	.00969
#2	-.00007	-.00021	.00207	.24525	.13071	-.00249	.77217	.00951
#3	.00017	.00099	.00150	.31579	.25356	.00004	.78824	.01415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	1.3092	-.00001	.00072	.00005	.00458	-.00378	3.3076
Stddev	.00020	.0283	.00086	.00100	.00271	.00195	.00824	.0156
%RSD	85.562	2.1605	12970.	139.93	5208.4	42.553	217.94	.47001
#1	.00023	1.3197	-.00058	.00088	-.00137	.00405	-.01271	3.3062
#2	.00003	1.3307	-.00042	-.00036	.00318	.00675	.00355	3.3238
#3	.00043	1.2772	.00098	.00162	-.00165	.00296	-.00220	3.2928
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103005 Acquired: 6/28/2016 20:23:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.01292	-.00204	-.00247	.00029	.00314	-.00035
Stddev	.00071	.00027	.00622	.00123	.00022	.00013	.00044
%RSD	152.45	2.1003	305.29	49.901	75.753	4.1400	124.35
#1	.00001	.01323	-.00350	-.00117	.00016	.00300	-.00025
#2	.00129	.01274	-.00740	-.00362	.00016	.00316	-.00084
#3	.00011	.01279	.00479	-.00262	.00054	.00326	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8591.7	51718.	2396.2
Stddev	32.8	139.	5.9
%RSD	.38213	.26800	.24697
#1	8553.8	51723.	2390.7
#2	8608.4	51854.	2395.5
#3	8612.8	51577.	2402.5

Approved: June 29, 2016

Sample Name: L1606103008 Acquired: 6/28/2016 20:27:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00248	.06335	-.00155	.00171	.01387	.00004	1.6732	.00015
Stddev	.00069	.00988	.00102	.00041	.00106	.00006	.0055	.00026
%RSD	27.761	15.595	65.691	24.128	7.6363	153.17	.32845	175.08
#1	-.00325	.07445	-.00144	.00165	.01367	-.00001	1.6770	-.00015
#2	-.00226	.06007	-.00261	.00215	.01292	.00003	1.6669	.00031
#3	-.00193	.05553	-.00059	.00133	.01501	.00011	1.6758	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00268	.00155	.25935	.21785	.00346	.90723	.00963
Stddev	.00047	.00094	.00044	.02869	.03338	.00211	.08643	.00343
%RSD	11692.	35.293	28.463	11.064	15.323	60.967	9.5265	35.627
#1	-.00015	.00179	.00186	.23014	.25226	.00217	.80749	.00585
#2	-.00037	.00256	.00176	.28750	.18560	.00232	.95414	.01255
#3	.00053	.00367	.00105	.26042	.21567	.00590	.96007	.01047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	1.6028	.00050	.00285	-.00172	.00432	-.00424	3.4372
Stddev	.00034	.0210	.00082	.00190	.00344	.00344	.00226	.0990
%RSD	117.08	1.3071	162.19	66.549	200.13	79.563	53.304	2.8817
#1	.00026	1.6264	.00111	.00504	-.00499	.00768	-.00276	3.4985
#2	-.00003	1.5953	-.00042	.00170	-.00202	.00447	-.00684	3.4902
#3	.00065	1.5866	.00082	.00181	.00186	.00081	-.00311	3.3230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103008 Acquired: 6/28/2016 20:27:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.01269	-.00096	-.00294	-.00047	.00324	-.00082
Stddev	.00041	.00020	.01187	.00205	.00058	.00036	.00004
%RSD	61.897	1.5519	1242.1	69.635	121.79	11.026	4.5093
#1	.00086	.01290	-.01258	-.00059	-.00094	.00364	-.00086
#2	.00019	.01251	.01115	-.00387	.00017	.00296	-.00080
#3	.00094	.01265	-.00143	-.00435	-.00065	.00312	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8606.8	51900.	2410.3
Stddev	16.7	132.	9.1
%RSD	.19431	.25415	.37944
#1	8598.2	51935.	2406.3
#2	8626.0	52011.	2420.8
#3	8596.0	51754.	2403.9

Approved: June 29, 2016

Sample Name: L1606103013 Acquired: 6/28/2016 20:31:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	.04624	-.00178	.00095	.01561	.00013	2.0066	.00029
Stddev	.00021	.00680	.00616	.00269	.00083	.00001	.0376	.00015
%RSD	16.871	14.707	345.25	283.48	5.3373	8.0351	1.8742	52.224
#1	.00114	.05286	.00318	.00378	.01466	.00012	1.9900	.00012
#2	.00107	.03927	.00014	-.00156	.01599	.00012	1.9801	.00033
#3	.00146	.04659	-.00868	.00062	.01619	.00014	2.0497	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.00029	.00151	.29221	.26761	.00398	1.1180	.00839
Stddev	.00019	.00101	.00091	.02806	.10146	.00258	.0551	.00336
%RSD	34.020	344.06	60.719	9.6032	37.912	64.760	4.9282	40.034
#1	-.00034	-.00082	.00255	.26127	.37672	.00184	1.1808	.00543
#2	-.00064	.00055	.00087	.31601	.17611	.00684	1.0778	.00769
#3	-.00069	.00115	.00110	.29936	.25000	.00325	1.0955	.01204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	2.1231	-.00118	.00513	-.00473	.00222	-.00603	4.1440
Stddev	.00017	.0465	.00037	.00302	.00167	.00456	.00114	.1226
%RSD	44.300	2.1922	31.218	58.874	35.342	205.45	18.846	2.9593
#1	.00039	2.0706	-.00115	.00459	-.00336	-.00152	-.00552	4.2262
#2	.00021	2.1594	-.00082	.00839	-.00423	.00089	-.00733	4.2027
#3	.00054	2.1393	-.00156	.00242	-.00659	.00729	-.00523	4.0030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103013 Acquired: 6/28/2016 20:31:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.01567	-.00061	-.00476	.00024	.00140	.00136
Stddev	.00090	.00032	.00297	.00325	.00067	.00012	.00036
%RSD	182.01	2.0296	488.92	68.203	279.71	8.5409	26.414
#1	.00112	.01532	-.00325	-.00849	.00036	.00144	.00160
#2	-.00054	.01594	-.00118	-.00260	-.00048	.00150	.00152
#3	.00089	.01575	.00260	-.00319	.00084	.00127	.00095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8578.5	51693.	2409.2
Stddev	5.0	380.	28.4
%RSD	.05873	.73419	1.1788
#1	8583.0	51259.	2441.8
#2	8579.4	51855.	2395.8
#3	8573.1	51965.	2389.9

Approved: June 29, 2016

Sample Name: L1606103014S Acquired: 6/28/2016 20:35:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19712**	**5.1426**	**.19698**	**.95559**	**.52325**	**.02504**	**7.1364**	**.02503**
Stddev	.00387	.0305	.00335	.00861	.00545	.00008	.1283	.00025
%RSD	1.9618	.59258	1.7000	.90073	1.0423	.33543	1.7978	1.0117
#1	.19423	5.1194	.19313	.94725	.52465	.02497	7.2805	.02505
#2	.20152	5.1771	.19856	.96444	.52787	.02513	7.0347	.02477
#3	.19563	5.1313	.19924	.95509	.51723	.02503	7.0939	.02528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10214**	**.25928**	**.25338**	**2.3233**	**26.069**	**.52468**	**6.2318**	**.26664**
Stddev	.00135	.00040	.00160	.0125	.190	.00255	.1325	.00172
%RSD	1.3220	.15466	.63168	.53830	.72708	.48682	2.1255	.64432
#1	.10357	.25975	.25477	2.3215	26.081	.52258	6.1381	.26856
#2	.10088	.25905	.25163	2.3367	26.253	.52752	6.3833	.26525
#3	.10197	.25905	.25375	2.3118	25.874	.52393	6.1739	.26611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50844**	**27.294**	**.25043**	**4.7758**	**.25102**	**.58741**	**.18813**	**6.5890**
Stddev	.00349	.254	.00206	.0281	.00585	.00436	.00782	.0469
%RSD	.68643	.93201	.82062	.58817	2.3315	.74208	4.1588	.71105
#1	.50968	27.367	.25075	4.8009	.25595	.59104	.19682	6.6036
#2	.50450	27.505	.24824	4.7455	.24455	.58257	.18596	6.5365
#3	.51115	27.012	.25231	4.7809	.25256	.58861	.18163	6.6267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103014S Acquired: 6/28/2016 20:35:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50967	.53343	.50624	.24971	.50892	.50235	.00030
Stddev	.00450	.00383	.00683	.00270	.00053	.00313	.00028
%RSD	.88259	.71764	1.3493	1.0831	.10449	.62256	93.438
#1	.51146	.53276	.51236	.24681	.50919	.50409	.00052
#2	.50455	.53755	.49887	.25015	.50927	.49874	.00041
#3	.51300	.52998	.50747	.25217	.50831	.50421	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8552.5	50892.	2386.8
Stddev	54.7	220.	25.0
%RSD	.63959	.43158	1.0478
#1	8521.9	50991.	2379.9
#2	8615.7	50640.	2366.0
#3	8519.9	51045.	2414.5

Approved: June 29, 2016

Sample Name: L1606103015SD Acquired: 6/28/2016 20:39:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19945	5.1587	.19596	.96938	.52400	.02505	7.0900	.02511
Stddev	.00173	.0276	.00166	.00022	.00923	.00012	.1630	.00023
%RSD	.86965	.53434	.84677	.02230	1.7606	.49890	2.2987	.89707
#1	.19757	5.1745	.19499	.96955	.51782	.02518	7.0286	.02491
#2	.20100	5.1748	.19501	.96947	.53460	.02502	7.2748	.02508
#3	.19978	5.1269	.19788	.96914	.51957	.02493	6.9667	.02535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10337	.25841	.25831	2.3603	26.179	.52946	6.2591	.26435
Stddev	.00053	.00183	.00149	.0599	.253	.00794	.0416	.00468
%RSD	.51104	.70916	.57726	2.5380	.96484	1.4993	.66458	1.7695
#1	.10285	.25643	.25699	2.3235	25.984	.52081	6.3007	.26566
#2	.10390	.26004	.25993	2.4294	26.464	.53640	6.2175	.26822
#3	.10336	.25876	.25800	2.3280	26.088	.53118	6.2592	.25915
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51686	27.396	.25484	4.8687	.25758	.59782	.19383	6.6540
Stddev	.00352	.389	.00234	.0367	.00220	.00371	.00712	.0309
%RSD	.68063	1.4205	.91811	.75454	.85248	.62120	3.6739	.46516
#1	.51287	27.174	.25226	4.8340	.25694	.59358	.19131	6.6202
#2	.51954	27.845	.25683	4.9072	.25577	.59937	.20186	6.6810
#3	.51815	27.168	.25544	4.8648	.26002	.60051	.18830	6.6607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103015SD Acquired: 6/28/2016 20:39:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51888	.53421	.50143	.25567	.51178	.51917	-.00014
Stddev	.00271	.00813	.00412	.00076	.00169	.00325	.00025
%RSD	.52203	1.5219	.82169	.29775	.33018	.62683	177.03
#1	.51614	.52777	.50024	.25556	.51373	.51570	-.00031
#2	.52156	.54335	.50602	.25496	.51071	.52215	.00015
#3	.51894	.53152	.49804	.25648	.51089	.51968	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8578.1	51459.	2426.3
Stddev	28.4	147.	29.4
%RSD	.33082	.28491	1.2131
#1	8609.8	51467.	2430.4
#2	8555.2	51308.	2395.1
#3	8569.3	51601.	2453.5

Approved: June 29, 2016

Sample Name: L1606103020 Acquired: 6/28/2016 20:43:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.00877	-.00460	.00734	.00651	.00012	-.01988	.00004
Stddev	.00095	.00655	.00314	.00147	.00132	.00008	.02973	.00023
%RSD	113.31	74.670	68.199	20.026	20.246	69.398	149.59	546.82
#1	.00026	.00462	-.00377	.00900	.00698	.00005	-.02899	-.00013
#2	-.00133	.00538	-.00807	.00684	.00753	.00010	.01335	-.00004
#3	-.00146	.01633	-.00196	.00619	.00502	.00021	-.04399	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00085	.00015	-.01469	-.08758	-.00071	.02146	-.00067
Stddev	.00039	.00091	.00020	.03225	.15993	.00263	.03330	.00092
%RSD	722.61	106.86	135.15	219.57	182.60	369.20	155.19	138.50
#1	.00047	.00117	.00036	.01959	-.08635	-.00237	-.01567	-.00103
#2	-.00032	-.00018	-.00004	-.04444	-.24812	-.00209	.04870	.00038
#3	.00002	.00155	.00013	-.01922	.07172	.00232	.03135	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	1.4536	.00020	.00376	-.00365	.00289	-.00559	.47911
Stddev	.00033	.0476	.00046	.00579	.00477	.00166	.00612	.00016
%RSD	762.05	3.2713	232.76	153.90	130.81	57.274	109.47	.03278
#1	-.00021	1.4309	-.00026	.00280	-.00897	.00420	.00111	.47898
#2	.00042	1.4217	.00020	.00997	-.00221	.00344	-.00701	.47928
#3	-.00008	1.5083	.00065	-.00149	.00024	.00103	-.01088	.47906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103020 Acquired: 6/28/2016 20:43:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00110**	**.00023**	**.00531**	**-.00695**	**.00052**	**.00111**	**-.00094**
Stddev	.00104	.00028	.00887	.00154	.00080	.00027	.00037
%RSD	94.401	122.88	167.05	22.192	152.73	24.492	38.941
#1	.00055	.00021	-.00034	-.00767	-.00026	.00097	-.00109
#2	.00045	.00052	.01554	-.00801	.00050	.00093	-.00122
#3	.00229	-.00004	.00074	-.00518	.00133	.00142	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8676.7**	**52192.**	**2438.5**
Stddev	21.8	312.	21.6
%RSD	.25144	.59803	.88605
#1	8698.9	52061.	2422.8
#2	8655.3	52548.	2429.6
#3	8676.1	51966.	2463.1

Approved: June 29, 2016

Sample Name: L1606103023 Acquired: 6/28/2016 20:46:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00096	.03076	-.00276	.00673	.00671	.00004	.05475	.00017
Stddev	.00096	.00939	.00497	.00251	.00155	.00008	.07827	.00022
%RSD	99.279	30.538	179.87	37.370	23.180	233.89	142.96	130.78
#1	.00014	.03473	-.00086	.00447	.00515	-.00006	-.03529	.00042
#2	-.00159	.02004	.00098	.00628	.00671	.00008	.09300	-.00001
#3	-.00144	.03753	-.00840	.00943	.00826	.00009	.10653	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00042	.00160	.00802	-.07936	.00670	.15045	.00000
Stddev	.00034	.00040	.00030	.01615	.07275	.00052	.09119	.00197
%RSD	252.40	96.122	18.507	201.43	91.670	7.7603	60.608	39387.
#1	.00018	.00089	.00159	.00372	-.00710	.00612	.20505	-.00172
#2	-.00050	.00018	.00191	.02589	-.07840	.00713	.04519	.00215
#3	-.00009	.00019	.00131	-.00555	-.15259	.00684	.20113	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	1.4650	-.00008	-.00133	-.00359	.00243	-.00207	.48862
Stddev	.00012	.0168	.00079	.00979	.00280	.00016	.00574	.01993
%RSD	46.960	1.1474	959.93	737.61	77.930	6.5708	277.61	4.0787
#1	.00030	1.4786	-.00025	-.00456	-.00204	.00262	.00363	.50244
#2	.00036	1.4701	-.00078	.00967	-.00191	.00233	-.00784	.49764
#3	.00012	1.4462	.00078	-.00909	-.00683	.00235	-.00199	.46577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103023 Acquired: 6/28/2016 20:46:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00091	-.00161	-.00016	-.00030	.00149	-.00032
Stddev	.00042	.00021	.00547	.00220	.00012	.00020	.00112
%RSD	227.16	23.373	338.87	1370.6	39.551	13.167	345.43
#1	-.00021	.00113	-.00777	.00081	-.00028	.00135	-.00141
#2	.00014	.00070	.00268	-.00268	-.00042	.00139	-.00038
#3	.00062	.00089	.00025	.00139	-.00019	.00171	.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8702.3	52447.	2432.2
Stddev	19.4	88.	24.6
%RSD	.22259	.16845	1.0115
#1	8681.6	52435.	2433.5
#2	8720.0	52366.	2406.9
#3	8705.2	52541.	2456.1

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 20:50:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39387**	**10.025**	**.39209**	**.48927**	**.99341**	**.04979**	**9.8452**	**.05027**
Stddev	.00255	.030	.00174	.00801	.00147	.00030	.0611	.00024
%RSD	.64753	.29611	.44340	1.6369	.14776	.60772	.62029	.48017
#1	.39528	10.011	.39103	.48057	.99301	.04978	9.8212	.05054
#2	.39540	10.004	.39410	.49091	.99218	.05009	9.9146	.05017
#3	.39092	10.059	.39115	.49634	.99504	.04949	9.7997	.05008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20130**	**.50328**	**.50194**	**3.8976**	**50.161**	**.99794**	**9.9823**	**.49277**
Stddev	.00054	.00180	.00113	.0316	.096	.00307	.0048	.00233
%RSD	.27066	.35681	.22427	.80949	.19110	.30743	.04819	.47273
#1	.20072	.50134	.50064	3.8647	50.177	.99891	9.9878	.49045
#2	.20180	.50488	.50251	3.9005	50.058	.99450	9.9799	.49510
#3	.20139	.50362	.50266	3.9276	50.248	1.0004	9.9792	.49275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0041**	**49.461**	**.49722**	**9.8366**	**.49583**	**1.1908**	**.39387**	**4.9618**
Stddev	.0018	.062	.00041	.0283	.00102	.0064	.00958	.0100
%RSD	.18282	.12491	.08194	.28740	.20516	.53822	2.4318	.20201
#1	1.0023	49.480	.49734	9.8053	.49524	1.1847	.40206	4.9509
#2	1.0059	49.391	.49755	9.8603	.49525	1.1975	.38334	4.9705
#3	1.0042	49.510	.49676	9.8443	.49700	1.1901	.39620	4.9641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 20:50:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0071**	**.98955**	**.99924**	**.50029**	**1.0027**	**.99967**	**1.0262**
Stddev	.0029	.00102	.00558	.00094	.0071	.00173	.0015
%RSD	.28373	.10289	.55859	.18755	.70574	.17318	.15142
#1	1.0044	.99067	.99835	.50120	.99916	.99923	1.0257
#2	1.0069	.98868	.99416	.50035	1.0109	.99819	1.0280
#3	1.0101	.98929	1.0052	.49933	.99811	1.0016	1.0250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8509.8**	**50998.**	**2411.4**
Stddev	31.1	121.	5.1
%RSD	.36540	.23792	.21191
#1	8492.7	50959.	2406.2
#2	8545.7	51133.	2411.4
#3	8491.1	50900.	2416.4

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 20:54:31 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00097	.01028	-.00070	.00231	.00628	.00006	-.00151	.00026
Stddev	.00117	.00825	.00285	.00203	.00132	.00006	.05286	.00040
%RSD	121.50	80.294	406.96	87.692	20.977	99.683	3494.8	153.91
#1	.00016	.01966	.00239	.00134	.00484	.00005	.05735	-.00019
#2	-.00088	.00413	-.00127	.00096	.00743	.00012	-.01695	.00040
#3	-.00218	.00705	-.00323	.00465	.00656	.00001	-.04494	.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00019	.00124	.00012	.01193	.00194	.09408	-.00460
Stddev	.00035	.00047	.00168	.01222	.12968	.00350	.09956	.00259
%RSD	394.87	246.49	135.63	10327.	1086.9	179.97	105.82	56.340
#1	.00045	.00000	.00318	.00632	-.11270	.00119	.17982	-.00178
#2	.00006	-.00016	.00036	.00799	.14613	-.00112	.11753	-.00516
#3	-.00024	.00072	.00018	-.01395	.00236	.00576	-.01511	-.00687
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.08282	-.00179	.00255	-.00305	.00088	-.00266	.00929
Stddev	.00044	.02080	.00061	.00580	.00051	.00568	.00235	.00264
%RSD	390.13	25.120	34.102	227.36	16.768	645.68	88.410	28.446
#1	.00023	-.05883	-.00182	.00709	-.00359	.00496	-.00107	.01233
#2	-.00061	-.09382	-.00238	.00454	-.00296	.00329	-.00155	.00806
#3	.00004	-.09582	-.00116	-.00398	-.00258	-.00561	-.00536	.00749
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 20:54:31 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**-.00009**	**.00531**	**-.00285**	**-.00050**	**.00011**	**-.00047**
Stddev	.00107	.00038	.00364	.00117	.00035	.00019	.00041
%RSD	261.53	433.74	68.573	40.924	69.361	167.36	86.498
#1	-.00066	-.00053	.00158	-.00249	-.00082	.00015	-.00018
#2	.00041	.00010	.00885	-.00415	-.00057	.00029	-.00029
#3	.00148	.00017	.00551	-.00191	-.00013	-.00009	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8624.7**	**51659.**	**2390.8**
Stddev	26.4	102.	13.3
%RSD	.30619	.19728	.55665
#1	8650.5	51749.	2395.5
#2	8626.0	51679.	2375.8
#3	8597.7	51548.	2401.1

Approved: June 29, 2016

Sample Name: L1606106501 Acquired: 6/28/2016 20:58:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00122	.04246	.00096	.00933	.01907	.00012	48.210	.00018
Stddev	.00080	.00956	.00129	.00476	.00169	.00009	.667	.00040
%RSD	66.026	22.514	133.81	51.003	8.8376	74.850	1.3838	224.50
#1	-.00109	.03166	-.00051	.00441	.01870	.00022	47.543	-.00028
#2	-.00049	.04591	.00187	.01391	.02090	.00006	48.211	.00033
#3	-.00208	.04982	.00152	.00966	.01759	.00008	48.877	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.12034	.00337	.84538	4.8885	.00613	19.130	.19236
Stddev	.00035	.00062	.00185	.01733	.0577	.00353	.062	.00124
%RSD	42.451	.51230	55.118	2.0499	1.1811	57.613	.32623	.64546
#1	.00076	.11987	.00429	.84110	4.8268	.00687	19.058	.19093
#2	.00050	.12104	.00123	.83059	4.9412	.00229	19.167	.19314
#3	.00119	.12012	.00458	.86445	4.8975	.00923	19.166	.19300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00502	101.49	.03666	.05061	.00037	.00552	-.00691	4.2371
Stddev	.00063	.70	.00145	.00855	.00214	.00409	.00550	.0714
%RSD	12.644	.68806	3.9580	16.896	580.68	74.132	79.603	1.6841
#1	.00553	100.80	.03830	.04656	-.00196	.00856	-.01288	4.2787
#2	.00521	102.20	.03615	.06044	.00225	.00087	-.00206	4.2778
#3	.00431	101.47	.03554	.04484	.00082	.00713	-.00578	4.1547
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106501 Acquired: 6/28/2016 20:58:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.27982	-.00044	-.00323	.00081	.00487	-.00039
Stddev	.00124	.00141	.01103	.00191	.00135	.00030	.00090
%RSD	214.61	.50382	2503.1	59.084	167.35	6.2180	234.47
#1	.00005	.27832	-.00113	-.00441	-.00040	.00461	-.00063
#2	-.00031	.28112	-.01111	-.00103	.00055	.00520	-.00114
#3	.00199	.28001	.01092	-.00425	.00227	.00480	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8509.3	50804.	2422.1
Stddev	39.1	141.	10.1
%RSD	.45930	.27662	.41861
#1	8466.1	50939.	2433.8
#2	8542.3	50658.	2415.8
#3	8519.4	50814.	2416.7

Approved: June 29, 2016

Sample Name: L1606106502 Acquired: 6/28/2016 21:02:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00114	.04867	-.00289	.00851	.01762	.00016	35.936	.00020
Stddev	.00268	.00795	.00156	.00216	.00094	.00011	.343	.00034
%RSD	234.09	16.342	53.935	25.365	5.3376	68.879	.95434	175.42
#1	.00194	.04010	-.00140	.00603	.01790	.00019	36.093	.00008
#2	-.00255	.05010	-.00450	.00991	.01657	.00024	35.543	-.00007
#3	-.00282	.05581	-.00276	.00961	.01839	.00004	36.172	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00459	1.0529	.01632	5.0050	.94962	.00464	10.669	.16800
Stddev	.00041	.0021	.00038	.0194	.06132	.00481	.111	.00302
%RSD	9.0431	.19962	2.3454	.38836	6.4578	103.77	1.0376	1.7983
#1	.00412	1.0546	.01676	4.9982	.96223	.00667	10.667	.17029
#2	.00491	1.0537	.01605	4.9898	.88297	.00810	10.781	.16912
#3	.00473	1.0506	.01616	5.0269	1.0037	-.00086	10.559	.16457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02964	111.70	.04251	.05620	-.00251	-.00857	-.00677	5.3032
Stddev	.00092	.30	.00079	.00640	.00333	.00438	.01076	.0854
%RSD	3.1108	.26623	1.8609	11.382	132.84	51.124	158.88	1.6112
#1	.03041	111.57	.04282	.05992	-.00625	-.00890	-.00689	5.3352
#2	.02990	112.04	.04309	.05987	.00011	-.01278	-.01747	5.3680
#3	.02862	111.49	.04161	.04882	-.00137	-.00403	.00405	5.2064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106502 Acquired: 6/28/2016 21:02:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.12031	.00009	-.00450	.00634	.00260	-.00112
Stddev	.00029	.00088	.00398	.00333	.00034	.00025	.00041
%RSD	34.357	.73136	4483.1	74.119	5.3714	9.8103	36.698
#1	.00117	.11973	.00242	-.00289	.00663	.00269	-.00123
#2	.00063	.11988	.00235	-.00833	.00641	.00231	-.00066
#3	.00072	.12132	-.00450	-.00227	.00596	.00279	-.00146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8550.4	51133.	2443.3
Stddev	23.9	86.	5.6
%RSD	.27987	.16812	.22818
#1	8569.9	51216.	2438.0
#2	8523.7	51044.	2442.8
#3	8557.6	51139.	2449.1

Approved: June 29, 2016

Sample Name: L1606106503 Acquired: 6/28/2016 21:06:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.01851	-.00143	.00738	.04387	.00008	45.653	.00029
Stddev	.00152	.00228	.00115	.00348	.00218	.00006	.183	.00008
%RSD	414.82	12.329	80.342	47.166	4.9668	74.693	.40194	29.371
#1	-.00121	.01940	-.00262	.01046	.04591	.00013	45.864	.00034
#2	.00047	.01591	-.00034	.00806	.04157	.00001	45.552	.00019
#3	.00183	.02021	-.00132	.00361	.04412	.00011	45.542	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.16212	.00545	3.1219	1.3740	.00540	11.847	.51275
Stddev	.00044	.00101	.00037	.0120	.1362	.00337	.092	.00428
%RSD	27.935	.62303	6.8000	.38450	9.9150	62.457	.77861	.83566
#1	.00146	.16139	.00566	3.1123	1.2183	.00220	11.756	.51512
#2	.00123	.16169	.00502	3.1180	1.4714	.00892	11.844	.51533
#3	.00209	.16327	.00567	3.1354	1.4322	.00507	11.940	.50781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	174.62	.04481	.00362	-.00178	.00108	-.00296	4.4236
Stddev	.00017	1.14	.00119	.00421	.00226	.00281	.00929	.0795
%RSD	14.627	.65397	2.6463	116.24	127.13	258.91	313.99	1.7977
#1	.00095	175.93	.04559	.00590	.00071	.00419	.00728	4.4682
#2	.00127	174.11	.04540	.00619	-.00233	.00033	-.01085	4.4708
#3	.00118	173.82	.04345	-.00124	-.00371	-.00127	-.00530	4.3318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106503 Acquired: 6/28/2016 21:06:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.16890	-.00309	-.00225	-.00026	.00270	-.00035
Stddev	.00100	.00033	.00750	.00208	.00148	.00008	.00068
%RSD	483.66	.19786	242.96	92.738	566.95	2.9192	192.50
#1	.00079	.16911	.00487	-.00262	-.00195	.00276	-.00032
#2	.00078	.16908	-.00411	-.00000	.00082	.00261	.00031
#3	-.00095	.16852	-.01002	-.00412	.00034	.00274	-.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8510.3	50639.	2430.2
Stddev	7.5	23.	18.8
%RSD	.08869	.04463	.77216
#1	8519.0	50665.	2409.5
#2	8505.2	50628.	2435.0
#3	8506.7	50623.	2446.1

Approved: June 29, 2016

Sample Name: L1606106504 Acquired: 6/28/2016 21:10:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00213	.09096	-.00153	.00691	.01641	.00011	37.014	.00041
Stddev	.00056	.01201	.00090	.00198	.00229	.00006	.834	.00023
%RSD	26.320	13.200	58.781	28.617	13.939	54.878	2.2539	56.817
#1	-.00260	.08217	-.00057	.00917	.01902	.00005	37.973	.00016
#2	-.00228	.08608	-.00235	.00547	.01545	.00018	36.605	.00061
#3	-.00151	.10464	-.00168	.00611	.01476	.00011	36.463	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01035	.41103	.00712	3.8800	9.5189	.02111	18.430	.25101
Stddev	.00050	.00097	.00195	.0540	.1479	.00400	.267	.00484
%RSD	4.8232	.23525	27.322	1.3928	1.5538	18.953	1.4467	1.9274
#1	.01046	.40992	.00878	3.9419	9.3883	.02555	18.710	.25657
#2	.01079	.41171	.00760	3.8560	9.4889	.01780	18.402	.24876
#3	.00981	.41145	.00498	3.8422	9.6795	.01998	18.179	.24771
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00352	122.20	.09998	.03453	.00070	.00399	-.00526	5.7215
Stddev	.00039	1.45	.00206	.00291	.00260	.00243	.00421	.1201
%RSD	11.002	1.1895	2.0639	8.4366	372.00	61.032	80.108	2.0990
#1	.00375	123.86	.09940	.03333	.00304	.00199	-.00504	5.7577
#2	.00373	121.61	.10227	.03785	.00117	.00670	-.00958	5.8193
#3	.00307	121.14	.09827	.03241	-.00211	.00327	-.00116	5.5875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106504 Acquired: 6/28/2016 21:10:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.21514	-.00193	-.00213	.00339	.00785	-.00076
Stddev	.00062	.00319	.01407	.00225	.00062	.00025	.00024
%RSD	114.95	1.4817	727.11	106.00	18.385	3.1697	31.487
#1	-.00008	.21868	-.01773	-.00095	.00282	.00786	-.00068
#2	.00115	.21423	.00924	-.00472	.00328	.00810	-.00058
#3	.00055	.21250	.00269	-.00070	.00405	.00760	-.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8604.3	51216.	2448.5
Stddev	45.8	176.	25.8
%RSD	.53283	.34304	1.0528
#1	8580.4	51038.	2418.8
#2	8575.4	51389.	2463.9
#3	8657.2	51221.	2462.9

Approved: June 29, 2016

Sample Name: L1606106505 Acquired: 6/28/2016 21:13:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.02921	-.00384	.00411	.01418	.00007	21.596	.00014
Stddev	.00260	.01455	.00201	.00175	.00156	.00012	.210	.00028
%RSD	285.47	49.798	52.350	42.699	10.969	180.72	.97426	194.07
#1	.00036	.04383	-.00604	.00599	.01579	.00008	21.785	.00041
#2	-.00137	.02906	-.00336	.00383	.01407	-.00006	21.633	.00016
#3	.00374	.01474	-.00211	.00251	.01268	.00019	21.369	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.01331	.00184	.28146	42.106	.02502	24.386	.10216
Stddev	.00023	.00099	.00045	.02441	.255	.00418	.202	.00328
%RSD	74.655	7.4575	24.686	8.6720	.60615	16.715	.82951	3.2063
#1	.00037	.01445	.00205	.27951	42.035	.02729	24.208	.10074
#2	.00049	.01291	.00132	.25808	42.390	.02759	24.606	.10590
#3	.00005	.01259	.00215	.30678	41.894	.02020	24.342	.09983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	71.860	.01009	.01291	-.00001	.00666	-.00207	3.4334
Stddev	.00030	.672	.00042	.00086	.00201	.00229	.00662	.0871
%RSD	22.478	.93503	4.1380	6.6831	38038.	34.442	319.11	2.5378
#1	.00135	71.698	.01043	.01290	-.00221	.00546	.00549	3.4892
#2	.00102	72.598	.01021	.01205	.00049	.00930	-.00683	3.4780
#3	.00161	71.284	.00963	.01377	.00171	.00522	-.00488	3.3330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106505 Acquired: 6/28/2016 21:13:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.11257**	**-.00701**	**-.00258**	**-.00079**	**.00417**	**-.00019**
Stddev	.00050	.00059	.00451	.00158	.00075	.00010	.00046
%RSD	710.42	.52043	64.379	61.242	94.617	2.3387	242.20
#1	.00015	.11286	-.00751	-.00313	-.00089	.00412	-.00046
#2	.00029	.11296	-.00227	-.00080	.00000	.00428	.00034
#3	-.00065	.11190	-.01126	-.00381	-.00148	.00411	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8614.1**	**51472.**	**2478.5**
Stddev	5.8	202.	14.1
%RSD	.06752	.39279	.56993
#1	8607.5	51241.	2482.7
#2	8616.5	51619.	2462.8
#3	8618.3	51555.	2490.1

Approved: June 29, 2016

Sample Name: L1606106506 Acquired: 6/28/2016 21:17:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00158	.03183	.00137	.00857	.02635	.00004	82.528	.00016
Stddev	.00017	.00971	.00409	.00205	.00061	.00005	.363	.00031
%RSD	10.921	30.510	298.35	23.919	2.2963	131.49	.43946	194.55
#1	-.00141	.03589	.00503	.01061	.02646	.00008	82.864	-.00015
#2	-.00175	.02075	-.00305	.00651	.02569	.00004	82.576	.00046
#3	-.00159	.03886	.00214	.00859	.02689	-.00001	82.144	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00909	.00538	7.0235	1.4155	.00695	12.915	.85197
Stddev	.00018	.00062	.00113	.0060	.1772	.00130	.106	.00198
%RSD	58.487	6.8567	20.985	.08524	12.519	18.696	.82117	.23221
#1	.00037	.00928	.00506	7.0254	1.2352	.00616	12.934	.85425
#2	.00011	.00839	.00445	7.0168	1.5895	.00845	12.800	.85094
#3	.00046	.00960	.00664	7.0283	1.4219	.00623	13.010	.85072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	144.61	.00414	.05218	-.00444	.00163	-.00756	3.8921
Stddev	.00008	.67	.00044	.00345	.00182	.00509	.00113	.0069
%RSD	10.115	.46055	10.513	6.6114	41.057	312.15	14.927	.17602
#1	.00074	145.24	.00447	.04820	-.00234	.00737	-.00725	3.8999
#2	.00089	144.68	.00430	.05438	-.00538	-.00013	-.00661	3.8886
#3	.00088	143.92	.00365	.05395	-.00561	-.00234	-.00881	3.8876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106506 Acquired: 6/28/2016 21:17:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.28262	-.01096	-.00234	-.00027	.00256	-.00032
Stddev	.00025	.00036	.01126	.00040	.00113	.00013	.00040
%RSD	112.34	.12884	102.74	17.244	427.21	5.1943	124.24
#1	.00047	.28284	-.02222	-.00236	-.00117	.00256	-.00074
#2	-.00003	.28281	-.01096	-.00193	.00101	.00243	-.00026
#3	.00022	.28220	.00030	-.00273	-.00063	.00270	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8553.4	50864.	2455.9
Stddev	12.6	33.	15.0
%RSD	.14684	.06447	.61218
#1	8567.9	50893.	2443.3
#2	8545.3	50829.	2451.9
#3	8547.0	50870.	2472.6

Approved: June 29, 2016

Sample Name: L1606106601 Acquired: 6/28/2016 21:21:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.05733	.00013	.02509	.01675	.00006	41.897	-.00001
Stddev	.00135	.00660	.00335	.00142	.00111	.00014	.519	.00029
%RSD	143.38	11.514	2627.2	5.6694	6.6496	234.17	1.2380	2888.5
#1	.00055	.05738	-.00157	.02580	.01748	-.00008	42.496	-.00021
#2	.00244	.05071	-.00204	.02601	.01731	.00006	41.615	.00032
#3	-.00017	.06391	.00399	.02345	.01547	.00020	41.581	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00150	.00375	.10753	1.7660	.00792	6.7640	.37747
Stddev	.00046	.00032	.00079	.04103	.1722	.00282	.0311	.00284
%RSD	89.372	21.198	21.178	38.159	9.7541	35.537	.45978	.75243
#1	.00018	.00135	.00466	.11217	1.9288	.00664	6.7589	.37569
#2	.00032	.00186	.00321	.14605	1.5857	.00598	6.7358	.38075
#3	.00103	.00128	.00336	.06438	1.7834	.01115	6.7974	.37598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	6.4675	.00459	.04483	-.00411	-.00214	-.00687	1.9555
Stddev	.00003	.0420	.00107	.01033	.00284	.00195	.00638	.0168
%RSD	4.2619	.64927	23.394	23.036	69.131	91.184	92.837	.85655
#1	.00071	6.4802	.00522	.05673	-.00662	.00006	-.00932	1.9683
#2	.00077	6.5017	.00335	.03834	-.00102	-.00280	-.01166	1.9616
#3	.00075	6.4206	.00521	.03940	-.00470	-.00368	.00037	1.9365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106601 Acquired: 6/28/2016 21:21:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.11283	.00392	-.00305	.00047	.33904	-.00049
Stddev	.00054	.00044	.00554	.00319	.00027	.00188	.00070
%RSD	78.018	.39156	141.22	104.31	56.552	.55336	141.29
#1	.00130	.11256	.00656	-.00672	.00074	.33986	-.00115
#2	.00051	.11260	-.00244	-.00097	.00046	.34036	.00023
#3	.00027	.11334	.00764	-.00147	.00021	.33689	-.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8739.1	52488.	2461.2
Stddev	19.7	68.	11.7
%RSD	.22495	.12970	.47713
#1	8753.6	52516.	2461.6
#2	8716.7	52537.	2449.3
#3	8747.0	52410.	2472.8

Approved: June 29, 2016

Sample Name: L1606106602 Acquired: 6/28/2016 21:25:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00046	.01721	-.00296	.03350	.01766	.00005	126.67	.00054
Stddev	.00050	.00800	.00245	.00208	.00078	.00011	.63	.00011
%RSD	109.04	46.468	82.731	6.1998	4.4271	218.76	.50118	20.238
#1	-.00060	.00978	-.00457	.03491	.01741	.00017	126.16	.00043
#2	-.00087	.01618	-.00418	.03448	.01853	-.00005	127.38	.00054
#3	.00010	.02568	-.00014	.03112	.01703	.00003	126.47	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00096	.00718	.00525	3.3984	.03319	27.870	.32098
Stddev	.00008	.00104	.00040	.03706	.0389	.00390	.150	.00200
%RSD	36.271	108.18	5.6337	705.29	1.1462	11.750	.53992	.62385
#1	.00015	.00156	.00702	.03492	3.4430	.02922	27.743	.31869
#2	.00018	.00157	.00764	-.03628	3.3810	.03702	28.037	.32186
#3	.00029	-.00024	.00689	.01712	3.3711	.03334	27.832	.32239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	7.9568	.00808	.01457	-.00103	.00082	-.00252	4.0823
Stddev	.00027	.0423	.00084	.00435	.00417	.00306	.00511	.0358
%RSD	27.211	.53158	10.346	29.825	404.71	372.65	202.25	.87730
#1	.00131	7.9223	.00760	.01070	.00365	.00377	.00155	4.1012
#2	.00089	8.0040	.00905	.01927	-.00238	-.00234	-.00088	4.1048
#3	.00080	7.9440	.00760	.01373	-.00436	.00104	-.00825	4.0410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106602 Acquired: 6/28/2016 21:25:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.69108**	**-.02422**	**-.00202**	**-.00021**	**.92972**	**-.00088**
Stddev	.00073	.00328	.00761	.00348	.00114	.01192	.00037
%RSD	1124.6	.47509	31.395	172.68	544.07	1.2824	42.708
#1	.00025	.68768	-.03174	-.00293	-.00019	.93618	-.00131
#2	-.00090	.69423	-.02440	.00183	-.00135	.93701	-.00069
#3	.00046	.69134	-.01653	-.00495	.00092	.91596	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8615.2**	**51801.**	**2454.3**
Stddev	26.5	242.	3.2
%RSD	.30743	.46655	.13005
#1	8603.8	51557.	2457.9
#2	8596.2	52040.	2451.7
#3	8645.4	51806.	2453.4

Approved: June 29, 2016

Sample Name: L1606106603 Acquired: 6/28/2016 21:29:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00173	.36498	-.00171	.02440	.03685	.00017	69.851	.00055
Stddev	.00273	.00934	.00289	.00202	.00234	.00006	.658	.00005
%RSD	157.80	2.5588	168.91	8.2904	6.3439	36.518	.94238	8.8191
#1	.00060	.37414	.00151	.02477	.03915	.00011	70.340	.00053
#2	-.00025	.35547	-.00258	.02621	.03693	.00017	70.112	.00051
#3	.00484	.36534	-.00407	.02222	.03448	.00024	69.103	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	.00148	.00571	.64206	2.7655	.02243	19.201	.14255
Stddev	.00003	.00107	.00122	.07652	.0955	.00337	.326	.00224
%RSD	2.0740	72.233	21.333	11.918	3.4524	15.030	1.6982	1.5740
#1	.00146	.00206	.00710	.58376	2.7001	.02239	18.883	.14401
#2	.00145	.00214	.00480	.72871	2.8751	.02581	19.185	.14366
#3	.00151	.00025	.00524	.61371	2.7214	.01907	19.535	.13996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	3.0430	.00499	.01511	-.00185	.00358	-.00385	4.6375
Stddev	.00045	.0310	.00026	.00537	.00127	.00190	.00513	.0117
%RSD	87.312	1.0191	5.2903	35.507	68.817	52.995	133.19	.25255
#1	.00026	3.0201	.00477	.02129	-.00278	.00269	-.00042	4.6465
#2	.00025	3.0307	.00490	.01164	-.00235	.00230	-.00139	4.6243
#3	.00103	3.0783	.00528	.01241	-.00040	.00576	-.00975	4.6417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106603 Acquired: 6/28/2016 21:29:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.48630**	**-.01289**	**-.00215**	**-.00076**	**.45919**	**-.00029**
Stddev	.00139	.00323	.00210	.00305	.00079	.00017	.00032
%RSD	712.04	.66440	16.307	141.91	103.26	.03766	109.68
#1	.00037	.48604	-.01099	-.00551	.00014	.45931	-.00027
#2	.00083	.48966	-.01254	.00045	-.00114	.45927	.00002
#3	-.00178	.48321	-.01515	-.00139	-.00129	.45899	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8732.4**	**52177.**	**2462.7**
Stddev	20.3	54.	13.0
%RSD	.23191	.10365	.52811
#1	8709.0	52117.	2455.4
#2	8744.0	52190.	2455.1
#3	8744.2	52223.	2477.8

Approved: June 29, 2016

Sample Name: L1606106604 Acquired: 6/28/2016 21:33:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.02304**	**-.00165**	**.00067**	**.00485**	**.00005**	**.13530**	**.00025**
Stddev	.00174	.00560	.00089	.00160	.00009	.00013	.04003	.00020
%RSD	1057.4	24.313	53.680	240.55	1.7582	234.28	29.589	79.333
#1	-.00143	.01809	-.00247	.00206	.00495	-.00009	.15528	.00024
#2	-.00088	.02190	-.00178	.00103	.00479	.00014	.16141	.00046
#3	.00182	.02912	-.00071	-.00109	.00480	.00012	.08921	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**-.00028**	**.00384**	**-.00237**	**-.08280**	**.00575**	**.00931**	**.00331**
Stddev	.00028	.00070	.00074	.02982	.04654	.00319	.05212	.00164
%RSD	101.17	250.89	19.269	1258.4	56.201	55.378	559.70	49.631
#1	-.00033	.00034	.00360	.02974	-.13452	.00564	-.05087	.00491
#2	-.00053	-.00104	.00467	-.02920	-.06959	.00900	.03957	.00338
#3	.00003	-.00014	.00325	-.00765	-.04430	.00263	.03924	.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.19024**	**-.00085**	**.00306**	**-.00070**	**.00752**	**-.00658**	**.00832**
Stddev	.00018	.04205	.00044	.00554	.00157	.00438	.00441	.00165
%RSD	146.41	22.106	51.727	180.83	225.72	58.246	67.118	19.873
#1	.00006	.19030	-.00035	-.00122	.00046	.00812	-.01079	.00852
#2	-.00012	.14815	-.00101	.00932	-.00006	.01158	-.00199	.00657
#3	-.00030	.23226	-.00118	.00109	-.00249	.00288	-.00695	.00986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106604 Acquired: 6/28/2016 21:33:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00064	.00545	-.00336	-.00090	.00138	-.00024
Stddev	.00073	.00042	.00640	.00137	.00073	.00023	.00007
%RSD	328.97	65.140	117.35	40.879	80.825	16.816	28.554
#1	-.00060	.00107	-.00114	-.00247	-.00171	.00118	-.00029
#2	.00047	.00023	.00586	-.00494	-.00029	.00133	-.00016
#3	.00080	.00064	.01164	-.00267	-.00071	.00163	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8774.5	53148.	2468.5
Stddev	18.9	40.	21.3
%RSD	.21516	.07564	.86449
#1	8788.8	53138.	2443.9
#2	8753.1	53192.	2479.7
#3	8781.7	53113.	2481.9

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 21:37:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39973	10.108	.39636	.49128	1.0030	.05037	9.9826	.05037
Stddev	.00161	.031	.00538	.00660	.0054	.00040	.0796	.00027
%RSD	.40227	.30747	1.3561	1.3434	.53726	.79813	.79769	.52668
#1	.39827	10.073	.40184	.49693	1.0081	.05010	10.074	.05059
#2	.40145	10.121	.39615	.48403	1.0036	.05018	9.9267	.05044
#3	.39946	10.132	.39110	.49289	.99738	.05083	9.9473	.05007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20223	.50813	.50393	3.9109	50.905	1.0169	10.132	.49597
Stddev	.00031	.00309	.00152	.0391	.191	.0173	.111	.00237
%RSD	.15093	.60823	.30237	1.0004	.37447	1.6974	1.0972	.47821
#1	.20248	.50643	.50485	3.9094	51.119	1.0362	10.014	.49324
#2	.20231	.50627	.50217	3.9508	50.843	1.0112	10.235	.49743
#3	.20189	.51170	.50477	3.8726	50.754	1.0031	10.147	.49725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0097	50.118	.50038	9.9139	.50050	1.1943	.39418	4.9666
Stddev	.0018	.494	.00134	.0075	.00314	.0064	.01371	.0067
%RSD	.17790	.98650	.26717	.07528	.62691	.53237	3.4790	.13412
#1	1.0110	50.489	.50146	9.9177	.49695	1.2005	.39664	4.9686
#2	1.0105	50.309	.49889	9.9187	.50165	1.1878	.40650	4.9721
#3	1.0077	49.557	.50079	9.9053	.50291	1.1945	.37940	4.9592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 21:37:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0102**	**1.0008**	**1.0090**	**.50371**	**1.0109**	**1.0026**	**1.0337**
Stddev	.0011	.0082	.0140	.00342	.0098	.0015	.0091
%RSD	.11060	.81843	1.3826	.67900	.97198	.15021	.87957
#1	1.0110	1.0081	1.0239	.50460	1.0029	1.0041	1.0379
#2	1.0108	1.0024	1.0069	.49993	1.0080	1.0025	1.0399
#3	1.0089	.99194	.99622	.50660	1.0219	1.0011	1.0232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8691.4**	**51771.**	**2447.6**
Stddev	17.1	102.	28.5
%RSD	.19660	.19712	1.1648
#1	8710.9	51793.	2432.1
#2	8679.2	51660.	2430.3
#3	8684.1	51860.	2480.5

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 21:40:55 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00230**	**.02348**	**.00079**	**.00047**	**.00786**	**.00018**	**.01177**
Stddev	.00096	.01651	.00379	.00372	.00037	.00013	.04160
%RSD	41.591	70.337	482.07	783.24	4.6602	72.515	353.45
#1	-.00126	.02991	-.00187	-.00345	.00750	.00031	.00397
#2	-.00315	.03582	.00513	.00092	.00824	.00004	.05672
#3	-.00250	.00472	-.00090	.00395	.00784	.00020	-.02538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**-.00004**	**.00107**	**-.00001**	**.00019**	**.07602**	**.00268**
Stddev	.00009	.00025	.00159	.00135	.01328	.08213	.00385
%RSD	25.273	632.10	148.38	19006.	6889.7	108.05	143.60
#1	.00043	-.00027	.00031	-.00143	.01232	-.01693	.00613
#2	.00026	.00023	.00290	.00015	.00226	.13881	-.00146
#3	.00033	-.00008	.00001	.00125	-.01400	.10617	.00337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02421**	**-.00287**	**.00013**	**-.07567**	**-.00105**	**-.00288**	F **-.00510**
Stddev	.14641	.00299	.00020	.04275	.00176	.00467	.00166
%RSD	604.74	104.22	149.54	56.498	167.99	162.30	32.476
#1	.17026	-.00597	.00032	-.12254	-.00215	-.00071	-.00500
#2	.02494	-.00265	.00015	-.03883	-.00199	-.00824	-.00350
#3	-.12256	.00000	-.00007	-.06562	.00099	.00032	-.00681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 21:40:55 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	-.00493	.01371	-.00034	.00027	-.00092	-.00343
Stddev	.00210	.00240	.00112	.00073	.00037	.00774	.00240
%RSD	400.61	48.796	8.1935	212.64	134.38	841.10	69.734
#1	-.00285	-.00741	.01246	.00047	.00065	-.00106	-.00415
#2	.00126	-.00477	.01464	-.00055	-.00009	.00689	-.00076
#3	.00001	-.00260	.01404	-.00095	.00027	-.00859	-.00539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00092	-.00006	-.00074
Stddev	.00130	.00011	.00020
%RSD	140.65	194.82	26.527
#1	-.00015	.00005	-.00062
#2	-.00242	-.00018	-.00097
#3	-.00020	-.00005	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8260.5	48995.	2264.7
Stddev	38.9	34.	4.4
%RSD	.47079	.06981	.19247
#1	8254.9	49022.	2262.3
#2	8224.7	48957.	2262.1
#3	8301.9	49006.	2269.7

Approved: June 29, 2016

Sample Name: L1606112801 Acquired: 6/28/2016 21:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00126	6.6020	.00045	.01160	.10137	.00065	89.722	.00048
Stddev	.00051	.0809	.00394	.00130	.00139	.00003	.444	.00026
%RSD	40.081	1.2256	881.01	11.180	1.3750	5.0705	.49497	55.083
#1	-.00112	6.5919	-.00406	.01267	.10022	.00066	90.003	.00018
#2	-.00084	6.6875	.00325	.01199	.10292	.00061	89.952	.00066
#3	-.00182	6.5266	.00216	.01016	.10097	.00067	89.210	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00927	.01015	.01734	9.3384	2.8756	.00909	27.581	3.3145
Stddev	.00031	.00120	.00195	.1034	.1441	.00919	.176	.0157
%RSD	3.3697	11.836	11.222	1.1073	5.0108	101.13	.63765	.47468
#1	.00919	.00915	.01674	9.4457	3.0190	.01971	27.402	3.3263
#2	.00961	.01148	.01952	9.3301	2.7308	.00356	27.753	3.3205
#3	.00901	.00981	.01576	9.2394	2.8771	.00401	27.587	3.2966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	179.82	.00990	1.1598	.00365	.00463	-.00760	14.603
Stddev	.00021	1.25	.00112	.0071	.00319	.00725	.01197	.046
%RSD	66.922	.69527	11.336	.61274	87.319	156.46	157.61	.31395
#1	.00024	180.61	.01115	1.1668	.00089	-.00339	.00615	14.625
#2	.00016	180.48	.00957	1.1601	.00293	.00659	-.01320	14.633
#3	.00056	178.38	.00898	1.1526	.00715	.01070	-.01573	14.550
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112801 Acquired: 6/28/2016 21:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.32812**	**.27643**	**-.00273**	**.01512**	**.04982**	**.00275**
Stddev	.00096	.00293	.00218	.00221	.00018	.00020	.00062
%RSD	189.76	.89290	.78923	80.867	1.2130	.39717	22.527
#1	-.00059	.32919	.27449	-.00043	.01522	.04962	.00329
#2	.00116	.33038	.27600	-.00484	.01491	.05001	.00207
#3	.00094	.32481	.27879	-.00294	.01525	.04985	.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8325.9**	**49707.**	**2420.6**
Stddev	10.7	333.	17.2
%RSD	.12902	.66931	.71130
#1	8327.5	49554.	2417.7
#2	8314.4	49478.	2405.1
#3	8335.7	50088.	2439.1

Approved: June 29, 2016

Sample Name: L1606112802 Acquired: 6/28/2016 21:48:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00143	.09340	.02577	.01283	.03807	.00004	75.043	.00011
Stddev	.00212	.00753	.00448	.00265	.00148	.00008	1.434	.00026
%RSD	147.93	8.0639	17.390	20.691	3.8920	211.55	1.9113	230.46
#1	-.00174	.08474	.03069	.01180	.03842	.00008	76.162	.00016
#2	.00082	.09699	.02192	.01584	.03935	.00009	75.542	.00034
#3	-.00338	.09846	.02470	.01084	.03645	-.00006	73.426	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00256	.00042	.00242	21.284	2.4576	.00843	12.599	.64431
Stddev	.00040	.00092	.00111	.262	.1645	.00155	.042	.01215
%RSD	15.565	219.85	45.761	1.2315	6.6928	18.347	.33457	1.8852
#1	.00298	.00009	.00303	21.442	2.3550	.00665	12.584	.64760
#2	.00219	-.00029	.00309	21.428	2.6473	.00944	12.646	.65447
#3	.00251	.00146	.00114	20.981	2.3704	.00920	12.565	.63085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	109.87	.00156	.12368	.00708	.01401	-.00736	10.011
Stddev	.00039	1.13	.00086	.00820	.00187	.00109	.00394	.102
%RSD	64.929	1.0247	55.389	6.6338	26.435	7.7786	53.526	1.0229
#1	.00016	109.93	.00215	.13208	.00744	.01525	-.00302	10.118
#2	.00091	110.97	.00196	.11568	.00875	.01358	-.00834	9.9991
#3	.00075	108.72	.00057	.12329	.00506	.01321	-.01070	9.9145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112802 Acquired: 6/28/2016 21:48:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.26989	-.00221	-.00203	.00052	.00463	-.00108
Stddev	.00059	.00192	.01536	.00088	.00043	.00003	.00047
%RSD	347.96	.71298	693.92	43.316	83.559	.73022	43.462
#1	.00080	.26979	-.00603	-.00248	.00037	.00465	-.00105
#2	.00006	.27186	-.01531	-.00259	.00018	.00459	-.00063
#3	-.00036	.26801	.01470	-.00102	.00101	.00465	-.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8612.0	50934.	2441.5
Stddev	51.1	190.	21.3
%RSD	.59296	.37328	.87422
#1	8555.4	50716.	2436.0
#2	8626.2	51018.	2423.5
#3	8654.5	51068.	2465.1

Approved: June 29, 2016

Sample Name: L1606112803 Acquired: 6/28/2016 21:52:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	10.535	.00189	.01142	.11626	.00079	98.814	.00034
Stddev	.00177	.148	.00298	.00095	.00142	.00002	1.200	.00026
%RSD	1594.6	1.4026	157.74	8.3374	1.2246	2.0752	1.2140	75.122
#1	.00006	10.645	.00445	.01111	.11595	.00080	97.453	.00005
#2	-.00196	10.593	-.00138	.01249	.11781	.00080	99.717	.00044
#3	.00157	10.367	.00259	.01066	.11501	.00077	99.273	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01269	.01633	.02038	16.450	3.4713	.02302	33.982	3.5230
Stddev	.00024	.00161	.00072	.240	.0597	.00431	.399	.0643
%RSD	1.8735	9.8301	3.5542	1.4610	1.7189	18.733	1.1733	1.8258
#1	.01276	.01759	.02108	16.172	3.4581	.02703	33.528	3.4508
#2	.01289	.01452	.02043	16.578	3.5364	.02358	34.277	3.5743
#3	.01243	.01688	.01963	16.598	3.4193	.01846	34.140	3.5438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	177.78	.01566	2.3781	.01017	.00458	.00154	17.494
Stddev	.00046	2.20	.00031	.0458	.00324	.00567	.00741	.335
%RSD	138.39	1.2365	1.9982	1.9246	31.815	123.68	482.45	1.9164
#1	.00086	175.28	.01531	2.3321	.00645	.01104	-.00628	17.130
#2	.00008	179.42	.01577	2.4236	.01171	.00230	.00241	17.790
#3	.00005	178.65	.01590	2.3786	.01235	.00041	.00847	17.563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112803 Acquired: 6/28/2016 21:52:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00194	.33225	.42590	-.00152	.02349	.08177	.00412
Stddev	.00069	.00446	.00364	.00092	.00102	.00175	.00011
%RSD	35.430	1.3426	.85533	60.584	4.3449	2.1409	2.7154
#1	.00163	.32718	.42347	-.00248	.02252	.08031	.00399
#2	.00273	.33556	.42414	-.00146	.02455	.08371	.00417
#3	.00146	.33402	.43009	-.00063	.02340	.08128	.00419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8675.3	50297.	2418.4
Stddev	148.1	449.	26.1
%RSD	1.7076	.89307	1.0785
#1	8846.2	49999.	2446.3
#2	8582.5	50079.	2394.7
#3	8597.3	50814.	2414.2

Approved: June 29, 2016

Sample Name: L1606112804 Acquired: 6/28/2016 21:56:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00094	.01965	-.00331	.00170	.00552	.00010	.05227	.00019
Stddev	.00209	.00679	.00295	.00183	.00070	.00003	.01579	.00009
%RSD	221.69	34.539	88.933	107.86	12.661	29.053	30.205	45.792
#1	.00131	.01674	-.00652	.00375	.00632	.00013	.06667	.00010
#2	-.00132	.01480	-.00269	.00112	.00517	.00009	.03539	.00027
#3	-.00281	.02740	-.00073	.00022	.00506	.00008	.05477	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00071	.00267	.01034	.01751	-.00294	.07074	-.00085
Stddev	.00057	.00072	.00087	.00956	.06462	.00447	.02273	.00293
%RSD	719.54	101.38	32.771	92.501	368.98	151.68	32.134	344.35
#1	-.00017	.00050	.00329	-.00070	-.05466	.00197	.07932	-.00361
#2	-.00060	.00012	.00167	.01592	.03721	-.00675	.08794	-.00115
#3	.00053	.00152	.00304	.01581	.06999	-.00405	.04497	.00221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.21454	-.00017	-.00100	.00001	.00141	-.00683	.00229
Stddev	.00011	.05619	.00160	.00204	.00183	.00153	.00705	.00107
%RSD	69.253	26.191	936.44	203.28	21825.	108.74	103.17	46.841
#1	-.00005	.18801	.00145	.00032	.00208	.00290	.00047	.00242
#2	-.00016	.27908	-.00021	-.00335	-.00071	-.00017	-.00737	.00116
#3	-.00026	.17652	-.00175	.00002	-.00135	.00151	-.01361	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112804 Acquired: 6/28/2016 21:56:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00011	-.00309	-.00145	-.00050	.00490	-.00036
Stddev	.00050	.00071	.00063	.00370	.00123	.00023	.00073
%RSD	84.759	627.39	20.331	254.92	247.66	4.6374	203.87
#1	.00014	.00011	-.00285	.00062	.00082	.00464	-.00007
#2	.00050	.00083	-.00380	-.00573	-.00071	.00507	.00019
#3	.00112	-.00060	-.00261	.00075	-.00160	.00499	-.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8819.2	53004.	2487.9
Stddev	17.1	187.	24.2
%RSD	.19396	.35229	.97464
#1	8810.0	52928.	2477.4
#2	8808.7	52868.	2515.7
#3	8839.0	53217.	2470.7

Approved: June 29, 2016

Sample Name: L1606112803PS Acquired: 6/28/2016 22:00:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574357-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20095**	**14.356**	**.21007**	**1.0121**	**.61454**	**.02613**	**91.444**	**.02600**
Stddev	.00481	.061	.00389	.0043	.00540	.00013	.473	.00017
%RSD	2.3919	.42364	1.8524	.42525	.87819	.48337	.51703	.64154
#1	.20638	14.390	.20954	1.0149	.61844	.02627	91.821	.02612
#2	.19724	14.393	.21420	1.0141	.60838	.02605	90.914	.02607
#3	.19924	14.286	.20647	1.0071	.61679	.02607	91.598	.02581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11359**	**.27131**	**.27123**	**16.370**	**29.233**	**.54468**	**34.678**	**3.3100**
Stddev	.00068	.00178	.00265	.137	.068	.00572	.153	.0190
%RSD	.59694	.65438	.97793	.83583	.23153	1.0504	.44001	.57504
#1	.11319	.27050	.27032	16.469	29.265	.54266	34.847	3.3073
#2	.11437	.27335	.27422	16.214	29.156	.54024	34.636	3.2925
#3	.11320	.27008	.26916	16.428	29.280	.55113	34.551	3.3302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52427**	**181.81**	**.26694**	**7.3186**	**.26296**	**.61666**	**.18939**	**18.508**
Stddev	.00210	1.02	.00124	.0166	.00398	.01135	.00558	.072
%RSD	.39994	.56052	.46561	.22700	1.5152	1.8411	2.9443	.38719
#1	.52344	182.62	.26633	7.3067	.26751	.60699	.18666	18.466
#2	.52665	180.67	.26837	7.3376	.26010	.62916	.19580	18.591
#3	.52271	182.14	.26613	7.3116	.26127	.61382	.18570	18.468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112803PS Acquired: 6/28/2016 22:00:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574357-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51709**	**.80563**	**.87003**	**.24848**	**.53655**	**.57886**	**.00411**
Stddev	.00316	.01295	.00934	.00030	.00121	.00554	.00024
%RSD	.61122	1.6072	1.0733	.11999	.22571	.95632	5.7393
#1	.51459	.81184	.86393	.24821	.53722	.57986	.00392
#2	.52065	.79075	.86539	.24844	.53727	.58383	.00405
#3	.51604	.81430	.88078	.24880	.53515	.57289	.00438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8563.6**	**51061.**	**2463.3**
Stddev	11.6	133.	17.7
%RSD	.13595	.26074	.71667
#1	8550.2	51001.	2450.1
#2	8569.8	50969.	2483.3
#3	8571.0	51214.	2456.3

Approved: June 29, 2016

Sample Name: L1606112803SDL Acquired: 6/28/2016 22:03:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574357-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	2.3653	-.00080	.00071	.03250	.00019	21.647	.00016
Stddev	.00316	.0441	.00432	.00148	.00027	.00002	.131	.00015
%RSD	464.59	1.8640	543.10	206.66	.83918	8.5968	.60578	92.705
#1	.00138	2.4022	-.00231	.00088	.03251	.00017	21.568	.00033
#2	.00090	2.3165	-.00415	.00210	.03223	.00021	21.798	.00006
#3	-.00432	2.3773	.00408	-.00084	.03278	.00019	21.574	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00291	.00430	.00502	3.5754	.78870	.00110	7.4514	.76169
Stddev	.00023	.00147	.00070	.0615	.07166	.00058	.1103	.00877
%RSD	7.7357	34.230	14.001	1.7196	9.0857	52.847	1.4803	1.1513
#1	.00300	.00450	.00487	3.5046	.87006	.00064	7.5321	.75196
#2	.00308	.00274	.00441	3.6152	.73494	.00175	7.3257	.76897
#3	.00266	.00566	.00579	3.6064	.76111	.00090	7.4964	.76415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	38.198	.00320	.53198	-.00107	.00060	-.00472	3.8999
Stddev	.00032	.372	.00123	.01450	.00685	.00503	.00573	.0839
%RSD	361.14	.97448	38.470	2.7254	640.05	841.28	121.39	2.1521
#1	.00046	37.770	.00281	.54432	-.00286	-.00142	.00062	3.9374
#2	-.00016	38.375	.00221	.53562	.00650	.00633	-.01076	3.9585
#3	-.00002	38.448	.00458	.51601	-.00685	-.00311	-.00401	3.8037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112803SDL Acquired: 6/28/2016 22:03:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574357-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.07216	.10212	-.00231	.00431	.01844	.00038
Stddev	.00133	.00117	.01163	.00109	.00028	.00061	.00039
%RSD	139.81	1.6216	11.386	47.354	6.3917	3.2919	103.05
#1	.00178	.07087	.10324	-.00353	.00402	.01856	.00004
#2	-.00058	.07246	.08998	-.00140	.00456	.01897	.00081
#3	.00165	.07315	.11315	-.00201	.00435	.01778	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8361.5	49819.	2293.8
Stddev	17.0	414.	11.1
%RSD	.20308	.83150	.48449
#1	8371.9	49341.	2306.4
#2	8370.6	50077.	2289.6
#3	8341.9	50038.	2285.5

Approved: June 29, 2016

Sample Name: L1606112803SDL Acquired: 6/28/2016 22:07:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574357-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00162**	**.47788**	**-.00227**	**-.00056**	**.01205**	**.00011**	**4.2713**	**-.00014**
Stddev	.00075	.01163	.00206	.00203	.00116	.00004	.0877	.00019
%RSD	46.251	2.4344	90.808	362.12	9.6597	38.275	2.0541	140.63
#1	-.00216	.46621	-.00032	.00059	.01219	.00006	4.2856	-.00036
#2	-.00193	.47795	-.00443	-.00290	.01082	.00014	4.1772	-.00003
#3	-.00076	.48948	-.00206	.00063	.01313	.00013	4.3509	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00051**	**.00135**	**.00081**	**.70827**	**-.00670**	**.00175**	**1.6675**	**.15266**
Stddev	.00036	.00138	.00156	.01174	.12685	.00342	.0917	.00439
%RSD	70.312	102.42	193.61	1.6582	1893.3	194.78	5.4974	2.8763
#1	.00076	.00267	-.00050	.72142	.10653	-.00105	1.7637	.14860
#2	.00010	.00144	.00038	.69883	-.14379	.00076	1.5812	.15207
#3	.00068	-.00008	.00254	.70455	.01716	.00556	1.6574	.15732
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**7.7362**	**-.00043**	**.10795**	**-.00209**	**.00389**	**.00185**	**.76606**
Stddev	.00023	.0714	.00020	.00783	.00156	.00375	.00575	.01334
%RSD	90.709	.92253	45.658	7.2541	74.799	96.576	310.52	1.7416
#1	.00014	7.7553	-.00031	.10438	-.00205	.00754	.00542	.76915
#2	.00053	7.6573	-.00033	.11693	-.00366	.00407	.00492	.77759
#3	.00010	7.7962	-.00066	.10255	-.00054	.00004	-.00478	.75145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112803SDL Acquired: 6/28/2016 22:07:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574357-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.01382**	**.01746**	**-.00635**	**.00012**	**.00409**	**-.00003**
Stddev	.00069	.00028	.00359	.00161	.00049	.00018	.00092
%RSD	183.96	2.0556	20.543	25.328	418.39	4.2845	2643.0
#1	.00006	.01368	.01735	-.00457	-.00044	.00393	.00099
#2	-.00116	.01415	.01394	-.00676	.00031	.00406	-.00031
#3	-.00002	.01364	.02111	-.00771	.00048	.00427	-.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8482.1**	**50509.**	**2297.3**
Stddev	19.5	251.	4.0
%RSD	.23043	.49685	.17596
#1	8501.8	50309.	2293.8
#2	8462.7	50428.	2301.7
#3	8481.9	50791.	2296.4

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 22:11:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40572**	**10.228**	**.40778**	**.50344**	**1.0288**	**.05092**	**10.169**	**.05113**
Stddev	.00314	.025	.00392	.00430	.0033	.00034	.070	.00010
%RSD	.77427	.24251	.96061	.85317	.32250	.67424	.69173	.19962
#1	.40916	10.221	.40874	.50657	1.0322	.05126	10.249	.05122
#2	.40300	10.207	.41114	.49854	1.0288	.05058	10.116	.05116
#3	.40501	10.255	.40348	.50520	1.0255	.05093	10.143	.05102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20555**	**.51334**	**.51382**	**4.0383**	**51.647**	**1.0392**	**10.217**	**.50448**
Stddev	.00151	.00479	.00222	.0333	.180	.0070	.054	.00584
%RSD	.73486	.93225	.43112	.82342	.34947	.67702	.52572	1.1579
#1	.20603	.51676	.51420	4.0121	51.784	1.0466	10.278	.51121
#2	.20676	.50787	.51582	4.0757	51.443	1.0326	10.191	.50138
#3	.20385	.51538	.51144	4.0272	51.715	1.0383	10.180	.50084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0275**	**51.414**	**.51049**	**10.139**	**.51106**	**1.2210**	**.41631**	**5.0808**
Stddev	.0045	.240	.00280	.062	.00613	.0093	.00996	.0304
%RSD	.44229	.46623	.54817	.61116	1.2004	.75913	2.3927	.59862
#1	1.0302	51.644	.51221	10.175	.51426	1.2272	.41472	5.0962
#2	1.0300	51.433	.51200	10.175	.51493	1.2253	.42698	5.1005
#3	1.0222	51.166	.50726	10.067	.50399	1.2103	.40725	5.0458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 22:11:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0285**	**1.0247**	**1.0020**	**.51174**	**1.0149**	**1.0240**	**1.0488**
Stddev	.0076	.0082	.0163	.00555	.0049	.0062	.0044
%RSD	.74427	.80293	1.6241	1.0847	.48551	.60338	.42003
#1	1.0309	1.0329	1.0205	.51033	1.0132	1.0279	1.0440
#2	1.0346	1.0248	.99569	.51786	1.0111	1.0272	1.0498
#3	1.0199	1.0165	.98987	.50703	1.0205	1.0168	1.0527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8678.6**	**51516.**	**2445.1**
Stddev	45.7	29.	5.4
%RSD	.52668	.05576	.22001
#1	8663.9	51536.	2449.9
#2	8642.0	51483.	2439.3
#3	8729.8	51529.	2446.2

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 22:15:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**.01093**	**-.00104**	**.00133**	**.00382**	**.00009**	**-.00048**	**.00002**
Stddev	.00188	.00631	.00224	.00072	.00217	.00014	.03647	.00017
%RSD	165.57	57.741	215.36	54.491	56.767	157.27	7575.1	819.46
#1	-.00328	.01759	-.00360	.00205	.00490	-.00007	-.04232	.00021
#2	.00023	.00503	.00062	.00060	.00523	.00020	.02457	-.00011
#3	-.00035	.01017	-.00015	.00133	.00132	.00013	.01631	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.00130**	**-.00003**	**.00471**	**-.17082**	**.00107**	**.07763**	**-.00159**
Stddev	.00008	.00102	.00244	.01922	.12011	.00243	.10018	.00118
%RSD	17.678	78.123	6991.8	407.68	70.313	226.77	129.04	74.398
#1	-.00055	.00013	.00120	.01111	-.16180	-.00099	-.03260	-.00250
#2	-.00047	.00194	-.00284	-.01689	-.29517	.00375	.16311	-.00025
#3	-.00039	.00184	.00154	.01992	-.05547	.00046	.10239	-.00202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**-.04420**	**-.00104**	**.00127**	**-.00270**	**.00108**	**-.00369**	**.01070**
Stddev	.00019	.01963	.00078	.00469	.00329	.00282	.00430	.00127
%RSD	85.105	44.403	74.947	368.86	121.95	262.24	116.56	11.870
#1	-.00021	-.06646	-.00192	.00316	.00110	.00244	-.00063	.01216
#2	-.00041	-.02938	-.00045	-.00407	-.00449	.00296	-.00183	.00984
#3	-.00004	-.03676	-.00074	.00473	-.00469	-.00217	-.00860	.01010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 22:15:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.00007	-.00497	-.00309	-.00064	.00009	-.00028
Stddev	.00131	.00026	.00562	.00208	.00140	.00004	.00053
%RSD	191.19	360.61	113.14	67.324	219.62	39.362	185.03
#1	.00036	.00023	-.00552	-.00204	.00054	.00008	-.00040
#2	-.00043	-.00023	-.01029	-.00175	-.00218	.00006	.00029
#3	.00213	.00021	.00091	-.00549	-.00027	.00013	-.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8755.8	52637.	2452.1
Stddev	10.5	105.	18.3
%RSD	.11982	.19865	.74545
#1	8744.3	52518.	2444.9
#2	8764.9	52679.	2438.5
#3	8758.1	52714.	2472.9

Approved: June 29, 2016

Sample Name: PBW 1C Acquired: 6/28/2016 22:19:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**.02526**	**.00019**	**-.00126**	**.00474**	**.00005**	**-.06440**
Stddev	.00133	.00097	.00079	.00039	.00092	.00008	.02795
%RSD	244.34	3.8298	424.05	30.922	19.421	160.84	43.410
#1	-.00187	.02587	.00106	-.00084	.00457	-.00003	-.06853
#2	.00080	.02577	-.00004	-.00132	.00392	.00005	-.09005
#3	-.00056	.02414	-.00046	-.00161	.00574	.00012	-.03461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00006**	**.00004**	**.00069**	**-.01050**	**-.08446**	**.00399**
Stddev	.00019	.00018	.00021	.00178	.00472	.04011	.00130
%RSD	121.72	319.28	500.05	257.41	44.944	47.484	32.424
#1	-.00037	.00018	.00005	-.00122	-.00949	-.05954	.00250
#2	.00000	-.00015	.00026	.00099	-.00637	-.06312	.00463
#3	-.00011	.00014	-.00017	.00231	-.01564	-.13073	.00485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.07442**	F **-.00430**	**-.00000**	**-.03320**	**.00047**	**.00033**	**-.00283**
Stddev	.16565	.00512	.00038	.01914	.00036	.00983	.00441
%RSD	222.60	119.13	36626.	57.648	77.208	2964.3	155.82
#1	-.00353	-.00406	-.00012	-.01395	.00031	.00271	.00178
#2	.26466	.00070	-.00031	-.05223	.00089	.00875	-.00700
#3	-.03788	-.00953	.00043	-.03344	.00022	-.01047	-.00327
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: June 29, 2016

Sample Name: PBW 1C Acquired: 6/28/2016 22:19:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00187	-.00564	.01154	.00035	.00053	-.00260	-.00298
Stddev	.00354	.00266	.00212	.00068	.00032	.00827	.00455
%RSD	188.84	47.177	18.346	195.26	60.764	317.95	152.51
#1	.00215	-.00544	.01047	-.00041	.00085	.00498	-.00808
#2	.00526	-.00840	.01398	.00054	.00053	-.00136	.00064
#3	-.00180	-.00309	.01017	.00091	.00020	-.01142	-.00150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00022	.00074	-.00068
Stddev	.00020	.00015	.00030
%RSD	90.741	19.670	43.452
#1	.00003	.00058	-.00080
#2	.00020	.00077	-.00090
#3	.00043	.00086	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8910.1	53689.	2496.9
Stddev	19.0	146.	12.6
%RSD	.21295	.27185	.50389
#1	8888.4	53854.	2492.7
#2	8917.8	53579.	2487.0
#3	8923.9	53632.	2511.1

Approved: June 29, 2016

Sample Name: LCSW 1C Acquired: 6/28/2016 22:23:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20404**	**5.1631**	**.20421**	**1.0014**	**.52128**	**.02521**	**5.2991**	**.02561**
Stddev	.00280	.0119	.00623	.0076	.00253	.00014	.0470	.00003
%RSD	1.3713	.22990	3.0485	.76107	.48529	.54123	.88764	.12887
#1	.20159	5.1496	.20785	.99456	.52403	.02523	5.3257	.02562
#2	.20343	5.1720	.20777	1.0096	.52076	.02506	5.2447	.02564
#3	.20709	5.1676	.19702	.99998	.51906	.02533	5.3267	.02557
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10436**	**.26054**	**.26124**	**2.0905**	**25.769**	**.53496**	**5.1879**	**.25915**
Stddev	.00080	.00255	.00082	.0795	.010	.00339	.0920	.00313
%RSD	.76572	.97787	.31411	3.8046	.04033	.63443	1.7740	1.2087
#1	.10510	.25765	.26079	2.1392	25.768	.53886	5.0993	.25829
#2	.10447	.26150	.26218	2.1337	25.780	.53341	5.2830	.26262
#3	.10352	.26247	.26074	1.9988	25.760	.53262	5.1814	.25654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52537**	**26.143**	**.26070**	**4.9992**	**.25777**	**.61678**	**.19947**	**2.4584**
Stddev	.00273	.080	.00155	.0135	.00340	.00487	.01034	.0045
%RSD	.51951	.30602	.59512	.27082	1.3194	.78946	5.1860	.18373
#1	.52631	26.235	.25959	5.0046	.26170	.61253	.18798	2.4607
#2	.52751	26.100	.26247	5.0092	.25571	.62209	.20805	2.4614
#3	.52230	26.093	.26005	4.9838	.25591	.61572	.20236	2.4532
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW 1C Acquired: 6/28/2016 22:23:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51944	.52676	.50888	.25733	.51326	.52069	.00091
Stddev	.00368	.00097	.01396	.00225	.00359	.00299	.00071
%RSD	.70927	.18347	2.7425	.87396	.69915	.57451	78.366
#1	.52040	.52780	.52316	.25579	.50921	.52136	.00095
#2	.52255	.52659	.49527	.25991	.51455	.52330	.00161
#3	.51537	.52589	.50819	.25630	.51603	.51743	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8773.4	52628.	2505.9
Stddev	31.5	151.	8.4
%RSD	.35958	.28754	.33514
#1	8809.4	52672.	2499.6
#2	8750.4	52753.	2515.4
#3	8760.5	52460.	2502.6

Approved: June 29, 2016

Sample Name: L1606090701 Acquired: 6/28/2016 22:26:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.20247**	**.70648**	**.23731**	**.05346**	**.00049**	**.47637**
Stddev	.00453	.01902	.01020	.00474	.00090	.00011	.00516
%RSD	1221.6	9.3956	1.4434	1.9964	1.6844	23.047	1.0839
#1	.00534	.18337	.70812	.23191	.05262	.00038	.48206
#2	-.00353	.20262	.71575	.23925	.05337	.00050	.47199
#3	-.00070	.22142	.69556	.24077	.05441	.00060	.47505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.00415**	**.02862**	**.00093**	**.10270**	**.46857**	**.00685**
Stddev	.00039	.00030	.00044	.00084	.02803	.04045	.00114
%RSD	116.54	7.1863	1.5407	90.443	27.291	8.6325	16.609
#1	-.00000	.00449	.02829	.00068	.12172	.48022	.00762
#2	.00075	.00403	.02912	.00024	.07051	.50192	.00738
#3	.00024	.00393	.02845	.00187	.11586	.42358	.00554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47395**	**-.00153**	**.00856**	F **1299.3**	**.04735**	**3.3563**	**-.00183**
Stddev	.11995	.00088	.00070	14.8	.00184	.0605	.00319
%RSD	25.309	57.507	8.1580	1.1376	3.8948	1.8029	173.76
#1	.60272	-.00108	.00804	1312.4	.04531	3.3872	-.00182
#2	.45373	-.00097	.00935	1302.3	.04891	3.3952	-.00503
#3	.36539	-.00255	.00827	1283.3	.04783	3.2866	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090701 Acquired: 6/28/2016 22:26:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01444	-.00771	1.4228	.00372	.16630	.19886	.00097
Stddev	.00266	.00684	.0230	.00054	.00110	.01041	.00476
%RSD	18.436	88.776	1.6168	14.433	.66413	5.2364	489.80
#1	.01722	-.01490	1.4366	.00426	.16673	.19548	-.00309
#2	.01418	-.00696	1.4355	.00319	.16713	.19055	.00621
#3	.01192	-.00127	1.3962	.00371	.16505	.21054	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.09811	.00863	.04798
Stddev	.00119	.00010	.00066
%RSD	1.2143	1.1489	1.3715
#1	.09836	.00872	.04820
#2	.09915	.00866	.04850
#3	.09681	.00853	.04724
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8051.3	46745.	2322.8
Stddev	24.3	190.	26.3
%RSD	.30151	.40704	1.1338
#1	8077.3	46953.	2301.4
#2	8047.1	46580.	2314.8
#3	8029.3	46702.	2352.2

Approved: June 29, 2016

Sample Name: L1606090702 Acquired: 6/28/2016 22:30:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.12789**	**.78212**	**.25911**	**.04510**	**.00044**	**.29251**
Stddev	.00416	.00204	.04015	.00375	.00118	.00013	.04673
%RSD	1709.5	1.5928	5.1337	1.4478	2.6147	30.156	15.977
#1	-.00276	.12878	.80294	.26034	.04582	.00029	.26761
#2	-.00253	.12932	.80758	.25489	.04573	.00055	.34642
#3	.00456	.12555	.73583	.26208	.04374	.00048	.26349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.00446**	**.02542**	**.00097**	**.03210**	**.49071**	**.00689**
Stddev	.00021	.00018	.00107	.00162	.00935	.12505	.00134
%RSD	55.703	4.0075	4.2056	166.85	29.132	25.483	19.378
#1	.00017	.00467	.02432	.00112	.04087	.49772	.00816
#2	.00060	.00437	.02549	-.00072	.02226	.61210	.00550
#3	.00038	.00436	.02645	.00251	.03316	.36230	.00703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.29743**	**-.00100**	**.00979**	F **1332.3**	**.05469**	**3.0958**	**-.00494**
Stddev	.04778	.00165	.00042	7.8	.00235	.1690	.00326
%RSD	16.064	165.30	4.2654	.58822	4.2891	5.4596	66.047
#1	.35189	.00017	.00961	1324.6	.05628	3.1896	-.00696
#2	.26255	-.00289	.01026	1340.3	.05580	3.1972	-.00668
#3	.27785	-.00028	.00948	1332.0	.05200	2.9007	-.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090702 Acquired: 6/28/2016 22:30:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01286	.00017	1.3895	.00591	.14936	.14448	.00213
Stddev	.00363	.00339	.0730	.00055	.00219	.01191	.00247
%RSD	28.193	1943.7	5.2542	9.3870	1.4656	8.2462	115.94
#1	.00873	-.00252	1.4256	.00645	.14987	.13233	.00187
#2	.01432	.00398	1.4374	.00594	.15125	.15614	.00472
#3	.01553	-.00093	1.3055	.00534	.14696	.14496	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.11003	.00718	.05092
Stddev	.00070	.00058	.00075
%RSD	.63332	8.0564	1.4819
#1	.10929	.00774	.05172
#2	.11013	.00723	.05022
#3	.11067	.00658	.05082
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8056.2	46928.	2348.2
Stddev	8.2	310.	23.7
%RSD	.10227	.66009	1.0082
#1	8051.3	47216.	2344.9
#2	8065.8	46600.	2326.3
#3	8051.7	46969.	2373.3

Approved: June 29, 2016

Sample Name: L1606090703 Acquired: 6/28/2016 22:34:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.21822	.91288	.25581	.05517	.00054	.50027
Stddev	.00200	.00882	.04933	.00386	.00034	.00010	.04190
%RSD	345.56	4.0400	5.4034	1.5075	.62106	17.932	8.3762
#1	.00247	.21173	.93681	.25152	.05494	.00064	.53835
#2	.00079	.21468	.94567	.25692	.05501	.00052	.50708
#3	-.00152	.22826	.85615	.25899	.05557	.00045	.45538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00493	.03469	.00014	.09214	.56022	.00836
Stddev	.00022	.00016	.00072	.00051	.02370	.09849	.00192
%RSD	45.113	3.2908	2.0715	363.89	25.718	17.581	22.978
#1	.00073	.00482	.03419	-.00033	.08643	.44861	.01057
#2	.00042	.00511	.03437	.00006	.11818	.63492	.00708
#3	.00031	.00484	.03551	.00069	.07183	.59714	.00744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.61119	-.00056	.01189	F 1334.7	.05087	3.6444	-.00456
Stddev	.01713	.00296	.00070	15.6	.00309	.2175	.00548
%RSD	2.8035	531.91	5.8615	1.1715	6.0695	5.9671	120.21
#1	.60865	-.00389	.01246	1319.5	.05224	3.7621	-.00857
#2	.59546	.00047	.01210	1334.0	.05304	3.7775	.00168
#3	.62945	.00176	.01111	1350.7	.04734	3.3934	-.00679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090703 Acquired: 6/28/2016 22:34:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01265	-.00629	1.5342	.00519	.17328	.25183	.00137
Stddev	.00236	.00192	.0849	.00050	.00293	.00765	.00343
%RSD	18.686	30.543	5.5340	9.5782	1.6931	3.0382	249.67
#1	.01081	-.00496	1.5818	.00485	.17075	.25533	.00530
#2	.01532	-.00543	1.5846	.00576	.17259	.25711	-.00011
#3	.01184	-.00850	1.4362	.00496	.17650	.24305	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.10623	.00853	.05422
Stddev	.00168	.00057	.00054
%RSD	1.5791	6.6217	.99216
#1	.10430	.00883	.05362
#2	.10728	.00889	.05438
#3	.10713	.00788	.05466
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8112.9	46934.	2373.1
Stddev	19.1	67.	8.5
%RSD	.23568	.14286	.35956
#1	8109.4	46928.	2363.7
#2	8095.8	46871.	2380.5
#3	8133.5	47004.	2375.0

Approved: June 29, 2016

Sample Name: L1606090704 Acquired: 6/28/2016 22:38:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.17494	.00497	.32040	.06352	-.00003	139.74	.00030
Stddev	.00119	.00286	.00470	.00160	.00110	.00008	2.95	.00025
%RSD	374.53	1.6346	94.501	.49976	1.7242	295.73	2.1089	83.199
#1	.00106	.17492	.00205	.31857	.06422	.00005	142.00	.00051
#2	-.00095	.17781	.01040	.32109	.06226	-.00011	140.82	.00003
#3	-.00106	.17209	.00247	.32154	.06408	-.00002	136.41	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00111	.00256	1.0822	3.9031	.04950	69.750	.15431
Stddev	.00071	.00119	.00142	.0787	.1085	.00334	1.215	.00158
%RSD	309.50	107.58	55.330	7.2741	2.7812	6.7370	1.7420	1.0263
#1	.00104	.00235	.00211	1.1580	4.0127	.04909	70.913	.15511
#2	-.00025	-.00002	.00143	1.0878	3.9011	.05302	69.848	.15534
#3	-.00010	.00099	.00415	1.0009	3.7956	.04639	68.489	.15249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	147.94	.00034	.01280	.00111	.00125	-.00760	7.7303
Stddev	.00015	3.31	.00058	.00224	.00503	.00297	.00295	.1525
%RSD	18.814	2.2398	171.11	17.506	453.42	236.93	38.834	1.9722
#1	.00091	150.42	.00094	.01352	.00164	.00194	-.01096	7.8177
#2	.00084	149.24	-.00021	.01029	.00586	.00382	-.00641	7.8188
#3	.00062	144.18	.00028	.01459	-.00416	-.00200	-.00542	7.5542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090704 Acquired: 6/28/2016 22:38:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	2.6834	-.02101	-.00193	-.00039	.00292	.00059
Stddev	.00145	.0622	.00529	.00167	.00032	.00031	.00010
%RSD	249.72	2.3172	25.156	86.729	81.495	10.722	17.819
#1	-.00052	2.7308	-.01626	-.00066	-.00034	.00285	.00056
#2	.00004	2.7065	-.02670	-.00382	-.00010	.00326	.00070
#3	.00223	2.6130	-.02007	-.00130	-.00073	.00265	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8658.8	51888.	2487.2
Stddev	9.9	148.	69.0
%RSD	.11468	.28592	2.7755
#1	8654.6	51738.	2521.7
#2	8651.7	51893.	2532.1
#3	8670.2	52035.	2407.7

Approved: June 29, 2016

Sample Name: L1606090705 Acquired: 6/28/2016 22:42:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.02159	.00561	.30320	.06274	.00002	137.80	.00024
Stddev	.00156	.00578	.00162	.00302	.00133	.00008	.48	.00030
%RSD	1169.5	26.784	28.929	.99639	2.1264	326.70	.34802	126.66
#1	.00118	.01941	.00433	.30596	.06334	.00006	138.36	.00017
#2	.00028	.01721	.00744	.29997	.06367	-.00006	137.52	.00057
#3	-.00186	.02814	.00507	.30366	.06121	.00008	137.53	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00085	.00036	.84842	3.8794	.05303	68.272	.14675
Stddev	.00018	.00119	.00129	.00435	.1739	.00302	.204	.00403
%RSD	105.03	140.13	361.75	.51297	4.4822	5.6928	.29863	2.7492
#1	.00037	.00018	-.00104	.84393	4.0068	.05284	68.461	.14708
#2	.00011	.00015	.00062	.85262	3.6813	.05011	68.056	.14255
#3	.00003	.00223	.00149	.84870	3.9500	.05614	68.298	.15060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	148.72	.00060	.00270	-.00210	.00669	-.00077	7.1810
Stddev	.00029	.55	.00115	.00224	.00157	.00298	.00974	.1338
%RSD	28.046	.37003	191.52	82.940	75.086	44.551	1260.3	1.8630
#1	.00086	149.35	.00186	.00114	-.00376	.00586	-.01160	7.2794
#2	.00138	148.49	-.00039	.00526	-.00190	.00999	.00201	7.2349
#3	.00089	148.32	.00033	.00169	-.00063	.00421	.00728	7.0286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090705 Acquired: 6/28/2016 22:42:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**2.6618**	**-.01517**	**-.00418**	**-.00152**	**.00293**	**-.00010**
Stddev	.00046	.0095	.01009	.00214	.00102	.00029	.00027
%RSD	208.97	.35779	66.496	51.120	67.379	10.065	276.76
#1	-.00061	2.6723	-.02480	-.00226	-.00057	.00310	-.00034
#2	.00029	2.6591	-.00468	-.00649	-.00139	.00309	-.00014
#3	-.00035	2.6538	-.01602	-.00381	-.00260	.00259	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8674.4**	**51820.**	**2498.2**
Stddev	32.9	175.	23.9
%RSD	.37941	.33839	.95480
#1	8655.0	51617.	2471.9
#2	8712.4	51919.	2518.5
#3	8655.8	51922.	2504.0

Approved: June 29, 2016

Sample Name: L1606090706 Acquired: 6/28/2016 22:46:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00090	.15373	.00403	.30250	.06188	-.00006	136.59	.00008
Stddev	.00131	.01001	.00352	.00314	.00039	.00009	.12	.00010
%RSD	146.19	6.5090	87.260	1.0395	.62550	147.12	.08614	120.77
#1	-.00023	.14243	.00610	.30562	.06154	-.00015	136.60	.00004
#2	-.00240	.16146	-.00003	.29933	.06180	-.00006	136.69	.00019
#3	-.00006	.15730	.00602	.30256	.06230	.00003	136.46	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00069	.00154	1.0178	3.8522	.04856	67.952	.14959
Stddev	.00011	.00084	.00094	.0208	.1250	.00071	.165	.00297
%RSD	287.57	121.84	61.318	2.0466	3.2435	1.4598	.24300	1.9863
#1	-.00009	.00158	.00258	.99741	3.7640	.04774	67.876	.15012
#2	.00008	.00057	.00074	1.0390	3.7975	.04899	68.142	.15226
#3	.00012	-.00009	.00130	1.0169	3.9952	.04895	67.839	.14639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	143.60	.00084	.00793	.00189	.00624	-.00491	7.3759
Stddev	.00024	.10	.00096	.00216	.00148	.00303	.01046	.0144
%RSD	31.262	.06631	114.15	27.183	78.406	48.515	213.04	.19504
#1	.00105	143.69	.00177	.00696	.00306	.00927	-.00685	7.3596
#2	.00073	143.50	.00091	.01041	.00237	.00321	.00638	7.3867
#3	.00057	143.61	-.00015	.00644	.00023	.00625	-.01426	7.3815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090706 Acquired: 6/28/2016 22:46:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	2.6312	-.02241	-.00027	-.00185	.00410	.00039
Stddev	.00066	.0032	.00434	.00181	.00059	.00019	.00047
%RSD	431.02	.12040	19.377	673.65	32.035	4.6825	118.72
#1	.00001	2.6346	-.01751	-.00130	-.00179	.00402	.00057
#2	.00087	2.6307	-.02577	.00182	-.00129	.00433	.00075
#3	-.00042	2.6283	-.02395	-.00133	-.00248	.00397	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8657.0	51883.	2499.7
Stddev	10.6	192.	2.4
%RSD	.12268	.36927	.09631
#1	8645.7	51825.	2499.6
#2	8666.7	51727.	2502.1
#3	8658.7	52097.	2497.3

Approved: June 29, 2016

Sample Name: L1606090707 Acquired: 6/28/2016 22:50:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**.07375**	**.70623**	**.33607**	**.07325**	**.00013**	**5.4165**
Stddev	.00058	.00357	.03344	.00389	.00301	.00005	.0795
%RSD	186.60	4.8345	4.7357	1.1586	4.1099	37.394	1.4682
#1	.00098	.06964	.72690	.33159	.07673	.00018	5.4977
#2	-.00006	.07564	.72414	.33855	.07162	.00013	5.4130
#3	.00001	.07598	.66764	.33808	.07141	.00008	5.3387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00137**	**.00186**	**.00186**	**.13231**	**1.7812**	**.01194**
Stddev	.00063	.00056	.00061	.00033	.00855	.0656	.00137
%RSD	100.58	40.601	32.549	17.672	6.4637	3.6831	11.472
#1	.00037	.00105	.00175	.00201	.12751	1.7109	.01081
#2	.00134	.00202	.00252	.00148	.14218	1.8407	.01346
#3	.00017	.00106	.00132	.00208	.12723	1.7919	.01155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.0009**	**.01807**	**.00288**	F **632.46**	**.00073**	**.07554**	**-.00359**
Stddev	.2970	.00121	.00074	7.98	.00139	.01500	.00381
%RSD	3.7122	6.7066	25.889	1.2624	189.72	19.859	106.12
#1	8.0051	.01910	.00358	628.03	.00117	.07361	.00081
#2	7.7019	.01674	.00210	641.68	.00185	.09142	-.00577
#3	8.2959	.01837	.00295	627.68	-.00082	.06160	-.00580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090707 Acquired: 6/28/2016 22:50:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00671	-.00605	4.2226	.00040	.59804	-.00277	-.00454
Stddev	.00347	.00661	.2109	.00102	.00214	.01232	.00349
%RSD	51.629	109.28	4.9938	255.44	.35786	444.35	76.911
#1	.01029	-.01053	4.3569	.00029	.59679	-.00286	-.00813
#2	.00648	.00154	4.3313	.00147	.60051	-.01505	-.00116
#3	.00337	-.00917	3.9795	-.00056	.59683	.00959	-.00431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00049	.00286	.00051
Stddev	.00080	.00026	.00019
%RSD	163.21	9.1726	36.456
#1	-.00139	.00288	.00066
#2	.00012	.00312	.00056
#3	-.00019	.00259	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8507.4	50781.	2448.7
Stddev	26.8	172.	22.3
%RSD	.31549	.33939	.91265
#1	8532.0	50586.	2429.1
#2	8511.6	50913.	2444.0
#3	8478.8	50844.	2473.0

Approved: June 29, 2016

Sample Name: L1606090708 Acquired: 6/28/2016 22:54:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00089	.02176	.71471	.33811	.07254	.00002	5.0730
Stddev	.00183	.00345	.04493	.00058	.00161	.00009	.0292
%RSD	206.52	15.872	6.2858	.17285	2.2229	399.17	.57529
#1	-.00228	.02426	.73953	.33878	.07437	.00010	5.0414
#2	-.00158	.02321	.74175	.33786	.07193	.00005	5.0990
#3	.00119	.01782	.66285	.33769	.07132	-.00008	5.0787
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.00106	.00161	-.00160	.00022	1.6878	.01046
Stddev	.00022	.00018	.00152	.00051	.02286	.2081	.00428
%RSD	25.222	17.186	94.297	32.142	10180.	12.331	40.874
#1	.00101	.00121	.00011	-.00101	-.01033	1.5372	.01387
#2	.00062	.00110	.00315	-.00189	.02646	1.6009	.01186
#3	.00099	.00086	.00158	-.00190	-.01545	1.9252	.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.5862	.01686	.00321	F 624.73	-.00051	.07940	.00105
Stddev	.1396	.00137	.00063	16.41	.00145	.00521	.00014
%RSD	1.8406	8.1255	19.463	2.6262	285.59	6.5654	13.351
#1	7.7394	.01591	.00323	635.00	.00084	.07365	.00093
#2	7.5528	.01843	.00383	605.81	-.00204	.08381	.00120
#3	7.4662	.01624	.00258	633.40	-.00032	.08075	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090708 Acquired: 6/28/2016 22:54:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00382**	**-.00261**	**4.2531**	**-.00015**	**.57918**	**-.00135**	**-.00088**
Stddev	.00153	.00968	.2281	.00025	.00127	.00872	.00071
%RSD	40.120	370.97	5.3644	163.66	.21989	646.16	81.340
#1	.00451	.00347	4.3850	-.00018	.57780	-.01137	-.00170
#2	.00488	.00248	4.3845	-.00038	.57941	.00279	-.00040
#3	.00206	-.01378	3.9896	.00011	.58032	.00452	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00039**	**.00142**	**-.00001**
Stddev	.00093	.00008	.00004
%RSD	238.33	5.7809	430.75
#1	.00066	.00151	.00002
#2	-.00071	.00137	.00000
#3	-.00112	.00137	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8720.2**	**51336.**	**2488.0**
Stddev	11.3	289.	71.4
%RSD	.12924	.56321	2.8704
#1	8716.8	51002.	2405.8
#2	8732.7	51515.	2524.3
#3	8710.9	51489.	2534.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 22:58:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39344	9.8988	.39249	.49224	.99894	.04861	9.8375	.04953
Stddev	.00232	.0610	.00510	.00165	.00208	.00013	.0480	.00023
%RSD	.58958	.61629	1.2996	.33480	.20806	.26302	.48816	.47024
#1	.39269	9.9164	.39121	.49398	1.0005	.04864	9.7932	.04952
#2	.39604	9.9491	.38815	.49071	.99967	.04871	9.8308	.04977
#3	.39158	9.8310	.39811	.49203	.99659	.04847	9.8885	.04931
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19950	.49097	.49985	3.9366	49.669	1.0039	9.9168	.49251
Stddev	.00092	.00192	.00190	.0169	.237	.0038	.0981	.00169
%RSD	.46102	.39146	.38006	.43000	.47634	.37925	.98952	.34245
#1	.20054	.49018	.50105	3.9395	49.542	1.0056	9.8676	.49093
#2	.19920	.49316	.50084	3.9519	49.523	1.0066	9.8530	.49429
#3	.19877	.48957	.49766	3.9184	49.942	.99955	10.030	.49232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0011	50.743	.49860	9.8926	.50483	1.1979	.39869	4.9753
Stddev	.0024	.181	.00037	.0093	.00530	.0033	.00678	.0067
%RSD	.24044	.35752	.07415	.09361	1.0505	.27239	1.7002	.13442
#1	1.0035	50.865	.49899	9.8952	.49872	1.1997	.40291	4.9679
#2	1.0012	50.535	.49826	9.8824	.50755	1.1999	.39088	4.9770
#3	.99870	50.831	.49856	9.9004	.50822	1.1942	.40230	4.9810
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 22:58:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99767**	**.99373**	**.96406**	**.49618**	**.97586**	**1.0021**	**1.0208**
Stddev	.00239	.00053	.01473	.00080	.00425	.0005	.0053
%RSD	.23990	.05369	1.5278	.16191	.43595	.04913	.51729
#1	.99930	.99431	.95995	.49662	.97870	1.0018	1.0265
#2	.99492	.99361	.98040	.49526	.97791	1.0017	1.0160
#3	.99879	.99327	.95182	.49667	.97097	1.0026	1.0199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8992.4**	**54014.**	**2548.3**
Stddev	16.7	153.	12.1
%RSD	.18517	.28361	.47426
#1	9002.2	53936.	2534.7
#2	9001.8	53916.	2557.9
#3	8973.1	54191.	2552.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 23:02:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00100**	**.00842**	**-.00230**	**.00116**	**.00400**	**.00005**	**-.04233**	**.00014**
Stddev	.00182	.01035	.00099	.00018	.00131	.00006	.03657	.00020
%RSD	181.88	122.94	43.133	15.210	32.627	109.75	86.407	142.05
#1	.00262	.00341	-.00343	.00121	.00497	.00012	-.01453	.00036
#2	.00137	.02033	-.00158	.00130	.00252	.00002	-.02869	-.00000
#3	-.00098	.00153	-.00189	.00096	.00452	.00002	-.08376	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.00068**	**-.00021**	**.00012**	**.02280**	**.00716**	**.14734**	**-.00204**
Stddev	.00036	.00099	.00052	.02768	.05559	.00282	.07268	.00369
%RSD	309.21	145.76	249.13	22189.	243.81	39.425	49.327	180.61
#1	-.00027	.00166	.00038	.00594	.06447	.00463	.06670	-.00567
#2	-.00037	.00072	-.00040	-.03000	.04426	.01020	.20779	-.00216
#3	.00030	-.00033	-.00061	.02443	-.04032	.00663	.16753	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**.12092**	**.00014**	**.00488**	**-.00013**	**-.00107**	**.00087**	**.00687**
Stddev	.00019	.00980	.00054	.01211	.00369	.00175	.00409	.00121
%RSD	60.294	8.1009	381.60	248.32	2776.9	163.54	471.54	17.539
#1	.00012	.11566	.00070	.01850	.00389	-.00115	.00253	.00754
#2	.00049	.11487	-.00036	.00084	-.00094	-.00278	-.00379	.00548
#3	.00032	.13222	.00008	-.00470	-.00334	.00072	.00386	.00760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 23:02:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00010**	**-.00017**	**-.00250**	**.00002**	**-.00009**	**-.00070**
Stddev	.00071	.00061	.00969	.00374	.00116	.00001	.00017
%RSD	1926.0	592.76	5554.2	149.55	5142.7	8.4484	24.855
#1	-.00059	.00055	.00970	.00174	-.00131	-.00008	-.00087
#2	-.00028	-.00020	-.00967	-.00390	.00076	-.00009	-.00069
#3	.00076	-.00066	-.00055	-.00533	.00062	-.00010	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9051.2**	**54427.**	**2508.0**
Stddev	17.0	197.	4.4
%RSD	.18779	.36147	.17683
#1	9069.0	54303.	2506.7
#2	9035.2	54324.	2512.9
#3	9049.2	54654.	2504.3

Approved: June 29, 2016

Sample Name: L1606090709 Acquired: 6/28/2016 23:06:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.08904**	**.70931**	**.33668**	**.07317**	**.00007**	**5.4108**
Stddev	.00023	.01573	.03728	.00368	.00092	.00002	.0048
%RSD	102.45	17.664	5.2553	1.0924	1.2568	32.392	.08917
#1	-.00004	.10613	.73018	.33255	.07211	.00008	5.4124
#2	.00036	.07518	.73148	.33961	.07369	.00004	5.4146
#3	.00036	.08580	.66628	.33788	.07371	.00008	5.4054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00121**	**.00143**	**-.00011**	**.08534**	**1.8682**	**.01053**
Stddev	.00027	.00057	.00102	.00206	.00736	.0683	.00158
%RSD	56.037	47.367	71.215	1896.7	8.6284	3.6542	15.010
#1	.00057	.00153	.00064	.00015	.08703	1.9454	.01051
#2	.00068	.00154	.00258	-.00229	.07728	1.8158	.01212
#3	.00018	.00055	.00107	.00181	.09172	1.8434	.00896
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.9578**	**.01679**	**.00329**	F **631.90**	**.00018**	**.07592**	**-.00095**
Stddev	.0271	.00359	.00013	.79	.00058	.01123	.00345
%RSD	.34071	21.404	3.9287	.12431	324.85	14.789	363.21
#1	7.9889	.01584	.00341	631.44	-.00006	.07663	-.00321
#2	7.9445	.01376	.00316	631.46	.00084	.08678	-.00265
#3	7.9398	.02076	.00331	632.81	-.00024	.06436	.00302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090709 Acquired: 6/28/2016 23:06:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00637	-.00876	4.2975	.00019	.59786	.00813	-.00327
Stddev	.00220	.00654	.2103	.00077	.00208	.00724	.00217
%RSD	34.543	74.679	4.8941	408.44	.34807	88.983	66.163
#1	.00831	-.00342	4.4325	.00026	.59619	.01154	-.00545
#2	.00398	-.00680	4.4049	.00092	.59720	-.00018	-.00111
#3	.00683	-.01606	4.0552	-.00061	.60019	.01303	-.00326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00013	.00214	.00012
Stddev	.00062	.00011	.00013
%RSD	463.70	5.1663	101.51
#1	.00051	.00222	.00005
#2	-.00072	.00219	.00027
#3	-.00019	.00201	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8576.6	50611.	2469.4
Stddev	28.5	223.	8.7
%RSD	.33249	.44051	.35190
#1	8552.3	50373.	2459.7
#2	8608.0	50645.	2476.6
#3	8569.3	50815.	2471.8

Approved: June 29, 2016

Sample Name: L1606090710 Acquired: 6/28/2016 23:10:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00116	.07123	.69978	.33683	.07153	.00003	5.2509
Stddev	.00269	.00183	.03909	.00290	.00172	.00010	.0210
%RSD	231.20	2.5745	5.5862	.86014	2.4047	323.75	.39931
#1	.00066	.07077	.72204	.33383	.07008	-.00001	5.2751
#2	-.00426	.07325	.72266	.33703	.07108	.00015	5.2375
#3	.00010	.06968	.65465	.33962	.07343	-.00004	5.2401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00133	.00103	.00035	.08426	1.6622	.01610
Stddev	.00034	.00039	.00026	.00054	.01504	.0838	.00599
%RSD	134.41	29.601	25.679	154.79	17.852	5.0401	37.195
#1	.00030	.00160	.00133	.00074	.08774	1.7067	.01003
#2	-.00011	.00150	.00091	.00058	.06778	1.5655	.02201
#3	.00057	.00088	.00085	-.00027	.09725	1.7142	.01628
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.8156	.01761	.00333	F 618.28	.00063	.07265	-.00419
Stddev	.1337	.00064	.00050	3.47	.00003	.00721	.00267
%RSD	1.7102	3.6403	15.005	.56098	4.6752	9.9227	63.740
#1	7.6942	.01720	.00381	615.78	.00063	.07234	-.00378
#2	7.7937	.01835	.00338	622.24	.00060	.08001	-.00174
#3	7.9588	.01729	.00281	616.81	.00065	.06560	-.00704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090710 Acquired: 6/28/2016 23:10:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00217	-.00567	4.1751	.00077	.58570	.01177	-.00436
Stddev	.00165	.00574	.2229	.00130	.00328	.00743	.00507
%RSD	75.844	101.25	5.3390	169.28	.56049	63.116	116.30
#1	.00029	-.01056	4.2974	.00224	.58523	.01020	-.00962
#2	.00289	.00066	4.3100	-.00023	.58919	.00525	.00049
#3	.00334	-.00712	3.9178	.00030	.58268	.01986	-.00394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00034	.00214	.00029
Stddev	.00041	.00018	.00078
%RSD	121.71	8.4377	264.45
#1	-.00045	.00193	-.00059
#2	.00012	.00222	.00087
#3	-.00068	.00226	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8615.9	50993.	2485.4
Stddev	19.1	101.	8.7
%RSD	.22196	.19826	.34997
#1	8599.4	50877.	2486.2
#2	8636.9	51045.	2476.3
#3	8611.5	51058.	2493.6

Approved: June 29, 2016

Sample Name: L1606090711 Acquired: 6/28/2016 23:14:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00097**	**.03556**	**.73169**	**.34795**	**.07439**	**.00003**	**5.2478**
Stddev	.00024	.00485	.04137	.00163	.00035	.00006	.0392
%RSD	25.030	13.645	5.6546	.46954	.46963	202.86	.74701
#1	-.00117	.03016	.75338	.34674	.07421	-.00003	5.2114
#2	-.00105	.03698	.75772	.34980	.07479	.00004	5.2427
#3	-.00070	.03955	.68398	.34730	.07416	.00008	5.2893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**.00109**	**.00075**	**-.00124**	**.01430**	**1.9312**	**.01121**
Stddev	.00032	.00057	.00098	.00116	.01452	.0662	.00375
%RSD	40.847	52.643	130.59	93.056	101.50	3.4299	33.475
#1	.00065	.00148	.00185	-.00182	.00722	1.9905	.00707
#2	.00054	.00136	-.00002	-.00201	.00468	1.8597	.01218
#3	.00114	.00043	.00041	.00009	.03100	1.9435	.01438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.6988**	**.01630**	**.00313**	F **663.81**	**.00018**	**.08187**	**.00053**
Stddev	.0966	.00360	.00048	5.28	.00079	.00852	.00463
%RSD	1.2553	22.095	15.303	.79571	446.31	10.404	870.46
#1	7.7774	.01955	.00368	663.60	.00064	.09166	-.00463
#2	7.7282	.01692	.00294	669.19	.00063	.07782	.00192
#3	7.5909	.01243	.00279	658.64	-.00073	.07613	.00430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090711 Acquired: 6/28/2016 23:14:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00477	-.00947	4.3743	.00012	.59749	-.00341	-.00368
Stddev	.00205	.00703	.2235	.00071	.00261	.00718	.00482
%RSD	42.998	74.264	5.1088	610.33	.43726	210.78	131.07
#1	.00352	-.01297	4.5068	.00080	.59457	-.00637	-.00075
#2	.00366	-.01406	4.4999	-.00061	.59959	.00478	-.00105
#3	.00714	-.00137	4.1163	.00016	.59832	-.00864	-.00924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00067	.00187	.00016
Stddev	.00018	.00039	.00039
%RSD	26.132	20.991	250.81
#1	-.00048	.00224	.00013
#2	-.00072	.00192	-.00022
#3	-.00082	.00146	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8558.7	50968.	2468.0
Stddev	32.6	266.	12.5
%RSD	.38137	.52256	.50634
#1	8582.1	50678.	2474.2
#2	8572.7	51022.	2453.7
#3	8521.4	51203.	2476.3

Approved: June 29, 2016

Sample Name: L1606090712 Acquired: 6/28/2016 23:18:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.33933	.00030	.07127	.05688	.00016	2.0338
Stddev	.00237	.00787	.00132	.00246	.00045	.00012	.0603
%RSD	291.62	2.3179	435.76	3.4534	.79846	72.701	2.9649
#1	.00177	.33514	-.00021	.06852	.05740	.00027	2.1010
#2	-.00288	.33445	-.00068	.07204	.05653	.00003	1.9844
#3	-.00133	.34841	.00181	.07326	.05673	.00019	2.0160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00348	.00115	.14552	.01724	.92438	1.6617	.01097
Stddev	.00018	.00061	.00045	.00110	.03976	.0106	.00703
%RSD	5.1777	53.182	.30931	6.3566	4.3016	.63818	64.052
#1	.00353	.00097	.14500	.01788	.88776	1.6670	.01828
#2	.00362	.00183	.14581	.01597	.91871	1.6687	.00426
#3	.00327	.00065	.14575	.01786	.96668	1.6495	.01039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.3249	.01152	.00383	F 391.44	.00707	.86059	.02181
Stddev	.1530	.00179	.00054	2.81	.00137	.01152	.00342
%RSD	11.552	15.543	14.106	.71775	19.411	1.3389	15.698
#1	1.5007	.01088	.00325	388.59	.00558	.86948	.01787
#2	1.2531	.01014	.00432	391.52	.00829	.84757	.02352
#3	1.2210	.01354	.00392	394.20	.00735	.86472	.02403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090712 Acquired: 6/28/2016 23:18:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00348**	**.00035**	**1.9954**	**.01117**	**.32038**	**.22636**	**.00135**
Stddev	.00020	.00121	.0012	.00040	.00240	.00266	.00214
%RSD	5.8328	347.48	.06231	3.5705	.75050	1.1738	158.56
#1	.00370	.00157	1.9940	.01149	.31769	.22820	.00269
#2	.00345	.00033	1.9955	.01130	.32111	.22756	-.00112
#3	.00330	-.00085	1.9965	.01072	.32233	.22331	.00247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.04514**	**.17974**	**.02206**
Stddev	.00090	.00019	.00066
%RSD	1.9881	.10310	2.9925
#1	.04612	.17978	.02281
#2	.04436	.17953	.02156
#3	.04495	.17989	.02182
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8716.9**	**51451.**	**2449.4**
Stddev	48.4	29.	7.6
%RSD	.55475	.05648	.30870
#1	8664.0	51484.	2448.2
#2	8758.7	51440.	2457.4
#3	8728.0	51429.	2442.4

Approved: June 29, 2016

Sample Name: L1606090713 Acquired: 6/28/2016 23:22:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00219	.08213	.00368	.07443	.04854	.00011	.42469
Stddev	.00096	.00972	.00334	.00183	.00110	.00005	.01977
%RSD	43.698	11.832	90.686	2.4627	2.2723	40.957	4.6556
#1	-.00225	.09092	.00289	.07233	.04795	.00011	.40186
#2	-.00121	.08378	.00081	.07521	.04981	.00016	.43586
#3	-.00312	.07170	.00734	.07574	.04786	.00007	.43635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00222	.00137	.13907	.00317	.34040	1.7220	.00905
Stddev	.00025	.00028	.00123	.00071	.01243	.0003	.00271
%RSD	11.273	20.393	.88415	22.430	3.6529	.01888	29.930
#1	.00223	.00160	.13998	.00280	.34114	1.7219	.00629
#2	.00247	.00146	.13767	.00272	.32761	1.7224	.01170
#3	.00197	.00106	.13955	.00399	.35244	1.7218	.00916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0987	.00113	.00754	F 415.04	.00596	.74146	.00350
Stddev	.0280	.00202	.00033	2.37	.00037	.00798	.00379
%RSD	2.5471	178.69	4.3197	.57087	6.2471	1.0768	108.44
#1	1.1249	.00313	.00717	412.47	.00613	.73242	-.00053
#2	1.0692	.00117	.00780	417.13	.00621	.74754	.00700
#3	1.1020	-.00091	.00765	415.51	.00553	.74442	.00403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090713 Acquired: 6/28/2016 23:22:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00153**	**-.00521**	**1.6202**	**.00992**	**.32429**	**.20882**	**-.00046**
Stddev	.00624	.00387	.0074	.00050	.00323	.01892	.00304
%RSD	408.39	74.236	.45925	5.0727	.99564	9.0597	653.54
#1	.00863	-.00095	1.6128	.00948	.32128	.19072	-.00372
#2	-.00310	-.00851	1.6200	.01047	.32770	.22846	.00004
#3	-.00095	-.00616	1.6277	.00980	.32389	.20727	.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.03937**	**.07492**	**.02350**
Stddev	.00096	.00040	.00055
%RSD	2.4413	.53362	2.3494
#1	.04043	.07465	.02411
#2	.03855	.07474	.02336
#3	.03914	.07538	.02304
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8640.6**	**51402.**	**2468.9**
Stddev	11.6	25.	10.8
%RSD	.13368	.04908	.43542
#1	8653.3	51400.	2462.0
#2	8630.8	51378.	2463.4
#3	8637.6	51428.	2481.3

Approved: June 29, 2016

Sample Name: L1606090714 Acquired: 6/28/2016 23:25:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.05270**	**.00261**	**.14849**	**.04532**	**.00003**	**61.576**
Stddev	.00185	.00318	.00454	.00253	.00179	.00010	.493
%RSD	687.89	6.0257	174.05	1.7055	3.9414	357.59	.80130
#1	-.00157	.04958	.00318	.15133	.04382	.00007	61.008
#2	-.00110	.05258	.00683	.14767	.04484	-.00009	61.890
#3	.00185	.05593	-.00219	.14646	.04729	.00010	61.831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00028**	**.00075**	**.00337**	**-.00019**	**.78003**	**7.3488**	**.01657**
Stddev	.00021	.00021	.00077	.00126	.00831	.1082	.00291
%RSD	72.792	28.536	22.927	672.72	1.0653	1.4723	17.561
#1	.00008	.00100	.00398	.00126	.77075	7.4712	.01488
#2	.00027	.00062	.00363	-.00091	.78677	7.3091	.01993
#3	.00050	.00063	.00250	-.00091	.78257	7.2660	.01490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.360**	**.06191**	**.00071**	F **463.30**	**-.00030**	**.21561**	**.00177**
Stddev	.046	.00525	.00020	1.03	.00019	.00661	.00305
%RSD	.37543	8.4821	27.996	.22272	64.080	3.0658	172.41
#1	12.310	.05872	.00072	464.48	-.00041	.22283	.00423
#2	12.369	.06797	.00051	462.60	-.00008	.21412	-.00164
#3	12.401	.05903	.00091	462.81	-.00041	.20986	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090714 Acquired: 6/28/2016 23:25:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00300	-.00604	7.8267	-.00025	.74218	.01975	-.00197
Stddev	.00421	.00260	.1047	.00019	.00050	.00124	.00109
%RSD	140.31	43.094	1.3380	77.158	.06708	6.2763	55.271
#1	.00785	-.00902	7.8821	-.00023	.74201	.02073	-.00317
#2	.00099	-.00423	7.8920	-.00045	.74274	.02016	-.00166
#3	.00018	-.00486	7.7059	-.00006	.74179	.01835	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00316	.00407	.00256
Stddev	.00077	.00024	.00075
%RSD	24.497	5.8483	29.163
#1	.00354	.00412	.00330
#2	.00227	.00381	.00258
#3	.00367	.00428	.00181
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8639.6	51094.	2465.7
Stddev	41.6	335.	13.0
%RSD	.48197	.65487	.52745
#1	8594.7	50709.	2451.1
#2	8647.1	51260.	2476.1
#3	8677.0	51313.	2469.8

Approved: June 29, 2016

Sample Name: L1606090715 Acquired: 6/28/2016 23:29:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00285	.04407	.00140	.14412	.04143	.00005	59.558
Stddev	.00231	.00586	.00072	.00507	.00040	.00007	.224
%RSD	81.027	13.303	51.277	3.5199	.95567	130.41	.37536
#1	-.00334	.04994	.00156	.14606	.04131	.00012	59.814
#2	-.00033	.03822	.00202	.13837	.04111	-.00001	59.406
#3	-.00486	.04404	.00061	.14794	.04188	.00004	59.452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00118	.00184	.00063	.76100	7.1671	.01922
Stddev	.00015	.00052	.00098	.00103	.01018	.0349	.00312
%RSD	163.96	43.892	53.087	163.96	1.3375	.48685	16.215
#1	.00011	.00058	.00246	-.00047	.77275	7.1527	.02093
#2	-.00007	.00153	.00071	.00158	.75530	7.1417	.01563
#3	.00022	.00141	.00236	.00077	.75494	7.2069	.02112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.054	.05684	.00116	F 450.35	.00088	.20516	-.00211
Stddev	.082	.00269	.00042	2.00	.00126	.00415	.00576
%RSD	.68190	4.7277	35.663	.44397	142.77	2.0226	273.36
#1	11.975	.05375	.00106	452.52	-.00055	.20427	-.00571
#2	12.048	.05807	.00162	449.96	.00139	.20968	.00454
#3	12.139	.05868	.00081	448.58	.00181	.20152	-.00515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090715 Acquired: 6/28/2016 23:29:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	-.00862	7.6795	-.00039	.71676	.00461	-.00278
Stddev	.00283	.00291	.1196	.00106	.00041	.01298	.00101
%RSD	347.45	33.797	1.5570	275.08	.05661	281.78	36.497
#1	-.00157	-.00587	7.7419	-.00040	.71645	-.00429	-.00356
#2	.00007	-.01167	7.7550	.00069	.71722	.01951	-.00313
#3	.00394	-.00832	7.5417	-.00144	.71660	-.00140	-.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00152	.00115	.00113
Stddev	.00105	.00008	.00105
%RSD	68.884	6.8866	93.346
#1	.00202	.00117	.00002
#2	.00032	.00106	.00212
#3	.00223	.00121	.00124
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8792.1	51880.	2496.3
Stddev	133.4	299.	10.1
%RSD	1.5178	.57649	.40317
#1	8941.8	51623.	2484.7
#2	8685.6	51808.	2502.1
#3	8748.8	52208.	2502.2

Approved: June 29, 2016

Sample Name: L1606090716 Acquired: 6/28/2016 23:33:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00333**	**.06674**	**.00128**	**.14298**	**.04222**	**-.00000**	**59.504**
Stddev	.00201	.01138	.00278	.00064	.00070	.00007	.484
%RSD	60.249	17.058	217.94	.44859	1.6629	94045.	.81312
#1	-.00169	.07800	-.00194	.14246	.04294	.00002	59.231
#2	-.00557	.05523	.00286	.14278	.04219	.00006	60.063
#3	-.00273	.06698	.00291	.14369	.04154	-.00008	59.219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.00092**	**.00339**	**.00042**	**.74101**	**7.3675**	**.01893**
Stddev	.00006	.00016	.00146	.00135	.02065	.0749	.00240
%RSD	50.431	17.014	43.091	324.21	2.7866	1.0165	12.657
#1	.00017	.00075	.00375	-.00081	.76451	7.3956	.01995
#2	.00005	.00106	.00463	.00020	.72578	7.2826	.02065
#3	.00013	.00095	.00178	.00187	.73273	7.4242	.01619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.094**	**.05669**	**.00049**	F **451.79**	**.00147**	**.21191**	**-.00151**
Stddev	.163	.00550	.00036	.50	.00054	.00242	.00084
%RSD	1.3447	9.6932	73.725	.11164	37.077	1.1421	55.736
#1	12.012	.05647	.00070	451.99	.00147	.21046	-.00232
#2	11.990	.05131	.00007	452.16	.00201	.21470	-.00064
#3	12.282	.06230	.00070	451.22	.00092	.21056	-.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090716 Acquired: 6/28/2016 23:33:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00348**	**.00089**	**7.5669**	**.00117**	**.72443**	**.01709**	**-.00245**
Stddev	.00354	.00448	.1572	.00050	.00298	.00437	.00201
%RSD	101.58	501.51	2.0775	42.865	.41088	25.593	82.267
#1	.00281	-.00275	7.6956	.00118	.72247	.02126	-.00474
#2	.00033	-.00046	7.6136	.00167	.72297	.01748	-.00099
#3	.00731	.00590	7.3917	.00066	.72785	.01253	-.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00241**	**.00548**	**.00402**
Stddev	.00054	.00017	.00083
%RSD	22.212	3.0592	20.651
#1	.00257	.00567	.00416
#2	.00285	.00542	.00312
#3	.00181	.00535	.00476
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8690.3**	**52175.**	**2516.1**
Stddev	61.6	126.	8.6
%RSD	.70844	.24177	.34375
#1	8760.8	52034.	2508.6
#2	8663.2	52277.	2514.2
#3	8646.9	52214.	2525.5

Approved: June 29, 2016

Sample Name: L1606090717S Acquired: 6/28/2016 23:37:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19035**	**4.9212**	**.20242**	**1.1173**	**.53870**	**.02399**	**64.987**
Stddev	.00066	.0138	.00438	.0089	.00438	.00023	.548
%RSD	.34417	.28081	2.1640	.79744	.81379	.96737	.84372
#1	.19107	4.9363	.19945	1.1238	.54193	.02421	65.145
#2	.19018	4.9092	.20745	1.1071	.54046	.02375	65.440
#3	.18980	4.9181	.20036	1.1209	.53371	.02402	64.378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02424**	**.09697**	**.24272**	**.24153**	**2.7000**	**32.302**	**.53435**
Stddev	.00017	.00063	.00128	.00115	.0542	.305	.00423
%RSD	.69750	.64652	.52774	.47706	2.0085	.94343	.79145
#1	.02434	.09701	.24384	.24064	2.6890	32.507	.53012
#2	.02404	.09757	.24299	.24283	2.7589	32.447	.53858
#3	.02433	.09632	.24133	.24112	2.6521	31.952	.53434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**16.882**	**.30451**	**.49711**	F **482.71**	**.24091**	**5.1537**	**.23668**
Stddev	.177	.00348	.00560	3.01	.00269	.0308	.00218
%RSD	1.0459	1.1415	1.1272	.62426	1.1176	.59723	.92237
#1	16.684	.30381	.50102	485.98	.24166	5.1882	.23907
#2	16.940	.30143	.49961	480.04	.24314	5.1434	.23479
#3	17.023	.30828	.49069	482.12	.23792	5.1293	.23620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090717S Acquired: 6/28/2016 23:37:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58578**	**.18538**	**10.159**	**.48811**	**1.2154**	**.49634**	**.23046**
Stddev	.00448	.00618	.043	.00637	.0098	.00608	.00038
%RSD	.76433	3.3363	.42424	1.3058	.80446	1.2245	.16463
#1	.58622	.18565	10.182	.49235	1.2180	.50327	.23047
#2	.59002	.19142	10.185	.49120	1.2236	.49195	.23007
#3	.58110	.17906	10.109	.48078	1.2045	.49379	.23083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.48987**	**.55148**	**.00343**
Stddev	.00176	.00599	.00013
%RSD	.35980	1.0854	3.7809
#1	.49143	.55650	.00328
#2	.49024	.55309	.00353
#3	.48796	.54486	.00348
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8539.5**	**51024.**	**2450.9**
Stddev	15.7	223.	7.4
%RSD	.18405	.43733	.30335
#1	8544.9	50769.	2447.1
#2	8551.8	51123.	2446.2
#3	8521.8	51181.	2459.5

Approved: June 29, 2016

Sample Name: L1606090718S Acquired: 6/28/2016 23:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19819**	**5.0418**	**.21172**	**1.1474**	**.55608**	**.02463**	**66.735**
Stddev	.00185	.0069	.00260	.0063	.00500	.00008	.403
%RSD	.93500	.13782	1.2291	.55360	.89834	.32817	.60319
#1	.19951	5.0496	.20902	1.1497	.56117	.02462	67.001
#2	.19607	5.0393	.21422	1.1402	.55588	.02472	66.933
#3	.19898	5.0364	.21193	1.1522	.55119	.02456	66.272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02500**	**.10059**	**.24966**	**.24894**	**2.7946**	**32.968**	**.54262**
Stddev	.00038	.00067	.00147	.00202	.0041	.141	.00182
%RSD	1.5041	.66457	.58723	.81332	.14772	.42769	.33489
#1	.02475	.10047	.25066	.24998	2.7907	33.127	.54285
#2	.02543	.10131	.25035	.25022	2.7989	32.857	.54431
#3	.02482	.09999	.24798	.24660	2.7943	32.920	.54070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.345**	**.31116**	**.51510**	F **490.28**	**.24919**	**5.3591**	**.24651**
Stddev	.105	.00167	.00292	3.51	.00358	.0052	.00234
%RSD	.60374	.53669	.56649	.71621	1.4381	.09607	.95097
#1	17.354	.31227	.51623	493.94	.25164	5.3628	.24477
#2	17.445	.31197	.51728	489.95	.25087	5.3613	.24917
#3	17.236	.30924	.51178	486.94	.24508	5.3532	.24558
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090718S Acquired: 6/28/2016 23:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.61053	.18691	10.528	.50556	1.2260	.48937	.23724
Stddev	.00166	.00666	.059	.00312	.0084	.00665	.00363
%RSD	.27229	3.5608	.55758	.61700	.68851	1.3593	1.5298
#1	.60861	.19403	10.543	.50630	1.2334	.49010	.24128
#2	.61141	.18085	10.578	.50824	1.2277	.48238	.23618
#3	.61157	.18584	10.464	.50214	1.2168	.49562	.23425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50091	.51523	.00172
Stddev	.00126	.00263	.00010
%RSD	.25176	.51067	5.6499
#1	.50233	.51612	.00161
#2	.50044	.51730	.00180
#3	.49994	.51227	.00174
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8681.6	51146.	2422.3
Stddev	38.8	474.	15.3
%RSD	.44711	.92760	.63064
#1	8639.4	50613.	2406.1
#2	8715.8	51303.	2424.3
#3	8689.6	51522.	2436.4

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 23:44:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39087**	**9.8878**	**.39267**	**.49465**	**1.0058**	**.04827**	**9.9182**	**.04932**
Stddev	.00134	.0059	.00349	.00240	.0067	.00007	.1083	.00019
%RSD	.34212	.05973	.88952	.48553	.66475	.14231	1.0921	.38581
#1	.39238	9.8935	.39657	.49655	.99820	.04819	9.9431	.04942
#2	.39039	9.8883	.38984	.49195	1.0109	.04832	10.012	.04944
#3	.38985	9.8817	.39158	.49545	1.0082	.04830	9.7996	.04910
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19738**	**.48910**	**.49523**	**3.9669**	**49.882**	**1.0110**	**9.9379**	**.49619**
Stddev	.00146	.00249	.00033	.0535	.426	.0100	.0856	.00254
%RSD	.73891	.50943	.06565	1.3490	.85413	.98572	.86106	.51125
#1	.19864	.48643	.49560	3.9112	49.398	1.0025	9.9597	.49529
#2	.19771	.49137	.49512	4.0179	50.203	1.0219	10.010	.49906
#3	.19578	.48951	.49498	3.9715	50.043	1.0085	9.8435	.49423
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99366**	**51.102**	**.49479**	**9.8180**	**.49245**	**1.1839**	**.38331**	**4.9252**
Stddev	.00229	.296	.00112	.0436	.00417	.0076	.00756	.0162
%RSD	.23040	.57951	.22563	.44368	.84739	.64567	1.9734	.32807
#1	.99519	50.797	.49605	9.8652	.48874	1.1905	.38626	4.9385
#2	.99476	51.389	.49438	9.8094	.49696	1.1858	.38895	4.9300
#3	.99103	51.119	.49393	9.7793	.49165	1.1755	.37471	4.9072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 23:44:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98988	.99765	.95643	.49291	.97109	.99816	1.0264
Stddev	.00005	.00662	.00491	.00612	.00246	.00225	.0069
%RSD	.00544	.66367	.51341	1.2415	.25373	.22587	.66714
#1	.98986	.99154	.96068	.49817	.96993	.99855	1.0228
#2	.98985	1.0047	.95106	.49436	.97392	1.0002	1.0343
#3	.98995	.99673	.95756	.48619	.96943	.99574	1.0221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8852.4	53248.	2485.2
Stddev	68.1	165.	17.6
%RSD	.76947	.31035	.70769
#1	8891.9	53420.	2501.0
#2	8891.6	53232.	2466.3
#3	8773.7	53091.	2488.4

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 23:48:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00890	-.00396	.00204	.00494	-.00000	-.03955	.00028
Stddev	.00061	.00649	.00226	.00096	.00139	.00006	.02980	.00016
%RSD	121.10	72.941	57.036	47.171	28.084	1878.9	75.346	56.000
#1	.00012	.00140	-.00135	.00236	.00433	-.00007	-.00514	.00025
#2	.00019	.01256	-.00530	.00280	.00653	.00003	-.05651	.00014
#3	.00120	.01274	-.00524	.00096	.00396	.00003	-.05701	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.00009	-.00055	-.00135	.02566	.00472	.12990	-.00124
Stddev	.00026	.00133	.00103	.03748	.11658	.00694	.07003	.00153
%RSD	88.905	1496.9	185.85	2784.8	454.39	146.81	53.907	123.10
#1	-.00021	.00162	-.00060	-.04304	-.10891	.00709	.05840	.00042
#2	-.00009	-.00079	.00050	.02953	.08997	-.00309	.19836	-.00156
#3	-.00059	-.00057	-.00156	.00947	.09591	.01017	.13295	-.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.11232	.00016	-.00070	-.00263	.00402	-.00130	.00878
Stddev	.00052	.01221	.00035	.00315	.00378	.00429	.00491	.00194
%RSD	233.23	10.874	219.15	451.13	143.82	106.54	378.44	22.144
#1	.00018	.09853	.00056	-.00433	-.00468	.00891	-.00563	.01097
#2	.00076	.12179	-.00003	.00108	-.00494	.00227	.00404	.00808
#3	-.00027	.11663	-.00005	.00116	.00173	.00089	-.00230	.00727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 23:48:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00041	.00381	-.00016	-.00081	-.00009	-.00076
Stddev	.00089	.00029	.01190	.00136	.00028	.00006	.00080
%RSD	548.13	70.796	312.63	830.39	34.214	65.418	104.29
#1	.00094	.00011	.00779	-.00069	-.00088	-.00002	-.00004
#2	-.00080	.00043	-.00957	-.00118	-.00051	-.00014	-.00063
#3	.00035	.00070	.01320	.00138	-.00105	-.00011	-.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8917.9	53751.	2458.4
Stddev	22.4	401.	6.6
%RSD	.25103	.74546	.27049
#1	8939.0	53385.	2451.2
#2	8920.3	53689.	2464.4
#3	8894.4	54179.	2459.5

Approved: June 29, 2016

Sample Name: L1606090719SD Acquired: 6/28/2016 23:52:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19494	4.9876	.20649	1.1206	.54899	.02446	63.684
Stddev	.00341	.0267	.00227	.0072	.00266	.00017	.197
%RSD	1.7503	.53500	1.0987	.64357	.48472	.70636	.30953
#1	.19841	5.0143	.20896	1.1267	.55198	.02458	63.895
#2	.19159	4.9875	.20600	1.1224	.54814	.02454	63.505
#3	.19483	4.9610	.20450	1.1126	.54686	.02426	63.652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02431	.09859	.24820	.24356	2.7627	32.523	.53917
Stddev	.00024	.00035	.00106	.00236	.0104	.139	.00283
%RSD	.97941	.35770	.42716	.97084	.37521	.42742	.52434
#1	.02452	.09895	.24891	.24428	2.7631	32.683	.54200
#2	.02405	.09857	.24872	.24548	2.7521	32.438	.53915
#3	.02436	.09824	.24698	.24092	2.7728	32.447	.53635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.744	.30262	.50161	F 474.44	.24121	5.1977	.24211
Stddev	.092	.00376	.00063	1.95	.00134	.0033	.00235
%RSD	.55099	1.2423	.12466	.41010	.55486	.06327	.97156
#1	16.843	.30299	.50231	476.69	.24248	5.1948	.24104
#2	16.730	.29869	.50142	473.46	.24134	5.2012	.24049
#3	16.660	.30618	.50110	473.18	.23981	5.1970	.24481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090719SD Acquired: 6/28/2016 23:52:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-06

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.59430**	**.19071**	**9.9338**	**.49319**	**1.2061**	**.50455**	**.23257**
Stddev	.00255	.00879	.0338	.00371	.0041	.01325	.00642
%RSD	.42853	4.6099	.34057	.75174	.34161	2.6270	2.7619
#1	.59360	.18296	9.9720	.49283	1.2102	.50667	.23886
#2	.59713	.20026	9.9217	.49706	1.2019	.49036	.23282
#3	.59219	.18890	9.9077	.48967	1.2063	.51661	.22602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.49849**	**.50582**	**.00353**
Stddev	.00523	.00152	.00043
%RSD	1.0487	.30029	12.202
#1	.50407	.50610	.00382
#2	.49770	.50717	.00372
#3	.49371	.50417	.00303
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8401.5**	**50047.**	**2408.6**
Stddev	47.5	258.	12.0
%RSD	.56522	.51528	.50025
#1	8347.1	50008.	2396.9
#2	8422.6	49810.	2408.1
#3	8434.7	50321.	2421.0

Approved: June 29, 2016

Sample Name: L1606090720SD Acquired: 6/28/2016 23:56:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19353**	**5.0216**	**.20252**	**1.1352**	**.55071**	**.02451**	**66.439**
Stddev	.00144	.0141	.00254	.0111	.00305	.00002	.233
%RSD	.74536	.28090	1.2537	.97553	.55460	.08092	.35135
#1	.19274	5.0377	.20544	1.1467	.55275	.02452	66.357
#2	.19265	5.0157	.20132	1.1247	.54720	.02453	66.259
#3	.19519	5.0114	.20080	1.1342	.55218	.02449	66.703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02480**	**.09885**	**.24939**	**.24699**	**2.8311**	**33.202**	**.54334**
Stddev	.00042	.00109	.00128	.00315	.0563	.083	.00155
%RSD	1.6782	1.1039	.51473	1.2735	1.9886	.24955	.28467
#1	.02471	.09937	.24793	.24805	2.7662	33.298	.54161
#2	.02525	.09958	.24991	.24947	2.8664	33.150	.54461
#3	.02443	.09759	.25034	.24345	2.8608	33.159	.54379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.468**	**.30738**	**.50680**	F **486.61**	**.24492**	**5.2693**	**.23893**
Stddev	.072	.00145	.00532	.70	.00225	.0369	.00191
%RSD	.41344	.47181	1.0490	.14406	.91921	.69961	.79970
#1	17.534	.30875	.50843	487.39	.24519	5.2707	.23692
#2	17.479	.30586	.51112	486.41	.24702	5.3054	.24072
#3	17.391	.30753	.50086	486.04	.24254	5.2317	.23916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090720SD Acquired: 6/28/2016 23:56:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.60142**	**.18637**	**10.363**	**.49767**	**1.2283**	**.48765**	**.23702**
Stddev	.00105	.00245	.038	.00779	.0034	.01138	.00072
%RSD	.17417	1.3166	.36865	1.5652	.27874	2.3335	.30474
#1	.60114	.18602	10.365	.50037	1.2270	.48994	.23679
#2	.60258	.18411	10.400	.50376	1.2257	.49771	.23784
#3	.60054	.18898	10.323	.48889	1.2322	.47530	.23645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.49895**	**.50500**	**.00250**
Stddev	.00095	.00538	.00016
%RSD	.19000	1.0655	6.4596
#1	.49928	.50545	.00254
#2	.49789	.51014	.00232
#3	.49969	.49940	.00263
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8545.4**	**50337.**	**2417.3**
Stddev	21.8	38.	36.4
%RSD	.25460	.07587	1.5070
#1	8520.7	50381.	2377.2
#2	8553.5	50312.	2448.3
#3	8561.9	50318.	2426.3

Approved: June 29, 2016

Sample Name: L1606090721 Acquired: 6/28/2016 23:59:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.02815	.15472	.21993	.04999	-.00009	89.088	.00036
Stddev	.00081	.00286	.00224	.00203	.00067	.00013	.252	.00044
%RSD	366.68	10.152	1.4476	.92302	1.3456	150.92	.28326	121.20
#1	-.00034	.03039	.15696	.22227	.04930	.00005	89.280	.00047
#2	-.00015	.02493	.15248	.21860	.05065	-.00021	89.181	.00073
#3	.00116	.02913	.15471	.21893	.05004	-.00011	88.802	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00053	-.00019	3.2279	4.7476	.04543	58.195	.03506
Stddev	.00051	.00109	.00130	.0396	.0330	.00398	.306	.00452
%RSD	326.23	207.39	678.63	1.2283	.69494	8.7612	.52530	12.890
#1	.00000	.00087	.00120	3.2707	4.7445	.04159	58.337	.03505
#2	.00073	-.00070	-.00039	3.2207	4.7162	.04953	57.844	.03055
#3	-.00026	.00141	-.00138	3.1923	4.7820	.04517	58.404	.03959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00255	148.09	.00067	.00784	-.00039	.00421	.00052	8.2957
Stddev	.00041	.74	.00056	.00761	.00326	.00112	.00642	.0916
%RSD	15.975	.49798	83.836	97.017	843.36	26.690	1239.6	1.1044
#1	.00242	148.81	.00126	.01662	.00333	.00379	.00730	8.3545
#2	.00222	148.12	.00060	.00379	-.00277	.00548	-.00546	8.3426
#3	.00300	147.34	.00015	.00312	-.00172	.00336	-.00029	8.1902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090721 Acquired: 6/28/2016 23:59:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**2.8879**	**-.00940**	**-.00107**	**-.00134**	**.00848**	**-.00035**
Stddev	.00043	.0149	.00196	.00331	.00181	.00045	.00038
%RSD	143.26	.51746	20.833	308.32	134.84	5.2706	107.75
#1	.00019	2.8997	-.00999	-.00402	.00042	.00893	-.00019
#2	-.00051	2.8929	-.00722	-.00170	-.00320	.00845	-.00008
#3	-.00059	2.8711	-.01100	.00251	-.00126	.00804	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8758.0**	**52368.**	**2466.4**
Stddev	37.5	325.	5.9
%RSD	.42875	.61986	.23758
#1	8801.1	52031.	2461.0
#2	8740.8	52395.	2465.6
#3	8732.2	52679.	2472.6

Approved: June 29, 2016

Sample Name: L1606090721PS Acquired: 6/29/2016 0:03:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574358-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20019**	**5.1576**	**.34766**	**1.2114**	**.56381**	**.02498**	**84.663**	**.02573**
Stddev	.00211	.0098	.00116	.0050	.00202	.00020	.418	.00033
%RSD	1.0557	.19056	.33293	.41263	.35822	.78492	.49396	1.2934
#1	.20254	5.1664	.34633	1.2164	.56443	.02520	84.492	.02609
#2	.19843	5.1594	.34818	1.2115	.56156	.02488	84.358	.02565
#3	.19962	5.1470	.34846	1.2064	.56545	.02485	85.140	.02544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10080**	**.25421**	**.24916**	**4.8701**	**30.624**	**.57779**	**56.693**	**.28817**
Stddev	.00058	.00200	.00195	.0302	.149	.00202	.131	.00453
%RSD	.57642	.78787	.78160	.62019	.48743	.34921	.23190	1.5720
#1	.10116	.25562	.25054	4.8792	30.503	.58012	56.633	.28367
#2	.10112	.25192	.25001	4.8364	30.577	.57659	56.844	.28809
#3	.10013	.25509	.24693	4.8947	30.791	.57665	56.603	.29273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52502**	**158.09**	**.24876**	**5.1636**	**.25008**	**.61265**	**.20014**	**9.8671**
Stddev	.00212	.60	.00180	.0181	.00331	.00479	.00936	.0394
%RSD	.40403	.38248	.72227	.35030	1.3223	.78195	4.6766	.39881
#1	.52705	157.73	.25045	5.1793	.25359	.61277	.21037	9.9112
#2	.52519	157.76	.24895	5.1678	.24962	.60780	.19201	9.8547
#3	.52282	158.79	.24687	5.1438	.24702	.61738	.19805	9.8355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090721PS Acquired: 6/29/2016 0:03:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574358-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51223**	**3.0821**	**.49582**	**.24982**	**.51140**	**.51568**	**.00008**
Stddev	.00186	.0080	.00627	.00152	.00318	.00201	.00023
%RSD	.36371	.25984	1.2655	.60916	.62230	.38914	288.95
#1	.51427	3.0793	.49082	.24918	.51445	.51741	-.00011
#2	.51181	3.0759	.50286	.24872	.51164	.51616	.00001
#3	.51062	3.0912	.49379	.25156	.50810	.51348	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8832.3**	**52453.**	**2508.5**
Stddev	83.5	84.	29.4
%RSD	.94590	.16065	1.1725
#1	8737.3	52363.	2520.1
#2	8865.3	52530.	2530.3
#3	8894.3	52465.	2475.0

Approved: June 29, 2016

Sample Name: L1606090721SDL Acquired: 6/29/2016 0:07:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574358-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00109**	**.01687**	**.03369**	**.04578**	**.01396**	**.00004**	**18.552**	**-.00004**
Stddev	.00056	.00689	.00354	.00177	.00096	.00009	.306	.00023
%RSD	51.289	40.861	10.514	3.8702	6.8513	202.11	1.6474	556.22
#1	-.00057	.01633	.03244	.04378	.01352	-.00003	18.207	-.00012
#2	-.00168	.02401	.03094	.04715	.01506	.00002	18.661	-.00023
#3	-.00102	.01026	.03768	.04641	.01331	.00014	18.789	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.00087**	**.00035**	**.65230**	**1.0355**	**.01184**	**12.221**	**.00894**
Stddev	.00063	.00100	.00121	.00671	.0941	.00202	.100	.00309
%RSD	228.11	115.30	345.85	1.0286	9.0852	17.078	.82191	34.543
#1	-.00017	.00049	.00025	.64609	1.1157	.01374	12.150	.00874
#2	-.00095	.00201	.00160	.65942	.93195	.00972	12.336	.01212
#3	.00029	.00011	-.00080	.65140	1.0588	.01205	12.177	.00595
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**30.325**	**-.00027**	**.00422**	**-.00298**	**-.00092**	**.00109**	**1.7914**
Stddev	.00016	.440	.00045	.00425	.00057	.00256	.00169	.0091
%RSD	27.689	1.4521	163.54	100.75	19.102	277.37	155.02	.50513
#1	.00039	29.824	.00017	.00885	-.00259	-.00352	.00170	1.7813
#2	.00063	30.649	-.00072	.00329	-.00363	.00160	.00240	1.7986
#3	.00068	30.503	-.00027	.00050	-.00270	-.00084	-.00082	1.7945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090721SDL Acquired: 6/29/2016 0:07:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574358-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.60742**	**-.00374**	**-.00166**	**-.00033**	**.00256**	**-.00085**
Stddev	.00088	.00734	.00118	.00273	.00106	.00022	.00027
%RSD	279.18	1.2083	31.693	164.00	318.25	8.4916	31.787
#1	.00070	.59907	-.00244	.00132	.00067	.00233	-.00090
#2	-.00077	.61036	-.00402	-.00403	-.00023	.00276	-.00109
#3	-.00087	.61284	-.00475	-.00228	-.00144	.00259	-.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9187.1**	**55503.**	**2599.5**
Stddev	26.1	119.	10.7
%RSD	.28437	.21476	.41022
#1	9217.2	55501.	2602.6
#2	9170.3	55385.	2587.6
#3	9173.8	55623.	2608.2

Approved: June 29, 2016

Sample Name: L1606090721SDL Acquired: 6/29/2016 0:11:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574358-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00118	.01500	.00516	.01043	.00379	.00000	3.7995	-.00012
Stddev	.00135	.01168	.00534	.00108	.00026	.00003	.1244	.00014
%RSD	115.03	77.862	103.64	10.384	6.8212	2470.3	3.2736	120.38
#1	.00206	.02216	.00814	.01042	.00375	-.00003	3.6648	-.00028
#2	.00185	.00152	-.00101	.01152	.00355	.00003	3.8235	-.00005
#3	-.00038	.02133	.00835	.00935	.00407	.00000	3.9101	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00065	-.00055	.11045	.13865	.00675	2.5225	.00092
Stddev	.00015	.00092	.00086	.02744	.23040	.00333	.0784	.00193
%RSD	109.63	141.35	157.85	24.848	166.17	49.354	3.1085	209.31
#1	.00002	-.00027	.00015	.09324	.28975	.00394	2.5026	.00021
#2	-.00015	.00158	-.00028	.14210	.25272	.01043	2.6090	-.00055
#3	-.00028	.00066	-.00151	.09600	-.12653	.00587	2.4560	.00311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	6.3739	.00039	-.00167	-.00065	-.00192	-.00400	.35805
Stddev	.00019	.1221	.00077	.00568	.00220	.00225	.00392	.00092
%RSD	80.325	1.9149	193.81	340.49	339.56	117.21	97.951	.25782
#1	-.00041	6.2501	.00122	.00247	-.00170	-.00154	.00049	.35884
#2	-.00025	6.3776	.00024	.00067	-.00212	-.00435	-.00579	.35826
#3	-.00004	6.4941	-.00028	-.00815	.00188	.00011	-.00671	.35703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090721SDL Acquired: 6/29/2016 0:11:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574358-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.12378**	**-.00436**	**-.00134**	**-.00055**	**.00073**	**-.00039**
Stddev	.00019	.00308	.00683	.00086	.00034	.00007	.00029
%RSD	53.797	2.4878	156.69	64.146	61.988	8.9830	73.514
#1	-.00044	.12023	-.00553	-.00058	-.00062	.00068	-.00036
#2	-.00014	.12543	.00298	-.00228	-.00018	.00081	-.00070
#3	-.00049	.12569	-.01052	-.00118	-.00084	.00071	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9402.9**	**57082.**	**2645.4**
Stddev	82.4	75.	15.8
%RSD	.87665	.13174	.59891
#1	9406.7	56995.	2659.6
#2	9483.5	57126.	2628.3
#3	9318.7	57125.	2648.2

Approved: June 29, 2016

Sample Name: L1606090722 Acquired: 6/29/2016 0:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.01028	.16985	.22958	.04883	-.00008	90.394	.00025
Stddev	.00324	.00963	.00396	.00222	.00061	.00002	.121	.00028
%RSD	4949.1	93.723	2.3290	.96586	1.2550	23.760	.13404	111.24
#1	-.00285	.02132	.16813	.22730	.04935	-.00010	90.382	.00038
#2	.00356	.00356	.17438	.23172	.04815	-.00006	90.279	.00045
#3	-.00051	.00596	.16705	.22972	.04898	-.00008	90.521	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00041	.00087	3.5026	4.9295	.04910	59.267	.03325
Stddev	.00022	.00111	.00098	.0284	.0894	.00151	.265	.00219
%RSD	60.847	271.25	113.61	.80943	1.8143	3.0855	.44788	6.5929
#1	.00021	.00134	-.00025	3.5352	5.0034	.05063	59.294	.03495
#2	.00061	-.00082	.00122	3.4887	4.9549	.04760	58.989	.03402
#3	.00025	.00070	.00163	3.4838	4.8301	.04907	59.518	.03077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00244	153.19	.00041	.00458	-.00053	.00040	-.00283	8.7875
Stddev	.00007	.41	.00041	.00497	.00262	.00456	.00573	.1224
%RSD	2.9584	.27064	99.304	108.46	489.40	1152.0	202.89	1.3923
#1	.00237	153.49	.00084	-.00022	.00239	-.00465	-.00944	8.8015
#2	.00251	152.72	.00004	.00427	-.00266	.00424	.00068	8.9022
#3	.00243	153.37	.00034	.00970	-.00134	.00160	.00029	8.6587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090722 Acquired: 6/29/2016 0:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	2.9518	-.00995	-.00362	-.00096	.00440	.00001
Stddev	.00028	.0074	.00793	.00237	.00054	.00006	.00056
%RSD	32.226	.25211	79.682	65.490	56.708	1.2532	6214.2
#1	.00100	2.9566	-.00351	-.00118	-.00042	.00436	.00025
#2	.00104	2.9432	-.00753	-.00591	-.00150	.00446	-.00063
#3	.00054	2.9556	-.01881	-.00378	-.00096	.00438	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9054.6	54099.	2585.8
Stddev	57.4	436.	25.2
%RSD	.63423	.80554	.97528
#1	8988.4	53629.	2556.7
#2	9090.0	54180.	2602.1
#3	9085.5	54489.	2598.5

Approved: June 29, 2016

Sample Name: L1606090701 Acquired: 6/29/2016 0:18:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.00128**	**.00101**	**.00061**	**.00104**	**-.00005**	**.00169**
Stddev	.00126	.00585	.00355	.00032	.00091	.00002	.04030
%RSD	221.80	456.51	353.52	53.224	87.506	37.484	2388.3
#1	-.00202	.00804	-.00224	.00024	.00004	-.00004	.00221
#2	.00024	-.00195	.00046	.00078	.00184	-.00004	.04172
#3	.00008	-.00224	.00480	.00082	.00125	-.00008	-.03887
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00013**	**.00013**	**-.00052**	F **-.02173**	**.03273**	**.00032**
Stddev	.00034	.00034	.00036	.00092	.03139	.06816	.00284
%RSD	181.69	267.06	267.98	175.61	144.44	208.24	885.16
#1	-.00016	-.00013	.00000	.00035	-.00211	-.02317	-.00284
#2	.00052	.00001	.00054	-.00148	-.05793	.01270	.00268
#3	.00020	.00050	-.00014	-.00044	-.00515	.10865	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03898**	**-.00058**	**-.00045**	**13.251**	**.00077**	**.02846**	**.00119**
Stddev	.01377	.00586	.00050	.124	.00076	.00679	.00468
%RSD	35.318	1010.5	110.38	.93889	99.705	23.842	394.31
#1	.05488	.00610	.00012	13.121	-.00004	.03395	.00279
#2	.03088	-.00485	-.00078	13.369	.00087	.03056	.00485
#3	.03118	-.00299	-.00069	13.262	.00148	.02087	-.00408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606090701 Acquired: 6/29/2016 0:18:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	-.00537	-.00914	-.00006	.00159	.00532	.00037
Stddev	.00582	.00242	.00090	.00019	.00051	.00299	.00136
%RSD	476.64	45.078	9.7969	317.95	32.073	56.250	371.00
#1	.00683	-.00708	-.00955	.00015	.00207	.00837	-.00054
#2	.00162	-.00260	-.00812	-.00022	.00105	.00517	.00193
#3	-.00479	-.00644	-.00976	-.00012	.00165	.00240	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00093	.00059	-.00016
Stddev	.00081	.00031	.00018
%RSD	87.282	53.168	114.46
#1	.00149	.00024	-.00018
#2	-.00000	.00070	.00003
#3	.00130	.00083	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10015.	59457.	2772.0
Stddev	42.	185.	13.1
%RSD	.41543	.31142	.47139
#1	9974.4	59316.	2765.7
#2	10014.	59389.	2763.3
#3	10058.	59667.	2787.0

Approved: June 29, 2016

Sample Name: L1606090702 Acquired: 6/29/2016 0:22:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.01099**	**.00749**	**.00123**	**.00036**	**-.00012**	**-.07492**	**-.00003**
Stddev	.00077	.00938	.00313	.00162	.00100	.00005	.00757	.00027
%RSD	273.98	85.420	41.773	131.72	279.74	40.850	10.106	1080.6
#1	-.00115	.00075	.00467	.00308	.00068	-.00017	-.07360	-.00000
#2	.00027	.01919	.00694	.00049	.00115	-.00008	-.08306	.00024
#3	.00004	.01302	.01085	.00011	-.00076	-.00011	-.06809	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00052**	**.00026**	**.00386**	**.16270**	**.00415**	**.04673**	**.00035**
Stddev	.00014	.00036	.00083	.03541	.08205	.00393	.05332	.00318
%RSD	207.94	70.672	315.94	916.99	50.431	94.730	114.10	912.30
#1	-.00005	-.00049	.00109	.03399	.24654	.00843	.09724	.00046
#2	.00003	-.00089	.00028	-.03514	.15901	.00071	-.00901	-.00289
#3	.00022	-.00017	-.00058	.01273	.08256	.00330	.05196	.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**13.268**	**.00028**	**.03344**	**-.00107**	**.00163**	**-.00334**	**-.00974**
Stddev	.00034	.166	.00066	.00168	.00231	.00202	.00700	.00231
%RSD	306.42	1.2519	239.13	5.0110	216.85	124.05	209.45	23.731
#1	-.00024	13.091	.00009	.03433	-.00011	.00058	-.00482	-.01123
#2	.00014	13.421	-.00027	.03151	-.00370	.00396	.00428	-.01090
#3	.00044	13.292	.00101	.03449	.00061	.00035	-.00947	-.00708
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090702 Acquired: 6/29/2016 0:22:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00164	-.00565	.00199	.00055	.00050	.00004
Stddev	.00079	.00045	.00790	.00125	.00014	.00028	.00055
%RSD	1277.4	27.361	139.76	62.800	24.818	56.699	1243.8
#1	-.00043	.00119	-.00017	.00104	.00045	.00053	.00062
#2	.00085	.00209	-.00208	.00153	.00070	.00020	-.00000
#3	-.00061	.00165	-.01471	.00341	.00048	.00076	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9738.1	60303.	2841.7
Stddev	547.0	130.	36.2
%RSD	5.6170	.21550	1.2725
#1	10017.	60254.	2883.1
#2	10090.	60205.	2816.3
#3	9107.9	60450.	2825.6

Approved: June 29, 2016

Sample Name: L1606090703 Acquired: 6/29/2016 0:26:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.01419**	**.00833**	**.00267**	**.00573**	**.00007**	**-.01298**	**.00028**
Stddev	.00111	.00653	.00123	.00250	.00075	.00004	.01762	.00008
%RSD	324.10	46.043	14.722	93.692	13.099	59.317	135.74	30.625
#1	.00043	.01132	.00941	.00414	.00600	.00009	-.02179	.00028
#2	-.00162	.02166	.00699	-.00022	.00488	.00010	-.02446	.00036
#3	.00015	.00958	.00859	.00408	.00631	.00002	.00731	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00028**	**-.00007**	**.00093**	**-.08334**	**.00442**	**.05416**	**-.00223**
Stddev	.00033	.00039	.00100	.03445	.03697	.00209	.12696	.00364
%RSD	714.65	138.78	1370.0	3703.8	44.357	47.372	234.43	163.51
#1	-.00035	-.00004	.00065	.03766	-.04634	.00636	-.08396	-.00517
#2	-.00009	.00071	.00035	-.03067	-.08341	.00220	.08067	-.00335
#3	.00030	.00016	-.00122	-.00419	-.12027	.00471	.16576	.00184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**12.860**	**.00056**	**.03060**	**.00372**	**.00167**	**-.00610**	**-.00860**
Stddev	.00033	.114	.00047	.00278	.00309	.00242	.00720	.00231
%RSD	68.677	.88636	84.171	9.0836	83.096	145.58	118.12	26.807
#1	.00085	12.729	.00085	.03311	.00720	.00039	-.01435	-.00824
#2	.00020	12.918	.00082	.03107	.00133	.00015	-.00106	-.01107
#3	.00040	12.934	.00002	.02761	.00261	.00446	-.00289	-.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090703 Acquired: 6/29/2016 0:26:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00163	.00150	-.00142	-.00028	.00054	-.00031
Stddev	.00154	.00020	.00473	.00186	.00089	.00012	.00014
%RSD	833.10	12.147	314.69	131.50	317.50	23.204	44.658
#1	-.00148	.00177	.00555	.00056	-.00022	.00040	-.00038
#2	.00049	.00140	.00264	-.00313	-.00119	.00057	-.00015
#3	.00155	.00171	-.00369	-.00168	.00058	.00064	-.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8961.9	53770.	2483.7
Stddev	24.6	200.	12.6
%RSD	.27397	.37198	.50552
#1	8948.0	53948.	2494.1
#2	8947.6	53810.	2487.2
#3	8990.3	53554.	2469.8

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 0:30:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38698	9.7002	.38881	.48586	.97844	.04760	9.6997	.04862
Stddev	.00201	.0203	.00157	.00014	.00815	.00008	.1085	.00031
%RSD	.51885	.20953	.40456	.02940	.83333	.17484	1.1184	.62844
#1	.38537	9.7101	.38875	.48602	.97139	.04767	9.5885	.04859
#2	.38923	9.7137	.39041	.48575	.97656	.04751	9.7056	.04893
#3	.38635	9.6768	.38727	.48580	.98737	.04761	9.8052	.04833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19474	.48277	.49043	3.8560	48.915	.99456	9.7949	.48405
Stddev	.00051	.00254	.00033	.0609	.335	.00767	.1720	.00787
%RSD	.26333	.52661	.06686	1.5789	.68546	.77131	1.7563	1.6253
#1	.19457	.48338	.49081	3.8528	48.576	.99076	9.7412	.47822
#2	.19531	.48496	.49029	3.7967	48.921	.98953	9.9874	.49300
#3	.19433	.47998	.49020	3.9184	49.247	1.0034	9.6561	.48095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98170	49.583	.48813	9.7294	.48732	1.1783	.39418	4.8785
Stddev	.00158	.461	.00119	.0077	.00141	.0038	.00511	.0212
%RSD	.16102	.92944	.24398	.07901	.28900	.32524	1.2962	.43401
#1	.98309	49.171	.48947	9.7258	.48621	1.1793	.39983	4.8671
#2	.98204	49.497	.48720	9.7383	.48891	1.1815	.38987	4.9030
#3	.97998	50.081	.48770	9.7242	.48685	1.1740	.39285	4.8655
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 0:30:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97834	.97494	.95108	.49247	.96191	.98339	1.0034
Stddev	.00099	.00909	.00833	.00178	.00224	.00090	.0089
%RSD	.10136	.93258	.87586	.36227	.23243	.09113	.88886
#1	.97841	.96663	.94449	.49042	.96271	.98417	1.0004
#2	.97929	.97353	.96044	.49368	.96363	.98360	.99636
#3	.97731	.98465	.94830	.49330	.95938	.98241	1.0134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9122.8	54587.	2572.6
Stddev	38.4	60.	22.7
%RSD	.42057	.10952	.88400
#1	9080.2	54522.	2582.2
#2	9154.5	54598.	2589.0
#3	9133.9	54640.	2546.6

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 0:34:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00122**	**.00466**	**-.00017**	**.00093**	**.00303**	**.00003**	**-.00913**	**.00007**
Stddev	.00162	.00478	.00123	.00265	.00146	.00003	.02230	.00003
%RSD	132.99	102.72	706.52	285.61	48.176	128.86	244.19	39.474
#1	-.00245	.00930	-.00082	.00154	.00139	-.00001	-.02871	.00006
#2	.00062	-.00026	-.00095	.00321	.00352	.00005	-.01382	.00010
#3	-.00182	.00494	.00125	-.00197	.00419	.00004	.01514	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00032**	**.00081**	**.00903**	**.11096**	**.00079**	**.11616**	**-.00064**
Stddev	.00021	.00106	.00150	.00328	.08553	.00255	.04775	.00185
%RSD	92.337	329.80	184.91	36.276	77.077	324.20	41.108	287.40
#1	-.00031	.00116	.00012	.01041	.15087	-.00162	.12367	.00002
#2	.00001	-.00087	.00253	.01139	.16925	.00345	.06510	.00078
#3	-.00037	.00068	-.00022	.00529	.01278	.00053	.15972	-.00273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**.03737**	**.00066**	**.00144**	**-.00082**	**.00340**	**-.00182**	**.00536**
Stddev	.00029	.03843	.00053	.00265	.00132	.00154	.00313	.00166
%RSD	18406.	102.83	80.134	184.71	160.11	45.408	172.27	31.019
#1	-.00023	-.00602	.00051	.00428	-.00109	.00444	-.00083	.00643
#2	-.00008	.05101	.00125	-.00097	.00061	.00162	-.00533	.00344
#3	.00032	.06712	.00022	.00100	-.00199	.00412	.00070	.00619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 0:34:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00006**	**-.00104**	**-.00128**	**-.00041**	**-.00019**	**-.00004**
Stddev	.00023	.00034	.00413	.00294	.00104	.00017	.00025
%RSD	118.21	534.50	395.70	230.77	254.74	88.279	579.67
#1	-.00003	.00003	-.00572	-.00154	-.00150	-.00037	.00025
#2	.00043	-.00026	.00210	-.00408	.00058	-.00004	-.00020
#3	.00019	.00042	.00049	.00179	-.00032	-.00016	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9272.3**	**55978.**	**2591.0**
Stddev	17.3	111.	14.1
%RSD	.18630	.19762	.54251
#1	9287.0	55853.	2604.2
#2	9276.7	56064.	2576.2
#3	9253.3	56018.	2592.6

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 0:38:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**262.47**	**-.00206**	**-.02130**	**.00281**	**-.00000**	**250.14**
Stddev	.00247	1.07	.00184	.00233	.00097	.00005	2.94
%RSD	520.49	.40938	89.302	10.960	34.651	8633.1	1.1761
#1	-.00151	263.71	-.00344	-.02376	.00260	-.00002	251.91
#2	-.00030	261.77	-.00276	-.02102	.00386	-.00004	251.76
#3	.00324	261.93	.00003	-.01911	.00195	.00005	246.74
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**-.00148**	**-.00209**	F **.00553**	**97.120**	**.04934**	**.01710**
Stddev	.00029	.00036	.00124	.00159	1.989	.10530	.00684
%RSD	102.43	24.677	59.423	28.729	2.0482	213.42	39.969
#1	-.00058	-.00111	-.00306	.00402	99.151	-.05089	.02085
#2	.00000	-.00184	-.00069	.00538	97.032	.03984	.00921
#3	-.00028	-.00147	-.00253	.00719	95.176	.15907	.02125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**246.62**	**-.00237**	**-.00057**	**.08363**	**.00230**	**.02090**	**.00151**
Stddev	4.84	.00083	.00044	.01520	.00099	.00801	.00124
%RSD	1.9620	34.848	77.462	18.179	42.768	38.309	82.153
#1	250.97	-.00179	-.00098	.08232	.00251	.02109	.00293
#2	247.47	-.00201	-.00011	.06913	.00317	.02881	.00068
#3	241.41	-.00332	-.00061	.09945	.00123	.01280	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 0:38:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00153	.00160	.00135	.00065	.01387	-.00370
Stddev	.00668	.00418	.00084	.00065	.00032	.01328	.00337
%RSD	5905.2	273.58	52.462	48.380	49.235	95.708	91.188
#1	-.00013	-.00376	.00212	.00090	.00048	.02812	.00019
#2	-.00679	.00330	.00063	.00209	.00102	.01165	-.00584
#3	.00658	-.00412	.00205	.00104	.00045	.00184	-.00544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00278	-.00222	-.00352
Stddev	.00102	.00014	.00042
%RSD	36.742	6.2944	12.022
#1	-.00380	-.00209	-.00303
#2	-.00176	-.00220	-.00370
#3	-.00277	-.00237	-.00382
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8680.3	52289.	2546.4
Stddev	44.3	276.	34.7
%RSD	.51002	.52714	1.3639
#1	8712.8	51991.	2529.8
#2	8698.3	52534.	2523.1
#3	8629.9	52343.	2586.3

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 0:42:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50445	258.44	.25287	-.02137	.25789	.23434	248.80	.48765
Stddev	.00262	.64	.00200	.00127	.00279	.00053	1.58	.00305
%RSD	.51933	.24817	.79007	5.9512	1.0819	.22550	.63387	.62636
#1	.50738	258.98	.25156	-.02092	.26103	.23410	250.34	.49004
#2	.50363	257.73	.25188	-.02281	.25570	.23397	248.87	.48870
#3	.50233	258.62	.25517	-.02038	.25694	.23494	247.19	.48420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23586	.24441	.24607	95.941	5.0748	.01284	244.06	.24468
Stddev	.00239	.00022	.00330	.799	.2552	.00183	1.38	.00514
%RSD	1.0145	.09063	1.3420	.83270	5.0291	14.276	.56411	2.1022
#1	.23719	.24416	.24760	96.679	5.2910	.01485	245.62	.25020
#2	.23730	.24453	.24833	96.052	5.1401	.01124	243.56	.24384
#3	.23310	.24455	.24228	95.093	4.7933	.01244	243.01	.24001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00082	5.5086	.47332	.08682	.49116	.50117	.24881	-.01883
Stddev	.00020	.0636	.00452	.00312	.00773	.00981	.00506	.00303
%RSD	24.735	1.1550	.95592	3.5983	1.5729	1.9568	2.0355	16.104
#1	-.00060	5.5795	.47560	.08552	.49675	.50459	.25092	-.01667
#2	-.00101	5.4897	.47625	.09038	.49439	.50881	.24304	-.01753
#3	-.00086	5.4566	.46811	.08455	.48235	.49011	.25248	-.02230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 0:42:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00046**	**.01528**	**.45471**	**.24352**	**.47724**	**-.00365**
Stddev	.00022	.00062	.01129	.00542	.00062	.00539	.00054
%RSD	53.078	134.10	73.872	1.1924	.25306	1.1297	14.769
#1	.00016	.00017	.02136	.45909	.24299	.47979	-.00426
#2	.00054	.00004	.00226	.44865	.24337	.48089	-.00344
#3	.00057	.00118	.02221	.45639	.24420	.47105	-.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8595.4**	**51463.**	**2494.4**
Stddev	12.5	154.	16.1
%RSD	.14588	.29931	.64420
#1	8581.0	51365.	2476.0
#2	8601.3	51640.	2501.3
#3	8603.9	51383.	2505.9

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 0:45:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37249	9.3850	.37153	.46617	.94206	.04580	9.3425	.04736
Stddev	.00135	.0062	.00236	.00421	.00815	.00009	.1257	.00021
%RSD	.36335	.06605	.63425	.90259	.86541	.20303	1.3456	.44636
#1	.37201	9.3922	.37250	.46400	.93313	.04575	9.2021	.04760
#2	.37402	9.3815	.37325	.46348	.94911	.04591	9.4445	.04730
#3	.37145	9.3814	.36885	.47102	.94393	.04575	9.3811	.04719
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18881	.46476	.47375	3.7404	47.124	.95096	9.4232	.47238
Stddev	.00059	.00211	.00197	.0379	.346	.01412	.1940	.00206
%RSD	.31469	.45346	.41514	1.0141	.73325	1.4848	2.0589	.43640
#1	.18948	.46353	.47602	3.7313	46.726	.93751	9.5290	.47025
#2	.18859	.46356	.47266	3.7821	47.295	.96567	9.5413	.47436
#3	.18835	.46719	.47256	3.7079	47.350	.94969	9.1993	.47253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95052	47.859	.47282	9.4102	.47603	1.1343	.38138	4.6607
Stddev	.00385	.439	.00178	.0522	.00235	.0072	.00804	.0170
%RSD	.40470	.91770	.37626	.55421	.49431	.63621	2.1084	.36583
#1	.95410	47.399	.47476	9.4689	.47851	1.1426	.37301	4.6779
#2	.95101	48.274	.47244	9.3923	.47383	1.1311	.38207	4.6604
#3	.94645	47.904	.47126	9.3694	.47575	1.1293	.38905	4.6438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 0:45:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95197**	**.93702**	**.92263**	**.47643**	**.92448**	**.95160**	**.97507**
Stddev	.00473	.00838	.01693	.00143	.00063	.00382	.00104
%RSD	.49684	.89484	1.8346	.30081	.06802	.40092	.10630
#1	.95683	.92974	.90667	.47650	.92520	.95592	.97461
#2	.95171	.94619	.94038	.47783	.92404	.95023	.97626
#3	.94738	.93514	.92083	.47497	.92419	.94867	.97435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9087.0**	**54614.**	**2550.6**
Stddev	3.8	262.	13.9
%RSD	.04182	.47951	.54585
#1	9083.1	54480.	2543.1
#2	9087.3	54445.	2542.0
#3	9090.7	54915.	2566.6

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 0:49:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**.00400**	**.00139**	**.00122**	**.00267**	**.00003**	**.05025**	**.00011**
Stddev	.00251	.01163	.00213	.00125	.00165	.00007	.07513	.00012
%RSD	366.27	290.42	152.53	102.57	61.778	205.07	149.51	109.92
#1	-.00158	.01718	.00371	.00209	.00087	-.00002	.05175	.00020
#2	.00215	-.00482	-.00047	.00177	.00412	.00002	-.02562	.00016
#3	-.00262	-.00035	.00094	-.00021	.00303	.00011	.12463	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00016**	**-.00070**	**-.01893**	**.07755**	**.00375**	**.03834**	**-.00121**
Stddev	.00013	.00056	.00119	.00831	.13350	.00081	.08590	.00146
%RSD	171.58	345.66	170.55	43.884	172.14	21.694	224.04	120.18
#1	-.00006	.00072	-.00188	-.00946	.20051	.00374	-.05322	.00040
#2	-.00022	-.00040	.00049	-.02497	.09658	.00457	.05108	-.00244
#3	.00005	.00017	-.00070	-.02237	-.06444	.00295	.11717	-.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.01371**	**-.00046**	**-.00067**	**-.00131**	**.00551**	**-.00590**	**.00629**
Stddev	.00042	.03708	.00226	.00533	.00161	.00520	.00597	.00022
%RSD	217.83	270.34	492.60	796.20	122.75	94.376	101.19	3.4434
#1	.00027	-.00597	.00177	-.00182	-.00130	.00352	-.00607	.00632
#2	-.00054	.05648	-.00040	.00514	.00029	.00160	-.01178	.00649
#3	-.00030	-.00937	-.00275	-.00532	-.00293	.01141	.00016	.00606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 0:49:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00044	-.00315	-.00473	-.00034	.00003	.00018
Stddev	.00061	.00016	.00698	.00077	.00104	.00016	.00023
%RSD	455.77	35.798	221.58	16.356	310.41	589.77	124.55
#1	.00084	.00062	.00235	-.00465	.00045	.00020	.00037
#2	-.00027	.00040	-.00079	-.00401	.00006	-.00010	.00024
#3	-.00017	.00031	-.01101	-.00555	-.00152	-.00003	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9180.5	55417.	2549.1
Stddev	25.8	125.	21.9
%RSD	.28083	.22601	.86043
#1	9183.5	55274.	2554.0
#2	9204.7	55507.	2568.1
#3	9153.4	55471.	2525.1

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/29/2016 0:53:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00728	.16725	.00378	.07726	.01180	.00143	.35906	.00066
Stddev	.00137	.00666	.00178	.00289	.00157	.00004	.05069	.00023
%RSD	18.848	3.9821	47.186	3.7351	13.268	2.6821	14.119	34.256
#1	.00828	.16623	.00413	.07569	.01240	.00145	.41129	.00054
#2	.00785	.17436	.00184	.07549	.01298	.00145	.35585	.00053
#3	.00572	.16116	.00536	.08059	.01002	.00138	.31005	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00379	.00358	.00417	.08592	.63449	.08105	.42078	.00714
Stddev	.00037	.00061	.00084	.02959	.14149	.00217	.08217	.00569
%RSD	9.7874	16.945	20.280	34.437	22.301	2.6718	19.528	79.640
#1	.00409	.00347	.00508	.11985	.68708	.08034	.51284	.01145
#2	.00391	.00304	.00341	.07236	.74215	.08348	.39465	.00070
#3	.00338	.00424	.00401	.06554	.47423	.07932	.35486	.00927
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00745	.45225	.01495	.74739	.00741	.08220	.01330	.78982
Stddev	.00026	.01750	.00093	.01357	.00202	.00457	.00369	.00349
%RSD	3.4239	3.8702	6.2130	1.8157	27.283	5.5591	27.773	.44225
#1	.00762	.47114	.01588	.76086	.00541	.07740	.01396	.79161
#2	.00716	.43658	.01402	.74758	.00945	.08272	.01662	.79206
#3	.00758	.44903	.01495	.73372	.00736	.08649	.00932	.78580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/29/2016 0:53:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38988**	**.03952**	**.02710**	**.14360**	**.00710**	**.01660**	**.04091**
Stddev	.00438	.00037	.00041	.00006	.00032	.00023	.00032
%RSD	1.1233	.93136	1.5058	.04290	4.5228	1.3963	.77546
#1	.39331	.03950	.02704	.14359	.00677	.01680	.04127
#2	.39139	.03989	.02754	.14367	.00741	.01665	.04070
#3	.38495	.03916	.02673	.14354	.00712	.01634	.04075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9192.1**	**55588.**	**2554.1**
Stddev	31.9	43.	25.7
%RSD	.34691	.07750	1.0055
#1	9168.6	55539.	2529.3
#2	9179.3	55615.	2552.4
#3	9228.4	55612.	2580.5

Approved: June 29, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C01-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 18:09
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	NI.063016.180913
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00438		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000345	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00251	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00101	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00135	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0324		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00428	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00242		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C01-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 13:57
Collect Date:	06/17/2016 08:35	**Dilution:**	50	**File ID:**	NI.070116.135751
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.441		0.300	0.150	0.0750

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C01FD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 18:12
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	NI.063016.181225
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00431		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000340	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00247	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.000974	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00128	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0318		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00424	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00266		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C01FD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:01
Collect Date:	06/17/2016 08:35	**Dilution:**	50	**File ID:**	NI.070116.140103
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.471		0.300	0.150	0.0750

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW19F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 18:15
Collect Date:	06/17/2016 13:10	**Dilution:**	1	**File ID:**	NI.063016.181536
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0130		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00495		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.116		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0274		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.127		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.0706		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0997		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000821		0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.152		0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW19F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:04
Collect Date:	06/17/2016 13:10	**Dilution:**	10	**File ID:**	NI.070116.140414
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.695		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	1.09		0.0400	0.0200	0.0100
Zinc, Total	7440-66-6	1.09		0.500	0.250	0.125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 17:18
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	NI.063016.171806
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00149	J	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00583		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00225		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0138		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00915		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00447		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00227		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0630		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000127	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0105		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0491	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:07
Collect Date:	06/17/2016 14:20	**Dilution:**	10	**File ID:**	NI.070116.140725
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.157		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.360		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18FMS-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 17:21
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	NI.063016.172118
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.117		0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.131		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.125		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.141		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.127		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.125		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.133		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.170		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.116		0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.125		0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.131		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.160		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18FMS-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:17
Collect Date:	06/17/2016 14:20	**Dilution:**	10	**File ID:**	NI.070116.141703
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.245		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.408		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18FMSD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 17:24
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	NI.063016.172429
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.111		0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.133		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.126		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.180		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.133		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.130		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.133		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.195		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.116		0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.125		0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.147		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.181		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18FMSD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:20
Collect Date:	06/17/2016 14:20	**Dilution:**	10	**File ID:**	NI.070116.142015
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.311		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.521		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573840
Analyst: AC
Spike Analyst: AC
Run Date: 06/23/2016 09:23
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/23/2016 09:23

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621
40 & 50 ML. DIGESTION TU COA18987

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573840-02	BLANK	1	20 mL	50 mL	183.763 g	183.76 g		
2	WG573840-03	LCS	1	20 mL	50 mL	184.441 g	184.435 g	.25 mL	
3	L16061065-01	SAMP	1	20 mL	50 mL	184.148 g	184.145 g		07/01/16
4	L16061065-02	SAMP	1	20 mL	50 mL	182.231 g	182.216 g		07/01/16
5	L16061065-03	SAMP	1	20 mL	50 mL	184.52 g	184.527 g		07/01/16
6	L16061065-04	SAMP	1	20 mL	50 mL	182.46 g	182.457 g		07/01/16
7	L16061065-05	SAMP	1	20 mL	50 mL	183.334 g	183.327 g		07/01/16
8	L16061065-06	SAMP	1	20 mL	50 mL	184.895 g	184.889 g		07/01/16
9	L16061068-04	SAMP	1	20 mL	50 mL	181.9 g	181.889 g		07/01/16
10	L16061068-05	SAMP	1	20 mL	50 mL	180.941 g	180.93 g		07/01/16
11	L16061068-11	SAMP	1	20 mL	50 mL	182.577 g	182.569 g		07/01/16
12	WG573840-01	REF	1	20 mL	50 mL	180.736 g	180.717 g		
13	L16061068-13	RS04	1	20 mL	50 mL	180.736 g	180.717 g		07/01/16
14	WG573840-04	MS	1	20 mL	50 mL	176.431 g	176.415 g	.25 mL	
15	L16061068-15	MS04	1	20 mL	50 mL	176.431 g	176.415 g	.25 mL	07/01/16
16	WG573840-05	MSD	1	20 mL	50 mL	184.31 g	184.309 g	.25 mL	
17	L16061068-17	SD04	1	20 mL	50 mL	184.31 g	184.309 g	.25 mL	07/01/16
18	L16061228-01	SAMP	1	20 mL	50 mL	183.73 g	183.705 g		06/29/16
19	L16061228-02	SAMP	1	20 mL	50 mL	184.531 g	184.501 g		06/29/16
20	L16061228-03	SAMP	1	20 mL	50 mL	182.371 g	182.351 g		06/29/16
21	L16061231-01	SAMP	1	20 mL	50 mL	184.788 g	184.77 g		06/29/16
22	L16061237-01	SAMP	1	20 mL	50 mL	185.495 g	185.456 g		06/29/16
23	L16061237-02	SAMP	1	20 mL	50 mL	185.251 g	185.22 g		06/29/16
24	L16061237-03	SAMP	1	20 mL	50 mL	181.772 g	181.75 g		06/29/16
25	L16061237-04	SAMP	1	20 mL	50 mL	183.167 g	183.142 g		06/29/16
26	L16061237-05	SAMP	1	20 mL	50 mL	183.281 g	183.236 g		06/29/16
27	L16061237-06	SAMP	1	20 mL	50 mL	183.584 g	183.554 g		06/29/16

L16061068-15	Filtered Digestate
L16061068-17	Filtered Digestate
L16061065-01	Filtered Digestate
L16061065-03	Filtered Digestate
L16061065-04	Filtered Digestate
L16061068-11	Filtered Digestate
L16061068-13	Filtered Digestate
WG573840-01	Filtered Digestate
WG573840-04	Filtered Digestate

MW_DIG - Modified 09/30/2009
PDF ID: 4820394
Report generated: 06/23/2016 11:03

Microbac Laboratories Inc.
Microwave Digestion Log

WG573840-05	Filtered Digestate	SOP:
L16061228-03	Filtered Digestate	Spike Solution:
		Spike Witness:

Analyst: M
Balance:
Instrument:
Instrument Start:

Reviewer:

MW_DIG - Modified 09/30/2009
PDF ID: 4820394
Report generated: 06/23/2016 11:03

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.063016.103549	Blank	Blank		1		06/30/16 10:35
2	NI.063016.103900	WG574800-01	Calibration Point		1		06/30/16 10:39
3	NI.063016.104212	WG574800-02	Calibration Point		1		06/30/16 10:42
4	NI.063016.104523	WG574800-03	Calibration Point		1		06/30/16 10:45
5	NI.063016.104835	WG574800-04	Calibration Point		1		06/30/16 10:48
6	NI.063016.105148	WG574800-05	Initial Calibration Verification		1		06/30/16 10:51
7	NI.063016.105501	WG574800-06	Initial Calib Blank		1		06/30/16 10:55
8	NI.063016.105814	WG574800-07	Low Level Initial Calibration V		1		06/30/16 10:58
9	NI.063016.110126	WG574800-08	Interference Check		1		06/30/16 11:01
10	NI.063016.110437	WG574800-09	Interference Check		1		06/30/16 11:04
11	NI.063016.110750	WG574800-10	CCV		1		06/30/16 11:07
12	NI.063016.111102	WG574800-11	CCB		1		06/30/16 11:11
13	NI.063016.111415	WG574201-01	Method/Prep Blank	10/100	1		06/30/16 11:14
14	NI.063016.111727	WG574201-02	Laboratory Control S	10/100	1		06/30/16 11:17
15	NI.063016.112039	WG574201-03	Laboratory Control S	10/100	1		06/30/16 11:20
16	NI.063016.112351	L16061384-01	BFB-16-019	10.031/100	1		06/30/16 11:23
17	NI.063016.112702	L16061384-03	BFB-16-020	10.038/100	1		06/30/16 11:27
18	NI.063016.113014	L16061384-05	BFB-16-021	10.027/100	1		06/30/16 11:30
19	NI.063016.113325	L16061384-07	BFB-16-022	10.009/100	1		06/30/16 11:33
20	NI.063016.113637	L16061384-09	BFB-16-023	10.025/100	1		06/30/16 11:36
21	NI.063016.113948	L16061384-11	BFB-16-024	10.048/100	1		06/30/16 11:39
22	NI.063016.114300	WG574744-01	Post Digestion Spike		1	L16061384-11	06/30/16 11:43
23	NI.063016.114613	WG574800-12	CCV		1		06/30/16 11:46
24	NI.063016.114924	WG574800-13	CCB		1		06/30/16 11:49
25	NI.063016.115237	WG574744-02	Serial Dilution		5	L16061384-11	06/30/16 11:52
26	NI.063016.115550	WG574800-14	CCV		1		06/30/16 11:55
27	NI.063016.115902	WG574800-15	CCB		1		06/30/16 11:59
28	NI.063016.120956	WG573868-03	Method/Prep Blank	20/50	1		06/30/16 12:09
29	NI.063016.121308	WG573868-04	Laboratory Control S	20/50	1		06/30/16 12:13
30	NI.063016.121619	WG573868-01	Reference Sample		1	L16061130-05	06/30/16 12:16
31	NI.063016.121931	WG573868-05	Matrix Spike	20/50	1	L16061130-05	06/30/16 12:19
32	NI.063016.122242	WG573868-06	Matrix Spike Duplica	20/50	1	L16061130-05	06/30/16 12:22
33	NI.063016.122554	L16061238-01	LF003MW0306-007	20/50	1		06/30/16 12:25
34	NI.063016.122905	L16061238-02	LF003MW0307-007	20/50	1		06/30/16 12:29

Page: 1 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.063016.123217	WG574742-01	Post Digestion Spike		1	L16061238-02	06/30/16 12:32
36	NI.063016.123551	WG574742-02	Serial Dilution		5	L16061238-02	06/30/16 12:35
37	NI.063016.123903	WG574742-02	Serial Dilution		25	L16061238-02	06/30/16 12:39
38	NI.063016.124216	WG574800-16	CCV		1		06/30/16 12:42
39	NI.063016.124527	WG574800-17	CCB		1		06/30/16 12:45
40	NI.063016.124840	WG573868-02	Reference Sample		1	L16061229-03	06/30/16 12:48
41	NI.063016.125152	WG573868-07	Duplicate	20/50	1	L16061229-03	06/30/16 12:51
42	NI.063016.125503	L16061227-01	18WW22-062116	20/50	1		06/30/16 12:55
43	NI.063016.125815	L16061227-03	C04F-062116	20/50	1		06/30/16 12:58
44	NI.063016.130126	L16061227-05	C04FFD-062116	20/50	1		06/30/16 13:01
45	NI.063016.130438	L16061227-06	18CPTMW18-062116	20/50	1		06/30/16 13:04
46	NI.063016.130749	L16061227-07	18WW18-062116	20/50	1		06/30/16 13:07
47	NI.063016.131101	L16061129-01	MW-22-002	20/50	1		06/30/16 13:11
48	NI.063016.131412	L16061129-02	MW-22-010	20/50	1		06/30/16 13:14
49	NI.063016.131724	L16061129-03	MW-22-007	20/50	1		06/30/16 13:17
50	NI.063016.132037	WG574800-18	CCV		1		06/30/16 13:20
51	NI.063016.132348	WG574800-19	CCB		1		06/30/16 13:23
52	NI.063016.132701	L16061129-04	FD061716	20/50	1		06/30/16 13:27
53	NI.063016.133013	L16061129-05	EB-WATER A	20/50	1		06/30/16 13:30
54	NI.063016.133324	L16061130-01	MW-23-012	20/50	1		06/30/16 13:33
55	NI.063016.133636	L16061130-02	MW-23-003	20/50	1		06/30/16 13:36
56	NI.063016.133947	L16061130-03	MW-23-013	20/50	1		06/30/16 13:39
57	NI.063016.134259	L16061130-04	MW-23-001	20/50	1		06/30/16 13:42
58	NI.063016.134610	L16061380-01	XU936TW003A	20/50	50		06/30/16 13:46
59	NI.063016.134922	L16061380-02	XU936TW003C	20/50	50		06/30/16 13:49
60	NI.063016.135234	WG574800-20	CCV		1		06/30/16 13:52
61	NI.063016.135546	WG574800-21	CCB		1		06/30/16 13:55
62	NI.063016.135859	WG574800-22	Low Level Continuing Calibra		1		06/30/16 13:58
63	NI.063016.140445	WG574262-01	Method/Prep Blank	.25/100	1		06/30/16 14:04
64	NI.063016.140756	WG574262-02	Laboratory Control S	.25/100	1		06/30/16 14:07
65	NI.063016.141108	WG574262-03	Laboratory Control S	.25/100	1		06/30/16 14:11
66	NI.063016.141419	L16061291-01	V6F0270-01	.251/100	1		06/30/16 14:14
67	NI.063016.141731	WG574807-01	Post Digestion Spike		1	L16061291-01	06/30/16 14:17
68	NI.063016.142042	WG574807-02	Serial Dilution		5	L16061291-01	06/30/16 14:20

Page: 2 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.063016.142354	WG574807-02	Serial Dilution		25	L16061291-01	06/30/16 14:23
70	NI.063016.142707	WG574800-23	CCV		1		06/30/16 14:27
71	NI.063016.143019	WG574800-24	CCB		1		06/30/16 14:30
72	NI.063016.143630	WG573868-02	Reference Sample		1000	L16061229-03	06/30/16 14:36
73	NI.063016.143942	WG573868-07	Duplicate	20/50	1000	L16061229-03	06/30/16 14:39
74	NI.063016.144253	L16061227-01	18WW22-062116	20/50	20		06/30/16 14:42
75	NI.063016.144605	L16061227-03	C04F-062116	20/50	20		06/30/16 14:46
76	NI.063016.144917	L16061227-05	C04FFD-062116	20/50	20		06/30/16 14:49
77	NI.063016.145228	L16061227-06	18CPTMW18-062116	20/50	100		06/30/16 14:52
78	NI.063016.145540	L16061227-07	18WW18-062116	20/50	100		06/30/16 14:55
79	NI.063016.145853	WG574800-25	CCV		1		06/30/16 14:58
80	NI.063016.150204	WG574800-26	CCB		1		06/30/16 15:02
81	NI.063016.150517	WG574800-27	Low Level Continuing Calibra		1		06/30/16 15:05
82	NI.063016.151448	WG573728-03	Method/Prep Blank	20/50	1		06/30/16 15:14
83	NI.063016.151800	WG573728-04	Laboratory Control S	20/50	1		06/30/16 15:18
84	NI.063016.152111	L16060996-01	MW-21-007		1	WG573728-01	06/30/16 15:21
85	NI.063016.152423	L16060996-02	MW-21-007 MS	20/50	1	WG573728-05	06/30/16 15:24
86	NI.063016.152734	L16060996-03	MW-21-007 MSD	20/50	1	WG573728-06	06/30/16 15:27
87	NI.063016.153046	L16061148-01	DP005SW0513-007	20/50	1		06/30/16 15:30
88	NI.063016.153357	L16061148-02	DP005SW0514-007	20/50	1		06/30/16 15:33
89	NI.063016.153709	WG574806-01	Post Digestion Spike		1	L16061148-02	06/30/16 15:37
90	NI.063016.154020	WG574806-02	Serial Dilution		5	L16061148-02	06/30/16 15:40
91	NI.063016.154332	WG574806-02	Serial Dilution		25	L16061148-02	06/30/16 15:43
92	NI.063016.154645	WG574800-28	CCV		1		06/30/16 15:46
93	NI.063016.154956	WG574800-29	CCB		1		06/30/16 15:49
94	NI.063016.155309	L16061150-01	SS007SW0709-007	20/50	1		06/30/16 15:53
95	NI.063016.155621	L16061150-02	SS007SW0710-007	20/50	1		06/30/16 15:56
96	NI.063016.155932	L16060996-04	MW-21-006	20/50	1		06/30/16 15:59
97	NI.063016.160243	L16060996-05	MW-21-002	20/50	1		06/30/16 16:02
98	NI.063016.160555	L16060996-06	FD-061516-21	20/50	1		06/30/16 16:05
99	NI.063016.160906	L16060996-07	MW-21-009	20/50	1		06/30/16 16:09
100	NI.063016.161218	L16060996-08	MW-21-005	20/50	1		06/30/16 16:12
101	NI.063016.161529	L16060996-09	MW-21-004	20/50	1		06/30/16 16:15
102	NI.063016.161840	L16061030-02	SW1A-322-14	20/50	1		06/30/16 16:18

Page: 3 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.063016.162152	L16061030-05	SW1B-322-14	20/50	1		06/30/16 16:21
104	NI.063016.162505	WG574800-30	CCV		1		06/30/16 16:25
105	NI.063016.162816	WG574800-31	CCB		1		06/30/16 16:28
106	NI.063016.163129	L16061030-08	SW2A-322-14	20/50	1		06/30/16 16:31
107	NI.063016.163440	L16061030-13	SW3A-322-14		1	WG573728-02	06/30/16 16:34
108	NI.063016.163752	L16061030-14	SW3A-322-14	20/50	1	WG573728-07	06/30/16 16:37
109	NI.063016.164103	L16061030-15	SW3A-322-14	20/50	1	WG573728-08	06/30/16 16:41
110	NI.063016.164415	L16061030-20	SW4A-322-14	20/50	1		06/30/16 16:44
111	NI.063016.170207	L16061030-23	SW5A-322-14	20/50	1		06/30/16 17:02
112	NI.063016.170519	WG574800-32	CCV		1		06/30/16 17:05
113	NI.063016.170831	WG574800-33	CCB		1		06/30/16 17:08
114	NI.063016.171143	WG573840-02	Method/Prep Blank	20/50	1		06/30/16 17:11
115	NI.063016.171455	WG573840-03	Laboratory Control S	20/50	1		06/30/16 17:14
116	NI.063016.171806	WG573840-01	Reference Sample		1	L16061068-13	06/30/16 17:18
117	NI.063016.172118	WG573840-04	Matrix Spike	20/50	1	L16061068-13	06/30/16 17:21
118	NI.063016.172429	WG573840-05	Matrix Spike Duplica	20/50	1	L16061068-13	06/30/16 17:24
119	NI.063016.172741	L16061228-01	SS007MWOB03-007	20/50	1		06/30/16 17:27
120	NI.063016.173052	L16061228-02	SS007MWN751-007	20/50	1		06/30/16 17:30
121	NI.063016.173403	WG574804-01	Post Digestion Spike		1	L16061228-02	06/30/16 17:34
122	NI.063016.173715	WG574804-02	Serial Dilution		5	L16061228-02	06/30/16 17:37
123	NI.063016.174026	WG574804-02	Serial Dilution		25	L16061228-02	06/30/16 17:40
124	NI.063016.174340	WG574800-34	CCV		1		06/30/16 17:43
125	NI.063016.174651	WG574800-35	CCB		1		06/30/16 17:46
126	NI.063016.175004	L16061065-01	MW-23-007	20/50	1		06/30/16 17:50
127	NI.063016.175316	L16061065-02	MW-23-006	20/50	1		06/30/16 17:53
128	NI.063016.175627	L16061065-03	MW-23-008	20/50	1		06/30/16 17:56
129	NI.063016.175939	L16061065-04	MW-23-009	20/50	1		06/30/16 17:59
130	NI.063016.180250	L16061065-05	MW-23-010	20/50	1		06/30/16 18:02
131	NI.063016.180602	L16061065-06	MW-23-011	20/50	1		06/30/16 18:06
132	NI.063016.180913	L16061068-04	C01-061716	20/50	1		06/30/16 18:09
133	NI.063016.181225	L16061068-05	C01FD-061716	20/50	1		06/30/16 18:12
134	NI.063016.181536	L16061068-11	MW19F-061716	20/50	1		06/30/16 18:15
135	NI.063016.181847	L16061228-03	SS007MWN753-007	20/50	1		06/30/16 18:18
136	NI.063016.182201	WG574800-36	CCV		1		06/30/16 18:22

Page: 4 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.063016.182512	WG574800-37	CCB		1		06/30/16 18:25
138	NI.063016.182825	L16061231-01	FT002MW0205-007	20/50	1		06/30/16 18:28
139	NI.063016.183136	L16061237-01	SS007MWN769-007	20/50	1		06/30/16 18:31
140	NI.063016.183448	L16061237-02	SS007MWN740-007	20/50	1		06/30/16 18:34
141	NI.063016.183759	L16061237-03	SS007MWN740-007 DUP	20/50	1		06/30/16 18:37
142	NI.063016.184111	L16061237-04	SS007MWN738-007	20/50	1		06/30/16 18:41
143	NI.063016.184422	L16061237-05	SS007MWN741-007	20/50	1		06/30/16 18:44
144	NI.063016.184734	L16061237-06	SS007MWNOB09-007	20/50	1		06/30/16 18:47
145	NI.063016.185046	WG574800-38	CCV		1		06/30/16 18:50
146	NI.063016.185358	WG574800-39	CCB		1		06/30/16 18:53
147	NI.063016.185710	WG574593-02	Method/Prep Blank	20/50	1		06/30/16 18:57
148	NI.063016.190021	WG574593-03	Laboratory Control S	20/50	1		06/30/16 19:00
149	NI.063016.190333	WG574519-01	Fluid Blank 2		1		06/30/16 19:03
150	NI.063016.190644	WG574593-01	Reference Sample		1	L16061536-01	06/30/16 19:06
151	NI.063016.190956	WG574593-04	Duplicate	20/50	1	L16061536-01	06/30/16 19:09
152	NI.063016.191307	WG574593-05	Matrix Spike	20/50	1	L16061536-01	06/30/16 19:13
153	NI.063016.191619	WG574593-06	Matrix Spike Duplica	20/50	1	L16061536-01	06/30/16 19:16
154	NI.063016.191930	L16061496-02	60500-SSP0043-SSP0043	20/50	1		06/30/16 19:19
155	NI.063016.192242	WG574849-01	Post Digestion Spike		1	L16061496-02	06/30/16 19:22
156	NI.063016.192553	L16061496-02	60500-SSP0043-SSP0043		5		06/30/16 19:25
157	NI.063016.192906	WG574800-40	CCV		1		06/30/16 19:29
158	NI.063016.193217	WG574800-41	CCB		1		06/30/16 19:32
159	NI.063016.193530	WG574849-02	Serial Dilution		25	L16061496-02	06/30/16 19:35
160	NI.063016.193841	L16061498-01	AG6056	20/50	1		06/30/16 19:38
161	NI.063016.194153	L16061529-01	J6E1295-01	20/50	1		06/30/16 19:41
162	NI.063016.194506	L16061529-02	J6E1295-02	20/50	1		06/30/16 19:45
163	NI.063016.194817	L16061529-03	J6E1295-03	20/50	1		06/30/16 19:48
164	NI.063016.195129	L16061529-04	J6E1295-04	20/50	1		06/30/16 19:51
165	NI.063016.195440	L16061529-05	J6E1295-05	20/50	1		06/30/16 19:54
166	NI.063016.195752	L16061529-06	J6E1295-06	20/50	1		06/30/16 19:57
167	NI.063016.200103	L16061529-07	J6E1295-07	20/50	1		06/30/16 20:01
168	NI.063016.200415	L16061529-08	J6E1295-08	20/50	1		06/30/16 20:04
169	NI.063016.200728	WG574800-42	CCV		1		06/30/16 20:07
170	NI.063016.201039	WG574800-43	CCB		1		06/30/16 20:10

Page: 5 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	NI.063016.201352	L16061529-09	J6E1295-09	20/50	1		06/30/16 20:13
172	NI.063016.201704	L16061529-10	J6E1295-10	20/50	1		06/30/16 20:17
173	NI.063016.202016	L16061529-11	J6E1295-11	20/50	1		06/30/16 20:20
174	NI.063016.202327	L16061529-12	J6E1295-12	20/50	1		06/30/16 20:23
175	NI.063016.202639	L16061529-13	J6E1295-13	20/50	1		06/30/16 20:26
176	NI.063016.202950	L16061532-01	TS935TW011A	20/50	1		06/30/16 20:29
177	NI.063016.203303	WG574800-44	CCV		1		06/30/16 20:33
178	NI.063016.203614	WG574800-45	CCB		1		06/30/16 20:36
179	NI.063016.203927	WG574800-46	Low Level Continuing Calibra		1		06/30/16 20:39
180	NI.063016.204240	L16060362-03	6060227-03		25		06/30/16 20:42
181	NI.063016.204553	WG574800-47	QC Std 6		1		06/30/16 20:45
182	NI.063016.204904	WG574800-48	QC Std 7		1		06/30/16 20:49

Page: 6 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.070116.102728	Blank	Blank		1		07/01/16 10:27
2	NI.070116.103040	WG575028-01	Calibration Point		1		07/01/16 10:30
3	NI.070116.103351	WG575028-02	Calibration Point		1		07/01/16 10:33
4	NI.070116.103702	WG575028-03	Calibration Point		1		07/01/16 10:37
5	NI.070116.104014	WG575028-04	Calibration Point		1		07/01/16 10:40
6	NI.070116.104327	WG575028-05	Initial Calibration Verification		1		07/01/16 10:43
7	NI.070116.104640	WG575028-06	Initial Calib Blank		1		07/01/16 10:46
8	NI.070116.104953	WG575028-07	Low Level Initial Calibration V		1		07/01/16 10:49
9	NI.070116.105304	WG575028-08	Interference Check		1		07/01/16 10:53
10	NI.070116.105616	WG575028-09	Interference Check		1		07/01/16 10:56
11	NI.070116.105929	WG575028-10	CCV		1		07/01/16 10:59
12	NI.070116.110241	WG575028-11	CCB		1		07/01/16 11:02
13	NI.070116.110553	WG574416-04	Method/Prep Blank	20/50	1		07/01/16 11:05
14	NI.070116.110904	WG574416-05	Laboratory Control S	20/50	1		07/01/16 11:09
15	NI.070116.111216	WG574416-01	Reference Sample		1	L16061417-05	07/01/16 11:12
16	NI.070116.111527	WG574416-06	Matrix Spike	20/50	1	L16061417-05	07/01/16 11:15
17	NI.070116.111839	WG574416-07	Matrix Spike Duplica	20/50	1	L16061417-05	07/01/16 11:18
18	NI.070116.112150	L16061417-01	SS007MW0B04-007	20/50	1		07/01/16 11:21
19	NI.070116.112502	L16061417-02	SS007MW0B06-007	20/50	1		07/01/16 11:25
20	NI.070116.112813	WG574808-01	Post Digestion Spike		1	L16061417-02	07/01/16 11:28
21	NI.070116.113125	WG574808-02	Serial Dilution		5	L16061417-02	07/01/16 11:31
22	NI.070116.113436	WG574808-02	Serial Dilution		25	L16061417-02	07/01/16 11:34
23	NI.070116.113750	WG575028-12	CCV		1		07/01/16 11:37
24	NI.070116.114101	WG575028-13	CCB		1		07/01/16 11:41
25	NI.070116.114414	L16061417-03	SS007MW0B06-007DUP	20/50	1		07/01/16 11:44
26	NI.070116.114726	L16061417-04	SS007MW0B13-007	20/50	1		07/01/16 11:47
27	NI.070116.115037	L16061417-08	SS007MWN748-007	20/50	1		07/01/16 11:50
28	NI.070116.115349	L16061417-09	FQC-RB06221601-CC	20/50	1		07/01/16 11:53
29	NI.070116.115701	L16061441-01	TS935TW002A	20/50	1		07/01/16 11:57
30	NI.070116.120012	L16061441-02	TS935TW005A	20/50	1		07/01/16 12:00
31	NI.070116.120324	WG574416-02	Reference Sample		1	L16061442-01	07/01/16 12:03
32	NI.070116.120635	L16061442-02	TS935TW010C	20/50	1		07/01/16 12:06
33	NI.070116.120947	WG574416-08	Matrix Spike	20/50	1	L16061442-01	07/01/16 12:09
34	NI.070116.121258	WG574416-09	Matrix Spike Duplica	20/50	1	L16061442-01	07/01/16 12:12

Page: 1 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.070116.121611	WG575028-14	CCV		1		07/01/16 12:16
36	NI.070116.121923	WG575028-15	CCB		1		07/01/16 12:19
37	NI.070116.122236	L16061446-01	GH9-HSPRING	20/50	1		07/01/16 12:22
38	NI.070116.122548	WG574416-03	Reference Sample		1	L16061447-01	07/01/16 12:25
39	NI.070116.122859	WG574416-10	Duplicate	20/50	1	L16061447-01	07/01/16 12:28
40	NI.070116.123211	L16061289-01	MW21-062216	20/50	1		07/01/16 12:32
41	NI.070116.123523	L16061289-04	18WW02F-062216	20/50	1		07/01/16 12:35
42	NI.070116.123834	L16061290-03	MW16F-062116	20/50	1		07/01/16 12:38
43	NI.070116.124145	L16061290-05	109-062216	20/50	1		07/01/16 12:41
44	NI.070116.124458	WG575028-16	CCV		1		07/01/16 12:44
45	NI.070116.124810	WG575028-17	CCB		1		07/01/16 12:48
46	NI.070116.125836	WG574419-03	Method/Prep Blank	20/50	1		07/01/16 12:58
47	NI.070116.130334	WG574419-04	Laboratory Control S	20/50	1		07/01/16 13:03
48	NI.070116.130646	WG574419-01	Reference Sample		1	L16061400-06	07/01/16 13:06
49	NI.070116.130957	WG574419-05	Matrix Spike	20/50	1	L16061400-06	07/01/16 13:09
50	NI.070116.131309	WG574419-06	Matrix Spike Duplica	20/50	1	L16061400-06	07/01/16 13:13
51	NI.070116.131620	WG574419-02	Reference Sample		1	L16061427-01	07/01/16 13:16
52	NI.070116.131932	WG574419-07	Duplicate	20/50	1	L16061427-01	07/01/16 13:19
53	NI.070116.132243	L16061468-01	H6F0605-01	20/50	1		07/01/16 13:22
54	NI.070116.132555	WG574824-01	Post Digestion Spike		1	L16061468-01	07/01/16 13:25
55	NI.070116.132906	WG574824-02	Serial Dilution		5	L16061468-01	07/01/16 13:29
56	NI.070116.133218	WG575028-18	CCV		1		07/01/16 13:32
57	NI.070116.133530	WG575028-19	CCB		1		07/01/16 13:35
58	NI.070116.133842	L16061470-01	S6F0639-01	20/50	1		07/01/16 13:38
59	NI.070116.134154	L16061471-01	S6F0244-01	20/50	1		07/01/16 13:41
60	NI.070116.134505	WG574593-01	Reference Sample		2	L16061536-01	07/01/16 13:45
61	NI.070116.134817	WG574593-04	Duplicate	20/50	2	L16061536-01	07/01/16 13:48
62	NI.070116.135128	WG574593-05	Matrix Spike	20/50	2	L16061536-01	07/01/16 13:51
63	NI.070116.135440	WG574593-06	Matrix Spike Duplica	20/50	2	L16061536-01	07/01/16 13:54
64	NI.070116.135751	L16061068-04	C01-061716	20/50	50		07/01/16 13:57
65	NI.070116.140103	L16061068-05	C01FD-061716	20/50	50		07/01/16 14:01
66	NI.070116.140414	L16061068-11	MW19F-061716	20/50	10		07/01/16 14:04
67	NI.070116.140725	WG574840-01	Post Digestion Spike		10	L16061622-02	07/01/16 14:07
68	NI.070116.141039	WG575028-20	CCV		1		07/01/16 14:10

Page: 2 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.070116.141350	WG575028-21	CCB		1		07/01/16 14:13
70	NI.070116.141703	WG574840-04	L1606106815S WG574840-0	20/50	10		07/01/16 14:17
71	NI.070116.142015	WG574840-05	L1606106817SD WG574840	20/50	10		07/01/16 14:20
72	NI.070116.142326	L16061065-02	MW-23-006	20/50	50		07/01/16 14:23
73	NI.070116.142637	L16061065-03	MW-23-008	20/50	50		07/01/16 14:26
74	NI.070116.142949	L16061065-04	MW-23-009	20/50	50		07/01/16 14:29
75	NI.070116.143302	WG575028-22	CCV		1		07/01/16 14:33
76	NI.070116.143613	WG575028-23	CCB		1		07/01/16 14:36
77	NI.070116.143926	WG575028-24	Low Level Continuing Calibra		1		07/01/16 14:39
78	NI.070116.151112	L16061360-01	NP0116-LM1	20/50	1		07/01/16 15:11
79	NI.070116.151423	L16061360-02	EB-062416	20/50	1		07/01/16 15:14
80	NI.070116.151735	L16061400-01	MW-22-008	20/50	1		07/01/16 15:17
81	NI.070116.152046	L16061400-02	MW-22-016	20/50	1		07/01/16 15:20
82	NI.070116.152358	L16061400-03	MW-22-006	20/50	1		07/01/16 15:23
83	NI.070116.152709	L16061400-04	MW-22-005	20/50	1		07/01/16 15:27
84	NI.070116.153021	L16061400-05	MW-22-001	20/50	1		07/01/16 15:30
85	NI.070116.153332	L16061400-09	MW-22-003	20/50	1		07/01/16 15:33
86	NI.070116.153643	L16061400-10	MW-22-004	20/50	1		07/01/16 15:36
87	NI.070116.153955	L16061444-11	EB03	20/50	1		07/01/16 15:39
88	NI.070116.154308	WG575028-25	CCV		1		07/01/16 15:43
89	NI.070116.154619	WG575028-26	CCB		1		07/01/16 15:46
90	NI.070116.154932	L16061452-01	18CPTMW12SW-062416	20/50	1		07/01/16 15:49
91	NI.070116.155244	L16061453-01	MW2-062416	20/50	1		07/01/16 15:52
92	NI.070116.155555	L16061453-03	18CPTMW01SW-062416	20/50	1		07/01/16 15:55
93	NI.070116.155907	WG574419-02	Reference Sample		5	L16061427-01	07/01/16 15:59
94	NI.070116.160218	WG574419-07	Duplicate	20/50	5	L16061427-01	07/01/16 16:02
95	NI.070116.160530	L16061289-01	MW21-062216	20/50	50		07/01/16 16:05
96	NI.070116.160841	L16061290-03	MW16F-062116	20/50	10		07/01/16 16:08
97	NI.070116.161155	WG575028-27	CCV		1		07/01/16 16:11
98	NI.070116.161506	WG575028-28	CCB		1		07/01/16 16:15
99	NI.070116.163708	WG574521-03	Method/Prep Blank	.25/100	1		07/01/16 16:37
100	NI.070116.164019	WG574521-04	Laboratory Control S	.25/100	1		07/01/16 16:40
101	NI.070116.164331	WG574521-01	Reference Sample		1	L16061445-04	07/01/16 16:43
102	NI.070116.164642	WG574521-05	Matrix Spike	.254/100	1	L16061445-04	07/01/16 16:46

Page: 3 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.070116.164954	WG574521-06	Matrix Spike Duplica	.25/100	1	L16061445-04	07/01/16 16:49
104	NI.070116.165305	L16061451-01	GS165SS062016S-ES	.251/100	1		07/01/16 16:53
105	NI.070116.165617	L16061451-02	GS159SS062116G-ES	.25/100	1		07/01/16 16:56
106	NI.070116.165928	WG575057-01	Post Digestion Spike		1	L16061451-02	07/01/16 16:59
107	NI.070116.170240	WG575057-02	Serial Dilution		5	L16061451-02	07/01/16 17:02
108	NI.070116.170552	WG575057-02	Serial Dilution		25	L16061451-02	07/01/16 17:05
109	NI.070116.170905	WG575028-29	CCV		1		07/01/16 17:09
110	NI.070116.171217	WG575028-30	CCB		1		07/01/16 17:12
111	NI.070116.171825	L16061451-03	GS164SS062116S-ES	.251/100	1		07/01/16 17:18
112	NI.070116.172204	L16061451-04	GS164SS062116P-ES	.253/100	1		07/01/16 17:22
113	NI.070116.172516	L16061451-05	GS154SS062316X-ES	.253/100	1		07/01/16 17:25
114	NI.070116.172827	WG574521-02	Reference Sample		1	L16061451-06	07/01/16 17:28
115	NI.070116.173139	L16061451-07	GS153SS0622316X-ES	.253/100	1		07/01/16 17:31
116	NI.070116.173450	L16061451-08	GS153SS062316X-ESD	.256/100	1		07/01/16 17:34
117	NI.070116.173802	WG574521-07	Matrix Spike	.258/100	1	L16061451-06	07/01/16 17:38
118	NI.070116.174113	WG574521-08	Matrix Spike Duplica	.256/100	1	L16061451-06	07/01/16 17:41
119	NI.070116.174425	L16061445-01	TS935DS00700A	.258/100	1		07/01/16 17:44
120	NI.070116.174736	L16061445-02	TS935DS00705A	.256/100	1		07/01/16 17:47
121	NI.070116.175049	WG575028-31	CCV		1		07/01/16 17:50
122	NI.070116.175401	WG575028-32	CCB		1		07/01/16 17:54
123	NI.070116.175714	L16061445-03	TS935DS00800A		1		07/01/16 17:57
124	NI.070116.180025	L16061445-07	TS935DS00900A		1		07/01/16 18:00
125	NI.070116.180337	L16061445-08	TS935DS00905A		1		07/01/16 18:03
126	NI.070116.180648	L16061445-09	TS935DS00905C		1		07/01/16 18:06
127	NI.070116.181000	L16061445-10	TS935DS01000A		1		07/01/16 18:10
128	NI.070116.181311	L16061445-11	TS935DS01005A		1		07/01/16 18:13
129	NI.070116.181623	L16061445-12	TS935DS01205A		1		07/01/16 18:16
130	NI.070116.181934	L16061451-01	GS165SS062016S-ES		10		07/01/16 18:19
131	NI.070116.182246	L16061451-02	GS159SS062116G-ES		10		07/01/16 18:22
132	NI.070116.182557	WG575057-01	Post Digestion Spike		10	L16061451-02	07/01/16 18:25
133	NI.070116.182910	WG575028-33	CCV		1		07/01/16 18:29
134	NI.070116.183222	WG575028-34	CCB		1		07/01/16 18:32
135	NI.070116.183535	WG575057-02	Serial Dilution		50	L16061451-02	07/01/16 18:35
136	NI.070116.183846	L16061451-03	GS164SS062116S-ES		10		07/01/16 18:38

Page: 4 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.070116.184158	L16061451-04	GS164SS062116P-ES		10		07/01/16 18:41
138	NI.070116.184509	L16061451-05	GS154SS062316X-ES		10		07/01/16 18:45
139	NI.070116.184821	WG574521-02	Reference Sample		10	L16061451-06	07/01/16 18:48
140	NI.070116.185132	L16061451-07	GS153SS0622316X-ES		10		07/01/16 18:51
141	NI.070116.185444	L16061451-08	GS153SS062316X-ESD		10		07/01/16 18:54
142	NI.070116.185755	WG574521-07	Matrix Spike		10	L16061451-06	07/01/16 18:57
143	NI.070116.190107	WG574521-08	Matrix Spike Duplica		10	L16061451-06	07/01/16 19:01
144	NI.070116.190419	WG575028-35	CCV		1		07/01/16 19:04
145	NI.070116.190731	WG575028-36	CCB		1		07/01/16 19:07
146	NI.070116.191044	WG575028-37	Low Level Continuing Calibra		1		07/01/16 19:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
67				
Seq. 67, 70-71: wrong WG numbers. JYH				

Page: 5 Approved: July 05, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 574800
Runlog ID: 76036
Analytical Workgroups: 574744,574571,574742,574807,574804,574806,574849

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1384,1129,1130,1065,996,1532
Level 4	1380,1227,1238,1068,1228,1231
	1237,1148,1150,1496,1498
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
30-JUN-2016

Secondary Reviewer:
01-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-01-2016 12:44:08

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 575028
Runlog ID: 76079
Analytical Workgroups: 574808,574849,574824,574804,575057

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1441,1442,1360,1400,1444,1445
Level 4	1289,12901417,1452,1453,1068
	1065,1451
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:

Secondary Reviewer:
05-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 15:57:13

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG574804

Login Number: L16061068

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
C01-061716	04	06/17/16					06/23/2016	6	180		06/30/16	13.4	180	
C01-061716	04	06/17/16					06/23/2016	6	180		07/01/16	14.2	180	
C01FD-061716	05	06/17/16					06/23/2016	6	180		07/01/16	14.2	180	
C01FD-061716	05	06/17/16					06/23/2016	6	180		06/30/16	13.4	180	
MW19F-061716	11	06/17/16					06/23/2016	5.8	180		07/01/16	14	180	
MW19F-061716	11	06/17/16					06/23/2016	5.8	180		06/30/16	13.2	180	
MW18F-061716	13	06/17/16					06/23/2016	5.8	180		07/01/16	14	180	
MW18F-061716	13	06/17/16					06/23/2016	5.8	180		06/30/16	13.1	180	
MW18FMS-061716	15	06/17/16					06/23/2016	5.8	180		06/30/16	13.1	180	
MW18FMS-061716	15	06/17/16					06/23/2016	5.8	180		07/01/16	14	180	
MW18FMSD-061716	17	06/17/16					06/23/2016	5.8	180		07/01/16	14	180	
MW18FMSD-061716	17	06/17/16					06/23/2016	5.8	180		06/30/16	13.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4835989
Report generated 07/01/2016 15:24

METHOD BLANK SUMMARY

Login Number: L16061068
Blank File ID: NI.063016.171143
Prep Date: 06/23/16 09:23
Analyzed Date: 06/30/16 17:11
Analyst: JYH

Work Group: WG574804
Blank Sample ID: WG573840-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573840-03	NI.063016.171455	06/30/16 17:14	01
MW18F-061716	L16061068-13	NI.063016.171806	06/30/16 17:18	01
MW18FMS-061716	L16061068-15	NI.063016.172118	06/30/16 17:21	01
MW18FMSD-061716	L16061068-17	NI.063016.172429	06/30/16 17:24	01
C01-061716	L16061068-04	NI.063016.180913	06/30/16 18:09	01
C01FD-061716	L16061068-05	NI.063016.181225	06/30/16 18:12	01
MW19F-061716	L16061068-11	NI.063016.181536	06/30/16 18:15	01
C01-061716	L16061068-04	NI.070116.135751	07/01/16 13:57	DL01
C01FD-061716	L16061068-05	NI.070116.140103	07/01/16 14:01	DL01
MW19F-061716	L16061068-11	NI.070116.140414	07/01/16 14:04	DL01
MW18F-061716	L16061068-13	NI.070116.140725	07/01/16 14:07	DL01
MW18FMS-061716	L16061068-15	NI.070116.141703	07/01/16 14:17	DL01
MW18FMSD-061716	L16061068-17	NI.070116.142015	07/01/16 14:20	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4836148
Report generated 07/01/2016 15:24

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/23/16 09:23 Sample ID: WG573840-02
Instrument ID: ICP-MS2 Run Date: 06/30/16 17:11 Prep Method: 3015
File ID: NI.063016.171143 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574804 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4836149
01-JUL-2016 15:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG573840-03
Instrument ID: ICP-MS2 Run Time: 17:14 Prep Method: 3015
File ID: NI.063016.171455 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574804 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-30-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.120	96.1	80 - 120	
Arsenic, Total	0.125	0.122	97.3	80 - 120	
Barium, Total	0.125	0.125	100	80 - 120	
Cadmium, Total	0.125	0.125	99.7	80 - 120	
Chromium, Total	0.125	0.129	103	80 - 120	
Cobalt, Total	0.125	0.125	100	80 - 120	
Copper, Total	0.125	0.130	104	80 - 120	
Lead, Total	0.125	0.133	107	80 - 120	
Manganese, Total	0.125	0.128	103	80 - 120	
Nickel, Total	0.125	0.130	104	80 - 120	
Silver, Total	0.125	0.126	101	80 - 120	
Thallium, Total	0.125	0.129	103	80 - 120	
Vanadium, Total	0.125	0.126	100	80 - 120	
Zinc, Total	0.125	0.130	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4836150
Report generated: 07/01/2016 15:24

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: ICP-MS2- 30-JUN-16 Worknum: WG574804
Instrument ID: ICP-MS2 Contract #: Prep Method: 3015
Parent ID: L16061068-13 File ID: NI.063016.171806 Dil: 1 Method: 6020
Sample ID: L16061068-15 MS File ID: NI.063016.172118 Dil: 1 Matrix: Water
Sample ID: L16061068-17 MSD File ID: NI.063016.172429 Dil: 1 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony, Total	0.00149	0.125	0.117	92.6	0.125	0.111	87.3	5.82	80 - 120	20	
Arsenic, Total	0.00583	0.125	0.131	99.9	0.125	0.133	102	1.60	80 - 120	20	
Cadmium, Total	0.00225	0.125	0.125	97.9	0.125	0.126	99.4	1.43	80 - 120	20	
Chromium, Total	0.0138	0.125	0.141	102	0.125	0.180	133	24.2	80 - 120	20	*#
Cobalt, Total	0.00915	0.125	0.127	94.3	0.125	0.133	99.1	4.56	80 - 120	20	
Copper, Total	0.00447	0.125	0.125	96.5	0.125	0.130	100	3.58	80 - 120	20	
Lead, Total	0.00227	0.125	0.133	105	0.125	0.133	104	0.219	80 - 120	20	
Nickel, Total	0.0630	0.125	0.170	85.7	0.125	0.195	105	13.5	80 - 120	20	
Silver, Total	U	0.125	0.116	92.9	0.125	0.116	92.5	0.439	80 - 120	20	
Thallium, Total	0.000127	0.125	0.125	99.8	0.125	0.125	100	0.331	80 - 120	20	
Vanadium, Total	0.0105	0.125	0.131	96.4	0.125	0.147	109	11.2	80 - 120	20	
Zinc, Total	0.0491	0.125	0.160	88.8	0.125	0.181	106	12.4	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4835993
Report generated 07/05/2016 11:24

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: ICP-MS2- 01-JUL-16 Worknum: WG574804
Instrument ID: ICP-MS2 Contract #: Prep Method: 3015
Parent ID: L16061068-13 File ID: NI.070116.140725 Dil: 10 Method: 6020
Sample ID: L16061068-15 MS File ID: NI.070116.141703 Dil: 10 Matrix: Water
Sample ID: L16061068-17 MSD File ID: NI.070116.142015 Dil: 10 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Barium, Total	0.157	0.125	0.245	70.6	0.125	0.311	124	23.9	80 - 120	20	*#
Manganese, Total	0.360	0.125	0.408	38.8	0.125	0.521	129	24.3	80 - 120	20	*#

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4835993
Report generated 07/05/2016 11:24

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061068 **Worknum:** WG574804
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574804-02 **File ID:** NI.063016.173715 **Dil:** 5 **Units:** ug/L
Sample: L16061228-02 **File ID:** NI.063016.173052 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	1.32	F	1960.00	
Arsenic	3.49	X	4.17	X	19.60	
Barium	8.08	X	8.66	F	7.22	
Cadmium	ND	U	ND	U		
Chromium	2.18	X	2.41	F	10.30	
Cobalt	0.215	F	ND	U		
Copper	1.00	F	ND	U		
Lead	0.256	F	ND	U		
Manganese	2.11	X	2.29	F	8.67	
Nickel	2.44	F	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	0.259	F	1200.00	
Vanadium	4.89	X	5.37	X	9.81	
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4835987
07/01/2016 15:24

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061068 **Worknum:** WG574804
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574804-01 **File ID:** NI.063016.173403 **Dil:** 1 **Units:** ug/L
Sample ID: L16061228-02 **File ID:** NI.063016.173052 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	47.0		0	U	50	94.0	75 - 125	
ARSENIC	53.9		3.49		50	100.8	75 - 125	
BARIUM	55.3		8.08		50	94.4	75 - 125	
CADMIUM	47.1		0	U	50	94.1	75 - 125	
CHROMIUM	52.2		2.18		50	100.0	75 - 125	
COBALT	48.2		0.215	F	50	96.0	75 - 125	
COPPER	47.7		1.00	F	50	93.4	75 - 125	
LEAD	50.9		0.256	F	50	101.2	75 - 125	
MANGANESE	51.9		2.11		50	99.5	75 - 125	
NICKEL	49.9		2.44	F	50	94.9	75 - 125	
SILVER	40.6		0	U	50	81.3	75 - 125	
THALLIUM	49.1		0	U	50	98.3	75 - 125	
VANADIUM	55.7		4.89		50	101.6	75 - 125	
ZINC	52.9		0	U	50	105.8	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4836147
Report generated: 07/01/2016 15:24

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061068	Workgroup (AAB#):	WG574804
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG574800	Initial Calibration Date:	30-JUN-2016 10:48

	WG574800-01		WG574800-02		WG574800-03		WG574800-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	70.5	.4	244	50	257000	100	505000	.999999	
ARSENIC	0	-57.0	.4	-7.10	50	66000	100	130000	.999996	
BARIUM	0	88.3	.4	161	50	111000	100	218000	1	
CADMIUM	0	5.70	.4	103	50	117000	100	230000	.999999	
CHROMIUM	0	9640	.4	9940	50	454000	100	879000	.999978	
COBALT	0	279	.4	601	50	400000	100	794000	.999998	
COPPER	0	114	.4	243	50	110000	100	211000	.999876	
LEAD	0	884	.4	1800	50	996000	100	1960000	.999999	
MANGANESE	0	954	.4	1350	50	423000	100	839000	1	
NICKEL	0	359	.4	445	50	112000	100	216000	.999936	
SILVER	0	123	.4	427	50	368000	100	716000	.999987	
THALLIUM	0	39.7	.4	401	50	446000	100	873000	.999999	
VANADIUM	0	1950	.4	2310	50	460000	100	897000	.99998	
ZINC	0	366	.4	523	50	64900	100	126000	.999968	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4835996
Report generated: 01-JUL-2016 15:25

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061068	Workgroup (AAB#):	WG574804
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG575028	Initial Calibration Date:	01-JUL-2016 10:40

	WG575028-01		WG575028-02		WG575028-03		WG575028-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	259	.4	428	50	250000	100	508000	.999935	
ARSENIC	0	-59.9	.4	5.90	50	61400	100	123000	.999997	
BARIUM	0	20.7	.4	146	50	107000	100	210000	.99998	
CADMIUM	0	2.60	.4	119	50	113000	100	223000	.999998	
CHROMIUM	0	7690	.4	8190	50	412000	100	812000	1	
COBALT	0	201	.4	604	50	385000	100	759000	.999986	
COPPER	0	167	.4	251	50	103000	100	201000	.999949	
LEAD	0	930	.4	2060	50	1040000	100	2040000	.999999	
MANGANESE	0	715	.4	1140	50	380000	100	751000	.999989	
NICKEL	0	335	.4	418	50	105000	100	205000	.999979	
SILVER	0	83.3	.4	447	50	352000	100	698000	1	
THALLIUM	0	7.70	.4	454	50	444000	100	872000	.999994	
VANADIUM	0	1560	.4	2030	50	413000	100	818000	.999998	
ZINC	0	240	.4	280	50	61600	100	122000	.999992	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4835996
Report generated: 01-JUL-2016 15:25

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061068
Instrument ID: ICP-MS2
File ID: NI.063016.105501
Workgroup (AAB#): WG574804
Matrix: WATER

Run Date: 06/30/2016
Run Time: 10:55
Analyst: JYH
Cal ID: ICP-MS2 - 30-JUN-16

Sample ID: WG574800-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.2	U
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4835998
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061068
Instrument ID: ICP-MS2
File ID: NI.070116.104640
Workgroup (AAB#): WG574804
Matrix: WATER

Run Date: 07/01/2016
Run Time: 10:46
Analyst: JYH
Cal ID: ICP-MS2 - 01-JUL-16

Sample ID: WG575028-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.2	U
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4835998
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-11
Instrument ID: ICP-MS2
Run Time: 11:11
Method: 6020A
File ID: NI.063016.111102
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836001
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-33
Instrument ID: ICP-MS2
Run Time: 17:08
Method: 6020A
File ID: NI.063016.170831
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836001
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-35
Instrument ID: ICP-MS2
Run Time: 17:46
Method: 6020A
File ID: NI.063016.174651
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836001
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-37
Instrument ID: ICP-MS2
Run Time: 18:25
Method: 6020A
File ID: NI.063016.182512
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836001
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-11
Instrument ID: ICP-MS2
Run Time: 11:02
Method: 6020A
File ID: NI.070116.110241
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.276	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836001
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-19
Instrument ID: ICP-MS2
Run Time: 13:35
Method: 6020A
File ID: NI.070116.133530
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836001
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-21
Instrument ID: ICP-MS2
Run Time: 14:13
Method: 6020A
File ID: NI.070116.141350
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836001
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-23
Instrument ID: ICP-MS2
Run Time: 14:36
Method: 6020A
File ID: NI.070116.143613
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836001
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061068 Run Date: 07/01/2016 Sample ID: WG575028-05
Instrument ID: ICP-MS2 Run Time: 10:43 Method: 6020A
File ID: NI.070116.104327 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG574804 Cal ID: ICP-MS - 01-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.5	98.9	90 - 110	
Arsenic		50	50.5	101	90 - 110	
Barium		50	49.1	98.3	90 - 110	
Cadmium		50	49.7	99.4	90 - 110	
Chromium		50	50.3	101	90 - 110	
Cobalt		50	50.9	102	90 - 110	
Copper		50	50.6	101	90 - 110	
Lead		50	50.4	101	90 - 110	
Manganese		50	51.2	102	90 - 110	
Nickel		50	50.3	101	90 - 110	
Silver		50	49.2	98.3	90 - 110	
Thallium		50	49.7	99.3	90 - 110	
Vanadium		50	50.3	101	90 - 110	
Zinc		50	51.2	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4835997
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-05
Instrument ID: ICP-MS2
Run Time: 10:51
Method: 6020A
File ID: NI.063016.105148
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.0	98.1	90 - 110	
Arsenic		50	49.6	99.2	90 - 110	
Barium		50	49.4	98.8	90 - 110	
Cadmium		50	49.6	99.2	90 - 110	
Chromium		50	49.3	98.7	90 - 110	
Cobalt		50	50.0	99.9	90 - 110	
Copper		50	49.9	99.9	90 - 110	
Lead		50	50.0	99.9	90 - 110	
Manganese		50	49.5	99.0	90 - 110	
Nickel		50	49.8	99.6	90 - 110	
Silver		50	49.5	98.9	90 - 110	
Thallium		50	50.0	100	90 - 110	
Vanadium		50	49.7	99.4	90 - 110	
Zinc		50	50.5	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4835997
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-10
Instrument ID: ICP-MS2
Run Time: 11:07
Method: 6020A
File ID: NI.063016.110750
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0497	mg/L	99.4	90 - 110		
Arsenic		0.0500	0.0500	mg/L	100	90 - 110		
Barium		0.0500	0.0490	mg/L	98.0	90 - 110		
Cadmium		0.0500	0.0493	mg/L	98.6	90 - 110		
Chromium		0.0500	0.0496	mg/L	99.1	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0502	mg/L	100	90 - 110		
Lead		0.0500	0.0502	mg/L	100	90 - 110		
Manganese		0.0500	0.0497	mg/L	99.4	90 - 110		
Nickel		0.0500	0.0499	mg/L	99.7	90 - 110		
Silver		0.0500	0.0494	mg/L	98.7	90 - 110		
Thallium		0.0500	0.0500	mg/L	100	90 - 110		
Vanadium		0.0500	0.0501	mg/L	100	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836000
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-32
Instrument ID: ICP-MS2
Run Time: 17:05
Method: 6020A
File ID: NI.063016.170519
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0489	mg/L	97.8	90 - 110		
Arsenic		0.0500	0.0488	mg/L	97.6	90 - 110		
Barium		0.0500	0.0487	mg/L	97.3	90 - 110		
Cadmium		0.0500	0.0488	mg/L	97.7	90 - 110		
Chromium		0.0500	0.0497	mg/L	99.4	90 - 110		
Cobalt		0.0500	0.0496	mg/L	99.2	90 - 110		
Copper		0.0500	0.0498	mg/L	99.6	90 - 110		
Lead		0.0500	0.0517	mg/L	103	90 - 110		
Manganese		0.0500	0.0503	mg/L	101	90 - 110		
Nickel		0.0500	0.0498	mg/L	99.5	90 - 110		
Silver		0.0500	0.0484	mg/L	96.7	90 - 110		
Thallium		0.0500	0.0500	mg/L	99.9	90 - 110		
Vanadium		0.0500	0.0493	mg/L	98.7	90 - 110		
Zinc		0.0500	0.0503	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836000
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG574800-34
Instrument ID: ICP-MS2 Run Time: 17:43 Method: 6020A
File ID: NI.063016.174340 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG574804 Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0499	mg/L	99.9	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.9	90 - 110		
Barium		0.0500	0.0496	mg/L	99.2	90 - 110		
Cadmium		0.0500	0.0500	mg/L	99.9	90 - 110		
Chromium		0.0500	0.0516	mg/L	103	90 - 110		
Cobalt		0.0500	0.0508	mg/L	102	90 - 110		
Copper		0.0500	0.0511	mg/L	102	90 - 110		
Lead		0.0500	0.0527	mg/L	105	90 - 110		
Manganese		0.0500	0.0501	mg/L	100	90 - 110		
Nickel		0.0500	0.0511	mg/L	102	90 - 110		
Silver		0.0500	0.0492	mg/L	98.4	90 - 110		
Thallium		0.0500	0.0511	mg/L	102	90 - 110		
Vanadium		0.0500	0.0504	mg/L	101	90 - 110		
Zinc		0.0500	0.0508	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836000
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-36
Instrument ID: ICP-MS2
Run Time: 18:22
Method: 6020A
File ID: NI.063016.182201
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0487	mg/L	97.4	90 - 110		
Arsenic		0.0500	0.0491	mg/L	98.1	90 - 110		
Barium		0.0500	0.0483	mg/L	96.5	90 - 110		
Cadmium		0.0500	0.0493	mg/L	98.6	90 - 110		
Chromium		0.0500	0.0503	mg/L	101	90 - 110		
Cobalt		0.0500	0.0500	mg/L	100	90 - 110		
Copper		0.0500	0.0497	mg/L	99.5	90 - 110		
Lead		0.0500	0.0523	mg/L	105	90 - 110		
Manganese		0.0500	0.0500	mg/L	100	90 - 110		
Nickel		0.0500	0.0501	mg/L	100	90 - 110		
Silver		0.0500	0.0484	mg/L	96.7	90 - 110		
Thallium		0.0500	0.0501	mg/L	100	90 - 110		
Vanadium		0.0500	0.0495	mg/L	99.0	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836000
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 07/01/2016 Sample ID: WG575028-10
Instrument ID: ICP-MS2 Run Time: 10:59 Method: 6020A
File ID: NI.070116.105929 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG574804 Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0511	mg/L	102	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0496	mg/L	99.2	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0506	mg/L	101	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0505	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0502	mg/L	100	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0509	mg/L	102	90 - 110		
Zinc		0.0500	0.0502	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836000
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-18
Instrument ID: ICP-MS2
Run Time: 13:32
Method: 6020A
File ID: NI.070116.133218
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0501	mg/L	100	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.8	90 - 110		
Barium		0.0500	0.0480	mg/L	96.0	90 - 110		
Cadmium		0.0500	0.0496	mg/L	99.2	90 - 110		
Chromium		0.0500	0.0495	mg/L	99.0	90 - 110		
Cobalt		0.0500	0.0513	mg/L	103	90 - 110		
Copper		0.0500	0.0497	mg/L	99.5	90 - 110		
Lead		0.0500	0.0511	mg/L	102	90 - 110		
Manganese		0.0500	0.0499	mg/L	99.8	90 - 110		
Nickel		0.0500	0.0496	mg/L	99.3	90 - 110		
Silver		0.0500	0.0497	mg/L	99.3	90 - 110		
Thallium		0.0500	0.0503	mg/L	101	90 - 110		
Vanadium		0.0500	0.0504	mg/L	101	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836000
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-20
Instrument ID: ICP-MS2
Run Time: 14:10
Method: 6020A
File ID: NI.070116.141039
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0495	mg/L	98.9	90 - 110		
Arsenic		0.0500	0.0500	mg/L	100	90 - 110		
Barium		0.0500	0.0481	mg/L	96.1	90 - 110		
Cadmium		0.0500	0.0499	mg/L	99.7	90 - 110		
Chromium		0.0500	0.0488	mg/L	97.6	90 - 110		
Cobalt		0.0500	0.0528	mg/L	106	90 - 110		
Copper		0.0500	0.0492	mg/L	98.3	90 - 110		
Lead		0.0500	0.0510	mg/L	102	90 - 110		
Manganese		0.0500	0.0487	mg/L	97.4	90 - 110		
Nickel		0.0500	0.0489	mg/L	97.8	90 - 110		
Silver		0.0500	0.0496	mg/L	99.2	90 - 110		
Thallium		0.0500	0.0500	mg/L	100	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0495	mg/L	99.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836000
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-22
Instrument ID: ICP-MS2
Run Time: 14:33
Method: 6020A
File ID: NI.070116.143302
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0491	mg/L	98.1	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.8	90 - 110		
Barium		0.0500	0.0481	mg/L	96.1	90 - 110		
Cadmium		0.0500	0.0497	mg/L	99.3	90 - 110		
Chromium		0.0500	0.0492	mg/L	98.4	90 - 110		
Cobalt		0.0500	0.0529	mg/L	106	90 - 110		
Copper		0.0500	0.0503	mg/L	101	90 - 110		
Lead		0.0500	0.0521	mg/L	104	90 - 110		
Manganese		0.0500	0.0492	mg/L	98.3	90 - 110		
Nickel		0.0500	0.0497	mg/L	99.5	90 - 110		
Silver		0.0500	0.0501	mg/L	100	90 - 110		
Thallium		0.0500	0.0502	mg/L	100	90 - 110		
Vanadium		0.0500	0.0504	mg/L	101	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836000
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-07
Instrument ID: ICP-MS2
Run Time: 10:58
Method: 6020A
File ID: NI.063016.105814
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.420	ug/L	105	70 - 130		
Arsenic		0.400	0.398	ug/L	99.5	70 - 130		
Barium		0.750	0.731	ug/L	97.5	70 - 130		
Cadmium		0.240	0.241	ug/L	101	70 - 130		
Chromium		0.800	0.644	ug/L	80.6	70 - 130		
Cobalt		0.400	0.390	ug/L	97.6	70 - 130		
Copper		0.800	0.780	ug/L	97.4	70 - 130		
Lead		0.200	0.204	ug/L	102	70 - 130		
Manganese		0.500	0.454	ug/L	90.8	70 - 130		
Nickel		1.60	1.54	ug/L	96.3	70 - 130		
Silver		0.400	0.401	ug/L	100	70 - 130		
Thallium		0.0800	0.0893	ug/L	112	70 - 130		
Vanadium		0.400	0.355	ug/L	88.7	70 - 130		
Zinc		6.25	5.98	ug/L	95.7	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837261
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-22
Instrument ID: ICP-MS2
Run Time: 13:58
Method: 6020A
File ID: NI.063016.135859
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.406	ug/L	101	70 - 130		
Arsenic		0.400	0.408	ug/L	102	70 - 130		
Barium		0.750	0.678	ug/L	90.4	70 - 130		
Cadmium		0.240	0.242	ug/L	101	70 - 130		
Chromium		0.800	0.711	ug/L	88.8	70 - 130		
Cobalt		0.400	0.382	ug/L	95.5	70 - 130		
Copper		0.800	0.787	ug/L	98.3	70 - 130		
Lead		0.200	0.207	ug/L	104	70 - 130		
Manganese		0.500	0.471	ug/L	94.1	70 - 130		
Nickel		1.60	1.52	ug/L	94.8	70 - 130		
Silver		0.400	0.386	ug/L	96.5	70 - 130		
Thallium		0.0800	0.0865	ug/L	108	70 - 130		
Vanadium		0.400	0.336	ug/L	84.0	70 - 130		
Zinc		6.25	6.19	ug/L	99.1	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837261
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-27
Instrument ID: ICP-MS2
Run Time: 15:05
Method: 6020A
File ID: NI.063016.150517
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.411	ug/L	103	70 - 130		
Arsenic		0.400	0.411	ug/L	103	70 - 130		
Barium		0.750	0.703	ug/L	93.7	70 - 130		
Cadmium		0.240	0.234	ug/L	97.6	70 - 130		
Chromium		0.800	0.673	ug/L	84.1	70 - 130		
Cobalt		0.400	0.384	ug/L	95.9	70 - 130		
Copper		0.800	0.777	ug/L	97.1	70 - 130		
Lead		0.200	0.209	ug/L	104	70 - 130		
Manganese		0.500	0.449	ug/L	89.8	70 - 130		
Nickel		1.60	1.52	ug/L	95.3	70 - 130		
Silver		0.400	0.382	ug/L	95.4	70 - 130		
Thallium		0.0800	0.0853	ug/L	107	70 - 130		
Vanadium		0.400	0.356	ug/L	89.0	70 - 130		
Zinc		6.25	6.28	ug/L	101	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837261
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-46
Instrument ID: ICP-MS2
Run Time: 20:39
Method: 6020A
File ID: NI.063016.203927
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.368	ug/L	92.0	70 - 130		
Arsenic		0.400	0.399	ug/L	99.8	70 - 130		
Barium		0.750	0.662	ug/L	88.2	70 - 130		
Cadmium		0.240	0.226	ug/L	94.3	70 - 130		
Chromium		0.800	0.633	ug/L	79.1	70 - 130		
Cobalt		0.400	0.403	ug/L	101	70 - 130		
Copper		0.800	0.775	ug/L	96.9	70 - 130		
Lead		0.200	0.209	ug/L	104	70 - 130		
Manganese		0.500	0.435	ug/L	86.9	70 - 130		
Nickel		1.60	1.55	ug/L	96.6	70 - 130		
Silver		0.400	0.387	ug/L	96.6	70 - 130		
Thallium		0.0800	0.0831	ug/L	104	70 - 130		
Vanadium		0.400	0.374	ug/L	93.5	70 - 130		
Zinc		6.25	6.10	ug/L	97.5	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837261
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-07
Instrument ID: ICP-MS2
Run Time: 10:49
Method: 6020A
File ID: NI.070116.104953
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.364	ug/L	91.0	70 - 130		
Arsenic		0.400	0.390	ug/L	97.6	70 - 130		
Barium		0.750	0.697	ug/L	92.9	70 - 130		
Cadmium		0.240	0.238	ug/L	99.3	70 - 130		
Chromium		0.800	0.709	ug/L	88.6	70 - 130		
Cobalt		0.400	0.371	ug/L	92.7	70 - 130		
Copper		0.800	0.775	ug/L	96.9	70 - 130		
Lead		0.200	0.193	ug/L	96.3	70 - 130		
Manganese		0.500	0.457	ug/L	91.3	70 - 130		
Nickel		1.60	1.52	ug/L	95.0	70 - 130		
Silver		0.400	0.392	ug/L	98.0	70 - 130		
Thallium		0.0800	0.0815	ug/L	102	70 - 130		
Vanadium		0.400	0.339	ug/L	84.7	70 - 130		
Zinc		6.25	6.40	ug/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837261
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-24
Instrument ID: ICP-MS2
Run Time: 14:39
Method: 6020A
File ID: NI.070116.143926
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.364	ug/L	90.9	70 - 130		
Arsenic		0.400	0.415	ug/L	104	70 - 130		
Barium		0.750	0.660	ug/L	88.0	70 - 130		
Cadmium		0.240	0.234	ug/L	97.3	70 - 130		
Chromium		0.800	0.671	ug/L	83.8	70 - 130		
Cobalt		0.400	0.393	ug/L	98.3	70 - 130		
Copper		0.800	0.781	ug/L	97.7	70 - 130		
Lead		0.200	0.199	ug/L	99.6	70 - 130		
Manganese		0.500	0.428	ug/L	85.7	70 - 130		
Nickel		1.60	1.54	ug/L	96.4	70 - 130		
Silver		0.400	0.385	ug/L	96.2	70 - 130		
Thallium		0.0800	0.0813	ug/L	102	70 - 130		
Vanadium		0.400	0.360	ug/L	90.0	70 - 130		
Zinc		6.25	7.08	ug/L	113	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837261
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061068
Instrument ID: ICP-MS2
Sol. A : WG574800-08 **File ID:** NI.063016.110126
Sol. AB : WG574800-09 **File ID:** NI.063016.110437

Workgroup (AAB#): WG574804
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0513	NS	100	96.0	96.0	
Arsenic	NS	0.0233	NS	100	97.5	97.5	
Barium	NS	0.348	NS	100	95.6	95.6	
Cadmium	NS	-0.0809	NS	100	95.8	95.8	
Chromium	NS	0.0229	NS	100	94.9	94.9	
Cobalt	NS	0.0396	NS	100	94.9	94.9	
Copper	NS	0.304	NS	100	95.5	95.5	
Lead	NS	0.0556	NS	100	95.9	95.9	
Manganese	NS	0.116	NS	100	94.4	94.4	
Nickel	NS	0.412	NS	100	94.4	94.4	
Silver	NS	0.0314	NS	100	85.1	85.1	
Thallium	NS	0.0458	NS	100	95.8	95.8	
Vanadium	NS	0.0260	NS	100	96.0	96.0	
Zinc	NS	0.752	NS	100	98.3	98.3	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4835999
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061068
Instrument ID: ICP-MS2
Sol. A : WG575028-08 **File ID:** NI.070116.105304
Sol. AB : WG575028-09 **File ID:** NI.070116.105616

Workgroup (AAB#): WG574804
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.118	NS	100	96.8	96.8	
Arsenic	NS	0	NS	100	100	100	
Barium	NS	0.406	NS	100	98.7	98.7	
Cadmium	NS	-0.0920	NS	100	99.5	99.5	
Chromium	NS	0.0974	NS	100	97.8	97.8	
Cobalt	NS	0.0353	NS	100	98.4	98.4	
Copper	NS	0.287	NS	100	98.5	98.5	
Lead	NS	0.0642	NS	100	98.7	98.7	
Manganese	NS	0.0949	NS	100	99.2	99.2	
Nickel	NS	0.398	NS	100	97.1	97.1	
Silver	NS	0.0605	NS	100	87.4	87.4	
Thallium	NS	0.0383	NS	100	98.2	98.2	
Vanadium	NS	0.0180	NS	100	99.7	99.7	
Zinc	NS	1.24	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4835999
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061068 **Analytical Method:** 6020
Analytical Workgroup: WG574804 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 30-JUN-2016 10:39

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061068-04	SAMP	30-JUN-2016 18:09	94.398	97.396	95.708
L16061068-05	SAMP	30-JUN-2016 18:12	95.017	98.903	97.081
L16061068-11	SAMP	30-JUN-2016 18:15	104.851	106.076	105.072
L16061068-13	SAMP	30-JUN-2016 17:18	95.237	98.07	97.68
L16061068-15	SAMP	30-JUN-2016 17:21	95.349	100.413	98.47
L16061068-17	SAMP	30-JUN-2016 17:24	95.494	98.907	98.404
L16061228-02	SAMP	30-JUN-2016 17:30	91.277	96.4	94.63
WG573840-02	BLANK	30-JUN-2016 17:11	97.169	95.925	94.999
WG573840-03	LCS	30-JUN-2016 17:14	101.585	103.466	103.274
WG574800-05	ICV	30-JUN-2016 10:51	97.371	98.497	97.785
WG574800-06	ICB	30-JUN-2016 10:55	98.231	98.427	97.708
WG574800-07	LLICV	30-JUN-2016 10:58	96.27	95.948	95.14
WG574800-08	ICS	30-JUN-2016 11:01	97.491	98.02	97.584
WG574800-09	ICS	30-JUN-2016 11:04	99.493	99.441	97.601
WG574800-10	CCV	30-JUN-2016 11:07	99.729	98.935	99.965
WG574800-11	CCB	30-JUN-2016 11:11	100.592	99.112	100.515
WG574800-22	LLCCV	30-JUN-2016 13:58	98.475	97.374	97.764
WG574800-27	LLCCV	30-JUN-2016 15:05	98.002	96.511	98.029
WG574800-32	CCV	30-JUN-2016 17:05	99.022	100.899	100.829
WG574800-33	CCB	30-JUN-2016 17:08	101.747	102.289	102.818
WG574800-34	CCV	30-JUN-2016 17:43	103.129	103.628	104.03
WG574800-35	CCB	30-JUN-2016 17:46	105.158	103.663	106.407
WG574800-36	CCV	30-JUN-2016 18:22	101.016	102.877	103.708
WG574800-37	CCB	30-JUN-2016 18:25	102.533	102.639	103.588
WG574800-46	LLCCV	30-JUN-2016 20:39	99.181	92.721	97.658
WG574804-01	PSPK	30-JUN-2016 17:34	93.535	97.917	97.366
WG574804-02	SERIAL	30-JUN-2016 17:37	96.163	97.507	96.155

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4836152
Report generated: 07/01/2016 15:25

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061068 **Analytical Method:** 6020
Analytical Workgroup: WG574804 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 01-JUL-2016 10:30

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061068-04	SAMP	01-JUL-2016 13:57	99.248	94.861	95.359
L16061068-05	SAMP	01-JUL-2016 14:01	97.219	93.599	93.329
L16061068-11	SAMP	01-JUL-2016 14:04	98.247	94.031	93.75
L16061068-13	SAMP	01-JUL-2016 14:07	96.152	93.267	93.5
L16061068-15	SAMP	01-JUL-2016 14:17	94.686	91.96	91.442
L16061068-17	SAMP	01-JUL-2016 14:20	95.055	91.806	91.481
WG575028-05	ICV	01-JUL-2016 10:43	99.388	100.45	101.227
WG575028-06	ICB	01-JUL-2016 10:46	99.921	101.195	100.88
WG575028-07	LLICV	01-JUL-2016 10:49	97.843	98.579	96.464
WG575028-08	ICS	01-JUL-2016 10:53	97.097	100.956	98.373
WG575028-09	ICS	01-JUL-2016 10:56	99.537	101.553	98.936
WG575028-10	CCV	01-JUL-2016 10:59	98.413	100.239	99.347
WG575028-11	CCB	01-JUL-2016 11:02	101.078	100.828	100.108
WG575028-18	CCV	01-JUL-2016 13:32	102.499	106.565	105.514
WG575028-19	CCB	01-JUL-2016 13:35	102.831	106.05	104.856
WG575028-20	CCV	01-JUL-2016 14:10	100.873	99.656	100.42
WG575028-21	CCB	01-JUL-2016 14:13	101.791	98.273	100.402
WG575028-22	CCV	01-JUL-2016 14:33	101.588	103.499	103.495
WG575028-23	CCB	01-JUL-2016 14:36	103.592	103.273	104.686
WG575028-24	LLCCV	01-JUL-2016 14:39	100.804	98.706	100.09

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4836152
Report generated: 07/01/2016 15:25

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061068 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4835994
Report generated: 07/01/2016 15:25

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, June 30, 2016 10:16:38

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1328	2024	0.711	
Mg	23.985	23.975	4505	2020	0.704	
Co	58.933	58.925	11694	2022	0.703	
In	114.904	114.925	22865	2028	0.690	
U	238.050	238.075	47462	2043	0.688	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	7.630
5.575	5.349
5.625	5.081
5.675	3.334
5.725	4.033
5.775	2.990
5.825	2.517
5.875	2.463
5.925	2.363
5.975	1.901
6.025	1.768
6.075	2.257
6.125	3.087
6.175	2.374
6.225	3.065
6.275	23.027
6.325	91.287
6.375	104.583
6.425	79.057
6.475	31.882
6.525	13.481
6.575	6.091
6.625	4.743
6.675	2.806
6.725	1.215
6.775	1.960
6.825	1.716

Report Date/Time: Thursday, June 30, 2016 10:19:49
Page 1

Approved: July 01, 2016

6.875	1.994
6.925	0.718
6.975	0.930
7.025	1.375
7.075	2.469
7.125	1.868
7.175	1.445
7.225	1.854
7.275	2.308
7.325	12.753
7.375	83.853
7.425	70.711
7.475	70.711
7.525	93.541
7.575	60.858
7.625	46.481
7.675	70.711
7.725	34.401
7.775	119.523
7.825	50.000
7.875	37.268
7.925	127.476
7.975	34.233
8.025	91.287
8.075	38.030
8.125	35.355
8.175	60.858
8.225	81.223
8.275	81.441
8.325	81.441
8.375	108.327
8.425	136.931
8.475	55.902
22.525	70.711
22.575	39.033
22.625	61.341
22.675	56.983
22.725	46.220
22.775	20.787
22.825	34.401
22.875	19.357
22.925	29.463
22.975	26.998
23.025	25.078
23.075	21.812
23.125	32.010
23.175	13.608

Report Date/Time: Thursday, June 30, 2016 10:19:49
Page 2

Approved: July 01, 2016

23.225	32.341
23.275	38.828
23.325	30.053
23.375	30.859
23.425	25.074
23.475	16.686
23.525	2.987
23.575	2.068
23.625	1.912
23.675	1.479
23.725	1.430
23.775	0.814
23.825	0.812
23.875	0.782
23.925	1.354
23.975	0.967
24.025	1.220
24.075	1.436
24.125	1.501
24.175	1.650
24.225	1.929
24.275	3.295
24.325	8.839
24.375	20.738
24.425	26.143
24.475	8.190
24.525	2.847
24.575	2.081
24.625	0.816
24.675	1.083
24.725	1.324
24.775	1.693
24.825	1.461
24.875	0.765
24.925	0.362
24.975	0.884
25.025	1.720
25.075	1.315
25.125	1.430
25.175	1.294
25.225	3.746
25.275	11.806
25.325	62.251
25.375	39.219
25.425	15.767
25.475	12.071
57.525	1.335

Report Date/Time: Thursday, June 30, 2016 10:19:49
Page 3

Approved: July 01, 2016

57.575	1.767
57.625	2.181
57.675	2.009
57.725	2.029
57.775	2.254
57.825	2.922
57.875	2.887
57.925	1.630
57.975	0.949
58.025	1.557
58.075	1.747
58.125	1.182
58.175	2.238
58.225	3.336
58.275	23.538
58.325	30.609
58.375	13.574
58.425	14.809
58.475	3.919
58.525	2.582
58.575	1.791
58.625	2.908
58.675	2.527
58.725	1.367
58.775	1.571
58.825	1.717
58.875	1.142
58.925	2.124
58.975	0.937
59.025	1.704
59.075	1.389
59.125	1.584
59.175	2.144
59.225	3.699
59.275	31.869
59.325	40.825
59.375	45.799
59.425	31.345
59.475	10.995
59.525	6.778
59.575	1.800
59.625	2.865
59.675	3.974
59.725	4.516
59.775	2.063
59.825	2.491
59.875	2.616

Report Date/Time: Thursday, June 30, 2016 10:19:49
Page 4

Approved: July 01, 2016

59.925	2.954
59.975	2.919
60.025	2.174
60.075	3.080
60.125	2.036
60.175	4.733
60.225	16.194
60.275	23.923
60.325	52.705
60.375	71.261
60.425	42.592
60.475	38.540
113.525	6.475
113.575	2.639
113.625	3.226
113.675	0.931
113.725	0.501
113.775	1.524
113.825	1.495
113.875	2.496
113.925	1.825
113.975	1.532
114.025	1.933
114.075	0.733
114.125	2.194
114.175	1.035
114.225	3.370
114.275	8.850
114.325	18.763
114.375	48.230
114.425	17.246
114.475	8.898
114.525	2.048
114.575	2.379
114.625	1.068
114.675	1.539
114.725	1.194
114.775	2.031
114.825	1.123
114.875	1.770
114.925	1.834
114.975	1.824
115.025	1.759
115.075	1.250
115.125	0.617
115.175	2.122
115.225	1.801

Approved: July 01, 2016

115.275	5.203
115.325	13.734
115.375	42.592
115.425	21.114
115.475	17.678
115.525	14.002
115.575	6.607
115.625	3.973
115.675	2.459
115.725	3.163
115.775	1.631
115.825	3.014
115.875	3.357
115.925	1.866
115.975	3.156
116.025	3.757
116.075	2.834
116.125	2.480
116.175	4.209
116.225	6.098
116.275	20.916
116.325	64.359
116.375	109.139
116.425	32.969
116.475	54.772
236.525	
236.575	32.723
236.625	28.020
236.675	32.394
236.725	27.217
236.775	29.607
236.825	46.481
236.875	38.528
236.925	40.232
236.975	25.495
237.025	28.917
237.075	16.767
237.125	20.306
237.175	41.714
237.225	28.144
237.275	25.377
237.325	14.678
237.375	15.811
237.425	32.785
237.475	27.741
237.525	21.495
237.575	7.610

Report Date/Time: Thursday, June 30, 2016 10:19:49
Page 6

Approved: July 01, 2016

237.625	6.358
237.675	0.613
237.725	2.011
237.775	1.691
237.825	0.412
237.875	0.870
237.925	0.892
237.975	0.832
238.025	0.851
238.075	1.242
238.125	0.975
238.175	0.909
238.225	1.242
238.275	1.635
238.325	2.249
238.375	2.589
238.425	3.619
238.475	2.494
238.525	6.239
238.575	22.114
238.625	31.950
238.675	23.742
238.725	41.271
238.775	13.284
238.825	23.799
238.875	20.490
238.925	20.729
238.975	25.009
239.025	10.012
239.075	10.866
239.125	21.209
239.175	17.275
239.225	8.810
239.275	26.290
239.325	15.160
239.375	31.836
239.425	35.067
239.475	24.022

Approved: July 01, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/30/2016 10:25:18 AM
End Time: 6/30/2016 10:27:30 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 7351.05
        Obtained Intensity (Mg 23.985): 182663.43
        Obtained Intensity (In 114.904): 78892.53
        Obtained Intensity (U 238.05): 164664.04
        Obtained Intensity (Bkgd 220): 0.27
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.021 (=4819.37 / 231640.41)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.012 (=2694.11 / 231640.41)
```

Report Date/Time: Thursday, June 30, 2016 10:27:30
Page 1

Approved: July 01, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/30/2016 10:25:18 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 7351.05
                Obtained Intensity (Mg 23.985): 182663.43
                Obtained Intensity (In 114.904): 78892.53
                Obtained Intensity (U 238.05): 164664.04
                Obtained Intensity (Bkgd 220): 0.27
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.021 (=4819.37 / 231640.41)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.012 (=2694.11 / 231640.41)
[Passed]  Optimum value(s): N/A

End Time: 6/30/2016 10:27:30 AM
```


Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, June 30, 2016 10:35:49
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74916.4	0.4				ug/L		Standard
	Be	9	10.0	50.0				ug/L		Standard
	Al	27	1821.8	4.2				ug/L		Standard
	Sc	45	55220.5	2.3				ug/L		Standard
	Ti	47	34.0	19.3				ug/L		Standard
	V	51	1937.5	2.5				ug/L		Standard
	Cr	52	9521.7	0.5				ug/L		Standard
	Cr	53	395.0	15.6				ug/L		Standard
	Mn	55	902.0	1.6				ug/L		Standard
	Co	59	262.3	7.9				ug/L		Standard
	Ni	60	370.7	8.4				ug/L		Standard
	Cu	65	105.7	3.8				ug/L		Standard
	Zn	66	398.3	3.8				ug/L		Standard
>	Ge	72	535147.0	1.3				ug/L		Standard
	As	75	-43.2	36.5				ug/L		Standard
	Se	82	13.7	13.4				ug/L		Standard
	Se-1	77	65.0	13.8				ug/L		Standard
>	Ga	71	96.7	26.0				mg/L		Standard
	Rb	85	15.0	88.2				ug/L		Standard
	Y	89	465703.7	0.2				ug/L		Standard
>	Rh	103	10.0	50.0				ug/L		Standard
	Mo	98	9.3	22.2				ug/L		Standard
	Ag	107	82.3	22.3				ug/L		Standard
	Cd	111	6.7	31.3				mg/L		Standard
	Cd	114	21.4	79.6				ug/L		Standard
>	In	115	619034.9	0.4				ug/L		Standard
	Sn	118	508.3	11.8				ug/L		Standard
	Sb	123	86.5	9.9				ug/L		Standard
	Ba	135	79.3	8.0				ug/L		Standard
	Ce	140	68.3	51.9				ug/L		Standard
>	Tb	159	986981.5	1.1				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	13.0	73.4				ug/L		Standard
	Tl	205	10.0	50.0				ug/L		Standard
	Pb	206	263.7	6.5				ug/L		Standard
	Pb	207	227.0	4.2				ug/L		Standard
	Pb	208	867.7	4.8				ug/L		Standard
	U	238	8.3	45.4				ug/L		Standard
>	Bi	209	541014.1	1.0				ug/L		Standard

Sample ID: Blank
Report Date/Time: Thursday, June 30, 2016 10:38:06
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	mg/L	Standard
Mg	24	53.3	14.3	mg/L	Standard
K	39	53.3	37.9	mg/L	Standard
Ca	43	28.3	36.7	mg/L	Standard
Fe	54	180.5	24.2	mg/L	Standard
Fe	57	256.7	3.0	mg/L	Standard
> **Sc-1**	45	55220.5	2.3	mg/L	Standard
Cl	35	35503.6	2.5	ug/L	Standard
Kr	83	1.7	69.3	ug/L	Standard
Br	81	2040.1	4.5	ug/L	Standard
P	31	20435.5	5.2	ug/L	Standard
S	34	2430.2	2.4	ug/L	Standard
Sr	88	75.0	24.0	ug/L	Standard
C	12	293.3	19.4	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	6.7	86.6	mg/L	Standard
Dy	164	8.9	104.8	mg/L	Standard
Ho-1	165	10.0	50.0	mg/L	Standard
Er	166	23.3	89.2	mg/L	Standard
I	127	1808.4	6.4	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Blank
Report Date/Time: Thursday, June 30, 2016 10:38:06
Page 2

Approved: July 01, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Thursday, June 30, 2016 10:38:06
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, June 30, 2016 10:39:00
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73168.0	2.3				ug/L	74916	Standard
	Be	9	18.3	41.7				ug/L	10	Standard
	Al	27	1861.8	6.0				ug/L	1822	Standard
	Sc	45	55454.6	1.0				ug/L	55220	Standard
	Ti	47	36.7	1.6				ug/L	34	Standard
	V	51	1952.1	3.2				ug/L	1938	Standard
	Cr	52	9643.4	1.2				ug/L	9522	Standard
	Cr	53	401.7	8.7				ug/L	395	Standard
	Mn	55	953.7	5.3				ug/L	902	Standard
	Co	59	279.0	21.4				ug/L	262	Standard
	Ni	60	359.3	5.8				ug/L	371	Standard
	Cu	65	114.3	1.0				ug/L	106	Standard
	Zn	66	366.0	3.4				ug/L	398	Standard
>	**Ge**	72	539086.2	1.2				ug/L	535147	Standard
	As	75	-57.0	25.6				ug/L	-43	Standard
	Se	82	17.9	18.3				ug/L	14	Standard
	Se-1	77	61.7	4.7				ug/L	65	Standard
>	**Ga**	71	95.0	29.3				mg/L	97	Standard
	Rb	85	35.0	24.7				ug/L	15	Standard
	Y	89	475042.0	0.3				ug/L	465704	Standard
>	**Rh**	103	18.3	15.7				ug/L	10	Standard
	Mo	98	4.2	10.7				ug/L	9	Standard
	Ag	107	122.7	49.1				ug/L	82	Standard
	Cd	111	5.7	113.6				mg/L	7	Standard
	Cd	114	21.7	100.9				ug/L	21	Standard
>	**In**	115	616759.5	0.1				ug/L	619035	Standard
	Sn	118	495.0	9.3				ug/L	508	Standard
	Sb	123	70.5	74.4				ug/L	86	Standard
	Ba	135	88.3	26.2				ug/L	79	Standard
	Ce	140	181.7	151.8				ug/L	68	Standard
>	**Tb**	159	989061.2	1.8				ug/L	986982	Standard
	Ho	165	8.3	124.9				ug/L	10	Standard
	Tl	203	39.7	160.1				ug/L	13	Standard
	Tl	205	28.3	142.6				ug/L	10	Standard
	Pb	206	285.3	17.3				ug/L	264	Standard
	Pb	207	226.7	15.6				ug/L	227	Standard
	Pb	208	883.7	9.2				ug/L	868	Standard
	U	238	17.7	134.0				ug/L	8	Standard
>	**Bi**	209	540861.9	0.7				ug/L	541014	Standard

Sample ID: Standard 1
Report Date/Time: Thursday, June 30, 2016 10:41:17
Page 1

Approved: July 01, 2016

	Na	23	0.0		mg/L	2	Standard
	Mg	24	56.7	41.7	mg/L	53	Standard
	K	39	36.7	41.7	mg/L	53	Standard
	Ca	43	46.7	16.4	mg/L	28	Standard
	Fe	54	178.9	5.0	mg/L	181	Standard
	Fe	57	258.3	9.5	mg/L	257	Standard
>	**Sc-1**	45	55454.6	1.0	mg/L	55220	Standard
	Cl	35	35327.8	0.4	ug/L	35504	Standard
	Kr	83	2.7	57.3	ug/L	2	Standard
	Br	81	2013.5	0.6	ug/L	2040	Standard
	P	31	20338.7	3.7	ug/L	20435	Standard
	S	34	2328.5	3.8	ug/L	2430	Standard
	Sr	88	75.0	33.3	ug/L	75	Standard
	C	12	266.7	24.4	mg/L	293	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	7	Standard
	Dy	164	2.2	285.5	mg/L	9	Standard
	Ho-1	165	8.3	124.9	mg/L	10	Standard
	Er	166	23.3	49.5	mg/L	23	Standard
	I	127	1715.1	9.7	mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 1
Report Date/Time: Thursday, June 30, 2016 10:41:17
Page 2

Approved: July 01, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Thursday, June 30, 2016 10:41:17
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, June 30, 2016 10:42:12
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72707.4	2.7				ug/L	74916	Standard
	Be	9	55.0	24.1				ug/L	10	Standard
	Al	27	8810.9	6.1				ug/L	1822	Standard
	Sc	45	55881.2	1.6				ug/L	55220	Standard
	Ti	47	71.3	25.6				ug/L	34	Standard
	V	51	2314.2	6.8				ug/L	1938	Standard
	Cr	52	9938.6	0.7				ug/L	9522	Standard
	Cr	53	495.0	15.3				ug/L	395	Standard
	Mn	55	1353.1	1.7				ug/L	902	Standard
	Co	59	601.3	1.5				ug/L	262	Standard
	Ni	60	444.7	3.8				ug/L	371	Standard
	Cu	65	243.3	5.3				ug/L	106	Standard
	Zn	66	523.0	8.5				ug/L	398	Standard
>	Ge	72	542852.5	0.7				ug/L	535147	Standard
	As	75	-7.1	315.0				ug/L	-43	Standard
	Se	82	20.2	32.1				ug/L	14	Standard
	Se-1	77	57.7	10.6				ug/L	65	Standard
>	Ga	71	103.3	22.9				mg/L	97	Standard
	Rb	85	45.0	48.4				ug/L	15	Standard
	Y	89	482686.3	1.8				ug/L	465704	Standard
>	Rh	103	15.0	57.7				ug/L	10	Standard
	Mo	98	276.1	8.9				ug/L	9	Standard
	Ag	107	427.3	2.1				ug/L	82	Standard
	Cd	111	102.5	11.8				mg/L	7	Standard
	Cd	114	241.2	14.1				ug/L	21	Standard
>	In	115	624979.9	1.0				ug/L	619035	Standard
	Sn	118	1010.0	34.3				ug/L	508	Standard
	Sb	123	243.8	4.7				ug/L	86	Standard
	Ba	135	160.7	8.2				ug/L	79	Standard
	Ce	140	43.3	35.3				ug/L	68	Standard
>	Tb	159	995051.3	1.5				ug/L	986982	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	401.3	6.5				ug/L	13	Standard
	Tl	205	330.0	13.5				ug/L	10	Standard
	Pb	206	514.0	4.8				ug/L	264	Standard
	Pb	207	440.3	5.0				ug/L	227	Standard
	Pb	208	1803.0	2.1				ug/L	868	Standard
	U	238	318.0	5.0				ug/L	8	Standard
>	Bi	209	540720.8	0.8				ug/L	541014	Standard

Sample ID: Standard 2
Report Date/Time: Thursday, June 30, 2016 10:44:29
Page 1

Approved: July 01, 2016

	Na	23	0.0		mg/L	2	Standard
	Mg	24	36.7	105.9	mg/L	53	Standard
	K	39	48.3	57.0	mg/L	53	Standard
	Ca	43	30.0	33.3	mg/L	28	Standard
	Fe	54	184.1	19.1	mg/L	181	Standard
	Fe	57	255.0	7.1	mg/L	257	Standard
>	**Sc-1**	45	55881.2	1.6	mg/L	55220	Standard
	Cl	35	35839.7	1.1	ug/L	35504	Standard
	Kr	83	1.3	43.3	ug/L	2	Standard
	Br	81	1970.1	12.0	ug/L	2040	Standard
	P	31	19911.4	2.6	ug/L	20435	Standard
	S	34	2461.9	5.7	ug/L	2430	Standard
	Sr	88	85.0	31.1	ug/L	75	Standard
	C	12	176.7	8.6	mg/L	293	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	7	Standard
	Dy	164	149.0	35.5	mg/L	9	Standard
	Ho-1	165	11.7	107.9	mg/L	10	Standard
	Er	166	20.0	0.0	mg/L	23	Standard
	I	127	2015.1	5.0	mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 2
Report Date/Time: Thursday, June 30, 2016 10:44:29
Page 2

Approved: July 01, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Thursday, June 30, 2016 10:44:29
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, June 30, 2016 10:45:23
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68983.4	2.1				ug/L	74916	Standard
	Be	9	48367.2	4.1	**50.0000**	1.404	2.8	ug/L	10	Standard
	Al	27	7972073.9	2.0	**50.0000**	0.467	0.9	ug/L	1822	Standard
	Sc	45	52755.0	2.1				ug/L	55220	Standard
	Ti	47	40601.0	0.6	**100.0000**	1.612	1.6	ug/L	34	Standard
	V	51	460078.2	1.8	**50.0000**	0.531	1.1	ug/L	1938	Standard
	Cr	52	454436.3	1.4	**50.0000**	0.663	1.3	ug/L	9522	Standard
	Cr	53	55469.7	2.6	**50.0000**	1.635	3.3	ug/L	395	Standard
	Mn	55	423456.2	1.6	**50.0000**	0.702	1.4	ug/L	902	Standard
	Co	59	399872.6	2.0	**50.0000**	0.614	1.2	ug/L	262	Standard
	Ni	60	111808.1	1.4	**50.0000**	0.643	1.3	ug/L	371	Standard
	Cu	65	110333.0	1.1	**50.0000**	0.836	1.7	ug/L	106	Standard
	Zn	66	64857.2	2.2	**50.0000**	1.100	2.2	ug/L	398	Standard
>	**Ge**	72	526457.8	1.2				ug/L	535147	Standard
	As	75	65989.7	1.5	**50.0000**	0.778	1.6	ug/L	-43	Standard
	Se	82	6684.8	2.5	**50.0000**	0.729	1.5	ug/L	14	Standard
	Se-1	77	4547.7	2.0	**50.0000**	0.855	1.7	ug/L	65	Standard
>	**Ga**	71	88.3	42.5				mg/L	97	Standard
	Rb	85	925.0	7.6				ug/L	15	Standard
	Y	89	458987.7	1.5				ug/L	465704	Standard
>	**Rh**	103	40.0	50.0				ug/L	10	Standard
	Mo	98	300517.9	1.7	**100.0000**	1.196	1.2	ug/L	9	Standard
	Ag	107	368336.5	1.3	**50.0000**	0.495	1.0	ug/L	82	Standard
	Cd	111	117284.8	2.5	**50.0000**	0.847	1.7	mg/L	7	Standard
	Cd	114	285421.9	3.9	**50.0000**	1.210	2.4	ug/L	21	Standard
>	**In**	115	601036.1	1.7				ug/L	619035	Standard
	Sn	118	316578.1	2.8	**50.0000**	1.497	3.0	ug/L	508	Standard
	Sb	123	256746.9	1.1	**50.0000**	0.856	1.7	ug/L	86	Standard
	Ba	135	110969.6	1.5	**50.0000**	0.201	0.4	ug/L	79	Standard
	Ce	140	148.3	71.5				ug/L	68	Standard
>	**Tb**	159	962177.6	0.4				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	446239.6	0.2	**50.0000**	0.331	0.7	ug/L	13	Standard
	Tl	205	381081.2	0.4	**50.0000**	0.342	0.7	ug/L	10	Standard
	Pb	206	286636.0	1.6	**50.0000**	1.103	2.2	ug/L	264	Standard
	Pb	207	258526.4	1.8	**50.0000**	1.236	2.5	ug/L	227	Standard
	Pb	208	996447.9	1.4	**50.0000**	0.992	2.0	ug/L	868	Standard
	U	238	363811.3	1.8	**50.0000**	1.240	2.5	ug/L	8	Standard
>	**Bi**	209	528328.4	0.7				ug/L	541014	Standard

Sample ID: Standard 3
Report Date/Time: Thursday, June 30, 2016 10:47:40
Page 1

Approved: July 01, 2016

	Na	23	1.7	173.2	**5.0000**	8.652	173.0	mg/L	2	Standard
	Mg	24	4435.6	3.0	**5.0000**	0.174	3.5	mg/L	53	Standard
	K	39	2920.3	4.4	**5.0000**	0.139	2.8	mg/L	53	Standard
	Ca	43	115.0	17.4	**5.0000**	1.130	22.6	mg/L	28	Standard
	Fe	54	7160.1	1.1	**5.0000**	0.062	1.2	mg/L	181	Standard
	Fe	57	2058.5	5.3	**5.0000**	0.343	6.9	mg/L	257	Standard
>	**Sc-1**	45	52755.0	2.1				mg/L	55220	Standard
	Cl	35	36143.1	1.7				ug/L	35504	Standard
	Kr	83	2.0	50.0				ug/L	2	Standard
	Br	81	1956.8	4.7				ug/L	2040	Standard
	P	31	21276.6	4.0				ug/L	20435	Standard
	S	34	2776.9	2.8				ug/L	2430	Standard
	Sr	88	73.3	3.9				ug/L	75	Standard
	C	12	156.7	9.8				mg/L	293	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	7	Standard
	Dy	164	5.4	211.7				mg/L	9	Standard
	Ho-1	165	6.7	43.3				mg/L	10	Standard
	Er	166	26.7	21.7				mg/L	23	Standard
	I	127	1676.8	9.5				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 3
Report Date/Time: Thursday, June 30, 2016 10:47:40
Page 2

Approved: July 01, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
Report Date/Time: Thursday, June 30, 2016 10:47:40
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, June 30, 2016 10:48:35
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67369.5	1.7				ug/L	74916	Standard
	Be	9	95332.6	4.2	**100.4528**	2.854	2.8	ug/L	10	Standard
	Al	27	15638994.9	1.2	**100.2191**	0.593	0.6	ug/L	1822	Standard
	Sc	45	52572.7	1.6				ug/L	55220	Standard
	Ti	47	80471.2	2.1	**200.1947**	3.941	2.0	ug/L	34	Standard
	V	51	897077.3	1.5	**99.3635**	0.751	0.8	ug/L	1938	Standard
	Cr	52	878500.8	1.1	**99.3377**	0.531	0.5	ug/L	9522	Standard
	Cr	53	108574.4	1.8	**99.6484**	2.481	2.5	ug/L	395	Standard
	Mn	55	838539.2	2.6	**100.0892**	2.008	2.0	ug/L	902	Standard
	Co	59	794185.3	2.3	**100.1981**	1.503	1.5	ug/L	262	Standard
	Ni	60	215992.5	1.4	**98.8706**	0.739	0.7	ug/L	371	Standard
	Cu	65	211433.7	0.6	**98.4255**	0.669	0.7	ug/L	106	Standard
	Zn	66	125887.2	1.2	**99.2056**	0.438	0.4	ug/L	398	Standard
>	Ge	72	520828.8	0.8				ug/L	535147	Standard
	As	75	129933.5	1.4	**99.7289**	1.641	1.6	ug/L	-43	Standard
	Se	82	13193.5	0.9	**99.9295**	1.041	1.0	ug/L	14	Standard
	Se-1	77	8690.2	2.7	**98.5326**	2.339	2.4	ug/L	65	Standard
>	Ga	71	120.0	7.2				mg/L	97	Standard
	Rb	85	1946.8	5.2				ug/L	15	Standard
	Y	89	455643.2	0.7				ug/L	465704	Standard
>	Rh	103	55.0	27.3				ug/L	10	Standard
	Mo	98	599287.7	1.5	**201.5560**	2.360	1.2	ug/L	9	Standard
	Ag	107	715847.1	1.4	**99.4950**	1.075	1.1	ug/L	82	Standard
	Cd	111	229739.0	1.4	**99.8878**	1.448	1.4	mg/L	7	Standard
	Cd	114	547495.4	2.0	**98.8512**	2.232	2.3	ug/L	21	Standard
>	In	115	589960.6	0.7				ug/L	619035	Standard
	Sn	118	620778.1	1.3	**99.9891**	1.397	1.4	ug/L	508	Standard
	Sb	123	505252.4	1.5	**100.1114**	1.378	1.4	ug/L	86	Standard
	Ba	135	218020.5	1.0	**100.0495**	1.309	1.3	ug/L	79	Standard
	Ce	140	136.7	11.2				ug/L	68	Standard
>	Tb	159	952291.8	0.6				ug/L	986982	Standard
	Ho	165	18.3	31.5				ug/L	10	Standard
	Tl	203	872534.7	0.8	**99.8943**	0.590	0.6	ug/L	13	Standard
	Tl	205	745726.0	1.8	**99.9319**	1.346	1.3	ug/L	10	Standard
	Pb	206	560083.0	1.8	**99.8785**	1.571	1.6	ug/L	264	Standard
	Pb	207	507226.4	1.1	**100.0807**	0.918	0.9	ug/L	227	Standard
	Pb	208	1956705.3	0.7	**100.1279**	0.743	0.7	ug/L	868	Standard
	U	238	732371.6	1.4	**101.3423**	0.755	0.7	ug/L	8	Standard
>	Bi	209	517571.9	0.7				ug/L	541014	Standard

Sample ID: Standard 4
Report Date/Time: Thursday, June 30, 2016 10:50:52
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8717.5	4.3	**9.9469**	0.489	4.9	mg/L	53	Standard
K	39	5526.0	4.4	**9.7799**	0.589	6.0	mg/L	53	Standard
Ca	43	191.7	6.6	**9.7213**	0.568	5.8	mg/L	28	Standard
Fe	54	14164.2	4.7	**10.0228**	0.580	5.8	mg/L	181	Standard
Fe	57	3798.8	6.3	**9.9068**	0.665	6.7	mg/L	257	Standard
Sc-1	45	52572.7	1.6				mg/L	55220	Standard
Cl	35	35283.0	1.9				ug/L	35504	Standard
Kr	83	3.3	69.3				ug/L	2	Standard
Br	81	1953.5	1.5				ug/L	2040	Standard
P	31	22002.6	2.6				ug/L	20435	Standard
S	34	2656.9	6.5				ug/L	2430	Standard
Sr	88	53.3	23.6				ug/L	75	Standard
C	12	190.0	13.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	16.0	70.4				mg/L	9	Standard
Ho-1	165	18.3	31.5				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	1825.1	3.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 4
Report Date/Time: Thursday, June 30, 2016 10:50:52
Page 2

Approved: July 01, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Thursday, June 30, 2016 10:50:52
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 30, 2016 10:51:48
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67351.1	1.6				ug/L	74916	Standard
	Be	9	48467.4	1.1	**51.0988**	0.634	1.2	ug/L	10	Standard
	Al	27	7996341.6	4.4	**51.2380**	1.451	2.8	ug/L	1822	Standard
	Sc	45	52557.8	3.9				ug/L	55220	Standard
	Ti	47	40171.9	1.7	**98.7092**	0.932	0.9	ug/L	34	Standard
	V	51	454957.7	1.1	**49.6959**	0.243	0.5	ug/L	1938	Standard
	Cr	52	446215.6	1.6	**49.3363**	0.396	0.8	ug/L	9522	Standard
	Cr	53	54578.1	1.1	**49.2937**	0.265	0.5	ug/L	395	Standard
	Mn	55	420081.9	2.7	**49.4914**	1.060	2.1	ug/L	902	Standard
	Co	59	400918.1	2.1	**49.9700**	0.795	1.6	ug/L	262	Standard
	Ni	60	110250.7	0.8	**49.7955**	0.072	0.1	ug/L	371	Standard
	Cu	65	108650.5	0.5	**49.9472**	0.257	0.5	ug/L	106	Standard
	Zn	66	65025.6	2.2	**50.4617**	0.801	1.6	ug/L	398	Standard
>	Ge	72	527102.6	0.8				ug/L	535147	Standard
	As	75	65350.8	1.2	**49.5867**	0.180	0.4	ug/L	-43	Standard
	Se	82	6565.5	1.3	**49.0843**	0.359	0.7	ug/L	14	Standard
	Se-1	77	4457.7	1.3	**49.6612**	0.976	2.0	ug/L	65	Standard
>	Ga	71	85.0	25.6				mg/L	97	Standard
	Rb	85	945.0	13.2				ug/L	15	Standard
	Y	89	464922.4	1.0				ug/L	465704	Standard
>	Rh	103	41.7	38.6				ug/L	10	Standard
	Mo	98	296691.4	1.5	**97.2606**	1.381	1.4	ug/L	9	Standard
	Ag	107	365082.9	0.7	**49.4519**	0.182	0.4	ug/L	82	Standard
	Cd	111	117076.7	0.2	**49.6152**	0.191	0.4	mg/L	7	Standard
	Cd	114	282101.6	2.6	**49.6402**	1.043	2.1	ug/L	21	Standard
>	In	115	605322.8	0.5				ug/L	619035	Standard
	Sn	118	311722.6	1.2	**48.8804**	0.420	0.9	ug/L	508	Standard
	Sb	123	253974.8	1.6	**49.0470**	0.652	1.3	ug/L	86	Standard
	Ba	135	110464.9	1.5	**49.3927**	0.528	1.1	ug/L	79	Standard
	Ce	140	80.0	31.3				ug/L	68	Standard
>	Tb	159	956299.2	0.4				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	444248.1	0.5	**49.9754**	0.316	0.6	ug/L	13	Standard
	Tl	205	381176.1	1.8	**50.1891**	0.437	0.9	ug/L	10	Standard
	Pb	206	285348.0	1.6	**49.9780**	0.770	1.5	ug/L	264	Standard
	Pb	207	258242.5	1.6	**50.0467**	0.816	1.6	ug/L	227	Standard
	Pb	208	994320.7	1.0	**49.9713**	0.343	0.7	ug/L	868	Standard
	U	238	366904.6	1.5	**49.8902**	0.853	1.7	ug/L	8	Standard
>	Bi	209	526788.4	0.9				ug/L	541014	Standard

Sample ID: QC Std 1
Report Date/Time: Thursday, June 30, 2016 10:54:05
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4402.3	4.6	**5.0055**	0.082	1.6	mg/L	53	Standard
K	39	2796.9	1.7	**4.9164**	0.229	4.7	mg/L	53	Standard
Ca	43	118.3	31.7	**5.3755**	2.210	41.1	mg/L	28	Standard
Fe	54	7106.9	6.1	**4.9714**	0.301	6.1	mg/L	181	Standard
Fe	57	2026.8	5.0	**4.9813**	0.301	6.0	mg/L	257	Standard
Sc-1	45	52557.8	3.9				mg/L	55220	Standard
Cl	35	34358.3	1.5				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2053.5	3.5				ug/L	2040	Standard
P	31	21905.8	4.8				ug/L	20435	Standard
S	34	2591.9	2.6				ug/L	2430	Standard
Sr	88	80.0	27.2				ug/L	75	Standard
C	12	160.0	38.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.3	86.6				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	26471.4	2.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.198		
Al	27	102.476		
Sc	45			
Ti	47	98.709		
V	51	99.392		
Cr	52	98.673		
Cr	53			
Mn	55	98.983		
Co	59	99.940		
Ni	60	99.591		
Cu	65	99.894		
Zn	66	100.923		
Ge	72		98.497	
As	75	99.173		
Se	82	98.169		
Se-1	77			
Ga	71			

Sample ID: QC Std 1
Report Date/Time: Thursday, June 30, 2016 10:54:05
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	97.261		
Ag	107	98.904		
Cd	111	99.230		
Cd	114			
In	115		97.785	
Sn	118	97.761		
Sb	123	98.094		
Ba	135	98.785		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.951		
Tl	205			
Pb	206	99.956		
Pb	207	100.093		
Pb	208	99.943		
U	238	99.780		
Bi	209		97.371	
Na	23	0.100		
Mg	24	100.110		
K	39	98.328		
Ca	43	107.510		
Fe	54	99.429		
Fe	57	99.625		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
Report Date/Time: Thursday, June 30, 2016 10:54:05
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 30, 2016 10:55:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67078.2	2.4				ug/L	74916	Standard
	Be	9	50.0	69.3	**0.0488**	0.035	71.6	ug/L	10	Standard
	Al	27	6411.8	70.9	**0.0385**	0.028	72.5	ug/L	1822	Standard
	Sc	45	54151.6	2.7				ug/L	55220	Standard
	Ti	47	64.0	40.2	**0.0867**	0.061	70.7	ug/L	34	Standard
	V	51	1644.8	9.3	**-0.0159**	0.016	101.1	ug/L	1938	Standard
	Cr	52	8148.5	4.3	**-0.1190**	0.032	26.5	ug/L	9522	Standard
	Cr	53	370.0	15.6	**-0.0506**	0.049	96.6	ug/L	395	Standard
	Mn	55	1219.4	21.0	**0.0389**	0.029	75.7	ug/L	902	Standard
	Co	59	552.3	35.6	**0.0460**	0.024	52.4	ug/L	262	Standard
	Ni	60	412.0	16.2	**0.0410**	0.028	69.1	ug/L	371	Standard
	Cu	65	206.0	25.8	**0.0359**	0.023	65.3	ug/L	106	Standard
	Zn	66	425.0	8.2	**-0.0140**	0.033	233.6	ug/L	398	Standard
>	**Ge**	72	526727.6	1.9				ug/L	535147	Standard
	As	75	12.2	412.1	**0.0647**	0.038	58.5	ug/L	-43	Standard
	Se	82	20.7	24.7	**0.0587**	0.041	69.9	ug/L	14	Standard
	Se-1	77	56.7	22.1	**0.0564**	0.131	231.2	ug/L	65	Standard
>	**Ga**	71	90.0	25.5				mg/L	97	Standard
	Rb	85	36.7	7.9				ug/L	15	Standard
	Y	89	462493.1	2.2				ug/L	465704	Standard
>	**Rh**	103	10.0	86.6				ug/L	10	Standard
	Mo	98	363.4	28.8	**0.1314**	0.033	25.2	ug/L	9	Standard
	Ag	107	282.0	43.5	**0.0321**	0.016	50.6	ug/L	82	Standard
	Cd	111	62.7	87.0	**0.0343**	0.023	66.4	mg/L	7	Standard
	Cd	114	166.3	71.5	**0.0381**	0.021	54.1	ug/L	21	Standard
>	**In**	115	604846.6	0.9				ug/L	619035	Standard
	Sn	118	1070.0	10.6	**0.0649**	0.019	29.1	ug/L	508	Standard
	Sb	123	524.8	1.2	**0.1058**	0.002	1.7	ug/L	86	Standard
	Ba	135	121.3	57.5	**0.0345**	0.031	88.8	ug/L	79	Standard
	Ce	140	45.0	50.9				ug/L	68	Standard
>	**Tb**	159	962411.6	1.0				ug/L	986982	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	249.3	85.5	**0.0336**	0.023	69.7	ug/L	13	Standard
	Tl	205	243.3	73.6	**0.0393**	0.023	58.5	ug/L	10	Standard
	Pb	206	433.7	30.1	**0.0374**	0.022	58.2	ug/L	264	Standard
	Pb	207	379.0	24.0	**0.0395**	0.017	41.9	ug/L	227	Standard
	Pb	208	1619.7	32.3	**0.0422**	0.025	59.6	ug/L	868	Standard
	U	238	218.3	75.0	**0.0372**	0.022	58.4	ug/L	8	Standard
>	**Bi**	209	531441.7	1.6				ug/L	541014	Standard

Sample ID: QC Std 2
Report Date/Time: Thursday, June 30, 2016 10:57:18
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	43.6	**0.0208**	0.023	110.8	mg/L	53	Standard
K	39	51.7	24.4	**0.0138**	0.024	174.4	mg/L	53	Standard
Ca	43	30.0	33.3	**0.0685**	0.625	913.0	mg/L	28	Standard
Fe	54	162.6	13.7	**-0.0054**	0.018	338.9	mg/L	181	Standard
Fe	57	263.3	25.3	**0.0455**	0.163	357.3	mg/L	257	Standard
> **Sc-1**	45	54151.6	2.7				mg/L	55220	Standard
Cl	35	33892.5	1.8				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1836.8	9.3				ug/L	2040	Standard
P	31	20765.9	1.7				ug/L	20435	Standard
S	34	2595.2	6.8				ug/L	2430	Standard
Sr	88	70.0	49.5				ug/L	75	Standard
C	12	130.0	27.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	586.2	22.6				mg/L	9	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	80.0	45.1				mg/L	23	Standard
I	127	16415.6	0.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 2
Report Date/Time: Thursday, June 30, 2016 10:57:18
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.708
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.231
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 2
Report Date/Time: Thursday, June 30, 2016 10:57:18
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, June 30, 2016 10:58:14
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64500.4	2.4				ug/L	74916	Standard
	Be	9	203.3	8.6	**0.2203**	0.020	9.0	ug/L	10	Standard
	Al	27	1753.4	16.3	**0.0094**	0.002	18.5	ug/L	1822	Standard
	Sc	45	50965.6	0.7				ug/L	55220	Standard
	Ti	47	28.7	28.0	**0.0021**	0.020	920.6	ug/L	34	Standard
	V	51	4896.0	2.8	**0.3548**	0.008	2.3	ug/L	1938	Standard
	Cr	52	14526.3	1.1	**0.6444**	0.040	6.2	ug/L	9522	Standard
	Cr	53	1280.1	8.5	**0.8090**	0.103	12.7	ug/L	395	Standard
	Mn	55	4612.7	1.2	**0.4540**	0.004	0.9	ug/L	902	Standard
	Co	59	3227.7	0.8	**0.3904**	0.004	1.1	ug/L	262	Standard
	Ni	60	3626.4	2.5	**1.5413**	0.064	4.1	ug/L	371	Standard
	Cu	65	1774.1	3.8	**0.7795**	0.031	3.9	ug/L	106	Standard
	Zn	66	7890.1	0.7	**5.9833**	0.114	1.9	ug/L	398	Standard
>	Ge	72	513465.0	1.3				ug/L	535147	Standard
	As	75	440.5	6.0	**0.3981**	0.023	5.9	ug/L	-43	Standard
	Se	82	66.6	10.6	**0.4154**	0.058	14.0	ug/L	14	Standard
	Se-1	77	87.0	3.0	**0.4255**	0.041	9.7	ug/L	65	Standard
>	Ga	71	58.3	17.8				mg/L	97	Standard
	Rb	85	26.7	43.3				ug/L	15	Standard
	Y	89	439375.0	1.0				ug/L	465704	Standard
>	Rh	103	10.0	86.6				ug/L	10	Standard
	Mo	98	96.4	30.1	**0.0448**	0.010	21.6	ug/L	9	Standard
	Ag	107	2923.6	0.8	**0.4010**	0.002	0.6	ug/L	82	Standard
	Cd	111	535.9	6.0	**0.2413**	0.014	6.0	mg/L	7	Standard
	Cd	114	1345.3	5.7	**0.2523**	0.016	6.4	ug/L	21	Standard
>	In	115	588951.2	1.0				ug/L	619035	Standard
	Sn	118	551.7	21.2	**-0.0144**	0.018	127.8	ug/L	508	Standard
	Sb	123	2094.7	0.9	**0.4201**	0.001	0.2	ug/L	86	Standard
	Ba	135	1633.1	2.2	**0.7313**	0.020	2.7	ug/L	79	Standard
	Ce	140	21.7	53.3				ug/L	68	Standard
>	Tb	159	931014.3	1.3				ug/L	986982	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	732.7	7.5	**0.0893**	0.006	6.6	ug/L	13	Standard
	Tl	205	583.3	9.7	**0.0854**	0.008	9.3	ug/L	10	Standard
	Pb	206	1436.4	1.9	**0.2169**	0.006	2.8	ug/L	264	Standard
	Pb	207	1236.7	1.0	**0.2094**	0.002	0.7	ug/L	227	Standard
	Pb	208	4768.0	1.4	**0.2042**	0.003	1.4	ug/L	868	Standard
	U	238	2803.9	2.1	**0.3935**	0.009	2.3	ug/L	8	Standard
>	Bi	209	520833.4	0.5				ug/L	541014	Standard

Sample ID: QC Std 3
Report Date/Time: Thursday, June 30, 2016 11:00:31
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.0840**	17.457	173.1	mg/L	2	Standard
Mg	24	35.0	65.5	**0.0068**	0.027	399.5	mg/L	53	Standard
K	39	51.7	29.6	**0.0189**	0.027	145.5	mg/L	53	Standard
Ca	43	41.7	13.9	**0.8836**	0.370	41.8	mg/L	28	Standard
Fe	54	120.1	2.6	**-0.0301**	0.003	9.4	mg/L	181	Standard
Fe	57	306.7	15.8	**0.2172**	0.139	63.9	mg/L	257	Standard
Sc-1	45	50965.6	0.7				mg/L	55220	Standard
Cl	35	32699.9	0.7				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1686.8	5.7				ug/L	2040	Standard
P	31	13986.5	2.7				ug/L	20435	Standard
S	34	2311.8	5.0				ug/L	2430	Standard
Sr	88	78.3	28.8				ug/L	75	Standard
C	12	143.3	10.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	25.4	58.0				mg/L	9	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	26.7	78.1				mg/L	23	Standard
I	127	1528.4	10.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.150		
Al	27	0.939		
Sc	45			
Ti	47			
V	51	88.689		
Cr	52	80.551		
Cr	53			
Mn	55	90.794		
Co	59	97.600		
Ni	60	96.329		
Cu	65	97.433		
Zn	66	95.733		
Ge	72		95.948	
As	75	99.531		
Se	82	103.853		
Se-1	77			
Ga	71			

Sample ID: QC Std 3
Report Date/Time: Thursday, June 30, 2016 11:00:31
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	100.254		
Cd	111	100.534		
Cd	114			
> In	115			95.140
Sn	118			
Sb	123	105.037		
Ba	135	97.502		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	111.679		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.099		
U	238	98.364		
> Bi	209			96.270
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
Report Date/Time: Thursday, June 30, 2016 11:00:31
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, June 30, 2016 11:01:26
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69047.0	1.6				ug/L	74916	Standard
	Be	9	30.0	28.9	**0.0273**	0.009	34.6	ug/L	10	Standard
	Al	27	7980071.2	1.4	**49.8949**	0.509	1.0	ug/L	1822	Standard
	Sc	45	53713.4	1.0				ug/L	55220	Standard
	Ti	47	44903.8	1.5	**110.8893**	1.899	1.7	ug/L	34	Standard
	V	51	2017.2	8.6	**0.0260**	0.020	77.0	ug/L	1938	Standard
	Cr	52	9364.2	1.6	**0.0229**	0.019	84.6	ug/L	9522	Standard
	Cr	53	2848.6	9.1	**2.2177**	0.229	10.3	ug/L	395	Standard
	Mn	55	1866.1	2.8	**0.1163**	0.006	5.5	ug/L	902	Standard
	Co	59	498.3	2.8	**0.0396**	0.002	5.1	ug/L	262	Standard
	Ni	60	1225.4	1.5	**0.4122**	0.009	2.1	ug/L	371	Standard
	Cu	65	783.4	1.7	**0.3035**	0.005	1.6	ug/L	106	Standard
	Zn	66	1398.7	2.4	**0.7516**	0.026	3.4	ug/L	398	Standard
>	**Ge**	72	524552.7	0.4				ug/L	535147	Standard
	As	75	-41.9	71.7	**0.0233**	0.023	98.3	ug/L	-43	Standard
	Se	82	17.8	18.1	**0.0369**	0.024	64.7	ug/L	14	Standard
	Se-1	77	315.0	3.8	**2.9861**	0.140	4.7	ug/L	65	Standard
>	**Ga**	71	231.7	8.7				mg/L	97	Standard
	Rb	85	1228.4	9.5				ug/L	15	Standard
	Y	89	457479.6	1.4				ug/L	465704	Standard
>	**Rh**	103	8.3	34.6				ug/L	10	Standard
	Mo	98	298868.9	1.0	**98.1743**	0.505	0.5	ug/L	9	Standard
	Ag	107	276.3	5.3	**0.0314**	0.002	6.3	ug/L	82	Standard
	Cd	111	-209.1	3.3	**-0.0809**	0.003	4.0	mg/L	7	Standard
	Cd	114	585.9	7.2	**0.1122**	0.007	6.1	ug/L	21	Standard
>	**In**	115	604081.8	0.6				ug/L	619035	Standard
	Sn	118	835.0	7.9	**0.0281**	0.011	39.5	ug/L	508	Standard
	Sb	123	241.9	20.1	**0.0513**	0.010	18.8	ug/L	86	Standard
	Ba	135	819.7	4.2	**0.3477**	0.013	3.8	ug/L	79	Standard
	Ce	140	243.3	11.3				ug/L	68	Standard
>	**Tb**	159	958745.4	0.6				ug/L	986982	Standard
	Ho	165	28.3	50.9				ug/L	10	Standard
	Tl	203	353.7	19.3	**0.0458**	0.008	17.2	ug/L	13	Standard
	Tl	205	340.0	24.1	**0.0525**	0.011	21.0	ug/L	10	Standard
	Pb	206	540.3	0.6	**0.0568**	0.001	1.7	ug/L	264	Standard
	Pb	207	482.3	2.7	**0.0602**	0.003	4.2	ug/L	227	Standard
	Pb	208	1869.4	0.5	**0.0556**	0.000	0.7	ug/L	868	Standard
	U	238	22.7	9.2	**0.0110**	0.000	2.7	ug/L	8	Standard
>	**Bi**	209	527440.0	0.7				ug/L	541014	Standard

Sample ID: QC Std 4
Report Date/Time: Thursday, June 30, 2016 11:03:42
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11219.2	1.9	**12.5374**	0.364	2.9	mg/L	53	Standard
K	39	2653.6	10.5	**4.5535**	0.480	10.5	mg/L	53	Standard
Ca	43	296.7	13.7	**15.6039**	2.413	15.5	mg/L	28	Standard
Fe	54	17937.8	2.3	**12.4450**	0.170	1.4	mg/L	181	Standard
Fe	57	4687.4	2.3	**12.1000**	0.169	1.4	mg/L	257	Standard
Sc-1	45	53713.4	1.0				mg/L	55220	Standard
Cl	35	32003.8	1.7				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1996.8	3.9				ug/L	2040	Standard
P	31	20527.4	12.6				ug/L	20435	Standard
S	34	2190.2	4.6				ug/L	2430	Standard
Sr	88	61.7	9.4				ug/L	75	Standard
C	12	220.0	16.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	40.5				mg/L	7	Standard
Dy	164	12.5	45.0				mg/L	9	Standard
Ho-1	165	28.3	50.9				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	2538.5	6.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.998		
Sc	45			
Ti	47	110.889		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.020	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 4
Report Date/Time: Thursday, June 30, 2016 11:03:42
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.174		
Ag	107			
Cd	111			
Cd	114			
In	115			97.584
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			97.491
Na	23	0.040		
Mg	24	250.748		
K	39	91.069		
Ca	43	104.026		
Fe	54	99.560		
Fe	57	96.800		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

Sample ID: QC Std 4
Report Date/Time: Thursday, June 30, 2016 11:03:42
Page 3

Approved: July 01, 2016

QC Std 4	Mg	24

Sample ID: QC Std 4
Report Date/Time: Thursday, June 30, 2016 11:03:42
Page 4

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, June 30, 2016 11:04:37
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72463.0	3.2				ug/L	74916	Standard
	Be	9	98297.8	0.6	**96.3910**	3.517	3.6	ug/L	10	Standard
	Al	27	8447942.1	1.6	**50.3585**	1.657	3.3	ug/L	1822	Standard
	Sc	45	52367.0	0.4				ug/L	55220	Standard
	Ti	47	44980.0	1.7	**109.4960**	2.514	2.3	ug/L	34	Standard
	V	51	885855.9	1.8	**96.0355**	2.157	2.2	ug/L	1938	Standard
	Cr	52	857497.0	0.9	**94.8597**	1.504	1.6	ug/L	9522	Standard
	Cr	53	107918.0	1.0	**96.9200**	1.348	1.4	ug/L	395	Standard
	Mn	55	808410.1	1.8	**94.4490**	2.273	2.4	ug/L	902	Standard
	Co	59	768641.5	1.6	**94.9270**	2.168	2.3	ug/L	262	Standard
	Ni	60	210790.5	0.8	**94.4332**	0.812	0.9	ug/L	371	Standard
	Cu	65	209564.5	1.5	**95.4828**	2.026	2.1	ug/L	106	Standard
	Zn	66	127430.0	0.9	**98.2863**	1.219	1.2	ug/L	398	Standard
>	Ge	72	532155.6	0.7				ug/L	535147	Standard
	As	75	129733.9	1.2	**97.4561**	1.333	1.4	ug/L	-43	Standard
	Se	82	12863.9	0.1	**95.3546**	0.676	0.7	ug/L	14	Standard
	Se-1	77	9072.4	1.9	**100.6971**	2.031	2.0	ug/L	65	Standard
>	Ga	71	191.7	3.0				mg/L	97	Standard
	Rb	85	1040.0	3.4				ug/L	15	Standard
	Y	89	459617.2	0.7				ug/L	465704	Standard
>	Rh	103	48.3	36.3				ug/L	10	Standard
	Mo	98	300627.9	1.7	**98.7341**	1.433	1.5	ug/L	9	Standard
	Ag	107	626834.5	7.6	**85.0619**	6.265	7.4	ug/L	82	Standard
	Cd	111	225712.2	0.8	**95.8236**	0.304	0.3	mg/L	7	Standard
	Cd	114	546974.4	1.4	**96.4250**	0.861	0.9	ug/L	21	Standard
>	In	115	604185.2	0.5				ug/L	619035	Standard
	Sn	118	951.7	2.0	**0.0464**	0.002	5.3	ug/L	508	Standard
	Sb	123	496035.7	1.5	**95.9684**	1.123	1.2	ug/L	86	Standard
	Ba	135	213321.7	1.3	**95.5818**	0.880	0.9	ug/L	79	Standard
	Ce	140	56.7	10.2				ug/L	68	Standard
>	Tb	159	980693.1	0.1				ug/L	986982	Standard
	Ho	165	15.0	88.2				ug/L	10	Standard
	Tl	203	870360.2	0.9	**95.8131**	0.800	0.8	ug/L	13	Standard
	Tl	205	746193.3	0.5	**96.1523**	0.552	0.6	ug/L	10	Standard
	Pb	206	567035.9	1.4	**97.2301**	1.451	1.5	ug/L	264	Standard
	Pb	207	493132.7	0.8	**93.5550**	0.631	0.7	ug/L	227	Standard
	Pb	208	1948151.9	0.5	**95.8535**	0.504	0.5	ug/L	868	Standard
	U	238	709733.2	0.4	**94.4363**	0.351	0.4	ug/L	8	Standard
>	Bi	209	538272.1	0.1				ug/L	541014	Standard

Sample ID: QC Std 5
Report Date/Time: Thursday, June 30, 2016 11:06:54
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.9241**	17.180	173.1	mg/L	2	Standard
Mg	24	11447.7	3.7	**13.1199**	0.448	3.4	mg/L	53	Standard
K	39	2688.6	4.4	**4.7356**	0.226	4.8	mg/L	53	Standard
Ca	43	285.0	16.7	**15.3503**	2.879	18.8	mg/L	28	Standard
Fe	54	17502.0	3.9	**12.4563**	0.493	4.0	mg/L	181	Standard
Fe	57	4882.5	2.9	**12.9742**	0.403	3.1	mg/L	257	Standard
Sc-1	45	52367.0	0.4				mg/L	55220	Standard
Cl	35	31680.4	0.6				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2006.8	4.1				ug/L	2040	Standard
P	31	17386.6	2.6				ug/L	20435	Standard
S	34	2086.8	9.8				ug/L	2430	Standard
Sr	88	73.3	20.8				ug/L	75	Standard
C	12	173.3	37.5				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	8.9	6.2				mg/L	9	Standard
Ho-1	165	15.0	88.2				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	19968.2	3.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.391		
Al	27	1.007		
Sc	45			
Ti	47	109.496		
V	51	96.035		
Cr	52	94.860		
Cr	53			
Mn	55	94.449		
Co	59	94.927		
Ni	60	94.433		
Cu	65	95.483		
Zn	66	98.286		
Ge	72		99.441	
As	75	97.456		
Se	82	95.355		
Se-1	77			
Ga	71			

Sample ID: QC Std 5
Report Date/Time: Thursday, June 30, 2016 11:06:54
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.734		
Ag	107	85.062		
Cd	111	95.824		
Cd	114			
In	115		97.601	
Sn	118			
Sb	123	95.968		
Ba	135	95.582		
Ce	140			
Tb	159			
Ho	165			
Tl	203	95.813		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.853		
U	238	94.436		
Bi	209		99.493	
Na	23	79.393		
Mg	24	262.398		
K	39	94.712		
Ca	43	102.336		
Fe	54	99.650		
Fe	57	103.794		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
Report Date/Time: Thursday, June 30, 2016 11:06:54
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 11:07:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72536.7	3.7				ug/L	74916	Standard
	Be	9	50693.0	0.3	**49.6607**	1.688	3.4	ug/L	10	Standard
	Al	27	8327113.6	2.9	**49.5669**	0.426	0.9	ug/L	1822	Standard
	Sc	45	53057.7	1.0				ug/L	55220	Standard
	Ti	47	40618.4	1.5	**99.3748**	1.991	2.0	ug/L	34	Standard
	V	51	460379.9	0.4	**50.0683**	0.385	0.8	ug/L	1938	Standard
	Cr	52	450102.7	2.7	**49.5570**	1.580	3.2	ug/L	9522	Standard
	Cr	53	55635.3	1.9	**50.0358**	1.215	2.4	ug/L	395	Standard
	Mn	55	423500.2	1.5	**49.6797**	0.961	1.9	ug/L	902	Standard
	Co	59	409881.4	1.9	**50.8666**	1.204	2.4	ug/L	262	Standard
	Ni	60	110889.0	0.9	**49.8637**	0.615	1.2	ug/L	371	Standard
	Cu	65	109608.1	1.3	**50.1660**	0.894	1.8	ug/L	106	Standard
	Zn	66	64818.0	1.3	**50.0808**	0.895	1.8	ug/L	398	Standard
>	**Ge**	72	529450.1	0.5				ug/L	535147	Standard
	As	75	66239.4	0.3	**50.0394**	0.294	0.6	ug/L	-43	Standard
	Se	82	6726.4	0.5	**50.0674**	0.227	0.5	ug/L	14	Standard
	Se-1	77	4648.4	2.9	**51.5794**	1.744	3.4	ug/L	65	Standard
>	**Ga**	71	66.7	22.9				mg/L	97	Standard
	Rb	85	955.0	7.9				ug/L	15	Standard
	Y	89	458931.7	0.2				ug/L	465704	Standard
>	**Rh**	103	26.7	10.8				ug/L	10	Standard
	Mo	98	304032.3	1.1	**97.4918**	0.468	0.5	ug/L	9	Standard
	Ag	107	372476.9	0.7	**49.3535**	0.113	0.2	ug/L	82	Standard
	Cd	111	118909.2	1.2	**49.2913**	0.303	0.6	mg/L	7	Standard
	Cd	114	290136.7	0.3	**49.9462**	0.493	1.0	ug/L	21	Standard
>	**In**	115	618815.7	0.7				ug/L	619035	Standard
	Sn	118	323168.7	1.1	**49.5729**	0.500	1.0	ug/L	508	Standard
	Sb	123	263073.5	1.0	**49.6963**	0.188	0.4	ug/L	86	Standard
	Ba	135	112084.1	1.1	**49.0241**	0.233	0.5	ug/L	79	Standard
	Ce	140	163.3	15.7				ug/L	68	Standard
>	**Tb**	159	982022.6	0.6				ug/L	986982	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	455658.8	1.2	**50.0475**	0.793	1.6	ug/L	13	Standard
	Tl	205	396748.5	1.8	**51.0037**	0.610	1.2	ug/L	10	Standard
	Pb	206	292830.3	0.4	**50.0750**	0.191	0.4	ug/L	264	Standard
	Pb	207	264806.7	0.5	**50.1043**	0.182	0.4	ug/L	227	Standard
	Pb	208	1023180.7	1.1	**50.2060**	0.575	1.1	ug/L	868	Standard
	U	238	378257.3	1.4	**50.2134**	0.362	0.7	ug/L	8	Standard
>	**Bi**	209	539549.6	0.7				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 11:10:07
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.6749**	16.749	173.1	mg/L	2	Standard
Mg	24	4524.0	6.4	**5.0993**	0.385	7.5	mg/L	53	Standard
K	39	2573.6	1.7	**4.4700**	0.112	2.5	mg/L	53	Standard
Ca	43	131.7	2.2	**6.0879**	0.249	4.1	mg/L	28	Standard
Fe	54	7333.9	2.8	**5.0822**	0.153	3.0	mg/L	181	Standard
Fe	57	2120.1	7.9	**5.1834**	0.493	9.5	mg/L	257	Standard
> **Sc-1**	45	53057.7	1.0				mg/L	55220	Standard
Cl	35	34119.7	1.1				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1983.5	11.5				ug/L	2040	Standard
P	31	20664.1	0.8				ug/L	20435	Standard
S	34	2381.9	5.4				ug/L	2430	Standard
Sr	88	63.3	9.1				ug/L	75	Standard
C	12	150.0	6.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	12.5	122.8				mg/L	9	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	16197.0	2.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.321		
Al	27	99.134		
Sc	45			
Ti	47	99.375		
V	51	100.137		
Cr	52	99.114		
Cr	53			
Mn	55	99.359		
Co	59	101.733		
Ni	60	99.727		
Cu	65	100.332		
Zn	66	100.162		
> Ge	72		98.935	
As	75	100.079		
Se	82	100.135		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 11:10:07
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	97.492		
Ag	107	98.707		
Cd	111	98.583		
Cd	114			
> In	115			99.965
Sn	118	99.146		
Sb	123	99.393		
Ba	135	98.048		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.095		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.412		
U	238	100.427		
> Bi	209			99.729
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 11:10:07
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 11:11:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73134.5	2.3				ug/L	74916	Standard
	Be	9	38.3	7.5	**0.0336**	0.003	7.6	ug/L	10	Standard
	Al	27	3792.2	44.9	**0.0199**	0.009	47.4	ug/L	1822	Standard
	Sc	45	54190.1	0.5				ug/L	55220	Standard
	Ti	47	48.3	19.2	**0.0478**	0.021	44.7	ug/L	34	Standard
	V	51	1584.9	7.6	**-0.0237**	0.012	50.3	ug/L	1938	Standard
	Cr	52	7959.1	2.1	**-0.1465**	0.013	8.8	ug/L	9522	Standard
	Cr	53	491.7	4.1	**0.0574**	0.016	27.6	ug/L	395	Standard
	Mn	55	1049.0	8.7	**0.0179**	0.009	49.9	ug/L	902	Standard
	Co	59	426.3	10.5	**0.0300**	0.005	16.8	ug/L	262	Standard
	Ni	60	348.0	13.6	**0.0110**	0.021	186.8	ug/L	371	Standard
	Cu	65	167.7	18.3	**0.0179**	0.014	75.9	ug/L	106	Standard
	Zn	66	414.7	7.1	**-0.0248**	0.018	72.5	ug/L	398	Standard
>	**Ge**	72	530396.1	2.0				ug/L	535147	Standard
	As	75	-26.7	180.7	**0.0347**	0.037	105.8	ug/L	-43	Standard
	Se	82	16.6	86.9	**0.0271**	0.107	394.5	ug/L	14	Standard
	Se-1	77	63.0	18.0	**0.1234**	0.118	95.9	ug/L	65	Standard
>	**Ga**	71	83.3	33.0				mg/L	97	Standard
	Rb	85	18.3	15.7				ug/L	15	Standard
	Y	89	465262.4	0.7				ug/L	465704	Standard
>	**Rh**	103	18.3	63.0				ug/L	10	Standard
	Mo	98	279.5	14.4	**0.1015**	0.013	12.7	ug/L	9	Standard
	Ag	107	219.7	28.5	**0.0229**	0.008	36.2	ug/L	82	Standard
	Cd	111	34.5	55.0	**0.0221**	0.008	35.5	mg/L	7	Standard
	Cd	114	80.2	45.7	**0.0226**	0.006	27.8	ug/L	21	Standard
>	**In**	115	622224.2	0.3				ug/L	619035	Standard
	Sn	118	925.0	9.2	**0.0380**	0.013	34.2	ug/L	508	Standard
	Sb	123	983.6	25.4	**0.1892**	0.047	24.8	ug/L	86	Standard
	Ba	135	87.3	18.7	**0.0184**	0.007	38.9	ug/L	79	Standard
	Ce	140	26.7	78.1				ug/L	68	Standard
>	**Tb**	159	965445.1	0.7				ug/L	986982	Standard
	Ho	165	21.7	13.3				ug/L	10	Standard
	Tl	203	154.0	63.6	**0.0228**	0.011	46.9	ug/L	13	Standard
	Tl	205	146.7	58.8	**0.0264**	0.011	41.8	ug/L	10	Standard
	Pb	206	392.0	15.8	**0.0287**	0.011	37.2	ug/L	264	Standard
	Pb	207	329.3	12.9	**0.0286**	0.008	28.3	ug/L	227	Standard
	Pb	208	1276.7	12.2	**0.0238**	0.008	32.6	ug/L	868	Standard
	U	238	109.0	69.7	**0.0223**	0.010	45.1	ug/L	8	Standard
>	**Bi**	209	544217.1	0.5				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 11:13:19
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.4960**	16.439	173.1	mg/L	2	Standard
Mg	24	38.3	39.8	**0.0080**	0.017	212.6	mg/L	53	Standard
K	39	48.3	39.2	**0.0075**	0.032	430.4	mg/L	53	Standard
Ca	43	36.7	28.4	**0.4397**	0.593	134.8	mg/L	28	Standard
Fe	54	180.9	15.5	**0.0069**	0.020	289.3	mg/L	181	Standard
Fe	57	275.0	14.2	**0.0792**	0.103	130.6	mg/L	257	Standard
Sc-1	45	54190.1	0.5				mg/L	55220	Standard
Cl	35	34690.3	0.7				ug/L	35504	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1803.4	1.8				ug/L	2040	Standard
P	31	20203.5	2.8				ug/L	20435	Standard
S	34	2368.5	5.0				ug/L	2430	Standard
Sr	88	71.7	21.3				ug/L	75	Standard
C	12	163.3	23.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	541.4	14.2				mg/L	9	Standard
Ho-1	165	21.7	13.3				mg/L	10	Standard
Er	166	110.0	18.2				mg/L	23	Standard
I	127	15639.7	0.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.112	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 11:13:19
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.515
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.592
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 11:13:19
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: PBW M6 WG574201-01
Sample Date/Time: Thursday, June 30, 2016 11:14:15
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66206.1	3.3				ug/L	74916	Standard
	Be	9	25.0	20.0	**0.0233**	0.006	25.2	ug/L	10	Standard
	Al	27	2728.6	2.0	**0.0155**	0.000	2.2	ug/L	1822	Standard
	Sc	45	49101.1	1.0				ug/L	55220	Standard
	Ti	47	33.3	12.5	**0.0177**	0.011	61.7	ug/L	34	Standard
	V	51	1448.5	2.2	**-0.0261**	0.004	15.6	ug/L	1938	Standard
	Cr	52	6056.9	2.1	**-0.3065**	0.017	5.5	ug/L	9522	Standard
	Cr	53	286.7	2.0	**-0.1076**	0.007	6.6	ug/L	395	Standard
	Mn	55	618.3	12.3	**-0.0269**	0.010	35.9	ug/L	902	Standard
	Co	59	318.7	5.7	**0.0198**	0.003	12.7	ug/L	262	Standard
	Ni	60	362.3	3.8	**0.0303**	0.006	18.8	ug/L	371	Standard
	Cu	65	99.7	13.6	**-0.0096**	0.007	69.2	ug/L	106	Standard
	Zn	66	633.3	59.2	**0.1836**	0.314	171.0	ug/L	398	Standard
>	**Ge**	72	491721.1	0.6				ug/L	535147	Standard
	As	75	-19.8	15.7	**0.0391**	0.003	6.6	ug/L	-43	Standard
	Se	82	19.7	30.5	**0.0611**	0.049	79.6	ug/L	14	Standard
	Se-1	77	63.7	13.1	**0.1875**	0.097	51.7	ug/L	65	Standard
>	**Ga**	71	55.0	24.1				mg/L	97	Standard
	Rb	85	18.3	15.7				ug/L	15	Standard
	Y	89	428431.8	1.3				ug/L	465704	Standard
>	**Rh**	103	13.3	57.3				ug/L	10	Standard
	Mo	98	53.7	29.6	**0.0311**	0.006	17.7	ug/L	9	Standard
	Ag	107	174.0	16.4	**0.0191**	0.004	21.5	ug/L	82	Standard
	Cd	111	22.2	17.0	**0.0179**	0.002	9.4	mg/L	7	Standard
	Cd	114	51.3	23.3	**0.0185**	0.002	12.1	ug/L	21	Standard
>	**In**	115	566677.7	0.5				ug/L	619035	Standard
	Sn	118	201.7	12.5	**-0.0696**	0.004	6.0	ug/L	508	Standard
	Sb	123	254.5	16.3	**0.0569**	0.009	15.1	ug/L	86	Standard
	Ba	135	59.7	19.4	**0.0089**	0.006	63.6	ug/L	79	Standard
	Ce	140	6.7	114.6				ug/L	68	Standard
>	**Tb**	159	901324.0	1.3				ug/L	986982	Standard
	Ho	165	0.0					ug/L	10	Standard
	Tl	203	103.0	43.3	**0.0179**	0.005	29.0	ug/L	13	Standard
	Tl	205	81.7	30.8	**0.0187**	0.003	18.3	ug/L	10	Standard
	Pb	206	284.0	15.4	**0.0131**	0.008	60.7	ug/L	264	Standard
	Pb	207	248.0	13.5	**0.0160**	0.007	42.8	ug/L	227	Standard
	Pb	208	1008.0	8.1	**0.0135**	0.004	32.6	ug/L	868	Standard
	U	238	45.7	20.3	**0.0142**	0.001	9.1	ug/L	8	Standard
>	**Bi**	209	515556.1	0.5				ug/L	541014	Standard

Sample ID: PBW M6 WG574201-01
Report Date/Time: Thursday, June 30, 2016 11:16:32
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	30.0	**0.0268**	0.019	70.2	mg/L	53	Standard
K	39	56.7	51.7	**0.0318**	0.055	171.6	mg/L	53	Standard
Ca	43	30.0	44.1	**0.2337**	0.839	359.0	mg/L	28	Standard
Fe	54	72.8	37.4	**-0.0631**	0.020	32.2	mg/L	181	Standard
Fe	57	295.0	9.0	**0.2156**	0.073	33.8	mg/L	257	Standard
Sc-1	45	49101.1	1.0				mg/L	55220	Standard
Cl	35	31979.7	0.9				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1776.8	5.5				ug/L	2040	Standard
P	31	7448.6	24.8				ug/L	20435	Standard
S	34	2298.5	2.2				ug/L	2430	Standard
Sr	88	85.0	31.1				ug/L	75	Standard
C	12	140.0	46.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	-0.3	86.6				mg/L	9	Standard
Ho-1	165	0.0					mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	1355.1	9.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		88.373	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.885	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: PBW M6 WG574201-01
Report Date/Time: Thursday, June 30, 2016 11:16:32
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.542
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.294
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW M6 WG574201-01
Report Date/Time: Thursday, June 30, 2016 11:16:32
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: LCSW M6 WG574201-02
Sample Date/Time: Thursday, June 30, 2016 11:17:27
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64644.4	3.5				ug/L	74916	Standard
	Be	9	24256.1	3.2	**26.6512**	0.918	3.4	ug/L	10	Standard
	Al	27	4295.6	5.2	**0.0264**	0.001	4.2	ug/L	1822	Standard
	Sc	45	48622.9	0.9				ug/L	55220	Standard
	Ti	47	37.7	9.3	**0.0291**	0.010	32.8	ug/L	34	Standard
	V	51	152090.0	9.7	**17.6711**	1.731	9.8	ug/L	1938	Standard
	Cr	52	215188.7	5.2	**24.9908**	1.463	5.9	ug/L	9522	Standard
	Cr	53	26019.0	4.3	**24.9885**	1.195	4.8	ug/L	395	Standard
	Mn	55	204766.0	5.1	**25.7989**	1.420	5.5	ug/L	902	Standard
	Co	59	189845.6	5.0	**25.3420**	1.375	5.4	ug/L	262	Standard
	Ni	60	54086.9	5.9	**26.1050**	1.650	6.3	ug/L	371	Standard
	Cu	65	53131.2	5.7	**26.1413**	1.611	6.2	ug/L	106	Standard
	Zn	66	36319.6	5.1	**30.0605**	1.673	5.6	ug/L	398	Standard
>	**Ge**	72	492035.7	0.4				ug/L	535147	Standard
	As	75	33099.6	0.8	**26.9307**	0.104	0.4	ug/L	-43	Standard
	Se	82	3603.6	1.9	**28.8201**	0.426	1.5	ug/L	14	Standard
	Se-1	77	2458.5	4.3	**29.0987**	1.177	4.0	ug/L	65	Standard
>	**Ga**	71	58.3	17.8				mg/L	97	Standard
	Rb	85	31.7	24.1				ug/L	15	Standard
	Y	89	422389.7	3.5				ug/L	465704	Standard
>	**Rh**	103	25.0	34.6				ug/L	10	Standard
	Mo	98	48.7	16.4	**0.0291**	0.003	9.1	ug/L	9	Standard
	Ag	107	180030.5	4.8	**25.6238**	1.186	4.6	ug/L	82	Standard
	Cd	111	60091.4	5.4	**26.7643**	1.380	5.2	mg/L	7	Standard
	Cd	114	145971.9	7.3	**26.9991**	1.950	7.2	ug/L	21	Standard
>	**In**	115	575992.2	0.7				ug/L	619035	Standard
	Sn	118	266.7	15.3	**-0.0594**	0.006	10.8	ug/L	508	Standard
	Sb	123	124962.0	1.4	**25.3655**	0.466	1.8	ug/L	86	Standard
	Ba	135	54723.2	6.3	**25.7054**	1.592	6.2	ug/L	79	Standard
	Ce	140	33.3	31.2				ug/L	68	Standard
>	**Tb**	159	900033.6	0.8				ug/L	986982	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	216597.6	4.6	**24.8274**	1.034	4.2	ug/L	13	Standard
	Tl	205	186399.3	4.4	**25.0109**	0.997	4.0	ug/L	10	Standard
	Pb	206	132845.1	5.7	**23.6873**	1.326	5.6	ug/L	264	Standard
	Pb	207	115019.5	5.7	**22.6941**	1.280	5.6	ug/L	227	Standard
	Pb	208	460646.0	5.9	**23.5670**	1.321	5.6	ug/L	868	Standard
	U	238	142871.0	4.4	**19.8025**	0.973	4.9	ug/L	8	Standard
>	**Bi**	209	516996.9	0.9				ug/L	541014	Standard

Sample ID: LCSW M6 WG574201-02
Report Date/Time: Thursday, June 30, 2016 11:19:43
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.5453**	18.256	173.1	mg/L	2	Standard
Mg	24	33.3	34.6	**0.0068**	0.015	214.9	mg/L	53	Standard
K	39	51.7	22.3	**0.0236**	0.022	94.8	mg/L	53	Standard
Ca	43	36.7	43.8	**0.6853**	1.038	151.5	mg/L	28	Standard
Fe	54	45.4	21.0	**-0.0836**	0.007	8.8	mg/L	181	Standard
Fe	57	285.0	16.1	**0.1940**	0.134	69.1	mg/L	257	Standard
Sc-1	45	48622.9	0.9				mg/L	55220	Standard
Cl	35	31751.2	1.3				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2096.8	15.6				ug/L	2040	Standard
P	31	6428.0	0.9				ug/L	20435	Standard
S	34	2303.5	8.7				ug/L	2430	Standard
Sr	88	73.3	37.6				ug/L	75	Standard
C	12	120.0	52.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	2.7	219.6				mg/L	9	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1255.1	14.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		86.289	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.944	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: LCSW M6 WG574201-02
Report Date/Time: Thursday, June 30, 2016 11:19:43
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.047
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.561
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW M6 WG574201-02
Report Date/Time: Thursday, June 30, 2016 11:19:43
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: LCSW DP WG574201-03
Sample Date/Time: Thursday, June 30, 2016 11:20:39
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63201.6	1.5				ug/L	74916	Standard
	Be	9	23903.8	2.4	**26.8556**	0.733	2.7	ug/L	10	Standard
	Al	27	5737.8	6.2	**0.0369**	0.003	8.1	ug/L	1822	Standard
	Sc	45	48599.5	2.0				ug/L	55220	Standard
	Ti	47	46.3	53.8	**0.0520**	0.065	124.8	ug/L	34	Standard
	V	51	154520.0	8.3	**18.0168**	1.629	9.0	ug/L	1938	Standard
	Cr	52	211595.7	4.7	**24.6240**	1.093	4.4	ug/L	9522	Standard
	Cr	53	25357.9	3.6	**24.4081**	0.661	2.7	ug/L	395	Standard
	Mn	55	201667.5	4.7	**25.4735**	1.044	4.1	ug/L	902	Standard
	Co	59	189508.2	5.6	**25.3626**	1.278	5.0	ug/L	262	Standard
	Ni	60	53391.4	5.8	**25.8339**	1.363	5.3	ug/L	371	Standard
	Cu	65	52719.7	4.6	**26.0057**	1.035	4.0	ug/L	106	Standard
	Zn	66	36052.3	5.5	**29.9141**	1.463	4.9	ug/L	398	Standard
>	Ge	72	490614.4	0.9				ug/L	535147	Standard
	As	75	32692.3	1.1	**26.6791**	0.430	1.6	ug/L	-43	Standard
	Se	82	3581.2	1.2	**28.7291**	0.612	2.1	ug/L	14	Standard
	Se-1	77	2389.9	4.2	**28.3511**	1.007	3.6	ug/L	65	Standard
>	Ga	71	53.3	47.2				mg/L	97	Standard
	Rb	85	35.0	37.8				ug/L	15	Standard
	Y	89	419941.8	0.4				ug/L	465704	Standard
>	Rh	103	26.7	28.6				ug/L	10	Standard
	Mo	98	176.7	7.0	**0.0744**	0.004	5.7	ug/L	9	Standard
	Ag	107	179573.6	4.0	**26.0599**	0.863	3.3	ug/L	82	Standard
	Cd	111	59106.0	5.8	**26.8419**	1.431	5.3	mg/L	7	Standard
	Cd	114	142189.6	5.2	**26.8137**	1.236	4.6	ug/L	21	Standard
>	In	115	564866.5	1.0				ug/L	619035	Standard
	Sn	118	215.0	6.2	**-0.0672**	0.003	3.9	ug/L	508	Standard
	Sb	123	123122.3	1.2	**25.4843**	0.405	1.6	ug/L	86	Standard
	Ba	135	53570.4	6.3	**25.6553**	1.465	5.7	ug/L	79	Standard
	Ce	140	26.7	10.8				ug/L	68	Standard
>	Tb	159	893274.9	1.5				ug/L	986982	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	214845.2	4.9	**24.7144**	1.262	5.1	ug/L	13	Standard
	Tl	205	185089.1	5.4	**24.9242**	1.414	5.7	ug/L	10	Standard
	Pb	206	130951.6	5.5	**23.4302**	1.330	5.7	ug/L	264	Standard
	Pb	207	113903.8	5.8	**22.5513**	1.338	5.9	ug/L	227	Standard
	Pb	208	456214.5	6.4	**23.4221**	1.520	6.5	ug/L	868	Standard
	U	238	142740.1	5.2	**19.8466**	1.002	5.1	ug/L	8	Standard
>	Bi	209	515247.5	0.5				ug/L	541014	Standard

Sample ID: LCSW DP WG574201-03
Report Date/Time: Thursday, June 30, 2016 11:22:56
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	36.7	20.8	**0.0109**	0.010	89.9	mg/L	53	Standard
K	39	50.0	69.3	**0.0209**	0.068	326.3	mg/L	53	Standard
Ca	43	36.7	56.8	**0.6973**	1.372	196.8	mg/L	28	Standard
Fe	54	53.5	29.3	**-0.0772**	0.013	16.4	mg/L	181	Standard
Fe	57	311.7	4.0	**0.2758**	0.054	19.4	mg/L	257	Standard
> **Sc-1**	45	48599.5	2.0				mg/L	55220	Standard
Cl	35	31866.1	1.4				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2513.5	3.9				ug/L	2040	Standard
P	31	6396.4	2.4				ug/L	20435	Standard
S	34	2231.8	5.4				ug/L	2430	Standard
Sr	88	76.7	33.5				ug/L	75	Standard
C	12	163.3	31.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.8	2.8				mg/L	9	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	1581.7	3.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.363	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW DP WG574201-03
Report Date/Time: Thursday, June 30, 2016 11:22:56
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.250
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.237
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW DP WG574201-03
Report Date/Time: Thursday, June 30, 2016 11:22:56
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138401
Sample Date/Time: Thursday, June 30, 2016 11:23:51
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63507.9	2.7				ug/L	74916	Standard
	Be	9	45.0	0.0	**0.0467**	0.001	2.9	ug/L	10	Standard
	Al	27	579151.6	9.1	**3.9324**	0.299	7.6	ug/L	1822	Standard
	Sc	45	50261.6	2.0				ug/L	55220	Standard
	Ti	47	4807.4	10.2	**12.3788**	1.356	11.0	ug/L	34	Standard
	V	51	25206.6	26.1	**2.7183**	0.794	29.2	ug/L	1938	Standard
	Cr	52	66822.6	12.8	**6.9055**	1.063	15.4	ug/L	9522	Standard
	Cr	53	7641.9	11.2	**6.9388**	0.872	12.6	ug/L	395	Standard
	Mn	55	107364.1	9.0	**13.2318**	1.102	8.3	ug/L	902	Standard
	Co	59	1594.4	3.9	**0.1865**	0.008	4.5	ug/L	262	Standard
	Ni	60	5128.5	1.3	**2.2995**	0.031	1.3	ug/L	371	Standard
	Cu	65	1796.8	11.4	**0.8122**	0.107	13.2	ug/L	106	Standard
	Zn	66	6372.3	6.5	**4.8961**	0.382	7.8	ug/L	398	Standard
>	**Ge**	72	500812.1	1.0				ug/L	535147	Standard
	As	75	1116.8	10.4	**0.9467**	0.100	10.6	ug/L	-43	Standard
	Se	82	60.3	14.3	**0.3791**	0.073	19.4	ug/L	14	Standard
	Se-1	77	93.3	11.5	**0.5250**	0.117	22.2	ug/L	65	Standard
>	**Ga**	71	813.4	13.8				mg/L	97	Standard
	Rb	85	11027.4	9.6				ug/L	15	Standard
	Y	89	442099.3	1.0				ug/L	465704	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	5434.4	24.6	**1.8757**	0.486	25.9	ug/L	9	Standard
	Ag	107	172.0	1.5	**0.0182**	0.001	4.1	ug/L	82	Standard
	Cd	111	46.3	23.7	**0.0284**	0.005	17.2	mg/L	7	Standard
	Cd	114	171.4	15.4	**0.0404**	0.005	12.9	ug/L	21	Standard
>	**In**	115	580272.2	1.6				ug/L	619035	Standard
	Sn	118	256.7	21.4	**-0.0613**	0.009	14.7	ug/L	508	Standard
	Sb	123	1175.2	1.3	**0.2412**	0.007	2.8	ug/L	86	Standard
	Ba	135	26741.6	14.3	**12.4444**	1.604	12.9	ug/L	79	Standard
	Ce	140	16634.3	18.2				ug/L	68	Standard
>	**Tb**	159	906690.0	0.8				ug/L	986982	Standard
	Ho	165	818.4	17.3				ug/L	10	Standard
	Tl	203	327.3	4.6	**0.0436**	0.002	5.4	ug/L	13	Standard
	Tl	205	313.3	30.7	**0.0497**	0.013	25.8	ug/L	10	Standard
	Pb	206	746.4	9.3	**0.0958**	0.014	15.0	ug/L	264	Standard
	Pb	207	580.3	13.5	**0.0818**	0.017	21.2	ug/L	227	Standard
	Pb	208	2569.8	12.6	**0.0937**	0.019	19.8	ug/L	868	Standard
	U	238	407.7	27.8	**0.0646**	0.017	25.6	ug/L	8	Standard
>	**Bi**	209	516339.8	1.8				ug/L	541014	Standard

Sample ID: L1606138401
Report Date/Time: Thursday, June 30, 2016 11:26:08
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	568.3	5.2	**0.6464**	0.045	7.0	mg/L	53	Standard
K	39	398.3	4.0	**0.6670**	0.037	5.6	mg/L	53	Standard
Ca	43	43.3	24.0	**1.0309**	0.707	68.6	mg/L	28	Standard
Fe	54	401.5	20.0	**0.1821**	0.061	33.6	mg/L	181	Standard
Fe	57	360.0	7.7	**0.3843**	0.068	17.7	mg/L	257	Standard
> **Sc-1**	45	50261.6	2.0				mg/L	55220	Standard
Cl	35	31812.1	3.4				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2060.1	7.3				ug/L	2040	Standard
P	31	9829.9	2.5				ug/L	20435	Standard
S	34	1978.5	8.8				ug/L	2430	Standard
Sr	88	105.0	29.0				ug/L	75	Standard
C	12	246.7	30.4				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	33.3	105.4				mg/L	7	Standard
Dy	164	1002.4	17.9				mg/L	9	Standard
Ho-1	165	818.4	17.3				mg/L	10	Standard
Er	166	786.7	22.3				mg/L	23	Standard
I	127	4182.2	12.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.772	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.584	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138401
Report Date/Time: Thursday, June 30, 2016 11:26:08
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.738
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606138401
Report Date/Time: Thursday, June 30, 2016 11:26:08
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138403
Sample Date/Time: Thursday, June 30, 2016 11:27:02
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64930.5	1.2				ug/L	74916	Standard
	Be	9	30.0	16.7	**0.0292**	0.006	19.5	ug/L	10	Standard
	Al	27	1828795.5	14.8	**12.1666**	1.899	15.6	ug/L	1822	Standard
	Sc	45	51057.6	1.6				ug/L	55220	Standard
	Ti	47	1084.7	9.7	**2.6861**	0.266	9.9	ug/L	34	Standard
	V	51	32038.5	18.5	**3.4344**	0.672	19.6	ug/L	1938	Standard
	Cr	52	18396.2	5.5	**1.1067**	0.115	10.4	ug/L	9522	Standard
	Cr	53	1613.4	13.1	**1.1304**	0.201	17.7	ug/L	395	Standard
	Mn	55	121230.5	36.9	**14.6904**	5.474	37.3	ug/L	902	Standard
	Co	59	2783.6	25.6	**0.3360**	0.092	27.4	ug/L	262	Standard
	Ni	60	3626.8	8.1	**1.5522**	0.140	9.0	ug/L	371	Standard
	Cu	65	1153.4	7.6	**0.4897**	0.041	8.3	ug/L	106	Standard
	Zn	66	1516.1	18.4	**0.8777**	0.227	25.8	ug/L	398	Standard
>	**Ge**	72	510077.1	0.2				ug/L	535147	Standard
	As	75	1089.9	4.7	**0.9089**	0.038	4.2	ug/L	-43	Standard
	Se	82	41.3	17.6	**0.2229**	0.055	24.9	ug/L	14	Standard
	Se-1	77	73.7	2.1	**0.2766**	0.019	7.0	ug/L	65	Standard
>	**Ga**	71	165.0	19.9				mg/L	97	Standard
	Rb	85	5817.8	8.8				ug/L	15	Standard
	Y	89	441072.2	2.5				ug/L	465704	Standard
>	**Rh**	103	18.3	56.8				ug/L	10	Standard
	Mo	98	6803.9	9.9	**2.3308**	0.237	10.2	ug/L	9	Standard
	Ag	107	181.7	60.0	**0.0194**	0.015	77.8	ug/L	82	Standard
	Cd	111	51.3	53.5	**0.0304**	0.012	39.1	mg/L	7	Standard
	Cd	114	129.3	66.9	**0.0325**	0.016	48.0	ug/L	21	Standard
>	**In**	115	582444.7	1.2				ug/L	619035	Standard
	Sn	118	211.7	14.2	**-0.0689**	0.005	6.6	ug/L	508	Standard
	Sb	123	980.7	9.5	**0.2012**	0.018	8.8	ug/L	86	Standard
	Ba	135	33140.8	28.4	**15.3771**	4.302	28.0	ug/L	79	Standard
	Ce	140	5237.6	5.3				ug/L	68	Standard
>	**Tb**	159	914520.5	1.3				ug/L	986982	Standard
	Ho	165	355.0	24.1				ug/L	10	Standard
	Tl	203	250.0	41.9	**0.0344**	0.012	33.6	ug/L	13	Standard
	Tl	205	195.0	43.1	**0.0337**	0.011	32.6	ug/L	10	Standard
	Pb	206	406.3	9.3	**0.0344**	0.006	16.8	ug/L	264	Standard
	Pb	207	335.7	15.4	**0.0328**	0.009	28.5	ug/L	227	Standard
	Pb	208	1363.7	20.3	**0.0311**	0.013	42.6	ug/L	868	Standard
	U	238	178.3	24.1	**0.0325**	0.006	17.3	ug/L	8	Standard
>	**Bi**	209	519165.0	1.3				ug/L	541014	Standard

Sample ID: L1606138403
Report Date/Time: Thursday, June 30, 2016 11:29:19
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	873.4	10.4	**0.9960**	0.122	12.2	mg/L	53	Standard
K	39	440.0	19.4	**0.7317**	0.159	21.7	mg/L	53	Standard
Ca	43	106.7	42.5	**4.8817**	2.847	58.3	mg/L	28	Standard
Fe	54	130.3	11.2	**-0.0228**	0.010	44.2	mg/L	181	Standard
Fe	57	360.0	10.8	**0.3692**	0.122	33.0	mg/L	257	Standard
> **Sc-1**	45	51057.6	1.6				mg/L	55220	Standard
Cl	35	32742.0	1.8				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2203.5	4.1				ug/L	2040	Standard
P	31	9269.5	5.3				ug/L	20435	Standard
S	34	2001.8	9.6				ug/L	2430	Standard
Sr	88	98.3	5.9				ug/L	75	Standard
C	12	460.0	18.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	14.3				mg/L	7	Standard
Dy	164	417.4	5.7				mg/L	9	Standard
Ho-1	165	355.0	24.1				mg/L	10	Standard
Er	166	403.3	16.5				mg/L	23	Standard
I	127	4218.9	8.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.671	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.315	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138403
Report Date/Time: Thursday, June 30, 2016 11:29:19
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.089
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.961
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138405
Sample Date/Time: Thursday, June 30, 2016 11:30:14
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66576.0	3.1				ug/L	74916	Standard
	Be	9	26.7	60.3	**0.0246**	0.017	67.2	ug/L	10	Standard
	Al	27	782618.5	17.0	**5.0937**	1.037	20.4	ug/L	1822	Standard
	Sc	45	52681.5	3.6				ug/L	55220	Standard
	Ti	47	2692.2	14.0	**6.7525**	0.884	13.1	ug/L	34	Standard
	V	51	29525.5	27.9	**3.1409**	0.924	29.4	ug/L	1938	Standard
	Cr	52	36356.6	11.5	**3.1921**	0.449	14.1	ug/L	9522	Standard
	Cr	53	3823.8	11.5	**3.2008**	0.380	11.9	ug/L	395	Standard
	Mn	55	71662.3	35.6	**8.6456**	3.216	37.2	ug/L	902	Standard
	Co	59	1638.1	13.8	**0.1882**	0.032	16.8	ug/L	262	Standard
	Ni	60	4089.9	5.4	**1.7667**	0.129	7.3	ug/L	371	Standard
	Cu	65	1490.4	17.3	**0.6484**	0.119	18.4	ug/L	106	Standard
	Zn	66	3492.4	0.7	**2.4690**	0.059	2.4	ug/L	398	Standard
>	**Ge**	72	510976.4	1.4				ug/L	535147	Standard
	As	75	1205.8	5.9	**0.9977**	0.044	4.4	ug/L	-43	Standard
	Se	82	64.4	6.1	**0.4011**	0.034	8.4	ug/L	14	Standard
	Se-1	77	83.3	19.2	**0.3870**	0.184	47.4	ug/L	65	Standard
>	**Ga**	71	375.0	12.2				mg/L	97	Standard
	Rb	85	5906.2	3.9				ug/L	15	Standard
	Y	89	447665.9	1.1				ug/L	465704	Standard
>	**Rh**	103	23.3	49.5				ug/L	10	Standard
	Mo	98	14254.7	18.6	**4.8045**	0.870	18.1	ug/L	9	Standard
	Ag	107	108.0	4.0	**0.0089**	0.000	4.9	ug/L	82	Standard
	Cd	111	15.8	87.9	**0.0148**	0.006	41.1	mg/L	7	Standard
	Cd	114	128.0	25.5	**0.0321**	0.006	19.1	ug/L	21	Standard
>	**In**	115	589791.5	1.1				ug/L	619035	Standard
	Sn	118	200.0	31.2	**-0.0711**	0.010	14.6	ug/L	508	Standard
	Sb	123	861.9	5.1	**0.1752**	0.007	3.9	ug/L	86	Standard
	Ba	135	24057.3	38.8	**11.0457**	4.375	39.6	ug/L	79	Standard
	Ce	140	12245.0	12.8				ug/L	68	Standard
>	**Tb**	159	925423.5	1.9				ug/L	986982	Standard
	Ho	165	598.3	14.1				ug/L	10	Standard
	Tl	203	114.7	18.8	**0.0189**	0.002	11.7	ug/L	13	Standard
	Tl	205	115.0	19.0	**0.0229**	0.003	12.0	ug/L	10	Standard
	Pb	206	491.7	10.8	**0.0487**	0.009	19.0	ug/L	264	Standard
	Pb	207	396.7	4.3	**0.0440**	0.003	7.1	ug/L	227	Standard
	Pb	208	1699.4	6.7	**0.0474**	0.005	11.4	ug/L	868	Standard
	U	238	237.7	18.5	**0.0403**	0.006	14.7	ug/L	8	Standard
>	**Bi**	209	524816.3	1.6				ug/L	541014	Standard

Sample ID: L1606138405
Report Date/Time: Thursday, June 30, 2016 11:32:31
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	765.0	11.5	**0.8403**	0.110	13.0	mg/L	53	Standard
K	39	351.7	11.5	**0.5493**	0.066	12.0	mg/L	53	Standard
Ca	43	48.3	36.3	**1.1962**	1.066	89.1	mg/L	28	Standard
Fe	54	235.5	17.5	**0.0492**	0.027	54.6	mg/L	181	Standard
Fe	57	333.3	10.6	**0.2631**	0.102	38.9	mg/L	257	Standard
> **Sc-1**	45	52681.5	3.6				mg/L	55220	Standard
Cl	35	32550.9	0.2				ug/L	35504	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1960.1	15.1				ug/L	2040	Standard
P	31	10708.8	2.7				ug/L	20435	Standard
S	34	1863.4	4.2				ug/L	2430	Standard
Sr	88	111.7	20.2				ug/L	75	Standard
C	12	300.0	18.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	160.0	22.5				mg/L	7	Standard
Dy	164	774.6	21.6				mg/L	9	Standard
Ho-1	165	598.3	14.1				mg/L	10	Standard
Er	166	670.0	14.4				mg/L	23	Standard
I	127	3110.3	17.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.867	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.483	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138405
Report Date/Time: Thursday, June 30, 2016 11:32:31
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.276
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.006
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138407
Sample Date/Time: Thursday, June 30, 2016 11:33:25
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68944.9	2.8				ug/L	74916	Standard
	Be	9	65.0	46.8	**0.0639**	0.033	51.1	ug/L	10	Standard
	Al	27	579198.2	6.0	**3.6270**	0.255	7.0	ug/L	1822	Standard
	Sc	45	52994.2	2.6				ug/L	55220	Standard
	Ti	47	12552.6	16.4	**31.7432**	5.355	16.9	ug/L	34	Standard
	V	51	48414.4	28.6	**5.2766**	1.580	29.9	ug/L	1938	Standard
	Cr	52	170208.6	13.9	**18.7642**	2.854	15.2	ug/L	9522	Standard
	Cr	53	19978.3	13.2	**18.3538**	2.570	14.0	ug/L	395	Standard
	Mn	55	153875.3	17.2	**18.5999**	3.136	16.9	ug/L	902	Standard
	Co	59	4428.0	10.9	**0.5458**	0.059	10.8	ug/L	262	Standard
	Ni	60	12470.8	1.4	**5.6734**	0.108	1.9	ug/L	371	Standard
	Cu	65	4762.8	15.1	**2.2003**	0.350	15.9	ug/L	106	Standard
	Zn	66	14572.4	10.3	**11.3866**	1.269	11.1	ug/L	398	Standard
>	**Ge**	72	511732.4	0.5				ug/L	535147	Standard
	As	75	1713.1	6.8	**1.3930**	0.098	7.0	ug/L	-43	Standard
	Se	82	63.5	10.7	**0.3930**	0.055	14.0	ug/L	14	Standard
	Se-1	77	85.3	17.1	**0.4098**	0.173	42.3	ug/L	65	Standard
>	**Ga**	71	2083.5	15.4				mg/L	97	Standard
	Rb	85	24605.1	10.7				ug/L	15	Standard
	Y	89	487990.5	2.6				ug/L	465704	Standard
>	**Rh**	103	21.7	26.6				ug/L	10	Standard
	Mo	98	13071.8	23.3	**4.4058**	1.007	22.9	ug/L	9	Standard
	Ag	107	195.3	16.3	**0.0211**	0.005	22.9	ug/L	82	Standard
	Cd	111	83.6	29.8	**0.0443**	0.011	24.6	mg/L	7	Standard
	Cd	114	202.5	11.5	**0.0455**	0.004	9.2	ug/L	21	Standard
>	**In**	115	590114.0	1.7				ug/L	619035	Standard
	Sn	118	465.0	11.6	**-0.0284**	0.009	32.2	ug/L	508	Standard
	Sb	123	1175.4	1.8	**0.2373**	0.008	3.3	ug/L	86	Standard
	Ba	135	25691.2	16.9	**11.7737**	2.016	17.1	ug/L	79	Standard
	Ce	140	43623.8	16.3				ug/L	68	Standard
>	**Tb**	159	927358.9	1.0				ug/L	986982	Standard
	Ho	165	2205.2	13.9				ug/L	10	Standard
	Tl	203	354.7	15.2	**0.0460**	0.006	13.9	ug/L	13	Standard
	Tl	205	273.3	18.4	**0.0438**	0.007	15.7	ug/L	10	Standard
	Pb	206	1450.7	13.7	**0.2170**	0.035	16.0	ug/L	264	Standard
	Pb	207	1153.0	13.5	**0.1909**	0.031	16.0	ug/L	227	Standard
	Pb	208	4825.6	12.1	**0.2049**	0.030	14.8	ug/L	868	Standard
	U	238	954.0	24.1	**0.1379**	0.032	23.0	ug/L	8	Standard
>	**Bi**	209	525755.1	1.0				ug/L	541014	Standard

Sample ID: L1606138407
Report Date/Time: Thursday, June 30, 2016 11:35:42
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	751.7	4.3	**0.8196**	0.047	5.7	mg/L	53	Standard
K	39	433.3	5.7	**0.6912**	0.060	8.6	mg/L	53	Standard
Ca	43	45.0	40.1	**0.9976**	1.122	112.5	mg/L	28	Standard
Fe	54	1005.3	16.4	**0.5974**	0.137	22.9	mg/L	181	Standard
Fe	57	478.3	11.2	**0.6589**	0.161	24.5	mg/L	257	Standard
> **Sc-1**	45	52994.2	2.6				mg/L	55220	Standard
Cl	35	31149.3	0.8				ug/L	35504	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	1960.1	22.3				ug/L	2040	Standard
P	31	11923.0	5.3				ug/L	20435	Standard
S	34	1808.4	9.5				ug/L	2430	Standard
Sr	88	90.0	14.7				ug/L	75	Standard
C	12	273.3	2.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	126.7	43.5				mg/L	7	Standard
Dy	164	2923.5	15.8				mg/L	9	Standard
Ho-1	165	2205.2	13.9				mg/L	10	Standard
Er	166	2160.2	11.2				mg/L	23	Standard
I	127	4143.9	13.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.029	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.625	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138407
Report Date/Time: Thursday, June 30, 2016 11:35:42
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.328
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.180
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138409
Sample Date/Time: Thursday, June 30, 2016 11:36:37
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71031.2	3.3				ug/L	74916	Standard
	Be	9	78.3	85.0	**0.0733**	0.063	85.7	ug/L	10	Standard
	Al	27	507801.3	1.9	**3.0867**	0.135	4.4	ug/L	1822	Standard
	Sc	45	54725.4	2.4				ug/L	55220	Standard
	Ti	47	7734.0	16.1	**19.1317**	3.053	16.0	ug/L	34	Standard
	V	51	40746.1	29.7	**4.3199**	1.365	31.6	ug/L	1938	Standard
	Cr	52	147373.0	14.9	**15.7599**	2.464	15.6	ug/L	9522	Standard
	Cr	53	17555.3	14.4	**15.7489**	2.305	14.6	ug/L	395	Standard
	Mn	55	34382.5	8.3	**3.9955**	0.352	8.8	ug/L	902	Standard
	Co	59	1254.7	3.7	**0.1352**	0.005	3.7	ug/L	262	Standard
	Ni	60	5111.5	10.0	**2.1928**	0.235	10.7	ug/L	371	Standard
	Cu	65	1596.4	19.1	**0.6834**	0.143	20.9	ug/L	106	Standard
	Zn	66	11716.9	11.6	**8.8995**	1.072	12.1	ug/L	398	Standard
>	**Ge**	72	521945.8	1.0				ug/L	535147	Standard
	As	75	1724.1	6.8	**1.3750**	0.090	6.6	ug/L	-43	Standard
	Se	82	46.2	10.0	**0.2522**	0.035	13.8	ug/L	14	Standard
	Se-1	77	78.3	9.2	**0.3101**	0.080	25.8	ug/L	65	Standard
>	**Ga**	71	1711.8	21.6				mg/L	97	Standard
	Rb	85	20609.2	14.7				ug/L	15	Standard
	Y	89	447841.8	2.7				ug/L	465704	Standard
>	**Rh**	103	13.3	108.3				ug/L	10	Standard
	Mo	98	4630.6	25.0	**1.5695**	0.394	25.1	ug/L	9	Standard
	Ag	107	199.3	39.5	**0.0217**	0.011	51.4	ug/L	82	Standard
	Cd	111	48.6	50.9	**0.0291**	0.011	37.5	mg/L	7	Standard
	Cd	114	117.9	23.7	**0.0302**	0.005	17.1	ug/L	21	Standard
>	**In**	115	590335.8	0.6				ug/L	619035	Standard
	Sn	118	451.7	7.4	**-0.0307**	0.005	16.4	ug/L	508	Standard
	Sb	123	1230.5	5.8	**0.2481**	0.015	6.0	ug/L	86	Standard
	Ba	135	6241.3	3.7	**2.8432**	0.109	3.8	ug/L	79	Standard
	Ce	140	17900.9	20.2				ug/L	68	Standard
>	**Tb**	159	927670.3	0.0				ug/L	986982	Standard
	Ho	165	476.7	22.1				ug/L	10	Standard
	Tl	203	214.7	41.9	**0.0301**	0.010	33.0	ug/L	13	Standard
	Tl	205	171.7	25.4	**0.0303**	0.006	18.5	ug/L	10	Standard
	Pb	206	875.7	18.6	**0.1158**	0.028	24.0	ug/L	264	Standard
	Pb	207	701.7	14.4	**0.1030**	0.019	18.5	ug/L	227	Standard
	Pb	208	2799.4	14.3	**0.1025**	0.019	18.9	ug/L	868	Standard
	U	238	455.3	22.3	**0.0698**	0.014	19.4	ug/L	8	Standard
>	**Bi**	209	526233.6	0.6				ug/L	541014	Standard

Sample ID: L1606138409
Report Date/Time: Thursday, June 30, 2016 11:38:54
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.2734**	16.053	173.1	mg/L	2	Standard
Mg	24	760.0	1.1	**0.8014**	0.015	1.8	mg/L	53	Standard
K	39	358.3	21.9	**0.5397**	0.147	27.2	mg/L	53	Standard
Ca	43	60.0	28.9	**1.7401**	0.925	53.2	mg/L	28	Standard
Fe	54	574.4	11.0	**0.2769**	0.051	18.3	mg/L	181	Standard
Fe	57	445.0	7.9	**0.5259**	0.078	14.8	mg/L	257	Standard
> **Sc-1**	45	54725.4	2.4				mg/L	55220	Standard
Cl	35	30822.0	1.4				ug/L	35504	Standard
Kr	83	3.0	88.2				ug/L	2	Standard
Br	81	1956.8	6.5				ug/L	2040	Standard
P	31	12046.5	9.0				ug/L	20435	Standard
S	34	1585.1	5.2				ug/L	2430	Standard
Sr	88	81.7	24.7				ug/L	75	Standard
C	12	240.0	29.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	7	Standard
Dy	164	622.3	8.0				mg/L	9	Standard
Ho-1	165	476.7	22.1				mg/L	10	Standard
Er	166	510.0	10.9				mg/L	23	Standard
I	127	5877.8	8.8				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		94.814	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.533	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606138409
Report Date/Time: Thursday, June 30, 2016 11:38:54
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.364
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.268
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138411
Sample Date/Time: Thursday, June 30, 2016 11:39:48
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68988.4	0.8				ug/L	74916	Standard
	Be	9	63.3	27.7	**0.0617**	0.018	29.8	ug/L	10	Standard
	Al	27	533128.9	2.3	**3.3336**	0.057	1.7	ug/L	1822	Standard
	Sc	45	54469.4	1.5				ug/L	55220	Standard
	Ti	47	12265.4	15.6	**30.2589**	4.795	15.8	ug/L	34	Standard
	V	51	40732.1	26.3	**4.2961**	1.190	27.7	ug/L	1938	Standard
	Cr	52	160641.9	15.5	**17.1981**	2.864	16.7	ug/L	9522	Standard
	Cr	53	19144.0	17.4	**17.1367**	3.079	18.0	ug/L	395	Standard
	Mn	55	58616.6	4.2	**6.8526**	0.278	4.1	ug/L	902	Standard
	Co	59	2370.5	6.4	**0.2744**	0.019	6.8	ug/L	262	Standard
	Ni	60	7541.5	7.2	**3.2892**	0.256	7.8	ug/L	371	Standard
	Cu	65	2431.5	17.8	**1.0666**	0.202	19.0	ug/L	106	Standard
	Zn	66	13971.2	12.7	**10.6309**	1.416	13.3	ug/L	398	Standard
>	**Ge**	72	524288.1	0.2				ug/L	535147	Standard
	As	75	1576.3	4.9	**1.2565**	0.062	4.9	ug/L	-43	Standard
	Se	82	45.1	8.0	**0.2430**	0.026	10.9	ug/L	14	Standard
	Se-1	77	74.0	5.9	**0.2571**	0.049	19.1	ug/L	65	Standard
>	**Ga**	71	2193.5	19.5				mg/L	97	Standard
	Rb	85	24783.9	14.8				ug/L	15	Standard
	Y	89	461274.1	2.5				ug/L	465704	Standard
>	**Rh**	103	10.0	86.6				ug/L	10	Standard
	Mo	98	4756.2	29.4	**1.6006**	0.481	30.1	ug/L	9	Standard
	Ag	107	280.7	5.2	**0.0326**	0.002	6.8	ug/L	82	Standard
	Cd	111	53.5	28.3	**0.0309**	0.006	20.4	mg/L	7	Standard
	Cd	114	152.2	14.8	**0.0362**	0.004	11.9	ug/L	21	Standard
>	**In**	115	595368.5	1.0				ug/L	619035	Standard
	Sn	118	478.3	5.4	**-0.0270**	0.003	12.4	ug/L	508	Standard
	Sb	123	1264.5	1.8	**0.2527**	0.007	2.7	ug/L	86	Standard
	Ba	135	20157.8	10.1	**9.1433**	0.846	9.2	ug/L	79	Standard
	Ce	140	32943.3	19.1				ug/L	68	Standard
>	**Tb**	159	929811.0	1.1				ug/L	986982	Standard
	Ho	165	1143.4	16.9				ug/L	10	Standard
	Tl	203	188.0	9.8	**0.0269**	0.002	7.5	ug/L	13	Standard
	Tl	205	165.0	29.2	**0.0292**	0.006	21.4	ug/L	10	Standard
	Pb	206	1392.7	15.1	**0.2034**	0.036	17.6	ug/L	264	Standard
	Pb	207	1112.4	15.4	**0.1799**	0.032	18.0	ug/L	227	Standard
	Pb	208	4576.3	16.6	**0.1891**	0.037	19.7	ug/L	868	Standard
	U	238	725.4	20.4	**0.1053**	0.020	18.7	ug/L	8	Standard
>	**Bi**	209	533013.4	0.3				ug/L	541014	Standard

Sample ID: L1606138411
Report Date/Time: Thursday, June 30, 2016 11:42:05
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	523.3	4.0	**0.5436**	0.020	3.8	mg/L	53	Standard
K	39	300.0	13.2	**0.4408**	0.075	17.0	mg/L	53	Standard
Ca	43	31.7	39.7	**0.1483**	0.737	497.2	mg/L	28	Standard
Fe	54	892.2	12.2	**0.4978**	0.078	15.8	mg/L	181	Standard
Fe	57	511.7	7.3	**0.7120**	0.117	16.4	mg/L	257	Standard
> **Sc-1**	45	54469.4	1.5				mg/L	55220	Standard
Cl	35	30870.8	3.1				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2210.2	6.3				ug/L	2040	Standard
P	31	11792.9	4.9				ug/L	20435	Standard
S	34	1665.1	3.4				ug/L	2430	Standard
Sr	88	70.0	32.7				ug/L	75	Standard
C	12	196.7	25.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	7	Standard
Dy	164	1450.0	22.0				mg/L	9	Standard
Ho-1	165	1143.4	16.9				mg/L	10	Standard
Er	166	1323.4	16.6				mg/L	23	Standard
I	127	4440.7	16.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.087	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.971	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138411
Report Date/Time: Thursday, June 30, 2016 11:42:05
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.177
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.521
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138411PS WG574744-01
Sample Date/Time: Thursday, June 30, 2016 11:43:00
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70420.1	3.3				ug/L	74916	Standard
	Be	9	51515.8	1.6	**51.9868**	2.203	4.2	ug/L	10	Standard
	Al	27	613547.1	3.5	**3.7594**	0.075	2.0	ug/L	1822	Standard
	Sc	45	53633.1	1.0				ug/L	55220	Standard
	Ti	47	14734.5	10.7	**36.8395**	4.069	11.0	ug/L	34	Standard
	V	51	391216.4	6.5	**43.4919**	2.747	6.3	ug/L	1938	Standard
	Cr	52	587022.8	7.6	**66.4671**	5.340	8.0	ug/L	9522	Standard
	Cr	53	71068.6	7.9	**65.5072**	5.411	8.3	ug/L	395	Standard
	Mn	55	474064.1	4.8	**56.8941**	2.524	4.4	ug/L	902	Standard
	Co	59	383376.7	5.2	**48.6588**	2.335	4.8	ug/L	262	Standard
	Ni	60	116221.4	3.7	**53.4665**	1.823	3.4	ug/L	371	Standard
	Cu	65	109294.3	2.9	**51.1653**	1.259	2.5	ug/L	106	Standard
	Zn	66	88905.1	1.2	**70.4032**	0.762	1.1	ug/L	398	Standard
>	Ge	72	517573.1	0.5				ug/L	535147	Standard
	As	75	68907.6	0.8	**53.2464**	0.584	1.1	ug/L	-43	Standard
	Se	82	7342.5	1.8	**55.9224**	1.238	2.2	ug/L	14	Standard
	Se-1	77	4919.1	1.4	**55.8814**	1.046	1.9	ug/L	65	Standard
>	Ga	71	2736.9	9.9				mg/L	97	Standard
	Rb	85	30353.9	10.3				ug/L	15	Standard
	Y	89	452230.9	1.7				ug/L	465704	Standard
>	Rh	103	18.3	31.5				ug/L	10	Standard
	Mo	98	4465.2	8.1	**1.5113**	0.128	8.5	ug/L	9	Standard
	Ag	107	358914.4	3.0	**49.7747**	1.333	2.7	ug/L	82	Standard
	Cd	111	120938.7	5.0	**52.4694**	2.453	4.7	mg/L	7	Standard
	Cd	114	290724.6	3.9	**52.3777**	1.851	3.5	ug/L	21	Standard
>	In	115	591206.5	0.5				ug/L	619035	Standard
	Sn	118	663.3	18.1	**0.0033**	0.019	582.6	ug/L	508	Standard
	Sb	123	203333.4	8.8	**40.2163**	3.682	9.2	ug/L	86	Standard
	Ba	135	130878.8	4.1	**59.9209**	2.362	3.9	ug/L	79	Standard
	Ce	140	36251.9	10.0				ug/L	68	Standard
>	Tb	159	935141.5	0.6				ug/L	986982	Standard
	Ho	165	1171.7	15.8				ug/L	10	Standard
	Tl	203	430773.5	3.8	**48.3242**	2.170	4.5	ug/L	13	Standard
	Tl	205	368331.0	3.9	**48.3645**	2.148	4.4	ug/L	10	Standard
	Pb	206	258429.5	2.9	**45.1283**	1.492	3.3	ug/L	264	Standard
	Pb	207	224906.3	3.0	**43.4532**	1.377	3.2	ug/L	227	Standard
	Pb	208	907951.0	3.5	**45.4984**	1.868	4.1	ug/L	868	Standard
	U	238	238863.4	8.2	**32.3797**	2.553	7.9	ug/L	8	Standard
>	Bi	209	528361.0	0.9				ug/L	541014	Standard

Sample ID: L1606138411PS WG574744-01
Report Date/Time: Thursday, June 30, 2016 11:45:17
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.7609**	16.898	173.1	mg/L	2	Standard
Mg	24	540.0	14.9	**0.5711**	0.087	15.3	mg/L	53	Standard
K	39	353.3	15.1	**0.5413**	0.093	17.1	mg/L	53	Standard
Ca	43	46.7	27.0	**1.0501**	0.758	72.2	mg/L	28	Standard
Fe	54	1043.5	12.3	**0.6128**	0.084	13.6	mg/L	181	Standard
Fe	57	565.0	6.4	**0.8781**	0.100	11.4	mg/L	257	Standard
> **Sc-1**	45	53633.1	1.0				mg/L	55220	Standard
Cl	35	30508.7	0.4				ug/L	35504	Standard
Kr	83	2.7	94.4				ug/L	2	Standard
Br	81	1973.5	7.0				ug/L	2040	Standard
P	31	12516.8	3.2				ug/L	20435	Standard
S	34	1548.4	4.5				ug/L	2430	Standard
Sr	88	85.0	41.2				ug/L	75	Standard
C	12	176.7	29.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	101.3				mg/L	7	Standard
Dy	164	1455.1	24.6				mg/L	9	Standard
Ho-1	165	1171.7	15.8				mg/L	10	Standard
Er	166	1146.7	6.8				mg/L	23	Standard
I	127	4585.7	8.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.998	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.716	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138411PS WG574744-01
Report Date/Time: Thursday, June 30, 2016 11:45:17
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.505
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.661
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 11:46:13
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74928.3	3.4				ug/L	74916	Standard
	Be	9	53902.4	2.4	**51.0924**	0.960	1.9	ug/L	10	Standard
	Al	27	8626351.3	2.3	**49.7131**	0.749	1.5	ug/L	1822	Standard
	Sc	45	55387.8	2.6				ug/L	55220	Standard
	Ti	47	42382.5	2.0	**99.7465**	1.271	1.3	ug/L	34	Standard
	V	51	476315.9	2.5	**49.8302**	0.848	1.7	ug/L	1938	Standard
	Cr	52	470347.2	1.2	**49.8229**	0.501	1.0	ug/L	9522	Standard
	Cr	53	57733.1	1.8	**49.9468**	0.607	1.2	ug/L	395	Standard
	Mn	55	435418.4	0.8	**49.1370**	0.250	0.5	ug/L	902	Standard
	Co	59	421451.6	1.1	**50.3155**	0.452	0.9	ug/L	262	Standard
	Ni	60	115400.2	1.1	**49.9232**	0.424	0.8	ug/L	371	Standard
	Cu	65	114595.1	0.8	**50.4588**	0.504	1.0	ug/L	106	Standard
	Zn	66	67289.4	0.9	**50.0169**	0.513	1.0	ug/L	398	Standard
>	**Ge**	72	550336.8	1.3				ug/L	535147	Standard
	As	75	68538.5	1.1	**49.8127**	0.452	0.9	ug/L	-43	Standard
	Se	82	6897.2	0.4	**49.3931**	0.532	1.1	ug/L	14	Standard
	Se-1	77	4689.7	2.2	**50.0397**	0.834	1.7	ug/L	65	Standard
>	**Ga**	71	76.7	16.4				mg/L	97	Standard
	Rb	85	945.0	0.5				ug/L	15	Standard
	Y	89	476720.2	0.4				ug/L	465704	Standard
>	**Rh**	103	28.3	36.7				ug/L	10	Standard
	Mo	98	312410.4	2.2	**98.2077**	0.907	0.9	ug/L	9	Standard
	Ag	107	383396.7	0.8	**49.8064**	0.368	0.7	ug/L	82	Standard
	Cd	111	122235.8	0.9	**49.6791**	0.213	0.4	mg/L	7	Standard
	Cd	114	295258.0	0.8	**49.8307**	0.249	0.5	ug/L	21	Standard
>	**In**	115	631197.2	1.3				ug/L	619035	Standard
	Sn	118	332451.6	1.5	**49.9960**	0.217	0.4	ug/L	508	Standard
	Sb	123	270852.4	1.8	**50.1613**	0.406	0.8	ug/L	86	Standard
	Ba	135	115106.0	1.9	**49.3590**	0.653	1.3	ug/L	79	Standard
	Ce	140	496.7	33.3				ug/L	68	Standard
>	**Tb**	159	994881.4	0.9				ug/L	986982	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	464133.7	1.0	**50.4278**	0.348	0.7	ug/L	13	Standard
	Tl	205	400913.7	1.2	**50.9890**	0.656	1.3	ug/L	10	Standard
	Pb	206	295146.5	1.0	**49.9276**	0.367	0.7	ug/L	264	Standard
	Pb	207	267176.6	1.9	**50.0076**	0.811	1.6	ug/L	227	Standard
	Pb	208	1048172.1	0.4	**50.8801**	0.254	0.5	ug/L	868	Standard
	U	238	382634.6	1.1	**50.2498**	0.381	0.8	ug/L	8	Standard
>	**Bi**	209	545406.3	0.3				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 11:48:30
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4579.0	2.2	**4.9409**	0.019	0.4	mg/L	53	Standard
K	39	2495.2	2.5	**4.1457**	0.017	0.4	mg/L	53	Standard
Ca	43	118.3	21.3	**4.9969**	1.350	27.0	mg/L	28	Standard
Fe	54	7373.6	3.8	**4.8932**	0.257	5.3	mg/L	181	Standard
Fe	57	2095.1	7.9	**4.8722**	0.455	9.3	mg/L	257	Standard
Sc-1	45	55387.8	2.6				mg/L	55220	Standard
Cl	35	37239.0	1.0				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1966.8	6.4				ug/L	2040	Standard
P	31	20163.4	0.1				ug/L	20435	Standard
S	34	2090.1	11.6				ug/L	2430	Standard
Sr	88	75.0	17.6				ug/L	75	Standard
C	12	90.0	29.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	9.4	109.6				mg/L	9	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	15120.9	2.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.185		
Al	27	99.426		
Sc	45			
Ti	47	99.747		
V	51	99.660		
Cr	52	99.646		
Cr	53			
Mn	55	98.274		
Co	59	100.631		
Ni	60	99.846		
Cu	65	100.918		
Zn	66	100.034		
Ge	72		102.838	
As	75	99.625		
Se	82	98.786		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 11:48:30
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	98.208		
Ag	107	99.613		
Cd	111	99.358		
Cd	114			
> In	115			101.965
Sn	118	99.992		
Sb	123	100.323		
Ba	135	98.718		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.856		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.760		
U	238	100.500		
> Bi	209			100.812
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 11:49:24
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74094.1	1.5				ug/L	74916	Standard
	Be	9	30.0	44.1	**0.0252**	0.013	50.7	ug/L	10	Standard
	Al	27	3078.6	12.8	**0.0156**	0.002	13.6	ug/L	1822	Standard
	Sc	45	54076.4	3.3				ug/L	55220	Standard
	Ti	47	61.3	20.6	**0.0770**	0.032	41.9	ug/L	34	Standard
	V	51	2046.2	3.0	**0.0221**	0.003	15.1	ug/L	1938	Standard
	Cr	52	9408.9	2.6	**-0.0053**	0.025	474.4	ug/L	9522	Standard
	Cr	53	521.7	3.9	**0.0752**	0.024	31.5	ug/L	395	Standard
	Mn	55	1218.7	3.2	**0.0349**	0.003	8.7	ug/L	902	Standard
	Co	59	397.7	13.6	**0.0254**	0.006	23.9	ug/L	262	Standard
	Ni	60	304.0	4.8	**-0.0116**	0.005	40.4	ug/L	371	Standard
	Cu	65	197.0	8.8	**0.0296**	0.009	29.9	ug/L	106	Standard
	Zn	66	431.7	5.1	**-0.0181**	0.021	114.0	ug/L	398	Standard
>	**Ge**	72	541436.6	1.5				ug/L	535147	Standard
	As	75	-19.0	261.9	**0.0415**	0.036	87.2	ug/L	-43	Standard
	Se	82	25.8	36.4	**0.0920**	0.070	76.5	ug/L	14	Standard
	Se-1	77	59.0	6.1	**0.0658**	0.032	48.9	ug/L	65	Standard
>	**Ga**	71	76.7	10.0				mg/L	97	Standard
	Rb	85	128.3	31.3				ug/L	15	Standard
	Y	89	473142.7	1.0				ug/L	465704	Standard
>	**Rh**	103	11.7	107.9				ug/L	10	Standard
	Mo	98	265.7	17.4	**0.0959**	0.014	14.2	ug/L	9	Standard
	Ag	107	244.3	17.5	**0.0257**	0.005	19.8	ug/L	82	Standard
	Cd	111	26.2	12.3	**0.0186**	0.001	7.8	mg/L	7	Standard
	Cd	114	60.2	29.1	**0.0191**	0.003	15.5	ug/L	21	Standard
>	**In**	115	630319.4	1.4				ug/L	619035	Standard
	Sn	118	863.4	18.4	**0.0271**	0.026	94.2	ug/L	508	Standard
	Sb	123	1310.0	30.1	**0.2480**	0.076	30.7	ug/L	86	Standard
	Ba	135	87.3	7.0	**0.0179**	0.003	17.3	ug/L	79	Standard
	Ce	140	170.0	74.6				ug/L	68	Standard
>	**Tb**	159	978400.2	1.6				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	215.0	15.4	**0.0293**	0.004	12.6	ug/L	13	Standard
	Tl	205	185.0	13.5	**0.0312**	0.003	10.3	ug/L	10	Standard
	Pb	206	438.7	10.6	**0.0363**	0.008	21.0	ug/L	264	Standard
	Pb	207	354.7	1.3	**0.0331**	0.001	3.0	ug/L	227	Standard
	Pb	208	1461.0	8.2	**0.0324**	0.006	17.2	ug/L	868	Standard
	U	238	225.3	16.3	**0.0374**	0.005	13.1	ug/L	8	Standard
>	**Bi**	209	546754.7	0.4				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 11:51:41
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	88.2	**-0.0009**	0.030	3396.7	mg/L	53	Standard
K	39	36.7	47.9	**-0.0119**	0.033	273.8	mg/L	53	Standard
Ca	43	28.3	20.4	**-0.0367**	0.324	884.9	mg/L	28	Standard
Fe	54	202.3	1.2	**0.0221**	0.006	25.7	mg/L	181	Standard
Fe	57	298.3	9.2	**0.1443**	0.072	49.7	mg/L	257	Standard
Sc-1	45	54076.4	3.3				mg/L	55220	Standard
Cl	35	37355.3	1.2				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2116.8	5.4				ug/L	2040	Standard
P	31	19372.4	0.8				ug/L	20435	Standard
S	34	2241.8	5.0				ug/L	2430	Standard
Sr	88	56.7	18.4				ug/L	75	Standard
C	12	126.7	4.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	576.3	20.2				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	76.7	32.8				mg/L	23	Standard
I	127	14990.7	2.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.175	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 11:51:41
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.823
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.061
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 11:51:41
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138411SDL WG574744-02
Sample Date/Time: Thursday, June 30, 2016 11:52:37
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66753.5	3.8				ug/L	74916	Standard
	Be	9	20.0	43.3	**0.0179**	0.010	55.7	ug/L	10	Standard
	Al	27	109583.5	3.6	**0.7064**	0.002	0.3	ug/L	1822	Standard
	Sc	45	49285.0	1.3				ug/L	55220	Standard
	Ti	47	2714.6	18.5	**6.9773**	1.363	19.5	ug/L	34	Standard
	V	51	8460.6	22.2	**0.7823**	0.217	27.8	ug/L	1938	Standard
	Cr	52	42071.6	15.6	**3.9736**	0.814	20.5	ug/L	9522	Standard
	Cr	53	4567.4	19.1	**4.0006**	0.862	21.5	ug/L	395	Standard
	Mn	55	11799.3	6.6	**1.3637**	0.086	6.3	ug/L	902	Standard
	Co	59	683.7	6.0	**0.0671**	0.005	7.4	ug/L	262	Standard
	Ni	60	1724.8	10.4	**0.6788**	0.092	13.6	ug/L	371	Standard
	Cu	65	611.3	19.9	**0.2382**	0.061	25.5	ug/L	106	Standard
	Zn	66	3527.1	6.4	**2.5607**	0.207	8.1	ug/L	398	Standard
>	**Ge**	72	499847.4	1.0				ug/L	535147	Standard
	As	75	293.4	16.2	**0.2897**	0.037	12.9	ug/L	-43	Standard
	Se	82	20.7	11.8	**0.0664**	0.019	28.0	ug/L	14	Standard
	Se-1	77	57.0	3.0	**0.0961**	0.020	21.2	ug/L	65	Standard
>	**Ga**	71	548.3	22.0				mg/L	97	Standard
	Rb	85	5541.0	15.0				ug/L	15	Standard
	Y	89	428396.1	1.6				ug/L	465704	Standard
>	**Rh**	103	13.3	57.3				ug/L	10	Standard
	Mo	98	811.0	25.3	**0.2924**	0.072	24.5	ug/L	9	Standard
	Ag	107	188.7	5.3	**0.0208**	0.001	6.6	ug/L	82	Standard
	Cd	111	19.9	11.6	**0.0168**	0.001	6.4	mg/L	7	Standard
	Cd	114	65.0	38.7	**0.0210**	0.005	22.4	ug/L	21	Standard
>	**In**	115	574769.4	0.5				ug/L	619035	Standard
	Sn	118	250.0	12.2	**-0.0621**	0.005	7.8	ug/L	508	Standard
	Sb	123	633.4	7.5	**0.1332**	0.009	6.8	ug/L	86	Standard
	Ba	135	3566.4	8.8	**1.6609**	0.154	9.3	ug/L	79	Standard
	Ce	140	6809.9	20.4				ug/L	68	Standard
>	**Tb**	159	905865.7	1.8				ug/L	986982	Standard
	Ho	165	275.0	21.0				ug/L	10	Standard
	Tl	203	97.0	21.5	**0.0171**	0.002	14.0	ug/L	13	Standard
	Tl	205	83.3	33.0	**0.0188**	0.004	19.6	ug/L	10	Standard
	Pb	206	526.3	11.0	**0.0559**	0.010	18.5	ug/L	264	Standard
	Pb	207	434.7	15.7	**0.0524**	0.014	25.8	ug/L	227	Standard
	Pb	208	1770.7	11.0	**0.0521**	0.010	19.0	ug/L	868	Standard
	U	238	198.0	23.7	**0.0352**	0.006	18.3	ug/L	8	Standard
>	**Bi**	209	518831.3	0.3				ug/L	541014	Standard

Sample ID: L1606138411SDL WG574744-02
Report Date/Time: Thursday, June 30, 2016 11:54:54
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	151.7	10.1	**0.1508**	0.020	13.4	mg/L	53	Standard
K	39	90.0	16.7	**0.0953**	0.030	31.3	mg/L	53	Standard
Ca	43	26.7	43.3	**0.0229**	0.756	3307.7	mg/L	28	Standard
Fe	54	233.3	5.5	**0.0594**	0.011	18.2	mg/L	181	Standard
Fe	57	301.7	6.7	**0.2328**	0.067	29.0	mg/L	257	Standard
> **Sc-1**	45	49285.0	1.3				mg/L	55220	Standard
Cl	35	32605.7	1.4				ug/L	35504	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1956.8	5.5				ug/L	2040	Standard
P	31	7258.4	2.9				ug/L	20435	Standard
S	34	1698.4	1.5				ug/L	2430	Standard
Sr	88	61.7	28.5				ug/L	75	Standard
C	12	96.7	15.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	339.0	40.1				mg/L	9	Standard
Ho-1	165	275.0	21.0				mg/L	10	Standard
Er	166	230.0	47.8				mg/L	23	Standard
I	127	26713.5	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.104	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.404	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138411SDL WG574744-02
Report Date/Time: Thursday, June 30, 2016 11:54:54
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.849
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.900
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 11:55:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73471.1	1.5				ug/L	74916	Standard
	Be	9	53803.7	2.7	**51.9914**	0.927	1.8	ug/L	10	Standard
	Al	27	8617402.5	1.0	**50.6396**	0.854	1.7	ug/L	1822	Standard
	Sc	45	55560.0	1.1				ug/L	55220	Standard
	Ti	47	42477.1	1.5	**100.6323**	0.276	0.3	ug/L	34	Standard
	V	51	479326.5	1.4	**50.4824**	0.031	0.1	ug/L	1938	Standard
	Cr	52	467744.0	1.6	**49.8733**	0.359	0.7	ug/L	9522	Standard
	Cr	53	57450.4	2.8	**50.0258**	0.734	1.5	ug/L	395	Standard
	Mn	55	438319.0	2.2	**49.7885**	0.650	1.3	ug/L	902	Standard
	Co	59	429053.6	1.5	**51.5613**	0.502	1.0	ug/L	262	Standard
	Ni	60	116039.3	0.4	**50.5360**	0.520	1.0	ug/L	371	Standard
	Cu	65	115333.0	0.7	**51.1200**	0.359	0.7	ug/L	106	Standard
	Zn	66	67421.7	1.0	**50.4480**	0.173	0.3	ug/L	398	Standard
>	Ge	72	546720.8	1.3				ug/L	535147	Standard
	As	75	69011.0	1.2	**50.4869**	0.429	0.8	ug/L	-43	Standard
	Se	82	6880.5	0.7	**49.5985**	0.367	0.7	ug/L	14	Standard
	Se-1	77	4803.4	0.4	**51.6156**	0.560	1.1	ug/L	65	Standard
>	Ga	71	91.7	11.4				mg/L	97	Standard
	Rb	85	968.4	7.8				ug/L	15	Standard
	Y	89	476399.1	3.4				ug/L	465704	Standard
>	Rh	103	40.0	21.7				ug/L	10	Standard
	Mo	98	317271.3	0.9	**98.5797**	0.807	0.8	ug/L	9	Standard
	Ag	107	383771.0	1.9	**49.2667**	0.500	1.0	ug/L	82	Standard
	Cd	111	122621.3	2.1	**49.2465**	0.412	0.8	mg/L	7	Standard
	Cd	114	298584.6	2.3	**49.7946**	0.426	0.9	ug/L	21	Standard
>	In	115	638699.7	1.6				ug/L	619035	Standard
	Sn	118	330125.0	1.7	**49.0640**	0.589	1.2	ug/L	508	Standard
	Sb	123	267358.3	1.7	**48.9342**	0.249	0.5	ug/L	86	Standard
	Ba	135	115832.8	1.6	**49.0883**	0.336	0.7	ug/L	79	Standard
	Ce	140	405.0	17.3				ug/L	68	Standard
>	Tb	159	985370.4	0.8				ug/L	986982	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	467550.0	0.1	**50.4119**	0.413	0.8	ug/L	13	Standard
	Tl	205	409083.0	1.4	**51.6282**	0.628	1.2	ug/L	10	Standard
	Pb	206	295016.7	1.2	**49.5226**	0.377	0.8	ug/L	264	Standard
	Pb	207	268860.1	1.3	**49.9385**	0.602	1.2	ug/L	227	Standard
	Pb	208	1058510.8	0.5	**50.9882**	0.179	0.4	ug/L	868	Standard
	U	238	383137.6	0.8	**49.9325**	0.552	1.1	ug/L	8	Standard
>	Bi	209	549624.3	0.8				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 11:58:07
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4540.7	2.6	**4.8831**	0.083	1.7	mg/L	53	Standard
K	39	2480.2	4.4	**4.1088**	0.230	5.6	mg/L	53	Standard
Ca	43	106.7	21.1	**4.3314**	1.274	29.4	mg/L	28	Standard
Fe	54	7391.6	1.2	**4.8870**	0.066	1.4	mg/L	181	Standard
Fe	57	2151.8	3.3	**5.0036**	0.248	5.0	mg/L	257	Standard
> **Sc-1**	45	55560.0	1.1				mg/L	55220	Standard
Cl	35	39075.0	0.9				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2100.1	2.1				ug/L	2040	Standard
P	31	22523.4	5.5				ug/L	20435	Standard
S	34	2553.5	5.9				ug/L	2430	Standard
Sr	88	76.7	39.3				ug/L	75	Standard
C	12	140.0	37.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.2	186.8				mg/L	9	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	15276.0	3.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.983		
Al	27	101.279		
Sc	45			
Ti	47	100.632		
V	51	100.965		
Cr	52	99.747		
Cr	53			
Mn	55	99.577		
Co	59	103.123		
Ni	60	101.072		
Cu	65	102.240		
Zn	66	100.896		
> Ge	72		102.163	
As	75	100.974		
Se	82	99.197		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 11:58:07
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	98.580		
Ag	107	98.533		
Cd	111	98.493		
Cd	114			
> In	115			103.177
Sn	118	98.128		
Sb	123	97.868		
Ba	135	98.177		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.824		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.976		
U	238	99.865		
> Bi	209			101.591
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 11:58:07
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 11:59:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73266.9	3.6				ug/L	74916	Standard
	Be	9	38.3	30.1	**0.0335**	0.011	32.9	ug/L	10	Standard
	Al	27	2666.9	9.7	**0.0134**	0.001	8.7	ug/L	1822	Standard
	Sc	45	54129.9	0.6				ug/L	55220	Standard
	Ti	47	47.7	19.5	**0.0440**	0.021	48.7	ug/L	34	Standard
	V	51	1815.6	3.2	**-0.0022**	0.009	417.7	ug/L	1938	Standard
	Cr	52	8908.6	1.0	**-0.0592**	0.025	41.9	ug/L	9522	Standard
	Cr	53	500.0	6.1	**0.0561**	0.023	41.9	ug/L	395	Standard
	Mn	55	1168.7	1.2	**0.0293**	0.002	8.4	ug/L	902	Standard
	Co	59	347.7	9.3	**0.0194**	0.003	17.6	ug/L	262	Standard
	Ni	60	307.0	17.4	**-0.0098**	0.026	261.6	ug/L	371	Standard
	Cu	65	163.7	7.9	**0.0146**	0.005	33.6	ug/L	106	Standard
	Zn	66	431.7	0.7	**-0.0179**	0.007	39.9	ug/L	398	Standard
>	**Ge**	72	540936.2	1.7				ug/L	535147	Standard
	As	75	-11.2	339.5	**0.0471**	0.028	59.8	ug/L	-43	Standard
	Se	82	27.6	38.1	**0.1053**	0.080	75.7	ug/L	14	Standard
	Se-1	77	58.7	11.3	**0.0634**	0.079	124.5	ug/L	65	Standard
>	**Ga**	71	86.7	33.3				mg/L	97	Standard
	Rb	85	66.7	30.3				ug/L	15	Standard
	Y	89	467928.3	2.4				ug/L	465704	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	236.1	20.7	**0.0858**	0.015	17.2	ug/L	9	Standard
	Ag	107	190.0	14.6	**0.0184**	0.003	18.5	ug/L	82	Standard
	Cd	111	20.6	21.1	**0.0162**	0.002	10.4	mg/L	7	Standard
	Cd	114	68.1	34.7	**0.0203**	0.004	19.3	ug/L	21	Standard
>	**In**	115	637305.2	0.8				ug/L	619035	Standard
	Sn	118	880.0	7.4	**0.0280**	0.010	37.2	ug/L	508	Standard
	Sb	123	794.1	27.5	**0.1502**	0.041	27.2	ug/L	86	Standard
	Ba	135	64.0	4.1	**0.0076**	0.001	17.3	ug/L	79	Standard
	Ce	140	128.3	54.6				ug/L	68	Standard
>	**Tb**	159	982464.6	1.0				ug/L	986982	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	126.7	23.9	**0.0197**	0.003	16.6	ug/L	13	Standard
	Tl	205	91.7	36.3	**0.0193**	0.004	21.6	ug/L	10	Standard
	Pb	206	366.0	3.4	**0.0241**	0.001	6.0	ug/L	264	Standard
	Pb	207	305.7	8.4	**0.0239**	0.004	18.4	ug/L	227	Standard
	Pb	208	1216.7	5.0	**0.0206**	0.002	11.7	ug/L	868	Standard
	U	238	92.0	19.6	**0.0199**	0.002	11.6	ug/L	8	Standard
>	**Bi**	209	546299.6	1.1				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 12:01:19
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	21.7	48.0	**-0.0105**	0.011	109.1	mg/L	53	Standard
K	39	50.0	26.5	**0.0105**	0.023	214.7	mg/L	53	Standard
Ca	43	33.3	22.9	**0.2493**	0.431	172.8	mg/L	28	Standard
Fe	54	190.9	6.0	**0.0139**	0.008	54.2	mg/L	181	Standard
Fe	57	266.7	23.9	**0.0573**	0.169	295.2	mg/L	257	Standard
> **Sc-1**	45	54129.9	0.6				mg/L	55220	Standard
Cl	35	39084.3	0.8				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	2156.8	6.9				ug/L	2040	Standard
P	31	20552.3	1.5				ug/L	20435	Standard
S	34	2501.9	1.6				ug/L	2430	Standard
Sr	88	81.7	17.7				ug/L	75	Standard
C	12	106.7	23.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	608.4	11.8				mg/L	9	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	103.3	24.4				mg/L	23	Standard
I	127	15052.5	1.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.082	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 12:01:19
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.951
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.977
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 12:01:19
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: PBW DM WG573868-03
Sample Date/Time: Thursday, June 30, 2016 12:09:56
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75042.1	2.4				ug/L	74916	Standard
	Be	9	46.7	12.4	**0.0406**	0.006	15.0	ug/L	10	Standard
	Al	27	5130.9	23.4	**0.0272**	0.007	24.3	ug/L	1822	Standard
	Sc	45	55277.3	0.3				ug/L	55220	Standard
	Ti	47	46.0	12.1	**0.0376**	0.012	32.6	ug/L	34	Standard
	V	51	2344.5	6.5	**0.0487**	0.015	30.2	ug/L	1938	Standard
	Cr	52	10404.6	0.1	**0.0803**	0.013	15.7	ug/L	9522	Standard
	Cr	53	568.3	11.8	**0.1058**	0.058	54.8	ug/L	395	Standard
	Mn	55	2002.8	7.0	**0.1203**	0.016	13.2	ug/L	902	Standard
	Co	59	509.3	18.1	**0.0377**	0.011	28.5	ug/L	262	Standard
	Ni	60	393.3	5.9	**0.0243**	0.011	44.9	ug/L	371	Standard
	Cu	65	237.7	6.1	**0.0455**	0.005	11.8	ug/L	106	Standard
	Zn	66	1297.4	2.8	**0.6198**	0.029	4.7	ug/L	398	Standard
>	**Ge**	72	552956.0	1.0				ug/L	535147	Standard
	As	75	-28.9	102.6	**0.0343**	0.022	62.8	ug/L	-43	Standard
	Se	82	25.5	33.7	**0.0856**	0.062	72.0	ug/L	14	Standard
	Se-1	77	56.3	5.4	**0.0240**	0.037	152.5	ug/L	65	Standard
>	**Ga**	71	51.7	11.2				mg/L	97	Standard
	Rb	85	58.3	26.2				ug/L	15	Standard
	Y	89	476604.2	1.4				ug/L	465704	Standard
>	**Rh**	103	16.7	34.6				ug/L	10	Standard
	Mo	98	110.0	34.7	**0.0464**	0.011	24.7	ug/L	9	Standard
	Ag	107	470.0	14.4	**0.0541**	0.008	15.0	ug/L	82	Standard
	Cd	111	86.8	29.8	**0.0426**	0.010	23.4	mg/L	7	Standard
	Cd	114	200.3	71.6	**0.0421**	0.023	55.6	ug/L	21	Standard
>	**In**	115	640268.8	1.4				ug/L	619035	Standard
	Sn	118	798.4	8.9	**0.0152**	0.010	67.0	ug/L	508	Standard
	Sb	123	661.5	7.4	**0.1252**	0.009	7.3	ug/L	86	Standard
	Ba	135	127.0	35.5	**0.0340**	0.018	54.2	ug/L	79	Standard
	Ce	140	86.7	17.6				ug/L	68	Standard
>	**Tb**	159	987703.0	0.6				ug/L	986982	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	278.0	36.9	**0.0355**	0.011	29.9	ug/L	13	Standard
	Tl	205	215.0	34.7	**0.0344**	0.009	26.1	ug/L	10	Standard
	Pb	206	476.7	15.4	**0.0411**	0.012	28.1	ug/L	264	Standard
	Pb	207	439.0	17.9	**0.0472**	0.014	29.4	ug/L	227	Standard
	Pb	208	1642.0	10.9	**0.0397**	0.008	20.0	ug/L	868	Standard
	U	238	87.0	72.6	**0.0190**	0.008	41.9	ug/L	8	Standard
>	**Bi**	209	557268.1	1.1				ug/L	541014	Standard

Sample ID: PBW DM WG573868-03
Report Date/Time: Thursday, June 30, 2016 12:12:13
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.3804**	16.239	173.1	mg/L	2	Standard
Mg	24	45.0	19.2	**0.0144**	0.009	65.7	mg/L	53	Standard
K	39	50.0	34.6	**0.0088**	0.030	334.6	mg/L	53	Standard
Ca	43	25.0	40.0	**-0.2606**	0.566	217.2	mg/L	28	Standard
Fe	54	165.8	13.9	**-0.0058**	0.016	274.6	mg/L	181	Standard
Fe	57	281.7	14.8	**0.0827**	0.112	135.9	mg/L	257	Standard
Sc-1	45	55277.3	0.3				mg/L	55220	Standard
Cl	35	39960.6	0.9				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2270.2	3.8				ug/L	2040	Standard
P	31	20181.8	3.6				ug/L	20435	Standard
S	34	2101.8	5.3				ug/L	2430	Standard
Sr	88	70.0	14.3				ug/L	75	Standard
C	12	103.3	14.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	8.4	6.6				mg/L	9	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	33.3	34.6				mg/L	23	Standard
I	127	14196.7	3.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.168	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.328	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW DM WG573868-03
Report Date/Time: Thursday, June 30, 2016 12:12:13
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.430
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.004
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW DM WG573868-03
Report Date/Time: Thursday, June 30, 2016 12:12:13
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: LCSW DM WG573868-04
Sample Date/Time: Thursday, June 30, 2016 12:13:08
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75614.9	0.8				ug/L	74916	Standard
	Be	9	56461.7	2.6	**53.0158**	1.254	2.4	ug/L	10	Standard
	Al	27	8238.9	4.9	**0.0447**	0.003	6.0	ug/L	1822	Standard
	Sc	45	54966.2	2.3				ug/L	55220	Standard
	Ti	47	53.7	13.5	**0.0559**	0.016	29.5	ug/L	34	Standard
	V	51	486782.8	1.3	**50.7926**	0.588	1.2	ug/L	1938	Standard
	Cr	52	487122.6	0.7	**51.4915**	0.441	0.9	ug/L	9522	Standard
	Cr	53	59874.8	2.0	**51.6707**	0.958	1.9	ug/L	395	Standard
	Mn	55	464127.5	0.4	**52.2382**	0.073	0.1	ug/L	902	Standard
	Co	59	442230.6	0.3	**52.6518**	0.339	0.6	ug/L	262	Standard
	Ni	60	120110.9	0.7	**51.8238**	0.534	1.0	ug/L	371	Standard
	Cu	65	119462.5	1.3	**52.4568**	0.612	1.2	ug/L	106	Standard
	Zn	66	69006.1	0.8	**51.1577**	0.387	0.8	ug/L	398	Standard
>	**Ge**	72	551846.0	0.4				ug/L	535147	Standard
	As	75	70485.8	0.5	**51.0842**	0.120	0.2	ug/L	-43	Standard
	Se	82	6971.9	1.5	**49.7873**	0.613	1.2	ug/L	14	Standard
	Se-1	77	4835.1	1.1	**51.4687**	0.717	1.4	ug/L	65	Standard
>	**Ga**	71	75.0	11.5				mg/L	97	Standard
	Rb	85	53.3	19.5				ug/L	15	Standard
	Y	89	480514.9	1.4				ug/L	465704	Standard
>	**Rh**	103	46.7	16.4				ug/L	10	Standard
	Mo	98	72.7	13.4	**0.0347**	0.003	8.3	ug/L	9	Standard
	Ag	107	405687.5	0.3	**51.5601**	0.578	1.1	ug/L	82	Standard
	Cd	111	125440.7	0.4	**49.8773**	0.557	1.1	mg/L	7	Standard
	Cd	114	303151.0	0.5	**50.0526**	0.311	0.6	ug/L	21	Standard
>	**In**	115	645186.9	0.8				ug/L	619035	Standard
	Sn	118	700.0	7.4	**-0.0002**	0.007	3014.2	ug/L	508	Standard
	Sb	123	279461.7	1.0	**50.6399**	0.925	1.8	ug/L	86	Standard
	Ba	135	119660.3	0.8	**50.2013**	0.454	0.9	ug/L	79	Standard
	Ce	140	271.7	32.7				ug/L	68	Standard
>	**Tb**	159	996230.2	1.7				ug/L	986982	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	481064.0	0.4	**50.8871**	0.487	1.0	ug/L	13	Standard
	Tl	205	418584.1	1.5	**51.8251**	0.426	0.8	ug/L	10	Standard
	Pb	206	313866.3	0.6	**51.6940**	0.593	1.1	ug/L	264	Standard
	Pb	207	273492.3	0.3	**49.8395**	0.528	1.1	ug/L	227	Standard
	Pb	208	1100367.2	0.4	**52.0040**	0.604	1.2	ug/L	868	Standard
	U	238	390238.6	0.2	**49.8959**	0.511	1.0	ug/L	8	Standard
>	**Bi**	209	560231.5	0.8				ug/L	541014	Standard

Sample ID: LCSW DM WG573868-04
Report Date/Time: Thursday, June 30, 2016 12:15:25
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	29.4	**0.0145**	0.014	94.0	mg/L	53	Standard
K	39	45.0	48.4	**0.0003**	0.036	11085.7	mg/L	53	Standard
Ca	43	20.0	50.0	**-0.5429**	0.546	100.5	mg/L	28	Standard
Fe	54	187.7	16.1	**0.0100**	0.023	229.2	mg/L	181	Standard
Fe	57	243.3	9.3	**-0.0154**	0.058	378.3	mg/L	257	Standard
> **Sc-1**	45	54966.2	2.3				mg/L	55220	Standard
Cl	35	39538.2	1.9				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1870.1	8.4				ug/L	2040	Standard
P	31	20659.1	1.9				ug/L	20435	Standard
S	34	2180.2	6.0				ug/L	2430	Standard
Sr	88	70.0	46.8				ug/L	75	Standard
C	12	96.7	31.6				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	19.5	53.7				mg/L	9	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1283.4	22.1				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.932	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.120	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: LCSW DM WG573868-04
Report Date/Time: Thursday, June 30, 2016 12:15:25
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.225
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.552
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW DM WG573868-04
Report Date/Time: Thursday, June 30, 2016 12:15:25
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113005 WG573868-01
Sample Date/Time: Thursday, June 30, 2016 12:16:19
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74224.7	0.4				ug/L	74916	Standard
	Be	9	33.3	48.2	**0.0282**	0.015	54.1	ug/L	10	Standard
	Al	27	13729.6	1.9	**0.0775**	0.002	2.4	ug/L	1822	Standard
	Sc	45	54909.3	1.4				ug/L	55220	Standard
	Ti	47	52.0	26.9	**0.0519**	0.035	66.5	ug/L	34	Standard
	V	51	2026.8	1.1	**0.0153**	0.002	15.9	ug/L	1938	Standard
	Cr	52	11350.9	1.2	**0.1808**	0.031	17.2	ug/L	9522	Standard
	Cr	53	698.3	8.0	**0.2175**	0.040	18.4	ug/L	395	Standard
	Mn	55	1997.1	1.0	**0.1194**	0.005	4.2	ug/L	902	Standard
	Co	59	345.0	7.0	**0.0182**	0.003	18.0	ug/L	262	Standard
	Ni	60	400.0	6.0	**0.0269**	0.011	41.9	ug/L	371	Standard
	Cu	65	1623.4	1.5	**0.6528**	0.021	3.2	ug/L	106	Standard
	Zn	66	1888.5	2.6	**1.0587**	0.056	5.3	ug/L	398	Standard
>	**Ge**	72	553668.9	1.4				ug/L	535147	Standard
	As	75	-49.2	51.8	**0.0198**	0.018	91.0	ug/L	-43	Standard
	Se	82	21.8	46.3	**0.0578**	0.071	122.1	ug/L	14	Standard
	Se-1	77	61.7	9.5	**0.0798**	0.054	67.4	ug/L	65	Standard
>	**Ga**	71	58.3	9.9				mg/L	97	Standard
	Rb	85	98.3	41.4				ug/L	15	Standard
	Y	89	487175.7	1.2				ug/L	465704	Standard
>	**Rh**	103	6.7	43.3				ug/L	10	Standard
	Mo	98	43.2	20.0	**0.0257**	0.003	10.5	ug/L	9	Standard
	Ag	107	172.0	10.9	**0.0160**	0.003	16.1	ug/L	82	Standard
	Cd	111	16.2	29.1	**0.0144**	0.002	13.5	mg/L	7	Standard
	Cd	114	56.3	71.8	**0.0183**	0.007	37.0	ug/L	21	Standard
>	**In**	115	640857.1	0.9				ug/L	619035	Standard
	Sn	118	2248.5	21.6	**0.2299**	0.069	29.9	ug/L	508	Standard
	Sb	123	230.9	14.3	**0.0465**	0.006	12.2	ug/L	86	Standard
	Ba	135	326.0	5.8	**0.1181**	0.009	7.4	ug/L	79	Standard
	Ce	140	65.0	23.1				ug/L	68	Standard
>	**Tb**	159	1002952.3	1.1				ug/L	986982	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	365.3	26.2	**0.0447**	0.010	22.4	ug/L	13	Standard
	Tl	205	333.3	33.3	**0.0490**	0.014	27.8	ug/L	10	Standard
	Pb	206	323.3	11.2	**0.0156**	0.006	39.8	ug/L	264	Standard
	Pb	207	298.3	7.9	**0.0213**	0.005	21.2	ug/L	227	Standard
	Pb	208	1114.7	7.9	**0.0144**	0.004	30.0	ug/L	868	Standard
	U	238	59.7	41.1	**0.0155**	0.003	20.4	ug/L	8	Standard
>	**Bi**	209	559636.4	0.4				ug/L	541014	Standard

Sample ID: L1606113005 WG573868-01
Report Date/Time: Thursday, June 30, 2016 12:18:36
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.4552**	16.368	173.1	mg/L	2	Standard
Mg	24	115.0	19.0	**0.0914**	0.023	25.7	mg/L	53	Standard
K	39	31.7	48.2	**-0.0217**	0.026	121.6	mg/L	53	Standard
Ca	43	25.0	40.0	**-0.2454**	0.589	240.0	mg/L	28	Standard
Fe	54	195.2	12.5	**0.0152**	0.019	122.1	mg/L	181	Standard
Fe	57	260.0	19.5	**0.0288**	0.127	440.0	mg/L	257	Standard
> **Sc-1**	45	54909.3	1.4				mg/L	55220	Standard
Cl	35	39663.8	0.4				ug/L	35504	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	2350.2	5.6				ug/L	2040	Standard
P	31	21443.5	2.9				ug/L	20435	Standard
S	34	2165.2	3.8				ug/L	2430	Standard
Sr	88	63.3	31.9				ug/L	75	Standard
C	12	160.0	6.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	22.2	26.6				mg/L	9	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	1581.8	15.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.077	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.461	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606113005 WG573868-01
Report Date/Time: Thursday, June 30, 2016 12:18:36
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.525
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.442
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113005S WG573868-05
Sample Date/Time: Thursday, June 30, 2016 12:19:31
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75859.5	1.7				ug/L	74916	Standard
	Be	9	53517.7	0.7	**50.0953**	0.496	1.0	ug/L	10	Standard
	Al	27	14822.3	4.1	**0.0821**	0.005	5.9	ug/L	1822	Standard
	Sc	45	55769.1	1.4				ug/L	55220	Standard
	Ti	47	56.7	12.4	**0.0625**	0.018	28.2	ug/L	34	Standard
	V	51	477963.8	1.8	**49.6645**	1.337	2.7	ug/L	1938	Standard
	Cr	52	477361.7	1.3	**50.2263**	1.123	2.2	ug/L	9522	Standard
	Cr	53	57509.0	1.8	**49.4101**	1.327	2.7	ug/L	395	Standard
	Mn	55	446297.6	2.8	**50.0240**	1.838	3.7	ug/L	902	Standard
	Co	59	429160.2	2.4	**50.8864**	1.638	3.2	ug/L	262	Standard
	Ni	60	116532.1	0.5	**50.0630**	0.586	1.2	ug/L	371	Standard
	Cu	65	119264.3	1.8	**52.1555**	1.404	2.7	ug/L	106	Standard
	Zn	66	68742.9	1.2	**50.7470**	0.887	1.7	ug/L	398	Standard
>	**Ge**	72	554202.5	0.9				ug/L	535147	Standard
	As	75	68808.0	1.4	**49.6622**	0.974	2.0	ug/L	-43	Standard
	Se	82	6870.4	2.1	**48.8573**	1.250	2.6	ug/L	14	Standard
	Se-1	77	4643.4	2.5	**49.1971**	1.525	3.1	ug/L	65	Standard
>	**Ga**	71	91.7	24.6				mg/L	97	Standard
	Rb	85	131.7	35.3				ug/L	15	Standard
	Y	89	486292.9	2.1				ug/L	465704	Standard
>	**Rh**	103	33.3	37.7				ug/L	10	Standard
	Mo	98	56.7	2.0	**0.0297**	0.000	0.2	ug/L	9	Standard
	Ag	107	395086.0	1.7	**50.0359**	0.832	1.7	ug/L	82	Standard
	Cd	111	123225.4	2.1	**48.8369**	1.711	3.5	mg/L	7	Standard
	Cd	114	293682.5	0.4	**48.3309**	1.240	2.6	ug/L	21	Standard
>	**In**	115	647535.4	2.3				ug/L	619035	Standard
	Sn	118	1893.5	3.7	**0.1750**	0.016	9.3	ug/L	508	Standard
	Sb	123	259785.3	2.7	**46.9064**	1.211	2.6	ug/L	86	Standard
	Ba	135	116849.2	1.2	**48.8634**	1.506	3.1	ug/L	79	Standard
	Ce	140	153.3	39.8				ug/L	68	Standard
>	**Tb**	159	1011084.7	1.8				ug/L	986982	Standard
	Ho	165	20.0	66.1				ug/L	10	Standard
	Tl	203	469188.2	1.0	**49.3773**	0.843	1.7	ug/L	13	Standard
	Tl	205	410523.6	2.0	**50.5675**	0.970	1.9	ug/L	10	Standard
	Pb	206	306453.9	0.8	**50.2156**	0.970	1.9	ug/L	264	Standard
	Pb	207	266953.5	1.4	**48.4007**	1.172	2.4	ug/L	227	Standard
	Pb	208	1071921.5	1.1	**50.3960**	0.627	1.2	ug/L	868	Standard
	U	238	385204.2	1.1	**49.0033**	1.122	2.3	ug/L	8	Standard
>	**Bi**	209	563202.7	2.1				ug/L	541014	Standard

Sample ID: L1606113005S WG573868-05
Report Date/Time: Thursday, June 30, 2016 12:21:48
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	121.7	16.6	**0.0969**	0.023	24.0	mg/L	53	Standard
K	39	41.7	36.7	**-0.0062**	0.025	403.7	mg/L	53	Standard
Ca	43	30.0	44.1	**0.0050**	0.728	14524.7	mg/L	28	Standard
Fe	54	196.3	28.3	**0.0135**	0.036	268.0	mg/L	181	Standard
Fe	57	255.0	3.9	**0.0060**	0.028	467.7	mg/L	257	Standard
Sc-1	45	55769.1	1.4				mg/L	55220	Standard
Cl	35	39136.5	1.8				ug/L	35504	Standard
Kr	83	3.7	31.5				ug/L	2	Standard
Br	81	2323.5	7.6				ug/L	2040	Standard
P	31	21603.7	3.7				ug/L	20435	Standard
S	34	2060.1	5.2				ug/L	2430	Standard
Sr	88	75.0	24.0				ug/L	75	Standard
C	12	180.0	0.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.9	187.9				mg/L	9	Standard
Ho-1	165	20.0	66.1				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1540.1	16.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.259	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.561	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606113005S WG573868-05
Report Date/Time: Thursday, June 30, 2016 12:21:48
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.604
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.101
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113005SD WG573868-06
Sample Date/Time: Thursday, June 30, 2016 12:22:42
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74551.4	3.4				ug/L	74916	Standard
	Be	9	53178.2	3.2	**50.6600**	1.356	2.7	ug/L	10	Standard
	Al	27	18813.3	1.8	**0.1067**	0.003	2.5	ug/L	1822	Standard
	Sc	45	55598.5	1.6				ug/L	55220	Standard
	Ti	47	42.7	9.8	**0.0300**	0.010	32.2	ug/L	34	Standard
	V	51	475255.0	2.5	**49.5591**	1.214	2.5	ug/L	1938	Standard
	Cr	52	473969.7	2.1	**50.0448**	1.014	2.0	ug/L	9522	Standard
	Cr	53	57654.5	2.6	**49.7179**	1.462	2.9	ug/L	395	Standard
	Mn	55	442756.2	1.2	**49.8003**	0.298	0.6	ug/L	902	Standard
	Co	59	424024.9	0.7	**50.4565**	0.397	0.8	ug/L	262	Standard
	Ni	60	117258.1	2.1	**50.5593**	0.859	1.7	ug/L	371	Standard
	Cu	65	118084.1	1.1	**51.8235**	0.506	1.0	ug/L	106	Standard
	Zn	66	68404.8	2.2	**50.6819**	1.115	2.2	ug/L	398	Standard
>	Ge	72	552141.6	0.7				ug/L	535147	Standard
	As	75	67261.4	1.0	**48.7232**	0.168	0.3	ug/L	-43	Standard
	Se	82	6897.0	1.0	**49.2249**	0.173	0.4	ug/L	14	Standard
	Se-1	77	4659.0	1.2	**49.5452**	0.522	1.1	ug/L	65	Standard
>	Ga	71	111.7	11.3				mg/L	97	Standard
	Rb	85	128.3	11.9				ug/L	15	Standard
	Y	89	474313.0	0.2				ug/L	465704	Standard
>	Rh	103	28.3	40.8				ug/L	10	Standard
	Mo	98	52.5	25.1	**0.0287**	0.004	14.2	ug/L	9	Standard
	Ag	107	396093.4	0.8	**50.8417**	0.342	0.7	ug/L	82	Standard
	Cd	111	122436.6	0.5	**49.1678**	0.301	0.6	mg/L	7	Standard
	Cd	114	294291.4	1.0	**49.0751**	0.426	0.9	ug/L	21	Standard
>	In	115	638789.3	0.1				ug/L	619035	Standard
	Sn	118	1938.5	7.0	**0.1852**	0.020	10.9	ug/L	508	Standard
	Sb	123	259908.8	1.7	**47.5638**	0.768	1.6	ug/L	86	Standard
	Ba	135	117151.2	0.5	**49.6392**	0.187	0.4	ug/L	79	Standard
	Ce	140	143.3	62.0				ug/L	68	Standard
>	Tb	159	992320.5	0.6				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	470616.6	0.7	**49.8191**	0.719	1.4	ug/L	13	Standard
	Tl	205	411651.5	1.7	**51.0100**	1.168	2.3	ug/L	10	Standard
	Pb	206	306649.7	1.4	**50.5436**	1.089	2.2	ug/L	264	Standard
	Pb	207	268147.6	1.2	**48.9019**	0.972	2.0	ug/L	227	Standard
	Pb	208	1070133.8	1.2	**50.6106**	0.852	1.7	ug/L	868	Standard
	U	238	382139.7	1.1	**48.8973**	0.909	1.9	ug/L	8	Standard
>	Bi	209	559832.8	0.8				ug/L	541014	Standard

Sample ID: L1606113005SD WG573868-06
Report Date/Time: Thursday, June 30, 2016 12:24:59
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	91.7	16.7	**0.0647**	0.017	26.6	mg/L	53	Standard
K	39	50.0	45.8	**0.0087**	0.040	460.5	mg/L	53	Standard
Ca	43	38.3	41.9	**0.4906**	0.931	189.7	mg/L	28	Standard
Fe	54	189.1	25.8	**0.0093**	0.033	357.3	mg/L	181	Standard
Fe	57	263.3	12.9	**0.0307**	0.097	316.1	mg/L	257	Standard
> **Sc-1**	45	55598.5	1.6				mg/L	55220	Standard
Cl	35	37237.1	2.9				ug/L	35504	Standard
Kr	83	4.3	13.3				ug/L	2	Standard
Br	81	2256.8	14.5				ug/L	2040	Standard
P	31	21346.7	0.5				ug/L	20435	Standard
S	34	2086.8	9.4				ug/L	2430	Standard
Sr	88	66.7	31.2				ug/L	75	Standard
C	12	123.3	54.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.7	98.4				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	1585.1	16.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.513	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.176	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606113005SD WG573868-06
Report Date/Time: Thursday, June 30, 2016 12:24:59
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.191
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.478
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123801
Sample Date/Time: Thursday, June 30, 2016 12:25:54
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74244.9	2.3				ug/L	74916	Standard
	Be	9	36.7	70.0	**0.0311**	0.024	75.7	ug/L	10	Standard
	Al	27	40987674.7	0.3	**238.4014**	4.801	2.0	ug/L	1822	Standard
	Sc	45	55571.8	3.6				ug/L	55220	Standard
	Ti	47	299.3	4.5	**0.6581**	0.032	4.9	ug/L	34	Standard
	V	51	36979.9	0.9	**3.8159**	0.038	1.0	ug/L	1938	Standard
	Cr	52	12709.3	1.3	**0.3801**	0.018	4.8	ug/L	9522	Standard
	Cr	53	5606.0	4.8	**4.6613**	0.240	5.1	ug/L	395	Standard
	Mn	55	421396.0	1.1	**49.1212**	0.583	1.2	ug/L	902	Standard
	Co	59	2301.5	3.1	**0.2611**	0.009	3.5	ug/L	262	Standard
	Ni	60	3910.8	2.1	**1.6070**	0.034	2.1	ug/L	371	Standard
	Cu	65	773.7	4.5	**0.2935**	0.015	5.3	ug/L	106	Standard
	Zn	66	2818.3	1.7	**1.8321**	0.037	2.0	ug/L	398	Standard
>	**Ge**	72	532768.3	0.2				ug/L	535147	Standard
	As	75	1369.2	3.1	**1.0820**	0.033	3.1	ug/L	-43	Standard
	Se	82	398.0	0.6	**2.8528**	0.021	0.7	ug/L	14	Standard
	Se-1	77	449.3	10.0	**4.4287**	0.501	11.3	ug/L	65	Standard
>	**Ga**	71	101.7	22.7				mg/L	97	Standard
	Rb	85	1325.1	2.3				ug/L	15	Standard
	Y	89	455634.3	1.9				ug/L	465704	Standard
>	**Rh**	103	173.3	7.3				ug/L	10	Standard
	Mo	98	459.2	2.9	**0.1632**	0.005	3.1	ug/L	9	Standard
	Ag	107	240.0	1.4	**0.0265**	0.000	1.4	ug/L	82	Standard
	Cd	111	29.9	2.0	**0.0206**	0.000	1.7	mg/L	7	Standard
	Cd	114	75.2	10.3	**0.0222**	0.001	6.1	ug/L	21	Standard
>	**In**	115	604246.1	1.1				ug/L	619035	Standard
	Sn	118	613.3	11.1	**-0.0069**	0.010	141.5	ug/L	508	Standard
	Sb	123	2719.5	28.6	**0.5309**	0.152	28.5	ug/L	86	Standard
	Ba	135	92033.0	0.8	**41.2277**	0.772	1.9	ug/L	79	Standard
	Ce	140	1463.4	3.8				ug/L	68	Standard
>	**Tb**	159	962887.3	0.3				ug/L	986982	Standard
	Ho	165	45.0	11.1				ug/L	10	Standard
	Tl	203	365.3	3.0	**0.0480**	0.002	3.3	ug/L	13	Standard
	Tl	205	323.3	10.3	**0.0512**	0.005	9.3	ug/L	10	Standard
	Pb	206	14023.2	0.8	**2.4745**	0.030	1.2	ug/L	264	Standard
	Pb	207	11750.2	0.5	**2.2958**	0.019	0.8	ug/L	227	Standard
	Pb	208	47567.6	0.7	**2.4069**	0.020	0.8	ug/L	868	Standard
	U	238	42987.9	0.7	**5.9811**	0.044	0.7	ug/L	8	Standard
>	**Bi**	209	515414.9	0.8				ug/L	541014	Standard

Sample ID: L1606123801
Report Date/Time: Thursday, June 30, 2016 12:28:11
Page 1

Approved: July 01, 2016

Na	23	10.0	50.0	**56.5003**	29.382	52.0	mg/L	2	Standard
Mg	24	58837.4	0.7	**63.7321**	2.198	3.4	mg/L	53	Standard
K	39	145.0	6.0	**0.1689**	0.020	12.1	mg/L	53	Standard
Ca	43	801.7	4.7	**43.5056**	3.217	7.4	mg/L	28	Standard
Fe	54	230.3	10.8	**0.0375**	0.020	53.1	mg/L	181	Standard
Fe	57	665.0	0.0	**1.0889**	0.062	5.7	mg/L	257	Standard
> **Sc-1**	45	55571.8	3.6				mg/L	55220	Standard
Cl	35	43493.7	1.2				ug/L	35504	Standard
Kr	83	3.0	100.0				ug/L	2	Standard
Br	81	78305.5	5.1				ug/L	2040	Standard
P	31	26029.0	0.6				ug/L	20435	Standard
S	34	2565.2	4.1				ug/L	2430	Standard
Sr	88	583.3	1.0				ug/L	75	Standard
C	12	400.0	19.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	86.2	51.0				mg/L	9	Standard
Ho-1	165	45.0	11.1				mg/L	10	Standard
Er	166	80.0	21.7				mg/L	23	Standard
I	127	592701.8	6.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.104	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.556	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123801
Report Date/Time: Thursday, June 30, 2016 12:28:11
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.611
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.268
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606123801
Report Date/Time: Thursday, June 30, 2016 12:28:11
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123802
Sample Date/Time: Thursday, June 30, 2016 12:29:05
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85281.0	1.8				ug/L	74916	Standard
	Be	9	31.7	55.5	**0.0229**	0.015	65.8	ug/L	10	Standard
	Al	27	40832774.8	0.8	**206.7413**	3.781	1.8	ug/L	1822	Standard
	Sc	45	54113.1	1.6				ug/L	55220	Standard
	Ti	47	761.0	62.9	**1.8316**	1.167	63.7	ug/L	34	Standard
	V	51	60819.6	2.4	**6.6233**	0.223	3.4	ug/L	1938	Standard
	Cr	52	25517.8	0.5	**1.9058**	0.034	1.8	ug/L	9522	Standard
	Cr	53	20120.0	5.6	**18.3399**	1.146	6.2	ug/L	395	Standard
	Mn	55	7353.8	0.4	**0.7825**	0.010	1.3	ug/L	902	Standard
	Co	59	1110.7	5.5	**0.1187**	0.006	5.1	ug/L	262	Standard
	Ni	60	3088.6	0.9	**1.2848**	0.020	1.6	ug/L	371	Standard
	Cu	65	1541.7	3.9	**0.6667**	0.032	4.7	ug/L	106	Standard
	Zn	66	2653.2	4.4	**1.7721**	0.063	3.6	ug/L	398	Standard
>	**Ge**	72	515636.8	1.5				ug/L	535147	Standard
	As	75	3689.9	1.3	**2.9149**	0.078	2.7	ug/L	-43	Standard
	Se	82	1133.1	0.7	**8.5813**	0.174	2.0	ug/L	14	Standard
	Se-1	77	2001.1	4.2	**22.4732**	0.911	4.1	ug/L	65	Standard
>	**Ga**	71	131.7	22.3				mg/L	97	Standard
	Rb	85	21328.3	1.6				ug/L	15	Standard
	Y	89	452149.0	0.4				ug/L	465704	Standard
>	**Rh**	103	435.0	5.0				ug/L	10	Standard
	Mo	98	14977.2	1.8	**5.0495**	0.111	2.2	ug/L	9	Standard
	Ag	107	143.0	11.3	**0.0138**	0.002	16.7	ug/L	82	Standard
	Cd	111	11.4	2.3	**0.0128**	0.000	0.6	mg/L	7	Standard
	Cd	114	91.8	27.3	**0.0255**	0.005	18.1	ug/L	21	Standard
>	**In**	115	589985.2	0.7				ug/L	619035	Standard
	Sn	118	803.4	29.4	**0.0262**	0.038	147.0	ug/L	508	Standard
	Sb	123	773.1	32.3	**0.1578**	0.050	32.0	ug/L	86	Standard
	Ba	135	24159.6	0.8	**11.0685**	0.049	0.4	ug/L	79	Standard
	Ce	140	1713.4	3.5				ug/L	68	Standard
>	**Tb**	159	962435.5	0.7				ug/L	986982	Standard
	Ho	165	66.7	17.3				ug/L	10	Standard
	Tl	203	153.3	12.4	**0.0238**	0.002	9.0	ug/L	13	Standard
	Tl	205	135.0	13.4	**0.0261**	0.002	9.4	ug/L	10	Standard
	Pb	206	668.3	3.9	**0.0833**	0.005	5.5	ug/L	264	Standard
	Pb	207	559.7	2.3	**0.0790**	0.002	3.1	ug/L	227	Standard
	Pb	208	2297.4	1.6	**0.0811**	0.002	2.6	ug/L	868	Standard
	U	238	87580.4	0.3	**12.3190**	0.088	0.7	ug/L	8	Standard
>	**Bi**	209	509478.2	0.4				ug/L	541014	Standard

Sample ID: L1606123802
Report Date/Time: Thursday, June 30, 2016 12:31:22
Page 1

Approved: July 01, 2016

Na	23	3.3	173.2	**19.0801**	33.039	173.2	mg/L	2	Standard
Mg	24	163394.8	1.7	**181.6976**	3.675	2.0	mg/L	53	Standard
K	39	673.3	8.2	**1.0905**	0.102	9.3	mg/L	53	Standard
Ca	43	636.7	6.7	**35.1510**	3.000	8.5	mg/L	28	Standard
Fe	54	221.2	1.4	**0.0350**	0.001	3.4	mg/L	181	Standard
Fe	57	676.7	6.7	**1.1677**	0.151	12.9	mg/L	257	Standard
> **Sc-1**	45	54113.1	1.6				mg/L	55220	Standard
Cl	35	50047.9	0.7				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	37272.5	1.7				ug/L	2040	Standard
P	31	24598.3	1.7				ug/L	20435	Standard
S	34	2330.2	6.3				ug/L	2430	Standard
Sr	88	1316.7	9.4				ug/L	75	Standard
C	12	223.3	21.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	106.6	56.7				mg/L	9	Standard
Ho-1	165	66.7	17.3				mg/L	10	Standard
Er	166	70.0	28.6				mg/L	23	Standard
I	127	129859.3	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.354	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123802
Report Date/Time: Thursday, June 30, 2016 12:31:22
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	95.307	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.171	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123802PS WG574742-01
Sample Date/Time: Thursday, June 30, 2016 12:32:17
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90026.7	0.8				ug/L	74916	Standard
	Be	9	55156.9	1.4	**43.5024**	0.777	1.8	ug/L	10	Standard
	Al	27	42431963.2	0.5	**203.4865**	2.596	1.3	ug/L	1822	Standard
	Sc	45	55210.4	0.9				ug/L	55220	Standard
	Ti	47	633.0	44.3	**1.4860**	0.698	47.0	ug/L	34	Standard
	V	51	504685.6	0.5	**55.0548**	0.569	1.0	ug/L	1938	Standard
	Cr	52	444386.3	0.9	**49.0453**	0.582	1.2	ug/L	9522	Standard
	Cr	53	73665.3	1.6	**66.5494**	0.802	1.2	ug/L	395	Standard
	Mn	55	405919.8	1.3	**47.7397**	0.682	1.4	ug/L	902	Standard
	Co	59	377751.7	1.5	**47.0009**	0.675	1.4	ug/L	262	Standard
	Ni	60	103282.8	0.4	**46.5576**	0.059	0.1	ug/L	371	Standard
	Cu	65	101218.0	0.8	**46.4456**	0.553	1.2	ug/L	106	Standard
	Zn	66	63559.7	1.1	**49.2342**	0.736	1.5	ug/L	398	Standard
>	Ge	72	528026.7	0.5				ug/L	535147	Standard
	As	75	68292.3	0.5	**51.7282**	0.517	1.0	ug/L	-43	Standard
	Se	82	7467.2	1.7	**55.7421**	0.954	1.7	ug/L	14	Standard
	Se-1	77	6291.3	1.6	**70.2008**	1.328	1.9	ug/L	65	Standard
>	Ga	71	175.0	14.8				mg/L	97	Standard
	Rb	85	21011.2	0.9				ug/L	15	Standard
	Y	89	457532.3	0.8				ug/L	465704	Standard
>	Rh	103	456.7	13.1				ug/L	10	Standard
	Mo	98	15165.9	1.5	**5.0804**	0.082	1.6	ug/L	9	Standard
	Ag	107	323469.9	0.7	**44.6696**	0.305	0.7	ug/L	82	Standard
	Cd	111	108927.2	1.0	**47.0605**	0.163	0.3	mg/L	7	Standard
	Cd	114	263052.0	1.9	**47.1909**	0.546	1.2	ug/L	21	Standard
>	In	115	593751.2	0.8				ug/L	619035	Standard
	Sn	118	850.0	1.8	**0.0328**	0.003	9.1	ug/L	508	Standard
	Sb	123	237149.8	1.1	**46.6930**	0.618	1.3	ug/L	86	Standard
	Ba	135	126318.4	0.3	**57.5882**	0.301	0.5	ug/L	79	Standard
	Ce	140	1838.4	16.1				ug/L	68	Standard
>	Tb	159	963825.5	0.9				ug/L	986982	Standard
	Ho	165	66.7	11.5				ug/L	10	Standard
	Tl	203	416503.8	1.0	**48.0712**	0.216	0.4	ug/L	13	Standard
	Tl	205	364432.7	1.0	**49.2380**	0.756	1.5	ug/L	10	Standard
	Pb	206	277275.5	0.4	**49.8264**	0.163	0.3	ug/L	264	Standard
	Pb	207	240482.5	0.7	**47.8168**	0.618	1.3	ug/L	227	Standard
	Pb	208	944780.0	0.6	**48.7174**	0.550	1.1	ug/L	868	Standard
	U	238	449702.3	0.7	**62.7382**	0.887	1.4	ug/L	8	Standard
>	Bi	209	513434.3	0.7				ug/L	541014	Standard

Sample ID: L1606123802PS WG574742-01
Report Date/Time: Thursday, June 30, 2016 12:34:34
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	167045.9	1.0	**182.0647**	3.413	1.9	mg/L	53	Standard
K	39	685.0	5.1	**1.0865**	0.051	4.7	mg/L	53	Standard
Ca	43	726.7	3.3	**39.4999**	1.706	4.3	mg/L	28	Standard
Fe	54	191.1	19.7	**0.0113**	0.024	215.3	mg/L	181	Standard
Fe	57	611.7	9.9	**0.9585**	0.173	18.1	mg/L	257	Standard
> **Sc-1**	45	55210.4	0.9				mg/L	55220	Standard
Cl	35	51236.5	0.7				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	36838.1	1.4				ug/L	2040	Standard
P	31	25471.4	2.3				ug/L	20435	Standard
S	34	2350.2	6.0				ug/L	2430	Standard
Sr	88	1250.1	5.2				ug/L	75	Standard
C	12	160.0	43.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	90.3	45.9				mg/L	9	Standard
Ho-1	165	66.7	11.5				mg/L	10	Standard
Er	166	63.3	18.2				mg/L	23	Standard
I	127	224161.3	1.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.169	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.669	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123802PS WG574742-01
Report Date/Time: Thursday, June 30, 2016 12:34:34
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.916
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.902
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123802SDL WG574742-02
Sample Date/Time: Thursday, June 30, 2016 12:35:51
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78422.5	2.5				ug/L	74916	Standard
	Be	9	26.7	54.1	**0.0204**	0.013	62.5	ug/L	10	Standard
	Al	27	7894596.4	0.6	**43.4738**	1.073	2.5	ug/L	1822	Standard
	Sc	45	50880.3	1.7				ug/L	55220	Standard
	Ti	47	93.3	15.0	**0.1657**	0.036	22.0	ug/L	34	Standard
	V	51	13858.3	1.7	**1.3644**	0.019	1.4	ug/L	1938	Standard
	Cr	52	12210.9	1.6	**0.3763**	0.020	5.3	ug/L	9522	Standard
	Cr	53	6824.9	3.0	**5.9924**	0.168	2.8	ug/L	395	Standard
	Mn	55	1982.8	2.7	**0.1353**	0.008	5.6	ug/L	902	Standard
	Co	59	409.3	8.6	**0.0296**	0.005	16.0	ug/L	262	Standard
	Ni	60	855.7	2.2	**0.2525**	0.010	4.1	ug/L	371	Standard
	Cu	65	595.7	3.8	**0.2228**	0.009	4.2	ug/L	106	Standard
	Zn	66	1650.8	2.8	**0.9781**	0.040	4.1	ug/L	398	Standard
>	**Ge**	72	513253.1	0.5				ug/L	535147	Standard
	As	75	704.2	3.4	**0.6034**	0.021	3.5	ug/L	-43	Standard
	Se	82	253.3	1.6	**1.8520**	0.037	2.0	ug/L	14	Standard
	Se-1	77	538.0	7.6	**5.6470**	0.495	8.8	ug/L	65	Standard
>	**Ga**	71	78.3	35.2				mg/L	97	Standard
	Rb	85	4115.6	0.1				ug/L	15	Standard
	Y	89	440141.7	0.8				ug/L	465704	Standard
>	**Rh**	103	96.7	7.9				ug/L	10	Standard
	Mo	98	2789.6	1.1	**0.9561**	0.010	1.1	ug/L	9	Standard
	Ag	107	1217.4	41.0	**0.1640**	0.069	42.2	ug/L	82	Standard
	Cd	111	12.7	36.1	**0.0134**	0.002	14.7	mg/L	7	Standard
	Cd	114	22.3	33.6	**0.0130**	0.001	10.3	ug/L	21	Standard
>	**In**	115	586501.7	0.5				ug/L	619035	Standard
	Sn	118	471.7	13.0	**-0.0269**	0.010	35.8	ug/L	508	Standard
	Sb	123	997.7	34.2	**0.2031**	0.067	33.1	ug/L	86	Standard
	Ba	135	4696.7	0.6	**2.1488**	0.020	0.9	ug/L	79	Standard
	Ce	140	410.0	20.1				ug/L	68	Standard
>	**Tb**	159	933616.4	0.4				ug/L	986982	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	145.3	15.9	**0.0226**	0.003	12.3	ug/L	13	Standard
	Tl	205	143.3	16.5	**0.0269**	0.003	11.1	ug/L	10	Standard
	Pb	206	439.7	6.2	**0.0406**	0.005	13.4	ug/L	264	Standard
	Pb	207	372.7	3.4	**0.0403**	0.002	5.6	ug/L	227	Standard
	Pb	208	1457.4	0.9	**0.0362**	0.001	1.6	ug/L	868	Standard
	U	238	16942.1	0.5	**2.3501**	0.026	1.1	ug/L	8	Standard
>	**Bi**	209	518073.0	1.1				ug/L	541014	Standard

Sample ID: L1606123802SDL WG574742-02
Report Date/Time: Thursday, June 30, 2016 12:38:08
Page 1

Approved: July 01, 2016

Na	23	5.0	0.0	**30.5280**	0.517	1.7	mg/L	2	Standard
Mg	24	31290.6	1.2	**36.9770**	0.268	0.7	mg/L	53	Standard
K	39	196.7	12.8	**0.2861**	0.044	15.2	mg/L	53	Standard
Ca	43	151.7	14.9	**7.6575**	1.462	19.1	mg/L	28	Standard
Fe	54	77.0	4.2	**-0.0618**	0.002	3.0	mg/L	181	Standard
Fe	57	371.7	22.4	**0.4076**	0.254	62.4	mg/L	257	Standard
> **Sc-1**	45	50880.3	1.7				mg/L	55220	Standard
Cl	35	45617.9	1.5				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	8455.7	2.8				ug/L	2040	Standard
P	31	10917.3	3.3				ug/L	20435	Standard
S	34	2505.2	2.7				ug/L	2430	Standard
Sr	88	308.3	21.6				ug/L	75	Standard
C	12	96.7	26.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	47.6	1.0				mg/L	9	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	50.0	20.0				mg/L	23	Standard
I	127	59592.1	3.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.680	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.909	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123802SDL WG574742-02
Report Date/Time: Thursday, June 30, 2016 12:38:08
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.745
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.760
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123802SDL WG574742-02
Sample Date/Time: Thursday, June 30, 2016 12:39:03
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75372.2	4.0				ug/L	74916	Standard
	Be	9	30.0	72.6	**0.0245**	0.020	83.7	ug/L	10	Standard
	Al	27	1600639.2	0.2	**9.1751**	0.352	3.8	ug/L	1822	Standard
	Sc	45	50582.7	2.6				ug/L	55220	Standard
	Ti	47	58.0	22.6	**0.0771**	0.033	42.3	ug/L	34	Standard
	V	51	4717.2	3.0	**0.3382**	0.019	5.5	ug/L	1938	Standard
	Cr	52	9867.5	1.6	**0.1115**	0.021	19.2	ug/L	9522	Standard
	Cr	53	2166.8	4.2	**1.6508**	0.095	5.8	ug/L	395	Standard
	Mn	55	821.4	7.8	**-0.0049**	0.008	164.9	ug/L	902	Standard
	Co	59	285.3	8.5	**0.0140**	0.003	23.1	ug/L	262	Standard
	Ni	60	404.0	1.0	**0.0435**	0.001	2.2	ug/L	371	Standard
	Cu	65	238.7	6.0	**0.0547**	0.007	13.1	ug/L	106	Standard
	Zn	66	1106.4	4.4	**0.5465**	0.041	7.4	ug/L	398	Standard
>	**Ge**	72	510181.7	0.5				ug/L	535147	Standard
	As	75	100.9	42.8	**0.1342**	0.034	25.0	ug/L	-43	Standard
	Se	82	61.7	16.0	**0.3807**	0.077	20.3	ug/L	14	Standard
	Se-1	77	146.7	6.6	**1.1261**	0.104	9.2	ug/L	65	Standard
>	**Ga**	71	45.0	38.5				mg/L	97	Standard
	Rb	85	865.0	3.5				ug/L	15	Standard
	Y	89	433642.8	2.8				ug/L	465704	Standard
>	**Rh**	103	33.3	34.6				ug/L	10	Standard
	Mo	98	535.4	7.6	**0.1938**	0.015	7.6	ug/L	9	Standard
	Ag	107	569.3	32.2	**0.0736**	0.026	34.7	ug/L	82	Standard
	Cd	111	6.7	46.2	**0.0108**	0.001	12.6	mg/L	7	Standard
	Cd	114	18.0	67.5	**0.0122**	0.002	18.1	ug/L	21	Standard
>	**In**	115	585624.8	0.6				ug/L	619035	Standard
	Sn	118	200.0	9.0	**-0.0709**	0.003	4.1	ug/L	508	Standard
	Sb	123	260.8	21.9	**0.0565**	0.011	20.1	ug/L	86	Standard
	Ba	135	967.7	4.5	**0.4279**	0.022	5.2	ug/L	79	Standard
	Ce	140	76.7	26.4				ug/L	68	Standard
>	**Tb**	159	921991.9	1.3				ug/L	986982	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	123.0	10.0	**0.0199**	0.001	6.8	ug/L	13	Standard
	Tl	205	121.7	45.3	**0.0238**	0.007	30.5	ug/L	10	Standard
	Pb	206	323.0	1.2	**0.0190**	0.000	2.6	ug/L	264	Standard
	Pb	207	289.0	4.0	**0.0230**	0.002	10.7	ug/L	227	Standard
	Pb	208	1206.4	16.5	**0.0225**	0.010	44.0	ug/L	868	Standard
	U	238	3304.4	1.2	**0.4586**	0.005	1.0	ug/L	8	Standard
>	**Bi**	209	525074.7	0.4				ug/L	541014	Standard

Sample ID: L1606123802SDL WG574742-02
Report Date/Time: Thursday, June 30, 2016 12:41:20
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**20.3518**	17.635	86.7	mg/L	2	Standard
Mg	24	6017.9	1.4	**7.1295**	0.269	3.8	mg/L	53	Standard
K	39	73.3	37.6	**0.0607**	0.054	88.7	mg/L	53	Standard
Ca	43	56.7	33.4	**1.8502**	1.244	67.2	mg/L	28	Standard
Fe	54	74.1	7.0	**-0.0637**	0.003	4.3	mg/L	181	Standard
Fe	57	323.3	0.9	**0.2726**	0.032	11.8	mg/L	257	Standard
> **Sc-1**	45	50582.7	2.6				mg/L	55220	Standard
Cl	35	46106.0	1.0				ug/L	35504	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	3507.1	3.6				ug/L	2040	Standard
P	31	7600.2	0.1				ug/L	20435	Standard
S	34	2533.5	3.1				ug/L	2430	Standard
Sr	88	113.3	29.4				ug/L	75	Standard
C	12	116.7	26.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	15.4	95.6				mg/L	9	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	23	Standard
I	127	45802.5	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.608	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.335	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123802SDL WG574742-02
Report Date/Time: Thursday, June 30, 2016 12:41:20
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.054
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 12:42:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77730.6	1.0				ug/L	74916	Standard
	Be	9	55872.9	2.6	**51.0301**	0.838	1.6	ug/L	10	Standard
	Al	27	8818314.5	1.2	**48.9746**	0.498	1.0	ug/L	1822	Standard
	Sc	45	53661.6	3.0				ug/L	55220	Standard
	Ti	47	41807.6	2.3	**99.7069**	2.778	2.8	ug/L	34	Standard
	V	51	469384.7	2.2	**49.7616**	1.319	2.7	ug/L	1938	Standard
	Cr	52	463904.9	1.3	**49.7905**	0.855	1.7	ug/L	9522	Standard
	Cr	53	57698.0	1.0	**50.5840**	0.668	1.3	ug/L	395	Standard
	Mn	55	431644.5	2.1	**49.3591**	1.304	2.6	ug/L	902	Standard
	Co	59	418478.5	3.1	**50.6270**	1.835	3.6	ug/L	262	Standard
	Ni	60	114350.9	0.9	**50.1243**	0.603	1.2	ug/L	371	Standard
	Cu	65	113158.0	1.0	**50.4839**	0.666	1.3	ug/L	106	Standard
	Zn	66	66443.1	1.6	**50.0419**	1.022	2.0	ug/L	398	Standard
>	Ge	72	543150.6	0.7				ug/L	535147	Standard
	As	75	67490.4	1.3	**49.7017**	0.938	1.9	ug/L	-43	Standard
	Se	82	6792.4	0.9	**49.2836**	0.563	1.1	ug/L	14	Standard
	Se-1	77	4663.4	3.0	**50.4291**	1.813	3.6	ug/L	65	Standard
>	Ga	71	68.3	40.3				mg/L	97	Standard
	Rb	85	936.7	6.3				ug/L	15	Standard
	Y	89	469758.9	1.6				ug/L	465704	Standard
>	Rh	103	28.3	27.0				ug/L	10	Standard
	Mo	98	307857.4	1.2	**96.4230**	1.296	1.3	ug/L	9	Standard
	Ag	107	379112.3	1.0	**49.0635**	0.518	1.1	ug/L	82	Standard
	Cd	111	121432.1	1.0	**49.1667**	0.548	1.1	mg/L	7	Standard
	Cd	114	297834.1	2.1	**50.0762**	1.086	2.2	ug/L	21	Standard
>	In	115	633565.8	0.1				ug/L	619035	Standard
	Sn	118	328806.4	1.1	**49.2628**	0.581	1.2	ug/L	508	Standard
	Sb	123	266594.0	0.8	**49.1899**	0.443	0.9	ug/L	86	Standard
	Ba	135	113121.8	1.5	**48.3272**	0.793	1.6	ug/L	79	Standard
	Ce	140	240.0	16.5				ug/L	68	Standard
>	Tb	159	981551.7	1.4				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	466879.4	0.1	**50.2861**	0.324	0.6	ug/L	13	Standard
	Tl	205	410945.2	0.6	**51.8097**	0.429	0.8	ug/L	10	Standard
	Pb	206	296756.7	0.8	**49.7637**	0.390	0.8	ug/L	264	Standard
	Pb	207	268967.1	0.7	**49.9087**	0.694	1.4	ug/L	227	Standard
	Pb	208	1065082.8	0.6	**51.2536**	0.698	1.4	ug/L	868	Standard
	U	238	392731.7	0.9	**51.1307**	0.815	1.6	ug/L	8	Standard
>	Bi	209	550204.1	0.8				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 12:44:33
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.9874**	17.290	173.1	mg/L	2	Standard
Mg	24	4752.4	2.6	**5.2959**	0.091	1.7	mg/L	53	Standard
K	39	2363.5	6.0	**4.0498**	0.162	4.0	mg/L	53	Standard
Ca	43	123.3	6.2	**5.5087**	0.243	4.4	mg/L	28	Standard
Fe	54	7245.6	3.9	**4.9629**	0.195	3.9	mg/L	181	Standard
Fe	57	2031.8	2.2	**4.8789**	0.223	4.6	mg/L	257	Standard
Sc-1	45	53661.6	3.0				mg/L	55220	Standard
Cl	35	43630.8	3.7				ug/L	35504	Standard
Kr	83	2.7	86.6				ug/L	2	Standard
Br	81	2263.5	7.1				ug/L	2040	Standard
P	31	23681.8	1.1				ug/L	20435	Standard
S	34	2846.9	4.6				ug/L	2430	Standard
Sr	88	75.0	6.7				ug/L	75	Standard
C	12	113.3	20.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	12.5	41.8				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	16178.7	6.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.060		
Al	27	97.949		
Sc	45			
Ti	47	99.707		
V	51	99.523		
Cr	52	99.581		
Cr	53			
Mn	55	98.718		
Co	59	101.254		
Ni	60	100.249		
Cu	65	100.968		
Zn	66	100.084		
Ge	72		101.496	
As	75	99.403		
Se	82	98.567		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 12:44:33
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	96.423		
Ag	107	98.127		
Cd	111	98.333		
Cd	114			
In	115			102.347
Sn	118	98.526		
Sb	123	98.380		
Ba	135	96.654		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.572		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.507		
U	238	102.261		
Bi	209			101.699
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 12:44:33
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 12:45:27
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77417.4	3.5				ug/L	74916	Standard
	Be	9	31.7	9.1	**0.0255**	0.003	12.9	ug/L	10	Standard
	Al	27	4240.7	47.8	**0.0211**	0.010	48.9	ug/L	1822	Standard
	Sc	45	55407.8	0.6				ug/L	55220	Standard
	Ti	47	36.0	20.0	**0.0157**	0.016	101.7	ug/L	34	Standard
	V	51	1596.0	4.9	**-0.0263**	0.006	23.6	ug/L	1938	Standard
	Cr	52	8222.6	1.2	**-0.1370**	0.021	15.5	ug/L	9522	Standard
	Cr	53	661.7	6.4	**0.1982**	0.039	19.6	ug/L	395	Standard
	Mn	55	1028.0	4.8	**0.0128**	0.005	42.4	ug/L	902	Standard
	Co	59	346.3	6.7	**0.0191**	0.002	11.5	ug/L	262	Standard
	Ni	60	276.0	2.5	**-0.0241**	0.004	15.7	ug/L	371	Standard
	Cu	65	182.7	11.5	**0.0229**	0.009	38.9	ug/L	106	Standard
	Zn	66	445.0	4.2	**-0.0088**	0.009	99.3	ug/L	398	Standard
>	**Ge**	72	542321.0	1.6				ug/L	535147	Standard
	As	75	-31.6	107.4	**0.0321**	0.025	77.0	ug/L	-43	Standard
	Se	82	18.9	31.9	**0.0405**	0.042	104.1	ug/L	14	Standard
	Se-1	77	62.7	19.2	**0.1064**	0.142	133.5	ug/L	65	Standard
>	**Ga**	71	90.0	11.1				mg/L	97	Standard
	Rb	85	33.3	8.7				ug/L	15	Standard
	Y	89	470192.8	2.1				ug/L	465704	Standard
>	**Rh**	103	20.0	25.0				ug/L	10	Standard
	Mo	98	190.1	19.8	**0.0713**	0.011	15.7	ug/L	9	Standard
	Ag	107	372.7	4.1	**0.0418**	0.002	5.4	ug/L	82	Standard
	Cd	111	16.6	60.6	**0.0145**	0.004	27.3	mg/L	7	Standard
	Cd	114	35.0	68.8	**0.0147**	0.004	26.8	ug/L	21	Standard
>	**In**	115	639140.0	0.9				ug/L	619035	Standard
	Sn	118	995.0	15.0	**0.0448**	0.023	52.0	ug/L	508	Standard
	Sb	123	844.2	29.0	**0.1590**	0.046	28.8	ug/L	86	Standard
	Ba	135	51.7	22.7	**0.0022**	0.005	213.6	ug/L	79	Standard
	Ce	140	45.0	58.8				ug/L	68	Standard
>	**Tb**	159	987254.5	1.0				ug/L	986982	Standard
	Ho	165	13.3	78.1				ug/L	10	Standard
	Tl	203	117.7	28.5	**0.0185**	0.003	18.9	ug/L	13	Standard
	Tl	205	120.0	18.2	**0.0226**	0.003	11.6	ug/L	10	Standard
	Pb	206	372.3	4.1	**0.0237**	0.002	9.3	ug/L	264	Standard
	Pb	207	300.3	6.7	**0.0217**	0.003	15.9	ug/L	227	Standard
	Pb	208	1211.4	10.7	**0.0191**	0.006	30.6	ug/L	868	Standard
	U	238	72.7	61.6	**0.0172**	0.006	33.0	ug/L	8	Standard
>	**Bi**	209	558803.9	0.6				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 12:47:44
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.2851**	16.074	173.1	mg/L	2	Standard
Mg	24	46.7	27.0	**0.0161**	0.013	83.2	mg/L	53	Standard
K	39	41.7	36.7	**-0.0055**	0.026	464.8	mg/L	53	Standard
Ca	43	38.3	71.8	**0.4831**	1.537	318.2	mg/L	28	Standard
Fe	54	144.3	15.9	**-0.0207**	0.016	77.5	mg/L	181	Standard
Fe	57	238.3	11.6	**-0.0334**	0.076	227.3	mg/L	257	Standard
Sc-1	45	55407.8	0.6				mg/L	55220	Standard
Cl	35	41950.7	1.1				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2033.5	3.2				ug/L	2040	Standard
P	31	22096.1	1.2				ug/L	20435	Standard
S	34	2886.9	1.7				ug/L	2430	Standard
Sr	88	81.7	24.7				ug/L	75	Standard
C	12	63.3	24.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	573.3	4.2				mg/L	9	Standard
Ho-1	165	13.3	78.1				mg/L	10	Standard
Er	166	70.0	28.6				mg/L	23	Standard
I	127	15613.0	3.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.341	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 12:47:44
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.248
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.288
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 12:47:44
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122903 WG573868-02
Sample Date/Time: Thursday, June 30, 2016 12:48:40
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	94380.1	4.5				ug/L	74916	Standard
	Be	9	91.7	46.4	**0.0649**	0.030	46.7	ug/L	10	Standard
	Al	27	56152566.3	1.4	**257.2159**	12.825	5.0	ug/L	1822	Standard
	Sc	45	62458.5	1.2				ug/L	55220	Standard
	Ti	47	6162.3	1.2	**15.3008**	0.117	0.8	ug/L	34	Standard
	V	51	-1368040.2	24.0	**-152.4696**	37.213	24.4	ug/L	1938	Standard
	Cr	52	303770668.6	0.3	**34789.2143**	189.541	0.5	ug/L	9522	Standard
	Cr	53	37580913.2	1.3	**34701.2797**	393.777	1.1	ug/L	395	Standard
	Mn	55	935139.8	1.8	**111.8980**	1.925	1.7	ug/L	902	Standard
	Co	59	8549.4	1.5	**1.0587**	0.020	1.9	ug/L	262	Standard
	Ni	60	57727.8	0.7	**26.3802**	0.080	0.3	ug/L	371	Standard
	Cu	65	923440.4	1.1	**431.0563**	3.244	0.8	ug/L	106	Standard
	Zn	66	28421.6	0.6	**22.1821**	0.114	0.5	ug/L	398	Standard
>	Ge	72	519619.4	0.5				ug/L	535147	Standard
	As	75	2730.2	5.0	**2.1547**	0.113	5.2	ug/L	-43	Standard
	Se	82	284.1	19.2	**2.0630**	0.425	20.6	ug/L	14	Standard
	Se-1	77	149.3	6.3	**1.1260**	0.111	9.9	ug/L	65	Standard
>	Ga	71	1333.4	6.8				mg/L	97	Standard
	Rb	85	9376.2	2.7				ug/L	15	Standard
	Y	89	468015.9	2.4				ug/L	465704	Standard
>	Rh	103	323.3	26.4				ug/L	10	Standard
	Mo	98	16962.4	0.8	**5.5363**	0.107	1.9	ug/L	9	Standard
	Ag	107	8753.2	2.7	**1.1721**	0.038	3.2	ug/L	82	Standard
	Cd	111	125.5	27.5	**0.0608**	0.015	24.4	mg/L	7	Standard
	Cd	114	1547.5	12.5	**0.2792**	0.031	11.2	ug/L	21	Standard
>	In	115	609353.2	1.3				ug/L	619035	Standard
	Sn	118	416991.6	1.9	**65.0044**	1.914	2.9	ug/L	508	Standard
	Sb	123	15244.9	1.6	**2.9290**	0.048	1.7	ug/L	86	Standard
	Ba	135	18235.3	1.1	**8.0851**	0.190	2.4	ug/L	79	Standard
	Ce	140	12727.0	2.4				ug/L	68	Standard
>	Tb	159	990288.0	1.8				ug/L	986982	Standard
	Ho	165	530.0	9.6				ug/L	10	Standard
	Tl	203	209.3	34.5	**0.0291**	0.008	26.5	ug/L	13	Standard
	Tl	205	321.7	99.2	**0.0491**	0.041	83.1	ug/L	10	Standard
	Pb	206	50254.9	1.5	**8.6142**	0.134	1.6	ug/L	264	Standard
	Pb	207	41617.8	1.8	**7.8938**	0.131	1.7	ug/L	227	Standard
	Pb	208	169789.1	1.6	**8.3491**	0.099	1.2	ug/L	868	Standard
	U	238	5823.1	6.5	**0.7851**	0.041	5.2	ug/L	8	Standard
>	Bi	209	536398.7	2.1				ug/L	541014	Standard

Sample ID: L1606122903 WG573868-02
Report Date/Time: Thursday, June 30, 2016 12:50:57
Page 1

Approved: July 01, 2016

Na	23	6.7	86.6	**33.3226**	28.857	86.6	mg/L	2	Standard
Mg	24	147252.4	2.8	**141.8564**	4.249	3.0	mg/L	53	Standard
K	39	266.7	7.6	**0.3241**	0.030	9.1	mg/L	53	Standard
Ca	43	1293.4	2.0	**63.1046**	2.005	3.2	mg/L	28	Standard
Fe	54	297.2	172.5	**0.0616**	0.311	504.8	mg/L	181	Standard
Fe	57	1773.4	1.2	**3.4905**	0.068	2.0	mg/L	257	Standard
> **Sc-1**	45	62458.5	1.2				mg/L	55220	Standard
Cl	35	78157.1	1.3				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	33710.8	0.9				ug/L	2040	Standard
P	31	48081.3	5.7				ug/L	20435	Standard
S	34	2281.8	3.8				ug/L	2430	Standard
Sr	88	218.3	16.6				ug/L	75	Standard
C	12	343.3	14.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	28.6				mg/L	7	Standard
Dy	164	582.4	13.8				mg/L	9	Standard
Ho-1	165	530.0	9.6				mg/L	10	Standard
Er	166	506.7	16.8				mg/L	23	Standard
I	127	9578.1	12.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.981	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.098	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122903 WG573868-02
Report Date/Time: Thursday, June 30, 2016 12:50:57
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.436	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.147	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

Sample ID: L1606122903 WG573868-02
Report Date/Time: Thursday, June 30, 2016 12:50:57
Page 3

Approved: July 01, 2016

Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Cu 65 Upper, S, EEE	Cu	65

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122903DP WG573868-07
Sample Date/Time: Thursday, June 30, 2016 12:51:52
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	102134.9	2.7				ug/L	74916	Standard
	Be	9	65.0	7.7	**0.0416**	0.003	6.2	ug/L	10	Standard
	Al	27	63183038.5	1.4	**267.1354**	4.535	1.7	ug/L	1822	Standard
	Sc	45	61847.6	0.8				ug/L	55220	Standard
	Ti	47	6523.1	1.8	**16.3700**	0.289	1.8	ug/L	34	Standard
	V	51	-1546049.9	24.4	**-174.0618**	43.049	24.7	ug/L	1938	Standard
	Cr	52	322112934.4	0.5	**37272.4484**	238.200	0.6	ug/L	9522	Standard
	Cr	53	40248349.1	2.6	**37550.7455**	1017.902	2.7	ug/L	395	Standard
	Mn	55	991053.0	0.6	**119.8276**	0.634	0.5	ug/L	902	Standard
	Co	59	9179.1	1.7	**1.1504**	0.025	2.2	ug/L	262	Standard
	Ni	60	61487.9	1.0	**28.4024**	0.406	1.4	ug/L	371	Standard
	Cu	65	986874.2	0.3	**465.4613**	2.052	0.4	ug/L	106	Standard
	Zn	66	29767.2	0.6	**23.4933**	0.092	0.4	ug/L	398	Standard
>	**Ge**	72	514287.8	0.6				ug/L	535147	Standard
	As	75	2574.5	2.7	**2.0554**	0.064	3.1	ug/L	-43	Standard
	Se	82	170.7	18.5	**1.2147**	0.250	20.5	ug/L	14	Standard
	Se-1	77	129.7	5.8	**0.9161**	0.078	8.5	ug/L	65	Standard
>	**Ga**	71	1410.1	8.2				mg/L	97	Standard
	Rb	85	10441.9	2.4				ug/L	15	Standard
	Y	89	466018.5	0.9				ug/L	465704	Standard
>	**Rh**	103	426.7	22.7				ug/L	10	Standard
	Mo	98	18201.3	0.8	**5.9257**	0.036	0.6	ug/L	9	Standard
	Ag	107	9323.9	0.4	**1.2459**	0.006	0.5	ug/L	82	Standard
	Cd	111	110.5	8.8	**0.0543**	0.004	7.4	mg/L	7	Standard
	Cd	114	1615.9	15.1	**0.2908**	0.043	14.8	ug/L	21	Standard
>	**In**	115	610696.5	0.2				ug/L	619035	Standard
	Sn	118	452746.6	0.6	**70.4160**	0.471	0.7	ug/L	508	Standard
	Sb	123	16308.6	1.8	**3.1260**	0.057	1.8	ug/L	86	Standard
	Ba	135	19306.3	0.3	**8.5405**	0.036	0.4	ug/L	79	Standard
	Ce	140	13217.4	1.5				ug/L	68	Standard
>	**Tb**	159	985335.9	1.7				ug/L	986982	Standard
	Ho	165	581.7	8.6				ug/L	10	Standard
	Tl	203	112.3	1.9	**0.0185**	0.000	0.7	ug/L	13	Standard
	Tl	205	83.3	44.2	**0.0185**	0.005	25.2	ug/L	10	Standard
	Pb	206	55262.3	0.5	**9.5451**	0.116	1.2	ug/L	264	Standard
	Pb	207	45375.2	0.7	**8.6726**	0.152	1.8	ug/L	227	Standard
	Pb	208	184377.7	1.0	**9.1363**	0.157	1.7	ug/L	868	Standard
	U	238	6422.7	5.7	**0.8719**	0.053	6.0	ug/L	8	Standard
>	**Bi**	209	532502.1	1.0				ug/L	541014	Standard

Sample ID: L1606122903DP WG573868-07
Report Date/Time: Thursday, June 30, 2016 12:54:08
Page 1

Approved: July 01, 2016

Na	23	11.7	24.7	**58.6291**	14.787	25.2	mg/L	2	Standard
Mg	24	164201.8	1.9	**159.7280**	1.904	1.2	mg/L	53	Standard
K	39	261.7	31.1	**0.3212**	0.126	39.2	mg/L	53	Standard
Ca	43	1280.1	10.5	**63.0199**	6.216	9.9	mg/L	28	Standard
Fe	54	-649.5	82.1	**-0.5146**	0.327	63.5	mg/L	181	Standard
Fe	57	1908.5	2.3	**3.8509**	0.127	3.3	mg/L	257	Standard
> **Sc-1**	45	61847.6	0.8				mg/L	55220	Standard
Cl	35	81436.9	0.5				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	5651.1	3.4				ug/L	2040	Standard
P	31	51477.3	1.5				ug/L	20435	Standard
S	34	2203.5	4.6				ug/L	2430	Standard
Sr	88	213.3	3.6				ug/L	75	Standard
C	12	343.3	19.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	7	Standard
Dy	164	753.9	5.1				mg/L	9	Standard
Ho-1	165	581.7	8.6				mg/L	10	Standard
Er	166	476.7	7.9				mg/L	23	Standard
I	127	8432.3	4.1				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		136.332	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.102	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606122903DP WG573868-07
Report Date/Time: Thursday, June 30, 2016 12:54:08
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.653	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.427	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

Sample ID: L1606122903DP WG573868-07
Report Date/Time: Thursday, June 30, 2016 12:54:08
Page 3

Approved: July 01, 2016

Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Cu 65 Upper, S, EEE	Cu	65

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122701
Sample Date/Time: Thursday, June 30, 2016 12:55:03
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	102041.0	2.8				ug/L	74916	Standard
	Be	9	35.0	51.5	**0.0206**	0.012	57.3	ug/L	10	Standard
	Al	27	877585.3	5.4	**3.7089**	0.106	2.9	ug/L	1822	Standard
	Sc	45	57673.0	4.5				ug/L	55220	Standard
	Ti	47	923.7	10.3	**2.2096**	0.231	10.4	ug/L	34	Standard
	V	51	280479.4	0.6	**30.6810**	0.258	0.8	ug/L	1938	Standard
	Cr	52	412149.7	45.4	**45.6590**	21.122	46.3	ug/L	9522	Standard
	Cr	53	51894.5	42.9	**47.0217**	20.264	43.1	ug/L	395	Standard
	Mn	55	8554.1	4.7	**0.9087**	0.046	5.1	ug/L	902	Standard
	Co	59	3701.5	3.9	**0.4405**	0.018	4.1	ug/L	262	Standard
	Ni	60	5324.9	0.7	**2.2758**	0.025	1.1	ug/L	371	Standard
	Cu	65	4018.2	14.3	**1.7976**	0.265	14.7	ug/L	106	Standard
	Zn	66	3367.4	2.2	**2.2947**	0.059	2.6	ug/L	398	Standard
>	Ge	72	525083.9	0.3				ug/L	535147	Standard
	As	75	2675.8	0.8	**2.0911**	0.017	0.8	ug/L	-43	Standard
	Se	82	317.4	3.1	**2.2898**	0.080	3.5	ug/L	14	Standard
	Se-1	77	341.7	12.7	**3.2841**	0.491	15.0	ug/L	65	Standard
>	Ga	71	5656.1	0.7				mg/L	97	Standard
	Rb	85	72886.6	1.0				ug/L	15	Standard
	Y	89	468551.4	0.6				ug/L	465704	Standard
>	Rh	103	1286.7	17.9				ug/L	10	Standard
	Mo	98	5009.6	1.7	**1.5899**	0.024	1.5	ug/L	9	Standard
	Ag	107	213.0	12.1	**0.0217**	0.003	15.6	ug/L	82	Standard
	Cd	111	122.6	10.7	**0.0578**	0.005	9.1	mg/L	7	Standard
	Cd	114	318.0	10.0	**0.0627**	0.005	8.6	ug/L	21	Standard
>	In	115	630059.3	0.2				ug/L	619035	Standard
	Sn	118	2871.9	7.6	**0.3302**	0.034	10.2	ug/L	508	Standard
	Sb	123	786.4	8.9	**0.1503**	0.013	8.8	ug/L	86	Standard
	Ba	135	330955.0	1.0	**142.2106**	1.127	0.8	ug/L	79	Standard
	Ce	140	2098.5	1.9				ug/L	68	Standard
>	Tb	159	1001039.4	1.3				ug/L	986982	Standard
	Ho	165	38.3	39.8				ug/L	10	Standard
	Tl	203	173.7	17.6	**0.0248**	0.003	12.9	ug/L	13	Standard
	Tl	205	130.0	20.0	**0.0242**	0.003	13.1	ug/L	10	Standard
	Pb	206	1142.7	8.1	**0.1552**	0.014	8.9	ug/L	264	Standard
	Pb	207	990.7	5.6	**0.1520**	0.010	6.4	ug/L	227	Standard
	Pb	208	3988.2	2.6	**0.1550**	0.003	2.2	ug/L	868	Standard
	U	238	1917.5	4.2	**0.2592**	0.011	4.2	ug/L	8	Standard
>	Bi	209	546503.3	1.0				ug/L	541014	Standard

Sample ID: L1606122701
Report Date/Time: Thursday, June 30, 2016 12:57:20
Page 1

Approved: July 01, 2016

Na	23	8.3	91.7	**45.9105**	41.804	91.1	mg/L	2	Standard
Mg	24	22995.8	4.3	**23.9915**	1.464	6.1	mg/L	53	Standard
K	39	1361.7	7.2	**2.1440**	0.254	11.8	mg/L	53	Standard
Ca	43	1233.4	0.5	**65.2887**	2.661	4.1	mg/L	28	Standard
Fe	54	200.5	26.1	**0.0125**	0.036	289.4	mg/L	181	Standard
Fe	57	838.4	5.4	**1.4641**	0.099	6.7	mg/L	257	Standard
> **Sc-1**	45	57673.0	4.5				mg/L	55220	Standard
Cl	35	40206.6	2.3				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	36911.7	6.6				ug/L	2040	Standard
P	31	38662.6	2.7				ug/L	20435	Standard
S	34	2288.5	1.5				ug/L	2430	Standard
Sr	88	4789.1	4.8				ug/L	75	Standard
C	12	1030.0	20.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	7	Standard
Dy	164	58.4	35.1				mg/L	9	Standard
Ho-1	165	38.3	39.8				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	81289.4	3.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.206	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.120	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122701
Report Date/Time: Thursday, June 30, 2016 12:57:20
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.781
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.015
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122703
Sample Date/Time: Thursday, June 30, 2016 12:58:15
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98106.7	2.3				ug/L	74916	Standard
	Be	9	41.7	18.3	**0.0266**	0.006	21.6	ug/L	10	Standard
	Al	27	5810039.6	1.6	**25.5754**	0.828	3.2	ug/L	1822	Standard
	Sc	45	59551.8	1.0				ug/L	55220	Standard
	Ti	47	617.0	1.7	**1.4056**	0.024	1.7	ug/L	34	Standard
	V	51	2392.4	22.7	**0.0588**	0.058	98.6	ug/L	1938	Standard
	Cr	52	22416.9	23.9	**1.4217**	0.586	41.2	ug/L	9522	Standard
	Cr	53	5614.4	11.2	**4.5831**	0.554	12.1	ug/L	395	Standard
	Mn	55	913432.0	1.5	**104.7943**	1.499	1.4	ug/L	902	Standard
	Co	59	617.7	4.3	**0.0521**	0.003	6.1	ug/L	262	Standard
	Ni	60	965.7	2.7	**0.2799**	0.012	4.3	ug/L	371	Standard
	Cu	65	623.3	6.9	**0.2203**	0.019	8.7	ug/L	106	Standard
	Zn	66	5970.5	1.7	**4.1910**	0.074	1.8	ug/L	398	Standard
>	**Ge**	72	541927.7	0.1				ug/L	535147	Standard
	As	75	449.9	5.6	**0.3869**	0.018	4.8	ug/L	-43	Standard
	Se	82	197.0	3.3	**1.3386**	0.047	3.5	ug/L	14	Standard
	Se-1	77	248.0	4.4	**2.1371**	0.119	5.6	ug/L	65	Standard
>	**Ga**	71	100.0	30.0				mg/L	97	Standard
	Rb	85	7907.1	1.3				ug/L	15	Standard
	Y	89	476065.1	1.9				ug/L	465704	Standard
>	**Rh**	103	83.3	15.1				ug/L	10	Standard
	Mo	98	66.3	20.6	**0.0328**	0.004	12.6	ug/L	9	Standard
	Ag	107	168.7	5.1	**0.0154**	0.001	6.8	ug/L	82	Standard
	Cd	111	68.6	10.2	**0.0352**	0.003	8.0	mg/L	7	Standard
	Cd	114	201.3	8.0	**0.0422**	0.003	6.1	ug/L	21	Standard
>	**In**	115	644446.3	0.4				ug/L	619035	Standard
	Sn	118	1071.7	18.0	**0.0549**	0.029	53.2	ug/L	508	Standard
	Sb	123	213.7	27.5	**0.0432**	0.011	25.0	ug/L	86	Standard
	Ba	135	271145.0	0.5	**113.9061**	0.186	0.2	ug/L	79	Standard
	Ce	140	188.3	15.1				ug/L	68	Standard
>	**Tb**	159	1013875.1	0.8				ug/L	986982	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	102.3	14.0	**0.0167**	0.002	9.1	ug/L	13	Standard
	Tl	205	103.3	26.6	**0.0203**	0.003	16.3	ug/L	10	Standard
	Pb	206	355.0	8.5	**0.0198**	0.005	24.1	ug/L	264	Standard
	Pb	207	281.7	6.3	**0.0173**	0.003	17.1	ug/L	227	Standard
	Pb	208	1217.4	4.7	**0.0183**	0.003	15.0	ug/L	868	Standard
	U	238	30.7	15.1	**0.0117**	0.001	4.8	ug/L	8	Standard
>	**Bi**	209	569392.8	0.7				ug/L	541014	Standard

Sample ID: L1606122703
Report Date/Time: Thursday, June 30, 2016 13:00:31
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11045.7	0.8	**11.1276**	0.030	0.3	mg/L	53	Standard
K	39	341.7	6.1	**0.4615**	0.027	6.0	mg/L	53	Standard
Ca	43	123.3	8.4	**4.7990**	0.478	10.0	mg/L	28	Standard
Fe	54	4422.1	3.5	**2.6747**	0.078	2.9	mg/L	181	Standard
Fe	57	1381.7	8.6	**2.7305**	0.286	10.5	mg/L	257	Standard
> **Sc-1**	45	59551.8	1.0				mg/L	55220	Standard
Cl	35	40835.6	1.8				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	38221.7	8.1				ug/L	2040	Standard
P	31	36084.6	1.8				ug/L	20435	Standard
S	34	2403.5	2.3				ug/L	2430	Standard
Sr	88	328.3	5.8				ug/L	75	Standard
C	12	643.3	16.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.9	44.9				mg/L	9	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	25898.8	2.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.955	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.267	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122703
Report Date/Time: Thursday, June 30, 2016 13:00:31
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.105
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.245
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122705
Sample Date/Time: Thursday, June 30, 2016 13:01:26
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96506.5	2.9				ug/L	74916	Standard
	Be	9	36.7	7.9	**0.0234**	0.001	6.3	ug/L	10	Standard
	Al	27	5814534.7	1.0	**26.0187**	0.549	2.1	ug/L	1822	Standard
	Sc	45	59138.6	2.8				ug/L	55220	Standard
	Ti	47	595.3	2.1	**1.3327**	0.069	5.2	ug/L	34	Standard
	V	51	2547.8	6.4	**0.0710**	0.011	15.2	ug/L	1938	Standard
	Cr	52	16464.5	19.5	**0.7433**	0.369	49.6	ug/L	9522	Standard
	Cr	53	4032.2	4.4	**3.1302**	0.228	7.3	ug/L	395	Standard
	Mn	55	875048.2	0.7	**98.8596**	2.763	2.8	ug/L	902	Standard
	Co	59	594.3	2.9	**0.0482**	0.003	6.6	ug/L	262	Standard
	Ni	60	892.4	4.9	**0.2413**	0.014	5.8	ug/L	371	Standard
	Cu	65	427.7	5.9	**0.1296**	0.006	4.5	ug/L	106	Standard
	Zn	66	5518.3	4.4	**3.7857**	0.265	7.0	ug/L	398	Standard
>	**Ge**	72	550577.4	2.9				ug/L	535147	Standard
	As	75	469.6	4.0	**0.3963**	0.019	4.9	ug/L	-43	Standard
	Se	82	206.6	5.7	**1.3866**	0.118	8.5	ug/L	14	Standard
	Se-1	77	232.0	11.2	**1.9274**	0.337	17.5	ug/L	65	Standard
>	**Ga**	71	91.7	32.0				mg/L	97	Standard
	Rb	85	7670.3	2.1				ug/L	15	Standard
	Y	89	479075.3	1.4				ug/L	465704	Standard
>	**Rh**	103	90.0	38.5				ug/L	10	Standard
	Mo	98	31.3	29.0	**0.0219**	0.003	12.6	ug/L	9	Standard
	Ag	107	144.7	4.6	**0.0121**	0.001	6.5	ug/L	82	Standard
	Cd	111	65.9	4.6	**0.0338**	0.001	3.7	mg/L	7	Standard
	Cd	114	199.2	12.6	**0.0414**	0.004	9.7	ug/L	21	Standard
>	**In**	115	652958.1	0.4				ug/L	619035	Standard
	Sn	118	963.4	13.3	**0.0370**	0.019	51.8	ug/L	508	Standard
	Sb	123	203.8	29.6	**0.0409**	0.011	26.5	ug/L	86	Standard
	Ba	135	265341.0	0.7	**110.0166**	1.085	1.0	ug/L	79	Standard
	Ce	140	121.7	4.7				ug/L	68	Standard
>	**Tb**	159	1011433.0	1.5				ug/L	986982	Standard
	Ho	165	21.7	53.3				ug/L	10	Standard
	Tl	203	92.3	7.8	**0.0155**	0.001	4.8	ug/L	13	Standard
	Tl	205	78.3	25.8	**0.0172**	0.003	14.9	ug/L	10	Standard
	Pb	206	346.3	1.6	**0.0180**	0.001	3.8	ug/L	264	Standard
	Pb	207	288.0	8.7	**0.0181**	0.004	22.3	ug/L	227	Standard
	Pb	208	1142.0	2.8	**0.0144**	0.001	5.8	ug/L	868	Standard
	U	238	12.0	30.0	**0.0094**	0.000	4.6	ug/L	8	Standard
>	**Bi**	209	573608.2	1.2				ug/L	541014	Standard

Sample ID: L1606122705
Report Date/Time: Thursday, June 30, 2016 13:03:43
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**26.7481**	26.895	100.6	mg/L	2	Standard
Mg	24	10548.7	1.0	**10.7032**	0.190	1.8	mg/L	53	Standard
K	39	330.0	18.4	**0.4476**	0.100	22.4	mg/L	53	Standard
Ca	43	113.3	22.2	**4.2973**	1.158	26.9	mg/L	28	Standard
Fe	54	4122.2	2.3	**2.5063**	0.133	5.3	mg/L	181	Standard
Fe	57	1295.1	5.7	**2.5384**	0.096	3.8	mg/L	257	Standard
> **Sc-1**	45	59138.6	2.8				mg/L	55220	Standard
Cl	35	40393.1	1.6				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	37803.8	3.7				ug/L	2040	Standard
P	31	37417.9	4.6				ug/L	20435	Standard
S	34	2318.5	3.4				ug/L	2430	Standard
Sr	88	295.0	9.0				ug/L	75	Standard
C	12	586.7	12.6				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	2.4	243.9				mg/L	9	Standard
Ho-1	165	21.7	53.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	24688.5	5.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.819	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.883	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122705
Report Date/Time: Thursday, June 30, 2016 13:03:43
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.480
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.025
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606122705
Report Date/Time: Thursday, June 30, 2016 13:03:43
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122706
Sample Date/Time: Thursday, June 30, 2016 13:04:38
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103189.4	6.0				ug/L	74916	Standard
	Be	9	78.3	22.4	**0.0508**	0.014	28.2	ug/L	10	Standard
	Al	27	157081868.9	2.1	**658.2050**	26.291	4.0	ug/L	1822	Standard
	Sc	45	54901.0	0.9				ug/L	55220	Standard
	Ti	47	1394.7	5.0	**3.6738**	0.174	4.7	ug/L	34	Standard
	V	51	12108.3	4.2	**1.2535**	0.069	5.5	ug/L	1938	Standard
	Cr	52	50501.1	3.4	**5.1868**	0.274	5.3	ug/L	9522	Standard
	Cr	53	39827.3	3.4	**39.1856**	0.945	2.4	ug/L	395	Standard
	Mn	55	8765989.5	1.5	**1129.8039**	8.440	0.7	ug/L	902	Standard
	Co	59	67581.4	0.8	**9.1778**	0.069	0.8	ug/L	262	Standard
	Ni	60	22113.8	2.0	**10.7894**	0.112	1.0	ug/L	371	Standard
	Cu	65	2237.8	4.4	**1.0654**	0.040	3.8	ug/L	106	Standard
	Zn	66	8636.1	3.9	**7.0189**	0.198	2.8	ug/L	398	Standard
>	**Ge**	72	482829.1	1.2				ug/L	535147	Standard
	As	75	7723.0	1.7	**6.4468**	0.173	2.7	ug/L	-43	Standard
	Se	82	2488.9	2.3	**20.2630**	0.714	3.5	ug/L	14	Standard
	Se-1	77	4611.4	5.0	**56.1401**	2.313	4.1	ug/L	65	Standard
>	**Ga**	71	616.7	10.3				mg/L	97	Standard
	Rb	85	83239.7	1.6				ug/L	15	Standard
	Y	89	441272.2	0.8				ug/L	465704	Standard
>	**Rh**	103	1876.8	2.2				ug/L	10	Standard
	Mo	98	400.8	3.8	**0.1543**	0.004	2.9	ug/L	9	Standard
	Ag	107	193.3	2.6	**0.0222**	0.001	4.5	ug/L	82	Standard
	Cd	111	149.9	12.0	**0.0766**	0.009	11.3	mg/L	7	Standard
	Cd	114	385.7	11.9	**0.0822**	0.008	10.1	ug/L	21	Standard
>	**In**	115	560210.1	1.0				ug/L	619035	Standard
	Sn	118	2025.1	7.5	**0.2406**	0.029	12.0	ug/L	508	Standard
	Sb	123	366.2	10.2	**0.0809**	0.009	10.5	ug/L	86	Standard
	Ba	135	599986.5	1.1	**290.0146**	5.707	2.0	ug/L	79	Standard
	Ce	140	48873.7	0.5				ug/L	68	Standard
>	**Tb**	159	930027.9	1.3				ug/L	986982	Standard
	Ho	165	370.0	19.9				ug/L	10	Standard
	Tl	203	317.7	4.5	**0.0458**	0.002	3.9	ug/L	13	Standard
	Tl	205	268.3	14.5	**0.0471**	0.006	11.8	ug/L	10	Standard
	Pb	206	1015.4	2.5	**0.1606**	0.004	2.5	ug/L	264	Standard
	Pb	207	852.4	2.5	**0.1510**	0.005	3.3	ug/L	227	Standard
	Pb	208	3285.5	3.6	**0.1458**	0.007	4.7	ug/L	868	Standard
	U	238	64724.3	1.1	**9.8156**	0.160	1.6	ug/L	8	Standard
>	**Bi**	209	472641.5	0.5				ug/L	541014	Standard

Sample ID: L1606122706
Report Date/Time: Thursday, June 30, 2016 13:06:54
Page 1

Approved: July 01, 2016

Na	23	15.0	33.3	**84.9355**	28.778	33.9	mg/L	2	Standard
Mg	24	364289.1	2.5	**399.2375**	6.419	1.6	mg/L	53	Standard
K	39	1398.4	2.4	**2.3110**	0.059	2.5	mg/L	53	Standard
Ca	43	2235.2	4.9	**125.6306**	5.283	4.2	mg/L	28	Standard
Fe	54	1417.5	4.9	**0.8526**	0.043	5.0	mg/L	181	Standard
Fe	57	1791.8	4.1	**4.1118**	0.229	5.6	mg/L	257	Standard
> **Sc-1**	45	54901.0	0.9				mg/L	55220	Standard
Cl	35	43736.4	0.7				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	643090.2	1.8				ug/L	2040	Standard
P	31	32297.7	2.1				ug/L	20435	Standard
S	34	2658.6	4.5				ug/L	2430	Standard
Sr	88	5339.3	3.0				ug/L	75	Standard
C	12	726.7	12.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	540.1	10.6				mg/L	9	Standard
Ho-1	165	370.0	19.9				mg/L	10	Standard
Er	166	346.7	6.0				mg/L	23	Standard
I	127	615711.5	8.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.739	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.224	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122706
Report Date/Time: Thursday, June 30, 2016 13:06:54
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.497
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.362
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606122706
Report Date/Time: Thursday, June 30, 2016 13:06:54
Page 3

Approved: July 01, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122707
Sample Date/Time: Thursday, June 30, 2016 13:07:49
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90026.7	0.8				ug/L	74916	Standard
	Be	9	63.3	46.3	**0.0463**	0.023	49.7	ug/L	10	Standard
	Al	27	22111709.1	2.8	**106.0268**	2.597	2.4	ug/L	1822	Standard
	Sc	45	58884.2	2.2				ug/L	55220	Standard
	Ti	47	569.0	6.3	**1.2718**	0.095	7.5	ug/L	34	Standard
	V	51	3560.4	9.4	**0.1782**	0.038	21.4	ug/L	1938	Standard
	Cr	52	14246.9	22.2	**0.5041**	0.353	70.0	ug/L	9522	Standard
	Cr	53	11462.7	6.7	**9.6195**	0.734	7.6	ug/L	395	Standard
	Mn	55	5192834.3	1.2	**587.7850**	12.002	2.0	ug/L	902	Standard
	Co	59	1334.4	2.6	**0.1367**	0.003	2.0	ug/L	262	Standard
	Ni	60	46100.4	1.9	**19.8780**	0.544	2.7	ug/L	371	Standard
	Cu	65	1099.7	5.6	**0.4266**	0.030	7.1	ug/L	106	Standard
	Zn	66	4252.3	1.5	**2.8393**	0.076	2.7	ug/L	398	Standard
>	**Ge**	72	549794.8	0.8				ug/L	535147	Standard
	As	75	2904.0	2.8	**2.1652**	0.041	1.9	ug/L	-43	Standard
	Se	82	568.7	1.4	**3.9870**	0.030	0.7	ug/L	14	Standard
	Se-1	77	817.0	3.1	**8.2479**	0.326	4.0	ug/L	65	Standard
>	**Ga**	71	196.7	8.9				mg/L	97	Standard
	Rb	85	24827.0	1.2				ug/L	15	Standard
	Y	89	478508.6	0.4				ug/L	465704	Standard
>	**Rh**	103	468.3	13.2				ug/L	10	Standard
	Mo	98	430.7	1.8	**0.1478**	0.005	3.5	ug/L	9	Standard
	Ag	107	156.0	11.2	**0.0142**	0.002	13.2	ug/L	82	Standard
	Cd	111	89.1	5.9	**0.0441**	0.002	3.6	mg/L	7	Standard
	Cd	114	247.5	23.5	**0.0506**	0.009	18.3	ug/L	21	Standard
>	**In**	115	631239.9	2.0				ug/L	619035	Standard
	Sn	118	1025.0	5.8	**0.0511**	0.011	21.1	ug/L	508	Standard
	Sb	123	219.0	11.9	**0.0450**	0.005	12.2	ug/L	86	Standard
	Ba	135	919087.1	0.8	**394.2935**	4.746	1.2	ug/L	79	Standard
	Ce	140	1991.8	1.0				ug/L	68	Standard
>	**Tb**	159	999394.7	1.6				ug/L	986982	Standard
	Ho	165	48.3	29.9				ug/L	10	Standard
	Tl	203	86.7	8.7	**0.0155**	0.001	4.5	ug/L	13	Standard
	Tl	205	88.3	26.1	**0.0190**	0.003	14.9	ug/L	10	Standard
	Pb	206	364.3	2.5	**0.0245**	0.001	5.9	ug/L	264	Standard
	Pb	207	309.7	1.7	**0.0254**	0.002	6.2	ug/L	227	Standard
	Pb	208	1253.4	0.3	**0.0231**	0.001	3.4	ug/L	868	Standard
	U	238	58.7	15.8	**0.0157**	0.001	7.5	ug/L	8	Standard
>	**Bi**	209	540168.7	1.4				ug/L	541014	Standard

Sample ID: L1606122707
Report Date/Time: Thursday, June 30, 2016 13:10:06
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**26.2781**	25.903	98.6	mg/L	2	Standard
Mg	24	53879.0	2.6	**55.0404**	1.546	2.8	mg/L	53	Standard
K	39	575.0	9.2	**0.8404**	0.102	12.1	mg/L	53	Standard
Ca	43	341.7	4.5	**16.4847**	1.095	6.6	mg/L	28	Standard
Fe	54	40703.3	2.2	**25.8984**	0.856	3.3	mg/L	181	Standard
Fe	57	10752.1	1.3	**26.0580**	0.936	3.6	mg/L	257	Standard
Sc-1	45	58884.2	2.2				mg/L	55220	Standard
Cl	35	40587.7	3.8				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	120692.1	0.4				ug/L	2040	Standard
P	31	34541.0	0.8				ug/L	20435	Standard
S	34	2881.9	4.0				ug/L	2430	Standard
Sr	88	800.0	10.7				ug/L	75	Standard
C	12	423.3	20.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	84.0	14.1				mg/L	9	Standard
Ho-1	165	48.3	29.9				mg/L	10	Standard
Er	166	56.7	36.7				mg/L	23	Standard
I	127	191486.3	2.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		120.169	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.737	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606122707
Report Date/Time: Thursday, June 30, 2016 13:10:06
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.972	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.844	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606122707
Report Date/Time: Thursday, June 30, 2016 13:10:06
Page 3

Approved: July 01, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606112901
Sample Date/Time: Thursday, June 30, 2016 13:11:01
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84503.5	2.9				ug/L	74916	Standard
	Be	9	21.7	53.3	**0.0147**	0.010	68.3	ug/L	10	Standard
	Al	27	16220096.8	1.2	**82.9137**	2.826	3.4	ug/L	1822	Standard
	Sc	45	57890.4	2.0				ug/L	55220	Standard
	Ti	47	277.3	7.3	**0.5737**	0.044	7.7	ug/L	34	Standard
	V	51	4780.4	3.2	**0.2988**	0.019	6.5	ug/L	1938	Standard
	Cr	52	21846.1	18.6	**1.2922**	0.456	35.3	ug/L	9522	Standard
	Cr	53	5070.9	10.0	**3.9738**	0.470	11.8	ug/L	395	Standard
	Mn	55	476221.8	2.4	**52.9921**	1.410	2.7	ug/L	902	Standard
	Co	59	1995.8	4.6	**0.2122**	0.011	5.2	ug/L	262	Standard
	Ni	60	3903.8	4.2	**1.5242**	0.069	4.6	ug/L	371	Standard
	Cu	65	2599.9	4.7	**1.0712**	0.055	5.1	ug/L	106	Standard
	Zn	66	4040.2	0.5	**2.6346**	0.043	1.6	ug/L	398	Standard
>	**Ge**	72	558230.7	0.9				ug/L	535147	Standard
	As	75	429.9	0.7	**0.3629**	0.002	0.5	ug/L	-43	Standard
	Se	82	53.3	9.3	**0.2803**	0.036	12.9	ug/L	14	Standard
	Se-1	77	312.3	6.8	**2.7435**	0.245	8.9	ug/L	65	Standard
>	**Ga**	71	161.7	7.1				mg/L	97	Standard
	Rb	85	10201.8	1.2				ug/L	15	Standard
	Y	89	483396.8	0.2				ug/L	465704	Standard
>	**Rh**	103	161.7	17.6				ug/L	10	Standard
	Mo	98	174.3	4.4	**0.0663**	0.003	4.5	ug/L	9	Standard
	Ag	107	141.3	8.2	**0.0120**	0.001	11.0	ug/L	82	Standard
	Cd	111	74.3	11.3	**0.0376**	0.003	8.3	mg/L	7	Standard
	Cd	114	171.0	24.5	**0.0373**	0.007	17.8	ug/L	21	Standard
>	**In**	115	641638.0	1.2				ug/L	619035	Standard
	Sn	118	1328.4	11.2	**0.0934**	0.020	21.3	ug/L	508	Standard
	Sb	123	3845.7	1.8	**0.7050**	0.005	0.7	ug/L	86	Standard
	Ba	135	27836.9	0.8	**11.7294**	0.230	2.0	ug/L	79	Standard
	Ce	140	16030.1	2.6				ug/L	68	Standard
>	**Tb**	159	1018893.0	1.0				ug/L	986982	Standard
	Ho	165	438.3	9.3				ug/L	10	Standard
	Tl	203	96.3	8.6	**0.0163**	0.001	5.7	ug/L	13	Standard
	Tl	205	76.7	18.8	**0.0173**	0.002	10.7	ug/L	10	Standard
	Pb	206	2082.1	3.5	**0.3098**	0.014	4.4	ug/L	264	Standard
	Pb	207	1675.8	3.3	**0.2763**	0.011	3.9	ug/L	227	Standard
	Pb	208	7081.3	3.8	**0.3009**	0.014	4.6	ug/L	868	Standard
	U	238	1271.1	2.6	**0.1725**	0.005	2.8	ug/L	8	Standard
>	**Bi**	209	553112.0	0.5				ug/L	541014	Standard

Sample ID: L1606112901
Report Date/Time: Thursday, June 30, 2016 13:13:18
Page 1

Approved: July 01, 2016

Na	23	6.7	86.6	**36.1091**	31.274	86.6	mg/L	2	Standard
Mg	24	29747.5	1.6	**30.8906**	0.128	0.4	mg/L	53	Standard
K	39	685.0	9.5	**1.0344**	0.125	12.1	mg/L	53	Standard
Ca	43	770.0	9.0	**39.9826**	4.567	11.4	mg/L	28	Standard
Fe	54	700.4	9.7	**0.3361**	0.038	11.2	mg/L	181	Standard
Fe	57	773.4	13.1	**1.2886**	0.222	17.2	mg/L	257	Standard
> **Sc-1**	45	57890.4	2.0				mg/L	55220	Standard
Cl	35	44774.8	2.3				ug/L	35504	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	8082.2	5.4				ug/L	2040	Standard
P	31	26997.4	2.1				ug/L	20435	Standard
S	34	2950.3	2.8				ug/L	2430	Standard
Sr	88	258.3	7.8				ug/L	75	Standard
C	12	320.0	5.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	589.4	11.7				mg/L	9	Standard
Ho-1	165	438.3	9.3				mg/L	10	Standard
Er	166	430.0	16.8				mg/L	23	Standard
I	127	41294.5	1.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.797	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.314	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606112901
Report Date/Time: Thursday, June 30, 2016 13:13:18
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.651
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.236
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606112902
Sample Date/Time: Thursday, June 30, 2016 13:14:12
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85505.7	2.3				ug/L	74916	Standard
	Be	9	33.3	22.9	**0.0242**	0.007	28.1	ug/L	10	Standard
	Al	27	16102936.0	1.9	**81.3052**	0.536	0.7	ug/L	1822	Standard
	Sc	45	57932.2	1.6				ug/L	55220	Standard
	Ti	47	2060.8	3.3	**4.7290**	0.220	4.7	ug/L	34	Standard
	V	51	4721.3	7.2	**0.2934**	0.027	9.1	ug/L	1938	Standard
	Cr	52	35568.7	1.9	**2.7621**	0.066	2.4	ug/L	9522	Standard
	Cr	53	8937.6	4.2	**7.3181**	0.424	5.8	ug/L	395	Standard
	Mn	55	1621057.9	0.9	**181.0990**	2.157	1.2	ug/L	902	Standard
	Co	59	1572.7	3.6	**0.1628**	0.004	2.6	ug/L	262	Standard
	Ni	60	5510.0	0.7	**2.2174**	0.036	1.6	ug/L	371	Standard
	Cu	65	2590.2	3.6	**1.0697**	0.035	3.3	ug/L	106	Standard
	Zn	66	3882.5	2.8	**2.5247**	0.020	0.8	ug/L	398	Standard
>	**Ge**	72	556858.5	2.1				ug/L	535147	Standard
	As	75	211.6	19.7	**0.2074**	0.033	15.7	ug/L	-43	Standard
	Se	82	51.6	4.8	**0.2690**	0.017	6.5	ug/L	14	Standard
	Se-1	77	366.0	5.3	**3.3266**	0.275	8.3	ug/L	65	Standard
>	**Ga**	71	345.0	9.5				mg/L	97	Standard
	Rb	85	15703.1	3.3				ug/L	15	Standard
	Y	89	488405.3	0.2				ug/L	465704	Standard
>	**Rh**	103	76.7	16.4				ug/L	10	Standard
	Mo	98	790.6	4.1	**0.2527**	0.010	4.0	ug/L	9	Standard
	Ag	107	120.7	4.1	**0.0091**	0.001	7.2	ug/L	82	Standard
	Cd	111	117.9	12.2	**0.0543**	0.006	10.8	mg/L	7	Standard
	Cd	114	308.0	18.6	**0.0592**	0.009	15.8	ug/L	21	Standard
>	**In**	115	652556.8	0.6				ug/L	619035	Standard
	Sn	118	1316.7	6.5	**0.0886**	0.014	15.5	ug/L	508	Standard
	Sb	123	21644.9	1.1	**3.8815**	0.026	0.7	ug/L	86	Standard
	Ba	135	14730.5	1.3	**6.0925**	0.048	0.8	ug/L	79	Standard
	Ce	140	14029.8	0.5				ug/L	68	Standard
>	**Tb**	159	1019421.4	0.9				ug/L	986982	Standard
	Ho	165	286.7	1.0				ug/L	10	Standard
	Tl	203	75.0	13.1	**0.0138**	0.001	7.2	ug/L	13	Standard
	Tl	205	75.0	24.0	**0.0168**	0.002	13.3	ug/L	10	Standard
	Pb	206	7804.7	3.4	**1.2275**	0.036	2.9	ug/L	264	Standard
	Pb	207	6506.7	1.9	**1.1340**	0.015	1.3	ug/L	227	Standard
	Pb	208	26754.3	1.1	**1.2065**	0.021	1.7	ug/L	868	Standard
	U	238	142.7	8.3	**0.0258**	0.001	5.4	ug/L	8	Standard
>	**Bi**	209	569462.3	0.6				ug/L	541014	Standard

Sample ID: L1606112902
Report Date/Time: Thursday, June 30, 2016 13:16:29
Page 1

Approved: July 01, 2016

Na	23	6.7	43.3	**35.5921**	14.804	41.6	mg/L	2	Standard
Mg	24	12573.6	3.7	**13.0310**	0.597	4.6	mg/L	53	Standard
K	39	395.0	17.5	**0.5640**	0.121	21.5	mg/L	53	Standard
Ca	43	470.0	8.0	**23.7149**	2.271	9.6	mg/L	28	Standard
Fe	54	715.7	12.6	**0.3456**	0.052	15.2	mg/L	181	Standard
Fe	57	633.3	9.1	**0.9355**	0.130	13.9	mg/L	257	Standard
Sc-1	45	57932.2	1.6				mg/L	55220	Standard
Cl	35	45353.8	0.9				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	7928.7	1.2				ug/L	2040	Standard
P	31	25888.8	1.3				ug/L	20435	Standard
S	34	2683.6	7.3				ug/L	2430	Standard
Sr	88	223.3	12.3				ug/L	75	Standard
C	12	250.0	24.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	477.4	5.5				mg/L	9	Standard
Ho-1	165	286.7	1.0				mg/L	10	Standard
Er	166	263.3	4.4				mg/L	23	Standard
I	127	15045.8	4.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.135	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.057	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606112902
Report Date/Time: Thursday, June 30, 2016 13:16:29
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.415
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.258
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606112902
Report Date/Time: Thursday, June 30, 2016 13:16:29
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606112903
Sample Date/Time: Thursday, June 30, 2016 13:17:24
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82633.1	1.9				ug/L	74916	Standard
	Be	9	20.0	25.0	**0.0136**	0.005	33.2	ug/L	10	Standard
	Al	27	18202343.0	1.2	**95.1067**	1.298	1.4	ug/L	1822	Standard
	Sc	45	55814.3	0.5				ug/L	55220	Standard
	Ti	47	223.7	14.6	**0.4591**	0.076	16.7	ug/L	34	Standard
	V	51	4195.5	5.9	**0.2465**	0.028	11.6	ug/L	1938	Standard
	Cr	52	27579.5	15.9	**1.9555**	0.460	23.5	ug/L	9522	Standard
	Cr	53	5416.0	8.1	**4.3562**	0.370	8.5	ug/L	395	Standard
	Mn	55	392743.5	2.6	**44.5235**	1.406	3.2	ug/L	902	Standard
	Co	59	1595.1	5.5	**0.1686**	0.011	6.8	ug/L	262	Standard
	Ni	60	3333.0	3.6	**1.3071**	0.044	3.3	ug/L	371	Standard
	Cu	65	1548.7	3.7	**0.6272**	0.027	4.3	ug/L	106	Standard
	Zn	66	2008.1	1.8	**1.1634**	0.033	2.8	ug/L	398	Standard
>	**Ge**	72	547762.6	0.7				ug/L	535147	Standard
	As	75	427.4	24.0	**0.3670**	0.075	20.5	ug/L	-43	Standard
	Se	82	64.6	10.5	**0.3686**	0.052	14.1	ug/L	14	Standard
	Se-1	77	228.0	3.9	**1.8916**	0.108	5.7	ug/L	65	Standard
>	**Ga**	71	103.3	31.5				mg/L	97	Standard
	Rb	85	1483.4	6.2				ug/L	15	Standard
	Y	89	490402.3	1.1				ug/L	465704	Standard
>	**Rh**	103	81.7	14.1				ug/L	10	Standard
	Mo	98	101.9	43.0	**0.0443**	0.014	31.9	ug/L	9	Standard
	Ag	107	130.3	13.8	**0.0108**	0.002	23.0	ug/L	82	Standard
	Cd	111	69.2	11.0	**0.0359**	0.003	8.1	mg/L	7	Standard
	Cd	114	161.1	11.1	**0.0359**	0.003	7.2	ug/L	21	Standard
>	**In**	115	634377.7	1.8				ug/L	619035	Standard
	Sn	118	768.4	11.6	**0.0118**	0.014	115.6	ug/L	508	Standard
	Sb	123	460.4	5.5	**0.0893**	0.006	6.9	ug/L	86	Standard
	Ba	135	20721.8	1.8	**8.8253**	0.041	0.5	ug/L	79	Standard
	Ce	140	2230.2	1.6				ug/L	68	Standard
>	**Tb**	159	984576.1	0.8				ug/L	986982	Standard
	Ho	165	148.3	30.6				ug/L	10	Standard
	Tl	203	120.0	9.5	**0.0191**	0.001	6.1	ug/L	13	Standard
	Tl	205	143.3	31.3	**0.0260**	0.006	21.9	ug/L	10	Standard
	Pb	206	464.0	15.1	**0.0412**	0.012	28.7	ug/L	264	Standard
	Pb	207	399.3	27.5	**0.0420**	0.021	49.1	ug/L	227	Standard
	Pb	208	1631.7	10.6	**0.0414**	0.008	19.8	ug/L	868	Standard
	U	238	1095.4	6.1	**0.1526**	0.009	5.6	ug/L	8	Standard
>	**Bi**	209	542130.4	0.7				ug/L	541014	Standard

Sample ID: L1606112903
Report Date/Time: Thursday, June 30, 2016 13:19:41
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**18.5012**	16.018	86.6	mg/L	2	Standard
Mg	24	20070.0	1.5	**21.6062**	0.429	2.0	mg/L	53	Standard
K	39	331.7	13.6	**0.4809**	0.076	15.8	mg/L	53	Standard
Ca	43	756.7	4.0	**40.7258**	1.691	4.2	mg/L	28	Standard
Fe	54	718.9	5.9	**0.3658**	0.026	7.2	mg/L	181	Standard
Fe	57	738.4	9.3	**1.2715**	0.173	13.6	mg/L	257	Standard
> **Sc-1**	45	55814.3	0.5				mg/L	55220	Standard
Cl	35	48250.7	0.2				ug/L	35504	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	8635.8	2.1				ug/L	2040	Standard
P	31	28111.1	1.2				ug/L	20435	Standard
S	34	3018.6	3.5				ug/L	2430	Standard
Sr	88	258.3	19.9				ug/L	75	Standard
C	12	273.3	27.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	198.8	15.4				mg/L	9	Standard
Ho-1	165	148.3	30.6				mg/L	10	Standard
Er	166	163.3	3.5				mg/L	23	Standard
I	127	31669.8	6.8				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.300	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.357	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606112903
Report Date/Time: Thursday, June 30, 2016 13:19:41
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.479
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.206
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 13:20:37
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79900.1	1.3				ug/L	74916	Standard
	Be	9	57147.7	3.5	**50.7735**	1.148	2.3	ug/L	10	Standard
	Al	27	8732343.3	1.3	**47.1819**	0.598	1.3	ug/L	1822	Standard
	Sc	45	54700.3	2.6				ug/L	55220	Standard
	Ti	47	41369.1	1.0	**97.4428**	1.470	1.5	ug/L	34	Standard
	V	51	465247.6	2.0	**48.7108**	1.117	2.3	ug/L	1938	Standard
	Cr	52	469969.5	3.8	**49.7995**	0.789	1.6	ug/L	9522	Standard
	Cr	53	58365.7	5.2	**50.5062**	1.411	2.8	ug/L	395	Standard
	Mn	55	432273.8	1.1	**48.8242**	1.117	2.3	ug/L	902	Standard
	Co	59	416250.9	0.9	**49.7343**	0.779	1.6	ug/L	262	Standard
	Ni	60	113064.7	1.4	**48.9451**	0.549	1.1	ug/L	371	Standard
	Cu	65	110972.6	1.3	**48.8962**	0.559	1.1	ug/L	106	Standard
	Zn	66	65922.5	1.5	**49.0279**	0.565	1.2	ug/L	398	Standard
>	**Ge**	72	550016.3	2.5				ug/L	535147	Standard
	As	75	66744.8	1.7	**48.5447**	0.633	1.3	ug/L	-43	Standard
	Se	82	6814.9	1.8	**48.8345**	0.706	1.4	ug/L	14	Standard
	Se-1	77	4558.7	4.2	**48.6414**	0.883	1.8	ug/L	65	Standard
>	**Ga**	71	101.7	15.0				mg/L	97	Standard
	Rb	85	965.0	6.3				ug/L	15	Standard
	Y	89	475534.6	1.4				ug/L	465704	Standard
>	**Rh**	103	45.0	57.7				ug/L	10	Standard
	Mo	98	309899.2	0.8	**95.8767**	0.846	0.9	ug/L	9	Standard
	Ag	107	376812.4	1.5	**48.1670**	0.339	0.7	ug/L	82	Standard
	Cd	111	120977.0	0.1	**48.3850**	0.394	0.8	mg/L	7	Standard
	Cd	114	290674.6	2.4	**48.2748**	1.126	2.3	ug/L	21	Standard
>	**In**	115	641413.4	0.8				ug/L	619035	Standard
	Sn	118	325899.3	0.0	**48.2296**	0.409	0.8	ug/L	508	Standard
	Sb	123	264734.5	1.7	**48.2480**	0.637	1.3	ug/L	86	Standard
	Ba	135	113119.7	1.1	**47.7337**	0.198	0.4	ug/L	79	Standard
	Ce	140	205.0	7.3				ug/L	68	Standard
>	**Tb**	159	985502.5	1.0				ug/L	986982	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	463987.5	1.7	**49.3714**	0.337	0.7	ug/L	13	Standard
	Tl	205	412712.2	0.6	**51.4082**	0.207	0.4	ug/L	10	Standard
	Pb	206	293514.0	1.2	**48.6270**	0.208	0.4	ug/L	264	Standard
	Pb	207	268313.2	1.4	**49.1873**	0.628	1.3	ug/L	227	Standard
	Pb	208	1073164.4	0.3	**51.0218**	0.412	0.8	ug/L	868	Standard
	U	238	392652.3	0.9	**50.5036**	0.130	0.3	ug/L	8	Standard
>	**Bi**	209	556886.0	1.0				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 13:22:54
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.2171**	15.956	173.1	mg/L	2	Standard
Mg	24	4832.4	1.8	**5.2834**	0.116	2.2	mg/L	53	Standard
K	39	2306.8	5.1	**3.8800**	0.278	7.2	mg/L	53	Standard
Ca	43	108.3	10.7	**4.5322**	0.800	17.7	mg/L	28	Standard
Fe	54	7100.8	3.3	**4.7668**	0.174	3.6	mg/L	181	Standard
Fe	57	1925.1	9.0	**4.4864**	0.474	10.6	mg/L	257	Standard
Sc-1	45	54700.3	2.6				mg/L	55220	Standard
Cl	35	45320.4	2.2				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2546.9	7.9				ug/L	2040	Standard
P	31	25962.2	1.5				ug/L	20435	Standard
S	34	3140.3	2.5				ug/L	2430	Standard
Sr	88	63.3	19.9				ug/L	75	Standard
C	12	110.0	55.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	22.9	66.2				mg/L	9	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	13801.3	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.547		
Al	27	94.364		
Sc	45			
Ti	47	97.443		
V	51	97.422		
Cr	52	99.599		
Cr	53			
Mn	55	97.648		
Co	59	99.469		
Ni	60	97.890		
Cu	65	97.792		
Zn	66	98.056		
Ge	72		102.779	
As	75	97.089		
Se	82	97.669		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 13:22:54
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	95.877		
Ag	107	96.334		
Cd	111	96.770		
Cd	114			
> In	115			103.615
Sn	118	96.459		
Sb	123	96.496		
Ba	135	95.467		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.743		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.044		
U	238	101.007		
> Bi	209			102.934
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 13:22:54
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 13:23:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77613.3	1.9				ug/L	74916	Standard
	Be	9	26.7	43.3	**0.0209**	0.011	53.1	ug/L	10	Standard
	Al	27	4013.9	16.5	**0.0200**	0.004	17.8	ug/L	1822	Standard
	Sc	45	53790.4	4.1				ug/L	55220	Standard
	Ti	47	40.3	9.4	**0.0270**	0.008	30.9	ug/L	34	Standard
	V	51	1570.4	7.2	**-0.0277**	0.011	39.7	ug/L	1938	Standard
	Cr	52	9530.3	6.1	**0.0150**	0.066	439.7	ug/L	9522	Standard
	Cr	53	931.7	7.4	**0.4437**	0.060	13.6	ug/L	395	Standard
	Mn	55	1144.7	6.3	**0.0273**	0.008	28.2	ug/L	902	Standard
	Co	59	305.7	2.6	**0.0145**	0.001	6.6	ug/L	262	Standard
	Ni	60	276.0	3.8	**-0.0231**	0.005	19.8	ug/L	371	Standard
	Cu	65	184.3	7.4	**0.0244**	0.006	25.2	ug/L	106	Standard
	Zn	66	412.0	4.9	**-0.0312**	0.015	47.5	ug/L	398	Standard
>	**Ge**	72	537897.6	0.8				ug/L	535147	Standard
	As	75	-29.0	115.0	**0.0336**	0.025	73.8	ug/L	-43	Standard
	Se	82	25.6	45.5	**0.0905**	0.084	93.0	ug/L	14	Standard
	Se-1	77	72.3	17.8	**0.2171**	0.138	63.7	ug/L	65	Standard
>	**Ga**	71	76.7	30.8				mg/L	97	Standard
	Rb	85	48.3	29.9				ug/L	15	Standard
	Y	89	473909.1	0.5				ug/L	465704	Standard
>	**Rh**	103	26.7	39.0				ug/L	10	Standard
	Mo	98	194.3	6.6	**0.0724**	0.004	5.0	ug/L	9	Standard
	Ag	107	137.3	5.8	**0.0115**	0.001	9.8	ug/L	82	Standard
	Cd	111	16.0	28.2	**0.0143**	0.002	12.6	mg/L	7	Standard
	Cd	114	32.7	50.4	**0.0143**	0.003	18.9	ug/L	21	Standard
>	**In**	115	642024.4	0.6				ug/L	619035	Standard
	Sn	118	1080.0	19.1	**0.0567**	0.031	55.0	ug/L	508	Standard
	Sb	123	653.6	26.6	**0.1235**	0.032	26.0	ug/L	86	Standard
	Ba	135	66.0	27.6	**0.0082**	0.008	92.5	ug/L	79	Standard
	Ce	140	51.7	64.4				ug/L	68	Standard
>	**Tb**	159	985804.8	1.4				ug/L	986982	Standard
	Ho	165	10.0					ug/L	10	Standard
	Tl	203	80.7	0.7	**0.0145**	0.000	0.6	ug/L	13	Standard
	Tl	205	80.0	48.8	**0.0176**	0.005	27.3	ug/L	10	Standard
	Pb	206	345.7	6.1	**0.0191**	0.003	17.6	ug/L	264	Standard
	Pb	207	300.0	5.8	**0.0215**	0.003	15.2	ug/L	227	Standard
	Pb	208	1211.7	4.6	**0.0189**	0.002	12.6	ug/L	868	Standard
	U	238	57.7	11.5	**0.0153**	0.001	5.4	ug/L	8	Standard
>	**Bi**	209	560751.9	0.5				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 13:26:05
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.8776**	17.100	173.1	mg/L	2	Standard
Mg	24	55.0	32.8	**0.0275**	0.022	80.3	mg/L	53	Standard
K	39	63.3	22.8	**0.0338**	0.020	59.7	mg/L	53	Standard
Ca	43	26.7	57.3	**-0.1261**	0.902	714.8	mg/L	28	Standard
Fe	54	179.2	2.8	**0.0067**	0.003	42.6	mg/L	181	Standard
Fe	57	313.3	24.0	**0.1951**	0.234	119.7	mg/L	257	Standard
Sc-1	45	53790.4	4.1				mg/L	55220	Standard
Cl	35	43643.5	2.6				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2146.8	4.3				ug/L	2040	Standard
P	31	24579.9	2.6				ug/L	20435	Standard
S	34	3047.0	2.1				ug/L	2430	Standard
Sr	88	68.3	34.6				ug/L	75	Standard
C	12	106.7	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	506.5	5.5				mg/L	9	Standard
Ho-1	165	10.0					mg/L	10	Standard
Er	166	73.3	43.8				mg/L	23	Standard
I	127	13424.3	1.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.514	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 13:26:05
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.714
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.648
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 13:26:05
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606112904
Sample Date/Time: Thursday, June 30, 2016 13:27:01
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77697.1	2.0				ug/L	74916	Standard
	Be	9	33.3	8.7	**0.0269**	0.003	11.5	ug/L	10	Standard
	Al	27	16310108.0	0.1	**90.6465**	1.855	2.0	ug/L	1822	Standard
	Sc	45	54240.3	1.9				ug/L	55220	Standard
	Ti	47	2684.6	9.0	**6.4077**	0.517	8.1	ug/L	34	Standard
	V	51	5386.0	5.4	**0.3834**	0.027	7.0	ug/L	1938	Standard
	Cr	52	59624.2	3.8	**5.5699**	0.256	4.6	ug/L	9522	Standard
	Cr	53	11434.3	7.4	**9.8353**	0.821	8.3	ug/L	395	Standard
	Mn	55	2048984.2	1.0	**237.4175**	0.335	0.1	ug/L	902	Standard
	Co	59	2103.5	0.9	**0.2347**	0.004	1.6	ug/L	262	Standard
	Ni	60	8758.5	1.6	**3.7494**	0.024	0.6	ug/L	371	Standard
	Cu	65	3653.8	1.9	**1.5923**	0.032	2.0	ug/L	106	Standard
	Zn	66	5799.1	0.9	**4.1028**	0.085	2.1	ug/L	398	Standard
>	**Ge**	72	536880.0	1.0				ug/L	535147	Standard
	As	75	231.4	23.5	**0.2276**	0.042	18.4	ug/L	-43	Standard
	Se	82	45.8	24.7	**0.2394**	0.081	33.8	ug/L	14	Standard
	Se-1	77	363.0	9.0	**3.4362**	0.377	11.0	ug/L	65	Standard
>	**Ga**	71	441.7	11.8				mg/L	97	Standard
	Rb	85	19058.6	2.2				ug/L	15	Standard
	Y	89	472702.6	0.9				ug/L	465704	Standard
>	**Rh**	103	60.0	25.0				ug/L	10	Standard
	Mo	98	1134.3	1.4	**0.3728**	0.006	1.7	ug/L	9	Standard
	Ag	107	154.7	13.8	**0.0142**	0.003	19.3	ug/L	82	Standard
	Cd	111	242.3	0.5	**0.1074**	0.000	0.4	mg/L	7	Standard
	Cd	114	593.2	7.6	**0.1101**	0.008	7.4	ug/L	21	Standard
>	**In**	115	624500.1	0.5				ug/L	619035	Standard
	Sn	118	1746.8	10.4	**0.1627**	0.028	17.3	ug/L	508	Standard
	Sb	123	35311.2	0.7	**6.6139**	0.066	1.0	ug/L	86	Standard
	Ba	135	17076.0	0.7	**7.3843**	0.040	0.5	ug/L	79	Standard
	Ce	140	16609.1	2.5				ug/L	68	Standard
>	**Tb**	159	963913.5	0.7				ug/L	986982	Standard
	Ho	165	328.3	17.7				ug/L	10	Standard
	Tl	203	125.0	8.4	**0.0197**	0.001	6.1	ug/L	13	Standard
	Tl	205	111.7	21.2	**0.0220**	0.003	13.4	ug/L	10	Standard
	Pb	206	11629.5	2.3	**1.9498**	0.046	2.4	ug/L	264	Standard
	Pb	207	9793.5	1.8	**1.8187**	0.034	1.9	ug/L	227	Standard
	Pb	208	40243.5	0.8	**1.9354**	0.028	1.5	ug/L	868	Standard
	U	238	155.3	6.0	**0.0285**	0.001	4.4	ug/L	8	Standard
>	**Bi**	209	540255.5	0.7				ug/L	541014	Standard

Sample ID: L1606112904
Report Date/Time: Thursday, June 30, 2016 13:29:18
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	13307.5	0.8	**14.7349**	0.397	2.7	mg/L	53	Standard
K	39	520.0	18.8	**0.8223**	0.165	20.1	mg/L	53	Standard
Ca	43	530.0	5.3	**28.8936**	1.711	5.9	mg/L	28	Standard
Fe	54	887.4	6.5	**0.4967**	0.036	7.2	mg/L	181	Standard
Fe	57	678.3	10.1	**1.1688**	0.216	18.4	mg/L	257	Standard
> **Sc-1**	45	54240.3	1.9				mg/L	55220	Standard
Cl	35	47467.6	0.6				ug/L	35504	Standard
Kr	83	3.7	83.3				ug/L	2	Standard
Br	81	6017.9	4.8				ug/L	2040	Standard
P	31	26616.7	1.5				ug/L	20435	Standard
S	34	2893.6	3.7				ug/L	2430	Standard
Sr	88	215.0	14.0				ug/L	75	Standard
C	12	130.0	15.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	514.2	11.9				mg/L	9	Standard
Ho-1	165	328.3	17.7				mg/L	10	Standard
Er	166	330.0	3.0				mg/L	23	Standard
I	127	12760.4	2.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.712	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606112904
Report Date/Time: Thursday, June 30, 2016 13:29:18
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.883
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.860
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606112905
Sample Date/Time: Thursday, June 30, 2016 13:30:13
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76432.3	1.6				ug/L	74916	Standard
	Be	9	20.0	50.0	**0.0149**	0.009	60.7	ug/L	10	Standard
	Al	27	21059.7	6.5	**0.1166**	0.006	5.1	ug/L	1822	Standard
	Sc	45	55068.2	0.9				ug/L	55220	Standard
	Ti	47	71.3	78.5	**0.1025**	0.137	134.1	ug/L	34	Standard
	V	51	2275.4	3.5	**0.0479**	0.011	22.5	ug/L	1938	Standard
	Cr	52	12553.5	2.2	**0.3476**	0.018	5.2	ug/L	9522	Standard
	Cr	53	1180.0	9.4	**0.6649**	0.110	16.6	ug/L	395	Standard
	Mn	55	2619.6	6.4	**0.1975**	0.017	8.4	ug/L	902	Standard
	Co	59	251.3	8.1	**0.0079**	0.003	32.9	ug/L	262	Standard
	Ni	60	534.3	6.1	**0.0914**	0.016	17.5	ug/L	371	Standard
	Cu	65	1121.4	3.9	**0.4466**	0.026	5.8	ug/L	106	Standard
	Zn	66	2738.6	2.1	**1.7481**	0.056	3.2	ug/L	398	Standard
>	**Ge**	72	538551.7	1.2				ug/L	535147	Standard
	As	75	-45.8	92.9	**0.0214**	0.032	147.1	ug/L	-43	Standard
	Se	82	21.1	26.0	**0.0570**	0.038	67.1	ug/L	14	Standard
	Se-1	77	67.0	15.7	**0.1572**	0.111	70.4	ug/L	65	Standard
>	**Ga**	71	81.7	19.7				mg/L	97	Standard
	Rb	85	188.3	17.7				ug/L	15	Standard
	Y	89	473580.7	1.9				ug/L	465704	Standard
>	**Rh**	103	18.3	41.7				ug/L	10	Standard
	Mo	98	50.8	10.6	**0.0283**	0.002	6.1	ug/L	9	Standard
	Ag	107	104.3	14.0	**0.0074**	0.002	25.2	ug/L	82	Standard
	Cd	111	60.2	6.3	**0.0322**	0.002	4.8	mg/L	7	Standard
	Cd	114	143.9	6.1	**0.0331**	0.001	4.2	ug/L	21	Standard
>	**In**	115	634449.3	0.3				ug/L	619035	Standard
	Sn	118	2651.9	5.9	**0.2942**	0.025	8.3	ug/L	508	Standard
	Sb	123	239.5	12.9	**0.0486**	0.006	12.0	ug/L	86	Standard
	Ba	135	1220.7	4.5	**0.5013**	0.023	4.6	ug/L	79	Standard
	Ce	140	88.3	3.3				ug/L	68	Standard
>	**Tb**	159	971722.3	0.5				ug/L	986982	Standard
	Ho	165	18.3	15.7				ug/L	10	Standard
	Tl	203	37.0	9.7	**0.0100**	0.000	3.9	ug/L	13	Standard
	Tl	205	21.7	53.3	**0.0104**	0.001	14.0	ug/L	10	Standard
	Pb	206	308.7	3.9	**0.0141**	0.002	13.9	ug/L	264	Standard
	Pb	207	282.7	6.0	**0.0193**	0.003	16.1	ug/L	227	Standard
	Pb	208	1180.0	5.4	**0.0185**	0.003	16.1	ug/L	868	Standard
	U	238	13.7	33.0	**0.0097**	0.001	6.0	ug/L	8	Standard
>	**Bi**	209	549756.7	0.3				ug/L	541014	Standard

Sample ID: L1606112905
Report Date/Time: Thursday, June 30, 2016 13:32:30
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	105.0	28.6	**0.0803**	0.033	41.2	mg/L	53	Standard
K	39	48.3	33.3	**0.0064**	0.028	435.5	mg/L	53	Standard
Ca	43	25.0	40.0	**-0.2535**	0.571	225.2	mg/L	28	Standard
Fe	54	191.9	18.9	**0.0123**	0.024	193.0	mg/L	181	Standard
Fe	57	288.3	10.5	**0.1032**	0.082	79.8	mg/L	257	Standard
> **Sc-1**	45	55068.2	0.9				mg/L	55220	Standard
Cl	35	49489.4	0.8				ug/L	35504	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	2563.6	6.4				ug/L	2040	Standard
P	31	25469.7	2.1				ug/L	20435	Standard
S	34	2828.6	6.1				ug/L	2430	Standard
Sr	88	71.7	4.0				ug/L	75	Standard
C	12	150.0	26.7				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	19.2	2.9				mg/L	9	Standard
Ho-1	165	18.3	15.7				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	2351.9	22.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.023	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.636	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606112905
Report Date/Time: Thursday, June 30, 2016 13:32:30
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.490
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.616
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113001
Sample Date/Time: Thursday, June 30, 2016 13:33:24
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76874.5	1.2				ug/L	74916	Standard
	Be	9	26.7	10.8	**0.0210**	0.002	11.3	ug/L	10	Standard
	Al	27	12263160.4	0.1	**68.8716**	0.858	1.2	ug/L	1822	Standard
	Sc	45	57164.3	2.3				ug/L	55220	Standard
	Ti	47	1058.4	44.6	**2.4597**	1.148	46.7	ug/L	34	Standard
	V	51	3268.4	50.6	**0.1520**	0.179	117.7	ug/L	1938	Standard
	Cr	52	382346.8	1.5	**40.8212**	0.179	0.4	ug/L	9522	Standard
	Cr	53	51346.9	1.0	**44.9410**	0.414	0.9	ug/L	395	Standard
	Mn	55	630931.5	0.9	**72.1420**	0.853	1.2	ug/L	902	Standard
	Co	59	4405.0	2.3	**0.5098**	0.007	1.4	ug/L	262	Standard
	Ni	60	48386.1	1.4	**21.1104**	0.303	1.4	ug/L	371	Standard
	Cu	65	3249.3	1.8	**1.3918**	0.043	3.1	ug/L	106	Standard
	Zn	66	4252.3	1.2	**2.8756**	0.019	0.6	ug/L	398	Standard
>	**Ge**	72	543540.1	1.2				ug/L	535147	Standard
	As	75	1132.6	1.7	**0.8878**	0.020	2.2	ug/L	-43	Standard
	Se	82	40.0	4.8	**0.1938**	0.012	6.2	ug/L	14	Standard
	Se-1	77	291.7	2.4	**2.6072**	0.110	4.2	ug/L	65	Standard
>	**Ga**	71	198.3	15.2				mg/L	97	Standard
	Rb	85	8367.3	3.6				ug/L	15	Standard
	Y	89	471596.4	1.6				ug/L	465704	Standard
>	**Rh**	103	86.7	3.3				ug/L	10	Standard
	Mo	98	3531.2	1.4	**1.1178**	0.027	2.4	ug/L	9	Standard
	Ag	107	112.0	10.7	**0.0084**	0.002	20.0	ug/L	82	Standard
	Cd	111	203.8	12.5	**0.0903**	0.009	10.1	mg/L	7	Standard
	Cd	114	530.5	18.4	**0.0979**	0.015	15.1	ug/L	21	Standard
>	**In**	115	633938.3	1.8				ug/L	619035	Standard
	Sn	118	1660.1	48.1	**0.1459**	0.120	82.6	ug/L	508	Standard
	Sb	123	21130.8	0.3	**3.9014**	0.063	1.6	ug/L	86	Standard
	Ba	135	17189.4	1.0	**7.3234**	0.083	1.1	ug/L	79	Standard
	Ce	140	2903.6	0.7				ug/L	68	Standard
>	**Tb**	159	976943.8	0.9				ug/L	986982	Standard
	Ho	165	68.3	23.5				ug/L	10	Standard
	Tl	203	64.0	8.3	**0.0129**	0.001	4.6	ug/L	13	Standard
	Tl	205	63.3	18.2	**0.0157**	0.001	9.3	ug/L	10	Standard
	Pb	206	10722.5	1.0	**1.7726**	0.017	1.0	ug/L	264	Standard
	Pb	207	8993.7	2.1	**1.6468**	0.032	1.9	ug/L	227	Standard
	Pb	208	37818.9	1.6	**1.7939**	0.033	1.8	ug/L	868	Standard
	U	238	31.3	24.4	**0.0120**	0.001	8.3	ug/L	8	Standard
>	**Bi**	209	546875.5	0.4				ug/L	541014	Standard

Sample ID: L1606113001
Report Date/Time: Thursday, June 30, 2016 13:35:41
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**8.8932**	15.395	173.1	mg/L	2	Standard
Mg	24	10813.9	0.6	**11.3543**	0.313	2.8	mg/L	53	Standard
K	39	456.7	9.6	**0.6723**	0.064	9.5	mg/L	53	Standard
Ca	43	280.0	11.7	**13.6756**	2.132	15.6	mg/L	28	Standard
Fe	54	698.7	8.5	**0.3411**	0.036	10.6	mg/L	181	Standard
Fe	57	571.7	2.7	**0.8008**	0.066	8.2	mg/L	257	Standard
> **Sc-1**	45	57164.3	2.3				mg/L	55220	Standard
Cl	35	47684.3	0.4				ug/L	35504	Standard
Kr	83	3.3	34.6				ug/L	2	Standard
Br	81	5371.0	10.5				ug/L	2040	Standard
P	31	29385.2	3.0				ug/L	20435	Standard
S	34	3042.0	6.9				ug/L	2430	Standard
Sr	88	291.7	13.0				ug/L	75	Standard
C	12	226.7	24.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	126.8	13.5				mg/L	9	Standard
Ho-1	165	68.3	23.5				mg/L	10	Standard
Er	166	66.7	31.2				mg/L	23	Standard
I	127	23603.4	6.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.614	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.568	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606113001
Report Date/Time: Thursday, June 30, 2016 13:35:41
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.408
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.083
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113002
Sample Date/Time: Thursday, June 30, 2016 13:36:36
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75750.7	3.6				ug/L	74916	Standard
	Be	9	26.7	10.8	**0.0214**	0.003	12.3	ug/L	10	Standard
	Al	27	11634446.9	1.1	**66.3450**	1.758	2.7	ug/L	1822	Standard
	Sc	45	56353.0	3.1				ug/L	55220	Standard
	Ti	47	431.3	4.2	**0.9744**	0.043	4.4	ug/L	34	Standard
	V	51	3495.9	3.5	**0.1812**	0.014	7.5	ug/L	1938	Standard
	Cr	52	11350.3	2.8	**0.2223**	0.028	12.7	ug/L	9522	Standard
	Cr	53	1553.4	8.7	**1.0047**	0.114	11.3	ug/L	395	Standard
	Mn	55	4216711.0	2.3	**490.1772**	10.857	2.2	ug/L	902	Standard
	Co	59	3782.5	2.5	**0.4416**	0.009	2.1	ug/L	262	Standard
	Ni	60	2748.2	4.1	**1.0802**	0.044	4.1	ug/L	371	Standard
	Cu	65	535.3	3.2	**0.1839**	0.009	4.8	ug/L	106	Standard
	Zn	66	3704.1	0.8	**2.5036**	0.016	0.6	ug/L	398	Standard
>	**Ge**	72	535262.1	0.6				ug/L	535147	Standard
	As	75	2494.4	2.2	**1.9171**	0.042	2.2	ug/L	-43	Standard
	Se	82	35.6	7.5	**0.1655**	0.020	12.1	ug/L	14	Standard
	Se-1	77	139.7	14.2	**0.9686**	0.220	22.7	ug/L	65	Standard
>	**Ga**	71	176.7	9.1				mg/L	97	Standard
	Rb	85	16689.2	1.7				ug/L	15	Standard
	Y	89	462143.9	0.4				ug/L	465704	Standard
>	**Rh**	103	81.7	36.9				ug/L	10	Standard
	Mo	98	207.5	9.5	**0.0780**	0.006	7.8	ug/L	9	Standard
	Ag	107	137.0	4.1	**0.0118**	0.001	6.3	ug/L	82	Standard
	Cd	111	22.6	13.2	**0.0171**	0.001	6.7	mg/L	7	Standard
	Cd	114	39.1	90.4	**0.0155**	0.006	38.5	ug/L	21	Standard
>	**In**	115	627598.6	0.8				ug/L	619035	Standard
	Sn	118	1151.7	9.3	**0.0712**	0.018	24.9	ug/L	508	Standard
	Sb	123	245.7	16.9	**0.0502**	0.008	16.1	ug/L	86	Standard
	Ba	135	33514.4	0.9	**14.4409**	0.208	1.4	ug/L	79	Standard
	Ce	140	2736.9	4.6				ug/L	68	Standard
>	**Tb**	159	967343.4	0.5				ug/L	986982	Standard
	Ho	165	148.3	25.5				ug/L	10	Standard
	Tl	203	52.0	5.8	**0.0118**	0.000	3.3	ug/L	13	Standard
	Tl	205	51.7	39.1	**0.0144**	0.003	17.8	ug/L	10	Standard
	Pb	206	383.3	6.7	**0.0284**	0.004	14.3	ug/L	264	Standard
	Pb	207	326.7	5.6	**0.0292**	0.004	13.2	ug/L	227	Standard
	Pb	208	1332.4	2.3	**0.0277**	0.002	6.0	ug/L	868	Standard
	U	238	25.0	6.9	**0.0112**	0.000	2.3	ug/L	8	Standard
>	**Bi**	209	534662.1	1.0				ug/L	541014	Standard

Sample ID: L1606113002
Report Date/Time: Thursday, June 30, 2016 13:38:52
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	16000.1	0.9	**17.0625**	0.541	3.2	mg/L	53	Standard
K	39	658.3	3.2	**1.0198**	0.059	5.8	mg/L	53	Standard
Ca	43	578.3	5.6	**30.4220**	1.440	4.7	mg/L	28	Standard
Fe	54	23523.9	1.9	**15.5957**	0.506	3.2	mg/L	181	Standard
Fe	57	6413.0	2.7	**15.9835**	0.084	0.5	mg/L	257	Standard
> **Sc-1**	45	56353.0	3.1				mg/L	55220	Standard
Cl	35	44150.9	2.7				ug/L	35504	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	6244.6	1.0				ug/L	2040	Standard
P	31	30246.8	2.0				ug/L	20435	Standard
S	34	3203.7	4.2				ug/L	2430	Standard
Sr	88	215.0	8.1				ug/L	75	Standard
C	12	320.0	13.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	223.4	21.9				mg/L	9	Standard
Ho-1	165	148.3	25.5				mg/L	10	Standard
Er	166	206.7	34.0				mg/L	23	Standard
I	127	27950.8	5.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.114	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.022	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606113002
Report Date/Time: Thursday, June 30, 2016 13:38:52
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.383
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.826
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113003
Sample Date/Time: Thursday, June 30, 2016 13:39:47
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74740.6	1.1				ug/L	74916	Standard
	Be	9	16.7	34.6	**0.0122**	0.005	44.6	ug/L	10	Standard
	Al	27	13368183.3	1.6	**77.2132**	0.803	1.0	ug/L	1822	Standard
	Sc	45	55762.4	1.9				ug/L	55220	Standard
	Ti	47	527.3	8.8	**1.2065**	0.109	9.1	ug/L	34	Standard
	V	51	3916.1	16.0	**0.2266**	0.069	30.3	ug/L	1938	Standard
	Cr	52	268317.4	0.8	**28.7872**	0.180	0.6	ug/L	9522	Standard
	Cr	53	35839.0	3.9	**31.7355**	1.282	4.0	ug/L	395	Standard
	Mn	55	1553349.7	1.3	**180.4784**	2.032	1.1	ug/L	902	Standard
	Co	59	3514.1	2.0	**0.4086**	0.008	1.9	ug/L	262	Standard
	Ni	60	33947.0	1.5	**14.9951**	0.229	1.5	ug/L	371	Standard
	Cu	65	2559.5	1.0	**1.1011**	0.014	1.3	ug/L	106	Standard
	Zn	66	4152.6	2.2	**2.8481**	0.062	2.2	ug/L	398	Standard
>	**Ge**	72	535340.3	0.2				ug/L	535147	Standard
	As	75	424.2	19.4	**0.3718**	0.061	16.5	ug/L	-43	Standard
	Se	82	47.2	17.3	**0.2512**	0.061	24.1	ug/L	14	Standard
	Se-1	77	298.3	8.0	**2.7294**	0.271	9.9	ug/L	65	Standard
>	**Ga**	71	196.7	3.9				mg/L	97	Standard
	Rb	85	8317.3	3.6				ug/L	15	Standard
	Y	89	467785.5	1.3				ug/L	465704	Standard
>	**Rh**	103	95.0	18.2				ug/L	10	Standard
	Mo	98	2007.8	2.4	**0.6473**	0.017	2.5	ug/L	9	Standard
	Ag	107	133.7	2.3	**0.0114**	0.000	3.3	ug/L	82	Standard
	Cd	111	151.4	8.0	**0.0698**	0.005	7.0	mg/L	7	Standard
	Cd	114	336.2	22.3	**0.0660**	0.013	19.1	ug/L	21	Standard
>	**In**	115	627458.4	0.3				ug/L	619035	Standard
	Sn	118	1385.1	8.9	**0.1066**	0.019	18.0	ug/L	508	Standard
	Sb	123	5747.5	1.5	**1.0752**	0.019	1.8	ug/L	86	Standard
	Ba	135	21568.7	1.5	**9.2884**	0.155	1.7	ug/L	79	Standard
	Ce	140	2366.9	7.4				ug/L	68	Standard
>	**Tb**	159	959954.6	0.2				ug/L	986982	Standard
	Ho	165	168.3	12.0				ug/L	10	Standard
	Tl	203	81.7	11.9	**0.0150**	0.001	6.6	ug/L	13	Standard
	Tl	205	88.3	36.4	**0.0191**	0.004	22.1	ug/L	10	Standard
	Pb	206	3173.3	0.5	**0.5063**	0.006	1.1	ug/L	264	Standard
	Pb	207	2755.9	3.1	**0.4897**	0.019	4.0	ug/L	227	Standard
	Pb	208	11492.7	0.7	**0.5271**	0.004	0.8	ug/L	868	Standard
	U	238	31.7	14.9	**0.0121**	0.001	5.5	ug/L	8	Standard
>	**Bi**	209	538551.6	1.2				ug/L	541014	Standard

Sample ID: L1606113003
Report Date/Time: Thursday, June 30, 2016 13:42:04
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	19093.7	2.4	**20.5730**	0.433	2.1	mg/L	53	Standard
K	39	375.0	7.1	**0.5539**	0.037	6.6	mg/L	53	Standard
Ca	43	406.7	8.6	**21.1628**	2.370	11.2	mg/L	28	Standard
Fe	54	1312.8	4.1	**0.7668**	0.019	2.5	mg/L	181	Standard
Fe	57	795.0	14.9	**1.4192**	0.269	18.9	mg/L	257	Standard
> **Sc-1**	45	55762.4	1.9				mg/L	55220	Standard
Cl	35	45442.7	1.1				ug/L	35504	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	6418.0	8.0				ug/L	2040	Standard
P	31	27555.0	2.1				ug/L	20435	Standard
S	34	2735.2	2.3				ug/L	2430	Standard
Sr	88	291.7	1.0				ug/L	75	Standard
C	12	200.0	10.0				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	195.0	15.6				mg/L	9	Standard
Ho-1	165	168.3	12.0				mg/L	10	Standard
Er	166	243.3	16.6				mg/L	23	Standard
I	127	20867.7	4.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.765	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.036	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606113003
Report Date/Time: Thursday, June 30, 2016 13:42:04
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.361	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.545	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113004
Sample Date/Time: Thursday, June 30, 2016 13:42:59
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74399.0	3.1				ug/L	74916	Standard
	Be	9	23.3	44.6	**0.0189**	0.011	56.8	ug/L	10	Standard
	Al	27	10856638.5	1.5	**63.0208**	1.392	2.2	ug/L	1822	Standard
	Sc	45	56719.3	2.1				ug/L	55220	Standard
	Ti	47	289.3	2.4	**0.6229**	0.017	2.7	ug/L	34	Standard
	V	51	2332.0	5.7	**0.0527**	0.013	25.2	ug/L	1938	Standard
	Cr	52	18336.1	70.5	**0.9802**	1.432	146.1	ug/L	9522	Standard
	Cr	53	2213.5	70.4	**1.5784**	1.391	88.2	ug/L	395	Standard
	Mn	55	3385468.4	0.9	**389.2475**	3.227	0.8	ug/L	902	Standard
	Co	59	20336.3	2.5	**2.4471**	0.048	2.0	ug/L	262	Standard
	Ni	60	6018.2	2.5	**2.5095**	0.053	2.1	ug/L	371	Standard
	Cu	65	683.7	4.2	**0.2478**	0.014	5.7	ug/L	106	Standard
	Zn	66	2766.9	0.8	**1.7594**	0.028	1.6	ug/L	398	Standard
>	**Ge**	72	541153.6	0.5				ug/L	535147	Standard
	As	75	4598.6	0.6	**3.4503**	0.025	0.7	ug/L	-43	Standard
	Se	82	72.3	2.2	**0.4309**	0.014	3.2	ug/L	14	Standard
	Se-1	77	125.7	8.0	**0.7981**	0.109	13.6	ug/L	65	Standard
>	**Ga**	71	170.0	5.9				mg/L	97	Standard
	Rb	85	5877.8	6.1				ug/L	15	Standard
	Y	89	480882.2	0.7				ug/L	465704	Standard
>	**Rh**	103	90.0	44.4				ug/L	10	Standard
	Mo	98	176.8	20.1	**0.0686**	0.011	15.6	ug/L	9	Standard
	Ag	107	142.3	33.1	**0.0126**	0.006	47.4	ug/L	82	Standard
	Cd	111	30.0	68.4	**0.0202**	0.008	41.1	mg/L	7	Standard
	Cd	114	64.9	65.0	**0.0200**	0.007	35.5	ug/L	21	Standard
>	**In**	115	623102.8	1.4				ug/L	619035	Standard
	Sn	118	1121.7	18.6	**0.0677**	0.031	45.2	ug/L	508	Standard
	Sb	123	309.3	18.9	**0.0624**	0.011	17.1	ug/L	86	Standard
	Ba	135	39415.9	0.4	**17.1108**	0.208	1.2	ug/L	79	Standard
	Ce	140	28894.2	0.7				ug/L	68	Standard
>	**Tb**	159	964868.0	0.6				ug/L	986982	Standard
	Ho	165	706.7	6.7				ug/L	10	Standard
	Tl	203	147.0	43.1	**0.0222**	0.007	31.4	ug/L	13	Standard
	Tl	205	111.7	18.6	**0.0221**	0.003	12.0	ug/L	10	Standard
	Pb	206	529.0	2.6	**0.0530**	0.002	3.5	ug/L	264	Standard
	Pb	207	469.3	7.6	**0.0559**	0.006	11.5	ug/L	227	Standard
	Pb	208	1889.4	2.0	**0.0547**	0.002	4.3	ug/L	868	Standard
	U	238	168.3	8.3	**0.0303**	0.002	5.9	ug/L	8	Standard
>	**Bi**	209	538123.0	0.8				ug/L	541014	Standard

Sample ID: L1606113004
Report Date/Time: Thursday, June 30, 2016 13:45:16
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	7290.1	2.6	**7.7040**	0.321	4.2	mg/L	53	Standard
K	39	425.0	5.4	**0.6269**	0.052	8.4	mg/L	53	Standard
Ca	43	673.3	11.7	**35.4983**	4.811	13.6	mg/L	28	Standard
Fe	54	38438.3	1.9	**25.3833**	0.501	2.0	mg/L	181	Standard
Fe	57	10161.7	2.0	**25.5443**	0.445	1.7	mg/L	257	Standard
> **Sc-1**	45	56719.3	2.1				mg/L	55220	Standard
Cl	35	42442.1	2.9				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	11864.7	6.7				ug/L	2040	Standard
P	31	30823.0	1.5				ug/L	20435	Standard
S	34	3190.3	5.5				ug/L	2430	Standard
Sr	88	306.7	12.2				ug/L	75	Standard
C	12	283.3	5.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	1112.5	6.7				mg/L	9	Standard
Ho-1	165	706.7	6.7				mg/L	10	Standard
Er	166	783.4	12.8				mg/L	23	Standard
I	127	26803.8	6.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.309	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.122	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606113004
Report Date/Time: Thursday, June 30, 2016 13:45:16
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.657
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.466
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138001
Sample Date/Time: Thursday, June 30, 2016 13:46:10
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66387.0	4.2				ug/L	74916	Standard
	Be	9	23.3	53.9	**0.0211**	0.013	59.7	ug/L	10	Standard
	Al	27	474015.9	0.8	**3.0843**	0.149	4.8	ug/L	1822	Standard
	Sc	45	49494.0	0.4				ug/L	55220	Standard
	Ti	47	793.4	2.4	**1.9681**	0.061	3.1	ug/L	34	Standard
	V	51	4262.8	2.5	**0.2920**	0.015	5.2	ug/L	1938	Standard
	Cr	52	8768.2	4.3	**-0.0054**	0.043	793.3	ug/L	9522	Standard
	Cr	53	776.7	11.5	**0.3512**	0.085	24.3	ug/L	395	Standard
	Mn	55	107808.6	1.7	**13.1935**	0.309	2.3	ug/L	902	Standard
	Co	59	1257.7	3.9	**0.1410**	0.006	4.0	ug/L	262	Standard
	Ni	60	924.7	1.2	**0.2920**	0.007	2.5	ug/L	371	Standard
	Cu	65	658.7	3.7	**0.2580**	0.013	5.0	ug/L	106	Standard
	Zn	66	5538.7	2.4	**4.1749**	0.133	3.2	ug/L	398	Standard
>	**Ge**	72	504580.1	0.6				ug/L	535147	Standard
	As	75	106.1	35.6	**0.1391**	0.029	21.1	ug/L	-43	Standard
	Se	82	23.2	11.2	**0.0848**	0.020	23.6	ug/L	14	Standard
	Se-1	77	60.7	8.3	**0.1327**	0.055	41.4	ug/L	65	Standard
>	**Ga**	71	403.3	13.0				mg/L	97	Standard
	Rb	85	5115.9	3.3				ug/L	15	Standard
	Y	89	435874.1	0.5				ug/L	465704	Standard
>	**Rh**	103	26.7	28.6				ug/L	10	Standard
	Mo	98	145.8	11.1	**0.0616**	0.005	8.8	ug/L	9	Standard
	Ag	107	85.0	3.1	**0.0058**	0.000	4.6	ug/L	82	Standard
	Cd	111	7.4	15.9	**0.0111**	0.000	4.4	mg/L	7	Standard
	Cd	114	25.0	106.1	**0.0135**	0.005	36.4	ug/L	21	Standard
>	**In**	115	587323.3	1.4				ug/L	619035	Standard
	Sn	118	246.7	18.7	**-0.0635**	0.007	11.4	ug/L	508	Standard
	Sb	123	113.1	13.5	**0.0269**	0.003	11.9	ug/L	86	Standard
	Ba	135	5777.8	2.5	**2.6441**	0.052	2.0	ug/L	79	Standard
	Ce	140	18709.9	0.8				ug/L	68	Standard
>	**Tb**	159	897694.4	1.4				ug/L	986982	Standard
	Ho	165	320.0	15.4				ug/L	10	Standard
	Tl	203	53.7	11.4	**0.0121**	0.001	5.5	ug/L	13	Standard
	Tl	205	31.7	59.8	**0.0119**	0.003	21.2	ug/L	10	Standard
	Pb	206	1993.5	2.0	**0.3137**	0.004	1.2	ug/L	264	Standard
	Pb	207	1692.8	5.1	**0.2972**	0.020	6.7	ug/L	227	Standard
	Pb	208	6900.0	0.7	**0.3108**	0.005	1.7	ug/L	868	Standard
	U	238	131.3	1.9	**0.0259**	0.000	0.7	ug/L	8	Standard
>	**Bi**	209	523640.4	1.0				ug/L	541014	Standard

Sample ID: L1606138001
Report Date/Time: Thursday, June 30, 2016 13:48:27
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	76.7	21.0	**0.0587**	0.020	33.9	mg/L	53	Standard
K	39	73.3	23.9	**0.0629**	0.034	53.6	mg/L	53	Standard
Ca	43	31.7	9.1	**0.3261**	0.183	56.0	mg/L	28	Standard
Fe	54	350.6	2.1	**0.1478**	0.007	4.4	mg/L	181	Standard
Fe	57	360.0	23.6	**0.4013**	0.253	63.0	mg/L	257	Standard
> **Sc-1**	45	49494.0	0.4				mg/L	55220	Standard
Cl	35	38474.1	1.0				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1776.8	4.7				ug/L	2040	Standard
P	31	8579.1	1.3				ug/L	20435	Standard
S	34	2888.6	5.6				ug/L	2430	Standard
Sr	88	68.3	25.7				ug/L	75	Standard
C	12	90.0	22.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	509.3	4.1				mg/L	9	Standard
Ho-1	165	320.0	15.4				mg/L	10	Standard
Er	166	293.3	2.0				mg/L	23	Standard
I	127	34252.0	1.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.615	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.288	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138001
Report Date/Time: Thursday, June 30, 2016 13:48:27
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.877
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.789
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606138001
Report Date/Time: Thursday, June 30, 2016 13:48:27
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138002
Sample Date/Time: Thursday, June 30, 2016 13:49:22
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64661.1	2.8				ug/L	74916	Standard
	Be	9	26.7	10.8	**0.0256**	0.002	9.4	ug/L	10	Standard
	Al	27	495451.4	1.5	**3.3071**	0.100	3.0	ug/L	1822	Standard
	Sc	45	48776.7	0.9				ug/L	55220	Standard
	Ti	47	742.0	0.2	**1.8391**	0.000	0.0	ug/L	34	Standard
	V	51	4463.4	1.4	**0.3158**	0.008	2.5	ug/L	1938	Standard
	Cr	52	8324.3	1.7	**-0.0561**	0.015	27.6	ug/L	9522	Standard
	Cr	53	671.7	3.0	**0.2524**	0.018	7.3	ug/L	395	Standard
	Mn	55	108883.9	0.8	**13.3471**	0.085	0.6	ug/L	902	Standard
	Co	59	1323.4	2.1	**0.1499**	0.003	2.2	ug/L	262	Standard
	Ni	60	977.4	1.6	**0.3176**	0.007	2.3	ug/L	371	Standard
	Cu	65	833.7	3.1	**0.3427**	0.011	3.3	ug/L	106	Standard
	Zn	66	7284.8	2.1	**5.6095**	0.112	2.0	ug/L	398	Standard
>	Ge	72	503742.7	0.2				ug/L	535147	Standard
	As	75	106.0	30.1	**0.1393**	0.026	18.3	ug/L	-43	Standard
	Se	82	20.2	50.4	**0.0616**	0.080	130.3	ug/L	14	Standard
	Se-1	77	55.3	13.6	**0.0712**	0.088	123.9	ug/L	65	Standard
>	Ga	71	383.3	15.1				mg/L	97	Standard
	Rb	85	5436.0	3.7				ug/L	15	Standard
	Y	89	434664.1	1.5				ug/L	465704	Standard
>	Rh	103	23.3	44.6				ug/L	10	Standard
	Mo	98	161.8	10.2	**0.0673**	0.006	8.5	ug/L	9	Standard
	Ag	107	84.7	21.5	**0.0058**	0.003	44.3	ug/L	82	Standard
	Cd	111	7.0	16.1	**0.0110**	0.001	4.6	mg/L	7	Standard
	Cd	114	16.7	21.5	**0.0120**	0.001	5.5	ug/L	21	Standard
>	In	115	583990.8	0.3				ug/L	619035	Standard
	Sn	118	248.3	18.7	**-0.0630**	0.007	11.9	ug/L	508	Standard
	Sb	123	91.7	16.4	**0.0228**	0.003	13.0	ug/L	86	Standard
	Ba	135	5793.1	1.4	**2.6664**	0.038	1.4	ug/L	79	Standard
	Ce	140	20100.0	3.3				ug/L	68	Standard
>	Tb	159	899230.7	0.5				ug/L	986982	Standard
	Ho	165	273.3	23.9				ug/L	10	Standard
	Tl	203	40.3	14.5	**0.0106**	0.001	6.1	ug/L	13	Standard
	Tl	205	30.0	72.6	**0.0117**	0.003	24.7	ug/L	10	Standard
	Pb	206	2067.1	0.3	**0.3277**	0.002	0.5	ug/L	264	Standard
	Pb	207	1625.1	2.8	**0.2847**	0.008	2.9	ug/L	227	Standard
	Pb	208	7094.0	1.0	**0.3216**	0.006	1.8	ug/L	868	Standard
	U	238	139.3	5.8	**0.0270**	0.001	4.5	ug/L	8	Standard
>	Bi	209	522174.4	0.6				ug/L	541014	Standard

Sample ID: L1606138002
Report Date/Time: Thursday, June 30, 2016 13:51:39
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	128.3	9.8	**0.1239**	0.017	13.7	mg/L	53	Standard
K	39	65.0	20.4	**0.0490**	0.026	53.8	mg/L	53	Standard
Ca	43	36.7	20.8	**0.6732**	0.466	69.2	mg/L	28	Standard
Fe	54	429.0	3.1	**0.2121**	0.009	4.3	mg/L	181	Standard
Fe	57	321.7	18.0	**0.3028**	0.182	60.2	mg/L	257	Standard
> **Sc-1**	45	48776.7	0.9				mg/L	55220	Standard
Cl	35	39347.0	2.0				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1716.8	13.9				ug/L	2040	Standard
P	31	8409.0	1.8				ug/L	20435	Standard
S	34	2855.3	5.2				ug/L	2430	Standard
Sr	88	81.7	7.1				ug/L	75	Standard
C	12	90.0	11.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	575.7	17.1				mg/L	9	Standard
Ho-1	165	273.3	23.9				mg/L	10	Standard
Er	166	230.0	22.6				mg/L	23	Standard
I	127	34921.9	3.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.311	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138002
Report Date/Time: Thursday, June 30, 2016 13:51:39
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.339
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.518
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 13:52:34
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70351.3	1.5				ug/L	74916	Standard
	Be	9	53402.3	3.1	**53.8872**	0.854	1.6	ug/L	10	Standard
	Al	27	8536698.5	1.6	**52.3825**	0.048	0.1	ug/L	1822	Standard
	Sc	45	54668.5	1.7				ug/L	55220	Standard
	Ti	47	42118.1	1.1	**99.2640**	0.592	0.6	ug/L	34	Standard
	V	51	468509.2	1.7	**49.0833**	0.889	1.8	ug/L	1938	Standard
	Cr	52	469374.8	1.2	**49.7880**	0.672	1.3	ug/L	9522	Standard
	Cr	53	57157.6	1.3	**49.5191**	0.959	1.9	ug/L	395	Standard
	Mn	55	435423.3	1.0	**49.2040**	0.253	0.5	ug/L	902	Standard
	Co	59	416954.7	1.7	**49.8454**	0.726	1.5	ug/L	262	Standard
	Ni	60	115262.5	1.0	**49.9318**	0.466	0.9	ug/L	371	Standard
	Cu	65	113776.3	0.6	**50.1650**	0.265	0.5	ug/L	106	Standard
	Zn	66	67512.8	0.9	**50.2512**	0.160	0.3	ug/L	398	Standard
>	Ge	72	549568.6	0.6				ug/L	535147	Standard
	As	75	67559.3	2.0	**49.1657**	0.725	1.5	ug/L	-43	Standard
	Se	82	6897.1	2.3	**49.4551**	0.984	2.0	ug/L	14	Standard
	Se-1	77	4799.8	3.4	**51.2947**	1.457	2.8	ug/L	65	Standard
>	Ga	71	81.7	35.3				mg/L	97	Standard
	Rb	85	1100.0	8.1				ug/L	15	Standard
	Y	89	472317.5	0.9				ug/L	465704	Standard
>	Rh	103	28.3	56.7				ug/L	10	Standard
	Mo	98	311318.4	1.2	**96.8405**	0.751	0.8	ug/L	9	Standard
	Ag	107	375352.2	0.6	**48.2459**	0.186	0.4	ug/L	82	Standard
	Cd	111	121680.2	1.5	**48.9299**	0.512	1.0	mg/L	7	Standard
	Cd	114	295402.6	1.0	**49.3283**	0.334	0.7	ug/L	21	Standard
>	In	115	637918.9	0.9				ug/L	619035	Standard
	Sn	118	329220.1	0.8	**48.9878**	0.167	0.3	ug/L	508	Standard
	Sb	123	266012.3	1.4	**48.7461**	0.223	0.5	ug/L	86	Standard
	Ba	135	113369.9	1.1	**48.1056**	0.773	1.6	ug/L	79	Standard
	Ce	140	228.3	8.3				ug/L	68	Standard
>	Tb	159	969024.1	1.7				ug/L	986982	Standard
	Ho	165	15.0	33.3				ug/L	10	Standard
	Tl	203	459036.6	1.0	**50.0510**	0.294	0.6	ug/L	13	Standard
	Tl	205	406627.8	0.8	**51.9013**	0.775	1.5	ug/L	10	Standard
	Pb	206	289135.8	0.6	**49.0844**	0.241	0.5	ug/L	264	Standard
	Pb	207	262963.0	0.7	**49.3945**	0.173	0.4	ug/L	227	Standard
	Pb	208	1066285.7	1.0	**51.9429**	0.371	0.7	ug/L	868	Standard
	U	238	384760.4	0.1	**50.7102**	0.365	0.7	ug/L	8	Standard
>	Bi	209	543486.8	0.8				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 13:54:51
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.5241**	16.488	173.1	mg/L	2	Standard
Mg	24	4477.3	3.3	**4.8941**	0.142	2.9	mg/L	53	Standard
K	39	2273.5	4.9	**3.8219**	0.208	5.4	mg/L	53	Standard
Ca	43	113.3	2.5	**4.8087**	0.120	2.5	mg/L	28	Standard
Fe	54	7203.2	2.1	**4.8406**	0.177	3.7	mg/L	181	Standard
Fe	57	2146.8	2.6	**5.0804**	0.063	1.2	mg/L	257	Standard
Sc-1	45	54668.5	1.7				mg/L	55220	Standard
Cl	35	43784.5	1.4				ug/L	35504	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2276.8	5.5				ug/L	2040	Standard
P	31	25897.1	0.8				ug/L	20435	Standard
S	34	3145.3	2.1				ug/L	2430	Standard
Sr	88	68.3	40.3				ug/L	75	Standard
C	12	126.7	18.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	5.4	118.7				mg/L	9	Standard
Ho-1	165	15.0	33.3				mg/L	10	Standard
Er	166	26.7	86.6				mg/L	23	Standard
I	127	12495.2	4.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.774		
Al	27	104.765		
Sc	45			
Ti	47	99.264		
V	51	98.167		
Cr	52	99.576		
Cr	53			
Mn	55	98.408		
Co	59	99.691		
Ni	60	99.864		
Cu	65	100.330		
Zn	66	100.502		
Ge	72		102.695	
As	75	98.331		
Se	82	98.910		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 13:54:51
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	96.840		
Ag	107	96.492		
Cd	111	97.860		
Cd	114			
In	115			103.051
Sn	118	97.976		
Sb	123	97.492		
Ba	135	96.211		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.102		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.886		
U	238	101.420		
Bi	209			100.457
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 13:55:46
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68432.6	2.4				ug/L	74916	Standard
	Be	9	28.3	53.9	**0.0256**	0.015	58.8	ug/L	10	Standard
	Al	27	2561.9	32.4	**0.0138**	0.005	34.8	ug/L	1822	Standard
	Sc	45	53586.3	0.9				ug/L	55220	Standard
	Ti	47	42.3	12.1	**0.0323**	0.013	39.8	ug/L	34	Standard
	V	51	1520.6	0.6	**-0.0323**	0.002	6.2	ug/L	1938	Standard
	Cr	52	8093.5	1.4	**-0.1406**	0.009	6.2	ug/L	9522	Standard
	Cr	53	538.3	14.4	**0.0944**	0.066	69.8	ug/L	395	Standard
	Mn	55	1064.7	10.1	**0.0185**	0.012	62.7	ug/L	902	Standard
	Co	59	307.0	14.2	**0.0148**	0.005	34.3	ug/L	262	Standard
	Ni	60	268.3	6.5	**-0.0260**	0.008	31.4	ug/L	371	Standard
	Cu	65	165.0	7.9	**0.0159**	0.005	33.7	ug/L	106	Standard
	Zn	66	438.3	7.7	**-0.0099**	0.023	238.2	ug/L	398	Standard
>	Ge	72	535819.1	0.7				ug/L	535147	Standard
	As	75	6.6	376.3	**0.0602**	0.018	30.6	ug/L	-43	Standard
	Se	82	29.3	22.0	**0.1194**	0.049	40.9	ug/L	14	Standard
	Se-1	77	62.3	8.8	**0.1100**	0.066	59.7	ug/L	65	Standard
>	Ga	71	78.3	3.7				mg/L	97	Standard
	Rb	85	63.3	4.6				ug/L	15	Standard
	Y	89	473768.5	2.1				ug/L	465704	Standard
>	Rh	103	23.3	24.7				ug/L	10	Standard
	Mo	98	199.2	14.8	**0.0746**	0.009	11.9	ug/L	9	Standard
	Ag	107	161.7	32.4	**0.0148**	0.007	44.5	ug/L	82	Standard
	Cd	111	30.9	74.3	**0.0203**	0.009	45.0	mg/L	7	Standard
	Cd	114	72.9	104.0	**0.0211**	0.013	59.7	ug/L	21	Standard
>	In	115	634159.9	0.7				ug/L	619035	Standard
	Sn	118	1073.4	13.8	**0.0577**	0.023	40.3	ug/L	508	Standard
	Sb	123	669.6	26.7	**0.1280**	0.034	26.4	ug/L	86	Standard
	Ba	135	70.3	49.0	**0.0103**	0.014	139.7	ug/L	79	Standard
	Ce	140	51.7	14.8				ug/L	68	Standard
>	Tb	159	954941.3	1.5				ug/L	986982	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	115.0	46.4	**0.0185**	0.006	31.0	ug/L	13	Standard
	Tl	205	83.3	39.0	**0.0183**	0.004	22.3	ug/L	10	Standard
	Pb	206	359.0	17.2	**0.0229**	0.010	44.1	ug/L	264	Standard
	Pb	207	292.3	15.1	**0.0215**	0.008	37.8	ug/L	227	Standard
	Pb	208	1243.7	10.1	**0.0220**	0.006	26.7	ug/L	868	Standard
	U	238	65.7	33.2	**0.0165**	0.003	17.1	ug/L	8	Standard
>	Bi	209	546073.6	0.7				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 13:58:03
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	21.7	**0.0104**	0.010	95.4	mg/L	53	Standard
K	39	33.3	37.7	**-0.0178**	0.022	121.3	mg/L	53	Standard
Ca	43	18.3	31.5	**-0.6058**	0.332	54.7	mg/L	28	Standard
Fe	54	221.0	21.5	**0.0364**	0.033	90.5	mg/L	181	Standard
Fe	57	250.0	10.4	**0.0200**	0.078	387.9	mg/L	257	Standard
Sc-1	45	53586.3	0.9				mg/L	55220	Standard
Cl	35	43438.9	0.9				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1990.1	6.9				ug/L	2040	Standard
P	31	24860.4	1.5				ug/L	20435	Standard
S	34	3005.3	2.2				ug/L	2430	Standard
Sr	88	78.3	30.2				ug/L	75	Standard
C	12	70.0	24.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	486.3	15.6				mg/L	9	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	76.7	7.5				mg/L	23	Standard
I	127	11689.5	2.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.126	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 13:58:03
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.443
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.935
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 13:58:03
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 30, 2016 13:58:59
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66356.7	2.1				ug/L	74916	Standard
	Be	9	215.0	30.2	**0.2261**	0.067	29.5	ug/L	10	Standard
	Al	27	2230.2	26.9	**0.0121**	0.004	30.1	ug/L	1822	Standard
	Sc	45	51398.8	4.2				ug/L	55220	Standard
	Ti	47	25.3	9.1	**-0.0071**	0.006	81.8	ug/L	34	Standard
	V	51	4800.2	0.2	**0.3361**	0.003	1.0	ug/L	1938	Standard
	Cr	52	15323.7	1.7	**0.7106**	0.037	5.2	ug/L	9522	Standard
	Cr	53	1368.4	10.2	**0.8729**	0.133	15.2	ug/L	395	Standard
	Mn	55	4821.4	3.0	**0.4707**	0.018	3.9	ug/L	902	Standard
	Co	59	3207.7	2.8	**0.3818**	0.013	3.3	ug/L	262	Standard
	Ni	60	3628.8	1.0	**1.5172**	0.022	1.5	ug/L	371	Standard
	Cu	65	1815.4	2.8	**0.7865**	0.027	3.5	ug/L	106	Standard
	Zn	66	8275.6	1.0	**6.1944**	0.041	0.7	ug/L	398	Standard
>	**Ge**	72	521093.1	0.5				ug/L	535147	Standard
	As	75	460.0	12.9	**0.4079**	0.046	11.2	ug/L	-43	Standard
	Se	82	70.4	16.5	**0.4369**	0.090	20.5	ug/L	14	Standard
	Se-1	77	95.3	6.1	**0.5056**	0.071	14.1	ug/L	65	Standard
>	**Ga**	71	38.3	15.1				mg/L	97	Standard
	Rb	85	53.3	32.9				ug/L	15	Standard
	Y	89	448899.9	1.0				ug/L	465704	Standard
>	**Rh**	103	10.0	50.0				ug/L	10	Standard
	Mo	98	59.4	30.1	**0.0318**	0.006	18.4	ug/L	9	Standard
	Ag	107	2890.9	2.6	**0.3858**	0.015	3.8	ug/L	82	Standard
	Cd	111	552.2	6.1	**0.2421**	0.017	7.1	mg/L	7	Standard
	Cd	114	1357.9	4.8	**0.2480**	0.014	5.6	ug/L	21	Standard
>	**In**	115	605194.8	1.2				ug/L	619035	Standard
	Sn	118	515.0	7.9	**-0.0225**	0.006	26.7	ug/L	508	Standard
	Sb	123	2078.3	0.9	**0.4059**	0.008	1.9	ug/L	86	Standard
	Ba	135	1558.4	3.6	**0.6779**	0.033	4.9	ug/L	79	Standard
	Ce	140	20.0	50.0				ug/L	68	Standard
>	**Tb**	159	919439.0	1.0				ug/L	986982	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	723.7	5.0	**0.0865**	0.004	4.4	ug/L	13	Standard
	Tl	205	610.0	5.0	**0.0871**	0.004	4.3	ug/L	10	Standard
	Pb	206	1404.1	3.4	**0.2056**	0.009	4.2	ug/L	264	Standard
	Pb	207	1193.0	5.7	**0.1956**	0.014	6.9	ug/L	227	Standard
	Pb	208	4933.3	1.7	**0.2070**	0.004	2.0	ug/L	868	Standard
	U	238	2866.6	0.7	**0.3932**	0.004	0.9	ug/L	8	Standard
>	**Bi**	209	532763.8	0.3				ug/L	541014	Standard

Sample ID: QC Std 8
Report Date/Time: Thursday, June 30, 2016 14:01:16
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	37.1	**0.0158**	0.017	109.9	mg/L	53	Standard
K	39	51.7	20.1	**0.0188**	0.023	119.9	mg/L	53	Standard
Ca	43	20.0	25.0	**-0.4483**	0.353	78.6	mg/L	28	Standard
Fe	54	110.3	26.1	**-0.0377**	0.022	58.6	mg/L	181	Standard
Fe	57	295.0	19.3	**0.1805**	0.189	104.9	mg/L	257	Standard
> **Sc-1**	45	51398.8	4.2				mg/L	55220	Standard
Cl	35	41676.6	0.2				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1763.4	7.5				ug/L	2040	Standard
P	31	16789.3	2.3				ug/L	20435	Standard
S	34	2972.0	1.4				ug/L	2430	Standard
Sr	88	86.7	37.1				ug/L	75	Standard
C	12	83.3	56.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	26.2	77.7				mg/L	9	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1693.4	6.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	113.025		
Al	27			
Sc	45			
Ti	47			
V	51	84.035		
Cr	52	88.826		
Cr	53			
Mn	55	94.146		
Co	59	95.456		
Ni	60	94.822		
Cu	65	98.312		
Zn	66	99.111		
> Ge	72		97.374	
As	75	101.977		
Se	82	109.236		
Se-1	77			
> Ga	71			

Sample ID: QC Std 8
Report Date/Time: Thursday, June 30, 2016 14:01:16
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.443		
Cd	111	100.863		
Cd	114			
> In	115			97.764
Sn	118			
Sb	123	101.469		
Ba	135	90.385		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	108.104		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.497		
U	238	98.309		
> Bi	209			98.475
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Thursday, June 30, 2016 14:01:16
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: PBS H1 WG574262-01
Sample Date/Time: Thursday, June 30, 2016 14:04:45
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	111427.1	4.3				ug/L	74916	Standard
	Be	9	20.0	50.0	**0.0091**	0.006	66.0	ug/L	10	Standard
	Al	27	34110.0	3.0	**0.1301**	0.010	7.5	ug/L	1822	Standard
	Sc	45	55491.4	1.6				ug/L	55220	Standard
	Ti	47	93.7	9.9	**0.1555**	0.021	13.4	ug/L	34	Standard
	V	51	44354.0	10.5	**4.5741**	0.536	11.7	ug/L	1938	Standard
	Cr	52	24972.9	1.3	**1.7243**	0.040	2.3	ug/L	9522	Standard
	Cr	53	206771.4	0.9	**184.1210**	2.288	1.2	ug/L	395	Standard
	Mn	55	2545.9	11.7	**0.1894**	0.034	17.7	ug/L	902	Standard
	Co	59	293.3	5.8	**0.0131**	0.002	18.0	ug/L	262	Standard
	Ni	60	590.0	1.9	**0.1164**	0.005	4.0	ug/L	371	Standard
	Cu	65	308.7	4.1	**0.0805**	0.005	6.0	ug/L	106	Standard
	Zn	66	2132.5	3.9	**1.2865**	0.055	4.3	ug/L	398	Standard
>	Ge	72	537728.3	0.8				ug/L	535147	Standard
	As	75	-342.5	41.1	**-0.1988**	0.103	51.7	ug/L	-43	Standard
	Se	82	13.2	70.1	**0.0001**	0.068	64311.6	ug/L	14	Standard
	Se-1	77	13334.2	2.7	**146.7115**	2.985	2.0	ug/L	65	Standard
>	Ga	71	400.0	17.7				mg/L	97	Standard
	Rb	85	110.0	7.9				ug/L	15	Standard
	Y	89	464081.2	3.2				ug/L	465704	Standard
>	Rh	103	21.7	26.6				ug/L	10	Standard
	Mo	98	72.0	26.8	**0.0362**	0.006	16.8	ug/L	9	Standard
	Ag	107	244.3	35.1	**0.0275**	0.012	44.4	ug/L	82	Standard
	Cd	111	11.2	43.6	**0.0127**	0.002	15.9	mg/L	7	Standard
	Cd	114	31.3	132.5	**0.0144**	0.007	50.8	ug/L	21	Standard
>	In	115	598667.1	1.4				ug/L	619035	Standard
	Sn	118	1255.1	7.6	**0.0959**	0.014	14.1	ug/L	508	Standard
	Sb	123	515.3	19.6	**0.1048**	0.018	17.4	ug/L	86	Standard
	Ba	135	222.0	9.0	**0.0808**	0.010	12.4	ug/L	79	Standard
	Ce	140	90.0	5.6				ug/L	68	Standard
>	Tb	159	1033304.5	1.5				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	164.0	23.2	**0.0228**	0.004	16.5	ug/L	13	Standard
	Tl	205	150.0	32.8	**0.0257**	0.006	22.3	ug/L	10	Standard
	Pb	206	730.0	3.3	**0.0790**	0.004	4.7	ug/L	264	Standard
	Pb	207	653.0	3.6	**0.0824**	0.003	3.7	ug/L	227	Standard
	Pb	208	2412.7	7.2	**0.0724**	0.007	9.6	ug/L	868	Standard
	U	238	18.0	34.7	**0.0101**	0.001	7.7	ug/L	8	Standard
>	Bi	209	576949.5	1.0				ug/L	541014	Standard

Sample ID: PBS H1 WG574262-01
Report Date/Time: Thursday, June 30, 2016 14:07:02
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	173.3	12.0	**0.1533**	0.021	13.6	mg/L	53	Standard
K	39	86.7	14.5	**0.0706**	0.023	32.6	mg/L	53	Standard
Ca	43	38.3	39.8	**0.4775**	0.824	172.5	mg/L	28	Standard
Fe	54	234.1	8.4	**0.0399**	0.011	27.2	mg/L	181	Standard
Fe	57	311.7	11.6	**0.1597**	0.107	67.0	mg/L	257	Standard
> **Sc-1**	45	55491.4	1.6				mg/L	55220	Standard
Cl	35	48185.2	0.8				ug/L	35504	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	3143.7	18.1				ug/L	2040	Standard
P	31	26150.9	3.2				ug/L	20435	Standard
S	34	3633.8	3.2				ug/L	2430	Standard
Sr	88	83.3	38.1				ug/L	75	Standard
C	12	210.0	17.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	18.9	88.9				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	23.3	99.0				mg/L	23	Standard
I	127	4142.2	20.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		148.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.482	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBS H1 WG574262-01
Report Date/Time: Thursday, June 30, 2016 14:07:02
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	96.710	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	106.642	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	

Sample ID: PBS H1 WG574262-01
Report Date/Time: Thursday, June 30, 2016 14:07:02
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: LCSS H1 WG574262-02
Sample Date/Time: Thursday, June 30, 2016 14:07:56
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	118705.1	2.8				ug/L	74916	Standard
	Be	9	30489.0	1.7	**18.2429**	0.579	3.2	ug/L	10	Standard
	Al	27	43652.8	2.8	**0.1565**	0.004	2.8	ug/L	1822	Standard
	Sc	45	57107.4	1.6				ug/L	55220	Standard
	Ti	47	126.0	33.1	**0.2335**	0.102	43.6	ug/L	34	Standard
	V	51	282984.6	2.3	**30.1957**	0.715	2.4	ug/L	1938	Standard
	Cr	52	267745.2	1.3	**28.5638**	0.368	1.3	ug/L	9522	Standard
	Cr	53	268659.4	1.0	**239.1157**	2.898	1.2	ug/L	395	Standard
	Mn	55	234777.4	0.6	**27.0428**	0.266	1.0	ug/L	902	Standard
	Co	59	209564.0	0.3	**25.5696**	0.025	0.1	ug/L	262	Standard
	Ni	60	59639.5	0.6	**26.3110**	0.073	0.3	ug/L	371	Standard
	Cu	65	58354.2	1.2	**26.2421**	0.236	0.9	ug/L	106	Standard
	Zn	66	35510.6	0.8	**26.8274**	0.127	0.5	ug/L	398	Standard
>	**Ge**	72	538233.9	0.4				ug/L	535147	Standard
	As	75	33844.9	1.4	**25.1769**	0.299	1.2	ug/L	-43	Standard
	Se	82	3497.5	1.2	**25.5605**	0.204	0.8	ug/L	14	Standard
	Se-1	77	17979.3	2.3	**197.8649**	5.115	2.6	ug/L	65	Standard
>	**Ga**	71	533.3	3.8				mg/L	97	Standard
	Rb	85	116.7	16.2				ug/L	15	Standard
	Y	89	475379.4	0.9				ug/L	465704	Standard
>	**Rh**	103	73.3	15.7				ug/L	10	Standard
	Mo	98	117.3	1.7	**0.0504**	0.001	2.0	ug/L	9	Standard
	Ag	107	196226.5	0.5	**26.3032**	0.390	1.5	ug/L	82	Standard
	Cd	111	59719.2	0.8	**25.0507**	0.363	1.4	mg/L	7	Standard
	Cd	114	142846.1	1.2	**24.8855**	0.615	2.5	ug/L	21	Standard
>	**In**	115	611695.2	1.3				ug/L	619035	Standard
	Sn	118	1348.4	18.1	**0.1062**	0.037	35.0	ug/L	508	Standard
	Sb	123	130294.2	0.5	**24.9051**	0.309	1.2	ug/L	86	Standard
	Ba	135	59084.0	0.8	**26.1372**	0.352	1.3	ug/L	79	Standard
	Ce	140	145.0	12.4				ug/L	68	Standard
>	**Tb**	159	1051581.5	1.7				ug/L	986982	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	245132.2	1.0	**25.0319**	0.229	0.9	ug/L	13	Standard
	Tl	205	199766.7	0.8	**23.8798**	0.208	0.9	ug/L	10	Standard
	Pb	206	167820.3	0.1	**26.6612**	0.130	0.5	ug/L	264	Standard
	Pb	207	146254.2	0.5	**25.7104**	0.260	1.0	ug/L	227	Standard
	Pb	208	546991.8	0.5	**24.9321**	0.005	0.0	ug/L	868	Standard
	U	238	197816.1	1.2	**24.4178**	0.329	1.3	ug/L	8	Standard
>	**Bi**	209	580382.8	0.5				ug/L	541014	Standard

Sample ID: LCSS H1 WG574262-02
Report Date/Time: Thursday, June 30, 2016 14:10:13
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	166.7	19.1	**0.1411**	0.034	24.0	mg/L	53	Standard
K	39	66.7	37.0	**0.0338**	0.042	125.4	mg/L	53	Standard
Ca	43	25.0	34.6	**-0.3097**	0.453	146.2	mg/L	28	Standard
Fe	54	238.6	14.6	**0.0384**	0.022	57.8	mg/L	181	Standard
Fe	57	386.7	7.1	**0.3279**	0.077	23.5	mg/L	257	Standard
> **Sc-1**	45	57107.4	1.6				mg/L	55220	Standard
Cl	35	50166.9	1.4				ug/L	35504	Standard
Kr	83	4.0	43.3				ug/L	2	Standard
Br	81	2546.9	4.7				ug/L	2040	Standard
P	31	28042.6	1.7				ug/L	20435	Standard
S	34	4057.2	1.9				ug/L	2430	Standard
Sr	88	80.0	43.8				ug/L	75	Standard
C	12	186.7	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	12.9	41.7				mg/L	9	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	2561.9	7.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		158.450	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.577	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSS H1 WG574262-02
Report Date/Time: Thursday, June 30, 2016 14:10:13
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.814	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.277	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	

Sample ID: LCSS H1 WG574262-02
Report Date/Time: Thursday, June 30, 2016 14:10:13
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: LCSS DP WG574262-03
Sample Date/Time: Thursday, June 30, 2016 14:11:08
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	114514.6	2.6				ug/L	74916	Standard
	Be	9	30086.5	2.3	**18.6673**	0.911	4.9	ug/L	10	Standard
	Al	27	129250.6	0.9	**0.4851**	0.012	2.4	ug/L	1822	Standard
	Sc	45	57239.6	2.3				ug/L	55220	Standard
	Ti	47	1106.0	4.7	**2.5727**	0.127	4.9	ug/L	34	Standard
	V	51	289939.1	2.5	**30.6971**	0.593	1.9	ug/L	1938	Standard
	Cr	52	264631.1	0.9	**27.9911**	0.161	0.6	ug/L	9522	Standard
	Cr	53	289850.1	4.7	**255.9465**	10.660	4.2	ug/L	395	Standard
	Mn	55	238961.9	1.3	**27.3127**	0.531	1.9	ug/L	902	Standard
	Co	59	201360.2	1.9	**24.3779**	0.587	2.4	ug/L	262	Standard
	Ni	60	58898.3	1.1	**25.7800**	0.411	1.6	ug/L	371	Standard
	Cu	65	56438.9	1.1	**25.1818**	0.356	1.4	ug/L	106	Standard
	Zn	66	35755.5	0.8	**26.8015**	0.156	0.6	ug/L	398	Standard
>	**Ge**	72	542467.4	0.7				ug/L	535147	Standard
	As	75	33447.4	0.4	**24.6888**	0.116	0.5	ug/L	-43	Standard
	Se	82	3346.9	2.1	**24.2654**	0.536	2.2	ug/L	14	Standard
	Se-1	77	17587.9	2.2	**192.0071**	3.086	1.6	ug/L	65	Standard
>	**Ga**	71	565.0	4.9				mg/L	97	Standard
	Rb	85	913.4	4.6				ug/L	15	Standard
	Y	89	475199.5	1.5				ug/L	465704	Standard
>	**Rh**	103	48.3	11.9				ug/L	10	Standard
	Mo	98	76.0	14.5	**0.0371**	0.003	9.2	ug/L	9	Standard
	Ag	107	188124.0	0.2	**25.2909**	0.357	1.4	ug/L	82	Standard
	Cd	111	57273.6	1.5	**24.0990**	0.674	2.8	mg/L	7	Standard
	Cd	114	134913.9	4.3	**23.5802**	1.336	5.7	ug/L	21	Standard
>	**In**	115	609922.1	1.6				ug/L	619035	Standard
	Sn	118	1498.4	2.2	**0.1303**	0.003	2.6	ug/L	508	Standard
	Sb	123	125319.3	0.3	**24.0264**	0.455	1.9	ug/L	86	Standard
	Ba	135	58846.4	1.1	**26.1123**	0.678	2.6	ug/L	79	Standard
	Ce	140	3812.1	2.8				ug/L	68	Standard
>	**Tb**	159	1052434.7	0.3				ug/L	986982	Standard
	Ho	165	50.0	17.3				ug/L	10	Standard
	Tl	203	234636.2	0.2	**24.0570**	0.089	0.4	ug/L	13	Standard
	Tl	205	196194.2	2.2	**23.5474**	0.544	2.3	ug/L	10	Standard
	Pb	206	161998.1	0.3	**25.8385**	0.086	0.3	ug/L	264	Standard
	Pb	207	140338.3	0.2	**24.7681**	0.109	0.4	ug/L	227	Standard
	Pb	208	529789.6	0.6	**24.2446**	0.181	0.7	ug/L	868	Standard
	U	238	192680.1	0.7	**23.8795**	0.155	0.6	ug/L	8	Standard
>	**Bi**	209	578052.1	0.4				ug/L	541014	Standard

Sample ID: LCSS DP WG574262-03
Report Date/Time: Thursday, June 30, 2016 14:13:25
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**18.3214**	15.864	86.6	mg/L	2	Standard
Mg	24	131.7	13.3	**0.1041**	0.020	19.5	mg/L	53	Standard
K	39	91.7	6.3	**0.0743**	0.013	17.0	mg/L	53	Standard
Ca	43	28.3	10.2	**-0.1281**	0.135	105.5	mg/L	28	Standard
Fe	54	380.9	6.7	**0.1319**	0.022	16.6	mg/L	181	Standard
Fe	57	421.7	3.0	**0.4155**	0.056	13.5	mg/L	257	Standard
> **Sc-1**	45	57239.6	2.3				mg/L	55220	Standard
Cl	35	49730.2	1.6				ug/L	35504	Standard
Kr	83	4.3	48.0				ug/L	2	Standard
Br	81	2426.9	6.4				ug/L	2040	Standard
P	31	26623.4	1.6				ug/L	20435	Standard
S	34	3945.5	4.4				ug/L	2430	Standard
Sr	88	90.0	27.8				ug/L	75	Standard
C	12	146.7	35.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	107.4	41.5				mg/L	9	Standard
Ho-1	165	50.0	17.3				mg/L	10	Standard
Er	166	53.3	57.3				mg/L	23	Standard
I	127	2481.9	7.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		152.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.368	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSS DP WG574262-03
Report Date/Time: Thursday, June 30, 2016 14:13:25
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.528	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	106.846	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	

Sample ID: LCSS DP WG574262-03
Report Date/Time: Thursday, June 30, 2016 14:13:25
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606129101
Sample Date/Time: Thursday, June 30, 2016 14:14:19
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	136791.5	2.0				ug/L	74916	Standard
	Be	9	410.0	7.3	**0.2095**	0.020	9.4	ug/L	10	Standard
	Al	27	3957239.7	0.8	**12.4898**	0.265	2.1	ug/L	1822	Standard
	Sc	45	64274.4	0.7				ug/L	55220	Standard
	Ti	47	37116.7	1.5	**82.1121**	2.399	2.9	ug/L	34	Standard
	V	51	159473.8	6.8	**15.5386**	0.866	5.6	ug/L	1938	Standard
	Cr	52	194818.3	1.3	**18.7600**	0.052	0.3	ug/L	9522	Standard
	Cr	53	485561.2	9.7	**397.1547**	32.903	8.3	ug/L	395	Standard
	Mn	55	4685341.6	1.1	**497.9063**	5.101	1.0	ug/L	902	Standard
	Co	59	14989.7	0.8	**1.6600**	0.023	1.4	ug/L	262	Standard
	Ni	60	22506.0	2.0	**9.0310**	0.065	0.7	ug/L	371	Standard
	Cu	65	1154642.9	0.3	**478.3618**	6.685	1.4	ug/L	106	Standard
	Zn	66	719355.1	0.7	**505.7123**	7.702	1.5	ug/L	398	Standard
>	**Ge**	72	585562.6	1.5				ug/L	535147	Standard
	As	75	27055.7	0.9	**18.5158**	0.109	0.6	ug/L	-43	Standard
	Se	82	499.7	4.6	**3.2713**	0.105	3.2	ug/L	14	Standard
	Se-1	77	28362.9	7.1	**286.9992**	16.378	5.7	ug/L	65	Standard
>	**Ga**	71	48631.3	1.2				mg/L	97	Standard
	Rb	85	34325.5	2.8				ug/L	15	Standard
	Y	89	546871.9	2.0				ug/L	465704	Standard
>	**Rh**	103	260.0	20.4				ug/L	10	Standard
	Mo	98	23134.5	1.9	**7.2534**	0.176	2.4	ug/L	9	Standard
	Ag	107	13335.2	0.3	**1.7191**	0.035	2.0	ug/L	82	Standard
	Cd	111	1545.2	1.1	**0.6331**	0.012	1.9	mg/L	7	Standard
	Cd	114	4005.6	5.5	**0.6822**	0.045	6.6	ug/L	21	Standard
>	**In**	115	634028.9	1.9				ug/L	619035	Standard
	Sn	118	103292.6	1.9	**15.3936**	0.108	0.7	ug/L	508	Standard
	Sb	123	23726.3	0.7	**4.3794**	0.067	1.5	ug/L	86	Standard
	Ba	135	1097968.8	1.1	**468.9492**	5.140	1.1	ug/L	79	Standard
	Ce	140	189814.9	0.4				ug/L	68	Standard
>	**Tb**	159	1115555.5	1.1				ug/L	986982	Standard
	Ho	165	3177.0	3.1				ug/L	10	Standard
	Tl	203	398.0	13.3	**0.0298**	0.003	11.3	ug/L	13	Standard
	Tl	205	275.0	1.8	**0.0269**	0.000	1.3	ug/L	10	Standard
	Pb	206	135768.6	0.4	**12.6181**	0.185	1.5	ug/L	264	Standard
	Pb	207	111855.0	0.8	**11.5025**	0.175	1.5	ug/L	227	Standard
	Pb	208	420883.1	1.5	**11.2180**	0.045	0.4	ug/L	868	Standard
	U	238	83413.0	0.8	**6.0384**	0.067	1.1	ug/L	8	Standard
>	**Bi**	209	990639.1	1.2				ug/L	541014	Standard

Sample ID: L1606129101
Report Date/Time: Thursday, June 30, 2016 14:16:36
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**16.0553**	13.900	86.6	mg/L	2	Standard
Mg	24	1075.0	2.8	**0.9719**	0.023	2.3	mg/L	53	Standard
K	39	608.3	6.4	**0.8109**	0.056	6.9	mg/L	53	Standard
Ca	43	246.7	25.8	**10.3407**	3.184	30.8	mg/L	28	Standard
Fe	54	11770.2	2.4	**6.7715**	0.174	2.6	mg/L	181	Standard
Fe	57	3402.0	3.7	**7.0779**	0.244	3.5	mg/L	257	Standard
> **Sc-1**	45	64274.4	0.7				mg/L	55220	Standard
Cl	35	50261.9	0.4				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	6027.9	5.6				ug/L	2040	Standard
P	31	27798.8	3.8				ug/L	20435	Standard
S	34	3652.1	2.9				ug/L	2430	Standard
Sr	88	426.7	4.9				ug/L	75	Standard
C	12	2326.8	12.0				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	1986.8	9.0				mg/L	7	Standard
Dy	164	5283.4	7.8				mg/L	9	Standard
Ho-1	165	3177.0	3.1				mg/L	10	Standard
Er	166	3080.3	6.2				mg/L	23	Standard
I	127	363370.9	6.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		182.592	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.421	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129101
Report Date/Time: Thursday, June 30, 2016 14:16:36
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.422
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		183.108
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606129101
Report Date/Time: Thursday, June 30, 2016 14:16:36
Page 3

Approved: July 01, 2016

Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	
Se-1 77 Upper, S, EEE	Se-1	77	
Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606129101PS WG574807-01
Sample Date/Time: Thursday, June 30, 2016 14:17:31
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	137356.6	1.7				ug/L	74916	Standard
	Be	9	73022.2	1.5	**37.7466**	0.373	1.0	ug/L	10	Standard
	Al	27	3943616.7	1.3	**12.3930**	0.084	0.7	ug/L	1822	Standard
	Sc	45	65189.9	0.9				ug/L	55220	Standard
	Ti	47	36612.5	0.8	**81.3955**	1.449	1.8	ug/L	34	Standard
	V	51	693082.3	3.3	**68.5607**	1.598	2.3	ug/L	1938	Standard
	Cr	52	704324.1	2.0	**70.9025**	1.024	1.4	ug/L	9522	Standard
	Cr	53	593558.0	2.1	**488.4612**	9.661	2.0	ug/L	395	Standard
	Mn	55	5186923.2	0.6	**554.0487**	8.324	1.5	ug/L	902	Standard
	Co	59	457572.6	0.9	**51.6104**	1.113	2.2	ug/L	262	Standard
	Ni	60	146331.3	1.2	**59.8276**	0.645	1.1	ug/L	371	Standard
	Cu	65	1261675.7	0.8	**525.3316**	5.515	1.0	ug/L	106	Standard
	Zn	66	790446.1	0.9	**558.4915**	2.109	0.4	ug/L	398	Standard
>	Ge	72	582600.4	1.2				ug/L	535147	Standard
	As	75	100050.5	1.0	**68.6729**	1.245	1.8	ug/L	-43	Standard
	Se	82	8037.2	0.3	**54.3795**	0.650	1.2	ug/L	14	Standard
	Se-1	77	34422.7	1.2	**350.4177**	3.188	0.9	ug/L	65	Standard
>	Ga	71	48439.0	1.5				mg/L	97	Standard
	Rb	85	34302.1	0.7				ug/L	15	Standard
	Y	89	560244.3	1.3				ug/L	465704	Standard
>	Rh	103	265.0	6.8				ug/L	10	Standard
	Mo	98	23546.3	1.5	**7.2772**	0.183	2.5	ug/L	9	Standard
	Ag	107	402679.1	0.9	**51.3383**	0.793	1.5	ug/L	82	Standard
	Cd	111	124289.9	0.8	**49.5788**	1.072	2.2	mg/L	7	Standard
	Cd	114	296329.0	2.2	**49.0902**	1.678	3.4	ug/L	21	Standard
>	In	115	643202.9	1.3				ug/L	619035	Standard
	Sn	118	103962.4	3.2	**15.2770**	0.682	4.5	ug/L	508	Standard
	Sb	123	282944.1	1.2	**51.4255**	0.352	0.7	ug/L	86	Standard
	Ba	135	1219389.4	0.7	**513.4112**	10.544	2.1	ug/L	79	Standard
	Ce	140	188144.4	1.0				ug/L	68	Standard
>	Tb	159	1119010.8	0.9				ug/L	986982	Standard
	Ho	165	3330.4	3.1				ug/L	10	Standard
	Tl	203	501006.2	0.8	**29.6691**	0.152	0.5	ug/L	13	Standard
	Tl	205	410582.2	0.7	**28.4622**	0.185	0.7	ug/L	10	Standard
	Pb	206	478829.8	0.2	**44.1422**	0.371	0.8	ug/L	264	Standard
	Pb	207	409096.7	0.2	**41.7280**	0.339	0.8	ug/L	227	Standard
	Pb	208	1506380.0	0.6	**39.8439**	0.360	0.9	ug/L	868	Standard
	U	238	493440.1	1.0	**35.3203**	0.414	1.2	ug/L	8	Standard
>	Bi	209	1000776.7	1.0				ug/L	541014	Standard

Sample ID: L1606129101PS WG574807-01
Report Date/Time: Thursday, June 30, 2016 14:19:48
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**7.9268**	13.721	173.1	mg/L	2	Standard
Mg	24	1058.4	10.0	**0.9421**	0.092	9.7	mg/L	53	Standard
K	39	655.0	4.0	**0.8658**	0.046	5.3	mg/L	53	Standard
Ca	43	301.7	12.7	**12.8093**	1.958	15.3	mg/L	28	Standard
Fe	54	12093.5	1.4	**6.8610**	0.073	1.1	mg/L	181	Standard
Fe	57	3442.1	2.4	**7.0600**	0.173	2.4	mg/L	257	Standard
> **Sc-1**	45	65189.9	0.9				mg/L	55220	Standard
Cl	35	50684.0	1.4				ug/L	35504	Standard
Kr	83	4.7	12.4				ug/L	2	Standard
Br	81	6251.3	6.5				ug/L	2040	Standard
P	31	28184.5	3.4				ug/L	20435	Standard
S	34	3433.7	8.7				ug/L	2430	Standard
Sr	88	411.7	1.4				ug/L	75	Standard
C	12	2223.5	8.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	2036.8	4.9				mg/L	7	Standard
Dy	164	5113.6	4.0				mg/L	9	Standard
Ho-1	165	3330.4	3.1				mg/L	10	Standard
Er	166	3213.7	9.7				mg/L	23	Standard
I	127	366302.3	5.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		183.346	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.867	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129101PS WG574807-01
Report Date/Time: Thursday, June 30, 2016 14:19:48
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.904
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		184.982
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606129101PS WG574807-01
Report Date/Time: Thursday, June 30, 2016 14:19:48
Page 3

Approved: July 01, 2016

Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	
Se-1 77 Upper, S, EEE	Se-1	77	
Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606129101SDL WG574807-02
Sample Date/Time: Thursday, June 30, 2016 14:20:42
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84778.3	2.6				ug/L	74916	Standard
	Be	9	85.0	20.4	**0.0674**	0.013	19.8	ug/L	10	Standard
	Al	27	784608.7	4.3	**3.9933**	0.151	3.8	ug/L	1822	Standard
	Sc	45	56118.8	3.1				ug/L	55220	Standard
	Ti	47	7615.9	4.4	**18.3302**	0.823	4.5	ug/L	34	Standard
	V	51	41825.9	2.6	**4.3105**	0.135	3.1	ug/L	1938	Standard
	Cr	52	46751.4	2.9	**4.1463**	0.146	3.5	ug/L	9522	Standard
	Cr	53	151049.7	3.3	**134.6990**	4.336	3.2	ug/L	395	Standard
	Mn	55	1013716.5	2.5	**117.4885**	2.767	2.4	ug/L	902	Standard
	Co	59	3251.0	2.2	**0.3755**	0.009	2.4	ug/L	262	Standard
	Ni	60	5095.2	1.9	**2.1218**	0.025	1.2	ug/L	371	Standard
	Cu	65	253476.6	2.6	**114.5518**	2.601	2.3	ug/L	106	Standard
	Zn	66	171185.0	2.4	**131.0753**	3.077	2.3	ug/L	398	Standard
>	Ge	72	536506.8	0.7				ug/L	535147	Standard
	As	75	5955.2	2.7	**4.4894**	0.086	1.9	ug/L	-43	Standard
	Se	82	125.7	8.1	**0.8282**	0.081	9.7	ug/L	14	Standard
	Se-1	77	6593.1	2.1	**72.4177**	1.202	1.7	ug/L	65	Standard
>	Ga	71	10615.4	4.2				mg/L	97	Standard
	Rb	85	7655.3	7.1				ug/L	15	Standard
	Y	89	475904.2	2.9				ug/L	465704	Standard
>	Rh	103	76.7	22.9				ug/L	10	Standard
	Mo	98	5094.8	3.1	**1.6733**	0.029	1.8	ug/L	9	Standard
	Ag	107	2964.0	1.4	**0.3933**	0.002	0.5	ug/L	82	Standard
	Cd	111	386.8	5.4	**0.1708**	0.006	3.4	mg/L	7	Standard
	Cd	114	995.4	1.9	**0.1832**	0.006	3.0	ug/L	21	Standard
>	In	115	608564.8	1.9				ug/L	619035	Standard
	Sn	118	22663.6	0.3	**3.4400**	0.079	2.3	ug/L	508	Standard
	Sb	123	6417.2	8.6	**1.2360**	0.085	6.9	ug/L	86	Standard
	Ba	135	241358.8	2.2	**107.3691**	0.797	0.7	ug/L	79	Standard
	Ce	140	40357.0	2.8				ug/L	68	Standard
>	Tb	159	999005.0	0.9				ug/L	986982	Standard
	Ho	165	710.0	6.7				ug/L	10	Standard
	Tl	203	184.0	3.8	**0.0230**	0.001	4.1	ug/L	13	Standard
	Tl	205	153.3	5.0	**0.0243**	0.001	5.1	ug/L	10	Standard
	Pb	206	28820.1	1.7	**4.1128**	0.036	0.9	ug/L	264	Standard
	Pb	207	23942.6	2.0	**3.7816**	0.020	0.5	ug/L	227	Standard
	Pb	208	95916.8	3.1	**3.9247**	0.050	1.3	ug/L	868	Standard
	U	238	17748.4	3.2	**1.9900**	0.014	0.7	ug/L	8	Standard
>	Bi	209	641212.3	2.5				ug/L	541014	Standard

Sample ID: L1606129101SDL WG574807-02
Report Date/Time: Thursday, June 30, 2016 14:22:59
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.0341**	15.639	173.1	mg/L	2	Standard
Mg	24	218.3	8.0	**0.1994**	0.013	6.7	mg/L	53	Standard
K	39	170.0	17.6	**0.2082**	0.051	24.5	mg/L	53	Standard
Ca	43	78.3	9.8	**2.6961**	0.479	17.8	mg/L	28	Standard
Fe	54	2573.4	1.9	**1.6074**	0.052	3.2	mg/L	181	Standard
Fe	57	951.7	4.5	**1.8193**	0.139	7.6	mg/L	257	Standard
> **Sc-1**	45	56118.8	3.1				mg/L	55220	Standard
Cl	35	41388.5	2.2				ug/L	35504	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2593.6	6.0				ug/L	2040	Standard
P	31	11646.1	0.6				ug/L	20435	Standard
S	34	2718.6	6.0				ug/L	2430	Standard
Sr	88	143.3	23.2				ug/L	75	Standard
C	12	423.3	13.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	493.3	9.6				mg/L	7	Standard
Dy	164	1023.2	11.7				mg/L	9	Standard
Ho-1	165	710.0	6.7				mg/L	10	Standard
Er	166	630.0	11.4				mg/L	23	Standard
I	127	124802.9	5.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.164	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.254	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129101SDL WG574807-02
Report Date/Time: Thursday, June 30, 2016 14:22:59
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.309	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	118.520	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

Sample ID: L1606129101SDL WG574807-02
Report Date/Time: Thursday, June 30, 2016 14:22:59
Page 3

Approved: July 01, 2016

Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606129101SDL WG574807-02
Sample Date/Time: Thursday, June 30, 2016 14:23:54
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63330.4	1.3				ug/L	74916	Standard
	Be	9	35.0	28.6	**0.0356**	0.011	31.3	ug/L	10	Standard
	Al	27	99549.4	1.6	**0.6763**	0.005	0.8	ug/L	1822	Standard
	Sc	45	51612.8	1.8				ug/L	55220	Standard
	Ti	47	1006.4	1.1	**2.4929**	0.034	1.4	ug/L	34	Standard
	V	51	8517.7	5.7	**0.7710**	0.055	7.2	ug/L	1938	Standard
	Cr	52	12355.0	0.7	**0.4051**	0.008	2.1	ug/L	9522	Standard
	Cr	53	32528.3	6.5	**30.2729**	1.833	6.1	ug/L	395	Standard
	Mn	55	137959.7	1.8	**16.7647**	0.258	1.5	ug/L	902	Standard
	Co	59	665.0	5.6	**0.0631**	0.004	6.8	ug/L	262	Standard
	Ni	60	946.7	3.1	**0.2985**	0.014	4.6	ug/L	371	Standard
	Cu	65	35169.4	0.7	**16.7056**	0.215	1.3	ug/L	106	Standard
	Zn	66	25495.4	0.9	**20.2867**	0.240	1.2	ug/L	398	Standard
>	**Ge**	72	508951.4	0.6				ug/L	535147	Standard
	As	75	790.5	1.3	**0.6758**	0.007	1.1	ug/L	-43	Standard
	Se	82	35.4	16.1	**0.1781**	0.046	25.8	ug/L	14	Standard
	Se-1	77	1243.1	9.7	**13.9220**	1.318	9.5	ug/L	65	Standard
>	**Ga**	71	1495.1	12.1				mg/L	97	Standard
	Rb	85	1045.0	0.5				ug/L	15	Standard
	Y	89	449338.0	1.4				ug/L	465704	Standard
>	**Rh**	103	15.0	33.3				ug/L	10	Standard
	Mo	98	650.9	6.9	**0.2299**	0.012	5.0	ug/L	9	Standard
	Ag	107	513.3	5.0	**0.0649**	0.003	4.5	ug/L	82	Standard
	Cd	111	59.7	4.3	**0.0337**	0.001	3.8	mg/L	7	Standard
	Cd	114	106.1	28.4	**0.0279**	0.005	18.6	ug/L	21	Standard
>	**In**	115	593483.3	1.6				ug/L	619035	Standard
	Sn	118	2942.0	7.5	**0.3679**	0.029	7.8	ug/L	508	Standard
	Sb	123	1026.7	7.2	**0.2068**	0.018	8.5	ug/L	86	Standard
	Ba	135	32307.1	0.7	**14.7222**	0.195	1.3	ug/L	79	Standard
	Ce	140	5164.2	2.0				ug/L	68	Standard
>	**Tb**	159	921813.6	1.0				ug/L	986982	Standard
	Ho	165	81.7	12.7				ug/L	10	Standard
	Tl	203	97.7	17.9	**0.0168**	0.002	12.0	ug/L	13	Standard
	Tl	205	90.0	48.1	**0.0193**	0.005	28.2	ug/L	10	Standard
	Pb	206	4051.5	1.7	**0.6581**	0.018	2.8	ug/L	264	Standard
	Pb	207	3282.4	3.0	**0.5904**	0.011	1.9	ug/L	227	Standard
	Pb	208	13848.5	1.0	**0.6441**	0.002	0.3	ug/L	868	Standard
	U	238	2342.2	3.0	**0.3198**	0.007	2.1	ug/L	8	Standard
>	**Bi**	209	537647.1	1.3				ug/L	541014	Standard

Sample ID: L1606129101SDL WG574807-02
Report Date/Time: Thursday, June 30, 2016 14:26:11
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.2440**	17.735	173.1	mg/L	2	Standard
Mg	24	55.0	24.1	**0.0296**	0.016	52.8	mg/L	53	Standard
K	39	53.3	35.5	**0.0206**	0.033	161.7	mg/L	53	Standard
Ca	43	36.7	39.4	**0.5519**	0.889	161.1	mg/L	28	Standard
Fe	54	390.8	3.9	**0.1663**	0.015	9.2	mg/L	181	Standard
Fe	57	398.3	18.2	**0.4684**	0.225	48.0	mg/L	257	Standard
> **Sc-1**	45	51612.8	1.8				mg/L	55220	Standard
Cl	35	38530.3	1.2				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1890.1	1.6				ug/L	2040	Standard
P	31	7296.8	0.9				ug/L	20435	Standard
S	34	2378.5	3.4				ug/L	2430	Standard
Sr	88	105.0	20.8				ug/L	75	Standard
C	12	113.3	5.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	12.4				mg/L	7	Standard
Dy	164	131.2	34.9				mg/L	9	Standard
Ho-1	165	81.7	12.7				mg/L	10	Standard
Er	166	113.3	18.4				mg/L	23	Standard
I	127	52358.7	3.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.535	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.105	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129101SDL WG574807-02
Report Date/Time: Thursday, June 30, 2016 14:26:11
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.872
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.378
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 14:27:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68343.8	2.4				ug/L	74916	Standard
	Be	9	56163.9	2.0	**58.3572**	1.048	1.8	ug/L	10	Standard
	Al	27	8830999.9	0.8	**55.7964**	1.064	1.9	ug/L	1822	Standard
	Sc	45	58071.1	2.8				ug/L	55220	Standard
	Ti	47	45017.8	1.7	**105.7692**	1.704	1.6	ug/L	34	Standard
	V	51	497045.5	1.8	**51.9188**	0.868	1.7	ug/L	1938	Standard
	Cr	52	495709.7	1.9	**52.4701**	1.037	2.0	ug/L	9522	Standard
	Cr	53	70055.1	4.3	**60.5778**	2.429	4.0	ug/L	395	Standard
	Mn	55	462411.6	0.5	**52.0973**	0.505	1.0	ug/L	902	Standard
	Co	59	424961.0	1.2	**50.6465**	0.859	1.7	ug/L	262	Standard
	Ni	60	121622.6	1.9	**52.5260**	0.778	1.5	ug/L	371	Standard
	Cu	65	118686.2	2.0	**52.1658**	0.919	1.8	ug/L	106	Standard
	Zn	66	69781.7	0.6	**51.7876**	0.302	0.6	ug/L	398	Standard
>	Ge	72	551326.3	1.2				ug/L	535147	Standard
	As	75	70449.1	0.9	**51.1091**	0.602	1.2	ug/L	-43	Standard
	Se	82	7143.6	1.1	**51.0674**	0.624	1.2	ug/L	14	Standard
	Se-1	77	5368.0	2.2	**57.2636**	1.497	2.6	ug/L	65	Standard
>	Ga	71	118.3	2.4				mg/L	97	Standard
	Rb	85	1088.4	7.6				ug/L	15	Standard
	Y	89	480107.6	2.5				ug/L	465704	Standard
>	Rh	103	30.0	72.6				ug/L	10	Standard
	Mo	98	318527.8	2.0	**98.2098**	1.420	1.4	ug/L	9	Standard
	Ag	107	387998.0	1.7	**49.4315**	0.536	1.1	ug/L	82	Standard
	Cd	111	126141.1	1.3	**50.2785**	0.366	0.7	mg/L	7	Standard
	Cd	114	307281.4	1.2	**50.8610**	0.443	0.9	ug/L	21	Standard
>	In	115	643557.7	0.6				ug/L	619035	Standard
	Sn	118	339017.2	3.5	**50.0007**	1.537	3.1	ug/L	508	Standard
	Sb	123	274626.2	1.2	**49.8837**	0.350	0.7	ug/L	86	Standard
	Ba	135	117839.2	0.8	**49.5604**	0.140	0.3	ug/L	79	Standard
	Ce	140	300.0	6.7				ug/L	68	Standard
>	Tb	159	984962.7	1.4				ug/L	986982	Standard
	Ho	165	13.3	94.4				ug/L	10	Standard
	Tl	203	472528.9	1.5	**51.1647**	0.526	1.0	ug/L	13	Standard
	Tl	205	414817.5	1.4	**52.5782**	0.784	1.5	ug/L	10	Standard
	Pb	206	301319.0	1.2	**50.7986**	0.331	0.7	ug/L	264	Standard
	Pb	207	273907.5	1.1	**51.0948**	0.336	0.7	ug/L	227	Standard
	Pb	208	1090776.5	0.6	**52.7697**	0.252	0.5	ug/L	868	Standard
	U	238	393854.7	0.3	**51.5487**	0.145	0.3	ug/L	8	Standard
>	Bi	209	547266.1	0.6				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 14:29:24
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4749.1	4.8	**4.8851**	0.096	2.0	mg/L	53	Standard
K	39	2540.2	4.0	**4.0230**	0.115	2.8	mg/L	53	Standard
Ca	43	111.7	38.6	**4.3113**	2.199	51.0	mg/L	28	Standard
Fe	54	7412.1	3.0	**4.6841**	0.099	2.1	mg/L	181	Standard
Fe	57	2123.5	3.1	**4.6907**	0.294	6.3	mg/L	257	Standard
> **Sc-1**	45	58071.1	2.8				mg/L	55220	Standard
Cl	35	44907.8	1.0				ug/L	35504	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	2173.5	4.5				ug/L	2040	Standard
P	31	23653.5	2.5				ug/L	20435	Standard
S	34	3143.7	3.9				ug/L	2430	Standard
Sr	88	71.7	31.5				ug/L	75	Standard
C	12	93.3	27.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	12.7	40.1				mg/L	9	Standard
Ho-1	165	13.3	94.4				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	13696.2	3.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	116.714		
Al	27	111.593		
Sc	45			
Ti	47	105.769		
V	51	103.838		
Cr	52	104.940		
Cr	53			
Mn	55	104.195		
Co	59	101.293		
Ni	60	105.052		
Cu	65	104.332		
Zn	66	103.575		
> Ge	72		103.023	
As	75	102.218		
Se	82	102.135		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 14:29:24
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	98.210		
Ag	107	98.863		
Cd	111	100.557		
Cd	114			
> In	115			103.961
Sn	118	100.001		
Sb	123	99.767		
Ba	135	99.121		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.329		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.539		
U	238	103.097		
> Bi	209			101.156
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 14:29:24
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 14:30:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68849.4	1.0				ug/L	74916	Standard
	Be	9	15.0	57.7	**0.0118**	0.009	74.9	ug/L	10	Standard
	Al	27	2420.2	16.4	**0.0129**	0.003	20.5	ug/L	1822	Standard
	Sc	45	57243.0	2.9				ug/L	55220	Standard
	Ti	47	47.3	29.6	**0.0406**	0.033	81.0	ug/L	34	Standard
	V	51	2278.3	14.7	**0.0415**	0.036	86.5	ug/L	1938	Standard
	Cr	52	8862.6	0.5	**-0.0873**	0.009	10.2	ug/L	9522	Standard
	Cr	53	4424.0	2.9	**3.4446**	0.093	2.7	ug/L	395	Standard
	Mn	55	1178.0	6.8	**0.0272**	0.008	31.0	ug/L	902	Standard
	Co	59	321.3	5.0	**0.0153**	0.002	11.4	ug/L	262	Standard
	Ni	60	306.3	4.9	**-0.0136**	0.006	43.3	ug/L	371	Standard
	Cu	65	168.7	6.5	**0.0151**	0.005	30.0	ug/L	106	Standard
	Zn	66	485.3	2.1	**0.0142**	0.006	41.5	ug/L	398	Standard
>	**Ge**	72	553907.6	0.5				ug/L	535147	Standard
	As	75	-16.9	53.1	**0.0430**	0.006	15.1	ug/L	-43	Standard
	Se	82	16.0	5.1	**0.0173**	0.006	36.6	ug/L	14	Standard
	Se-1	77	229.0	12.9	**1.8737**	0.305	16.3	ug/L	65	Standard
>	**Ga**	71	66.7	21.7				mg/L	97	Standard
	Rb	85	46.7	27.0				ug/L	15	Standard
	Y	89	490579.9	1.4				ug/L	465704	Standard
>	**Rh**	103	11.7	65.5				ug/L	10	Standard
	Mo	98	229.1	14.3	**0.0822**	0.010	12.1	ug/L	9	Standard
	Ag	107	158.3	1.6	**0.0139**	0.000	3.0	ug/L	82	Standard
	Cd	111	11.9	34.7	**0.0126**	0.002	12.8	mg/L	7	Standard
	Cd	114	37.6	66.1	**0.0151**	0.004	26.8	ug/L	21	Standard
>	**In**	115	650758.6	0.5				ug/L	619035	Standard
	Sn	118	1208.4	21.8	**0.0732**	0.039	52.8	ug/L	508	Standard
	Sb	123	885.2	32.8	**0.1635**	0.052	32.0	ug/L	86	Standard
	Ba	135	75.0	19.2	**0.0116**	0.006	50.8	ug/L	79	Standard
	Ce	140	85.0	40.8				ug/L	68	Standard
>	**Tb**	159	989894.2	0.6				ug/L	986982	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	140.0	14.3	**0.0209**	0.002	10.4	ug/L	13	Standard
	Tl	205	108.3	13.3	**0.0212**	0.002	8.1	ug/L	10	Standard
	Pb	206	351.7	5.1	**0.0207**	0.003	15.3	ug/L	264	Standard
	Pb	207	323.0	8.8	**0.0262**	0.005	20.8	ug/L	227	Standard
	Pb	208	1309.7	7.2	**0.0242**	0.005	20.1	ug/L	868	Standard
	U	238	69.0	10.9	**0.0168**	0.001	6.1	ug/L	8	Standard
>	**Bi**	209	555329.7	0.6				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 14:32:36
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**8.8680**	15.351	173.1	mg/L	2	Standard
Mg	24	30.0	16.7	**-0.0031**	0.005	148.3	mg/L	53	Standard
K	39	38.3	27.2	**-0.0129**	0.019	148.3	mg/L	53	Standard
Ca	43	31.7	24.1	**0.0538**	0.398	740.6	mg/L	28	Standard
Fe	54	182.6	11.1	**0.0013**	0.013	999.6	mg/L	181	Standard
Fe	57	265.0	1.9	**0.0147**	0.025	169.8	mg/L	257	Standard
> **Sc-1**	45	57243.0	2.9				mg/L	55220	Standard
Cl	35	44938.6	1.8				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1873.4	1.9				ug/L	2040	Standard
P	31	23655.1	0.6				ug/L	20435	Standard
S	34	2910.3	4.5				ug/L	2430	Standard
Sr	88	90.0	28.9				ug/L	75	Standard
C	12	113.3	35.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	508.4	17.1				mg/L	9	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	103.3	39.1				mg/L	23	Standard
I	127	12196.6	4.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.506	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 14:32:36
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.125
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.646
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 14:32:36
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122903 WG573868-02
Sample Date/Time: Thursday, June 30, 2016 14:36:30
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71002.7	1.3				ug/L	74916	Standard
	Be	9	110.0	13.6	**0.1065**	0.016	15.4	ug/L	10	Standard
	Al	27	60587.6	0.3	**0.3661**	0.006	1.7	ug/L	1822	Standard
	Sc	45	57154.3	2.4				ug/L	55220	Standard
	Ti	47	49.7	4.6	**0.0452**	0.006	12.3	ug/L	34	Standard
	V	51	2081.7	41.8	**0.0190**	0.089	470.9	ug/L	1938	Standard
	Cr	52	346396.8	0.8	**35.8869**	0.159	0.4	ug/L	9522	Standard
	Cr	53	45784.1	2.4	**38.9623**	0.821	2.1	ug/L	395	Standard
	Mn	55	59947.8	3.6	**6.5779**	0.223	3.4	ug/L	902	Standard
	Co	59	915.7	3.6	**0.0850**	0.004	5.0	ug/L	262	Standard
	Ni	60	812.7	5.7	**0.2020**	0.021	10.2	ug/L	371	Standard
	Cu	65	1727.4	1.0	**0.6919**	0.010	1.5	ug/L	106	Standard
	Zn	66	13300.5	3.0	**9.4660**	0.258	2.7	ug/L	398	Standard
>	**Ge**	72	558242.0	0.4				ug/L	535147	Standard
	As	75	65.8	23.6	**0.1023**	0.011	11.0	ug/L	-43	Standard
	Se	82	32.9	6.0	**0.1355**	0.014	10.2	ug/L	14	Standard
	Se-1	77	178.0	8.3	**1.3130**	0.161	12.3	ug/L	65	Standard
>	**Ga**	71	481.7	9.6				mg/L	97	Standard
	Rb	85	121.7	24.8				ug/L	15	Standard
	Y	89	491956.7	1.3				ug/L	465704	Standard
>	**Rh**	103	28.3	10.2				ug/L	10	Standard
	Mo	98	708.5	1.9	**0.2258**	0.004	1.8	ug/L	9	Standard
	Ag	107	255.7	1.4	**0.0258**	0.000	1.8	ug/L	82	Standard
	Cd	111	186.7	8.9	**0.0806**	0.007	8.1	mg/L	7	Standard
	Cd	114	502.9	6.7	**0.0902**	0.005	6.0	ug/L	21	Standard
>	**In**	115	658594.5	0.1				ug/L	619035	Standard
	Sn	118	3992.2	4.0	**0.4732**	0.023	4.8	ug/L	508	Standard
	Sb	123	704.6	13.7	**0.1294**	0.017	13.2	ug/L	86	Standard
	Ba	135	280.0	7.2	**0.0955**	0.008	8.8	ug/L	79	Standard
	Ce	140	160.0	17.4				ug/L	68	Standard
>	**Tb**	159	987064.7	0.5				ug/L	986982	Standard
	Ho	165	13.3	114.6				ug/L	10	Standard
	Tl	203	732.7	2.9	**0.0833**	0.003	3.4	ug/L	13	Standard
	Tl	205	638.3	8.7	**0.0866**	0.007	8.2	ug/L	10	Standard
	Pb	206	3147.7	1.8	**0.4799**	0.013	2.6	ug/L	264	Standard
	Pb	207	2938.3	1.9	**0.5014**	0.008	1.6	ug/L	227	Standard
	Pb	208	11735.4	1.5	**0.5154**	0.012	2.3	ug/L	868	Standard
	U	238	27.7	44.9	**0.0114**	0.002	13.9	ug/L	8	Standard
>	**Bi**	209	561516.9	1.0				ug/L	541014	Standard

Sample ID: L1606122903 WG573868-02
Report Date/Time: Thursday, June 30, 2016 14:38:47
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	218.3	14.0	**0.1956**	0.034	17.5	mg/L	53	Standard
K	39	48.3	11.9	**0.0034**	0.011	334.1	mg/L	53	Standard
Ca	43	26.7	28.6	**-0.2176**	0.401	184.1	mg/L	28	Standard
Fe	54	154.6	2.8	**-0.0169**	0.005	31.7	mg/L	181	Standard
Fe	57	288.3	11.3	**0.0751**	0.082	108.7	mg/L	257	Standard
> **Sc-1**	45	57154.3	2.4				mg/L	55220	Standard
Cl	35	44364.2	1.0				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1986.8	12.1				ug/L	2040	Standard
P	31	23139.3	3.0				ug/L	20435	Standard
S	34	2735.2	5.6				ug/L	2430	Standard
Sr	88	70.0	28.6				ug/L	75	Standard
C	12	96.7	33.3				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	16.3	38.7				mg/L	9	Standard
Ho-1	165	13.3	114.6				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	17933.9	2.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.776	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.316	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122903 WG573868-02
Report Date/Time: Thursday, June 30, 2016 14:38:47
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.391
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.790
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122903DP WG573868-07
Sample Date/Time: Thursday, June 30, 2016 14:39:42
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70982.6	0.4				ug/L	74916	Standard
	Be	9	78.3	3.7	**0.0748**	0.003	3.9	ug/L	10	Standard
	Al	27	58663.4	0.8	**0.3545**	0.004	1.2	ug/L	1822	Standard
	Sc	45	54899.3	2.2				ug/L	55220	Standard
	Ti	47	42.0	20.3	**0.0291**	0.021	71.9	ug/L	34	Standard
	V	51	1986.2	67.7	**0.0123**	0.141	1143.9	ug/L	1938	Standard
	Cr	52	368969.5	1.4	**38.9458**	0.615	1.6	ug/L	9522	Standard
	Cr	53	47358.9	1.3	**40.9908**	0.314	0.8	ug/L	395	Standard
	Mn	55	2494.5	1.0	**0.1776**	0.003	2.0	ug/L	902	Standard
	Co	59	853.7	4.1	**0.0794**	0.004	5.4	ug/L	262	Standard
	Ni	60	516.0	2.0	**0.0787**	0.003	3.9	ug/L	371	Standard
	Cu	65	1366.4	1.5	**0.5448**	0.003	0.6	ug/L	106	Standard
	Zn	66	1813.8	2.6	**1.0140**	0.049	4.9	ug/L	398	Standard
>	**Ge**	72	549160.2	1.0				ug/L	535147	Standard
	As	75	46.3	32.0	**0.0889**	0.011	12.0	ug/L	-43	Standard
	Se	82	26.7	16.3	**0.0953**	0.032	33.7	ug/L	14	Standard
	Se-1	77	149.3	11.4	**1.0347**	0.194	18.7	ug/L	65	Standard
>	**Ga**	71	50.0	30.0				mg/L	97	Standard
	Rb	85	33.3	48.2				ug/L	15	Standard
	Y	89	479449.5	0.7				ug/L	465704	Standard
>	**Rh**	103	15.0	57.7				ug/L	10	Standard
	Mo	98	48.2	16.0	**0.0272**	0.002	8.7	ug/L	9	Standard
	Ag	107	307.3	5.2	**0.0331**	0.002	6.4	ug/L	82	Standard
	Cd	111	175.3	12.3	**0.0777**	0.009	11.4	mg/L	7	Standard
	Cd	114	457.7	16.6	**0.0845**	0.012	14.3	ug/L	21	Standard
>	**In**	115	644130.8	0.8				ug/L	619035	Standard
	Sn	118	1141.7	10.3	**0.0651**	0.016	25.2	ug/L	508	Standard
	Sb	123	451.3	16.0	**0.0863**	0.012	14.5	ug/L	86	Standard
	Ba	135	215.0	11.9	**0.0707**	0.010	14.2	ug/L	79	Standard
	Ce	140	68.3	18.4				ug/L	68	Standard
>	**Tb**	159	972427.1	1.7				ug/L	986982	Standard
	Ho	165	20.0	0.0				ug/L	10	Standard
	Tl	203	724.0	1.3	**0.0829**	0.001	1.0	ug/L	13	Standard
	Tl	205	615.0	10.6	**0.0841**	0.007	8.9	ug/L	10	Standard
	Pb	206	746.7	2.4	**0.0858**	0.004	4.4	ug/L	264	Standard
	Pb	207	647.3	1.0	**0.0853**	0.002	2.5	ug/L	227	Standard
	Pb	208	2717.1	0.5	**0.0907**	0.001	1.6	ug/L	868	Standard
	U	238	17.7	21.4	**0.0102**	0.000	4.9	ug/L	8	Standard
>	**Bi**	209	557965.7	0.8				ug/L	541014	Standard

Sample ID: L1606122903DP WG573868-07
Report Date/Time: Thursday, June 30, 2016 14:41:59
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.6831**	16.763	173.1	mg/L	2	Standard
Mg	24	153.3	12.3	**0.1335**	0.020	14.8	mg/L	53	Standard
K	39	50.0	10.0	**0.0093**	0.007	74.0	mg/L	53	Standard
Ca	43	20.0	25.0	**-0.5355**	0.280	52.3	mg/L	28	Standard
Fe	54	168.8	9.1	**-0.0030**	0.011	377.3	mg/L	181	Standard
Fe	57	223.3	12.9	**-0.0670**	0.085	126.8	mg/L	257	Standard
Sc-1	45	54899.3	2.2				mg/L	55220	Standard
Cl	35	43575.9	0.9				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2043.5	8.3				ug/L	2040	Standard
P	31	21959.2	2.7				ug/L	20435	Standard
S	34	2773.6	3.8				ug/L	2430	Standard
Sr	88	75.0	48.1				ug/L	75	Standard
C	12	73.3	43.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	2.4	262.3				mg/L	9	Standard
Ho-1	165	20.0	0.0				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	23	Standard
I	127	17311.6	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.749	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.619	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122903DP WG573868-07
Report Date/Time: Thursday, June 30, 2016 14:41:59
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.054
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.133
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122701
Sample Date/Time: Thursday, June 30, 2016 14:42:53
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64442.1	6.0				ug/L	74916	Standard
	Be	9	23.3	44.6	**0.0225**	0.013	55.8	ug/L	10	Standard
	Al	27	35175.8	1.1	**0.2340**	0.016	6.9	ug/L	1822	Standard
	Sc	45	50300.1	3.5				ug/L	55220	Standard
	Ti	47	56.7	10.6	**0.0742**	0.016	21.5	ug/L	34	Standard
	V	51	14543.2	1.3	**1.4556**	0.051	3.5	ug/L	1938	Standard
	Cr	52	16900.1	1.3	**0.9376**	0.092	9.8	ug/L	9522	Standard
	Cr	53	4118.9	6.8	**3.4933**	0.222	6.4	ug/L	395	Standard
	Mn	55	789.4	1.1	**-0.0086**	0.004	47.1	ug/L	902	Standard
	Co	59	369.0	1.5	**0.0249**	0.002	7.9	ug/L	262	Standard
	Ni	60	498.7	1.5	**0.0883**	0.007	7.9	ug/L	371	Standard
	Cu	65	272.3	6.6	**0.0713**	0.013	17.7	ug/L	106	Standard
	Zn	66	1142.7	4.6	**0.5789**	0.068	11.7	ug/L	398	Standard
>	**Ge**	72	509231.3	3.4				ug/L	535147	Standard
	As	75	106.3	53.1	**0.1395**	0.046	33.0	ug/L	-43	Standard
	Se	82	31.1	9.4	**0.1446**	0.027	18.8	ug/L	14	Standard
	Se-1	77	158.7	4.8	**1.2722**	0.136	10.7	ug/L	65	Standard
>	**Ga**	71	300.0	13.3				mg/L	97	Standard
	Rb	85	3572.1	5.2				ug/L	15	Standard
	Y	89	437515.1	1.9				ug/L	465704	Standard
>	**Rh**	103	71.7	10.7				ug/L	10	Standard
	Mo	98	198.8	4.5	**0.0792**	0.004	5.4	ug/L	9	Standard
	Ag	107	89.3	7.3	**0.0064**	0.001	17.9	ug/L	82	Standard
	Cd	111	8.3	13.6	**0.0115**	0.001	4.7	mg/L	7	Standard
	Cd	114	18.2	68.8	**0.0122**	0.002	18.7	ug/L	21	Standard
>	**In**	115	590604.5	2.1				ug/L	619035	Standard
	Sn	118	255.0	10.9	**-0.0623**	0.005	8.3	ug/L	508	Standard
	Sb	123	116.1	9.8	**0.0274**	0.003	9.8	ug/L	86	Standard
	Ba	135	15449.5	1.2	**7.0659**	0.187	2.7	ug/L	79	Standard
	Ce	140	106.7	7.2				ug/L	68	Standard
>	**Tb**	159	903950.3	1.9				ug/L	986982	Standard
	Ho	165	21.7	35.3				ug/L	10	Standard
	Tl	203	50.3	8.0	**0.0117**	0.000	3.4	ug/L	13	Standard
	Tl	205	38.3	45.8	**0.0127**	0.002	18.4	ug/L	10	Standard
	Pb	206	305.7	8.4	**0.0157**	0.004	23.6	ug/L	264	Standard
	Pb	207	250.0	2.2	**0.0152**	0.001	9.4	ug/L	227	Standard
	Pb	208	1046.3	3.9	**0.0142**	0.001	8.1	ug/L	868	Standard
	U	238	78.7	9.6	**0.0186**	0.001	6.5	ug/L	8	Standard
>	**Bi**	209	527486.6	1.9				ug/L	541014	Standard

Sample ID: L1606122701
Report Date/Time: Thursday, June 30, 2016 14:45:10
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.7038**	18.531	173.1	mg/L	2	Standard
Mg	24	1011.7	4.5	**1.1779**	0.093	7.9	mg/L	53	Standard
K	39	111.7	29.8	**0.1312**	0.056	42.9	mg/L	53	Standard
Ca	43	86.7	26.0	**3.6971**	1.306	35.3	mg/L	28	Standard
Fe	54	57.1	5.7	**-0.0760**	0.003	4.3	mg/L	181	Standard
Fe	57	325.0	12.3	**0.2811**	0.098	34.8	mg/L	257	Standard
Sc-1	45	50300.1	3.5				mg/L	55220	Standard
Cl	35	38597.1	1.2				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3163.7	4.8				ug/L	2040	Standard
P	31	8620.8	3.4				ug/L	20435	Standard
S	34	2843.6	2.8				ug/L	2430	Standard
Sr	88	275.0	7.9				ug/L	75	Standard
C	12	80.0	25.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	15.9	34.8				mg/L	9	Standard
Ho-1	165	21.7	35.3				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	41971.4	3.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.019	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.157	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122701
Report Date/Time: Thursday, June 30, 2016 14:45:10
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.407
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.500
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122703
Sample Date/Time: Thursday, June 30, 2016 14:46:05
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63872.8	3.9				ug/L	74916	Standard
	Be	9	23.3	24.7	**0.0225**	0.007	31.7	ug/L	10	Standard
	Al	27	262731.8	0.7	**1.7750**	0.062	3.5	ug/L	1822	Standard
	Sc	45	50567.6	1.4				ug/L	55220	Standard
	Ti	47	69.3	15.9	**0.1109**	0.030	26.6	ug/L	34	Standard
	V	51	2022.9	3.1	**0.0391**	0.010	24.6	ug/L	1938	Standard
	Cr	52	7400.1	4.1	**-0.1526**	0.044	28.8	ug/L	9522	Standard
	Cr	53	2908.6	10.0	**2.4248**	0.310	12.8	ug/L	395	Standard
	Mn	55	46636.0	2.9	**5.7392**	0.181	3.2	ug/L	902	Standard
	Co	59	313.3	27.7	**0.0187**	0.012	62.9	ug/L	262	Standard
	Ni	60	333.7	4.3	**0.0149**	0.008	57.2	ug/L	371	Standard
	Cu	65	411.3	45.3	**0.1419**	0.091	63.9	ug/L	106	Standard
	Zn	66	1541.7	7.1	**0.9319**	0.091	9.7	ug/L	398	Standard
>	Ge	72	496662.3	1.1				ug/L	535147	Standard
	As	75	3.0	487.9	**0.0576**	0.012	20.3	ug/L	-43	Standard
	Se	82	30.5	8.2	**0.1453**	0.022	15.3	ug/L	14	Standard
	Se-1	77	151.7	4.4	**1.2325**	0.068	5.5	ug/L	65	Standard
>	Ga	71	56.7	43.5				mg/L	97	Standard
	Rb	85	436.7	11.5				ug/L	15	Standard
	Y	89	430441.7	1.9				ug/L	465704	Standard
>	Rh	103	13.3	57.3				ug/L	10	Standard
	Mo	98	41.9	29.5	**0.0266**	0.004	15.8	ug/L	9	Standard
	Ag	107	143.3	22.7	**0.0141**	0.005	33.0	ug/L	82	Standard
	Cd	111	32.9	51.0	**0.0224**	0.007	33.2	mg/L	7	Standard
	Cd	114	121.0	17.4	**0.0310**	0.004	12.5	ug/L	21	Standard
>	In	115	584144.8	1.3				ug/L	619035	Standard
	Sn	118	585.0	3.1	**-0.0082**	0.002	22.4	ug/L	508	Standard
	Sb	123	122.5	19.2	**0.0289**	0.005	16.2	ug/L	86	Standard
	Ba	135	13459.0	1.0	**6.2201**	0.123	2.0	ug/L	79	Standard
	Ce	140	33.3	70.9				ug/L	68	Standard
>	Tb	159	898212.6	0.3				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	141.3	39.5	**0.0219**	0.006	28.4	ug/L	13	Standard
	Tl	205	166.7	95.7	**0.0296**	0.021	70.6	ug/L	10	Standard
	Pb	206	307.3	15.5	**0.0162**	0.008	50.6	ug/L	264	Standard
	Pb	207	261.7	12.6	**0.0177**	0.006	35.9	ug/L	227	Standard
	Pb	208	1296.0	32.2	**0.0269**	0.021	77.0	ug/L	868	Standard
	U	238	118.7	114.1	**0.0240**	0.018	76.4	ug/L	8	Standard
>	Bi	209	525541.8	0.4				ug/L	541014	Standard

Sample ID: L1606122703
Report Date/Time: Thursday, June 30, 2016 14:48:22
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.0978**	17.481	173.1	mg/L	2	Standard
Mg	24	535.0	18.8	**0.6015**	0.115	19.1	mg/L	53	Standard
K	39	66.7	18.9	**0.0477**	0.025	51.7	mg/L	53	Standard
Ca	43	23.3	53.9	**-0.2274**	0.784	344.8	mg/L	28	Standard
Fe	54	255.7	31.1	**0.0710**	0.056	79.3	mg/L	181	Standard
Fe	57	321.7	7.0	**0.2673**	0.059	22.0	mg/L	257	Standard
> **Sc-1**	45	50567.6	1.4				mg/L	55220	Standard
Cl	35	40072.9	1.5				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	3260.4	4.3				ug/L	2040	Standard
P	31	8352.3	6.8				ug/L	20435	Standard
S	34	2655.2	6.2				ug/L	2430	Standard
Sr	88	96.7	7.9				ug/L	75	Standard
C	12	113.3	18.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.0	193.9				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	39451.3	3.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.259	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.809	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122703
Report Date/Time: Thursday, June 30, 2016 14:48:22
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.364
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.140
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122705
Sample Date/Time: Thursday, June 30, 2016 14:49:17
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63382.3	2.1				ug/L	74916	Standard
	Be	9	8.3	34.6	**0.0058**	0.003	58.5	ug/L	10	Standard
	Al	27	247230.8	0.5	**1.6820**	0.028	1.7	ug/L	1822	Standard
	Sc	45	49723.1	1.2				ug/L	55220	Standard
	Ti	47	51.0	13.6	**0.0595**	0.017	28.9	ug/L	34	Standard
	V	51	2118.9	4.8	**0.0438**	0.011	24.7	ug/L	1938	Standard
	Cr	52	7443.8	2.2	**-0.1708**	0.014	8.1	ug/L	9522	Standard
	Cr	53	2696.9	4.2	**2.1505**	0.105	4.9	ug/L	395	Standard
	Mn	55	42329.4	0.7	**5.0615**	0.004	0.1	ug/L	902	Standard
	Co	59	228.7	1.8	**0.0067**	0.000	7.3	ug/L	262	Standard
	Ni	60	308.3	7.9	**-0.0013**	0.011	847.7	ug/L	371	Standard
	Cu	65	124.0	4.3	**0.0002**	0.002	938.4	ug/L	106	Standard
	Zn	66	1239.4	3.7	**0.6545**	0.038	5.8	ug/L	398	Standard
>	**Ge**	72	509892.2	0.6				ug/L	535147	Standard
	As	75	-21.0	156.3	**0.0386**	0.026	66.7	ug/L	-43	Standard
	Se	82	22.8	3.9	**0.0799**	0.006	7.4	ug/L	14	Standard
	Se-1	77	129.3	5.0	**0.9258**	0.084	9.0	ug/L	65	Standard
>	**Ga**	71	36.7	43.8				mg/L	97	Standard
	Rb	85	353.3	8.3				ug/L	15	Standard
	Y	89	434937.9	2.2				ug/L	465704	Standard
>	**Rh**	103	18.3	78.7				ug/L	10	Standard
	Mo	98	13.3	4.9	**0.0169**	0.000	1.3	ug/L	9	Standard
	Ag	107	93.3	9.6	**0.0069**	0.001	17.6	ug/L	82	Standard
	Cd	111	5.6	41.0	**0.0104**	0.001	9.7	mg/L	7	Standard
	Cd	114	19.8	80.0	**0.0125**	0.003	23.0	ug/L	21	Standard
>	**In**	115	588399.0	0.2				ug/L	619035	Standard
	Sn	118	255.0	18.9	**-0.0622**	0.008	12.6	ug/L	508	Standard
	Sb	123	79.2	9.4	**0.0201**	0.002	7.5	ug/L	86	Standard
	Ba	135	12570.5	1.2	**5.7652**	0.070	1.2	ug/L	79	Standard
	Ce	140	25.0	34.6				ug/L	68	Standard
>	**Tb**	159	905028.5	0.8				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	44.3	15.4	**0.0110**	0.001	7.0	ug/L	13	Standard
	Tl	205	45.0	22.2	**0.0136**	0.001	9.7	ug/L	10	Standard
	Pb	206	333.3	5.0	**0.0203**	0.003	14.2	ug/L	264	Standard
	Pb	207	266.3	5.4	**0.0181**	0.003	14.7	ug/L	227	Standard
	Pb	208	1164.0	1.9	**0.0198**	0.001	6.0	ug/L	868	Standard
	U	238	8.7	24.0	**0.0091**	0.000	3.0	ug/L	8	Standard
>	**Bi**	209	530144.0	0.4				ug/L	541014	Standard

Sample ID: L1606122705
Report Date/Time: Thursday, June 30, 2016 14:51:33
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.3550**	17.927	173.1	mg/L	2	Standard
Mg	24	483.3	4.3	**0.5506**	0.030	5.5	mg/L	53	Standard
K	39	80.0	16.5	**0.0747**	0.024	32.2	mg/L	53	Standard
Ca	43	26.7	10.8	**0.0040**	0.203	5081.3	mg/L	28	Standard
Fe	54	226.1	14.7	**0.0524**	0.025	48.2	mg/L	181	Standard
Fe	57	310.0	11.3	**0.2484**	0.095	38.1	mg/L	257	Standard
> **Sc-1**	45	49723.1	1.2				mg/L	55220	Standard
Cl	35	40435.9	0.5				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	3133.7	7.1				ug/L	2040	Standard
P	31	8177.2	1.9				ug/L	20435	Standard
S	34	2473.5	1.8				ug/L	2430	Standard
Sr	88	75.0	52.9				ug/L	75	Standard
C	12	90.0	44.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	2.7	221.0				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	38071.1	2.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.604	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.281	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122705
Report Date/Time: Thursday, June 30, 2016 14:51:33
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.051
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.991
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122706
Sample Date/Time: Thursday, June 30, 2016 14:52:28
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63995.1	4.9				ug/L	74916	Standard
	Be	9	25.0	20.0	**0.0243**	0.007	27.2	ug/L	10	Standard
	Al	27	1452158.4	1.3	**9.8063**	0.384	3.9	ug/L	1822	Standard
	Sc	45	49316.8	2.6				ug/L	55220	Standard
	Ti	47	38.0	22.8	**0.0277**	0.023	81.9	ug/L	34	Standard
	V	51	2307.6	6.8	**0.0683**	0.017	24.7	ug/L	1938	Standard
	Cr	52	7271.4	1.4	**-0.1808**	0.007	3.7	ug/L	9522	Standard
	Cr	53	3968.9	5.0	**3.3927**	0.215	6.3	ug/L	395	Standard
	Mn	55	91787.5	1.0	**11.2317**	0.163	1.5	ug/L	902	Standard
	Co	59	876.0	4.6	**0.0915**	0.006	6.4	ug/L	262	Standard
	Ni	60	474.7	3.4	**0.0793**	0.009	11.3	ug/L	371	Standard
	Cu	65	164.7	34.4	**0.0207**	0.028	135.8	ug/L	106	Standard
	Zn	66	988.0	6.5	**0.4611**	0.057	12.4	ug/L	398	Standard
>	**Ge**	72	503918.8	0.8				ug/L	535147	Standard
	As	75	46.2	85.3	**0.0918**	0.031	33.8	ug/L	-43	Standard
	Se	82	41.0	23.8	**0.2246**	0.078	34.8	ug/L	14	Standard
	Se-1	77	170.7	3.4	**1.4303**	0.053	3.7	ug/L	65	Standard
>	**Ga**	71	73.3	25.8				mg/L	97	Standard
	Rb	85	820.0	1.8				ug/L	15	Standard
	Y	89	428133.2	0.9				ug/L	465704	Standard
>	**Rh**	103	33.3	56.8				ug/L	10	Standard
	Mo	98	14.7	37.7	**0.0174**	0.002	10.6	ug/L	9	Standard
	Ag	107	85.0	6.2	**0.0059**	0.001	12.3	ug/L	82	Standard
	Cd	111	6.3	105.4	**0.0107**	0.003	27.8	mg/L	7	Standard
	Cd	114	17.2	88.0	**0.0121**	0.003	23.1	ug/L	21	Standard
>	**In**	115	582185.3	1.1				ug/L	619035	Standard
	Sn	118	228.3	17.7	**-0.0661**	0.006	9.7	ug/L	508	Standard
	Sb	123	73.7	18.3	**0.0192**	0.003	13.8	ug/L	86	Standard
	Ba	135	6171.3	2.4	**2.8508**	0.076	2.7	ug/L	79	Standard
	Ce	140	311.7	26.7				ug/L	68	Standard
>	**Tb**	159	900041.5	0.2				ug/L	986982	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	78.0	18.9	**0.0149**	0.002	11.2	ug/L	13	Standard
	Tl	205	86.7	37.5	**0.0192**	0.004	22.2	ug/L	10	Standard
	Pb	206	268.7	7.4	**0.0099**	0.004	38.8	ug/L	264	Standard
	Pb	207	237.7	0.5	**0.0135**	0.000	1.2	ug/L	227	Standard
	Pb	208	982.0	12.1	**0.0117**	0.006	49.8	ug/L	868	Standard
	U	238	573.7	13.6	**0.0868**	0.010	12.0	ug/L	8	Standard
>	**Bi**	209	520191.7	0.7				ug/L	541014	Standard

Sample ID: L1606122706
Report Date/Time: Thursday, June 30, 2016 14:54:45
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3188.7	3.7	**3.8557**	0.044	1.1	mg/L	53	Standard
K	39	53.3	28.6	**0.0251**	0.027	108.2	mg/L	53	Standard
Ca	43	46.7	27.0	**1.2792**	0.771	60.3	mg/L	28	Standard
Fe	54	69.3	57.6	**-0.0655**	0.032	48.3	mg/L	181	Standard
Fe	57	315.0	11.1	**0.2703**	0.086	31.9	mg/L	257	Standard
> **Sc-1**	45	49316.8	2.6				mg/L	55220	Standard
Cl	35	40068.9	0.3				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	6631.5	4.6				ug/L	2040	Standard
P	31	7241.7	2.9				ug/L	20435	Standard
S	34	2561.9	3.4				ug/L	2430	Standard
Sr	88	133.3	36.4				ug/L	75	Standard
C	12	60.0					mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	19.8	51.6				mg/L	9	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	44420.0	2.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.422	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.165	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122706
Report Date/Time: Thursday, June 30, 2016 14:54:45
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.047
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.151
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122707
Sample Date/Time: Thursday, June 30, 2016 14:55:40
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62577.4	3.3				ug/L	74916	Standard
	Be	9	6.7	86.6	**0.0039**	0.007	166.0	ug/L	10	Standard
	Al	27	198944.4	1.5	**1.3707**	0.026	1.9	ug/L	1822	Standard
	Sc	45	50035.9	2.6				ug/L	55220	Standard
	Ti	47	30.0	20.8	**0.0075**	0.015	197.5	ug/L	34	Standard
	V	51	2013.9	5.4	**0.0366**	0.012	33.1	ug/L	1938	Standard
	Cr	52	7046.6	1.7	**-0.2000**	0.028	13.8	ug/L	9522	Standard
	Cr	53	2293.5	0.8	**1.8158**	0.076	4.2	ug/L	395	Standard
	Mn	55	50488.3	0.7	**6.1844**	0.145	2.3	ug/L	902	Standard
	Co	59	221.0	2.5	**0.0063**	0.001	23.6	ug/L	262	Standard
	Ni	60	712.4	1.1	**0.1948**	0.006	2.9	ug/L	371	Standard
	Cu	65	141.3	12.8	**0.0098**	0.008	84.8	ug/L	106	Standard
	Zn	66	1168.4	4.0	**0.6160**	0.014	2.2	ug/L	398	Standard
>	**Ge**	72	499784.8	2.6				ug/L	535147	Standard
	As	75	-33.5	115.4	**0.0280**	0.031	111.0	ug/L	-43	Standard
	Se	82	22.8	19.0	**0.0842**	0.039	46.9	ug/L	14	Standard
	Se-1	77	125.0	5.8	**0.9050**	0.091	10.1	ug/L	65	Standard
>	**Ga**	71	46.7	50.6				mg/L	97	Standard
	Rb	85	270.0	11.6				ug/L	15	Standard
	Y	89	429135.1	1.7				ug/L	465704	Standard
>	**Rh**	103	16.7	45.8				ug/L	10	Standard
	Mo	98	13.7	25.0	**0.0170**	0.001	6.4	ug/L	9	Standard
	Ag	107	80.0	11.9	**0.0051**	0.001	26.5	ug/L	82	Standard
	Cd	111	5.0	40.2	**0.0101**	0.001	9.0	mg/L	7	Standard
	Cd	114	10.0	53.1	**0.0107**	0.001	8.9	ug/L	21	Standard
>	**In**	115	585198.1	1.8				ug/L	619035	Standard
	Sn	118	186.7	13.5	**-0.0730**	0.005	6.3	ug/L	508	Standard
	Sb	123	75.9	10.6	**0.0196**	0.002	8.4	ug/L	86	Standard
	Ba	135	8760.9	0.3	**4.0349**	0.067	1.7	ug/L	79	Standard
	Ce	140	36.7	7.9				ug/L	68	Standard
>	**Tb**	159	899376.2	1.9				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	44.3	10.7	**0.0110**	0.001	5.1	ug/L	13	Standard
	Tl	205	46.7	24.7	**0.0139**	0.001	10.7	ug/L	10	Standard
	Pb	206	244.3	3.1	**0.0053**	0.002	35.8	ug/L	264	Standard
	Pb	207	230.3	8.7	**0.0118**	0.004	32.8	ug/L	227	Standard
	Pb	208	925.0	2.8	**0.0085**	0.001	11.3	ug/L	868	Standard
	U	238	3.7	56.8	**0.0084**	0.000	3.3	ug/L	8	Standard
>	**Bi**	209	523201.8	1.3				ug/L	541014	Standard

Sample ID: L1606122707
Report Date/Time: Thursday, June 30, 2016 14:57:57
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	508.3	2.8	**0.5773**	0.030	5.2	mg/L	53	Standard
K	39	55.0	18.2	**0.0274**	0.021	77.1	mg/L	53	Standard
Ca	43	28.3	36.7	**0.1031**	0.676	655.6	mg/L	28	Standard
Fe	54	462.6	3.9	**0.2290**	0.007	3.0	mg/L	181	Standard
Fe	57	376.7	12.0	**0.4365**	0.105	24.0	mg/L	257	Standard
> **Sc-1**	45	50035.9	2.6				mg/L	55220	Standard
Cl	35	40185.2	1.9				ug/L	35504	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	2750.3	5.5				ug/L	2040	Standard
P	31	7351.8	4.8				ug/L	20435	Standard
S	34	2616.9	2.6				ug/L	2430	Standard
Sr	88	65.0	15.4				ug/L	75	Standard
C	12	113.3	27.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.5	239.4				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	39342.7	1.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.392	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122707
Report Date/Time: Thursday, June 30, 2016 14:57:57
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.534
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.708
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 14:58:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64391.5	0.8				ug/L	74916	Standard
	Be	9	49959.0	3.9	**55.0785**	1.704	3.1	ug/L	10	Standard
	Al	27	8042298.7	3.0	**53.9109**	1.197	2.2	ug/L	1822	Standard
	Sc	45	52713.3	3.1				ug/L	55220	Standard
	Ti	47	40282.8	2.2	**100.6643**	0.597	0.6	ug/L	34	Standard
	V	51	449362.5	2.0	**49.9229**	0.786	1.6	ug/L	1938	Standard
	Cr	52	448068.9	1.4	**50.4103**	0.341	0.7	ug/L	9522	Standard
	Cr	53	56742.8	3.7	**52.1353**	1.373	2.6	ug/L	395	Standard
	Mn	55	411079.3	2.0	**49.2603**	0.827	1.7	ug/L	902	Standard
	Co	59	391313.5	1.8	**49.6052**	0.544	1.1	ug/L	262	Standard
	Ni	60	110525.4	1.2	**50.7752**	0.447	0.9	ug/L	371	Standard
	Cu	65	108521.4	2.5	**50.7316**	0.511	1.0	ug/L	106	Standard
	Zn	66	64187.3	0.5	**50.6710**	0.790	1.6	ug/L	398	Standard
>	Ge	72	518300.5	1.9				ug/L	535147	Standard
	As	75	65315.7	1.3	**50.4052**	0.285	0.6	ug/L	-43	Standard
	Se	82	6637.9	2.0	**50.4718**	0.221	0.4	ug/L	14	Standard
	Se-1	77	4485.7	1.7	**50.8352**	0.703	1.4	ug/L	65	Standard
>	Ga	71	66.7	30.3				mg/L	97	Standard
	Rb	85	938.4	3.4				ug/L	15	Standard
	Y	89	452750.4	1.1				ug/L	465704	Standard
>	Rh	103	43.3	58.1				ug/L	10	Standard
	Mo	98	290978.1	1.9	**95.9061**	1.779	1.9	ug/L	9	Standard
	Ag	107	359437.5	1.1	**48.9522**	0.523	1.1	ug/L	82	Standard
	Cd	111	116831.1	2.1	**49.7787**	0.939	1.9	mg/L	7	Standard
	Cd	114	283363.8	1.4	**50.1376**	0.775	1.5	ug/L	21	Standard
>	In	115	602055.6	0.7				ug/L	619035	Standard
	Sn	118	319610.8	2.7	**50.3915**	1.220	2.4	ug/L	508	Standard
	Sb	123	254703.1	1.5	**49.4555**	0.671	1.4	ug/L	86	Standard
	Ba	135	109175.3	1.2	**49.0837**	0.702	1.4	ug/L	79	Standard
	Ce	140	180.0	7.3				ug/L	68	Standard
>	Tb	159	909220.9	1.0				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	443311.4	0.8	**50.2200**	0.968	1.9	ug/L	13	Standard
	Tl	205	389649.1	1.6	**51.6702**	1.301	2.5	ug/L	10	Standard
	Pb	206	277554.0	1.2	**48.9549**	1.120	2.3	ug/L	264	Standard
	Pb	207	252521.8	1.1	**49.2813**	1.032	2.1	ug/L	227	Standard
	Pb	208	1029674.4	0.9	**52.1136**	0.991	1.9	ug/L	868	Standard
	U	238	368061.3	1.2	**50.3996**	1.185	2.4	ug/L	8	Standard
>	Bi	209	523176.7	1.1				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 15:01:10
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4247.3	2.1	**4.8159**	0.107	2.2	mg/L	53	Standard
K	39	2163.5	3.7	**3.7700**	0.073	1.9	mg/L	53	Standard
Ca	43	123.3	16.9	**5.6653**	1.407	24.8	mg/L	28	Standard
Fe	54	7090.0	0.4	**4.9449**	0.156	3.2	mg/L	181	Standard
Fe	57	1908.5	4.2	**4.6381**	0.337	7.3	mg/L	257	Standard
Sc-1	45	52713.3	3.1				mg/L	55220	Standard
Cl	35	43291.8	1.4				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1943.5	0.8				ug/L	2040	Standard
P	31	22641.9	1.4				ug/L	20435	Standard
S	34	3180.3	0.4				ug/L	2430	Standard
Sr	88	60.0	33.3				ug/L	75	Standard
C	12	106.7	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.7	46.6				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	10243.5	6.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.157		
Al	27	107.822		
Sc	45			
Ti	47	100.664		
V	51	99.846		
Cr	52	100.821		
Cr	53			
Mn	55	98.521		
Co	59	99.210		
Ni	60	101.550		
Cu	65	101.463		
Zn	66	101.342		
Ge	72		96.852	
As	75	100.810		
Se	82	100.944		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 15:01:10
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	95.906		
Ag	107	97.904		
Cd	111	99.557		
Cd	114			
In	115		97.257	
Sn	118	100.783		
Sb	123	98.911		
Ba	135	98.167		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.440		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.227		
U	238	100.799		
Bi	209		96.703	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 15:01:10
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 15:02:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64908.8	2.4				ug/L	74916	Standard
	Be	9	33.3	70.9	**0.0325**	0.025	76.1	ug/L	10	Standard
	Al	27	5675.1	97.0	**0.0349**	0.035	101.2	ug/L	1822	Standard
	Sc	45	52479.1	1.7				ug/L	55220	Standard
	Ti	47	57.0	36.8	**0.0705**	0.052	73.1	ug/L	34	Standard
	V	51	1708.7	5.1	**-0.0083**	0.009	105.1	ug/L	1938	Standard
	Cr	52	8255.6	3.6	**-0.1041**	0.031	29.6	ug/L	9522	Standard
	Cr	53	1440.1	4.9	**0.9282**	0.060	6.5	ug/L	395	Standard
	Mn	55	1694.5	64.0	**0.0955**	0.128	134.1	ug/L	902	Standard
	Co	59	484.7	54.7	**0.0378**	0.033	87.5	ug/L	262	Standard
	Ni	60	327.0	14.6	**0.0030**	0.021	704.8	ug/L	371	Standard
	Cu	65	269.7	59.2	**0.0657**	0.073	111.8	ug/L	106	Standard
	Zn	66	495.3	20.2	**0.0417**	0.078	186.4	ug/L	398	Standard
>	Ge	72	525176.3	0.7				ug/L	535147	Standard
	As	75	14.9	238.4	**0.0664**	0.027	40.6	ug/L	-43	Standard
	Se	82	26.6	22.2	**0.1030**	0.043	42.0	ug/L	14	Standard
	Se-1	77	111.7	16.6	**0.6809**	0.202	29.7	ug/L	65	Standard
>	Ga	71	71.7	24.5				mg/L	97	Standard
	Rb	85	48.3	15.8				ug/L	15	Standard
	Y	89	456993.2	1.0				ug/L	465704	Standard
>	Rh	103	21.7	58.1				ug/L	10	Standard
	Mo	98	281.0	44.7	**0.1038**	0.041	39.5	ug/L	9	Standard
	Ag	107	192.3	43.4	**0.0198**	0.011	56.9	ug/L	82	Standard
	Cd	111	40.5	99.9	**0.0249**	0.017	68.3	mg/L	7	Standard
	Cd	114	98.3	87.3	**0.0261**	0.015	57.5	ug/L	21	Standard
>	In	115	609890.0	0.3				ug/L	619035	Standard
	Sn	118	1120.0	5.0	**0.0713**	0.008	11.7	ug/L	508	Standard
	Sb	123	687.4	14.9	**0.1361**	0.019	14.3	ug/L	86	Standard
	Ba	135	123.0	77.9	**0.0350**	0.043	121.7	ug/L	79	Standard
	Ce	140	38.3	32.8				ug/L	68	Standard
>	Tb	159	927551.9	2.0				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	179.3	52.1	**0.0260**	0.010	40.3	ug/L	13	Standard
	Tl	205	265.0	97.2	**0.0423**	0.034	79.6	ug/L	10	Standard
	Pb	206	399.3	16.9	**0.0316**	0.012	37.7	ug/L	264	Standard
	Pb	207	341.0	19.1	**0.0323**	0.013	39.3	ug/L	227	Standard
	Pb	208	1776.4	50.1	**0.0502**	0.045	88.7	ug/L	868	Standard
	U	238	255.0	121.7	**0.0423**	0.042	99.0	ug/L	8	Standard
>	Bi	209	531848.0	0.6				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 15:04:21
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	33.3	**0.0150**	0.016	104.4	mg/L	53	Standard
K	39	43.3	40.5	**0.0013**	0.031	2462.6	mg/L	53	Standard
Ca	43	21.7	81.0	**-0.3788**	1.065	281.3	mg/L	28	Standard
Fe	54	192.3	23.9	**0.0189**	0.031	166.4	mg/L	181	Standard
Fe	57	313.3	16.0	**0.2091**	0.125	59.8	mg/L	257	Standard
Sc-1	45	52479.1	1.7				mg/L	55220	Standard
Cl	35	43387.4	1.0				ug/L	35504	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	1960.1	2.6				ug/L	2040	Standard
P	31	23142.7	2.3				ug/L	20435	Standard
S	34	3065.3	5.7				ug/L	2430	Standard
Sr	88	78.3	20.5				ug/L	75	Standard
C	12	70.0	24.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	540.6	19.0				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	56.7	53.9				mg/L	23	Standard
I	127	9673.1	2.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.137	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 15:04:21
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.523
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.306
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 15:04:21
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 30, 2016 15:05:17
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64547.2	0.8				ug/L	74916	Standard
	Be	9	225.0	18.2	**0.2441**	0.046	19.0	ug/L	10	Standard
	Al	27	1113.4	11.1	**0.0051**	0.001	15.2	ug/L	1822	Standard
	Sc	45	51576.0	1.5				ug/L	55220	Standard
	Ti	47	25.3	14.9	**-0.0066**	0.009	139.6	ug/L	34	Standard
	V	51	4935.8	2.7	**0.3561**	0.015	4.2	ug/L	1938	Standard
	Cr	52	14861.3	0.5	**0.6731**	0.027	4.0	ug/L	9522	Standard
	Cr	53	2343.5	4.8	**1.7902**	0.113	6.3	ug/L	395	Standard
	Mn	55	4597.0	1.4	**0.4488**	0.007	1.5	ug/L	902	Standard
	Co	59	3194.0	4.3	**0.3837**	0.017	4.4	ug/L	262	Standard
	Ni	60	3611.4	1.8	**1.5243**	0.046	3.0	ug/L	371	Standard
	Cu	65	1778.8	1.1	**0.7768**	0.003	0.4	ug/L	106	Standard
	Zn	66	8315.3	1.6	**6.2844**	0.025	0.4	ug/L	398	Standard
>	Ge	72	516477.7	1.2				ug/L	535147	Standard
	As	75	460.5	11.9	**0.4113**	0.041	10.0	ug/L	-43	Standard
	Se	82	69.8	4.3	**0.4368**	0.024	5.5	ug/L	14	Standard
	Se-1	77	131.3	8.7	**0.9301**	0.143	15.4	ug/L	65	Standard
>	Ga	71	43.3	58.1				mg/L	97	Standard
	Rb	85	33.3	22.9				ug/L	15	Standard
	Y	89	450395.4	2.4				ug/L	465704	Standard
>	Rh	103	21.7	13.3				ug/L	10	Standard
	Mo	98	72.5	11.1	**0.0360**	0.002	6.1	ug/L	9	Standard
	Ag	107	2867.6	1.4	**0.3815**	0.008	2.2	ug/L	82	Standard
	Cd	111	535.5	0.4	**0.2343**	0.005	2.3	mg/L	7	Standard
	Cd	114	1336.0	8.1	**0.2432**	0.015	6.0	ug/L	21	Standard
>	In	115	606832.4	2.2				ug/L	619035	Standard
	Sn	118	650.0	14.7	**-0.0017**	0.013	760.6	ug/L	508	Standard
	Sb	123	2113.1	2.9	**0.4114**	0.005	1.3	ug/L	86	Standard
	Ba	135	1618.8	1.5	**0.7028**	0.007	1.0	ug/L	79	Standard
	Ce	140	13.3	94.4				ug/L	68	Standard
>	Tb	159	927835.7	0.6				ug/L	986982	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	710.0	3.9	**0.0853**	0.003	3.4	ug/L	13	Standard
	Tl	205	648.3	3.6	**0.0925**	0.003	3.6	ug/L	10	Standard
	Pb	206	1383.7	2.8	**0.2032**	0.006	2.9	ug/L	264	Standard
	Pb	207	1185.7	2.7	**0.1952**	0.005	2.7	ug/L	227	Standard
	Pb	208	4940.3	2.3	**0.2085**	0.005	2.3	ug/L	868	Standard
	U	238	2890.9	1.4	**0.3984**	0.007	1.8	ug/L	8	Standard
>	Bi	209	530205.9	0.5				ug/L	541014	Standard

Sample ID: QC Std 8
Report Date/Time: Thursday, June 30, 2016 15:07:34
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	44.1	**0.0005**	0.016	3421.5	mg/L	53	Standard
K	39	45.0	11.1	**0.0058**	0.010	165.5	mg/L	53	Standard
Ca	43	26.7	57.3	**-0.0502**	0.938	1867.4	mg/L	28	Standard
Fe	54	103.5	36.2	**-0.0433**	0.027	62.6	mg/L	181	Standard
Fe	57	285.0	9.3	**0.1447**	0.062	43.1	mg/L	257	Standard
Sc-1	45	51576.0	1.5				mg/L	55220	Standard
Cl	35	41973.4	2.1				ug/L	35504	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	1820.1	12.4				ug/L	2040	Standard
P	31	16265.4	2.1				ug/L	20435	Standard
S	34	2886.9	1.2				ug/L	2430	Standard
Sr	88	58.3	4.9				ug/L	75	Standard
C	12	63.3	9.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.2	103.5				mg/L	9	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	1938.5	24.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	122.033		
Al	27			
Sc	45			
Ti	47			
V	51	89.021		
Cr	52	84.133		
Cr	53			
Mn	55	89.765		
Co	59	95.918		
Ni	60	95.267		
Cu	65	97.095		
Zn	66	100.550		
Ge	72		96.511	
As	75	102.824		
Se	82	109.192		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
Report Date/Time: Thursday, June 30, 2016 15:07:34
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	95.385		
Cd	111	97.634		
Cd	114			
> In	115			98.029
Sn	118			
Sb	123	102.852		
Ba	135	93.700		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	106.681		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.258		
U	238	99.600		
> Bi	209			98.002
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Thursday, June 30, 2016 15:07:34
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: PBW A1 WG573728-03
Sample Date/Time: Thursday, June 30, 2016 15:14:48
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63953.1	2.1				ug/L	74916	Standard
	Be	9	18.3	56.8	**0.0169**	0.012	71.1	ug/L	10	Standard
	Al	27	6076.2	2.5	**0.0387**	0.001	3.8	ug/L	1822	Standard
	Sc	45	51092.7	3.3				ug/L	55220	Standard
	Ti	47	34.0	12.8	**0.0177**	0.013	71.0	ug/L	34	Standard
	V	51	1827.5	7.0	**0.0140**	0.018	130.2	ug/L	1938	Standard
	Cr	52	8456.0	0.5	**-0.0382**	0.019	49.8	ug/L	9522	Standard
	Cr	53	1518.4	1.3	**1.0626**	0.043	4.0	ug/L	395	Standard
	Mn	55	964.0	3.9	**0.0142**	0.005	32.9	ug/L	902	Standard
	Co	59	219.3	2.5	**0.0059**	0.001	14.0	ug/L	262	Standard
	Ni	60	319.7	1.5	**0.0062**	0.000	6.3	ug/L	371	Standard
	Cu	65	205.3	3.5	**0.0404**	0.005	12.4	ug/L	106	Standard
	Zn	66	994.0	3.0	**0.4683**	0.037	7.9	ug/L	398	Standard
>	**Ge**	72	502641.9	1.7				ug/L	535147	Standard
	As	75	-49.4	116.2	**0.0160**	0.046	287.1	ug/L	-43	Standard
	Se	82	19.2	30.7	**0.0534**	0.045	84.3	ug/L	14	Standard
	Se-1	77	89.0	25.4	**0.4682**	0.250	53.5	ug/L	65	Standard
>	**Ga**	71	48.3	15.8				mg/L	97	Standard
	Rb	85	38.3	45.8				ug/L	15	Standard
	Y	89	435665.6	1.4				ug/L	465704	Standard
>	**Rh**	103	18.3	56.8				ug/L	10	Standard
	Mo	98	138.2	11.7	**0.0588**	0.005	8.0	ug/L	9	Standard
	Ag	107	81.0	9.9	**0.0052**	0.001	17.5	ug/L	82	Standard
	Cd	111	3.1	49.7	**0.0092**	0.001	7.2	mg/L	7	Standard
	Cd	114	20.0	81.9	**0.0125**	0.003	23.8	ug/L	21	Standard
>	**In**	115	590439.5	1.9				ug/L	619035	Standard
	Sn	118	560.0	26.7	**-0.0135**	0.022	164.8	ug/L	508	Standard
	Sb	123	160.9	21.8	**0.0362**	0.006	17.9	ug/L	86	Standard
	Ba	135	36.3	1.6	**-0.0030**	0.001	18.2	ug/L	79	Standard
	Ce	140	40.0	54.5				ug/L	68	Standard
>	**Tb**	159	901092.5	1.7				ug/L	986982	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	21.7	14.8	**0.0084**	0.000	4.1	ug/L	13	Standard
	Tl	205	16.7	45.8	**0.0099**	0.001	10.0	ug/L	10	Standard
	Pb	206	270.3	3.4	**0.0096**	0.002	19.5	ug/L	264	Standard
	Pb	207	243.7	5.8	**0.0141**	0.003	19.2	ug/L	227	Standard
	Pb	208	961.0	2.2	**0.0100**	0.001	12.7	ug/L	868	Standard
	U	238	8.7	37.1	**0.0091**	0.000	4.9	ug/L	8	Standard
>	**Bi**	209	526478.0	0.7				ug/L	541014	Standard

Sample ID: PBW A1 WG573728-03
Report Date/Time: Thursday, June 30, 2016 15:17:05
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.2562**	17.756	173.1	mg/L	2	Standard
Mg	24	31.7	32.9	**0.0025**	0.011	445.9	mg/L	53	Standard
K	39	40.0		**-0.0026**	0.002	93.9	mg/L	53	Standard
Ca	43	16.7	17.3	**-0.6528**	0.190	29.1	mg/L	28	Standard
Fe	54	89.1	10.9	**-0.0529**	0.009	17.4	mg/L	181	Standard
Fe	57	250.0	2.0	**0.0530**	0.011	20.7	mg/L	257	Standard
Sc-1	45	51092.7	3.3				mg/L	55220	Standard
Cl	35	41081.0	0.6				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2020.1	6.0				ug/L	2040	Standard
P	31	12546.9	2.1				ug/L	20435	Standard
S	34	2720.2	2.7				ug/L	2430	Standard
Sr	88	58.3	34.6				ug/L	75	Standard
C	12	103.3	14.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	16.2	38.3				mg/L	9	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	26366.3	0.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.366	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.926	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW A1 WG573728-03
Report Date/Time: Thursday, June 30, 2016 15:17:05
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.381
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.313
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW A1 WG573728-03
Report Date/Time: Thursday, June 30, 2016 15:17:05
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: LCSW A1 WG573728-04
Sample Date/Time: Thursday, June 30, 2016 15:18:00
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67086.6	1.9				ug/L	74916	Standard
	Be	9	52004.2	3.6	**55.0288**	1.102	2.0	ug/L	10	Standard
	Al	27	19120.2	42.5	**0.1206**	0.052	42.9	ug/L	1822	Standard
	Sc	45	54313.9	2.0				ug/L	55220	Standard
	Ti	47	54.3	36.2	**0.0615**	0.047	76.8	ug/L	34	Standard
	V	51	458407.9	1.0	**49.3763**	0.378	0.8	ug/L	1938	Standard
	Cr	52	472124.0	3.2	**51.5201**	1.504	2.9	ug/L	9522	Standard
	Cr	53	58969.6	3.5	**52.5404**	1.552	3.0	ug/L	395	Standard
	Mn	55	441488.7	1.2	**51.2972**	0.389	0.8	ug/L	902	Standard
	Co	59	406379.7	1.4	**49.9477**	0.441	0.9	ug/L	262	Standard
	Ni	60	114871.8	0.8	**51.1656**	0.153	0.3	ug/L	371	Standard
	Cu	65	114058.0	0.4	**51.7070**	0.416	0.8	ug/L	106	Standard
	Zn	66	67996.2	0.9	**52.0496**	0.635	1.2	ug/L	398	Standard
>	**Ge**	72	534529.3	0.6				ug/L	535147	Standard
	As	75	67804.4	0.8	**50.7332**	0.210	0.4	ug/L	-43	Standard
	Se	82	6788.7	1.1	**50.0521**	0.627	1.3	ug/L	14	Standard
	Se-1	77	4642.0	1.2	**51.0109**	0.869	1.7	ug/L	65	Standard
>	**Ga**	71	63.3	18.2				mg/L	97	Standard
	Rb	85	53.3	10.8				ug/L	15	Standard
	Y	89	465214.1	0.4				ug/L	465704	Standard
>	**Rh**	103	33.3	37.7				ug/L	10	Standard
	Mo	98	49.8	4.8	**0.0281**	0.001	2.5	ug/L	9	Standard
	Ag	107	380273.7	0.6	**49.6011**	0.481	1.0	ug/L	82	Standard
	Cd	111	120281.8	0.6	**49.0834**	0.359	0.7	mg/L	7	Standard
	Cd	114	291528.7	1.2	**49.4009**	0.657	1.3	ug/L	21	Standard
>	**In**	115	628631.6	0.4				ug/L	619035	Standard
	Sn	118	995.0	12.2	**0.0471**	0.018	38.6	ug/L	508	Standard
	Sb	123	267507.3	0.0	**49.7461**	0.194	0.4	ug/L	86	Standard
	Ba	135	112861.8	0.6	**48.5948**	0.377	0.8	ug/L	79	Standard
	Ce	140	156.7	16.1				ug/L	68	Standard
>	**Tb**	159	955141.2	1.4				ug/L	986982	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	458925.6	0.3	**50.0906**	0.546	1.1	ug/L	13	Standard
	Tl	205	395986.2	0.4	**50.5921**	0.578	1.1	ug/L	10	Standard
	Pb	206	296512.1	1.1	**50.3892**	0.789	1.6	ug/L	264	Standard
	Pb	207	258480.9	0.5	**48.6004**	0.300	0.6	ug/L	227	Standard
	Pb	208	1067449.1	0.0	**52.0525**	0.416	0.8	ug/L	868	Standard
	U	238	376134.4	0.8	**49.6201**	0.107	0.2	ug/L	8	Standard
>	**Bi**	209	542955.6	0.8				ug/L	541014	Standard

Sample ID: LCSW A1 WG573728-04
Report Date/Time: Thursday, June 30, 2016 15:20:17
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	48.7	**0.0301**	0.031	103.9	mg/L	53	Standard
K	39	45.0	29.4	**0.0015**	0.022	1442.6	mg/L	53	Standard
Ca	43	13.3	57.3	**-0.9037**	0.451	49.9	mg/L	28	Standard
Fe	54	183.7	5.0	**0.0086**	0.009	100.9	mg/L	181	Standard
Fe	57	281.7	19.8	**0.0947**	0.141	148.5	mg/L	257	Standard
Sc-1	45	54313.9	2.0				mg/L	55220	Standard
Cl	35	43485.7	1.5				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	13933.1	10.0				ug/L	2040	Standard
P	31	22263.0	3.5				ug/L	20435	Standard
S	34	2703.6	1.7				ug/L	2430	Standard
Sr	88	86.7	13.3				ug/L	75	Standard
C	12	143.3	10.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.5	48.3				mg/L	9	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	1948.5	33.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		89.549	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.885	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: LCSW A1 WG573728-04
Report Date/Time: Thursday, June 30, 2016 15:20:17
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.550
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.359
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW A1 WG573728-04
Report Date/Time: Thursday, June 30, 2016 15:20:17
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099601 WG573728-01
Sample Date/Time: Thursday, June 30, 2016 15:21:11
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68291.9	1.3				ug/L	74916	Standard
	Be	9	28.3	66.8	**0.0257**	0.019	74.7	ug/L	10	Standard
	Al	27	18880570.9	2.2	**119.3426**	1.083	0.9	ug/L	1822	Standard
	Sc	45	56550.3	0.6				ug/L	55220	Standard
	Ti	47	199.7	6.4	**0.4065**	0.032	7.9	ug/L	34	Standard
	V	51	3186.4	2.3	**0.1428**	0.006	4.0	ug/L	1938	Standard
	Cr	52	15293.0	2.0	**0.6365**	0.040	6.3	ug/L	9522	Standard
	Cr	53	2076.8	2.7	**1.4480**	0.064	4.4	ug/L	395	Standard
	Mn	55	7278.7	1.9	**0.7290**	0.013	1.8	ug/L	902	Standard
	Co	59	936.0	3.1	**0.0905**	0.004	4.9	ug/L	262	Standard
	Ni	60	2428.9	2.8	**0.9224**	0.033	3.5	ug/L	371	Standard
	Cu	65	491.3	2.0	**0.1607**	0.003	2.0	ug/L	106	Standard
	Zn	66	1815.4	2.9	**1.0305**	0.051	4.9	ug/L	398	Standard
>	**Ge**	72	543038.8	0.8				ug/L	535147	Standard
	As	75	1683.9	5.9	**1.2940**	0.069	5.3	ug/L	-43	Standard
	Se	82	733.4	4.8	**5.2358**	0.250	4.8	ug/L	14	Standard
	Se-1	77	105.7	3.0	**0.5744**	0.026	4.5	ug/L	65	Standard
>	**Ga**	71	63.3	16.4				mg/L	97	Standard
	Rb	85	1220.0	3.5				ug/L	15	Standard
	Y	89	463241.7	0.6				ug/L	465704	Standard
>	**Rh**	103	35.0	14.3				ug/L	10	Standard
	Mo	98	59.8	4.4	**0.0313**	0.001	3.0	ug/L	9	Standard
	Ag	107	163.3	11.0	**0.0153**	0.002	14.7	ug/L	82	Standard
	Cd	111	50.6	15.0	**0.0286**	0.003	10.8	mg/L	7	Standard
	Cd	114	105.0	22.2	**0.0267**	0.004	14.6	ug/L	21	Standard
>	**In**	115	627040.8	1.0				ug/L	619035	Standard
	Sn	118	806.7	5.9	**0.0190**	0.008	42.7	ug/L	508	Standard
	Sb	123	257.7	17.6	**0.0525**	0.009	16.9	ug/L	86	Standard
	Ba	135	7603.2	0.4	**3.2639**	0.042	1.3	ug/L	79	Standard
	Ce	140	580.0	1.7				ug/L	68	Standard
>	**Tb**	159	960608.0	1.5				ug/L	986982	Standard
	Ho	165	45.0	0.0				ug/L	10	Standard
	Tl	203	590.7	38.6	**0.0712**	0.025	35.2	ug/L	13	Standard
	Tl	205	546.7	36.1	**0.0783**	0.025	32.4	ug/L	10	Standard
	Pb	206	366.0	2.4	**0.0252**	0.002	6.1	ug/L	264	Standard
	Pb	207	330.3	12.5	**0.0297**	0.008	26.7	ug/L	227	Standard
	Pb	208	1408.4	7.6	**0.0312**	0.005	17.2	ug/L	868	Standard
	U	238	478.7	3.5	**0.0718**	0.002	3.0	ug/L	8	Standard
>	**Bi**	209	536561.7	0.1				ug/L	541014	Standard

Sample ID: L1606099601 WG573728-01
Report Date/Time: Thursday, June 30, 2016 15:23:28
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1728.4	2.5	**1.8049**	0.054	3.0	mg/L	53	Standard
K	39	103.3	7.4	**0.0953**	0.014	14.4	mg/L	53	Standard
Ca	43	473.3	5.2	**24.5092**	1.516	6.2	mg/L	28	Standard
Fe	54	206.7	15.5	**0.0188**	0.022	114.8	mg/L	181	Standard
Fe	57	471.7	6.2	**0.5573**	0.080	14.4	mg/L	257	Standard
> **Sc-1**	45	56550.3	0.6				mg/L	55220	Standard
Cl	35	49410.4	1.6				ug/L	35504	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	141239.5	4.6				ug/L	2040	Standard
P	31	24261.1	3.2				ug/L	20435	Standard
S	34	2875.3	3.8				ug/L	2430	Standard
Sr	88	131.7	18.7				ug/L	75	Standard
C	12	210.0	20.8				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	57.8	28.3				mg/L	9	Standard
Ho-1	165	45.0	0.0				mg/L	10	Standard
Er	166	46.7	53.9				mg/L	23	Standard
I	127	5429.3	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.157	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.475	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606099601 WG573728-01
Report Date/Time: Thursday, June 30, 2016 15:23:28
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.293	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.177	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606099601 WG573728-01
Report Date/Time: Thursday, June 30, 2016 15:23:28
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099602S WG573728-05
Sample Date/Time: Thursday, June 30, 2016 15:24:23
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69534.2	1.4				ug/L	74916	Standard
	Be	9	52693.2	3.1	**53.7987**	1.123	2.1	ug/L	10	Standard
	Al	27	18046739.9	1.3	**112.0655**	2.753	2.5	ug/L	1822	Standard
	Sc	45	55386.1	1.5				ug/L	55220	Standard
	Ti	47	175.3	7.1	**0.3486**	0.028	8.2	ug/L	34	Standard
	V	51	467682.0	0.4	**49.6221**	0.237	0.5	ug/L	1938	Standard
	Cr	52	466630.2	1.1	**50.1322**	0.425	0.8	ug/L	9522	Standard
	Cr	53	58007.5	2.3	**50.9027**	1.216	2.4	ug/L	395	Standard
	Mn	55	440702.3	1.3	**50.4380**	0.631	1.3	ug/L	902	Standard
	Co	59	400447.4	1.3	**48.4823**	0.666	1.4	ug/L	262	Standard
	Ni	60	114183.3	0.8	**50.0946**	0.387	0.8	ug/L	371	Standard
	Cu	65	109435.5	0.9	**48.8635**	0.353	0.7	ug/L	106	Standard
	Zn	66	67439.4	0.5	**50.8415**	0.459	0.9	ug/L	398	Standard
>	**Ge**	72	542657.5	0.4				ug/L	535147	Standard
	As	75	68318.6	1.2	**50.3522**	0.481	1.0	ug/L	-43	Standard
	Se	82	6810.7	0.7	**49.4600**	0.454	0.9	ug/L	14	Standard
	Se-1	77	4705.1	1.1	**50.9251**	0.579	1.1	ug/L	65	Standard
>	**Ga**	71	60.0	28.9				mg/L	97	Standard
	Rb	85	1110.0	1.8				ug/L	15	Standard
	Y	89	469941.9	0.8				ug/L	465704	Standard
>	**Rh**	103	56.7	39.8				ug/L	10	Standard
	Mo	98	72.7	12.4	**0.0352**	0.003	8.3	ug/L	9	Standard
	Ag	107	368953.1	1.0	**47.8031**	0.661	1.4	ug/L	82	Standard
	Cd	111	120061.4	1.0	**48.6669**	0.625	1.3	mg/L	7	Standard
	Cd	114	288235.3	0.9	**48.5174**	0.631	1.3	ug/L	21	Standard
>	**In**	115	632863.0	0.4				ug/L	619035	Standard
	Sn	118	848.4	8.8	**0.0241**	0.011	45.0	ug/L	508	Standard
	Sb	123	260105.2	1.3	**48.0476**	0.775	1.6	ug/L	86	Standard
	Ba	135	119215.2	0.6	**50.9874**	0.185	0.4	ug/L	79	Standard
	Ce	140	488.3	8.7				ug/L	68	Standard
>	**Tb**	159	969085.8	0.9				ug/L	986982	Standard
	Ho	165	61.7	28.5				ug/L	10	Standard
	Tl	203	454990.6	1.0	**49.7114**	0.424	0.9	ug/L	13	Standard
	Tl	205	400819.2	0.5	**51.2626**	0.436	0.9	ug/L	10	Standard
	Pb	206	289476.2	0.7	**49.2439**	0.528	1.1	ug/L	264	Standard
	Pb	207	253387.6	0.7	**47.6936**	0.544	1.1	ug/L	227	Standard
	Pb	208	1047648.0	0.8	**51.1394**	0.430	0.8	ug/L	868	Standard
	U	238	375994.5	0.5	**49.6560**	0.421	0.8	ug/L	8	Standard
>	**Bi**	209	542372.6	0.4				ug/L	541014	Standard

Sample ID: L1606099602S WG573728-05
Report Date/Time: Thursday, June 30, 2016 15:26:40
Page 1

Approved: July 01, 2016

Na	23	3.3	173.2	**18.8346**	32.614	173.2	mg/L	2	Standard
Mg	24	1690.1	1.5	**1.8023**	0.055	3.0	mg/L	53	Standard
K	39	70.0	31.1	**0.0421**	0.035	82.8	mg/L	53	Standard
Ca	43	493.3	5.8	**26.1715**	1.201	4.6	mg/L	28	Standard
Fe	54	219.2	11.1	**0.0301**	0.016	52.7	mg/L	181	Standard
Fe	57	555.0	8.6	**0.8025**	0.120	15.0	mg/L	257	Standard
> **Sc-1**	45	55386.1	1.5				mg/L	55220	Standard
Cl	35	50690.7	0.6				ug/L	35504	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	10120.1	13.0				ug/L	2040	Standard
P	31	24778.6	2.5				ug/L	20435	Standard
S	34	3147.0	5.5				ug/L	2430	Standard
Sr	88	123.3	6.2				ug/L	75	Standard
C	12	190.0	9.1				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	54.8	71.8				mg/L	9	Standard
Ho-1	165	61.7	28.5				mg/L	10	Standard
Er	166	40.0	66.1				mg/L	23	Standard
I	127	6076.2	4.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.816	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.403	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606099602S WG573728-05
Report Date/Time: Thursday, June 30, 2016 15:26:40
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.234
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606099602S WG573728-05
Report Date/Time: Thursday, June 30, 2016 15:26:40
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099603SD WG573728-05
Sample Date/Time: Thursday, June 30, 2016 15:27:34
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69961.2	1.4				ug/L	74916	Standard
	Be	9	53945.9	1.9	**54.7452**	0.405	0.7	ug/L	10	Standard
	Al	27	18653584.9	0.9	**115.1220**	2.287	2.0	ug/L	1822	Standard
	Sc	45	56466.7	1.1				ug/L	55220	Standard
	Ti	47	199.0	12.0	**0.4023**	0.058	14.3	ug/L	34	Standard
	V	51	472536.7	1.2	**49.8306**	0.700	1.4	ug/L	1938	Standard
	Cr	52	478928.8	1.2	**51.1603**	0.702	1.4	ug/L	9522	Standard
	Cr	53	59648.9	1.2	**52.0306**	0.727	1.4	ug/L	395	Standard
	Mn	55	449264.4	1.6	**51.1046**	0.889	1.7	ug/L	902	Standard
	Co	59	408055.5	1.0	**49.1007**	0.567	1.2	ug/L	262	Standard
	Ni	60	115830.7	0.7	**50.5068**	0.402	0.8	ug/L	371	Standard
	Cu	65	112174.4	0.3	**49.7804**	0.170	0.3	ug/L	106	Standard
	Zn	66	68689.4	0.3	**51.4692**	0.201	0.4	ug/L	398	Standard
>	Ge	72	546008.7	0.2				ug/L	535147	Standard
	As	75	69065.1	0.3	**50.5905**	0.233	0.5	ug/L	-43	Standard
	Se	82	6889.2	0.9	**49.7234**	0.503	1.0	ug/L	14	Standard
	Se-1	77	4739.7	3.6	**50.9864**	1.857	3.6	ug/L	65	Standard
>	Ga	71	73.3	21.9				mg/L	97	Standard
	Rb	85	1075.0	5.7				ug/L	15	Standard
	Y	89	470734.4	2.1				ug/L	465704	Standard
>	Rh	103	43.3	6.7				ug/L	10	Standard
	Mo	98	111.0	13.4	**0.0473**	0.005	10.4	ug/L	9	Standard
	Ag	107	376890.2	1.0	**48.9233**	0.298	0.6	ug/L	82	Standard
	Cd	111	122069.6	1.2	**49.5773**	0.825	1.7	mg/L	7	Standard
	Cd	114	293598.8	0.4	**49.5146**	0.392	0.8	ug/L	21	Standard
>	In	115	631650.0	0.6				ug/L	619035	Standard
	Sn	118	958.4	7.0	**0.0409**	0.010	23.4	ug/L	508	Standard
	Sb	123	259515.9	2.0	**48.0341**	1.271	2.6	ug/L	86	Standard
	Ba	135	121213.3	0.4	**51.9434**	0.429	0.8	ug/L	79	Standard
	Ce	140	640.0	4.3				ug/L	68	Standard
>	Tb	159	965792.9	0.7				ug/L	986982	Standard
	Ho	165	28.3	27.0				ug/L	10	Standard
	Tl	203	464038.3	0.6	**50.7914**	0.508	1.0	ug/L	13	Standard
	Tl	205	403235.4	0.5	**51.6643**	0.627	1.2	ug/L	10	Standard
	Pb	206	296855.0	1.0	**50.5921**	0.885	1.7	ug/L	264	Standard
	Pb	207	258402.6	0.8	**48.7261**	0.763	1.6	ug/L	227	Standard
	Pb	208	1060861.7	0.8	**51.8784**	0.664	1.3	ug/L	868	Standard
	U	238	381780.9	1.2	**50.5117**	0.896	1.8	ug/L	8	Standard
>	Bi	209	541419.0	0.8				ug/L	541014	Standard

Sample ID: L1606099603SD WG573728-05
Report Date/Time: Thursday, June 30, 2016 15:29:51
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.2826**	16.069	173.1	mg/L	2	Standard
Mg	24	1868.4	2.5	**1.9568**	0.048	2.5	mg/L	53	Standard
K	39	120.0	8.3	**0.1233**	0.018	14.8	mg/L	53	Standard
Ca	43	530.0	15.8	**27.6998**	4.765	17.2	mg/L	28	Standard
Fe	54	159.3	27.4	**-0.0125**	0.029	231.7	mg/L	181	Standard
Fe	57	513.3	2.2	**0.6671**	0.042	6.3	mg/L	257	Standard
> **Sc-1**	45	56466.7	1.1				mg/L	55220	Standard
Cl	35	51310.1	1.2				ug/L	35504	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	3180.3	3.0				ug/L	2040	Standard
P	31	26316.3	7.9				ug/L	20435	Standard
S	34	3025.3	7.4				ug/L	2430	Standard
Sr	88	130.0	20.4				ug/L	75	Standard
C	12	173.3	23.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	47.1	21.7				mg/L	9	Standard
Ho-1	165	28.3	27.0				mg/L	10	Standard
Er	166	60.0	16.7				mg/L	23	Standard
I	127	6022.9	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.386	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.030	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606099603SD WG573728-05
Report Date/Time: Thursday, June 30, 2016 15:29:51
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.038
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.075
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606099603SD WG573728-05
Report Date/Time: Thursday, June 30, 2016 15:29:51
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606114801
Sample Date/Time: Thursday, June 30, 2016 15:30:46
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69385.3	2.8				ug/L	74916	Standard
	Be	9	68.3	25.7	**0.0663**	0.017	26.3	ug/L	10	Standard
	Al	27	13382964.5	1.3	**83.3247**	3.301	4.0	ug/L	1822	Standard
	Sc	45	56610.6	1.5				ug/L	55220	Standard
	Ti	47	3988.2	1.6	**9.5598**	0.160	1.7	ug/L	34	Standard
	V	51	27071.1	1.9	**2.7187**	0.051	1.9	ug/L	1938	Standard
	Cr	52	21116.0	3.1	**1.3011**	0.053	4.1	ug/L	9522	Standard
	Cr	53	5205.9	4.1	**4.2645**	0.131	3.1	ug/L	395	Standard
	Mn	55	137023.2	1.4	**15.7833**	0.378	2.4	ug/L	902	Standard
	Co	59	2697.2	4.0	**0.3074**	0.009	2.8	ug/L	262	Standard
	Ni	60	3470.4	4.0	**1.3976**	0.040	2.9	ug/L	371	Standard
	Cu	65	2221.8	3.0	**0.9456**	0.043	4.5	ug/L	106	Standard
	Zn	66	5981.5	2.6	**4.2437**	0.160	3.8	ug/L	398	Standard
>	**Ge**	72	536829.4	1.4				ug/L	535147	Standard
	As	75	2382.3	2.0	**1.8286**	0.053	2.9	ug/L	-43	Standard
	Se	82	261.3	5.1	**1.8253**	0.111	6.1	ug/L	14	Standard
	Se-1	77	229.7	8.8	**1.9613**	0.241	12.3	ug/L	65	Standard
>	**Ga**	71	1473.4	14.4				mg/L	97	Standard
	Rb	85	48947.3	0.9				ug/L	15	Standard
	Y	89	472065.0	1.1				ug/L	465704	Standard
>	**Rh**	103	75.0	35.3				ug/L	10	Standard
	Mo	98	2018.4	1.7	**0.6566**	0.014	2.1	ug/L	9	Standard
	Ag	107	198.3	9.6	**0.0201**	0.003	13.2	ug/L	82	Standard
	Cd	111	74.8	29.3	**0.0387**	0.009	23.4	mg/L	7	Standard
	Cd	114	198.7	19.5	**0.0430**	0.007	15.6	ug/L	21	Standard
>	**In**	115	621679.0	1.3				ug/L	619035	Standard
	Sn	118	916.7	7.9	**0.0369**	0.011	31.0	ug/L	508	Standard
	Sb	123	4696.0	17.7	**0.8869**	0.151	17.1	ug/L	86	Standard
	Ba	135	102992.2	0.2	**44.8453**	0.700	1.6	ug/L	79	Standard
	Ce	140	26710.2	2.2				ug/L	68	Standard
>	**Tb**	159	959294.1	0.8				ug/L	986982	Standard
	Ho	165	378.3	19.8				ug/L	10	Standard
	Tl	203	275.7	1.5	**0.0368**	0.001	1.6	ug/L	13	Standard
	Tl	205	273.3	4.2	**0.0434**	0.001	3.2	ug/L	10	Standard
	Pb	206	2842.9	1.5	**0.4571**	0.006	1.3	ug/L	264	Standard
	Pb	207	2333.5	1.2	**0.4162**	0.007	1.6	ug/L	227	Standard
	Pb	208	9849.9	1.7	**0.4537**	0.010	2.2	ug/L	868	Standard
	U	238	5425.6	1.4	**0.7405**	0.013	1.7	ug/L	8	Standard
>	**Bi**	209	530404.9	0.4				ug/L	541014	Standard

Sample ID: L1606114801
Report Date/Time: Thursday, June 30, 2016 15:33:03
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	32277.7	1.4	**34.2819**	0.620	1.8	mg/L	53	Standard
K	39	1353.4	4.1	**2.1637**	0.058	2.7	mg/L	53	Standard
Ca	43	298.3	4.8	**14.8059**	0.718	4.9	mg/L	28	Standard
Fe	54	711.7	5.2	**0.3546**	0.032	9.0	mg/L	181	Standard
Fe	57	595.0	21.3	**0.8781**	0.354	40.3	mg/L	257	Standard
> **Sc-1**	45	56610.6	1.5				mg/L	55220	Standard
Cl	35	47826.7	3.1				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	45294.3	2.0				ug/L	2040	Standard
P	31	25608.3	2.2				ug/L	20435	Standard
S	34	2995.3	1.7				ug/L	2430	Standard
Sr	88	291.7	4.9				ug/L	75	Standard
C	12	240.0	37.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	508.2	11.9				mg/L	9	Standard
Ho-1	165	378.3	19.8				mg/L	10	Standard
Er	166	316.7	9.6				mg/L	23	Standard
I	127	242809.3	7.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.617	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.314	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606114801
Report Date/Time: Thursday, June 30, 2016 15:33:03
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.427
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.039
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606114802
Sample Date/Time: Thursday, June 30, 2016 15:33:57
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73343.8	2.3				ug/L	74916	Standard
	Be	9	36.7	20.8	**0.0318**	0.007	20.7	ug/L	10	Standard
	Al	27	39865885.0	1.0	**234.7683**	7.638	3.3	ug/L	1822	Standard
	Sc	45	56650.7	0.3				ug/L	55220	Standard
	Ti	47	366.7	8.2	**0.8136**	0.076	9.3	ug/L	34	Standard
	V	51	42007.3	1.9	**4.3184**	0.122	2.8	ug/L	1938	Standard
	Cr	52	29051.8	1.5	**2.1749**	0.071	3.3	ug/L	9522	Standard
	Cr	53	8153.9	4.5	**6.8871**	0.365	5.3	ug/L	395	Standard
	Mn	55	29371.4	1.1	**3.2931**	0.013	0.4	ug/L	902	Standard
	Co	59	2064.1	1.7	**0.2294**	0.002	1.0	ug/L	262	Standard
	Ni	60	4963.1	3.4	**2.0578**	0.090	4.4	ug/L	371	Standard
	Cu	65	2302.8	3.2	**0.9800**	0.040	4.1	ug/L	106	Standard
	Zn	66	8387.7	1.3	**6.0765**	0.138	2.3	ug/L	398	Standard
>	**Ge**	72	537915.2	0.8				ug/L	535147	Standard
	As	75	1882.3	2.7	**1.4535**	0.047	3.3	ug/L	-43	Standard
	Se	82	460.8	5.7	**3.2863**	0.218	6.6	ug/L	14	Standard
	Se-1	77	487.0	5.2	**4.7975**	0.290	6.0	ug/L	65	Standard
>	**Ga**	71	151.7	8.3				mg/L	97	Standard
	Rb	85	15017.4	0.7				ug/L	15	Standard
	Y	89	469088.3	1.3				ug/L	465704	Standard
>	**Rh**	103	120.0	26.0				ug/L	10	Standard
	Mo	98	1940.6	1.7	**0.6336**	0.005	0.8	ug/L	9	Standard
	Ag	107	135.7	14.7	**0.0119**	0.002	20.9	ug/L	82	Standard
	Cd	111	83.6	10.2	**0.0425**	0.004	9.3	mg/L	7	Standard
	Cd	114	232.4	5.3	**0.0488**	0.002	3.2	ug/L	21	Standard
>	**In**	115	619836.2	2.0				ug/L	619035	Standard
	Sn	118	905.0	8.9	**0.0357**	0.015	42.4	ug/L	508	Standard
	Sb	123	1696.7	16.9	**0.3252**	0.060	18.5	ug/L	86	Standard
	Ba	135	155475.6	0.5	**67.9173**	1.375	2.0	ug/L	79	Standard
	Ce	140	1150.0	5.9				ug/L	68	Standard
>	**Tb**	159	966263.7	2.7				ug/L	986982	Standard
	Ho	165	68.3	25.7				ug/L	10	Standard
	Tl	203	177.0	9.9	**0.0261**	0.002	8.3	ug/L	13	Standard
	Tl	205	150.0	6.7	**0.0276**	0.001	4.5	ug/L	10	Standard
	Pb	206	690.3	2.9	**0.0841**	0.003	3.7	ug/L	264	Standard
	Pb	207	561.0	6.9	**0.0764**	0.008	10.1	ug/L	227	Standard
	Pb	208	2261.4	3.2	**0.0763**	0.003	4.4	ug/L	868	Standard
	U	238	14407.5	0.3	**1.9818**	0.012	0.6	ug/L	8	Standard
>	**Bi**	209	522746.9	0.9				ug/L	541014	Standard

Sample ID: L1606114802
Report Date/Time: Thursday, June 30, 2016 15:36:14
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53151.4	1.8	**56.4275**	1.028	1.8	mg/L	53	Standard
K	39	618.3	5.4	**0.9467**	0.052	5.5	mg/L	53	Standard
Ca	43	466.7	9.1	**24.0926**	2.415	10.0	mg/L	28	Standard
Fe	54	229.1	9.2	**0.0334**	0.014	40.5	mg/L	181	Standard
Fe	57	538.3	7.2	**0.7273**	0.104	14.4	mg/L	257	Standard
> **Sc-1**	45	56650.7	0.3				mg/L	55220	Standard
Cl	35	52351.0	1.2				ug/L	35504	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	65016.0	4.2				ug/L	2040	Standard
P	31	25988.9	2.7				ug/L	20435	Standard
S	34	2898.6	3.2				ug/L	2430	Standard
Sr	88	400.0	15.2				ug/L	75	Standard
C	12	300.0	8.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	65.5	28.8				mg/L	9	Standard
Ho-1	165	68.3	25.7				mg/L	10	Standard
Er	166	93.3	34.4				mg/L	23	Standard
I	127	177926.1	3.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.901	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.517	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606114802
Report Date/Time: Thursday, June 30, 2016 15:36:14
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.129	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.624	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606114802PS WG574806-01
Sample Date/Time: Thursday, June 30, 2016 15:37:09
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73739.0	1.9				ug/L	74916	Standard
	Be	9	54417.6	3.5	**52.3946**	1.365	2.6	ug/L	10	Standard
	Al	27	39247361.2	1.1	**229.7986**	2.118	0.9	ug/L	1822	Standard
	Sc	45	56950.2	2.8				ug/L	55220	Standard
	Ti	47	367.7	2.9	**0.8081**	0.024	3.0	ug/L	34	Standard
	V	51	505314.0	0.9	**53.6430**	1.115	2.1	ug/L	1938	Standard
	Cr	52	480659.8	0.9	**51.6795**	0.671	1.3	ug/L	9522	Standard
	Cr	53	64282.8	1.2	**56.4552**	0.246	0.4	ug/L	395	Standard
	Mn	55	460538.3	1.7	**52.7210**	1.043	2.0	ug/L	902	Standard
	Co	59	400762.5	0.8	**48.5257**	0.353	0.7	ug/L	262	Standard
	Ni	60	117749.1	0.6	**51.6704**	0.485	0.9	ug/L	371	Standard
	Cu	65	109931.1	1.2	**49.0902**	0.462	0.9	ug/L	106	Standard
	Zn	66	91227.5	0.7	**68.9095**	1.187	1.7	ug/L	398	Standard
>	Ge	72	542618.3	1.2				ug/L	535147	Standard
	As	75	69426.1	0.8	**51.1768**	0.749	1.5	ug/L	-43	Standard
	Se	82	7178.4	1.6	**52.1429**	0.991	1.9	ug/L	14	Standard
	Se-1	77	4969.5	0.6	**53.8312**	0.990	1.8	ug/L	65	Standard
>	Ga	71	151.7	18.2				mg/L	97	Standard
	Rb	85	15104.2	2.1				ug/L	15	Standard
	Y	89	473952.1	1.9				ug/L	465704	Standard
>	Rh	103	126.7	21.7				ug/L	10	Standard
	Mo	98	1955.0	1.7	**0.6317**	0.011	1.7	ug/L	9	Standard
	Ag	107	341042.7	1.4	**44.6484**	0.717	1.6	ug/L	82	Standard
	Cd	111	119331.3	1.6	**48.8732**	0.434	0.9	mg/L	7	Standard
	Cd	114	283552.8	3.0	**48.2253**	1.320	2.7	ug/L	21	Standard
>	In	115	626330.3	1.1				ug/L	619035	Standard
	Sn	118	1168.4	4.4	**0.0741**	0.009	12.8	ug/L	508	Standard
	Sb	123	255007.1	2.2	**47.6011**	1.260	2.6	ug/L	86	Standard
	Ba	135	266477.6	0.5	**115.1938**	1.488	1.3	ug/L	79	Standard
	Ce	140	2081.8	32.8				ug/L	68	Standard
>	Tb	159	960668.0	1.0				ug/L	986982	Standard
	Ho	165	70.0	18.9				ug/L	10	Standard
	Tl	203	450205.8	0.4	**50.2373**	0.703	1.4	ug/L	13	Standard
	Tl	205	391691.8	0.7	**51.1622**	0.808	1.6	ug/L	10	Standard
	Pb	206	290403.7	0.7	**50.4549**	0.842	1.7	ug/L	264	Standard
	Pb	207	253726.6	1.1	**48.7769**	1.023	2.1	ug/L	227	Standard
	Pb	208	1033949.6	0.4	**51.5458**	0.656	1.3	ug/L	868	Standard
	U	238	392544.5	1.2	**52.9480**	1.174	2.2	ug/L	8	Standard
>	Bi	209	531104.0	1.0				ug/L	541014	Standard

Sample ID: L1606114802PS WG574806-01
Report Date/Time: Thursday, June 30, 2016 15:39:26
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**18.0264**	15.619	86.6	mg/L	2	Standard
Mg	24	51765.0	1.9	**54.7079**	2.408	4.4	mg/L	53	Standard
K	39	630.0	7.6	**0.9625**	0.105	10.9	mg/L	53	Standard
Ca	43	441.7	10.5	**22.6115**	2.886	12.8	mg/L	28	Standard
Fe	54	202.4	2.0	**0.0151**	0.006	41.5	mg/L	181	Standard
Fe	57	538.3	5.7	**0.7218**	0.114	15.8	mg/L	257	Standard
> **Sc-1**	45	56950.2	2.8				mg/L	55220	Standard
Cl	35	53220.7	1.5				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	65718.9	1.0				ug/L	2040	Standard
P	31	25209.3	1.7				ug/L	20435	Standard
S	34	3057.0	2.8				ug/L	2430	Standard
Sr	88	331.7	9.7				ug/L	75	Standard
C	12	233.3	19.8				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	85.8	42.2				mg/L	9	Standard
Ho-1	165	70.0	18.9				mg/L	10	Standard
Er	166	86.7	13.3				mg/L	23	Standard
I	127	181175.5	2.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.396	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606114802PS WG574806-01
Report Date/Time: Thursday, June 30, 2016 15:39:26
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.179	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.168	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606114802PS WG574806-01
Report Date/Time: Thursday, June 30, 2016 15:39:26
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606114802SDL WG574806-02
Sample Date/Time: Thursday, June 30, 2016 15:40:20
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67563.7	2.3				ug/L	74916	Standard
	Be	9	18.3	41.7	**0.0157**	0.008	51.7	ug/L	10	Standard
	Al	27	7469662.9	0.3	**47.7405**	0.938	2.0	ug/L	1822	Standard
	Sc	45	52594.5	1.3				ug/L	55220	Standard
	Ti	47	86.0	9.2	**0.1438**	0.020	13.6	ug/L	34	Standard
	V	51	10002.6	2.6	**0.9133**	0.036	3.9	ug/L	1938	Standard
	Cr	52	13316.9	1.4	**0.4814**	0.031	6.5	ug/L	9522	Standard
	Cr	53	2925.3	1.6	**2.3063**	0.058	2.5	ug/L	395	Standard
	Mn	55	6250.6	3.1	**0.6413**	0.019	3.0	ug/L	902	Standard
	Co	59	635.7	4.6	**0.0574**	0.004	6.9	ug/L	262	Standard
	Ni	60	1430.4	0.6	**0.5098**	0.008	1.5	ug/L	371	Standard
	Cu	65	733.4	1.6	**0.2827**	0.008	2.8	ug/L	106	Standard
	Zn	66	2918.6	3.6	**1.9606**	0.098	5.0	ug/L	398	Standard
>	**Ge**	72	521117.4	0.7				ug/L	535147	Standard
	As	75	354.4	15.0	**0.3267**	0.039	12.0	ug/L	-43	Standard
	Se	82	103.1	2.3	**0.6843**	0.018	2.6	ug/L	14	Standard
	Se-1	77	171.3	10.3	**1.3721**	0.205	14.9	ug/L	65	Standard
>	**Ga**	71	60.0	28.9				mg/L	97	Standard
	Rb	85	2775.3	8.1				ug/L	15	Standard
	Y	89	435237.1	1.6				ug/L	465704	Standard
>	**Rh**	103	20.0	66.1				ug/L	10	Standard
	Mo	98	360.0	5.2	**0.1332**	0.006	4.8	ug/L	9	Standard
	Ag	107	249.7	3.1	**0.0286**	0.001	3.5	ug/L	82	Standard
	Cd	111	33.0	33.9	**0.0222**	0.005	21.8	mg/L	7	Standard
	Cd	114	69.1	29.2	**0.0214**	0.004	17.0	ug/L	21	Standard
>	**In**	115	591194.5	0.2				ug/L	619035	Standard
	Sn	118	343.3	13.1	**-0.0482**	0.007	14.9	ug/L	508	Standard
	Sb	123	1623.4	29.5	**0.3253**	0.094	28.9	ug/L	86	Standard
	Ba	135	29618.9	2.1	**13.5463**	0.286	2.1	ug/L	79	Standard
	Ce	140	233.3	8.1				ug/L	68	Standard
>	**Tb**	159	916411.8	1.4				ug/L	986982	Standard
	Ho	165	16.7	75.5				ug/L	10	Standard
	Tl	203	164.0	7.4	**0.0245**	0.001	5.3	ug/L	13	Standard
	Tl	205	153.3	9.4	**0.0280**	0.002	6.6	ug/L	10	Standard
	Pb	206	452.3	2.8	**0.0418**	0.003	6.2	ug/L	264	Standard
	Pb	207	393.3	7.5	**0.0434**	0.006	13.6	ug/L	227	Standard
	Pb	208	1569.4	6.7	**0.0409**	0.005	12.6	ug/L	868	Standard
	U	238	2803.6	2.3	**0.3904**	0.007	1.8	ug/L	8	Standard
>	**Bi**	209	524925.3	0.4				ug/L	541014	Standard

Sample ID: L1606114802SDL WG574806-02
Report Date/Time: Thursday, June 30, 2016 15:42:37
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	9916.6	3.7	**11.3168**	0.564	5.0	mg/L	53	Standard
K	39	163.3	7.1	**0.2151**	0.021	9.8	mg/L	53	Standard
Ca	43	110.0	25.3	**4.8532**	1.571	32.4	mg/L	28	Standard
Fe	54	113.4	15.9	**-0.0376**	0.013	34.6	mg/L	181	Standard
Fe	57	321.7	3.2	**0.2320**	0.037	16.1	mg/L	257	Standard
> **Sc-1**	45	52594.5	1.3				mg/L	55220	Standard
Cl	35	50654.5	0.8				ug/L	35504	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	13766.3	1.7				ug/L	2040	Standard
P	31	11045.7	1.4				ug/L	20435	Standard
S	34	2928.6	0.6				ug/L	2430	Standard
Sr	88	118.3	33.9				ug/L	75	Standard
C	12	100.0	26.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	32.4	99.3				mg/L	9	Standard
Ho-1	165	16.7	75.5				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	23	Standard
I	127	64641.0	1.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.185	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.378	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606114802SDL WG574806-02
Report Date/Time: Thursday, June 30, 2016 15:42:37
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.503
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.026
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606114802SDL WG574806-02
Sample Date/Time: Thursday, June 30, 2016 15:43:32
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64564.1	4.0				ug/L	74916	Standard
	Be	9	21.7	35.3	**0.0201**	0.008	39.4	ug/L	10	Standard
	Al	27	1491927.4	0.5	**9.9834**	0.370	3.7	ug/L	1822	Standard
	Sc	45	49999.1	4.2				ug/L	55220	Standard
	Ti	47	34.7	13.3	**0.0188**	0.013	66.8	ug/L	34	Standard
	V	51	4042.0	5.2	**0.2658**	0.027	10.2	ug/L	1938	Standard
	Cr	52	10343.9	0.9	**0.1779**	0.002	1.3	ug/L	9522	Standard
	Cr	53	1346.7	6.7	**0.8906**	0.086	9.6	ug/L	395	Standard
	Mn	55	1524.7	2.2	**0.0825**	0.003	4.1	ug/L	902	Standard
	Co	59	305.7	7.8	**0.0169**	0.003	16.8	ug/L	262	Standard
	Ni	60	472.0	2.7	**0.0773**	0.004	5.8	ug/L	371	Standard
	Cu	65	262.0	7.5	**0.0669**	0.009	12.9	ug/L	106	Standard
	Zn	66	1226.7	3.6	**0.6524**	0.029	4.5	ug/L	398	Standard
>	**Ge**	72	505648.6	0.7				ug/L	535147	Standard
	As	75	50.9	17.9	**0.0954**	0.007	7.3	ug/L	-43	Standard
	Se	82	36.8	18.2	**0.1905**	0.051	26.6	ug/L	14	Standard
	Se-1	77	105.7	7.7	**0.6606**	0.105	15.9	ug/L	65	Standard
>	**Ga**	71	55.0	41.7				mg/L	97	Standard
	Rb	85	618.3	12.5				ug/L	15	Standard
	Y	89	430100.5	1.9				ug/L	465704	Standard
>	**Rh**	103	18.3	83.3				ug/L	10	Standard
	Mo	98	84.8	5.3	**0.0413**	0.001	3.5	ug/L	9	Standard
	Ag	107	187.3	11.8	**0.0204**	0.003	16.0	ug/L	82	Standard
	Cd	111	14.2	42.3	**0.0142**	0.003	18.6	mg/L	7	Standard
	Cd	114	33.2	60.8	**0.0150**	0.004	24.5	ug/L	21	Standard
>	**In**	115	580789.9	0.7				ug/L	619035	Standard
	Sn	118	190.0	7.0	**-0.0723**	0.002	2.8	ug/L	508	Standard
	Sb	123	368.7	19.1	**0.0787**	0.015	18.6	ug/L	86	Standard
	Ba	135	5896.1	0.9	**2.7294**	0.036	1.3	ug/L	79	Standard
	Ce	140	55.0	18.2				ug/L	68	Standard
>	**Tb**	159	901658.2	1.0				ug/L	986982	Standard
	Ho	165	13.3	78.1				ug/L	10	Standard
	Tl	203	79.0	12.1	**0.0150**	0.001	7.2	ug/L	13	Standard
	Tl	205	78.3	44.8	**0.0181**	0.005	25.8	ug/L	10	Standard
	Pb	206	290.0	6.2	**0.0136**	0.003	23.6	ug/L	264	Standard
	Pb	207	233.3	1.7	**0.0125**	0.001	6.0	ug/L	227	Standard
	Pb	208	1074.7	3.5	**0.0163**	0.002	11.8	ug/L	868	Standard
	U	238	543.0	2.0	**0.0825**	0.001	1.7	ug/L	8	Standard
>	**Bi**	209	521078.1	0.1				ug/L	541014	Standard

Sample ID: L1606114802SDL WG574806-02
Report Date/Time: Thursday, June 30, 2016 15:45:49
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.6993**	18.523	173.1	mg/L	2	Standard
Mg	24	1928.5	1.3	**2.2885**	0.073	3.2	mg/L	53	Standard
K	39	60.0	22.0	**0.0367**	0.026	71.3	mg/L	53	Standard
Ca	43	33.3	8.7	**0.4175**	0.262	62.8	mg/L	28	Standard
Fe	54	77.4	18.8	**-0.0607**	0.008	13.8	mg/L	181	Standard
Fe	57	326.7	3.2	**0.2947**	0.070	23.6	mg/L	257	Standard
> **Sc-1**	45	49999.1	4.2				mg/L	55220	Standard
Cl	35	49910.7	0.4				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	4307.3	7.8				ug/L	2040	Standard
P	31	8710.9	14.5				ug/L	20435	Standard
S	34	2932.0	5.4				ug/L	2430	Standard
Sr	88	100.0	26.0				ug/L	75	Standard
C	12	100.0	62.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.4	107.0				mg/L	9	Standard
Ho-1	165	13.3	78.1				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	40771.5	0.6				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		86.181	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.488	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606114802SDL WG574806-02
Report Date/Time: Thursday, June 30, 2016 15:45:49
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.822
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.315
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606114802SDL WG574806-02
Report Date/Time: Thursday, June 30, 2016 15:45:49
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 15:46:45
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65648.6	1.2				ug/L	74916	Standard
	Be	9	52089.4	3.2	**56.3287**	1.251	2.2	ug/L	10	Standard
	Al	27	8382474.3	2.0	**55.1221**	0.938	1.7	ug/L	1822	Standard
	Sc	45	53922.5	1.2				ug/L	55220	Standard
	Ti	47	42402.9	1.4	**102.4543**	1.478	1.4	ug/L	34	Standard
	V	51	465387.0	1.0	**49.9862**	0.574	1.1	ug/L	1938	Standard
	Cr	52	469228.1	1.6	**51.0504**	0.895	1.8	ug/L	9522	Standard
	Cr	53	59473.3	3.8	**52.8395**	1.876	3.6	ug/L	395	Standard
	Mn	55	432583.6	0.9	**50.1157**	0.430	0.9	ug/L	902	Standard
	Co	59	410961.4	1.0	**50.3659**	0.420	0.8	ug/L	262	Standard
	Ni	60	114268.4	2.0	**50.7489**	1.027	2.0	ug/L	371	Standard
	Cu	65	112915.6	2.0	**51.0392**	1.019	2.0	ug/L	106	Standard
	Zn	66	66348.0	0.7	**50.6301**	0.393	0.8	ug/L	398	Standard
>	Ge	72	536080.5	0.4				ug/L	535147	Standard
	As	75	67443.3	1.3	**50.3166**	0.509	1.0	ug/L	-43	Standard
	Se	82	6849.4	0.6	**50.3529**	0.349	0.7	ug/L	14	Standard
	Se-1	77	4694.7	0.6	**51.4430**	0.420	0.8	ug/L	65	Standard
>	Ga	71	101.7	15.8				mg/L	97	Standard
	Rb	85	925.0	9.2				ug/L	15	Standard
	Y	89	470576.4	1.1				ug/L	465704	Standard
>	Rh	103	33.3	52.7				ug/L	10	Standard
	Mo	98	305436.2	1.2	**96.4896**	0.744	0.8	ug/L	9	Standard
	Ag	107	373900.7	2.0	**48.8034**	0.544	1.1	ug/L	82	Standard
	Cd	111	120993.1	0.1	**49.4148**	0.539	1.1	mg/L	7	Standard
	Cd	114	298857.5	0.7	**50.6847**	0.681	1.3	ug/L	21	Standard
>	In	115	628148.6	1.0				ug/L	619035	Standard
	Sn	118	330694.9	0.4	**49.9794**	0.746	1.5	ug/L	508	Standard
	Sb	123	266870.7	1.3	**49.6669**	0.635	1.3	ug/L	86	Standard
	Ba	135	114715.0	0.9	**49.4327**	0.539	1.1	ug/L	79	Standard
	Ce	140	148.3	30.2				ug/L	68	Standard
>	Tb	159	952045.6	0.7				ug/L	986982	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	463255.3	1.5	**50.7530**	0.545	1.1	ug/L	13	Standard
	Tl	205	407629.0	0.5	**52.2795**	0.723	1.4	ug/L	10	Standard
	Pb	206	290785.0	1.1	**49.6010**	0.312	0.6	ug/L	264	Standard
	Pb	207	262146.4	0.7	**49.4786**	0.370	0.7	ug/L	227	Standard
	Pb	208	1078322.1	0.7	**52.7887**	1.009	1.9	ug/L	868	Standard
	U	238	388498.2	1.3	**51.4471**	0.537	1.0	ug/L	8	Standard
>	Bi	209	540906.6	1.3				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 15:49:02
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4492.3	1.5	**4.9799**	0.123	2.5	mg/L	53	Standard
K	39	2275.2	1.6	**3.8778**	0.020	0.5	mg/L	53	Standard
Ca	43	88.3	11.8	**3.4537**	0.669	19.4	mg/L	28	Standard
Fe	54	7294.4	2.9	**4.9718**	0.177	3.6	mg/L	181	Standard
Fe	57	2060.1	7.2	**4.9236**	0.362	7.4	mg/L	257	Standard
Sc-1	45	53922.5	1.2				mg/L	55220	Standard
Cl	35	47549.3	4.4				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2193.5	8.6				ug/L	2040	Standard
P	31	25055.7	0.6				ug/L	20435	Standard
S	34	3182.0	0.1				ug/L	2430	Standard
Sr	88	88.3	28.5				ug/L	75	Standard
C	12	110.0	15.7				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	19.8	50.4				mg/L	9	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	6643.1	12.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	112.657		
Al	27	110.244		
Sc	45			
Ti	47	102.454		
V	51	99.972		
Cr	52	102.101		
Cr	53			
Mn	55	100.231		
Co	59	100.732		
Ni	60	101.498		
Cu	65	102.078		
Zn	66	101.260		
Ge	72		100.174	
As	75	100.633		
Se	82	100.706		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 15:49:02
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	96.490		
Ag	107	97.607		
Cd	111	98.830		
Cd	114			
In	115		101.472	
Sn	118	99.959		
Sb	123	99.334		
Ba	135	98.865		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.506		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.577		
U	238	102.894		
Bi	209		99.980	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 15:49:02
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 15:49:56
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66639.6	2.5				ug/L	74916	Standard
	Be	9	33.3	60.6	**0.0321**	0.022	69.6	ug/L	10	Standard
	Al	27	3542.1	35.4	**0.0205**	0.008	36.9	ug/L	1822	Standard
	Sc	45	54986.3	1.0				ug/L	55220	Standard
	Ti	47	40.7	21.5	**0.0270**	0.021	78.9	ug/L	34	Standard
	V	51	1615.0	9.3	**-0.0245**	0.015	60.9	ug/L	1938	Standard
	Cr	52	8524.4	1.1	**-0.1054**	0.015	14.2	ug/L	9522	Standard
	Cr	53	1090.0	5.6	**0.5753**	0.043	7.5	ug/L	395	Standard
	Mn	55	884.7	10.0	**-0.0038**	0.010	252.5	ug/L	902	Standard
	Co	59	311.7	13.4	**0.0149**	0.005	31.0	ug/L	262	Standard
	Ni	60	266.3	3.4	**-0.0285**	0.003	12.2	ug/L	371	Standard
	Cu	65	144.7	13.4	**0.0058**	0.008	135.4	ug/L	106	Standard
	Zn	66	414.3	6.4	**-0.0324**	0.022	66.8	ug/L	398	Standard
>	Ge	72	543124.4	1.3				ug/L	535147	Standard
	As	75	-41.8	54.1	**0.0245**	0.017	68.0	ug/L	-43	Standard
	Se	82	21.7	29.1	**0.0613**	0.047	76.4	ug/L	14	Standard
	Se-1	77	87.7	8.4	**0.3783**	0.093	24.5	ug/L	65	Standard
>	Ga	71	50.0	20.0				mg/L	97	Standard
	Rb	85	35.0	37.8				ug/L	15	Standard
	Y	89	472361.0	1.4				ug/L	465704	Standard
>	Rh	103	10.0	50.0				ug/L	10	Standard
	Mo	98	282.6	18.8	**0.0997**	0.015	15.5	ug/L	9	Standard
	Ag	107	310.0	3.9	**0.0336**	0.001	3.2	ug/L	82	Standard
	Cd	111	18.2	51.7	**0.0151**	0.004	24.3	mg/L	7	Standard
	Cd	114	70.6	60.9	**0.0206**	0.007	34.5	ug/L	21	Standard
>	In	115	641519.0	1.3				ug/L	619035	Standard
	Sn	118	1156.7	11.1	**0.0682**	0.021	30.4	ug/L	508	Standard
	Sb	123	968.5	30.9	**0.1813**	0.056	30.9	ug/L	86	Standard
	Ba	135	64.3	15.1	**0.0075**	0.004	49.9	ug/L	79	Standard
	Ce	140	31.7	48.2				ug/L	68	Standard
>	Tb	159	964944.2	1.7				ug/L	986982	Standard
	Ho	165	6.7	173.2				ug/L	10	Standard
	Tl	203	115.0	23.5	**0.0183**	0.003	15.4	ug/L	13	Standard
	Tl	205	113.3	36.7	**0.0218**	0.005	23.4	ug/L	10	Standard
	Pb	206	340.7	14.1	**0.0188**	0.008	40.8	ug/L	264	Standard
	Pb	207	281.0	12.0	**0.0185**	0.006	32.3	ug/L	227	Standard
	Pb	208	1211.7	16.6	**0.0194**	0.009	47.7	ug/L	868	Standard
	U	238	81.7	46.4	**0.0184**	0.005	26.2	ug/L	8	Standard
>	Bi	209	555377.0	0.5				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 15:52:13
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.3685**	16.218	173.1	mg/L	2	Standard
Mg	24	35.0	24.7	**0.0038**	0.010	255.2	mg/L	53	Standard
K	39	31.7	24.1	**-0.0219**	0.014	61.8	mg/L	53	Standard
Ca	43	16.7	45.8	**-0.7275**	0.430	59.1	mg/L	28	Standard
Fe	54	160.7	15.7	**-0.0086**	0.018	213.4	mg/L	181	Standard
Fe	57	270.0	16.5	**0.0561**	0.126	223.8	mg/L	257	Standard
Sc-1	45	54986.3	1.0				mg/L	55220	Standard
Cl	35	45581.8	1.4				ug/L	35504	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	2123.5	7.6				ug/L	2040	Standard
P	31	24367.9	2.6				ug/L	20435	Standard
S	34	3195.3	1.8				ug/L	2430	Standard
Sr	88	85.0	20.4				ug/L	75	Standard
C	12	100.0	52.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	138.7	12.7				mg/L	9	Standard
Ho-1	165	6.7	173.2				mg/L	10	Standard
Er	166	26.7	21.7				mg/L	23	Standard
I	127	4657.4	11.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.491	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 15:52:13
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.632
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.655
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 15:52:13
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606115001
Sample Date/Time: Thursday, June 30, 2016 15:53:09
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69448.8	1.7				ug/L	74916	Standard
	Be	9	58.3	48.7	**0.0563**	0.030	52.9	ug/L	10	Standard
	Al	27	19098580.6	1.6	**118.7603**	3.782	3.2	ug/L	1822	Standard
	Sc	45	55650.4	2.4				ug/L	55220	Standard
	Ti	47	3432.1	3.3	**8.2642**	0.310	3.7	ug/L	34	Standard
	V	51	42258.5	0.6	**4.3797**	0.011	0.2	ug/L	1938	Standard
	Cr	52	19237.2	0.4	**1.1052**	0.018	1.6	ug/L	9522	Standard
	Cr	53	9361.2	7.9	**8.0257**	0.644	8.0	ug/L	395	Standard
	Mn	55	244442.6	1.2	**28.3961**	0.499	1.8	ug/L	902	Standard
	Co	59	2880.3	1.8	**0.3319**	0.007	2.2	ug/L	262	Standard
	Ni	60	3429.7	1.5	**1.3885**	0.022	1.6	ug/L	371	Standard
	Cu	65	2716.6	2.8	**1.1758**	0.033	2.8	ug/L	106	Standard
	Zn	66	7591.2	0.7	**5.5106**	0.012	0.2	ug/L	398	Standard
>	**Ge**	72	533808.2	0.7				ug/L	535147	Standard
	As	75	2296.3	2.9	**1.7741**	0.060	3.4	ug/L	-43	Standard
	Se	82	359.0	1.7	**2.5586**	0.060	2.3	ug/L	14	Standard
	Se-1	77	426.3	4.8	**4.1634**	0.233	5.6	ug/L	65	Standard
>	**Ga**	71	968.4	6.5				mg/L	97	Standard
	Rb	85	26389.6	1.0				ug/L	15	Standard
	Y	89	472663.4	1.3				ug/L	465704	Standard
>	**Rh**	103	78.3	7.4				ug/L	10	Standard
	Mo	98	5034.9	1.4	**1.6224**	0.008	0.5	ug/L	9	Standard
	Ag	107	266.0	13.8	**0.0291**	0.005	17.4	ug/L	82	Standard
	Cd	111	130.9	11.9	**0.0620**	0.007	10.8	mg/L	7	Standard
	Cd	114	377.1	26.4	**0.0737**	0.017	23.2	ug/L	21	Standard
>	**In**	115	620464.9	1.3				ug/L	619035	Standard
	Sn	118	1413.4	10.5	**0.1135**	0.026	22.6	ug/L	508	Standard
	Sb	123	1646.3	9.2	**0.3148**	0.032	10.3	ug/L	86	Standard
	Ba	135	121578.6	1.5	**53.0407**	0.755	1.4	ug/L	79	Standard
	Ce	140	29600.6	0.9				ug/L	68	Standard
>	**Tb**	159	964507.4	1.4				ug/L	986982	Standard
	Ho	165	411.7	13.4				ug/L	10	Standard
	Tl	203	212.3	34.2	**0.0298**	0.008	27.0	ug/L	13	Standard
	Tl	205	173.3	23.5	**0.0305**	0.005	17.3	ug/L	10	Standard
	Pb	206	6350.7	0.5	**1.0737**	0.007	0.7	ug/L	264	Standard
	Pb	207	5312.6	0.8	**0.9955**	0.008	0.8	ug/L	227	Standard
	Pb	208	22281.1	1.2	**1.0806**	0.011	1.0	ug/L	868	Standard
	U	238	13222.1	0.6	**1.8027**	0.018	1.0	ug/L	8	Standard
>	**Bi**	209	527588.8	0.4				ug/L	541014	Standard

Sample ID: L1606115001
Report Date/Time: Thursday, June 30, 2016 15:55:26
Page 1

Approved: July 01, 2016

Na	23	6.7	43.3	**37.4623**	17.162	45.8	mg/L	2	Standard
Mg	24	54078.0	0.9	**58.4711**	1.764	3.0	mg/L	53	Standard
K	39	603.3	6.7	**0.9395**	0.053	5.6	mg/L	53	Standard
Ca	43	305.0	10.2	**15.4711**	1.773	11.5	mg/L	28	Standard
Fe	54	731.9	3.1	**0.3764**	0.022	6.0	mg/L	181	Standard
Fe	57	566.7	6.0	**0.8265**	0.082	9.9	mg/L	257	Standard
> **Sc-1**	45	55650.4	2.4				mg/L	55220	Standard
Cl	35	49211.1	0.6				ug/L	35504	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	58559.7	2.6				ug/L	2040	Standard
P	31	26145.9	0.7				ug/L	20435	Standard
S	34	2950.3	3.8				ug/L	2430	Standard
Sr	88	243.3	12.4				ug/L	75	Standard
C	12	220.0	29.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	649.1	9.9				mg/L	9	Standard
Ho-1	165	411.7	13.4				mg/L	10	Standard
Er	166	366.7	9.6				mg/L	23	Standard
I	127	437609.2	7.5				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		92.702	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.750	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606115001
Report Date/Time: Thursday, June 30, 2016 15:55:26
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.231	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.518	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606115002
Sample Date/Time: Thursday, June 30, 2016 15:56:21
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71421.3	1.6				ug/L	74916	Standard
	Be	9	38.3	41.9	**0.0343**	0.016	45.2	ug/L	10	Standard
	Al	27	4797413.4	1.7	**28.9985**	0.514	1.8	ug/L	1822	Standard
	Sc	45	57023.8	2.0				ug/L	55220	Standard
	Ti	47	2029.8	1.6	**4.7502**	0.136	2.9	ug/L	34	Standard
	V	51	31492.8	2.0	**3.1383**	0.061	2.0	ug/L	1938	Standard
	Cr	52	16465.9	1.6	**0.7554**	0.015	2.0	ug/L	9522	Standard
	Cr	53	2970.3	6.2	**2.2222**	0.131	5.9	ug/L	395	Standard
	Mn	55	75113.4	1.3	**8.4578**	0.011	0.1	ug/L	902	Standard
	Co	59	1569.1	2.4	**0.1661**	0.002	1.4	ug/L	262	Standard
	Ni	60	1930.8	1.8	**0.6990**	0.023	3.3	ug/L	371	Standard
	Cu	65	1792.1	3.2	**0.7376**	0.024	3.2	ug/L	106	Standard
	Zn	66	6166.3	1.8	**4.3057**	0.077	1.8	ug/L	398	Standard
>	**Ge**	72	545929.0	1.3				ug/L	535147	Standard
	As	75	1087.1	3.4	**0.8507**	0.023	2.7	ug/L	-43	Standard
	Se	82	175.6	2.3	**1.1729**	0.025	2.1	ug/L	14	Standard
	Se-1	77	148.0	13.5	**1.0280**	0.205	19.9	ug/L	65	Standard
>	**Ga**	71	653.3	9.9				mg/L	97	Standard
	Rb	85	46049.9	2.1				ug/L	15	Standard
	Y	89	476995.8	1.0				ug/L	465704	Standard
>	**Rh**	103	53.3	14.3				ug/L	10	Standard
	Mo	98	796.8	2.4	**0.2623**	0.007	2.6	ug/L	9	Standard
	Ag	107	140.3	2.9	**0.0121**	0.000	3.6	ug/L	82	Standard
	Cd	111	49.8	18.3	**0.0281**	0.004	13.4	mg/L	7	Standard
	Cd	114	123.2	30.8	**0.0296**	0.006	21.2	ug/L	21	Standard
>	**In**	115	632511.4	0.5				ug/L	619035	Standard
	Sn	118	1000.0	3.6	**0.0470**	0.006	11.8	ug/L	508	Standard
	Sb	123	4032.4	3.6	**0.7496**	0.028	3.7	ug/L	86	Standard
	Ba	135	50380.0	1.5	**21.5471**	0.216	1.0	ug/L	79	Standard
	Ce	140	16629.1	0.9				ug/L	68	Standard
>	**Tb**	159	968713.2	1.4				ug/L	986982	Standard
	Ho	165	263.3	23.6				ug/L	10	Standard
	Tl	203	95.7	12.0	**0.0164**	0.001	7.7	ug/L	13	Standard
	Tl	205	76.7	19.9	**0.0174**	0.002	11.2	ug/L	10	Standard
	Pb	206	2363.9	1.7	**0.3622**	0.006	1.7	ug/L	264	Standard
	Pb	207	1924.1	2.9	**0.3270**	0.010	3.0	ug/L	227	Standard
	Pb	208	8281.6	1.5	**0.3638**	0.007	1.8	ug/L	868	Standard
	U	238	3906.2	1.8	**0.5205**	0.010	1.9	ug/L	8	Standard
>	**Bi**	209	545694.0	0.2				ug/L	541014	Standard

Sample ID: L1606115002
Report Date/Time: Thursday, June 30, 2016 15:58:37
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	17430.0	1.5	**18.3641**	0.418	2.3	mg/L	53	Standard
K	39	1168.4	9.0	**1.8461**	0.201	10.9	mg/L	53	Standard
Ca	43	183.3	1.6	**8.3818**	0.186	2.2	mg/L	28	Standard
Fe	54	452.3	21.5	**0.1801**	0.067	37.4	mg/L	181	Standard
Fe	57	478.3	10.5	**0.5644**	0.133	23.6	mg/L	257	Standard
> **Sc-1**	45	57023.8	2.0				mg/L	55220	Standard
Cl	35	48759.0	3.0				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	26419.7	2.9				ug/L	2040	Standard
P	31	23984.0	4.7				ug/L	20435	Standard
S	34	2903.6	6.4				ug/L	2430	Standard
Sr	88	143.3	17.2				ug/L	75	Standard
C	12	193.3	38.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	319.1	7.7				mg/L	9	Standard
Ho-1	165	263.3	23.6				mg/L	10	Standard
Er	166	226.7	31.9				mg/L	23	Standard
I	127	274664.0	5.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.335	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.015	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606115002
Report Date/Time: Thursday, June 30, 2016 15:58:37
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.177
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.865
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099604
Sample Date/Time: Thursday, June 30, 2016 15:59:32
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69961.2	0.6				ug/L	74916	Standard
	Be	9	28.3	44.4	**0.0252**	0.013	51.3	ug/L	10	Standard
	Al	27	19425781.4	1.6	**119.8632**	1.268	1.1	ug/L	1822	Standard
	Sc	45	56475.1	2.4				ug/L	55220	Standard
	Ti	47	262.7	6.3	**0.5661**	0.035	6.2	ug/L	34	Standard
	V	51	2779.8	5.1	**0.1041**	0.016	15.8	ug/L	1938	Standard
	Cr	52	12190.2	1.9	**0.3167**	0.027	8.6	ug/L	9522	Standard
	Cr	53	4825.8	5.1	**3.9420**	0.240	6.1	ug/L	395	Standard
	Mn	55	5701701.5	0.7	**663.2941**	6.907	1.0	ug/L	902	Standard
	Co	59	11754.6	1.3	**1.4216**	0.014	1.0	ug/L	262	Standard
	Ni	60	7372.1	1.0	**3.1451**	0.031	1.0	ug/L	371	Standard
	Cu	65	803.4	1.9	**0.3056**	0.005	1.6	ug/L	106	Standard
	Zn	66	2560.2	1.0	**1.6248**	0.030	1.8	ug/L	398	Standard
>	**Ge**	72	534918.8	0.8				ug/L	535147	Standard
	As	75	1357.7	6.6	**1.0696**	0.075	7.0	ug/L	-43	Standard
	Se	82	88.6	10.8	**0.5572**	0.074	13.3	ug/L	14	Standard
	Se-1	77	289.7	7.7	**2.6368**	0.271	10.3	ug/L	65	Standard
>	**Ga**	71	195.0	23.1				mg/L	97	Standard
	Rb	85	6686.5	2.4				ug/L	15	Standard
	Y	89	464786.7	1.0				ug/L	465704	Standard
>	**Rh**	103	205.0	4.2				ug/L	10	Standard
	Mo	98	826.4	4.1	**0.2776**	0.013	4.8	ug/L	9	Standard
	Ag	107	114.7	5.6	**0.0091**	0.001	8.8	ug/L	82	Standard
	Cd	111	186.2	3.7	**0.0851**	0.003	3.5	mg/L	7	Standard
	Cd	114	479.9	16.5	**0.0915**	0.013	14.2	ug/L	21	Standard
>	**In**	115	618323.1	1.1				ug/L	619035	Standard
	Sn	118	810.0	8.9	**0.0212**	0.011	52.1	ug/L	508	Standard
	Sb	123	314.7	22.7	**0.0639**	0.013	20.4	ug/L	86	Standard
	Ba	135	187252.0	0.4	**81.9858**	0.624	0.8	ug/L	79	Standard
	Ce	140	5165.9	2.9				ug/L	68	Standard
>	**Tb**	159	962521.7	0.2				ug/L	986982	Standard
	Ho	165	113.3	10.2				ug/L	10	Standard
	Tl	203	260.0	5.5	**0.0351**	0.001	4.1	ug/L	13	Standard
	Tl	205	283.3	27.4	**0.0449**	0.011	23.6	ug/L	10	Standard
	Pb	206	485.3	3.4	**0.0469**	0.003	7.0	ug/L	264	Standard
	Pb	207	410.0	1.1	**0.0459**	0.001	1.8	ug/L	227	Standard
	Pb	208	1780.4	10.3	**0.0508**	0.010	20.2	ug/L	868	Standard
	U	238	896.7	6.4	**0.1292**	0.009	7.0	ug/L	8	Standard
>	**Bi**	209	529472.6	1.3				ug/L	541014	Standard

Sample ID: L1606099604
Report Date/Time: Thursday, June 30, 2016 16:01:49
Page 1

Approved: July 01, 2016

Na	23	5.0	0.0	**27.5091**	0.643	2.3	mg/L	2	Standard
Mg	24	28273.0	1.0	**30.1001**	0.507	1.7	mg/L	53	Standard
K	39	1395.1	3.9	**2.2385**	0.055	2.5	mg/L	53	Standard
Ca	43	991.7	11.7	**53.1667**	5.071	9.5	mg/L	28	Standard
Fe	54	5117.6	1.9	**3.2912**	0.059	1.8	mg/L	181	Standard
Fe	57	1863.4	1.4	**4.1644**	0.091	2.2	mg/L	257	Standard
> **Sc-1**	45	56475.1	2.4				mg/L	55220	Standard
Cl	35	47688.3	1.9				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	14860.6	1.2				ug/L	2040	Standard
P	31	27715.3	0.8				ug/L	20435	Standard
S	34	3085.3	5.7				ug/L	2430	Standard
Sr	88	611.7	3.7				ug/L	75	Standard
C	12	206.7	17.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	150.4	14.1				mg/L	9	Standard
Ho-1	165	113.3	10.2				mg/L	10	Standard
Er	166	130.0	23.1				mg/L	23	Standard
I	127	154687.6	2.4				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		93.386	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.957	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606099604
Report Date/Time: Thursday, June 30, 2016 16:01:49
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.885	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.867	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099605
Sample Date/Time: Thursday, June 30, 2016 16:02:43
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69855.7	2.4				ug/L	74916	Standard
	Be	9	30.0	16.7	**0.0270**	0.006	21.6	ug/L	10	Standard
	Al	27	25298682.7	0.3	**156.4064**	3.966	2.5	ug/L	1822	Standard
	Sc	45	56075.3	2.8				ug/L	55220	Standard
	Ti	47	338.7	2.0	**0.7516**	0.018	2.5	ug/L	34	Standard
	V	51	3001.7	4.8	**0.1285**	0.018	13.9	ug/L	1938	Standard
	Cr	52	12584.6	0.7	**0.3623**	0.002	0.6	ug/L	9522	Standard
	Cr	53	5834.5	2.3	**4.8522**	0.084	1.7	ug/L	395	Standard
	Mn	55	2623286.7	0.8	**305.5121**	4.757	1.6	ug/L	902	Standard
	Co	59	15465.9	0.6	**1.8800**	0.016	0.8	ug/L	262	Standard
	Ni	60	6197.6	0.3	**2.6243**	0.013	0.5	ug/L	371	Standard
	Cu	65	2478.2	0.8	**1.0666**	0.013	1.3	ug/L	106	Standard
	Zn	66	7697.6	1.2	**5.5884**	0.116	2.1	ug/L	398	Standard
>	**Ge**	72	534251.5	0.8				ug/L	535147	Standard
	As	75	1974.2	4.3	**1.5314**	0.058	3.8	ug/L	-43	Standard
	Se	82	78.5	7.3	**0.4834**	0.046	9.5	ug/L	14	Standard
	Se-1	77	351.3	1.7	**3.3251**	0.044	1.3	ug/L	65	Standard
>	**Ga**	71	205.0	25.5				mg/L	97	Standard
	Rb	85	5237.6	3.5				ug/L	15	Standard
	Y	89	469644.5	0.7				ug/L	465704	Standard
>	**Rh**	103	150.0	26.0				ug/L	10	Standard
	Mo	98	1144.9	1.6	**0.3788**	0.004	1.1	ug/L	9	Standard
	Ag	107	102.0	8.4	**0.0074**	0.001	16.1	ug/L	82	Standard
	Cd	111	1652.0	2.2	**0.6914**	0.017	2.4	mg/L	7	Standard
	Cd	114	4129.0	3.7	**0.7182**	0.022	3.1	ug/L	21	Standard
>	**In**	115	619962.0	0.5				ug/L	619035	Standard
	Sn	118	1053.4	26.1	**0.0583**	0.043	73.2	ug/L	508	Standard
	Sb	123	326.9	12.9	**0.0660**	0.008	11.8	ug/L	86	Standard
	Ba	135	161983.3	0.3	**70.7294**	0.370	0.5	ug/L	79	Standard
	Ce	140	5751.1	4.0				ug/L	68	Standard
>	**Tb**	159	963142.2	0.8				ug/L	986982	Standard
	Ho	165	166.7	9.2				ug/L	10	Standard
	Tl	203	314.3	1.9	**0.0413**	0.001	1.6	ug/L	13	Standard
	Tl	205	290.0	12.1	**0.0458**	0.005	10.1	ug/L	10	Standard
	Pb	206	1740.4	1.2	**0.2666**	0.002	0.7	ug/L	264	Standard
	Pb	207	1409.4	1.4	**0.2395**	0.005	2.2	ug/L	227	Standard
	Pb	208	5876.8	1.0	**0.2566**	0.002	0.7	ug/L	868	Standard
	U	238	1185.0	1.4	**0.1687**	0.003	2.0	ug/L	8	Standard
>	**Bi**	209	527930.9	0.7				ug/L	541014	Standard

Sample ID: L1606099605
Report Date/Time: Thursday, June 30, 2016 16:05:00
Page 1

Approved: July 01, 2016

Na	23	6.7	43.3	**36.6702**	14.812	40.4	mg/L	2	Standard
Mg	24	25957.2	2.0	**27.8323**	0.729	2.6	mg/L	53	Standard
K	39	1290.1	1.7	**2.0816**	0.095	4.6	mg/L	53	Standard
Ca	43	816.7	4.0	**43.9174**	2.717	6.2	mg/L	28	Standard
Fe	54	4281.2	3.8	**2.7565**	0.170	6.2	mg/L	181	Standard
Fe	57	1635.1	10.3	**3.5996**	0.392	10.9	mg/L	257	Standard
> **Sc-1**	45	56075.3	2.8				mg/L	55220	Standard
Cl	35	47329.8	0.8				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	13232.4	3.8				ug/L	2040	Standard
P	31	28035.9	1.3				ug/L	20435	Standard
S	34	3043.6	7.4				ug/L	2430	Standard
Sr	88	438.3	13.2				ug/L	75	Standard
C	12	256.7	31.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	199.3	28.2				mg/L	9	Standard
Ho-1	165	166.7	9.2				mg/L	10	Standard
Er	166	153.3	18.8				mg/L	23	Standard
I	127	169123.3	4.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.245	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.833	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606099605
Report Date/Time: Thursday, June 30, 2016 16:05:00
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.150	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.582	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099606
Sample Date/Time: Thursday, June 30, 2016 16:05:55
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70334.6	1.5				ug/L	74916	Standard
	Be	9	38.3	49.4	**0.0352**	0.020	55.6	ug/L	10	Standard
	Al	27	25573073.5	2.7	**156.9735**	4.152	2.6	ug/L	1822	Standard
	Sc	45	56620.6	1.2				ug/L	55220	Standard
	Ti	47	326.7	6.1	**0.7228**	0.051	7.0	ug/L	34	Standard
	V	51	3018.6	3.6	**0.1304**	0.013	9.7	ug/L	1938	Standard
	Cr	52	12679.3	1.7	**0.3733**	0.027	7.4	ug/L	9522	Standard
	Cr	53	5749.4	2.4	**4.7779**	0.131	2.7	ug/L	395	Standard
	Mn	55	2623375.0	1.1	**305.5981**	3.639	1.2	ug/L	902	Standard
	Co	59	15436.5	1.3	**1.8770**	0.025	1.3	ug/L	262	Standard
	Ni	60	6020.2	2.8	**2.5457**	0.069	2.7	ug/L	371	Standard
	Cu	65	1658.8	4.6	**0.6948**	0.038	5.5	ug/L	106	Standard
	Zn	66	6334.0	1.2	**4.5379**	0.038	0.8	ug/L	398	Standard
>	**Ge**	72	534086.7	0.6				ug/L	535147	Standard
	As	75	1720.4	3.8	**1.3423**	0.053	4.0	ug/L	-43	Standard
	Se	82	76.2	11.8	**0.4665**	0.070	14.9	ug/L	14	Standard
	Se-1	77	341.0	8.1	**3.2125**	0.324	10.1	ug/L	65	Standard
>	**Ga**	71	150.0	6.7				mg/L	97	Standard
	Rb	85	5017.5	2.9				ug/L	15	Standard
	Y	89	460333.3	1.9				ug/L	465704	Standard
>	**Rh**	103	160.0	15.6				ug/L	10	Standard
	Mo	98	1159.9	2.1	**0.3857**	0.007	1.9	ug/L	9	Standard
	Ag	107	207.3	84.7	**0.0215**	0.023	108.6	ug/L	82	Standard
	Cd	111	1273.0	4.1	**0.5376**	0.022	4.2	mg/L	7	Standard
	Cd	114	3184.2	4.3	**0.5591**	0.023	4.1	ug/L	21	Standard
>	**In**	115	616398.5	0.2				ug/L	619035	Standard
	Sn	118	851.7	11.9	**0.0280**	0.016	56.5	ug/L	508	Standard
	Sb	123	420.7	41.3	**0.0842**	0.033	39.2	ug/L	86	Standard
	Ba	135	159545.0	0.6	**70.0658**	0.337	0.5	ug/L	79	Standard
	Ce	140	4699.1	1.6				ug/L	68	Standard
>	**Tb**	159	960648.2	1.0				ug/L	986982	Standard
	Ho	165	116.7	25.1				ug/L	10	Standard
	Tl	203	478.0	50.7	**0.0598**	0.027	45.7	ug/L	13	Standard
	Tl	205	370.0	32.5	**0.0565**	0.016	28.1	ug/L	10	Standard
	Pb	206	1075.7	12.0	**0.1509**	0.023	15.2	ug/L	264	Standard
	Pb	207	893.4	13.8	**0.1402**	0.024	17.1	ug/L	227	Standard
	Pb	208	3590.5	9.6	**0.1424**	0.017	12.3	ug/L	868	Standard
	U	238	1264.4	10.4	**0.1799**	0.018	10.0	ug/L	8	Standard
>	**Bi**	209	526401.5	0.2				ug/L	541014	Standard

Sample ID: L1606099606
Report Date/Time: Thursday, June 30, 2016 16:08:12
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.1445**	15.830	173.1	mg/L	2	Standard
Mg	24	26034.0	1.2	**27.6407**	0.661	2.4	mg/L	53	Standard
K	39	1291.7	4.5	**2.0624**	0.110	5.3	mg/L	53	Standard
Ca	43	728.4	12.3	**38.5487**	4.806	12.5	mg/L	28	Standard
Fe	54	4004.2	3.4	**2.5420**	0.079	3.1	mg/L	181	Standard
Fe	57	1421.7	2.8	**3.0102**	0.115	3.8	mg/L	257	Standard
> **Sc-1**	45	56620.6	1.2				mg/L	55220	Standard
Cl	35	47091.1	1.5				ug/L	35504	Standard
Kr	83	3.3	62.4				ug/L	2	Standard
Br	81	12705.3	3.4				ug/L	2040	Standard
P	31	27217.8	1.2				ug/L	20435	Standard
S	34	3183.7	0.9				ug/L	2430	Standard
Sr	88	466.7	7.3				ug/L	75	Standard
C	12	233.3	22.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	147.1	4.2				mg/L	9	Standard
Ho-1	165	116.7	25.1				mg/L	10	Standard
Er	166	130.0	13.3				mg/L	23	Standard
I	127	166708.5	4.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.884	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.802	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606099606
Report Date/Time: Thursday, June 30, 2016 16:08:12
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.574
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.299
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099607
Sample Date/Time: Thursday, June 30, 2016 16:09:06
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70116.9	1.0				ug/L	74916	Standard
	Be	9	10.0	50.0	**0.0065**	0.005	76.3	ug/L	10	Standard
	Al	27	19484010.1	0.8	**119.9707**	1.788	1.5	ug/L	1822	Standard
	Sc	45	56406.5	2.4				ug/L	55220	Standard
	Ti	47	205.0	2.4	**0.4191**	0.013	3.1	ug/L	34	Standard
	V	51	2940.0	2.1	**0.1165**	0.008	6.7	ug/L	1938	Standard
	Cr	52	15036.8	1.8	**0.6080**	0.037	6.2	ug/L	9522	Standard
	Cr	53	4282.3	0.5	**3.3954**	0.032	0.9	ug/L	395	Standard
	Mn	55	23551.6	2.3	**2.5932**	0.049	1.9	ug/L	902	Standard
	Co	59	903.4	6.4	**0.0865**	0.007	8.0	ug/L	262	Standard
	Ni	60	2782.6	1.3	**1.0776**	0.018	1.7	ug/L	371	Standard
	Cu	65	721.7	3.7	**0.2636**	0.013	5.0	ug/L	106	Standard
	Zn	66	2321.8	1.0	**1.4139**	0.018	1.2	ug/L	398	Standard
>	**Ge**	72	543181.9	0.5				ug/L	535147	Standard
	As	75	-0.1	61796.7	**0.0553**	0.039	70.5	ug/L	-43	Standard
	Se	82	37.3	3.2	**0.1744**	0.007	4.2	ug/L	14	Standard
	Se-1	77	228.0	4.5	**1.9126**	0.123	6.4	ug/L	65	Standard
>	**Ga**	71	105.0	17.2				mg/L	97	Standard
	Rb	85	1916.8	7.9				ug/L	15	Standard
	Y	89	473426.1	0.7				ug/L	465704	Standard
>	**Rh**	103	55.0	18.2				ug/L	10	Standard
	Mo	98	1137.2	3.5	**0.3746**	0.013	3.4	ug/L	9	Standard
	Ag	107	86.0	10.1	**0.0053**	0.001	21.9	ug/L	82	Standard
	Cd	111	110.6	8.1	**0.0534**	0.004	7.0	mg/L	7	Standard
	Cd	114	282.5	7.7	**0.0572**	0.004	6.6	ug/L	21	Standard
>	**In**	115	622869.2	0.1				ug/L	619035	Standard
	Sn	118	778.4	11.1	**0.0154**	0.013	84.2	ug/L	508	Standard
	Sb	123	258.9	21.0	**0.0530**	0.010	19.3	ug/L	86	Standard
	Ba	135	28644.1	0.6	**12.4326**	0.096	0.8	ug/L	79	Standard
	Ce	140	530.0	1.6				ug/L	68	Standard
>	**Tb**	159	966795.0	1.1				ug/L	986982	Standard
	Ho	165	28.3	40.8				ug/L	10	Standard
	Tl	203	79.7	11.9	**0.0148**	0.001	7.4	ug/L	13	Standard
	Tl	205	60.0	33.3	**0.0155**	0.003	16.9	ug/L	10	Standard
	Pb	206	402.3	7.1	**0.0317**	0.005	14.3	ug/L	264	Standard
	Pb	207	358.3	3.9	**0.0353**	0.002	6.5	ug/L	227	Standard
	Pb	208	1516.0	3.6	**0.0368**	0.002	6.3	ug/L	868	Standard
	U	238	1327.4	2.2	**0.1858**	0.004	2.0	ug/L	8	Standard
>	**Bi**	209	534294.5	0.6				ug/L	541014	Standard

Sample ID: L1606099607
Report Date/Time: Thursday, June 30, 2016 16:11:23
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**18.2896**	15.847	86.6	mg/L	2	Standard
Mg	24	16824.3	1.1	**17.9246**	0.605	3.4	mg/L	53	Standard
K	39	213.3	28.2	**0.2790**	0.104	37.2	mg/L	53	Standard
Ca	43	591.7	12.0	**31.1277**	3.829	12.3	mg/L	28	Standard
Fe	54	212.4	20.3	**0.0229**	0.028	124.6	mg/L	181	Standard
Fe	57	545.0	15.4	**0.7481**	0.193	25.8	mg/L	257	Standard
> **Sc-1**	45	56406.5	2.4				mg/L	55220	Standard
Cl	35	50090.0	0.6				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	4580.7	3.0				ug/L	2040	Standard
P	31	26423.0	1.3				ug/L	20435	Standard
S	34	3012.0	4.9				ug/L	2430	Standard
Sr	88	228.3	12.1				ug/L	75	Standard
C	12	143.3	29.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	7	Standard
Dy	164	29.2	60.3				mg/L	9	Standard
Ho-1	165	28.3	40.8				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	18783.4	8.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.593	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606099607
Report Date/Time: Thursday, June 30, 2016 16:11:23
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.619
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.758
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099608
Sample Date/Time: Thursday, June 30, 2016 16:12:18
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70543.9	1.8				ug/L	74916	Standard
	Be	9	15.0	66.7	**0.0116**	0.010	88.6	ug/L	10	Standard
	Al	27	22711632.2	0.7	**139.0134**	2.390	1.7	ug/L	1822	Standard
	Sc	45	57522.4	2.5				ug/L	55220	Standard
	Ti	47	207.0	5.1	**0.4278**	0.029	6.7	ug/L	34	Standard
	V	51	2735.9	11.5	**0.0971**	0.034	35.0	ug/L	1938	Standard
	Cr	52	13832.0	1.0	**0.4877**	0.005	1.1	ug/L	9522	Standard
	Cr	53	2311.8	2.6	**1.6707**	0.052	3.1	ug/L	395	Standard
	Mn	55	6443.0	0.6	**0.6388**	0.001	0.2	ug/L	902	Standard
	Co	59	926.4	2.1	**0.0902**	0.002	2.5	ug/L	262	Standard
	Ni	60	3521.7	0.7	**1.4145**	0.010	0.7	ug/L	371	Standard
	Cu	65	752.7	1.6	**0.2800**	0.006	2.2	ug/L	106	Standard
	Zn	66	2242.5	1.0	**1.3670**	0.024	1.8	ug/L	398	Standard
>	**Ge**	72	538990.2	0.6				ug/L	535147	Standard
	As	75	37.1	21.4	**0.0827**	0.006	7.0	ug/L	-43	Standard
	Se	82	41.4	4.3	**0.2064**	0.015	7.2	ug/L	14	Standard
	Se-1	77	141.3	6.0	**0.9761**	0.087	8.9	ug/L	65	Standard
>	**Ga**	71	86.7	17.6				mg/L	97	Standard
	Rb	85	4118.9	3.5				ug/L	15	Standard
	Y	89	476168.4	0.6				ug/L	465704	Standard
>	**Rh**	103	86.7	8.8				ug/L	10	Standard
	Mo	98	438.6	5.5	**0.1506**	0.008	5.2	ug/L	9	Standard
	Ag	107	104.0	20.1	**0.0075**	0.003	36.9	ug/L	82	Standard
	Cd	111	101.6	17.7	**0.0493**	0.007	14.5	mg/L	7	Standard
	Cd	114	228.0	17.1	**0.0475**	0.007	13.7	ug/L	21	Standard
>	**In**	115	629533.9	0.4				ug/L	619035	Standard
	Sn	118	818.4	4.9	**0.0202**	0.006	31.1	ug/L	508	Standard
	Sb	123	185.0	17.5	**0.0388**	0.006	15.9	ug/L	86	Standard
	Ba	135	43526.4	1.4	**18.7021**	0.263	1.4	ug/L	79	Standard
	Ce	140	235.0	5.6				ug/L	68	Standard
>	**Tb**	159	965281.9	1.5				ug/L	986982	Standard
	Ho	165	25.0	69.3				ug/L	10	Standard
	Tl	203	71.7	14.9	**0.0139**	0.001	8.0	ug/L	13	Standard
	Tl	205	46.7	27.0	**0.0137**	0.002	11.4	ug/L	10	Standard
	Pb	206	309.7	0.5	**0.0155**	0.001	4.7	ug/L	264	Standard
	Pb	207	267.0	9.4	**0.0176**	0.004	25.4	ug/L	227	Standard
	Pb	208	1122.3	2.1	**0.0171**	0.002	9.7	ug/L	868	Standard
	U	238	1061.4	2.9	**0.1496**	0.003	1.8	ug/L	8	Standard
>	**Bi**	209	536286.4	1.0				ug/L	541014	Standard

Sample ID: L1606099608
Report Date/Time: Thursday, June 30, 2016 16:14:35
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**8.7738**	15.188	173.1	mg/L	2	Standard
Mg	24	5964.5	3.7	**6.2055**	0.174	2.8	mg/L	53	Standard
K	39	355.0	11.2	**0.5027**	0.068	13.5	mg/L	53	Standard
Ca	43	778.4	4.5	**40.6775**	2.577	6.3	mg/L	28	Standard
Fe	54	170.4	9.8	**-0.0071**	0.012	174.8	mg/L	181	Standard
Fe	57	601.7	16.8	**0.8634**	0.218	25.3	mg/L	257	Standard
> **Sc-1**	45	57522.4	2.5				mg/L	55220	Standard
Cl	35	50187.0	1.2				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	4597.4	6.9				ug/L	2040	Standard
P	31	26302.9	6.9				ug/L	20435	Standard
S	34	3048.6	5.1				ug/L	2430	Standard
Sr	88	291.7	3.6				ug/L	75	Standard
C	12	176.7	3.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	28.9	33.2				mg/L	9	Standard
Ho-1	165	25.0	69.3				mg/L	10	Standard
Er	166	23.3	107.9				mg/L	23	Standard
I	127	83376.0	6.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.718	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606099608
Report Date/Time: Thursday, June 30, 2016 16:14:35
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.696
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.126
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099609
Sample Date/Time: Thursday, June 30, 2016 16:15:29
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69845.6	0.9				ug/L	74916	Standard
	Be	9	16.7	96.4	**0.0133**	0.016	122.4	ug/L	10	Standard
	Al	27	21005224.6	0.5	**129.8402**	1.843	1.4	ug/L	1822	Standard
	Sc	45	56552.1	2.6				ug/L	55220	Standard
	Ti	47	228.0	3.9	**0.4775**	0.018	3.7	ug/L	34	Standard
	V	51	2703.5	12.7	**0.0933**	0.037	39.7	ug/L	1938	Standard
	Cr	52	13913.4	0.5	**0.4950**	0.006	1.3	ug/L	9522	Standard
	Cr	53	3350.4	0.8	**2.5921**	0.039	1.5	ug/L	395	Standard
	Mn	55	377039.5	0.8	**43.3828**	0.058	0.1	ug/L	902	Standard
	Co	59	1768.4	1.9	**0.1926**	0.003	1.3	ug/L	262	Standard
	Ni	60	3728.1	1.9	**1.5042**	0.035	2.3	ug/L	371	Standard
	Cu	65	882.4	2.6	**0.3379**	0.007	2.2	ug/L	106	Standard
	Zn	66	3312.7	1.9	**2.1819**	0.032	1.4	ug/L	398	Standard
>	**Ge**	72	539583.6	0.8				ug/L	535147	Standard
	As	75	211.7	19.5	**0.2119**	0.030	14.3	ug/L	-43	Standard
	Se	82	44.3	2.0	**0.2271**	0.007	3.0	ug/L	14	Standard
	Se-1	77	164.3	5.5	**1.2281**	0.103	8.4	ug/L	65	Standard
>	**Ga**	71	81.7	24.7				mg/L	97	Standard
	Rb	85	4610.7	3.0				ug/L	15	Standard
	Y	89	467092.7	1.0				ug/L	465704	Standard
>	**Rh**	103	156.7	9.8				ug/L	10	Standard
	Mo	98	4088.4	2.0	**1.3255**	0.024	1.8	ug/L	9	Standard
	Ag	107	151.7	8.6	**0.0141**	0.002	12.4	ug/L	82	Standard
	Cd	111	530.2	3.4	**0.2280**	0.007	3.0	mg/L	7	Standard
	Cd	114	1263.2	4.5	**0.2267**	0.009	4.2	ug/L	21	Standard
>	**In**	115	617728.7	0.2				ug/L	619035	Standard
	Sn	118	1375.1	33.7	**0.1082**	0.071	65.5	ug/L	508	Standard
	Sb	123	301.9	1.0	**0.0615**	0.001	1.0	ug/L	86	Standard
	Ba	135	43249.0	1.1	**18.9381**	0.206	1.1	ug/L	79	Standard
	Ce	140	308.3	12.2				ug/L	68	Standard
>	**Tb**	159	955749.7	1.1				ug/L	986982	Standard
	Ho	165	30.0	28.9				ug/L	10	Standard
	Tl	203	109.7	13.8	**0.0182**	0.002	9.5	ug/L	13	Standard
	Tl	205	103.3	34.0	**0.0212**	0.005	21.6	ug/L	10	Standard
	Pb	206	534.7	2.3	**0.0552**	0.002	3.4	ug/L	264	Standard
	Pb	207	441.3	2.8	**0.0517**	0.003	5.1	ug/L	227	Standard
	Pb	208	1853.7	3.0	**0.0542**	0.003	4.9	ug/L	868	Standard
	U	238	762.0	2.3	**0.1107**	0.003	2.5	ug/L	8	Standard
>	**Bi**	209	530937.1	0.4				ug/L	541014	Standard

Sample ID: L1606099609
Report Date/Time: Thursday, June 30, 2016 16:17:46
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**27.1983**	27.396	100.7	mg/L	2	Standard
Mg	24	7133.3	3.1	**7.5562**	0.118	1.6	mg/L	53	Standard
K	39	415.0	10.3	**0.6114**	0.064	10.5	mg/L	53	Standard
Ca	43	686.7	4.0	**36.3056**	1.365	3.8	mg/L	28	Standard
Fe	54	1208.6	8.4	**0.6860**	0.076	11.1	mg/L	181	Standard
Fe	57	823.4	2.3	**1.4684**	0.104	7.1	mg/L	257	Standard
> **Sc-1**	45	56552.1	2.6				mg/L	55220	Standard
Cl	35	50053.9	2.1				ug/L	35504	Standard
Kr	83	3.7	15.7				ug/L	2	Standard
Br	81	7205.1	9.6				ug/L	2040	Standard
P	31	26600.0	1.7				ug/L	20435	Standard
S	34	2965.3	2.8				ug/L	2430	Standard
Sr	88	376.7	10.1				ug/L	75	Standard
C	12	183.3	16.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	22.5	25.0				mg/L	9	Standard
Ho-1	165	30.0	28.9				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	44396.6	1.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.231	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.829	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606099609
Report Date/Time: Thursday, June 30, 2016 16:17:46
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.789
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606099609
Report Date/Time: Thursday, June 30, 2016 16:17:46
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103002
Sample Date/Time: Thursday, June 30, 2016 16:18:40
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69760.3	2.4				ug/L	74916	Standard
	Be	9	13.3	86.6	**0.0101**	0.012	117.4	ug/L	10	Standard
	Al	27	740653.6	2.0	**4.5836**	0.173	3.8	ug/L	1822	Standard
	Sc	45	56779.5	1.3				ug/L	55220	Standard
	Ti	47	352.0	6.0	**0.7588**	0.067	8.8	ug/L	34	Standard
	V	51	3517.2	3.2	**0.1726**	0.008	4.9	ug/L	1938	Standard
	Cr	52	13903.4	3.0	**0.4622**	0.042	9.0	ug/L	9522	Standard
	Cr	53	2013.5	2.9	**1.3664**	0.059	4.4	ug/L	395	Standard
	Mn	55	55706.2	1.6	**6.1883**	0.152	2.5	ug/L	902	Standard
	Co	59	1079.7	0.9	**0.1060**	0.002	2.2	ug/L	262	Standard
	Ni	60	1229.0	0.4	**0.3871**	0.010	2.6	ug/L	371	Standard
	Cu	65	533.7	9.3	**0.1760**	0.017	9.9	ug/L	106	Standard
	Zn	66	3869.5	1.0	**2.5467**	0.076	3.0	ug/L	398	Standard
>	**Ge**	72	551015.3	2.1				ug/L	535147	Standard
	As	75	98.2	11.1	**0.1264**	0.007	5.5	ug/L	-43	Standard
	Se	82	54.6	6.8	**0.2946**	0.030	10.2	ug/L	14	Standard
	Se-1	77	78.3	5.2	**0.2634**	0.045	17.3	ug/L	65	Standard
>	**Ga**	71	133.3	13.2				mg/L	97	Standard
	Rb	85	4482.3	4.1				ug/L	15	Standard
	Y	89	487384.7	2.5				ug/L	465704	Standard
>	**Rh**	103	13.3	21.7				ug/L	10	Standard
	Mo	98	79.3	5.3	**0.0369**	0.001	3.8	ug/L	9	Standard
	Ag	107	110.3	7.7	**0.0080**	0.001	13.7	ug/L	82	Standard
	Cd	111	13.9	7.2	**0.0134**	0.000	3.0	mg/L	7	Standard
	Cd	114	54.8	20.1	**0.0180**	0.002	10.1	ug/L	21	Standard
>	**In**	115	642536.0	0.9				ug/L	619035	Standard
	Sn	118	813.4	8.4	**0.0170**	0.011	62.4	ug/L	508	Standard
	Sb	123	143.8	24.4	**0.0306**	0.006	21.1	ug/L	86	Standard
	Ba	135	10242.1	2.0	**4.2969**	0.104	2.4	ug/L	79	Standard
	Ce	140	11245.8	1.1				ug/L	68	Standard
>	**Tb**	159	974036.2	1.2				ug/L	986982	Standard
	Ho	165	155.0	23.3				ug/L	10	Standard
	Tl	203	30.0	5.8	**0.0092**	0.000	2.1	ug/L	13	Standard
	Tl	205	23.3	65.5	**0.0106**	0.002	18.2	ug/L	10	Standard
	Pb	206	1023.7	2.5	**0.1315**	0.002	1.9	ug/L	264	Standard
	Pb	207	847.0	4.7	**0.1218**	0.006	4.7	ug/L	227	Standard
	Pb	208	3461.5	0.8	**0.1259**	0.001	0.4	ug/L	868	Standard
	U	238	63.3	7.9	**0.0160**	0.001	3.8	ug/L	8	Standard
>	**Bi**	209	558238.3	1.1				ug/L	541014	Standard

Sample ID: L1606103002
Report Date/Time: Thursday, June 30, 2016 16:20:57
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	700.0	10.4	**0.7068**	0.068	9.6	mg/L	53	Standard
K	39	126.7	12.7	**0.1329**	0.024	18.3	mg/L	53	Standard
Ca	43	31.7	36.5	**0.0684**	0.631	922.5	mg/L	28	Standard
Fe	54	408.8	4.5	**0.1521**	0.009	6.0	mg/L	181	Standard
Fe	57	358.3	8.9	**0.2610**	0.094	35.8	mg/L	257	Standard
> **Sc-1**	45	56779.5	1.3				mg/L	55220	Standard
Cl	35	48396.5	2.0				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	8715.8	6.7				ug/L	2040	Standard
P	31	25454.7	3.1				ug/L	20435	Standard
S	34	2967.0	5.2				ug/L	2430	Standard
Sr	88	95.0	13.9				ug/L	75	Standard
C	12	143.3	26.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	300.0	13.4				mg/L	9	Standard
Ho-1	165	155.0	23.3				mg/L	10	Standard
Er	166	140.0	25.8				mg/L	23	Standard
I	127	23847.1	3.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.117	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.965	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606103002
Report Date/Time: Thursday, June 30, 2016 16:20:57
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.796
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.184
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103005
Sample Date/Time: Thursday, June 30, 2016 16:21:52
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71014.4	1.4				ug/L	74916	Standard
	Be	9	36.7	55.1	**0.0329**	0.020	60.1	ug/L	10	Standard
	Al	27	717718.3	2.7	**4.3622**	0.171	3.9	ug/L	1822	Standard
	Sc	45	58608.3	4.0				ug/L	55220	Standard
	Ti	47	356.7	10.5	**0.7684**	0.093	12.1	ug/L	34	Standard
	V	51	3250.2	2.0	**0.1443**	0.006	4.2	ug/L	1938	Standard
	Cr	52	13800.9	1.1	**0.4496**	0.006	1.2	ug/L	9522	Standard
	Cr	53	1710.1	0.8	**1.1004**	0.000	0.0	ug/L	395	Standard
	Mn	55	53809.4	0.9	**5.9671**	0.056	0.9	ug/L	902	Standard
	Co	59	1072.7	2.4	**0.1050**	0.004	3.7	ug/L	262	Standard
	Ni	60	1245.1	3.8	**0.3933**	0.017	4.2	ug/L	371	Standard
	Cu	65	488.3	4.9	**0.1561**	0.012	7.7	ug/L	106	Standard
	Zn	66	4184.6	0.6	**2.7785**	0.022	0.8	ug/L	398	Standard
>	**Ge**	72	551518.7	0.8				ug/L	535147	Standard
	As	75	30.2	104.8	**0.0772**	0.023	29.8	ug/L	-43	Standard
	Se	82	28.0	24.6	**0.1034**	0.050	48.7	ug/L	14	Standard
	Se-1	77	77.3	8.3	**0.2515**	0.067	26.5	ug/L	65	Standard
>	**Ga**	71	118.3	27.5				mg/L	97	Standard
	Rb	85	4068.9	5.6				ug/L	15	Standard
	Y	89	482786.2	0.5				ug/L	465704	Standard
>	**Rh**	103	13.3	43.3				ug/L	10	Standard
	Mo	98	68.4	19.7	**0.0333**	0.004	12.0	ug/L	9	Standard
	Ag	107	143.7	25.9	**0.0121**	0.005	37.8	ug/L	82	Standard
	Cd	111	28.2	75.9	**0.0190**	0.008	44.0	mg/L	7	Standard
	Cd	114	64.3	75.6	**0.0195**	0.008	40.6	ug/L	21	Standard
>	**In**	115	647732.5	0.7				ug/L	619035	Standard
	Sn	118	833.4	12.9	**0.0190**	0.016	84.0	ug/L	508	Standard
	Sb	123	159.5	29.5	**0.0332**	0.008	25.1	ug/L	86	Standard
	Ba	135	9910.6	2.3	**4.1231**	0.071	1.7	ug/L	79	Standard
	Ce	140	11327.6	1.9				ug/L	68	Standard
>	**Tb**	159	970710.1	0.2				ug/L	986982	Standard
	Ho	165	156.7	7.4				ug/L	10	Standard
	Tl	203	65.3	101.0	**0.0129**	0.007	54.3	ug/L	13	Standard
	Tl	205	46.7	37.6	**0.0135**	0.002	16.3	ug/L	10	Standard
	Pb	206	1011.0	5.5	**0.1282**	0.010	8.1	ug/L	264	Standard
	Pb	207	823.0	5.9	**0.1162**	0.008	6.8	ug/L	227	Standard
	Pb	208	3448.2	2.5	**0.1240**	0.005	4.1	ug/L	868	Standard
	U	238	82.7	18.8	**0.0184**	0.002	11.2	ug/L	8	Standard
>	**Bi**	209	562677.9	0.7				ug/L	541014	Standard

Sample ID: L1606103005
Report Date/Time: Thursday, June 30, 2016 16:24:09
Page 1

Approved: July 01, 2016

Na	23	3.3	173.2	**17.7615**	30.755	173.2	mg/L	2	Standard
Mg	24	670.0	4.2	**0.6549**	0.055	8.5	mg/L	53	Standard
K	39	98.3	10.6	**0.0811**	0.012	14.9	mg/L	53	Standard
Ca	43	48.3	26.0	**0.8897**	0.576	64.7	mg/L	28	Standard
Fe	54	422.0	23.4	**0.1541**	0.074	47.7	mg/L	181	Standard
Fe	57	358.3	7.9	**0.2330**	0.089	38.0	mg/L	257	Standard
> **Sc-1**	45	58608.3	4.0				mg/L	55220	Standard
Cl	35	47519.1	2.1				ug/L	35504	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	3033.6	9.1				ug/L	2040	Standard
P	31	25564.9	4.9				ug/L	20435	Standard
S	34	2915.3	4.9				ug/L	2430	Standard
Sr	88	93.3	35.7				ug/L	75	Standard
C	12	126.7	31.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	250.9	22.7				mg/L	9	Standard
Ho-1	165	156.7	7.4				mg/L	10	Standard
Er	166	120.0	14.4				mg/L	23	Standard
I	127	18065.8	5.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.059	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606103005
Report Date/Time: Thursday, June 30, 2016 16:24:09
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.636
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.004
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 16:25:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68409.2	3.0				ug/L	74916	Standard
	Be	9	52770.2	5.1	**54.7618**	1.986	3.6	ug/L	10	Standard
	Al	27	8495126.3	2.5	**53.6326**	1.834	3.4	ug/L	1822	Standard
	Sc	45	55150.2	3.0				ug/L	55220	Standard
	Ti	47	42922.7	1.8	**102.7322**	1.643	1.6	ug/L	34	Standard
	V	51	470082.4	0.9	**50.0153**	0.422	0.8	ug/L	1938	Standard
	Cr	52	473487.4	0.8	**51.0277**	0.278	0.5	ug/L	9522	Standard
	Cr	53	59402.9	1.8	**52.2791**	0.810	1.5	ug/L	395	Standard
	Mn	55	439411.4	1.3	**50.4278**	0.536	1.1	ug/L	902	Standard
	Co	59	415321.2	1.6	**50.4208**	0.645	1.3	ug/L	262	Standard
	Ni	60	115571.1	0.7	**50.8447**	0.188	0.4	ug/L	371	Standard
	Cu	65	113338.0	1.1	**50.7471**	0.414	0.8	ug/L	106	Standard
	Zn	66	66667.7	0.4	**50.3945**	0.324	0.6	ug/L	398	Standard
>	Ge	72	541166.6	0.3				ug/L	535147	Standard
	As	75	67552.5	0.5	**49.9255**	0.120	0.2	ug/L	-43	Standard
	Se	82	6820.0	2.0	**49.6629**	0.906	1.8	ug/L	14	Standard
	Se-1	77	4680.1	1.7	**50.7942**	1.014	2.0	ug/L	65	Standard
>	Ga	71	88.3	11.8				mg/L	97	Standard
	Rb	85	988.4	2.8				ug/L	15	Standard
	Y	89	475342.9	0.3				ug/L	465704	Standard
>	Rh	103	28.3	20.4				ug/L	10	Standard
	Mo	98	308161.4	1.1	**96.6686**	2.040	2.1	ug/L	9	Standard
	Ag	107	378642.8	1.0	**49.0786**	0.942	1.9	ug/L	82	Standard
	Cd	111	122873.2	0.7	**49.8265**	0.844	1.7	mg/L	7	Standard
	Cd	114	299328.2	0.9	**50.4045**	0.935	1.9	ug/L	21	Standard
>	In	115	632664.3	1.1				ug/L	619035	Standard
	Sn	118	332294.9	1.6	**49.8630**	1.097	2.2	ug/L	508	Standard
	Sb	123	268364.2	0.7	**49.5926**	0.839	1.7	ug/L	86	Standard
	Ba	135	114660.2	0.5	**49.0565**	0.431	0.9	ug/L	79	Standard
	Ce	140	131.7	35.9				ug/L	68	Standard
>	Tb	159	965300.2	0.9				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	465432.8	0.6	**50.6040**	0.185	0.4	ug/L	13	Standard
	Tl	205	408743.6	0.9	**52.0229**	0.823	1.6	ug/L	10	Standard
	Pb	206	293608.2	0.5	**49.7024**	0.334	0.7	ug/L	264	Standard
	Pb	207	265313.8	0.4	**49.6947**	0.197	0.4	ug/L	227	Standard
	Pb	208	1077488.9	0.3	**52.3406**	0.343	0.7	ug/L	868	Standard
	U	238	391420.8	0.1	**51.4409**	0.405	0.8	ug/L	8	Standard
>	Bi	209	545041.9	0.8				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 16:27:22
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4614.0	2.3	**5.0053**	0.264	5.3	mg/L	53	Standard
K	39	2398.5	2.1	**4.0028**	0.184	4.6	mg/L	53	Standard
Ca	43	113.3	12.7	**4.7722**	1.026	21.5	mg/L	28	Standard
Fe	54	7252.1	4.5	**4.8280**	0.125	2.6	mg/L	181	Standard
Fe	57	2030.1	4.0	**4.7230**	0.221	4.7	mg/L	257	Standard
Sc-1	45	55150.2	3.0				mg/L	55220	Standard
Cl	35	45835.2	2.1				ug/L	35504	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1923.5	9.2				ug/L	2040	Standard
P	31	25456.4	2.5				ug/L	20435	Standard
S	34	3473.7	4.0				ug/L	2430	Standard
Sr	88	76.7	13.6				ug/L	75	Standard
C	12	90.0	0.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.0	113.3				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	5842.8	18.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.524		
Al	27	107.265		
Sc	45			
Ti	47	102.732		
V	51	100.031		
Cr	52	102.055		
Cr	53			
Mn	55	100.856		
Co	59	100.842		
Ni	60	101.689		
Cu	65	101.494		
Zn	66	100.789		
Ge	72		101.125	
As	75	99.851		
Se	82	99.326		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 16:27:22
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	96.669		
Ag	107	98.157		
Cd	111	99.653		
Cd	114			
In	115			102.202
Sn	118	99.726		
Sb	123	99.185		
Ba	135	98.113		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.208		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.681		
U	238	102.882		
Bi	209			100.744
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 16:28:16
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67131.8	2.8				ug/L	74916	Standard
	Be	9	28.3	40.8	**0.0262**	0.012	45.2	ug/L	10	Standard
	Al	27	2920.3	34.7	**0.0163**	0.006	36.2	ug/L	1822	Standard
	Sc	45	56267.7	3.6				ug/L	55220	Standard
	Ti	47	38.0	2.6	**0.0210**	0.004	16.8	ug/L	34	Standard
	V	51	1661.2	5.6	**-0.0188**	0.009	47.1	ug/L	1938	Standard
	Cr	52	8418.7	1.4	**-0.1130**	0.019	16.9	ug/L	9522	Standard
	Cr	53	883.4	4.8	**0.3966**	0.043	10.8	ug/L	395	Standard
	Mn	55	915.7	3.3	**0.0002**	0.003	1118.4	ug/L	902	Standard
	Co	59	280.3	8.3	**0.0113**	0.003	23.7	ug/L	262	Standard
	Ni	60	270.3	5.6	**-0.0262**	0.007	28.6	ug/L	371	Standard
	Cu	65	136.3	8.6	**0.0024**	0.006	231.2	ug/L	106	Standard
	Zn	66	465.7	3.7	**0.0080**	0.015	185.4	ug/L	398	Standard
>	**Ge**	72	540817.2	1.3				ug/L	535147	Standard
	As	75	-34.0	85.0	**0.0299**	0.022	73.2	ug/L	-43	Standard
	Se	82	21.5	42.4	**0.0591**	0.065	109.7	ug/L	14	Standard
	Se-1	77	70.3	7.2	**0.1909**	0.046	24.3	ug/L	65	Standard
>	**Ga**	71	63.3	19.9				mg/L	97	Standard
	Rb	85	45.0	29.4				ug/L	15	Standard
	Y	89	468523.8	0.5				ug/L	465704	Standard
>	**Rh**	103	15.0	33.3				ug/L	10	Standard
	Mo	98	291.3	18.3	**0.1025**	0.015	14.9	ug/L	9	Standard
	Ag	107	139.7	15.6	**0.0118**	0.003	21.7	ug/L	82	Standard
	Cd	111	16.4	55.4	**0.0145**	0.004	24.7	mg/L	7	Standard
	Cd	114	48.7	43.6	**0.0170**	0.003	20.4	ug/L	21	Standard
>	**In**	115	639875.7	1.4				ug/L	619035	Standard
	Sn	118	1166.7	8.1	**0.0701**	0.016	22.8	ug/L	508	Standard
	Sb	123	660.1	27.5	**0.1253**	0.035	27.6	ug/L	86	Standard
	Ba	135	57.3	38.1	**0.0045**	0.009	195.0	ug/L	79	Standard
	Ce	140	36.7	20.8				ug/L	68	Standard
>	**Tb**	159	969041.7	1.0				ug/L	986982	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	78.3	14.8	**0.0144**	0.001	8.4	ug/L	13	Standard
	Tl	205	63.3	52.6	**0.0156**	0.004	26.4	ug/L	10	Standard
	Pb	206	295.0	18.9	**0.0113**	0.009	80.3	ug/L	264	Standard
	Pb	207	276.3	20.0	**0.0177**	0.010	56.3	ug/L	227	Standard
	Pb	208	1191.7	6.8	**0.0186**	0.004	19.5	ug/L	868	Standard
	U	238	60.3	49.7	**0.0157**	0.004	24.5	ug/L	8	Standard
>	**Bi**	209	554738.2	0.5				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 16:30:33
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**8.8353**	15.295	173.1	mg/L	2	Standard
Mg	24	35.0	42.9	**0.0026**	0.015	574.6	mg/L	53	Standard
K	39	45.0	29.4	**-0.0007**	0.024	3568.2	mg/L	53	Standard
Ca	43	20.0	25.0	**-0.5678**	0.244	42.9	mg/L	28	Standard
Fe	54	167.8	9.1	**-0.0064**	0.012	182.5	mg/L	181	Standard
Fe	57	263.3	17.1	**0.0197**	0.094	478.7	mg/L	257	Standard
Sc-1	45	56267.7	3.6				mg/L	55220	Standard
Cl	35	46157.5	0.4				ug/L	35504	Standard
Kr	83	3.3	34.6				ug/L	2	Standard
Br	81	2056.8	3.2				ug/L	2040	Standard
P	31	24833.7	3.8				ug/L	20435	Standard
S	34	3113.7	3.7				ug/L	2430	Standard
Sr	88	50.0	26.5				ug/L	75	Standard
C	12	90.0	11.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	168.7	37.2				mg/L	9	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	23	Standard
I	127	4048.9	10.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.060	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 16:30:33
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.367
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.537
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103008
Sample Date/Time: Thursday, June 30, 2016 16:31:29
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67414.7	2.6				ug/L	74916	Standard
	Be	9	23.3	24.7	**0.0211**	0.007	31.0	ug/L	10	Standard
	Al	27	697703.1	1.5	**4.4665**	0.053	1.2	ug/L	1822	Standard
	Sc	45	56883.3	3.1				ug/L	55220	Standard
	Ti	47	374.3	11.3	**0.8209**	0.099	12.1	ug/L	34	Standard
	V	51	3031.5	6.1	**0.1256**	0.021	17.0	ug/L	1938	Standard
	Cr	52	13310.2	0.8	**0.4153**	0.020	4.7	ug/L	9522	Standard
	Cr	53	1890.1	4.4	**1.2785**	0.079	6.2	ug/L	395	Standard
	Mn	55	49832.8	1.5	**5.5910**	0.086	1.5	ug/L	902	Standard
	Co	59	881.4	5.0	**0.0836**	0.005	5.8	ug/L	262	Standard
	Ni	60	1075.7	3.9	**0.3261**	0.016	4.9	ug/L	371	Standard
	Cu	65	445.3	2.7	**0.1397**	0.005	3.6	ug/L	106	Standard
	Zn	66	3558.4	0.9	**2.3451**	0.015	0.6	ug/L	398	Standard
>	**Ge**	72	544476.9	0.6				ug/L	535147	Standard
	As	75	37.1	82.1	**0.0823**	0.022	27.1	ug/L	-43	Standard
	Se	82	25.7	9.9	**0.0891**	0.018	19.8	ug/L	14	Standard
	Se-1	77	81.7	9.9	**0.3096**	0.087	28.2	ug/L	65	Standard
>	**Ga**	71	90.0	22.2				mg/L	97	Standard
	Rb	85	3642.1	3.5				ug/L	15	Standard
	Y	89	476384.2	2.4				ug/L	465704	Standard
>	**Rh**	103	21.7	74.2				ug/L	10	Standard
	Mo	98	124.4	15.8	**0.0511**	0.006	12.0	ug/L	9	Standard
	Ag	107	111.3	7.2	**0.0082**	0.001	12.5	ug/L	82	Standard
	Cd	111	22.8	8.9	**0.0171**	0.001	4.8	mg/L	7	Standard
	Cd	114	58.8	19.4	**0.0187**	0.002	10.1	ug/L	21	Standard
>	**In**	115	637810.6	0.1				ug/L	619035	Standard
	Sn	118	851.7	7.3	**0.0236**	0.009	39.2	ug/L	508	Standard
	Sb	123	241.7	16.4	**0.0487**	0.007	15.0	ug/L	86	Standard
	Ba	135	9792.2	0.8	**4.1375**	0.040	1.0	ug/L	79	Standard
	Ce	140	7248.4	1.1				ug/L	68	Standard
>	**Tb**	159	972412.9	0.5				ug/L	986982	Standard
	Ho	165	118.3	14.8				ug/L	10	Standard
	Tl	203	47.0	27.2	**0.0111**	0.001	12.5	ug/L	13	Standard
	Tl	205	40.0	12.5	**0.0127**	0.001	4.9	ug/L	10	Standard
	Pb	206	772.0	3.0	**0.0916**	0.004	4.5	ug/L	264	Standard
	Pb	207	671.7	2.4	**0.0914**	0.003	3.0	ug/L	227	Standard
	Pb	208	2701.1	2.6	**0.0916**	0.004	4.0	ug/L	868	Standard
	U	238	61.7	16.6	**0.0159**	0.001	8.3	ug/L	8	Standard
>	**Bi**	209	550857.6	0.2				ug/L	541014	Standard

Sample ID: L1606103008
Report Date/Time: Thursday, June 30, 2016 16:33:46
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	663.3	5.7	**0.6669**	0.021	3.2	mg/L	53	Standard
K	39	96.7	6.0	**0.0832**	0.007	9.0	mg/L	53	Standard
Ca	43	33.3	8.7	**0.1622**	0.212	130.8	mg/L	28	Standard
Fe	54	363.8	6.2	**0.1221**	0.018	14.7	mg/L	181	Standard
Fe	57	288.3	10.5	**0.0801**	0.094	117.2	mg/L	257	Standard
> **Sc-1**	45	56883.3	3.1				mg/L	55220	Standard
Cl	35	46234.4	1.6				ug/L	35504	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3327.0	3.1				ug/L	2040	Standard
P	31	24850.4	2.2				ug/L	20435	Standard
S	34	2960.3	3.4				ug/L	2430	Standard
Sr	88	66.7	24.1				ug/L	75	Standard
C	12	120.0	44.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	124.3	19.8				mg/L	9	Standard
Ho-1	165	118.3	14.8				mg/L	10	Standard
Er	166	120.0	33.3				mg/L	23	Standard
I	127	13813.0	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.987	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.743	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606103008
Report Date/Time: Thursday, June 30, 2016 16:33:46
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.033
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.819
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103013 WG573728-02
Sample Date/Time: Thursday, June 30, 2016 16:34:40
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67988.9	0.4				ug/L	74916	Standard
	Be	9	13.3	94.4	**0.0104**	0.013	127.2	ug/L	10	Standard
	Al	27	820817.4	1.2	**5.2095**	0.042	0.8	ug/L	1822	Standard
	Sc	45	58102.9	0.4				ug/L	55220	Standard
	Ti	47	348.7	6.4	**0.7490**	0.042	5.6	ug/L	34	Standard
	V	51	3037.8	4.0	**0.1221**	0.014	11.5	ug/L	1938	Standard
	Cr	52	13485.0	2.0	**0.4159**	0.029	6.9	ug/L	9522	Standard
	Cr	53	1880.1	4.5	**1.2495**	0.097	7.7	ug/L	395	Standard
	Mn	55	48555.0	1.2	**5.3761**	0.139	2.6	ug/L	902	Standard
	Co	59	705.7	1.6	**0.0613**	0.002	3.3	ug/L	262	Standard
	Ni	60	823.7	3.3	**0.2110**	0.010	4.6	ug/L	371	Standard
	Cu	65	477.7	3.8	**0.1514**	0.008	5.4	ug/L	106	Standard
	Zn	66	2294.5	2.6	**1.3677**	0.067	4.9	ug/L	398	Standard
>	**Ge**	72	551432.0	1.3				ug/L	535147	Standard
	As	75	61.7	53.3	**0.1002**	0.025	24.5	ug/L	-43	Standard
	Se	82	25.1	14.7	**0.0831**	0.029	34.7	ug/L	14	Standard
	Se-1	77	81.3	5.1	**0.2948**	0.041	13.8	ug/L	65	Standard
>	**Ga**	71	106.7	23.1				mg/L	97	Standard
	Rb	85	3122.0	4.7				ug/L	15	Standard
	Y	89	476977.3	1.4				ug/L	465704	Standard
>	**Rh**	103	23.3	53.9				ug/L	10	Standard
	Mo	98	80.0	20.0	**0.0372**	0.005	13.7	ug/L	9	Standard
	Ag	107	90.0	10.9	**0.0055**	0.001	24.8	ug/L	82	Standard
	Cd	111	8.2	7.2	**0.0112**	0.000	1.8	mg/L	7	Standard
	Cd	114	12.6	96.2	**0.0110**	0.002	18.1	ug/L	21	Standard
>	**In**	115	639996.7	2.1				ug/L	619035	Standard
	Sn	118	836.7	12.0	**0.0208**	0.013	62.4	ug/L	508	Standard
	Sb	123	169.8	31.7	**0.0353**	0.009	26.2	ug/L	86	Standard
	Ba	135	10432.3	1.4	**4.3955**	0.116	2.6	ug/L	79	Standard
	Ce	140	5774.4	3.1				ug/L	68	Standard
>	**Tb**	159	976928.2	1.0				ug/L	986982	Standard
	Ho	165	96.7	23.3				ug/L	10	Standard
	Tl	203	29.7	12.8	**0.0092**	0.000	4.1	ug/L	13	Standard
	Tl	205	30.0	44.1	**0.0115**	0.002	14.7	ug/L	10	Standard
	Pb	206	595.0	6.4	**0.0616**	0.006	9.8	ug/L	264	Standard
	Pb	207	524.7	2.4	**0.0638**	0.001	2.3	ug/L	227	Standard
	Pb	208	2121.1	2.9	**0.0633**	0.002	3.3	ug/L	868	Standard
	U	238	43.3	13.9	**0.0135**	0.001	5.9	ug/L	8	Standard
>	**Bi**	209	552576.0	0.9				ug/L	541014	Standard

Sample ID: L1606103013 WG573728-02
Report Date/Time: Thursday, June 30, 2016 16:36:57
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	903.4	7.9	**0.9013**	0.077	8.5	mg/L	53	Standard
K	39	136.7	7.6	**0.1445**	0.018	12.2	mg/L	53	Standard
Ca	43	45.0	40.1	**0.7451**	0.962	129.2	mg/L	28	Standard
Fe	54	370.4	5.4	**0.1211**	0.012	10.2	mg/L	181	Standard
Fe	57	331.7	15.5	**0.1724**	0.132	76.7	mg/L	257	Standard
> **Sc-1**	45	58102.9	0.4				mg/L	55220	Standard
Cl	35	45958.3	0.9				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	3450.4	5.0				ug/L	2040	Standard
P	31	26236.1	5.3				ug/L	20435	Standard
S	34	2760.3	4.3				ug/L	2430	Standard
Sr	88	101.7	11.4				ug/L	75	Standard
C	12	123.3	30.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	220.1	21.3				mg/L	9	Standard
Ho-1	165	96.7	23.3				mg/L	10	Standard
Er	166	66.7	17.3				mg/L	23	Standard
I	127	17006.2	5.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.753	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.043	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606103013 WG573728-02
Report Date/Time: Thursday, June 30, 2016 16:36:57
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.386
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103014S WG573728-07
Sample Date/Time: Thursday, June 30, 2016 16:37:52
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68017.4	2.0				ug/L	74916	Standard
	Be	9	52571.1	2.8	**54.8746**	0.821	1.5	ug/L	10	Standard
	Al	27	884621.2	0.8	**5.6134**	0.073	1.3	ug/L	1822	Standard
	Sc	45	57954.0	0.7				ug/L	55220	Standard
	Ti	47	382.3	7.1	**0.8317**	0.058	7.0	ug/L	34	Standard
	V	51	465045.2	1.2	**48.7359**	0.671	1.4	ug/L	1938	Standard
	Cr	52	472423.2	0.7	**50.1344**	0.252	0.5	ug/L	9522	Standard
	Cr	53	57743.2	0.8	**50.0432**	0.144	0.3	ug/L	395	Standard
	Mn	55	488346.3	1.0	**55.2189**	0.761	1.4	ug/L	902	Standard
	Co	59	406334.6	1.8	**48.5919**	0.790	1.6	ug/L	262	Standard
	Ni	60	115552.7	1.0	**50.0738**	0.232	0.5	ug/L	371	Standard
	Cu	65	114149.7	0.6	**50.3465**	0.021	0.0	ug/L	106	Standard
	Zn	66	68167.7	1.0	**50.7601**	0.485	1.0	ug/L	398	Standard
>	**Ge**	72	549382.7	0.6				ug/L	535147	Standard
	As	75	67432.6	1.3	**49.0917**	0.378	0.8	ug/L	-43	Standard
	Se	82	6675.7	1.0	**47.8820**	0.199	0.4	ug/L	14	Standard
	Se-1	77	4509.0	1.5	**48.1752**	0.774	1.6	ug/L	65	Standard
>	**Ga**	71	138.3	18.2				mg/L	97	Standard
	Rb	85	3512.1	1.5				ug/L	15	Standard
	Y	89	477860.5	2.0				ug/L	465704	Standard
>	**Rh**	103	38.3	41.9				ug/L	10	Standard
	Mo	98	89.1	17.4	**0.0398**	0.005	11.5	ug/L	9	Standard
	Ag	107	377521.2	0.7	**48.0780**	0.610	1.3	ug/L	82	Standard
	Cd	111	120236.4	0.9	**47.9064**	0.701	1.5	mg/L	7	Standard
	Cd	114	288334.3	2.5	**47.7095**	1.480	3.1	ug/L	21	Standard
>	**In**	115	643866.4	0.7				ug/L	619035	Standard
	Sn	118	865.0	13.7	**0.0243**	0.017	68.5	ug/L	508	Standard
	Sb	123	254042.3	1.7	**46.1289**	1.092	2.4	ug/L	86	Standard
	Ba	135	122514.7	0.7	**51.5064**	0.720	1.4	ug/L	79	Standard
	Ce	140	6418.0	1.5				ug/L	68	Standard
>	**Tb**	159	971839.6	1.4				ug/L	986982	Standard
	Ho	165	113.3	29.4				ug/L	10	Standard
	Tl	203	461326.3	0.5	**49.0175**	0.465	0.9	ug/L	13	Standard
	Tl	205	409190.2	0.5	**50.8922**	0.391	0.8	ug/L	10	Standard
	Pb	206	298682.3	0.5	**49.4115**	0.539	1.1	ug/L	264	Standard
	Pb	207	258990.8	0.6	**47.4056**	0.459	1.0	ug/L	227	Standard
	Pb	208	1072240.4	0.4	**50.8994**	0.435	0.9	ug/L	868	Standard
	U	238	379514.5	1.0	**48.7426**	0.751	1.5	ug/L	8	Standard
>	**Bi**	209	557731.9	0.6				ug/L	541014	Standard

Sample ID: L1606103014S WG573728-07
Report Date/Time: Thursday, June 30, 2016 16:40:09
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	893.4	2.6	**0.8930**	0.020	2.2	mg/L	53	Standard
K	39	115.0	34.8	**0.1103**	0.066	59.8	mg/L	53	Standard
Ca	43	55.0		**1.2933**	0.021	1.6	mg/L	28	Standard
Fe	54	390.4	4.9	**0.1347**	0.011	8.2	mg/L	181	Standard
Fe	57	333.3	10.0	**0.1788**	0.089	49.6	mg/L	257	Standard
> **Sc-1**	45	57954.0	0.7				mg/L	55220	Standard
Cl	35	44711.9	2.2				ug/L	35504	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	9322.9	2.7				ug/L	2040	Standard
P	31	26069.1	1.5				ug/L	20435	Standard
S	34	2676.9	0.7				ug/L	2430	Standard
Sr	88	95.0	19.0				ug/L	75	Standard
C	12	133.3	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	242.2	12.0				mg/L	9	Standard
Ho-1	165	113.3	29.4				mg/L	10	Standard
Er	166	93.3	34.4				mg/L	23	Standard
I	127	30041.6	8.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606103014S WG573728-07
Report Date/Time: Thursday, June 30, 2016 16:40:09
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.011
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.090
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103015SD WG573728-08
Sample Date/Time: Thursday, June 30, 2016 16:41:03
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67875.1	2.1				ug/L	74916	Standard
	Be	9	54554.7	1.2	**57.0744**	0.504	0.9	ug/L	10	Standard
	Al	27	838737.2	2.0	**5.3339**	0.157	2.9	ug/L	1822	Standard
	Sc	45	58265.2	2.7				ug/L	55220	Standard
	Ti	47	412.3	3.3	**0.9165**	0.047	5.2	ug/L	34	Standard
	V	51	473565.2	1.0	**50.3192**	0.324	0.6	ug/L	1938	Standard
	Cr	52	480110.1	0.9	**51.6869**	0.596	1.2	ug/L	9522	Standard
	Cr	53	59545.1	0.6	**52.3429**	1.066	2.0	ug/L	395	Standard
	Mn	55	496384.2	1.0	**56.9038**	0.381	0.7	ug/L	902	Standard
	Co	59	417941.4	1.2	**50.6714**	0.393	0.8	ug/L	262	Standard
	Ni	60	118225.1	0.4	**51.9492**	0.656	1.3	ug/L	371	Standard
	Cu	65	116537.8	0.5	**52.1164**	0.812	1.6	ug/L	106	Standard
	Zn	66	69765.3	0.6	**52.6823**	0.565	1.1	ug/L	398	Standard
>	Ge	72	541933.8	1.6				ug/L	535147	Standard
	As	75	68942.8	1.1	**50.8879**	0.915	1.8	ug/L	-43	Standard
	Se	82	6922.4	1.2	**50.3465**	0.857	1.7	ug/L	14	Standard
	Se-1	77	4676.4	2.8	**50.6984**	2.081	4.1	ug/L	65	Standard
>	Ga	71	123.3	11.7				mg/L	97	Standard
	Rb	85	3528.7	4.8				ug/L	15	Standard
	Y	89	475192.3	2.2				ug/L	465704	Standard
>	Rh	103	30.0	33.3				ug/L	10	Standard
	Mo	98	122.2	2.5	**0.0500**	0.001	2.7	ug/L	9	Standard
	Ag	107	382714.4	1.3	**48.7537**	1.201	2.5	ug/L	82	Standard
	Cd	111	123349.9	0.8	**49.1552**	0.647	1.3	mg/L	7	Standard
	Cd	114	297106.9	0.9	**49.1645**	0.530	1.1	ug/L	21	Standard
>	In	115	643770.2	1.2				ug/L	619035	Standard
	Sn	118	871.7	14.1	**0.0254**	0.018	71.1	ug/L	508	Standard
	Sb	123	262546.4	2.1	**47.6862**	1.532	3.2	ug/L	86	Standard
	Ba	135	127056.2	0.5	**53.4280**	0.875	1.6	ug/L	79	Standard
	Ce	140	6346.3	1.8				ug/L	68	Standard
>	Tb	159	973181.1	1.9				ug/L	986982	Standard
	Ho	165	133.3	20.7				ug/L	10	Standard
	Tl	203	470669.9	1.0	**50.3691**	1.346	2.7	ug/L	13	Standard
	Tl	205	417244.6	1.5	**52.2657**	1.466	2.8	ug/L	10	Standard
	Pb	206	303673.3	0.1	**50.5928**	0.859	1.7	ug/L	264	Standard
	Pb	207	264554.7	0.6	**48.7688**	0.992	2.0	ug/L	227	Standard
	Pb	208	1097482.5	0.3	**52.4671**	0.888	1.7	ug/L	868	Standard
	U	238	389241.3	1.7	**50.3480**	1.440	2.9	ug/L	8	Standard
>	Bi	209	553900.9	1.6				ug/L	541014	Standard

Sample ID: L1606103015SD WG573728-08
Report Date/Time: Thursday, June 30, 2016 16:43:20
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	865.0	7.4	**0.8583**	0.047	5.4	mg/L	53	Standard
K	39	138.3	19.9	**0.1469**	0.047	31.9	mg/L	53	Standard
Ca	43	51.7	14.8	**1.1028**	0.453	41.0	mg/L	28	Standard
Fe	54	385.4	8.6	**0.1300**	0.019	14.7	mg/L	181	Standard
Fe	57	286.7	1.0	**0.0570**	0.013	21.9	mg/L	257	Standard
> **Sc-1**	45	58265.2	2.7				mg/L	55220	Standard
Cl	35	44248.5	1.6				ug/L	35504	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	16452.3	2.0				ug/L	2040	Standard
P	31	25105.8	2.2				ug/L	20435	Standard
S	34	2581.9	7.2				ug/L	2430	Standard
Sr	88	71.7	28.2				ug/L	75	Standard
C	12	160.0	12.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	221.6	21.3				mg/L	9	Standard
Ho-1	165	133.3	20.7				mg/L	10	Standard
Er	166	106.7	14.3				mg/L	23	Standard
I	127	27847.3	6.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.601	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.268	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606103015SD WG573728-08
Report Date/Time: Thursday, June 30, 2016 16:43:20
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.996
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.382
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103020
Sample Date/Time: Thursday, June 30, 2016 16:44:15
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67717.7	1.6				ug/L	74916	Standard
	Be	9	31.7	55.5	**0.0296**	0.019	62.9	ug/L	10	Standard
	Al	27	18491.3	2.9	**0.1156**	0.005	4.0	ug/L	1822	Standard
	Sc	45	57242.9	0.8				ug/L	55220	Standard
	Ti	47	66.0	12.9	**0.0864**	0.020	23.2	ug/L	34	Standard
	V	51	2032.2	8.1	**0.0187**	0.019	103.0	ug/L	1938	Standard
	Cr	52	12676.3	1.6	**0.3406**	0.022	6.4	ug/L	9522	Standard
	Cr	53	1410.1	13.3	**0.8516**	0.178	20.9	ug/L	395	Standard
	Mn	55	2390.5	1.9	**0.1670**	0.004	2.5	ug/L	902	Standard
	Co	59	400.0	5.6	**0.0253**	0.002	9.8	ug/L	262	Standard
	Ni	60	453.3	1.7	**0.0524**	0.002	2.9	ug/L	371	Standard
	Cu	65	1268.4	3.5	**0.5041**	0.018	3.5	ug/L	106	Standard
	Zn	66	1962.1	0.6	**1.1318**	0.007	0.6	ug/L	398	Standard
>	**Ge**	72	546628.1	1.1				ug/L	535147	Standard
	As	75	-22.1	178.4	**0.0388**	0.029	75.1	ug/L	-43	Standard
	Se	82	22.8	7.2	**0.0680**	0.010	15.1	ug/L	14	Standard
	Se-1	77	71.3	6.3	**0.1942**	0.057	29.2	ug/L	65	Standard
>	**Ga**	71	41.7	36.7				mg/L	97	Standard
	Rb	85	108.3	25.4				ug/L	15	Standard
	Y	89	478150.4	1.6				ug/L	465704	Standard
>	**Rh**	103	8.3	34.6				ug/L	10	Standard
	Mo	98	29.5	24.1	**0.0215**	0.002	9.9	ug/L	9	Standard
	Ag	107	170.0	12.2	**0.0157**	0.003	17.2	ug/L	82	Standard
	Cd	111	31.9	35.5	**0.0207**	0.005	21.9	mg/L	7	Standard
	Cd	114	83.7	51.2	**0.0228**	0.007	30.7	ug/L	21	Standard
>	**In**	115	641678.7	0.9				ug/L	619035	Standard
	Sn	118	920.0	3.8	**0.0329**	0.004	12.7	ug/L	508	Standard
	Sb	123	3097.0	31.5	**0.5680**	0.176	30.9	ug/L	86	Standard
	Ba	135	1108.0	1.5	**0.4480**	0.008	1.8	ug/L	79	Standard
	Ce	140	60.0	25.0				ug/L	68	Standard
>	**Tb**	159	980127.5	0.7				ug/L	986982	Standard
	Ho	165	5.0	0.0				ug/L	10	Standard
	Tl	203	200.0	29.5	**0.0275**	0.006	23.1	ug/L	13	Standard
	Tl	205	186.7	29.5	**0.0312**	0.007	22.3	ug/L	10	Standard
	Pb	206	522.0	6.9	**0.0496**	0.006	12.3	ug/L	264	Standard
	Pb	207	476.3	8.8	**0.0551**	0.008	14.1	ug/L	227	Standard
	Pb	208	1956.0	3.0	**0.0557**	0.003	5.3	ug/L	868	Standard
	U	238	100.3	29.1	**0.0209**	0.004	18.2	ug/L	8	Standard
>	**Bi**	209	551371.4	0.1				ug/L	541014	Standard

Sample ID: L1606103020
Report Date/Time: Thursday, June 30, 2016 16:46:32
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**18.0048**	15.588	86.6	mg/L	2	Standard
Mg	24	676.7	6.7	**0.6767**	0.044	6.4	mg/L	53	Standard
K	39	40.0	33.1	**-0.0106**	0.021	201.8	mg/L	53	Standard
Ca	43	20.0	43.3	**-0.5833**	0.468	80.3	mg/L	28	Standard
Fe	54	171.4	3.1	**-0.0061**	0.003	50.1	mg/L	181	Standard
Fe	57	270.0	8.1	**0.0269**	0.052	193.9	mg/L	257	Standard
> **Sc-1**	45	57242.9	0.8				mg/L	55220	Standard
Cl	35	44467.2	1.4				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2603.6	5.0				ug/L	2040	Standard
P	31	23429.8	1.3				ug/L	20435	Standard
S	34	2785.3	4.1				ug/L	2430	Standard
Sr	88	71.7	8.1				ug/L	75	Standard
C	12	156.7	25.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	19.8	50.4				mg/L	9	Standard
Ho-1	165	5.0	0.0				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	2625.2	29.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.391	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.145	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606103020
Report Date/Time: Thursday, June 30, 2016 16:46:32
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.658
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.914
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103023
Sample Date/Time: Thursday, June 30, 2016 17:02:07
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63782.3	1.2				ug/L	74916	Standard
	Be	9	10.0	50.0	**0.0075**	0.006	73.8	ug/L	10	Standard
	Al	27	21553.7	3.8	**0.1436**	0.007	4.9	ug/L	1822	Standard
	Sc	45	53141.4	2.4				ug/L	55220	Standard
	Ti	47	62.3	15.2	**0.0841**	0.024	28.6	ug/L	34	Standard
	V	51	1922.2	10.9	**0.0157**	0.023	148.6	ug/L	1938	Standard
	Cr	52	11950.0	1.2	**0.3174**	0.013	4.0	ug/L	9522	Standard
	Cr	53	1446.7	3.8	**0.9371**	0.045	4.8	ug/L	395	Standard
	Mn	55	1521.4	1.0	**0.0755**	0.003	3.6	ug/L	902	Standard
	Co	59	290.7	3.0	**0.0136**	0.001	9.6	ug/L	262	Standard
	Ni	60	439.0	5.6	**0.0544**	0.012	21.6	ug/L	371	Standard
	Cu	65	1254.4	3.8	**0.5219**	0.022	4.3	ug/L	106	Standard
	Zn	66	2074.8	3.1	**1.2840**	0.054	4.2	ug/L	398	Standard
>	**Ge**	72	524092.0	0.7				ug/L	535147	Standard
	As	75	297.5	25.4	**0.2818**	0.056	19.8	ug/L	-43	Standard
	Se	82	160.0	13.1	**1.1075**	0.150	13.6	ug/L	14	Standard
	Se-1	77	81.3	3.8	**0.3406**	0.037	10.7	ug/L	65	Standard
>	**Ga**	71	43.3	6.7				mg/L	97	Standard
	Rb	85	115.0	19.9				ug/L	15	Standard
	Y	89	459127.5	0.2				ug/L	465704	Standard
>	**Rh**	103	13.3	43.3				ug/L	10	Standard
	Mo	98	28.3	20.3	**0.0216**	0.002	8.1	ug/L	9	Standard
	Ag	107	113.3	10.8	**0.0092**	0.001	15.9	ug/L	82	Standard
	Cd	111	10.6	35.6	**0.0124**	0.002	12.8	mg/L	7	Standard
	Cd	114	7.7	60.4	**0.0103**	0.001	8.1	ug/L	21	Standard
>	**In**	115	609200.4	1.8				ug/L	619035	Standard
	Sn	118	1141.7	8.1	**0.0747**	0.012	15.6	ug/L	508	Standard
	Sb	123	1005.9	32.6	**0.1969**	0.061	30.9	ug/L	86	Standard
	Ba	135	1059.0	1.3	**0.4512**	0.012	2.8	ug/L	79	Standard
	Ce	140	61.7	20.4				ug/L	68	Standard
>	**Tb**	159	932555.9	1.8				ug/L	986982	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	35.7	18.2	**0.0100**	0.001	6.7	ug/L	13	Standard
	Tl	205	33.3	37.7	**0.0121**	0.002	14.2	ug/L	10	Standard
	Pb	206	284.0	7.9	**0.0117**	0.003	27.8	ug/L	264	Standard
	Pb	207	253.0	6.7	**0.0155**	0.003	16.6	ug/L	227	Standard
	Pb	208	1027.7	2.8	**0.0130**	0.001	5.3	ug/L	868	Standard
	U	238	10.3	22.3	**0.0093**	0.000	3.2	ug/L	8	Standard
>	**Bi**	209	529997.9	1.5				ug/L	541014	Standard

Sample ID: L1606103023
Report Date/Time: Thursday, June 30, 2016 17:04:24
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.5487**	16.530	173.1	mg/L	2	Standard
Mg	24	645.0	4.7	**0.6963**	0.042	6.1	mg/L	53	Standard
K	39	45.0	22.2	**0.0036**	0.019	534.5	mg/L	53	Standard
Ca	43	33.3	31.2	**0.2833**	0.596	210.3	mg/L	28	Standard
Fe	54	148.6	19.1	**-0.0131**	0.023	172.7	mg/L	181	Standard
Fe	57	245.0	7.1	**0.0124**	0.064	512.5	mg/L	257	Standard
Sc-1	45	53141.4	2.4				mg/L	55220	Standard
Cl	35	44686.5	0.9				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	29882.8	4.2				ug/L	2040	Standard
P	31	23481.5	1.6				ug/L	20435	Standard
S	34	2808.6	5.2				ug/L	2430	Standard
Sr	88	83.3	6.9				ug/L	75	Standard
C	12	106.7	39.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	26.2	45.7				mg/L	9	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	9686.4	4.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.934	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606103023
Report Date/Time: Thursday, June 30, 2016 17:04:24
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.411
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.964
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 17:05:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63849.3	3.2				ug/L	74916	Standard
	Be	9	49356.9	1.6	**54.9095**	1.251	2.3	ug/L	10	Standard
	Al	27	8088490.1	1.6	**54.7076**	1.005	1.8	ug/L	1822	Standard
	Sc	45	53355.5	2.2				ug/L	55220	Standard
	Ti	47	41943.3	0.2	**100.6143**	0.393	0.4	ug/L	34	Standard
	V	51	462586.4	1.2	**49.3276**	0.830	1.7	ug/L	1938	Standard
	Cr	52	460362.3	0.6	**49.6985**	0.340	0.7	ug/L	9522	Standard
	Cr	53	57448.8	3.1	**50.6666**	1.791	3.5	ug/L	395	Standard
	Mn	55	437257.5	0.7	**50.2932**	0.228	0.5	ug/L	902	Standard
	Co	59	407514.6	0.3	**49.5851**	0.254	0.5	ug/L	262	Standard
	Ni	60	112856.8	0.5	**49.7588**	0.040	0.1	ug/L	371	Standard
	Cu	65	110957.8	0.5	**49.7932**	0.409	0.8	ug/L	106	Standard
	Zn	66	66373.7	0.9	**50.2844**	0.584	1.2	ug/L	398	Standard
>	Ge	72	539959.0	0.4				ug/L	535147	Standard
	As	75	65894.6	0.6	**48.8109**	0.285	0.6	ug/L	-43	Standard
	Se	82	6708.7	1.0	**48.9625**	0.610	1.2	ug/L	14	Standard
	Se-1	77	4564.0	1.3	**49.6319**	0.771	1.6	ug/L	65	Standard
>	Ga	71	60.0	38.2				mg/L	97	Standard
	Rb	85	991.7	7.3				ug/L	15	Standard
	Y	89	461440.3	2.3				ug/L	465704	Standard
>	Rh	103	25.0	34.6				ug/L	10	Standard
	Mo	98	299758.4	0.9	**95.3056**	1.188	1.2	ug/L	9	Standard
	Ag	107	368040.6	0.9	**48.3525**	0.807	1.7	ug/L	82	Standard
	Cd	111	118857.8	1.6	**48.8478**	0.437	0.9	mg/L	7	Standard
	Cd	114	294881.5	2.1	**50.3254**	0.867	1.7	ug/L	21	Standard
>	In	115	624167.7	1.1				ug/L	619035	Standard
	Sn	118	320651.0	1.0	**48.7698**	0.986	2.0	ug/L	508	Standard
	Sb	123	261017.7	0.8	**48.8877**	0.350	0.7	ug/L	86	Standard
	Ba	135	112221.4	0.2	**48.6682**	0.594	1.2	ug/L	79	Standard
	Ce	140	108.3	19.2				ug/L	68	Standard
>	Tb	159	953179.7	0.3				ug/L	986982	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	451684.9	1.1	**49.9622**	0.209	0.4	ug/L	13	Standard
	Tl	205	402076.6	2.1	**52.0628**	1.208	2.3	ug/L	10	Standard
	Pb	206	286059.5	0.5	**49.2676**	0.522	1.1	ug/L	264	Standard
	Pb	207	259413.7	0.9	**49.4369**	0.743	1.5	ug/L	227	Standard
	Pb	208	1045434.4	0.6	**51.6654**	0.223	0.4	ug/L	868	Standard
	U	238	381876.9	0.6	**51.0597**	0.529	1.0	ug/L	8	Standard
>	Bi	209	535721.3	0.7				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 17:07:36
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4462.3	3.0	**4.9989**	0.129	2.6	mg/L	53	Standard
K	39	2393.5	1.6	**4.1281**	0.026	0.6	mg/L	53	Standard
Ca	43	101.7	19.9	**4.2731**	1.076	25.2	mg/L	28	Standard
Fe	54	7194.1	2.2	**4.9576**	0.224	4.5	mg/L	181	Standard
Fe	57	2128.5	5.2	**5.1769**	0.405	7.8	mg/L	257	Standard
> **Sc-1**	45	53355.5	2.2				mg/L	55220	Standard
Cl	35	44134.9	1.1				ug/L	35504	Standard
Kr	83	3.3	34.6				ug/L	2	Standard
Br	81	2123.5	11.5				ug/L	2040	Standard
P	31	25097.4	2.7				ug/L	20435	Standard
S	34	3133.7	1.4				ug/L	2430	Standard
Sr	88	83.3	18.3				ug/L	75	Standard
C	12	53.3	28.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	6.2	87.4				mg/L	9	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	17556.8	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.819		
Al	27	109.415		
Sc	45			
Ti	47	100.614		
V	51	98.655		
Cr	52	99.397		
Cr	53			
Mn	55	100.586		
Co	59	99.170		
Ni	60	99.518		
Cu	65	99.586		
Zn	66	100.569		
> Ge	72		100.899	
As	75	97.622		
Se	82	97.925		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 17:07:36
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	95.306		
Ag	107	96.705		
Cd	111	97.696		
Cd	114			
> In	115		100.829	
Sn	118	97.540		
Sb	123	97.775		
Ba	135	97.336		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.924		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.331		
U	238	102.119		
> Bi	209		99.022	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 17:07:36
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 17:08:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64853.5	1.7				ug/L	74916	Standard
	Be	9	11.7	49.5	**0.0092**	0.006	70.0	ug/L	10	Standard
	Al	27	2441.9	26.4	**0.0139**	0.004	28.7	ug/L	1822	Standard
	Sc	45	55307.4	1.7				ug/L	55220	Standard
	Ti	47	39.3	16.9	**0.0231**	0.017	73.0	ug/L	34	Standard
	V	51	1667.1	3.6	**-0.0203**	0.008	40.7	ug/L	1938	Standard
	Cr	52	8265.9	0.8	**-0.1408**	0.008	5.6	ug/L	9522	Standard
	Cr	53	790.0	9.9	**0.3047**	0.061	20.2	ug/L	395	Standard
	Mn	55	874.0	4.5	**-0.0057**	0.006	96.3	ug/L	902	Standard
	Co	59	299.7	6.5	**0.0132**	0.003	20.8	ug/L	262	Standard
	Ni	60	269.0	3.5	**-0.0282**	0.005	18.6	ug/L	371	Standard
	Cu	65	120.0	19.6	**-0.0055**	0.011	201.6	ug/L	106	Standard
	Zn	66	403.7	3.9	**-0.0430**	0.010	24.3	ug/L	398	Standard
>	**Ge**	72	547396.9	1.1				ug/L	535147	Standard
	As	75	-23.1	181.6	**0.0385**	0.031	79.4	ug/L	-43	Standard
	Se	82	20.9	23.9	**0.0541**	0.036	66.4	ug/L	14	Standard
	Se-1	77	81.0	11.8	**0.2976**	0.102	34.1	ug/L	65	Standard
>	**Ga**	71	48.3	33.3				mg/L	97	Standard
	Rb	85	41.7	30.2				ug/L	15	Standard
	Y	89	475064.4	0.3				ug/L	465704	Standard
>	**Rh**	103	13.3	21.7				ug/L	10	Standard
	Mo	98	285.8	27.9	**0.1014**	0.024	24.0	ug/L	9	Standard
	Ag	107	160.3	23.1	**0.0146**	0.005	31.9	ug/L	82	Standard
	Cd	111	19.5	53.6	**0.0157**	0.004	26.4	mg/L	7	Standard
	Cd	114	57.3	51.9	**0.0185**	0.005	26.6	ug/L	21	Standard
>	**In**	115	636477.0	0.5				ug/L	619035	Standard
	Sn	118	1158.4	16.3	**0.0698**	0.029	41.4	ug/L	508	Standard
	Sb	123	730.1	29.4	**0.1386**	0.040	28.9	ug/L	86	Standard
	Ba	135	55.7	46.2	**0.0040**	0.011	269.0	ug/L	79	Standard
	Ce	140	30.0	28.9				ug/L	68	Standard
>	**Tb**	159	957058.2	1.0				ug/L	986982	Standard
	Ho	165	3.3	173.2				ug/L	10	Standard
	Tl	203	95.0	41.0	**0.0162**	0.004	25.7	ug/L	13	Standard
	Tl	205	71.7	33.0	**0.0167**	0.003	17.6	ug/L	10	Standard
	Pb	206	321.7	12.5	**0.0162**	0.007	41.2	ug/L	264	Standard
	Pb	207	271.0	17.9	**0.0171**	0.009	52.3	ug/L	227	Standard
	Pb	208	1145.0	12.1	**0.0168**	0.007	39.7	ug/L	868	Standard
	U	238	62.7	41.3	**0.0160**	0.003	20.9	ug/L	8	Standard
>	**Bi**	209	550463.7	0.4				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 17:10:48
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.3779**	16.234	173.1	mg/L	2	Standard
Mg	24	28.3	27.0	**-0.0037**	0.009	235.7	mg/L	53	Standard
K	39	41.7	61.6	**-0.0052**	0.044	841.2	mg/L	53	Standard
Ca	43	13.3	78.1	**-0.9220**	0.590	63.9	mg/L	28	Standard
Fe	54	174.2	10.0	**-0.0003**	0.010	3275.9	mg/L	181	Standard
Fe	57	268.3	11.2	**0.0460**	0.067	146.1	mg/L	257	Standard
> **Sc-1**	45	55307.4	1.7				mg/L	55220	Standard
Cl	35	45000.1	2.4				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2080.1	6.5				ug/L	2040	Standard
P	31	24610.0	2.1				ug/L	20435	Standard
S	34	3330.4	2.0				ug/L	2430	Standard
Sr	88	71.7	17.6				ug/L	75	Standard
C	12	130.0	30.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	128.6	20.1				mg/L	9	Standard
Ho-1	165	3.3	173.2				mg/L	10	Standard
Er	166	30.0	88.2				mg/L	23	Standard
I	127	6899.9	5.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.289	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 17:10:48
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.818
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.747
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 17:10:48
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: PBW 2C WG573840-02
Sample Date/Time: Thursday, June 30, 2016 17:11:43
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60134.2	2.9				ug/L	74916	Standard
	Be	9	26.7	10.8	**0.0279**	0.004	13.9	ug/L	10	Standard
	Al	27	2303.5	2.7	**0.0142**	0.000	1.4	ug/L	1822	Standard
	Sc	45	52908.9	1.9				ug/L	55220	Standard
	Ti	47	32.7	61.9	**0.0123**	0.051	414.4	ug/L	34	Standard
	V	51	1551.2	8.5	**-0.0217**	0.015	69.8	ug/L	1938	Standard
	Cr	52	6813.9	1.4	**-0.2496**	0.013	5.2	ug/L	9522	Standard
	Cr	53	650.0	8.1	**0.2202**	0.049	22.4	ug/L	395	Standard
	Mn	55	521.7	1.8	**-0.0419**	0.001	2.6	ug/L	902	Standard
	Co	59	225.3	10.2	**0.0060**	0.003	47.7	ug/L	262	Standard
	Ni	60	258.3	15.9	**-0.0255**	0.019	74.1	ug/L	371	Standard
	Cu	65	124.3	5.4	**-0.0000**	0.000	210884.2	ug/L	106	Standard
	Zn	66	1158.0	4.1	**0.5824**	0.036	6.3	ug/L	398	Standard
>	**Ge**	72	513337.9	0.2				ug/L	535147	Standard
	As	75	-72.9	25.6	**-0.0015**	0.015	951.7	ug/L	-43	Standard
	Se	82	16.3	51.8	**0.0282**	0.065	229.6	ug/L	14	Standard
	Se-1	77	62.0	9.8	**0.1360**	0.069	50.7	ug/L	65	Standard
>	**Ga**	71	40.0	37.5				mg/L	97	Standard
	Rb	85	28.3	27.0				ug/L	15	Standard
	Y	89	442812.9	2.2				ug/L	465704	Standard
>	**Rh**	103	16.7	45.8				ug/L	10	Standard
	Mo	98	60.6	6.2	**0.0328**	0.001	3.7	ug/L	9	Standard
	Ag	107	98.7	12.8	**0.0077**	0.002	23.6	ug/L	82	Standard
	Cd	111	5.2	10.9	**0.0102**	0.000	2.5	mg/L	7	Standard
	Cd	114	16.2	115.2	**0.0119**	0.003	28.6	ug/L	21	Standard
>	**In**	115	588076.1	0.4				ug/L	619035	Standard
	Sn	118	390.0	24.7	**-0.0403**	0.016	38.6	ug/L	508	Standard
	Sb	123	152.7	23.1	**0.0348**	0.007	20.3	ug/L	86	Standard
	Ba	135	25.3	29.6	**-0.0080**	0.003	42.8	ug/L	79	Standard
	Ce	140	5.0	100.0				ug/L	68	Standard
>	**Tb**	159	902943.7	0.5				ug/L	986982	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	33.3	39.2	**0.0098**	0.001	15.1	ug/L	13	Standard
	Tl	205	41.7	48.5	**0.0132**	0.003	20.2	ug/L	10	Standard
	Pb	206	263.0	1.5	**0.0084**	0.001	8.1	ug/L	264	Standard
	Pb	207	234.0	5.6	**0.0123**	0.003	21.2	ug/L	227	Standard
	Pb	208	980.7	3.9	**0.0111**	0.002	17.9	ug/L	868	Standard
	U	238	12.0	30.0	**0.0095**	0.000	5.2	ug/L	8	Standard
>	**Bi**	209	525698.7	0.1				ug/L	541014	Standard

Sample ID: PBW 2C WG573840-02
Report Date/Time: Thursday, June 30, 2016 17:14:00
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.9894**	17.293	173.1	mg/L	2	Standard
Mg	24	45.0	29.4	**0.0166**	0.015	89.5	mg/L	53	Standard
K	39	58.3	34.6	**0.0269**	0.034	125.5	mg/L	53	Standard
Ca	43	26.7	28.6	**-0.0940**	0.479	509.5	mg/L	28	Standard
Fe	54	89.3	21.9	**-0.0554**	0.013	23.0	mg/L	181	Standard
Fe	57	223.3	17.4	**-0.0467**	0.096	206.3	mg/L	257	Standard
> **Sc-1**	45	52908.9	1.9				mg/L	55220	Standard
Cl	35	41658.5	0.8				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	2276.8	4.6				ug/L	2040	Standard
P	31	11304.2	3.8				ug/L	20435	Standard
S	34	2982.0	1.4				ug/L	2430	Standard
Sr	88	63.3	4.6				ug/L	75	Standard
C	12	60.0	28.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.9	48.5				mg/L	9	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	27787.1	2.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.268	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 2C WG573840-02
Report Date/Time: Thursday, June 30, 2016 17:14:00
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.999
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.169
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 2C WG573840-02
Report Date/Time: Thursday, June 30, 2016 17:14:00
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: LCSW 2C WG573840-03
Sample Date/Time: Thursday, June 30, 2016 17:14:55
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64058.5	2.3				ug/L	74916	Standard
	Be	9	50870.3	3.1	**56.3929**	1.713	3.0	ug/L	10	Standard
	Al	27	13599.5	6.8	**0.0893**	0.006	7.0	ug/L	1822	Standard
	Sc	45	55821.0	2.8				ug/L	55220	Standard
	Ti	47	45.7	17.7	**0.0367**	0.018	49.2	ug/L	34	Standard
	V	51	483182.7	1.2	**50.2459**	0.127	0.3	ug/L	1938	Standard
	Cr	52	488742.8	1.3	**51.4889**	0.346	0.7	ug/L	9522	Standard
	Cr	53	60345.0	1.6	**51.9074**	0.879	1.7	ug/L	395	Standard
	Mn	55	457613.2	1.8	**51.3293**	0.603	1.2	ug/L	902	Standard
	Co	59	422454.4	1.2	**50.1274**	0.388	0.8	ug/L	262	Standard
	Ni	60	120601.1	1.4	**51.8594**	0.313	0.6	ug/L	371	Standard
	Cu	65	118799.3	1.3	**51.9910**	0.427	0.8	ug/L	106	Standard
	Zn	66	70445.7	1.1	**52.0559**	0.152	0.3	ug/L	398	Standard
>	Ge	72	553696.9	1.0				ug/L	535147	Standard
	As	75	67356.4	1.3	**48.6560**	0.417	0.9	ug/L	-43	Standard
	Se	82	6884.8	0.9	**49.0024**	0.551	1.1	ug/L	14	Standard
	Se-1	77	4835.4	1.6	**51.2958**	0.557	1.1	ug/L	65	Standard
>	Ga	71	53.3	28.6				mg/L	97	Standard
	Rb	85	113.3	21.8				ug/L	15	Standard
	Y	89	469203.9	2.5				ug/L	465704	Standard
>	Rh	103	38.3	19.9				ug/L	10	Standard
	Mo	98	79.6	14.3	**0.0370**	0.003	8.5	ug/L	9	Standard
	Ag	107	391921.4	0.8	**50.2702**	0.420	0.8	ug/L	82	Standard
	Cd	111	124239.8	0.9	**49.8552**	0.355	0.7	mg/L	7	Standard
	Cd	114	299345.2	1.9	**49.8798**	0.788	1.6	ug/L	21	Standard
>	In	115	639302.5	1.6				ug/L	619035	Standard
	Sn	118	836.7	4.5	**0.0211**	0.007	33.7	ug/L	508	Standard
	Sb	123	262807.0	2.6	**48.0511**	0.600	1.2	ug/L	86	Standard
	Ba	135	118153.6	1.3	**50.0298**	0.818	1.6	ug/L	79	Standard
	Ce	140	73.3	17.2				ug/L	68	Standard
>	Tb	159	964089.7	1.6				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	477074.5	0.5	**51.4398**	0.122	0.2	ug/L	13	Standard
	Tl	205	415235.0	1.1	**52.4076**	0.524	1.0	ug/L	10	Standard
	Pb	206	305633.8	1.2	**51.3093**	0.493	1.0	ug/L	264	Standard
	Pb	207	268222.4	0.6	**49.8228**	0.265	0.5	ug/L	227	Standard
	Pb	208	1106889.2	0.5	**53.3229**	0.200	0.4	ug/L	868	Standard
	U	238	390961.0	1.3	**50.9526**	0.530	1.0	ug/L	8	Standard
>	Bi	209	549588.4	0.3				ug/L	541014	Standard

Sample ID: LCSW 2C WG573840-03
Report Date/Time: Thursday, June 30, 2016 17:17:12
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	31.7	32.9	**-0.0002**	0.012	6226.9	mg/L	53	Standard
K	39	75.0	33.3	**0.0507**	0.045	88.8	mg/L	53	Standard
Ca	43	25.0	20.0	**-0.2728**	0.293	107.4	mg/L	28	Standard
Fe	54	199.1	3.0	**0.0156**	0.007	47.8	mg/L	181	Standard
Fe	57	235.0	25.5	**-0.0464**	0.163	351.9	mg/L	257	Standard
Sc-1	45	55821.0	2.8				mg/L	55220	Standard
Cl	35	44818.9	2.3				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2590.2	4.5				ug/L	2040	Standard
P	31	24174.3	4.1				ug/L	20435	Standard
S	34	2943.6	1.1				ug/L	2430	Standard
Sr	88	83.3	18.3				ug/L	75	Standard
C	12	100.0	10.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	-0.5	173.2				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	2098.5	24.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.507	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.466	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 2C WG573840-03
Report Date/Time: Thursday, June 30, 2016 17:17:12
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.274
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.585
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 2C WG573840-03
Report Date/Time: Thursday, June 30, 2016 17:17:12
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106813 WG573840-01
Sample Date/Time: Thursday, June 30, 2016 17:18:06
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66825.4	2.4				ug/L	74916	Standard
	Be	9	133.3	4.3	**0.1380**	0.003	2.3	ug/L	10	Standard
	Al	27	4241117.0	1.3	**27.4025**	0.478	1.7	ug/L	1822	Standard
	Sc	45	59376.1	1.4				ug/L	55220	Standard
	Ti	47	6584.8	3.7	**16.1909**	0.531	3.3	ug/L	34	Standard
	V	51	39736.5	3.0	**4.1806**	0.143	3.4	ug/L	1938	Standard
	Cr	52	57987.8	0.9	**5.5358**	0.042	0.8	ug/L	9522	Standard
	Cr	53	28570.3	7.4	**25.7373**	2.017	7.8	ug/L	395	Standard
	Mn	55	1241189.6	1.3	**147.0826**	1.783	1.2	ug/L	902	Standard
	Co	59	29402.2	0.3	**3.6596**	0.010	0.3	ug/L	262	Standard
	Ni	60	55711.6	0.6	**25.2006**	0.129	0.5	ug/L	371	Standard
	Cu	65	3990.9	1.2	**1.7861**	0.030	1.7	ug/L	106	Standard
	Zn	66	25472.7	2.2	**19.6446**	0.438	2.2	ug/L	398	Standard
>	**Ge**	72	524817.3	0.4				ug/L	535147	Standard
	As	75	2992.7	2.8	**2.3334**	0.058	2.5	ug/L	-43	Standard
	Se	82	764.6	1.8	**5.6555**	0.104	1.8	ug/L	14	Standard
	Se-1	77	980.4	8.6	**10.5178**	0.994	9.4	ug/L	65	Standard
>	**Ga**	71	2516.9	4.2				mg/L	97	Standard
	Rb	85	45387.9	1.0				ug/L	15	Standard
	Y	89	471788.9	1.6				ug/L	465704	Standard
>	**Rh**	103	80.0	6.3				ug/L	10	Standard
	Mo	98	2138.6	3.5	**0.7142**	0.028	4.0	ug/L	9	Standard
	Ag	107	157.0	9.4	**0.0152**	0.002	14.0	ug/L	82	Standard
	Cd	111	2099.6	3.0	**0.8986**	0.033	3.6	mg/L	7	Standard
	Cd	114	5226.5	4.6	**0.9297**	0.049	5.2	ug/L	21	Standard
>	**In**	115	604671.8	0.7				ug/L	619035	Standard
	Sn	118	1033.4	9.5	**0.0592**	0.017	28.1	ug/L	508	Standard
	Sb	123	3055.1	27.0	**0.5957**	0.163	27.3	ug/L	86	Standard
	Ba	135	139944.7	1.3	**62.6537**	1.221	1.9	ug/L	79	Standard
	Ce	140	55800.9	2.4				ug/L	68	Standard
>	**Tb**	159	948910.8	2.6				ug/L	986982	Standard
	Ho	165	1046.7	5.9				ug/L	10	Standard
	Tl	203	390.3	7.2	**0.0509**	0.004	7.6	ug/L	13	Standard
	Tl	205	276.7	8.9	**0.0449**	0.003	7.7	ug/L	10	Standard
	Pb	206	5380.3	2.6	**0.9266**	0.031	3.4	ug/L	264	Standard
	Pb	207	4252.6	1.3	**0.8100**	0.016	1.9	ug/L	227	Standard
	Pb	208	18395.1	1.9	**0.9076**	0.011	1.2	ug/L	868	Standard
	U	238	1322.7	2.5	**0.1917**	0.002	1.1	ug/L	8	Standard
>	**Bi**	209	515245.5	1.5				ug/L	541014	Standard

Sample ID: L1606106813 WG573840-01
Report Date/Time: Thursday, June 30, 2016 17:20:23
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	85376.6	1.5	**86.4979**	0.694	0.8	mg/L	53	Standard
K	39	520.0	15.3	**0.7438**	0.115	15.4	mg/L	53	Standard
Ca	43	115.0	27.2	**4.3841**	1.643	37.5	mg/L	28	Standard
Fe	54	6737.0	2.5	**4.1500**	0.071	1.7	mg/L	181	Standard
Fe	57	1958.5	2.2	**4.1618**	0.107	2.6	mg/L	257	Standard
> **Sc-1**	45	59376.1	1.4				mg/L	55220	Standard
Cl	35	44962.0	1.2				ug/L	35504	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	154271.8	2.6				ug/L	2040	Standard
P	31	29709.1	1.2				ug/L	20435	Standard
S	34	2896.9	2.7				ug/L	2430	Standard
Sr	88	188.3	6.7				ug/L	75	Standard
C	12	266.7	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	173.2				mg/L	7	Standard
Dy	164	1604.1	12.5				mg/L	9	Standard
Ho-1	165	1046.7	5.9				mg/L	10	Standard
Er	166	1100.0	8.8				mg/L	23	Standard
I	127	327312.3	8.5				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		89.200	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.070	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606106813 WG573840-01
Report Date/Time: Thursday, June 30, 2016 17:20:23
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.680
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.237
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606106813 WG573840-01
Report Date/Time: Thursday, June 30, 2016 17:20:23
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106815S WG573840-04
Sample Date/Time: Thursday, June 30, 2016 17:21:18
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67680.9	1.9				ug/L	74916	Standard
	Be	9	51052.5	0.1	**53.5693**	0.995	1.9	ug/L	10	Standard
	Al	27	3368816.2	1.1	**21.4929**	0.585	2.7	ug/L	1822	Standard
	Sc	45	58536.3	3.3				ug/L	55220	Standard
	Ti	47	5172.5	1.1	**12.4067**	0.155	1.3	ug/L	34	Standard
	V	51	488672.2	1.1	**52.3707**	0.516	1.0	ug/L	1938	Standard
	Cr	52	519795.4	1.0	**56.5266**	0.672	1.2	ug/L	9522	Standard
	Cr	53	80134.7	1.1	**71.1659**	0.792	1.1	ug/L	395	Standard
	Mn	55	1422478.1	1.3	**164.6477**	2.416	1.5	ug/L	902	Standard
	Co	59	415646.2	0.7	**50.8197**	0.346	0.7	ug/L	262	Standard
	Ni	60	153457.9	0.5	**68.0410**	0.220	0.3	ug/L	371	Standard
	Cu	65	110950.8	0.9	**50.0307**	0.453	0.9	ug/L	106	Standard
	Zn	66	84002.9	0.2	**64.0414**	0.177	0.3	ug/L	398	Standard
>	Ge	72	537355.1	0.2				ug/L	535147	Standard
	As	75	70214.5	0.8	**52.2590**	0.480	0.9	ug/L	-43	Standard
	Se	82	7282.6	0.6	**53.4169**	0.409	0.8	ug/L	14	Standard
	Se-1	77	5276.3	1.5	**57.7485**	0.932	1.6	ug/L	65	Standard
>	Ga	71	2600.2	1.0				mg/L	97	Standard
	Rb	85	34761.5	1.6				ug/L	15	Standard
	Y	89	471549.9	1.5				ug/L	465704	Standard
>	Rh	103	131.7	12.2				ug/L	10	Standard
	Mo	98	1846.2	2.7	**0.6134**	0.022	3.6	ug/L	9	Standard
	Ag	107	345199.2	0.6	**46.4387**	0.773	1.7	ug/L	82	Standard
	Cd	111	118493.6	1.5	**49.8650**	0.385	0.8	mg/L	7	Standard
	Cd	114	289951.9	1.8	**50.6671**	0.404	0.8	ug/L	21	Standard
>	In	115	609561.0	1.1				ug/L	619035	Standard
	Sn	118	1016.7	8.9	**0.0553**	0.014	26.2	ug/L	508	Standard
	Sb	123	244619.3	0.4	**46.9151**	0.346	0.7	ug/L	86	Standard
	Ba	135	220516.2	0.7	**97.9426**	1.108	1.1	ug/L	79	Standard
	Ce	140	48158.1	1.0				ug/L	68	Standard
>	Tb	159	947264.5	1.2				ug/L	986982	Standard
	Ho	165	921.7	8.3				ug/L	10	Standard
	Tl	203	434639.0	0.4	**49.9317**	0.347	0.7	ug/L	13	Standard
	Tl	205	380633.7	0.9	**51.1887**	0.936	1.8	ug/L	10	Standard
	Pb	206	288741.7	0.6	**51.6468**	0.449	0.9	ug/L	264	Standard
	Pb	207	251536.6	1.1	**49.7801**	0.446	0.9	ug/L	227	Standard
	Pb	208	1036183.7	0.5	**53.1850**	0.617	1.2	ug/L	868	Standard
	U	238	374057.3	1.4	**51.9465**	1.232	2.4	ug/L	8	Standard
>	Bi	209	515850.6	1.0				ug/L	541014	Standard

Sample ID: L1606106815S WG573840-04
Report Date/Time: Thursday, June 30, 2016 17:23:35
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.0953**	15.745	173.1	mg/L	2	Standard
Mg	24	66515.7	1.7	**68.3869**	2.109	3.1	mg/L	53	Standard
K	39	388.3	10.0	**0.5473**	0.079	14.4	mg/L	53	Standard
Ca	43	78.3	9.8	**2.5142**	0.451	17.9	mg/L	28	Standard
Fe	54	5869.1	3.9	**3.6575**	0.229	6.3	mg/L	181	Standard
Fe	57	1700.1	7.0	**3.5827**	0.199	5.6	mg/L	257	Standard
> **Sc-1**	45	58536.3	3.3				mg/L	55220	Standard
Cl	35	44802.2	3.0				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	127443.9	1.8				ug/L	2040	Standard
P	31	28511.8	1.0				ug/L	20435	Standard
S	34	2775.3	1.9				ug/L	2430	Standard
Sr	88	178.3	30.9				ug/L	75	Standard
C	12	230.0	19.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	1365.5	5.5				mg/L	9	Standard
Ho-1	165	921.7	8.3				mg/L	10	Standard
Er	166	930.0	6.7				mg/L	23	Standard
I	127	255438.3	5.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.342	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.413	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106815S WG573840-04
Report Date/Time: Thursday, June 30, 2016 17:23:35
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.470	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.349	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606106815S WG573840-04
Report Date/Time: Thursday, June 30, 2016 17:23:35
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106817SD WG573840-05
Sample Date/Time: Thursday, June 30, 2016 17:24:29
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71317.5	0.5				ug/L	74916	Standard
	Be	9	52868.7	0.7	**52.6345**	0.351	0.7	ug/L	10	Standard
	Al	27	4849961.3	0.9	**29.3561**	0.184	0.6	ug/L	1822	Standard
	Sc	45	62463.5	1.2				ug/L	55220	Standard
	Ti	47	15053.8	0.9	**36.7934**	0.200	0.5	ug/L	34	Standard
	V	51	538418.4	0.4	**58.6061**	0.527	0.9	ug/L	1938	Standard
	Cr	52	650223.4	0.7	**72.0695**	0.889	1.2	ug/L	9522	Standard
	Cr	53	98390.1	1.1	**88.8086**	1.445	1.6	ug/L	395	Standard
	Mn	55	1763132.6	1.1	**207.2200**	3.342	1.6	ug/L	902	Standard
	Co	59	428512.3	1.2	**53.1932**	0.793	1.5	ug/L	262	Standard
	Ni	60	172907.0	0.5	**77.8539**	0.550	0.7	ug/L	371	Standard
	Cu	65	113260.4	0.2	**51.8526**	0.333	0.6	ug/L	106	Standard
	Zn	66	93640.5	0.5	**72.5211**	0.161	0.2	ug/L	398	Standard
>	Ge	72	529298.6	0.5				ug/L	535147	Standard
	As	75	70275.1	0.8	**53.0999**	0.493	0.9	ug/L	-43	Standard
	Se	82	7438.1	1.0	**55.3925**	0.719	1.3	ug/L	14	Standard
	Se-1	77	5341.3	1.2	**59.3683**	0.990	1.7	ug/L	65	Standard
>	Ga	71	7857.0	3.6				mg/L	97	Standard
	Rb	85	80878.6	1.0				ug/L	15	Standard
	Y	89	485637.4	2.2				ug/L	465704	Standard
>	Rh	103	135.0	12.8				ug/L	10	Standard
	Mo	98	2900.7	2.5	**0.9572**	0.026	2.7	ug/L	9	Standard
	Ag	107	343502.7	1.0	**46.2351**	0.223	0.5	ug/L	82	Standard
	Cd	111	120117.5	0.6	**50.5847**	0.556	1.1	mg/L	7	Standard
	Cd	114	292092.4	0.7	**51.0777**	0.183	0.4	ug/L	21	Standard
>	In	115	609154.8	0.5				ug/L	619035	Standard
	Sn	118	1316.7	6.3	**0.1022**	0.014	13.4	ug/L	508	Standard
	Sb	123	230647.1	1.3	**44.2618**	0.385	0.9	ug/L	86	Standard
	Ba	135	273668.5	0.7	**121.6298**	0.962	0.8	ug/L	79	Standard
	Ce	140	109752.8	1.4				ug/L	68	Standard
>	Tb	159	952644.8	0.6				ug/L	986982	Standard
	Ho	165	1935.1	9.2				ug/L	10	Standard
	Tl	203	436763.9	0.6	**50.0972**	0.134	0.3	ug/L	13	Standard
	Tl	205	378561.1	0.9	**50.8280**	0.601	1.2	ug/L	10	Standard
	Pb	206	295590.9	0.8	**52.7895**	0.146	0.3	ug/L	264	Standard
	Pb	207	255520.9	0.4	**50.4919**	0.303	0.6	ug/L	227	Standard
	Pb	208	1035519.8	0.6	**53.0684**	0.588	1.1	ug/L	868	Standard
	U	238	372267.1	1.1	**51.6142**	0.831	1.6	ug/L	8	Standard
>	Bi	209	516637.7	0.5				ug/L	541014	Standard

Sample ID: L1606106817SD WG573840-05
Report Date/Time: Thursday, June 30, 2016 17:26:46
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	87984.8	1.4	**84.7490**	2.157	2.5	mg/L	53	Standard
K	39	573.3	13.5	**0.7848**	0.124	15.8	mg/L	53	Standard
Ca	43	141.7	10.2	**5.4143**	0.660	12.2	mg/L	28	Standard
Fe	54	10646.8	1.6	**6.2957**	0.178	2.8	mg/L	181	Standard
Fe	57	2967.0	0.4	**6.2851**	0.079	1.3	mg/L	257	Standard
> **Sc-1**	45	62463.5	1.2				mg/L	55220	Standard
Cl	35	43456.9	3.2				ug/L	35504	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	183975.0	4.4				ug/L	2040	Standard
P	31	35738.8	3.0				ug/L	20435	Standard
S	34	2516.9	2.9				ug/L	2430	Standard
Sr	88	236.7	13.6				ug/L	75	Standard
C	12	223.3	25.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	43.3				mg/L	7	Standard
Dy	164	3296.7	5.8				mg/L	9	Standard
Ho-1	165	1935.1	9.2				mg/L	10	Standard
Er	166	1886.8	7.5				mg/L	23	Standard
I	127	363130.0	8.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.196	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.907	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106817SD WG573840-05
Report Date/Time: Thursday, June 30, 2016 17:26:46
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.404
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.494
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606106817SD WG573840-05
Report Date/Time: Thursday, June 30, 2016 17:26:46
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122801
Sample Date/Time: Thursday, June 30, 2016 17:27:41
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70219.0	1.1				ug/L	74916	Standard
	Be	9	55.0	48.1	**0.0522**	0.028	52.7	ug/L	10	Standard
	Al	27	23221144.3	0.6	**142.7741**	1.838	1.3	ug/L	1822	Standard
	Sc	45	57070.6	2.2				ug/L	55220	Standard
	Ti	47	534.7	8.5	**1.2366**	0.117	9.5	ug/L	34	Standard
	V	51	7446.5	8.6	**0.6149**	0.067	10.9	ug/L	1938	Standard
	Cr	52	12430.1	1.9	**0.3548**	0.021	6.0	ug/L	9522	Standard
	Cr	53	7560.2	15.2	**6.4485**	1.018	15.8	ug/L	395	Standard
	Mn	55	2113807.9	0.6	**247.8805**	0.738	0.3	ug/L	902	Standard
	Co	59	1074.4	19.7	**0.1103**	0.026	23.6	ug/L	262	Standard
	Ni	60	2096.5	2.0	**0.7980**	0.018	2.2	ug/L	371	Standard
	Cu	65	989.4	3.5	**0.3937**	0.017	4.4	ug/L	106	Standard
	Zn	66	2275.2	1.6	**1.4198**	0.027	1.9	ug/L	398	Standard
>	**Ge**	72	530492.6	0.4				ug/L	535147	Standard
	As	75	1618.0	1.0	**1.2738**	0.017	1.3	ug/L	-43	Standard
	Se	82	532.9	5.0	**3.8697**	0.199	5.1	ug/L	14	Standard
	Se-1	77	405.0	3.4	**3.9543**	0.170	4.3	ug/L	65	Standard
>	**Ga**	71	131.7	28.5				mg/L	97	Standard
	Rb	85	1008.4	5.5				ug/L	15	Standard
	Y	89	463829.6	1.0				ug/L	465704	Standard
>	**Rh**	103	183.3	15.5				ug/L	10	Standard
	Mo	98	288.7	15.5	**0.1064**	0.014	12.8	ug/L	9	Standard
	Ag	107	262.7	61.3	**0.0292**	0.021	72.9	ug/L	82	Standard
	Cd	111	64.1	52.5	**0.0348**	0.014	39.8	mg/L	7	Standard
	Cd	114	151.5	64.1	**0.0353**	0.017	47.2	ug/L	21	Standard
>	**In**	115	608837.3	1.5				ug/L	619035	Standard
	Sn	118	688.3	15.3	**0.0040**	0.015	381.7	ug/L	508	Standard
	Sb	123	748.4	25.1	**0.1478**	0.034	23.1	ug/L	86	Standard
	Ba	135	323132.0	0.2	**143.7088**	1.894	1.3	ug/L	79	Standard
	Ce	140	1510.1	6.1				ug/L	68	Standard
>	**Tb**	159	942636.2	0.9				ug/L	986982	Standard
	Ho	165	71.7	42.1				ug/L	10	Standard
	Tl	203	221.7	39.3	**0.0318**	0.010	31.8	ug/L	13	Standard
	Tl	205	200.0	49.8	**0.0349**	0.014	38.7	ug/L	10	Standard
	Pb	206	3260.4	7.1	**0.5527**	0.041	7.5	ug/L	264	Standard
	Pb	207	2764.6	8.4	**0.5208**	0.046	8.8	ug/L	227	Standard
	Pb	208	11354.3	4.2	**0.5518**	0.024	4.4	ug/L	868	Standard
	U	238	6271.3	2.3	**0.8889**	0.020	2.2	ug/L	8	Standard
>	**Bi**	209	509768.6	0.1				ug/L	541014	Standard

Sample ID: L1606122801
Report Date/Time: Thursday, June 30, 2016 17:29:58
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**27.4457**	27.277	99.4	mg/L	2	Standard
Mg	24	105167.2	2.0	**110.8934**	3.210	2.9	mg/L	53	Standard
K	39	93.3	34.9	**0.0778**	0.055	70.6	mg/L	53	Standard
Ca	43	381.7	4.2	**19.2352**	0.454	2.4	mg/L	28	Standard
Fe	54	383.9	11.8	**0.1342**	0.028	21.1	mg/L	181	Standard
Fe	57	550.0	11.8	**0.7475**	0.173	23.1	mg/L	257	Standard
Sc-1	45	57070.6	2.2				mg/L	55220	Standard
Cl	35	45817.2	1.5				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	102824.5	2.2				ug/L	2040	Standard
P	31	27136.0	2.5				ug/L	20435	Standard
S	34	2881.9	4.6				ug/L	2430	Standard
Sr	88	315.0	13.0				ug/L	75	Standard
C	12	273.3	15.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	91.2	16.9				mg/L	9	Standard
Ho-1	165	71.7	42.1				mg/L	10	Standard
Er	166	113.3	13.5				mg/L	23	Standard
I	127	577318.3	6.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.730	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.130	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122801
Report Date/Time: Thursday, June 30, 2016 17:29:58
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.353	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.225	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606122801
Report Date/Time: Thursday, June 30, 2016 17:29:58
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122802
Sample Date/Time: Thursday, June 30, 2016 17:30:52
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84553.6	0.8				ug/L	74916	Standard
	Be	9	40.0	54.5	**0.0301**	0.019	61.7	ug/L	10	Standard
	Al	27	72687440.4	0.6	**371.1272**	1.759	0.5	ug/L	1822	Standard
	Sc	45	56028.5	3.6				ug/L	55220	Standard
	Ti	47	1271.7	12.9	**3.1264**	0.427	13.7	ug/L	34	Standard
	V	51	45357.8	2.5	**4.8857**	0.105	2.1	ug/L	1938	Standard
	Cr	52	27926.4	2.4	**2.1818**	0.066	3.0	ug/L	9522	Standard
	Cr	53	41080.8	6.8	**37.8153**	2.480	6.6	ug/L	395	Standard
	Mn	55	18342.1	1.0	**2.1077**	0.024	1.2	ug/L	902	Standard
	Co	59	1867.8	1.8	**0.2152**	0.003	1.5	ug/L	262	Standard
	Ni	60	5585.0	3.9	**2.4394**	0.105	4.3	ug/L	371	Standard
	Cu	65	2253.2	2.2	**1.0007**	0.019	1.9	ug/L	106	Standard
	Zn	66	5947.8	1.6	**4.4020**	0.073	1.7	ug/L	398	Standard
>	**Ge**	72	515884.0	0.5				ug/L	535147	Standard
	As	75	4431.5	3.5	**3.4872**	0.124	3.6	ug/L	-43	Standard
	Se	82	1759.9	1.3	**13.3742**	0.232	1.7	ug/L	14	Standard
	Se-1	77	4138.2	6.7	**47.0651**	3.039	6.5	ug/L	65	Standard
>	**Ga**	71	275.0	12.7				mg/L	97	Standard
	Rb	85	9714.8	2.0				ug/L	15	Standard
	Y	89	451972.4	0.7				ug/L	465704	Standard
>	**Rh**	103	713.4	15.1				ug/L	10	Standard
	Mo	98	14249.3	0.9	**4.8390**	0.048	1.0	ug/L	9	Standard
	Ag	107	130.3	28.3	**0.0122**	0.005	41.7	ug/L	82	Standard
	Cd	111	36.6	50.8	**0.0239**	0.008	33.8	mg/L	7	Standard
	Cd	114	111.4	48.8	**0.0291**	0.010	33.6	ug/L	21	Standard
>	**In**	115	585793.5	1.5				ug/L	619035	Standard
	Sn	118	695.0	14.0	**0.0094**	0.015	159.8	ug/L	508	Standard
	Sb	123	298.3	27.7	**0.0638**	0.016	24.8	ug/L	86	Standard
	Ba	135	17524.8	1.5	**8.0809**	0.009	0.1	ug/L	79	Standard
	Ce	140	4882.5	7.2				ug/L	68	Standard
>	**Tb**	159	939211.6	2.4				ug/L	986982	Standard
	Ho	165	90.0	20.0				ug/L	10	Standard
	Tl	203	117.0	31.8	**0.0200**	0.004	22.4	ug/L	13	Standard
	Tl	205	85.0	11.8	**0.0196**	0.001	7.6	ug/L	10	Standard
	Pb	206	1637.8	1.8	**0.2684**	0.004	1.3	ug/L	264	Standard
	Pb	207	1331.4	4.1	**0.2422**	0.012	4.8	ug/L	227	Standard
	Pb	208	5486.4	2.8	**0.2560**	0.008	3.1	ug/L	868	Standard
	U	238	60169.2	1.1	**8.7341**	0.107	1.2	ug/L	8	Standard
>	**Bi**	209	493823.0	0.7				ug/L	541014	Standard

Sample ID: L1606122802
Report Date/Time: Thursday, June 30, 2016 17:33:09
Page 1

Approved: July 01, 2016

Na	23	6.7	43.3	**36.6454**	14.539	39.7	mg/L	2	Standard
Mg	24	244255.3	2.0	**262.4118**	4.079	1.6	mg/L	53	Standard
K	39	685.0	6.4	**1.0706**	0.082	7.6	mg/L	53	Standard
Ca	43	993.4	8.8	**53.9378**	6.881	12.8	mg/L	28	Standard
Fe	54	260.7	6.9	**0.0567**	0.018	32.0	mg/L	181	Standard
Fe	57	821.7	9.3	**1.4845**	0.220	14.8	mg/L	257	Standard
> **Sc-1**	45	56028.5	3.6				mg/L	55220	Standard
Cl	35	59927.6	0.3				ug/L	35504	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	52735.1	4.5				ug/L	2040	Standard
P	31	28319.8	2.2				ug/L	20435	Standard
S	34	2893.6	4.6				ug/L	2430	Standard
Sr	88	1485.1	3.7				ug/L	75	Standard
C	12	193.3	24.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	129.7	23.0				mg/L	9	Standard
Ho-1	165	90.0	20.0				mg/L	10	Standard
Er	166	76.7	19.9				mg/L	23	Standard
I	127	106629.1	3.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.864	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.400	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122802
Report Date/Time: Thursday, June 30, 2016 17:33:09
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.630
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.277
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122802PS WG574804-01
Sample Date/Time: Thursday, June 30, 2016 17:34:03
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	86437.6	1.7				ug/L	74916	Standard
	Be	9	56613.9	1.0	**46.5070**	0.399	0.9	ug/L	10	Standard
	Al	27	75487495.4	1.1	**377.0591**	5.028	1.3	ug/L	1822	Standard
	Sc	45	58174.8	1.4				ug/L	55220	Standard
	Ti	47	1182.0	2.8	**2.8538**	0.084	2.9	ug/L	34	Standard
	V	51	506511.3	0.9	**55.6793**	0.488	0.9	ug/L	1938	Standard
	Cr	52	468582.8	0.8	**52.1771**	0.411	0.8	ug/L	9522	Standard
	Cr	53	98380.1	1.2	**89.6982**	1.261	1.4	ug/L	395	Standard
	Mn	55	437615.2	0.5	**51.8710**	0.153	0.3	ug/L	902	Standard
	Co	59	384345.6	1.3	**48.1889**	0.577	1.2	ug/L	262	Standard
	Ni	60	109797.1	1.5	**49.8850**	0.779	1.6	ug/L	371	Standard
	Cu	65	103193.2	1.1	**47.7166**	0.590	1.2	ug/L	106	Standard
	Zn	66	67753.5	1.0	**52.9106**	0.608	1.1	ug/L	398	Standard
>	Ge	72	523997.6	0.2				ug/L	535147	Standard
	As	75	70632.2	0.6	**53.9078**	0.320	0.6	ug/L	-43	Standard
	Se	82	8300.6	0.5	**62.4519**	0.357	0.6	ug/L	14	Standard
	Se-1	77	8649.5	1.4	**97.4766**	1.453	1.5	ug/L	65	Standard
>	Ga	71	280.0	25.2				mg/L	97	Standard
	Rb	85	9468.0	1.9				ug/L	15	Standard
	Y	89	467656.1	0.8				ug/L	465704	Standard
>	Rh	103	703.3	13.1				ug/L	10	Standard
	Mo	98	14547.0	0.8	**4.8010**	0.023	0.5	ug/L	9	Standard
	Ag	107	298779.8	0.3	**40.6443**	0.013	0.0	ug/L	82	Standard
	Cd	111	110559.1	0.6	**47.0556**	0.428	0.9	mg/L	7	Standard
	Cd	114	270298.7	1.3	**47.7731**	0.754	1.6	ug/L	21	Standard
>	In	115	602726.9	0.3				ug/L	619035	Standard
	Sn	118	4093.9	2.1	**0.5427**	0.016	2.9	ug/L	508	Standard
	Sb	123	242329.1	0.5	**47.0003**	0.122	0.3	ug/L	86	Standard
	Ba	135	123107.1	0.7	**55.2866**	0.431	0.8	ug/L	79	Standard
	Ce	140	5095.9	1.4				ug/L	68	Standard
>	Tb	159	959859.0	1.9				ug/L	986982	Standard
	Ho	165	75.0	30.6				ug/L	10	Standard
	Tl	203	419623.5	0.5	**49.1426**	0.528	1.1	ug/L	13	Standard
	Tl	205	367995.8	1.3	**50.4422**	0.282	0.6	ug/L	10	Standard
	Pb	206	277925.9	0.4	**50.6764**	0.491	1.0	ug/L	264	Standard
	Pb	207	242544.6	0.3	**48.9335**	0.558	1.1	ug/L	227	Standard
	Pb	208	972336.7	0.8	**50.8744**	0.701	1.4	ug/L	868	Standard
	U	238	429336.0	0.6	**60.7713**	0.490	0.8	ug/L	8	Standard
>	Bi	209	506035.4	0.9				ug/L	541014	Standard

Sample ID: L1606122802PS WG574804-01
Report Date/Time: Thursday, June 30, 2016 17:36:20
Page 1

Approved: July 01, 2016

Na	23	16.7	62.4	**88.6640**	54.789	61.8	mg/L	2	Standard
Mg	24	250054.9	0.8	**258.6884**	5.747	2.2	mg/L	53	Standard
K	39	701.7	10.7	**1.0553**	0.133	12.6	mg/L	53	Standard
Ca	43	950.0	7.6	**49.4071**	4.026	8.1	mg/L	28	Standard
Fe	54	280.5	29.8	**0.0629**	0.056	88.2	mg/L	181	Standard
Fe	57	826.7	0.9	**1.4157**	0.014	1.0	mg/L	257	Standard
> **Sc-1**	45	58174.8	1.4				mg/L	55220	Standard
Cl	35	60997.2	1.1				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	53979.4	3.0				ug/L	2040	Standard
P	31	27292.9	1.1				ug/L	20435	Standard
S	34	2830.3	11.9				ug/L	2430	Standard
Sr	88	1463.4	6.1				ug/L	75	Standard
C	12	156.7	9.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	110.9	27.4				mg/L	9	Standard
Ho-1	165	75.0	30.6				mg/L	10	Standard
Er	166	50.0	34.6				mg/L	23	Standard
I	127	137947.1	7.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.379	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.917	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122802PS WG574804-01
Report Date/Time: Thursday, June 30, 2016 17:36:20
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.366
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606122802PS WG574804-01
Report Date/Time: Thursday, June 30, 2016 17:36:20
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122802SDL WG574804-02
Sample Date/Time: Thursday, June 30, 2016 17:37:15
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73360.5	0.4				ug/L	74916	Standard
	Be	9	36.7	28.4	**0.0319**	0.010	31.8	ug/L	10	Standard
	Al	27	14509056.2	0.6	**85.3818**	0.806	0.9	ug/L	1822	Standard
	Sc	45	53337.1	1.3				ug/L	55220	Standard
	Ti	47	286.3	19.2	**0.6411**	0.136	21.2	ug/L	34	Standard
	V	51	11459.1	1.9	**1.0730**	0.021	2.0	ug/L	1938	Standard
	Cr	52	13335.2	2.1	**0.4814**	0.035	7.2	ug/L	9522	Standard
	Cr	53	12733.7	2.1	**11.3211**	0.206	1.8	ug/L	395	Standard
	Mn	55	4720.1	19.9	**0.4581**	0.114	24.9	ug/L	902	Standard
	Co	59	731.4	36.8	**0.0694**	0.034	49.4	ug/L	262	Standard
	Ni	60	1482.7	3.8	**0.5329**	0.028	5.2	ug/L	371	Standard
	Cu	65	730.7	5.4	**0.2810**	0.019	6.8	ug/L	106	Standard
	Zn	66	2863.9	0.8	**1.9140**	0.025	1.3	ug/L	398	Standard
>	**Ge**	72	521806.3	0.3				ug/L	535147	Standard
	As	75	1017.6	2.9	**0.8344**	0.023	2.8	ug/L	-43	Standard
	Se	82	430.4	3.6	**3.1599**	0.109	3.4	ug/L	14	Standard
	Se-1	77	993.7	4.8	**10.7325**	0.584	5.4	ug/L	65	Standard
>	**Ga**	71	96.7	20.9				mg/L	97	Standard
	Rb	85	1926.8	6.7				ug/L	15	Standard
	Y	89	447616.0	1.0				ug/L	465704	Standard
>	**Rh**	103	160.0	13.6				ug/L	10	Standard
	Mo	98	2746.4	1.1	**0.9278**	0.002	0.2	ug/L	9	Standard
	Ag	107	402.0	70.3	**0.0495**	0.039	79.7	ug/L	82	Standard
	Cd	111	119.5	146.0	**0.0597**	0.076	126.8	mg/L	7	Standard
	Cd	114	348.7	133.0	**0.0717**	0.084	116.6	ug/L	21	Standard
>	**In**	115	595231.3	1.1				ug/L	619035	Standard
	Sn	118	358.3	13.7	**-0.0462**	0.007	15.6	ug/L	508	Standard
	Sb	123	1318.5	18.5	**0.2630**	0.045	17.1	ug/L	86	Standard
	Ba	135	3850.8	7.3	**1.7328**	0.140	8.1	ug/L	79	Standard
	Ce	140	1061.7	17.4				ug/L	68	Standard
>	**Tb**	159	941612.4	1.0				ug/L	986982	Standard
	Ho	165	26.7	47.2				ug/L	10	Standard
	Tl	203	404.7	120.4	**0.0518**	0.055	106.0	ug/L	13	Standard
	Tl	205	258.3	86.3	**0.0420**	0.029	69.9	ug/L	10	Standard
	Pb	206	715.7	32.4	**0.0890**	0.040	44.9	ug/L	264	Standard
	Pb	207	616.7	41.1	**0.0876**	0.049	55.4	ug/L	227	Standard
	Pb	208	2314.4	25.3	**0.0794**	0.029	36.2	ug/L	868	Standard
	U	238	12021.4	3.5	**1.6624**	0.041	2.5	ug/L	8	Standard
>	**Bi**	209	520254.4	1.0				ug/L	541014	Standard

Sample ID: L1606122802SDL WG574804-02
Report Date/Time: Thursday, June 30, 2016 17:39:32
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**28.8752**	28.736	99.5	mg/L	2	Standard
Mg	24	47109.8	2.2	**53.1337**	1.841	3.5	mg/L	53	Standard
K	39	183.3	6.9	**0.2463**	0.025	10.1	mg/L	53	Standard
Ca	43	235.0	10.6	**12.1008**	1.406	11.6	mg/L	28	Standard
Fe	54	82.5	6.4	**-0.0605**	0.004	6.3	mg/L	181	Standard
Fe	57	368.3	12.6	**0.3480**	0.137	39.4	mg/L	257	Standard
> **Sc-1**	45	53337.1	1.3				mg/L	55220	Standard
Cl	35	51990.4	1.9				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	12571.9	2.3				ug/L	2040	Standard
P	31	11519.4	2.2				ug/L	20435	Standard
S	34	2808.6	3.0				ug/L	2430	Standard
Sr	88	361.7	8.4				ug/L	75	Standard
C	12	96.7	31.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	34.1	18.0				mg/L	9	Standard
Ho-1	165	26.7	47.2				mg/L	10	Standard
Er	166	53.3	39.0				mg/L	23	Standard
I	127	50790.0	2.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.923	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.507	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122802SDL WG574804-02
Report Date/Time: Thursday, June 30, 2016 17:39:32
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.155
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.163
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122802SDL WG574804-02
Sample Date/Time: Thursday, June 30, 2016 17:40:26
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71461.5	2.2				ug/L	74916	Standard
	Be	9	26.7	47.2	**0.0228**	0.012	52.7	ug/L	10	Standard
	Al	27	2806825.1	1.4	**16.9567**	0.202	1.2	ug/L	1822	Standard
	Sc	45	52559.4	2.1				ug/L	55220	Standard
	Ti	47	72.0	6.4	**0.1108**	0.011	9.9	ug/L	34	Standard
	V	51	4274.9	5.1	**0.2826**	0.022	7.9	ug/L	1938	Standard
	Cr	52	10369.5	1.5	**0.1568**	0.015	9.6	ug/L	9522	Standard
	Cr	53	3978.9	3.6	**3.3142**	0.151	4.6	ug/L	395	Standard
	Mn	55	1206.4	7.1	**0.0403**	0.008	21.0	ug/L	902	Standard
	Co	59	303.7	11.1	**0.0159**	0.004	25.6	ug/L	262	Standard
	Ni	60	502.7	11.1	**0.0869**	0.023	26.1	ug/L	371	Standard
	Cu	65	277.0	15.4	**0.0714**	0.019	26.4	ug/L	106	Standard
	Zn	66	1164.0	1.9	**0.5827**	0.010	1.7	ug/L	398	Standard
>	**Ge**	72	515849.3	1.3				ug/L	535147	Standard
	As	75	184.2	24.2	**0.1976**	0.033	16.5	ug/L	-43	Standard
	Se	82	106.6	2.9	**0.7192**	0.027	3.7	ug/L	14	Standard
	Se-1	77	263.0	1.7	**2.4473**	0.021	0.8	ug/L	65	Standard
>	**Ga**	71	55.0	18.2				mg/L	97	Standard
	Rb	85	421.7	3.8				ug/L	15	Standard
	Y	89	442472.4	1.7				ug/L	465704	Standard
>	**Rh**	103	45.0	19.2				ug/L	10	Standard
	Mo	98	520.7	1.7	**0.1853**	0.004	2.0	ug/L	9	Standard
	Ag	107	154.3	12.7	**0.0151**	0.003	17.8	ug/L	82	Standard
	Cd	111	12.3	92.1	**0.0132**	0.005	36.7	mg/L	7	Standard
	Cd	114	44.3	52.1	**0.0168**	0.004	24.1	ug/L	21	Standard
>	**In**	115	597577.3	0.8				ug/L	619035	Standard
	Sn	118	213.3	23.6	**-0.0694**	0.008	11.7	ug/L	508	Standard
	Sb	123	262.1	15.7	**0.0557**	0.008	14.9	ug/L	86	Standard
	Ba	135	716.7	2.2	**0.3051**	0.005	1.5	ug/L	79	Standard
	Ce	140	191.7	15.7				ug/L	68	Standard
>	**Tb**	159	921013.3	2.2				ug/L	986982	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	102.3	27.2	**0.0174**	0.003	17.1	ug/L	13	Standard
	Tl	205	156.7	95.9	**0.0281**	0.019	68.9	ug/L	10	Standard
	Pb	206	348.0	6.3	**0.0228**	0.003	15.2	ug/L	264	Standard
	Pb	207	266.7	6.0	**0.0182**	0.003	14.2	ug/L	227	Standard
	Pb	208	1386.0	20.7	**0.0309**	0.014	44.1	ug/L	868	Standard
	U	238	2294.8	6.4	**0.3179**	0.016	5.2	ug/L	8	Standard
>	**Bi**	209	529934.8	1.1				ug/L	541014	Standard

Sample ID: L1606122802SDL WG574804-02
Report Date/Time: Thursday, June 30, 2016 17:42:43
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	9147.8	1.6	**10.4409**	0.172	1.6	mg/L	53	Standard
K	39	70.0	28.6	**0.0490**	0.037	75.3	mg/L	53	Standard
Ca	43	71.7	21.3	**2.5839**	0.860	33.3	mg/L	28	Standard
Fe	54	76.1	10.2	**-0.0643**	0.006	8.7	mg/L	181	Standard
Fe	57	308.3	5.7	**0.1952**	0.046	23.6	mg/L	257	Standard
> **Sc-1**	45	52559.4	2.1				mg/L	55220	Standard
Cl	35	50844.5	1.6				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	4347.3	5.7				ug/L	2040	Standard
P	31	8237.2	1.9				ug/L	20435	Standard
S	34	2880.3	4.6				ug/L	2430	Standard
Sr	88	123.3	26.1				ug/L	75	Standard
C	12	56.7	40.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.4	43.3				mg/L	9	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	38066.1	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.388	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.394	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122802SDL WG574804-02
Report Date/Time: Thursday, June 30, 2016 17:42:43
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.534
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.952
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 17:43:40
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72258.6	1.9				ug/L	74916	Standard
	Be	9	57037.2	1.8	**56.0506**	0.953	1.7	ug/L	10	Standard
	Al	27	9091492.0	2.1	**54.3234**	1.304	2.4	ug/L	1822	Standard
	Sc	45	56784.6	2.3				ug/L	55220	Standard
	Ti	47	44286.6	0.4	**103.4553**	1.782	1.7	ug/L	34	Standard
	V	51	485675.3	0.3	**50.4329**	0.546	1.1	ug/L	1938	Standard
	Cr	52	490309.2	1.8	**51.5847**	1.331	2.6	ug/L	9522	Standard
	Cr	53	61139.8	2.4	**52.5078**	0.692	1.3	ug/L	395	Standard
	Mn	55	447615.4	1.9	**50.1306**	0.806	1.6	ug/L	902	Standard
	Co	59	428562.6	1.7	**50.7726**	0.436	0.9	ug/L	262	Standard
	Ni	60	119106.3	1.0	**51.1440**	1.025	2.0	ug/L	371	Standard
	Cu	65	116860.6	1.3	**51.0638**	0.517	1.0	ug/L	106	Standard
	Zn	66	68880.9	0.3	**50.8192**	0.775	1.5	ug/L	398	Standard
>	Ge	72	554559.8	1.3				ug/L	535147	Standard
	As	75	69238.1	0.3	**49.9414**	0.660	1.3	ug/L	-43	Standard
	Se	82	6963.6	0.6	**49.4910**	0.758	1.5	ug/L	14	Standard
	Se-1	77	4796.4	3.0	**50.7976**	1.329	2.6	ug/L	65	Standard
>	Ga	71	75.0	24.0				mg/L	97	Standard
	Rb	85	1118.4	7.6				ug/L	15	Standard
	Y	89	481212.4	0.6				ug/L	465704	Standard
>	Rh	103	43.3	24.0				ug/L	10	Standard
	Mo	98	315125.8	0.5	**97.1128**	1.487	1.5	ug/L	9	Standard
	Ag	107	386205.1	0.9	**49.1797**	0.968	2.0	ug/L	82	Standard
	Cd	111	125400.2	0.7	**49.9571**	0.795	1.6	mg/L	7	Standard
	Cd	114	304281.3	0.4	**50.3344**	0.343	0.7	ug/L	21	Standard
>	In	115	643980.7	1.1				ug/L	619035	Standard
	Sn	118	345428.6	1.3	**50.9205**	0.539	1.1	ug/L	508	Standard
	Sb	123	275057.7	1.1	**49.9373**	1.011	2.0	ug/L	86	Standard
	Ba	135	118011.5	0.9	**49.6017**	0.296	0.6	ug/L	79	Standard
	Ce	140	126.7	32.9				ug/L	68	Standard
>	Tb	159	982270.0	1.2				ug/L	986982	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	481075.9	0.7	**51.0955**	0.420	0.8	ug/L	13	Standard
	Tl	205	420488.3	0.5	**52.2771**	0.384	0.7	ug/L	10	Standard
	Pb	206	300589.6	1.1	**49.7077**	0.665	1.3	ug/L	264	Standard
	Pb	207	271260.3	0.3	**49.6331**	0.176	0.4	ug/L	227	Standard
	Pb	208	1111622.2	0.7	**52.7489**	0.293	0.6	ug/L	868	Standard
	U	238	405342.1	0.3	**52.0374**	0.347	0.7	ug/L	8	Standard
>	Bi	209	557941.2	0.4				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 17:45:57
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4927.5	4.8	**5.1899**	0.290	5.6	mg/L	53	Standard
K	39	2308.5	3.7	**3.7365**	0.212	5.7	mg/L	53	Standard
Ca	43	113.3	16.7	**4.5567**	0.927	20.3	mg/L	28	Standard
Fe	54	7483.3	2.8	**4.8432**	0.248	5.1	mg/L	181	Standard
Fe	57	2221.8	7.9	**5.0628**	0.482	9.5	mg/L	257	Standard
Sc-1	45	56784.6	2.3				mg/L	55220	Standard
Cl	35	48383.9	3.9				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2723.6	12.6				ug/L	2040	Standard
P	31	25431.3	1.5				ug/L	20435	Standard
S	34	3180.3	4.3				ug/L	2430	Standard
Sr	88	90.0	33.3				ug/L	75	Standard
C	12	123.3	20.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	19.4	50.5				mg/L	9	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	18646.5	4.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	112.101		
Al	27	108.647		
Sc	45			
Ti	47	103.455		
V	51	100.866		
Cr	52	103.169		
Cr	53			
Mn	55	100.261		
Co	59	101.545		
Ni	60	102.288		
Cu	65	102.128		
Zn	66	101.638		
Ge	72		103.628	
As	75	99.883		
Se	82	98.982		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 17:45:57
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	97.113		
Ag	107	98.359		
Cd	111	99.914		
Cd	114			
In	115			104.030
Sn	118	101.841		
Sb	123	99.875		
Ba	135	99.203		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.191		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.498		
U	238	104.075		
Bi	209			103.129
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 17:45:57
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 17:46:51
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71546.9	1.6				ug/L	74916	Standard
	Be	9	70.0	65.5	**0.0656**	0.045	68.4	ug/L	10	Standard
	Al	27	20191.3	127.2	**0.1188**	0.154	129.5	ug/L	1822	Standard
	Sc	45	56650.7	0.9				ug/L	55220	Standard
	Ti	47	55.3	41.9	**0.0588**	0.053	89.4	ug/L	34	Standard
	V	51	1898.8	4.3	**0.0014**	0.006	433.4	ug/L	1938	Standard
	Cr	52	8671.5	6.2	**-0.1096**	0.049	45.1	ug/L	9522	Standard
	Cr	53	1248.4	8.8	**0.6919**	0.084	12.2	ug/L	395	Standard
	Mn	55	1063.4	23.8	**0.0140**	0.027	193.5	ug/L	902	Standard
	Co	59	356.0	39.3	**0.0193**	0.016	83.4	ug/L	262	Standard
	Ni	60	347.3	30.1	**0.0036**	0.043	1191.3	ug/L	371	Standard
	Cu	65	223.7	29.9	**0.0389**	0.028	72.4	ug/L	106	Standard
	Zn	66	452.3	14.9	**-0.0111**	0.047	419.6	ug/L	398	Standard
>	**Ge**	72	554751.4	1.2				ug/L	535147	Standard
	As	75	-55.9	25.8	**0.0150**	0.010	68.9	ug/L	-43	Standard
	Se	82	21.4	11.6	**0.0557**	0.019	33.3	ug/L	14	Standard
	Se-1	77	90.0	12.2	**0.3821**	0.113	29.6	ug/L	65	Standard
>	**Ga**	71	58.3	27.6				mg/L	97	Standard
	Rb	85	45.0	19.2				ug/L	15	Standard
	Y	89	482380.1	2.6				ug/L	465704	Standard
>	**Rh**	103	40.0	37.5				ug/L	10	Standard
	Mo	98	322.1	29.1	**0.1093**	0.028	25.5	ug/L	9	Standard
	Ag	107	381.0	21.2	**0.0413**	0.010	23.7	ug/L	82	Standard
	Cd	111	46.7	121.4	**0.0260**	0.022	84.3	mg/L	7	Standard
	Cd	114	87.7	82.5	**0.0231**	0.012	50.3	ug/L	21	Standard
>	**In**	115	658696.5	1.3				ug/L	619035	Standard
	Sn	118	1141.7	4.6	**0.0615**	0.007	12.2	ug/L	508	Standard
	Sb	123	938.2	24.9	**0.1709**	0.041	24.1	ug/L	86	Standard
	Ba	135	89.7	82.5	**0.0172**	0.030	175.6	ug/L	79	Standard
	Ce	140	43.3	43.7				ug/L	68	Standard
>	**Tb**	159	992991.8	0.3				ug/L	986982	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	200.3	77.5	**0.0268**	0.016	60.0	ug/L	13	Standard
	Tl	205	213.3	103.0	**0.0337**	0.027	79.3	ug/L	10	Standard
	Pb	206	385.0	24.3	**0.0247**	0.015	61.1	ug/L	264	Standard
	Pb	207	327.3	27.0	**0.0256**	0.016	61.6	ug/L	227	Standard
	Pb	208	1329.0	23.3	**0.0235**	0.014	60.8	ug/L	868	Standard
	U	238	207.7	109.3	**0.0340**	0.029	83.9	ug/L	8	Standard
>	**Bi**	209	568921.4	0.2				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 17:49:08
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	126.7	81.5	**0.1003**	0.111	110.3	mg/L	53	Standard
K	39	40.0	25.0	**-0.0098**	0.017	170.2	mg/L	53	Standard
Ca	43	23.3	32.7	**-0.3870**	0.423	109.2	mg/L	28	Standard
Fe	54	159.2	11.3	**-0.0131**	0.011	86.4	mg/L	181	Standard
Fe	57	273.3	4.6	**0.0429**	0.033	77.3	mg/L	257	Standard
> **Sc-1**	45	56650.7	0.9				mg/L	55220	Standard
Cl	35	45940.2	1.2				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2093.5	11.0				ug/L	2040	Standard
P	31	24581.6	1.1				ug/L	20435	Standard
S	34	3042.0	8.5				ug/L	2430	Standard
Sr	88	70.0	14.3				ug/L	75	Standard
C	12	76.7	30.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	172.7	9.0				mg/L	9	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	8235.6	8.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.663	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 17:49:08
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.407
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.158
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 17:49:08
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106501
Sample Date/Time: Thursday, June 30, 2016 17:50:04
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73635.2	0.9				ug/L	74916	Standard
	Be	9	30.0	16.7	**0.0253**	0.005	19.6	ug/L	10	Standard
	Al	27	16116931.3	0.8	**94.4932**	1.153	1.2	ug/L	1822	Standard
	Sc	45	57662.9	0.8				ug/L	55220	Standard
	Ti	47	336.7	9.7	**0.7312**	0.081	11.1	ug/L	34	Standard
	V	51	5982.0	43.5	**0.4395**	0.279	63.4	ug/L	1938	Standard
	Cr	52	611766.7	0.6	**65.8027**	0.537	0.8	ug/L	9522	Standard
	Cr	53	86462.7	0.9	**75.7804**	0.701	0.9	ug/L	395	Standard
	Mn	55	887838.0	0.5	**101.3493**	1.401	1.4	ug/L	902	Standard
	Co	59	4582.7	1.6	**0.5302**	0.006	1.1	ug/L	262	Standard
	Ni	60	41104.7	0.5	**17.8736**	0.095	0.5	ug/L	371	Standard
	Cu	65	2756.3	3.3	**1.1692**	0.052	4.4	ug/L	106	Standard
	Zn	66	17435.4	1.2	**12.8391**	0.252	2.0	ug/L	398	Standard
>	**Ge**	72	544681.4	1.0				ug/L	535147	Standard
	As	75	162.3	16.8	**0.1743**	0.020	11.4	ug/L	-43	Standard
	Se	82	40.0	22.7	**0.1928**	0.065	33.7	ug/L	14	Standard
	Se-1	77	588.7	14.2	**5.8405**	0.920	15.7	ug/L	65	Standard
>	**Ga**	71	186.7	6.7				mg/L	97	Standard
	Rb	85	47365.6	1.2				ug/L	15	Standard
	Y	89	471520.5	1.5				ug/L	465704	Standard
>	**Rh**	103	111.7	9.3				ug/L	10	Standard
	Mo	98	9357.1	1.9	**2.9396**	0.067	2.3	ug/L	9	Standard
	Ag	107	194.0	23.5	**0.0190**	0.006	31.8	ug/L	82	Standard
	Cd	111	169.3	4.2	**0.0764**	0.004	4.7	mg/L	7	Standard
	Cd	114	469.8	16.7	**0.0878**	0.013	14.9	ug/L	21	Standard
>	**In**	115	634293.5	1.1				ug/L	619035	Standard
	Sn	118	1250.1	5.7	**0.0841**	0.011	12.7	ug/L	508	Standard
	Sb	123	10516.4	0.9	**1.9427**	0.039	2.0	ug/L	86	Standard
	Ba	135	14835.6	0.8	**6.3138**	0.040	0.6	ug/L	79	Standard
	Ce	140	1355.1	1.3				ug/L	68	Standard
>	**Tb**	159	980205.4	1.5				ug/L	986982	Standard
	Ho	165	105.0	24.7				ug/L	10	Standard
	Tl	203	91.3	17.4	**0.0161**	0.002	11.0	ug/L	13	Standard
	Tl	205	81.7	33.7	**0.0182**	0.003	19.1	ug/L	10	Standard
	Pb	206	2801.3	0.6	**0.4427**	0.006	1.4	ug/L	264	Standard
	Pb	207	2407.5	0.5	**0.4237**	0.002	0.4	ug/L	227	Standard
	Pb	208	10014.6	0.8	**0.4546**	0.008	1.7	ug/L	868	Standard
	U	238	1288.7	2.6	**0.1794**	0.006	3.1	ug/L	8	Standard
>	**Bi**	209	538332.6	0.8				ug/L	541014	Standard

Sample ID: L1606106501
Report Date/Time: Thursday, June 30, 2016 17:52:21
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.0499**	15.666	173.1	mg/L	2	Standard
Mg	24	46080.0	1.0	**48.0607**	0.867	1.8	mg/L	53	Standard
K	39	1136.7	6.1	**1.7713**	0.112	6.3	mg/L	53	Standard
Ca	43	476.7	19.5	**24.1522**	4.825	20.0	mg/L	28	Standard
Fe	54	806.2	1.9	**0.4073**	0.006	1.4	mg/L	181	Standard
Fe	57	648.3	5.1	**0.9822**	0.098	9.9	mg/L	257	Standard
> **Sc-1**	45	57662.9	0.8				mg/L	55220	Standard
Cl	35	49425.8	0.4				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	5294.3	1.6				ug/L	2040	Standard
P	31	27229.5	2.2				ug/L	20435	Standard
S	34	3085.3	3.6				ug/L	2430	Standard
Sr	88	235.0	9.3				ug/L	75	Standard
C	12	146.7	23.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	128.2	58.4				mg/L	9	Standard
Ho-1	165	105.0	24.7				mg/L	10	Standard
Er	166	106.7	19.5				mg/L	23	Standard
I	127	7078.3	4.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.290	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.782	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106501
Report Date/Time: Thursday, June 30, 2016 17:52:21
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.465	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.504	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106502
Sample Date/Time: Thursday, June 30, 2016 17:53:16
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72146.4	2.3				ug/L	74916	Standard
	Be	9	33.3	69.3	**0.0291**	0.022	76.7	ug/L	10	Standard
	Al	27	9143805.5	1.7	**54.7197**	0.658	1.2	ug/L	1822	Standard
	Sc	45	57748.2	1.1				ug/L	55220	Standard
	Ti	47	387.0	7.8	**0.8501**	0.073	8.6	ug/L	34	Standard
	V	51	16858.0	80.2	**1.5917**	1.431	89.9	ug/L	1938	Standard
	Cr	52	4964026.3	0.6	**540.8487**	6.495	1.2	ug/L	9522	Standard
	Cr	53	629499.0	1.4	**553.7238**	13.816	2.5	ug/L	395	Standard
	Mn	55	883241.4	1.3	**100.7267**	1.452	1.4	ug/L	902	Standard
	Co	59	24044.4	1.3	**2.8764**	0.057	2.0	ug/L	262	Standard
	Ni	60	51740.2	1.0	**22.5158**	0.325	1.4	ug/L	371	Standard
	Cu	65	17579.9	1.8	**7.7639**	0.133	1.7	ug/L	106	Standard
	Zn	66	2765.6	0.3	**1.7428**	0.016	0.9	ug/L	398	Standard
>	Ge	72	545188.7	1.1				ug/L	535147	Standard
	As	75	735.7	13.4	**0.5948**	0.076	12.8	ug/L	-43	Standard
	Se	82	41.0	14.1	**0.2003**	0.044	22.2	ug/L	14	Standard
	Se-1	77	481.7	5.4	**4.6670**	0.276	5.9	ug/L	65	Standard
>	Ga	71	550.0	8.8				mg/L	97	Standard
	Rb	85	5659.4	1.5				ug/L	15	Standard
	Y	89	495236.8	0.4				ug/L	465704	Standard
>	Rh	103	58.3	34.6				ug/L	10	Standard
	Mo	98	53760.2	0.9	**16.9630**	0.070	0.4	ug/L	9	Standard
	Ag	107	191.3	10.8	**0.0189**	0.003	14.6	ug/L	82	Standard
	Cd	111	62.5	16.0	**0.0334**	0.004	11.9	mg/L	7	Standard
	Cd	114	293.6	17.4	**0.0586**	0.009	14.9	ug/L	21	Standard
>	In	115	629265.6	0.6				ug/L	619035	Standard
	Sn	118	2848.6	5.3	**0.3272**	0.024	7.4	ug/L	508	Standard
	Sb	123	804.0	3.9	**0.1538**	0.006	3.9	ug/L	86	Standard
	Ba	135	14742.2	1.9	**6.3237**	0.092	1.5	ug/L	79	Standard
	Ce	140	2671.9	4.0				ug/L	68	Standard
>	Tb	159	977403.9	1.3				ug/L	986982	Standard
	Ho	165	1240.1	9.1				ug/L	10	Standard
	Tl	203	196.7	16.2	**0.0277**	0.004	12.6	ug/L	13	Standard
	Tl	205	168.3	6.2	**0.0295**	0.001	4.2	ug/L	10	Standard
	Pb	206	866.4	7.6	**0.1114**	0.011	10.1	ug/L	264	Standard
	Pb	207	763.4	10.1	**0.1122**	0.014	12.8	ug/L	227	Standard
	Pb	208	3091.5	4.1	**0.1144**	0.006	5.3	ug/L	868	Standard
	U	238	383.7	7.3	**0.0591**	0.004	6.2	ug/L	8	Standard
>	Bi	209	536269.8	0.5				ug/L	541014	Standard

Sample ID: L1606106502
Report Date/Time: Thursday, June 30, 2016 17:55:33
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**17.8230**	15.431	86.6	mg/L	2	Standard
Mg	24	50808.4	2.5	**52.9253**	1.876	3.5	mg/L	53	Standard
K	39	263.3	23.9	**0.3507**	0.098	27.9	mg/L	53	Standard
Ca	43	335.0	14.2	**16.4838**	2.751	16.7	mg/L	28	Standard
Fe	54	3770.4	4.9	**2.3376**	0.113	4.8	mg/L	181	Standard
Fe	57	1288.4	9.4	**2.6008**	0.312	12.0	mg/L	257	Standard
> **Sc-1**	45	57748.2	1.1				mg/L	55220	Standard
Cl	35	47216.1	1.9				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	5644.4	5.9				ug/L	2040	Standard
P	31	28563.6	2.2				ug/L	20435	Standard
S	34	3062.0	5.7				ug/L	2430	Standard
Sr	88	153.3	16.4				ug/L	75	Standard
C	12	156.7	14.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	33.3				mg/L	7	Standard
Dy	164	1576.7	5.4				mg/L	9	Standard
Ho-1	165	1240.1	9.1				mg/L	10	Standard
Er	166	1183.4	13.0				mg/L	23	Standard
I	127	11782.9	3.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.303	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.876	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106502
Report Date/Time: Thursday, June 30, 2016 17:55:33
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.653	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.123	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106503
Sample Date/Time: Thursday, June 30, 2016 17:56:27
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72267.1	3.4				ug/L	74916	Standard
	Be	9	25.0	20.0	**0.0211**	0.005	25.9	ug/L	10	Standard
	Al	27	9609222.0	1.3	**57.4380**	1.746	3.0	ug/L	1822	Standard
	Sc	45	56719.3	1.4				ug/L	55220	Standard
	Ti	47	314.0	8.3	**0.6892**	0.070	10.2	ug/L	34	Standard
	V	51	9882.7	51.2	**0.8691**	0.548	63.1	ug/L	1938	Standard
	Cr	52	1188107.4	0.9	**130.8093**	1.119	0.9	ug/L	9522	Standard
	Cr	53	157236.7	1.1	**140.2942**	0.188	0.1	ug/L	395	Standard
	Mn	55	1593129.9	0.6	**184.7936**	1.923	1.0	ug/L	902	Standard
	Co	59	5302.6	0.8	**0.6272**	0.010	1.6	ug/L	262	Standard
	Ni	60	52859.7	0.7	**23.3912**	0.318	1.4	ug/L	371	Standard
	Cu	65	4676.1	1.5	**2.0568**	0.050	2.4	ug/L	106	Standard
	Zn	66	13695.9	1.8	**10.1747**	0.313	3.1	ug/L	398	Standard
>	**Ge**	72	536277.7	1.2				ug/L	535147	Standard
	As	75	582.2	21.2	**0.4890**	0.092	18.9	ug/L	-43	Standard
	Se	82	45.5	5.6	**0.2385**	0.021	8.7	ug/L	14	Standard
	Se-1	77	720.0	2.4	**7.3963**	0.270	3.6	ug/L	65	Standard
>	**Ga**	71	248.3	30.8				mg/L	97	Standard
	Rb	85	4008.9	1.2				ug/L	15	Standard
	Y	89	473754.3	0.1				ug/L	465704	Standard
>	**Rh**	103	110.0	7.9				ug/L	10	Standard
	Mo	98	4459.5	1.0	**1.4370**	0.027	1.9	ug/L	9	Standard
	Ag	107	169.7	20.5	**0.0163**	0.005	28.3	ug/L	82	Standard
	Cd	111	27.4	24.2	**0.0192**	0.003	14.6	mg/L	7	Standard
	Cd	114	98.3	29.5	**0.0258**	0.005	19.6	ug/L	21	Standard
>	**In**	115	621152.9	1.0				ug/L	619035	Standard
	Sn	118	1058.4	7.6	**0.0588**	0.014	23.7	ug/L	508	Standard
	Sb	123	419.5	13.7	**0.0834**	0.011	13.3	ug/L	86	Standard
	Ba	135	41508.4	0.6	**18.0760**	0.194	1.1	ug/L	79	Standard
	Ce	140	6071.2	3.4				ug/L	68	Standard
>	**Tb**	159	964455.2	0.8				ug/L	986982	Standard
	Ho	165	346.7	14.4				ug/L	10	Standard
	Tl	203	247.0	3.9	**0.0337**	0.001	3.3	ug/L	13	Standard
	Tl	205	235.0	9.8	**0.0386**	0.003	8.2	ug/L	10	Standard
	Pb	206	1431.7	0.2	**0.2128**	0.001	0.5	ug/L	264	Standard
	Pb	207	1231.7	1.9	**0.2053**	0.005	2.2	ug/L	227	Standard
	Pb	208	5055.0	0.8	**0.2155**	0.001	0.4	ug/L	868	Standard
	U	238	897.7	3.9	**0.1297**	0.005	3.8	ug/L	8	Standard
>	**Bi**	209	527610.6	0.5				ug/L	541014	Standard

Sample ID: L1606106503
Report Date/Time: Thursday, June 30, 2016 17:58:44
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**27.1787**	27.209	100.1	mg/L	2	Standard
Mg	24	76226.3	1.0	**80.8465**	0.780	1.0	mg/L	53	Standard
K	39	330.0	9.5	**0.4690**	0.047	10.1	mg/L	53	Standard
Ca	43	416.7	13.3	**21.2780**	2.769	13.0	mg/L	28	Standard
Fe	54	2258.1	2.4	**1.3795**	0.049	3.6	mg/L	181	Standard
Fe	57	981.7	1.6	**1.8687**	0.018	1.0	mg/L	257	Standard
Sc-1	45	56719.3	1.4				mg/L	55220	Standard
Cl	35	47083.0	0.3				ug/L	35504	Standard
Kr	83	4.7	53.9				ug/L	2	Standard
Br	81	8569.1	2.3				ug/L	2040	Standard
P	31	27803.8	2.0				ug/L	20435	Standard
S	34	3010.3	4.7				ug/L	2430	Standard
Sr	88	171.7	11.0				ug/L	75	Standard
C	12	170.0	56.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	7	Standard
Dy	164	380.7	13.5				mg/L	9	Standard
Ho-1	165	346.7	14.4				mg/L	10	Standard
Er	166	403.3	12.7				mg/L	23	Standard
I	127	14363.5	3.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		96.464	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.211	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606106503
Report Date/Time: Thursday, June 30, 2016 17:58:44
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.342	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.523	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106504
Sample Date/Time: Thursday, June 30, 2016 17:59:39
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73044.0	0.7				ug/L	74916	Standard
	Be	9	20.0	66.1	**0.0158**	0.013	81.1	ug/L	10	Standard
	Al	27	14890059.6	1.9	**88.0112**	2.233	2.5	ug/L	1822	Standard
	Sc	45	56127.1	2.5				ug/L	55220	Standard
	Ti	47	684.7	0.3	**1.5842**	0.013	0.8	ug/L	34	Standard
	V	51	13946.2	28.3	**1.3048**	0.416	31.8	ug/L	1938	Standard
	Cr	52	1670670.6	1.4	**184.2918**	1.683	0.9	ug/L	9522	Standard
	Cr	53	217611.9	1.9	**194.2485**	3.221	1.7	ug/L	395	Standard
	Mn	55	1043368.4	2.0	**120.9446**	2.516	2.1	ug/L	902	Standard
	Co	59	41859.4	0.7	**5.1062**	0.013	0.3	ug/L	262	Standard
	Ni	60	94446.5	0.6	**41.8919**	0.141	0.3	ug/L	371	Standard
	Cu	65	5341.9	1.9	**2.3570**	0.039	1.7	ug/L	106	Standard
	Zn	66	14047.2	1.9	**10.4384**	0.166	1.6	ug/L	398	Standard
>	Ge	72	536441.4	0.6				ug/L	535147	Standard
	As	75	633.5	11.9	**0.5272**	0.058	11.0	ug/L	-43	Standard
	Se	82	31.7	5.9	**0.1362**	0.013	9.3	ug/L	14	Standard
	Se-1	77	649.7	1.0	**6.6130**	0.043	0.7	ug/L	65	Standard
>	Ga	71	410.0	14.8				mg/L	97	Standard
	Rb	85	132130.3	1.2				ug/L	15	Standard
	Y	89	474946.5	2.3				ug/L	465704	Standard
>	Rh	103	93.3	29.5				ug/L	10	Standard
	Mo	98	5272.3	2.4	**1.7093**	0.050	2.9	ug/L	9	Standard
	Ag	107	231.7	10.6	**0.0248**	0.003	13.3	ug/L	82	Standard
	Cd	111	395.6	5.6	**0.1725**	0.010	5.9	mg/L	7	Standard
	Cd	114	1048.3	2.6	**0.1900**	0.004	2.0	ug/L	21	Standard
>	In	115	616493.3	0.5				ug/L	619035	Standard
	Sn	118	1433.4	5.0	**0.1177**	0.011	9.0	ug/L	508	Standard
	Sb	123	13013.0	1.3	**2.4718**	0.035	1.4	ug/L	86	Standard
	Ba	135	13824.0	1.2	**6.0522**	0.083	1.4	ug/L	79	Standard
	Ce	140	7013.3	4.1				ug/L	68	Standard
>	Tb	159	964332.8	2.1				ug/L	986982	Standard
	Ho	165	1006.7	4.5				ug/L	10	Standard
	Tl	203	208.7	13.6	**0.0294**	0.003	10.0	ug/L	13	Standard
	Tl	205	180.0	43.3	**0.0314**	0.010	33.1	ug/L	10	Standard
	Pb	206	6744.2	1.3	**1.1438**	0.024	2.1	ug/L	264	Standard
	Pb	207	5755.1	0.8	**1.0824**	0.023	2.1	ug/L	227	Standard
	Pb	208	23463.1	0.3	**1.1412**	0.017	1.5	ug/L	868	Standard
	U	238	640.0	6.0	**0.0949**	0.006	6.0	ug/L	8	Standard
>	Bi	209	527082.8	1.3				ug/L	541014	Standard

Sample ID: L1606106504
Report Date/Time: Thursday, June 30, 2016 18:01:55
Page 1

Approved: July 01, 2016

Na	23	8.3	69.3	**46.3620**	32.662	70.5	mg/L	2	Standard
Mg	24	54382.5	2.9	**58.2709**	0.521	0.9	mg/L	53	Standard
K	39	2045.1	8.2	**3.3436**	0.351	10.5	mg/L	53	Standard
Ca	43	306.7	14.2	**15.4474**	2.730	17.7	mg/L	28	Standard
Fe	54	2616.1	3.9	**1.6351**	0.060	3.7	mg/L	181	Standard
Fe	57	1056.7	7.6	**2.0939**	0.256	12.2	mg/L	257	Standard
> **Sc-1**	45	56127.1	2.5				mg/L	55220	Standard
Cl	35	46950.6	1.7				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	5627.7	2.5				ug/L	2040	Standard
P	31	28496.8	5.3				ug/L	20435	Standard
S	34	3097.0	2.4				ug/L	2430	Standard
Sr	88	225.0	25.6				ug/L	75	Standard
C	12	120.0	22.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	7	Standard
Dy	164	1300.3	7.6				mg/L	9	Standard
Ho-1	165	1006.7	4.5				mg/L	10	Standard
Er	166	900.0	5.9				mg/L	23	Standard
I	127	8590.8	4.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.242	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106504
Report Date/Time: Thursday, June 30, 2016 18:01:55
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.589	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.425	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106505
Sample Date/Time: Thursday, June 30, 2016 18:02:50
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74521.2	1.6				ug/L	74916	Standard
	Be	9	11.7	89.2	**0.0075**	0.010	132.8	ug/L	10	Standard
	Al	27	21478597.1	0.8	**124.4554**	2.868	2.3	ug/L	1822	Standard
	Sc	45	57492.2	2.1				ug/L	55220	Standard
	Ti	47	252.3	5.2	**0.5312**	0.026	5.0	ug/L	34	Standard
	V	51	5121.6	17.5	**0.3486**	0.101	28.9	ug/L	1938	Standard
	Cr	52	70044.2	0.4	**6.6263**	0.112	1.7	ug/L	9522	Standard
	Cr	53	18946.8	3.0	**16.3331**	0.630	3.9	ug/L	395	Standard
	Mn	55	443945.6	0.8	**50.7064**	0.748	1.5	ug/L	902	Standard
	Co	59	1061.4	2.8	**0.1055**	0.005	4.7	ug/L	262	Standard
	Ni	60	12700.7	1.0	**5.4312**	0.085	1.6	ug/L	371	Standard
	Cu	65	1736.8	1.8	**0.7160**	0.009	1.3	ug/L	106	Standard
	Zn	66	3357.7	1.7	**2.1967**	0.054	2.5	ug/L	398	Standard
>	**Ge**	72	543813.6	1.1				ug/L	535147	Standard
	As	75	48.4	94.1	**0.0908**	0.034	37.0	ug/L	-43	Standard
	Se	82	48.8	16.1	**0.2573**	0.058	22.6	ug/L	14	Standard
	Se-1	77	599.7	2.9	**5.9687**	0.138	2.3	ug/L	65	Standard
>	**Ga**	71	270.0	25.7				mg/L	97	Standard
	Rb	85	463340.4	1.4				ug/L	15	Standard
	Y	89	469105.6	1.4				ug/L	465704	Standard
>	**Rh**	103	75.0	17.6				ug/L	10	Standard
	Mo	98	1754.4	2.2	**0.5694**	0.017	3.0	ug/L	9	Standard
	Ag	107	196.0	47.6	**0.0197**	0.012	62.6	ug/L	82	Standard
	Cd	111	159.1	1.3	**0.0732**	0.001	1.9	mg/L	7	Standard
	Cd	114	395.1	15.1	**0.0762**	0.010	12.9	ug/L	21	Standard
>	**In**	115	625024.6	0.8				ug/L	619035	Standard
	Sn	118	990.0	15.1	**0.0473**	0.023	48.5	ug/L	508	Standard
	Sb	123	5564.4	1.8	**1.0452**	0.025	2.4	ug/L	86	Standard
	Ba	135	10303.2	1.2	**4.4444**	0.086	1.9	ug/L	79	Standard
	Ce	140	1150.0	11.1				ug/L	68	Standard
>	**Tb**	159	978171.3	1.4				ug/L	986982	Standard
	Ho	165	78.3	13.3				ug/L	10	Standard
	Tl	203	125.3	56.3	**0.0199**	0.008	39.6	ug/L	13	Standard
	Tl	205	88.3	25.5	**0.0191**	0.003	15.4	ug/L	10	Standard
	Pb	206	1646.1	2.8	**0.2461**	0.009	3.7	ug/L	264	Standard
	Pb	207	1373.4	5.0	**0.2288**	0.014	6.2	ug/L	227	Standard
	Pb	208	5691.1	0.6	**0.2433**	0.003	1.2	ug/L	868	Standard
	U	238	70.0	35.1	**0.0173**	0.003	19.3	ug/L	8	Standard
>	**Bi**	209	535475.4	0.5				ug/L	541014	Standard

Sample ID: L1606106505
Report Date/Time: Thursday, June 30, 2016 18:05:07
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	34121.7	1.4	**35.6859**	0.355	1.0	mg/L	53	Standard
K	39	9759.8	0.3	**15.8371**	0.382	2.4	mg/L	53	Standard
Ca	43	246.7	6.2	**11.7374**	0.613	5.2	mg/L	28	Standard
Fe	54	445.3	11.1	**0.1732**	0.039	22.4	mg/L	181	Standard
Fe	57	443.3	5.7	**0.4651**	0.060	13.0	mg/L	257	Standard
> **Sc-1**	45	57492.2	2.1				mg/L	55220	Standard
Cl	35	51043.8	0.6				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	7035.0	6.1				ug/L	2040	Standard
P	31	27479.9	4.1				ug/L	20435	Standard
S	34	2850.3	7.2				ug/L	2430	Standard
Sr	88	156.7	14.4				ug/L	75	Standard
C	12	150.0	33.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	57.0	65.8				mg/L	9	Standard
Ho-1	165	78.3	13.3				mg/L	10	Standard
Er	166	63.3	71.2				mg/L	23	Standard
I	127	8402.3	4.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.472	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.619	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106505
Report Date/Time: Thursday, June 30, 2016 18:05:07
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.968
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.976
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606106505
Report Date/Time: Thursday, June 30, 2016 18:05:07
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106506
Sample Date/Time: Thursday, June 30, 2016 18:06:02
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71069.7	2.2				ug/L	74916	Standard
	Be	9	30.0	33.3	**0.0265**	0.010	39.6	ug/L	10	Standard
	Al	27	11143825.1	2.6	**67.6893**	0.868	1.3	ug/L	1822	Standard
	Sc	45	56048.5	1.5				ug/L	55220	Standard
	Ti	47	477.7	3.5	**1.0979**	0.040	3.7	ug/L	34	Standard
	V	51	4437.6	7.8	**0.2877**	0.039	13.6	ug/L	1938	Standard
	Cr	52	45979.0	2.0	**4.1225**	0.083	2.0	ug/L	9522	Standard
	Cr	53	13444.3	4.2	**11.7831**	0.524	4.4	ug/L	395	Standard
	Mn	55	3575608.0	1.6	**419.7161**	4.801	1.1	ug/L	902	Standard
	Co	59	2220.8	1.8	**0.2526**	0.003	1.3	ug/L	262	Standard
	Ni	60	7995.4	0.2	**3.4561**	0.023	0.7	ug/L	371	Standard
	Cu	65	2743.2	1.7	**1.1967**	0.016	1.3	ug/L	106	Standard
	Zn	66	4451.7	1.5	**3.1126**	0.058	1.9	ug/L	398	Standard
>	**Ge**	72	530048.9	0.6				ug/L	535147	Standard
	As	75	2032.0	2.8	**1.5868**	0.042	2.6	ug/L	-43	Standard
	Se	82	76.9	9.6	**0.4758**	0.054	11.4	ug/L	14	Standard
	Se-1	77	672.7	3.2	**6.9571**	0.208	3.0	ug/L	65	Standard
>	**Ga**	71	185.0	9.7				mg/L	97	Standard
	Rb	85	7120.0	1.7				ug/L	15	Standard
	Y	89	462046.4	1.0				ug/L	465704	Standard
>	**Rh**	103	118.3	34.2				ug/L	10	Standard
	Mo	98	710.5	3.3	**0.2430**	0.007	3.1	ug/L	9	Standard
	Ag	107	224.0	3.1	**0.0240**	0.001	3.7	ug/L	82	Standard
	Cd	111	47.0	19.1	**0.0276**	0.004	13.4	mg/L	7	Standard
	Cd	114	113.0	29.7	**0.0286**	0.006	20.3	ug/L	21	Standard
>	**In**	115	611324.6	0.3				ug/L	619035	Standard
	Sn	118	1256.7	33.6	**0.0923**	0.066	71.8	ug/L	508	Standard
	Sb	123	729.4	5.3	**0.1439**	0.008	5.4	ug/L	86	Standard
	Ba	135	23684.8	0.9	**10.4710**	0.067	0.6	ug/L	79	Standard
	Ce	140	3487.1	5.2				ug/L	68	Standard
>	**Tb**	159	950376.7	0.4				ug/L	986982	Standard
	Ho	165	113.3	16.7				ug/L	10	Standard
	Tl	203	194.3	13.6	**0.0282**	0.003	10.7	ug/L	13	Standard
	Tl	205	166.7	7.5	**0.0300**	0.002	5.4	ug/L	10	Standard
	Pb	206	868.0	3.2	**0.1167**	0.005	4.3	ug/L	264	Standard
	Pb	207	745.7	6.4	**0.1136**	0.009	8.0	ug/L	227	Standard
	Pb	208	2985.1	1.3	**0.1141**	0.002	1.4	ug/L	868	Standard
	U	238	143.0	9.5	**0.0276**	0.002	6.8	ug/L	8	Standard
>	**Bi**	209	518904.1	0.3				ug/L	541014	Standard

Sample ID: L1606106506
Report Date/Time: Thursday, June 30, 2016 18:08:18
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**27.6637**	27.875	100.8	mg/L	2	Standard
Mg	24	64789.9	2.1	**69.5287**	0.838	1.2	mg/L	53	Standard
K	39	358.3	15.4	**0.5231**	0.092	17.6	mg/L	53	Standard
Ca	43	758.4	6.6	**40.6443**	2.815	6.9	mg/L	28	Standard
Fe	54	4937.5	1.5	**3.1958**	0.022	0.7	mg/L	181	Standard
Fe	57	1738.4	3.5	**3.8759**	0.222	5.7	mg/L	257	Standard
Sc-1	45	56048.5	1.5				mg/L	55220	Standard
Cl	35	46920.6	2.0				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	14326.8	1.4				ug/L	2040	Standard
P	31	27583.5	4.6				ug/L	20435	Standard
S	34	3072.0	2.6				ug/L	2430	Standard
Sr	88	263.3	13.3				ug/L	75	Standard
C	12	206.7	12.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	203.6	27.1				mg/L	9	Standard
Ho-1	165	113.3	16.7				mg/L	10	Standard
Er	166	133.3	8.7				mg/L	23	Standard
I	127	19841.3	3.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.865	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.047	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106506
Report Date/Time: Thursday, June 30, 2016 18:08:18
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.754
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.913
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106804
Sample Date/Time: Thursday, June 30, 2016 18:09:13
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77459.2	1.8				ug/L	74916	Standard
	Be	9	18.3	68.6	**0.0131**	0.011	86.1	ug/L	10	Standard
	Al	27	41020836.0	0.1	**228.6660**	3.747	1.6	ug/L	1822	Standard
	Sc	45	58899.3	1.4				ug/L	55220	Standard
	Ti	47	683.7	2.2	**1.6300**	0.029	1.8	ug/L	34	Standard
	V	51	10480.9	2.8	**0.9661**	0.034	3.5	ug/L	1938	Standard
	Cr	52	17903.6	1.0	**1.0049**	0.037	3.7	ug/L	9522	Standard
	Cr	53	28528.6	6.8	**25.8846**	1.981	7.7	ug/L	395	Standard
	Mn	55	109383.8	1.1	**12.9559**	0.037	0.3	ug/L	902	Standard
	Co	59	3379.4	2.6	**0.4033**	0.008	2.0	ug/L	262	Standard
	Ni	60	4055.2	0.8	**1.7121**	0.017	1.0	ug/L	371	Standard
	Cu	65	1283.7	4.3	**0.5389**	0.030	5.6	ug/L	106	Standard
	Zn	66	4828.4	1.2	**3.4689**	0.012	0.4	ug/L	398	Standard
>	**Ge**	72	521209.6	0.9				ug/L	535147	Standard
	As	75	2211.0	8.9	**1.7504**	0.158	9.0	ug/L	-43	Standard
	Se	82	893.2	6.4	**6.6723**	0.493	7.4	ug/L	14	Standard
	Se-1	77	1913.1	8.8	**21.2303**	2.028	9.6	ug/L	65	Standard
>	**Ga**	71	136.7	5.6				mg/L	97	Standard
	Rb	85	8235.6	0.7				ug/L	15	Standard
	Y	89	458447.5	0.6				ug/L	465704	Standard
>	**Rh**	103	401.7	9.0				ug/L	10	Standard
	Mo	98	249.5	8.0	**0.0959**	0.007	7.1	ug/L	9	Standard
	Ag	107	181.3	9.8	**0.0190**	0.002	13.0	ug/L	82	Standard
	Cd	111	300.2	7.7	**0.1378**	0.009	6.7	mg/L	7	Standard
	Cd	114	734.2	11.4	**0.1410**	0.016	11.2	ug/L	21	Standard
>	**In**	115	592465.9	1.1				ug/L	619035	Standard
	Sn	118	775.0	11.8	**0.0209**	0.013	64.4	ug/L	508	Standard
	Sb	123	603.9	4.2	**0.1235**	0.004	3.4	ug/L	86	Standard
	Ba	135	545541.8	0.5	**249.3393**	4.016	1.6	ug/L	79	Standard
	Ce	140	2048.5	7.3				ug/L	68	Standard
>	**Tb**	159	949095.6	1.2				ug/L	986982	Standard
	Ho	165	88.3	18.2				ug/L	10	Standard
	Tl	203	97.3	8.7	**0.0173**	0.001	5.4	ug/L	13	Standard
	Tl	205	90.0	16.7	**0.0199**	0.002	10.1	ug/L	10	Standard
	Pb	206	978.0	0.7	**0.1390**	0.001	0.7	ug/L	264	Standard
	Pb	207	802.4	6.7	**0.1273**	0.011	8.8	ug/L	227	Standard
	Pb	208	3285.1	1.3	**0.1321**	0.002	1.4	ug/L	868	Standard
	U	238	1121.4	2.1	**0.1651**	0.002	1.4	ug/L	8	Standard
>	**Bi**	209	510708.2	0.8				ug/L	541014	Standard

Sample ID: L1606106804
Report Date/Time: Thursday, June 30, 2016 18:11:30
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**26.2857**	26.048	99.1	mg/L	2	Standard
Mg	24	118017.9	1.0	**120.5636**	2.169	1.8	mg/L	53	Standard
K	39	473.3	3.2	**0.6774**	0.033	4.9	mg/L	53	Standard
Ca	43	628.3	1.2	**31.6956**	0.741	2.3	mg/L	28	Standard
Fe	54	284.4	4.9	**0.0630**	0.011	17.3	mg/L	181	Standard
Fe	57	583.3	4.1	**0.7864**	0.079	10.0	mg/L	257	Standard
> **Sc-1**	45	58899.3	1.4				mg/L	55220	Standard
Cl	35	47927.0	0.5				ug/L	35504	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	177183.7	2.3				ug/L	2040	Standard
P	31	33166.3	1.4				ug/L	20435	Standard
S	34	3038.6	3.6				ug/L	2430	Standard
Sr	88	1120.0	5.8				ug/L	75	Standard
C	12	333.3	41.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	78.9	41.1				mg/L	9	Standard
Ho-1	165	88.3	18.2				mg/L	10	Standard
Er	166	93.3	16.4				mg/L	23	Standard
I	127	490251.5	7.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.394	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.396	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106804
Report Date/Time: Thursday, June 30, 2016 18:11:30
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.708
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.398
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106805
Sample Date/Time: Thursday, June 30, 2016 18:12:25
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78762.6	2.6				ug/L	74916	Standard
	Be	9	20.0	50.0	**0.0144**	0.009	60.4	ug/L	10	Standard
	Al	27	41204374.5	1.8	**225.9730**	8.404	3.7	ug/L	1822	Standard
	Sc	45	61672.0	2.2				ug/L	55220	Standard
	Ti	47	674.3	4.5	**1.5812**	0.070	4.5	ug/L	34	Standard
	V	51	11529.2	6.0	**1.0631**	0.082	7.7	ug/L	1938	Standard
	Cr	52	18039.7	0.8	**0.9888**	0.007	0.7	ug/L	9522	Standard
	Cr	53	31686.4	2.6	**28.3390**	0.782	2.8	ug/L	395	Standard
	Mn	55	109122.6	0.6	**12.7266**	0.120	0.9	ug/L	902	Standard
	Co	59	3320.0	3.2	**0.3895**	0.012	3.0	ug/L	262	Standard
	Ni	60	4079.5	2.0	**1.6947**	0.030	1.7	ug/L	371	Standard
	Cu	65	1241.4	3.2	**0.5103**	0.020	4.0	ug/L	106	Standard
	Zn	66	4815.1	1.9	**3.4002**	0.053	1.5	ug/L	398	Standard
>	**Ge**	72	529274.8	0.6				ug/L	535147	Standard
	As	75	2209.6	7.3	**1.7236**	0.131	7.6	ug/L	-43	Standard
	Se	82	896.1	1.4	**6.5882**	0.124	1.9	ug/L	14	Standard
	Se-1	77	2079.1	4.3	**22.7577**	1.102	4.8	ug/L	65	Standard
>	**Ga**	71	145.0	12.4				mg/L	97	Standard
	Rb	85	8400.7	1.3				ug/L	15	Standard
	Y	89	462821.0	0.8				ug/L	465704	Standard
>	**Rh**	103	420.0	13.3				ug/L	10	Standard
	Mo	98	221.4	13.0	**0.0855**	0.010	11.2	ug/L	9	Standard
	Ag	107	161.0	24.1	**0.0159**	0.005	33.2	ug/L	82	Standard
	Cd	111	299.9	12.1	**0.1359**	0.015	11.3	mg/L	7	Standard
	Cd	114	712.8	9.3	**0.1352**	0.011	8.5	ug/L	21	Standard
>	**In**	115	600962.3	0.2				ug/L	619035	Standard
	Sn	118	703.3	5.7	**0.0079**	0.006	79.0	ug/L	508	Standard
	Sb	123	530.9	6.4	**0.1077**	0.006	6.0	ug/L	86	Standard
	Ba	135	542029.2	0.7	**244.1998**	1.171	0.5	ug/L	79	Standard
	Ce	140	1825.1	4.0				ug/L	68	Standard
>	**Tb**	159	958625.4	0.8				ug/L	986982	Standard
	Ho	165	46.7	16.4				ug/L	10	Standard
	Tl	203	87.3	19.7	**0.0161**	0.002	12.5	ug/L	13	Standard
	Tl	205	65.0	20.4	**0.0165**	0.002	10.9	ug/L	10	Standard
	Pb	206	1118.4	2.4	**0.1631**	0.005	2.8	ug/L	264	Standard
	Pb	207	947.7	3.3	**0.1551**	0.006	4.1	ug/L	227	Standard
	Pb	208	3928.5	2.1	**0.1641**	0.004	2.3	ug/L	868	Standard
	U	238	1138.7	0.9	**0.1665**	0.002	1.1	ug/L	8	Standard
>	**Bi**	209	514052.9	0.4				ug/L	541014	Standard

Sample ID: L1606106805
Report Date/Time: Thursday, June 30, 2016 18:14:41
Page 1

Approved: July 01, 2016

Na	23	6.7	114.6	**34.1484**	39.564	115.9	mg/L	2	Standard
Mg	24	120082.3	0.4	**117.1865**	3.113	2.7	mg/L	53	Standard
K	39	458.3	18.1	**0.6225**	0.142	22.8	mg/L	53	Standard
Ca	43	670.0	12.3	**32.3531**	4.666	14.4	mg/L	28	Standard
Fe	54	211.5	10.0	**0.0101**	0.010	102.2	mg/L	181	Standard
Fe	57	595.0	16.8	**0.7476**	0.225	30.2	mg/L	257	Standard
> **Sc-1**	45	61672.0	2.2				mg/L	55220	Standard
Cl	35	48429.3	0.5				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	177803.9	0.6				ug/L	2040	Standard
P	31	34178.5	1.4				ug/L	20435	Standard
S	34	3103.7	2.6				ug/L	2430	Standard
Sr	88	1121.7	7.1				ug/L	75	Standard
C	12	310.0	12.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	98.9	29.5				mg/L	9	Standard
Ho-1	165	46.7	16.4				mg/L	10	Standard
Er	166	93.3	12.4				mg/L	23	Standard
I	127	532134.0	7.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.134	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.903	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106805
Report Date/Time: Thursday, June 30, 2016 18:14:41
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.081
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.017
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606106805
Report Date/Time: Thursday, June 30, 2016 18:14:41
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106811
Sample Date/Time: Thursday, June 30, 2016 18:15:36
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78749.2	2.6				ug/L	74916	Standard
	Be	9	3210.3	2.9	**2.8931**	0.138	4.8	ug/L	10	Standard
	Al	27	8276123.8	2.0	**45.3731**	0.379	0.8	ug/L	1822	Standard
	Sc	45	110165.8	2.1				ug/L	55220	Standard
	Ti	47	71798.4	1.1	**163.8727**	1.830	1.1	ug/L	34	Standard
	V	51	597395.3	2.2	**60.6469**	1.875	3.1	ug/L	1938	Standard
	Cr	52	454287.2	0.3	**46.5886**	0.601	1.3	ug/L	9522	Standard
	Cr	53	59023.1	2.1	**49.5051**	1.218	2.5	ug/L	395	Standard
	Mn	55	4104131.7	1.4	**449.9024**	9.422	2.1	ug/L	902	Standard
	Co	59	94928.8	1.1	**10.9690**	0.039	0.4	ug/L	262	Standard
	Ni	60	95168.6	0.3	**39.8855**	0.353	0.9	ug/L	371	Standard
	Cu	65	119473.9	0.7	**50.9995**	0.248	0.5	ug/L	106	Standard
	Zn	66	542722.9	0.9	**393.4429**	2.381	0.6	ug/L	398	Standard
>	**Ge**	72	567664.4	0.9				ug/L	535147	Standard
	As	75	7285.2	0.6	**5.1825**	0.021	0.4	ug/L	-43	Standard
	Se	82	272.3	1.4	**1.7973**	0.037	2.1	ug/L	14	Standard
	Se-1	77	303.7	6.5	**2.5954**	0.179	6.9	ug/L	65	Standard
>	**Ga**	71	56776.2	2.2				mg/L	97	Standard
	Rb	85	477870.7	0.6				ug/L	15	Standard
	Y	89	822359.5	0.5				ug/L	465704	Standard
>	**Rh**	103	91.7	11.4				ug/L	10	Standard
	Mo	98	1727.7	2.3	**0.5395**	0.015	2.9	ug/L	9	Standard
	Ag	107	1194.0	7.9	**0.1445**	0.011	7.9	ug/L	82	Standard
	Cd	111	5005.8	0.8	**1.9818**	0.018	0.9	mg/L	7	Standard
	Cd	114	12202.2	2.0	**2.0071**	0.047	2.3	ug/L	21	Standard
>	**In**	115	650434.8	0.8				ug/L	619035	Standard
	Sn	118	1160.0	0.4	**0.0662**	0.001	1.3	ug/L	508	Standard
	Sb	123	470.0	9.1	**0.0889**	0.008	8.8	ug/L	86	Standard
	Ba	135	653420.0	0.4	**272.0161**	3.332	1.2	ug/L	79	Standard
	Ce	140	1323543.4	0.9				ug/L	68	Standard
>	**Tb**	159	1024977.1	0.6				ug/L	986982	Standard
	Ho	165	25294.4	0.4				ug/L	10	Standard
	Tl	203	3087.0	0.8	**0.3285**	0.001	0.2	ug/L	13	Standard
	Tl	205	2636.9	5.2	**0.3302**	0.020	5.9	ug/L	10	Standard
	Pb	206	174438.4	0.1	**28.3571**	0.235	0.8	ug/L	264	Standard
	Pb	207	142402.4	0.8	**25.6126**	0.261	1.0	ug/L	227	Standard
	Pb	208	605823.5	0.5	**28.2596**	0.349	1.2	ug/L	868	Standard
	U	238	20875.4	0.8	**2.6436**	0.041	1.5	ug/L	8	Standard
>	**Bi**	209	567257.9	0.9				ug/L	541014	Standard

Sample ID: L1606106811
Report Date/Time: Thursday, June 30, 2016 18:17:53
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	7990.4	1.6	**4.3309**	0.069	1.6	mg/L	53	Standard
K	39	1378.4	4.7	**1.0972**	0.070	6.4	mg/L	53	Standard
Ca	43	161.7	15.3	**2.9254**	0.802	27.4	mg/L	28	Standard
Fe	54	40769.5	0.5	**13.8094**	0.314	2.3	mg/L	181	Standard
Fe	57	10608.7	0.8	**13.4263**	0.334	2.5	mg/L	257	Standard
> **Sc-1**	45	110165.8	2.1				mg/L	55220	Standard
Cl	35	42049.6	2.4				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	8065.5	16.8				ug/L	2040	Standard
P	31	76226.3	1.5				ug/L	20435	Standard
S	34	2406.9	13.6				ug/L	2430	Standard
Sr	88	263.3	4.8				ug/L	75	Standard
C	12	300.0	8.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	330.0	8.0				mg/L	7	Standard
Dy	164	39232.4	1.8				mg/L	9	Standard
Ho-1	165	25294.4	0.4				mg/L	10	Standard
Er	166	23965.6	1.4				mg/L	23	Standard
I	127	64313.6	9.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.116	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.076	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106811
Report Date/Time: Thursday, June 30, 2016 18:17:53
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.072
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.851
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606106811
Report Date/Time: Thursday, June 30, 2016 18:17:53
Page 3

Approved: July 01, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122803
Sample Date/Time: Thursday, June 30, 2016 18:18:47
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75779.1	1.5				ug/L	74916	Standard
	Be	9	38.3	58.8	**0.0323**	0.021	65.8	ug/L	10	Standard
	Al	27	3674175.9	1.4	**20.9293**	0.040	0.2	ug/L	1822	Standard
	Sc	45	59863.0	1.4				ug/L	55220	Standard
	Ti	47	3033.0	2.3	**6.9943**	0.222	3.2	ug/L	34	Standard
	V	51	34608.1	1.8	**3.3978**	0.044	1.3	ug/L	1938	Standard
	Cr	52	15251.3	1.0	**0.5912**	0.011	1.9	ug/L	9522	Standard
	Cr	53	2611.9	4.9	**1.8640**	0.098	5.3	ug/L	395	Standard
	Mn	55	71329.9	1.8	**7.8706**	0.081	1.0	ug/L	902	Standard
	Co	59	2238.5	2.9	**0.2415**	0.006	2.5	ug/L	262	Standard
	Ni	60	3339.7	0.4	**1.2872**	0.012	1.0	ug/L	371	Standard
	Cu	65	1994.5	2.1	**0.8106**	0.016	2.0	ug/L	106	Standard
	Zn	66	26090.8	0.0	**18.9622**	0.156	0.8	ug/L	398	Standard
>	**Ge**	72	556570.8	0.8				ug/L	535147	Standard
	As	75	428.1	4.3	**0.3626**	0.015	4.1	ug/L	-43	Standard
	Se	82	54.7	2.8	**0.2909**	0.008	2.8	ug/L	14	Standard
	Se-1	77	100.3	12.7	**0.4889**	0.128	26.1	ug/L	65	Standard
>	**Ga**	71	608.3	10.3				mg/L	97	Standard
	Rb	85	60132.4	1.0				ug/L	15	Standard
	Y	89	491612.9	1.6				ug/L	465704	Standard
>	**Rh**	103	56.7	13.5				ug/L	10	Standard
	Mo	98	1351.1	5.5	**0.4221**	0.022	5.3	ug/L	9	Standard
	Ag	107	131.3	13.4	**0.0104**	0.002	21.4	ug/L	82	Standard
	Cd	111	30.5	14.2	**0.0198**	0.002	8.5	mg/L	7	Standard
	Cd	114	65.9	55.0	**0.0196**	0.006	29.6	ug/L	21	Standard
>	**In**	115	654259.7	0.8				ug/L	619035	Standard
	Sn	118	898.4	13.5	**0.0271**	0.017	61.8	ug/L	508	Standard
	Sb	123	278.2	7.9	**0.0541**	0.004	6.7	ug/L	86	Standard
	Ba	135	59563.9	1.2	**24.6321**	0.281	1.1	ug/L	79	Standard
	Ce	140	17551.8	3.2				ug/L	68	Standard
>	**Tb**	159	989788.8	0.3				ug/L	986982	Standard
	Ho	165	365.0	9.6				ug/L	10	Standard
	Tl	203	48.7	12.0	**0.0112**	0.001	6.0	ug/L	13	Standard
	Tl	205	31.7	32.9	**0.0117**	0.001	10.9	ug/L	10	Standard
	Pb	206	2053.5	2.8	**0.3045**	0.009	2.9	ug/L	264	Standard
	Pb	207	1720.8	1.5	**0.2842**	0.004	1.3	ug/L	227	Standard
	Pb	208	7157.7	1.4	**0.3040**	0.006	1.8	ug/L	868	Standard
	U	238	756.0	3.0	**0.1056**	0.002	1.7	ug/L	8	Standard
>	**Bi**	209	553931.3	1.3				ug/L	541014	Standard

Sample ID: L1606122803
Report Date/Time: Thursday, June 30, 2016 18:21:04
Page 1

Approved: July 01, 2016

Na	23	3.3	173.2	**17.5709**	30.425	173.2	mg/L	2	Standard
Mg	24	1763.4	6.2	**1.7389**	0.124	7.2	mg/L	53	Standard
K	39	2405.2	5.0	**3.6880**	0.142	3.8	mg/L	53	Standard
Ca	43	323.3	6.2	**15.2296**	1.297	8.5	mg/L	28	Standard
Fe	54	694.0	3.8	**0.3175**	0.017	5.4	mg/L	181	Standard
Fe	57	510.0	14.8	**0.5849**	0.200	34.1	mg/L	257	Standard
> **Sc-1**	45	59863.0	1.4				mg/L	55220	Standard
Cl	35	43270.4	1.0				ug/L	35504	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	5717.7	4.6				ug/L	2040	Standard
P	31	27109.2	1.6				ug/L	20435	Standard
S	34	2391.9	8.1				ug/L	2430	Standard
Sr	88	230.0	4.3				ug/L	75	Standard
C	12	243.3	15.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	578.5	3.4				mg/L	9	Standard
Ho-1	165	365.0	9.6				mg/L	10	Standard
Er	166	310.0	8.5				mg/L	23	Standard
I	127	16976.2	8.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.151	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.003	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122803
Report Date/Time: Thursday, June 30, 2016 18:21:04
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.690
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.388
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 18:22:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73578.2	1.0				ug/L	74916	Standard
	Be	9	56436.6	1.3	**54.4597**	0.400	0.7	ug/L	10	Standard
	Al	27	8718982.3	2.0	**51.1525**	0.630	1.2	ug/L	1822	Standard
	Sc	45	57758.2	1.5				ug/L	55220	Standard
	Ti	47	42985.6	0.8	**101.1406**	1.072	1.1	ug/L	34	Standard
	V	51	473388.7	2.1	**49.5193**	1.553	3.1	ug/L	1938	Standard
	Cr	52	474882.2	1.7	**50.3019**	1.317	2.6	ug/L	9522	Standard
	Cr	53	59704.1	2.5	**51.6666**	2.064	4.0	ug/L	395	Standard
	Mn	55	443343.2	1.1	**50.0227**	1.138	2.3	ug/L	902	Standard
	Co	59	419267.7	1.3	**50.0452**	1.250	2.5	ug/L	262	Standard
	Ni	60	115798.5	1.3	**50.0800**	0.779	1.6	ug/L	371	Standard
	Cu	65	112988.1	1.7	**49.7307**	0.715	1.4	ug/L	106	Standard
	Zn	66	67467.2	1.8	**50.1266**	0.166	0.3	ug/L	398	Standard
>	Ge	72	550545.3	1.5				ug/L	535147	Standard
	As	75	67527.8	0.8	**49.0676**	0.992	2.0	ug/L	-43	Standard
	Se	82	6913.0	1.7	**49.4991**	1.588	3.2	ug/L	14	Standard
	Se-1	77	4680.4	2.0	**49.9384**	1.760	3.5	ug/L	65	Standard
>	Ga	71	65.0	13.3				mg/L	97	Standard
	Rb	85	991.7	6.3				ug/L	15	Standard
	Y	89	482982.4	0.6				ug/L	465704	Standard
>	Rh	103	33.3	17.3				ug/L	10	Standard
	Mo	98	313121.3	1.1	**96.7874**	0.451	0.5	ug/L	9	Standard
	Ag	107	378687.7	0.4	**48.3701**	0.519	1.1	ug/L	82	Standard
	Cd	111	123318.4	0.8	**49.2782**	0.374	0.8	mg/L	7	Standard
	Cd	114	303262.6	0.8	**50.3224**	0.349	0.7	ug/L	21	Standard
>	In	115	641990.0	1.5				ug/L	619035	Standard
	Sn	118	335969.9	1.8	**49.6749**	0.360	0.7	ug/L	508	Standard
	Sb	123	267416.7	1.1	**48.6961**	0.330	0.7	ug/L	86	Standard
	Ba	135	114466.8	0.3	**48.2658**	0.663	1.4	ug/L	79	Standard
	Ce	140	326.7	13.7				ug/L	68	Standard
>	Tb	159	988094.4	1.2				ug/L	986982	Standard
	Ho	165	20.0	75.0				ug/L	10	Standard
	Tl	203	462310.9	1.0	**50.1285**	0.295	0.6	ug/L	13	Standard
	Tl	205	410772.5	1.1	**52.1362**	0.458	0.9	ug/L	10	Standard
	Pb	206	293921.2	0.6	**49.6204**	0.144	0.3	ug/L	264	Standard
	Pb	207	267372.5	0.4	**49.9456**	0.275	0.6	ug/L	227	Standard
	Pb	208	1079740.5	0.7	**52.3080**	0.393	0.8	ug/L	868	Standard
	U	238	394495.8	0.5	**51.7037**	0.139	0.3	ug/L	8	Standard
>	Bi	209	546511.9	0.6				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 18:24:17
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4735.7	5.0	**4.8993**	0.220	4.5	mg/L	53	Standard
K	39	2316.8	4.3	**3.6831**	0.157	4.3	mg/L	53	Standard
Ca	43	126.7	26.3	**5.2012**	1.908	36.7	mg/L	28	Standard
Fe	54	7170.8	0.5	**4.5533**	0.090	2.0	mg/L	181	Standard
Fe	57	2145.2	10.2	**4.7726**	0.596	12.5	mg/L	257	Standard
Sc-1	45	57758.2	1.5				mg/L	55220	Standard
Cl	35	43470.3	1.1				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2583.6	3.3				ug/L	2040	Standard
P	31	22620.2	1.5				ug/L	20435	Standard
S	34	2977.0	2.9				ug/L	2430	Standard
Sr	88	95.0	27.3				ug/L	75	Standard
C	12	76.7	15.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	23.3	49.5				mg/L	9	Standard
Ho-1	165	20.0	75.0				mg/L	10	Standard
Er	166	0.0					mg/L	23	Standard
I	127	17932.3	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	108.919		
Al	27	102.305		
Sc	45			
Ti	47	101.141		
V	51	99.039		
Cr	52	100.604		
Cr	53			
Mn	55	100.045		
Co	59	100.090		
Ni	60	100.160		
Cu	65	99.461		
Zn	66	100.253		
Ge	72		102.877	
As	75	98.135		
Se	82	98.998		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 18:24:17
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	96.787		
Ag	107	96.740		
Cd	111	98.556		
Cd	114			
In	115			103.708
Sn	118	99.350		
Sb	123	97.392		
Ba	135	96.532		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.257		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.616		
U	238	103.407		
Bi	209			101.016
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 18:24:17
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 18:25:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72625.4	2.0				ug/L	74916	Standard
	Be	9	35.0	37.8	**0.0306**	0.013	41.6	ug/L	10	Standard
	Al	27	5221.2	75.4	**0.0289**	0.024	83.2	ug/L	1822	Standard
	Sc	45	56361.3	2.2				ug/L	55220	Standard
	Ti	47	43.7	24.3	**0.0330**	0.026	77.4	ug/L	34	Standard
	V	51	1667.3	7.1	**-0.0209**	0.013	60.6	ug/L	1938	Standard
	Cr	52	8464.0	0.3	**-0.1225**	0.003	2.7	ug/L	9522	Standard
	Cr	53	1203.4	5.2	**0.6637**	0.049	7.4	ug/L	395	Standard
	Mn	55	1135.4	33.1	**0.0236**	0.043	182.8	ug/L	902	Standard
	Co	59	286.0	2.4	**0.0114**	0.001	7.5	ug/L	262	Standard
	Ni	60	298.3	5.7	**-0.0159**	0.008	48.2	ug/L	371	Standard
	Cu	65	147.7	21.4	**0.0065**	0.014	218.6	ug/L	106	Standard
	Zn	66	427.7	12.3	**-0.0259**	0.041	158.3	ug/L	398	Standard
>	**Ge**	72	549268.9	0.5				ug/L	535147	Standard
	As	75	-50.0	72.3	**0.0189**	0.026	137.7	ug/L	-43	Standard
	Se	82	24.5	32.5	**0.0791**	0.056	71.3	ug/L	14	Standard
	Se-1	77	77.3	5.8	**0.2550**	0.048	18.7	ug/L	65	Standard
>	**Ga**	71	38.3	52.7				mg/L	97	Standard
	Rb	85	70.0	50.0				ug/L	15	Standard
	Y	89	475993.8	1.4				ug/L	465704	Standard
>	**Rh**	103	10.0	100.0				ug/L	10	Standard
	Mo	98	316.0	18.8	**0.1102**	0.018	16.8	ug/L	9	Standard
	Ag	107	191.0	14.7	**0.0184**	0.004	20.1	ug/L	82	Standard
	Cd	111	15.8	57.1	**0.0142**	0.004	25.5	mg/L	7	Standard
	Cd	114	106.5	47.8	**0.0266**	0.009	32.0	ug/L	21	Standard
>	**In**	115	641247.5	0.4				ug/L	619035	Standard
	Sn	118	1061.7	14.0	**0.0541**	0.022	41.0	ug/L	508	Standard
	Sb	123	624.1	28.9	**0.1182**	0.033	27.9	ug/L	86	Standard
	Ba	135	118.7	74.4	**0.0306**	0.037	122.6	ug/L	79	Standard
	Ce	140	183.3	31.6				ug/L	68	Standard
>	**Tb**	159	974124.5	0.5				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	104.0	35.3	**0.0171**	0.004	23.3	ug/L	13	Standard
	Tl	205	90.0	45.5	**0.0190**	0.005	27.4	ug/L	10	Standard
	Pb	206	345.0	10.3	**0.0196**	0.006	30.4	ug/L	264	Standard
	Pb	207	284.3	1.6	**0.0192**	0.001	5.0	ug/L	227	Standard
	Pb	208	1190.4	5.2	**0.0185**	0.003	17.1	ug/L	868	Standard
	U	238	79.3	52.6	**0.0181**	0.005	29.9	ug/L	8	Standard
>	**Bi**	209	554720.3	0.6				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 18:27:29
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	51.7	31.1	**0.0208**	0.018	88.3	mg/L	53	Standard
K	39	43.3	48.0	**-0.0038**	0.035	936.1	mg/L	53	Standard
Ca	43	30.0	16.7	**-0.0077**	0.294	3799.4	mg/L	28	Standard
Fe	54	184.1	9.6	**0.0040**	0.009	229.0	mg/L	181	Standard
Fe	57	265.0	3.3	**0.0254**	0.037	145.9	mg/L	257	Standard
Sc-1	45	56361.3	2.2				mg/L	55220	Standard
Cl	35	42936.1	1.9				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2356.9	5.5				ug/L	2040	Standard
P	31	21977.6	2.3				ug/L	20435	Standard
S	34	2853.6	3.4				ug/L	2430	Standard
Sr	88	71.7	16.1				ug/L	75	Standard
C	12	63.3	18.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	101.3	25.6				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	43.3	48.0				mg/L	23	Standard
I	127	8230.6	10.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.639	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 18:27:29
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.588
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.533
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 18:27:29
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123101
Sample Date/Time: Thursday, June 30, 2016 18:28:25
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73708.9	1.2				ug/L	74916	Standard
	Be	9	23.3	24.7	**0.0189**	0.006	29.4	ug/L	10	Standard
	Al	27	21182916.8	0.4	**124.0736**	1.102	0.9	ug/L	1822	Standard
	Sc	45	55145.2	2.0				ug/L	55220	Standard
	Ti	47	356.7	5.4	**0.8173**	0.044	5.4	ug/L	34	Standard
	V	51	77183.8	0.8	**8.3694**	0.088	1.1	ug/L	1938	Standard
	Cr	52	15236.3	0.8	**0.7013**	0.022	3.1	ug/L	9522	Standard
	Cr	53	5759.4	6.2	**4.9190**	0.351	7.1	ug/L	395	Standard
	Mn	55	155667.6	0.4	**18.4949**	0.121	0.7	ug/L	902	Standard
	Co	59	787.7	0.8	**0.0766**	0.000	0.6	ug/L	262	Standard
	Ni	60	2258.8	3.8	**0.8898**	0.039	4.4	ug/L	371	Standard
	Cu	65	1302.1	4.1	**0.5477**	0.026	4.7	ug/L	106	Standard
	Zn	66	2771.6	0.7	**1.8449**	0.007	0.4	ug/L	398	Standard
>	**Ge**	72	520875.8	0.5				ug/L	535147	Standard
	As	75	4494.6	3.5	**3.5023**	0.105	3.0	ug/L	-43	Standard
	Se	82	1105.2	3.5	**8.2806**	0.249	3.0	ug/L	14	Standard
	Se-1	77	364.3	11.2	**3.5731**	0.452	12.7	ug/L	65	Standard
>	**Ga**	71	78.3	9.8				mg/L	97	Standard
	Rb	85	3303.7	4.4				ug/L	15	Standard
	Y	89	460451.9	0.5				ug/L	465704	Standard
>	**Rh**	103	130.0	34.2				ug/L	10	Standard
	Mo	98	529.4	5.8	**0.1869**	0.011	6.0	ug/L	9	Standard
	Ag	107	127.3	19.5	**0.0113**	0.003	29.3	ug/L	82	Standard
	Cd	111	29.7	34.4	**0.0205**	0.004	21.3	mg/L	7	Standard
	Cd	114	78.1	54.1	**0.0227**	0.007	32.8	ug/L	21	Standard
>	**In**	115	602147.0	0.8				ug/L	619035	Standard
	Sn	118	753.4	10.9	**0.0155**	0.012	78.4	ug/L	508	Standard
	Sb	123	275.0	25.5	**0.0577**	0.013	22.9	ug/L	86	Standard
	Ba	135	65480.9	0.3	**29.4275**	0.311	1.1	ug/L	79	Standard
	Ce	140	2970.3	9.9				ug/L	68	Standard
>	**Tb**	159	936456.7	0.9				ug/L	986982	Standard
	Ho	165	58.3	50.2				ug/L	10	Standard
	Tl	203	145.7	21.0	**0.0233**	0.004	15.7	ug/L	13	Standard
	Tl	205	150.0	5.8	**0.0285**	0.001	4.1	ug/L	10	Standard
	Pb	206	385.3	9.6	**0.0336**	0.007	21.0	ug/L	264	Standard
	Pb	207	324.3	3.1	**0.0332**	0.002	5.0	ug/L	227	Standard
	Pb	208	1371.0	3.4	**0.0345**	0.002	5.9	ug/L	868	Standard
	U	238	12005.1	0.6	**1.7315**	0.001	0.1	ug/L	8	Standard
>	**Bi**	209	498820.7	0.6				ug/L	541014	Standard

Sample ID: L1606123101
Report Date/Time: Thursday, June 30, 2016 18:30:42
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.3575**	16.199	173.1	mg/L	2	Standard
Mg	24	165723.2	1.4	**180.8485**	3.237	1.8	mg/L	53	Standard
K	39	150.0	26.5	**0.1787**	0.066	36.9	mg/L	53	Standard
Ca	43	341.7	28.9	**17.7757**	6.017	33.8	mg/L	28	Standard
Fe	54	356.7	11.8	**0.1243**	0.024	19.5	mg/L	181	Standard
Fe	57	510.0	18.9	**0.6879**	0.236	34.2	mg/L	257	Standard
Sc-1	45	55145.2	2.0				mg/L	55220	Standard
Cl	35	47507.0	1.1				ug/L	35504	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	197000.1	3.5				ug/L	2040	Standard
P	31	26680.1	1.8				ug/L	20435	Standard
S	34	2485.2	5.2				ug/L	2430	Standard
Sr	88	211.7	3.6				ug/L	75	Standard
C	12	373.3	13.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	69.5	16.6				mg/L	9	Standard
Ho-1	165	58.3	50.2				mg/L	10	Standard
Er	166	80.0	0.0				mg/L	23	Standard
I	127	132259.0	4.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.388	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.333	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606123101
Report Date/Time: Thursday, June 30, 2016 18:30:42
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.272	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	92.201	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123701
Sample Date/Time: Thursday, June 30, 2016 18:31:36
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73556.5	1.2				ug/L	74916	Standard
	Be	9	58.3	32.5	**0.0528**	0.019	35.9	ug/L	10	Standard
	Al	27	4324633.9	1.0	**25.3836**	0.546	2.1	ug/L	1822	Standard
	Sc	45	59757.6	2.1				ug/L	55220	Standard
	Ti	47	3697.1	2.8	**8.5949**	0.280	3.3	ug/L	34	Standard
	V	51	30410.5	0.4	**2.9820**	0.028	0.9	ug/L	1938	Standard
	Cr	52	16342.1	1.7	**0.7189**	0.031	4.3	ug/L	9522	Standard
	Cr	53	2475.2	0.7	**1.7600**	0.025	1.4	ug/L	395	Standard
	Mn	55	379098.1	1.5	**42.5563**	0.890	2.1	ug/L	902	Standard
	Co	59	3754.1	1.8	**0.4234**	0.010	2.3	ug/L	262	Standard
	Ni	60	3304.0	1.2	**1.2808**	0.026	2.0	ug/L	371	Standard
	Cu	65	2883.3	0.8	**1.2059**	0.010	0.8	ug/L	106	Standard
	Zn	66	7248.1	0.7	**5.0510**	0.037	0.7	ug/L	398	Standard
>	**Ge**	72	553085.4	0.6				ug/L	535147	Standard
	As	75	1716.7	1.4	**1.2953**	0.018	1.4	ug/L	-43	Standard
	Se	82	81.3	6.0	**0.4831**	0.033	6.9	ug/L	14	Standard
	Se-1	77	107.0	12.4	**0.5683**	0.148	26.0	ug/L	65	Standard
>	**Ga**	71	810.0	1.9				mg/L	97	Standard
	Rb	85	16889.4	2.8				ug/L	15	Standard
	Y	89	489914.2	2.5				ug/L	465704	Standard
>	**Rh**	103	76.7	22.9				ug/L	10	Standard
	Mo	98	1118.4	2.5	**0.3544**	0.012	3.4	ug/L	9	Standard
	Ag	107	270.0	17.0	**0.0280**	0.005	19.1	ug/L	82	Standard
	Cd	111	122.3	24.0	**0.0562**	0.011	19.7	mg/L	7	Standard
	Cd	114	310.2	20.0	**0.0598**	0.010	16.0	ug/L	21	Standard
>	**In**	115	648962.0	1.2				ug/L	619035	Standard
	Sn	118	985.0	7.7	**0.0409**	0.010	23.4	ug/L	508	Standard
	Sb	123	515.7	10.8	**0.0972**	0.009	9.2	ug/L	86	Standard
	Ba	135	122438.4	1.1	**51.0753**	1.105	2.2	ug/L	79	Standard
	Ce	140	33540.4	1.4				ug/L	68	Standard
>	**Tb**	159	977369.7	0.8				ug/L	986982	Standard
	Ho	165	413.3	5.7				ug/L	10	Standard
	Tl	203	119.7	46.0	**0.0187**	0.006	30.3	ug/L	13	Standard
	Tl	205	90.0	0.0	**0.0189**	0.000	0.7	ug/L	10	Standard
	Pb	206	5921.8	1.6	**0.9478**	0.023	2.4	ug/L	264	Standard
	Pb	207	4892.8	0.9	**0.8677**	0.011	1.2	ug/L	227	Standard
	Pb	208	20732.2	0.4	**0.9517**	0.016	1.7	ug/L	868	Standard
	U	238	400.3	10.4	**0.0596**	0.005	9.1	ug/L	8	Standard
>	**Bi**	209	554872.4	1.2				ug/L	541014	Standard

Sample ID: L1606123701
Report Date/Time: Thursday, June 30, 2016 18:33:53
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**8.8665**	15.349	173.1	mg/L	2	Standard
Mg	24	3070.3	3.5	**3.0576**	0.096	3.2	mg/L	53	Standard
K	39	1061.7	12.7	**1.5864**	0.179	11.3	mg/L	53	Standard
Ca	43	296.7	9.7	**13.8539**	1.502	10.8	mg/L	28	Standard
Fe	54	956.9	9.5	**0.4831**	0.045	9.3	mg/L	181	Standard
Fe	57	635.0	5.2	**0.8916**	0.078	8.7	mg/L	257	Standard
Sc-1	45	59757.6	2.1				mg/L	55220	Standard
Cl	35	44313.4	1.9				ug/L	35504	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	10370.3	12.9				ug/L	2040	Standard
P	31	28954.3	0.4				ug/L	20435	Standard
S	34	2603.6	2.1				ug/L	2430	Standard
Sr	88	181.7	10.4				ug/L	75	Standard
C	12	193.3	35.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	668.5	3.4				mg/L	9	Standard
Ho-1	165	413.3	5.7				mg/L	10	Standard
Er	166	310.0	11.2				mg/L	23	Standard
I	127	85175.8	4.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.185	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.352	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606123701
Report Date/Time: Thursday, June 30, 2016 18:33:53
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.834
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.562
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123702
Sample Date/Time: Thursday, June 30, 2016 18:34:48
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73352.1	1.1				ug/L	74916	Standard
	Be	9	26.7	84.5	**0.0223**	0.022	99.0	ug/L	10	Standard
	Al	27	7425346.7	1.3	**43.7005**	0.575	1.3	ug/L	1822	Standard
	Sc	45	57823.5	1.1				ug/L	55220	Standard
	Ti	47	1820.8	1.7	**4.3369**	0.098	2.3	ug/L	34	Standard
	V	51	80652.9	0.8	**8.5090**	0.056	0.7	ug/L	1938	Standard
	Cr	52	12307.0	0.7	**0.3281**	0.011	3.2	ug/L	9522	Standard
	Cr	53	4964.1	4.9	**4.0597**	0.199	4.9	ug/L	395	Standard
	Mn	55	1685034.1	0.2	**195.7157**	0.610	0.3	ug/L	902	Standard
	Co	59	7064.0	1.4	**0.8442**	0.013	1.5	ug/L	262	Standard
	Ni	60	5946.2	2.4	**2.5055**	0.069	2.8	ug/L	371	Standard
	Cu	65	5548.3	1.0	**2.4546**	0.034	1.4	ug/L	106	Standard
	Zn	66	9347.5	1.2	**6.8425**	0.092	1.3	ug/L	398	Standard
>	**Ge**	72	535545.9	0.5				ug/L	535147	Standard
	As	75	3482.5	0.9	**2.6532**	0.030	1.1	ug/L	-43	Standard
	Se	82	238.3	4.8	**1.6603**	0.091	5.5	ug/L	14	Standard
	Se-1	77	234.0	3.7	**2.0146**	0.108	5.3	ug/L	65	Standard
>	**Ga**	71	255.0	7.8				mg/L	97	Standard
	Rb	85	5642.7	7.3				ug/L	15	Standard
	Y	89	471263.7	0.8				ug/L	465704	Standard
>	**Rh**	103	85.0	25.6				ug/L	10	Standard
	Mo	98	13076.1	0.6	**4.1371**	0.046	1.1	ug/L	9	Standard
	Ag	107	263.3	11.3	**0.0283**	0.004	14.8	ug/L	82	Standard
	Cd	111	497.9	3.4	**0.2109**	0.005	2.3	mg/L	7	Standard
	Cd	114	1167.5	7.5	**0.2067**	0.017	8.2	ug/L	21	Standard
>	**In**	115	629037.3	1.1				ug/L	619035	Standard
	Sn	118	780.0	7.1	**0.0146**	0.010	65.8	ug/L	508	Standard
	Sb	123	581.4	7.1	**0.1125**	0.009	7.6	ug/L	86	Standard
	Ba	135	116448.2	1.3	**50.1063**	0.307	0.6	ug/L	79	Standard
	Ce	140	12521.8	1.9				ug/L	68	Standard
>	**Tb**	159	952242.5	1.2				ug/L	986982	Standard
	Ho	165	245.0	12.4				ug/L	10	Standard
	Tl	203	124.0	10.8	**0.0197**	0.001	7.4	ug/L	13	Standard
	Tl	205	106.7	25.8	**0.0215**	0.003	16.3	ug/L	10	Standard
	Pb	206	1649.1	1.4	**0.2467**	0.003	1.2	ug/L	264	Standard
	Pb	207	1450.7	3.9	**0.2437**	0.011	4.5	ug/L	227	Standard
	Pb	208	5966.8	1.9	**0.2570**	0.004	1.6	ug/L	868	Standard
	U	238	7288.1	1.1	**0.9830**	0.017	1.7	ug/L	8	Standard
>	**Bi**	209	535292.5	0.6				ug/L	541014	Standard

Sample ID: L1606123702
Report Date/Time: Thursday, June 30, 2016 18:37:05
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	22827.2	2.1	**23.7220**	0.371	1.6	mg/L	53	Standard
K	39	1010.0	3.9	**1.5614**	0.080	5.1	mg/L	53	Standard
Ca	43	435.0	10.0	**21.8568**	2.379	10.9	mg/L	28	Standard
Fe	54	340.7	1.7	**0.1030**	0.002	2.1	mg/L	181	Standard
Fe	57	453.3	2.5	**0.4839**	0.031	6.4	mg/L	257	Standard
> **Sc-1**	45	57823.5	1.1				mg/L	55220	Standard
Cl	35	45303.6	1.3				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	41754.2	3.5				ug/L	2040	Standard
P	31	25987.3	4.3				ug/L	20435	Standard
S	34	2758.6	5.7				ug/L	2430	Standard
Sr	88	278.3	12.7				ug/L	75	Standard
C	12	160.0	34.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	7	Standard
Dy	164	280.6	10.5				mg/L	9	Standard
Ho-1	165	245.0	12.4				mg/L	10	Standard
Er	166	266.7	5.7				mg/L	23	Standard
I	127	176316.0	8.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.912	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.075	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123702
Report Date/Time: Thursday, June 30, 2016 18:37:05
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.616	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.942	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123703
Sample Date/Time: Thursday, June 30, 2016 18:37:59
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72498.1	1.7				ug/L	74916	Standard
	Be	9	26.7	39.0	**0.0226**	0.011	46.6	ug/L	10	Standard
	Al	27	6795709.4	1.3	**40.4705**	0.708	1.7	ug/L	1822	Standard
	Sc	45	57423.7	3.0				ug/L	55220	Standard
	Ti	47	1820.1	1.8	**4.3278**	0.121	2.8	ug/L	34	Standard
	V	51	78659.2	1.4	**8.2782**	0.041	0.5	ug/L	1938	Standard
	Cr	52	12166.2	1.2	**0.3100**	0.009	2.9	ug/L	9522	Standard
	Cr	53	5002.5	3.4	**4.0874**	0.181	4.4	ug/L	395	Standard
	Mn	55	1702026.4	1.6	**197.3278**	1.748	0.9	ug/L	902	Standard
	Co	59	7405.1	1.8	**0.8844**	0.008	0.9	ug/L	262	Standard
	Ni	60	5681.7	2.6	**2.3836**	0.093	3.9	ug/L	371	Standard
	Cu	65	5142.5	1.2	**2.2667**	0.036	1.6	ug/L	106	Standard
	Zn	66	6961.3	1.2	**4.9979**	0.091	1.8	ug/L	398	Standard
>	**Ge**	72	536520.8	1.2				ug/L	535147	Standard
	As	75	3464.6	2.2	**2.6350**	0.044	1.7	ug/L	-43	Standard
	Se	82	269.5	3.6	**1.8872**	0.094	5.0	ug/L	14	Standard
	Se-1	77	236.7	10.7	**2.0415**	0.311	15.3	ug/L	65	Standard
>	**Ga**	71	298.3	5.4				mg/L	97	Standard
	Rb	85	5194.2	1.7				ug/L	15	Standard
	Y	89	463947.8	0.3				ug/L	465704	Standard
>	**Rh**	103	70.0	14.3				ug/L	10	Standard
	Mo	98	12098.0	1.5	**3.8608**	0.077	2.0	ug/L	9	Standard
	Ag	107	294.0	6.8	**0.0326**	0.003	8.0	ug/L	82	Standard
	Cd	111	385.0	8.6	**0.1662**	0.014	8.5	mg/L	7	Standard
	Cd	114	1056.2	4.6	**0.1893**	0.009	4.9	ug/L	21	Standard
>	**In**	115	623767.0	0.6				ug/L	619035	Standard
	Sn	118	825.0	8.5	**0.0224**	0.010	45.0	ug/L	508	Standard
	Sb	123	491.1	2.7	**0.0964**	0.003	3.1	ug/L	86	Standard
	Ba	135	110200.0	1.0	**47.8191**	0.607	1.3	ug/L	79	Standard
	Ce	140	11742.9	0.5				ug/L	68	Standard
>	**Tb**	159	959960.3	0.5				ug/L	986982	Standard
	Ho	165	215.0	15.2				ug/L	10	Standard
	Tl	203	112.0	12.3	**0.0185**	0.001	8.1	ug/L	13	Standard
	Tl	205	103.3	15.6	**0.0212**	0.002	10.0	ug/L	10	Standard
	Pb	206	1564.7	1.6	**0.2337**	0.004	1.6	ug/L	264	Standard
	Pb	207	1332.7	0.8	**0.2227**	0.002	0.9	ug/L	227	Standard
	Pb	208	5440.7	0.5	**0.2326**	0.001	0.5	ug/L	868	Standard
	U	238	6741.8	1.0	**0.9153**	0.006	0.6	ug/L	8	Standard
>	**Bi**	209	532066.3	0.4				ug/L	541014	Standard

Sample ID: L1606123703
Report Date/Time: Thursday, June 30, 2016 18:40:16
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	21246.6	2.8	**22.2476**	1.022	4.6	mg/L	53	Standard
K	39	896.7	3.2	**1.3874**	0.024	1.7	mg/L	53	Standard
Ca	43	366.7	13.0	**18.3580**	3.195	17.4	mg/L	28	Standard
Fe	54	347.3	8.8	**0.1093**	0.026	24.1	mg/L	181	Standard
Fe	57	465.0	9.9	**0.5199**	0.082	15.8	mg/L	257	Standard
> **Sc-1**	45	57423.7	3.0				mg/L	55220	Standard
Cl	35	45819.2	1.3				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	41774.3	5.0				ug/L	2040	Standard
P	31	25414.6	2.7				ug/L	20435	Standard
S	34	2805.3	1.7				ug/L	2430	Standard
Sr	88	228.3	2.5				ug/L	75	Standard
C	12	220.0	12.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	7	Standard
Dy	164	388.8	30.1				mg/L	9	Standard
Ho-1	165	215.0	15.2				mg/L	10	Standard
Er	166	233.3	21.1				mg/L	23	Standard
I	127	161422.8	6.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.772	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123703
Report Date/Time: Thursday, June 30, 2016 18:40:16
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.764	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.346	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123704
Sample Date/Time: Thursday, June 30, 2016 18:41:11
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74700.4	1.5				ug/L	74916	Standard
	Be	9	25.0	34.6	**0.0202**	0.008	41.6	ug/L	10	Standard
	Al	27	15133453.9	0.8	**87.4746**	1.860	2.1	ug/L	1822	Standard
	Sc	45	57433.7	3.1				ug/L	55220	Standard
	Ti	47	1116.0	5.6	**2.6964**	0.124	4.6	ug/L	34	Standard
	V	51	43724.0	1.3	**4.6399**	0.118	2.6	ug/L	1938	Standard
	Cr	52	15434.2	1.7	**0.7179**	0.043	6.0	ug/L	9522	Standard
	Cr	53	7095.0	3.2	**6.1276**	0.285	4.7	ug/L	395	Standard
	Mn	55	24493.4	0.5	**2.8116**	0.050	1.8	ug/L	902	Standard
	Co	59	1370.4	1.3	**0.1495**	0.002	1.5	ug/L	262	Standard
	Ni	60	4008.2	1.6	**1.6853**	0.020	1.2	ug/L	371	Standard
	Cu	65	1042.4	0.5	**0.4251**	0.007	1.6	ug/L	106	Standard
	Zn	66	3012.6	1.2	**2.0275**	0.051	2.5	ug/L	398	Standard
>	**Ge**	72	522710.1	1.2				ug/L	535147	Standard
	As	75	1352.2	5.0	**1.0884**	0.041	3.7	ug/L	-43	Standard
	Se	82	371.1	3.5	**2.7067**	0.122	4.5	ug/L	14	Standard
	Se-1	77	381.0	2.0	**3.7490**	0.094	2.5	ug/L	65	Standard
>	**Ga**	71	253.3	13.4				mg/L	97	Standard
	Rb	85	4595.7	5.5				ug/L	15	Standard
	Y	89	464468.4	0.3				ug/L	465704	Standard
>	**Rh**	103	88.3	8.6				ug/L	10	Standard
	Mo	98	1006.4	1.0	**0.3415**	0.002	0.7	ug/L	9	Standard
	Ag	107	123.0	6.5	**0.0106**	0.001	10.7	ug/L	82	Standard
	Cd	111	26.8	11.4	**0.0192**	0.001	6.6	mg/L	7	Standard
	Cd	114	58.4	32.7	**0.0192**	0.003	17.6	ug/L	21	Standard
>	**In**	115	606613.6	0.4				ug/L	619035	Standard
	Sn	118	680.0	9.7	**0.0032**	0.011	331.8	ug/L	508	Standard
	Sb	123	230.7	6.4	**0.0489**	0.003	5.9	ug/L	86	Standard
	Ba	135	49480.7	1.3	**22.0679**	0.363	1.6	ug/L	79	Standard
	Ce	140	11719.5	2.2				ug/L	68	Standard
>	**Tb**	159	942397.8	0.6				ug/L	986982	Standard
	Ho	165	170.0	24.1				ug/L	10	Standard
	Tl	203	103.0	13.1	**0.0178**	0.002	8.6	ug/L	13	Standard
	Tl	205	86.7	23.3	**0.0193**	0.003	13.9	ug/L	10	Standard
	Pb	206	883.7	2.1	**0.1195**	0.002	2.1	ug/L	264	Standard
	Pb	207	732.4	2.3	**0.1110**	0.003	2.8	ug/L	227	Standard
	Pb	208	3144.5	0.5	**0.1223**	0.001	1.2	ug/L	868	Standard
	U	238	11938.4	1.8	**1.6560**	0.021	1.3	ug/L	8	Standard
>	**Bi**	209	518732.9	0.6				ug/L	541014	Standard

Sample ID: L1606123704
Report Date/Time: Thursday, June 30, 2016 18:43:27
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**26.5771**	26.100	98.2	mg/L	2	Standard
Mg	24	58492.7	1.9	**61.2716**	0.950	1.6	mg/L	53	Standard
K	39	303.3	9.7	**0.4202**	0.062	14.8	mg/L	53	Standard
Ca	43	820.0	3.2	**42.9785**	0.015	0.0	mg/L	28	Standard
Fe	54	269.9	23.5	**0.0573**	0.035	61.8	mg/L	181	Standard
Fe	57	703.3	12.9	**1.1251**	0.179	15.9	mg/L	257	Standard
> **Sc-1**	45	57433.7	3.1				mg/L	55220	Standard
Cl	35	47952.4	0.9				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	58556.3	2.6				ug/L	2040	Standard
P	31	27825.5	1.9				ug/L	20435	Standard
S	34	2730.2	2.0				ug/L	2430	Standard
Sr	88	346.7	24.6				ug/L	75	Standard
C	12	183.3	38.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	7	Standard
Dy	164	293.3	8.9				mg/L	9	Standard
Ho-1	165	170.0	24.1				mg/L	10	Standard
Er	166	140.0	12.4				mg/L	23	Standard
I	127	160434.3	4.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.712	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.676	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123704
Report Date/Time: Thursday, June 30, 2016 18:43:27
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.993
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.882
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123705
Sample Date/Time: Thursday, June 30, 2016 18:44:22
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75807.6	2.4				ug/L	74916	Standard
	Be	9	15.0	57.7	**0.0105**	0.008	78.4	ug/L	10	Standard
	Al	27	16819757.9	1.0	**95.8103**	1.874	2.0	ug/L	1822	Standard
	Sc	45	56911.8	3.1				ug/L	55220	Standard
	Ti	47	333.7	8.3	**0.7492**	0.070	9.3	ug/L	34	Standard
	V	51	26190.8	1.8	**2.6713**	0.044	1.7	ug/L	1938	Standard
	Cr	52	11710.2	0.4	**0.2805**	0.003	1.1	ug/L	9522	Standard
	Cr	53	8892.6	3.9	**7.6943**	0.295	3.8	ug/L	395	Standard
	Mn	55	750738.1	1.3	**88.3994**	1.378	1.6	ug/L	902	Standard
	Co	59	3620.4	4.0	**0.4280**	0.018	4.3	ug/L	262	Standard
	Ni	60	5830.8	1.3	**2.4915**	0.033	1.3	ug/L	371	Standard
	Cu	65	3275.0	2.4	**1.4462**	0.037	2.6	ug/L	106	Standard
	Zn	66	11576.1	3.0	**8.6847**	0.271	3.1	ug/L	398	Standard
>	**Ge**	72	527929.6	0.2				ug/L	535147	Standard
	As	75	1507.7	7.3	**1.1960**	0.081	6.8	ug/L	-43	Standard
	Se	82	264.0	5.2	**1.8774**	0.098	5.2	ug/L	14	Standard
	Se-1	77	452.3	3.8	**4.5083**	0.185	4.1	ug/L	65	Standard
>	**Ga**	71	91.7	8.3				mg/L	97	Standard
	Rb	85	1790.1	1.5				ug/L	15	Standard
	Y	89	459787.3	0.7				ug/L	465704	Standard
>	**Rh**	103	98.3	10.6				ug/L	10	Standard
	Mo	98	7598.5	2.3	**2.4593**	0.046	1.9	ug/L	9	Standard
	Ag	107	107.7	23.2	**0.0083**	0.003	39.7	ug/L	82	Standard
	Cd	111	203.4	9.7	**0.0926**	0.008	9.0	mg/L	7	Standard
	Cd	114	563.4	13.5	**0.1064**	0.014	12.7	ug/L	21	Standard
>	**In**	115	616088.9	0.4				ug/L	619035	Standard
	Sn	118	741.7	6.4	**0.0111**	0.007	65.9	ug/L	508	Standard
	Sb	123	228.7	4.8	**0.0478**	0.002	4.0	ug/L	86	Standard
	Ba	135	72026.8	1.1	**31.6368**	0.353	1.1	ug/L	79	Standard
	Ce	140	1040.0	1.0				ug/L	68	Standard
>	**Tb**	159	950323.7	0.5				ug/L	986982	Standard
	Ho	165	100.0	8.7				ug/L	10	Standard
	Tl	203	79.0	12.8	**0.0150**	0.001	7.3	ug/L	13	Standard
	Tl	205	88.3	55.8	**0.0194**	0.007	33.7	ug/L	10	Standard
	Pb	206	683.0	11.0	**0.0831**	0.013	16.0	ug/L	264	Standard
	Pb	207	594.0	10.8	**0.0831**	0.012	14.6	ug/L	227	Standard
	Pb	208	2416.7	6.3	**0.0844**	0.008	9.2	ug/L	868	Standard
	U	238	5401.0	1.5	**0.7494**	0.012	1.6	ug/L	8	Standard
>	**Bi**	209	521632.3	0.7				ug/L	541014	Standard

Sample ID: L1606123705
Report Date/Time: Thursday, June 30, 2016 18:46:39
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**18.0428**	15.638	86.7	mg/L	2	Standard
Mg	24	60197.7	2.6	**63.6892**	3.459	5.4	mg/L	53	Standard
K	39	146.7	5.2	**0.1657**	0.016	9.6	mg/L	53	Standard
Ca	43	673.3	4.4	**35.3839**	2.707	7.6	mg/L	28	Standard
Fe	54	201.8	23.4	**0.0146**	0.031	210.5	mg/L	181	Standard
Fe	57	551.7	4.6	**0.7557**	0.075	9.9	mg/L	257	Standard
> **Sc-1**	45	56911.8	3.1				mg/L	55220	Standard
Cl	35	51354.2	2.0				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	48855.3	1.4				ug/L	2040	Standard
P	31	27864.0	4.9				ug/L	20435	Standard
S	34	2916.9	4.4				ug/L	2430	Standard
Sr	88	280.0	3.1				ug/L	75	Standard
C	12	166.7	21.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	92.8	23.1				mg/L	9	Standard
Ho-1	165	100.0	8.7				mg/L	10	Standard
Er	166	150.0	23.1				mg/L	23	Standard
I	127	215352.8	3.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.190	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.651	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123705
Report Date/Time: Thursday, June 30, 2016 18:46:39
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.524
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.417
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123706
Sample Date/Time: Thursday, June 30, 2016 18:47:34
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74487.7	1.5				ug/L	74916	Standard
	Be	9	13.3	86.6	**0.0092**	0.011	120.4	ug/L	10	Standard
	Al	27	11820936.1	1.6	**68.5203**	1.611	2.4	ug/L	1822	Standard
	Sc	45	55595.2	2.1				ug/L	55220	Standard
	Ti	47	326.7	7.2	**0.7343**	0.060	8.2	ug/L	34	Standard
	V	51	44071.1	2.3	**4.6430**	0.103	2.2	ug/L	1938	Standard
	Cr	52	11553.4	1.3	**0.2666**	0.021	8.0	ug/L	9522	Standard
	Cr	53	8779.2	2.1	**7.6152**	0.191	2.5	ug/L	395	Standard
	Mn	55	39929.6	1.2	**4.6157**	0.059	1.3	ug/L	902	Standard
	Co	59	1062.0	2.5	**0.1098**	0.004	3.7	ug/L	262	Standard
	Ni	60	1866.1	1.2	**0.7008**	0.009	1.3	ug/L	371	Standard
	Cu	65	1098.0	1.4	**0.4473**	0.010	2.2	ug/L	106	Standard
	Zn	66	3754.1	1.4	**2.5907**	0.036	1.4	ug/L	398	Standard
>	**Ge**	72	526406.1	0.6				ug/L	535147	Standard
	As	75	1178.8	3.3	**0.9500**	0.034	3.6	ug/L	-43	Standard
	Se	82	190.1	10.6	**1.3289**	0.156	11.7	ug/L	14	Standard
	Se-1	77	429.0	5.7	**4.2598**	0.267	6.3	ug/L	65	Standard
>	**Ga**	71	83.3	3.5				mg/L	97	Standard
	Rb	85	1408.4	8.6				ug/L	15	Standard
	Y	89	458293.2	0.9				ug/L	465704	Standard
>	**Rh**	103	70.0	31.1				ug/L	10	Standard
	Mo	98	14819.1	1.5	**4.8262**	0.045	0.9	ug/L	9	Standard
	Ag	107	103.3	12.6	**0.0078**	0.002	21.3	ug/L	82	Standard
	Cd	111	10.4	71.6	**0.0123**	0.003	26.0	mg/L	7	Standard
	Cd	114	89.6	37.9	**0.0245**	0.006	23.5	ug/L	21	Standard
>	**In**	115	610793.1	1.1				ug/L	619035	Standard
	Sn	118	760.0	10.3	**0.0149**	0.011	73.7	ug/L	508	Standard
	Sb	123	308.5	0.3	**0.0634**	0.001	0.8	ug/L	86	Standard
	Ba	135	63587.8	1.8	**28.1686**	0.196	0.7	ug/L	79	Standard
	Ce	140	1448.4	6.8				ug/L	68	Standard
>	**Tb**	159	948916.9	1.3				ug/L	986982	Standard
	Ho	165	36.7	7.9				ug/L	10	Standard
	Tl	203	79.3	4.1	**0.0150**	0.000	2.3	ug/L	13	Standard
	Tl	205	61.7	12.4	**0.0158**	0.001	6.1	ug/L	10	Standard
	Pb	206	411.0	2.8	**0.0344**	0.002	7.0	ug/L	264	Standard
	Pb	207	364.0	2.9	**0.0376**	0.002	5.3	ug/L	227	Standard
	Pb	208	1486.0	1.0	**0.0366**	0.000	1.1	ug/L	868	Standard
	U	238	7610.9	2.4	**1.0452**	0.021	2.0	ug/L	8	Standard
>	**Bi**	209	525407.3	0.6				ug/L	541014	Standard

Sample ID: L1606123706
Report Date/Time: Thursday, June 30, 2016 18:49:50
Page 1

Approved: July 01, 2016

Na	23	5.0	0.0	**27.9422**	0.578	2.1	mg/L	2	Standard
Mg	24	52755.1	2.4	**57.0711**	0.842	1.5	mg/L	53	Standard
K	39	150.0	8.8	**0.1772**	0.027	15.2	mg/L	53	Standard
Ca	43	313.3	20.8	**15.9633**	3.778	23.7	mg/L	28	Standard
Fe	54	212.3	15.3	**0.0252**	0.024	97.0	mg/L	181	Standard
Fe	57	398.3	20.7	**0.3868**	0.230	59.5	mg/L	257	Standard
> **Sc-1**	45	55595.2	2.1				mg/L	55220	Standard
Cl	35	49423.8	1.2				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	35855.7	2.9				ug/L	2040	Standard
P	31	26942.3	1.6				ug/L	20435	Standard
S	34	3012.0	1.5				ug/L	2430	Standard
Sr	88	220.0	11.8				ug/L	75	Standard
C	12	180.0	25.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	40.5	37.0				mg/L	9	Standard
Ho-1	165	36.7	7.9				mg/L	10	Standard
Er	166	60.0	16.7				mg/L	23	Standard
I	127	561335.4	4.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.367	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123706
Report Date/Time: Thursday, June 30, 2016 18:49:50
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.669
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.115
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606123706
Report Date/Time: Thursday, June 30, 2016 18:49:50
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 18:50:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71687.5	1.4				ug/L	74916	Standard
	Be	9	56212.4	2.2	**55.6744**	0.981	1.8	ug/L	10	Standard
	Al	27	8771268.2	2.9	**52.8124**	0.842	1.6	ug/L	1822	Standard
	Sc	45	55598.5	1.4				ug/L	55220	Standard
	Ti	47	42411.0	2.0	**101.9404**	1.750	1.7	ug/L	34	Standard
	V	51	469521.3	1.1	**50.1684**	0.092	0.2	ug/L	1938	Standard
	Cr	52	465815.6	1.0	**50.4026**	0.203	0.4	ug/L	9522	Standard
	Cr	53	56885.0	2.2	**50.2601**	0.777	1.5	ug/L	395	Standard
	Mn	55	437945.4	1.3	**50.4742**	0.337	0.7	ug/L	902	Standard
	Co	59	417548.6	1.4	**50.9095**	0.645	1.3	ug/L	262	Standard
	Ni	60	114353.6	1.4	**50.5212**	0.176	0.3	ug/L	371	Standard
	Cu	65	111446.1	0.9	**50.1133**	0.291	0.6	ug/L	106	Standard
	Zn	66	66488.2	1.0	**50.4769**	0.800	1.6	ug/L	398	Standard
>	Ge	72	538875.7	1.1				ug/L	535147	Standard
	As	75	67522.2	0.5	**50.1175**	0.341	0.7	ug/L	-43	Standard
	Se	82	6846.0	0.7	**50.0674**	0.209	0.4	ug/L	14	Standard
	Se-1	77	4653.4	1.8	**50.7142**	0.391	0.8	ug/L	65	Standard
>	Ga	71	71.7	28.2				mg/L	97	Standard
	Rb	85	916.7	4.0				ug/L	15	Standard
	Y	89	469799.8	1.4				ug/L	465704	Standard
>	Rh	103	31.7	32.9				ug/L	10	Standard
	Mo	98	311161.5	0.9	**97.3135**	1.276	1.3	ug/L	9	Standard
	Ag	107	375662.4	1.9	**48.5477**	1.199	2.5	ug/L	82	Standard
	Cd	111	121621.4	0.4	**49.1707**	0.522	1.1	mg/L	7	Standard
	Cd	114	296179.2	0.5	**49.7223**	0.142	0.3	ug/L	21	Standard
>	In	115	634529.9	0.8				ug/L	619035	Standard
	Sn	118	329929.0	3.1	**49.3536**	1.344	2.7	ug/L	508	Standard
	Sb	123	267054.5	1.3	**49.2021**	0.782	1.6	ug/L	86	Standard
	Ba	135	113140.9	0.4	**48.2634**	0.467	1.0	ug/L	79	Standard
	Ce	140	128.3	20.0				ug/L	68	Standard
>	Tb	159	957418.9	1.2				ug/L	986982	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	464958.9	0.7	**50.5990**	0.829	1.6	ug/L	13	Standard
	Tl	205	415202.1	0.2	**52.8880**	0.585	1.1	ug/L	10	Standard
	Pb	206	294687.8	1.3	**49.9241**	0.223	0.4	ug/L	264	Standard
	Pb	207	268350.0	0.9	**50.3058**	0.452	0.9	ug/L	227	Standard
	Pb	208	1083165.8	0.6	**52.6601**	0.325	0.6	ug/L	868	Standard
	U	238	400940.3	0.4	**52.7360**	0.496	0.9	ug/L	8	Standard
>	Bi	209	544596.2	1.1				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 18:53:03
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4615.7	1.6	**4.9627**	0.144	2.9	mg/L	53	Standard
K	39	2171.8	4.6	**3.5842**	0.149	4.2	mg/L	53	Standard
Ca	43	113.3	19.9	**4.6898**	1.182	25.2	mg/L	28	Standard
Fe	54	7351.4	3.6	**4.8564**	0.179	3.7	mg/L	181	Standard
Fe	57	2108.5	1.8	**4.8855**	0.174	3.6	mg/L	257	Standard
Sc-1	45	55598.5	1.4				mg/L	55220	Standard
Cl	35	45959.6	2.2				ug/L	35504	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	3020.3	12.7				ug/L	2040	Standard
P	31	25206.0	4.0				ug/L	20435	Standard
S	34	3005.3	2.9				ug/L	2430	Standard
Sr	88	63.3	24.1				ug/L	75	Standard
C	12	83.3	48.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.0	105.7				mg/L	9	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	20.0	100.0				mg/L	23	Standard
I	127	27561.4	28.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	111.349		
Al	27	105.625		
Sc	45			
Ti	47	101.940		
V	51	100.337		
Cr	52	100.805		
Cr	53			
Mn	55	100.948		
Co	59	101.819		
Ni	60	101.042		
Cu	65	100.227		
Zn	66	100.954		
Ge	72		100.697	
As	75	100.235		
Se	82	100.135		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 18:53:03
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	97.314		
Ag	107	97.095		
Cd	111	98.341		
Cd	114			
In	115		102.503	
Sn	118	98.707		
Sb	123	98.404		
Ba	135	96.527		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.198		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.320		
U	238	105.472		
Bi	209		100.662	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 18:53:03
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 18:53:58
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70564.0	1.3				ug/L	74916	Standard
	Be	9	15.0	33.3	**0.0115**	0.005	43.9	ug/L	10	Standard
	Al	27	2650.2	30.0	**0.0138**	0.005	33.3	ug/L	1822	Standard
	Sc	45	55267.3	1.7				ug/L	55220	Standard
	Ti	47	37.0	13.5	**0.0193**	0.013	65.6	ug/L	34	Standard
	V	51	1576.6	11.5	**-0.0265**	0.021	77.8	ug/L	1938	Standard
	Cr	52	7930.7	1.2	**-0.1603**	0.016	10.0	ug/L	9522	Standard
	Cr	53	933.4	10.2	**0.4468**	0.083	18.5	ug/L	395	Standard
	Mn	55	838.0	6.3	**-0.0080**	0.007	83.7	ug/L	902	Standard
	Co	59	260.3	20.6	**0.0091**	0.007	74.5	ug/L	262	Standard
	Ni	60	289.7	5.8	**-0.0167**	0.008	49.3	ug/L	371	Standard
	Cu	65	145.0	9.6	**0.0068**	0.007	97.5	ug/L	106	Standard
	Zn	66	383.3	2.1	**-0.0525**	0.008	14.8	ug/L	398	Standard
>	**Ge**	72	536805.7	0.6				ug/L	535147	Standard
	As	75	-7.0	257.8	**0.0500**	0.013	26.7	ug/L	-43	Standard
	Se	82	26.0	21.0	**0.0939**	0.039	41.6	ug/L	14	Standard
	Se-1	77	74.7	11.4	**0.2452**	0.098	39.8	ug/L	65	Standard
>	**Ga**	71	61.7	9.4				mg/L	97	Standard
	Rb	85	28.3	40.8				ug/L	15	Standard
	Y	89	474941.0	0.9				ug/L	465704	Standard
>	**Rh**	103	26.7	43.3				ug/L	10	Standard
	Mo	98	254.5	24.8	**0.0910**	0.019	21.1	ug/L	9	Standard
	Ag	107	150.0	15.4	**0.0131**	0.003	21.8	ug/L	82	Standard
	Cd	111	14.2	26.1	**0.0136**	0.001	10.7	mg/L	7	Standard
	Cd	114	40.6	40.8	**0.0157**	0.003	17.7	ug/L	21	Standard
>	**In**	115	641699.1	0.5				ug/L	619035	Standard
	Sn	118	1158.4	8.6	**0.0683**	0.015	22.5	ug/L	508	Standard
	Sb	123	594.0	22.6	**0.1127**	0.025	22.0	ug/L	86	Standard
	Ba	135	49.7	37.8	**0.0013**	0.008	600.3	ug/L	79	Standard
	Ce	140	31.7	9.1				ug/L	68	Standard
>	**Tb**	159	966472.8	1.2				ug/L	986982	Standard
	Ho	165	6.7	173.2				ug/L	10	Standard
	Tl	203	80.0	13.5	**0.0146**	0.001	8.2	ug/L	13	Standard
	Tl	205	70.0	44.6	**0.0165**	0.004	24.0	ug/L	10	Standard
	Pb	206	303.7	8.6	**0.0128**	0.004	35.1	ug/L	264	Standard
	Pb	207	290.3	16.5	**0.0204**	0.009	44.6	ug/L	227	Standard
	Pb	208	1089.7	9.1	**0.0138**	0.005	35.9	ug/L	868	Standard
	U	238	63.3	36.3	**0.0161**	0.003	18.6	ug/L	8	Standard
>	**Bi**	209	554130.2	0.5				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 18:56:15
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.2510**	16.015	173.1	mg/L	2	Standard
Mg	24	65.0	27.7	**0.0364**	0.020	56.2	mg/L	53	Standard
K	39	26.7	47.2	**-0.0306**	0.022	72.6	mg/L	53	Standard
Ca	43	23.3	53.9	**-0.3468**	0.734	211.7	mg/L	28	Standard
Fe	54	170.8	15.9	**-0.0024**	0.019	821.1	mg/L	181	Standard
Fe	57	275.0	25.8	**0.0671**	0.202	300.2	mg/L	257	Standard
Sc-1	45	55267.3	1.7				mg/L	55220	Standard
Cl	35	45791.8	1.4				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2516.9	9.5				ug/L	2040	Standard
P	31	24761.9	0.5				ug/L	20435	Standard
S	34	3220.3	7.0				ug/L	2430	Standard
Sr	88	55.0	15.7				ug/L	75	Standard
C	12	86.7	24.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	188.9	23.3				mg/L	9	Standard
Ho-1	165	6.7	173.2				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	10310.2	12.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.310	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 18:56:15
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.661
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.424
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 18:56:15
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: PBW V WG574593-02
Sample Date/Time: Thursday, June 30, 2016 18:57:10
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65124.7	1.8				ug/L	74916	Standard
	Be	9	11.7	65.5	**0.0092**	0.009	93.5	ug/L	10	Standard
	Al	27	3680.5	10.6	**0.0221**	0.002	10.9	ug/L	1822	Standard
	Sc	45	50311.7	1.8				ug/L	55220	Standard
	Ti	47	25.7	4.5	**-0.0034**	0.003	74.9	ug/L	34	Standard
	V	51	1415.1	5.7	**-0.0324**	0.008	25.8	ug/L	1938	Standard
	Cr	52	6107.2	3.0	**-0.3108**	0.016	5.2	ug/L	9522	Standard
	Cr	53	671.7	16.0	**0.2590**	0.104	40.1	ug/L	395	Standard
	Mn	55	484.7	5.0	**-0.0447**	0.003	6.4	ug/L	902	Standard
	Co	59	221.0	5.2	**0.0063**	0.001	21.0	ug/L	262	Standard
	Ni	60	295.3	4.9	**-0.0042**	0.006	140.7	ug/L	371	Standard
	Cu	65	138.0	4.5	**0.0084**	0.003	37.2	ug/L	106	Standard
	Zn	66	1155.7	3.5	**0.6080**	0.040	6.5	ug/L	398	Standard
>	**Ge**	72	498696.9	0.9				ug/L	535147	Standard
	As	75	-30.1	128.0	**0.0313**	0.031	98.7	ug/L	-43	Standard
	Se	82	15.4	57.0	**0.0257**	0.071	276.7	ug/L	14	Standard
	Se-1	77	65.3	19.4	**0.1978**	0.158	79.8	ug/L	65	Standard
>	**Ga**	71	40.0	12.5				mg/L	97	Standard
	Rb	85	30.0	60.1				ug/L	15	Standard
	Y	89	430247.5	1.6				ug/L	465704	Standard
>	**Rh**	103	13.3	57.3				ug/L	10	Standard
	Mo	98	65.4	31.6	**0.0347**	0.007	20.3	ug/L	9	Standard
	Ag	107	108.0	15.3	**0.0092**	0.002	24.8	ug/L	82	Standard
	Cd	111	4.6	83.0	**0.0099**	0.002	16.8	mg/L	7	Standard
	Cd	114	17.9	60.7	**0.0122**	0.002	16.5	ug/L	21	Standard
>	**In**	115	580808.3	0.9				ug/L	619035	Standard
	Sn	118	326.7	5.4	**-0.0499**	0.002	4.8	ug/L	508	Standard
	Sb	123	160.5	9.7	**0.0367**	0.003	7.8	ug/L	86	Standard
	Ba	135	36.3	21.4	**-0.0027**	0.003	127.5	ug/L	79	Standard
	Ce	140	20.0	66.1				ug/L	68	Standard
>	**Tb**	159	893130.6	0.7				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	31.0	11.6	**0.0095**	0.000	4.3	ug/L	13	Standard
	Tl	205	31.7	63.8	**0.0119**	0.003	22.4	ug/L	10	Standard
	Pb	206	260.7	7.5	**0.0079**	0.003	43.1	ug/L	264	Standard
	Pb	207	227.0	12.1	**0.0108**	0.005	49.4	ug/L	227	Standard
	Pb	208	965.7	3.1	**0.0102**	0.002	14.8	ug/L	868	Standard
	U	238	17.7	34.1	**0.0103**	0.001	8.0	ug/L	8	Standard
>	**Bi**	209	526979.7	0.1				ug/L	541014	Standard

Sample ID: PBW V WG574593-02
Report Date/Time: Thursday, June 30, 2016 18:59:27
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**20.3871**	17.653	86.6	mg/L	2	Standard
Mg	24	35.0	65.5	**0.0070**	0.027	380.2	mg/L	53	Standard
K	39	43.3	13.3	**0.0049**	0.012	251.2	mg/L	53	Standard
Ca	43	28.3	27.0	**0.0854**	0.465	544.9	mg/L	28	Standard
Fe	54	62.8	35.8	**-0.0719**	0.016	22.9	mg/L	181	Standard
Fe	57	288.3	11.5	**0.1765**	0.108	61.2	mg/L	257	Standard
> **Sc-1**	45	50311.7	1.8				mg/L	55220	Standard
Cl	35	42044.3	0.6				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1890.1	2.3				ug/L	2040	Standard
P	31	9644.7	4.6				ug/L	20435	Standard
S	34	2881.9	2.9				ug/L	2430	Standard
Sr	88	75.0	13.3				ug/L	75	Standard
C	12	90.0	19.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.0	88.0				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	23	Standard
I	127	31466.0	4.3				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		86.930	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.189	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: PBW V WG574593-02
Report Date/Time: Thursday, June 30, 2016 18:59:27
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	93.825	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.406	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW V WG574593-02
Report Date/Time: Thursday, June 30, 2016 18:59:27
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: LCSW V WG574593-03
Sample Date/Time: Thursday, June 30, 2016 19:00:21
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69562.7	1.6				ug/L	74916	Standard
	Be	9	55881.3	3.5	**57.0358**	1.690	3.0	ug/L	10	Standard
	Al	27	38980.1	2.0	**0.2396**	0.002	0.8	ug/L	1822	Standard
	Sc	45	55707.3	3.2				ug/L	55220	Standard
	Ti	47	72.0	69.8	**0.0984**	0.116	117.8	ug/L	34	Standard
	V	51	471085.8	1.2	**49.2051**	0.573	1.2	ug/L	1938	Standard
	Cr	52	475883.4	0.8	**50.3369**	0.146	0.3	ug/L	9522	Standard
	Cr	53	57898.8	2.5	**50.0104**	1.177	2.4	ug/L	395	Standard
	Mn	55	437440.5	1.3	**49.2849**	0.589	1.2	ug/L	902	Standard
	Co	59	411129.2	1.4	**49.0012**	0.470	1.0	ug/L	262	Standard
	Ni	60	115394.5	1.9	**49.8345**	0.439	0.9	ug/L	371	Standard
	Cu	65	114293.6	1.9	**50.2386**	0.553	1.1	ug/L	106	Standard
	Zn	66	68137.2	1.6	**50.5638**	0.366	0.7	ug/L	398	Standard
>	**Ge**	72	551232.8	1.0				ug/L	535147	Standard
	As	75	67324.2	1.0	**48.8502**	0.240	0.5	ug/L	-43	Standard
	Se	82	6755.6	1.9	**48.2934**	0.688	1.4	ug/L	14	Standard
	Se-1	77	4626.4	0.4	**49.2779**	0.338	0.7	ug/L	65	Standard
>	**Ga**	71	48.3	11.9				mg/L	97	Standard
	Rb	85	60.0	8.3				ug/L	15	Standard
	Y	89	471884.7	1.3				ug/L	465704	Standard
>	**Rh**	103	28.3	44.4				ug/L	10	Standard
	Mo	98	78.0	23.1	**0.0363**	0.006	15.3	ug/L	9	Standard
	Ag	107	382843.9	0.7	**48.5758**	0.339	0.7	ug/L	82	Standard
	Cd	111	121706.1	1.5	**48.3134**	0.813	1.7	mg/L	7	Standard
	Cd	114	293415.4	2.3	**48.3681**	1.191	2.5	ug/L	21	Standard
>	**In**	115	646223.1	0.3				ug/L	619035	Standard
	Sn	118	735.0	7.2	**0.0048**	0.008	161.7	ug/L	508	Standard
	Sb	123	258744.8	2.4	**46.8067**	1.129	2.4	ug/L	86	Standard
	Ba	135	113648.3	0.8	**47.6009**	0.461	1.0	ug/L	79	Standard
	Ce	140	66.7	21.7				ug/L	68	Standard
>	**Tb**	159	978173.5	0.6				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	464890.4	0.6	**49.4533**	0.267	0.5	ug/L	13	Standard
	Tl	205	415961.1	0.9	**51.7944**	0.478	0.9	ug/L	10	Standard
	Pb	206	301601.6	0.3	**49.9520**	0.137	0.3	ug/L	264	Standard
	Pb	207	262116.2	0.6	**48.0334**	0.260	0.5	ug/L	227	Standard
	Pb	208	1097299.1	0.6	**52.1501**	0.236	0.5	ug/L	868	Standard
	U	238	389833.0	0.4	**50.1241**	0.175	0.3	ug/L	8	Standard
>	**Bi**	209	557069.2	0.1				ug/L	541014	Standard

Sample ID: LCSW V WG574593-03
Report Date/Time: Thursday, June 30, 2016 19:02:38
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	13.5	**0.0267**	0.008	31.7	mg/L	53	Standard
K	39	53.3	32.9	**0.0139**	0.031	220.8	mg/L	53	Standard
Ca	43	15.0	66.7	**-0.8437**	0.534	63.2	mg/L	28	Standard
Fe	54	206.4	18.6	**0.0203**	0.023	111.4	mg/L	181	Standard
Fe	57	230.0	7.8	**-0.0594**	0.033	54.8	mg/L	257	Standard
Sc-1	45	55707.3	3.2				mg/L	55220	Standard
Cl	35	46169.6	0.9				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2390.2	11.5				ug/L	2040	Standard
P	31	24085.8	0.8				ug/L	20435	Standard
S	34	3070.3	3.9				ug/L	2430	Standard
Sr	88	66.7	30.3				ug/L	75	Standard
C	12	90.0	44.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	8.6	117.2				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	23	Standard
I	127	17955.6	2.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.854	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.006	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW V WG574593-03
Report Date/Time: Thursday, June 30, 2016 19:02:38
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.392
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.968
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW V WG574593-03
Report Date/Time: Thursday, June 30, 2016 19:02:38
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: F BLANK WG574519-01
Sample Date/Time: Thursday, June 30, 2016 19:03:33
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68901.4	2.7				ug/L	74916	Standard
	Be	9	35.0	0.0	**0.0325**	0.001	3.0	ug/L	10	Standard
	Al	27	13376.7	44.8	**0.0815**	0.037	45.8	ug/L	1822	Standard
	Sc	45	56279.3	1.3				ug/L	55220	Standard
	Ti	47	49.0	26.8	**0.0449**	0.030	66.9	ug/L	34	Standard
	V	51	1904.9	20.7	**0.0032**	0.040	1261.0	ug/L	1938	Standard
	Cr	52	10709.8	1.1	**0.1165**	0.013	11.0	ug/L	9522	Standard
	Cr	53	1201.7	3.2	**0.6585**	0.031	4.7	ug/L	395	Standard
	Mn	55	2313.5	41.6	**0.1557**	0.107	68.9	ug/L	902	Standard
	Co	59	426.0	48.2	**0.0279**	0.024	86.7	ug/L	262	Standard
	Ni	60	451.0	5.0	**0.0498**	0.011	22.6	ug/L	371	Standard
	Cu	65	885.0	3.9	**0.3307**	0.016	4.9	ug/L	106	Standard
	Zn	66	2763.6	4.2	**1.7184**	0.104	6.0	ug/L	398	Standard
>	**Ge**	72	551340.8	0.9				ug/L	535147	Standard
	As	75	68.9	33.8	**0.1051**	0.017	15.8	ug/L	-43	Standard
	Se	82	69.5	11.0	**0.4005**	0.051	12.7	ug/L	14	Standard
	Se-1	77	56.7	8.2	**0.0295**	0.055	187.8	ug/L	65	Standard
>	**Ga**	71	41.7	13.9				mg/L	97	Standard
	Rb	85	55.0	24.1				ug/L	15	Standard
	Y	89	480211.7	1.0				ug/L	465704	Standard
>	**Rh**	103	6.7	114.6				ug/L	10	Standard
	Mo	98	108.4	79.8	**0.0458**	0.027	59.7	ug/L	9	Standard
	Ag	107	229.0	50.7	**0.0230**	0.015	66.8	ug/L	82	Standard
	Cd	111	25.6	32.6	**0.0180**	0.003	17.7	mg/L	7	Standard
	Cd	114	68.1	31.3	**0.0200**	0.003	16.5	ug/L	21	Standard
>	**In**	115	649486.2	1.9				ug/L	619035	Standard
	Sn	118	630.0	14.3	**-0.0111**	0.013	120.8	ug/L	508	Standard
	Sb	123	2763.7	29.7	**0.5029**	0.152	30.2	ug/L	86	Standard
	Ba	135	521.0	3.5	**0.1976**	0.008	4.3	ug/L	79	Standard
	Ce	140	36.7	15.7				ug/L	68	Standard
>	**Tb**	159	966307.5	1.5				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	189.7	17.5	**0.0262**	0.004	13.7	ug/L	13	Standard
	Tl	205	248.3	56.4	**0.0386**	0.017	45.1	ug/L	10	Standard
	Pb	206	868.4	21.3	**0.1061**	0.031	28.8	ug/L	264	Standard
	Pb	207	771.7	25.0	**0.1083**	0.035	32.6	ug/L	227	Standard
	Pb	208	3058.8	10.1	**0.1071**	0.015	13.6	ug/L	868	Standard
	U	238	127.3	60.3	**0.0243**	0.010	40.6	ug/L	8	Standard
>	**Bi**	209	557094.5	0.3				ug/L	541014	Standard

Sample ID: F BLANK WG574519-01
Report Date/Time: Thursday, June 30, 2016 19:05:50
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.1066**	15.764	173.1	mg/L	2	Standard
Mg	24	351.7	14.8	**0.3415**	0.055	16.2	mg/L	53	Standard
K	39	33.3	22.9	**-0.0204**	0.013	64.6	mg/L	53	Standard
Ca	43	13.3	57.3	**-0.9375**	0.417	44.5	mg/L	28	Standard
Fe	54	189.3	9.4	**0.0079**	0.013	163.4	mg/L	181	Standard
Fe	57	275.0	14.2	**0.0511**	0.094	183.1	mg/L	257	Standard
Sc-1	45	56279.3	1.3				mg/L	55220	Standard
Cl	35	45061.6	0.5				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	10497.0	6.0				ug/L	2040	Standard
P	31	23987.3	1.8				ug/L	20435	Standard
S	34	2932.0	0.8				ug/L	2430	Standard
Sr	88	76.7	15.1				ug/L	75	Standard
C	12	106.7	10.8				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	16.0	72.9				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	29338.4	1.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.971	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.026	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: F BLANK WG574519-01
Report Date/Time: Thursday, June 30, 2016 19:05:50
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.919
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.972
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606153601 WG574593-01
Sample Date/Time: Thursday, June 30, 2016 19:06:44
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	122673.1	2.2				ug/L	74916	Standard
	Be	9	31.7	55.5	**0.0146**	0.010	66.7	ug/L	10	Standard
	Al	27	18994381.1	0.9	**66.8555**	0.955	1.4	ug/L	1822	Standard
	Sc	45	46431.0	0.5				ug/L	55220	Standard
	Ti	47	683.3	6.3	**1.9112**	0.129	6.8	ug/L	34	Standard
	V	51	30052.2	22.2	**3.6833**	0.821	22.3	ug/L	1938	Standard
	Cr	52	21130.7	1.8	**1.7730**	0.033	1.8	ug/L	9522	Standard
	Cr	53	14517.2	22.9	**15.1703**	3.419	22.5	ug/L	395	Standard
	Mn	55	85596.1	0.7	**11.8105**	0.088	0.7	ug/L	902	Standard
	Co	59	116786.7	0.4	**17.1478**	0.141	0.8	ug/L	262	Standard
	Ni	60	17742.0	0.6	**9.3298**	0.063	0.7	ug/L	371	Standard
	Cu	65	20615.4	1.5	**11.1291**	0.283	2.5	ug/L	106	Standard
	Zn	66	13403.6	4.3	**12.0053**	0.643	5.4	ug/L	398	Standard
>	**Ge**	72	447096.6	1.2				ug/L	535147	Standard
	As	75	6308.4	1.3	**5.6928**	0.101	1.8	ug/L	-43	Standard
	Se	82	571.1	6.9	**4.9502**	0.406	8.2	ug/L	14	Standard
	Se-1	77	1142.4	10.9	**14.5869**	1.497	10.3	ug/L	65	Standard
>	**Ga**	71	756.7	6.7				mg/L	97	Standard
	Rb	85	264851.7	1.4				ug/L	15	Standard
	Y	89	428599.5	1.0				ug/L	465704	Standard
>	**Rh**	103	428.3	16.9				ug/L	10	Standard
	Mo	98	1248169.6	0.3	**472.3040**	4.038	0.9	ug/L	9	Standard
	Ag	107	334.0	12.0	**0.0462**	0.007	14.2	ug/L	82	Standard
	Cd	111	-881.1	2.5	**-0.4230**	0.010	2.3	mg/L	7	Standard
	Cd	114	2092.7	7.3	**0.4339**	0.031	7.1	ug/L	21	Standard
>	**In**	115	524373.9	0.6				ug/L	619035	Standard
	Sn	118	1396.7	7.2	**0.1500**	0.019	12.5	ug/L	508	Standard
	Sb	123	2763.9	2.3	**0.6205**	0.015	2.4	ug/L	86	Standard
	Ba	135	74756.0	0.3	**38.5832**	0.154	0.4	ug/L	79	Standard
	Ce	140	973.4	5.1				ug/L	68	Standard
>	**Tb**	159	853344.7	1.3				ug/L	986982	Standard
	Ho	165	58.3	32.5				ug/L	10	Standard
	Tl	203	937.0	32.6	**0.1350**	0.042	31.4	ug/L	13	Standard
	Tl	205	240.0	27.2	**0.0464**	0.011	23.2	ug/L	10	Standard
	Pb	206	737.0	5.6	**0.1202**	0.009	7.3	ug/L	264	Standard
	Pb	207	643.7	9.2	**0.1195**	0.015	12.3	ug/L	227	Standard
	Pb	208	2580.4	7.6	**0.1204**	0.013	10.9	ug/L	868	Standard
	U	238	2118.5	4.2	**0.3601**	0.017	4.6	ug/L	8	Standard
>	**Bi**	209	430851.9	0.7				ug/L	541014	Standard

Sample ID: L1606153601 WG574593-01
Report Date/Time: Thursday, June 30, 2016 19:09:01
Page 1

Approved: July 01, 2016

Na	23	25.0	69.3	**167.1204**	115.560	69.1	mg/L	2	Standard
Mg	24	1041469.6	1.5	**1349.8898**	27.206	2.0	mg/L	53	Standard
K	39	1346.7	6.5	**2.6416**	0.167	6.3	mg/L	53	Standard
Ca	43	1193.4	7.9	**78.6907**	5.988	7.6	mg/L	28	Standard
Fe	54	146.8	27.2	**0.0001**	0.032	25226.5	mg/L	181	Standard
Fe	57	1303.4	10.9	**3.4417**	0.428	12.4	mg/L	257	Standard
Sc-1	45	46431.0	0.5				mg/L	55220	Standard
Cl	35	221401.2	0.1				ug/L	35504	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	60055.9	7.2				ug/L	2040	Standard
P	31	21758.9	1.5				ug/L	20435	Standard
S	34	2653.6	2.7				ug/L	2430	Standard
Sr	88	396.7	13.9				ug/L	75	Standard
C	12	190.0	18.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	52377.1	40.9				mg/L	7	Standard
Dy	164	11.9	128.4				mg/L	9	Standard
Ho-1	165	58.3	32.5				mg/L	10	Standard
Er	166	30.0	0.0				mg/L	23	Standard
I	127	199806.6	8.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		163.747	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		83.547	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601 WG574593-01
Report Date/Time: Thursday, June 30, 2016 19:09:01
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	84.708
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	79.638
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606153601 WG574593-01
Report Date/Time: Thursday, June 30, 2016 19:09:01
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606153601DP WG574593-04
Sample Date/Time: Thursday, June 30, 2016 19:09:56
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	145131.3	5.2				ug/L	74916	Standard
	Be	9	38.3	78.6	**0.0153**	0.015	95.1	ug/L	10	Standard
	Al	27	20839638.7	6.3	**61.9647**	1.121	1.8	ug/L	1822	Standard
	Sc	45	51571.0	4.0				ug/L	55220	Standard
	Ti	47	849.0	9.4	**2.1919**	0.167	7.6	ug/L	34	Standard
	V	51	36447.2	16.7	**4.1501**	0.825	19.9	ug/L	1938	Standard
	Cr	52	21907.5	2.6	**1.6433**	0.067	4.1	ug/L	9522	Standard
	Cr	53	10825.5	4.5	**10.3076**	0.649	6.3	ug/L	395	Standard
	Mn	55	90738.7	2.8	**11.5133**	0.066	0.6	ug/L	902	Standard
	Co	59	125381.0	4.5	**16.9279**	0.346	2.0	ug/L	262	Standard
	Ni	60	18867.8	4.3	**9.1206**	0.188	2.1	ug/L	371	Standard
	Cu	65	22283.4	4.1	**11.0610**	0.229	2.1	ug/L	106	Standard
	Zn	66	14870.3	6.1	**12.2488**	0.518	4.2	ug/L	398	Standard
>	Ge	72	486033.9	2.5				ug/L	535147	Standard
	As	75	6634.4	6.0	**5.5055**	0.197	3.6	ug/L	-43	Standard
	Se	82	622.2	14.5	**4.9508**	0.649	13.1	ug/L	14	Standard
	Se-1	77	954.7	5.1	**11.0985**	0.821	7.4	ug/L	65	Standard
>	Ga	71	735.0	6.2				mg/L	97	Standard
	Rb	85	280985.0	3.3				ug/L	15	Standard
	Y	89	467730.0	3.9				ug/L	465704	Standard
>	Rh	103	991.7	26.1				ug/L	10	Standard
	Mo	98	1366675.1	3.4	**465.0197**	2.989	0.6	ug/L	9	Standard
	Ag	107	341.7	18.3	**0.0422**	0.010	24.6	ug/L	82	Standard
	Cd	111	-916.3	0.9	**-0.3953**	0.011	2.8	mg/L	7	Standard
	Cd	114	2215.8	6.2	**0.4142**	0.035	8.4	ug/L	21	Standard
>	In	115	583122.3	3.2				ug/L	619035	Standard
	Sn	118	1590.1	4.2	**0.1562**	0.015	9.4	ug/L	508	Standard
	Sb	123	2817.7	3.8	**0.5692**	0.005	0.8	ug/L	86	Standard
	Ba	135	79167.7	3.0	**36.7444**	0.151	0.4	ug/L	79	Standard
	Ce	140	1018.4	6.7				ug/L	68	Standard
>	Tb	159	945728.6	2.5				ug/L	986982	Standard
	Ho	165	63.3	52.6				ug/L	10	Standard
	Tl	203	1194.7	26.8	**0.1568**	0.046	29.2	ug/L	13	Standard
	Tl	205	235.0	25.1	**0.0424**	0.010	23.6	ug/L	10	Standard
	Pb	206	779.7	7.0	**0.1149**	0.016	13.8	ug/L	264	Standard
	Pb	207	712.7	3.3	**0.1211**	0.010	8.5	ug/L	227	Standard
	Pb	208	2715.1	2.2	**0.1140**	0.006	5.4	ug/L	868	Standard
	U	238	2279.8	3.7	**0.3534**	0.005	1.4	ug/L	8	Standard
>	Bi	209	472522.9	3.5				ug/L	541014	Standard

Sample ID: L1606153601DP WG574593-04
Report Date/Time: Thursday, June 30, 2016 19:12:13
Page 1

Approved: July 01, 2016

Na	23	11.7	99.0	**69.7203**	68.154	97.8	mg/L	2	Standard
Mg	24	1137339.3	3.2	**1327.4723**	16.520	1.2	mg/L	53	Standard
K	39	1246.7	8.6	**2.1884**	0.146	6.7	mg/L	53	Standard
Ca	43	1193.4	9.8	**70.6867**	6.151	8.7	mg/L	28	Standard
Fe	54	172.3	23.9	**0.0064**	0.026	410.4	mg/L	181	Standard
Fe	57	1273.4	6.7	**2.9462**	0.106	3.6	mg/L	257	Standard
> **Sc-1**	45	51571.0	4.0				mg/L	55220	Standard
Cl	35	236472.8	3.0				ug/L	35504	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	63175.0	5.0				ug/L	2040	Standard
P	31	23453.2	4.9				ug/L	20435	Standard
S	34	2768.6	5.1				ug/L	2430	Standard
Sr	88	461.7	3.3				ug/L	75	Standard
C	12	266.7	15.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	71212.3	32.9				mg/L	7	Standard
Dy	164	41.9	56.1				mg/L	9	Standard
Ho-1	165	63.3	52.6				mg/L	10	Standard
Er	166	30.0	33.3				mg/L	23	Standard
I	127	118564.9	6.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		193.724	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.823	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601DP WG574593-04
Report Date/Time: Thursday, June 30, 2016 19:12:13
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.199
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.340
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606153601S WG574593-05
Sample Date/Time: Thursday, June 30, 2016 19:13:07
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	143015.1	0.4				ug/L	74916	Standard
	Be	9	64930.5	1.9	**32.2330**	0.549	1.7	ug/L	10	Standard
	Al	27	19624790.6	1.8	**59.2354**	0.841	1.4	ug/L	1822	Standard
	Sc	45	46411.0	0.4				ug/L	55220	Standard
	Ti	47	889.0	11.4	**2.4697**	0.264	10.7	ug/L	34	Standard
	V	51	363710.8	13.8	**46.1270**	5.796	12.6	ug/L	1938	Standard
	Cr	52	383056.0	1.4	**49.2423**	0.433	0.9	ug/L	9522	Standard
	Cr	53	54581.5	1.5	**57.3821**	0.914	1.6	ug/L	395	Standard
	Mn	55	429579.9	1.5	**58.8649**	0.091	0.2	ug/L	902	Standard
	Co	59	480081.2	1.5	**69.5797**	0.229	0.3	ug/L	262	Standard
	Ni	60	101825.7	0.5	**53.4866**	0.655	1.2	ug/L	371	Standard
	Cu	65	103347.9	0.3	**55.2467**	0.559	1.0	ug/L	106	Standard
	Zn	66	65133.7	0.7	**58.8316**	0.616	1.0	ug/L	398	Standard
>	Ge	72	453366.3	1.4				ug/L	535147	Standard
	As	75	67998.6	1.4	**59.9775**	0.350	0.6	ug/L	-43	Standard
	Se	82	8004.7	1.5	**69.6196**	0.663	1.0	ug/L	14	Standard
	Se-1	77	5747.1	0.6	**74.7297**	0.858	1.1	ug/L	65	Standard
>	Ga	71	700.0	7.7				mg/L	97	Standard
	Rb	85	262612.4	2.7				ug/L	15	Standard
	Y	89	431755.5	0.9				ug/L	465704	Standard
>	Rh	103	1180.0	12.1				ug/L	10	Standard
	Mo	98	1268678.8	1.5	**462.4618**	7.325	1.6	ug/L	9	Standard
	Ag	107	289362.3	0.2	**43.5874**	0.122	0.3	ug/L	82	Standard
	Cd	111	94792.1	0.8	**44.6737**	0.366	0.8	mg/L	7	Standard
	Cd	114	230907.1	2.6	**45.1893**	1.189	2.6	ug/L	21	Standard
>	In	115	544320.7	0.1				ug/L	619035	Standard
	Sn	118	1760.1	2.7	**0.2042**	0.008	3.9	ug/L	508	Standard
	Sb	123	233383.2	0.4	**50.1222**	0.236	0.5	ug/L	86	Standard
	Ba	135	165124.3	0.9	**82.1221**	0.708	0.9	ug/L	79	Standard
	Ce	140	966.7	8.2				ug/L	68	Standard
>	Tb	159	884416.1	0.7				ug/L	986982	Standard
	Ho	165	73.3	38.8				ug/L	10	Standard
	Tl	203	384991.2	0.4	**50.4813**	0.655	1.3	ug/L	13	Standard
	Tl	205	341869.1	1.1	**52.4681**	0.385	0.7	ug/L	10	Standard
	Pb	206	255668.8	0.9	**52.1981**	0.879	1.7	ug/L	264	Standard
	Pb	207	224089.7	0.5	**50.6200**	0.634	1.3	ug/L	227	Standard
	Pb	208	888698.2	0.6	**52.0591**	0.157	0.3	ug/L	868	Standard
	U	238	358665.5	0.3	**56.8418**	0.316	0.6	ug/L	8	Standard
>	Bi	209	451966.0	0.9				ug/L	541014	Standard

Sample ID: L1606153601S WG574593-05
Report Date/Time: Thursday, June 30, 2016 19:15:24
Page 1

Approved: July 01, 2016

Na	23	16.7	34.6	**111.6222**	38.965	34.9	mg/L	2	Standard
Mg	24	1057684.2	1.3	**1371.3823**	13.464	1.0	mg/L	53	Standard
K	39	1123.4	9.3	**2.1927**	0.220	10.0	mg/L	53	Standard
Ca	43	1163.4	6.7	**76.7147**	5.120	6.7	mg/L	28	Standard
Fe	54	172.0	23.7	**0.0208**	0.033	160.7	mg/L	181	Standard
Fe	57	1135.0	4.0	**2.9145**	0.156	5.4	mg/L	257	Standard
Sc-1	45	46411.0	0.4				mg/L	55220	Standard
Cl	35	218214.2	0.7				ug/L	35504	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	60607.7	2.8				ug/L	2040	Standard
P	31	22690.3	1.8				ug/L	20435	Standard
S	34	2575.2	6.7				ug/L	2430	Standard
Sr	88	481.7	15.9				ug/L	75	Standard
C	12	266.7	14.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103574.1	22.0				mg/L	7	Standard
Dy	164	22.2	113.4				mg/L	9	Standard
Ho-1	165	73.3	38.8				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	121412.0	5.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		190.900	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		84.718	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601S WG574593-05
Report Date/Time: Thursday, June 30, 2016 19:15:24
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	87.931	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	83.541	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606153601SD WG574593-06
Sample Date/Time: Thursday, June 30, 2016 19:16:19
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	144320.8	1.4				ug/L	74916	Standard
	Be	9	67036.4	2.5	**32.9766**	0.573	1.7	ug/L	10	Standard
	Al	27	19028383.5	1.6	**56.9163**	0.252	0.4	ug/L	1822	Standard
	Sc	45	45364.5	1.2				ug/L	55220	Standard
	Ti	47	864.0	14.8	**2.4561**	0.339	13.8	ug/L	34	Standard
	V	51	409554.8	7.4	**53.2416**	3.343	6.3	ug/L	1938	Standard
	Cr	52	373963.3	2.3	**49.2139**	0.515	1.0	ug/L	9522	Standard
	Cr	53	52440.6	1.0	**56.4442**	1.146	2.0	ug/L	395	Standard
	Mn	55	414320.5	2.9	**58.1196**	1.024	1.8	ug/L	902	Standard
	Co	59	481049.2	2.9	**71.3749**	1.274	1.8	ug/L	262	Standard
	Ni	60	100627.5	1.8	**54.1113**	0.263	0.5	ug/L	371	Standard
	Cu	65	101353.6	1.2	**55.4683**	0.248	0.4	ug/L	106	Standard
	Zn	66	63976.8	1.0	**59.1634**	0.288	0.5	ug/L	398	Standard
>	Ge	72	442808.8	1.3				ug/L	535147	Standard
	As	75	65657.0	1.0	**59.2943**	0.212	0.4	ug/L	-43	Standard
	Se	82	7691.2	2.1	**68.4817**	0.661	1.0	ug/L	14	Standard
	Se-1	77	5384.6	1.6	**71.6561**	0.754	1.1	ug/L	65	Standard
>	Ga	71	658.3	9.6				mg/L	97	Standard
	Rb	85	255749.5	2.4				ug/L	15	Standard
	Y	89	419777.3	0.4				ug/L	465704	Standard
>	Rh	103	1070.0	9.0				ug/L	10	Standard
	Mo	98	1236104.0	2.4	**461.4124**	4.988	1.1	ug/L	9	Standard
	Ag	107	281437.4	2.3	**43.4126**	0.448	1.0	ug/L	82	Standard
	Cd	111	91534.3	1.0	**44.1809**	0.328	0.7	mg/L	7	Standard
	Cd	114	225320.4	3.6	**45.1561**	1.335	3.0	ug/L	21	Standard
>	In	115	531495.6	1.3				ug/L	619035	Standard
	Sn	118	1726.8	2.8	**0.2057**	0.012	6.1	ug/L	508	Standard
	Sb	123	227797.6	2.3	**50.0991**	0.600	1.2	ug/L	86	Standard
	Ba	135	161039.8	1.6	**82.0212**	0.257	0.3	ug/L	79	Standard
	Ce	140	906.7	5.3				ug/L	68	Standard
>	Tb	159	880141.6	0.9				ug/L	986982	Standard
	Ho	165	85.0	65.5				ug/L	10	Standard
	Tl	203	378471.8	2.5	**50.0289**	0.587	1.2	ug/L	13	Standard
	Tl	205	343724.7	2.2	**53.1854**	0.518	1.0	ug/L	10	Standard
	Pb	206	251355.3	1.3	**51.7382**	0.295	0.6	ug/L	264	Standard
	Pb	207	219297.8	1.2	**49.9444**	0.068	0.1	ug/L	227	Standard
	Pb	208	870795.0	1.8	**51.4295**	0.358	0.7	ug/L	868	Standard
	U	238	351344.4	2.1	**56.1378**	0.462	0.8	ug/L	8	Standard
>	Bi	209	448252.8	1.3				ug/L	541014	Standard

Sample ID: L1606153601SD WG574593-06
Report Date/Time: Thursday, June 30, 2016 19:18:36
Page 1

Approved: July 01, 2016

Na	23	13.3	43.3	**91.5778**	40.783	44.5	mg/L	2	Standard
Mg	24	1030234.6	3.5	**1366.3947**	31.771	2.3	mg/L	53	Standard
K	39	1185.0	3.3	**2.3727**	0.105	4.4	mg/L	53	Standard
Ca	43	1123.4	8.6	**75.7793**	6.723	8.9	mg/L	28	Standard
Fe	54	146.6	6.0	**0.0029**	0.008	282.1	mg/L	181	Standard
Fe	57	1080.0	9.4	**2.8172**	0.286	10.2	mg/L	257	Standard
> **Sc-1**	45	45364.5	1.2				mg/L	55220	Standard
Cl	35	210550.8	2.6				ug/L	35504	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	57964.0	1.3				ug/L	2040	Standard
P	31	21213.2	2.6				ug/L	20435	Standard
S	34	2423.5	4.0				ug/L	2430	Standard
Sr	88	468.3	4.4				ug/L	75	Standard
C	12	256.7	25.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	116534.2	19.4				mg/L	7	Standard
Dy	164	45.4	89.4				mg/L	9	Standard
Ho-1	165	85.0	65.5				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	23	Standard
I	127	133412.5	5.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		192.642	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		82.745	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601SD WG574593-06
Report Date/Time: Thursday, June 30, 2016 19:18:36
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		85.859
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		82.854
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606153601SD WG574593-06
Report Date/Time: Thursday, June 30, 2016 19:18:36
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606149602
Sample Date/Time: Thursday, June 30, 2016 19:19:30
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	104772.7	1.5				ug/L	74916	Standard
	Be	9	263.3	12.2	**0.1749**	0.022	12.8	ug/L	10	Standard
	Al	27	2327206.5	2.0	**9.5886**	0.259	2.7	ug/L	1822	Standard
	Sc	45	53544.5	2.5				ug/L	55220	Standard
	Ti	47	16761.3	1.7	**42.3552**	0.341	0.8	ug/L	34	Standard
	V	51	72697.7	4.2	**8.0120**	0.394	4.9	ug/L	1938	Standard
	Cr	52	31803.0	2.2	**2.6563**	0.048	1.8	ug/L	9522	Standard
	Cr	53	4635.7	2.8	**3.9573**	0.155	3.9	ug/L	395	Standard
	Mn	55	461938.0	0.8	**56.0400**	0.179	0.3	ug/L	902	Standard
	Co	59	7731.6	1.0	**0.9697**	0.004	0.4	ug/L	262	Standard
	Ni	60	5444.3	1.5	**2.3929**	0.012	0.5	ug/L	371	Standard
	Cu	65	244497.6	1.7	**115.7696**	0.937	0.8	ug/L	106	Standard
	Zn	66	95689.3	2.3	**76.6174**	1.133	1.5	ug/L	398	Standard
>	**Ge**	72	512059.6	1.0				ug/L	535147	Standard
	As	75	8368.8	9.3	**6.5821**	0.557	8.5	ug/L	-43	Standard
	Se	82	699.3	44.3	**5.2835**	2.351	44.5	ug/L	14	Standard
	Se-1	77	162.7	7.3	**1.3050**	0.119	9.1	ug/L	65	Standard
>	**Ga**	71	4504.0	7.0				mg/L	97	Standard
	Rb	85	91165.1	0.7				ug/L	15	Standard
	Y	89	475204.6	1.4				ug/L	465704	Standard
>	**Rh**	103	323.3	28.1				ug/L	10	Standard
	Mo	98	9970.5	0.6	**3.1545**	0.012	0.4	ug/L	9	Standard
	Ag	107	1999.8	4.1	**0.2544**	0.011	4.2	ug/L	82	Standard
	Cd	111	985.7	2.2	**0.4094**	0.008	1.8	mg/L	7	Standard
	Cd	114	2510.2	4.6	**0.4335**	0.018	4.3	ug/L	21	Standard
>	**In**	115	629593.3	0.4				ug/L	619035	Standard
	Sn	118	8885.9	1.2	**1.2391**	0.014	1.1	ug/L	508	Standard
	Sb	123	35324.6	0.9	**6.5627**	0.043	0.7	ug/L	86	Standard
	Ba	135	56638.7	0.7	**24.3393**	0.085	0.3	ug/L	79	Standard
	Ce	140	132589.5	2.3				ug/L	68	Standard
>	**Tb**	159	989187.3	1.2				ug/L	986982	Standard
	Ho	165	2191.8	5.2				ug/L	10	Standard
	Tl	203	653.7	11.2	**0.0726**	0.007	9.8	ug/L	13	Standard
	Tl	205	521.7	4.9	**0.0699**	0.003	3.8	ug/L	10	Standard
	Pb	206	450058.3	0.7	**71.4171**	0.502	0.7	ug/L	264	Standard
	Pb	207	375040.1	0.8	**65.8445**	0.305	0.5	ug/L	227	Standard
	Pb	208	1541570.9	0.9	**70.1911**	0.206	0.3	ug/L	868	Standard
	U	238	768.7	10.1	**0.1025**	0.009	8.9	ug/L	8	Standard
>	**Bi**	209	581585.4	1.2				ug/L	541014	Standard

Sample ID: L1606149602
Report Date/Time: Thursday, June 30, 2016 19:21:47
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.4621**	16.380	173.1	mg/L	2	Standard
Mg	24	17518.5	1.6	**19.6574**	0.180	0.9	mg/L	53	Standard
K	39	1336.7	7.1	**2.2625**	0.136	6.0	mg/L	53	Standard
Ca	43	150.0	29.6	**7.1161**	2.698	37.9	mg/L	28	Standard
Fe	54	2445.9	4.8	**1.6003**	0.084	5.2	mg/L	181	Standard
Fe	57	911.7	10.0	**1.8244**	0.187	10.3	mg/L	257	Standard
> **Sc-1**	45	53544.5	2.5				mg/L	55220	Standard
Cl	35	39591.0	3.0				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	8435.7	4.1				ug/L	2040	Standard
P	31	32474.8	3.9				ug/L	20435	Standard
S	34	1970.1	2.2				ug/L	2430	Standard
Sr	88	191.7	12.9				ug/L	75	Standard
C	12	316.7	11.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6454.7	14.8				mg/L	7	Standard
Dy	164	3364.1	3.4				mg/L	9	Standard
Ho-1	165	2191.8	5.2				mg/L	10	Standard
Er	166	2080.1	5.8				mg/L	23	Standard
I	127	47278.7	1.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.853	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.686	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606149602
Report Date/Time: Thursday, June 30, 2016 19:21:47
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.706
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.499
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606149602PS WG574849-01
Sample Date/Time: Thursday, June 30, 2016 19:22:42
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	103109.8	2.5				ug/L	74916	Standard
	Be	9	77933.4	3.7	**53.6569**	0.981	1.8	ug/L	10	Standard
	Al	27	2281277.1	0.1	**9.5530**	0.236	2.5	ug/L	1822	Standard
	Sc	45	55926.4	2.7				ug/L	55220	Standard
	Ti	47	16573.4	0.4	**41.7070**	0.077	0.2	ug/L	34	Standard
	V	51	525181.9	0.5	**58.8445**	0.516	0.9	ug/L	1938	Standard
	Cr	52	452407.5	2.1	**51.3173**	0.938	1.8	ug/L	9522	Standard
	Cr	53	55755.8	1.8	**51.6383**	0.780	1.5	ug/L	395	Standard
	Mn	55	853926.6	1.8	**103.2487**	1.685	1.6	ug/L	902	Standard
	Co	59	433237.1	1.5	**55.3580**	0.766	1.4	ug/L	262	Standard
	Ni	60	108738.9	1.6	**50.3458**	0.626	1.2	ug/L	371	Standard
	Cu	65	348102.0	1.0	**164.1687**	1.118	0.7	ug/L	106	Standard
	Zn	66	154688.6	0.4	**123.5626**	0.566	0.5	ug/L	398	Standard
>	Ge	72	514197.3	0.4				ug/L	535147	Standard
	As	75	72841.3	0.6	**56.6505**	0.211	0.4	ug/L	-43	Standard
	Se	82	6978.0	1.8	**53.4868**	0.860	1.6	ug/L	14	Standard
	Se-1	77	4469.7	1.0	**51.0555**	0.341	0.7	ug/L	65	Standard
>	Ga	71	4263.9	4.0				mg/L	97	Standard
	Rb	85	89092.9	2.1				ug/L	15	Standard
	Y	89	475816.2	1.0				ug/L	465704	Standard
>	Rh	103	153.3	18.0				ug/L	10	Standard
	Mo	98	8345.8	1.9	**2.6468**	0.068	2.6	ug/L	9	Standard
	Ag	107	375316.3	0.2	**48.9550**	0.354	0.7	ug/L	82	Standard
	Cd	111	119990.1	0.1	**48.9662**	0.427	0.9	mg/L	7	Standard
	Cd	114	291500.4	1.2	**49.4012**	1.030	2.1	ug/L	21	Standard
>	In	115	628633.7	0.9				ug/L	619035	Standard
	Sn	118	9141.1	1.5	**1.2797**	0.012	0.9	ug/L	508	Standard
	Sb	123	292476.1	1.8	**54.3852**	0.550	1.0	ug/L	86	Standard
	Ba	135	165631.8	0.7	**71.3277**	0.810	1.1	ug/L	79	Standard
	Ce	140	132476.6	0.4				ug/L	68	Standard
>	Tb	159	983495.9	0.8				ug/L	986982	Standard
	Ho	165	2075.1	6.5				ug/L	10	Standard
	Tl	203	481149.5	0.7	**49.1296**	0.206	0.4	ug/L	13	Standard
	Tl	205	428530.6	0.3	**51.2204**	0.373	0.7	ug/L	10	Standard
	Pb	206	759727.2	0.9	**120.8333**	0.725	0.6	ug/L	264	Standard
	Pb	207	644523.9	0.7	**113.4180**	0.527	0.5	ug/L	227	Standard
	Pb	208	2619689.3	1.3	**119.5658**	2.190	1.8	ug/L	868	Standard
	U	238	425453.5	0.8	**52.5108**	0.557	1.1	ug/L	8	Standard
>	Bi	209	580355.7	0.8				ug/L	541014	Standard

Sample ID: L1606149602PS WG574849-01
Report Date/Time: Thursday, June 30, 2016 19:24:59
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.5408**	16.516	173.1	mg/L	2	Standard
Mg	24	17336.6	1.6	**18.6304**	0.635	3.4	mg/L	53	Standard
K	39	1470.1	3.9	**2.3880**	0.102	4.3	mg/L	53	Standard
Ca	43	176.7	13.4	**8.1890**	1.121	13.7	mg/L	28	Standard
Fe	54	2425.7	5.9	**1.5136**	0.097	6.4	mg/L	181	Standard
Fe	57	908.4	11.3	**1.7168**	0.315	18.3	mg/L	257	Standard
> **Sc-1**	45	55926.4	2.7				mg/L	55220	Standard
Cl	35	38868.5	1.9				ug/L	35504	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	6991.6	0.9				ug/L	2040	Standard
P	31	33233.1	4.0				ug/L	20435	Standard
S	34	2060.1	7.2				ug/L	2430	Standard
Sr	88	165.0	22.9				ug/L	75	Standard
C	12	266.7	16.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3680.5	18.4				mg/L	7	Standard
Dy	164	3273.9	7.2				mg/L	9	Standard
Ho-1	165	2075.1	6.5				mg/L	10	Standard
Er	166	1943.5	5.4				mg/L	23	Standard
I	127	42986.0	4.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.633	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.085	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606149602PS WG574849-01
Report Date/Time: Thursday, June 30, 2016 19:24:59
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.551
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.272
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

Approved: July 01, 2016

Zn 66 Upper, S, EEE	Zn	66
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606149602SDL WG574849-02
Sample Date/Time: Thursday, June 30, 2016 19:25:53
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93955.5	2.3				ug/L	74916	Standard
	Be	9	91.7	17.5	**0.0655**	0.010	15.9	ug/L	10	Standard
	Al	27	435016.7	0.6	**1.9970**	0.036	1.8	ug/L	1822	Standard
	Sc	45	46536.4	2.0				ug/L	55220	Standard
	Ti	47	3197.0	1.4	**8.6280**	0.173	2.0	ug/L	34	Standard
	V	51	13935.8	2.3	**1.4943**	0.029	1.9	ug/L	1938	Standard
	Cr	52	10481.3	2.0	**0.2696**	0.018	6.9	ug/L	9522	Standard
	Cr	53	1375.1	5.2	**0.9976**	0.076	7.6	ug/L	395	Standard
	Mn	55	87248.2	0.4	**11.2920**	0.055	0.5	ug/L	902	Standard
	Co	59	1639.4	0.1	**0.2034**	0.002	0.8	ug/L	262	Standard
	Ni	60	1658.1	1.3	**0.6854**	0.012	1.8	ug/L	371	Standard
	Cu	65	48737.9	1.7	**24.7594**	0.542	2.2	ug/L	106	Standard
	Zn	66	20637.7	1.3	**17.4959**	0.332	1.9	ug/L	398	Standard
>	**Ge**	72	476439.4	0.6				ug/L	535147	Standard
	As	75	1518.5	3.9	**1.3286**	0.052	3.9	ug/L	-43	Standard
	Se	82	100.8	12.1	**0.7385**	0.104	14.1	ug/L	14	Standard
	Se-1	77	79.3	11.4	**0.4075**	0.109	26.8	ug/L	65	Standard
>	**Ga**	71	933.4	1.6				mg/L	97	Standard
	Rb	85	17089.6	2.7				ug/L	15	Standard
	Y	89	412058.7	1.4				ug/L	465704	Standard
>	**Rh**	103	76.7	16.4				ug/L	10	Standard
	Mo	98	2801.6	5.5	**0.9655**	0.045	4.6	ug/L	9	Standard
	Ag	107	478.7	1.2	**0.0613**	0.001	1.1	ug/L	82	Standard
	Cd	111	212.2	7.2	**0.1012**	0.005	5.3	mg/L	7	Standard
	Cd	114	512.0	11.8	**0.1024**	0.010	10.1	ug/L	21	Standard
>	**In**	115	583106.0	1.4				ug/L	619035	Standard
	Sn	118	1851.8	10.2	**0.1986**	0.029	14.8	ug/L	508	Standard
	Sb	123	7851.0	3.4	**1.5782**	0.048	3.0	ug/L	86	Standard
	Ba	135	10949.6	1.5	**5.0661**	0.131	2.6	ug/L	79	Standard
	Ce	140	25568.2	2.5				ug/L	68	Standard
>	**Tb**	159	919967.3	0.8				ug/L	986982	Standard
	Ho	165	418.3	9.0				ug/L	10	Standard
	Tl	203	262.3	17.9	**0.0346**	0.006	15.9	ug/L	13	Standard
	Tl	205	165.0	10.5	**0.0287**	0.002	7.8	ug/L	10	Standard
	Pb	206	87208.3	0.6	**14.7596**	0.282	1.9	ug/L	264	Standard
	Pb	207	73088.5	0.1	**13.6871**	0.203	1.5	ug/L	227	Standard
	Pb	208	296893.6	0.2	**14.4164**	0.196	1.4	ug/L	868	Standard
	U	238	176.3	3.2	**0.0311**	0.001	3.2	ug/L	8	Standard
>	**Bi**	209	544255.4	1.3				ug/L	541014	Standard

Sample ID: L1606149602SDL WG574849-02
Report Date/Time: Thursday, June 30, 2016 19:28:10
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3300.4	1.0	**4.2345**	0.101	2.4	mg/L	53	Standard
K	39	323.3	12.4	**0.5743**	0.069	12.0	mg/L	53	Standard
Ca	43	48.3	21.5	**1.5801**	0.742	46.9	mg/L	28	Standard
Fe	54	545.8	9.2	**0.3226**	0.042	13.0	mg/L	181	Standard
Fe	57	365.0	2.7	**0.4843**	0.015	3.2	mg/L	257	Standard
> **Sc-1**	45	46536.4	2.0				mg/L	55220	Standard
Cl	35	36777.9	2.4				ug/L	35504	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	2873.6	9.8				ug/L	2040	Standard
P	31	12638.6	1.3				ug/L	20435	Standard
S	34	2045.1	7.4				ug/L	2430	Standard
Sr	88	75.0	6.7				ug/L	75	Standard
C	12	160.0	39.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6728.2	24.0				mg/L	7	Standard
Dy	164	640.1	13.9				mg/L	9	Standard
Ho-1	165	418.3	9.0				mg/L	10	Standard
Er	166	416.7	9.7				mg/L	23	Standard
I	127	34769.9	1.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.414	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.030	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606149602SDL WG574849-02
Report Date/Time: Thursday, June 30, 2016 19:28:10
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	94.196	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.599	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 19:29:06
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	95961.4	2.2				ug/L	74916	Standard
	Be	9	71707.6	1.6	**53.0606**	0.339	0.6	ug/L	10	Standard
	Al	27	9500292.9	1.0	**42.7499**	0.969	2.3	ug/L	1822	Standard
	Sc	45	50089.4	2.7				ug/L	55220	Standard
	Ti	47	38126.9	2.2	**97.2767**	2.761	2.8	ug/L	34	Standard
	V	51	450805.6	0.8	**51.1303**	0.535	1.0	ug/L	1938	Standard
	Cr	52	420207.7	1.8	**48.2152**	0.947	2.0	ug/L	9522	Standard
	Cr	53	53022.6	1.5	**49.7332**	1.518	3.1	ug/L	395	Standard
	Mn	55	391804.7	0.8	**47.9236**	0.476	1.0	ug/L	902	Standard
	Co	59	416314.6	0.9	**53.8746**	0.457	0.8	ug/L	262	Standard
	Ni	60	103681.5	0.6	**48.6168**	0.702	1.4	ug/L	371	Standard
	Cu	65	103376.1	0.5	**49.3415**	0.927	1.9	ug/L	106	Standard
	Zn	66	61988.9	0.5	**49.9450**	0.714	1.4	ug/L	398	Standard
>	Ge	72	507763.0	1.8				ug/L	535147	Standard
	As	75	63276.7	1.7	**49.8427**	0.076	0.2	ug/L	-43	Standard
	Se	82	6646.2	1.2	**51.5894**	0.295	0.6	ug/L	14	Standard
	Se-1	77	4399.3	1.0	**50.9034**	1.388	2.7	ug/L	65	Standard
>	Ga	71	58.3	13.1				mg/L	97	Standard
	Rb	85	1000.0	0.9				ug/L	15	Standard
	Y	89	450523.8	1.1				ug/L	465704	Standard
>	Rh	103	90.0	11.1				ug/L	10	Standard
	Mo	98	316138.3	1.2	**100.4613**	1.010	1.0	ug/L	9	Standard
	Ag	107	370934.7	1.2	**48.7051**	0.350	0.7	ug/L	82	Standard
	Cd	111	116910.7	0.9	**48.0288**	0.583	1.2	mg/L	7	Standard
	Cd	114	288182.6	1.1	**49.1611**	0.548	1.1	ug/L	21	Standard
>	In	115	624446.9	0.6				ug/L	619035	Standard
	Sn	118	331269.7	1.8	**50.3563**	0.616	1.2	ug/L	508	Standard
	Sb	123	262483.0	1.1	**49.1376**	0.313	0.6	ug/L	86	Standard
	Ba	135	107920.0	0.7	**46.7768**	0.061	0.1	ug/L	79	Standard
	Ce	140	183.3	21.2				ug/L	68	Standard
>	Tb	159	959700.8	0.1				ug/L	986982	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	468303.5	0.6	**50.0474**	0.369	0.7	ug/L	13	Standard
	Tl	205	420837.0	1.6	**52.6432**	0.744	1.4	ug/L	10	Standard
	Pb	206	303018.9	0.9	**50.4205**	0.564	1.1	ug/L	264	Standard
	Pb	207	273947.8	0.7	**50.4360**	0.330	0.7	ug/L	227	Standard
	Pb	208	1103991.7	0.7	**52.7123**	0.440	0.8	ug/L	868	Standard
	U	238	418677.6	1.5	**54.0799**	0.566	1.0	ug/L	8	Standard
>	Bi	209	554524.6	1.2				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 19:31:23
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4905.8	6.0	**5.8628**	0.392	6.7	mg/L	53	Standard
K	39	1735.1	5.2	**3.1692**	0.112	3.5	mg/L	53	Standard
Ca	43	81.7	18.7	**3.4095**	0.825	24.2	mg/L	28	Standard
Fe	54	6899.3	0.6	**5.0657**	0.116	2.3	mg/L	181	Standard
Fe	57	1910.1	3.7	**4.9138**	0.067	1.4	mg/L	257	Standard
> **Sc-1**	45	50089.4	2.7				mg/L	55220	Standard
Cl	35	40319.6	2.9				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2363.5	4.5				ug/L	2040	Standard
P	31	24077.5	2.6				ug/L	20435	Standard
S	34	2363.5	3.5				ug/L	2430	Standard
Sr	88	58.3	13.1				ug/L	75	Standard
C	12	160.0	25.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1323.4	28.0				mg/L	7	Standard
Dy	164	12.5	48.3				mg/L	9	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	14271.7	4.4				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	106.121		
	Al	27	85.500		
	Sc	45			
	Ti	47	97.277		
	V	51	102.261		
	Cr	52	96.430		
	Cr	53			
	Mn	55	95.847		
	Co	59	107.749		
	Ni	60	97.234		
	Cu	65	98.683		
	Zn	66	99.890		
>	Ge	72		94.883	
	As	75	99.685		
	Se	82	103.179		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 19:31:23
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.461		
Ag	107	97.410		
Cd	111	96.058		
Cd	114			
In	115		100.874	
Sn	118	100.713		
Sb	123	98.275		
Ba	135	93.554		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.095		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.425		
U	238	108.160		
Bi	209		102.497	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 19:31:23
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 19:32:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94958.3	1.5				ug/L	74916	Standard
	Be	9	71.7	82.6	**0.0499**	0.044	88.3	ug/L	10	Standard
	Al	27	9098.7	74.8	**0.0390**	0.031	78.9	ug/L	1822	Standard
	Sc	45	49644.5	1.0				ug/L	55220	Standard
	Ti	47	45.7	39.5	**0.0472**	0.046	97.8	ug/L	34	Standard
	V	51	2791.6	18.3	**0.1237**	0.059	47.6	ug/L	1938	Standard
	Cr	52	7193.7	1.7	**-0.1906**	0.014	7.3	ug/L	9522	Standard
	Cr	53	800.0	4.9	**0.3739**	0.038	10.1	ug/L	395	Standard
	Mn	55	1181.1	42.2	**0.0406**	0.061	151.1	ug/L	902	Standard
	Co	59	509.7	61.6	**0.0436**	0.041	93.5	ug/L	262	Standard
	Ni	60	774.4	5.5	**0.2210**	0.020	8.8	ug/L	371	Standard
	Cu	65	680.7	12.0	**0.2687**	0.039	14.4	ug/L	106	Standard
	Zn	66	686.0	7.0	**0.2136**	0.039	18.3	ug/L	398	Standard
>	**Ge**	72	504271.2	0.2				ug/L	535147	Standard
	As	75	83.8	41.5	**0.1215**	0.027	22.6	ug/L	-43	Standard
	Se	82	62.6	2.3	**0.3930**	0.012	3.2	ug/L	14	Standard
	Se-1	77	70.0	16.5	**0.2432**	0.135	55.5	ug/L	65	Standard
>	**Ga**	71	45.0	50.9				mg/L	97	Standard
	Rb	85	325.0	113.3				ug/L	15	Standard
	Y	89	445052.8	1.6				ug/L	465704	Standard
>	**Rh**	103	61.7	4.7				ug/L	10	Standard
	Mo	98	1074.0	56.8	**0.3517**	0.190	54.0	ug/L	9	Standard
	Ag	107	419.0	95.5	**0.0485**	0.052	106.6	ug/L	82	Standard
	Cd	111	151.8	148.4	**0.0696**	0.091	131.3	mg/L	7	Standard
	Cd	114	348.7	131.1	**0.0678**	0.077	113.4	ug/L	21	Standard
>	**In**	115	626263.5	0.8				ug/L	619035	Standard
	Sn	118	1168.4	25.1	**0.0739**	0.043	58.7	ug/L	508	Standard
	Sb	123	1254.8	36.8	**0.2384**	0.085	35.8	ug/L	86	Standard
	Ba	135	263.3	119.9	**0.0935**	0.135	144.4	ug/L	79	Standard
	Ce	140	171.7	100.3				ug/L	68	Standard
>	**Tb**	159	957711.4	0.6				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	528.0	116.8	**0.0611**	0.064	104.7	ug/L	13	Standard
	Tl	205	238.3	87.9	**0.0368**	0.025	68.8	ug/L	10	Standard
	Pb	206	736.4	72.7	**0.0822**	0.086	104.7	ug/L	264	Standard
	Pb	207	625.4	66.7	**0.0796**	0.074	93.2	ug/L	227	Standard
	Pb	208	2292.7	50.7	**0.0690**	0.053	77.3	ug/L	868	Standard
	U	238	238.0	86.6	**0.0379**	0.026	67.9	ug/L	8	Standard
>	**Bi**	209	564278.1	1.0				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 19:34:34
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	300.0	91.6	**0.3285**	0.332	101.1	mg/L	53	Standard
K	39	25.0	20.0	**-0.0288**	0.009	32.0	mg/L	53	Standard
Ca	43	23.3	65.5	**-0.1997**	0.980	490.8	mg/L	28	Standard
Fe	54	159.1	21.8	**0.0019**	0.027	1411.1	mg/L	181	Standard
Fe	57	241.7	30.5	**0.0479**	0.210	438.9	mg/L	257	Standard
Sc-1	45	49644.5	1.0				mg/L	55220	Standard
Cl	35	39558.9	1.4				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2310.2	6.8				ug/L	2040	Standard
P	31	23586.7	1.9				ug/L	20435	Standard
S	34	2100.1	9.6				ug/L	2430	Standard
Sr	88	58.3	27.6				ug/L	75	Standard
C	12	140.0	21.4				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	1126.7	22.7				mg/L	7	Standard
Dy	164	149.2	23.8				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	6298.0	6.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.230	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 19:34:34
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.168	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	104.300	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sb	123	
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 19:34:34
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606149602SDL WG574849-02
Sample Date/Time: Thursday, June 30, 2016 19:35:30
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86523.1	2.7				ug/L	74916	Standard
	Be	9	51.7	20.1	**0.0388**	0.009	22.1	ug/L	10	Standard
	Al	27	85953.1	1.3	**0.4266**	0.006	1.4	ug/L	1822	Standard
	Sc	45	44204.4	2.0				ug/L	55220	Standard
	Ti	47	638.0	1.7	**1.7181**	0.027	1.6	ug/L	34	Standard
	V	51	3723.6	3.4	**0.2691**	0.016	6.1	ug/L	1938	Standard
	Cr	52	5946.2	3.6	**-0.2743**	0.028	10.1	ug/L	9522	Standard
	Cr	53	650.0	6.7	**0.2870**	0.043	15.0	ug/L	395	Standard
	Mn	55	17352.3	1.1	**2.2302**	0.028	1.3	ug/L	902	Standard
	Co	59	498.7	4.3	**0.0481**	0.003	6.5	ug/L	262	Standard
	Ni	60	834.7	0.4	**0.2854**	0.001	0.5	ug/L	371	Standard
	Cu	65	9780.8	1.7	**5.0724**	0.097	1.9	ug/L	106	Standard
	Zn	66	4901.1	2.1	**4.0187**	0.097	2.4	ug/L	398	Standard
>	**Ge**	72	462436.6	0.3				ug/L	535147	Standard
	As	75	327.6	12.6	**0.3383**	0.036	10.7	ug/L	-43	Standard
	Se	82	51.2	11.5	**0.3404**	0.050	14.5	ug/L	14	Standard
	Se-1	77	60.0	8.7	**0.1895**	0.069	36.3	ug/L	65	Standard
>	**Ga**	71	176.7	1.6				mg/L	97	Standard
	Rb	85	3545.4	4.6				ug/L	15	Standard
	Y	89	406227.1	0.6				ug/L	465704	Standard
>	**Rh**	103	36.7	34.3				ug/L	10	Standard
	Mo	98	2525.0	10.4	**0.8922**	0.089	10.0	ug/L	9	Standard
	Ag	107	182.0	6.8	**0.0201**	0.002	8.7	ug/L	82	Standard
	Cd	111	42.0	26.3	**0.0268**	0.005	18.8	mg/L	7	Standard
	Cd	114	102.8	20.6	**0.0281**	0.004	13.9	ug/L	21	Standard
>	**In**	115	569300.6	0.3				ug/L	619035	Standard
	Sn	118	516.7	3.0	**-0.0171**	0.003	16.4	ug/L	508	Standard
	Sb	123	1444.7	2.0	**0.3011**	0.007	2.3	ug/L	86	Standard
	Ba	135	1949.5	3.3	**0.9076**	0.031	3.4	ug/L	79	Standard
	Ce	140	2333.5	42.9				ug/L	68	Standard
>	**Tb**	159	887901.9	0.9				ug/L	986982	Standard
	Ho	165	38.3	49.4				ug/L	10	Standard
	Tl	203	180.7	33.0	**0.0262**	0.007	25.5	ug/L	13	Standard
	Tl	205	65.0	7.7	**0.0162**	0.001	4.1	ug/L	10	Standard
	Pb	206	12240.0	6.5	**2.0913**	0.139	6.6	ug/L	264	Standard
	Pb	207	10224.5	8.0	**1.9345**	0.157	8.1	ug/L	227	Standard
	Pb	208	42832.7	7.1	**2.0996**	0.152	7.2	ug/L	868	Standard
	U	238	39.0	11.2	**0.0132**	0.001	4.5	ug/L	8	Standard
>	**Bi**	209	530821.4	0.2				ug/L	541014	Standard

Sample ID: L1606149602SDL WG574849-02
Report Date/Time: Thursday, June 30, 2016 19:37:47
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	690.0	6.2	**0.9057**	0.074	8.2	mg/L	53	Standard
K	39	100.0	13.2	**0.1364**	0.033	23.8	mg/L	53	Standard
Ca	43	25.0	40.0	**0.0946**	0.702	741.5	mg/L	28	Standard
Fe	54	134.2	3.6	**-0.0044**	0.006	141.6	mg/L	181	Standard
Fe	57	263.3	10.5	**0.2076**	0.076	36.8	mg/L	257	Standard
> **Sc-1**	45	44204.4	2.0				mg/L	55220	Standard
Cl	35	36845.4	0.7				ug/L	35504	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	2000.1	11.3				ug/L	2040	Standard
P	31	8230.6	2.2				ug/L	20435	Standard
S	34	2098.5	4.7				ug/L	2430	Standard
Sr	88	76.7	26.4				ug/L	75	Standard
C	12	116.7	52.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	7835.6	37.8				mg/L	7	Standard
Dy	164	81.3	50.6				mg/L	9	Standard
Ho-1	165	38.3	49.4				mg/L	10	Standard
Er	166	43.3	48.0				mg/L	23	Standard
I	127	27107.6	5.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.493	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.413	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606149602SDL WG574849-02
Report Date/Time: Thursday, June 30, 2016 19:37:47
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.116
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606149801
Sample Date/Time: Thursday, June 30, 2016 19:38:41
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92592.1	1.4				ug/L	74916	Standard
	Be	9	475.0	12.8	**0.3603**	0.042	11.6	ug/L	10	Standard
	Al	27	2387958.6	1.4	**11.1329**	0.209	1.9	ug/L	1822	Standard
	Sc	45	53171.6	4.4				ug/L	55220	Standard
	Ti	47	1016.4	8.9	**2.5223**	0.237	9.4	ug/L	34	Standard
	V	51	9109.0	1.7	**0.8397**	0.021	2.5	ug/L	1938	Standard
	Cr	52	15164.6	1.4	**0.7361**	0.022	3.0	ug/L	9522	Standard
	Cr	53	2218.5	3.8	**1.7070**	0.078	4.6	ug/L	395	Standard
	Mn	55	3141097.9	0.7	**384.5503**	5.509	1.4	ug/L	902	Standard
	Co	59	3810.1	1.2	**0.4700**	0.010	2.1	ug/L	262	Standard
	Ni	60	3766.5	3.0	**1.6237**	0.049	3.0	ug/L	371	Standard
	Cu	65	12779.1	1.2	**6.0408**	0.064	1.1	ug/L	106	Standard
	Zn	66	24001.7	0.6	**19.1045**	0.183	1.0	ug/L	398	Standard
>	**Ge**	72	508257.5	0.8				ug/L	535147	Standard
	As	75	18152.4	1.0	**14.3247**	0.198	1.4	ug/L	-43	Standard
	Se	82	412.3	6.1	**3.1067**	0.212	6.8	ug/L	14	Standard
	Se-1	77	116.7	10.0	**0.7827**	0.142	18.2	ug/L	65	Standard
>	**Ga**	71	261.7	14.1				mg/L	97	Standard
	Rb	85	55121.8	2.1				ug/L	15	Standard
	Y	89	489107.7	0.8				ug/L	465704	Standard
>	**Rh**	103	106.7	5.4				ug/L	10	Standard
	Mo	98	1661.3	4.5	**0.5375**	0.026	4.9	ug/L	9	Standard
	Ag	107	107.0	20.9	**0.0079**	0.003	37.3	ug/L	82	Standard
	Cd	111	37.4	15.9	**0.0232**	0.002	10.7	mg/L	7	Standard
	Cd	114	92.1	17.7	**0.0245**	0.003	11.0	ug/L	21	Standard
>	**In**	115	627819.2	0.5				ug/L	619035	Standard
	Sn	118	976.7	4.1	**0.0446**	0.007	14.9	ug/L	508	Standard
	Sb	123	512.0	14.1	**0.0998**	0.014	13.9	ug/L	86	Standard
	Ba	135	49828.5	0.8	**21.4712**	0.164	0.8	ug/L	79	Standard
	Ce	140	95005.3	0.3				ug/L	68	Standard
>	**Tb**	159	963158.8	1.0				ug/L	986982	Standard
	Ho	165	2865.3	5.4				ug/L	10	Standard
	Tl	203	114.7	11.1	**0.0182**	0.001	7.6	ug/L	13	Standard
	Tl	205	115.0	19.9	**0.0220**	0.003	12.7	ug/L	10	Standard
	Pb	206	7845.0	1.2	**1.2640**	0.010	0.8	ug/L	264	Standard
	Pb	207	6721.5	1.1	**1.2009**	0.019	1.6	ug/L	227	Standard
	Pb	208	28270.4	0.7	**1.3079**	0.016	1.2	ug/L	868	Standard
	U	238	1735.4	2.9	**0.2313**	0.006	2.6	ug/L	8	Standard
>	**Bi**	209	556405.3	0.5				ug/L	541014	Standard

Sample ID: L1606149801
Report Date/Time: Thursday, June 30, 2016 19:40:58
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	9029.4	2.0	**10.2038**	0.653	6.4	mg/L	53	Standard
K	39	611.7	14.2	**1.0024**	0.150	15.0	mg/L	53	Standard
Ca	43	315.0	3.2	**16.8679**	0.705	4.2	mg/L	28	Standard
Fe	54	5107.8	1.9	**3.5012**	0.205	5.9	mg/L	181	Standard
Fe	57	1653.4	5.6	**3.8905**	0.307	7.9	mg/L	257	Standard
> **Sc-1**	45	53171.6	4.4				mg/L	55220	Standard
Cl	35	41246.7	1.0				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	75966.9	4.8				ug/L	2040	Standard
P	31	30046.4	2.6				ug/L	20435	Standard
S	34	2270.2	2.0				ug/L	2430	Standard
Sr	88	276.7	15.2				ug/L	75	Standard
C	12	276.7	8.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1063.4	31.5				mg/L	7	Standard
Dy	164	3847.0	8.9				mg/L	9	Standard
Ho-1	165	2865.3	5.4				mg/L	10	Standard
Er	166	2716.9	5.5				mg/L	23	Standard
I	127	73848.4	6.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.594	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.975	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606149801
Report Date/Time: Thursday, June 30, 2016 19:40:58
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.419
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.845
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606149801
Report Date/Time: Thursday, June 30, 2016 19:40:58
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152901
Sample Date/Time: Thursday, June 30, 2016 19:41:53
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91623.0	2.3				ug/L	74916	Standard
	Be	9	86.7	16.7	**0.0635**	0.010	16.5	ug/L	10	Standard
	Al	27	4709098.2	0.6	**22.1945**	0.581	2.6	ug/L	1822	Standard
	Sc	45	51331.9	3.4				ug/L	55220	Standard
	Ti	47	1675.8	1.3	**4.2896**	0.030	0.7	ug/L	34	Standard
	V	51	11556.6	2.3	**1.1447**	0.038	3.4	ug/L	1938	Standard
	Cr	52	17512.1	1.2	**1.0523**	0.009	0.8	ug/L	9522	Standard
	Cr	53	6754.8	3.1	**6.1208**	0.292	4.8	ug/L	395	Standard
	Mn	55	746180.8	1.6	**93.1169**	1.892	2.0	ug/L	902	Standard
	Co	59	8081.8	1.5	**1.0435**	0.010	1.0	ug/L	262	Standard
	Ni	60	4978.8	0.9	**2.2406**	0.017	0.8	ug/L	371	Standard
	Cu	65	6989.9	0.8	**3.3456**	0.078	2.3	ug/L	106	Standard
	Zn	66	20923.8	0.6	**16.9547**	0.359	2.1	ug/L	398	Standard
>	**Ge**	72	498217.9	1.5				ug/L	535147	Standard
	As	75	1319.8	6.1	**1.1135**	0.062	5.6	ug/L	-43	Standard
	Se	82	63.1	11.7	**0.4025**	0.053	13.2	ug/L	14	Standard
	Se-1	77	328.3	1.7	**3.3348**	0.125	3.7	ug/L	65	Standard
>	**Ga**	71	1348.4	1.4				mg/L	97	Standard
	Rb	85	12897.2	1.9				ug/L	15	Standard
	Y	89	461979.9	1.5				ug/L	465704	Standard
>	**Rh**	103	55.0	32.8				ug/L	10	Standard
	Mo	98	459.3	18.5	**0.1621**	0.026	16.2	ug/L	9	Standard
	Ag	107	773.7	5.2	**0.0982**	0.004	4.6	ug/L	82	Standard
	Cd	111	127.2	6.3	**0.0616**	0.004	6.3	mg/L	7	Standard
	Cd	114	327.6	9.9	**0.0663**	0.006	8.9	ug/L	21	Standard
>	**In**	115	608144.3	1.0				ug/L	619035	Standard
	Sn	118	1706.8	6.6	**0.1634**	0.015	9.3	ug/L	508	Standard
	Sb	123	406.4	11.1	**0.0825**	0.008	9.7	ug/L	86	Standard
	Ba	135	76054.7	0.3	**33.8456**	0.317	0.9	ug/L	79	Standard
	Ce	140	91810.7	1.2				ug/L	68	Standard
>	**Tb**	159	945758.0	1.2				ug/L	986982	Standard
	Ho	165	2055.1	5.3				ug/L	10	Standard
	Tl	203	176.0	6.7	**0.0254**	0.001	5.0	ug/L	13	Standard
	Tl	205	150.0	26.7	**0.0271**	0.005	19.0	ug/L	10	Standard
	Pb	206	15554.6	0.9	**2.6358**	0.029	1.1	ug/L	264	Standard
	Pb	207	12984.9	1.6	**2.4360**	0.034	1.4	ug/L	227	Standard
	Pb	208	54505.7	0.9	**2.6500**	0.024	0.9	ug/L	868	Standard
	U	238	2232.5	0.5	**0.3055**	0.001	0.3	ug/L	8	Standard
>	**Bi**	209	537187.0	0.3				ug/L	541014	Standard

Sample ID: L1606152901
Report Date/Time: Thursday, June 30, 2016 19:44:11
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**20.2016**	17.522	86.7	mg/L	2	Standard
Mg	24	27080.8	0.6	**31.7349**	0.931	2.9	mg/L	53	Standard
K	39	478.3	11.6	**0.8002**	0.131	16.3	mg/L	53	Standard
Ca	43	121.7	30.8	**5.7176**	2.206	38.6	mg/L	28	Standard
Fe	54	2158.6	4.4	**1.4639**	0.066	4.5	mg/L	181	Standard
Fe	57	796.7	8.5	**1.6086**	0.202	12.6	mg/L	257	Standard
> **Sc-1**	45	51331.9	3.4				mg/L	55220	Standard
Cl	35	38716.7	1.3				ug/L	35504	Standard
Kr	83	4.3	13.3				ug/L	2	Standard
Br	81	6661.5	7.7				ug/L	2040	Standard
P	31	25903.8	4.0				ug/L	20435	Standard
S	34	2286.8	0.8				ug/L	2430	Standard
Sr	88	106.7	13.5				ug/L	75	Standard
C	12	213.3	11.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1103.4	22.2				mg/L	7	Standard
Dy	164	3539.8	4.8				mg/L	9	Standard
Ho-1	165	2055.1	5.3				mg/L	10	Standard
Er	166	1753.4	7.2				mg/L	23	Standard
I	127	24299.5	0.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.300	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.099	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152901
Report Date/Time: Thursday, June 30, 2016 19:44:11
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.241
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.293
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152902
Sample Date/Time: Thursday, June 30, 2016 19:45:06
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89491.9	2.0				ug/L	74916	Standard
	Be	9	40.0	37.5	**0.0283**	0.012	43.3	ug/L	10	Standard
	Al	27	3621131.6	1.0	**17.4718**	0.464	2.7	ug/L	1822	Standard
	Sc	45	50005.7	0.5				ug/L	55220	Standard
	Ti	47	186.0	5.7	**0.4056**	0.025	6.1	ug/L	34	Standard
	V	51	2851.9	15.6	**0.1288**	0.049	37.7	ug/L	1938	Standard
	Cr	52	10083.7	2.1	**0.1447**	0.018	12.3	ug/L	9522	Standard
	Cr	53	4102.2	8.9	**3.4960**	0.321	9.2	ug/L	395	Standard
	Mn	55	1495187.5	0.6	**183.5547**	1.977	1.1	ug/L	902	Standard
	Co	59	626.3	5.8	**0.0585**	0.005	8.5	ug/L	262	Standard
	Ni	60	2963.0	0.3	**1.2507**	0.009	0.7	ug/L	371	Standard
	Cu	65	1204.4	3.7	**0.5179**	0.024	4.6	ug/L	106	Standard
	Zn	66	3026.3	1.7	**2.1136**	0.057	2.7	ug/L	398	Standard
>	**Ge**	72	506688.0	0.6				ug/L	535147	Standard
	As	75	90.5	44.9	**0.1266**	0.032	25.5	ug/L	-43	Standard
	Se	82	35.5	16.2	**0.1801**	0.046	25.7	ug/L	14	Standard
	Se-1	77	219.0	2.5	**1.9866**	0.080	4.0	ug/L	65	Standard
>	**Ga**	71	131.7	11.0				mg/L	97	Standard
	Rb	85	958.4	12.3				ug/L	15	Standard
	Y	89	439630.2	0.1				ug/L	465704	Standard
>	**Rh**	103	50.0	36.1				ug/L	10	Standard
	Mo	98	275.6	14.7	**0.1016**	0.014	13.4	ug/L	9	Standard
	Ag	107	112.0	14.9	**0.0089**	0.002	26.1	ug/L	82	Standard
	Cd	111	187.9	10.7	**0.0866**	0.009	10.5	mg/L	7	Standard
	Cd	114	408.8	6.5	**0.0799**	0.004	4.8	ug/L	21	Standard
>	**In**	115	612882.5	1.2				ug/L	619035	Standard
	Sn	118	851.7	4.8	**0.0288**	0.008	26.8	ug/L	508	Standard
	Sb	123	226.6	12.9	**0.0477**	0.006	12.5	ug/L	86	Standard
	Ba	135	40616.4	0.3	**17.9264**	0.197	1.1	ug/L	79	Standard
	Ce	140	943.4	9.0				ug/L	68	Standard
>	**Tb**	159	940407.6	1.0				ug/L	986982	Standard
	Ho	165	56.7	28.4				ug/L	10	Standard
	Tl	203	106.3	8.9	**0.0176**	0.001	5.9	ug/L	13	Standard
	Tl	205	98.3	20.5	**0.0203**	0.003	13.0	ug/L	10	Standard
	Pb	206	909.7	3.7	**0.1168**	0.005	4.4	ug/L	264	Standard
	Pb	207	833.4	5.4	**0.1235**	0.008	6.5	ug/L	227	Standard
	Pb	208	3440.5	1.6	**0.1295**	0.003	2.6	ug/L	868	Standard
	U	238	49.0	17.4	**0.0144**	0.001	8.0	ug/L	8	Standard
>	**Bi**	209	543200.5	0.4				ug/L	541014	Standard

Sample ID: L1606152902
Report Date/Time: Thursday, June 30, 2016 19:47:23
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.3002**	17.832	173.1	mg/L	2	Standard
Mg	24	16630.8	0.5	**19.9803**	0.197	1.0	mg/L	53	Standard
K	39	245.0	9.4	**0.3831**	0.042	11.1	mg/L	53	Standard
Ca	43	105.0	39.0	**4.8835**	2.523	51.7	mg/L	28	Standard
Fe	54	242.6	15.8	**0.0637**	0.028	44.2	mg/L	181	Standard
Fe	57	298.3	17.0	**0.2102**	0.151	72.1	mg/L	257	Standard
> **Sc-1**	45	50005.7	0.5				mg/L	55220	Standard
Cl	35	40569.6	2.3				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	3843.8	4.3				ug/L	2040	Standard
P	31	24364.6	0.7				ug/L	20435	Standard
S	34	2188.5	1.6				ug/L	2430	Standard
Sr	88	121.7	10.3				ug/L	75	Standard
C	12	146.7	21.9				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	760.0	11.8				mg/L	7	Standard
Dy	164	64.0	46.2				mg/L	9	Standard
Ho-1	165	56.7	28.4				mg/L	10	Standard
Er	166	56.7	27.0				mg/L	23	Standard
I	127	16871.1	2.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.456	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.682	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152902
Report Date/Time: Thursday, June 30, 2016 19:47:23
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.006
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.404
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152903
Sample Date/Time: Thursday, June 30, 2016 19:48:17
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88668.7	1.5				ug/L	74916	Standard
	Be	9	25.0	34.6	**0.0165**	0.007	42.9	ug/L	10	Standard
	Al	27	2429020.7	0.7	**11.8263**	0.241	2.0	ug/L	1822	Standard
	Sc	45	50766.6	1.1				ug/L	55220	Standard
	Ti	47	147.3	12.6	**0.3072**	0.051	16.7	ug/L	34	Standard
	V	51	2755.9	8.9	**0.1183**	0.031	26.5	ug/L	1938	Standard
	Cr	52	10269.1	0.8	**0.1669**	0.008	4.5	ug/L	9522	Standard
	Cr	53	1963.5	3.7	**1.4731**	0.090	6.1	ug/L	395	Standard
	Mn	55	759929.8	0.9	**93.2604**	0.396	0.4	ug/L	902	Standard
	Co	59	556.0	7.1	**0.0494**	0.006	12.2	ug/L	262	Standard
	Ni	60	1145.7	1.5	**0.3945**	0.015	3.8	ug/L	371	Standard
	Cu	65	965.7	2.3	**0.4038**	0.016	4.0	ug/L	106	Standard
	Zn	66	2386.2	0.8	**1.5936**	0.017	1.1	ug/L	398	Standard
>	**Ge**	72	506574.4	1.3				ug/L	535147	Standard
	As	75	89.2	7.4	**0.1255**	0.005	3.7	ug/L	-43	Standard
	Se	82	36.5	5.9	**0.1873**	0.019	9.9	ug/L	14	Standard
	Se-1	77	120.7	5.8	**0.8332**	0.065	7.8	ug/L	65	Standard
>	**Ga**	71	70.0	37.8				mg/L	97	Standard
	Rb	85	908.4	21.5				ug/L	15	Standard
	Y	89	439406.6	1.6				ug/L	465704	Standard
>	**Rh**	103	51.7	20.1				ug/L	10	Standard
	Mo	98	233.6	20.0	**0.0875**	0.014	16.3	ug/L	9	Standard
	Ag	107	88.7	7.9	**0.0057**	0.001	18.5	ug/L	82	Standard
	Cd	111	24.3	42.4	**0.0180**	0.004	24.2	mg/L	7	Standard
	Cd	114	70.1	12.6	**0.0211**	0.002	7.9	ug/L	21	Standard
>	**In**	115	615742.1	1.2				ug/L	619035	Standard
	Sn	118	678.3	9.2	**0.0014**	0.010	728.8	ug/L	508	Standard
	Sb	123	346.9	9.1	**0.0702**	0.006	8.1	ug/L	86	Standard
	Ba	135	55523.6	0.7	**24.3984**	0.182	0.7	ug/L	79	Standard
	Ce	140	605.0	45.8				ug/L	68	Standard
>	**Tb**	159	948538.7	0.6				ug/L	986982	Standard
	Ho	165	45.0	11.1				ug/L	10	Standard
	Tl	203	70.3	11.4	**0.0136**	0.001	6.2	ug/L	13	Standard
	Tl	205	48.3	6.0	**0.0138**	0.000	2.8	ug/L	10	Standard
	Pb	206	1011.0	4.4	**0.1313**	0.008	5.9	ug/L	264	Standard
	Pb	207	869.4	2.6	**0.1276**	0.004	3.4	ug/L	227	Standard
	Pb	208	3745.8	1.5	**0.1414**	0.002	1.5	ug/L	868	Standard
	U	238	63.3	4.0	**0.0161**	0.000	1.9	ug/L	8	Standard
>	**Bi**	209	552170.5	0.3				ug/L	541014	Standard

Sample ID: L1606152903
Report Date/Time: Thursday, June 30, 2016 19:50:34
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.1205**	17.521	173.1	mg/L	2	Standard
Mg	24	3732.1	6.2	**4.3881**	0.232	5.3	mg/L	53	Standard
K	39	163.3	11.6	**0.2258**	0.039	17.1	mg/L	53	Standard
Ca	43	71.7	10.7	**2.7382**	0.440	16.1	mg/L	28	Standard
Fe	54	167.4	12.3	**0.0054**	0.017	305.4	mg/L	181	Standard
Fe	57	313.3	14.5	**0.2407**	0.138	57.5	mg/L	257	Standard
> **Sc-1**	45	50766.6	1.1				mg/L	55220	Standard
Cl	35	41918.6	1.0				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3617.1	7.3				ug/L	2040	Standard
P	31	24186.0	2.2				ug/L	20435	Standard
S	34	2338.5	5.2				ug/L	2430	Standard
Sr	88	80.0	12.5				ug/L	75	Standard
C	12	133.3	15.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	543.3	6.5				mg/L	7	Standard
Dy	164	61.9	49.6				mg/L	9	Standard
Ho-1	165	45.0	11.1				mg/L	10	Standard
Er	166	30.0	33.3				mg/L	23	Standard
I	127	16812.7	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.357	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.661	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152903
Report Date/Time: Thursday, June 30, 2016 19:50:34
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.468	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.062	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152904
Sample Date/Time: Thursday, June 30, 2016 19:51:29
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88900.1	1.3				ug/L	74916	Standard
	Be	9	21.7	35.3	**0.0138**	0.006	45.8	ug/L	10	Standard
	Al	27	3998039.8	0.6	**19.4159**	0.368	1.9	ug/L	1822	Standard
	Sc	45	49693.0	1.5				ug/L	55220	Standard
	Ti	47	194.3	21.7	**0.4277**	0.108	25.3	ug/L	34	Standard
	V	51	2612.2	1.6	**0.1020**	0.005	5.3	ug/L	1938	Standard
	Cr	52	11628.5	1.2	**0.3279**	0.013	3.9	ug/L	9522	Standard
	Cr	53	2001.8	3.5	**1.5108**	0.071	4.7	ug/L	395	Standard
	Mn	55	10984.6	3.3	**1.2459**	0.048	3.8	ug/L	902	Standard
	Co	59	463.7	6.9	**0.0374**	0.004	11.5	ug/L	262	Standard
	Ni	60	1092.7	5.1	**0.3700**	0.027	7.3	ug/L	371	Standard
	Cu	65	737.0	3.4	**0.2946**	0.013	4.4	ug/L	106	Standard
	Zn	66	2118.5	2.2	**1.3776**	0.043	3.1	ug/L	398	Standard
>	**Ge**	72	506051.1	0.3				ug/L	535147	Standard
	As	75	112.3	24.9	**0.1439**	0.022	15.3	ug/L	-43	Standard
	Se	82	40.3	12.6	**0.2177**	0.039	18.1	ug/L	14	Standard
	Se-1	77	104.3	9.6	**0.6436**	0.121	18.8	ug/L	65	Standard
>	**Ga**	71	90.0	9.6				mg/L	97	Standard
	Rb	85	821.7	18.7				ug/L	15	Standard
	Y	89	444347.1	1.2				ug/L	465704	Standard
>	**Rh**	103	38.3	7.5				ug/L	10	Standard
	Mo	98	243.7	25.7	**0.0907**	0.020	22.2	ug/L	9	Standard
	Ag	107	114.7	8.7	**0.0092**	0.001	13.7	ug/L	82	Standard
	Cd	111	19.3	16.3	**0.0159**	0.001	8.2	mg/L	7	Standard
	Cd	114	30.1	71.3	**0.0141**	0.004	26.1	ug/L	21	Standard
>	**In**	115	617612.1	0.5				ug/L	619035	Standard
	Sn	118	616.7	15.4	**-0.0084**	0.015	178.7	ug/L	508	Standard
	Sb	123	212.8	12.7	**0.0447**	0.005	11.4	ug/L	86	Standard
	Ba	135	14500.9	0.4	**6.3380**	0.042	0.7	ug/L	79	Standard
	Ce	140	393.3	3.9				ug/L	68	Standard
>	**Tb**	159	944897.7	0.4				ug/L	986982	Standard
	Ho	165	25.0	34.6				ug/L	10	Standard
	Tl	203	86.7	13.4	**0.0153**	0.001	7.9	ug/L	13	Standard
	Tl	205	90.0	38.9	**0.0190**	0.004	22.9	ug/L	10	Standard
	Pb	206	664.7	9.3	**0.0737**	0.010	13.8	ug/L	264	Standard
	Pb	207	565.7	6.5	**0.0718**	0.007	9.8	ug/L	227	Standard
	Pb	208	2395.1	4.9	**0.0769**	0.005	6.9	ug/L	868	Standard
	U	238	50.0	29.9	**0.0144**	0.002	13.3	ug/L	8	Standard
>	**Bi**	209	550432.3	0.4				ug/L	541014	Standard

Sample ID: L1606152904
Report Date/Time: Thursday, June 30, 2016 19:53:46
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1671.8	5.6	**1.9912**	0.140	7.0	mg/L	53	Standard
K	39	100.0	10.0	**0.1127**	0.021	18.2	mg/L	53	Standard
Ca	43	96.7	24.4	**4.3968**	1.414	32.2	mg/L	28	Standard
Fe	54	166.7	18.4	**0.0074**	0.022	304.6	mg/L	181	Standard
Fe	57	231.7	12.3	**0.0184**	0.075	407.9	mg/L	257	Standard
> **Sc-1**	45	49693.0	1.5				mg/L	55220	Standard
Cl	35	43809.9	1.0				ug/L	35504	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	4597.4	0.6				ug/L	2040	Standard
P	31	24069.1	1.8				ug/L	20435	Standard
S	34	2253.5	3.8				ug/L	2430	Standard
Sr	88	86.7	17.6				ug/L	75	Standard
C	12	156.7	44.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	386.7	23.5				mg/L	7	Standard
Dy	164	25.2	56.3				mg/L	9	Standard
Ho-1	165	25.0	34.6				mg/L	10	Standard
Er	166	30.0	88.2				mg/L	23	Standard
I	127	5777.8	11.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.666	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.563	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152904
Report Date/Time: Thursday, June 30, 2016 19:53:46
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.770	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.741	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152905
Sample Date/Time: Thursday, June 30, 2016 19:54:40
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88234.5	1.5				ug/L	74916	Standard
	Be	9	30.0	28.9	**0.0206**	0.007	34.9	ug/L	10	Standard
	Al	27	9752429.2	0.2	**47.7217**	0.808	1.7	ug/L	1822	Standard
	Sc	45	51669.7	2.6				ug/L	55220	Standard
	Ti	47	350.0	16.4	**0.8315**	0.150	18.0	ug/L	34	Standard
	V	51	3730.5	9.1	**0.2322**	0.039	17.0	ug/L	1938	Standard
	Cr	52	10952.0	1.4	**0.2556**	0.021	8.3	ug/L	9522	Standard
	Cr	53	5461.0	1.8	**4.8193**	0.089	1.8	ug/L	395	Standard
	Mn	55	47373.3	0.6	**5.7534**	0.020	0.3	ug/L	902	Standard
	Co	59	1253.7	0.7	**0.1409**	0.001	0.6	ug/L	262	Standard
	Ni	60	2141.2	3.2	**0.8702**	0.031	3.6	ug/L	371	Standard
	Cu	65	1030.7	3.9	**0.4381**	0.020	4.7	ug/L	106	Standard
	Zn	66	2315.8	0.5	**1.5487**	0.011	0.7	ug/L	398	Standard
>	**Ge**	72	503246.7	0.2				ug/L	535147	Standard
	As	75	161.2	14.7	**0.1832**	0.019	10.3	ug/L	-43	Standard
	Se	82	43.0	18.6	**0.2408**	0.064	26.4	ug/L	14	Standard
	Se-1	77	266.3	6.2	**2.5624**	0.191	7.4	ug/L	65	Standard
>	**Ga**	71	105.0	26.5				mg/L	97	Standard
	Rb	85	1428.4	7.3				ug/L	15	Standard
	Y	89	446734.5	1.6				ug/L	465704	Standard
>	**Rh**	103	60.0	38.2				ug/L	10	Standard
	Mo	98	183.5	11.0	**0.0713**	0.006	8.8	ug/L	9	Standard
	Ag	107	94.0	23.0	**0.0064**	0.003	46.3	ug/L	82	Standard
	Cd	111	28.0	21.5	**0.0195**	0.002	12.3	mg/L	7	Standard
	Cd	114	70.6	28.1	**0.0211**	0.003	16.2	ug/L	21	Standard
>	**In**	115	617799.5	0.9				ug/L	619035	Standard
	Sn	118	660.0	5.3	**-0.0018**	0.004	243.1	ug/L	508	Standard
	Sb	123	178.8	10.8	**0.0382**	0.003	8.9	ug/L	86	Standard
	Ba	135	61705.1	1.0	**27.0252**	0.152	0.6	ug/L	79	Standard
	Ce	140	2460.2	6.7				ug/L	68	Standard
>	**Tb**	159	954272.1	1.0				ug/L	986982	Standard
	Ho	165	108.3	27.0				ug/L	10	Standard
	Tl	203	105.3	13.3	**0.0175**	0.001	8.4	ug/L	13	Standard
	Tl	205	90.0	20.0	**0.0192**	0.002	12.1	ug/L	10	Standard
	Pb	206	1384.4	2.5	**0.1982**	0.006	2.8	ug/L	264	Standard
	Pb	207	1158.0	4.5	**0.1852**	0.009	4.6	ug/L	227	Standard
	Pb	208	4790.0	0.8	**0.1959**	0.003	1.7	ug/L	868	Standard
	U	238	78.7	1.5	**0.0183**	0.000	0.7	ug/L	8	Standard
>	**Bi**	209	541699.6	0.6				ug/L	541014	Standard

Sample ID: L1606152905
Report Date/Time: Thursday, June 30, 2016 19:56:57
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	14490.3	0.8	**16.8507**	0.519	3.1	mg/L	53	Standard
K	39	288.3	22.6	**0.4455**	0.109	24.4	mg/L	53	Standard
Ca	43	256.7	12.7	**13.9005**	2.373	17.1	mg/L	28	Standard
Fe	54	272.4	10.1	**0.0800**	0.025	31.8	mg/L	181	Standard
Fe	57	385.0	5.7	**0.4270**	0.055	12.8	mg/L	257	Standard
> **Sc-1**	45	51669.7	2.6				mg/L	55220	Standard
Cl	35	43979.7	0.5				ug/L	35504	Standard
Kr	83	3.0	88.2				ug/L	2	Standard
Br	81	5497.7	7.6				ug/L	2040	Standard
P	31	25977.3	3.5				ug/L	20435	Standard
S	34	2546.9	1.9				ug/L	2430	Standard
Sr	88	131.7	36.5				ug/L	75	Standard
C	12	196.7	22.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	430.0	6.2				mg/L	7	Standard
Dy	164	205.8	13.7				mg/L	9	Standard
Ho-1	165	108.3	27.0				mg/L	10	Standard
Er	166	86.7	56.9				mg/L	23	Standard
I	127	28657.1	4.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.777	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152905
Report Date/Time: Thursday, June 30, 2016 19:56:57
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.800
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.127
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152906
Sample Date/Time: Thursday, June 30, 2016 19:57:52
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88056.9	2.0				ug/L	74916	Standard
	Be	9	15.0	57.7	**0.0084**	0.007	81.7	ug/L	10	Standard
	Al	27	7293528.8	3.4	**35.7503**	0.696	1.9	ug/L	1822	Standard
	Sc	45	51325.1	1.9				ug/L	55220	Standard
	Ti	47	171.0	28.9	**0.3652**	0.123	33.6	ug/L	34	Standard
	V	51	2943.0	7.9	**0.1382**	0.027	19.3	ug/L	1938	Standard
	Cr	52	10991.3	1.7	**0.2469**	0.029	11.7	ug/L	9522	Standard
	Cr	53	4732.4	3.5	**4.0787**	0.184	4.5	ug/L	395	Standard
	Mn	55	122498.9	0.8	**14.8876**	0.143	1.0	ug/L	902	Standard
	Co	59	819.7	2.4	**0.0832**	0.003	3.8	ug/L	262	Standard
	Ni	60	2285.5	3.4	**0.9274**	0.030	3.2	ug/L	371	Standard
	Cu	65	1080.4	6.5	**0.4565**	0.030	6.6	ug/L	106	Standard
	Zn	66	2925.3	2.5	**2.0226**	0.047	2.3	ug/L	398	Standard
>	**Ge**	72	508515.8	0.7				ug/L	535147	Standard
	As	75	134.3	28.3	**0.1607**	0.029	18.2	ug/L	-43	Standard
	Se	82	79.0	16.8	**0.5164**	0.106	20.5	ug/L	14	Standard
	Se-1	77	251.3	2.3	**2.3551**	0.087	3.7	ug/L	65	Standard
>	**Ga**	71	68.3	8.4				mg/L	97	Standard
	Rb	85	355.0	7.3				ug/L	15	Standard
	Y	89	444542.1	0.1				ug/L	465704	Standard
>	**Rh**	103	30.0	44.1				ug/L	10	Standard
	Mo	98	287.9	12.2	**0.1049**	0.011	10.7	ug/L	9	Standard
	Ag	107	119.0	11.7	**0.0098**	0.002	19.3	ug/L	82	Standard
	Cd	111	50.9	20.7	**0.0291**	0.004	14.9	mg/L	7	Standard
	Cd	114	87.9	23.8	**0.0241**	0.004	14.8	ug/L	21	Standard
>	**In**	115	616933.2	0.3				ug/L	619035	Standard
	Sn	118	1260.1	2.9	**0.0909**	0.006	6.7	ug/L	508	Standard
	Sb	123	189.4	11.8	**0.0403**	0.004	10.3	ug/L	86	Standard
	Ba	135	52065.6	0.7	**22.8327**	0.232	1.0	ug/L	79	Standard
	Ce	140	241.7	4.3				ug/L	68	Standard
>	**Tb**	159	941735.5	0.8				ug/L	986982	Standard
	Ho	165	46.7	12.4				ug/L	10	Standard
	Tl	203	87.0	11.0	**0.0155**	0.001	7.3	ug/L	13	Standard
	Tl	205	80.0	25.0	**0.0179**	0.003	14.8	ug/L	10	Standard
	Pb	206	587.3	5.7	**0.0619**	0.005	8.7	ug/L	264	Standard
	Pb	207	507.7	1.5	**0.0621**	0.002	3.2	ug/L	227	Standard
	Pb	208	2102.1	1.1	**0.0640**	0.001	1.5	ug/L	868	Standard
	U	238	41.0	12.2	**0.0133**	0.001	5.4	ug/L	8	Standard
>	**Bi**	209	544076.0	1.0				ug/L	541014	Standard

Sample ID: L1606152906
Report Date/Time: Thursday, June 30, 2016 20:00:09
Page 1

Approved: July 01, 2016

Na	23	3.3	173.2	**20.1139**	34.830	173.2	mg/L	2	Standard
Mg	24	12645.3	2.6	**14.7908**	0.138	0.9	mg/L	53	Standard
K	39	298.3	26.8	**0.4670**	0.136	29.1	mg/L	53	Standard
Ca	43	208.3	9.1	**11.0229**	1.168	10.6	mg/L	28	Standard
Fe	54	180.7	11.0	**0.0136**	0.013	92.2	mg/L	181	Standard
Fe	57	301.7	11.8	**0.1964**	0.095	48.2	mg/L	257	Standard
> **Sc-1**	45	51325.1	1.9				mg/L	55220	Standard
Cl	35	45896.7	0.8				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	13415.9	5.3				ug/L	2040	Standard
P	31	24930.5	1.7				ug/L	20435	Standard
S	34	2516.9	2.2				ug/L	2430	Standard
Sr	88	135.0	20.6				ug/L	75	Standard
C	12	196.7	28.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	456.7	20.2				mg/L	7	Standard
Dy	164	40.9	56.4				mg/L	9	Standard
Ho-1	165	46.7	12.4				mg/L	10	Standard
Er	166	50.0	20.0				mg/L	23	Standard
I	127	36985.1	2.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.540	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.024	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152906
Report Date/Time: Thursday, June 30, 2016 20:00:09
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.660	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.566	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152907
Sample Date/Time: Thursday, June 30, 2016 20:01:03
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86590.1	1.5				ug/L	74916	Standard
	Be	9	23.3	32.7	**0.0156**	0.007	41.8	ug/L	10	Standard
	Al	27	7288041.0	1.9	**36.3329**	0.405	1.1	ug/L	1822	Standard
	Sc	45	51350.2	1.2				ug/L	55220	Standard
	Ti	47	157.7	3.1	**0.3305**	0.011	3.3	ug/L	34	Standard
	V	51	3007.3	5.0	**0.1445**	0.016	10.9	ug/L	1938	Standard
	Cr	52	10947.0	1.6	**0.2378**	0.018	7.6	ug/L	9522	Standard
	Cr	53	4819.1	2.2	**4.1468**	0.112	2.7	ug/L	395	Standard
	Mn	55	107294.6	0.9	**12.9884**	0.118	0.9	ug/L	902	Standard
	Co	59	789.7	3.4	**0.0790**	0.004	5.0	ug/L	262	Standard
	Ni	60	2216.5	1.5	**0.8921**	0.015	1.7	ug/L	371	Standard
	Cu	65	856.4	2.4	**0.3486**	0.008	2.2	ug/L	106	Standard
	Zn	66	3147.3	0.8	**2.1952**	0.028	1.3	ug/L	398	Standard
>	**Ge**	72	509995.2	0.5				ug/L	535147	Standard
	As	75	109.6	15.3	**0.1411**	0.013	9.1	ug/L	-43	Standard
	Se	82	74.9	2.1	**0.4827**	0.010	2.1	ug/L	14	Standard
	Se-1	77	253.7	10.3	**2.3725**	0.290	12.2	ug/L	65	Standard
>	**Ga**	71	65.0	13.3				mg/L	97	Standard
	Rb	85	353.3	31.5				ug/L	15	Standard
	Y	89	444447.1	1.6				ug/L	465704	Standard
>	**Rh**	103	51.7	29.6				ug/L	10	Standard
	Mo	98	174.2	8.5	**0.0687**	0.004	6.4	ug/L	9	Standard
	Ag	107	114.7	15.4	**0.0093**	0.002	24.6	ug/L	82	Standard
	Cd	111	47.1	5.2	**0.0276**	0.001	3.6	mg/L	7	Standard
	Cd	114	112.5	18.8	**0.0284**	0.004	12.7	ug/L	21	Standard
>	**In**	115	613045.3	0.7				ug/L	619035	Standard
	Sn	118	715.0	9.8	**0.0075**	0.010	135.8	ug/L	508	Standard
	Sb	123	161.1	10.6	**0.0351**	0.003	8.8	ug/L	86	Standard
	Ba	135	53387.2	0.8	**23.5616**	0.255	1.1	ug/L	79	Standard
	Ce	140	331.7	4.4				ug/L	68	Standard
>	**Tb**	159	944449.4	0.4				ug/L	986982	Standard
	Ho	165	43.3	59.2				ug/L	10	Standard
	Tl	203	92.3	8.8	**0.0161**	0.001	5.4	ug/L	13	Standard
	Tl	205	83.3	12.5	**0.0184**	0.001	7.5	ug/L	10	Standard
	Pb	206	592.3	4.9	**0.0632**	0.005	7.5	ug/L	264	Standard
	Pb	207	542.0	8.1	**0.0691**	0.008	12.0	ug/L	227	Standard
	Pb	208	2230.1	0.4	**0.0708**	0.001	1.1	ug/L	868	Standard
	U	238	38.7	24.4	**0.0130**	0.001	9.5	ug/L	8	Standard
>	**Bi**	209	541519.6	0.4				ug/L	541014	Standard

Sample ID: L1606152907
Report Date/Time: Thursday, June 30, 2016 20:03:20
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	12728.7	2.0	**14.8819**	0.155	1.0	mg/L	53	Standard
K	39	308.3	6.1	**0.4867**	0.034	7.0	mg/L	53	Standard
Ca	43	193.3	38.9	**10.0877**	4.505	44.7	mg/L	28	Standard
Fe	54	165.4	7.7	**0.0025**	0.010	409.5	mg/L	181	Standard
Fe	57	355.0	2.8	**0.3486**	0.041	11.7	mg/L	257	Standard
> **Sc-1**	45	51350.2	1.2				mg/L	55220	Standard
Cl	35	46325.4	1.2				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	11614.5	3.1				ug/L	2040	Standard
P	31	24781.9	0.8				ug/L	20435	Standard
S	34	2535.2	2.6				ug/L	2430	Standard
Sr	88	126.7	18.7				ug/L	75	Standard
C	12	233.3	36.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	473.3	22.2				mg/L	7	Standard
Dy	164	27.4	75.5				mg/L	9	Standard
Ho-1	165	43.3	59.2				mg/L	10	Standard
Er	166	53.3	39.0				mg/L	23	Standard
I	127	36998.5	2.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.582	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.300	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152907
Report Date/Time: Thursday, June 30, 2016 20:03:20
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.032	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.093	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152908
Sample Date/Time: Thursday, June 30, 2016 20:04:15
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87356.1	0.7				ug/L	74916	Standard
	Be	9	16.7	124.9	**0.0100**	0.017	170.0	ug/L	10	Standard
	Al	27	5800884.1	0.6	**28.6654**	0.017	0.1	ug/L	1822	Standard
	Sc	45	51183.0	1.5				ug/L	55220	Standard
	Ti	47	397.3	11.7	**0.9365**	0.122	13.0	ug/L	34	Standard
	V	51	2921.7	9.2	**0.1337**	0.032	23.8	ug/L	1938	Standard
	Cr	52	11373.6	0.2	**0.2830**	0.010	3.5	ug/L	9522	Standard
	Cr	53	3103.7	1.4	**2.5224**	0.030	1.2	ug/L	395	Standard
	Mn	55	14821.9	0.6	**1.6973**	0.005	0.3	ug/L	902	Standard
	Co	59	1000.7	2.1	**0.1057**	0.003	3.1	ug/L	262	Standard
	Ni	60	2624.2	2.0	**1.0787**	0.027	2.5	ug/L	371	Standard
	Cu	65	1039.0	1.7	**0.4338**	0.011	2.4	ug/L	106	Standard
	Zn	66	2372.5	1.6	**1.5627**	0.032	2.0	ug/L	398	Standard
>	**Ge**	72	511783.4	0.6				ug/L	535147	Standard
	As	75	213.0	16.3	**0.2214**	0.026	11.8	ug/L	-43	Standard
	Se	82	74.1	2.2	**0.4750**	0.010	2.1	ug/L	14	Standard
	Se-1	77	150.3	2.8	**1.1637**	0.050	4.3	ug/L	65	Standard
>	**Ga**	71	95.0	13.9				mg/L	97	Standard
	Rb	85	968.4	2.5				ug/L	15	Standard
	Y	89	451673.5	0.3				ug/L	465704	Standard
>	**Rh**	103	30.0	28.9				ug/L	10	Standard
	Mo	98	173.2	5.3	**0.0678**	0.003	4.0	ug/L	9	Standard
	Ag	107	91.7	12.4	**0.0061**	0.001	24.3	ug/L	82	Standard
	Cd	111	17.7	27.9	**0.0152**	0.002	13.4	mg/L	7	Standard
	Cd	114	48.1	60.1	**0.0172**	0.005	29.0	ug/L	21	Standard
>	**In**	115	619434.4	0.4				ug/L	619035	Standard
	Sn	118	753.4	10.6	**0.0123**	0.012	98.4	ug/L	508	Standard
	Sb	123	177.3	16.5	**0.0378**	0.005	14.3	ug/L	86	Standard
	Ba	135	31784.0	0.8	**13.8741**	0.090	0.6	ug/L	79	Standard
	Ce	140	6034.7	39.1				ug/L	68	Standard
>	**Tb**	159	948600.3	1.0				ug/L	986982	Standard
	Ho	165	146.7	17.5				ug/L	10	Standard
	Tl	203	81.0	4.3	**0.0148**	0.000	3.0	ug/L	13	Standard
	Tl	205	66.7	37.7	**0.0162**	0.003	19.4	ug/L	10	Standard
	Pb	206	958.0	0.9	**0.1252**	0.002	1.4	ug/L	264	Standard
	Pb	207	787.0	3.2	**0.1149**	0.003	3.0	ug/L	227	Standard
	Pb	208	3386.1	2.7	**0.1270**	0.005	3.8	ug/L	868	Standard
	U	238	520.7	2.4	**0.0766**	0.002	2.8	ug/L	8	Standard
>	**Bi**	209	542764.0	0.9				ug/L	541014	Standard

Sample ID: L1606152908
Report Date/Time: Thursday, June 30, 2016 20:06:32
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**20.2036**	17.498	86.6	mg/L	2	Standard
Mg	24	10431.9	4.4	**12.2290**	0.439	3.6	mg/L	53	Standard
K	39	275.0	13.7	**0.4279**	0.073	17.1	mg/L	53	Standard
Ca	43	170.0	16.4	**8.6979**	1.544	17.7	mg/L	28	Standard
Fe	54	239.2	0.3	**0.0571**	0.002	3.7	mg/L	181	Standard
Fe	57	291.7	20.7	**0.1691**	0.160	94.5	mg/L	257	Standard
> **Sc-1**	45	51183.0	1.5				mg/L	55220	Standard
Cl	35	47035.6	1.5				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	13913.1	0.7				ug/L	2040	Standard
P	31	24708.5	3.0				ug/L	20435	Standard
S	34	2581.9	2.1				ug/L	2430	Standard
Sr	88	108.3	18.7				ug/L	75	Standard
C	12	163.3	18.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	420.0	10.9				mg/L	7	Standard
Dy	164	173.5	54.2				mg/L	9	Standard
Ho-1	165	146.7	17.5				mg/L	10	Standard
Er	166	136.7	46.5				mg/L	23	Standard
I	127	34858.4	3.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.605	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.634	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152908
Report Date/Time: Thursday, June 30, 2016 20:06:32
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.065
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.323
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 20:07:28
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85472.1	1.7				ug/L	74916	Standard
	Be	9	65108.0	3.0	**54.0823**	1.154	2.1	ug/L	10	Standard
	Al	27	9105473.5	0.5	**45.9972**	0.825	1.8	ug/L	1822	Standard
	Sc	45	49731.5	2.5				ug/L	55220	Standard
	Ti	47	38285.3	0.5	**97.9042**	1.148	1.2	ug/L	34	Standard
	V	51	442931.2	1.2	**50.3540**	0.833	1.7	ug/L	1938	Standard
	Cr	52	426545.4	1.3	**49.0741**	0.566	1.2	ug/L	9522	Standard
	Cr	53	52663.1	2.1	**49.4989**	1.008	2.0	ug/L	395	Standard
	Mn	55	386900.6	0.1	**47.4345**	0.333	0.7	ug/L	902	Standard
	Co	59	401578.1	1.0	**52.0897**	0.499	1.0	ug/L	262	Standard
	Ni	60	104374.0	1.3	**49.0555**	0.650	1.3	ug/L	371	Standard
	Cu	65	102991.9	0.9	**49.2674**	0.136	0.3	ug/L	106	Standard
	Zn	66	61809.5	1.0	**49.9152**	0.561	1.1	ug/L	398	Standard
>	Ge	72	506525.9	0.8				ug/L	535147	Standard
	As	75	62357.5	1.0	**49.2419**	0.735	1.5	ug/L	-43	Standard
	Se	82	6465.3	1.5	**50.3023**	0.653	1.3	ug/L	14	Standard
	Se-1	77	4276.3	1.3	**49.5714**	0.657	1.3	ug/L	65	Standard
>	Ga	71	65.0	40.0				mg/L	97	Standard
	Rb	85	945.0	8.0				ug/L	15	Standard
	Y	89	445522.7	1.3				ug/L	465704	Standard
>	Rh	103	31.7	9.1				ug/L	10	Standard
	Mo	98	306532.4	0.5	**98.3988**	0.768	0.8	ug/L	9	Standard
	Ag	107	364777.1	1.0	**48.3842**	0.587	1.2	ug/L	82	Standard
	Cd	111	115886.4	1.0	**48.0888**	0.315	0.7	mg/L	7	Standard
	Cd	114	282581.5	2.0	**48.6942**	0.954	2.0	ug/L	21	Standard
>	In	115	618174.7	0.4				ug/L	619035	Standard
	Sn	118	319592.1	0.3	**49.0738**	0.056	0.1	ug/L	508	Standard
	Sb	123	258837.8	1.5	**48.9487**	0.795	1.6	ug/L	86	Standard
	Ba	135	107239.8	0.2	**46.9543**	0.164	0.3	ug/L	79	Standard
	Ce	140	115.0	41.9				ug/L	68	Standard
>	Tb	159	940862.5	1.3				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	460304.9	0.5	**50.0911**	0.197	0.4	ug/L	13	Standard
	Tl	205	410842.8	1.2	**52.3373**	1.020	1.9	ug/L	10	Standard
	Pb	206	293474.6	0.0	**49.7248**	0.447	0.9	ug/L	264	Standard
	Pb	207	266458.3	0.3	**49.9548**	0.482	1.0	ug/L	227	Standard
	Pb	208	1078784.7	0.3	**52.4507**	0.478	0.9	ug/L	868	Standard
	U	238	405046.7	0.5	**53.2776**	0.329	0.6	ug/L	8	Standard
>	Bi	209	544562.5	0.9				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 20:09:45
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**21.1233**	18.289	86.6	mg/L	2	Standard
Mg	24	4860.8	2.2	**5.8517**	0.266	4.5	mg/L	53	Standard
K	39	1825.1	0.7	**3.3646**	0.096	2.9	mg/L	53	Standard
Ca	43	85.0	15.6	**3.6635**	0.753	20.6	mg/L	28	Standard
Fe	54	6850.5	3.8	**5.0682**	0.296	5.8	mg/L	181	Standard
Fe	57	1940.1	1.6	**5.0449**	0.134	2.7	mg/L	257	Standard
Sc-1	45	49731.5	2.5				mg/L	55220	Standard
Cl	35	43548.5	1.9				ug/L	35504	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	2076.8	5.4				ug/L	2040	Standard
P	31	25009.0	3.0				ug/L	20435	Standard
S	34	2823.6	2.3				ug/L	2430	Standard
Sr	88	101.7	5.7				ug/L	75	Standard
C	12	100.0	50.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	343.3	14.4				mg/L	7	Standard
Dy	164	2.2	267.0				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	12311.7	2.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	108.165		
Al	27	91.994		
Sc	45			
Ti	47	97.904		
V	51	100.708		
Cr	52	98.148		
Cr	53			
Mn	55	94.869		
Co	59	104.179		
Ni	60	98.111		
Cu	65	98.535		
Zn	66	99.830		
Ge	72		94.652	
As	75	98.484		
Se	82	100.605		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 20:09:45
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	98.399		
Ag	107	96.768		
Cd	111	96.178		
Cd	114			
> In	115			99.861
Sn	118	98.148		
Sb	123	97.897		
Ba	135	93.909		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.182		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.901		
U	238	106.555		
> Bi	209			100.656
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 20:09:45
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 20:10:39
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84508.4	1.1				ug/L	74916	Standard
	Be	9	33.3	8.7	**0.0244**	0.002	10.1	ug/L	10	Standard
	Al	27	4085.6	35.3	**0.0185**	0.007	39.4	ug/L	1822	Standard
	Sc	45	51201.4	1.2				ug/L	55220	Standard
	Ti	47	49.3	13.5	**0.0547**	0.017	31.7	ug/L	34	Standard
	V	51	1705.1	7.3	**-0.0039**	0.015	396.5	ug/L	1938	Standard
	Cr	52	7223.1	1.3	**-0.2003**	0.017	8.7	ug/L	9522	Standard
	Cr	53	643.3	12.9	**0.2153**	0.078	36.3	ug/L	395	Standard
	Mn	55	817.4	1.3	**-0.0058**	0.002	33.6	ug/L	902	Standard
	Co	59	278.0	3.7	**0.0129**	0.001	11.6	ug/L	262	Standard
	Ni	60	472.0	2.2	**0.0744**	0.006	7.9	ug/L	371	Standard
	Cu	65	242.0	9.3	**0.0559**	0.012	20.6	ug/L	106	Standard
	Zn	66	406.0	4.9	**-0.0203**	0.014	69.6	ug/L	398	Standard
>	**Ge**	72	512276.8	0.7				ug/L	535147	Standard
	As	75	-39.3	24.4	**0.0246**	0.008	30.9	ug/L	-43	Standard
	Se	82	24.7	25.4	**0.0935**	0.047	50.3	ug/L	14	Standard
	Se-1	77	61.7	4.7	**0.1339**	0.036	27.1	ug/L	65	Standard
>	**Ga**	71	40.0	21.7				mg/L	97	Standard
	Rb	85	40.0	33.1				ug/L	15	Standard
	Y	89	451013.8	2.6				ug/L	465704	Standard
>	**Rh**	103	33.3	75.5				ug/L	10	Standard
	Mo	98	337.7	6.2	**0.1193**	0.006	5.0	ug/L	9	Standard
	Ag	107	160.7	20.3	**0.0149**	0.004	27.5	ug/L	82	Standard
	Cd	111	17.1	27.4	**0.0149**	0.002	12.5	mg/L	7	Standard
	Cd	114	56.9	45.7	**0.0186**	0.004	23.4	ug/L	21	Standard
>	**In**	115	626686.9	1.0				ug/L	619035	Standard
	Sn	118	1108.4	17.2	**0.0649**	0.029	45.4	ug/L	508	Standard
	Sb	123	719.1	31.0	**0.1386**	0.041	29.9	ug/L	86	Standard
	Ba	135	66.7	26.7	**0.0091**	0.008	82.3	ug/L	79	Standard
	Ce	140	33.3	52.7				ug/L	68	Standard
>	**Tb**	159	951647.1	1.9				ug/L	986982	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	116.3	23.3	**0.0185**	0.003	15.8	ug/L	13	Standard
	Tl	205	81.7	12.7	**0.0179**	0.001	7.3	ug/L	10	Standard
	Pb	206	355.3	7.9	**0.0215**	0.005	21.8	ug/L	264	Standard
	Pb	207	296.0	5.5	**0.0215**	0.003	14.0	ug/L	227	Standard
	Pb	208	1251.0	8.8	**0.0216**	0.005	24.5	ug/L	868	Standard
	U	238	86.3	22.6	**0.0191**	0.003	13.3	ug/L	8	Standard
>	**Bi**	209	553114.9	0.1				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 20:12:56
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.0447**	17.389	173.1	mg/L	2	Standard
Mg	24	65.0	30.8	**0.0419**	0.023	55.9	mg/L	53	Standard
K	39	46.7	22.3	**0.0095**	0.020	207.6	mg/L	53	Standard
Ca	43	30.0	33.3	**0.1622**	0.633	390.4	mg/L	28	Standard
Fe	54	137.1	20.9	**-0.0179**	0.021	119.5	mg/L	181	Standard
Fe	57	260.0	20.1	**0.0806**	0.154	191.3	mg/L	257	Standard
Sc-1	45	51201.4	1.2				mg/L	55220	Standard
Cl	35	42811.7	0.8				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2026.8	15.5				ug/L	2040	Standard
P	31	24645.0	3.2				ug/L	20435	Standard
S	34	2743.6	4.8				ug/L	2430	Standard
Sr	88	56.7	28.4				ug/L	75	Standard
C	12	133.3	24.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	330.0	15.2				mg/L	7	Standard
Dy	164	142.7	35.5				mg/L	9	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	5080.9	5.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.726	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 20:12:56
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.236
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.237
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 20:12:56
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152909
Sample Date/Time: Thursday, June 30, 2016 20:13:52
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84981.0	1.6				ug/L	74916	Standard
	Be	9	46.7	55.0	**0.0355**	0.022	61.8	ug/L	10	Standard
	Al	27	2649760.5	1.0	**13.4599**	0.154	1.1	ug/L	1822	Standard
	Sc	45	50823.5	2.2				ug/L	55220	Standard
	Ti	47	621.0	35.7	**1.4839**	0.544	36.6	ug/L	34	Standard
	V	51	3519.7	4.6	**0.1968**	0.015	7.5	ug/L	1938	Standard
	Cr	52	11065.7	1.5	**0.2335**	0.024	10.4	ug/L	9522	Standard
	Cr	53	2253.5	7.1	**1.7037**	0.164	9.6	ug/L	395	Standard
	Mn	55	69223.4	0.5	**8.2230**	0.056	0.7	ug/L	902	Standard
	Co	59	1262.7	2.4	**0.1376**	0.003	2.2	ug/L	262	Standard
	Ni	60	1836.1	2.2	**0.7020**	0.028	4.0	ug/L	371	Standard
	Cu	65	1478.1	2.8	**0.6345**	0.023	3.6	ug/L	106	Standard
	Zn	66	2676.9	1.2	**1.7846**	0.014	0.8	ug/L	398	Standard
>	**Ge**	72	517327.5	1.1				ug/L	535147	Standard
	As	75	137.8	11.9	**0.1615**	0.012	7.3	ug/L	-43	Standard
	Se	82	34.2	7.9	**0.1643**	0.022	13.6	ug/L	14	Standard
	Se-1	77	107.3	5.7	**0.6510**	0.064	9.8	ug/L	65	Standard
>	**Ga**	71	211.7	15.4				mg/L	97	Standard
	Rb	85	3202.0	8.6				ug/L	15	Standard
	Y	89	457604.0	1.9				ug/L	465704	Standard
>	**Rh**	103	46.7	43.3				ug/L	10	Standard
	Mo	98	197.3	18.3	**0.0741**	0.012	16.5	ug/L	9	Standard
	Ag	107	138.3	23.5	**0.0118**	0.004	37.8	ug/L	82	Standard
	Cd	111	22.7	32.9	**0.0171**	0.003	18.4	mg/L	7	Standard
	Cd	114	85.9	11.7	**0.0233**	0.002	8.1	ug/L	21	Standard
>	**In**	115	635294.3	1.4				ug/L	619035	Standard
	Sn	118	773.4	8.1	**0.0124**	0.011	85.2	ug/L	508	Standard
	Sb	123	378.6	23.7	**0.0742**	0.017	23.5	ug/L	86	Standard
	Ba	135	24337.9	0.6	**10.3548**	0.129	1.2	ug/L	79	Standard
	Ce	140	2685.2	8.1				ug/L	68	Standard
>	**Tb**	159	947650.0	0.1				ug/L	986982	Standard
	Ho	165	105.0	4.8				ug/L	10	Standard
	Tl	203	119.3	21.9	**0.0188**	0.003	15.5	ug/L	13	Standard
	Tl	205	95.0	24.1	**0.0196**	0.003	14.9	ug/L	10	Standard
	Pb	206	1284.1	2.8	**0.1765**	0.004	2.5	ug/L	264	Standard
	Pb	207	1133.4	4.1	**0.1762**	0.011	6.0	ug/L	227	Standard
	Pb	208	4625.6	1.4	**0.1833**	0.005	2.8	ug/L	868	Standard
	U	238	95.0	19.5	**0.0202**	0.002	12.2	ug/L	8	Standard
>	**Bi**	209	553131.1	1.0				ug/L	541014	Standard

Sample ID: L1606152909
Report Date/Time: Thursday, June 30, 2016 20:16:09
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.1205**	17.521	173.1	mg/L	2	Standard
Mg	24	4830.8	0.8	**5.6868**	0.096	1.7	mg/L	53	Standard
K	39	253.3	8.9	**0.3908**	0.035	8.9	mg/L	53	Standard
Ca	43	75.0	37.1	**2.9439**	1.706	58.0	mg/L	28	Standard
Fe	54	370.2	13.4	**0.1556**	0.039	25.3	mg/L	181	Standard
Fe	57	308.3	7.7	**0.2243**	0.061	27.3	mg/L	257	Standard
> **Sc-1**	45	50823.5	2.2				mg/L	55220	Standard
Cl	35	43236.9	0.7				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	5484.3	4.6				ug/L	2040	Standard
P	31	25227.7	0.7				ug/L	20435	Standard
S	34	2473.5	6.7				ug/L	2430	Standard
Sr	88	61.7	9.4				ug/L	75	Standard
C	12	146.7	28.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	313.3	32.0				mg/L	7	Standard
Dy	164	144.7	24.7				mg/L	9	Standard
Ho-1	165	105.0	4.8				mg/L	10	Standard
Er	166	110.0	18.2				mg/L	23	Standard
I	127	10783.8	0.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.434	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.670	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152909
Report Date/Time: Thursday, June 30, 2016 20:16:09
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.627
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.240
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152910
Sample Date/Time: Thursday, June 30, 2016 20:17:04
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85247.6	3.1				ug/L	74916	Standard
	Be	9	43.3	74.2	**0.0327**	0.027	84.0	ug/L	10	Standard
	Al	27	8510555.6	2.4	**43.1028**	0.408	0.9	ug/L	1822	Standard
	Sc	45	51932.2	1.1				ug/L	55220	Standard
	Ti	47	1029.0	29.8	**2.5664**	0.783	30.5	ug/L	34	Standard
	V	51	4367.2	5.7	**0.3028**	0.026	8.6	ug/L	1938	Standard
	Cr	52	12079.8	6.1	**0.3817**	0.071	18.7	ug/L	9522	Standard
	Cr	53	7580.2	7.2	**6.8071**	0.547	8.0	ug/L	395	Standard
	Mn	55	83482.7	1.3	**10.1707**	0.156	1.5	ug/L	902	Standard
	Co	59	1517.7	1.1	**0.1745**	0.002	1.4	ug/L	262	Standard
	Ni	60	2542.5	1.9	**1.0552**	0.032	3.0	ug/L	371	Standard
	Cu	65	1783.1	4.1	**0.7965**	0.026	3.3	ug/L	106	Standard
	Zn	66	3302.0	2.8	**2.3428**	0.055	2.3	ug/L	398	Standard
>	Ge	72	505645.1	1.0				ug/L	535147	Standard
	As	75	610.8	2.8	**0.5379**	0.016	2.9	ug/L	-43	Standard
	Se	82	184.7	4.6	**1.3451**	0.069	5.2	ug/L	14	Standard
	Se-1	77	372.3	2.8	**3.7934**	0.138	3.6	ug/L	65	Standard
>	Ga	71	258.3	14.8				mg/L	97	Standard
	Rb	85	3520.4	5.7				ug/L	15	Standard
	Y	89	444968.3	1.2				ug/L	465704	Standard
>	Rh	103	56.7	22.2				ug/L	10	Standard
	Mo	98	154.0	19.6	**0.0625**	0.010	15.9	ug/L	9	Standard
	Ag	107	132.7	1.6	**0.0118**	0.000	1.4	ug/L	82	Standard
	Cd	111	45.0	32.2	**0.0268**	0.006	22.7	mg/L	7	Standard
	Cd	114	116.9	9.5	**0.0293**	0.002	7.0	ug/L	21	Standard
>	In	115	609907.5	0.7				ug/L	619035	Standard
	Sn	118	613.3	11.5	**-0.0077**	0.012	151.4	ug/L	508	Standard
	Sb	123	344.4	18.6	**0.0705**	0.013	18.0	ug/L	86	Standard
	Ba	135	83944.9	0.2	**37.2499**	0.298	0.8	ug/L	79	Standard
	Ce	140	3115.3	6.4				ug/L	68	Standard
>	Tb	159	935811.2	1.5				ug/L	986982	Standard
	Ho	165	168.3	13.4				ug/L	10	Standard
	Tl	203	140.0	23.9	**0.0216**	0.004	16.7	ug/L	13	Standard
	Tl	205	133.3	16.9	**0.0251**	0.003	12.1	ug/L	10	Standard
	Pb	206	1608.8	2.7	**0.2416**	0.006	2.4	ug/L	264	Standard
	Pb	207	1470.7	2.8	**0.2494**	0.006	2.4	ug/L	227	Standard
	Pb	208	5963.5	0.4	**0.2589**	0.002	0.8	ug/L	868	Standard
	U	238	80.7	14.5	**0.0188**	0.001	8.0	ug/L	8	Standard
>	Bi	209	531560.9	0.7				ug/L	541014	Standard

Sample ID: L1606152910
Report Date/Time: Thursday, June 30, 2016 20:19:21
Page 1

Approved: July 01, 2016

Na	23	3.3	173.2	**19.8680**	34.404	173.2	mg/L	2	Standard
Mg	24	21381.8	3.6	**24.7466**	1.006	4.1	mg/L	53	Standard
K	39	523.3	2.0	**0.8684**	0.016	1.9	mg/L	53	Standard
Ca	43	270.0	6.4	**14.5888**	1.106	7.6	mg/L	28	Standard
Fe	54	425.4	9.3	**0.1894**	0.028	14.9	mg/L	181	Standard
Fe	57	405.0	10.1	**0.4787**	0.128	26.8	mg/L	257	Standard
> **Sc-1**	45	51932.2	1.1				mg/L	55220	Standard
Cl	35	45101.7	0.8				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	35307.8	3.0				ug/L	2040	Standard
P	31	25357.9	2.1				ug/L	20435	Standard
S	34	2631.9	4.1				ug/L	2430	Standard
Sr	88	215.0	14.5				ug/L	75	Standard
C	12	140.0	25.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	256.7	22.5				mg/L	7	Standard
Dy	164	243.1	25.1				mg/L	9	Standard
Ho-1	165	168.3	13.4				mg/L	10	Standard
Er	166	143.3	8.1				mg/L	23	Standard
I	127	21702.2	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.790	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.487	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152910
Report Date/Time: Thursday, June 30, 2016 20:19:21
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.253
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152911
Sample Date/Time: Thursday, June 30, 2016 20:20:16
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83573.2	1.5				ug/L	74916	Standard
	Be	9	33.3	31.2	**0.0246**	0.008	34.0	ug/L	10	Standard
	Al	27	6861949.3	1.6	**35.4458**	0.495	1.4	ug/L	1822	Standard
	Sc	45	51285.0	2.1				ug/L	55220	Standard
	Ti	47	288.0	39.4	**0.6733**	0.294	43.6	ug/L	34	Standard
	V	51	5266.7	5.9	**0.4099**	0.037	9.1	ug/L	1938	Standard
	Cr	52	11325.9	1.0	**0.3025**	0.009	2.9	ug/L	9522	Standard
	Cr	53	11184.1	2.5	**10.2982**	0.304	3.0	ug/L	395	Standard
	Mn	55	786461.8	1.3	**97.3526**	1.294	1.3	ug/L	902	Standard
	Co	59	906.4	7.2	**0.0958**	0.008	8.5	ug/L	262	Standard
	Ni	60	1758.4	4.4	**0.6903**	0.035	5.1	ug/L	371	Standard
	Cu	65	1982.8	0.9	**0.8990**	0.012	1.3	ug/L	106	Standard
	Zn	66	4952.8	2.7	**3.7149**	0.093	2.5	ug/L	398	Standard
>	**Ge**	72	502233.2	0.4				ug/L	535147	Standard
	As	75	80.3	74.3	**0.1190**	0.047	39.6	ug/L	-43	Standard
	Se	82	58.8	12.4	**0.3655**	0.056	15.3	ug/L	14	Standard
	Se-1	77	491.7	3.9	**5.2344**	0.231	4.4	ug/L	65	Standard
>	**Ga**	71	93.3	34.4				mg/L	97	Standard
	Rb	85	896.7	7.1				ug/L	15	Standard
	Y	89	441710.6	1.7				ug/L	465704	Standard
>	**Rh**	103	41.7	42.1				ug/L	10	Standard
	Mo	98	608.7	10.2	**0.2107**	0.020	9.6	ug/L	9	Standard
	Ag	107	240.0	4.4	**0.0262**	0.001	5.4	ug/L	82	Standard
	Cd	111	212.4	8.7	**0.0973**	0.008	8.0	mg/L	7	Standard
	Cd	114	534.1	15.2	**0.1023**	0.014	13.8	ug/L	21	Standard
>	**In**	115	609038.8	0.0				ug/L	619035	Standard
	Sn	118	1090.0	7.3	**0.0668**	0.012	18.5	ug/L	508	Standard
	Sb	123	607.9	4.4	**0.1211**	0.005	4.2	ug/L	86	Standard
	Ba	135	74342.3	1.0	**33.0325**	0.340	1.0	ug/L	79	Standard
	Ce	140	740.0	10.4				ug/L	68	Standard
>	**Tb**	159	934924.8	1.9				ug/L	986982	Standard
	Ho	165	50.0	36.1				ug/L	10	Standard
	Tl	203	320.3	3.0	**0.0420**	0.001	2.9	ug/L	13	Standard
	Tl	205	230.0	20.7	**0.0379**	0.006	16.2	ug/L	10	Standard
	Pb	206	1171.7	7.8	**0.1672**	0.015	9.1	ug/L	264	Standard
	Pb	207	1041.0	6.0	**0.1683**	0.011	6.6	ug/L	227	Standard
	Pb	208	4335.9	3.1	**0.1793**	0.006	3.4	ug/L	868	Standard
	U	238	130.3	27.9	**0.0256**	0.005	19.0	ug/L	8	Standard
>	**Bi**	209	527772.3	0.4				ug/L	541014	Standard

Sample ID: L1606152911
Report Date/Time: Thursday, June 30, 2016 20:22:33
Page 1

Approved: July 01, 2016

Na	23	5.0	0.0	**30.2905**	0.643	2.1	mg/L	2	Standard
Mg	24	32406.3	1.7	**37.9987**	0.770	2.0	mg/L	53	Standard
K	39	553.3	8.6	**0.9359**	0.099	10.6	mg/L	53	Standard
Ca	43	206.7	9.8	**10.9494**	1.494	13.6	mg/L	28	Standard
Fe	54	231.8	8.1	**0.0516**	0.017	33.5	mg/L	181	Standard
Fe	57	361.7	9.7	**0.3683**	0.092	24.9	mg/L	257	Standard
> **Sc-1**	45	51285.0	2.1				mg/L	55220	Standard
Cl	35	45860.6	1.0				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	8892.6	1.4				ug/L	2040	Standard
P	31	25207.6	2.0				ug/L	20435	Standard
S	34	2685.2	1.5				ug/L	2430	Standard
Sr	88	123.3	8.4				ug/L	75	Standard
C	12	156.7	40.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	290.0	15.0				mg/L	7	Standard
Dy	164	82.7	18.2				mg/L	9	Standard
Ho-1	165	50.0	36.1				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	22520.1	0.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.555	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.850	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152911
Report Date/Time: Thursday, June 30, 2016 20:22:33
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.385
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.552
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152912
Sample Date/Time: Thursday, June 30, 2016 20:23:27
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83561.5	0.3				ug/L	74916	Standard
	Be	9	28.3	71.3	**0.0204**	0.017	83.8	ug/L	10	Standard
	Al	27	1142457.6	1.7	**5.8999**	0.089	1.5	ug/L	1822	Standard
	Sc	45	51276.7	3.0				ug/L	55220	Standard
	Ti	47	232.3	25.2	**0.5169**	0.147	28.4	ug/L	34	Standard
	V	51	2883.0	4.8	**0.1286**	0.017	12.9	ug/L	1938	Standard
	Cr	52	11199.8	2.3	**0.2601**	0.034	13.3	ug/L	9522	Standard
	Cr	53	1680.1	8.8	**1.1848**	0.143	12.1	ug/L	395	Standard
	Mn	55	43442.2	2.6	**5.1670**	0.156	3.0	ug/L	902	Standard
	Co	59	648.0	14.5	**0.0603**	0.012	20.5	ug/L	262	Standard
	Ni	60	894.4	4.8	**0.2708**	0.022	8.0	ug/L	371	Standard
	Cu	65	891.7	2.5	**0.3630**	0.011	3.0	ug/L	106	Standard
	Zn	66	2132.8	2.9	**1.3664**	0.058	4.3	ug/L	398	Standard
>	**Ge**	72	512862.3	0.5				ug/L	535147	Standard
	As	75	81.9	16.5	**0.1190**	0.010	8.6	ug/L	-43	Standard
	Se	82	28.4	3.0	**0.1217**	0.006	5.1	ug/L	14	Standard
	Se-1	77	79.0	9.1	**0.3340**	0.087	26.1	ug/L	65	Standard
>	**Ga**	71	108.3	23.7				mg/L	97	Standard
	Rb	85	1580.1	11.7				ug/L	15	Standard
	Y	89	444358.6	0.5				ug/L	465704	Standard
>	**Rh**	103	28.3	27.0				ug/L	10	Standard
	Mo	98	213.2	48.6	**0.0802**	0.032	40.5	ug/L	9	Standard
	Ag	107	93.3	6.1	**0.0062**	0.001	13.2	ug/L	82	Standard
	Cd	111	14.1	53.6	**0.0137**	0.003	22.4	mg/L	7	Standard
	Cd	114	58.8	32.6	**0.0190**	0.003	16.9	ug/L	21	Standard
>	**In**	115	622593.9	0.6				ug/L	619035	Standard
	Sn	118	730.0	4.8	**0.0081**	0.006	69.0	ug/L	508	Standard
	Sb	123	256.5	2.9	**0.0526**	0.002	3.0	ug/L	86	Standard
	Ba	135	10960.0	1.4	**4.7469**	0.041	0.9	ug/L	79	Standard
	Ce	140	2988.7	39.7				ug/L	68	Standard
>	**Tb**	159	943687.8	0.6				ug/L	986982	Standard
	Ho	165	93.3	3.1				ug/L	10	Standard
	Tl	203	49.0	26.8	**0.0113**	0.001	12.1	ug/L	13	Standard
	Tl	205	68.3	69.5	**0.0163**	0.006	36.2	ug/L	10	Standard
	Pb	206	812.7	1.1	**0.0982**	0.002	2.2	ug/L	264	Standard
	Pb	207	747.4	8.3	**0.1051**	0.010	9.4	ug/L	227	Standard
	Pb	208	3105.8	7.7	**0.1107**	0.010	8.9	ug/L	868	Standard
	U	238	95.0	67.5	**0.0202**	0.008	40.4	ug/L	8	Standard
>	**Bi**	209	551731.2	1.1				ug/L	541014	Standard

Sample ID: L1606152912
Report Date/Time: Thursday, June 30, 2016 20:25:44
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.0978**	17.481	173.1	mg/L	2	Standard
Mg	24	1641.8	2.8	**1.8923**	0.008	0.4	mg/L	53	Standard
K	39	116.7	8.9	**0.1376**	0.024	17.2	mg/L	53	Standard
Ca	43	55.0	27.3	**1.6998**	1.016	59.7	mg/L	28	Standard
Fe	54	252.5	19.8	**0.0659**	0.031	47.4	mg/L	181	Standard
Fe	57	290.0	8.6	**0.1634**	0.047	28.6	mg/L	257	Standard
> **Sc-1**	45	51276.7	3.0				mg/L	55220	Standard
Cl	35	45886.1	2.5				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2533.5	8.3				ug/L	2040	Standard
P	31	24920.5	1.8				ug/L	20435	Standard
S	34	2648.6	4.3				ug/L	2430	Standard
Sr	88	91.7	31.5				ug/L	75	Standard
C	12	140.0	56.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	296.7	10.3				mg/L	7	Standard
Dy	164	126.3	16.4				mg/L	9	Standard
Ho-1	165	93.3	3.1				mg/L	10	Standard
Er	166	76.7	19.9				mg/L	23	Standard
I	127	12023.1	1.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.540	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.836	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152912
Report Date/Time: Thursday, June 30, 2016 20:25:44
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.575
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.981
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152913
Sample Date/Time: Thursday, June 30, 2016 20:26:39
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83144.2	1.2				ug/L	74916	Standard
	Be	9	203.3	14.4	**0.1702**	0.026	15.4	ug/L	10	Standard
	Al	27	3075507.5	1.9	**15.9662**	0.187	1.2	ug/L	1822	Standard
	Sc	45	53502.6	0.3				ug/L	55220	Standard
	Ti	47	4717.7	9.5	**11.9495**	1.106	9.3	ug/L	34	Standard
	V	51	34500.2	1.6	**3.7245**	0.081	2.2	ug/L	1938	Standard
	Cr	52	39833.6	0.7	**3.6208**	0.008	0.2	ug/L	9522	Standard
	Cr	53	5310.9	1.3	**4.6226**	0.076	1.6	ug/L	395	Standard
	Mn	55	1581170.6	1.4	**193.3537**	1.958	1.0	ug/L	902	Standard
	Co	59	20948.8	1.4	**2.6842**	0.032	1.2	ug/L	262	Standard
	Ni	60	12333.4	1.4	**5.6440**	0.100	1.8	ug/L	371	Standard
	Cu	65	14731.2	0.9	**6.9673**	0.099	1.4	ug/L	106	Standard
	Zn	66	35391.6	1.1	**28.3108**	0.153	0.5	ug/L	398	Standard
>	**Ge**	72	508664.2	0.9				ug/L	535147	Standard
	As	75	3470.9	0.5	**2.7815**	0.034	1.2	ug/L	-43	Standard
	Se	82	38.3	17.2	**0.2009**	0.054	26.8	ug/L	14	Standard
	Se-1	77	81.7	12.7	**0.3727**	0.124	33.3	ug/L	65	Standard
>	**Ga**	71	4624.0	2.2				mg/L	97	Standard
	Rb	85	73009.0	3.5				ug/L	15	Standard
	Y	89	476478.1	0.8				ug/L	465704	Standard
>	**Rh**	103	26.7	10.8				ug/L	10	Standard
	Mo	98	302.0	8.4	**0.1093**	0.009	8.6	ug/L	9	Standard
	Ag	107	240.0	5.1	**0.0258**	0.002	6.4	ug/L	82	Standard
	Cd	111	64.8	9.4	**0.0348**	0.003	8.2	mg/L	7	Standard
	Cd	114	166.0	9.3	**0.0375**	0.003	7.6	ug/L	21	Standard
>	**In**	115	618372.2	1.3				ug/L	619035	Standard
	Sn	118	1020.0	3.8	**0.0535**	0.006	10.7	ug/L	508	Standard
	Sb	123	609.5	9.9	**0.1196**	0.012	9.8	ug/L	86	Standard
	Ba	135	96258.1	0.3	**42.1337**	0.419	1.0	ug/L	79	Standard
	Ce	140	67600.5	0.7				ug/L	68	Standard
>	**Tb**	159	945334.0	0.5				ug/L	986982	Standard
	Ho	165	2460.2	3.8				ug/L	10	Standard
	Tl	203	331.0	2.6	**0.0419**	0.001	1.8	ug/L	13	Standard
	Tl	205	320.0	12.4	**0.0483**	0.005	10.3	ug/L	10	Standard
	Pb	206	22992.8	0.9	**3.8513**	0.058	1.5	ug/L	264	Standard
	Pb	207	19230.5	1.0	**3.5656**	0.061	1.7	ug/L	227	Standard
	Pb	208	81163.7	0.4	**3.9008**	0.028	0.7	ug/L	868	Standard
	U	238	1044.7	1.1	**0.1449**	0.002	1.4	ug/L	8	Standard
>	**Bi**	209	545921.2	0.7				ug/L	541014	Standard

Sample ID: L1606152913
Report Date/Time: Thursday, June 30, 2016 20:28:56
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1895.1	5.1	**2.0969**	0.103	4.9	mg/L	53	Standard
K	39	446.7	21.3	**0.7061**	0.165	23.3	mg/L	53	Standard
Ca	43	40.0	33.1	**0.6617**	0.767	115.9	mg/L	28	Standard
Fe	54	7059.5	3.4	**4.8453**	0.151	3.1	mg/L	181	Standard
Fe	57	1893.5	2.2	**4.5135**	0.117	2.6	mg/L	257	Standard
> **Sc-1**	45	53502.6	0.3				mg/L	55220	Standard
Cl	35	40968.1	5.2				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	5170.9	1.0				ug/L	2040	Standard
P	31	28127.8	1.6				ug/L	20435	Standard
S	34	2423.5	2.4				ug/L	2430	Standard
Sr	88	96.7	16.6				ug/L	75	Standard
C	12	116.7	9.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	356.7	18.7				mg/L	7	Standard
Dy	164	4073.6	6.6				mg/L	9	Standard
Ho-1	165	2460.2	3.8				mg/L	10	Standard
Er	166	2093.5	6.5				mg/L	23	Standard
I	127	13008.9	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.983	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.051	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152913
Report Date/Time: Thursday, June 30, 2016 20:28:56
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.893	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.907	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606153201
Sample Date/Time: Thursday, June 30, 2016 20:29:50
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89644.5	2.1				ug/L	74916	Standard
	Be	9	1925.1	4.6	**1.5220**	0.084	5.5	ug/L	10	Standard
	Al	27	33731374.7	1.7	**162.4486**	0.616	0.4	ug/L	1822	Standard
	Sc	45	75308.4	0.7				ug/L	55220	Standard
	Ti	47	72764.3	0.8	**185.9893**	1.903	1.0	ug/L	34	Standard
	V	51	344344.8	0.6	**39.0709**	0.350	0.9	ug/L	1938	Standard
	Cr	52	198511.1	1.2	**22.2654**	0.288	1.3	ug/L	9522	Standard
	Cr	53	24231.0	2.1	**22.5510**	0.638	2.8	ug/L	395	Standard
	Mn	55	8234177.7	0.9	**1010.8489**	9.075	0.9	ug/L	902	Standard
	Co	59	97114.6	1.1	**12.5705**	0.202	1.6	ug/L	262	Standard
	Ni	60	61192.7	0.5	**28.6787**	0.338	1.2	ug/L	371	Standard
	Cu	65	39756.1	0.2	**18.9676**	0.120	0.6	ug/L	106	Standard
	Zn	66	80311.0	0.5	**64.9085**	0.202	0.3	ug/L	398	Standard
>	**Ge**	72	506918.0	0.7				ug/L	535147	Standard
	As	75	9147.0	1.2	**7.2641**	0.054	0.7	ug/L	-43	Standard
	Se	82	190.4	12.1	**1.3851**	0.168	12.1	ug/L	14	Standard
	Se-1	77	196.3	6.5	**1.7188**	0.132	7.7	ug/L	65	Standard
>	**Ga**	71	30931.6	3.2				mg/L	97	Standard
	Rb	85	428695.1	2.1				ug/L	15	Standard
	Y	89	798406.2	0.4				ug/L	465704	Standard
>	**Rh**	103	131.7	21.6				ug/L	10	Standard
	Mo	98	12612.1	2.1	**4.1093**	0.084	2.0	ug/L	9	Standard
	Ag	107	391.7	4.3	**0.0465**	0.002	4.6	ug/L	82	Standard
	Cd	111	394.2	3.5	**0.1734**	0.005	3.1	mg/L	7	Standard
	Cd	114	1131.0	10.9	**0.2061**	0.021	10.3	ug/L	21	Standard
>	**In**	115	610796.2	0.3				ug/L	619035	Standard
	Sn	118	1331.7	3.0	**0.1040**	0.007	6.6	ug/L	508	Standard
	Sb	123	931.7	3.6	**0.1827**	0.007	3.6	ug/L	86	Standard
	Ba	135	545599.0	0.7	**241.8530**	1.754	0.7	ug/L	79	Standard
	Ce	140	1545043.5	0.7				ug/L	68	Standard
>	**Tb**	159	969755.6	0.5				ug/L	986982	Standard
	Ho	165	30089.9	1.2				ug/L	10	Standard
	Tl	203	1941.8	1.7	**0.2255**	0.004	1.9	ug/L	13	Standard
	Tl	205	1686.8	1.8	**0.2309**	0.003	1.3	ug/L	10	Standard
	Pb	206	82334.1	0.7	**14.4679**	0.157	1.1	ug/L	264	Standard
	Pb	207	67724.4	0.4	**13.1675**	0.052	0.4	ug/L	227	Standard
	Pb	208	285782.6	1.0	**14.4086**	0.082	0.6	ug/L	868	Standard
	U	238	14378.2	1.4	**1.9726**	0.018	0.9	ug/L	8	Standard
>	**Bi**	209	524096.0	0.5				ug/L	541014	Standard

Sample ID: L1606153201
Report Date/Time: Thursday, June 30, 2016 20:32:07
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**20.6926**	20.779	100.4	mg/L	2	Standard
Mg	24	3587.1	4.9	**2.8326**	0.159	5.6	mg/L	53	Standard
K	39	1336.7	2.1	**1.5875**	0.046	2.9	mg/L	53	Standard
Ca	43	956.7	5.7	**38.0674**	2.553	6.7	mg/L	28	Standard
Fe	54	24191.2	1.4	**11.9678**	0.197	1.6	mg/L	181	Standard
Fe	57	6944.9	2.7	**12.8265**	0.406	3.2	mg/L	257	Standard
> **Sc-1**	45	75308.4	0.7				mg/L	55220	Standard
Cl	35	41309.6	1.0				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	13139.1	8.9				ug/L	2040	Standard
P	31	56287.7	1.7				ug/L	20435	Standard
S	34	2321.8	4.4				ug/L	2430	Standard
Sr	88	488.3	4.8				ug/L	75	Standard
C	12	296.7	22.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	476.7	37.7				mg/L	7	Standard
Dy	164	49979.9	0.8				mg/L	9	Standard
Ho-1	165	30089.9	1.2				mg/L	10	Standard
Er	166	27070.8	2.7				mg/L	23	Standard
I	127	56145.8	6.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.659	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.725	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153201
Report Date/Time: Thursday, June 30, 2016 20:32:07
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.669
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.873
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606153201
Report Date/Time: Thursday, June 30, 2016 20:32:07
Page 3

Approved: July 01, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 20:33:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82411.9	2.0				ug/L	74916	Standard
	Be	9	63501.2	2.9	**54.7156**	1.591	2.9	ug/L	10	Standard
	Al	27	8936275.0	1.1	**46.8272**	1.363	2.9	ug/L	1822	Standard
	Sc	45	50709.8	2.6				ug/L	55220	Standard
	Ti	47	38704.7	1.1	**97.1505**	0.850	0.9	ug/L	34	Standard
	V	51	446648.8	0.9	**49.8380**	0.325	0.7	ug/L	1938	Standard
	Cr	52	432283.2	1.8	**48.8135**	0.759	1.6	ug/L	9522	Standard
	Cr	53	54529.6	1.8	**50.3157**	0.783	1.6	ug/L	395	Standard
	Mn	55	397792.4	1.2	**47.8745**	0.756	1.6	ug/L	902	Standard
	Co	59	408707.4	1.0	**52.0384**	0.389	0.7	ug/L	262	Standard
	Ni	60	106814.3	1.7	**49.2774**	0.643	1.3	ug/L	371	Standard
	Cu	65	105225.1	1.0	**49.4116**	0.576	1.2	ug/L	106	Standard
	Zn	66	62698.8	0.8	**49.7004**	0.463	0.9	ug/L	398	Standard
>	Ge	72	516010.1	0.4				ug/L	535147	Standard
	As	75	64411.7	0.4	**49.9261**	0.328	0.7	ug/L	-43	Standard
	Se	82	6628.1	1.4	**50.6222**	0.759	1.5	ug/L	14	Standard
	Se-1	77	4396.6	2.5	**50.0358**	1.361	2.7	ug/L	65	Standard
>	Ga	71	61.7	28.5				mg/L	97	Standard
	Rb	85	996.7	10.1				ug/L	15	Standard
	Y	89	456681.8	1.9				ug/L	465704	Standard
>	Rh	103	46.7	6.2				ug/L	10	Standard
	Mo	98	310943.7	0.9	**98.7097**	0.997	1.0	ug/L	9	Standard
	Ag	107	368163.3	0.1	**48.2932**	0.364	0.8	ug/L	82	Standard
	Cd	111	118493.3	0.3	**48.6275**	0.278	0.6	mg/L	7	Standard
	Cd	114	292362.7	1.4	**49.8198**	0.391	0.8	ug/L	21	Standard
>	In	115	625098.4	0.7				ug/L	619035	Standard
	Sn	118	328088.5	2.1	**49.8247**	1.168	2.3	ug/L	508	Standard
	Sb	123	260509.7	0.6	**48.7212**	0.650	1.3	ug/L	86	Standard
	Ba	135	109479.1	0.8	**47.4058**	0.586	1.2	ug/L	79	Standard
	Ce	140	758.4	29.4				ug/L	68	Standard
>	Tb	159	940749.3	1.4				ug/L	986982	Standard
	Ho	165	26.7	60.3				ug/L	10	Standard
	Tl	203	458765.3	0.6	**50.6626**	0.208	0.4	ug/L	13	Standard
	Tl	205	413032.5	0.8	**53.3915**	0.514	1.0	ug/L	10	Standard
	Pb	206	292542.6	0.8	**50.2992**	0.212	0.4	ug/L	264	Standard
	Pb	207	262126.4	0.9	**49.8679**	0.237	0.5	ug/L	227	Standard
	Pb	208	1068253.8	1.0	**52.7083**	0.744	1.4	ug/L	868	Standard
	U	238	400138.0	0.8	**53.4122**	0.638	1.2	ug/L	8	Standard
>	Bi	209	536606.7	0.4				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 20:35:20
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.9269**	17.185	173.1	mg/L	2	Standard
Mg	24	4815.8	3.0	**5.6803**	0.067	1.2	mg/L	53	Standard
K	39	1883.5	5.5	**3.4038**	0.145	4.3	mg/L	53	Standard
Ca	43	110.0	12.0	**5.1122**	0.842	16.5	mg/L	28	Standard
Fe	54	6834.6	1.8	**4.9544**	0.153	3.1	mg/L	181	Standard
Fe	57	1956.8	6.8	**4.9772**	0.240	4.8	mg/L	257	Standard
Sc-1	45	50709.8	2.6				mg/L	55220	Standard
Cl	35	41202.0	1.9				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2030.1	11.2				ug/L	2040	Standard
P	31	23463.2	2.4				ug/L	20435	Standard
S	34	2733.6	7.5				ug/L	2430	Standard
Sr	88	60.0	22.0				ug/L	75	Standard
C	12	116.7	47.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	220.0	41.7				mg/L	7	Standard
Dy	164	31.9	43.5				mg/L	9	Standard
Ho-1	165	26.7	60.3				mg/L	10	Standard
Er	166	30.0	100.0				mg/L	23	Standard
I	127	12453.5	8.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.431		
Al	27	93.654		
Sc	45			
Ti	47	97.150		
V	51	99.676		
Cr	52	97.627		
Cr	53			
Mn	55	95.749		
Co	59	104.077		
Ni	60	98.555		
Cu	65	98.823		
Zn	66	99.401		
Ge	72		96.424	
As	75	99.852		
Se	82	101.244		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 20:35:20
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.710		
Ag	107	96.586		
Cd	111	97.255		
Cd	114			
In	115			100.980
Sn	118	99.649		
Sb	123	97.442		
Ba	135	94.812		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.325		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.417		
U	238	106.824		
Bi	209			99.185
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 20:35:20
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 20:36:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82128.7	1.1				ug/L	74916	Standard
	Be	9	30.0	16.7	**0.0223**	0.004	18.3	ug/L	10	Standard
	Al	27	5192.6	9.2	**0.0250**	0.002	9.1	ug/L	1822	Standard
	Sc	45	51186.4	3.6				ug/L	55220	Standard
	Ti	47	43.3	23.6	**0.0390**	0.025	64.9	ug/L	34	Standard
	V	51	1718.2	4.9	**-0.0032**	0.009	291.6	ug/L	1938	Standard
	Cr	52	7393.1	1.8	**-0.1840**	0.014	7.8	ug/L	9522	Standard
	Cr	53	693.3	17.3	**0.2598**	0.114	43.8	ug/L	395	Standard
	Mn	55	1321.1	4.6	**0.0547**	0.007	13.5	ug/L	902	Standard
	Co	59	293.7	10.4	**0.0147**	0.004	27.4	ug/L	262	Standard
	Ni	60	410.0	7.5	**0.0448**	0.015	32.9	ug/L	371	Standard
	Cu	65	188.3	4.3	**0.0301**	0.004	13.0	ug/L	106	Standard
	Zn	66	383.3	1.0	**-0.0397**	0.004	10.4	ug/L	398	Standard
>	**Ge**	72	514250.8	0.4				ug/L	535147	Standard
	As	75	-54.4	100.9	**0.0129**	0.043	331.1	ug/L	-43	Standard
	Se	82	19.7	51.7	**0.0538**	0.077	143.9	ug/L	14	Standard
	Se-1	77	63.0	5.7	**0.1465**	0.044	30.1	ug/L	65	Standard
>	**Ga**	71	55.0	36.4				mg/L	97	Standard
	Rb	85	68.3	22.4				ug/L	15	Standard
	Y	89	449659.4	1.7				ug/L	465704	Standard
>	**Rh**	103	23.3	24.7				ug/L	10	Standard
	Mo	98	335.6	19.0	**0.1188**	0.020	16.7	ug/L	9	Standard
	Ag	107	154.3	7.0	**0.0142**	0.001	9.5	ug/L	82	Standard
	Cd	111	22.4	30.8	**0.0171**	0.003	16.3	mg/L	7	Standard
	Cd	114	51.4	43.4	**0.0177**	0.004	21.3	ug/L	21	Standard
>	**In**	115	625232.6	0.5				ug/L	619035	Standard
	Sn	118	1065.0	15.1	**0.0587**	0.025	42.6	ug/L	508	Standard
	Sb	123	705.8	28.7	**0.1365**	0.038	28.0	ug/L	86	Standard
	Ba	135	108.3	3.0	**0.0273**	0.001	4.4	ug/L	79	Standard
	Ce	140	348.3	13.3				ug/L	68	Standard
>	**Tb**	159	943281.6	0.4				ug/L	986982	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	113.3	12.2	**0.0182**	0.001	8.2	ug/L	13	Standard
	Tl	205	100.0	30.0	**0.0203**	0.004	18.7	ug/L	10	Standard
	Pb	206	363.3	6.5	**0.0234**	0.004	17.0	ug/L	264	Standard
	Pb	207	296.3	6.8	**0.0220**	0.004	17.0	ug/L	227	Standard
	Pb	208	1320.0	5.6	**0.0254**	0.004	14.1	ug/L	868	Standard
	U	238	99.0	19.9	**0.0208**	0.003	12.3	ug/L	8	Standard
>	**Bi**	209	548536.9	0.0				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 20:38:31
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	75.0	48.1	**0.0541**	0.045	82.5	mg/L	53	Standard
K	39	33.3	31.2	**-0.0153**	0.017	109.6	mg/L	53	Standard
Ca	43	23.3	32.7	**-0.2522**	0.460	182.3	mg/L	28	Standard
Fe	54	165.6	21.1	**0.0031**	0.027	859.8	mg/L	181	Standard
Fe	57	250.0	23.1	**0.0548**	0.181	330.7	mg/L	257	Standard
> **Sc-1**	45	51186.4	3.6				mg/L	55220	Standard
Cl	35	41182.6	1.6				ug/L	35504	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	1913.5	4.1				ug/L	2040	Standard
P	31	22580.1	1.2				ug/L	20435	Standard
S	34	2533.5	8.6				ug/L	2430	Standard
Sr	88	78.3	30.2				ug/L	75	Standard
C	12	96.7	52.1				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	230.0	4.3				mg/L	7	Standard
Dy	164	171.3	13.6				mg/L	9	Standard
Ho-1	165	11.7	107.9				mg/L	10	Standard
Er	166	43.3	58.1				mg/L	23	Standard
I	127	5109.2	12.5				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.095	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 20:38:31
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.001
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.390
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 20:38:31
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 30, 2016 20:39:27
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80112.9	1.5				ug/L	74916	Standard
	Be	9	261.7	14.3	**0.2284**	0.034	15.1	ug/L	10	Standard
	Al	27	1921.8	14.3	**0.0080**	0.001	16.8	ug/L	1822	Standard
	Sc	45	48402.2	0.5				ug/L	55220	Standard
	Ti	47	27.3	11.8	**0.0013**	0.008	664.7	ug/L	34	Standard
	V	51	4894.0	1.7	**0.3738**	0.012	3.1	ug/L	1938	Standard
	Cr	52	13943.7	1.3	**0.6328**	0.015	2.4	ug/L	9522	Standard
	Cr	53	1380.1	5.0	**0.9470**	0.060	6.3	ug/L	395	Standard
	Mn	55	4302.6	2.0	**0.4346**	0.013	2.9	ug/L	902	Standard
	Co	59	3213.7	1.7	**0.4029**	0.007	1.8	ug/L	262	Standard
	Ni	60	3515.4	1.2	**1.5461**	0.028	1.8	ug/L	371	Standard
	Cu	65	1705.1	1.9	**0.7749**	0.015	2.0	ug/L	106	Standard
	Zn	66	7760.7	0.6	**6.0954**	0.054	0.9	ug/L	398	Standard
>	**Ge**	72	496193.5	0.5				ug/L	535147	Standard
	As	75	427.1	10.4	**0.3992**	0.036	9.1	ug/L	-43	Standard
	Se	82	66.0	22.5	**0.4286**	0.118	27.6	ug/L	14	Standard
	Se-1	77	89.7	9.7	**0.4918**	0.099	20.1	ug/L	65	Standard
>	**Ga**	71	40.0	33.1				mg/L	97	Standard
	Rb	85	45.0	11.1				ug/L	15	Standard
	Y	89	428520.5	0.7				ug/L	465704	Standard
>	**Rh**	103	26.7	47.2				ug/L	10	Standard
	Mo	98	135.3	10.3	**0.0568**	0.005	8.2	ug/L	9	Standard
	Ag	107	2893.9	2.4	**0.3865**	0.009	2.3	ug/L	82	Standard
	Cd	111	514.8	5.0	**0.2263**	0.011	4.7	mg/L	7	Standard
	Cd	114	1337.4	8.6	**0.2445**	0.020	8.1	ug/L	21	Standard
>	**In**	115	604537.0	0.2				ug/L	619035	Standard
	Sn	118	533.3	11.2	**-0.0195**	0.010	49.0	ug/L	508	Standard
	Sb	123	1880.2	1.4	**0.3679**	0.005	1.3	ug/L	86	Standard
	Ba	135	1521.1	0.6	**0.6617**	0.004	0.6	ug/L	79	Standard
	Ce	140	56.7	48.6				ug/L	68	Standard
>	**Tb**	159	922348.4	0.4				ug/L	986982	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	698.7	3.6	**0.0831**	0.002	2.8	ug/L	13	Standard
	Tl	205	633.3	15.8	**0.0896**	0.013	14.7	ug/L	10	Standard
	Pb	206	1409.4	1.3	**0.2047**	0.004	2.1	ug/L	264	Standard
	Pb	207	1194.0	0.4	**0.1941**	0.002	0.9	ug/L	227	Standard
	Pb	208	5007.3	0.9	**0.2089**	0.001	0.3	ug/L	868	Standard
	U	238	2975.6	1.6	**0.4051**	0.008	2.0	ug/L	8	Standard
>	**Bi**	209	536583.7	0.6				ug/L	541014	Standard

Sample ID: QC Std 8
Report Date/Time: Thursday, June 30, 2016 20:41:44
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	52.0	**0.0277**	0.033	118.0	mg/L	53	Standard
K	39	30.0	60.1	**-0.0180**	0.035	192.8	mg/L	53	Standard
Ca	43	25.0	20.0	**-0.0605**	0.317	523.5	mg/L	28	Standard
Fe	54	115.1	13.0	**-0.0293**	0.011	38.4	mg/L	181	Standard
Fe	57	271.7	24.0	**0.1575**	0.193	122.6	mg/L	257	Standard
Sc-1	45	48402.2	0.5				mg/L	55220	Standard
Cl	35	40155.8	1.0				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1830.1	7.5				ug/L	2040	Standard
P	31	15689.8	3.7				ug/L	20435	Standard
S	34	2581.9	4.2				ug/L	2430	Standard
Sr	88	76.7	16.4				ug/L	75	Standard
C	12	103.3	43.6				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	213.3	35.5				mg/L	7	Standard
Dy	164	11.7	90.2				mg/L	9	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	33.3	62.5				mg/L	23	Standard
I	127	1745.1	30.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	114.223		
Al	27			
Sc	45			
Ti	47			
V	51	93.449		
Cr	52	79.097		
Cr	53			
Mn	55	86.911		
Co	59	100.725		
Ni	60	96.630		
Cu	65	96.860		
Zn	66	97.527		
Ge	72		92.721	
As	75	99.789		
Se	82	107.150		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
Report Date/Time: Thursday, June 30, 2016 20:41:44
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.620		
Cd	111	94.287		
Cd	114			
> In	115			97.658
Sn	118			
Sb	123	91.986		
Ba	135	88.222		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.934		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.449		
U	238	101.266		
> Bi	209			99.181
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Thursday, June 30, 2016 20:41:44
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Thursday, June 30, 2016 20:42:40
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76651.8	1.2				ug/L	74916	Standard
	Be	9	28.3	50.9	**0.0227**	0.014	60.0	ug/L	10	Standard
	Al	27	640328.6	1.2	**3.6044**	0.062	1.7	ug/L	1822	Standard
	Sc	45	43241.6	2.8				ug/L	55220	Standard
	Ti	47	248.0	8.7	**0.6477**	0.062	9.5	ug/L	34	Standard
	V	51	2583.8	3.1	**0.1372**	0.011	7.8	ug/L	1938	Standard
	Cr	52	5507.0	1.7	**-0.3077**	0.014	4.4	ug/L	9522	Standard
	Cr	53	3593.8	14.6	**3.4628**	0.558	16.1	ug/L	395	Standard
	Mn	55	5635941.5	0.8	**783.1928**	7.420	0.9	ug/L	902	Standard
	Co	59	6792.5	0.8	**0.9742**	0.006	0.6	ug/L	262	Standard
	Ni	60	2130.5	1.5	**0.9904**	0.019	1.9	ug/L	371	Standard
	Cu	65	2467.9	3.3	**1.2782**	0.046	3.6	ug/L	106	Standard
	Zn	66	6137.2	2.5	**5.2984**	0.146	2.8	ug/L	398	Standard
>	**Ge**	72	447801.7	0.2				ug/L	535147	Standard
	As	75	1508.3	2.0	**1.4009**	0.025	1.8	ug/L	-43	Standard
	Se	82	238.5	5.9	**2.0064**	0.127	6.3	ug/L	14	Standard
	Se-1	77	249.0	8.1	**2.7217**	0.263	9.7	ug/L	65	Standard
>	**Ga**	71	240.0	4.2				mg/L	97	Standard
	Rb	85	63461.0	2.7				ug/L	15	Standard
	Y	89	391275.2	1.5				ug/L	465704	Standard
>	**Rh**	103	106.7	13.5				ug/L	10	Standard
	Mo	98	1073579.5	0.4	**401.7377**	3.626	0.9	ug/L	9	Standard
	Ag	107	87.3	13.7	**0.0074**	0.002	25.3	ug/L	82	Standard
	Cd	111	-818.3	3.2	**-0.3880**	0.016	4.0	mg/L	7	Standard
	Cd	114	1651.3	10.4	**0.3409**	0.038	11.2	ug/L	21	Standard
>	**In**	115	530268.9	1.2				ug/L	619035	Standard
	Sn	118	203.3	18.1	**-0.0670**	0.006	9.2	ug/L	508	Standard
	Sb	123	1149.6	6.1	**0.2577**	0.013	5.0	ug/L	86	Standard
	Ba	135	3359.0	0.8	**1.6958**	0.031	1.8	ug/L	79	Standard
	Ce	140	3432.1	5.6				ug/L	68	Standard
>	**Tb**	159	837304.0	0.6				ug/L	986982	Standard
	Ho	165	81.7	27.6				ug/L	10	Standard
	Tl	203	136.7	19.4	**0.0233**	0.004	15.2	ug/L	13	Standard
	Tl	205	88.3	23.6	**0.0208**	0.003	15.2	ug/L	10	Standard
	Pb	206	550.7	4.5	**0.0708**	0.005	7.7	ug/L	264	Standard
	Pb	207	451.7	9.0	**0.0654**	0.010	14.9	ug/L	227	Standard
	Pb	208	1928.7	2.6	**0.0708**	0.004	5.7	ug/L	868	Standard
	U	238	98.0	36.2	**0.0229**	0.006	24.4	ug/L	8	Standard
>	**Bi**	209	468325.2	1.1				ug/L	541014	Standard

Sample ID: L1606036203
Report Date/Time: Thursday, June 30, 2016 20:44:57
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	119319.7	0.6	**166.1256**	5.606	3.4	mg/L	53	Standard
K	39	5299.3	3.8	**11.4085**	0.316	2.8	mg/L	53	Standard
Ca	43	215.0	20.9	**13.8398**	2.992	21.6	mg/L	28	Standard
Fe	54	637.3	4.6	**0.4356**	0.010	2.3	mg/L	181	Standard
Fe	57	536.7	4.4	**1.1520**	0.042	3.7	mg/L	257	Standard
> **Sc-1**	45	43241.6	2.8				mg/L	55220	Standard
Cl	35	58098.5	1.3				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	34676.3	1.4				ug/L	2040	Standard
P	31	6889.9	4.6				ug/L	20435	Standard
S	34	2093.5	2.2				ug/L	2430	Standard
Sr	88	331.7	15.3				ug/L	75	Standard
C	12	116.7	54.4				mg/L	293	Standard
N	14	6.7	173.2				mg/L	0	Standard
Hg	202	3307.0	25.9				mg/L	7	Standard
Dy	164	130.0	8.2				mg/L	9	Standard
Ho-1	165	81.7	27.6				mg/L	10	Standard
Er	166	70.0	24.7				mg/L	23	Standard
I	127	366229.6	3.2				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.316	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		83.678	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606036203
Report Date/Time: Thursday, June 30, 2016 20:44:57
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		85.661
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.564
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606036203
Report Date/Time: Thursday, June 30, 2016 20:44:57
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 20:45:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83990.5	1.6				ug/L	74916	Standard
	Be	9	65171.5	1.4	**55.0945**	0.393	0.7	ug/L	10	Standard
	Al	27	8906533.3	1.1	**45.7799**	0.406	0.9	ug/L	1822	Standard
	Sc	45	48572.8	1.9				ug/L	55220	Standard
	Ti	47	37751.3	1.5	**97.3003**	0.891	0.9	ug/L	34	Standard
	V	51	436290.7	1.3	**49.9895**	0.349	0.7	ug/L	1938	Standard
	Cr	52	422974.4	1.0	**49.0536**	0.698	1.4	ug/L	9522	Standard
	Cr	53	52040.9	1.9	**49.3027**	0.910	1.8	ug/L	395	Standard
	Mn	55	384063.1	1.2	**47.4615**	0.495	1.0	ug/L	902	Standard
	Co	59	398080.6	0.9	**52.0523**	0.925	1.8	ug/L	262	Standard
	Ni	60	103678.2	0.6	**49.1206**	0.741	1.5	ug/L	371	Standard
	Cu	65	102993.3	1.5	**49.6596**	0.307	0.6	ug/L	106	Standard
	Zn	66	61365.7	1.8	**49.9467**	0.087	0.2	ug/L	398	Standard
>	Ge	72	502569.8	2.0				ug/L	535147	Standard
	As	75	61842.1	1.6	**49.2214**	0.636	1.3	ug/L	-43	Standard
	Se	82	6409.0	1.2	**50.2632**	0.606	1.2	ug/L	14	Standard
	Se-1	77	4323.6	1.1	**50.5321**	0.649	1.3	ug/L	65	Standard
>	Ga	71	70.0	43.4				mg/L	97	Standard
	Rb	85	973.4	6.4				ug/L	15	Standard
	Y	89	445280.6	2.4				ug/L	465704	Standard
>	Rh	103	56.7	13.5				ug/L	10	Standard
	Mo	98	305918.8	0.8	**98.0968**	1.357	1.4	ug/L	9	Standard
	Ag	107	361617.9	0.6	**47.9187**	1.063	2.2	ug/L	82	Standard
	Cd	111	115336.2	1.8	**47.8055**	0.563	1.2	mg/L	7	Standard
	Cd	114	283581.1	0.5	**48.8167**	0.800	1.6	ug/L	21	Standard
>	In	115	618947.1	2.1				ug/L	619035	Standard
	Sn	118	321189.0	1.3	**49.2793**	1.581	3.2	ug/L	508	Standard
	Sb	123	254680.3	1.4	**48.1148**	1.181	2.5	ug/L	86	Standard
	Ba	135	105862.2	0.1	**46.3075**	1.051	2.3	ug/L	79	Standard
	Ce	140	278.3	15.3				ug/L	68	Standard
>	Tb	159	931972.9	1.4				ug/L	986982	Standard
	Ho	165	15.0	33.3				ug/L	10	Standard
	Tl	203	450548.5	1.4	**49.5430**	0.196	0.4	ug/L	13	Standard
	Tl	205	402706.3	2.1	**51.8449**	1.535	3.0	ug/L	10	Standard
	Pb	206	286824.8	0.4	**49.1101**	0.587	1.2	ug/L	264	Standard
	Pb	207	262479.7	0.1	**49.7276**	0.566	1.1	ug/L	227	Standard
	Pb	208	1067833.3	1.0	**52.4694**	1.100	2.1	ug/L	868	Standard
	U	238	395668.2	0.7	**52.5954**	0.841	1.6	ug/L	8	Standard
>	Bi	209	538895.0	1.1				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 20:48:10
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.4524**	18.095	173.1	mg/L	2	Standard
Mg	24	4662.4	2.7	**5.7440**	0.220	3.8	mg/L	53	Standard
K	39	1790.1	8.6	**3.3791**	0.319	9.4	mg/L	53	Standard
Ca	43	108.3	7.1	**5.2962**	0.370	7.0	mg/L	28	Standard
Fe	54	6691.4	1.9	**5.0646**	0.058	1.1	mg/L	181	Standard
Fe	57	1865.1	3.8	**4.9539**	0.208	4.2	mg/L	257	Standard
> **Sc-1**	45	48572.8	1.9				mg/L	55220	Standard
Cl	35	40060.9	1.3				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2233.5	7.2				ug/L	2040	Standard
P	31	22233.0	3.1				ug/L	20435	Standard
S	34	2528.5	7.9				ug/L	2430	Standard
Sr	88	91.7	8.3				ug/L	75	Standard
C	12	140.0	32.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	850.0	27.5				mg/L	7	Standard
Dy	164	19.4	103.3				mg/L	9	Standard
Ho-1	165	15.0	33.3				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	15705.0	17.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	110.189		
Al	27	91.560		
Sc	45			
Ti	47	97.300		
V	51	99.979		
Cr	52	98.107		
Cr	53			
Mn	55	94.923		
Co	59	104.105		
Ni	60	98.241		
Cu	65	99.319		
Zn	66	99.893		
> Ge	72		93.912	
As	75	98.443		
Se	82	100.526		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 20:48:10
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	98.097		
Ag	107	95.837		
Cd	111	95.611		
Cd	114			
> In	115			99.986
Sn	118	98.559		
Sb	123	96.230		
Ba	135	92.615		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.086		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.939		
U	238	105.191		
> Bi	209			99.608
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 20:48:10
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 20:49:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81895.8	2.0				ug/L	74916	Standard
	Be	9	26.7	39.0	**0.0195**	0.009	45.9	ug/L	10	Standard
	Al	27	3003.6	21.0	**0.0135**	0.003	23.7	ug/L	1822	Standard
	Sc	45	48704.8	1.8				ug/L	55220	Standard
	Ti	47	37.3	15.5	**0.0267**	0.015	54.4	ug/L	34	Standard
	V	51	1722.1	9.7	**0.0031**	0.020	658.5	ug/L	1938	Standard
	Cr	52	6815.5	0.8	**-0.2272**	0.010	4.5	ug/L	9522	Standard
	Cr	53	573.3	10.8	**0.1635**	0.057	35.1	ug/L	395	Standard
	Mn	55	1172.7	8.8	**0.0410**	0.012	29.7	ug/L	902	Standard
	Co	59	290.0	11.9	**0.0153**	0.004	28.6	ug/L	262	Standard
	Ni	60	366.0	6.0	**0.0294**	0.010	34.3	ug/L	371	Standard
	Cu	65	230.7	7.0	**0.0533**	0.008	14.8	ug/L	106	Standard
	Zn	66	407.3	7.7	**-0.0106**	0.027	252.5	ug/L	398	Standard
>	**Ge**	72	499312.8	0.6				ug/L	535147	Standard
	As	75	-29.2	59.1	**0.0319**	0.014	43.1	ug/L	-43	Standard
	Se	82	22.7	5.9	**0.0825**	0.012	14.0	ug/L	14	Standard
	Se-1	77	47.0	27.2	**-0.0227**	0.150	659.5	ug/L	65	Standard
>	**Ga**	71	36.7	28.4				mg/L	97	Standard
	Rb	85	51.7	29.6				ug/L	15	Standard
	Y	89	445183.0	1.4				ug/L	465704	Standard
>	**Rh**	103	50.0	43.6				ug/L	10	Standard
	Mo	98	1174.7	4.2	**0.3885**	0.018	4.5	ug/L	9	Standard
	Ag	107	153.3	11.2	**0.0142**	0.002	15.5	ug/L	82	Standard
	Cd	111	17.6	18.0	**0.0152**	0.001	8.4	mg/L	7	Standard
	Cd	114	83.5	22.5	**0.0233**	0.003	13.5	ug/L	21	Standard
>	**In**	115	619708.4	0.7				ug/L	619035	Standard
	Sn	118	988.4	8.9	**0.0483**	0.013	27.6	ug/L	508	Standard
	Sb	123	746.5	30.0	**0.1454**	0.043	29.6	ug/L	86	Standard
	Ba	135	57.7	13.9	**0.0055**	0.003	60.4	ug/L	79	Standard
	Ce	140	110.0	20.8				ug/L	68	Standard
>	**Tb**	159	926404.8	1.4				ug/L	986982	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	111.0	16.0	**0.0181**	0.002	10.0	ug/L	13	Standard
	Tl	205	75.0	11.5	**0.0173**	0.001	5.8	ug/L	10	Standard
	Pb	206	345.0	8.6	**0.0210**	0.005	24.9	ug/L	264	Standard
	Pb	207	301.0	12.6	**0.0235**	0.007	27.7	ug/L	227	Standard
	Pb	208	1232.7	3.5	**0.0219**	0.002	9.1	ug/L	868	Standard
	U	238	74.3	13.5	**0.0177**	0.001	7.2	ug/L	8	Standard
>	**Bi**	209	541724.9	1.0				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 20:51:21
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	81.7	30.8	**0.0665**	0.032	48.4	mg/L	53	Standard
K	39	30.0	60.1	**-0.0186**	0.034	180.1	mg/L	53	Standard
Ca	43	16.7	34.6	**-0.6009**	0.384	63.8	mg/L	28	Standard
Fe	54	179.0	19.4	**0.0193**	0.025	127.5	mg/L	181	Standard
Fe	57	233.3	32.7	**0.0373**	0.225	603.1	mg/L	257	Standard
Sc-1	45	48704.8	1.8				mg/L	55220	Standard
Cl	35	39728.7	1.2				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1956.8	2.4				ug/L	2040	Standard
P	31	21510.3	0.9				ug/L	20435	Standard
S	34	2288.5	1.5				ug/L	2430	Standard
Sr	88	70.0	32.7				ug/L	75	Standard
C	12	173.3	17.6				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	363.3	43.9				mg/L	7	Standard
Dy	164	148.9	37.7				mg/L	9	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	23.3	89.2				mg/L	23	Standard
I	127	6463.1	9.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.304	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 20:51:21
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.109
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.131
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 20:51:21
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 20:52:16
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74727.2	2.6				ug/L	74916	Standard
	Be	9	25.0	80.0	**0.0199**	0.018	92.2	ug/L	10	Standard
	Al	27	5329.3	24.9	**0.0285**	0.008	27.8	ug/L	1822	Standard
	Sc	45	43377.0	2.4				ug/L	55220	Standard
	Ti	47	95.7	19.0	**0.2005**	0.047	23.3	ug/L	34	Standard
	V	51	4034.0	3.0	**0.3136**	0.012	4.0	ug/L	1938	Standard
	Cr	52	16438.9	5.2	**1.0993**	0.075	6.8	ug/L	9522	Standard
	Cr	53	685.0	9.8	**0.3309**	0.059	17.8	ug/L	395	Standard
	Mn	55	2971.0	23.2	**0.3001**	0.100	33.3	ug/L	902	Standard
	Co	59	289.7	6.6	**0.0189**	0.003	18.3	ug/L	262	Standard
	Ni	60	402.7	3.2	**0.0647**	0.006	10.0	ug/L	371	Standard
	Cu	65	334.0	2.3	**0.1185**	0.004	3.2	ug/L	106	Standard
	Zn	66	962.7	2.9	**0.5205**	0.017	3.3	ug/L	398	Standard
>	**Ge**	72	457222.8	1.7				ug/L	535147	Standard
	As	75	-15.7	124.6	**0.0417**	0.017	40.7	ug/L	-43	Standard
	Se	82	18.9	33.3	**0.0666**	0.057	85.8	ug/L	14	Standard
	Se-1	77	54.0	10.3	**0.1196**	0.060	50.6	ug/L	65	Standard
>	**Ga**	71	70.0	31.1				mg/L	97	Standard
	Rb	85	136.7	13.9				ug/L	15	Standard
	Y	89	396044.5	2.4				ug/L	465704	Standard
>	**Rh**	103	15.0	0.0				ug/L	10	Standard
	Mo	98	6104.3	29.3	**2.1953**	0.662	30.2	ug/L	9	Standard
	Ag	107	146.0	16.1	**0.0155**	0.003	22.0	ug/L	82	Standard
	Cd	111	22.1	12.0	**0.0181**	0.001	7.5	mg/L	7	Standard
	Cd	114	72.7	19.8	**0.0229**	0.003	12.7	ug/L	21	Standard
>	**In**	115	556161.3	1.4				ug/L	619035	Standard
	Sn	118	1453.4	5.0	**0.1451**	0.011	7.5	ug/L	508	Standard
	Sb	123	235.3	31.1	**0.0540**	0.016	29.5	ug/L	86	Standard
	Ba	135	137.3	10.9	**0.0472**	0.007	14.8	ug/L	79	Standard
	Ce	140	118.3	17.6				ug/L	68	Standard
>	**Tb**	159	853667.4	0.8				ug/L	986982	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	839.7	20.5	**0.1050**	0.021	20.1	ug/L	13	Standard
	Tl	205	71.7	33.0	**0.0176**	0.003	18.3	ug/L	10	Standard
	Pb	206	351.7	6.0	**0.0268**	0.004	16.6	ug/L	264	Standard
	Pb	207	304.0	1.1	**0.0285**	0.001	4.5	ug/L	227	Standard
	Pb	208	1256.4	10.7	**0.0278**	0.007	25.6	ug/L	868	Standard
	U	238	77.3	38.0	**0.0189**	0.004	22.5	ug/L	8	Standard
>	**Bi**	209	503236.8	1.0				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 20:54:33
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	275.0	13.7	**0.3470**	0.051	14.8	mg/L	53	Standard
K	39	20.0	25.0	**-0.0326**	0.012	36.3	mg/L	53	Standard
Ca	43	31.7	50.8	**0.6274**	1.227	195.5	mg/L	28	Standard
Fe	54	68.3	18.4	**-0.0594**	0.012	19.5	mg/L	181	Standard
Fe	57	256.7	12.4	**0.2034**	0.114	56.2	mg/L	257	Standard
> **Sc-1**	45	43377.0	2.4				mg/L	55220	Standard
Cl	35	35122.0	1.2				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1736.8	10.5				ug/L	2040	Standard
P	31	8842.6	4.7				ug/L	20435	Standard
S	34	2135.2	4.7				ug/L	2430	Standard
Sr	88	68.3	18.4				ug/L	75	Standard
C	12	3483.7	8.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	57892.0	25.9				mg/L	7	Standard
Dy	164	3.2	186.4				mg/L	9	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	2947.0	35.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.747	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.439	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 20:54:33
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.843
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.017
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 20:54:33
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 20:55:28
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74107.6	3.4				ug/L	74916	Standard
	Be	9	18.3	31.5	**0.0141**	0.006	42.8	ug/L	10	Standard
	Al	27	4844.5	86.9	**0.0263**	0.026	97.1	ug/L	1822	Standard
	Sc	45	44092.4	0.2				ug/L	55220	Standard
	Ti	47	70.3	15.9	**0.1280**	0.034	26.6	ug/L	34	Standard
	V	51	4108.2	2.7	**0.3192**	0.020	6.3	ug/L	1938	Standard
	Cr	52	16358.2	1.0	**1.0734**	0.017	1.6	ug/L	9522	Standard
	Cr	53	638.3	11.9	**0.2775**	0.078	28.3	ug/L	395	Standard
	Mn	55	3246.8	71.9	**0.3361**	0.323	96.1	ug/L	902	Standard
	Co	59	336.3	57.6	**0.0254**	0.028	112.0	ug/L	262	Standard
	Ni	60	401.7	10.9	**0.0628**	0.025	40.4	ug/L	371	Standard
	Cu	65	302.7	3.1	**0.1006**	0.005	4.6	ug/L	106	Standard
	Zn	66	958.0	2.9	**0.5097**	0.017	3.3	ug/L	398	Standard
>	**Ge**	72	460737.3	1.2				ug/L	535147	Standard
	As	75	-51.4	19.2	**0.0107**	0.008	79.3	ug/L	-43	Standard
	Se	82	17.6	15.9	**0.0542**	0.026	47.9	ug/L	14	Standard
	Se-1	77	52.0	10.7	**0.0890**	0.070	78.3	ug/L	65	Standard
>	**Ga**	71	48.3	15.8				mg/L	97	Standard
	Rb	85	86.7	23.3				ug/L	15	Standard
	Y	89	392306.0	1.1				ug/L	465704	Standard
>	**Rh**	103	26.7	75.8				ug/L	10	Standard
	Mo	98	3317.0	55.2	**1.2027**	0.666	55.4	ug/L	9	Standard
	Ag	107	87.3	8.1	**0.0068**	0.001	17.4	ug/L	82	Standard
	Cd	111	7.2	41.2	**0.0112**	0.001	11.8	mg/L	7	Standard
	Cd	114	32.4	63.2	**0.0151**	0.004	26.2	ug/L	21	Standard
>	**In**	115	555514.4	1.5				ug/L	619035	Standard
	Sn	118	1463.4	7.7	**0.1472**	0.019	12.7	ug/L	508	Standard
	Sb	123	120.8	37.8	**0.0299**	0.010	33.0	ug/L	86	Standard
	Ba	135	91.7	10.3	**0.0250**	0.004	16.5	ug/L	79	Standard
	Ce	140	56.7	58.8				ug/L	68	Standard
>	**Tb**	159	847707.0	2.4				ug/L	986982	Standard
	Ho	165	16.7	86.6				ug/L	10	Standard
	Tl	203	394.0	52.5	**0.0527**	0.025	47.6	ug/L	13	Standard
	Tl	205	63.3	139.1	**0.0165**	0.012	74.7	ug/L	10	Standard
	Pb	206	291.3	3.6	**0.0157**	0.003	16.4	ug/L	264	Standard
	Pb	207	294.3	19.3	**0.0266**	0.012	46.6	ug/L	227	Standard
	Pb	208	1276.7	28.9	**0.0290**	0.020	70.5	ug/L	868	Standard
	U	238	51.3	151.3	**0.0153**	0.011	73.4	ug/L	8	Standard
>	**Bi**	209	503355.5	1.6				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 20:57:45
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	240.0	22.0	**0.2930**	0.072	24.6	mg/L	53	Standard
K	39	33.3	17.3	**-0.0052**	0.012	235.9	mg/L	53	Standard
Ca	43	15.0	33.3	**-0.6108**	0.355	58.1	mg/L	28	Standard
Fe	54	49.8	55.4	**-0.0762**	0.024	30.8	mg/L	181	Standard
Fe	57	285.0	10.7	**0.2825**	0.101	35.6	mg/L	257	Standard
> **Sc-1**	45	44092.4	0.2				mg/L	55220	Standard
Cl	35	35796.9	0.4				ug/L	35504	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1746.8	6.3				ug/L	2040	Standard
P	31	8695.8	2.3				ug/L	20435	Standard
S	34	2180.2	3.8				ug/L	2430	Standard
Sr	88	55.0	41.7				ug/L	75	Standard
C	12	3950.5	2.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	28517.7	48.5				mg/L	7	Standard
Dy	164	5.7	108.5				mg/L	9	Standard
Ho-1	165	16.7	86.6				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	1731.8	10.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.920	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.095	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 20:57:45
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.739
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.039
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 20:57:45
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 20:58:40
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72422.8	2.6				ug/L	74916	Standard
	Be	9	18.3	56.8	**0.0142**	0.010	68.2	ug/L	10	Standard
	Al	27	2110.1	8.4	**0.0102**	0.001	9.1	ug/L	1822	Standard
	Sc	45	43602.7	1.2				ug/L	55220	Standard
	Ti	47	62.3	13.8	**0.1046**	0.022	21.3	ug/L	34	Standard
	V	51	4028.3	2.4	**0.3078**	0.013	4.3	ug/L	1938	Standard
	Cr	52	16458.3	3.4	**1.0804**	0.041	3.8	ug/L	9522	Standard
	Cr	53	546.7	4.5	**0.1805**	0.026	14.2	ug/L	395	Standard
	Mn	55	1820.4	5.7	**0.1401**	0.013	9.1	ug/L	902	Standard
	Co	59	213.3	4.3	**0.0075**	0.001	16.9	ug/L	262	Standard
	Ni	60	381.0	3.9	**0.0513**	0.005	10.6	ug/L	371	Standard
	Cu	65	257.7	3.0	**0.0766**	0.006	8.0	ug/L	106	Standard
	Zn	66	935.0	3.8	**0.4873**	0.039	8.0	ug/L	398	Standard
>	**Ge**	72	461930.2	1.5				ug/L	535147	Standard
	As	75	-37.3	19.8	**0.0230**	0.006	26.4	ug/L	-43	Standard
	Se	82	18.4	28.2	**0.0606**	0.045	74.8	ug/L	14	Standard
	Se-1	77	54.7	14.7	**0.1228**	0.114	93.0	ug/L	65	Standard
>	**Ga**	71	36.7	34.3				mg/L	97	Standard
	Rb	85	78.3	20.5				ug/L	15	Standard
	Y	89	395553.6	0.8				ug/L	465704	Standard
>	**Rh**	103	25.0	40.0				ug/L	10	Standard
	Mo	98	1932.5	55.0	**0.7046**	0.386	54.7	ug/L	9	Standard
	Ag	107	81.0	10.1	**0.0059**	0.001	18.7	ug/L	82	Standard
	Cd	111	4.7	45.9	**0.0100**	0.001	10.0	mg/L	7	Standard
	Cd	114	20.4	173.1	**0.0128**	0.007	52.5	ug/L	21	Standard
>	**In**	115	555907.9	1.0				ug/L	619035	Standard
	Sn	118	1288.4	3.8	**0.1170**	0.006	5.4	ug/L	508	Standard
	Sb	123	110.1	37.8	**0.0276**	0.009	32.4	ug/L	86	Standard
	Ba	135	80.7	1.9	**0.0197**	0.001	5.7	ug/L	79	Standard
	Ce	140	45.0	19.2				ug/L	68	Standard
>	**Tb**	159	849258.9	2.2				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	249.3	55.6	**0.0354**	0.017	46.9	ug/L	13	Standard
	Tl	205	13.3	43.3	**0.0095**	0.001	8.6	ug/L	10	Standard
	Pb	206	280.0	3.7	**0.0134**	0.002	17.0	ug/L	264	Standard
	Pb	207	248.0	10.3	**0.0169**	0.005	27.4	ug/L	227	Standard
	Pb	208	1027.7	1.3	**0.0156**	0.001	3.2	ug/L	868	Standard
	U	238	6.7	62.4	**0.0088**	0.001	6.7	ug/L	8	Standard
>	**Bi**	209	504972.6	1.1				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:00:57
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	248.3	7.6	**0.3084**	0.030	9.7	mg/L	53	Standard
K	39	43.3	13.3	**0.0172**	0.013	78.0	mg/L	53	Standard
Ca	43	26.7	10.8	**0.2394**	0.228	95.3	mg/L	28	Standard
Fe	54	66.3	9.6	**-0.0616**	0.006	9.0	mg/L	181	Standard
Fe	57	245.0	13.4	**0.1599**	0.120	74.9	mg/L	257	Standard
> **Sc-1**	45	43602.7	1.2				mg/L	55220	Standard
Cl	35	35767.5	0.9				ug/L	35504	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1663.4	4.1				ug/L	2040	Standard
P	31	8655.8	4.9				ug/L	20435	Standard
S	34	2086.8	3.5				ug/L	2430	Standard
Sr	88	85.0	5.9				ug/L	75	Standard
C	12	3550.4	2.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	17669.1	55.9				mg/L	7	Standard
Dy	164	16.2	33.1				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1548.4	10.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.671	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.318	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:00:57
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	89.802	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	93.338	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:00:57
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:01:53
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70967.6	3.2				ug/L	74916	Standard
	Be	9	10.0	50.0	**0.0065**	0.005	81.8	ug/L	10	Standard
	Al	27	1825.1	2.1	**0.0088**	0.001	6.7	ug/L	1822	Standard
	Sc	45	43183.1	1.3				ug/L	55220	Standard
	Ti	47	46.3	10.0	**0.0615**	0.015	24.5	ug/L	34	Standard
	V	51	4031.9	5.4	**0.3136**	0.018	5.7	ug/L	1938	Standard
	Cr	52	16465.3	2.4	**1.1053**	0.012	1.1	ug/L	9522	Standard
	Cr	53	573.3	5.6	**0.2154**	0.045	21.0	ug/L	395	Standard
	Mn	55	1795.8	0.8	**0.1395**	0.003	1.9	ug/L	902	Standard
	Co	59	228.3	2.0	**0.0100**	0.000	2.6	ug/L	262	Standard
	Ni	60	389.7	3.5	**0.0581**	0.009	14.9	ug/L	371	Standard
	Cu	65	286.3	12.8	**0.0934**	0.020	21.5	ug/L	106	Standard
	Zn	66	959.7	10.4	**0.5177**	0.074	14.3	ug/L	398	Standard
>	**Ge**	72	456824.0	1.9				ug/L	535147	Standard
	As	75	-60.5	32.8	**0.0024**	0.017	692.6	ug/L	-43	Standard
	Se	82	14.4	53.7	**0.0273**	0.066	241.8	ug/L	14	Standard
	Se-1	77	56.3	14.3	**0.1501**	0.094	62.3	ug/L	65	Standard
>	**Ga**	71	46.7	22.3				mg/L	97	Standard
	Rb	85	66.7	8.7				ug/L	15	Standard
	Y	89	394406.6	2.8				ug/L	465704	Standard
>	**Rh**	103	28.3	81.5				ug/L	10	Standard
	Mo	98	1379.0	55.6	**0.5084**	0.282	55.5	ug/L	9	Standard
	Ag	107	93.3	14.9	**0.0077**	0.002	24.1	ug/L	82	Standard
	Cd	111	2.7	63.5	**0.0091**	0.001	8.5	mg/L	7	Standard
	Cd	114	13.3	104.0	**0.0114**	0.003	22.5	ug/L	21	Standard
>	**In**	115	555788.7	2.3				ug/L	619035	Standard
	Sn	118	1306.7	4.4	**0.1202**	0.006	5.3	ug/L	508	Standard
	Sb	123	85.1	34.7	**0.0224**	0.007	29.2	ug/L	86	Standard
	Ba	135	84.7	11.8	**0.0216**	0.005	23.1	ug/L	79	Standard
	Ce	140	26.7	43.3				ug/L	68	Standard
>	**Tb**	159	844220.8	1.6				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	157.7	52.2	**0.0247**	0.010	40.0	ug/L	13	Standard
	Tl	205	8.3	69.3	**0.0088**	0.001	8.9	ug/L	10	Standard
	Pb	206	291.7	1.0	**0.0159**	0.001	6.1	ug/L	264	Standard
	Pb	207	254.3	4.8	**0.0186**	0.002	11.0	ug/L	227	Standard
	Pb	208	1047.3	0.4	**0.0170**	0.000	2.4	ug/L	868	Standard
	U	238	3.7	15.7	**0.0084**	0.000	1.0	ug/L	8	Standard
>	**Bi**	209	501630.8	0.9				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:04:10
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	171.7	16.0	**0.2049**	0.040	19.6	mg/L	53	Standard
K	39	36.7	7.9	**0.0036**	0.007	182.4	mg/L	53	Standard
Ca	43	20.0	43.3	**-0.2251**	0.633	281.0	mg/L	28	Standard
Fe	54	62.0	32.2	**-0.0648**	0.017	25.9	mg/L	181	Standard
Fe	57	311.7	15.6	**0.3918**	0.153	39.0	mg/L	257	Standard
> **Sc-1**	45	43183.1	1.3				mg/L	55220	Standard
Cl	35	36534.0	0.8				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1630.1	4.4				ug/L	2040	Standard
P	31	8617.5	1.2				ug/L	20435	Standard
S	34	2181.8	2.4				ug/L	2430	Standard
Sr	88	70.0	7.1				ug/L	75	Standard
C	12	3767.1	7.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	12269.4	57.6				mg/L	7	Standard
Dy	164	9.4	117.2				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	23	Standard
I	127	1266.7	12.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.729	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.364	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:04:10
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.783
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.720
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:04:10
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:05:05
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71520.1	2.1				ug/L	74916	Standard
	Be	9	11.7	65.5	**0.0081**	0.008	97.6	ug/L	10	Standard
	Al	27	1998.5	3.6	**0.0097**	0.001	7.1	ug/L	1822	Standard
	Sc	45	44115.8	2.0				ug/L	55220	Standard
	Ti	47	47.7	12.6	**0.0657**	0.019	28.6	ug/L	34	Standard
	V	51	4000.4	3.0	**0.3117**	0.010	3.2	ug/L	1938	Standard
	Cr	52	16493.6	3.3	**1.1165**	0.023	2.1	ug/L	9522	Standard
	Cr	53	511.7	6.5	**0.1519**	0.031	20.7	ug/L	395	Standard
	Mn	55	1810.4	3.6	**0.1425**	0.010	6.8	ug/L	902	Standard
	Co	59	200.3	4.5	**0.0061**	0.001	16.1	ug/L	262	Standard
	Ni	60	365.0	4.2	**0.0460**	0.012	26.4	ug/L	371	Standard
	Cu	65	258.7	3.1	**0.0791**	0.002	2.4	ug/L	106	Standard
	Zn	66	938.4	6.5	**0.5027**	0.058	11.5	ug/L	398	Standard
>	**Ge**	72	455193.4	2.3				ug/L	535147	Standard
	As	75	-21.6	123.1	**0.0365**	0.023	63.2	ug/L	-43	Standard
	Se	82	21.3	13.5	**0.0879**	0.025	28.1	ug/L	14	Standard
	Se-1	77	54.0	21.0	**0.1214**	0.131	107.7	ug/L	65	Standard
>	**Ga**	71	41.7	36.7				mg/L	97	Standard
	Rb	85	68.3	29.6				ug/L	15	Standard
	Y	89	395254.2	2.3				ug/L	465704	Standard
>	**Rh**	103	31.7	9.1				ug/L	10	Standard
	Mo	98	1044.1	52.0	**0.3862**	0.198	51.3	ug/L	9	Standard
	Ag	107	86.3	9.3	**0.0066**	0.001	15.4	ug/L	82	Standard
	Cd	111	1.5	101.2	**0.0086**	0.001	8.3	mg/L	7	Standard
	Cd	114	22.1	38.8	**0.0131**	0.002	12.5	ug/L	21	Standard
>	**In**	115	556687.6	1.3				ug/L	619035	Standard
	Sn	118	1351.7	12.8	**0.1278**	0.032	25.1	ug/L	508	Standard
	Sb	123	82.0	27.7	**0.0217**	0.005	23.0	ug/L	86	Standard
	Ba	135	86.0	10.1	**0.0222**	0.005	20.9	ug/L	79	Standard
	Ce	140	31.7	59.8				ug/L	68	Standard
>	**Tb**	159	840648.0	0.2				ug/L	986982	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	128.7	56.4	**0.0213**	0.009	41.0	ug/L	13	Standard
	Tl	205	13.3	43.3	**0.0095**	0.001	8.7	ug/L	10	Standard
	Pb	206	282.3	1.0	**0.0143**	0.001	9.6	ug/L	264	Standard
	Pb	207	227.7	8.2	**0.0133**	0.005	34.0	ug/L	227	Standard
	Pb	208	1009.3	4.5	**0.0151**	0.003	19.8	ug/L	868	Standard
	U	238	9.0	29.4	**0.0092**	0.000	4.0	ug/L	8	Standard
>	**Bi**	209	500253.7	1.7				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:07:22
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	211.7	3.6	**0.2541**	0.005	2.0	mg/L	53	Standard
K	39	25.0	40.0	**-0.0231**	0.020	87.4	mg/L	53	Standard
Ca	43	18.3	15.7	**-0.3774**	0.183	48.6	mg/L	28	Standard
Fe	54	62.0	25.1	**-0.0660**	0.012	18.6	mg/L	181	Standard
Fe	57	230.0	10.0	**0.0993**	0.068	68.3	mg/L	257	Standard
Sc-1	45	44115.8	2.0				mg/L	55220	Standard
Cl	35	36965.0	0.6				ug/L	35504	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1676.8	11.7				ug/L	2040	Standard
P	31	8922.6	3.5				ug/L	20435	Standard
S	34	2015.1	2.7				ug/L	2430	Standard
Sr	88	75.0	24.0				ug/L	75	Standard
C	12	3437.1	3.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	8963.2	57.5				mg/L	7	Standard
Dy	164	6.0	93.6				mg/L	9	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1223.4	8.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.467	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.060	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:07:22
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.928
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:07:22
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:08:17
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79091.8	20.9				ug/L	74916	Standard
	Be	9	11.7	89.2	**0.0084**	0.011	129.8	ug/L	10	Standard
	Al	27	2535.3	65.2	**0.0130**	0.012	88.5	ug/L	1822	Standard
	Sc	45	46831.6	14.3				ug/L	55220	Standard
	Ti	47	69.7	56.4	**0.1207**	0.113	93.8	ug/L	34	Standard
	V	51	2046.5	53.7	**0.0549**	0.148	270.3	ug/L	1938	Standard
	Cr	52	8324.7	51.7	**0.0115**	0.602	5252.2	ug/L	9522	Standard
	Cr	53	435.0	32.0	**0.0505**	0.173	343.3	ug/L	395	Standard
	Mn	55	1487.1	61.3	**0.0934**	0.137	146.6	ug/L	902	Standard
	Co	59	228.0	22.1	**0.0085**	0.010	121.0	ug/L	262	Standard
	Ni	60	318.3	14.8	**0.0117**	0.033	284.7	ug/L	371	Standard
	Cu	65	185.0	23.0	**0.0347**	0.028	81.3	ug/L	106	Standard
	Zn	66	569.7	56.9	**0.1528**	0.310	203.0	ug/L	398	Standard
>	**Ge**	72	489383.6	10.3				ug/L	535147	Standard
	As	75	12.9	27.7	**0.0660**	0.004	5.6	ug/L	-43	Standard
	Se	82	28.6	46.2	**0.1408**	0.122	86.4	ug/L	14	Standard
	Se-1	77	40.0	7.5	**-0.0938**	0.040	42.9	ug/L	65	Standard
>	**Ga**	71	38.3	27.2				mg/L	97	Standard
	Rb	85	101.7	56.8				ug/L	15	Standard
	Y	89	433042.0	13.5				ug/L	465704	Standard
>	**Rh**	103	33.3	56.8				ug/L	10	Standard
	Mo	98	897.2	72.7	**0.3249**	0.253	77.9	ug/L	9	Standard
	Ag	107	121.0	8.1	**0.0105**	0.004	35.8	ug/L	82	Standard
	Cd	111	8.3	145.2	**0.0119**	0.006	50.5	mg/L	7	Standard
	Cd	114	50.3	126.0	**0.0188**	0.013	70.7	ug/L	21	Standard
>	**In**	115	612202.9	13.4				ug/L	619035	Standard
	Sn	118	860.0	54.7	**0.0372**	0.087	234.5	ug/L	508	Standard
	Sb	123	103.8	56.3	**0.0253**	0.013	52.6	ug/L	86	Standard
	Ba	135	77.7	64.8	**0.0170**	0.027	158.0	ug/L	79	Standard
	Ce	140	131.7	91.5				ug/L	68	Standard
>	**Tb**	159	976671.3	15.8				ug/L	986982	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	125.3	82.5	**0.0201**	0.013	66.3	ug/L	13	Standard
	Tl	205	36.7	90.8	**0.0126**	0.005	40.2	ug/L	10	Standard
	Pb	206	330.0	2.8	**0.0154**	0.009	56.4	ug/L	264	Standard
	Pb	207	286.0	5.8	**0.0176**	0.007	41.7	ug/L	227	Standard
	Pb	208	1154.7	6.9	**0.0148**	0.007	44.9	ug/L	868	Standard
	U	238	30.3	130.6	**0.0122**	0.006	48.8	ug/L	8	Standard
>	**Bi**	209	583026.9	16.2				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:10:34
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	126.7	59.8	**0.1391**	0.115	82.4	mg/L	53	Standard
K	39	33.3	56.8	**-0.0074**	0.041	553.5	mg/L	53	Standard
Ca	43	25.0	52.9	**0.0888**	1.136	1278.0	mg/L	28	Standard
Fe	54	85.7	21.5	**-0.0476**	0.024	49.4	mg/L	181	Standard
Fe	57	338.3	4.3	**0.4110**	0.186	45.2	mg/L	257	Standard
> **Sc-1**	45	46831.6	14.3				mg/L	55220	Standard
Cl	35	23783.5	26.5				ug/L	35504	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	970.0	32.6				ug/L	2040	Standard
P	31	9866.7	27.4				ug/L	20435	Standard
S	34	1328.4	29.5				ug/L	2430	Standard
Sr	88	88.3	25.5				ug/L	75	Standard
C	12	1143.4	80.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6285.3	85.7				mg/L	7	Standard
Dy	164	19.4	2.9				mg/L	9	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	1403.4	57.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.573	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.448	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:10:34
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.896
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.766
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:11:29
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68032.5	2.4				ug/L	74916	Standard
	Be	9	15.0	33.3	**0.0121**	0.005	44.8	ug/L	10	Standard
	Al	27	1520.1	11.9	**0.0073**	0.001	12.3	ug/L	1822	Standard
	Sc	45	44854.6	1.7				ug/L	55220	Standard
	Ti	47	28.3	13.4	**0.0111**	0.011	99.2	ug/L	34	Standard
	V	51	1373.4	4.7	**-0.0209**	0.006	27.4	ug/L	1938	Standard
	Cr	52	6353.7	0.6	**-0.2036**	0.017	8.4	ug/L	9522	Standard
	Cr	53	455.0	13.2	**0.0946**	0.057	59.7	ug/L	395	Standard
	Mn	55	597.0	2.1	**-0.0230**	0.002	9.0	ug/L	902	Standard
	Co	59	202.7	3.0	**0.0066**	0.001	9.2	ug/L	262	Standard
	Ni	60	304.3	5.9	**0.0151**	0.011	70.9	ug/L	371	Standard
	Cu	65	150.7	0.8	**0.0220**	0.001	3.9	ug/L	106	Standard
	Zn	66	281.0	12.5	**-0.0907**	0.034	37.1	ug/L	398	Standard
>	**Ge**	72	452431.5	1.5				ug/L	535147	Standard
	As	75	-52.0	87.3	**0.0089**	0.041	462.8	ug/L	-43	Standard
	Se	82	17.7	69.0	**0.0566**	0.104	184.5	ug/L	14	Standard
	Se-1	77	45.3	9.9	**0.0146**	0.068	469.5	ug/L	65	Standard
>	**Ga**	71	31.7	9.1				mg/L	97	Standard
	Rb	85	43.3	56.9				ug/L	15	Standard
	Y	89	399241.3	2.0				ug/L	465704	Standard
>	**Rh**	103	28.3	20.4				ug/L	10	Standard
	Mo	98	105.1	18.7	**0.0502**	0.008	15.0	ug/L	9	Standard
	Ag	107	88.0	11.0	**0.0070**	0.001	18.6	ug/L	82	Standard
	Cd	111	2.8	95.0	**0.0092**	0.001	13.5	mg/L	7	Standard
	Cd	114	12.9	40.7	**0.0114**	0.001	8.9	ug/L	21	Standard
>	**In**	115	552377.7	1.3				ug/L	619035	Standard
	Sn	118	451.7	11.2	**-0.0256**	0.010	37.7	ug/L	508	Standard
	Sb	123	75.5	18.8	**0.0204**	0.003	15.3	ug/L	86	Standard
	Ba	135	23.0	26.4	**-0.0084**	0.003	34.2	ug/L	79	Standard
	Ce	140	28.3	27.0				ug/L	68	Standard
>	**Tb**	159	829888.8	1.2				ug/L	986982	Standard
	Ho	165	6.7	173.2				ug/L	10	Standard
	Tl	203	11.3	5.1	**0.0074**	0.000	1.0	ug/L	13	Standard
	Tl	205	6.7	43.3	**0.0086**	0.000	4.8	ug/L	10	Standard
	Pb	206	245.0	4.9	**0.0084**	0.002	26.2	ug/L	264	Standard
	Pb	207	199.0	4.6	**0.0083**	0.002	29.5	ug/L	227	Standard
	Pb	208	835.0	4.7	**0.0068**	0.002	35.3	ug/L	868	Standard
	U	238	6.3	24.1	**0.0088**	0.000	2.4	ug/L	8	Standard
>	**Bi**	209	490010.4	1.3				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:13:46
Page 1

Approved: July 01, 2016

Na	23	3.3	173.2	**23.0691**	39.948	173.2	mg/L	2	Standard
Mg	24	63.3	39.7	**0.0506**	0.034	67.3	mg/L	53	Standard
K	39	40.0	33.1	**0.0078**	0.029	370.2	mg/L	53	Standard
Ca	43	28.3	50.9	**0.2915**	0.970	332.9	mg/L	28	Standard
Fe	54	92.7	32.9	**-0.0409**	0.026	63.3	mg/L	181	Standard
Fe	57	283.3	28.6	**0.2638**	0.276	104.6	mg/L	257	Standard
> **Sc-1**	45	44854.6	1.7				mg/L	55220	Standard
Cl	35	38032.3	1.6				ug/L	35504	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1593.4	9.4				ug/L	2040	Standard
P	31	12683.6	1.9				ug/L	20435	Standard
S	34	2303.5	2.6				ug/L	2430	Standard
Sr	88	75.0	40.6				ug/L	75	Standard
C	12	130.0	23.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	7	Standard
Dy	164	9.5	100.0				mg/L	9	Standard
Ho-1	165	6.7	173.2				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	7281.8	4.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.811	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		84.543	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:13:46
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.232
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.573
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:14:41
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68866.2	2.2				ug/L	74916	Standard
	Be	9	16.7	69.3	**0.0137**	0.012	89.8	ug/L	10	Standard
	Al	27	1236.7	3.0	**0.0054**	0.000	5.6	ug/L	1822	Standard
	Sc	45	44744.3	1.5				ug/L	55220	Standard
	Ti	47	30.0	20.3	**0.0150**	0.018	118.2	ug/L	34	Standard
	V	51	1428.1	4.2	**-0.0156**	0.010	66.8	ug/L	1938	Standard
	Cr	52	6350.3	0.8	**-0.2124**	0.008	3.9	ug/L	9522	Standard
	Cr	53	480.0	13.8	**0.1161**	0.062	53.6	ug/L	395	Standard
	Mn	55	557.7	5.1	**-0.0292**	0.003	9.3	ug/L	902	Standard
	Co	59	199.3	4.1	**0.0059**	0.002	26.9	ug/L	262	Standard
	Ni	60	314.0	9.2	**0.0186**	0.016	87.6	ug/L	371	Standard
	Cu	65	165.7	14.8	**0.0292**	0.013	43.5	ug/L	106	Standard
	Zn	66	281.7	4.8	**-0.0928**	0.011	11.9	ug/L	398	Standard
>	**Ge**	72	456950.4	1.7				ug/L	535147	Standard
	As	75	-61.8	37.2	**0.0010**	0.021	1957.9	ug/L	-43	Standard
	Se	82	14.6	27.6	**0.0286**	0.033	115.8	ug/L	14	Standard
	Se-1	77	52.0	10.7	**0.0956**	0.084	88.0	ug/L	65	Standard
>	**Ga**	71	45.0	33.3				mg/L	97	Standard
	Rb	85	35.0	37.8				ug/L	15	Standard
	Y	89	396910.4	1.2				ug/L	465704	Standard
>	**Rh**	103	31.7	32.9				ug/L	10	Standard
	Mo	98	81.1	8.9	**0.0413**	0.003	7.1	ug/L	9	Standard
	Ag	107	76.0	10.8	**0.0051**	0.001	22.4	ug/L	82	Standard
	Cd	111	3.5	58.0	**0.0095**	0.001	10.0	mg/L	7	Standard
	Cd	114	10.4	54.7	**0.0109**	0.001	10.0	ug/L	21	Standard
>	**In**	115	555953.8	1.2				ug/L	619035	Standard
	Sn	118	483.3	6.3	**-0.0208**	0.004	20.6	ug/L	508	Standard
	Sb	123	61.7	27.5	**0.0174**	0.004	21.0	ug/L	86	Standard
	Ba	135	17.7	31.2	**-0.0110**	0.003	25.3	ug/L	79	Standard
	Ce	140	28.3	66.8				ug/L	68	Standard
>	**Tb**	159	835275.0	2.0				ug/L	986982	Standard
	Ho	165	3.3	173.2				ug/L	10	Standard
	Tl	203	9.3	27.0	**0.0071**	0.000	4.1	ug/L	13	Standard
	Tl	205	10.0	50.0	**0.0091**	0.001	7.6	ug/L	10	Standard
	Pb	206	244.3	4.5	**0.0079**	0.002	19.6	ug/L	264	Standard
	Pb	207	203.3	6.9	**0.0089**	0.003	36.3	ug/L	227	Standard
	Pb	208	837.0	0.4	**0.0066**	0.000	5.6	ug/L	868	Standard
	U	238	3.7	41.7	**0.0084**	0.000	2.6	ug/L	8	Standard
>	**Bi**	209	493679.8	1.1				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:16:58
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	39.6	**0.0391**	0.028	71.6	mg/L	53	Standard
K	39	40.0	21.7	**0.0077**	0.018	229.4	mg/L	53	Standard
Ca	43	25.0	52.9	**0.0694**	0.922	1328.8	mg/L	28	Standard
Fe	54	86.2	14.3	**-0.0462**	0.011	23.1	mg/L	181	Standard
Fe	57	240.0	17.8	**0.1228**	0.148	120.6	mg/L	257	Standard
> **Sc-1**	45	44744.3	1.5				mg/L	55220	Standard
Cl	35	38930.6	1.7				ug/L	35504	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	1423.4	8.1				ug/L	2040	Standard
P	31	13542.8	9.7				ug/L	20435	Standard
S	34	2230.2	9.6				ug/L	2430	Standard
Sr	88	63.3	9.1				ug/L	75	Standard
C	12	106.7	30.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.9	203.0				mg/L	9	Standard
Ho-1	165	3.3	173.2				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	6659.8	6.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.924	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.388	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:16:58
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	89.810	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	91.251	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:16:58
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:17:53
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70512.1	1.9				ug/L	74916	Standard
	Be	9	13.3	43.3	**0.0099**	0.006	60.9	ug/L	10	Standard
	Al	27	1230.1	5.1	**0.0052**	0.000	6.2	ug/L	1822	Standard
	Sc	45	44657.4	2.0				ug/L	55220	Standard
	Ti	47	30.3	8.3	**0.0141**	0.007	48.4	ug/L	34	Standard
	V	51	1454.2	3.5	**-0.0161**	0.007	40.6	ug/L	1938	Standard
	Cr	52	6462.0	1.0	**-0.2150**	0.011	5.0	ug/L	9522	Standard
	Cr	53	418.3	0.7	**0.0430**	0.002	3.9	ug/L	395	Standard
	Mn	55	584.3	4.9	**-0.0272**	0.004	13.4	ug/L	902	Standard
	Co	59	213.0	12.1	**0.0072**	0.004	49.4	ug/L	262	Standard
	Ni	60	312.0	8.6	**0.0141**	0.013	94.7	ug/L	371	Standard
	Cu	65	165.7	5.6	**0.0274**	0.005	16.7	ug/L	106	Standard
	Zn	66	335.7	3.3	**-0.0503**	0.010	20.4	ug/L	398	Standard
>	**Ge**	72	466403.1	0.3				ug/L	535147	Standard
	As	75	-67.3	42.7	**-0.0024**	0.024	1031.7	ug/L	-43	Standard
	Se	82	8.0	106.3	**-0.0291**	0.072	247.4	ug/L	14	Standard
	Se-1	77	52.3	11.7	**0.0854**	0.080	93.8	ug/L	65	Standard
>	**Ga**	71	36.7	15.7				mg/L	97	Standard
	Rb	85	40.0	45.1				ug/L	15	Standard
	Y	89	406679.9	1.7				ug/L	465704	Standard
>	**Rh**	103	23.3	32.7				ug/L	10	Standard
	Mo	98	61.6	19.4	**0.0342**	0.004	12.7	ug/L	9	Standard
	Ag	107	80.7	11.5	**0.0057**	0.002	26.5	ug/L	82	Standard
	Cd	111	1.5	73.6	**0.0086**	0.001	6.0	mg/L	7	Standard
	Cd	114	20.3	46.0	**0.0128**	0.002	14.3	ug/L	21	Standard
>	**In**	115	560994.2	1.3				ug/L	619035	Standard
	Sn	118	548.3	9.6	**-0.0104**	0.009	90.2	ug/L	508	Standard
	Sb	123	47.7	27.8	**0.0144**	0.003	19.7	ug/L	86	Standard
	Ba	135	21.3	18.9	**-0.0093**	0.002	22.4	ug/L	79	Standard
	Ce	140	30.0	28.9				ug/L	68	Standard
>	**Tb**	159	855592.5	2.2				ug/L	986982	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	5.7	97.2	**0.0067**	0.001	9.7	ug/L	13	Standard
	Tl	205	5.0	100.0	**0.0084**	0.001	8.3	ug/L	10	Standard
	Pb	206	239.0	2.2	**0.0064**	0.001	19.4	ug/L	264	Standard
	Pb	207	213.7	6.3	**0.0105**	0.003	29.4	ug/L	227	Standard
	Pb	208	840.3	4.1	**0.0062**	0.002	26.2	ug/L	868	Standard
	U	238	2.0	86.6	**0.0082**	0.000	3.1	ug/L	8	Standard
>	**Bi**	209	499713.5	0.8				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:20:10
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**11.8358**	20.492	173.1	mg/L	2	Standard
Mg	24	53.3	51.6	**0.0373**	0.037	99.4	mg/L	53	Standard
K	39	40.0	45.1	**0.0081**	0.038	469.6	mg/L	53	Standard
Ca	43	18.3	78.7	**-0.3787**	1.044	275.8	mg/L	28	Standard
Fe	54	101.0	12.3	**-0.0336**	0.011	33.4	mg/L	181	Standard
Fe	57	258.3	8.1	**0.1828**	0.058	31.5	mg/L	257	Standard
> **Sc-1**	45	44657.4	2.0				mg/L	55220	Standard
Cl	35	39868.4	0.5				ug/L	35504	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1683.4	14.1				ug/L	2040	Standard
P	31	12468.5	0.6				ug/L	20435	Standard
S	34	2168.5	4.3				ug/L	2430	Standard
Sr	88	93.3	15.5				ug/L	75	Standard
C	12	116.7	60.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	-0.3	86.6				mg/L	9	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	5404.3	1.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.121	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		87.154	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:20:10
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.624
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.366
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:20:10
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:21:05
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69532.6	2.0				ug/L	74916	Standard
	Be	9	11.7	107.9	**0.0085**	0.013	155.7	ug/L	10	Standard
	Al	27	1261.7	3.6	**0.0055**	0.000	2.4	ug/L	1822	Standard
	Sc	45	44276.3	1.0				ug/L	55220	Standard
	Ti	47	26.3	4.4	**0.0035**	0.004	105.2	ug/L	34	Standard
	V	51	1388.4	2.7	**-0.0233**	0.006	24.3	ug/L	1938	Standard
	Cr	52	6486.7	0.7	**-0.2072**	0.012	5.7	ug/L	9522	Standard
	Cr	53	405.0	7.7	**0.0316**	0.032	101.9	ug/L	395	Standard
	Mn	55	617.7	1.1	**-0.0223**	0.002	7.0	ug/L	902	Standard
	Co	59	191.7	5.3	**0.0043**	0.001	28.3	ug/L	262	Standard
	Ni	60	323.7	12.1	**0.0210**	0.020	95.1	ug/L	371	Standard
	Cu	65	161.0	6.1	**0.0255**	0.006	22.4	ug/L	106	Standard
	Zn	66	333.3	4.6	**-0.0507**	0.012	23.5	ug/L	398	Standard
>	**Ge**	72	463825.0	0.7				ug/L	535147	Standard
	As	75	-56.2	16.5	**0.0068**	0.008	122.5	ug/L	-43	Standard
	Se	82	14.4	38.9	**0.0256**	0.047	183.0	ug/L	14	Standard
	Se-1	77	48.3	14.7	**0.0375**	0.088	235.9	ug/L	65	Standard
>	**Ga**	71	38.3	15.1				mg/L	97	Standard
	Rb	85	58.3	40.5				ug/L	15	Standard
	Y	89	397444.4	1.5				ug/L	465704	Standard
>	**Rh**	103	26.7	10.8				ug/L	10	Standard
	Mo	98	51.9	31.6	**0.0306**	0.006	18.6	ug/L	9	Standard
	Ag	107	86.0	9.9	**0.0065**	0.001	19.9	ug/L	82	Standard
	Cd	111	4.9	70.0	**0.0101**	0.002	15.3	mg/L	7	Standard
	Cd	114	3.6	328.3	**0.0096**	0.002	23.6	ug/L	21	Standard
>	**In**	115	562767.5	0.4				ug/L	619035	Standard
	Sn	118	671.7	10.1	**0.0101**	0.011	112.0	ug/L	508	Standard
	Sb	123	46.8	27.2	**0.0141**	0.003	18.5	ug/L	86	Standard
	Ba	135	23.7	6.5	**-0.0082**	0.001	9.0	ug/L	79	Standard
	Ce	140	21.7	35.3				ug/L	68	Standard
>	**Tb**	159	855180.1	0.4				ug/L	986982	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	4.3	53.3	**0.0065**	0.000	4.2	ug/L	13	Standard
	Tl	205	5.0	100.0	**0.0084**	0.001	8.3	ug/L	10	Standard
	Pb	206	232.0	5.4	**0.0050**	0.002	45.1	ug/L	264	Standard
	Pb	207	201.0	15.5	**0.0079**	0.006	81.5	ug/L	227	Standard
	Pb	208	859.0	5.1	**0.0072**	0.002	32.4	ug/L	868	Standard
	U	238	1.3	43.3	**0.0081**	0.000	1.0	ug/L	8	Standard
>	**Bi**	209	500150.3	0.1				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:23:22
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	11.1	**0.0266**	0.006	23.2	mg/L	53	Standard
K	39	30.0	16.7	**-0.0125**	0.010	81.0	mg/L	53	Standard
Ca	43	8.3	91.7	**-1.0898**	0.535	49.1	mg/L	28	Standard
Fe	54	107.5	47.5	**-0.0271**	0.044	162.7	mg/L	181	Standard
Fe	57	278.3	8.5	**0.2562**	0.070	27.4	mg/L	257	Standard
> **Sc-1**	45	44276.3	1.0				mg/L	55220	Standard
Cl	35	39463.3	1.3				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1523.4	10.0				ug/L	2040	Standard
P	31	12618.6	4.2				ug/L	20435	Standard
S	34	2155.2	2.4				ug/L	2430	Standard
Sr	88	71.7	16.1				ug/L	75	Standard
C	12	113.3	5.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	9.4	114.5				mg/L	9	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	4117.2	7.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.672	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:23:22
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.910
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.447
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:23:22
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:24:18
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70078.4	0.8				ug/L	74916	Standard
	Be	9	13.3	21.7	**0.0099**	0.003	28.6	ug/L	10	Standard
	Al	27	1280.1	5.4	**0.0056**	0.000	7.4	ug/L	1822	Standard
	Sc	45	43723.0	1.0				ug/L	55220	Standard
	Ti	47	22.0	27.3	**-0.0089**	0.017	187.8	ug/L	34	Standard
	V	51	1515.7	2.4	**-0.0081**	0.005	58.8	ug/L	1938	Standard
	Cr	52	6681.5	1.2	**-0.1853**	0.011	5.9	ug/L	9522	Standard
	Cr	53	398.3	6.2	**0.0232**	0.024	105.4	ug/L	395	Standard
	Mn	55	625.7	3.4	**-0.0215**	0.002	11.4	ug/L	902	Standard
	Co	59	201.3	5.6	**0.0056**	0.002	30.5	ug/L	262	Standard
	Ni	60	326.3	2.3	**0.0218**	0.004	17.5	ug/L	371	Standard
	Cu	65	154.3	1.5	**0.0217**	0.001	6.3	ug/L	106	Standard
	Zn	66	362.7	5.5	**-0.0257**	0.019	73.1	ug/L	398	Standard
>	**Ge**	72	465484.6	0.4				ug/L	535147	Standard
	As	75	-39.2	24.9	**0.0216**	0.008	39.2	ug/L	-43	Standard
	Se	82	20.1	13.2	**0.0734**	0.022	30.6	ug/L	14	Standard
	Se-1	77	53.7	1.1	**0.1036**	0.010	10.0	ug/L	65	Standard
>	**Ga**	71	48.3	43.1				mg/L	97	Standard
	Rb	85	31.7	32.9				ug/L	15	Standard
	Y	89	401219.7	0.7				ug/L	465704	Standard
>	**Rh**	103	23.3	24.7				ug/L	10	Standard
	Mo	98	48.8	19.7	**0.0296**	0.003	11.4	ug/L	9	Standard
	Ag	107	74.7	8.6	**0.0048**	0.001	19.9	ug/L	82	Standard
	Cd	111	0.9	187.5	**0.0083**	0.001	9.4	mg/L	7	Standard
	Cd	114	23.8	79.8	**0.0134**	0.004	26.8	ug/L	21	Standard
>	**In**	115	561226.5	0.2				ug/L	619035	Standard
	Sn	118	665.0	10.1	**0.0093**	0.011	121.3	ug/L	508	Standard
	Sb	123	39.5	34.5	**0.0126**	0.003	22.4	ug/L	86	Standard
	Ba	135	21.0	21.8	**-0.0095**	0.002	23.5	ug/L	79	Standard
	Ce	140	16.7	34.6				ug/L	68	Standard
>	**Tb**	159	856155.5	0.8				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	3.7	15.7	**0.0064**	0.000	1.1	ug/L	13	Standard
	Tl	205	6.7	43.3	**0.0086**	0.000	4.6	ug/L	10	Standard
	Pb	206	233.3	6.1	**0.0051**	0.003	54.7	ug/L	264	Standard
	Pb	207	213.0	0.5	**0.0101**	0.000	2.5	ug/L	227	Standard
	Pb	208	875.7	2.1	**0.0079**	0.001	9.3	ug/L	868	Standard
	U	238	1.7	34.6	**0.0081**	0.000	1.0	ug/L	8	Standard
>	**Bi**	209	502169.3	0.6				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:26:34
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	48.3	21.5	**0.0320**	0.015	46.4	mg/L	53	Standard
K	39	40.0	33.1	**0.0099**	0.029	291.7	mg/L	53	Standard
Ca	43	8.3	69.3	**-1.0765**	0.420	39.0	mg/L	28	Standard
Fe	54	107.5	10.9	**-0.0263**	0.009	35.6	mg/L	181	Standard
Fe	57	255.0	17.0	**0.1894**	0.137	72.3	mg/L	257	Standard
Sc-1	45	43723.0	1.0				mg/L	55220	Standard
Cl	35	39852.4	2.0				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1556.7	12.4				ug/L	2040	Standard
P	31	12406.7	1.2				ug/L	20435	Standard
S	34	2413.5	4.0				ug/L	2430	Standard
Sr	88	101.7	15.8				ug/L	75	Standard
C	12	100.0	55.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	5.7	195.1				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	3485.4	2.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.542	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.983	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:26:34
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.662
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.820
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:26:34
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:27:30
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70600.8	1.5				ug/L	74916	Standard
	Be	9	20.0	50.0	**0.0165**	0.010	61.3	ug/L	10	Standard
	Al	27	1301.7	8.3	**0.0056**	0.001	9.6	ug/L	1822	Standard
	Sc	45	43522.4	1.4				ug/L	55220	Standard
	Ti	47	21.0	16.5	**-0.0110**	0.010	89.8	ug/L	34	Standard
	V	51	1508.1	3.3	**-0.0070**	0.007	95.9	ug/L	1938	Standard
	Cr	52	6601.4	1.0	**-0.1862**	0.010	5.4	ug/L	9522	Standard
	Cr	53	400.0	3.3	**0.0296**	0.015	49.5	ug/L	395	Standard
	Mn	55	637.0	2.8	**-0.0190**	0.002	13.1	ug/L	902	Standard
	Co	59	213.0	3.3	**0.0076**	0.001	13.6	ug/L	262	Standard
	Ni	60	333.3	8.7	**0.0272**	0.015	54.0	ug/L	371	Standard
	Cu	65	145.7	8.0	**0.0180**	0.006	32.9	ug/L	106	Standard
	Zn	66	331.0	7.1	**-0.0506**	0.021	41.5	ug/L	398	Standard
>	**Ge**	72	460390.3	0.2				ug/L	535147	Standard
	As	75	-39.3	50.2	**0.0211**	0.017	80.5	ug/L	-43	Standard
	Se	82	18.5	30.7	**0.0620**	0.049	79.1	ug/L	14	Standard
	Se-1	77	51.3	11.4	**0.0811**	0.077	94.7	ug/L	65	Standard
>	**Ga**	71	43.3	6.7				mg/L	97	Standard
	Rb	85	43.3	35.3				ug/L	15	Standard
	Y	89	401358.3	0.8				ug/L	465704	Standard
>	**Rh**	103	31.7	63.8				ug/L	10	Standard
	Mo	98	50.7	21.3	**0.0304**	0.004	13.2	ug/L	9	Standard
	Ag	107	75.7	9.7	**0.0051**	0.001	19.9	ug/L	82	Standard
	Cd	111	3.3	17.8	**0.0094**	0.000	3.0	mg/L	7	Standard
	Cd	114	20.2	20.8	**0.0128**	0.001	6.2	ug/L	21	Standard
>	**In**	115	557303.8	1.0				ug/L	619035	Standard
	Sn	118	676.7	8.9	**0.0121**	0.010	86.8	ug/L	508	Standard
	Sb	123	37.0	29.8	**0.0122**	0.002	19.2	ug/L	86	Standard
	Ba	135	17.7	17.3	**-0.0110**	0.002	14.1	ug/L	79	Standard
	Ce	140	11.7	107.9				ug/L	68	Standard
>	**Tb**	159	848865.5	0.9				ug/L	986982	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	2.3	49.5	**0.0063**	0.000	2.2	ug/L	13	Standard
	Tl	205	6.7	114.6	**0.0086**	0.001	12.4	ug/L	10	Standard
	Pb	206	256.3	4.3	**0.0096**	0.001	15.5	ug/L	264	Standard
	Pb	207	197.3	10.3	**0.0072**	0.005	64.2	ug/L	227	Standard
	Pb	208	847.7	4.4	**0.0067**	0.002	30.4	ug/L	868	Standard
	U	238	2.0	100.0	**0.0082**	0.000	3.5	ug/L	8	Standard
>	**Bi**	209	499010.5	1.3				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:29:47
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**11.7084**	20.271	173.1	mg/L	2	Standard
Mg	24	63.3	19.9	**0.0529**	0.016	30.8	mg/L	53	Standard
K	39	20.0	66.1	**-0.0329**	0.029	87.3	mg/L	53	Standard
Ca	43	28.3	56.7	**0.3528**	1.137	322.2	mg/L	28	Standard
Fe	54	82.7	9.2	**-0.0473**	0.006	11.9	mg/L	181	Standard
Fe	57	270.0	16.7	**0.2433**	0.139	57.0	mg/L	257	Standard
Sc-1	45	43522.4	1.4				mg/L	55220	Standard
Cl	35	39770.1	1.0				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1510.1	10.0				ug/L	2040	Standard
P	31	12520.2	3.3				ug/L	20435	Standard
S	34	2190.2	0.6				ug/L	2430	Standard
Sr	88	75.0	46.7				ug/L	75	Standard
C	12	93.3	44.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.9	202.3				mg/L	9	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	3380.4	5.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		94.239	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		86.031	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:29:47
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.028
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.236
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:29:47
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:30:42
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69370.1	1.4				ug/L	74916	Standard
	Be	9	21.7	58.1	**0.0186**	0.013	70.4	ug/L	10	Standard
	Al	27	1571.8	27.3	**0.0074**	0.003	34.1	ug/L	1822	Standard
	Sc	45	44480.2	0.8				ug/L	55220	Standard
	Ti	47	21.7	19.2	**-0.0093**	0.012	124.9	ug/L	34	Standard
	V	51	1499.6	0.8	**-0.0084**	0.002	24.0	ug/L	1938	Standard
	Cr	52	6590.4	1.1	**-0.1892**	0.009	4.5	ug/L	9522	Standard
	Cr	53	373.3	4.7	**0.0010**	0.019	1762.9	ug/L	395	Standard
	Mn	55	653.0	18.5	**-0.0170**	0.016	94.4	ug/L	902	Standard
	Co	59	211.3	7.9	**0.0073**	0.002	31.5	ug/L	262	Standard
	Ni	60	313.3	3.1	**0.0166**	0.005	29.3	ug/L	371	Standard
	Cu	65	154.0	8.0	**0.0222**	0.006	28.1	ug/L	106	Standard
	Zn	66	375.0	3.1	**-0.0118**	0.011	92.9	ug/L	398	Standard
>	**Ge**	72	461224.5	0.2				ug/L	535147	Standard
	As	75	-46.0	23.6	**0.0154**	0.009	60.6	ug/L	-43	Standard
	Se	82	16.5	5.6	**0.0443**	0.008	17.8	ug/L	14	Standard
	Se-1	77	46.7	16.2	**0.0196**	0.097	493.7	ug/L	65	Standard
>	**Ga**	71	41.7	30.2				mg/L	97	Standard
	Rb	85	48.3	93.9				ug/L	15	Standard
	Y	89	394283.2	1.4				ug/L	465704	Standard
>	**Rh**	103	41.7	56.7				ug/L	10	Standard
	Mo	98	53.6	27.3	**0.0317**	0.005	16.9	ug/L	9	Standard
	Ag	107	102.3	32.4	**0.0091**	0.005	54.6	ug/L	82	Standard
	Cd	111	13.2	154.6	**0.0140**	0.009	67.7	mg/L	7	Standard
	Cd	114	40.7	92.9	**0.0168**	0.007	43.7	ug/L	21	Standard
>	**In**	115	552172.5	0.5				ug/L	619035	Standard
	Sn	118	720.0	11.5	**0.0206**	0.014	67.3	ug/L	508	Standard
	Sb	123	47.0	26.3	**0.0144**	0.003	18.5	ug/L	86	Standard
	Ba	135	50.7	104.9	**0.0053**	0.026	496.0	ug/L	79	Standard
	Ce	140	40.0	86.6				ug/L	68	Standard
>	**Tb**	159	844324.6	0.6				ug/L	986982	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	37.7	143.5	**0.0105**	0.006	61.4	ug/L	13	Standard
	Tl	205	6.7	43.3	**0.0086**	0.000	4.7	ug/L	10	Standard
	Pb	206	266.7	10.1	**0.0118**	0.005	42.1	ug/L	264	Standard
	Pb	207	223.7	12.9	**0.0128**	0.006	46.1	ug/L	227	Standard
	Pb	208	861.0	3.8	**0.0076**	0.002	22.5	ug/L	868	Standard
	U	238	6.7	96.4	**0.0089**	0.001	10.5	ug/L	8	Standard
>	**Bi**	209	496597.9	0.1				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:32:59
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	70.0	32.7	**0.0603**	0.032	52.9	mg/L	53	Standard
K	39	43.3	6.7	**0.0153**	0.007	43.0	mg/L	53	Standard
Ca	43	20.0	66.1	**-0.2660**	0.936	352.0	mg/L	28	Standard
Fe	54	87.5	28.3	**-0.0447**	0.021	47.5	mg/L	181	Standard
Fe	57	265.0	11.5	**0.2083**	0.096	45.9	mg/L	257	Standard
Sc-1	45	44480.2	0.8				mg/L	55220	Standard
Cl	35	39214.7	1.5				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1540.1	12.0				ug/L	2040	Standard
P	31	12109.8	3.8				ug/L	20435	Standard
S	34	2268.5	5.2				ug/L	2430	Standard
Sr	88	85.0	17.6				ug/L	75	Standard
C	12	106.7	46.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	8.7	192.2				mg/L	9	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	23	Standard
I	127	3217.0	6.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.597	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		86.187	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:32:59
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.199
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.790
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:32:59
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:33:54
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90450.1	20.6				ug/L	74916	Standard
	Be	9	5.0	0.0	**0.0004**	0.001	173.7	ug/L	10	Standard
	Al	27	775.0	31.7	**0.0016**	0.002	112.9	ug/L	1822	Standard
	Sc	45	50978.4	13.8				ug/L	55220	Standard
	Ti	47	26.0	7.7	**-0.0042**	0.020	469.4	ug/L	34	Standard
	V	51	784.9	9.1	**-0.1080**	0.026	24.3	ug/L	1938	Standard
	Cr	52	4060.9	14.4	**-0.5718**	0.120	21.0	ug/L	9522	Standard
	Cr	53	301.7	12.0	**-0.1069**	0.079	74.2	ug/L	395	Standard
	Mn	55	609.3	28.1	**-0.0297**	0.032	107.2	ug/L	902	Standard
	Co	59	219.7	9.5	**0.0048**	0.004	91.0	ug/L	262	Standard
	Ni	60	252.3	20.8	**-0.0270**	0.042	155.2	ug/L	371	Standard
	Cu	65	108.7	4.1	**-0.0076**	0.013	170.5	ug/L	106	Standard
	Zn	66	183.3	13.9	**-0.2033**	0.019	9.2	ug/L	398	Standard
>	Ge	72	535510.2	22.8				ug/L	535147	Standard
	As	75	37.6	99.0	**0.0872**	0.030	34.3	ug/L	-43	Standard
	Se	82	42.1	65.8	**0.2494**	0.250	100.3	ug/L	14	Standard
	Se-1	77	40.0	31.9	**-0.1439**	0.061	42.7	ug/L	65	Standard
>	Ga	71	35.0	0.0				mg/L	97	Standard
	Rb	85	48.3	33.3				ug/L	15	Standard
	Y	89	411465.1	30.1				ug/L	465704	Standard
>	Rh	103	28.3	36.7				ug/L	10	Standard
	Mo	98	125.1	60.3	**0.0647**	0.038	58.9	ug/L	9	Standard
	Ag	107	83.3	17.1	**0.0065**	0.002	37.8	ug/L	82	Standard
	Cd	111	2.1	24.7	**0.0090**	0.001	6.1	mg/L	7	Standard
	Cd	114	-0.7	1078.9	**0.0089**	0.002	18.4	ug/L	21	Standard
>	In	115	564958.1	33.0				ug/L	619035	Standard
	Sn	118	335.0	22.6	**-0.0453**	0.011	24.3	ug/L	508	Standard
	Sb	123	18.4	50.3	**0.0089**	0.003	36.4	ug/L	86	Standard
	Ba	135	15.7	9.8	**-0.0117**	0.002	17.4	ug/L	79	Standard
	Ce	140	20.0	25.0				ug/L	68	Standard
>	Tb	159	950315.9	31.4				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	8.3	73.3	**0.0070**	0.001	13.0	ug/L	13	Standard
	Tl	205	10.0	100.0	**0.0091**	0.001	14.1	ug/L	10	Standard
	Pb	206	274.0	27.4	**0.0059**	0.002	29.0	ug/L	264	Standard
	Pb	207	238.7	22.5	**0.0093**	0.001	16.0	ug/L	227	Standard
	Pb	208	974.0	15.7	**0.0072**	0.005	71.7	ug/L	868	Standard
	U	238	2.3	49.5	**0.0082**	0.000	1.4	ug/L	8	Standard
>	Bi	209	577512.8	26.0				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:36:11
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	18.3	**0.0162**	0.017	104.0	mg/L	53	Standard
K	39	18.3	15.7	**-0.0423**	0.002	4.5	mg/L	53	Standard
Ca	43	20.0	25.0	**-0.4400**	0.295	67.1	mg/L	28	Standard
Fe	54	111.2	48.2	**-0.0326**	0.048	147.4	mg/L	181	Standard
Fe	57	305.0	8.5	**0.2171**	0.057	26.1	mg/L	257	Standard
Sc-1	45	50978.4	13.8				mg/L	55220	Standard
Cl	35	19130.1	4.6				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	666.7	5.7				ug/L	2040	Standard
P	31	12328.9	39.2				ug/L	20435	Standard
S	34	1113.4	14.8				ug/L	2430	Standard
Sr	88	68.3	15.2				ug/L	75	Standard
C	12	93.3	55.0				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	290.0	88.7				mg/L	7	Standard
Dy	164	12.9	45.1				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1068.4	17.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		120.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.068	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:36:11
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	91.264	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	106.746	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 52 Lower	Cr	52	

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:36:11
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 21:37:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67431.4	0.9				ug/L	74916	Standard
	Be	9	53817.1	2.2	**56.6770**	1.756	3.1	ug/L	10	Standard
	Al	27	7915196.4	0.8	**50.6766**	0.779	1.5	ug/L	1822	Standard
	Sc	45	47487.7	2.6				ug/L	55220	Standard
	Ti	47	35585.1	0.5	**95.4658**	2.604	2.7	ug/L	34	Standard
	V	51	402119.5	0.8	**47.9478**	1.257	2.6	ug/L	1938	Standard
	Cr	52	400703.0	0.9	**48.3435**	0.787	1.6	ug/L	9522	Standard
	Cr	53	48943.9	1.1	**48.2440**	0.640	1.3	ug/L	395	Standard
	Mn	55	360303.0	0.3	**46.3376**	1.024	2.2	ug/L	902	Standard
	Co	59	357130.9	0.5	**48.6003**	1.378	2.8	ug/L	262	Standard
	Ni	60	97761.7	1.2	**48.1917**	0.589	1.2	ug/L	371	Standard
	Cu	65	97541.7	1.0	**48.9446**	0.765	1.6	ug/L	106	Standard
	Zn	66	58233.7	1.4	**49.3295**	1.243	2.5	ug/L	398	Standard
>	**Ge**	72	482994.3	2.4				ug/L	535147	Standard
	As	75	58332.8	0.8	**48.3177**	0.741	1.5	ug/L	-43	Standard
	Se	82	5861.9	0.6	**47.8385**	0.901	1.9	ug/L	14	Standard
	Se-1	77	3960.9	1.5	**48.1496**	1.207	2.5	ug/L	65	Standard
>	**Ga**	71	76.7	26.4				mg/L	97	Standard
	Rb	85	853.4	5.7				ug/L	15	Standard
	Y	89	414125.8	1.6				ug/L	465704	Standard
>	**Rh**	103	40.0	43.3				ug/L	10	Standard
	Mo	98	272355.1	0.4	**93.5687**	1.700	1.8	ug/L	9	Standard
	Ag	107	332621.4	0.0	**47.2188**	0.947	2.0	ug/L	82	Standard
	Cd	111	107165.6	0.8	**47.5953**	0.983	2.1	mg/L	7	Standard
	Cd	114	257847.8	1.0	**47.5584**	1.267	2.7	ug/L	21	Standard
>	**In**	115	577731.0	1.9				ug/L	619035	Standard
	Sn	118	300594.3	0.7	**49.4050**	1.294	2.6	ug/L	508	Standard
	Sb	123	236808.1	0.3	**47.9277**	0.854	1.8	ug/L	86	Standard
	Ba	135	99562.7	0.8	**46.6609**	1.297	2.8	ug/L	79	Standard
	Ce	140	140.0	35.2				ug/L	68	Standard
>	**Tb**	159	867654.4	1.3				ug/L	986982	Standard
	Ho	165	11.7	89.2				ug/L	10	Standard
	Tl	203	416289.5	1.3	**48.9625**	1.155	2.4	ug/L	13	Standard
	Tl	205	366754.2	0.8	**50.4878**	0.642	1.3	ug/L	10	Standard
	Pb	206	263152.9	0.6	**48.1874**	0.951	2.0	ug/L	264	Standard
	Pb	207	238074.2	0.7	**48.2372**	0.963	2.0	ug/L	227	Standard
	Pb	208	984369.0	1.0	**51.7197**	0.568	1.1	ug/L	868	Standard
	U	238	358515.6	1.0	**50.9636**	0.777	1.5	ug/L	8	Standard
>	**Bi**	209	503932.6	1.4				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 21:39:24
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4042.2	2.5	**5.0922**	0.253	5.0	mg/L	53	Standard
K	39	1623.4	6.5	**3.1316**	0.276	8.8	mg/L	53	Standard
Ca	43	90.0	9.6	**4.2482**	0.483	11.4	mg/L	28	Standard
Fe	54	5975.1	4.2	**4.6170**	0.222	4.8	mg/L	181	Standard
Fe	57	1913.5	4.0	**5.2334**	0.291	5.6	mg/L	257	Standard
> **Sc-1**	45	47487.7	2.6				mg/L	55220	Standard
Cl	35	39379.1	1.8				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1633.4	6.7				ug/L	2040	Standard
P	31	21400.1	1.3				ug/L	20435	Standard
S	34	2506.9	6.2				ug/L	2430	Standard
Sr	88	65.0	23.1				ug/L	75	Standard
C	12	90.0	29.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	7	Standard
Dy	164	13.2	117.5				mg/L	9	Standard
Ho-1	165	11.7	89.2				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	8260.6	4.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	113.354		
Al	27	101.353		
Sc	45			
Ti	47	95.466		
V	51	95.896		
Cr	52	96.687		
Cr	53			
Mn	55	92.675		
Co	59	97.201		
Ni	60	96.383		
Cu	65	97.889		
Zn	66	98.659		
> Ge	72		90.255	
As	75	96.635		
Se	82	95.677		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 21:39:24
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	93.569		
Ag	107	94.438		
Cd	111	95.191		
Cd	114			
In	115		93.328	
Sn	118	98.810		
Sb	123	95.855		
Ba	135	93.322		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.925		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.439		
U	238	101.927		
Bi	209		93.146	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 21:39:24
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 21:40:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71900.2	1.6				ug/L	74916	Standard
	Be	9	21.7	35.3	**0.0178**	0.007	41.7	ug/L	10	Standard
	Al	27	2898.6	45.2	**0.0150**	0.008	50.6	ug/L	1822	Standard
	Sc	45	47536.1	1.4				ug/L	55220	Standard
	Ti	47	35.0	11.4	**0.0223**	0.010	42.7	ug/L	34	Standard
	V	51	1200.3	7.6	**-0.0548**	0.011	19.7	ug/L	1938	Standard
	Cr	52	6500.4	2.4	**-0.2503**	0.022	8.8	ug/L	9522	Standard
	Cr	53	503.3	12.8	**0.1049**	0.058	55.7	ug/L	395	Standard
	Mn	55	738.0	10.0	**-0.0115**	0.009	80.1	ug/L	902	Standard
	Co	59	292.0	26.9	**0.0163**	0.010	63.6	ug/L	262	Standard
	Ni	60	263.0	4.6	**-0.0175**	0.005	26.1	ug/L	371	Standard
	Cu	65	174.0	18.1	**0.0273**	0.015	54.7	ug/L	106	Standard
	Zn	66	341.7	8.5	**-0.0597**	0.023	38.4	ug/L	398	Standard
>	**Ge**	72	490224.0	1.2				ug/L	535147	Standard
	As	75	-42.6	38.6	**0.0204**	0.014	66.6	ug/L	-43	Standard
	Se	82	20.2	27.9	**0.0662**	0.046	69.7	ug/L	14	Standard
	Se-1	77	49.7	18.7	**0.0213**	0.119	560.0	ug/L	65	Standard
>	**Ga**	71	36.7	43.8				mg/L	97	Standard
	Rb	85	28.3	44.4				ug/L	15	Standard
	Y	89	430929.4	1.2				ug/L	465704	Standard
>	**Rh**	103	25.0	80.0				ug/L	10	Standard
	Mo	98	240.0	28.0	**0.0921**	0.022	24.4	ug/L	9	Standard
	Ag	107	163.3	39.5	**0.0164**	0.009	54.4	ug/L	82	Standard
	Cd	111	16.9	26.3	**0.0152**	0.002	12.7	mg/L	7	Standard
	Cd	114	59.4	58.0	**0.0195**	0.006	31.5	ug/L	21	Standard
>	**In**	115	597612.9	0.2				ug/L	619035	Standard
	Sn	118	955.0	17.0	**0.0486**	0.026	53.0	ug/L	508	Standard
	Sb	123	608.2	26.3	**0.1233**	0.031	25.2	ug/L	86	Standard
	Ba	135	47.3	46.9	**0.0018**	0.010	554.4	ug/L	79	Standard
	Ce	140	30.0	28.9				ug/L	68	Standard
>	**Tb**	159	896744.8	0.6				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	106.0	37.4	**0.0180**	0.004	24.3	ug/L	13	Standard
	Tl	205	63.3	40.5	**0.0161**	0.003	20.7	ug/L	10	Standard
	Pb	206	303.7	6.4	**0.0158**	0.003	18.7	ug/L	264	Standard
	Pb	207	270.0	14.7	**0.0195**	0.007	37.4	ug/L	227	Standard
	Pb	208	1117.7	11.7	**0.0182**	0.006	33.3	ug/L	868	Standard
	U	238	78.7	54.5	**0.0186**	0.006	30.9	ug/L	8	Standard
>	**Bi**	209	523387.9	0.9				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 21:42:35
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	76.0	**0.0164**	0.039	240.4	mg/L	53	Standard
K	39	20.0	90.1	**-0.0368**	0.035	96.4	mg/L	53	Standard
Ca	43	15.0	115.5	**-0.6879**	1.140	165.7	mg/L	28	Standard
Fe	54	175.7	28.7	**0.0207**	0.042	202.0	mg/L	181	Standard
Fe	57	243.3	3.1	**0.0857**	0.013	15.5	mg/L	257	Standard
> **Sc-1**	45	47536.1	1.4				mg/L	55220	Standard
Cl	35	37912.7	0.7				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1596.8	8.8				ug/L	2040	Standard
P	31	20108.3	2.8				ug/L	20435	Standard
S	34	2458.5	3.7				ug/L	2430	Standard
Sr	88	83.3	3.5				ug/L	75	Standard
C	12	106.7	10.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	7	Standard
Dy	164	112.2	18.7				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	3290.4	8.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 21:42:35
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.539
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.742
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 21:42:35
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Friday, July 01, 2016 08:32:04
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	93006.3	1.1				ug/L	74916	Standard
	Be	9	20.0	25.0	**0.0116**	0.004	31.7	ug/L	10	Standard
	Al	27	1552992.1	1.0	**7.2064**	0.052	0.7	ug/L	1822	Standard
	Sc	45	39419.6	2.0				ug/L	55220	Standard
	Ti	47	501.0	4.3	**1.5380**	0.050	3.3	ug/L	34	Standard
	V	51	2620.2	6.3	**0.1790**	0.027	14.9	ug/L	1938	Standard
	Cr	52	5440.0	0.8	**-0.2376**	0.005	2.2	ug/L	9522	Standard
	Cr	53	2233.5	15.4	**2.2669**	0.406	17.9	ug/L	395	Standard
	Mn	55	12884096.7	1.2	**1986.1988**	24.888	1.3	ug/L	902	Standard
	Co	59	14555.7	5.3	**2.3470**	0.122	5.2	ug/L	262	Standard
	Ni	60	4131.6	1.3	**2.2980**	0.028	1.2	ug/L	371	Standard
	Cu	65	3742.1	7.4	**2.1908**	0.182	8.3	ug/L	106	Standard
	Zn	66	6948.6	3.1	**6.7442**	0.282	4.2	ug/L	398	Standard
>	Ge	72	403717.5	1.3				ug/L	535147	Standard
	As	75	3272.2	1.7	**3.2933**	0.019	0.6	ug/L	-43	Standard
	Se	82	468.8	5.1	**4.4884**	0.233	5.2	ug/L	14	Standard
	Se-1	77	300.0	5.5	**3.8347**	0.277	7.2	ug/L	65	Standard
>	Ga	71	398.3	16.6				mg/L	97	Standard
	Rb	85	145071.3	1.5				ug/L	15	Standard
	Y	89	367799.2	1.0				ug/L	465704	Standard
>	Rh	103	268.3	26.2				ug/L	10	Standard
	Mo	98	2447721.3	1.3	**1045.0964**	23.451	2.2	ug/L	9	Standard
	Ag	107	96.3	15.8	**0.0109**	0.002	22.8	ug/L	82	Standard
	Cd	111	-2684.4	2.0	**-1.4735**	0.029	2.0	mg/L	7	Standard
	Cd	114	3116.6	4.8	**0.7235**	0.043	6.0	ug/L	21	Standard
>	In	115	464778.6	1.3				ug/L	619035	Standard
	Sn	118	200.0	24.6	**-0.0626**	0.010	15.4	ug/L	508	Standard
	Sb	123	1153.1	15.2	**0.2941**	0.041	13.9	ug/L	86	Standard
	Ba	135	7861.0	1.3	**4.5603**	0.044	1.0	ug/L	79	Standard
	Ce	140	10441.9	1.0				ug/L	68	Standard
>	Tb	159	822223.0	0.9				ug/L	986982	Standard
	Ho	165	268.3	15.6				ug/L	10	Standard
	Tl	203	82.3	15.6	**0.0175**	0.002	10.1	ug/L	13	Standard
	Tl	205	100.0	25.0	**0.0241**	0.004	17.6	ug/L	10	Standard
	Pb	206	1074.0	1.8	**0.1970**	0.007	3.8	ug/L	264	Standard
	Pb	207	905.4	2.5	**0.1858**	0.006	3.3	ug/L	227	Standard
	Pb	208	3476.2	0.7	**0.1797**	0.005	2.7	ug/L	868	Standard
	U	238	205.3	7.0	**0.0427**	0.002	4.1	ug/L	8	Standard
>	Bi	209	422495.5	2.5				ug/L	541014	Standard

Sample ID: L1606036203
Report Date/Time: Friday, July 01, 2016 08:34:21
Page 1

Approved: July 01, 2016

Na	23	3.3	173.2	**25.7144**	44.530	173.2	mg/L	2	Standard
Mg	24	307341.0	3.0	**469.1675**	11.229	2.4	mg/L	53	Standard
K	39	16730.9	4.5	**39.6882**	1.267	3.2	mg/L	53	Standard
Ca	43	478.3	5.8	**36.2580**	1.470	4.1	mg/L	28	Standard
Fe	54	1582.4	11.9	**1.3903**	0.161	11.6	mg/L	181	Standard
Fe	57	835.0	11.0	**2.4319**	0.278	11.5	mg/L	257	Standard
> **Sc-1**	45	39419.6	2.0				mg/L	55220	Standard
Cl	35	63976.8	1.8				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	84877.1	1.1				ug/L	2040	Standard
P	31	5806.1	1.9				ug/L	20435	Standard
S	34	1706.8	4.3				ug/L	2430	Standard
Sr	88	715.0	4.9				ug/L	75	Standard
C	12	340.0	5.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	63.6				mg/L	7	Standard
Dy	164	347.7	31.7				mg/L	9	Standard
Ho-1	165	268.3	15.6				mg/L	10	Standard
Er	166	186.7	25.3				mg/L	23	Standard
I	127	685083.8	4.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.147	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		75.440	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606036203
Report Date/Time: Friday, July 01, 2016 08:34:21
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	75.081	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	78.093	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606036203
Report Date/Time: Friday, July 01, 2016 08:34:21
Page 3

Approved: July 01, 2016

Cd 111 Lower	Cd	111

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 08:35:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	104652.1	3.1				ug/L	74916	Standard
	Be	9	65190.0	1.7	**44.2562**	1.577	3.6	ug/L	10	Standard
	Al	27	8981432.3	0.8	**37.0663**	0.908	2.4	ug/L	1822	Standard
	Sc	45	43714.6	1.6				ug/L	55220	Standard
	Ti	47	31848.4	0.7	**91.2042**	0.432	0.5	ug/L	34	Standard
	V	51	397692.8	1.5	**50.6325**	0.695	1.4	ug/L	1938	Standard
	Cr	52	364036.8	0.6	**46.8611**	0.164	0.3	ug/L	9522	Standard
	Cr	53	44369.9	2.1	**46.6840**	0.901	1.9	ug/L	395	Standard
	Mn	55	343511.4	1.2	**47.1649**	0.503	1.1	ug/L	902	Standard
	Co	59	365301.7	0.5	**53.0684**	0.242	0.5	ug/L	262	Standard
	Ni	60	88054.5	0.3	**46.3416**	0.215	0.5	ug/L	371	Standard
	Cu	65	88641.2	0.7	**47.4878**	0.316	0.7	ug/L	106	Standard
	Zn	66	53665.6	1.4	**48.5266**	0.608	1.3	ug/L	398	Standard
>	Ge	72	452264.7	0.2				ug/L	535147	Standard
	As	75	54576.0	1.2	**48.2651**	0.498	1.0	ug/L	-43	Standard
	Se	82	5913.9	1.8	**51.5338**	0.825	1.6	ug/L	14	Standard
	Se-1	77	3667.1	0.9	**47.5865**	0.510	1.1	ug/L	65	Standard
>	Ga	71	155.0	28.1				mg/L	97	Standard
	Rb	85	930.0	4.1				ug/L	15	Standard
	Y	89	421703.0	0.5				ug/L	465704	Standard
>	Rh	103	63.3	70.8				ug/L	10	Standard
	Mo	98	269466.6	0.9	**95.0402**	0.819	0.9	ug/L	9	Standard
	Ag	107	324401.6	1.1	**47.2760**	0.478	1.0	ug/L	82	Standard
	Cd	111	100577.6	0.8	**45.8578**	0.287	0.6	mg/L	7	Standard
	Cd	114	250730.0	1.0	**47.4721**	0.488	1.0	ug/L	21	Standard
>	In	115	562623.8	0.4				ug/L	619035	Standard
	Sn	118	281805.1	1.3	**47.5397**	0.439	0.9	ug/L	508	Standard
	Sb	123	224039.7	0.6	**46.5502**	0.156	0.3	ug/L	86	Standard
	Ba	135	98585.4	0.5	**47.4267**	0.184	0.4	ug/L	79	Standard
	Ce	140	163.3	18.5				ug/L	68	Standard
>	Tb	159	931867.2	1.5				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	411636.8	0.3	**47.3597**	0.319	0.7	ug/L	13	Standard
	Tl	205	368917.7	1.2	**49.6846**	0.789	1.6	ug/L	10	Standard
	Pb	206	265065.5	0.3	**47.4786**	0.117	0.2	ug/L	264	Standard
	Pb	207	240273.2	0.7	**47.6208**	0.337	0.7	ug/L	227	Standard
	Pb	208	920376.8	1.1	**47.3047**	0.501	1.1	ug/L	868	Standard
	U	238	372261.0	0.4	**51.7673**	0.178	0.3	ug/L	8	Standard
>	Bi	209	515073.7	0.4				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 08:37:33
Page 1

Approved: July 01, 2016

Na	23	3.3	173.2	**23.6206**	40.903	173.2	mg/L	2	Standard
Mg	24	4920.8	2.5	**6.7416**	0.245	3.6	mg/L	53	Standard
K	39	1953.5	3.3	**4.1118**	0.137	3.3	mg/L	53	Standard
Ca	43	80.0	47.2	**4.0631**	2.720	67.0	mg/L	28	Standard
Fe	54	6442.0	0.3	**5.4265**	0.076	1.4	mg/L	181	Standard
Fe	57	1820.1	1.5	**5.4286**	0.169	3.1	mg/L	257	Standard
Sc-1	45	43714.6	1.6				mg/L	55220	Standard
Cl	35	25342.5	0.5				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2553.5	7.8				ug/L	2040	Standard
P	31	17611.9	2.0				ug/L	20435	Standard
S	34	1886.8	9.4				ug/L	2430	Standard
Sr	88	51.7	22.3				ug/L	75	Standard
C	12	216.7	11.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	7	Standard
Dy	164	12.9	41.7				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	9761.8	38.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	88.512		
Al	27	74.133		
Sc	45			
Ti	47	91.204		
V	51	101.265		
Cr	52	93.722		
Cr	53			
Mn	55	94.330		
Co	59	106.137		
Ni	60	92.683		
Cu	65	94.976		
Zn	66	97.053		
Ge	72		84.512	
As	75	96.530		
Se	82	103.068		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 08:37:33
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	95.040		
Ag	107	94.552		
Cd	111	91.716		
Cd	114			
In	115		90.887	
Sn	118	95.079		
Sb	123	93.100		
Ba	135	94.853		
Ce	140			
Tb	159			
Ho	165			
Tl	203	94.719		
Tl	205			
Pb	206			
Pb	207			
Pb	208	94.609		
U	238	103.535		
Bi	209		95.205	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 08:37:33
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 08:38:28
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101832.7	0.1				ug/L	74916	Standard
	Be	9	21.7	13.3	**0.0115**	0.002	17.5	ug/L	10	Standard
	Al	27	3402.1	40.5	**0.0121**	0.006	48.4	ug/L	1822	Standard
	Sc	45	43323.5	1.5				ug/L	55220	Standard
	Ti	47	47.7	4.4	**0.0655**	0.006	9.3	ug/L	34	Standard
	V	51	1261.5	5.2	**-0.0363**	0.008	22.4	ug/L	1938	Standard
	Cr	52	6090.9	1.2	**-0.2438**	0.011	4.7	ug/L	9522	Standard
	Cr	53	543.3	24.4	**0.1852**	0.141	76.1	ug/L	395	Standard
	Mn	55	2328.9	74.2	**0.2134**	0.237	111.1	ug/L	902	Standard
	Co	59	267.0	18.5	**0.0157**	0.007	45.9	ug/L	262	Standard
	Ni	60	619.0	4.8	**0.1789**	0.016	9.1	ug/L	371	Standard
	Cu	65	403.7	9.0	**0.1563**	0.020	12.8	ug/L	106	Standard
	Zn	66	491.7	4.3	**0.0979**	0.020	20.8	ug/L	398	Standard
>	**Ge**	72	455524.9	0.3				ug/L	535147	Standard
	As	75	-12.5	248.3	**0.0443**	0.027	61.6	ug/L	-43	Standard
	Se	82	35.3	18.1	**0.2092**	0.056	26.8	ug/L	14	Standard
	Se-1	77	57.3	1.0	**0.1663**	0.008	4.8	ug/L	65	Standard
>	**Ga**	71	73.3	53.0				mg/L	97	Standard
	Rb	85	48.3	21.5				ug/L	15	Standard
	Y	89	420800.7	2.5				ug/L	465704	Standard
>	**Rh**	103	48.3	41.8				ug/L	10	Standard
	Mo	98	1359.7	4.4	**0.4956**	0.020	4.1	ug/L	9	Standard
	Ag	107	96.0	1.0	**0.0080**	0.000	3.1	ug/L	82	Standard
	Cd	111	11.8	64.2	**0.0133**	0.003	26.1	mg/L	7	Standard
	Cd	114	49.1	54.7	**0.0183**	0.005	27.7	ug/L	21	Standard
>	**In**	115	558184.5	0.7				ug/L	619035	Standard
	Sn	118	840.0	13.6	**0.0398**	0.020	49.3	ug/L	508	Standard
	Sb	123	615.3	27.1	**0.1333**	0.035	26.4	ug/L	86	Standard
	Ba	135	41.3	38.6	**0.0004**	0.008	1923.8	ug/L	79	Standard
	Ce	140	33.3	22.9				ug/L	68	Standard
>	**Tb**	159	919868.1	0.7				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	70.7	36.4	**0.0141**	0.003	20.9	ug/L	13	Standard
	Tl	205	83.3	59.2	**0.0189**	0.007	35.1	ug/L	10	Standard
	Pb	206	296.0	10.7	**0.0150**	0.006	38.5	ug/L	264	Standard
	Pb	207	242.3	9.3	**0.0146**	0.004	30.4	ug/L	227	Standard
	Pb	208	1060.7	19.5	**0.0159**	0.011	66.8	ug/L	868	Standard
	U	238	73.7	80.7	**0.0181**	0.008	45.5	ug/L	8	Standard
>	**Bi**	209	518253.1	0.4				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 08:40:45
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	108.3	23.2	**0.1158**	0.034	29.3	mg/L	53	Standard
K	39	28.3	44.4	**-0.0145**	0.028	192.8	mg/L	53	Standard
Ca	43	16.7	17.3	**-0.4722**	0.203	43.0	mg/L	28	Standard
Fe	54	122.7	13.1	**-0.0120**	0.015	126.5	mg/L	181	Standard
Fe	57	215.0	22.4	**0.0615**	0.153	249.0	mg/L	257	Standard
Sc-1	45	43323.5	1.5				mg/L	55220	Standard
Cl	35	25651.0	2.4				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1796.8	2.2				ug/L	2040	Standard
P	31	17269.8	0.2				ug/L	20435	Standard
S	34	1768.4	7.7				ug/L	2430	Standard
Sr	88	51.7	11.2				ug/L	75	Standard
C	12	190.0	36.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	7	Standard
Dy	164	125.4	30.1				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	26.7	21.7				mg/L	23	Standard
I	127	4757.4	13.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		85.121	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 08:40:45
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	90.170	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.793	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Mo	98	

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 08:40:45
Page 3

Approved: July 01, 2016

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Friday, July 01, 2016 10:13:04

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1329	2024	0.709	
Mg	23.985	23.975	4503	2020	0.696	
Co	58.933	58.925	11692	2022	0.691	
In	114.904	114.875	22859	2028	0.686	
U	238.050	238.025	47457	2043	0.687	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	3.598
5.575	4.718
5.625	3.789
5.675	2.527
5.725	1.318
5.775	1.142
5.825	2.913
5.875	3.428
5.925	4.580
5.975	3.116
6.025	1.509
6.075	2.372
6.125	1.519
6.175	1.841
6.225	5.064
6.275	40.937
6.325	69.722
6.375	49.793
6.425	63.949
6.475	46.187
6.525	18.017
6.575	4.888
6.625	1.946
6.675	3.206
6.725	1.995
6.775	2.218
6.825	1.690

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 1

Approved: July 02, 2016

6.875	1.781
6.925	1.186
6.975	1.328
7.025	1.344
7.075	1.081
7.125	0.453
7.175	2.067
7.225	2.391
7.275	2.950
7.325	17.639
7.375	57.735
7.425	72.436
7.475	223.607
7.525	61.237
7.575	61.237
7.625	74.689
7.675	43.853
7.725	81.441
7.775	70.711
7.825	49.793
7.875	81.441
7.925	71.261
7.975	63.888
8.025	108.327
8.075	69.722
8.125	100.000
8.175	69.722
8.225	63.191
8.275	46.481
8.325	59.265
8.375	94.786
8.425	43.853
8.475	35.355
22.525	100.000
22.575	24.845
22.625	11.877
22.675	14.821
22.725	27.507
22.775	16.675
22.825	18.109
22.875	27.152
22.925	12.748
22.975	17.626
23.025	12.284
23.075	17.138
23.125	22.852
23.175	24.755

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 2

Approved: July 02, 2016

23.225	27.794
23.275	13.465
23.325	28.287
23.375	27.216
23.425	29.613
23.475	25.156
23.525	5.738
23.575	3.240
23.625	2.912
23.675	3.295
23.725	2.834
23.775	3.434
23.825	2.694
23.875	2.849
23.925	2.371
23.975	2.335
24.025	3.002
24.075	2.407
24.125	2.590
24.175	2.561
24.225	3.038
24.275	3.732
24.325	13.243
24.375	46.291
24.425	31.044
24.475	3.900
24.525	3.690
24.575	1.518
24.625	2.041
24.675	1.011
24.725	0.948
24.775	1.552
24.825	1.240
24.875	0.999
24.925	2.206
24.975	1.206
25.025	1.519
25.075	1.903
25.125	0.579
25.175	1.714
25.225	2.460
25.275	18.990
25.325	26.352
25.375	57.810
25.425	13.305
25.475	13.731
57.525	8.299

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 3

Approved: July 02, 2016

57.575	3.825
57.625	2.379
57.675	1.810
57.725	1.941
57.775	3.194
57.825	3.753
57.875	1.813
57.925	1.247
57.975	2.156
58.025	1.826
58.075	1.503
58.125	1.715
58.175	3.179
58.225	2.838
58.275	20.250
58.325	47.507
58.375	33.055
58.425	7.046
58.475	7.950
58.525	1.298
58.575	2.456
58.625	0.689
58.675	2.468
58.725	2.353
58.775	0.839
58.825	1.215
58.875	1.050
58.925	1.190
58.975	1.362
59.025	1.477
59.075	1.339
59.125	2.122
59.175	2.562
59.225	3.714
59.275	10.687
59.325	73.193
59.375	43.301
59.425	29.315
59.475	15.449
59.525	9.592
59.575	4.491
59.625	3.077
59.675	2.739
59.725	2.974
59.775	4.607
59.825	3.985
59.875	2.185

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 4

Approved: July 02, 2016

59.925	2.525
59.975	1.104
60.025	3.006
60.075	3.085
60.125	2.240
60.175	5.388
60.225	7.934
60.275	43.006
60.325	15.215
60.375	46.351
60.425	85.267
60.475	44.721
113.525	8.024
113.575	2.930
113.625	3.520
113.675	3.350
113.725	2.512
113.775	1.897
113.825	2.146
113.875	1.417
113.925	2.337
113.975	2.849
114.025	1.596
114.075	1.757
114.125	1.986
114.175	3.937
114.225	7.420
114.275	16.156
114.325	23.697
114.375	19.422
114.425	6.964
114.475	6.194
114.525	3.847
114.575	1.824
114.625	1.449
114.675	1.397
114.725	1.117
114.775	1.853
114.825	0.668
114.875	1.048
114.925	1.062
114.975	0.807
115.025	1.604
115.075	0.617
115.125	0.990
115.175	1.502
115.225	4.478

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 5

Approved: July 02, 2016

115.275	6.474
115.325	39.891
115.375	63.816
115.425	37.630
115.475	30.031
115.525	14.465
115.575	9.978
115.625	2.212
115.675	2.597
115.725	4.004
115.775	4.700
115.825	2.647
115.875	1.521
115.925	0.934
115.975	2.944
116.025	2.211
116.075	6.400
116.125	6.342
116.175	7.120
116.225	10.108
116.275	16.197
116.325	46.481
116.375	69.722
116.425	51.349
116.475	37.029
236.525	
236.575	29.186
236.625	24.495
236.675	29.186
236.725	31.126
236.775	17.430
236.825	21.320
236.875	35.016
236.925	29.487
236.975	22.480
237.025	20.328
237.075	5.167
237.125	26.770
237.175	39.033
237.225	35.209
237.275	32.070
237.325	18.731
237.375	19.628
237.425	26.854
237.475	32.050
237.525	17.891
237.575	10.999

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 6

Approved: July 02, 2016

237.625	4.356
237.675	1.280
237.725	1.988
237.775	1.816
237.825	1.251
237.875	1.667
237.925	1.057
237.975	0.998
238.025	0.960
238.075	1.070
238.125	0.734
238.175	2.008
238.225	0.722
238.275	1.413
238.325	1.849
238.375	2.376
238.425	2.444
238.475	2.524
238.525	19.935
238.575	20.360
238.625	13.507
238.675	21.195
238.725	21.155
238.775	6.804
238.825	10.080
238.875	12.811
238.925	23.344
238.975	11.513
239.025	14.758
239.075	30.366
239.125	18.763
239.175	14.417
239.225	4.027
239.275	13.280
239.325	20.761
239.375	27.288
239.425	21.246
239.475	21.217

Approved: July 02, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 7/1/2016 10:17:38 AM
End Time: 7/1/2016 10:19:50 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 6753.37
        Obtained Intensity (Mg 23.985): 350422.63
        Obtained Intensity (In 114.904): 74054.21
        Obtained Intensity (U 238.05): 161864.28
        Obtained Intensity (Bkgd 220): 0.13
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4067.61 / 207928.14)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2367.92 / 207928.14)
```

Report Date/Time: Friday, July 01, 2016 10:19:50
Page 1

Approved: July 02, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 7/1/2016 10:17:38 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 6753.37
                Obtained Intensity (Mg 23.985): 350422.63
                Obtained Intensity (In 114.904): 74054.21
                Obtained Intensity (U 238.05): 161864.28
                Obtained Intensity (Bkgd 220): 0.13
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4067.61 / 207928.14)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2367.92 / 207928.14)
[Passed]  Optimum value(s): N/A

End Time: 7/1/2016 10:19:50 AM
```


Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Friday, July 01, 2016 10:27:28
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76455.8	1.4				ug/L		Standard
	Be	9	20.0	50.0				ug/L		Standard
	Al	27	1306.7	8.4				ug/L		Standard
	Sc	45	41174.2	1.3				ug/L		Standard
	Ti	47	27.3	20.1				ug/L		Standard
	V	51	1434.3	4.1				ug/L		Standard
	Cr	52	7733.0	1.4				ug/L		Standard
	Cr	53	441.7	6.2				ug/L		Standard
	Mn	55	722.7	2.8				ug/L		Standard
	Co	59	217.3	3.4				ug/L		Standard
	Ni	60	304.3	3.8				ug/L		Standard
	Cu	65	181.0	9.6				ug/L		Standard
	Zn	66	214.7	7.4				ug/L		Standard
>	Ge	72	520809.4	1.3				ug/L		Standard
	As	75	-51.8	28.3				ug/L		Standard
	Se	82	16.9	16.8				ug/L		Standard
	Se-1	77	56.0	13.9				ug/L		Standard
>	Ga	71	25.0	34.6				mg/L		Standard
	Rb	85	28.3	71.3				ug/L		Standard
	Y	89	447394.9	1.2				ug/L		Standard
>	Rh	103	15.0	0.0				ug/L		Standard
	Mo	98	112.7	27.3				ug/L		Standard
	Ag	107	108.0	3.2				ug/L		Standard
	Cd	111	3.1	49.9				mg/L		Standard
	Cd	114	19.8	49.9				ug/L		Standard
>	In	115	625727.9	1.1				ug/L		Standard
	Sn	118	568.3	11.1				ug/L		Standard
	Sb	123	611.9	31.5				ug/L		Standard
	Ba	135	21.0	20.8				ug/L		Standard
	Ce	140	245.0	41.7				ug/L		Standard
>	Tb	159	950397.3	0.8				ug/L		Standard
	Ho	165	6.7	114.6				ug/L		Standard
	Tl	203	15.0	17.6				ug/L		Standard
	Tl	205	13.3	57.3				ug/L		Standard
	Pb	206	263.7	1.3				ug/L		Standard
	Pb	207	221.7	2.3				ug/L		Standard
	Pb	208	958.7	0.3				ug/L		Standard
	U	238	9.3	30.9				ug/L		Standard
>	Bi	209	552820.8	0.2				ug/L		Standard

Sample ID: Blank
Report Date/Time: Friday, July 01, 2016 10:29:45
Page 1

Approved: July 02, 2016

	Na	23	1.7	173.2	mg/L	Standard
	Mg	24	55.0	15.7	mg/L	Standard
	K	39	28.3	27.0	mg/L	Standard
	Ca	43	26.7	47.2	mg/L	Standard
	Fe	54	147.3	8.3	mg/L	Standard
	Fe	57	268.3	12.1	mg/L	Standard
>	**Sc-1**	45	41174.2	1.3	mg/L	Standard
	Cl	35	69550.0	1.7	ug/L	Standard
	Kr	83	0.7	86.6	ug/L	Standard
	Br	81	1950.1	7.9	ug/L	Standard
	P	31	21156.4	1.5	ug/L	Standard
	S	34	3418.7	4.4	ug/L	Standard
	Sr	88	71.7	49.5	ug/L	Standard
	C	12	163.3	19.7	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	16.7	69.3	mg/L	Standard
	Dy	164	16.3	91.8	mg/L	Standard
	Ho-1	165	6.7	114.6	mg/L	Standard
	Er	166	6.7	86.6	mg/L	Standard
	I	127	19499.2	0.9	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Blank
Report Date/Time: Friday, July 01, 2016 10:29:45
Page 2

Approved: July 02, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Friday, July 01, 2016 10:29:45
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Friday, July 01, 2016 10:30:40
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76115.8	2.8				ug/L	76456	Standard
	Be	9	13.3	21.7				ug/L	20	Standard
	Al	27	1265.1	6.9				ug/L	1307	Standard
	Sc	45	40428.9	1.7				ug/L	41174	Standard
	Ti	47	21.7	32.4				ug/L	27	Standard
	V	51	1555.0	2.9				ug/L	1434	Standard
	Cr	52	7686.3	1.0				ug/L	7733	Standard
	Cr	53	466.7	11.8				ug/L	442	Standard
	Mn	55	715.0	5.0				ug/L	723	Standard
	Co	59	200.7	6.9				ug/L	217	Standard
	Ni	60	335.0	2.6				ug/L	304	Standard
	Cu	65	166.7	3.3				ug/L	181	Standard
	Zn	66	240.0	2.6				ug/L	215	Standard
>	**Ge**	72	524095.0	0.6				ug/L	520809	Standard
	As	75	-59.9	59.9				ug/L	-52	Standard
	Se	82	13.2	52.5				ug/L	17	Standard
	Se-1	77	54.7	18.5				ug/L	56	Standard
>	**Ga**	71	33.3	45.8				mg/L	25	Standard
	Rb	85	11.7	89.2				ug/L	28	Standard
	Y	89	451430.1	1.0				ug/L	447395	Standard
>	**Rh**	103	13.3	142.0				ug/L	15	Standard
	Mo	98	59.2	36.8				ug/L	113	Standard
	Ag	107	83.3	15.2				ug/L	108	Standard
	Cd	111	2.6	60.3				mg/L	3	Standard
	Cd	114	6.8	257.6				ug/L	20	Standard
>	**In**	115	626754.1	0.5				ug/L	625728	Standard
	Sn	118	553.3	6.0				ug/L	568	Standard
	Sb	123	259.4	31.5				ug/L	612	Standard
	Ba	135	20.7	14.8				ug/L	21	Standard
	Ce	140	71.7	8.1				ug/L	245	Standard
>	**Tb**	159	970231.2	1.1				ug/L	950397	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	7.7	32.8				ug/L	15	Standard
	Tl	205	6.7	43.3				ug/L	13	Standard
	Pb	206	273.7	9.4				ug/L	264	Standard
	Pb	207	216.3	5.9				ug/L	222	Standard
	Pb	208	930.0	2.3				ug/L	959	Standard
	U	238	2.3	24.7				ug/L	9	Standard
>	**Bi**	209	552479.9	0.9				ug/L	552821	Standard

Sample ID: Standard 1
Report Date/Time: Friday, July 01, 2016 10:32:57
Page 1

Approved: July 02, 2016

	Na	23	0.0		mg/L	2	Standard
	Mg	24	65.0	20.4	mg/L	55	Standard
	K	39	38.3	19.9	mg/L	28	Standard
	Ca	43	28.3	53.9	mg/L	27	Standard
	Fe	54	142.9	16.5	mg/L	147	Standard
	Fe	57	211.7	5.9	mg/L	268	Standard
>	**Sc-1**	45	40428.9	1.7	mg/L	41174	Standard
	Cl	35	69484.3	2.2	ug/L	69550	Standard
	Kr	83	1.0	0.0	ug/L	1	Standard
	Br	81	2066.8	4.1	ug/L	1950	Standard
	P	31	21174.8	5.7	ug/L	21156	Standard
	S	34	3378.7	3.5	ug/L	3419	Standard
	Sr	88	91.7	20.7	ug/L	72	Standard
	C	12	160.0	28.6	mg/L	163	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	16.7	91.7	mg/L	17	Standard
	Dy	164	6.3	93.2	mg/L	16	Standard
	Ho-1	165	3.3	173.2	mg/L	7	Standard
	Er	166	6.7	86.6	mg/L	7	Standard
	I	127	19828.0	1.1	mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 1
Report Date/Time: Friday, July 01, 2016 10:32:57
Page 2

Approved: July 02, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Friday, July 01, 2016 10:32:57
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Friday, July 01, 2016 10:33:51
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74986.8	1.6				ug/L	76456	Standard
	Be	9	76.7	43.4				ug/L	20	Standard
	Al	27	10110.0	3.2				ug/L	1307	Standard
	Sc	45	40704.6	1.5				ug/L	41174	Standard
	Ti	47	59.7	6.8				ug/L	27	Standard
	V	51	2028.1	3.7				ug/L	1434	Standard
	Cr	52	8189.5	1.1				ug/L	7733	Standard
	Cr	53	468.3	4.9				ug/L	442	Standard
	Mn	55	1137.0	2.8				ug/L	723	Standard
	Co	59	604.0	2.0				ug/L	217	Standard
	Ni	60	418.3	1.4				ug/L	304	Standard
	Cu	65	251.3	1.9				ug/L	181	Standard
	Zn	66	280.0	1.2				ug/L	215	Standard
>	**Ge**	72	516908.5	0.1				ug/L	520809	Standard
	As	75	5.9	557.4				ug/L	-52	Standard
	Se	82	22.1	63.4				ug/L	17	Standard
	Se-1	77	62.3	6.5				ug/L	56	Standard
>	**Ga**	71	28.3	62.0				mg/L	25	Standard
	Rb	85	13.3	142.0				ug/L	28	Standard
	Y	89	452397.3	1.6				ug/L	447395	Standard
>	**Rh**	103	8.3	91.7				ug/L	15	Standard
	Mo	98	371.2	3.3				ug/L	113	Standard
	Ag	107	447.0	1.8				ug/L	108	Standard
	Cd	111	119.4	7.1				mg/L	3	Standard
	Cd	114	282.1	4.3				ug/L	20	Standard
>	**In**	115	619630.9	0.5				ug/L	625728	Standard
	Sn	118	855.0	13.6				ug/L	568	Standard
	Sb	123	428.3	12.3				ug/L	612	Standard
	Ba	135	146.3	3.9				ug/L	21	Standard
	Ce	140	45.0	50.9				ug/L	245	Standard
>	**Tb**	159	965634.3	1.4				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	454.3	3.7				ug/L	15	Standard
	Tl	205	475.0	1.1				ug/L	13	Standard
	Pb	206	529.3	1.0				ug/L	264	Standard
	Pb	207	492.7	3.7				ug/L	222	Standard
	Pb	208	2058.4	0.9				ug/L	959	Standard
	U	238	404.0	3.6				ug/L	9	Standard
>	**Bi**	209	551272.3	0.2				ug/L	552821	Standard

Sample ID: Standard 2
Report Date/Time: Friday, July 01, 2016 10:36:08
Page 1

Approved: July 02, 2016

	Na	23	0.0		mg/L	2	Standard
	Mg	24	55.0	39.6	mg/L	55	Standard
	K	39	35.0	51.5	mg/L	28	Standard
	Ca	43	26.7	28.6	mg/L	27	Standard
	Fe	54	131.1	29.5	mg/L	147	Standard
	Fe	57	260.0	13.9	mg/L	268	Standard
>	**Sc-1**	45	40704.6	1.5	mg/L	41174	Standard
	Cl	35	69075.1	1.1	ug/L	69550	Standard
	Kr	83	2.0	50.0	ug/L	1	Standard
	Br	81	2083.5	5.5	ug/L	1950	Standard
	P	31	20977.8	1.6	ug/L	21156	Standard
	S	34	3237.0	8.2	ug/L	3419	Standard
	Sr	88	66.7	30.3	ug/L	72	Standard
	C	12	120.0	16.7	mg/L	163	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	16.7	34.6	mg/L	17	Standard
	Dy	164	19.5	0.0	mg/L	16	Standard
	Ho-1	165	8.3	69.3	mg/L	7	Standard
	Er	166	10.0		mg/L	7	Standard
	I	127	19168.8	3.3	mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 2
Report Date/Time: Friday, July 01, 2016 10:36:08
Page 2

Approved: July 02, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Friday, July 01, 2016 10:36:08
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Friday, July 01, 2016 10:37:02
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74971.7	1.7				ug/L	76456	Standard
	Be	9	54860.9	3.6	**50.0000**	1.210	2.4	ug/L	20	Standard
	Al	27	8440082.6	0.7	**50.0000**	0.980	2.0	ug/L	1307	Standard
	Sc	45	40865.0	1.5				ug/L	41174	Standard
	Ti	47	32329.8	0.6	**100.0000**	0.832	0.8	ug/L	27	Standard
	V	51	412896.9	0.3	**50.0000**	0.270	0.5	ug/L	1434	Standard
	Cr	52	411678.8	0.9	**50.0000**	0.611	1.2	ug/L	7733	Standard
	Cr	53	51159.6	0.9	**50.0000**	0.580	1.2	ug/L	442	Standard
	Mn	55	380443.4	1.4	**50.0000**	0.789	1.6	ug/L	723	Standard
	Co	59	384667.7	0.9	**50.0000**	0.374	0.7	ug/L	217	Standard
	Ni	60	104566.9	0.5	**50.0000**	0.292	0.6	ug/L	304	Standard
	Cu	65	103056.3	0.1	**50.0000**	0.150	0.3	ug/L	181	Standard
	Zn	66	61622.7	0.7	**50.0000**	0.151	0.3	ug/L	215	Standard
>	**Ge**	72	520018.0	0.4				ug/L	520809	Standard
	As	75	61417.5	0.3	**50.0000**	0.279	0.6	ug/L	-52	Standard
	Se	82	6337.3	1.0	**50.0000**	0.692	1.4	ug/L	17	Standard
	Se-1	77	4335.3	1.3	**50.0000**	0.572	1.1	ug/L	56	Standard
>	**Ga**	71	61.7	40.0				mg/L	25	Standard
	Rb	85	878.4	2.6				ug/L	28	Standard
	Y	89	444837.1	3.4				ug/L	447395	Standard
>	**Rh**	103	30.0	44.1				ug/L	15	Standard
	Mo	98	294287.0	0.6	**100.0000**	0.409	0.4	ug/L	113	Standard
	Ag	107	351901.5	1.0	**50.0000**	0.404	0.8	ug/L	108	Standard
	Cd	111	112966.0	0.5	**50.0000**	0.196	0.4	mg/L	3	Standard
	Cd	114	280940.2	0.5	**50.0000**	0.110	0.2	ug/L	20	Standard
>	**In**	115	612769.1	0.4				ug/L	625728	Standard
	Sn	118	314258.0	2.0	**50.0000**	1.163	2.3	ug/L	568	Standard
	Sb	123	250330.0	0.3	**50.0000**	0.094	0.2	ug/L	612	Standard
	Ba	135	107237.2	0.5	**50.0000**	0.330	0.7	ug/L	21	Standard
	Ce	140	96.7	19.6				ug/L	245	Standard
>	**Tb**	159	945727.5	1.1				ug/L	950397	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	443860.6	0.2	**50.0000**	0.306	0.6	ug/L	15	Standard
	Tl	205	392135.3	1.5	**50.0000**	0.676	1.4	ug/L	13	Standard
	Pb	206	280519.3	0.4	**50.0000**	0.226	0.5	ug/L	264	Standard
	Pb	207	254589.8	0.6	**50.0000**	0.448	0.9	ug/L	222	Standard
	Pb	208	1037250.6	0.5	**50.0000**	0.611	1.2	ug/L	959	Standard
	U	238	392629.2	0.3	**50.0000**	0.515	1.0	ug/L	9	Standard
>	**Bi**	209	544795.2	0.7				ug/L	552821	Standard

Sample ID: Standard 3
Report Date/Time: Friday, July 01, 2016 10:39:19
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**5.0000**	4.327	86.5	mg/L	2	Standard
Mg	24	4290.6	8.9	**5.0000**	0.514	10.3	mg/L	55	Standard
K	39	1336.7	14.8	**5.0000**	0.680	13.6	mg/L	28	Standard
Ca	43	78.3	9.8	**5.0000**	0.715	14.3	mg/L	27	Standard
Fe	54	6652.7	2.6	**5.0000**	0.189	3.8	mg/L	147	Standard
Fe	57	1848.4	3.7	**5.0000**	0.193	3.9	mg/L	268	Standard
Sc-1	45	40865.0	1.5				mg/L	41174	Standard
Cl	35	67370.1	1.9				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1980.1	7.8				ug/L	1950	Standard
P	31	22366.5	1.7				ug/L	21156	Standard
S	34	3632.1	4.0				ug/L	3419	Standard
Sr	88	68.3	33.8				ug/L	72	Standard
C	12	116.7	13.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	120.2				mg/L	17	Standard
Dy	164	5.7	108.5				mg/L	16	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	24309.5	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 3
Report Date/Time: Friday, July 01, 2016 10:39:19
Page 2

Approved: July 02, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
Report Date/Time: Friday, July 01, 2016 10:39:19
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Friday, July 01, 2016 10:40:14
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74573.1	2.4				ug/L	76456	Standard
	Be	9	109282.8	1.9	**100.0980**	2.509	2.5	ug/L	20	Standard
	Al	27	16601431.1	0.9	**99.4425**	1.710	1.7	ug/L	1307	Standard
	Sc	45	41180.9	0.8				ug/L	41174	Standard
	Ti	47	65332.6	0.8	**201.3970**	0.318	0.2	ug/L	27	Standard
	V	51	817909.9	1.4	**99.7804**	1.578	1.6	ug/L	1434	Standard
	Cr	52	812246.8	1.3	**99.9568**	0.856	0.9	ug/L	7733	Standard
	Cr	53	100426.9	3.2	**99.4382**	3.780	3.8	ug/L	442	Standard
	Mn	55	750652.7	0.8	**99.5323**	0.364	0.4	ug/L	723	Standard
	Co	59	758624.4	0.2	**99.4757**	0.655	0.7	ug/L	217	Standard
	Ni	60	205495.5	0.6	**99.3580**	0.343	0.3	ug/L	304	Standard
	Cu	65	201186.2	0.4	**98.9880**	0.686	0.7	ug/L	181	Standard
	Zn	66	121678.0	0.3	**99.6126**	1.153	1.2	ug/L	215	Standard
>	**Ge**	72	518357.9	0.9				ug/L	520809	Standard
	As	75	123132.9	0.9	**100.2583**	0.732	0.7	ug/L	-52	Standard
	Se	82	12560.6	0.3	**99.7710**	0.579	0.6	ug/L	17	Standard
	Se-1	77	8548.4	1.2	**99.7880**	1.005	1.0	ug/L	56	Standard
>	**Ga**	71	40.0	45.1				mg/L	25	Standard
	Rb	85	1701.8	13.2				ug/L	28	Standard
	Y	89	451914.9	2.5				ug/L	447395	Standard
>	**Rh**	103	40.0	25.0				ug/L	15	Standard
	Mo	98	592109.5	0.9	**201.3215**	2.481	1.2	ug/L	113	Standard
	Ag	107	698129.6	0.3	**99.9561**	0.390	0.4	ug/L	108	Standard
	Cd	111	223398.5	0.3	**99.7914**	0.348	0.3	mg/L	3	Standard
	Cd	114	550589.1	2.0	**99.3411**	2.205	2.2	ug/L	20	Standard
>	**In**	115	608447.5	0.3				ug/L	625728	Standard
	Sn	118	629099.1	1.2	**100.4410**	1.420	1.4	ug/L	568	Standard
	Sb	123	508420.5	1.6	**101.1418**	1.887	1.9	ug/L	612	Standard
	Ba	135	210242.6	0.2	**99.3661**	0.116	0.1	ug/L	21	Standard
	Ce	140	141.7	20.7				ug/L	245	Standard
>	**Tb**	159	939885.9	0.8				ug/L	950397	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	872285.6	0.1	**99.6647**	0.211	0.2	ug/L	15	Standard
	Tl	205	778762.6	2.1	**100.1937**	1.912	1.9	ug/L	13	Standard
	Pb	206	549521.0	0.7	**99.5257**	0.453	0.5	ug/L	264	Standard
	Pb	207	499379.9	0.5	**99.5919**	0.286	0.3	ug/L	222	Standard
	Pb	208	2044680.9	0.3	**99.8400**	0.419	0.4	ug/L	959	Standard
	U	238	794936.5	0.3	**101.1523**	0.190	0.2	ug/L	9	Standard
>	**Bi**	209	538915.4	0.3				ug/L	552821	Standard

Sample ID: Standard 4
Report Date/Time: Friday, July 01, 2016 10:42:31
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8624.1	2.7	**10.0117**	0.211	2.1	mg/L	55	Standard
K	39	2628.6	4.6	**9.9475**	0.505	5.1	mg/L	28	Standard
Ca	43	143.3	11.2	**10.5644**	1.388	13.1	mg/L	27	Standard
Fe	54	12475.4	2.0	**9.6818**	0.117	1.2	mg/L	147	Standard
Fe	57	3570.4	3.6	**10.1632**	0.334	3.3	mg/L	268	Standard
Sc-1	45	41180.9	0.8				mg/L	41174	Standard
Cl	35	66505.0	1.1				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1963.5	9.6				ug/L	1950	Standard
P	31	23055.9	3.6				ug/L	21156	Standard
S	34	3625.4	3.4				ug/L	3419	Standard
Sr	88	81.7	21.5				ug/L	72	Standard
C	12	133.3	30.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	17	Standard
Dy	164	12.1	43.5				mg/L	16	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	3062.0	8.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 4
Report Date/Time: Friday, July 01, 2016 10:42:31
Page 2

Approved: July 02, 2016

	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Friday, July 01, 2016 10:42:31
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Friday, July 01, 2016 10:43:27
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73226.6	2.1				ug/L	76456	Standard
	Be	9	55138.5	1.1	**51.4232**	1.173	2.3	ug/L	20	Standard
	Al	27	8364287.3	0.8	**51.0145**	0.701	1.4	ug/L	1307	Standard
	Sc	45	42051.6	1.4				ug/L	41174	Standard
	Ti	47	32632.1	1.2	**99.6299**	0.273	0.3	ug/L	27	Standard
	V	51	416986.8	1.2	**50.3040**	0.153	0.3	ug/L	1434	Standard
	Cr	52	416377.2	0.8	**50.2986**	0.675	1.3	ug/L	7733	Standard
	Cr	53	51450.5	1.0	**50.2662**	0.513	1.0	ug/L	442	Standard
	Mn	55	390114.9	0.6	**51.2101**	0.808	1.6	ug/L	723	Standard
	Co	59	391917.0	0.9	**50.9056**	0.274	0.5	ug/L	217	Standard
	Ni	60	105069.4	0.7	**50.2680**	0.977	1.9	ug/L	304	Standard
	Cu	65	103770.8	0.9	**50.5551**	0.555	1.1	ug/L	181	Standard
	Zn	66	63280.5	0.6	**51.2430**	0.408	0.8	ug/L	215	Standard
>	Ge	72	523154.7	1.4				ug/L	520809	Standard
	As	75	62592.0	0.8	**50.5289**	1.093	2.2	ug/L	-52	Standard
	Se	82	6421.3	0.7	**50.4779**	0.451	0.9	ug/L	17	Standard
	Se-1	77	4421.6	3.1	**50.8264**	2.224	4.4	ug/L	56	Standard
>	Ga	71	38.3	30.1				mg/L	25	Standard
	Rb	85	941.7	14.7				ug/L	28	Standard
	Y	89	448213.9	1.5				ug/L	447395	Standard
>	Rh	103	35.0	49.5				ug/L	15	Standard
	Mo	98	294940.7	1.4	**96.3152**	0.728	0.8	ug/L	113	Standard
	Ag	107	357502.4	1.0	**49.1663**	0.717	1.5	ug/L	108	Standard
	Cd	111	115768.3	0.2	**49.6787**	0.607	1.2	mg/L	3	Standard
	Cd	114	281209.7	0.6	**48.7423**	0.787	1.6	ug/L	20	Standard
>	In	115	633404.9	1.1				ug/L	625728	Standard
	Sn	118	321628.0	0.8	**49.2868**	0.611	1.2	ug/L	568	Standard
	Sb	123	258956.5	0.4	**49.4694**	0.480	1.0	ug/L	612	Standard
	Ba	135	108217.8	0.6	**49.1275**	0.780	1.6	ug/L	21	Standard
	Ce	140	141.7	45.4				ug/L	245	Standard
>	Tb	159	959365.6	0.2				ug/L	950397	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	443048.1	0.6	**49.6569**	0.744	1.5	ug/L	15	Standard
	Tl	205	398039.0	0.4	**50.2306**	0.560	1.1	ug/L	13	Standard
	Pb	206	281925.4	0.1	**50.0662**	0.613	1.2	ug/L	264	Standard
	Pb	207	256662.1	1.0	**50.1891**	0.845	1.7	ug/L	222	Standard
	Pb	208	1053544.2	0.4	**50.4385**	0.548	1.1	ug/L	959	Standard
	U	238	395989.8	1.3	**49.4226**	0.077	0.2	ug/L	9	Standard
>	Bi	209	549436.2	1.2				ug/L	552821	Standard

Sample ID: QC Std 1
Report Date/Time: Friday, July 01, 2016 10:45:44
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.9322**	8.534	173.0	mg/L	2	Standard
Mg	24	4375.6	3.8	**4.9437**	0.134	2.7	mg/L	55	Standard
K	39	1525.1	4.3	**5.5930**	0.165	3.0	mg/L	28	Standard
Ca	43	100.0	13.2	**6.4519**	1.261	19.5	mg/L	27	Standard
Fe	54	6527.6	4.7	**4.9145**	0.265	5.4	mg/L	147	Standard
Fe	57	1855.1	8.5	**4.7782**	0.491	10.3	mg/L	268	Standard
> **Sc-1**	45	42051.6	1.4				mg/L	41174	Standard
Cl	35	67170.6	2.2				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1903.5	10.0				ug/L	1950	Standard
P	31	22763.8	0.6				ug/L	21156	Standard
S	34	3593.8	4.0				ug/L	3419	Standard
Sr	88	85.0	40.8				ug/L	72	Standard
C	12	133.3	15.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	132.3				mg/L	17	Standard
Dy	164	16.5	70.8				mg/L	16	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	23309.6	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.846		
Al	27	102.029		
Sc	45			
Ti	47	99.630		
V	51	100.608		
Cr	52	100.597		
Cr	53			
Mn	55	102.420		
Co	59	101.811		
Ni	60	100.536		
Cu	65	101.110		
Zn	66	102.486		
> Ge	72		100.450	
As	75	101.058		
Se	82	100.956		
Se-1	77			
> Ga	71			

Sample ID: QC Std 1
Report Date/Time: Friday, July 01, 2016 10:45:44
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	96.315		
Ag	107	98.333		
Cd	111	99.357		
Cd	114			
> In	115		101.227	
Sn	118	98.574		
Sb	123	98.939		
Ba	135	98.255		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.314		
Tl	205			
Pb	206	100.132		
Pb	207	100.378		
Pb	208	100.877		
U	238	98.845		
> Bi	209		99.388	
Na	23	98.644		
Mg	24	98.874		
K	39	111.859		
Ca	43	129.039		
Fe	54	98.290		
Fe	57	95.564		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

Sample ID: QC Std 1
Report Date/Time: Friday, July 01, 2016 10:45:44
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Friday, July 01, 2016 10:46:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73082.5	1.7				ug/L	76456	Standard
	Be	9	35.0	65.5	**0.0129**	0.022	168.2	ug/L	20	Standard
	Al	27	2900.3	16.4	**0.0075**	0.003	39.6	ug/L	1307	Standard
	Sc	45	41413.2	2.8				ug/L	41174	Standard
	Ti	47	35.3	18.8	**0.0225**	0.019	85.6	ug/L	27	Standard
	V	51	1420.2	5.2	**-0.0279**	0.008	27.9	ug/L	1434	Standard
	Cr	52	6961.6	2.3	**-0.1197**	0.018	14.9	ug/L	7733	Standard
	Cr	53	446.7	2.3	**0.0198**	0.006	30.4	ug/L	442	Standard
	Mn	55	849.7	3.5	**0.0096**	0.004	44.1	ug/L	723	Standard
	Co	59	304.7	6.6	**0.0099**	0.003	30.2	ug/L	217	Standard
	Ni	60	329.3	2.5	**0.0037**	0.005	136.9	ug/L	304	Standard
	Cu	65	206.0	9.7	**0.0257**	0.010	38.8	ug/L	181	Standard
	Zn	66	265.3	8.1	**0.0337**	0.016	46.4	ug/L	215	Standard
>	**Ge**	72	527031.7	1.0				ug/L	520809	Standard
	As	75	-62.3	20.0	**-0.0048**	0.010	219.6	ug/L	-52	Standard
	Se	82	14.1	36.1	**-0.0165**	0.039	235.1	ug/L	17	Standard
	Se-1	77	48.7	10.1	**-0.1219**	0.059	48.3	ug/L	56	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	26.7	84.5				ug/L	28	Standard
	Y	89	456491.7	1.0				ug/L	447395	Standard
>	**Rh**	103	26.7	57.3				ug/L	15	Standard
	Mo	98	335.9	6.6	**0.0861**	0.007	7.7	ug/L	113	Standard
	Ag	107	180.3	7.4	**0.0120**	0.002	16.2	ug/L	108	Standard
	Cd	111	27.1	26.6	**0.0093**	0.003	33.3	mg/L	3	Standard
	Cd	114	66.3	29.5	**0.0115**	0.003	29.4	ug/L	20	Standard
>	**In**	115	631231.9	0.6				ug/L	625728	Standard
	Sn	118	1070.0	25.4	**0.0807**	0.043	52.8	ug/L	568	Standard
	Sb	123	986.7	28.6	**0.1557**	0.055	35.3	ug/L	612	Standard
	Ba	135	49.3	8.4	**0.0046**	0.002	42.1	ug/L	21	Standard
	Ce	140	21.7	58.1				ug/L	245	Standard
>	**Tb**	159	958993.9	0.7				ug/L	950397	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	132.3	25.5	**0.0140**	0.004	27.2	ug/L	15	Standard
	Tl	205	123.3	29.3	**0.0057**	0.005	80.1	ug/L	13	Standard
	Pb	206	354.7	6.4	**0.0189**	0.004	22.4	ug/L	264	Standard
	Pb	207	298.7	4.5	**0.0120**	0.003	23.0	ug/L	222	Standard
	Pb	208	1215.7	2.5	**0.0096**	0.002	16.0	ug/L	959	Standard
	U	238	110.7	12.5	**0.0135**	0.002	13.1	ug/L	9	Standard
>	**Bi**	209	552384.0	0.3				ug/L	552821	Standard

Sample ID: QC Std 2
Report Date/Time: Friday, July 01, 2016 10:48:57
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.1172**	8.855	173.0	mg/L	2	Standard
Mg	24	61.7	49.5	**0.0114**	0.035	305.2	mg/L	55	Standard
K	39	43.3	29.0	**0.0349**	0.052	149.9	mg/L	28	Standard
Ca	43	15.0	66.7	**-1.1126**	0.876	78.7	mg/L	27	Standard
Fe	54	155.9	11.0	**0.0227**	0.013	57.8	mg/L	147	Standard
Fe	57	246.7	5.1	**-0.0507**	0.023	46.3	mg/L	268	Standard
> **Sc-1**	45	41413.2	2.8				mg/L	41174	Standard
Cl	35	67081.5	1.7				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1926.8	4.5				ug/L	1950	Standard
P	31	22241.3	1.7				ug/L	21156	Standard
S	34	3415.4	3.5				ug/L	3419	Standard
Sr	88	56.7	39.8				ug/L	72	Standard
C	12	120.0	30.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	12.7	43.5				mg/L	16	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	18017.4	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.195	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 2
Report Date/Time: Friday, July 01, 2016 10:48:57
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.880	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.921	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Na	23	
QC Std 2	Ca	43	

Sample ID: QC Std 2
Report Date/Time: Friday, July 01, 2016 10:48:57
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Friday, July 01, 2016 10:49:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71014.5	3.1				ug/L	76456	Standard
	Be	9	276.7	13.7	**0.2467**	0.041	16.7	ug/L	20	Standard
	Al	27	1433.4	19.2	**-0.0012**	0.001	117.3	ug/L	1307	Standard
	Sc	45	40355.3	1.3				ug/L	41174	Standard
	Ti	47	21.0	29.7	**-0.0191**	0.020	103.3	ug/L	27	Standard
	V	51	4354.1	2.4	**0.3388**	0.016	4.6	ug/L	1434	Standard
	Cr	52	13385.9	0.6	**0.7089**	0.010	1.4	ug/L	7733	Standard
	Cr	53	1290.1	5.1	**0.8778**	0.062	7.0	ug/L	442	Standard
	Mn	55	4164.2	0.5	**0.4567**	0.004	0.8	ug/L	723	Standard
	Co	59	3022.0	3.5	**0.3708**	0.015	4.0	ug/L	217	Standard
	Ni	60	3422.7	3.0	**1.5204**	0.058	3.8	ug/L	304	Standard
	Cu	65	1708.4	1.3	**0.7752**	0.014	1.9	ug/L	181	Standard
	Zn	66	7949.4	1.3	**6.4016**	0.063	1.0	ug/L	215	Standard
>	**Ge**	72	513410.3	0.5				ug/L	520809	Standard
	As	75	420.2	2.0	**0.3904**	0.006	1.5	ug/L	-52	Standard
	Se	82	57.4	15.1	**0.3348**	0.072	21.4	ug/L	17	Standard
	Se-1	77	86.3	6.6	**0.3399**	0.069	20.2	ug/L	56	Standard
>	**Ga**	71	38.3	7.5				mg/L	25	Standard
	Rb	85	15.0	115.5				ug/L	28	Standard
	Y	89	441603.6	1.2				ug/L	447395	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	125.5	7.4	**0.0191**	0.003	17.3	ug/L	113	Standard
	Ag	107	2803.6	3.0	**0.3918**	0.011	2.9	ug/L	108	Standard
	Cd	111	534.5	1.7	**0.2383**	0.004	1.8	mg/L	3	Standard
	Cd	114	1340.9	4.1	**0.2439**	0.009	3.8	ug/L	20	Standard
>	**In**	115	603601.4	0.4				ug/L	625728	Standard
	Sn	118	588.3	20.4	**0.0106**	0.020	185.6	ug/L	568	Standard
	Sb	123	1982.0	3.1	**0.3639**	0.013	3.7	ug/L	612	Standard
	Ba	135	1500.1	4.2	**0.6970**	0.033	4.7	ug/L	21	Standard
	Ce	140	13.3	57.3				ug/L	245	Standard
>	**Tb**	159	923552.7	1.3				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	722.4	6.5	**0.0815**	0.005	6.2	ug/L	15	Standard
	Tl	205	658.3	9.8	**0.0746**	0.008	10.9	ug/L	13	Standard
	Pb	206	1350.7	0.3	**0.2001**	0.002	0.8	ug/L	264	Standard
	Pb	207	1167.0	2.9	**0.1859**	0.007	3.6	ug/L	222	Standard
	Pb	208	4949.3	2.3	**0.1926**	0.005	2.7	ug/L	959	Standard
	U	238	3051.6	1.8	**0.3866**	0.007	1.9	ug/L	9	Standard
>	**Bi**	209	540899.0	0.4				ug/L	552821	Standard

Sample ID: QC Std 3
Report Date/Time: Friday, July 01, 2016 10:52:10
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**10.1911**	8.823	86.6	mg/L	2	Standard
Mg	24	73.3	17.2	**0.0273**	0.016	58.3	mg/L	55	Standard
K	39	43.3	17.6	**0.0384**	0.030	78.8	mg/L	28	Standard
Ca	43	21.7	13.3	**-0.4451**	0.256	57.4	mg/L	27	Standard
Fe	54	112.1	10.4	**-0.0092**	0.008	90.3	mg/L	147	Standard
Fe	57	220.0	10.4	**-0.1144**	0.071	61.7	mg/L	268	Standard
Sc-1	45	40355.3	1.3				mg/L	41174	Standard
Cl	35	64985.1	1.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1890.1	8.2				ug/L	1950	Standard
P	31	15399.5	2.8				ug/L	21156	Standard
S	34	3492.1	3.5				ug/L	3419	Standard
Sr	88	78.3	3.7				ug/L	72	Standard
C	12	140.0	14.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	12.9	182.9				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2308.5	15.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	123.368		
Al	27	-0.122		
Sc	45			
Ti	47			
V	51	84.694		
Cr	52	88.608		
Cr	53			
Mn	55	91.340		
Co	59	92.690		
Ni	60	95.026		
Cu	65	96.904		
Zn	66	102.426		
Ge	72		98.579	
As	75	97.610		
Se	82	83.691		
Se-1	77			
Ga	71			

Sample ID: QC Std 3
Report Date/Time: Friday, July 01, 2016 10:52:10
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.953		
Cd	111	99.297		
Cd	114			
> In	115			96.464
Sn	118			
Sb	123	90.972		
Ba	135	92.929		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.839		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.295		
U	238	96.660		
> Bi	209			97.843
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
Report Date/Time: Friday, July 01, 2016 10:52:10
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Friday, July 01, 2016 10:53:04
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72812.9	1.2				ug/L	76456	Standard
	Be	9	36.7	20.8	**0.0145**	0.007	47.6	ug/L	20	Standard
	Al	27	8248243.5	1.3	**50.5822**	0.139	0.3	ug/L	1307	Standard
	Sc	45	42120.1	1.9				ug/L	41174	Standard
	Ti	47	35838.7	1.4	**108.8763**	0.923	0.8	ug/L	27	Standard
	V	51	1796.6	6.7	**0.0180**	0.017	92.8	ug/L	1434	Standard
	Cr	52	8717.2	1.4	**0.0974**	0.005	5.1	ug/L	7733	Standard
	Cr	53	5294.3	3.4	**4.7714**	0.146	3.1	ug/L	442	Standard
	Mn	55	1499.1	2.5	**0.0949**	0.007	6.9	ug/L	723	Standard
	Co	59	500.3	4.2	**0.0353**	0.003	8.8	ug/L	217	Standard
	Ni	60	1153.7	2.9	**0.3978**	0.021	5.4	ug/L	304	Standard
	Cu	65	743.0	1.9	**0.2866**	0.009	3.1	ug/L	181	Standard
	Zn	66	1750.4	2.4	**1.2353**	0.049	3.9	ug/L	215	Standard
>	Ge	72	525789.4	1.1				ug/L	520809	Standard
	As	75	-56.5	78.0	**0.0000**	0.035	94213.4	ug/L	-52	Standard
	Se	82	21.9	13.2	**0.0450**	0.024	52.9	ug/L	17	Standard
	Se-1	77	369.0	3.8	**3.5902**	0.118	3.3	ug/L	56	Standard
>	Ga	71	190.0	4.6				mg/L	25	Standard
	Rb	85	1346.7	12.1				ug/L	28	Standard
	Y	89	446130.3	1.4				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	294809.8	0.7	**99.0666**	0.826	0.8	ug/L	113	Standard
	Ag	107	518.7	43.1	**0.0605**	0.032	52.1	ug/L	108	Standard
	Cd	111	-203.1	6.2	**-0.0920**	0.006	6.1	mg/L	3	Standard
	Cd	114	646.5	2.5	**0.1153**	0.003	2.6	ug/L	20	Standard
>	In	115	615550.0	0.1				ug/L	625728	Standard
	Sn	118	1126.7	15.8	**0.0937**	0.028	29.8	ug/L	568	Standard
	Sb	123	769.4	36.4	**0.1176**	0.055	46.8	ug/L	612	Standard
	Ba	135	907.7	4.8	**0.4062**	0.020	4.9	ug/L	21	Standard
	Ce	140	310.0	5.6				ug/L	245	Standard
>	Tb	159	945278.1	1.3				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	340.3	40.4	**0.0383**	0.016	41.1	ug/L	15	Standard
	Tl	205	238.3	11.6	**0.0211**	0.004	17.6	ug/L	13	Standard
	Pb	206	679.7	9.3	**0.0799**	0.011	14.4	ug/L	264	Standard
	Pb	207	580.3	10.0	**0.0701**	0.011	16.1	ug/L	222	Standard
	Pb	208	2295.1	2.9	**0.0642**	0.002	3.2	ug/L	959	Standard
	U	238	77.3	37.1	**0.0096**	0.004	37.6	ug/L	9	Standard
>	Bi	209	536774.2	1.2				ug/L	552821	Standard

Sample ID: QC Std 4
Report Date/Time: Friday, July 01, 2016 10:55:21
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.7734**	16.919	173.1	mg/L	2	Standard
Mg	24	10777.2	2.6	**12.2531**	0.537	4.4	mg/L	55	Standard
K	39	1383.4	9.9	**5.0519**	0.468	9.3	mg/L	28	Standard
Ca	43	138.3	7.5	**9.8265**	0.682	6.9	mg/L	27	Standard
Fe	54	16161.2	1.3	**12.2930**	0.303	2.5	mg/L	147	Standard
Fe	57	4369.0	2.7	**12.3260**	0.594	4.8	mg/L	268	Standard
> **Sc-1**	45	42120.1	1.9				mg/L	41174	Standard
Cl	35	65421.7	2.5				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1906.8	13.4				ug/L	1950	Standard
P	31	21114.7	2.7				ug/L	21156	Standard
S	34	3085.3	2.7				ug/L	3419	Standard
Sr	88	60.0	33.3				ug/L	72	Standard
C	12	210.0	31.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	54.9				mg/L	17	Standard
Dy	164	19.7	50.8				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	3048.6	5.5				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27	1.012		
	Sc	45			
	Ti	47	108.876		
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.956	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 4
Report Date/Time: Friday, July 01, 2016 10:55:21
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	99.067		
Ag	107			
Cd	111			
Cd	114			
In	115			98.373
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			97.097
Na	23	78.187		
Mg	24	245.062		
K	39	101.039		
Ca	43	65.510		
Fe	54	98.344		
Fe	57	98.608		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Ba	135	
QC Std 4	Na	23	

Sample ID: QC Std 4
Report Date/Time: Friday, July 01, 2016 10:55:21
Page 3

Approved: July 02, 2016

QC Std 4	Mg	24
QC Std 4	Ca	43

Sample ID: QC Std 4
Report Date/Time: Friday, July 01, 2016 10:55:21
Page 4

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Friday, July 01, 2016 10:56:16
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75903.0	2.2				ug/L	76456	Standard
	Be	9	113931.8	1.0	**102.5442**	3.204	3.1	ug/L	20	Standard
	Al	27	7231990.8	1.8	**42.5454**	0.182	0.4	ug/L	1307	Standard
	Sc	45	42432.7	2.4				ug/L	41174	Standard
	Ti	47	30737.8	1.0	**92.8199**	0.734	0.8	ug/L	27	Standard
	V	51	833696.6	0.9	**99.6740**	0.237	0.2	ug/L	1434	Standard
	Cr	52	810709.3	1.6	**97.7572**	1.161	1.2	ug/L	7733	Standard
	Cr	53	105220.8	1.3	**102.1011**	1.018	1.0	ug/L	442	Standard
	Mn	55	763205.2	1.1	**99.1800**	1.093	1.1	ug/L	723	Standard
	Co	59	765446.7	1.5	**98.3652**	1.221	1.2	ug/L	217	Standard
	Ni	60	204863.4	0.8	**97.0735**	0.398	0.4	ug/L	304	Standard
	Cu	65	204176.2	1.0	**98.4523**	0.417	0.4	ug/L	181	Standard
	Zn	66	128188.4	1.6	**102.8491**	1.339	1.3	ug/L	215	Standard
>	Ge	72	528896.0	0.7				ug/L	520809	Standard
	As	75	125724.6	1.1	**100.3319**	1.466	1.5	ug/L	-52	Standard
	Se	82	12709.7	1.6	**98.9446**	1.879	1.9	ug/L	17	Standard
	Se-1	77	8838.2	1.3	**101.1222**	0.967	1.0	ug/L	56	Standard
>	Ga	71	141.7	2.0				mg/L	25	Standard
	Rb	85	858.4	8.2				ug/L	28	Standard
	Y	89	450945.0	1.6				ug/L	447395	Standard
>	Rh	103	58.3	17.8				ug/L	15	Standard
	Mo	98	252063.2	0.9	**84.2200**	0.957	1.1	ug/L	113	Standard
	Ag	107	620939.1	2.7	**87.3716**	1.954	2.2	ug/L	108	Standard
	Cd	111	226578.4	0.5	**99.4783**	0.760	0.8	mg/L	3	Standard
	Cd	114	558953.6	2.4	**99.1106**	1.789	1.8	ug/L	20	Standard
>	In	115	619069.3	0.8				ug/L	625728	Standard
	Sn	118	1101.7	13.0	**0.0889**	0.024	26.9	ug/L	568	Standard
	Sb	123	495062.3	2.0	**96.7840**	1.258	1.3	ug/L	612	Standard
	Ba	135	212436.2	0.4	**98.6825**	0.524	0.5	ug/L	21	Standard
	Ce	140	106.7	5.4				ug/L	245	Standard
>	Tb	159	965012.6	0.9				ug/L	950397	Standard
	Ho	165	11.7	89.2				ug/L	7	Standard
	Tl	203	877864.5	0.6	**98.2340**	0.597	0.6	ug/L	15	Standard
	Tl	205	786061.6	0.2	**99.0500**	0.141	0.1	ug/L	13	Standard
	Pb	206	570990.7	1.2	**101.2826**	1.116	1.1	ug/L	264	Standard
	Pb	207	499235.8	0.8	**97.5091**	0.551	0.6	ug/L	222	Standard
	Pb	208	2063776.1	0.5	**98.6933**	0.341	0.3	ug/L	959	Standard
	U	238	778595.3	0.8	**97.0297**	0.672	0.7	ug/L	9	Standard
>	Bi	209	550260.8	0.2				ug/L	552821	Standard

Sample ID: QC Std 5
Report Date/Time: Friday, July 01, 2016 10:58:33
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**14.6626**	14.607	99.6	mg/L	2	Standard
Mg	24	9379.6	3.3	**10.5777**	0.497	4.7	mg/L	55	Standard
K	39	1123.4	14.5	**4.0598**	0.702	17.3	mg/L	28	Standard
Ca	43	151.7	14.9	**10.9556**	2.287	20.9	mg/L	27	Standard
Fe	54	13756.2	0.9	**10.3738**	0.327	3.2	mg/L	147	Standard
Fe	57	3798.8	1.3	**10.5253**	0.250	2.4	mg/L	268	Standard
> **Sc-1**	45	42432.7	2.4				mg/L	41174	Standard
Cl	35	63162.8	2.2				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2016.8	12.5				ug/L	1950	Standard
P	31	19924.8	3.7				ug/L	21156	Standard
S	34	3145.3	1.7				ug/L	3419	Standard
Sr	88	73.3	10.4				ug/L	72	Standard
C	12	216.7	17.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	29.4	59.5				mg/L	16	Standard
Ho-1	165	11.7	89.2				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	3137.0	10.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.544		
Al	27	0.851		
Sc	45			
Ti	47	92.820		
V	51	99.674		
Cr	52	97.757		
Cr	53			
Mn	55	99.180		
Co	59	98.365		
Ni	60	97.073		
Cu	65	98.452		
Zn	66	102.849		
> Ge	72		101.553	
As	75	100.332		
Se	82	98.945		
Se-1	77			
> Ga	71			

Sample ID: QC Std 5
Report Date/Time: Friday, July 01, 2016 10:58:33
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	84.220		
Ag	107	87.372		
Cd	111	99.478		
Cd	114			
> In	115		98.936	
Sn	118			
Sb	123	96.784		
Ba	135	98.683		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.234		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.693		
U	238	97.030		
> Bi	209		99.537	
Na	23	117.301		
Mg	24	211.554		
K	39	81.196		
Ca	43	73.037		
Fe	54	82.990		
Fe	57	84.202		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
Report Date/Time: Friday, July 01, 2016 10:58:33
Page 3

Approved: July 02, 2016

QC Std 5	Ca	43

Sample ID: QC Std 5
Report Date/Time: Friday, July 01, 2016 10:58:33
Page 4

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 10:59:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76397.1	0.4				ug/L	76456	Standard
	Be	9	56429.9	0.6	**50.4288**	0.323	0.6	ug/L	20	Standard
	Al	27	8608329.7	1.2	**50.3148**	0.658	1.3	ug/L	1307	Standard
	Sc	45	41418.2	1.5				ug/L	41174	Standard
	Ti	47	32560.9	0.4	**99.6282**	1.278	1.3	ug/L	27	Standard
	V	51	420616.9	0.3	**50.8527**	0.410	0.8	ug/L	1434	Standard
	Cr	52	416237.8	1.3	**50.3856**	0.640	1.3	ug/L	7733	Standard
	Cr	53	51529.2	2.3	**50.4433**	0.671	1.3	ug/L	442	Standard
	Mn	55	384144.6	2.2	**50.5271**	1.192	2.4	ug/L	723	Standard
	Co	59	391365.2	2.6	**50.9408**	1.337	2.6	ug/L	217	Standard
	Ni	60	104660.9	0.3	**50.1718**	0.419	0.8	ug/L	304	Standard
	Cu	65	103744.3	0.5	**50.6474**	0.422	0.8	ug/L	181	Standard
	Zn	66	61920.9	0.7	**50.2420**	0.301	0.6	ug/L	215	Standard
>	Ge	72	522053.0	1.0				ug/L	520809	Standard
	As	75	62496.7	0.9	**50.5498**	0.506	1.0	ug/L	-52	Standard
	Se	82	6394.4	1.6	**50.3673**	0.526	1.0	ug/L	17	Standard
	Se-1	77	4303.6	0.6	**49.5434**	0.744	1.5	ug/L	56	Standard
>	Ga	71	55.0	9.1				mg/L	25	Standard
	Rb	85	888.4	10.1				ug/L	28	Standard
	Y	89	456826.7	1.0				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	297194.2	1.6	**98.9144**	2.943	3.0	ug/L	113	Standard
	Ag	107	358131.2	0.8	**50.1903**	1.051	2.1	ug/L	108	Standard
	Cd	111	114353.1	0.3	**50.0023**	0.782	1.6	mg/L	3	Standard
	Cd	114	281397.0	1.0	**49.6948**	0.508	1.0	ug/L	20	Standard
>	In	115	621643.5	1.3				ug/L	625728	Standard
	Sn	118	312305.8	0.1	**48.7658**	0.722	1.5	ug/L	568	Standard
	Sb	123	262685.9	0.2	**51.1341**	0.568	1.1	ug/L	612	Standard
	Ba	135	107196.2	0.5	**49.5868**	0.878	1.8	ug/L	21	Standard
	Ce	140	91.7	19.2				ug/L	245	Standard
>	Tb	159	949369.3	0.9				ug/L	950397	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	446446.9	0.3	**50.5283**	0.234	0.5	ug/L	15	Standard
	Tl	205	397524.5	2.6	**50.6566**	1.177	2.3	ug/L	13	Standard
	Pb	206	283032.1	0.6	**50.7560**	0.110	0.2	ug/L	264	Standard
	Pb	207	256737.6	0.4	**50.6961**	0.167	0.3	ug/L	222	Standard
	Pb	208	1049117.6	0.6	**50.7200**	0.161	0.3	ug/L	959	Standard
	U	238	395685.5	0.4	**49.8743**	0.152	0.3	ug/L	9	Standard
>	Bi	209	544048.8	0.4				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:01:46
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.9687**	17.258	173.1	mg/L	2	Standard
Mg	24	4517.3	2.2	**5.1854**	0.050	1.0	mg/L	55	Standard
K	39	1296.7	2.0	**4.8131**	0.164	3.4	mg/L	28	Standard
Ca	43	80.0	16.5	**4.7867**	1.292	27.0	mg/L	27	Standard
Fe	54	6442.2	3.1	**4.9235**	0.148	3.0	mg/L	147	Standard
Fe	57	1841.8	2.1	**4.8233**	0.186	3.8	mg/L	268	Standard
Sc-1	45	41418.2	1.5				mg/L	41174	Standard
Cl	35	65714.2	0.5				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1946.8	7.2				ug/L	1950	Standard
P	31	21396.8	2.5				ug/L	21156	Standard
S	34	3327.0	3.8				ug/L	3419	Standard
Sr	88	70.0	18.9				ug/L	72	Standard
C	12	130.0	20.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	17	Standard
Dy	164	9.5	107.6				mg/L	16	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	23620.1	0.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.858		
Al	27	100.630		
Sc	45			
Ti	47	99.628		
V	51	101.705		
Cr	52	100.771		
Cr	53			
Mn	55	101.054		
Co	59	101.882		
Ni	60	100.344		
Cu	65	101.295		
Zn	66	100.484		
Ge	72		100.239	
As	75	101.100		
Se	82	100.735		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:01:46
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	98.914		
Ag	107	100.381		
Cd	111	100.005		
Cd	114			
> In	115			99.347
Sn	118	97.532		
Sb	123	102.268		
Ba	135	99.174		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.057		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.440		
U	238	99.749		
> Bi	209			98.413
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:01:46
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 11:02:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76638.3	0.9				ug/L	76456	Standard
	Be	9	45.0	69.4	**0.0201**	0.027	136.2	ug/L	20	Standard
	Al	27	2771.9	19.2	**0.0059**	0.003	49.8	ug/L	1307	Standard
	Sc	45	41874.5	1.3				ug/L	41174	Standard
	Ti	47	34.3	22.6	**0.0199**	0.023	116.0	ug/L	27	Standard
	V	51	1314.7	3.0	**-0.0400**	0.005	13.2	ug/L	1434	Standard
	Cr	52	7063.3	2.5	**-0.1041**	0.024	23.4	ug/L	7733	Standard
	Cr	53	583.3	6.1	**0.1556**	0.035	22.3	ug/L	442	Standard
	Mn	55	795.7	2.1	**0.0029**	0.003	97.4	ug/L	723	Standard
	Co	59	301.0	14.0	**0.0095**	0.006	58.4	ug/L	217	Standard
	Ni	60	322.3	4.2	**0.0009**	0.006	613.3	ug/L	304	Standard
	Cu	65	188.3	9.4	**0.0175**	0.009	51.5	ug/L	181	Standard
	Zn	66	246.3	14.0	**0.0191**	0.028	144.2	ug/L	215	Standard
>	**Ge**	72	525121.4	0.6				ug/L	520809	Standard
	As	75	-40.2	86.9	**0.0130**	0.028	214.4	ug/L	-52	Standard
	Se	82	15.7	75.3	**-0.0027**	0.093	3488.1	ug/L	17	Standard
	Se-1	77	53.7	18.4	**-0.0615**	0.118	192.4	ug/L	56	Standard
>	**Ga**	71	31.7	18.2				mg/L	25	Standard
	Rb	85	18.3	15.7				ug/L	28	Standard
	Y	89	447115.8	1.8				ug/L	447395	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	330.0	12.1	**0.0850**	0.013	15.3	ug/L	113	Standard
	Ag	107	352.0	8.7	**0.0361**	0.004	11.5	ug/L	108	Standard
	Cd	111	29.4	26.4	**0.0104**	0.003	32.2	mg/L	3	Standard
	Cd	114	71.8	39.3	**0.0126**	0.005	39.2	ug/L	20	Standard
>	**In**	115	626402.7	0.2				ug/L	625728	Standard
	Sn	118	865.0	27.7	**0.0501**	0.037	74.4	ug/L	568	Standard
	Sb	123	1603.3	32.0	**0.2763**	0.100	36.1	ug/L	612	Standard
	Ba	135	44.0	23.9	**0.0023**	0.005	210.3	ug/L	21	Standard
	Ce	140	16.7	34.6				ug/L	245	Standard
>	**Tb**	159	964218.0	1.0				ug/L	950397	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	134.0	19.6	**0.0140**	0.003	21.2	ug/L	15	Standard
	Tl	205	110.0	16.4	**0.0039**	0.002	58.2	ug/L	13	Standard
	Pb	206	338.3	8.4	**0.0154**	0.006	35.8	ug/L	264	Standard
	Pb	207	297.0	6.8	**0.0111**	0.004	39.6	ug/L	222	Standard
	Pb	208	1217.7	7.2	**0.0091**	0.005	50.4	ug/L	959	Standard
	U	238	104.0	26.4	**0.0125**	0.003	27.7	ug/L	9	Standard
>	**Bi**	209	558778.4	1.0				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:04:58
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	45.1	**-0.0142**	0.021	147.6	mg/L	55	Standard
K	39	25.0	72.1	**-0.0375**	0.066	177.3	mg/L	28	Standard
Ca	43	30.0	33.3	**0.2279**	0.902	395.6	mg/L	27	Standard
Fe	54	134.1	12.9	**0.0047**	0.015	308.3	mg/L	147	Standard
Fe	57	221.7	27.3	**-0.1357**	0.173	127.8	mg/L	268	Standard
> **Sc-1**	45	41874.5	1.3				mg/L	41174	Standard
Cl	35	67946.0	1.7				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	1943.5	9.7				ug/L	1950	Standard
P	31	20762.6	2.5				ug/L	21156	Standard
S	34	3392.0	1.6				ug/L	3419	Standard
Sr	88	48.3	36.3				ug/L	72	Standard
C	12	116.7	42.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	15.9	71.9				mg/L	16	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	17685.3	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:04:58
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.108
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.078
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:04:58
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: PBW 78 WG574416-04
Sample Date/Time: Friday, July 01, 2016 11:05:53
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76067.2	2.6				ug/L	76456	Standard
	Be	9	91.7	22.0	**0.0624**	0.018	28.1	ug/L	20	Standard
	Al	27	9900.0	18.4	**0.0479**	0.010	21.7	ug/L	1307	Standard
	Sc	45	42185.3	1.2				ug/L	41174	Standard
	Ti	47	37.3	6.7	**0.0291**	0.007	24.8	ug/L	27	Standard
	V	51	1740.2	8.5	**0.0114**	0.018	156.7	ug/L	1434	Standard
	Cr	52	8205.6	2.3	**0.0360**	0.018	50.7	ug/L	7733	Standard
	Cr	53	613.3	22.1	**0.1846**	0.130	70.5	ug/L	442	Standard
	Mn	55	2289.5	4.2	**0.1986**	0.011	5.7	ug/L	723	Standard
	Co	59	620.0	11.0	**0.0508**	0.009	16.8	ug/L	217	Standard
	Ni	60	519.3	1.9	**0.0951**	0.005	5.1	ug/L	304	Standard
	Cu	65	329.0	6.1	**0.0858**	0.009	10.4	ug/L	181	Standard
	Zn	66	3237.3	0.8	**2.4406**	0.012	0.5	ug/L	215	Standard
>	**Ge**	72	525088.2	0.5				ug/L	520809	Standard
	As	75	30.8	108.7	**0.0699**	0.027	38.5	ug/L	-52	Standard
	Se	82	25.8	16.5	**0.0760**	0.033	43.0	ug/L	17	Standard
	Se-1	77	68.3	8.1	**0.1083**	0.066	60.6	ug/L	56	Standard
>	**Ga**	71	20.0	66.1				mg/L	25	Standard
	Rb	85	38.3	7.5				ug/L	28	Standard
	Y	89	448293.9	2.2				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	197.6	7.0	**0.0411**	0.005	11.2	ug/L	113	Standard
	Ag	107	356.3	27.8	**0.0365**	0.014	37.3	ug/L	108	Standard
	Cd	111	135.0	20.3	**0.0560**	0.012	21.0	mg/L	3	Standard
	Cd	114	292.8	13.1	**0.0511**	0.007	12.9	ug/L	20	Standard
>	**In**	115	628756.6	0.3				ug/L	625728	Standard
	Sn	118	890.0	6.8	**0.0534**	0.009	17.4	ug/L	568	Standard
	Sb	123	903.8	20.1	**0.1404**	0.035	25.1	ug/L	612	Standard
	Ba	135	176.0	12.6	**0.0626**	0.010	15.9	ug/L	21	Standard
	Ce	140	53.3	61.0				ug/L	245	Standard
>	**Tb**	159	955139.7	2.0				ug/L	950397	Standard
	Ho	165	11.7	49.5				ug/L	7	Standard
	Tl	203	548.0	21.5	**0.0598**	0.012	20.5	ug/L	15	Standard
	Tl	205	510.0	24.7	**0.0537**	0.015	27.8	ug/L	13	Standard
	Pb	206	677.0	11.7	**0.0750**	0.013	16.8	ug/L	264	Standard
	Pb	207	544.7	11.6	**0.0591**	0.011	18.5	ug/L	222	Standard
	Pb	208	2290.4	8.0	**0.0601**	0.007	12.3	ug/L	959	Standard
	U	238	102.7	66.1	**0.0123**	0.008	66.3	ug/L	9	Standard
>	**Bi**	209	556043.1	1.2				ug/L	552821	Standard

Sample ID: PBW 78 WG574416-04
Report Date/Time: Friday, July 01, 2016 11:08:10
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	46.1	**0.0100**	0.032	319.9	mg/L	55	Standard
K	39	35.0	57.1	**0.0003**	0.076	23783.0	mg/L	28	Standard
Ca	43	23.3	32.7	**-0.3783**	0.697	184.3	mg/L	27	Standard
Fe	54	175.9	11.5	**0.0357**	0.014	38.5	mg/L	147	Standard
Fe	57	216.7	10.7	**-0.1545**	0.066	42.5	mg/L	268	Standard
> **Sc-1**	45	42185.3	1.2				mg/L	41174	Standard
Cl	35	67744.4	0.4				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2090.1	1.7				ug/L	1950	Standard
P	31	21226.5	2.4				ug/L	21156	Standard
S	34	3468.7	3.7				ug/L	3419	Standard
Sr	88	66.7	18.9				ug/L	72	Standard
C	12	106.7	51.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	6.2	100.1				mg/L	16	Standard
Ho-1	165	11.7	49.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2538.5	15.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.492	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.822	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 78 WG574416-04
Report Date/Time: Friday, July 01, 2016 11:08:10
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.484
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.583
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 78 WG574416-04
Report Date/Time: Friday, July 01, 2016 11:08:10
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: LCSW 78 WG574416-05
Sample Date/Time: Friday, July 01, 2016 11:09:04
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76480.9	1.3				ug/L	76456	Standard
	Be	9	57299.8	1.8	**51.1515**	0.782	1.5	ug/L	20	Standard
	Al	27	13893.0	5.9	**0.0710**	0.006	8.3	ug/L	1307	Standard
	Sc	45	41525.2	3.0				ug/L	41174	Standard
	Ti	47	50.0	14.4	**0.0663**	0.021	31.6	ug/L	27	Standard
	V	51	423867.5	0.4	**50.5009**	0.287	0.6	ug/L	1434	Standard
	Cr	52	423554.6	0.4	**50.5309**	0.121	0.2	ug/L	7733	Standard
	Cr	53	51463.9	0.2	**49.6485**	0.215	0.4	ug/L	442	Standard
	Mn	55	395604.7	0.2	**51.2819**	0.431	0.8	ug/L	723	Standard
	Co	59	393078.4	0.7	**50.4221**	0.467	0.9	ug/L	217	Standard
	Ni	60	106911.2	0.9	**50.5097**	0.714	1.4	ug/L	304	Standard
	Cu	65	106870.6	0.8	**51.4201**	0.725	1.4	ug/L	181	Standard
	Zn	66	64695.2	1.1	**51.7405**	0.880	1.7	ug/L	215	Standard
>	**Ge**	72	529720.7	0.6				ug/L	520809	Standard
	As	75	63865.6	0.7	**50.9077**	0.332	0.7	ug/L	-52	Standard
	Se	82	6442.1	1.2	**50.0074**	0.423	0.8	ug/L	17	Standard
	Se-1	77	4460.3	1.4	**50.6149**	0.735	1.5	ug/L	56	Standard
>	**Ga**	71	33.3	48.2				mg/L	25	Standard
	Rb	85	51.7	53.3				ug/L	28	Standard
	Y	89	451210.1	0.7				ug/L	447395	Standard
>	**Rh**	103	28.3	10.2				ug/L	15	Standard
	Mo	98	211.5	58.2	**0.0455**	0.040	88.5	ug/L	113	Standard
	Ag	107	371127.1	0.8	**51.3096**	0.429	0.8	ug/L	108	Standard
	Cd	111	117429.0	0.6	**50.6559**	0.197	0.4	mg/L	3	Standard
	Cd	114	286369.4	2.1	**49.8969**	1.108	2.2	ug/L	20	Standard
>	**In**	115	630039.4	0.2				ug/L	625728	Standard
	Sn	118	975.0	11.8	**0.0662**	0.017	26.4	ug/L	568	Standard
	Sb	123	249155.3	2.4	**47.8470**	1.151	2.4	ug/L	612	Standard
	Ba	135	109490.5	0.6	**49.9659**	0.356	0.7	ug/L	21	Standard
	Ce	140	110.0	22.7				ug/L	245	Standard
>	**Tb**	159	961658.5	1.2				ug/L	950397	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	456267.9	0.6	**50.3461**	0.267	0.5	ug/L	15	Standard
	Tl	205	402501.7	1.2	**50.0083**	0.617	1.2	ug/L	13	Standard
	Pb	206	293954.8	0.6	**51.3969**	0.546	1.1	ug/L	264	Standard
	Pb	207	256579.6	0.1	**49.3966**	0.497	1.0	ug/L	222	Standard
	Pb	208	1074330.1	0.6	**50.6396**	0.527	1.0	ug/L	959	Standard
	U	238	394562.7	0.9	**48.4869**	0.395	0.8	ug/L	9	Standard
>	**Bi**	209	558043.6	1.1				ug/L	552821	Standard

Sample ID: LCSW 78 WG574416-05
Report Date/Time: Friday, July 01, 2016 11:11:21
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	20.4	**0.0111**	0.013	120.9	mg/L	55	Standard
K	39	35.0	37.8	**0.0010**	0.048	4646.6	mg/L	28	Standard
Ca	43	28.3	36.7	**0.0919**	0.886	964.6	mg/L	27	Standard
Fe	54	169.1	21.5	**0.0325**	0.027	81.8	mg/L	147	Standard
Fe	57	220.0	8.2	**-0.1334**	0.058	43.3	mg/L	268	Standard
Sc-1	45	41525.2	3.0				mg/L	41174	Standard
Cl	35	67082.2	2.2				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	2023.5	3.3				ug/L	1950	Standard
P	31	22251.3	1.9				ug/L	21156	Standard
S	34	3218.7	6.1				ug/L	3419	Standard
Sr	88	76.7	10.0				ug/L	72	Standard
C	12	130.0	27.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	12.2	119.1				mg/L	16	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	1945.1	18.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.033	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.711	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 78 WG574416-05
Report Date/Time: Friday, July 01, 2016 11:11:21
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.689
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.945
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 78 WG574416-05
Report Date/Time: Friday, July 01, 2016 11:11:21
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141705 WG574416-01
Sample Date/Time: Friday, July 01, 2016 11:12:16
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78995.4	1.2				ug/L	76456	Standard
	Be	9	58.3	4.9	**0.0306**	0.003	9.8	ug/L	20	Standard
	Al	27	21381126.3	0.9	**120.8920**	2.463	2.0	ug/L	1307	Standard
	Sc	45	41005.4	0.8				ug/L	41174	Standard
	Ti	47	385.7	14.4	**1.1313**	0.162	14.4	ug/L	27	Standard
	V	51	37880.1	0.4	**4.5394**	0.067	1.5	ug/L	1434	Standard
	Cr	52	15651.7	0.4	**1.0197**	0.032	3.2	ug/L	7733	Standard
	Cr	53	6074.6	20.3	**5.7629**	1.265	22.0	ug/L	442	Standard
	Mn	55	15005.4	0.7	**1.9367**	0.029	1.5	ug/L	723	Standard
	Co	59	1426.7	2.3	**0.1620**	0.002	1.4	ug/L	217	Standard
	Ni	60	3377.0	1.1	**1.5203**	0.032	2.1	ug/L	304	Standard
	Cu	65	1905.1	1.9	**0.8856**	0.009	1.0	ug/L	181	Standard
	Zn	66	4588.7	1.0	**3.6704**	0.063	1.7	ug/L	215	Standard
>	**Ge**	72	506618.0	1.2				ug/L	520809	Standard
	As	75	2080.8	8.4	**1.7774**	0.135	7.6	ug/L	-52	Standard
	Se	82	818.2	2.3	**6.5307**	0.077	1.2	ug/L	17	Standard
	Se-1	77	895.7	3.3	**10.0889**	0.428	4.2	ug/L	56	Standard
>	**Ga**	71	153.3	31.3				mg/L	25	Standard
	Rb	85	3665.4	2.3				ug/L	28	Standard
	Y	89	429409.0	1.3				ug/L	447395	Standard
>	**Rh**	103	178.3	12.6				ug/L	15	Standard
	Mo	98	683.2	5.3	**0.2157**	0.014	6.4	ug/L	113	Standard
	Ag	107	300.3	34.9	**0.0315**	0.016	49.6	ug/L	108	Standard
	Cd	111	82.5	7.8	**0.0356**	0.003	8.6	mg/L	3	Standard
	Cd	114	158.8	23.9	**0.0295**	0.007	23.3	ug/L	20	Standard
>	**In**	115	590046.0	0.5				ug/L	625728	Standard
	Sn	118	975.0	8.9	**0.0764**	0.014	18.3	ug/L	568	Standard
	Sb	123	2972.1	30.5	**0.5762**	0.187	32.4	ug/L	612	Standard
	Ba	135	67195.3	0.7	**32.7370**	0.271	0.8	ug/L	21	Standard
	Ce	140	5165.9	1.6				ug/L	245	Standard
>	**Tb**	159	918152.8	1.4				ug/L	950397	Standard
	Ho	165	105.0	29.7				ug/L	7	Standard
	Tl	203	363.0	14.1	**0.0439**	0.007	15.0	ug/L	15	Standard
	Tl	205	258.3	37.0	**0.0260**	0.013	51.2	ug/L	13	Standard
	Pb	206	917.4	3.4	**0.1351**	0.007	5.1	ug/L	264	Standard
	Pb	207	764.4	2.1	**0.1180**	0.005	4.0	ug/L	222	Standard
	Pb	208	3197.8	4.0	**0.1198**	0.007	5.7	ug/L	959	Standard
	U	238	29042.1	0.6	**3.9760**	0.053	1.3	ug/L	9	Standard
>	**Bi**	209	500900.4	0.8				ug/L	552821	Standard

Sample ID: L1606141705 WG574416-01
Report Date/Time: Friday, July 01, 2016 11:14:33
Page 1

Approved: July 02, 2016

Na	23	6.7	43.3	**19.9855**	8.657	43.3	mg/L	2	Standard
Mg	24	126521.1	1.0	**148.3441**	0.501	0.3	mg/L	55	Standard
K	39	181.7	30.9	**0.5679**	0.214	37.7	mg/L	28	Standard
Ca	43	465.0	16.3	**40.0054**	7.184	18.0	mg/L	27	Standard
Fe	54	240.2	12.6	**0.0904**	0.025	28.1	mg/L	147	Standard
Fe	57	603.3	4.8	**1.0579**	0.102	9.7	mg/L	268	Standard
> **Sc-1**	45	41005.4	0.8				mg/L	41174	Standard
Cl	35	90433.8	0.8				ug/L	69550	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	57739.9	3.1				ug/L	1950	Standard
P	31	24640.0	1.7				ug/L	21156	Standard
S	34	3010.3	1.4				ug/L	3419	Standard
Sr	88	401.7	14.4				ug/L	72	Standard
C	12	506.7	3.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	132.3				mg/L	17	Standard
Dy	164	121.7	25.2				mg/L	16	Standard
Ho-1	165	105.0	29.7				mg/L	7	Standard
Er	166	103.3	29.6				mg/L	7	Standard
I	127	25413.0	5.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.322	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.275	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141705 WG574416-01
Report Date/Time: Friday, July 01, 2016 11:14:33
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.298
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.608
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141705 WG574416-01
Report Date/Time: Friday, July 01, 2016 11:14:33
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141706S WG574416-06
Sample Date/Time: Friday, July 01, 2016 11:15:27
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82487.3	1.1				ug/L	76456	Standard
	Be	9	59434.7	2.0	**49.1890**	0.474	1.0	ug/L	20	Standard
	Al	27	21126866.6	0.7	**114.3857**	1.245	1.1	ug/L	1307	Standard
	Sc	45	42071.7	1.5				ug/L	41174	Standard
	Ti	47	445.7	9.0	**1.3272**	0.106	8.0	ug/L	27	Standard
	V	51	448794.0	1.2	**56.1906**	0.338	0.6	ug/L	1434	Standard
	Cr	52	405302.2	0.8	**50.8030**	0.762	1.5	ug/L	7733	Standard
	Cr	53	55872.8	0.8	**56.6886**	1.157	2.0	ug/L	442	Standard
	Mn	55	376409.4	1.7	**51.2605**	1.187	2.3	ug/L	723	Standard
	Co	59	371466.0	0.9	**50.0608**	1.026	2.0	ug/L	217	Standard
	Ni	60	100340.5	1.4	**49.7984**	1.011	2.0	ug/L	304	Standard
	Cu	65	97977.1	1.5	**49.5201**	1.028	2.1	ug/L	181	Standard
	Zn	66	64249.3	1.5	**53.9822**	0.650	1.2	ug/L	215	Standard
>	Ge	72	504287.9	1.5				ug/L	520809	Standard
	As	75	64736.7	1.2	**54.2084**	0.977	1.8	ug/L	-52	Standard
	Se	82	7105.9	2.4	**57.9770**	1.906	3.3	ug/L	17	Standard
	Se-1	77	5081.5	1.0	**60.7211**	1.522	2.5	ug/L	56	Standard
>	Ga	71	93.3	21.7				mg/L	25	Standard
	Rb	85	3385.4	7.7				ug/L	28	Standard
	Y	89	437587.9	1.2				ug/L	447395	Standard
>	Rh	103	133.3	19.2				ug/L	15	Standard
	Mo	98	712.0	6.4	**0.2258**	0.015	6.5	ug/L	113	Standard
	Ag	107	254706.8	0.6	**37.6267**	0.420	1.1	ug/L	108	Standard
	Cd	111	107324.5	0.5	**49.4721**	0.054	0.1	mg/L	3	Standard
	Cd	114	266264.7	1.6	**49.5778**	1.034	2.1	ug/L	20	Standard
>	In	115	589608.9	0.6				ug/L	625728	Standard
	Sn	118	1198.4	5.9	**0.1134**	0.011	9.9	ug/L	568	Standard
	Sb	123	255276.2	0.1	**52.3884**	0.301	0.6	ug/L	612	Standard
	Ba	135	166458.1	0.3	**81.1840**	0.412	0.5	ug/L	21	Standard
	Ce	140	2188.5	3.6				ug/L	245	Standard
>	Tb	159	935892.6	1.8				ug/L	950397	Standard
	Ho	165	80.0	12.5				ug/L	7	Standard
	Tl	203	416301.7	0.5	**50.3128**	0.740	1.5	ug/L	15	Standard
	Tl	205	372797.3	0.4	**50.7287**	0.513	1.0	ug/L	13	Standard
	Pb	206	269916.3	0.3	**51.6884**	0.658	1.3	ug/L	264	Standard
	Pb	207	235694.4	0.5	**49.6950**	0.399	0.8	ug/L	222	Standard
	Pb	208	976732.6	0.6	**50.4213**	0.371	0.7	ug/L	959	Standard
	U	238	405996.3	0.5	**54.6443**	0.642	1.2	ug/L	9	Standard
>	Bi	209	509531.8	1.0				ug/L	552821	Standard

Sample ID: L1606141706S WG574416-06
Report Date/Time: Friday, July 01, 2016 11:17:44
Page 1

Approved: July 02, 2016

Na	23	6.7	86.6	**19.6383**	17.003	86.6	mg/L	2	Standard
Mg	24	124588.6	1.9	**142.3700**	0.938	0.7	mg/L	55	Standard
K	39	133.3	31.9	**0.3687**	0.159	43.1	mg/L	28	Standard
Ca	43	506.7	5.0	**42.5935**	1.641	3.9	mg/L	27	Standard
Fe	54	191.0	18.5	**0.0477**	0.027	55.6	mg/L	147	Standard
Fe	57	573.3	0.5	**0.9203**	0.025	2.7	mg/L	268	Standard
> **Sc-1**	45	42071.7	1.5				mg/L	41174	Standard
Cl	35	93134.7	1.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	57294.9	3.7				ug/L	1950	Standard
P	31	24481.4	0.9				ug/L	21156	Standard
S	34	3050.3	2.6				ug/L	3419	Standard
Sr	88	351.7	17.1				ug/L	72	Standard
C	12	470.0	15.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	66.5	44.7				mg/L	16	Standard
Ho-1	165	80.0	12.5				mg/L	7	Standard
Er	166	73.3	92.8				mg/L	7	Standard
I	127	27035.8	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.889	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141706S WG574416-06
Report Date/Time: Friday, July 01, 2016 11:17:44
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.228
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.169
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141706S WG574416-06
Report Date/Time: Friday, July 01, 2016 11:17:44
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141707SD WG574416-07
Sample Date/Time: Friday, July 01, 2016 11:18:39
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83771.0	2.5				ug/L	76456	Standard
	Be	9	60537.4	1.9	**49.3442**	0.599	1.2	ug/L	20	Standard
	Al	27	20909187.8	2.0	**111.4909**	2.320	2.1	ug/L	1307	Standard
	Sc	45	42178.7	2.5				ug/L	41174	Standard
	Ti	47	385.0	17.2	**1.1368**	0.214	18.9	ug/L	27	Standard
	V	51	446877.6	0.6	**55.9631**	0.571	1.0	ug/L	1434	Standard
	Cr	52	407703.5	1.0	**51.1164**	0.567	1.1	ug/L	7733	Standard
	Cr	53	57269.7	0.1	**58.1199**	0.209	0.4	ug/L	442	Standard
	Mn	55	373320.3	1.2	**50.8451**	0.769	1.5	ug/L	723	Standard
	Co	59	374639.0	0.7	**50.4931**	0.593	1.2	ug/L	217	Standard
	Ni	60	102269.7	0.8	**50.7649**	0.500	1.0	ug/L	304	Standard
	Cu	65	98211.9	0.3	**49.6447**	0.334	0.7	ug/L	181	Standard
	Zn	66	63211.9	0.4	**53.1189**	0.394	0.7	ug/L	215	Standard
>	Ge	72	504167.3	0.4				ug/L	520809	Standard
	As	75	65436.1	0.6	**54.8009**	0.553	1.0	ug/L	-52	Standard
	Se	82	7107.1	0.1	**57.9877**	0.247	0.4	ug/L	17	Standard
	Se-1	77	5193.9	0.7	**62.0795**	0.521	0.8	ug/L	56	Standard
>	Ga	71	93.3	56.3				mg/L	25	Standard
	Rb	85	2987.0	1.6				ug/L	28	Standard
	Y	89	428781.1	0.8				ug/L	447395	Standard
>	Rh	103	146.7	3.9				ug/L	15	Standard
	Mo	98	634.9	1.7	**0.2009**	0.001	0.6	ug/L	113	Standard
	Ag	107	261558.3	0.6	**39.0020**	0.323	0.8	ug/L	108	Standard
	Cd	111	107761.1	1.2	**50.1421**	0.734	1.5	mg/L	3	Standard
	Cd	114	265170.0	1.2	**49.8331**	0.062	0.1	ug/L	20	Standard
>	In	115	584141.3	1.3				ug/L	625728	Standard
	Sn	118	778.4	10.9	**0.0453**	0.014	30.6	ug/L	568	Standard
	Sb	123	253357.3	0.7	**52.4833**	0.432	0.8	ug/L	612	Standard
	Ba	135	164823.3	0.7	**81.1417**	0.473	0.6	ug/L	21	Standard
	Ce	140	1715.1	1.1				ug/L	245	Standard
>	Tb	159	919374.0	0.5				ug/L	950397	Standard
	Ho	165	48.3	26.0				ug/L	7	Standard
	Tl	203	415993.7	1.0	**50.5326**	0.446	0.9	ug/L	15	Standard
	Tl	205	377462.4	0.7	**51.6305**	0.656	1.3	ug/L	13	Standard
	Pb	206	269578.4	0.3	**51.8894**	0.298	0.6	ug/L	264	Standard
	Pb	207	236101.7	0.1	**50.0395**	0.358	0.7	ug/L	222	Standard
	Pb	208	981599.1	1.3	**50.9367**	0.779	1.5	ug/L	959	Standard
	U	238	408604.0	0.1	**55.2799**	0.488	0.9	ug/L	9	Standard
>	Bi	209	506896.7	0.8				ug/L	552821	Standard

Sample ID: L1606141707SD WG574416-07
Report Date/Time: Friday, July 01, 2016 11:20:56
Page 1

Approved: July 02, 2016

Na	23	6.7	86.6	**19.7141**	17.069	86.6	mg/L	2	Standard
Mg	24	123424.1	1.3	**140.7631**	4.816	3.4	mg/L	55	Standard
K	39	126.7	21.7	**0.3448**	0.114	32.9	mg/L	28	Standard
Ca	43	478.3	6.3	**39.9606**	1.868	4.7	mg/L	27	Standard
Fe	54	159.8	26.4	**0.0241**	0.035	144.2	mg/L	147	Standard
Fe	57	558.3	4.0	**0.8725**	0.108	12.4	mg/L	268	Standard
> **Sc-1**	45	42178.7	2.5				mg/L	41174	Standard
Cl	35	93263.5	1.5				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	55210.4	0.6				ug/L	1950	Standard
P	31	24391.3	2.2				ug/L	21156	Standard
S	34	2932.0	3.7				ug/L	3419	Standard
Sr	88	386.7	9.1				ug/L	72	Standard
C	12	800.0	2.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	64.1	17.0				mg/L	16	Standard
Ho-1	165	48.3	26.0				mg/L	7	Standard
Er	166	53.3	39.0				mg/L	7	Standard
I	127	27236.1	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.568	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.805	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141707SD WG574416-07
Report Date/Time: Friday, July 01, 2016 11:20:56
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.354
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.693
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141707SD WG574416-07
Report Date/Time: Friday, July 01, 2016 11:20:56
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141701
Sample Date/Time: Friday, July 01, 2016 11:21:50
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83420.7	1.6				ug/L	76456	Standard
	Be	9	53.3	21.7	**0.0237**	0.009	37.8	ug/L	20	Standard
	Al	27	31084082.3	1.3	**166.4192**	1.988	1.2	ug/L	1307	Standard
	Sc	45	42130.2	2.0				ug/L	41174	Standard
	Ti	47	170.3	8.2	**0.4375**	0.044	10.0	ug/L	27	Standard
	V	51	22939.6	1.3	**2.5877**	0.032	1.2	ug/L	1434	Standard
	Cr	52	13097.0	1.3	**0.6468**	0.025	3.9	ug/L	7733	Standard
	Cr	53	1960.1	6.9	**1.5196**	0.135	8.9	ug/L	442	Standard
	Mn	55	3766.5	0.8	**0.3954**	0.005	1.2	ug/L	723	Standard
	Co	59	709.0	6.9	**0.0630**	0.006	10.1	ug/L	217	Standard
	Ni	60	2223.2	1.0	**0.9167**	0.012	1.3	ug/L	304	Standard
	Cu	65	739.0	2.4	**0.2875**	0.008	2.9	ug/L	181	Standard
	Zn	66	2322.5	1.8	**1.7125**	0.036	2.1	ug/L	215	Standard
>	**Ge**	72	521624.8	0.2				ug/L	520809	Standard
	As	75	515.4	8.1	**0.4620**	0.033	7.2	ug/L	-52	Standard
	Se	82	150.1	4.3	**1.0601**	0.051	4.8	ug/L	17	Standard
	Se-1	77	163.7	3.7	**1.2270**	0.071	5.8	ug/L	56	Standard
>	**Ga**	71	35.0	42.9				mg/L	25	Standard
	Rb	85	1295.1	7.1				ug/L	28	Standard
	Y	89	450422.8	1.4				ug/L	447395	Standard
>	**Rh**	103	130.0	23.4				ug/L	15	Standard
	Mo	98	654.1	6.4	**0.1969**	0.014	7.3	ug/L	113	Standard
	Ag	107	196.0	12.7	**0.0150**	0.004	24.0	ug/L	108	Standard
	Cd	111	38.8	25.3	**0.0149**	0.004	28.8	mg/L	3	Standard
	Cd	114	102.9	24.1	**0.0184**	0.004	23.7	ug/L	20	Standard
>	**In**	115	612771.9	0.4				ug/L	625728	Standard
	Sn	118	700.0	1.2	**0.0268**	0.002	5.6	ug/L	568	Standard
	Sb	123	677.6	31.8	**0.1003**	0.043	43.0	ug/L	612	Standard
	Ba	135	79352.9	0.7	**37.2291**	0.386	1.0	ug/L	21	Standard
	Ce	140	398.3	12.2				ug/L	245	Standard
>	**Tb**	159	943156.7	0.8				ug/L	950397	Standard
	Ho	165	36.7	20.8				ug/L	7	Standard
	Tl	203	227.0	14.0	**0.0253**	0.004	14.6	ug/L	15	Standard
	Tl	205	246.7	13.8	**0.0221**	0.004	19.4	ug/L	13	Standard
	Pb	206	454.7	7.7	**0.0390**	0.006	16.7	ug/L	264	Standard
	Pb	207	363.0	3.8	**0.0266**	0.003	11.0	ug/L	222	Standard
	Pb	208	1563.4	3.8	**0.0284**	0.003	10.4	ug/L	959	Standard
	U	238	20328.0	1.2	**2.5974**	0.039	1.5	ug/L	9	Standard
>	**Bi**	209	536649.8	0.3				ug/L	552821	Standard

Sample ID: L1606141701
Report Date/Time: Friday, July 01, 2016 11:24:07
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	14153.3	4.2	**16.0944**	0.416	2.6	mg/L	55	Standard
K	39	73.3	50.3	**0.1418**	0.131	92.5	mg/L	28	Standard
Ca	43	301.7	14.5	**24.2946**	3.319	13.7	mg/L	27	Standard
Fe	54	192.1	16.5	**0.0481**	0.021	43.9	mg/L	147	Standard
Fe	57	448.3	3.9	**0.5433**	0.078	14.4	mg/L	268	Standard
> **Sc-1**	45	42130.2	2.0				mg/L	41174	Standard
Cl	35	78637.6	2.5				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	17710.4	7.6				ug/L	1950	Standard
P	31	24940.5	2.0				ug/L	21156	Standard
S	34	3180.3	5.3				ug/L	3419	Standard
Sr	88	363.3	6.9				ug/L	72	Standard
C	12	386.7	16.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	17	Standard
Dy	164	45.1	46.6				mg/L	16	Standard
Ho-1	165	36.7	20.8				mg/L	7	Standard
Er	166	33.3	17.3				mg/L	7	Standard
I	127	17748.8	7.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.110	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.157	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141701
Report Date/Time: Friday, July 01, 2016 11:24:07
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.929
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.075
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141701
Report Date/Time: Friday, July 01, 2016 11:24:07
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141702
Sample Date/Time: Friday, July 01, 2016 11:25:02
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84178.2	0.8				ug/L	76456	Standard
	Be	9	68.3	33.0	**0.0357**	0.019	52.5	ug/L	20	Standard
	Al	27	21395590.4	1.7	**113.5091**	1.891	1.7	ug/L	1307	Standard
	Sc	45	40557.5	1.2				ug/L	41174	Standard
	Ti	47	235.3	3.5	**0.6749**	0.030	4.5	ug/L	27	Standard
	V	51	30102.8	0.4	**3.6510**	0.042	1.2	ug/L	1434	Standard
	Cr	52	20877.7	0.2	**1.7436**	0.023	1.3	ug/L	7733	Standard
	Cr	53	13953.1	1.5	**14.0948**	0.198	1.4	ug/L	442	Standard
	Mn	55	6869.6	2.0	**0.8525**	0.013	1.6	ug/L	723	Standard
	Co	59	1049.0	2.3	**0.1145**	0.004	3.2	ug/L	217	Standard
	Ni	60	3023.6	1.9	**1.3787**	0.032	2.3	ug/L	304	Standard
	Cu	65	1353.7	2.9	**0.6232**	0.017	2.7	ug/L	181	Standard
	Zn	66	2790.6	0.7	**2.2139**	0.010	0.4	ug/L	215	Standard
>	Ge	72	495483.9	0.7				ug/L	520809	Standard
	As	75	1494.2	7.1	**1.3177**	0.098	7.4	ug/L	-52	Standard
	Se	82	1155.8	1.9	**9.4896**	0.142	1.5	ug/L	17	Standard
	Se-1	77	1366.7	2.9	**16.1232**	0.600	3.7	ug/L	56	Standard
>	Ga	71	65.0	46.8				mg/L	25	Standard
	Rb	85	1118.4	6.5				ug/L	28	Standard
	Y	89	431041.5	1.8				ug/L	447395	Standard
>	Rh	103	106.7	2.7				ug/L	15	Standard
	Mo	98	636.9	5.4	**0.2018**	0.013	6.3	ug/L	113	Standard
	Ag	107	175.7	31.4	**0.0134**	0.008	62.4	ug/L	108	Standard
	Cd	111	69.9	26.7	**0.0302**	0.009	28.8	mg/L	3	Standard
	Cd	114	141.9	41.1	**0.0267**	0.011	41.2	ug/L	20	Standard
>	In	115	583855.1	0.8				ug/L	625728	Standard
	Sn	118	985.0	7.5	**0.0798**	0.012	15.3	ug/L	568	Standard
	Sb	123	469.0	23.7	**0.0635**	0.023	35.9	ug/L	612	Standard
	Ba	135	16891.1	0.4	**8.3035**	0.096	1.2	ug/L	21	Standard
	Ce	140	950.0	9.1				ug/L	245	Standard
>	Tb	159	915987.8	1.1				ug/L	950397	Standard
	Ho	165	58.3	13.1				ug/L	7	Standard
	Tl	203	239.0	33.8	**0.0285**	0.010	35.2	ug/L	15	Standard
	Tl	205	226.7	28.0	**0.0215**	0.009	41.6	ug/L	13	Standard
	Pb	206	491.0	11.7	**0.0515**	0.012	22.7	ug/L	264	Standard
	Pb	207	417.3	7.3	**0.0430**	0.007	16.1	ug/L	222	Standard
	Pb	208	1796.4	4.5	**0.0456**	0.005	10.2	ug/L	959	Standard
	U	238	24911.1	0.1	**3.3908**	0.016	0.5	ug/L	9	Standard
>	Bi	209	503762.9	0.6				ug/L	552821	Standard

Sample ID: L1606141702
Report Date/Time: Friday, July 01, 2016 11:27:19
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**10.0444**	8.695	86.6	mg/L	2	Standard
Mg	24	132735.6	1.2	**157.3747**	3.155	2.0	mg/L	55	Standard
K	39	131.7	11.6	**0.3818**	0.065	17.1	mg/L	28	Standard
Ca	43	436.7	8.3	**37.8132**	2.966	7.8	mg/L	27	Standard
Fe	54	188.4	13.0	**0.0512**	0.020	39.7	mg/L	147	Standard
Fe	57	626.7	13.5	**1.1530**	0.288	25.0	mg/L	268	Standard
> **Sc-1**	45	40557.5	1.2				mg/L	41174	Standard
Cl	35	95111.1	2.9				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	69814.0	4.5				ug/L	1950	Standard
P	31	24122.5	3.6				ug/L	21156	Standard
S	34	3262.0	2.8				ug/L	3419	Standard
Sr	88	431.7	9.9				ug/L	72	Standard
C	12	460.0	22.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	50.5	77.6				mg/L	16	Standard
Ho-1	165	58.3	13.1				mg/L	7	Standard
Er	166	60.0	44.1				mg/L	7	Standard
I	127	37230.7	1.0				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.101	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.137	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606141702
Report Date/Time: Friday, July 01, 2016 11:27:19
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.308
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.126
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141702
Report Date/Time: Friday, July 01, 2016 11:27:19
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141702PS WG574808-01
Sample Date/Time: Friday, July 01, 2016 11:28:13
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84706.2	1.4				ug/L	76456	Standard
	Be	9	61248.6	0.7	**49.3719**	0.771	1.6	ug/L	20	Standard
	Al	27	21521134.5	1.9	**113.4962**	3.763	3.3	ug/L	1307	Standard
	Sc	45	40794.9	2.7				ug/L	41174	Standard
	Ti	47	240.0	10.1	**0.6796**	0.085	12.5	ug/L	27	Standard
	V	51	455261.1	1.0	**57.2107**	0.562	1.0	ug/L	1434	Standard
	Cr	52	426443.6	1.0	**53.6956**	0.415	0.8	ug/L	7733	Standard
	Cr	53	63767.3	2.8	**64.9856**	1.904	2.9	ug/L	442	Standard
	Mn	55	385209.5	0.8	**52.6493**	0.868	1.6	ug/L	723	Standard
	Co	59	385929.7	0.6	**52.1919**	0.293	0.6	ug/L	217	Standard
	Ni	60	103771.2	0.7	**51.6879**	0.282	0.5	ug/L	304	Standard
	Cu	65	101476.7	1.4	**51.4688**	0.149	0.3	ug/L	181	Standard
	Zn	66	65028.6	0.8	**54.8362**	0.235	0.4	ug/L	215	Standard
>	Ge	72	502470.5	1.2				ug/L	520809	Standard
	As	75	66227.4	1.6	**55.6481**	0.524	0.9	ug/L	-52	Standard
	Se	82	7664.8	0.5	**62.7619**	0.423	0.7	ug/L	17	Standard
	Se-1	77	5635.0	2.2	**67.6351**	0.810	1.2	ug/L	56	Standard
>	Ga	71	56.7	41.7				mg/L	25	Standard
	Rb	85	1151.7	5.5				ug/L	28	Standard
	Y	89	435252.0	2.3				ug/L	447395	Standard
>	Rh	103	131.7	9.6				ug/L	15	Standard
	Mo	98	659.3	4.3	**0.2083**	0.012	5.6	ug/L	113	Standard
	Ag	107	333584.9	1.2	**49.4501**	0.303	0.6	ug/L	108	Standard
	Cd	111	111317.0	0.6	**51.4929**	0.677	1.3	mg/L	3	Standard
	Cd	114	272508.8	2.4	**50.9184**	1.531	3.0	ug/L	20	Standard
>	In	115	587582.2	0.8				ug/L	625728	Standard
	Sn	118	1173.4	7.2	**0.1100**	0.015	13.8	ug/L	568	Standard
	Sb	123	246884.2	2.4	**50.8360**	0.942	1.9	ug/L	612	Standard
	Ba	135	121048.6	0.4	**59.2388**	0.725	1.2	ug/L	21	Standard
	Ce	140	995.0	2.7				ug/L	245	Standard
>	Tb	159	924930.3	1.0				ug/L	950397	Standard
	Ho	165	51.7	39.1				ug/L	7	Standard
	Tl	203	432904.6	0.1	**52.3301**	0.247	0.5	ug/L	15	Standard
	Tl	205	391263.3	1.6	**53.2578**	1.128	2.1	ug/L	13	Standard
	Pb	206	282728.2	0.5	**54.1561**	0.449	0.8	ug/L	264	Standard
	Pb	207	246312.6	0.2	**51.9491**	0.256	0.5	ug/L	222	Standard
	Pb	208	1022028.0	0.9	**52.7764**	0.638	1.2	ug/L	959	Standard
	U	238	421958.1	0.7	**56.8072**	0.698	1.2	ug/L	9	Standard
>	Bi	209	509385.6	0.5				ug/L	552821	Standard

Sample ID: L1606141702PS WG574808-01
Report Date/Time: Friday, July 01, 2016 11:30:30
Page 1

Approved: July 02, 2016

Na	23	10.0	50.0	**29.8847**	14.237	47.6	mg/L	2	Standard
Mg	24	133593.1	0.8	**157.5206**	4.134	2.6	mg/L	55	Standard
K	39	128.3	35.1	**0.3678**	0.182	49.5	mg/L	28	Standard
Ca	43	420.0	20.7	**36.0275**	7.706	21.4	mg/L	27	Standard
Fe	54	180.1	10.8	**0.0439**	0.018	40.9	mg/L	147	Standard
Fe	57	538.3	4.2	**0.8651**	0.032	3.7	mg/L	268	Standard
> **Sc-1**	45	40794.9	2.7				mg/L	41174	Standard
Cl	35	96279.6	0.7				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	71609.1	5.3				ug/L	1950	Standard
P	31	24898.8	2.0				ug/L	21156	Standard
S	34	3225.3	2.1				ug/L	3419	Standard
Sr	88	406.7	4.3				ug/L	72	Standard
C	12	440.0	36.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	27.8	36.1				mg/L	16	Standard
Ho-1	165	51.7	39.1				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	7	Standard
I	127	36331.8	0.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.479	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141702PS WG574808-01
Report Date/Time: Friday, July 01, 2016 11:30:30
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.904
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.143
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141702PS WG574808-01
Report Date/Time: Friday, July 01, 2016 11:30:30
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141702SDL WG574808-02
Sample Date/Time: Friday, July 01, 2016 11:31:25
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79270.2	1.4				ug/L	76456	Standard
	Be	9	48.3	15.8	**0.0218**	0.006	29.8	ug/L	20	Standard
	Al	27	4222516.4	1.3	**23.7801**	0.015	0.1	ug/L	1307	Standard
	Sc	45	38916.6	1.8				ug/L	41174	Standard
	Ti	47	59.3	17.5	**0.1088**	0.035	32.6	ug/L	27	Standard
	V	51	7243.4	2.3	**0.7359**	0.026	3.5	ug/L	1434	Standard
	Cr	52	10348.9	1.0	**0.3868**	0.014	3.5	ug/L	7733	Standard
	Cr	53	3842.2	2.6	**3.6141**	0.077	2.1	ug/L	442	Standard
	Mn	55	1712.4	2.4	**0.1385**	0.004	3.2	ug/L	723	Standard
	Co	59	414.7	3.6	**0.0280**	0.003	9.0	ug/L	217	Standard
	Ni	60	921.4	5.7	**0.3179**	0.030	9.6	ug/L	304	Standard
	Cu	65	476.3	6.6	**0.1735**	0.018	10.2	ug/L	181	Standard
	Zn	66	1250.7	2.0	**0.9024**	0.030	3.3	ug/L	215	Standard
>	**Ge**	72	491133.0	0.8				ug/L	520809	Standard
	As	75	262.0	15.9	**0.2704**	0.037	13.9	ug/L	-52	Standard
	Se	82	270.1	2.3	**2.1408**	0.063	2.9	ug/L	17	Standard
	Se-1	77	339.3	3.5	**3.5247**	0.142	4.0	ug/L	56	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	250.0	13.1				ug/L	28	Standard
	Y	89	411909.2	0.7				ug/L	447395	Standard
>	**Rh**	103	60.0	30.0				ug/L	15	Standard
	Mo	98	158.0	15.1	**0.0328**	0.008	25.5	ug/L	113	Standard
	Ag	107	268.7	10.2	**0.0278**	0.004	15.6	ug/L	108	Standard
	Cd	111	28.7	19.4	**0.0112**	0.003	23.8	mg/L	3	Standard
	Cd	114	92.0	14.0	**0.0176**	0.002	14.2	ug/L	20	Standard
>	**In**	115	575454.3	0.4				ug/L	625728	Standard
	Sn	118	298.3	6.8	**-0.0338**	0.003	9.9	ug/L	568	Standard
	Sb	123	1720.4	31.0	**0.3280**	0.111	33.8	ug/L	612	Standard
	Ba	135	3347.4	3.0	**1.6553**	0.056	3.4	ug/L	21	Standard
	Ce	140	181.7	6.9				ug/L	245	Standard
>	**Tb**	159	890346.9	0.6				ug/L	950397	Standard
	Ho	165	23.3	32.7				ug/L	7	Standard
	Tl	203	214.3	9.6	**0.0249**	0.002	9.4	ug/L	15	Standard
	Tl	205	275.0	41.2	**0.0273**	0.015	55.9	ug/L	13	Standard
	Pb	206	399.7	2.6	**0.0322**	0.002	4.9	ug/L	264	Standard
	Pb	207	322.7	4.0	**0.0214**	0.002	11.0	ug/L	222	Standard
	Pb	208	1435.0	2.3	**0.0252**	0.002	7.2	ug/L	959	Standard
	U	238	5076.5	3.7	**0.6771**	0.028	4.1	ug/L	9	Standard
>	**Bi**	209	514021.2	0.5				ug/L	552821	Standard

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:33:42
Page 1

Approved: July 02, 2016

Na	23	6.7	114.6	**21.2259**	24.589	115.8	mg/L	2	Standard
Mg	24	26095.8	2.9	**32.1961**	0.941	2.9	mg/L	55	Standard
K	39	48.3	21.5	**0.0648**	0.042	64.9	mg/L	28	Standard
Ca	43	73.3	25.8	**4.5982**	1.826	39.7	mg/L	27	Standard
Fe	54	79.1	19.4	**-0.0333**	0.012	34.7	mg/L	147	Standard
Fe	57	293.3	4.3	**0.1499**	0.049	32.9	mg/L	268	Standard
Sc-1	45	38916.6	1.8				mg/L	41174	Standard
Cl	35	81436.9	1.0				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	16265.4	2.3				ug/L	1950	Standard
P	31	10428.6	1.9				ug/L	21156	Standard
S	34	3263.7	1.5				ug/L	3419	Standard
Sr	88	118.3	30.0				ug/L	72	Standard
C	12	173.3	3.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	17	Standard
Dy	164	22.2	71.3				mg/L	16	Standard
Ho-1	165	23.3	32.7				mg/L	7	Standard
Er	166	23.3	107.9				mg/L	7	Standard
I	127	34272.1	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.681	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.302	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:33:42
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.982
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141702SDL WG574808-02
Sample Date/Time: Friday, July 01, 2016 11:34:36
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75492.7	3.2				ug/L	76456	Standard
	Be	9	23.3	12.4	**0.0012**	0.002	197.6	ug/L	20	Standard
	Al	27	829607.4	2.3	**4.8996**	0.125	2.6	ug/L	1307	Standard
	Sc	45	37073.7	3.1				ug/L	41174	Standard
	Ti	47	28.0	12.9	**0.0070**	0.012	174.3	ug/L	27	Standard
	V	51	3170.1	5.9	**0.2118**	0.020	9.4	ug/L	1434	Standard
	Cr	52	8461.0	1.1	**0.1435**	0.006	4.5	ug/L	7733	Standard
	Cr	53	1218.4	12.8	**0.8668**	0.167	19.3	ug/L	442	Standard
	Mn	55	694.0	1.2	**-0.0037**	0.001	25.0	ug/L	723	Standard
	Co	59	224.0	8.2	**0.0017**	0.003	168.9	ug/L	217	Standard
	Ni	60	457.0	4.9	**0.0814**	0.014	16.9	ug/L	304	Standard
	Cu	65	221.3	9.3	**0.0415**	0.012	28.9	ug/L	181	Standard
	Zn	66	1093.0	3.6	**0.7694**	0.029	3.8	ug/L	215	Standard
>	Ge	72	489217.1	1.1				ug/L	520809	Standard
	As	75	21.5	96.2	**0.0638**	0.018	28.2	ug/L	-52	Standard
	Se	82	69.4	5.3	**0.4582**	0.034	7.4	ug/L	17	Standard
	Se-1	77	109.3	5.9	**0.6765**	0.067	9.8	ug/L	56	Standard
>	Ga	71	15.0	33.3				mg/L	25	Standard
	Rb	85	76.7	16.4				ug/L	28	Standard
	Y	89	405198.5	2.3				ug/L	447395	Standard
>	Rh	103	26.7	60.3				ug/L	15	Standard
	Mo	98	142.2	38.6	**0.0281**	0.020	72.6	ug/L	113	Standard
	Ag	107	112.7	10.2	**0.0045**	0.002	36.8	ug/L	108	Standard
	Cd	111	8.1	48.9	**0.0015**	0.002	126.2	mg/L	3	Standard
	Cd	114	16.9	33.2	**0.0033**	0.001	33.5	ug/L	20	Standard
>	In	115	566627.7	0.7				ug/L	625728	Standard
	Sn	118	178.3	10.6	**-0.0536**	0.003	6.2	ug/L	568	Standard
	Sb	123	679.8	12.9	**0.1116**	0.020	17.6	ug/L	612	Standard
	Ba	135	676.7	1.6	**0.3256**	0.006	1.8	ug/L	21	Standard
	Ce	140	45.0	61.9				ug/L	245	Standard
>	Tb	159	881967.0	0.2				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	116.0	4.3	**0.0131**	0.001	4.5	ug/L	15	Standard
	Tl	205	140.0	3.6	**0.0090**	0.001	6.9	ug/L	13	Standard
	Pb	206	294.0	3.6	**0.0118**	0.002	17.2	ug/L	264	Standard
	Pb	207	254.0	8.5	**0.0068**	0.004	64.3	ug/L	222	Standard
	Pb	208	1072.0	4.7	**0.0063**	0.003	41.6	ug/L	959	Standard
	U	238	957.7	4.8	**0.1269**	0.006	4.8	ug/L	9	Standard
>	Bi	209	516500.7	0.3				ug/L	552821	Standard

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:36:53
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4970.8	4.5	**6.3914**	0.307	4.8	mg/L	55	Standard
K	39	25.0	0.0	**-0.0247**	0.003	13.3	mg/L	28	Standard
Ca	43	50.0	34.6	**2.6288**	1.919	73.0	mg/L	27	Standard
Fe	54	54.5	0.1	**-0.0513**	0.002	3.0	mg/L	147	Standard
Fe	57	253.3	6.3	**0.0613**	0.067	109.5	mg/L	268	Standard
> **Sc-1**	45	37073.7	3.1				mg/L	41174	Standard
Cl	35	80495.3	1.6				ug/L	69550	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	5040.8	9.7				ug/L	1950	Standard
P	31	7305.1	3.6				ug/L	21156	Standard
S	34	3295.4	6.8				ug/L	3419	Standard
Sr	88	108.3	11.6				ug/L	72	Standard
C	12	146.7	3.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	17	Standard
Dy	164	-1.1	89.2				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	7	Standard
I	127	33724.2	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.740	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.934	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:36:53
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.555
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.430
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:36:53
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 11:37:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79886.8	2.4				ug/L	76456	Standard
	Be	9	60216.2	2.8	**51.4590**	0.417	0.8	ug/L	20	Standard
	Al	27	8658161.3	1.0	**48.4053**	0.695	1.4	ug/L	1307	Standard
	Sc	45	41946.3	1.7				ug/L	41174	Standard
	Ti	47	32783.8	1.1	**99.4934**	0.341	0.3	ug/L	27	Standard
	V	51	421947.6	0.5	**50.6006**	0.209	0.4	ug/L	1434	Standard
	Cr	52	415783.8	0.5	**49.9191**	0.677	1.4	ug/L	7733	Standard
	Cr	53	52323.5	0.7	**50.8163**	0.079	0.2	ug/L	442	Standard
	Mn	55	383488.2	0.5	**50.0327**	0.303	0.6	ug/L	723	Standard
	Co	59	396921.5	0.3	**51.2480**	0.300	0.6	ug/L	217	Standard
	Ni	60	105550.0	0.7	**50.1916**	0.654	1.3	ug/L	304	Standard
	Cu	65	104187.0	0.3	**50.4533**	0.298	0.6	ug/L	181	Standard
	Zn	66	62119.1	0.9	**49.9953**	0.242	0.5	ug/L	215	Standard
>	Ge	72	526287.7	0.8				ug/L	520809	Standard
	As	75	62653.6	0.5	**50.2687**	0.288	0.6	ug/L	-52	Standard
	Se	82	6502.0	0.1	**50.8075**	0.476	0.9	ug/L	17	Standard
	Se-1	77	4394.6	2.3	**50.1962**	1.546	3.1	ug/L	56	Standard
>	Ga	71	41.7	34.6				mg/L	25	Standard
	Rb	85	811.7	7.3				ug/L	28	Standard
	Y	89	449443.8	0.8				ug/L	447395	Standard
>	Rh	103	28.3	20.4				ug/L	15	Standard
	Mo	98	299240.3	0.5	**98.3551**	0.449	0.5	ug/L	113	Standard
	Ag	107	359054.0	0.7	**49.6967**	0.335	0.7	ug/L	108	Standard
	Cd	111	115287.0	0.4	**49.7893**	0.202	0.4	mg/L	3	Standard
	Cd	114	284203.9	0.6	**49.5756**	0.249	0.5	ug/L	20	Standard
>	In	115	629316.2	0.1				ug/L	625728	Standard
	Sn	118	316403.3	1.4	**48.7968**	0.695	1.4	ug/L	568	Standard
	Sb	123	257145.7	0.4	**49.4396**	0.256	0.5	ug/L	612	Standard
	Ba	135	107880.7	0.2	**49.2873**	0.099	0.2	ug/L	21	Standard
	Ce	140	80.0	12.5				ug/L	245	Standard
>	Tb	159	959375.1	0.6				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	446456.6	0.5	**49.7300**	0.195	0.4	ug/L	15	Standard
	Tl	205	404447.0	0.4	**50.7263**	0.364	0.7	ug/L	13	Standard
	Pb	206	281579.7	0.3	**49.6971**	0.317	0.6	ug/L	264	Standard
	Pb	207	257039.7	0.6	**49.9528**	0.358	0.7	ug/L	222	Standard
	Pb	208	1065428.7	1.4	**50.6922**	0.446	0.9	ug/L	959	Standard
	U	238	401590.9	0.5	**49.8178**	0.056	0.1	ug/L	9	Standard
>	Bi	209	552793.0	0.6				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:40:07
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4465.7	1.7	**5.0623**	0.170	3.4	mg/L	55	Standard
K	39	1175.0	4.1	**4.2914**	0.166	3.9	mg/L	28	Standard
Ca	43	80.0	12.5	**4.6810**	0.869	18.6	mg/L	27	Standard
Fe	54	6475.2	2.0	**4.8865**	0.136	2.8	mg/L	147	Standard
Fe	57	1960.1	2.3	**5.1091**	0.183	3.6	mg/L	268	Standard
> **Sc-1**	45	41946.3	1.7				mg/L	41174	Standard
Cl	35	79383.6	3.3				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2656.9	5.2				ug/L	1950	Standard
P	31	23768.6	2.4				ug/L	21156	Standard
S	34	4000.5	6.6				ug/L	3419	Standard
Sr	88	80.0	43.3				ug/L	72	Standard
C	12	120.0	25.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	12.4	100.1				mg/L	16	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	22111.1	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.918		
Al	27	96.811		
Sc	45			
Ti	47	99.493		
V	51	101.201		
Cr	52	99.838		
Cr	53			
Mn	55	100.065		
Co	59	102.496		
Ni	60	100.383		
Cu	65	100.907		
Zn	66	99.991		
> Ge	72		101.052	
As	75	100.537		
Se	82	101.615		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:40:07
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	98.355		
Ag	107	99.393		
Cd	111	99.579		
Cd	114			
> In	115			100.573
Sn	118	97.594		
Sb	123	98.879		
Ba	135	98.575		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.460		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.384		
U	238	99.636		
> Bi	209			99.995
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:40:07
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 11:41:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79854.9	1.2				ug/L	76456	Standard
	Be	9	28.3	44.4	**0.0043**	0.011	247.6	ug/L	20	Standard
	Al	27	4860.8	30.8	**0.0170**	0.009	51.0	ug/L	1307	Standard
	Sc	45	40828.3	2.4				ug/L	41174	Standard
	Ti	47	33.7	26.8	**0.0170**	0.026	153.3	ug/L	27	Standard
	V	51	1448.8	4.8	**-0.0250**	0.010	39.6	ug/L	1434	Standard
	Cr	52	7320.1	2.9	**-0.0792**	0.016	19.8	ug/L	7733	Standard
	Cr	53	573.3	8.4	**0.1415**	0.043	30.2	ug/L	442	Standard
	Mn	55	774.7	1.8	**-0.0006**	0.001	182.2	ug/L	723	Standard
	Co	59	305.0	4.6	**0.0098**	0.001	15.1	ug/L	217	Standard
	Ni	60	339.0	2.3	**0.0078**	0.005	67.4	ug/L	304	Standard
	Cu	65	197.7	11.1	**0.0212**	0.010	48.2	ug/L	181	Standard
	Zn	66	269.3	7.5	**0.0362**	0.017	46.8	ug/L	215	Standard
>	**Ge**	72	528956.5	1.1				ug/L	520809	Standard
	As	75	-45.6	52.3	**0.0087**	0.019	224.1	ug/L	-52	Standard
	Se	82	23.2	12.4	**0.0547**	0.023	42.1	ug/L	17	Standard
	Se-1	77	56.7	21.6	**-0.0309**	0.148	479.3	ug/L	56	Standard
>	**Ga**	71	35.0	62.3				mg/L	25	Standard
	Rb	85	25.0	34.6				ug/L	28	Standard
	Y	89	451349.1	0.6				ug/L	447395	Standard
>	**Rh**	103	21.7	48.0				ug/L	15	Standard
	Mo	98	237.5	8.6	**0.0541**	0.007	13.2	ug/L	113	Standard
	Ag	107	234.7	5.8	**0.0196**	0.002	10.5	ug/L	108	Standard
	Cd	111	27.2	17.4	**0.0094**	0.002	21.1	mg/L	3	Standard
	Cd	114	66.4	34.3	**0.0116**	0.004	34.4	ug/L	20	Standard
>	**In**	115	629965.8	0.8				ug/L	625728	Standard
	Sn	118	940.0	21.0	**0.0607**	0.029	48.4	ug/L	568	Standard
	Sb	123	1092.2	32.6	**0.1759**	0.067	38.2	ug/L	612	Standard
	Ba	135	59.0	17.7	**0.0090**	0.005	54.2	ug/L	21	Standard
	Ce	140	21.7	70.5				ug/L	245	Standard
>	**Tb**	159	955018.0	0.8				ug/L	950397	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	126.3	20.6	**0.0132**	0.003	22.7	ug/L	15	Standard
	Tl	205	113.3	18.4	**0.0043**	0.003	62.2	ug/L	13	Standard
	Pb	206	346.7	4.9	**0.0167**	0.003	20.4	ug/L	264	Standard
	Pb	207	322.3	7.2	**0.0158**	0.005	30.9	ug/L	222	Standard
	Pb	208	1248.7	4.5	**0.0104**	0.003	28.9	ug/L	959	Standard
	U	238	111.7	26.1	**0.0134**	0.004	27.1	ug/L	9	Standard
>	**Bi**	209	560384.3	0.8				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:43:18
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	59.6	**0.0047**	0.039	831.6	mg/L	55	Standard
K	39	35.0	37.8	**0.0039**	0.051	1305.2	mg/L	28	Standard
Ca	43	11.7	24.7	**-1.3816**	0.279	20.2	mg/L	27	Standard
Fe	54	175.9	8.8	**0.0403**	0.012	30.1	mg/L	147	Standard
Fe	57	250.0	2.0	**-0.0293**	0.009	29.6	mg/L	268	Standard
Sc-1	45	40828.3	2.4				mg/L	41174	Standard
Cl	35	77022.6	1.0				ug/L	69550	Standard
Kr	83	3.3	34.6				ug/L	1	Standard
Br	81	2493.5	3.8				ug/L	1950	Standard
P	31	23044.2	2.3				ug/L	21156	Standard
S	34	3880.5	1.7				ug/L	3419	Standard
Sr	88	65.0	33.5				ug/L	72	Standard
C	12	130.0	40.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	17	Standard
Dy	164	9.0	113.3				mg/L	16	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	16675.8	0.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.564	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:43:18
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.677
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.368
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:43:18
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141703
Sample Date/Time: Friday, July 01, 2016 11:44:14
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81889.0	0.6				ug/L	76456	Standard
	Be	9	25.0	91.7	**0.0010**	0.019	1981.7	ug/L	20	Standard
	Al	27	20848394.4	0.7	**113.6982**	1.012	0.9	ug/L	1307	Standard
	Sc	45	42434.3	1.1				ug/L	41174	Standard
	Ti	47	234.7	10.2	**0.6592**	0.078	11.8	ug/L	27	Standard
	V	51	28681.8	1.4	**3.4038**	0.038	1.1	ug/L	1434	Standard
	Cr	52	19756.9	2.1	**1.5522**	0.054	3.5	ug/L	7733	Standard
	Cr	53	14119.9	6.2	**14.0078**	0.905	6.5	ug/L	442	Standard
	Mn	55	3334.7	3.0	**0.3535**	0.012	3.4	ug/L	723	Standard
	Co	59	938.4	1.3	**0.0970**	0.001	0.7	ug/L	217	Standard
	Ni	60	2864.9	3.9	**1.2722**	0.046	3.6	ug/L	304	Standard
	Cu	65	1854.4	2.7	**0.8643**	0.032	3.7	ug/L	181	Standard
	Zn	66	2610.6	1.0	**2.0198**	0.039	1.9	ug/L	215	Standard
>	**Ge**	72	504450.0	0.8				ug/L	520809	Standard
	As	75	1324.6	1.2	**1.1530**	0.022	1.9	ug/L	-52	Standard
	Se	82	1104.4	0.5	**8.8990**	0.094	1.1	ug/L	17	Standard
	Se-1	77	1261.1	5.7	**14.5449**	0.840	5.8	ug/L	56	Standard
>	**Ga**	71	50.0	43.6				mg/L	25	Standard
	Rb	85	1121.7	4.1				ug/L	28	Standard
	Y	89	436048.7	1.9				ug/L	447395	Standard
>	**Rh**	103	121.7	29.7				ug/L	15	Standard
	Mo	98	645.7	3.5	**0.2020**	0.005	2.6	ug/L	113	Standard
	Ag	107	223.7	26.2	**0.0200**	0.008	40.7	ug/L	108	Standard
	Cd	111	51.2	16.5	**0.0212**	0.004	16.8	mg/L	3	Standard
	Cd	114	113.2	6.3	**0.0210**	0.002	7.4	ug/L	20	Standard
>	**In**	115	591186.7	1.3				ug/L	625728	Standard
	Sn	118	875.0	14.2	**0.0597**	0.021	34.7	ug/L	568	Standard
	Sb	123	602.8	25.4	**0.0895**	0.030	33.5	ug/L	612	Standard
	Ba	135	16459.3	1.1	**7.9899**	0.039	0.5	ug/L	21	Standard
	Ce	140	880.0	5.0				ug/L	245	Standard
>	**Tb**	159	920155.8	2.2				ug/L	950397	Standard
	Ho	165	50.0	34.6				ug/L	7	Standard
	Tl	203	157.7	7.1	**0.0182**	0.001	6.2	ug/L	15	Standard
	Tl	205	155.0	27.9	**0.0113**	0.006	51.8	ug/L	13	Standard
	Pb	206	453.0	2.5	**0.0428**	0.002	4.5	ug/L	264	Standard
	Pb	207	378.7	4.5	**0.0335**	0.003	9.5	ug/L	222	Standard
	Pb	208	1616.4	3.0	**0.0349**	0.002	5.2	ug/L	959	Standard
	U	238	24675.7	1.0	**3.3100**	0.026	0.8	ug/L	9	Standard
>	**Bi**	209	511192.5	1.2				ug/L	552821	Standard

Sample ID: L1606141703
Report Date/Time: Friday, July 01, 2016 11:46:31
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**14.4476**	14.513	100.4	mg/L	2	Standard
Mg	24	129302.7	0.5	**146.5117**	1.623	1.1	mg/L	55	Standard
K	39	120.0	31.5	**0.3147**	0.137	43.6	mg/L	28	Standard
Ca	43	443.3	15.8	**36.6451**	6.259	17.1	mg/L	27	Standard
Fe	54	170.0	14.6	**0.0304**	0.017	57.5	mg/L	147	Standard
Fe	57	581.7	5.3	**0.9302**	0.090	9.7	mg/L	268	Standard
> **Sc-1**	45	42434.3	1.1				mg/L	41174	Standard
Cl	35	97340.4	1.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	68893.1	4.4				ug/L	1950	Standard
P	31	25483.1	3.6				ug/L	21156	Standard
S	34	3482.1	6.0				ug/L	3419	Standard
Sr	88	398.3	9.6				ug/L	72	Standard
C	12	456.7	3.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	44.0	27.1				mg/L	16	Standard
Ho-1	165	50.0	34.6				mg/L	7	Standard
Er	166	56.7	53.9				mg/L	7	Standard
I	127	49472.4	4.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.106	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.859	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141703
Report Date/Time: Friday, July 01, 2016 11:46:31
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.480
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141703
Report Date/Time: Friday, July 01, 2016 11:46:31
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141704
Sample Date/Time: Friday, July 01, 2016 11:47:26
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84196.6	0.3				ug/L	76456	Standard
	Be	9	33.3	22.9	**0.0072**	0.006	86.7	ug/L	20	Standard
	Al	27	15514677.9	3.0	**82.2819**	2.194	2.7	ug/L	1307	Standard
	Sc	45	43039.4	2.0				ug/L	41174	Standard
	Ti	47	214.3	5.1	**0.5706**	0.026	4.6	ug/L	27	Standard
	V	51	104787.8	1.3	**12.4991**	0.095	0.8	ug/L	1434	Standard
	Cr	52	15259.3	0.7	**0.9095**	0.033	3.7	ug/L	7733	Standard
	Cr	53	5951.2	3.9	**5.4474**	0.187	3.4	ug/L	442	Standard
	Mn	55	4057.5	2.5	**0.4326**	0.014	3.2	ug/L	723	Standard
	Co	59	713.7	6.2	**0.0633**	0.005	7.8	ug/L	217	Standard
	Ni	60	1861.4	2.8	**0.7406**	0.029	3.9	ug/L	304	Standard
	Cu	65	1343.1	2.6	**0.5817**	0.025	4.2	ug/L	181	Standard
	Zn	66	2743.6	1.9	**2.0501**	0.019	0.9	ug/L	215	Standard
>	Ge	72	522881.1	1.2				ug/L	520809	Standard
	As	75	2151.6	2.6	**1.7810**	0.033	1.9	ug/L	-52	Standard
	Se	82	460.2	1.1	**3.5021**	0.008	0.2	ug/L	17	Standard
	Se-1	77	457.3	2.7	**4.6435**	0.083	1.8	ug/L	56	Standard
>	Ga	71	48.3	41.8				mg/L	25	Standard
	Rb	85	1016.7	4.8				ug/L	28	Standard
	Y	89	448180.4	0.4				ug/L	447395	Standard
>	Rh	103	61.7	28.5				ug/L	15	Standard
	Mo	98	2950.5	2.8	**0.9697**	0.025	2.6	ug/L	113	Standard
	Ag	107	125.3	5.6	**0.0049**	0.001	22.3	ug/L	108	Standard
	Cd	111	47.4	9.4	**0.0186**	0.002	10.0	mg/L	3	Standard
	Cd	114	120.7	5.3	**0.0216**	0.001	5.2	ug/L	20	Standard
>	In	115	614296.5	0.6				ug/L	625728	Standard
	Sn	118	906.7	10.1	**0.0592**	0.014	23.4	ug/L	568	Standard
	Sb	123	614.0	19.1	**0.0872**	0.022	25.7	ug/L	612	Standard
	Ba	135	28748.9	0.6	**13.4426**	0.042	0.3	ug/L	21	Standard
	Ce	140	528.3	5.7				ug/L	245	Standard
>	Tb	159	947954.0	1.2				ug/L	950397	Standard
	Ho	165	23.3	12.4				ug/L	7	Standard
	Tl	203	129.3	12.8	**0.0142**	0.002	13.1	ug/L	15	Standard
	Tl	205	116.7	9.9	**0.0055**	0.002	28.8	ug/L	13	Standard
	Pb	206	445.0	3.2	**0.0379**	0.002	6.0	ug/L	264	Standard
	Pb	207	341.0	4.4	**0.0228**	0.003	12.0	ug/L	222	Standard
	Pb	208	1493.7	0.5	**0.0256**	0.000	1.6	ug/L	959	Standard
	U	238	70565.6	0.2	**9.0963**	0.034	0.4	ug/L	9	Standard
>	Bi	209	531969.0	0.4				ug/L	552821	Standard

Sample ID: L1606141704
Report Date/Time: Friday, July 01, 2016 11:49:43
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	88574.8	1.4	**98.9343**	0.707	0.7	mg/L	55	Standard
K	39	85.0	11.8	**0.1808**	0.038	21.2	mg/L	28	Standard
Ca	43	236.7	3.2	**18.1358**	1.082	6.0	mg/L	27	Standard
Fe	54	139.8	11.5	**0.0060**	0.011	187.7	mg/L	147	Standard
Fe	57	440.0	15.9	**0.4880**	0.189	38.8	mg/L	268	Standard
> **Sc-1**	45	43039.4	2.0				mg/L	41174	Standard
Cl	35	92305.0	1.1				ug/L	69550	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	47838.7	1.5				ug/L	1950	Standard
P	31	25832.0	1.0				ug/L	21156	Standard
S	34	3398.7	3.3				ug/L	3419	Standard
Sr	88	276.7	16.4				ug/L	72	Standard
C	12	396.7	10.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	28.9	100.6				mg/L	16	Standard
Ho-1	165	23.3	12.4				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	7	Standard
I	127	50935.5	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.125	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.398	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141704
Report Date/Time: Friday, July 01, 2016 11:49:43
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.173
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.228
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141708
Sample Date/Time: Friday, July 01, 2016 11:50:37
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89411.4	1.5				ug/L	76456	Standard
	Be	9	40.0	65.0	**0.0106**	0.020	184.8	ug/L	20	Standard
	Al	27	22078727.0	1.3	**110.2973**	2.573	2.3	ug/L	1307	Standard
	Sc	45	45105.4	2.6				ug/L	41174	Standard
	Ti	47	320.0	7.2	**0.8822**	0.060	6.8	ug/L	27	Standard
	V	51	99984.6	2.1	**11.7774**	0.066	0.6	ug/L	1434	Standard
	Cr	52	21104.0	1.8	**1.5998**	0.060	3.7	ug/L	7733	Standard
	Cr	53	17553.5	0.8	**16.6868**	0.266	1.6	ug/L	442	Standard
	Mn	55	6430.0	0.9	**0.7351**	0.014	1.9	ug/L	723	Standard
	Co	59	852.7	2.7	**0.0802**	0.004	4.4	ug/L	217	Standard
	Ni	60	2949.0	1.3	**1.2465**	0.031	2.4	ug/L	304	Standard
	Cu	65	1272.1	1.7	**0.5397**	0.010	1.8	ug/L	181	Standard
	Zn	66	3425.7	3.7	**2.5723**	0.060	2.3	ug/L	215	Standard
>	Ge	72	528948.8	1.6				ug/L	520809	Standard
	As	75	3475.1	1.0	**2.8171**	0.043	1.5	ug/L	-52	Standard
	Se	82	859.6	2.0	**6.5725**	0.024	0.4	ug/L	17	Standard
	Se-1	77	1345.7	4.1	**14.8113**	0.393	2.7	ug/L	56	Standard
>	Ga	71	66.7	11.5				mg/L	25	Standard
	Rb	85	4762.4	2.0				ug/L	28	Standard
	Y	89	458548.0	1.5				ug/L	447395	Standard
>	Rh	103	130.0	17.6				ug/L	15	Standard
	Mo	98	5253.1	0.6	**1.7250**	0.023	1.4	ug/L	113	Standard
	Ag	107	143.3	4.2	**0.0072**	0.001	7.4	ug/L	108	Standard
	Cd	111	26.0	42.6	**0.0090**	0.005	53.4	mg/L	3	Standard
	Cd	114	74.8	31.1	**0.0133**	0.004	31.5	ug/L	20	Standard
>	In	115	621514.7	1.7				ug/L	625728	Standard
	Sn	118	2120.1	10.2	**0.2472**	0.030	12.0	ug/L	568	Standard
	Sb	123	722.8	13.7	**0.1069**	0.018	16.5	ug/L	612	Standard
	Ba	135	16530.7	1.8	**7.6319**	0.034	0.4	ug/L	21	Standard
	Ce	140	651.7	0.4				ug/L	245	Standard
>	Tb	159	970516.7	2.5				ug/L	950397	Standard
	Ho	165	30.0	28.9				ug/L	7	Standard
	Tl	203	115.3	7.9	**0.0125**	0.001	8.0	ug/L	15	Standard
	Tl	205	93.3	21.7	**0.0024**	0.003	115.8	ug/L	13	Standard
	Pb	206	443.0	3.9	**0.0372**	0.003	8.7	ug/L	264	Standard
	Pb	207	377.3	5.1	**0.0298**	0.003	10.5	ug/L	222	Standard
	Pb	208	1645.4	1.3	**0.0327**	0.002	5.5	ug/L	959	Standard
	U	238	38430.4	2.4	**4.9290**	0.066	1.3	ug/L	9	Standard
>	Bi	209	534585.3	1.1				ug/L	552821	Standard

Sample ID: L1606141708
Report Date/Time: Friday, July 01, 2016 11:52:54
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.3062**	16.110	173.1	mg/L	2	Standard
Mg	24	132828.1	1.2	**141.6540**	4.533	3.2	mg/L	55	Standard
K	39	191.7	1.5	**0.5400**	0.021	3.8	mg/L	28	Standard
Ca	43	260.0	27.1	**19.0243**	5.272	27.7	mg/L	27	Standard
Fe	54	173.3	10.7	**0.0254**	0.016	61.2	mg/L	147	Standard
Fe	57	418.3	15.9	**0.3725**	0.215	57.6	mg/L	268	Standard
> **Sc-1**	45	45105.4	2.6				mg/L	41174	Standard
Cl	35	100939.1	0.9				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	47925.8	4.8				ug/L	1950	Standard
P	31	29869.4	2.0				ug/L	21156	Standard
S	34	3397.0	1.1				ug/L	3419	Standard
Sr	88	423.3	25.1				ug/L	72	Standard
C	12	363.3	14.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	21.9	26.4				mg/L	16	Standard
Ho-1	165	30.0	28.9				mg/L	7	Standard
Er	166	30.0	0.0				mg/L	7	Standard
I	127	41419.9	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.945	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.563	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141708
Report Date/Time: Friday, July 01, 2016 11:52:54
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.327
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.701
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141708
Report Date/Time: Friday, July 01, 2016 11:52:54
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141709
Sample Date/Time: Friday, July 01, 2016 11:53:49
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89000.7	1.7				ug/L	76456	Standard
	Be	9	21.7	53.3	**-0.0032**	0.009	283.0	ug/L	20	Standard
	Al	27	81398.6	19.6	**0.3975**	0.073	18.3	ug/L	1307	Standard
	Sc	45	44555.4	0.6				ug/L	41174	Standard
	Ti	47	68.3	11.1	**0.1083**	0.021	19.5	ug/L	27	Standard
	V	51	3436.2	9.0	**0.1857**	0.034	18.2	ug/L	1434	Standard
	Cr	52	29812.6	1.5	**2.4193**	0.055	2.3	ug/L	7733	Standard
	Cr	53	3683.8	3.4	**2.9342**	0.118	4.0	ug/L	442	Standard
	Mn	55	6681.5	2.0	**0.7101**	0.015	2.0	ug/L	723	Standard
	Co	59	555.0	20.9	**0.0372**	0.014	37.4	ug/L	217	Standard
	Ni	60	3463.7	2.0	**1.3816**	0.031	2.2	ug/L	304	Standard
	Cu	65	1056.0	4.0	**0.4017**	0.019	4.6	ug/L	181	Standard
	Zn	66	4593.4	1.7	**3.2666**	0.053	1.6	ug/L	215	Standard
>	**Ge**	72	566488.4	0.2				ug/L	520809	Standard
	As	75	-5.4	928.8	**0.0411**	0.038	91.4	ug/L	-52	Standard
	Se	82	29.8	40.3	**0.0905**	0.087	96.5	ug/L	17	Standard
	Se-1	77	89.0	15.9	**0.2724**	0.151	55.6	ug/L	56	Standard
>	**Ga**	71	38.3	15.1				mg/L	25	Standard
	Rb	85	258.3	31.9				ug/L	28	Standard
	Y	89	491649.6	0.6				ug/L	447395	Standard
>	**Rh**	103	20.0	0.0				ug/L	15	Standard
	Mo	98	1080.6	3.0	**0.3054**	0.011	3.5	ug/L	113	Standard
	Ag	107	233.3	81.3	**0.0171**	0.024	142.6	ug/L	108	Standard
	Cd	111	62.5	42.8	**0.0227**	0.011	47.4	mg/L	3	Standard
	Cd	114	173.3	77.7	**0.0281**	0.022	77.8	ug/L	20	Standard
>	**In**	115	678768.0	0.3				ug/L	625728	Standard
	Sn	118	3542.1	5.1	**0.4232**	0.027	6.3	ug/L	568	Standard
	Sb	123	458.8	15.3	**0.0481**	0.013	26.4	ug/L	612	Standard
	Ba	135	1179.0	5.3	**0.4817**	0.027	5.6	ug/L	21	Standard
	Ce	140	250.0	8.7				ug/L	245	Standard
>	**Tb**	159	1017740.7	0.9				ug/L	950397	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	186.0	120.6	**0.0185**	0.023	124.9	ug/L	15	Standard
	Tl	205	108.3	94.3	**0.0029**	0.012	410.9	ug/L	13	Standard
	Pb	206	582.3	26.2	**0.0521**	0.024	46.8	ug/L	264	Standard
	Pb	207	512.3	24.2	**0.0467**	0.022	46.6	ug/L	222	Standard
	Pb	208	1988.1	15.4	**0.0399**	0.013	32.1	ug/L	959	Standard
	U	238	126.0	91.3	**0.0142**	0.013	92.3	ug/L	9	Standard
>	**Bi**	209	592807.4	1.2				ug/L	552821	Standard

Sample ID: L1606141709
Report Date/Time: Friday, July 01, 2016 11:56:06
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	260.0	26.4	**0.2207**	0.075	34.1	mg/L	55	Standard
K	39	20.0	25.0	**-0.0603**	0.018	29.6	mg/L	28	Standard
Ca	43	25.0	40.0	**-0.3533**	0.844	239.0	mg/L	27	Standard
Fe	54	209.5	1.2	**0.0530**	0.003	4.8	mg/L	147	Standard
Fe	57	231.7	15.2	**-0.1465**	0.097	65.9	mg/L	268	Standard
Sc-1	45	44555.4	0.6				mg/L	41174	Standard
Cl	35	92666.6	2.2				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	3473.7	14.7				ug/L	1950	Standard
P	31	23892.2	1.7				ug/L	21156	Standard
S	34	3687.1	4.5				ug/L	3419	Standard
Sr	88	46.7	37.6				ug/L	72	Standard
C	12	203.3	12.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	32.1	49.0				mg/L	16	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	7	Standard
I	127	2500.2	19.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.408	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.771	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141709
Report Date/Time: Friday, July 01, 2016 11:56:06
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.477
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.233
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144101
Sample Date/Time: Friday, July 01, 2016 11:57:01
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90118.9	1.7				ug/L	76456	Standard
	Be	9	590.0	6.6	**0.4275**	0.033	7.7	ug/L	20	Standard
	Al	27	41637732.7	0.8	**206.3623**	2.003	1.0	ug/L	1307	Standard
	Sc	45	52748.3	1.3				ug/L	41174	Standard
	Ti	47	25849.4	0.9	**75.9425**	0.582	0.8	ug/L	27	Standard
	V	51	119191.4	0.7	**13.6962**	0.128	0.9	ug/L	1434	Standard
	Cr	52	206171.6	0.2	**23.4624**	0.147	0.6	ug/L	7733	Standard
	Cr	53	26030.7	3.1	**24.2644**	0.827	3.4	ug/L	442	Standard
	Mn	55	3362426.1	1.3	**425.5410**	6.574	1.5	ug/L	723	Standard
	Co	59	45394.2	0.9	**5.6490**	0.060	1.1	ug/L	217	Standard
	Ni	60	38170.7	0.8	**17.4748**	0.075	0.4	ug/L	304	Standard
	Cu	65	32375.9	0.9	**15.1289**	0.102	0.7	ug/L	181	Standard
	Zn	66	132720.1	0.4	**103.6234**	0.326	0.3	ug/L	215	Standard
>	**Ge**	72	543517.2	0.4				ug/L	520809	Standard
	As	75	40511.0	0.4	**31.4895**	0.240	0.8	ug/L	-52	Standard
	Se	82	271.3	7.7	**1.9305**	0.150	7.7	ug/L	17	Standard
	Se-1	77	159.7	0.7	**1.1051**	0.008	0.7	ug/L	56	Standard
>	**Ga**	71	10717.1	0.7				mg/L	25	Standard
	Rb	85	127736.4	2.6				ug/L	28	Standard
	Y	89	566400.0	1.2				ug/L	447395	Standard
>	**Rh**	103	230.0	10.0				ug/L	15	Standard
	Mo	98	19958.9	0.3	**6.3798**	0.036	0.6	ug/L	113	Standard
	Ag	107	307.3	4.7	**0.0287**	0.002	7.3	ug/L	108	Standard
	Cd	111	352.1	11.3	**0.1461**	0.017	11.5	mg/L	3	Standard
	Cd	114	941.3	14.8	**0.1602**	0.023	14.2	ug/L	20	Standard
>	**In**	115	644859.8	0.7				ug/L	625728	Standard
	Sn	118	2065.1	2.2	**0.2271**	0.006	2.7	ug/L	568	Standard
	Sb	123	1536.5	9.5	**0.2547**	0.026	10.2	ug/L	612	Standard
	Ba	135	755795.9	0.3	**337.0929**	2.903	0.9	ug/L	21	Standard
	Ce	140	578983.3	0.3				ug/L	245	Standard
>	**Tb**	159	997623.6	0.4				ug/L	950397	Standard
	Ho	165	8542.4	1.8				ug/L	7	Standard
	Tl	203	679.7	2.4	**0.0742**	0.002	2.6	ug/L	15	Standard
	Tl	205	551.7	3.8	**0.0587**	0.002	3.1	ug/L	13	Standard
	Pb	206	82465.5	0.5	**14.3726**	0.198	1.4	ug/L	264	Standard
	Pb	207	67377.8	0.6	**12.9242**	0.183	1.4	ug/L	222	Standard
	Pb	208	291536.5	0.2	**13.6926**	0.174	1.3	ug/L	959	Standard
	U	238	4078.5	1.0	**0.5004**	0.006	1.2	ug/L	9	Standard
>	**Bi**	209	558632.4	1.1				ug/L	552821	Standard

Sample ID: L1606144101
Report Date/Time: Friday, July 01, 2016 11:59:18
Page 1

Approved: July 02, 2016

Na	23	6.7	43.3	**15.4842**	6.494	41.9	mg/L	2	Standard
Mg	24	15246.0	1.4	**13.8434**	0.267	1.9	mg/L	55	Standard
K	39	708.3	3.5	**1.9891**	0.079	4.0	mg/L	28	Standard
Ca	43	650.0	13.5	**43.6069**	5.619	12.9	mg/L	27	Standard
Fe	54	24640.5	1.6	**14.9863**	0.360	2.4	mg/L	147	Standard
Fe	57	6984.9	0.7	**15.9501**	0.213	1.3	mg/L	268	Standard
Sc-1	45	52748.3	1.3				mg/L	41174	Standard
Cl	35	77949.4	2.2				ug/L	69550	Standard
Kr	83	4.0	50.0				ug/L	1	Standard
Br	81	47491.0	0.5				ug/L	1950	Standard
P	31	44155.9	1.6				ug/L	21156	Standard
S	34	4003.9	3.1				ug/L	3419	Standard
Sr	88	953.4	8.4				ug/L	72	Standard
C	12	680.0	10.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	17	Standard
Dy	164	14685.5	3.1				mg/L	16	Standard
Ho-1	165	8542.4	1.8				mg/L	7	Standard
Er	166	7695.3	3.1				mg/L	7	Standard
I	127	857640.2	8.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.871	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.360	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144101
Report Date/Time: Friday, July 01, 2016 11:59:18
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.058
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.051
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Approved: July 02, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144102
Sample Date/Time: Friday, July 01, 2016 12:00:12
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	98658.5	1.5				ug/L	76456	Standard
	Be	9	2670.2	2.5	**1.8290**	0.053	2.9	ug/L	20	Standard
	Al	27	100018655.9	1.5	**452.7643**	1.271	0.3	ug/L	1307	Standard
	Sc	45	67269.1	3.4				ug/L	41174	Standard
	Ti	47	65558.9	1.5	**191.1007**	3.376	1.8	ug/L	27	Standard
	V	51	394103.6	0.8	**45.3542**	0.603	1.3	ug/L	1434	Standard
	Cr	52	244910.5	0.4	**27.8063**	0.223	0.8	ug/L	7733	Standard
	Cr	53	30011.4	1.8	**27.7958**	0.566	2.0	ug/L	442	Standard
	Mn	55	9446087.0	0.8	**1185.4895**	15.339	1.3	ug/L	723	Standard
	Co	59	127992.0	0.5	**15.8451**	0.159	1.0	ug/L	217	Standard
	Ni	60	80262.0	0.9	**36.5997**	0.485	1.3	ug/L	304	Standard
	Cu	65	41760.1	1.2	**19.3697**	0.328	1.7	ug/L	181	Standard
	Zn	66	117095.1	0.6	**90.6239**	0.738	0.8	ug/L	215	Standard
>	Ge	72	548186.8	0.5				ug/L	520809	Standard
	As	75	12213.4	1.0	**9.4446**	0.140	1.5	ug/L	-52	Standard
	Se	82	168.5	1.4	**1.1404**	0.019	1.7	ug/L	17	Standard
	Se-1	77	183.7	6.1	**1.3567**	0.128	9.4	ug/L	56	Standard
>	Ga	71	38156.3	0.9				mg/L	25	Standard
	Rb	85	401776.2	1.3				ug/L	28	Standard
	Y	89	977933.0	0.9				ug/L	447395	Standard
>	Rh	103	285.0	6.1				ug/L	15	Standard
	Mo	98	2398.4	0.8	**0.7441**	0.003	0.4	ug/L	113	Standard
	Ag	107	404.7	5.9	**0.0417**	0.003	8.1	ug/L	108	Standard
	Cd	111	528.3	1.5	**0.2199**	0.003	1.2	mg/L	3	Standard
	Cd	114	1302.9	4.8	**0.2213**	0.008	3.8	ug/L	20	Standard
>	In	115	646109.7	1.1				ug/L	625728	Standard
	Sn	118	1073.4	7.7	**0.0773**	0.012	15.1	ug/L	568	Standard
	Sb	123	1069.4	22.8	**0.1664**	0.044	26.2	ug/L	612	Standard
	Ba	135	1753079.8	0.5	**780.4145**	5.897	0.8	ug/L	21	Standard
	Ce	140	2444826.3	0.9				ug/L	245	Standard
>	Tb	159	1048030.7	0.8				ug/L	950397	Standard
	Ho	165	43214.9	0.3				ug/L	7	Standard
	Tl	203	1815.1	1.2	**0.2022**	0.002	1.2	ug/L	15	Standard
	Tl	205	1641.8	6.8	**0.1969**	0.014	6.9	ug/L	13	Standard
	Pb	206	125036.8	0.6	**22.1250**	0.076	0.3	ug/L	264	Standard
	Pb	207	102892.9	0.5	**20.0422**	0.120	0.6	ug/L	222	Standard
	Pb	208	445404.9	0.2	**21.2431**	0.093	0.4	ug/L	959	Standard
	U	238	8589.4	1.3	**1.0692**	0.015	1.4	ug/L	9	Standard
>	Bi	209	550757.7	0.3				ug/L	552821	Standard

Sample ID: L1606144102
Report Date/Time: Friday, July 01, 2016 12:02:29
Page 1

Approved: July 02, 2016

Na	23	15.0	33.3	**27.3614**	8.722	31.9	mg/L	2	Standard
Mg	24	11512.7	3.2	**8.1734**	0.184	2.3	mg/L	55	Standard
K	39	1368.4	5.6	**3.0793**	0.098	3.2	mg/L	28	Standard
Ca	43	1295.1	4.3	**69.6682**	4.720	6.8	mg/L	27	Standard
Fe	54	38707.5	2.1	**18.4898**	0.545	2.9	mg/L	147	Standard
Fe	57	11109.1	1.4	**20.0998**	0.536	2.7	mg/L	268	Standard
> **Sc-1**	45	67269.1	3.4				mg/L	41174	Standard
Cl	35	76892.0	1.5				ug/L	69550	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	13365.9	1.5				ug/L	1950	Standard
P	31	63609.9	1.5				ug/L	21156	Standard
S	34	3752.1	6.7				ug/L	3419	Standard
Sr	88	1298.4	6.6				ug/L	72	Standard
C	12	780.0	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	20.4				mg/L	17	Standard
Dy	164	72319.7	1.0				mg/L	16	Standard
Ho-1	165	43214.9	0.3				mg/L	7	Standard
Er	166	38789.6	1.4				mg/L	7	Standard
I	127	200464.2	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.040	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144102
Report Date/Time: Friday, July 01, 2016 12:02:29
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.257	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.627	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	

Sample ID: L1606144102
Report Date/Time: Friday, July 01, 2016 12:02:29
Page 3

Approved: July 02, 2016

Mn 55 Upper, S, EEE	Mn	55
Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144201 WG574416-02
Sample Date/Time: Friday, July 01, 2016 12:03:24
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	91136.7	2.7				ug/L	76456	Standard
	Be	9	201.7	10.3	**0.1314**	0.018	13.5	ug/L	20	Standard
	Al	27	21905405.8	1.2	**107.3706**	1.869	1.7	ug/L	1307	Standard
	Sc	45	50086.0	0.8				ug/L	41174	Standard
	Ti	47	9316.5	1.4	**26.0675**	0.608	2.3	ug/L	27	Standard
	V	51	52523.0	0.3	**5.6447**	0.076	1.3	ug/L	1434	Standard
	Cr	52	28573.6	1.1	**2.2609**	0.041	1.8	ug/L	7733	Standard
	Cr	53	3023.6	5.3	**2.3192**	0.157	6.8	ug/L	442	Standard
	Mn	55	526886.3	1.1	**63.5454**	0.695	1.1	ug/L	723	Standard
	Co	59	12298.0	1.4	**1.4386**	0.020	1.4	ug/L	217	Standard
	Ni	60	9400.9	1.0	**3.9901**	0.052	1.3	ug/L	304	Standard
	Cu	65	4207.6	2.8	**1.8116**	0.065	3.6	ug/L	181	Standard
	Zn	66	23172.4	0.3	**17.1155**	0.171	1.0	ug/L	215	Standard
>	Ge	72	569574.4	1.1				ug/L	520809	Standard
	As	75	2039.6	1.1	**1.5560**	0.025	1.6	ug/L	-52	Standard
	Se	82	85.8	3.3	**0.4942**	0.015	3.0	ug/L	17	Standard
	Se-1	77	88.7	8.5	**0.2643**	0.088	33.1	ug/L	56	Standard
>	Ga	71	3267.0	3.2				mg/L	25	Standard
	Rb	85	51683.0	1.3				ug/L	28	Standard
	Y	89	529527.6	0.3				ug/L	447395	Standard
>	Rh	103	150.0	5.8				ug/L	15	Standard
	Mo	98	1541.7	1.1	**0.4475**	0.001	0.3	ug/L	113	Standard
	Ag	107	153.0	7.4	**0.0069**	0.002	23.0	ug/L	108	Standard
	Cd	111	40.7	6.3	**0.0140**	0.001	8.1	mg/L	3	Standard
	Cd	114	102.3	14.8	**0.0166**	0.003	15.4	ug/L	20	Standard
>	In	115	676532.0	0.8				ug/L	625728	Standard
	Sn	118	971.7	4.9	**0.0555**	0.008	14.3	ug/L	568	Standard
	Sb	123	639.0	14.8	**0.0807**	0.018	21.8	ug/L	612	Standard
	Ba	135	197467.2	0.8	**83.9345**	0.680	0.8	ug/L	21	Standard
	Ce	140	158462.8	1.7				ug/L	245	Standard
>	Tb	159	1025960.2	1.0				ug/L	950397	Standard
	Ho	165	2715.2	3.4				ug/L	7	Standard
	Tl	203	280.3	9.2	**0.0292**	0.003	9.9	ug/L	15	Standard
	Tl	205	271.7	10.1	**0.0229**	0.003	13.4	ug/L	13	Standard
	Pb	206	9533.7	0.7	**1.5691**	0.011	0.7	ug/L	264	Standard
	Pb	207	7883.1	1.1	**1.4223**	0.009	0.6	ug/L	222	Standard
	Pb	208	34084.4	0.9	**1.5063**	0.007	0.5	ug/L	959	Standard
	U	238	20271.2	0.7	**2.4081**	0.030	1.3	ug/L	9	Standard
>	Bi	209	577230.0	0.8				ug/L	552821	Standard

Sample ID: L1606144201 WG574416-02
Report Date/Time: Friday, July 01, 2016 12:05:41
Page 1

Approved: July 02, 2016

Na	23	10.0	86.6	**24.6403**	21.507	87.3	mg/L	2	Standard
Mg	24	4422.3	4.5	**4.1870**	0.202	4.8	mg/L	55	Standard
K	39	186.7	8.6	**0.4573**	0.052	11.3	mg/L	28	Standard
Ca	43	566.7	10.9	**39.8634**	4.346	10.9	mg/L	27	Standard
Fe	54	2666.0	2.2	**1.6199**	0.041	2.5	mg/L	147	Standard
Fe	57	1331.7	5.5	**2.5595**	0.178	6.9	mg/L	268	Standard
> **Sc-1**	45	50086.0	0.8				mg/L	41174	Standard
Cl	35	83929.2	1.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	13155.7	1.8				ug/L	1950	Standard
P	31	31337.4	1.4				ug/L	21156	Standard
S	34	3528.7	1.1				ug/L	3419	Standard
Sr	88	476.7	5.8				ug/L	72	Standard
C	12	400.0	7.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	4673.5	1.6				mg/L	16	Standard
Ho-1	165	2715.2	3.4				mg/L	7	Standard
Er	166	2656.9	8.5				mg/L	7	Standard
I	127	16687.6	14.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.202	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.363	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144201 WG574416-02
Report Date/Time: Friday, July 01, 2016 12:05:41
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.119
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.415
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606144201 WG574416-02
Report Date/Time: Friday, July 01, 2016 12:05:41
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144202
Sample Date/Time: Friday, July 01, 2016 12:06:35
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90507.9	1.9				ug/L	76456	Standard
	Be	9	248.3	5.8	**0.1675**	0.008	4.9	ug/L	20	Standard
	Al	27	22277088.2	0.8	**109.9375**	1.745	1.6	ug/L	1307	Standard
	Sc	45	50101.1	3.7				ug/L	41174	Standard
	Ti	47	12264.6	1.2	**34.7196**	0.584	1.7	ug/L	27	Standard
	V	51	62744.3	1.8	**6.8585**	0.146	2.1	ug/L	1434	Standard
	Cr	52	32463.4	1.9	**2.7415**	0.091	3.3	ug/L	7733	Standard
	Cr	53	3775.5	3.5	**3.0371**	0.138	4.6	ug/L	442	Standard
	Mn	55	731304.2	2.1	**89.2163**	2.199	2.5	ug/L	723	Standard
	Co	59	14984.4	2.2	**1.7791**	0.048	2.7	ug/L	217	Standard
	Ni	60	11028.3	1.8	**4.7605**	0.068	1.4	ug/L	304	Standard
	Cu	65	5131.2	1.5	**2.2507**	0.042	1.9	ug/L	181	Standard
	Zn	66	19672.8	1.3	**14.6652**	0.250	1.7	ug/L	215	Standard
>	Ge	72	563354.5	0.6				ug/L	520809	Standard
	As	75	2285.7	4.9	**1.7571**	0.090	5.1	ug/L	-52	Standard
	Se	82	78.7	24.0	**0.4498**	0.141	31.2	ug/L	17	Standard
	Se-1	77	96.3	4.2	**0.3571**	0.042	11.8	ug/L	56	Standard
>	Ga	71	4088.9	0.8				mg/L	25	Standard
	Rb	85	66167.5	0.6				ug/L	28	Standard
	Y	89	527047.3	1.0				ug/L	447395	Standard
>	Rh	103	133.3	20.7				ug/L	15	Standard
	Mo	98	1560.3	2.2	**0.4569**	0.008	1.8	ug/L	113	Standard
	Ag	107	236.0	37.0	**0.0178**	0.011	63.3	ug/L	108	Standard
	Cd	111	70.9	65.6	**0.0263**	0.019	71.1	mg/L	3	Standard
	Cd	114	182.9	70.7	**0.0299**	0.021	70.2	ug/L	20	Standard
>	In	115	671365.1	1.0				ug/L	625728	Standard
	Sn	118	1011.7	2.2	**0.0623**	0.004	5.8	ug/L	568	Standard
	Sb	123	671.0	17.2	**0.0874**	0.022	24.8	ug/L	612	Standard
	Ba	135	208248.7	0.6	**89.2003**	0.372	0.4	ug/L	21	Standard
	Ce	140	195369.9	1.1				ug/L	245	Standard
>	Tb	159	1017569.8	0.3				ug/L	950397	Standard
	Ho	165	3448.7	3.2				ug/L	7	Standard
	Tl	203	464.3	26.6	**0.0488**	0.013	26.2	ug/L	15	Standard
	Tl	205	373.3	2.0	**0.0351**	0.001	2.1	ug/L	13	Standard
	Pb	206	11404.0	0.3	**1.8871**	0.014	0.7	ug/L	264	Standard
	Pb	207	9244.8	0.8	**1.6776**	0.026	1.6	ug/L	222	Standard
	Pb	208	39660.1	0.9	**1.7621**	0.018	1.0	ug/L	959	Standard
	U	238	20504.2	1.2	**2.4376**	0.012	0.5	ug/L	9	Standard
>	Bi	209	576748.8	0.8				ug/L	552821	Standard

Sample ID: L1606144202
Report Date/Time: Friday, July 01, 2016 12:08:52
Page 1

Approved: July 02, 2016

Na	23	8.3	34.6	**20.5955**	7.569	36.8	mg/L	2	Standard
Mg	24	4662.4	4.9	**4.4148**	0.085	1.9	mg/L	55	Standard
K	39	218.3	22.9	**0.5540**	0.135	24.3	mg/L	28	Standard
Ca	43	601.7	7.9	**42.4925**	3.322	7.8	mg/L	27	Standard
Fe	54	3310.4	1.9	**2.0364**	0.082	4.1	mg/L	147	Standard
Fe	57	1525.1	5.8	**3.0549**	0.352	11.5	mg/L	268	Standard
> **Sc-1**	45	50101.1	3.7				mg/L	41174	Standard
Cl	35	83923.1	0.7				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	11030.7	1.9				ug/L	1950	Standard
P	31	32000.4	1.7				ug/L	21156	Standard
S	34	3522.1	3.8				ug/L	3419	Standard
Sr	88	531.7	5.7				ug/L	72	Standard
C	12	333.3	12.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	5934.4	7.8				mg/L	16	Standard
Ho-1	165	3448.7	3.2				mg/L	7	Standard
Er	166	3343.7	6.8				mg/L	7	Standard
I	127	14929.0	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.379	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.169	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144202
Report Date/Time: Friday, July 01, 2016 12:08:52
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.293
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.328
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606144202
Report Date/Time: Friday, July 01, 2016 12:08:52
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144203S WG574416-08
Sample Date/Time: Friday, July 01, 2016 12:09:47
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90030.2	2.8				ug/L	76456	Standard
	Be	9	67451.5	0.8	**51.1736**	1.267	2.5	ug/L	20	Standard
	Al	27	22083553.0	1.2	**109.5762**	1.952	1.8	ug/L	1307	Standard
	Sc	45	48706.5	1.6				ug/L	41174	Standard
	Ti	47	11744.6	3.0	**33.6397**	0.840	2.5	ug/L	27	Standard
	V	51	504596.4	0.3	**57.2364**	0.479	0.8	ug/L	1434	Standard
	Cr	52	455560.7	0.5	**51.7411**	0.108	0.2	ug/L	7733	Standard
	Cr	53	56769.5	0.3	**52.1372**	0.385	0.7	ug/L	442	Standard
	Mn	55	1036346.8	0.7	**127.9850**	0.471	0.4	ug/L	723	Standard
	Co	59	423691.1	0.7	**51.7179**	0.252	0.5	ug/L	217	Standard
	Ni	60	117301.3	0.2	**52.7412**	0.343	0.7	ug/L	304	Standard
	Cu	65	109232.0	1.3	**50.0075**	0.589	1.2	ug/L	181	Standard
	Zn	66	89717.5	1.0	**68.3316**	0.407	0.6	ug/L	215	Standard
>	**Ge**	72	556663.9	0.5				ug/L	520809	Standard
	As	75	68119.8	0.9	**51.6696**	0.438	0.8	ug/L	-52	Standard
	Se	82	6698.0	0.6	**49.4767**	0.038	0.1	ug/L	17	Standard
	Se-1	77	4484.0	0.7	**48.3919**	0.526	1.1	ug/L	56	Standard
>	**Ga**	71	4812.4	3.6				mg/L	25	Standard
	Rb	85	61444.3	0.8				ug/L	28	Standard
	Y	89	517239.3	0.8				ug/L	447395	Standard
>	**Rh**	103	106.7	32.9				ug/L	15	Standard
	Mo	98	1731.4	0.3	**0.5186**	0.008	1.5	ug/L	113	Standard
	Ag	107	354175.3	0.9	**46.7205**	0.584	1.2	ug/L	108	Standard
	Cd	111	119010.3	1.4	**48.9848**	0.748	1.5	mg/L	3	Standard
	Cd	114	293416.8	0.7	**48.7814**	0.554	1.1	ug/L	20	Standard
>	**In**	115	660339.6	1.1				ug/L	625728	Standard
	Sn	118	1475.1	6.5	**0.1329**	0.012	9.2	ug/L	568	Standard
	Sb	123	188284.4	1.5	**34.4893**	0.374	1.1	ug/L	612	Standard
	Ba	135	310505.8	0.4	**135.2331**	0.887	0.7	ug/L	21	Standard
	Ce	140	169550.1	0.7				ug/L	245	Standard
>	**Tb**	159	1009819.6	1.8				ug/L	950397	Standard
	Ho	165	3057.0	3.5				ug/L	7	Standard
	Tl	203	459336.1	0.3	**49.1469**	0.484	1.0	ug/L	15	Standard
	Tl	205	419582.5	1.2	**50.5538**	1.161	2.3	ug/L	13	Standard
	Pb	206	306250.8	0.1	**51.9221**	0.623	1.2	ug/L	264	Standard
	Pb	207	267507.5	0.3	**49.9387**	0.751	1.5	ug/L	222	Standard
	Pb	208	1116297.0	0.4	**51.0219**	0.722	1.4	ug/L	959	Standard
	U	238	433722.1	0.8	**51.6863**	1.022	2.0	ug/L	9	Standard
>	**Bi**	209	575528.3	1.2				ug/L	552821	Standard

Sample ID: L1606144203S WG574416-08
Report Date/Time: Friday, July 01, 2016 12:12:04
Page 1

Approved: July 02, 2016

Na	23	16.7	75.5	**41.7692**	31.215	74.7	mg/L	2	Standard
Mg	24	4830.8	1.7	**4.7112**	0.123	2.6	mg/L	55	Standard
K	39	223.3	5.2	**0.5924**	0.027	4.5	mg/L	28	Standard
Ca	43	666.7	3.0	**48.7692**	1.740	3.6	mg/L	27	Standard
Fe	54	3420.8	4.4	**2.1691**	0.101	4.6	mg/L	147	Standard
Fe	57	1528.4	2.8	**3.1654**	0.056	1.8	mg/L	268	Standard
Sc-1	45	48706.5	1.6				mg/L	41174	Standard
Cl	35	82992.7	2.0				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	7521.9	4.9				ug/L	1950	Standard
P	31	32994.2	3.4				ug/L	21156	Standard
S	34	3745.5	4.1				ug/L	3419	Standard
Sr	88	541.7	13.3				ug/L	72	Standard
C	12	350.0	24.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	17	Standard
Dy	164	4986.9	2.7				mg/L	16	Standard
Ho-1	165	3057.0	3.5				mg/L	7	Standard
Er	166	2656.9	3.8				mg/L	7	Standard
I	127	14203.3	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.755	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.884	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144203S WG574416-08
Report Date/Time: Friday, July 01, 2016 12:12:04
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.531	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	104.108	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144204SD WG574416-09
Sample Date/Time: Friday, July 01, 2016 12:12:58
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90070.3	0.3				ug/L	76456	Standard
	Be	9	67068.2	2.3	**50.8355**	1.023	2.0	ug/L	20	Standard
	Al	27	22820326.8	1.6	**113.1467**	1.840	1.6	ug/L	1307	Standard
	Sc	45	48614.5	1.1				ug/L	41174	Standard
	Ti	47	12429.8	0.9	**35.6977**	0.390	1.1	ug/L	27	Standard
	V	51	500213.8	0.9	**56.8738**	0.256	0.4	ug/L	1434	Standard
	Cr	52	457920.4	0.8	**52.1452**	0.679	1.3	ug/L	7733	Standard
	Cr	53	55433.0	3.5	**51.0119**	1.142	2.2	ug/L	442	Standard
	Mn	55	1032001.7	0.7	**127.7596**	0.851	0.7	ug/L	723	Standard
	Co	59	426181.5	0.6	**52.1492**	0.363	0.7	ug/L	217	Standard
	Ni	60	115745.8	0.4	**52.1679**	0.569	1.1	ug/L	304	Standard
	Cu	65	108435.6	0.5	**49.7650**	0.481	1.0	ug/L	181	Standard
	Zn	66	83122.4	0.9	**63.4509**	0.540	0.9	ug/L	215	Standard
>	Ge	72	555340.6	1.3				ug/L	520809	Standard
	As	75	68386.4	1.0	**51.9966**	0.210	0.4	ug/L	-52	Standard
	Se	82	6617.0	1.4	**48.9951**	0.511	1.0	ug/L	17	Standard
	Se-1	77	4553.0	1.4	**49.2655**	0.470	1.0	ug/L	56	Standard
>	Ga	71	4989.2	4.2				mg/L	25	Standard
	Rb	85	63782.3	0.6				ug/L	28	Standard
	Y	89	508585.3	3.2				ug/L	447395	Standard
>	Rh	103	155.0	16.8				ug/L	15	Standard
	Mo	98	1690.9	2.2	**0.5065**	0.021	4.1	ug/L	113	Standard
	Ag	107	359804.6	1.4	**47.4968**	0.270	0.6	ug/L	108	Standard
	Cd	111	119520.8	0.7	**49.2344**	0.563	1.1	mg/L	3	Standard
	Cd	114	293080.3	1.6	**48.7653**	1.035	2.1	ug/L	20	Standard
>	In	115	659870.1	1.8				ug/L	625728	Standard
	Sn	118	1175.0	5.3	**0.0889**	0.010	10.9	ug/L	568	Standard
	Sb	123	180927.8	2.0	**33.1631**	0.062	0.2	ug/L	612	Standard
	Ba	135	313663.8	0.6	**136.7260**	2.307	1.7	ug/L	21	Standard
	Ce	140	181386.0	0.5				ug/L	245	Standard
>	Tb	159	1008393.6	0.8				ug/L	950397	Standard
	Ho	165	2945.3	1.9				ug/L	7	Standard
	Tl	203	461671.8	0.2	**49.9891**	0.298	0.6	ug/L	15	Standard
	Tl	205	421242.1	0.2	**51.3576**	0.369	0.7	ug/L	13	Standard
	Pb	206	307820.1	0.5	**52.8142**	0.466	0.9	ug/L	264	Standard
	Pb	207	267725.9	1.2	**50.5746**	0.254	0.5	ug/L	222	Standard
	Pb	208	1118569.9	0.5	**51.7383**	0.472	0.9	ug/L	959	Standard
	U	238	435363.6	0.2	**52.5003**	0.385	0.7	ug/L	9	Standard
>	Bi	209	568683.1	0.8				ug/L	552821	Standard

Sample ID: L1606144204SD WG574416-09
Report Date/Time: Friday, July 01, 2016 12:15:15
Page 1

Approved: July 02, 2016

Na	23	10.0	50.0	**25.2590**	12.492	49.5	mg/L	2	Standard
Mg	24	4682.4	0.4	**4.5730**	0.070	1.5	mg/L	55	Standard
K	39	196.7	12.8	**0.5079**	0.086	17.0	mg/L	28	Standard
Ca	43	620.0	2.8	**45.2717**	1.537	3.4	mg/L	27	Standard
Fe	54	3578.4	8.9	**2.2770**	0.195	8.6	mg/L	147	Standard
Fe	57	1561.7	1.9	**3.2607**	0.102	3.1	mg/L	268	Standard
> **Sc-1**	45	48614.5	1.1				mg/L	41174	Standard
Cl	35	83140.8	0.7				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	7508.5	3.6				ug/L	1950	Standard
P	31	33216.4	1.3				ug/L	21156	Standard
S	34	3633.8	2.2				ug/L	3419	Standard
Sr	88	566.7	11.0				ug/L	72	Standard
C	12	476.7	6.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	17	Standard
Dy	164	4984.3	2.5				mg/L	16	Standard
Ho-1	165	2945.3	1.9				mg/L	7	Standard
Er	166	2850.3	2.1				mg/L	7	Standard
I	127	15054.2	4.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.807	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.630	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144204SD WG574416-09
Report Date/Time: Friday, July 01, 2016 12:15:15
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.456
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.869
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144204SD WG574416-09
Report Date/Time: Friday, July 01, 2016 12:15:15
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 12:16:11
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87445.1	3.4				ug/L	76456	Standard
	Be	9	64070.2	0.9	**50.0545**	1.445	2.9	ug/L	20	Standard
	Al	27	9240352.4	0.8	**47.2275**	1.909	4.0	ug/L	1307	Standard
	Sc	45	44832.9	2.4				ug/L	41174	Standard
	Ti	47	34259.7	1.0	**97.1606**	1.714	1.8	ug/L	27	Standard
	V	51	451230.5	0.6	**50.5628**	0.294	0.6	ug/L	1434	Standard
	Cr	52	441549.7	0.7	**49.5261**	0.488	1.0	ug/L	7733	Standard
	Cr	53	54047.9	0.8	**49.0333**	0.166	0.3	ug/L	442	Standard
	Mn	55	409600.5	0.8	**49.9366**	0.757	1.5	ug/L	723	Standard
	Co	59	429332.5	1.0	**51.7968**	0.540	1.0	ug/L	217	Standard
	Ni	60	111250.6	0.3	**49.4298**	0.556	1.1	ug/L	304	Standard
	Cu	65	109537.2	0.3	**49.5637**	0.351	0.7	ug/L	181	Standard
	Zn	66	65566.2	0.7	**49.3061**	0.180	0.4	ug/L	215	Standard
>	Ge	72	563235.2	0.9				ug/L	520809	Standard
	As	75	66627.6	0.4	**49.9511**	0.273	0.5	ug/L	-52	Standard
	Se	82	6922.5	0.6	**50.5422**	0.157	0.3	ug/L	17	Standard
	Se-1	77	4596.0	1.5	**49.0283**	0.390	0.8	ug/L	56	Standard
>	Ga	71	40.0	21.7				mg/L	25	Standard
	Rb	85	993.4	8.3				ug/L	28	Standard
	Y	89	482225.9	1.1				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	318941.8	1.3	**98.3261**	1.568	1.6	ug/L	113	Standard
	Ag	107	382282.6	0.5	**49.6279**	0.362	0.7	ug/L	108	Standard
	Cd	111	122482.8	0.3	**49.6133**	0.042	0.1	mg/L	3	Standard
	Cd	114	296548.6	0.8	**48.5180**	0.351	0.7	ug/L	20	Standard
>	In	115	670966.5	0.3				ug/L	625728	Standard
	Sn	118	338852.8	1.5	**49.0149**	0.673	1.4	ug/L	568	Standard
	Sb	123	274306.5	0.2	**49.4654**	0.232	0.5	ug/L	612	Standard
	Ba	135	113482.1	0.5	**48.6277**	0.189	0.4	ug/L	21	Standard
	Ce	140	308.3	9.8				ug/L	245	Standard
>	Tb	159	1016008.3	2.4				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	473547.1	1.1	**49.9959**	0.041	0.1	ug/L	15	Standard
	Tl	205	428096.0	1.4	**50.8923**	0.684	1.3	ug/L	13	Standard
	Pb	206	298789.4	0.8	**49.9841**	0.126	0.3	ug/L	264	Standard
	Pb	207	271570.2	0.6	**50.0267**	0.582	1.2	ug/L	222	Standard
	Pb	208	1117926.1	0.2	**50.4203**	0.478	0.9	ug/L	959	Standard
	U	238	428309.5	0.4	**50.3630**	0.285	0.6	ug/L	9	Standard
>	Bi	209	583209.8	1.0				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:18:28
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4910.8	1.7	**5.2115**	0.207	4.0	mg/L	55	Standard
K	39	1366.7	7.2	**4.6780**	0.226	4.8	mg/L	28	Standard
Ca	43	96.7	13.0	**5.6017**	0.863	15.4	mg/L	27	Standard
Fe	54	7079.3	0.6	**5.0021**	0.155	3.1	mg/L	147	Standard
Fe	57	2068.5	8.1	**5.0303**	0.399	7.9	mg/L	268	Standard
> **Sc-1**	45	44832.9	2.4				mg/L	41174	Standard
Cl	35	82615.3	1.2				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2370.2	6.2				ug/L	1950	Standard
P	31	24917.1	2.0				ug/L	21156	Standard
S	34	4207.3	4.1				ug/L	3419	Standard
Sr	88	65.0	33.5				ug/L	72	Standard
C	12	150.0	30.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	25.7	41.7				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	20977.9	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.109		
Al	27	94.455		
Sc	45			
Ti	47	97.161		
V	51	101.126		
Cr	52	99.052		
Cr	53			
Mn	55	99.873		
Co	59	103.594		
Ni	60	98.860		
Cu	65	99.127		
Zn	66	98.612		
> Ge	72		108.146	
As	75	99.902		
Se	82	101.084		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:18:28
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.326		
Ag	107	99.256		
Cd	111	99.227		
Cd	114			
In	115			107.230
Sn	118	98.030		
Sb	123	98.931		
Ba	135	97.255		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.992		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.841		
U	238	100.726		
Bi	209			105.497
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:18:28
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 12:19:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86888.4	1.2				ug/L	76456	Standard
	Be	9	43.3	6.7	**0.0142**	0.002	14.4	ug/L	20	Standard
	Al	27	10504.4	54.9	**0.0440**	0.030	68.3	ug/L	1307	Standard
	Sc	45	44657.4	2.0				ug/L	41174	Standard
	Ti	47	39.3	11.5	**0.0270**	0.014	53.3	ug/L	27	Standard
	V	51	1529.0	2.6	**-0.0269**	0.007	25.9	ug/L	1434	Standard
	Cr	52	7711.0	1.1	**-0.0906**	0.015	16.9	ug/L	7733	Standard
	Cr	53	511.7	5.7	**0.0505**	0.033	65.1	ug/L	442	Standard
	Mn	55	1157.7	24.7	**0.0401**	0.037	91.8	ug/L	723	Standard
	Co	59	342.7	7.9	**0.0119**	0.004	32.6	ug/L	217	Standard
	Ni	60	345.0	7.1	**0.0004**	0.013	3536.3	ug/L	304	Standard
	Cu	65	196.7	14.8	**0.0150**	0.014	96.7	ug/L	181	Standard
	Zn	66	265.3	6.8	**0.0197**	0.016	82.6	ug/L	215	Standard
>	**Ge**	72	564532.3	1.4				ug/L	520809	Standard
	As	75	-63.0	4.9	**-0.0020**	0.003	148.8	ug/L	-52	Standard
	Se	82	13.5	49.1	**-0.0274**	0.049	178.6	ug/L	17	Standard
	Se-1	77	66.7	9.6	**0.0356**	0.080	224.7	ug/L	56	Standard
>	**Ga**	71	36.7	34.3				mg/L	25	Standard
	Rb	85	50.0	17.3				ug/L	28	Standard
	Y	89	485264.3	1.4				ug/L	447395	Standard
>	**Rh**	103	23.3	65.5				ug/L	15	Standard
	Mo	98	248.2	9.5	**0.0519**	0.007	13.4	ug/L	113	Standard
	Ag	107	217.7	28.5	**0.0151**	0.008	51.7	ug/L	108	Standard
	Cd	111	38.2	50.7	**0.0130**	0.008	59.2	mg/L	3	Standard
	Cd	114	103.6	56.8	**0.0168**	0.009	56.1	ug/L	20	Standard
>	**In**	115	676839.2	0.6				ug/L	625728	Standard
	Sn	118	985.0	18.1	**0.0572**	0.025	43.7	ug/L	568	Standard
	Sb	123	1289.0	34.6	**0.1967**	0.079	40.2	ug/L	612	Standard
	Ba	135	163.7	48.0	**0.0515**	0.033	64.0	ug/L	21	Standard
	Ce	140	190.0	43.5				ug/L	245	Standard
>	**Tb**	159	1027800.2	0.9				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	185.7	43.6	**0.0185**	0.008	45.3	ug/L	15	Standard
	Tl	205	140.0	34.4	**0.0066**	0.006	85.8	ug/L	13	Standard
	Pb	206	391.7	5.7	**0.0205**	0.004	17.4	ug/L	264	Standard
	Pb	207	348.0	8.5	**0.0168**	0.005	31.6	ug/L	222	Standard
	Pb	208	1428.4	8.6	**0.0149**	0.005	36.0	ug/L	959	Standard
	U	238	152.0	24.6	**0.0173**	0.004	24.9	ug/L	9	Standard
>	**Bi**	209	594942.4	0.2				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:21:40
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.6930**	8.120	173.0	mg/L	2	Standard
Mg	24	61.7	4.7	**0.0063**	0.004	70.3	mg/L	55	Standard
K	39	21.7	58.1	**-0.0541**	0.046	85.2	mg/L	28	Standard
Ca	43	16.7	45.8	**-1.0495**	0.670	63.8	mg/L	27	Standard
Fe	54	185.9	12.3	**0.0354**	0.014	39.9	mg/L	147	Standard
Fe	57	231.7	7.6	**-0.1482**	0.038	25.4	mg/L	268	Standard
> **Sc-1**	45	44657.4	2.0				mg/L	41174	Standard
Cl	35	83476.7	1.5				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	2133.5	9.1				ug/L	1950	Standard
P	31	25304.5	3.5				ug/L	21156	Standard
S	34	4207.3	4.6				ug/L	3419	Standard
Sr	88	80.0	16.5				ug/L	72	Standard
C	12	116.7	44.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	15.7	39.4				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	16377.2	4.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.395	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:21:40
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.168
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.619
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:21:40
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144601
Sample Date/Time: Friday, July 01, 2016 12:22:36
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85066.5	1.2				ug/L	76456	Standard
	Be	9	16.7	45.8	**-0.0065**	0.006	94.4	ug/L	20	Standard
	Al	27	9710029.6	1.9	**50.9822**	1.574	3.1	ug/L	1307	Standard
	Sc	45	45336.1	0.8				ug/L	41174	Standard
	Ti	47	130.7	11.5	**0.2865**	0.040	13.8	ug/L	27	Standard
	V	51	2965.5	17.4	**0.1358**	0.062	45.7	ug/L	1434	Standard
	Cr	52	10925.6	1.4	**0.2804**	0.032	11.4	ug/L	7733	Standard
	Cr	53	6674.8	19.2	**5.7008**	1.204	21.1	ug/L	442	Standard
	Mn	55	17608.9	0.7	**2.0519**	0.031	1.5	ug/L	723	Standard
	Co	59	843.4	6.2	**0.0725**	0.007	9.6	ug/L	217	Standard
	Ni	60	3752.8	1.2	**1.5211**	0.029	1.9	ug/L	304	Standard
	Cu	65	735.7	3.5	**0.2597**	0.015	5.9	ug/L	181	Standard
	Zn	66	4713.1	0.8	**3.3806**	0.039	1.2	ug/L	215	Standard
>	**Ge**	72	562685.3	1.1				ug/L	520809	Standard
	As	75	331.7	14.1	**0.2942**	0.038	12.9	ug/L	-52	Standard
	Se	82	169.7	3.4	**1.1168**	0.055	5.0	ug/L	17	Standard
	Se-1	77	298.3	16.2	**2.5437**	0.506	19.9	ug/L	56	Standard
>	**Ga**	71	43.3	17.6				mg/L	25	Standard
	Rb	85	1375.1	8.1				ug/L	28	Standard
	Y	89	479863.0	1.4				ug/L	447395	Standard
>	**Rh**	103	75.0	23.1				ug/L	15	Standard
	Mo	98	184.0	20.7	**0.0331**	0.012	35.3	ug/L	113	Standard
	Ag	107	187.7	22.7	**0.0116**	0.006	47.6	ug/L	108	Standard
	Cd	111	61.4	13.6	**0.0226**	0.003	14.9	mg/L	3	Standard
	Cd	114	163.1	19.9	**0.0268**	0.005	19.9	ug/L	20	Standard
>	**In**	115	667538.0	0.2				ug/L	625728	Standard
	Sn	118	1128.4	13.7	**0.0801**	0.022	27.7	ug/L	568	Standard
	Sb	123	642.2	32.3	**0.0827**	0.037	45.2	ug/L	612	Standard
	Ba	135	124733.7	0.4	**53.7257**	0.253	0.5	ug/L	21	Standard
	Ce	140	376.7	16.7				ug/L	245	Standard
>	**Tb**	159	1007994.8	2.0				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	197.3	10.9	**0.0203**	0.002	12.2	ug/L	15	Standard
	Tl	205	216.7	21.8	**0.0163**	0.006	35.8	ug/L	13	Standard
	Pb	206	891.0	6.5	**0.1071**	0.008	7.9	ug/L	264	Standard
	Pb	207	795.4	2.4	**0.1022**	0.003	2.6	ug/L	222	Standard
	Pb	208	3278.5	4.0	**0.1014**	0.007	7.1	ug/L	959	Standard
	U	238	85.3	43.4	**0.0099**	0.004	45.2	ug/L	9	Standard
>	**Bi**	209	576617.3	0.8				ug/L	552821	Standard

Sample ID: L1606144601
Report Date/Time: Friday, July 01, 2016 12:24:53
Page 1

Approved: July 02, 2016

Na	23	5.0	0.0	**13.5582**	0.108	0.8	mg/L	2	Standard
Mg	24	5319.3	4.2	**5.5837**	0.252	4.5	mg/L	55	Standard
K	39	98.3	41.1	**0.2120**	0.143	67.6	mg/L	28	Standard
Ca	43	363.3	7.8	**27.5274**	2.210	8.0	mg/L	27	Standard
Fe	54	179.0	5.5	**0.0286**	0.006	20.9	mg/L	147	Standard
Fe	57	463.3	13.0	**0.4888**	0.165	33.8	mg/L	268	Standard
> **Sc-1**	45	45336.1	0.8				mg/L	41174	Standard
Cl	35	89142.8	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	30834.8	6.1				ug/L	1950	Standard
P	31	26140.9	1.9				ug/L	21156	Standard
S	34	4027.2	2.4				ug/L	3419	Standard
Sr	88	260.0	15.3				ug/L	72	Standard
C	12	170.0	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	38.6	3.3				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	7	Standard
I	127	3538.7	10.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.262	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.041	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144601
Report Date/Time: Friday, July 01, 2016 12:24:53
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.682
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.305
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144701 WG574416-03
Sample Date/Time: Friday, July 01, 2016 12:25:48
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88482.7	2.3				ug/L	76456	Standard
	Be	9	38.3	39.8	**0.0099**	0.012	125.1	ug/L	20	Standard
	Al	27	11359959.6	1.4	**57.3517**	1.667	2.9	ug/L	1307	Standard
	Sc	45	45563.4	2.6				ug/L	41174	Standard
	Ti	47	479.3	13.4	**1.2787**	0.172	13.4	ug/L	27	Standard
	V	51	3530.4	7.8	**0.1998**	0.034	17.3	ug/L	1434	Standard
	Cr	52	12134.2	0.3	**0.4209**	0.011	2.6	ug/L	7733	Standard
	Cr	53	7648.6	5.0	**6.6019**	0.407	6.2	ug/L	442	Standard
	Mn	55	16091.5	2.0	**1.8699**	0.055	2.9	ug/L	723	Standard
	Co	59	1173.0	4.1	**0.1126**	0.006	5.8	ug/L	217	Standard
	Ni	60	3889.5	2.3	**1.5848**	0.031	1.9	ug/L	304	Standard
	Cu	65	1317.7	0.5	**0.5246**	0.003	0.5	ug/L	181	Standard
	Zn	66	3687.1	0.9	**2.6100**	0.006	0.2	ug/L	215	Standard
>	**Ge**	72	561722.8	0.8				ug/L	520809	Standard
	As	75	1392.1	5.5	**1.0905**	0.054	4.9	ug/L	-52	Standard
	Se	82	606.7	3.3	**4.3252**	0.116	2.7	ug/L	17	Standard
	Se-1	77	418.0	2.5	**3.8492**	0.119	3.1	ug/L	56	Standard
>	**Ga**	71	115.0	8.7				mg/L	25	Standard
	Rb	85	5234.2	9.4				ug/L	28	Standard
	Y	89	487944.7	1.1				ug/L	447395	Standard
>	**Rh**	103	568.3	20.1				ug/L	15	Standard
	Mo	98	1044.2	2.3	**0.3054**	0.008	2.6	ug/L	113	Standard
	Ag	107	187.3	42.9	**0.0121**	0.011	91.2	ug/L	108	Standard
	Cd	111	55.0	27.2	**0.0204**	0.006	30.3	mg/L	3	Standard
	Cd	114	135.5	6.2	**0.0227**	0.001	5.1	ug/L	20	Standard
>	**In**	115	656101.2	1.3				ug/L	625728	Standard
	Sn	118	1038.4	15.8	**0.0699**	0.026	37.7	ug/L	568	Standard
	Sb	123	573.4	30.4	**0.0724**	0.034	46.6	ug/L	612	Standard
	Ba	135	501979.0	0.4	**220.0552**	2.127	1.0	ug/L	21	Standard
	Ce	140	2408.5	3.7				ug/L	245	Standard
>	**Tb**	159	999721.2	1.2				ug/L	950397	Standard
	Ho	165	475.0	13.8				ug/L	7	Standard
	Tl	203	180.7	18.9	**0.0191**	0.004	19.9	ug/L	15	Standard
	Tl	205	181.7	18.3	**0.0127**	0.004	33.1	ug/L	13	Standard
	Pb	206	1433.1	5.5	**0.2055**	0.013	6.5	ug/L	264	Standard
	Pb	207	1269.4	7.4	**0.1971**	0.019	9.6	ug/L	222	Standard
	Pb	208	5249.0	0.8	**0.1978**	0.003	1.5	ug/L	959	Standard
	U	238	833.4	3.5	**0.1015**	0.003	3.3	ug/L	9	Standard
>	**Bi**	209	561437.9	0.5				ug/L	552821	Standard

Sample ID: L1606144701 WG574416-03
Report Date/Time: Friday, July 01, 2016 12:28:05
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.1266**	7.900	86.6	mg/L	2	Standard
Mg	24	22316.4	4.6	**23.4898**	0.474	2.0	mg/L	55	Standard
K	39	291.7	17.2	**0.8820**	0.191	21.6	mg/L	28	Standard
Ca	43	361.7	17.8	**27.2179**	4.974	18.3	mg/L	27	Standard
Fe	54	219.1	19.9	**0.0560**	0.027	47.8	mg/L	147	Standard
Fe	57	508.3	13.1	**0.6052**	0.153	25.3	mg/L	268	Standard
> **Sc-1**	45	45563.4	2.6				mg/L	41174	Standard
Cl	35	95139.1	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	117746.0	3.1				ug/L	1950	Standard
P	31	26077.4	3.3				ug/L	21156	Standard
S	34	3920.5	3.9				ug/L	3419	Standard
Sr	88	1768.4	4.8				ug/L	72	Standard
C	12	193.3	38.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	700.0	19.1				mg/L	16	Standard
Ho-1	165	475.0	13.8				mg/L	7	Standard
Er	166	486.7	19.4				mg/L	7	Standard
I	127	22775.4	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.731	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.856	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144701 WG574416-03
Report Date/Time: Friday, July 01, 2016 12:28:05
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.854
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.559
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144701 WG574416-03
Report Date/Time: Friday, July 01, 2016 12:28:05
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144701DP WG574416-10
Sample Date/Time: Friday, July 01, 2016 12:28:59
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88142.4	1.7				ug/L	76456	Standard
	Be	9	40.0	37.5	**0.0111**	0.011	101.8	ug/L	20	Standard
	Al	27	11494838.5	2.0	**58.2408**	1.266	2.2	ug/L	1307	Standard
	Sc	45	46242.2	2.8				ug/L	41174	Standard
	Ti	47	491.0	28.0	**1.3133**	0.392	29.8	ug/L	27	Standard
	V	51	4065.2	7.6	**0.2601**	0.033	12.8	ug/L	1434	Standard
	Cr	52	12264.0	1.3	**0.4365**	0.008	1.9	ug/L	7733	Standard
	Cr	53	8637.5	5.6	**7.5132**	0.490	6.5	ug/L	442	Standard
	Mn	55	16026.8	1.0	**1.8627**	0.011	0.6	ug/L	723	Standard
	Co	59	1127.4	3.0	**0.1071**	0.004	3.8	ug/L	217	Standard
	Ni	60	3889.8	1.2	**1.5861**	0.030	1.9	ug/L	304	Standard
	Cu	65	1351.4	4.3	**0.5403**	0.027	5.0	ug/L	181	Standard
	Zn	66	3072.3	1.9	**2.1459**	0.033	1.5	ug/L	215	Standard
>	Ge	72	561430.2	0.7				ug/L	520809	Standard
	As	75	1450.6	6.2	**1.1355**	0.075	6.6	ug/L	-52	Standard
	Se	82	626.4	4.3	**4.4737**	0.217	4.8	ug/L	17	Standard
	Se-1	77	446.7	4.4	**4.1629**	0.222	5.3	ug/L	56	Standard
>	Ga	71	118.3	21.3				mg/L	25	Standard
	Rb	85	5335.9	4.4				ug/L	28	Standard
	Y	89	485232.7	0.7				ug/L	447395	Standard
>	Rh	103	503.3	5.6				ug/L	15	Standard
	Mo	98	890.3	4.1	**0.2555**	0.010	3.8	ug/L	113	Standard
	Ag	107	130.0	4.8	**0.0043**	0.001	19.6	ug/L	108	Standard
	Cd	111	38.1	10.0	**0.0134**	0.002	12.3	mg/L	3	Standard
	Cd	114	93.0	28.3	**0.0155**	0.004	28.0	ug/L	20	Standard
>	In	115	659077.6	0.9				ug/L	625728	Standard
	Sn	118	881.7	14.6	**0.0459**	0.019	42.5	ug/L	568	Standard
	Sb	123	507.6	19.6	**0.0596**	0.019	31.6	ug/L	612	Standard
	Ba	135	515199.9	0.5	**224.8243**	2.217	1.0	ug/L	21	Standard
	Ce	140	2820.3	8.4				ug/L	245	Standard
>	Tb	159	1000855.8	0.8				ug/L	950397	Standard
	Ho	165	511.7	6.7				ug/L	7	Standard
	Tl	203	145.0	5.2	**0.0151**	0.001	5.3	ug/L	15	Standard
	Tl	205	140.0	29.2	**0.0075**	0.005	66.5	ug/L	13	Standard
	Pb	206	896.0	1.8	**0.1117**	0.003	2.6	ug/L	264	Standard
	Pb	207	768.4	3.7	**0.1007**	0.005	5.0	ug/L	222	Standard
	Pb	208	3189.1	0.1	**0.1009**	0.001	0.5	ug/L	959	Standard
	U	238	824.4	5.0	**0.1002**	0.005	5.0	ug/L	9	Standard
>	Bi	209	562695.6	0.4				ug/L	552821	Standard

Sample ID: L1606144701DP WG574416-10
Report Date/Time: Friday, July 01, 2016 12:31:16
Page 1

Approved: July 02, 2016

Na	23	8.3	34.6	**22.1713**	7.744	34.9	mg/L	2	Standard
Mg	24	23199.4	1.6	**24.0879**	0.996	4.1	mg/L	55	Standard
K	39	276.7	2.8	**0.8134**	0.006	0.8	mg/L	28	Standard
Ca	43	471.7	6.8	**35.7746**	3.568	10.0	mg/L	27	Standard
Fe	54	212.8	23.2	**0.0499**	0.035	69.4	mg/L	147	Standard
Fe	57	470.0	11.3	**0.4850**	0.177	36.5	mg/L	268	Standard
> **Sc-1**	45	46242.2	2.8				mg/L	41174	Standard
Cl	35	96975.4	1.3				ug/L	69550	Standard
Kr	83	2.3	137.8				ug/L	1	Standard
Br	81	120957.8	2.8				ug/L	1950	Standard
P	31	25446.4	2.8				ug/L	21156	Standard
S	34	3975.5	1.0				ug/L	3419	Standard
Sr	88	1878.4	2.6				ug/L	72	Standard
C	12	223.3	38.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	17	Standard
Dy	164	658.1	9.2				mg/L	16	Standard
Ho-1	165	511.7	6.7				mg/L	7	Standard
Er	166	526.7	11.0				mg/L	7	Standard
I	127	23127.6	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.285	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.800	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144701DP WG574416-10
Report Date/Time: Friday, July 01, 2016 12:31:16
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.330
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.786
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606128901
Sample Date/Time: Friday, July 01, 2016 12:32:11
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100202.1	2.7				ug/L	76456	Standard
	Be	9	85.0	61.4	**0.0383**	0.036	94.9	ug/L	20	Standard
	Al	27	121494771.0	1.8	**541.6309**	8.514	1.6	ug/L	1307	Standard
	Sc	45	48803.5	2.8				ug/L	41174	Standard
	Ti	47	545.3	5.0	**1.5278**	0.038	2.5	ug/L	27	Standard
	V	51	10661.2	18.0	**1.0481**	0.197	18.8	ug/L	1434	Standard
	Cr	52	662482.0	2.6	**77.9794**	0.550	0.7	ug/L	7733	Standard
	Cr	53	138513.8	2.3	**131.6729**	2.729	2.1	ug/L	442	Standard
	Mn	55	5966787.8	1.9	**759.5704**	10.887	1.4	ug/L	723	Standard
	Co	59	181210.6	0.8	**22.7724**	0.421	1.8	ug/L	217	Standard
	Ni	60	645750.8	2.4	**299.7645**	3.348	1.1	ug/L	304	Standard
	Cu	65	22297.4	3.7	**10.4538**	0.196	1.9	ug/L	181	Standard
	Zn	66	11919.4	2.6	**9.1948**	0.114	1.2	ug/L	215	Standard
>	**Ge**	72	540486.8	2.6				ug/L	520809	Standard
	As	75	4102.0	1.8	**3.2473**	0.027	0.8	ug/L	-52	Standard
	Se	82	1886.5	4.1	**14.2618**	0.413	2.9	ug/L	17	Standard
	Se-1	77	4801.8	0.7	**53.4605**	1.123	2.1	ug/L	56	Standard
>	**Ga**	71	275.0	24.6				mg/L	25	Standard
	Rb	85	16008.5	1.9				ug/L	28	Standard
	Y	89	482574.6	0.5				ug/L	447395	Standard
>	**Rh**	103	891.7	13.1				ug/L	15	Standard
	Mo	98	6427.1	1.7	**2.1501**	0.036	1.7	ug/L	113	Standard
	Ag	107	215.3	42.5	**0.0178**	0.013	73.5	ug/L	108	Standard
	Cd	111	1192.8	4.2	**0.5277**	0.023	4.3	mg/L	3	Standard
	Cd	114	2955.5	4.3	**0.5305**	0.024	4.6	ug/L	20	Standard
>	**In**	115	611635.6	0.3				ug/L	625728	Standard
	Sn	118	1171.7	1.6	**0.1020**	0.003	2.8	ug/L	568	Standard
	Sb	123	952.5	13.3	**0.1549**	0.025	16.4	ug/L	612	Standard
	Ba	135	5659971.5	1.5	**2661.5360**	36.316	1.4	ug/L	21	Standard
	Ce	140	34602.8	2.7				ug/L	245	Standard
>	**Tb**	159	987729.2	0.4				ug/L	950397	Standard
	Ho	165	555.0	3.6				ug/L	7	Standard
	Tl	203	271.3	38.8	**0.0315**	0.013	40.1	ug/L	15	Standard
	Tl	205	228.3	29.2	**0.0208**	0.009	43.4	ug/L	13	Standard
	Pb	206	682.3	7.9	**0.0848**	0.010	12.2	ug/L	264	Standard
	Pb	207	562.7	4.7	**0.0706**	0.006	7.9	ug/L	222	Standard
	Pb	208	2400.7	5.1	**0.0736**	0.007	9.1	ug/L	959	Standard
	U	238	485.7	17.4	**0.0640**	0.011	17.8	ug/L	9	Standard
>	**Bi**	209	518402.7	0.8				ug/L	552821	Standard

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 12:34:28
Page 1

Approved: July 02, 2016

Na	23	6.7	43.3	**16.7312**	6.981	41.7	mg/L	2	Standard
Mg	24	234951.0	0.3	**231.6239**	7.038	3.0	mg/L	55	Standard
K	39	286.7	15.7	**0.7989**	0.169	21.2	mg/L	28	Standard
Ca	43	935.0	7.2	**69.1820**	3.528	5.1	mg/L	27	Standard
Fe	54	758.4	8.2	**0.4032**	0.043	10.6	mg/L	147	Standard
Fe	57	1138.4	6.9	**2.1447**	0.127	5.9	mg/L	268	Standard
> **Sc-1**	45	48803.5	2.8				mg/L	41174	Standard
Cl	35	88877.9	0.3				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	391239.0	2.6				ug/L	1950	Standard
P	31	37070.3	1.2				ug/L	21156	Standard
S	34	4178.9	3.9				ug/L	3419	Standard
Sr	88	2831.9	1.5				ug/L	72	Standard
C	12	466.7	21.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	17	Standard
Dy	164	667.5	12.4				mg/L	16	Standard
Ho-1	165	555.0	3.6				mg/L	7	Standard
Er	166	540.0	8.5				mg/L	7	Standard
I	127	188266.3	8.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.059	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 12:34:28
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.748	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	93.774	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 53 Upper, S, EEE	Cr	53	

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 12:34:28
Page 3

Approved: July 02, 2016

Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606128904
Sample Date/Time: Friday, July 01, 2016 12:35:23
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80174.9	0.5				ug/L	76456	Standard
	Be	9	53.3	27.1	**0.0255**	0.012	47.2	ug/L	20	Standard
	Al	27	1032791.8	1.6	**5.7430**	0.086	1.5	ug/L	1307	Standard
	Sc	45	47549.6	3.6				ug/L	41174	Standard
	Ti	47	1435.7	2.3	**3.8643**	0.058	1.5	ug/L	27	Standard
	V	51	10110.4	0.9	**0.9038**	0.025	2.8	ug/L	1434	Standard
	Cr	52	20122.7	4.1	**1.2588**	0.042	3.3	ug/L	7733	Standard
	Cr	53	3665.5	16.0	**2.8260**	0.446	15.8	ug/L	442	Standard
	Mn	55	288289.9	2.5	**34.0207**	0.139	0.4	ug/L	723	Standard
	Co	59	1477.7	1.3	**0.1434**	0.004	2.6	ug/L	217	Standard
	Ni	60	4239.3	2.2	**1.6775**	0.005	0.3	ug/L	304	Standard
	Cu	65	5707.4	2.9	**2.4318**	0.022	0.9	ug/L	181	Standard
	Zn	66	6174.6	2.5	**4.3354**	0.036	0.8	ug/L	215	Standard
>	Ge	72	581260.9	2.3				ug/L	520809	Standard
	As	75	447.8	4.7	**0.3704**	0.019	5.1	ug/L	-52	Standard
	Se	82	65.6	5.7	**0.3388**	0.024	6.9	ug/L	17	Standard
	Se-1	77	141.0	9.5	**0.7917**	0.108	13.6	ug/L	56	Standard
>	Ga	71	390.0	12.2				mg/L	25	Standard
	Rb	85	14513.6	3.3				ug/L	28	Standard
	Y	89	508182.1	0.9				ug/L	447395	Standard
>	Rh	103	35.0	14.3				ug/L	15	Standard
	Mo	98	3302.1	0.9	**0.9834**	0.006	0.6	ug/L	113	Standard
	Ag	107	192.0	6.8	**0.0118**	0.002	15.7	ug/L	108	Standard
	Cd	111	79.5	7.9	**0.0295**	0.002	7.8	mg/L	3	Standard
	Cd	114	220.0	7.1	**0.0356**	0.003	7.0	ug/L	20	Standard
>	In	115	678248.4	0.8				ug/L	625728	Standard
	Sn	118	933.4	10.8	**0.0496**	0.015	30.5	ug/L	568	Standard
	Sb	123	584.6	1.8	**0.0706**	0.002	3.0	ug/L	612	Standard
	Ba	135	45177.6	1.6	**19.1408**	0.317	1.7	ug/L	21	Standard
	Ce	140	30016.4	0.4				ug/L	245	Standard
>	Tb	159	1007751.2	0.8				ug/L	950397	Standard
	Ho	165	761.7	12.8				ug/L	7	Standard
	Tl	203	113.3	7.1	**0.0112**	0.001	7.0	ug/L	15	Standard
	Tl	205	111.7	14.4	**0.0035**	0.002	52.8	ug/L	13	Standard
	Pb	206	3404.0	3.3	**0.5260**	0.017	3.3	ug/L	264	Standard
	Pb	207	2818.6	2.1	**0.4734**	0.010	2.1	ug/L	222	Standard
	Pb	208	12328.3	2.3	**0.5080**	0.010	2.0	ug/L	959	Standard
	U	238	374.0	2.0	**0.0437**	0.001	1.8	ug/L	9	Standard
>	Bi	209	583367.9	0.5				ug/L	552821	Standard

Sample ID: L1606128904
Report Date/Time: Friday, July 01, 2016 12:37:39
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.1425**	7.166	173.0	mg/L	2	Standard
Mg	24	5377.6	1.9	**5.3817**	0.098	1.8	mg/L	55	Standard
K	39	255.0	12.2	**0.7172**	0.121	16.8	mg/L	28	Standard
Ca	43	56.7	51.7	**1.9556**	2.109	107.9	mg/L	27	Standard
Fe	54	965.3	12.0	**0.5554**	0.055	10.0	mg/L	147	Standard
Fe	57	456.7	2.8	**0.4120**	0.054	13.1	mg/L	268	Standard
> **Sc-1**	45	47549.6	3.6				mg/L	41174	Standard
Cl	35	89186.5	3.0				ug/L	69550	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	9616.5	21.7				ug/L	1950	Standard
P	31	24750.2	1.9				ug/L	21156	Standard
S	34	3972.2	3.0				ug/L	3419	Standard
Sr	88	126.7	22.8				ug/L	72	Standard
C	12	306.7	35.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	1037.0	4.9				mg/L	16	Standard
Ho-1	165	761.7	12.8				mg/L	7	Standard
Er	166	690.0	14.7				mg/L	7	Standard
I	127	33632.4	5.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.864	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.607	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606128904
Report Date/Time: Friday, July 01, 2016 12:37:39
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.393
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.526
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606129003
Sample Date/Time: Friday, July 01, 2016 12:38:34
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84017.4	2.6				ug/L	76456	Standard
	Be	9	56.7	41.7	**0.0265**	0.020	76.1	ug/L	20	Standard
	Al	27	11410287.5	2.4	**60.6815**	2.547	4.2	ug/L	1307	Standard
	Sc	45	47460.9	2.7				ug/L	41174	Standard
	Ti	47	632.0	2.0	**1.7083**	0.053	3.1	ug/L	27	Standard
	V	51	4979.6	9.0	**0.3608**	0.043	11.9	ug/L	1434	Standard
	Cr	52	16733.9	1.7	**0.9422**	0.057	6.1	ug/L	7733	Standard
	Cr	53	16242.1	5.6	**14.4384**	0.968	6.7	ug/L	442	Standard
	Mn	55	2106790.2	0.3	**257.0785**	2.759	1.1	ug/L	723	Standard
	Co	59	32596.4	0.7	**3.9025**	0.026	0.7	ug/L	217	Standard
	Ni	60	16570.4	1.9	**7.2264**	0.135	1.9	ug/L	304	Standard
	Cu	65	821.7	5.9	**0.2979**	0.020	6.6	ug/L	181	Standard
	Zn	66	15799.9	1.0	**11.7367**	0.172	1.5	ug/L	215	Standard
>	**Ge**	72	563660.3	1.3				ug/L	520809	Standard
	As	75	8280.0	0.5	**6.2429**	0.078	1.2	ug/L	-52	Standard
	Se	82	523.6	3.6	**3.7022**	0.090	2.4	ug/L	17	Standard
	Se-1	77	661.3	8.7	**6.4700**	0.719	11.1	ug/L	56	Standard
>	**Ga**	71	153.3	26.4				mg/L	25	Standard
	Rb	85	22955.7	2.8				ug/L	28	Standard
	Y	89	481907.4	0.8				ug/L	447395	Standard
>	**Rh**	103	116.7	21.1				ug/L	15	Standard
	Mo	98	609.0	1.0	**0.1691**	0.001	0.8	ug/L	113	Standard
	Ag	107	122.3	6.1	**0.0035**	0.001	30.0	ug/L	108	Standard
	Cd	111	546.6	6.3	**0.2253**	0.014	6.3	mg/L	3	Standard
	Cd	114	1227.9	3.1	**0.2066**	0.006	2.8	ug/L	20	Standard
>	**In**	115	652572.6	0.4				ug/L	625728	Standard
	Sn	118	2255.2	0.8	**0.2518**	0.004	1.5	ug/L	568	Standard
	Sb	123	396.5	22.6	**0.0398**	0.016	41.0	ug/L	612	Standard
	Ba	135	362353.4	0.4	**159.6881**	0.037	0.0	ug/L	21	Standard
	Ce	140	11014.0	2.2				ug/L	245	Standard
>	**Tb**	159	996583.7	1.1				ug/L	950397	Standard
	Ho	165	233.3	12.4				ug/L	7	Standard
	Tl	203	149.3	13.7	**0.0157**	0.002	13.7	ug/L	15	Standard
	Tl	205	146.7	18.8	**0.0085**	0.003	39.2	ug/L	13	Standard
	Pb	206	578.7	5.4	**0.0575**	0.005	8.6	ug/L	264	Standard
	Pb	207	484.0	0.4	**0.0472**	0.000	0.8	ug/L	222	Standard
	Pb	208	2033.4	0.6	**0.0477**	0.001	2.3	ug/L	959	Standard
	U	238	110.3	15.4	**0.0133**	0.002	15.3	ug/L	9	Standard
>	**Bi**	209	557686.0	0.7				ug/L	552821	Standard

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 12:40:51
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.4332**	7.670	173.0	mg/L	2	Standard
Mg	24	51897.1	1.5	**52.5721**	2.174	4.1	mg/L	55	Standard
K	39	418.3	15.8	**1.2584**	0.193	15.3	mg/L	28	Standard
Ca	43	125.0	28.0	**7.4017**	2.760	37.3	mg/L	27	Standard
Fe	54	21570.7	2.6	**14.5894**	0.772	5.3	mg/L	147	Standard
Fe	57	5684.4	0.4	**14.3563**	0.459	3.2	mg/L	268	Standard
Sc-1	45	47460.9	2.7				mg/L	41174	Standard
Cl	35	86591.4	1.7				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	106345.6	3.6				ug/L	1950	Standard
P	31	31901.9	1.3				ug/L	21156	Standard
S	34	4255.6	0.8				ug/L	3419	Standard
Sr	88	460.0	1.1				ug/L	72	Standard
C	12	313.3	22.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	343.4	18.1				mg/L	16	Standard
Ho-1	165	233.3	12.4				mg/L	7	Standard
Er	166	276.7	12.7				mg/L	7	Standard
I	127	558531.1	6.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.890	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.228	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 12:40:51
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.290
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.880
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 12:40:51
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606129005
Sample Date/Time: Friday, July 01, 2016 12:41:45
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85192.2	0.8				ug/L	76456	Standard
	Be	9	115.0	19.0	**0.0724**	0.018	24.9	ug/L	20	Standard
	Al	27	1289763.0	0.8	**6.7519**	0.110	1.6	ug/L	1307	Standard
	Sc	45	49773.3	2.8				ug/L	41174	Standard
	Ti	47	6020.5	2.3	**16.8263**	0.429	2.6	ug/L	27	Standard
	V	51	26156.2	0.5	**2.7133**	0.015	0.6	ug/L	1434	Standard
	Cr	52	22253.3	0.9	**1.5480**	0.025	1.6	ug/L	7733	Standard
	Cr	53	3922.2	9.7	**3.1342**	0.341	10.9	ug/L	442	Standard
	Mn	55	93436.0	2.3	**11.1943**	0.294	2.6	ug/L	723	Standard
	Co	59	5246.2	1.4	**0.5973**	0.011	1.8	ug/L	217	Standard
	Ni	60	3873.2	3.3	**1.5552**	0.062	4.0	ug/L	304	Standard
	Cu	65	2052.1	1.1	**0.8462**	0.011	1.3	ug/L	181	Standard
	Zn	66	6978.9	2.8	**5.0326**	0.156	3.1	ug/L	215	Standard
>	**Ge**	72	569140.4	0.4				ug/L	520809	Standard
	As	75	675.9	4.5	**0.5462**	0.024	4.5	ug/L	-52	Standard
	Se	82	122.4	11.2	**0.7599**	0.101	13.3	ug/L	17	Standard
	Se-1	77	130.3	23.7	**0.7102**	0.329	46.3	ug/L	56	Standard
>	**Ga**	71	1996.8	2.2				mg/L	25	Standard
	Rb	85	22308.1	1.4				ug/L	28	Standard
	Y	89	509803.9	1.2				ug/L	447395	Standard
>	**Rh**	103	36.7	31.5				ug/L	15	Standard
	Mo	98	326.9	4.2	**0.0762**	0.004	5.1	ug/L	113	Standard
	Ag	107	126.0	4.2	**0.0034**	0.001	17.4	ug/L	108	Standard
	Cd	111	98.1	1.5	**0.0371**	0.001	1.9	mg/L	3	Standard
	Cd	114	296.0	9.7	**0.0481**	0.005	9.6	ug/L	20	Standard
>	**In**	115	675122.4	0.6				ug/L	625728	Standard
	Sn	118	1330.1	3.9	**0.1073**	0.007	6.6	ug/L	568	Standard
	Sb	123	517.6	11.1	**0.0591**	0.010	16.6	ug/L	612	Standard
	Ba	135	76309.4	0.8	**32.4918**	0.196	0.6	ug/L	21	Standard
	Ce	140	95146.2	1.3				ug/L	245	Standard
>	**Tb**	159	1016001.4	1.3				ug/L	950397	Standard
	Ho	165	1441.7	4.0				ug/L	7	Standard
	Tl	203	251.7	11.3	**0.0262**	0.003	11.5	ug/L	15	Standard
	Tl	205	263.3	19.1	**0.0220**	0.006	26.3	ug/L	13	Standard
	Pb	206	4604.0	0.8	**0.7379**	0.007	1.0	ug/L	264	Standard
	Pb	207	3793.5	2.8	**0.6632**	0.027	4.1	ug/L	222	Standard
	Pb	208	16401.2	0.5	**0.7024**	0.005	0.7	ug/L	959	Standard
	U	238	755.4	2.7	**0.0898**	0.002	2.3	ug/L	9	Standard
>	**Bi**	209	575207.2	1.1				ug/L	552821	Standard

Sample ID: L1606129005
Report Date/Time: Friday, July 01, 2016 12:44:02
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11827.9	2.0	**11.3730**	0.250	2.2	mg/L	55	Standard
K	39	63.3	12.1	**0.0696**	0.022	31.4	mg/L	28	Standard
Ca	43	26.7	39.0	**-0.4604**	0.739	160.5	mg/L	27	Standard
Fe	54	2263.3	3.3	**1.3710**	0.089	6.5	mg/L	147	Standard
Fe	57	798.4	7.3	**1.2235**	0.092	7.5	mg/L	268	Standard
> **Sc-1**	45	49773.3	2.8				mg/L	41174	Standard
Cl	35	80793.5	1.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	20093.3	2.4				ug/L	1950	Standard
P	31	35491.5	0.9				ug/L	21156	Standard
S	34	3435.4	2.3				ug/L	3419	Standard
Sr	88	86.7	16.7				ug/L	72	Standard
C	12	120.0	16.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	17	Standard
Dy	164	2283.5	2.5				mg/L	16	Standard
Ho-1	165	1441.7	4.0				mg/L	7	Standard
Er	166	1253.4	17.9				mg/L	7	Standard
I	127	29910.2	19.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.280	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129005
Report Date/Time: Friday, July 01, 2016 12:44:02
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.894
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.049
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 12:44:58
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83031.9	1.8				ug/L	76456	Standard
	Be	9	62607.4	1.8	**51.4790**	0.092	0.2	ug/L	20	Standard
	Al	27	9205440.0	1.0	**49.5101**	0.482	1.0	ug/L	1307	Standard
	Sc	45	45279.2	0.9				ug/L	41174	Standard
	Ti	47	35616.8	0.8	**99.7569**	0.384	0.4	ug/L	27	Standard
	V	51	453381.0	1.3	**50.1773**	0.834	1.7	ug/L	1434	Standard
	Cr	52	454717.9	0.4	**50.3900**	0.329	0.7	ug/L	7733	Standard
	Cr	53	56792.9	2.0	**50.9006**	0.670	1.3	ug/L	442	Standard
	Mn	55	417865.9	1.4	**50.3140**	0.768	1.5	ug/L	723	Standard
	Co	59	427490.0	0.8	**50.9392**	0.677	1.3	ug/L	217	Standard
	Ni	60	114502.7	0.7	**50.2468**	0.055	0.1	ug/L	304	Standard
	Cu	65	113283.0	1.3	**50.6253**	0.452	0.9	ug/L	181	Standard
	Zn	66	67088.2	1.2	**49.8311**	0.666	1.3	ug/L	215	Standard
>	**Ge**	72	570265.5	0.7				ug/L	520809	Standard
	As	75	66940.7	0.7	**49.5659**	0.028	0.1	ug/L	-52	Standard
	Se	82	6904.8	0.9	**49.7902**	0.542	1.1	ug/L	17	Standard
	Se-1	77	4848.4	1.0	**51.1131**	0.306	0.6	ug/L	56	Standard
>	**Ga**	71	33.3	34.6				mg/L	25	Standard
	Rb	85	945.0	6.5				ug/L	28	Standard
	Y	89	486567.9	0.8				ug/L	447395	Standard
>	**Rh**	103	36.7	43.8				ug/L	15	Standard
	Mo	98	321546.8	0.2	**99.1357**	1.367	1.4	ug/L	113	Standard
	Ag	107	383263.2	0.3	**49.7591**	0.678	1.4	ug/L	108	Standard
	Cd	111	123447.9	0.3	**50.0091**	0.713	1.4	mg/L	3	Standard
	Cd	114	300381.5	2.0	**49.1538**	1.432	2.9	ug/L	20	Standard
>	**In**	115	670977.0	1.2				ug/L	625728	Standard
	Sn	118	339655.3	1.3	**49.1307**	0.150	0.3	ug/L	568	Standard
	Sb	123	274538.6	0.7	**49.5136**	0.951	1.9	ug/L	612	Standard
	Ba	135	114656.9	0.7	**49.1372**	0.870	1.8	ug/L	21	Standard
	Ce	140	131.7	33.2				ug/L	245	Standard
>	**Tb**	159	1007430.4	0.6				ug/L	950397	Standard
	Ho	165	15.0	88.2				ug/L	7	Standard
	Tl	203	470169.7	1.1	**50.6935**	0.361	0.7	ug/L	15	Standard
	Tl	205	427547.4	1.3	**51.9072**	0.778	1.5	ug/L	13	Standard
	Pb	206	295170.9	0.9	**50.4289**	0.577	1.1	ug/L	264	Standard
	Pb	207	268434.7	0.6	**50.4969**	0.171	0.3	ug/L	222	Standard
	Pb	208	1104478.8	0.4	**50.8716**	0.540	1.1	ug/L	959	Standard
	U	238	418715.2	0.4	**50.2797**	0.305	0.6	ug/L	9	Standard
>	**Bi**	209	571081.7	0.7				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:47:15
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4769.1	1.8	**5.0062**	0.108	2.1	mg/L	55	Standard
K	39	1336.7	4.6	**4.5306**	0.241	5.3	mg/L	28	Standard
Ca	43	75.0	17.6	**3.7457**	1.100	29.4	mg/L	27	Standard
Fe	54	7200.7	4.3	**5.0367**	0.239	4.8	mg/L	147	Standard
Fe	57	2128.5	4.4	**5.1427**	0.247	4.8	mg/L	268	Standard
Sc-1	45	45279.2	0.9				mg/L	41174	Standard
Cl	35	81839.8	0.8				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	3040.3	8.6				ug/L	1950	Standard
P	31	24877.1	2.1				ug/L	21156	Standard
S	34	3887.2	7.0				ug/L	3419	Standard
Sr	88	81.7	7.1				ug/L	72	Standard
C	12	123.3	12.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	17	Standard
Dy	164	9.4	3.0				mg/L	16	Standard
Ho-1	165	15.0	88.2				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	21875.8	2.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.958		
Al	27	99.020		
Sc	45			
Ti	47	99.757		
V	51	100.355		
Cr	52	100.780		
Cr	53			
Mn	55	100.628		
Co	59	101.878		
Ni	60	100.494		
Cu	65	101.251		
Zn	66	99.662		
Ge	72		109.496	
As	75	99.132		
Se	82	99.580		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:47:15
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	99.136		
Ag	107	99.518		
Cd	111	100.018		
Cd	114			
In	115			107.231
Sn	118	98.261		
Sb	123	99.027		
Ba	135	98.274		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.387		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.743		
U	238	100.559		
Bi	209			103.303
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:47:15
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 12:48:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79667.3	2.3				ug/L	76456	Standard
	Be	9	48.3	39.2	**0.0215**	0.016	74.4	ug/L	20	Standard
	Al	27	13667.3	103.9	**0.0663**	0.079	119.0	ug/L	1307	Standard
	Sc	45	44725.9	0.8				ug/L	41174	Standard
	Ti	47	40.3	36.1	**0.0282**	0.040	143.2	ug/L	27	Standard
	V	51	1800.6	20.7	**0.0010**	0.041	3971.4	ug/L	1434	Standard
	Cr	52	8069.5	1.6	**-0.0611**	0.005	7.9	ug/L	7733	Standard
	Cr	53	805.0	12.6	**0.3085**	0.086	27.9	ug/L	442	Standard
	Mn	55	1891.2	86.3	**0.1261**	0.196	155.3	ug/L	723	Standard
	Co	59	402.0	57.1	**0.0183**	0.027	148.1	ug/L	217	Standard
	Ni	60	380.0	16.0	**0.0137**	0.026	190.1	ug/L	304	Standard
	Cu	65	200.3	16.4	**0.0153**	0.014	94.0	ug/L	181	Standard
	Zn	66	277.3	5.9	**0.0260**	0.012	46.5	ug/L	215	Standard
>	**Ge**	72	571534.4	1.1				ug/L	520809	Standard
	As	75	-32.7	47.9	**0.0211**	0.011	53.6	ug/L	-52	Standard
	Se	82	21.0	34.3	**0.0252**	0.052	206.6	ug/L	17	Standard
	Se-1	77	64.3	8.6	**0.0008**	0.051	6596.2	ug/L	56	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	26.7	75.8				ug/L	28	Standard
	Y	89	488434.0	1.5				ug/L	447395	Standard
>	**Rh**	103	18.3	56.8				ug/L	15	Standard
	Mo	98	360.1	51.7	**0.0867**	0.057	65.8	ug/L	113	Standard
	Ag	107	301.7	75.6	**0.0262**	0.029	112.6	ug/L	108	Standard
	Cd	111	35.8	64.4	**0.0121**	0.009	76.9	mg/L	3	Standard
	Cd	114	93.7	41.3	**0.0153**	0.006	41.1	ug/L	20	Standard
>	**In**	115	672952.0	0.6				ug/L	625728	Standard
	Sn	118	2098.5	22.4	**0.2192**	0.070	31.8	ug/L	568	Standard
	Sb	123	1021.0	31.2	**0.1501**	0.058	38.5	ug/L	612	Standard
	Ba	135	296.3	92.5	**0.1088**	0.117	107.6	ug/L	21	Standard
	Ce	140	101.7	62.5				ug/L	245	Standard
>	**Tb**	159	1018483.3	2.2				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	228.7	95.2	**0.0235**	0.023	98.1	ug/L	15	Standard
	Tl	205	170.0	71.4	**0.0105**	0.014	137.1	ug/L	13	Standard
	Pb	206	473.7	49.2	**0.0358**	0.039	109.0	ug/L	264	Standard
	Pb	207	396.7	45.3	**0.0273**	0.033	121.3	ug/L	222	Standard
	Pb	208	1490.7	28.8	**0.0193**	0.019	100.6	ug/L	959	Standard
	U	238	168.7	71.3	**0.0196**	0.014	72.1	ug/L	9	Standard
>	**Bi**	209	580702.6	1.0				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:50:27
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	85.0	38.6	**0.0310**	0.035	111.2	mg/L	55	Standard
K	39	35.0	37.8	**-0.0077**	0.046	604.4	mg/L	28	Standard
Ca	43	16.7	105.4	**-1.0542**	1.482	140.5	mg/L	27	Standard
Fe	54	153.9	28.2	**0.0123**	0.031	255.3	mg/L	147	Standard
Fe	57	300.0	3.3	**0.0447**	0.032	71.4	mg/L	268	Standard
Sc-1	45	44725.9	0.8				mg/L	41174	Standard
Cl	35	82881.4	0.4				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2540.2	1.8				ug/L	1950	Standard
P	31	24578.3	4.0				ug/L	21156	Standard
S	34	4135.6	7.4				ug/L	3419	Standard
Sr	88	55.0	27.3				ug/L	72	Standard
C	12	116.7	21.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	16.5	36.7				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	16210.3	1.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.740	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:50:27
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.547
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.044
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:50:27
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: PBW 07 WG574419-03
Sample Date/Time: Friday, July 01, 2016 12:58:36
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81259.0	1.7				ug/L	76456	Standard
	Be	9	25.0	52.9	**0.0011**	0.011	980.8	ug/L	20	Standard
	Al	27	43520.8	2.0	**0.2290**	0.003	1.2	ug/L	1307	Standard
	Sc	45	45160.6	1.8				ug/L	41174	Standard
	Ti	47	37.3	12.7	**0.0196**	0.013	67.8	ug/L	27	Standard
	V	51	1890.1	0.3	**0.0103**	0.002	20.9	ug/L	1434	Standard
	Cr	52	10254.5	1.2	**0.1819**	0.016	8.6	ug/L	7733	Standard
	Cr	53	800.0	8.4	**0.3021**	0.055	18.2	ug/L	442	Standard
	Mn	55	1844.4	0.9	**0.1201**	0.001	0.9	ug/L	723	Standard
	Co	59	227.3	7.0	**-0.0025**	0.002	69.8	ug/L	217	Standard
	Ni	60	435.3	6.3	**0.0376**	0.014	36.1	ug/L	304	Standard
	Cu	65	169.0	18.5	**0.0011**	0.014	1207.4	ug/L	181	Standard
	Zn	66	2605.6	4.5	**1.7518**	0.074	4.2	ug/L	215	Standard
>	**Ge**	72	573164.6	0.8				ug/L	520809	Standard
	As	75	-74.5	34.0	**-0.0097**	0.019	192.2	ug/L	-52	Standard
	Se	82	11.5	10.8	**-0.0437**	0.008	19.0	ug/L	17	Standard
	Se-1	77	70.7	5.9	**0.0666**	0.045	68.1	ug/L	56	Standard
>	**Ga**	71	35.0	65.5				mg/L	25	Standard
	Rb	85	83.3	9.2				ug/L	28	Standard
	Y	89	497110.0	0.3				ug/L	447395	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	63.4	20.9	**-0.0047**	0.004	88.1	ug/L	113	Standard
	Ag	107	104.7	2.9	**0.0005**	0.001	97.2	ug/L	108	Standard
	Cd	111	8.9	29.5	**0.0012**	0.001	90.2	mg/L	3	Standard
	Cd	114	20.2	129.3	**0.0033**	0.004	129.2	ug/L	20	Standard
>	**In**	115	681820.3	1.0				ug/L	625728	Standard
	Sn	118	1671.8	12.8	**0.1542**	0.031	19.9	ug/L	568	Standard
	Sb	123	510.3	25.3	**0.0569**	0.023	40.1	ug/L	612	Standard
	Ba	135	135.7	5.5	**0.0393**	0.003	7.0	ug/L	21	Standard
	Ce	140	68.3	33.0				ug/L	245	Standard
>	**Tb**	159	1025294.3	0.6				ug/L	950397	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	44.0	21.7	**0.0039**	0.001	25.6	ug/L	15	Standard
	Tl	205	40.0	25.0	**-0.0050**	0.001	25.0	ug/L	13	Standard
	Pb	206	314.3	3.7	**0.0090**	0.002	26.0	ug/L	264	Standard
	Pb	207	276.7	9.5	**0.0051**	0.005	106.7	ug/L	222	Standard
	Pb	208	1132.0	1.7	**0.0030**	0.001	48.7	ug/L	959	Standard
	U	238	26.0	17.6	**0.0028**	0.001	20.4	ug/L	9	Standard
>	**Bi**	209	581506.6	1.1				ug/L	552821	Standard

Sample ID: PBW 07 WG574419-03
Report Date/Time: Friday, July 01, 2016 13:00:53
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.6090**	7.974	173.0	mg/L	2	Standard
Mg	24	81.7	9.4	**0.0269**	0.009	33.7	mg/L	55	Standard
K	39	40.0	21.7	**0.0086**	0.030	348.4	mg/L	28	Standard
Ca	43	30.0	33.3	**0.0262**	0.793	3031.4	mg/L	27	Standard
Fe	54	180.2	26.2	**0.0304**	0.036	118.2	mg/L	147	Standard
Fe	57	258.3	6.2	**-0.0804**	0.042	52.2	mg/L	268	Standard
> **Sc-1**	45	45160.6	1.8				mg/L	41174	Standard
Cl	35	85551.6	2.1				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	2493.5	7.2				ug/L	1950	Standard
P	31	25546.6	9.0				ug/L	21156	Standard
S	34	4053.9	0.5				ug/L	3419	Standard
Sr	88	75.0	13.3				ug/L	72	Standard
C	12	136.7	53.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	19.4	51.7				mg/L	16	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	10762.2	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.282	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.053	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 07 WG574419-03
Report Date/Time: Friday, July 01, 2016 13:00:53
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.964
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.189
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 07 WG574419-03
Report Date/Time: Friday, July 01, 2016 13:00:53
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: LCSW 07 WG574419-04
Sample Date/Time: Friday, July 01, 2016 13:03:34
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80883.7	2.2				ug/L	76456	Standard
	Be	9	63273.5	1.3	**53.4233**	1.134	2.1	ug/L	20	Standard
	Al	27	15556.3	4.2	**0.0758**	0.006	7.3	ug/L	1307	Standard
	Sc	45	46230.4	2.2				ug/L	41174	Standard
	Ti	47	48.3	18.7	**0.0475**	0.025	52.8	ug/L	27	Standard
	V	51	465592.0	1.2	**50.1984**	0.441	0.9	ug/L	1434	Standard
	Cr	52	471783.2	1.2	**50.9433**	0.486	1.0	ug/L	7733	Standard
	Cr	53	57119.2	2.3	**49.8721**	1.291	2.6	ug/L	442	Standard
	Mn	55	436781.1	0.8	**51.2372**	0.113	0.2	ug/L	723	Standard
	Co	59	434567.5	1.2	**50.4450**	0.373	0.7	ug/L	217	Standard
	Ni	60	118551.0	1.3	**50.6835**	0.443	0.9	ug/L	304	Standard
	Cu	65	119119.1	1.3	**51.8651**	0.602	1.2	ug/L	181	Standard
	Zn	66	71172.1	1.7	**51.5055**	0.595	1.2	ug/L	215	Standard
>	**Ge**	72	585340.9	0.6				ug/L	520809	Standard
	As	75	69945.5	1.2	**50.4563**	0.545	1.1	ug/L	-52	Standard
	Se	82	7094.3	1.4	**49.8362**	0.433	0.9	ug/L	17	Standard
	Se-1	77	4867.8	0.7	**49.9806**	0.170	0.3	ug/L	56	Standard
>	**Ga**	71	31.7	24.1				mg/L	25	Standard
	Rb	85	36.7	41.7				ug/L	28	Standard
	Y	89	498458.5	0.8				ug/L	447395	Standard
>	**Rh**	103	18.3	41.7				ug/L	15	Standard
	Mo	98	78.0	18.4	**-0.0003**	0.004	1563.8	ug/L	113	Standard
	Ag	107	402127.6	1.2	**51.3787**	0.778	1.5	ug/L	108	Standard
	Cd	111	126507.9	1.2	**50.4309**	0.392	0.8	mg/L	3	Standard
	Cd	114	308784.3	0.8	**49.7196**	0.327	0.7	ug/L	20	Standard
>	**In**	115	681801.9	1.3				ug/L	625728	Standard
	Sn	118	1796.8	16.1	**0.1722**	0.043	25.0	ug/L	568	Standard
	Sb	123	288724.4	0.5	**51.2448**	0.727	1.4	ug/L	612	Standard
	Ba	135	116686.9	0.7	**49.2097**	0.376	0.8	ug/L	21	Standard
	Ce	140	85.0	38.6				ug/L	245	Standard
>	**Tb**	159	1014866.4	0.7				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	482185.7	0.8	**50.5384**	0.275	0.5	ug/L	15	Standard
	Tl	205	444917.2	1.5	**52.5153**	1.373	2.6	ug/L	13	Standard
	Pb	206	312986.7	0.5	**51.9814**	0.469	0.9	ug/L	264	Standard
	Pb	207	271686.9	0.6	**49.6820**	0.381	0.8	ug/L	222	Standard
	Pb	208	1142411.3	0.4	**51.1494**	0.415	0.8	ug/L	959	Standard
	U	238	421119.4	1.0	**49.1551**	0.103	0.2	ug/L	9	Standard
>	**Bi**	209	587494.5	1.1				ug/L	552821	Standard

Sample ID: LCSW 07 WG574419-04
Report Date/Time: Friday, July 01, 2016 13:05:51
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**8.7572**	7.580	86.6	mg/L	2	Standard
Mg	24	76.7	21.0	**0.0195**	0.016	83.2	mg/L	55	Standard
K	39	21.7	26.6	**-0.0575**	0.018	32.0	mg/L	28	Standard
Ca	43	18.3	83.3	**-0.9528**	1.279	134.3	mg/L	27	Standard
Fe	54	147.9	28.9	**0.0041**	0.028	686.0	mg/L	147	Standard
Fe	57	245.0	10.8	**-0.1326**	0.084	63.2	mg/L	268	Standard
> **Sc-1**	45	46230.4	2.2				mg/L	41174	Standard
Cl	35	86090.6	2.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2420.2	0.7				ug/L	1950	Standard
P	31	25546.5	4.4				ug/L	21156	Standard
S	34	3980.5	6.3				ug/L	3419	Standard
Sr	88	56.7	20.4				ug/L	72	Standard
C	12	156.7	16.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	17	Standard
Dy	164	19.7	89.4				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	4735.7	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.391	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 07 WG574419-04
Report Date/Time: Friday, July 01, 2016 13:05:51
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.961
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.272
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 07 WG574419-04
Report Date/Time: Friday, July 01, 2016 13:05:51
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140006 WG574419-01
Sample Date/Time: Friday, July 01, 2016 13:06:46
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80758.0	0.8				ug/L	76456	Standard
	Be	9	41.7	6.9	**0.0154**	0.002	16.2	ug/L	20	Standard
	Al	27	11868534.0	1.1	**65.6266**	0.514	0.8	ug/L	1307	Standard
	Sc	45	45759.0	1.2				ug/L	41174	Standard
	Ti	47	2320.2	10.4	**6.5166**	0.703	10.8	ug/L	27	Standard
	V	51	6253.1	3.7	**0.5063**	0.022	4.3	ug/L	1434	Standard
	Cr	52	20690.1	0.7	**1.4009**	0.007	0.5	ug/L	7733	Standard
	Cr	53	7241.7	4.8	**6.2224**	0.278	4.5	ug/L	442	Standard
	Mn	55	361893.7	0.6	**44.2063**	0.556	1.3	ug/L	723	Standard
	Co	59	1899.1	4.5	**0.2003**	0.011	5.6	ug/L	217	Standard
	Ni	60	3188.7	2.0	**1.2710**	0.022	1.8	ug/L	304	Standard
	Cu	65	3204.0	1.0	**1.3811**	0.024	1.8	ug/L	181	Standard
	Zn	66	3650.1	1.8	**2.5809**	0.057	2.2	ug/L	215	Standard
>	Ge	72	561976.5	0.7				ug/L	520809	Standard
	As	75	349.0	10.2	**0.3073**	0.028	9.1	ug/L	-52	Standard
	Se	82	95.4	7.6	**0.5731**	0.052	9.1	ug/L	17	Standard
	Se-1	77	310.3	6.8	**2.6788**	0.206	7.7	ug/L	56	Standard
>	Ga	71	306.7	3.4				mg/L	25	Standard
	Rb	85	9304.5	4.6				ug/L	28	Standard
	Y	89	479158.2	2.5				ug/L	447395	Standard
>	Rh	103	63.3	19.9				ug/L	15	Standard
	Mo	98	462.6	2.2	**0.1212**	0.004	3.1	ug/L	113	Standard
	Ag	107	229.3	10.2	**0.0174**	0.003	18.1	ug/L	108	Standard
	Cd	111	314.9	4.8	**0.1274**	0.007	5.3	mg/L	3	Standard
	Cd	114	778.8	0.7	**0.1296**	0.002	1.2	ug/L	20	Standard
>	In	115	659596.7	0.4				ug/L	625728	Standard
	Sn	118	3462.1	8.7	**0.4262**	0.046	10.8	ug/L	568	Standard
	Sb	123	25160.0	1.7	**4.5846**	0.068	1.5	ug/L	612	Standard
	Ba	135	24755.2	1.0	**10.7771**	0.149	1.4	ug/L	21	Standard
	Ce	140	10733.8	0.6				ug/L	245	Standard
>	Tb	159	997525.3	0.9				ug/L	950397	Standard
	Ho	165	248.3	11.4				ug/L	7	Standard
	Tl	203	323.7	9.0	**0.0349**	0.003	8.9	ug/L	15	Standard
	Tl	205	295.0	13.5	**0.0268**	0.005	17.8	ug/L	13	Standard
	Pb	206	13733.6	1.1	**2.3523**	0.014	0.6	ug/L	264	Standard
	Pb	207	11541.7	1.2	**2.1713**	0.021	1.0	ug/L	222	Standard
	Pb	208	49582.7	0.8	**2.2840**	0.012	0.5	ug/L	959	Standard
	U	238	794.4	5.3	**0.0971**	0.005	5.3	ug/L	9	Standard
>	Bi	209	559684.2	0.5				ug/L	552821	Standard

Sample ID: L1606140006 WG574419-01
Report Date/Time: Friday, July 01, 2016 13:09:03
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**13.3851**	13.441	100.4	mg/L	2	Standard
Mg	24	23146.0	2.0	**24.2692**	0.405	1.7	mg/L	55	Standard
K	39	161.7	7.1	**0.4263**	0.034	7.9	mg/L	28	Standard
Ca	43	226.7	16.0	**16.1036**	3.136	19.5	mg/L	27	Standard
Fe	54	423.4	7.8	**0.1999**	0.022	10.8	mg/L	147	Standard
Fe	57	503.3	8.4	**0.5885**	0.131	22.2	mg/L	268	Standard
> **Sc-1**	45	45759.0	1.2				mg/L	41174	Standard
Cl	35	89790.6	1.3				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	17466.7	4.8				ug/L	1950	Standard
P	31	27324.6	2.0				ug/L	21156	Standard
S	34	4078.9	2.0				ug/L	3419	Standard
Sr	88	211.7	20.1				ug/L	72	Standard
C	12	163.3	9.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	17	Standard
Dy	164	363.3	15.2				mg/L	16	Standard
Ho-1	165	248.3	11.4				mg/L	7	Standard
Er	166	280.0	3.6				mg/L	7	Standard
I	127	49912.2	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.627	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140006 WG574419-01
Report Date/Time: Friday, July 01, 2016 13:09:03
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.413
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.242
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140007S WG574419-05
Sample Date/Time: Friday, July 01, 2016 13:09:57
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80711.1	0.9				ug/L	76456	Standard
	Be	9	64078.6	1.3	54.2065	0.745	1.4	ug/L	20	Standard
	Al	27	12211012.4	1.5	67.5580	0.517	0.8	ug/L	1307	Standard
	Sc	45	44934.9	0.8				ug/L	41174	Standard
	Ti	47	2064.8	6.8	5.8866	0.415	7.1	ug/L	27	Standard
	V	51	459064.1	0.1	52.4156	0.397	0.8	ug/L	1434	Standard
	Cr	52	459452.2	0.5	52.5615	0.550	1.0	ug/L	7733	Standard
	Cr	53	62920.4	1.2	58.2380	1.104	1.9	ug/L	442	Standard
	Mn	55	774817.1	0.6	96.3273	0.870	0.9	ug/L	723	Standard
	Co	59	418465.0	0.9	51.4354	0.672	1.3	ug/L	217	Standard
	Ni	60	114181.6	0.7	51.6930	0.726	1.4	ug/L	304	Standard
	Cu	65	110934.3	0.7	51.1428	0.660	1.3	ug/L	181	Standard
	Zn	66	70146.7	0.6	53.7582	0.090	0.2	ug/L	215	Standard
>	Ge	72	552840.2	0.7				ug/L	520809	Standard
	As	75	68517.6	0.7	52.3310	0.386	0.7	ug/L	-52	Standard
	Se	82	6918.4	0.6	51.4649	0.420	0.8	ug/L	17	Standard
	Se-1	77	5005.2	0.2	54.4756	0.506	0.9	ug/L	56	Standard
>	Ga	71	246.7	21.7				mg/L	25	Standard
	Rb	85	8369.0	3.4				ug/L	28	Standard
	Y	89	475828.1	0.8				ug/L	447395	Standard
>	Rh	103	60.0	8.3				ug/L	15	Standard
	Mo	98	444.1	3.8	0.1178	0.005	4.5	ug/L	113	Standard
	Ag	107	373105.8	0.7	50.1488	0.527	1.1	ug/L	108	Standard
	Cd	111	121300.2	0.5	50.8704	0.210	0.4	mg/L	3	Standard
	Cd	114	296777.5	0.3	50.2713	0.199	0.4	ug/L	20	Standard
>	In	115	648070.4	0.4				ug/L	625728	Standard
	Sn	118	3198.7	11.7	0.3955	0.054	13.6	ug/L	568	Standard
	Sb	123	305348.9	0.8	57.0152	0.685	1.2	ug/L	612	Standard
	Ba	135	127151.7	1.1	56.4152	0.853	1.5	ug/L	21	Standard
	Ce	140	10170.1	11.9				ug/L	245	Standard
>	Tb	159	984910.5	1.3				ug/L	950397	Standard
	Ho	165	243.3	11.3				ug/L	7	Standard
	Tl	203	460227.9	0.5	50.9164	0.584	1.1	ug/L	15	Standard
	Tl	205	419164.2	0.8	52.2197	1.079	2.1	ug/L	13	Standard
	Pb	206	308797.4	0.7	54.1380	1.001	1.8	ug/L	264	Standard
	Pb	207	269438.3	0.3	52.0122	0.916	1.8	ug/L	222	Standard
	Pb	208	1139591.7	0.5	53.8600	0.817	1.5	ug/L	959	Standard
	U	238	412122.6	0.9	50.7770	0.583	1.1	ug/L	9	Standard
>	Bi	209	556623.0	1.5				ug/L	552821	Standard

Sample ID: L1606140007S WG574419-05
Report Date/Time: Friday, July 01, 2016 13:12:14
Page 1

Approved: July 02, 2016

Na	23	5.0	0.0	**13.6792**	0.103	0.8	mg/L	2	Standard
Mg	24	24264.4	1.3	**25.9117**	0.145	0.6	mg/L	55	Standard
K	39	138.3	27.1	**0.3549**	0.133	37.4	mg/L	28	Standard
Ca	43	288.3	17.1	**21.5709**	4.241	19.7	mg/L	27	Standard
Fe	54	394.0	6.5	**0.1843**	0.018	9.9	mg/L	147	Standard
Fe	57	461.7	10.0	**0.4961**	0.134	27.1	mg/L	268	Standard
> **Sc-1**	45	44934.9	0.8				mg/L	41174	Standard
Cl	35	90855.7	2.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	11284.2	7.1				ug/L	1950	Standard
P	31	27506.6	4.3				ug/L	21156	Standard
S	34	4052.2	3.2				ug/L	3419	Standard
Sr	88	215.0	8.1				ug/L	72	Standard
C	12	163.3	9.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	17	Standard
Dy	164	319.9	13.5				mg/L	16	Standard
Ho-1	165	243.3	11.3				mg/L	7	Standard
Er	166	280.0	25.8				mg/L	7	Standard
I	127	66618.3	7.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.566	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.150	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140007S WG574419-05
Report Date/Time: Friday, July 01, 2016 13:12:14
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.571
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140008SD WG574419-06
Sample Date/Time: Friday, July 01, 2016 13:13:09
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79700.7	0.7				ug/L	76456	Standard
	Be	9	61700.4	1.6	**52.8560**	0.961	1.8	ug/L	20	Standard
	Al	27	12099353.2	1.1	**67.7900**	0.341	0.5	ug/L	1307	Standard
	Sc	45	46046.6	2.1				ug/L	41174	Standard
	Ti	47	1942.8	6.7	**5.5490**	0.345	6.2	ug/L	27	Standard
	V	51	439192.0	0.4	**50.2950**	0.725	1.4	ug/L	1434	Standard
	Cr	52	444362.9	0.8	**50.9606**	0.244	0.5	ug/L	7733	Standard
	Cr	53	61436.0	0.3	**57.0274**	0.463	0.8	ug/L	442	Standard
	Mn	55	751669.2	0.7	**93.7402**	1.592	1.7	ug/L	723	Standard
	Co	59	399707.3	0.9	**49.2832**	0.963	2.0	ug/L	217	Standard
	Ni	60	109770.2	0.4	**49.8430**	0.612	1.2	ug/L	304	Standard
	Cu	65	108323.5	0.5	**50.0917**	0.642	1.3	ug/L	181	Standard
	Zn	66	68554.1	0.3	**52.6985**	0.620	1.2	ug/L	215	Standard
>	Ge	72	551156.5	1.1				ug/L	520809	Standard
	As	75	66401.2	0.7	**50.8743**	0.706	1.4	ug/L	-52	Standard
	Se	82	6730.1	0.5	**50.2159**	0.522	1.0	ug/L	17	Standard
	Se-1	77	4856.1	2.0	**53.0004**	1.342	2.5	ug/L	56	Standard
>	Ga	71	258.3	16.5				mg/L	25	Standard
	Rb	85	8118.8	3.8				ug/L	28	Standard
	Y	89	478755.4	1.4				ug/L	447395	Standard
>	Rh	103	76.7	3.8				ug/L	15	Standard
	Mo	98	512.6	9.1	**0.1403**	0.015	10.9	ug/L	113	Standard
	Ag	107	359474.2	1.7	**48.4964**	0.550	1.1	ug/L	108	Standard
	Cd	111	117797.3	1.3	**49.5872**	0.214	0.4	mg/L	3	Standard
	Cd	114	286908.0	1.1	**48.7832**	0.247	0.5	ug/L	20	Standard
>	In	115	645632.6	1.1				ug/L	625728	Standard
	Sn	118	3095.3	10.7	**0.3822**	0.054	14.0	ug/L	568	Standard
	Sb	123	295379.5	0.9	**55.3607**	0.341	0.6	ug/L	612	Standard
	Ba	135	123159.2	0.4	**54.8524**	0.674	1.2	ug/L	21	Standard
	Ce	140	9327.9	2.1				ug/L	245	Standard
>	Tb	159	983378.7	0.8				ug/L	950397	Standard
	Ho	165	230.0	2.2				ug/L	7	Standard
	Tl	203	446759.8	0.8	**49.4389**	0.212	0.4	ug/L	15	Standard
	Tl	205	408461.1	0.9	**50.8970**	0.668	1.3	ug/L	13	Standard
	Pb	206	301254.5	0.8	**52.8246**	0.290	0.5	ug/L	264	Standard
	Pb	207	261947.7	0.8	**50.5743**	0.209	0.4	ug/L	222	Standard
	Pb	208	1104059.4	0.6	**52.1919**	0.419	0.8	ug/L	959	Standard
	U	238	402584.9	0.8	**49.6175**	0.619	1.2	ug/L	9	Standard
>	Bi	209	556417.0	0.4				ug/L	552821	Standard

Sample ID: L1606140008SD WG574419-06
Report Date/Time: Friday, July 01, 2016 13:15:26
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**13.3094**	13.444	101.0	mg/L	2	Standard
Mg	24	23635.1	1.3	**24.6326**	0.412	1.7	mg/L	55	Standard
K	39	136.7	2.1	**0.3374**	0.002	0.7	mg/L	28	Standard
Ca	43	218.3	2.6	**15.2980**	0.780	5.1	mg/L	27	Standard
Fe	54	402.8	5.8	**0.1835**	0.012	6.4	mg/L	147	Standard
Fe	57	453.3	11.2	**0.4438**	0.163	36.7	mg/L	268	Standard
> **Sc-1**	45	46046.6	2.1				mg/L	41174	Standard
Cl	35	91583.3	0.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	12164.9	6.2				ug/L	1950	Standard
P	31	27852.3	5.0				ug/L	21156	Standard
S	34	4047.2	6.0				ug/L	3419	Standard
Sr	88	165.0	13.2				ug/L	72	Standard
C	12	173.3	28.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	17	Standard
Dy	164	272.5	13.7				mg/L	16	Standard
Ho-1	165	230.0	2.2				mg/L	7	Standard
Er	166	296.7	5.1				mg/L	7	Standard
I	127	59372.8	2.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.244	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140008SD WG574419-06
Report Date/Time: Friday, July 01, 2016 13:15:26
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.181
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.651
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606140008SD WG574419-06
Report Date/Time: Friday, July 01, 2016 13:15:26
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606142701 WG574419-02
Sample Date/Time: Friday, July 01, 2016 13:16:20
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94406.8	3.4				ug/L	76456	Standard
	Be	9	85.0	35.3	**0.0412**	0.020	47.7	ug/L	20	Standard
	Al	27	56617238.2	4.0	**267.8022**	1.372	0.5	ug/L	1307	Standard
	Sc	45	46416.0	2.3				ug/L	41174	Standard
	Ti	47	884.0	4.8	**2.5428**	0.066	2.6	ug/L	27	Standard
	V	51	553940.5	2.9	**65.0728**	0.307	0.5	ug/L	1434	Standard
	Cr	52	299233.7	2.3	**34.8806**	0.725	2.1	ug/L	7733	Standard
	Cr	53	52044.3	2.2	**49.4662**	0.542	1.1	ug/L	442	Standard
	Mn	55	240351.0	1.7	**30.6595**	0.508	1.7	ug/L	723	Standard
	Co	59	198012.4	2.6	**25.0083**	0.182	0.7	ug/L	217	Standard
	Ni	60	153480.0	2.1	**71.5090**	1.345	1.9	ug/L	304	Standard
	Cu	65	58814.7	2.8	**27.8441**	0.424	1.5	ug/L	181	Standard
	Zn	66	154855.3	2.4	**122.2558**	1.271	1.0	ug/L	215	Standard
>	**Ge**	72	537771.5	3.3				ug/L	520809	Standard
	As	75	14927.7	4.1	**11.7537**	0.103	0.9	ug/L	-52	Standard
	Se	82	5918.7	4.3	**45.2355**	0.439	1.0	ug/L	17	Standard
	Se-1	77	1154.4	4.7	**12.3907**	0.295	2.4	ug/L	56	Standard
>	**Ga**	71	381.7	7.4				mg/L	25	Standard
	Rb	85	99551.2	2.9				ug/L	28	Standard
	Y	89	473605.3	2.9				ug/L	447395	Standard
>	**Rh**	103	343.3	14.9				ug/L	15	Standard
	Mo	98	2403599.9	3.3	**789.6820**	1.502	0.2	ug/L	113	Standard
	Ag	107	348.7	11.5	**0.0353**	0.004	11.4	ug/L	108	Standard
	Cd	111	-1248.7	2.3	**-0.5414**	0.006	1.1	mg/L	3	Standard
	Cd	114	4967.3	3.8	**0.8659**	0.009	1.0	ug/L	20	Standard
>	**In**	115	629706.1	3.1				ug/L	625728	Standard
	Sn	118	2805.3	14.7	**0.3479**	0.050	14.4	ug/L	568	Standard
	Sb	123	2974.2	8.0	**0.5376**	0.028	5.2	ug/L	612	Standard
	Ba	135	206845.8	2.1	**94.4794**	0.976	1.0	ug/L	21	Standard
	Ce	140	2191.8	6.3				ug/L	245	Standard
>	**Tb**	159	977368.8	3.8				ug/L	950397	Standard
	Ho	165	160.0	22.5				ug/L	7	Standard
	Tl	203	430.0	2.3	**0.0496**	0.002	4.9	ug/L	15	Standard
	Tl	205	390.0	8.0	**0.0417**	0.005	11.7	ug/L	13	Standard
	Pb	206	8083.8	1.9	**1.4566**	0.015	1.0	ug/L	264	Standard
	Pb	207	6744.5	3.2	**1.3320**	0.010	0.7	ug/L	222	Standard
	Pb	208	28675.7	2.4	**1.3865**	0.012	0.8	ug/L	959	Standard
	U	238	878.7	4.2	**0.1143**	0.007	5.7	ug/L	9	Standard
>	**Bi**	209	526224.9	2.9				ug/L	552821	Standard

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 13:18:37
Page 1

Approved: July 02, 2016

Na	23	10.0	100.0	**26.3285**	25.935	98.5	mg/L	2	Standard
Mg	24	138231.5	3.2	**143.1647**	1.819	1.3	mg/L	55	Standard
K	39	2051.8	3.6	**6.8480**	0.212	3.1	mg/L	28	Standard
Ca	43	1005.0	4.6	**78.6144**	4.822	6.1	mg/L	27	Standard
Fe	54	1298.8	6.4	**0.8054**	0.072	8.9	mg/L	147	Standard
Fe	57	1345.1	6.6	**2.8597**	0.164	5.7	mg/L	268	Standard
> **Sc-1**	45	46416.0	2.3				mg/L	41174	Standard
Cl	35	167690.5	2.1				ug/L	69550	Standard
Kr	83	3.0	66.7				ug/L	1	Standard
Br	81	1167966.9	3.9				ug/L	1950	Standard
P	31	32757.0	0.7				ug/L	21156	Standard
S	34	3867.2	4.1				ug/L	3419	Standard
Sr	88	1343.4	2.4				ug/L	72	Standard
C	12	240.0	12.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1276.7	2.5				mg/L	17	Standard
Dy	164	1123.0	11.7				mg/L	16	Standard
Ho-1	165	160.0	22.5				mg/L	7	Standard
Er	166	146.7	14.2				mg/L	7	Standard
I	127	116304.4	6.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.479	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 13:18:37
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.636	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.189	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 13:18:37
Page 3

Approved: July 02, 2016

Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606142701DP WG574419-07
Sample Date/Time: Friday, July 01, 2016 13:19:32
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	104046.1	2.0				ug/L	76456	Standard
	Be	9	46.7	34.4	**0.0108**	0.011	98.8	ug/L	20	Standard
	Al	27	58682132.6	0.8	**251.9338**	4.223	1.7	ug/L	1307	Standard
	Sc	45	49029.2	0.9				ug/L	41174	Standard
	Ti	47	887.4	3.2	**2.4062**	0.089	3.7	ug/L	27	Standard
	V	51	572508.3	0.6	**63.4877**	0.191	0.3	ug/L	1434	Standard
	Cr	52	308728.3	0.4	**33.9428**	0.266	0.8	ug/L	7733	Standard
	Cr	53	52407.2	1.8	**46.9988**	0.886	1.9	ug/L	442	Standard
	Mn	55	248854.2	1.2	**29.9599**	0.484	1.6	ug/L	723	Standard
	Co	59	205279.2	0.1	**24.4744**	0.076	0.3	ug/L	217	Standard
	Ni	60	157071.7	0.8	**69.0682**	0.457	0.7	ug/L	304	Standard
	Cu	65	60395.8	1.4	**26.9893**	0.358	1.3	ug/L	181	Standard
	Zn	66	157884.7	1.0	**117.6566**	1.110	0.9	ug/L	215	Standard
>	Ge	72	569569.1	0.4				ug/L	520809	Standard
	As	75	17073.6	1.5	**12.6909**	0.145	1.1	ug/L	-52	Standard
	Se	82	6774.5	1.0	**48.9062**	0.303	0.6	ug/L	17	Standard
	Se-1	77	1068.4	1.0	**10.7433**	0.123	1.1	ug/L	56	Standard
>	Ga	71	446.7	9.5				mg/L	25	Standard
	Rb	85	100812.6	1.2				ug/L	28	Standard
	Y	89	506159.4	0.9				ug/L	447395	Standard
>	Rh	103	378.3	6.5				ug/L	15	Standard
	Mo	98	2476607.9	0.6	**769.3094**	6.421	0.8	ug/L	113	Standard
	Ag	107	277.0	7.6	**0.0234**	0.003	11.5	ug/L	108	Standard
	Cd	111	-1309.7	3.6	**-0.5367**	0.015	2.9	mg/L	3	Standard
	Cd	114	4986.9	3.4	**0.8220**	0.028	3.4	ug/L	20	Standard
>	In	115	666048.1	0.7				ug/L	625728	Standard
	Sn	118	2695.2	8.4	**0.3091**	0.031	9.9	ug/L	568	Standard
	Sb	123	2859.3	3.8	**0.4860**	0.016	3.4	ug/L	612	Standard
	Ba	135	211685.9	0.6	**91.3948**	0.192	0.2	ug/L	21	Standard
	Ce	140	2868.6	2.4				ug/L	245	Standard
>	Tb	159	1029121.0	0.5				ug/L	950397	Standard
	Ho	165	185.0	14.3				ug/L	7	Standard
	Tl	203	334.0	8.3	**0.0363**	0.003	8.5	ug/L	15	Standard
	Tl	205	321.7	4.7	**0.0304**	0.002	6.7	ug/L	13	Standard
	Pb	206	8239.2	0.3	**1.4051**	0.008	0.6	ug/L	264	Standard
	Pb	207	6707.8	0.3	**1.2527**	0.005	0.4	ug/L	222	Standard
	Pb	208	28813.8	0.3	**1.3177**	0.005	0.4	ug/L	959	Standard
	U	238	815.7	5.7	**0.1005**	0.006	5.9	ug/L	9	Standard
>	Bi	209	555326.9	0.6				ug/L	552821	Standard

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 13:21:49
Page 1

Approved: July 02, 2016

Na	23	11.7	89.2	**29.1295**	26.033	89.4	mg/L	2	Standard
Mg	24	145830.2	1.6	**142.9963**	1.122	0.8	mg/L	55	Standard
K	39	1910.1	4.3	**6.0209**	0.304	5.1	mg/L	28	Standard
Ca	43	1011.7	3.6	**74.7713**	3.380	4.5	mg/L	27	Standard
Fe	54	1358.4	2.2	**0.7959**	0.027	3.4	mg/L	147	Standard
Fe	57	1346.7	4.5	**2.6702**	0.125	4.7	mg/L	268	Standard
> **Sc-1**	45	49029.2	0.9				mg/L	41174	Standard
Cl	35	174677.8	0.8				ug/L	69550	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1284910.2	3.2				ug/L	1950	Standard
P	31	34656.3	1.1				ug/L	21156	Standard
S	34	3823.8	7.2				ug/L	3419	Standard
Sr	88	1511.7	7.3				ug/L	72	Standard
C	12	326.7	14.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1320.1	5.5				mg/L	17	Standard
Dy	164	1289.7	16.2				mg/L	16	Standard
Ho-1	165	185.0	14.3				mg/L	7	Standard
Er	166	146.7	50.3				mg/L	7	Standard
I	127	128302.1	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.087	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.362	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 13:21:49
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.444
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.453
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 13:21:49
Page 3

Approved: July 02, 2016

Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606146801
Sample Date/Time: Friday, July 01, 2016 13:22:43
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	95246.8	1.7				ug/L	76456	Standard
	Be	9	60.0	36.3	**0.0230**	0.015	65.8	ug/L	20	Standard
	Al	27	35472226.0	0.8	**166.3429**	2.244	1.3	ug/L	1307	Standard
	Sc	45	46670.1	1.2				ug/L	41174	Standard
	Ti	47	140.0	21.5	**0.3094**	0.088	28.6	ug/L	27	Standard
	V	51	4190.3	5.3	**0.2681**	0.025	9.2	ug/L	1434	Standard
	Cr	52	13346.9	2.4	**0.5405**	0.016	3.1	ug/L	7733	Standard
	Cr	53	6873.2	1.9	**5.8101**	0.177	3.1	ug/L	442	Standard
	Mn	55	19772.6	3.3	**2.2894**	0.049	2.1	ug/L	723	Standard
	Co	59	1288.4	10.2	**0.1244**	0.014	11.2	ug/L	217	Standard
	Ni	60	3544.7	6.0	**1.4102**	0.074	5.2	ug/L	304	Standard
	Cu	65	6205.3	5.0	**2.7088**	0.103	3.8	ug/L	181	Standard
	Zn	66	22108.8	2.9	**16.3375**	0.265	1.6	ug/L	215	Standard
>	Ge	72	568906.9	1.3				ug/L	520809	Standard
	As	75	543.4	5.2	**0.4480**	0.017	3.7	ug/L	-52	Standard
	Se	82	262.1	5.1	**1.7720**	0.073	4.1	ug/L	17	Standard
	Se-1	77	440.0	5.3	**4.0275**	0.247	6.1	ug/L	56	Standard
>	Ga	71	158.3	3.6				mg/L	25	Standard
	Rb	85	31255.6	3.8				ug/L	28	Standard
	Y	89	486688.8	1.2				ug/L	447395	Standard
>	Rh	103	48.3	15.8				ug/L	15	Standard
	Mo	98	2311.5	33.1	**0.6846**	0.225	32.9	ug/L	113	Standard
	Ag	107	184.3	31.5	**0.0110**	0.007	66.0	ug/L	108	Standard
	Cd	111	67.6	38.4	**0.0249**	0.010	40.7	mg/L	3	Standard
	Cd	114	137.0	32.2	**0.0223**	0.007	31.3	ug/L	20	Standard
>	In	115	673094.9	1.4				ug/L	625728	Standard
	Sn	118	1788.4	15.0	**0.1745**	0.042	24.3	ug/L	568	Standard
	Sb	123	351.8	14.1	**0.0296**	0.010	32.6	ug/L	612	Standard
	Ba	135	56024.1	0.9	**23.9231**	0.201	0.8	ug/L	21	Standard
	Ce	140	3798.8	2.1				ug/L	245	Standard
>	Tb	159	1033945.4	1.1				ug/L	950397	Standard
	Ho	165	101.7	7.5				ug/L	7	Standard
	Tl	203	1144.4	9.6	**0.1229**	0.010	8.3	ug/L	15	Standard
	Tl	205	953.4	4.2	**0.1063**	0.005	4.8	ug/L	13	Standard
	Pb	206	1672.1	2.6	**0.2429**	0.007	2.7	ug/L	264	Standard
	Pb	207	1423.7	2.4	**0.2227**	0.003	1.2	ug/L	222	Standard
	Pb	208	6035.8	3.4	**0.2307**	0.005	2.3	ug/L	959	Standard
	U	238	4452.3	3.5	**0.5357**	0.011	2.0	ug/L	9	Standard
>	Bi	209	569516.4	1.6				ug/L	552821	Standard

Sample ID: L1606146801
Report Date/Time: Friday, July 01, 2016 13:25:00
Page 1

Approved: July 02, 2016

Na	23	8.3	34.6	**21.9971**	7.770	35.3	mg/L	2	Standard
Mg	24	21678.8	1.3	**22.2848**	0.435	2.0	mg/L	55	Standard
K	39	2645.2	6.0	**8.8196**	0.578	6.6	mg/L	28	Standard
Ca	43	443.3	15.1	**33.0787**	5.254	15.9	mg/L	27	Standard
Fe	54	243.9	19.5	**0.0697**	0.031	44.8	mg/L	147	Standard
Fe	57	548.3	7.8	**0.6829**	0.122	17.9	mg/L	268	Standard
> **Sc-1**	45	46670.1	1.2				mg/L	41174	Standard
Cl	35	103993.1	1.8				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	45849.6	8.7				ug/L	1950	Standard
P	31	27049.2	4.2				ug/L	21156	Standard
S	34	3738.8	3.2				ug/L	3419	Standard
Sr	88	155.0	11.6				ug/L	72	Standard
C	12	323.3	23.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	17	Standard
Dy	164	114.1	9.2				mg/L	16	Standard
Ho-1	165	101.7	7.5				mg/L	7	Standard
Er	166	123.3	9.4				mg/L	7	Standard
I	127	41777.5	0.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.578	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.235	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606146801
Report Date/Time: Friday, July 01, 2016 13:25:00
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	107.570	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	103.020	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606146801PS WG574824-01
Sample Date/Time: Friday, July 01, 2016 13:25:55
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90108.8	0.5				ug/L	76456	Standard
	Be	9	70249.2	1.7	**53.2245**	0.671	1.3	ug/L	20	Standard
	Al	27	34044331.9	1.0	**168.7325**	2.084	1.2	ug/L	1307	Standard
	Sc	45	45399.6	0.8				ug/L	41174	Standard
	Ti	47	138.7	17.3	**0.3148**	0.070	22.1	ug/L	27	Standard
	V	51	476317.0	1.0	**54.1491**	0.294	0.5	ug/L	1434	Standard
	Cr	52	466031.0	0.5	**53.0857**	0.077	0.1	ug/L	7733	Standard
	Cr	53	63049.2	0.3	**58.0938**	0.175	0.3	ug/L	442	Standard
	Mn	55	440401.5	1.9	**54.4612**	0.687	1.3	ug/L	723	Standard
	Co	59	434977.5	1.9	**53.2245**	0.684	1.3	ug/L	217	Standard
	Ni	60	116940.2	0.8	**52.7068**	0.130	0.2	ug/L	304	Standard
	Cu	65	117328.2	0.6	**53.8548**	0.631	1.2	ug/L	181	Standard
	Zn	66	90120.9	0.2	**68.8123**	0.512	0.7	ug/L	215	Standard
>	Ge	72	555295.5	0.6				ug/L	520809	Standard
	As	75	70805.4	0.6	**53.8379**	0.372	0.7	ug/L	-52	Standard
	Se	82	7397.3	0.8	**54.7911**	0.368	0.7	ug/L	17	Standard
	Se-1	77	5164.9	2.2	**55.9837**	1.347	2.4	ug/L	56	Standard
>	Ga	71	125.0	14.4				mg/L	25	Standard
	Rb	85	30505.7	1.7				ug/L	28	Standard
	Y	89	478605.6	2.2				ug/L	447395	Standard
>	Rh	103	46.7	43.3				ug/L	15	Standard
	Mo	98	839.0	9.3	**0.2402**	0.025	10.4	ug/L	113	Standard
	Ag	107	377133.6	0.1	**49.9818**	0.291	0.6	ug/L	108	Standard
	Cd	111	125097.0	1.5	**51.7283**	0.533	1.0	mg/L	3	Standard
	Cd	114	305450.5	0.6	**51.0188**	0.497	1.0	ug/L	20	Standard
>	In	115	657251.3	0.6				ug/L	625728	Standard
	Sn	118	2133.5	27.9	**0.2313**	0.087	37.7	ug/L	568	Standard
	Sb	123	274150.2	2.6	**50.4698**	1.311	2.6	ug/L	612	Standard
	Ba	135	169708.2	1.1	**74.2483**	0.737	1.0	ug/L	21	Standard
	Ce	140	3655.4	2.8				ug/L	245	Standard
>	Tb	159	997893.3	1.3				ug/L	950397	Standard
	Ho	165	96.7	3.0				ug/L	7	Standard
	Tl	203	479768.6	1.3	**52.5300**	0.668	1.3	ug/L	15	Standard
	Tl	205	441867.2	0.2	**54.4752**	0.081	0.1	ug/L	13	Standard
	Pb	206	307910.6	0.5	**53.4209**	0.305	0.6	ug/L	264	Standard
	Pb	207	270893.2	0.6	**51.7493**	0.347	0.7	ug/L	222	Standard
	Pb	208	1132008.2	0.1	**52.9464**	0.115	0.2	ug/L	959	Standard
	U	238	437881.5	0.7	**53.3944**	0.388	0.7	ug/L	9	Standard
>	Bi	209	562372.5	0.1				ug/L	552821	Standard

Sample ID: L1606146801PS WG574824-01
Report Date/Time: Friday, July 01, 2016 13:28:12
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.0238**	15.621	173.1	mg/L	2	Standard
Mg	24	21021.2	2.0	**22.2136**	0.609	2.7	mg/L	55	Standard
K	39	2403.5	9.2	**8.2292**	0.795	9.7	mg/L	28	Standard
Ca	43	463.3	6.3	**35.7330**	2.393	6.7	mg/L	27	Standard
Fe	54	243.1	16.8	**0.0741**	0.029	39.0	mg/L	147	Standard
Fe	57	501.7	6.6	**0.5936**	0.084	14.1	mg/L	268	Standard
> **Sc-1**	45	45399.6	0.8				mg/L	41174	Standard
Cl	35	103755.4	0.3				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	34723.1	4.1				ug/L	1950	Standard
P	31	26186.0	3.6				ug/L	21156	Standard
S	34	3878.8	0.5				ug/L	3419	Standard
Sr	88	156.7	22.4				ug/L	72	Standard
C	12	250.0	6.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	17	Standard
Dy	164	122.0	12.6				mg/L	16	Standard
Ho-1	165	96.7	3.0				mg/L	7	Standard
Er	166	96.7	21.5				mg/L	7	Standard
I	127	39521.5	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.622	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606146801PS WG574824-01
Report Date/Time: Friday, July 01, 2016 13:28:12
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.038
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.728
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606146801PS WG574824-01
Report Date/Time: Friday, July 01, 2016 13:28:12
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606146801SDL WG574824-02
Sample Date/Time: Friday, July 01, 2016 13:29:06
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81934.4	2.4				ug/L	76456	Standard
	Be	9	23.3	12.4	**-0.0004**	0.002	528.6	ug/L	20	Standard
	Al	27	6372058.3	0.6	**34.7368**	0.867	2.5	ug/L	1307	Standard
	Sc	45	41202.6	2.0				ug/L	41174	Standard
	Ti	47	41.3	2.8	**0.0406**	0.003	7.7	ug/L	27	Standard
	V	51	2837.9	5.4	**0.1420**	0.017	12.0	ug/L	1434	Standard
	Cr	52	10022.3	0.9	**0.2524**	0.016	6.4	ug/L	7733	Standard
	Cr	53	2263.5	3.6	**1.7926**	0.079	4.4	ug/L	442	Standard
	Mn	55	3961.5	5.6	**0.4150**	0.030	7.3	ug/L	723	Standard
	Co	59	455.7	11.3	**0.0293**	0.007	23.1	ug/L	217	Standard
	Ni	60	945.7	5.5	**0.2966**	0.026	8.9	ug/L	304	Standard
	Cu	65	1313.7	2.7	**0.5610**	0.018	3.2	ug/L	181	Standard
	Zn	66	5244.2	0.6	**4.0427**	0.043	1.1	ug/L	215	Standard
>	**Ge**	72	527921.1	0.4				ug/L	520809	Standard
	As	75	85.0	19.3	**0.1131**	0.013	11.5	ug/L	-52	Standard
	Se	82	67.2	5.5	**0.3985**	0.027	6.7	ug/L	17	Standard
	Se-1	77	133.3	10.0	**0.8545**	0.159	18.6	ug/L	56	Standard
>	**Ga**	71	51.7	34.0				mg/L	25	Standard
	Rb	85	5692.7	3.6				ug/L	28	Standard
	Y	89	450949.6	1.2				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	345.8	14.9	**0.0912**	0.015	16.7	ug/L	113	Standard
	Ag	107	237.3	15.4	**0.0205**	0.005	24.9	ug/L	108	Standard
	Cd	111	35.8	40.8	**0.0133**	0.006	46.9	mg/L	3	Standard
	Cd	114	93.4	10.0	**0.0165**	0.001	8.4	ug/L	20	Standard
>	**In**	115	620231.7	1.6				ug/L	625728	Standard
	Sn	118	866.7	12.4	**0.0518**	0.019	35.8	ug/L	568	Standard
	Sb	123	1735.5	30.3	**0.3061**	0.107	34.9	ug/L	612	Standard
	Ba	135	10779.2	0.9	**4.9812**	0.056	1.1	ug/L	21	Standard
	Ce	140	791.7	4.9				ug/L	245	Standard
>	**Tb**	159	942729.5	1.8				ug/L	950397	Standard
	Ho	165	28.3	36.7				ug/L	7	Standard
	Tl	203	339.3	13.7	**0.0372**	0.005	12.3	ug/L	15	Standard
	Tl	205	293.3	14.5	**0.0272**	0.005	18.3	ug/L	13	Standard
	Pb	206	612.0	8.4	**0.0647**	0.008	11.7	ug/L	264	Standard
	Pb	207	519.7	9.7	**0.0553**	0.008	14.9	ug/L	222	Standard
	Pb	208	2221.7	7.6	**0.0579**	0.007	11.9	ug/L	959	Standard
	U	238	900.0	3.6	**0.1118**	0.003	3.1	ug/L	9	Standard
>	**Bi**	209	550585.9	1.6				ug/L	552821	Standard

Sample ID: L1606146801SDL WG574824-02
Report Date/Time: Friday, July 01, 2016 13:31:23
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.0521**	8.742	173.0	mg/L	2	Standard
Mg	24	4062.2	4.3	**4.6808**	0.132	2.8	mg/L	55	Standard
K	39	498.3	11.6	**1.7809**	0.252	14.1	mg/L	28	Standard
Ca	43	101.7	7.5	**6.7726**	0.507	7.5	mg/L	27	Standard
Fe	54	107.3	30.2	**-0.0145**	0.026	180.3	mg/L	147	Standard
Fe	57	291.7	13.3	**0.0919**	0.123	133.6	mg/L	268	Standard
> **Sc-1**	45	41202.6	2.0				mg/L	41174	Standard
Cl	35	96829.8	0.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	10183.4	2.4				ug/L	1950	Standard
P	31	11094.1	2.9				ug/L	21156	Standard
S	34	3683.8	0.7				ug/L	3419	Standard
Sr	88	95.0	24.1				ug/L	72	Standard
C	12	163.3	7.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	17	Standard
Dy	164	29.5	32.3				mg/L	16	Standard
Ho-1	165	28.3	36.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	35264.3	1.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.166	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.366	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606146801SDL WG574824-02
Report Date/Time: Friday, July 01, 2016 13:31:23
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.122
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.596
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 13:32:18
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83467.6	1.4				ug/L	76456	Standard
	Be	9	63718.7	0.7	**52.1231**	0.475	0.9	ug/L	20	Standard
	Al	27	9062605.1	0.9	**48.4842**	0.275	0.6	ug/L	1307	Standard
	Sc	45	44059.0	1.3				ug/L	41174	Standard
	Ti	47	34404.0	1.1	**99.0094**	0.671	0.7	ug/L	27	Standard
	V	51	443244.1	0.4	**50.4051**	0.454	0.9	ug/L	1434	Standard
	Cr	52	434951.0	1.6	**49.5050**	0.344	0.7	ug/L	7733	Standard
	Cr	53	55258.9	0.5	**50.8922**	0.303	0.6	ug/L	442	Standard
	Mn	55	403371.8	0.9	**49.9032**	0.315	0.6	ug/L	723	Standard
	Co	59	418724.4	1.0	**51.2643**	0.239	0.5	ug/L	217	Standard
	Ni	60	110119.8	2.0	**49.6473**	0.559	1.1	ug/L	304	Standard
	Cu	65	108317.9	1.6	**49.7353**	0.387	0.8	ug/L	181	Standard
	Zn	66	65643.9	0.2	**50.1012**	0.420	0.8	ug/L	215	Standard
>	Ge	72	555003.0	0.9				ug/L	520809	Standard
	As	75	65592.7	0.9	**49.9040**	0.350	0.7	ug/L	-52	Standard
	Se	82	6752.9	1.3	**50.0327**	0.319	0.6	ug/L	17	Standard
	Se-1	77	4634.4	1.8	**50.1857**	0.510	1.0	ug/L	56	Standard
>	Ga	71	43.3	43.7				mg/L	25	Standard
	Rb	85	895.0	1.7				ug/L	28	Standard
	Y	89	470300.0	1.3				ug/L	447395	Standard
>	Rh	103	21.7	53.3				ug/L	15	Standard
	Mo	98	316268.1	0.4	**99.0881**	0.889	0.9	ug/L	113	Standard
	Ag	107	376354.5	0.2	**49.6535**	0.293	0.6	ug/L	108	Standard
	Cd	111	120441.8	1.1	**49.5792**	0.292	0.6	mg/L	3	Standard
	Cd	114	295637.4	1.1	**49.1550**	0.340	0.7	ug/L	20	Standard
>	In	115	660227.7	0.5				ug/L	625728	Standard
	Sn	118	331178.7	0.6	**48.6841**	0.135	0.3	ug/L	568	Standard
	Sb	123	273404.4	0.5	**50.1048**	0.039	0.1	ug/L	612	Standard
	Ba	135	110185.5	0.7	**47.9831**	0.253	0.5	ug/L	21	Standard
	Ce	140	71.7	8.1				ug/L	245	Standard
>	Tb	159	984792.3	0.6				ug/L	950397	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	462531.1	0.4	**50.2621**	0.297	0.6	ug/L	15	Standard
	Tl	205	421818.4	1.3	**51.6134**	0.810	1.6	ug/L	13	Standard
	Pb	206	290494.8	0.7	**50.0181**	0.451	0.9	ug/L	264	Standard
	Pb	207	263168.3	0.9	**49.8939**	0.483	1.0	ug/L	222	Standard
	Pb	208	1101207.6	0.2	**51.1172**	0.228	0.4	ug/L	959	Standard
	U	238	418119.7	0.4	**50.6018**	0.328	0.6	ug/L	9	Standard
>	Bi	209	566634.4	0.3				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 13:34:35
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4939.1	6.4	**5.3310**	0.320	6.0	mg/L	55	Standard
K	39	1245.1	5.8	**4.3288**	0.211	4.9	mg/L	28	Standard
Ca	43	85.0	25.6	**4.7651**	1.854	38.9	mg/L	27	Standard
Fe	54	6867.9	1.6	**4.9353**	0.136	2.8	mg/L	147	Standard
Fe	57	2071.8	2.6	**5.1454**	0.157	3.1	mg/L	268	Standard
> **Sc-1**	45	44059.0	1.3				mg/L	41174	Standard
Cl	35	90383.1	4.1				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	4354.0	6.6				ug/L	1950	Standard
P	31	26625.0	1.6				ug/L	21156	Standard
S	34	4595.7	0.9				ug/L	3419	Standard
Sr	88	73.3	21.9				ug/L	72	Standard
C	12	80.0	25.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	9.7	105.8				mg/L	16	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	17566.9	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.246		
Al	27	96.968		
Sc	45			
Ti	47	99.009		
V	51	100.810		
Cr	52	99.010		
Cr	53			
Mn	55	99.806		
Co	59	102.529		
Ni	60	99.295		
Cu	65	99.471		
Zn	66	100.202		
> Ge	72		106.565	
As	75	99.808		
Se	82	100.065		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 13:34:35
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	99.088		
Ag	107	99.307		
Cd	111	99.158		
Cd	114			
> In	115			105.514
Sn	118	97.368		
Sb	123	100.210		
Ba	135	95.966		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.524		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.234		
U	238	101.204		
> Bi	209			102.499
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 13:34:35
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 13:35:30
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81907.5	2.0				ug/L	76456	Standard
	Be	9	33.3	37.7	**0.0081**	0.011	136.7	ug/L	20	Standard
	Al	27	3658.8	6.2	**0.0097**	0.001	9.1	ug/L	1307	Standard
	Sc	45	43395.4	0.6				ug/L	41174	Standard
	Ti	47	24.0	4.2	**-0.0151**	0.003	16.8	ug/L	27	Standard
	V	51	1486.9	6.2	**-0.0280**	0.012	41.3	ug/L	1434	Standard
	Cr	52	7626.6	0.2	**-0.0811**	0.008	9.6	ug/L	7733	Standard
	Cr	53	623.3	4.9	**0.1647**	0.029	17.3	ug/L	442	Standard
	Mn	55	758.4	6.6	**-0.0069**	0.006	85.9	ug/L	723	Standard
	Co	59	258.3	7.6	**0.0024**	0.003	111.1	ug/L	217	Standard
	Ni	60	313.7	6.6	**-0.0106**	0.010	91.1	ug/L	304	Standard
	Cu	65	185.7	9.2	**0.0117**	0.008	71.7	ug/L	181	Standard
	Zn	66	252.7	5.5	**0.0142**	0.012	81.1	ug/L	215	Standard
>	**Ge**	72	552319.3	0.7				ug/L	520809	Standard
	As	75	-27.0	147.4	**0.0246**	0.030	123.9	ug/L	-52	Standard
	Se	82	28.2	27.0	**0.0839**	0.058	69.1	ug/L	17	Standard
	Se-1	77	72.0	11.0	**0.1099**	0.092	83.3	ug/L	56	Standard
>	**Ga**	71	16.7	62.4				mg/L	25	Standard
	Rb	85	41.7	61.6				ug/L	28	Standard
	Y	89	471686.6	0.8				ug/L	447395	Standard
>	**Rh**	103	6.7	114.6				ug/L	15	Standard
	Mo	98	354.1	7.5	**0.0877**	0.008	9.3	ug/L	113	Standard
	Ag	107	160.0	3.9	**0.0084**	0.001	9.7	ug/L	108	Standard
	Cd	111	21.1	31.9	**0.0064**	0.003	43.8	mg/L	3	Standard
	Cd	114	42.3	49.2	**0.0071**	0.003	48.8	ug/L	20	Standard
>	**In**	115	656112.9	0.3				ug/L	625728	Standard
	Sn	118	1841.8	22.7	**0.1887**	0.062	32.7	ug/L	568	Standard
	Sb	123	1164.1	37.2	**0.1810**	0.080	44.0	ug/L	612	Standard
	Ba	135	49.7	23.3	**0.0039**	0.005	131.8	ug/L	21	Standard
	Ce	140	23.3	81.1				ug/L	245	Standard
>	**Tb**	159	980631.2	1.7				ug/L	950397	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	97.0	22.3	**0.0098**	0.002	24.1	ug/L	15	Standard
	Tl	205	98.3	10.6	**0.0022**	0.001	58.4	ug/L	13	Standard
	Pb	206	329.0	7.5	**0.0127**	0.004	31.8	ug/L	264	Standard
	Pb	207	298.7	13.9	**0.0104**	0.008	73.2	ug/L	222	Standard
	Pb	208	1210.7	3.3	**0.0078**	0.002	20.2	ug/L	959	Standard
	U	238	84.3	9.6	**0.0099**	0.001	9.3	ug/L	9	Standard
>	**Bi**	209	568472.1	0.5				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 13:37:47
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	32.8	**-0.0177**	0.014	79.8	mg/L	55	Standard
K	39	20.0	43.3	**-0.0585**	0.031	53.1	mg/L	28	Standard
Ca	43	10.0	50.0	**-1.5919**	0.429	27.0	mg/L	27	Standard
Fe	54	159.5	25.8	**0.0198**	0.030	153.3	mg/L	147	Standard
Fe	57	218.3	15.2	**-0.1678**	0.094	56.0	mg/L	268	Standard
Sc-1	45	43395.4	0.6				mg/L	41174	Standard
Cl	35	88102.1	0.5				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	3323.7	4.5				ug/L	1950	Standard
P	31	24955.5	2.9				ug/L	21156	Standard
S	34	4405.6	3.7				ug/L	3419	Standard
Sr	88	81.7	3.5				ug/L	72	Standard
C	12	120.0	8.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	-1.1	49.5				mg/L	16	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	7	Standard
I	127	13129.0	1.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.050	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 13:37:47
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.856
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.831
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 13:37:47
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606147001
Sample Date/Time: Friday, July 01, 2016 13:38:42
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81631.0	0.4				ug/L	76456	Standard
	Be	9	53.3	51.6	**0.0248**	0.023	93.4	ug/L	20	Standard
	Al	27	1267924.9	0.3	**6.9269**	0.012	0.2	ug/L	1307	Standard
	Sc	45	44398.3	2.2				ug/L	41174	Standard
	Ti	47	2584.6	3.5	**7.4850**	0.306	4.1	ug/L	27	Standard
	V	51	6589.9	3.8	**0.5661**	0.025	4.4	ug/L	1434	Standard
	Cr	52	17924.3	2.1	**1.1443**	0.040	3.5	ug/L	7733	Standard
	Cr	53	3320.4	0.9	**2.7174**	0.024	0.9	ug/L	442	Standard
	Mn	55	64462.5	1.4	**8.0226**	0.071	0.9	ug/L	723	Standard
	Co	59	2066.5	2.4	**0.2279**	0.005	2.1	ug/L	217	Standard
	Ni	60	3389.4	1.0	**1.4053**	0.013	0.9	ug/L	304	Standard
	Cu	65	36919.6	0.8	**17.1868**	0.112	0.7	ug/L	181	Standard
	Zn	66	100190.5	0.7	**77.8387**	0.507	0.7	ug/L	215	Standard
>	Ge	72	545904.9	0.6				ug/L	520809	Standard
	As	75	297.3	18.2	**0.2747**	0.041	14.8	ug/L	-52	Standard
	Se	82	57.3	13.9	**0.3062**	0.059	19.1	ug/L	17	Standard
	Se-1	77	123.0	8.6	**0.6885**	0.126	18.3	ug/L	56	Standard
>	Ga	71	431.7	8.5				mg/L	25	Standard
	Rb	85	29366.8	1.1				ug/L	28	Standard
	Y	89	475138.4	0.5				ug/L	447395	Standard
>	Rh	103	50.0	45.8				ug/L	15	Standard
	Mo	98	2283.8	2.0	**0.7046**	0.016	2.2	ug/L	113	Standard
	Ag	107	471.3	8.2	**0.0505**	0.006	10.9	ug/L	108	Standard
	Cd	111	442.4	4.4	**0.1831**	0.009	4.8	mg/L	3	Standard
	Cd	114	1113.8	8.0	**0.1885**	0.014	7.5	ug/L	20	Standard
>	In	115	648548.7	0.6				ug/L	625728	Standard
	Sn	118	6074.6	8.1	**0.8267**	0.078	9.5	ug/L	568	Standard
	Sb	123	3585.4	3.4	**0.6357**	0.026	4.1	ug/L	612	Standard
	Ba	135	28482.1	1.1	**12.6131**	0.063	0.5	ug/L	21	Standard
	Ce	140	9227.8	4.3				ug/L	245	Standard
>	Tb	159	980514.4	0.6				ug/L	950397	Standard
	Ho	165	175.0	22.7				ug/L	7	Standard
	Tl	203	154.0	7.9	**0.0159**	0.001	7.9	ug/L	15	Standard
	Tl	205	146.7	61.1	**0.0082**	0.011	135.5	ug/L	13	Standard
	Pb	206	300241.0	0.6	**51.5086**	0.588	1.1	ug/L	264	Standard
	Pb	207	251797.0	0.4	**47.5618**	0.476	1.0	ug/L	222	Standard
	Pb	208	1082895.4	0.4	**50.0819**	0.392	0.8	ug/L	959	Standard
	U	238	477.3	8.6	**0.0573**	0.005	9.4	ug/L	9	Standard
>	Bi	209	568731.4	0.7				ug/L	552821	Standard

Sample ID: L1606147001
Report Date/Time: Friday, July 01, 2016 13:40:59
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4449.0	1.5	**4.7618**	0.165	3.5	mg/L	55	Standard
K	39	216.7	12.7	**0.6389**	0.091	14.3	mg/L	28	Standard
Ca	43	100.0	13.2	**5.9773**	1.125	18.8	mg/L	27	Standard
Fe	54	785.4	6.3	**0.4720**	0.024	5.1	mg/L	147	Standard
Fe	57	430.0	12.3	**0.4211**	0.144	34.2	mg/L	268	Standard
> **Sc-1**	45	44398.3	2.2				mg/L	41174	Standard
Cl	35	84373.7	2.1				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	8569.1	5.7				ug/L	1950	Standard
P	31	27454.9	2.2				ug/L	21156	Standard
S	34	3758.8	6.0				ug/L	3419	Standard
Sr	88	151.7	5.0				ug/L	72	Standard
C	12	163.3	44.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	436.7	46.5				mg/L	17	Standard
Dy	164	239.6	2.7				mg/L	16	Standard
Ho-1	165	175.0	22.7				mg/L	7	Standard
Er	166	146.7	15.7				mg/L	7	Standard
I	127	165778.6	7.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.769	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.819	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606147001
Report Date/Time: Friday, July 01, 2016 13:40:59
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.647
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.878
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606147101
Sample Date/Time: Friday, July 01, 2016 13:41:54
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82165.6	1.5				ug/L	76456	Standard
	Be	9	25.0	60.0	**0.0010**	0.013	1235.0	ug/L	20	Standard
	Al	27	7420176.1	1.8	**40.3263**	0.745	1.8	ug/L	1307	Standard
	Sc	45	43403.8	1.8				ug/L	41174	Standard
	Ti	47	118.3	2.1	**0.2622**	0.007	2.8	ug/L	27	Standard
	V	51	2485.8	8.9	**0.0901**	0.026	28.6	ug/L	1434	Standard
	Cr	52	11852.6	4.6	**0.4290**	0.067	15.6	ug/L	7733	Standard
	Cr	53	3065.3	10.5	**2.4783**	0.300	12.1	ug/L	442	Standard
	Mn	55	13532.4	4.2	**1.6054**	0.074	4.6	ug/L	723	Standard
	Co	59	973.4	27.9	**0.0919**	0.034	37.1	ug/L	217	Standard
	Ni	60	2788.9	4.3	**1.1302**	0.057	5.1	ug/L	304	Standard
	Cu	65	167698.1	1.5	**78.3834**	1.378	1.8	ug/L	181	Standard
	Zn	66	18490.9	1.1	**14.2285**	0.192	1.3	ug/L	215	Standard
>	Ge	72	545541.7	0.2				ug/L	520809	Standard
	As	75	56.9	102.5	**0.0892**	0.045	50.6	ug/L	-52	Standard
	Se	82	46.0	7.1	**0.2215**	0.025	11.4	ug/L	17	Standard
	Se-1	77	165.0	10.0	**1.1579**	0.182	15.8	ug/L	56	Standard
>	Ga	71	40.0	45.1				mg/L	25	Standard
	Rb	85	1635.1	4.7				ug/L	28	Standard
	Y	89	467449.1	1.6				ug/L	447395	Standard
>	Rh	103	46.7	27.0				ug/L	15	Standard
	Mo	98	638.2	33.3	**0.1798**	0.068	38.0	ug/L	113	Standard
	Ag	107	803.4	8.9	**0.0950**	0.010	10.3	ug/L	108	Standard
	Cd	111	142.8	28.8	**0.0575**	0.017	29.9	mg/L	3	Standard
	Cd	114	382.8	34.4	**0.0647**	0.022	33.9	ug/L	20	Standard
>	In	115	648871.9	1.3				ug/L	625728	Standard
	Sn	118	1820.1	16.8	**0.1889**	0.050	26.3	ug/L	568	Standard
	Sb	123	517.0	31.6	**0.0630**	0.032	50.1	ug/L	612	Standard
	Ba	135	105021.4	1.0	**46.5367**	0.469	1.0	ug/L	21	Standard
	Ce	140	176.7	12.8				ug/L	245	Standard
>	Tb	159	974106.7	1.7				ug/L	950397	Standard
	Ho	165	20.0	43.3				ug/L	7	Standard
	Tl	203	182.7	61.2	**0.0196**	0.013	64.0	ug/L	15	Standard
	Tl	205	260.0	110.0	**0.0228**	0.036	157.4	ug/L	13	Standard
	Pb	206	1477.4	2.4	**0.2162**	0.008	3.6	ug/L	264	Standard
	Pb	207	1248.7	8.1	**0.1959**	0.021	10.5	ug/L	222	Standard
	Pb	208	5698.4	18.4	**0.2221**	0.051	22.9	ug/L	959	Standard
	U	238	669.4	46.7	**0.0825**	0.039	47.3	ug/L	9	Standard
>	Bi	209	555056.3	0.6				ug/L	552821	Standard

Sample ID: L1606147101
Report Date/Time: Friday, July 01, 2016 13:44:11
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8267.3	1.5	**9.1027**	0.178	2.0	mg/L	55	Standard
K	39	178.3	20.3	**0.5189**	0.142	27.4	mg/L	28	Standard
Ca	43	265.0	15.0	**20.3615**	3.046	15.0	mg/L	27	Standard
Fe	54	255.7	20.5	**0.0914**	0.039	42.6	mg/L	147	Standard
Fe	57	411.7	6.1	**0.3970**	0.095	23.9	mg/L	268	Standard
> **Sc-1**	45	43403.8	1.8				mg/L	41174	Standard
Cl	35	91879.7	0.6				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	5647.7	9.0				ug/L	1950	Standard
P	31	26070.8	4.0				ug/L	21156	Standard
S	34	4028.9	4.5				ug/L	3419	Standard
Sr	88	183.3	6.3				ug/L	72	Standard
C	12	180.0	24.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	57.3				mg/L	17	Standard
Dy	164	38.6	26.6				mg/L	16	Standard
Ho-1	165	20.0	43.3				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	7	Standard
I	127	15740.0	17.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.468	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.749	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606147101
Report Date/Time: Friday, July 01, 2016 13:44:11
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.699
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606153601 WG574593-01
Sample Date/Time: Friday, July 01, 2016 13:45:05
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	105632.1	2.8				ug/L	76456	Standard
	Be	9	31.7	39.7	**0.0005**	0.008	1597.2	ug/L	20	Standard
	Al	27	9212844.4	2.9	**38.9423**	0.330	0.8	ug/L	1307	Standard
	Sc	45	37845.6	1.8				ug/L	41174	Standard
	Ti	47	303.7	8.6	**0.9123**	0.111	12.1	ug/L	27	Standard
	V	51	24245.6	11.6	**2.9541**	0.410	13.9	ug/L	1434	Standard
	Cr	52	16917.1	2.1	**1.2643**	0.091	7.2	ug/L	7733	Standard
	Cr	53	9354.6	13.4	**9.4775**	1.472	15.5	ug/L	442	Standard
	Mn	55	60166.6	2.3	**8.3838**	0.064	0.8	ug/L	723	Standard
	Co	59	59968.5	3.2	**8.3264**	0.059	0.7	ug/L	217	Standard
	Ni	60	11329.9	3.4	**5.6751**	0.056	1.0	ug/L	304	Standard
	Cu	65	10538.7	5.5	**5.4379**	0.239	4.4	ug/L	181	Standard
	Zn	66	77341.6	1.9	**67.2161**	0.503	0.7	ug/L	215	Standard
>	Ge	72	487884.6	2.6				ug/L	520809	Standard
	As	75	3262.4	6.3	**2.8666**	0.175	6.1	ug/L	-52	Standard
	Se	82	371.0	19.1	**3.0068**	0.587	19.5	ug/L	17	Standard
	Se-1	77	623.3	8.4	**7.1096**	0.803	11.3	ug/L	56	Standard
>	Ga	71	1885.1	4.1				mg/L	25	Standard
	Rb	85	131658.3	3.5				ug/L	28	Standard
	Y	89	431897.9	2.3				ug/L	447395	Standard
>	Rh	103	143.3	38.9				ug/L	15	Standard
	Mo	98	627591.1	3.5	**227.1784**	5.050	2.2	ug/L	113	Standard
	Ag	107	276.3	2.5	**0.0293**	0.001	4.0	ug/L	108	Standard
	Cd	111	-404.3	7.2	**-0.1947**	0.015	7.6	mg/L	3	Standard
	Cd	114	1007.4	4.4	**0.1935**	0.003	1.7	ug/L	20	Standard
>	In	115	571506.3	2.8				ug/L	625728	Standard
	Sn	118	2893.6	2.8	**0.4084**	0.024	5.8	ug/L	568	Standard
	Sb	123	6941.9	4.4	**1.4365**	0.025	1.7	ug/L	612	Standard
	Ba	135	39683.6	1.8	**19.9579**	0.305	1.5	ug/L	21	Standard
	Ce	140	421.7	17.2				ug/L	245	Standard
>	Tb	159	912620.2	2.1				ug/L	950397	Standard
	Ho	165	31.7	24.1				ug/L	7	Standard
	Tl	203	8399.3	2.5	**1.0755**	0.030	2.8	ug/L	15	Standard
	Tl	205	7106.7	3.1	**1.0155**	0.022	2.2	ug/L	13	Standard
	Pb	206	2580.9	3.9	**0.4804**	0.009	1.9	ug/L	264	Standard
	Pb	207	2297.2	1.5	**0.4679**	0.011	2.3	ug/L	222	Standard
	Pb	208	9454.2	3.4	**0.4694**	0.008	1.7	ug/L	959	Standard
	U	238	1115.7	2.4	**0.1590**	0.005	3.3	ug/L	9	Standard
>	Bi	209	480711.3	2.7				ug/L	552821	Standard

Sample ID: L1606153601 WG574593-01
Report Date/Time: Friday, July 01, 2016 13:47:22
Page 1

Approved: July 02, 2016

Na	23	8.3	34.6	**27.1734**	9.738	35.8	mg/L	2	Standard
Mg	24	507921.7	2.6	**645.4329**	9.385	1.5	mg/L	55	Standard
K	39	415.0	4.8	**1.6014**	0.114	7.1	mg/L	28	Standard
Ca	43	481.7	12.6	**45.2243**	6.627	14.7	mg/L	27	Standard
Fe	54	127.9	17.8	**0.0101**	0.018	174.2	mg/L	147	Standard
Fe	57	770.0	11.3	**1.7671**	0.242	13.7	mg/L	268	Standard
Sc-1	45	37845.6	1.8				mg/L	41174	Standard
Cl	35	383189.3	2.3				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	30317.0	3.7				ug/L	1950	Standard
P	31	15528.0	3.6				ug/L	21156	Standard
S	34	3745.5	2.5				ug/L	3419	Standard
Sr	88	250.0	23.1				ug/L	72	Standard
C	12	176.7	14.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26862.7	37.9				mg/L	17	Standard
Dy	164	21.9	26.7				mg/L	16	Standard
Ho-1	165	31.7	24.1				mg/L	7	Standard
Er	166	30.0	66.7				mg/L	7	Standard
I	127	123380.9	8.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.161	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601 WG574593-01
Report Date/Time: Friday, July 01, 2016 13:47:22
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.335
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.956
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606153601 WG574593-01
Report Date/Time: Friday, July 01, 2016 13:47:22
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606153601DP WG574593-04
Sample Date/Time: Friday, July 01, 2016 13:48:17
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	113476.7	0.3				ug/L	76456	Standard
	Be	9	31.7	39.7	**-0.0008**	0.008	933.9	ug/L	20	Standard
	Al	27	9155815.3	1.0	**36.0246**	0.289	0.8	ug/L	1307	Standard
	Sc	45	38106.2	3.0				ug/L	41174	Standard
	Ti	47	317.7	11.6	**0.9598**	0.126	13.2	ug/L	27	Standard
	V	51	23799.7	13.5	**2.9030**	0.438	15.1	ug/L	1434	Standard
	Cr	52	15774.9	0.6	**1.1182**	0.010	0.9	ug/L	7733	Standard
	Cr	53	7253.4	7.9	**7.2700**	0.659	9.1	ug/L	442	Standard
	Mn	55	54277.4	0.5	**7.5755**	0.086	1.1	ug/L	723	Standard
	Co	59	56802.6	1.1	**7.9092**	0.067	0.8	ug/L	217	Standard
	Ni	60	10522.3	1.7	**5.2767**	0.120	2.3	ug/L	304	Standard
	Cu	65	10358.5	2.3	**5.3602**	0.097	1.8	ug/L	181	Standard
	Zn	66	63839.2	1.1	**55.6043**	0.258	0.5	ug/L	215	Standard
>	Ge	72	486471.3	0.9				ug/L	520809	Standard
	As	75	3361.1	6.7	**2.9591**	0.174	5.9	ug/L	-52	Standard
	Se	82	440.0	19.1	**3.5994**	0.683	19.0	ug/L	17	Standard
	Se-1	77	548.0	6.3	**6.1810**	0.486	7.9	ug/L	56	Standard
>	Ga	71	1580.1	9.0				mg/L	25	Standard
	Rb	85	128497.6	0.7				ug/L	28	Standard
	Y	89	437852.1	1.2				ug/L	447395	Standard
>	Rh	103	195.0	13.3				ug/L	15	Standard
	Mo	98	610817.8	0.2	**219.3028**	1.490	0.7	ug/L	113	Standard
	Ag	107	270.0	5.4	**0.0280**	0.002	7.9	ug/L	108	Standard
	Cd	111	-435.5	5.5	**-0.2078**	0.012	5.8	mg/L	3	Standard
	Cd	114	1008.9	7.4	**0.1923**	0.015	7.6	ug/L	20	Standard
>	In	115	576209.6	0.5				ug/L	625728	Standard
	Sn	118	2962.0	1.1	**0.4156**	0.007	1.7	ug/L	568	Standard
	Sb	123	5993.6	0.1	**1.2257**	0.006	0.5	ug/L	612	Standard
	Ba	135	37997.3	1.1	**18.9491**	0.250	1.3	ug/L	21	Standard
	Ce	140	438.3	13.3				ug/L	245	Standard
>	Tb	159	912922.8	0.6				ug/L	950397	Standard
	Ho	165	23.3	44.6				ug/L	7	Standard
	Tl	203	7035.6	2.0	**0.8846**	0.019	2.1	ug/L	15	Standard
	Tl	205	6231.3	4.9	**0.8732**	0.041	4.7	ug/L	13	Standard
	Pb	206	2197.2	4.0	**0.3947**	0.019	4.9	ug/L	264	Standard
	Pb	207	1945.1	0.8	**0.3813**	0.005	1.2	ug/L	222	Standard
	Pb	208	7974.8	0.5	**0.3808**	0.004	1.1	ug/L	959	Standard
	U	238	1110.0	6.5	**0.1553**	0.010	6.5	ug/L	9	Standard
>	Bi	209	489368.4	0.9				ug/L	552821	Standard

Sample ID: L1606153601DP WG574593-04
Report Date/Time: Friday, July 01, 2016 13:50:34
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.3506**	9.259	173.0	mg/L	2	Standard
Mg	24	497934.2	1.5	**628.6633**	12.777	2.0	mg/L	55	Standard
K	39	386.7	13.3	**1.4712**	0.210	14.3	mg/L	28	Standard
Ca	43	468.3	8.9	**43.5651**	4.343	10.0	mg/L	27	Standard
Fe	54	108.4	32.3	**-0.0071**	0.029	411.5	mg/L	147	Standard
Fe	57	688.3	12.0	**1.4795**	0.238	16.1	mg/L	268	Standard
> **Sc-1**	45	38106.2	3.0				mg/L	41174	Standard
Cl	35	369584.8	0.9				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	29598.9	3.8				ug/L	1950	Standard
P	31	15125.9	2.3				ug/L	21156	Standard
S	34	3780.5	5.9				ug/L	3419	Standard
Sr	88	230.0	13.6				ug/L	72	Standard
C	12	213.3	38.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30656.1	29.8				mg/L	17	Standard
Dy	164	16.0	70.4				mg/L	16	Standard
Ho-1	165	23.3	44.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	76869.6	2.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		148.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.407	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601DP WG574593-04
Report Date/Time: Friday, July 01, 2016 13:50:34
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	92.086	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	88.522	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606153601DP WG574593-04
Report Date/Time: Friday, July 01, 2016 13:50:34
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606153601S WG574593-05
Sample Date/Time: Friday, July 01, 2016 13:51:28
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	114783.5	3.4				ug/L	76456	Standard
	Be	9	31472.7	2.0	**18.7219**	0.754	4.0	ug/L	20	Standard
	Al	27	8967809.3	2.2	**34.8925**	0.413	1.2	ug/L	1307	Standard
	Sc	45	36838.1	2.1				ug/L	41174	Standard
	Ti	47	293.0	5.4	**0.9041**	0.043	4.8	ug/L	27	Standard
	V	51	144707.0	17.5	**19.1390**	3.192	16.7	ug/L	1434	Standard
	Cr	52	181657.1	2.0	**23.7324**	0.270	1.1	ug/L	7733	Standard
	Cr	53	26979.0	1.6	**28.9363**	0.245	0.8	ug/L	442	Standard
	Mn	55	196630.4	2.3	**28.4601**	0.390	1.4	ug/L	723	Standard
	Co	59	229358.7	1.0	**32.8948**	0.071	0.2	ug/L	217	Standard
	Ni	60	50822.4	1.0	**26.7818**	0.048	0.2	ug/L	304	Standard
	Cu	65	50564.2	0.8	**27.1746**	0.164	0.6	ug/L	181	Standard
	Zn	66	34538.3	0.8	**30.8215**	0.391	1.3	ug/L	215	Standard
>	Ge	72	473620.3	1.0				ug/L	520809	Standard
	As	75	32972.2	0.9	**29.4152**	0.246	0.8	ug/L	-52	Standard
	Se	82	3843.3	1.0	**33.3303**	0.606	1.8	ug/L	17	Standard
	Se-1	77	2661.6	3.4	**33.5483**	0.893	2.7	ug/L	56	Standard
>	Ga	71	381.7	15.1				mg/L	25	Standard
	Rb	85	125348.3	2.7				ug/L	28	Standard
	Y	89	429677.9	2.4				ug/L	447395	Standard
>	Rh	103	226.7	13.3				ug/L	15	Standard
	Mo	98	605966.7	1.3	**219.9601**	1.216	0.6	ug/L	113	Standard
	Ag	107	143805.9	1.0	**21.9725**	0.186	0.8	ug/L	108	Standard
	Cd	111	47375.9	2.4	**22.5887**	0.138	0.6	mg/L	3	Standard
	Cd	114	117916.6	2.4	**22.7105**	0.229	1.0	ug/L	20	Standard
>	In	115	569946.5	1.8				ug/L	625728	Standard
	Sn	118	2151.8	16.9	**0.2836**	0.068	23.8	ug/L	568	Standard
	Sb	123	117947.9	1.3	**25.0246**	0.247	1.0	ug/L	612	Standard
	Ba	135	80315.6	0.5	**40.5194**	0.565	1.4	ug/L	21	Standard
	Ce	140	525.0	16.6				ug/L	245	Standard
>	Tb	159	909446.5	2.1				ug/L	950397	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	188663.7	0.8	**24.0492**	0.050	0.2	ug/L	15	Standard
	Tl	205	172066.6	1.3	**24.6917**	0.238	1.0	ug/L	13	Standard
	Pb	206	123402.9	1.1	**24.9025**	0.136	0.5	ug/L	264	Standard
	Pb	207	107579.3	1.1	**23.9013**	0.073	0.3	ug/L	222	Standard
	Pb	208	446533.6	1.0	**24.2893**	0.091	0.4	ug/L	959	Standard
	U	238	179675.3	1.7	**25.5069**	0.325	1.3	ug/L	9	Standard
>	Bi	209	483038.3	0.9				ug/L	552821	Standard

Sample ID: L1606153601S WG574593-05
Report Date/Time: Friday, July 01, 2016 13:53:45
Page 1

Approved: July 02, 2016

Na	23	13.3	21.7	**44.4001**	9.083	20.5	mg/L	2	Standard
Mg	24	482486.9	1.9	**629.9240**	1.410	0.2	mg/L	55	Standard
K	39	456.7	2.3	**1.8260**	0.024	1.3	mg/L	28	Standard
Ca	43	443.3	6.2	**42.6201**	3.595	8.4	mg/L	27	Standard
Fe	54	107.2	30.6	**-0.0052**	0.027	515.1	mg/L	147	Standard
Fe	57	646.7	6.6	**1.4187**	0.179	12.6	mg/L	268	Standard
> **Sc-1**	45	36838.1	2.1				mg/L	41174	Standard
Cl	35	363789.4	1.4				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	29438.6	3.1				ug/L	1950	Standard
P	31	15032.5	1.4				ug/L	21156	Standard
S	34	3710.5	3.9				ug/L	3419	Standard
Sr	88	215.0	4.7				ug/L	72	Standard
C	12	186.7	18.8				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	44900.2	29.0				mg/L	17	Standard
Dy	164	12.5	117.7				mg/L	16	Standard
Ho-1	165	18.3	56.8				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	7	Standard
I	127	80914.0	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.131	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.939	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601S WG574593-05
Report Date/Time: Friday, July 01, 2016 13:53:45
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.085
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.377
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606153601S WG574593-05
Report Date/Time: Friday, July 01, 2016 13:53:45
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606153601SD WG574593-06
Sample Date/Time: Friday, July 01, 2016 13:54:40
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	112397.1	1.9				ug/L	76456	Standard
	Be	9	31070.2	1.4	**18.8667**	0.550	2.9	ug/L	20	Standard
	Al	27	8839135.1	2.6	**35.1153**	0.794	2.3	ug/L	1307	Standard
	Sc	45	36505.6	0.6				ug/L	41174	Standard
	Ti	47	313.3	8.2	**0.9879**	0.083	8.4	ug/L	27	Standard
	V	51	166809.7	7.9	**22.4386**	1.861	8.3	ug/L	1434	Standard
	Cr	52	176635.7	0.7	**23.3939**	0.040	0.2	ug/L	7733	Standard
	Cr	53	26448.1	1.1	**28.7705**	0.310	1.1	ug/L	442	Standard
	Mn	55	190612.1	1.7	**27.9819**	0.319	1.1	ug/L	723	Standard
	Co	59	229904.6	2.0	**33.4420**	0.439	1.3	ug/L	217	Standard
	Ni	60	50248.2	1.0	**26.8570**	0.085	0.3	ug/L	304	Standard
	Cu	65	50373.6	1.7	**27.4578**	0.363	1.3	ug/L	181	Standard
	Zn	66	32810.8	2.5	**29.6880**	0.646	2.2	ug/L	215	Standard
>	Ge	72	466958.0	0.7				ug/L	520809	Standard
	As	75	31818.9	1.7	**28.7902**	0.285	1.0	ug/L	-52	Standard
	Se	82	3739.0	3.2	**32.8806**	0.943	2.9	ug/L	17	Standard
	Se-1	77	2572.6	1.3	**32.8825**	0.665	2.0	ug/L	56	Standard
>	Ga	71	335.0	0.0				mg/L	25	Standard
	Rb	85	123842.4	1.0				ug/L	28	Standard
	Y	89	424204.0	1.6				ug/L	447395	Standard
>	Rh	103	250.0	19.1				ug/L	15	Standard
	Mo	98	596887.3	1.2	**220.8114**	1.891	0.9	ug/L	113	Standard
	Ag	107	140477.5	2.4	**21.8716**	0.278	1.3	ug/L	108	Standard
	Cd	111	46478.5	0.9	**22.5882**	0.134	0.6	mg/L	3	Standard
	Cd	114	114740.4	2.4	**22.5229**	0.416	1.8	ug/L	20	Standard
>	In	115	559219.9	1.1				ug/L	625728	Standard
	Sn	118	2036.8	20.6	**0.2701**	0.075	27.8	ug/L	568	Standard
	Sb	123	115612.8	1.8	**24.9963**	0.192	0.8	ug/L	612	Standard
	Ba	135	78486.8	0.7	**40.3510**	0.202	0.5	ug/L	21	Standard
	Ce	140	446.7	6.2				ug/L	245	Standard
>	Tb	159	894070.3	0.6				ug/L	950397	Standard
	Ho	165	23.3	24.7				ug/L	7	Standard
	Tl	203	185499.3	0.6	**23.8373**	0.171	0.7	ug/L	15	Standard
	Tl	205	169836.9	2.3	**24.5659**	0.283	1.2	ug/L	13	Standard
	Pb	206	121903.1	0.8	**24.7990**	0.171	0.7	ug/L	264	Standard
	Pb	207	105852.8	0.4	**23.7090**	0.262	1.1	ug/L	222	Standard
	Pb	208	438929.8	1.6	**24.0671**	0.200	0.8	ug/L	959	Standard
	U	238	177358.8	1.6	**25.3810**	0.202	0.8	ug/L	9	Standard
>	Bi	209	479179.3	1.2				ug/L	552821	Standard

Sample ID: L1606153601SD WG574593-06
Report Date/Time: Friday, July 01, 2016 13:56:57
Page 1

Approved: July 02, 2016

Na	23	6.7	86.6	**22.4621**	19.450	86.6	mg/L	2	Standard
Mg	24	471196.6	0.7	**620.7791**	4.974	0.8	mg/L	55	Standard
K	39	408.3	16.7	**1.6356**	0.302	18.5	mg/L	28	Standard
Ca	43	436.7	18.5	**42.2777**	8.047	19.0	mg/L	27	Standard
Fe	54	118.9	19.0	**0.0063**	0.019	307.7	mg/L	147	Standard
Fe	57	681.7	4.2	**1.5588**	0.115	7.4	mg/L	268	Standard
> **Sc-1**	45	36505.6	0.6				mg/L	41174	Standard
Cl	35	356982.4	1.5				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	28717.2	3.6				ug/L	1950	Standard
P	31	15301.1	0.8				ug/L	21156	Standard
S	34	3565.4	1.6				ug/L	3419	Standard
Sr	88	228.3	25.6				ug/L	72	Standard
C	12	156.7	38.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50532.6	17.8				mg/L	17	Standard
Dy	164	15.4	96.7				mg/L	16	Standard
Ho-1	165	23.3	24.7				mg/L	7	Standard
Er	166	26.7	78.1				mg/L	7	Standard
I	127	86335.9	6.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.009	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601SD WG574593-06
Report Date/Time: Friday, July 01, 2016 13:56:57
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	89.371
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	86.679
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606153601SD WG574593-06
Report Date/Time: Friday, July 01, 2016 13:56:57
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106804
Sample Date/Time: Friday, July 01, 2016 13:57:51
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92136.1	2.7				ug/L	76456	Standard
	Be	9	31.7	32.9	**0.0036**	0.008	216.5	ug/L	20	Standard
	Al	27	859023.9	1.9	**4.1545**	0.040	1.0	ug/L	1307	Standard
	Sc	45	36834.7	2.5				ug/L	41174	Standard
	Ti	47	40.0	19.5	**0.0448**	0.025	54.9	ug/L	27	Standard
	V	51	5203.8	19.0	**0.4694**	0.132	28.1	ug/L	1434	Standard
	Cr	52	6735.2	1.8	**-0.0924**	0.015	16.5	ug/L	7733	Standard
	Cr	53	918.4	10.2	**0.5415**	0.104	19.3	ug/L	442	Standard
	Mn	55	2241.8	1.6	**0.2108**	0.003	1.6	ug/L	723	Standard
	Co	59	300.7	9.6	**0.0119**	0.004	33.8	ug/L	217	Standard
	Ni	60	672.3	1.0	**0.1885**	0.006	3.2	ug/L	304	Standard
	Cu	65	1685.8	29.1	**0.7955**	0.246	31.0	ug/L	181	Standard
	Zn	66	3230.4	18.8	**2.5967**	0.499	19.2	ug/L	215	Standard
>	**Ge**	72	494044.1	0.8				ug/L	520809	Standard
	As	75	465.2	37.5	**0.4417**	0.146	33.1	ug/L	-52	Standard
	Se	82	234.7	30.5	**1.8293**	0.582	31.8	ug/L	17	Standard
	Se-1	77	90.3	10.8	**0.4300**	0.128	29.8	ug/L	56	Standard
>	**Ga**	71	38.3	39.8				mg/L	25	Standard
	Rb	85	223.3	18.1				ug/L	28	Standard
	Y	89	421894.0	1.5				ug/L	447395	Standard
>	**Rh**	103	131.7	22.3				ug/L	15	Standard
	Mo	98	5006.3	9.4	**1.7140**	0.193	11.2	ug/L	113	Standard
	Ag	107	126.3	16.6	**0.0056**	0.003	50.1	ug/L	108	Standard
	Cd	111	16.1	25.5	**0.0049**	0.002	35.5	mg/L	3	Standard
	Cd	114	61.4	11.1	**0.0113**	0.001	10.9	ug/L	20	Standard
>	**In**	115	596688.0	1.6				ug/L	625728	Standard
	Sn	118	568.3	15.2	**0.0085**	0.015	181.1	ug/L	568	Standard
	Sb	123	246.2	18.9	**0.0163**	0.010	61.8	ug/L	612	Standard
	Ba	135	7350.5	3.5	**3.5247**	0.082	2.3	ug/L	21	Standard
	Ce	140	23.3	32.7				ug/L	245	Standard
>	**Tb**	159	916453.6	1.2				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	304.7	24.9	**0.0334**	0.008	23.6	ug/L	15	Standard
	Tl	205	111.7	6.8	**0.0044**	0.001	16.4	ug/L	13	Standard
	Pb	206	327.7	8.6	**0.0145**	0.004	27.3	ug/L	264	Standard
	Pb	207	301.0	9.8	**0.0128**	0.005	36.7	ug/L	222	Standard
	Pb	208	1200.4	8.2	**0.0093**	0.004	42.0	ug/L	959	Standard
	U	238	75.7	24.1	**0.0092**	0.002	23.9	ug/L	9	Standard
>	**Bi**	209	548664.2	1.8				ug/L	552821	Standard

Sample ID: L1606106804
Report Date/Time: Friday, July 01, 2016 14:00:08
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2398.5	7.1	**3.0753**	0.279	9.1	mg/L	55	Standard
K	39	18.3	56.8	**-0.0529**	0.044	83.5	mg/L	28	Standard
Ca	43	20.0	43.3	**-0.4071**	0.939	230.7	mg/L	27	Standard
Fe	54	72.6	4.6	**-0.0352**	0.002	4.7	mg/L	147	Standard
Fe	57	226.7	6.4	**-0.0245**	0.066	267.2	mg/L	268	Standard
> **Sc-1**	45	36834.7	2.5				mg/L	41174	Standard
Cl	35	83689.9	2.1				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	5874.5	1.4				ug/L	1950	Standard
P	31	8095.5	4.0				ug/L	21156	Standard
S	34	3318.7	0.5				ug/L	3419	Standard
Sr	88	98.3	10.6				ug/L	72	Standard
C	12	110.0	9.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	12785.7	29.7				mg/L	17	Standard
Dy	164	19.7	89.4				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	43990.5	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.509	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.861	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106804
Report Date/Time: Friday, July 01, 2016 14:00:08
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.359
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.248
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106805
Sample Date/Time: Friday, July 01, 2016 14:01:03
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88670.5	2.3				ug/L	76456	Standard
	Be	9	28.3	53.9	**0.0021**	0.012	582.5	ug/L	20	Standard
	Al	27	846462.5	1.2	**4.2550**	0.126	3.0	ug/L	1307	Standard
	Sc	45	36754.5	1.7				ug/L	41174	Standard
	Ti	47	37.0	14.0	**0.0369**	0.018	47.7	ug/L	27	Standard
	V	51	2755.7	12.5	**0.1599**	0.048	29.8	ug/L	1434	Standard
	Cr	52	6950.6	2.2	**-0.0520**	0.020	37.7	ug/L	7733	Standard
	Cr	53	901.7	5.0	**0.5360**	0.035	6.6	ug/L	442	Standard
	Mn	55	2061.5	1.0	**0.1896**	0.005	2.5	ug/L	723	Standard
	Co	59	262.3	1.3	**0.0071**	0.000	6.4	ug/L	217	Standard
	Ni	60	603.3	3.0	**0.1577**	0.014	9.0	ug/L	304	Standard
	Cu	65	649.0	15.6	**0.2657**	0.052	19.6	ug/L	181	Standard
	Zn	66	1686.8	6.3	**1.2909**	0.094	7.3	ug/L	215	Standard
>	Ge	72	487470.5	1.6				ug/L	520809	Standard
	As	75	91.9	24.0	**0.1249**	0.020	16.4	ug/L	-52	Standard
	Se	82	68.6	9.5	**0.4538**	0.061	13.4	ug/L	17	Standard
	Se-1	77	88.7	15.6	**0.4255**	0.192	45.1	ug/L	56	Standard
>	Ga	71	20.0	25.0				mg/L	25	Standard
	Rb	85	151.7	6.9				ug/L	28	Standard
	Y	89	408691.1	1.5				ug/L	447395	Standard
>	Rh	103	55.0	47.2				ug/L	15	Standard
	Mo	98	2038.3	34.8	**0.7007**	0.261	37.3	ug/L	113	Standard
	Ag	107	89.7	17.4	**0.0005**	0.003	460.6	ug/L	108	Standard
	Cd	111	8.9	44.4	**0.0018**	0.002	101.9	mg/L	3	Standard
	Cd	114	22.8	93.4	**0.0043**	0.004	93.2	ug/L	20	Standard
>	In	115	583988.4	1.5				ug/L	625728	Standard
	Sn	118	641.7	21.4	**0.0228**	0.025	107.3	ug/L	568	Standard
	Sb	123	149.4	23.6	**-0.0027**	0.008	291.8	ug/L	612	Standard
	Ba	135	7693.6	5.0	**3.7701**	0.138	3.7	ug/L	21	Standard
	Ce	140	23.3	32.7				ug/L	245	Standard
>	Tb	159	893255.5	0.4				ug/L	950397	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	160.7	5.8	**0.0177**	0.001	6.5	ug/L	15	Standard
	Tl	205	106.7	47.9	**0.0040**	0.007	165.6	ug/L	13	Standard
	Pb	206	280.3	10.7	**0.0072**	0.005	74.5	ug/L	264	Standard
	Pb	207	240.3	4.9	**0.0020**	0.003	130.9	ug/L	222	Standard
	Pb	208	1064.0	7.7	**0.0038**	0.004	108.8	ug/L	959	Standard
	U	238	55.7	89.2	**0.0069**	0.006	93.0	ug/L	9	Standard
>	Bi	209	537449.2	0.6				ug/L	552821	Standard

Sample ID: L1606106805
Report Date/Time: Friday, July 01, 2016 14:03:20
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2241.8	5.9	**2.8723**	0.129	4.5	mg/L	55	Standard
K	39	31.7	48.2	**0.0047**	0.065	1378.1	mg/L	28	Standard
Ca	43	28.3	53.9	**0.4489**	1.610	358.7	mg/L	27	Standard
Fe	54	77.8	24.1	**-0.0306**	0.015	50.4	mg/L	147	Standard
Fe	57	243.3	20.8	**0.0319**	0.163	509.9	mg/L	268	Standard
> **Sc-1**	45	36754.5	1.7				mg/L	41174	Standard
Cl	35	86917.3	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	5100.9	3.4				ug/L	1950	Standard
P	31	8162.2	1.3				ug/L	21156	Standard
S	34	3385.4	1.8				ug/L	3419	Standard
Sr	88	96.7	14.9				ug/L	72	Standard
C	12	130.0	13.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	4313.9	5.0				mg/L	17	Standard
Dy	164	12.7	43.5				mg/L	16	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	41831.0	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.599	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106805
Report Date/Time: Friday, July 01, 2016 14:03:20
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.329
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.219
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606106805
Report Date/Time: Friday, July 01, 2016 14:03:20
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106811
Sample Date/Time: Friday, July 01, 2016 14:04:14
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87384.7	2.1				ug/L	76456	Standard
	Be	9	386.7	6.4	**0.2826**	0.024	8.6	ug/L	20	Standard
	Al	27	801461.1	1.1	**4.0865**	0.037	0.9	ug/L	1307	Standard
	Sc	45	38134.6	2.7				ug/L	41174	Standard
	Ti	47	4667.1	1.1	**15.1502**	0.207	1.4	ug/L	27	Standard
	V	51	48516.8	1.5	**6.0786**	0.102	1.7	ug/L	1434	Standard
	Cr	52	40220.3	0.9	**4.3195**	0.059	1.4	ug/L	7733	Standard
	Cr	53	4720.7	0.9	**4.5507**	0.057	1.3	ug/L	442	Standard
	Mn	55	311842.6	1.0	**43.7090**	0.370	0.8	ug/L	723	Standard
	Co	59	8423.7	2.0	**1.1400**	0.022	1.9	ug/L	217	Standard
	Ni	60	8146.2	0.4	**4.0222**	0.012	0.3	ug/L	304	Standard
	Cu	65	10805.5	1.3	**5.5573**	0.061	1.1	ug/L	181	Standard
	Zn	66	50531.5	0.7	**43.6829**	0.260	0.6	ug/L	215	Standard
>	Ge	72	489720.8	0.2				ug/L	520809	Standard
	As	75	655.4	1.6	**0.6098**	0.008	1.3	ug/L	-52	Standard
	Se	82	60.2	5.5	**0.3806**	0.029	7.6	ug/L	17	Standard
	Se-1	77	67.3	4.5	**0.1530**	0.036	23.8	ug/L	56	Standard
>	Ga	71	4829.1	0.8				mg/L	25	Standard
	Rb	85	40306.9	0.9				ug/L	28	Standard
	Y	89	441421.4	0.7				ug/L	447395	Standard
>	Rh	103	40.0	54.5				ug/L	15	Standard
	Mo	98	794.4	11.9	**0.2560**	0.030	11.9	ug/L	113	Standard
	Ag	107	205.0	13.7	**0.0176**	0.004	24.9	ug/L	108	Standard
	Cd	111	469.4	3.6	**0.2151**	0.008	3.7	mg/L	3	Standard
	Cd	114	1178.5	4.6	**0.2206**	0.012	5.5	ug/L	20	Standard
>	In	115	586618.1	1.1				ug/L	625728	Standard
	Sn	118	1050.0	35.8	**0.0894**	0.061	68.0	ug/L	568	Standard
	Sb	123	166.1	12.7	**0.0005**	0.004	734.3	ug/L	612	Standard
	Ba	135	56741.7	0.9	**27.8031**	0.108	0.4	ug/L	21	Standard
	Ce	140	116496.1	0.3				ug/L	245	Standard
>	Tb	159	902035.2	0.5				ug/L	950397	Standard
	Ho	165	2190.2	5.6				ug/L	7	Standard
	Tl	203	356.0	5.6	**0.0396**	0.002	5.7	ug/L	15	Standard
	Tl	205	270.0	10.3	**0.0247**	0.004	14.6	ug/L	13	Standard
	Pb	206	16366.5	1.5	**2.8988**	0.049	1.7	ug/L	264	Standard
	Pb	207	13229.8	1.5	**2.5731**	0.042	1.6	ug/L	222	Standard
	Pb	208	57216.2	0.2	**2.7252**	0.006	0.2	ug/L	959	Standard
	U	238	2067.8	1.8	**0.2608**	0.005	1.9	ug/L	9	Standard
>	Bi	209	543128.9	0.1				ug/L	552821	Standard

Sample ID: L1606106811
Report Date/Time: Friday, July 01, 2016 14:06:31
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	836.7	5.2	**0.9955**	0.059	5.9	mg/L	55	Standard
K	39	96.7	23.3	**0.2695**	0.095	35.1	mg/L	28	Standard
Ca	43	25.0	52.9	**-0.0121**	1.244	10273.4	mg/L	27	Standard
Fe	54	3385.4	5.7	**2.7677**	0.147	5.3	mg/L	147	Standard
Fe	57	1086.7	6.1	**2.8007**	0.187	6.7	mg/L	268	Standard
> **Sc-1**	45	38134.6	2.7				mg/L	41174	Standard
Cl	35	72343.0	2.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2266.8	11.8				ug/L	1950	Standard
P	31	15112.5	3.0				ug/L	21156	Standard
S	34	3132.0	3.9				ug/L	3419	Standard
Sr	88	90.0	11.1				ug/L	72	Standard
C	12	160.0	39.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1193.4	7.9				mg/L	17	Standard
Dy	164	3446.2	2.4				mg/L	16	Standard
Ho-1	165	2190.2	5.6				mg/L	7	Standard
Er	166	2036.8	6.1				mg/L	7	Standard
I	127	34445.8	1.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.294	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.031	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106811
Report Date/Time: Friday, July 01, 2016 14:06:31
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.750
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.247
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106813 ~~WG574840-01~~ WG573840-01
Sample Date/Time: Friday, July 01, 2016 14:07:25
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85735.2	1.3				ug/L	76456	Standard
	Be	9	26.7	28.6	**0.0014**	0.006	443.3	ug/L	20	Standard
	Al	27	449795.7	0.8	**2.3331**	0.023	1.0	ug/L	1307	Standard
	Sc	45	35930.9	1.1				ug/L	41174	Standard
	Ti	47	472.3	1.7	**1.4707**	0.057	3.8	ug/L	27	Standard
	V	51	4534.5	3.6	**0.3927**	0.010	2.6	ug/L	1434	Standard
	Cr	52	9314.9	0.9	**0.2650**	0.027	10.0	ug/L	7733	Standard
	Cr	53	2433.5	4.4	**2.1645**	0.092	4.2	ug/L	442	Standard
	Mn	55	102294.5	0.4	**14.3920**	0.341	2.4	ug/L	723	Standard
	Co	59	3018.3	3.5	**0.3929**	0.007	1.8	ug/L	217	Standard
	Ni	60	5415.6	1.7	**2.6457**	0.041	1.6	ug/L	304	Standard
	Cu	65	743.0	9.7	**0.3169**	0.044	14.0	ug/L	181	Standard
	Zn	66	3480.1	1.7	**2.8660**	0.076	2.6	ug/L	215	Standard
>	Ge	72	485745.7	2.0				ug/L	520809	Standard
	As	75	242.8	9.7	**0.2563**	0.025	9.6	ug/L	-52	Standard
	Se	82	97.2	2.1	**0.6986**	0.030	4.2	ug/L	17	Standard
	Se-1	77	117.0	14.6	**0.7818**	0.201	25.7	ug/L	56	Standard
>	Ga	71	268.3	10.3				mg/L	25	Standard
	Rb	85	4108.9	5.5				ug/L	28	Standard
	Y	89	416309.3	1.5				ug/L	447395	Standard
>	Rh	103	45.0	50.9				ug/L	15	Standard
	Mo	98	680.6	19.4	**0.2163**	0.043	19.7	ug/L	113	Standard
	Ag	107	83.7	9.0	**-0.0004**	0.001	316.0	ug/L	108	Standard
	Cd	111	203.5	6.4	**0.0922**	0.005	5.5	mg/L	3	Standard
	Cd	114	545.9	14.8	**0.1025**	0.015	14.8	ug/L	20	Standard
>	In	115	585054.4	1.7				ug/L	625728	Standard
	Sn	118	836.7	33.0	**0.0543**	0.043	80.0	ug/L	568	Standard
	Sb	123	125.9	11.8	**-0.0077**	0.003	35.5	ug/L	612	Standard
	Ba	135	12781.1	0.9	**6.2667**	0.128	2.0	ug/L	21	Standard
	Ce	140	5152.5	0.8				ug/L	245	Standard
>	Tb	159	900548.7	1.5				ug/L	950397	Standard
	Ho	165	100.0	10.0				ug/L	7	Standard
	Tl	203	107.7	11.0	**0.0117**	0.001	10.8	ug/L	15	Standard
	Tl	205	76.7	10.0	**0.0002**	0.001	348.4	ug/L	13	Standard
	Pb	206	778.4	4.5	**0.0993**	0.008	7.9	ug/L	264	Standard
	Pb	207	661.0	3.8	**0.0876**	0.005	5.2	ug/L	222	Standard
	Pb	208	2799.8	2.1	**0.0904**	0.002	2.4	ug/L	959	Standard
	U	238	156.0	3.6	**0.0199**	0.000	2.4	ug/L	9	Standard
>	Bi	209	531551.0	1.5				ug/L	552821	Standard

Sample ID: L1606106813 ~~WG574840-01~~
Report Date/Time: Friday, July 01, 2016 14:09:42
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8015.5	3.4	**10.6709**	0.401	3.8	mg/L	55	Standard
K	39	28.3	50.9	**-0.0070**	0.062	882.4	mg/L	28	Standard
Ca	43	31.7	36.5	**0.8382**	1.170	139.6	mg/L	27	Standard
Fe	54	628.6	3.1	**0.4660**	0.014	3.0	mg/L	147	Standard
Fe	57	371.7	8.1	**0.5046**	0.104	20.5	mg/L	268	Standard
> **Sc-1**	45	35930.9	1.1				mg/L	41174	Standard
Cl	35	72947.2	1.3				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	16705.9	1.9				ug/L	1950	Standard
P	31	9869.9	4.0				ug/L	21156	Standard
S	34	3002.0	2.0				ug/L	3419	Standard
Sr	88	73.3	38.8				ug/L	72	Standard
C	12	123.3	24.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	670.0	12.2				mg/L	17	Standard
Dy	164	162.7	37.8				mg/L	16	Standard
Ho-1	165	100.0	10.0				mg/L	7	Standard
Er	166	83.3	25.0				mg/L	7	Standard
I	127	64636.1	5.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.267	
As	75			
Se	82			
Se-1	77			
> Ga	71			

WG573840-01

Sample ID: L1606106813 ~~WG574840-01~~
Report Date/Time: Friday, July 01, 2016 14:09:42
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.500
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.152
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
WG573840-01			

Sample ID: L1606106813 ~~WG574840-01~~
Report Date/Time: Friday, July 01, 2016 14:09:42
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 14:10:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88849.8	2.1				ug/L	76456	Standard
	Be	9	66753.5	2.5	**51.2959**	0.926	1.8	ug/L	20	Standard
	Al	27	8854426.6	1.6	**44.5025**	0.510	1.1	ug/L	1307	Standard
	Sc	45	39063.7	3.7				ug/L	41174	Standard
	Ti	47	30764.2	0.5	**94.6692**	0.333	0.4	ug/L	27	Standard
	V	51	413476.1	0.1	**50.2774**	0.192	0.4	ug/L	1434	Standard
	Cr	52	400969.6	0.9	**48.7893**	0.334	0.7	ug/L	7733	Standard
	Cr	53	49330.2	1.0	**48.5611**	0.384	0.8	ug/L	442	Standard
	Mn	55	368164.8	0.7	**48.7020**	0.201	0.4	ug/L	723	Standard
	Co	59	403506.1	0.3	**52.8271**	0.036	0.1	ug/L	217	Standard
	Ni	60	101394.2	1.2	**48.8833**	0.523	1.1	ug/L	304	Standard
	Cu	65	100114.0	0.9	**49.1563**	0.410	0.8	ug/L	181	Standard
	Zn	66	60654.2	0.4	**49.4979**	0.106	0.2	ug/L	215	Standard
>	Ge	72	519017.5	0.3				ug/L	520809	Standard
	As	75	61466.0	0.5	**50.0055**	0.153	0.3	ug/L	-52	Standard
	Se	82	6464.5	2.4	**51.2180**	1.098	2.1	ug/L	17	Standard
	Se-1	77	4373.3	1.3	**50.6496**	0.533	1.1	ug/L	56	Standard
>	Ga	71	66.7	18.9				mg/L	25	Standard
	Rb	85	861.7	5.9				ug/L	28	Standard
	Y	89	449328.6	2.0				ug/L	447395	Standard
>	Rh	103	36.7	31.5				ug/L	15	Standard
	Mo	98	305460.5	0.7	**100.5610**	1.227	1.2	ug/L	113	Standard
	Ag	107	357889.2	0.5	**49.6167**	0.755	1.5	ug/L	108	Standard
	Cd	111	115251.7	0.3	**49.8541**	0.558	1.1	mg/L	3	Standard
	Cd	114	285891.9	1.9	**49.9459**	0.709	1.4	ug/L	20	Standard
>	In	115	628352.9	1.0				ug/L	625728	Standard
	Sn	118	322603.7	1.4	**49.8300**	0.182	0.4	ug/L	568	Standard
	Sb	123	256839.4	0.5	**49.4582**	0.316	0.6	ug/L	612	Standard
	Ba	135	105057.6	0.5	**48.0726**	0.299	0.6	ug/L	21	Standard
	Ce	140	361.7	34.4				ug/L	245	Standard
>	Tb	159	960077.3	1.9				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	452676.3	0.7	**49.9830**	0.213	0.4	ug/L	15	Standard
	Tl	205	410938.2	0.4	**51.0915**	0.351	0.7	ug/L	13	Standard
	Pb	206	286259.6	0.4	**50.0826**	0.130	0.3	ug/L	264	Standard
	Pb	207	259240.1	0.9	**49.9407**	0.356	0.7	ug/L	222	Standard
	Pb	208	1080903.3	0.1	**50.9831**	0.221	0.4	ug/L	959	Standard
	U	238	414937.8	0.7	**51.0249**	0.218	0.4	ug/L	9	Standard
>	Bi	209	557647.7	0.3				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:12:56
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4484.0	1.2	**5.4671**	0.257	4.7	mg/L	55	Standard
K	39	1023.4	3.3	**4.0066**	0.130	3.2	mg/L	28	Standard
Ca	43	43.3	53.3	**1.7517**	2.400	137.0	mg/L	27	Standard
Fe	54	6523.2	1.6	**5.2995**	0.275	5.2	mg/L	147	Standard
Fe	57	1890.1	7.4	**5.3143**	0.301	5.7	mg/L	268	Standard
Sc-1	45	39063.7	3.7				mg/L	41174	Standard
Cl	35	79213.9	1.2				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2563.6	1.5				ug/L	1950	Standard
P	31	24057.4	1.2				ug/L	21156	Standard
S	34	3523.7	3.2				ug/L	3419	Standard
Sr	88	65.0	7.7				ug/L	72	Standard
C	12	140.0	57.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	940.0	34.1				mg/L	17	Standard
Dy	164	25.2	57.6				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	7	Standard
I	127	15756.5	3.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.592		
Al	27	89.005		
Sc	45			
Ti	47	94.669		
V	51	100.555		
Cr	52	97.579		
Cr	53			
Mn	55	97.404		
Co	59	105.654		
Ni	60	97.767		
Cu	65	98.313		
Zn	66	98.996		
Ge	72		99.656	
As	75	100.011		
Se	82	102.436		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:12:56
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.561		
Ag	107	99.233		
Cd	111	99.708		
Cd	114			
In	115			100.420
Sn	118	99.660		
Sb	123	98.916		
Ba	135	96.145		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.966		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.966		
U	238	102.050		
Bi	209			100.873
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:12:56
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 14:13:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88888.4	2.2				ug/L	76456	Standard
	Be	9	38.3	52.7	**0.0094**	0.015	161.5	ug/L	20	Standard
	Al	27	2825.3	17.3	**0.0040**	0.002	53.4	ug/L	1307	Standard
	Sc	45	39005.1	1.5				ug/L	41174	Standard
	Ti	47	28.0	19.9	**0.0028**	0.016	582.3	ug/L	27	Standard
	V	51	2415.4	18.1	**0.1010**	0.058	57.8	ug/L	1434	Standard
	Cr	52	6917.2	0.7	**-0.0998**	0.014	13.7	ug/L	7733	Standard
	Cr	53	555.0	5.9	**0.1417**	0.025	17.3	ug/L	442	Standard
	Mn	55	752.7	2.2	**-0.0001**	0.003	2090.7	ug/L	723	Standard
	Co	59	252.7	11.5	**0.0041**	0.003	85.1	ug/L	217	Standard
	Ni	60	429.7	6.2	**0.0575**	0.011	18.3	ug/L	304	Standard
	Cu	65	263.0	14.8	**0.0569**	0.017	30.5	ug/L	181	Standard
	Zn	66	279.3	0.5	**0.0518**	0.003	5.0	ug/L	215	Standard
>	**Ge**	72	511815.0	1.6				ug/L	520809	Standard
	As	75	-18.1	92.8	**0.0301**	0.014	46.4	ug/L	-52	Standard
	Se	82	24.7	15.0	**0.0723**	0.029	39.9	ug/L	17	Standard
	Se-1	77	58.0	10.8	**0.0062**	0.079	1288.4	ug/L	56	Standard
>	**Ga**	71	13.3	78.1				mg/L	25	Standard
	Rb	85	38.3	7.5				ug/L	28	Standard
	Y	89	444682.5	1.8				ug/L	447395	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	598.8	12.4	**0.1734**	0.026	14.8	ug/L	113	Standard
	Ag	107	140.0	4.0	**0.0066**	0.001	12.4	ug/L	108	Standard
	Cd	111	12.3	61.1	**0.0030**	0.003	109.1	mg/L	3	Standard
	Cd	114	49.0	43.7	**0.0086**	0.004	42.9	ug/L	20	Standard
>	**In**	115	628245.6	0.7				ug/L	625728	Standard
	Sn	118	1961.8	30.2	**0.2198**	0.093	42.5	ug/L	568	Standard
	Sb	123	904.2	34.2	**0.1408**	0.061	43.0	ug/L	612	Standard
	Ba	135	57.3	10.7	**0.0083**	0.003	31.6	ug/L	21	Standard
	Ce	140	128.3	30.3				ug/L	245	Standard
>	**Tb**	159	944365.6	0.9				ug/L	950397	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	108.0	13.0	**0.0111**	0.001	13.5	ug/L	15	Standard
	Tl	205	96.7	15.8	**0.0022**	0.002	85.6	ug/L	13	Standard
	Pb	206	339.7	1.4	**0.0152**	0.001	5.3	ug/L	264	Standard
	Pb	207	305.3	7.3	**0.0122**	0.004	33.7	ug/L	222	Standard
	Pb	208	1308.0	3.7	**0.0129**	0.002	16.1	ug/L	959	Standard
	U	238	87.3	40.5	**0.0104**	0.004	41.2	ug/L	9	Standard
>	**Bi**	209	562720.5	0.3				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:16:07
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	75.0	23.1	**0.0324**	0.022	69.0	mg/L	55	Standard
K	39	33.3	45.8	**0.0031**	0.060	1894.0	mg/L	28	Standard
Ca	43	15.0	33.3	**-1.0175**	0.462	45.4	mg/L	27	Standard
Fe	54	165.7	9.2	**0.0385**	0.014	37.1	mg/L	147	Standard
Fe	57	250.0	12.0	**0.0061**	0.086	1418.1	mg/L	268	Standard
> **Sc-1**	45	39005.1	1.5				mg/L	41174	Standard
Cl	35	79585.8	1.1				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	2136.8	1.9				ug/L	1950	Standard
P	31	23918.9	4.5				ug/L	21156	Standard
S	34	3433.7	5.0				ug/L	3419	Standard
Sr	88	81.7	12.7				ug/L	72	Standard
C	12	130.0	20.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	723.4	38.9				mg/L	17	Standard
Dy	164	12.1	100.4				mg/L	16	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	11843.0	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.273	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:16:07
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.402
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.791
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:16:07
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

WG573840-04

Sample ID: L1606106815S ~~WG574840-04~~
Sample Date/Time: Friday, July 01, 2016 14:17:03
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83265.1	4.4				ug/L	76456	Standard
	Be	9	6339.7	3.7	**5.1828**	0.150	2.9	ug/L	20	Standard
	Al	27	349898.6	2.2	**1.8682**	0.063	3.4	ug/L	1307	Standard
	Sc	45	36113.0	0.7				ug/L	41174	Standard
	Ti	47	374.0	5.7	**1.1636**	0.064	5.5	ug/L	27	Standard
	V	51	40708.6	1.1	**5.1868**	0.031	0.6	ug/L	1434	Standard
	Cr	52	46718.3	0.7	**5.3127**	0.067	1.3	ug/L	7733	Standard
	Cr	53	6618.1	2.8	**6.7048**	0.239	3.6	ug/L	442	Standard
	Mn	55	114395.6	0.5	**16.3321**	0.067	0.4	ug/L	723	Standard
	Co	59	38195.1	1.8	**5.3924**	0.078	1.4	ug/L	217	Standard
	Ni	60	13663.5	1.3	**7.0078**	0.080	1.1	ug/L	304	Standard
	Cu	65	9944.3	1.7	**5.2251**	0.077	1.5	ug/L	181	Standard
	Zn	66	9492.0	1.6	**8.2445**	0.108	1.3	ug/L	215	Standard
>	Ge	72	478934.2	0.5				ug/L	520809	Standard
	As	75	6298.1	2.1	**5.5931**	0.137	2.4	ug/L	-52	Standard
	Se	82	745.3	1.6	**6.2890**	0.131	2.1	ug/L	17	Standard
	Se-1	77	565.0	3.4	**6.5031**	0.256	3.9	ug/L	56	Standard
>	Ga	71	210.0	14.9				mg/L	25	Standard
	Rb	85	3015.3	2.7				ug/L	28	Standard
	Y	89	406713.6	1.2				ug/L	447395	Standard
>	Rh	103	30.0	44.1				ug/L	15	Standard
	Mo	98	643.2	26.9	**0.2086**	0.062	29.9	ug/L	113	Standard
	Ag	107	33003.9	0.1	**5.0128**	0.031	0.6	ug/L	108	Standard
	Cd	111	11239.0	0.3	**5.3366**	0.046	0.9	mg/L	3	Standard
	Cd	114	27301.6	1.5	**5.2380**	0.071	1.4	ug/L	20	Standard
>	In	115	572178.3	0.7				ug/L	625728	Standard
	Sn	118	856.7	28.9	**0.0614**	0.042	68.6	ug/L	568	Standard
	Sb	123	23676.7	0.6	**4.9767**	0.063	1.3	ug/L	612	Standard
	Ba	135	19520.2	0.7	**9.7948**	0.108	1.1	ug/L	21	Standard
	Ce	140	4247.3	5.7				ug/L	245	Standard
>	Tb	159	879458.6	1.4				ug/L	950397	Standard
	Ho	165	76.7	30.1				ug/L	7	Standard
	Tl	203	41384.8	1.8	**4.8673**	0.052	1.1	ug/L	15	Standard
	Tl	205	37817.2	2.3	**4.9998**	0.080	1.6	ug/L	13	Standard
	Pb	206	27923.4	1.8	**5.1651**	0.060	1.2	ug/L	264	Standard
	Pb	207	24211.0	1.2	**4.9273**	0.030	0.6	ug/L	222	Standard
	Pb	208	101923.3	0.8	**5.0783**	0.055	1.1	ug/L	959	Standard
	U	238	37622.7	0.8	**4.9287**	0.050	1.0	ug/L	9	Standard
>	Bi	209	523442.8	0.7				ug/L	552821	Standard

Sample ID: L1606106815S ~~WG574840-04~~
Report Date/Time: Friday, July 01, 2016 14:19:20
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.6795**	9.828	173.1	mg/L	2	Standard
Mg	24	6323.0	5.1	**8.3634**	0.482	5.8	mg/L	55	Standard
K	39	55.0	24.1	**0.1095**	0.059	54.3	mg/L	28	Standard
Ca	43	28.3	83.4	**0.4924**	2.471	501.8	mg/L	27	Standard
Fe	54	574.3	6.7	**0.4148**	0.038	9.1	mg/L	147	Standard
Fe	57	356.7	11.3	**0.4458**	0.147	32.9	mg/L	268	Standard
> **Sc-1**	45	36113.0	0.7				mg/L	41174	Standard
Cl	35	72434.1	0.7				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	13466.0	3.1				ug/L	1950	Standard
P	31	9684.8	1.1				ug/L	21156	Standard
S	34	3162.0	7.4				ug/L	3419	Standard
Sr	88	88.3	6.5				ug/L	72	Standard
C	12	126.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	493.3	11.2				mg/L	17	Standard
Dy	164	135.8	20.6				mg/L	16	Standard
Ho-1	165	76.7	30.1				mg/L	7	Standard
Er	166	86.7	40.5				mg/L	7	Standard
I	127	53586.4	4.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.906	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.960	
As	75			
Se	82			
Se-1	77			
> Ga	71			

WG573840-04

Sample ID: L1606106815S ~~WG574840-04~~
Report Date/Time: Friday, July 01, 2016 14:19:20
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.442
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

WG573840-04

Sample ID: L1606106815S ~~WG574840-04~~
Report Date/Time: Friday, July 01, 2016 14:19:20
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

WG573840-05

Sample ID: L1606106817SD ~~WG574840-05~~
Sample Date/Time: Friday, July 01, 2016 14:20:15
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81106.5	1.7				ug/L	76456	Standard
	Be	9	6459.7	2.4	**5.4224**	0.225	4.2	ug/L	20	Standard
	Al	27	501960.4	2.3	**2.7550**	0.103	3.7	ug/L	1307	Standard
	Sc	45	36201.5	0.9				ug/L	41174	Standard
	Ti	47	1052.0	1.1	**3.4327**	0.017	0.5	ug/L	27	Standard
	V	51	46082.9	1.9	**5.9078**	0.087	1.5	ug/L	1434	Standard
	Cr	52	58550.9	1.6	**6.9166**	0.078	1.1	ug/L	7733	Standard
	Cr	53	8594.1	3.3	**8.8449**	0.268	3.0	ug/L	442	Standard
	Mn	55	145669.8	2.3	**20.8582**	0.361	1.7	ug/L	723	Standard
	Co	59	40340.0	2.3	**5.7063**	0.097	1.7	ug/L	217	Standard
	Ni	60	15750.9	2.0	**8.1157**	0.154	1.9	ug/L	304	Standard
	Cu	65	10601.7	1.3	**5.5848**	0.040	0.7	ug/L	181	Standard
	Zn	66	10298.5	1.1	**8.9757**	0.069	0.8	ug/L	215	Standard
>	Ge	72	478135.2	0.6				ug/L	520809	Standard
	As	75	6490.3	1.3	**5.7717**	0.072	1.2	ug/L	-52	Standard
	Se	82	783.8	3.6	**6.6313**	0.232	3.5	ug/L	17	Standard
	Se-1	77	575.7	8.4	**6.6484**	0.573	8.6	ug/L	56	Standard
>	Ga	71	653.3	4.4				mg/L	25	Standard
	Rb	85	7186.7	2.7				ug/L	28	Standard
	Y	89	409741.2	2.1				ug/L	447395	Standard
>	Rh	103	31.7	18.2				ug/L	15	Standard
	Mo	98	998.2	56.5	**0.3366**	0.205	60.9	ug/L	113	Standard
	Ag	107	33931.3	1.3	**5.1521**	0.034	0.7	ug/L	108	Standard
	Cd	111	11629.2	3.5	**5.5186**	0.109	2.0	mg/L	3	Standard
	Cd	114	28711.5	1.0	**5.5071**	0.084	1.5	ug/L	20	Standard
>	In	115	572419.1	1.9				ug/L	625728	Standard
	Sn	118	771.7	35.0	**0.0463**	0.043	93.9	ug/L	568	Standard
	Sb	123	22618.6	1.5	**4.7509**	0.051	1.1	ug/L	612	Standard
	Ba	135	24808.3	0.6	**12.4494**	0.172	1.4	ug/L	21	Standard
	Ce	140	9864.9	1.2				ug/L	245	Standard
>	Tb	159	882133.3	1.2				ug/L	950397	Standard
	Ho	165	175.0	13.1				ug/L	7	Standard
	Tl	203	43094.9	1.3	**5.0490**	0.012	0.2	ug/L	15	Standard
	Tl	205	38782.9	1.4	**5.1088**	0.109	2.1	ug/L	13	Standard
	Pb	206	28842.8	0.9	**5.3164**	0.076	1.4	ug/L	264	Standard
	Pb	207	24928.5	1.0	**5.0552**	0.065	1.3	ug/L	222	Standard
	Pb	208	104803.4	1.3	**5.2025**	0.040	0.8	ug/L	959	Standard
	U	238	38305.0	0.8	**4.9987**	0.028	0.6	ug/L	9	Standard
>	Bi	209	525482.1	1.1				ug/L	552821	Standard

Sample ID: L1606106817SD ~~WG574840-05~~
Report Date/Time: Friday, July 01, 2016 14:22:32
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**11.2046**	19.398	173.1	mg/L	2	Standard
Mg	24	8434.0	5.4	**11.1454**	0.594	5.3	mg/L	55	Standard
K	39	58.3	13.1	**0.1234**	0.036	28.8	mg/L	28	Standard
Ca	43	20.0	75.0	**-0.3837**	1.563	407.4	mg/L	27	Standard
Fe	54	968.4	3.8	**0.7651**	0.040	5.3	mg/L	147	Standard
Fe	57	503.3	13.7	**0.9549**	0.241	25.2	mg/L	268	Standard
> **Sc-1**	45	36201.5	0.9				mg/L	41174	Standard
Cl	35	71982.6	1.3				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18638.1	5.1				ug/L	1950	Standard
P	31	10710.5	1.0				ug/L	21156	Standard
S	34	3345.4	0.8				ug/L	3419	Standard
Sr	88	73.3	27.6				ug/L	72	Standard
C	12	120.0	57.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	436.7	13.4				mg/L	17	Standard
Dy	164	280.4	13.3				mg/L	16	Standard
Ho-1	165	175.0	13.1				mg/L	7	Standard
Er	166	200.0	13.2				mg/L	7	Standard
I	127	66018.7	4.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.083	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.806	
As	75			
Se	82			
Se-1	77			
> Ga	71	WG573840-05		

Sample ID: L1606106817SD ~~WG574840-05~~
Report Date/Time: Friday, July 01, 2016 14:22:32
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.481
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.055
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

WG573840-05

Sample ID: L1606106817SD ~~**WG574840-05**~~
Report Date/Time: Friday, July 01, 2016 14:22:32
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106502
Sample Date/Time: Friday, July 01, 2016 14:23:26
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80066.0	1.1				ug/L	76456	Standard
	Be	9	30.0	115.5	**0.0056**	0.029	520.4	ug/L	20	Standard
	Al	27	180778.3	4.1	**0.9982**	0.041	4.1	ug/L	1307	Standard
	Sc	45	36360.3	2.0				ug/L	41174	Standard
	Ti	47	27.3	18.4	**0.0052**	0.016	312.3	ug/L	27	Standard
	V	51	1588.1	11.5	**0.0081**	0.023	286.5	ug/L	1434	Standard
	Cr	52	81053.1	3.8	**9.7557**	0.368	3.8	ug/L	7733	Standard
	Cr	53	9971.6	2.0	**10.1419**	0.234	2.3	ug/L	442	Standard
	Mn	55	13954.4	0.7	**1.8714**	0.017	0.9	ug/L	723	Standard
	Co	59	649.0	8.3	**0.0612**	0.008	12.7	ug/L	217	Standard
	Ni	60	1447.4	0.9	**0.5934**	0.004	0.6	ug/L	304	Standard
	Cu	65	486.7	11.5	**0.1810**	0.028	15.4	ug/L	181	Standard
	Zn	66	1353.4	2.5	**1.0020**	0.034	3.4	ug/L	215	Standard
>	Ge	72	486676.1	0.5				ug/L	520809	Standard
	As	75	-22.0	245.7	**0.0260**	0.047	179.9	ug/L	-52	Standard
	Se	82	18.1	72.4	**0.0263**	0.110	418.7	ug/L	17	Standard
	Se-1	77	60.7	2.5	**0.0749**	0.022	28.9	ug/L	56	Standard
>	Ga	71	25.0	20.0				mg/L	25	Standard
	Rb	85	138.3	26.6				ug/L	28	Standard
	Y	89	406376.2	1.0				ug/L	447395	Standard
>	Rh	103	16.7	69.3				ug/L	15	Standard
	Mo	98	1770.7	17.5	**0.6016**	0.111	18.5	ug/L	113	Standard
	Ag	107	129.0	37.0	**0.0063**	0.007	112.2	ug/L	108	Standard
	Cd	111	16.9	116.6	**0.0055**	0.009	166.8	mg/L	3	Standard
	Cd	114	59.1	100.8	**0.0111**	0.011	100.7	ug/L	20	Standard
>	In	115	585828.3	0.2				ug/L	625728	Standard
	Sn	118	591.7	24.5	**0.0140**	0.024	173.1	ug/L	568	Standard
	Sb	123	173.5	26.1	**0.0021**	0.009	438.7	ug/L	612	Standard
	Ba	135	254.0	14.4	**0.1068**	0.018	16.8	ug/L	21	Standard
	Ce	140	36.7	55.1				ug/L	245	Standard
>	Tb	159	883738.0	0.6				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	137.0	50.5	**0.0151**	0.008	51.9	ug/L	15	Standard
	Tl	205	130.0	90.1	**0.0071**	0.015	211.0	ug/L	13	Standard
	Pb	206	304.3	19.3	**0.0122**	0.010	84.1	ug/L	264	Standard
	Pb	207	261.0	10.0	**0.0068**	0.005	70.4	ug/L	222	Standard
	Pb	208	1149.7	15.1	**0.0087**	0.008	92.0	ug/L	959	Standard
	U	238	112.0	113.8	**0.0141**	0.016	115.0	ug/L	9	Standard
>	Bi	209	530616.0	1.0				ug/L	552821	Standard

Sample ID: L1606106502
Report Date/Time: Friday, July 01, 2016 14:25:43
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1146.7	22.2	**1.4533**	0.307	21.1	mg/L	55	Standard
K	39	28.3	44.4	**-0.0074**	0.057	769.4	mg/L	28	Standard
Ca	43	26.7	54.1	**0.3104**	1.522	490.2	mg/L	27	Standard
Fe	54	101.6	8.0	**-0.0086**	0.008	94.5	mg/L	147	Standard
Fe	57	255.0	17.0	**0.0854**	0.166	194.4	mg/L	268	Standard
> **Sc-1**	45	36360.3	2.0				mg/L	41174	Standard
Cl	35	73712.2	1.2				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2090.1	10.3				ug/L	1950	Standard
P	31	7825.4	0.6				ug/L	21156	Standard
S	34	3022.0	4.6				ug/L	3419	Standard
Sr	88	71.7	8.1				ug/L	72	Standard
C	12	96.7	23.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1313.4	4.6				mg/L	17	Standard
Dy	164	22.1	25.6				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	7	Standard
I	127	28513.5	2.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.722	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.446	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106502
Report Date/Time: Friday, July 01, 2016 14:25:43
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.623
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.983
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106503
Sample Date/Time: Friday, July 01, 2016 14:26:37
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79132.8	1.3				ug/L	76456	Standard
	Be	9	20.0	90.1	**-0.0027**	0.015	566.6	ug/L	20	Standard
	Al	27	183681.8	1.0	**1.0266**	0.021	2.0	ug/L	1307	Standard
	Sc	45	35984.4	2.9				ug/L	41174	Standard
	Ti	47	20.7	12.2	**-0.0167**	0.009	53.6	ug/L	27	Standard
	V	51	1554.3	4.0	**0.0034**	0.007	204.4	ug/L	1434	Standard
	Cr	52	22825.5	4.8	**2.0452**	0.152	7.4	ug/L	7733	Standard
	Cr	53	2823.6	3.2	**2.5679**	0.111	4.3	ug/L	442	Standard
	Mn	55	25588.9	0.9	**3.5097**	0.037	1.1	ug/L	723	Standard
	Co	59	286.3	4.8	**0.0105**	0.002	16.3	ug/L	217	Standard
	Ni	60	1267.4	3.9	**0.4993**	0.024	4.9	ug/L	304	Standard
	Cu	65	240.7	4.8	**0.0519**	0.005	9.1	ug/L	181	Standard
	Zn	66	1398.4	2.4	**1.0389**	0.016	1.6	ug/L	215	Standard
>	**Ge**	72	487565.1	1.1				ug/L	520809	Standard
	As	75	-30.6	81.1	**0.0187**	0.022	115.7	ug/L	-52	Standard
	Se	82	20.5	30.4	**0.0466**	0.051	110.3	ug/L	17	Standard
	Se-1	77	71.3	18.1	**0.2061**	0.156	75.5	ug/L	56	Standard
>	**Ga**	71	30.0	33.3				mg/L	25	Standard
	Rb	85	90.0	53.6				ug/L	28	Standard
	Y	89	411794.3	0.5				ug/L	447395	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	702.5	37.7	**0.2235**	0.093	41.6	ug/L	113	Standard
	Ag	107	100.7	6.4	**0.0021**	0.001	44.2	ug/L	108	Standard
	Cd	111	3.1	64.7	**-0.0009**	0.001	98.3	mg/L	3	Standard
	Cd	114	10.2	126.7	**0.0019**	0.002	125.3	ug/L	20	Standard
>	**In**	115	587395.6	0.4				ug/L	625728	Standard
	Sn	118	551.7	28.8	**0.0071**	0.026	370.3	ug/L	568	Standard
	Sb	123	119.5	11.5	**-0.0091**	0.003	31.3	ug/L	612	Standard
	Ba	135	603.3	5.0	**0.2775**	0.015	5.3	ug/L	21	Standard
	Ce	140	43.3	40.5				ug/L	245	Standard
>	**Tb**	159	891615.0	1.6				ug/L	950397	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	80.7	10.3	**0.0085**	0.001	11.1	ug/L	15	Standard
	Tl	205	53.3	57.3	**-0.0028**	0.004	140.3	ug/L	13	Standard
	Pb	206	274.3	3.4	**0.0064**	0.002	26.4	ug/L	264	Standard
	Pb	207	227.0	9.3	**-0.0004**	0.004	980.7	ug/L	222	Standard
	Pb	208	977.7	5.7	**-0.0001**	0.003	2332.0	ug/L	959	Standard
	U	238	23.7	16.0	**0.0028**	0.000	17.0	ug/L	9	Standard
>	**Bi**	209	534397.5	0.8				ug/L	552821	Standard

Sample ID: L1606106503
Report Date/Time: Friday, July 01, 2016 14:28:54
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1421.7	2.1	**1.8418**	0.090	4.9	mg/L	55	Standard
K	39	28.3	40.8	**-0.0067**	0.051	756.8	mg/L	28	Standard
Ca	43	21.7	35.3	**-0.2051**	0.778	379.2	mg/L	27	Standard
Fe	54	96.5	16.4	**-0.0124**	0.012	96.4	mg/L	147	Standard
Fe	57	246.7	7.7	**0.0625**	0.044	71.0	mg/L	268	Standard
> **Sc-1**	45	35984.4	2.9				mg/L	41174	Standard
Cl	35	75787.1	1.4				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	1940.1	11.4				ug/L	1950	Standard
P	31	7708.6	3.3				ug/L	21156	Standard
S	34	3283.7	7.0				ug/L	3419	Standard
Sr	88	81.7	3.5				ug/L	72	Standard
C	12	93.3	6.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	810.0	7.7				mg/L	17	Standard
Dy	164	19.4	51.7				mg/L	16	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	28069.3	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.617	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106503
Report Date/Time: Friday, July 01, 2016 14:28:54
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.874
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.667
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106504
Sample Date/Time: Friday, July 01, 2016 14:29:49
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79397.5	1.7				ug/L	76456	Standard
	Be	9	16.7	45.8	**-0.0055**	0.007	119.4	ug/L	20	Standard
	Al	27	291025.7	1.9	**1.6271**	0.036	2.2	ug/L	1307	Standard
	Sc	45	36009.4	0.8				ug/L	41174	Standard
	Ti	47	26.7	15.2	**0.0019**	0.013	690.9	ug/L	27	Standard
	V	51	1704.2	12.5	**0.0204**	0.028	139.1	ug/L	1434	Standard
	Cr	52	30766.6	4.8	**3.0469**	0.189	6.2	ug/L	7733	Standard
	Cr	53	3653.8	5.4	**3.4005**	0.215	6.3	ug/L	442	Standard
	Mn	55	17036.6	2.3	**2.2748**	0.050	2.2	ug/L	723	Standard
	Co	59	958.7	6.2	**0.1027**	0.008	8.2	ug/L	217	Standard
	Ni	60	2008.1	1.5	**0.8687**	0.014	1.6	ug/L	304	Standard
	Cu	65	251.7	3.4	**0.0561**	0.005	9.3	ug/L	181	Standard
	Zn	66	1482.7	0.2	**1.0976**	0.010	0.9	ug/L	215	Standard
>	Ge	72	493269.0	0.6				ug/L	520809	Standard
	As	75	-44.8	49.5	**0.0068**	0.019	282.1	ug/L	-52	Standard
	Se	82	18.7	10.9	**0.0294**	0.017	58.4	ug/L	17	Standard
	Se-1	77	64.3	6.3	**0.1099**	0.049	45.0	ug/L	56	Standard
>	Ga	71	26.7	43.3				mg/L	25	Standard
	Rb	85	2356.8	1.6				ug/L	28	Standard
	Y	89	413880.0	0.1				ug/L	447395	Standard
>	Rh	103	25.0	0.0				ug/L	15	Standard
	Mo	98	624.4	36.8	**0.1955**	0.081	41.4	ug/L	113	Standard
	Ag	107	92.7	17.9	**0.0009**	0.003	292.7	ug/L	108	Standard
	Cd	111	11.5	37.2	**0.0030**	0.002	67.8	mg/L	3	Standard
	Cd	114	45.1	23.2	**0.0084**	0.002	22.0	ug/L	20	Standard
>	In	115	588539.3	1.1				ug/L	625728	Standard
	Sn	118	616.7	20.1	**0.0176**	0.020	114.5	ug/L	568	Standard
	Sb	123	351.6	3.8	**0.0386**	0.003	9.0	ug/L	612	Standard
	Ba	135	231.7	10.0	**0.0953**	0.011	11.7	ug/L	21	Standard
	Ce	140	43.3	88.1				ug/L	245	Standard
>	Tb	159	885756.3	0.8				ug/L	950397	Standard
	Ho	165	16.7	34.6				ug/L	7	Standard
	Tl	203	73.3	2.8	**0.0077**	0.000	3.3	ug/L	15	Standard
	Tl	205	65.0	13.3	**-0.0013**	0.001	87.3	ug/L	13	Standard
	Pb	206	322.7	5.3	**0.0151**	0.003	19.7	ug/L	264	Standard
	Pb	207	256.3	3.1	**0.0054**	0.001	26.7	ug/L	222	Standard
	Pb	208	1164.0	5.3	**0.0090**	0.003	33.0	ug/L	959	Standard
	U	238	19.0	34.5	**0.0022**	0.001	38.3	ug/L	9	Standard
>	Bi	209	534942.7	0.4				ug/L	552821	Standard

Sample ID: L1606106504
Report Date/Time: Friday, July 01, 2016 14:32:06
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**11.3879**	9.859	86.6	mg/L	2	Standard
Mg	24	1060.0	6.8	**1.3559**	0.099	7.3	mg/L	55	Standard
K	39	55.0	32.8	**0.1095**	0.077	70.3	mg/L	28	Standard
Ca	43	21.7	48.0	**-0.2024**	1.077	531.9	mg/L	27	Standard
Fe	54	98.8	37.3	**-0.0103**	0.032	312.2	mg/L	147	Standard
Fe	57	268.3	7.1	**0.1387**	0.065	46.8	mg/L	268	Standard
> **Sc-1**	45	36009.4	0.8				mg/L	41174	Standard
Cl	35	77523.2	0.3				ug/L	69550	Standard
Kr	83	2.7	114.6				ug/L	1	Standard
Br	81	2113.5	9.3				ug/L	1950	Standard
P	31	7710.3	3.6				ug/L	21156	Standard
S	34	3393.7	3.0				ug/L	3419	Standard
Sr	88	65.0	23.1				ug/L	72	Standard
C	12	106.7	28.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	623.3	9.8				mg/L	17	Standard
Dy	164	15.7	70.9				mg/L	16	Standard
Ho-1	165	16.7	34.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	28194.6	4.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.848	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.712	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106504
Report Date/Time: Friday, July 01, 2016 14:32:06
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.057
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.766
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 14:33:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84479.9	0.6				ug/L	76456	Standard
	Be	9	65431.0	1.7	52.8839	1.234	2.3	ug/L	20	Standard
	Al	27	9107293.6	1.3	48.1391	0.761	1.6	ug/L	1307	Standard
	Sc	45	41221.0	1.1				ug/L	41174	Standard
	Ti	47	32532.9	2.1	96.4064	2.590	2.7	ug/L	27	Standard
	V	51	430170.6	0.9	50.3648	0.150	0.3	ug/L	1434	Standard
	Cr	52	419842.9	0.7	49.1999	0.629	1.3	ug/L	7733	Standard
	Cr	53	51666.3	1.8	48.9792	1.063	2.2	ug/L	442	Standard
	Mn	55	386049.1	1.6	49.1731	0.734	1.5	ug/L	723	Standard
	Co	59	420011.6	1.0	52.9472	0.520	1.0	ug/L	217	Standard
	Ni	60	107142.5	0.5	49.7412	0.431	0.9	ug/L	304	Standard
	Cu	65	106376.5	0.2	50.2954	0.371	0.7	ug/L	181	Standard
	Zn	66	63768.9	0.5	50.1114	0.441	0.9	ug/L	215	Standard
>	Ge	72	539029.9	0.6				ug/L	520809	Standard
	As	75	63720.4	0.2	49.9158	0.187	0.4	ug/L	-52	Standard
	Se	82	6616.1	1.4	50.4720	0.409	0.8	ug/L	17	Standard
	Se-1	77	4538.7	1.1	50.6161	0.744	1.5	ug/L	56	Standard
>	Ga	71	41.7	36.7				mg/L	25	Standard
	Rb	85	886.7	6.2				ug/L	28	Standard
	Y	89	466133.9	1.1				ug/L	447395	Standard
>	Rh	103	45.0	48.4				ug/L	15	Standard
	Mo	98	316079.0	1.2	100.9623	1.590	1.6	ug/L	113	Standard
	Ag	107	372581.7	1.1	50.1169	0.847	1.7	ug/L	108	Standard
	Cd	111	118352.7	0.1	49.6717	0.324	0.7	mg/L	3	Standard
	Cd	114	294028.3	2.4	49.8404	1.066	2.1	ug/L	20	Standard
>	In	115	647595.9	0.6				ug/L	625728	Standard
	Sn	118	333519.2	0.4	49.9888	0.512	1.0	ug/L	568	Standard
	Sb	123	262566.9	2.8	49.0609	1.554	3.2	ug/L	612	Standard
	Ba	135	108230.2	0.7	48.0518	0.424	0.9	ug/L	21	Standard
	Ce	140	185.0	15.0				ug/L	245	Standard
>	Tb	159	963986.1	0.6				ug/L	950397	Standard
	Ho	165	15.0	115.5				ug/L	7	Standard
	Tl	203	457975.8	1.0	50.2126	0.379	0.8	ug/L	15	Standard
	Tl	205	420042.8	0.3	51.8564	0.350	0.7	ug/L	13	Standard
	Pb	206	291174.6	0.8	50.5849	0.394	0.8	ug/L	264	Standard
	Pb	207	263877.7	0.4	50.4775	0.161	0.3	ug/L	222	Standard
	Pb	208	1113044.3	0.4	52.1318	0.466	0.9	ug/L	959	Standard
	U	238	419550.2	0.5	51.2295	0.115	0.2	ug/L	9	Standard
>	Bi	209	561599.8	0.5				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:35:18
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4695.7	3.2	**5.4185**	0.141	2.6	mg/L	55	Standard
K	39	1080.0	1.9	**4.0059**	0.102	2.5	mg/L	28	Standard
Ca	43	58.3	9.9	**2.8430**	0.540	19.0	mg/L	27	Standard
Fe	54	6681.6	1.6	**5.1353**	0.107	2.1	mg/L	147	Standard
Fe	57	1935.1	3.8	**5.1339**	0.159	3.1	mg/L	268	Standard
> **Sc-1**	45	41221.0	1.1				mg/L	41174	Standard
Cl	35	86136.9	2.1				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2180.2	1.6				ug/L	1950	Standard
P	31	25733.5	2.6				ug/L	21156	Standard
S	34	4153.9	3.6				ug/L	3419	Standard
Sr	88	75.0	13.3				ug/L	72	Standard
C	12	106.7	28.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	720.0	29.7				mg/L	17	Standard
Dy	164	22.7	24.3				mg/L	16	Standard
Ho-1	165	15.0	115.5				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	15117.5	1.0				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	105.768		
	Al	27	96.278		
	Sc	45			
	Ti	47	96.406		
	V	51	100.730		
	Cr	52	98.400		
	Cr	53			
	Mn	55	98.346		
	Co	59	105.894		
	Ni	60	99.482		
	Cu	65	100.591		
	Zn	66	100.223		
>	Ge	72		103.499	
	As	75	99.832		
	Se	82	100.944		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:35:18
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	100.962		
Ag	107	100.234		
Cd	111	99.343		
Cd	114			
> In	115			103.495
Sn	118	99.978		
Sb	123	98.122		
Ba	135	96.104		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.425		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.264		
U	238	102.459		
> Bi	209			101.588
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:35:18
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 14:36:13
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84748.1	2.2				ug/L	76456	Standard
	Be	9	28.3	27.0	**0.0029**	0.006	204.3	ug/L	20	Standard
	Al	27	2800.3	34.3	**0.0045**	0.005	111.4	ug/L	1307	Standard
	Sc	45	41077.3	1.7				ug/L	41174	Standard
	Ti	47	26.0	26.6	**-0.0072**	0.021	288.8	ug/L	27	Standard
	V	51	1826.7	11.6	**0.0166**	0.026	154.1	ug/L	1434	Standard
	Cr	52	7089.7	2.6	**-0.1215**	0.019	15.7	ug/L	7733	Standard
	Cr	53	518.3	19.4	**0.0795**	0.095	119.0	ug/L	442	Standard
	Mn	55	744.0	2.7	**-0.0062**	0.002	40.3	ug/L	723	Standard
	Co	59	250.7	12.3	**0.0022**	0.004	175.9	ug/L	217	Standard
	Ni	60	366.0	4.1	**0.0177**	0.007	39.1	ug/L	304	Standard
	Cu	65	215.0	5.8	**0.0279**	0.006	21.4	ug/L	181	Standard
	Zn	66	258.3	5.8	**0.0239**	0.012	50.5	ug/L	215	Standard
>	**Ge**	72	537853.0	0.3				ug/L	520809	Standard
	As	75	-50.7	30.0	**0.0054**	0.012	222.4	ug/L	-52	Standard
	Se	82	23.4	28.3	**0.0526**	0.050	95.5	ug/L	17	Standard
	Se-1	77	56.3	13.3	**-0.0464**	0.086	185.9	ug/L	56	Standard
>	**Ga**	71	38.3	66.9				mg/L	25	Standard
	Rb	85	33.3	67.6				ug/L	28	Standard
	Y	89	471394.3	0.7				ug/L	447395	Standard
>	**Rh**	103	18.3	63.0				ug/L	15	Standard
	Mo	98	398.2	17.4	**0.1019**	0.023	22.4	ug/L	113	Standard
	Ag	107	141.3	16.6	**0.0060**	0.003	53.5	ug/L	108	Standard
	Cd	111	18.0	20.7	**0.0051**	0.002	31.3	mg/L	3	Standard
	Cd	114	51.0	12.7	**0.0086**	0.001	12.0	ug/L	20	Standard
>	**In**	115	655049.2	0.7				ug/L	625728	Standard
	Sn	118	1826.8	33.6	**0.1873**	0.093	49.6	ug/L	568	Standard
	Sb	123	1005.7	35.1	**0.1525**	0.066	43.6	ug/L	612	Standard
	Ba	135	50.7	11.6	**0.0043**	0.003	59.6	ug/L	21	Standard
	Ce	140	55.0	18.2				ug/L	245	Standard
>	**Tb**	159	963692.0	2.2				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	91.3	32.5	**0.0091**	0.003	36.2	ug/L	15	Standard
	Tl	205	100.0	20.0	**0.0024**	0.003	107.2	ug/L	13	Standard
	Pb	206	358.7	4.9	**0.0174**	0.003	18.6	ug/L	264	Standard
	Pb	207	299.3	9.7	**0.0101**	0.006	57.2	ug/L	222	Standard
	Pb	208	1241.0	6.1	**0.0088**	0.004	42.7	ug/L	959	Standard
	U	238	67.3	26.7	**0.0078**	0.002	28.5	ug/L	9	Standard
>	**Bi**	209	572676.0	1.1				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:38:30
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	27.6	**0.0080**	0.018	227.2	mg/L	55	Standard
K	39	31.7	24.1	**-0.0097**	0.028	287.6	mg/L	28	Standard
Ca	43	30.0	60.1	**0.2757**	1.623	588.8	mg/L	27	Standard
Fe	54	132.3	15.7	**0.0051**	0.015	299.1	mg/L	147	Standard
Fe	57	226.7	3.4	**-0.1060**	0.019	17.5	mg/L	268	Standard
> **Sc-1**	45	41077.3	1.7				mg/L	41174	Standard
Cl	35	85337.0	1.5				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	2146.8	7.1				ug/L	1950	Standard
P	31	24845.4	3.5				ug/L	21156	Standard
S	34	4015.5	0.7				ug/L	3419	Standard
Sr	88	58.3	27.6				ug/L	72	Standard
C	12	116.7	9.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	523.3	24.3				mg/L	17	Standard
Dy	164	6.0	187.1				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	11185.8	0.6				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.273	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:38:30
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.686
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.592
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:38:30
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, July 01, 2016 14:39:26
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82750.5	2.9				ug/L	76456	Standard
	Be	9	285.0	17.8	**0.2151**	0.039	18.0	ug/L	20	Standard
	Al	27	1818.4	16.8	**-0.0004**	0.002	418.1	ug/L	1307	Standard
	Sc	45	39031.9	2.5				ug/L	41174	Standard
	Ti	47	23.0	28.5	**-0.0130**	0.020	154.9	ug/L	27	Standard
	V	51	4531.3	0.6	**0.3599**	0.004	1.1	ug/L	1434	Standard
	Cr	52	13097.3	0.4	**0.6705**	0.008	1.2	ug/L	7733	Standard
	Cr	53	1321.7	4.4	**0.9081**	0.059	6.5	ug/L	442	Standard
	Mn	55	3958.5	1.2	**0.4284**	0.005	1.2	ug/L	723	Standard
	Co	59	3194.7	3.0	**0.3931**	0.014	3.5	ug/L	217	Standard
	Ni	60	3472.1	3.0	**1.5421**	0.046	3.0	ug/L	304	Standard
	Cu	65	1723.1	3.0	**0.7813**	0.023	3.0	ug/L	181	Standard
	Zn	66	8776.2	0.9	**7.0769**	0.052	0.7	ug/L	215	Standard
>	**Ge**	72	514072.5	0.3				ug/L	520809	Standard
	As	75	450.1	8.8	**0.4145**	0.032	7.7	ug/L	-52	Standard
	Se	82	70.4	7.3	**0.4383**	0.043	9.7	ug/L	17	Standard
	Se-1	77	94.3	4.8	**0.4334**	0.056	12.9	ug/L	56	Standard
>	**Ga**	71	21.7	35.3				mg/L	25	Standard
	Rb	85	21.7	53.3				ug/L	28	Standard
	Y	89	438183.2	1.3				ug/L	447395	Standard
>	**Rh**	103	16.7	105.4				ug/L	15	Standard
	Mo	98	167.4	18.5	**0.0314**	0.011	34.8	ug/L	113	Standard
	Ag	107	2856.9	3.2	**0.3846**	0.011	2.9	ug/L	108	Standard
	Cd	111	543.4	2.2	**0.2335**	0.007	3.2	mg/L	3	Standard
	Cd	114	1301.0	2.4	**0.2280**	0.003	1.3	ug/L	20	Standard
>	**In**	115	626288.8	1.2				ug/L	625728	Standard
	Sn	118	1146.7	25.4	**0.0941**	0.047	50.1	ug/L	568	Standard
	Sb	123	2055.0	1.9	**0.3637**	0.012	3.3	ug/L	612	Standard
	Ba	135	1475.7	2.5	**0.6597**	0.010	1.5	ug/L	21	Standard
	Ce	140	10.0	50.0				ug/L	245	Standard
>	**Tb**	159	937003.8	0.8				ug/L	950397	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	742.4	3.9	**0.0813**	0.003	3.9	ug/L	15	Standard
	Tl	205	635.0	7.6	**0.0693**	0.006	9.0	ug/L	13	Standard
	Pb	206	1423.4	1.3	**0.2057**	0.004	1.8	ug/L	264	Standard
	Pb	207	1222.7	2.7	**0.1898**	0.007	3.5	ug/L	222	Standard
	Pb	208	5238.4	1.7	**0.1992**	0.005	2.7	ug/L	959	Standard
	U	238	3209.7	2.1	**0.3947**	0.010	2.6	ug/L	9	Standard
>	**Bi**	209	557268.2	0.5				ug/L	552821	Standard

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 14:41:43
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.3145**	9.196	173.0	mg/L	2	Standard
Mg	24	45.0	11.1	**-0.0048**	0.005	106.0	mg/L	55	Standard
K	39	16.7	45.8	**-0.0643**	0.029	45.1	mg/L	28	Standard
Ca	43	28.3	40.8	**0.2822**	1.159	410.5	mg/L	27	Standard
Fe	54	125.5	27.9	**0.0049**	0.029	586.2	mg/L	147	Standard
Fe	57	236.7	18.2	**-0.0367**	0.142	386.3	mg/L	268	Standard
> **Sc-1**	45	39031.9	2.5				mg/L	41174	Standard
Cl	35	80966.5	1.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2093.5	4.3				ug/L	1950	Standard
P	31	17104.7	1.6				ug/L	21156	Standard
S	34	3810.5	3.5				ug/L	3419	Standard
Sr	88	53.3	51.6				ug/L	72	Standard
C	12	146.7	52.1				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	223.3	40.6				mg/L	17	Standard
Dy	164	5.7	102.5				mg/L	16	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	1610.1	16.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	107.542		
Al	27			
Sc	45			
Ti	47			
V	51	89.972		
Cr	52	83.818		
Cr	53			
Mn	55	85.687		
Co	59	98.272		
Ni	60	96.381		
Cu	65	97.667		
Zn	66	113.230		
> Ge	72		98.706	
As	75	103.620		
Se	82	109.583		
Se-1	77			
> Ga	71			

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 14:41:43
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.144		
Cd	111	97.300		
Cd	114			
> In	115			100.090
Sn	118			
Sb	123	90.914		
Ba	135	87.967		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.600		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.596		
U	238	98.687		
> Bi	209			100.804
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 14:41:43
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606136001
Sample Date/Time: Friday, July 01, 2016 15:11:12
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	102032.6	2.7				ug/L	76456	Standard
	Be	9	25.0	34.6	**-0.0031**	0.006	188.0	ug/L	20	Standard
	Al	27	55269386.4	1.6	**242.0065**	6.248	2.6	ug/L	1307	Standard
	Sc	45	42982.6	3.7				ug/L	41174	Standard
	Ti	47	671.0	5.7	**1.9148**	0.128	6.7	ug/L	27	Standard
	V	51	4267.5	6.4	**0.3052**	0.033	10.8	ug/L	1434	Standard
	Cr	52	10596.7	1.5	**0.3014**	0.025	8.3	ug/L	7733	Standard
	Cr	53	1925.1	6.6	**1.4310**	0.107	7.5	ug/L	442	Standard
	Mn	55	5430678.9	1.0	**696.1378**	12.327	1.8	ug/L	723	Standard
	Co	59	2218.2	2.4	**0.2516**	0.009	3.5	ug/L	217	Standard
	Ni	60	4312.3	3.2	**1.8641**	0.080	4.3	ug/L	304	Standard
	Cu	65	798.0	4.6	**0.3054**	0.016	5.3	ug/L	181	Standard
	Zn	66	2494.5	0.6	**1.7957**	0.026	1.4	ug/L	215	Standard
>	Ge	72	536693.6	0.8				ug/L	520809	Standard
	As	75	4266.7	1.8	**3.3992**	0.072	2.1	ug/L	-52	Standard
	Se	82	495.3	5.2	**3.6793**	0.225	6.1	ug/L	17	Standard
	Se-1	77	148.7	2.7	**1.0032**	0.054	5.4	ug/L	56	Standard
>	Ga	71	150.0	23.3				mg/L	25	Standard
	Rb	85	52107.8	0.6				ug/L	28	Standard
	Y	89	450964.8	1.0				ug/L	447395	Standard
>	Rh	103	411.7	6.2				ug/L	15	Standard
	Mo	98	1387.0	5.2	**0.4385**	0.030	6.9	ug/L	113	Standard
	Ag	107	200.3	32.4	**0.0153**	0.009	61.2	ug/L	108	Standard
	Cd	111	14.4	26.9	**0.0039**	0.002	40.7	mg/L	3	Standard
	Cd	114	17.5	189.3	**0.0031**	0.006	189.4	ug/L	20	Standard
>	In	115	620931.3	1.4				ug/L	625728	Standard
	Sn	118	1585.1	13.6	**0.1643**	0.037	22.3	ug/L	568	Standard
	Sb	123	1484.9	28.1	**0.2566**	0.085	33.0	ug/L	612	Standard
	Ba	135	185434.9	0.7	**85.8822**	0.643	0.7	ug/L	21	Standard
	Ce	140	220.0	14.2				ug/L	245	Standard
>	Tb	159	948217.7	1.1				ug/L	950397	Standard
	Ho	165	31.7	9.1				ug/L	7	Standard
	Tl	203	125.3	17.6	**0.0138**	0.003	19.7	ug/L	15	Standard
	Tl	205	88.3	14.2	**0.0018**	0.002	100.1	ug/L	13	Standard
	Pb	206	400.7	10.7	**0.0298**	0.009	29.3	ug/L	264	Standard
	Pb	207	353.0	2.8	**0.0252**	0.002	8.1	ug/L	222	Standard
	Pb	208	1381.0	1.8	**0.0200**	0.002	10.5	ug/L	959	Standard
	U	238	1004.0	3.9	**0.1291**	0.007	5.4	ug/L	9	Standard
>	Bi	209	532629.6	1.5				ug/L	552821	Standard

Sample ID: L1606136001
Report Date/Time: Friday, July 01, 2016 15:13:29
Page 1

Approved: July 02, 2016

Na	23	15.0	33.3	**42.5757**	12.711	29.9	mg/L	2	Standard
Mg	24	49159.6	0.3	**55.0024**	2.117	3.8	mg/L	55	Standard
K	39	1461.7	10.0	**5.2295**	0.334	6.4	mg/L	28	Standard
Ca	43	601.7	4.7	**50.0156**	4.072	8.1	mg/L	27	Standard
Fe	54	4574.4	1.8	**3.3398**	0.110	3.3	mg/L	147	Standard
Fe	57	1803.4	3.2	**4.5113**	0.320	7.1	mg/L	268	Standard
> **Sc-1**	45	42982.6	3.7				mg/L	41174	Standard
Cl	35	94962.0	0.7				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	95694.6	1.2				ug/L	1950	Standard
P	31	33902.9	0.5				ug/L	21156	Standard
S	34	4128.9	1.2				ug/L	3419	Standard
Sr	88	1591.8	1.7				ug/L	72	Standard
C	12	436.7	25.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	510.0	42.5				mg/L	17	Standard
Dy	164	37.8	54.9				mg/L	16	Standard
Ho-1	165	31.7	9.1				mg/L	7	Standard
Er	166	46.7	32.7				mg/L	7	Standard
I	127	121671837.9	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.453	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.050	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606136001
Report Date/Time: Friday, July 01, 2016 15:13:29
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.233	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.348	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606136001
Report Date/Time: Friday, July 01, 2016 15:13:29
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606136002
Sample Date/Time: Friday, July 01, 2016 15:14:23
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85581.0	1.5				ug/L	76456	Standard
	Be	9	25.0	60.0	**0.0002**	0.012	7141.4	ug/L	20	Standard
	Al	27	55900.2	24.1	**0.2811**	0.067	23.9	ug/L	1307	Standard
	Sc	45	42536.3	1.1				ug/L	41174	Standard
	Ti	47	133.7	20.6	**0.3028**	0.078	25.8	ug/L	27	Standard
	V	51	2309.2	3.2	**0.0668**	0.010	14.4	ug/L	1434	Standard
	Cr	52	10748.5	0.6	**0.2852**	0.003	0.9	ug/L	7733	Standard
	Cr	53	1006.7	5.2	**0.5242**	0.053	10.1	ug/L	442	Standard
	Mn	55	5954.9	24.0	**0.6413**	0.175	27.3	ug/L	723	Standard
	Co	59	262.0	8.2	**0.0029**	0.003	90.0	ug/L	217	Standard
	Ni	60	497.3	9.2	**0.0733**	0.022	29.6	ug/L	304	Standard
	Cu	65	2911.9	5.2	**1.2738**	0.065	5.1	ug/L	181	Standard
	Zn	66	1381.4	5.9	**0.8847**	0.058	6.6	ug/L	215	Standard
>	Ge	72	551341.1	0.5				ug/L	520809	Standard
	As	75	-21.8	42.5	**0.0285**	0.007	24.8	ug/L	-52	Standard
	Se	82	22.1	22.3	**0.0391**	0.037	95.8	ug/L	17	Standard
	Se-1	77	66.7	24.4	**0.0515**	0.176	341.9	ug/L	56	Standard
>	Ga	71	61.7	33.8				mg/L	25	Standard
	Rb	85	408.3	7.2				ug/L	28	Standard
	Y	89	470361.2	0.7				ug/L	447395	Standard
>	Rh	103	16.7	45.8				ug/L	15	Standard
	Mo	98	156.0	25.9	**0.0252**	0.013	53.1	ug/L	113	Standard
	Ag	107	109.0	5.1	**0.0016**	0.001	52.8	ug/L	108	Standard
	Cd	111	14.4	21.7	**0.0036**	0.001	37.8	mg/L	3	Standard
	Cd	114	35.6	84.3	**0.0060**	0.005	83.9	ug/L	20	Standard
>	In	115	658802.4	1.3				ug/L	625728	Standard
	Sn	118	3085.3	1.9	**0.3711**	0.008	2.1	ug/L	568	Standard
	Sb	123	348.5	35.2	**0.0306**	0.023	76.5	ug/L	612	Standard
	Ba	135	1852.8	5.0	**0.7908**	0.032	4.1	ug/L	21	Standard
	Ce	140	210.0	16.5				ug/L	245	Standard
>	Tb	159	984012.0	1.0				ug/L	950397	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	41.3	6.1	**0.0037**	0.000	7.2	ug/L	15	Standard
	Tl	205	46.7	68.9	**-0.0041**	0.004	94.4	ug/L	13	Standard
	Pb	206	460.7	0.7	**0.0345**	0.001	2.0	ug/L	264	Standard
	Pb	207	404.0	4.8	**0.0295**	0.003	11.6	ug/L	222	Standard
	Pb	208	1690.4	3.1	**0.0292**	0.002	7.9	ug/L	959	Standard
	U	238	26.3	7.9	**0.0029**	0.000	8.7	ug/L	9	Standard
>	Bi	209	574438.2	0.4				ug/L	552821	Standard

Sample ID: L1606136002
Report Date/Time: Friday, July 01, 2016 15:16:40
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	250.0	12.5	**0.2227**	0.038	16.8	mg/L	55	Standard
K	39	21.7	48.0	**-0.0507**	0.039	76.8	mg/L	28	Standard
Ca	43	33.3	45.8	**0.4827**	1.350	279.7	mg/L	27	Standard
Fe	54	174.0	19.0	**0.0332**	0.024	72.4	mg/L	147	Standard
Fe	57	240.0	20.1	**-0.0912**	0.137	149.9	mg/L	268	Standard
> **Sc-1**	45	42536.3	1.1				mg/L	41174	Standard
Cl	35	95107.6	2.0				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2680.2	5.4				ug/L	1950	Standard
P	31	27181.0	2.6				ug/L	21156	Standard
S	34	4080.5	2.6				ug/L	3419	Standard
Sr	88	60.0	8.3				ug/L	72	Standard
C	12	186.7	8.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	346.7	61.6				mg/L	17	Standard
Dy	164	25.7	79.6				mg/L	16	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	835274.3	37.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.935	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.862	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606136002
Report Date/Time: Friday, July 01, 2016 15:16:40
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.286
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.910
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140001
Sample Date/Time: Friday, July 01, 2016 15:17:35
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83445.8	0.6				ug/L	76456	Standard
	Be	9	45.0	29.4	**0.0170**	0.011	63.9	ug/L	20	Standard
	Al	27	7040110.3	1.1	**37.6724**	0.642	1.7	ug/L	1307	Standard
	Sc	45	41625.4	2.0				ug/L	41174	Standard
	Ti	47	4285.9	4.9	**12.7764**	0.570	4.5	ug/L	27	Standard
	V	51	7078.2	1.9	**0.6435**	0.022	3.4	ug/L	1434	Standard
	Cr	52	21057.0	0.1	**1.5759**	0.026	1.6	ug/L	7733	Standard
	Cr	53	3443.7	1.2	**2.9149**	0.056	1.9	ug/L	442	Standard
	Mn	55	883702.1	0.7	**114.0510**	1.835	1.6	ug/L	723	Standard
	Co	59	2499.5	0.8	**0.2896**	0.004	1.4	ug/L	217	Standard
	Ni	60	4161.2	2.0	**1.8082**	0.061	3.4	ug/L	304	Standard
	Cu	65	3327.7	0.9	**1.5204**	0.005	0.4	ug/L	181	Standard
	Zn	66	4188.9	1.5	**3.1626**	0.022	0.7	ug/L	215	Standard
>	Ge	72	532673.4	1.1				ug/L	520809	Standard
	As	75	1321.1	0.2	**1.0915**	0.014	1.3	ug/L	-52	Standard
	Se	82	41.1	15.2	**0.1918**	0.049	25.5	ug/L	17	Standard
	Se-1	77	114.0	7.6	**0.6197**	0.107	17.2	ug/L	56	Standard
>	Ga	71	1218.4	5.9				mg/L	25	Standard
	Rb	85	38403.6	2.5				ug/L	28	Standard
	Y	89	469727.3	1.0				ug/L	447395	Standard
>	Rh	103	41.7	25.0				ug/L	15	Standard
	Mo	98	855.3	9.6	**0.2517**	0.030	12.0	ug/L	113	Standard
	Ag	107	118.0	3.1	**0.0031**	0.000	8.0	ug/L	108	Standard
	Cd	111	168.9	5.8	**0.0690**	0.003	4.5	mg/L	3	Standard
	Cd	114	422.3	16.9	**0.0721**	0.011	15.8	ug/L	20	Standard
>	In	115	642729.5	1.7				ug/L	625728	Standard
	Sn	118	2336.8	13.7	**0.2695**	0.050	18.6	ug/L	568	Standard
	Sb	123	10092.5	4.2	**1.8672**	0.060	3.2	ug/L	612	Standard
	Ba	135	14880.6	0.5	**6.6421**	0.083	1.2	ug/L	21	Standard
	Ce	140	38117.9	1.2				ug/L	245	Standard
>	Tb	159	971949.7	2.4				ug/L	950397	Standard
	Ho	165	766.7	0.8				ug/L	7	Standard
	Tl	203	84.7	11.9	**0.0086**	0.001	13.1	ug/L	15	Standard
	Tl	205	65.0	26.6	**-0.0017**	0.002	121.5	ug/L	13	Standard
	Pb	206	5500.7	2.1	**0.9180**	0.006	0.6	ug/L	264	Standard
	Pb	207	4505.0	2.1	**0.8213**	0.015	1.9	ug/L	222	Standard
	Pb	208	19667.7	0.6	**0.8791**	0.020	2.3	ug/L	959	Standard
	U	238	150.0	6.0	**0.0182**	0.001	7.7	ug/L	9	Standard
>	Bi	209	558473.2	1.6				ug/L	552821	Standard

Sample ID: L1606140001
Report Date/Time: Friday, July 01, 2016 15:19:52
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.9489**	8.563	173.0	mg/L	2	Standard
Mg	24	2895.3	5.1	**3.2866**	0.193	5.9	mg/L	55	Standard
K	39	586.7	6.5	**2.0948**	0.159	7.6	mg/L	28	Standard
Ca	43	126.7	13.9	**8.9443**	1.703	19.0	mg/L	27	Standard
Fe	54	1267.9	7.9	**0.8860**	0.097	10.9	mg/L	147	Standard
Fe	57	600.0	6.3	**1.0204**	0.129	12.6	mg/L	268	Standard
Sc-1	45	41625.4	2.0				mg/L	41174	Standard
Cl	35	87177.5	2.1				ug/L	69550	Standard
Kr	83	2.0	173.2				ug/L	1	Standard
Br	81	7248.4	5.5				ug/L	1950	Standard
P	31	28932.6	1.2				ug/L	21156	Standard
S	34	4053.9	3.3				ug/L	3419	Standard
Sr	88	248.3	11.1				ug/L	72	Standard
C	12	190.0	13.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	326.7	32.7				mg/L	17	Standard
Dy	164	1103.7	6.9				mg/L	16	Standard
Ho-1	165	766.7	0.8				mg/L	7	Standard
Er	166	690.0	9.5				mg/L	7	Standard
I	127	358932.7	7.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.143	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.278	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606140001
Report Date/Time: Friday, July 01, 2016 15:19:52
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.717
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.022
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606140001
Report Date/Time: Friday, July 01, 2016 15:19:52
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140002
Sample Date/Time: Friday, July 01, 2016 15:20:46
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83243.1	1.8				ug/L	76456	Standard
	Be	9	40.0	66.1	**0.0127**	0.021	164.7	ug/L	20	Standard
	Al	27	20806325.7	1.5	**111.6281**	1.089	1.0	ug/L	1307	Standard
	Sc	45	42705.1	1.7				ug/L	41174	Standard
	Ti	47	521.0	4.2	**1.4841**	0.067	4.5	ug/L	27	Standard
	V	51	3344.5	4.3	**0.2005**	0.017	8.4	ug/L	1434	Standard
	Cr	52	11575.8	0.5	**0.4337**	0.008	1.8	ug/L	7733	Standard
	Cr	53	3380.4	6.9	**2.8639**	0.226	7.9	ug/L	442	Standard
	Mn	55	948881.0	1.2	**122.8502**	1.452	1.2	ug/L	723	Standard
	Co	59	2088.1	1.4	**0.2379**	0.004	1.7	ug/L	217	Standard
	Ni	60	3829.2	1.0	**1.6570**	0.016	1.0	ug/L	304	Standard
	Cu	65	1020.7	3.6	**0.4165**	0.018	4.3	ug/L	181	Standard
	Zn	66	1711.1	3.0	**1.1897**	0.044	3.7	ug/L	215	Standard
>	**Ge**	72	530967.7	0.1				ug/L	520809	Standard
	As	75	120.6	26.2	**0.1410**	0.025	17.8	ug/L	-52	Standard
	Se	82	48.6	18.0	**0.2506**	0.068	27.3	ug/L	17	Standard
	Se-1	77	180.0	11.7	**1.3805**	0.238	17.3	ug/L	56	Standard
>	**Ga**	71	128.3	39.0				mg/L	25	Standard
	Rb	85	2536.9	2.3				ug/L	28	Standard
	Y	89	459396.3	1.3				ug/L	447395	Standard
>	**Rh**	103	68.3	16.9				ug/L	15	Standard
	Mo	98	164.7	11.0	**0.0301**	0.006	21.2	ug/L	113	Standard
	Ag	107	87.7	14.4	**-0.0008**	0.002	218.3	ug/L	108	Standard
	Cd	111	68.1	9.8	**0.0269**	0.003	10.0	mg/L	3	Standard
	Cd	114	155.0	26.9	**0.0270**	0.007	27.3	ug/L	20	Standard
>	**In**	115	631529.9	1.1				ug/L	625728	Standard
	Sn	118	1490.1	25.7	**0.1455**	0.061	42.2	ug/L	568	Standard
	Sb	123	888.6	10.6	**0.1367**	0.019	13.9	ug/L	612	Standard
	Ba	135	26458.7	0.5	**12.0331**	0.137	1.1	ug/L	21	Standard
	Ce	140	9911.6	1.3				ug/L	245	Standard
>	**Tb**	159	958775.7	0.7				ug/L	950397	Standard
	Ho	165	208.3	2.8				ug/L	7	Standard
	Tl	203	123.7	9.6	**0.0132**	0.001	9.6	ug/L	15	Standard
	Tl	205	103.3	42.3	**0.0034**	0.005	161.1	ug/L	13	Standard
	Pb	206	646.3	4.8	**0.0721**	0.004	5.3	ug/L	264	Standard
	Pb	207	521.7	7.3	**0.0568**	0.007	11.5	ug/L	222	Standard
	Pb	208	2324.1	2.2	**0.0641**	0.003	5.2	ug/L	959	Standard
	U	238	1352.7	2.4	**0.1701**	0.003	1.9	ug/L	9	Standard
>	**Bi**	209	544667.8	1.5				ug/L	552821	Standard

Sample ID: L1606140002
Report Date/Time: Friday, July 01, 2016 15:23:03
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.5374**	16.511	173.1	mg/L	2	Standard
Mg	24	12897.2	1.9	**14.4668**	0.241	1.7	mg/L	55	Standard
K	39	143.3	40.4	**0.3966**	0.206	52.0	mg/L	28	Standard
Ca	43	550.0	11.0	**45.7421**	5.294	11.6	mg/L	27	Standard
Fe	54	409.1	1.1	**0.2106**	0.008	3.9	mg/L	147	Standard
Fe	57	643.3	9.1	**1.1039**	0.202	18.3	mg/L	268	Standard
> **Sc-1**	45	42705.1	1.7				mg/L	41174	Standard
Cl	35	94915.1	1.1				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	7108.3	0.6				ug/L	1950	Standard
P	31	28478.4	1.9				ug/L	21156	Standard
S	34	4015.5	4.7				ug/L	3419	Standard
Sr	88	310.0	10.1				ug/L	72	Standard
C	12	300.0	17.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	246.7	10.2				mg/L	17	Standard
Dy	164	399.0	15.6				mg/L	16	Standard
Ho-1	165	208.3	2.8				mg/L	7	Standard
Er	166	230.0	11.5				mg/L	7	Standard
I	127	149991.1	7.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.877	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.950	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140002
Report Date/Time: Friday, July 01, 2016 15:23:03
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.927
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.525
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606140002
Report Date/Time: Friday, July 01, 2016 15:23:03
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140003
Sample Date/Time: Friday, July 01, 2016 15:23:58
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82504.1	1.6				ug/L	76456	Standard
	Be	9	21.7	48.0	**-0.0018**	0.009	480.2	ug/L	20	Standard
	Al	27	13452706.7	0.5	**72.8294**	1.526	2.1	ug/L	1307	Standard
	Sc	45	41709.0	1.4				ug/L	41174	Standard
	Ti	47	2378.5	5.3	**7.0809**	0.376	5.3	ug/L	27	Standard
	V	51	7214.8	5.3	**0.6629**	0.045	6.8	ug/L	1434	Standard
	Cr	52	13978.1	0.6	**0.7263**	0.017	2.4	ug/L	7733	Standard
	Cr	53	7091.7	6.1	**6.4687**	0.376	5.8	ug/L	442	Standard
	Mn	55	62406.3	0.1	**7.9906**	0.075	0.9	ug/L	723	Standard
	Co	59	1446.4	2.2	**0.1559**	0.006	3.6	ug/L	217	Standard
	Ni	60	2083.8	4.2	**0.8328**	0.047	5.6	ug/L	304	Standard
	Cu	65	965.4	1.3	**0.3903**	0.010	2.5	ug/L	181	Standard
	Zn	66	2028.5	1.9	**1.4450**	0.043	3.0	ug/L	215	Standard
>	**Ge**	72	530627.2	0.9				ug/L	520809	Standard
	As	75	140.1	24.4	**0.1567**	0.028	17.9	ug/L	-52	Standard
	Se	82	39.3	18.1	**0.1786**	0.052	29.4	ug/L	17	Standard
	Se-1	77	316.3	5.9	**2.9476**	0.217	7.4	ug/L	56	Standard
>	**Ga**	71	366.7	8.0				mg/L	25	Standard
	Rb	85	8984.3	2.4				ug/L	28	Standard
	Y	89	458813.5	0.8				ug/L	447395	Standard
>	**Rh**	103	51.7	39.1				ug/L	15	Standard
	Mo	98	313.7	15.4	**0.0798**	0.016	20.1	ug/L	113	Standard
	Ag	107	93.7	11.2	**0.0002**	0.001	781.2	ug/L	108	Standard
	Cd	111	28.1	20.3	**0.0099**	0.002	24.9	mg/L	3	Standard
	Cd	114	65.8	57.7	**0.0116**	0.007	57.4	ug/L	20	Standard
>	**In**	115	625934.2	0.5				ug/L	625728	Standard
	Sn	118	1398.4	16.4	**0.1329**	0.035	26.4	ug/L	568	Standard
	Sb	123	422.7	21.1	**0.0480**	0.017	35.9	ug/L	612	Standard
	Ba	135	6793.5	0.6	**3.1038**	0.028	0.9	ug/L	21	Standard
	Ce	140	15908.3	1.9				ug/L	245	Standard
>	**Tb**	159	944178.7	1.1				ug/L	950397	Standard
	Ho	165	355.0	16.2				ug/L	7	Standard
	Tl	203	120.3	15.9	**0.0130**	0.002	16.8	ug/L	15	Standard
	Tl	205	111.7	23.0	**0.0046**	0.003	71.8	ug/L	13	Standard
	Pb	206	1028.4	3.3	**0.1425**	0.006	4.1	ug/L	264	Standard
	Pb	207	909.0	1.6	**0.1352**	0.003	2.4	ug/L	222	Standard
	Pb	208	3805.2	1.1	**0.1376**	0.002	1.8	ug/L	959	Standard
	U	238	790.4	10.0	**0.1003**	0.010	10.2	ug/L	9	Standard
>	**Bi**	209	538993.4	0.2				ug/L	552821	Standard

Sample ID: L1606140003
Report Date/Time: Friday, July 01, 2016 15:26:15
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.8709**	8.546	86.6	mg/L	2	Standard
Mg	24	22061.0	0.3	**25.3844**	0.436	1.7	mg/L	55	Standard
K	39	113.3	9.2	**0.2976**	0.036	12.0	mg/L	28	Standard
Ca	43	235.0	16.1	**18.6613**	3.690	19.8	mg/L	27	Standard
Fe	54	444.8	12.4	**0.2457**	0.044	17.8	mg/L	147	Standard
Fe	57	475.0	1.1	**0.6368**	0.010	1.6	mg/L	268	Standard
Sc-1	45	41709.0	1.4				mg/L	41174	Standard
Cl	35	94012.8	1.3				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	5417.6	1.0				ug/L	1950	Standard
P	31	27702.0	0.2				ug/L	21156	Standard
S	34	3952.2	4.7				ug/L	3419	Standard
Sr	88	203.3	6.2				ug/L	72	Standard
C	12	180.0	5.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	206.7	46.0				mg/L	17	Standard
Dy	164	524.4	5.0				mg/L	16	Standard
Ho-1	165	355.0	16.2				mg/L	7	Standard
Er	166	326.7	23.8				mg/L	7	Standard
I	127	92501.9	4.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.885	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606140003
Report Date/Time: Friday, July 01, 2016 15:26:15
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.033
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.499
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140004
Sample Date/Time: Friday, July 01, 2016 15:27:09
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81751.7	2.2				ug/L	76456	Standard
	Be	9	135.0	7.4	**0.0930**	0.010	10.5	ug/L	20	Standard
	Al	27	16409591.9	0.7	**89.6714**	2.399	2.7	ug/L	1307	Standard
	Sc	45	43657.8	2.3				ug/L	41174	Standard
	Ti	47	15858.0	1.7	**48.2292**	0.843	1.7	ug/L	27	Standard
	V	51	24903.7	1.5	**2.8088**	0.058	2.1	ug/L	1434	Standard
	Cr	52	24554.9	2.0	**2.0436**	0.044	2.1	ug/L	7733	Standard
	Cr	53	8734.2	4.6	**8.1598**	0.352	4.3	ug/L	442	Standard
	Mn	55	321581.9	1.2	**42.0644**	0.335	0.8	ug/L	723	Standard
	Co	59	9091.1	1.5	**1.1485**	0.011	1.0	ug/L	217	Standard
	Ni	60	4968.8	2.8	**2.2237**	0.057	2.6	ug/L	304	Standard
	Cu	65	4956.5	2.1	**2.3370**	0.063	2.7	ug/L	181	Standard
	Zn	66	24116.8	0.6	**19.3591**	0.218	1.1	ug/L	215	Standard
>	Ge	72	524703.9	0.5				ug/L	520809	Standard
	As	75	614.6	10.2	**0.5395**	0.053	9.9	ug/L	-52	Standard
	Se	82	60.0	7.2	**0.3447**	0.037	10.6	ug/L	17	Standard
	Se-1	77	320.0	6.3	**3.0305**	0.221	7.3	ug/L	56	Standard
>	Ga	71	2358.5	3.8				mg/L	25	Standard
	Rb	85	29106.3	0.5				ug/L	28	Standard
	Y	89	488820.8	1.3				ug/L	447395	Standard
>	Rh	103	41.7	36.7				ug/L	15	Standard
	Mo	98	207.5	20.0	**0.0449**	0.014	31.5	ug/L	113	Standard
	Ag	107	157.7	11.6	**0.0091**	0.002	27.1	ug/L	108	Standard
	Cd	111	394.0	4.6	**0.1692**	0.008	4.7	mg/L	3	Standard
	Cd	114	994.3	3.1	**0.1748**	0.005	2.7	ug/L	20	Standard
>	In	115	624414.0	0.6				ug/L	625728	Standard
	Sn	118	1828.4	12.1	**0.2006**	0.036	17.9	ug/L	568	Standard
	Sb	123	719.7	13.7	**0.1059**	0.020	18.8	ug/L	612	Standard
	Ba	135	28855.8	0.8	**13.2740**	0.137	1.0	ug/L	21	Standard
	Ce	140	181035.3	1.7				ug/L	245	Standard
>	Tb	159	950705.2	0.6				ug/L	950397	Standard
	Ho	165	3198.7	2.4				ug/L	7	Standard
	Tl	203	267.3	11.5	**0.0298**	0.004	11.9	ug/L	15	Standard
	Tl	205	255.0	10.9	**0.0230**	0.004	15.5	ug/L	13	Standard
	Pb	206	5712.7	1.8	**0.9909**	0.019	1.9	ug/L	264	Standard
	Pb	207	4766.7	1.5	**0.9045**	0.014	1.5	ug/L	222	Standard
	Pb	208	20771.3	1.3	**0.9660**	0.013	1.3	ug/L	959	Standard
	U	238	597.3	5.0	**0.0757**	0.004	5.0	ug/L	9	Standard
>	Bi	209	539160.5	0.0				ug/L	552821	Standard

Sample ID: L1606140004
Report Date/Time: Friday, July 01, 2016 15:29:26
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.3434**	8.093	86.6	mg/L	2	Standard
Mg	24	23045.8	1.2	**25.3403**	0.746	2.9	mg/L	55	Standard
K	39	200.0	16.4	**0.5941**	0.134	22.5	mg/L	28	Standard
Ca	43	263.3	19.5	**20.1662**	4.729	23.5	mg/L	27	Standard
Fe	54	2633.0	5.5	**1.8499**	0.135	7.3	mg/L	147	Standard
Fe	57	1085.0	6.4	**2.3396**	0.175	7.5	mg/L	268	Standard
Sc-1	45	43657.8	2.3				mg/L	41174	Standard
Cl	35	89531.9	3.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	8986.0	7.5				ug/L	1950	Standard
P	31	30121.6	2.2				ug/L	21156	Standard
S	34	4117.2	5.6				ug/L	3419	Standard
Sr	88	208.3	27.6				ug/L	72	Standard
C	12	203.3	12.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	336.7	30.9				mg/L	17	Standard
Dy	164	4587.9	2.0				mg/L	16	Standard
Ho-1	165	3198.7	2.4				mg/L	7	Standard
Er	166	3260.4	5.8				mg/L	7	Standard
I	127	86340.3	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.927	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.748	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606140004
Report Date/Time: Friday, July 01, 2016 15:29:26
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.790
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.529
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140005
Sample Date/Time: Friday, July 01, 2016 15:30:21
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81575.7	1.3				ug/L	76456	Standard
	Be	9	31.7	45.6	**0.0067**	0.012	182.8	ug/L	20	Standard
	Al	27	11361131.6	0.7	**62.2005**	1.160	1.9	ug/L	1307	Standard
	Sc	45	41289.5	1.9				ug/L	41174	Standard
	Ti	47	446.7	4.2	**1.2710**	0.064	5.1	ug/L	27	Standard
	V	51	6339.2	1.7	**0.5637**	0.005	0.9	ug/L	1434	Standard
	Cr	52	14053.8	0.9	**0.7478**	0.031	4.1	ug/L	7733	Standard
	Cr	53	3397.0	0.8	**2.9061**	0.060	2.1	ug/L	442	Standard
	Mn	55	91180.2	0.3	**11.8062**	0.126	1.1	ug/L	723	Standard
	Co	59	1636.1	3.3	**0.1817**	0.006	3.3	ug/L	217	Standard
	Ni	60	2420.2	3.0	**0.9998**	0.030	3.0	ug/L	304	Standard
	Cu	65	1115.7	0.8	**0.4664**	0.010	2.1	ug/L	181	Standard
	Zn	66	4102.9	4.8	**3.1313**	0.189	6.0	ug/L	215	Standard
>	**Ge**	72	526864.0	1.0				ug/L	520809	Standard
	As	75	209.1	23.9	**0.2126**	0.040	18.9	ug/L	-52	Standard
	Se	82	44.2	19.7	**0.2192**	0.067	30.8	ug/L	17	Standard
	Se-1	77	143.0	9.9	**0.9701**	0.178	18.4	ug/L	56	Standard
>	**Ga**	71	123.3	14.2				mg/L	25	Standard
	Rb	85	2268.5	7.3				ug/L	28	Standard
	Y	89	460843.6	0.6				ug/L	447395	Standard
>	**Rh**	103	38.3	7.5				ug/L	15	Standard
	Mo	98	138.6	17.2	**0.0223**	0.008	37.4	ug/L	113	Standard
	Ag	107	89.7	12.2	**-0.0003**	0.002	618.7	ug/L	108	Standard
	Cd	111	119.1	4.0	**0.0498**	0.002	3.9	mg/L	3	Standard
	Cd	114	332.6	23.3	**0.0590**	0.014	24.0	ug/L	20	Standard
>	**In**	115	620430.9	1.0				ug/L	625728	Standard
	Sn	118	1270.1	10.3	**0.1149**	0.022	19.3	ug/L	568	Standard
	Sb	123	506.5	10.9	**0.0652**	0.012	17.9	ug/L	612	Standard
	Ba	135	12723.7	1.4	**5.8806**	0.073	1.2	ug/L	21	Standard
	Ce	140	16098.5	0.3				ug/L	245	Standard
>	**Tb**	159	949690.5	1.0				ug/L	950397	Standard
	Ho	165	733.4	8.1				ug/L	7	Standard
	Tl	203	89.0	5.8	**0.0094**	0.001	6.1	ug/L	15	Standard
	Tl	205	71.7	4.0	**-0.0005**	0.000	65.6	ug/L	13	Standard
	Pb	206	791.4	4.4	**0.0994**	0.006	5.9	ug/L	264	Standard
	Pb	207	690.7	3.6	**0.0915**	0.005	5.0	ug/L	222	Standard
	Pb	208	2860.4	1.4	**0.0912**	0.002	1.7	ug/L	959	Standard
	U	238	438.0	6.5	**0.0554**	0.003	6.2	ug/L	9	Standard
>	**Bi**	209	539820.6	0.5				ug/L	552821	Standard

Sample ID: L1606140005
Report Date/Time: Friday, July 01, 2016 15:32:38
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.8050**	16.974	173.1	mg/L	2	Standard
Mg	24	7792.0	1.0	**9.0186**	0.177	2.0	mg/L	55	Standard
K	39	263.3	14.7	**0.8766**	0.155	17.6	mg/L	28	Standard
Ca	43	330.0	19.8	**27.4186**	5.627	20.5	mg/L	27	Standard
Fe	54	735.5	15.2	**0.4767**	0.090	18.9	mg/L	147	Standard
Fe	57	581.7	10.7	**0.9796**	0.205	21.0	mg/L	268	Standard
> **Sc-1**	45	41289.5	1.9				mg/L	41174	Standard
Cl	35	92233.2	0.5				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	7218.4	8.8				ug/L	1950	Standard
P	31	25119.1	2.5				ug/L	21156	Standard
S	34	4015.5	4.2				ug/L	3419	Standard
Sr	88	198.3	12.9				ug/L	72	Standard
C	12	296.7	7.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	29.4				mg/L	17	Standard
Dy	164	946.6	5.7				mg/L	16	Standard
Ho-1	165	733.4	8.1				mg/L	7	Standard
Er	166	766.7	15.2				mg/L	7	Standard
I	127	70972.5	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.697	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.163	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140005
Report Date/Time: Friday, July 01, 2016 15:32:38
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.648
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140009
Sample Date/Time: Friday, July 01, 2016 15:33:32
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81176.9	1.8				ug/L	76456	Standard
	Be	9	121.7	33.5	**0.0827**	0.035	42.4	ug/L	20	Standard
	Al	27	9588194.5	0.1	**52.7539**	0.999	1.9	ug/L	1307	Standard
	Sc	45	43500.7	0.9				ug/L	41174	Standard
	Ti	47	16231.4	1.0	**49.4700**	1.142	2.3	ug/L	27	Standard
	V	51	27177.8	1.2	**3.0895**	0.018	0.6	ug/L	1434	Standard
	Cr	52	30590.2	0.3	**2.7921**	0.043	1.5	ug/L	7733	Standard
	Cr	53	15214.3	3.9	**14.5584**	0.723	5.0	ug/L	442	Standard
	Mn	55	419736.2	0.6	**55.0489**	1.027	1.9	ug/L	723	Standard
	Co	59	9146.8	1.6	**1.1580**	0.019	1.6	ug/L	217	Standard
	Ni	60	5875.8	2.7	**2.6630**	0.065	2.4	ug/L	304	Standard
	Cu	65	6513.4	1.0	**3.1007**	0.066	2.1	ug/L	181	Standard
	Zn	66	26692.5	0.5	**21.4893**	0.375	1.7	ug/L	215	Standard
>	Ge	72	523713.8	1.4				ug/L	520809	Standard
	As	75	573.5	19.4	**0.5079**	0.095	18.7	ug/L	-52	Standard
	Se	82	88.9	5.9	**0.5739**	0.045	7.8	ug/L	17	Standard
	Se-1	77	673.7	3.9	**7.1522**	0.285	4.0	ug/L	56	Standard
>	Ga	71	2611.9	4.8				mg/L	25	Standard
	Rb	85	28024.2	1.3				ug/L	28	Standard
	Y	89	508019.1	1.4				ug/L	447395	Standard
>	Rh	103	75.0	11.5				ug/L	15	Standard
	Mo	98	440.1	11.3	**0.1259**	0.017	13.3	ug/L	113	Standard
	Ag	107	293.3	3.4	**0.0292**	0.001	4.2	ug/L	108	Standard
	Cd	111	123.6	12.9	**0.0529**	0.007	13.0	mg/L	3	Standard
	Cd	114	259.6	1.9	**0.0469**	0.001	2.3	ug/L	20	Standard
>	In	115	607695.5	0.5				ug/L	625728	Standard
	Sn	118	1815.1	15.8	**0.2060**	0.044	21.6	ug/L	568	Standard
	Sb	123	1181.5	5.3	**0.2017**	0.012	6.1	ug/L	612	Standard
	Ba	135	44851.3	1.2	**21.2102**	0.264	1.2	ug/L	21	Standard
	Ce	140	233746.2	1.6				ug/L	245	Standard
>	Tb	159	940005.0	0.9				ug/L	950397	Standard
	Ho	165	4862.4	3.3				ug/L	7	Standard
	Tl	203	294.3	3.6	**0.0336**	0.001	3.3	ug/L	15	Standard
	Tl	205	293.3	8.4	**0.0288**	0.003	10.7	ug/L	13	Standard
	Pb	206	14978.4	0.2	**2.7295**	0.019	0.7	ug/L	264	Standard
	Pb	207	12667.6	1.3	**2.5366**	0.044	1.7	ug/L	222	Standard
	Pb	208	54283.9	0.6	**2.6615**	0.029	1.1	ug/L	959	Standard
	U	238	853.7	3.9	**0.1108**	0.005	4.3	ug/L	9	Standard
>	Bi	209	527415.0	0.5				ug/L	552821	Standard

Sample ID: L1606140009
Report Date/Time: Friday, July 01, 2016 15:35:49
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58944.5	2.4	**65.1233**	1.989	3.1	mg/L	55	Standard
K	39	308.3	15.9	**0.9880**	0.180	18.2	mg/L	28	Standard
Ca	43	298.3	31.7	**23.1691**	7.979	34.4	mg/L	27	Standard
Fe	54	3472.7	3.0	**2.4787**	0.071	2.9	mg/L	147	Standard
Fe	57	1280.1	3.7	**2.9195**	0.164	5.6	mg/L	268	Standard
> **Sc-1**	45	43500.7	0.9				mg/L	41174	Standard
Cl	35	88358.4	3.5				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	13829.7	7.0				ug/L	1950	Standard
P	31	28925.9	0.9				ug/L	21156	Standard
S	34	3962.2	5.0				ug/L	3419	Standard
Sr	88	261.7	17.1				ug/L	72	Standard
C	12	160.0	39.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	233.3	49.3				mg/L	17	Standard
Dy	164	7255.6	1.4				mg/L	16	Standard
Ho-1	165	4862.4	3.3				mg/L	7	Standard
Er	166	4654.0	5.4				mg/L	7	Standard
I	127	97026.7	3.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.175	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140009
Report Date/Time: Friday, July 01, 2016 15:35:49
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.118
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140010
Sample Date/Time: Friday, July 01, 2016 15:36:43
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81063.0	2.2				ug/L	76456	Standard
	Be	9	45.0	40.1	**0.0179**	0.015	82.9	ug/L	20	Standard
	Al	27	11177331.1	2.6	**61.5680**	0.262	0.4	ug/L	1307	Standard
	Sc	45	42046.6	2.8				ug/L	41174	Standard
	Ti	47	3513.4	4.8	**10.6195**	0.508	4.8	ug/L	27	Standard
	V	51	6549.3	3.1	**0.5923**	0.026	4.4	ug/L	1434	Standard
	Cr	52	28159.1	0.6	**2.4863**	0.028	1.1	ug/L	7733	Standard
	Cr	53	13474.3	4.4	**12.8172**	0.601	4.7	ug/L	442	Standard
	Mn	55	64803.6	1.2	**8.3962**	0.117	1.4	ug/L	723	Standard
	Co	59	2906.3	2.0	**0.3471**	0.007	2.1	ug/L	217	Standard
	Ni	60	4725.7	1.8	**2.1076**	0.036	1.7	ug/L	304	Standard
	Cu	65	5144.9	0.4	**2.4285**	0.010	0.4	ug/L	181	Standard
	Zn	66	4108.2	1.9	**3.1482**	0.066	2.1	ug/L	215	Standard
>	Ge	72	524692.7	0.2				ug/L	520809	Standard
	As	75	145.9	6.5	**0.1625**	0.008	4.8	ug/L	-52	Standard
	Se	82	112.8	12.6	**0.7595**	0.112	14.8	ug/L	17	Standard
	Se-1	77	626.7	4.9	**6.5924**	0.373	5.7	ug/L	56	Standard
>	Ga	71	708.3	9.6				mg/L	25	Standard
	Rb	85	114385.2	1.8				ug/L	28	Standard
	Y	89	451161.9	0.3				ug/L	447395	Standard
>	Rh	103	126.7	19.5				ug/L	15	Standard
	Mo	98	337.8	3.9	**0.0889**	0.005	5.8	ug/L	113	Standard
	Ag	107	99.0	14.6	**0.0011**	0.002	190.6	ug/L	108	Standard
	Cd	111	210.4	3.4	**0.0899**	0.004	4.2	mg/L	3	Standard
	Cd	114	526.0	13.1	**0.0932**	0.013	13.7	ug/L	20	Standard
>	In	115	619724.1	0.7				ug/L	625728	Standard
	Sn	118	3008.6	5.9	**0.3878**	0.029	7.5	ug/L	568	Standard
	Sb	123	32833.7	1.0	**6.3811**	0.045	0.7	ug/L	612	Standard
	Ba	135	22694.3	1.2	**10.5145**	0.070	0.7	ug/L	21	Standard
	Ce	140	24100.8	3.3				ug/L	245	Standard
>	Tb	159	942819.0	1.4				ug/L	950397	Standard
	Ho	165	435.0	17.4				ug/L	7	Standard
	Tl	203	173.7	3.3	**0.0194**	0.001	3.9	ug/L	15	Standard
	Tl	205	150.0	13.3	**0.0098**	0.003	26.2	ug/L	13	Standard
	Pb	206	11753.6	0.5	**2.1162**	0.005	0.2	ug/L	264	Standard
	Pb	207	9878.9	1.2	**1.9529**	0.015	0.8	ug/L	222	Standard
	Pb	208	42950.0	0.3	**2.0797**	0.006	0.3	ug/L	959	Standard
	U	238	632.3	2.5	**0.0814**	0.002	2.7	ug/L	9	Standard
>	Bi	209	531366.5	0.5				ug/L	552821	Standard

Sample ID: L1606140010
Report Date/Time: Friday, July 01, 2016 15:39:00
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**10.0447**	17.389	173.1	mg/L	2	Standard
Mg	24	54402.5	1.7	**62.2231**	2.757	4.4	mg/L	55	Standard
K	39	598.3	6.5	**2.1139**	0.085	4.0	mg/L	28	Standard
Ca	43	330.0	10.9	**26.8723**	2.438	9.1	mg/L	27	Standard
Fe	54	560.8	9.0	**0.3316**	0.032	9.6	mg/L	147	Standard
Fe	57	588.3	6.5	**0.9662**	0.103	10.6	mg/L	268	Standard
> **Sc-1**	45	42046.6	2.8				mg/L	41174	Standard
Cl	35	90806.6	0.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18608.1	1.3				ug/L	1950	Standard
P	31	26292.8	1.7				ug/L	21156	Standard
S	34	4085.6	2.8				ug/L	3419	Standard
Sr	88	385.0	14.8				ug/L	72	Standard
C	12	186.7	30.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	136.7	27.7				mg/L	17	Standard
Dy	164	734.0	6.8				mg/L	16	Standard
Ho-1	165	435.0	17.4				mg/L	7	Standard
Er	166	403.3	10.0				mg/L	7	Standard
I	127	125158.4	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.026	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140010
Report Date/Time: Friday, July 01, 2016 15:39:00
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.041
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.119
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144411
Sample Date/Time: Friday, July 01, 2016 15:39:55
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81448.4	1.6				ug/L	76456	Standard
	Be	9	11.7	65.5	**-0.0101**	0.006	63.9	ug/L	20	Standard
	Al	27	21525.3	7.9	**0.1077**	0.007	6.9	ug/L	1307	Standard
	Sc	45	43096.2	1.6				ug/L	41174	Standard
	Ti	47	91.7	3.5	**0.1831**	0.008	4.3	ug/L	27	Standard
	V	51	5715.4	7.0	**0.4625**	0.039	8.5	ug/L	1434	Standard
	Cr	52	72666.9	1.2	**7.5774**	0.036	0.5	ug/L	7733	Standard
	Cr	53	9179.5	6.4	**8.2203**	0.500	6.1	ug/L	442	Standard
	Mn	55	17987.3	2.4	**2.1587**	0.042	2.0	ug/L	723	Standard
	Co	59	1272.7	1.0	**0.1286**	0.001	0.4	ug/L	217	Standard
	Ni	60	1771.4	2.8	**0.6589**	0.022	3.3	ug/L	304	Standard
	Cu	65	890.7	4.0	**0.3410**	0.015	4.4	ug/L	181	Standard
	Zn	66	2169.2	1.7	**1.5037**	0.020	1.3	ug/L	215	Standard
>	**Ge**	72	547560.2	1.1				ug/L	520809	Standard
	As	75	-25.7	84.9	**0.0255**	0.017	64.8	ug/L	-52	Standard
	Se	82	30.2	19.3	**0.1012**	0.046	45.5	ug/L	17	Standard
	Se-1	77	82.7	3.0	**0.2352**	0.029	12.5	ug/L	56	Standard
>	**Ga**	71	61.7	16.9				mg/L	25	Standard
	Rb	85	225.0	18.2				ug/L	28	Standard
	Y	89	463078.5	0.6				ug/L	447395	Standard
>	**Rh**	103	16.7	34.6				ug/L	15	Standard
	Mo	98	9345.0	1.0	**2.9323**	0.025	0.9	ug/L	113	Standard
	Ag	107	88.3	4.7	**-0.0011**	0.001	50.3	ug/L	108	Standard
	Cd	111	4.7	106.3	**-0.0004**	0.002	489.8	mg/L	3	Standard
	Cd	114	53.3	48.8	**0.0090**	0.004	49.5	ug/L	20	Standard
>	**In**	115	654026.5	1.0				ug/L	625728	Standard
	Sn	118	6959.9	4.7	**0.9503**	0.045	4.8	ug/L	568	Standard
	Sb	123	309.2	21.8	**0.0236**	0.013	55.3	ug/L	612	Standard
	Ba	135	560.7	1.9	**0.2287**	0.006	2.5	ug/L	21	Standard
	Ce	140	275.0	28.4				ug/L	245	Standard
>	**Tb**	159	972057.0	0.8				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	71.3	7.7	**0.0070**	0.001	9.6	ug/L	15	Standard
	Tl	205	56.7	27.0	**-0.0028**	0.002	64.9	ug/L	13	Standard
	Pb	206	408.7	2.4	**0.0268**	0.002	8.8	ug/L	264	Standard
	Pb	207	323.7	7.4	**0.0155**	0.005	32.9	ug/L	222	Standard
	Pb	208	1481.0	2.8	**0.0207**	0.002	11.3	ug/L	959	Standard
	U	238	26.3	21.6	**0.0029**	0.001	22.8	ug/L	9	Standard
>	**Bi**	209	565291.9	1.0				ug/L	552821	Standard

Sample ID: L1606144411
Report Date/Time: Friday, July 01, 2016 15:42:12
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	118.3	31.7	**0.0714**	0.040	55.7	mg/L	55	Standard
K	39	33.3	8.7	**-0.0090**	0.012	135.9	mg/L	28	Standard
Ca	43	25.0	20.0	**-0.2843**	0.417	146.5	mg/L	27	Standard
Fe	54	653.3	3.0	**0.3905**	0.007	1.8	mg/L	147	Standard
Fe	57	318.3	7.9	**0.1302**	0.066	51.0	mg/L	268	Standard
> **Sc-1**	45	43096.2	1.6				mg/L	41174	Standard
Cl	35	93637.8	1.2				ug/L	69550	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	4000.5	7.9				ug/L	1950	Standard
P	31	25331.2	1.4				ug/L	21156	Standard
S	34	4190.6	5.7				ug/L	3419	Standard
Sr	88	63.3	25.4				ug/L	72	Standard
C	12	126.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	170.0	56.1				mg/L	17	Standard
Dy	164	16.0	67.7				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	17883.9	8.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.136	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144411
Report Date/Time: Friday, July 01, 2016 15:42:12
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.523
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.256
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 15:43:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79848.2	1.4				ug/L	76456	Standard
	Be	9	61340.6	1.3	**52.4607**	1.344	2.6	ug/L	20	Standard
	Al	27	8840196.9	1.7	**49.4449**	1.243	2.5	ug/L	1307	Standard
	Sc	45	42292.3	2.5				ug/L	41174	Standard
	Ti	47	33237.8	0.4	**98.6642**	0.509	0.5	ug/L	27	Standard
	V	51	434298.1	1.3	**50.9427**	0.727	1.4	ug/L	1434	Standard
	Cr	52	424946.0	0.9	**49.8972**	0.200	0.4	ug/L	7733	Standard
	Cr	53	51918.8	0.3	**49.3069**	0.192	0.4	ug/L	442	Standard
	Mn	55	396032.4	2.3	**50.5349**	0.943	1.9	ug/L	723	Standard
	Co	59	408091.6	1.9	**51.5332**	0.754	1.5	ug/L	217	Standard
	Ni	60	107986.8	0.7	**50.2226**	0.157	0.3	ug/L	304	Standard
	Cu	65	107294.9	0.3	**50.8210**	0.440	0.9	ug/L	181	Standard
	Zn	66	64441.1	1.0	**50.7299**	0.295	0.6	ug/L	215	Standard
>	Ge	72	538072.4	0.6				ug/L	520809	Standard
	As	75	64224.3	0.8	**50.3990**	0.228	0.5	ug/L	-52	Standard
	Se	82	6653.0	0.9	**50.8468**	0.498	1.0	ug/L	17	Standard
	Se-1	77	4539.7	1.5	**50.7170**	0.744	1.5	ug/L	56	Standard
>	Ga	71	38.3	19.9				mg/L	25	Standard
	Rb	85	878.4	4.8				ug/L	28	Standard
	Y	89	464875.9	0.9				ug/L	447395	Standard
>	Rh	103	28.3	56.7				ug/L	15	Standard
	Mo	98	306641.4	1.5	**98.6937**	1.489	1.5	ug/L	113	Standard
	Ag	107	367901.9	1.4	**49.8620**	0.492	1.0	ug/L	108	Standard
	Cd	111	117489.0	1.1	**49.6867**	0.641	1.3	mg/L	3	Standard
	Cd	114	291631.0	1.7	**49.8103**	0.297	0.6	ug/L	20	Standard
>	In	115	642695.4	1.1				ug/L	625728	Standard
	Sn	118	325840.7	2.1	**49.2102**	1.100	2.2	ug/L	568	Standard
	Sb	123	265299.9	1.4	**49.9473**	0.644	1.3	ug/L	612	Standard
	Ba	135	109451.6	0.3	**48.9670**	0.439	0.9	ug/L	21	Standard
	Ce	140	91.7	17.5				ug/L	245	Standard
>	Tb	159	960139.4	0.5				ug/L	950397	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	455308.6	0.4	**50.2176**	0.333	0.7	ug/L	15	Standard
	Tl	205	418174.0	0.6	**51.9308**	0.055	0.1	ug/L	13	Standard
	Pb	206	287949.4	0.0	**50.3217**	0.263	0.5	ug/L	264	Standard
	Pb	207	261570.9	0.7	**50.3350**	0.638	1.3	ug/L	222	Standard
	Pb	208	1088813.8	0.8	**51.2998**	0.701	1.4	ug/L	959	Standard
	U	238	413789.6	1.0	**50.8288**	0.805	1.6	ug/L	9	Standard
>	Bi	209	558286.7	0.5				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 15:45:25
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4697.4	5.9	**5.2790**	0.180	3.4	mg/L	55	Standard
K	39	1176.7	4.0	**4.2662**	0.289	6.8	mg/L	28	Standard
Ca	43	75.0	40.6	**4.2243**	2.811	66.5	mg/L	27	Standard
Fe	54	6836.4	1.2	**5.1227**	0.153	3.0	mg/L	147	Standard
Fe	57	1986.8	1.5	**5.1413**	0.153	3.0	mg/L	268	Standard
> **Sc-1**	45	42292.3	2.5				mg/L	41174	Standard
Cl	35	87844.6	1.1				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2156.8	5.6				ug/L	1950	Standard
P	31	26853.8	2.9				ug/L	21156	Standard
S	34	4549.0	3.6				ug/L	3419	Standard
Sr	88	63.3	24.1				ug/L	72	Standard
C	12	106.7	10.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	173.3	43.3				mg/L	17	Standard
Dy	164	9.0	191.8				mg/L	16	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	21254.9	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.921		
Al	27	98.890		
Sc	45			
Ti	47	98.664		
V	51	101.885		
Cr	52	99.794		
Cr	53			
Mn	55	101.070		
Co	59	103.066		
Ni	60	100.445		
Cu	65	101.642		
Zn	66	101.460		
> Ge	72		103.315	
As	75	100.798		
Se	82	101.694		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 15:45:25
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	98.694		
Ag	107	99.724		
Cd	111	99.373		
Cd	114			
> In	115			102.712
Sn	118	98.420		
Sb	123	99.895		
Ba	135	97.934		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.435		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.600		
U	238	101.658		
> Bi	209			100.989
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 15:45:25
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 15:46:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79389.1	1.5				ug/L	76456	Standard
	Be	9	21.7	58.1	**-0.0012**	0.011	924.7	ug/L	20	Standard
	Al	27	2653.6	26.5	**0.0047**	0.004	80.6	ug/L	1307	Standard
	Sc	45	42380.9	4.0				ug/L	41174	Standard
	Ti	47	29.7	33.8	**0.0025**	0.028	1148.4	ug/L	27	Standard
	V	51	1542.6	6.8	**-0.0189**	0.014	72.9	ug/L	1434	Standard
	Cr	52	7249.7	1.4	**-0.1121**	0.006	5.1	ug/L	7733	Standard
	Cr	53	556.7	17.0	**0.1098**	0.084	76.1	ug/L	442	Standard
	Mn	55	781.0	5.8	**-0.0026**	0.005	178.6	ug/L	723	Standard
	Co	59	230.7	5.2	**-0.0006**	0.001	192.9	ug/L	217	Standard
	Ni	60	287.0	3.3	**-0.0207**	0.003	16.9	ug/L	304	Standard
	Cu	65	178.0	9.4	**0.0094**	0.008	88.1	ug/L	181	Standard
	Zn	66	241.3	7.8	**0.0083**	0.014	168.4	ug/L	215	Standard
>	**Ge**	72	544000.0	1.1				ug/L	520809	Standard
	As	75	-38.4	128.5	**0.0152**	0.039	254.8	ug/L	-52	Standard
	Se	82	20.0	53.3	**0.0245**	0.079	323.1	ug/L	17	Standard
	Se-1	77	71.7	19.7	**0.1170**	0.150	127.9	ug/L	56	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	31.7	9.1				ug/L	28	Standard
	Y	89	461634.5	1.4				ug/L	447395	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	249.2	9.7	**0.0550**	0.007	12.4	ug/L	113	Standard
	Ag	107	132.3	12.7	**0.0048**	0.002	45.5	ug/L	108	Standard
	Cd	111	16.9	42.6	**0.0047**	0.003	63.4	mg/L	3	Standard
	Cd	114	56.7	84.7	**0.0095**	0.008	83.3	ug/L	20	Standard
>	**In**	115	653131.6	1.3				ug/L	625728	Standard
	Sn	118	1488.4	26.0	**0.1378**	0.060	43.6	ug/L	568	Standard
	Sb	123	795.3	31.1	**0.1141**	0.047	41.5	ug/L	612	Standard
	Ba	135	49.7	33.1	**0.0039**	0.007	180.6	ug/L	21	Standard
	Ce	140	41.7	13.9				ug/L	245	Standard
>	**Tb**	159	951623.8	1.5				ug/L	950397	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	77.3	16.4	**0.0077**	0.001	17.6	ug/L	15	Standard
	Tl	205	83.3	27.7	**0.0005**	0.003	538.8	ug/L	13	Standard
	Pb	206	329.3	15.7	**0.0134**	0.008	63.3	ug/L	264	Standard
	Pb	207	295.3	8.1	**0.0104**	0.004	40.0	ug/L	222	Standard
	Pb	208	1227.0	6.3	**0.0091**	0.003	35.4	ug/L	959	Standard
	U	238	66.0	40.1	**0.0078**	0.003	40.9	ug/L	9	Standard
>	**Bi**	209	562277.6	0.8				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 15:48:36
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	16.9	**0.0099**	0.013	128.3	mg/L	55	Standard
K	39	20.0	25.0	**-0.0563**	0.020	35.8	mg/L	28	Standard
Ca	43	20.0	25.0	**-0.6925**	0.397	57.4	mg/L	27	Standard
Fe	54	164.3	3.0	**0.0265**	0.005	17.4	mg/L	147	Standard
Fe	57	226.7	11.3	**-0.1282**	0.057	44.8	mg/L	268	Standard
> **Sc-1**	45	42380.9	4.0				mg/L	41174	Standard
Cl	35	88109.5	1.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2156.8	5.0				ug/L	1950	Standard
P	31	25852.0	1.3				ug/L	21156	Standard
S	34	4487.3	2.3				ug/L	3419	Standard
Sr	88	56.7	5.1				ug/L	72	Standard
C	12	96.7	39.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	113.3	10.2				mg/L	17	Standard
Dy	164	6.2	100.1				mg/L	16	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	15996.8	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.453	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 15:48:36
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.379
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.711
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 15:48:36
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145201
Sample Date/Time: Friday, July 01, 2016 15:49:32
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94816.0	3.6				ug/L	76456	Standard
	Be	9	25.0	40.0	**-0.0020**	0.007	332.6	ug/L	20	Standard
	Al	27	21072085.0	1.8	**99.2963**	2.302	2.3	ug/L	1307	Standard
	Sc	45	43716.3	1.4				ug/L	41174	Standard
	Ti	47	397.0	3.2	**1.1396**	0.053	4.7	ug/L	27	Standard
	V	51	4169.6	18.7	**0.3116**	0.101	32.4	ug/L	1434	Standard
	Cr	52	31233.8	0.8	**2.9091**	0.081	2.8	ug/L	7733	Standard
	Cr	53	20687.6	10.5	**20.1582**	2.403	11.9	ug/L	442	Standard
	Mn	55	2658788.2	0.4	**352.6307**	4.074	1.2	ug/L	723	Standard
	Co	59	29637.6	0.8	**3.8558**	0.023	0.6	ug/L	217	Standard
	Ni	60	6462.7	2.0	**2.9745**	0.037	1.3	ug/L	304	Standard
	Cu	65	861.0	3.9	**0.3497**	0.019	5.5	ug/L	181	Standard
	Zn	66	6645.5	1.6	**5.2668**	0.080	1.5	ug/L	215	Standard
>	**Ge**	72	518645.6	1.3				ug/L	520809	Standard
	As	75	3126.8	4.4	**2.5897**	0.143	5.5	ug/L	-52	Standard
	Se	82	664.6	4.5	**5.1588**	0.301	5.8	ug/L	17	Standard
	Se-1	77	930.7	11.1	**10.2587**	1.337	13.0	ug/L	56	Standard
>	**Ga**	71	203.3	20.9				mg/L	25	Standard
	Rb	85	1041748.9	1.1				ug/L	28	Standard
	Y	89	448254.4	0.8				ug/L	447395	Standard
>	**Rh**	103	201.7	17.6				ug/L	15	Standard
	Mo	98	637.0	2.3	**0.1927**	0.005	2.4	ug/L	113	Standard
	Ag	107	163.3	33.8	**0.0105**	0.008	72.2	ug/L	108	Standard
	Cd	111	106.6	9.0	**0.0453**	0.005	10.1	mg/L	3	Standard
	Cd	114	259.2	18.0	**0.0469**	0.009	19.3	ug/L	20	Standard
>	**In**	115	608292.3	1.4				ug/L	625728	Standard
	Sn	118	1770.1	23.1	**0.1984**	0.063	31.6	ug/L	568	Standard
	Sb	123	609.0	15.5	**0.0875**	0.018	20.6	ug/L	612	Standard
	Ba	135	570406.1	1.3	**269.6937**	1.874	0.7	ug/L	21	Standard
	Ce	140	4143.9	0.7				ug/L	245	Standard
>	**Tb**	159	943834.4	0.3				ug/L	950397	Standard
	Ho	165	73.3	37.6				ug/L	7	Standard
	Tl	203	318.3	4.1	**0.0368**	0.002	4.3	ug/L	15	Standard
	Tl	205	295.0	13.5	**0.0294**	0.005	17.1	ug/L	13	Standard
	Pb	206	463.0	0.4	**0.0429**	0.001	1.6	ug/L	264	Standard
	Pb	207	397.7	5.2	**0.0359**	0.005	12.9	ug/L	222	Standard
	Pb	208	1684.0	4.4	**0.0367**	0.004	11.5	ug/L	959	Standard
	U	238	1098.4	2.7	**0.1441**	0.005	3.4	ug/L	9	Standard
>	**Bi**	209	521779.5	0.6				ug/L	552821	Standard

Sample ID: L1606145201
Report Date/Time: Friday, July 01, 2016 15:51:49
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.7590**	8.234	173.0	mg/L	2	Standard
Mg	24	80860.2	1.3	**88.9060**	0.128	0.1	mg/L	55	Standard
K	39	8253.9	2.9	**29.6886**	1.293	4.4	mg/L	28	Standard
Ca	43	198.3	3.9	**14.5226**	0.636	4.4	mg/L	27	Standard
Fe	54	1838.9	5.0	**1.2589**	0.053	4.2	mg/L	147	Standard
Fe	57	841.7	4.0	**1.6326**	0.120	7.3	mg/L	268	Standard
> **Sc-1**	45	43716.3	1.4				mg/L	41174	Standard
Cl	35	88622.4	0.4				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	138083.1	1.2				ug/L	1950	Standard
P	31	31377.5	0.7				ug/L	21156	Standard
S	34	4085.6	4.2				ug/L	3419	Standard
Sr	88	866.7	4.6				ug/L	72	Standard
C	12	386.7	12.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	63.6				mg/L	17	Standard
Dy	164	120.3	12.9				mg/L	16	Standard
Ho-1	165	73.3	37.6				mg/L	7	Standard
Er	166	63.3	9.1				mg/L	7	Standard
I	127	189740.0	7.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.014	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.585	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145201
Report Date/Time: Friday, July 01, 2016 15:51:49
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.214
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.385
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145201
Report Date/Time: Friday, July 01, 2016 15:51:49
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145301
Sample Date/Time: Friday, July 01, 2016 15:52:44
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89907.9	3.9				ug/L	76456	Standard
	Be	9	211.7	15.2	**0.1412**	0.026	18.7	ug/L	20	Standard
	Al	27	42254036.6	2.1	**209.9919**	4.107	2.0	ug/L	1307	Standard
	Sc	45	48114.6	1.7				ug/L	41174	Standard
	Ti	47	742.0	6.1	**2.0824**	0.104	5.0	ug/L	27	Standard
	V	51	8101.4	4.4	**0.7396**	0.044	5.9	ug/L	1434	Standard
	Cr	52	57499.6	0.2	**5.7989**	0.111	1.9	ug/L	7733	Standard
	Cr	53	37860.6	3.1	**35.2327**	0.609	1.7	ug/L	442	Standard
	Mn	55	6394718.4	1.0	**803.9667**	4.505	0.6	ug/L	723	Standard
	Co	59	184000.3	2.5	**22.8310**	0.339	1.5	ug/L	217	Standard
	Ni	60	37990.6	1.7	**17.2738**	0.133	0.8	ug/L	304	Standard
	Cu	65	1519.1	2.8	**0.6345**	0.018	2.9	ug/L	181	Standard
	Zn	66	65750.7	0.3	**50.9054**	0.635	1.2	ug/L	215	Standard
>	Ge	72	547197.2	1.5				ug/L	520809	Standard
	As	75	6205.1	1.8	**4.8294**	0.085	1.7	ug/L	-52	Standard
	Se	82	411.3	4.6	**2.9717**	0.112	3.8	ug/L	17	Standard
	Se-1	77	1750.8	0.4	**18.8117**	0.357	1.9	ug/L	56	Standard
>	Ga	71	151.7	19.9				mg/L	25	Standard
	Rb	85	17248.1	1.6				ug/L	28	Standard
	Y	89	479799.4	2.3				ug/L	447395	Standard
>	Rh	103	326.7	3.2				ug/L	15	Standard
	Mo	98	555.5	3.1	**0.1551**	0.002	1.1	ug/L	113	Standard
	Ag	107	126.3	11.0	**0.0043**	0.002	53.3	ug/L	108	Standard
	Cd	111	138.7	16.3	**0.0566**	0.011	19.3	mg/L	3	Standard
	Cd	114	356.3	13.9	**0.0611**	0.010	15.7	ug/L	20	Standard
>	In	115	641727.3	2.7				ug/L	625728	Standard
	Sn	118	1815.1	14.3	**0.1914**	0.045	23.5	ug/L	568	Standard
	Sb	123	789.7	10.3	**0.1155**	0.018	15.5	ug/L	612	Standard
	Ba	135	2472744.3	1.1	**1108.6111**	20.421	1.8	ug/L	21	Standard
	Ce	140	34706.4	3.0				ug/L	245	Standard
>	Tb	159	985263.1	3.4				ug/L	950397	Standard
	Ho	165	401.7	6.3				ug/L	7	Standard
	Tl	203	117.7	8.7	**0.0126**	0.001	10.2	ug/L	15	Standard
	Tl	205	90.0	11.1	**0.0018**	0.001	56.0	ug/L	13	Standard
	Pb	206	577.0	6.7	**0.0602**	0.005	9.1	ug/L	264	Standard
	Pb	207	486.3	6.2	**0.0505**	0.006	11.6	ug/L	222	Standard
	Pb	208	2130.1	2.6	**0.0553**	0.003	5.9	ug/L	959	Standard
	U	238	158.7	10.2	**0.0198**	0.002	9.7	ug/L	9	Standard
>	Bi	209	541702.7	2.6				ug/L	552821	Standard

Sample ID: L1606145301
Report Date/Time: Friday, July 01, 2016 15:55:01
Page 1

Approved: July 02, 2016

Na	23	6.7	114.6	**17.2516**	19.854	115.1	mg/L	2	Standard
Mg	24	87429.9	0.9	**87.3596**	1.878	2.1	mg/L	55	Standard
K	39	405.0	18.3	**1.2003**	0.260	21.7	mg/L	28	Standard
Ca	43	375.0	6.7	**26.7244**	2.231	8.3	mg/L	27	Standard
Fe	54	4204.7	3.3	**2.7242**	0.135	5.0	mg/L	147	Standard
Fe	57	1598.4	2.6	**3.4000**	0.148	4.3	mg/L	268	Standard
> **Sc-1**	45	48114.6	1.7				mg/L	41174	Standard
Cl	35	91040.7	1.1				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	68651.9	2.9				ug/L	1950	Standard
P	31	44045.6	3.3				ug/L	21156	Standard
S	34	4263.9	3.9				ug/L	3419	Standard
Sr	88	1216.7	5.1				ug/L	72	Standard
C	12	740.0	12.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	150.0	40.6				mg/L	17	Standard
Dy	164	420.2	5.3				mg/L	16	Standard
Ho-1	165	401.7	6.3				mg/L	7	Standard
Er	166	413.3	49.7				mg/L	7	Standard
I	127	1073738.4	7.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.595	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.067	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145301
Report Date/Time: Friday, July 01, 2016 15:55:01
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.557	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.989	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145301
Report Date/Time: Friday, July 01, 2016 15:55:01
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145303
Sample Date/Time: Friday, July 01, 2016 15:55:55
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86373.8	1.1				ug/L	76456	Standard
	Be	9	46.7	12.4	**0.0170**	0.005	27.0	ug/L	20	Standard
	Al	27	14145040.2	0.8	**73.1395**	1.317	1.8	ug/L	1307	Standard
	Sc	45	47950.8	2.8				ug/L	41174	Standard
	Ti	47	645.7	4.6	**1.7427**	0.078	4.5	ug/L	27	Standard
	V	51	5119.6	16.2	**0.3758**	0.094	25.1	ug/L	1434	Standard
	Cr	52	15660.8	1.2	**0.8154**	0.028	3.4	ug/L	7733	Standard
	Cr	53	17461.7	5.9	**15.5162**	0.994	6.4	ug/L	442	Standard
	Mn	55	1851750.9	0.7	**225.4523**	0.893	0.4	ug/L	723	Standard
	Co	59	6079.9	0.1	**0.7024**	0.002	0.3	ug/L	217	Standard
	Ni	60	3414.1	2.2	**1.3640**	0.029	2.1	ug/L	304	Standard
	Cu	65	716.4	2.9	**0.2496**	0.010	3.9	ug/L	181	Standard
	Zn	66	5607.0	0.9	**4.0396**	0.027	0.7	ug/L	215	Standard
>	**Ge**	72	564834.0	0.3				ug/L	520809	Standard
	As	75	9187.6	1.4	**6.9075**	0.115	1.7	ug/L	-52	Standard
	Se	82	374.5	2.3	**2.6072**	0.072	2.8	ug/L	17	Standard
	Se-1	77	677.0	5.1	**6.6170**	0.347	5.3	ug/L	56	Standard
>	**Ga**	71	156.7	12.9				mg/L	25	Standard
	Rb	85	67336.0	0.8				ug/L	28	Standard
	Y	89	479624.4	2.5				ug/L	447395	Standard
>	**Rh**	103	165.0	24.1				ug/L	15	Standard
	Mo	98	376.6	7.3	**0.0951**	0.009	9.5	ug/L	113	Standard
	Ag	107	95.7	7.7	**-0.0001**	0.001	907.0	ug/L	108	Standard
	Cd	111	85.6	10.8	**0.0332**	0.004	11.6	mg/L	3	Standard
	Cd	114	251.0	20.4	**0.0421**	0.008	19.8	ug/L	20	Standard
>	**In**	115	654613.0	0.6				ug/L	625728	Standard
	Sn	118	2261.8	11.1	**0.2519**	0.039	15.5	ug/L	568	Standard
	Sb	123	469.5	25.9	**0.0532**	0.023	43.1	ug/L	612	Standard
	Ba	135	790046.7	0.9	**347.1125**	3.141	0.9	ug/L	21	Standard
	Ce	140	7066.6	1.9				ug/L	245	Standard
>	**Tb**	159	995476.8	2.0				ug/L	950397	Standard
	Ho	165	136.7	9.2				ug/L	7	Standard
	Tl	203	120.3	3.1	**0.0125**	0.000	3.4	ug/L	15	Standard
	Tl	205	115.0	19.9	**0.0045**	0.003	61.6	ug/L	13	Standard
	Pb	206	675.0	1.7	**0.0742**	0.002	2.8	ug/L	264	Standard
	Pb	207	573.0	0.8	**0.0642**	0.001	1.0	ug/L	222	Standard
	Pb	208	2423.1	1.0	**0.0659**	0.001	2.1	ug/L	959	Standard
	U	238	289.7	4.3	**0.0353**	0.002	5.0	ug/L	9	Standard
>	**Bi**	209	558695.9	0.8				ug/L	552821	Standard

Sample ID: L1606145303
Report Date/Time: Friday, July 01, 2016 15:58:12
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**12.9192**	12.771	98.9	mg/L	2	Standard
Mg	24	36766.2	0.7	**36.8431**	1.290	3.5	mg/L	55	Standard
K	39	516.7	3.4	**1.5703**	0.055	3.5	mg/L	28	Standard
Ca	43	131.7	25.3	**7.7852**	2.329	29.9	mg/L	27	Standard
Fe	54	27742.4	0.7	**18.5905**	0.497	2.7	mg/L	147	Standard
Fe	57	7620.3	4.0	**19.3167**	1.147	5.9	mg/L	268	Standard
> **Sc-1**	45	47950.8	2.8				mg/L	41174	Standard
Cl	35	87125.8	1.5				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	74331.9	2.0				ug/L	1950	Standard
P	31	38512.2	1.7				ug/L	21156	Standard
S	34	4447.3	3.4				ug/L	3419	Standard
Sr	88	553.3	7.8				ug/L	72	Standard
C	12	426.7	14.3				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	150.0	48.1				mg/L	17	Standard
Dy	164	179.8	21.5				mg/L	16	Standard
Ho-1	165	136.7	9.2				mg/L	7	Standard
Er	166	143.3	22.4				mg/L	7	Standard
I	127	215985.2	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.972	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.453	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145303
Report Date/Time: Friday, July 01, 2016 15:58:12
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.616
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.063
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145303
Report Date/Time: Friday, July 01, 2016 15:58:12
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606142701 WG574419-02
Sample Date/Time: Friday, July 01, 2016 15:59:07
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79441.0	0.3				ug/L	76456	Standard
	Be	9	21.7	96.1	**-0.0013**	0.018	1415.0	ug/L	20	Standard
	Al	27	10303389.4	2.0	**57.9147**	1.116	1.9	ug/L	1307	Standard
	Sc	45	40113.1	2.6				ug/L	41174	Standard
	Ti	47	184.0	9.4	**0.4748**	0.053	11.1	ug/L	27	Standard
	V	51	103393.4	0.6	**12.2581**	0.142	1.2	ug/L	1434	Standard
	Cr	52	60643.8	2.1	**6.4579**	0.232	3.6	ug/L	7733	Standard
	Cr	53	11869.6	1.2	**11.2148**	0.255	2.3	ug/L	442	Standard
	Mn	55	46538.0	1.1	**5.9867**	0.050	0.8	ug/L	723	Standard
	Co	59	37235.0	0.6	**4.7844**	0.072	1.5	ug/L	217	Standard
	Ni	60	30036.7	0.7	**14.1841**	0.259	1.8	ug/L	304	Standard
	Cu	65	12213.6	1.3	**5.8539**	0.146	2.5	ug/L	181	Standard
	Zn	66	33617.6	0.9	**26.9954**	0.533	2.0	ug/L	215	Standard
>	Ge	72	525941.0	1.1				ug/L	520809	Standard
	As	75	2649.6	1.8	**2.1706**	0.042	1.9	ug/L	-52	Standard
	Se	82	1059.1	1.9	**8.1767**	0.235	2.9	ug/L	17	Standard
	Se-1	77	280.3	4.4	**2.5625**	0.130	5.1	ug/L	56	Standard
>	Ga	71	101.7	18.6				mg/L	25	Standard
	Rb	85	18985.2	1.5				ug/L	28	Standard
	Y	89	446075.2	1.3				ug/L	447395	Standard
>	Rh	103	71.7	26.4				ug/L	15	Standard
	Mo	98	435588.8	0.8	**147.3741**	1.220	0.8	ug/L	113	Standard
	Ag	107	124.3	1.7	**0.0049**	0.000	10.0	ug/L	108	Standard
	Cd	111	-216.2	12.9	**-0.0985**	0.013	12.8	mg/L	3	Standard
	Cd	114	902.1	8.1	**0.1619**	0.011	7.0	ug/L	20	Standard
>	In	115	611441.0	1.1				ug/L	625728	Standard
	Sn	118	915.0	18.3	**0.0613**	0.027	44.2	ug/L	568	Standard
	Sb	123	652.5	5.8	**0.0955**	0.006	6.7	ug/L	612	Standard
	Ba	135	39982.7	1.2	**18.7899**	0.104	0.6	ug/L	21	Standard
	Ce	140	376.7	4.3				ug/L	245	Standard
>	Tb	159	929616.4	0.5				ug/L	950397	Standard
	Ho	165	33.3	48.2				ug/L	7	Standard
	Tl	203	136.7	9.3	**0.0150**	0.001	9.9	ug/L	15	Standard
	Tl	205	106.7	11.8	**0.0041**	0.002	39.6	ug/L	13	Standard
	Pb	206	1749.8	1.5	**0.2761**	0.005	1.9	ug/L	264	Standard
	Pb	207	1478.4	2.6	**0.2515**	0.008	3.1	ug/L	222	Standard
	Pb	208	6375.9	0.9	**0.2660**	0.002	0.9	ug/L	959	Standard
	U	238	161.7	12.3	**0.0205**	0.003	12.5	ug/L	9	Standard
>	Bi	209	534118.6	0.2				ug/L	552821	Standard

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 16:01:24
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**10.0941**	8.741	86.6	mg/L	2	Standard
Mg	24	25695.1	1.2	**30.7602**	0.665	2.2	mg/L	55	Standard
K	39	365.0	11.7	**1.3075**	0.193	14.8	mg/L	28	Standard
Ca	43	230.0	14.3	**18.9742**	2.668	14.1	mg/L	27	Standard
Fe	54	302.2	7.9	**0.1442**	0.013	8.8	mg/L	147	Standard
Fe	57	455.0	18.2	**0.6271**	0.222	35.4	mg/L	268	Standard
> **Sc-1**	45	40113.1	2.6				mg/L	41174	Standard
Cl	35	98380.0	3.9				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	216720.0	3.3				ug/L	1950	Standard
P	31	13189.1	3.4				ug/L	21156	Standard
S	34	3895.5	7.2				ug/L	3419	Standard
Sr	88	283.3	22.8				ug/L	72	Standard
C	12	173.3	27.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	316.7	12.8				mg/L	17	Standard
Dy	164	233.8	13.8				mg/L	16	Standard
Ho-1	165	33.3	48.2				mg/L	7	Standard
Er	166	60.0	33.3				mg/L	7	Standard
I	127	62818.3	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.985	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 16:01:24
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.717
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.617
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 16:01:24
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606142701DP WG574419-07
Sample Date/Time: Friday, July 01, 2016 16:02:18
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77749.0	1.6				ug/L	76456	Standard
	Be	9	6.7	43.3	**-0.0140**	0.002	17.3	ug/L	20	Standard
	Al	27	9817097.2	1.8	**56.3855**	0.837	1.5	ug/L	1307	Standard
	Sc	45	39810.6	1.5				ug/L	41174	Standard
	Ti	47	174.0	5.5	**0.4563**	0.027	5.9	ug/L	27	Standard
	V	51	99457.7	1.9	**12.0558**	0.214	1.8	ug/L	1434	Standard
	Cr	52	58802.6	0.7	**6.3951**	0.090	1.4	ug/L	7733	Standard
	Cr	53	11255.8	2.7	**10.8641**	0.366	3.4	ug/L	442	Standard
	Mn	55	43355.3	1.9	**5.6990**	0.079	1.4	ug/L	723	Standard
	Co	59	35792.9	1.2	**4.7027**	0.031	0.7	ug/L	217	Standard
	Ni	60	28593.6	0.6	**13.8042**	0.061	0.4	ug/L	304	Standard
	Cu	65	11425.0	1.5	**5.5962**	0.062	1.1	ug/L	181	Standard
	Zn	66	32386.6	1.1	**26.5937**	0.385	1.4	ug/L	215	Standard
>	Ge	72	514230.5	0.6				ug/L	520809	Standard
	As	75	2594.3	1.9	**2.1736**	0.050	2.3	ug/L	-52	Standard
	Se	82	1064.6	1.8	**8.4087**	0.182	2.2	ug/L	17	Standard
	Se-1	77	269.0	6.0	**2.5031**	0.207	8.3	ug/L	56	Standard
>	Ga	71	116.7	27.9				mg/L	25	Standard
	Rb	85	18095.8	1.8				ug/L	28	Standard
	Y	89	436440.0	0.3				ug/L	447395	Standard
>	Rh	103	98.3	34.6				ug/L	15	Standard
	Mo	98	417319.1	1.0	**143.2353**	2.296	1.6	ug/L	113	Standard
	Ag	107	105.3	7.0	**0.0024**	0.001	42.1	ug/L	108	Standard
	Cd	111	-221.7	8.5	**-0.1024**	0.009	8.7	mg/L	3	Standard
	Cd	114	915.2	5.7	**0.1667**	0.008	5.0	ug/L	20	Standard
>	In	115	602737.8	0.7				ug/L	625728	Standard
	Sn	118	925.0	27.3	**0.0648**	0.040	61.0	ug/L	568	Standard
	Sb	123	629.8	5.8	**0.0928**	0.007	7.1	ug/L	612	Standard
	Ba	135	37742.0	0.9	**17.9925**	0.177	1.0	ug/L	21	Standard
	Ce	140	530.0	15.0				ug/L	245	Standard
>	Tb	159	918022.5	0.6				ug/L	950397	Standard
	Ho	165	26.7	47.2				ug/L	7	Standard
	Tl	203	122.7	8.6	**0.0136**	0.001	8.7	ug/L	15	Standard
	Tl	205	120.0	23.2	**0.0061**	0.004	61.9	ug/L	13	Standard
	Pb	206	1673.8	3.7	**0.2676**	0.008	2.9	ug/L	264	Standard
	Pb	207	1385.7	3.3	**0.2377**	0.006	2.4	ug/L	222	Standard
	Pb	208	6038.1	1.4	**0.2546**	0.001	0.3	ug/L	959	Standard
	U	238	134.0	4.7	**0.0173**	0.001	3.8	ug/L	9	Standard
>	Bi	209	524841.4	1.3				ug/L	552821	Standard

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 16:04:35
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**10.3333**	8.947	86.6	mg/L	2	Standard
Mg	24	24359.6	1.9	**29.3745**	0.694	2.4	mg/L	55	Standard
K	39	391.7	23.4	**1.4257**	0.389	27.3	mg/L	28	Standard
Ca	43	220.0	19.4	**18.2274**	4.000	21.9	mg/L	27	Standard
Fe	54	293.3	15.9	**0.1391**	0.037	26.9	mg/L	147	Standard
Fe	57	398.3	15.7	**0.4602**	0.182	39.6	mg/L	268	Standard
> **Sc-1**	45	39810.6	1.5				mg/L	41174	Standard
Cl	35	101579.4	0.9				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	218312.6	3.3				ug/L	1950	Standard
P	31	12735.4	2.4				ug/L	21156	Standard
S	34	3657.1	4.9				ug/L	3419	Standard
Sr	88	253.3	24.1				ug/L	72	Standard
C	12	143.3	20.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	270.0	11.1				mg/L	17	Standard
Dy	164	258.1	16.7				mg/L	16	Standard
Ho-1	165	26.7	47.2				mg/L	7	Standard
Er	166	40.0	25.0				mg/L	7	Standard
I	127	57368.4	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.691	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.737	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 16:04:35
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.326
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.939
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 16:04:35
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606128901
Sample Date/Time: Friday, July 01, 2016 16:05:30
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76109.2	3.3				ug/L	76456	Standard
	Be	9	26.7	10.8	**0.0041**	0.003	75.2	ug/L	20	Standard
	Al	27	2157263.5	1.2	**12.6549**	0.272	2.1	ug/L	1307	Standard
	Sc	45	39362.7	1.0				ug/L	41174	Standard
	Ti	47	31.0	25.6	**0.0115**	0.025	213.1	ug/L	27	Standard
	V	51	2160.8	9.2	**0.0669**	0.026	39.1	ug/L	1434	Standard
	Cr	52	18224.3	3.5	**1.3053**	0.079	6.0	ug/L	7733	Standard
	Cr	53	3937.2	3.2	**3.5166**	0.125	3.6	ug/L	442	Standard
	Mn	55	109531.5	1.1	**14.5084**	0.090	0.6	ug/L	723	Standard
	Co	59	3522.7	2.0	**0.4349**	0.006	1.3	ug/L	217	Standard
	Ni	60	12809.7	0.5	**6.0810**	0.080	1.3	ug/L	304	Standard
	Cu	65	624.3	3.1	**0.2348**	0.009	4.0	ug/L	181	Standard
	Zn	66	2829.3	0.5	**2.1516**	0.027	1.3	ug/L	215	Standard
>	**Ge**	72	515809.2	1.0				ug/L	520809	Standard
	As	75	48.3	6.2	**0.0847**	0.002	2.4	ug/L	-52	Standard
	Se	82	67.8	11.0	**0.4157**	0.062	15.0	ug/L	17	Standard
	Se-1	77	139.0	6.9	**0.9565**	0.097	10.1	ug/L	56	Standard
>	**Ga**	71	33.3	31.2				mg/L	25	Standard
	Rb	85	320.0	16.9				ug/L	28	Standard
	Y	89	425911.6	0.3				ug/L	447395	Standard
>	**Rh**	103	23.3	61.9				ug/L	15	Standard
	Mo	98	1200.8	19.7	**0.3848**	0.082	21.3	ug/L	113	Standard
	Ag	107	75.3	7.8	**-0.0021**	0.001	36.3	ug/L	108	Standard
	Cd	111	25.6	20.9	**0.0091**	0.002	26.3	mg/L	3	Standard
	Cd	114	59.2	25.8	**0.0107**	0.003	26.4	ug/L	20	Standard
>	**In**	115	608157.1	1.0				ug/L	625728	Standard
	Sn	118	525.0	20.9	**-0.0004**	0.017	4881.3	ug/L	568	Standard
	Sb	123	165.4	19.3	**-0.0007**	0.007	874.9	ug/L	612	Standard
	Ba	135	100056.7	1.7	**47.3091**	1.176	2.5	ug/L	21	Standard
	Ce	140	223.3	64.9				ug/L	245	Standard
>	**Tb**	159	910863.8	0.3				ug/L	950397	Standard
	Ho	165	15.0	57.7				ug/L	7	Standard
	Tl	203	83.0	10.7	**0.0087**	0.001	10.8	ug/L	15	Standard
	Tl	205	80.0	31.3	**0.0005**	0.003	626.9	ug/L	13	Standard
	Pb	206	270.7	3.7	**0.0052**	0.002	42.5	ug/L	264	Standard
	Pb	207	242.0	6.8	**0.0021**	0.003	162.6	ug/L	222	Standard
	Pb	208	1024.7	1.6	**0.0016**	0.001	40.9	ug/L	959	Standard
	U	238	10.0	43.6	**0.0010**	0.001	55.3	ug/L	9	Standard
>	**Bi**	209	540336.1	0.9				ug/L	552821	Standard

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 16:07:47
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4055.5	6.4	**4.8960**	0.330	6.7	mg/L	55	Standard
K	39	15.0	66.7	**-0.0710**	0.040	57.0	mg/L	28	Standard
Ca	43	48.3	26.0	**2.1421**	1.207	56.4	mg/L	27	Standard
Fe	54	63.5	15.9	**-0.0467**	0.009	18.5	mg/L	147	Standard
Fe	57	253.3	5.0	**0.0103**	0.042	410.2	mg/L	268	Standard
> **Sc-1**	45	39362.7	1.0				mg/L	41174	Standard
Cl	35	90744.3	1.5				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	11220.8	7.7				ug/L	1950	Standard
P	31	8672.5	2.6				ug/L	21156	Standard
S	34	4007.2	6.6				ug/L	3419	Standard
Sr	88	146.7	20.0				ug/L	72	Standard
C	12	96.7	36.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	436.7	13.4				mg/L	17	Standard
Dy	164	6.5	179.6				mg/L	16	Standard
Ho-1	165	15.0	57.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	40273.5	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.547	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.040	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 16:07:47
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.192
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.742
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606129003
Sample Date/Time: Friday, July 01, 2016 16:08:41
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74300.1	2.3				ug/L	76456	Standard
	Be	9	33.3	70.9	**0.0108**	0.022	200.3	ug/L	20	Standard
	Al	27	1109788.9	1.6	**6.6634**	0.204	3.1	ug/L	1307	Standard
	Sc	45	38913.3	2.4				ug/L	41174	Standard
	Ti	47	72.3	13.4	**0.1384**	0.027	19.6	ug/L	27	Standard
	V	51	1833.5	12.2	**0.0257**	0.030	115.0	ug/L	1434	Standard
	Cr	52	6791.5	6.8	**-0.1263**	0.061	48.5	ug/L	7733	Standard
	Cr	53	2288.5	7.5	**1.8597**	0.192	10.3	ug/L	442	Standard
	Mn	55	199243.2	0.7	**26.3506**	0.434	1.6	ug/L	723	Standard
	Co	59	3319.7	2.1	**0.4061**	0.014	3.4	ug/L	217	Standard
	Ni	60	1865.1	2.1	**0.7502**	0.017	2.3	ug/L	304	Standard
	Cu	65	304.7	2.9	**0.0760**	0.006	7.4	ug/L	181	Standard
	Zn	66	5878.8	1.2	**4.6424**	0.117	2.5	ug/L	215	Standard
>	Ge	72	518291.1	1.3				ug/L	520809	Standard
	As	75	792.5	2.6	**0.6902**	0.010	1.5	ug/L	-52	Standard
	Se	82	76.5	13.2	**0.4817**	0.073	15.2	ug/L	17	Standard
	Se-1	77	129.3	15.3	**0.8357**	0.233	27.9	ug/L	56	Standard
>	Ga	71	50.0	26.5				mg/L	25	Standard
	Rb	85	2285.2	6.7				ug/L	28	Standard
	Y	89	427107.4	1.7				ug/L	447395	Standard
>	Rh	103	36.7	56.8				ug/L	15	Standard
	Mo	98	394.1	11.3	**0.1099**	0.015	13.4	ug/L	113	Standard
	Ag	107	108.3	28.6	**0.0026**	0.004	163.3	ug/L	108	Standard
	Cd	111	66.5	18.4	**0.0273**	0.005	18.9	mg/L	3	Standard
	Cd	114	176.4	7.1	**0.0318**	0.002	6.8	ug/L	20	Standard
>	In	115	609166.7	1.0				ug/L	625728	Standard
	Sn	118	880.0	21.8	**0.0564**	0.032	56.6	ug/L	568	Standard
	Sb	123	119.8	10.9	**-0.0099**	0.003	28.1	ug/L	612	Standard
	Ba	135	34816.0	1.5	**16.4201**	0.118	0.7	ug/L	21	Standard
	Ce	140	1188.4	1.5				ug/L	245	Standard
>	Tb	159	905742.5	1.6				ug/L	950397	Standard
	Ho	165	23.3	32.7				ug/L	7	Standard
	Tl	203	105.7	16.3	**0.0112**	0.002	15.9	ug/L	15	Standard
	Tl	205	100.0	22.9	**0.0030**	0.003	94.5	ug/L	13	Standard
	Pb	206	323.0	3.6	**0.0143**	0.002	17.0	ug/L	264	Standard
	Pb	207	282.3	3.6	**0.0098**	0.001	12.1	ug/L	222	Standard
	Pb	208	1225.0	3.7	**0.0111**	0.002	20.3	ug/L	959	Standard
	U	238	27.3	27.5	**0.0032**	0.001	29.6	ug/L	9	Standard
>	Bi	209	543356.0	1.6				ug/L	552821	Standard

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 16:10:58
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4887.5	0.8	**5.9826**	0.111	1.8	mg/L	55	Standard
K	39	70.0	31.1	**0.1543**	0.094	61.0	mg/L	28	Standard
Ca	43	26.7	78.1	**0.1318**	2.068	1569.3	mg/L	27	Standard
Fe	54	2091.2	5.6	**1.6384**	0.138	8.4	mg/L	147	Standard
Fe	57	790.0	3.5	**1.7657**	0.122	6.9	mg/L	268	Standard
> **Sc-1**	45	38913.3	2.4				mg/L	41174	Standard
Cl	35	85357.9	2.8				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	12818.8	1.9				ug/L	1950	Standard
P	31	10578.7	2.6				ug/L	21156	Standard
S	34	4063.9	1.6				ug/L	3419	Standard
Sr	88	108.3	11.6				ug/L	72	Standard
C	12	110.0	32.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	17	Standard
Dy	164	55.7	26.3				mg/L	16	Standard
Ho-1	165	23.3	32.7				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	7	Standard
I	127	94261.3	5.7				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.181	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.516	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 16:10:58
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.353
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.288
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 16:10:58
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 16:11:55
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78995.5	2.2				ug/L	76456	Standard
	Be	9	60502.3	2.1	**52.2922**	0.491	0.9	ug/L	20	Standard
	Al	27	8989002.2	0.8	**50.8245**	0.985	1.9	ug/L	1307	Standard
	Sc	45	42305.6	0.7				ug/L	41174	Standard
	Ti	47	34061.9	1.0	**98.6488**	1.546	1.6	ug/L	27	Standard
	V	51	436960.5	1.1	**50.0001**	0.513	1.0	ug/L	1434	Standard
	Cr	52	437865.8	0.9	**50.1688**	0.753	1.5	ug/L	7733	Standard
	Cr	53	53937.5	1.4	**49.9817**	0.858	1.7	ug/L	442	Standard
	Mn	55	399271.1	0.3	**49.7080**	0.463	0.9	ug/L	723	Standard
	Co	59	415402.7	0.9	**51.1776**	0.121	0.2	ug/L	217	Standard
	Ni	60	110781.9	0.5	**50.2680**	0.560	1.1	ug/L	304	Standard
	Cu	65	108848.6	0.7	**50.2966**	0.042	0.1	ug/L	181	Standard
	Zn	66	65152.1	0.8	**50.0366**	0.239	0.5	ug/L	215	Standard
>	**Ge**	72	551526.5	0.7				ug/L	520809	Standard
	As	75	65288.4	0.5	**49.9868**	0.536	1.1	ug/L	-52	Standard
	Se	82	6767.7	1.1	**50.4635**	0.866	1.7	ug/L	17	Standard
	Se-1	77	4643.0	1.4	**50.6038**	0.550	1.1	ug/L	56	Standard
>	**Ga**	71	51.7	27.9				mg/L	25	Standard
	Rb	85	896.7	7.7				ug/L	28	Standard
	Y	89	469245.9	0.9				ug/L	447395	Standard
>	**Rh**	103	30.0	50.0				ug/L	15	Standard
	Mo	98	315176.0	0.7	**100.1655**	0.835	0.8	ug/L	113	Standard
	Ag	107	372454.9	1.5	**49.8448**	0.674	1.4	ug/L	108	Standard
	Cd	111	120309.5	0.5	**50.2390**	0.275	0.5	mg/L	3	Standard
	Cd	114	296771.3	0.4	**50.0551**	0.319	0.6	ug/L	20	Standard
>	**In**	115	650857.3	0.3				ug/L	625728	Standard
	Sn	118	332008.2	0.6	**49.5103**	0.318	0.6	ug/L	568	Standard
	Sb	123	262896.6	1.7	**48.8713**	0.775	1.6	ug/L	612	Standard
	Ba	135	110171.1	0.5	**48.6680**	0.323	0.7	ug/L	21	Standard
	Ce	140	123.3	16.9				ug/L	245	Standard
>	**Tb**	159	962981.5	0.4				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	457474.5	0.7	**50.4943**	0.334	0.7	ug/L	15	Standard
	Tl	205	418439.6	0.8	**52.0062**	0.714	1.4	ug/L	13	Standard
	Pb	206	289168.5	1.0	**50.5726**	0.399	0.8	ug/L	264	Standard
	Pb	207	263060.3	0.2	**50.6591**	0.254	0.5	ug/L	222	Standard
	Pb	208	1106275.9	0.6	**52.1627**	0.606	1.2	ug/L	959	Standard
	U	238	414349.5	1.0	**50.9359**	0.727	1.4	ug/L	9	Standard
>	**Bi**	209	557861.1	0.5				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 16:14:12
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.8874**	8.457	173.0	mg/L	2	Standard
Mg	24	4582.4	2.1	**5.1503**	0.148	2.9	mg/L	55	Standard
K	39	1161.7	7.3	**4.2028**	0.289	6.9	mg/L	28	Standard
Ca	43	63.3	9.1	**3.1474**	0.494	15.7	mg/L	27	Standard
Fe	54	6769.4	2.9	**5.0672**	0.121	2.4	mg/L	147	Standard
Fe	57	2078.5	6.0	**5.4119**	0.382	7.1	mg/L	268	Standard
Sc-1	45	42305.6	0.7				mg/L	41174	Standard
Cl	35	87401.4	1.9				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	3040.3	9.5				ug/L	1950	Standard
P	31	27000.7	1.2				ug/L	21156	Standard
S	34	4354.0	2.5				ug/L	3419	Standard
Sr	88	48.3	31.6				ug/L	72	Standard
C	12	120.0	22.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	296.7	25.3				mg/L	17	Standard
Dy	164	9.4	107.0				mg/L	16	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	16158.6	6.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.584		
Al	27	101.649		
Sc	45			
Ti	47	98.649		
V	51	100.000		
Cr	52	100.338		
Cr	53			
Mn	55	99.416		
Co	59	102.355		
Ni	60	100.536		
Cu	65	100.593		
Zn	66	100.073		
Ge	72		105.898	
As	75	99.974		
Se	82	100.927		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 16:14:12
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	100.165		
Ag	107	99.690		
Cd	111	100.478		
Cd	114			
> In	115			104.016
Sn	118	99.021		
Sb	123	97.743		
Ba	135	97.336		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.989		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.325		
U	238	101.872		
> Bi	209			100.912
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 16:14:12
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 16:15:06
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79089.3	2.9				ug/L	76456	Standard
	Be	9	15.0	57.7	**-0.0068**	0.008	113.4	ug/L	20	Standard
	Al	27	2235.2	13.9	**0.0024**	0.001	57.8	ug/L	1307	Standard
	Sc	45	43469.0	3.3				ug/L	41174	Standard
	Ti	47	28.3	17.4	**-0.0019**	0.015	796.4	ug/L	27	Standard
	V	51	1493.4	3.9	**-0.0261**	0.008	30.6	ug/L	1434	Standard
	Cr	52	7368.5	3.1	**-0.1054**	0.021	19.8	ug/L	7733	Standard
	Cr	53	613.3	6.6	**0.1595**	0.042	26.4	ug/L	442	Standard
	Mn	55	787.0	3.1	**-0.0026**	0.002	90.1	ug/L	723	Standard
	Co	59	245.7	12.9	**0.0010**	0.004	377.8	ug/L	217	Standard
	Ni	60	277.3	6.7	**-0.0262**	0.009	35.5	ug/L	304	Standard
	Cu	65	184.0	15.4	**0.0115**	0.013	111.3	ug/L	181	Standard
	Zn	66	259.7	4.8	**0.0209**	0.009	40.6	ug/L	215	Standard
>	**Ge**	72	548531.1	0.8				ug/L	520809	Standard
	As	75	-66.9	12.4	**-0.0063**	0.007	105.6	ug/L	-52	Standard
	Se	82	22.1	15.5	**0.0395**	0.025	62.6	ug/L	17	Standard
	Se-1	77	54.7	22.1	**-0.0780**	0.131	167.8	ug/L	56	Standard
>	**Ga**	71	23.3	75.3				mg/L	25	Standard
	Rb	85	18.3	56.8				ug/L	28	Standard
	Y	89	474502.6	0.9				ug/L	447395	Standard
>	**Rh**	103	10.0					ug/L	15	Standard
	Mo	98	353.6	10.5	**0.0864**	0.011	12.8	ug/L	113	Standard
	Ag	107	117.0	12.6	**0.0025**	0.002	78.3	ug/L	108	Standard
	Cd	111	11.4	37.7	**0.0023**	0.002	74.6	mg/L	3	Standard
	Cd	114	48.0	51.5	**0.0079**	0.004	50.7	ug/L	20	Standard
>	**In**	115	662932.4	0.6				ug/L	625728	Standard
	Sn	118	1505.1	27.3	**0.1367**	0.061	44.7	ug/L	568	Standard
	Sb	123	848.9	30.9	**0.1215**	0.049	40.0	ug/L	612	Standard
	Ba	135	79.0	17.7	**0.0163**	0.006	35.9	ug/L	21	Standard
	Ce	140	31.7	24.1				ug/L	245	Standard
>	**Tb**	159	977903.3	1.9				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	71.7	6.3	**0.0070**	0.000	7.1	ug/L	15	Standard
	Tl	205	66.7	28.4	**-0.0016**	0.002	147.5	ug/L	13	Standard
	Pb	206	325.0	5.7	**0.0119**	0.003	21.2	ug/L	264	Standard
	Pb	207	293.0	9.6	**0.0091**	0.005	50.3	ug/L	222	Standard
	Pb	208	1180.4	1.4	**0.0062**	0.001	14.3	ug/L	959	Standard
	U	238	63.3	11.6	**0.0074**	0.001	11.2	ug/L	9	Standard
>	**Bi**	209	570093.4	1.3				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 16:17:23
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	13.3	**-0.0123**	0.005	38.9	mg/L	55	Standard
K	39	35.0	14.3	**-0.0036**	0.022	615.4	mg/L	28	Standard
Ca	43	20.0	25.0	**-0.7333**	0.424	57.9	mg/L	27	Standard
Fe	54	187.6	24.1	**0.0414**	0.038	91.6	mg/L	147	Standard
Fe	57	236.7	10.0	**-0.1153**	0.063	54.7	mg/L	268	Standard
> **Sc-1**	45	43469.0	3.3				mg/L	41174	Standard
Cl	35	86433.8	0.2				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	2503.5	3.8				ug/L	1950	Standard
P	31	25746.9	1.4				ug/L	21156	Standard
S	34	4332.3	3.9				ug/L	3419	Standard
Sr	88	76.7	27.2				ug/L	72	Standard
C	12	100.0	65.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	49.3				mg/L	17	Standard
Dy	164	6.3	86.6				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	12004.8	4.7				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.323	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 16:17:23
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.946
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.124
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 16:17:23
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: PBS H2 WG574521-03
Sample Date/Time: Friday, July 01, 2016 16:37:08
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79271.8	0.3				ug/L	76456	Standard
	Be	9	20.0	66.1	**-0.0027**	0.011	426.9	ug/L	20	Standard
	Al	27	18129.4	51.1	**0.0920**	0.053	57.1	ug/L	1307	Standard
	Sc	45	43671.2	1.7				ug/L	41174	Standard
	Ti	47	42.0	27.0	**0.0356**	0.031	88.1	ug/L	27	Standard
	V	51	1815.5	7.2	**0.0075**	0.013	168.1	ug/L	1434	Standard
	Cr	52	9893.9	1.4	**0.1721**	0.017	10.1	ug/L	7733	Standard
	Cr	53	775.0	10.2	**0.2997**	0.080	26.8	ug/L	442	Standard
	Mn	55	2337.2	54.3	**0.1861**	0.154	82.5	ug/L	723	Standard
	Co	59	338.7	60.7	**0.0117**	0.025	210.3	ug/L	217	Standard
	Ni	60	460.3	4.6	**0.0540**	0.007	13.4	ug/L	304	Standard
	Cu	65	246.0	5.3	**0.0385**	0.005	13.8	ug/L	181	Standard
	Zn	66	1190.0	1.7	**0.7267**	0.005	0.6	ug/L	215	Standard
>	**Ge**	72	557757.5	1.2				ug/L	520809	Standard
	As	75	-45.2	46.1	**0.0109**	0.016	146.4	ug/L	-52	Standard
	Se	82	21.5	16.2	**0.0326**	0.024	74.5	ug/L	17	Standard
	Se-1	77	60.7	14.0	**-0.0215**	0.097	452.0	ug/L	56	Standard
>	**Ga**	71	30.0	33.3				mg/L	25	Standard
	Rb	85	78.3	35.2				ug/L	28	Standard
	Y	89	482555.7	1.9				ug/L	447395	Standard
>	**Rh**	103	8.3	91.7				ug/L	15	Standard
	Mo	98	332.0	91.4	**0.0799**	0.095	118.5	ug/L	113	Standard
	Ag	107	123.7	31.0	**0.0035**	0.005	145.5	ug/L	108	Standard
	Cd	111	20.3	82.0	**0.0060**	0.007	114.1	mg/L	3	Standard
	Cd	114	52.4	144.8	**0.0087**	0.013	144.6	ug/L	20	Standard
>	**In**	115	660410.5	0.4				ug/L	625728	Standard
	Sn	118	1340.1	28.5	**0.1130**	0.056	49.2	ug/L	568	Standard
	Sb	123	501.3	30.5	**0.0581**	0.028	47.8	ug/L	612	Standard
	Ba	135	141.0	74.3	**0.0434**	0.045	104.7	ug/L	21	Standard
	Ce	140	65.0	13.3				ug/L	245	Standard
>	**Tb**	159	984326.5	0.5				ug/L	950397	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	36.3	87.4	**0.0032**	0.003	108.0	ug/L	15	Standard
	Tl	205	81.7	141.4	**0.0002**	0.014	6303.1	ug/L	13	Standard
	Pb	206	357.0	4.6	**0.0175**	0.003	15.4	ug/L	264	Standard
	Pb	207	301.0	13.7	**0.0108**	0.008	73.3	ug/L	222	Standard
	Pb	208	1410.0	25.6	**0.0170**	0.017	98.8	ug/L	959	Standard
	U	238	79.0	155.7	**0.0093**	0.015	160.0	ug/L	9	Standard
>	**Bi**	209	568547.7	0.3				ug/L	552821	Standard

Sample ID: PBS H2 WG574521-03
Report Date/Time: Friday, July 01, 2016 16:39:25
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	83.3	70.3	**0.0311**	0.063	203.4	mg/L	55	Standard
K	39	26.7	47.2	**-0.0352**	0.044	125.3	mg/L	28	Standard
Ca	43	13.3	43.3	**-1.3140**	0.480	36.5	mg/L	27	Standard
Fe	54	179.3	22.8	**0.0338**	0.030	89.2	mg/L	147	Standard
Fe	57	248.3	6.5	**-0.0850**	0.036	42.0	mg/L	268	Standard
> **Sc-1**	45	43671.2	1.7				mg/L	41174	Standard
Cl	35	94694.4	1.8				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2446.9	5.5				ug/L	1950	Standard
P	31	26514.9	2.3				ug/L	21156	Standard
S	34	4310.6	3.2				ug/L	3419	Standard
Sr	88	95.0	13.9				ug/L	72	Standard
C	12	123.3	28.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	223.3	40.1				mg/L	17	Standard
Dy	164	6.2	193.4				mg/L	16	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	20320.3	3.3				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.683	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		107.094	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: PBS H2 WG574521-03
Report Date/Time: Friday, July 01, 2016 16:39:25
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.543
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.845
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS H2 WG574521-03
Report Date/Time: Friday, July 01, 2016 16:39:25
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: LCSS H2 WG574521-04
Sample Date/Time: Friday, July 01, 2016 16:40:19
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78206.3	1.2				ug/L	76456	Standard
	Be	9	30357.1	1.3	**26.4935**	0.412	1.6	ug/L	20	Standard
	Al	27	14527.0	3.3	**0.0727**	0.002	2.4	ug/L	1307	Standard
	Sc	45	43500.7	0.4				ug/L	41174	Standard
	Ti	47	50.0	23.1	**0.0598**	0.033	54.4	ug/L	27	Standard
	V	51	219978.8	0.3	**24.9959**	0.252	1.0	ug/L	1434	Standard
	Cr	52	227773.4	1.1	**25.5491**	0.376	1.5	ug/L	7733	Standard
	Cr	53	27710.3	2.0	**25.3978**	0.708	2.8	ug/L	442	Standard
	Mn	55	209603.4	1.5	**25.9644**	0.258	1.0	ug/L	723	Standard
	Co	59	210851.5	1.3	**25.8831**	0.352	1.4	ug/L	217	Standard
	Ni	60	56751.8	1.2	**25.5968**	0.369	1.4	ug/L	304	Standard
	Cu	65	56217.4	1.4	**25.8605**	0.261	1.0	ug/L	181	Standard
	Zn	66	34071.3	0.3	**26.0003**	0.170	0.7	ug/L	215	Standard
>	Ge	72	553234.9	0.8				ug/L	520809	Standard
	As	75	33169.4	0.5	**25.3389**	0.170	0.7	ug/L	-52	Standard
	Se	82	3351.8	0.3	**24.8507**	0.232	0.9	ug/L	17	Standard
	Se-1	77	2368.9	3.2	**25.4071**	1.040	4.1	ug/L	56	Standard
>	Ga	71	33.3	31.2				mg/L	25	Standard
	Rb	85	63.3	32.9				ug/L	28	Standard
	Y	89	471256.9	0.9				ug/L	447395	Standard
>	Rh	103	23.3	75.3				ug/L	15	Standard
	Mo	98	151.2	23.7	**0.0237**	0.012	48.5	ug/L	113	Standard
	Ag	107	190870.7	0.3	**25.3271**	0.087	0.3	ug/L	108	Standard
	Cd	111	60282.1	0.5	**24.9635**	0.019	0.1	mg/L	3	Standard
	Cd	114	147909.0	1.0	**24.7417**	0.334	1.4	ug/L	20	Standard
>	In	115	656276.3	0.4				ug/L	625728	Standard
	Sn	118	1236.7	17.5	**0.0991**	0.033	33.0	ug/L	568	Standard
	Sb	123	139998.4	0.5	**25.7951**	0.218	0.8	ug/L	612	Standard
	Ba	135	55761.4	0.2	**24.4204**	0.141	0.6	ug/L	21	Standard
	Ce	140	101.7	7.5				ug/L	245	Standard
>	Tb	159	982894.1	0.9				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	233767.2	0.4	**25.3362**	0.353	1.4	ug/L	15	Standard
	Tl	205	211866.2	1.4	**25.8487**	0.316	1.2	ug/L	13	Standard
	Pb	206	151902.3	0.4	**26.0680**	0.572	2.2	ug/L	264	Standard
	Pb	207	132458.5	0.8	**25.0234**	0.298	1.2	ug/L	222	Standard
	Pb	208	562733.9	0.2	**26.0307**	0.442	1.7	ug/L	959	Standard
	U	238	206496.7	1.0	**24.9238**	0.246	1.0	ug/L	9	Standard
>	Bi	209	568206.0	1.8				ug/L	552821	Standard

Sample ID: LCSS H2 WG574521-04
Report Date/Time: Friday, July 01, 2016 16:42:36
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	26.2	**0.0044**	0.017	394.1	mg/L	55	Standard
K	39	25.0	20.0	**-0.0405**	0.018	44.5	mg/L	28	Standard
Ca	43	28.3	10.2	**-0.0167**	0.239	1431.0	mg/L	27	Standard
Fe	54	163.4	6.9	**0.0225**	0.008	36.3	mg/L	147	Standard
Fe	57	255.0	14.8	**-0.0621**	0.113	181.2	mg/L	268	Standard
Sc-1	45	43500.7	0.4				mg/L	41174	Standard
Cl	35	91778.5	1.5				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	5150.9	3.9				ug/L	1950	Standard
P	31	26144.2	2.1				ug/L	21156	Standard
S	34	4105.6	2.0				ug/L	3419	Standard
Sr	88	88.3	25.5				ug/L	72	Standard
C	12	90.0	19.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	216.7	38.7				mg/L	17	Standard
Dy	164	12.1	119.9				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	7	Standard
I	127	5989.5	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.290	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.226	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSS H2 WG574521-04
Report Date/Time: Friday, July 01, 2016 16:42:36
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.882
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.783
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS H2 WG574521-04
Report Date/Time: Friday, July 01, 2016 16:42:36
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144504 WG574521-01
Sample Date/Time: Friday, July 01, 2016 16:43:31
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82711.9	1.7				ug/L	76456	Standard
	Be	9	1393.4	1.7	**1.1308**	0.019	1.7	ug/L	20	Standard
	Al	27	12446064.6	0.4	**67.2063**	1.063	1.6	ug/L	1307	Standard
	Sc	45	49798.4	0.9				ug/L	41174	Standard
	Ti	47	3275.7	2.4	**9.3815**	0.258	2.8	ug/L	27	Standard
	V	51	187113.3	0.3	**21.2321**	0.189	0.9	ug/L	1434	Standard
	Cr	52	137212.2	0.9	**15.0050**	0.153	1.0	ug/L	7733	Standard
	Cr	53	16570.7	1.1	**15.0184**	0.113	0.8	ug/L	442	Standard
	Mn	55	3185070.4	0.3	**396.0143**	1.958	0.5	ug/L	723	Standard
	Co	59	91536.7	1.1	**11.2200**	0.101	0.9	ug/L	217	Standard
	Ni	60	45707.8	1.2	**20.5854**	0.156	0.8	ug/L	304	Standard
	Cu	65	23258.8	1.9	**10.6559**	0.153	1.4	ug/L	181	Standard
	Zn	66	46036.5	0.5	**35.1961**	0.406	1.2	ug/L	215	Standard
>	**Ge**	72	553218.9	0.6				ug/L	520809	Standard
	As	75	5739.6	2.8	**4.4216**	0.100	2.3	ug/L	-52	Standard
	Se	82	54.0	18.0	**0.2758**	0.072	26.2	ug/L	17	Standard
	Se-1	77	126.7	3.9	**0.7105**	0.061	8.6	ug/L	56	Standard
>	**Ga**	71	21134.7	1.1				mg/L	25	Standard
	Rb	85	212914.0	1.2				ug/L	28	Standard
	Y	89	733052.8	0.4				ug/L	447395	Standard
>	**Rh**	103	31.7	50.8				ug/L	15	Standard
	Mo	98	356.5	15.7	**0.0888**	0.017	19.2	ug/L	113	Standard
	Ag	107	670.0	12.8	**0.0764**	0.011	14.4	ug/L	108	Standard
	Cd	111	132.6	4.8	**0.0528**	0.002	4.3	mg/L	3	Standard
	Cd	114	355.4	28.0	**0.0597**	0.017	27.7	ug/L	20	Standard
>	**In**	115	653864.1	0.7				ug/L	625728	Standard
	Sn	118	1290.1	26.4	**0.1075**	0.050	46.3	ug/L	568	Standard
	Sb	123	594.8	48.0	**0.0762**	0.052	68.5	ug/L	612	Standard
	Ba	135	574692.3	0.9	**252.7729**	0.765	0.3	ug/L	21	Standard
	Ce	140	1393840.8	0.9				ug/L	245	Standard
>	**Tb**	159	1000230.3	1.3				ug/L	950397	Standard
	Ho	165	21410.1	1.0				ug/L	7	Standard
	Tl	203	1416.4	11.1	**0.1555**	0.018	11.5	ug/L	15	Standard
	Tl	205	1253.4	9.7	**0.1459**	0.016	10.8	ug/L	13	Standard
	Pb	206	71530.8	0.4	**12.4648**	0.067	0.5	ug/L	264	Standard
	Pb	207	58749.0	0.7	**11.2666**	0.094	0.8	ug/L	222	Standard
	Pb	208	258108.7	0.1	**12.1209**	0.070	0.6	ug/L	959	Standard
	U	238	3402.4	1.9	**0.4176**	0.009	2.1	ug/L	9	Standard
>	**Bi**	209	558413.2	0.5				ug/L	552821	Standard

Sample ID: L1606144504 WG574521-01
Report Date/Time: Friday, July 01, 2016 16:45:48
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.0919**	7.079	173.0	mg/L	2	Standard
Mg	24	115.0	19.0	**0.0509**	0.021	40.8	mg/L	55	Standard
K	39	340.0	8.9	**0.9470**	0.101	10.7	mg/L	28	Standard
Ca	43	83.3	24.2	**3.8084**	1.512	39.7	mg/L	27	Standard
Fe	54	19898.8	3.5	**12.8021**	0.403	3.1	mg/L	147	Standard
Fe	57	5240.9	4.1	**12.5122**	0.602	4.8	mg/L	268	Standard
> **Sc-1**	45	49798.4	0.9				mg/L	41174	Standard
Cl	35	83679.2	2.8				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	3150.3	10.3				ug/L	1950	Standard
P	31	25890.4	3.1				ug/L	21156	Standard
S	34	4145.6	3.5				ug/L	3419	Standard
Sr	88	115.0	15.1				ug/L	72	Standard
C	12	180.0	25.5				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	210.0	42.3				mg/L	17	Standard
Dy	164	35643.1	1.6				mg/L	16	Standard
Ho-1	165	21410.1	1.0				mg/L	7	Standard
Er	166	18878.4	2.2				mg/L	7	Standard
I	127	27002.4	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.183	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.223	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144504 WG574521-01
Report Date/Time: Friday, July 01, 2016 16:45:48
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.497
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.012
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144505S WG574521-05
Sample Date/Time: Friday, July 01, 2016 16:46:42
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81052.9	2.1				ug/L	76456	Standard
	Be	9	30676.0	2.4	**25.8290**	0.259	1.0	ug/L	20	Standard
	Al	27	13294166.7	2.5	**73.2465**	1.294	1.8	ug/L	1307	Standard
	Sc	45	48179.8	2.6				ug/L	41174	Standard
	Ti	47	6953.9	1.9	**20.0934**	0.295	1.5	ug/L	27	Standard
	V	51	398485.1	1.1	**45.6308**	0.280	0.6	ug/L	1434	Standard
	Cr	52	346453.3	0.7	**39.5366**	0.280	0.7	ug/L	7733	Standard
	Cr	53	41902.9	1.3	**38.7788**	0.379	1.0	ug/L	442	Standard
	Mn	55	3061942.5	1.0	**382.3072**	4.386	1.1	ug/L	723	Standard
	Co	59	255934.9	0.7	**31.5572**	0.332	1.1	ug/L	217	Standard
	Ni	60	90655.7	0.5	**41.1541**	0.349	0.8	ug/L	304	Standard
	Cu	65	74619.0	0.4	**34.4964**	0.137	0.4	ug/L	181	Standard
	Zn	66	75694.3	0.6	**58.2286**	0.173	0.3	ug/L	215	Standard
>	Ge	72	550897.8	0.5				ug/L	520809	Standard
	As	75	34828.9	0.1	**26.7169**	0.137	0.5	ug/L	-52	Standard
	Se	82	2635.3	1.9	**19.5943**	0.381	1.9	ug/L	17	Standard
	Se-1	77	1869.4	1.0	**19.9893**	0.095	0.5	ug/L	56	Standard
>	Ga	71	20570.6	1.4				mg/L	25	Standard
	Rb	85	177643.7	0.9				ug/L	28	Standard
	Y	89	691746.1	1.0				ug/L	447395	Standard
>	Rh	103	35.0	37.8				ug/L	15	Standard
	Mo	98	1110.7	3.0	**0.3333**	0.010	3.0	ug/L	113	Standard
	Ag	107	178239.6	0.1	**24.1330**	0.242	1.0	ug/L	108	Standard
	Cd	111	58613.6	0.8	**24.7671**	0.188	0.8	mg/L	3	Standard
	Cd	114	143184.7	2.0	**24.4376**	0.381	1.6	ug/L	20	Standard
>	In	115	643190.5	1.0				ug/L	625728	Standard
	Sn	118	1398.4	22.6	**0.1275**	0.050	39.0	ug/L	568	Standard
	Sb	123	4282.3	1.0	**0.7725**	0.016	2.0	ug/L	612	Standard
	Ba	135	345608.0	0.5	**154.5433**	2.126	1.4	ug/L	21	Standard
	Ce	140	1299122.5	1.1				ug/L	245	Standard
>	Tb	159	990488.4	0.8				ug/L	950397	Standard
	Ho	165	18067.4	1.7				ug/L	7	Standard
	Tl	203	217125.4	0.9	**24.1291**	0.277	1.1	ug/L	15	Standard
	Tl	205	198577.9	0.6	**24.8432**	0.213	0.9	ug/L	13	Standard
	Pb	206	259935.7	1.5	**45.7680**	0.825	1.8	ug/L	264	Standard
	Pb	207	221787.2	1.0	**42.9961**	0.567	1.3	ug/L	222	Standard
	Pb	208	955436.3	0.5	**45.3507**	0.360	0.8	ug/L	959	Standard
	U	238	203540.4	0.9	**25.1914**	0.306	1.2	ug/L	9	Standard
>	Bi	209	554076.2	0.3				ug/L	552821	Standard

Sample ID: L1606144505S WG574521-05
Report Date/Time: Friday, July 01, 2016 16:48:59
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**8.7132**	15.083	173.1	mg/L	2	Standard
Mg	24	123.3	10.2	**0.0629**	0.011	18.2	mg/L	55	Standard
K	39	401.7	6.9	**1.1840**	0.057	4.8	mg/L	28	Standard
Ca	43	85.0	17.6	**4.1392**	1.063	25.7	mg/L	27	Standard
Fe	54	19135.8	0.4	**12.7297**	0.274	2.2	mg/L	147	Standard
Fe	57	5282.6	2.0	**13.0758**	0.572	4.4	mg/L	268	Standard
Sc-1	45	48179.8	2.6				mg/L	41174	Standard
Cl	35	81193.7	1.4				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3463.7	11.3				ug/L	1950	Standard
P	31	25893.8	3.3				ug/L	21156	Standard
S	34	3793.8	6.6				ug/L	3419	Standard
Sr	88	98.3	7.8				ug/L	72	Standard
C	12	150.0	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	31.6				mg/L	17	Standard
Dy	164	30043.9	1.0				mg/L	16	Standard
Ho-1	165	18067.4	1.7				mg/L	7	Standard
Er	166	16368.8	2.5				mg/L	7	Standard
I	127	31820.1	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.013	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.777	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144505S WG574521-05
Report Date/Time: Friday, July 01, 2016 16:48:59
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.791
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.227
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144505S WG574521-05
Report Date/Time: Friday, July 01, 2016 16:48:59
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144506SD WG574521-06
Sample Date/Time: Friday, July 01, 2016 16:49:54
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80097.9	2.8				ug/L	76456	Standard
	Be	9	30038.1	2.5	25.6081	1.007	3.9	ug/L	20	Standard
	Al	27	25838350.2	1.3	144.1079	2.593	1.8	ug/L	1307	Standard
	Sc	45	47559.6	2.9				ug/L	41174	Standard
	Ti	47	6556.4	1.8	19.3875	0.685	3.5	ug/L	27	Standard
	V	51	371950.4	0.9	43.5770	0.897	2.1	ug/L	1434	Standard
	Cr	52	331664.7	2.0	38.7230	1.629	4.2	ug/L	7733	Standard
	Cr	53	41130.8	1.7	38.9560	1.095	2.8	ug/L	442	Standard
	Mn	55	3596932.1	1.0	459.6785	15.165	3.3	ug/L	723	Standard
	Co	59	263231.1	1.3	33.2200	1.092	3.3	ug/L	217	Standard
	Ni	60	95938.5	1.6	44.5917	1.721	3.9	ug/L	304	Standard
	Cu	65	74284.7	1.9	35.1502	1.281	3.6	ug/L	181	Standard
	Zn	66	76677.6	1.5	60.3810	2.186	3.6	ug/L	215	Standard
>	Ge	72	538522.8	2.5				ug/L	520809	Standard
	As	75	31096.8	1.3	24.4196	0.873	3.6	ug/L	-52	Standard
	Se	82	2411.7	1.1	18.3435	0.519	2.8	ug/L	17	Standard
	Se-1	77	1751.1	3.2	19.1315	0.710	3.7	ug/L	56	Standard
>	Ga	71	19424.1	1.9				mg/L	25	Standard
	Rb	85	183661.6	1.6				ug/L	28	Standard
	Y	89	704841.2	2.1				ug/L	447395	Standard
>	Rh	103	36.7	20.8				ug/L	15	Standard
	Mo	98	611.4	5.3	0.1763	0.010	5.6	ug/L	113	Standard
	Ag	107	174143.9	1.6	24.0046	0.280	1.2	ug/L	108	Standard
	Cd	111	57620.6	0.9	24.7920	0.490	2.0	mg/L	3	Standard
	Cd	114	139765.7	1.6	24.2901	0.536	2.2	ug/L	20	Standard
>	In	115	631733.1	1.1				ug/L	625728	Standard
	Sn	118	1106.7	20.2	0.0862	0.035	40.7	ug/L	568	Standard
	Sb	123	5971.0	2.3	1.1106	0.013	1.2	ug/L	612	Standard
	Ba	135	389506.4	0.2	177.3323	1.766	1.0	ug/L	21	Standard
	Ce	140	1279386.9	0.6				ug/L	245	Standard
>	Tb	159	976334.8	1.3				ug/L	950397	Standard
	Ho	165	21239.9	2.3				ug/L	7	Standard
	Tl	203	212476.8	0.4	24.3917	0.306	1.3	ug/L	15	Standard
	Tl	205	190802.6	2.3	24.6603	0.758	3.1	ug/L	13	Standard
	Pb	206	194049.7	0.6	35.2833	0.374	1.1	ug/L	264	Standard
	Pb	207	165998.7	0.6	33.2303	0.156	0.5	ug/L	222	Standard
	Pb	208	711047.9	1.1	34.8555	0.746	2.1	ug/L	959	Standard
	U	238	196776.4	1.6	25.1602	0.659	2.6	ug/L	9	Standard
>	Bi	209	536411.2	1.1				ug/L	552821	Standard

Sample ID: L1606144506SD WG574521-06
Report Date/Time: Friday, July 01, 2016 16:52:11
Page 1

Approved: July 02, 2016

Na	23	5.0	0.0	**12.9314**	0.378	2.9	mg/L	2	Standard
Mg	24	121.7	21.1	**0.0630**	0.027	42.3	mg/L	55	Standard
K	39	396.7	12.8	**1.1837**	0.137	11.6	mg/L	28	Standard
Ca	43	198.3	9.5	**13.1529**	1.459	11.1	mg/L	27	Standard
Fe	54	17265.4	3.0	**11.6302**	0.519	4.5	mg/L	147	Standard
Fe	57	5002.5	1.8	**12.5110**	0.483	3.9	mg/L	268	Standard
> **Sc-1**	45	47559.6	2.9				mg/L	41174	Standard
Cl	35	82047.6	0.3				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2713.6	16.2				ug/L	1950	Standard
P	31	26575.0	0.8				ug/L	21156	Standard
S	34	4360.6	2.1				ug/L	3419	Standard
Sr	88	131.7	17.9				ug/L	72	Standard
C	12	140.0	31.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	120.0	25.0				mg/L	17	Standard
Dy	164	35523.7	1.8				mg/L	16	Standard
Ho-1	165	21239.9	2.3				mg/L	7	Standard
Er	166	19068.7	0.7				mg/L	7	Standard
I	127	21363.4	3.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.764	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.401	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144506SD WG574521-06
Report Date/Time: Friday, July 01, 2016 16:52:11
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.960
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.032
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144506SD WG574521-06
Report Date/Time: Friday, July 01, 2016 16:52:11
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Friday, July 01, 2016 16:53:05
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77083.9	1.4				ug/L	76456	Standard
	Be	9	475.0	1.1	**0.4010**	0.005	1.3	ug/L	20	Standard
	Al	27	2237415.9	0.9	**12.9552**	0.241	1.9	ug/L	1307	Standard
	Sc	45	46143.5	0.6				ug/L	41174	Standard
	Ti	47	14229.3	1.3	**40.3569**	0.503	1.2	ug/L	27	Standard
	V	51	81926.5	1.2	**9.0305**	0.138	1.5	ug/L	1434	Standard
	Cr	52	71884.8	0.5	**7.2617**	0.092	1.3	ug/L	7733	Standard
	Cr	53	8222.2	3.8	**7.1184**	0.362	5.1	ug/L	442	Standard
	Mn	55	1326114.2	0.7	**162.1111**	1.014	0.6	ug/L	723	Standard
	Co	59	18265.0	0.3	**2.1786**	0.035	1.6	ug/L	217	Standard
	Ni	60	14421.9	1.4	**6.2826**	0.026	0.4	ug/L	304	Standard
	Cu	65	20275.6	1.0	**9.1261**	0.043	0.5	ug/L	181	Standard
	Zn	66	84084.7	0.5	**63.3707**	0.506	0.8	ug/L	215	Standard
>	Ge	72	562486.4	1.3				ug/L	520809	Standard
	As	75	12273.7	0.0	**9.2515**	0.118	1.3	ug/L	-52	Standard
	Se	82	80.8	6.1	**0.4662**	0.041	8.7	ug/L	17	Standard
	Se-1	77	117.0	7.4	**0.5834**	0.109	18.6	ug/L	56	Standard
>	Ga	71	7775.3	1.7				mg/L	25	Standard
	Rb	85	53367.2	1.6				ug/L	28	Standard
	Y	89	546880.1	0.9				ug/L	447395	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	1997.9	3.1	**0.5987**	0.021	3.5	ug/L	113	Standard
	Ag	107	409.7	7.2	**0.0409**	0.004	9.7	ug/L	108	Standard
	Cd	111	850.8	2.0	**0.3460**	0.009	2.5	mg/L	3	Standard
	Cd	114	2106.8	7.8	**0.3483**	0.025	7.1	ug/L	20	Standard
>	In	115	663939.9	0.6				ug/L	625728	Standard
	Sn	118	2050.1	14.8	**0.2160**	0.045	20.8	ug/L	568	Standard
	Sb	123	671.1	9.1	**0.0887**	0.011	12.6	ug/L	612	Standard
	Ba	135	107917.7	1.0	**46.7326**	0.441	0.9	ug/L	21	Standard
	Ce	140	627825.8	0.9				ug/L	245	Standard
>	Tb	159	987128.9	0.6				ug/L	950397	Standard
	Ho	165	5104.2	2.7				ug/L	7	Standard
	Tl	203	689.0	1.9	**0.0742**	0.001	1.8	ug/L	15	Standard
	Tl	205	618.3	5.7	**0.0660**	0.005	7.0	ug/L	13	Standard
	Pb	206	276291.1	0.7	**47.6167**	0.411	0.9	ug/L	264	Standard
	Pb	207	230628.0	0.7	**43.7624**	0.472	1.1	ug/L	222	Standard
	Pb	208	1006911.8	0.1	**46.7816**	0.251	0.5	ug/L	959	Standard
	U	238	4725.7	2.3	**0.5722**	0.012	2.1	ug/L	9	Standard
>	Bi	209	566085.1	0.4				ug/L	552821	Standard

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 16:55:22
Page 1

Approved: July 02, 2016

Na	23	8.3	124.9	**22.1583**	27.707	125.0	mg/L	2	Standard
Mg	24	85.0	11.8	**0.0284**	0.010	35.7	mg/L	55	Standard
K	39	100.0	15.0	**0.2109**	0.050	23.9	mg/L	28	Standard
Ca	43	75.0	6.7	**3.6275**	0.385	10.6	mg/L	27	Standard
Fe	54	8171.7	3.6	**5.6200**	0.239	4.3	mg/L	147	Standard
Fe	57	2388.5	3.0	**5.7441**	0.167	2.9	mg/L	268	Standard
> **Sc-1**	45	46143.5	0.6				mg/L	41174	Standard
Cl	35	81155.5	2.1				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	3463.7	7.7				ug/L	1950	Standard
P	31	25539.9	4.4				ug/L	21156	Standard
S	34	3917.2	3.0				ug/L	3419	Standard
Sr	88	76.7	18.8				ug/L	72	Standard
C	12	486.7	15.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	256.7	4.5				mg/L	17	Standard
Dy	164	8760.5	4.1				mg/L	16	Standard
Ho-1	165	5104.2	2.7				mg/L	7	Standard
Er	166	4777.4	5.8				mg/L	7	Standard
I	127	36602.6	6.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.822	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.002	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 16:55:22
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.107
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.399
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 16:55:22
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Friday, July 01, 2016 16:56:17
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78477.8	2.4				ug/L	76456	Standard
	Be	9	601.7	8.2	**0.5033**	0.031	6.2	ug/L	20	Standard
	Al	27	4781763.5	1.4	**27.2109**	0.622	2.3	ug/L	1307	Standard
	Sc	45	48186.5	2.1				ug/L	41174	Standard
	Ti	47	26915.6	1.4	**75.8086**	1.495	2.0	ug/L	27	Standard
	V	51	170171.2	0.3	**18.8187**	0.180	1.0	ug/L	1434	Standard
	Cr	52	138418.5	1.4	**14.7553**	0.301	2.0	ug/L	7733	Standard
	Cr	53	16907.8	0.5	**14.9504**	0.076	0.5	ug/L	442	Standard
	Mn	55	4385050.3	0.1	**532.0225**	4.124	0.8	ug/L	723	Standard
	Co	59	55284.7	0.4	**6.6001**	0.055	0.8	ug/L	217	Standard
	Ni	60	30764.2	0.1	**13.4670**	0.097	0.7	ug/L	304	Standard
	Cu	65	65698.5	1.0	**29.5008**	0.365	1.2	ug/L	181	Standard
	Zn	66	217089.2	0.9	**162.5825**	0.761	0.5	ug/L	215	Standard
>	Ge	72	566980.9	0.7				ug/L	520809	Standard
	As	75	11103.7	0.8	**8.3069**	0.047	0.6	ug/L	-52	Standard
	Se	82	132.6	4.8	**0.8380**	0.046	5.5	ug/L	17	Standard
	Se-1	77	150.3	12.7	**0.9313**	0.212	22.8	ug/L	56	Standard
>	Ga	71	15192.6	2.9				mg/L	25	Standard
	Rb	85	155948.5	0.6				ug/L	28	Standard
	Y	89	601495.0	1.4				ug/L	447395	Standard
>	Rh	103	23.3	32.7				ug/L	15	Standard
	Mo	98	5496.7	0.9	**1.6857**	0.006	0.4	ug/L	113	Standard
	Ag	107	775.4	2.6	**0.0887**	0.002	2.3	ug/L	108	Standard
	Cd	111	1034.2	3.3	**0.4202**	0.011	2.7	mg/L	3	Standard
	Cd	114	2656.7	6.0	**0.4384**	0.024	5.5	ug/L	20	Standard
>	In	115	665198.2	0.6				ug/L	625728	Standard
	Sn	118	1311.7	13.8	**0.1076**	0.028	25.7	ug/L	568	Standard
	Sb	123	507.6	23.3	**0.0588**	0.022	37.4	ug/L	612	Standard
	Ba	135	246404.5	0.4	**106.5243**	0.535	0.5	ug/L	21	Standard
	Ce	140	708985.8	1.9				ug/L	245	Standard
>	Tb	159	1000873.3	0.7				ug/L	950397	Standard
	Ho	165	8867.6	1.0				ug/L	7	Standard
	Tl	203	1805.8	2.5	**0.1960**	0.004	2.0	ug/L	15	Standard
	Tl	205	1731.8	4.2	**0.2027**	0.009	4.2	ug/L	13	Standard
	Pb	206	179680.5	0.2	**31.0013**	0.201	0.6	ug/L	264	Standard
	Pb	207	147967.3	0.2	**28.1058**	0.174	0.6	ug/L	222	Standard
	Pb	208	649286.1	0.4	**30.1982**	0.309	1.0	ug/L	959	Standard
	U	238	11590.8	1.2	**1.4062**	0.023	1.6	ug/L	9	Standard
>	Bi	209	565178.3	0.6				ug/L	552821	Standard

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 16:58:34
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**8.3775**	14.502	173.1	mg/L	2	Standard
Mg	24	161.7	21.7	**0.1008**	0.032	31.7	mg/L	55	Standard
K	39	290.0	13.0	**0.8193**	0.124	15.2	mg/L	28	Standard
Ca	43	116.7	13.8	**6.5999**	1.152	17.5	mg/L	27	Standard
Fe	54	19162.0	2.8	**12.7406**	0.220	1.7	mg/L	147	Standard
Fe	57	5199.2	1.1	**12.8525**	0.447	3.5	mg/L	268	Standard
> **Sc-1**	45	48186.5	2.1				mg/L	41174	Standard
Cl	35	81627.3	0.9				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	4627.4	6.5				ug/L	1950	Standard
P	31	26000.6	1.2				ug/L	21156	Standard
S	34	3977.2	4.8				ug/L	3419	Standard
Sr	88	111.7	18.6				ug/L	72	Standard
C	12	856.7	2.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	230.0	17.4				mg/L	17	Standard
Dy	164	14613.4	2.0				mg/L	16	Standard
Ho-1	165	8867.6	1.0				mg/L	7	Standard
Er	166	8085.5	6.9				mg/L	7	Standard
I	127	50293.4	2.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.645	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.865	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 16:58:34
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.308
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.235
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 16:58:34
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102PS WG575057-01
Sample Date/Time: Friday, July 01, 2016 16:59:28
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79385.8	1.3				ug/L	76456	Standard
	Be	9	66132.4	2.2	**56.8900**	1.804	3.2	ug/L	20	Standard
	Al	27	4677646.6	0.6	**26.3080**	0.258	1.0	ug/L	1307	Standard
	Sc	45	48036.1	2.2				ug/L	41174	Standard
	Ti	47	26404.3	1.4	**75.0881**	1.235	1.6	ug/L	27	Standard
	V	51	638356.3	0.3	**71.8329**	0.463	0.6	ug/L	1434	Standard
	Cr	52	595924.0	0.5	**67.3875**	0.498	0.7	ug/L	7733	Standard
	Cr	53	74037.1	1.4	**67.5313**	1.159	1.7	ug/L	442	Standard
	Mn	55	4772659.1	0.6	**584.6747**	1.033	0.2	ug/L	723	Standard
	Co	59	500476.8	0.3	**60.5691**	0.409	0.7	ug/L	217	Standard
	Ni	60	148905.8	0.4	**66.4112**	0.102	0.2	ug/L	304	Standard
	Cu	65	183049.8	0.4	**83.1281**	0.455	0.5	ug/L	181	Standard
	Zn	66	287669.1	1.1	**217.6035**	2.596	1.2	ug/L	215	Standard
>	Ge	72	561514.3	0.4				ug/L	520809	Standard
	As	75	82895.8	0.4	**62.3258**	0.436	0.7	ug/L	-52	Standard
	Se	82	7441.1	0.8	**54.5039**	0.359	0.7	ug/L	17	Standard
	Se-1	77	5169.2	1.0	**55.4015**	0.590	1.1	ug/L	56	Standard
>	Ga	71	15267.7	1.1				mg/L	25	Standard
	Rb	85	154189.3	2.6				ug/L	28	Standard
	Y	89	603447.9	0.9				ug/L	447395	Standard
>	Rh	103	43.3	24.0				ug/L	15	Standard
	Mo	98	5476.6	2.0	**1.7012**	0.041	2.4	ug/L	113	Standard
	Ag	107	391731.6	0.9	**51.9492**	0.634	1.2	ug/L	108	Standard
	Cd	111	129263.1	1.2	**53.4846**	0.463	0.9	mg/L	3	Standard
	Cd	114	313124.4	0.6	**52.3315**	0.333	0.6	ug/L	20	Standard
>	In	115	656847.0	0.4				ug/L	625728	Standard
	Sn	118	1576.8	23.5	**0.1493**	0.056	37.2	ug/L	568	Standard
	Sb	123	282627.6	1.8	**52.0619**	0.839	1.6	ug/L	612	Standard
	Ba	135	360531.0	1.0	**157.8560**	2.191	1.4	ug/L	21	Standard
	Ce	140	708239.5	1.1				ug/L	245	Standard
>	Tb	159	993751.4	0.6				ug/L	950397	Standard
	Ho	165	9054.4	1.6				ug/L	7	Standard
	Tl	203	489986.8	0.9	**53.0644**	0.590	1.1	ug/L	15	Standard
	Tl	205	443077.3	1.1	**54.0276**	0.463	0.9	ug/L	13	Standard
	Pb	206	490668.3	0.8	**84.2254**	0.742	0.9	ug/L	264	Standard
	Pb	207	417558.3	0.6	**78.9219**	0.638	0.8	ug/L	222	Standard
	Pb	208	1796810.4	0.6	**83.1513**	0.452	0.5	ug/L	959	Standard
	U	238	437485.4	0.2	**52.7644**	0.211	0.4	ug/L	9	Standard
>	Bi	209	568575.4	0.3				ug/L	552821	Standard

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 17:01:45
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.3123**	7.460	173.0	mg/L	2	Standard
Mg	24	195.0	13.6	**0.1353**	0.029	21.4	mg/L	55	Standard
K	39	278.3	18.2	**0.7825**	0.157	20.1	mg/L	28	Standard
Ca	43	116.7	21.1	**6.6089**	1.697	25.7	mg/L	27	Standard
Fe	54	18988.9	2.1	**12.6650**	0.048	0.4	mg/L	147	Standard
Fe	57	5222.6	2.2	**12.9542**	0.402	3.1	mg/L	268	Standard
> **Sc-1**	45	48036.1	2.2				mg/L	41174	Standard
Cl	35	79157.6	0.9				ug/L	69550	Standard
Kr	83	3.0	88.2				ug/L	1	Standard
Br	81	4567.4	7.8				ug/L	1950	Standard
P	31	25140.8	1.9				ug/L	21156	Standard
S	34	3993.9	5.1				ug/L	3419	Standard
Sr	88	141.7	14.7				ug/L	72	Standard
C	12	916.7	5.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	220.0	20.8				mg/L	17	Standard
Dy	164	14636.5	2.9				mg/L	16	Standard
Ho-1	165	9054.4	1.6				mg/L	7	Standard
Er	166	8719.2	6.2				mg/L	7	Standard
I	127	60985.9	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.832	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.816	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 17:01:45
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.973
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.850
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 17:01:45
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 17:02:40
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72896.8	3.6				ug/L	76456	Standard
	Be	9	151.7	28.0	**0.1215**	0.035	28.7	ug/L	20	Standard
	Al	27	886084.1	1.1	**5.4244**	0.245	4.5	ug/L	1307	Standard
	Sc	45	40265.1	1.1				ug/L	41174	Standard
	Ti	47	4872.5	1.7	**14.8447**	0.431	2.9	ug/L	27	Standard
	V	51	31678.7	1.1	**3.6484**	0.093	2.5	ug/L	1434	Standard
	Cr	52	29443.9	1.3	**2.6645**	0.094	3.5	ug/L	7733	Standard
	Cr	53	3295.4	2.1	**2.8380**	0.099	3.5	ug/L	442	Standard
	Mn	55	811630.5	1.3	**106.9281**	2.799	2.6	ug/L	723	Standard
	Co	59	10016.3	0.5	**1.2757**	0.020	1.5	ug/L	217	Standard
	Ni	60	6049.9	1.8	**2.7576**	0.087	3.1	ug/L	304	Standard
	Cu	65	12638.9	1.7	**6.1089**	0.185	3.0	ug/L	181	Standard
	Zn	66	44343.1	2.3	**35.9528**	1.298	3.6	ug/L	215	Standard
>	Ge	72	521851.4	1.3				ug/L	520809	Standard
	As	75	2135.0	1.6	**1.7715**	0.050	2.8	ug/L	-52	Standard
	Se	82	32.7	15.9	**0.1321**	0.044	33.6	ug/L	17	Standard
	Se-1	77	80.0	15.4	**0.2505**	0.153	61.0	ug/L	56	Standard
>	Ga	71	2831.9	8.0				mg/L	25	Standard
	Rb	85	29441.9	2.0				ug/L	28	Standard
	Y	89	460347.3	0.7				ug/L	447395	Standard
>	Rh	103	23.3	44.6				ug/L	15	Standard
	Mo	98	1036.0	4.3	**0.3306**	0.018	5.5	ug/L	113	Standard
	Ag	107	240.3	7.9	**0.0218**	0.002	11.3	ug/L	108	Standard
	Cd	111	192.5	10.6	**0.0842**	0.009	10.8	mg/L	3	Standard
	Cd	114	501.8	24.8	**0.0913**	0.024	25.9	ug/L	20	Standard
>	In	115	604796.3	1.1				ug/L	625728	Standard
	Sn	118	678.3	14.5	**0.0250**	0.017	67.9	ug/L	568	Standard
	Sb	123	1577.0	34.7	**0.2828**	0.113	39.9	ug/L	612	Standard
	Ba	135	46358.8	0.3	**22.0307**	0.285	1.3	ug/L	21	Standard
	Ce	140	135977.5	1.1				ug/L	245	Standard
>	Tb	159	909731.4	0.9				ug/L	950397	Standard
	Ho	165	1651.8	7.4				ug/L	7	Standard
	Tl	203	404.7	3.9	**0.0462**	0.002	3.6	ug/L	15	Standard
	Tl	205	413.3	12.1	**0.0442**	0.006	14.3	ug/L	13	Standard
	Pb	206	34246.7	0.6	**6.2517**	0.027	0.4	ug/L	264	Standard
	Pb	207	28334.8	0.4	**5.6896**	0.033	0.6	ug/L	222	Standard
	Pb	208	122940.1	1.3	**6.0452**	0.111	1.8	ug/L	959	Standard
	U	238	2224.5	2.8	**0.2869**	0.007	2.3	ug/L	9	Standard
>	Bi	209	531198.7	0.5				ug/L	552821	Standard

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:04:57
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.1506**	8.913	173.0	mg/L	2	Standard
Mg	24	81.7	18.7	**0.0373**	0.018	48.0	mg/L	55	Standard
K	39	76.7	26.4	**0.1697**	0.081	47.8	mg/L	28	Standard
Ca	43	40.0	25.0	**1.2573**	0.889	70.7	mg/L	27	Standard
Fe	54	3471.8	1.5	**2.6857**	0.073	2.7	mg/L	147	Standard
Fe	57	1143.4	4.3	**2.7898**	0.194	6.9	mg/L	268	Standard
> **Sc-1**	45	40265.1	1.1				mg/L	41174	Standard
Cl	35	70995.3	1.2				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2253.5	3.8				ug/L	1950	Standard
P	31	10969.0	0.7				ug/L	21156	Standard
S	34	3750.5	0.4				ug/L	3419	Standard
Sr	88	80.0	12.5				ug/L	72	Standard
C	12	226.7	9.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	17	Standard
Dy	164	2685.5	6.0				mg/L	16	Standard
Ho-1	165	1651.8	7.4				mg/L	7	Standard
Er	166	1560.1	5.1				mg/L	7	Standard
I	127	40504.1	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.345	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.200	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:04:57
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.655
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.089
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:04:57
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 17:05:52
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70195.6	2.2				ug/L	76456	Standard
	Be	9	78.3	41.0	**0.0567**	0.033	57.8	ug/L	20	Standard
	Al	27	176403.2	5.8	**1.1130**	0.082	7.4	ug/L	1307	Standard
	Sc	45	38834.7	0.9				ug/L	41174	Standard
	Ti	47	931.7	5.0	**2.8080**	0.157	5.6	ug/L	27	Standard
	V	51	7219.8	2.6	**0.6896**	0.020	2.9	ug/L	1434	Standard
	Cr	52	9795.8	4.3	**0.2546**	0.049	19.3	ug/L	7733	Standard
	Cr	53	816.7	8.0	**0.4003**	0.064	16.0	ug/L	442	Standard
	Mn	55	156110.5	2.6	**20.7536**	0.477	2.3	ug/L	723	Standard
	Co	59	2209.5	13.5	**0.2622**	0.038	14.6	ug/L	217	Standard
	Ni	60	1399.1	2.2	**0.5287**	0.012	2.4	ug/L	304	Standard
	Cu	65	2640.2	2.1	**1.2343**	0.024	2.0	ug/L	181	Standard
	Zn	66	9656.7	1.3	**7.7908**	0.073	0.9	ug/L	215	Standard
>	**Ge**	72	514985.8	0.4				ug/L	520809	Standard
	As	75	413.0	1.8	**0.3835**	0.006	1.4	ug/L	-52	Standard
	Se	82	23.7	20.7	**0.0632**	0.039	61.2	ug/L	17	Standard
	Se-1	77	57.0	6.1	**-0.0104**	0.039	372.4	ug/L	56	Standard
>	**Ga**	71	518.3	3.7				mg/L	25	Standard
	Rb	85	5472.7	4.6				ug/L	28	Standard
	Y	89	432045.4	1.1				ug/L	447395	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	406.8	30.7	**0.1173**	0.043	37.1	ug/L	113	Standard
	Ag	107	155.3	56.4	**0.0098**	0.013	129.9	ug/L	108	Standard
	Cd	111	62.6	64.4	**0.0262**	0.018	70.2	mg/L	3	Standard
	Cd	114	167.6	61.4	**0.0309**	0.019	61.4	ug/L	20	Standard
>	**In**	115	596116.9	0.1				ug/L	625728	Standard
	Sn	118	588.3	26.0	**0.0117**	0.025	212.4	ug/L	568	Standard
	Sb	123	388.4	28.3	**0.0452**	0.022	49.6	ug/L	612	Standard
	Ba	135	8995.0	2.1	**4.3221**	0.097	2.2	ug/L	21	Standard
	Ce	140	24040.7	2.3				ug/L	245	Standard
>	**Tb**	159	895791.4	0.8				ug/L	950397	Standard
	Ho	165	243.3	11.3				ug/L	7	Standard
	Tl	203	146.7	64.0	**0.0163**	0.011	66.9	ug/L	15	Standard
	Tl	205	206.7	97.8	**0.0173**	0.026	152.8	ug/L	13	Standard
	Pb	206	6377.7	1.6	**1.1327**	0.021	1.9	ug/L	264	Standard
	Pb	207	5284.9	1.3	**1.0274**	0.015	1.5	ug/L	222	Standard
	Pb	208	23160.0	2.5	**1.1036**	0.032	2.9	ug/L	959	Standard
	U	238	525.7	30.5	**0.0678**	0.021	30.5	ug/L	9	Standard
>	**Bi**	209	529365.9	0.5				ug/L	552821	Standard

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:08:09
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	68.3	23.5	**0.0243**	0.019	79.3	mg/L	55	Standard
K	39	26.7	78.1	**-0.0227**	0.085	373.8	mg/L	28	Standard
Ca	43	28.3	36.7	**0.2726**	0.981	359.8	mg/L	27	Standard
Fe	54	762.6	6.6	**0.5352**	0.041	7.7	mg/L	147	Standard
Fe	57	421.7	1.8	**0.5696**	0.019	3.3	mg/L	268	Standard
> **Sc-1**	45	38834.7	0.9				mg/L	41174	Standard
Cl	35	69123.3	0.3				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	1883.5	2.0				ug/L	1950	Standard
P	31	7872.0	1.6				ug/L	21156	Standard
S	34	3360.4	5.9				ug/L	3419	Standard
Sr	88	80.0	32.5				ug/L	72	Standard
C	12	90.0	22.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	38.2				mg/L	17	Standard
Dy	164	420.7	27.3				mg/L	16	Standard
Ho-1	165	243.3	11.3				mg/L	7	Standard
Er	166	263.3	34.5				mg/L	7	Standard
I	127	37972.5	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.812	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.882	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:08:09
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.268
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.757
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 17:09:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74588.1	0.3				ug/L	76456	Standard
	Be	9	57897.1	2.0	**52.9977**	1.204	2.3	ug/L	20	Standard
	Al	27	8733198.2	1.7	**52.2835**	0.984	1.9	ug/L	1307	Standard
	Sc	45	42748.6	2.7				ug/L	41174	Standard
	Ti	47	34213.3	0.6	**98.3209**	0.421	0.4	ug/L	27	Standard
	V	51	442681.7	1.0	**50.2684**	0.638	1.3	ug/L	1434	Standard
	Cr	52	439186.0	0.4	**49.9273**	0.312	0.6	ug/L	7733	Standard
	Cr	53	53859.0	4.5	**49.5163**	2.076	4.2	ug/L	442	Standard
	Mn	55	408283.6	1.1	**50.4406**	0.633	1.3	ug/L	723	Standard
	Co	59	418347.3	1.1	**51.1465**	0.625	1.2	ug/L	217	Standard
	Ni	60	111527.3	0.5	**50.2172**	0.479	1.0	ug/L	304	Standard
	Cu	65	110380.0	1.0	**50.6153**	0.665	1.3	ug/L	181	Standard
	Zn	66	65800.9	0.7	**50.1493**	0.538	1.1	ug/L	215	Standard
>	Ge	72	555788.6	0.5				ug/L	520809	Standard
	As	75	65659.0	0.5	**49.8836**	0.337	0.7	ug/L	-52	Standard
	Se	82	6718.9	0.9	**49.7097**	0.395	0.8	ug/L	17	Standard
	Se-1	77	4636.4	0.7	**50.1376**	0.106	0.2	ug/L	56	Standard
>	Ga	71	43.3	35.3				mg/L	25	Standard
	Rb	85	1065.0	6.1				ug/L	28	Standard
	Y	89	468359.1	2.1				ug/L	447395	Standard
>	Rh	103	20.0	25.0				ug/L	15	Standard
	Mo	98	314455.9	1.0	**100.8766**	0.307	0.3	ug/L	113	Standard
	Ag	107	371694.7	0.4	**50.2132**	0.146	0.3	ug/L	108	Standard
	Cd	111	119048.0	0.9	**50.1804**	0.274	0.5	mg/L	3	Standard
	Cd	114	295369.7	1.4	**50.2861**	0.415	0.8	ug/L	20	Standard
>	In	115	644781.5	0.7				ug/L	625728	Standard
	Sn	118	326587.3	0.5	**49.1617**	0.446	0.9	ug/L	568	Standard
	Sb	123	269765.0	0.9	**50.6219**	0.112	0.2	ug/L	612	Standard
	Ba	135	109973.0	0.0	**49.0395**	0.330	0.7	ug/L	21	Standard
	Ce	140	1043.4	21.6				ug/L	245	Standard
>	Tb	159	966885.6	0.6				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	449950.1	0.5	**50.5682**	0.198	0.4	ug/L	15	Standard
	Tl	205	409109.7	0.2	**51.7709**	0.214	0.4	ug/L	13	Standard
	Pb	206	284448.3	0.6	**50.6536**	0.284	0.6	ug/L	264	Standard
	Pb	207	258444.3	0.7	**50.6761**	0.292	0.6	ug/L	222	Standard
	Pb	208	1085344.7	0.3	**52.1064**	0.244	0.5	ug/L	959	Standard
	U	238	403930.8	0.4	**50.5574**	0.115	0.2	ug/L	9	Standard
>	Bi	209	547878.4	0.3				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:11:22
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.4428**	8.174	86.6	mg/L	2	Standard
Mg	24	4510.7	2.8	**5.0184**	0.235	4.7	mg/L	55	Standard
K	39	1208.4	6.0	**4.3343**	0.305	7.0	mg/L	28	Standard
Ca	43	88.3	31.2	**5.2894**	2.418	45.7	mg/L	27	Standard
Fe	54	6821.5	2.8	**5.0554**	0.184	3.6	mg/L	147	Standard
Fe	57	2156.8	8.4	**5.5723**	0.370	6.6	mg/L	268	Standard
> **Sc-1**	45	42748.6	2.7				mg/L	41174	Standard
Cl	35	80981.2	1.3				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	2280.2	6.1				ug/L	1950	Standard
P	31	25067.4	1.4				ug/L	21156	Standard
S	34	4143.9	4.2				ug/L	3419	Standard
Sr	88	66.7	51.1				ug/L	72	Standard
C	12	116.7	24.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	173.3	61.7				mg/L	17	Standard
Dy	164	15.5	97.9				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	7	Standard
I	127	10653.7	0.8				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	105.995		
	Al	27	104.567		
	Sc	45			
	Ti	47	98.321		
	V	51	100.537		
	Cr	52	99.855		
	Cr	53			
	Mn	55	100.881		
	Co	59	102.293		
	Ni	60	100.434		
	Cu	65	101.231		
	Zn	66	100.299		
>	Ge	72		106.716	
	As	75	99.767		
	Se	82	99.419		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:11:22
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.877		
Ag	107	100.426		
Cd	111	100.361		
Cd	114			
In	115			103.045
Sn	118	98.323		
Sb	123	101.244		
Ba	135	98.079		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.136		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.213		
U	238	101.115		
Bi	209			99.106
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:11:22
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 17:12:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73740.8	2.8				ug/L	76456	Standard
	Be	9	30.0	16.7	**0.0079**	0.005	57.8	ug/L	20	Standard
	Al	27	2383.5	29.7	**0.0042**	0.004	92.9	ug/L	1307	Standard
	Sc	45	42364.1	1.1				ug/L	41174	Standard
	Ti	47	28.3	8.2	**-0.0020**	0.008	409.9	ug/L	27	Standard
	V	51	1463.8	6.3	**-0.0298**	0.010	33.6	ug/L	1434	Standard
	Cr	52	7082.7	1.2	**-0.1402**	0.009	6.6	ug/L	7733	Standard
	Cr	53	485.0	17.5	**0.0388**	0.087	223.5	ug/L	442	Standard
	Mn	55	856.7	6.3	**0.0059**	0.006	103.8	ug/L	723	Standard
	Co	59	239.7	17.2	**0.0002**	0.005	2435.9	ug/L	217	Standard
	Ni	60	264.7	3.4	**-0.0322**	0.006	18.2	ug/L	304	Standard
	Cu	65	171.0	2.0	**0.0054**	0.002	46.6	ug/L	181	Standard
	Zn	66	243.3	6.7	**0.0079**	0.011	133.5	ug/L	215	Standard
>	**Ge**	72	549483.2	1.7				ug/L	520809	Standard
	As	75	-74.2	16.4	**-0.0117**	0.009	74.0	ug/L	-52	Standard
	Se	82	18.9	27.4	**0.0161**	0.041	258.0	ug/L	17	Standard
	Se-1	77	51.3	15.1	**-0.1160**	0.081	69.5	ug/L	56	Standard
>	**Ga**	71	21.7	53.3				mg/L	25	Standard
	Rb	85	48.3	33.3				ug/L	28	Standard
	Y	89	469146.0	2.8				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	269.5	12.3	**0.0621**	0.010	15.8	ug/L	113	Standard
	Ag	107	131.3	8.8	**0.0048**	0.002	32.6	ug/L	108	Standard
	Cd	111	13.9	69.3	**0.0035**	0.004	115.1	mg/L	3	Standard
	Cd	114	67.3	28.0	**0.0114**	0.003	28.7	ug/L	20	Standard
>	**In**	115	647674.1	1.6				ug/L	625728	Standard
	Sn	118	1591.8	26.5	**0.1547**	0.062	40.2	ug/L	568	Standard
	Sb	123	1048.5	31.2	**0.1625**	0.061	37.8	ug/L	612	Standard
	Ba	135	62.3	27.9	**0.0097**	0.008	77.5	ug/L	21	Standard
	Ce	140	363.3	30.0				ug/L	245	Standard
>	**Tb**	159	949797.9	2.5				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	92.0	24.5	**0.0095**	0.002	24.5	ug/L	15	Standard
	Tl	205	60.0	22.0	**-0.0022**	0.002	85.3	ug/L	13	Standard
	Pb	206	340.0	6.2	**0.0166**	0.004	25.1	ug/L	264	Standard
	Pb	207	288.7	4.1	**0.0103**	0.002	15.3	ug/L	222	Standard
	Pb	208	1226.7	6.9	**0.0104**	0.004	37.3	ug/L	959	Standard
	U	238	77.0	45.5	**0.0093**	0.004	45.3	ug/L	9	Standard
>	**Bi**	209	550276.1	2.1				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:14:34
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	24.7	**-0.0073**	0.013	171.5	mg/L	55	Standard
K	39	21.7	48.0	**-0.0502**	0.039	78.2	mg/L	28	Standard
Ca	43	33.3	17.3	**0.4877**	0.477	97.9	mg/L	27	Standard
Fe	54	195.9	17.0	**0.0503**	0.024	47.6	mg/L	147	Standard
Fe	57	191.7	26.4	**-0.2314**	0.152	65.8	mg/L	268	Standard
> **Sc-1**	45	42364.1	1.1				mg/L	41174	Standard
Cl	35	80980.6	1.9				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2003.5	11.5				ug/L	1950	Standard
P	31	23999.0	2.6				ug/L	21156	Standard
S	34	4252.3	5.6				ug/L	3419	Standard
Sr	88	71.7	21.3				ug/L	72	Standard
C	12	100.0	34.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	36.4				mg/L	17	Standard
Dy	164	16.5	70.8				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	7548.5	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.506	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:14:34
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.507
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.540
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:14:34
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Friday, July 01, 2016 17:18:25
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77464.3	3.3				ug/L	76456	Standard
	Be	9	561.7	8.9	**0.4749**	0.032	6.7	ug/L	20	Standard
	Al	27	1784965.6	1.0	**10.2905**	0.435	4.2	ug/L	1307	Standard
	Sc	45	46648.4	2.7				ug/L	41174	Standard
	Ti	47	18184.2	0.6	**50.8412**	0.521	1.0	ug/L	27	Standard
	V	51	103032.2	1.3	**11.2383**	0.206	1.8	ug/L	1434	Standard
	Cr	52	92595.8	0.6	**9.4776**	0.042	0.4	ug/L	7733	Standard
	Cr	53	11107.4	3.1	**9.6118**	0.373	3.9	ug/L	442	Standard
	Mn	55	2019437.5	1.0	**243.2931**	1.293	0.5	ug/L	723	Standard
	Co	59	22651.9	1.2	**2.6686**	0.043	1.6	ug/L	217	Standard
	Ni	60	16329.8	0.7	**7.0275**	0.020	0.3	ug/L	304	Standard
	Cu	65	24727.8	0.3	**10.9821**	0.036	0.3	ug/L	181	Standard
	Zn	66	127705.3	0.5	**94.9239**	0.754	0.8	ug/L	215	Standard
>	Ge	72	570830.0	0.6				ug/L	520809	Standard
	As	75	6011.6	0.9	**4.4881**	0.053	1.2	ug/L	-52	Standard
	Se	82	95.5	2.7	**0.5629**	0.016	2.8	ug/L	17	Standard
	Se-1	77	101.0	4.3	**0.3932**	0.042	10.6	ug/L	56	Standard
>	Ga	71	9259.5	1.6				mg/L	25	Standard
	Rb	85	72246.9	1.1				ug/L	28	Standard
	Y	89	547009.7	0.9				ug/L	447395	Standard
>	Rh	103	31.7	24.1				ug/L	15	Standard
	Mo	98	3914.2	0.5	**1.1794**	0.014	1.2	ug/L	113	Standard
	Ag	107	483.7	3.9	**0.0498**	0.002	4.8	ug/L	108	Standard
	Cd	111	987.4	2.0	**0.3964**	0.008	2.0	mg/L	3	Standard
	Cd	114	2496.5	1.3	**0.4073**	0.007	1.6	ug/L	20	Standard
>	In	115	673007.1	0.7				ug/L	625728	Standard
	Sn	118	1876.8	14.9	**0.1869**	0.040	21.4	ug/L	568	Standard
	Sb	123	1273.6	19.1	**0.1953**	0.043	22.1	ug/L	612	Standard
	Ba	135	110926.6	0.4	**47.3888**	0.135	0.3	ug/L	21	Standard
	Ce	140	529177.4	0.3				ug/L	245	Standard
>	Tb	159	1007132.0	0.8				ug/L	950397	Standard
	Ho	165	4118.9	3.9				ug/L	7	Standard
	Tl	203	1019.0	7.4	**0.1098**	0.008	7.6	ug/L	15	Standard
	Tl	205	931.7	3.7	**0.1041**	0.004	4.2	ug/L	13	Standard
	Pb	206	349755.5	0.5	**60.1201**	0.233	0.4	ug/L	264	Standard
	Pb	207	290008.2	0.8	**54.8870**	0.434	0.8	ug/L	222	Standard
	Pb	208	1256548.1	0.6	**58.2295**	0.582	1.0	ug/L	959	Standard
	U	238	5395.3	1.0	**0.6515**	0.003	0.5	ug/L	9	Standard
>	Bi	209	567672.3	0.6				ug/L	552821	Standard

Sample ID: L1606145103
Report Date/Time: Friday, July 01, 2016 17:20:42
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	26.4	**0.0141**	0.021	150.8	mg/L	55	Standard
K	39	116.7	6.5	**0.2640**	0.032	12.1	mg/L	28	Standard
Ca	43	40.0	33.1	**0.7666**	1.123	146.5	mg/L	27	Standard
Fe	54	10538.1	0.8	**7.1995**	0.244	3.4	mg/L	147	Standard
Fe	57	2908.6	5.3	**7.0806**	0.202	2.9	mg/L	268	Standard
> **Sc-1**	45	46648.4	2.7				mg/L	41174	Standard
Cl	35	80143.5	2.5				ug/L	69550	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	3830.5	4.5				ug/L	1950	Standard
P	31	23700.2	1.3				ug/L	21156	Standard
S	34	3720.5	5.4				ug/L	3419	Standard
Sr	88	83.3	28.4				ug/L	72	Standard
C	12	560.0	12.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	286.7	34.2				mg/L	17	Standard
Dy	164	6970.4	6.6				mg/L	16	Standard
Ho-1	165	4118.9	3.9				mg/L	7	Standard
Er	166	3853.8	3.6				mg/L	7	Standard
I	127	33669.0	1.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.319	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.604	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145103
Report Date/Time: Friday, July 01, 2016 17:20:42
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.556
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Friday, July 01, 2016 17:22:04
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75591.5	2.3				ug/L	76456	Standard
	Be	9	436.7	14.5	**0.3755**	0.064	17.2	ug/L	20	Standard
	Al	27	7695752.7	1.5	**45.4726**	1.098	2.4	ug/L	1307	Standard
	Sc	45	44985.0	2.4				ug/L	41174	Standard
	Ti	47	18604.1	2.8	**52.8354**	1.232	2.3	ug/L	27	Standard
	V	51	86248.0	1.1	**9.5259**	0.091	1.0	ug/L	1434	Standard
	Cr	52	84116.5	1.2	**8.6708**	0.090	1.0	ug/L	7733	Standard
	Cr	53	9486.3	1.6	**8.2820**	0.108	1.3	ug/L	442	Standard
	Mn	55	1964825.3	2.7	**240.4380**	5.305	2.2	ug/L	723	Standard
	Co	59	30224.8	2.1	**3.6271**	0.056	1.5	ug/L	217	Standard
	Ni	60	18384.5	0.8	**8.0589**	0.068	0.8	ug/L	304	Standard
	Cu	65	28824.7	1.7	**13.0170**	0.152	1.2	ug/L	181	Standard
	Zn	66	125736.6	1.1	**94.9340**	0.526	0.6	ug/L	215	Standard
>	Ge	72	561947.7	0.6				ug/L	520809	Standard
	As	75	5595.8	2.2	**4.2465**	0.119	2.8	ug/L	-52	Standard
	Se	82	88.4	10.6	**0.5221**	0.073	13.9	ug/L	17	Standard
	Se-1	77	109.0	11.9	**0.4966**	0.134	27.0	ug/L	56	Standard
>	Ga	71	7550.2	3.3				mg/L	25	Standard
	Rb	85	65005.8	0.9				ug/L	28	Standard
	Y	89	541545.4	1.1				ug/L	447395	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	5215.9	1.9	**1.6229**	0.033	2.0	ug/L	113	Standard
	Ag	107	406.7	7.0	**0.0412**	0.004	9.1	ug/L	108	Standard
	Cd	111	829.8	3.4	**0.3418**	0.009	2.5	mg/L	3	Standard
	Cd	114	1989.6	6.7	**0.3333**	0.022	6.7	ug/L	20	Standard
>	In	115	655315.6	1.0				ug/L	625728	Standard
	Sn	118	1885.1	5.0	**0.1955**	0.016	8.1	ug/L	568	Standard
	Sb	123	963.7	16.2	**0.1445**	0.030	21.0	ug/L	612	Standard
	Ba	135	109632.3	1.8	**48.0987**	0.601	1.2	ug/L	21	Standard
	Ce	140	540393.1	1.7				ug/L	245	Standard
>	Tb	159	980324.3	0.6				ug/L	950397	Standard
	Ho	165	4750.7	4.0				ug/L	7	Standard
	Tl	203	1323.7	5.2	**0.1446**	0.008	5.6	ug/L	15	Standard
	Tl	205	1150.0	7.8	**0.1324**	0.010	7.6	ug/L	13	Standard
	Pb	206	276145.9	0.9	**48.0493**	0.456	0.9	ug/L	264	Standard
	Pb	207	230196.6	0.9	**44.1005**	0.476	1.1	ug/L	222	Standard
	Pb	208	1005008.2	0.4	**47.1436**	0.504	1.1	ug/L	959	Standard
	U	238	6299.6	1.7	**0.7703**	0.019	2.4	ug/L	9	Standard
>	Bi	209	560704.1	0.8				ug/L	552821	Standard

Sample ID: L1606145104
Report Date/Time: Friday, July 01, 2016 17:24:21
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	86.7	31.8	**0.0328**	0.031	93.1	mg/L	55	Standard
K	39	151.7	23.2	**0.4031**	0.135	33.6	mg/L	28	Standard
Ca	43	201.7	16.5	**14.3695**	3.198	22.3	mg/L	27	Standard
Fe	54	9525.1	4.7	**6.7386**	0.306	4.5	mg/L	147	Standard
Fe	57	2743.6	3.6	**6.9108**	0.154	2.2	mg/L	268	Standard
Sc-1	45	44985.0	2.4				mg/L	41174	Standard
Cl	35	83879.0	2.3				ug/L	69550	Standard
Kr	83	3.7	68.6				ug/L	1	Standard
Br	81	3460.4	7.8				ug/L	1950	Standard
P	31	24561.6	1.4				ug/L	21156	Standard
S	34	4369.0	1.4				ug/L	3419	Standard
Sr	88	116.7	25.8				ug/L	72	Standard
C	12	810.0	9.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	280.0	22.3				mg/L	17	Standard
Dy	164	8460.7	2.9				mg/L	16	Standard
Ho-1	165	4750.7	4.0				mg/L	7	Standard
Er	166	4977.5	6.3				mg/L	7	Standard
I	127	28665.4	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.870	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.899	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145104
Report Date/Time: Friday, July 01, 2016 17:24:21
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.729
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.426
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Friday, July 01, 2016 17:25:16
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76445.7	1.5				ug/L	76456	Standard
	Be	9	1478.4	3.1	**1.3014**	0.055	4.2	ug/L	20	Standard
	Al	27	1064223.2	1.9	**6.2082**	0.151	2.4	ug/L	1307	Standard
	Sc	45	47139.9	1.1				ug/L	41174	Standard
	Ti	47	53065.8	1.2	**150.6405**	1.848	1.2	ug/L	27	Standard
	V	51	112245.2	0.3	**12.4388**	0.221	1.8	ug/L	1434	Standard
	Cr	52	137183.3	1.2	**14.7291**	0.173	1.2	ug/L	7733	Standard
	Cr	53	16672.5	1.8	**14.8516**	0.459	3.1	ug/L	442	Standard
	Mn	55	332066.2	0.6	**40.4939**	0.573	1.4	ug/L	723	Standard
	Co	59	15191.9	1.6	**1.8061**	0.055	3.0	ug/L	217	Standard
	Ni	60	16308.4	0.5	**7.1212**	0.143	2.0	ug/L	304	Standard
	Cu	65	21255.2	1.0	**9.5654**	0.170	1.8	ug/L	181	Standard
	Zn	66	82188.0	0.4	**61.9044**	1.216	2.0	ug/L	215	Standard
>	Ge	72	562856.9	1.5				ug/L	520809	Standard
	As	75	14736.1	1.0	**11.0928**	0.282	2.5	ug/L	-52	Standard
	Se	82	116.4	6.1	**0.7268**	0.063	8.7	ug/L	17	Standard
	Se-1	77	132.3	7.3	**0.7485**	0.116	15.5	ug/L	56	Standard
>	Ga	71	12084.8	1.2				mg/L	25	Standard
	Rb	85	57895.4	0.4				ug/L	28	Standard
	Y	89	579341.1	3.7				ug/L	447395	Standard
>	Rh	103	25.0	52.9				ug/L	15	Standard
	Mo	98	3018.2	2.6	**0.9183**	0.011	1.2	ug/L	113	Standard
	Ag	107	450.3	2.5	**0.0464**	0.001	1.9	ug/L	108	Standard
	Cd	111	1161.6	1.5	**0.4742**	0.011	2.3	mg/L	3	Standard
	Cd	114	2894.3	3.4	**0.4797**	0.022	4.7	ug/L	20	Standard
>	In	115	662690.4	1.5				ug/L	625728	Standard
	Sn	118	2460.2	11.3	**0.2766**	0.040	14.4	ug/L	568	Standard
	Sb	123	1480.8	9.6	**0.2369**	0.027	11.6	ug/L	612	Standard
	Ba	135	103973.2	0.1	**45.1144**	0.613	1.4	ug/L	21	Standard
	Ce	140	278912.2	1.0				ug/L	245	Standard
>	Tb	159	988921.6	2.1				ug/L	950397	Standard
	Ho	165	6249.6	2.1				ug/L	7	Standard
	Tl	203	4793.4	0.3	**0.5229**	0.004	0.8	ug/L	15	Standard
	Tl	205	4507.3	1.9	**0.5447**	0.012	2.1	ug/L	13	Standard
	Pb	206	156846.0	1.0	**27.1285**	0.554	2.0	ug/L	264	Standard
	Pb	207	129940.5	0.3	**24.7412**	0.348	1.4	ug/L	222	Standard
	Pb	208	563558.5	1.1	**26.2711**	0.203	0.8	ug/L	959	Standard
	U	238	4562.4	2.7	**0.5547**	0.010	1.7	ug/L	9	Standard
>	Bi	209	563740.5	1.2				ug/L	552821	Standard

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 17:27:33
Page 1

Approved: July 02, 2016

Na	23	5.0	0.0	**13.0402**	0.148	1.1	mg/L	2	Standard
Mg	24	245.0	9.4	**0.1897**	0.021	11.0	mg/L	55	Standard
K	39	223.3	12.3	**0.6174**	0.098	15.9	mg/L	28	Standard
Ca	43	61.7	26.1	**2.4323**	1.213	49.9	mg/L	27	Standard
Fe	54	13777.8	1.0	**9.3394**	0.181	1.9	mg/L	147	Standard
Fe	57	3655.4	2.7	**9.0074**	0.309	3.4	mg/L	268	Standard
Sc-1	45	47139.9	1.1				mg/L	41174	Standard
Cl	35	79351.4	2.7				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3307.0	6.7				ug/L	1950	Standard
P	31	25337.8	0.8				ug/L	21156	Standard
S	34	3845.5	8.8				ug/L	3419	Standard
Sr	88	98.3	15.5				ug/L	72	Standard
C	12	523.3	19.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	236.7	19.1				mg/L	17	Standard
Dy	164	9446.5	2.6				mg/L	16	Standard
Ho-1	165	6249.6	2.1				mg/L	7	Standard
Er	166	6261.3	4.0				mg/L	7	Standard
I	127	33405.2	4.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.987	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.073	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 17:27:33
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 17:27:33
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145106 WG574521-02
Sample Date/Time: Friday, July 01, 2016 17:28:27
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77424.0	1.4				ug/L	76456	Standard
	Be	9	1420.1	5.3	**1.2334**	0.078	6.4	ug/L	20	Standard
	Al	27	3898597.3	2.1	**22.4779**	0.265	1.2	ug/L	1307	Standard
	Sc	45	51348.6	3.6				ug/L	41174	Standard
	Ti	47	30144.6	2.1	**85.8695**	0.856	1.0	ug/L	27	Standard
	V	51	531061.4	1.0	**59.8240**	0.037	0.1	ug/L	1434	Standard
	Cr	52	163422.1	1.8	**17.8054**	0.173	1.0	ug/L	7733	Standard
	Cr	53	19674.4	1.7	**17.6680**	0.130	0.7	ug/L	442	Standard
	Mn	55	2218244.0	2.3	**272.1177**	3.374	1.2	ug/L	723	Standard
	Co	59	32222.6	2.7	**3.8780**	0.063	1.6	ug/L	217	Standard
	Ni	60	47836.8	2.1	**21.2646**	0.223	1.0	ug/L	304	Standard
	Cu	65	112081.4	1.4	**50.9532**	0.215	0.4	ug/L	181	Standard
	Zn	66	110645.9	1.3	**83.7216**	0.252	0.3	ug/L	215	Standard
>	**Ge**	72	560589.7	1.1				ug/L	520809	Standard
	As	75	18364.3	1.7	**13.8646**	0.106	0.8	ug/L	-52	Standard
	Se	82	562.0	1.7	**4.0067**	0.091	2.3	ug/L	17	Standard
	Se-1	77	479.0	3.5	**4.5225**	0.226	5.0	ug/L	56	Standard
>	**Ga**	71	14325.1	2.5				mg/L	25	Standard
	Rb	85	53934.2	0.6				ug/L	28	Standard
	Y	89	962525.9	0.6				ug/L	447395	Standard
>	**Rh**	103	61.7	4.7				ug/L	15	Standard
	Mo	98	10152.0	1.8	**3.1844**	0.030	1.0	ug/L	113	Standard
	Ag	107	989.4	6.5	**0.1188**	0.009	7.5	ug/L	108	Standard
	Cd	111	5112.5	1.5	**2.1203**	0.021	1.0	mg/L	3	Standard
	Cd	114	12820.7	1.5	**2.1502**	0.050	2.3	ug/L	20	Standard
>	**In**	115	654652.2	1.1				ug/L	625728	Standard
	Sn	118	1108.4	23.7	**0.0806**	0.040	50.1	ug/L	568	Standard
	Sb	123	662.0	36.0	**0.0890**	0.045	50.9	ug/L	612	Standard
	Ba	135	290178.7	0.4	**127.4785**	1.030	0.8	ug/L	21	Standard
	Ce	140	1471841.9	0.9				ug/L	245	Standard
>	**Tb**	159	1014801.8	1.4				ug/L	950397	Standard
	Ho	165	35576.7	1.0				ug/L	7	Standard
	Tl	203	2282.2	3.2	**0.2479**	0.009	3.5	ug/L	15	Standard
	Tl	205	2125.1	5.8	**0.2510**	0.016	6.2	ug/L	13	Standard
	Pb	206	184986.8	1.0	**31.9104**	0.323	1.0	ug/L	264	Standard
	Pb	207	153794.0	1.0	**29.2069**	0.234	0.8	ug/L	222	Standard
	Pb	208	672139.8	1.3	**31.2540**	0.308	1.0	ug/L	959	Standard
	U	238	23718.9	1.7	**2.8769**	0.043	1.5	ug/L	9	Standard
>	**Bi**	209	565303.0	0.3				ug/L	552821	Standard

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 17:30:44
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**12.1905**	12.475	102.3	mg/L	2	Standard
Mg	24	515.0	7.3	**0.4218**	0.020	4.8	mg/L	55	Standard
K	39	145.0	15.8	**0.3133**	0.055	17.6	mg/L	28	Standard
Ca	43	251.7	14.6	**15.9361**	3.051	19.1	mg/L	27	Standard
Fe	54	21541.2	1.4	**13.4547**	0.377	2.8	mg/L	147	Standard
Fe	57	6066.2	2.9	**14.1508**	0.552	3.9	mg/L	268	Standard
Sc-1	45	51348.6	3.6				mg/L	41174	Standard
Cl	35	83904.4	2.5				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	7455.2	1.0				ug/L	1950	Standard
P	31	24167.7	6.9				ug/L	21156	Standard
S	34	4078.9	4.5				ug/L	3419	Standard
Sr	88	178.3	24.5				ug/L	72	Standard
C	12	1733.4	9.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	446.7	14.4				mg/L	17	Standard
Dy	164	52369.2	4.0				mg/L	16	Standard
Ho-1	165	35576.7	1.0				mg/L	7	Standard
Er	166	35010.4	0.8				mg/L	7	Standard
I	127	69199.4	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.266	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.638	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 17:30:44
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.623
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.258
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 17:30:44
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Friday, July 01, 2016 17:31:39
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77976.9	3.0				ug/L	76456	Standard
	Be	9	4238.9	1.2	**3.6947**	0.093	2.5	ug/L	20	Standard
	Al	27	6498898.5	1.0	**37.2377**	1.289	3.5	ug/L	1307	Standard
	Sc	45	49464.0	2.1				ug/L	41174	Standard
	Ti	47	128073.0	0.5	**363.1539**	6.490	1.8	ug/L	27	Standard
	V	51	349457.1	2.0	**39.0869**	1.161	3.0	ug/L	1434	Standard
	Cr	52	339178.2	1.4	**37.7839**	0.334	0.9	ug/L	7733	Standard
	Cr	53	41896.2	0.9	**37.8898**	0.902	2.4	ug/L	442	Standard
	Mn	55	1606512.7	1.3	**195.9725**	1.717	0.9	ug/L	723	Standard
	Co	59	54787.2	1.9	**6.5778**	0.027	0.4	ug/L	217	Standard
	Ni	60	49280.4	1.6	**21.7906**	0.290	1.3	ug/L	304	Standard
	Cu	65	58505.7	1.0	**26.4179**	0.486	1.8	ug/L	181	Standard
	Zn	66	199363.7	0.4	**150.1818**	2.763	1.8	ug/L	215	Standard
>	Ge	72	563783.0	2.2				ug/L	520809	Standard
	As	75	72841.2	1.2	**54.5595**	0.676	1.2	ug/L	-52	Standard
	Se	82	260.0	4.3	**1.7742**	0.048	2.7	ug/L	17	Standard
	Se-1	77	240.0	3.1	**1.9101**	0.113	5.9	ug/L	56	Standard
>	Ga	71	27433.2	2.3				mg/L	25	Standard
	Rb	85	214873.2	1.9				ug/L	28	Standard
	Y	89	688224.7	2.2				ug/L	447395	Standard
>	Rh	103	50.0	34.6				ug/L	15	Standard
	Mo	98	15750.9	1.3	**5.0545**	0.122	2.4	ug/L	113	Standard
	Ag	107	1137.7	4.6	**0.1417**	0.010	7.3	ug/L	108	Standard
	Cd	111	4595.8	1.9	**1.9447**	0.072	3.7	mg/L	3	Standard
	Cd	114	11753.0	1.4	**2.0112**	0.076	3.8	ug/L	20	Standard
>	In	115	641892.6	2.4				ug/L	625728	Standard
	Sn	118	2545.2	5.6	**0.3012**	0.016	5.3	ug/L	568	Standard
	Sb	123	1737.1	5.6	**0.2941**	0.021	7.1	ug/L	612	Standard
	Ba	135	236984.3	0.4	**106.2043**	2.197	2.1	ug/L	21	Standard
	Ce	140	773385.4	0.4				ug/L	245	Standard
>	Tb	159	984938.0	3.6				ug/L	950397	Standard
	Ho	165	16265.4	1.5				ug/L	7	Standard
	Tl	203	22667.3	0.8	**2.5566**	0.057	2.2	ug/L	15	Standard
	Tl	205	20584.0	2.7	**2.6047**	0.030	1.2	ug/L	13	Standard
	Pb	206	321586.0	1.4	**57.4914**	1.247	2.2	ug/L	264	Standard
	Pb	207	267373.6	0.8	**52.6407**	1.680	3.2	ug/L	222	Standard
	Pb	208	1175990.0	0.9	**56.6808**	1.299	2.3	ug/L	959	Standard
	U	238	16091.9	1.2	**2.0215**	0.038	1.9	ug/L	9	Standard
>	Bi	209	546013.7	3.1				ug/L	552821	Standard

Sample ID: L1606145107
Report Date/Time: Friday, July 01, 2016 17:33:56
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**8.3896**	14.523	173.1	mg/L	2	Standard
Mg	24	313.3	12.2	**0.2450**	0.042	17.2	mg/L	55	Standard
K	39	578.3	4.1	**1.7142**	0.039	2.3	mg/L	28	Standard
Ca	43	190.0	22.5	**11.8882**	2.994	25.2	mg/L	27	Standard
Fe	54	47361.4	0.7	**30.8245**	0.629	2.0	mg/L	147	Standard
Fe	57	12388.4	2.6	**30.8824**	0.658	2.1	mg/L	268	Standard
> **Sc-1**	45	49464.0	2.1				mg/L	41174	Standard
Cl	35	79796.9	1.5				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	3437.1	6.8				ug/L	1950	Standard
P	31	26398.0	3.4				ug/L	21156	Standard
S	34	4072.2	2.6				ug/L	3419	Standard
Sr	88	165.0	6.1				ug/L	72	Standard
C	12	630.0	4.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	340.0	26.1				mg/L	17	Standard
Dy	164	25210.3	0.7				mg/L	16	Standard
Ho-1	165	16265.4	1.5				mg/L	7	Standard
Er	166	15487.9	0.9				mg/L	7	Standard
I	127	25923.8	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.990	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.251	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145107
Report Date/Time: Friday, July 01, 2016 17:33:56
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.583	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.769	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606145107
Report Date/Time: Friday, July 01, 2016 17:33:56
Page 3

Approved: July 02, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Friday, July 01, 2016 17:34:50
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78296.8	0.6				ug/L	76456	Standard
	Be	9	5035.8	1.1	**4.3730**	0.045	1.0	ug/L	20	Standard
	Al	27	8296103.3	2.9	**47.3081**	1.104	2.3	ug/L	1307	Standard
	Sc	45	51448.9	3.1				ug/L	41174	Standard
	Ti	47	143723.1	0.7	**413.9468**	6.279	1.5	ug/L	27	Standard
	V	51	366509.9	0.1	**41.6481**	0.419	1.0	ug/L	1434	Standard
	Cr	52	544163.4	1.5	**62.1923**	1.314	2.1	ug/L	7733	Standard
	Cr	53	66433.7	1.1	**61.2720**	0.593	1.0	ug/L	442	Standard
	Mn	55	1841665.0	0.6	**228.2274**	2.393	1.0	ug/L	723	Standard
	Co	59	60732.8	1.2	**7.4113**	0.113	1.5	ug/L	217	Standard
	Ni	60	55300.1	1.5	**24.8624**	0.580	2.3	ug/L	304	Standard
	Cu	65	53837.8	1.0	**24.6886**	0.479	1.9	ug/L	181	Standard
	Zn	66	206840.0	0.6	**158.2701**	2.252	1.4	ug/L	215	Standard
>	Ge	72	554963.2	0.9				ug/L	520809	Standard
	As	75	66893.4	0.9	**50.8958**	0.201	0.4	ug/L	-52	Standard
	Se	82	248.2	6.5	**1.7168**	0.104	6.0	ug/L	17	Standard
	Se-1	77	241.0	3.2	**1.9609**	0.071	3.6	ug/L	56	Standard
>	Ga	71	28399.9	2.1				mg/L	25	Standard
	Rb	85	238607.6	1.1				ug/L	28	Standard
	Y	89	727081.9	1.3				ug/L	447395	Standard
>	Rh	103	48.3	48.9				ug/L	15	Standard
	Mo	98	16138.3	0.6	**5.1475**	0.088	1.7	ug/L	113	Standard
	Ag	107	1178.0	3.1	**0.1461**	0.006	4.0	ug/L	108	Standard
	Cd	111	4690.3	1.4	**1.9722**	0.048	2.4	mg/L	3	Standard
	Cd	114	11637.8	1.7	**1.9789**	0.055	2.8	ug/L	20	Standard
>	In	115	645732.9	1.1				ug/L	625728	Standard
	Sn	118	2240.2	14.5	**0.2530**	0.048	19.0	ug/L	568	Standard
	Sb	123	1441.2	4.7	**0.2365**	0.011	4.5	ug/L	612	Standard
	Ba	135	274841.1	0.7	**122.4109**	1.640	1.3	ug/L	21	Standard
	Ce	140	887134.9	0.7				ug/L	245	Standard
>	Tb	159	985869.5	0.8				ug/L	950397	Standard
	Ho	165	18397.8	1.0				ug/L	7	Standard
	Tl	203	22726.7	1.1	**2.5470**	0.017	0.7	ug/L	15	Standard
	Tl	205	20669.1	0.8	**2.5996**	0.009	0.3	ug/L	13	Standard
	Pb	206	304509.2	0.5	**54.0918**	0.193	0.4	ug/L	264	Standard
	Pb	207	255448.0	0.1	**49.9624**	0.361	0.7	ug/L	222	Standard
	Pb	208	1107233.4	0.4	**53.0246**	0.467	0.9	ug/L	959	Standard
	U	238	17326.6	1.5	**2.1631**	0.047	2.2	ug/L	9	Standard
>	Bi	209	549274.6	0.7				ug/L	552821	Standard

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 17:37:07
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**8.1301**	14.073	173.1	mg/L	2	Standard
Mg	24	360.0	2.4	**0.2767**	0.016	5.7	mg/L	55	Standard
K	39	590.0	10.2	**1.6839**	0.234	13.9	mg/L	28	Standard
Ca	43	221.7	16.9	**13.7026**	2.998	21.9	mg/L	27	Standard
Fe	54	51880.7	2.5	**32.4850**	1.445	4.4	mg/L	147	Standard
Fe	57	13546.1	1.6	**32.5153**	0.491	1.5	mg/L	268	Standard
Sc-1	45	51448.9	3.1				mg/L	41174	Standard
Cl	35	79311.7	1.5				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	2893.6	2.1				ug/L	1950	Standard
P	31	26569.9	1.7				ug/L	21156	Standard
S	34	4178.9	3.2				ug/L	3419	Standard
Sr	88	200.0	24.6				ug/L	72	Standard
C	12	570.0	12.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	283.3	10.2				mg/L	17	Standard
Dy	164	28615.4	0.7				mg/L	16	Standard
Ho-1	165	18397.8	1.0				mg/L	7	Standard
Er	166	17950.6	1.5				mg/L	7	Standard
I	127	24543.2	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.408	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.558	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 17:37:07
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.197	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.359	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 17:37:07
Page 3

Approved: July 02, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145109S WG574521-07
Sample Date/Time: Friday, July 01, 2016 17:38:02
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77300.2	4.1				ug/L	76456	Standard
	Be	9	31013.4	0.9	**27.4058**	0.869	3.2	ug/L	20	Standard
	Al	27	4089154.1	3.2	**23.6238**	0.470	2.0	ug/L	1307	Standard
	Sc	45	51686.4	2.6				ug/L	41174	Standard
	Ti	47	34757.2	1.7	**100.2574**	1.039	1.0	ug/L	27	Standard
	V	51	798652.3	3.3	**91.1648**	1.278	1.4	ug/L	1434	Standard
	Cr	52	383358.6	3.0	**43.6124**	0.316	0.7	ug/L	7733	Standard
	Cr	53	46656.8	2.4	**42.9982**	0.311	0.7	ug/L	442	Standard
	Mn	55	2313030.1	2.9	**287.2366**	2.286	0.8	ug/L	723	Standard
	Co	59	229099.5	3.1	**28.0933**	0.227	0.8	ug/L	217	Standard
	Ni	60	103411.0	3.4	**46.7113**	0.544	1.2	ug/L	304	Standard
	Cu	65	167787.3	3.4	**77.2413**	0.870	1.1	ug/L	181	Standard
	Zn	66	148653.6	2.3	**113.9303**	0.817	0.7	ug/L	215	Standard
>	**Ge**	72	553789.9	2.3				ug/L	520809	Standard
	As	75	50674.7	3.7	**38.6402**	0.614	1.6	ug/L	-52	Standard
	Se	82	4006.1	3.7	**29.6916**	0.620	2.1	ug/L	17	Standard
	Se-1	77	2822.3	6.3	**30.3505**	1.406	4.6	ug/L	56	Standard
>	**Ga**	71	15926.7	1.8				mg/L	25	Standard
	Rb	85	61213.5	2.5				ug/L	28	Standard
	Y	89	995780.9	3.8				ug/L	447395	Standard
>	**Rh**	103	80.0	39.0				ug/L	15	Standard
	Mo	98	11202.2	1.3	**3.5351**	0.100	2.8	ug/L	113	Standard
	Ag	107	172476.6	3.4	**23.0491**	0.075	0.3	ug/L	108	Standard
	Cd	111	62525.5	2.9	**26.0819**	0.217	0.8	mg/L	3	Standard
	Cd	114	155090.1	3.1	**26.1298**	0.108	0.4	ug/L	20	Standard
>	**In**	115	651612.6	3.5				ug/L	625728	Standard
	Sn	118	1198.4	14.3	**0.0953**	0.032	33.2	ug/L	568	Standard
	Sb	123	13746.3	2.5	**2.5212**	0.035	1.4	ug/L	612	Standard
	Ba	135	355128.0	2.7	**156.7604**	1.139	0.7	ug/L	21	Standard
	Ce	140	1618154.9	2.5				ug/L	245	Standard
>	**Tb**	159	1001149.2	2.4				ug/L	950397	Standard
	Ho	165	38079.5	2.2				ug/L	7	Standard
	Tl	203	217506.4	3.1	**24.1924**	0.167	0.7	ug/L	15	Standard
	Tl	205	199413.9	1.5	**24.9766**	0.301	1.2	ug/L	13	Standard
	Pb	206	340199.5	1.6	**59.9805**	0.583	1.0	ug/L	264	Standard
	Pb	207	287102.8	2.6	**55.7262**	0.520	0.9	ug/L	222	Standard
	Pb	208	1239148.8	1.7	**58.8977**	0.622	1.1	ug/L	959	Standard
	U	238	215333.8	2.0	**26.6800**	0.294	1.1	ug/L	9	Standard
>	**Bi**	209	553529.4	2.5				ug/L	552821	Standard

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 17:40:19
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**8.0461**	6.964	86.6	mg/L	2	Standard
Mg	24	420.0	23.2	**0.3305**	0.090	27.3	mg/L	55	Standard
K	39	140.0	12.9	**0.2971**	0.061	20.5	mg/L	28	Standard
Ca	43	243.3	22.2	**15.1089**	3.441	22.8	mg/L	27	Standard
Fe	54	22645.6	2.0	**14.0499**	0.221	1.6	mg/L	147	Standard
Fe	57	6007.9	4.3	**13.9009**	0.509	3.7	mg/L	268	Standard
Sc-1	45	51686.4	2.6				mg/L	41174	Standard
Cl	35	80429.2	4.3				ug/L	69550	Standard
Kr	83	2.7	86.6				ug/L	1	Standard
Br	81	13772.9	3.0				ug/L	1950	Standard
P	31	24882.1	4.1				ug/L	21156	Standard
S	34	3928.8	5.2				ug/L	3419	Standard
Sr	88	231.7	13.2				ug/L	72	Standard
C	12	2016.8	5.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	526.7	13.7				mg/L	17	Standard
Dy	164	57272.5	3.0				mg/L	16	Standard
Ho-1	165	38079.5	2.2				mg/L	7	Standard
Er	166	36791.3	0.3				mg/L	7	Standard
I	127	68461.0	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.105	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.333	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 17:40:19
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.128
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 17:40:19
Page 3

Approved: July 02, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145110SD WG574521-08
Sample Date/Time: Friday, July 01, 2016 17:41:13
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75000.2	2.3				ug/L	76456	Standard
	Be	9	30976.6	1.7	**28.1959**	0.613	2.2	ug/L	20	Standard
	Al	27	3439220.2	1.5	**20.4763**	0.514	2.5	ug/L	1307	Standard
	Sc	45	50167.9	0.3				ug/L	41174	Standard
	Ti	47	20331.3	1.6	**60.1182**	0.386	0.6	ug/L	27	Standard
	V	51	735011.2	1.2	**86.0697**	0.811	0.9	ug/L	1434	Standard
	Cr	52	348065.1	1.5	**40.5590**	0.525	1.3	ug/L	7733	Standard
	Cr	53	41963.1	3.7	**39.6270**	0.656	1.7	ug/L	442	Standard
	Mn	55	2126490.8	1.0	**270.9327**	3.985	1.5	ug/L	723	Standard
	Co	59	224148.6	1.1	**28.2013**	0.328	1.2	ug/L	217	Standard
	Ni	60	97510.5	1.6	**45.1854**	0.391	0.9	ug/L	304	Standard
	Cu	65	159657.8	0.8	**75.4140**	0.961	1.3	ug/L	181	Standard
	Zn	66	122702.2	1.2	**96.4430**	0.853	0.9	ug/L	215	Standard
>	Ge	72	539893.8	2.0				ug/L	520809	Standard
	As	75	43731.6	1.5	**34.2188**	0.207	0.6	ug/L	-52	Standard
	Se	82	3851.1	1.9	**29.2807**	0.182	0.6	ug/L	17	Standard
	Se-1	77	2693.2	3.6	**29.7006**	0.473	1.6	ug/L	56	Standard
>	Ga	71	10877.2	4.3				mg/L	25	Standard
	Rb	85	26646.7	1.9				ug/L	28	Standard
	Y	89	984741.5	1.3				ug/L	447395	Standard
>	Rh	103	75.0	23.1				ug/L	15	Standard
	Mo	98	12396.0	1.1	**4.0096**	0.009	0.2	ug/L	113	Standard
	Ag	107	167394.8	1.6	**22.9251**	0.326	1.4	ug/L	108	Standard
	Cd	111	61689.6	0.9	**26.3685**	0.182	0.7	mg/L	3	Standard
	Cd	114	150249.5	3.1	**25.9377**	0.589	2.3	ug/L	20	Standard
>	In	115	635843.6	1.2				ug/L	625728	Standard
	Sn	118	1905.1	12.7	**0.2074**	0.041	19.5	ug/L	568	Standard
	Sb	123	35922.0	1.1	**6.8066**	0.045	0.7	ug/L	612	Standard
	Ba	135	328480.5	1.3	**148.5677**	0.342	0.2	ug/L	21	Standard
	Ce	140	1483643.4	1.0				ug/L	245	Standard
>	Tb	159	980223.1	1.4				ug/L	950397	Standard
	Ho	165	36555.7	1.5				ug/L	7	Standard
	Tl	203	214476.5	1.2	**24.1754**	0.120	0.5	ug/L	15	Standard
	Tl	205	195033.9	0.4	**24.7497**	0.108	0.4	ug/L	13	Standard
	Pb	206	331178.4	0.7	**59.1601**	0.433	0.7	ug/L	264	Standard
	Pb	207	281134.0	0.6	**55.2947**	0.155	0.3	ug/L	222	Standard
	Pb	208	1213063.3	0.7	**58.4179**	0.082	0.1	ug/L	959	Standard
	U	238	215012.5	0.4	**26.9929**	0.177	0.7	ug/L	9	Standard
>	Bi	209	546245.7	0.8				ug/L	552821	Standard

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 17:43:30
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	401.7	8.7	**0.3249**	0.034	10.5	mg/L	55	Standard
K	39	65.0	53.8	**0.0732**	0.110	149.7	mg/L	28	Standard
Ca	43	258.3	8.9	**16.8169**	1.773	10.5	mg/L	27	Standard
Fe	54	18860.0	1.9	**12.0398**	0.263	2.2	mg/L	147	Standard
Fe	57	5239.2	5.1	**12.4090**	0.703	5.7	mg/L	268	Standard
> **Sc-1**	45	50167.9	0.3				mg/L	41174	Standard
Cl	35	77473.7	3.0				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	7528.5	1.9				ug/L	1950	Standard
P	31	23025.8	3.4				ug/L	21156	Standard
S	34	3772.1	4.4				ug/L	3419	Standard
Sr	88	236.7	6.8				ug/L	72	Standard
C	12	2743.6	3.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	510.0	3.4				mg/L	17	Standard
Dy	164	54236.1	2.2				mg/L	16	Standard
Ho-1	165	36555.7	1.5				mg/L	7	Standard
Er	166	36333.5	1.9				mg/L	7	Standard
I	127	50945.5	2.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.664	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 17:43:30
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.617	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.811	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 17:43:30
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144501
Sample Date/Time: Friday, July 01, 2016 17:44:25
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75614.9	1.3				ug/L	76456	Standard
	Be	9	616.7	9.4	**0.5370**	0.050	9.3	ug/L	20	Standard
	Al	27	13167988.3	1.5	**77.7749**	1.539	2.0	ug/L	1307	Standard
	Sc	45	44936.5	0.9				ug/L	41174	Standard
	Ti	47	2539.2	1.9	**7.5419**	0.159	2.1	ug/L	27	Standard
	V	51	86547.1	1.5	**10.1041**	0.180	1.8	ug/L	1434	Standard
	Cr	52	60907.8	0.8	**6.4000**	0.028	0.4	ug/L	7733	Standard
	Cr	53	7250.1	1.9	**6.6027**	0.158	2.4	ug/L	442	Standard
	Mn	55	1905061.9	1.8	**246.1332**	2.751	1.1	ug/L	723	Standard
	Co	59	36801.3	0.6	**4.6715**	0.060	1.3	ug/L	217	Standard
	Ni	60	21869.8	1.0	**10.1605**	0.108	1.1	ug/L	304	Standard
	Cu	65	17811.5	0.6	**8.4670**	0.104	1.2	ug/L	181	Standard
	Zn	66	27607.8	0.3	**21.8690**	0.071	0.3	ug/L	215	Standard
>	Ge	72	532269.5	0.7				ug/L	520809	Standard
	As	75	3673.7	1.1	**2.9570**	0.036	1.2	ug/L	-52	Standard
	Se	82	41.1	14.0	**0.1921**	0.043	22.6	ug/L	17	Standard
	Se-1	77	92.7	12.4	**0.3761**	0.133	35.3	ug/L	56	Standard
>	Ga	71	8445.7	4.3				mg/L	25	Standard
	Rb	85	79397.5	0.6				ug/L	28	Standard
	Y	89	617711.9	0.3				ug/L	447395	Standard
>	Rh	103	20.0	50.0				ug/L	15	Standard
	Mo	98	513.2	4.5	**0.1463**	0.008	5.2	ug/L	113	Standard
	Ag	107	411.0	5.4	**0.0445**	0.003	7.0	ug/L	108	Standard
	Cd	111	224.8	17.0	**0.0956**	0.017	17.3	mg/L	3	Standard
	Cd	114	528.5	15.3	**0.0930**	0.014	15.2	ug/L	20	Standard
>	In	115	623854.0	0.2				ug/L	625728	Standard
	Sn	118	1113.4	15.3	**0.0893**	0.027	30.1	ug/L	568	Standard
	Sb	123	402.5	19.7	**0.0444**	0.016	34.9	ug/L	612	Standard
	Ba	135	200643.8	0.9	**92.4876**	1.043	1.1	ug/L	21	Standard
	Ce	140	742147.0	0.8				ug/L	245	Standard
>	Tb	159	959744.7	0.8				ug/L	950397	Standard
	Ho	165	13928.1	1.6				ug/L	7	Standard
	Tl	203	447.0	8.8	**0.0505**	0.005	9.0	ug/L	15	Standard
	Tl	205	406.7	11.9	**0.0427**	0.006	14.6	ug/L	13	Standard
	Pb	206	40310.6	0.6	**7.2786**	0.040	0.5	ug/L	264	Standard
	Pb	207	33326.3	0.4	**6.6200**	0.027	0.4	ug/L	222	Standard
	Pb	208	145576.7	0.6	**7.0813**	0.040	0.6	ug/L	959	Standard
	U	238	2828.3	0.6	**0.3605**	0.002	0.6	ug/L	9	Standard
>	Bi	209	537569.5	0.1				ug/L	552821	Standard

Sample ID: L1606144501
Report Date/Time: Friday, July 01, 2016 17:46:42
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.1104**	7.886	86.6	mg/L	2	Standard
Mg	24	76.7	7.5	**0.0219**	0.006	26.1	mg/L	55	Standard
K	39	218.3	9.5	**0.6363**	0.080	12.5	mg/L	28	Standard
Ca	43	151.7	22.0	**10.1772**	2.793	27.4	mg/L	27	Standard
Fe	54	7340.4	3.8	**5.1756**	0.204	3.9	mg/L	147	Standard
Fe	57	2196.8	7.0	**5.3817**	0.451	8.4	mg/L	268	Standard
> **Sc-1**	45	44936.5	0.9				mg/L	41174	Standard
Cl	35	75625.0	1.8				ug/L	69550	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	2456.9	6.6				ug/L	1950	Standard
P	31	22234.7	4.3				ug/L	21156	Standard
S	34	3950.5	4.3				ug/L	3419	Standard
Sr	88	111.7	18.1				ug/L	72	Standard
C	12	203.3	42.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	36.6				mg/L	17	Standard
Dy	164	23311.5	2.8				mg/L	16	Standard
Ho-1	165	13928.1	1.6				mg/L	7	Standard
Er	166	12401.8	5.5				mg/L	7	Standard
I	127	16120.2	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.900	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.200	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144501
Report Date/Time: Friday, July 01, 2016 17:46:42
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.701
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.241
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606144501
Report Date/Time: Friday, July 01, 2016 17:46:42
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144502
Sample Date/Time: Friday, July 01, 2016 17:47:36
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80582.1	0.6				ug/L	76456	Standard
	Be	9	1050.0	6.5	**0.8699**	0.053	6.1	ug/L	20	Standard
	Al	27	10543226.3	2.9	**58.4275**	1.839	3.1	ug/L	1307	Standard
	Sc	45	50111.1	1.7				ug/L	41174	Standard
	Ti	47	7592.6	3.2	**21.5864**	0.745	3.5	ug/L	27	Standard
	V	51	232882.8	0.5	**26.1453**	0.088	0.3	ug/L	1434	Standard
	Cr	52	180590.6	0.7	**19.7971**	0.199	1.0	ug/L	7733	Standard
	Cr	53	21970.9	2.4	**19.7976**	0.515	2.6	ug/L	442	Standard
	Mn	55	4529682.0	0.5	**556.3104**	4.224	0.8	ug/L	723	Standard
	Co	59	72279.7	0.5	**8.7442**	0.060	0.7	ug/L	217	Standard
	Ni	60	42964.2	0.1	**19.1012**	0.022	0.1	ug/L	304	Standard
	Cu	65	47497.7	0.8	**21.5696**	0.226	1.0	ug/L	181	Standard
	Zn	66	105865.9	1.3	**80.1698**	1.221	1.5	ug/L	215	Standard
>	Ge	72	560104.1	0.3				ug/L	520809	Standard
	As	75	7808.3	0.8	**5.9264**	0.056	0.9	ug/L	-52	Standard
	Se	82	138.7	8.9	**0.8941**	0.089	9.9	ug/L	17	Standard
	Se-1	77	161.0	3.3	**1.0667**	0.061	5.7	ug/L	56	Standard
>	Ga	71	24149.2	0.8				mg/L	25	Standard
	Rb	85	233795.1	1.1				ug/L	28	Standard
	Y	89	725001.6	1.1				ug/L	447395	Standard
>	Rh	103	41.7	18.3				ug/L	15	Standard
	Mo	98	1317.7	5.6	**0.3993**	0.019	4.9	ug/L	113	Standard
	Ag	107	864.0	1.1	**0.1041**	0.002	2.4	ug/L	108	Standard
	Cd	111	1117.0	0.9	**0.4692**	0.009	1.8	mg/L	3	Standard
	Cd	114	2788.0	2.8	**0.4754**	0.015	3.1	ug/L	20	Standard
>	In	115	643922.1	1.0				ug/L	625728	Standard
	Sn	118	2010.1	12.1	**0.2191**	0.034	15.5	ug/L	568	Standard
	Sb	123	437.2	13.5	**0.0484**	0.010	21.4	ug/L	612	Standard
	Ba	135	1679042.7	0.5	**749.9950**	6.832	0.9	ug/L	21	Standard
	Ce	140	1471540.7	0.8				ug/L	245	Standard
>	Tb	159	984687.8	0.7				ug/L	950397	Standard
	Ho	165	20360.3	1.4				ug/L	7	Standard
	Tl	203	1212.7	2.5	**0.1370**	0.004	2.6	ug/L	15	Standard
	Tl	205	1158.4	9.0	**0.1384**	0.013	9.2	ug/L	13	Standard
	Pb	206	419173.3	0.5	**75.4515**	0.814	1.1	ug/L	264	Standard
	Pb	207	344138.4	0.6	**68.2056**	0.866	1.3	ug/L	222	Standard
	Pb	208	1506247.3	0.9	**73.0918**	0.807	1.1	ug/L	959	Standard
	U	238	5748.4	0.4	**0.7268**	0.007	1.0	ug/L	9	Standard
>	Bi	209	542199.4	0.6				ug/L	552821	Standard

Sample ID: L1606144502
Report Date/Time: Friday, July 01, 2016 17:49:53
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	146.7	3.9	**0.0806**	0.004	4.7	mg/L	55	Standard
K	39	706.7	5.1	**2.0968**	0.148	7.0	mg/L	28	Standard
Ca	43	91.7	22.0	**4.4031**	1.569	35.6	mg/L	27	Standard
Fe	54	24940.6	4.4	**15.9770**	0.842	5.3	mg/L	147	Standard
Fe	57	6641.5	3.9	**15.9699**	0.826	5.2	mg/L	268	Standard
> **Sc-1**	45	50111.1	1.7				mg/L	41174	Standard
Cl	35	76057.1	1.3				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	3847.2	5.3				ug/L	1950	Standard
P	31	23633.4	0.7				ug/L	21156	Standard
S	34	3662.1	4.5				ug/L	3419	Standard
Sr	88	171.7	11.8				ug/L	72	Standard
C	12	470.0	20.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	233.3	19.3				mg/L	17	Standard
Dy	164	34433.8	0.7				mg/L	16	Standard
Ho-1	165	20360.3	1.4				mg/L	7	Standard
Er	166	19082.0	1.0				mg/L	7	Standard
I	127	32727.0	1.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.397	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.545	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144502
Report Date/Time: Friday, July 01, 2016 17:49:53
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.908
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144502
Report Date/Time: Friday, July 01, 2016 17:49:53
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 17:50:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75660.1	1.1				ug/L	76456	Standard
	Be	9	60406.9	2.0	**54.5087**	0.731	1.3	ug/L	20	Standard
	Al	27	8901183.3	0.4	**52.5361**	0.439	0.8	ug/L	1307	Standard
	Sc	45	43571.0	4.5				ug/L	41174	Standard
	Ti	47	34622.5	2.0	**98.8044**	2.139	2.2	ug/L	27	Standard
	V	51	445398.2	1.1	**50.2213**	0.481	1.0	ug/L	1434	Standard
	Cr	52	446008.3	0.3	**50.3583**	0.638	1.3	ug/L	7733	Standard
	Cr	53	54342.3	1.8	**49.6105**	0.179	0.4	ug/L	442	Standard
	Mn	55	412872.1	1.4	**50.6530**	0.943	1.9	ug/L	723	Standard
	Co	59	423920.9	1.9	**51.4674**	1.144	2.2	ug/L	217	Standard
	Ni	60	112641.5	1.2	**50.3629**	0.567	1.1	ug/L	304	Standard
	Cu	65	112208.4	1.7	**51.0893**	0.402	0.8	ug/L	181	Standard
	Zn	66	66744.0	0.4	**50.5145**	0.608	1.2	ug/L	215	Standard
>	Ge	72	559742.9	1.5				ug/L	520809	Standard
	As	75	66794.1	0.6	**50.3914**	0.530	1.1	ug/L	-52	Standard
	Se	82	6873.9	1.4	**50.5047**	0.860	1.7	ug/L	17	Standard
	Se-1	77	4690.7	2.0	**50.3684**	0.411	0.8	ug/L	56	Standard
>	Ga	71	70.0	37.1				mg/L	25	Standard
	Rb	85	931.7	8.4				ug/L	28	Standard
	Y	89	472026.6	0.3				ug/L	447395	Standard
>	Rh	103	31.7	32.9				ug/L	15	Standard
	Mo	98	318819.4	0.9	**100.5497**	0.545	0.5	ug/L	113	Standard
	Ag	107	375898.4	1.4	**49.9218**	0.531	1.1	ug/L	108	Standard
	Cd	111	121191.8	0.6	**50.2220**	0.334	0.7	mg/L	3	Standard
	Cd	114	302196.5	1.8	**50.5816**	0.945	1.9	ug/L	20	Standard
>	In	115	655853.7	0.4				ug/L	625728	Standard
	Sn	118	335213.1	1.5	**49.6075**	0.708	1.4	ug/L	568	Standard
	Sb	123	270386.5	1.1	**49.8811**	0.362	0.7	ug/L	612	Standard
	Ba	135	111336.6	0.9	**48.8080**	0.417	0.9	ug/L	21	Standard
	Ce	140	1411.7	25.7				ug/L	245	Standard
>	Tb	159	970990.0	1.2				ug/L	950397	Standard
	Ho	165	26.7	71.0				ug/L	7	Standard
	Tl	203	450496.8	1.2	**50.6789**	0.648	1.3	ug/L	15	Standard
	Tl	205	413746.4	0.4	**52.4089**	0.448	0.9	ug/L	13	Standard
	Pb	206	283628.8	0.6	**50.5558**	0.102	0.2	ug/L	264	Standard
	Pb	207	257451.9	0.7	**50.5301**	0.341	0.7	ug/L	222	Standard
	Pb	208	1074344.6	0.3	**51.6273**	0.180	0.3	ug/L	959	Standard
	U	238	402853.9	0.7	**50.4710**	0.276	0.5	ug/L	9	Standard
>	Bi	209	547356.6	0.6				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:53:06
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4665.7	4.0	**5.1012**	0.401	7.9	mg/L	55	Standard
K	39	1318.4	2.8	**4.6563**	0.350	7.5	mg/L	28	Standard
Ca	43	68.3	16.9	**3.4315**	1.098	32.0	mg/L	27	Standard
Fe	54	7100.4	2.7	**5.1707**	0.292	5.6	mg/L	147	Standard
Fe	57	2145.2	7.2	**5.4299**	0.465	8.6	mg/L	268	Standard
> **Sc-1**	45	43571.0	4.5				mg/L	41174	Standard
Cl	35	80089.1	0.5				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2080.1	5.8				ug/L	1950	Standard
P	31	24411.3	2.1				ug/L	21156	Standard
S	34	4227.3	2.4				ug/L	3419	Standard
Sr	88	76.7	45.8				ug/L	72	Standard
C	12	110.0	45.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	56.7				mg/L	17	Standard
Dy	164	54.4	29.0				mg/L	16	Standard
Ho-1	165	26.7	71.0				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	7	Standard
I	127	7775.3	3.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.017		
Al	27	105.072		
Sc	45			
Ti	47	98.804		
V	51	100.443		
Cr	52	100.717		
Cr	53			
Mn	55	101.306		
Co	59	102.935		
Ni	60	100.726		
Cu	65	102.179		
Zn	66	101.029		
> Ge	72		107.476	
As	75	100.783		
Se	82	101.009		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:53:06
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.550		
Ag	107	99.844		
Cd	111	100.444		
Cd	114			
In	115			104.815
Sn	118	99.215		
Sb	123	99.762		
Ba	135	97.616		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.358		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.255		
U	238	100.942		
Bi	209			99.012
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:53:06
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 17:54:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76125.8	1.7				ug/L	76456	Standard
	Be	9	28.3	40.8	**0.0054**	0.010	184.7	ug/L	20	Standard
	Al	27	3772.2	25.1	**0.0119**	0.005	45.3	ug/L	1307	Standard
	Sc	45	44115.8	1.5				ug/L	41174	Standard
	Ti	47	36.0	36.4	**0.0190**	0.038	200.0	ug/L	27	Standard
	V	51	1432.6	3.3	**-0.0355**	0.004	12.4	ug/L	1434	Standard
	Cr	52	7275.4	1.9	**-0.1286**	0.011	8.9	ug/L	7733	Standard
	Cr	53	543.3	3.8	**0.0861**	0.017	20.2	ug/L	442	Standard
	Mn	55	1260.1	9.4	**0.0544**	0.014	25.4	ug/L	723	Standard
	Co	59	264.3	9.7	**0.0028**	0.003	106.4	ug/L	217	Standard
	Ni	60	263.3	2.3	**-0.0344**	0.002	7.2	ug/L	304	Standard
	Cu	65	186.3	1.1	**0.0113**	0.000	4.4	ug/L	181	Standard
	Zn	66	283.0	3.7	**0.0359**	0.009	24.2	ug/L	215	Standard
>	**Ge**	72	556594.5	0.6				ug/L	520809	Standard
	As	75	-80.7	20.9	**-0.0160**	0.013	82.1	ug/L	-52	Standard
	Se	82	15.4	35.3	**-0.0124**	0.040	323.4	ug/L	17	Standard
	Se-1	77	60.3	15.0	**-0.0241**	0.101	419.2	ug/L	56	Standard
>	**Ga**	71	31.7	63.8				mg/L	25	Standard
	Rb	85	60.0					ug/L	28	Standard
	Y	89	477190.1	1.0				ug/L	447395	Standard
>	**Rh**	103	8.3	124.9				ug/L	15	Standard
	Mo	98	226.0	18.3	**0.0476**	0.013	27.7	ug/L	113	Standard
	Ag	107	150.7	15.9	**0.0072**	0.003	44.5	ug/L	108	Standard
	Cd	111	16.6	57.3	**0.0046**	0.004	86.9	mg/L	3	Standard
	Cd	114	59.8	49.5	**0.0101**	0.005	49.3	ug/L	20	Standard
>	**In**	115	653461.3	0.4				ug/L	625728	Standard
	Sn	118	1496.7	19.9	**0.1384**	0.044	31.8	ug/L	568	Standard
	Sb	123	746.4	28.2	**0.1046**	0.039	37.1	ug/L	612	Standard
	Ba	135	171.7	17.2	**0.0577**	0.013	22.8	ug/L	21	Standard
	Ce	140	668.3	13.8				ug/L	245	Standard
>	**Tb**	159	971042.5	0.5				ug/L	950397	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	88.3	25.2	**0.0090**	0.002	27.2	ug/L	15	Standard
	Tl	205	80.0	16.5	**0.0002**	0.002	912.8	ug/L	13	Standard
	Pb	206	378.0	7.1	**0.0223**	0.005	20.2	ug/L	264	Standard
	Pb	207	334.0	19.5	**0.0182**	0.012	68.6	ug/L	222	Standard
	Pb	208	1457.7	7.9	**0.0204**	0.005	25.7	ug/L	959	Standard
	U	238	80.3	16.8	**0.0096**	0.002	17.0	ug/L	9	Standard
>	**Bi**	209	558602.1	0.7				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:56:18
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	25.0	**0.0053**	0.017	313.2	mg/L	55	Standard
K	39	28.3	44.4	**-0.0302**	0.044	144.5	mg/L	28	Standard
Ca	43	16.7	75.5	**-1.0452**	1.061	101.5	mg/L	27	Standard
Fe	54	162.7	23.0	**0.0200**	0.026	130.3	mg/L	147	Standard
Fe	57	228.3	8.3	**-0.1492**	0.054	36.5	mg/L	268	Standard
> **Sc-1**	45	44115.8	1.5				mg/L	41174	Standard
Cl	35	79992.6	1.1				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2276.8	13.7				ug/L	1950	Standard
P	31	23509.9	2.2				ug/L	21156	Standard
S	34	4122.2	2.6				ug/L	3419	Standard
Sr	88	61.7	24.8				ug/L	72	Standard
C	12	93.3	16.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	60.0	16.7				mg/L	17	Standard
Dy	164	41.6	40.0				mg/L	16	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	36.7	83.3				mg/L	7	Standard
I	127	5142.5	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.871	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:56:18
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.432
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.046
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:56:18
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144503
Sample Date/Time: Friday, July 01, 2016 17:57:14
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81064.6	1.5				ug/L	76456	Standard
	Be	9	923.4	4.6	**0.7579**	0.026	3.5	ug/L	20	Standard
	Al	27	9265006.3	1.5	**51.0345**	0.228	0.4	ug/L	1307	Standard
	Sc	45	49278.4	2.1				ug/L	41174	Standard
	Ti	47	6532.7	0.9	**18.1480**	0.376	2.1	ug/L	27	Standard
	V	51	196838.4	1.2	**21.5756**	0.486	2.3	ug/L	1434	Standard
	Cr	52	144221.5	0.4	**15.2461**	0.132	0.9	ug/L	7733	Standard
	Cr	53	17702.0	4.1	**15.5134**	0.839	5.4	ug/L	442	Standard
	Mn	55	4322666.6	0.8	**519.0669**	3.003	0.6	ug/L	723	Standard
	Co	59	73004.8	0.8	**8.6351**	0.046	0.5	ug/L	217	Standard
	Ni	60	37595.6	1.2	**16.3200**	0.066	0.4	ug/L	304	Standard
	Cu	65	29226.2	0.6	**12.9475**	0.087	0.7	ug/L	181	Standard
	Zn	66	73620.1	0.4	**54.4550**	0.675	1.2	ug/L	215	Standard
>	Ge	72	572863.4	1.2				ug/L	520809	Standard
	As	75	5889.9	1.0	**4.3827**	0.015	0.3	ug/L	-52	Standard
	Se	82	131.9	5.2	**0.8223**	0.038	4.7	ug/L	17	Standard
	Se-1	77	184.3	3.7	**1.2757**	0.064	5.0	ug/L	56	Standard
>	Ga	71	19340.7	1.8				mg/L	25	Standard
	Rb	85	221404.3	0.5				ug/L	28	Standard
	Y	89	706877.6	0.9				ug/L	447395	Standard
>	Rh	103	30.0	72.6				ug/L	15	Standard
	Mo	98	2018.2	3.9	**0.6082**	0.025	4.1	ug/L	113	Standard
	Ag	107	770.7	2.0	**0.0888**	0.002	2.2	ug/L	108	Standard
	Cd	111	2871.4	1.3	**1.1792**	0.015	1.3	mg/L	3	Standard
	Cd	114	6981.1	2.4	**1.1603**	0.029	2.5	ug/L	20	Standard
>	In	115	660500.6	0.1				ug/L	625728	Standard
	Sn	118	1633.4	19.7	**0.1562**	0.047	30.4	ug/L	568	Standard
	Sb	123	766.2	17.6	**0.1067**	0.025	23.2	ug/L	612	Standard
	Ba	135	509530.1	0.7	**221.8605**	1.691	0.8	ug/L	21	Standard
	Ce	140	1234713.5	0.5				ug/L	245	Standard
>	Tb	159	1007837.3	0.4				ug/L	950397	Standard
	Ho	165	17965.6	2.4				ug/L	7	Standard
	Tl	203	1067.0	3.3	**0.1181**	0.003	2.2	ug/L	15	Standard
	Tl	205	1001.7	2.4	**0.1159**	0.004	3.7	ug/L	13	Standard
	Pb	206	195840.9	0.6	**34.5471**	0.280	0.8	ug/L	264	Standard
	Pb	207	161774.1	0.6	**31.4180**	0.202	0.6	ug/L	222	Standard
	Pb	208	705256.5	0.4	**33.5368**	0.236	0.7	ug/L	959	Standard
	U	238	5486.7	0.6	**0.6803**	0.004	0.5	ug/L	9	Standard
>	Bi	209	552878.3	1.1				ug/L	552821	Standard

Sample ID: L1606144503
Report Date/Time: Friday, July 01, 2016 17:59:31
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	775.0	0.6	**0.6965**	0.018	2.6	mg/L	55	Standard
K	39	456.7	20.3	**1.3315**	0.288	21.7	mg/L	28	Standard
Ca	43	66.7	11.5	**2.6050**	0.520	20.0	mg/L	27	Standard
Fe	54	19066.0	1.2	**12.3984**	0.367	3.0	mg/L	147	Standard
Fe	57	5245.9	1.7	**12.6645**	0.072	0.6	mg/L	268	Standard
> **Sc-1**	45	49278.4	2.1				mg/L	41174	Standard
Cl	35	75533.8	1.8				ug/L	69550	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	12581.9	2.8				ug/L	1950	Standard
P	31	23234.5	1.4				ug/L	21156	Standard
S	34	3415.4	8.9				ug/L	3419	Standard
Sr	88	155.0	8.5				ug/L	72	Standard
C	12	606.7	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	183.3	45.4				mg/L	17	Standard
Dy	164	30531.0	0.8				mg/L	16	Standard
Ho-1	165	17965.6	2.4				mg/L	7	Standard
Er	166	16101.9	2.4				mg/L	7	Standard
I	127	47399.3	7.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.028	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.995	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144503
Report Date/Time: Friday, July 01, 2016 17:59:31
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.557	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.010	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144503
Report Date/Time: Friday, July 01, 2016 17:59:31
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144507
Sample Date/Time: Friday, July 01, 2016 18:00:25
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81719.8	0.5				ug/L	76456	Standard
	Be	9	1150.0	3.4	**0.9414**	0.038	4.0	ug/L	20	Standard
	Al	27	19122972.5	1.5	**104.5075**	1.996	1.9	ug/L	1307	Standard
	Sc	45	50161.3	3.1				ug/L	41174	Standard
	Ti	47	4290.6	1.9	**12.0513**	0.158	1.3	ug/L	27	Standard
	V	51	176002.8	1.5	**19.5347**	0.381	2.0	ug/L	1434	Standard
	Cr	52	202519.5	0.7	**22.1111**	0.164	0.7	ug/L	7733	Standard
	Cr	53	24688.4	0.5	**22.0962**	0.312	1.4	ug/L	442	Standard
	Mn	55	3882576.5	0.7	**472.5626**	1.691	0.4	ug/L	723	Standard
	Co	59	74015.0	0.7	**8.8755**	0.153	1.7	ug/L	217	Standard
	Ni	60	49898.7	0.5	**22.0097**	0.116	0.5	ug/L	304	Standard
	Cu	65	49732.2	0.6	**22.3872**	0.351	1.6	ug/L	181	Standard
	Zn	66	114291.8	0.2	**85.7937**	1.009	1.2	ug/L	215	Standard
>	Ge	72	565157.3	1.0				ug/L	520809	Standard
	As	75	14435.4	1.1	**10.8205**	0.032	0.3	ug/L	-52	Standard
	Se	82	92.4	6.7	**0.5475**	0.040	7.3	ug/L	17	Standard
	Se-1	77	153.7	16.6	**0.9738**	0.293	30.1	ug/L	56	Standard
>	Ga	71	20582.3	3.6				mg/L	25	Standard
	Rb	85	203311.7	0.8				ug/L	28	Standard
	Y	89	751032.3	1.4				ug/L	447395	Standard
>	Rh	103	46.7	44.6				ug/L	15	Standard
	Mo	98	590.9	4.0	**0.1610**	0.008	5.2	ug/L	113	Standard
	Ag	107	615.7	5.5	**0.0683**	0.004	5.9	ug/L	108	Standard
	Cd	111	2075.5	3.1	**0.8510**	0.024	2.8	mg/L	3	Standard
	Cd	114	5077.8	10.1	**0.8428**	0.077	9.1	ug/L	20	Standard
>	In	115	661094.1	1.5				ug/L	625728	Standard
	Sn	118	1358.4	19.5	**0.1160**	0.042	36.3	ug/L	568	Standard
	Sb	123	1552.9	6.2	**0.2509**	0.021	8.4	ug/L	612	Standard
	Ba	135	403285.7	0.6	**175.4541**	1.609	0.9	ug/L	21	Standard
	Ce	140	1308604.3	1.2				ug/L	245	Standard
>	Tb	159	1004791.8	1.1				ug/L	950397	Standard
	Ho	165	21420.1	0.2				ug/L	7	Standard
	Tl	203	1393.7	1.3	**0.1546**	0.002	1.2	ug/L	15	Standard
	Tl	205	1293.4	6.5	**0.1525**	0.010	6.7	ug/L	13	Standard
	Pb	206	576456.5	0.6	**101.8203**	0.799	0.8	ug/L	264	Standard
	Pb	207	487118.2	0.8	**94.7368**	0.502	0.5	ug/L	222	Standard
	Pb	208	2107804.8	0.1	**100.3728**	0.432	0.4	ug/L	959	Standard
	U	238	4448.0	2.0	**0.5517**	0.009	1.6	ug/L	9	Standard
>	Bi	209	552606.6	0.3				ug/L	552821	Standard

Sample ID: L1606144507
Report Date/Time: Friday, July 01, 2016 18:02:42
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**3.9605**	6.851	173.0	mg/L	2	Standard
Mg	24	146.7	22.7	**0.0801**	0.030	37.5	mg/L	55	Standard
K	39	540.0	0.9	**1.5696**	0.061	3.9	mg/L	28	Standard
Ca	43	96.7	3.0	**4.7655**	0.419	8.8	mg/L	27	Standard
Fe	54	17314.9	1.0	**11.0515**	0.258	2.3	mg/L	147	Standard
Fe	57	4700.7	3.1	**11.0529**	0.214	1.9	mg/L	268	Standard
> **Sc-1**	45	50161.3	3.1				mg/L	41174	Standard
Cl	35	76662.1	1.5				ug/L	69550	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	3767.1	7.9				ug/L	1950	Standard
P	31	23611.7	2.9				ug/L	21156	Standard
S	34	3682.1	3.0				ug/L	3419	Standard
Sr	88	63.3	31.9				ug/L	72	Standard
C	12	343.3	8.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	210.0	26.5				mg/L	17	Standard
Dy	164	35453.0	4.2				mg/L	16	Standard
Ho-1	165	21420.1	0.2				mg/L	7	Standard
Er	166	19218.8	0.6				mg/L	7	Standard
I	127	28176.2	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.515	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144507
Report Date/Time: Friday, July 01, 2016 18:02:42
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.652
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.961
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144507
Report Date/Time: Friday, July 01, 2016 18:02:42
Page 3

Approved: July 02, 2016

Pb 206 Upper, S, EEE	Pb	206
Pb 208 Upper, S, EEE	Pb	208

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144508
Sample Date/Time: Friday, July 01, 2016 18:03:37
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80067.7	0.8				ug/L	76456	Standard
	Be	9	1216.7	3.5	**1.0182**	0.042	4.1	ug/L	20	Standard
	Al	27	26828418.5	2.0	**149.6306**	1.983	1.3	ug/L	1307	Standard
	Sc	45	50947.2	1.6				ug/L	41174	Standard
	Ti	47	5410.0	2.3	**15.2604**	0.406	2.7	ug/L	27	Standard
	V	51	186134.5	1.5	**20.7252**	0.259	1.2	ug/L	1434	Standard
	Cr	52	142957.3	0.4	**15.3665**	0.097	0.6	ug/L	7733	Standard
	Cr	53	17178.1	1.5	**15.2891**	0.249	1.6	ug/L	442	Standard
	Mn	55	4606939.6	1.4	**562.2720**	9.197	1.6	ug/L	723	Standard
	Co	59	80106.5	0.8	**9.6337**	0.111	1.2	ug/L	217	Standard
	Ni	60	49331.5	0.8	**21.8172**	0.266	1.2	ug/L	304	Standard
	Cu	65	27262.5	1.2	**12.2715**	0.190	1.6	ug/L	181	Standard
	Zn	66	50487.3	0.6	**37.8990**	0.363	1.0	ug/L	215	Standard
>	Ge	72	563626.3	0.4				ug/L	520809	Standard
	As	75	5127.9	0.4	**3.8833**	0.025	0.7	ug/L	-52	Standard
	Se	82	63.4	13.7	**0.3372**	0.065	19.3	ug/L	17	Standard
	Se-1	77	127.0	8.8	**0.6885**	0.125	18.2	ug/L	56	Standard
>	Ga	71	20874.4	1.1				mg/L	25	Standard
	Rb	85	200244.6	0.8				ug/L	28	Standard
	Y	89	753887.4	1.4				ug/L	447395	Standard
>	Rh	103	23.3	24.7				ug/L	15	Standard
	Mo	98	546.6	7.3	**0.1509**	0.014	9.6	ug/L	113	Standard
	Ag	107	629.3	8.8	**0.0718**	0.007	9.6	ug/L	108	Standard
	Cd	111	214.4	9.4	**0.0877**	0.009	10.1	mg/L	3	Standard
	Cd	114	474.4	3.2	**0.0805**	0.003	3.5	ug/L	20	Standard
>	In	115	647228.9	1.0				ug/L	625728	Standard
	Sn	118	1141.7	25.6	**0.0873**	0.044	50.2	ug/L	568	Standard
	Sb	123	347.3	21.7	**0.0313**	0.014	45.5	ug/L	612	Standard
	Ba	135	428959.8	0.0	**190.6168**	1.771	0.9	ug/L	21	Standard
	Ce	140	1454827.7	0.7				ug/L	245	Standard
>	Tb	159	993072.0	0.4				ug/L	950397	Standard
	Ho	165	23219.4	1.9				ug/L	7	Standard
	Tl	203	1106.7	1.7	**0.1248**	0.002	1.9	ug/L	15	Standard
	Tl	205	985.0	10.2	**0.1162**	0.014	11.7	ug/L	13	Standard
	Pb	206	63645.1	1.2	**11.4085**	0.083	0.7	ug/L	264	Standard
	Pb	207	52266.7	0.7	**10.3105**	0.095	0.9	ug/L	222	Standard
	Pb	208	232091.9	0.7	**11.2123**	0.155	1.4	ug/L	959	Standard
	U	238	4568.7	1.3	**0.5771**	0.011	1.9	ug/L	9	Standard
>	Bi	209	542669.3	0.8				ug/L	552821	Standard

Sample ID: L1606144508
Report Date/Time: Friday, July 01, 2016 18:05:54
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.0478**	7.002	173.0	mg/L	2	Standard
Mg	24	115.0	7.5	**0.0484**	0.008	16.3	mg/L	55	Standard
K	39	411.7	8.1	**1.1441**	0.093	8.1	mg/L	28	Standard
Ca	43	256.7	13.7	**16.4263**	2.858	17.4	mg/L	27	Standard
Fe	54	19822.2	2.5	**12.4655**	0.367	2.9	mg/L	147	Standard
Fe	57	5277.6	3.2	**12.3025**	0.438	3.6	mg/L	268	Standard
> **Sc-1**	45	50947.2	1.6				mg/L	41174	Standard
Cl	35	80549.5	0.6				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	2766.9	10.3				ug/L	1950	Standard
P	31	24564.9	2.5				ug/L	21156	Standard
S	34	4093.9	1.0				ug/L	3419	Standard
Sr	88	131.7	11.6				ug/L	72	Standard
C	12	213.3	21.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	17	Standard
Dy	164	39354.5	1.1				mg/L	16	Standard
Ho-1	165	23219.4	1.9				mg/L	7	Standard
Er	166	20997.9	3.9				mg/L	7	Standard
I	127	17520.1	0.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.724	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.221	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144508
Report Date/Time: Friday, July 01, 2016 18:05:54
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.436	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.164	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144508
Report Date/Time: Friday, July 01, 2016 18:05:54
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144509
Sample Date/Time: Friday, July 01, 2016 18:06:48
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79442.8	2.3				ug/L	76456	Standard
	Be	9	943.4	17.8	**0.7923**	0.154	19.4	ug/L	20	Standard
	Al	27	24668673.1	1.9	**138.6963**	2.466	1.8	ug/L	1307	Standard
	Sc	45	50062.6	1.9				ug/L	41174	Standard
	Ti	47	4807.4	4.3	**13.5672**	0.456	3.4	ug/L	27	Standard
	V	51	136414.7	0.2	**15.1594**	0.132	0.9	ug/L	1434	Standard
	Cr	52	121344.3	1.1	**12.9168**	0.132	1.0	ug/L	7733	Standard
	Cr	53	14567.0	3.2	**12.9202**	0.381	2.9	ug/L	442	Standard
	Mn	55	3584400.6	1.7	**438.0976**	8.663	2.0	ug/L	723	Standard
	Co	59	62786.5	0.8	**7.5554**	0.042	0.6	ug/L	217	Standard
	Ni	60	42141.2	1.3	**18.6419**	0.218	1.2	ug/L	304	Standard
	Cu	65	21722.6	0.6	**9.7770**	0.072	0.7	ug/L	181	Standard
	Zn	66	42178.0	0.8	**31.6788**	0.359	1.1	ug/L	215	Standard
>	Ge	72	562814.6	1.1				ug/L	520809	Standard
	As	75	3148.0	1.0	**2.4049**	0.028	1.2	ug/L	-52	Standard
	Se	82	55.8	21.4	**0.2824**	0.087	30.8	ug/L	17	Standard
	Se-1	77	111.3	15.0	**0.5195**	0.168	32.3	ug/L	56	Standard
>	Ga	71	17067.9	0.7				mg/L	25	Standard
	Rb	85	155458.5	0.3				ug/L	28	Standard
	Y	89	728811.9	0.2				ug/L	447395	Standard
>	Rh	103	40.0	21.7				ug/L	15	Standard
	Mo	98	532.8	6.7	**0.1442**	0.009	6.6	ug/L	113	Standard
	Ag	107	508.0	7.7	**0.0547**	0.005	9.0	ug/L	108	Standard
	Cd	111	168.7	12.8	**0.0676**	0.009	13.2	mg/L	3	Standard
	Cd	114	363.5	9.1	**0.0610**	0.006	10.1	ug/L	20	Standard
>	In	115	655174.8	1.1				ug/L	625728	Standard
	Sn	118	1111.7	18.9	**0.0808**	0.031	38.4	ug/L	568	Standard
	Sb	123	305.1	22.1	**0.0226**	0.012	54.1	ug/L	612	Standard
	Ba	135	334401.7	0.7	**146.7912**	1.362	0.9	ug/L	21	Standard
	Ce	140	1157016.3	1.7				ug/L	245	Standard
>	Tb	159	995793.1	2.4				ug/L	950397	Standard
	Ho	165	19706.1	2.6				ug/L	7	Standard
	Tl	203	788.7	4.8	**0.0883**	0.005	5.9	ug/L	15	Standard
	Tl	205	705.0	5.8	**0.0799**	0.004	5.3	ug/L	13	Standard
	Pb	206	52940.3	0.9	**9.4349**	0.070	0.7	ug/L	264	Standard
	Pb	207	43455.2	0.3	**8.5217**	0.073	0.9	ug/L	222	Standard
	Pb	208	192505.6	0.3	**9.2450**	0.110	1.2	ug/L	959	Standard
	U	238	3706.1	1.6	**0.4657**	0.006	1.4	ug/L	9	Standard
>	Bi	209	545400.8	1.1				ug/L	552821	Standard

Sample ID: L1606144509
Report Date/Time: Friday, July 01, 2016 18:09:05
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	125.0	18.3	**0.0601**	0.024	39.7	mg/L	55	Standard
K	39	280.0	4.7	**0.7524**	0.056	7.4	mg/L	28	Standard
Ca	43	271.7	13.1	**17.8657**	2.769	15.5	mg/L	27	Standard
Fe	54	13853.2	3.1	**8.8410**	0.431	4.9	mg/L	147	Standard
Fe	57	3842.2	1.2	**8.9061**	0.079	0.9	mg/L	268	Standard
> **Sc-1**	45	50062.6	1.9				mg/L	41174	Standard
Cl	35	80728.5	0.4				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	3187.0	4.9				ug/L	1950	Standard
P	31	24401.3	1.1				ug/L	21156	Standard
S	34	4165.6	2.7				ug/L	3419	Standard
Sr	88	115.0	7.5				ug/L	72	Standard
C	12	200.0	13.2				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	93.3	32.7				mg/L	17	Standard
Dy	164	33342.9	1.0				mg/L	16	Standard
Ho-1	165	19706.1	2.6				mg/L	7	Standard
Er	166	17443.4	2.1				mg/L	7	Standard
I	127	18624.8	0.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.907	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.065	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144509
Report Date/Time: Friday, July 01, 2016 18:09:05
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.706	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.658	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144509
Report Date/Time: Friday, July 01, 2016 18:09:05
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144510
Sample Date/Time: Friday, July 01, 2016 18:10:00
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79271.9	1.9				ug/L	76456	Standard
	Be	9	960.0	8.0	**0.8081**	0.079	9.8	ug/L	20	Standard
	Al	27	12161180.8	1.6	**68.5142**	1.144	1.7	ug/L	1307	Standard
	Sc	45	48484.1	1.3				ug/L	41174	Standard
	Ti	47	2552.9	3.2	**7.1191**	0.297	4.2	ug/L	27	Standard
	V	51	134266.7	0.5	**14.8155**	0.217	1.5	ug/L	1434	Standard
	Cr	52	132714.7	0.2	**14.1160**	0.211	1.5	ug/L	7733	Standard
	Cr	53	15915.0	2.5	**14.0541**	0.174	1.2	ug/L	442	Standard
	Mn	55	2692161.6	0.9	**326.7761**	3.297	1.0	ug/L	723	Standard
	Co	59	60946.7	0.7	**7.2843**	0.165	2.3	ug/L	217	Standard
	Ni	60	37036.2	0.7	**16.2553**	0.354	2.2	ug/L	304	Standard
	Cu	65	25813.0	0.6	**11.5528**	0.129	1.1	ug/L	181	Standard
	Zn	66	59196.1	0.9	**44.2314**	0.719	1.6	ug/L	215	Standard
>	Ge	72	566689.9	1.6				ug/L	520809	Standard
	As	75	6333.8	0.9	**4.7613**	0.105	2.2	ug/L	-52	Standard
	Se	82	64.1	11.3	**0.3404**	0.060	17.7	ug/L	17	Standard
	Se-1	77	129.7	6.6	**0.7103**	0.107	15.1	ug/L	56	Standard
>	Ga	71	16113.6	0.3				mg/L	25	Standard
	Rb	85	159279.6	1.1				ug/L	28	Standard
	Y	89	713422.0	1.5				ug/L	447395	Standard
>	Rh	103	25.0	60.0				ug/L	15	Standard
	Mo	98	950.0	4.7	**0.2755**	0.014	5.2	ug/L	113	Standard
	Ag	107	562.7	10.8	**0.0618**	0.008	12.5	ug/L	108	Standard
	Cd	111	481.0	9.3	**0.1967**	0.017	8.8	mg/L	3	Standard
	Cd	114	1249.3	10.0	**0.2089**	0.020	9.7	ug/L	20	Standard
>	In	115	656399.0	0.7				ug/L	625728	Standard
	Sn	118	1210.0	13.0	**0.0951**	0.024	25.2	ug/L	568	Standard
	Sb	123	969.1	5.8	**0.1450**	0.010	7.1	ug/L	612	Standard
	Ba	135	317720.7	1.4	**139.1962**	1.098	0.8	ug/L	21	Standard
	Ce	140	1155794.9	1.0				ug/L	245	Standard
>	Tb	159	984841.2	0.9				ug/L	950397	Standard
	Ho	165	19197.2	4.8				ug/L	7	Standard
	Tl	203	845.0	15.2	**0.0944**	0.014	15.2	ug/L	15	Standard
	Tl	205	828.4	29.5	**0.0953**	0.031	32.1	ug/L	13	Standard
	Pb	206	243494.3	0.6	**43.4500**	0.261	0.6	ug/L	264	Standard
	Pb	207	203498.1	0.4	**39.9806**	0.200	0.5	ug/L	222	Standard
	Pb	208	891072.1	0.5	**42.8651**	0.261	0.6	ug/L	959	Standard
	U	238	4045.9	6.6	**0.5073**	0.034	6.6	ug/L	9	Standard
>	Bi	209	546682.6	0.7				ug/L	552821	Standard

Sample ID: L1606144510
Report Date/Time: Friday, July 01, 2016 18:12:17
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	171.7	38.0	**0.1098**	0.063	57.3	mg/L	55	Standard
K	39	336.7	16.4	**0.9661**	0.187	19.4	mg/L	28	Standard
Ca	43	73.3	23.9	**3.2010**	1.330	41.6	mg/L	27	Standard
Fe	54	13407.2	1.8	**8.8316**	0.255	2.9	mg/L	147	Standard
Fe	57	3832.2	1.2	**9.1972**	0.235	2.6	mg/L	268	Standard
> **Sc-1**	45	48484.1	1.3				mg/L	41174	Standard
Cl	35	75838.8	2.7				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	3700.5	4.5				ug/L	1950	Standard
P	31	23035.9	5.5				ug/L	21156	Standard
S	34	3642.1	4.8				ug/L	3419	Standard
Sr	88	118.3	23.3				ug/L	72	Standard
C	12	246.7	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	39.6				mg/L	17	Standard
Dy	164	31661.9	4.0				mg/L	16	Standard
Ho-1	165	19197.2	4.8				mg/L	7	Standard
Er	166	17109.7	2.4				mg/L	7	Standard
I	127	24686.8	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.683	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.809	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144510
Report Date/Time: Friday, July 01, 2016 18:12:17
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.902	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.890	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144510
Report Date/Time: Friday, July 01, 2016 18:12:17
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144511
Sample Date/Time: Friday, July 01, 2016 18:13:11
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81056.3	1.5				ug/L	76456	Standard
	Be	9	1300.1	7.1	**1.0750**	0.063	5.9	ug/L	20	Standard
	Al	27	14087735.3	1.0	**77.6176**	0.555	0.7	ug/L	1307	Standard
	Sc	45	51079.3	2.3				ug/L	41174	Standard
	Ti	47	4050.2	1.8	**11.4166**	0.113	1.0	ug/L	27	Standard
	V	51	160903.7	0.9	**17.9135**	0.308	1.7	ug/L	1434	Standard
	Cr	52	157358.9	0.5	**17.0353**	0.148	0.9	ug/L	7733	Standard
	Cr	53	18739.9	2.5	**16.7418**	0.591	3.5	ug/L	442	Standard
	Mn	55	3983343.0	1.3	**486.7711**	7.837	1.6	ug/L	723	Standard
	Co	59	83282.3	0.9	**10.0291**	0.055	0.6	ug/L	217	Standard
	Ni	60	47596.6	1.1	**21.0730**	0.432	2.1	ug/L	304	Standard
	Cu	65	29877.1	1.6	**13.4740**	0.341	2.5	ug/L	181	Standard
	Zn	66	86877.7	1.2	**65.4276**	0.744	1.1	ug/L	215	Standard
>	**Ge**	72	562928.2	1.0				ug/L	520809	Standard
	As	75	5744.5	1.7	**4.3502**	0.061	1.4	ug/L	-52	Standard
	Se	82	56.4	20.2	**0.2867**	0.086	29.8	ug/L	17	Standard
	Se-1	77	130.3	3.1	**0.7263**	0.056	7.7	ug/L	56	Standard
>	**Ga**	71	21874.1	2.3				mg/L	25	Standard
	Rb	85	221462.0	1.4				ug/L	28	Standard
	Y	89	734796.1	0.6				ug/L	447395	Standard
>	**Rh**	103	31.7	24.1				ug/L	15	Standard
	Mo	98	474.5	3.0	**0.1270**	0.006	4.5	ug/L	113	Standard
	Ag	107	695.0	1.5	**0.0803**	0.002	2.7	ug/L	108	Standard
	Cd	111	1334.9	2.9	**0.5556**	0.015	2.7	mg/L	3	Standard
	Cd	114	3103.4	3.0	**0.5239**	0.011	2.1	ug/L	20	Standard
>	**In**	115	650267.1	1.0				ug/L	625728	Standard
	Sn	118	1253.4	12.9	**0.1031**	0.024	22.9	ug/L	568	Standard
	Sb	123	352.0	10.4	**0.0318**	0.006	20.1	ug/L	612	Standard
	Ba	135	635709.1	1.1	**281.1732**	3.369	1.2	ug/L	21	Standard
	Ce	140	1385894.9	1.0				ug/L	245	Standard
>	**Tb**	159	992786.2	1.1				ug/L	950397	Standard
	Ho	165	21371.7	1.6				ug/L	7	Standard
	Tl	203	1170.7	2.5	**0.1317**	0.002	1.8	ug/L	15	Standard
	Tl	205	1111.7	6.4	**0.1319**	0.009	7.1	ug/L	13	Standard
	Pb	206	547145.1	0.5	**98.1007**	0.480	0.5	ug/L	264	Standard
	Pb	207	460226.0	0.7	**90.8567**	0.149	0.2	ug/L	222	Standard
	Pb	208	1990544.8	1.0	**96.2154**	0.264	0.3	ug/L	959	Standard
	U	238	4825.8	2.0	**0.6077**	0.015	2.5	ug/L	9	Standard
>	**Bi**	209	544394.6	0.9				ug/L	552821	Standard

Sample ID: L1606144511
Report Date/Time: Friday, July 01, 2016 18:15:28
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**11.9370**	12.019	100.7	mg/L	2	Standard
Mg	24	136.7	11.2	**0.0686**	0.016	23.2	mg/L	55	Standard
K	39	338.3	18.4	**0.9175**	0.216	23.5	mg/L	28	Standard
Ca	43	100.0	10.0	**4.8632**	0.562	11.6	mg/L	27	Standard
Fe	54	19768.1	3.7	**12.3944**	0.190	1.5	mg/L	147	Standard
Fe	57	5529.3	1.5	**12.8981**	0.490	3.8	mg/L	268	Standard
> **Sc-1**	45	51079.3	2.3				mg/L	41174	Standard
Cl	35	74695.0	1.8				ug/L	69550	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	3833.8	5.0				ug/L	1950	Standard
P	31	23369.7	3.5				ug/L	21156	Standard
S	34	3573.8	8.7				ug/L	3419	Standard
Sr	88	135.0	7.4				ug/L	72	Standard
C	12	190.0	24.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	156.7	38.5				mg/L	17	Standard
Dy	164	36620.1	2.1				mg/L	16	Standard
Ho-1	165	21371.7	1.6				mg/L	7	Standard
Er	166	19966.5	1.7				mg/L	7	Standard
I	127	25928.9	6.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.017	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.087	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144511
Report Date/Time: Friday, July 01, 2016 18:15:28
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.922
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.476
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144512
Sample Date/Time: Friday, July 01, 2016 18:16:23
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80562.0	2.1				ug/L	76456	Standard
	Be	9	1056.7	6.8	**0.8755**	0.044	5.0	ug/L	20	Standard
	Al	27	20325479.9	1.3	**112.6812**	0.924	0.8	ug/L	1307	Standard
	Sc	45	51024.2	3.8				ug/L	41174	Standard
	Ti	47	4124.6	2.4	**11.6241**	0.214	1.8	ug/L	27	Standard
	V	51	179971.8	1.0	**20.0519**	0.111	0.6	ug/L	1434	Standard
	Cr	52	122094.3	0.7	**12.9955**	0.054	0.4	ug/L	7733	Standard
	Cr	53	14728.8	1.7	**13.0624**	0.219	1.7	ug/L	442	Standard
	Mn	55	2566086.0	1.4	**313.4230**	2.590	0.8	ug/L	723	Standard
	Co	59	71959.5	1.0	**8.6588**	0.038	0.4	ug/L	217	Standard
	Ni	60	44539.0	0.4	**19.7019**	0.201	1.0	ug/L	304	Standard
	Cu	65	25837.7	1.3	**11.6371**	0.150	1.3	ug/L	181	Standard
	Zn	66	46860.0	0.7	**35.1959**	0.095	0.3	ug/L	215	Standard
>	Ge	72	563090.4	0.6				ug/L	520809	Standard
	As	75	4748.6	0.5	**3.6029**	0.030	0.8	ug/L	-52	Standard
	Se	82	50.2	5.5	**0.2414**	0.021	8.8	ug/L	17	Standard
	Se-1	77	123.7	5.2	**0.6532**	0.062	9.5	ug/L	56	Standard
>	Ga	71	18362.8	1.6				mg/L	25	Standard
	Rb	85	168707.6	2.0				ug/L	28	Standard
	Y	89	736703.2	2.4				ug/L	447395	Standard
>	Rh	103	25.0	52.9				ug/L	15	Standard
	Mo	98	488.2	3.8	**0.1323**	0.005	4.0	ug/L	113	Standard
	Ag	107	511.0	3.1	**0.0560**	0.002	3.4	ug/L	108	Standard
	Cd	111	253.2	7.3	**0.1041**	0.008	7.3	mg/L	3	Standard
	Cd	114	604.4	7.2	**0.1026**	0.007	6.9	ug/L	20	Standard
>	In	115	646543.9	0.3				ug/L	625728	Standard
	Sn	118	893.4	21.7	**0.0501**	0.029	58.0	ug/L	568	Standard
	Sb	123	312.5	6.0	**0.0248**	0.004	14.8	ug/L	612	Standard
	Ba	135	248072.4	0.5	**110.3400**	0.769	0.7	ug/L	21	Standard
	Ce	140	1301357.0	1.2				ug/L	245	Standard
>	Tb	159	989062.4	0.6				ug/L	950397	Standard
	Ho	165	20744.2	1.0				ug/L	7	Standard
	Tl	203	836.4	5.3	**0.0943**	0.005	5.4	ug/L	15	Standard
	Tl	205	765.0	4.3	**0.0882**	0.004	4.8	ug/L	13	Standard
	Pb	206	112087.8	1.3	**20.1669**	0.259	1.3	ug/L	264	Standard
	Pb	207	94165.7	0.9	**18.6506**	0.174	0.9	ug/L	222	Standard
	Pb	208	412221.0	0.6	**19.9915**	0.120	0.6	ug/L	959	Standard
	U	238	4509.7	0.8	**0.5708**	0.005	0.8	ug/L	9	Standard
>	Bi	209	541556.4	0.0				ug/L	552821	Standard

Sample ID: L1606144512
Report Date/Time: Friday, July 01, 2016 18:18:40
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	148.3	8.5	**0.0799**	0.015	18.6	mg/L	55	Standard
K	39	408.3	5.1	**1.1318**	0.019	1.7	mg/L	28	Standard
Ca	43	105.0	12.6	**5.2550**	1.011	19.2	mg/L	27	Standard
Fe	54	15896.3	3.5	**9.9615**	0.123	1.2	mg/L	147	Standard
Fe	57	4270.6	7.1	**9.8107**	1.132	11.5	mg/L	268	Standard
> **Sc-1**	45	51024.2	3.8				mg/L	41174	Standard
Cl	35	77017.9	0.8				ug/L	69550	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	2873.6	4.9				ug/L	1950	Standard
P	31	23741.9	3.7				ug/L	21156	Standard
S	34	3792.1	2.1				ug/L	3419	Standard
Sr	88	118.3	26.8				ug/L	72	Standard
C	12	150.0	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	31.2				mg/L	17	Standard
Dy	164	35215.7	0.8				mg/L	16	Standard
Ho-1	165	20744.2	1.0				mg/L	7	Standard
Er	166	18591.4	0.2				mg/L	7	Standard
I	127	15219.3	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144512
Report Date/Time: Friday, July 01, 2016 18:18:40
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.327	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.962	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144512
Report Date/Time: Friday, July 01, 2016 18:18:40
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Friday, July 01, 2016 18:19:34
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70388.2	2.1				ug/L	76456	Standard
	Be	9	61.7	23.4	**0.0400**	0.014	34.9	ug/L	20	Standard
	Al	27	209415.6	0.4	**1.3190**	0.033	2.5	ug/L	1307	Standard
	Sc	45	39780.5	3.1				ug/L	41174	Standard
	Ti	47	1335.7	4.5	**4.0093**	0.186	4.6	ug/L	27	Standard
	V	51	9011.5	1.4	**0.8961**	0.016	1.8	ug/L	1434	Standard
	Cr	52	11942.0	0.5	**0.5043**	0.017	3.5	ug/L	7733	Standard
	Cr	53	965.0	9.9	**0.5365**	0.094	17.4	ug/L	442	Standard
	Mn	55	122738.2	0.8	**16.0893**	0.228	1.4	ug/L	723	Standard
	Co	59	1833.1	0.9	**0.2095**	0.004	1.9	ug/L	217	Standard
	Ni	60	1543.4	2.6	**0.5897**	0.025	4.3	ug/L	304	Standard
	Cu	65	2084.5	3.4	**0.9460**	0.041	4.4	ug/L	181	Standard
	Zn	66	9962.3	1.5	**7.9386**	0.062	0.8	ug/L	215	Standard
>	**Ge**	72	521595.8	0.8				ug/L	520809	Standard
	As	75	1195.1	0.9	**1.0118**	0.011	1.1	ug/L	-52	Standard
	Se	82	24.1	17.0	**0.0642**	0.032	49.3	ug/L	17	Standard
	Se-1	77	62.0	12.6	**0.0393**	0.087	222.5	ug/L	56	Standard
>	**Ga**	71	756.7	9.6				mg/L	25	Standard
	Rb	85	4860.8	2.7				ug/L	28	Standard
	Y	89	439023.6	1.3				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	289.5	25.4	**0.0755**	0.025	33.7	ug/L	113	Standard
	Ag	107	108.0	4.2	**0.0028**	0.001	24.8	ug/L	108	Standard
	Cd	111	86.5	15.6	**0.0367**	0.006	16.4	mg/L	3	Standard
	Cd	114	262.8	23.2	**0.0479**	0.011	23.5	ug/L	20	Standard
>	**In**	115	602493.1	0.2				ug/L	625728	Standard
	Sn	118	640.0	28.2	**0.0191**	0.029	153.5	ug/L	568	Standard
	Sb	123	159.0	14.4	**-0.0017**	0.005	267.5	ug/L	612	Standard
	Ba	135	10231.8	1.1	**4.8666**	0.057	1.2	ug/L	21	Standard
	Ce	140	59325.9	0.4				ug/L	245	Standard
>	**Tb**	159	901387.3	1.6				ug/L	950397	Standard
	Ho	165	468.3	19.0				ug/L	7	Standard
	Tl	203	67.3	15.2	**0.0072**	0.001	16.6	ug/L	15	Standard
	Tl	205	53.3	56.5	**-0.0027**	0.004	151.9	ug/L	13	Standard
	Pb	206	25545.5	0.9	**4.7304**	0.064	1.3	ug/L	264	Standard
	Pb	207	21325.3	0.3	**4.3424**	0.022	0.5	ug/L	222	Standard
	Pb	208	92265.3	0.3	**4.6006**	0.019	0.4	ug/L	959	Standard
	U	238	418.3	2.9	**0.0547**	0.002	3.4	ug/L	9	Standard
>	**Bi**	209	522518.3	0.5				ug/L	552821	Standard

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 18:21:51
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	0.0	**-0.0057**	0.002	29.9	mg/L	55	Standard
K	39	30.0	28.9	**-0.0116**	0.036	313.3	mg/L	28	Standard
Ca	43	28.3	50.9	**0.2419**	1.466	606.3	mg/L	27	Standard
Fe	54	830.6	5.4	**0.5751**	0.021	3.7	mg/L	147	Standard
Fe	57	475.0	3.8	**0.7085**	0.100	14.1	mg/L	268	Standard
> **Sc-1**	45	39780.5	3.1				mg/L	41174	Standard
Cl	35	69290.7	0.6				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2023.5	4.8				ug/L	1950	Standard
P	31	8517.4	4.8				ug/L	21156	Standard
S	34	3302.0	4.3				ug/L	3419	Standard
Sr	88	81.7	7.1				ug/L	72	Standard
C	12	106.7	19.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	43.3				mg/L	17	Standard
Dy	164	723.4	6.0				mg/L	16	Standard
Ho-1	165	468.3	19.0				mg/L	7	Standard
Er	166	416.7	9.7				mg/L	7	Standard
I	127	33121.2	4.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.064	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.151	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 18:21:51
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.287
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.519
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Friday, July 01, 2016 18:22:46
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69181.0	2.1				ug/L	76456	Standard
	Be	9	58.3	32.5	**0.0378**	0.019	50.7	ug/L	20	Standard
	Al	27	441238.9	1.7	**2.8389**	0.059	2.1	ug/L	1307	Standard
	Sc	45	40783.2	1.8				ug/L	41174	Standard
	Ti	47	2459.5	1.5	**7.4205**	0.178	2.4	ug/L	27	Standard
	V	51	16925.1	1.2	**1.8483**	0.038	2.1	ug/L	1434	Standard
	Cr	52	18122.2	1.5	**1.2572**	0.011	0.8	ug/L	7733	Standard
	Cr	53	1788.4	11.0	**1.3411**	0.181	13.5	ug/L	442	Standard
	Mn	55	409161.8	0.6	**53.6291**	0.654	1.2	ug/L	723	Standard
	Co	59	5121.9	2.3	**0.6351**	0.012	1.9	ug/L	217	Standard
	Ni	60	3165.0	1.3	**1.3633**	0.033	2.4	ug/L	304	Standard
	Cu	65	6880.2	2.6	**3.2772**	0.073	2.2	ug/L	181	Standard
	Zn	66	23732.9	1.1	**19.0745**	0.015	0.1	ug/L	215	Standard
>	Ge	72	523960.3	1.1				ug/L	520809	Standard
	As	75	1016.3	2.7	**0.8637**	0.031	3.5	ug/L	-52	Standard
	Se	82	21.9	9.7	**0.0461**	0.018	39.0	ug/L	17	Standard
	Se-1	77	60.7	6.2	**0.0211**	0.052	244.3	ug/L	56	Standard
>	Ga	71	1423.4	6.3				mg/L	25	Standard
	Rb	85	14632.1	2.4				ug/L	28	Standard
	Y	89	450617.7	0.3				ug/L	447395	Standard
>	Rh	103	8.3	69.3				ug/L	15	Standard
	Mo	98	554.2	6.5	**0.1661**	0.012	7.3	ug/L	113	Standard
	Ag	107	138.0	6.6	**0.0071**	0.001	19.2	ug/L	108	Standard
	Cd	111	114.3	13.8	**0.0491**	0.007	14.2	mg/L	3	Standard
	Cd	114	241.5	19.5	**0.0440**	0.009	19.7	ug/L	20	Standard
>	In	115	603273.3	0.3				ug/L	625728	Standard
	Sn	118	566.7	21.3	**0.0071**	0.019	272.0	ug/L	568	Standard
	Sb	123	143.4	25.7	**-0.0049**	0.007	148.6	ug/L	612	Standard
	Ba	135	23042.5	1.3	**10.9682**	0.165	1.5	ug/L	21	Standard
	Ce	140	67983.9	1.1				ug/L	245	Standard
>	Tb	159	906786.3	1.4				ug/L	950397	Standard
	Ho	165	761.7	6.0				ug/L	7	Standard
	Tl	203	182.7	10.3	**0.0207**	0.002	11.4	ug/L	15	Standard
	Tl	205	140.0	10.7	**0.0088**	0.002	22.7	ug/L	13	Standard
	Pb	206	16671.2	1.2	**3.0640**	0.050	1.6	ug/L	264	Standard
	Pb	207	13875.7	1.0	**2.8020**	0.007	0.2	ug/L	222	Standard
	Pb	208	60739.5	0.7	**3.0044**	0.029	1.0	ug/L	959	Standard
	U	238	1048.7	0.5	**0.1370**	0.000	0.3	ug/L	9	Standard
>	Bi	209	523858.2	0.8				ug/L	552821	Standard

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 18:25:03
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0		**0.0047**	0.001	24.2	mg/L	55	Standard
K	39	31.7	48.2	**-0.0079**	0.061	772.0	mg/L	28	Standard
Ca	43	26.7	92.5	**0.0138**	2.317	16826.1	mg/L	27	Standard
Fe	54	1768.8	1.5	**1.3016**	0.007	0.5	mg/L	147	Standard
Fe	57	735.0	6.2	**1.4753**	0.115	7.8	mg/L	268	Standard
> **Sc-1**	45	40783.2	1.8				mg/L	41174	Standard
Cl	35	69789.0	1.4				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1950.1	1.4				ug/L	1950	Standard
P	31	8389.0	2.9				ug/L	21156	Standard
S	34	3198.7	3.3				ug/L	3419	Standard
Sr	88	73.3	17.2				ug/L	72	Standard
C	12	130.0	27.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	17	Standard
Dy	164	1484.1	12.1				mg/L	16	Standard
Ho-1	165	761.7	6.0				mg/L	7	Standard
Er	166	820.0	8.5				mg/L	7	Standard
I	127	32808.8	1.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.485	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 18:25:03
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.411
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.761
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102PS WG575057-01
Sample Date/Time: Friday, July 01, 2016 18:25:57
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68702.1	2.1				ug/L	76456	Standard
	Be	9	54558.1	0.5	**54.2325**	1.076	2.0	ug/L	20	Standard
	Al	27	435359.5	0.4	**2.8209**	0.068	2.4	ug/L	1307	Standard
	Sc	45	39865.7	0.5				ug/L	41174	Standard
	Ti	47	2435.2	3.0	**7.3862**	0.145	2.0	ug/L	27	Standard
	V	51	420388.1	0.9	**50.9256**	0.275	0.5	ug/L	1434	Standard
	Cr	52	419034.6	1.2	**50.8325**	0.081	0.2	ug/L	7733	Standard
	Cr	53	51908.8	1.8	**50.9245**	0.712	1.4	ug/L	442	Standard
	Mn	55	776755.3	1.1	**102.4737**	0.893	0.9	ug/L	723	Standard
	Co	59	378685.6	0.4	**49.3890**	0.417	0.8	ug/L	217	Standard
	Ni	60	108298.4	0.9	**52.0251**	0.585	1.1	ug/L	304	Standard
	Cu	65	113206.4	0.7	**55.3835**	0.277	0.5	ug/L	181	Standard
	Zn	66	96400.4	0.9	**78.4751**	0.327	0.4	ug/L	215	Standard
>	Ge	72	521011.3	1.1				ug/L	520809	Standard
	As	75	67285.7	0.6	**54.5295**	0.414	0.8	ug/L	-52	Standard
	Se	82	7236.2	0.6	**57.1362**	0.906	1.6	ug/L	17	Standard
	Se-1	77	4996.5	1.7	**57.7421**	0.807	1.4	ug/L	56	Standard
>	Ga	71	1458.4	7.9				mg/L	25	Standard
	Rb	85	14268.4	1.9				ug/L	28	Standard
	Y	89	451572.6	1.0				ug/L	447395	Standard
>	Rh	103	11.7	65.5				ug/L	15	Standard
	Mo	98	552.6	6.3	**0.1658**	0.011	6.4	ug/L	113	Standard
	Ag	107	351874.8	0.5	**50.8757**	0.454	0.9	ug/L	108	Standard
	Cd	111	117424.6	1.2	**52.9718**	0.394	0.7	mg/L	3	Standard
	Cd	114	288020.9	0.5	**52.4815**	0.298	0.6	ug/L	20	Standard
>	In	115	602467.1	0.7				ug/L	625728	Standard
	Sn	118	795.0	18.9	**0.0440**	0.023	53.3	ug/L	568	Standard
	Sb	123	215335.2	6.0	**43.2556**	2.906	6.7	ug/L	612	Standard
	Ba	135	125031.8	0.4	**59.6735**	0.233	0.4	ug/L	21	Standard
	Ce	140	66756.7	0.9				ug/L	245	Standard
>	Tb	159	900882.6	0.1				ug/L	950397	Standard
	Ho	165	808.4	8.4				ug/L	7	Standard
	Tl	203	420669.9	0.3	**49.6255**	0.118	0.2	ug/L	15	Standard
	Tl	205	380791.1	1.2	**50.5823**	0.852	1.7	ug/L	13	Standard
	Pb	206	285006.3	0.5	**53.2753**	0.097	0.2	ug/L	264	Standard
	Pb	207	249618.4	0.3	**51.3775**	0.277	0.5	ug/L	222	Standard
	Pb	208	1065809.7	0.5	**53.7118**	0.481	0.9	ug/L	959	Standard
	U	238	362717.7	0.5	**47.6544**	0.373	0.8	ug/L	9	Standard
>	Bi	209	521960.5	0.5				ug/L	552821	Standard

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 18:28:14
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**10.3171**	17.861	173.1	mg/L	2	Standard
Mg	24	45.0	11.1	**-0.0059**	0.006	106.3	mg/L	55	Standard
K	39	41.7	36.7	**0.0338**	0.061	179.3	mg/L	28	Standard
Ca	43	31.7	39.7	**0.5190**	1.184	228.2	mg/L	27	Standard
Fe	54	1881.8	1.4	**1.4253**	0.028	2.0	mg/L	147	Standard
Fe	57	691.7	14.6	**1.3919**	0.331	23.7	mg/L	268	Standard
> **Sc-1**	45	39865.7	0.5				mg/L	41174	Standard
Cl	35	69700.6	0.3				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	2040.1	6.7				ug/L	1950	Standard
P	31	8364.0	2.5				ug/L	21156	Standard
S	34	3095.3	6.1				ug/L	3419	Standard
Sr	88	78.3	13.3				ug/L	72	Standard
C	12	143.3	45.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	76.7	27.2				mg/L	17	Standard
Dy	164	1201.3	2.6				mg/L	16	Standard
Ho-1	165	808.4	8.4				mg/L	7	Standard
Er	166	740.0	7.2				mg/L	7	Standard
I	127	33642.3	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.859	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 18:28:14
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.283
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.418
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 18:28:14
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 18:29:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58021.1	45.4				ug/L	76456	Standard
	Be	9	6020.3	96.8	**8.3334**	6.673	80.1	ug/L	20	Standard
	Al	27	1011614.4	93.0	**9.3377**	7.369	78.9	ug/L	1307	Standard
	Sc	45	36951.3	31.6				ug/L	41174	Standard
	Ti	47	4070.2	92.8	**14.0397**	11.313	80.6	ug/L	27	Standard
	V	51	57472.3	77.9	**8.2250**	6.608	80.3	ug/L	1434	Standard
	Cr	52	54950.0	85.4	**6.7134**	5.707	85.0	ug/L	7733	Standard
	Cr	53	6442.1	89.3	**6.7802**	5.559	82.0	ug/L	442	Standard
	Mn	55	56604.6	81.4	**8.6926**	6.701	77.1	ug/L	723	Standard
	Co	59	53000.8	82.9	**8.1234**	6.317	77.8	ug/L	217	Standard
	Ni	60	12997.1	88.3	**6.9634**	5.472	78.6	ug/L	304	Standard
	Cu	65	12947.1	88.8	**7.1426**	5.586	78.2	ug/L	181	Standard
	Zn	66	7783.4	89.0	**6.9746**	5.495	78.8	ug/L	215	Standard
>	Ge	72	483616.6	27.5				ug/L	520809	Standard
	As	75	8453.5	94.9	**7.7122**	6.230	80.8	ug/L	-52	Standard
	Se	82	939.4	85.8	**8.3049**	6.310	76.0	ug/L	17	Standard
	Se-1	77	622.0	88.3	**7.4670**	6.184	82.8	ug/L	56	Standard
>	Ga	71	31.7	18.2				mg/L	25	Standard
	Rb	85	225.0	67.8				ug/L	28	Standard
	Y	89	466261.8	17.1				ug/L	447395	Standard
>	Rh	103	20.0	25.0				ug/L	15	Standard
	Mo	98	38601.8	81.6	**16.0710**	14.394	89.6	ug/L	113	Standard
	Ag	107	46584.8	78.1	**8.1335**	7.118	87.5	ug/L	108	Standard
	Cd	111	17137.6	87.9	**9.4386**	9.351	99.1	mg/L	3	Standard
	Cd	114	41205.7	85.8	**9.1450**	8.904	97.4	ug/L	20	Standard
>	In	115	568605.0	21.6				ug/L	625728	Standard
	Sn	118	45202.2	81.7	**8.7560**	8.318	95.0	ug/L	568	Standard
	Sb	123	37304.6	74.8	**8.9935**	7.626	84.8	ug/L	612	Standard
	Ba	135	15451.6	84.3	**8.9549**	8.599	96.0	ug/L	21	Standard
	Ce	140	933.4	35.7				ug/L	245	Standard
>	Tb	159	834241.1	25.5				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	59816.1	84.3	**8.9067**	8.400	94.3	ug/L	15	Standard
	Tl	205	54932.9	85.7	**9.2244**	8.777	95.1	ug/L	13	Standard
	Pb	206	36885.4	75.9	**8.5933**	7.372	85.8	ug/L	264	Standard
	Pb	207	34161.2	77.5	**8.7804**	7.649	87.1	ug/L	222	Standard
	Pb	208	153924.2	83.6	**9.7508**	9.146	93.8	ug/L	959	Standard
	U	238	54480.0	85.8	**9.0581**	8.618	95.1	ug/L	9	Standard
>	Bi	209	483651.3	25.0				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 18:31:27
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	588.3	82.1	**0.7880**	0.634	80.5	mg/L	55	Standard
K	39	178.3	67.8	**0.7306**	0.604	82.7	mg/L	28	Standard
Ca	43	45.0	40.1	**2.8887**	3.750	129.8	mg/L	27	Standard
Fe	54	989.8	78.7	**0.8883**	0.763	85.9	mg/L	147	Standard
Fe	57	551.7	36.3	**1.2806**	1.046	81.6	mg/L	268	Standard
> **Sc-1**	45	36951.3	31.6				mg/L	41174	Standard
Cl	35	32002.2	14.3				ug/L	69550	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	793.4	7.2				ug/L	1950	Standard
P	31	12486.0	48.7				ug/L	21156	Standard
S	34	1356.7	20.0				ug/L	3419	Standard
Sr	88	81.7	21.5				ug/L	72	Standard
C	12	106.7	35.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	246.7	83.3				mg/L	17	Standard
Dy	164	12.1	44.0				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	7	Standard
I	127	4540.7	35.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	16.667		
Al	27	18.675		
Sc	45			
Ti	47	14.040		
V	51	16.450		
Cr	52	13.427		
Cr	53			
Mn	55	17.385		
Co	59	16.247		
Ni	60	13.927		
Cu	65	14.285		
Zn	66	13.949		
> Ge	72		92.859	
As	75	15.424		
Se	82	16.610		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 18:31:27
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	16.071		
Ag	107	16.267		
Cd	111	18.877		
Cd	114			
> In	115			90.871
Sn	118	17.512		
Sb	123	17.987		
Ba	135	17.910		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	17.813		
Tl	205			
Pb	206			
Pb	207			
Pb	208	19.502		
U	238	18.116		
> Bi	209			87.488
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Ti	47	

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 18:31:27
Page 3

Approved: July 02, 2016

QC Std 6	V	51
QC Std 6	Cr	52
QC Std 6	Mn	55
QC Std 6	Co	59
QC Std 6	Ni	60
QC Std 6	Cu	65
QC Std 6	Zn	66
QC Std 6	As	75
QC Std 6	Se	82
QC Std 6	Mo	98
QC Std 6	Ag	107
QC Std 6	Cd	111
QC Std 6	Sb	123
QC Std 6	Ba	135
QC Std 6	Tl	203
QC Std 6	Pb	208
QC Std 6	U	238

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 18:32:22
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73071.2	5.8				ug/L	76456	Standard
	Be	9	8.3	34.6	**-0.0120**	0.003	24.3	ug/L	20	Standard
	Al	27	2066.8	22.2	**0.0025**	0.003	126.6	ug/L	1307	Standard
	Sc	45	38902.0	12.0				ug/L	41174	Standard
	Ti	47	28.7	14.1	**0.0029**	0.006	212.7	ug/L	27	Standard
	V	51	892.2	10.9	**-0.0904**	0.007	8.2	ug/L	1434	Standard
	Cr	52	3594.8	10.0	**-0.5264**	0.046	8.8	ug/L	7733	Standard
	Cr	53	233.3	24.1	**-0.1899**	0.023	11.9	ug/L	442	Standard
	Mn	55	789.0	24.3	**0.0021**	0.023	1087.1	ug/L	723	Standard
	Co	59	303.0	15.4	**0.0101**	0.007	68.9	ug/L	217	Standard
	Ni	60	205.0	9.3	**-0.0541**	0.015	27.0	ug/L	304	Standard
	Cu	65	106.0	5.3	**-0.0215**	0.011	50.6	ug/L	181	Standard
	Zn	66	184.7	6.5	**-0.0287**	0.024	81.9	ug/L	215	Standard
>	**Ge**	72	527063.8	18.3				ug/L	520809	Standard
	As	75	45.7	91.0	**0.0818**	0.037	44.8	ug/L	-52	Standard
	Se	82	44.8	44.7	**0.2236**	0.160	71.7	ug/L	17	Standard
	Se-1	77	43.0	11.6	**-0.1831**	0.048	26.1	ug/L	56	Standard
>	**Ga**	71	36.7	7.9				mg/L	25	Standard
	Rb	85	58.3	40.5				ug/L	28	Standard
	Y	89	504597.8	24.2				ug/L	447395	Standard
>	**Rh**	103	18.3	83.3				ug/L	15	Standard
	Mo	98	262.6	10.7	**0.0552**	0.011	19.4	ug/L	113	Standard
	Ag	107	185.3	19.2	**0.0107**	0.005	48.4	ug/L	108	Standard
	Cd	111	28.5	36.7	**0.0089**	0.004	43.7	mg/L	3	Standard
	Cd	114	81.6	56.2	**0.0129**	0.006	47.4	ug/L	20	Standard
>	**In**	115	700695.8	22.4				ug/L	625728	Standard
	Sn	118	6341.5	38.7	**0.7820**	0.237	30.3	ug/L	568	Standard
	Sb	123	763.9	43.6	**0.0944**	0.040	42.0	ug/L	612	Standard
	Ba	135	62.7	16.0	**0.0082**	0.003	42.5	ug/L	21	Standard
	Ce	140	145.0	79.5				ug/L	245	Standard
>	**Tb**	159	1042763.2	15.4				ug/L	950397	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	182.0	22.0	**0.0180**	0.002	11.1	ug/L	15	Standard
	Tl	205	148.3	9.7	**0.0076**	0.002	25.0	ug/L	13	Standard
	Pb	206	414.0	16.3	**0.0241**	0.004	18.3	ug/L	264	Standard
	Pb	207	348.0	9.0	**0.0172**	0.006	37.6	ug/L	222	Standard
	Pb	208	1430.4	10.4	**0.0153**	0.006	41.0	ug/L	959	Standard
	U	238	124.7	10.8	**0.0142**	0.002	12.8	ug/L	9	Standard
>	**Bi**	209	596038.7	14.4				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 18:34:39
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	26.7	65.8	**-0.0280**	0.021	73.8	mg/L	55	Standard
K	39	30.0	60.1	**-0.0132**	0.067	507.4	mg/L	28	Standard
Ca	43	28.3	10.2	**0.2774**	0.122	44.0	mg/L	27	Standard
Fe	54	104.6	43.7	**-0.0136**	0.033	242.5	mg/L	147	Standard
Fe	57	286.7	7.0	**0.1321**	0.048	36.6	mg/L	268	Standard
Sc-1	45	38902.0	12.0				mg/L	41174	Standard
Cl	35	29524.2	6.8				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	630.0	34.9				ug/L	1950	Standard
P	31	11456.4	38.3				ug/L	21156	Standard
S	34	1375.1	3.3				ug/L	3419	Standard
Sr	88	53.3	37.9				ug/L	72	Standard
C	12	66.7	48.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	77.5				mg/L	17	Standard
Dy	164	13.0	179.6				mg/L	16	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	2638.6	27.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.201	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 18:34:39
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	111.981	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.818	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sn	118	

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 18:34:39
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 18:35:35
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62174.0	2.2				ug/L	76456	Standard
	Be	9	20.0	25.0	**0.0022**	0.006	269.5	ug/L	20	Standard
	Al	27	84546.9	0.4	**0.5973**	0.011	1.9	ug/L	1307	Standard
	Sc	45	38149.7	3.1				ug/L	41174	Standard
	Ti	47	483.3	4.9	**1.4725**	0.081	5.5	ug/L	27	Standard
	V	51	4248.5	1.3	**0.3438**	0.006	1.8	ug/L	1434	Standard
	Cr	52	8109.2	1.0	**0.0820**	0.013	16.2	ug/L	7733	Standard
	Cr	53	496.7	23.7	**0.0992**	0.125	126.0	ug/L	442	Standard
	Mn	55	78567.9	0.9	**10.7900**	0.016	0.2	ug/L	723	Standard
	Co	59	1117.0	0.8	**0.1236**	0.000	0.1	ug/L	217	Standard
	Ni	60	775.4	3.9	**0.2391**	0.018	7.4	ug/L	304	Standard
	Cu	65	1369.4	4.4	**0.6302**	0.035	5.5	ug/L	181	Standard
	Zn	66	5157.9	1.7	**4.2377**	0.083	2.0	ug/L	215	Standard
>	**Ge**	72	496310.3	0.7				ug/L	520809	Standard
	As	75	145.9	13.8	**0.1691**	0.016	9.6	ug/L	-52	Standard
	Se	82	21.4	35.8	**0.0511**	0.064	125.1	ug/L	17	Standard
	Se-1	77	46.7	8.7	**-0.1116**	0.053	47.6	ug/L	56	Standard
>	**Ga**	71	255.0	16.8				mg/L	25	Standard
	Rb	85	2703.6	4.1				ug/L	28	Standard
	Y	89	417509.6	1.1				ug/L	447395	Standard
>	**Rh**	103	16.7	69.3				ug/L	15	Standard
	Mo	98	345.0	36.3	**0.1002**	0.045	45.1	ug/L	113	Standard
	Ag	107	125.3	22.2	**0.0061**	0.004	68.7	ug/L	108	Standard
	Cd	111	34.3	46.4	**0.0139**	0.008	54.2	mg/L	3	Standard
	Cd	114	42.7	17.1	**0.0082**	0.001	17.1	ug/L	20	Standard
>	**In**	115	575196.5	0.1				ug/L	625728	Standard
	Sn	118	706.7	42.9	**0.0352**	0.051	145.6	ug/L	568	Standard
	Sb	123	527.1	13.9	**0.0772**	0.015	20.0	ug/L	612	Standard
	Ba	135	4163.9	5.4	**2.0642**	0.113	5.5	ug/L	21	Standard
	Ce	140	7787.1	30.7				ug/L	245	Standard
>	**Tb**	159	864381.3	0.7				ug/L	950397	Standard
	Ho	165	85.0	63.6				ug/L	7	Standard
	Tl	203	83.3	41.3	**0.0096**	0.004	45.0	ug/L	15	Standard
	Tl	205	73.3	55.1	**0.0005**	0.006	1188.2	ug/L	13	Standard
	Pb	206	2545.5	9.1	**0.4551**	0.047	10.4	ug/L	264	Standard
	Pb	207	2088.8	9.3	**0.4046**	0.043	10.7	ug/L	222	Standard
	Pb	208	9232.8	9.4	**0.4395**	0.047	10.7	ug/L	959	Standard
	U	238	222.7	20.7	**0.0304**	0.006	21.2	ug/L	9	Standard
>	**Bi**	209	498353.7	0.7				ug/L	552821	Standard

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 18:37:52
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.2196**	9.032	173.0	mg/L	2	Standard
Mg	24	50.0	30.0	**0.0033**	0.021	637.4	mg/L	55	Standard
K	39	31.7	32.9	**-0.0007**	0.041	5467.5	mg/L	28	Standard
Ca	43	28.3	50.9	**0.3254**	1.410	433.3	mg/L	27	Standard
Fe	54	321.0	6.6	**0.1731**	0.021	12.0	mg/L	147	Standard
Fe	57	343.3	20.8	**0.3318**	0.218	65.6	mg/L	268	Standard
> **Sc-1**	45	38149.7	3.1				mg/L	41174	Standard
Cl	35	66614.8	2.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1683.4	14.0				ug/L	1950	Standard
P	31	6868.2	3.4				ug/L	21156	Standard
S	34	2993.6	2.7				ug/L	3419	Standard
Sr	88	78.3	16.1				ug/L	72	Standard
C	12	60.0					mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	190.0	34.5				mg/L	17	Standard
Dy	164	136.6	41.3				mg/L	16	Standard
Ho-1	165	85.0	63.6				mg/L	7	Standard
Er	166	140.0	70.3				mg/L	7	Standard
I	127	27162.7	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.320	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.296	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 18:37:52
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.924
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.147
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Friday, July 01, 2016 18:38:46
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63245.1	2.3				ug/L	76456	Standard
	Be	9	45.0	29.4	**0.0289**	0.015	52.5	ug/L	20	Standard
	Al	27	154217.6	1.4	**1.0792**	0.028	2.6	ug/L	1307	Standard
	Sc	45	38011.0	1.7				ug/L	41174	Standard
	Ti	47	1647.1	2.7	**5.2249**	0.166	3.2	ug/L	27	Standard
	V	51	10217.6	1.1	**1.1067**	0.009	0.8	ug/L	1434	Standard
	Cr	52	13566.7	1.7	**0.7914**	0.021	2.7	ug/L	7733	Standard
	Cr	53	1203.4	4.0	**0.8334**	0.047	5.6	ug/L	442	Standard
	Mn	55	179485.2	0.5	**24.7976**	0.092	0.4	ug/L	723	Standard
	Co	59	2042.5	2.9	**0.2506**	0.009	3.7	ug/L	217	Standard
	Ni	60	1701.1	1.2	**0.7078**	0.006	0.9	ug/L	304	Standard
	Cu	65	2602.9	0.6	**1.2654**	0.012	0.9	ug/L	181	Standard
	Zn	66	13566.1	2.3	**11.4481**	0.299	2.6	ug/L	215	Standard
>	Ge	72	495954.1	0.5				ug/L	520809	Standard
	As	75	526.1	8.4	**0.4926**	0.036	7.4	ug/L	-52	Standard
	Se	82	19.2	20.2	**0.0327**	0.031	96.0	ug/L	17	Standard
	Se-1	77	60.7	19.3	**0.0602**	0.141	233.6	ug/L	56	Standard
>	Ga	71	858.4	5.0				mg/L	25	Standard
	Rb	85	6271.3	6.6				ug/L	28	Standard
	Y	89	419752.0	1.1				ug/L	447395	Standard
>	Rh	103	16.7	45.8				ug/L	15	Standard
	Mo	98	384.6	7.0	**0.1144**	0.010	8.4	ug/L	113	Standard
	Ag	107	109.3	5.4	**0.0037**	0.001	23.4	ug/L	108	Standard
	Cd	111	94.6	7.9	**0.0424**	0.003	8.2	mg/L	3	Standard
	Cd	114	251.8	5.8	**0.0481**	0.003	5.6	ug/L	20	Standard
>	In	115	575203.1	0.2				ug/L	625728	Standard
	Sn	118	680.0	22.3	**0.0307**	0.025	82.8	ug/L	568	Standard
	Sb	123	333.6	22.9	**0.0365**	0.016	43.9	ug/L	612	Standard
	Ba	135	10023.6	1.9	**4.9942**	0.091	1.8	ug/L	21	Standard
	Ce	140	48280.1	1.0				ug/L	245	Standard
>	Tb	159	860542.4	0.9				ug/L	950397	Standard
	Ho	165	373.3	17.4				ug/L	7	Standard
	Tl	203	98.7	6.5	**0.0114**	0.001	7.5	ug/L	15	Standard
	Tl	205	111.7	22.1	**0.0057**	0.003	56.6	ug/L	13	Standard
	Pb	206	31345.7	1.0	**6.0875**	0.078	1.3	ug/L	264	Standard
	Pb	207	25979.9	0.2	**5.5497**	0.058	1.0	ug/L	222	Standard
	Pb	208	113055.9	0.8	**5.9143**	0.107	1.8	ug/L	959	Standard
	U	238	480.3	2.8	**0.0657**	0.001	2.2	ug/L	9	Standard
>	Bi	209	499251.2	1.0				ug/L	552821	Standard

Sample ID: L1606145103
Report Date/Time: Friday, July 01, 2016 18:41:03
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	6.2	**-0.0011**	0.005	417.9	mg/L	55	Standard
K	39	40.0	50.0	**0.0355**	0.084	236.7	mg/L	28	Standard
Ca	43	20.0	43.3	**-0.4832**	0.857	177.3	mg/L	27	Standard
Fe	54	979.0	3.0	**0.7328**	0.021	2.8	mg/L	147	Standard
Fe	57	456.7	4.4	**0.7168**	0.091	12.6	mg/L	268	Standard
Sc-1	45	38011.0	1.7				mg/L	41174	Standard
Cl	35	67610.5	0.8				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1716.8	12.9				ug/L	1950	Standard
P	31	8008.8	5.2				ug/L	21156	Standard
S	34	2928.6	6.6				ug/L	3419	Standard
Sr	88	71.7	26.4				ug/L	72	Standard
C	12	106.7	54.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	68.6				mg/L	17	Standard
Dy	164	644.2	14.1				mg/L	16	Standard
Ho-1	165	373.3	17.4				mg/L	7	Standard
Er	166	400.0	22.2				mg/L	7	Standard
I	127	30482.3	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.721	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.228	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145103
Report Date/Time: Friday, July 01, 2016 18:41:03
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.925
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.310
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Friday, July 01, 2016 18:41:58
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63385.7	2.2				ug/L	76456	Standard
	Be	9	50.0	26.5	**0.0338**	0.013	38.3	ug/L	20	Standard
	Al	27	725235.3	1.5	**5.1021**	0.166	3.3	ug/L	1307	Standard
	Sc	45	39148.9	2.8				ug/L	41174	Standard
	Ti	47	1767.4	1.7	**5.5568**	0.163	2.9	ug/L	27	Standard
	V	51	9435.8	2.3	**0.9951**	0.038	3.8	ug/L	1434	Standard
	Cr	52	13141.4	0.9	**0.7193**	0.019	2.6	ug/L	7733	Standard
	Cr	53	1133.4	1.8	**0.7491**	0.025	3.3	ug/L	442	Standard
	Mn	55	184948.0	0.3	**25.3023**	0.378	1.5	ug/L	723	Standard
	Co	59	2891.6	3.9	**0.3629**	0.009	2.4	ug/L	217	Standard
	Ni	60	1981.8	1.1	**0.8399**	0.007	0.8	ug/L	304	Standard
	Cu	65	2972.3	0.4	**1.4404**	0.025	1.7	ug/L	181	Standard
	Zn	66	14124.9	1.1	**11.8061**	0.091	0.8	ug/L	215	Standard
>	**Ge**	72	500981.4	1.8				ug/L	520809	Standard
	As	75	525.3	4.0	**0.4878**	0.024	5.0	ug/L	-52	Standard
	Se	82	27.2	11.1	**0.0974**	0.029	29.5	ug/L	17	Standard
	Se-1	77	60.0	10.4	**0.0461**	0.088	191.5	ug/L	56	Standard
>	**Ga**	71	815.0	2.8				mg/L	25	Standard
	Rb	85	6224.6	2.3				ug/L	28	Standard
	Y	89	425374.4	1.5				ug/L	447395	Standard
>	**Rh**	103	25.0	40.0				ug/L	15	Standard
	Mo	98	520.6	8.2	**0.1605**	0.013	8.3	ug/L	113	Standard
	Ag	107	111.7	7.6	**0.0038**	0.001	37.5	ug/L	108	Standard
	Cd	111	92.7	8.2	**0.0408**	0.003	7.6	mg/L	3	Standard
	Cd	114	200.3	11.6	**0.0377**	0.005	12.6	ug/L	20	Standard
>	**In**	115	583569.6	1.1				ug/L	625728	Standard
	Sn	118	673.3	18.0	**0.0279**	0.019	69.1	ug/L	568	Standard
	Sb	123	316.8	22.4	**0.0319**	0.014	44.3	ug/L	612	Standard
	Ba	135	10430.3	1.6	**5.1226**	0.027	0.5	ug/L	21	Standard
	Ce	140	51980.7	2.3				ug/L	245	Standard
>	**Tb**	159	866344.8	1.0				ug/L	950397	Standard
	Ho	165	438.3	11.9				ug/L	7	Standard
	Tl	203	128.0	6.4	**0.0149**	0.001	5.7	ug/L	15	Standard
	Tl	205	108.3	13.3	**0.0051**	0.002	35.3	ug/L	13	Standard
	Pb	206	26433.4	1.2	**5.0710**	0.132	2.6	ug/L	264	Standard
	Pb	207	22121.5	0.6	**4.6673**	0.113	2.4	ug/L	222	Standard
	Pb	208	95760.1	0.8	**4.9468**	0.074	1.5	ug/L	959	Standard
	U	238	579.3	5.3	**0.0785**	0.005	6.6	ug/L	9	Standard
>	**Bi**	209	504799.5	1.9				ug/L	552821	Standard

Sample ID: L1606145104
Report Date/Time: Friday, July 01, 2016 18:44:14
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.2809**	9.138	173.0	mg/L	2	Standard
Mg	24	46.7	27.0	**-0.0030**	0.014	461.6	mg/L	55	Standard
K	39	46.7	6.2	**0.0571**	0.014	24.3	mg/L	28	Standard
Ca	43	46.7	16.4	**2.0216**	0.845	41.8	mg/L	27	Standard
Fe	54	948.7	5.1	**0.6833**	0.021	3.0	mg/L	147	Standard
Fe	57	496.7	2.9	**0.8012**	0.035	4.4	mg/L	268	Standard
> **Sc-1**	45	39148.9	2.8				mg/L	41174	Standard
Cl	35	69866.8	2.4				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1733.4	3.8				ug/L	1950	Standard
P	31	8088.8	1.5				ug/L	21156	Standard
S	34	3277.0	4.5				ug/L	3419	Standard
Sr	88	95.0	27.9				ug/L	72	Standard
C	12	93.3	49.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	709.7	12.9				mg/L	16	Standard
Ho-1	165	438.3	11.9				mg/L	7	Standard
Er	166	493.3	16.5				mg/L	7	Standard
I	127	31300.6	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.193	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145104
Report Date/Time: Friday, July 01, 2016 18:44:14
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.263
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.313
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Friday, July 01, 2016 18:45:09
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64614.2	2.4				ug/L	76456	Standard
	Be	9	185.0	11.8	**0.1761**	0.027	15.5	ug/L	20	Standard
	Al	27	102955.3	1.3	**0.7016**	0.016	2.3	ug/L	1307	Standard
	Sc	45	38894.9	1.6				ug/L	41174	Standard
	Ti	47	5095.2	2.9	**16.0563**	0.595	3.7	ug/L	27	Standard
	V	51	12093.5	2.4	**1.3198**	0.050	3.8	ug/L	1434	Standard
	Cr	52	18515.6	1.7	**1.3928**	0.062	4.4	ug/L	7733	Standard
	Cr	53	1865.1	14.6	**1.4862**	0.264	17.8	ug/L	442	Standard
	Mn	55	32921.4	0.8	**4.3867**	0.071	1.6	ug/L	723	Standard
	Co	59	1608.8	2.8	**0.1873**	0.008	4.3	ug/L	217	Standard
	Ni	60	1860.4	4.4	**0.7722**	0.043	5.6	ug/L	304	Standard
	Cu	65	2193.8	2.2	**1.0354**	0.028	2.7	ug/L	181	Standard
	Zn	66	9716.8	1.5	**8.0047**	0.192	2.4	ug/L	215	Standard
>	**Ge**	72	504722.0	1.0				ug/L	520809	Standard
	As	75	1470.5	3.8	**1.2746**	0.057	4.4	ug/L	-52	Standard
	Se	82	28.8	14.7	**0.1088**	0.036	32.9	ug/L	17	Standard
	Se-1	77	55.7	13.5	**-0.0132**	0.085	641.5	ug/L	56	Standard
>	**Ga**	71	1173.4	4.0				mg/L	25	Standard
	Rb	85	5657.7	5.6				ug/L	28	Standard
	Y	89	430091.6	2.7				ug/L	447395	Standard
>	**Rh**	103	10.0	100.0				ug/L	15	Standard
	Mo	98	330.9	6.7	**0.0921**	0.006	6.8	ug/L	113	Standard
	Ag	107	127.3	16.8	**0.0060**	0.003	57.0	ug/L	108	Standard
	Cd	111	132.1	1.6	**0.0585**	0.002	2.8	mg/L	3	Standard
	Cd	114	337.6	10.3	**0.0629**	0.007	11.3	ug/L	20	Standard
>	**In**	115	589920.6	1.4				ug/L	625728	Standard
	Sn	118	773.4	25.8	**0.0430**	0.031	72.7	ug/L	568	Standard
	Sb	123	374.2	12.0	**0.0430**	0.008	19.0	ug/L	612	Standard
	Ba	135	10208.8	2.5	**4.9590**	0.061	1.2	ug/L	21	Standard
	Ce	140	28101.1	3.0				ug/L	245	Standard
>	**Tb**	159	866375.5	1.2				ug/L	950397	Standard
	Ho	165	575.0	13.6				ug/L	7	Standard
	Tl	203	486.0	6.3	**0.0582**	0.003	5.7	ug/L	15	Standard
	Tl	205	386.7	8.6	**0.0431**	0.004	8.7	ug/L	13	Standard
	Pb	206	15320.4	2.2	**2.9057**	0.025	0.9	ug/L	264	Standard
	Pb	207	12702.3	2.1	**2.6467**	0.028	1.1	ug/L	222	Standard
	Pb	208	55482.0	1.8	**2.8316**	0.013	0.4	ug/L	959	Standard
	U	238	430.7	1.5	**0.0580**	0.000	0.2	ug/L	9	Standard
>	**Bi**	209	507193.8	1.5				ug/L	552821	Standard

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 18:47:26
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.2063**	9.009	173.0	mg/L	2	Standard
Mg	24	56.7	27.0	**0.0097**	0.018	185.7	mg/L	55	Standard
K	39	65.0	33.5	**0.1320**	0.085	64.4	mg/L	28	Standard
Ca	43	21.7	13.3	**-0.3705**	0.255	68.8	mg/L	27	Standard
Fe	54	1363.7	6.4	**1.0335**	0.073	7.1	mg/L	147	Standard
Fe	57	556.7	6.9	**1.0056**	0.095	9.5	mg/L	268	Standard
Sc-1	45	38894.9	1.6				mg/L	41174	Standard
Cl	35	69609.5	0.8				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	1780.1	1.7				ug/L	1950	Standard
P	31	8205.6	2.3				ug/L	21156	Standard
S	34	3335.4	2.7				ug/L	3419	Standard
Sr	88	61.7	20.4				ug/L	72	Standard
C	12	93.3	6.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	17	Standard
Dy	164	880.2	8.3				mg/L	16	Standard
Ho-1	165	575.0	13.6				mg/L	7	Standard
Er	166	553.3	3.8				mg/L	7	Standard
I	127	31464.3	3.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		84.512	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.911	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 18:47:26
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.277
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.747
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 18:47:26
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145106 WG574521-02
Sample Date/Time: Friday, July 01, 2016 18:48:21
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64025.1	3.2				ug/L	76456	Standard
	Be	9	150.0	10.0	**0.1401**	0.015	10.9	ug/L	20	Standard
	Al	27	373954.4	3.8	**2.6005**	0.138	5.3	ug/L	1307	Standard
	Sc	45	39992.7	0.8				ug/L	41174	Standard
	Ti	47	2911.6	0.9	**9.0743**	0.125	1.4	ug/L	27	Standard
	V	51	51458.1	1.3	**6.2169**	0.098	1.6	ug/L	1434	Standard
	Cr	52	21030.6	1.9	**1.6951**	0.060	3.5	ug/L	7733	Standard
	Cr	53	2078.5	6.6	**1.6910**	0.147	8.7	ug/L	442	Standard
	Mn	55	214722.6	3.4	**28.9695**	1.071	3.7	ug/L	723	Standard
	Co	59	3170.7	6.3	**0.3948**	0.028	7.2	ug/L	217	Standard
	Ni	60	4965.8	2.8	**2.2998**	0.080	3.5	ug/L	304	Standard
	Cu	65	11632.1	2.0	**5.7677**	0.126	2.2	ug/L	181	Standard
	Zn	66	12643.6	1.6	**10.3959**	0.197	1.9	ug/L	215	Standard
>	Ge	72	508214.5	0.5				ug/L	520809	Standard
	As	75	1760.7	0.9	**1.5067**	0.007	0.5	ug/L	-52	Standard
	Se	82	70.2	4.5	**0.4430**	0.026	5.8	ug/L	17	Standard
	Se-1	77	108.3	3.0	**0.6142**	0.044	7.2	ug/L	56	Standard
>	Ga	71	1403.4	6.8				mg/L	25	Standard
	Rb	85	5152.5	5.6				ug/L	28	Standard
	Y	89	465204.1	0.9				ug/L	447395	Standard
>	Rh	103	8.3	34.6				ug/L	15	Standard
	Mo	98	986.2	8.1	**0.3241**	0.024	7.4	ug/L	113	Standard
	Ag	107	197.7	29.4	**0.0165**	0.008	50.2	ug/L	108	Standard
	Cd	111	516.3	5.7	**0.2371**	0.011	4.7	mg/L	3	Standard
	Cd	114	1344.3	1.8	**0.2519**	0.006	2.5	ug/L	20	Standard
>	In	115	585874.6	1.3				ug/L	625728	Standard
	Sn	118	588.3	39.7	**0.0131**	0.038	286.1	ug/L	568	Standard
	Sb	123	350.0	28.7	**0.0385**	0.020	51.5	ug/L	612	Standard
	Ba	135	28617.3	1.6	**14.0306**	0.052	0.4	ug/L	21	Standard
	Ce	140	147578.6	1.0				ug/L	245	Standard
>	Tb	159	879044.3	0.3				ug/L	950397	Standard
	Ho	165	3460.4	5.6				ug/L	7	Standard
	Tl	203	284.7	28.0	**0.0338**	0.010	29.0	ug/L	15	Standard
	Tl	205	251.7	41.0	**0.0246**	0.014	57.8	ug/L	13	Standard
	Pb	206	17853.2	2.3	**3.3893**	0.091	2.7	ug/L	264	Standard
	Pb	207	14882.6	2.2	**3.1053**	0.081	2.6	ug/L	222	Standard
	Pb	208	65337.9	2.2	**3.3392**	0.088	2.6	ug/L	959	Standard
	U	238	2254.5	5.6	**0.3042**	0.018	6.0	ug/L	9	Standard
>	Bi	209	507833.7	0.4				ug/L	552821	Standard

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 18:50:37
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.0936**	8.814	173.0	mg/L	2	Standard
Mg	24	113.3	21.8	**0.0760**	0.029	37.9	mg/L	55	Standard
K	39	38.3	27.2	**0.0199**	0.040	200.6	mg/L	28	Standard
Ca	43	53.3	27.1	**2.5349**	1.339	52.8	mg/L	27	Standard
Fe	54	2059.6	7.3	**1.5638**	0.117	7.5	mg/L	147	Standard
Fe	57	870.0	4.0	**1.9479**	0.099	5.1	mg/L	268	Standard
> **Sc-1**	45	39992.7	0.8				mg/L	41174	Standard
Cl	35	70901.6	2.0				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2260.2	4.2				ug/L	1950	Standard
P	31	8212.2	3.0				ug/L	21156	Standard
S	34	3600.4	1.9				ug/L	3419	Standard
Sr	88	90.0	9.6				ug/L	72	Standard
C	12	176.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	40.0				mg/L	17	Standard
Dy	164	5100.9	5.6				mg/L	16	Standard
Ho-1	165	3460.4	5.6				mg/L	7	Standard
Er	166	3200.3	6.8				mg/L	7	Standard
I	127	34541.0	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.741	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.582	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 18:50:37
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.631
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.862
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Friday, July 01, 2016 18:51:32
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64661.0	1.8				ug/L	76456	Standard
	Be	9	435.0	25.2	**0.4383**	0.108	24.7	ug/L	20	Standard
	Al	27	688124.2	2.3	**4.7442**	0.162	3.4	ug/L	1307	Standard
	Sc	45	39658.5	2.4				ug/L	41174	Standard
	Ti	47	13864.7	2.7	**43.2019**	1.047	2.4	ug/L	27	Standard
	V	51	37809.2	1.4	**4.4801**	0.052	1.2	ug/L	1434	Standard
	Cr	52	41323.6	2.8	**4.2278**	0.133	3.1	ug/L	7733	Standard
	Cr	53	4789.1	2.3	**4.4030**	0.102	2.3	ug/L	442	Standard
	Mn	55	173827.6	1.4	**23.2563**	0.280	1.2	ug/L	723	Standard
	Co	59	5908.8	1.9	**0.7552**	0.015	2.0	ug/L	217	Standard
	Ni	60	5550.3	1.2	**2.5679**	0.031	1.2	ug/L	304	Standard
	Cu	65	7217.7	3.4	**3.5237**	0.120	3.4	ug/L	181	Standard
	Zn	66	24798.3	1.6	**20.4085**	0.308	1.5	ug/L	215	Standard
>	**Ge**	72	512004.2	0.3				ug/L	520809	Standard
	As	75	8113.7	1.3	**6.7304**	0.082	1.2	ug/L	-52	Standard
	Se	82	47.8	17.9	**0.2581**	0.069	26.7	ug/L	17	Standard
	Se-1	77	78.3	7.5	**0.2474**	0.068	27.6	ug/L	56	Standard
>	**Ga**	71	2850.3	1.2				mg/L	25	Standard
	Rb	85	22646.9	3.8				ug/L	28	Standard
	Y	89	456860.0	1.6				ug/L	447395	Standard
>	**Rh**	103	15.0	57.7				ug/L	15	Standard
	Mo	98	1709.2	2.3	**0.5713**	0.010	1.8	ug/L	113	Standard
	Ag	107	176.7	8.5	**0.0131**	0.002	17.8	ug/L	108	Standard
	Cd	111	527.4	1.5	**0.2390**	0.005	2.0	mg/L	3	Standard
	Cd	114	1273.9	8.3	**0.2354**	0.018	7.7	ug/L	20	Standard
>	**In**	115	594063.6	0.5				ug/L	625728	Standard
	Sn	118	725.0	18.7	**0.0344**	0.022	63.4	ug/L	568	Standard
	Sb	123	399.2	21.2	**0.0476**	0.017	35.7	ug/L	612	Standard
	Ba	135	25921.5	1.4	**12.5319**	0.140	1.1	ug/L	21	Standard
	Ce	140	84609.0	2.8				ug/L	245	Standard
>	**Tb**	159	884122.7	1.5				ug/L	950397	Standard
	Ho	165	1811.8	3.2				ug/L	7	Standard
	Tl	203	2382.2	2.0	**0.2851**	0.004	1.5	ug/L	15	Standard
	Tl	205	2155.2	0.8	**0.2815**	0.002	0.8	ug/L	13	Standard
	Pb	206	34780.5	0.5	**6.5761**	0.037	0.6	ug/L	264	Standard
	Pb	207	29105.6	0.4	**6.0542**	0.048	0.8	ug/L	222	Standard
	Pb	208	126449.0	1.6	**6.4404**	0.086	1.3	ug/L	959	Standard
	U	238	1711.1	3.8	**0.2285**	0.010	4.3	ug/L	9	Standard
>	**Bi**	209	513045.7	0.5				ug/L	552821	Standard

Sample ID: L1606145107
Report Date/Time: Friday, July 01, 2016 18:53:49
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	66.7	21.7	**0.0208**	0.018	87.5	mg/L	55	Standard
K	39	66.7	33.8	**0.1333**	0.086	64.5	mg/L	28	Standard
Ca	43	33.3	8.7	**0.6944**	0.305	44.0	mg/L	27	Standard
Fe	54	5014.4	0.7	**3.9857**	0.129	3.2	mg/L	147	Standard
Fe	57	1586.7	5.6	**4.2576**	0.247	5.8	mg/L	268	Standard
> **Sc-1**	45	39658.5	2.4				mg/L	41174	Standard
Cl	35	72080.4	1.0				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	1970.1	9.5				ug/L	1950	Standard
P	31	8810.9	5.8				ug/L	21156	Standard
S	34	3717.1	6.6				ug/L	3419	Standard
Sr	88	71.7	22.4				ug/L	72	Standard
C	12	120.0	16.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	13.3				mg/L	17	Standard
Dy	164	2375.7	6.5				mg/L	16	Standard
Ho-1	165	1811.8	3.2				mg/L	7	Standard
Er	166	1693.4	3.3				mg/L	7	Standard
I	127	32022.1	0.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.573	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.309	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145107
Report Date/Time: Friday, July 01, 2016 18:53:49
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.940
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.805
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Friday, July 01, 2016 18:54:44
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65516.4	2.1				ug/L	76456	Standard
	Be	9	508.3	16.0	**0.5110**	0.092	17.9	ug/L	20	Standard
	Al	27	800380.4	1.8	**5.4489**	0.215	3.9	ug/L	1307	Standard
	Sc	45	41087.3	0.8				ug/L	41174	Standard
	Ti	47	14067.5	1.7	**43.1737**	0.244	0.6	ug/L	27	Standard
	V	51	35953.7	1.5	**4.1835**	0.016	0.4	ug/L	1434	Standard
	Cr	52	58594.1	1.0	**6.2897**	0.017	0.3	ug/L	7733	Standard
	Cr	53	6973.3	2.0	**6.4961**	0.144	2.2	ug/L	442	Standard
	Mn	55	180922.6	1.7	**23.8431**	0.175	0.7	ug/L	723	Standard
	Co	59	6047.5	0.4	**0.7616**	0.011	1.5	ug/L	217	Standard
	Ni	60	5785.8	2.5	**2.6404**	0.042	1.6	ug/L	304	Standard
	Cu	65	5630.4	0.4	**2.6905**	0.031	1.2	ug/L	181	Standard
	Zn	66	23391.7	1.5	**18.9480**	0.094	0.5	ug/L	215	Standard
>	Ge	72	519833.8	1.1				ug/L	520809	Standard
	As	75	6871.0	0.9	**5.6213**	0.013	0.2	ug/L	-52	Standard
	Se	82	36.9	12.8	**0.1662**	0.040	24.4	ug/L	17	Standard
	Se-1	77	75.7	12.8	**0.2017**	0.109	53.9	ug/L	56	Standard
>	Ga	71	2690.2	10.4				mg/L	25	Standard
	Rb	85	22987.4	0.8				ug/L	28	Standard
	Y	89	454979.6	1.6				ug/L	447395	Standard
>	Rh	103	13.3	78.1				ug/L	15	Standard
	Mo	98	1493.9	2.8	**0.4956**	0.012	2.5	ug/L	113	Standard
	Ag	107	175.0	7.7	**0.0128**	0.002	15.5	ug/L	108	Standard
	Cd	111	498.3	4.3	**0.2253**	0.011	4.8	mg/L	3	Standard
	Cd	114	1246.2	5.5	**0.2300**	0.012	5.2	ug/L	20	Standard
>	In	115	594885.0	1.0				ug/L	625728	Standard
	Sn	118	763.4	27.5	**0.0404**	0.033	82.5	ug/L	568	Standard
	Sb	123	358.6	20.7	**0.0392**	0.014	36.9	ug/L	612	Standard
	Ba	135	27274.9	0.9	**13.1693**	0.072	0.5	ug/L	21	Standard
	Ce	140	89319.2	2.1				ug/L	245	Standard
>	Tb	159	880456.6	1.2				ug/L	950397	Standard
	Ho	165	2008.5	5.9				ug/L	7	Standard
	Tl	203	2224.8	1.1	**0.2667**	0.002	0.9	ug/L	15	Standard
	Tl	205	2000.1	8.4	**0.2612**	0.026	9.8	ug/L	13	Standard
	Pb	206	30072.5	0.9	**5.6895**	0.126	2.2	ug/L	264	Standard
	Pb	207	25200.3	0.2	**5.2438**	0.069	1.3	ug/L	222	Standard
	Pb	208	108593.2	0.7	**5.5329**	0.068	1.2	ug/L	959	Standard
	U	238	1657.1	2.7	**0.2215**	0.003	1.4	ug/L	9	Standard
>	Bi	209	512295.4	1.3				ug/L	552821	Standard

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 18:57:00
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	51.4	**0.0236**	0.043	182.4	mg/L	55	Standard
K	39	88.3	14.2	**0.2082**	0.048	23.2	mg/L	28	Standard
Ca	43	35.0	42.9	**0.7276**	1.340	184.1	mg/L	27	Standard
Fe	54	5032.2	2.8	**3.8559**	0.118	3.1	mg/L	147	Standard
Fe	57	1495.1	12.3	**3.7984**	0.557	14.7	mg/L	268	Standard
> **Sc-1**	45	41087.3	0.8				mg/L	41174	Standard
Cl	35	70479.6	1.8				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1836.8	12.0				ug/L	1950	Standard
P	31	8665.8	3.6				ug/L	21156	Standard
S	34	3460.4	4.7				ug/L	3419	Standard
Sr	88	80.0	18.8				ug/L	72	Standard
C	12	90.0	22.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	17	Standard
Dy	164	2628.5	8.2				mg/L	16	Standard
Ho-1	165	2008.5	5.9				mg/L	7	Standard
Er	166	1706.8	7.3				mg/L	7	Standard
I	127	30609.2	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.692	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.813	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 18:57:00
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.071
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145109S WG574521-07
Sample Date/Time: Friday, July 01, 2016 18:57:55
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66169.2	2.4				ug/L	76456	Standard
	Be	9	2845.3	1.4	**2.9179**	0.070	2.4	ug/L	20	Standard
	Al	27	402052.1	1.7	**2.7039**	0.037	1.4	ug/L	1307	Standard
	Sc	45	40838.3	0.3				ug/L	41174	Standard
	Ti	47	3598.8	1.2	**10.9719**	0.146	1.3	ug/L	27	Standard
	V	51	79956.8	0.6	**9.5376**	0.034	0.4	ug/L	1434	Standard
	Cr	52	43849.7	0.5	**4.4576**	0.028	0.6	ug/L	7733	Standard
	Cr	53	4982.5	0.8	**4.5178**	0.059	1.3	ug/L	442	Standard
	Mn	55	232874.6	0.3	**30.6911**	0.183	0.6	ug/L	723	Standard
	Co	59	22573.1	0.9	**2.9200**	0.017	0.6	ug/L	217	Standard
	Ni	60	11202.5	1.2	**5.2509**	0.054	1.0	ug/L	304	Standard
	Cu	65	17763.4	0.2	**8.6391**	0.027	0.3	ug/L	181	Standard
	Zn	66	17798.8	0.5	**14.3610**	0.032	0.2	ug/L	215	Standard
>	**Ge**	72	520328.1	0.5				ug/L	520809	Standard
	As	75	5212.0	2.2	**4.2712**	0.111	2.6	ug/L	-52	Standard
	Se	82	460.7	3.7	**3.5240**	0.138	3.9	ug/L	17	Standard
	Se-1	77	349.3	2.1	**3.4060**	0.106	3.1	ug/L	56	Standard
>	**Ga**	71	1643.4	2.5				mg/L	25	Standard
	Rb	85	6298.0	3.7				ug/L	28	Standard
	Y	89	489232.3	1.4				ug/L	447395	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	1075.7	0.6	**0.3442**	0.006	1.8	ug/L	113	Standard
	Ag	107	17796.8	1.4	**2.5517**	0.014	0.5	ug/L	108	Standard
	Cd	111	6560.4	0.7	**2.9469**	0.016	0.6	mg/L	3	Standard
	Cd	114	16108.1	2.8	**2.9255**	0.113	3.9	ug/L	20	Standard
>	**In**	115	604614.2	1.1				ug/L	625728	Standard
	Sn	118	576.7	20.9	**0.0084**	0.019	221.8	ug/L	568	Standard
	Sb	123	1529.4	1.9	**0.2726**	0.009	3.4	ug/L	612	Standard
	Ba	135	36016.4	1.8	**17.1151**	0.222	1.3	ug/L	21	Standard
	Ce	140	166971.8	1.4				ug/L	245	Standard
>	**Tb**	159	893545.7	0.7				ug/L	950397	Standard
	Ho	165	3838.8	4.6				ug/L	7	Standard
	Tl	203	21813.4	0.5	**2.5793**	0.005	0.2	ug/L	15	Standard
	Tl	205	20096.7	2.1	**2.6671**	0.046	1.7	ug/L	13	Standard
	Pb	206	33592.2	0.8	**6.2573**	0.064	1.0	ug/L	264	Standard
	Pb	207	28855.8	0.9	**5.9141**	0.073	1.2	ug/L	222	Standard
	Pb	208	125010.5	0.5	**6.2737**	0.013	0.2	ug/L	959	Standard
	U	238	20841.0	0.6	**2.7450**	0.006	0.2	ug/L	9	Standard
>	**Bi**	209	520594.3	0.4				ug/L	552821	Standard

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 19:00:12
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	78.3	32.1	**0.0321**	0.030	93.3	mg/L	55	Standard
K	39	38.3	30.1	**0.0170**	0.045	263.0	mg/L	28	Standard
Ca	43	36.7	7.9	**0.9069**	0.276	30.5	mg/L	27	Standard
Fe	54	2344.4	2.1	**1.7548**	0.045	2.6	mg/L	147	Standard
Fe	57	823.4	10.1	**1.7471**	0.264	15.1	mg/L	268	Standard
Sc-1	45	40838.3	0.3				mg/L	41174	Standard
Cl	35	72934.5	2.0				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	2890.3	3.7				ug/L	1950	Standard
P	31	8855.9	3.2				ug/L	21156	Standard
S	34	3612.1	4.5				ug/L	3419	Standard
Sr	88	103.3	32.9				ug/L	72	Standard
C	12	236.7	17.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	17	Standard
Dy	164	5672.6	5.0				mg/L	16	Standard
Ho-1	165	3838.8	4.6				mg/L	7	Standard
Er	166	3727.1	2.9				mg/L	7	Standard
I	127	35476.5	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.546	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.908	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 19:00:12
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.626
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.171
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 19:00:12
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145110SD WG574521-08
Sample Date/Time: Friday, July 01, 2016 19:01:07
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67019.7	4.1				ug/L	76456	Standard
	Be	9	2773.6	7.8	**2.8076**	0.211	7.5	ug/L	20	Standard
	Al	27	343053.6	0.5	**2.2782**	0.082	3.6	ug/L	1307	Standard
	Sc	45	40390.5	2.4				ug/L	41174	Standard
	Ti	47	2125.1	3.6	**6.3589**	0.289	4.5	ug/L	27	Standard
	V	51	73913.9	1.7	**8.6823**	0.187	2.2	ug/L	1434	Standard
	Cr	52	39647.8	1.1	**3.8723**	0.091	2.4	ug/L	7733	Standard
	Cr	53	4390.6	6.6	**3.8749**	0.313	8.1	ug/L	442	Standard
	Mn	55	211704.6	1.1	**27.5205**	0.540	2.0	ug/L	723	Standard
	Co	59	22138.2	1.1	**2.8248**	0.052	1.9	ug/L	217	Standard
	Ni	60	10229.1	2.4	**4.7164**	0.156	3.3	ug/L	304	Standard
	Cu	65	16797.3	0.8	**8.0558**	0.132	1.6	ug/L	181	Standard
	Zn	66	14601.7	0.9	**11.5899**	0.103	0.9	ug/L	215	Standard
>	**Ge**	72	527370.0	0.8				ug/L	520809	Standard
	As	75	4454.0	0.3	**3.6083**	0.041	1.1	ug/L	-52	Standard
	Se	82	433.6	3.6	**3.2627**	0.107	3.3	ug/L	17	Standard
	Se-1	77	342.3	4.4	**3.2706**	0.183	5.6	ug/L	56	Standard
>	**Ga**	71	1086.7	7.6				mg/L	25	Standard
	Rb	85	2715.2	5.0				ug/L	28	Standard
	Y	89	495479.9	0.9				ug/L	447395	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	1199.6	3.2	**0.3822**	0.017	4.5	ug/L	113	Standard
	Ag	107	16994.5	0.8	**2.4097**	0.040	1.7	ug/L	108	Standard
	Cd	111	6581.3	0.3	**2.9241**	0.026	0.9	mg/L	3	Standard
	Cd	114	16115.1	1.4	**2.8941**	0.037	1.3	ug/L	20	Standard
>	**In**	115	611286.5	1.2				ug/L	625728	Standard
	Sn	118	688.3	30.3	**0.0255**	0.034	134.7	ug/L	568	Standard
	Sb	123	3492.9	2.6	**0.6580**	0.010	1.5	ug/L	612	Standard
	Ba	135	33066.0	1.8	**15.5404**	0.233	1.5	ug/L	21	Standard
	Ce	140	153693.9	0.5				ug/L	245	Standard
>	**Tb**	159	899836.2	0.9				ug/L	950397	Standard
	Ho	165	3548.7	3.5				ug/L	7	Standard
	Tl	203	21026.9	1.7	**2.4700**	0.040	1.6	ug/L	15	Standard
	Tl	205	19092.0	1.1	**2.5170**	0.051	2.0	ug/L	13	Standard
	Pb	206	32793.8	0.3	**6.0676**	0.075	1.2	ug/L	264	Standard
	Pb	207	27703.0	0.3	**5.6387**	0.064	1.1	ug/L	222	Standard
	Pb	208	120754.5	1.4	**6.0193**	0.142	2.4	ug/L	959	Standard
	U	238	20391.4	0.6	**2.6683**	0.017	0.6	ug/L	9	Standard
>	**Bi**	209	524030.2	1.0				ug/L	552821	Standard

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 19:03:24
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	73.3	17.2	**0.0271**	0.015	54.1	mg/L	55	Standard
K	39	33.3	22.9	**-0.0010**	0.029	2803.3	mg/L	28	Standard
Ca	43	38.3	52.7	**1.0972**	1.891	172.3	mg/L	27	Standard
Fe	54	1833.3	6.8	**1.3677**	0.115	8.4	mg/L	147	Standard
Fe	57	725.0	5.5	**1.4696**	0.176	12.0	mg/L	268	Standard
> **Sc-1**	45	40390.5	2.4				mg/L	41174	Standard
Cl	35	74325.2	0.8				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2540.2	14.3				ug/L	1950	Standard
P	31	8757.5	2.9				ug/L	21156	Standard
S	34	3718.8	1.1				ug/L	3419	Standard
Sr	88	85.0					ug/L	72	Standard
C	12	270.0	14.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	32.9				mg/L	17	Standard
Dy	164	5206.1	3.7				mg/L	16	Standard
Ho-1	165	3548.7	3.5				mg/L	7	Standard
Er	166	3510.4	5.0				mg/L	7	Standard
I	127	34255.4	2.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.658	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.260	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 19:03:24
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.692
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.792
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 19:03:24
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 19:04:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73296.1	8.8				ug/L	76456	Standard
	Be	9	3.3	86.6	**-0.0168**	0.003	15.9	ug/L	20	Standard
	Al	27	943.4	25.1	**-0.0045**	0.001	28.6	ug/L	1307	Standard
	Sc	45	42173.6	2.9				ug/L	41174	Standard
	Ti	47	21.7	46.5	**-0.0224**	0.026	115.7	ug/L	27	Standard
	V	51	784.0	11.8	**-0.1085**	0.008	7.8	ug/L	1434	Standard
	Cr	52	3455.1	8.0	**-0.5654**	0.042	7.4	ug/L	7733	Standard
	Cr	53	226.7	14.2	**-0.2044**	0.032	15.6	ug/L	442	Standard
	Mn	55	689.7	25.5	**-0.0155**	0.019	124.5	ug/L	723	Standard
	Co	59	203.0	2.5	**-0.0043**	0.002	53.5	ug/L	217	Standard
	Ni	60	207.7	13.9	**-0.0589**	0.005	8.9	ug/L	304	Standard
	Cu	65	99.0	11.2	**-0.0283**	0.002	6.7	ug/L	181	Standard
	Zn	66	182.3	13.6	**-0.0400**	0.008	19.1	ug/L	215	Standard
>	**Ge**	72	551871.4	10.1				ug/L	520809	Standard
	As	75	90.2	75.8	**0.1123**	0.046	40.9	ug/L	-52	Standard
	Se	82	68.2	54.7	**0.3731**	0.233	62.5	ug/L	17	Standard
	Se-1	77	38.3	14.4	**-0.2548**	0.102	40.0	ug/L	56	Standard
>	**Ga**	71	36.7	7.9				mg/L	25	Standard
	Rb	85	36.7	39.4				ug/L	28	Standard
	Y	89	441182.6	6.0				ug/L	447395	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	46.2	9.0	**-0.0083**	0.001	14.8	ug/L	113	Standard
	Ag	107	129.7	15.8	**0.0056**	0.002	35.3	ug/L	108	Standard
	Cd	111	10.6	19.3	**0.0023**	0.001	28.9	mg/L	3	Standard
	Cd	114	32.4	13.3	**0.0058**	0.001	9.2	ug/L	20	Standard
>	**In**	115	611252.6	5.3				ug/L	625728	Standard
	Sn	118	5131.0	39.9	**0.7226**	0.283	39.2	ug/L	568	Standard
	Sb	123	96.0	32.5	**-0.0149**	0.005	34.0	ug/L	612	Standard
	Ba	135	116.3	18.2	**0.0366**	0.007	20.0	ug/L	21	Standard
	Ce	140	506.7	18.4				ug/L	245	Standard
>	**Tb**	159	937034.7	2.8				ug/L	950397	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	55.7	37.9	**0.0055**	0.002	44.3	ug/L	15	Standard
	Tl	205	48.3	15.8	**-0.0037**	0.001	24.8	ug/L	13	Standard
	Pb	206	388.7	9.1	**0.0251**	0.008	30.5	ug/L	264	Standard
	Pb	207	329.7	11.1	**0.0183**	0.008	44.7	ug/L	222	Standard
	Pb	208	1314.7	9.8	**0.0144**	0.005	32.0	ug/L	959	Standard
	U	238	44.3	33.9	**0.0053**	0.002	35.7	ug/L	9	Standard
>	**Bi**	209	551718.3	2.9				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 19:06:36
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.9772**	8.612	173.0	mg/L	2	Standard
Mg	24	23.3	12.4	**-0.0336**	0.003	9.5	mg/L	55	Standard
K	39	23.3	12.4	**-0.0439**	0.009	21.3	mg/L	28	Standard
Ca	43	31.7	24.1	**0.3653**	0.722	197.6	mg/L	27	Standard
Fe	54	110.7	37.7	**-0.0145**	0.030	207.1	mg/L	147	Standard
Fe	57	338.3	3.4	**0.2110**	0.026	12.2	mg/L	268	Standard
Sc-1	45	42173.6	2.9				mg/L	41174	Standard
Cl	35	30776.6	3.7				ug/L	69550	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	663.3	12.3				ug/L	1950	Standard
P	31	11284.4	27.3				ug/L	21156	Standard
S	34	1555.1	2.6				ug/L	3419	Standard
Sr	88	83.3	25.0				ug/L	72	Standard
C	12	73.3	15.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	44.4				mg/L	17	Standard
Dy	164	28.9	93.2				mg/L	16	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	2166.8	15.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	-0.034		
Al	27	-0.009		
Sc	45			
Ti	47	-0.022		
V	51	-0.217		
Cr	52	-1.131		
Cr	53			
Mn	55	-0.031		
Co	59	-0.009		
Ni	60	-0.118		
Cu	65	-0.057		
Zn	66	-0.080		
Ge	72		105.964	
As	75	0.225		
Se	82	0.746		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 19:06:36
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	-0.008		
Ag	107	0.011		
Cd	111	0.005		
Cd	114			
> In	115		97.687	
Sn	118	1.445		
Sb	123	-0.030		
Ba	135	0.073		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	0.011		
Tl	205			
Pb	206			
Pb	207			
Pb	208	0.029		
U	238	0.011		
> Bi	209		99.801	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Ti	47	

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 19:06:36
Page 3

Approved: July 02, 2016

QC Std 6	V	51
QC Std 6	Cr	52
QC Std 6	Mn	55
QC Std 6	Co	59
QC Std 6	Ni	60
QC Std 6	Cu	65
QC Std 6	Zn	66
QC Std 6	As	75
QC Std 6	Se	82
QC Std 6	Mo	98
QC Std 6	Ag	107
QC Std 6	Cd	111
QC Std 6	Sb	123
QC Std 6	Ba	135
QC Std 6	Tl	203
QC Std 6	Pb	208
QC Std 6	U	238

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 19:07:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63162.0	21.4				ug/L	76456	Standard
	Be	9	3.3	86.6	**-0.0166**	0.003	17.1	ug/L	20	Standard
	Al	27	735.0	20.4	**-0.0048**	0.002	36.2	ug/L	1307	Standard
	Sc	45	35650.7	12.8				ug/L	41174	Standard
	Ti	47	25.7	17.6	**-0.0049**	0.017	351.0	ug/L	27	Standard
	V	51	759.8	6.3	**-0.1049**	0.017	16.4	ug/L	1434	Standard
	Cr	52	3500.7	6.1	**-0.5352**	0.034	6.4	ug/L	7733	Standard
	Cr	53	196.7	21.6	**-0.2204**	0.047	21.1	ug/L	442	Standard
	Mn	55	654.0	15.9	**-0.0132**	0.024	180.8	ug/L	723	Standard
	Co	59	209.0	9.3	**-0.0019**	0.004	213.5	ug/L	217	Standard
	Ni	60	214.3	6.6	**-0.0494**	0.006	12.6	ug/L	304	Standard
	Cu	65	67.0	1.5	**-0.0410**	0.004	9.4	ug/L	181	Standard
	Zn	66	162.0	9.0	**-0.0461**	0.027	57.9	ug/L	215	Standard
>	**Ge**	72	520650.3	11.0				ug/L	520809	Standard
	As	75	34.9	127.0	**0.0765**	0.042	54.6	ug/L	-52	Standard
	Se	82	46.9	39.0	**0.2593**	0.198	76.5	ug/L	17	Standard
	Se-1	77	47.0	7.4	**-0.1317**	0.051	38.8	ug/L	56	Standard
>	**Ga**	71	33.3	37.7				mg/L	25	Standard
	Rb	85	20.0	0.0				ug/L	28	Standard
	Y	89	481329.7	5.0				ug/L	447395	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	40.1	16.4	**-0.0110**	0.002	22.0	ug/L	113	Standard
	Ag	107	85.7	14.5	**-0.0013**	0.001	114.3	ug/L	108	Standard
	Cd	111	7.3	15.9	**0.0008**	0.001	101.5	mg/L	3	Standard
	Cd	114	33.4	55.5	**0.0060**	0.004	67.7	ug/L	20	Standard
>	**In**	115	646206.1	11.6				ug/L	625728	Standard
	Sn	118	4905.8	30.1	**0.6479**	0.164	25.3	ug/L	568	Standard
	Sb	123	55.7	59.6	**-0.0232**	0.006	25.1	ug/L	612	Standard
	Ba	135	35.0	22.9	**-0.0022**	0.004	171.6	ug/L	21	Standard
	Ce	140	271.7	45.9				ug/L	245	Standard
>	**Tb**	159	974497.4	20.4				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	26.0	40.2	**0.0024**	0.002	88.7	ug/L	15	Standard
	Tl	205	23.3	32.7	**-0.0066**	0.002	26.3	ug/L	13	Standard
	Pb	206	286.0	20.6	**0.0054**	0.003	50.2	ug/L	264	Standard
	Pb	207	250.0	14.9	**0.0018**	0.006	349.2	ug/L	222	Standard
	Pb	208	1018.7	14.9	**-0.0005**	0.007	1419.7	ug/L	959	Standard
	U	238	28.0	71.2	**0.0037**	0.004	102.7	ug/L	9	Standard
>	**Bi**	209	573676.7	25.6				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 19:09:48
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	31.2	**-0.0144**	0.017	121.3	mg/L	55	Standard
K	39	30.0	44.1	**-0.0003**	0.051	19938.3	mg/L	28	Standard
Ca	43	26.7	47.2	**0.2749**	0.978	355.7	mg/L	27	Standard
Fe	54	97.7	28.6	**-0.0085**	0.033	388.9	mg/L	147	Standard
Fe	57	278.3	18.1	**0.2066**	0.281	136.1	mg/L	268	Standard
Sc-1	45	35650.7	12.8				mg/L	41174	Standard
Cl	35	30318.5	8.6				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	573.3	9.6				ug/L	1950	Standard
P	31	10907.3	13.1				ug/L	21156	Standard
S	34	1410.1	10.3				ug/L	3419	Standard
Sr	88	83.3	36.7				ug/L	72	Standard
C	12	66.7	60.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	38.5				mg/L	17	Standard
Dy	164	2.1	274.3				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	7	Standard
I	127	2056.8	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.969	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 19:09:48
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.273	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	103.773	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sn	118	

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 19:09:48
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, July 01, 2016 19:10:44
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61946.4	1.9				ug/L	76456	Standard
	Be	9	210.0	10.4	**0.2115**	0.020	9.6	ug/L	20	Standard
	Al	27	790.0	4.9	**-0.0045**	0.000	4.1	ug/L	1307	Standard
	Sc	45	40494.0	1.1				ug/L	41174	Standard
	Ti	47	28.3	17.8	**0.0022**	0.015	682.7	ug/L	27	Standard
	V	51	4636.0	0.9	**0.3641**	0.011	3.1	ug/L	1434	Standard
	Cr	52	14316.1	1.4	**0.7957**	0.001	0.1	ug/L	7733	Standard
	Cr	53	1240.1	3.8	**0.8075**	0.059	7.3	ug/L	442	Standard
	Mn	55	4264.3	2.5	**0.4605**	0.007	1.5	ug/L	723	Standard
	Co	59	3130.7	5.2	**0.3781**	0.017	4.5	ug/L	217	Standard
	Ni	60	3450.1	1.6	**1.5055**	0.006	0.4	ug/L	304	Standard
	Cu	65	1721.8	1.7	**0.7678**	0.026	3.4	ug/L	181	Standard
	Zn	66	8860.9	0.9	**7.0348**	0.045	0.6	ug/L	215	Standard
>	**Ge**	72	522095.7	1.4				ug/L	520809	Standard
	As	75	448.5	11.8	**0.4078**	0.044	10.9	ug/L	-52	Standard
	Se	82	67.9	14.5	**0.4100**	0.082	20.0	ug/L	17	Standard
	Se-1	77	86.0	19.1	**0.3190**	0.193	60.5	ug/L	56	Standard
>	**Ga**	71	40.0	37.5				mg/L	25	Standard
	Rb	85	30.0	28.9				ug/L	28	Standard
	Y	89	446341.0	1.0				ug/L	447395	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	31.0	24.0	**-0.0133**	0.003	19.1	ug/L	113	Standard
	Ag	107	2769.6	1.6	**0.3865**	0.006	1.6	ug/L	108	Standard
	Cd	111	511.0	7.5	**0.2275**	0.017	7.5	mg/L	3	Standard
	Cd	114	1362.0	6.3	**0.2474**	0.016	6.3	ug/L	20	Standard
>	**In**	115	604305.4	0.0				ug/L	625728	Standard
	Sn	118	1045.0	27.9	**0.0839**	0.047	56.0	ug/L	568	Standard
	Sb	123	1800.2	6.2	**0.3270**	0.022	6.8	ug/L	612	Standard
	Ba	135	1494.4	2.1	**0.6933**	0.015	2.2	ug/L	21	Standard
	Ce	140	240.0	28.9				ug/L	245	Standard
>	**Tb**	159	892072.4	1.2				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	655.0	0.9	**0.0773**	0.001	1.2	ug/L	15	Standard
	Tl	205	608.3	6.1	**0.0719**	0.005	7.4	ug/L	13	Standard
	Pb	206	1282.4	3.9	**0.1986**	0.006	3.2	ug/L	264	Standard
	Pb	207	1103.0	2.6	**0.1835**	0.003	1.7	ug/L	222	Standard
	Pb	208	4828.3	0.4	**0.1978**	0.004	2.3	ug/L	959	Standard
	U	238	2919.9	3.2	**0.3875**	0.018	4.7	ug/L	9	Standard
>	**Bi**	209	516591.6	1.5				ug/L	552821	Standard

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 19:13:01
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.0546**	8.746	173.0	mg/L	2	Standard
Mg	24	45.0	50.9	**-0.0067**	0.027	406.4	mg/L	55	Standard
K	39	28.3	71.3	**-0.0210**	0.078	373.7	mg/L	28	Standard
Ca	43	15.0	33.3	**-1.0703**	0.448	41.8	mg/L	27	Standard
Fe	54	120.9	25.4	**-0.0025**	0.024	952.7	mg/L	147	Standard
Fe	57	251.7	19.1	**-0.0185**	0.145	784.6	mg/L	268	Standard
> **Sc-1**	45	40494.0	1.1				mg/L	41174	Standard
Cl	35	72851.4	0.8				ug/L	69550	Standard
Kr	83	2.3	99.0				ug/L	1	Standard
Br	81	1900.1	5.1				ug/L	1950	Standard
P	31	14266.7	2.8				ug/L	21156	Standard
S	34	3213.7	2.6				ug/L	3419	Standard
Sr	88	90.0	16.7				ug/L	72	Standard
C	12	96.7	57.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	17	Standard
Dy	164	16.2	35.8				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	1820.1	14.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.733		
Al	27			
Sc	45			
Ti	47			
V	51	91.026		
Cr	52	99.459		
Cr	53			
Mn	55	92.107		
Co	59	94.532		
Ni	60	94.095		
Cu	65	95.977		
Zn	66	112.556		
> Ge	72		100.247	
As	75	101.941		
Se	82	102.498		
Se-1	77			
> Ga	71			

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 19:13:01
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.613		
Cd	111	94.773		
Cd	114			
> In	115			96.576
Sn	118			
Sb	123	81.741		
Ba	135	92.447		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.671		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.904		
U	238	96.884		
> Bi	209			93.446
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 19:13:01
Page 3

Approved: July 02, 2016

2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C01-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:31
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	M7.063016.183105
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C01FD-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:33
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	M7.063016.183335
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW19F-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:36
Collect Date:	06/17/2016 13:10	**Dilution:**	1	**File ID:**	M7.063016.183606
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000381	J	0.000400	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW18F-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:38
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	M7.063016.183837
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW18FMS-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:41
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	M7.063016.184109
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.00481		0.000444	0.000222	0.000111

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW18FMSD-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:43
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	M7.063016.184340
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.00483		0.000444	0.000222	0.000111

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG573482
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/21/2016 07:12
Hotblock Start Temp: 95.1 @ 07:05
Hotblock End Temp: 95 @ 09:05
Instrument: HB2

SOP: ME404 Revison 17
Spike Solution: STD76725
Spike Witness: ERP
H2SO4 Lot #: COA18359
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
K2S2O8 1:1 Lot #: RGT37046
KMnO4 1:1 Lot #: RGT37082
Mercury Water ICV Lot #: STD76727
HG H2O STDS 10PPM Lot #: STD76733

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG573482-03	BLANK	1	40 mL	40 mL		
2	WG573482-04	LCS	1	40 mL	40 mL	4 mL	
3	WG573482-01	REF	1	40 mL	40 mL		
4	L16060996-01	RS01	1	40 mL	40 mL		07/01/16
5	WG573482-05	MS	1	36 mL	40 mL	4 mL	
6	L16060996-02	MS01	1	36 mL	40 mL	4 mL	07/01/16
7	WG573482-06	MSD	1	36 mL	40 mL	4 mL	
8	L16060996-03	SD01	1	36 mL	40 mL	4 mL	07/01/16
9	L16060996-04	SAMP	1	40 mL	40 mL		07/01/16
10	L16060996-05	SAMP	1	40 mL	40 mL		07/01/16
11	L16060996-06	SAMP	1	40 mL	40 mL		07/01/16
12	L16060996-07	SAMP	1	40 mL	40 mL		07/01/16
13	L16060996-08	SAMP	1	40 mL	40 mL		07/01/16
14	L16060996-09	SAMP	1	40 mL	40 mL		07/01/16
15	L16061068-04	SAMP	1	40 mL	40 mL		07/01/16
16	L16061068-05	SAMP	1	40 mL	40 mL		07/01/16
17	L16061068-11	SAMP	1	40 mL	40 mL		07/01/16
18	WG573482-02	REF	1	40 mL	40 mL		
19	L16061068-13	RS04	1	40 mL	40 mL		07/01/16
20	WG573482-07	MS	1	36 mL	40 mL	4 mL	
21	L16061068-15	MS04	1	36 mL	40 mL	4 mL	07/01/16
22	WG573482-08	MSD	1	36 mL	40 mL	4 mL	
23	L16061068-17	SD04	1	36 mL	40 mL	4 mL	07/01/16

Analyst: [signature]

Reviewer: Erin Potter

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4816714
Report generated: 06/21/2016 13:09

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 063016E.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76733 ICV Std: STD76727 Post Spike: STD76733

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573638

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.063016.173011	WG574912-01	Calibration Point		1		06/30/16 17:30
2	M7.063016.173243	WG574912-02	Calibration Point		1		06/30/16 17:32
3	M7.063016.173514	WG574912-03	Calibration Point		1		06/30/16 17:35
4	M7.063016.173747	WG574912-04	Calibration Point		1		06/30/16 17:37
5	M7.063016.174020	WG574912-05	Calibration Point		1		06/30/16 17:40
6	M7.063016.174254	WG574912-06	Calibration Point		1		06/30/16 17:42
7	M7.063016.174528	WG574912-07	Initial Calibration Verification		1		06/30/16 17:45
8	M7.063016.174759	WG574912-08	Initial Calib Blank		1		06/30/16 17:47
9	M7.063016.175031	WG574912-09	CCV		1		06/30/16 17:50
10	M7.063016.175302	WG574912-10	CCB		1		06/30/16 17:53
11	M7.063016.175533	WG573482-03	Method/Prep Blank	40/40	1		06/30/16 17:55
12	M7.063016.175804	WG573482-04	Laboratory Control S	40/40	1		06/30/16 17:58
13	M7.063016.180036	WG573482-01	Reference Sample	40/40	1	L16060996-01	06/30/16 18:00
14	M7.063016.180307	L16060996-02	MW-21-007 MS	36/40	1	WG573482-05	06/30/16 18:03
15	M7.063016.180539	L16060996-03	MW-21-007 MSD	36/40	1	WG573482-06	06/30/16 18:05
16	M7.063016.180812	L16060996-04	MW-21-006	40/40	1		06/30/16 18:08
17	M7.063016.181044	L16060996-05	MW-21-002	40/40	1		06/30/16 18:10
18	M7.063016.181317	WG573638-01	Post Digestion Spike		1	L16060996-05	06/30/16 18:13
19	M7.063016.181550	L16060996-06	FD-061516-21	40/40	1		06/30/16 18:15
20	M7.063016.181823	L16060996-07	MW-21-009	40/40	1		06/30/16 18:18
21	M7.063016.182056	WG574912-11	CCV		1		06/30/16 18:20
22	M7.063016.182327	WG574912-12	CCB		1		06/30/16 18:23
23	M7.063016.182600	L16060996-08	MW-21-005	40/40	1		06/30/16 18:26
24	M7.063016.182834	L16060996-09	MW-21-004	40/40	1		06/30/16 18:28
25	M7.063016.183105	L16061068-04	C01-061716	40/40	1		06/30/16 18:31
26	M7.063016.183335	L16061068-05	C01FD-061716	40/40	1		06/30/16 18:33
27	M7.063016.183606	L16061068-11	MW19F-061716	40/40	1		06/30/16 18:36
28	M7.063016.183837	WG573482-02	Reference Sample	40/40	1	L16061068-13	06/30/16 18:38
29	M7.063016.184109	L16061068-15	MW18FMS-061716	36/40	1	WG573482-07	06/30/16 18:41
30	M7.063016.184340	L16061068-17	MW18FMSD-061716	36/40	1	WG573482-08	06/30/16 18:43
31	M7.063016.184613	WG574912-13	CCV		1		06/30/16 18:46
32	M7.063016.184844	WG574912-14	CCB		1		06/30/16 18:48

Page: 1 Approved: July 01, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 574912
Runlog ID: 76065
Analytical Workgroups: 573638

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0996, 1068
Client Forms	X
Level X	
Level 3	0996
Level 4	1068
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
01-JUL-2016
Alexandra M. Alfred

Secondary Reviewer:
01-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-01-2016 10:11:35

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG573638

Login Number: L16061068

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
C01-061716	04	06/17/16					06/21/2016	3.9	28		06/30/16	13.4	28	
C01FD-061716	05	06/17/16					06/21/2016	3.9	28		06/30/16	13.4	28	
MW19F-061716	11	06/17/16					06/21/2016	3.8	28		06/30/16	13.2	28	
MW18F-061716	13	06/17/16					06/21/2016	3.7	28		06/30/16	13.2	28	
MW18FMS-061716	15	06/17/16					06/21/2016	3.7	28		06/30/16	13.2	28	
MW18FMSD-061716	17	06/17/16					06/21/2016	3.7	28		06/30/16	13.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4834548
Report generated 07/01/2016 08:48

METHOD BLANK SUMMARY

Login Number: L16061068
Blank File ID: M7.063016.175533
Prep Date: 06/21/16 07:12
Analyzed Date: 06/30/16 17:55
Analyst: AMA

Work Group: WG573638
Blank Sample ID: WG573482-03
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573482-04	M7.063016.175804	06/30/16 17:58	01
C01-061716	L16061068-04	M7.063016.183105	06/30/16 18:31	01
C01FD-061716	L16061068-05	M7.063016.183335	06/30/16 18:33	01
MW19F-061716	L16061068-11	M7.063016.183606	06/30/16 18:36	01
MW18F-061716	L16061068-13	M7.063016.183837	06/30/16 18:38	01
MW18FMS-061716	L16061068-15	M7.063016.184109	06/30/16 18:41	01
MW18FMSD-061716	L16061068-17	M7.063016.184340	06/30/16 18:43	01

Report Name: BLANK_SUMMARY
PDF File ID: 4834549
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/21/16 07:12 Sample ID: WG573482-03
Instrument ID: CVAA1 Run Date: 06/30/16 17:55 Prep Method: 7470A
File ID: M7.063016.175533 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573638 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4834550
01-JUL-2016 08:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG573482-04
Instrument ID: CVAA1 Run Time: 17:58 Prep Method: 7470A
File ID: M7.063016.175804 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573638 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76725 Cal ID: CVAA1-30-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00428	107	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4834551
Report generated: 07/01/2016 08:48

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: CVAA1- 30-JUN-16 Worknum: WG573638
Instrument ID: CVAA1 Contract #: Prep Method: 7470A
Parent ID: L16061068-13 File ID: M7.063016.183837 Dil: 1 Method: 7470A
Sample ID: L16061068-15 MS File ID: M7.063016.184109 Dil: 1 Matrix: Water
Sample ID: L16061068-17 MSD File ID: M7.063016.184340 Dil: 1 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	U	0.00444	0.00481	108	0.00444	0.00483	109	0.346	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4834552
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061068 **Worknum:** WG573638
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG573638-01 **File ID:** M7.063016.181317 **Dil:** 1 **Units:** ug/L
Sample ID: L16060996-05 **File ID:** M7.063016.181044 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.05		0	U	1	105.4	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4834547
Report generated: 07/01/2016 08:48

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061068
Analytical Method: 7470A
ICAL Worknum: WG574912

Workgroup (AAB#): WG573638
Instrument ID: CVAA1
Initial Calibration Date: 06/30/2016 17:42

Analyte	WG574912-01		WG574912-02		WG574912-03		WG574912-04		WG574912-05		WG574912-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	-97.12	0.200	2076	1.00	11120	2.00	22170	5.00	55370	10.0	108200

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4834553
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061068
Analytical Method: 7470A
ICAL Worknum: WG574912

Workgroup (AAB#): WG573638
Instrument ID: CVAA1
Initial Calibration Date: 06/30/2016 17:42

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4834553
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061068
Instrument ID: CVAA1
File ID: M7.063016.174759
Workgroup (AAB#): WG573638
Matrix: WATER

Run Date: 06/30/2016
Run Time: 17:47
Analyst: AMA
Cal ID: CVAA1 - 30-JUN-16

Sample ID: WG574912-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4834555
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574912-10
Instrument ID: CVAA1
Run Time: 17:53
Method: 7470A
File ID: M7.063016.175302
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573638
Cal ID: CVAA1 - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834557
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574912-12
Instrument ID: CVAA1
Run Time: 18:23
Method: 7470A
File ID: M7.063016.182327
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573638
Cal ID: CVAA1 - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834557
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574912-14
Instrument ID: CVAA1
Run Time: 18:48
Method: 7470A
File ID: M7.063016.184844
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573638
Cal ID: CVAA1 - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834557
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG574912-07
Instrument ID: CVAA1 Run Time: 17:45 Method: 7470A
File ID: M7.063016.174528 Analyst: AMA Units: ug/L
Workgroup (AAB#): WG573638 Cal ID: CVAA1 - 30-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.13	106	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4834554
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574912-09
Instrument ID: CVAA1
Run Time: 17:50
Method: 7470A
File ID: M7.063016.175031
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573638
Cal ID: CVAA1 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00210	mg/L	105	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834556
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574912-11
Instrument ID: CVAA1
Run Time: 18:20
Method: 7470A
File ID: M7.063016.182056
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573638
Cal ID: CVAA1 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00217	mg/L	109	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834556
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574912-13
Instrument ID: CVAA1
Run Time: 18:46
Method: 7470A
File ID: M7.063016.184613
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573638
Cal ID: CVAA1 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00219	mg/L	109	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834556
Report generated 07/01/2016 08:48

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\063016E.wsz
Date Started: 6/30/2016 5:05:33 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/30/16 05:30:11 pm	0.0000	-97	13.55		1.00
Replicates	-92.1	-93.0	-116.5	-87.0							
Standard #1 (0.2 ug/L)					STD	06/30/16 05:32:43 pm	0.2000	2076	0.60		1.00
Replicates	2067.3	2090.7	2081.5	2063.9							
Standard #2 (1.0 ug/L)					STD	06/30/16 05:35:14 pm	1.0000	11121	0.29		1.00
Replicates	11133.6	11156.0	11078.9	11114.7							
Standard #3 (2.0 ug/L)					STD	06/30/16 05:37:47 pm	2.0000	22166	0.16		1.00
Replicates	22200.7	22191.1	22139.3	22133.8							
Standard #4 (5.0 ug/L)					STD	06/30/16 05:40:20 pm	5.0000	55369	0.20		1.00
Replicates	55491.3	55436.3	55294.1	55255.6							
Standard #5 (10.0 ug/L)					STD	06/30/16 05:42:54 pm	10.0000	108246	0.39		1.00
Replicates	108660.1	108527.5	108064.0	107732.8							

Calibration

Equation: A = 236.766 + 10849.480C
R2: 0.99985
SEE: 568.8621
Flags:

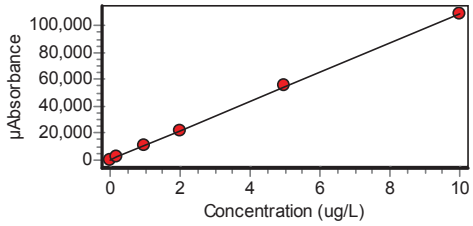

ICV					ICV	06/30/16 05:45:28 pm	2.1250	23292	0.30		1.00
Replicates	23369.4	23328.2	23258.0	23211.0							
% Recovery	106.25										

Approved: July 01, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	06/30/16 05:47:59 pm	-0.0379	-175	3.96		1.00
Replicates	-172.2	-169.6	-172.1	-185.0							
CCV					CCV	06/30/16 05:50:31 pm	2.0990	23006	0.14		1.00
Replicates	23028.4	23038.1	22990.7	22968.7							
% Recovery	104.93										
CCB					CCB	06/30/16 05:53:02 pm	-0.0365	-160	3.88		1.00
Replicates	-156.8	-167.8	-161.3	-153.5							
WG573482-03					MB	06/30/16 05:55:33 pm	-0.0355	-148	13.50		1.00
Replicates	-128.4	-174.8	-150.3	-138.6							
WG573482-04					LCS	06/30/16 05:58:04 pm	4.2810	46687	0.13		1.00
Replicates	46598.6	46718.3	46699.8	46730.1							
% Recovery	107.03										
L1606099601					UNK	06/30/16 06:00:36 pm	-0.0389	-185	4.55		1.00
Replicates	-196.1	-175.6	-183.9	-185.7							
WG573482-05					UNK	06/30/16 06:03:07 pm	4.2830	46701	0.05		1.00
Replicates	46682.8	46734.3	46687.4	46699.1							
WG573482-06					UNK	06/30/16 06:05:39 pm	4.2550	46399	0.11		1.00
Replicates	46328.2	46401.6	46425.3	46439.0							
L1606099604					UNK	06/30/16 06:08:12 pm	-0.0398	-195	4.80		1.00
Replicates	-185.7	-189.3	-206.0	-200.0							
L1606099605					UNK	06/30/16 06:10:44 pm	-0.0274	-61	32.67		1.00
Replicates	-78.7	-34.0	-58.2	-72.7							
WG573638-01					SPK	06/30/16 06:13:17 pm	1.0540	11671	0.09		1.00
Replicates	11656.5	11670.8	11675.6	11682.1							
% Recovery	108.14										
L1606099606					UNK	06/30/16 06:15:50 pm	-0.0303	-92	21.38		1.00
Replicates	-72.8	-102.9	-78.6	-114.3							

Approved: July 01, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606099607					UNK	06/30/16 06:18:23 pm	-0.0358	-151	10.41		1.00
Replicates	-171.8	-143.5	-154.5	-135.4							
CCV					CCV	06/30/16 06:20:56 pm	2.1730	23815	0.17		1.00
Replicates	23759.1	23847.9	23807.4	23843.8							
% Recovery	108.66										
CCB					CCB	06/30/16 06:23:27 pm	-0.0373	-168	5.70		1.00
Replicates	-169.9	-153.9	-173.4	-174.5							
L1606099608					UNK	06/30/16 06:26:00 pm	-0.0355	-148	4.66		1.00
Replicates	-152.6	-153.0	-138.2	-147.4							
L1606099609					UNK	06/30/16 06:28:34 pm	-0.0348	-140	12.43		1.00
Replicates	-132.3	-166.3	-128.7	-134.3							
L1606106804					UNK	06/30/16 06:31:05 pm	-0.0319	-109	16.96		1.00
Replicates	-127.1	-114.6	-110.3	-83.3							
L1606106805					UNK	06/30/16 06:33:35 pm	-0.0314	-103	10.43		1.00
Replicates	-101.7	-105.4	-116.4	-90.3							
L1606106811					UNK	06/30/16 06:36:06 pm	0.3805	4365	0.31		1.00
Replicates	4364.5	4358.7	4351.7	4383.4							
L1606106813					UNK	06/30/16 06:38:37 pm	-0.0182	40	36.98		1.00
Replicates	57.2	41.0	21.3	39.0							
WG573482-07					UNK	06/30/16 06:41:09 pm	4.3280	47189	0.23		1.00
Replicates	47040.6	47192.9	47228.4	47292.2							
WG573482-08					UNK	06/30/16 06:43:40 pm	4.3430	47356	0.19		1.00
Replicates	47227.3	47356.6	47414.6	47427.4							
CCV					CCV	06/30/16 06:46:13 pm	2.1850	23946	0.18		1.00
Replicates	23886.2	23955.2	23991.4	23951.5							
% Recovery	109.26										

Approved: July 01, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCB					CCB	06/30/16 06:48:44 pm	-0.0378	-173	12.82		1.00
	Replicates	-161.4	-192.2	-191.6	-147.9						

Approved: July 01, 2016

Alexandra M. Alpred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 12, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - Hanah D. Coe
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 12, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 12, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	MW23-061716			6/17/16	0730		✓	W	4	✓	✓							
	MW23MS-061716			6/17/16	0730		✓	W	4	✓	✓							
	MW23MSD-061716			6/17/16	0730		✓	W	4	✓	✓							
	EQ1-061716			6/17/16	0835		✓	W	5	✓	✓	✓						
	EQ1FD-061716			6/17/16	0835		✓	W	5	✓	✓	✓						
	MW13-061716			6/17/16	0945		✓	W	4	✓	✓							
	CO2-061716			6/17/16	1045		✓	W	4	✓	✓							
	CO2MS-061716			6/17/16	1045		✓	W	4	✓	✓							
	CO2MSD-061716			6/17/16	1045		✓	W	4	✓	✓							
	MW19-061716			6/17/16	1310		✓	W	4	✓	✓							
	MW19F-061716			6/17/16	1310		✓	W	1			✓						
	MW18-061716			6/17/16	1420		✓	W	4	✓	✓							
	MW18F-061716			6/17/16	1420		✓	W	1			✓						
	MW18MS-061716			6/17/16	1420		✓	W	4									

Comments: **STANDARD TAT**

Microbac OVD
Received: 06/18/2016 10:41
By: CARA STRICKLER
221000087419
Cara Strickler

	Date	Time	Received	Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	6/17/16	1600			
Relinquished by: (Signature)	Date	Time	Received (Signature)	Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	MW18FMS-061716			6/17/16	1420		✓	W	1			✓						
	MW18MSD-061716			6/17/16	1420		✓	W	4	✓	✓							
	MW18FMSD-061716			6/17/16	1420		✓	W	1			✓						
	Trip Blank			6/17/16			✓	W	2	✓								

Comments: **STANDARD TAT**

Microbac OVD
Received: 06/18/2016 10:41
By: CARA STRICKLER
221000087419

Relinquished by: (Signature)	Scott Beesinger	Date 6/17/16	Time 1600	Rec	Date	Time
Relinquished by: (Signature)		Date	Time	Rec (Sig	Time	Remarks:

Cara Strickler

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-01	763054	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-01	763055	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:23	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-02	763056	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	20-JUN-2016 10:19	CLS		
2	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	20-JUN-2016 10:19	CLS		
2	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-02	763057	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:23	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-03	763058	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	20-JUN-2016 10:19	CLS		
2	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-03	763059	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:23	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-04	763060	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	20-JUN-2016 10:19	CLS		
2	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-04	763061	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:23	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

Samplenum	Container ID	Products
L16061068-04	763062	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	PREP	W1	DIG	20-JUN-2016 15:07	ERP	CLS	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:43	AMA	ERP	
4	STORE	DIG	A1	23-JUN-2016 12:54	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-05	763063	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-05	763064	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:23	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

Samplenum	Container ID	Products
L16061068-05	763065	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	PREP	W1	DIG	20-JUN-2016 15:07	ERP	CLS	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:43	AMA	ERP	
4	STORE	DIG	A1	23-JUN-2016 12:54	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-06	763066	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-06	763067	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:23	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-07	763068	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-07	763069	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:23	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-08	763070	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-08	763071	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:23	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-09	763072	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-09	763073	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:23	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-10	763074	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-10	763075	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

Samplenum	Container ID	Products
L16061068-11	763076	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	PREP	W1	DIG	20-JUN-2016 15:07	ERP	CLS	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:43	AMA	ERP	
4	STORE	DIG	A1	23-JUN-2016 12:54	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-12	763077	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-12	763078	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

Samplenum	Container ID	Products
L16061068-13	763079	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	PREP	W1	DIG	20-JUN-2016 15:07	ERP	CLS	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:43	AMA	ERP	
4	STORE	DIG	A1	23-JUN-2016 12:54	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-14	763080	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-14	763081	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

Samplenum	Container ID	Products
L16061068-15	763082	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	PREP	W1	DIG	20-JUN-2016 15:07	ERP	CLS	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:43	AMA	ERP	
4	STORE	DIG	A1	23-JUN-2016 12:54	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-16	763083	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-16	763084	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

Samplenum	Container ID	Products
L16061068-17	763085	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	PREP	W1	DIG	20-JUN-2016 15:07	ERP	CLS	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:43	AMA	ERP	
4	STORE	DIG	A1	23-JUN-2016 12:54	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-18	763086	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:30	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac REPORT L16061142
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 2
1.1 Narratives 3
1.2 Certificate of Analysis 43
2.0 Full Sample Data Package 84
2.1 Volatiles Data 85
2.1.1 Volatiles GCMS Data (8260) 86
2.1.1.1 Summary Data 87
2.1.1.2 QC Summary Data 110
2.1.1.3 Sample Data 162
2.1.1.4 Standards Data 184
2.1.1.5 Raw QC Data 322
2.2 Semivolatiles Data 417
2.2.1 Semivolatiles GC/MS Data (Dioxane) 344
2.2.1.1 Summary Data 345
2.2.1.2 QC Summary Data 350
2.2.1.3 Sample Data 375
2.2.1.4 Standards Data 382
2.2.1.5 Raw QC Data 402
2.2 General Chromatography Data 417
2.2.2 6850 LC/MS Data 418
2.2.2.1 Summary Data 419
2.2.2.2 QC Summary Data 426
2.2.2.3 Sample Data 498
2.2.2.4 Standards Data 509
2.2.2.5 Raw QC Data 570
2.3 Metals Data 577
2.3.1 Metals I C P Data 578
2.3.1.1 Summary Data 579
2.3.1.2 QC Summary Data 587
2.3.1.3 Raw Data 661
2.3.2 Metals ICP-MS Data 1272
2.3.2.1 Summary Data 1273
2.3.2.2 QC Summary Data 1279
2.3.2.3 Raw Data 1324
2.3.3 Metals CVAA Data (Mercury) 1835
2.3.3.1 Summary Data 1836
2.3.3.2 QC Summary 1841
2.3.3.3 Raw Data 1863
3.0 Attachments 1868

1.0 Summary Data

1.1 Narratives

Microbac Laboratories
Case Narrative

Login Number: L16061142
Department: Volatiles
Analyst: Franci Bolden

METHOD

Preparation SW-846 5030C/5035A

Analysis SW-846 8260B

HOLDING TIMES

Sample Preparation: The reanalysis of sample 07 was performed 23 days after collection.

Sample Analysis: The reanalysis of sample 07 was performed 23 days after collection.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: Recoveries out of range were observed for the following analytes: 1,1,1-Trichloroethane, 2,2-Dichloropropane, Carbon Tetrachloride, Trichlorofluoromethane. These failures were high which would normally represent a bias high sample result, however all samples were non-detect for the previously mention analytes.
Recoveries out of range were observed for the following analytes in the reanalysis off sample 07 for SMI confirmation:1,2-Dibromo-3-Chloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: Recoveries out of range were observed for the following analytes: 1,2-Dichloroethane, Bromodichloromethane. Please see the applicable QC report for a detailed presentation of the failures.

Sample #	Analyte	Date	Result	Lower	Upper	Type
WG574190-02	1,2-Dichloroethane	2016-06-24 20:32:00	133	70	130	Recovery
WG574190-02	Bromodichloromethane	2016-06-24 20:32:00	123	75	120	Recovery

Matrix Spikes: The MS/MSD results were not associated with this sample delivery group (SDG), due to insufficient volume of sample. The laboratory included an LCS and LCS duplicate in the preparation batch in lieu of the NELAC prescribed MS/MSD. Microbac Laboratories recommends site specific MS/MSD samples to avoid possible data qualifications.

SAMPLES

Internal Standards: All acceptance criteria were met.

Surrogates: Recoveries out of range were observed for the following surrogates: 1,2-Dichloroethane-d4. Normally this would represent a bias high in the sample result, however samples 02 and 06 were non-detect for all target analytes so no further action was taken.

Sample 07 was reanalyzed out of hold for sample matrix interference. All acceptance criteria was met for surrogate recovery upon reanalysis.

Sample #	Analyte	Date	Result	Lower	Upper	Type
L16061142-02	1,2-Dichloroethane-d4	2016-06-25 01:21:00	122	70	120	Recovery
L16061142-06	1,2-Dichloroethane-d4	2016-06-25 02:19:00	122	70	120	Recovery
L16061142-07	1,2-Dichloroethane-d4	2016-06-25 02:48:00	121	70	120	Recovery

Other: The reanalysis of sample 07 was performed 23 days after collection for sample matrix interference with the surrogate. Reanalysis did not confirm sample matrix interference.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak. In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak. This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline. There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous. Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration

is not clearly covered by these four cases, then review and approval by the Managing Director or the QAO will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 115128
Approved By: Anthony Canter

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574190, WG576236	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Anthony Canter	Anthony Canter	Analyst I	2016-07-14 19:28:07

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574190, WG576236	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?		X			1
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			4
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574190, WG576236	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			2
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574190, WG576236	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			3
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574190, WG576236	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574190, WG576236	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)The reanalysis of sample 07 was performed 23 days after collection on HPMS11 on 07/13/16.

2) 1,2-Dichloroethane and Bromodichloromethane exceeded the UCL in the LCS analyzed 06/24/16 on HPMS11.

3) Carbon Tetrachloride, 2,2-Dichloropropane, 1,1,1-Trichloroethane, and Trichlorofluoromethane exceeded the UCL in the CCV analyzed 06/24/16 on HPMS8. 1,2-Dibromo-3-Chloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone were below the LCL in the CCV analyzed 07/13/16 on HPMS11.

4)1,2-Dichloroethane-d4 exceeded the upper surrogate limit in samples 02, 06, and 07 on 6/24/16. Samples 02 and 06 were non-detect and no further action was taken. Sample 07 was reanalyzed to confirm sample matrix interference.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-06-28 18:17:56

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?		X			ER1
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER1 The LCS/LCSD exceeded RPD criteria.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-06-28 17:54:25

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X		X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573828	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-11 15:37:34

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573828	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573828	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573828	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573828	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573828	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The closing low level calibration check analyzed on 28-Jun-2016 at 15:56 yielded a noncompliant result for selenium. All client samples and batch QA/QC samples were reanalyzed on a later calibration which was compliant for selenium.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573751	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-11 15:31:54

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573751	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			ER#2
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573751	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573751	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573751	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573751	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 01 required dilution analysis in order to obtain a result for manganese within the calibration range.

ER#2 - The initial calibration blank analyzed on 28-JUN-2016 at 13:22 yielded a result for antimony greater than the LOD and less than the LOQ. All client samples were non-detect for antimony. With permission from the project manager, antimony was reported and no further action was taken.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573654	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-11 15:28:11

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573654	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573654	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573654	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573654	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573654	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW20-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 00:52
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	8M413232
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	120	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	99.8	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW20-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 17:23
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	15M18605
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	41.7	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW20-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 02:28
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	1LM.LM35483
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW20-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:57
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	T3.062816.135712
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0733	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	2.78		0.500	0.250	0.125
Iron, Total	7439-89-6	5.75		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	2.14		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.32	J	2.00	1.00	0.500
Sodium, Total	7440-23-5	24.6		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW20-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/29/2016 10:07
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/29/2016 10:56
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	T3.062916.105622
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW20-062016	**Prep Method:**	3015	**Prep Date:**	06/22/2016 13:25
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574522	**Analyst:**	BKT	**Run Date:**	06/28/2016 16:41
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	NI.062816.164105
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00100	U	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0918		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00274	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00808		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00996		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW20-062016	**Prep Method:**	3015	**Prep Date:**	06/22/2016 13:25
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574522	**Analyst:**	BKT	**Run Date:**	06/28/2016 18:46
Collect Date:	06/20/2016 07:55	**Dilution:**	10	**File ID:**	NI.062816.184632
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Total	7439-96-5	0.279		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW20-062016	**Prep Method:**	7470A	**Prep Date:**	06/22/2016 07:32
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/29/2016 12:57
Workgroup #:	WG573906	**Analyst:**	AMA	**Run Date:**	06/29/2016 13:26
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	M7.062916.132604
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW19-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 01:21
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	8M413233
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	122	70	120	*
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW19-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 02:47
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	1LM.LM35484
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW19F-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/29/2016 10:07
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/29/2016 11:00
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	T3.062916.110017
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW19F-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/28/2016 14:01
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	T3.062816.140107
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.342		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.66		0.500	0.250	0.125
Iron, Total	7439-89-6	4.86		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.59		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.85	J	2.00	1.00	0.500
Sodium, Total	7440-23-5	5.07		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW19F-062016	**Prep Method:**	3015	**Prep Date:**	06/22/2016 13:25
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574522	**Analyst:**	BKT	**Run Date:**	06/28/2016 16:44
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	NI.062816.164417
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000865	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0557		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00184	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00116	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00117	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.221		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00429	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00170	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW19F-062016	**Prep Method:**	7470A	**Prep Date:**	06/22/2016 07:32
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/29/2016 12:57
Workgroup #:	WG573906	**Analyst:**	AMA	**Run Date:**	06/29/2016 13:28
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	M7.062916.132836
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW19FD-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 01:50
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	8M413234
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	120	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	99.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW19FD-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 03:06
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	1LM.LM35485
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW19FFD-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/29/2016 10:07
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/29/2016 11:04
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	T3.062916.110411
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW19FFD-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/28/2016 14:05
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	T3.062816.140501
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.369		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.45		0.500	0.250	0.125
Iron, Total	7439-89-6	4.92		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.46		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.74	J	2.00	1.00	0.500
Sodium, Total	7440-23-5	4.86		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW19FFD-062016	**Prep Method:**	3015	**Prep Date:**	06/22/2016 13:25
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574522	**Analyst:**	BKT	**Run Date:**	06/28/2016 16:47
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	NI.062816.164728
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000910	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0588		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00219	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00119	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00131	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.221		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00449	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00184	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW19FFD-062016	**Prep Method:**	7470A	**Prep Date:**	06/22/2016 07:32
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/29/2016 12:57
Workgroup #:	WG573906	**Analyst:**	AMA	**Run Date:**	06/29/2016 13:31
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	M7.062916.133109
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW08-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 02:19
Collect Date:	06/20/2016 10:10	**Dilution:**	1	**File ID:**	8M413235
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	122	70	120	*
Toluene-d8	103	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW08-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 17:46
Collect Date:	06/20/2016 10:10	**Dilution:**	1	**File ID:**	15M18606
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	52.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW08-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 20:37
Collect Date:	06/20/2016 10:10	**Dilution:**	1	**File ID:**	1LM.LM35506
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18WW09-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG576236	**Analyst:**	TMB	**Run Date:**	07/13/2016 14:40
Collect Date:	06/20/2016 11:10	**Dilution:**	1	**File ID:**	11M13228
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.57	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	1.38		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	88.3	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	93.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW09-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 02:48
Collect Date:	06/20/2016 11:10	**Dilution:**	1	**File ID:**	8M413236
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	1.30	J	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	104	85	120	
4-Bromofluorobenzene	103	75	120	

J	The reported result is an estimated value.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW09-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 18:09
Collect Date:	06/20/2016 11:10	**Dilution:**	1	**File ID:**	15M18607
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	56.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW09-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 03:44
Collect Date:	06/20/2016 11:10	**Dilution:**	1	**File ID:**	1LM.LM35487
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/24/2016 23:25
Collect Date:	06/20/2016 00:01	**Dilution:**	1	**File ID:**	8M413229
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac Laboratories
Case Narrative

Login Number: L16061142
Department: Volatiles
Analyst: Franci Bolden

METHOD

Preparation SW-846 5030C/5035A

Analysis SW-846 8260B

HOLDING TIMES

Sample Preparation: The reanalysis of sample 07 was performed 23 days after collection.

Sample Analysis: The reanalysis of sample 07 was performed 23 days after collection.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: Recoveries out of range were observed for the following analytes: 1,1,1-Trichloroethane, 2,2-Dichloropropane, Carbon Tetrachloride, Trichlorofluoromethane. These failures were high which would normally represent a bias high sample result, however all samples were non-detect for the previously mention analytes.
Recoveries out of range were observed for the following analytes in the reanalysis off sample 07 for SMI confirmation:1,2-Dibromo-3-Chloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: Recoveries out of range were observed for the following analytes: 1,2-Dichloroethane, Bromodichloromethane. Please see the applicable QC report for a detailed presentation of the failures.

Sample #	Analyte	Date	Result	Lower	Upper	Type
WG574190-02	1,2-Dichloroethane	2016-06-24 20:32:00	133	70	130	Recovery
WG574190-02	Bromodichloromethane	2016-06-24 20:32:00	123	75	120	Recovery

Matrix Spikes: The MS/MSD results were not associated with this sample delivery group (SDG), due to insufficient volume of sample. The laboratory included an LCS and LCS duplicate in the preparation batch in lieu of the NELAC prescribed MS/MSD. Microbac Laboratories recommends site specific MS/MSD samples to avoid possible data qualifications.

SAMPLES

Internal Standards: All acceptance criteria were met.

Surrogates: Recoveries out of range were observed for the following surrogates: 1,2-Dichloroethane-d4. Normally this would represent a bias high in the sample result, however samples 02 and 06 were non-detect for all target analytes so no further action was taken.

Sample 07 was reanalyzed out of hold for sample matrix interference. All acceptance criteria was met for surrogate recovery upon reanalysis.

Sample #	Analyte	Date	Result	Lower	Upper	Type
L16061142-02	1,2-Dichloroethane-d4	2016-06-25 01:21:00	122	70	120	Recovery
L16061142-06	1,2-Dichloroethane-d4	2016-06-25 02:19:00	122	70	120	Recovery
L16061142-07	1,2-Dichloroethane-d4	2016-06-25 02:48:00	121	70	120	Recovery

Other: The reanalysis of sample 07 was performed 23 days after collection for sample matrix interference with the surrogate. Reanalysis did not confirm sample matrix interference.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak. In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak. This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline. There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous. Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration

is not clearly covered by these four cases, then review and approval by the Managing Director or the QAO will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 115128
Approved By: Anthony Canter

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW20-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 00:52
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	8M413232
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	120	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	99.8	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW19-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 01:21
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	8M413233
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	122	70	120	*
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW19FD-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 01:50
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	8M413234
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	120	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	99.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW08-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 02:19
Collect Date:	06/20/2016 10:10	**Dilution:**	1	**File ID:**	8M413235
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	122	70	120	*
Toluene-d8	103	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18WW09-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG576236	**Analyst:**	TMB	**Run Date:**	07/13/2016 14:40
Collect Date:	06/20/2016 11:10	**Dilution:**	1	**File ID:**	11M13228
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.57	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	1.38		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	88.3	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	93.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW09-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 02:48
Collect Date:	06/20/2016 11:10	**Dilution:**	1	**File ID:**	8M413236
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	1.30	J	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	104	85	120	
4-Bromofluorobenzene	103	75	120	

J	The reported result is an estimated value.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/24/2016 23:25
Collect Date:	06/20/2016 00:01	**Dilution:**	1	**File ID:**	8M413229
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 051316

Analyst1: JDS Analyst2: NA

Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 23 / 0

Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 18 / 0

Method: 624 SOP: MSV10 Rev: 14

Maintenance Log ID:

Internal Standard: STD76110 Surrogate Standard: STD75929

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568769

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M11835	RINSE	NA	1	1		05/13/16 11:59
11M11836	WG568769-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 14:15
11M11837	WG568769-02 0.3ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 14:40
11M11838	WG568769-03 0.4ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:12
11M11839	WG568769-04 1.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:43
11M11840	WG568769-05 2.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:15
11M11841	WG568769-06 5.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:47
11M11842	WG568769-07 20ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:19
11M11843	WG568769-08 50ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:51
11M11844	WG568769-09 100ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:22
11M11845	WG568769-10 200ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:54
11M11846	WG568769-11 300ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 19:26
11M11847	RINSE	NA	1	1		05/13/16 19:58
11M11848	WG568769-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 20:30
11M11849	RINSE	NA	1	1		05/13/16 21:02
11M11850	RINSE	NA	1	1		05/13/16 21:34

Approved: May 23, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

Sarah Vandenberg

Microbac

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062416
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574190

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413218	WG574189-01 BFB 50ng 8260	NA	1	1	STD76496	06/24/16 18:19
8M413219	WG574189-01 BFB 50ng 8260	NA	1	1	STD76496	06/24/16 18:32
8M413220	WG574189-02 50ug/L CCV 8260	NA	1	1	STD76578	06/24/16 19:02
8M413221	WG574XXX-01 100ug/L CCV A9	NA	1	1	STD7XXXX	06/24/16 19:31
8M413222	WG574190-01 BLANK 8260	NA	1	1		06/24/16 20:03
8M413223	WG574190-02 20ug/L LCS 8260	NA	1	1	STD76744	06/24/16 20:32
8M413224	L16060978-03 100X B 826-SPE D1	NA	1	100		06/24/16 21:01
8M413225	L16060974-10 TB A 826-SPE	<2	1	1		06/24/16 21:30
8M413226	L16060986-45 TB A 826-SPE	<2	1	1		06/24/16 21:58
8M413227	L16060986-46 TB A 826-SPE	<2	1	1		06/24/16 22:27
8M413228	L16060986-47 TB A 826-SPE	<2	1	1		06/24/16 22:56
8M413229	L16061142-08 TB A 826-LOW	<2	1	1		06/24/16 23:25
8M413230	L16060974-07 A 826-SPE	<2	1	1		06/24/16 23:54
8M413231	L16060974-08 A 826-SPE	<2	1	1		06/25/16 00:23
8M413232	L16061142-01 A 826-LOW	<2	1	1		06/25/16 00:52
8M413233	L16061142-02 A 826-LOW	<2	1	1		06/25/16 01:21
8M413234	L16061142-04 A 826-LOW	<2	1	1		06/25/16 01:50
8M413235	L16061142-06 A 826-LOW	<2	1	1		06/25/16 02:19
8M413236	L16061142-07 A 826-LOW	<2	1	1		06/25/16 02:48
8M413237	L16060986-23 REF A 826-SPE	NA	1	1		06/25/16 03:17
8M413238	L16060986-35 MS A 826-SPE	NA	1	1	STD76744	06/25/16 03:46
8M413239	L16060986-37 MSD A 826-SPE	NA	1	1	STD76744	06/25/16 04:15
8M413240	L16060986-15 5X A 826-SPE	<2	1	5		06/25/16 04:44
8M413241	L16061055-04 100X A 826-SPE	<2	1	100		06/25/16 05:13
8M413242	L16061055-07 10X A 826-SPE	<2	1	10		06/25/16 05:42
8M413243	L16061096-01 A 826-SPE	<2	1	1		06/25/16 06:11
8M413244	CCV	NA	1	1		06/25/16 06:40
8M413245	RINSE	NA	1	1		06/25/16 07:09
8M413246	RINSE	NA	1	1		06/25/16 07:38

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			

Approved: June 29, 2016

Sarah Vandenberg

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062416
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574190

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 8M413218				
	Tune failed, DNR.			
4				
File ID: 8M413221				
	Not needed, DNR.			
7				
File ID: 8M413224				
	Could not read the pH due to dark sample matrix.			
8	X	1	Carry-over contamination	
File ID: 8M413225				
	DNR.			
19	X	1	Surrogate standard failure	
File ID: 8M413236				
24	X	1000	Over Calibration Range	BEN, TOL
File ID: 8M413241				
25	X	100	Over Calibration Range	BEN, CB
File ID: 8M413242				
26	X	1	Carry-over contamination	
File ID: 8M413243				
	DNR.			

Approved: June 29, 2016

Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 071316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76881 Surrogate Standard: STD76782
CCV: STD76892 LCS: STD77015 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG576236

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M13221	RINSE	NA	1	1		07/13/16 08:58
11M13222	WG576234-01 50ng BFB STD 8260	NA	1	1	STD77013	07/13/16 11:45
11M13223	WG576234-01 50ng BFB STD 8260	NA	1	1	STD77013	07/13/16 11:57
11M13224	WG576234-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/13/16 12:30
11M13225	WG576234-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/13/16 13:04
11M13226	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76943	07/13/16 13:36
11M13227	WG576236-01 VBLK0713 BLANK STD 826	NA	1	1		07/13/16 14:08
11M13228	L16061142-07 B 826-LOW	<2	1	1		07/13/16 14:40
11M13229	WG576236-02 20ug/L LCS STD 8260	NA	1	1	STD77015	07/13/16 15:12
11M13230	WG576236-03 20ug/L LCS2 STD 8260	NA	1	1	STD77015	07/13/16 15:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 11M13222				
			Tune failed, DNR.	
4				
File ID: 11M13224				
			Ketones were low, DNR.	
6				
File ID: 11M13226				
			Not needed, DNR.	

Approved: July 13, 2016

Page: 1

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75133
Analytical Workgroups: WG568769

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-MAY-2016

Secondary Reviewer:
23-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-23-2016 15:39:32

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 76006
Analytical Workgroups: WG574190

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-JUN-2016
Tiffany Bailey

Secondary Reviewer:
29-JUN-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 15:06:09

Microbac Laboratories Inc.

Data Checklist

Date: 13-JUL-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 76296
Analytical Workgroups: WG576236

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	ADC
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
13-JUL-2016
Tiffany Bailey

Secondary Reviewer:
13-JUL-2016
Cathy Cater

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-13-2016 17:15:33

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG574190

Login Number: L16061142

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW20-062016	01	06/20/16					06/25/2016	4.7	14		06/25/16	4.7	14	
18WW19-062016	02	06/20/16					06/25/2016	4.7	14		06/25/16	4.7	14	
18WW19FD-062016	04	06/20/16					06/25/2016	4.7	14		06/25/16	4.7	14	
18WW08-062016	06	06/20/16					06/25/2016	4.7	14		06/25/16	4.7	14	
18WW09-062016	07	06/20/16					06/25/2016	4.7	14		06/25/16	4.7	14	
TRIP BLANK	08	06/20/16					06/24/2016	5	14		06/24/16	5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4831226
Report generated 07/13/2016 17:10

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG576236

Login Number: L16061142

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW09-062016	07	06/20/16					07/13/2016	23.1	14	*	07/13/16	23.1	14	*

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4831226
Report generated 07/13/2016 17:10

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061142
Instrument Id: HPMS8
Workgroup (AAB#): WG574190

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061142-01	1.00	01	120	113	99.8	104
L16061142-02	1.00	01	122	114	101	101
L16061142-04	1.00	01	120	113	99.9	103
L16061142-06	1.00	01	122	113	101	103
L16061142-07	1.00	01	121	113	103	104
L16061142-08	1.00	01	118	113	100	103
WG574190-01	1.00	01	115	113	101	102
WG574190-02	1.00	01	119	110	101	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4831232
Report generated: 07/13/2016 17:11

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061142
Instrument Id: HPMS11
Workgroup (AAB#): WG576236

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061142-07	1.00	02	88.3	102	93.9	98.3
WG576236-01	1.00	01	83.6	96.6	92.2	96.3
WG576236-02	1.00	01	88.9	102	90.2	95.9
WG576236-03	1.00	01	85.5	100	92.6	96.4

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4831232
Report generated: 07/13/2016 17:11

METHOD BLANK SUMMARY

Login Number: L16061142
Blank File ID: 11M13227
Prep Date: 07/13/16 14:08
Analyzed Date: 07/13/16 14:08
Analyst: TMB

Work Group: WG576236
Blank Sample ID: WG576236-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
18WW09-062016	L16061142-07	11M13228	07/13/16 14:40	02
LCS	WG576236-02	11M13229	07/13/16 15:12	01
LCS2	WG576236-03	11M13230	07/13/16 15:44	01

Report Name: BLANK_SUMMARY
PDF File ID: 4853003
Report generated 07/13/2016 17:10

METHOD BLANK SUMMARY

Login Number: L16061142
Blank File ID: 8M413222
Prep Date: 06/24/16 20:03
Analyzed Date: 06/24/16 20:03
Analyst: FJB

Work Group: WG574190
Blank Sample ID: WG574190-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574190-02	8M413223	06/24/16 20:32	01
TRIP BLANK	L16061142-08	8M413229	06/24/16 23:25	01
18WW20-062016	L16061142-01	8M413232	06/25/16 00:52	01
18WW19-062016	L16061142-02	8M413233	06/25/16 01:21	01
18WW19FD-062016	L16061142-04	8M413234	06/25/16 01:50	01
18WW08-062016	L16061142-06	8M413235	06/25/16 02:19	01
18WW09-062016	L16061142-07	8M413236	06/25/16 02:48	01

Report Name: BLANK_SUMMARY
PDF File ID: 4853003
Report generated 07/13/2016 17:10

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 07/13/16 14:08 Sample ID: WG576236-01
Instrument ID: HPMS11 Run Date: 07/13/16 14:08 Prep Method: 5030B/5030C/503
File ID: 11M13227 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG576236 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4831227
13-JUL-2016 17:10

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 07/13/16 14:08 Sample ID: WG576236-01
Instrument ID: HPMS11 Run Date: 07/13/16 14:08 Prep Method: 5030B/5030C/503
File ID: 11M13227 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG576236 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	96.6	85 - 115	PASS
1,2-Dichloroethane-d4	83.6	70 - 120	PASS
Toluene-d8	96.3	85 - 120	PASS
4-Bromofluorobenzene	92.2	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4831227
13-JUL-2016 17:10

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 06/24/16 20:03 Sample ID: WG574190-01
Instrument ID: HPMS8 Run Date: 06/24/16 20:03 Prep Method: 5030B/5030C/503
File ID: 8M413222 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG574190 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4831227
13-JUL-2016 17:10

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 06/24/16 20:03 Sample ID: WG574190-01
Instrument ID: HPMS8 Run Date: 06/24/16 20:03 Prep Method: 5030B/5030C/503
File ID: 8M413222 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG574190 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	113	85 - 115	PASS
1,2-Dichloroethane-d4	115	70 - 120	PASS
Toluene-d8	102	85 - 120	PASS
4-Bromofluorobenzene	101	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4831227
13-JUL-2016 17:10

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 | Run Date: 06/24/2016 | Sample ID: WG574190-02
Instrument ID: HPMS8 | Run Time: 20:32 | Prep Method: 5030B/5030C/503
File ID: 8M413223 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG574190 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	22.5	113	40 - 140	
Benzene	20.0	22.9	115	80 - 120	
Bromobenzene	20.0	20.9	104	75 - 125	
Bromochloromethane	20.0	23.1	115	65 - 130	
Bromodichloromethane	20.0	24.7	123	75 - 120	*
Bromoform	20.0	20.8	104	70 - 130	
Bromomethane	20.0	16.9	84.6	30 - 145	
2-Butanone	20.0	20.2	101	30 - 150	
n-Butylbenzene	20.0	20.1	101	70 - 135	
sec-Butylbenzene	20.0	21.2	106	70 - 125	
tert-Butylbenzene	20.0	21.7	108	70 - 130	
Carbon disulfide	20.0	21.0	105	35 - 160	
Carbon tetrachloride	20.0	25.6	128	65 - 140	
Chlorobenzene	20.0	21.4	107	80 - 120	
Chlorodibromomethane	20.0	21.8	109	60 - 135	
Chloroethane	20.0	23.3	117	60 - 135	
Chloroform	20.0	23.9	119	65 - 135	
Chloromethane	20.0	22.6	113	40 - 125	
2-Chlorotoluene	20.0	21.9	109	75 - 125	
4-Chlorotoluene	20.0	20.6	103	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.1	95.3	50 - 130	
1,2-Dibromoethane	20.0	20.9	105	80 - 120	
Dibromomethane	20.0	22.1	110	75 - 125	
1,2-Dichlorobenzene	20.0	20.4	102	70 - 120	
1,3-Dichlorobenzene	20.0	21.3	106	75 - 125	
1,4-Dichlorobenzene	20.0	21.0	105	75 - 125	
Dichlorodifluoromethane	20.0	28.8	144	30 - 155	
1,1-Dichloroethane	20.0	22.4	112	70 - 135	
1,2-Dichloroethane	20.0	26.6	133	70 - 130	*
1,1-Dichloroethene	20.0	22.8	114	70 - 130	
cis-1,2-Dichloroethene	20.0	23.3	117	70 - 125	
trans-1,2-Dichloroethene	20.0	22.9	115	60 - 140	
1,2-Dichloropropane	20.0	22.0	110	75 - 125	
1,3-Dichloropropane	20.0	22.0	110	75 - 125	
2,2-Dichloropropane	20.0	25.5	127	70 - 135	
cis-1,3-Dichloropropene	20.0	25.5	127	70 - 130	
trans-1,3-Dichloropropene	20.0	22.1	111	55 - 140	
1,1-Dichloropropene	20.0	23.2	116	75 - 130	
Ethylbenzene	20.0	20.4	102	75 - 125	
2-Hexanone	20.0	18.0	90.1	55 - 130	
Hexachlorobutadiene	20.0	21.0	105	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4831228
Report generated: 06/29/2016 12:26

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 | Run Date: 06/24/2016 | Sample ID: WG574190-02
Instrument ID: HPMS8 | Run Time: 20:32 | Prep Method: 5030B/5030C/503
File ID: 8M413223 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG574190 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.4	112	75 - 125	
p-Isopropyltoluene	20.0	21.1	105	75 - 130	
4-Methyl-2-pentanone	20.0	21.0	105	60 - 135	
Methylene chloride	20.0	22.3	111	55 - 140	
Naphthalene	20.0	16.6	82.9	55 - 140	
n-Propylbenzene	20.0	21.6	108	70 - 130	
Styrene	20.0	21.8	109	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	22.2	111	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.2	91.0	65 - 130	
Tetrachloroethene	20.0	21.7	108	45 - 150	
Toluene	20.0	21.0	105	75 - 120	
1,2,3-Trichlorobenzene	20.0	18.3	91.4	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.8	98.9	65 - 135	
1,1,1-Trichloroethane	20.0	25.8	129	65 - 130	
1,1,2-Trichloroethane	20.0	19.8	98.9	75 - 125	
Trichloroethene	20.0	24.3	122	70 - 125	
Trichlorofluoromethane	20.0	25.1	126	60 - 145	
1,2,3-Trichloropropane	20.0	19.8	99.2	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.8	104	75 - 130	
1,3,5-Trimethylbenzene	20.0	21.7	108	75 - 130	
Vinyl chloride	20.0	26.7	134	50 - 145	
o-Xylene	20.0	21.9	110	80 - 120	
m-,p-Xylene	40.0	43.3	108	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	119	70 - 120	PASS
Toluene-d8	102	85 - 120	PASS
4-Bromofluorobenzene	101	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4831228
Report generated: 06/29/2016 12:26

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG576236 Units: ug/L
QC Key: DOD4 Lot #: STD77015

Sample ID: WG576236-02 LCS File ID: 11M13229 Run Date: 07/13/2016 15:12
Sample ID: WG576236-03 LCS2 File ID: 11M13230 Run Date: 07/13/2016 15:44

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.2	101	20.0	19.6	97.9	3.06	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.3	101	20.0	19.3	96.3	5.11	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	17.7	88.5	20.0	16.9	84.7	4.41	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.8	99.2	20.0	18.8	93.8	5.64	75 - 125	30	
1,1-Dichloroethane	20.0	19.4	97.0	20.0	18.8	93.9	3.25	70 - 135	30	
1,1-Dichloroethene	20.0	18.3	91.3	20.0	17.5	87.7	4.05	70 - 130	30	
1,1-Dichloropropene	20.0	20.0	99.9	20.0	19.0	95.2	4.86	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	18.1	90.3	20.0	17.4	86.9	3.88	55 - 140	30	
1,2,3-Trichloropropane	20.0	18.4	91.9	20.0	17.9	89.7	2.38	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	18.1	90.5	20.0	18.3	91.5	1.13	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.4	96.9	20.0	19.4	97.1	0.181	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	16.5	82.6	20.0	15.5	77.5	6.38	50 - 130	30	
1,2-Dibromoethane	20.0	20.0	99.9	20.0	18.5	92.7	7.50	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.0	99.8	20.0	19.3	96.6	3.26	70 - 120	30	
1,2-Dichloroethane	20.0	19.7	98.6	20.0	18.7	93.3	5.57	70 - 130	30	
1,2-Dichloropropane	20.0	21.4	107	20.0	20.3	101	5.32	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	19.3	96.3	20.0	19.2	96.0	0.320	75 - 130	30	
1,3-Dichlorobenzene	20.0	19.6	97.9	20.0	19.5	97.5	0.411	75 - 125	30	
1,3-Dichloropropane	20.0	20.5	102	20.0	19.3	96.5	5.77	75 - 125	30	
1,4-Dichlorobenzene	20.0	19.7	98.5	20.0	19.6	97.8	0.713	75 - 125	30	
2,2-Dichloropropane	20.0	19.3	96.6	20.0	20.3	102	5.04	70 - 135	30	
2-Butanone	20.0	17.4	87.0	20.0	16.0	80.0	8.34	30 - 150	30	
2-Chlorotoluene	20.0	19.4	97.2	20.0	19.6	97.8	0.571	75 - 125	30	
2-Hexanone	20.0	15.0	75.1	20.0	13.5	67.5	10.8	55 - 130	30	
4-Chlorotoluene	20.0	19.0	95.0	20.0	19.1	95.5	0.447	75 - 130	30	
4-Methyl-2-pentanone	20.0	18.7	93.4	20.0	17.3	86.7	7.50	60 - 135	30	
Acetone	20.0	16.5	82.3	20.0	15.8	79.2	3.80	40 - 140	30	
Benzene	20.0	20.5	102	20.0	20.1	101	1.74	80 - 120	30	
Bromobenzene	20.0	19.1	95.4	20.0	18.9	94.3	1.12	75 - 125	30	
Bromochloromethane	20.0	22.7	113	20.0	21.6	108	4.88	65 - 130	30	
Bromodichloromethane	20.0	20.4	102	20.0	19.5	97.5	4.48	75 - 120	30	
Bromoform	20.0	19.1	95.4	20.0	17.2	85.9	10.4	70 - 130	30	
Bromomethane	20.0	17.3	86.3	20.0	17.3	86.4	0.119	30 - 145	30	
Carbon disulfide	20.0	16.9	84.6	20.0	17.1	85.4	0.925	35 - 160	30	
Carbon tetrachloride	20.0	20.7	104	20.0	19.4	97.1	6.49	65 - 140	30	
Chlorobenzene	20.0	20.6	103	20.0	20.1	100	2.58	80 - 120	30	
Chloroethane	20.0	21.1	106	20.0	21.1	106	0.0130	60 - 135	30	
Chloroform	20.0	19.8	98.8	20.0	19.1	95.7	3.18	65 - 135	30	
Chloromethane	20.0	16.2	81.2	20.0	16.6	83.2	2.46	40 - 125	30	
cis-1,2-Dichloroethene	20.0	22.2	111	20.0	21.1	105	4.92	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4852937
Report generated: 07/13/2016 17:11

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG576236 Units: ug/L
QC Key: DOD4 Lot #: STD77015

Sample ID: WG576236-02 LCS File ID: 11M13229 Run Date: 07/13/2016 15:12
Sample ID: WG576236-03 LCS2 File ID: 11M13230 Run Date: 07/13/2016 15:44

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.4	112	20.0	21.9	109	2.59	70 - 130	30	
Chlorodibromomethane	20.0	20.2	101	20.0	18.9	94.7	6.61	60 - 135	30	
Dibromomethane	20.0	20.0	100	20.0	18.8	93.8	6.58	75 - 125	30	
Dichlorodifluoromethane	20.0	17.1	85.7	20.0	16.3	81.7	4.69	30 - 155	30	
Ethylbenzene	20.0	19.6	98.2	20.0	19.2	96.1	2.25	75 - 125	30	
Hexachlorobutadiene	20.0	15.8	79.1	20.0	15.6	77.8	1.66	50 - 140	30	
Isopropylbenzene	20.0	19.9	99.5	20.0	19.6	98.1	1.43	75 - 125	30	
m-,p-Xylene	40.0	40.2	100	40.0	39.9	99.7	0.831	75 - 130	30	
Methylene chloride	20.0	20.8	104	20.0	20.2	101	2.89	55 - 140	30	
n-Butylbenzene	20.0	17.3	86.4	20.0	17.4	87.1	0.817	70 - 135	30	
n-Propylbenzene	20.0	19.4	97.1	20.0	19.5	97.4	0.279	70 - 130	30	
Naphthalene	20.0	16.5	82.3	20.0	15.6	78.2	5.04	55 - 140	30	
o-Xylene	20.0	20.2	101	20.0	19.7	98.6	2.62	80 - 120	30	
p-Isopropyltoluene	20.0	18.7	93.7	20.0	18.7	93.7	0.0353	75 - 130	30	
sec-Butylbenzene	20.0	19.0	95.2	20.0	18.9	94.6	0.649	70 - 125	30	
Styrene	20.0	20.6	103	20.0	20.1	100	2.67	65 - 135	30	
tert-Butylbenzene	20.0	20.2	101	20.0	19.7	98.7	2.54	70 - 130	30	
Tetrachloroethene	20.0	20.0	100	20.0	19.2	96.2	4.00	45 - 150	30	
Toluene	20.0	19.9	99.6	20.0	19.4	96.9	2.67	75 - 120	30	
trans-1,2-Dichloroethene	20.0	21.0	105	20.0	20.3	101	3.40	60 - 140	30	
trans-1,3-Dichloropropene	20.0	18.8	94.0	20.0	17.9	89.4	5.02	55 - 140	30	
Trichloroethene	20.0	23.2	116	20.0	21.8	109	6.38	70 - 125	30	
Trichlorofluoromethane	20.0	19.5	97.6	20.0	18.6	93.0	4.85	60 - 145	30	
Vinyl chloride	20.0	20.6	103	20.0	19.5	97.6	5.43	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	88.9	85.5	70 - 120	PASS
Dibromofluoromethane	102	100	85 - 115	PASS
4-Bromofluorobenzene	90.2	92.6	75 - 120	PASS
Toluene-d8	95.9	96.4	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4852937
Report generated: 07/13/2016 17:11

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061142
Instrument: HPMS11
Analyst: JDS
Workgroup: WG568769

Tune ID: WG568769-01
Run Date: 05/13/2016
Run Time: 14:15
File ID: 11M11836
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.2	11638	PASS
75.0	95.0	30.0	60.0	50.2	24088	PASS
95.0	95.0	100	100	100	48016	PASS
96.0	95.0	5.00	9.00	6.26	3008	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.2	41402	PASS
175	174	5.00	9.00	8.26	3421	PASS
176	174	95.0	101	97.3	40288	PASS
177	176	5.00	9.00	6.92	2789	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568769-02	STD	01	05/13/2016 14:40	
WG568769-03	STD	01	05/13/2016 15:12	
WG568769-04	STD	01	05/13/2016 15:43	
WG568769-05	STD	01	05/13/2016 16:15	
WG568769-06	STD	01	05/13/2016 16:47	
WG568769-07	STD	01	05/13/2016 17:19	
WG568769-08	STD-CCV	01	05/13/2016 17:51	
WG568769-09	STD	01	05/13/2016 18:22	
WG568769-10	STD	01	05/13/2016 18:54	
WG568769-11	STD	01	05/13/2016 19:26	
WG568769-12	SSCV	01	05/13/2016 20:30	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4831230
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061142
Instrument: HPMS11
Analyst: TMB
Workgroup: WG576234

Tune ID: WG576234-01
Run Date: 07/13/2016
Run Time: 11:57
File ID: 11M13223
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.2	4243	PASS
75.0	95.0	30.0	60.0	45.7	10096	PASS
95.0	95.0	100	100	100	22097	PASS
96.0	95.0	5.00	9.00	7.01	1550	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	87.1	19238	PASS
175	174	5.00	9.00	7.51	1445	PASS
176	174	95.0	101	97.2	18706	PASS
177	176	5.00	9.00	6.98	1305	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG576234-02	CCV	01	07/13/2016 13:04	
WG576236-01	BLANK	01	07/13/2016 14:08	
L16061142-07	18WW09-062016	02	07/13/2016 14:40	
WG576236-02	LCS	01	07/13/2016 15:12	
WG576236-03	LCS2	01	07/13/2016 15:44	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4831230
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061142
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4831230
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061142
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4831230
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061142
Instrument: HPMS8
Analyst: FJB
Workgroup: WG574189

Tune ID: WG574189-01
Run Date: 06/24/2016
Run Time: 18:32
File ID: 8M413219
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.4	9741	PASS
75.0	95.0	30.0	60.0	54.9	29109	PASS
95.0	95.0	100	100	100	53042	PASS
96.0	95.0	5.00	9.00	5.99	3179	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	79.5	42146	PASS
175	174	5.00	9.00	7.65	3223	PASS
176	174	95.0	101	96.3	40586	PASS
177	176	5.00	9.00	6.45	2619	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574189-02	CCV	01	06/24/2016 19:02	
WG574190-01	BLANK	01	06/24/2016 20:03	
WG574190-02	LCS	01	06/24/2016 20:32	
L16061142-08	TRIP BLANK	01	06/24/2016 23:25	
L16061142-01	18WW20-062016	01	06/25/2016 00:52	
L16061142-02	18WW19-062016	01	06/25/2016 01:21	
L16061142-04	18WW19FD-062016	01	06/25/2016 01:50	
L16061142-06	18WW08-062016	01	06/25/2016 02:19	
L16061142-07	18WW09-062016	01	06/25/2016 02:48	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4831230
Report generated 07/13/2016 17:11

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Calibration: Sat May 14 18:45:57 2016
Curve: WG568769
Calibration Files

	Compound	0.3 11M11837.D	0.4 11M11838.D	1 11M11839.D	2 11M11840.D	5 11M11841.D	20 11M11842.D	50 11M11843.D	100 11M11844.D	200 11M11845.D	300 11M11846.D	Avg	%RSD	Linear	Quadratic
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.345	0.368	0.326	0.431	0.400	0.424	0.417	0.424	0.392	10.308		
P	Chloromethane			0.348	0.363	0.289	0.310	0.276	0.296	0.305	0.324	0.314	9.474		
C	Vinyl Chloride		0.275	0.241	0.249	0.244	0.268	0.250	0.271	0.271	0.276	0.261	5.458		
T	1,3-Butadiene					0.242	0.284	0.269	0.264	0.256	0.240	0.259	6.530		
T	Bromomethane			0.167	0.174	0.164	0.180	0.165	0.182	0.194	0.206	0.179	8.292		
T	Chloroethane			0.164	0.165	0.151	0.174	0.161	0.171	0.173	0.181	0.167	5.524		
T	Trichlorofluoromethane		0.514	0.523	0.537	0.496	0.552	0.498	0.524	0.514	0.514	0.519	3.376		
T	Diethyl ether			0.189	0.191	0.195	0.196	0.188	0.193		0.192	0.192	1.552		
T	Isoprene					0.299	0.331	0.317	0.323	0.325	0.325	0.320	3.522		
T	Acrolein			0.013	0.022	0.024	0.024	0.024	0.025		0.027	0.023	19.436	0.999	
T	1,1,2-Trichloro-1,2,2-Trifluor			0.261	0.245	0.234	0.268	0.245	0.252	0.254	0.257	0.252	4.225		
T	Acetone					0.063	0.067	0.058	0.057	0.057	0.054	0.059	7.931		
C	1,1-Dichloroethene		0.459	0.452	0.460	0.429	0.492	0.441	0.464	0.461	0.461	0.458	3.810		
T	Tert-Butyl Alcohol			0.014	0.015	0.017	0.018	0.017	0.017		0.017	0.016	9.673		
T	Dimethyl Sulfide					0.169	0.185	0.186	0.185	0.188	0.184	0.183	3.765		
T	Iodomethane				0.043	0.072	0.164	0.206	0.217	0.219	0.208	0.162	45.603		0.999
T	Methyl acetate				0.182	0.317	0.215	0.178	0.176	0.169	0.168	0.201	26.745		1.000
T	Methylene Chloride			0.239	0.256	0.230	0.243	0.224	0.232	0.234	0.238	0.237	4.076		
T	Carbon Disulfide			0.737	0.762	0.714	0.798	0.783	0.783	0.782	0.770	0.766	3.624		
T	Acrylonitrile			0.072	0.069	0.075	0.085	0.081	0.085		0.090	0.080	9.576		
T	Methyl Tert Butyl Ether			0.568	0.546	0.564	0.650	0.585	0.606	0.612	0.595	0.591	5.543		
T	trans-1,2-Dichloroethene		0.288	0.230	0.264	0.229	0.263	0.242	0.251	0.254	0.260	0.253	7.263		
T	n-Hexane				0.424	0.377	0.450	0.431	0.426	0.424	0.422	0.422	5.186		
T	Diisopropyl ether			1.034	1.075	1.083	1.055	1.046	1.062		1.015	1.053	2.218		
T	Vinyl Acetate					0.235	0.391	0.393	0.395	0.430	0.431	0.379	19.260	0.999	
P	1,1-Dichloroethane		0.463	0.517	0.527	0.505	0.535	0.495	0.513	0.511	0.508	0.508	4.023		
T	Ethyl-Tert-Butyl ether			0.815	0.854	0.881	0.876	0.855	0.873		0.844	0.857	2.667		
T	2-Butanone					0.079	0.097	0.087	0.092	0.092	0.091	0.090	6.720		
T	Propionitrile			0.023	0.025	0.026	0.029	0.027	0.027		0.027	0.026	7.381		
T	2,2-Dichloropropane		0.325	0.372	0.435	0.395	0.406	0.386	0.422	0.418	0.419	0.398	8.479		
T	cis-1,2-Dichloroethene		0.276	0.266	0.289	0.269	0.294	0.271	0.280	0.284	0.285	0.279	3.456		
C	Chloroform	0.587	0.483	0.491	0.514	0.480	0.509	0.470	0.486	0.489	0.482	0.499	6.767		
T	1-Bromopropane			0.014	0.041	0.045	0.047	0.048	0.049	0.050	0.050	0.043	28.190	1.000	
T	Bromochloromethane		0.115	0.140	0.169	0.167	0.188	0.172	0.179	0.180	0.181	0.166	14.065		
T	Tetrahydrofuran			0.074	0.061	0.058	0.067	0.061	0.062		0.059	0.063	8.769		
S	Dibromofluoromethane				0.251	0.266	0.284	0.268	0.284	0.285	0.278	0.274	4.605		
T	1,1,1-Trichloroethane		0.475	0.478	0.508	0.471	0.515	0.477	0.502	0.499	0.495	0.491	3.293		
T	Cyclohexane		0.477	0.485	0.547	0.509	0.574	0.551	0.560	0.558	0.556	0.535	6.606		
T	1,1-Dichloropropene		0.342	0.350	0.346	0.332	0.370	0.339	0.358	0.359	0.362	0.351	3.562		
T	Carbon Tetrachloride		0.409	0.457	0.522	0.465	0.518	0.473	0.496	0.492	0.486	0.480	7.177		
T	Tert-Amyl-Methyl ether			0.565	0.596	0.603	0.611	0.588	0.605		0.6	0.59537	2.5818		
S	1,2-Dichloroethane-d4			0.315	0.304	0.32	0.326	0.303	0.319	0.31	0.298	0.31197	3.15125		
T	1,2-Dichloroethane		0.388	0.391	0.419	0.395	0.441	0.402	0.413	0.409	0.391	0.40536	4.2274		
T	Benzene		1.058	0.952	1.016	0.923	0.996	0.908	0.943	0.931	0.914	0.96002	5.38884		
T	Trichloroethene		0.308	0.317	0.329	0.306	0.322	0.294	0.313	0.309	0.311	0.31204	3.21019		
T	Methylcyclohexane		0.332	0.37	0.389	0.35	0.411	0.401	0.4	0.405	0.407	0.3851	7.28708		
C	1,2-Dichloropropane		0.259	0.262	0.273	0.254	0.276	0.257	0.268	0.27	0.273	0.26575	2.95636		
T	1,4-Dioxane				0.001	0.001	0.002	0.001	0.002		0.002	0.0014	19.4617	0.999	
T	Bromodichloromethane		0.346	0.346	0.373	0.362	0.4	0.369	0.387	0.389	0.385	0.37307	5.09783		
T	Dibromomethane		0.118	0.136	0.135	0.137	0.149	0.137	0.146	0.145	0.144	0.13848	6.69192		
T	2-Chloroethyl Vinyl Ether					0.112	0.138	0.128	0.136	0.138	0.135	0.13098	7.7176		
T	4-Methyl-2-Pentanone					0.06	0.08	0.073	0.076	0.077	0.077	0.07387	9.67651		
T	cis-1,3-Dichloropropene		0.326	0.338	0.358	0.357	0.406	0.379	0.395	0.401	0.399	0.37315	7.91395		
T	Dimethyl Disulfide					0.185	0.229	0.227	0.233	0.238	0.235	0.22454	8.74309		

I	Chlorobenzene-d5	ISTD												
S	Toluene-d8				1.101	1.093	1.115	1.056	1.103	1.092	1.044	1.08625	2.42896	
C	Toluene		1.309	1.253	1.287	1.269	1.347	1.249	1.287	1.241	1.149	1.2656	4.33323	
T	Ethyl Methacrylate			0.234	0.233	0.25	0.299	0.285	0.289	0.291	0.281	0.27024	9.93745	
T	trans-1,3-Dichloropropene			0.335	0.388	0.387	0.448	0.418	0.432	0.43	0.412	0.40623	8.82781	
T	1,1,2-Trichloroethane		0.222	0.201	0.243	0.21	0.246	0.221	0.228	0.227	0.221	0.22442	6.30977	
T	2-Hexanone					0.137	0.179	0.165	0.172	0.172	0.165	0.16482	8.91224	
T	1,3-Dichloropropane		0.337	0.338	0.351	0.355	0.396	0.361	0.374	0.373	0.358	0.36039	5.16222	
T	Tetrachloroethene		0.274	0.287	0.317	0.286	0.306	0.286	0.3	0.299	0.294	0.29431	4.41886	
T	Dibromochloromethane		0.283	0.297	0.336	0.33	0.378	0.354	0.372	0.372	0.359	0.3423	9.88235	
T	1,2-Dibromoethane		0.232	0.182	0.228	0.214	0.243	0.224	0.233	0.235	0.232	0.22485	7.92714	
T	1-Chlorohexane		0.37	0.399	0.414	0.391	0.442	0.429	0.44	0.438	0.432	0.41726	6.09034	
P	Chlorobenzene		0.927	0.917	0.998	0.932	0.976	0.909	0.93	0.902	0.853	0.92715	4.48215	
T	1,1,1,2-Tetrachloroethane		0.341	0.361	0.405	0.366	0.388	0.371	0.384	0.385	0.376	0.37515	4.87731	
C	Ethylbenzene		0.453	0.457	0.512	0.463	0.495	0.466	0.482	0.479	0.472	0.47542	3.94078	
T	m-,p-Xylene		0.619	0.583	0.605	0.564	0.604	0.568	0.579	0.559	0.522	0.57798	5.08853	
T	o-Xylene		0.539	0.549	0.574	0.539	0.6	0.561	0.574	0.57	0.557	0.56249	3.43829	
T	Styrene		0.865	0.848	0.897	0.918	1.018	0.955	0.985	0.959	0.917	0.92933	5.96246	
P	Bromoform			0.172	0.189	0.185	0.226	0.21	0.225	0.226	0.228	0.20747	10.9157	
T	Isopropylbenzene		1.515	1.456	1.567	1.46	1.592	1.493	1.534	1.449	1.323	1.48754	5.34769	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.288	0.357	0.369	0.371	0.441	0.396	0.412	0.428	0.442	0.38931	12.6902	
S	p-Bromofluorobenzene				0.772	0.784	0.794	0.716	0.767	0.789	0.773	0.77065	3.38935	
T	1,2,3-Trichloropropane			0.087	0.129	0.138	0.151	0.137	0.142	0.148	0.148	0.13515	15.3522	0.999
T	trans-1,4-Dichloro-2-Butene			0.105	0.117	0.124	0.177	0.178	0.184	0.192	0.193	0.15883	23.0996	0.999
T	n-Propylbenzene		2.87	2.8	3.077	2.949	3.134	2.886	2.979	2.836	2.526	2.89527	6.10377	
T	Bromobenzene	0.663	0.778	0.81	0.798	0.765	0.784	0.718	0.752	0.769	0.76	0.75973	5.57443	
T	1,3,5-Trimethylbenzene		2.338	2.056	2.263	2.172	2.357	2.166	2.252	2.223	2.059	2.20939	4.86261	
T	2-Chlorotoluene		2.158	2.096	2.122	2.033	2.128	1.936	2.002	1.954	1.82	2.0279	5.4704	
T	4-Chlorotoluene		1.782	1.755	1.937	1.808	1.916	1.763	1.832	1.838	1.717	1.8165	4.03452	
T	a-Methylstyrene			1	1.066	1.101	1.241	1.231	1.235	1.242	1.208	1.16555	8.18507	
T	tert-Butylbenzene		0.378	0.44	0.48	0.489	0.498	0.458	0.483	0.49	0.497	0.46809	8.31778	
T	1,2,4-Trimethylbenzene		2.159	2.195	2.274	2.295	2.472	2.234	2.309	2.244	2.067	2.24981	4.97706	
T	sec-Butylbenzene			2.593	2.734	2.647	2.87	2.634	2.723	2.617	2.404	2.65291	5.05975	
T	p-Isopropyltoluene			2.247	2.592	2.45	2.641	2.43	2.506	2.404	2.226	2.43674	6.05243	
T	1,3-Dichlorobenzene		1.487	1.488	1.538	1.46	1.53	1.398	1.451	1.446	1.406	1.46732	3.33475	
T	1,4-Dichlorobenzene	1.482	1.601	1.511	1.569	1.484	1.538	1.404	1.456	1.434	1.395	1.4873	4.59741	
T	n-Butylbenzene		2.048	2.099	2.295	2.049	2.32	2.134	2.224	2.136	2.021	2.14721	5.09289	
T	1,2-Dichlorobenzene	1.33	1.26	1.333	1.432	1.33	1.406	1.296	1.343	1.326	1.31	1.33665	3.71841	
T	1,2-Dibromo-3-Chloropropane				0.057	0.079	0.096	0.081	0.086	0.087	0.091	0.08248	15.3444	0.999
T	1,2,4-Trichlorobenzene		0.927	0.903	0.957	0.956	1.042	0.972	0.998	1.002	1.047	0.97808	4.96993	
T	Hexachlorobutadiene		0.393	0.381	0.451	0.418	0.447	0.415	0.441	0.442	0.49	0.43089	7.64497	
T	Naphthalene		1.885	1.633	1.765	1.712	2.026	1.824	1.878	1.821	1.794	1.81543	6.15168	
T	1,2,3-Trichlorobenzene	0.854	0.957	0.865	0.918	0.834	0.946	0.86	0.889	0.912	0.943	0.89764	4.8559	

Tue May 17 13:57:02 2016

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061142 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.6	ug/L	0.475	4.80	20	
1,1-Dichloroethene	CCC	50.0	47.5	ug/L	0.435	4.90	20	
1,2-Dichloropropane	CCC	50.0	52.8	ug/L	0.281	5.60	20	
Ethylbenzene	CCC	50.0	52.4	ug/L	0.498	4.80	20	
Toluene	CCC	50.0	53.8	ug/L	1.36	7.50	20	
Vinyl Chloride	CCC	50.0	56.1	ug/L	0.292	12.2	20	
Bromoform	SPCC	50.0	49.8	ug/L	0.207	0.300	20	
Chlorobenzene	SPCC	50.0	53.3	ug/L	0.988	6.60	20	
Chloromethane	SPCC	50.0	55.1	ug/L	0.346	10.2	20	
1,1-Dichloroethane	SPCC	50.0	48.5	ug/L	0.493	3.00	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	54.9	ug/L	0.428	9.90	20	
Acetone		50.0	49.7	ug/L	0.0590	0.700	20	
Benzene		50.0	51.2	ug/L	0.983	2.40	20	
Bromobenzene		50.0	51.6	ug/L	0.785	3.30	20	
Bromochloromethane		50.0	53.9	ug/L	0.179	7.80	20	
Bromodichloromethane		50.0	49.5	ug/L	0.370	0.900	20	
Bromomethane		50.0	50.5	ug/L	0.181	1.00	20	
2-Butanone		50.0	50.3	ug/L	0.0904	0.700	20	
n-Butylbenzene		50.0	53.9	ug/L	2.31	7.80	20	
sec-Butylbenzene		50.0	55.9	ug/L	2.97	11.8	20	
tert-Butylbenzene		50.0	56.5	ug/L	0.529	13.1	20	
Carbon Disulfide		50.0	44.7	ug/L	0.685	10.6	20	
Carbon Tetrachloride		50.0	47.3	ug/L	0.454	5.30	20	
Dibromochloromethane		50.0	52.5	ug/L	0.360	5.10	20	
Chloroethane		50.0	58.9	ug/L	0.197	17.7	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.14	5.50	20	
4-Chlorotoluene		50.0	55.4	ug/L	2.01	10.8	20	
1,2-Dibromo-3-Chloropropane		50.0	48.1	ug/L	0.0844	3.80	20	
1,2-Dibromoethane		50.0	52.6	ug/L	0.237	5.30	20	
Dibromomethane		50.0	48.0	ug/L	0.133	3.90	20	
1,2-Dichlorobenzene		50.0	53.6	ug/L	1.43	7.20	20	
1,3-Dichlorobenzene		50.0	52.7	ug/L	1.55	5.40	20	
1,4-Dichlorobenzene		50.0	53.0	ug/L	1.58	6.10	20	
Dichlorodifluoromethane		50.0	56.6	ug/L	0.443	13.2	20	
1,2-Dichloroethane		50.0	47.9	ug/L	0.388	4.20	20	
cis-1,2-Dichloroethene		50.0	53.2	ug/L	0.297	6.30	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.264	4.30	20	
1,3-Dichloropropane		50.0	56.3	ug/L	0.406	12.6	20	
2,2-Dichloropropane		50.0	45.6	ug/L	0.362	8.90	20	
cis-1,3-Dichloropropene		50.0	57.6	ug/L	0.430	15.2	20	
trans-1,3-Dichloropropene		50.0	52.1	ug/L	0.423	4.20	20	
1,1-Dichloropropene		50.0	50.1	ug/L	0.352	0.200	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4831229
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061142 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.2	ug/L	0.172	4.40	20	
Hexachlorobutadiene		50.0	55.9	ug/L	0.482	11.8	20	
Isopropylbenzene		50.0	54.2	ug/L	1.61	8.50	20	
p-Isopropyltoluene		50.0	54.7	ug/L	2.67	9.40	20	
4-Methyl-2-Pentanone		50.0	52.6	ug/L	0.0777	5.10	20	
Methylene Chloride		50.0	52.0	ug/L	0.246	4.00	20	
Naphthalene		50.0	51.1	ug/L	1.86	2.30	20	
n-Propylbenzene		50.0	56.6	ug/L	3.28	13.2	20	
Styrene		50.0	55.0	ug/L	1.02	9.90	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/L	0.383	2.10	20	
Tetrachloroethene		50.0	52.2	ug/L	0.307	4.40	20	
1,2,3-Trichlorobenzene		50.0	54.1	ug/L	0.971	8.10	20	
1,2,4-Trichlorobenzene		50.0	55.4	ug/L	1.08	10.9	20	
1,1,1-Trichloroethane		50.0	48.1	ug/L	0.472	3.90	20	
1,1,2-Trichloroethane		50.0	52.8	ug/L	0.237	5.50	20	
Trichloroethene		50.0	52.3	ug/L	0.327	4.60	20	
Trichlorofluoromethane		50.0	47.5	ug/L	0.494	4.90	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.147	0.300	20	
1,2,4-Trimethylbenzene		50.0	53.8	ug/L	2.42	7.70	20	
1,3,5-Trimethylbenzene		50.0	55.1	ug/L	2.44	10.3	20	
o-Xylene		50.0	54.7	ug/L	0.615	9.40	20	
m-,p-Xylene		100	107	ug/L	0.620	7.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4831229
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061142 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4831229
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061142 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4831229
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/24/2016 Sample ID: WG574189-02
Instrument ID: HPMS8 Run Time: 19:02 Method: 8260B
File ID: 8M413220 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG574190 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	57.9	ug/L	0.631	15.8	20	
1,1-Dichloroethene	CCC	50.0	57.6	ug/L	0.465	15.1	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	51.2	ug/L	0.587	2.43	20	
Toluene	CCC	50.0	51.9	ug/L	1.61	3.90	20	
Vinyl Chloride	CCC	50.0	56.4	ug/L	0.327	12.8	20	
Bromoform	SPCC	50.0	52.6	ug/L	0.223	5.26	20	
Chlorobenzene	SPCC	50.0	51.8	ug/L	1.09	3.70	20	
Chloromethane	SPCC	50.0	46.7	ug/L	0.229	6.59	20	
1,1-Dichloroethane	SPCC	50.0	55.9	ug/L	0.516	11.8	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	41.4	ug/L	0.415	17.2	20	
Xylenes		150	157	ug/L	0.697	5.00	20	
Acetone		50.0	55.2	ug/L	0.0311	10.5	20	
Benzene		50.0	55.0	ug/L	1.13	10.0	20	
Bromobenzene		50.0	49.6	ug/L	0.795	0.899	20	
Bromochloromethane		50.0	53.9	ug/L	0.159	7.81	20	
Bromodichloromethane		50.0	58.2	ug/L	0.468	16.5	20	
Bromomethane		50.0	43.5	ug/L	0.152	13.1	20	
2-Butanone		50.0	46.7	ug/L	0.0386	6.66	20	
n-Butylbenzene		50.0	50.7	ug/L	2.85	1.46	20	
sec-Butylbenzene		50.0	51.1	ug/L	3.42	2.18	20	
tert-Butylbenzene		50.0	49.6	ug/L	0.552	0.720	20	
Carbon Disulfide		50.0	58.3	ug/L	0.986	16.6	20	
Carbon Tetrachloride		50.0	63.7	ug/L	0.586	27.5	20	*
Dibromochloromethane		50.0	51.6	ug/L	0.369	3.14	20	
Chloroethane		50.0	51.8	ug/L	0.166	3.64	20	
2-Chlorotoluene		50.0	50.6	ug/L	2.76	1.28	20	
4-Chlorotoluene		50.0	49.2	ug/L	2.42	1.54	20	
1,2-Dibromo-3-Chloropropane		50.0	44.2	ug/L	0.0890	11.6	20	
1,2-Dibromoethane		50.0	48.0	ug/L	0.234	4.08	20	
Dibromomethane		50.0	51.4	ug/L	0.139	2.86	20	
1,2-Dichlorobenzene		50.0	47.7	ug/L	1.31	4.67	20	
1,3-Dichlorobenzene		50.0	50.2	ug/L	1.55	0.331	20	
1,4-Dichlorobenzene		50.0	48.8	ug/L	1.52	2.32	20	
Dichlorodifluoromethane		50.0	53.8	ug/L	0.451	7.50	20	
1,2-Dichloroethane		50.0	59.9	ug/L	0.420	19.9	20	
cis-1,2-Dichloroethene		50.0	54.5	ug/L	0.313	9.01	20	
trans-1,2-Dichloroethene		50.0	55.8	ug/L	0.414	11.5	20	
1,3-Dichloropropane		50.0	47.6	ug/L	0.415	4.84	20	
2,2-Dichloropropane		50.0	63.6	ug/L	0.618	27.1	20	*
cis-1,3-Dichloropropene		50.0	55.6	ug/L	0.455	11.2	20	
trans-1,3-Dichloropropene		50.0	51.8	ug/L	0.539	3.56	20	

CCV - Modified 03/05/2008
PDF File ID: 4831231
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/24/2016 Sample ID: WG574189-02
Instrument ID: HPMS8 Run Time: 19:02 Method: 8260B
File ID: 8M413220 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG574190 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	58.3	ug/L	0.460	16.5	20	
2-Hexanone		50.0	40.4	ug/L	0.0416	19.1	20	
Hexachlorobutadiene		50.0	53.6	ug/L	0.514	7.20	20	
Isopropylbenzene		50.0	55.1	ug/L	1.92	10.2	20	
p-Isopropyltoluene		50.0	51.6	ug/L	2.93	3.15	20	
4-Methyl-2-Pentanone		50.0	45.1	ug/L	0.0362	9.78	20	
Methylene Chloride		50.0	52.0	ug/L	0.268	4.07	20	
Naphthalene		50.0	40.9	ug/L	1.25	18.2	20	
n-Propylbenzene		50.0	50.4	ug/L	3.93	0.877	20	
Styrene		50.0	53.1	ug/L	1.14	6.10	20	
1,1,1,2-Tetrachloroethane		50.0	53.2	ug/L	0.432	6.49	20	
Tetrachloroethene		50.0	55.3	ug/L	0.368	10.7	20	
1,2,3-Trichlorobenzene		50.0	42.6	ug/L	0.739	14.7	20	
1,2,4-Trichlorobenzene		50.0	46.7	ug/L	0.958	6.67	20	
1,1,1-Trichloroethane		50.0	63.1	ug/L	0.653	26.2	20	*
1,1,2-Trichloroethane		50.0	46.6	ug/L	0.228	6.78	20	
Trichloroethene		50.0	58.1	ug/L	0.318	16.2	20	
Trichlorofluoromethane		50.0	61.6	ug/L	0.665	23.1	20	*
1,2,3-Trichloropropane		50.0	44.5	ug/L	0.137	11.1	20	
1,2,4-Trimethylbenzene		50.0	51.3	ug/L	3.00	2.53	20	
1,3,5-Trimethylbenzene		50.0	51.9	ug/L	2.95	3.71	20	
o-Xylene		50.0	52.4	ug/L	0.689	4.89	20	
m-,p-Xylene		100	105	ug/L	0.706	5.05	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4831231
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 07/13/2016 Sample ID: WG576234-02
Instrument ID: HPMS11 Run Time: 13:04 Method: 8260B
File ID: 11M13225 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG576236 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.6	ug/L	0.495	0.837	20	
1,1-Dichloroethene	CCC	50.0	49.6	ug/L	0.454	0.871	20	
1,2-Dichloropropane	CCC	50.0	51.1	ug/L	0.271	2.14	20	
Ethylbenzene	CCC	50.0	51.5	ug/L	0.490	2.98	20	
Toluene	CCC	50.0	51.6	ug/L	1.30	3.10	20	
Vinyl Chloride	CCC	50.0	53.9	ug/L	0.281	7.88	20	
Bromoform	SPCC	50.0	47.3	ug/L	0.196	5.32	20	
Chlorobenzene	SPCC	50.0	51.5	ug/L	0.955	2.95	20	
Chloromethane	SPCC	50.0	53.9	ug/L	0.338	7.78	20	
1,1-Dichloroethane	SPCC	50.0	51.3	ug/L	0.522	2.68	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	43.7	ug/L	0.341	12.5	20	
Xylenes		150	154	ug/L	0.585	2.49	20	
Acetone		50.0	34.3	ug/L	0.0408	31.3	20	*
Benzene		50.0	53.2	ug/L	1.02	6.34	20	
Bromobenzene		50.0	50.2	ug/L	0.762	0.317	20	
Bromochloromethane		50.0	57.5	ug/L	0.191	14.9	20	
Bromodichloromethane		50.0	50.9	ug/L	0.380	1.82	20	
Bromomethane		50.0	52.1	ug/L	0.187	4.16	20	
2-Butanone		50.0	35.4	ug/L	0.0635	29.3	20	*
n-Butylbenzene		50.0	46.5	ug/L	2.00	6.92	20	
sec-Butylbenzene		50.0	48.7	ug/L	2.58	2.60	20	
tert-Butylbenzene		50.0	50.6	ug/L	0.474	1.28	20	
Carbon Disulfide		50.0	51.0	ug/L	0.782	2.03	20	
Carbon Tetrachloride		50.0	52.4	ug/L	0.502	4.76	20	
Dibromochloromethane		50.0	49.2	ug/L	0.337	1.61	20	
Chloroethane		50.0	54.2	ug/L	0.182	8.48	20	
2-Chlorotoluene		50.0	49.9	ug/L	2.03	0.126	20	
4-Chlorotoluene		50.0	47.6	ug/L	1.73	4.77	20	
1,2-Dibromo-3-Chloropropane		50.0	35.5	ug/L	0.0620	29.0	20	*
1,2-Dibromoethane		50.0	47.1	ug/L	0.212	5.87	20	
Dibromomethane		50.0	49.7	ug/L	0.138	0.626	20	
1,2-Dichlorobenzene		50.0	48.2	ug/L	1.29	3.51	20	
1,3-Dichlorobenzene		50.0	49.5	ug/L	1.45	0.933	20	
1,4-Dichlorobenzene		50.0	48.7	ug/L	1.45	2.59	20	
Dichlorodifluoromethane		50.0	53.4	ug/L	0.418	6.82	20	
1,2-Dichloroethane		50.0	45.0	ug/L	0.365	9.97	20	
cis-1,2-Dichloroethene		50.0	54.7	ug/L	0.305	9.32	20	
trans-1,2-Dichloroethene		50.0	54.2	ug/L	0.275	8.48	20	
1,3-Dichloropropane		50.0	46.4	ug/L	0.334	7.21	20	
2,2-Dichloropropane		50.0	54.6	ug/L	0.434	9.19	20	
cis-1,3-Dichloropropene		50.0	52.8	ug/L	0.394	5.52	20	
trans-1,3-Dichloropropene		50.0	46.7	ug/L	0.380	6.52	20	

CCV - Modified 03/05/2008
PDF File ID: 4831231
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 07/13/2016 Sample ID: WG576234-02
Instrument ID: HPMS11 Run Time: 13:04 Method: 8260B
File ID: 11M13225 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG576236 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.9	ug/L	0.371	5.73	20	
2-Hexanone		50.0	33.7	ug/L	0.111	32.6	20	*
Hexachlorobutadiene		50.0	40.3	ug/L	0.347	19.4	20	
Isopropylbenzene		50.0	51.3	ug/L	1.53	2.56	20	
p-Isopropyltoluene		50.0	49.0	ug/L	2.39	2.05	20	
4-Methyl-2-Pentanone		50.0	39.9	ug/L	0.0590	20.1	20	*
Methylene Chloride		50.0	52.2	ug/L	0.247	4.43	20	
Naphthalene		50.0	42.9	ug/L	1.56	14.1	20	
n-Propylbenzene		50.0	50.3	ug/L	2.91	0.627	20	
Styrene		50.0	52.5	ug/L	0.976	4.98	20	
1,1,1,2-Tetrachloroethane		50.0	50.7	ug/L	0.380	1.40	20	
Tetrachloroethene		50.0	53.2	ug/L	0.313	6.36	20	
1,2,3-Trichlorobenzene		50.0	43.8	ug/L	0.787	12.3	20	
1,2,4-Trichlorobenzene		50.0	47.0	ug/L	0.919	6.08	20	
1,1,1-Trichloroethane		50.0	50.9	ug/L	0.500	1.79	20	
1,1,2-Trichloroethane		50.0	47.1	ug/L	0.211	5.81	20	
Trichloroethene		50.0	55.7	ug/L	0.348	11.4	20	
Trichlorofluoromethane		50.0	50.0	ug/L	0.519	0.0632	20	
1,2,3-Trichloropropane		50.0	42.0	ug/L	0.122	16.1	20	
1,2,4-Trimethylbenzene		50.0	50.1	ug/L	2.26	0.269	20	
1,3,5-Trimethylbenzene		50.0	49.6	ug/L	2.19	0.888	20	
o-Xylene		50.0	51.4	ug/L	0.578	2.71	20	
m-,p-Xylene		100	102	ug/L	0.592	2.39	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4831231
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061142
Instrument ID: HPMS8
Workgroup (AAB#): WG574190

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16061142-01	1.00	01	280328	506258	638165
L16061142-02	1.00	01	280194	510630	647008
L16061142-04	1.00	01	282859	502865	639618
L16061142-06	1.00	01	281936	499951	637545
L16061142-07	1.00	01	274027	490669	626269
L16061142-08	1.00	01	287925	515232	653067
WG574190-01	1.00	01	292790	530947	663634
WG574190-02	1.00	01	297555	534450	690687

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4853004
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061142
Instrument ID: HPMS11
Workgroup (AAB#): WG576236

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16061142-07	1.00	02	249799	426121	475011
WG576236-01	1.00	01	256130	441422	488586
WG576236-02	1.00	01	275472	451735	490613
WG576236-03	1.00	01	271926	455887	498141

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4853004
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061142
Instrument ID: HPMS8
Workgroup (AAB#): WG574190

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16061142-01	1.00	01	17.6	14.57	10.71
L16061142-02	1.00	01	17.6	14.57	10.71
L16061142-04	1.00	01	17.6	14.57	10.71
L16061142-06	1.00	01	17.6	14.57	10.71
L16061142-07	1.00	01	17.6	14.57	10.71
L16061142-08	1.00	01	17.6	14.57	10.71
WG574190-01	1.00	01	17.6	14.57	10.71
WG574190-02	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4853005
Report generated: 07/13/2016 17:11

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061142
Instrument ID: HPMS11
Workgroup (AAB#): WG576236

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16061142-07	1.00	02	17.06	14.25	10.61
WG576236-01	1.00	01	17.06	14.25	10.61
WG576236-02	1.00	01	17.06	14.25	10.61
WG576236-03	1.00	01	17.06	14.25	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4853005
Report generated: 07/13/2016 17:11

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413232.D Vial: 14
Acq On : 25 Jun 2016 00:52 Operator: FJB
Sample : L16061142-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 25 01:14:43 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	638165	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	506258	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	280328	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	193689	28.2488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.00%		
43) 1,2-Dichloroethane-d4	10.30	65	219761	29.8916 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 119.56%		
58) Toluene-d8	12.68	98	685829	25.8850 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.56%		
80) p-Bromofluorobenzene	16.08	95	289741	24.9614 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.84%		

Target Compounds					Qvalue
13) Acetone	6.25	43	694	0.9666 ug/L #	50

(#) = qualifier out of range (m) = manual integration
8M413232.D 8260WT.M Mon Jun 27 12:43:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413232.D Vial: 14
Acq On : 25 Jun 2016 00:52 Operator: FJB
Sample : L16061142-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:23 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

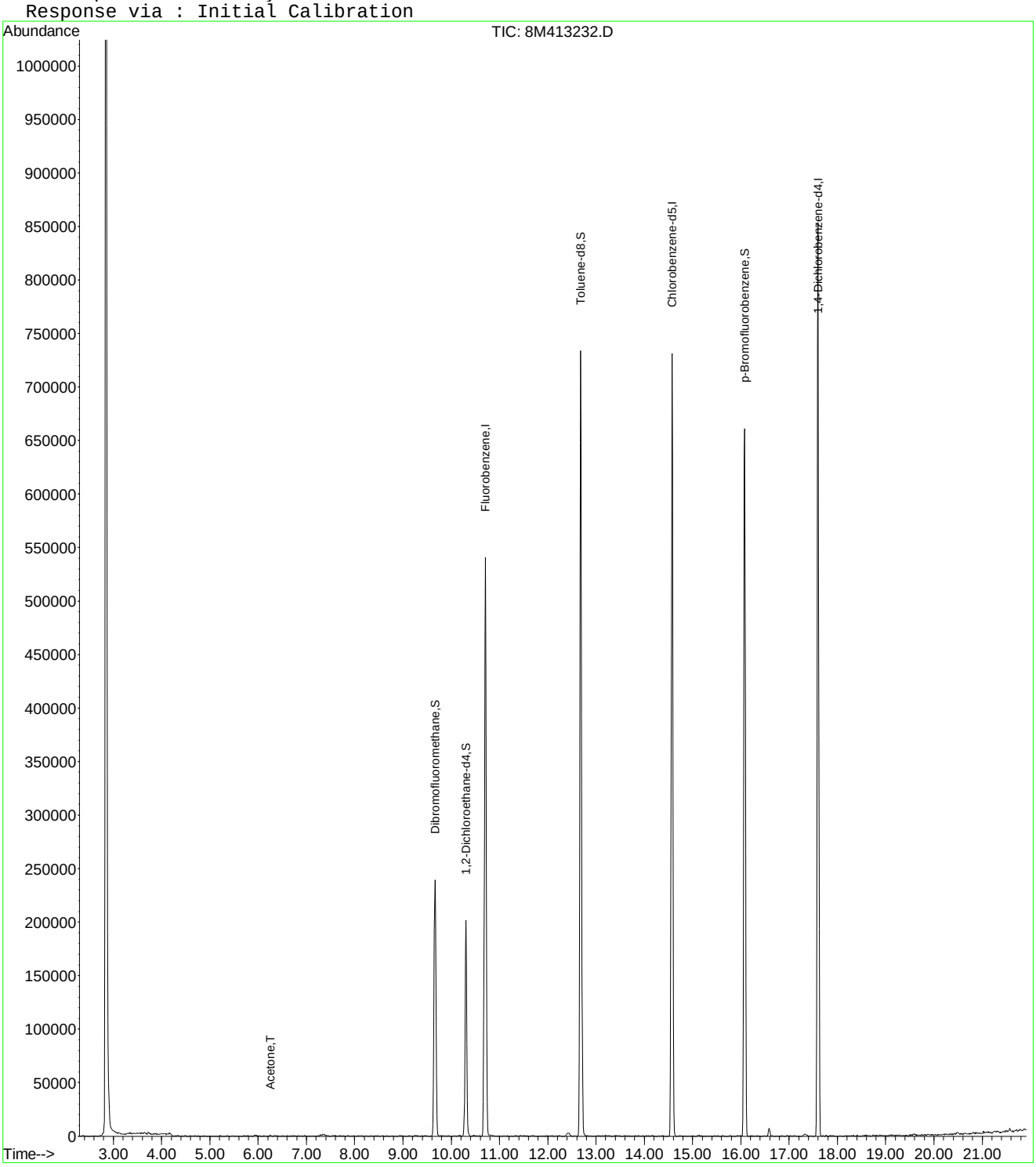

8M413232.D 8260WT.M Mon Jun 27 12:43:45 2016 Page 2

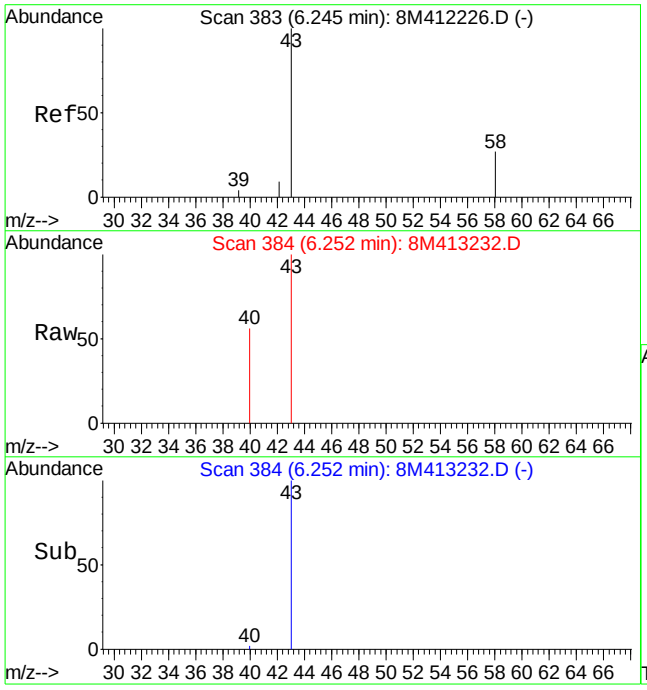

#13
Acetone
Concen: 0.97 ug/L
RT: 6.25 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M413232.D
Acq: 25 Jun 2016 00:52

Tgt Ion: 43 Resp: 694

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

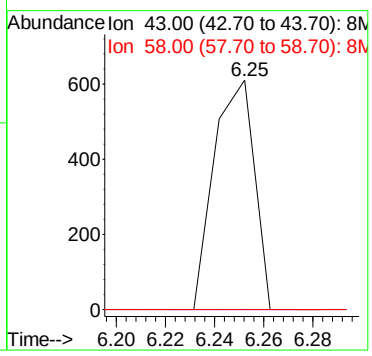

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413233.D Vial: 15
Acq On : 25 Jun 2016 1:21 Operator: FJB
Sample : L16061142-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 25 01:43:47 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	647008	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	510630	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	280194	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	198779	28.5949 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 114.36%		
43) 1,2-Dichloroethane-d4	10.30	65	227066	30.4631 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 121.84%#		
58) Toluene-d8	12.68	98	673911	25.2174 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.88%		
80) p-Bromofluorobenzene	16.08	95	293915	25.3331 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.32%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M413233.D 8260WT.M Mon Jun 27 12:43:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413233.D Vial: 15
Acq On : 25 Jun 2016 1:21 Operator: FJB
Sample : L16061142-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:23 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

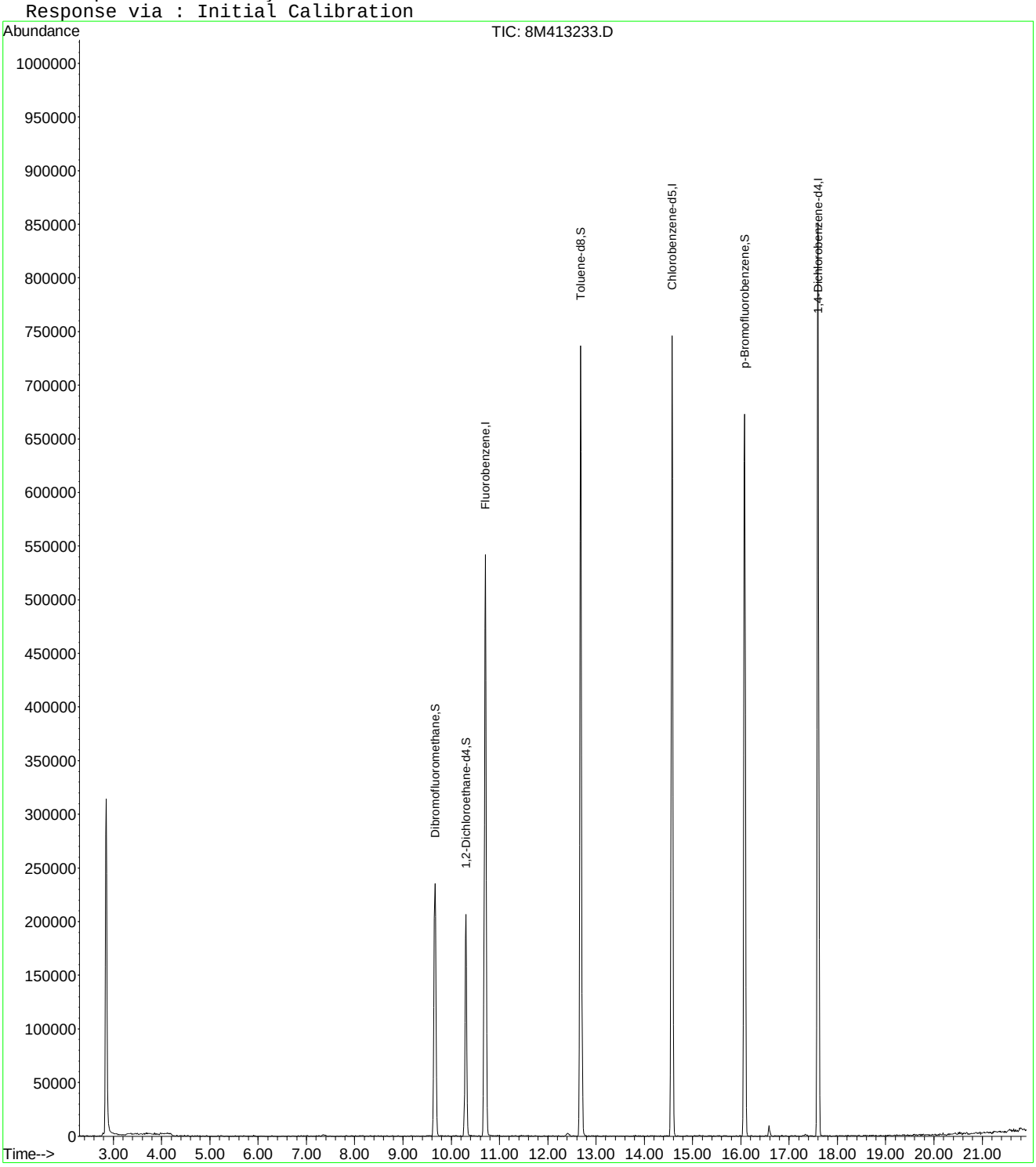

8M413233.D 8260WT.M Mon Jun 27 12:43:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413234.D Vial: 16
Acq On : 25 Jun 2016 1:50 Operator: FJB
Sample : L16061142-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 25 02:12:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	639618	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	502865	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	282859	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	193956	28.2235 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.88%		
43) 1,2-Dichloroethane-d4	10.30	65	221400	30.0462 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 120.20%#		
58) Toluene-d8	12.68	98	674585	25.6324 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.52%		
80) p-Bromofluorobenzene	16.07	95	292444	24.9688 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.88%		

Target Compounds					Qvalue
13) Acetone	6.27	43	977	1.3576 ug/L #	50

(#) = qualifier out of range (m) = manual integration
8M413234.D 8260WT.M Mon Jun 27 12:43:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413234.D Vial: 16
Acq On : 25 Jun 2016 1:50 Operator: FJB
Sample : L16061142-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:23 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

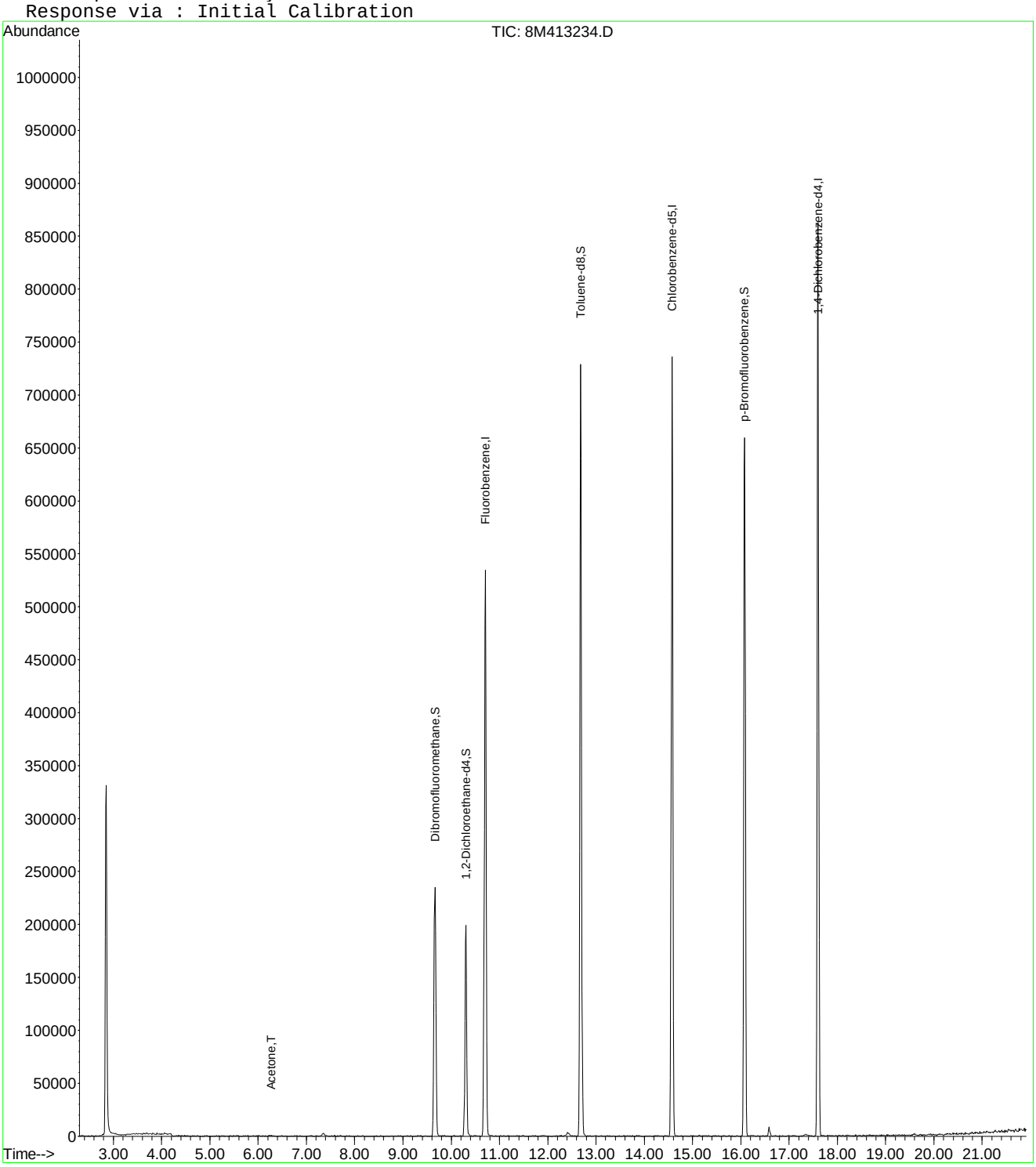

8M413234.D 8260WT.M Mon Jun 27 12:43:53 2016 Page 2

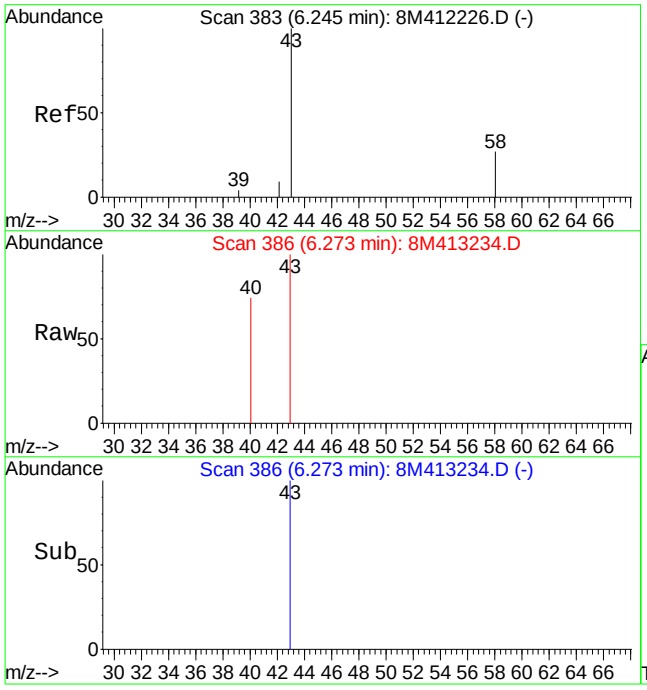

#13
Acetone
Concen: 1.36 ug/L
RT: 6.27 min Scan# 386
Delta R.T. 0.03 min
Lab File: 8M413234.D
Acq: 25 Jun 2016 1:50

Tgt Ion: 43 Resp: 977

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

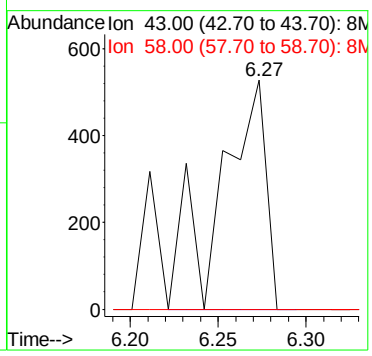

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413235.D Vial: 17
Acq On : 25 Jun 2016 2:19 Operator: FJB
Sample : L16061142-06 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 25 02:41:40 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	637545	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	499951	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	281936	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	193873	28.3031 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.20%		
43) 1,2-Dichloroethane-d4	10.30	65	223330	30.4066 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 121.64%#		
58) Toluene-d8	12.68	98	672325	25.6955 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.80%		
80) p-Bromofluorobenzene	16.07	95	293918	25.1768 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.72%		

Target Compounds					Qvalue
13) Acetone	6.23	43	1586	2.2111 ug/L #	50

(#) = qualifier out of range (m) = manual integration
8M413235.D 8260WT.M Mon Jun 27 12:43:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413235.D Vial: 17
Acq On : 25 Jun 2016 2:19 Operator: FJB
Sample : L16061142-06 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:24 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

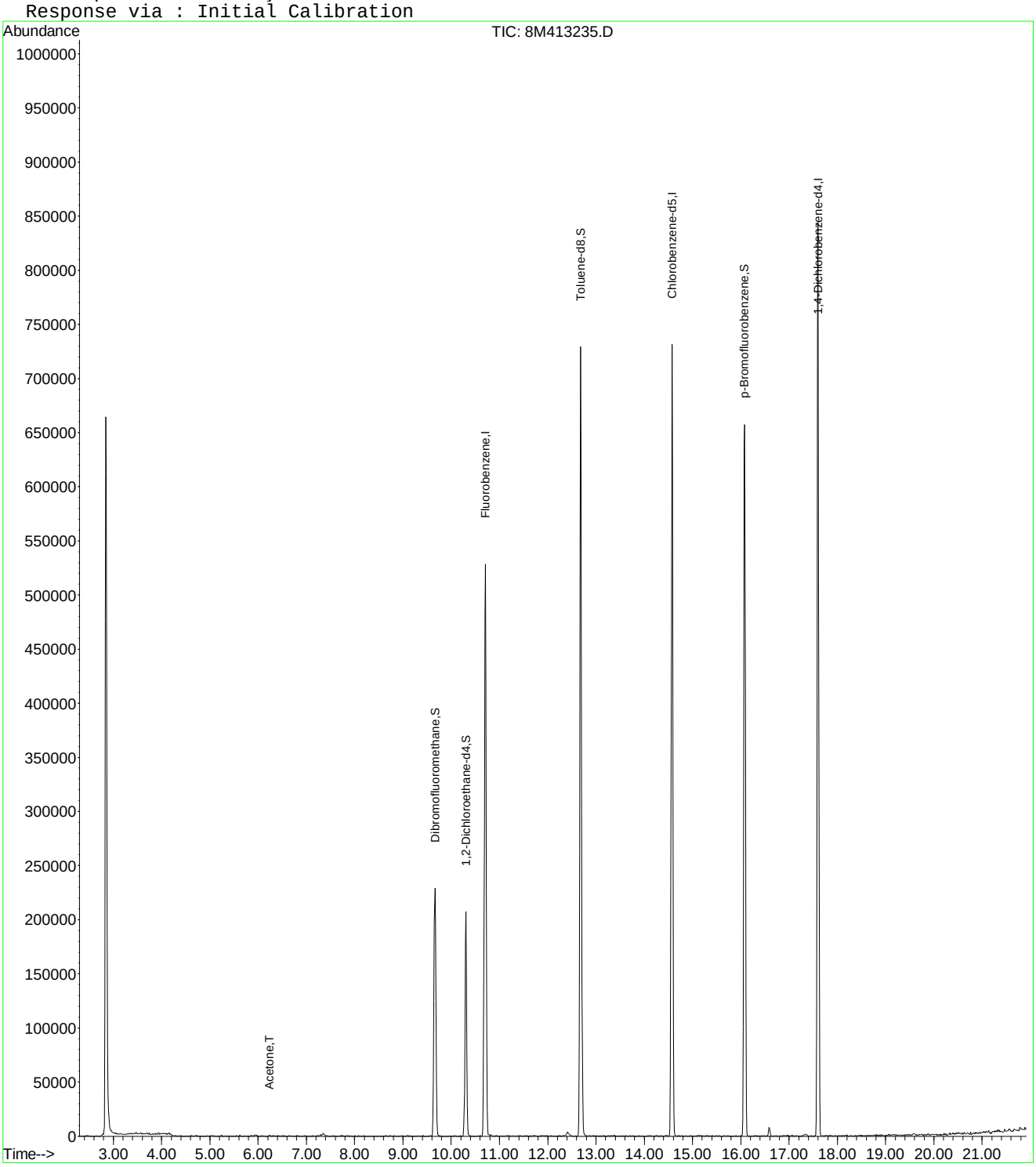

8M413235.D 8260WT.M Mon Jun 27 12:43:58 2016 Page 2

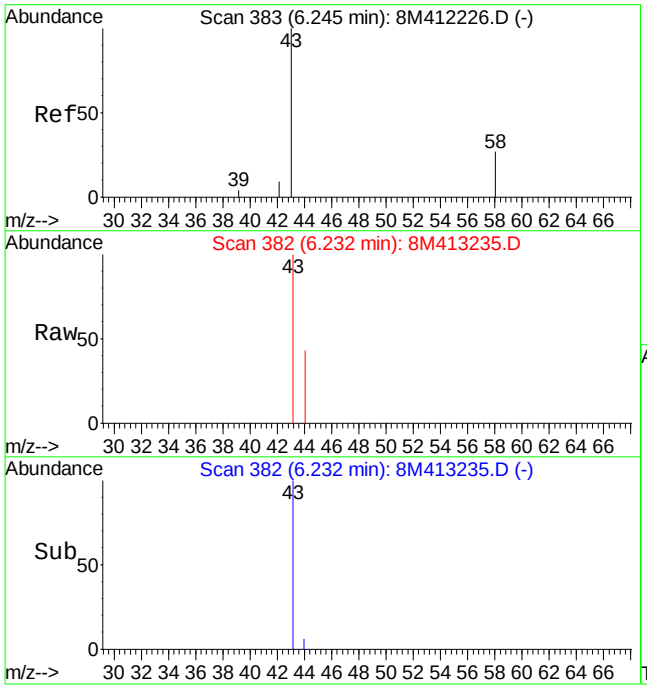

#13
Acetone
Concen: 2.21 ug/L
RT: 6.23 min Scan# 382
Delta R.T. -0.01 min
Lab File: 8M413235.D
Acq: 25 Jun 2016 2:19

Tgt Ion: 43 Resp: 1586

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

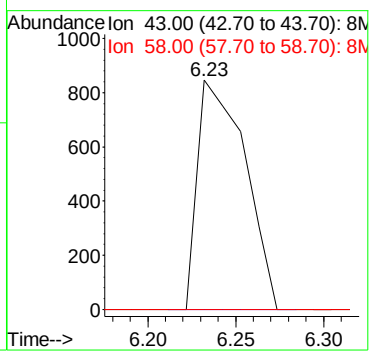

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413236.D Vial: 18
Acq On : 25 Jun 2016 2:48 Operator: FJB
Sample : L16061142-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 25 03:10:46 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	626269	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	490669	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	274027	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	190223	28.2703 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.08%		
43) 1,2-Dichloroethane-d4	10.30	65	218601	30.2987 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 121.20%#		
58) Toluene-d8	12.68	98	665855	25.9296 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.72%		
80) p-Bromofluorobenzene	16.07	95	292289	25.7599 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.04%		

Target Compounds					Qvalue
13) Acetone	6.24	43	1604	2.2764 ug/L #	50
59) Toluene	12.78	91	39449	1.2950 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413236.D 8260WT.M Mon Jun 27 12:44:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413236.D Vial: 18
Acq On : 25 Jun 2016 2:48 Operator: FJB
Sample : L16061142-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:24 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

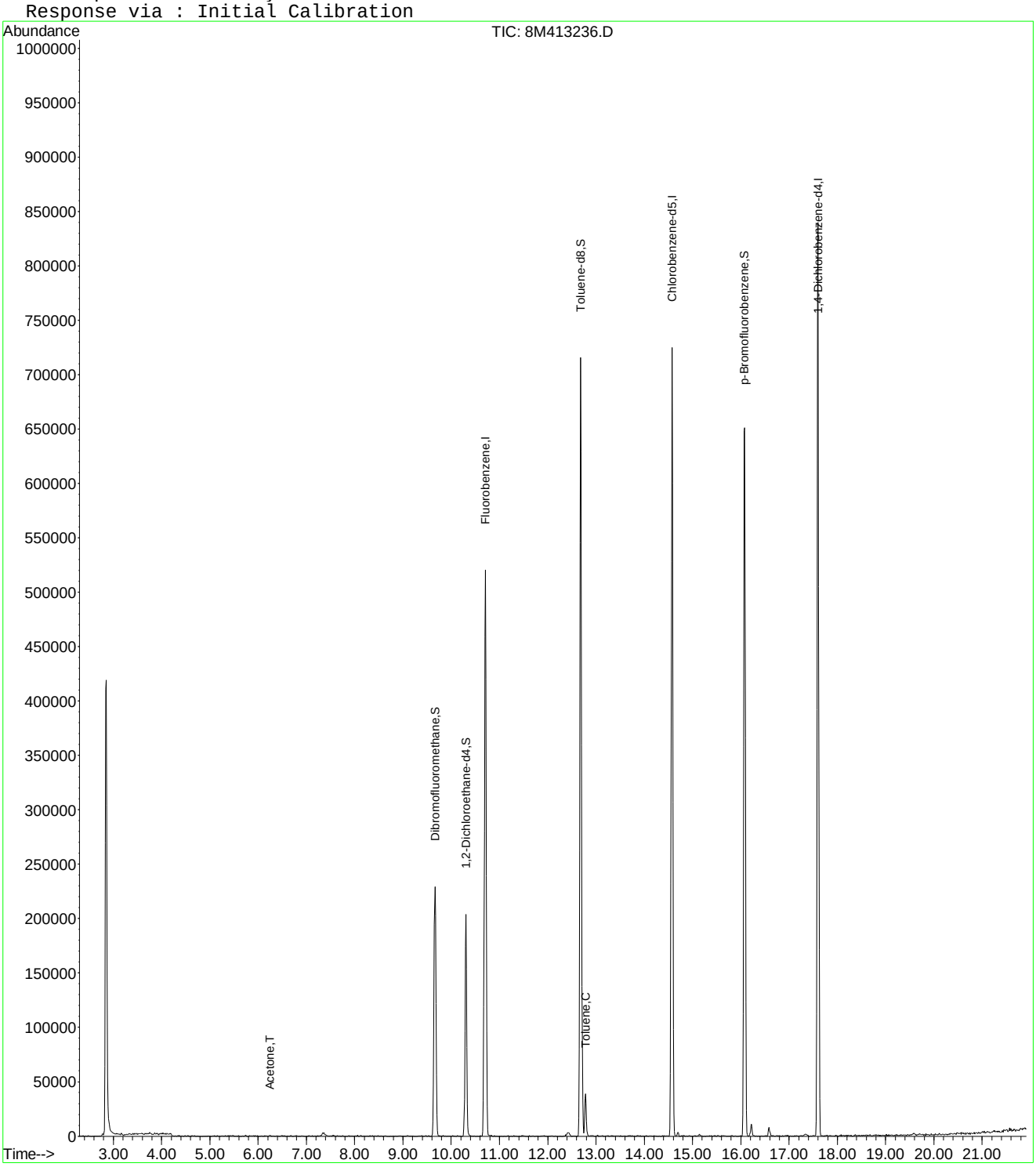

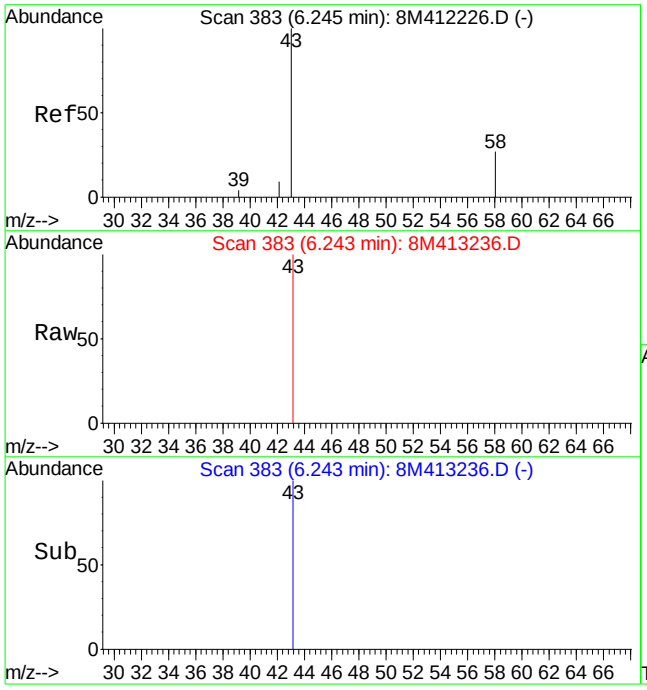

#13
Acetone
Concen: 2.28 ug/L
RT: 6.24 min Scan# 383
Delta R.T. -0.00 min
Lab File: 8M413236.D
Acq: 25 Jun 2016 2:48

Tgt Ion: 43 Resp: 1604

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

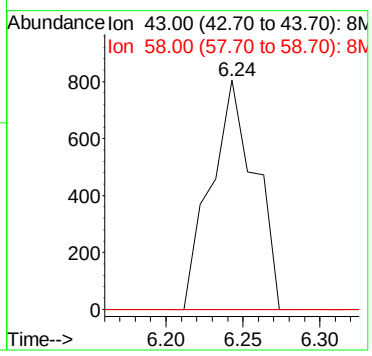

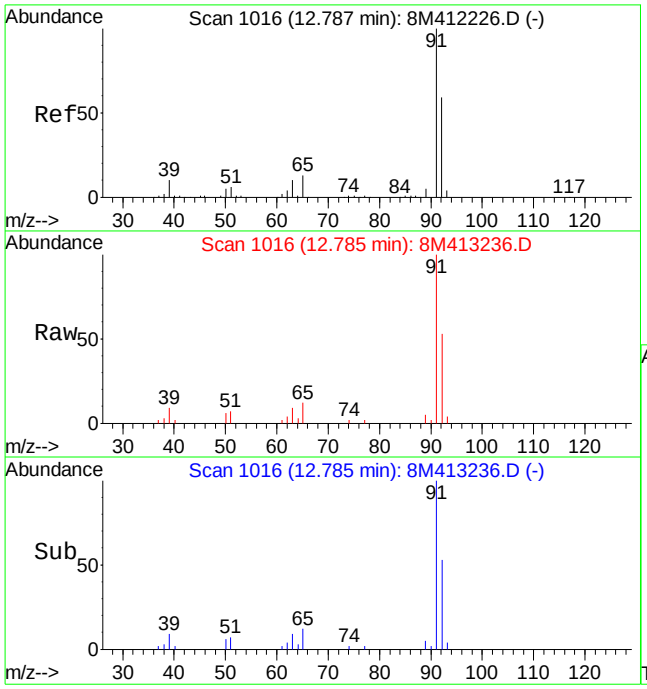

#59
Toluene
Concen: 1.30 ug/L
RT: 12.78 min Scan# 1016
Delta R.T. -0.00 min
Lab File: 8M413236.D
Acq: 25 Jun 2016 2:48

Tgt Ion: 91 Resp: 39449

Ion	Ratio	Lower	Upper
91	100		
92	58.4	35.5	82.7

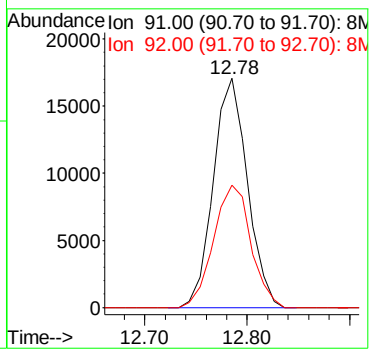

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\071316\11M13228.D Vial: 6
Acq On : 13 Jul 2016 14:40 Operator: TMB
Sample : L16061142-07 B 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:20:00 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	475011	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	426121	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	249799	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	132417	25.4717 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.88%		
43) 1,2-Dichloroethane-d4	10.23	65	130882	22.0802 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.32%		
57) Toluene-d8	12.47	98	455224	24.5868 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.36%		
78) p-Bromofluorobenzene	15.64	95	180671	23.4628 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.84%		

Target Compounds					Qvalue
3) Chloromethane	3.68	50	846	0.1419 ug/L	80
13) Acetone	6.34	43	4022	3.5658 ug/L #	78
20) Carbon Disulfide	7.36	76	4256	0.2923 ug/L #	75
58) Toluene	12.56	91	29738	1.3785 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13228.D 8260WT.M Wed Jul 13 16:20:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\071316\11M13228.D Vial: 6
Acq On : 13 Jul 2016 14:40 Operator: TMB
Sample : L16061142-07 B 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration

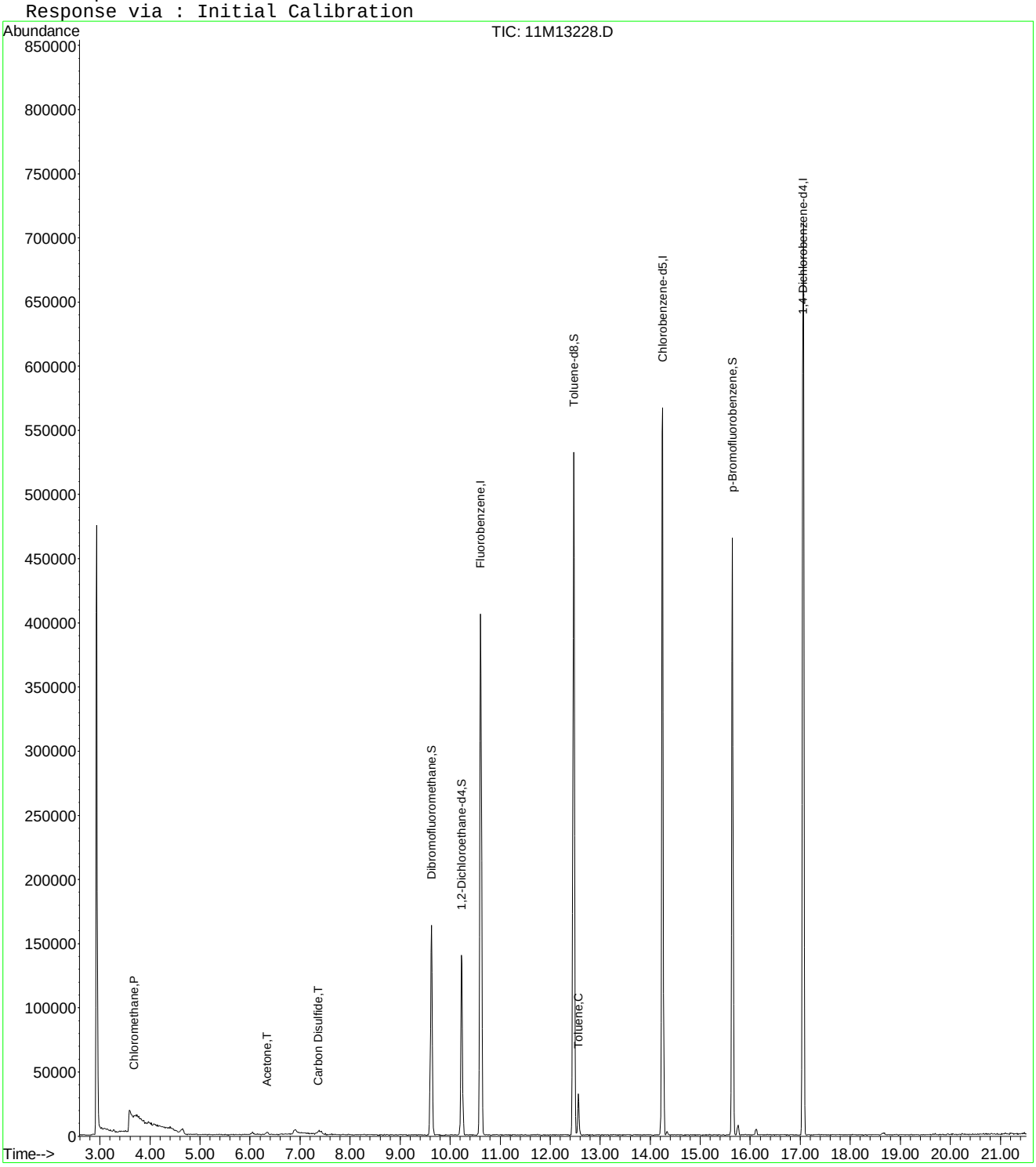

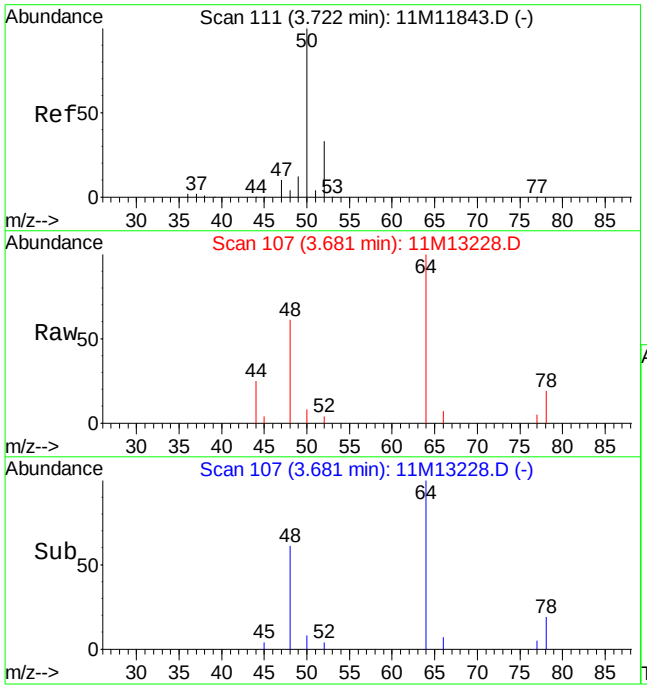

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.68 min Scan# 107
Delta R.T. -0.04 min
Lab File: 11M13228.D
Acq: 13 Jul 2016 14:40

Tgt Ion: 50 Resp: 846

Ion	Ratio	Lower	Upper
50	100		
52	44.7	20.0	46.6

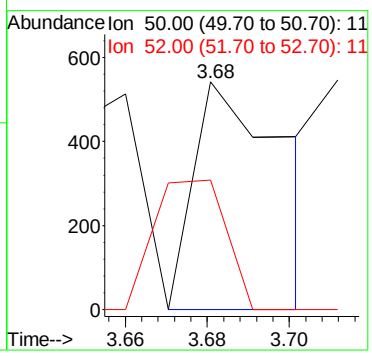

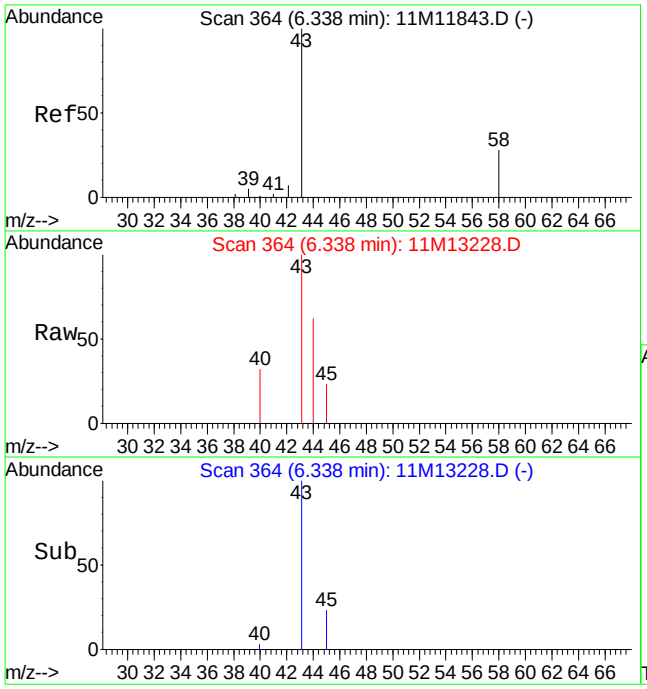

#13
Acetone
Concen: 3.57 ug/L
RT: 6.34 min Scan# 364
Delta R.T. -0.00 min
Lab File: 11M13228.D
Acq: 13 Jul 2016 14:40

Tgt Ion: 43 Resp: 4022

Ion	Ratio	Lower	Upper
43	100		
58	37.6	15.8	36.8#

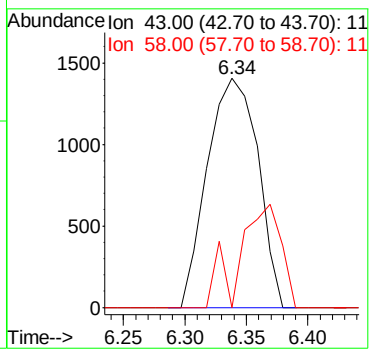

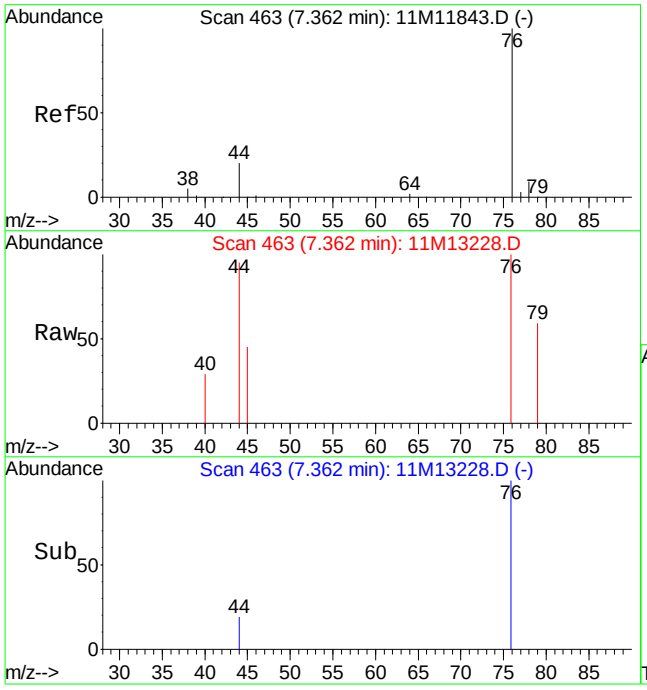

#20
Carbon Disulfide
Concen: 0.29 ug/L
RT: 7.36 min Scan# 463
Delta R.T. -0.00 min
Lab File: 11M13228.D
Acq: 13 Jul 2016 14:40

Tgt Ion: 76 Resp: 4256

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.5	12.9#

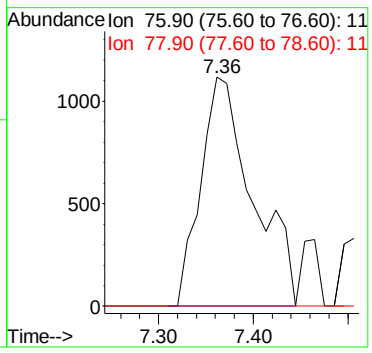

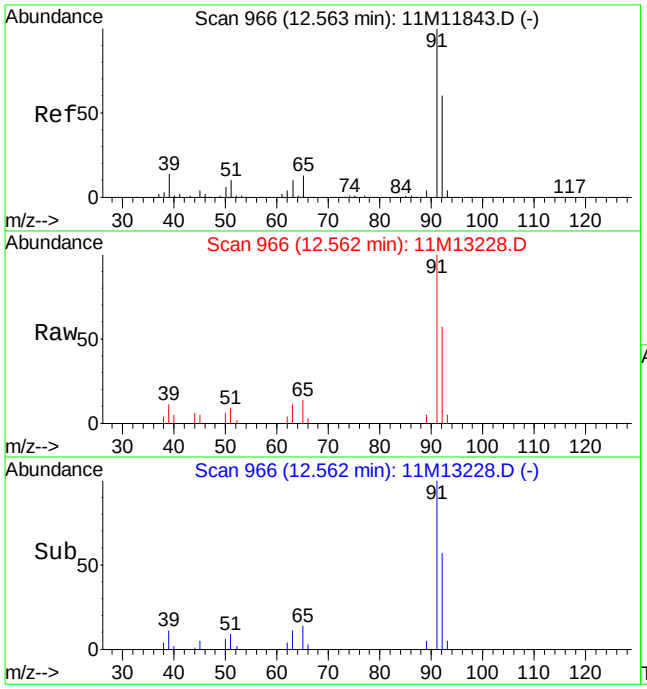

#58
Toluene
Concen: 1.38 ug/L
RT: 12.56 min Scan# 966
Delta R.T. -0.00 min
Lab File: 11M13228.D
Acq: 13 Jul 2016 14:40

Tgt Ion: 91 Resp: 29738

Ion	Ratio	Lower	Upper
91	100		
92	57.7	35.7	83.3

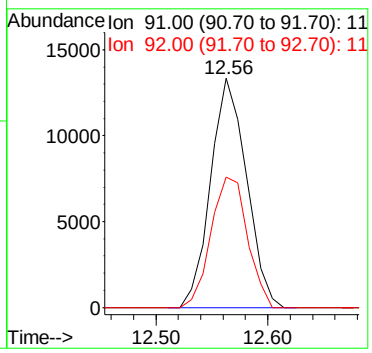

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413229.D Vial: 11
Acq On : 24 Jun 2016 23:25 Operator: FJB
Sample : L16061142-08 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 23:47:29 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	653067	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	515232	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	287925	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	198898	28.3466 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.40%		
43) 1,2-Dichloroethane-d4	10.30	65	222411	29.5618 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 118.24%		
58) Toluene-d8	12.68	98	693693	25.7258 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.92%		
80) p-Bromofluorobenzene	16.08	95	298270	25.0181 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
13) Acetone	6.24	43	1995	2.7152 ug/L #	50
36) Tetrahydrofuran	9.62	42	1050	1.4768 ug/L #	24

(#) = qualifier out of range (m) = manual integration
8M413229.D 8260WT.M Mon Jun 27 12:43:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413229.D Vial: 11
Acq On : 24 Jun 2016 23:25 Operator: FJB
Sample : L16061142-08 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:23 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

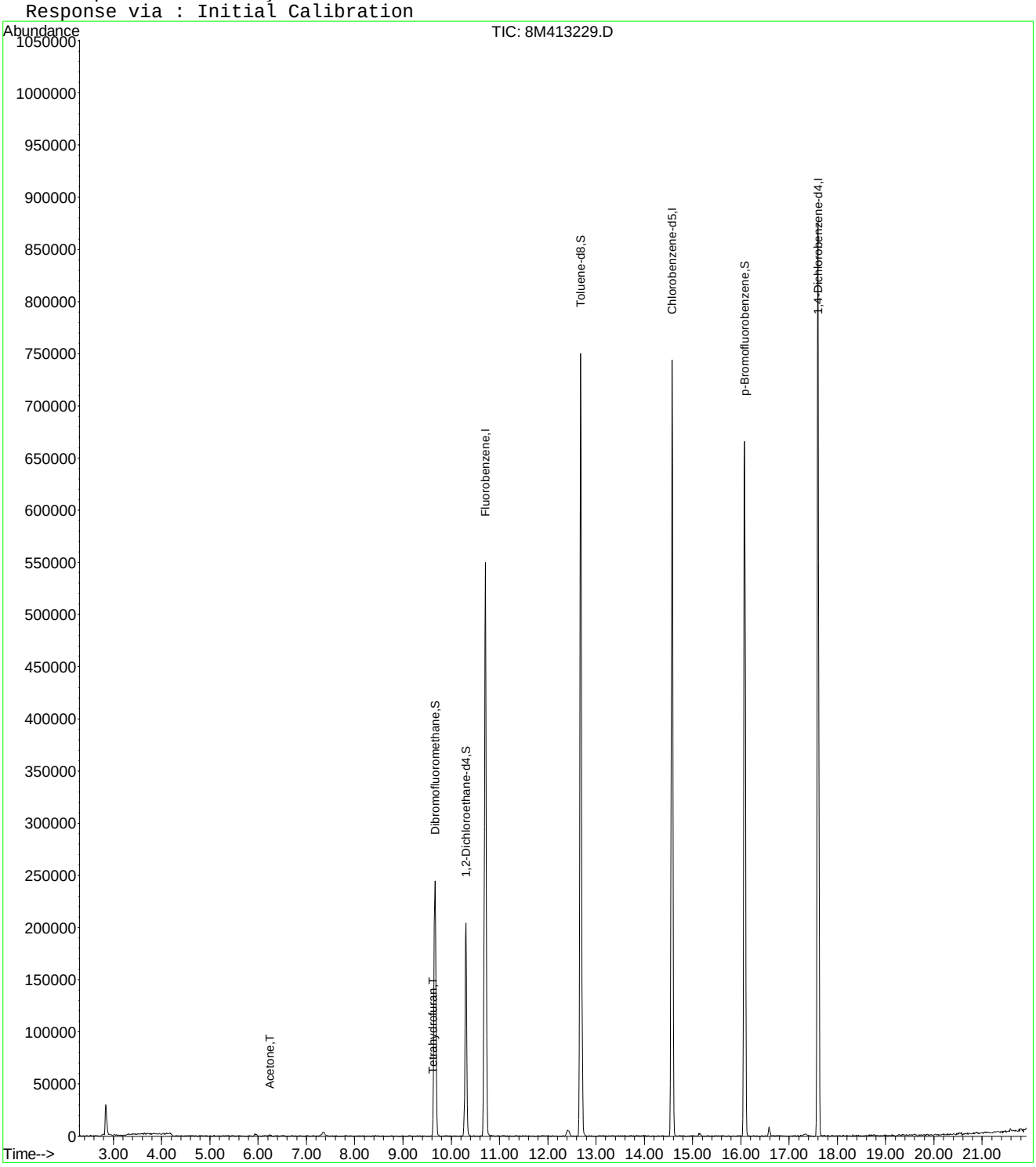

8M413229.D 8260WT.M Mon Jun 27 12:43:32 2016 Page 2

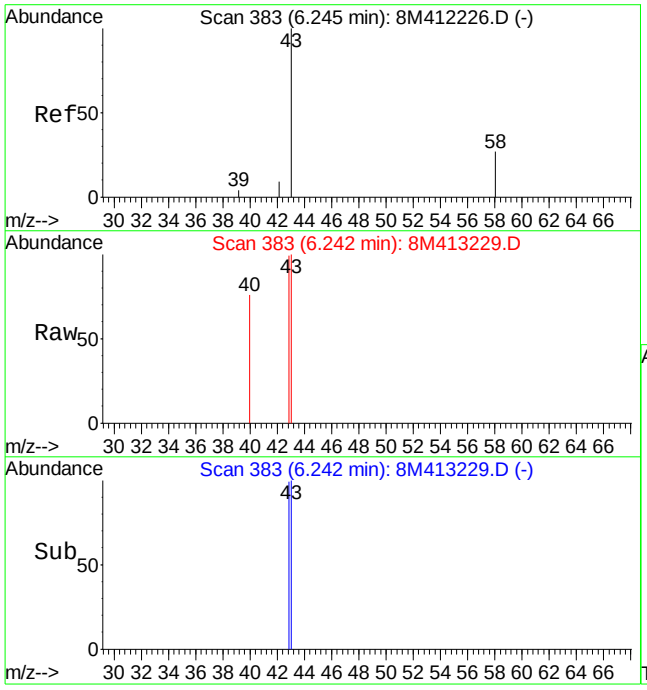

#13
Acetone
Concen: 2.72 ug/L
RT: 6.24 min Scan# 383
Delta R.T. -0.00 min
Lab File: 8M413229.D
Acq: 24 Jun 2016 23:25

Tgt Ion: 43 Resp: 1995

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

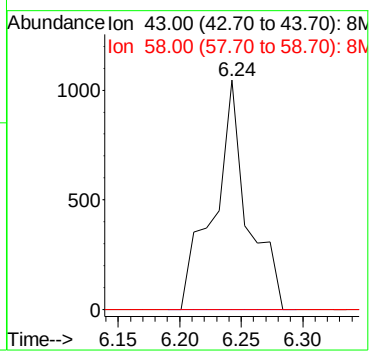

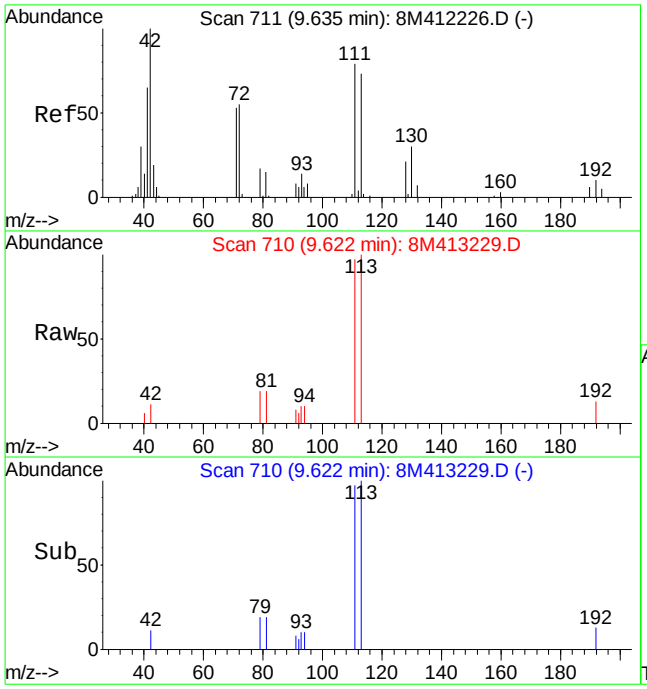

#36
Tetrahydrofuran
Concen: 1.48 ug/L
RT: 9.62 min Scan# 710
Delta R.T. -0.01 min
Lab File: 8M413229.D
Acq: 24 Jun 2016 23:25

Tgt Ion: 42 Resp: 1050

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	0.0	32.0	74.8#

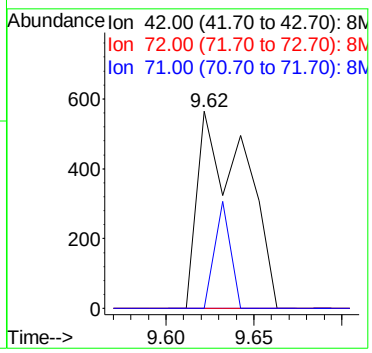

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	538041	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	450050	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	251600	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	12.47	98	210	0.0099 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#	
78) p-Bromofluorobenzene	15.64	95	566	0.0689 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2475	0.3135 ug/L #	66
3) Chloromethane	3.72	50	4639	0.6471 ug/L	91
4) Vinyl Chloride	3.96	62	1882	0.3288 ug/L #	44
5) 1,3-Butadiene	4.01	54	1564	0.2900 ug/L #	19
6) Bromomethane	4.84	94	1717	0.4723 ug/L	83
7) Chloroethane	5.00	64	616	0.1589 ug/L #	45
8) Trichlorofluoromethane	5.49	101	3531	0.3330 ug/L	97
10) Isoprene	6.04	67	1746	0.2381 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	1344	0.2515 ug/L	96
13) Acetone	6.34	43	2389	1.4850 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3780	0.3817 ug/L	78
16) Dimethyl Sulfide	6.80	62	762	0.1697 ug/L	78
18) Methyl acetate	7.02	43	24685	4.4975 ug/L #	70
19) Methylene Chloride	7.31	84	1766	0.3184 ug/L	74
20) Carbon Disulfide	7.36	76	5848	0.3373 ug/L	92
22) Methyl Tert Butyl Ether	7.54	73	3068	0.2131 ug/L #	48
23) trans-1,2-Dichloroethene	7.75	96	1449	0.2556 ug/L	91
24) n-Hexane	7.82	57	3745	0.4031 ug/L #	73
26) Vinyl Acetate	8.30	43	2410	0.6995 ug/L #	78
27) 1,1-Dichloroethane	8.35	63	3312	0.2969 ug/L #	76
31) 2,2-Dichloropropane	9.10	77	2449	0.3040 ug/L #	42
32) cis-1,2-Dichloroethene	9.15	96	1729	0.2748 ug/L	96
33) Chloroform	9.35	83	3792	0.3639 ug/L	92
35) Bromochloromethane	9.56	130	948	0.2355 ug/L #	68
38) 1,1,1-Trichloroethane	9.85	97	3449	0.3423 ug/L #	79
39) Cyclohexane	9.88	56	3639	0.2986 ug/L #	84
40) 1,1-Dichloropropene	10.04	75	2365	0.3106 ug/L #	53
41) Carbon Tetrachloride	10.17	117	2613	0.2748 ug/L	87
44) 1,2-Dichloroethane	10.35	62	2493	0.2788 ug/L #	73
45) Benzene	10.38	78	7133	0.3275 ug/L	99
46) Trichloroethene	11.09	130	1973	0.2780 ug/L	93
47) Methylcyclohexane	11.17	83	2570	0.2986 ug/L	84
48) 1,2-Dichloropropane	11.29	63	1665	0.2692 ug/L	87
50) Bromodichloromethane	11.57	83	2418	0.2950 ug/L #	82
51) Dibromomethane	11.65	93	756	0.2331 ug/L	88
54) cis-1,3-Dichloropropene	12.17	75	1869	0.2166 ug/L #	82
55) Dimethyl Disulfide	12.42	79	1028	0.1910 ug/L	95
58) Toluene	12.57	91	7355	0.3156 ug/L	91
59) Ethyl Methacrylate	12.64	69	1041	0.1887 ug/L	88
60) trans-1,3-Dichloropropene	12.72	75	1951	0.2556 ug/L #	51

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
61) 1,1,2-Trichloroethane	12.92	97	1087	0.2492 ug/L	87
62) 2-Hexanone	12.86	43	687	0.1910 ug/L #	29
63) 1,3-Dichloropropane	13.21	76	1673	0.2309 ug/L	94
64) Tetrachloroethene	13.34	164	1703	0.3238 ug/L	94
65) Dibromochloromethane	13.59	129	1515	0.2406 ug/L	92
66) 1,2-Dibromoethane	13.82	107	966	0.2181 ug/L	98
67) 1-Chlorohexane	13.89	91	2128	0.2784 ug/L	97
68) Chlorobenzene	14.29	112	5248	0.3062 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	2025	0.3082 ug/L	98
70) Ethylbenzene	14.31	106	2602	0.2992 ug/L	88
71) m-,p-Xylene	14.40	106	6296	0.6083 ug/L	82
72) o-Xylene	14.92	106	3032	0.2937 ug/L	95
73) Styrene	14.95	104	4953	0.2828 ug/L	95
75) Isopropylbenzene	15.31	105	7848	0.3006 ug/L	93
77) 1,1,2,2-Tetrachloroethane	15.52	83	1145	0.2759 ug/L	68
81) n-Propylbenzene	15.79	91	9421	0.3332 ug/L	94
82) Bromobenzene	15.92	156	2002	0.2551 ug/L	66
83) 1,3,5-Trimethylbenzene	15.95	105	6742	0.3138 ug/L	91
84) 2-Chlorotoluene	16.05	91	6735	0.3228 ug/L	96
85) 4-Chlorotoluene	16.09	91	6023	0.3518 ug/L	99
86) a-Methylstyrene	16.34	118	2850	0.2387 ug/L	95
87) tert-Butylbenzene	16.39	134	1197	0.2539 ug/L	64
88) 1,2,4-Trimethylbenzene	16.44	105	6992	0.3180 ug/L	88
89) sec-Butylbenzene	16.65	105	8335	0.3278 ug/L	97
90) p-Isopropyltoluene	16.79	119	7094	0.3065 ug/L	96
91) 1,3-Dichlorobenzene	16.98	146	4505	0.3090 ug/L	96
92) 1,4-Dichlorobenzene	17.10	146	4475	0.3006 ug/L #	1
93) n-Butylbenzene	17.28	91	7076	0.3396 ug/L #	93
94) 1,2-Dichlorobenzene	17.56	146	4016	0.2922 ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	2964	0.2902 ug/L	99
97) Hexachlorobutadiene	19.69	225	1160	0.2796 ug/L #	71
98) Naphthalene	19.90	128	4679	0.2394 ug/L #	93
99) 1,2,3-Trichlorobenzene	20.19	180	2578	0.2696 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M11837.D 8260WT.M Fri May 13 17:04:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

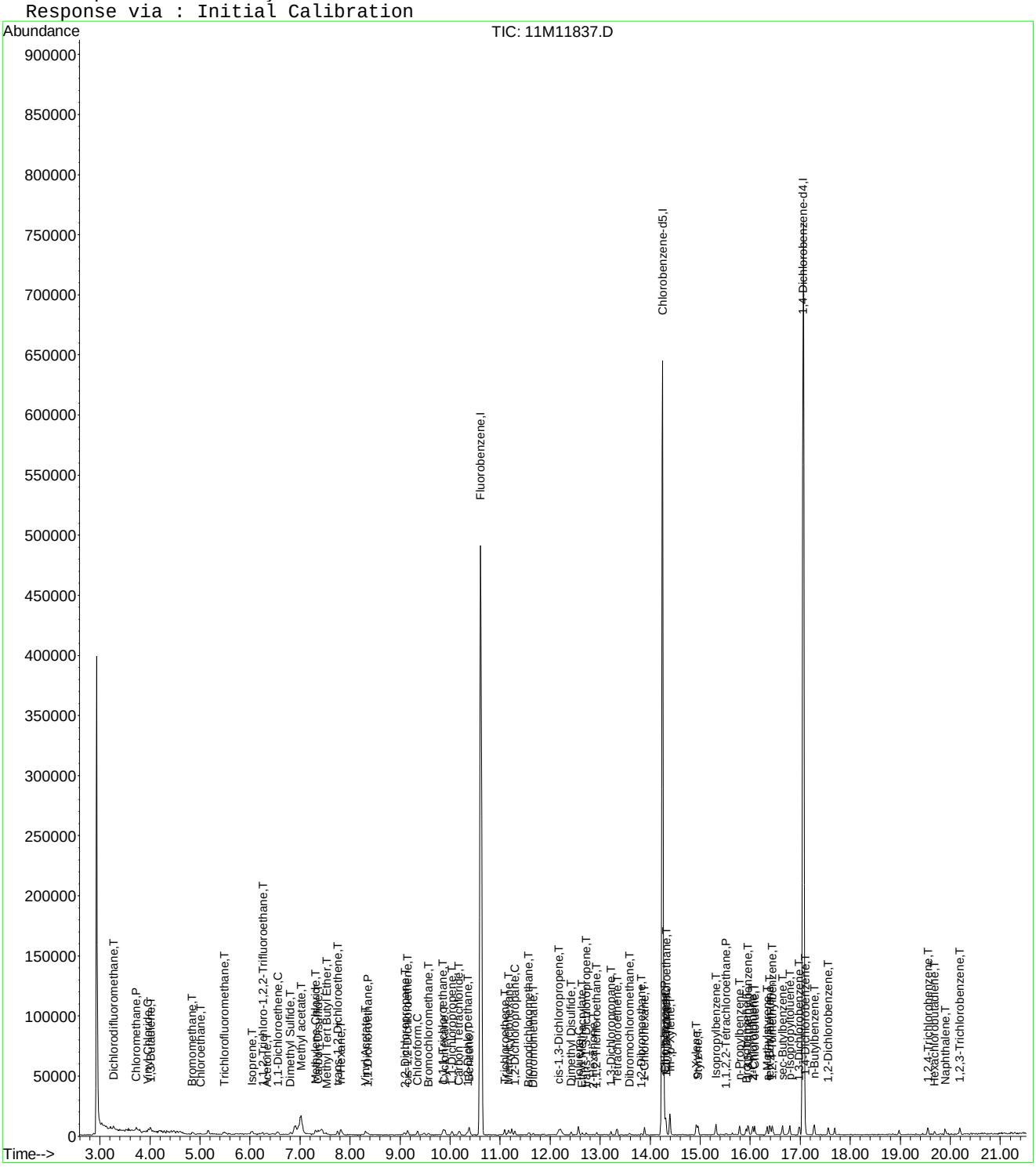

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2936	0.0	0	0.00
3	P	Chloromethane	-1.0000	0.6871	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.3357	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.2805	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.4454	0.0	0	-0.01
7	T	Chloroethane	-1.0000	0.1710	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.3160	0.0	0	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.01#
10	T	Isoprene	-1.0000	0.2535	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.23#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2478	0.0	0	0.01
13	T	Acetone	-1.0000	1.8699	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3838	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.66#
16	T	Dimethyl Sulfide	-1.0000	0.1937	0.0	0	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.06#
18	T	Methyl acetate	-1.0000	5.1442	0.0	0	-0.04
19	T	Methylene Chloride	-1.0000	0.3464	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.3546	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.49#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2413	0.0	0	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2658	0.0	0	0.01
24	T	n-Hexane	-1.0000	0.4125	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0083	0.0	0	0.08
26	T	Vinyl Acetate	-1.0000	2.6933	0.0	0	-0.01
27	P	1,1-Dichloroethane	-1.0000	0.3028	0.0	0	0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.70#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.87#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.97#
31	T	2,2-Dichloropropane	-1.0000	0.2862	0.0	0	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.2877	0.0	0	0.00
33	C	Chloroform	0.3000	0.3530	-17.7	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.48#
35	T	Bromochloromethane	-1.0000	0.2656	0.0	0	-0.01
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-9.60#
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.63#
38	T	1,1,1-Trichloroethane	-1.0000	0.3263	0.0	0	0.00
39	T	Cyclohexane	-1.0000	0.3159	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3134	0.0	0	0.00
41	T	Carbon Tetrachloride	-1.0000	0.2532	0.0	0	-0.01
42	T	Tert-Amyl-Methyl ether	-1.0000	0.0152	0.0	0	-0.09
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.23#
44	T	1,2-Dichloroethane	-1.0000	0.2858	0.0	0	0.01
45	T	Benzene	-1.0000	0.3452	0.0	0	0.00
46	T	Trichloroethene	-1.0000	0.2938	0.0	0	0.00
47	T	Methylcyclohexane	-1.0000	0.3101	0.0	0	0.00
48	C	1,2-Dichloropropane	-1.0000	0.2911	0.0	0	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.55#
50	T	Bromodichloromethane	-1.0000	0.3012	0.0	0	0.00
51	T	Dibromomethane	-1.0000	0.2537	0.0	0	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-11.84#
53	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-11.87#
54	T	cis-1,3-Dichloropropene	-1.0000	0.2327	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.2127	0.0	0	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0107	0.0	0	0.00
58	C	Toluene	-1.0000	0.3228	0.0	0	0.01
59	T	Ethyl Methacrylate	-1.0000	0.2140	0.0	0	-0.01
60	T	trans-1,3-Dichloropropene	-1.0000	0.2668	0.0	0	-0.01
61	T	1,1,2-Trichloroethane	-1.0000	0.2691	0.0	0	-0.01
62	T	2-Hexanone	-1.0000	0.2315	0.0	0	0.00
63	T	1,3-Dichloropropane	-1.0000	0.2579	0.0	0	0.00
64	T	Tetrachloroethene	-1.0000	0.3214	0.0	0	0.00
65	T	Dibromochloromethane	-1.0000	0.2459	0.0	0	0.00
66	T	1,2-Dibromoethane	-1.0000	0.2387	0.0	0	0.00
67	T	1-Chlorohexane	-1.0000	0.2833	0.0	0	0.00
68	P	Chlorobenzene	-1.0000	0.3144	0.0	0	0.00
69	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2998	0.0	0	0.00
70	C	Ethylbenzene	-1.0000	0.3040	0.0	0	0.00
71	T	m-,p-Xylene	-1.0000	0.6051	0.0	0	0.01
72	T	o-Xylene	-1.0000	0.2994	0.0	0	0.00
73	T	Styrene	-1.0000	0.2961	0.0	0	0.00
74	P	Bromoform	-1.0000	0.0798	0.0	0	-0.01
75	T	Isopropylbenzene	-1.0000	0.2931	0.0	0	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2922	0.0	0	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.0730	0.0	0	0.00
79	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-15.70#
80	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-15.74#
81	T	n-Propylbenzene	-1.0000	0.3233	0.0	0	0.00
82	T	Bromobenzene	0.3000	0.2618	12.7	100	0.00
83	T	1,3,5-Trimethylbenzene	-1.0000	0.3032	0.0	0	-0.01
84	T	2-Chlorotoluene	-1.0000	0.3300	0.0	0	0.00
85	T	4-Chlorotoluene	-1.0000	0.3295	0.0	0	0.00
86	T	a-Methylstyrene	-1.0000	0.2430	0.0	0	0.00
87	T	tert-Butylbenzene	-1.0000	0.2541	0.0	0	-0.01
88	T	1,2,4-Trimethylbenzene	-1.0000	0.3088	0.0	0	0.00
89	T	sec-Butylbenzene	-1.0000	0.3122	0.0	0	0.00
90	T	p-Isopropyltoluene	-1.0000	0.2893	0.0	0	0.00
91	T	1,3-Dichlorobenzene	-1.0000	0.3051	0.0	0	0.00
92	T	1,4-Dichlorobenzene	0.3000	0.2990	0.3	100	0.00
93	T	n-Butylbenzene	-1.0000	0.3274	0.0	0	0.00
94	T	1,2-Dichlorobenzene	0.3000	0.2985	0.5	100	-0.01
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-18.49#
96	T	1,2,4-Trichlorobenzene	-1.0000	0.3011	0.0	0	0.00
97	T	Hexachlorobutadiene	-1.0000	0.2675	0.0	0	0.00
98	T	Naphthalene	-1.0000	0.2561	0.0	0	0.00
99	T	1,2,3-Trichlorobenzene	0.3000	0.2854	4.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11837.D 8260WT.M Sat May 14 18:41:07 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	515473	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	435266	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244818	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
78) p-Bromofluorobenzene	15.64	95	236	0.0295 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2765	0.3656 ug/L #	66
3) Chloromethane	3.72	50	4021	0.5854 ug/L #	77
4) Vinyl Chloride	3.96	62	2267	0.4134 ug/L #	64
5) 1,3-Butadiene	4.01	54	2044	0.3956 ug/L #	18
6) Bromomethane	4.85	94	1571	0.4511 ug/L	89
7) Chloroethane	5.01	64	1496	0.4029 ug/L #	45
8) Trichlorofluoromethane	5.49	101	4241	0.4175 ug/L	96
10) Isoprene	6.03	67	2394	0.3408 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1439	0.2811 ug/L #	23
13) Acetone	6.33	43	1125	0.7299 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3786	0.3990 ug/L	77
16) Dimethyl Sulfide	6.80	62	1622	0.3769 ug/L	59
18) Methyl acetate	7.01	43	21364	4.0629 ug/L #	70
19) Methylene Chloride	7.32	84	2266	0.4265 ug/L	97
20) Carbon Disulfide	7.35	76	6628	0.3991 ug/L #	82
22) Methyl Tert Butyl Ether	7.52	73	4808	0.3486 ug/L #	74
23) trans-1,2-Dichloroethene	7.74	96	2372	0.4368 ug/L	93
24) n-Hexane	7.83	57	4212	0.4732 ug/L #	73
26) Vinyl Acetate	8.34	43	434	0.1315 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	3822	0.3576 ug/L #	89
29) 2-Butanone	8.88	43	484	0.2099 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	2680	0.3472 ug/L #	55
32) cis-1,2-Dichloroethene	9.15	96	2277	0.3777 ug/L	91
33) Chloroform	9.35	83	3981	0.3988 ug/L	89
35) Bromochloromethane	9.57	130	952	0.2468 ug/L	57
36) Tetrahydrofuran	9.59	42	212	0.1340 ug/L #	46
38) 1,1,1-Trichloroethane	9.85	97	3917	0.4058 ug/L #	84
39) Cyclohexane	9.88	56	3935	0.3371 ug/L #	80
40) 1,1-Dichloropropene	10.04	75	2817	0.3862 ug/L	82
41) Carbon Tetrachloride	10.18	117	3373	0.3702 ug/L #	88
44) 1,2-Dichloroethane	10.35	62	3201	0.3737 ug/L #	78
45) Benzene	10.39	78	8729	0.4184 ug/L	90
46) Trichloroethene	11.08	130	2537	0.3731 ug/L	93
47) Methylcyclohexane	11.17	83	2742	0.3325 ug/L	90
48) 1,2-Dichloropropane	11.29	63	2133	0.3600 ug/L	84
50) Bromodichloromethane	11.58	83	2857	0.3638 ug/L #	84
51) Dibromomethane	11.65	93	972	0.3128 ug/L	81
52) 2-Chloroethyl Vinyl Ether	11.85	63	791	0.2560 ug/L #	50
54) cis-1,3-Dichloropropene	12.17	75	2689	0.3253 ug/L	99
55) Dimethyl Disulfide	12.42	79	1113	0.2158 ug/L	74

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
58)	Toluene	12.56	91	9113	0.4043 ug/L		99
59)	Ethyl Methacrylate	12.65	69	1556	0.2916 ug/L		96
60)	trans-1,3-Dichloropropene	12.73	75	2303	0.3119 ug/L		86
61)	1,1,2-Trichloroethane	12.94	97	1549	0.3672 ug/L		85
62)	2-Hexanone	12.86	43	840	0.2415 ug/L	#	11
63)	1,3-Dichloropropane	13.21	76	2345	0.3346 ug/L		82
64)	Tetrachloroethene	13.34	164	1905	0.3745 ug/L		88
65)	Dibromochloromethane	13.59	129	1972	0.3238 ug/L		89
66)	1,2-Dibromoethane	13.82	107	1617	0.3776 ug/L		69
67)	1-Chlorohexane	13.89	91	2578	0.3487 ug/L		77
68)	Chlorobenzene	14.29	112	6458	0.3896 ug/L		93
69)	1,1,1,2-Tetrachloroethane	14.31	131	2374	0.3736 ug/L		98
70)	Ethylbenzene	14.31	106	3158	0.3754 ug/L		79
71)	m-,p-Xylene	14.39	106	8621	0.8613 ug/L		93
72)	o-Xylene	14.93	106	3752	0.3758 ug/L		96
73)	Styrene	14.95	104	6027	0.3558 ug/L		90
74)	Bromoform	15.44	173	931	0.2454 ug/L		87
75)	Isopropylbenzene	15.31	105	10551	0.4179 ug/L		95
77)	1,1,2,2-Tetrachloroethane	15.52	83	1129	0.2796 ug/L		84
79)	1,2,3-Trichloropropane	15.71	110	200	0.1341 ug/L	#	28
81)	n-Propylbenzene	15.79	91	11244	0.4087 ug/L		98
82)	Bromobenzene	15.91	156	3048	0.3991 ug/L		95
83)	1,3,5-Trimethylbenzene	15.96	105	9158	0.4381 ug/L		92
84)	2-Chlorotoluene	16.05	91	8455	0.4164 ug/L		96
85)	4-Chlorotoluene	16.09	91	6979	0.4189 ug/L		92
86)	a-Methylstyrene	16.34	118	4052	0.3488 ug/L		74
87)	tert-Butylbenzene	16.40	134	1479	0.3224 ug/L		63
88)	1,2,4-Trimethylbenzene	16.45	105	8457	0.3953 ug/L		95
89)	sec-Butylbenzene	16.65	105	10479	0.4236 ug/L		93
90)	p-Isopropyltoluene	16.79	119	9613	0.4269 ug/L		93
91)	1,3-Dichlorobenzene	16.98	146	5826	0.4107 ug/L		93
92)	1,4-Dichlorobenzene	17.10	146	6273	0.4331 ug/L	#	74
93)	n-Butylbenzene	17.28	91	8021	0.3956 ug/L	#	91
94)	1,2-Dichlorobenzene	17.57	146	4937	0.3691 ug/L		97
96)	1,2,4-Trichlorobenzene	19.55	180	3632	0.3655 ug/L		95
97)	Hexachlorobutadiene	19.69	225	1539	0.3812 ug/L		96
98)	Naphthalene	19.90	128	7383	0.3882 ug/L		97
99)	1,2,3-Trichlorobenzene	20.19	180	3748	0.4028 ug/L		84

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

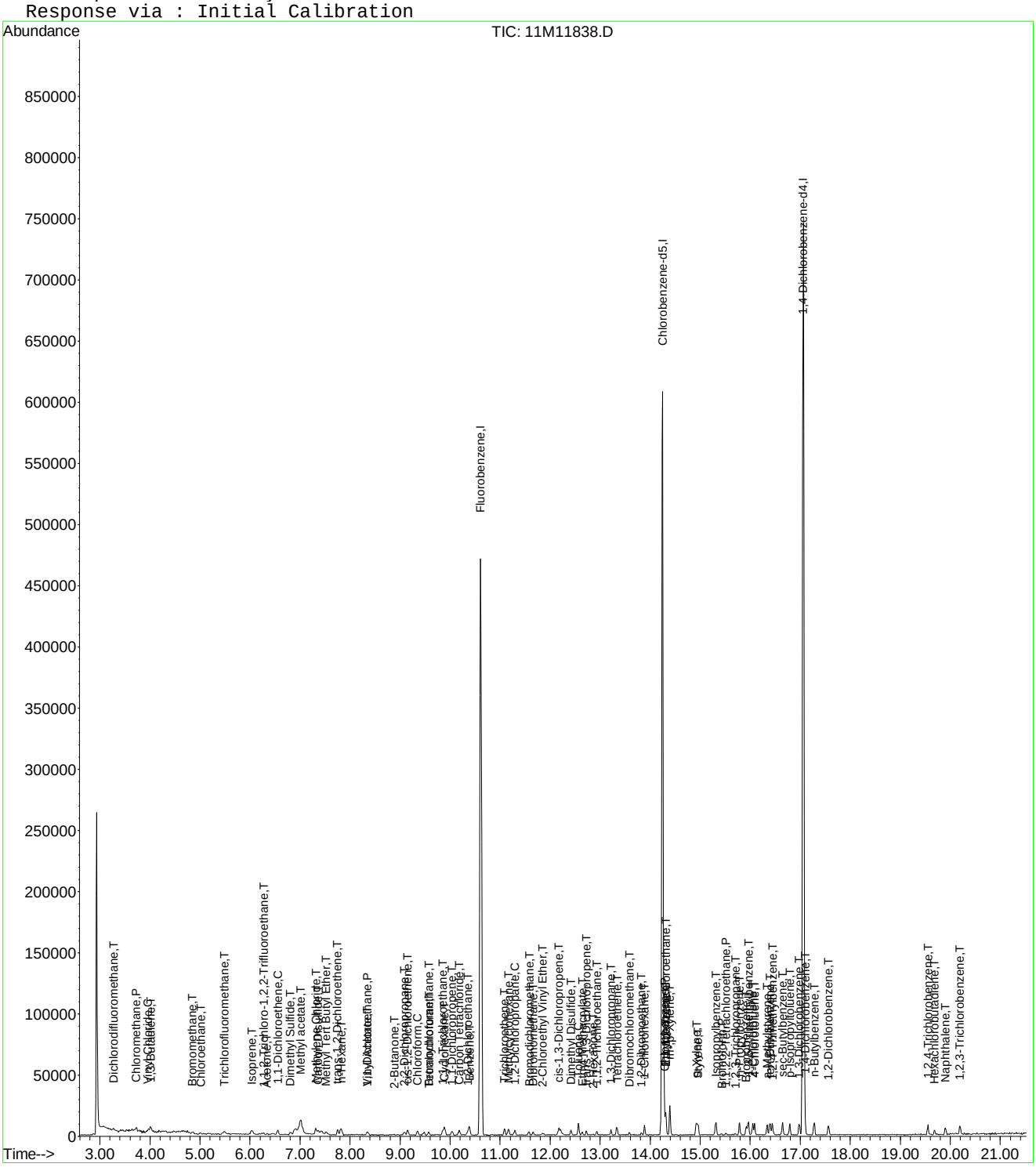

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	523425	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	440574	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	249989	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	1729	0.2910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.16%#	
43) 1,2-Dichloroethane-d4	10.23	65	3301	0.4585 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.84%#	
57) Toluene-d8	12.47	98	9307	0.4494 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.80%#	
78) p-Bromofluorobenzene	15.64	95	4047	0.4956 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	7215	0.9394 ug/L	98
3) Chloromethane	3.72	50	7292	1.0455 ug/L	80
4) Vinyl Chloride	3.96	62	5040	0.9051 ug/L	92
5) 1,3-Butadiene	4.02	54	5876	1.1198 ug/L #	76
6) Bromomethane	4.85	94	3488	0.9862 ug/L	94
7) Chloroethane	4.99	64	3425	0.9083 ug/L #	57
8) Trichlorofluoromethane	5.49	101	10960	1.0625 ug/L	95
9) Diethyl ether	6.01	59	19830	4.2253 ug/L	90
10) Isoprene	6.04	67	6121	0.8582 ug/L	94
11) Acrolein	6.25	56	697	1.2730 ug/L	65
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	5456	1.0497 ug/L	90
13) Acetone	6.34	43	1782	1.1386 ug/L #	45
14) 1,1-Dichloroethene	6.55	61	9456	0.9814 ug/L	91
15) Tert-Butyl Alcohol	6.67	59	2848	6.8484 ug/L #	67
16) Dimethyl Sulfide	6.80	62	3631	0.8310 ug/L	93
18) Methyl acetate	7.01	43	20953	3.9242 ug/L #	70
19) Methylene Chloride	7.31	84	5001	0.9270 ug/L	97
20) Carbon Disulfide	7.36	76	15438	0.9154 ug/L	99
21) Acrylonitrile	7.50	53	3780	1.8795 ug/L	89
22) Methyl Tert Butyl Ether	7.53	73	11891	0.8490 ug/L	90
23) trans-1,2-Dichloroethene	7.75	96	4815	0.8732 ug/L	95
24) n-Hexane	7.82	57	9213	1.0194 ug/L #	81
25) Diisopropyl ether	8.15	45	108233	4.5267 ug/L	99
26) Vinyl Acetate	8.31	43	1723	0.5141 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	10818	0.9968 ug/L	95
28) Ethyl-Tert-Butyl ether	8.70	59	85288	4.3548 ug/L	99
29) 2-Butanone	8.88	43	1368	0.5844 ug/L #	60
30) Propionitrile	8.99	54	2406	3.5185 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	7787	0.9935 ug/L	90
32) cis-1,2-Dichloroethene	9.15	96	5567	0.9095 ug/L	94
33) Chloroform	9.35	83	10278	1.0139 ug/L	96
34) 1-Bromopropane	9.48	122	295	0.2934 ug/L	49
35) Bromochloromethane	9.57	130	2941	0.7509 ug/L	88
36) Tetrahydrofuran	9.60	42	7790	4.8493 ug/L	92
38) 1,1,1-Trichloroethane	9.85	97	10000	1.0202 ug/L #	90
39) Cyclohexane	9.88	56	10164	0.8574 ug/L	98
40) 1,1-Dichloropropene	10.04	75	7321	0.9884 ug/L	92
41) Carbon Tetrachloride	10.18	117	9558	1.0331 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	59107	4.2417 ug/L	97
44) 1,2-Dichloroethane	10.34	62	8181	0.9406 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	Benzene	10.38	78	19924	0.9404 ug/L		95
46)	Trichloroethene	11.08	130	6636	0.9611 ug/L		92
47)	Methylcyclohexane	11.18	83	7740	0.9243 ug/L		94
48)	1,2-Dichloropropane	11.29	63	5477	0.9103 ug/L		99
49)	1,4-Dioxane	11.55	88	187	5.1264 ug/L	#	10
50)	Bromodichloromethane	11.57	83	7238	0.9076 ug/L		94
51)	Dibromomethane	11.65	93	2839	0.8997 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	1934	0.6164 ug/L	#	72
53)	4-Methyl-2-Pentanone	11.87	58	1016	0.5282 ug/L	#	42
54)	cis-1,3-Dichloropropene	12.17	75	7078	0.8432 ug/L		99
55)	Dimethyl Disulfide	12.42	79	3514	0.6710 ug/L		93
58)	Toluene	12.56	91	22074	0.9676 ug/L		96
59)	Ethyl Methacrylate	12.64	69	4130	0.7646 ug/L		88
60)	trans-1,3-Dichloropropene	12.73	75	5897	0.7891 ug/L		90
61)	1,1,2-Trichloroethane	12.94	97	3547	0.8307 ug/L		96
62)	2-Hexanone	12.87	43	2461	0.6990 ug/L	#	63
63)	1,3-Dichloropropane	13.21	76	5965	0.8410 ug/L		87
64)	Tetrachloroethene	13.34	164	5050	0.9809 ug/L		94
65)	Dibromochloromethane	13.59	129	5237	0.8497 ug/L		90
66)	1,2-Dibromoethane	13.82	107	3214	0.7414 ug/L		91
67)	1-Chlorohexane	13.89	91	7025	0.9387 ug/L		91
68)	Chlorobenzene	14.29	112	16160	0.9630 ug/L		95
69)	1,1,1,2-Tetrachloroethane	14.32	131	6361	0.9889 ug/L		97
70)	Ethylbenzene	14.31	106	8050	0.9455 ug/L		93
71)	m-,p-Xylene	14.39	106	20545	2.0278 ug/L		95
72)	o-Xylene	14.92	106	9683	0.9581 ug/L		96
73)	Styrene	14.96	104	14946	0.8716 ug/L		98
74)	Bromoform	15.43	173	3024	0.7876 ug/L		97
75)	Isopropylbenzene	15.31	105	25656	1.0039 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	3569	0.8655 ug/L		89
79)	1,2,3-Trichloropropane	15.71	110	872	0.5724 ug/L		84
80)	trans-1,4-Dichloro-2-Buten	15.74	53	1048	0.6163 ug/L	#	44
81)	n-Propylbenzene	15.79	91	27998	0.9967 ug/L		98
82)	Bromobenzene	15.92	156	8101	1.0388 ug/L		89
83)	1,3,5-Trimethylbenzene	15.96	105	20563	0.9633 ug/L		98
84)	2-Chlorotoluene	16.05	91	20962	1.0111 ug/L		96
85)	4-Chlorotoluene	16.09	91	17553	1.0318 ug/L		100
86)	a-Methylstyrene	16.34	118	10002	0.8431 ug/L		97
87)	tert-Butylbenzene	16.40	134	4396	0.9384 ug/L		84
88)	1,2,4-Trimethylbenzene	16.44	105	21945	1.0045 ug/L		96
89)	sec-Butylbenzene	16.65	105	25927	1.0263 ug/L		100
90)	p-Isopropyltoluene	16.79	119	22467	0.9771 ug/L		96
91)	1,3-Dichlorobenzene	16.98	146	14883	1.0274 ug/L		96
92)	1,4-Dichlorobenzene	17.10	146	15106	1.0213 ug/L	#	67
93)	n-Butylbenzene	17.28	91	20991	1.0139 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	13331	0.9762 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	493	0.5750 ug/L		75
96)	1,2,4-Trichlorobenzene	19.55	180	9030	0.8899 ug/L		96
97)	Hexachlorobutadiene	19.69	225	3810	0.9242 ug/L		95
98)	Naphthalene	19.90	128	16333	0.8410 ug/L		99
99)	1,2,3-Trichlorobenzene	20.19	180	8645	0.9098 ug/L		88

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

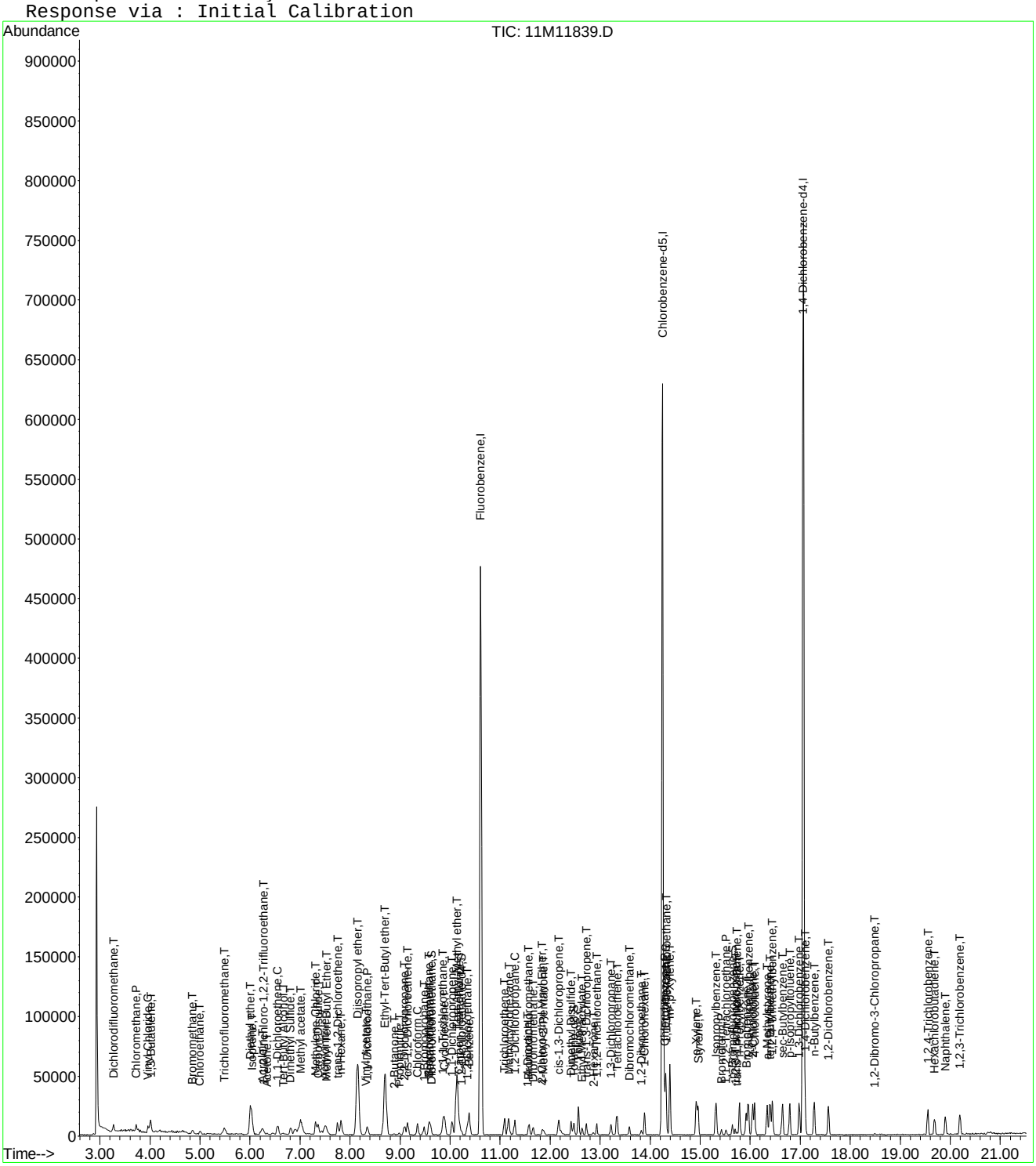

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.8798	12.0	100	0.00
3	P	Chloromethane	1.0000	1.1102	-11.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.9240	7.6	100	0.00
5	T	1,3-Butadiene	-1.0000	1.0834	0.0	100	0.02
6	T	Bromomethane	1.0000	0.9301	7.0	100	0.00
7	T	Chloroethane	1.0000	0.9773	2.3	100	-0.01
8	T	Trichlorofluoromethane	1.0000	1.0081	-0.8	100	0.01
9	T	Diethyl ether	5.0000	4.9318	1.4	100	0.00
10	T	Isoprene	-1.0000	0.9134	0.0	100	0.00
11	T	Acrolein	2.5000	2.7854	-11.4	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0342	-3.4	100	0.02
13	T	Acetone	-1.0000	1.4337	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9868	1.3	100	-0.01
15	T	Tert-Butyl Alcohol	10.0000	8.2841	17.2	100	0.01
16	T	Dimethyl Sulfide	-1.0000	0.9488	0.0	100	-0.01
17	T	Iodomethane	-1.0000	2.2962	0.0	0	0.01
18	T	Methyl acetate	-1.0000	4.2835	0.0	0	-0.05
19	T	Methylene Chloride	1.0000	1.0084	-0.8	100	0.00
20	T	Carbon Disulfide	1.0000	0.9624	3.8	100	0.00
21	T	Acrylonitrile	2.5000	2.2683	9.3	100	0.01
22	T	Methyl Tert Butyl Ether	1.0000	0.9614	3.9	100	0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9079	9.2	100	0.01
24	T	n-Hexane	-1.0000	1.0430	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.9106	1.8	100	0.00
26	T	Vinyl Acetate	-1.0000	2.6242	0.0	0	0.00
27	P	1,1-Dichloroethane	1.0000	1.0166	-1.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.7543	4.9	100	0.00
29	T	2-Butanone	-1.0000	0.7280	0.0	0	0.01
30	T	Propionitrile	5.0000	4.3718	12.6	100	0.01
31	T	2,2-Dichloropropane	1.0000	0.9353	6.5	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9520	4.8	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	1.0000	0.9106	8.9	100	0.00
35	T	Bromochloromethane	1.0000	0.8469	15.3	100	0.00
36	T	Tetrahydrofuran	5.0000	5.8710	-17.4	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.3018	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9725	2.8	100	0.00
39	T	Cyclohexane	1.0000	0.9069	9.3	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9971	0.3	100	0.00
41	T	Carbon Tetrachloride	1.0000	0.9518	4.8	100	0.00
42	T	Tert-Amyl-Methyl ether	5.0000	4.7417	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.5054	-1.1	100	0.00
44	T	1,2-Dichloroethane	1.0000	0.9639	3.6	100	0.00
45	T	Benzene	1.0000	0.9912	0.9	100	0.00
46	T	Trichloroethene	1.0000	1.0157	-1.6	100	-0.01
47	T	Methylcyclohexane	1.0000	0.9600	4.0	100	0.01
48	C	1,2-Dichloropropane	1.0000	0.9844	1.6	100	0.00
49	T	1,4-Dioxane	-1.0000	28.5532	0.0	0	0.00
50	T	Bromodichloromethane	1.0000	0.9266	7.3	100	0.00
51	T	Dibromomethane	1.0000	0.9792	2.1	100	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7053	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	0.6569	0.0	0	0.00
54	T	cis-1,3-Dichloropropene	1.0000	0.9060	9.4	100	0.00

(#) = Out of Range
11M11839.D 8260WT.M Sat May 14 18:41:49 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.7475	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.4862	0.0	100	0.00
58	C	Toluene	1.0000	0.9897	1.0	100	0.00
59	T	Ethyl Methacrylate	1.0000	0.8672	13.3	100	-0.01
60	T	trans-1,3-Dichloropropene	1.0000	0.8237	17.6	100	0.00
61	T	1,1,2-Trichloroethane	1.0000	0.8969	10.3	100	0.00
62	T	2-Hexanone	-1.0000	0.8473	0.0	100	0.01
63	T	1,3-Dichloropropane	1.0000	0.9392	6.1	100	0.00
64	T	Tetrachloroethene	1.0000	0.9737	2.6	100	0.00
65	T	Dibromochloromethane	1.0000	0.8681	13.2	100	0.00
66	T	1,2-Dibromoethane	1.0000	0.8111	18.9	100	0.00
67	T	1-Chlorohexane	1.0000	0.9554	4.5	100	0.00
68	P	Chlorobenzene	1.0000	0.9890	1.1	100	0.00
69	T	1,1,1,2-Tetrachloroethane	1.0000	0.9621	3.8	100	0.00
70	C	Ethylbenzene	1.0000	0.9608	3.9	100	0.00
71	T	m-,p-Xylene	2.0000	2.0170	-0.9	100	0.00
72	T	o-Xylene	1.0000	0.9768	2.3	100	0.00
73	T	Styrene	1.0000	0.9126	8.7	100	0.01
74	P	Bromoform	1.0000	0.8271	17.3	100	0.00
75	T	Isopropylbenzene	1.0000	0.9787	2.1	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	1.0000	0.9168	8.3	100	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.5252	0.0	100	0.00
79	T	1,2,3-Trichloropropane	1.0000	0.9573	4.3	100	0.01
80	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2934	-29.3#	100	0.00
81	T	n-Propylbenzene	1.0000	0.9671	3.3	100	0.00
82	T	Bromobenzene	1.0000	1.0663	-6.6	100	0.00
83	T	1,3,5-Trimethylbenzene	1.0000	0.9307	6.9	100	0.00
84	T	2-Chlorotoluene	1.0000	1.0337	-3.4	100	0.00
85	T	4-Chlorotoluene	1.0000	0.9664	3.4	100	0.00
86	T	a-Methylstyrene	1.0000	0.8582	14.2	100	0.00
87	T	tert-Butylbenzene	1.0000	0.9392	6.1	100	0.00
88	T	1,2,4-Trimethylbenzene	1.0000	0.9755	2.5	100	0.00
89	T	sec-Butylbenzene	1.0000	0.9774	2.3	100	0.00
90	T	p-Isopropyltoluene	1.0000	0.9221	7.8	100	0.00
91	T	1,3-Dichlorobenzene	1.0000	1.0144	-1.4	100	0.00
92	T	1,4-Dichlorobenzene	1.0000	1.0157	-1.6	100	0.00
93	T	n-Butylbenzene	1.0000	0.9776	2.2	100	0.00
94	T	1,2-Dichlorobenzene	1.0000	0.9974	0.3	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1961	0.0	100	0.00
96	T	1,2,4-Trichlorobenzene	1.0000	0.9233	7.7	100	0.00
97	T	Hexachlorobutadiene	1.0000	0.8843	11.6	100	0.00
98	T	Naphthalene	1.0000	0.8997	10.0	100	0.00
99	T	1,2,3-Trichlorobenzene	1.0000	0.9631	3.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11839.D 8260WT.M Sat May 14 18:41:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	504626	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	418265	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	241104	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	5067	0.8846 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.52%#	
43) 1,2-Dichloroethane-d4	10.23	65	6143	0.8851 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.56%#	
57) Toluene-d8	12.47	98	18425	0.9371 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.76%#	
78) p-Bromofluorobenzene	15.64	95	7442	0.9449 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.76%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	14866	2.0077 ug/L	98
3) Chloromethane	3.72	50	14641	2.1775 ug/L	94
4) Vinyl Chloride	3.96	62	10045	1.8711 ug/L	99
5) 1,3-Butadiene	4.01	54	10590	2.0934 ug/L	82
6) Bromomethane	4.85	94	7024	2.0600 ug/L	94
7) Chloroethane	4.99	64	6661	1.8324 ug/L	97
8) Trichlorofluoromethane	5.49	101	21690	2.1811 ug/L	99
9) Diethyl ether	6.01	59	96350	21.2945 ug/L	97
10) Isoprene	6.04	67	12682	1.8443 ug/L	94
11) Acrolein	6.23	56	5531	10.4784 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	9909	1.9774 ug/L	96
13) Acetone	6.35	43	3346	2.2176 ug/L #	68
14) 1,1-Dichloroethene	6.56	61	18584	2.0007 ug/L	98
15) Tert-Butyl Alcohol	6.66	59	15203	37.9194 ug/L #	93
16) Dimethyl Sulfide	6.81	62	7308	1.7348 ug/L	98
17) Iodomethane	7.06	142	1747	0.4335 ug/L #	49
18) Methyl acetate	7.01	43	17794	3.4567 ug/L #	75
19) Methylene Chloride	7.31	84	10330	1.9861 ug/L	99
20) Carbon Disulfide	7.36	76	30745	1.8910 ug/L	99
21) Acrylonitrile	7.49	53	17499	9.0252 ug/L	91
22) Methyl Tert Butyl Ether	7.52	73	22031	1.6315 ug/L	97
23) trans-1,2-Dichloroethene	7.74	96	10660	2.0051 ug/L	95
24) n-Hexane	7.82	57	17125	1.9654 ug/L #	94
25) Diisopropyl ether	8.15	45	542272	23.5246 ug/L	99
26) Vinyl Acetate	8.31	43	6813	2.1084 ug/L #	84
27) 1,1-Dichloroethane	8.34	63	21278	2.0336 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	431080	22.8311 ug/L	100
29) 2-Butanone	8.87	43	3175	1.4068 ug/L #	60
30) Propionitrile	8.99	54	12529	19.0049 ug/L	98
31) 2,2-Dichloropropane	9.09	77	17576	2.3259 ug/L	94
32) cis-1,2-Dichloroethene	9.15	96	11652	1.9746 ug/L	96
33) Chloroform	9.35	83	20769	2.1252 ug/L	96
34) 1-Bromopropane	9.48	122	1648	1.7003 ug/L	70
35) Bromochloromethane	9.57	130	6812	1.8040 ug/L	100
36) Tetrahydrofuran	9.60	42	30834	19.9093 ug/L	96
38) 1,1,1-Trichloroethane	9.84	97	20518	2.1713 ug/L #	94
39) Cyclohexane	9.88	56	22087	1.9325 ug/L	98
40) 1,1-Dichloropropene	10.04	75	13954	1.9542 ug/L	98
41) Carbon Tetrachloride	10.18	117	21054	2.3604 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	300593	22.3753 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	16928	2.0188 ug/L	98
45) Benzene	10.38	78	41004	2.0075 ug/L	97
46) Trichloroethene	11.08	130	13283	1.9954 ug/L	96
47) Methylcyclohexane	11.17	83	15711	1.9461 ug/L	95
48) 1,2-Dichloropropane	11.29	63	11010	1.8980 ug/L	91
49) 1,4-Dioxane	11.55	88	898	25.5347 ug/L	88
50) Bromodichloromethane	11.57	83	15058	1.9584 ug/L	100
51) Dibromomethane	11.66	93	5461	1.7952 ug/L	97
52) 2-Chloroethyl Vinyl Ether	11.84	63	4894	1.6180 ug/L	83
53) 4-Methyl-2-Pentanone	11.87	58	2173	1.1717 ug/L #	65
54) cis-1,3-Dichloropropene	12.17	75	14440	1.7842 ug/L	91
55) Dimethyl Disulfide	12.42	79	7378	1.4613 ug/L	97
58) Toluene	12.56	91	43051	1.9877 ug/L	98
59) Ethyl Methacrylate	12.64	69	7792	1.5195 ug/L	95
60) trans-1,3-Dichloropropene	12.73	75	12991	1.8310 ug/L	98
61) 1,1,2-Trichloroethane	12.93	97	8138	2.0075 ug/L	91
62) 2-Hexanone	12.86	43	4715	1.4106 ug/L #	61
63) 1,3-Dichloropropane	13.21	76	11740	1.7434 ug/L	95
64) Tetrachloroethene	13.34	164	10610	2.1708 ug/L	90
65) Dibromochloromethane	13.59	129	11236	1.9202 ug/L	96
66) 1,2-Dibromoethane	13.82	107	7613	1.8499 ug/L	99
67) 1-Chlorohexane	13.89	91	13853	1.9499 ug/L	96
68) Chlorobenzene	14.29	112	33381	2.0954 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	13541	2.2175 ug/L	97
70) Ethylbenzene	14.31	106	17116	2.1175 ug/L	98
71) m-,p-Xylene	14.39	106	40469	4.2073 ug/L	95
72) o-Xylene	14.92	106	19196	2.0006 ug/L	99
73) Styrene	14.96	104	30019	1.8440 ug/L	92
74) Bromoform	15.43	173	6309	1.7308 ug/L	96
75) Isopropylbenzene	15.31	105	52419	2.1605 ug/L	98
77) 1,1,2,2-Tetrachloroethane	15.51	83	7118	1.7898 ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	2487	1.6927 ug/L	98
80) trans-1,4-Dichloro-2-Buten	15.74	53	2265	1.3810 ug/L	68
81) n-Propylbenzene	15.79	91	59353	2.1908 ug/L	100
82) Bromobenzene	15.91	156	15393	2.0465 ug/L	97
83) 1,3,5-Trimethylbenzene	15.95	105	43641	2.1197 ug/L	98
84) 2-Chlorotoluene	16.05	91	40923	2.0467 ug/L	96
85) 4-Chlorotoluene	16.09	91	37360	2.2771 ug/L	97
86) a-Methylstyrene	16.34	118	20567	1.7976 ug/L	92
87) tert-Butylbenzene	16.40	134	9253	2.0481 ug/L	89
88) 1,2,4-Trimethylbenzene	16.44	105	43857	2.0815 ug/L	99
89) sec-Butylbenzene	16.65	105	52733	2.1643 ug/L	99
90) p-Isopropyltoluene	16.79	119	49990	2.2541 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	29674	2.1240 ug/L	99
92) 1,4-Dichlorobenzene	17.10	146	30258	2.1211 ug/L	87
93) n-Butylbenzene	17.28	91	44260	2.2167 ug/L	98
94) 1,2-Dichlorobenzene	17.57	146	27619	2.0969 ug/L	95
95) 1,2-Dibromo-3-Chloropropan	18.49	75	1094	1.3229 ug/L	60
96) 1,2,4-Trichlorobenzene	19.55	180	18455	1.8857 ug/L	98
97) Hexachlorobutadiene	19.69	225	8691	2.1858 ug/L	89
98) Naphthalene	19.90	128	34041	1.8174 ug/L #	95
99) 1,2,3-Trichlorobenzene	20.19	180	17703	1.9318 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

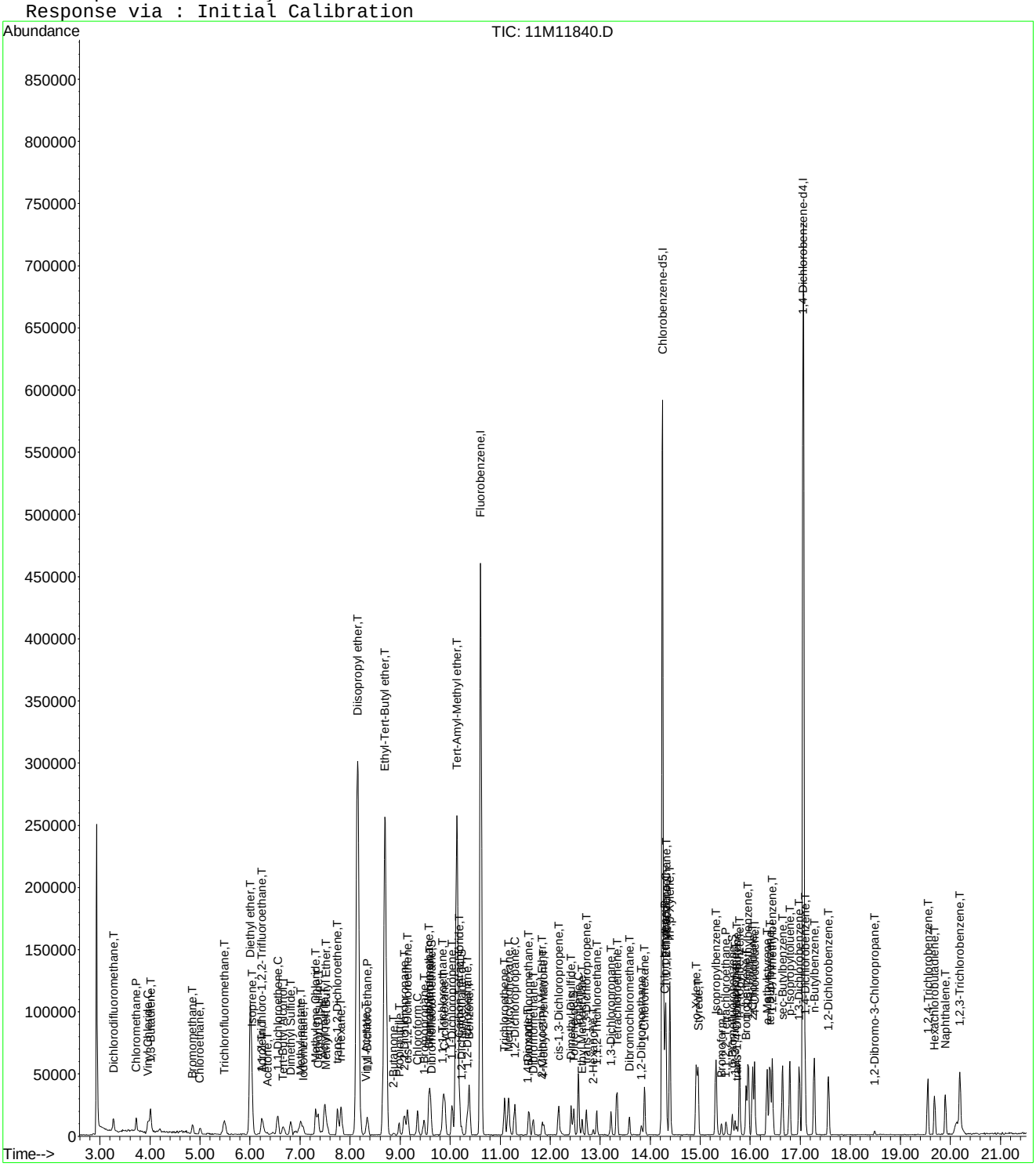

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8802	6.0	100	0.00
3	P	Chloromethane	2.0000	2.3121	-15.6	100	0.00
4	C	Vinyl Chloride	2.0000	1.9102	4.5	100	0.00
5	T	1,3-Butadiene	-1.0000	2.0253	0.0	100	0.01
6	T	Bromomethane	2.0000	1.9427	2.9	100	0.00
7	T	Chloroethane	2.0000	1.9714	1.4	100	-0.01
8	T	Trichlorofluoromethane	2.0000	2.0694	-3.5	100	0.01
9	T	Diethyl ether	25.0000	24.8555	0.6	100	0.00
10	T	Isoprene	-1.0000	1.9630	0.0	100	0.00
11	T	Acrolein	12.5000	12.0322	3.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9483	2.6	100	-0.01
13	T	Acetone	-1.0000	2.7924	0.0	100	0.01
14	C	1,1-Dichloroethene	2.0000	2.0117	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	45.8688	8.3	100	0.00
16	T	Dimethyl Sulfide	-1.0000	1.9809	0.0	100	0.00
17	T	Iodomethane	2.0000	2.6580	-32.9#	100	0.00
18	T	Methyl acetate	2.0000	0.8555	57.2#	100	0.00
19	T	Methylene Chloride	2.0000	2.1606	-8.0	100	0.00
20	T	Carbon Disulfide	2.0000	1.9879	0.6	100	0.00
21	T	Acrylonitrile	12.5000	10.8919	12.9	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8475	7.6	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0850	-4.2	100	0.00
24	T	n-Hexane	2.0000	2.0110	-0.6	100	0.00
25	T	Diisopropyl ether	25.0000	25.5200	-2.1	100	0.00
26	T	Vinyl Acetate	-1.0000	3.2184	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0741	-3.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.9254	0.3	100	0.00
29	T	2-Butanone	-1.0000	1.7527	0.0	0	0.00
30	T	Propionitrile	25.0000	23.6140	5.5	100	0.01
31	T	2,2-Dichloropropane	2.0000	2.1897	-9.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0669	-3.3	100	0.00
33	C	Chloroform	2.0000	2.0616	-3.1	100	0.00
34	T	1-Bromopropane	2.0000	2.2551	-12.8	100	0.00
35	T	Bromochloromethane	2.0000	2.0347	-1.7	100	0.00
36	T	Tetrahydrofuran	25.0000	24.1040	3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9175	8.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0696	-3.5	100	-0.01
39	T	Cyclohexane	2.0000	2.0442	-2.2	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9713	1.4	100	0.00
41	T	Carbon Tetrachloride	2.0000	2.1748	-8.7	100	0.00
42	T	Tert-Amyl-Methyl ether	25.0000	25.0128	-0.1	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	0.9755	2.4	100	0.00
44	T	1,2-Dichloroethane	2.0000	2.0689	-3.4	100	0.00
45	T	Benzene	2.0000	2.1160	-5.8	100	0.00
46	T	Trichloroethene	2.0000	2.1089	-5.4	100	-0.01
47	T	Methylcyclohexane	2.0000	2.0212	-1.1	100	0.00
48	C	1,2-Dichloropropane	2.0000	2.0525	-2.6	100	0.00
49	T	1,4-Dioxane	50.0000	49.5313	0.9	100	0.00
50	T	Bromodichloromethane	2.0000	1.9996	0.0	100	0.00
51	T	Dibromomethane	2.0000	1.9537	2.3	100	0.01
52	T	2-Chloroethyl Vinyl Ether	-1.0000	1.8512	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	1.4573	0.0	100	0.00
54	T	cis-1,3-Dichloropropene	2.0000	1.9172	4.1	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	1.6278	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	1.0000	1.0138	-1.4	100	0.00
58	C	Toluene	2.0000	2.0332	-1.7	100	0.00
59	T	Ethyl Methacrylate	2.0000	1.7234	13.8	100	-0.01
60	T	trans-1,3-Dichloropropene	2.0000	1.9114	4.4	100	0.00
61	T	1,1,2-Trichloroethane	2.0000	2.1674	-8.4	100	0.00
62	T	2-Hexanone	-1.0000	1.7098	0.0	100	0.00
63	T	1,3-Dichloropropane	2.0000	1.9471	2.6	100	0.00
64	T	Tetrachloroethene	2.0000	2.1547	-7.7	100	0.00
65	T	Dibromochloromethane	2.0000	1.9620	1.9	100	0.00
66	T	1,2-Dibromoethane	2.0000	2.0238	-1.2	100	0.00
67	T	1-Chlorohexane	2.0000	1.9844	0.8	100	0.00
68	P	Chlorobenzene	2.0000	2.1520	-7.6	100	0.00
69	T	1,1,1,2-Tetrachloroethane	2.0000	2.1574	-7.9	100	0.00
70	C	Ethylbenzene	2.0000	2.1518	-7.6	100	0.00
71	T	m-,p-Xylene	4.0000	4.1851	-4.6	100	0.00
72	T	o-Xylene	2.0000	2.0398	-2.0	100	0.00
73	T	Styrene	2.0000	1.9307	3.5	100	0.01
74	P	Bromoform	2.0000	1.8176	9.1	100	0.00
75	T	Isopropylbenzene	2.0000	2.1063	-5.3	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	2.0000	1.8958	5.2	100	-0.01
78	S	p-Bromofluorobenzene	1.0000	1.0013	-0.1	100	0.00
79	T	1,2,3-Trichloropropane	2.0000	2.1172	-5.9	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	2.0000	1.9762	1.2	100	0.00
81	T	n-Propylbenzene	2.0000	2.1256	-6.3	100	0.00
82	T	Bromobenzene	2.0000	2.1009	-5.0	100	-0.01
83	T	1,3,5-Trimethylbenzene	2.0000	2.0481	-2.4	100	-0.01
84	T	2-Chlorotoluene	2.0000	2.0925	-4.6	100	0.00
85	T	4-Chlorotoluene	2.0000	2.1326	-6.6	100	0.00
86	T	a-Methylstyrene	2.0000	1.8297	8.5	100	0.00
87	T	tert-Butylbenzene	2.0000	2.0497	-2.5	100	0.00
88	T	1,2,4-Trimethylbenzene	2.0000	2.0213	-1.1	100	0.00
89	T	sec-Butylbenzene	2.0000	2.0611	-3.1	100	0.00
90	T	p-Isopropyltoluene	2.0000	2.1272	-6.4	100	0.00
91	T	1,3-Dichlorobenzene	2.0000	2.0970	-4.8	100	0.00
92	T	1,4-Dichlorobenzene	2.0000	2.1095	-5.5	100	0.00
93	T	n-Butylbenzene	2.0000	2.1373	-6.9	100	0.00
94	T	1,2-Dichlorobenzene	2.0000	2.1425	-7.1	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	2.0000	1.9175	4.1	100	0.00
96	T	1,2,4-Trichlorobenzene	2.0000	1.9565	2.2	100	0.00
97	T	Hexachlorobutadiene	2.0000	2.0914	-4.6	100	0.00
98	T	Naphthalene	2.0000	1.9443	2.8	100	0.00
99	T	1,2,3-Trichlorobenzene	2.0000	2.0449	-2.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11840.D 8260WT.M Sat May 14 18:46:53 2016 Page 2

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

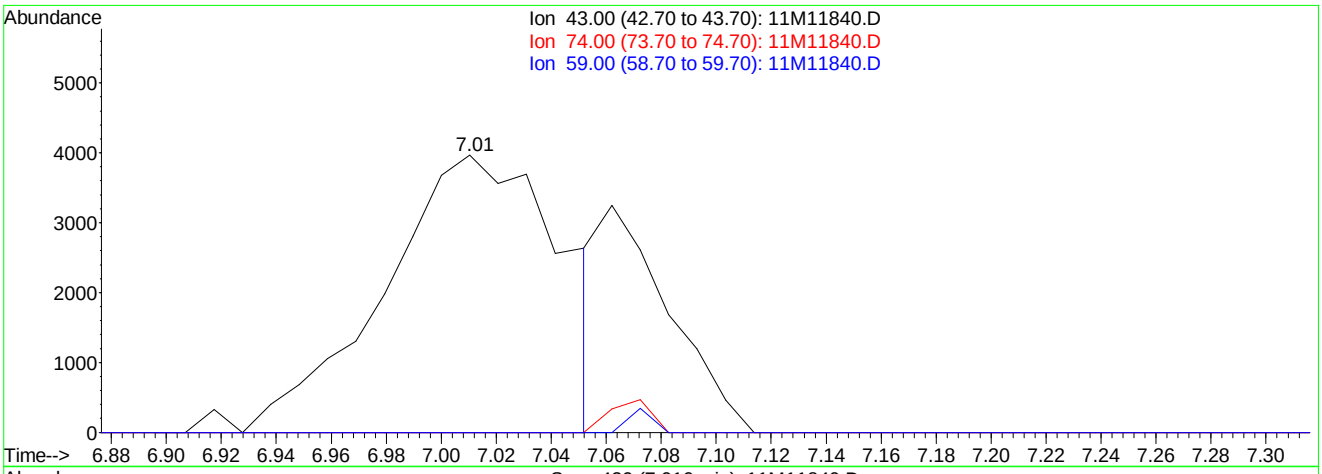

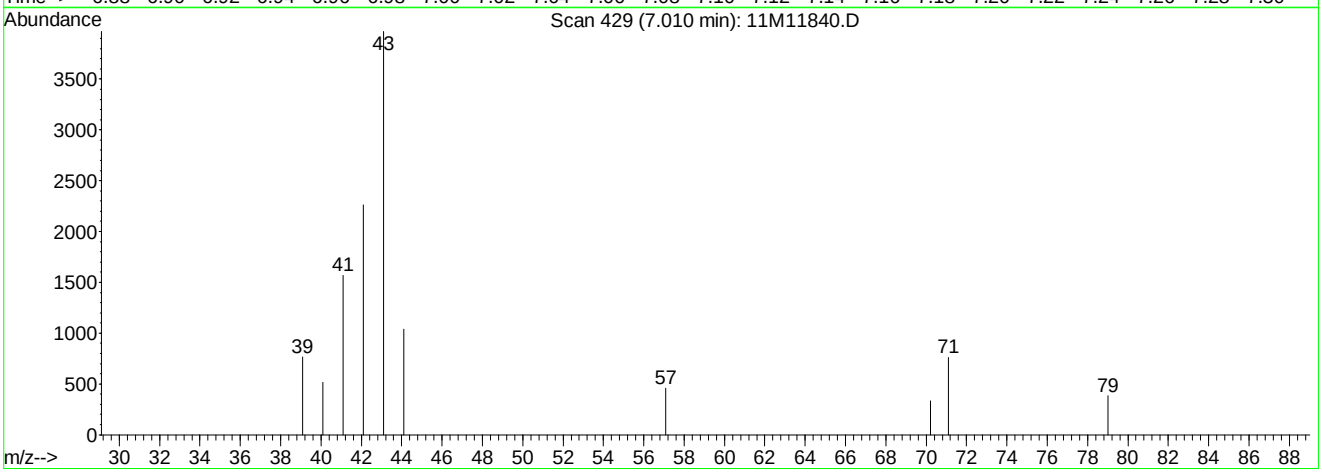

TIC: 11M11840.D

(18) Methyl acetate (T)

7.01min 3.69ug/L

response 17794

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	2.82#
59.00	6.50	1.21#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:34 2016

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

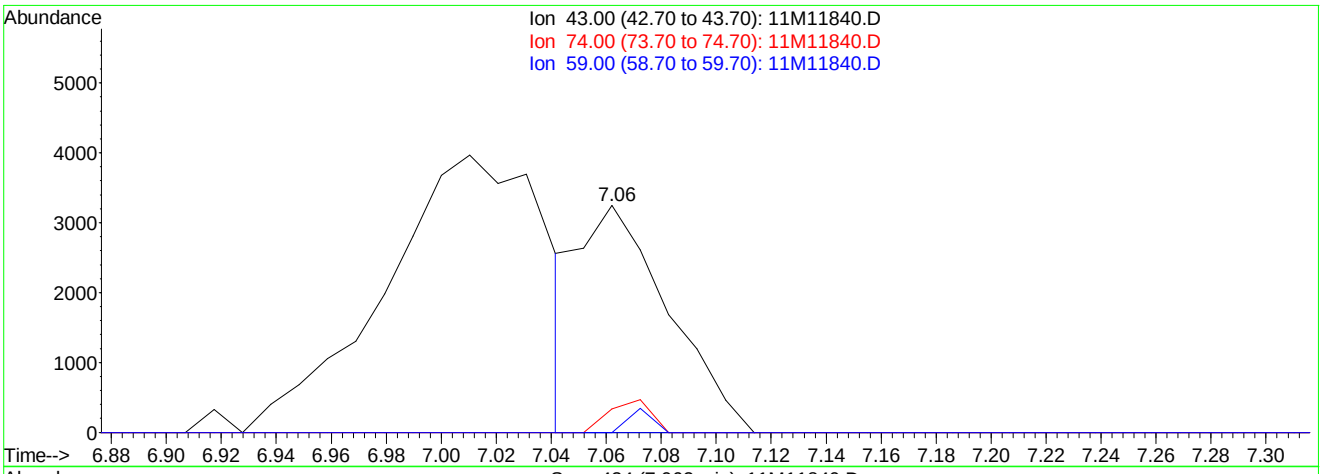

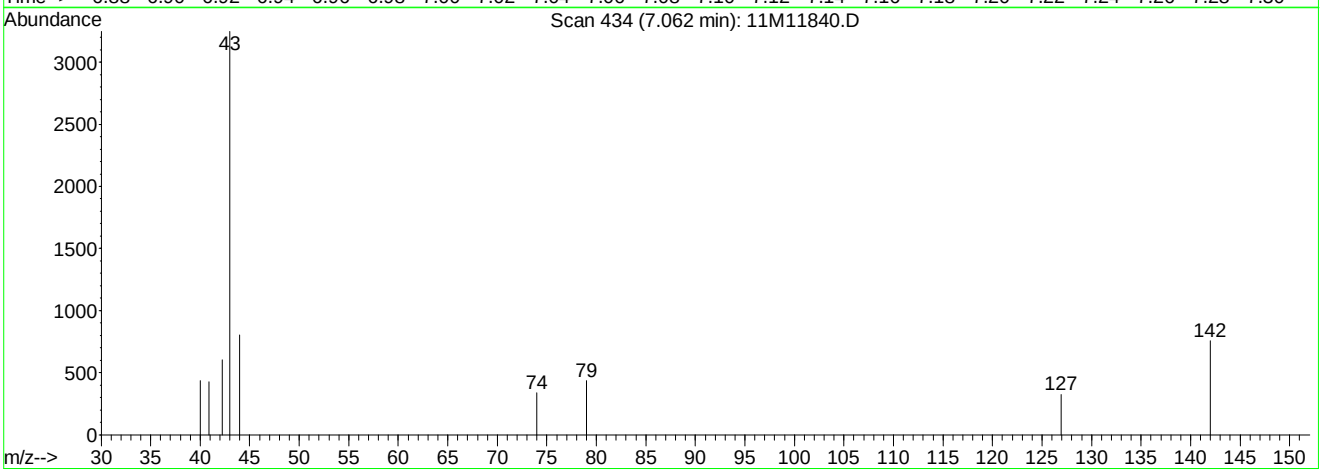

TIC: 11M11840.D

(18) Methyl acetate (T)

7.06min 0.86ug/L mint

response 7344

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	6.84#
59.00	6.50	2.93#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:39 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	510485	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	424113	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244127	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	13577	2.3093 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.24%#	
43) 1,2-Dichloroethane-d4	10.23	65	16340	2.3640 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.44%#	
57) Toluene-d8	12.47	98	46369	2.3570 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.44%#	
78) p-Bromofluorobenzene	15.64	95	19139	2.4218 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.68%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	33260	4.2909 ug/L	97
3) Chloromethane	3.72	50	29484	4.2588 ug/L	100
4) Vinyl Chloride	3.96	62	24947	4.6446 ug/L	98
5) 1,3-Butadiene	4.00	54	24704	4.8274 ug/L	87
6) Bromomethane	4.85	94	16794	4.7876 ug/L	96
7) Chloroethane	5.00	64	15417	4.1982 ug/L	96
8) Trichlorofluoromethane	5.48	101	50663	4.8750 ug/L	98
9) Diethyl ether	6.01	59	199353	45.0064 ug/L	100
10) Isoprene	6.04	67	30513	4.3864 ug/L	99
11) Acrolein	6.25	56	12345	23.3877 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	23865	4.5585 ug/L	97
13) Acetone	6.35	43	6439	4.2186 ug/L	86
14) 1,1-Dichloroethene	6.56	61	43769	4.6158 ug/L	96
15) Tert-Butyl Alcohol	6.66	59	34212	87.4805 ug/L	100
16) Dimethyl Sulfide	6.81	62	17251	4.0482 ug/L	99
17) Iodomethane	7.06	142	7385	2.0684 ug/L	94
18) Methyl acetate	7.06	43	32363	5.4250 ug/L #	83
19) Methylene Chloride	7.31	84	23476	4.4707 ug/L	98
20) Carbon Disulfide	7.36	76	72931	4.4715 ug/L	98
21) Acrylonitrile	7.49	53	38039	20.0847 ug/L	96
22) Methyl Tert Butyl Ether	7.52	73	57597	4.3071 ug/L	98
23) trans-1,2-Dichloroethene	7.74	96	23369	4.3390 ug/L	99
24) n-Hexane	7.82	57	38507	4.3615 ug/L	99
25) Diisopropyl ether	8.15	45	1105208	48.2180 ug/L	99
26) Vinyl Acetate	8.31	43	24007	7.3442 ug/L	97
27) 1,1-Dichloroethane	8.34	63	51535	4.8316 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	899266	48.1312 ug/L	99
29) 2-Butanone	8.88	43	8098	3.5469 ug/L	98
30) Propionitrile	8.98	54	26204	41.2561 ug/L	97
31) 2,2-Dichloropropane	9.09	77	40285	5.2526 ug/L	97
32) cis-1,2-Dichloroethene	9.15	96	27456	4.6081 ug/L	91
33) Chloroform	9.35	83	48958	4.7306 ug/L	97
34) 1-Bromopropane	9.47	122	4632	4.9482 ug/L	88
35) Bromochloromethane	9.57	130	17073	4.6807 ug/L	99
36) Tetrahydrofuran	9.60	42	59638	39.6839 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	48123	4.8983 ug/L	100
39) Cyclohexane	9.88	56	51945	4.5931 ug/L	98
40) 1,1-Dichloropropene	10.04	75	33867	4.6344 ug/L	99
41) Carbon Tetrachloride	10.17	117	47434	5.0851 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	615710	46.3601 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	40281	4.6727 ug/L	99
45) Benzene	10.38	78	94223	4.6151 ug/L	99
46) Trichloroethene	11.08	130	31195	4.7740 ug/L	96
47) Methylcyclohexane	11.17	83	35731	4.4100 ug/L	96
48) 1,2-Dichloropropane	11.29	63	25973	4.4921 ug/L	93
49) 1,4-Dioxane	11.56	88	2747	80.2363 ug/L	93
50) Bromodichloromethane	11.57	83	36997	4.7467 ug/L	99
51) Dibromomethane	11.65	93	13963	4.5774 ug/L	97
52) 2-Chloroethyl Vinyl Ether	11.84	63	11417	3.7313 ug/L	95
53) 4-Methyl-2-Pentanone	11.87	58	6133	3.2690 ug/L	90
54) cis-1,3-Dichloropropene	12.17	75	36461	4.5343 ug/L	100
55) Dimethyl Disulfide	12.42	79	18914	3.7032 ug/L	99
58) Toluene	12.56	91	107617	4.9467 ug/L	100
59) Ethyl Methacrylate	12.65	69	21187	4.1021 ug/L	99
60) trans-1,3-Dichloropropene	12.73	75	32824	4.5778 ug/L	99
61) 1,1,2-Trichloroethane	12.94	97	17791	4.3060 ug/L	98
62) 2-Hexanone	12.86	43	11606	3.4244 ug/L	99
63) 1,3-Dichloropropane	13.21	76	30121	4.5460 ug/L	97
64) Tetrachloroethene	13.33	164	24241	4.8819 ug/L	95
65) Dibromochloromethane	13.59	129	27989	4.7024 ug/L	95
66) 1,2-Dibromoethane	13.82	107	18147	4.4382 ug/L	96
67) 1-Chlorohexane	13.89	91	33195	4.6591 ug/L	97
68) Chlorobenzene	14.29	112	79059	4.9583 ug/L	98
69) 1,1,1,2-Tetrachloroethane	14.32	131	31047	4.8956 ug/L	97
70) Ethylbenzene	14.31	106	39304	4.8168 ug/L	95
71) m-,p-Xylene	14.39	106	95751	9.7273 ug/L	95
72) o-Xylene	14.92	106	45759	4.7228 ug/L	96
73) Styrene	14.95	104	77900	4.8227 ug/L	98
74) Bromoform	15.43	173	15663	4.1856 ug/L	97
75) Isopropylbenzene	15.31	105	123883	4.9827 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.51	83	18105	4.4049 ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	6717	4.7266 ug/L	85
80) trans-1,4-Dichloro-2-Buten	15.74	53	6067	3.6507 ug/L	69
81) n-Propylbenzene	15.79	91	143972	5.2435 ug/L	99
82) Bromobenzene	15.92	156	37345	4.9800 ug/L	93
83) 1,3,5-Trimethylbenzene	15.95	105	106030	5.0309 ug/L	100
84) 2-Chlorotoluene	16.05	91	99279	4.9734 ug/L	100
85) 4-Chlorotoluene	16.09	91	88275	5.1992 ug/L	98
86) a-Methylstyrene	16.34	118	53766	4.7153 ug/L	98
87) tert-Butylbenzene	16.39	134	23868	5.2956 ug/L	97
88) 1,2,4-Trimethylbenzene	16.44	105	112072	5.2401 ug/L	99
89) sec-Butylbenzene	16.65	105	129249	5.1810 ug/L	99
90) p-Isopropyltoluene	16.79	119	119605	5.2524 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	71265	5.0271 ug/L	99
92) 1,4-Dichlorobenzene	17.10	146	72437	5.0122 ug/L	96
93) n-Butylbenzene	17.28	91	100062	4.9277 ug/L	99
94) 1,2-Dichlorobenzene	17.57	146	64925	4.9520 ug/L	98
95) 1,2-Dibromo-3-Chloropropan	18.49	75	3875	4.6567 ug/L	87
96) 1,2,4-Trichlorobenzene	19.55	180	46664	4.8629 ug/L	97
97) Hexachlorobutadiene	19.69	225	20419	5.1319 ug/L	96
98) Naphthalene	19.90	128	83612	4.4869 ug/L	99
99) 1,2,3-Trichlorobenzene	20.19	180	40714	4.5323 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration

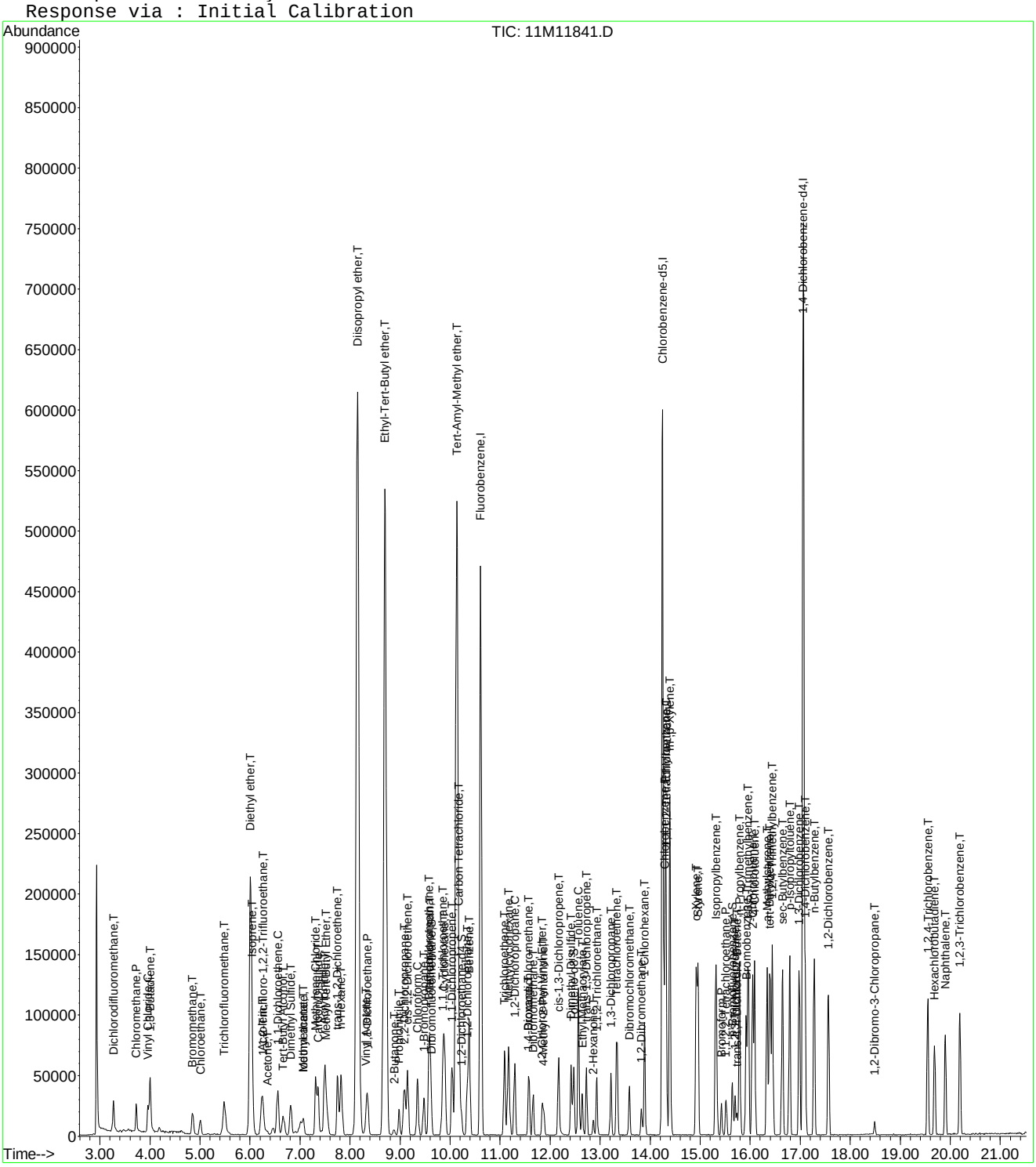

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.1584	16.8	100	0.00
3	P	Chloromethane	5.0000	4.6027	7.9	100	0.00
4	C	Vinyl Chloride	5.0000	4.6895	6.2	100	0.00
5	T	1,3-Butadiene	5.0000	4.6702	6.6	100	0.00
6	T	Bromomethane	5.0000	4.5915	8.2	100	0.00
7	T	Chloroethane	5.0000	4.5105	9.8	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7781	4.4	100	0.00
9	T	Diethyl ether	50.0000	50.8371	-1.7	100	0.00
10	T	Isoprene	5.0000	4.6688	6.6	100	0.00
11	T	Acrolein	25.0000	24.7297	1.1	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6385	7.2	100	0.01
13	T	Acetone	5.0000	5.3120	-6.2	100	0.01
14	C	1,1-Dichloroethene	5.0000	4.6835	6.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	102.0360	-2.0	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6223	7.6	100	0.00
17	T	Iodomethane	5.0000	3.9124	21.8	100	0.00
18	T	Methyl acetate	5.0000	7.5474	-50.9#	100	0.00
19	T	Methylene Chloride	5.0000	4.8539	2.9	100	0.00
20	T	Carbon Disulfide	5.0000	4.6615	6.8	100	0.00
21	T	Acrylonitrile	25.0000	23.4049	6.4	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.7747	4.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.5182	9.6	100	0.00
24	T	n-Hexane	5.0000	4.4700	10.6	100	0.00
25	T	Diisopropyl ether	50.0000	51.4154	-2.8	100	0.00
26	T	Vinyl Acetate	5.0000	5.1698	-3.4	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9658	0.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.3996	-2.8	100	0.00
29	T	2-Butanone	5.0000	4.4190	11.6	100	0.01
30	T	Propionitrile	50.0000	48.8210	2.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9614	0.8	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8145	3.7	100	0.00
33	C	Chloroform	5.0000	4.8039	3.9	100	0.00
34	T	1-Bromopropane	5.0000	5.1449	-2.9	100	0.00
35	T	Bromochloromethane	5.0000	5.0410	-0.8	100	0.00
36	T	Tetrahydrofuran	50.0000	46.0861	7.8	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4302	2.8	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7984	4.0	100	0.00
39	T	Cyclohexane	5.0000	4.7526	4.9	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.7295	5.4	100	0.00
41	T	Carbon Tetrachloride	5.0000	4.8435	3.1	100	-0.01
42	T	Tert-Amyl-Methyl ether	50.0000	50.6462	-1.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5650	-2.6	100	0.00
44	T	1,2-Dichloroethane	5.0000	4.8665	2.7	100	0.00
45	T	Benzene	5.0000	4.8065	3.9	100	0.00
46	T	Trichloroethene	5.0000	4.8959	2.1	100	-0.01
47	T	Methylcyclohexane	5.0000	4.5439	9.1	100	0.00
48	C	1,2-Dichloropropane	5.0000	4.7864	4.3	100	0.00
49	T	1,4-Dioxane	100.0000	102.6541	-2.7	100	0.01
50	T	Bromodichloromethane	5.0000	4.8566	2.9	100	0.00
51	T	Dibromomethane	5.0000	4.9379	1.2	100	0.00
52	T	2-Chloroethyl Vinyl Ether	5.0000	4.2689	14.6	100	0.00
53	T	4-Methyl-2-Pentanone	5.0000	4.0658	18.7	100	0.00
54	T	cis-1,3-Dichloropropene	5.0000	4.7853	4.3	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	5.0000	4.1252	17.5	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	2.5000	2.5163	-0.7	100	0.00
58	C	Toluene	5.0000	5.0124	-0.2	100	0.00
59	T	Ethyl Methacrylate	5.0000	4.6214	7.6	100	0.00
60	T	trans-1,3-Dichloropropene	5.0000	4.7629	4.7	100	0.00
61	T	1,1,2-Trichloroethane	5.0000	4.6730	6.5	100	0.00
62	T	2-Hexanone	5.0000	4.1507	17.0	100	0.00
63	T	1,3-Dichloropropane	5.0000	4.9267	1.5	100	0.00
64	T	Tetrachloroethene	5.0000	4.8551	2.9	100	-0.01
65	T	Dibromochloromethane	5.0000	4.8199	3.6	100	0.00
66	T	1,2-Dibromoethane	5.0000	4.7575	4.8	100	0.00
67	T	1-Chlorohexane	5.0000	4.6895	6.2	100	0.00
68	P	Chlorobenzene	5.0000	5.0264	-0.5	100	0.00
69	T	1,1,1,2-Tetrachloroethane	5.0000	4.8783	2.4	100	0.00
70	C	Ethylbenzene	5.0000	4.8732	2.5	100	0.00
71	T	m-,p-Xylene	10.0000	9.7654	2.3	100	0.00
72	T	o-Xylene	5.0000	4.7954	4.1	100	0.00
73	T	Styrene	5.0000	4.9411	1.2	100	0.00
74	P	Bromoform	5.0000	4.4503	11.0	100	0.00
75	T	Isopropylbenzene	5.0000	4.9091	1.8	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	5.0000	4.7624	4.8	100	-0.01
78	S	p-Bromofluorobenzene	2.5000	2.5432	-1.7	100	0.00
79	T	1,2,3-Trichloropropane	5.0000	5.0393	-0.8	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0050	19.9	100	0.00
81	T	n-Propylbenzene	5.0000	5.0923	-1.8	100	0.00
82	T	Bromobenzene	5.0000	5.0338	-0.7	100	0.00
83	T	1,3,5-Trimethylbenzene	5.0000	4.9145	1.7	100	-0.01
84	T	2-Chlorotoluene	5.0000	5.0134	-0.3	100	0.00
85	T	4-Chlorotoluene	5.0000	4.9765	0.5	100	0.00
86	T	a-Methylstyrene	5.0000	4.7239	5.5	100	0.00
87	T	tert-Butylbenzene	5.0000	5.2217	-4.4	100	-0.01
88	T	1,2,4-Trimethylbenzene	5.0000	5.1012	-2.0	100	0.00
89	T	sec-Butylbenzene	5.0000	4.9892	0.2	100	0.00
90	T	p-Isopropyltoluene	5.0000	5.0265	-0.5	100	0.00
91	T	1,3-Dichlorobenzene	5.0000	4.9737	0.5	100	0.00
92	T	1,4-Dichlorobenzene	5.0000	4.9875	0.2	100	0.00
93	T	n-Butylbenzene	5.0000	4.7722	4.6	100	0.00
94	T	1,2-Dichlorobenzene	5.0000	4.9741	0.5	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1051	-2.1	100	0.00
96	T	1,2,4-Trichlorobenzene	5.0000	4.8858	2.3	100	0.00
97	T	Hexachlorobutadiene	5.0000	4.8528	2.9	100	0.00
98	T	Naphthalene	5.0000	4.7164	5.7	100	0.00
99	T	1,2,3-Trichlorobenzene	5.0000	4.6448	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11841.D 8260WT.M Sat May 14 18:48:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	512017	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	433937	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	255524	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	58089	10.3664 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.48%#		
43) 1,2-Dichloroethane-d4	10.23	65	66804	10.4555 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.84%#		
57) Toluene-d8	12.47	98	193532	10.2645 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.04%#		
78) p-Bromofluorobenzene	15.64	95	81186	10.3070 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	176636	22.0179 ug/L	99
3) Chloromethane	3.72	50	126901	19.7510 ug/L	98
4) Vinyl Chloride	3.96	62	109592	20.5394 ug/L	98
5) 1,3-Butadiene	4.00	54	116317	21.9237 ug/L	96
6) Bromomethane	4.85	94	73878	20.1380 ug/L	93
7) Chloroethane	5.00	64	71103	20.7401 ug/L	100
8) Trichlorofluoromethane	5.49	101	225913	21.2425 ug/L	99
9) Diethyl ether	6.01	59	321203	81.6650 ug/L	99
10) Isoprene	6.04	67	135641	20.6925 ug/L	98
11) Acrolein	6.24	56	19366	37.8284 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	109792	21.2757 ug/L	99
13) Acetone	6.34	43	27399	22.5356 ug/L	96
14) 1,1-Dichloroethene	6.56	61	201658	21.5139 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	60081	178.6532 ug/L	99
16) Dimethyl Sulfide	6.81	62	75759	20.2383 ug/L	97
17) Iodomethane	7.06	142	67280	17.2594 ug/L	97
18) Methyl acetate	7.07	43	87945	22.4983 ug/L	96
19) Methylene Chloride	7.31	84	99453	20.5013 ug/L	100
20) Carbon Disulfide	7.36	76	327043	20.8410 ug/L	100
21) Acrylonitrile	7.49	53	69618	42.7070 ug/L	95
22) Methyl Tert Butyl Ether	7.52	73	266288	22.0086 ug/L	99
23) trans-1,2-Dichloroethene	7.75	96	107858	20.7912 ug/L	99
24) n-Hexane	7.82	57	184135	21.3111 ug/L	99
25) Diisopropyl ether	8.15	45	1729257	80.2062 ug/L	99
26) Vinyl Acetate	8.31	43	160029	20.6235 ug/L	99
27) 1,1-Dichloroethane	8.34	63	218994	21.0387 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1435318	81.7933 ug/L	100
29) 2-Butanone	8.87	43	39878	21.6958 ug/L	99
30) Propionitrile	8.97	54	47221	87.7149 ug/L	99
31) 2,2-Dichloropropane	9.09	77	166427	20.4352 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	120620	21.0877 ug/L	99
33) Chloroform	9.35	83	208615	20.4085 ug/L	99
34) 1-Bromopropane	9.48	122	19153	19.2424 ug/L	96
35) Bromochloromethane	9.57	130	77189	22.7226 ug/L	99
36) Tetrahydrofuran	9.60	42	109362	84.2581 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	210871	20.9631 ug/L	98
39) Cyclohexane	9.88	56	235071	21.4428 ug/L	99
40) 1,1-Dichloropropene	10.04	75	151682	21.1188 ug/L	99
41) Carbon Tetrachloride	10.17	117	212111	21.5941 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1001790	82.1572 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M11842.D 8260WT.M Sat May 14 18:50:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	180438	21.7339	ug/L	99
45)	Benzene	10.38	78	407777	20.7394	ug/L	100
46)	Trichloroethene	11.08	130	132094	20.6692	ug/L	99
47)	Methylcyclohexane	11.17	83	168355	21.3455	ug/L	98
48)	1,2-Dichloropropane	11.29	63	112875	20.7388	ug/L	99
49)	1,4-Dioxane	11.56	88	4948	165.8209	ug/L	99
50)	Bromodichloromethane	11.57	83	163762	21.4329	ug/L	98
51)	Dibromomethane	11.65	93	61028	21.5174	ug/L	98
52)	2-Chloroethyl Vinyl Ether	11.84	63	56664	21.1238	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	32621	21.5609	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	166399	21.7735	ug/L	100
55)	Dimethyl Disulfide	12.42	79	93808	20.3984	ug/L	99
58)	Toluene	12.56	91	467769	21.2936	ug/L	99
59)	Ethyl Methacrylate	12.64	69	103892	22.1484	ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	155661	22.0759	ug/L	100
61)	1,1,2-Trichloroethane	12.94	97	85297	21.8971	ug/L	100
62)	2-Hexanone	12.86	43	62113	21.7109	ug/L	99
63)	1,3-Dichloropropane	13.21	76	137448	21.9726	ug/L	98
64)	Tetrachloroethene	13.34	164	106368	20.8217	ug/L	99
65)	Dibromochloromethane	13.59	129	131143	22.0723	ug/L	99
66)	1,2-Dibromoethane	13.82	107	84381	21.6209	ug/L	99
67)	1-Chlorohexane	13.89	91	153420	21.1830	ug/L	100
68)	Chlorobenzene	14.29	112	338669	21.0446	ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	134571	20.6660	ug/L	98
70)	Ethylbenzene	14.31	106	171752	20.8130	ug/L	97
71)	m-,p-Xylene	14.39	106	419228	41.7882	ug/L	99
72)	o-Xylene	14.92	106	208125	21.3170	ug/L	99
73)	Styrene	14.95	104	353452	21.9116	ug/L	98
74)	Bromoform	15.43	173	78592	21.8247	ug/L	100
75)	Isopropylbenzene	15.31	105	552747	21.4078	ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	90122	22.6486	ug/L	98
79)	1,2,3-Trichloropropane	15.70	110	30969	20.9562	ug/L	97
80)	trans-1,4-Dichloro-2-Buten	15.74	53	36190	19.3325	ug/L	86
81)	n-Propylbenzene	15.79	91	640711	21.6512	ug/L	100
82)	Bromobenzene	15.92	156	160227	20.6340	ug/L	100
83)	1,3,5-Trimethylbenzene	15.95	105	481759	21.3337	ug/L	100
84)	2-Chlorotoluene	16.05	91	435100	20.9919	ug/L	99
85)	4-Chlorotoluene	16.09	91	391759	21.1004	ug/L	100
86)	a-Methylstyrene	16.34	118	253642	21.2911	ug/L	99
87)	tert-Butylbenzene	16.39	134	101859	21.2903	ug/L	99
88)	1,2,4-Trimethylbenzene	16.44	105	505239	21.9714	ug/L	98
89)	sec-Butylbenzene	16.65	105	586770	21.6398	ug/L	100
90)	p-Isopropyltoluene	16.79	119	539795	21.6735	ug/L	100
91)	1,3-Dichlorobenzene	16.98	146	312832	20.8591	ug/L	99
92)	1,4-Dichlorobenzene	17.10	146	314339	20.6779	ug/L	99
93)	n-Butylbenzene	17.28	91	474312	21.6121	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	287316	21.0305	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	19607	22.2193	ug/L	89
96)	1,2,4-Trichlorobenzene	19.55	180	212916	21.2982	ug/L	100
97)	Hexachlorobutadiene	19.69	225	91388	20.7507	ug/L	99
98)	Naphthalene	19.90	128	414073	22.3154	ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	193437	21.0836	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

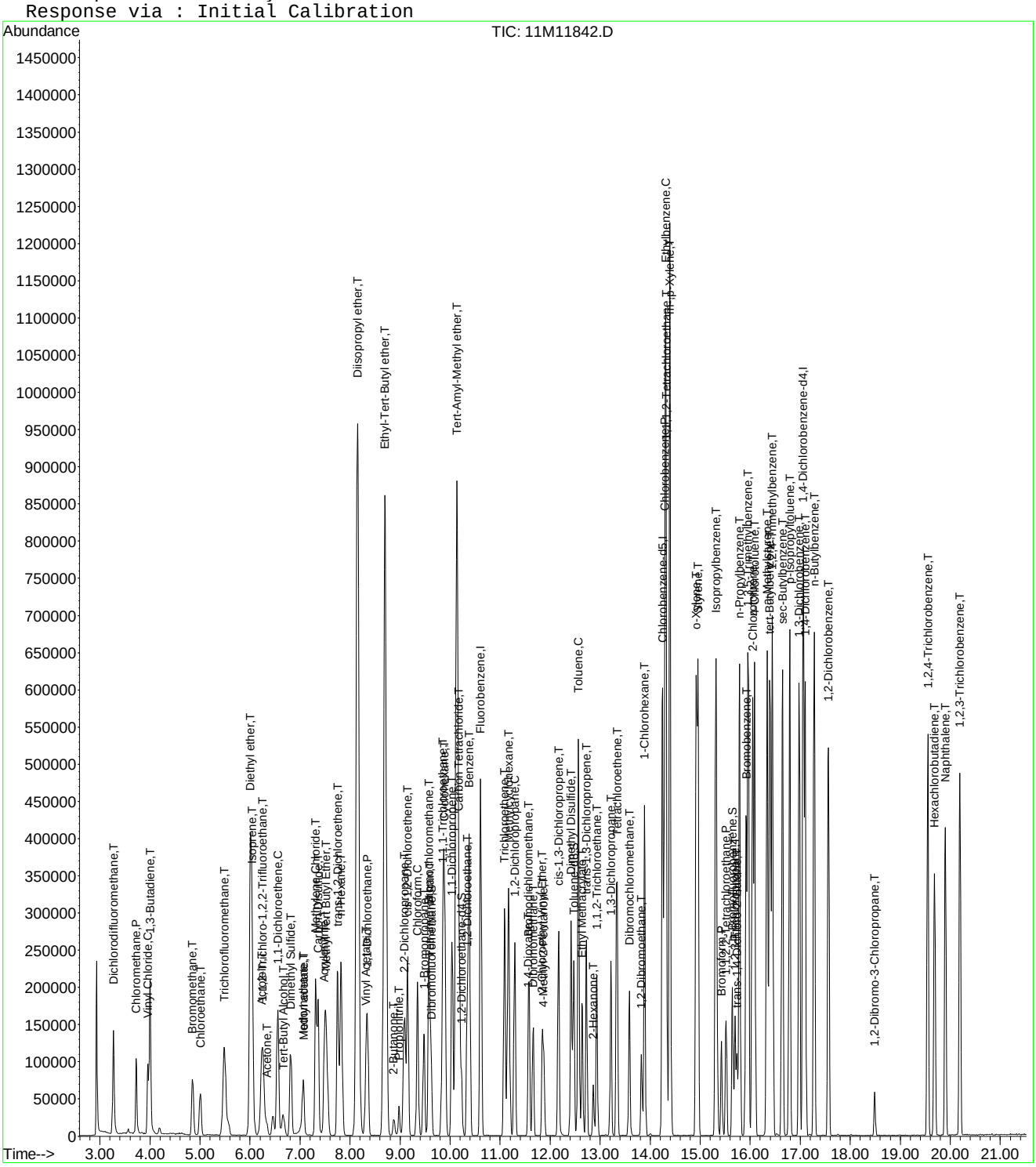

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	521583	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	438582	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	263885	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	139784	24.4879 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.23	65	158200	24.3058 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.24%		
57) Toluene-d8	12.47	98	462969	24.2947 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.16%		
78) p-Bromofluorobenzene	15.64	95	188875	23.2189 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	416971	51.0228 ug/L	100
3) Chloromethane	3.72	50	287508	43.9273 ug/L	100
4) Vinyl Chloride	3.96	62	261024	48.0232 ug/L	100
5) 1,3-Butadiene	4.00	54	280913	51.9760 ug/L	100
6) Bromomethane	4.85	94	172294	46.1032 ug/L	100
7) Chloroethane	5.00	64	167978	48.0991 ug/L	100
8) Trichlorofluoromethane	5.48	101	519806	47.9806 ug/L	100
9) Diethyl ether	6.01	59	391891	97.8098 ug/L	100
10) Isoprene	6.04	67	331169	49.5943 ug/L	100
11) Acrolein	6.23	56	25228	47.9550 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	255341	48.5730 ug/L	100
13) Acetone	6.34	43	57896	46.7459 ug/L	98
14) 1,1-Dichloroethene	6.56	61	459793	48.1534 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	69395	202.5643 ug/L	100
16) Dimethyl Sulfide	6.81	62	193959	50.8640 ug/L	100
17) Iodomethane	7.06	142	214554	49.3519 ug/L	100
18) Methyl acetate	7.06	43	185465	48.1983 ug/L	100
19) Methylene Chloride	7.31	84	233601	47.2715 ug/L	100
20) Carbon Disulfide	7.36	76	816514	51.0786 ug/L	100
21) Acrylonitrile	7.49	53	84821	51.0789 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	610666	49.5457 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	252405	47.7624 ug/L	100
24) n-Hexane	7.82	57	449694	51.0913 ug/L	100
25) Diisopropyl ether	8.15	45	2181723	99.3365 ug/L	100
26) Vinyl Acetate	8.31	43	410275	48.2141 ug/L	100
27) 1,1-Dichloroethane	8.34	63	516691	48.7281 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	1783350	99.7625 ug/L	100
29) 2-Butanone	8.87	43	91238	48.7281 ug/L	100
30) Propionitrile	8.97	54	56538	103.0954 ug/L	100
31) 2,2-Dichloropropane	9.09	77	402511	48.5170 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	282222	48.4353 ug/L	100
33) Chloroform	9.35	83	489993	47.0562 ug/L	100
34) 1-Bromopropane	9.48	122	50180	48.4991 ug/L	100
35) Bromochloromethane	9.57	130	179921	51.9932 ug/L	100
36) Tetrahydrofuran	9.60	42	127999	96.8083 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	497667	48.5667 ug/L	100
39) Cyclohexane	9.88	56	575045	51.4928 ug/L	100
40) 1,1-Dichloropropene	10.04	75	353148	48.2674 ug/L	100
41) Carbon Tetrachloride	10.18	117	493225	49.2921 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1227500	98.8215 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	419000	49.5434 ug/L	100
45) Benzene	10.38	78	947514	47.3064 ug/L	100
46) Trichloroethene	11.09	130	307211	47.1888 ug/L	100
47) Methylcyclohexane	11.17	83	418631	52.1043 ug/L	100
48) 1,2-Dichloropropane	11.29	63	268423	48.4136 ug/L	100
49) 1,4-Dioxane	11.55	88	5866	189.1665 ug/L	100
50) Bromodichloromethane	11.57	83	385292	49.5015 ug/L	100
51) Dibromomethane	11.65	93	142910	49.4635 ug/L	100
52) 2-Chloroethyl Vinyl Ether	11.84	63	133225	48.7541 ug/L	100
53) 4-Methyl-2-Pentanone	11.87	58	75720	49.1295 ug/L	100
54) cis-1,3-Dichloropropene	12.17	75	394857	50.7199 ug/L	100
55) Dimethyl Disulfide	12.42	79	236984	50.5867 ug/L	100
58) Toluene	12.56	91	1095397	49.3360 ug/L	100
59) Ethyl Methacrylate	12.65	69	249821	52.6944 ug/L	100
60) trans-1,3-Dichloropropene	12.73	75	366443	51.4187 ug/L	100
61) 1,1,2-Trichloroethane	12.93	97	194150	49.3135 ug/L	100
62) 2-Hexanone	12.86	43	144364	49.9264 ug/L	100
63) 1,3-Dichloropropane	13.21	76	316783	50.1049 ug/L	100
64) Tetrachloroethene	13.34	164	251037	48.6205 ug/L	100
65) Dibromochloromethane	13.59	129	310662	51.7330 ug/L	100
66) 1,2-Dibromoethane	13.82	107	196704	49.8676 ug/L	100
67) 1-Chlorohexane	13.89	91	376690	51.4596 ug/L	100
68) Chlorobenzene	14.29	112	797442	49.0276 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	325801	49.5033 ug/L	100
70) Ethylbenzene	14.31	106	408749	49.0078 ug/L	100
71) m-,p-Xylene	14.39	106	996141	98.2427 ug/L	100
72) o-Xylene	14.92	106	492043	49.8632 ug/L	100
73) Styrene	14.95	104	838125	51.4077 ug/L	100
74) Bromoform	15.43	173	184100	50.5823 ug/L	100
75) Isopropylbenzene	15.31	105	1309383	50.1751 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	208930	50.8426 ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	72411	46.9859 ug/L	100
80) trans-1,4-Dichloro-2-Buten	15.74	53	94075	47.5347 ug/L	100
81) n-Propylbenzene	15.79	91	1522917	49.8325 ug/L	100
82) Bromobenzene	15.92	156	379178	47.2834 ug/L	100
83) 1,3,5-Trimethylbenzene	15.96	105	1143246	49.0221 ug/L	100
84) 2-Chlorotoluene	16.05	91	1021921	47.7415 ug/L	100
85) 4-Chlorotoluene	16.09	91	930690	48.5394 ug/L	100
86) a-Methylstyrene	16.34	118	649847	52.8208 ug/L	100
87) tert-Butylbenzene	16.40	134	241955	48.9705 ug/L	100
88) 1,2,4-Trimethylbenzene	16.44	105	1178963	49.6454 ug/L	100
89) sec-Butylbenzene	16.65	105	1390388	49.6522 ug/L	100
90) p-Isopropyltoluene	16.79	119	1282252	49.8529 ug/L	100
91) 1,3-Dichlorobenzene	16.98	146	737967	47.6473 ug/L	100
92) 1,4-Dichlorobenzene	17.10	146	740977	47.1987 ug/L	100
93) n-Butylbenzene	17.28	91	1126170	49.6883 ug/L	100
94) 1,2-Dichlorobenzene	17.57	146	684016	48.4812 ug/L	100
95) 1,2-Dibromo-3-Chloropropan	18.49	75	42848	46.3023 ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	512927	49.6830 ug/L	100
97) Hexachlorobutadiene	19.69	225	219129	48.1793 ug/L	100
98) Naphthalene	19.90	128	962852	50.2463 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	453828	47.8975 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

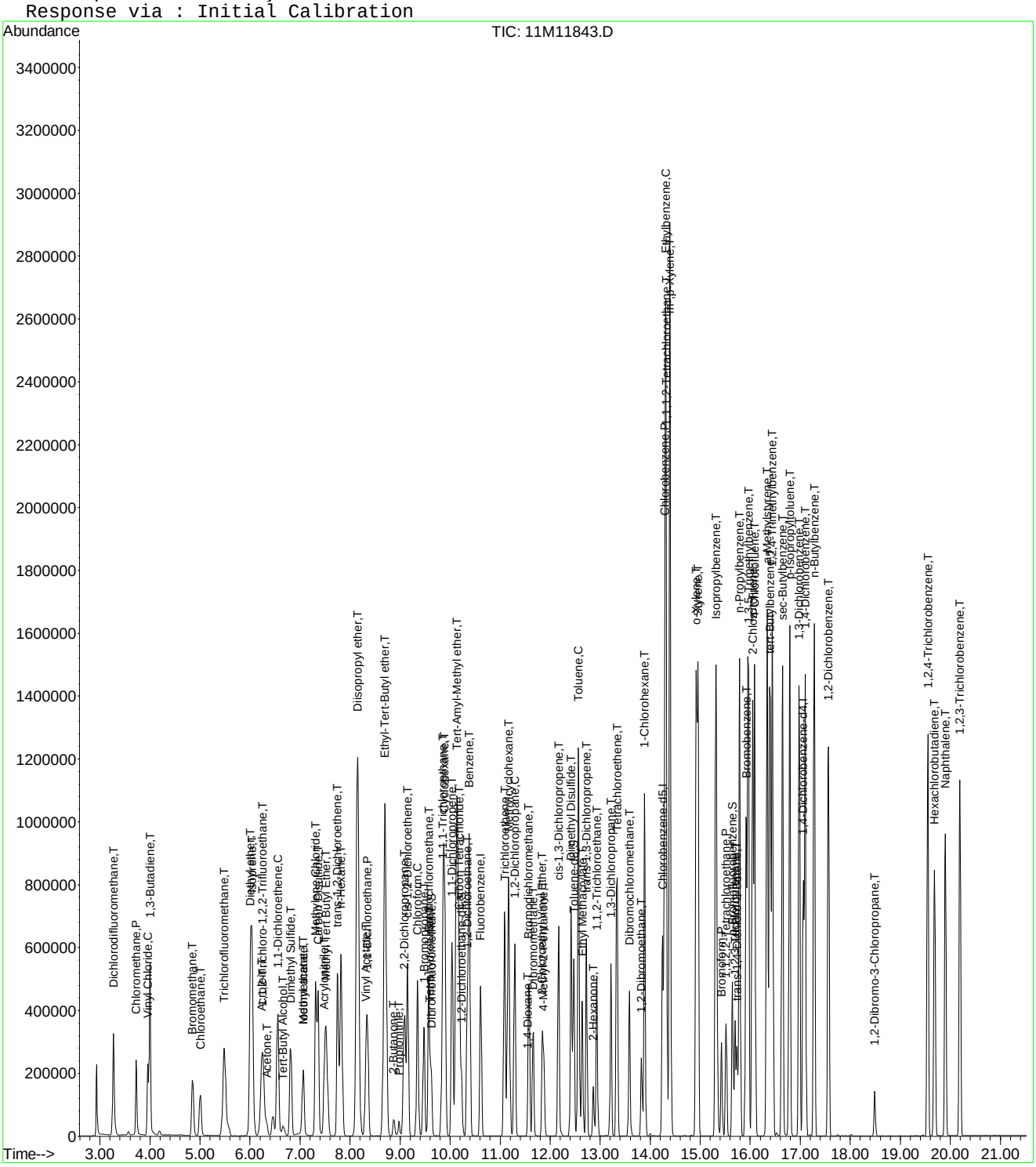

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	541540	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	458522	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	275719	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	307700	51.9175 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 207.68%#		
43) 1,2-Dichloroethane-d4	10.23	65	345779	51.1676 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 204.68%#		
57) Toluene-d8	12.47	98	1011334	50.7627 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 203.04%#		
78) p-Bromofluorobenzene	15.64	95	423157	49.7872 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 199.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	918088	108.2020 ug/L	100
3) Chloromethane	3.72	50	641242	94.3625 ug/L	99
4) Vinyl Chloride	3.95	62	586615	103.9481 ug/L	100
5) 1,3-Butadiene	3.99	54	571156	101.7838 ug/L	99
6) Bromomethane	4.85	94	394826	101.7560 ug/L	99
7) Chloroethane	5.00	64	370541	102.1913 ug/L	99
8) Trichlorofluoromethane	5.48	101	1135647	100.9627 ug/L	98
9) Diethyl ether	6.01	59	836495	201.0821 ug/L	99
10) Isoprene	6.04	67	699724	100.9257 ug/L	100
11) Acrolein	6.24	56	55228	99.4421 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	545013	99.8560 ug/L	100
13) Acetone	6.34	43	123799	96.2731 ug/L	95
14) 1,1-Dichloroethene	6.56	61	1004294	101.3022 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	148134	416.4687 ug/L	98
16) Dimethyl Sulfide	6.81	62	401237	101.3432 ug/L	100
17) Iodomethane	7.06	142	471112	102.3553 ug/L	100
18) Methyl acetate	7.07	43	381031	98.0957 ug/L	99
19) Methylene Chloride	7.31	84	501609	97.7649 ug/L	99
20) Carbon Disulfide	7.36	76	1695322	102.1458 ug/L	100
21) Acrylonitrile	7.49	53	184461	106.9881 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	1312901	102.5951 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	542907	98.9478 ug/L	98
24) n-Hexane	7.82	57	921942	100.8849 ug/L	99
25) Diisopropyl ether	8.15	45	4599625	201.7086 ug/L	99
26) Vinyl Acetate	8.31	43	855488	94.3763 ug/L	99
27) 1,1-Dichloroethane	8.34	63	1111115	100.9254 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	3780769	203.7060 ug/L	100
29) 2-Butanone	8.87	43	198511	102.1130 ug/L	100
30) Propionitrile	8.98	54	118699	208.4678 ug/L	97
31) 2,2-Dichloropropane	9.09	77	914695	106.1904 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	606774	100.2977 ug/L	99
33) Chloroform	9.35	83	1053766	97.4685 ug/L	100
34) 1-Bromopropane	9.48	122	106914	98.8615 ug/L	100
35) Bromochloromethane	9.57	130	387239	107.7795 ug/L	100
36) Tetrahydrofuran	9.60	42	270148	196.7890 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	1088263	102.2884 ug/L	99
39) Cyclohexane	9.88	56	1213186	104.6320 ug/L	100
40) 1,1-Dichloropropene	10.04	75	775674	102.1101 ug/L	98
41) Carbon Tetrachloride	10.18	117	1074698	103.4456 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	2619501	203.1147 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	895394	101.9714 ug/L	100
45)	Benzene	10.38	78	2041856	98.1867 ug/L	100
46)	Trichloroethene	11.08	130	677193	100.1861 ug/L	99
47)	Methylcyclohexane	11.17	83	867487	103.9915 ug/L	100
48)	1,2-Dichloropropane	11.29	63	580562	100.8530 ug/L	98
49)	1,4-Dioxane	11.56	88	13651	395.0901 ug/L	100
50)	Bromodichloromethane	11.57	83	837797	103.6717 ug/L	99
51)	Dibromomethane	11.65	93	315786	105.2707 ug/L	99
52)	2-Chloroethyl Vinyl Ether	11.84	63	293822	103.5626 ug/L	100
53)	4-Methyl-2-Pentanone	11.87	58	164890	103.0430 ug/L	98
54)	cis-1,3-Dichloropropene	12.17	75	854611	105.7305 ug/L	99
55)	Dimethyl Disulfide	12.42	79	505463	103.9202 ug/L	99
58)	Toluene	12.56	91	2361378	101.7300 ug/L	100
59)	Ethyl Methacrylate	12.65	69	529740	106.8782 ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	793063	106.4420 ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	418327	101.6330 ug/L	99
62)	2-Hexanone	12.86	43	314588	104.0648 ug/L	99
63)	1,3-Dichloropropane	13.21	76	685844	103.7610 ug/L	100
64)	Tetrachloroethene	13.34	164	550335	101.9528 ug/L	99
65)	Dibromochloromethane	13.59	129	681591	108.5659 ug/L	100
66)	1,2-Dibromoethane	13.82	107	427945	103.7729 ug/L	99
67)	1-Chlorohexane	13.89	91	807177	105.4730 ug/L	98
68)	Chlorobenzene	14.29	112	1705646	100.3046 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	704959	102.4557 ug/L	100
70)	Ethylbenzene	14.31	106	883839	101.3614 ug/L	99
71)	m-,p-Xylene	14.39	106	2123651	200.3333 ug/L	98
72)	o-Xylene	14.92	106	1053682	102.1356 ug/L	100
73)	Styrene	14.95	104	1807222	106.0282 ug/L	99
74)	Bromoform	15.43	173	412378	108.3755 ug/L	100
75)	Isopropylbenzene	15.31	105	2813193	103.1127 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	454052	105.7501 ug/L	99
79)	1,2,3-Trichloropropane	15.70	110	156532	96.8210 ug/L	100
80)	trans-1,4-Dichloro-2-Buten	15.74	53	203327	97.5343 ug/L	96
81)	n-Propylbenzene	15.79	91	3285915	102.9061 ug/L	99
82)	Bromobenzene	15.92	156	828973	98.9359 ug/L	99
83)	1,3,5-Trimethylbenzene	15.96	105	2483230	101.9102 ug/L	100
84)	2-Chlorotoluene	16.05	91	2208423	98.7437 ug/L	100
85)	4-Chlorotoluene	16.09	91	2020827	100.8710 ug/L	100
86)	a-Methylstyrene	16.34	118	1361545	105.9190 ug/L	99
87)	tert-Butylbenzene	16.40	134	532522	103.1540 ug/L	98
88)	1,2,4-Trimethylbenzene	16.44	105	2546912	102.6457 ug/L	100
89)	sec-Butylbenzene	16.65	105	3003570	102.6569 ug/L	99
90)	p-Isopropyltoluene	16.79	119	2763313	102.8241 ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	1600684	98.9134 ug/L	100
92)	1,4-Dichlorobenzene	17.10	146	1605475	97.8762 ug/L	100
93)	n-Butylbenzene	17.28	91	2452438	103.5609 ug/L	100
94)	1,2-Dichlorobenzene	17.57	146	1481276	100.4827 ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	95062	97.5959 ug/L	99
96)	1,2,4-Trichlorobenzene	19.55	180	1100416	102.0133 ug/L	100
97)	Hexachlorobutadiene	19.69	225	486893	102.4572 ug/L	100
98)	Naphthalene	19.90	128	2071229	103.4477 ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	980181	99.0092 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11844.D 8260WT.M Sat May 14 18:50:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

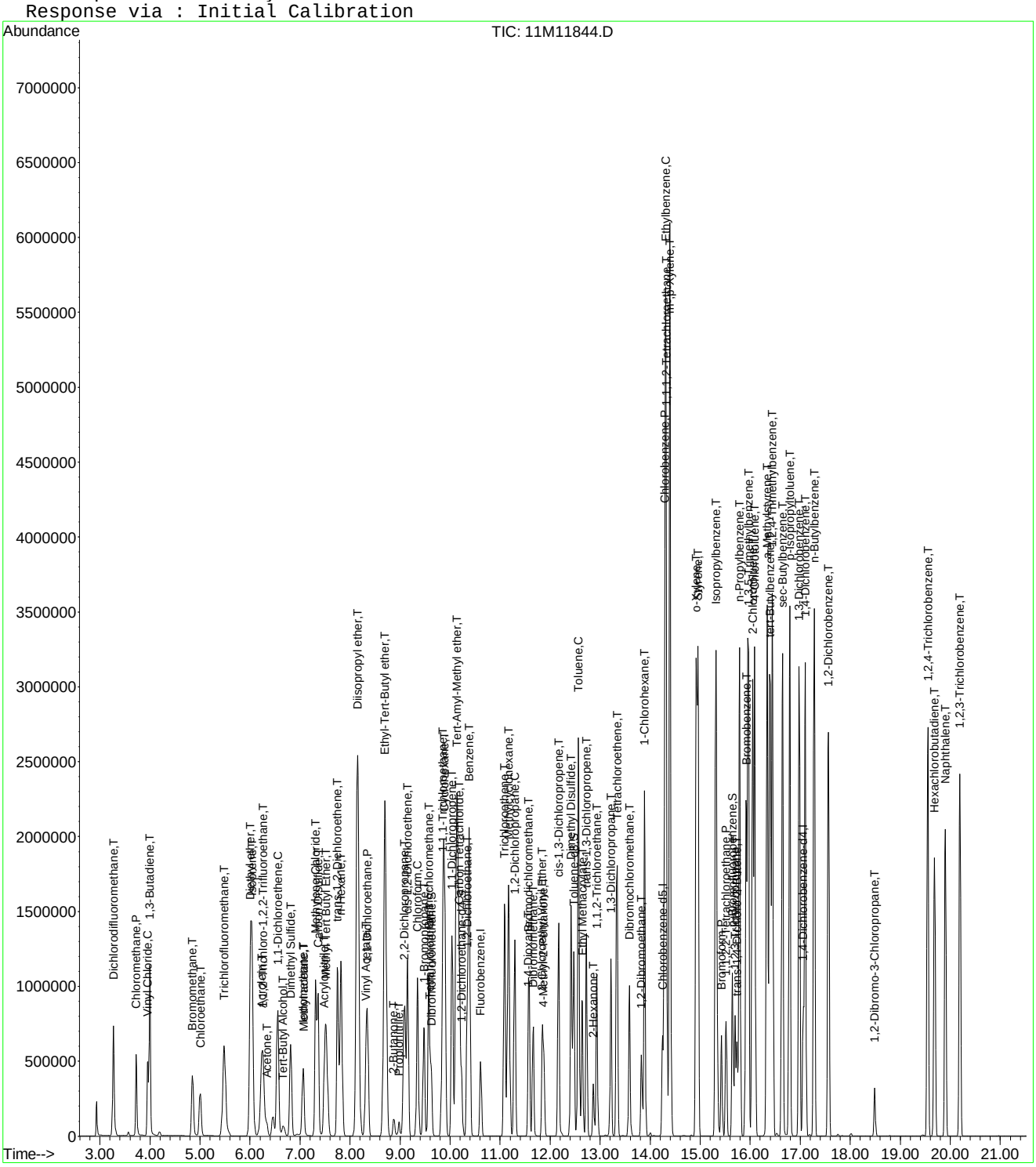

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	552905	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	473364	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	274188	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	629894	104.0960 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 416.40%#		
43) 1,2-Dichloroethane-d4	10.23	65	684792	99.2511 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 397.00%#		
57) Toluene-d8	12.47	98	2068111	100.5516 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 402.20%#		
78) p-Bromofluorobenzene	15.64	95	864999	102.3411 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 409.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	1843265	212.7741 ug/L	99
3) Chloromethane	3.72	50	1346993	194.1434 ug/L	100
4) Vinyl Chloride	3.95	62	1199147	208.1209 ug/L	100
5) 1,3-Butadiene	3.99	54	1131910	197.5677 ug/L	97
6) Bromomethane	4.85	94	859963	217.0771 ug/L	100
7) Chloroethane	5.00	64	764060	206.3883 ug/L	100
8) Trichlorofluoromethane	5.48	101	2275404	198.1327 ug/L	100
9) Diethyl ether	6.03	59	2592	0.6103 ug/L #	21
10) Isoprene	6.04	67	1435794	202.8369 ug/L	97
11) Acrolein	6.25	56	3061	6.8231 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1123889	201.6837 ug/L	99
13) Acetone	6.34	43	254053	193.5049 ug/L	96
14) 1,1-Dichloroethene	6.56	61	2040432	201.5858 ug/L	99
15) Tert-Butyl Alcohol	6.67	59	7729	21.2829 ug/L #	82
16) Dimethyl Sulfide	6.81	62	830179	205.3739 ug/L	99
17) Iodomethane	7.06	142	969857	206.1133 ug/L	99
18) Methyl acetate	7.07	43	749575	196.5068 ug/L	97
19) Methylene Chloride	7.31	84	1035656	197.7029 ug/L	97
20) Carbon Disulfide	7.36	76	3459748	204.1704 ug/L	99
21) Acrylonitrile	7.52	53	35662	20.2589 ug/L #	39
22) Methyl Tert Butyl Ether	7.52	73	2706665	207.1616 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1121963	200.2808 ug/L	99
24) n-Hexane	7.82	57	1873652	200.8128 ug/L	99
25) Diisopropyl ether	8.16	45	16567	0.7116 ug/L #	87
26) Vinyl Acetate	8.31	43	1904053	202.8645 ug/L	100
27) 1,1-Dichloroethane	8.34	63	2261904	201.2314 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	9063	0.4783 ug/L	90
29) 2-Butanone	8.87	43	407543	205.3288 ug/L	99
30) Propionitrile	8.97	54	4182	7.1938 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	1850091	210.3692 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	1257477	203.5843 ug/L	100
33) Chloroform	9.35	83	2160999	195.7739 ug/L	100
34) 1-Bromopropane	9.48	122	222798	201.1267 ug/L	98
35) Bromochloromethane	9.57	130	798076	217.5612 ug/L	99
36) Tetrahydrofuran	9.60	42	9110	6.4998 ug/L	97
38) 1,1,1-Trichloroethane	9.85	97	2208198	203.2875 ug/L	99
39) Cyclohexane	9.88	56	2467804	208.4625 ug/L	100
40) 1,1-Dichloropropene	10.04	75	1587009	204.6205 ug/L	99
41) Carbon Tetrachloride	10.18	117	2174730	205.0269 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	6538	0.4965 ug/L #	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	1808450	201.7209 ug/L		99
45)	Benzene	10.38	78	4119227	194.0096 ug/L		99
46)	Trichloroethene	11.09	130	1367103	198.0963 ug/L		100
47)	Methylcyclohexane	11.17	83	1789256	210.0812 ug/L		99
48)	1,2-Dichloropropane	11.29	63	1196100	203.5109 ug/L		99
49)	1,4-Dioxane	11.57	88	2656	94.1370 ug/L	#	31
50)	Bromodichloromethane	11.58	83	1721733	208.6734 ug/L		99
51)	Dibromomethane	11.66	93	641583	209.4825 ug/L		100
52)	2-Chloroethyl Vinyl Ether	11.84	63	608231	209.9748 ug/L		99
53)	4-Methyl-2-Pentanone	11.87	58	342251	209.4831 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	1772737	214.8108 ug/L		100
55)	Dimethyl Disulfide	12.42	79	1052498	211.9395 ug/L		98
58)	Toluene	12.56	91	4699240	196.0993 ug/L		98
59)	Ethyl Methacrylate	12.65	69	1101451	215.2567 ug/L		97
60)	trans-1,3-Dichloropropene	12.73	75	1627488	211.5866 ug/L		99
61)	1,1,2-Trichloroethane	12.93	97	860113	202.4133 ug/L		99
62)	2-Hexanone	12.86	43	651287	208.6888 ug/L		99
63)	1,3-Dichloropropane	13.21	76	1412360	206.9756 ug/L		99
64)	Tetrachloroethene	13.34	164	1133410	203.3874 ug/L		99
65)	Dibromochloromethane	13.59	129	1409248	217.4313 ug/L		99
66)	1,2-Dibromoethane	13.82	107	889951	209.0389 ug/L		99
67)	1-Chlorohexane	13.89	91	1659272	210.0173 ug/L		97
68)	Chlorobenzene	14.29	112	3416597	194.6214 ug/L		98
69)	1,1,1,2-Tetrachloroethane	14.32	131	1457008	205.1158 ug/L		100
70)	Ethylbenzene	14.31	106	1814385	201.5551 ug/L		91
71)	m-,p-Xylene	14.39	106	4230307	386.5510 ug/L		85
72)	o-Xylene	14.92	106	2156790	202.5071 ug/L		96
73)	Styrene	14.96	104	3630570	206.3240 ug/L		98
74)	Bromoform	15.43	173	854308	217.4778 ug/L		100
75)	Isopropylbenzene	15.31	105	5485636	194.7621 ug/L		97
77)	1,1,2,2-Tetrachloroethane	15.52	83	939708	220.0830 ug/L		98
79)	1,2,3-Trichloropropane	15.70	110	325518	202.0716 ug/L		99
80)	trans-1,4-Dichloro-2-Buten	15.74	53	421012	202.2796 ug/L		97
81)	n-Propylbenzene	15.79	91	6220435	195.8952 ug/L		95
82)	Bromobenzene	15.92	156	1685980	202.3412 ug/L		99
83)	1,3,5-Trimethylbenzene	15.96	105	4875063	201.1866 ug/L		97
84)	2-Chlorotoluene	16.05	91	4287026	192.7532 ug/L		98
85)	4-Chlorotoluene	16.09	91	4030756	202.3214 ug/L		98
86)	a-Methylstyrene	16.34	118	2724122	213.1015 ug/L		98
87)	tert-Butylbenzene	16.40	134	1075661	209.5280 ug/L		96
88)	1,2,4-Trimethylbenzene	16.44	105	4921395	199.4496 ug/L		97
89)	sec-Butylbenzene	16.65	105	5740919	197.3104 ug/L		97
90)	p-Isopropyltoluene	16.79	119	5274037	197.3451 ug/L		95
91)	1,3-Dichlorobenzene	16.98	146	3171808	197.0945 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	3145357	192.8244 ug/L		99
93)	n-Butylbenzene	17.28	91	4684496	198.9203 ug/L		97
94)	1,2-Dichlorobenzene	17.57	146	2909224	198.4498 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	191088	196.6217 ug/L		99
96)	1,2,4-Trichlorobenzene	19.55	180	2198003	204.9021 ug/L		99
97)	Hexachlorobutadiene	19.69	225	969160	205.0797 ug/L		99
98)	Naphthalene	19.90	128	3994903	200.6399 ug/L		98
99)	1,2,3-Trichlorobenzene	20.19	180	1999949	203.1452 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M11845.D 8260WT.M Sat May 14 18:51:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

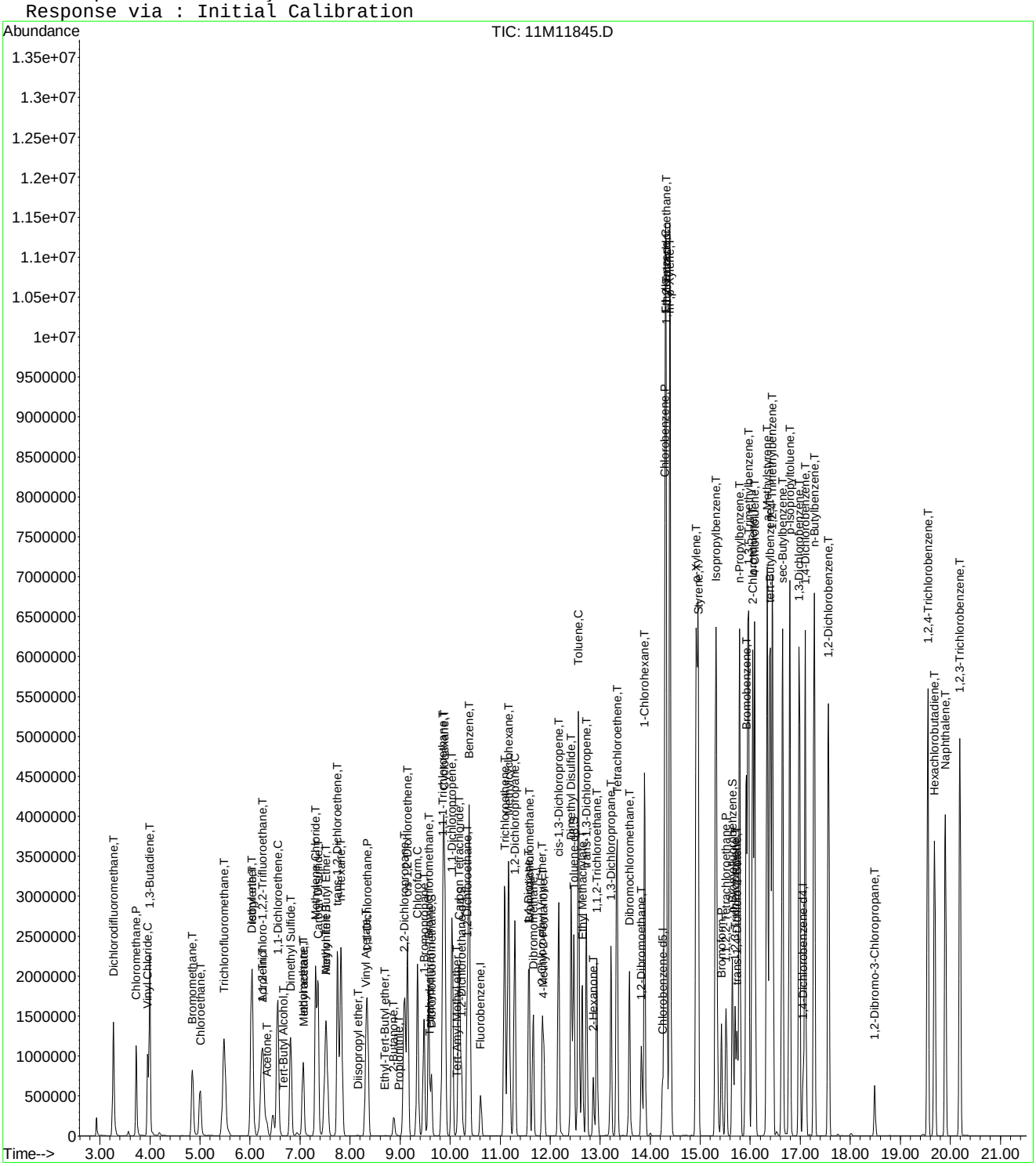
Abundance
TIC: 11M11845.D
Time-->
Dichlorodifluoromethane,T
Chloromethane,P
Vinyl Chloride,C
1,3-Butadiene,T
Bromomethane,T
Chloroethane,T
Trichlorofluoromethane,T
Acrolein,T
Acetone,T
Tert-Butyl Alcohol,T
1,1-Dichloroethene,C
Dimethyl Sulfide,T
Methylene Chloride,T
Carbon Disulfide,T
Methyl Tert-Butyl Ether,T
Methyl Acetate,T
Methyl Iodide,T
Diisopropyl ether,T
Ethyl-Tert-Butyl ether,T
Propanal,T
Vinyl Acetate,T
Chloroprene,T
Acrylonitrile,T
Propionitrile,T
Methacrylonitrile,T
Tert-Amyl Methyl Ether,T
Tert-Amyl Alcohol,T
Fluorobenzene,I
Benzene,T
Carbon Tetrachloride,T
Dibromomethane,T
Bromochloromethane,T
Chloroform,C
Bromodichloromethane,T
Dibromofluoromethane,S
Dibromochloromethane,T
1,2-Dibromoethane,T
Chlorobenzene-d5,I
Chlorobenzene,P
Ethylbenzene-d10,I
Ethylbenzene,T
m,p-Xylene,T
o-Xylene,T
Styrene,T
Isopropylbenzene,T
n-Propylbenzene,T
2-Chlorotoluene,T
4-Chlorotoluene,T
1,3,5-Trimethylbenzene,T
tert-Butylbenzene,T
sec-Butylbenzene,T
p-Isopropyltoluene,T
1,3-Dichlorobenzene,T
1,4-Dichlorobenzene,T
n-Butylbenzene,T
1,2-Dichlorobenzene,T
1,2-Dibromo-3-Chloropropane,T
1,2,4-Trichlorobenzene,T
Hexachlorobutadiene,T
Naphthalene,T
1,2,3-Trichlorobenzene,T
Toluene,C
1-Chlorohexane,T
Tetrachloroethene,T
1,1,2-Trichloroethane,T
1,3-Dichloropropane,T
1,3-Dichloropropene,T
Dibromomethane,T
2-Hexanone,T
Chlorodibromomethane,T
Ethyl Methacrylate,T
Dibromochloromethane,T
Ethyl Disulfide,T
Toluene-d8,I
cis-1,3-Dichloropropene,T
Tetrachloroethene,T
1,2-Dichloropropane,C
Trichloroethene,T
Methylcyclohexane,T
1,1-Dichloroethane,T
1,1,1-Trichloroethane,T
1,2-Dichloroethane,T
2,2-Dichloropropane,T
Bromobenzene,T
Chlorobenzene,T
Bromobenzene,S
trans-1,2,3-Trichlorobenzene,S
Bromobenzene,P
Chlorobenzene,S
Chlorobenzene,T
Chlorobenzene,P
Chlorobenzene,I
Chlorobenzene,C

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	543599	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	479542	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	277309	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	905755	152.2472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 609.00%#		
43) 1,2-Dichloroethane-d4	10.23	65	970758	143.1066 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 572.44%#		
57) Toluene-d8	12.47	98	3002456	144.0987 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 576.40%#		
78) p-Bromofluorobenzene	15.64	95	1285822	150.4179 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 601.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2762707	324.3678 ug/L	99
3) Chloromethane	3.72	50	2113477	309.8323 ug/L	100
4) Vinyl Chloride	3.95	62	1802126	318.1269 ug/L	100
5) 1,3-Butadiene	3.99	54	1562377	277.3715 ug/L	98
6) Bromomethane	4.85	94	1341865	344.5204 ug/L	100
7) Chloroethane	5.00	64	1181546	324.6236 ug/L	100
8) Trichlorofluoromethane	5.48	101	3351045	296.7904 ug/L	99
9) Diethyl ether	6.01	59	1250668	299.5049 ug/L	97
10) Isoprene	6.04	67	2121830	304.8859 ug/L	97
11) Acrolein	6.23	56	87016	155.2272 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1679276	306.5076 ug/L	99
13) Acetone	6.34	43	352141	272.8074 ug/L	95
14) 1,1-Dichloroethene	6.56	61	3009080	302.3733 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	227782	637.9680 ug/L	97
16) Dimethyl Sulfide	6.81	62	1199487	301.8151 ug/L	96
17) Iodomethane	7.06	142	1359092	295.3515 ug/L	96
18) Methyl acetate	7.07	43	1093862	303.3719 ug/L	97
19) Methylene Chloride	7.31	84	1550974	301.1438 ug/L	91
20) Carbon Disulfide	7.36	76	5025219	301.6304 ug/L	99
21) Acrylonitrile	7.49	53	292311	168.8994 ug/L	94
22) Methyl Tert Butyl Ether	7.52	73	3880019	302.0512 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1693308	307.4459 ug/L	98
24) n-Hexane	7.82	57	2752540	300.0599 ug/L	99
25) Diisopropyl ether	8.15	45	6621718	289.2841 ug/L	99
26) Vinyl Acetate	8.31	43	2814279	303.7518 ug/L	99
27) 1,1-Dichloroethane	8.34	63	3313473	299.8312 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	5508427	295.6672 ug/L	99
29) 2-Butanone	8.87	43	590742	302.7235 ug/L	97
30) Propionitrile	8.99	54	177454	310.4771 ug/L	98
31) 2,2-Dichloropropane	9.09	77	2735421	316.3626 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	1856543	305.7181 ug/L	98
33) Chloroform	9.35	83	3144758	289.7739 ug/L	100
34) 1-Bromopropane	9.48	122	329211	301.9597 ug/L	98
35) Bromochloromethane	9.57	130	1179409	327.0194 ug/L	97
36) Tetrahydrofuran	9.60	42	386389	280.3985 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3227247	302.1877 ug/L	99
39) Cyclohexane	9.88	56	3625895	311.5332 ug/L	99
40) 1,1-Dichloropropene	10.04	75	2360605	309.5743 ug/L	100
41) Carbon Tetrachloride	10.18	117	3172921	304.2542 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	3912691	302.2388 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M11846.D 8260WT.M Sat May 14 18:51:02 2016 Page 1

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	2551762	289.5052	ug/L		98
45)	Benzene	10.38	78	5961793	285.5987	ug/L		97
46)	Trichloroethene	11.09	130	2025948	298.5901	ug/L		99
47)	Methylcyclohexane	11.17	83	2657028	317.3092	ug/L		98
48)	1,2-Dichloropropane	11.29	63	1781372	308.2809	ug/L		96
49)	1,4-Dioxane	11.56	88	21540	607.7372	ug/L		100
50)	Bromodichloromethane	11.57	83	2511276	309.5762	ug/L		100
51)	Dibromomethane	11.65	93	939605	312.0413	ug/L		99
52)	2-Chloroethyl Vinyl Ether	11.84	63	879534	308.8327	ug/L		100
53)	4-Methyl-2-Pentanone	11.87	58	505191	314.5081	ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	2604960	321.0589	ug/L		99
55)	Dimethyl Disulfide	12.42	79	1529785	313.3234	ug/L		99
58)	Toluene	12.56	91	6613670	272.4329	ug/L		95
59)	Ethyl Methacrylate	12.65	69	1618015	312.1351	ug/L		94
60)	trans-1,3-Dichloropropene	12.73	75	2369133	304.0383	ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	1271039	295.2644	ug/L		98
62)	2-Hexanone	12.86	43	950079	300.5074	ug/L		97
63)	1,3-Dichloropropane	13.21	76	2062188	298.3119	ug/L		97
64)	Tetrachloroethene	13.34	164	1691190	299.5697	ug/L		98
65)	Dibromochloromethane	13.59	129	2065480	314.5750	ug/L		100
66)	1,2-Dibromoethane	13.82	107	1334668	309.4588	ug/L		99
67)	1-Chlorohexane	13.89	91	2483371	310.2757	ug/L		95
68)	Chlorobenzene	14.29	112	4911463	276.1698	ug/L		96
69)	1,1,1,2-Tetrachloroethane	14.32	131	2161701	300.4009	ug/L		100
70)	Ethylbenzene	14.31	106	2715675	297.7904	ug/L		79
71)	m-,p-Xylene	14.39	106	6004062	541.5626	ug/L		73
72)	o-Xylene	14.92	106	3202500	296.8179	ug/L		90
73)	Styrene	14.96	104	5278134	296.0902	ug/L		96
74)	Bromoform	15.43	173	1313245	330.0007	ug/L		100
75)	Isopropylbenzene	15.31	105	7610374	266.7178	ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	1470787	340.5868	ug/L		97
79)	1,2,3-Trichloropropane	15.70	110	494041	303.0514	ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	640812	304.0444	ug/L		94
81)	n-Propylbenzene	15.79	91	8405785	261.7374	ug/L		88
82)	Bromobenzene	15.92	156	2530711	300.3025	ug/L		98
83)	1,3,5-Trimethylbenzene	15.96	105	6851753	279.5793	ug/L		93
84)	2-Chlorotoluene	16.05	91	6055423	269.1996	ug/L		95
85)	4-Chlorotoluene	16.09	91	5712933	283.5299	ug/L		94
86)	a-Methylstyrene	16.34	118	4020347	310.9625	ug/L		96
87)	tert-Butylbenzene	16.40	134	1654009	318.5583	ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	6879061	275.6504	ug/L		91
89)	sec-Butylbenzene	16.65	105	7999374	271.8373	ug/L		92
90)	p-Isopropyltoluene	16.79	119	7406083	274.0036	ug/L		90
91)	1,3-Dichlorobenzene	16.98	146	4679194	287.4903	ug/L		97
92)	1,4-Dichlorobenzene	17.10	146	4642399	281.3967	ug/L		96
93)	n-Butylbenzene	17.28	91	6723928	282.3084	ug/L		93
94)	1,2-Dichlorobenzene	17.57	146	4360022	294.0672	ug/L		96
95)	1,2-Dibromo-3-Chloropropan	18.49	75	302346	307.2381	ug/L		100
96)	1,2,4-Trichlorobenzene	19.55	180	3482946	321.0328	ug/L		97
97)	Hexachlorobutadiene	19.69	225	1629665	340.9652	ug/L		98
98)	Naphthalene	19.90	128	5970381	296.4815	ug/L	#	96
99)	1,2,3-Trichlorobenzene	20.19	180	3137470	315.1025	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

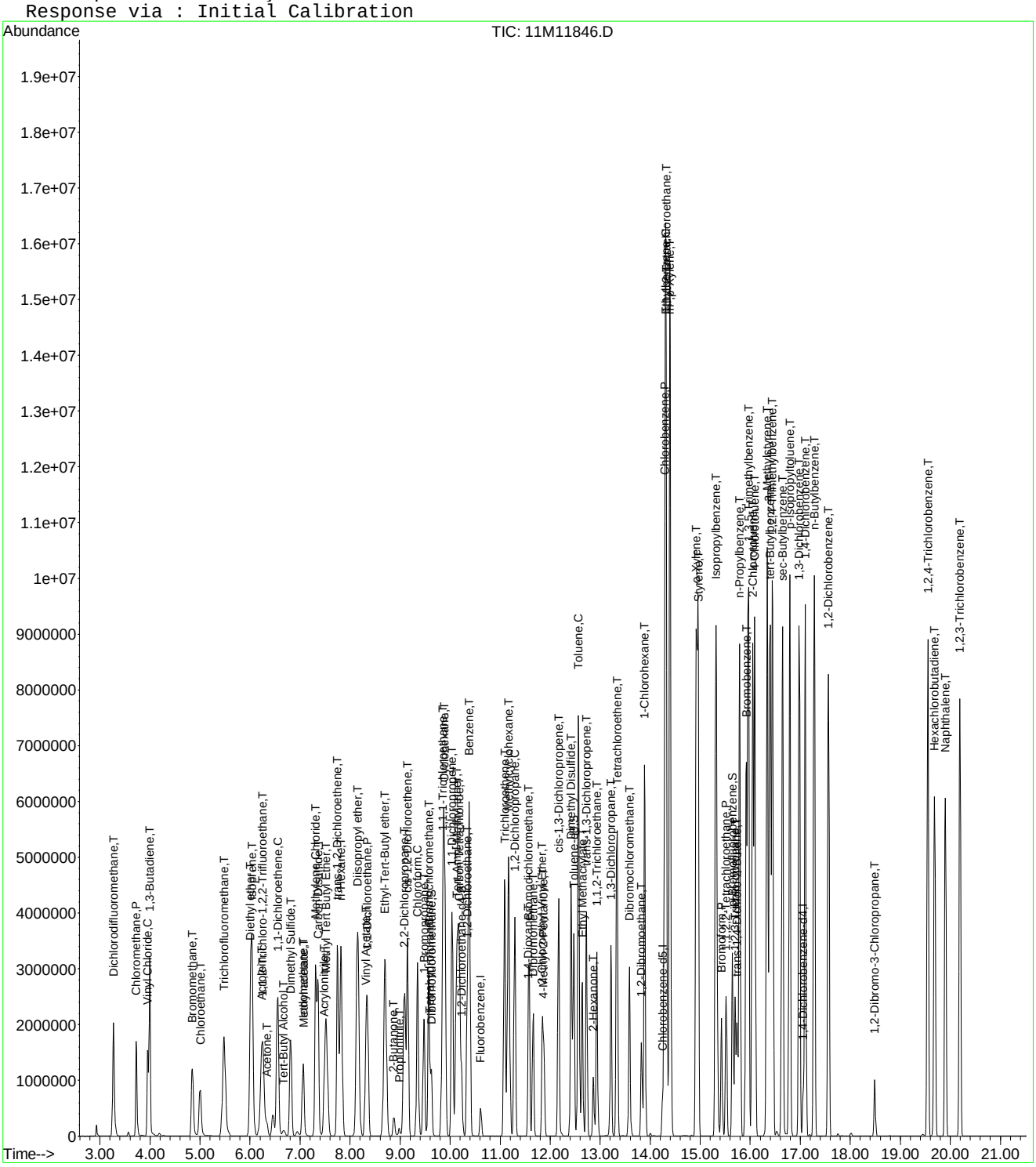

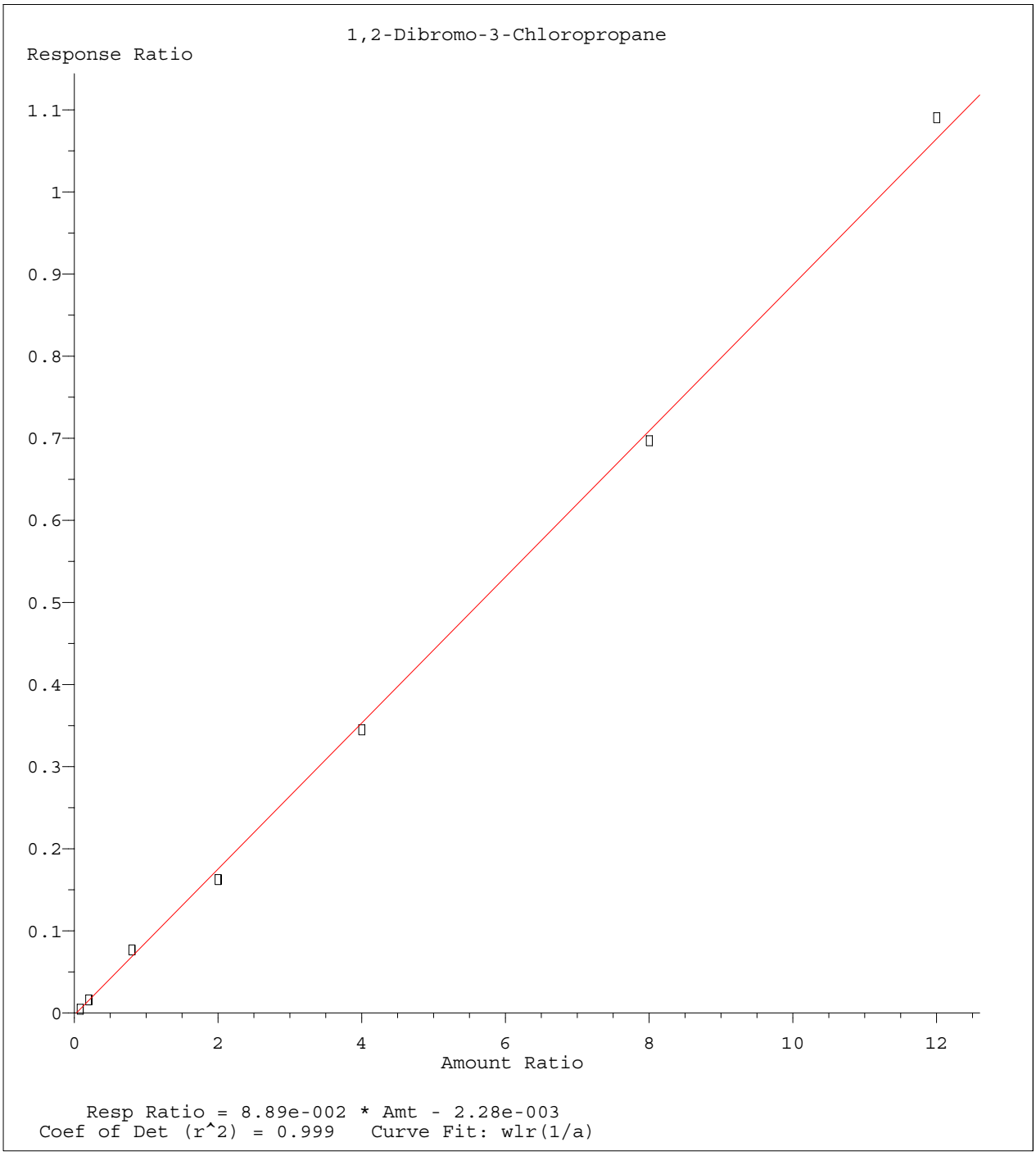

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

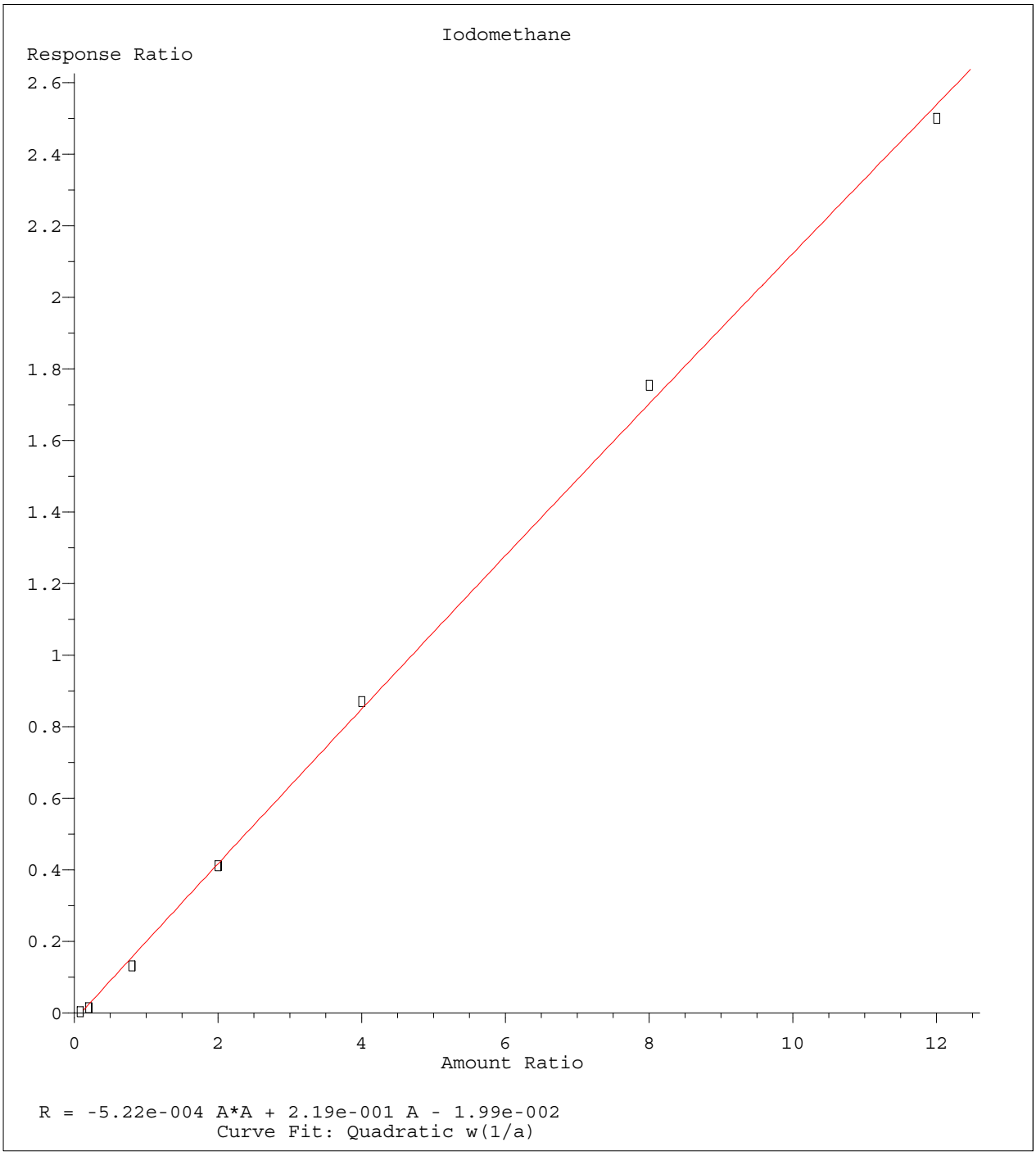

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

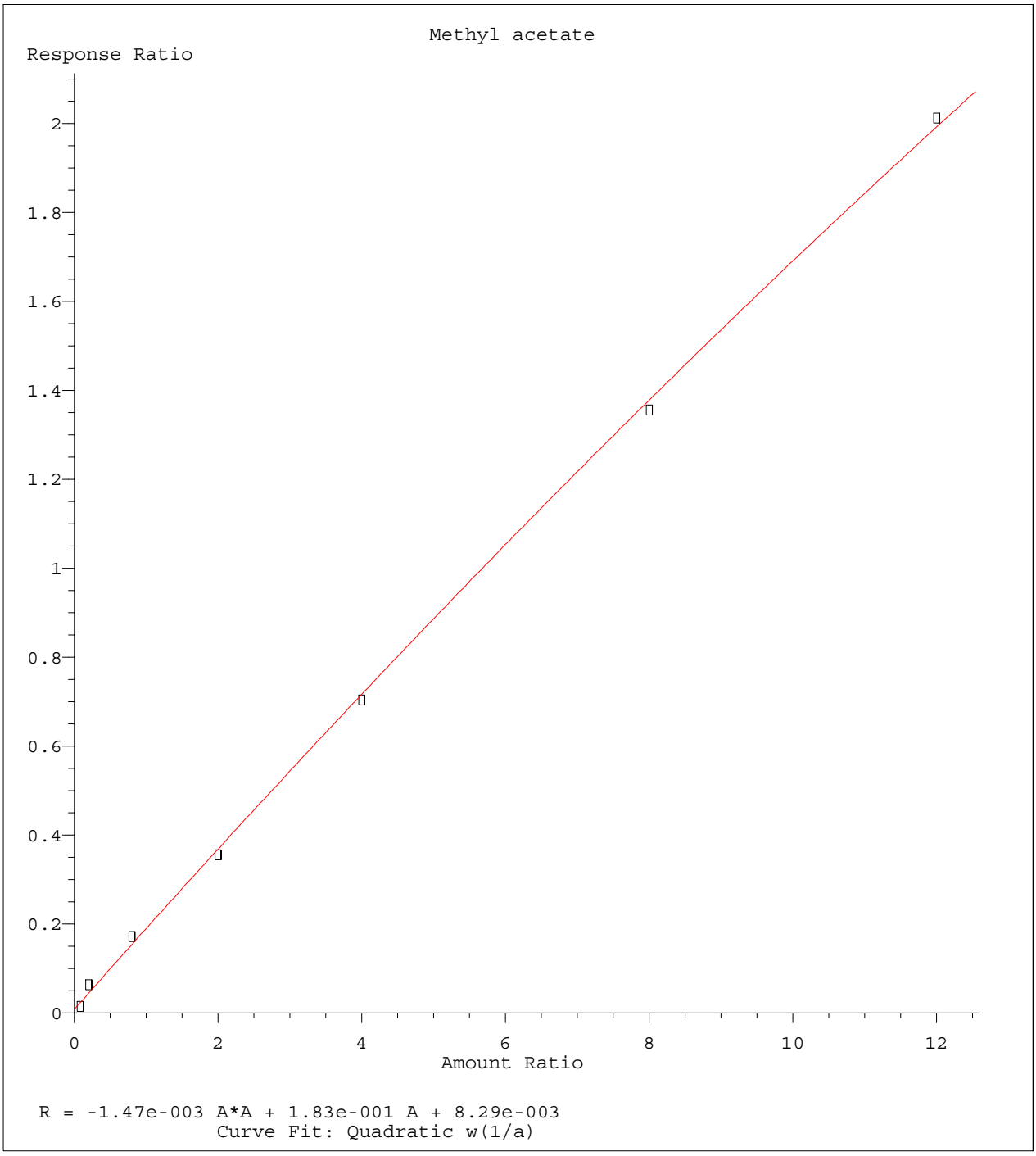

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

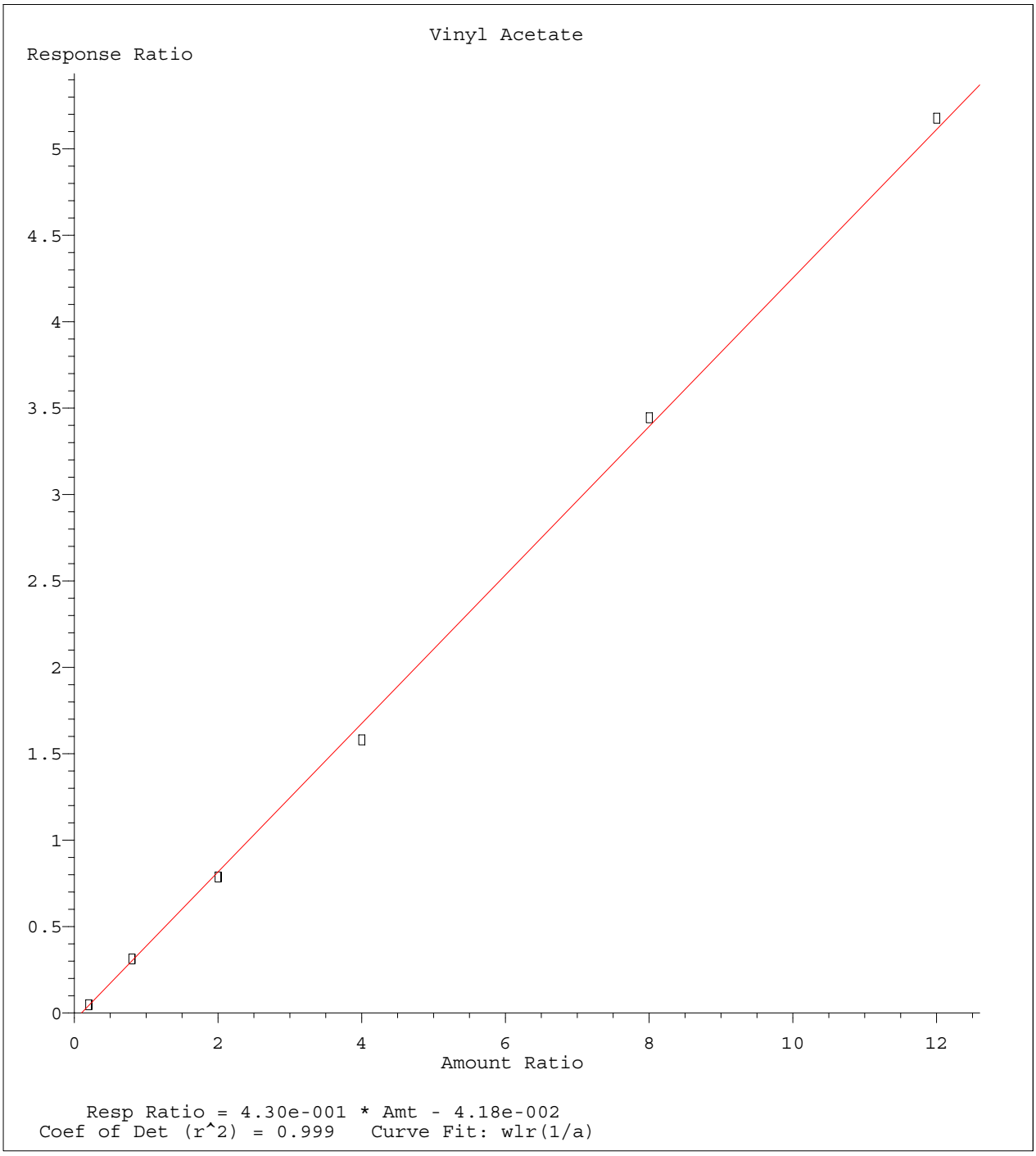

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

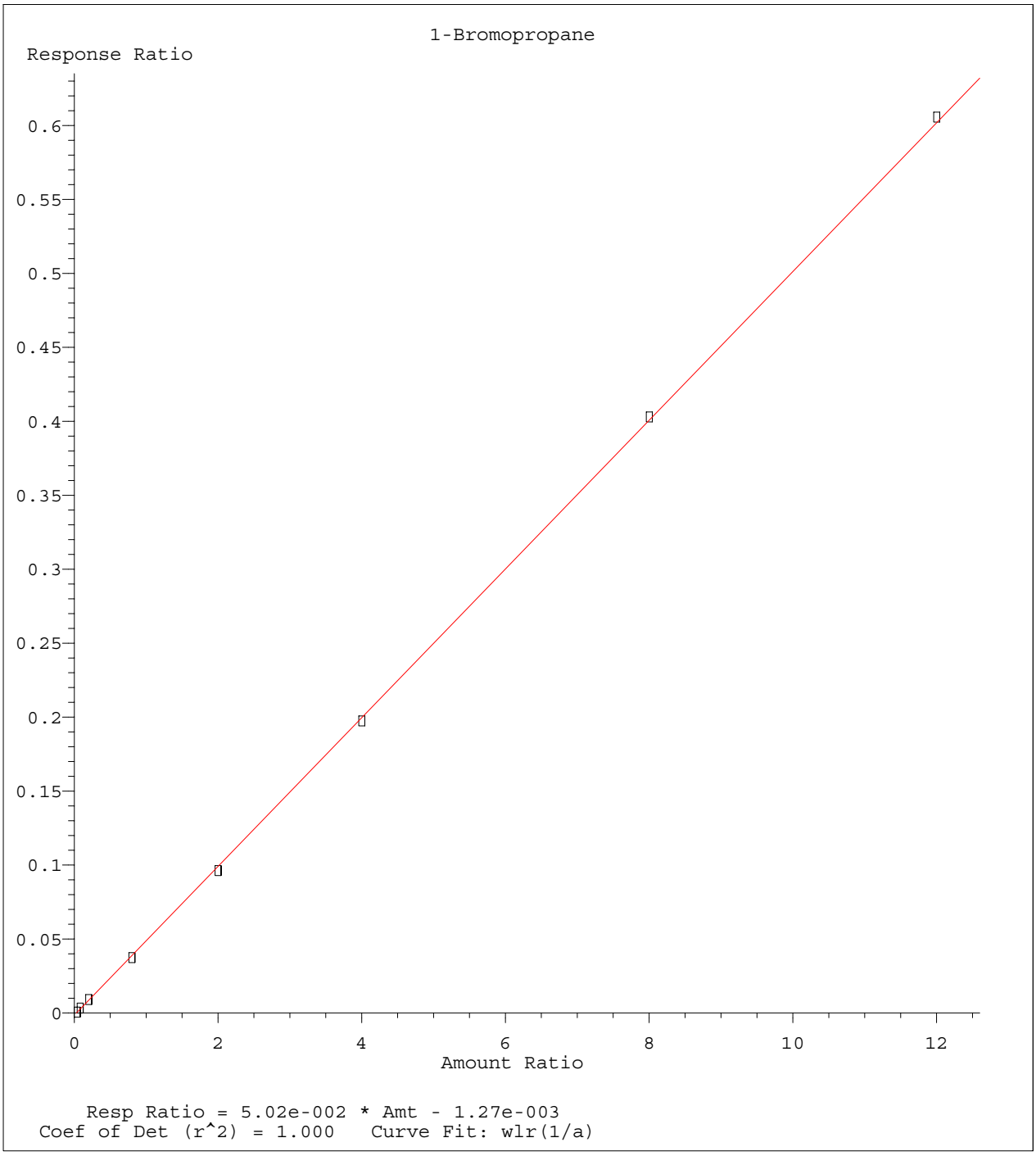

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

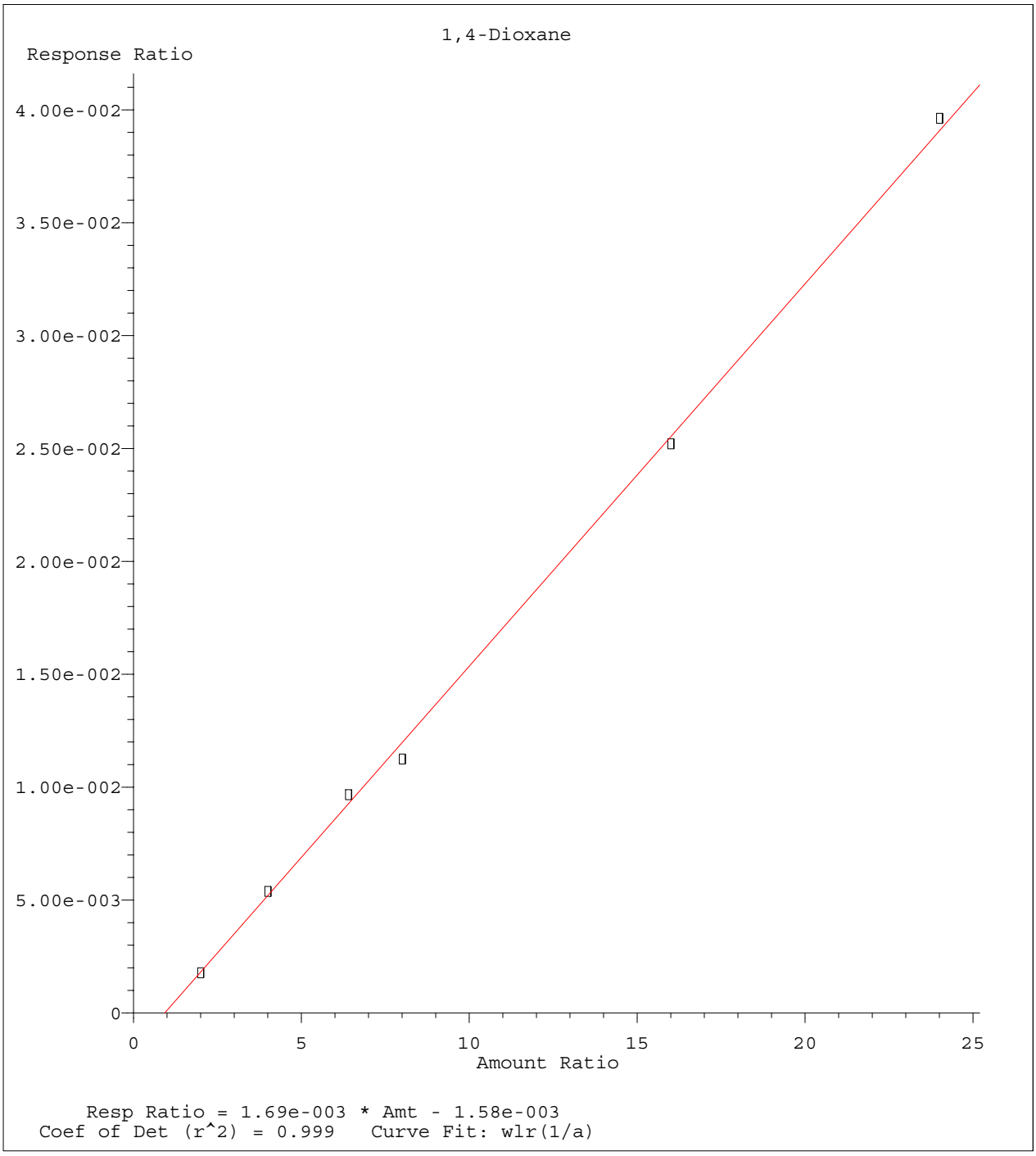

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

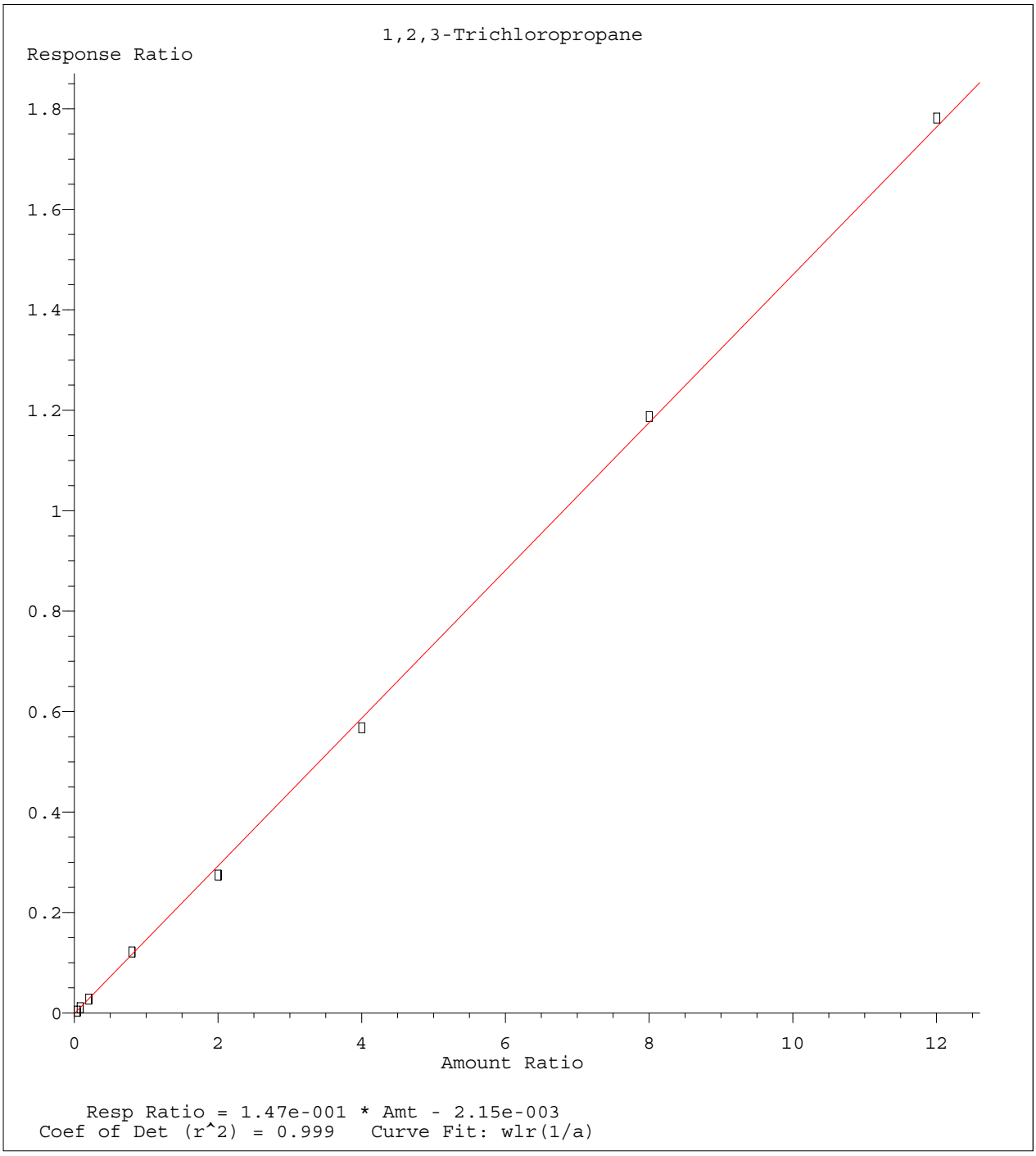

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

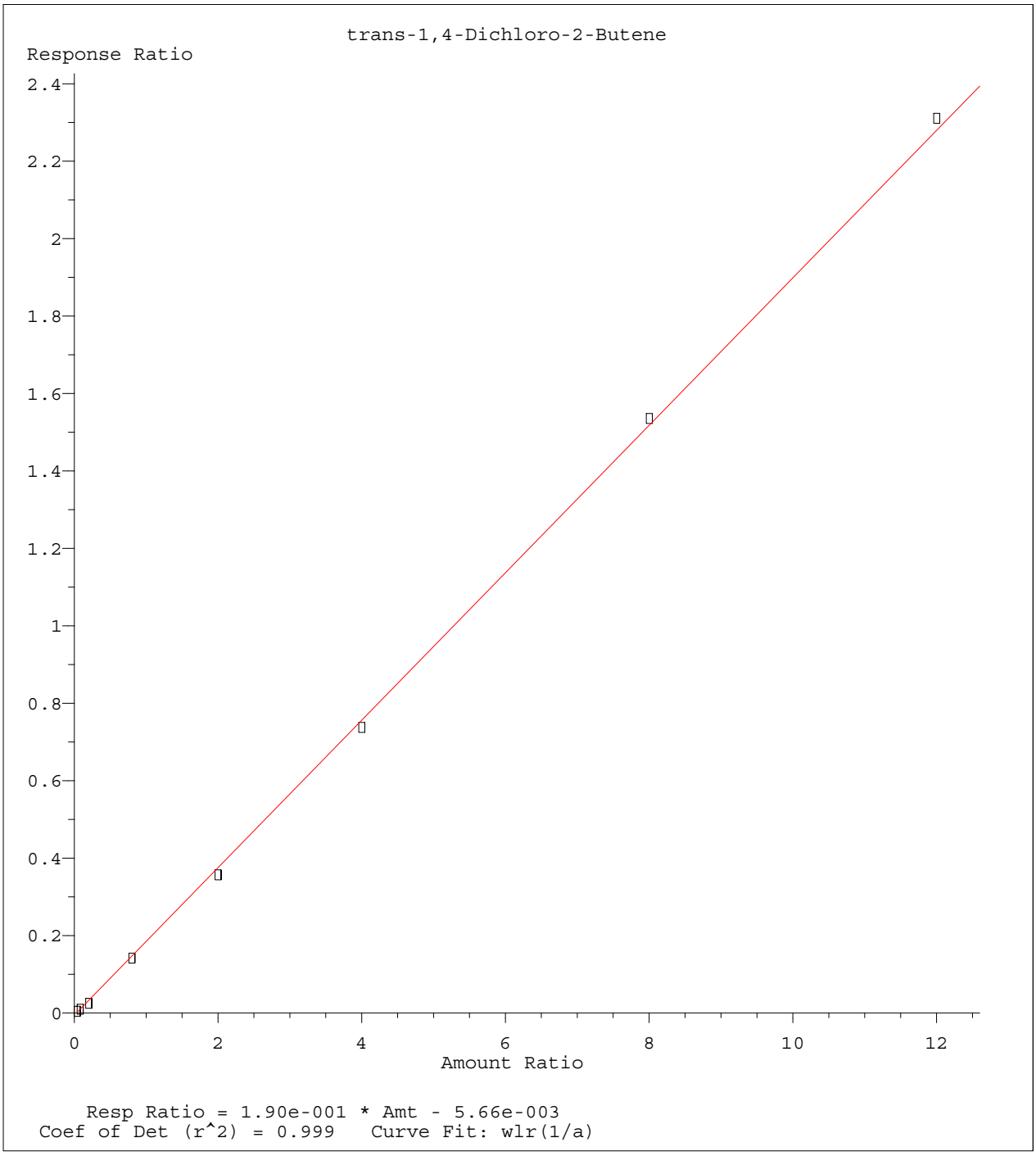

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

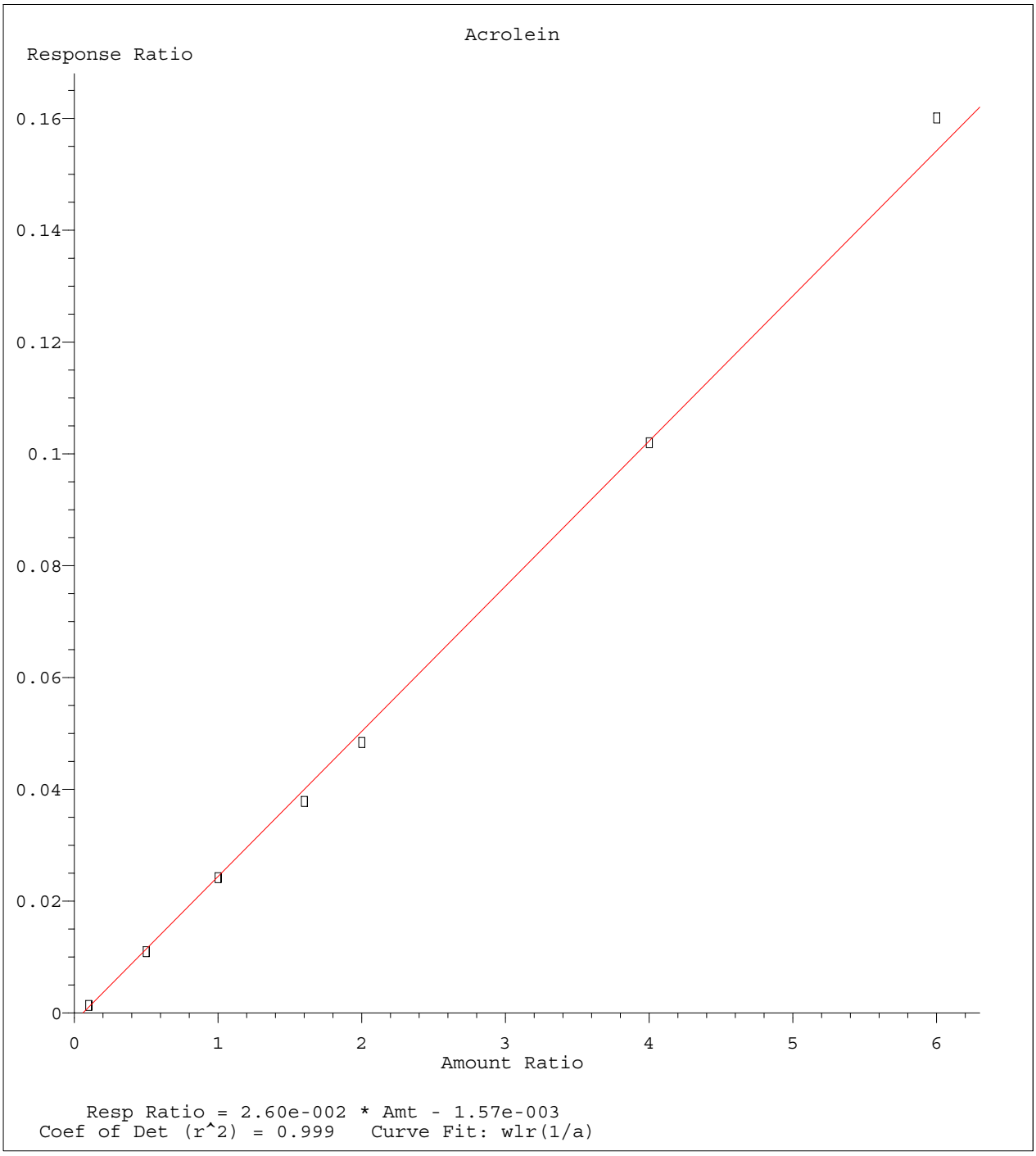

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	559172	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	461765	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	267551	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	155853	25.4675 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.88%		
43) 1,2-Dichloroethane-d4	10.23	65	160000	22.9299 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.72%		
57) Toluene-d8	12.47	98	531547	26.4930 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.96%		
78) p-Bromofluorobenzene	15.64	95	203747	24.7040 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	495777	56.5878 ug/L	98
3) Chloromethane	3.72	50	386673	55.1069 ug/L	100
4) Vinyl Chloride	3.95	62	326996	56.1165 ug/L	100
5) 1,3-Butadiene	3.99	54	212443	36.6650 ug/L	98
6) Bromomethane	4.84	94	202280	50.4885 ug/L	99
7) Chloroethane	5.00	64	220373	58.8601 ug/L	99
8) Trichlorofluoromethane	5.48	101	552017	47.5286 ug/L	99
9) Diethyl ether	6.01	59	453011	105.4639 ug/L	97
10) Isoprene	6.04	67	388108	54.2141 ug/L	93
11) Acrolein	6.23	56	56029	97.7296 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	292836	51.9609 ug/L	99
13) Acetone	6.35	43	65954	49.6723 ug/L	97
14) 1,1-Dichloroethene	6.55	61	486567	47.5319 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	79387	216.1534 ug/L	96
16) Dimethyl Sulfide	6.81	62	290204	70.9875 ug/L	94
17) Iodomethane	7.06	142	176766	38.4128 ug/L	92
18) Methyl acetate	7.07	43	200985	48.7416 ug/L	98
19) Methylene Chloride	7.31	84	275442	51.9916 ug/L	91
20) Carbon Disulfide	7.35	76	765803	44.6859 ug/L	99
21) Acrylonitrile	7.49	53	93674	52.6181 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	687029	51.9942 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	295337	52.1295 ug/L	97
24) n-Hexane	7.82	57	420811	44.5959 ug/L	99
25) Diisopropyl ether	8.15	45	2449232	104.0201 ug/L	98
26) Vinyl Acetate	8.31	43	395913	43.6417 ug/L	99
27) 1,1-Dichloroethane	8.34	63	551372	48.5033 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1884917	98.3560 ug/L	99
29) 2-Butanone	8.87	43	101045	50.3380 ug/L	98
30) Propionitrile	8.99	54	62190	105.7785 ug/L	98
31) 2,2-Dichloropropane	9.09	77	405332	45.5727 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	332086	53.1618 ug/L	94
33) Chloroform	9.35	83	531122	47.5773 ug/L	100
34) 1-Bromopropane	9.48	122	76460	68.6656 ug/L	96
35) Bromochloromethane	9.57	130	199933	53.8923 ug/L	96
36) Tetrahydrofuran	9.60	42	131835	93.0068 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	527857	48.0501 ug/L	99
39) Cyclohexane	9.88	56	601180	50.2142 ug/L	99
40) 1,1-Dichloropropene	10.04	75	393057	50.1107 ug/L	100
41) Carbon Tetrachloride	10.18	117	507914	47.3479 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1406419	105.6143 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M11848.D 8260WT.M Sat May 14 18:47:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	434117	47.8802	ug/L	99
45)	Benzene	10.38	78	1098993	51.1808	ug/L	100
46)	Trichloroethene	11.08	130	365193	52.3242	ug/L	99
47)	Methylcyclohexane	11.17	83	450581	52.3110	ug/L	97
48)	1,2-Dichloropropane	11.29	63	313901	52.8102	ug/L	94
49)	1,4-Dioxane	11.56	88	6366	191.2043	ug/L	95
50)	Bromodichloromethane	11.57	83	413329	49.5339	ug/L	99
51)	Dibromomethane	11.65	93	148822	48.0471	ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	152083	51.9140	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	86849	52.5623	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	480729	57.5993	ug/L	99
55)	Dimethyl Disulfide	12.42	79	261188	52.0055	ug/L	96
58)	Toluene	12.56	91	1256481	53.7500	ug/L	100
59)	Ethyl Methacrylate	12.65	69	284944	57.0854	ug/L	90
60)	trans-1,3-Dichloropropene	12.73	75	391013	52.1118	ug/L	97
61)	1,1,2-Trichloroethane	12.93	97	218717	52.7643	ug/L	99
62)	2-Hexanone	12.86	43	158873	52.1857	ug/L	98
63)	1,3-Dichloropropane	13.21	76	374611	56.2767	ug/L	95
64)	Tetrachloroethene	13.34	164	283714	52.1906	ug/L	97
65)	Dibromochloromethane	13.59	129	332092	52.5252	ug/L	99
66)	1,2-Dibromoethane	13.82	107	218604	52.6373	ug/L	99
67)	1-Chlorohexane	13.89	91	420217	54.5237	ug/L	92
68)	Chlorobenzene	14.29	112	912650	53.2936	ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	353663	51.0389	ug/L	98
70)	Ethylbenzene	14.31	106	460093	52.3943	ug/L	99
71)	m-,p-Xylene	14.39	106	1144896	107.2445	ug/L	98
72)	o-Xylene	14.92	106	568307	54.7003	ug/L	100
73)	Styrene	14.95	104	943635	54.9735	ug/L	98
74)	Bromoform	15.43	173	190959	49.8328	ug/L	99
75)	Isopropylbenzene	15.31	105	1490416	54.2449	ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.52	83	228913	54.9422	ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	78385	50.1407	ug/L	92
80)	trans-1,4-Dichloro-2-Buten	15.74	53	73730	36.9129	ug/L	62
81)	n-Propylbenzene	15.79	91	1753049	56.5769	ug/L	99
82)	Bromobenzene	15.92	156	419932	51.6479	ug/L	99
83)	1,3,5-Trimethylbenzene	15.95	105	1303495	55.1277	ug/L	99
84)	2-Chlorotoluene	16.05	91	1145029	52.7599	ug/L	99
85)	4-Chlorotoluene	16.09	91	1077116	55.4064	ug/L	99
86)	a-Methylstyrene	16.34	118	741671	59.4584	ug/L	99
87)	tert-Butylbenzene	16.40	134	283244	56.5417	ug/L	95
88)	1,2,4-Trimethylbenzene	16.44	105	1296091	53.8297	ug/L	99
89)	sec-Butylbenzene	16.65	105	1586978	55.8961	ug/L	100
90)	p-Isopropyltoluene	16.79	119	1426648	54.7069	ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	827515	52.6969	ug/L	98
92)	1,4-Dichlorobenzene	17.10	146	844174	53.0354	ug/L	98
93)	n-Butylbenzene	17.28	91	1238500	53.8957	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	766416	53.5772	ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	45158	48.1046	ug/L	97
96)	1,2,4-Trichlorobenzene	19.55	180	580278	55.4365	ug/L	99
97)	Hexachlorobutadiene	19.69	225	257859	55.9180	ug/L	98
98)	Naphthalene	19.90	128	993390	51.1296	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	519374	54.0642	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

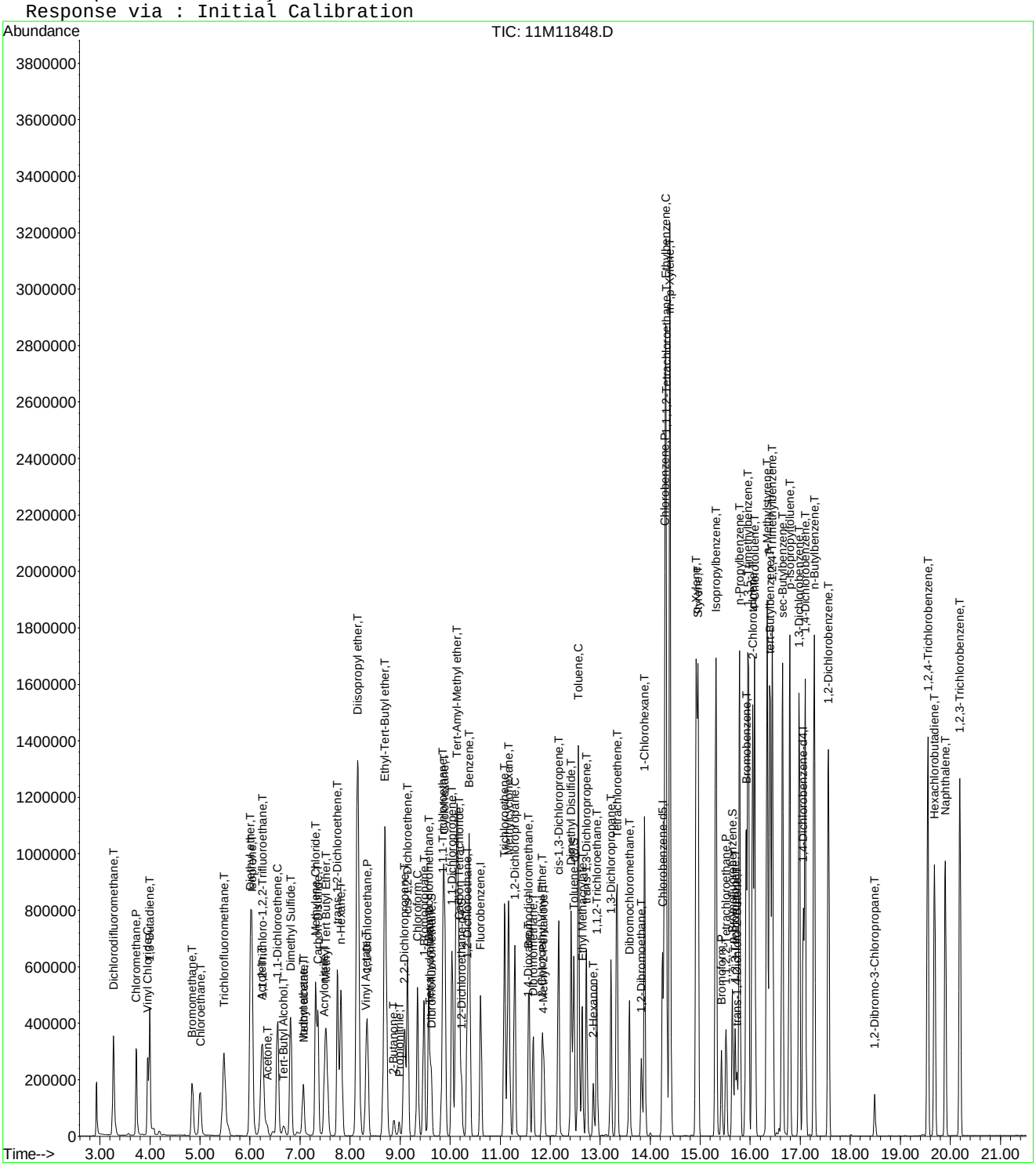

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	56.5878	-13.2	119	0.00
3	P	Chloromethane	50.0000	55.1069	-10.2	134	0.00
4	C	Vinyl Chloride	50.0000	56.1165	-12.2	125	-0.01
5	T	1,3-Butadiene	50.0000	36.6650	26.7#	76	-0.01
6	T	Bromomethane	50.0000	50.4885	-1.0	117	-0.01
7	T	Chloroethane	50.0000	58.8601	-17.7	131	0.00
8	T	Trichlorofluoromethane	50.0000	47.5286	4.9	106	0.00
9	T	Diethyl ether	100.0000	105.4639	-5.5	116	0.00
10	T	Isoprene	50.0000	54.2141	-8.4	117	0.00
11	T	Acrolein	50.0000	97.7296	-95.5#	222	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.9609	-3.9	115	0.00
13	T	Acetone	50.0000	49.6723	0.7	110	0.01
14	C	1,1-Dichloroethene	50.0000	47.5320	4.9	106	-0.01
15	T	Tert-Butyl Alcohol	200.0000	216.1534	-8.1	114	0.01
16	T	Dimethyl Sulfide	50.0000	70.9875	-42.0#	150	0.00
17	T	Iodomethane	50.0000	38.4128	23.2	82	0.00
18	T	Methyl acetate	50.0000	48.7416	2.5	108	0.01
19	T	Methylene Chloride	50.0000	51.9916	-4.0	118	0.00
20	T	Carbon Disulfide	50.0000	44.6859	10.6	94	-0.01
21	T	Acrylonitrile	50.0000	52.6181	-5.2	110	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.9942	-4.0	113	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.1295	-4.3	117	0.00
24	T	n-Hexane	50.0000	44.5959	10.8	94	0.00
25	T	Diisopropyl ether	100.0000	104.0201	-4.0	112	0.00
26	T	Vinyl Acetate	50.0000	43.6417	12.7	96	0.00
27	P	1,1-Dichloroethane	50.0000	48.5033	3.0	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.3560	1.6	106	0.00
29	T	2-Butanone	50.0000	50.3381	-0.7	111	0.00
30	T	Propionitrile	100.0000	105.7786	-5.8	110	0.01
31	T	2,2-Dichloropropane	50.0000	45.5727	8.9	101	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.1618	-6.3	118	0.00
33	C	Chloroform	50.0000	47.5773	4.8	108	0.00
34	T	1-Bromopropane	50.0000	68.6656	-37.3#	152	0.00
35	T	Bromochloromethane	50.0000	53.8923	-7.8	111	0.00
36	T	Tetrahydrofuran	100.0000	93.0068	7.0	103	0.00
37	S	Dibromofluoromethane	25.0000	25.4675	-1.9	111	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.0501	3.9	106	0.00
39	T	Cyclohexane	50.0000	50.2142	-0.4	105	0.00
40	T	1,1-Dichloropropene	50.0000	50.1107	-0.2	111	0.00
41	T	Carbon Tetrachloride	50.0000	47.3479	5.3	103	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	105.6143	-5.6	115	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.9299	8.3	101	0.00
44	T	1,2-Dichloroethane	50.0000	47.8802	4.2	104	0.00
45	T	Benzene	50.0000	51.1809	-2.4	116	0.00
46	T	Trichloroethene	50.0000	52.3242	-4.6	119	-0.01
47	T	Methylcyclohexane	50.0000	52.3110	-4.6	108	0.00
48	C	1,2-Dichloropropane	50.0000	52.8102	-5.6	117	0.00
49	T	1,4-Dioxane	200.0000	191.2043	4.4	109	0.01
50	T	Bromodichloromethane	50.0000	49.5339	0.9	107	0.00
51	T	Dibromomethane	50.0000	48.0471	3.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	51.9140	-3.8	114	0.00
53	T	4-Methyl-2-Pentanone	50.0000	52.5623	-5.1	115	0.00
54	T	cis-1,3-Dichloropropene	50.0000	57.5993	-15.2	122	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	52.0055	-4.0	110	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
57	S	Toluene-d8	25.0000	26.4930	-6.0	115	0.00
58	C	Toluene	50.0000	53.7500	-7.5	115	0.00
59	T	Ethyl Methacrylate	50.0000	57.0854	-14.2	114	0.00
60	T	trans-1,3-Dichloropropene	50.0000	52.1118	-4.2	107	0.00
61	T	1,1,2-Trichloroethane	50.0000	52.7643	-5.5	113	0.00
62	T	2-Hexanone	50.0000	52.1857	-4.4	110	0.00
63	T	1,3-Dichloropropane	50.0000	56.2767	-12.6	118	0.00
64	T	Tetrachloroethene	50.0000	52.1906	-4.4	113	0.00
65	T	Dibromochloromethane	50.0000	52.5251	-5.1	107	0.00
66	T	1,2-Dibromoethane	50.0000	52.6373	-5.3	111	0.00
67	T	1-Chlorohexane	50.0000	54.5237	-9.0	112	0.00
68	P	Chlorobenzene	50.0000	53.2936	-6.6	114	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	51.0388	-2.1	109	0.00
70	C	Ethylbenzene	50.0000	52.3943	-4.8	113	0.00
71	T	m-,p-Xylene	100.0000	107.2445	-7.2	115	0.00
72	T	o-Xylene	50.0000	54.7003	-9.4	115	0.00
73	T	Styrene	50.0000	54.9735	-9.9	113	0.00
74	P	Bromoform	50.0000	49.8327	0.3	104	0.00
75	T	Isopropylbenzene	50.0000	54.2449	-8.5	114	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	54.9422	-9.9	110	0.00
78	S	p-Bromofluorobenzene	25.0000	24.7040	1.2	108	0.00
79	T	1,2,3-Trichloropropane	50.0000	50.1407	-0.3	108	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	36.9129	26.2#	78	0.00
81	T	n-Propylbenzene	50.0000	56.5769	-13.2	115	0.00
82	T	Bromobenzene	50.0000	51.6479	-3.3	111	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	55.1277	-10.3	114	-0.01
84	T	2-Chlorotoluene	50.0000	52.7599	-5.5	112	0.00
85	T	4-Chlorotoluene	50.0000	55.4064	-10.8	116	0.00
86	T	a-Methylstyrene	50.0000	59.4584	-18.9	114	0.00
87	T	tert-Butylbenzene	50.0000	56.5417	-13.1	117	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	53.8297	-7.7	110	0.00
89	T	sec-Butylbenzene	50.0000	55.8961	-11.8	114	0.00
90	T	p-Isopropyltoluene	50.0000	54.7069	-9.4	111	0.00
91	T	1,3-Dichlorobenzene	50.0000	52.6969	-5.4	112	0.00
92	T	1,4-Dichlorobenzene	50.0000	53.0354	-6.1	114	0.00
93	T	n-Butylbenzene	50.0000	53.8957	-7.8	110	0.00
94	T	1,2-Dichlorobenzene	50.0000	53.5772	-7.2	112	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	48.1046	3.8	105	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	55.4365	-10.9	113	0.00
97	T	Hexachlorobutadiene	50.0000	55.9180	-11.8	118	0.00
98	T	Naphthalene	50.0000	51.1296	-2.3	103	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	54.0642	-8.1	114	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11848.D 8260WT.M Sat May 14 18:47:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:55 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

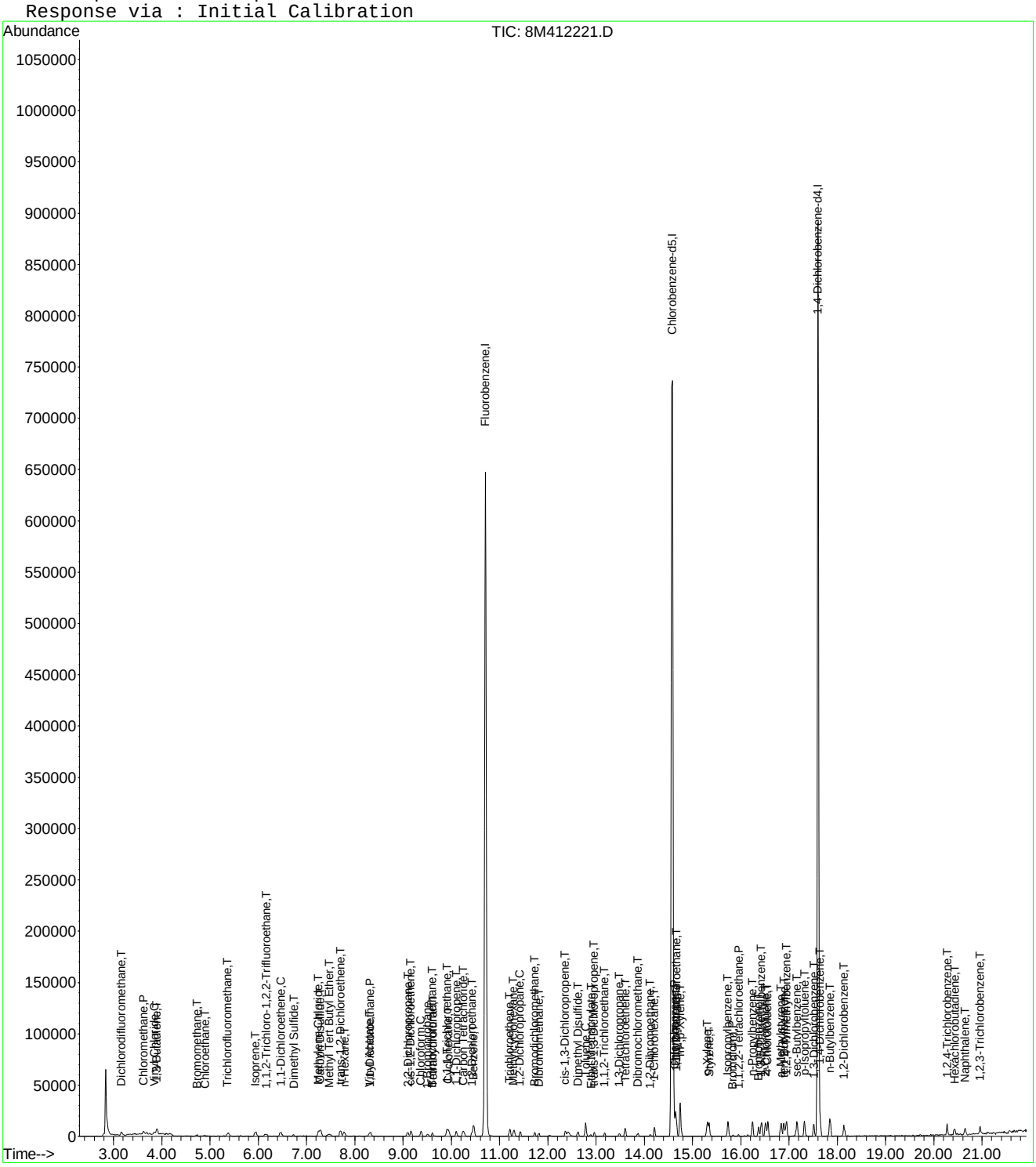

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

8M412221.D 8260WT.M Sat May 14 18:03:54 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

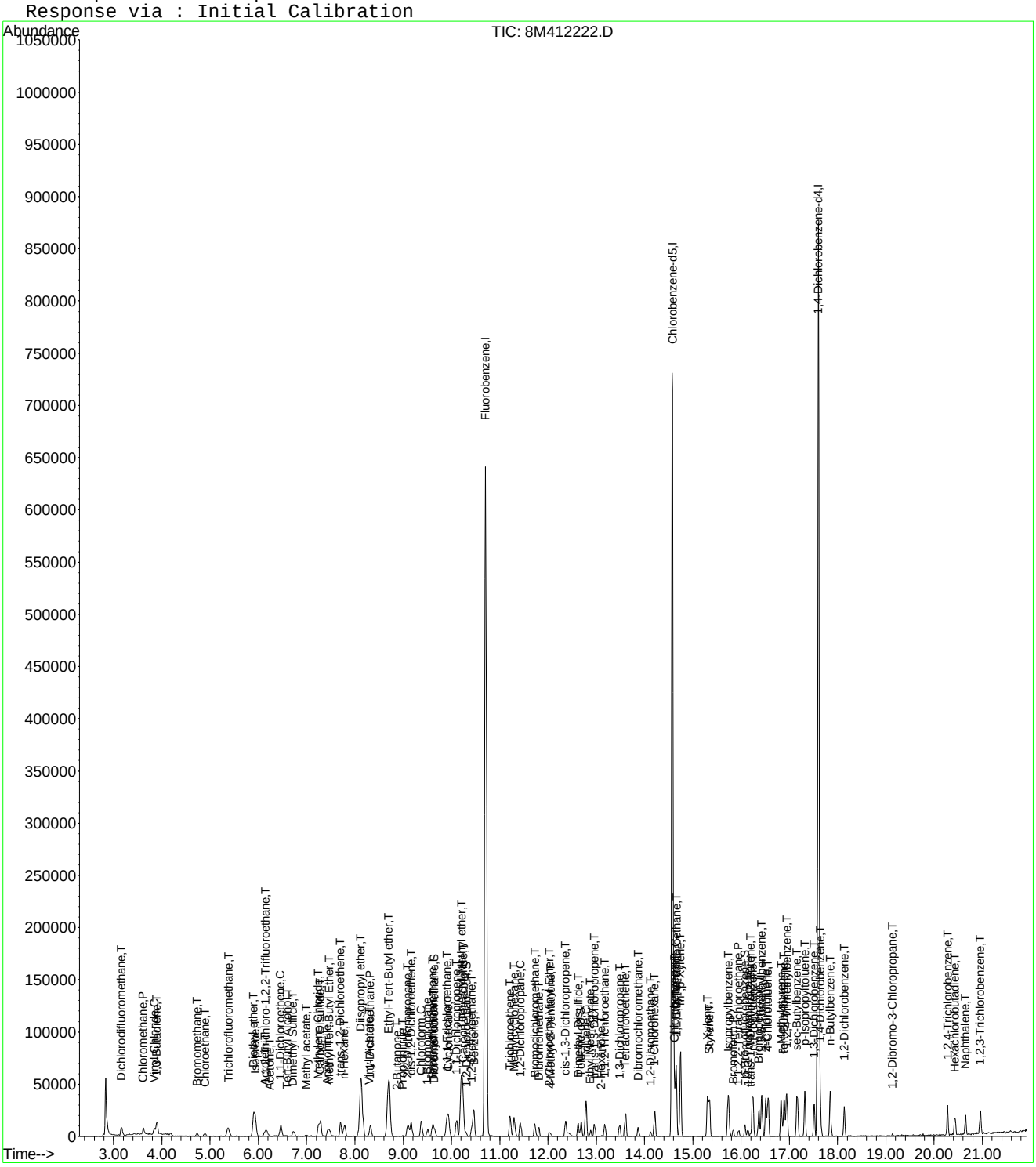

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range
8M412222.D 8260WT.M Sat May 14 18:05:49 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery	=	3.32%#	
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery	=	3.44%#	
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	=	4.00%#	
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	=	4.12%#	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

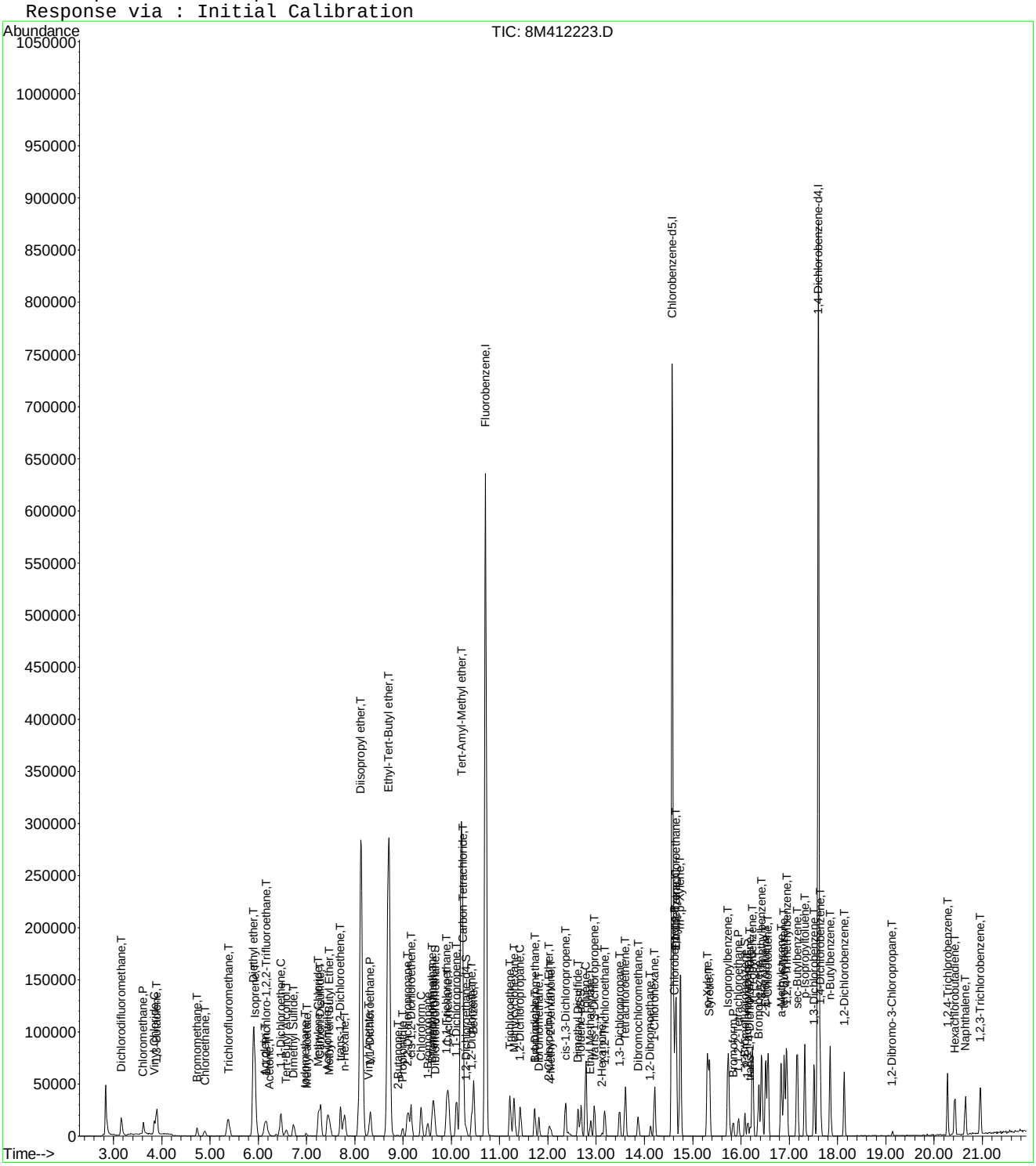

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	19775	2.0496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750 ug/L	99
3) Chloromethane	3.62	50	34194	2.2538 ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488 ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976 ug/L	93
6) Bromomethane	4.72	94	19582	3.4204 ug/L	94
7) Chloroethane	4.90	64	22000	3.2814 ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212 ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955 ug/L	79
10) Isoprene	5.94	67	44975	4.3218 ug/L	78
11) Acrolein	6.15	56	7712	13.9568 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591 ug/L	99
13) Acetone	6.24	43	3578	1.8967 ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897 ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597 ug/L	77
17) Iodomethane	6.99	142	3667	1.8964 ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398 ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823 ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097 ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108 ug/L	94
24) n-Hexane	7.78	57	40758	2.7480 ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337 ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113 ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852 ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738 ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726 ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950 ug/L	89
33) Chloroform	9.37	83	78227	4.3116 ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986 ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009 ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633 ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958 ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

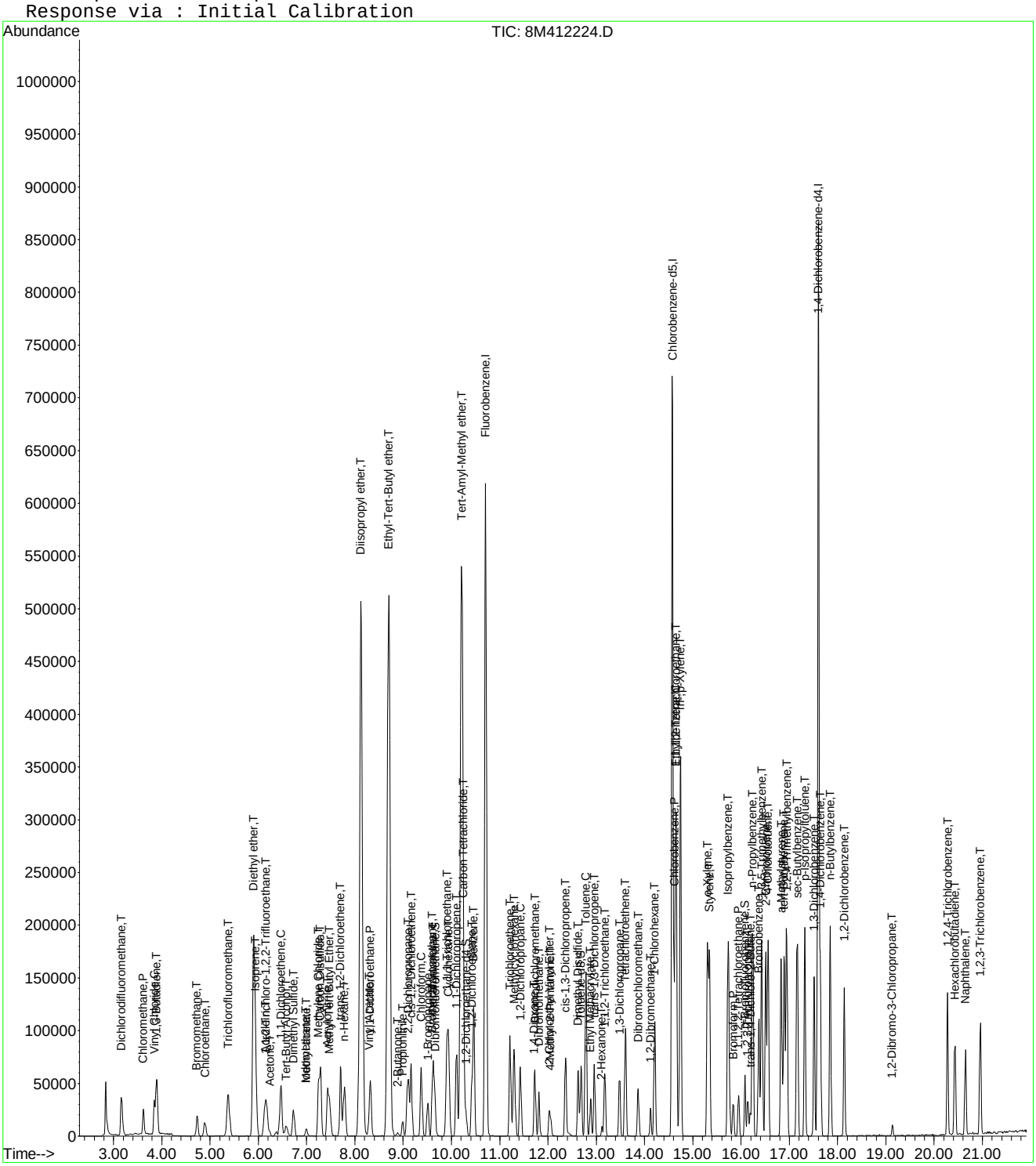

8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

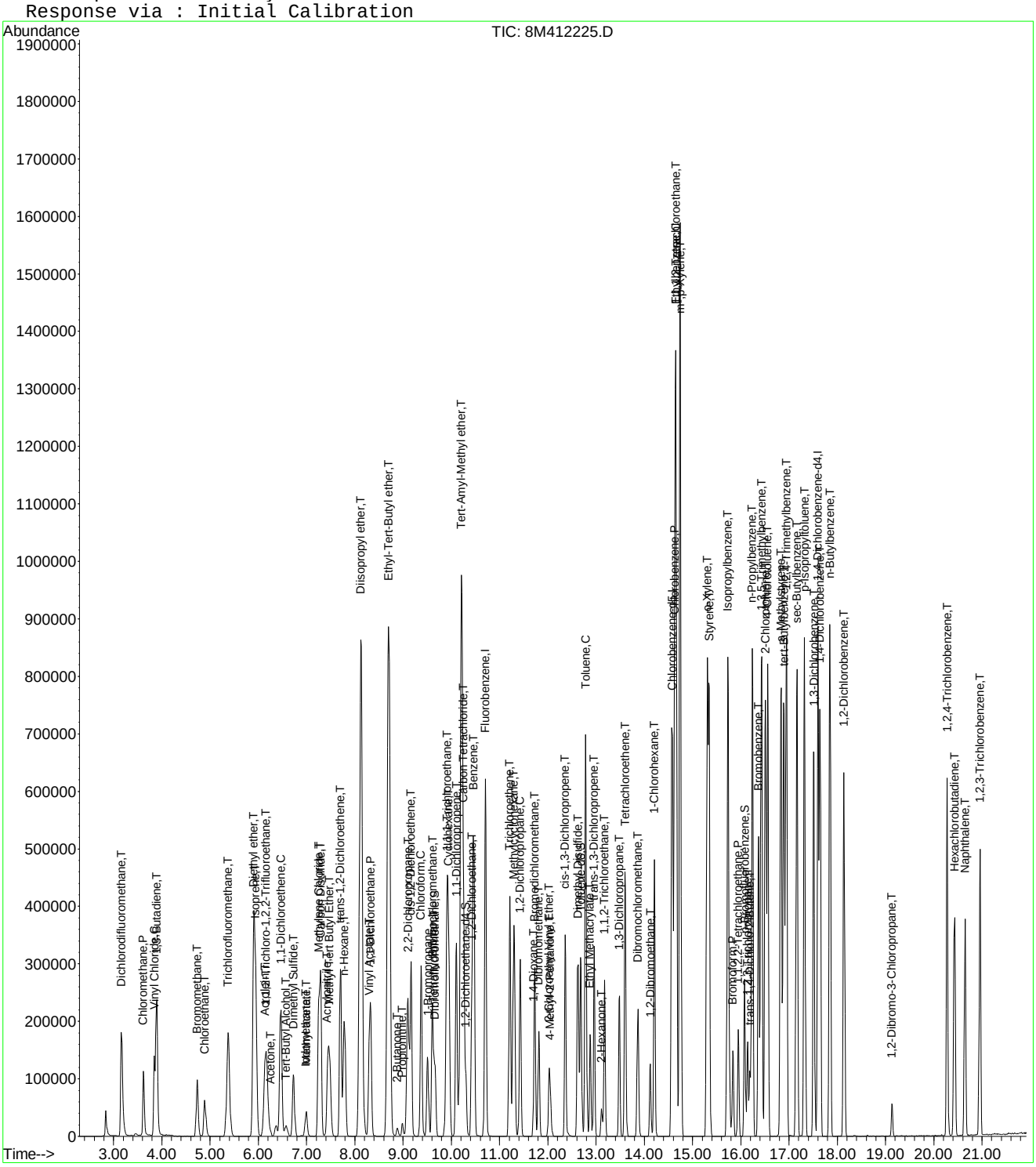

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401	ug/L		85
46)	Benzene	10.46	78	1607407	48.4816	ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312	ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040	ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320	ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701	ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918	ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281	ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928	ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463	ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260	ug/L		96
59)	Toluene	12.79	91	1676069	47.5846	ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503	ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570	ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347	ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770	ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296	ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780	ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252	ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984	ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462	ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980	ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463	ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265	ug/L		90
75)	Styrene	15.34	104	1212099	52.9133	ug/L		91
76)	Bromoform	15.84	173	238354	58.3272	ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656	ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956	ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277	ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549	ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745	ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367	ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344	ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111	ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493	ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234	ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166	ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795	ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327	ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909	ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992	ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902	ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844	ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

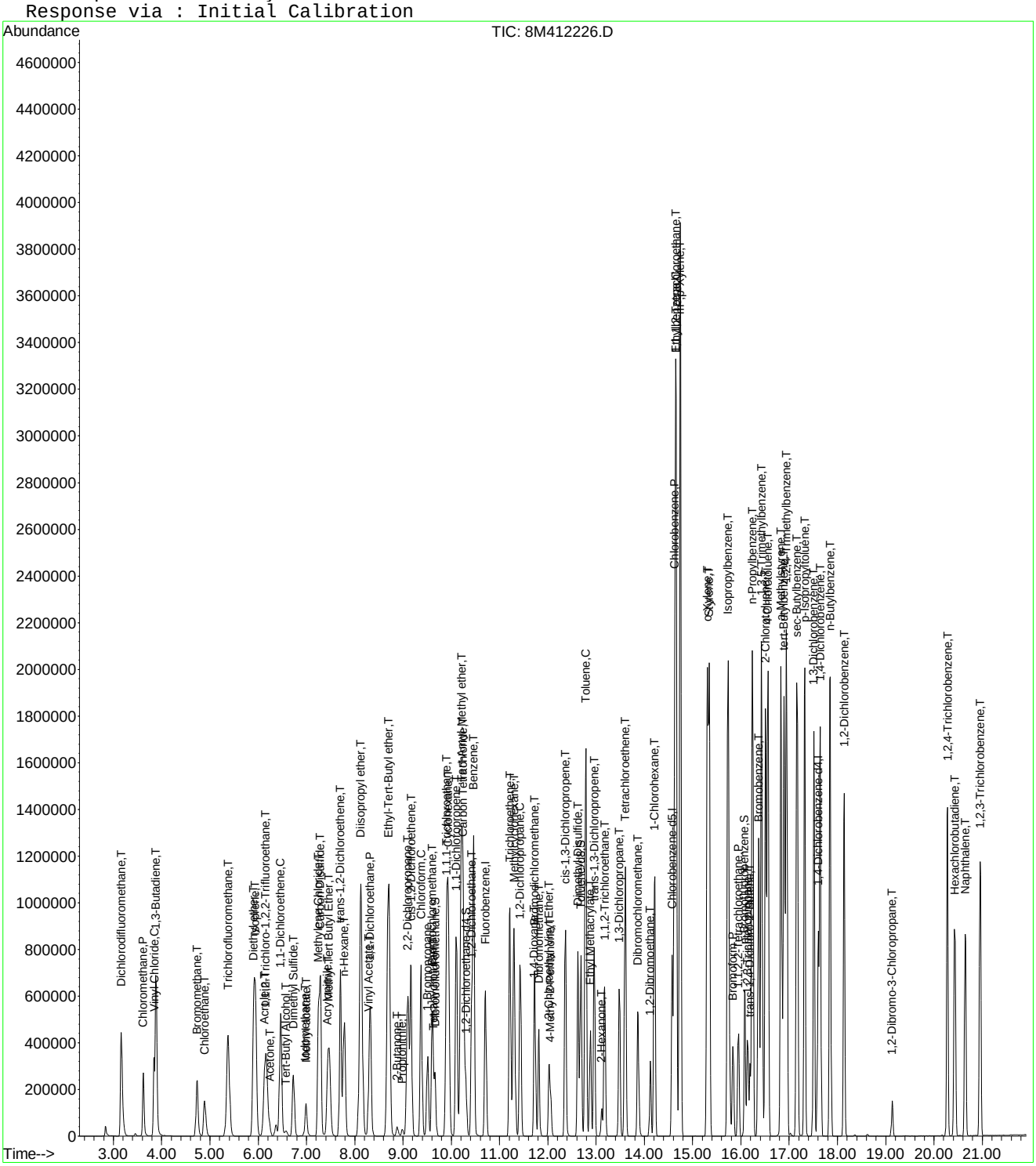

8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

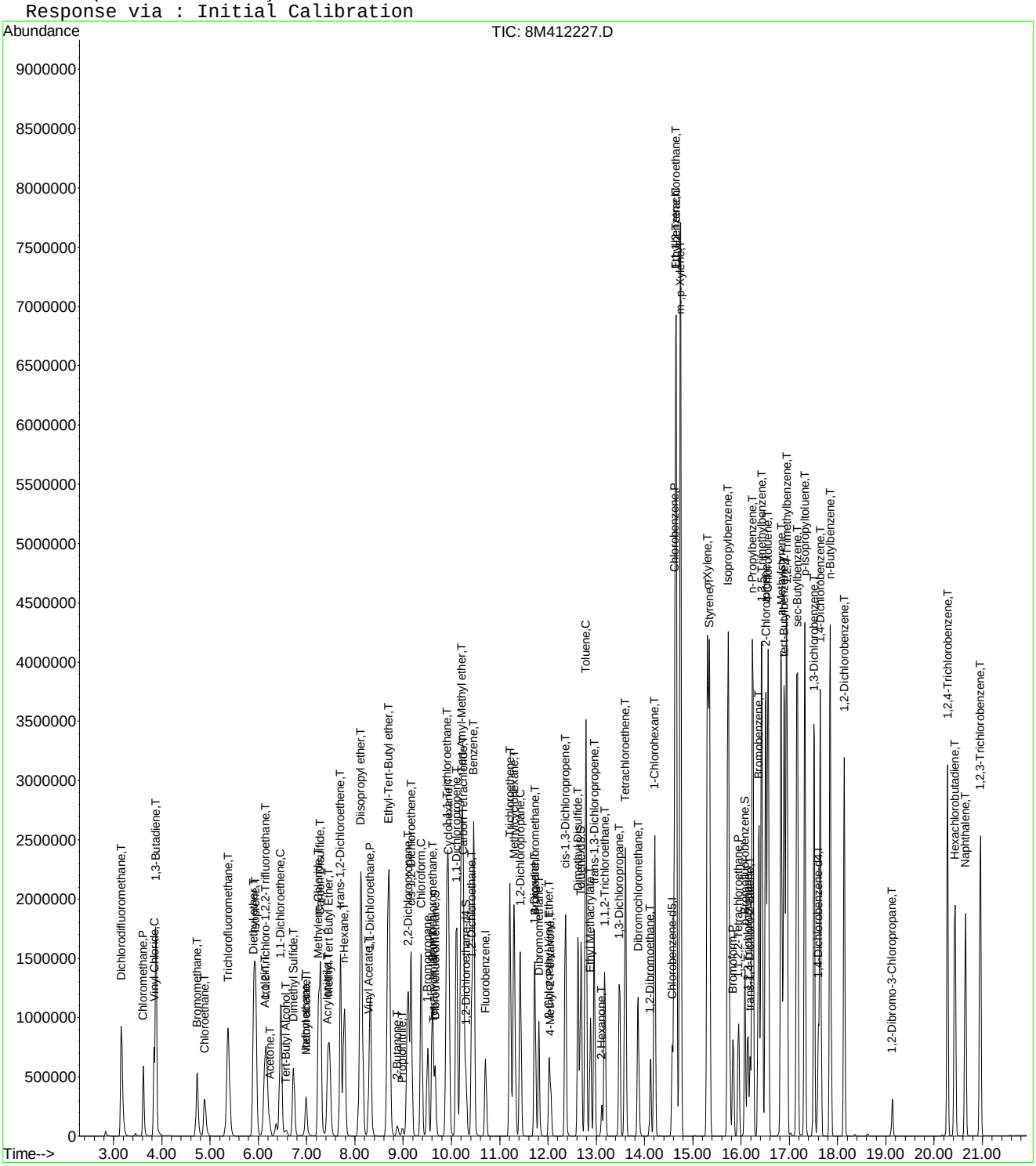

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

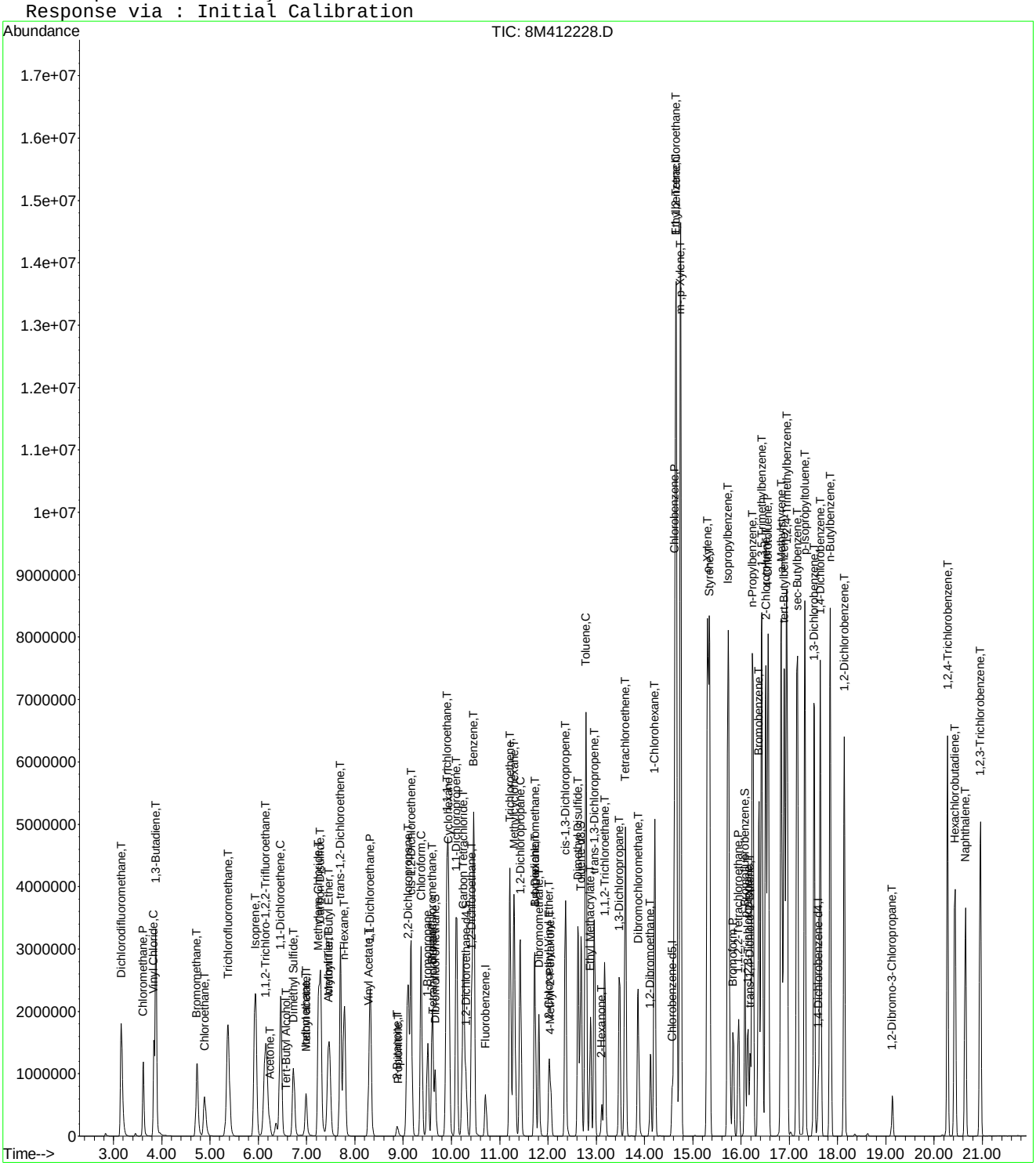

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726 ug/L		86
46)	Benzene	10.46	78	9065861	250.7462 ug/L		93
47)	Trichloroethene	11.21	130	2772282	295.1106 ug/L		97
48)	Methylcyclohexane	11.30	83	4327357	304.8748 ug/L		84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718 ug/L		74
50)	Bromodichloromethane	11.73	83	4051493	294.7973 ug/L		99
51)	1,4-Dioxane	11.72	88	26614	699.8767 ug/L		67
52)	Dibromomethane	11.81	93	1369945	295.3776 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917 ug/L		90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522 ug/L	#	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431 ug/L		97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911 ug/L		94
59)	Toluene	12.78	91	9135213	236.4669 ug/L		90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240 ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104 ug/L		100
64)	2-Hexanone	13.11	58	381967	311.8816 ug/L	#	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141 ug/L		76
66)	Tetrachloroethene	13.60	164	2374435	297.7522 ug/L		96
67)	Dibromochloromethane	13.87	129	2638145	310.7838 ug/L		100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085 ug/L		99
69)	1-Chlorohexane	14.21	91	3712592	290.5924 ug/L		84
70)	Chlorobenzene	14.63	112	6754240	263.7433 ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001 ug/L		100
72)	Ethylbenzene	14.65	106	4014412	290.7661 ug/L		70
73)	m-,p-Xylene	14.75	106	8357822	505.3514 ug/L		70
74)	o-Xylene	15.31	106	4530840	285.4488 ug/L		88
75)	Styrene	15.35	104	7050702	269.0641 ug/L		82
76)	Bromoform	15.84	173	1602587	321.7373 ug/L		99
77)	Isopropylbenzene	15.73	105	9900817	226.7477 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176 ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601 ug/L		82
83)	n-Propylbenzene	16.25	91	10768378	214.4110 ug/L		86
84)	Bromobenzene	16.37	156	2947671	300.5290 ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580 ug/L		92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449 ug/L		92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687 ug/L		93
88)	a-Methylstyrene	16.84	118	4955768	300.9205 ug/L		86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701 ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932 ug/L		89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051 ug/L		91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806 ug/L		87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593 ug/L		88
95)	n-Butylbenzene	17.85	91	8408157	234.6279 ug/L		92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787 ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741 ug/L		91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206 ug/L		98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378 ug/L		96
100)	Naphthalene	20.65	128	5216751	275.8542 ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

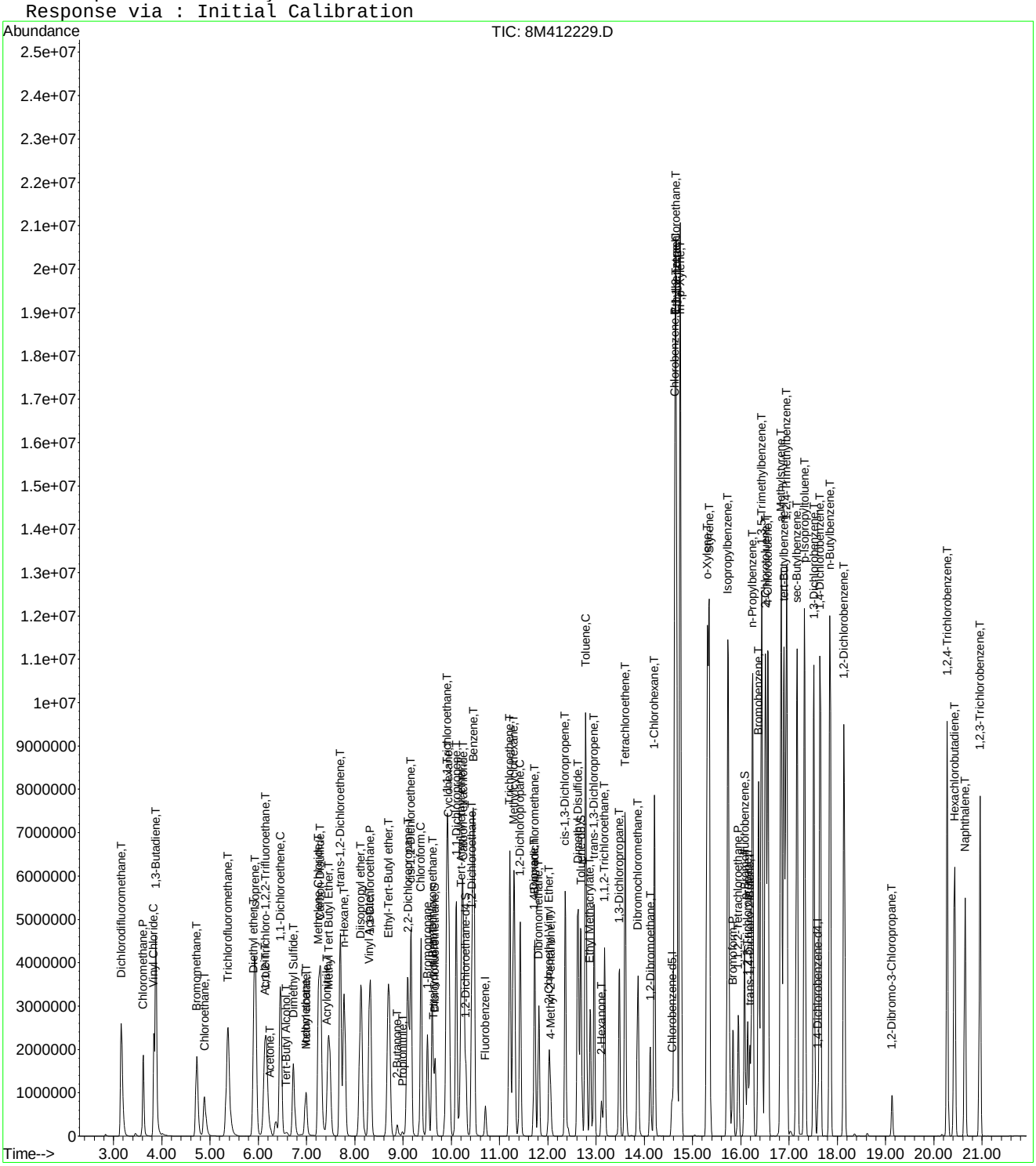

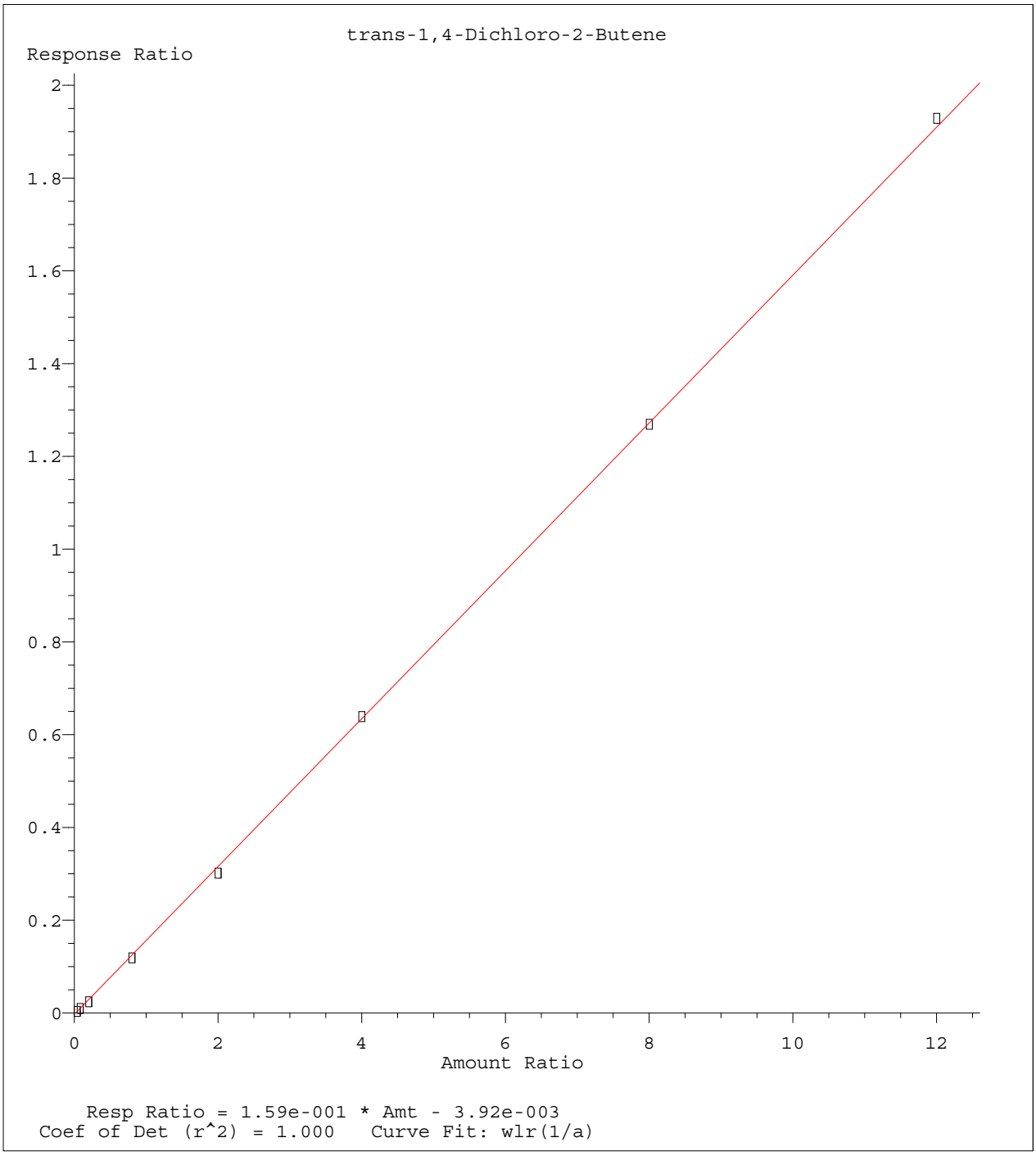

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

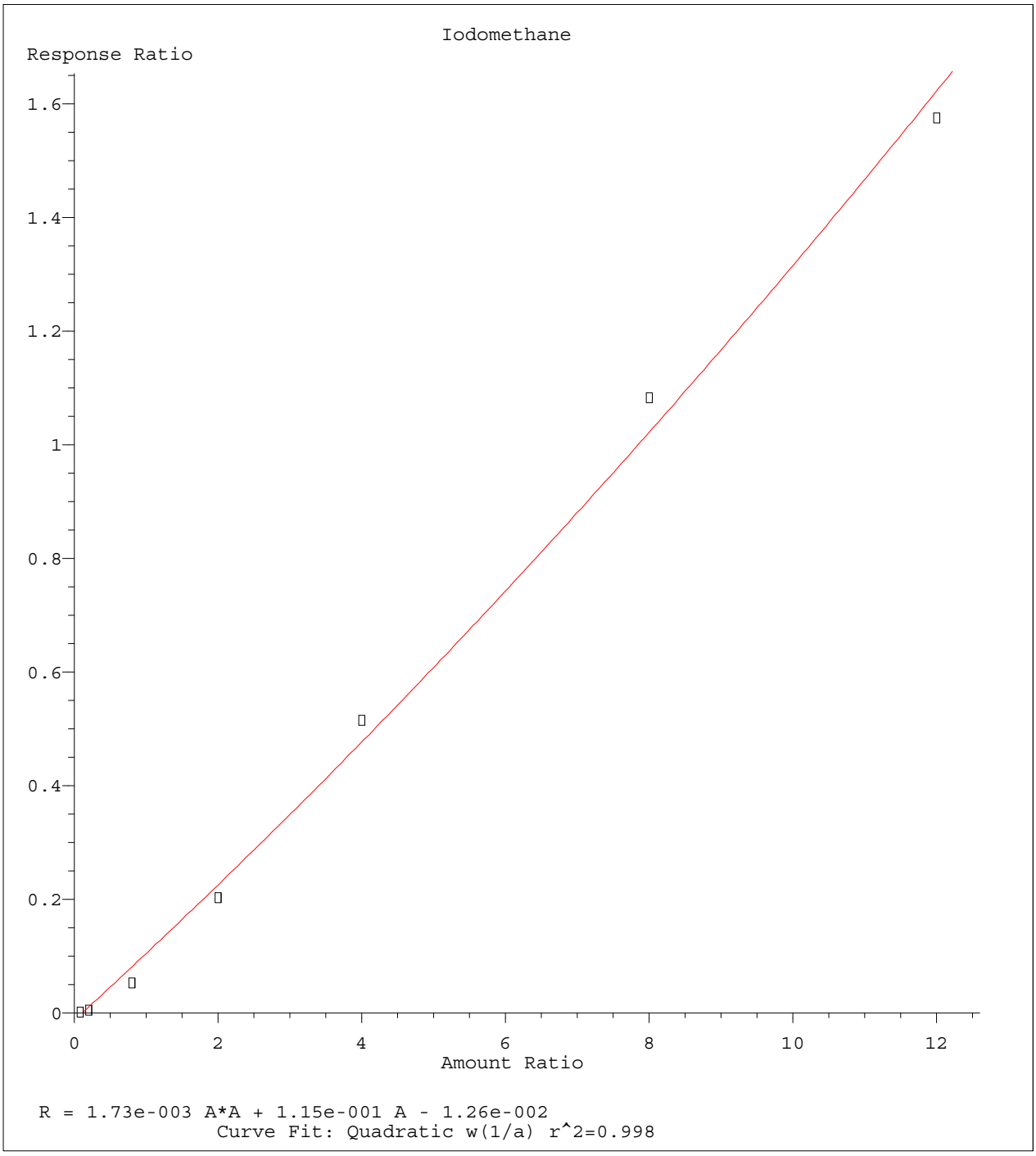

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

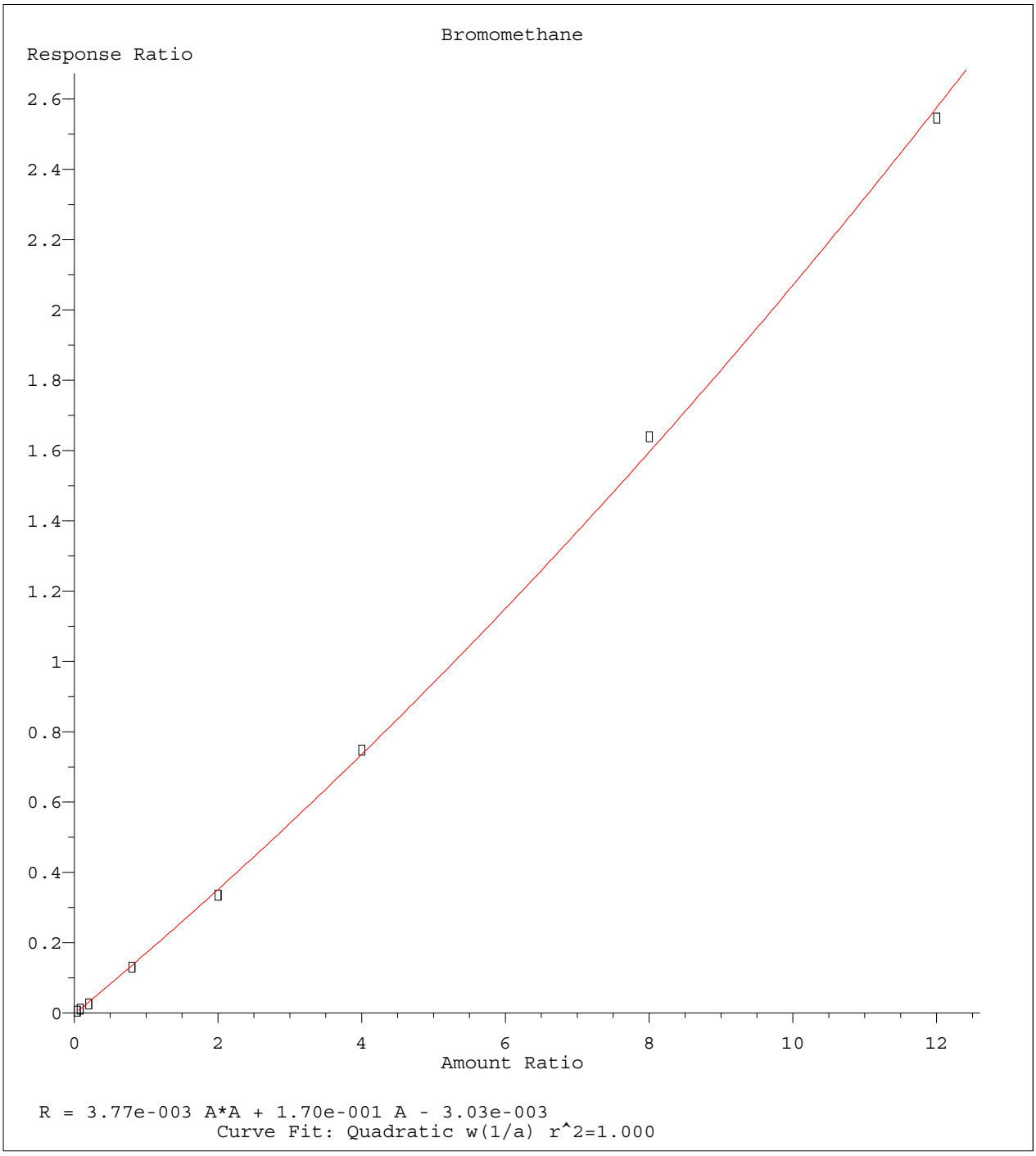

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

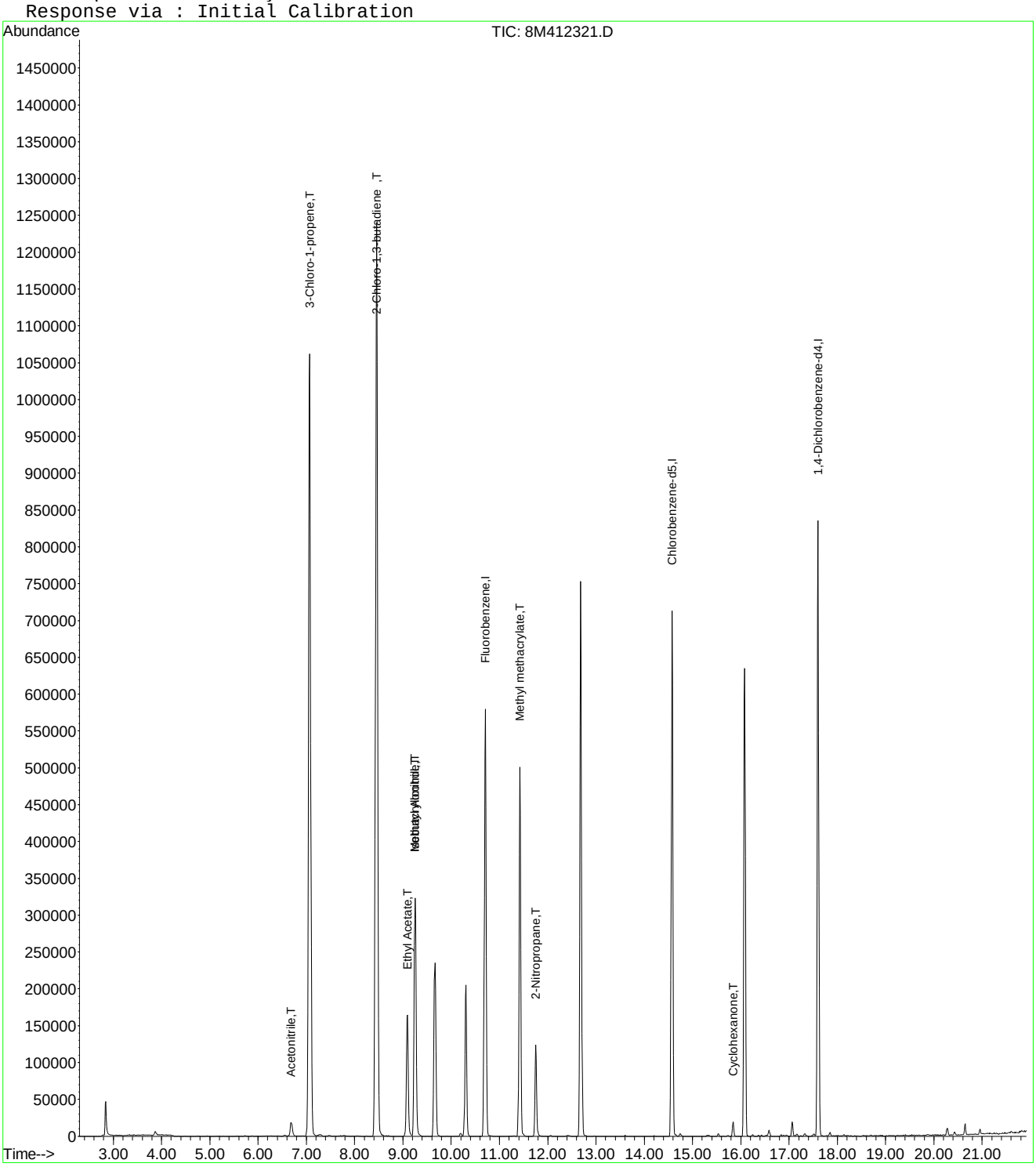

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

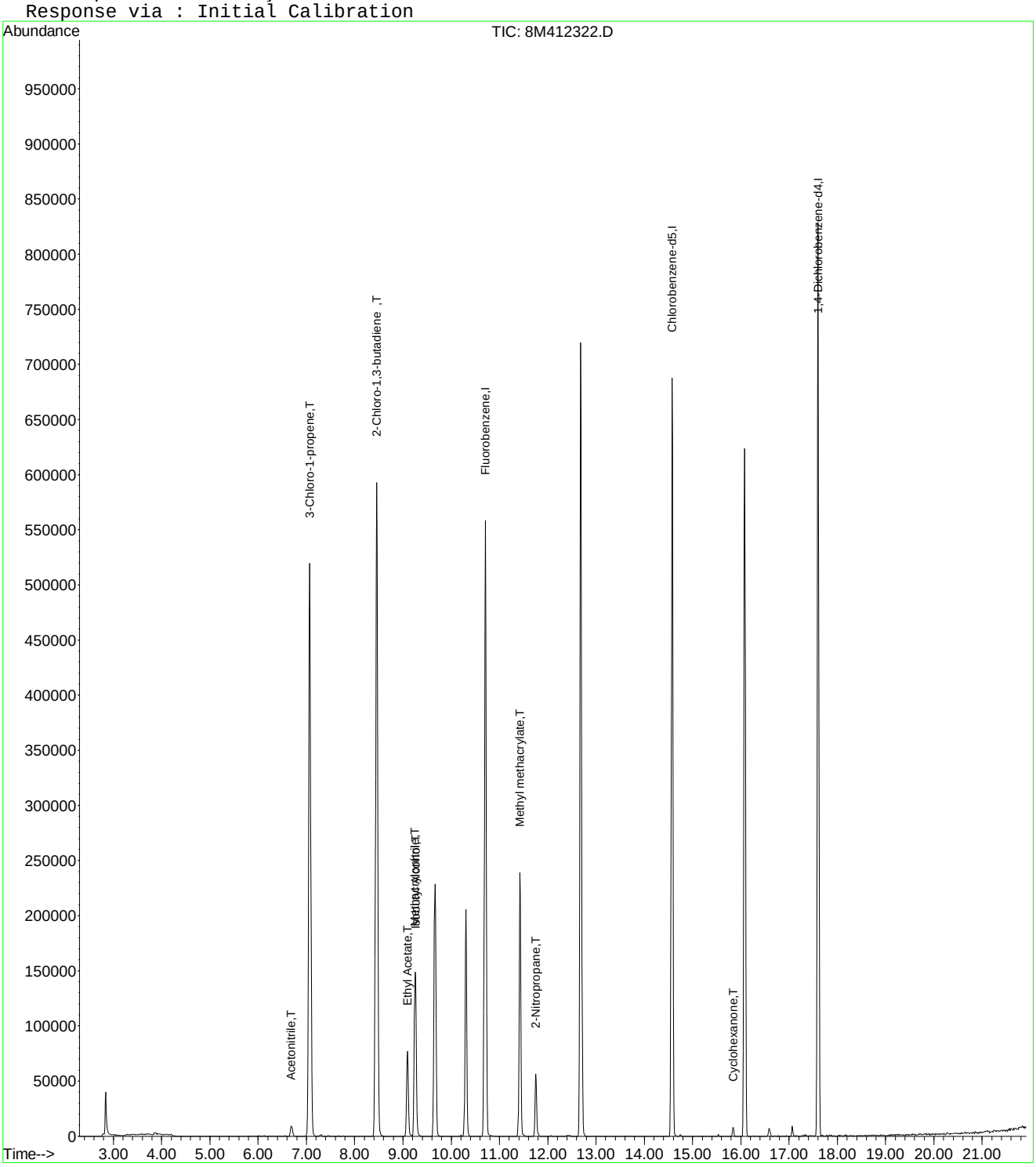

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	4873	19.3416	ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015	ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659	ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992	ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395	ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176	ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202	ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913	ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

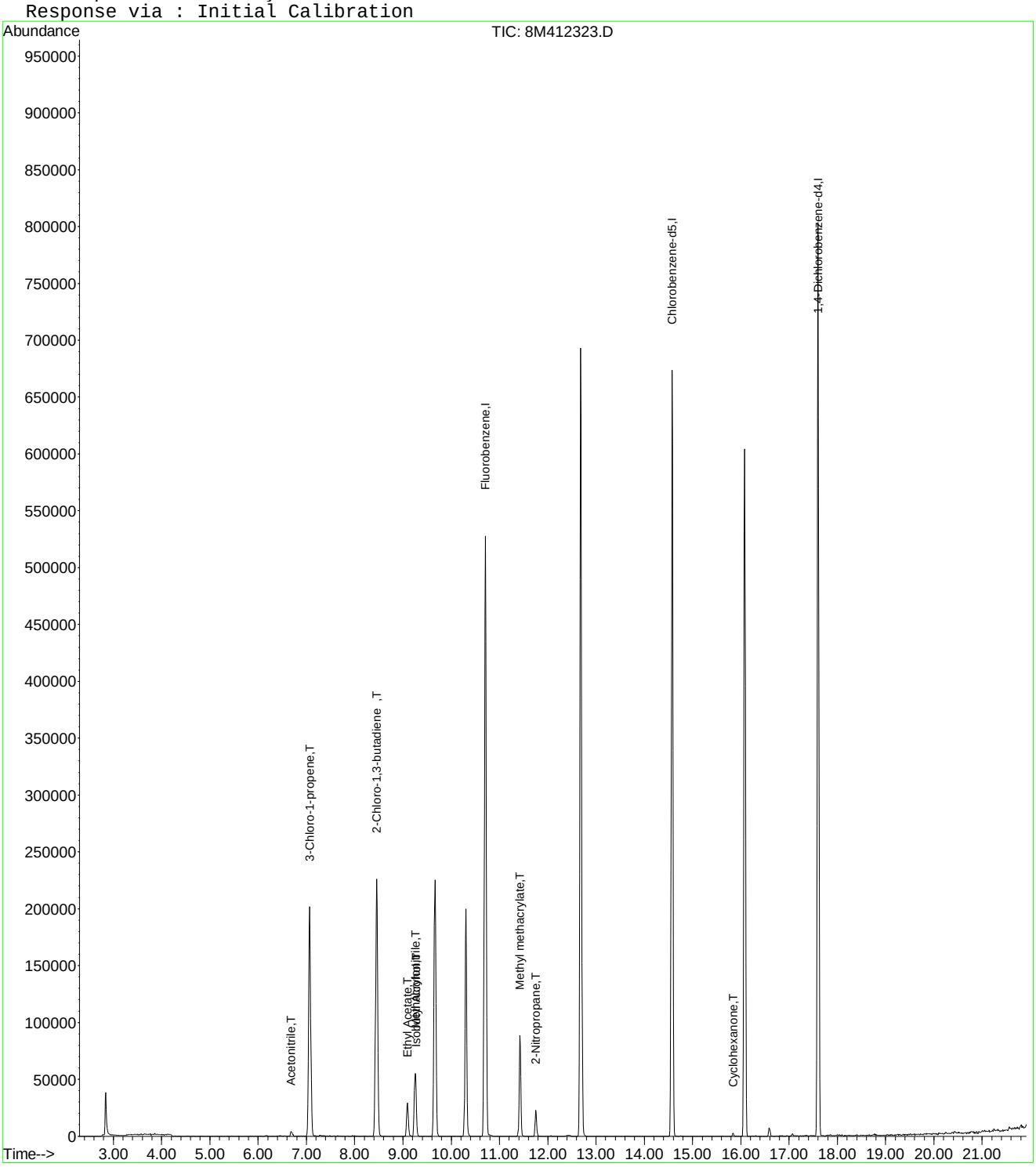

8M412323.D A9FOOWT.M Thu May 19 09:22:34 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

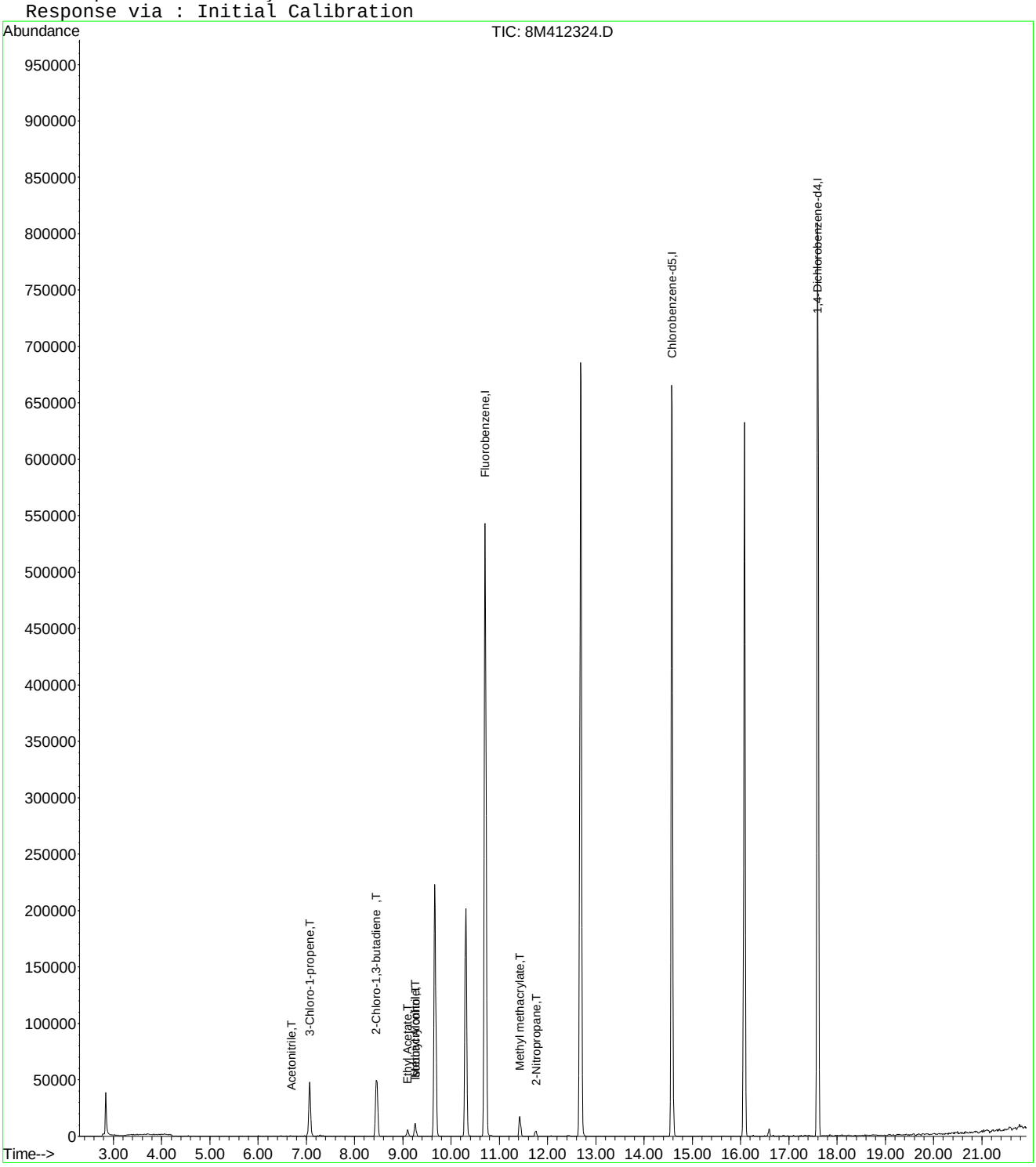

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.68	41	52022	197.6946	ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468	ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003	ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040	ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869	ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256	ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526	ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652	ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122	ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

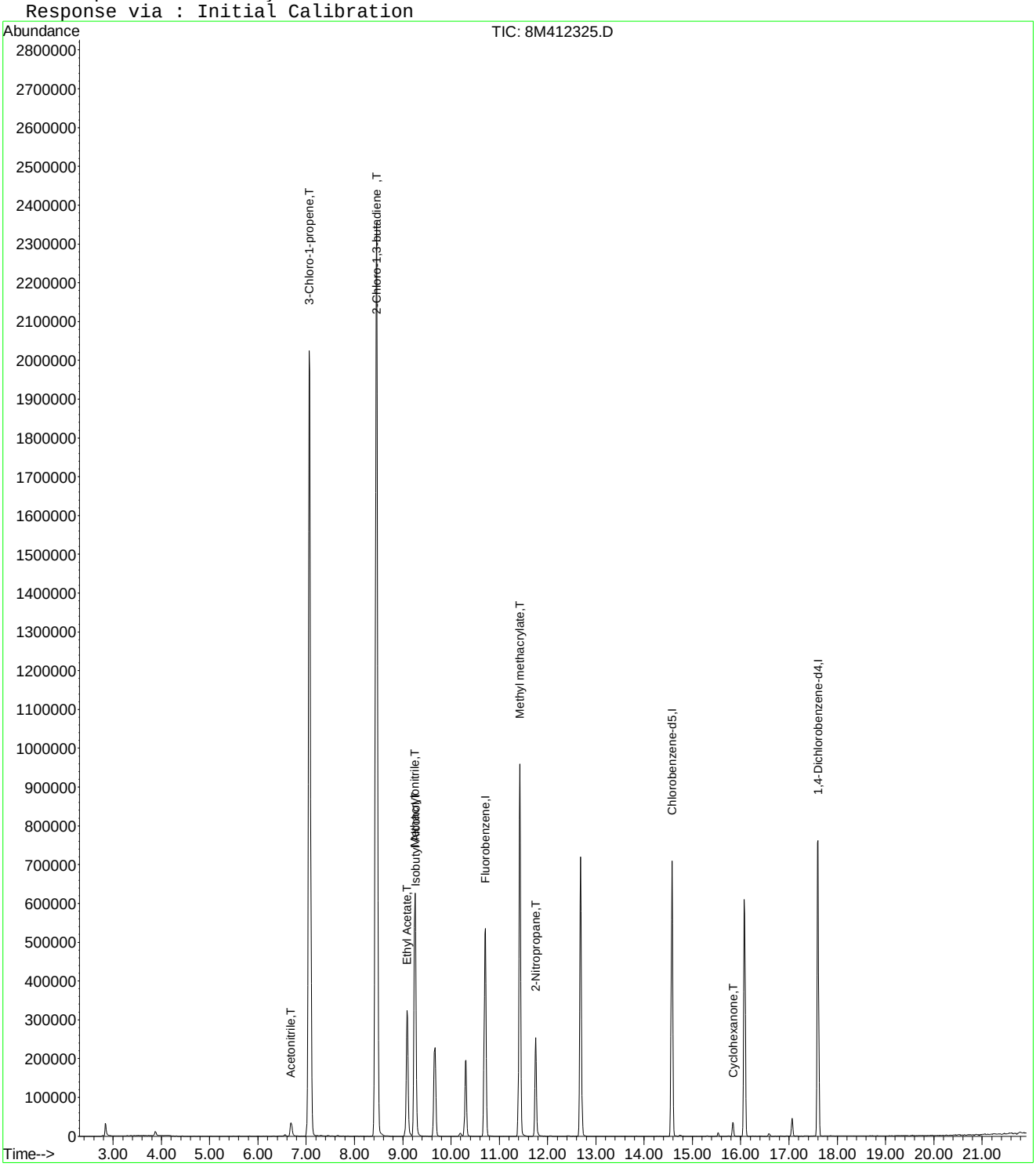

8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	81471	303.8636 ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562 ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424 ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374 ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836 ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132 ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456 ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412326.D A9FOOWT.M Thu May 19 09:01:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

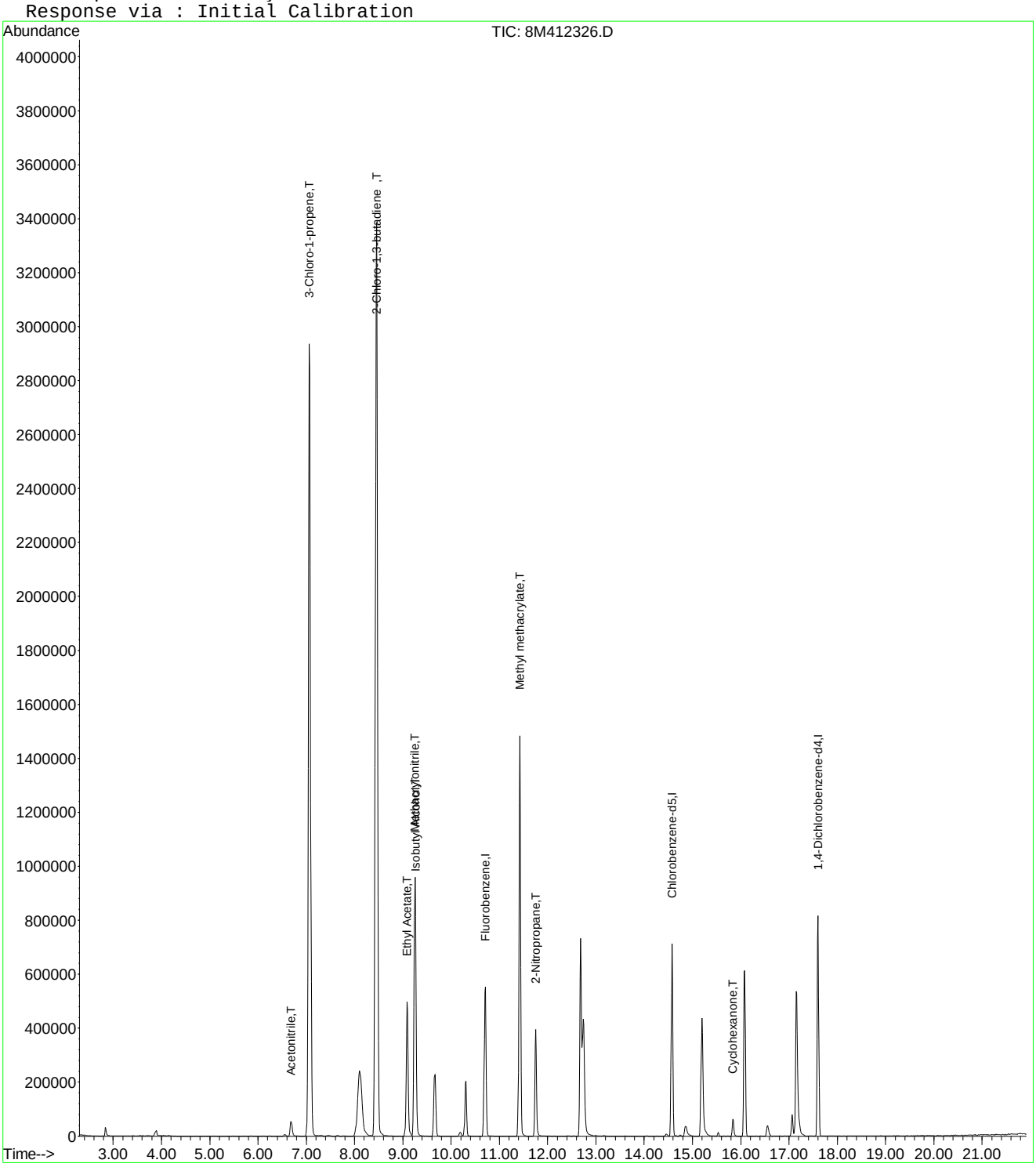

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

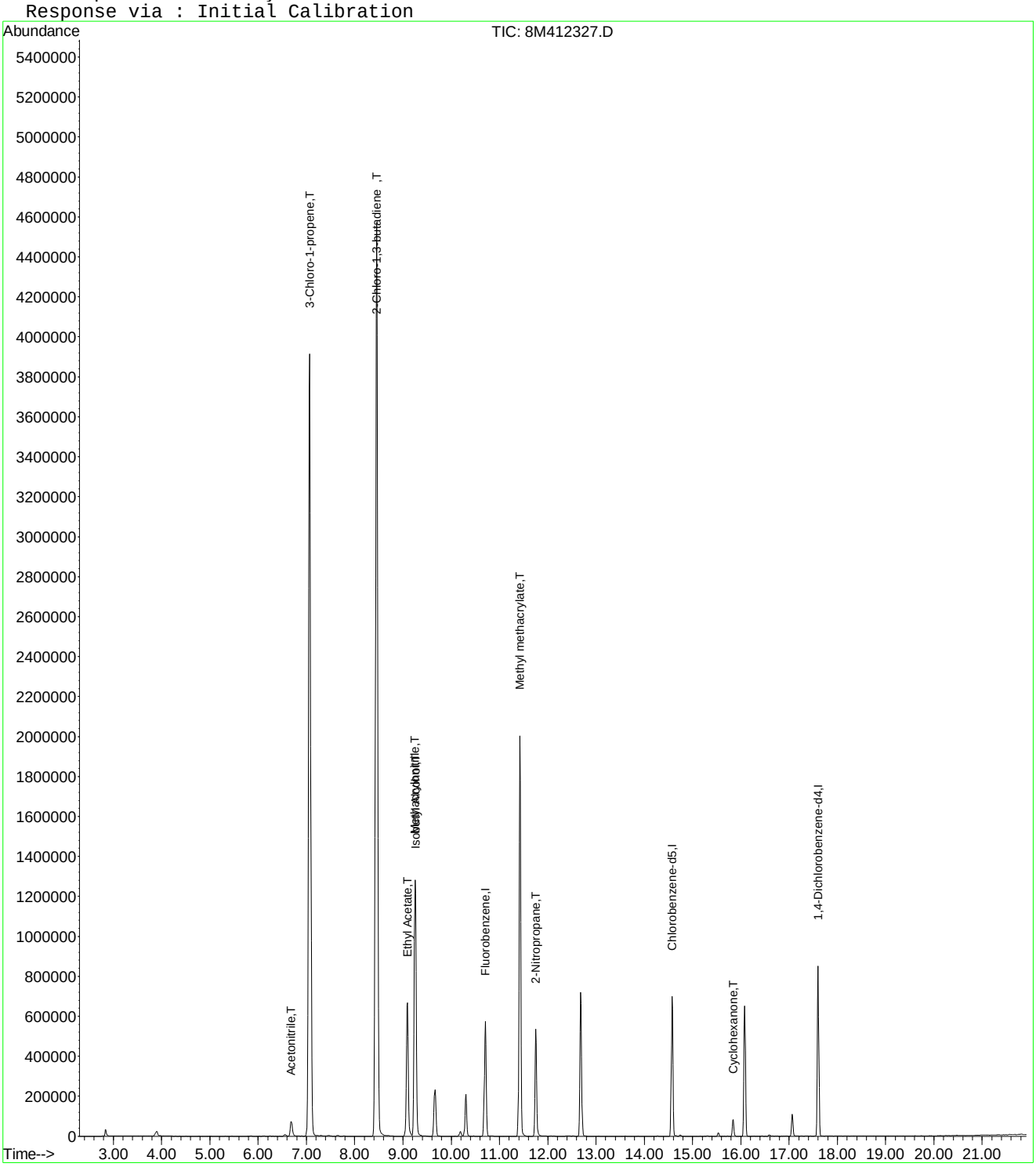

8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	132245	492.6753 ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834 ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693 ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017 ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083 ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367 ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877 ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956 ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

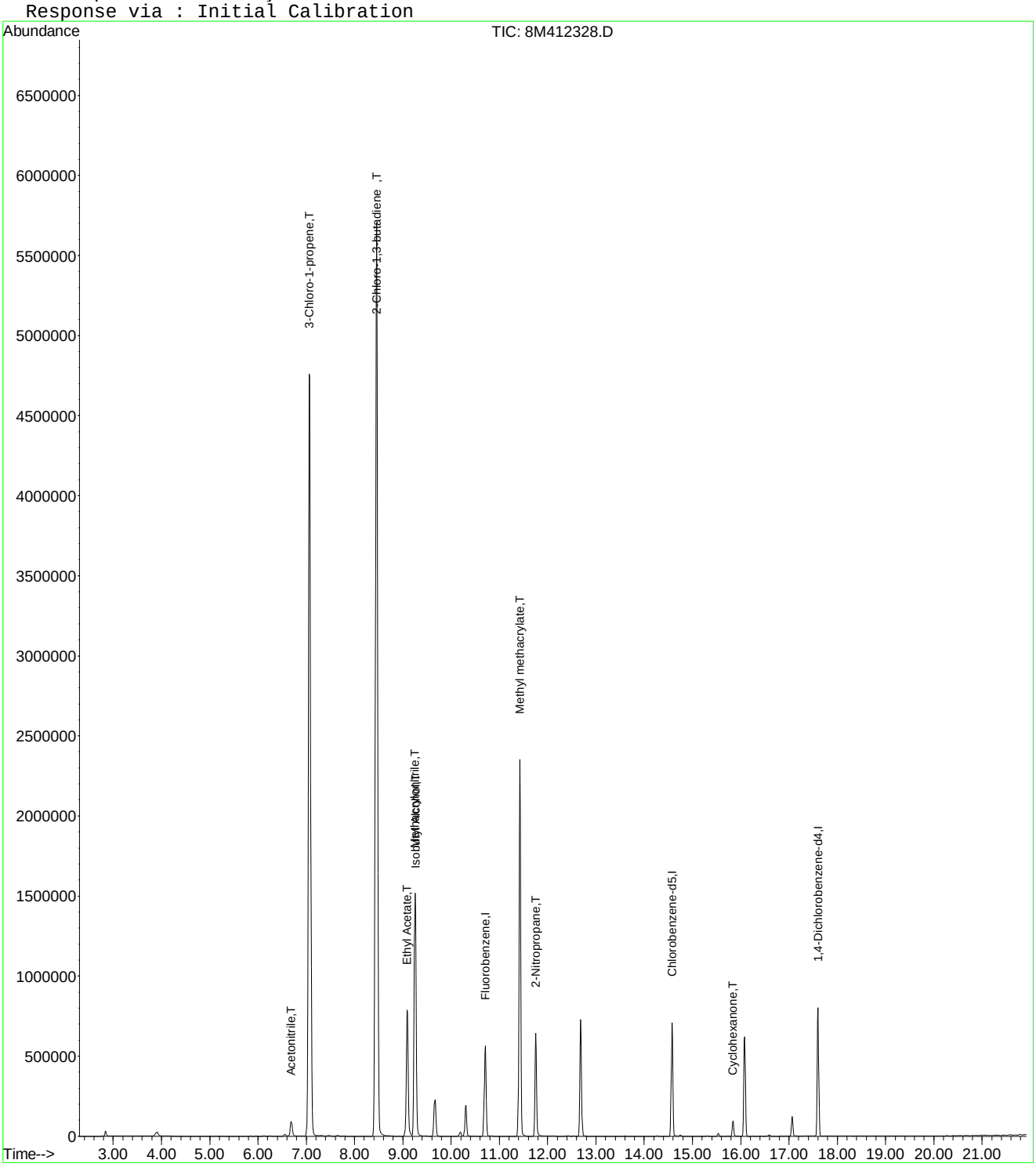

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

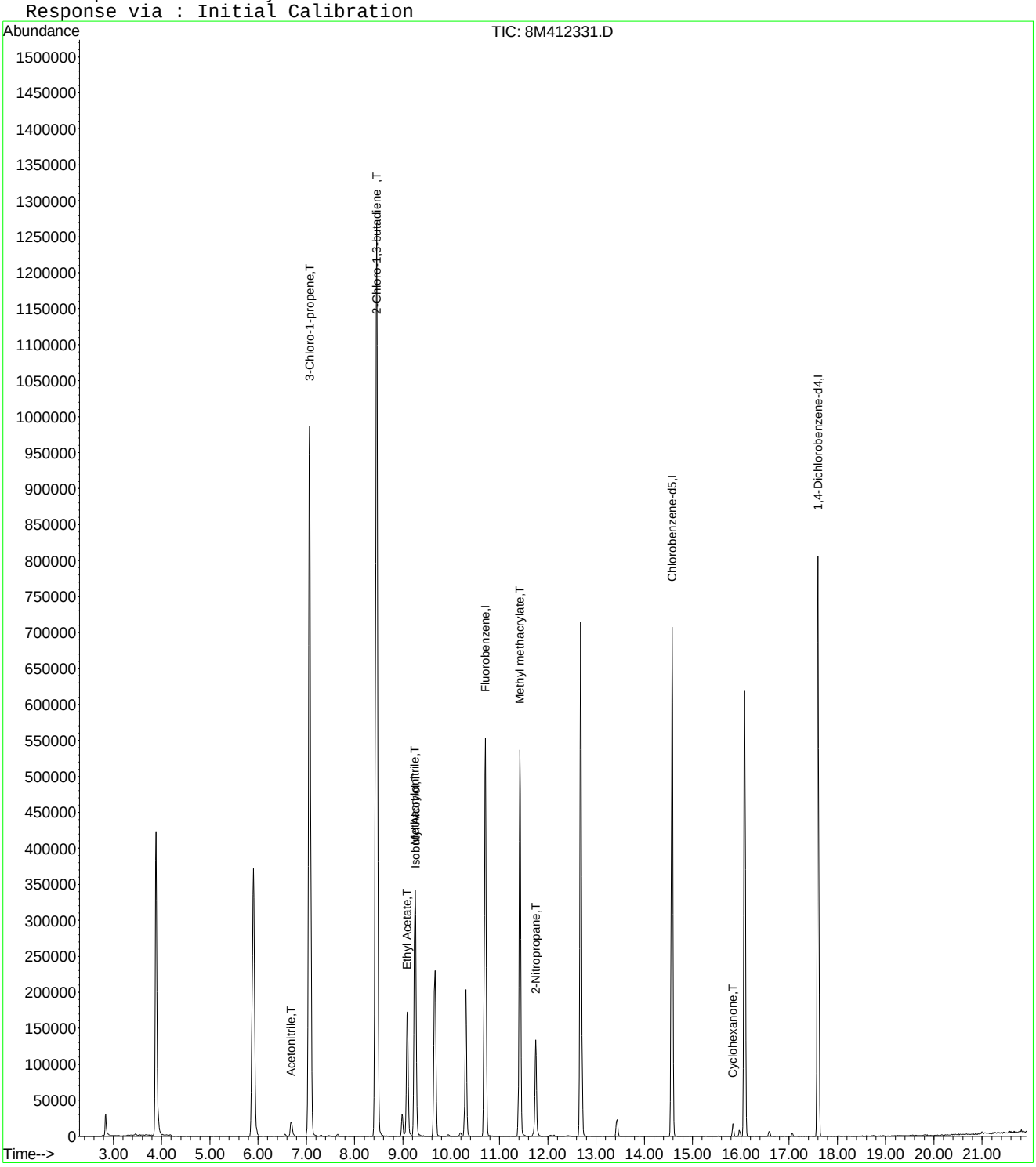

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\071316\11M13225.D Vial: 3
Acq On : 13 Jul 2016 13:04 Operator: TMB
Sample : WG576234-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:31:02 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	540525	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	487764	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	289065	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	147210	24.8851 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.56%		
43) 1,2-Dichloroethane-d4	10.23	65	138484	20.5311 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 82.12%		
57) Toluene-d8	12.47	98	518026	24.4429 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.76%		
78) p-Bromofluorobenzene	15.64	95	204802	22.9838 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.92%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	452344	53.4115 ug/L	94
3) Chloromethane	3.72	50	365507	53.8875 ug/L	100
4) Vinyl Chloride	3.96	62	303827	53.9392 ug/L	99
5) 1,3-Butadiene	4.00	54	262017	46.7809 ug/L	98
6) Bromomethane	4.86	94	201697	52.0797 ug/L	99
7) Chloroethane	5.00	64	196297	54.2383 ug/L	100
8) Trichlorofluoromethane	5.48	101	561000	49.9684 ug/L	100
9) Diethyl ether	6.01	59	351369	84.6230 ug/L	91
10) Isoprene	6.04	67	319075	46.1086 ug/L	89
11) Acrolein	6.24	56	21175	39.1267 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	291783	53.5602 ug/L	94
13) Acetone	6.34	43	44076	34.3403 ug/L	93
14) 1,1-Dichloroethene	6.56	61	490453	49.5644 ug/L	93
15) Tert-Butyl Alcohol	6.66	59	46257	130.2926 ug/L	98
16) Dimethyl Sulfide	6.81	62	169760	42.9580 ug/L	88
17) Iodomethane	7.06	142	210858	46.9086 ug/L	94
18) Methyl acetate	7.06	43	136354	33.6998 ug/L	94
19) Methylene Chloride	7.31	84	267411	52.2170 ug/L	79
20) Carbon Disulfide	7.36	76	845140	51.0166 ug/L	100
21) Acrylonitrile	7.49	53	71433	41.5092 ug/L	96
22) Methyl Tert Butyl Ether	7.52	73	591958	46.3447 ug/L	96
23) trans-1,2-Dichloroethene	7.75	96	297037	54.2383 ug/L	91
24) n-Hexane	7.82	57	422132	46.2792 ug/L	97
25) Diisopropyl ether	8.15	45	1957457	86.0021 ug/L	97
26) Vinyl Acetate	8.31	43	285883	33.2156 ug/L	98
27) 1,1-Dichloroethane	8.34	63	564151	51.3395 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1664382	89.8445 ug/L	98
29) 2-Butanone	8.87	43	68635	35.3718 ug/L	92
30) Propionitrile	8.98	54	46024	80.9825 ug/L	98
31) 2,2-Dichloropropane	9.09	77	469392	54.5958 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	330044	54.6576 ug/L	90
33) Chloroform	9.35	83	535036	49.5813 ug/L	99
34) 1-Bromopropane	9.48	122	56532	52.6687 ug/L	98
35) Bromochloromethane	9.57	130	206096	57.4700 ug/L	85
36) Tetrahydrofuran	9.60	42	90033	65.7076 ug/L	88
38) 1,1,1-Trichloroethane	9.85	97	540439	50.8925 ug/L	96
39) Cyclohexane	9.88	56	543750	46.9841 ug/L	93
40) 1,1-Dichloropropene	10.04	75	400828	52.8643 ug/L	98
41) Carbon Tetrachloride	10.18	117	543136	52.3780 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1189576	92.4123 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M13225.D 8260WT.M Wed Jul 13 16:31:04 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\071316\11M13225.D Vial: 3
Acq On : 13 Jul 2016 13:04 Operator: TMB
Sample : WG576234-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:31:02 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	394507	45.0126	ug/L	99
45)	Benzene	10.38	78	1103657	53.1712	ug/L	99
46)	Trichloroethene	11.08	130	375812	55.7033	ug/L	97
47)	Methylcyclohexane	11.17	83	412640	49.5588	ug/L	93
48)	1,2-Dichloropropane	11.29	63	293444	51.0717	ug/L	96
49)	1,4-Dioxane	11.56	88	4986	159.3402	ug/L	85
50)	Bromodichloromethane	11.57	83	410665	50.9124	ug/L	99
51)	Dibromomethane	11.65	93	148769	49.6869	ug/L	96
52)	2-Chloroethyl Vinyl Ether	11.84	63	124935	44.1182	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	63798	39.9435	ug/L	93
54)	cis-1,3-Dichloropropene	12.17	75	425635	52.7575	ug/L	100
55)	Dimethyl Disulfide	12.42	79	217836	44.8699	ug/L	94
58)	Toluene	12.56	91	1272953	51.5521	ug/L	100
59)	Ethyl Methacrylate	12.64	69	223138	42.3205	ug/L	83
60)	trans-1,3-Dichloropropene	12.73	75	370439	46.7383	ug/L	97
61)	1,1,2-Trichloroethane	12.94	97	206218	47.0973	ug/L	100
62)	2-Hexanone	12.86	43	108340	33.6900	ug/L	93
63)	1,3-Dichloropropane	13.21	76	326210	46.3934	ug/L	85
64)	Tetrachloroethene	13.34	164	305359	53.1781	ug/L	96
65)	Dibromochloromethane	13.59	129	328555	49.1958	ug/L	99
66)	1,2-Dibromoethane	13.82	107	206469	47.0654	ug/L	98
67)	1-Chlorohexane	13.89	91	387875	47.6447	ug/L	89
68)	Chlorobenzene	14.29	112	931120	51.4740	ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	371112	50.7023	ug/L	99
70)	Ethylbenzene	14.31	106	477611	51.4901	ug/L	96
71)	m-,p-Xylene	14.39	106	1154569	102.3859	ug/L	96
72)	o-Xylene	14.92	106	563598	51.3555	ug/L	97
73)	Styrene	14.95	104	951759	52.4913	ug/L	95
74)	Bromoform	15.43	173	191630	47.3423	ug/L	99
75)	Isopropylbenzene	15.31	105	1488280	51.2800	ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.51	83	196851	43.7305	ug/L	97
79)	1,2,3-Trichloropropane	15.70	110	70778	41.9650	ug/L	93
80)	trans-1,4-Dichloro-2-Buten	15.74	53	54225	25.3645	ug/L	49
81)	n-Propylbenzene	15.79	91	1684343	50.3137	ug/L	98
82)	Bromobenzene	15.91	156	440614	50.1583	ug/L	89
83)	1,3,5-Trimethylbenzene	15.95	105	1265969	49.5558	ug/L	98
84)	2-Chlorotoluene	16.05	91	1170909	49.9369	ug/L	96
85)	4-Chlorotoluene	16.09	91	1000061	47.6140	ug/L	97
86)	a-Methylstyrene	16.34	118	630796	46.8060	ug/L	95
87)	tert-Butylbenzene	16.39	134	274080	50.6404	ug/L	91
88)	1,2,4-Trimethylbenzene	16.44	105	1304183	50.1345	ug/L	98
89)	sec-Butylbenzene	16.64	105	1493851	48.7000	ug/L	99
90)	p-Isopropyltoluene	16.79	119	1379875	48.9752	ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	840382	49.5333	ug/L	97
92)	1,4-Dichlorobenzene	17.10	146	837600	48.7059	ug/L	97
93)	n-Butylbenzene	17.28	91	1155511	46.5418	ug/L	97
94)	1,2-Dichlorobenzene	17.57	146	745668	48.2472	ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	35842	35.5093	ug/L	94
96)	1,2,4-Trichlorobenzene	19.54	180	531054	46.9580	ug/L	97
97)	Hexachlorobutadiene	19.69	225	200785	40.3006	ug/L	96
98)	Naphthalene	19.89	128	901451	42.9444	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	454977	43.8359	ug/L	99

(#) = qualifier out of range (m) = manual integration
11M13225.D 8260WT.M Wed Jul 13 16:31:04 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\071316\11M13225.D Vial: 3
Acq On : 13 Jul 2016 13:04 Operator: TMB
Sample : WG576234-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:31 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration

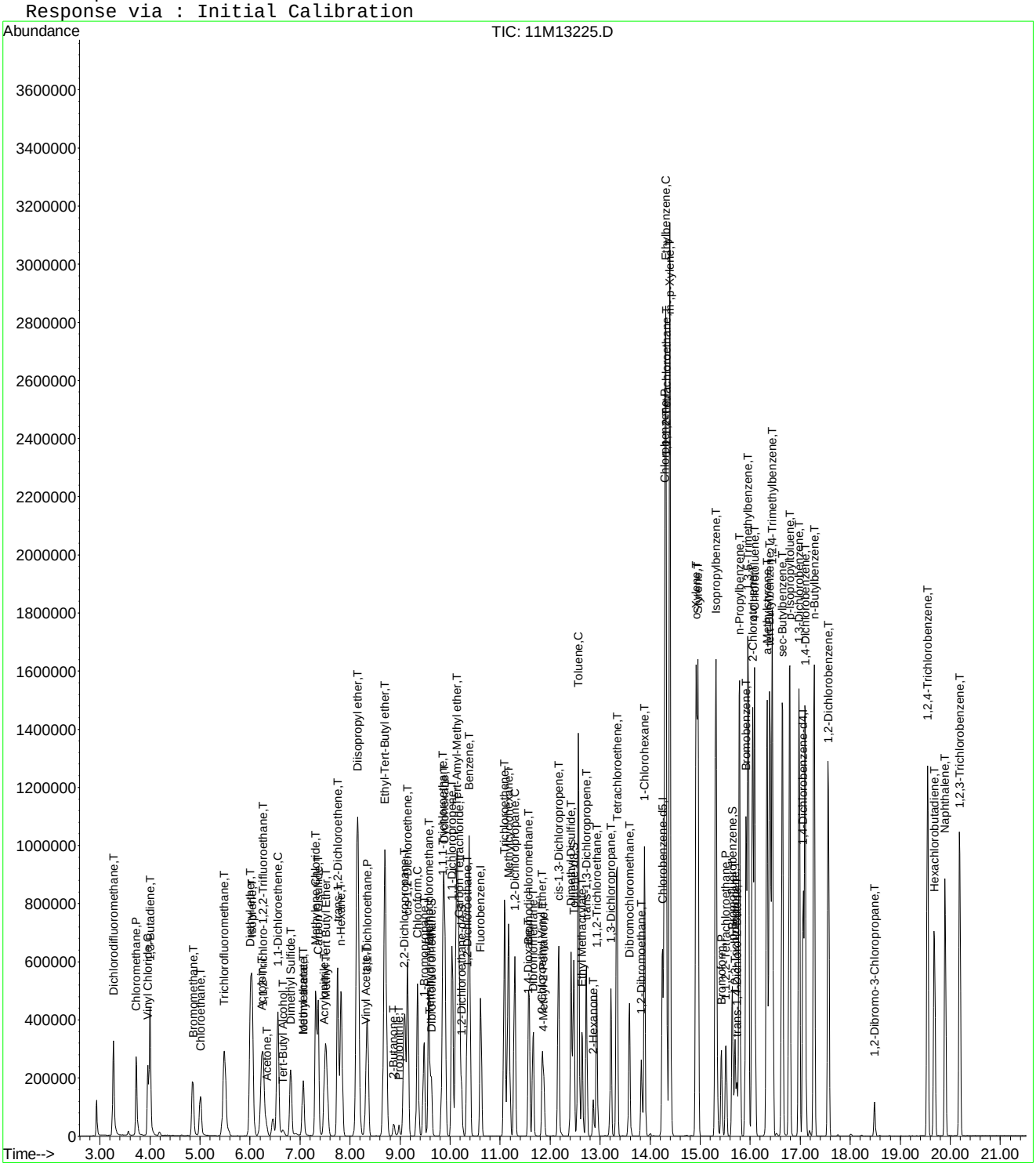

Continuing Calibration Area and RT check

Instrument: hpms11
Initial cal date: 13 May 2016 17:51
CCV date: 13 Jul 2016 13:04
CCV Filename: 11M13225.D

	Fluorobenzene		**Chlorobenzene-d5**		**1,4-Dichlorobenzene-d4**	
	Amount	RT	Amount	RT	Amount	RT
InitCal	521583	10.61	438582	14.25	263885	17.06
CCV	540525	10.61	487764	14.25	289065	17.06

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\071316\11M13225.D Vial: 3
Acq On : 13 Jul 2016 13:04 Operator: TMB
Sample : WG576234-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	104	0.00
2	T	Dichlorodifluoromethane	0.3917	0.4184	-6.8	108	0.00
3	P	Chloromethane	0.3137	0.3381	-7.8	127	0.00
4	C	Vinyl Chloride	0.2605	0.2811	-7.9	116	0.00
5	T	1,3-Butadiene	0.2591	0.2424	6.4	93	0.00
6	T	Bromomethane	0.1791	0.1866	-4.2	117	0.01
7	T	Chloroethane	0.1674	0.1816	-8.5	117	0.00
8	T	Trichlorofluoromethane	0.5193	0.5189	0.1	108	0.00
9	T	Diethyl ether	0.1920	0.1625	15.4	90	0.00
10	T	Isoprene	0.3201	0.2952	7.8	96	0.00
11	T	Acrolein	0.0228	0.0196	14.0	84	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2520	0.2699	-7.1	114	0.01
13	T	Acetone	0.0594	0.0408	31.3#	73	0.00
14	C	1,1-Dichloroethene	0.4577	0.4537	0.9	107	0.00
15	T	Tert-Butyl Alcohol	0.0164	0.0107	34.8#	67	0.00
16	T	Dimethyl Sulfide	0.1828	0.1570	14.1	88	0.00
17	T	Iodomethane	0.1615	0.1951	-20.8	98	0.00
18	T	Methyl acetate	0.2006	0.1261	37.1#	74	0.00
19	T	Methylene Chloride	0.2369	0.2474	-4.4	114	0.00
20	T	Carbon Disulfide	0.7662	0.7818	-2.0	104	0.00
21	T	Acrylonitrile	0.0796	0.0661	17.0	84	0.00
22	T	Methyl Tert Butyl Ether	0.5908	0.5476	7.3	97	0.00
23	T	trans-1,2-Dichloroethene	0.2533	0.2748	-8.5	118	0.01
24	T	n-Hexane	0.4219	0.3905	7.4	94	0.00
25	T	Diisopropyl ether	1.0527	0.9053	14.0	90	0.00
26	T	Vinyl Acetate	0.3793	0.2645	30.3#	70	0.00
27	P	1,1-Dichloroethane	0.5082	0.5219	-2.7	109	0.00
28	T	Ethyl-Tert-Butyl ether	0.8568	0.7698	10.2	93	0.00
29	T	2-Butanone	0.0897	0.0635	29.3#	75	0.00
30	T	Propionitrile	0.0263	0.0213	19.0	81	0.00
31	T	2,2-Dichloropropane	0.3977	0.4342	-9.2	117	0.00
32	T	cis-1,2-Dichloroethene	0.2793	0.3053	-9.3	117	0.00
33	C	Chloroform	0.4991	0.4949	0.8	109	0.00
34	T	1-Bromopropane	0.0432	0.0523	-21.1	113	0.00
35	T	Bromochloromethane	0.1659	0.1906	-14.9	115	0.00
36	T	Tetrahydrofuran	0.0634	0.0416	34.3#	70	0.00
37	S	Dibromofluoromethane	0.2736	0.2723	0.5	105	0.00
38	T	1,1,1-Trichloroethane	0.4911	0.4999	-1.8	109	0.00
39	T	Cyclohexane	0.5353	0.5030	6.0	95	0.00
40	T	1,1-Dichloropropene	0.3507	0.3708	-5.7	114	0.00
41	T	Carbon Tetrachloride	0.4796	0.5024	-4.8	110	0.00
42	T	Tert-Amyl-Methyl ether	0.5954	0.5502	7.6	97	0.00
43	S	1,2-Dichloroethane-d4	0.3120	0.2562	17.9	88	0.00
44	T	1,2-Dichloroethane	0.4054	0.3649	10.0	94	0.00
45	T	Benzene	0.9600	1.0209	-6.3	116	0.00
46	T	Trichloroethene	0.3120	0.3476	-11.4	122	-0.01
47	T	Methylcyclohexane	0.3851	0.3817	0.9	99	0.00
48	C	1,2-Dichloropropane	0.2657	0.2714	-2.1	109	0.00
49	T	1,4-Dioxane	0.0014	0.0012	17.9	85	0.01
50	T	Bromodichloromethane	0.3731	0.3799	-1.8	107	0.00
51	T	Dibromomethane	0.1385	0.1376	0.6	104	0.00
52	T	2-Chloroethyl Vinyl Ether	0.1310	0.1156	11.8	94	0.00
53	T	4-Methyl-2-Pentanone	0.0739	0.0590	20.1	84	0.00
54	T	cis-1,3-Dichloropropene	0.3731	0.3937	-5.5	108	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\071316\11M13225.D Vial: 3
Acq On : 13 Jul 2016 13:04 Operator: TMB
Sample : WG576234-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2245	0.2015	10.3	92	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	111	0.00
57	S	Toluene-d8	1.0862	1.0620	2.2	112	0.00
58	C	Toluene	1.2656	1.3049	-3.1	116	0.00
59	T	Ethyl Methacrylate	0.2702	0.2287	15.4	89	-0.01
60	T	trans-1,3-Dichloropropene	0.4062	0.3797	6.5	101	0.00
61	T	1,1,2-Trichloroethane	0.2244	0.2114	5.8	106	0.00
62	T	2-Hexanone	0.1648	0.1111	32.6#	75	0.00
63	T	1,3-Dichloropropane	0.3604	0.3344	7.2	103	0.00
64	T	Tetrachloroethene	0.2943	0.3130	-6.4	122	0.00
65	T	Dibromochloromethane	0.3423	0.3368	1.6	106	0.00
66	T	1,2-Dibromoethane	0.2248	0.2117	5.9	105	0.00
67	T	1-Chlorohexane	0.4173	0.3976	4.7	103	0.00
68	P	Chlorobenzene	0.9272	0.9545	-2.9	117	0.00
69	T	1,1,1,2-Tetrachloroethane	0.3751	0.3804	-1.4	114	0.00
70	C	Ethylbenzene	0.4754	0.4896	-3.0	117	0.00
71	T	m-,p-Xylene	0.5780	0.5918	-2.4	116	0.00
72	T	o-Xylene	0.5625	0.5777	-2.7	115	0.00
73	T	Styrene	0.9293	0.9756	-5.0	114	0.00
74	P	Bromoform	0.2075	0.1964	5.3	104	0.00
75	T	Isopropylbenzene	1.4875	1.5256	-2.6	114	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	110	0.00
77	P	1,1,2,2-Tetrachloroethane	0.3893	0.3405	12.5	94	-0.01
78	S	p-Bromofluorobenzene	0.7706	0.7085	8.1	108	0.00
79	T	1,2,3-Trichloropropane	0.1351	0.1224	9.4	98	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.1588	0.0938	40.9#	58	0.00
81	T	n-Propylbenzene	2.8953	2.9134	-0.6	111	0.00
82	T	Bromobenzene	0.7597	0.7621	-0.3	116	-0.01
83	T	1,3,5-Trimethylbenzene	2.2094	2.1898	0.9	111	0.00
84	T	2-Chlorotoluene	2.0279	2.0253	0.1	115	0.00
85	T	4-Chlorotoluene	1.8165	1.7298	4.8	107	0.00
86	T	a-Methylstyrene	1.1656	1.0911	6.4	97	0.00
87	T	tert-Butylbenzene	0.4681	0.4741	-1.3	113	-0.01
88	T	1,2,4-Trimethylbenzene	2.2498	2.2559	-0.3	111	0.00
89	T	sec-Butylbenzene	2.6529	2.5839	2.6	107	-0.01
90	T	p-Isopropyltoluene	2.4367	2.3868	2.0	108	0.00
91	T	1,3-Dichlorobenzene	1.4673	1.4536	0.9	114	0.00
92	T	1,4-Dichlorobenzene	1.4873	1.4488	2.6	113	0.00
93	T	n-Butylbenzene	2.1472	1.9987	6.9	103	0.00
94	T	1,2-Dichlorobenzene	1.3366	1.2898	3.5	109	0.00
95	T	1,2-Dibromo-3-Chloropropane	0.0825	0.0620	24.8	84	0.00
96	T	1,2,4-Trichlorobenzene	0.9781	0.9186	6.1	104	-0.01
97	T	Hexachlorobutadiene	0.4309	0.3473	19.4	92	0.00
98	T	Naphthalene	1.8154	1.5593	14.1	94	-0.01
99	T	1,2,3-Trichlorobenzene	0.8976	0.7870	12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M13225.D 8260WT.M Wed Jul 13 16:31:31 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\071316\11M13225.D Vial: 3
Acq On : 13 Jul 2016 13:04 Operator: TMB
Sample : WG576234-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	104	0.00
2	T	Dichlorodifluoromethane	50.0000	53.4115	-6.8	108	0.00
3	P	Chloromethane	50.0000	53.8875	-7.8	127	0.00
4	C	Vinyl Chloride	50.0000	53.9392	-7.9	116	0.00
5	T	1,3-Butadiene	50.0000	46.7809	6.4	93	0.00
6	T	Bromomethane	50.0000	52.0797	-4.2	117	0.01
7	T	Chloroethane	50.0000	54.2383	-8.5	117	0.00
8	T	Trichlorofluoromethane	50.0000	49.9684	0.1	108	0.00
9	T	Diethyl ether	100.0000	84.6230	15.4	90	0.00
10	T	Isoprene	50.0000	46.1086	7.8	96	0.00
11	T	Acrolein	50.0000	39.1266	21.7	84	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.5602	-7.1	114	0.01
13	T	Acetone	50.0000	34.3403	31.3#	73	0.00
14	C	1,1-Dichloroethene	50.0000	49.5644	0.9	107	0.00
15	T	Tert-Butyl Alcohol	200.0000	130.2926	34.9#	67	0.00
16	T	Dimethyl Sulfide	50.0000	42.9580	14.1	88	0.00
17	T	Iodomethane	50.0000	46.9086	6.2	98	0.00
18	T	Methyl acetate	50.0000	33.6998	32.6#	74	0.00
19	T	Methylene Chloride	50.0000	52.2170	-4.4	114	0.00
20	T	Carbon Disulfide	50.0000	51.0166	-2.0	104	0.00
21	T	Acrylonitrile	50.0000	41.5092	17.0	84	0.00
22	T	Methyl Tert Butyl Ether	50.0000	46.3447	7.3	97	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.2383	-8.5	118	0.01
24	T	n-Hexane	50.0000	46.2792	7.4	94	0.00
25	T	Diisopropyl ether	100.0000	86.0021	14.0	90	0.00
26	T	Vinyl Acetate	50.0000	33.2156	33.6#	70	0.00
27	P	1,1-Dichloroethane	50.0000	51.3395	-2.7	109	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	89.8445	10.2	93	0.00
29	T	2-Butanone	50.0000	35.3718	29.3#	75	0.00
30	T	Propionitrile	100.0000	80.9825	19.0	81	0.00
31	T	2,2-Dichloropropane	50.0000	54.5958	-9.2	117	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.6576	-9.3	117	0.00
33	C	Chloroform	50.0000	49.5813	0.8	109	0.00
34	T	1-Bromopropane	50.0000	52.6687	-5.3	113	0.00
35	T	Bromochloromethane	50.0000	57.4700	-14.9	115	0.00
36	T	Tetrahydrofuran	100.0000	65.7076	34.3#	70	0.00
37	S	Dibromofluoromethane	25.0000	24.8851	0.5	105	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.8925	-1.8	109	0.00
39	T	Cyclohexane	50.0000	46.9841	6.0	95	0.00
40	T	1,1-Dichloropropene	50.0000	52.8643	-5.7	114	0.00
41	T	Carbon Tetrachloride	50.0000	52.3780	-4.8	110	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	92.4123	7.6	97	0.00
43	S	1,2-Dichloroethane-d4	25.0000	20.5311	17.9	88	0.00
44	T	1,2-Dichloroethane	50.0000	45.0126	10.0	94	0.00
45	T	Benzene	50.0000	53.1712	-6.3	116	0.00
46	T	Trichloroethene	50.0000	55.7032	-11.4	122	-0.01
47	T	Methylcyclohexane	50.0000	49.5588	0.9	99	0.00
48	C	1,2-Dichloropropane	50.0000	51.0717	-2.1	109	0.00
49	T	1,4-Dioxane	200.0000	159.3402	20.3	85	0.01
50	T	Bromodichloromethane	50.0000	50.9124	-1.8	107	0.00
51	T	Dibromomethane	50.0000	49.6869	0.6	104	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	44.1182	11.8	94	0.00
53	T	4-Methyl-2-Pentanone	50.0000	39.9435	20.1	84	0.00
54	T	cis-1,3-Dichloropropene	50.0000	52.7575	-5.5	108	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\071316\11M13225.D Vial: 3
Acq On : 13 Jul 2016 13:04 Operator: TMB
Sample : WG576234-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	44.8699	10.3	92	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	111	0.00
57	S	Toluene-d8	25.0000	24.4429	2.2	112	0.00
58	C	Toluene	50.0000	51.5521	-3.1	116	0.00
59	T	Ethyl Methacrylate	50.0000	42.3205	15.4	89	-0.01
60	T	trans-1,3-Dichloropropene	50.0000	46.7383	6.5	101	0.00
61	T	1,1,2-Trichloroethane	50.0000	47.0973	5.8	106	0.00
62	T	2-Hexanone	50.0000	33.6900	32.6#	75	0.00
63	T	1,3-Dichloropropane	50.0000	46.3934	7.2	103	0.00
64	T	Tetrachloroethene	50.0000	53.1781	-6.4	122	0.00
65	T	Dibromochloromethane	50.0000	49.1958	1.6	106	0.00
66	T	1,2-Dibromoethane	50.0000	47.0654	5.9	105	0.00
67	T	1-Chlorohexane	50.0000	47.6447	4.7	103	0.00
68	P	Chlorobenzene	50.0000	51.4740	-2.9	117	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	50.7023	-1.4	114	0.00
70	C	Ethylbenzene	50.0000	51.4902	-3.0	117	0.00
71	T	m-,p-Xylene	100.0000	102.3859	-2.4	116	0.00
72	T	o-Xylene	50.0000	51.3555	-2.7	115	0.00
73	T	Styrene	50.0000	52.4913	-5.0	114	0.00
74	P	Bromoform	50.0000	47.3423	5.3	104	0.00
75	T	Isopropylbenzene	50.0000	51.2799	-2.6	114	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	110	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	43.7305	12.5	94	-0.01
78	S	p-Bromofluorobenzene	25.0000	22.9838	8.1	108	0.00
79	T	1,2,3-Trichloropropane	50.0000	41.9650	16.1	98	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	25.3645	49.3#	58	0.00
81	T	n-Propylbenzene	50.0000	50.3137	-0.6	111	0.00
82	T	Bromobenzene	50.0000	50.1583	-0.3	116	-0.01
83	T	1,3,5-Trimethylbenzene	50.0000	49.5558	0.9	111	0.00
84	T	2-Chlorotoluene	50.0000	49.9369	0.1	115	0.00
85	T	4-Chlorotoluene	50.0000	47.6140	4.8	107	0.00
86	T	a-Methylstyrene	50.0000	46.8060	6.4	97	0.00
87	T	tert-Butylbenzene	50.0000	50.6404	-1.3	113	-0.01
88	T	1,2,4-Trimethylbenzene	50.0000	50.1345	-0.3	111	0.00
89	T	sec-Butylbenzene	50.0000	48.7000	2.6	107	-0.01
90	T	p-Isopropyltoluene	50.0000	48.9752	2.0	108	0.00
91	T	1,3-Dichlorobenzene	50.0000	49.5333	0.9	114	0.00
92	T	1,4-Dichlorobenzene	50.0000	48.7059	2.6	113	0.00
93	T	n-Butylbenzene	50.0000	46.5418	6.9	103	0.00
94	T	1,2-Dichlorobenzene	50.0000	48.2472	3.5	109	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	35.5093	29.0#	84	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	46.9580	6.1	104	-0.01
97	T	Hexachlorobutadiene	50.0000	40.3006	19.4	92	0.00
98	T	Naphthalene	50.0000	42.9444	14.1	94	-0.01
99	T	1,2,3-Trichlorobenzene	50.0000	43.8359	12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M13225.D 8260WT.M Wed Jul 13 16:31:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413220.D Vial: 2
Acq On : 24 Jun 2016 19:02 Operator: FJB
Sample : WG574189-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:22:09 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	678100	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	510311	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	291689	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	200047	27.4578 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.84%		
43) 1,2-Dichloroethane-d4	10.30	65	220060	28.1695 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.68%		
58) Toluene-d8	12.68	98	704942	26.3951 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.60%		
80) p-Bromofluorobenzene	16.08	95	307880	25.4910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.96%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	611083	53.7500 ug/L	99
3) Chloromethane	3.62	50	309943	46.7040 ug/L	99
4) Vinyl Chloride	3.84	62	443957	56.3855 ug/L	99
5) 1,3-Butadiene	3.89	54	456753	69.1748 ug/L	95
6) Bromomethane	4.73	94	205574	43.4526 ug/L	98
7) Chloroethane	4.89	64	224511	51.8211 ug/L	96
8) Trichlorofluoromethane	5.37	101	901792	61.5535 ug/L	99
9) Diethyl ether	5.90	59	315266	90.1385 ug/L	98
10) Isoprene	5.94	67	510341	57.3624 ug/L	98
11) Acrolein	6.14	56	11210	35.7970 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	391032	56.7817 ug/L	95
13) Acetone	6.23	43	42133	55.2256 ug/L	95
14) 1,1-Dichloroethene	6.47	61	631152	57.5607 ug/L	97
15) Tert-Butyl Alcohol	6.58	59	54453	222.7247 ug/L	98
16) Dimethyl Sulfide	6.73	62	207961	53.0436 ug/L	99
17) Iodomethane	6.98	142	125051	41.6279 ug/L	100
18) Methyl acetate	7.00	43	112868	54.7304 ug/L	98
19) Methylene Chloride	7.25	84	363084	52.0332 ug/L	99
20) Carbon Disulfide	7.29	76	1337241	58.2771 ug/L	100
21) Acrylonitrile	7.43	53	49125	49.6271 ug/L	100
22) Methyl Tert Butyl Ether	7.46	73	799267	52.9235 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	561767	55.7662 ug/L	100
24) n-Hexane	7.78	57	433995	58.0186 ug/L	99
25) Diisopropyl ether	8.12	45	1550679	98.7541 ug/L	96
26) Vinyl Acetate	8.30	43	245921	34.2061 ug/L	99
27) 1,1-Dichloroethane	8.32	63	699550	55.9174 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1751989	104.1371 ug/L	98
29) 2-Butanone	8.88	43	52311	46.6679 ug/L	95
30) Propionitrile	8.98	54	31496	96.4196 ug/L	97
31) 2,2-Dichloropropane	9.10	77	838119	63.5722 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	424258	54.5059 ug/L	99
33) Chloroform	9.37	83	855188	57.8944 ug/L	100
34) 1-Bromopropane	9.51	122	71808	64.4064 ug/L	100
35) Bromochloromethane	9.61	130	215162	53.9056 ug/L	96
36) Tetrahydrofuran	9.63	42	76236	103.2625 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	885465	63.1070 ug/L	100
39) Cyclohexane	9.94	56	535861	55.1628 ug/L	96
40) 1,1-Dichloropropene	10.11	75	623126	58.2643 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1601595	104.8145 ug/L	100
42) Carbon Tetrachloride	10.25	117	794240	63.7456 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413220.D 8260WT.M Sun Jun 26 15:22:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413220.D Vial: 2
Acq On : 24 Jun 2016 19:02 Operator: FJB
Sample : WG574189-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:22:09 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	569948	59.9476	ug/L		98
46)	Benzene	10.46	78	1532030	55.0010	ug/L		99
47)	Trichloroethene	11.21	130	431606	58.0965	ug/L		99
48)	Methylcyclohexane	11.30	83	667270	59.1227	ug/L		98
49)	1,2-Dichloropropane	11.43	63	315929	50.9503	ug/L		87
50)	Bromodichloromethane	11.73	83	634708	58.2388	ug/L		99
51)	1,4-Dioxane	11.72	88	7999	256.8053	ug/L		93
52)	Dibromomethane	11.81	93	188769	51.4282	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	120364	45.1623	ug/L		98
54)	4-Methyl-2-Pentanone	12.06	58	49109	45.1092	ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	616891	55.6108	ug/L		98
56)	Dimethyl Disulfide	12.62	79	335084	56.5949	ug/L		100
59)	Toluene	12.78	91	1645815	51.9497	ug/L		100
60)	Ethyl Methacrylate	12.88	69	293301	48.2070	ug/L		96
62)	trans-1,3-Dichloropropene	12.96	75	549731	51.7790	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	233001	46.6082	ug/L		99
64)	2-Hexanone	13.11	58	42469	40.4263	ug/L	#	90
65)	1,3-Dichloropropane	13.49	76	423482	47.5797	ug/L		97
66)	Tetrachloroethene	13.60	164	375608	55.3372	ug/L		99
67)	Dibromochloromethane	13.87	129	376424	51.5691	ug/L		99
68)	1,2-Dibromoethane	14.13	107	238961	47.9619	ug/L		98
69)	1-Chlorohexane	14.21	91	584866	54.0823	ug/L		96
70)	Chlorobenzene	14.62	112	1107644	51.8477	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.65	131	440680	53.2449	ug/L		97
72)	Ethylbenzene	14.65	106	598639	51.2160	ug/L		99
73)	m-,p-Xylene	14.75	106	1440207	105.0481	ug/L		98
74)	o-Xylene	15.31	106	702984	52.4463	ug/L		99
75)	Styrene	15.35	104	1166311	53.0516	ug/L		96
76)	Bromoform	15.83	173	227868	52.6307	ug/L		99
77)	Isopropylbenzene	15.73	105	1961430	55.0840	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	242287	41.3806	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	80185	44.4730	ug/L		86
82)	trans-1,4-Dichloro-2-Buten	16.18	53	84755	46.1654	ug/L		80
83)	n-Propylbenzene	16.24	91	2295280	50.4383	ug/L		99
84)	Bromobenzene	16.37	156	463801	49.5503	ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	1718880	51.8534	ug/L		99
86)	2-Chlorotoluene	16.51	91	1608923	50.6401	ug/L		99
87)	4-Chlorotoluene	16.56	91	1412920	49.2325	ug/L		99
88)	a-Methylstyrene	16.84	118	804873	51.1773	ug/L		99
89)	tert-Butylbenzene	16.90	134	321920	49.6398	ug/L		99
90)	1,2,4-Trimethylbenzene	16.94	105	1747403	51.2648	ug/L		100
91)	sec-Butylbenzene	17.17	105	1992286	51.0878	ug/L		99
92)	p-Isopropyltoluene	17.32	119	1707754	51.5754	ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	904162	50.1657	ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	887446	48.8390	ug/L		99
95)	n-Butylbenzene	17.85	91	1660604	50.7294	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	764075	47.6653	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	51927	44.1818	ug/L		94
98)	1,2,4-Trichlorobenzene	20.28	180	559137	46.6650	ug/L		99
99)	Hexachlorobutadiene	20.43	225	300078	53.6005	ug/L		98
100)	Naphthalene	20.65	128	727970	40.8932	ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	431106	42.6472	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M413220.D 8260WT.M Sun Jun 26 15:22:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413220.D Vial: 2
Acq On : 24 Jun 2016 19:02 Operator: FJB
Sample : WG574189-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:22 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

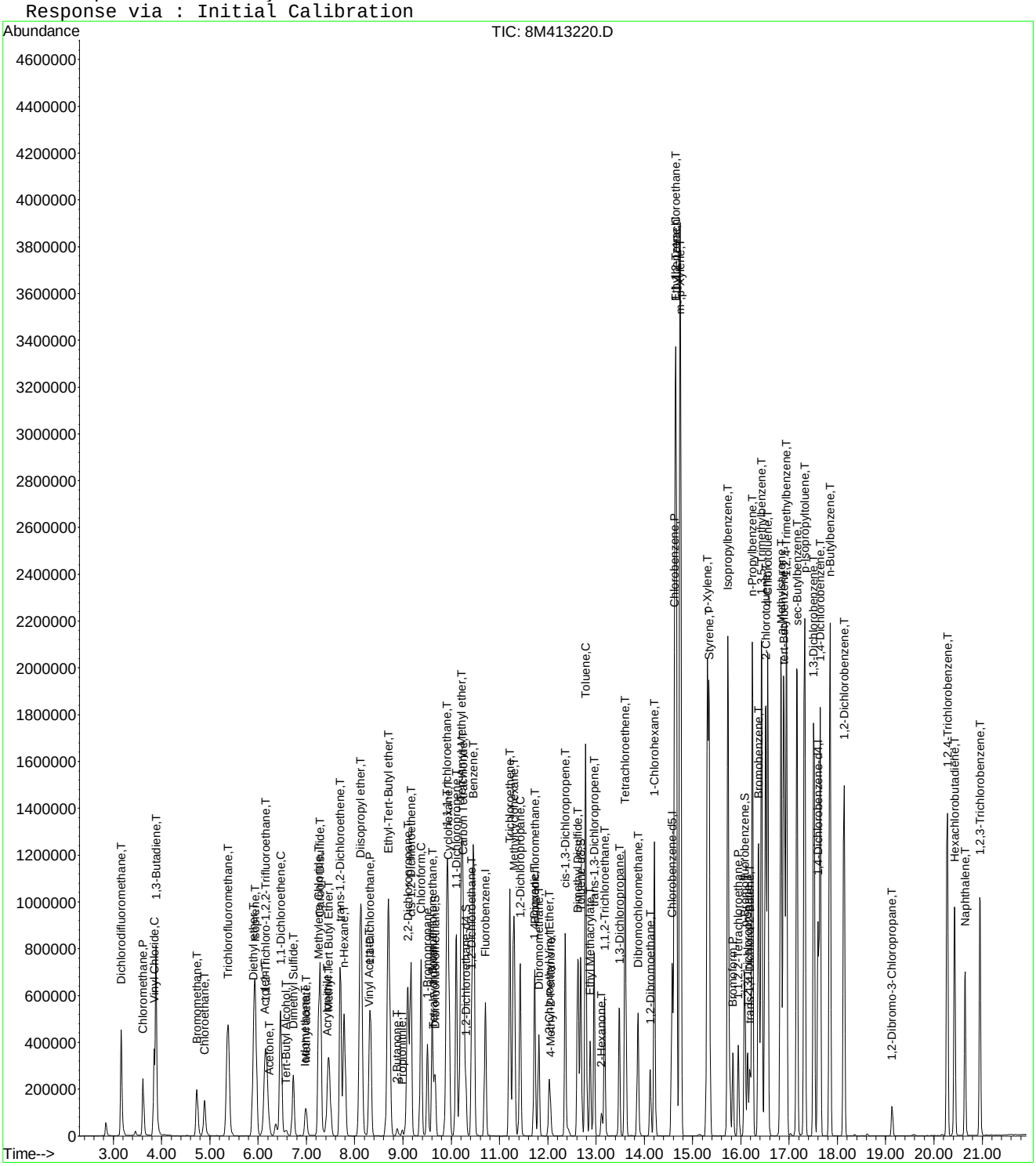

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413220.D Vial: 2
Acq On : 24 Jun 2016 19:02 Operator: FJB
Sample : WG574189-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	87	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4506	-7.5	90	0.00
3	P	Chloromethane	0.2447	0.2285	6.6	83	0.00
4	C	Vinyl Chloride	0.2903	0.3273	-12.8	98	0.00
5	T	1,3-Butadiene	0.2434	0.3368	-38.4#	117	0.00
6	T	Bromomethane	0.1654	0.1516	8.4	79	0.00
7	T	Chloroethane	0.1597	0.1655	-3.6	92	0.00
8	T	Trichlorofluoromethane	0.5401	0.6649	-23.1	108	0.00
9	T	Diethyl ether	0.1290	0.1162	9.9	81	0.00
10	T	Isoprene	0.3280	0.3763	-14.7	102	0.00
11	T	Acrolein	0.0116	0.0083	28.4#	64	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2883	-13.6	101	0.00
13	T	Acetone	0.0281	0.0311	-10.5	92	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4654	-15.1	102	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0100	-11.4	98	0.00
16	T	Dimethyl Sulfide	0.1445	0.1533	-6.1	94	0.00
17	T	Iodomethane	0.0866	0.0922	-6.5	79	0.00
18	T	Methyl acetate	0.0760	0.0832	-9.5	98	0.00
19	T	Methylene Chloride	0.2573	0.2677	-4.1	93	0.00
20	T	Carbon Disulfide	0.8460	0.9860	-16.6	105	0.00
21	T	Acrylonitrile	0.0365	0.0362	0.7	82	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5893	-5.8	89	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.4142	-11.5	98	0.00
24	T	n-Hexane	0.2758	0.3200	-16.0	103	0.00
25	T	Diisopropyl ether	0.5789	0.5717	1.2	87	0.00
26	T	Vinyl Acetate	0.2651	0.1813	31.6#	57	0.00
27	P	1,1-Dichloroethane	0.4612	0.5158	-11.8	97	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6459	-4.1	90	0.00
29	T	2-Butanone	0.0413	0.0386	6.7	79	0.00
30	T	Propionitrile	0.0120	0.0116	3.6	82	0.00
31	T	2,2-Dichloropropane	0.4860	0.6180	-27.1#	109	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.3128	-9.0	97	0.00
33	C	Chloroform	0.5446	0.6306	-15.8	101	0.00
34		1-Bromopropane	0.0411	0.0529	-28.8#	113	0.00
35	T	Bromochloromethane	0.1472	0.1587	-7.8	94	0.00
36	T	Tetrahydrofuran	0.0272	0.0281	-3.3	96	0.00
37	S	Dibromofluoromethane	0.2686	0.2950	-9.8	95	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6529	-26.2#	108	0.00
39	T	Cyclohexane	0.3581	0.3951	-10.3	100	0.00
40	T	1,1-Dichloropropene	0.3943	0.4595	-16.5	101	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5905	-4.8	91	0.00
42	T	Carbon Tetrachloride	0.4593	0.5856	-27.5#	110	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3245	-12.7	96	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.4203	-19.9	102	0.00
46	T	Benzene	1.0269	1.1297	-10.0	95	0.00
47	T	Trichloroethene	0.2739	0.3182	-16.2	102	0.00
48	T	Methylcyclohexane	0.4161	0.4920	-18.2	105	0.00
49	C	1,2-Dichloropropane	0.2286	0.2329	-1.9	90	0.00
50	T	Bromodichloromethane	0.4018	0.4680	-16.5	97	0.00
51	T	1,4-Dioxane	0.0012	0.0015	-27.8#	106	0.00
52	T	Dibromomethane	0.1353	0.1392	-2.9	90	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0887	9.7	74	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0362	9.8	76	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413220.D Vial: 2
Acq On : 24 Jun 2016 19:02 Operator: FJB
Sample : WG574189-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4549	-11.2	93	0.00
56	T	Dimethyl Disulfide	0.2183	0.2471	-13.2	98	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	95	0.00
58	S	Toluene-d8	1.3084	1.3814	-5.6	98	0.00
59	C	Toluene	1.5520	1.6126	-3.9	98	0.00
60	T	Ethyl Methacrylate	0.2981	0.2874	3.6	87	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5386	-3.6	92	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2283	6.8	87	0.00
64	T	2-Hexanone	0.0515	0.0416	19.2	75	0.00
65	T	1,3-Dichloropropane	0.4360	0.4149	4.8	87	0.00
66	T	Tetrachloroethene	0.3325	0.3680	-10.7	107	0.00
67	T	Dibromochloromethane	0.3576	0.3688	-3.1	94	0.00
68	T	1,2-Dibromoethane	0.2441	0.2341	4.1	87	0.00
69	T	1-Chlorohexane	0.5298	0.5730	-8.2	104	0.00
70	P	Chlorobenzene	1.0466	1.0853	-3.7	99	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4318	-6.5	99	0.00
72	C	Ethylbenzene	0.5726	0.5865	-2.4	99	0.00
73	T	m-,p-Xylene	0.6716	0.7056	-5.0	100	0.00
74	T	o-Xylene	0.6566	0.6888	-4.9	99	0.00
75	T	Styrene	1.0770	1.1427	-6.1	96	0.00
76	P	Bromoform	0.2121	0.2233	-5.3	96	0.00
77	T	Isopropylbenzene	1.7444	1.9218	-10.2	102	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	101	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4153	17.2	82	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0555	-2.0	105	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1374	11.1	90	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1453	-5.6	98	0.00
83	T	n-Propylbenzene	3.9003	3.9345	-0.9	101	0.00
84	T	Bromobenzene	0.8022	0.7950	0.9	101	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.9464	-3.7	103	0.00
86	T	2-Chlorotoluene	2.7231	2.7579	-1.3	100	0.00
87	T	4-Chlorotoluene	2.4597	2.4220	1.5	105	0.00
88	T	a-Methylstyrene	1.3479	1.3797	-2.4	104	0.00
89	T	tert-Butylbenzene	0.5558	0.5518	0.7	105	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.9953	-2.5	104	0.00
91	T	sec-Butylbenzene	3.3424	3.4151	-2.2	103	0.00
92	T	p-Isopropyltoluene	2.8379	2.9274	-3.2	105	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5499	-0.3	102	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.5212	2.3	102	0.00
95	T	n-Butylbenzene	2.8056	2.8465	-1.5	103	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.3097	4.7	99	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0890	11.6	87	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9585	6.7	96	0.00
99	T	Hexachlorobutadiene	0.4798	0.5144	-7.2	113	0.00
100	T	Naphthalene	1.5257	1.2478	18.2	81	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7390	14.7	91	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413220.D 8260WT.M Sun Jun 26 15:37:42 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413220.D Vial: 2
Acq On : 24 Jun 2016 19:02 Operator: FJB
Sample : WG574189-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	87	0.00
2	T	Dichlorodifluoromethane	50.0000	53.7500	-7.5	90	0.00
3	P	Chloromethane	50.0000	46.7040	6.6	83	0.00
4	C	Vinyl Chloride	50.0000	56.3855	-12.8	98	0.00
5	T	1,3-Butadiene	50.0000	69.1748	-38.3#	117	0.00
6	T	Bromomethane	50.0000	43.4526	13.1	79	0.00
7	T	Chloroethane	50.0000	51.8211	-3.6	92	0.00
8	T	Trichlorofluoromethane	50.0000	61.5534	-23.1	108	0.00
9	T	Diethyl ether	100.0000	90.1385	9.9	81	0.00
10	T	Isoprene	50.0000	57.3624	-14.7	102	0.00
11	T	Acrolein	50.0000	35.7970	28.4#	64	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	56.7817	-13.6	101	0.00
13	T	Acetone	50.0000	55.2256	-10.5	92	-0.01
14	C	1,1-Dichloroethene	50.0000	57.5607	-15.1	102	0.00
15	T	Tert-Butyl Alcohol	200.0000	222.7248	-11.4	98	0.00
16	T	Dimethyl Sulfide	50.0000	53.0436	-6.1	94	0.00
17	T	Iodomethane	50.0000	41.6279	16.7	79	0.00
18	T	Methyl acetate	50.0000	54.7304	-9.5	98	0.00
19	T	Methylene Chloride	50.0000	52.0332	-4.1	93	0.00
20	T	Carbon Disulfide	50.0000	58.2771	-16.6	105	0.00
21	T	Acrylonitrile	50.0000	49.6271	0.7	82	0.00
22	T	Methyl Tert Butyl Ether	50.0000	52.9235	-5.8	89	0.00
23	T	trans-1,2-Dichloroethene	50.0000	55.7662	-11.5	98	0.00
24	T	n-Hexane	50.0000	58.0186	-16.0	103	0.00
25	T	Diisopropyl ether	100.0000	98.7541	1.2	87	0.00
26	T	Vinyl Acetate	50.0000	34.2061	31.6#	57	0.00
27	P	1,1-Dichloroethane	50.0000	55.9174	-11.8	97	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	104.1371	-4.1	90	0.00
29	T	2-Butanone	50.0000	46.6679	6.7	79	0.00
30	T	Propionitrile	100.0000	96.4196	3.6	82	0.00
31	T	2,2-Dichloropropane	50.0000	63.5722	-27.1#	109	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.5059	-9.0	97	0.00
33	C	Chloroform	50.0000	57.8944	-15.8	101	0.00
34		1-Bromopropane	50.0000	64.4064	-28.8#	113	0.00
35	T	Bromochloromethane	50.0000	53.9056	-7.8	94	0.00
36	T	Tetrahydrofuran	100.0000	103.2625	-3.3	96	0.00
37	S	Dibromofluoromethane	25.0000	27.4578	-9.8	95	0.00
38	T	1,1,1-Trichloroethane	50.0000	63.1070	-26.2#	108	0.00
39	T	Cyclohexane	50.0000	55.1628	-10.3	100	0.00
40	T	1,1-Dichloropropene	50.0000	58.2643	-16.5	101	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	104.8145	-4.8	91	0.00
42	T	Carbon Tetrachloride	50.0000	63.7456	-27.5#	110	0.00
43	S	1,2-Dichloroethane-d4	25.0000	28.1695	-12.7	96	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	59.9476	-19.9	102	0.00
46	T	Benzene	50.0000	55.0010	-10.0	95	0.00
47	T	Trichloroethene	50.0000	58.0965	-16.2	102	0.00
48	T	Methylcyclohexane	50.0000	59.1228	-18.2	105	0.00
49	C	1,2-Dichloropropane	50.0000	50.9503	-1.9	90	0.00
50	T	Bromodichloromethane	50.0000	58.2388	-16.5	97	0.00
51	T	1,4-Dioxane	200.0000	256.8053	-28.4#	106	0.00
52	T	Dibromomethane	50.0000	51.4282	-2.9	90	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.1623	9.7	74	0.00
54	T	4-Methyl-2-Pentanone	50.0000	45.1092	9.8	76	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413220.D Vial: 2
Acq On : 24 Jun 2016 19:02 Operator: FJB
Sample : WG574189-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	55.6108	-11.2	93	0.00
56	T	Dimethyl Disulfide	50.0000	56.5949	-13.2	98	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	95	0.00
58	S	Toluene-d8	25.0000	26.3951	-5.6	98	0.00
59	C	Toluene	50.0000	51.9497	-3.9	98	0.00
60	T	Ethyl Methacrylate	50.0000	48.2070	3.6	87	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	51.7790	-3.6	92	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.6082	6.8	87	0.00
64	T	2-Hexanone	50.0000	40.4263	19.1	75	0.00
65	T	1,3-Dichloropropane	50.0000	47.5797	4.8	87	0.00
66	T	Tetrachloroethene	50.0000	55.3372	-10.7	107	0.00
67	T	Dibromochloromethane	50.0000	51.5691	-3.1	94	0.00
68	T	1,2-Dibromoethane	50.0000	47.9619	4.1	87	0.00
69	T	1-Chlorohexane	50.0000	54.0823	-8.2	104	0.00
70	P	Chlorobenzene	50.0000	51.8477	-3.7	99	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	53.2449	-6.5	99	0.00
72	C	Ethylbenzene	50.0000	51.2160	-2.4	99	0.00
73	T	m-,p-Xylene	100.0000	105.0481	-5.0	100	0.00
74	T	o-Xylene	50.0000	52.4464	-4.9	99	0.00
75	T	Styrene	50.0000	53.0516	-6.1	96	0.00
76	P	Bromoform	50.0000	52.6307	-5.3	96	0.00
77	T	Isopropylbenzene	50.0000	55.0840	-10.2	102	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	41.3806	17.2	82	0.00
80	S	p-Bromofluorobenzene	25.0000	25.4910	-2.0	105	0.00
81	T	1,2,3-Trichloropropane	50.0000	44.4730	11.1	90	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	46.1654	7.7	98	0.00
83	T	n-Propylbenzene	50.0000	50.4383	-0.9	101	0.00
84	T	Bromobenzene	50.0000	49.5503	0.9	101	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.8534	-3.7	103	0.00
86	T	2-Chlorotoluene	50.0000	50.6401	-1.3	100	0.00
87	T	4-Chlorotoluene	50.0000	49.2325	1.5	105	0.00
88	T	a-Methylstyrene	50.0000	51.1773	-2.4	104	0.00
89	T	tert-Butylbenzene	50.0000	49.6398	0.7	105	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.2648	-2.5	104	0.00
91	T	sec-Butylbenzene	50.0000	51.0878	-2.2	103	0.00
92	T	p-Isopropyltoluene	50.0000	51.5754	-3.2	105	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.1657	-0.3	102	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.8389	2.3	102	0.00
95	T	n-Butylbenzene	50.0000	50.7293	-1.5	103	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.6653	4.7	99	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	44.1818	11.6	87	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	46.6650	6.7	96	0.00
99	T	Hexachlorobutadiene	50.0000	53.6005	-7.2	113	0.00
100	T	Naphthalene	50.0000	40.8932	18.2	81	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	42.6472	14.7	91	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413220.D 8260WT.M Sun Jun 26 15:37:38 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D          Vial: 3
Acq On    : 13 May 2016  12:36                       Operator: TMB
Sample    : WG568561-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

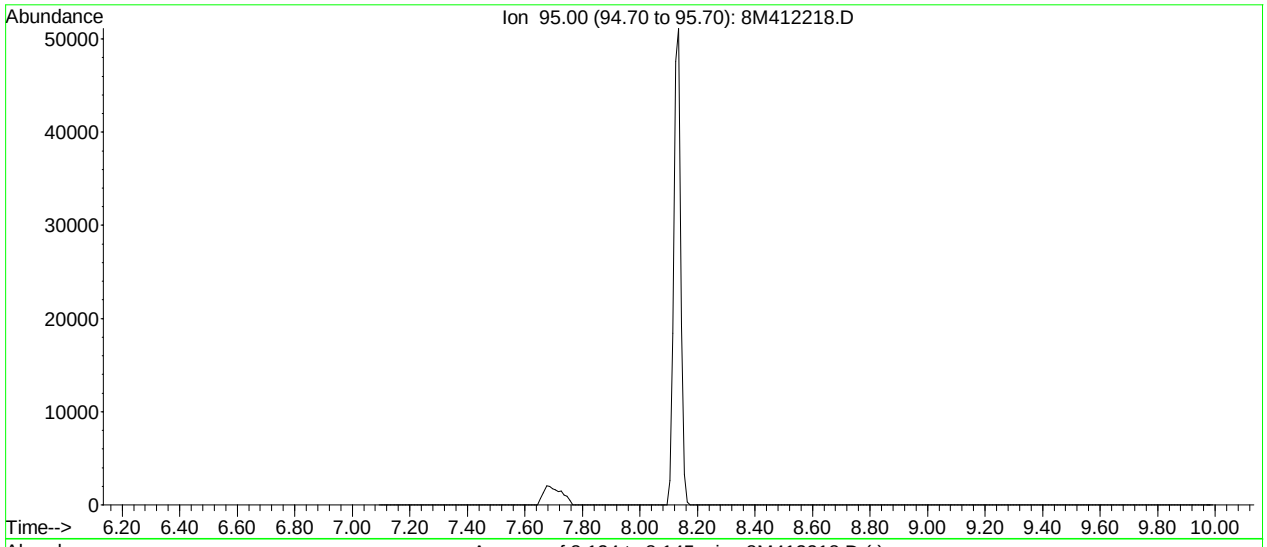

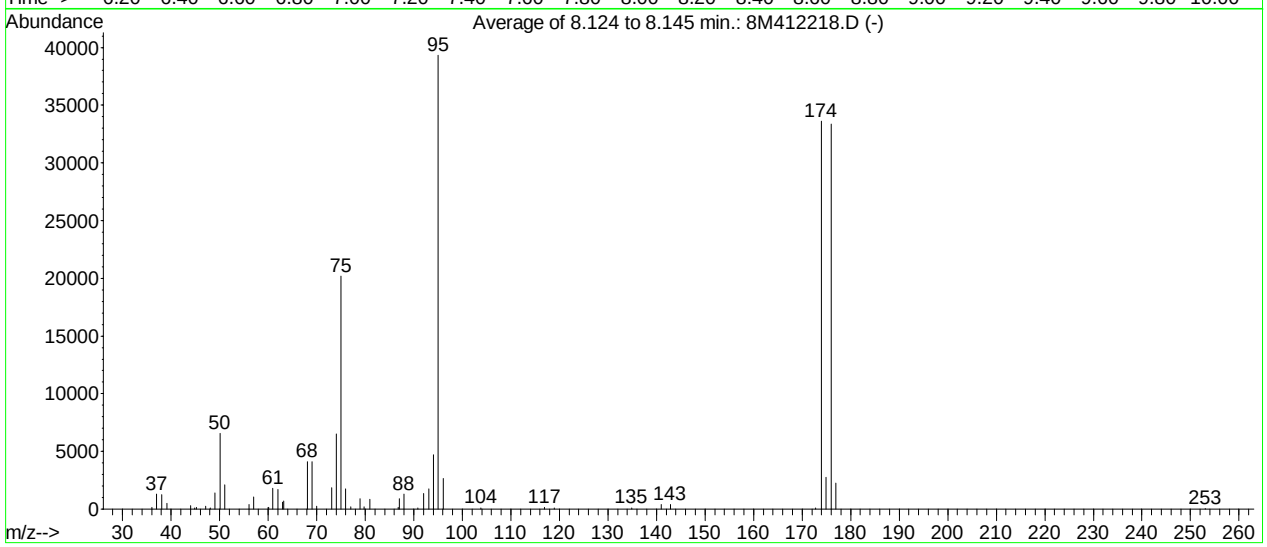

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\051316\11M11836.D          Vial: 2
Acq On    : 13 May 2016  14:15                        Operator: JDS
Sample    : WG568769-01 50ng BFB STD 8260             Inst    : hpms11
Misc      : 1,1 STD76034                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

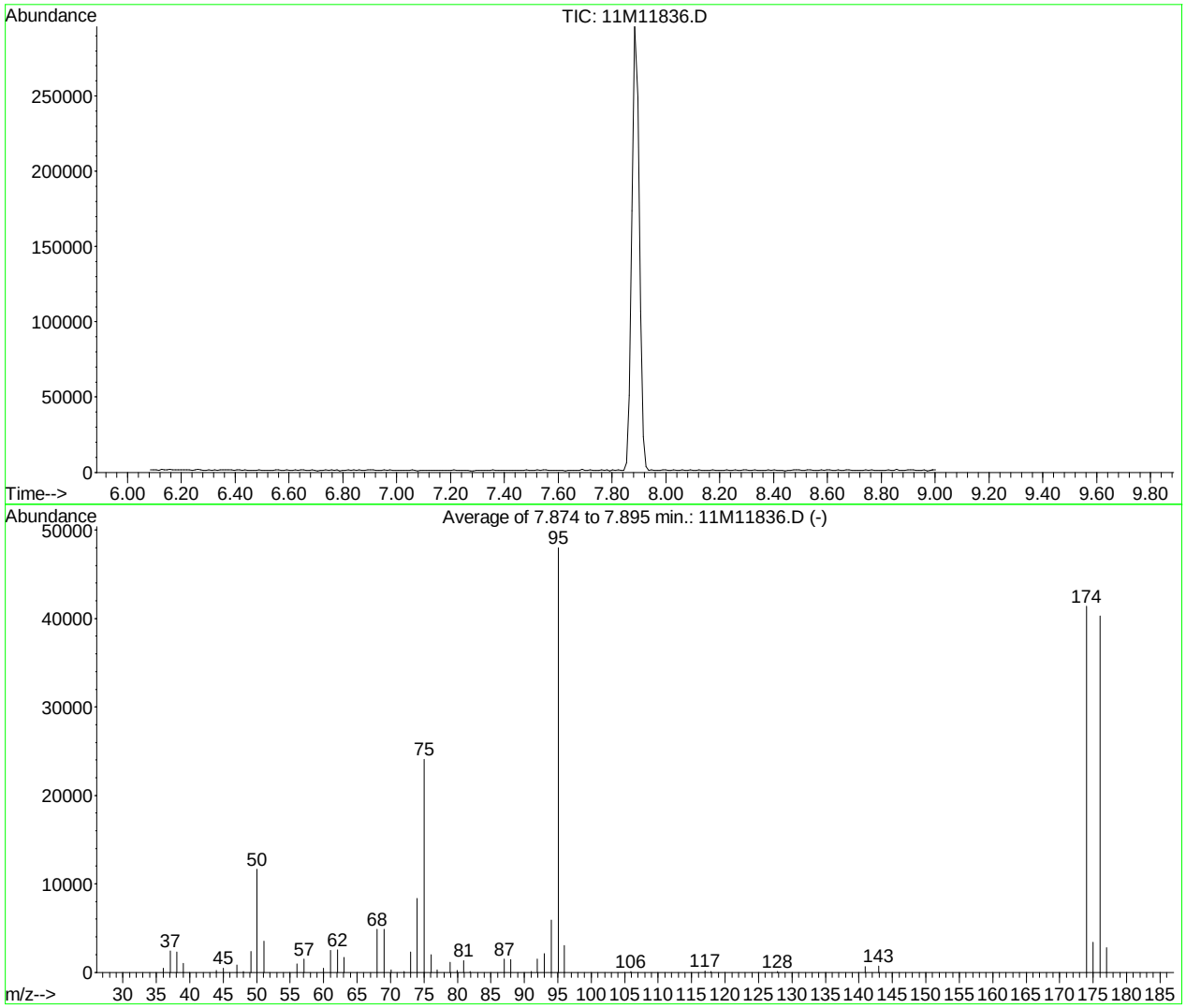

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.2	11638	PASS
75	95	30	60	50.2	24088	PASS
95	95	100	100	100.0	48016	PASS
96	95	5	9	6.3	3008	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.2	41402	PASS
175	174	5	9	8.3	3421	PASS
176	174	95	101	97.3	40288	PASS
177	176	5	9	6.9	2789	PASS

11M11836.D 8260WT.M Tue May 17 14:18:03 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413219.D Vial: 1
Acq On    : 24 Jun 2016  18:32                        Operator: FJB
Sample    : WG574189-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

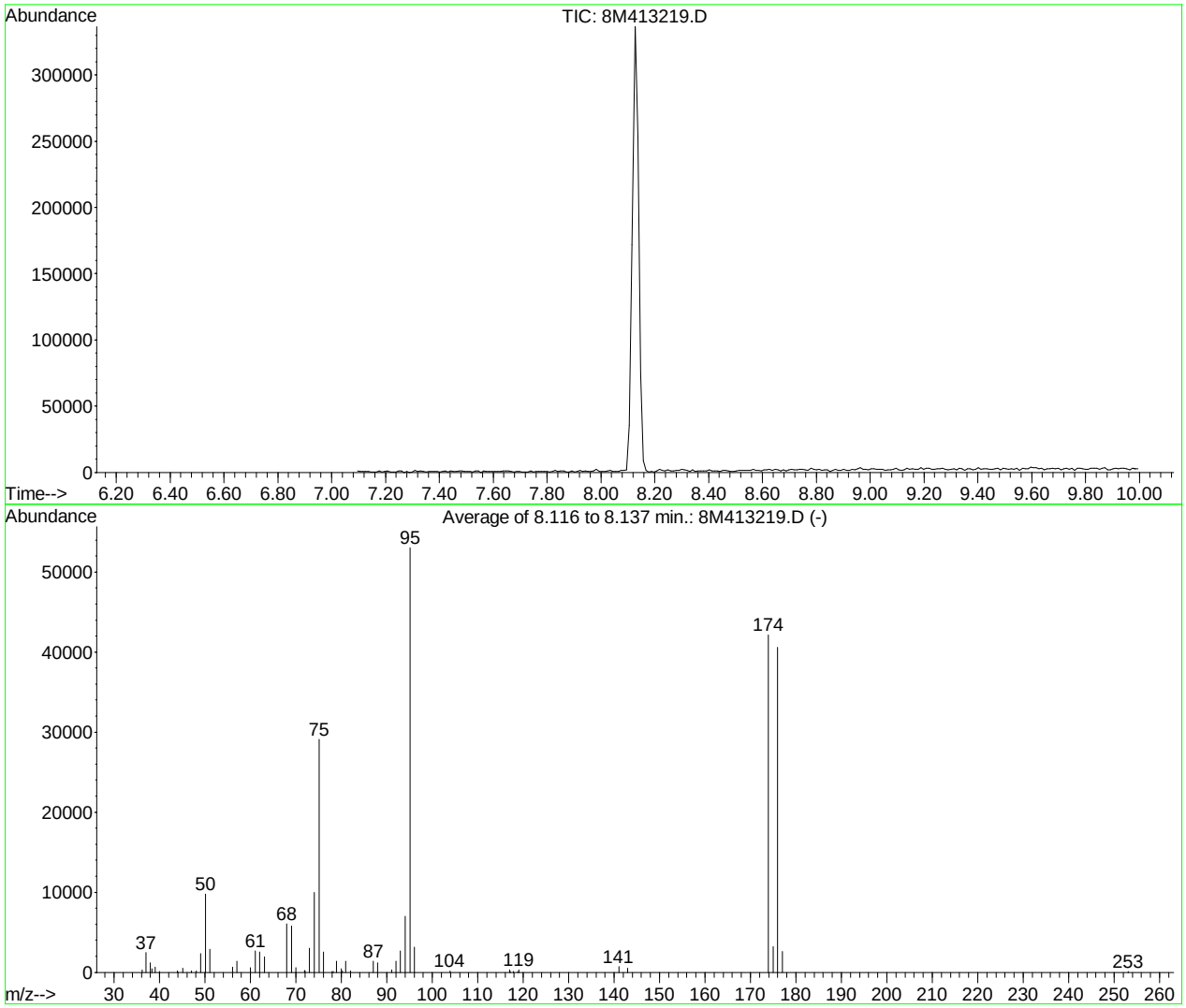

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.4	9741	PASS
75	95	30	60	54.9	29109	PASS
95	95	100	100	100.0	53042	PASS
96	95	5	9	6.0	3179	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	79.5	42146	PASS
175	174	5	9	7.6	3223	PASS
176	174	95	101	96.3	40586	PASS
177	176	5	9	6.5	2619	PASS

8M413219.D 8260WT.M Sun Jun 26 15:37:28 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\071316\11M13223.D          Vial: 2
Acq On    : 13 Jul 2016  11:57                       Operator: TMB
Sample    : WG576234-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD77013                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

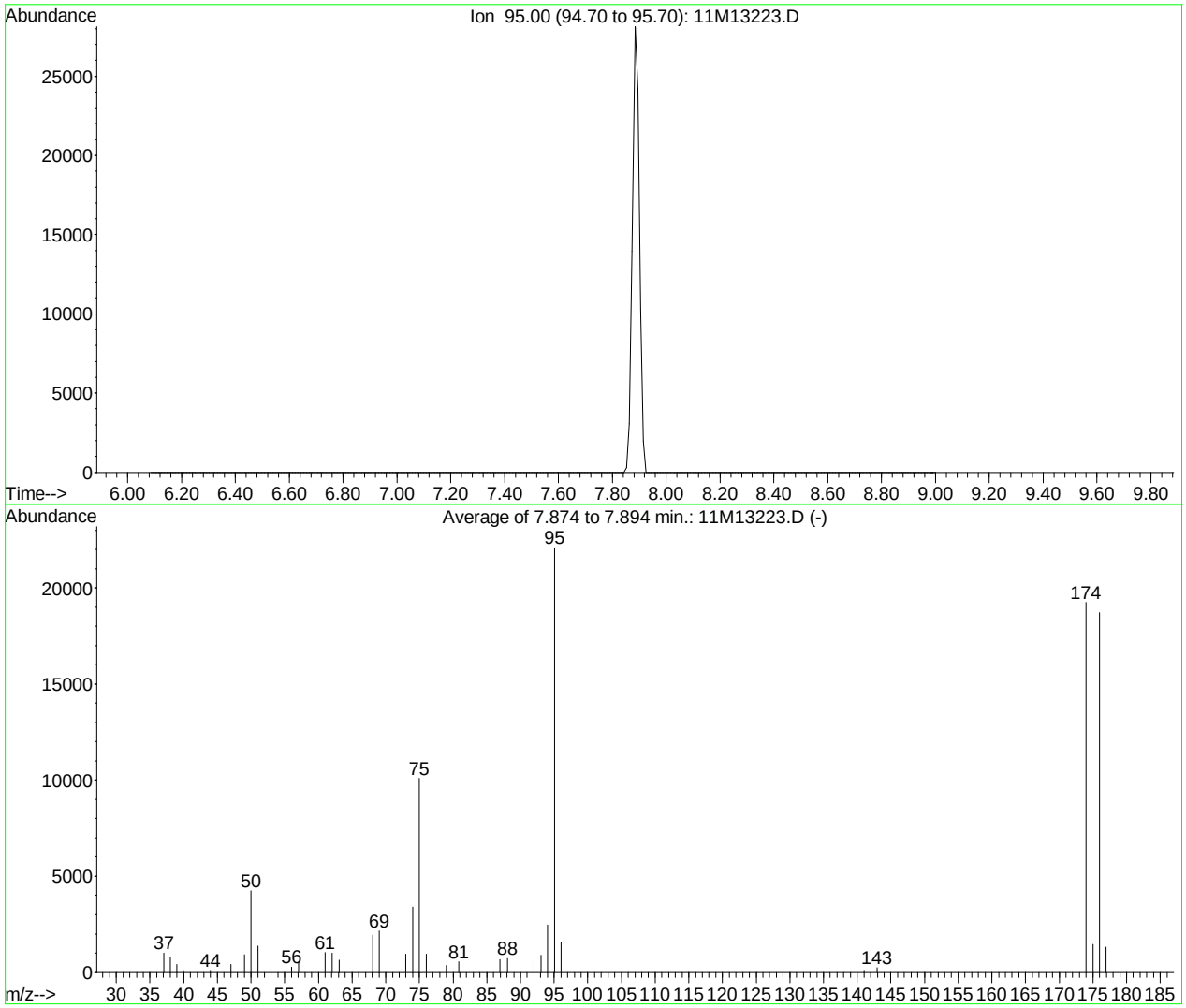

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.2	4243	PASS
75	95	30	60	45.7	10096	PASS
95	95	100	100	100.0	22097	PASS
96	95	5	9	7.0	1550	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	87.1	19238	PASS
175	174	5	9	7.5	1445	PASS
176	174	95	101	97.2	18706	PASS
177	176	5	9	7.0	1305	PASS

11M13223.D 8260WT.M Wed Jul 13 16:32:20 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\071316\11M13227.D Vial: 5
Acq On : 13 Jul 2016 14:08 Operator: TMB
Sample : WG576236-01 VBLK0713 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:19:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	488586	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	441422	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	256130	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	129095	24.1427 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.56%		
43) 1,2-Dichloroethane-d4	10.23	65	127492	20.9107 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.64%		
57) Toluene-d8	12.47	98	461598	24.0669 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.28%		
78) p-Bromofluorobenzene	15.64	95	181919	23.0409 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.16%		

Target Compounds					Qvalue
3) Chloromethane	3.73	50	858	0.1399 ug/L	82
36) Tetrahydrofuran	9.61	42	893	0.7210 ug/L #	47
97) Hexachlorobutadiene	19.68	225	645	0.1461 ug/L #	23

(#) = qualifier out of range (m) = manual integration
11M13227.D 8260WT.M Wed Jul 13 16:19:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\071316\11M13227.D Vial: 5
Acq On : 13 Jul 2016 14:08 Operator: TMB
Sample : WG576236-01 VBLK0713 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:19 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration

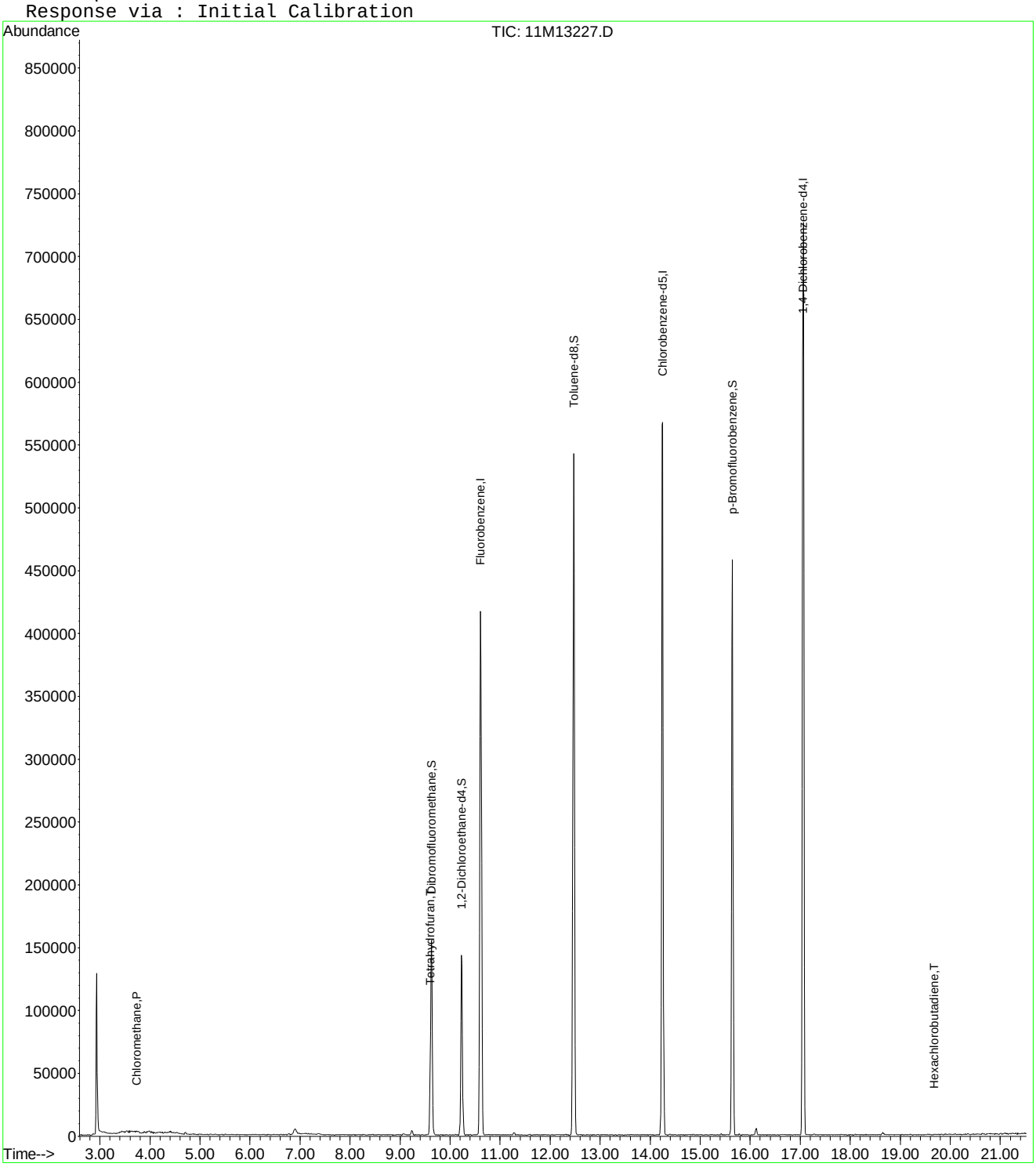

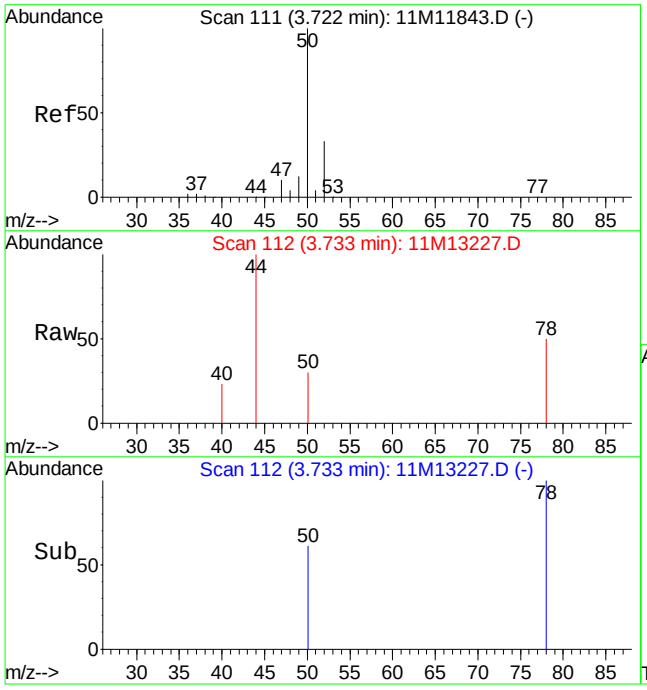

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.73 min Scan# 112
Delta R.T. 0.01 min
Lab File: 11M13227.D
Acq: 13 Jul 2016 14:08

Tgt Ion: 50 Resp: 858

Ion	Ratio	Lower	Upper
50	100		
52	23.3	20.0	46.6

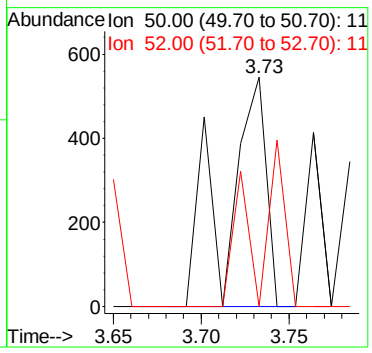

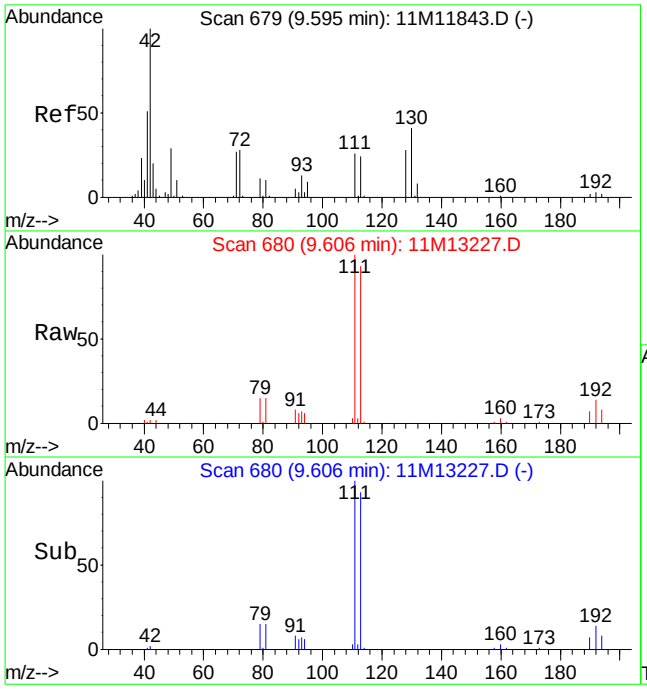

#36
Tetrahydrofuran
Concen: 0.72 ug/L
RT: 9.61 min Scan# 680
Delta R.T. 0.01 min
Lab File: 11M13227.D
Acq: 13 Jul 2016 14:08

Tgt Ion: 42 Resp: 893

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

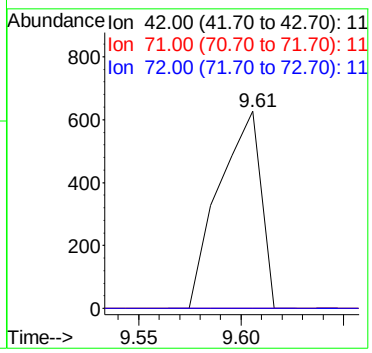

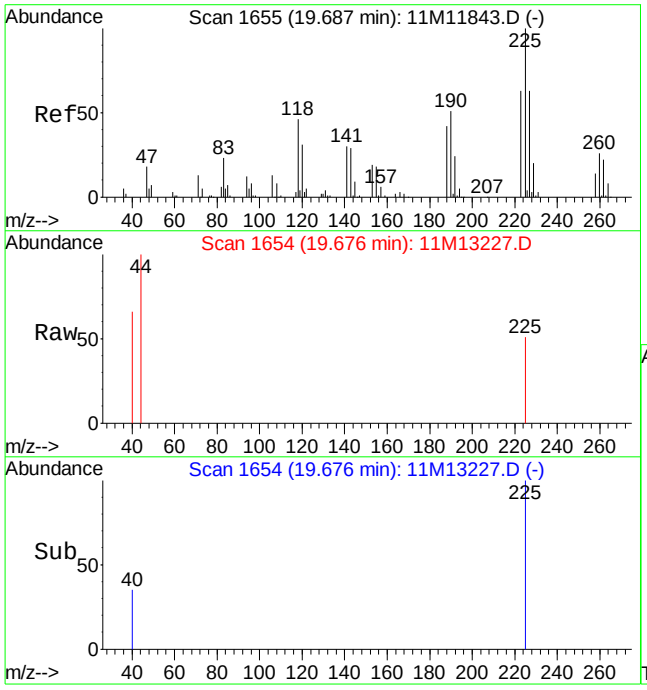

#97
Hexachlorobutadiene
Concen: 0.15 ug/L
RT: 19.68 min Scan# 1654
Delta R.T. -0.01 min
Lab File: 11M13227.D
Acq: 13 Jul 2016 14:08

Tgt Ion:225 Resp: 645

Ion	Ratio	Lower	Upper
225	100		
227	0.0	38.3	89.3#
118	0.0	28.7	66.9#

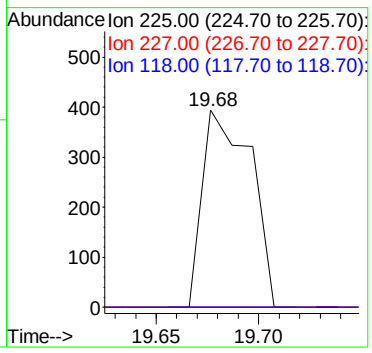

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413222.D Vial: 4
Acq On : 24 Jun 2016 20:03 Operator: FJB
Sample : WG574190-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 20:25:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	663634	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	530947	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	292790	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	202308	28.3735 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.48%		
43) 1,2-Dichloroethane-d4	10.30	65	220146	28.7948 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.16%		
58) Toluene-d8	12.68	98	710913	25.5841 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.32%		
80) p-Bromofluorobenzene	16.08	95	304773	25.1388 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.56%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	644	0.8913 ug/L #	52

(#) = qualifier out of range (m) = manual integration
8M413222.D 8260WT.M Mon Jun 27 12:43:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413222.D Vial: 4
Acq On : 24 Jun 2016 20:03 Operator: FJB
Sample : WG574190-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:22 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

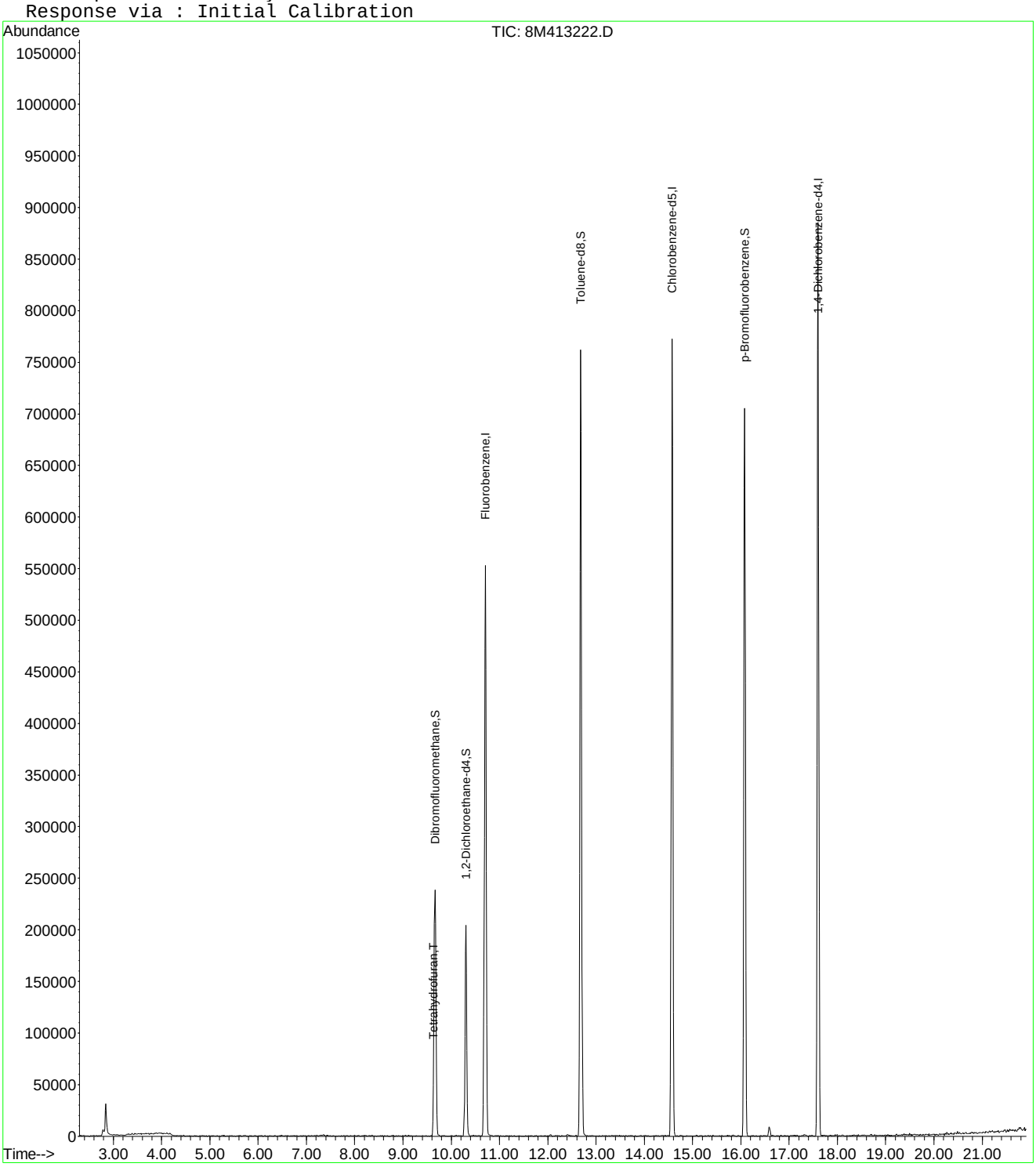

8M413222.D 8260WT.M Mon Jun 27 12:43:04 2016 Page 2

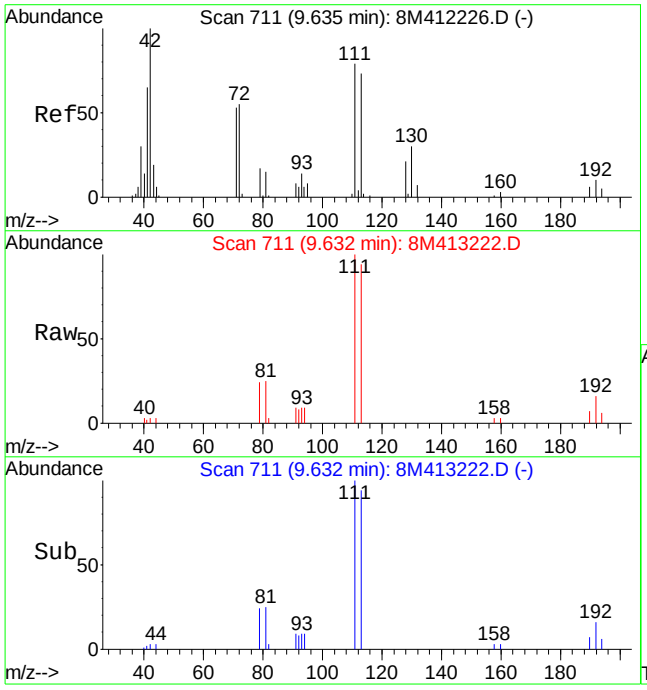

#36
Tetrahydrofuran
Concen: 0.89 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M413222.D
Acq: 24 Jun 2016 20:03

Tgt Ion: 42 Resp: 644

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	40.5	32.0	74.8

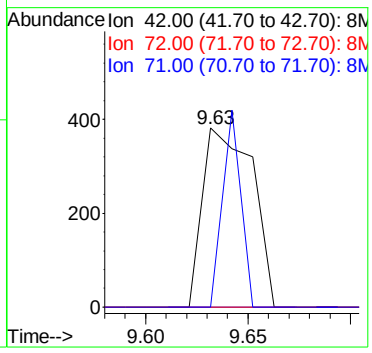

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\071316\11M13229.D Vial: 7
Acq On : 13 Jul 2016 15:12 Operator: TMB
Sample : WG576236-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 15:33:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	490613	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	451735	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	275472	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	136704	25.4601 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.84%		
43) 1,2-Dichloroethane-d4	10.23	65	136088	22.2284 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.92%		
57) Toluene-d8	12.47	98	470792	23.9859 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.96%		
78) p-Bromofluorobenzene	15.64	95	191407	22.5405 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.16%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	131714	17.1346 ug/L	94
3) Chloromethane	3.72	50	99926	16.2311 ug/L	99
4) Vinyl Chloride	3.96	62	105362	20.6081 ug/L	89
5) 1,3-Butadiene	3.99	54	81409	16.0136 ug/L	98
6) Bromomethane	4.85	94	60651	17.2538 ug/L	100
7) Chloroethane	5.00	64	69464	21.1460 ug/L	99
8) Trichlorofluoromethane	5.48	101	199003	19.5285 ug/L	99
9) Diethyl ether	6.01	59	369117	97.9412 ug/L	93
10) Isoprene	6.04	67	124319	19.7926 ug/L	92
11) Acrolein	6.23	56	47525	94.5305 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	104696	21.1733 ug/L	95
13) Acetone	6.34	43	19172	16.4568 ug/L	91
14) 1,1-Dichloroethene	6.56	61	164060	18.2664 ug/L	95
15) Tert-Butyl Alcohol	6.66	59	49990	155.1323 ug/L	97
16) Dimethyl Sulfide	6.81	62	115960	32.3291 ug/L	87
17) Iodomethane	7.06	142	79242	20.7022 ug/L	94
18) Methyl acetate	7.07	43	53006	13.6892 ug/L	92
19) Methylene Chloride	7.31	84	96554	20.7720 ug/L	84
20) Carbon Disulfide	7.36	76	254515	16.9267 ug/L	100
21) Acrylonitrile	7.50	53	28954	18.5366 ug/L	98
22) Methyl Tert Butyl Ether	7.52	73	232109	20.0207 ug/L	97
23) trans-1,2-Dichloroethene	7.75	96	104187	20.9597 ug/L	94
24) n-Hexane	7.82	57	122827	14.8357 ug/L	99
25) Diisopropyl ether	8.15	45	1979851	95.8354 ug/L	98
26) Vinyl Acetate	8.31	43	112533	15.7826 ug/L	98
27) 1,1-Dichloroethane	8.34	63	193411	19.3916 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1599221	95.1094 ug/L	98
29) 2-Butanone	8.87	43	30640	17.3971 ug/L	95
30) Propionitrile	8.97	54	44998	87.2322 ug/L	100
31) 2,2-Dichloropropane	9.09	77	150780	19.3217 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	121412	22.1522 ug/L	88
33) Chloroform	9.35	83	193620	19.7680 ug/L	100
34) 1-Bromopropane	9.48	122	29697	30.7477 ug/L	94
35) Bromochloromethane	9.57	130	73838	22.6845 ug/L	88
36) Tetrahydrofuran	9.60	42	98646	79.3177 ug/L	92
38) 1,1,1-Trichloroethane	9.85	97	195366	20.2690 ug/L	96
39) Cyclohexane	9.88	56	188713	17.9651 ug/L	95
40) 1,1-Dichloropropene	10.04	75	137494	19.9786 ug/L	98
41) Carbon Tetrachloride	10.18	117	195013	20.7196 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	1232647	105.5001 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\071316\11M13229.D Vial: 7
Acq On : 13 Jul 2016 15:12 Operator: TMB
Sample : WG576236-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 15:33:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	156926	19.7265 ug/L	97
45)	Benzene	10.38	78	386098	20.4935 ug/L	99
46)	Trichloroethene	11.08	130	142229	23.2260 ug/L	96
47)	Methylcyclohexane	11.17	83	142934	18.9131 ug/L	95
48)	1,2-Dichloropropane	11.29	63	111436	21.3677 ug/L	96
49)	1,4-Dioxane	11.56	88	3172	118.6460 ug/L	98
50)	Bromodichloromethane	11.57	83	149379	20.4034 ug/L	100
51)	Dibromomethane	11.65	93	54434	20.0298 ug/L	96
52)	2-Chloroethyl Vinyl Ether	11.84	63	46400	18.0521 ug/L	100
53)	4-Methyl-2-Pentanone	11.87	58	27085	18.6829 ug/L	96
54)	cis-1,3-Dichloropropene	12.17	75	164344	22.4428 ug/L	100
55)	Dimethyl Disulfide	12.42	79	85509	19.4050 ug/L	90
58)	Toluene	12.56	91	455347	19.9114 ug/L	100
59)	Ethyl Methacrylate	12.64	69	90708	18.5758 ug/L	86
60)	trans-1,3-Dichloropropene	12.73	75	138038	18.8053 ug/L	97
61)	1,1,2-Trichloroethane	12.94	97	80467	19.8433 ug/L	96
62)	2-Hexanone	12.86	43	44760	15.0289 ug/L	92
63)	1,3-Dichloropropane	13.21	76	133173	20.4504 ug/L	88
64)	Tetrachloroethene	13.34	164	106439	20.0147 ug/L	97
65)	Dibromochloromethane	13.59	129	125141	20.2323 ug/L	100
66)	1,2-Dibromoethane	13.82	107	81160	19.9763 ug/L	98
67)	1-Chlorohexane	13.89	91	138574	18.3794 ug/L	90
68)	Chlorobenzene	14.29	112	344934	20.5894 ug/L	98
69)	1,1,1,2-Tetrachloroethane	14.32	131	136779	20.1775 ug/L	100
70)	Ethylbenzene	14.31	106	168799	19.6492 ug/L	99
71)	m-,p-Xylene	14.39	106	419760	40.1927 ug/L	98
72)	o-Xylene	14.92	106	205806	20.2489 ug/L	98
73)	Styrene	14.95	104	346380	20.6272 ug/L	95
74)	Bromoform	15.43	173	71500	19.0730 ug/L	98
75)	Isopropylbenzene	15.31	105	535115	19.9084 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	75928	17.6997 ug/L	97
79)	1,2,3-Trichloropropane	15.70	110	29194	18.3704 ug/L	82
80)	trans-1,4-Dichloro-2-Buten	15.73	53	15713	8.2298 ug/L #	1
81)	n-Propylbenzene	15.79	91	619789	19.4275 ug/L	98
82)	Bromobenzene	15.91	156	159749	19.0828 ug/L	90
83)	1,3,5-Trimethylbenzene	15.95	105	468869	19.2593 ug/L	98
84)	2-Chlorotoluene	16.05	91	434610	19.4498 ug/L	96
85)	4-Chlorotoluene	16.09	91	380411	19.0055 ug/L	98
86)	a-Methylstyrene	16.34	118	259636	20.2160 ug/L	95
87)	tert-Butylbenzene	16.39	134	104429	20.2469 ug/L	90
88)	1,2,4-Trimethylbenzene	16.44	105	480479	19.3816 ug/L	99
89)	sec-Butylbenzene	16.65	105	556453	19.0357 ug/L	100
90)	p-Isopropyltoluene	16.79	119	503378	18.7477 ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	316633	19.5837 ug/L	98
92)	1,4-Dichlorobenzene	17.10	146	322822	19.6982 ug/L	99
93)	n-Butylbenzene	17.28	91	408884	17.2817 ug/L	97
94)	1,2-Dichlorobenzene	17.57	146	294021	19.9629 ug/L	97
95)	1,2-Dibromo-3-Chloropropan	18.49	75	15549	16.5143 ug/L	97
96)	1,2,4-Trichlorobenzene	19.54	180	195112	18.1039 ug/L	99
97)	Hexachlorobutadiene	19.69	225	75124	15.8226 ug/L	95
98)	Naphthalene	19.89	128	329099	16.4516 ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	178700	18.0669 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M13229.D 8260WT.M Wed Jul 13 15:33:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\071316\11M13229.D Vial: 7
Acq On : 13 Jul 2016 15:12 Operator: TMB
Sample : WG576236-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 15:33 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration

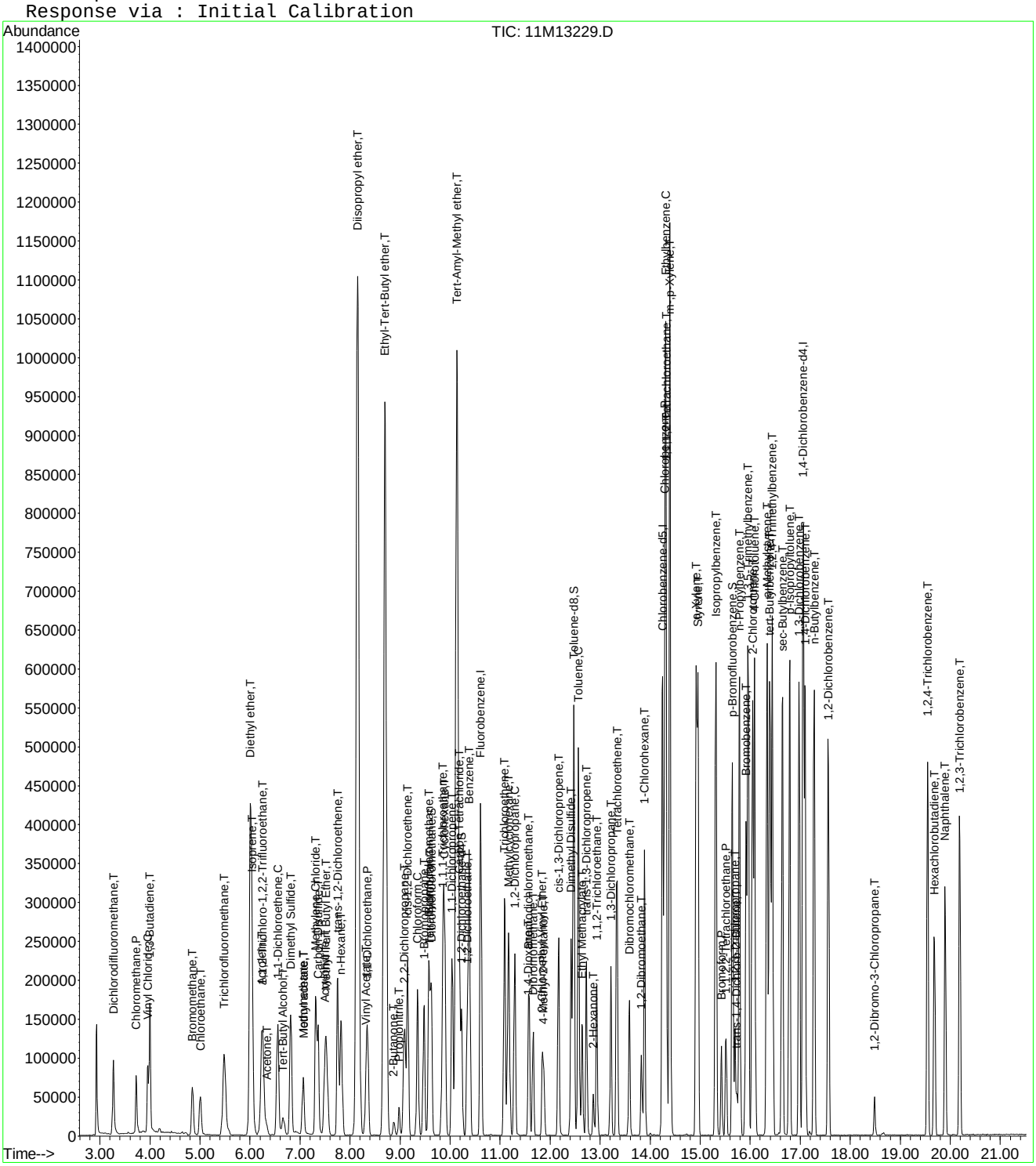

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413223.D Vial: 5
Acq On : 24 Jun 2016 20:32 Operator: FJB
Sample : WG574190-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:22:32 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	690687	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	534450	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	297555	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	204599	27.5708 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.28%		
43) 1,2-Dichloroethane-d4	10.30	65	235850	29.6406 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 118.56%		
58) Toluene-d8	12.68	98	714555	25.5466 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.20%		
80) p-Bromofluorobenzene	16.08	95	311535	25.2851 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.16%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	333913	28.8353 ug/L	99
3) Chloromethane	3.62	50	152865	22.6148 ug/L	99
4) Vinyl Chloride	3.84	62	214206	26.7098 ug/L	99
5) 1,3-Butadiene	3.88	54	126468	18.8044 ug/L	99
6) Bromomethane	4.73	94	78372	16.9178 ug/L	98
7) Chloroethane	4.89	64	102957	23.3312 ug/L	96
8) Trichlorofluoromethane	5.37	101	375276	25.1483 ug/L	99
9) Diethyl ether	5.90	59	363774	102.1121 ug/L	97
10) Isoprene	5.94	67	223401	24.6527 ug/L	97
11) Acrolein	6.14	56	21485	67.3579 ug/L	82
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	165358	23.5740 ug/L	94
13) Acetone	6.23	43	17509	22.5316 ug/L	99
14) 1,1-Dichloroethene	6.46	61	254737	22.8085 ug/L	97
15) Tert-Butyl Alcohol	6.58	59	33687	135.2762 ug/L	94
16) Dimethyl Sulfide	6.73	62	154810	38.7670 ug/L	99
17) Iodomethane	6.99	142	61237	21.6542 ug/L	100
18) Methyl acetate	7.00	43	44091	20.9904 ug/L	97
19) Methylene Chloride	7.24	84	158247	22.2649 ug/L	98
20) Carbon Disulfide	7.28	76	490903	21.0037 ug/L	100
21) Acrylonitrile	7.43	53	20580	20.4115 ug/L	92
22) Methyl Tert Butyl Ether	7.46	73	366537	23.8280 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	235371	22.9393 ug/L	99
24) n-Hexane	7.78	57	159391	20.9199 ug/L	99
25) Diisopropyl ether	8.12	45	1618888	101.2191 ug/L	96
26) Vinyl Acetate	8.30	43	119924	16.3767 ug/L	99
27) 1,1-Dichloroethane	8.32	63	286004	22.4446 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1771190	103.3598 ug/L	98
29) 2-Butanone	8.88	43	23037	20.1773 ug/L	98
30) Propionitrile	8.98	54	30874	92.7930 ug/L	97
31) 2,2-Dichloropropane	9.10	77	342106	25.4762 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	185058	23.3418 ug/L	100
33) Chloroform	9.37	83	359186	23.8730 ug/L	100
34) 1-Bromopropane	9.51	122	38385	33.8010 ug/L	93
35) Bromochloromethane	9.61	130	93802	23.0724 ug/L	95
36) Tetrahydrofuran	9.63	42	59777	79.4931 ug/L	93
38) 1,1,1-Trichloroethane	9.91	97	368334	25.7727 ug/L	98
39) Cyclohexane	9.94	56	212090	21.4352 ug/L	95
40) 1,1-Dichloropropene	10.11	75	253149	23.2389 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1696552	109.0055 ug/L	100
42) Carbon Tetrachloride	10.25	117	325228	25.6271 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413223.D 8260WT.M Sun Jun 26 15:22:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413223.D Vial: 5
Acq On : 24 Jun 2016 20:32 Operator: FJB
Sample : WG574190-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:22:32 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	257760	26.6173 ug/L		98
46)	Benzene	10.46	78	650058	22.9123 ug/L		99
47)	Trichloroethene	11.21	130	184227	24.3460 ug/L		98
48)	Methylcyclohexane	11.30	83	260878	22.6936 ug/L		98
49)	1,2-Dichloropropane	11.43	63	139137	22.0299 ug/L		87
50)	Bromodichloromethane	11.73	83	273665	24.6530 ug/L		100
51)	1,4-Dioxane	11.71	88	2615	82.4238 ug/L		94
52)	Dibromomethane	11.81	93	82569	22.0851 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	55406	20.4103 ug/L		97
54)	4-Methyl-2-Pentanone	12.05	58	23268	20.9834 ug/L		98
55)	cis-1,3-Dichloropropene	12.36	75	287987	25.4880 ug/L		100
56)	Dimethyl Disulfide	12.62	79	136136	22.5740 ug/L		93
59)	Toluene	12.78	91	696083	20.9793 ug/L		100
60)	Ethyl Methacrylate	12.88	69	132468	20.7891 ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	246156	22.1382 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	103525	19.7732 ug/L		96
64)	2-Hexanone	13.11	58	19834	18.0273 ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	205147	22.0080 ug/L		97
66)	Tetrachloroethene	13.60	164	154145	21.6840 ug/L		99
67)	Dibromochloromethane	13.87	129	166272	21.7500 ug/L		99
68)	1,2-Dibromoethane	14.12	107	109169	20.9217 ug/L		100
69)	1-Chlorohexane	14.21	91	227316	20.0704 ug/L		98
70)	Chlorobenzene	14.62	112	477896	21.3595 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.65	131	192714	22.2329 ug/L		99
72)	Ethylbenzene	14.65	106	250112	20.4316 ug/L		96
73)	m-,p-Xylene	14.75	106	621171	43.2616 ug/L		95
74)	o-Xylene	15.31	106	307995	21.9402 ug/L		98
75)	Styrene	15.35	104	502195	21.8115 ug/L		97
76)	Bromoform	15.83	173	94460	20.8320 ug/L		99
77)	Isopropylbenzene	15.73	105	834813	22.3857 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	108651	18.1909 ug/L		98
81)	1,2,3-Trichloropropane	16.13	110	36493	19.8411 ug/L	#	43
82)	trans-1,4-Dichloro-2-Buten	16.18	53	30366	16.6126 ug/L	#	20
83)	n-Propylbenzene	16.24	91	1004999	21.6493 ug/L		100
84)	Bromobenzene	16.37	156	199146	20.8564 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	732888	21.6731 ug/L		99
86)	2-Chlorotoluene	16.50	91	709424	21.8886 ug/L		98
87)	4-Chlorotoluene	16.56	91	603610	20.6178 ug/L		99
88)	a-Methylstyrene	16.82	118	338030	21.0697 ug/L		100
89)	tert-Butylbenzene	16.89	134	143338	21.6669 ug/L		96
90)	1,2,4-Trimethylbenzene	16.94	105	722935	20.7911 ug/L		99
91)	sec-Butylbenzene	17.16	105	844707	21.2336 ug/L		100
92)	p-Isopropyltoluene	17.32	119	711462	21.0631 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	390826	21.2568 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	389603	21.0184 ug/L		99
95)	n-Butylbenzene	17.85	91	672507	20.1392 ug/L		100
96)	1,2-Dichlorobenzene	18.14	146	333941	20.4216 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	22845	19.0544 ug/L		95
98)	1,2,4-Trichlorobenzene	20.28	180	241748	19.7783 ug/L		100
99)	Hexachlorobutadiene	20.43	225	119789	20.9751 ug/L		97
100)	Naphthalene	20.65	128	301191	16.5856 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	188432	18.2732 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413223.D Vial: 5
Acq On : 24 Jun 2016 20:32 Operator: FJB
Sample : WG574190-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:22 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

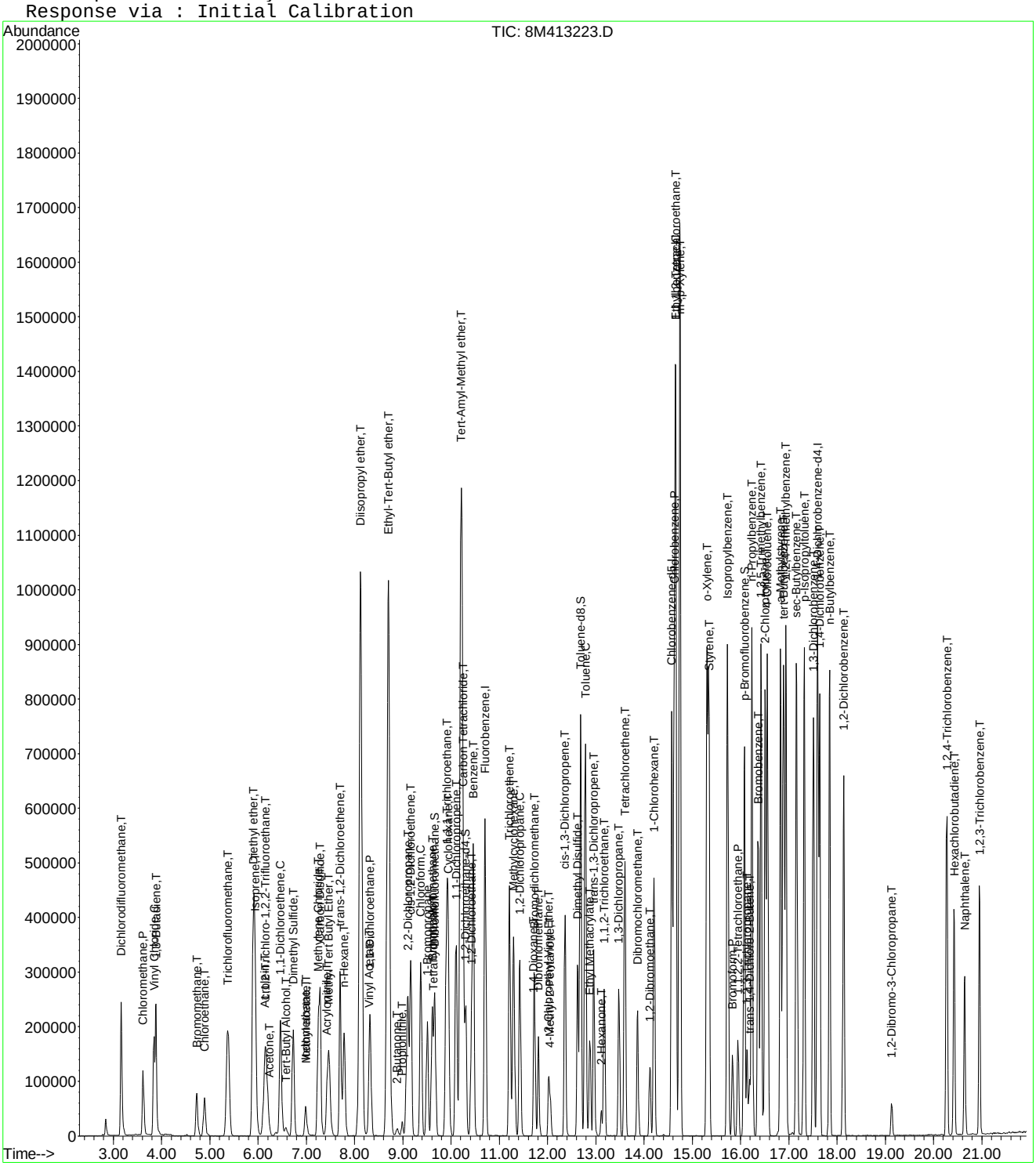

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\071316\11M13230.D Vial: 8
Acq On : 13 Jul 2016 15:44 Operator: TMB
Sample : WG576236-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:06:10 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	498141	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	455887	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	271926	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	136418	25.0228 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.08%		
43) 1,2-Dichloroethane-d4	10.23	65	132934	21.3851 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.56%		
57) Toluene-d8	12.47	98	477462	24.1041 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.40%		
78) p-Bromofluorobenzene	15.64	95	194001	23.1439 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.56%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	127611	16.3500 ug/L	96
3) Chloromethane	3.72	50	103983	16.6348 ug/L	98
4) Vinyl Chloride	3.96	62	101319	19.5179 ug/L	92
5) 1,3-Butadiene	4.00	54	80885	15.6700 ug/L	97
6) Bromomethane	4.85	94	61655	17.2743 ug/L	99
7) Chloroethane	5.00	64	70539	21.1488 ug/L	97
8) Trichlorofluoromethane	5.49	101	192497	18.6046 ug/L	99
9) Diethyl ether	6.01	59	355894	93.0056 ug/L	93
10) Isoprene	6.04	67	119671	18.7647 ug/L	91
11) Acrolein	6.23	56	48062	94.1599 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.24	101	102846	20.4849 ug/L	96
13) Acetone	6.34	43	18740	15.8429 ug/L	94
14) 1,1-Dichloroethene	6.56	61	159966	17.5414 ug/L	94
15) Tert-Butyl Alcohol	6.67	59	50461	154.2275 ug/L	95
16) Dimethyl Sulfide	6.81	62	116154	31.8938 ug/L	88
17) Iodomethane	7.06	142	101828	25.6105 ug/L	97
18) Methyl acetate	7.07	43	50320	12.7212 ug/L	94
19) Methylene Chloride	7.31	84	95247	20.1812 ug/L	79
20) Carbon Disulfide	7.36	76	260822	17.0840 ug/L	100
21) Acrylonitrile	7.49	53	26610	16.7785 ug/L	95
22) Methyl Tert Butyl Ether	7.52	73	225678	19.1718 ug/L	95
23) trans-1,2-Dichloroethene	7.75	96	102251	20.2594 ug/L	92
24) n-Hexane	7.83	57	125982	14.9868 ug/L	97
25) Diisopropyl ether	8.15	45	1966434	93.7475 ug/L	97
26) Vinyl Acetate	8.31	43	125287	17.0710 ug/L	98
27) 1,1-Dichloroethane	8.34	63	190102	18.7718 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1547105	90.6195 ug/L	98
29) 2-Butanone	8.87	43	28619	16.0040 ug/L	94
30) Propionitrile	8.97	54	44246	84.4781 ug/L	98
31) 2,2-Dichloropropane	9.09	77	161008	20.3205 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	117360	21.0893 ug/L	92
33) Chloroform	9.35	83	190438	19.1493 ug/L	99
34) 1-Bromopropane	9.48	122	28354	28.9511 ug/L	100
35) Bromochloromethane	9.57	130	71399	21.6037 ug/L	87
36) Tetrahydrofuran	9.59	42	91738	72.6485 ug/L	92
38) 1,1,1-Trichloroethane	9.85	97	188471	19.2582 ug/L	97
39) Cyclohexane	9.88	56	186160	17.4543 ug/L	96
40) 1,1-Dichloropropene	10.04	75	132978	19.0304 ug/L	99
41) Carbon Tetrachloride	10.18	117	185559	19.4172 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1182383	99.6688 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\071316\11M13230.D Vial: 8
Acq On : 13 Jul 2016 15:44 Operator: TMB
Sample : WG576236-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:06:10 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	150702	18.6579 ug/L	98
45) Benzene	10.38	78	385241	20.1390 ug/L	99
46) Trichloroethene	11.09	130	135489	21.7910 ug/L	96
47) Methylcyclohexane	11.17	83	139723	18.2088 ug/L	95
48) 1,2-Dichloropropane	11.29	63	107279	20.2597 ug/L	96
49) 1,4-Dioxane	11.56	88	4546	157.8883 ug/L	81
50) Bromodichloromethane	11.57	83	145022	19.5089 ug/L	98
51) Dibromomethane	11.65	93	51749	18.7540 ug/L	95
52) 2-Chloroethyl Vinyl Ether	11.84	63	45325	17.3674 ug/L	96
53) 4-Methyl-2-Pentanone	11.87	58	25512	17.3319 ug/L	99
54) cis-1,3-Dichloropropene	12.17	75	162601	21.8692 ug/L	99
55) Dimethyl Disulfide	12.42	79	82223	18.3773 ug/L	86
58) Toluene	12.56	91	447421	19.3866 ug/L	100
59) Ethyl Methacrylate	12.63	69	89687	18.1995 ug/L	82
60) trans-1,3-Dichloropropene	12.73	75	132482	17.8840 ug/L	95
61) 1,1,2-Trichloroethane	12.93	97	76755	18.7555 ug/L	99
62) 2-Hexanone	12.86	43	40552	13.4920 ug/L	91
63) 1,3-Dichloropropane	13.21	76	126858	19.3032 ug/L	87
64) Tetrachloroethene	13.34	164	103209	19.2306 ug/L	96
65) Dibromochloromethane	13.59	129	118212	18.9380 ug/L	100
66) 1,2-Dibromoethane	13.82	107	75982	18.5315 ug/L	100
67) 1-Chlorohexane	13.89	91	139143	18.2868 ug/L	89
68) Chlorobenzene	14.29	112	339253	20.0659 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	133881	19.5701 ug/L	97
70) Ethylbenzene	14.31	106	166564	19.2125 ug/L	98
71) m-,p-Xylene	14.39	106	420113	39.8602 ug/L	96
72) o-Xylene	14.92	106	202328	19.7254 ug/L	98
73) Styrene	14.95	104	340338	20.0828 ug/L	96
74) Bromoform	15.43	173	65017	17.1856 ug/L	96
75) Isopropylbenzene	15.31	105	532362	19.6256 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.51	83	71717	16.9361 ug/L	97
79) 1,2,3-Trichloropropane	15.70	110	28127	17.9385 ug/L	79
80) trans-1,4-Dichloro-2-Buten	15.74	53	16289	8.6055 ug/L #	15
81) n-Propylbenzene	15.79	91	613523	19.4819 ug/L	98
82) Bromobenzene	15.91	156	155934	18.8699 ug/L	91
83) 1,3,5-Trimethylbenzene	15.95	105	461353	19.1977 ug/L	99
84) 2-Chlorotoluene	16.05	91	431472	19.5612 ug/L	97
85) 4-Chlorotoluene	16.09	91	377198	19.0907 ug/L	99
86) a-Methylstyrene	16.34	118	260539	20.5509 ug/L	98
87) tert-Butylbenzene	16.39	134	100496	19.7385 ug/L	94
88) 1,2,4-Trimethylbenzene	16.44	105	475151	19.4166 ug/L	99
89) sec-Butylbenzene	16.65	105	545739	18.9126 ug/L	100
90) p-Isopropyltoluene	16.79	119	496723	18.7411 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	311276	19.5034 ug/L	96
92) 1,4-Dichlorobenzene	17.10	146	316401	19.5581 ug/L	98
93) n-Butylbenzene	17.28	91	406932	17.4235 ug/L	98
94) 1,2-Dichlorobenzene	17.57	146	280932	19.3229 ug/L	98
95) 1,2-Dibromo-3-Chloropropan	18.49	75	14362	15.4938 ug/L	99
96) 1,2,4-Trichlorobenzene	19.55	180	194781	18.3089 ug/L	98
97) Hexachlorobutadiene	19.69	225	72939	15.5627 ug/L	97
98) Naphthalene	19.89	128	308881	15.6423 ug/L	99
99) 1,2,3-Trichlorobenzene	20.19	180	169678	17.3784 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M13230.D 8260WT.M Wed Jul 13 16:06:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\071316\11M13230.D Vial: 8
Acq On : 13 Jul 2016 15:44 Operator: TMB
Sample : WG576236-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:06 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration

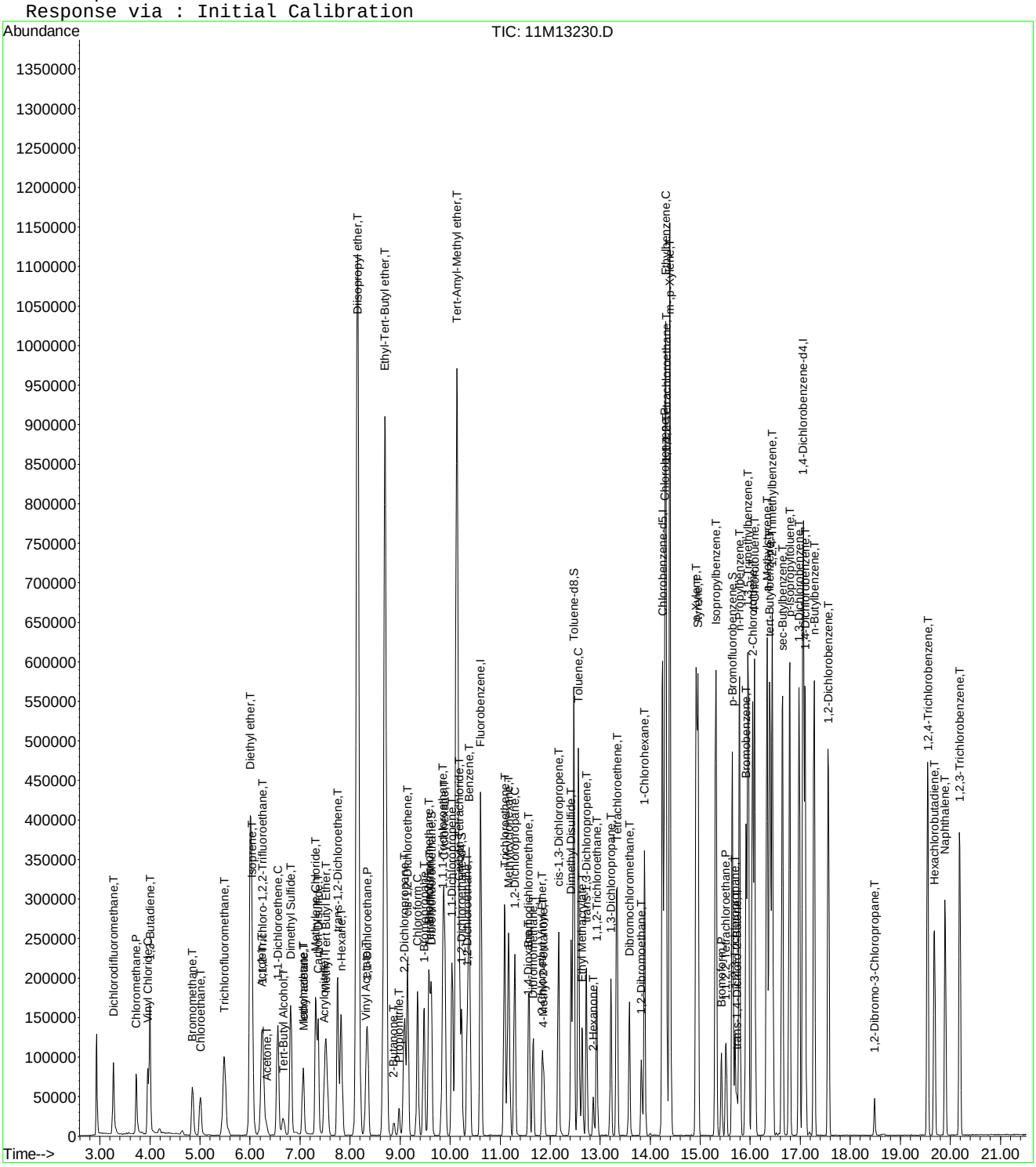

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW20-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 17:23
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	15M18605
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	41.7	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW08-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 17:46
Collect Date:	06/20/2016 10:10	**Dilution:**	1	**File ID:**	15M18606
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	52.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW09-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 18:09
Collect Date:	06/20/2016 11:10	**Dilution:**	1	**File ID:**	15M18607
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	56.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG573812
Analyst: CPD
Spike Analyst: 001
Method: 3520C
Run Date: 06/22/2016 13:51
SOP: EXB01 Revison 20
Spike Witness: JDH
Surr Solution: STD76628

TIME ON: 14:35 OFF: 09:00 ON: 14:30 OFF: 08:30

CH2CL2 Lot #: COA18982
1:1 H2SO4 Lot #: RGT36755
sodium sulfate Lot #: COA18814

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16061124-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16061142-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
3	L16061142-06	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
4	L16061142-07	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	L16061144-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	L16061144-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
7	L16061144-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
8	L16061227-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
9	L16061227-06	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
10	L16061227-07	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
11	L16061233-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
12	WG573812-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
13	WG573812-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
14	WG573812-03	LCS2		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent

Analyst: Chelsie Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4825361
Report generated: 06/27/2016 08:29

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

Page: 1 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062716
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574301,WG574187,WG574186,WG573853

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments: All samples associated with extraction workgroup WG573815 are being re-extracted due to low LCSDUP recovery: L16060637-02,756-01 to-03,809-01 and -02,930-01 and -02, 1213-01 to -06.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18584	BAKEOUT	1	1		06/27/16 08:21
13	15M18585	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 08:41
14	15M18586	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 08:58
2	15M18587	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 09:22
3	15M18588	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 09:38
4	15M18589	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 10:23
5	15M18590	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 11:15
6	15M18591	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 11:32
7	15M18592	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 12:20
8	15M18593	WG574241-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/27/16 12:37
9	15M18594	WG573975-03 LCSDUP 6/24 RR	7	1	SOIL	06/27/16 13:15
10	15M18595	WG573815-02 LCS 6/23 RR	7	1	SOIL	06/27/16 13:37
11	15M18596	WG573815-03 LCSDUP 6/23 RR	7	1	SOIL	06/27/16 13:59
12	15M18597	WG573812-01 BLANK 6/22	1	1		06/27/16 14:22
15	15M18598	WG573812-02 LCS 6/22	1	1		06/27/16 14:45
16	15M18599	WG573812-03 LCSDUP 6/22	1	1		06/27/16 15:07
17	15M18600	L16061026-05 40X	1	40		06/27/16 15:30
18	15M18601	L16061213-05 827-DIOX	7	1	SOIL	06/27/16 15:52
19	15M18602	L16061213-06 827-DIOX	7	1		06/27/16 16:15
20	15M18603	L16061233-02 827-DIOX	1	1		06/27/16 16:38
21	15M18604	L16061124-01	1	1		06/27/16 17:01
22	15M18605	L16061142-01	1	1		06/27/16 17:23
23	15M18606	L16061142-06	1	1		06/27/16 17:46
24	15M18607	L16061142-07	1	1		06/27/16 18:09
25	15M18608	L16061144-01	1	1		06/27/16 18:31
26	15M18609	L16061144-02	1	1		06/27/16 18:54
27	15M18610	L16061144-03	1	1		06/27/16 19:17
28	15M18611	L16061227-01	1	1		06/27/16 19:39
29	15M18612	L16061227-06	1	1		06/27/16 20:02
30	15M18613	L16061227-07	1	1		06/27/16 20:25
31	15M18614	L16061124-01 2X	1	2		06/27/16 20:47
32	15M18615	BAKEOUT	1	1		06/27/16 21:10
33	15M18616	BAKEOUT	1	1		06/27/16 21:32

Page: 1 Approved: 28-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062716

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574301,WG574187,WG574186,WG573853

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18617	BAKEOUT	1	1		06/27/16 21:55

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13				
	Rerun DFTPP, wrong standard was analyzed.			
14				
	Rerun DFTPP, wrong standard was analyzed.			
2				
	Rerun DFTPP, ion failures. Liner needs changed.			
3				
	Rerun DFTPP, degradation >20%.			
4				
	Rerun DFTPP, degradation >20%. Changed the gold seal.			
5				
	Rerun DFTPP, benzidine tailing >2.			
6				
	Rerun DFTPP, benzidine tailing >2. Clipped 5cm from the column.			
9				
	WG573975-03 LCSDUP 6/24 RR recovery is acceptable. Not reporting the run from 6/25/16.			
11				
	WG573815-03 LCSDUP 6/23 RR low recovery; confirms the original run.			
21	X	2	Over Calibration Range	
	L16061124-01			
28				
	L16061227-01 Needs re-extracted; surrogate recovery is low.			

Page: 2 Approved: 28-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75949
Analytical Workgroups: L16061026,061213,WG573956-LCSDUP RR,061124,1142,1144,1227,123

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
28-JUN-2016

Secondary Reviewer:
28-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 14:33:27

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG574301

Login Number: L16061142

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW20-062016	01	06/20/16					06/22/2016	2.2	7		06/27/16	5.1	40	
18WW08-062016	06	06/20/16					06/22/2016	2.2	7		06/27/16	5.2	40	
18WW09-062016	07	06/20/16					06/22/2016	2.1	7		06/27/16	5.2	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4828096
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061142
Instrument Id: HPMS15
Workgroup (AAB#): WG574301

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16061142-01	1.00	01	41.7
L16061142-06	1.00	01	52.6
L16061142-07	1.00	01	56.4
WG573812-01	1.00	01	29.1
WG573812-02	1.00	01	33.3
WG573812-03	1.00	01	61.4

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4828109
Report generated: 06/29/2016 08:19

METHOD BLANK SUMMARY

Login Number: L16061142
Blank File ID: 15M18597
Prep Date: 06/22/16 13:51
Analyzed Date: 06/27/16 14:22
Analyst: MES

Work Group: WG574301
Blank Sample ID: WG573812-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573812-02	15M18598	06/27/16 14:45	01
LCS2	WG573812-03	15M18599	06/27/16 15:07	01
18WW20-062016	L16061142-01	15M18605	06/27/16 17:23	01
18WW08-062016	L16061142-06	15M18606	06/27/16 17:46	01
18WW09-062016	L16061142-07	15M18607	06/27/16 18:09	01

Report Name: BLANK_SUMMARY
PDF File ID: 4828891
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 06/22/16 13:51 Sample ID: WG573812-01
Instrument ID: HPMS15 Run Date: 06/27/16 14:22 Prep Method: 3520C
File ID: 15M18597 Analyst: MES Method: 8270D
Workgroup (AAB#): WG574301 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15 - 21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	29.1	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4828098
29-JUN-2016 08:19

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG574301 Units: ug/L
QC Key: DOD4 Lot #: STD75256

Sample ID: WG573812-02 LCS File ID: 15M18598 Run Date: 06/27/2016 14:45
Sample ID: WG573812-03 LCS2 File ID: 15M18599 Run Date: 06/27/2016 15:07

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	1.59	31.8	5.00	3.00	60.0	61.5	30 - 104	30	#

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	33.3	61.4	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4828101
Report generated: 06/29/2016 08:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061142
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4828106
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061142
Instrument: HPMS15
Analyst: MES
Workgroup: WG574241

Tune ID: WG574241-01
Run Date: 06/27/2016
Run Time: 12:20
File ID: 15M18592
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	33.2	31989	PASS
68.0	69.0	0	2.00	1.61	580	PASS
69.0	198	0	100	37.4	35954	PASS
70.0	69.0	0	2.00	0.617	222	PASS
127	198	40.0	60.0	50.4	48459	PASS
197	198	0	1.00	0.425	409	PASS
198	198	100	100	100	96232	PASS
199	198	5.00	9.00	6.65	6399	PASS
275	198	10.0	30.0	25.2	24236	PASS
365	198	1.00	100	2.50	2410	PASS
441	443	0.0100	100	75.7	10371	PASS
442	198	40.0	100	73.9	71133	PASS
443	442	17.0	23.0	19.3	13708	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574241-02	CCV	01	06/27/2016 12:37	
WG573812-01	BLANK	01	06/27/2016 14:22	
WG573812-02	LCS	01	06/27/2016 14:45	
WG573812-03	LCS2	01	06/27/2016 15:07	
L16061142-01	18WW20-062016	01	06/27/2016 17:23	
L16061142-06	18WW08-062016	01	06/27/2016 17:46	
L16061142-07	18WW09-062016	01	06/27/2016 18:09	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4828106
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061142
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4828103
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061142

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4828103
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061142

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4828103
Report generated 06/29/2016 08:19

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061142 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4828104
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/27/2016
Sample ID: WG574241-02
Instrument ID: HPMS15
Run Time: 12:37
Method: 8270D
File ID: 15M18593
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG574301
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4360	ug/L	0.267	12.8	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4828107
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061142
Instrument ID: HPMS15
Workgroup (AAB#): WG574301

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16061142-01	1.00	01	47987
L16061142-06	1.00	01	46257
L16061142-07	1.00	01	37198
WG573812-01	1.00	01	38478
WG573812-02	1.00	01	47423
WG573812-03	1.00	01	50712

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4828108
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061142
Instrument ID: HPMS15
Workgroup (AAB#): WG574301

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	6.93
Upper Limit	NA	NA	7.43
Lower Limit	NA	NA	6.43
L16061142-01	1.00	01	6.896
L16061142-06	1.00	01	6.896
L16061142-07	1.00	01	6.896
WG573812-01	1.00	01	6.896
WG573812-02	1.00	01	6.896
WG573812-03	1.00	01	6.896

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4828892
Report generated: 06/29/2016 08:19

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18605.D
Acq On : 27 Jun 2016 17:23
Operator : MES
Sample : L16061142-01
Misc : 1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 27 17:44:28 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	47987	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	41217	2.0874	ug/L	-0.05
Spiked Amount 5.000			Recovery	=	41.80%	
4) Nitrobenzene-d5	7.404	82	2303	0.0454	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.860	172	4	0.0000	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.166	244	1615	0.0131	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18605.D
Acq On : 27 Jun 2016 17:23
Operator : MES
Sample : L16061142-01
Misc : 1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 27 17:44:28 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

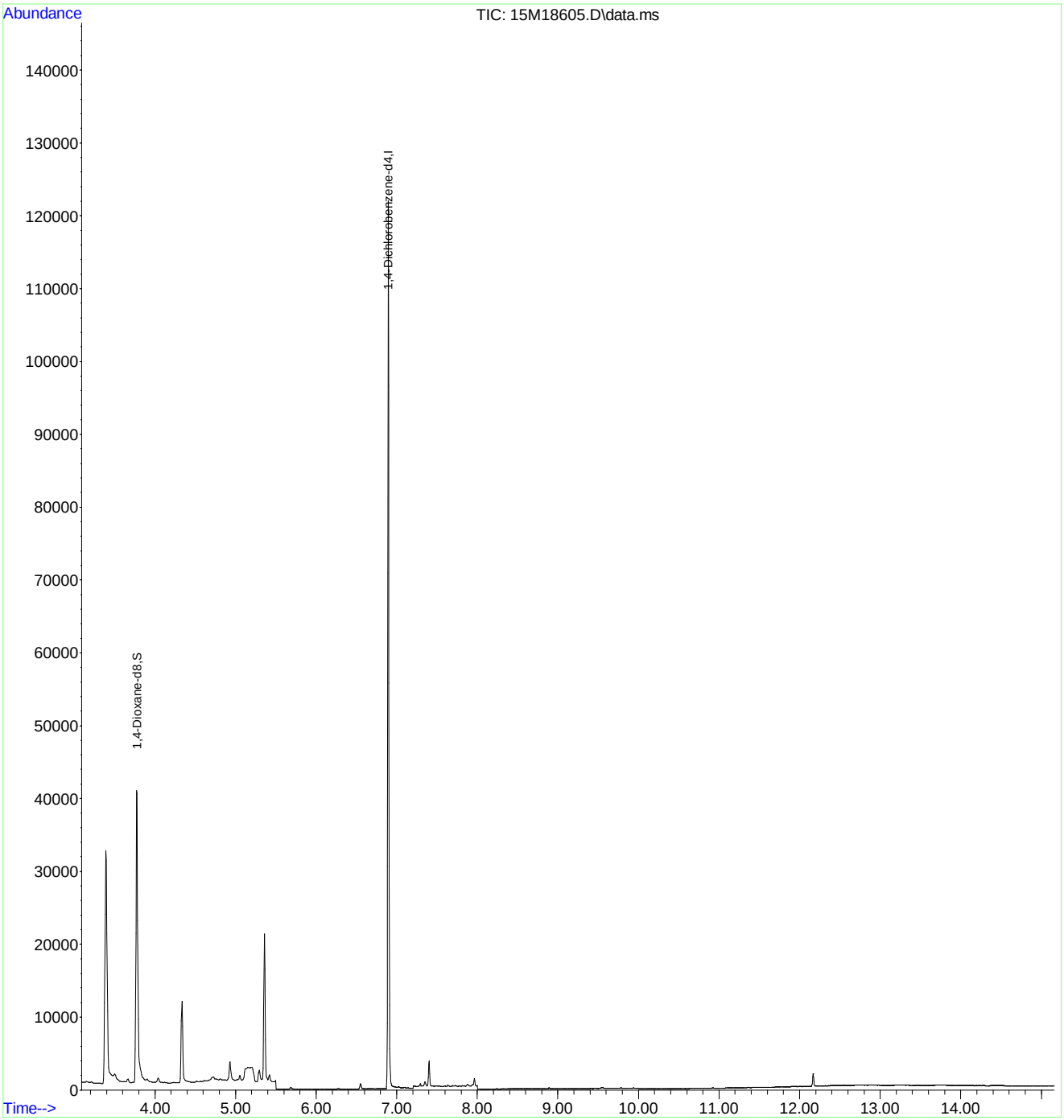

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18606.D
Acq On : 27 Jun 2016 17:46
Operator : MES
Sample : L16061142-06
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 27 18:02:12 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	46257	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.764	96	50090	2.6316	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	52.60%	
4) Nitrobenzene-d5	7.404	82	1439	0.0295	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.889	172	88	0.0007	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.159	244	474	0.0040	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18606.D
Acq On : 27 Jun 2016 17:46
Operator : MES
Sample : L16061142-06
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 27 18:02:12 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

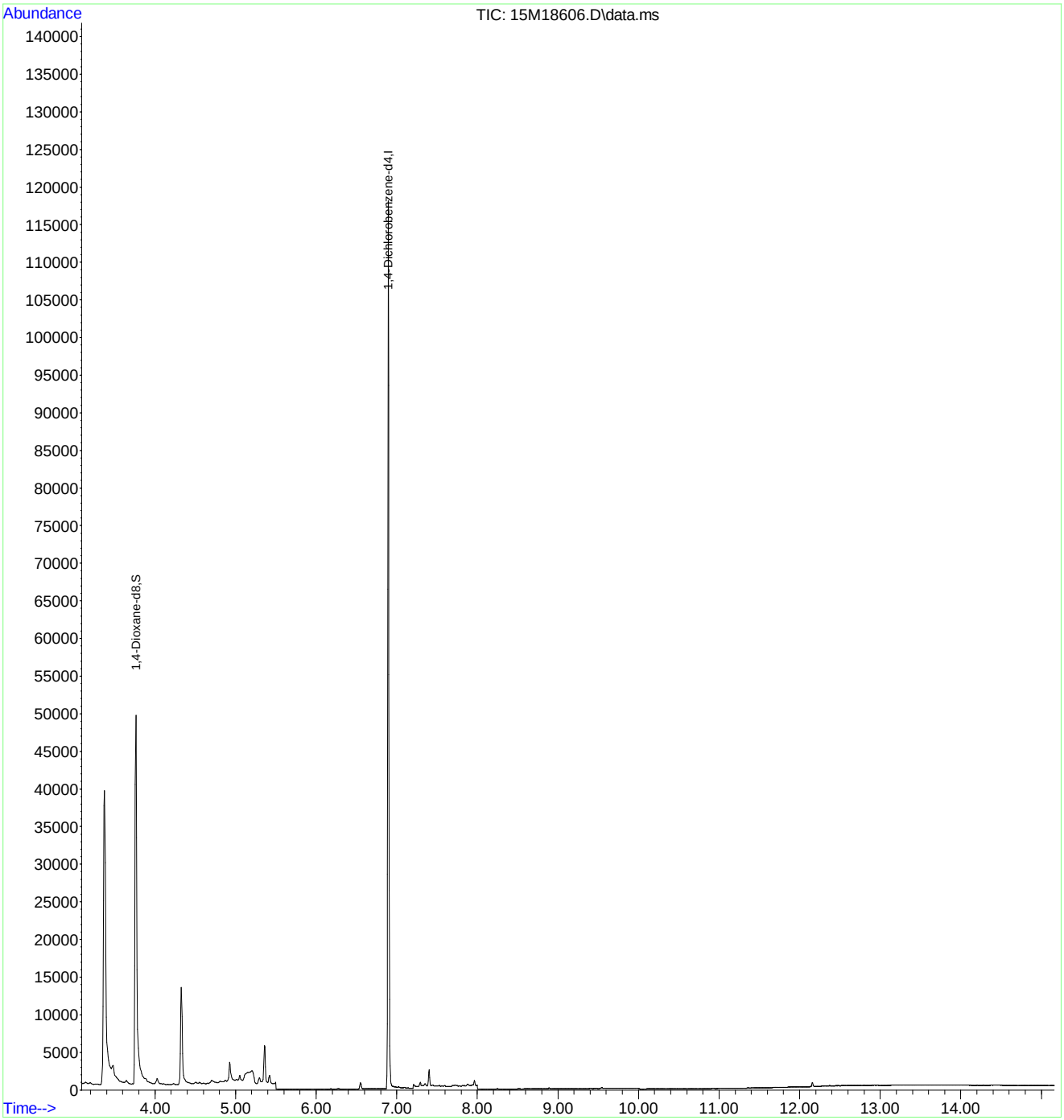

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18607.D
Acq On : 27 Jun 2016 18:09
Operator : MES
Sample : L16061142-07
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 27 18:24:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	37198	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.749	96	43134	2.8180	ug/L	-0.08
Spiked Amount 5.000			Recovery	=	56.40%	
4) Nitrobenzene-d5	7.404	82	1441	0.0367	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.80%	
5) 2-Fluorobiphenyl	8.890	172	137	0.0014	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.170	244	4292	0.0449	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	0.80%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18607.D
Acq On : 27 Jun 2016 18:09
Operator : MES
Sample : L16061142-07
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 27 18:24:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

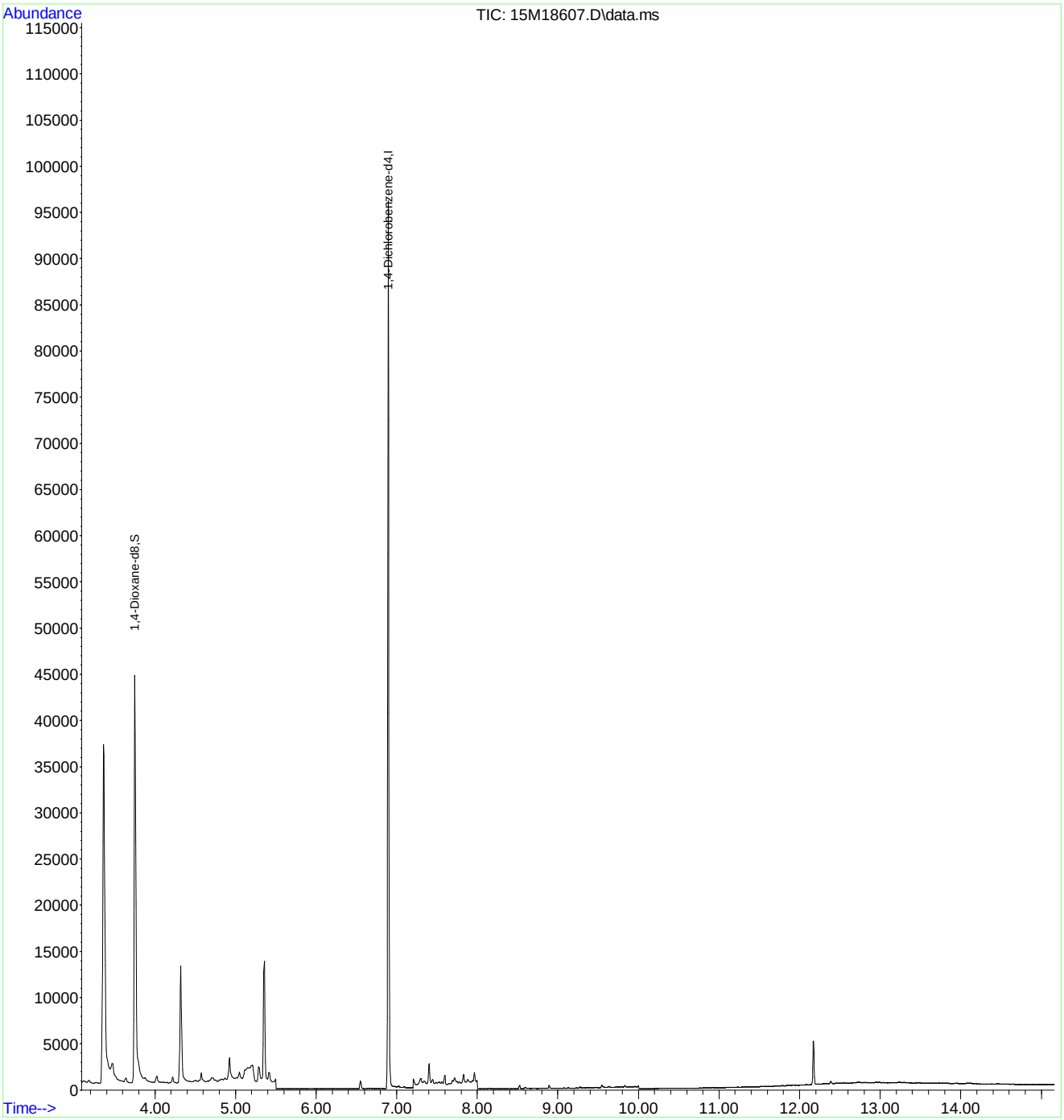

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

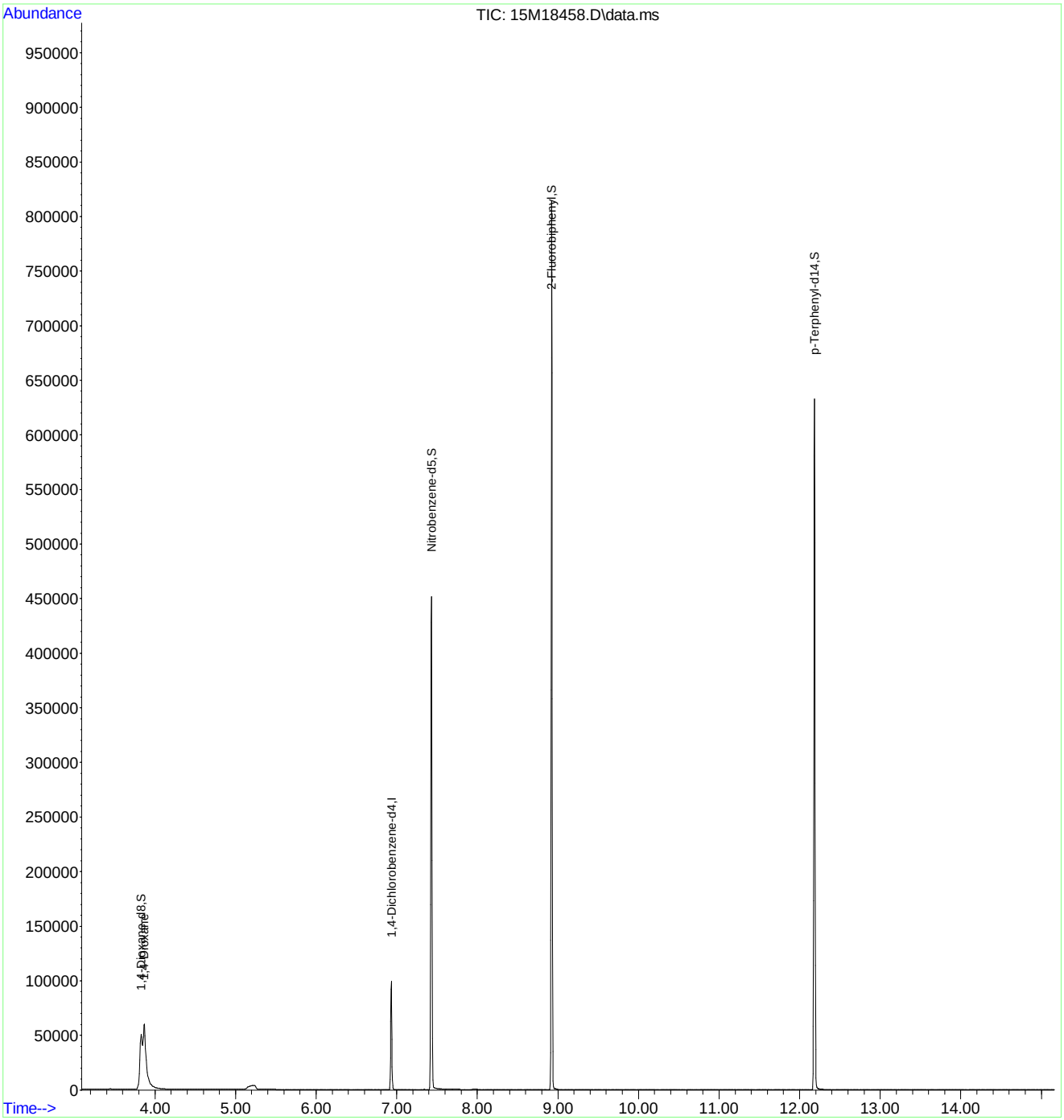

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

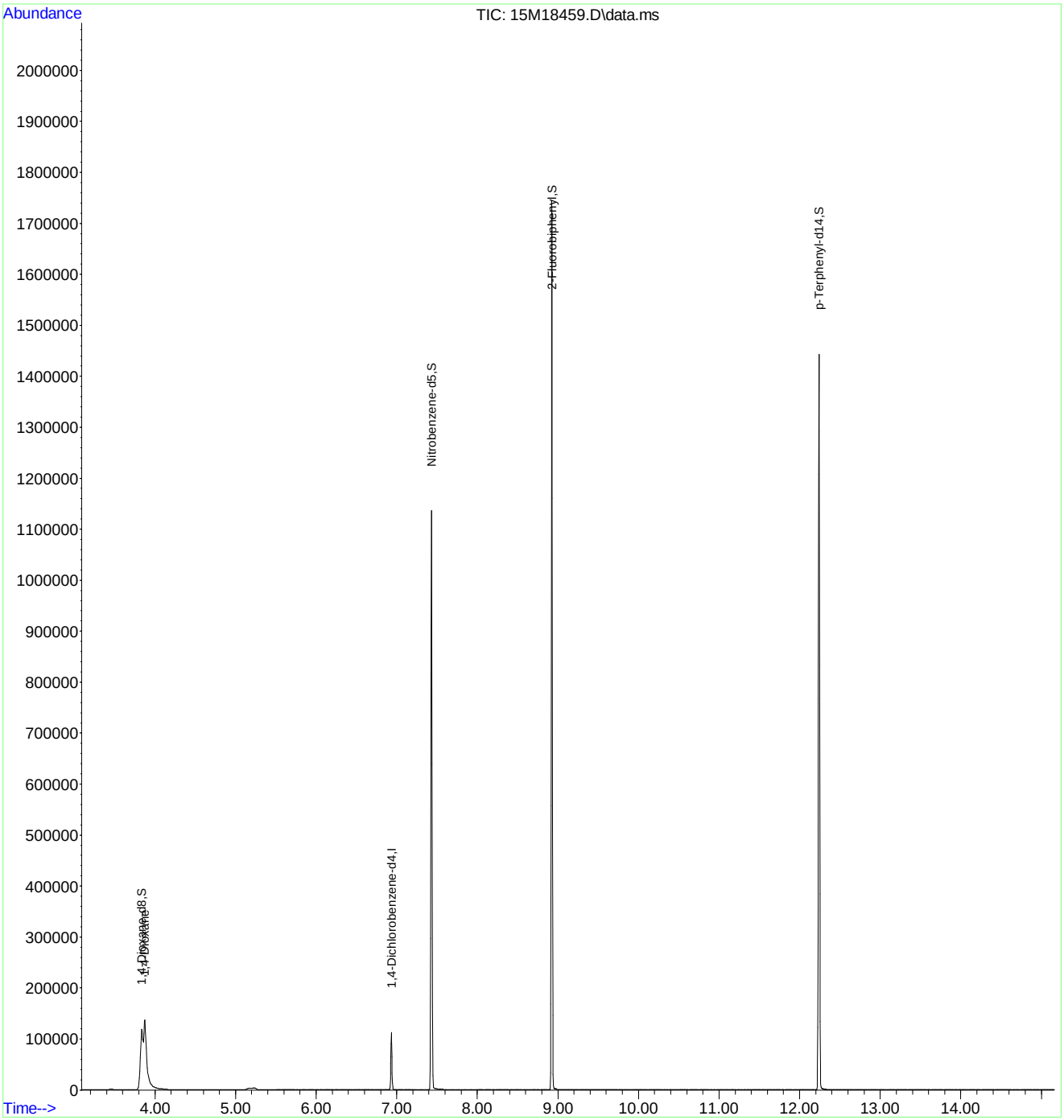

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

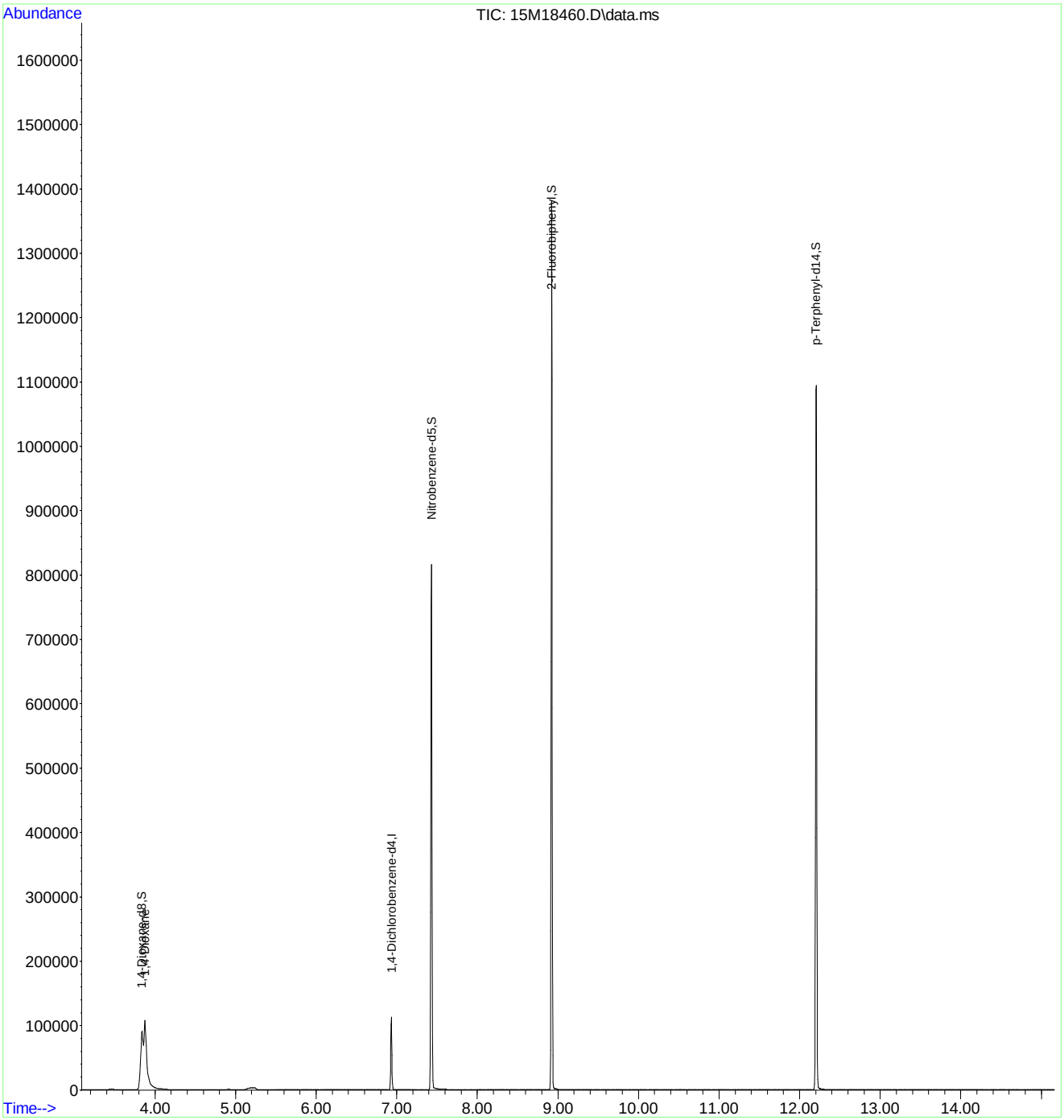

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406	ug/L	0.00
Spiked Amount 5.000			Recovery = 48.80%			
4) Nitrobenzene-d5	7.431	82	88869	2.3714	ug/L	0.00
Spiked Amount 5.000			Recovery = 47.40%			
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.20%			
6) p-Terphenyl-d14	12.199	244	218191	2.3930	ug/L	0.02
Spiked Amount 5.000			Recovery = 47.80%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

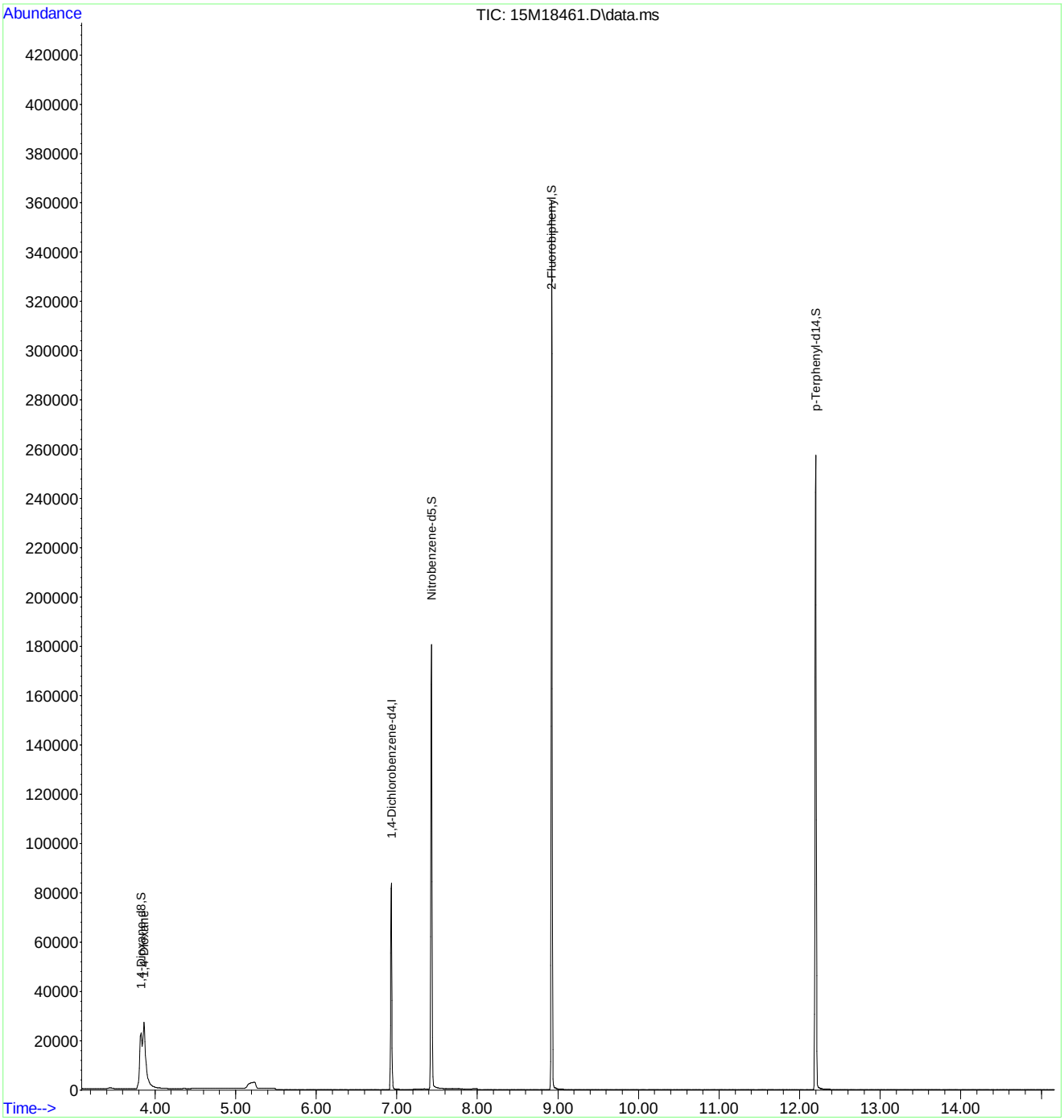

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607 ug/L	0.01
Spiked Amount 5.000			Recovery	= 19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776 ug/L	0.00
Spiked Amount 5.000			Recovery	= 17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612 ug/L	0.00
Spiked Amount 5.000			Recovery	= 19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208 ug/L	0.02
Spiked Amount 5.000			Recovery	= 18.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694 ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

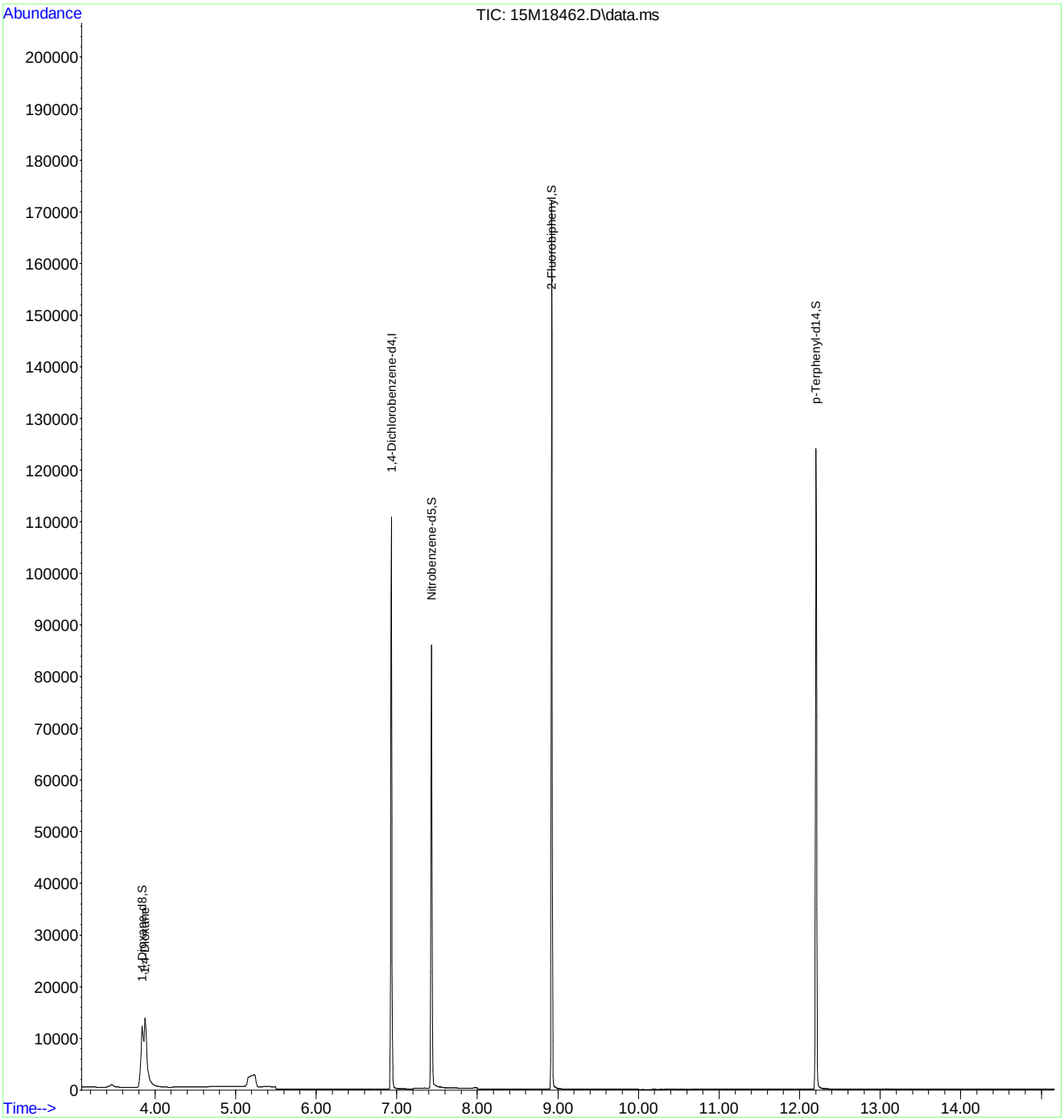

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

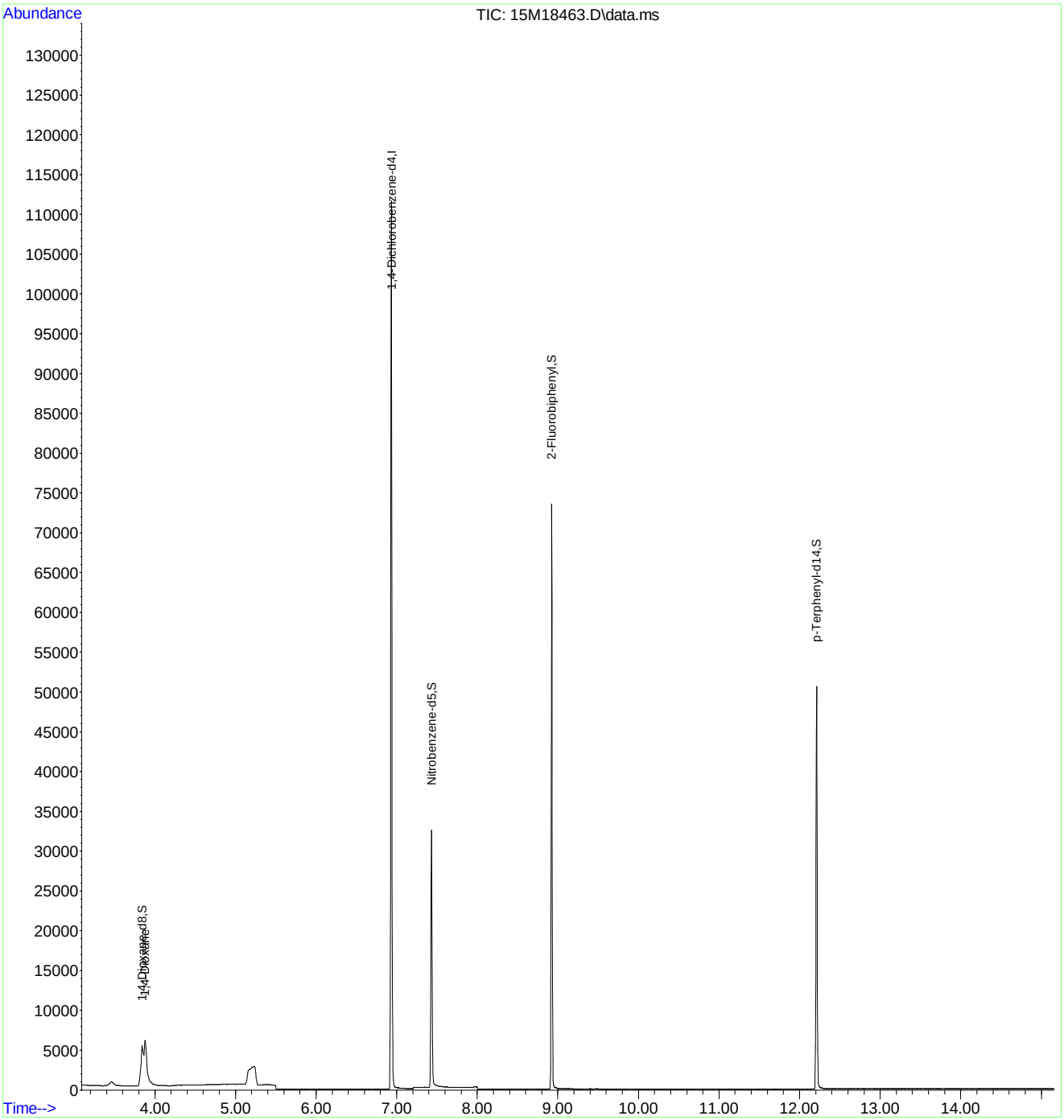

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

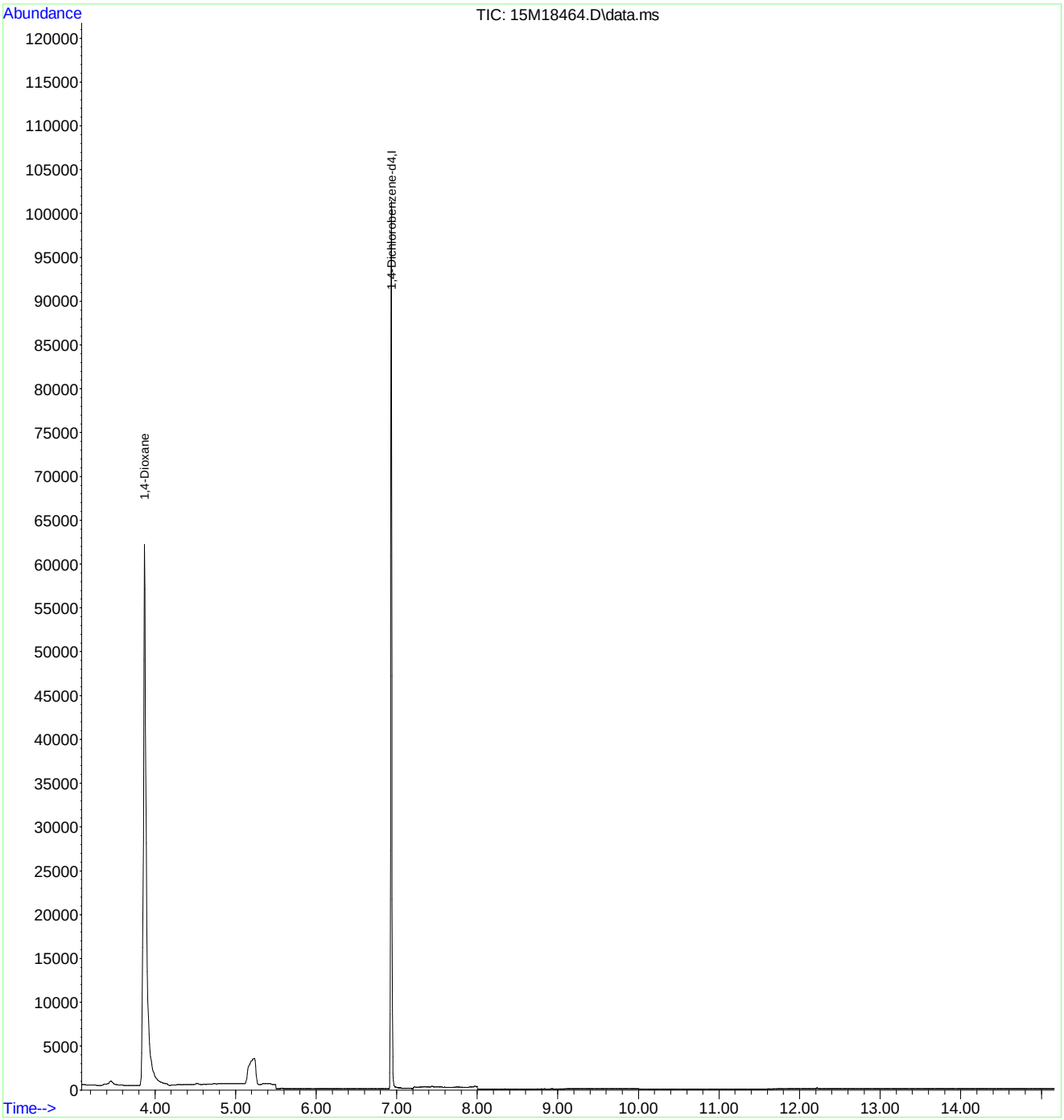

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2		1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3	S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4	S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5	S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6	S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.892	152	42974	1.0000 ug/mL	#-0.04
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.749	96	78711	4.4512 ug/L	-0.08
Spiked Amount 5.000			Recovery	= 89.00%	
4) Nitrobenzene-d5	7.393	82	235288	5.1833 ug/L	-0.04
Spiked Amount 5.000			Recovery	= 103.60%	
5) 2-Fluorobiphenyl	8.886	172	551093	4.8097 ug/L	-0.04
Spiked Amount 5.000			Recovery	= 96.20%	
6) p-Terphenyl-d14	12.170	244	561144	5.0809 ug/L	-0.01
Spiked Amount 5.000			Recovery	= 101.60%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.785	58	57358	4.3623 ug/L	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

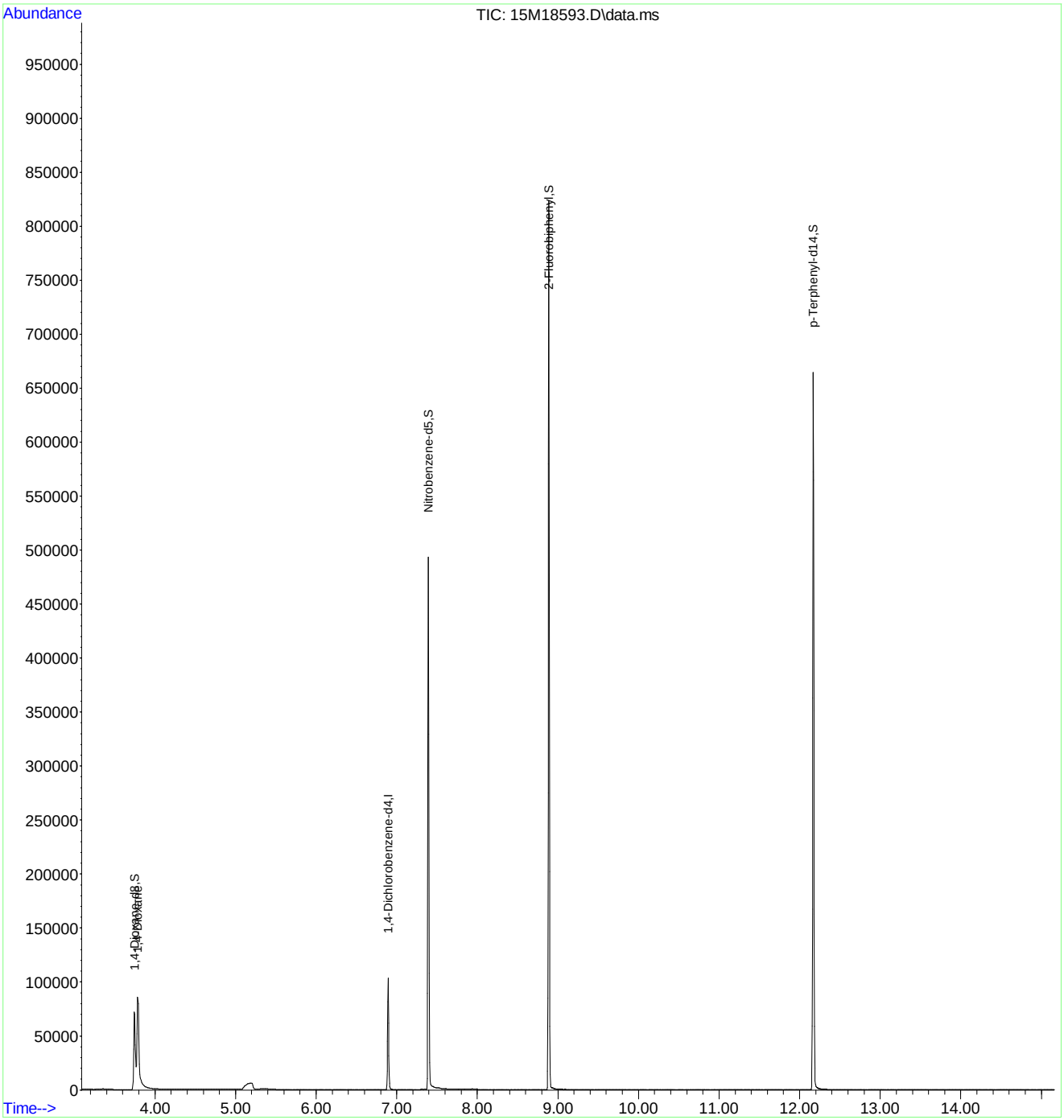

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	-0.04
2	1,4-Dioxane	0.306	0.267	12.7	94	-0.08
3 S	1,4-Dioxane-d8	0.411	0.366	10.9	95	-0.08
4 S	Nitrobenzene-d5	1.056	1.095	-3.7	105	-0.04
5 S	2-Fluorobiphenyl	2.666	2.565	3.8	103	-0.04
6 S	p-Terphenyl-d14	2.570	2.612	-1.6	108	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	-0.04
2	1,4-Dioxane	5.000	4.362	12.8	94	-0.08
3 S	1,4-Dioxane-d8	5.000	4.451	11.0	95	-0.08
4 S	Nitrobenzene-d5	5.000	5.183	-3.7	105	-0.04
5 S	2-Fluorobiphenyl	5.000	4.810	3.8	103	-0.04
6 S	p-Terphenyl-d14	5.000	5.081	-1.6	108	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

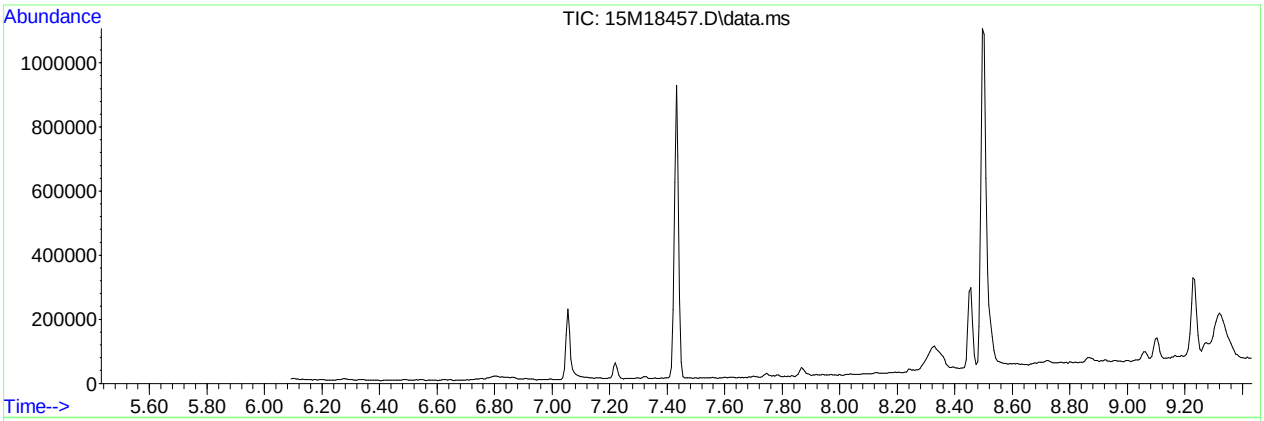

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

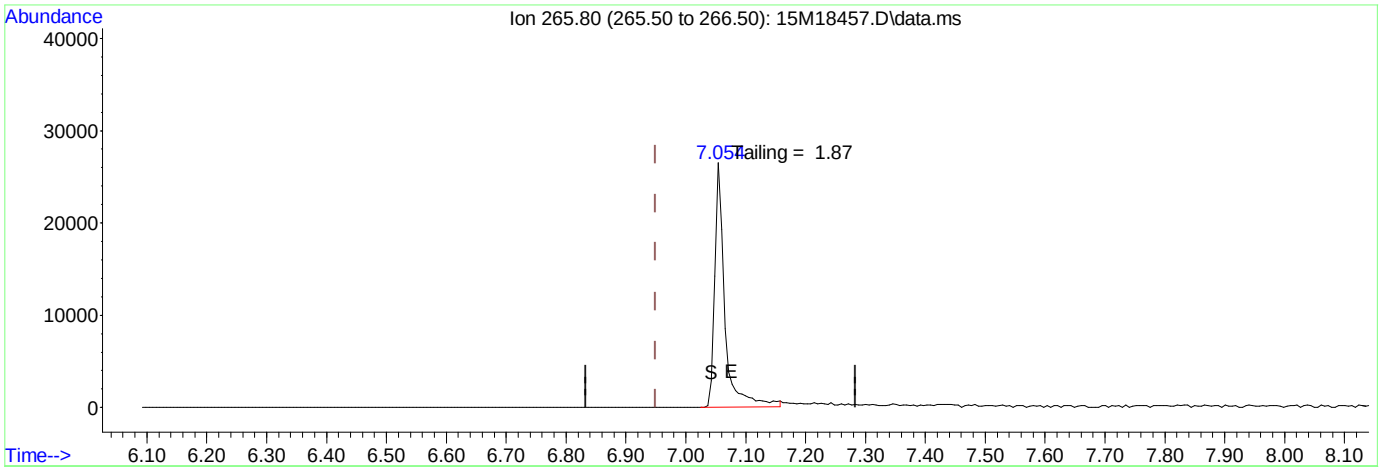

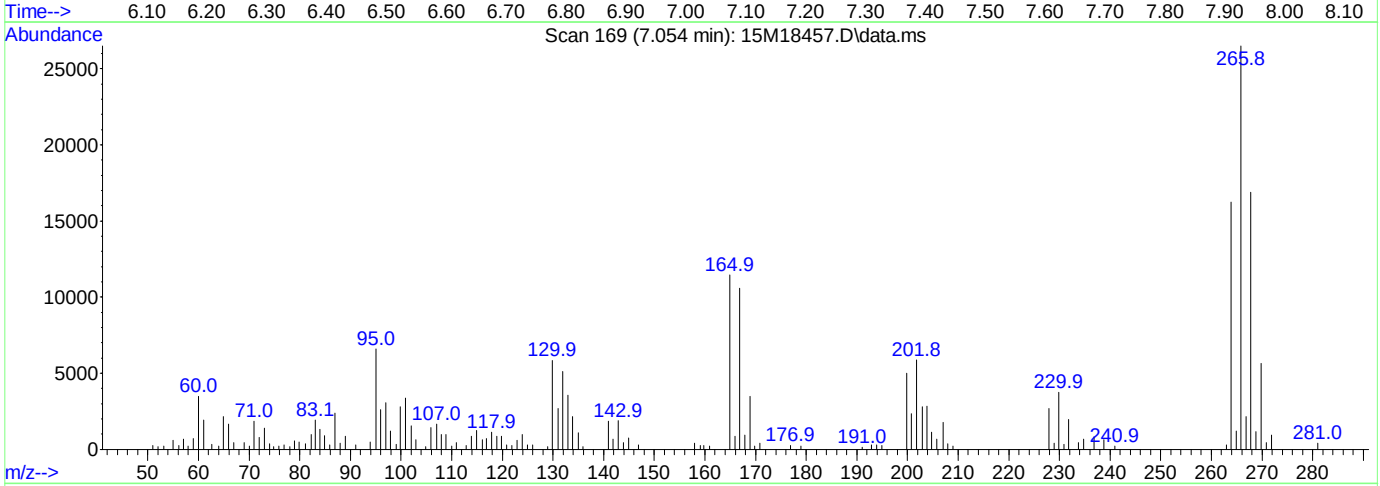

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

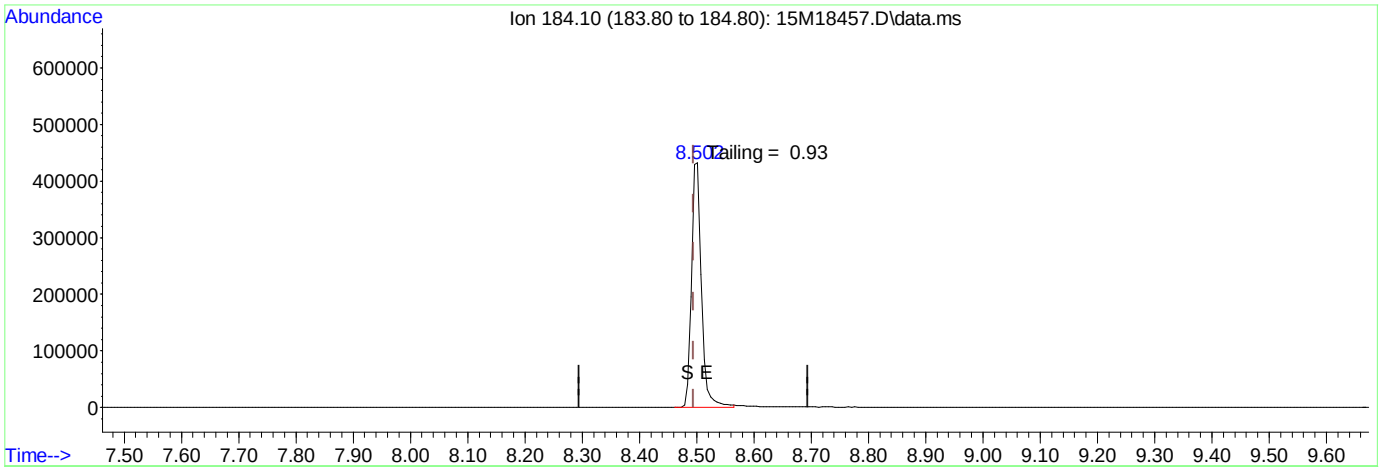

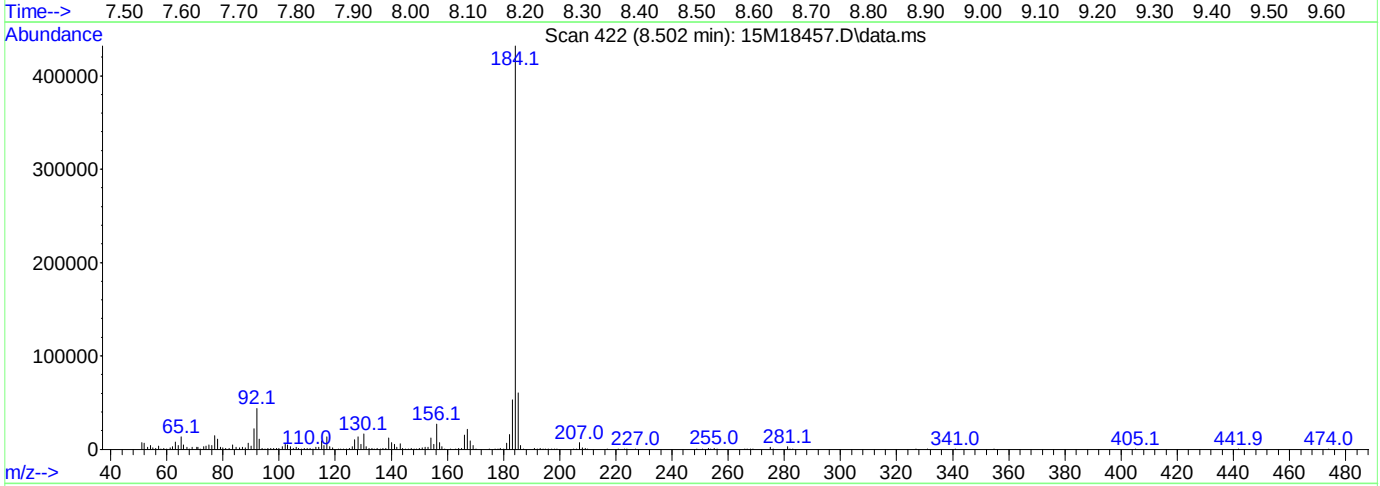

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

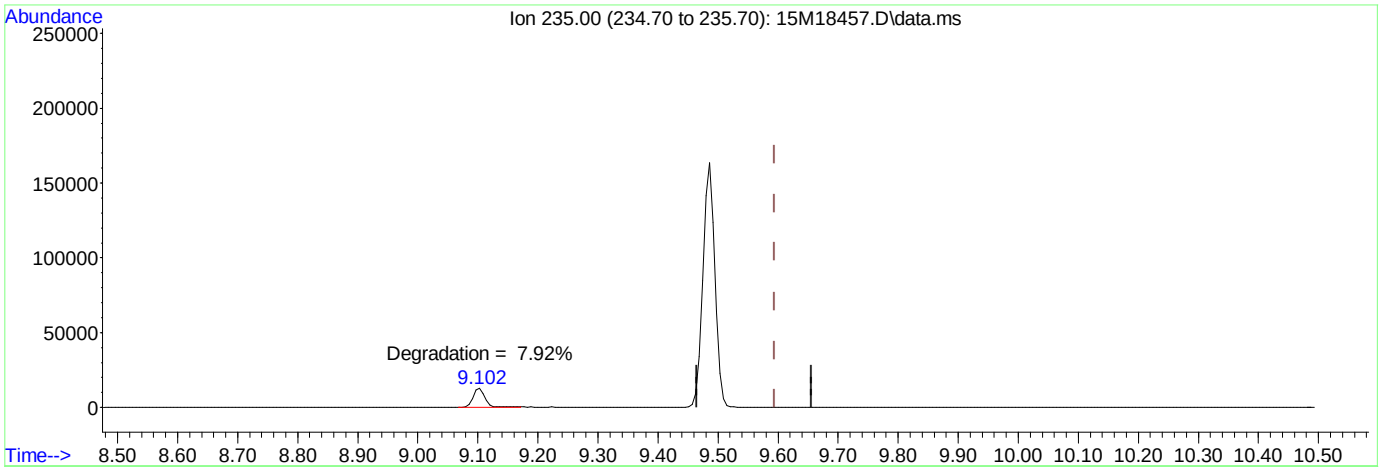

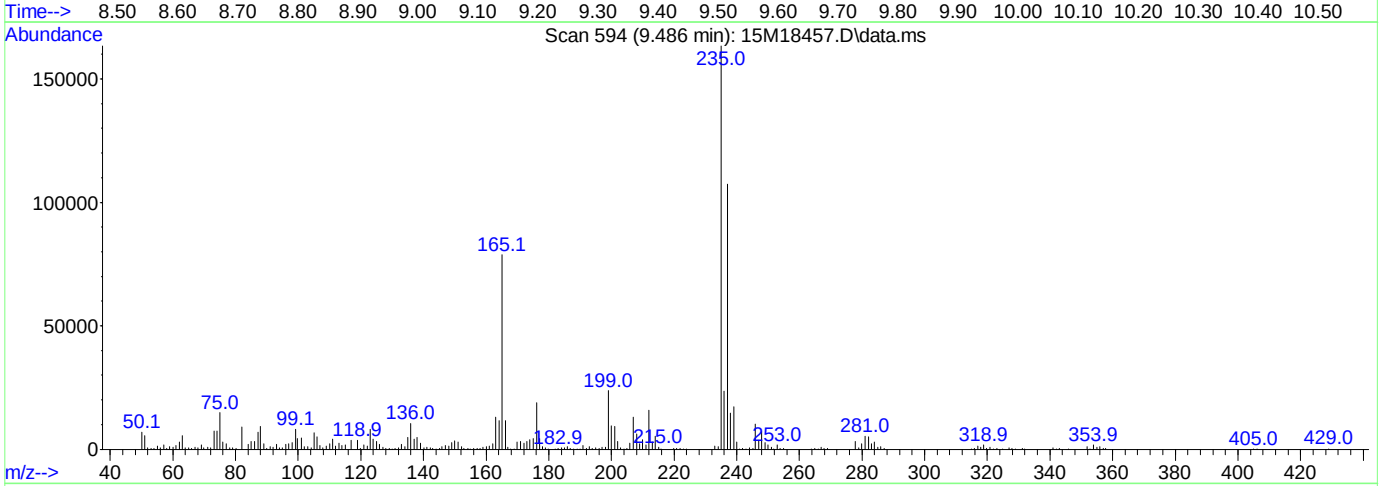

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

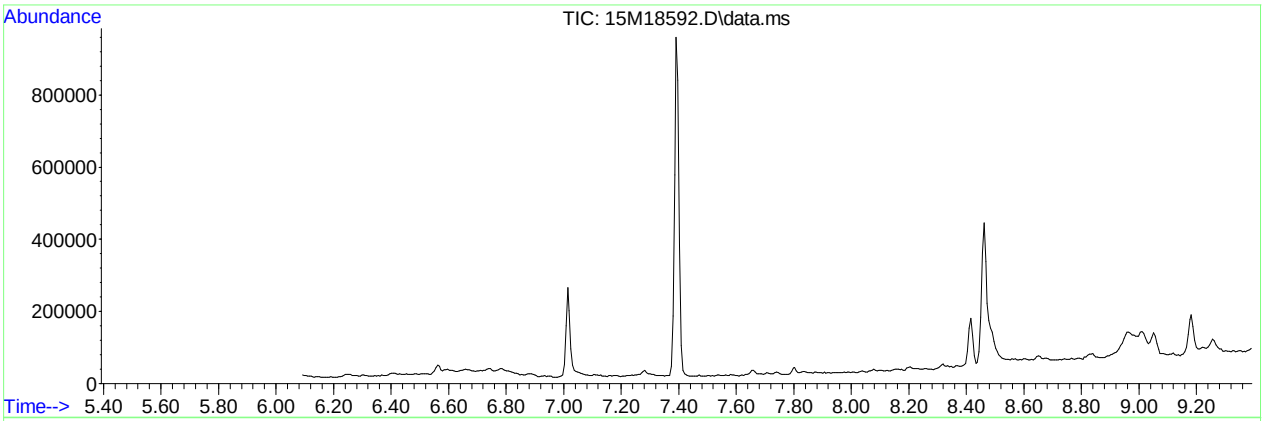

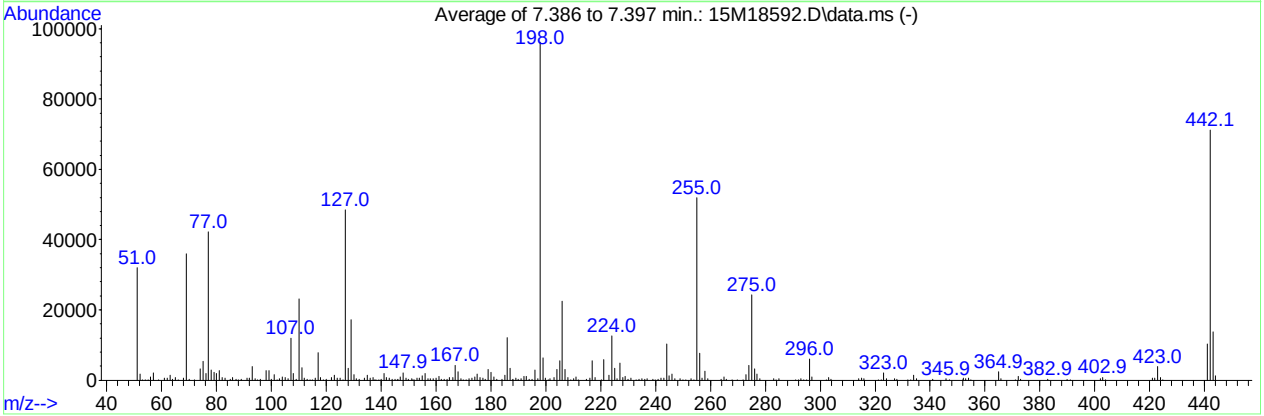

AutoFind: Scans 227, 228, 229; Background Corrected with Scan 221

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	33.2	31989	PASS
68	69	0.00	2	1.6	580	PASS
69	198	0.00	100	37.4	35954	PASS
70	69	0.00	2	0.6	222	PASS
127	198	40	60	50.4	48459	PASS
197	198	0.00	1	0.4	409	PASS
198	198	100	100	100.0	96232	PASS
199	198	5	9	6.6	6399	PASS
275	198	10	30	25.2	24236	PASS
365	198	1	100	2.5	2410	PASS
441	443	0.01	100	75.7	10371	PASS
442	198	40	100	73.9	71133	PASS
443	442	17	23	19.3	13708	PASS

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

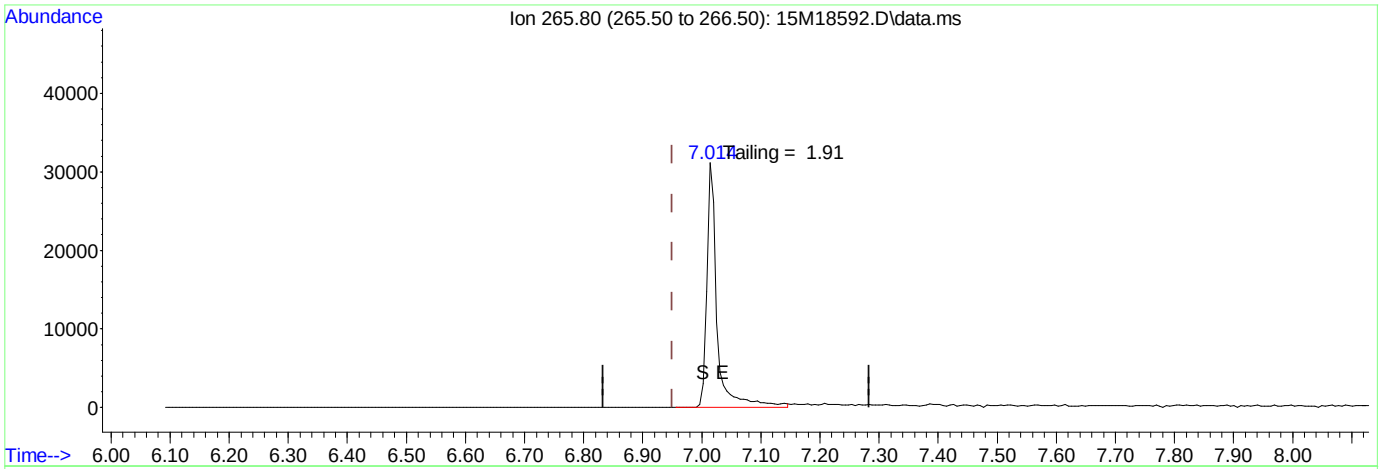

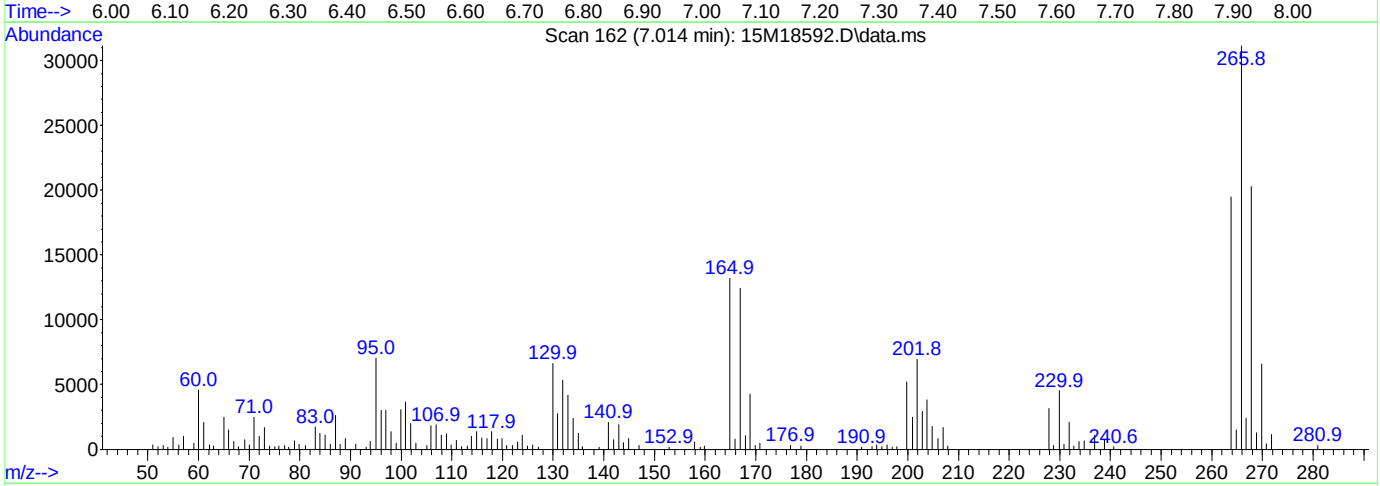

TIC: 15M18592.D\data.ms

(1) Pentachlorophenol

7.014min (+ 0.065) 0.00 ug/ml

response 37276

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

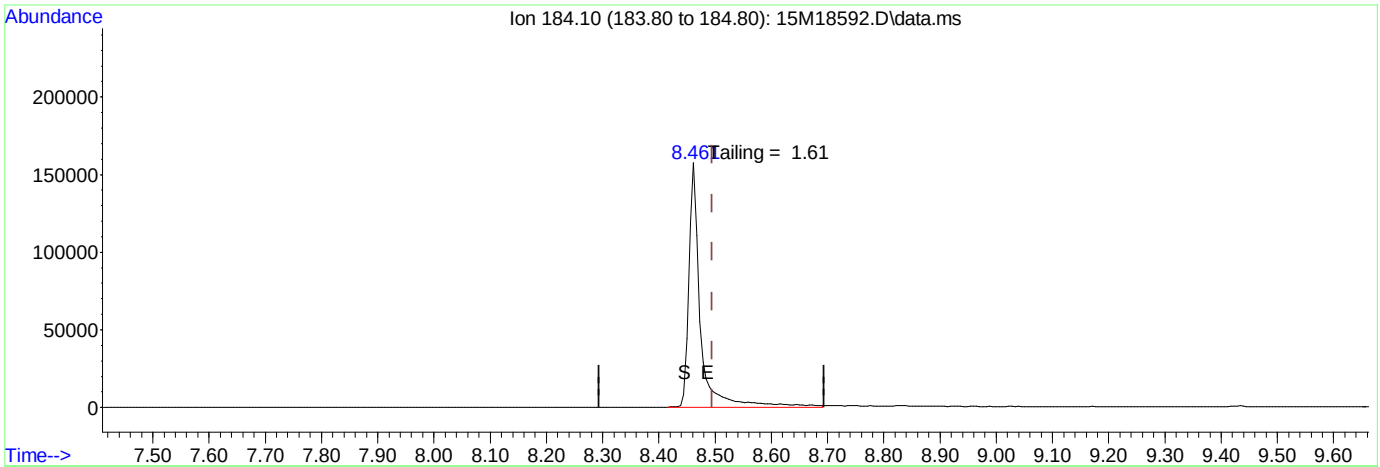

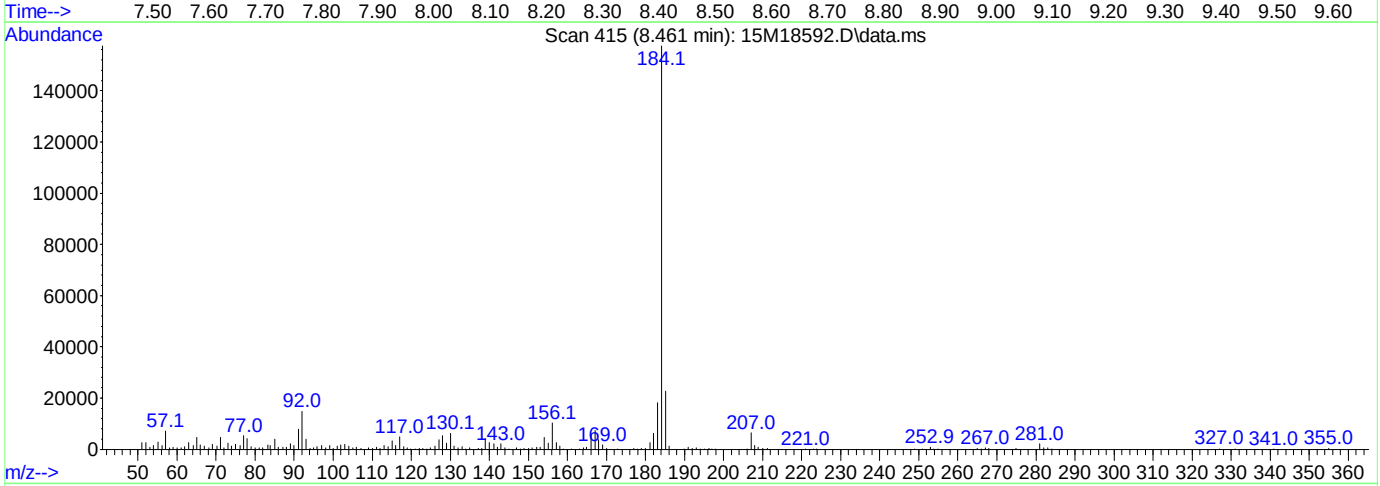

TIC: 15M18592.D\data.ms

(2) Benzidine

8.461min (-0.033) 0.00 ug/ml

response 225697

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

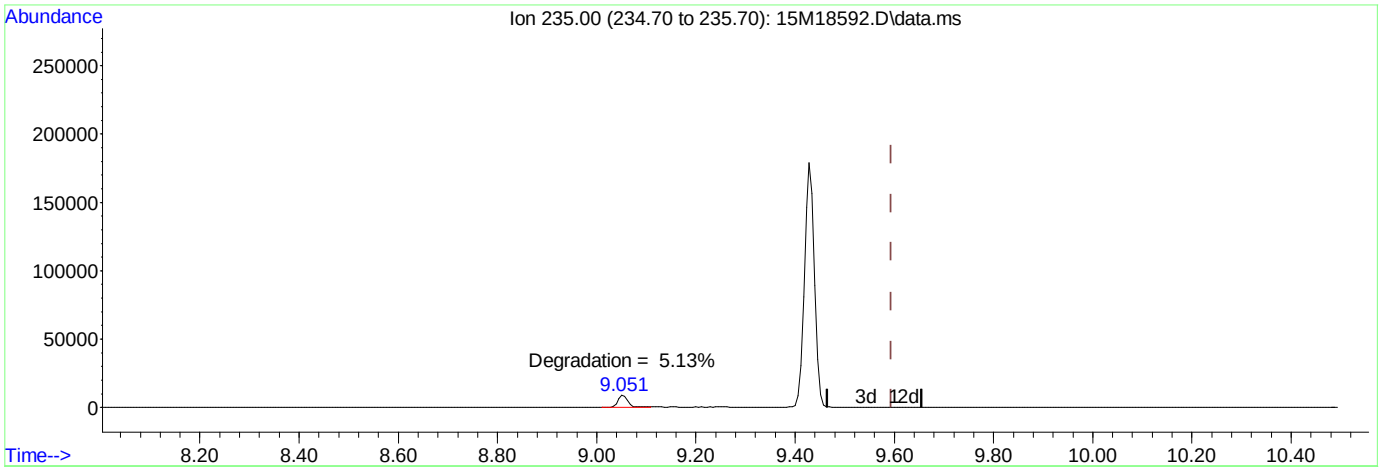

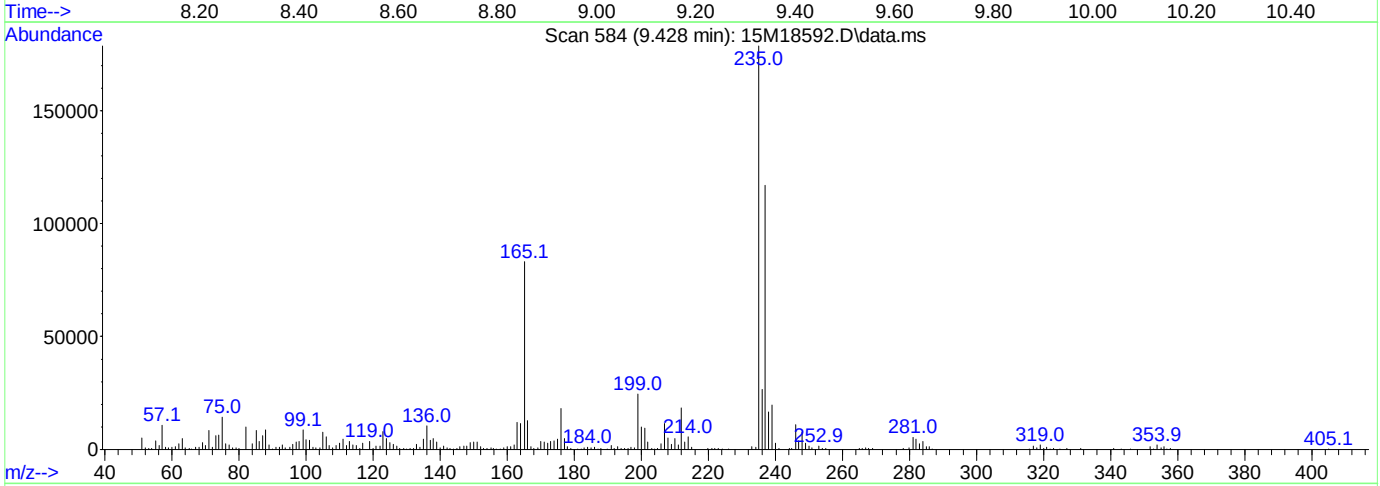

TIC: 15M18592.D\data.ms

(3) DDT

9.428min (-0.166) 0.00 ug/ml mint

response 273417

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18597.D
Acq On : 27 Jun 2016 14:22
Operator : MES
Sample : WG573812-01 BLANK 6/22
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 27 17:44:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	38478	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.749	96	23026	1.4543	ug/L	-0.08
Spiked Amount 5.000			Recovery = 29.00%			
4) Nitrobenzene-d5	7.393	82	809059	19.9059	ug/L	-0.04
Spiked Amount 5.000			Recovery = 398.20%			
5) 2-Fluorobiphenyl	8.889	172	1650481	16.0878	ug/L	-0.03
Spiked Amount 5.000			Recovery = 321.80%			
6) p-Terphenyl-d14	12.184	244	3974204	40.1893	ug/L	0.00
Spiked Amount 5.000			Recovery = 803.80%			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18597.D
Acq On : 27 Jun 2016 14:22
Operator : MES
Sample : WG573812-01 BLANK 6/22
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 27 17:44:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

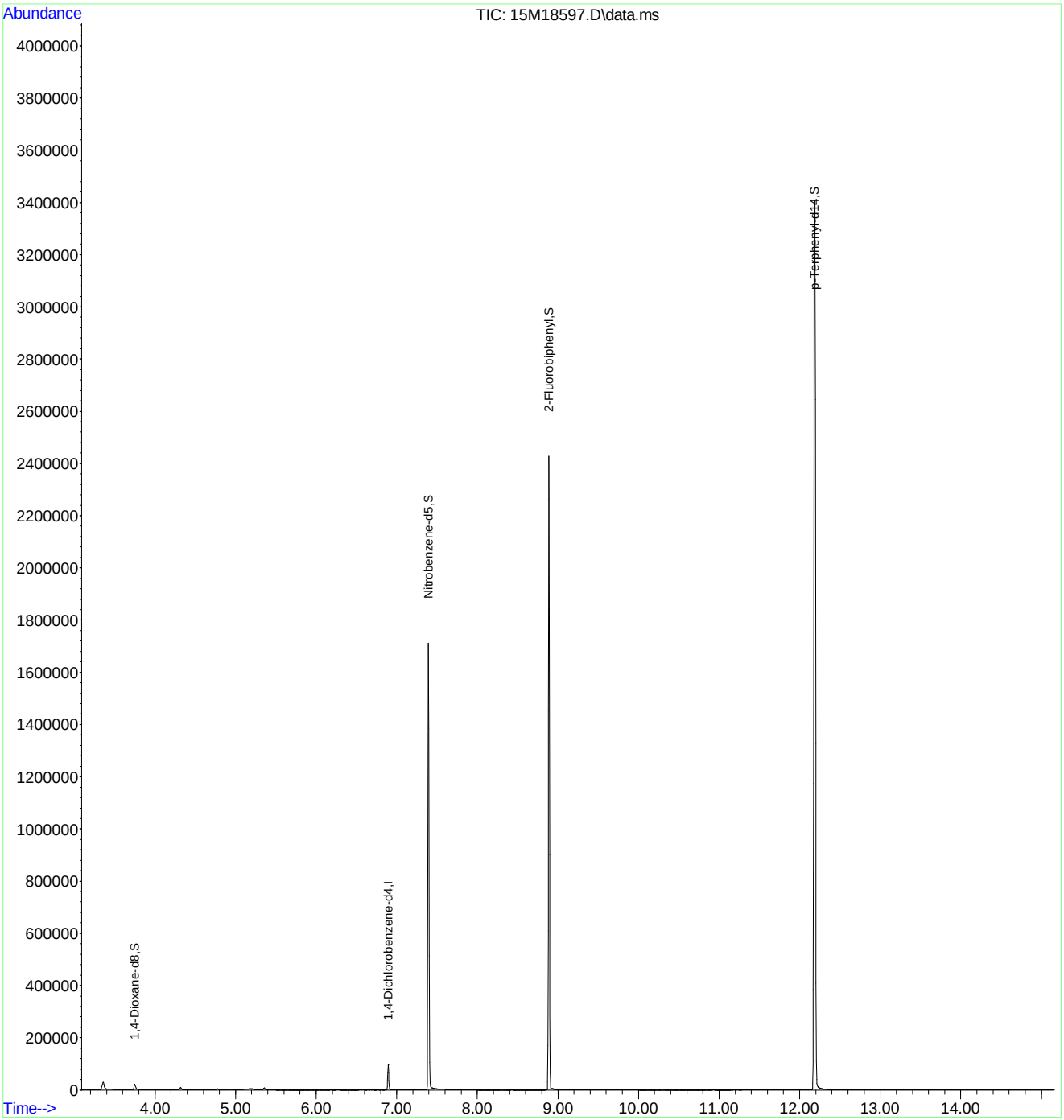

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18598.D
Acq On : 27 Jun 2016 14:45
Operator : MES
Sample : WG573812-02 LCS 6/22
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 27 17:47:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	47423	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.764	96	32479	1.6644	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	33.20%	
4) Nitrobenzene-d5	7.404	82	1302	0.0260	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.890	172	587	0.0046	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.199	244	733	0.0060	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	23052	1.5887	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18598.D
Acq On : 27 Jun 2016 14:45
Operator : MES
Sample : WG573812-02 LCS 6/22
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 27 17:47:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

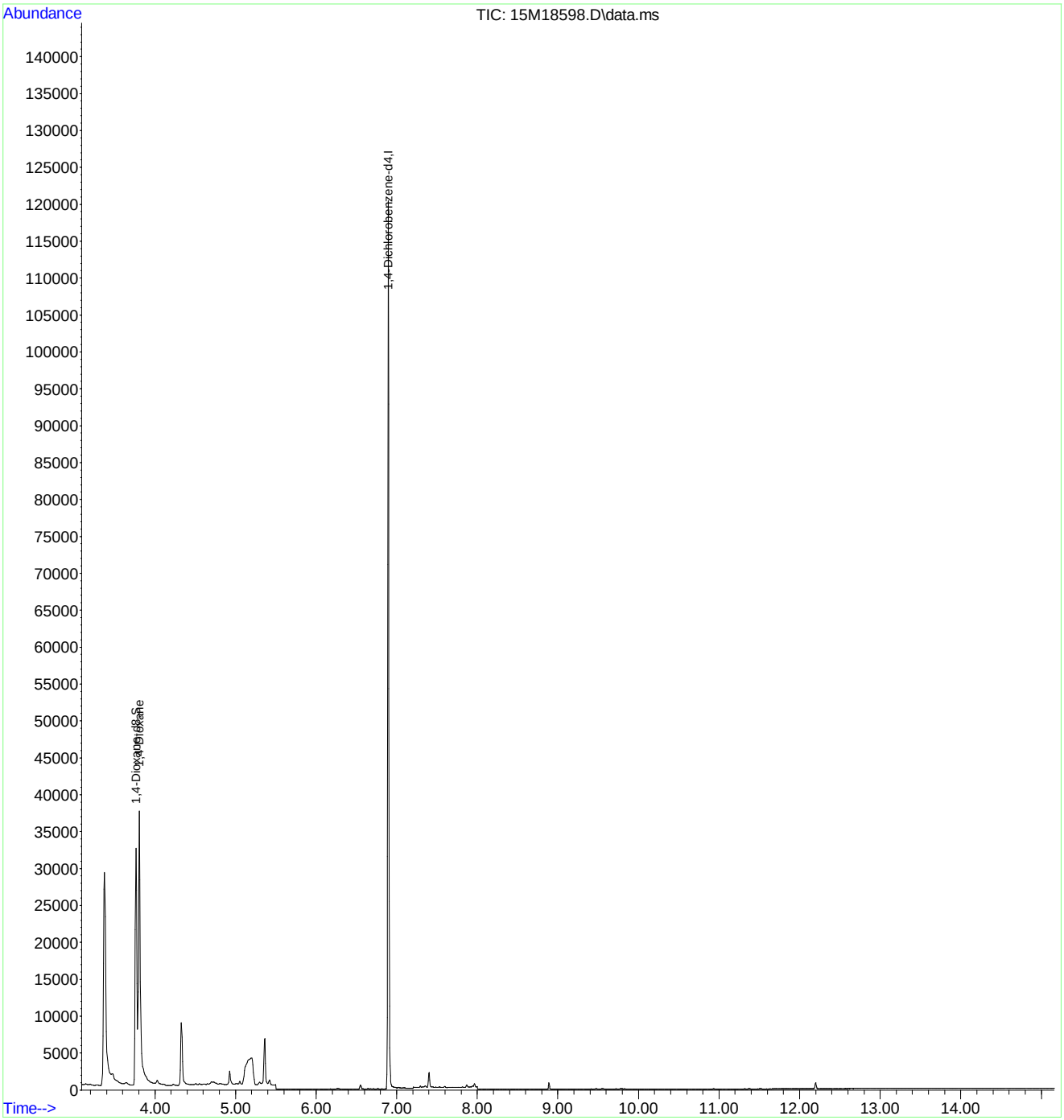

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18599.D
Acq On : 27 Jun 2016 15:07
Operator : MES
Sample : WG573812-03 LCSDUP 6/22
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 27 17:47:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	50712	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.763	96	64077	3.0707	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	61.40%	
4) Nitrobenzene-d5	7.404	82	2658	0.0496	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.889	172	2319	0.0172	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.195	244	557	0.0043	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	46522	2.9983	ug/L	86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18599.D
Acq On : 27 Jun 2016 15:07
Operator : MES
Sample : WG573812-03 LCSDUP 6/22
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 27 17:47:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

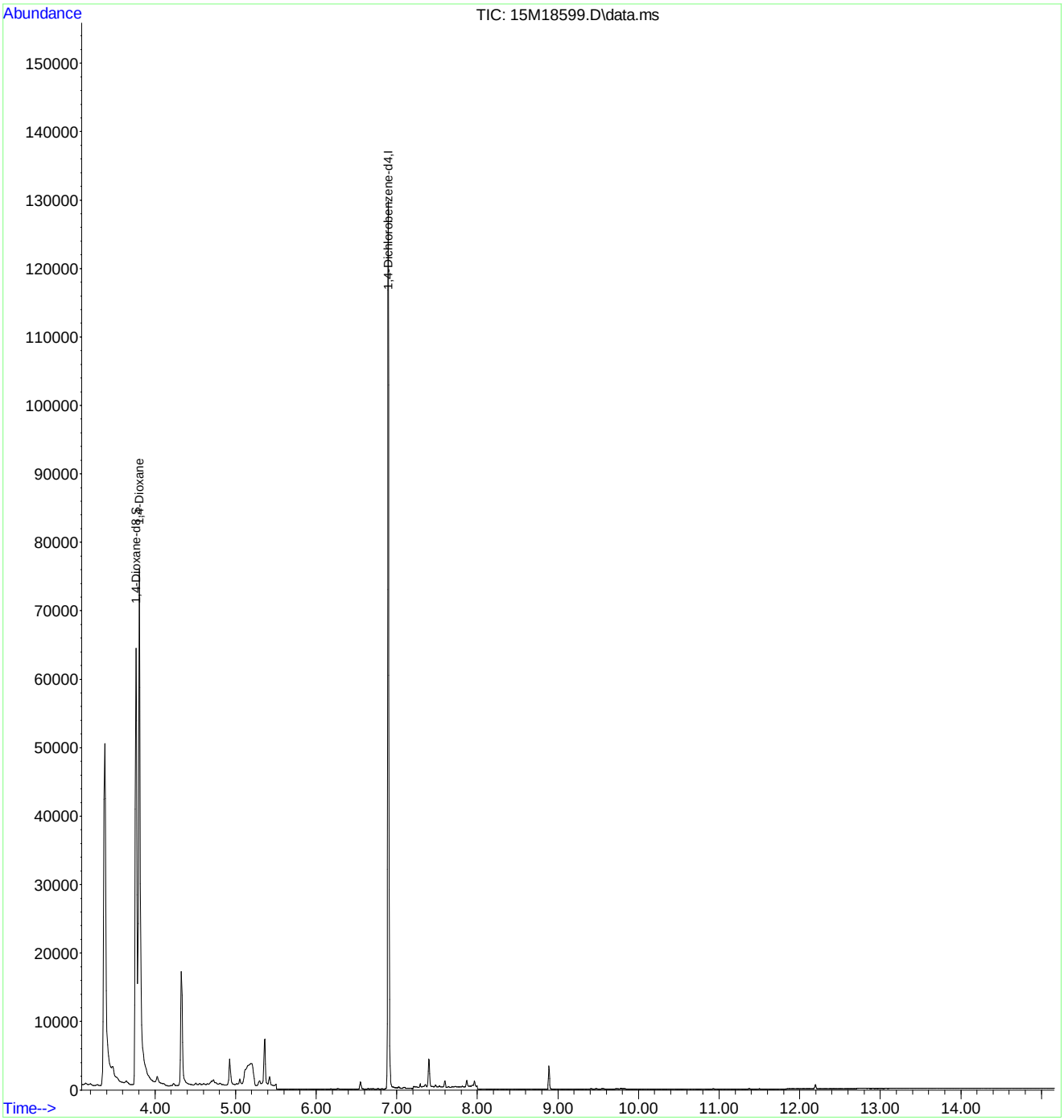

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW20-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 02:28
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	1LM.LM35483
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW19-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 02:47
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	1LM.LM35484
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW19FD-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 03:06
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	1LM.LM35485
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW08-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 20:37
Collect Date:	06/20/2016 10:10	**Dilution:**	1	**File ID:**	1LM.LM35506
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW09-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 03:44
Collect Date:	06/20/2016 11:10	**Dilution:**	1	**File ID:**	1LM.LM35487
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1380 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG574101-01 MCT	9,990.	
-02 Blank	0.33	
-03 LCS	0.48	
-04 LCS2	0.51	
L16060823-01	9,120.	
-03	7,440.	
-04	1,943.	
L16060927-01	750.	
-02	652.	
-03	446.	
-04	162.7	
L16061026-01	6,910.	
-03	238.	
-04	965.	
-05	1,526.	
-07	220.	
L16061142-01	165.3	
-02	81.1	
-04	83.1	
-06	728.	
-07	74.2	
L16061144-01	118.6	
-02	118.7	
-03	110.1	

Analyst: John Richards

Date/Time: 06/27/16 / 20:00

DCN#119317

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples initially analyzed at dilutions were done so based on their historical results. Samples tagged with (NR) did not conform to their historical results. These samples were reanalyzed on the end of the sequence as neat or at dilutions based on the results of their initial analysis.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35462	WG574102-01 CCB	1	1		06/24/16 19:50
2	1LM.LM35463	WG574102-02 CCV (1.0ug/L)	1	1	STD75510	06/24/16 20:09
3	1LM.LM35464	WG574101-05 MRL (0.2ug/L)	1	1	STD75510	06/24/16 20:28
4	1LM.LM35465	WG574101-01 MCT (0.2ug/L)	1	1	STD75512	06/24/16 20:47
5	1LM.LM35466	WG574101-02 BLANK	1	1		06/24/16 21:06
6	1LM.LM35467	WG574101-03 LCS (0.2ug/L)	1	1	STD75512	06/24/16 21:25
7	1LM.LM35468	L16060823-01	1	1		06/24/16 21:44
8	1LM.LM35469	L16060823-03	1	1		06/24/16 22:03
9	1LM.LM35470	L16060823-04 (10x)	1	10		06/24/16 22:22
10	1LM.LM35471	L16060927-01 (100x) (NR)	1	100		06/24/16 22:41
11	1LM.LM35472	L16060927-02 (100x) (NR)	1	100		06/24/16 23:00
12	1LM.LM35473	L16060927-03	1	1		06/24/16 23:18
13	1LM.LM35474	L16060927-04	1	1		06/24/16 23:37
14	1LM.LM35475	WG574102-03 CCV (1.0ug/L)	1	1	STD75510	06/24/16 23:56
15	1LM.LM35476	WG574101-06 MRL (0.2ug/L)	1	1	STD75510	06/25/16 00:15
16	1LM.LM35477	WG574102-04 CCB	1	1		06/25/16 00:34
17	1LM.LM35478	L16061026-01 (100x) (NR)	1	100		06/25/16 00:53
18	1LM.LM35479	L16061026-03 (100x)	1	100		06/25/16 01:12
19	1LM.LM35480	L16061026-04 (10,000x)	1	10000		06/25/16 01:31
20	1LM.LM35481	L16061026-05 (100,000x) (NR)	1	100000		06/25/16 01:50
21	1LM.LM35482	L16061026-07 (10x) (NR)	1	10		06/25/16 02:09
22	1LM.LM35483	L16061142-01	1	1		06/25/16 02:28
23	1LM.LM35484	L16061142-02	1	1		06/25/16 02:47
24	1LM.LM35485	L16061142-04	1	1		06/25/16 03:06
25	1LM.LM35486	L16061142-06 (10x) (NR)	1	10		06/25/16 03:25
26	1LM.LM35487	L16061142-07	1	1		06/25/16 03:44
27	1LM.LM35488	WG574102-05 CCV (1.0ug/L)	1	1	STD75510	06/25/16 04:03
28	1LM.LM35489	WG574101-07 MRL (0.2ug/L)	1	1	STD75510	06/25/16 04:22
29	1LM.LM35490	WG574102-06 CCB	1	1		06/25/16 04:40
30	1LM.LM35491	WG574101-04 LCS2 (0.2ug/L)	1	1	STD75512	06/25/16 04:59
31	1LM.LM35492	L16061144-01	1	1		06/25/16 05:18
32	1LM.LM35493	L16061144-02	1	1		06/25/16 05:37
33	1LM.LM35494	L16061144-03 (10x) (NR)	1	10		06/25/16 05:56

Page: 1 Approved: 28-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35495	WG574102-07 CCV (1.0ug/L)	1	1	STD75510	06/25/16 06:15
35	1LM.LM35496	WG574101-08 MRL (0.2ug/L)	1	1	STD75510	06/25/16 06:34
36	1LM.LM35497	WG574102-08 CCB	1	1		06/25/16 06:53
37	1LM.LM35498	WG574102-09 CCV (1.0ug/L)	1	1	STD75510	06/25/16 18:06
38	1LM.LM35499	WG574101-09 MRL (0.2ug/L)	1	1	STD75510	06/25/16 18:25
39	1LM.LM35500	WG574102-10 CCB	1	1		06/25/16 18:44
40	1LM.LM35501	L16060927-01 (RR Neat)	1	1		06/25/16 19:02
41	1LM.LM35502	L16060927-02 (RR 1000x)	1	1000		06/25/16 19:21
42	1LM.LM35503	L16061026-01 (RR Neat)	1	1		06/25/16 19:40
43	1LM.LM35504	L16061026-05 (RR 10,000x)	1	10000		06/25/16 19:59
44	1LM.LM35505	L16061026-07 (RR 50x)	1	50		06/25/16 20:18
45	1LM.LM35506	L16061142-06 (RR Neat)	1	1		06/25/16 20:37
46	1LM.LM35507	L16061144-03 (RR Neat)	1	1		06/25/16 20:56
47	1LM.LM35508	WG574102-11 CCV (1.0ug/L)	1	1	STD75510	06/25/16 21:15
48	1LM.LM35509	WG574101-10 MRL (0.2ug/L)	1	1	STD75510	06/25/16 21:34
49	1LM.LM35510	WG574102-12 CCB	1	1		06/25/16 21:53

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 28-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75960
Analytical Workgroups: L16060823, 0927, 1026, 1142, 1144

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
27-JUN-2016

Secondary Reviewer:
28-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 14:00:55

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG574101

Login Number: L16061142

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW20-062016	01	06/20/16					06/24/2016	4.5	28		06/25/16	.3	28	
18WW19-062016	02	06/20/16					06/24/2016	4.4	28		06/25/16	.3	28	
18WW19FD-062016	04	06/20/16					06/24/2016	4.4	28		06/25/16	.3	28	
18WW08-062016	06	06/20/16					06/24/2016	4.4	28		06/25/16	1.1	28	
18WW09-062016	07	06/20/16					06/24/2016	4.3	28		06/25/16	.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4827786
Report generated 06/28/2016 14:17

METHOD BLANK SUMMARY

Login Number: L16061142
Blank File ID: 1LM.LM35466
Prep Date: 06/24/16 19:00
Analyzed Date: 06/24/16 21:06
Analyst: JWR

Work Group: WG574101
Blank Sample ID: WG574101-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG574101-05	1LM.LM35464	06/24/16 20:28	01
MCT	WG574101-01	1LM.LM35465	06/24/16 20:47	01
LCS	WG574101-03	1LM.LM35467	06/24/16 21:25	01
QCMRL	WG574101-06	1LM.LM35476	06/25/16 00:15	01
18WW20-062016	L16061142-01	1LM.LM35483	06/25/16 02:28	01
18WW19-062016	L16061142-02	1LM.LM35484	06/25/16 02:47	01
18WW19FD-062016	L16061142-04	1LM.LM35485	06/25/16 03:06	01
18WW09-062016	L16061142-07	1LM.LM35487	06/25/16 03:44	01
QCMRL	WG574101-07	1LM.LM35489	06/25/16 04:22	01
LCS2	WG574101-04	1LM.LM35491	06/25/16 04:59	01
QCMRL	WG574101-08	1LM.LM35496	06/25/16 06:34	01
QCMRL	WG574101-09	1LM.LM35499	06/25/16 18:25	01
18WW08-062016	L16061142-06	1LM.LM35506	06/25/16 20:37	01
QCMRL	WG574101-10	1LM.LM35509	06/25/16 21:34	01

Report Name: BLANK_SUMMARY
PDF File ID: 4827787
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 06/24/16 19:00 Sample ID: WG574101-02
Instrument ID: LCMS1 Run Date: 06/24/16 21:06 Prep Method: 6850
File ID: 1LM.LM35466 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4827788
28-JUN-2016 14:17

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG574101 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG574101-03 LCS File ID: 1LM.LM35467 Run Date: 06/24/2016 21:25
Sample ID: WG574101-04 LCS2 File ID: 1LM.LM35491 Run Date: 06/25/2016 04:59

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.208	104	0.200	0.213	107	2.38	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4827789
Report generated: 06/28/2016 14:17

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061142
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4828752
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061142

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4828752
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061142

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4828752
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061142

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4828752
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061142 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4828753
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/24/2016
Sample ID: WG574102-01
Instrument ID: LCMS1
Run Time: 19:50
Method: 6850
File ID: 1LM.LM35462
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827792
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/25/2016
Sample ID: WG574102-04
Instrument ID: LCMS1
Run Time: 00:34
Method: 6850
File ID: 1LM.LM35477
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827792
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/25/2016
Sample ID: WG574102-06
Instrument ID: LCMS1
Run Time: 04:40
Method: 6850
File ID: 1LM.LM35490
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827792
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/25/2016
Sample ID: WG574102-08
Instrument ID: LCMS1
Run Time: 06:53
Method: 6850
File ID: 1LM.LM35497
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827792
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/25/2016
Sample ID: WG574102-10
Instrument ID: LCMS1
Run Time: 18:44
Method: 6850
File ID: 1LM.LM35500
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827792
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/25/2016
Sample ID: WG574102-12
Instrument ID: LCMS1
Run Time: 21:53
Method: 6850
File ID: 1LM.LM35510
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827792
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/24/2016 Sample ID: WG574102-02
Instrument ID: LCMS1 Run Time: 20:09 Method: 6850
File ID: 1LM.LM35463 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827791
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/24/2016 Sample ID: WG574102-03
Instrument ID: LCMS1 Run Time: 23:56 Method: 6850
File ID: 1LM.LM35475 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827791
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/25/2016
Sample ID: WG574102-05
Instrument ID: LCMS1
Run Time: 04:03
Method: 6850
File ID: 1LM.LM35488
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827791
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/25/2016
Sample ID: WG574102-07
Instrument ID: LCMS1
Run Time: 06:15
Method: 6850
File ID: 1LM.LM35495
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827791
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/25/2016 Sample ID: WG574102-09
Instrument ID: LCMS1 Run Time: 18:06 Method: 6850
File ID: 1LM.LM35498 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.76	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827791
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/25/2016 Sample ID: WG574102-11
Instrument ID: LCMS1 Run Time: 21:15 Method: 6850
File ID: 1LM.LM35508 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.73	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827791
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061142 Run Date: 06/24/2016 Sample ID: WG574101-05
Instrument ID: LCMS1 Run Time: 20:28 Prep Method: 6850
File ID: 1LM.LM35464 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827790
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061142 Run Date: 06/25/2016 Sample ID: WG574101-06
Instrument ID: LCMS1 Run Time: 00:15 Prep Method: 6850
File ID: 1LM.LM35476 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.198	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827790
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061142 Run Date: 06/25/2016 Sample ID: WG574101-07
Instrument ID: LCMS1 Run Time: 04:22 Prep Method: 6850
File ID: 1LM.LM35489 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.211	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827790
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061142 Run Date: 06/25/2016 Sample ID: WG574101-08
Instrument ID: LCMS1 Run Time: 06:34 Prep Method: 6850
File ID: 1LM.LM35496 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827790
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061142 Run Date: 06/25/2016 Sample ID: WG574101-09
Instrument ID: LCMS1 Run Time: 18:25 Prep Method: 6850
File ID: 1LM.LM35499 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827790
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061142 Run Date: 06/25/2016 Sample ID: WG574101-10
Instrument ID: LCMS1 Run Time: 21:34 Prep Method: 6850
File ID: 1LM.LM35509 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827790
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061142
Instrument ID: LCMS1
Workgroup (AAB#): WG574101

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061142-01	1.00	01	491000
L16061142-02	1.00	01	489000
L16061142-04	1.00	01	504000
L16061142-06	1.00	01	496000
L16061142-07	1.00	01	510000
WG574101-02	1.00	01	443000
WG574101-03	1.00	01	444000
WG574101-04	1.00	01	526000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4827793
Report generated 06/28/2016 14:17

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	L16061142-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35483
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 02:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2950	1360	2.17	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	L16061142-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35484
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 02:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1600	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	L16061142-04
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35485
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 03:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5840	2820	2.07	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	L16061142-06
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35506
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 20:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7600	2750	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	L16061142-07
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35487
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 03:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2000	538	3.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35465
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28100	10000	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35466
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35467
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	11800	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-04
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35491
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38300	14000	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-05
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35464
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	12100	2.61	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-06
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35476
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	13100	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-07
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35489
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38900	13400	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-08
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35496
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38000	14100	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-09
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35499
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32900	11500	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-10
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35509
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37900	14000	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:50	**File ID:**	1LM.LM35462
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 19:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 20:09	**File ID:**	1LM.LM35463
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	152000	55500	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 23:56	**File ID:**	1LM.LM35475
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 23:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	170000	57500	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-04
Instrument:	LCMS1	**Prep Date:**	06/25/2016 00:34	**File ID:**	1LM.LM35477
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	824	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-05
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:03	**File ID:**	1LM.LM35488
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	60200	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-06
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:40	**File ID:**	1LM.LM35490
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-07
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:15	**File ID:**	1LM.LM35495
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	189000	63400	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-08
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:53	**File ID:**	1LM.LM35497
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	518	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-09
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:06	**File ID:**	1LM.LM35498
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	161000	56700	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-10
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:44	**File ID:**	1LM.LM35500
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-11
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:15	**File ID:**	1LM.LM35508
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	59300	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-12
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:53	**File ID:**	1LM.LM35510
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:46 PM

Data File	LM35483.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 2:28:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061142-01	**Injection Vial**	20.00
Data File	LM35483.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 2:28:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061142-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.950e+03	9.53	N/A	0.014
Perchlorate conf	1.360e+03	9.52	N/A	0.0045

O18LP (Internal Standard)

RT (Exp. RT): 9.52(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

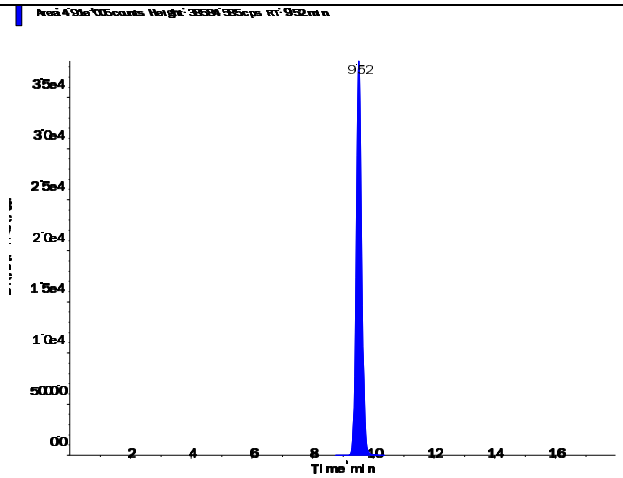

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:46 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	0.014 ng/ml
Area Ratio:	0.006
Sample Type:	(Unknown)

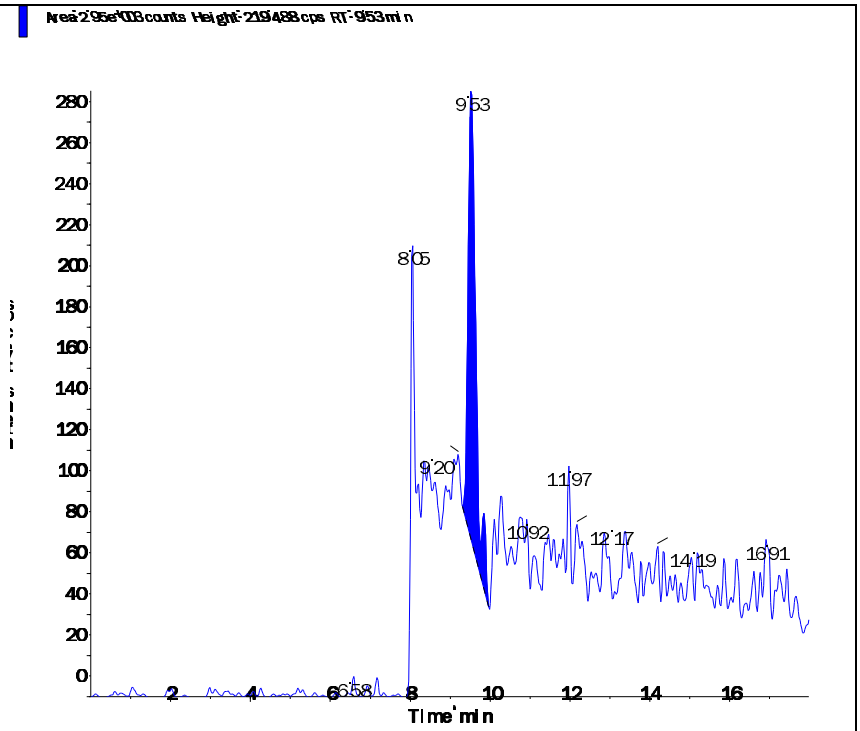

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.52 (9.84) min
Calculated conc:	0.0045 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

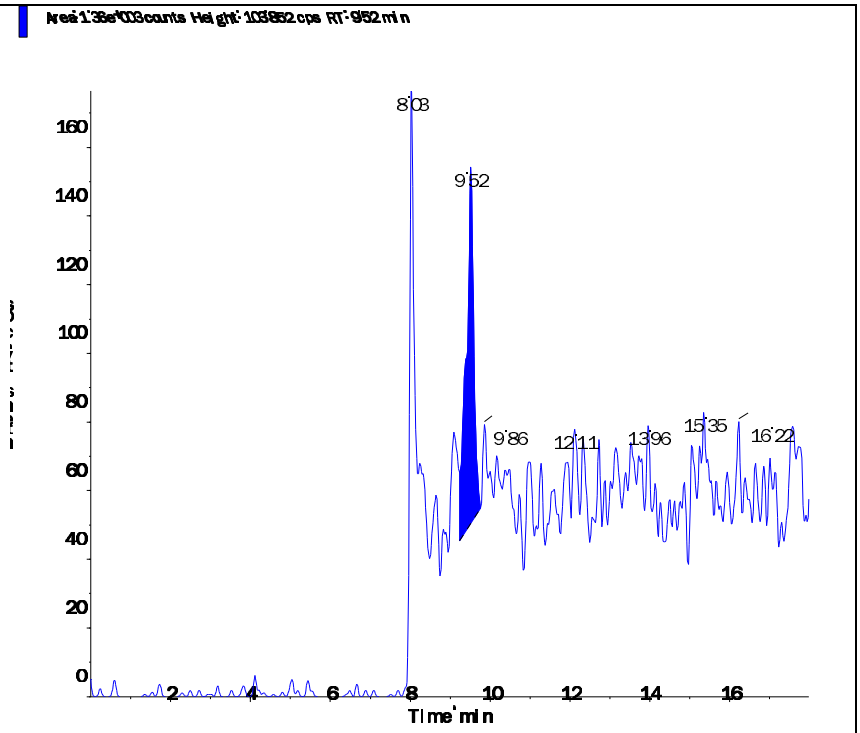

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:46 PM

Data File	LM35484.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 2:47:20 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061142-02	**Injection Vial**	21.00
Data File	LM35484.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 2:47:20 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061142-02	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.890e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+03	9.59	N/A	0.0059
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

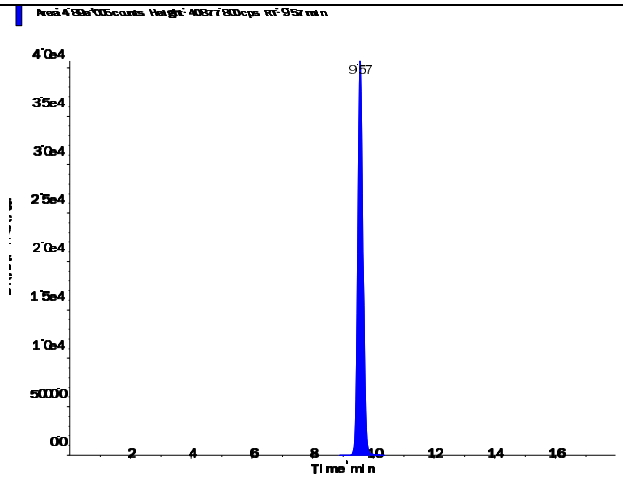

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	0.0059 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

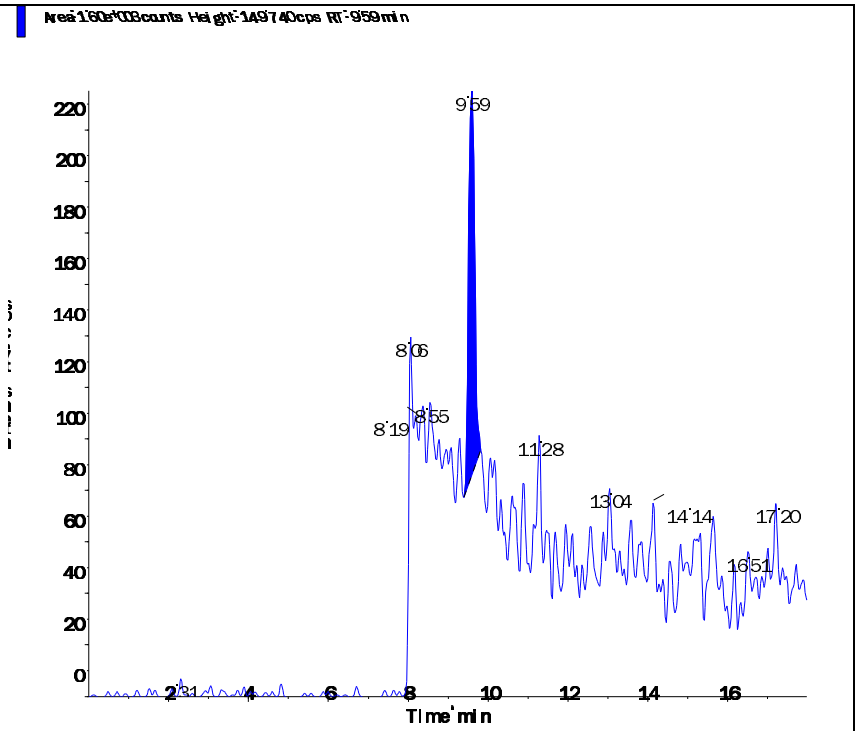

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

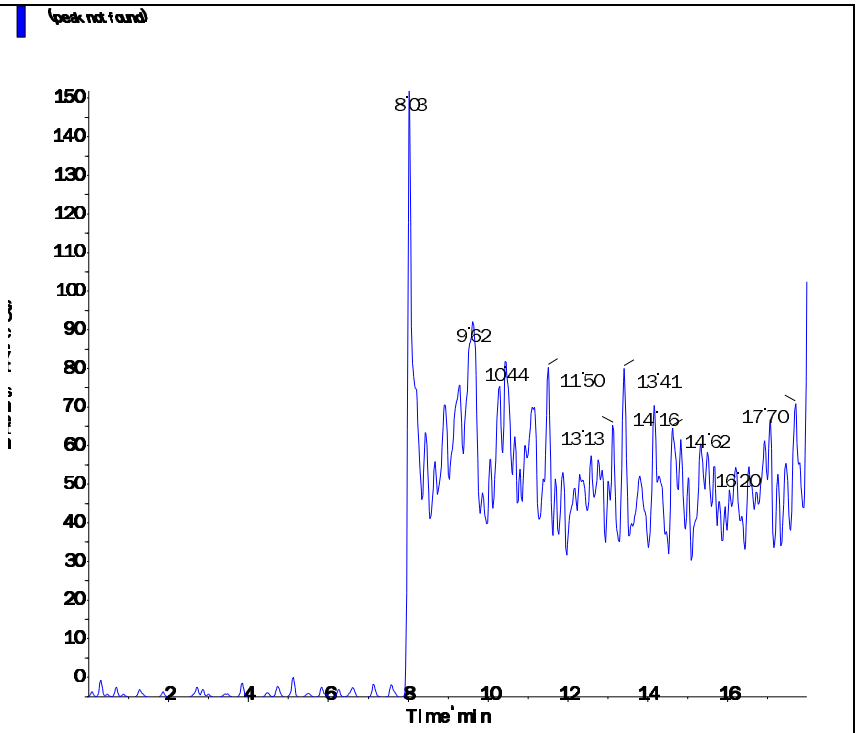

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:46 PM

Data File	LM35485.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 3:06:16 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061142-04	**Injection Vial**	22.00
Data File	LM35485.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 3:06:16 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061142-04	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.840e+03	9.57	N/A	0.0306
Perchlorate conf	2.820e+03	9.55	N/A	0.0296

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

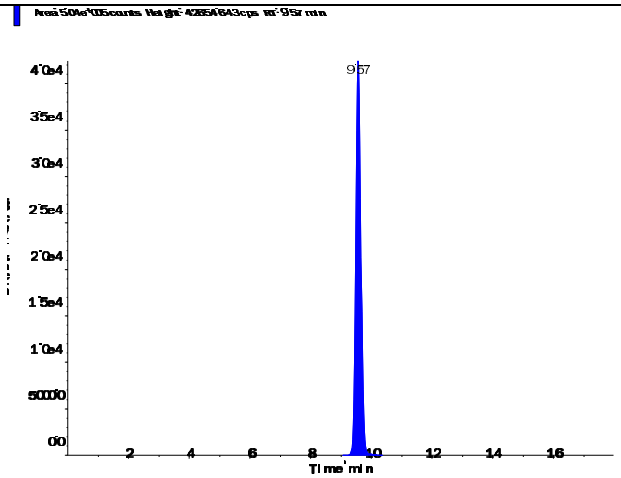

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:46 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.57 (9.84) min Calculated conc: 0.0306 ng/ml Area Ratio: 0.012 Sample Type: (Unknown)	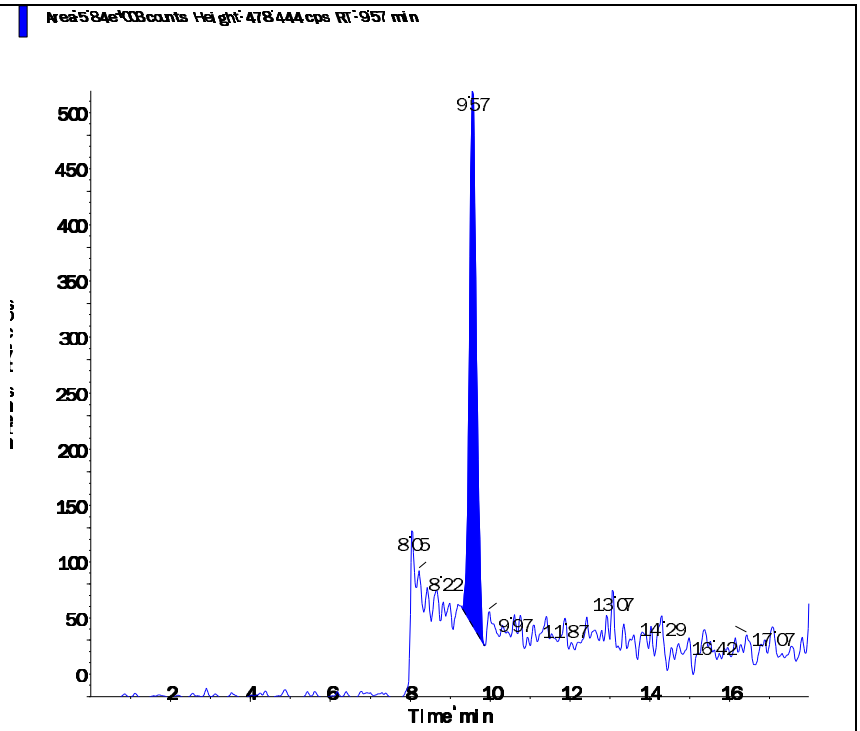
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.55 (9.84) min Calculated conc: 0.0296 ng/ml Area Ratio: 0.006 Sample Type: (Unknown)	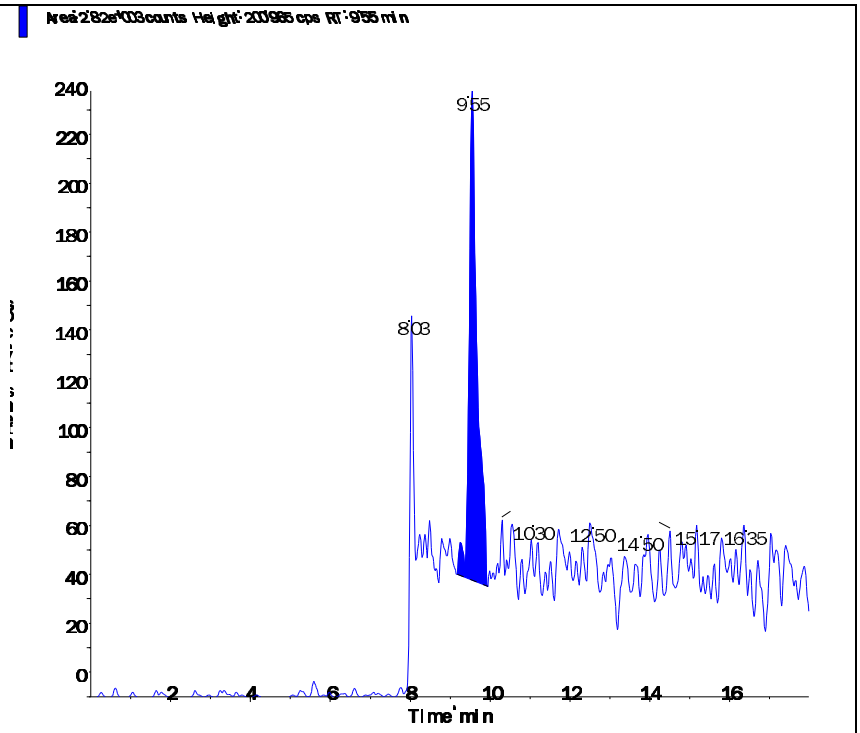

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:54 PM

Data File	LM35506.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 8:37:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061142-06 (RR Neat)	**Injection Vial**	33.00
Data File	LM35506.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 8:37:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061142-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.600e+03	9.46	N/A	0.0418
Perchlorate conf	2.750e+03	9.44	N/A	0.0293

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

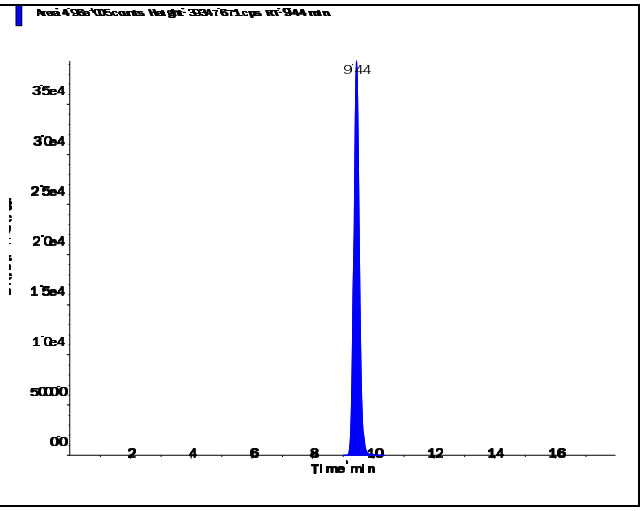

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:54 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.46 (9.84) min
Calculated conc:	0.0418 ng/ml
Area Ratio:	0.015
Sample Type:	(Unknown)

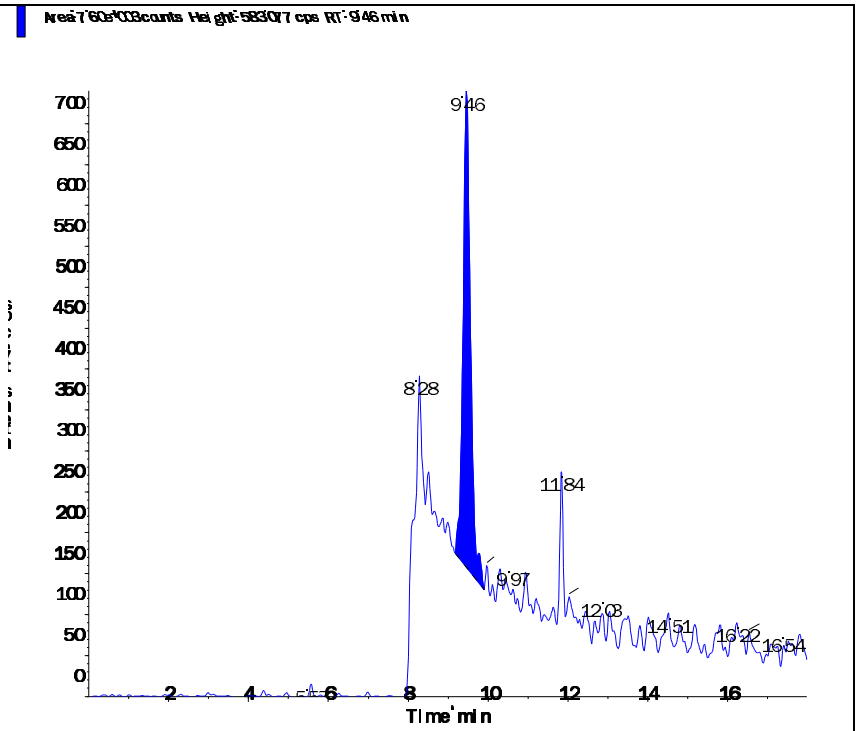

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.0293 ng/ml
Area Ratio:	0.006
Sample Type:	(Unknown)

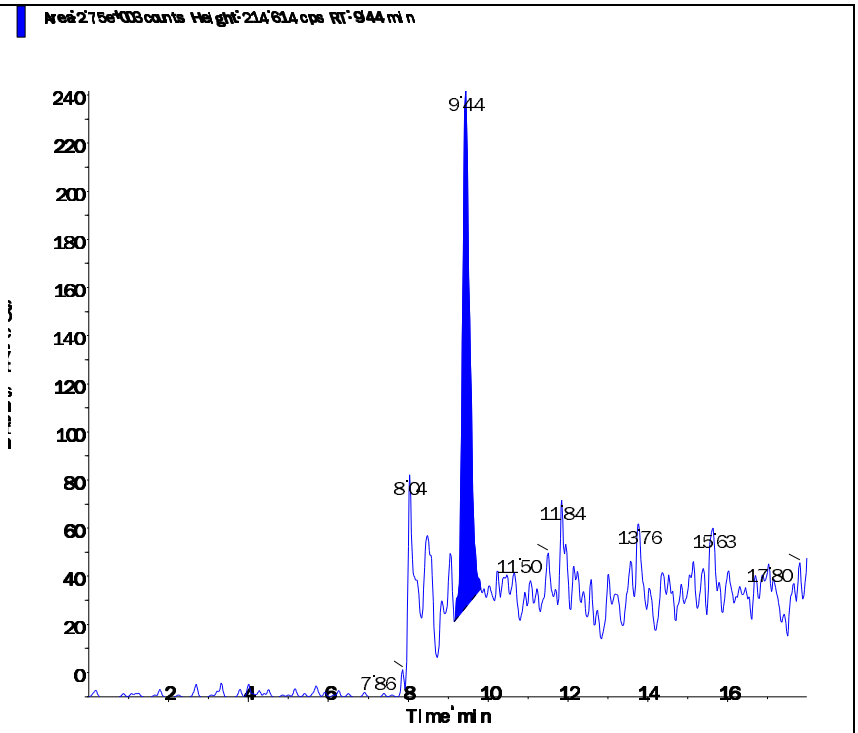

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:47 PM

Data File	LM35487.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 3:44:08 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061142-07	**Injection Vial**	24.00
Data File	LM35487.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 3:44:08 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061142-07	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.100e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.000e+03	9.58	N/A	0.0079
Perchlorate conf	5.380e+02	9.59	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

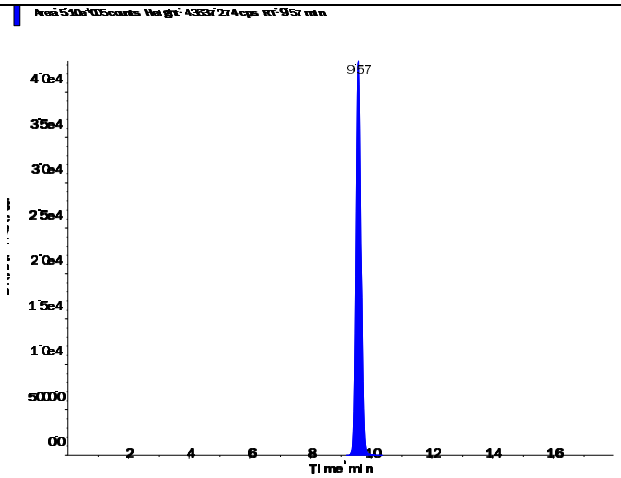

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.58 (9.84) min
Calculated conc:	0.0079 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

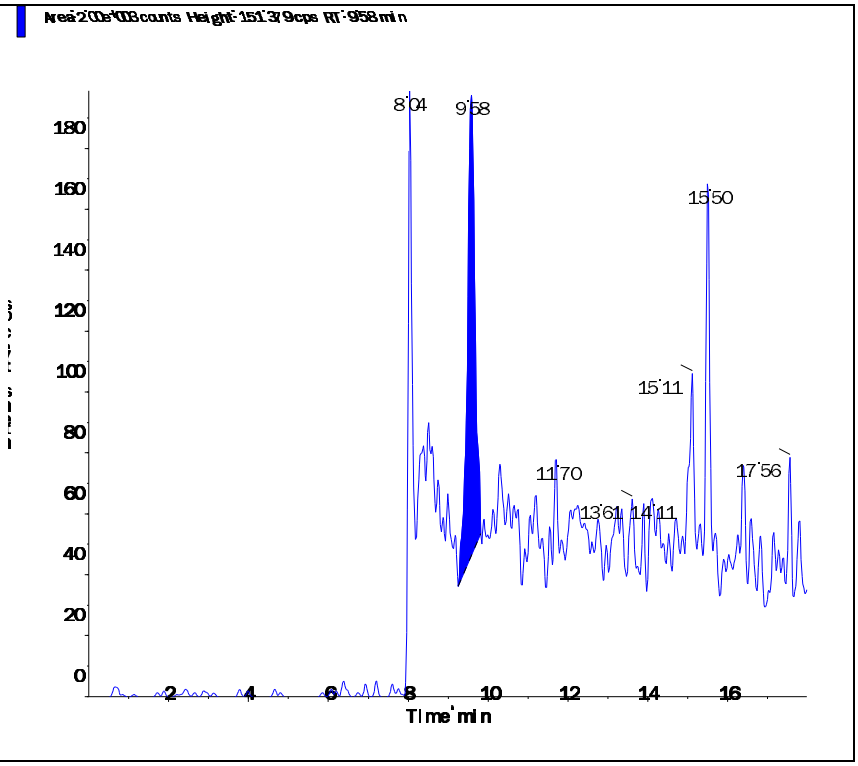

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

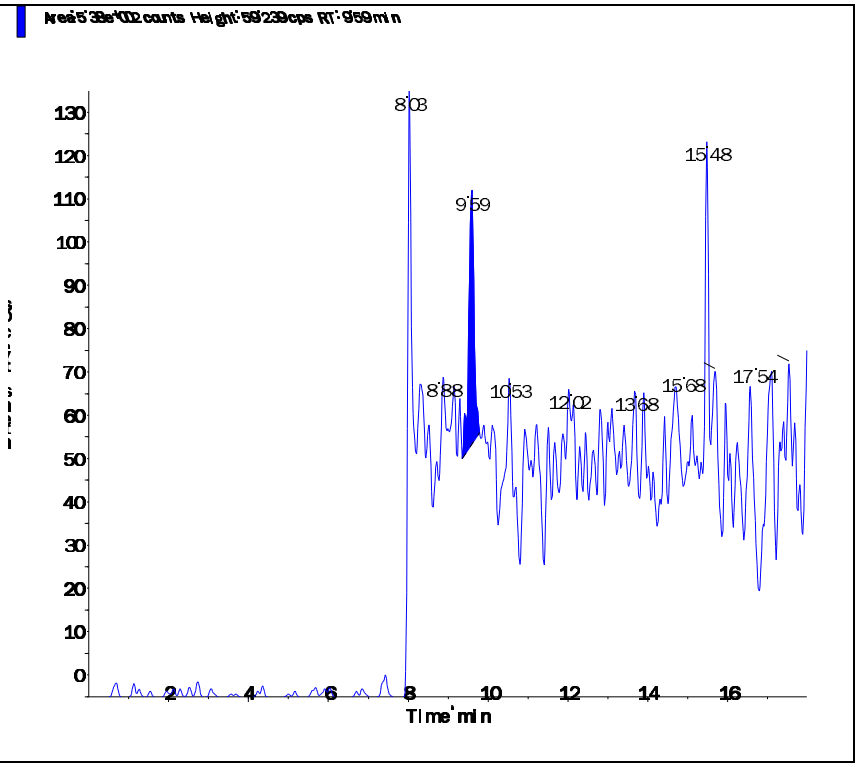

s.dataFile Page 2 of 2

2.2.2.4 Standards Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:36 PM

Data File	LM34686.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

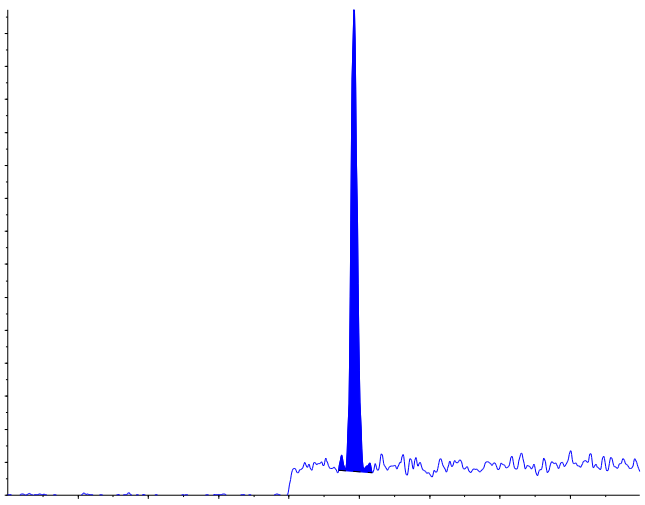

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:36 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	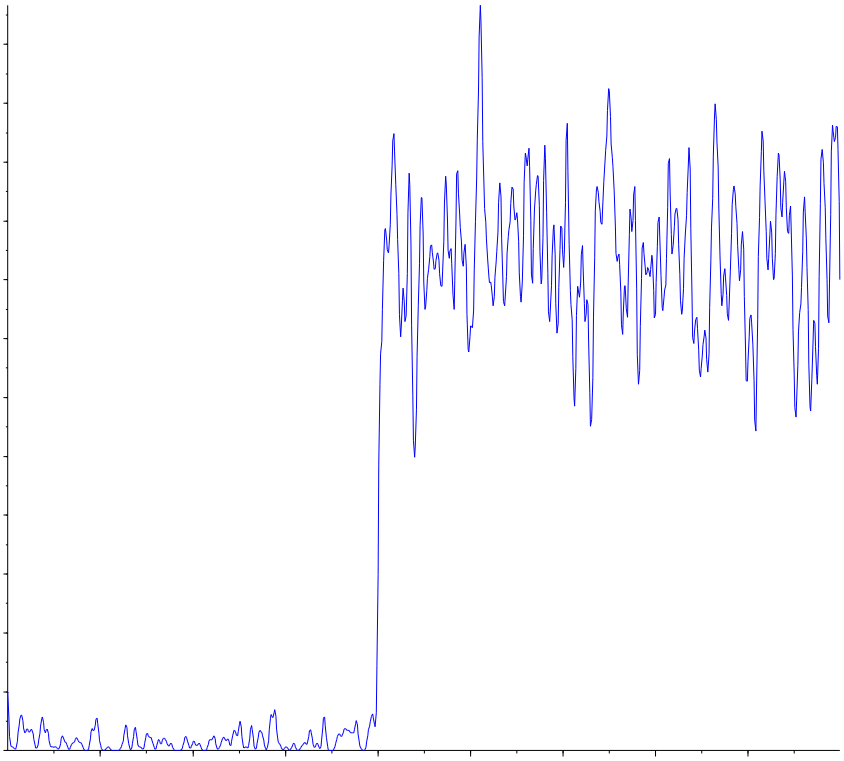
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	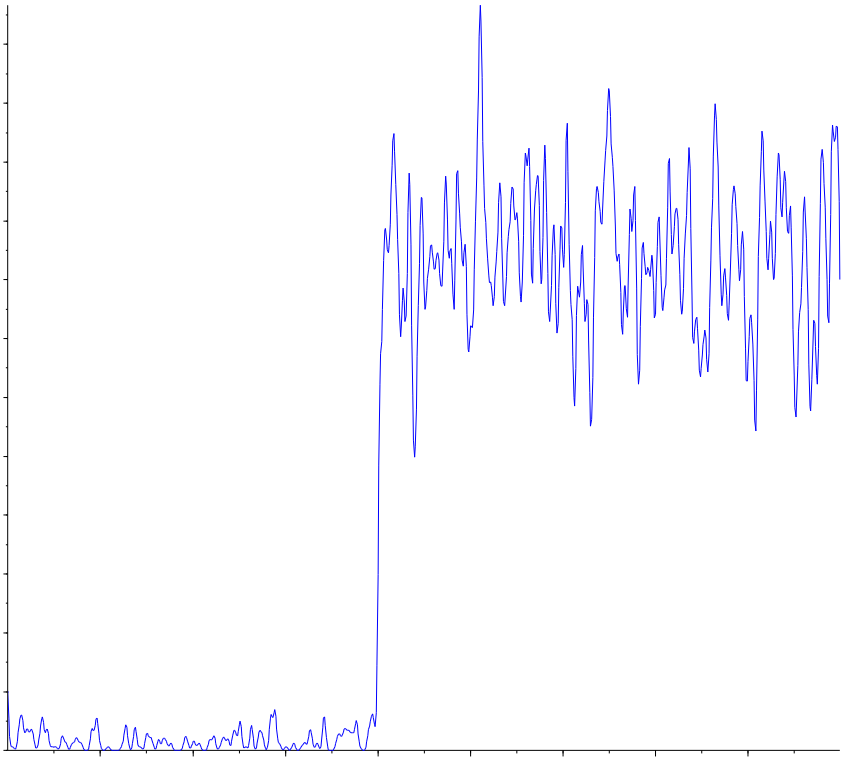

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

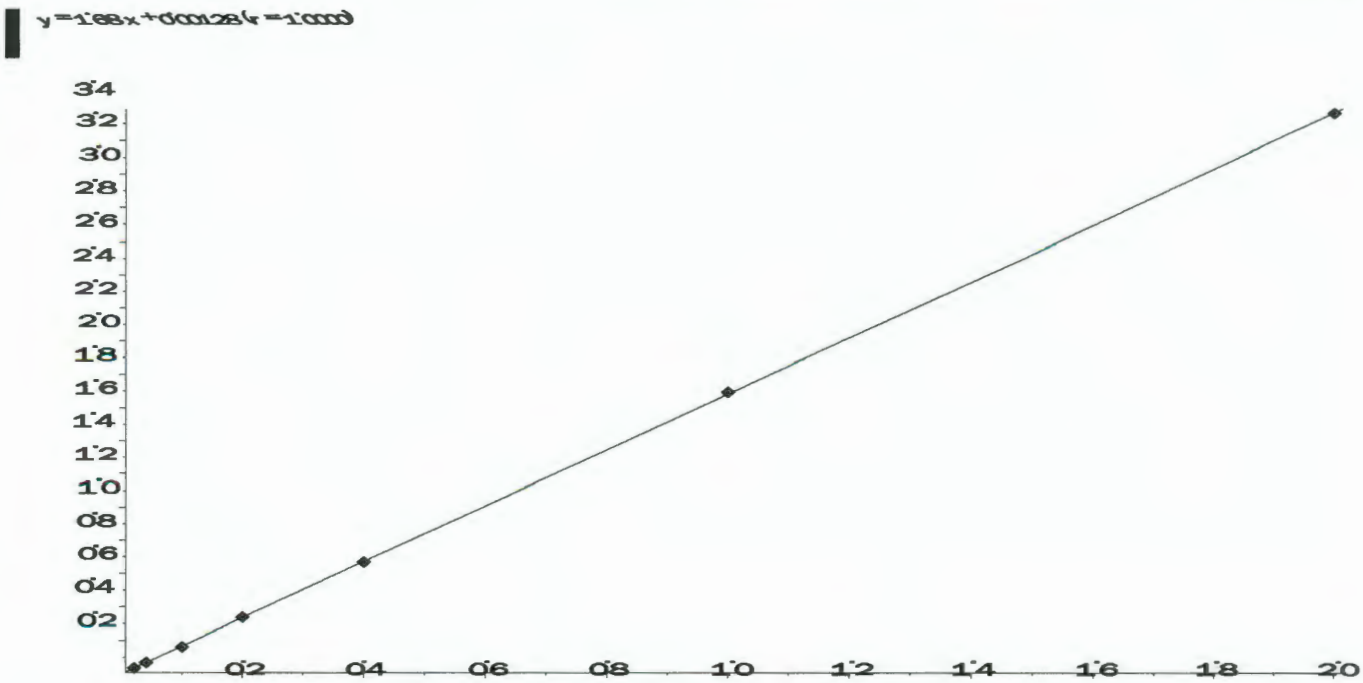

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

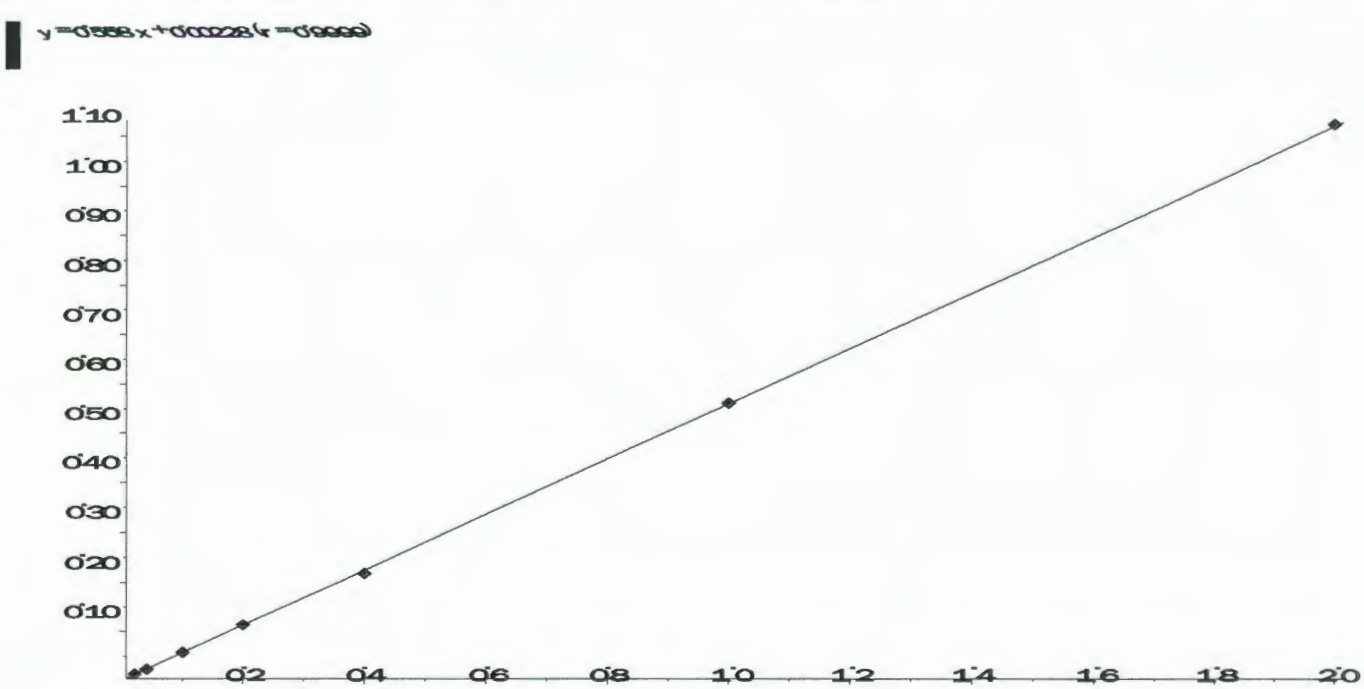

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:36 PM

Data File	LM34687.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

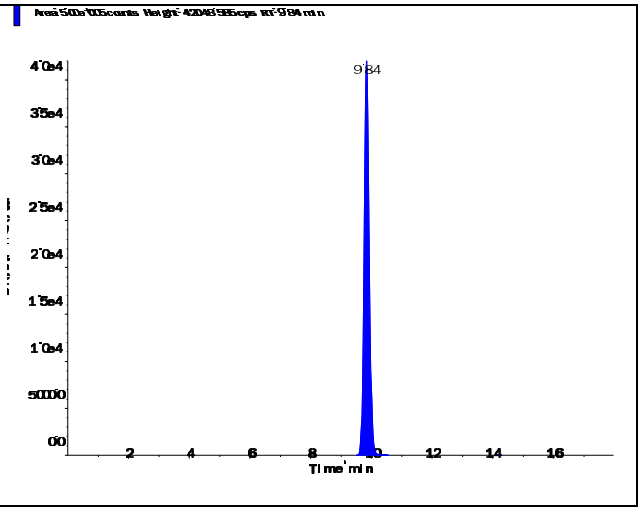

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:36 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

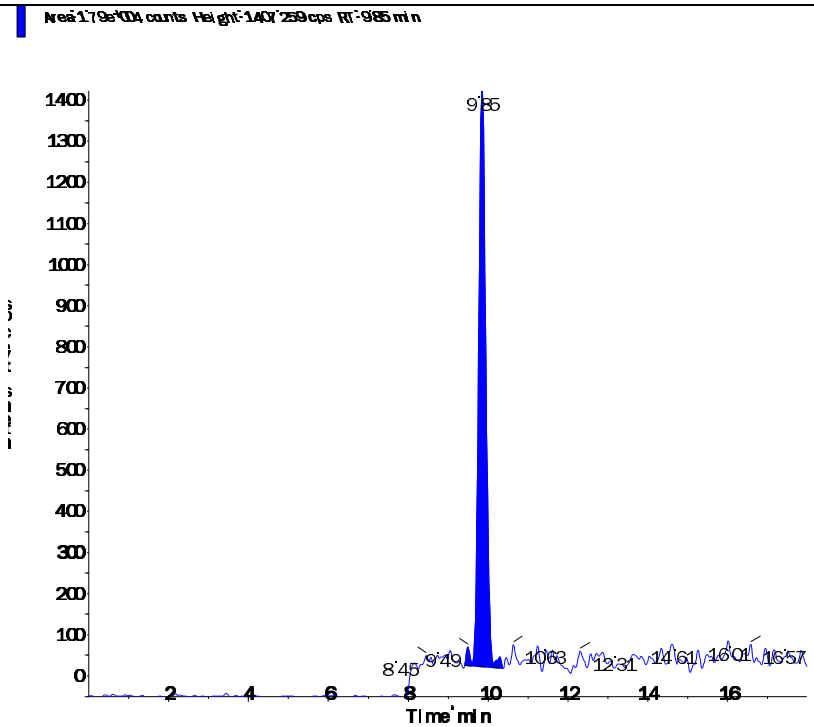

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

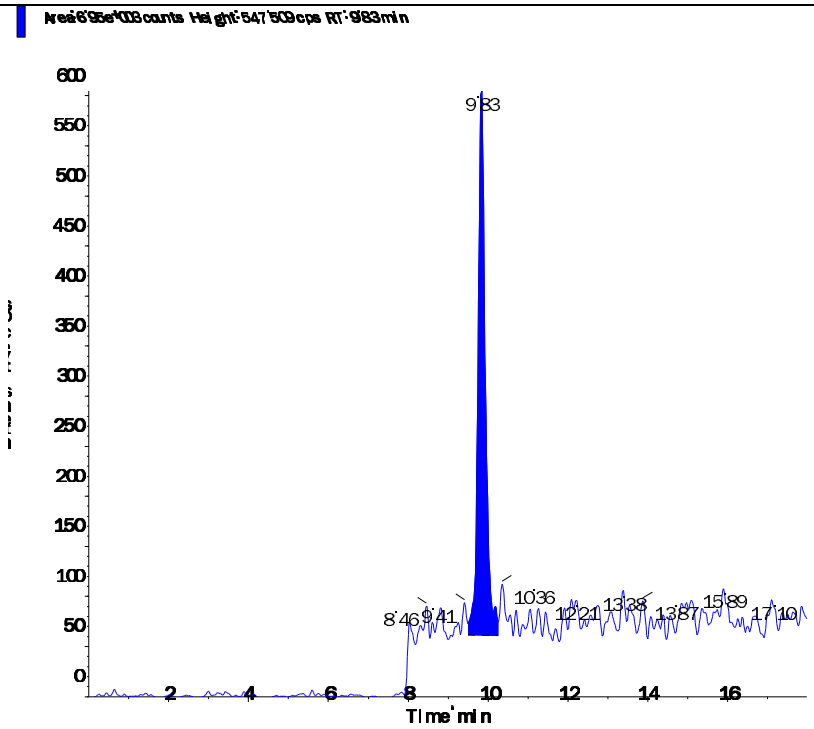

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:37 PM

Data File	LM34688.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

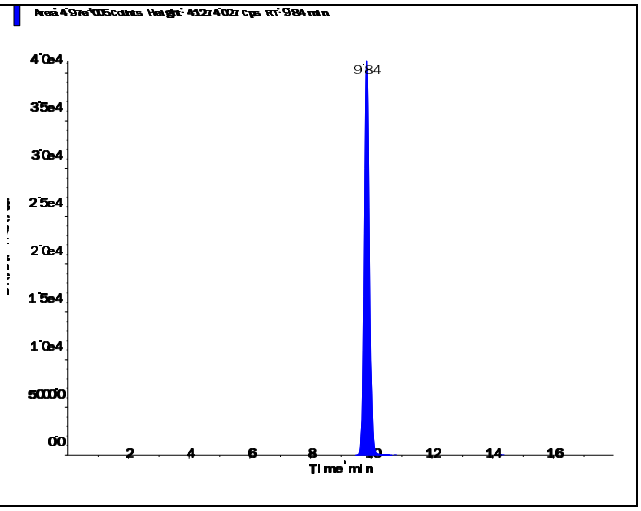

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

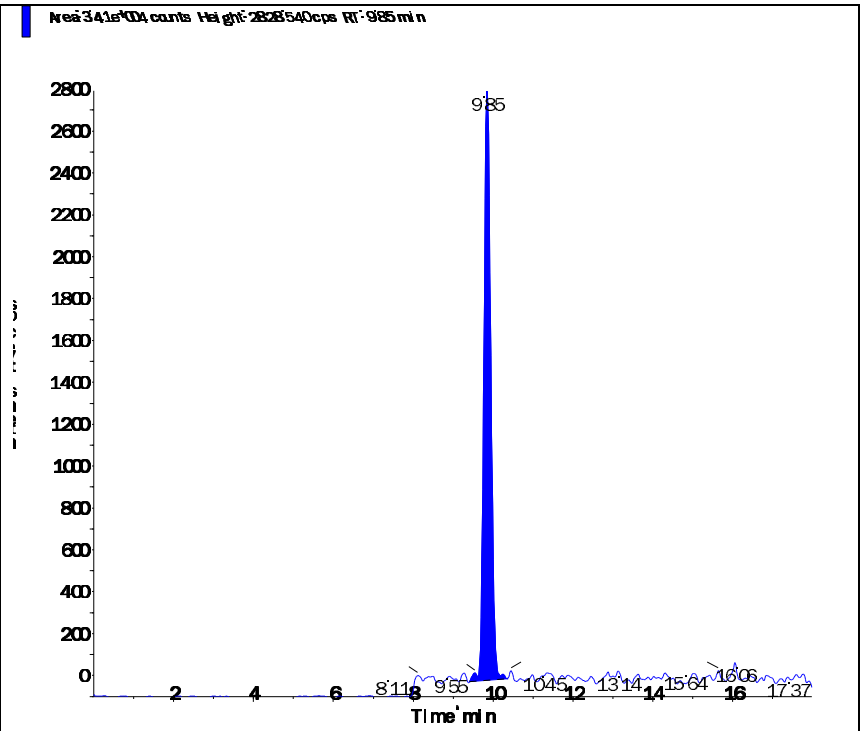

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

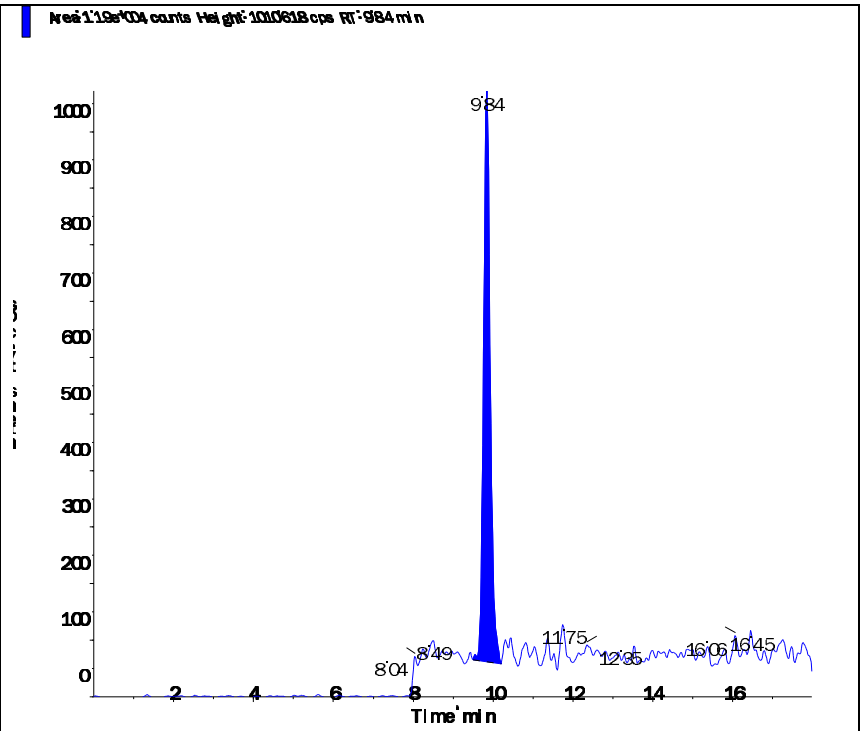

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:37 PM

Data File	LM34689.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

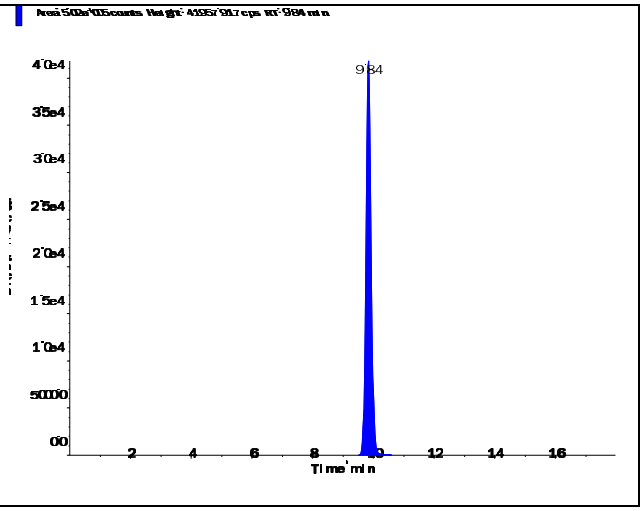

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

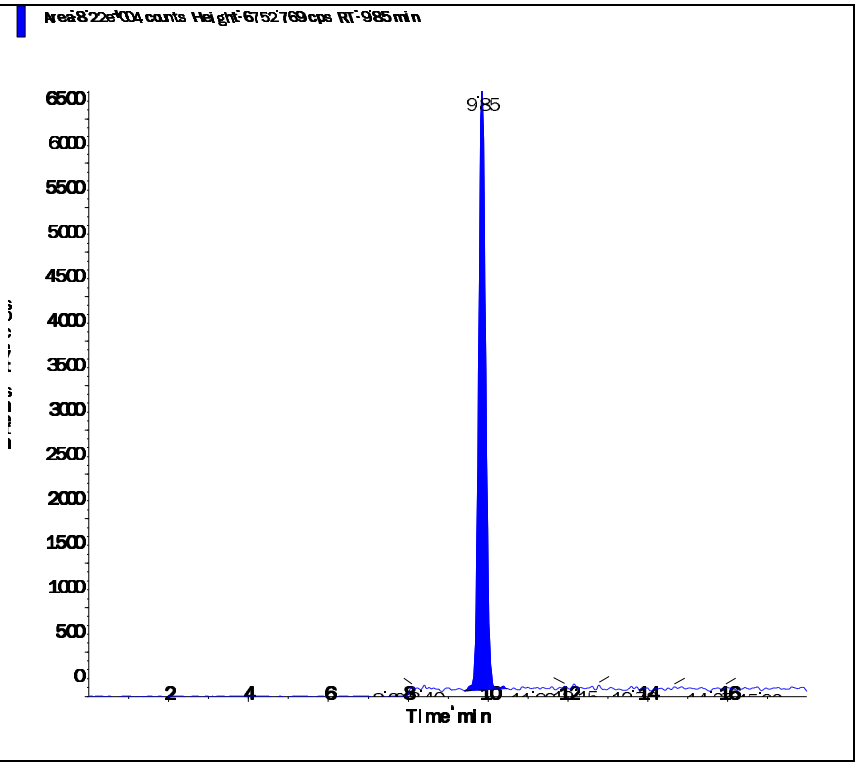

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

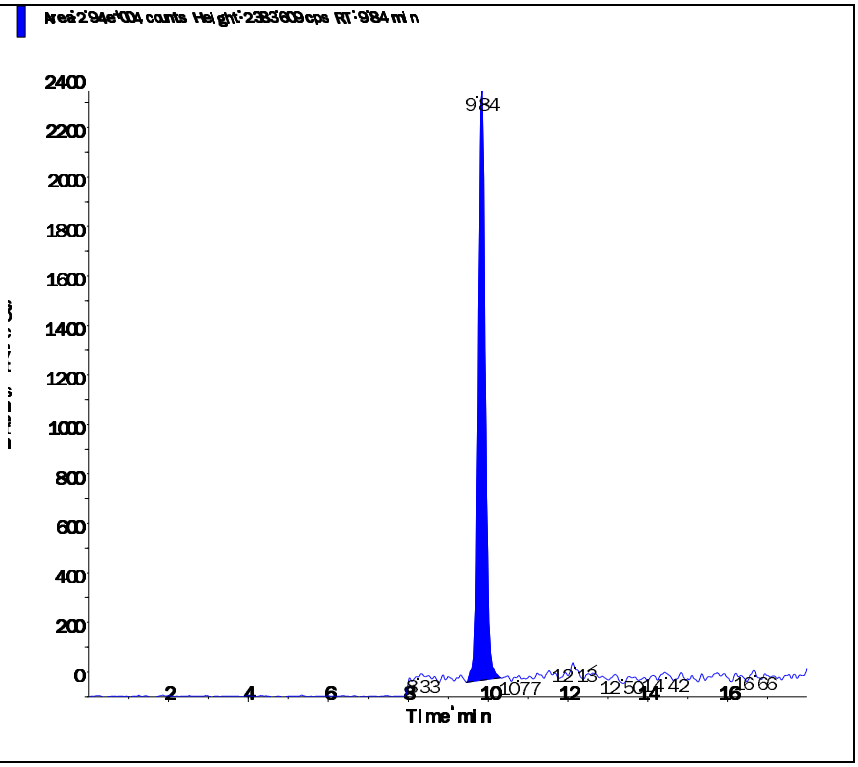

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:37 PM

Data File	LM34690.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

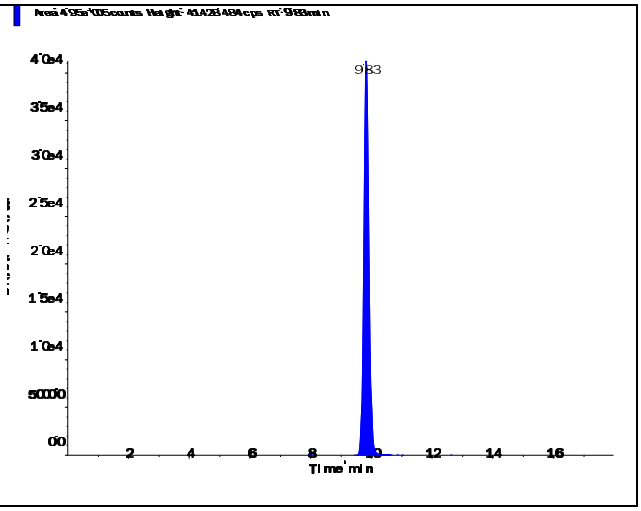

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:37 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

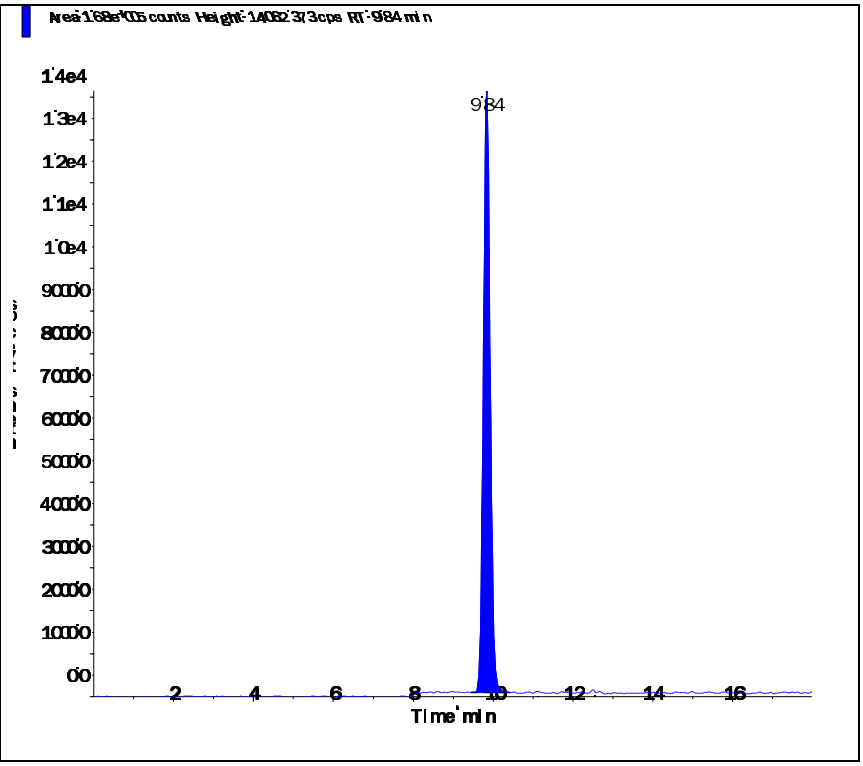

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

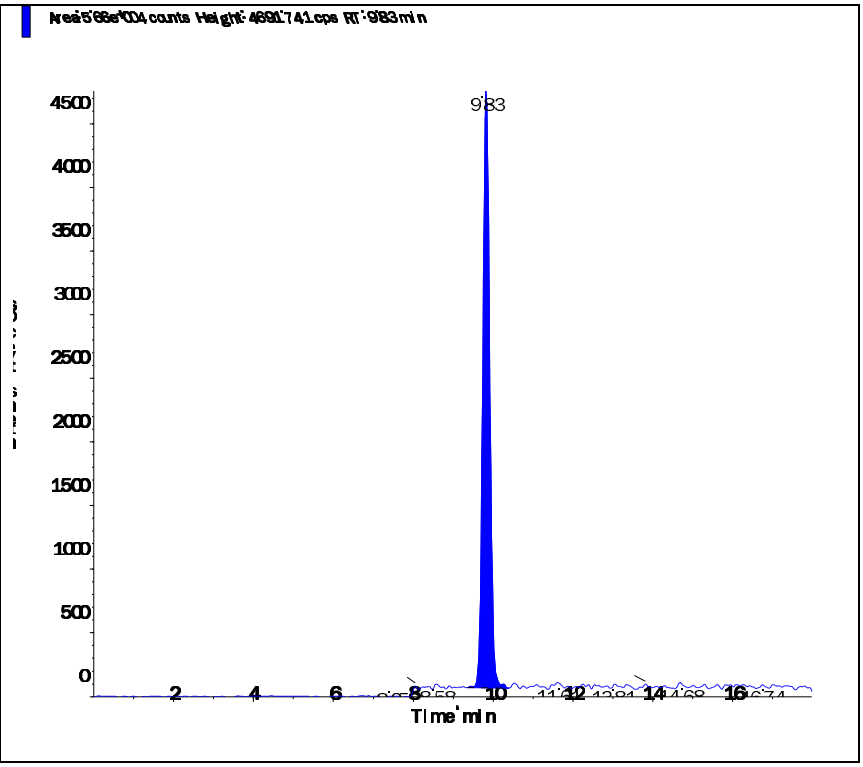

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:37 PM

Data File	LM34691.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

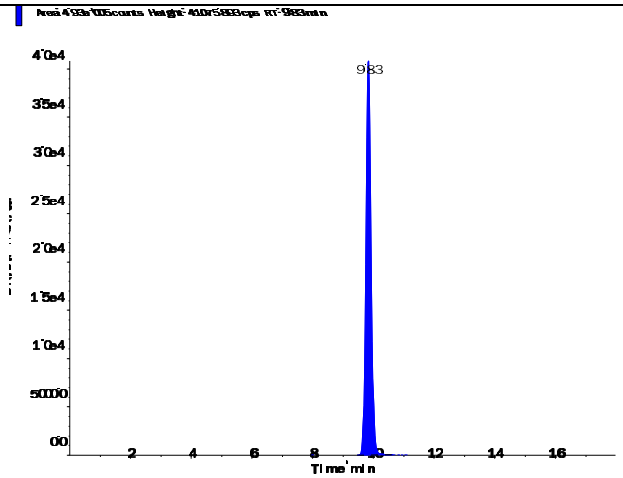

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:37 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

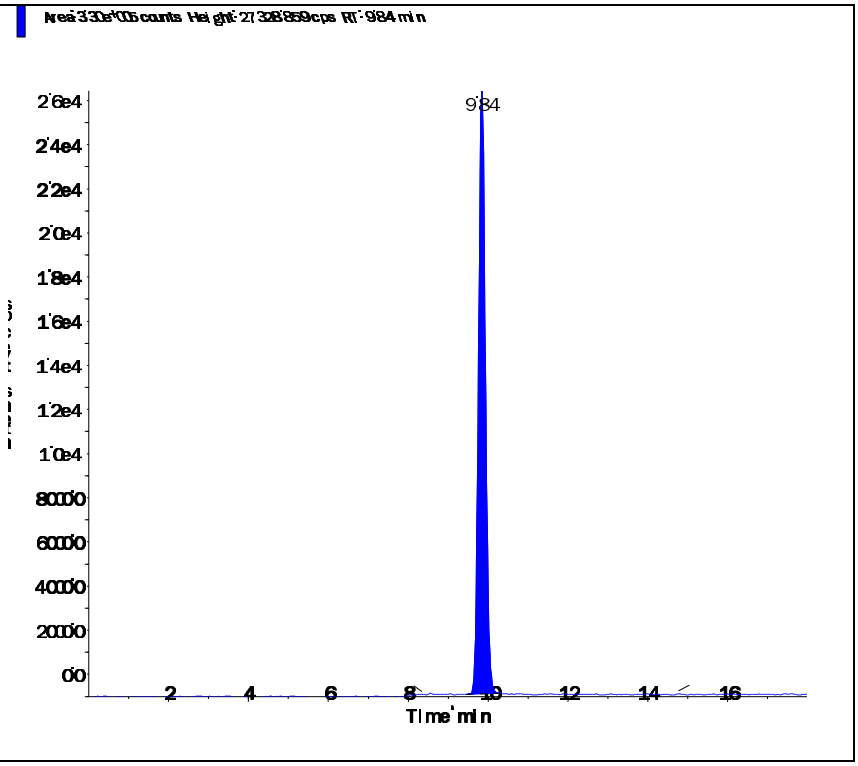

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

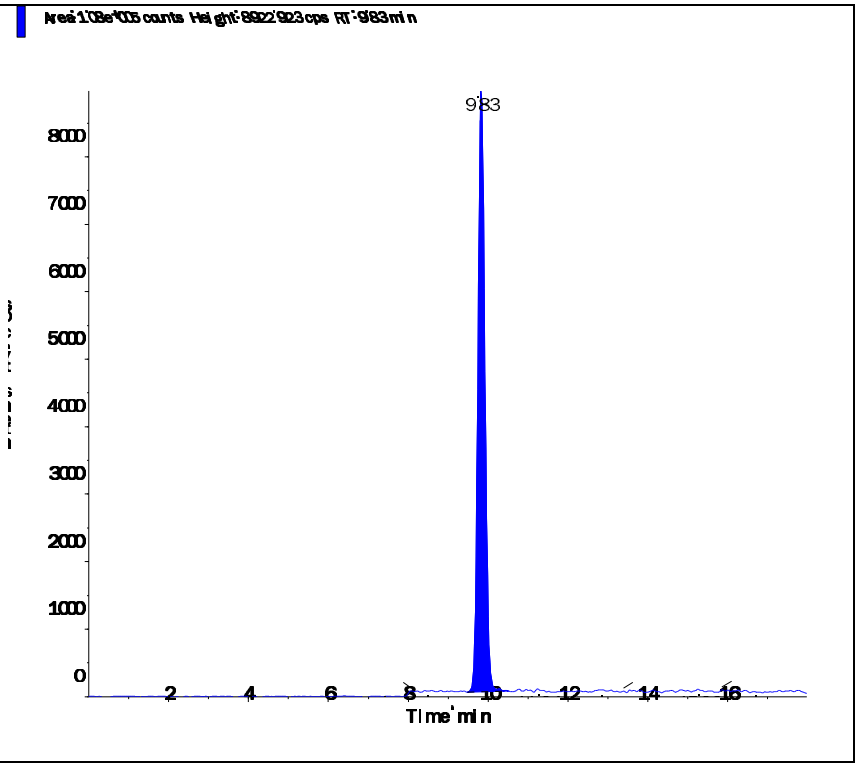

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:38 PM

Data File	LM34692.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

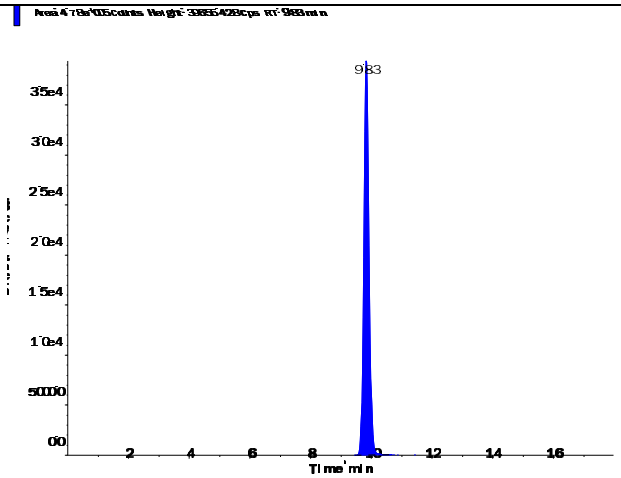

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:38 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

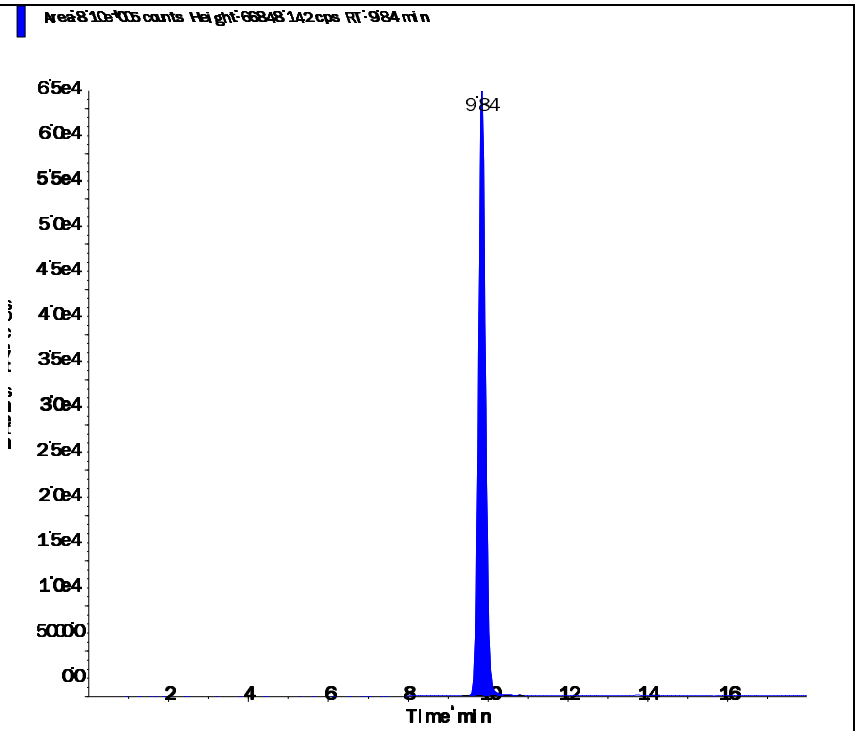

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

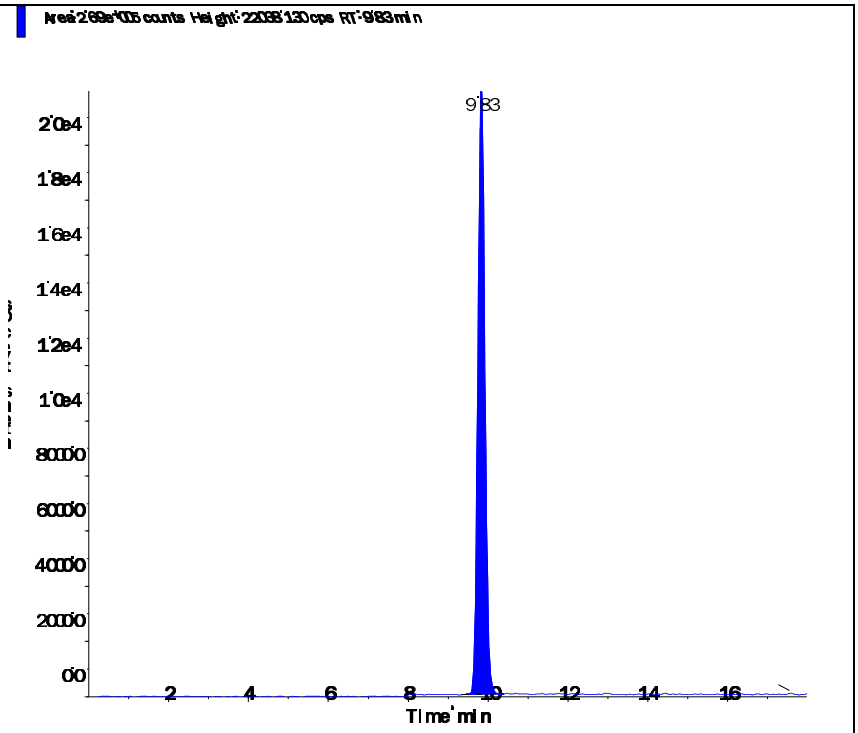

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:38 PM

Data File	LM34693.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

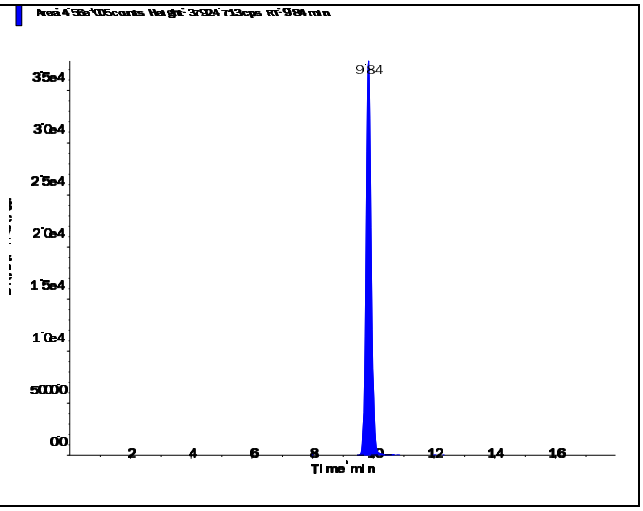

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:38 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	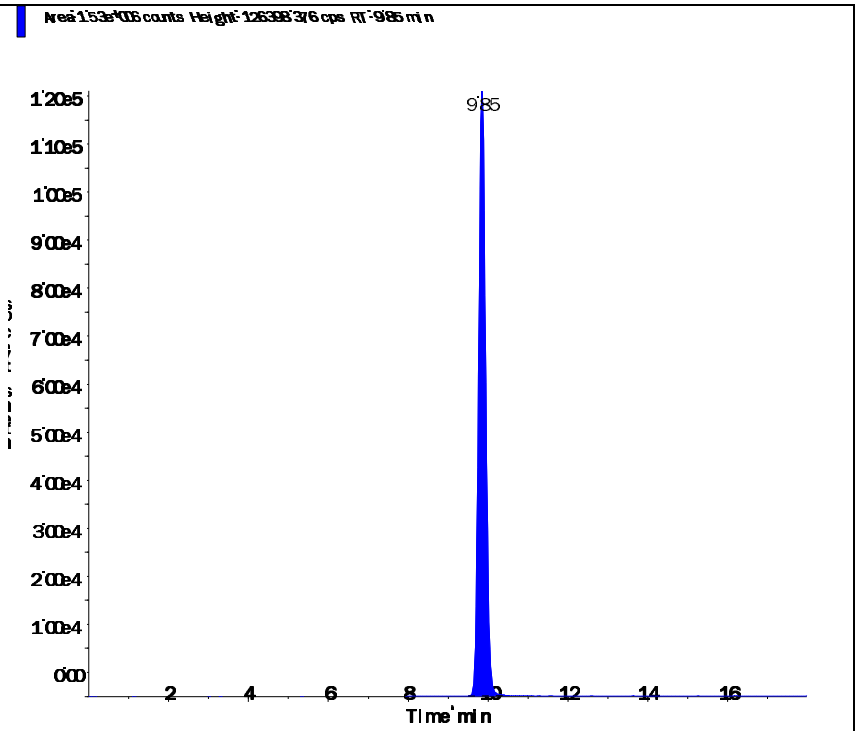
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	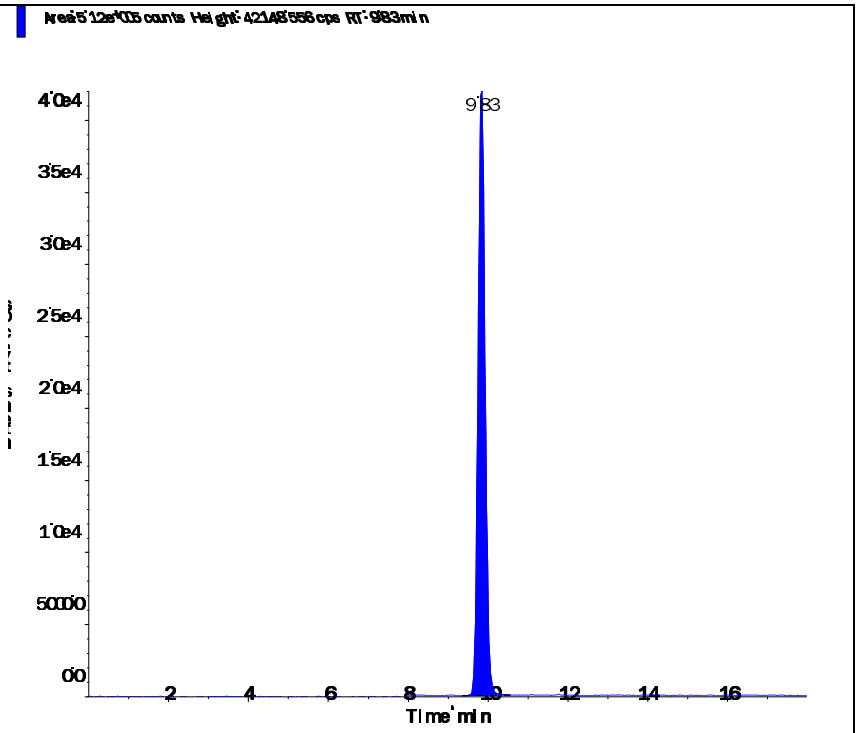

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

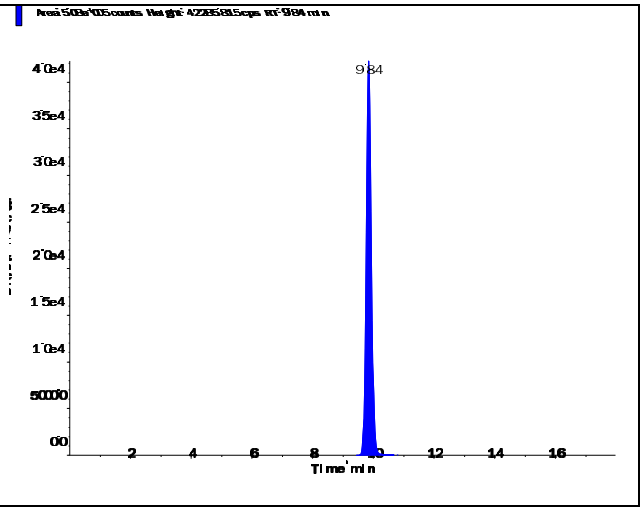

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

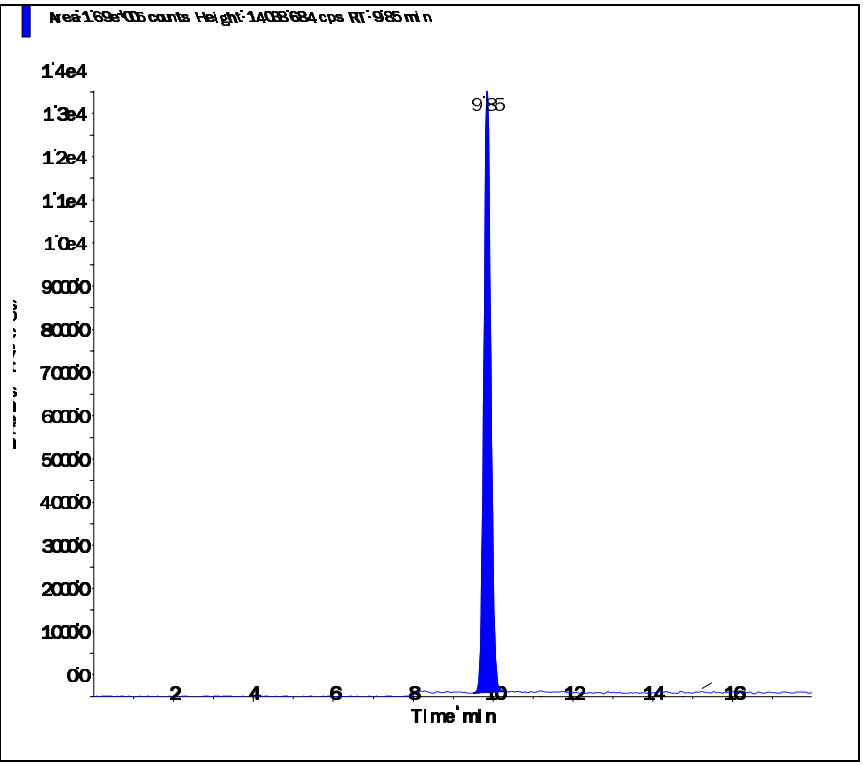

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

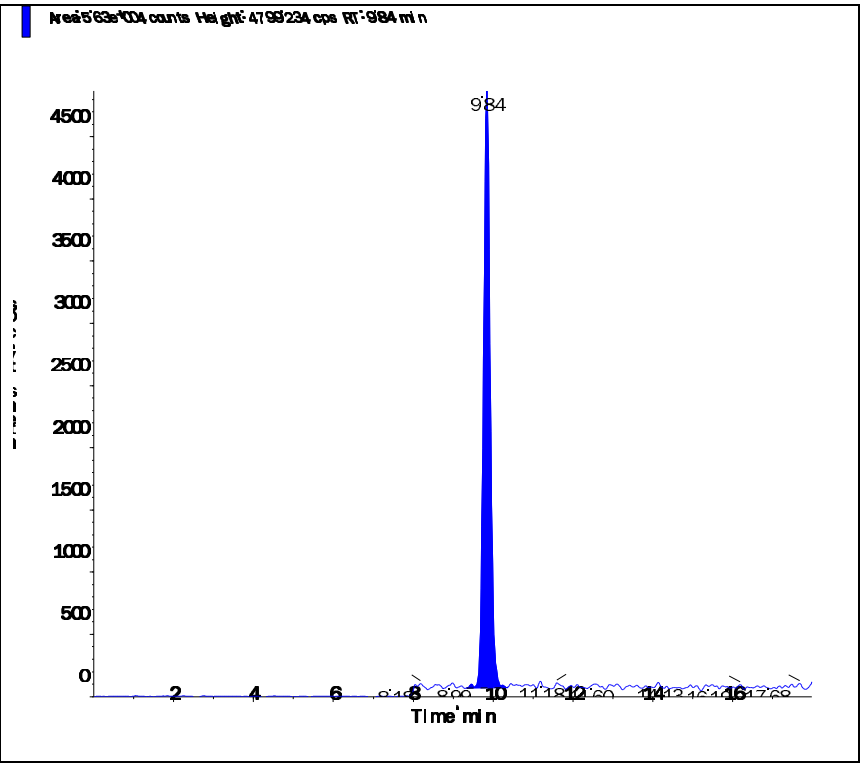

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:39 PM

Data File	LM35463.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35463.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.520e+05	9.35	1.00	1.01
Perchlorate conf	5.550e+04	9.33	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

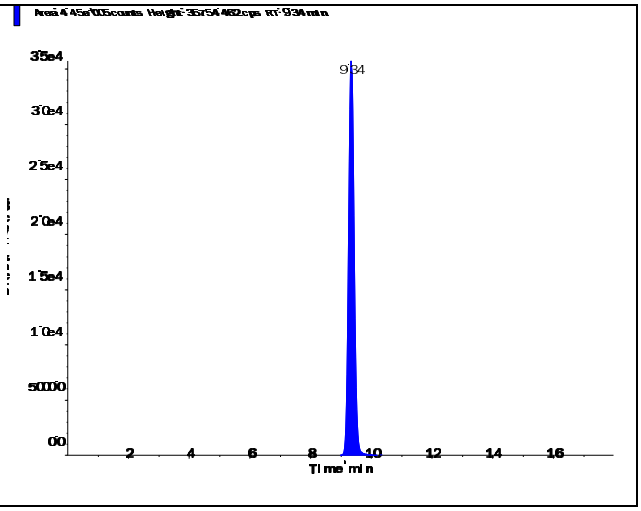

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:39 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

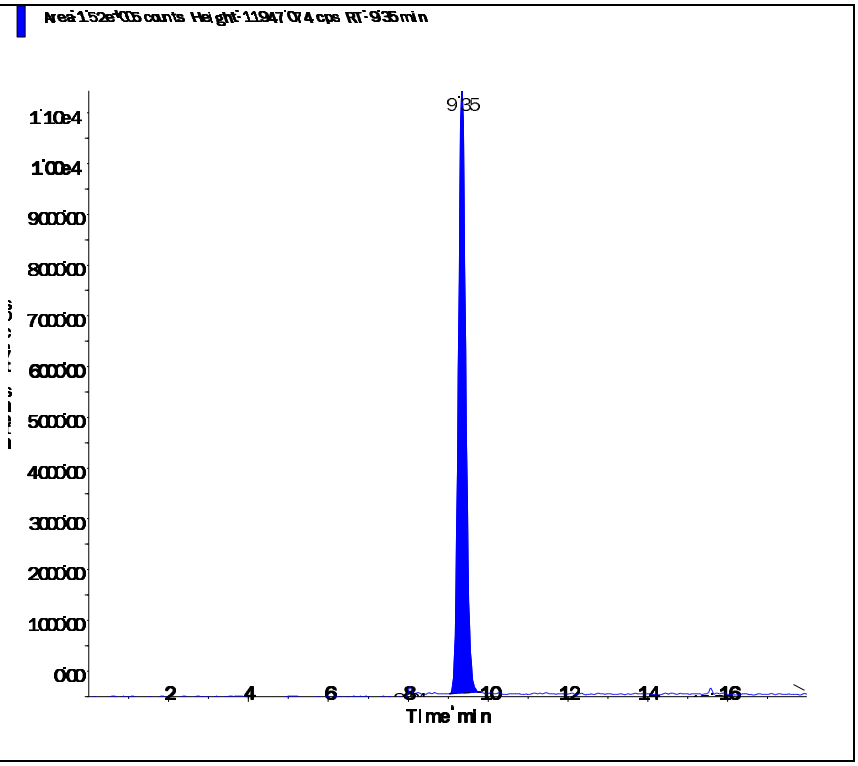

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

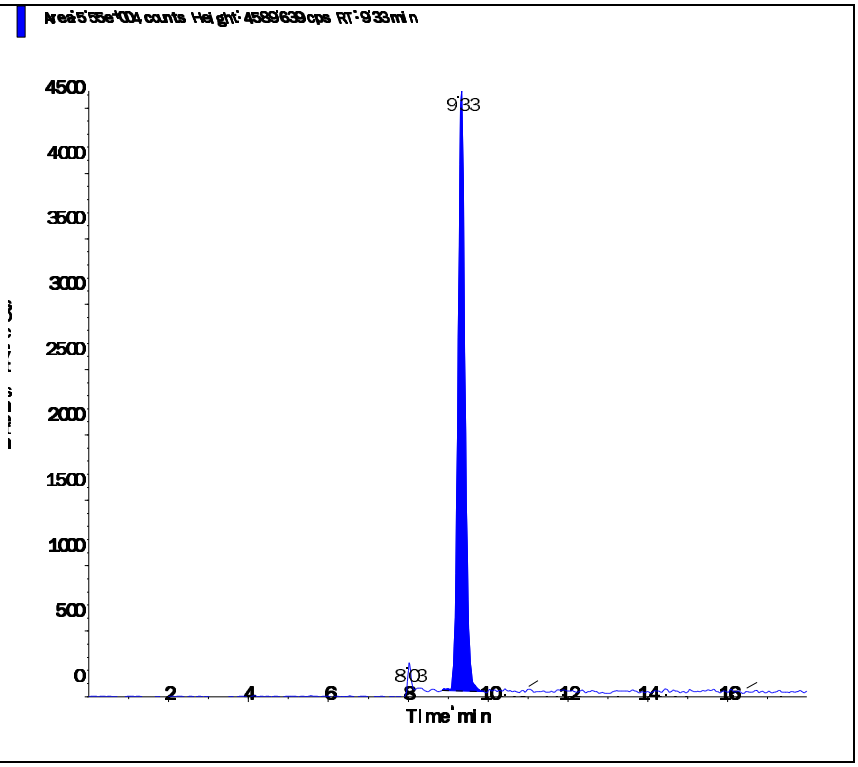

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:43 PM

Data File	LM35475.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35475.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.32	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.700e+05	9.33	1.00	1.01
Perchlorate conf	5.750e+04	9.32	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.32(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

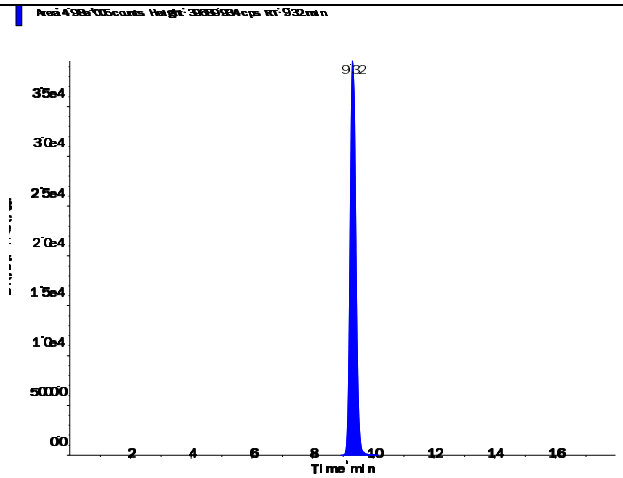

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:43 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.33 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.34 Sample Type: (Quality Control)	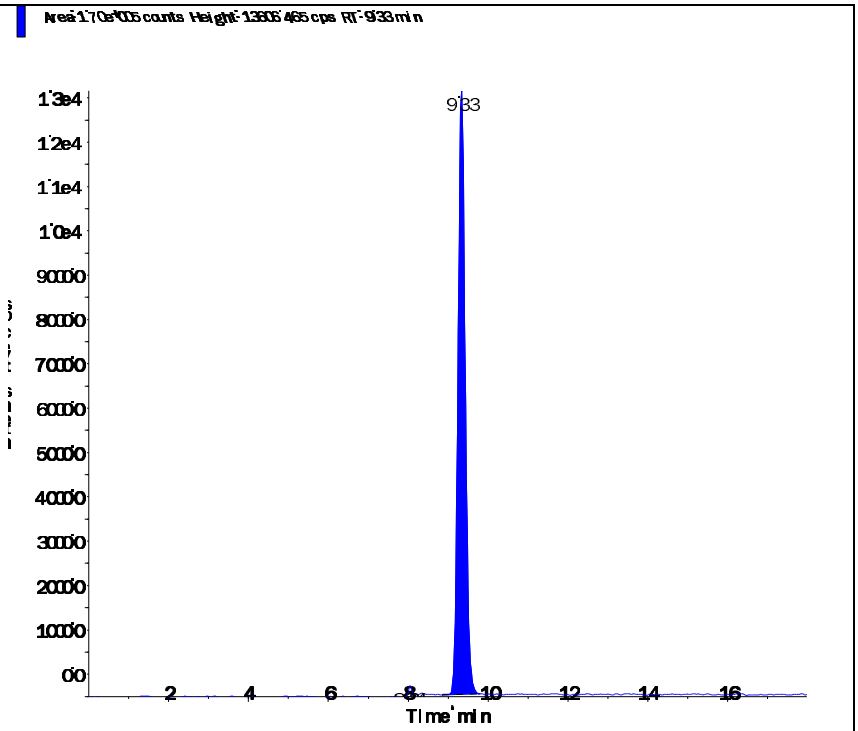
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.32 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.115 Sample Type: (Quality Control)	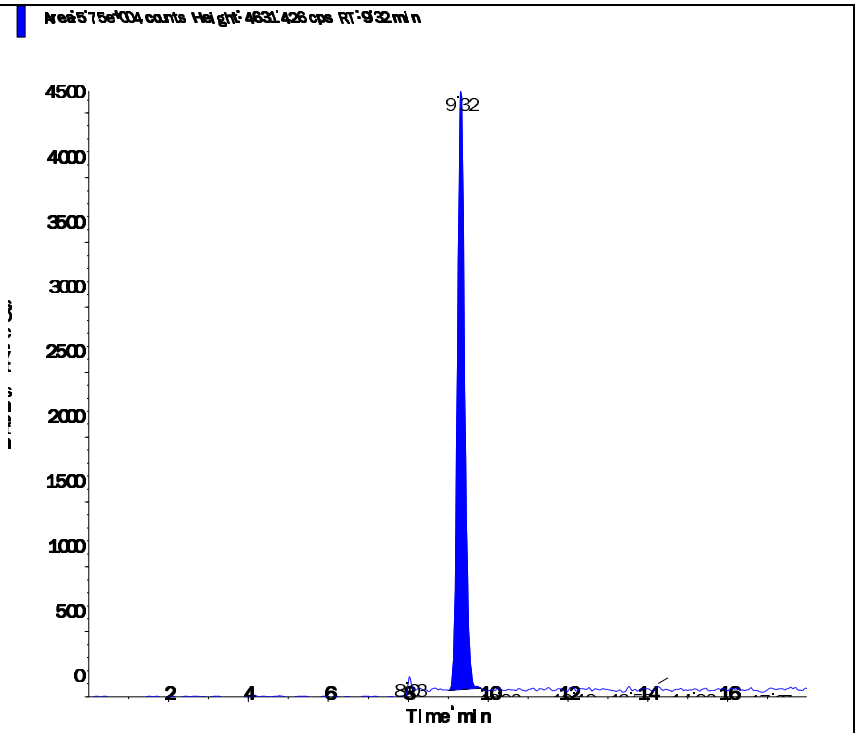

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:47 PM

Data File	LM35488.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35488.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.34	1.00	1.04
Perchlorate conf	6.020e+04	9.32	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

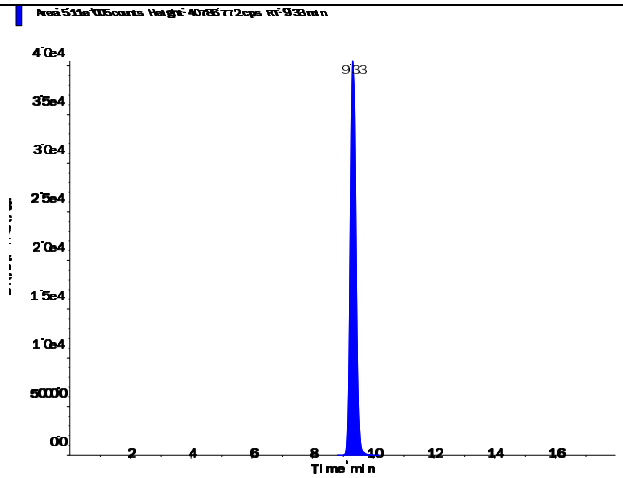

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:47 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.35
Sample Type:	(Quality Control)

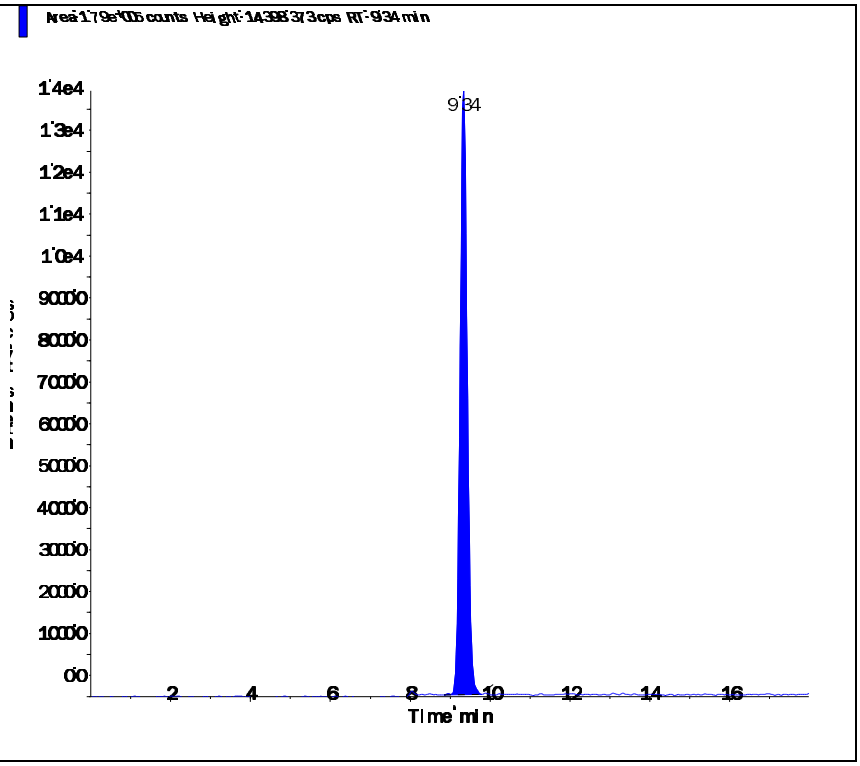

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

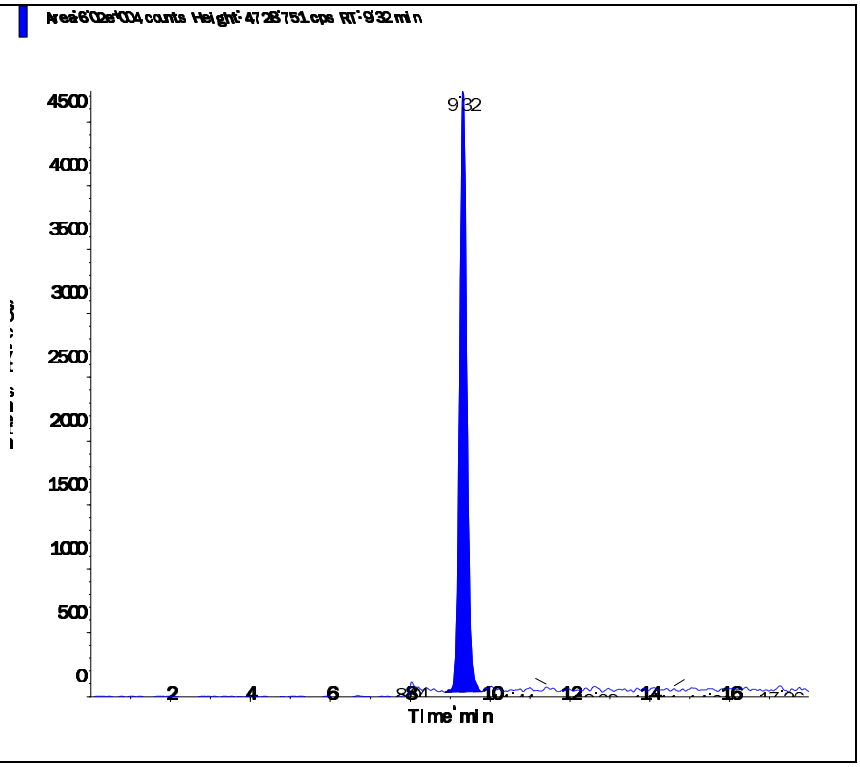

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:50 PM

Data File	LM35495.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35495.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.500e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.890e+05	9.35	1.00	1.02
Perchlorate conf	6.340e+04	9.33	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

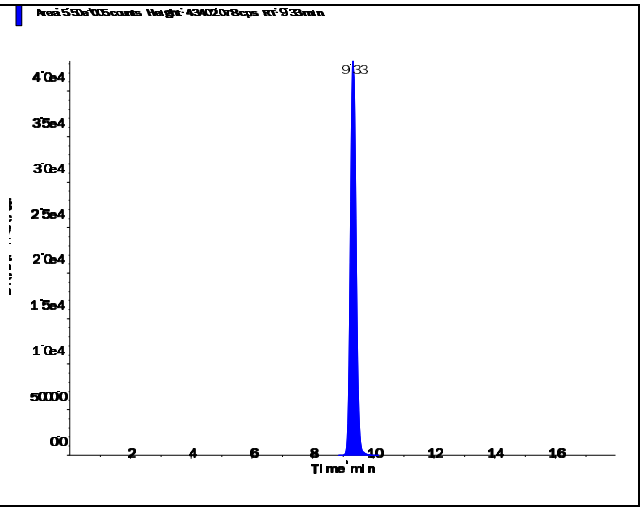

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:50 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

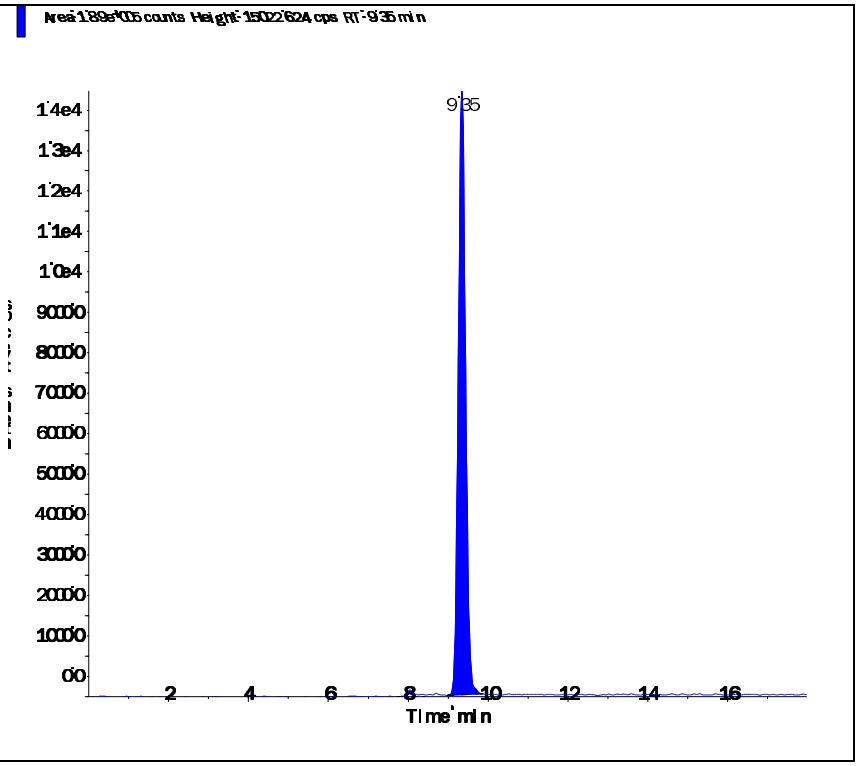

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

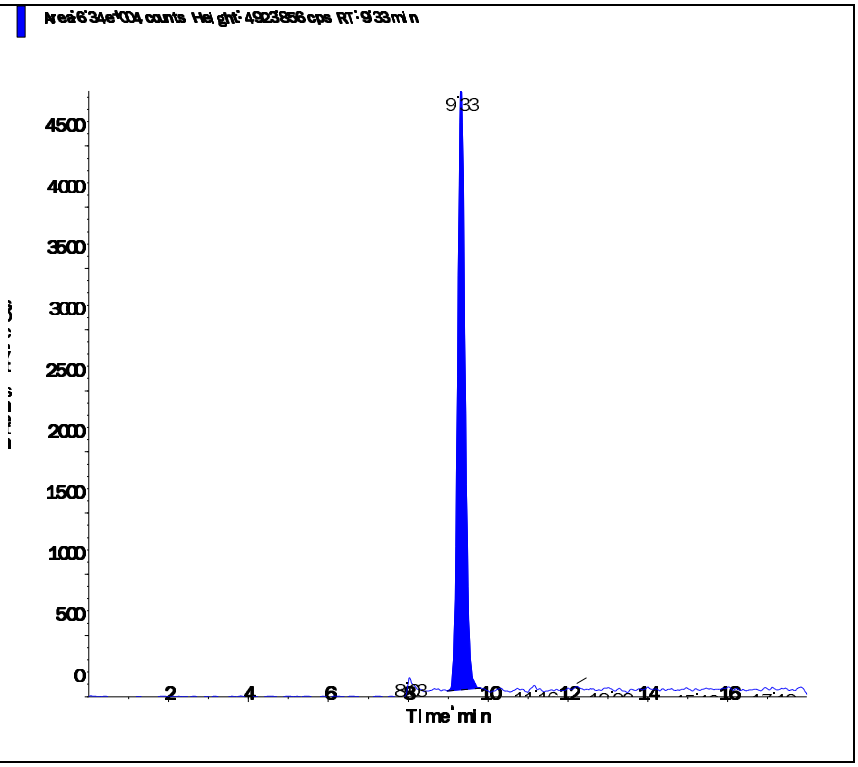

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:51 PM

Data File	LM35498.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35498.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.610e+05	9.35	1.00	1.04
Perchlorate conf	5.670e+04	9.34	1.00	1.09

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

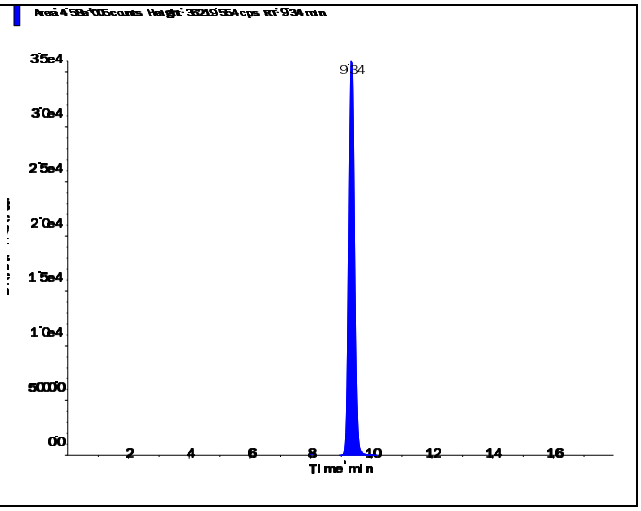

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:51 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

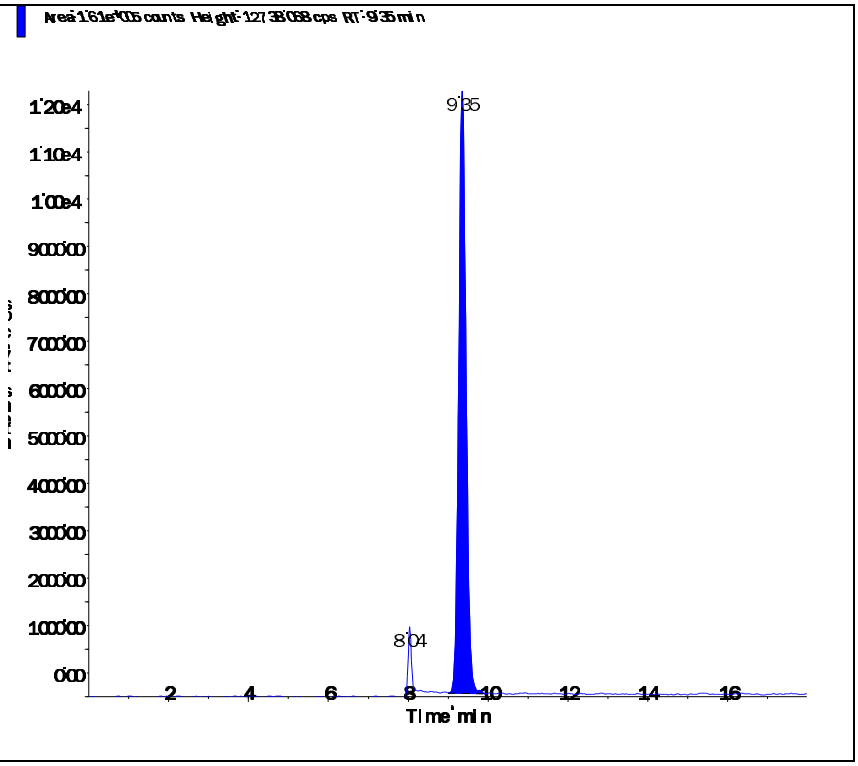

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.124
Sample Type:	(Quality Control)

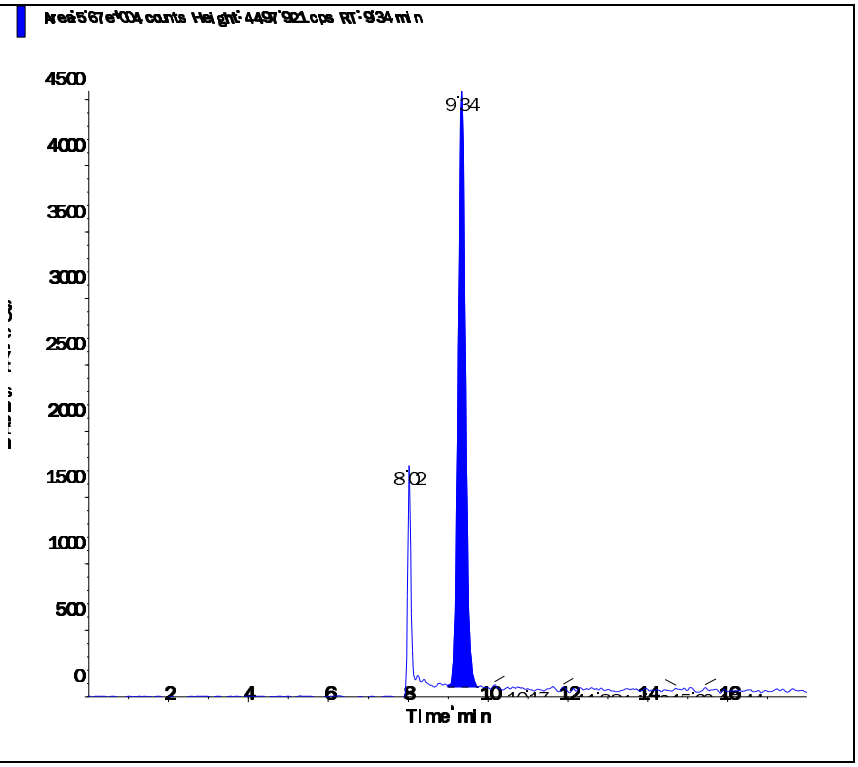

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:55 PM

Data File	LM35508.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35508.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.35	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.36	1.00	1.02
Perchlorate conf	5.930e+04	9.35	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.35(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

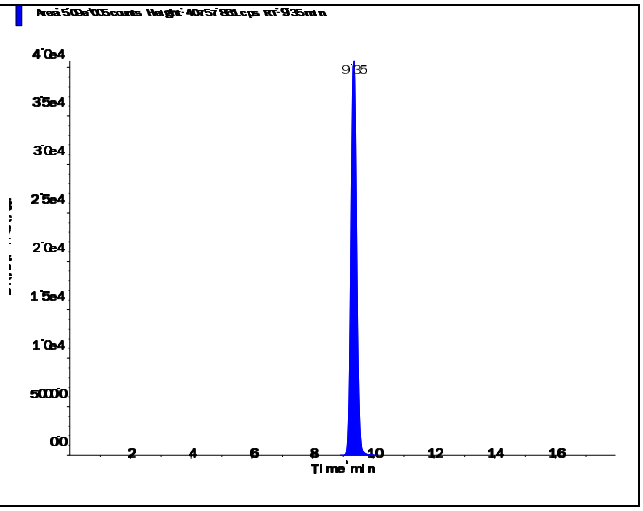

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:55 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

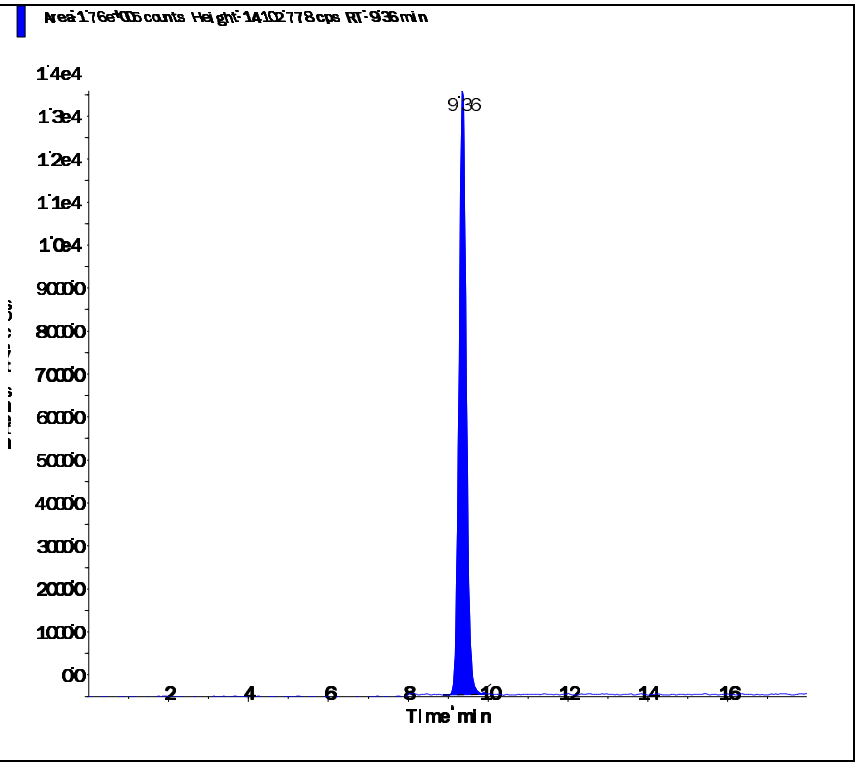

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

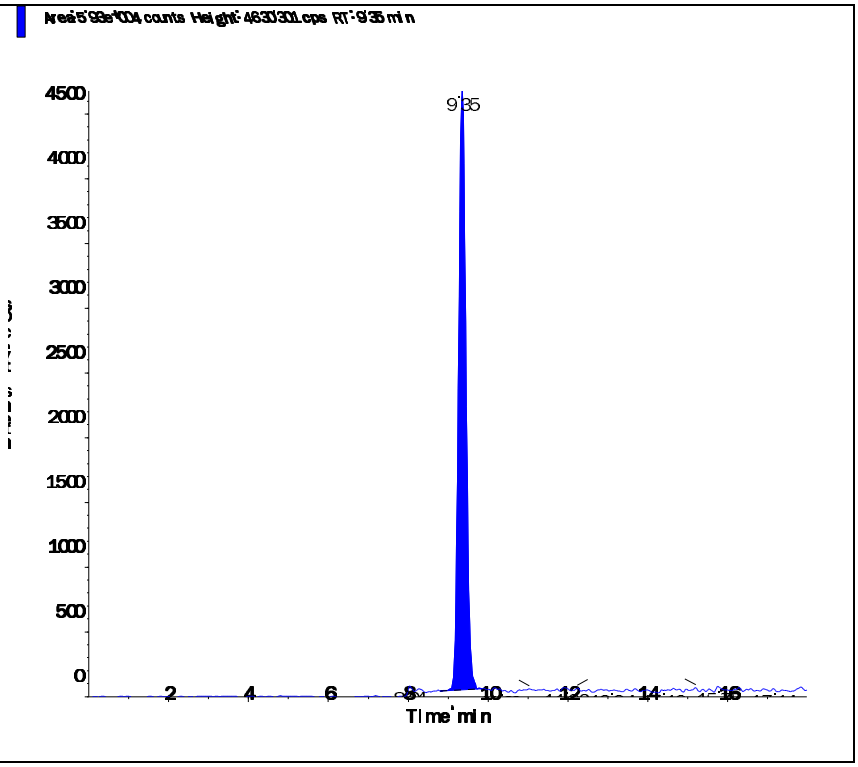

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:39 PM

Data File	LM35464.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35464.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.40	N/A	0.206
Perchlorate conf	1.210e+04	9.37	N/A	0.222

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

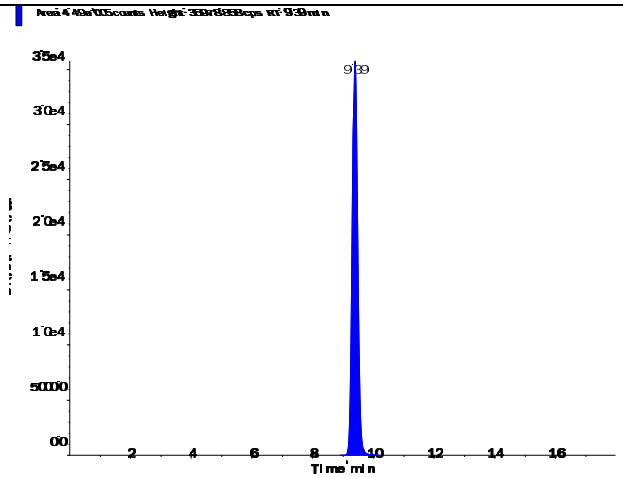

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:39 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

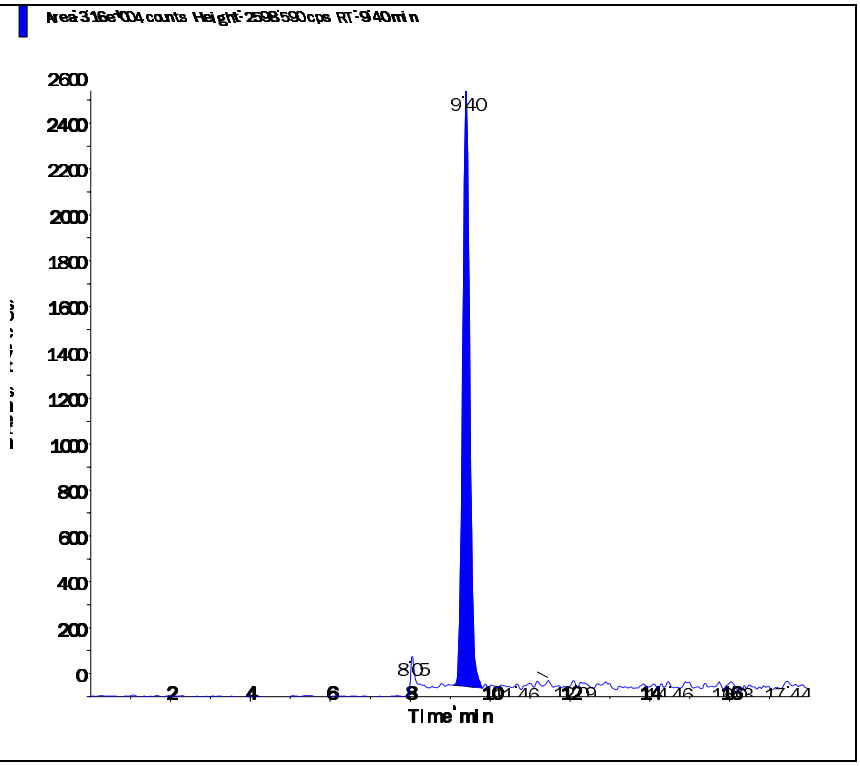

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.222 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

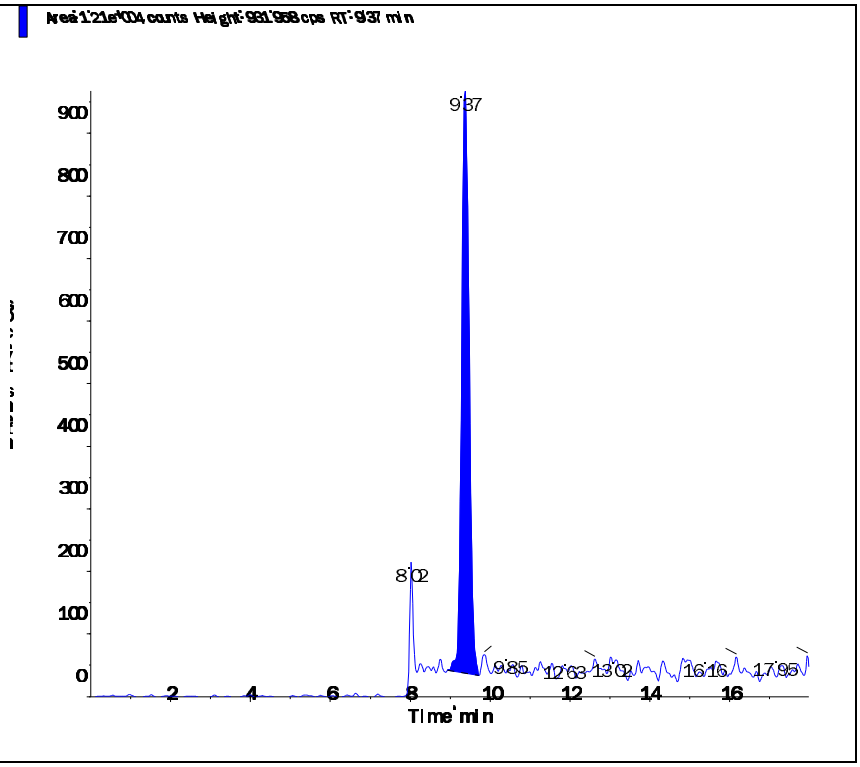

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:43 PM

Data File	LM35476.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35476.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.37	N/A	0.198
Perchlorate conf	1.310e+04	9.35	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

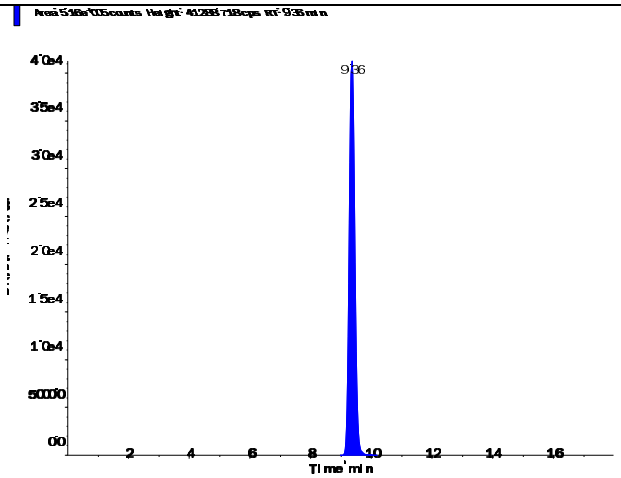

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:43 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

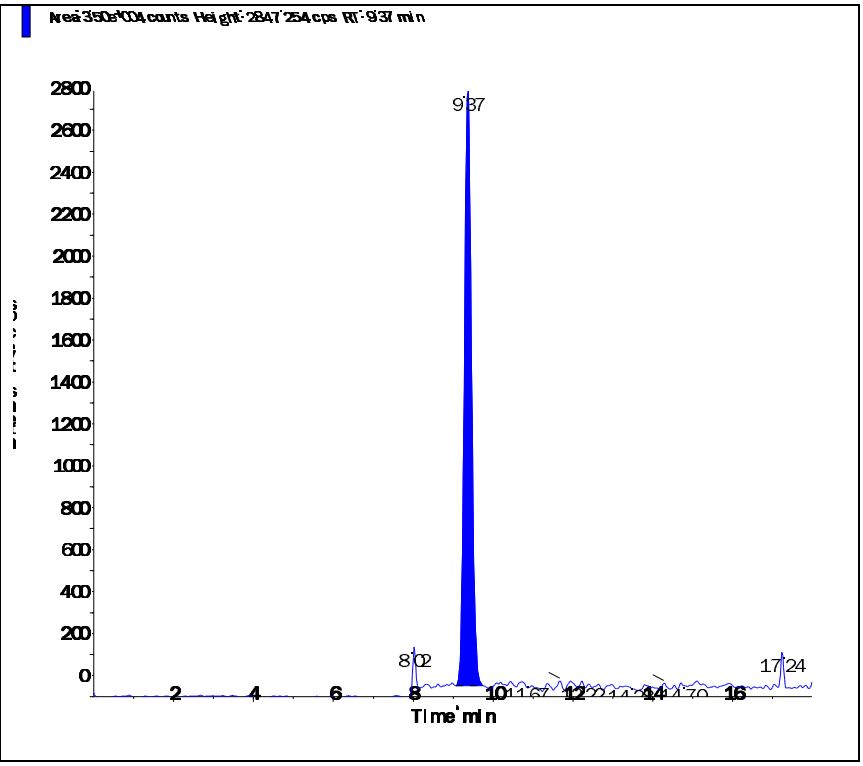

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

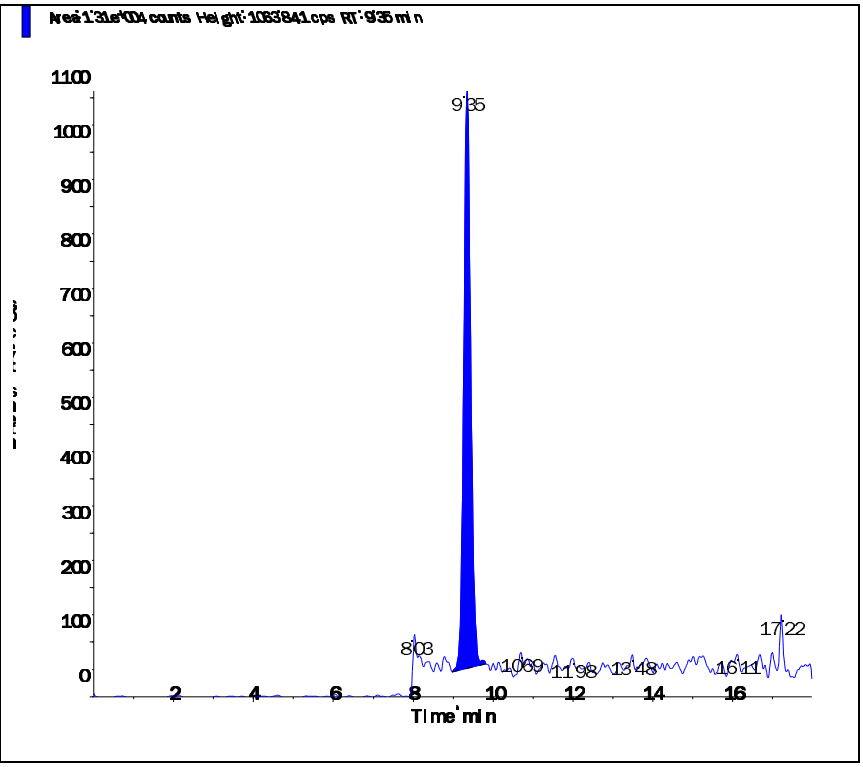

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Data File	LM35489.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35489.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.890e+04	9.39	N/A	0.211
Perchlorate conf	1.340e+04	9.38	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

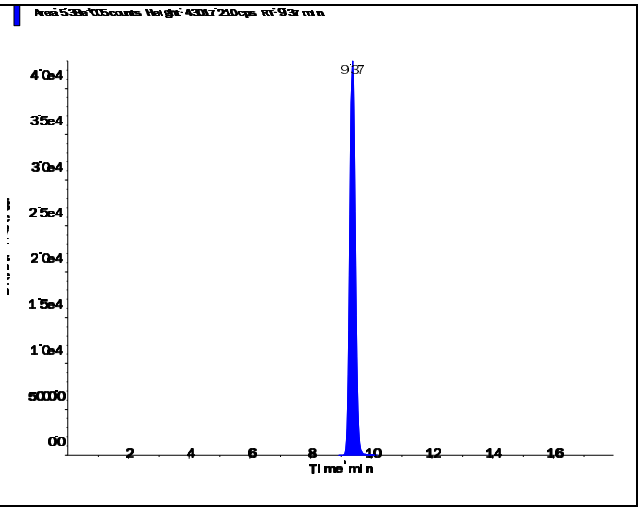

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

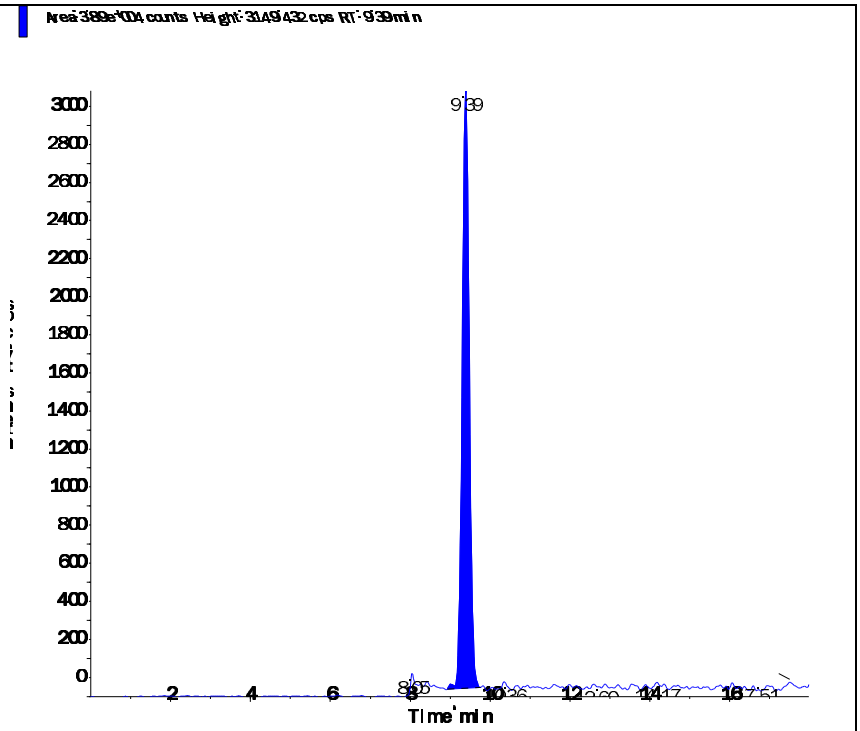

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

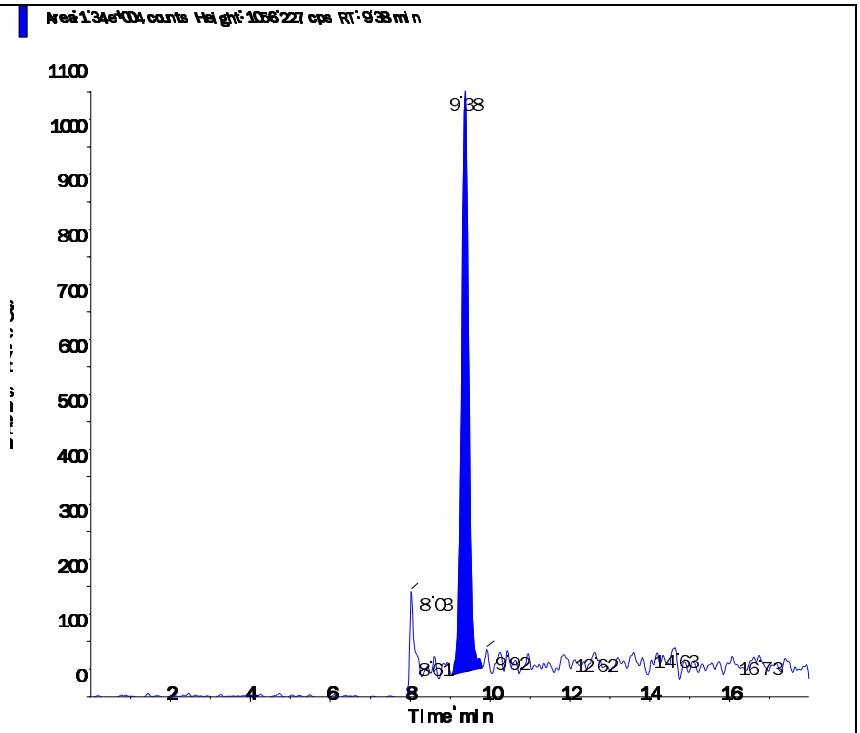

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:50 PM

Data File	LM35496.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35496.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.520e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.800e+04	9.39	N/A	0.201
Perchlorate conf	1.410e+04	9.38	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

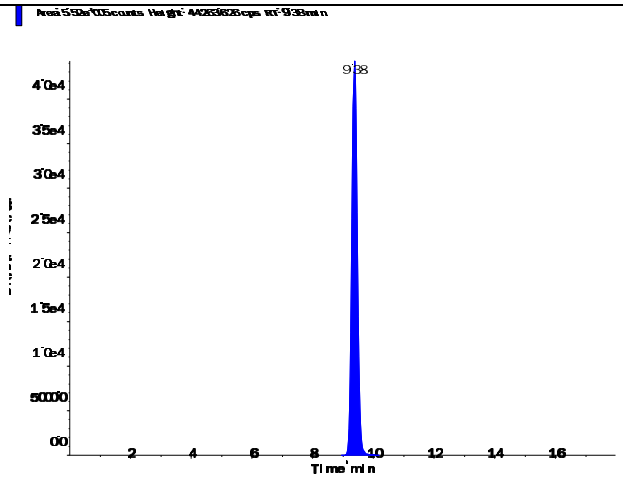

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

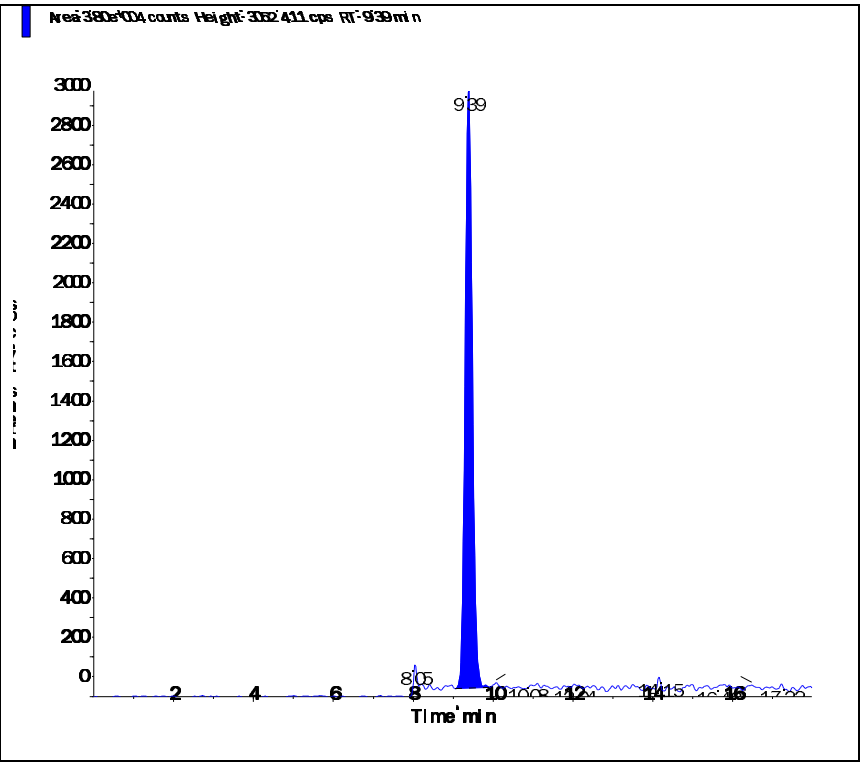

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

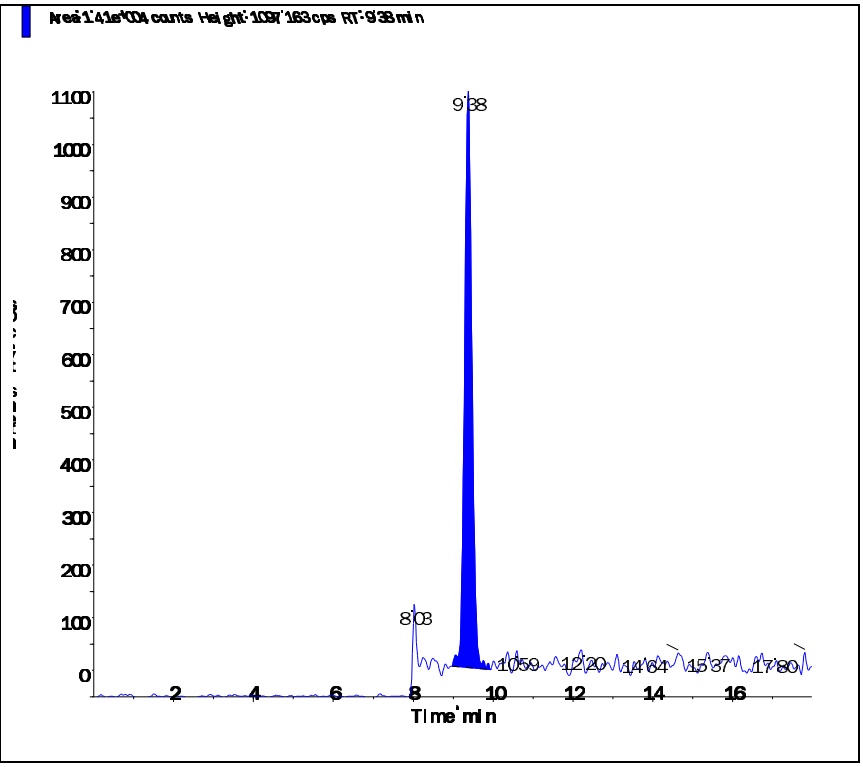

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:52 PM

Data File	LM35499.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35499.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.290e+04	9.40	N/A	0.207
Perchlorate conf	1.150e+04	9.38	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

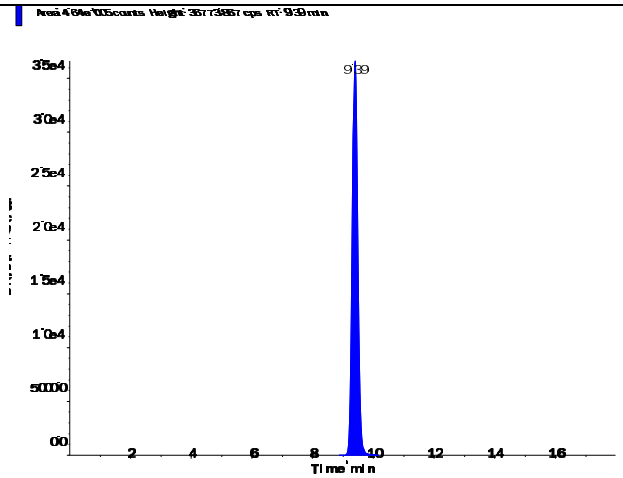

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:52 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

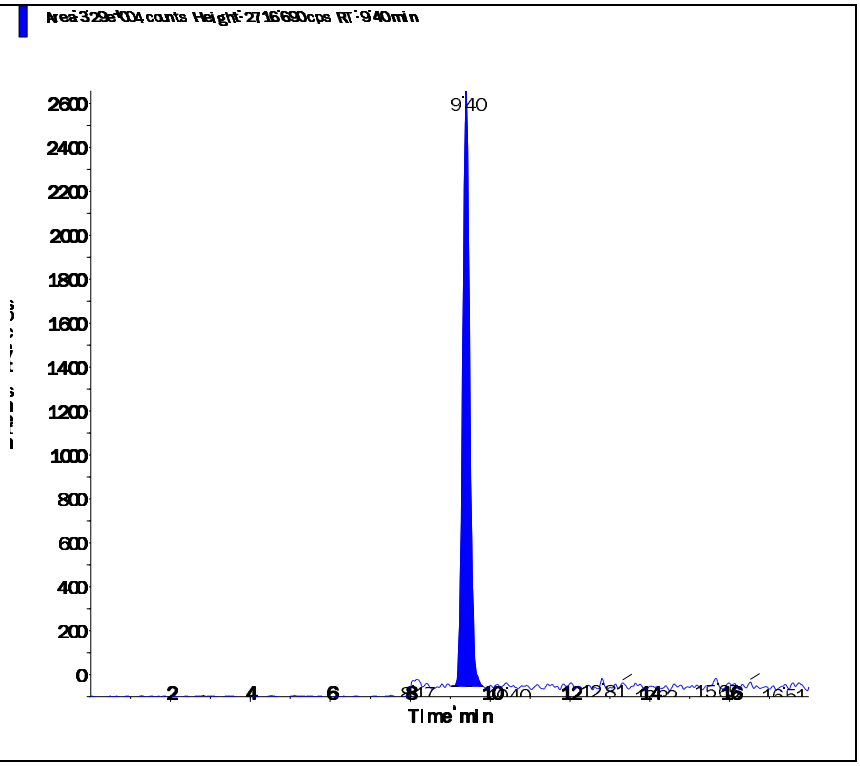

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

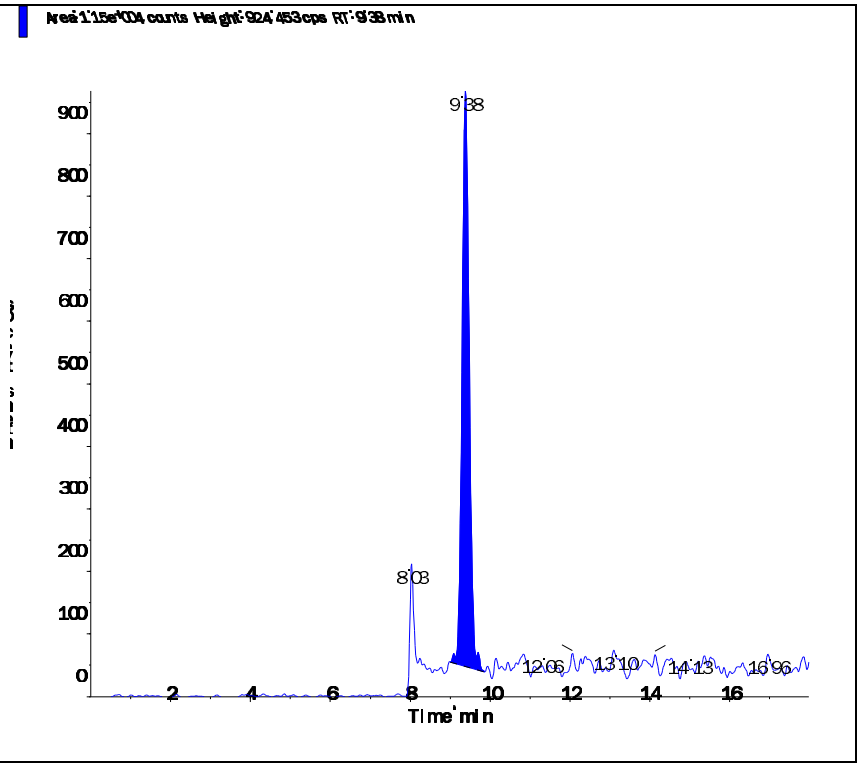

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:55 PM

Data File	LM35509.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35509.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.370e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.790e+04	9.40	N/A	0.206
Perchlorate conf	1.400e+04	9.39	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

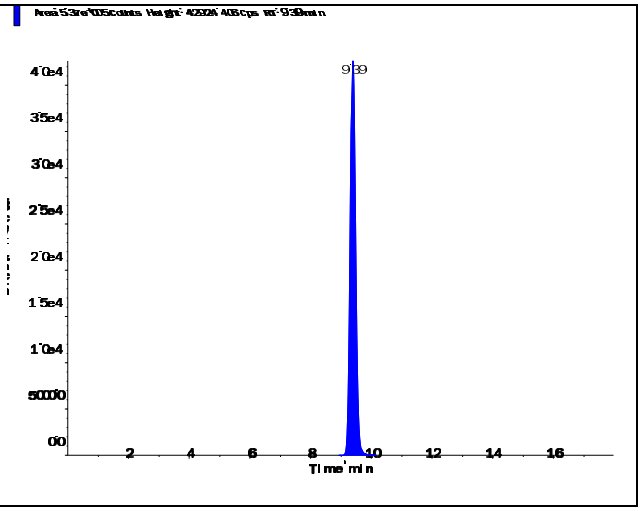

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

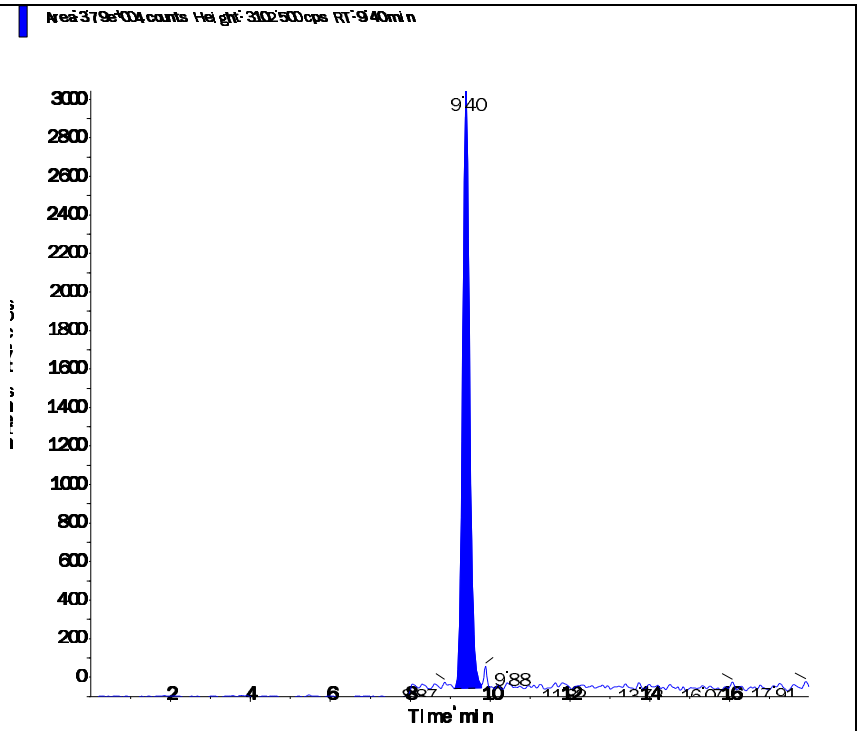

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

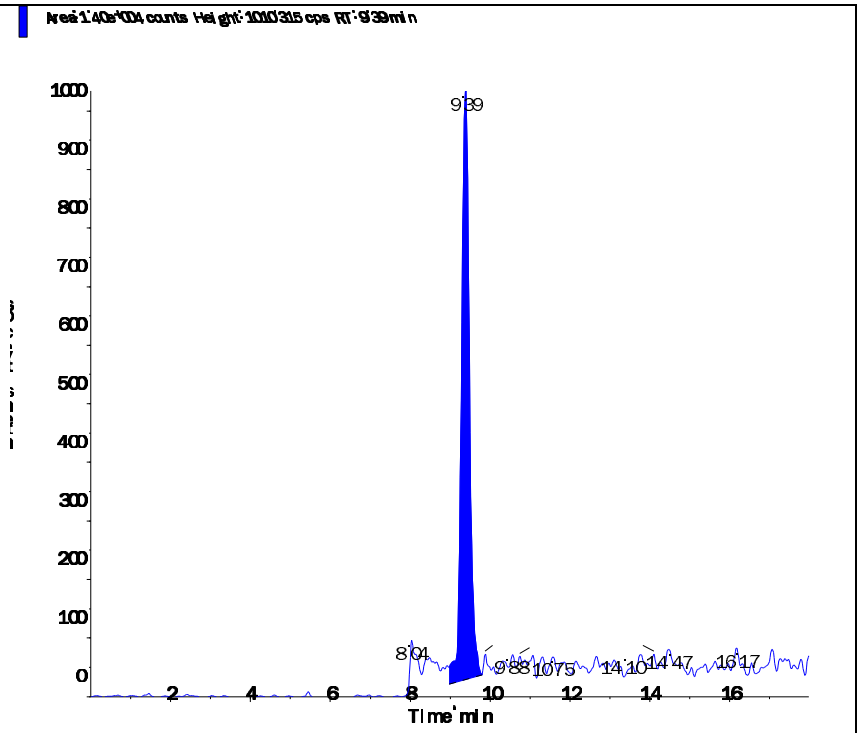

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:38 PM

Data File	LM35462.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-01 CCB	**Injection Vial**	1.00
Data File	LM35462.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

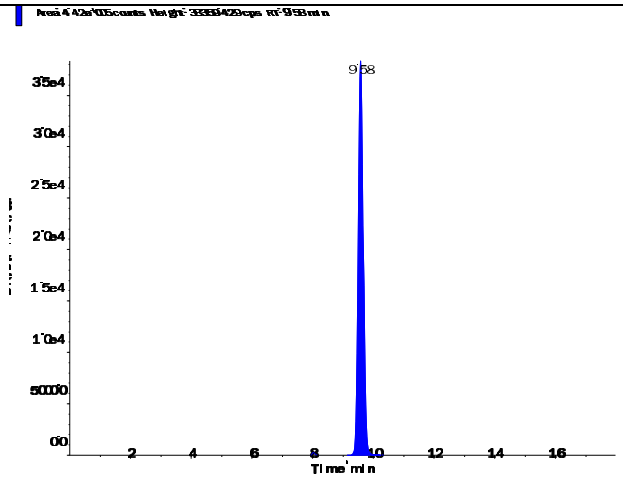

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:38 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	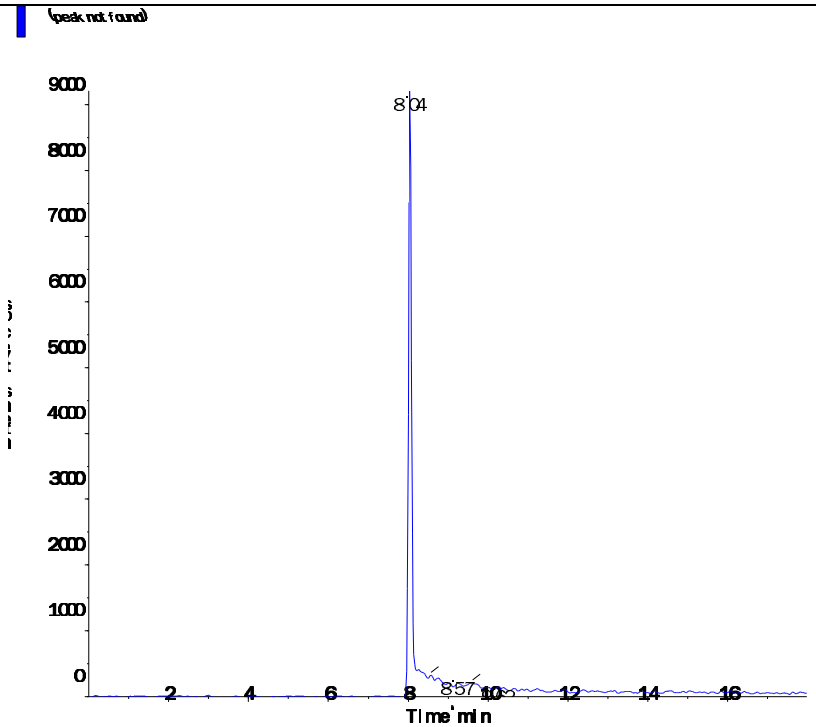
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	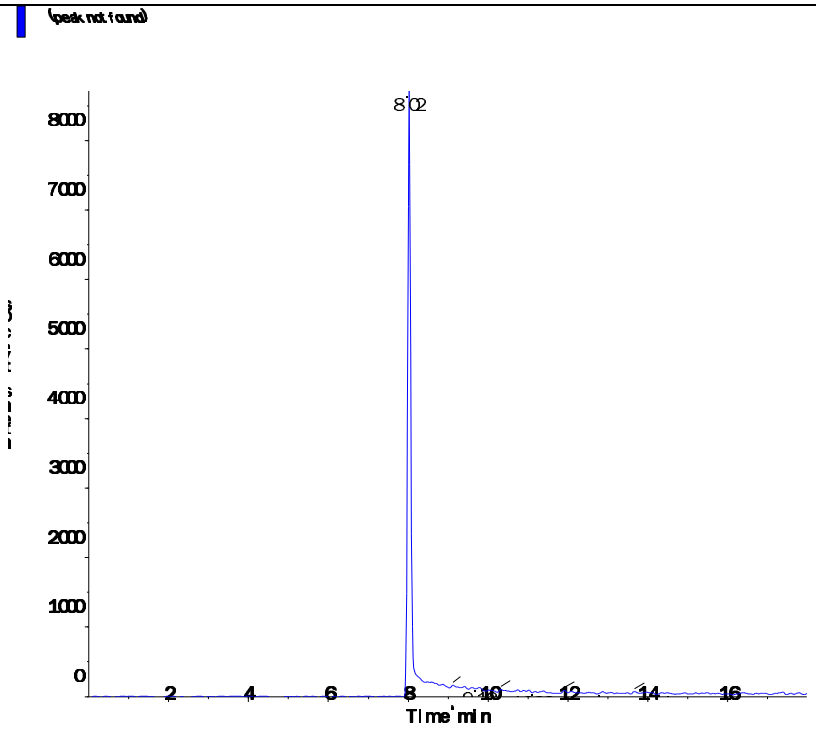

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:43 PM

Data File	LM35477.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-04 CCB	**Injection Vial**	1.00
Data File	LM35477.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	8.240e+02	9.53	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

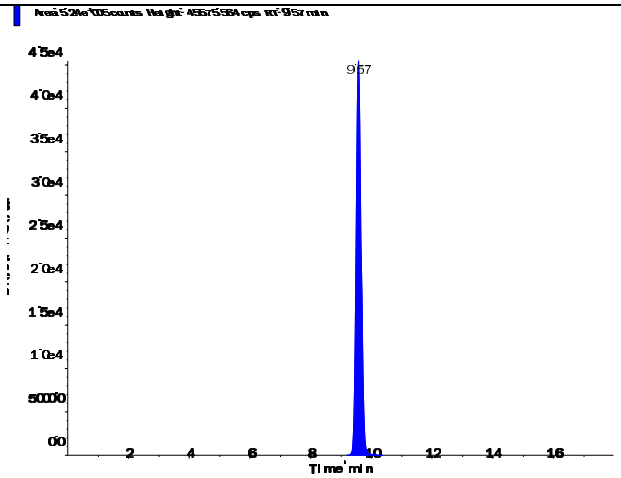

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:43 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

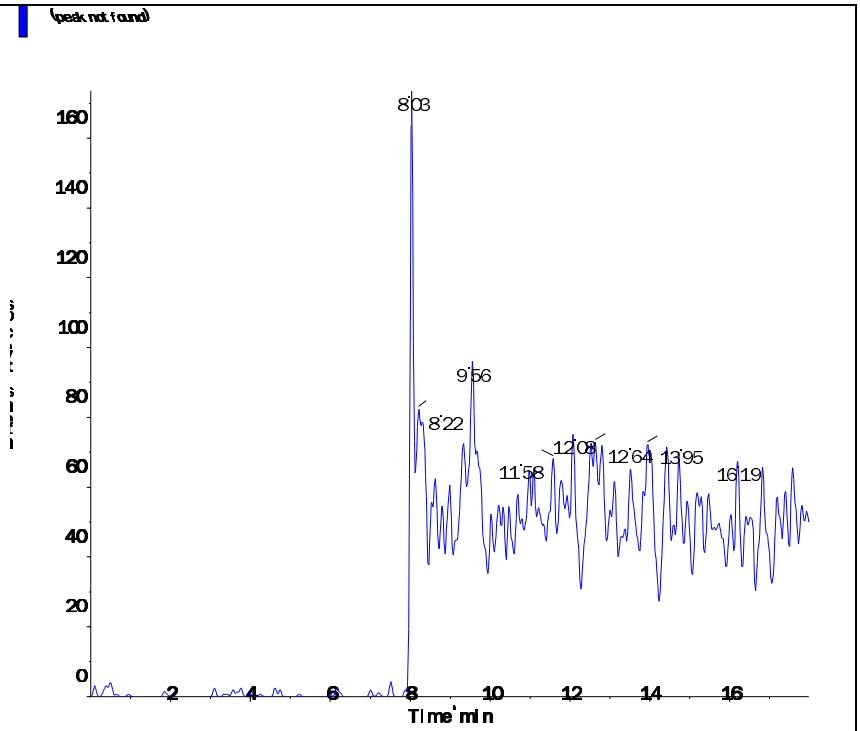

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

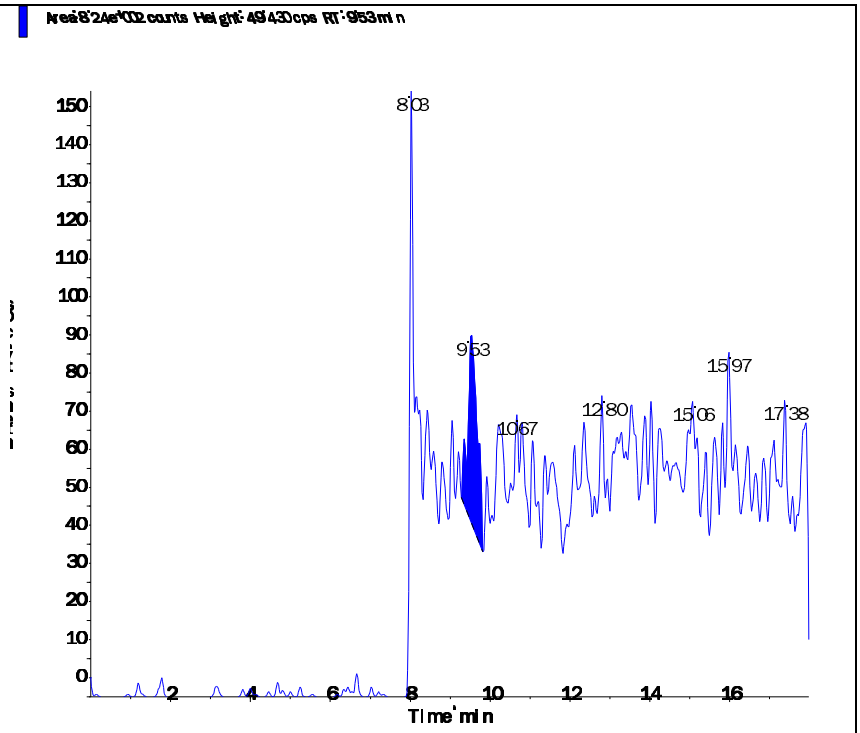

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Data File	LM35490.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-06 CCB	**Injection Vial**	1.00
Data File	LM35490.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

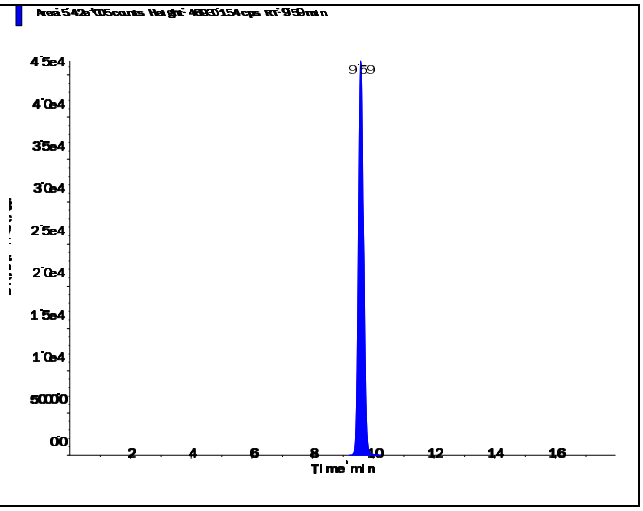

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

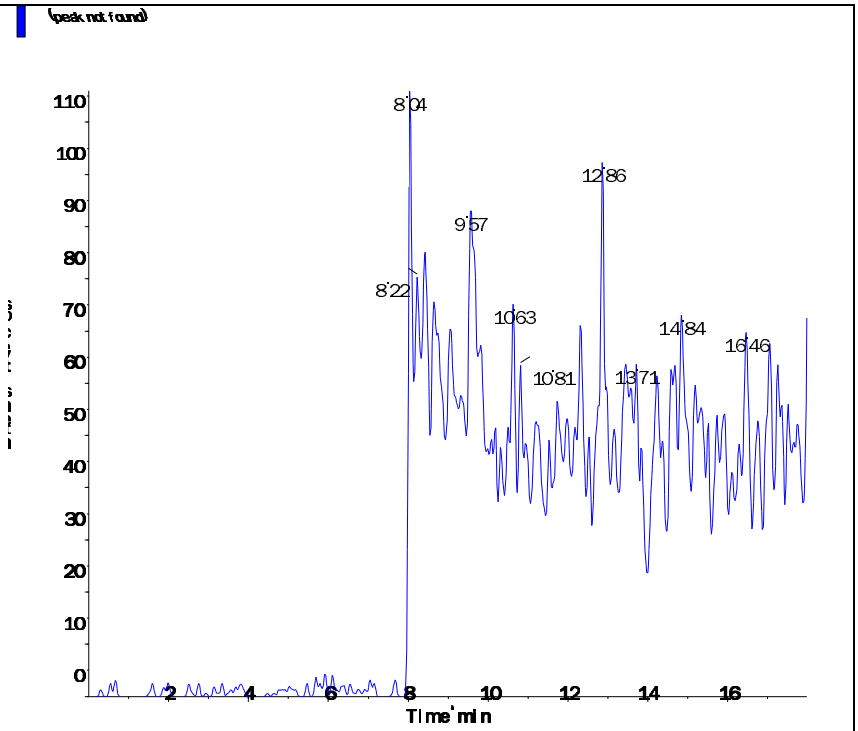

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

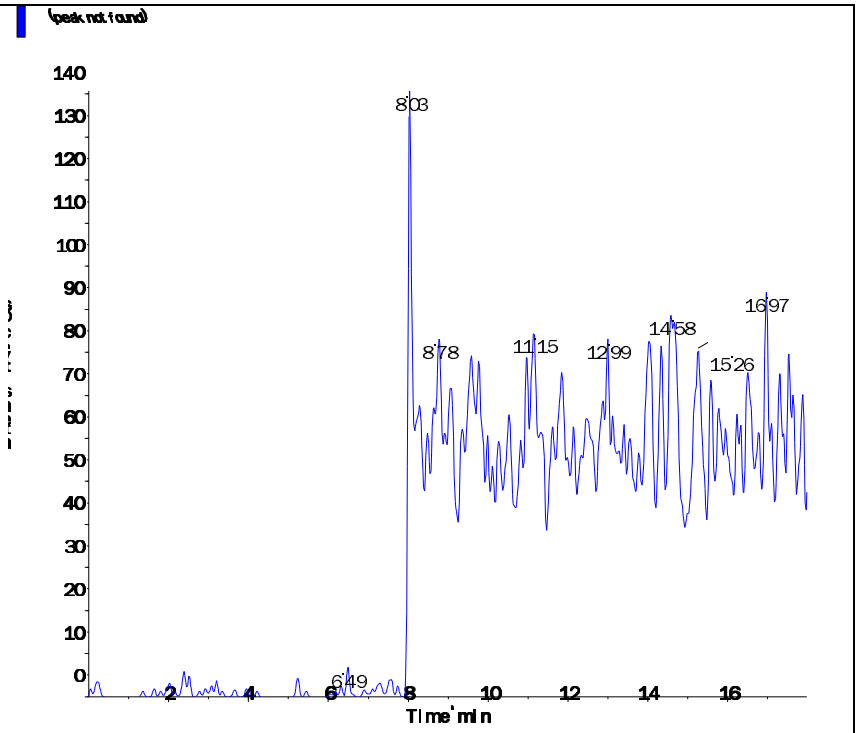

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:51 PM

Data File	LM35497.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-08 CCB	**Injection Vial**	1.00
Data File	LM35497.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.180e+02	9.63	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

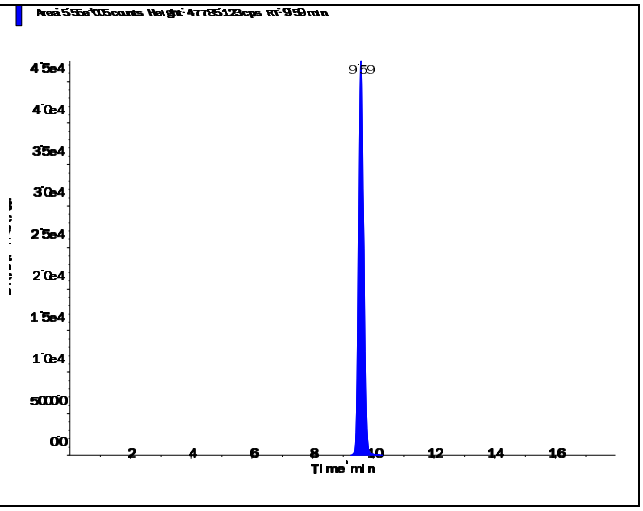

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:51 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

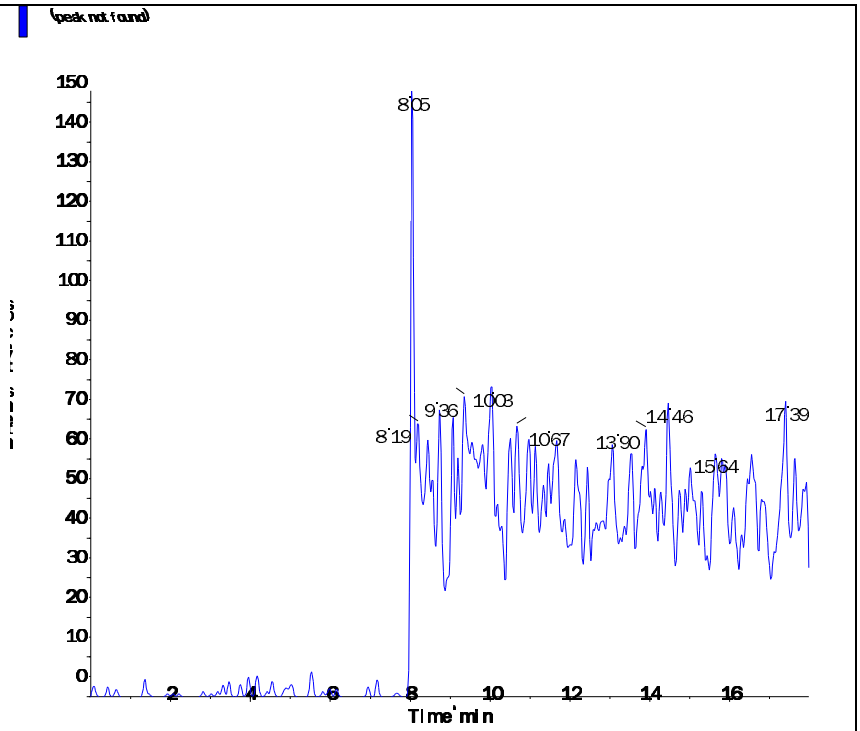

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

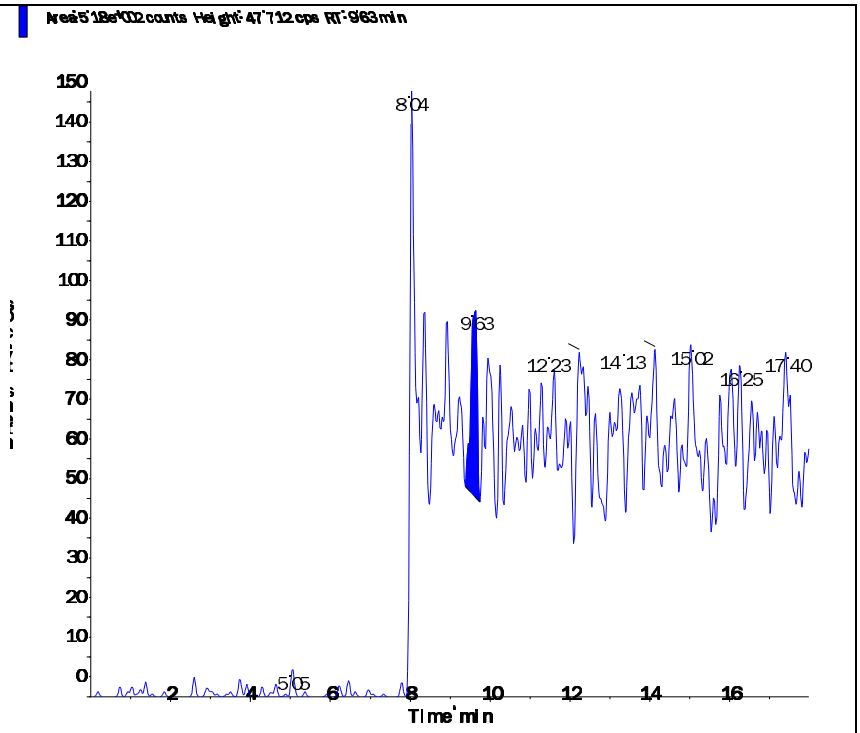

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:52 PM

Data File	LM35500.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-10 CCB	**Injection Vial**	1.00
Data File	LM35500.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

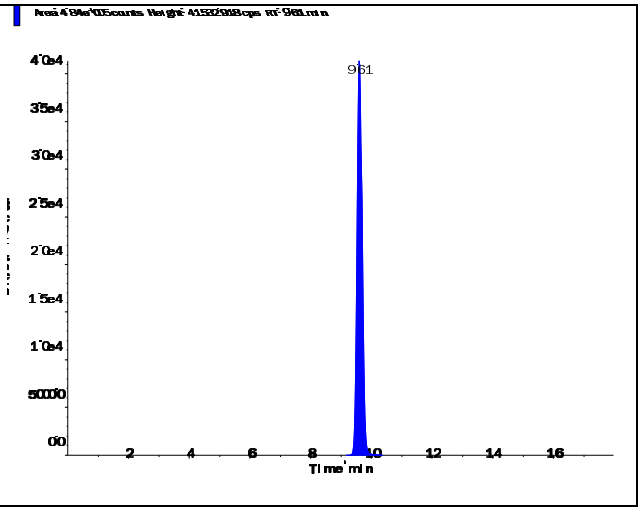

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:52 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	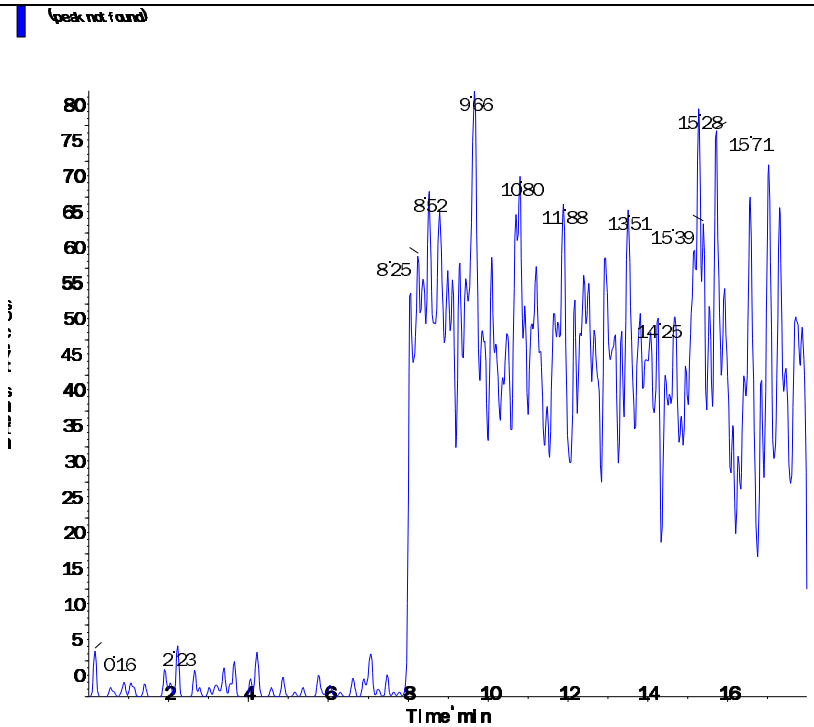
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	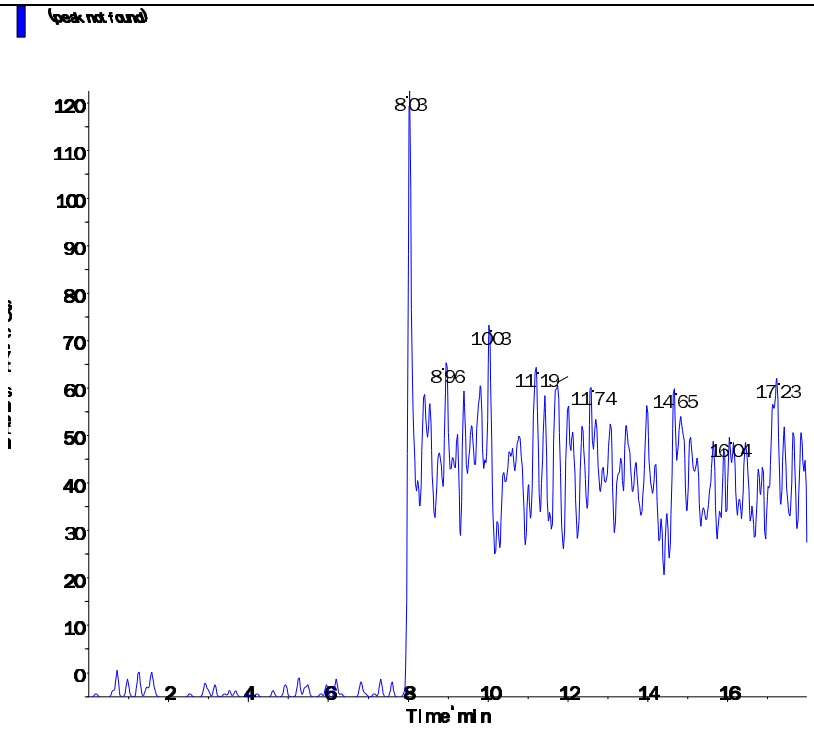

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:56 PM

Data File	LM35510.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-12 CCB	**Injection Vial**	1.00
Data File	LM35510.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

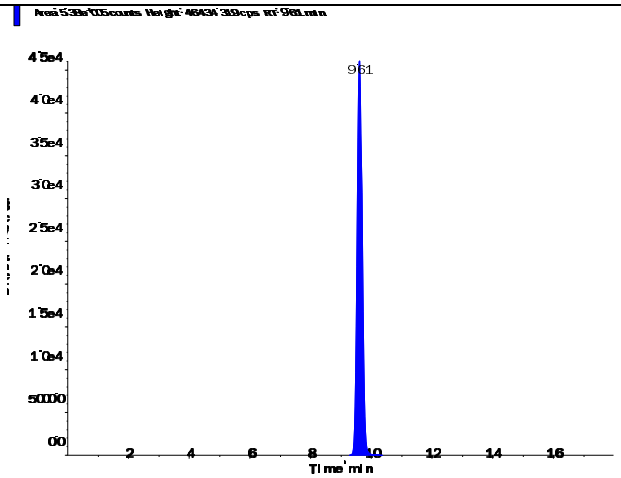

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:56 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

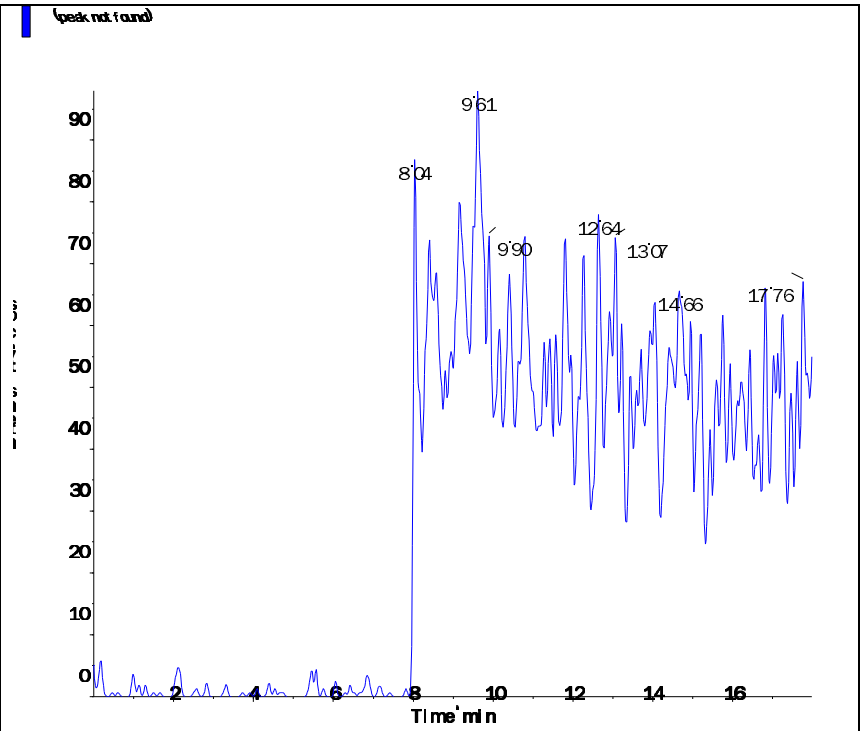

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

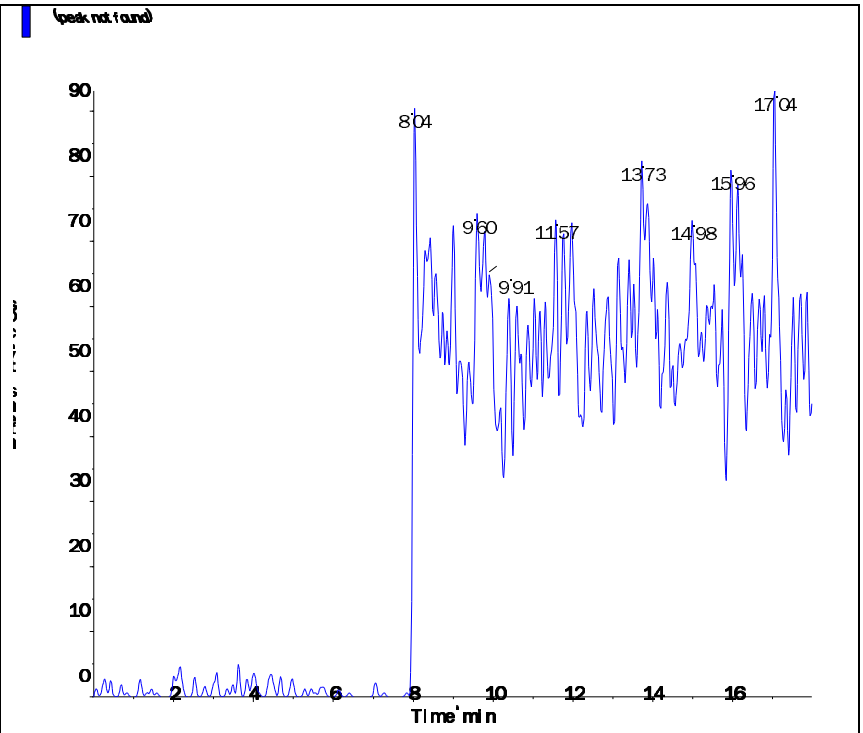

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:39 PM

Data File	LM35465.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35465.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.320e+05	8.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.810e+04	8.97	N/A	0.19
Perchlorate conf	1.000e+04	8.95	N/A	0.188

O18LP (Internal Standard)

RT (Exp. RT): 8.95(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

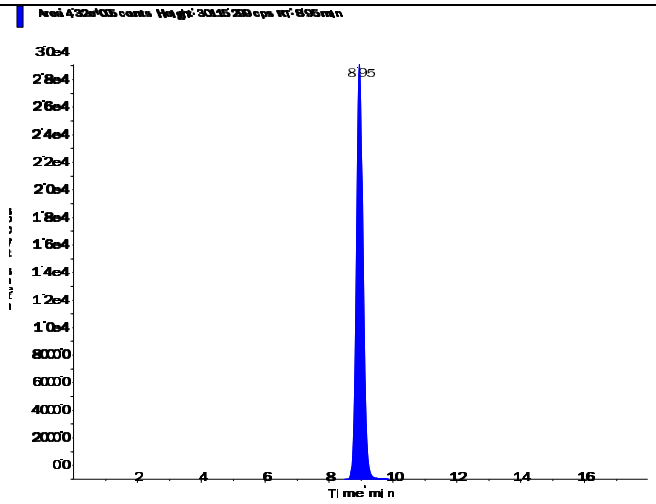

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:39 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	8.97 (9.84) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.065
Sample Type:	(Unknown)

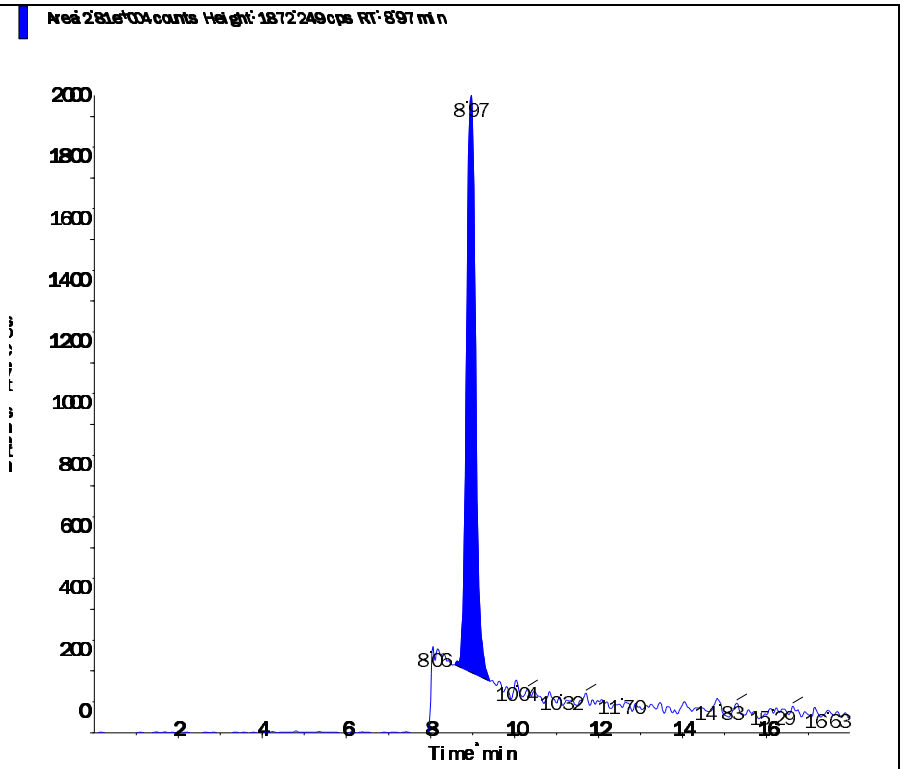

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	8.95 (9.84) min
Calculated conc:	0.188 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

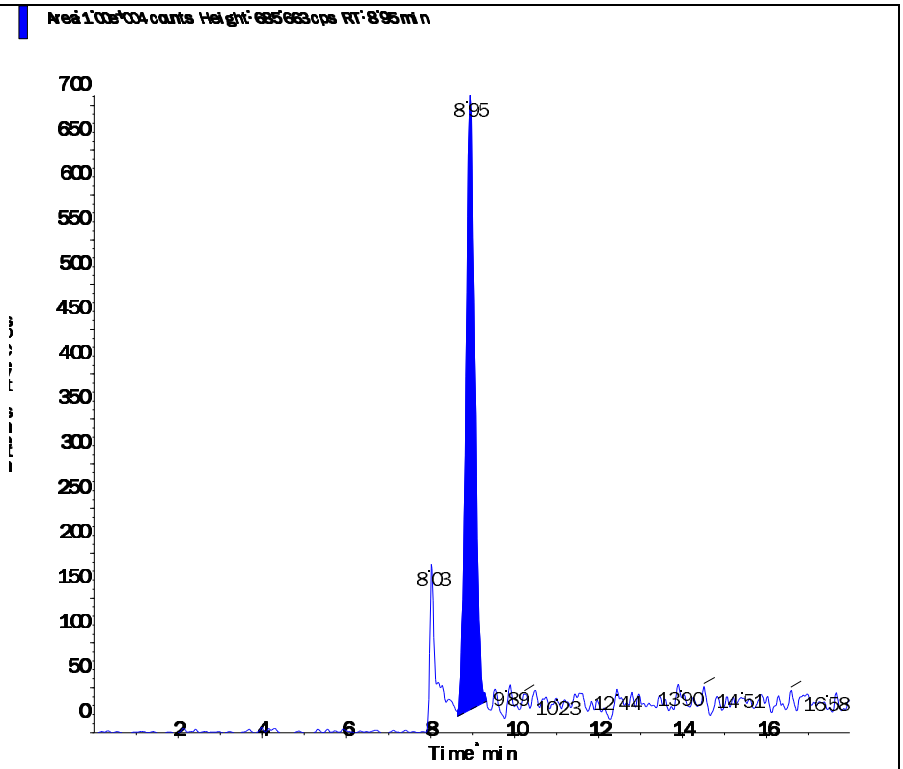

s.dataFile Page 2 of 2

Printing Time: 4:34:28 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.219 ug/L
Acq. Date:	6/24/2016
Acq. Time:	8:47:28 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	8.97 min
Area:	3.23e+004 counts
Height:	1951.523 cps
Start Time:	8.526 min
End Time:	9.417 min

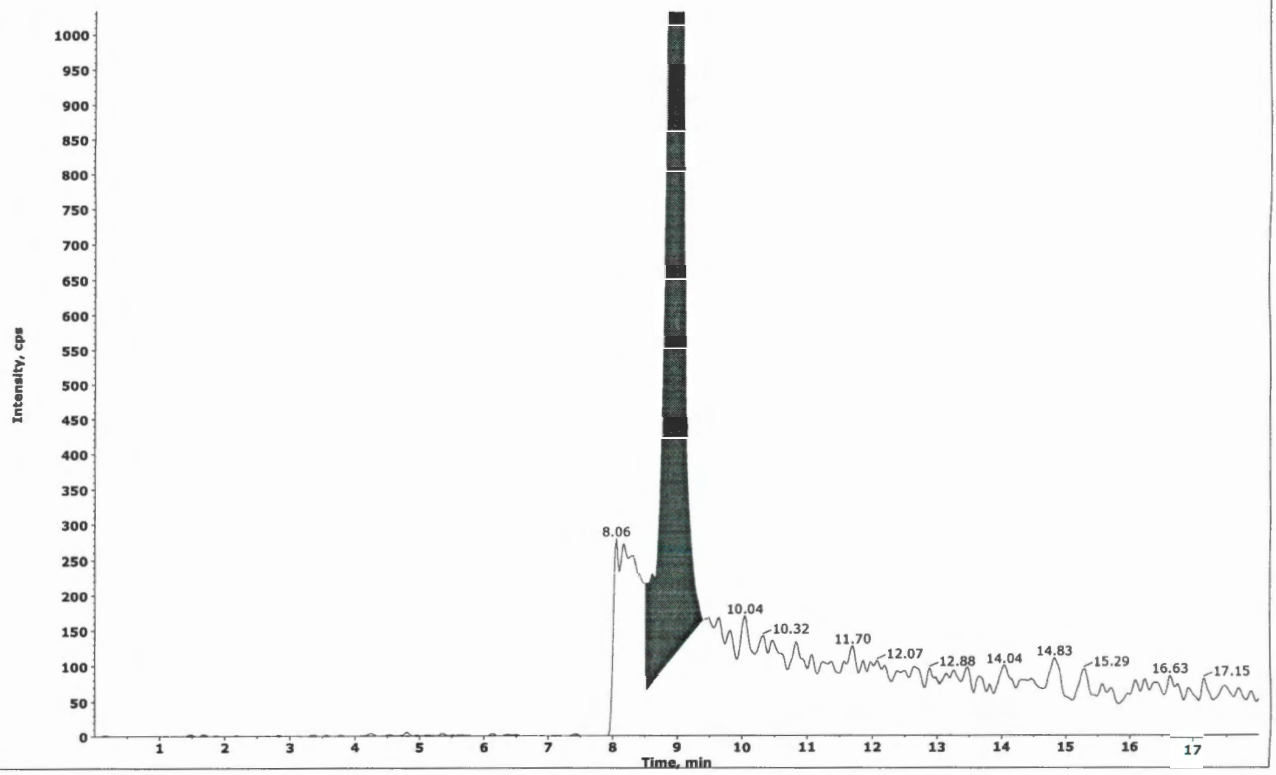

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

Printing Time: 4:36:56 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.190 ug/L
Acq. Date: 6/24/2016
Acq. Time: 8:47:28 PM

Modified: Yes
Proc. Algorithm: Analyst Classic
Smoothing Factor: 2
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Manual
Retention Time: 8.97 min
Area: 2.81e+004 counts
Height: 1872.249 cps
Start Time: 8.587 min
End Time: 9.417 min

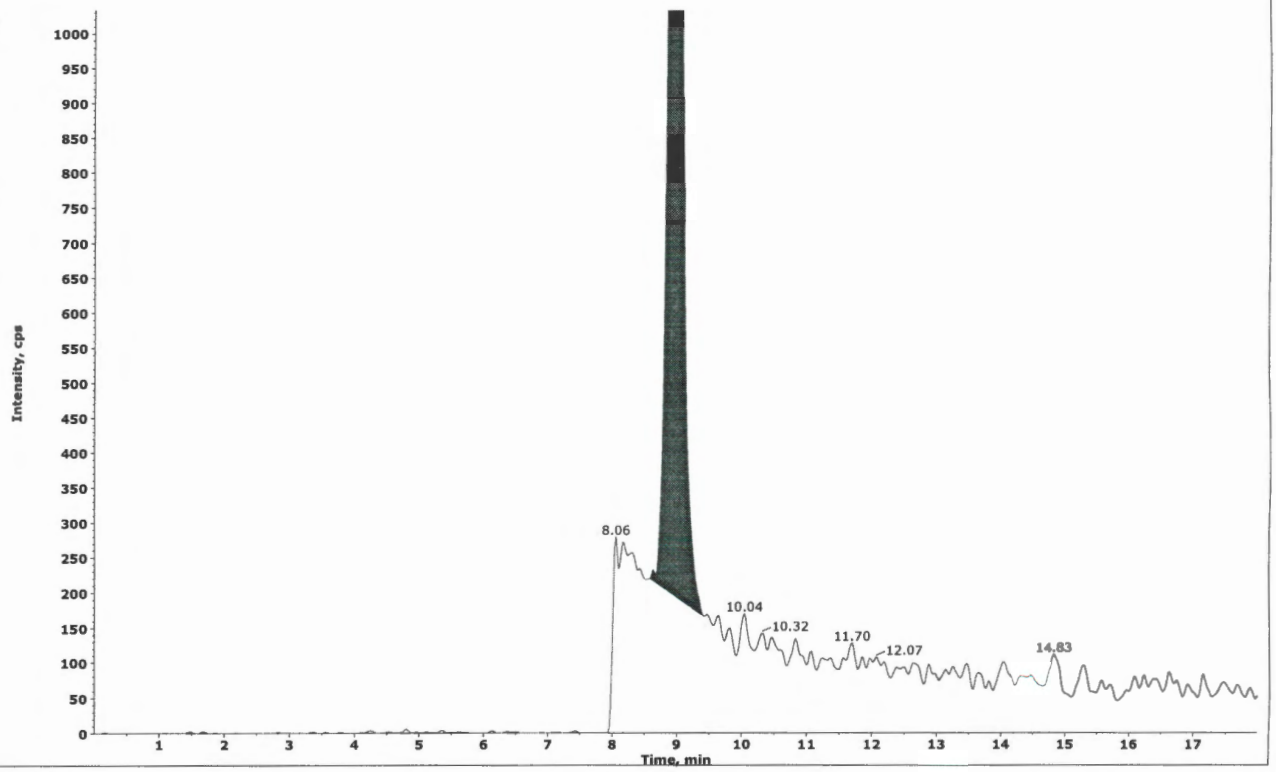

#4
JWR 06/25/16

✓ WTD
06-28-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Data File	LM35466.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-02 BLANK	**Injection Vial**	5.00
Data File	LM35466.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

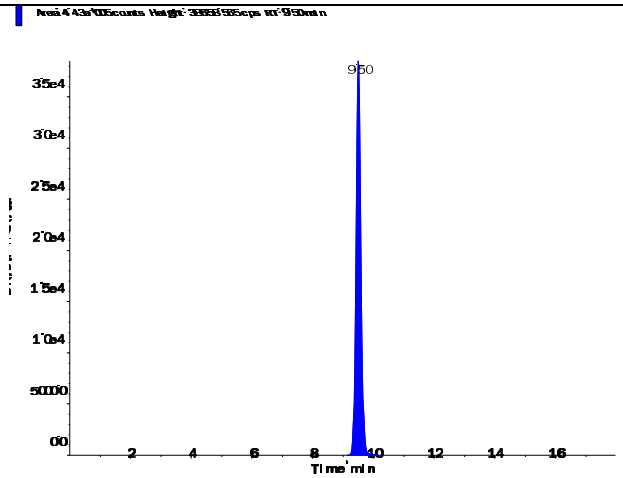

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

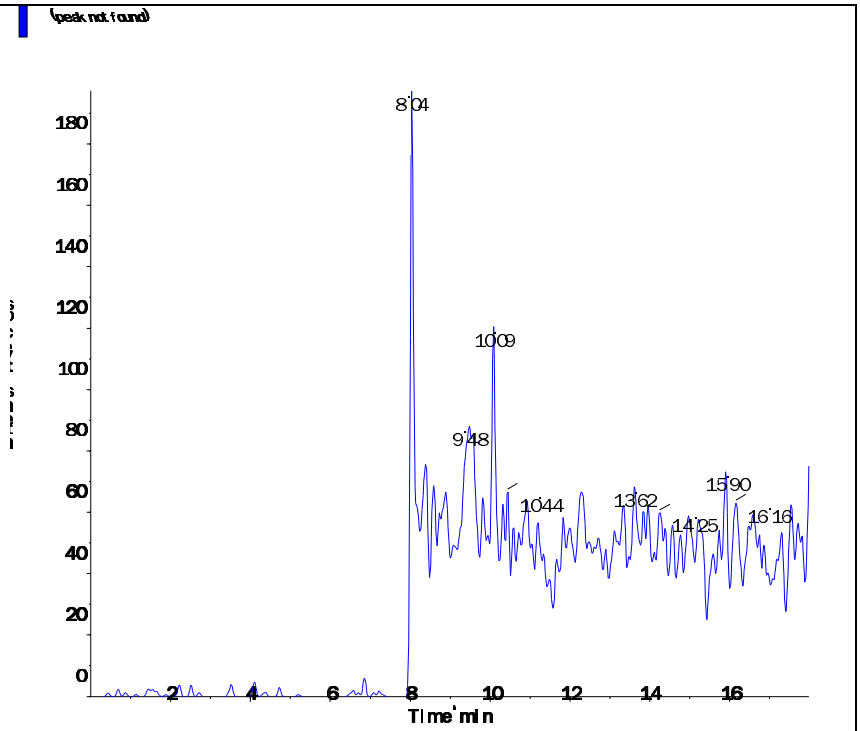

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

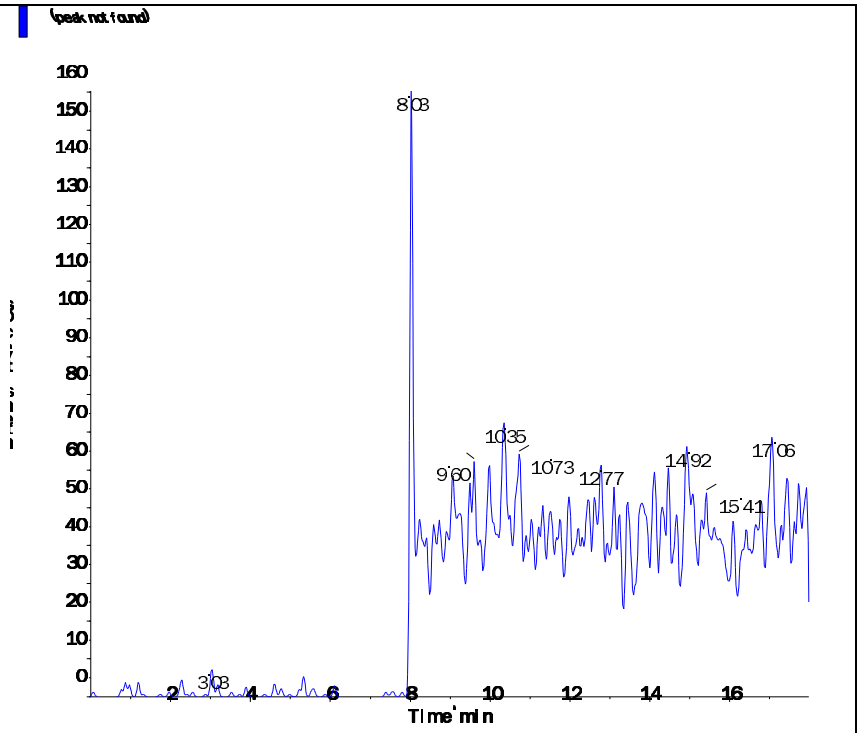

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Data File	LM35467.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35467.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.54	N/A	0.208
Perchlorate conf	1.180e+04	9.53	N/A	0.217

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

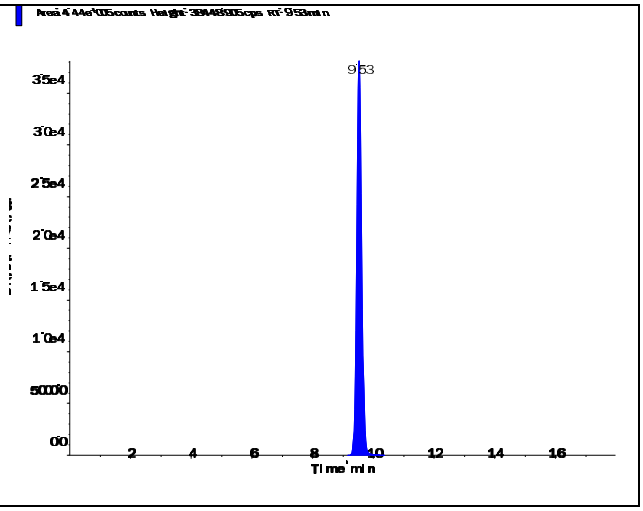

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

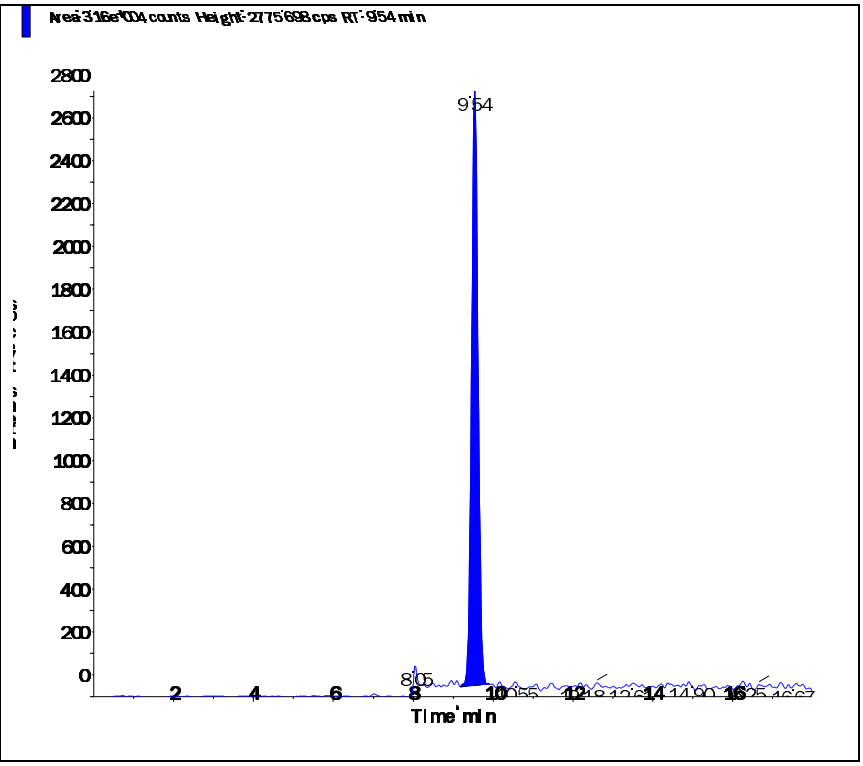

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	0.217 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

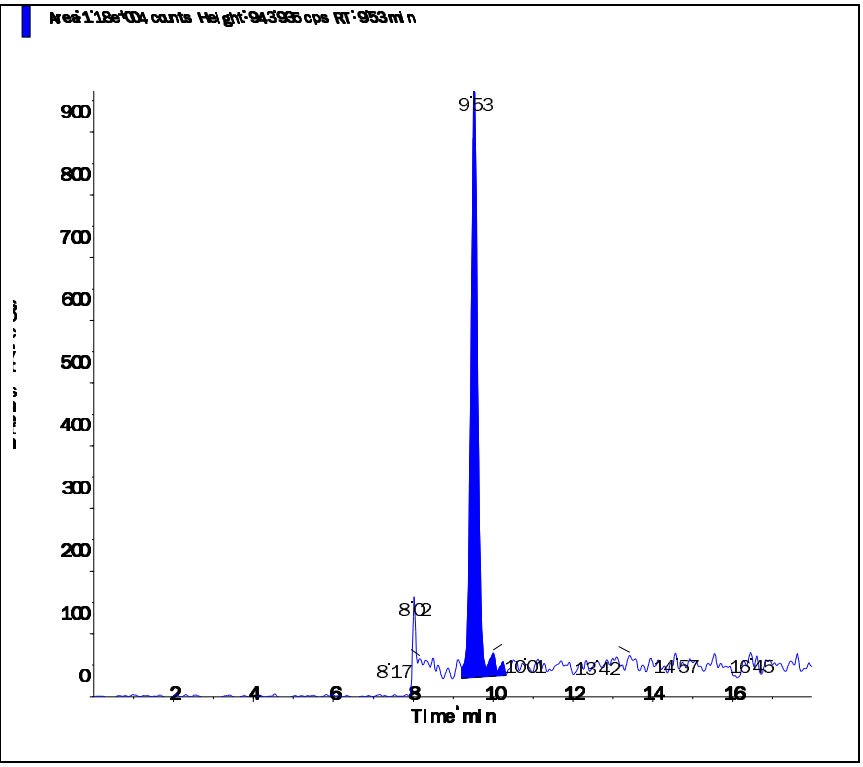

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Data File	LM35491.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35491.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.830e+04	9.59	N/A	0.213
Perchlorate conf	1.400e+04	9.57	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

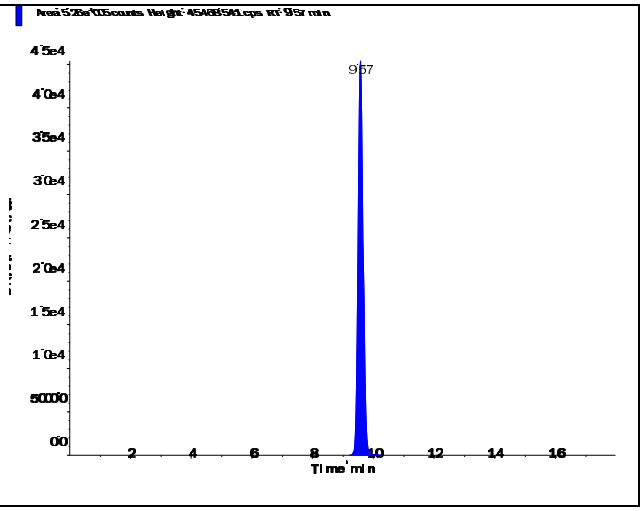

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

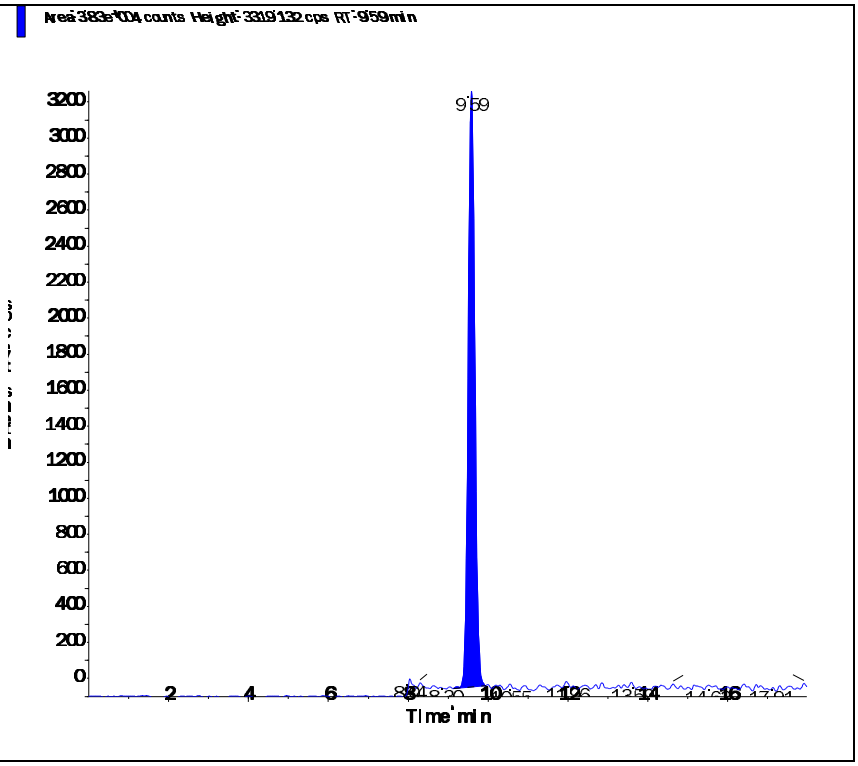

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	0.218 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

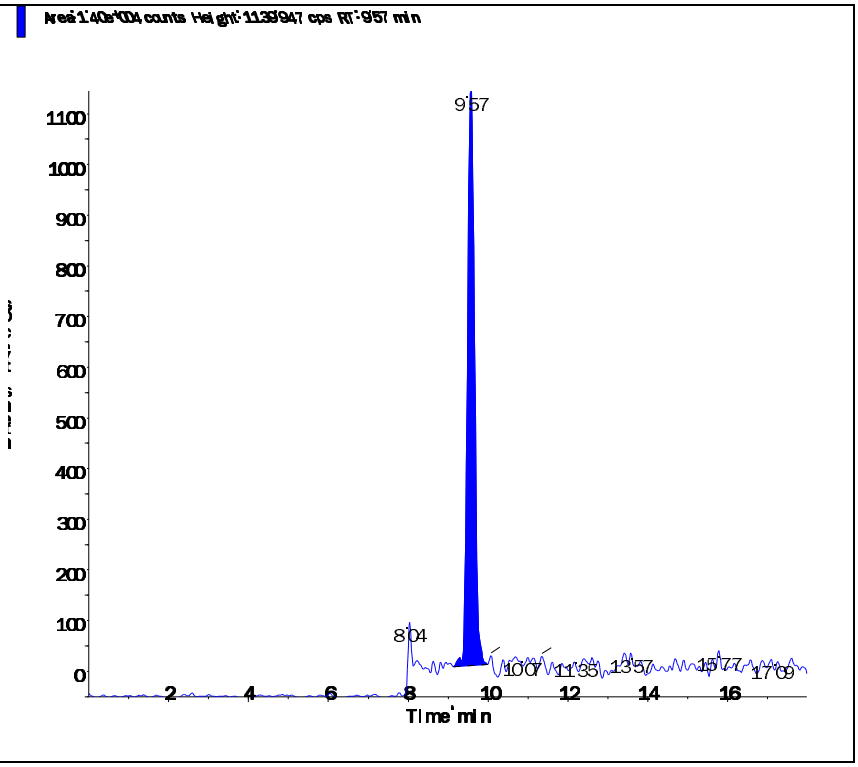

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW20-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/29/2016 10:07
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/29/2016 10:56
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	T3.062916.105622
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW20-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:57
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	T3.062816.135712
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0733	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	2.78		0.500	0.250	0.125
Iron, Total	7439-89-6	5.75		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	2.14		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.32	J	2.00	1.00	0.500
Sodium, Total	7440-23-5	24.6		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW19F-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/29/2016 10:07
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/29/2016 11:00
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	T3.062916.110017
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW19F-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/28/2016 14:01
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	T3.062816.140107
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.342		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.66		0.500	0.250	0.125
Iron, Total	7439-89-6	4.86		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.59		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.85	J	2.00	1.00	0.500
Sodium, Total	7440-23-5	5.07		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW19FFD-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/28/2016 14:05
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	T3.062816.140501
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.369		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.45		0.500	0.250	0.125
Iron, Total	7439-89-6	4.92		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.46		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.74	J	2.00	1.00	0.500
Sodium, Total	7440-23-5	4.86		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW19FFD-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/29/2016 10:07
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/29/2016 11:04
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	T3.062916.110411
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573828
Analyst: ERP
Spike Analyst: ERP
Run Date: 06/23/2016 08:03
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 06/23/2016 08:54

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: REK
HNO3 Lot #: COA18905
HCL Lot #: COA18769
40 & 50 ML. DIGESTION TU COA18987
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573828-02	BLANK	1	40 mL	50 mL	207.209 g	207.206 g		
2	WG573828-03	LCS	1	40 mL	50 mL	211.916 g	211.919 g	5 mL	
3	L16061142-01	SAMP	1	40 mL	50 mL	204.262 g	204.244 g		07/01/16
4	L16061142-03	SAMP	1	40 mL	50 mL	205.202 g	205.198 g		07/01/16
5	L16061142-05	SAMP	1	40 mL	50 mL	207.78 g	207.771 g		07/01/16
6	WG573828-01	REF	1	40 mL	50 mL	207.51 g	207.508 g		
7	L16061177-01	RS01	1	40 mL	50 mL	207.51 g	207.508 g		06/28/16
8	WG573828-04	MS	1	40 mL	50 mL	210.712 g	210.709 g	5 mL	
9	L16061177-02	MS01	1	40 mL	50 mL	210.712 g	210.709 g	5 mL	06/28/16
10	WG573828-05	MSD	1	40 mL	50 mL	212.905 g	212.92 g	5 mL	
11	L16061177-03	SD01	1	40 mL	50 mL	212.905 g	212.92 g	5 mL	06/28/16
12	L16061185-01	SAMP	1	40 mL	50 mL	203.692 g	203.699 g		06/29/16
13	L16061185-02	SAMP	1	40 mL	50 mL	204.217 g	204.21 g		06/29/16
14	L16061185-03	SAMP	1	40 mL	50 mL	205.262 g	205.267 g		06/29/16
15	L16061185-04	SAMP	1	40 mL	50 mL	207.112 g	207.122 g		06/29/16
16	L16061228-01	SAMP	1	40 mL	50 mL	207.875 g	207.873 g		06/29/16
17	L16061228-02	SAMP	1	40 mL	50 mL	205.684 g	205.688 g		06/29/16
18	L16061228-03	SAMP	1	40 mL	50 mL	206.291 g	206.292 g		06/29/16
19	L16061231-01	SAMP	1	40 mL	50 mL	205.351 g	205.351 g		06/29/16
20	L16061237-01	SAMP	1	40 mL	50 mL	206.015 g	206.015 g		06/29/16
21	L16061237-02	SAMP	1	40 mL	50 mL	205.838 g	205.835 g		06/29/16
22	L16061237-03	SAMP	1	40 mL	50 mL	206.006 g	205.992 g		06/29/16
23	L16061237-04	SAMP	1	40 mL	50 mL	204.76 g	204.75 g		06/29/16
24	L16061237-05	SAMP	1	40 mL	50 mL	207.397 g	207.39 g		06/29/16
25	L16061237-06	SAMP	1	40 mL	50 mL	207.603 g	207.599 g		06/29/16
26	L16061238-01	SAMP	1	40 mL	50 mL	203.998 g	203.991 g		06/29/16
27	L16061238-02	SAMP	1	40 mL	50 mL	205.965 g	205.959 g		06/29/16

Analyst: Erin Potter

Reviewer:

MW_DIG - Modified 09/30/2009
PDF ID: 4820021
Report generated: 06/23/2016 09:36

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062816.091620	WG574512-01	Calibration Point		1		06/28/16 09:16
2	T3.062816.092018	WG574512-02	Calibration Point		1		06/28/16 09:20
3	T3.062816.092413	WG574512-03	Calibration Point		1		06/28/16 09:24
4	T3.062816.092811	WG574512-04	Calibration Point		1		06/28/16 09:28
5	T3.062816.093148	WG574512-05	Calibration Point		1		06/28/16 09:31
6	T3.062816.093524	WG574512-06	Initial Calibration Verification		1		06/28/16 09:35
7	T3.062816.093901	WG574512-07	Initial Calib Blank		1		06/28/16 09:39
8	T3.062816.094252	WG574512-08	Low Level Initial Calibration V		1		06/28/16 09:42
9	T3.062816.094645	WG574512-09	Interference Check		1		06/28/16 09:46
10	T3.062816.095036	WG574512-10	Interference Check		1		06/28/16 09:50
11	T3.062816.095416	WG574512-11	CCV		1		06/28/16 09:54
12	T3.062816.095753	WG574512-12	CCB		1		06/28/16 09:57
13	T3.062816.100445	L16060986-10	MW-03-11	40/50	1		06/28/16 10:04
14	T3.062816.100840	L16060986-12	MW-01-01	40/50	1		06/28/16 10:08
15	T3.062816.101220	L16060986-14	MW-03-09	40/50	1		06/28/16 10:12
16	T3.062816.101612	L16060986-16	MW-01-08	40/50	1		06/28/16 10:16
17	T3.062816.102001	L16060986-18	MW-03-06	40/50	1		06/28/16 10:20
18	T3.062816.102355	L16060986-20	MW-03-05	40/50	1		06/28/16 10:23
19	T3.062816.102749	WG573530-01	Reference Sample		1	L16060986-22	06/28/16 10:27
20	T3.062816.103142	WG573530-02	Reference Sample		1	L16060986-24	06/28/16 10:31
21	T3.062816.103535	L16060986-26	MW-01-02	40/50	1		06/28/16 10:35
22	T3.062816.103931	WG574512-13	CCV		1		06/28/16 10:39
23	T3.062816.104308	WG574512-14	CCB		1		06/28/16 10:43
24	T3.062816.104705	L16060986-28	DUP 1	40/50	1		06/28/16 10:47
25	T3.062816.105057	L16060986-30	DUP 2	40/50	1		06/28/16 10:50
26	T3.062816.105450	WG573530-06	Matrix Spike	40/50	1	L16060986-22	06/28/16 10:54
27	T3.062816.105829	WG573530-07	Matrix Spike Duplica	40/50	1	L16060986-22	06/28/16 10:58
28	T3.062816.110208	WG573530-08	Matrix Spike	40/50	1	L16060986-24	06/28/16 11:02
29	T3.062816.110547	WG573530-09	Matrix Spike Duplica	40/50	1	L16060986-24	06/28/16 11:05
30	T3.062816.110925	L16060986-40	EQUIP BLANK 1	40/50	1		06/28/16 11:09
31	T3.062816.111320	L16060986-42	EQUIP BLANK 2	40/50	1		06/28/16 11:13
32	T3.062816.111715	WG574512-15	CCV		1		06/28/16 11:17
33	T3.062816.112053	WG574512-16	CCB		1		06/28/16 11:20
34	T3.062816.112448	L16061190-01	USDA / 04/07/16		2		06/28/16 11:24

Page: 1 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062816.112835	L16061190-02	USDA / 05/06/16		1		06/28/16 11:28
36	T3.062816.113223	L16061130-02	MW-23-003		5		06/28/16 11:32
37	T3.062816.113618	L16061130-03	MW-23-013		5		06/28/16 11:36
38	T3.062816.114012	L16061130-04	MW-23-001		5		06/28/16 11:40
39	T3.062816.114405	L16061130-05	EB (1) WATER A		1		06/28/16 11:44
40	T3.062816.114802	L16061164-11	16F1336-11		1		06/28/16 11:48
41	T3.062816.115153	L16061252-01	35006822000-W-1-06-22-16		1		06/28/16 11:51
42	T3.062816.115545	WG574476-01	L1606125201PS		1		06/28/16 11:55
43	T3.062816.115924	WG574476-02	L1606125201SDL		5		06/28/16 11:59
44	T3.062816.120319	WG574512-17	CCV		1		06/28/16 12:03
45	T3.062816.120656	WG574512-18	CCV		1		06/28/16 12:06
46	T3.062816.121034	L16061068-04	C01-061716		20		06/28/16 12:10
47	T3.062816.121735	WG574512-19	CCV		1		06/28/16 12:17
48	T3.062816.122110	WG574512-20	CCB		1		06/28/16 12:21
49	T3.062816.122507	L16061190-01	USDA / 04/07/16	40/50	2		06/28/16 12:25
50	T3.062816.122854	L16061190-02	USDA / 05/06/16	40/50	2		06/28/16 12:28
51	T3.062816.123240	L16061130-02	MW-23-003	40/50	5		06/28/16 12:32
52	T3.062816.123633	L16061130-03	MW-23-013	40/50	5		06/28/16 12:36
53	T3.062816.124025	L16061130-04	MW-23-001	40/50	5		06/28/16 12:40
54	T3.062816.124418	L16061130-05	EB (1) WATER A	40/50	1		06/28/16 12:44
55	T3.062816.124814	L16061164-11	16F1336-11	5/50	1		06/28/16 12:48
56	T3.062816.125207	L16061252-01	35006822000-W-1-06-22-16	40/50	1		06/28/16 12:52
57	T3.062816.125559	WG574276-01	Post Digestion Spike		1	L16061130-05	06/28/16 12:55
58	T3.062816.125938	WG574276-02	Serial Dilution		5	L16061130-05	06/28/16 12:59
59	T3.062816.130335	WG574512-21	CCV		1		06/28/16 13:03
60	T3.062816.130712	WG574512-22	CCB		1		06/28/16 13:07
61	T3.062816.131108	L16061068-04	C01-061716	40/50	20		06/28/16 13:11
62	T3.062816.131503	L16061068-05	C01FD-061716	40/50	20		06/28/16 13:15
63	T3.062816.131855	WG574276-01	Post Digestion Spike		1	L16061130-05	06/28/16 13:18
64	T3.062816.132234	L16061068-11	MW19F-061716	40/50	20		06/28/16 13:22
65	T3.062816.132628	WG573869-01	Reference Sample		20	L16061068-13	06/28/16 13:26
66	T3.062816.133023	WG573869-04	Matrix Spike	40/50	20	L16061068-13	06/28/16 13:30
67	T3.062816.133415	WG573869-05	Matrix Spike Duplica	40/50	20	L16061068-13	06/28/16 13:34
68	T3.062816.133809	WG574512-23	CCV		1		06/28/16 13:38

Page: 2 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062816.134146	WG574512-24	CCB		1		06/28/16 13:41
70	T3.062816.134543	WG574512-25	Low Level Continuing Calibra		1		06/28/16 13:45
71	T3.062816.134937	WG573828-02	Method/Prep Blank	40/50	1		06/28/16 13:49
72	T3.062816.135333	WG573828-03	Laboratory Control S	40/50	1		06/28/16 13:53
73	T3.062816.135712	L16061142-01	18WW20-062016	40/50	1		06/28/16 13:57
74	T3.062816.140107	L16061142-03	18WW19F-062016	40/50	1		06/28/16 14:01
75	T3.062816.140501	L16061142-05	18WW19FFD-062016	40/50	1		06/28/16 14:05
76	T3.062816.140856	WG573828-01	Reference Sample		1	L16061177-01	06/28/16 14:08
77	T3.062816.141250	WG573828-04	Matrix Spike	40/50	1	L16061177-01	06/28/16 14:12
78	T3.062816.141630	WG573828-05	Matrix Spike Duplica	40/50	1	L16061177-01	06/28/16 14:16
79	T3.062816.142009	L16061185-01	2203-123 W1 (B)	40/50	1		06/28/16 14:20
80	T3.062816.142402	L16061185-02	2203-123 W1 (B)	40/50	1		06/28/16 14:24
81	T3.062816.142755	WG574512-26	CCV		1		06/28/16 14:27
82	T3.062816.143132	WG574512-27	CCB		1		06/28/16 14:31
83	T3.062816.143530	L16061185-03	2203-123 W1 (FF)	40/50	1		06/28/16 14:35
84	T3.062816.143922	L16061185-04	2203-123 W1 (FF)	40/50	1		06/28/16 14:39
85	T3.062816.144315	L16061228-01	SS007MWOB03-007	40/50	1		06/28/16 14:43
86	T3.062816.144709	L16061228-02	SS007MWN751-007	40/50	1		06/28/16 14:47
87	T3.062816.145057	L16061228-03	SS007MWN753-007	40/50	1		06/28/16 14:50
88	T3.062816.145448	L16061231-01	FT002MW0205-007	40/50	1		06/28/16 14:54
89	T3.062816.145841	L16061237-01	SS007MWN769-007	40/50	1		06/28/16 14:58
90	T3.062816.150234	L16061237-02	SS007MWN740-007	40/50	1		06/28/16 15:02
91	T3.062816.150626	L16061237-03	SS007MWN740-007 DUP	40/50	1		06/28/16 15:06
92	T3.062816.151019	L16061237-04	SS007MWN738-007	40/50	1		06/28/16 15:10
93	T3.062816.151411	WG574512-28	CCV		1		06/28/16 15:14
94	T3.062816.151749	WG574512-29	CCB		1		06/28/16 15:17
95	T3.062816.152146	L16061237-05	SS007MWN741-007	40/50	1		06/28/16 15:21
96	T3.062816.152539	L16061237-06	SS007MWNOB09-007	40/50	1		06/28/16 15:25
97	T3.062816.152932	L16061238-01	LF003MW0306-007	40/50	1		06/28/16 15:29
98	T3.062816.153324	L16061238-02	LF003MW0307-007	40/50	1		06/28/16 15:33
99	T3.062816.153717	WG574350-01	Post Digestion Spike		1	L16061238-01	06/28/16 15:37
100	T3.062816.154055	WG574350-02	Serial Dilution		5	L16061238-01	06/28/16 15:40
101	T3.062816.154446	WG574350-02	Serial Dilution		25	L16061238-01	06/28/16 15:44
102	T3.062816.154842	WG574512-30	CCV		1		06/28/16 15:48

Page: 3 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062816.155209	WG574512-31	CCB		1		06/28/16 15:52
104	T3.062816.155606	WG574512-32	Low Level Continuing Calibra		1		06/28/16 15:56
105	T3.062816.160000	WG574197-02	Method/Prep Blank	40/50	1		06/28/16 16:00
106	T3.062816.160356	WG574197-03	Laboratory Control S	40/50	1		06/28/16 16:03
107	T3.062816.160736	L16061378-01	11002-G05-WQ-W0080	40/50	1		06/28/16 16:07
108	T3.062816.161133	L16061378-02	11103-G08-WQ-W0017	40/50	1		06/28/16 16:11
109	T3.062816.161529	L16061378-03	18311-G02-WQ-W0010	40/50	1		06/28/16 16:15
110	T3.062816.161925	L16061378-04	18416-L04-WQ-W0025	40/50	1		06/28/16 16:19
111	T3.062816.162323	L16061380-01	XU936TW003A	40/50	1		06/28/16 16:23
112	T3.062816.162711	L16061380-02	XU936TW003C	40/50	1		06/28/16 16:27
113	T3.062816.163057	L16061381-06	EB02	40/50	1		06/28/16 16:30
114	T3.062816.163455	L16061401-01	DP005MW0501-007	40/50	1		06/28/16 16:34
115	T3.062816.163852	WG574512-33	CCV		1		06/28/16 16:38
116	T3.062816.164230	WG574512-34	CCB		1		06/28/16 16:42
117	T3.062816.164626	L16061402-01	SS007MW0715-007	40/50	1		06/28/16 16:46
118	T3.062816.165019	L16061404-01	DP005MW0503-007	40/50	1		06/28/16 16:50
119	T3.062816.165410	L16061408-01	DP005MW0508-007	40/50	1		06/28/16 16:54
120	T3.062816.165803	L16061409-01	ST008MW0818-007	40/50	1		06/28/16 16:58
121	T3.062816.170156	L16061410-01	SS007MW0704-007	40/50	1		06/28/16 17:01
122	T3.062816.170548	L16061417-01	SS007MW0B04-007	40/50	1		06/28/16 17:05
123	T3.062816.170940	L16061417-02	SS007MW0B06-007	40/50	1		06/28/16 17:09
124	T3.062816.171335	L16061417-03	SS007MW0B06-007DUP	40/50	1		06/28/16 17:13
125	T3.062816.171728	L16061417-04	SS007MW0B13-007	40/50	1		06/28/16 17:17
126	T3.062816.172123	WG574197-01	Reference Sample		1	L16061417-05	06/28/16 17:21
127	T3.062816.172517	WG574512-35	CCV		1		06/28/16 17:25
128	T3.062816.172854	WG574512-36	CCB		1		06/28/16 17:28
129	T3.062816.173251	WG574197-04	Matrix Spike	40/50	1	L16061417-05	06/28/16 17:32
130	T3.062816.173629	WG574197-05	Matrix Spike Duplica	40/50	1	L16061417-05	06/28/16 17:36
131	T3.062816.174008	L16061417-09	FQC-RB06221601-CC	40/50	1		06/28/16 17:40
132	T3.062816.174405	L16061417-08	SS007MWN748-007	40/50	1		06/28/16 17:44
133	T3.062816.174800	WG574351-01	Post Digestion Spike		1	L16061417-04	06/28/16 17:48
134	T3.062816.175139	WG574351-02	Serial Dilution		5	L16061417-04	06/28/16 17:51
135	T3.062816.175533	WG574351-02	Serial Dilution		25	L16061417-04	06/28/16 17:55
136	T3.062816.175929	WG574512-37	CCV		1		06/28/16 17:59

Page: 4 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.062816.180306	WG574512-38	CCB		1		06/28/16 18:03
138	T3.062816.180704	WG573861-03	Method/Prep Blank	40/50	1		06/28/16 18:07
139	T3.062816.181059	WG573861-04	Laboratory Control S	40/50	1		06/28/16 18:10
140	T3.062816.181438	L16061116-01	062016-PS-OF001	40/50	1		06/28/16 18:14
141	T3.062816.181827	L16061116-02	062016-PS-OF001	40/50	1		06/28/16 18:18
142	T3.062816.182218	L16061116-03	062016-PS-OF1BN	40/50	1		06/28/16 18:22
143	T3.062816.182609	L16061116-04	062016-PS-OF1BN	40/50	1		06/28/16 18:26
144	T3.062816.183001	L16061116-05	062016-PS-OF1BS	40/50	1		06/28/16 18:30
145	T3.062816.183352	L16061116-06	062016-PS-OF1BS	40/50	1		06/28/16 18:33
146	T3.062816.183743	L16061116-07	062016-PS-OF1BE	40/50	1		06/28/16 18:37
147	T3.062816.184134	L16061116-08	062016-PS-OF1BE	40/50	1		06/28/16 18:41
148	T3.062816.184525	WG574512-39	CCV		1		06/28/16 18:45
149	T3.062816.184903	WG574512-40	CCB		1		06/28/16 18:49
150	T3.062816.185258	L16061116-09	062016-PS-CB032	40/50	1		06/28/16 18:52
151	T3.062816.185648	L16061116-10	062016-PS-CB032	40/50	1		06/28/16 18:56
152	T3.062816.190038	WG573861-01	Reference Sample		1	L16061116-11	06/28/16 19:00
153	T3.062816.190429	WG573861-02	Reference Sample		1	L16061116-12	06/28/16 19:04
154	T3.062816.190819	WG573861-05	Matrix Spike	40/50	1	L16061116-11	06/28/16 19:08
155	T3.062816.191158	WG573861-06	Matrix Spike	40/50	1	L16061116-12	06/28/16 19:11
156	T3.062816.191537	WG573861-07	Matrix Spike Duplica	40/50	1	L16061116-11	06/28/16 19:15
157	T3.062816.191915	WG573861-08	Matrix Spike Duplica	40/50	1	L16061116-12	06/28/16 19:19
158	T3.062816.192255	L16061116-17	062016-PS-CB029	40/50	1		06/28/16 19:22
159	T3.062816.192645	L16061116-18	062016-PS-CB029	40/50	1		06/28/16 19:26
160	T3.062816.193036	WG574512-41	CCV		1		06/28/16 19:30
161	T3.062816.193413	WG574512-42	CCB		1		06/28/16 19:34
162	T3.062816.193810	L16061116-19	062016-PS-CB099	40/50	1		06/28/16 19:38
163	T3.062816.194200	L16061116-20	062016-PS-CB099	40/50	1		06/28/16 19:42
164	T3.062816.194549	L16061116-22	062016-PS-CB028	40/50	1		06/28/16 19:45
165	T3.062816.194939	L16061116-21	062016-PS-CB028	40/50	1		06/28/16 19:49
166	T3.062816.195330	WG574353-01	Post Digestion Spike		1	L16061116-21	06/28/16 19:53
167	T3.062816.195708	WG574353-02	Serial Dilution		5	L16061116-21	06/28/16 19:57
168	T3.062816.200100	WG574353-02	Serial Dilution		25	L16061116-21	06/28/16 20:01
169	T3.062816.200456	WG574512-43	CCV		1		06/28/16 20:04
170	T3.062816.200834	WG574512-44	CCB		1		06/28/16 20:08

Page: 5 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	T3.062816.201230	WG573661-02	Method/Prep Blank	40/50	1		06/28/16 20:12
172	T3.062816.201625	WG573661-03	Laboratory Control S	40/50	1		06/28/16 20:16
173	T3.062816.202004	L16061030-02	SW1A-322-14	40/50	1		06/28/16 20:20
174	T3.062816.202358	L16061030-05	SW1B-322-14	40/50	1		06/28/16 20:23
175	T3.062816.202753	L16061030-08	SW2A-322-14	40/50	1		06/28/16 20:27
176	T3.062816.203148	WG573661-01	Reference Sample		1	L16061030-13	06/28/16 20:31
177	T3.062816.203543	WG573661-04	Matrix Spike	40/50	1	L16061030-13	06/28/16 20:35
178	T3.062816.203922	WG573661-05	Matrix Spike Duplica	40/50	1	L16061030-13	06/28/16 20:39
179	T3.062816.204301	L16061030-20	SW4A-322-14	40/50	1		06/28/16 20:43
180	T3.062816.204657	L16061030-23	SW5A-322-14	40/50	1		06/28/16 20:46
181	T3.062816.205052	WG574512-45	CCV		1		06/28/16 20:50
182	T3.062816.205431	WG574512-46	CCB		1		06/28/16 20:54
183	T3.062816.205827	L16061065-01	MW-23-007	40/50	1		06/28/16 20:58
184	T3.062816.210220	L16061065-02	MW-23-006	40/50	1		06/28/16 21:02
185	T3.062816.210612	L16061065-03	MW-23-008	40/50	1		06/28/16 21:06
186	T3.062816.211004	L16061065-04	MW-23-009	40/50	1		06/28/16 21:10
187	T3.062816.211355	L16061065-05	MW-23-010	40/50	1		06/28/16 21:13
188	T3.062816.211749	L16061065-06	MW-23-011	40/50	1		06/28/16 21:17
189	T3.062816.212143	L16061066-01	ST1H16-SW-01	40/50	1		06/28/16 21:21
190	T3.062816.212535	L16061066-02	ST1H16-SW-05	40/50	1		06/28/16 21:25
191	T3.062816.212927	L16061066-03	ST1H16-SW-06	40/50	1		06/28/16 21:29
192	T3.062816.213320	L16061066-04	FB-	40/50	1		06/28/16 21:33
193	T3.062816.213718	WG574512-47	CCV		1		06/28/16 21:37
194	T3.062816.214055	WG574512-48	CCB		1		06/28/16 21:40
195	T3.062816.214452	L16061128-01	MW-23-104	40/50	1		06/28/16 21:44
196	T3.062816.214841	L16061128-02	MW-23-103	40/50	1		06/28/16 21:48
197	T3.062816.215232	L16061128-03	FD062016	40/50	1		06/28/16 21:52
198	T3.062816.215619	L16061128-04	EB WATER A	40/50	1		06/28/16 21:56
199	T3.062816.220016	WG574357-01	Post Digestion Spike		1	L16061128-03	06/28/16 22:00
200	T3.062816.220354	WG574357-02	Serial Dilution		5	L16061128-03	06/28/16 22:03
201	T3.062816.220747	WG574357-02	Serial Dilution		25	L16061128-03	06/28/16 22:07
202	T3.062816.221140	WG574512-49	CCV		1		06/28/16 22:11
203	T3.062816.221518	WG574512-50	CCB		1		06/28/16 22:15
204	T3.062816.221914	WG573685-03	Method/Prep Blank	40/50	1		06/28/16 22:19

Page: 6 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
205	T3.062816.222308	WG573685-04	Laboratory Control S	40/50	1		06/28/16 22:23
206	T3.062816.222647	L16060907-01	MW21-061516	40/50	5		06/28/16 22:26
207	T3.062816.223047	L16060907-02	MW21-061516	40/50	5		06/28/16 22:30
208	T3.062816.223447	L16060907-03	MW21-061516	40/50	5		06/28/16 22:34
209	T3.062816.223848	L16060907-04	MW35-061516	40/50	1		06/28/16 22:38
210	T3.062816.224241	L16060907-05	MW35-061516	40/50	1		06/28/16 22:42
211	T3.062816.224635	L16060907-06	MW35-061516	40/50	1		06/28/16 22:46
212	T3.062816.225029	L16060907-07	MW11S-061516	40/50	1		06/28/16 22:50
213	T3.062816.225430	L16060907-08	MW11S-061516	40/50	1		06/28/16 22:54
214	T3.062816.225832	WG574512-51	CCV		1		06/28/16 22:58
215	T3.062816.230210	WG574512-52	CCB		1		06/28/16 23:02
216	T3.062816.230607	L16060907-09	MW11S-061516	40/50	1		06/28/16 23:06
217	T3.062816.231008	L16060907-10	DUP-GW-061516	40/50	1		06/28/16 23:10
218	T3.062816.231410	L16060907-11	DUP-GW-061516	40/50	1		06/28/16 23:14
219	T3.062816.231813	L16060907-12	MW31-061516	40/50	5		06/28/16 23:18
220	T3.062816.232204	L16060907-13	MW31-061516	40/50	5		06/28/16 23:22
221	T3.062816.232555	L16060907-14	MW30-061516		1	WG573685-01	06/28/16 23:25
222	T3.062816.232948	L16060907-15	MW30-061516		1	WG573685-02	06/28/16 23:29
223	T3.062816.233341	L16060907-16	MW30-061516	40/50	1		06/28/16 23:33
224	T3.062816.233734	L16060907-17	MW30-061516-MS	40/50	1	WG573685-05	06/28/16 23:37
225	T3.062816.234116	L16060907-18	MW30-061516-MS	40/50	1	WG573685-07	06/28/16 23:41
226	T3.062816.234453	WG574512-53	CCV		1		06/28/16 23:44
227	T3.062816.234830	WG574512-54	CCB		1		06/28/16 23:48
228	T3.062816.235226	L16060907-19	MW30-061516-MSD	40/50	1	WG573685-06	06/28/16 23:52
229	T3.062816.235604	L16060907-20	MW30-061516-MSD	40/50	1	WG573685-08	06/28/16 23:56
230	T3.062816.235945	L16060907-21	MW36-061516	40/50	1		06/28/16 23:59
231	T3.062916.000336	WG574358-01	Post Digestion Spike		1	L16060907-22	06/29/16 00:03
232	T3.062916.000715	WG574358-02	Serial Dilution		5	L16060907-22	06/29/16 00:07
233	T3.062916.001107	WG574358-02	Serial Dilution		25	L16060907-22	06/29/16 00:11
234	T3.062916.001503	L16060907-22	MW36-061516	40/50	1		06/29/16 00:15
235	T3.062916.001856	L16060907-01	MW21-061516	40/50	500		06/29/16 00:18
236	T3.062916.002252	L16060907-02	MW21-061516		500		06/29/16 00:22
237	T3.062916.002650	L16060907-03	MW21-061516		500		06/29/16 00:26
238	T3.062916.003045	WG574512-55	CCV		1		06/29/16 00:30

Page: 7 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
239	T3.062916.003423	WG574512-56	CCB		1		06/29/16 00:34
240	T3.062916.003819	WG574512-57	Interference Check		1		06/29/16 00:38
241	T3.062916.004209	WG574512-58	Interference Check		1		06/29/16 00:42
242	T3.062916.004552	WG574512-59	CCV		1		06/29/16 00:45
243	T3.062916.004929	WG574512-60	CCB		1		06/29/16 00:49
244	T3.062916.005324	WG574512-61	Low Level Continuing Calibra		1		06/29/16 00:53

Comments

Seq.	Rerun	Dil.	Reason	Analytes
45			Operation error, CCB was not run. Rerun Seq.34-43 and 46. JYH	

Page: 8 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062916T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574350574358,574351,574076,574637

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062916.095202	WG574675-01	Calibration Point		1		06/29/16 09:52
2	T3.062916.095558	WG574675-02	Calibration Point		1		06/29/16 09:55
3	T3.062916.095953	WG574675-03	Calibration Point		1		06/29/16 09:59
4	T3.062916.100348	WG574675-04	Calibration Point		1		06/29/16 10:03
5	T3.062916.100726	WG574675-05	Calibration Point		1		06/29/16 10:07
6	T3.062916.101102	WG574675-06	Initial Calibration Verification		1		06/29/16 10:11
7	T3.062916.101440	WG574675-07	Initial Calib Blank		1		06/29/16 10:14
8	T3.062916.101836	WG574675-08	Low Level Initial Calibration V		1		06/29/16 10:18
9	T3.062916.102229	WG574675-09	Interference Check		1		06/29/16 10:22
10	T3.062916.102611	WG574675-10	Interference Check		1		06/29/16 10:26
11	T3.062916.102953	WG574675-11	CCV		1		06/29/16 10:29
12	T3.062916.103333	WG574675-12	CCB		1		06/29/16 10:33
13	T3.062916.103731	WG573828-02	Method/Prep Blank	40/50	1		06/29/16 10:37
14	T3.062916.104127	WG573828-03	Laboratory Control S	40/50	1		06/29/16 10:41
15	T3.062916.104507	WG573828-01	Reference Sample		1	L16061177-01	06/29/16 10:45
16	T3.062916.104902	WG573828-04	Matrix Spike	40/50	1	L16061177-01	06/29/16 10:49
17	T3.062916.105243	WG573828-05	Matrix Spike Duplica	40/50	1	L16061177-01	06/29/16 10:52
18	T3.062916.105622	L160601142-01	L16060114201	40/50	1		06/29/16 10:56
19	T3.062916.110017	L160601142-03	L16060114203	40/50	1		06/29/16 11:00
20	T3.062916.110411	L160601142-05	L16060114205	40/50	1		06/29/16 11:04
21	T3.062916.110805	WG574350-03	Post Digestion Spike		1	L16061142-05	06/29/16 11:08
22	T3.062916.111145	WG574350-04	Serial Dilution		5	L16061142-05	06/29/16 11:11
23	T3.062916.111539	WG574675-13	CCV		1		06/29/16 11:15
24	T3.062916.111916	WG574675-14	CCB		1		06/29/16 11:19
25	T3.062916.112313	L16060907-07	MW11S-061516	40/50	100		06/29/16 11:23
26	T3.062916.112709	L16060907-10	DUP-GW-061516	40/50	100		06/29/16 11:27
27	T3.062916.113106	L16060907-12	MW31-061516	40/50	500		06/29/16 11:31
28	T3.062916.113502	WG573685-01	Reference Sample		100	L16060907-14	06/29/16 11:35
29	T3.062916.113857	WG573685-05	Matrix Spike	40/50	100	L16060907-14	06/29/16 11:38
30	T3.062916.114254	WG573685-06	Matrix Spike Duplica	40/50	100	L16060907-14	06/29/16 11:42
31	T3.062916.114650	L16061380-01	XU936TW003A	40/50	20		06/29/16 11:46
32	T3.062916.115043	L16061380-02	XU936TW003C	40/50	20		06/29/16 11:50
33	T3.062916.115438	L16061227-07	18WW18-062116	40/50	20		06/29/16 11:54
34	T3.062916.115833	WG574675-15	CCV		1		06/29/16 11:58

Page: 1 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062916T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574350574358,574351,574076,574637

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062916.120211	WG574675-16	CCB		1		06/29/16 12:02
36	T3.062916.120607	WG574675-17	Interference Check		1		06/29/16 12:06
37	T3.062916.120959	WG574675-18	Interference Check		1		06/29/16 12:09
38	T3.062916.121342	WG574675-19	CCV		1		06/29/16 12:13
39	T3.062916.121718	WG574675-20	CCB		1		06/29/16 12:17
40	T3.062916.122116	WG574675-21	Low Level Continuing Calibra		1		06/29/16 12:21
41	T3.062916.122508	WG572926-01	Method/Prep Blank	40/50	1		06/29/16 12:25
42	T3.062916.125108	L16060003-17	DOC-17	40/50	1		06/29/16 12:51
43	T3.062916.125443	L16060003-18	DOC-18	40/50	1		06/29/16 12:54
44	T3.062916.125818	L16060003-19	DOC-19	40/50	1		06/29/16 12:58
45	T3.062916.130153	L16060003-20	DOC-20	40/50	1		06/29/16 13:01
46	T3.062916.130527	WG574675-22	CCV		1		06/29/16 13:05
47	T3.062916.130900	WG574675-23	CCB		1		06/29/16 13:09
48	T3.062916.131252	WG574597-07	Method/Prep Blank		1		06/29/16 13:12
49	T3.062916.131644	WG574597-08	Laboratory Control S		1		06/29/16 13:16
50	T3.062916.132019	WG574515-01	Fluid Blank 1		1		06/29/16 13:20
51	T3.062916.132411	L16061539-01	27-12-9 RPW3		1		06/29/16 13:24
52	T3.062916.132758	WG574597-06	Reference Sample		1	L16061496-01	06/29/16 13:27
53	T3.062916.133144	WG574597-09	Matrix Spike		1	L16061496-01	06/29/16 13:31
54	T3.062916.133518	WG574597-10	Matrix Spike Duplica		1	L16061496-01	06/29/16 13:35
55	T3.062916.133852	WG574645-01	Post Digestion Spike		1	L16061539-01	06/29/16 13:38
56	T3.062916.134226	WG574645-02	Serial Dilution		5	L16061539-01	06/29/16 13:42
57	T3.062916.134616	WG574645-02	Serial Dilution		25	L16061539-01	06/29/16 13:46
58	T3.062916.135007	WG574675-24	CCV		1		06/29/16 13:50
59	T3.062916.135340	WG574675-25	CCB		1		06/29/16 13:53

Page: 2 Approved: June 30, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 28-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574512
Runlog ID: 75979
Analytical Workgroups: 574216,574276,574350,574351,574353,574357,574358

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1177,1380,1381,1065,1128
Level 4	986,1142,1228,1231,1237,1238
	1378,1401,1402,1404,1409,1410
	1417,907
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
30-JUN-2016

Secondary Reviewer:
30-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-30-2016 14:08:10

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574675
Runlog ID: 76005
Analytical Workgroups: 574350574358,574351,574076,574637

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1380
Level 4	1142,907,1227,0003
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
30-JUN-2016

Secondary Reviewer:
30-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-30-2016 10:49:34

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG574350

Login Number: L16061142

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW20-062016	01	06/20/16					06/23/2016	3	180		06/29/16	9.1	180	
18WW20-062016	01	06/20/16					06/23/2016	3	180		06/28/16	8.3	180	
18WW19F-062016	03	06/20/16					06/23/2016	3	180		06/28/16	8.2	180	
18WW19F-062016	03	06/20/16					06/23/2016	3	180		06/29/16	9.1	180	
18WW19FFD-062016	05	06/20/16					06/23/2016	3	180		06/28/16	8.2	180	
18WW19FFD-062016	05	06/20/16					06/23/2016	3	180		06/29/16	9.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4830058
Report generated 06/29/2016 13:53

METHOD BLANK SUMMARY

Login Number: L16061142
Blank File ID: T3.062816.134937
Prep Date: 06/23/16 08:03
Analyzed Date: 06/28/16 13:49
Analyst: JYH

Work Group: WG574350
Blank Sample ID: WG573828-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573828-03	T3.062816.135333	06/28/16 13:53	01
18WW20-062016	L16061142-01	T3.062816.135712	06/28/16 13:57	01
18WW19F-062016	L16061142-03	T3.062816.140107	06/28/16 14:01	01
18WW19FFD-062016	L16061142-05	T3.062816.140501	06/28/16 14:05	01
LCS	WG573828-03	T3.062916.104127	06/29/16 10:41	02
18WW20-062016	L16061142-01	T3.062916.105622	06/29/16 10:56	02
18WW19F-062016	L16061142-03	T3.062916.110017	06/29/16 11:00	02
18WW19FFD-062016	L16061142-05	T3.062916.110411	06/29/16 11:04	02

Report Name: BLANK_SUMMARY
PDF File ID: 4830059
Report generated 06/29/2016 13:58

METHOD BLANK SUMMARY

Login Number: L16061142
Blank File ID: T3.062916.103731
Prep Date: 06/23/16 08:03
Analyzed Date: 06/29/16 10:37
Analyst: JYH

Work Group: WG574350
Blank Sample ID: WG573828-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573828-03	T3.062816.135333	06/28/16 13:53	01
18WW20-062016	L16061142-01	T3.062816.135712	06/28/16 13:57	01
18WW19F-062016	L16061142-03	T3.062816.140107	06/28/16 14:01	01
18WW19FFD-062016	L16061142-05	T3.062816.140501	06/28/16 14:05	01
LCS	WG573828-03	T3.062916.104127	06/29/16 10:41	02
18WW20-062016	L16061142-01	T3.062916.105622	06/29/16 10:56	02
18WW19F-062016	L16061142-03	T3.062916.110017	06/29/16 11:00	02
18WW19FFD-062016	L16061142-05	T3.062916.110411	06/29/16 11:04	02

Report Name: BLANK_SUMMARY
PDF File ID: 4830059
Report generated 06/29/2016 13:58

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 06/23/16 08:03 Sample ID: WG573828-02
Instrument ID: ICP-THERMO3 Run Date: 06/28/16 13:49 Prep Method: 3015
File ID: T3.062816.134937 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574350 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-28-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4830060
30-JUN-2016 10:59

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 06/23/16 08:03 Sample ID: WG573828-02
Instrument ID: ICP-THERMO3 Run Date: 06/29/16 10:37 Prep Method: 3015
File ID: T3.062916.103731 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574350 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-29-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Selenium, Total	0.00500	0.0200	0.00500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4830060
30-JUN-2016 10:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 Run Date: 06/28/2016 Sample ID: WG573828-03
Instrument ID: ICP-THERMO3 Run Time: 13:53 Prep Method: 3015
File ID: T3.062816.135333 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574350 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-28-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.28	100	80 - 120	
Beryllium, Total	0.0313	0.0306	97.8	80 - 120	
Calcium, Total	6.25	6.40	102	80 - 120	
Iron, Total	2.50	2.45	97.8	80 - 120	
Magnesium, Total	6.25	6.35	102	80 - 120	
Potassium, Total	31.3	31.4	101	80 - 120	
Sodium, Total	31.3	31.6	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4830061
Report generated: 06/30/2016 10:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 Run Date: 06/29/2016 Sample ID: WG573828-03
Instrument ID: ICP-THERMO3 Run Time: 10:41 Prep Method: 3015
File ID: T3.062916.104127 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574350 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-29-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Selenium, Total	0.250	0.243	97.2	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4830061
Report generated: 06/30/2016 10:59

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061142 Cal ID: ICP-THERMO3 - Worknum: WG574350
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573828-01 File ID: T3.062816.140856 Dil: 1 Matrix: WATER
Sample ID: WG573828-04 MS File ID: T3.062816.141250 Dil: 1 Units: mg/L
Sample ID: WG573828-05 MSD File ID: T3.062816.141630 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	ND	6.25	6.04	96.6	6.25	6.15	98.4	1.78	80 - 120	20	
Beryllium	ND	0.0313	0.0299	95.6	0.0313	0.0305	97.6	2.11	80 - 120	20	
Calcium	ND	6.25	6.11	97.8	6.25	6.21	99.4	1.60	80 - 120	20	
Iron	ND	2.50	2.43	97.2	2.50	2.48	99.2	2.05	80 - 120	20	
Magnesium	ND	6.25	6.09	97.5	6.25	6.14	98.2	0.736	80 - 120	20	
Potassium	ND	31.3	30.1	96.4	31.3	30.6	98.1	1.72	80 - 120	20	
Sodium	143	31.3	167	74.3	31.3	168	78.8	0.844	80 - 120	20	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4830062
Report generated 06/30/2016 10:59

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061142 Cal ID: ICP-THERMO3 - Worknum: WG574350
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573828-01 File ID: T3.062916.104507 Dil: 1 Matrix: WATER
Sample ID: WG573828-04 MS File ID: T3.062916.104902 Dil: 1 Units: mg/L
Sample ID: WG573828-05 MSD File ID: T3.062916.105243 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Selenium	ND	0.250	0.235	93.9	0.250	0.234	93.6	0.379	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4830062
Report generated 06/30/2016 10:59

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061142 **Worknum:** WG574350
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574350-02 **File ID:** T3.062816.154055 **Dil:** 5 **Units:** ug/L
Sample: L16061238-01 **File ID:** T3.062816.152932 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	28.4		124		335.00	E
Beryllium	0.0900	X	0.250		178.00	
Calcium	101000		105000		3.79	
Iron	42.8		ND	U		
Magnesium	50700		54200		6.86	
Potassium	348		354		1.83	
Selenium	ND	U	ND	U		
Sodium	135000		139000		3.08	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4830056
06/29/2016 13:53

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061142 **Worknum:** WG574350
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574350-04 **File ID:** T3.062916.111145 **Dil:** 5 **Units:** ug/L
Sample: L16061142-05 **File ID:** T3.062916.110411 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	315		346		9.95	
Beryllium	0.0800	X	0.250		213.00	
Calcium	6920		7400		6.85	
Iron	3980		4170		4.85	
Magnesium	1110		1140		2.93	
Potassium	1480		2140		44.60	E
Selenium	ND	U	ND	U		
Sodium	3980		4290		7.89	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4830056
06/29/2016 13:53

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061142 **Worknum:** WG574350
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574350-01 **File ID:** T3.062816.153717 **Dil:** 1 **Units:** ug/L
Sample ID: L16061238-01 **File ID:** T3.062816.152932 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5260		0	U	5000	105.2	75 - 125	
BERYLLIUM	25.9		0	U	25	103.7	75 - 125	
CALCIUM	94900		101000		5000	82.4	75 - 125	
IRON	2070		42.8	F	2000	101.6	75 - 125	
MAGNESIUM	50000		50700		5000	87.8	75 - 125	
POTASSIUM	26300		0	U	25000	105.3	75 - 125	
SELENIUM	192		0	U	200	96.2	75 - 125	
SODIUM	146000		135000		25000	98.8	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4830057
Report generated: 06/29/2016 13:58

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061142 **Worknum:** WG574350
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574350-03 **File ID:** T3.062916.110805 **Dil:** 1 **Units:** ug/L
Sample ID: L16061142-05 **File ID:** T3.062916.110411 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5180		315		5000	98.0	75 - 125	
BERYLLIUM	24.2		0	U	25	96.8	75 - 125	
CALCIUM	11100		6920		5000	98.2	75 - 125	
IRON	5570		3980		2000	99.3	75 - 125	
MAGNESIUM	5960		1110		5000	99.2	75 - 125	
POTASSIUM	26100		1480	F	25000	99.3	75 - 125	
SELENIUM	192		0	U	200	96.1	75 - 125	
SODIUM	28500		3980		25000	99.7	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4830057
Report generated: 06/29/2016 13:58

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061142	Workgroup (AAB#):	WG574350
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574512	Initial Calibration Date:	28-JUN-2016 09:31

	WG574512-01		WG574512-02		WG574512-03		WG574512-04		WG574512-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000630	.1	0.00126	.2	0.00193	10	0.0790	20	0.158	.999993	
BERYLLIUM	0	0.000750	.0005	0.00103	.001	0.00146	.05	0.0470	.1	0.0945	.999896	
CALCIUM	0	0.00165	.1	0.00358	.2	0.00723	10	0.437	20	0.881	.999618	
IRON	0	-0.000100	.04	0.000550	.08	0.00104	4	0.0851	8	0.170	.999924	
MAGNESIUM	0	-0.000900	NA	NA	.2	0.00127	10	0.0818	20	0.164	.998924	
POTASSIUM	0	-0.0173	.5	0.00427	1	0.0257	50	2.67	100	5.41	.999988	
SELENIUM	0	-0.000470	NA	NA	.008	-0.000390	.4	0.00576	.8	0.0121	.999816	
SODIUM	0	-0.0583	.5	0.0109	1	0.0824	50	8.61	100	17.5	.999988	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4830065
Report generated: 29-JUN-2016 13:53

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061142	Workgroup (AAB#):	WG574350
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574675	Initial Calibration Date:	29-JUN-2016 10:07

	WG574675-01		WG574675-02		WG574675-03		WG574675-04		WG574675-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000900	.1	0.00149	.2	0.00216	10	0.0777	20	0.156	.99999	
BERYLLIUM	0	0.000140	.0005	0.000610	.001	0.000910	.05	0.0469	.1	0.0941	.999899	
CALCIUM	0	-0.000210	.1	0.00581	.2	0.00981	10	0.430	20	0.875	.998775	
IRON	0	-0.000420	.04	-0.0000800	.08	0.000850	4	0.0810	8	0.162	.999702	
MAGNESIUM	0	-0.000310	NA	NA	.2	0.000580	10	0.0800	20	0.161	.999747	
POTASSIUM	0	-0.0122	.5	0.0171	1	0.0387	50	3.21	100	6.51	.999964	
SELENIUM	0	-0.000300	NA	NA	.008	-0.000250	.4	0.00565	.8	0.0116	.999294	
SODIUM	0	-0.0579	.5	0.0179	1	0.0912	50	8.68	100	17.7	.999966	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4830065
Report generated: 29-JUN-2016 13:53

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-07
Instrument ID: ICP-THERMO3
Run Time: 09:39
Method: 6010C
File ID: T3.062816.093901
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-THERI - 28-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4830067
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-07
Instrument ID: ICP-THERMO3
Run Time: 10:14
Method: 6010C
File ID: T3.062916.101440
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-THERI - 29-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4830067
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-12
Instrument ID: ICP-THERMO3
Run Time: 09:57
Method: 6010C
File ID: T3.062816.095753
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-24
Instrument ID: ICP-THERMO3
Run Time: 13:41
Method: 6010C
File ID: T3.062816.134146
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-27
Instrument ID: ICP-THERMO3
Run Time: 14:31
Method: 6010C
File ID: T3.062816.143132
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-29
Instrument ID: ICP-THERMO3
Run Time: 15:17
Method: 6010C
File ID: T3.062816.151749
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00929	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-31
Instrument ID: ICP-THERMO3
Run Time: 15:52
Method: 6010C
File ID: T3.062816.155209
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574512-56
Instrument ID: ICP-THERMO3
Run Time: 00:34
Method: 6010C
File ID: T3.062916.003423
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574512-60
Instrument ID: ICP-THERMO3
Run Time: 00:49
Method: 6010C
File ID: T3.062916.004929
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00590	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-12
Instrument ID: ICP-THERMO3
Run Time: 10:33
Method: 6010C
File ID: T3.062916.103333
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0438	F
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.101	F
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-14
Instrument ID: ICP-THERMO3
Run Time: 11:19
Method: 6010C
File ID: T3.062916.111916
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-16
Instrument ID: ICP-THERMO3
Run Time: 12:02
Method: 6010C
File ID: T3.062916.120211
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-20
Instrument ID: ICP-THERMO3
Run Time: 12:17
Method: 6010C
File ID: T3.062916.121718
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061142 Run Date: 06/29/2016 Sample ID: WG574675-06
Instrument ID: ICP-THERMO3 Run Time: 10:11 Method: 6010C
File ID: T3.062916.101102 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG574350 Cal ID: ICP-TH - 29-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.3	103	90 - 110	
Beryllium		.05	0.0507	101	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.09	102	90 - 110	
Magnesium		10	10.3	103	90 - 110	
Potassium		50	51.0	102	90 - 110	
Selenium		.4	0.408	102	90 - 110	
Sodium		50	50.9	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4830066
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061142 Run Date: 06/28/2016 Sample ID: WG574512-06
Instrument ID: ICP-THERMO3 Run Time: 09:35 Method: 6010C
File ID: T3.062816.093524 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG574350 Cal ID: ICP-TH - 28-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.94	99.4	90 - 110	
Beryllium		.05	0.0494	98.9	90 - 110	
Calcium		10	9.88	98.8	90 - 110	
Iron		4	3.95	98.8	90 - 110	
Magnesium		10	10.0	100	90 - 110	
Potassium		50	49.4	98.7	90 - 110	
Selenium		.4	0.401	100	90 - 110	
Sodium		50	49.5	98.9	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4830066
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-11
Instrument ID: ICP-THERMO3
Run Time: 09:54
Method: 6010C
File ID: T3.062816.095416
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.6	mg/L	106	90 - 110		
Beryllium		0.0500	0.0510	mg/L	102	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.07	mg/L	102	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	50.2	mg/L	100	90 - 110		
Selenium		0.400	0.412	mg/L	103	90 - 110		
Sodium		50.0	50.2	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4830069
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-23
Instrument ID: ICP-THERMO3
Run Time: 13:38
Method: 6010C
File ID: T3.062816.133809
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Beryllium		0.0500	0.0500	mg/L	100	90 - 110		
Calcium		10.0	9.99	mg/L	99.9	90 - 110		
Iron		4.00	4.01	mg/L	100	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	50.3	mg/L	101	90 - 110		
Selenium		0.400	0.409	mg/L	102	90 - 110		
Sodium		50.0	50.4	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4830069
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-26
Instrument ID: ICP-THERMO3
Run Time: 14:27
Method: 6010C
File ID: T3.062816.142755
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0501	mg/L	100	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.04	mg/L	101	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	50.6	mg/L	101	90 - 110		
Selenium		0.400	0.406	mg/L	101	90 - 110		
Sodium		50.0	51.1	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4830069
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-28
Instrument ID: ICP-THERMO3
Run Time: 15:14
Method: 6010C
File ID: T3.062816.151411
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.9	mg/L	109	90 - 110		
Beryllium		0.0500	0.0542	mg/L	108	90 - 110		
Calcium		10.0	10.6	mg/L	106	90 - 110		
Iron		4.00	4.24	mg/L	106	90 - 110		
Magnesium		10.0	10.8	mg/L	108	90 - 110		
Potassium		50.0	53.6	mg/L	107	90 - 110		
Selenium		0.400	0.425	mg/L	106	90 - 110		
Sodium		50.0	53.4	mg/L	107	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4830069
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-30
Instrument ID: ICP-THERMO3
Run Time: 15:48
Method: 6010C
File ID: T3.062816.154842
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.45	mg/L	94.5	90 - 110		
Beryllium		0.0500	0.0471	mg/L	94.2	90 - 110		
Calcium		10.0	9.35	mg/L	93.5	90 - 110		
Iron		4.00	3.71	mg/L	92.7	90 - 110		
Magnesium		10.0	9.47	mg/L	94.7	90 - 110		
Potassium		50.0	47.4	mg/L	94.8	90 - 110		
Selenium		0.400	0.379	mg/L	94.7	90 - 110		
Sodium		50.0	47.0	mg/L	94.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4830069
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574512-55
Instrument ID: ICP-THERMO3
Run Time: 00:30
Method: 6010C
File ID: T3.062916.003045
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.70	mg/L	97.0	90 - 110		
Beryllium		0.0500	0.0476	mg/L	95.2	90 - 110		
Calcium		10.0	9.70	mg/L	97.0	90 - 110		
Iron		4.00	3.86	mg/L	96.4	90 - 110		
Magnesium		10.0	9.79	mg/L	97.9	90 - 110		
Potassium		50.0	48.9	mg/L	97.8	90 - 110		
Selenium		0.400	0.394	mg/L	98.5	90 - 110		
Sodium		50.0	49.6	mg/L	99.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4830069
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574512-59
Instrument ID: ICP-THERMO3
Run Time: 00:45
Method: 6010C
File ID: T3.062916.004552
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.39	mg/L	93.9	90 - 110		
Beryllium		0.0500	0.0458	mg/L	91.6	90 - 110		
Calcium		10.0	9.34	mg/L	93.4	90 - 110		
Iron		4.00	3.74	mg/L	93.5	90 - 110		
Magnesium		10.0	9.42	mg/L	94.2	90 - 110		
Potassium		50.0	47.1	mg/L	94.2	90 - 110		
Selenium		0.400	0.381	mg/L	95.3	90 - 110		
Sodium		50.0	47.9	mg/L	95.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4830069
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-11
Instrument ID: ICP-THERMO3
Run Time: 10:29
Method: 6010C
File ID: T3.062916.102953
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.76	mg/L	97.6	90 - 110		
Beryllium		0.0500	0.0480	mg/L	96.0	90 - 110		
Calcium		10.0	9.76	mg/L	97.6	90 - 110		
Iron		4.00	3.96	mg/L	98.9	90 - 110		
Magnesium		10.0	9.96	mg/L	99.6	90 - 110		
Potassium		50.0	48.2	mg/L	96.4	90 - 110		
Selenium		0.400	0.384	mg/L	96.1	90 - 110		
Sodium		50.0	47.9	mg/L	95.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4830069
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-13
Instrument ID: ICP-THERMO3
Run Time: 11:15
Method: 6010C
File ID: T3.062916.111539
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.90	mg/L	99.0	90 - 110		
Beryllium		0.0500	0.0492	mg/L	98.3	90 - 110		
Calcium		10.0	9.90	mg/L	99.0	90 - 110		
Iron		4.00	3.95	mg/L	98.8	90 - 110		
Magnesium		10.0	9.89	mg/L	98.9	90 - 110		
Potassium		50.0	49.9	mg/L	99.9	90 - 110		
Selenium		0.400	0.394	mg/L	98.5	90 - 110		
Sodium		50.0	49.8	mg/L	99.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4830069
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-15
Instrument ID: ICP-THERMO3
Run Time: 11:58
Method: 6010C
File ID: T3.062916.115833
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.85	mg/L	98.5	90 - 110		
Beryllium		0.0500	0.0488	mg/L	97.6	90 - 110		
Calcium		10.0	9.80	mg/L	98.0	90 - 110		
Iron		4.00	3.95	mg/L	98.7	90 - 110		
Magnesium		10.0	9.91	mg/L	99.1	90 - 110		
Potassium		50.0	49.4	mg/L	98.8	90 - 110		
Selenium		0.400	0.403	mg/L	101	90 - 110		
Sodium		50.0	49.3	mg/L	98.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4830069
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-19
Instrument ID: ICP-THERMO3
Run Time: 12:13
Method: 6010C
File ID: T3.062916.121342
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0504	mg/L	101	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.04	mg/L	101	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.403	mg/L	101	90 - 110		
Sodium		50.0	50.8	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4830069
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-08
Instrument ID: ICP-THERMO3
Run Time: 09:42
Method: 6010C
File ID: T3.062816.094252
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.178	mg/L	111	70 - 130		
Beryllium		0.00160	0.00148	mg/L	92.5	70 - 130		
Calcium		0.400	0.354	mg/L	88.6	70 - 130		
Iron		0.0800	0.0839	mg/L	105	70 - 130		
Magnesium		0.400	0.487	mg/L	122	70 - 130		
Potassium		0.800	0.762	mg/L	95.2	70 - 130		
Selenium		0.0160	0.0178	mg/L	111	70 - 130		
Sodium		0.400	0.434	mg/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4830071
Report generated 06/29/2016 13:58

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-25
Instrument ID: ICP-THERMO3
Run Time: 13:45
Method: 6010C
File ID: T3.062816.134543
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.191	mg/L	119	70 - 130		
Beryllium		0.00160	0.00173	mg/L	108	70 - 130		
Calcium		0.400	0.426	mg/L	106	70 - 130		
Iron		0.0800	0.0666	mg/L	83.2	70 - 130		
Magnesium		0.400	0.500	mg/L	125	70 - 130		
Potassium		0.800	0.922	mg/L	115	70 - 130		
Selenium		0.0160	0.0142	mg/L	88.8	70 - 130		
Sodium		0.400	0.400	mg/L	100	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4830071
Report generated 06/29/2016 13:58

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-32
Instrument ID: ICP-THERMO3
Run Time: 15:56
Method: 6010C
File ID: T3.062816.155606
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.166	mg/L	104	70 - 130		
Beryllium		0.00160	0.00151	mg/L	94.4	70 - 130		
Calcium		0.400	0.381	mg/L	95.1	70 - 130		
Iron		0.0800	0.0722	mg/L	90.3	70 - 130		
Magnesium		0.400	0.423	mg/L	106	70 - 130		
Potassium		0.800	0.888	mg/L	111	70 - 130		
Selenium		0.0160	0.0102	mg/L	64.0	70 - 130		*
Sodium		0.400	0.426	mg/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4830071
Report generated 06/29/2016 13:58

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574512-61
Instrument ID: ICP-THERMO3
Run Time: 00:53
Method: 6010C
File ID: T3.062916.005324
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.167	mg/L	105	70 - 130		
Beryllium		0.00160	0.00143	mg/L	89.4	70 - 130		
Calcium		0.400	0.359	mg/L	89.8	70 - 130		
Iron		0.0800	0.0859	mg/L	107	70 - 130		
Magnesium		0.400	0.421	mg/L	105	70 - 130		
Potassium		0.800	0.634	mg/L	79.3	70 - 130		
Selenium		0.0160	0.0133	mg/L	83.1	70 - 130		
Sodium		0.400	0.452	mg/L	113	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4830071
Report generated 06/29/2016 13:58

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-08
Instrument ID: ICP-THERMO3
Run Time: 10:18
Method: 6010C
File ID: T3.062916.101836
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.171	mg/L	107	70 - 130		
Beryllium		0.00160	0.00157	mg/L	98.1	70 - 130		
Calcium		0.400	0.421	mg/L	105	70 - 130		
Iron		0.0800	0.103	mg/L	128	70 - 130		
Magnesium		0.400	0.313	mg/L	78.3	70 - 130		
Selenium		0.0160	0.0143	mg/L	89.6	70 - 130		
Sodium		0.400	0.423	mg/L	106	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4830071
Report generated 06/29/2016 13:58

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-21
Instrument ID: ICP-THERMO3
Run Time: 12:21
Method: 6010C
File ID: T3.062916.122116
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.185	mg/L	116	70 - 130		
Beryllium		0.00160	0.00161	mg/L	101	70 - 130		
Calcium		0.400	0.463	mg/L	116	70 - 130		
Iron		0.0800	0.0701	mg/L	87.6	70 - 130		
Magnesium		0.400	0.338	mg/L	84.5	70 - 130		
Selenium		0.0160	0.0132	mg/L	82.4	70 - 130		
Sodium		0.400	0.434	mg/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4830071
Report generated 06/29/2016 13:58

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061142
Instrument ID: ICP-THERMO3
Sol. A : WG574512-09 **File ID:** T3.062816.094645
Sol. AB : WG574512-10 **File ID:** T3.062816.095036

Workgroup (AAB#): WG574350
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	266	106	250	262	105	
Beryllium	NS	-0.0000500	NS	0.250	0.243	97.2	
Calcium	250	248	99.2	250	244	97.6	
Iron	100	98.7	98.7	100	95.1	95.1	
Magnesium	250	251	100	250	244	97.6	
Potassium	NS	0.0688	NS	5.00	5.25	105	
Selenium	NS	-0.00226	NS	0.250	0.249	99.6	
Sodium	NS	0.0593	NS	5.00	5.25	105	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4830068
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061142
Instrument ID: ICP-THERMO3
Sol. A : WG574512-57 **File ID:** T3.062916.003819
Sol. AB : WG574512-58 **File ID:** T3.062916.004209

Workgroup (AAB#): WG574350
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	262	105	250	258	103	
Beryllium	NS	0	NS	0.250	0.234	93.6	
Calcium	250	250	100	250	249	99.6	
Iron	100	97.1	97.1	100	95.9	95.9	
Magnesium	250	247	98.8	250	244	97.6	
Potassium	NS	0.0493	NS	5.00	5.07	101	
Selenium	NS	-0.00153	NS	0.250	0.249	99.6	
Sodium	NS	0.0836	NS	5.00	5.51	110	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4830068
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061142
Instrument ID: ICP-THERMO3
Sol. A : WG574675-09 **File ID:** T3.062916.102229
Sol. AB : WG574675-10 **File ID:** T3.062916.102611

Workgroup (AAB#): WG574350
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	257	103	250	258	103	
Beryllium	NS	-0.0000700	NS	0.250	0.250	100	
Calcium	250	241	96.4	250	243	97.2	
Iron	100	96.2	96.2	100	95.0	95.0	
Magnesium	250	246	98.4	250	242	96.8	
Potassium	NS	0.182	NS	5.00	5.32	106	
Selenium	NS	0.00425	NS	0.250	0.257	103	
Sodium	NS	0.0105	NS	5.00	5.20	104	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4830068
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061142
Instrument ID: ICP-THERMO3
Sol. A : WG574675-17 **File ID:** T3.062916.120607
Sol. AB : WG574675-18 **File ID:** T3.062916.120959

Workgroup (AAB#): WG574350
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	256	102	250	258	103	
Beryllium	NS	-0.0000700	NS	0.250	0.251	100	
Calcium	250	243	97.2	250	241	96.4	
Iron	100	96.5	96.5	100	94.3	94.3	
Magnesium	250	246	98.4	250	241	96.4	
Potassium	NS	0.0274	NS	5.00	5.20	104	
Selenium	NS	0.00783	NS	0.250	0.264	106	
Sodium	NS	0.0111	NS	5.00	5.26	105	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4830068
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061142 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4830064
Report generated: 06/29/2016 13:53

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061142 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4830064
Report generated: 06/29/2016 13:53

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061142 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4830064
Report generated: 06/29/2016 13:53

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061142 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4830064
Report generated: 06/29/2016 13:53

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061142 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4830064
Report generated: 06/29/2016 13:53

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061142 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4830064
Report generated: 06/29/2016 13:53

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061142 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4830064
Report generated: 06/29/2016 13:53

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061142 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4830063
Report generated: 06/29/2016 13:53

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000232	0.049165	0.000000	1.000000
Al 308.215 {109}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000634	0.007803	0.000000	1.000000
As 189.042 {478}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000040	0.022231	0.000000	1.000000
B 249.678 {135}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000011	0.021528	0.000000	1.000000
Ba 455.403 { 74}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.057094	2.076352	0.000000	1.000000
Be 313.107 {108}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000750	0.915011	0.000000	1.000000
Ca 422.673 { 80}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.001646	0.043727	0.000000	1.000000
Cd 228.802 {447}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000087	0.541329	0.000000	1.000000
Co 228.616 {447}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000124	0.345900	0.000000	1.000000
Cr 267.716 {126}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000307	0.057253	0.000000	1.000000
Cu 224.700 {450}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000095	0.121091	0.000000	1.000000
Fe 261.187 {129}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000099	0.021228	0.000000	1.000000
K 766.490 { 44}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.017252	0.054111	0.000000	1.000000
Li 670.784 { 50}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.017716	1.541847	0.000000	1.000000
Mg 279.079 {121}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000903	0.008313	0.000000	1.000000
Mn 257.610 {131}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000352	0.261349	0.000000	1.000000
Mo 202.030 {467}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000019	0.173301	0.000000	1.000000
Na 589.592 { 57}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.058329	0.174631	0.000000	1.000000
Ni 231.604 {446}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000820	0.127033	0.000000	1.000000
P 214.914 {457}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000118	0.012842	0.000000	1.000000
Pb 220.353 {453}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.001076	0.059382	0.000000	1.000000
Sb 206.833 {463}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000235	0.028236	0.000000	1.000000
Se 196.090 {472}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000467	0.015624	0.000000	1.000000
Si 212.412 {459}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.002275	0.036630	0.000000	1.000000
Sn 189.989 {477}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000014	0.067208	0.000000	1.000000
Sr 407.771 { 83}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.002067	3.402056	0.000000	1.000000
Ti 337.280 {100}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.001900	0.093443	0.000000	1.000000
Tl 190.856 {477}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000364	0.027650	0.000000	1.000000
V 292.402 {115}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000001	0.067460	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000143	0.395720	0.000000	1.000000
Zr 339.198 { 99}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.005896	3.544760	0.000000	1.000000

Approved: June 29, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999853	0.000002	0.002445	0.008150	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999993	0.000002	0.010657	0.035523	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999959	0.000001	0.003594	0.011982	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999958	0.000001	0.003317	0.011056	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999927	0.000159	0.001217	0.004057	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999896	0.000004	0.000106	0.000355	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999618	0.000077	0.047958	0.159859	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999881	0.000003	0.000300	0.001001	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999934	0.000005	0.000451	0.001504	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999876	0.000003	0.001342	0.004472	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999948	0.000004	0.001515	0.005051	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999924	0.000007	0.031406	0.104688	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999988	0.000084	0.134248	0.447494	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999873	0.000241	0.004399	0.014664	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.998924	0.000038	0.090376	0.301254	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999918	0.000011	0.002982	0.009941	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999968	0.000009	0.000477	0.001591	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999988	0.000275	0.036379	0.121263	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999979	0.000003	0.001305	0.004351	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999991	0.000003	0.008026	0.026754	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999140	0.000008	0.004059	0.013529	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999877	0.000003	0.005017	0.016722	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999816	0.000001	0.007504	0.025013	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999953	0.000011	0.002658	0.008861	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999971	0.000003	0.000978	0.003261	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999990	0.000095	0.000514	0.001713	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999983	0.000003	0.009263	0.030877	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999987	0.000001	0.003426	0.011421	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999951	0.000004	0.001103	0.003675	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999989	0.000012	0.000225	0.000751	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999946	0.000234	0.000575	0.001916	OK.	1.000000	0.000000	1	0

Approved: June 29, 2016

Sample Name: S0 Acquired: 6/28/2016 9:16:20 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00023**	**.00063**	**.00004**	**.00001**	**.05709**	**.00075**	**.00165**
Stddev	.00004	.00000	.00006	.00004	.00140	.00001	.00175
%RSD	18.419	.66325	140.27	332.02	2.4545	1.9590	105.90
#1	-.00020	.00063	.00001	-.00001	.05868	.00075	.00362
#2	-.00028	.00063	.00011	.00005	.05658	.00077	.00103
#3	-.00021	.00064	.00001	-.00001	.05602	.00074	.00029

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00009**	**-.00012**	**.00031**	**.00009**	**-.00010**	**-.01725**	**-.01772**
Stddev	.00004	.00011	.00006	.00003	.00070	.00436	.00866
%RSD	42.371	86.096	18.227	29.654	708.02	25.277	48.862
#1	-.00013	-.00001	.00037	.00012	-.00045	-.02225	-.01094
#2	-.00006	-.00013	.00026	.00009	.00071	-.01424	-.01475
#3	-.00007	-.00022	.00029	.00007	-.00056	-.01526	-.02747

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00090**	**.00035**	**-.00002**	**-.05833**	**-.00082**	**-.00012**	**-.00108**
Stddev	.00031	.00041	.00003	.00617	.00011	.00009	.00011
%RSD	34.693	116.29	174.79	10.585	13.184	75.086	10.636
#1	-.00126	.00024	-.00001	-.06271	-.00070	-.00002	-.00106
#2	-.00067	.00001	-.00005	-.05127	-.00084	-.00018	-.00097
#3	-.00079	.00081	.00001	-.06101	-.00091	-.00016	-.00120

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00024**	**-.00047**	**.00228**	**.00001**	**.00207**	**-.00190**	**-.00036**
Stddev	.00009	.00015	.00006	.00003	.00122	.00047	.00004
%RSD	36.331	33.173	2.6350	196.75	58.814	24.571	11.950
#1	.00014	-.00032	.00223	-.00000	.00073	-.00184	-.00033
#2	.00029	-.00046	.00225	.00000	.00310	-.00239	-.00041
#3	.00027	-.00063	.00234	.00005	.00238	-.00147	-.00035

Approved: June 29, 2016

Sample Name: S0 Acquired: 6/28/2016 9:16:20 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00000	.00014	-.00589
Stddev	.00002	.00004	.00178
%RSD	4049.1	26.620	30.214
#1	.00001	.00014	-.00623
#2	.00002	.00018	-.00748
#3	-.00003	.00011	-.00397
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9714.8	58491.	2823.7
Stddev	16.7	110.	25.4
%RSD	.17193	.18886	.90073
#1	9720.2	58546.	2801.2
#2	9728.1	58564.	2818.6
#3	9696.1	58364.	2851.3

Approved: June 29, 2016

Sample Name: S1 Acquired: 6/28/2016 9:20:18 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00003	.00126	.07127	.00103	.00358	.00016	.00031
Stddev	.00003	.00006	.00137	.00015	.00050	.00014	.00006
%RSD	125.85	5.1064	1.9277	14.298	14.086	85.616	20.693
#1	-.00003	.00132	.07141	.00093	.00380	.00017	.00036
#2	-.00006	.00119	.06983	.00097	.00300	.00002	.00024
#3	.00001	.00129	.07256	.00120	.00394	.00029	.00032

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00048	.00049	.00055	.00427	.00160	.00124	.01092
Stddev	.00003	.00005	.00040	.00427	.00016	.00011	.00082
%RSD	5.3307	9.2632	73.814	99.979	9.7621	8.7281	7.5482
#1	.00050	.00044	.00022	-.00041	.00157	.00131	.01050
#2	.00048	.00050	.00100	.00797	.00147	.00129	.01187
#3	.00045	.00053	.00042	.00526	.00178	.00112	.01039

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00036	.00088	-.00103	.00046	.00356	.00049	.02743
Stddev	.00012	.00002	.00015	.00009	.00009	.00003	.00119
%RSD	33.945	2.6105	14.271	18.586	2.5479	7.0434	4.3541
#1	-.00026	.00090	-.00097	.00039	.00354	.00052	.02869
#2	-.00032	.00085	-.00092	.00044	.00366	.00049	.02631
#3	-.00050	.00088	-.00120	.00055	.00348	.00045	.02730

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00122	.00048	.00307	.01800
Stddev	.00014	.00002	.00019	.00142
%RSD	11.782	4.8775	6.2838	7.8748
#1	-.00137	.00048	.00311	.01754
#2	-.00108	.00050	.00324	.01687
#3	-.00121	.00046	.00286	.01959

Approved: June 29, 2016

Sample Name: S1 Acquired: 6/28/2016 9:20:18 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9700.9**	**58648.**	**2834.2**
Stddev	11.6	54.	2.3
%RSD	.11996	.09285	.08254
#1	9688.0	58595.	2831.5
#2	9710.7	58703.	2835.9
#3	9703.9	58646.	2835.0

Approved: June 29, 2016

Sample Name: S2 Acquired: 6/28/2016 9:24:13 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00009	.00193	.00017	.00017	.09454	.00146	.00723
Stddev	.00008	.00006	.00006	.00004	.00278	.00004	.00160
%RSD	83.939	3.1358	35.753	24.828	2.9371	2.8533	22.087
#1	.00011	.00190	.00023	.00019	.09719	.00151	.00588
#2	.00016	.00200	.00011	.00012	.09477	.00143	.00900
#3	.00001	.00189	.00016	.00019	.09166	.00144	.00682

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00030	.00098	.00072	.00105	.00104	.02566	.01205
Stddev	.00008	.00005	.00004	.00009	.00055	.01120	.00176
%RSD	26.659	5.3135	5.7558	8.1488	52.725	43.631	14.637
#1	.00039	.00103	.00070	.00107	.00130	.03847	.01331
#2	.00024	.00098	.00070	.00112	.00141	.02079	.01003
#3	.00028	.00092	.00077	.00096	.00041	.01773	.01281

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00127	.00261	.00256	.08239	.00025	.00182	-.00058
Stddev	.00061	.00102	.00007	.00826	.00004	.00007	.00016
%RSD	48.074	39.234	2.6316	10.022	14.836	3.8680	28.275
#1	.00188	.00263	.00261	.07825	.00022	.00177	-.00077
#2	.00066	.00362	.00258	.09190	.00023	.00190	-.00050
#3	.00125	.00158	.00248	.07702	.00029	.00179	-.00047

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00067	-.00039	.00509	.00102	.05525	-.00033	-.00016
Stddev	.00007	.00004	.00018	.00007	.00176	.00054	.00011
%RSD	10.832	9.8136	3.4524	6.4870	3.1861	162.21	68.603
#1	.00071	-.00038	.00503	.00109	.05600	-.00081	-.00013
#2	.00071	-.00036	.00529	.00102	.05324	-.00043	-.00028
#3	.00059	-.00044	.00495	.00096	.05652	.00025	-.00007

Approved: June 29, 2016

Sample Name: S2 Acquired: 6/28/2016 9:24:13 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00099	.00624	.04815
Stddev	.00002	.00020	.00347
%RSD	1.9896	3.2439	7.2147
#1	.00101	.00634	.05143
#2	.00097	.00637	.04451
#3	.00100	.00601	.04852
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9488.3	57374.	2740.7
Stddev	13.3	265.	16.1
%RSD	.14056	.46229	.58687
#1	9498.8	57303.	2735.4
#2	9492.7	57152.	2758.8
#3	9473.3	57668.	2728.0

Approved: June 29, 2016

Sample Name: S3 Acquired: 6/28/2016 9:28:11 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01916	.07899	.00881	.01065	2.1276	.04704	.43747	.02939
Stddev	.00009	.00021	.00004	.00008	.0188	.00004	.00572	.00012
%RSD	.48290	.26798	.41949	.72661	.88345	.07530	1.3084	.39245
#1	.01915	.07889	.00878	.01070	2.1392	.04705	.43801	.02929
#2	.01907	.07924	.00885	.01056	2.1376	.04700	.44291	.02935
#3	.01926	.07886	.00880	.01070	2.1059	.04707	.43150	.02951

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06899	.02881	.06128	.08514	2.6698	1.5114	.08181	.12999
Stddev	.00025	.00010	.00021	.00074	.0161	.0132	.00070	.00035
%RSD	.36800	.36413	.33638	.86441	.60241	.87096	.85392	.26989
#1	.06876	.02869	.06116	.08576	2.6757	1.5250	.08180	.13021
#2	.06894	.02886	.06152	.08533	2.6821	1.5103	.08252	.13017
#3	.06926	.02888	.06116	.08432	2.6516	1.4988	.08112	.12959

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.17433	8.6122	.06285	.12581	.02893	.03354	.00576	.18790
Stddev	.00031	.0732	.00005	.00024	.00024	.00003	.00001	.00028
%RSD	.17582	.84951	.08654	.19275	.83516	.09147	.09744	.15032
#1	.17399	8.6595	.06279	.12561	.02891	.03350	.00576	.18758
#2	.17443	8.6492	.06290	.12608	.02871	.03355	.00576	.18800
#3	.17457	8.5280	.06286	.12575	.02919	.03356	.00575	.18812

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06712	3.3956	.09127	.01239	.06680	.39577	3.5688
Stddev	.00013	.0315	.00072	.00006	.00018	.00037	.0461
%RSD	.19851	.92688	.79280	.51421	.27024	.09319	1.2920
#1	.06699	3.4194	.09199	.01232	.06671	.39600	3.5820
#2	.06711	3.4075	.09128	.01243	.06669	.39597	3.6069
#3	.06726	3.3599	.09055	.01243	.06701	.39535	3.5176

Approved: June 29, 2016

Sample Name: S3 Acquired: 6/28/2016 9:28:11 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9241.9**	**55260.**	**2668.0**
Stddev	19.7	48.	33.4
%RSD	.21369	.08737	1.2509
#1	9229.8	55276.	2646.9
#2	9231.3	55298.	2650.6
#3	9264.7	55205.	2706.4

Approved: June 29, 2016

Sample Name: S4 Acquired: 6/28/2016 9:31:48 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03898	.15838	.01780	.02157	4.2139	.09454	.88060	.05924
Stddev	.00003	.00023	.00001	.00010	.0233	.00025	.00662	.00020
%RSD	.08866	.14782	.07112	.46921	.55230	.26866	.75203	.34365
#1	.03894	.15829	.01779	.02152	4.1947	.09434	.87964	.05948
#2	.03900	.15864	.01780	.02151	4.2398	.09446	.88765	.05914
#3	.03900	.15820	.01781	.02169	4.2071	.09483	.87451	.05911

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13809	.05786	.12220	.16962	5.4128	3.0736	.16425	.26249
Stddev	.00033	.00011	.00045	.00080	.0435	.0280	.00229	.00125
%RSD	.24203	.19009	.36880	.47369	.80337	.91276	1.3953	.47581
#1	.13820	.05783	.12257	.16937	5.3823	3.0436	.16161	.26184
#2	.13836	.05797	.12233	.17052	5.4626	3.0991	.16579	.26393
#3	.13772	.05776	.12170	.16898	5.3936	3.0782	.16533	.26170

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.34580	17.465	.12606	.25335	.05863	.06689	.01208	.36847
Stddev	.00103	.089	.00054	.00060	.00028	.00018	.00008	.00027
%RSD	.29826	.51204	.42896	.23539	.46906	.26956	.69300	.07400
#1	.34674	17.386	.12620	.25381	.05870	.06700	.01218	.36872
#2	.34597	17.562	.12651	.25356	.05887	.06699	.01203	.36850
#3	.34470	17.448	.12546	.25268	.05833	.06668	.01204	.36818

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13428	6.8183	.18453	.02487	.13520	.79151	7.0595
Stddev	.00083	.0500	.00093	.00006	.00027	.00264	.0521
%RSD	.61918	.73271	.50222	.22755	.19752	.33404	.73814
#1	.13469	6.7844	.18348	.02491	.13496	.79350	7.0011
#2	.13482	6.8757	.18485	.02490	.13515	.79251	7.1011
#3	.13332	6.7948	.18525	.02481	.13549	.78851	7.0763

Approved: June 29, 2016

Sample Name: S4 Acquired: 6/28/2016 9:31:48 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9167.2**	**54335.**	**2654.7**
Stddev	38.1	122.	22.7
%RSD	.41612	.22434	.85400
#1	9143.1	54461.	2678.0
#2	9211.2	54218.	2632.7
#3	9147.4	54326.	2653.3

Approved: June 29, 2016

Sample Name: ICV Acquired: 6/28/2016 9:35:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39623	9.9377	.39889	.49732	.99363	.04944	9.8812	.04987
Stddev	.00106	.0076	.00708	.00191	.00263	.00011	.0536	.00024
%RSD	.26775	.07627	1.7741	.38466	.26478	.22215	.54207	.47368
#1	.39548	9.9303	.40454	.49713	.99097	.04941	9.8633	.05008
#2	.39577	9.9454	.39095	.49550	.99623	.04956	9.9414	.04961
#3	.39744	9.9373	.40117	.49932	.99370	.04935	9.8388	.04991
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19959	.49664	.50149	3.9513	49.374	.98661	10.034	.49580
Stddev	.00028	.00150	.00082	.0258	.237	.00181	.192	.00669
%RSD	.13960	.30233	.16435	.65329	.47968	.18320	1.9142	1.3487
#1	.19946	.49575	.50241	3.9273	49.179	.98559	9.9342	.48809
#2	.19940	.49837	.50124	3.9482	49.637	.98870	10.255	.49945
#3	.19991	.49580	.50081	3.9786	49.305	.98555	9.9118	.49988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0065	49.454	.49982	9.9830	.50183	1.1963	.40103	5.0777
Stddev	.0002	.121	.00152	.0155	.00322	.0016	.00482	.0052
%RSD	.02228	.24557	.30431	.15537	.64110	.13254	1.2016	.10217
#1	1.0068	49.335	.49901	9.9766	.49881	1.1979	.40328	5.0825
#2	1.0063	49.578	.50157	10.001	.50521	1.1962	.40432	5.0786
#3	1.0065	49.448	.49887	9.9716	.50146	1.1947	.39550	5.0722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: ICV Acquired: 6/28/2016 9:35:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0016**	**.99261**	**.99584**	**.50153**	**.98848**	**1.0048**	**.99997**
Stddev	.0014	.00354	.00789	.00098	.00445	.0012	.00652
%RSD	.13679	.35675	.79209	.19533	.45048	.12104	.65160
#1	1.0013	.98970	.98754	.50134	.98379	1.0059	.99456
#2	1.0032	.99655	1.0032	.50259	.98898	1.0050	1.0072
#3	1.0005	.99159	.99673	.50066	.99265	1.0035	.99814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9250.5**	**55131.**	**2679.3**
Stddev	20.5	128.	17.4
%RSD	.22138	.23235	.64777
#1	9233.7	55045.	2687.8
#2	9273.3	55070.	2659.3
#3	9244.5	55278.	2690.7

Approved: June 29, 2016

Sample Name: ICB Acquired: 6/28/2016 9:39:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	.01180	-.00119	.00063	.00251	.00001	-.00918	.00008
Stddev	.00181	.00703	.00094	.00081	.00066	.00006	.02928	.00031
%RSD	136.70	59.632	79.494	126.97	26.308	597.53	319.03	386.11
#1	-.00000	.01298	-.00012	.00058	.00242	.00008	.02412	.00032
#2	.00059	.00425	-.00191	-.00014	.00322	-.00002	-.03090	.00018
#3	.00338	.01816	-.00154	.00147	.00191	-.00003	-.02076	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00027	.00073	-.01933	.22486	.00161	-.02324	-.00042
Stddev	.00014	.00107	.00081	.05271	.09957	.00256	.03321	.00086
%RSD	166.85	404.59	111.23	272.68	44.280	159.67	142.93	202.90
#1	.00015	.00041	.00096	.00121	.27186	-.00060	-.05724	.00035
#2	.00017	.00126	.00140	.02002	.11049	.00442	.00912	-.00027
#3	-.00008	-.00087	-.00017	-.07922	.29222	.00100	-.02159	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.04470	.00005	.00699	.00132	.00357	.00008	.01683
Stddev	.00109	.04154	.00064	.00960	.00083	.00638	.00236	.00483
%RSD	272.72	92.940	1291.7	137.41	63.029	178.79	2974.4	28.717
#1	.00158	-.00292	.00078	.01781	.00208	.00712	.00108	.02228
#2	.00021	.06349	-.00026	-.00050	.00043	-.00380	.00178	.01513
#3	-.00058	.07352	-.00037	.00365	.00143	.00739	-.00262	.01308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICB Acquired: 6/28/2016 9:39:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00014	.00196	-.00125	-.00073	.00103	-.00010
Stddev	.00135	.00023	.00632	.00329	.00106	.00089	.00055
%RSD	236.56	168.90	323.11	262.65	146.43	86.352	567.67
#1	.00210	.00040	.00249	-.00348	-.00093	.00203	.00036
#2	-.00046	.00003	.00799	.00252	.00042	.00071	-.00070
#3	.00007	-.00002	-.00462	-.00279	-.00168	.00034	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9447.3	56860.	2718.2
Stddev	10.4	122.	12.5
%RSD	.11005	.21506	.45975
#1	9458.4	56769.	2709.1
#2	9437.8	56999.	2713.0
#3	9445.8	56813.	2732.4

Approved: June 29, 2016

Sample Name: LLICV Acquired: 6/28/2016 9:42:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00991	.17815	.00897	.07876	.00904	.00148	.35423	.00069
Stddev	.00104	.00704	.00226	.00139	.00049	.00009	.03506	.00011
%RSD	10.461	3.9500	25.189	1.7678	5.4305	6.3955	9.8986	16.368
#1	.01050	.18405	.01008	.07716	.00948	.00155	.38883	.00057
#2	.00871	.18003	.00637	.07946	.00851	.00152	.35515	.00072
#3	.01051	.17036	.01047	.07966	.00912	.00137	.31872	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00362	.00403	.00418	.08391	.76193	.08522	.48689	.00680
Stddev	.00017	.00112	.00111	.04090	.06478	.00043	.08244	.00161
%RSD	4.7207	27.688	26.526	48.748	8.5024	.50386	16.933	23.633
#1	.00366	.00518	.00483	.03807	.79397	.08473	.56288	.00695
#2	.00378	.00296	.00481	.11670	.68737	.08539	.39923	.00512
#3	.00344	.00395	.00290	.09695	.80445	.08554	.49855	.00832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00769	.43375	.01599	.75966	.00664	.08175	.01775	.80263
Stddev	.00020	.02121	.00136	.01273	.00191	.00204	.01011	.01097
%RSD	2.5737	4.8901	8.5264	1.6756	28.742	2.5008	56.975	1.3672
#1	.00787	.45781	.01609	.77125	.00884	.08189	.01142	.80967
#2	.00748	.41776	.01730	.76168	.00573	.08373	.01242	.80822
#3	.00770	.42567	.01458	.74604	.00536	.07964	.02942	.78998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLICV Acquired: 6/28/2016 9:42:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39622**	**.04016**	**.02914**	**.14830**	**.00783**	**.01683**	**.04076**
Stddev	.01031	.00026	.01007	.00332	.00030	.00028	.00052
%RSD	2.6017	.65964	34.548	2.2355	3.7875	1.6572	1.2881
#1	.40211	.04028	.04047	.15075	.00751	.01695	.04117
#2	.40223	.03985	.02123	.14964	.00809	.01703	.04094
#3	.38431	.04033	.02572	.14453	.00790	.01651	.04016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9378.4**	**56347.**	**2705.9**
Stddev	26.7	218.	8.1
%RSD	.28463	.38711	.29918
#1	9402.3	56567.	2704.5
#2	9349.6	56344.	2698.6
#3	9383.4	56131.	2714.6

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/28/2016 9:46:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00050	266.36	-.00152	-.01712	.00324	-.00005	247.98	-.00027
Stddev	.00037	.22	.00243	.00116	.00078	.00009	.43	.00011
%RSD	73.628	.08074	159.98	6.8032	24.071	185.53	.17248	39.233
#1	-.00041	266.18	-.00115	-.01623	.00235	.00002	248.46	-.00025
#2	-.00090	266.60	-.00411	-.01844	.00357	-.00002	247.82	-.00039
#3	-.00019	266.31	.00070	-.01669	.00379	-.00014	247.65	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00169	-.00144	.00013	98.701	.06883	.01603	250.89	-.00160
Stddev	.00026	.00067	.00548	.311	.12623	.00270	.87	.00294
%RSD	15.267	46.704	4143.6	.31529	183.41	16.858	.34767	183.10
#1	-.00143	-.00069	.00362	98.701	.00013	.01708	251.87	.00066
#2	-.00170	-.00165	.00296	99.012	-.00816	.01805	250.59	-.00056
#3	-.00194	-.00199	-.00618	98.390	.21451	.01296	250.20	-.00492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00105	.05927	.00061	.01849	-.00139	.00413	-.00226	.04009
Stddev	.00038	.02841	.00031	.00445	.00749	.00506	.00450	.00578
%RSD	36.274	47.924	51.490	24.054	538.59	122.61	198.89	14.425
#1	-.00079	.07985	.00085	.02340	.00046	.00063	-.00723	.04658
#2	-.00149	.02686	.00025	.01473	.00500	.00182	-.00111	.03819
#3	-.00089	.07110	.00072	.01735	-.00963	.00993	.00155	.03549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/28/2016 9:46:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00218	.00068	.00760	.00116	-.00333	-.00424	-.00339
Stddev	.00125	.00063	.00590	.00156	.00074	.00023	.00084
%RSD	57.532	93.689	77.648	134.06	22.180	5.4757	24.860
#1	.00360	.00138	.01052	.00203	-.00256	-.00418	-.00424
#2	.00168	.00049	.00081	.00210	-.00340	-.00449	-.00335
#3	.00125	.00016	.01147	-.00064	-.00403	-.00404	-.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8775.1	51967.	2616.3
Stddev	20.6	83.	2.5
%RSD	.23472	.16025	.09692
#1	8795.9	51991.	2614.2
#2	8774.7	51875.	2619.1
#3	8754.7	52036.	2615.7

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/28/2016 9:50:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50833	262.18	.25318	-.02181	.24986	.24306	244.26	.49106
Stddev	.00126	.58	.00122	.00145	.00044	.00020	.40	.00090
%RSD	.24874	.22306	.48164	6.6719	.17658	.08149	.16189	.18295
#1	.50757	261.68	.25459	-.02039	.25017	.24305	244.64	.49101
#2	.50979	262.82	.25250	-.02173	.25006	.24326	244.30	.49198
#3	.50763	262.05	.25246	-.02330	.24936	.24286	243.85	.49019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23788	.25163	.25229	95.063	5.2464	.00919	243.78	.24277
Stddev	.00015	.00059	.00181	.158	.1191	.00381	.56	.00046
%RSD	.06168	.23621	.71702	.16578	2.2694	41.482	.22832	.18874
#1	.23792	.25213	.25258	94.883	5.3322	.01222	244.21	.24224
#2	.23772	.25179	.25393	95.178	5.2964	.01044	243.98	.24295
#3	.23800	.25098	.25035	95.128	5.1104	.00491	243.15	.24310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	5.2460	.47642	.09011	.48731	.50360	.24875	-.01785
Stddev	.00037	.0122	.00205	.00129	.00428	.00481	.00501	.00607
%RSD	52.598	.23176	.42970	1.4289	.87800	.95448	2.0122	34.019
#1	-.00112	5.2480	.47501	.09145	.49090	.50915	.25453	-.01635
#2	-.00043	5.2330	.47877	.08998	.48258	.50104	.24582	-.01267
#3	-.00055	5.2571	.47549	.08889	.48845	.50062	.24591	-.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/28/2016 9:50:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00034**	**.01432**	**.45770**	**.25003**	**.47450**	**-.00411**
Stddev	.00066	.00044	.00471	.00381	.00123	.00039	.00022
%RSD	342.99	128.84	32.883	.83310	.49348	.08138	5.4415
#1	.00080	-.00016	.00974	.46183	.24862	.47464	-.00429
#2	.00027	.00065	.01408	.45695	.25056	.47407	-.00386
#3	-.00050	.00055	.01915	.45432	.25090	.47480	-.00418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8832.1**	**52417.**	**2628.2**
Stddev	21.0	68.	14.0
%RSD	.23726	.13011	.53298
#1	8814.6	52495.	2613.1
#2	8826.4	52369.	2631.0
#3	8855.3	52387.	2640.7

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 9:54:16 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40243**	**10.614**	**.40844**	**.50863**	**1.0121**	**.05102**	**10.217**	**.05116**
Stddev	.00112	.515	.00191	.00164	.0035	.00030	.043	.00068
%RSD	.27927	4.8494	.46671	.32182	.34959	.57927	.42277	1.3380
#1	.40130	11.204	.40953	.50971	1.0093	.05129	10.170	.05116
#2	.40355	10.382	.40955	.50943	1.0161	.05108	10.255	.05048
#3	.40244	10.257	.40624	.50675	1.0109	.05070	10.226	.05184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20478**	**.51148**	**.51464**	**4.0677**	**50.173**	**1.0065**	**10.314**	**.50732**
Stddev	.00051	.00296	.00045	.0473	.353	.0072	.034	.00544
%RSD	.24945	.57908	.08841	1.1625	.70448	.71712	.33086	1.0728
#1	.20423	.51005	.51506	4.0134	50.081	1.0002	10.321	.50516
#2	.20489	.51489	.51415	4.0899	50.563	1.0144	10.277	.50329
#3	.20523	.50951	.51470	4.0998	49.875	1.0048	10.345	.51351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0289**	**50.218**	**.51278**	**10.197**	**.51300**	**1.2267**	**.41248**	**5.1576**
Stddev	.0010	.142	.00154	.027	.00226	.0014	.00212	.0140
%RSD	.09444	.28181	.29952	.26129	.44099	.11533	.51455	.27050
#1	1.0300	50.065	.51438	10.173	.51371	1.2251	.41099	5.1524
#2	1.0287	50.345	.51264	10.193	.51047	1.2270	.41154	5.1469
#3	1.0281	50.245	.51132	10.226	.51482	1.2279	.41491	5.1734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 9:54:16 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0271**	**1.0127**	**1.0140**	**.50854**	**1.0159**	**1.0260**	**1.0267**
Stddev	.0031	.0018	.0068	.00377	.0037	.0011	.0023
%RSD	.30094	.17428	.66974	.74115	.36573	.10367	.22623
#1	1.0299	1.0107	1.0170	.50547	1.0121	1.0262	1.0241
#2	1.0238	1.0132	1.0062	.51275	1.0195	1.0270	1.0274
#3	1.0277	1.0141	1.0187	.50742	1.0160	1.0249	1.0286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9112.2**	**54490.**	**2638.0**
Stddev	42.3	229.	4.9
%RSD	.46371	.42014	.18716
#1	9071.0	54716.	2643.2
#2	9110.2	54259.	2637.5
#3	9155.4	54496.	2633.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 9:57:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00107	.01265	.00066	-.00059	.00133	.00005	-.02321
Stddev	.00172	.00739	.00480	.00117	.00044	.00009	.07069
%RSD	161.38	58.442	725.98	199.74	32.707	205.84	304.56
#1	-.00291	.01146	.00037	.00041	.00178	.00010	-.07158
#2	-.00078	.02057	-.00398	-.00188	.00091	.00010	-.05598
#3	.00050	.00593	.00560	-.00029	.00130	-.00006	.05792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	-.00001	.00070	.00064	-.01248	.01896	.00424
Stddev	.00008	.00024	.00052	.00024	.01697	.05567	.00356
%RSD	121.21	4578.5	75.209	37.753	135.92	293.58	84.012
#1	.00015	.00014	.00015	.00039	-.03204	-.04418	.00820
#2	.00001	-.00028	.00074	.00065	-.00181	.06099	.00129
#3	.00003	.00013	.00119	.00088	-.00359	.04008	.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07357	-.00184	.00007	-.01062	-.00011	F .01168	.00180
Stddev	.01112	.00228	.00054	.01276	.00016	.00984	.00196
%RSD	15.118	123.77	820.65	120.18	144.89	84.220	109.05
#1	.06409	.00072	.00068	-.02016	-.00025	.02234	.00377
#2	.07080	-.00365	-.00031	.00388	.00006	.00294	.00177
#3	.08581	-.00260	-.00018	-.01557	-.00014	.00977	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 9:57:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00297	-.00339	.01205	.00075	.00021	.00075	.00120
Stddev	.00590	.00357	.00514	.00126	.00040	.00784	.00102
%RSD	198.90	105.27	42.636	167.85	194.47	1051.9	85.165
#1	-.00142	-.00368	.01797	.00186	.00063	.00837	.00235
#2	.00967	.00031	.00882	.00102	.00016	.00116	.00040
#3	.00064	-.00682	.00935	-.00062	-.00017	-.00730	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00000	.00050	.00010
Stddev	.00121	.00044	.00035
%RSD	61027.	88.545	331.42
#1	.00084	.00101	.00002
#2	-.00139	.00027	-.00019
#3	.00055	.00022	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9271.3	55578.	2655.9
Stddev	51.6	74.	4.9
%RSD	.55665	.13326	.18372
#1	9329.9	55635.	2650.8
#2	9251.9	55603.	2660.5
#3	9232.3	55494.	2656.4

Approved: June 29, 2016

Sample Name: L1606098610 Acquired: 6/28/2016 10:04:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00145	.02181	-.00206	.00832	.01391	-.00004	122.67	.00047
Stddev	.00304	.00477	.00237	.00423	.00116	.00002	.55	.00028
%RSD	209.83	21.890	115.10	50.795	8.3057	52.478	.44893	58.626
#1	-.00139	.02678	-.00462	.01283	.01523	-.00006	123.13	.00055
#2	.00107	.01726	.00006	.00445	.01310	-.00005	122.82	.00016
#3	.00466	.02139	-.00162	.00768	.01340	-.00002	122.06	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.00086	.00144	.02058	.44789	.01086	31.049	.01682
Stddev	.00026	.00146	.00109	.06247	.10797	.00372	.048	.00056
%RSD	92.227	169.73	75.475	303.53	24.107	34.217	.15599	3.3113
#1	-.00039	.00185	.00045	.09233	.41216	.01516	31.103	.01727
#2	.00001	.00156	.00128	-.00884	.36231	.00882	31.011	.01699
#3	-.00048	-.00082	.00261	-.02175	.56920	.00862	31.031	.01620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	15.548	.00143	.00778	-.00125	.00088	-.00317	3.9825
Stddev	.00023	.062	.00093	.00138	.00116	.00443	.00234	.0926
%RSD	286.52	.39917	65.076	17.789	92.731	502.50	73.634	2.3256
#1	-.00018	15.614	.00107	.00849	-.00230	-.00088	-.00329	4.0331
#2	-.00025	15.539	.00249	.00867	-.00001	.00592	-.00078	4.0388
#3	.00019	15.491	.00074	.00619	-.00142	-.00240	-.00545	3.8756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098610 Acquired: 6/28/2016 10:04:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.56094**	**-.01734**	**-.00186**	**-.00096**	**.01161**	**.00025**
Stddev	.00056	.00226	.00672	.00164	.00046	.00049	.00009
%RSD	168.92	.40254	38.781	88.193	48.332	4.1942	34.377
#1	-.00041	.56174	-.00995	-.00027	-.00069	.01210	.00033
#2	-.00084	.56269	-.01895	-.00176	-.00070	.01160	.00016
#3	.00026	.55839	-.02311	-.00354	-.00150	.01113	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8920.2**	**53798.**	**2606.1**
Stddev	42.2	101.	6.7
%RSD	.47268	.18837	.25865
#1	8966.4	53714.	2598.6
#2	8910.3	53770.	2608.4
#3	8883.9	53911.	2611.5

Approved: June 29, 2016

Sample Name: L1606098612 Acquired: 6/28/2016 10:08:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00179**	**.01817**	**-.00173**	**.08964**	**.06989**	**.00028**	**149.00**
Stddev	.00100	.00210	.00123	.00064	.00163	.00007	1.41
%RSD	55.707	11.569	71.245	.71011	2.3276	25.194	.94738
#1	-.00244	.01934	-.00082	.08904	.07170	.00025	150.63
#2	-.00230	.01575	-.00313	.08958	.06943	.00036	148.08
#3	-.00064	.01943	-.00124	.09031	.06855	.00023	148.30
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00006**	**.00125**	**.04446**	F **-.02369**	**1.8466**	**.02203**
Stddev	.00018	.00028	.00145	.00051	.01758	.1274	.00321
%RSD	72.096	487.94	115.70	1.1501	74.200	6.9016	14.550
#1	.00022	.00027	.00182	.04416	-.01622	1.8634	.02058
#2	.00009	.00016	.00233	.04417	-.01108	1.7116	.02570
#3	.00045	-.00026	-.00039	.04505	-.04377	1.9648	.01981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**45.103**	**.03621**	**.00100**	**28.222**	**.00213**	**.00959**	**-.00001**
Stddev	.458	.00247	.00050	.258	.00087	.00880	.00083
%RSD	1.0159	6.8101	49.623	.91303	41.036	91.728	5820.7
#1	45.621	.03657	.00045	28.519	.00307	.00506	-.00095
#2	44.936	.03358	.00142	28.060	.00196	.00398	.00025
#3	44.752	.03847	.00113	28.087	.00135	.01973	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098612 Acquired: 6/28/2016 10:08:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	-.00578	2.4372	.00007	1.8293	-.02770	-.00171
Stddev	.00228	.00496	.0114	.00086	.0170	.00834	.00180
%RSD	301.69	85.805	.46813	1170.9	.92968	30.114	105.59
#1	.00125	-.00555	2.4456	-.00089	1.8486	-.01895	.00027
#2	-.00173	-.01085	2.4418	.00034	1.8168	-.03557	-.00325
#3	.00274	-.00094	2.4242	.00076	1.8224	-.02859	-.00214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00089	.05918	-.00043
Stddev	.00099	.00066	.00035
%RSD	111.24	1.1098	81.505
#1	-.00131	.05965	-.00004
#2	.00024	.05947	-.00071
#3	-.00160	.05843	-.00054
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9014.1	54047.	2633.3
Stddev	35.9	224.	16.2
%RSD	.39815	.41359	.61534
#1	8976.7	54004.	2620.2
#2	9017.5	54289.	2628.3
#3	9048.2	53848.	2651.4

Approved: June 29, 2016

Sample Name: L1606098614 Acquired: 6/28/2016 10:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.01902	.00012	.03801	.03323	.00008	204.88
Stddev	.00080	.00540	.00300	.00376	.00070	.00006	.99
%RSD	85.438	28.379	2423.6	9.8935	2.1045	69.928	.48308
#1	.00016	.02493	-.00300	.03753	.03371	.00002	204.76
#2	.00176	.01436	.00037	.03451	.03355	.00011	205.92
#3	.00089	.01776	.00299	.04199	.03243	.00011	203.95
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00056	.00150	.00728	.02142	3.2615	.02265
Stddev	.00057	.00060	.00108	.00027	.01165	.0798	.00129
%RSD	264.86	107.81	72.286	3.7643	54.407	2.4470	5.6835
#1	.00030	-.00037	.00047	.00737	.00797	3.2001	.02170
#2	.00074	-.00123	.00263	.00698	.02785	3.2326	.02412
#3	-.00040	-.00007	.00140	.00751	.02843	3.3517	.02214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	82.993	.04380	.00084	23.890	.00021	.01373	-.00122
Stddev	.436	.00413	.00032	.112	.00062	.00340	.00542
%RSD	.52569	9.4361	37.780	.47033	292.92	24.777	445.93
#1	82.807	.04136	.00050	23.898	-.00050	.01127	.00505
#2	83.491	.04857	.00113	23.997	.00047	.01231	-.00431
#3	82.680	.04147	.00090	23.773	.00067	.01761	-.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098614 Acquired: 6/28/2016 10:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00546**	**-.00344**	**3.4759**	**.00042**	**2.4733**	F **-.03075**	**-.00468**
Stddev	.00377	.00065	.0206	.00043	.0126	.00530	.00102
%RSD	69.101	18.985	.59208	103.39	.51047	17.253	21.736
#1	.00255	-.00418	3.4966	.00056	2.4736	-.02749	-.00377
#2	.00410	-.00321	3.4757	.00077	2.4857	-.02789	-.00578
#3	.00971	-.00293	3.4554	-.00007	2.4605	-.03687	-.00450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00073**	**.02393**	**-.00042**
Stddev	.00117	.00020	.00017
%RSD	159.68	.83679	38.969
#1	.00060	.02379	-.00032
#2	-.00161	.02385	-.00034
#3	-.00119	.02416	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8696.6**	**53360.**	**2635.3**
Stddev	53.3	123.	4.7
%RSD	.61278	.23073	.17646
#1	8705.6	53481.	2630.0
#2	8744.8	53363.	2637.4
#3	8639.3	53235.	2638.5

Approved: June 29, 2016

Sample Name: L1606098616 Acquired: 6/28/2016 10:16:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.04206**	**-.00224**	**.11946**	**.01583**	**.00019**	**231.26**
Stddev	.00241	.00928	.00150	.00213	.00097	.00003	2.09
%RSD	1408.6	22.062	66.850	1.7822	6.1387	16.849	.90274
#1	.00048	.04133	-.00337	.11784	.01688	.00018	233.06
#2	.00184	.05168	-.00054	.12187	.01496	.00017	228.97
#3	-.00284	.03317	-.00280	.11866	.01564	.00023	231.75
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**-.00016**	**.00227**	**.06476**	**-.01272**	**3.3820**	**.03902**
Stddev	.00014	.00007	.00186	.00299	.00289	.1857	.00289
%RSD	45.106	42.884	81.857	4.6169	22.742	5.4901	7.4164
#1	.00019	-.00024	.00395	.06819	-.00990	3.5637	.04149
#2	.00027	-.00014	.00028	.06274	-.01258	3.3897	.03974
#3	.00046	-.00010	.00258	.06334	-.01569	3.1925	.03584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**89.176**	**.29540**	**.00093**	**71.926**	**.00066**	**.02514**	**-.00152**
Stddev	.613	.00274	.00025	.659	.00227	.00577	.00426
%RSD	.68703	.92907	27.507	.91616	345.74	22.967	279.33
#1	89.667	.29671	.00072	72.457	-.00083	.02487	.00332
#2	88.490	.29224	.00085	71.188	.00327	.01951	-.00323
#3	89.371	.29724	.00121	72.131	-.00047	.03105	-.00466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098616 Acquired: 6/28/2016 10:16:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**-.00519**	**4.9238**	**-.00027**	**6.5296**	F **-.03371**	**-.00165**
Stddev	.00169	.00417	.0247	.00065	.0594	.00812	.00293
%RSD	216.35	80.222	.50103	244.32	.90963	24.078	177.80
#1	.00267	-.01000	4.9180	-.00088	6.5813	-.03699	.00082
#2	-.00061	-.00272	4.9024	-.00033	6.4647	-.03968	-.00088
#3	.00029	-.00285	4.9508	.00042	6.5427	-.02447	-.00488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00235**	**.08965**	**.00001**
Stddev	.00114	.00063	.00046
%RSD	48.572	.70222	6097.3
#1	-.00339	.09001	-.00002
#2	-.00113	.09001	.00048
#3	-.00252	.08892	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8519.2**	**51220.**	**2477.0**
Stddev	81.7	146.	20.1
%RSD	.95935	.28481	.81146
#1	8551.6	51098.	2469.4
#2	8426.3	51180.	2499.8
#3	8579.8	51381.	2461.8

Approved: June 29, 2016

Sample Name: L1606098618 Acquired: 6/28/2016 10:20:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00278**	**.01446**	**.00065**	**.04414**	**.02803**	**.00003**	**62.939**	**.00005**
Stddev	.00132	.00733	.00348	.00493	.00138	.00006	.433	.00030
%RSD	47.733	50.692	534.45	11.174	4.9100	229.60	.68765	604.20
#1	-.00152	.00830	-.00263	.04725	.02745	.00008	62.838	-.00003
#2	-.00416	.02256	.00029	.04672	.02704	.00004	62.565	-.00021
#3	-.00264	.01251	.00429	.03845	.02960	-.00004	63.413	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00082**	**.00223**	**-.00753**	**2.0170**	**.02393**	**21.554**	**.01082**
Stddev	.00031	.00057	.00204	.01101	.0505	.00515	.089	.00204
%RSD	220.03	69.016	91.162	146.17	2.5023	21.512	.41324	18.865
#1	-.00006	.00074	.00441	.00042	1.9589	.02045	21.554	.00997
#2	.00012	.00142	.00038	-.00291	2.0421	.02985	21.642	.01315
#3	-.00048	.00030	.00190	-.02010	2.0500	.02150	21.464	.00934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00081**	**26.450**	**.00031**	**.00548**	**-.00155**	**.00176**	**.00395**	**3.0409**
Stddev	.00060	.129	.00015	.00670	.00328	.00355	.00393	.0829
%RSD	74.514	.48686	47.432	122.31	212.16	202.06	99.431	2.7275
#1	.00092	26.577	.00018	.00890	.00028	.00578	.00301	3.0910
#2	.00135	26.453	.00027	-.00224	.00041	-.00094	.00827	3.0866
#3	.00016	26.320	.00047	.00977	-.00534	.00043	.00058	2.9452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098618 Acquired: 6/28/2016 10:20:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	1.4649	-.02108	-.00228	-.00070	.00804	.00001
Stddev	.00065	.0081	.00355	.00310	.00029	.00035	.00069
%RSD	189.54	.55254	16.835	135.99	41.071	4.3066	10757.
#1	-.00024	1.4741	-.02257	-.00444	-.00038	.00819	-.00033
#2	.00023	1.4620	-.02365	-.00366	-.00094	.00828	-.00045
#3	.00104	1.4587	-.01703	.00127	-.00077	.00764	.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9023.1	54498.	2583.2
Stddev	14.4	184.	12.5
%RSD	.15969	.33755	.48540
#1	9006.5	54286.	2572.4
#2	9030.9	54590.	2580.1
#3	9032.0	54618.	2596.9

Approved: June 29, 2016

Sample Name: L1606098620 Acquired: 6/28/2016 10:23:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.04817	-.00135	.07782	.03729	.00006	4.8405	.00006
Stddev	.00111	.00858	.00337	.00174	.00150	.00005	.2531	.00016
%RSD	136.72	17.805	248.80	2.2312	4.0209	85.004	5.2298	272.23
#1	-.00108	.04704	.00253	.07620	.03787	.00002	5.1119	.00014
#2	-.00176	.05726	-.00346	.07965	.03841	.00005	4.7988	.00016
#3	.00041	.04021	-.00313	.07760	.03559	.00012	4.6108	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.00046	.00221	-.01377	.52680	.01239	2.0518	.01543
Stddev	.00035	.00041	.00041	.01525	.03562	.00363	.1072	.00237
%RSD	54.061	87.558	18.325	110.70	6.7607	29.289	5.2228	15.371
#1	.00030	.00060	.00268	-.00834	.49605	.00892	2.1754	.01476
#2	.00099	.00001	.00194	-.03099	.51851	.01616	1.9958	.01806
#3	.00063	.00078	.00201	-.00199	.56582	.01209	1.9843	.01346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	258.51	.00049	.03608	-.00135	.00110	.00276	1.9678
Stddev	.00004	.62	.00088	.00106	.00357	.00320	.00409	.0632
%RSD	3.0038	.23936	179.30	2.9363	263.98	291.73	148.29	3.2116
#1	.00120	259.22	.00098	.03683	-.00547	-.00186	-.00133	2.0062
#2	.00121	258.20	-.00052	.03655	.00073	.00066	.00275	2.0024
#3	.00127	258.10	.00101	.03487	.00069	.00449	.00685	1.8949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098620 Acquired: 6/28/2016 10:23:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.15413	.00227	-.00087	-.00034	.02123	.00037
Stddev	.00049	.00610	.00348	.00169	.00126	.00088	.00059
%RSD	102.24	3.9587	153.49	194.91	370.40	4.1503	159.78
#1	-.00007	.16053	.00379	-.00050	-.00014	.02154	.00024
#2	.00066	.15347	.00472	-.00270	-.00169	.02192	-.00015
#3	.00086	.14838	-.00171	.00061	.00081	.02024	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8915.1	52786.	2597.1
Stddev	45.8	164.	11.0
%RSD	.51429	.31058	.42540
#1	8885.2	52710.	2592.9
#2	8967.9	52674.	2609.6
#3	8892.2	52974.	2588.8

Approved: June 29, 2016

Sample Name: L1606098622 Acquired: 6/28/2016 10:27:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.01654	-.00212	.05780	.02851	.00007	128.50
Stddev	.00221	.00540	.00112	.00139	.00140	.00008	.61
%RSD	309.11	32.673	53.037	2.3972	4.9093	109.84	.47424
#1	.00268	.01727	-.00108	.05667	.02774	.00013	128.79
#2	.00113	.01080	-.00331	.05935	.02767	.00011	127.80
#3	-.00167	.02153	-.00197	.05738	.03013	-.00002	128.91
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.00035	.00003	.00865	F -.02013	2.5823	.02626
Stddev	.00019	.00016	.00078	.00202	.02937	.0866	.00292
%RSD	53.805	45.705	2672.0	23.404	145.91	3.3518	11.104
#1	.00057	-.00046	-.00008	.00753	-.05397	2.5533	.02584
#2	.00019	-.00041	-.00070	.01099	-.00133	2.5140	.02357
#3	.00032	-.00017	.00086	.00744	-.00508	2.6797	.02936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	34.597	.04887	.00126	48.333	.00152	.00681	.00163
Stddev	.218	.00218	.00027	.227	.00088	.00369	.00090
%RSD	.63072	4.4551	21.418	.46900	57.830	54.237	55.351
#1	34.383	.05123	.00152	48.447	.00051	.00489	.00144
#2	34.589	.04693	.00098	48.072	.00204	.01107	.00084
#3	34.819	.04846	.00127	48.480	.00202	.00448	.00261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098622 Acquired: 6/28/2016 10:27:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00300	-.00363	3.4283	-.00015	1.8035	-.01458	-.00022
Stddev	.00517	.00367	.0159	.00066	.0069	.00510	.00189
%RSD	172.02	101.31	.46354	431.28	.38479	35.008	872.11
#1	.00363	-.00181	3.4416	-.00081	1.8070	-.00945	-.00025
#2	.00783	-.00785	3.4326	.00051	1.7956	-.01462	.00169
#3	-.00245	-.00121	3.4107	-.00016	1.8081	-.01966	-.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00041	.00960	-.00053
Stddev	.00135	.00013	.00033
%RSD	325.34	1.3960	61.890
#1	-.00062	.00974	-.00080
#2	.00102	.00959	-.00064
#3	-.00165	.00947	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9009.7	53993.	2581.9
Stddev	49.8	532.	16.6
%RSD	.55257	.98445	.64409
#1	9066.2	53507.	2574.9
#2	8972.3	53911.	2600.9
#3	8990.7	54561.	2570.0

Approved: June 29, 2016

Sample Name: L1606098624 Acquired: 6/28/2016 10:31:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00211**	**.01815**	**-.00167**	**.41043**	**.02519**	**.00017**	**236.59**
Stddev	.00165	.00860	.00049	.00361	.00225	.00005	1.75
%RSD	78.365	47.395	29.692	.87850	8.9284	28.538	.73841
#1	.00350	.00823	-.00192	.40698	.02636	.00020	238.49
#2	.00028	.02269	-.00199	.41417	.02260	.00012	236.21
#3	.00255	.02352	-.00110	.41015	.02661	.00021	235.06
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00007**	**.00153**	**.02731**	**.01601**	**5.9761**	**.01623**
Stddev	.00020	.00023	.00113	.00041	.03451	.1797	.00053
%RSD	49.211	326.20	73.951	1.5130	215.56	3.0065	3.2775
#1	.00029	-.00013	.00162	.02743	.05242	6.1344	.01570
#2	.00064	.00003	.00036	.02684	.01181	6.0132	.01623
#3	.00030	.00031	.00261	.02764	-.01621	5.7808	.01676
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**70.059**	**.32158**	**.00074**	**64.433**	**.00096**	**.01137**	**-.00087**
Stddev	.188	.00511	.00049	.448	.00028	.00676	.00448
%RSD	.26817	1.5886	66.238	.69502	29.106	59.452	515.84
#1	70.206	.32391	.00122	64.934	.00127	.00901	.00428
#2	70.123	.32510	.00024	64.295	.00071	.00610	-.00300
#3	69.847	.31572	.00075	64.070	.00091	.01899	-.00388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098624 Acquired: 6/28/2016 10:31:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00110**	**.00013**	**3.2594**	**-.00019**	**1.6653**	F **-.04852**	**-.00220**
Stddev	.00114	.00630	.0380	.00073	.0105	.00857	.00107
%RSD	104.21	4773.5	1.1667	393.67	.63193	17.652	48.834
#1	-.00018	-.00673	3.2387	-.00082	1.6771	-.04225	-.00215
#2	.00203	.00564	3.2362	-.00035	1.6619	-.05828	-.00115
#3	.00144	.00149	3.3033	.00061	1.6569	-.04504	-.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00178**	**.00879**	**-.00005**
Stddev	.00106	.00026	.00053
%RSD	59.569	2.9138	1129.9
#1	-.00264	.00862	-.00059
#2	-.00060	.00868	.00046
#3	-.00210	.00909	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8997.1**	**53950.**	**2623.6**
Stddev	115.6	416.	17.2
%RSD	1.2846	.77044	.65487
#1	8946.4	53576.	2606.1
#2	8915.6	53878.	2640.4
#3	9129.4	54398.	2624.3

Approved: June 29, 2016

Sample Name: L1606098626 Acquired: 6/28/2016 10:35:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.02934	-.00299	.04282	.02918	-.00008	122.59	.00031
Stddev	.00120	.01200	.00108	.00189	.00069	.00004	3.30	.00024
%RSD	428.74	40.885	35.969	4.4087	2.3809	49.214	2.6919	77.572
#1	-.00145	.03984	-.00192	.04492	.02875	-.00008	118.95	.00057
#2	-.00034	.03192	-.00408	.04224	.02881	-.00012	123.44	.00009
#3	.00095	.01627	-.00298	.04128	.02998	-.00004	125.38	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00038	.00374	.00620	1.8137	.01464	39.490	.00270
Stddev	.00028	.00100	.00067	.03925	.1385	.00311	.817	.00349
%RSD	438.71	263.65	17.855	633.53	7.6349	21.247	2.0694	129.32
#1	.00016	.00133	.00448	.05110	1.6558	.01155	38.561	.00059
#2	.00003	.00048	.00318	-.01091	1.9146	.01461	39.811	.00673
#3	-.00038	-.00067	.00356	-.02160	1.8706	.01777	40.098	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	19.000	.00026	.00581	.00143	.00022	.00066	2.8563
Stddev	.00035	.513	.00086	.00438	.00335	.00426	.00443	.1067
%RSD	36.480	2.6998	327.05	75.398	234.01	1917.0	667.74	3.7341
#1	.00125	18.423	.00118	.00259	-.00228	.00258	.00540	2.9183
#2	.00109	19.169	.00011	.00403	.00234	.00279	-.00338	2.9176
#3	.00057	19.406	-.00051	.01080	.00423	-.00470	-.00003	2.7332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098626 Acquired: 6/28/2016 10:35:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	1.0049	-.01768	-.00157	-.00079	.00650	-.00003
Stddev	.00125	.0273	.00276	.00082	.00042	.00016	.00045
%RSD	736.86	2.7217	15.631	52.392	53.276	2.3973	1567.8
#1	.00079	.97482	-.02087	-.00077	-.00110	.00664	-.00010
#2	-.00127	1.0117	-.01607	-.00241	-.00031	.00653	-.00044
#3	.00099	1.0283	-.01609	-.00153	-.00097	.00633	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9200.3	55136.	2700.9
Stddev	51.6	162.	67.0
%RSD	.56114	.29336	2.4815
#1	9251.8	55033.	2629.7
#2	9200.4	55053.	2762.9
#3	9148.5	55323.	2710.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 10:39:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40316	10.167	.40001	.49776	1.0062	.05040	10.043	.05094
Stddev	.00469	.048	.00207	.00593	.0065	.00018	.026	.00025
%RSD	1.1625	.47037	.51652	1.1910	.64434	.35492	.25579	.48606
#1	.39929	10.121	.40159	.49635	.99979	.05020	10.020	.05080
#2	.40837	10.217	.40076	.50427	1.0061	.05053	10.038	.05080
#3	.40182	10.164	.39767	.49267	1.0128	.05048	10.071	.05123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20379	.50933	.50963	3.9847	49.804	.99855	10.245	.49740
Stddev	.00075	.00518	.00117	.0199	.296	.00583	.114	.00646
%RSD	.36648	1.0175	.23038	.49825	.59527	.58364	1.1171	1.2985
#1	.20447	.50484	.51099	3.9622	49.552	.99411	10.313	.49230
#2	.20299	.51500	.50900	3.9996	49.731	.99638	10.112	.49523
#3	.20392	.50814	.50891	3.9924	50.131	1.0051	10.309	.50466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0194	49.838	.50664	10.073	.50309	1.2101	.40117	5.0889
Stddev	.0025	.220	.00264	.006	.00460	.0036	.00581	.0083
%RSD	.24924	.44233	.52114	.06246	.91484	.29951	1.4477	.16335
#1	1.0223	49.626	.50960	10.070	.50141	1.2135	.39633	5.0972
#2	1.0176	49.821	.50452	10.070	.50829	1.2063	.40761	5.0805
#3	1.0182	50.066	.50581	10.081	.49956	1.2105	.39956	5.0889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 10:39:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0195**	**1.0042**	**.99589**	**.50209**	**1.0096**	**1.0169**	**1.0180**
Stddev	.0017	.0067	.00461	.00153	.0035	.0027	.0027
%RSD	.16394	.66869	.46256	.30430	.34566	.26637	.26670
#1	1.0212	.99679	.99292	.50045	1.0057	1.0199	1.0193
#2	1.0196	1.0061	1.0012	.50348	1.0124	1.0159	1.0148
#3	1.0178	1.0098	.99355	.50234	1.0106	1.0148	1.0197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8953.2**	**53239.**	**2577.6**
Stddev	23.4	339.	5.2
%RSD	.26092	.63651	.20155
#1	8926.2	53533.	2582.1
#2	8967.5	52869.	2578.9
#3	8965.8	53316.	2571.9

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 10:43:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00123**	**.00119**	**-.00233**	**.00197**	**.00081**	**-.00003**	**-.00118**	**-.00001**
Stddev	.00124	.00937	.00168	.00233	.00089	.00007	.03680	.00041
%RSD	101.18	784.56	72.249	118.43	110.25	242.13	3131.7	3937.7
#1	.00020	-.00943	-.00396	.00429	.00168	-.00010	.01949	-.00043
#2	-.00188	.00831	-.00241	.00200	-.00010	.00003	.02065	.00038
#3	-.00200	.00470	-.00060	-.00038	.00085	-.00002	-.04366	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**-.00032**	**-.00018**	**-.00841**	**-.05157**	**.00253**	**.10335**	**.00001**
Stddev	.00014	.00088	.00159	.02756	.08915	.00185	.07359	.00304
%RSD	112.37	271.26	897.41	327.75	172.89	73.129	71.209	38148.
#1	.00010	-.00096	.00052	-.01693	-.00526	.00052	.04788	-.00301
#2	.00028	-.00070	.00095	-.03070	.00491	.00415	.18683	-.00003
#3	.00000	.00068	-.00200	.02240	-.15434	.00291	.07532	.00306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00291**	**.00020**	**.00111**	**.00124**	**.00025**	**-.00505**	**.00674**
Stddev	.00041	.04187	.00054	.00259	.00351	.00041	.00455	.00227
%RSD	156.26	1437.8	265.49	232.95	283.47	162.45	90.076	33.594
#1	.00004	.02857	.00067	.00385	.00454	.00007	-.00177	.00790
#2	.00074	-.04540	.00034	.00079	-.00245	.00072	-.01025	.00820
#3	.00002	.02557	-.00039	-.00130	.00163	-.00004	-.00314	.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 10:43:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**.00062**	**-.00008**	**-.00234**	**.00029**	**-.00011**	**.00048**
Stddev	.00029	.00031	.00355	.00123	.00093	.00007	.00056
%RSD	94.778	49.380	4253.5	52.618	315.05	60.863	118.05
#1	.00048	.00088	-.00419	-.00246	.00016	-.00015	.00054
#2	-.00003	.00028	.00187	-.00105	-.00056	-.00003	-.00012
#3	.00045	.00070	.00207	-.00351	.00128	-.00015	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9397.7**	**55798.**	**2684.8**
Stddev	44.8	443.	24.5
%RSD	.47711	.79465	.91327
#1	9351.5	55593.	2688.7
#2	9400.6	55494.	2707.1
#3	9441.1	56307.	2658.6

Approved: June 29, 2016

Sample Name: L1606098628 Acquired: 6/28/2016 10:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.01289	-.00450	.03718	.02822	.00000	209.02
Stddev	.00173	.00565	.00095	.00078	.00109	.00010	1.27
%RSD	229.23	43.846	21.152	2.0843	3.8710	5293.1	.60706
#1	-.00123	.01938	-.00381	.03806	.02943	-.00005	210.45
#2	.00156	.00899	-.00410	.03658	.02732	.00011	208.59
#3	.00195	.01032	-.00559	.03691	.02790	-.00005	208.03
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	-.00021	.00021	.00536	.02317	3.4262	.02729
Stddev	.00012	.00047	.00073	.00148	.01277	.1489	.00102
%RSD	44.425	218.43	358.22	27.667	55.118	4.3469	3.7448
#1	.00038	-.00004	.00086	.00388	.02959	3.3053	.02760
#2	.00027	.00014	-.00059	.00685	.03147	3.3808	.02615
#3	.00014	-.00074	.00035	.00535	.00846	3.5926	.02812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	85.261	.03463	.00082	23.989	.00048	.00818	-.00223
Stddev	.205	.00172	.00021	.129	.00033	.00315	.00320
%RSD	.24047	4.9805	26.329	.53970	67.997	38.475	143.54
#1	85.478	.03271	.00090	24.123	.00028	.00681	-.00384
#2	85.071	.03605	.00097	23.979	.00031	.01177	.00146
#3	85.235	.03513	.00057	23.865	.00086	.00594	-.00430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098628 Acquired: 6/28/2016 10:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00183**	**-.00402**	**3.5345**	**-.00007**	**2.5328**	F **-.03692**	**-.00256**
Stddev	.00348	.00068	.0862	.00082	.0182	.00467	.00334
%RSD	190.40	16.928	2.4394	1141.0	.71790	12.653	130.28
#1	.00212	-.00480	3.5847	.00072	2.5529	-.03669	.00110
#2	.00515	-.00362	3.5839	-.00002	2.5280	-.03237	-.00334
#3	-.00179	-.00363	3.4349	-.00092	2.5174	-.04170	-.00545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00175**	**.01366**	**.00039**
Stddev	.00082	.00040	.00061
%RSD	47.069	2.9163	156.65
#1	-.00224	.01395	.00082
#2	-.00220	.01381	.00067
#3	-.00080	.01320	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9020.9**	**54213.**	**2666.2**
Stddev	63.0	332.	24.9
%RSD	.69874	.61196	.93493
#1	8948.2	53830.	2642.0
#2	9059.3	54396.	2664.8
#3	9055.2	54413.	2691.8

Approved: June 29, 2016

Sample Name: L1606098630 Acquired: 6/28/2016 10:50:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00112**	**.06305**	**-.00208**	**.14294**	**.01941**	**.00005**	**247.94**
Stddev	.00418	.00320	.00118	.00341	.00034	.00004	1.16
%RSD	374.44	5.0732	57.040	2.3857	1.7709	83.190	.46966
#1	-.00594	.06207	-.00172	.14395	.01911	.00002	248.74
#2	.00155	.06046	-.00111	.13914	.01934	.00002	248.48
#3	.00104	.06663	-.00340	.14573	.01978	.00009	246.60
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.00009**	**.00160**	**.01136**	**-.00695**	**3.7319**	**.04659**
Stddev	.00054	.00031	.00100	.00046	.03558	.1216	.00224
%RSD	146.09	341.82	62.102	4.0522	512.15	3.2581	4.8143
#1	.00014	-.00027	.00197	.01085	-.04459	3.6608	.04457
#2	-.00002	.00027	.00237	.01175	-.00238	3.8723	.04620
#3	.00098	.00026	.00048	.01148	.02612	3.6627	.04901
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**99.425**	**.22627**	**.00078**	**83.428**	**.00189**	**.01477**	**.00041**
Stddev	.285	.00121	.00060	.359	.00084	.00647	.00324
%RSD	.28701	.53622	77.492	.43083	44.222	43.791	786.52
#1	99.365	.22489	.00068	83.673	.00183	.01186	-.00163
#2	99.736	.22719	.00143	83.596	.00276	.01026	-.00128
#3	99.175	.22671	.00023	83.016	.00109	.02218	.00415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098630 Acquired: 6/28/2016 10:50:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**-.00604**	**5.5242**	**-.00008**	**7.3387**	F **-.04842**	**-.00099**
Stddev	.00550	.00651	.1293	.00039	.0359	.00782	.00111
%RSD	956.70	107.88	2.3409	477.24	.48860	16.146	111.89
#1	-.00505	.00055	5.6118	.00017	7.3571	-.05406	.00009
#2	.00556	-.00619	5.5851	.00012	7.3615	-.05171	-.00094
#3	-.00223	-.01247	5.3757	-.00054	7.2973	-.03950	-.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00124**	**.02012**	**.00029**
Stddev	.00033	.00104	.00012
%RSD	26.862	5.1684	42.853
#1	-.00086	.02074	.00038
#2	-.00135	.02071	.00015
#3	-.00150	.01892	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8910.3**	**53758.**	**2664.2**
Stddev	38.9	307.	8.4
%RSD	.43613	.57080	.31523
#1	8941.3	53508.	2654.7
#2	8922.9	53664.	2667.2
#3	8866.7	54100.	2670.6

Approved: June 29, 2016

Sample Name: L1606098632S Acquired: 6/28/2016 10:54:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18846	4.8019	.19046	.99326	.50409	.02350	135.29	.02353
Stddev	.00068	.0071	.00255	.00360	.00221	.00005	.67	.00010
%RSD	.36110	.14839	1.3406	.36288	.43782	.20602	.49154	.44605
#1	.18832	4.8004	.18755	.99057	.50651	.02352	135.95	.02364
#2	.18786	4.7956	.19150	.99185	.50356	.02354	135.31	.02351
#3	.18920	4.8096	.19232	.99735	.50219	.02345	134.62	.02344
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09381	.23815	.24000	1.9130	26.640	.51162	39.895	.28319
Stddev	.00100	.00189	.00228	.0193	.074	.00286	.188	.00285
%RSD	1.0649	.79307	.95050	1.0075	.27942	.55998	.47192	1.0073
#1	.09414	.23597	.24247	1.9319	26.717	.50832	39.903	.28423
#2	.09460	.23915	.23954	1.8934	26.568	.51350	40.079	.27997
#3	.09269	.23933	.23798	1.9136	26.635	.51303	39.702	.28538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48664	72.566	.23006	4.7722	.22970	.57011	.17961	5.9299
Stddev	.00164	.276	.00122	.0198	.00405	.00461	.00446	.0220
%RSD	.33708	.38027	.53077	.41398	1.7643	.80832	2.4833	.37111
#1	.48809	72.880	.23128	4.7950	.22929	.56933	.17995	5.9451
#2	.48697	72.458	.23005	4.7606	.22586	.57506	.17499	5.9047
#3	.48486	72.361	.22884	4.7610	.23394	.56595	.18389	5.9400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098632S Acquired: 6/28/2016 10:54:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48032	2.3017	.44242	.23394	.48469	.47339	.00132
Stddev	.00248	.0102	.00605	.00222	.00214	.00181	.00037
%RSD	.51666	.44364	1.3679	.95093	.44068	.38183	28.098
#1	.48314	2.3134	.43785	.23403	.48605	.47524	.00138
#2	.47932	2.2973	.44013	.23167	.48223	.47329	.00166
#3	.47849	2.2945	.44928	.23611	.48580	.47163	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8688.7	52383.	2561.5
Stddev	20.4	122.	19.3
%RSD	.23454	.23294	.75227
#1	8695.7	52408.	2540.1
#2	8704.6	52491.	2567.0
#3	8665.7	52251.	2577.4

Approved: June 29, 2016

Sample Name: L1606098634SD Acquired: 6/28/2016 10:58:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19385**	**4.8954**	**.19343**	**1.0128**	**.51753**	**.02388**	**139.76**	**.02445**
Stddev	.00262	.0093	.00107	.0024	.00290	.00006	.52	.00008
%RSD	1.3538	.19080	.55216	.23927	.56012	.24808	.37032	.30805
#1	.19684	4.8863	.19374	1.0156	.52087	.02381	140.34	.02445
#2	.19279	4.8948	.19430	1.0111	.51582	.02391	139.58	.02437
#3	.19192	4.9050	.19224	1.0118	.51589	.02392	139.35	.02452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09545**	**.24302**	**.24613**	**1.9627**	**27.284**	**.52635**	**41.619**	**.28310**
Stddev	.00064	.00064	.00329	.0225	.313	.00748	.406	.00352
%RSD	.67403	.26200	1.3360	1.1470	1.1482	1.4202	.97438	1.2446
#1	.09594	.24255	.24524	1.9887	27.508	.53175	41.826	.28499
#2	.09569	.24375	.24338	1.9514	27.417	.52947	41.880	.28528
#3	.09473	.24277	.24977	1.9481	26.926	.51782	41.152	.27904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49748**	**77.859**	**.23713**	**4.8957**	**.23743**	**.58527**	**.18307**	**6.0698**
Stddev	.00174	.416	.00057	.0088	.00258	.00169	.00798	.0098
%RSD	.34891	.53439	.24187	.17976	1.0881	.28860	4.3602	.16074
#1	.49948	78.314	.23758	4.8994	.23444	.58557	.17919	6.0801
#2	.49658	77.767	.23648	4.8857	.23897	.58346	.19225	6.0608
#3	.49638	77.497	.23733	4.9021	.23886	.58679	.17777	6.0685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098634SD Acquired: 6/28/2016 10:58:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49219**	**2.3909**	**.46099**	**.23620**	**.49011**	**.49486**	**.00108**
Stddev	.00112	.0136	.00414	.00270	.00213	.00031	.00019
%RSD	.22718	.56755	.89815	1.1447	.43392	.06172	17.459
#1	.49342	2.4057	.45931	.23351	.49185	.49518	.00110
#2	.49125	2.3880	.46570	.23892	.49073	.49457	.00126
#3	.49188	2.3790	.45795	.23618	.48774	.49484	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8624.4**	**51785.**	**2507.5**
Stddev	34.6	103.	7.8
%RSD	.40116	.19897	.31044
#1	8586.0	51883.	2498.6
#2	8634.1	51794.	2512.9
#3	8653.1	51678.	2511.1

Approved: June 29, 2016

Sample Name: L1606098636S Acquired: 6/28/2016 11:02:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19772	5.0127	.19966	1.3850	.51214	.02480	245.86	.02477
Stddev	.00596	.1383	.00099	.0339	.00319	.00076	.17	.00011
%RSD	3.0140	2.7597	.49707	2.4504	.62221	3.0708	.06737	.45242
#1	.19402	4.9072	.19852	1.3612	.50849	.02423	245.76	.02490
#2	.19456	4.9616	.20011	1.3699	.51358	.02450	245.78	.02470
#3	.20460	5.1693	.20034	1.4238	.51436	.02566	246.05	.02471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09581	.24802	.29870	1.9392	30.905	.51342	76.554	.61303
Stddev	.00037	.00685	.00225	.0091	.082	.00243	.057	.00284
%RSD	.38833	2.7631	.75304	.46767	.26421	.47237	.07486	.46294
#1	.09581	.24194	.29785	1.9318	30.865	.51510	76.515	.60976
#2	.09544	.24668	.29700	1.9365	30.851	.51064	76.620	.61444
#3	.09618	.25545	.30125	1.9493	30.999	.51451	76.527	.61488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50074	91.350	.23694	4.9730	.23904	.58934	.18488	6.0814
Stddev	.00390	.151	.00117	.0362	.00508	.00409	.00290	.0627
%RSD	.77792	.16492	.49565	.72715	2.1269	.69342	1.5687	1.0313
#1	.49883	91.182	.23828	4.9726	.24049	.59260	.18219	6.0847
#2	.49816	91.394	.23610	4.9370	.23339	.58475	.18448	6.0172
#3	.50522	91.474	.23644	5.0093	.24324	.59066	.18795	6.1425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098636S Acquired: 6/28/2016 11:02:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49354	2.1681	.44779	.23586	.50155	.49646	.00080
Stddev	.00336	.0036	.01493	.00523	.01154	.00341	.00057
%RSD	.68125	.16648	3.3336	2.2166	2.3017	.68636	71.538
#1	.49311	2.1641	.44018	.24186	.49241	.49616	.00138
#2	.49041	2.1691	.46499	.23232	.49771	.49322	.00078
#3	.49709	2.1712	.43821	.23340	.51452	.50001	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8497.3	50908.	2509.3
Stddev	53.2	719.	14.0
%RSD	.62617	1.4115	.55736
#1	8555.0	51320.	2495.2
#2	8486.6	51326.	2509.5
#3	8450.3	50078.	2523.2

Approved: June 29, 2016

Sample Name: L1606098638SD Acquired: 6/28/2016 11:05:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19461**	**5.0104**	**.19785**	**1.3932**	**.51464**	**.02415**	**242.84**	**.02509**
Stddev	.00205	.0136	.00122	.0024	.00243	.00017	.45	.00015
%RSD	1.0512	.27199	.61628	.17380	.47230	.71874	.18597	.59393
#1	.19352	5.0251	.19758	1.3915	.51540	.02406	242.69	.02519
#2	.19697	4.9981	.19918	1.3960	.51192	.02405	243.35	.02492
#3	.19334	5.0079	.19678	1.3921	.51660	.02436	242.49	.02515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09681**	**.24640**	**.24874**	**1.9227**	**30.934**	**.51907**	**74.733**	**.61185**
Stddev	.00041	.00117	.00213	.0127	.073	.00309	.315	.00169
%RSD	.41948	.47310	.85495	.66056	.23719	.59567	.42145	.27686
#1	.09707	.24697	.24714	1.9111	30.855	.51695	74.400	.61033
#2	.09701	.24718	.24794	1.9363	30.948	.51764	75.026	.61368
#3	.09634	.24506	.25116	1.9209	30.999	.52261	74.774	.61153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50496**	**89.306**	**.23899**	**5.0248**	**.24132**	**.60097**	**.18640**	**6.1693**
Stddev	.00099	.033	.00162	.0082	.00136	.00275	.00260	.0316
%RSD	.19543	.03715	.67633	.16292	.56193	.45730	1.3937	.51177
#1	.50490	89.343	.23842	5.0209	.24263	.60304	.18468	6.1440
#2	.50597	89.278	.24081	5.0342	.24141	.60202	.18939	6.1591
#3	.50400	89.298	.23773	5.0193	.23992	.59785	.18513	6.2046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098638SD Acquired: 6/28/2016 11:05:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49778**	**2.1733**	**.44248**	**.23628**	**.49700**	**.48274**	**.00039**
Stddev	.00133	.0033	.00419	.00330	.00105	.00040	.00032
%RSD	.26806	.15241	.94725	1.3974	.21218	.08361	80.302
#1	.49916	2.1747	.44732	.23753	.49767	.48239	.00025
#2	.49766	2.1756	.44019	.23254	.49578	.48318	.00017
#3	.49650	2.1695	.43994	.23878	.49754	.48266	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8832.1**	**52381.**	**2503.4**
Stddev	43.7	518.	14.9
%RSD	.49512	.98899	.59513
#1	8807.7	51789.	2505.9
#2	8806.1	52747.	2487.4
#3	8882.6	52609.	2516.9

Approved: June 29, 2016

Sample Name: L1606098640 Acquired: 6/28/2016 11:09:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00368**	**-.00222**	**.01141**	**.00216**	**-.00005**	**2.2430**
Stddev	.00288	.00455	.00278	.00149	.00149	.00004	.0120
%RSD	1876.7	123.61	125.40	13.107	68.951	89.131	.53399
#1	.00212	-.00155	.00099	.01182	.00231	.00000	2.2297
#2	.00149	.00669	-.00400	.01265	.00060	-.00007	2.2530
#3	-.00315	.00590	-.00364	.00975	.00356	-.00007	2.2463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00031**	**-.00074**	**.00067**	F **-.02010**	**.12601**	**.00716**
Stddev	.00037	.00033	.00115	.00024	.02550	.12950	.00076
%RSD	108380.	105.10	155.50	35.998	126.88	102.77	10.598
#1	-.00034	-.00043	.00014	.00085	-.03819	.06228	.00655
#2	.00040	-.00057	-.00204	.00039	-.03117	.27502	.00801
#3	-.00006	.00006	-.00032	.00076	.00907	.04072	.00691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.91287**	**.00205**	**.00013**	**1.3571**	**.00020**	**.00323**	**.00041**
Stddev	.06200	.00215	.00012	.0399	.00066	.00482	.00096
%RSD	6.7914	104.57	86.770	2.9418	320.37	149.47	236.42
#1	.98438	.00035	.00001	1.3860	-.00004	.00798	-.00051
#2	.88005	.00447	.00014	1.3115	.00095	-.00166	.00141
#3	.87419	.00135	.00025	1.3737	-.00030	.00336	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098640 Acquired: 6/28/2016 11:09:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00221	.00185	1.7777	.00057	.02861	-.00047	-.00375
Stddev	.00170	.00581	.0072	.00092	.00010	.00218	.00315
%RSD	76.838	313.71	.40541	163.27	.34066	460.98	84.031
#1	.00123	-.00324	1.7771	-.00035	.02870	-.00248	-.00217
#2	.00122	.00819	1.7852	.00150	.02863	.00184	-.00737
#3	.00417	.00061	1.7709	.00054	.02851	-.00078	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00006	.00283	-.00030
Stddev	.00069	.00010	.00048
%RSD	1079.8	3.5427	163.06
#1	-.00026	.00293	.00025
#2	-.00064	.00284	-.00049
#3	.00070	.00273	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9289.4	56423.	2690.4
Stddev	27.6	170.	4.0
%RSD	.29737	.30164	.14881
#1	9321.1	56618.	2691.8
#2	9276.4	56308.	2693.5
#3	9270.7	56341.	2685.9

Approved: June 29, 2016

Sample Name: L1606098642 Acquired: 6/28/2016 11:13:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.00480	-.00226	.00604	.00443	.00001	2.2648	-.00002
Stddev	.00055	.00920	.00193	.00047	.00218	.00005	.0520	.00023
%RSD	123.65	191.72	85.371	7.7247	49.175	647.11	2.2956	994.00
#1	-.00030	.00393	-.00387	.00657	.00289	-.00004	2.2275	.00024
#2	.00002	.01441	-.00279	.00586	.00347	.00000	2.2427	-.00020
#3	-.00105	-.00394	-.00012	.00569	.00692	.00006	2.3242	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	-.00035	.00052	-.01163	.26316	-.00051	.80762	-.00038
Stddev	.00019	.00021	.00043	.02440	.11608	.00572	.03343	.00041
%RSD	387.22	60.889	84.163	209.79	44.110	1124.5	4.1388	108.83
#1	.00017	-.00048	.00015	.00199	.20693	-.00220	.77340	-.00048
#2	-.00012	-.00045	.00040	.00292	.39664	-.00520	.84019	.00008
#3	-.00019	-.00010	.00100	-.03980	.18589	.00587	.80927	-.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	1.3652	-.00037	-.00442	.00066	.00257	-.00014	1.8170
Stddev	.00002	.0250	.00097	.00540	.00267	.00332	.00546	.0049
%RSD	11.711	1.8350	262.18	122.21	406.64	129.03	3833.7	.27083
#1	.00022	1.3435	.00047	-.00429	.00358	.00628	.00485	1.8126
#2	.00018	1.3926	-.00143	.00091	-.00166	.00155	.00069	1.8223
#3	.00023	1.3596	-.00015	-.00989	.00005	-.00012	-.00597	1.8161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098642 Acquired: 6/28/2016 11:13:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.02904**	**.00647**	**-.00118**	**-.00045**	**.00265**	**-.00055**
Stddev	.00078	.00075	.00403	.00186	.00068	.00009	.00024
%RSD	611.12	2.5787	62.343	157.68	153.74	3.2764	43.066
#1	-.00025	.02923	.01112	-.00164	-.00121	.00267	-.00035
#2	.00071	.02821	.00425	-.00276	.00011	.00273	-.00081
#3	-.00084	.02967	.00404	.00087	-.00024	.00256	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9188.1**	**55730.**	**2641.7**
Stddev	33.3	117.	26.1
%RSD	.36205	.20964	.98933
#1	9221.4	55818.	2623.5
#2	9188.1	55775.	2671.6
#3	9154.9	55598.	2630.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 11:17:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38793**	**9.8216**	**.38568**	**.48241**	**.97649**	**.04892**	**9.6575**	**.04905**
Stddev	.00173	.0104	.00606	.00258	.00599	.00017	.0817	.00054
%RSD	.44530	.10617	1.5701	.53397	.61359	.35505	.84634	1.1034
#1	.38989	9.8335	.38005	.48355	.98308	.04912	9.7295	.04916
#2	.38662	9.8141	.38489	.48422	.97502	.04879	9.6743	.04953
#3	.38729	9.8171	.39209	.47946	.97137	.04886	9.5686	.04846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19642**	**.49210**	**.49159**	**3.8879**	**49.158**	**.97992**	**9.9365**	**.48176**
Stddev	.00062	.00133	.00208	.0465	.286	.01938	.0224	.00474
%RSD	.31488	.26994	.42282	1.1966	.58105	1.9777	.22529	.98319
#1	.19623	.49213	.49102	3.9206	49.268	1.0012	9.9456	.48577
#2	.19711	.49342	.49389	3.8346	49.372	.97517	9.9530	.48297
#3	.19592	.49076	.48986	3.9083	48.833	.96335	9.9111	.47653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98549**	**48.425**	**.48820**	**9.6834**	**.49219**	**1.1658**	**.39200**	**4.9060**
Stddev	.00189	.277	.00164	.0239	.00612	.0064	.00693	.0198
%RSD	.19203	.57139	.33676	.24696	1.2434	.54907	1.7666	.40262
#1	.98469	48.726	.48865	9.6700	.48522	1.1587	.39787	4.8842
#2	.98765	48.367	.48957	9.7110	.49669	1.1709	.39376	4.9228
#3	.98412	48.182	.48637	9.6693	.49465	1.1680	.38436	4.9109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 11:17:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98346	.97426	.97669	.49225	.97791	.97750	.99577
Stddev	.00532	.00518	.00473	.00251	.00190	.00255	.00695
%RSD	.54046	.53167	.48472	.51088	.19391	.26059	.69772
#1	.97812	.97975	.97533	.49200	.98010	.97761	.99790
#2	.98875	.97359	.98196	.49488	.97671	.98000	1.0014
#3	.98352	.96945	.97279	.48987	.97693	.97491	.98801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9011.4	53420.	2554.4
Stddev	14.3	287.	21.0
%RSD	.15841	.53648	.82136
#1	9023.0	53101.	2539.8
#2	9015.8	53501.	2545.0
#3	8995.5	53657.	2578.4

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 11:20:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.01332	-.00300	.00111	.00410	.00008	-.01736	-.00010
Stddev	.00226	.00916	.00118	.00122	.00098	.00004	.05399	.00024
%RSD	699.99	68.781	39.157	109.28	23.888	50.210	311.03	239.48
#1	-.00228	.00555	-.00168	.00251	.00332	.00003	-.00609	-.00000
#2	.00145	.02343	-.00393	.00054	.00378	.00011	-.07609	-.00037
#3	.00179	.01099	-.00341	.00029	.00520	.00009	.03011	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.00110	.00006	.01011	.09868	.00495	.07318	.00116
Stddev	.00025	.00108	.00079	.01784	.17501	.00447	.04292	.00196
%RSD	68.981	98.497	1300.8	176.39	177.35	90.362	58.654	169.29
#1	-.00043	.00034	.00081	.02055	.15066	.00125	.10534	-.00110
#2	-.00008	.00234	-.00076	.02028	-.09643	.00992	.08977	.00218
#3	-.00056	.00062	.00013	-.01049	.24181	.00367	.02444	.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.02000	-.00044	.00549	-.00016	.00387	-.00237	.01323
Stddev	.00029	.01349	.00065	.00222	.00288	.00267	.00270	.00241
%RSD	229.41	67.461	146.65	40.388	1830.6	69.139	113.99	18.207
#1	-.00016	-.02660	-.00048	.00468	-.00328	.00695	-.00095	.01375
#2	.00041	-.00448	.00023	.00379	.00041	.00244	-.00067	.01533
#3	.00012	-.02893	-.00107	.00800	.00240	.00221	-.00547	.01060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 11:20:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.00010	-.00014	-.00111	.00009	.00013	.00028
Stddev	.00030	.00013	.00720	.00236	.00051	.00023	.00053
%RSD	46.135	130.04	5092.9	212.88	551.63	170.81	192.28
#1	.00099	.00011	-.00831	.00150	.00056	.00036	.00028
#2	.00056	.00023	.00527	-.00171	.00017	.00013	-.00025
#3	.00041	-.00004	.00262	-.00312	-.00045	-.00009	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9053.5	54352.	2576.2
Stddev	33.1	114.	10.5
%RSD	.36561	.20997	.40893
#1	9016.7	54226.	2573.6
#2	9062.8	54383.	2567.2
#3	9080.9	54448.	2587.8

Approved: June 29, 2016

Sample Name: L1606119001 Acquired: 6/28/2016 11:24:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	4.0152	.00528	2.3259	.97175	.00033	76.368
Stddev	.00145	.0194	.00250	.0144	.00516	.00005	.270
%RSD	95608.	.48208	47.457	.61971	.53148	14.625	.35367
#1	-.00049	4.0240	.00561	2.3204	.97765	.00033	76.657
#2	.00163	3.9931	.00262	2.3150	.96956	.00039	76.325
#3	-.00113	4.0287	.00760	2.3422	.96804	.00029	76.122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.28502	.00428	.01113	.78990	11.216	94.553	5.2188
Stddev	.00690	.00052	.00063	.02058	.061	.313	.0182
%RSD	2.4193	12.177	5.6284	2.6050	.54549	.33117	.34821
#1	.28852	.00403	.01182	.80121	11.248	94.859	5.2386
#2	.28946	.00488	.01097	.80233	11.145	94.233	5.2147
#3	.27708	.00393	.01060	.76615	11.255	94.567	5.2030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.3151	.43401	.00500	F 331.07	.03574	.54738	.24924
Stddev	.0468	.00253	.00007	1.32	.00213	.01964	.00568
%RSD	.63935	.58333	1.3949	.39954	5.9585	3.5886	2.2783
#1	7.2826	.43190	.00497	332.57	.03794	.56696	.24923
#2	7.3687	.43331	.00508	330.56	.03559	.54753	.25493
#3	7.2939	.43682	.00496	330.08	.03368	.52767	.24357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606119001 Acquired: 6/28/2016 11:24:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00505**	**.00245**	**8.5723**	**.11492**	**.29561**	**.07288**	**-.00059**
Stddev	.00259	.00222	.1258	.00299	.00020	.00814	.00245
%RSD	51.234	90.320	1.4673	2.6021	.06631	11.173	418.30
#1	.00505	.00304	8.6004	.11669	.29581	.06658	.00209
#2	.00763	.00432	8.6817	.11661	.29560	.08207	-.00273
#3	.00246	.00000	8.4349	.11147	.29542	.06998	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01057**	**.54262**	**.00107**
Stddev	.00081	.00978	.00031
%RSD	7.6255	1.8021	29.122
#1	.01026	.54683	.00071
#2	.00995	.54959	.00123
#3	.01148	.53144	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8964.1**	**52749.**	**2647.9**
Stddev	10.0	121.	22.5
%RSD	.11182	.22893	.85076
#1	8961.3	52886.	2630.7
#2	8955.9	52660.	2639.6
#3	8975.3	52700.	2673.4

Approved: June 29, 2016

Sample Name: L1606119002 Acquired: 6/28/2016 11:28:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00226	9.5586	.00773	1.6559	.73068	.00051	257.60
Stddev	.00052	.0101	.00172	.0111	.00315	.00004	1.13
%RSD	22.844	.10580	22.192	.66996	.43173	8.0795	.43961
#1	.00168	9.5657	.00865	1.6683	.73423	.00052	258.78
#2	.00243	9.5631	.00575	1.6469	.72960	.00055	257.50
#3	.00267	9.5470	.00879	1.6525	.72821	.00047	256.52
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.27201	.01208	.15894	5.8326	29.202	56.914	.89923
Stddev	.00800	.00051	.00172	.1763	.137	.111	.00962
%RSD	2.9395	4.2506	1.0801	3.0229	.46817	.19512	1.0694
#1	.27750	.01242	.16039	5.9433	29.059	57.042	.90987
#2	.27569	.01234	.15938	5.9253	29.332	56.857	.89667
#3	.26284	.01149	.15704	5.6293	29.213	56.842	.89116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.114	4.0320	.02706	F 641.62	.13792	2.9803	.56145
Stddev	.234	.0137	.00074	.68	.00389	.0818	.01198
%RSD	.89502	.33980	2.7478	.10649	2.8189	2.7454	2.1345
#1	26.329	4.0439	.02755	642.37	.14139	3.0362	.56756
#2	26.147	4.0170	.02743	641.44	.13863	3.0183	.56915
#3	25.865	4.0350	.02621	641.04	.13372	2.8863	.54765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606119002 Acquired: 6/28/2016 11:28:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00979	-.00034	14.513	.67159	1.9116	.14184	-.00066
Stddev	.00494	.00207	.288	.02476	.0087	.00052	.00174
%RSD	50.481	600.71	1.9859	3.6868	.45688	.36836	261.54
#1	.00442	.00077	14.679	.68753	1.9215	.14241	.00006
#2	.01414	.00093	14.679	.68417	1.9086	.14139	.00059
#3	.01081	-.00273	14.180	.64307	1.9048	.14170	-.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.02758	.83818	.00313
Stddev	.00126	.02623	.00047
%RSD	4.5579	3.1291	15.093
#1	.02770	.85462	.00293
#2	.02877	.85200	.00279
#3	.02627	.80794	.00367
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8763.8	51691.	2636.9
Stddev	54.5	455.	6.1
%RSD	.62147	.88063	.23063
#1	8706.8	51253.	2642.2
#2	8769.1	51659.	2630.3
#3	8815.4	52162.	2638.2

Approved: June 29, 2016

Sample Name: L1606113002 Acquired: 6/28/2016 11:32:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	.01380	-.00240	.00864	.00926	.00006	15.171	-.00018
Stddev	.00307	.00691	.00324	.00121	.00165	.00002	1.078	.00030
%RSD	455.23	50.094	135.19	14.049	17.829	34.170	7.1085	168.95
#1	.00371	.01054	-.00132	.00990	.01087	.00005	16.216	.00013
#2	.00073	.02174	-.00604	.00857	.00757	.00005	14.062	-.00047
#3	-.00242	.00912	.00017	.00747	.00933	.00008	15.233	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	-.00078	.00175	7.4035	.65514	.00126	3.1114	.22587
Stddev	.00041	.00010	.00078	.5798	.12316	.00237	.1931	.01787
%RSD	103.82	12.531	44.704	7.8320	18.799	187.66	6.2047	7.9098
#1	-.00077	-.00083	.00095	7.9945	.79583	-.00145	3.3337	.24355
#2	.00004	-.00083	.00179	6.8355	.60273	.00229	3.0148	.20782
#3	-.00044	-.00067	.00251	7.3806	.56685	.00294	2.9857	.22623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	7.8703	-.00110	.02647	.00010	.00317	-.00146	1.3559
Stddev	.00029	.5148	.00130	.00375	.00018	.00401	.00278	.0434
%RSD	105.72	6.5408	117.93	14.181	179.79	126.53	190.62	3.2002
#1	.00001	8.3807	.00026	.03049	.00025	.00397	.00071	1.3799
#2	.00057	7.3512	-.00123	.02306	.00015	-.00118	-.00460	1.3819
#3	.00023	7.8789	-.00233	.02587	-.00010	.00671	-.00049	1.3058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113002 Acquired: 6/28/2016 11:32:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.04585	.00437	.00135	-.00004	.00151	-.00058
Stddev	.00032	.00370	.00161	.00255	.00053	.00030	.00048
%RSD	366.92	8.0609	36.855	189.29	1464.5	19.895	82.203
#1	-.00028	.04933	.00574	-.00050	.00009	.00168	-.00060
#2	.00024	.04197	.00260	.00028	-.00062	.00169	-.00105
#3	.00030	.04625	.00477	.00426	.00042	.00116	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8887.2	54480.	2588.1
Stddev	8.3	105.	124.4
%RSD	.09307	.19333	4.8069
#1	8877.7	54601.	2466.9
#2	8891.0	54436.	2715.4
#3	8892.9	54405.	2581.9

Approved: June 29, 2016

Sample Name: L1606113003 Acquired: 6/28/2016 11:36:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00199	.01185	.00153	.00484	.00664	.00004	9.9420	.00012
Stddev	.00057	.00418	.00300	.00411	.00234	.00009	.0992	.00025
%RSD	28.803	35.249	195.88	84.950	35.328	255.34	.99760	201.23
#1	-.00137	.01667	.00500	.00870	.00401	-.00007	9.8294	.00023
#2	-.00250	.00939	-.00016	.00531	.00737	.00008	9.9801	-.00016
#3	-.00209	.00948	-.00024	.00051	.00853	.00010	10.016	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.02213	-.00028	.36601	.35983	.00751	3.5741	.08240
Stddev	.00036	.00055	.00099	.01258	.21039	.00239	.0830	.00265
%RSD	82.966	2.4851	349.65	3.4376	58.470	31.762	2.3219	3.2186
#1	.00005	.02193	-.00142	.36347	.26015	.00991	3.6265	.07933
#2	.00075	.02171	.00038	.35488	.21781	.00514	3.4784	.08395
#3	.00049	.02275	.00019	.37966	.60153	.00749	3.6174	.08391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	8.7826	.01128	.03643	-.00299	.00077	.00315	1.0910
Stddev	.00028	.1122	.00042	.00453	.00296	.00304	.00520	.0093
%RSD	64.641	1.2779	3.7546	12.430	98.761	393.00	164.71	.84873
#1	.00031	8.6590	.01174	.03424	.00033	.00008	.00433	1.0822
#2	.00023	8.8782	.01120	.04164	-.00532	.00410	-.00253	1.0901
#3	.00075	8.8106	.01090	.03342	-.00399	-.00186	.00766	1.1007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113003 Acquired: 6/28/2016 11:36:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00126**	**.05910**	**-.00486**	**-.00167**	**.00006**	**.00125**	**-.00028**
Stddev	.00101	.00068	.01199	.00195	.00033	.00009	.00031
%RSD	79.892	1.1523	246.70	116.87	522.92	7.2617	108.50
#1	-.00239	.05832	-.01255	.00057	.00043	.00116	-.00058
#2	-.00044	.05946	.00896	-.00295	-.00002	.00134	.00003
#3	-.00096	.05953	-.01099	-.00262	-.00022	.00124	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8931.3**	**53313.**	**2521.9**
Stddev	14.6	143.	15.7
%RSD	.16319	.26910	.62180
#1	8916.4	53341.	2539.7
#2	8945.5	53157.	2510.1
#3	8932.1	53440.	2516.0

Approved: June 29, 2016

Sample Name: L1606113004 Acquired: 6/28/2016 11:40:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**.02222**	**.00110**	**.00027**	**.01162**	**-.00003**	**18.226**	**-.00011**
Stddev	.00136	.00709	.00170	.00161	.00137	.00004	.270	.00007
%RSD	119.92	31.895	155.12	594.93	11.803	130.22	1.4817	59.967
#1	-.00255	.01595	.00108	.00065	.01004	-.00002	18.002	-.00019
#2	-.00101	.02991	.00280	.00166	.01248	-.00007	18.526	-.00009
#3	.00016	.02079	-.00060	-.00150	.01235	.00000	18.151	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00068**	**.00113**	**.00050**	**12.248**	**.30126**	**.00680**	**2.9585**	**.18185**
Stddev	.00033	.00029	.00150	.171	.15023	.00143	.1165	.00697
%RSD	47.931	25.751	303.47	1.3989	49.868	21.079	3.9387	3.8302
#1	.00103	.00109	.00212	12.067	.36563	.00839	2.8255	.17423
#2	.00063	.00143	.00021	12.407	.12957	.00562	3.0425	.18341
#3	.00039	.00085	-.00085	12.269	.40858	.00638	3.0074	.18790
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**3.5805**	**.00166**	**-.00089**	**.00199**	**.00216**	**-.00111**	**1.4748**
Stddev	.00031	.0484	.00142	.01002	.00221	.00115	.00472	.0131
%RSD	56.104	1.3521	86.025	1120.2	111.08	53.382	426.06	.88890
#1	-.00024	3.5448	.00324	-.01222	-.00050	.00236	-.00656	1.4818
#2	-.00054	3.6356	.00047	.00271	.00273	.00319	.00167	1.4830
#3	-.00085	3.5610	.00126	.00683	.00373	.00092	.00156	1.4597
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113004 Acquired: 6/28/2016 11:40:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.05971**	**.00554**	**-.00232**	**.00022**	**.00127**	**-.00119**
Stddev	.00077	.00117	.00381	.00169	.00059	.00013	.00052
%RSD	1033.9	1.9573	68.806	72.951	263.47	9.9627	43.812
#1	-.00086	.05843	.00447	-.00042	.00027	.00122	-.00179
#2	-.00005	.05996	.00238	-.00366	.00078	.00117	-.00100
#3	.00069	.06073	.00977	-.00287	-.00039	.00141	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8958.9**	**53683.**	**2529.9**
Stddev	18.8	182.	9.0
%RSD	.20935	.33875	.35708
#1	8940.1	53478.	2539.9
#2	8977.6	53746.	2527.6
#3	8959.1	53825.	2522.2

Approved: June 29, 2016

Sample Name: L1606113005 Acquired: 6/28/2016 11:44:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00182**	**.01311**	**.00051**	**.00299**	**.00274**	**.00002**	**.01783**	**.00015**
Stddev	.00166	.01606	.00127	.00175	.00219	.00006	.07620	.00018
%RSD	91.021	122.54	248.12	58.424	80.129	245.90	427.38	117.06
#1	.00009	.00017	.00177	.00119	.00493	.00004	.05273	-.00005
#2	-.00271	.03109	-.00078	.00468	.00054	-.00004	.07033	.00024
#3	-.00285	.00807	.00055	.00311	.00275	.00008	-.06957	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00095**	**.00149**	**.02702**	**.10837**	**.00321**	**.11311**	**-.00002**
Stddev	.00036	.00069	.00082	.03091	.04208	.00286	.07473	.00053
%RSD	129.07	72.480	55.118	114.41	38.834	89.276	66.068	2828.5
#1	-.00066	.00072	.00241	.01040	.11048	-.00009	.02883	.00056
#2	.00006	.00172	.00083	.06268	.14936	.00460	.17128	-.00048
#3	-.00024	.00040	.00123	.00797	.06527	.00511	.13923	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.14703**	**-.00110**	**.00001**	**-.00405**	**.00493**	**-.00195**	**.00009**
Stddev	.00015	.00703	.00100	.00895	.00424	.00502	.00669	.00125
%RSD	397.74	4.7833	91.383	69819.	104.75	101.87	342.93	1350.1
#1	-.00013	.13899	-.00221	.00892	-.00839	.01054	-.00251	.00105
#2	.00007	.15007	-.00083	.00011	.00008	.00340	.00500	.00055
#3	.00017	.15203	-.00026	-.00899	-.00384	.00085	-.00835	-.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113005 Acquired: 6/28/2016 11:44:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00033	.00406	-.00662	-.00014	.00205	-.00081
Stddev	.00067	.00019	.00234	.00168	.00056	.00014	.00050
%RSD	289.31	57.588	57.746	25.401	396.40	6.6090	62.107
#1	.00035	.00053	.00524	-.00854	-.00067	.00221	-.00127
#2	.00084	.00030	.00136	-.00544	-.00020	.00198	-.00088
#3	-.00049	.00015	.00557	-.00587	.00045	.00197	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9124.4	55026.	2621.2
Stddev	17.1	95.	9.0
%RSD	.18749	.17295	.34452
#1	9106.9	54988.	2610.8
#2	9141.1	54956.	2626.5
#3	9125.3	55135.	2626.4

Approved: June 29, 2016

Sample Name: L1606116411 Acquired: 6/28/2016 11:48:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00116	.15574	-.00171	.03469	.02190	.00005	17.821	.00072
Stddev	.00249	.00517	.00262	.00295	.00047	.00004	.280	.00014
%RSD	214.69	3.3183	153.13	8.5097	2.1648	73.045	1.5685	20.189
#1	-.00013	.15599	.00126	.03787	.02218	.00010	18.080	.00083
#2	-.00400	.15045	-.00368	.03416	.02217	.00002	17.859	.00077
#3	.00065	.16078	-.00272	.03204	.02135	.00004	17.525	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00035	.01227	-.00191	1.2161	.00565	4.5909	.05471
Stddev	.00038	.00143	.00159	.00993	.1817	.00134	.0709	.00378
%RSD	72.627	412.52	12.998	520.76	14.943	23.688	1.5437	6.9078
#1	.00010	-.00130	.01325	.00952	1.3973	.00718	4.6629	.05221
#2	.00063	.00107	.01313	-.00839	1.2171	.00474	4.5886	.05906
#3	.00085	.00127	.01043	-.00684	1.0339	.00502	4.5212	.05287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	149.27	.00544	.18485	.00133	.00189	.00259	2.8294
Stddev	.00013	1.17	.00052	.00541	.00548	.00141	.00335	.0138
%RSD	244.26	.78109	9.5881	2.9257	410.94	74.968	129.26	.48586
#1	.00018	150.37	.00500	.18839	.00765	.00261	.00270	2.8383
#2	.00006	149.40	.00602	.18752	-.00158	.00279	.00589	2.8363
#3	-.00008	148.04	.00532	.17862	-.00207	.00026	-.00081	2.8135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606116411 Acquired: 6/28/2016 11:48:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.09608	-.00129	-.00451	-.00011	.28311	-.00011
Stddev	.00052	.00077	.00571	.00248	.00066	.00134	.00023
%RSD	725.00	.80553	444.09	55.074	621.07	.47167	205.12
#1	-.00008	.09641	-.00625	-.00208	.00066	.28404	.00010
#2	-.00058	.09664	-.00256	-.00704	-.00051	.28372	-.00008
#3	.00045	.09519	.00495	-.00441	-.00047	.28158	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8982.8	53771.	2629.9
Stddev	48.8	105.	30.6
%RSD	.54280	.19464	1.1632
#1	8959.8	53701.	2596.0
#2	8949.8	53720.	2638.3
#3	9038.8	53891.	2655.4

Approved: June 29, 2016

Sample Name: L1606125201 Acquired: 6/28/2016 11:51:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.00808	.00092	.01736	.04150	-.00001	59.752	.00004
Stddev	.00109	.00569	.00477	.00370	.00024	.00002	.163	.00026
%RSD	249.64	70.512	516.83	21.331	.58544	204.06	.27226	661.60
#1	.00028	.01318	.00124	.01758	.04162	-.00002	59.723	-.00013
#2	.00010	.00912	-.00400	.02095	.04122	-.00002	59.926	.00034
#3	-.00170	.00193	.00552	.01356	.04165	.00001	59.605	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00105	.01353	.02848	.98155	.01054	12.132	.00186
Stddev	.00040	.00059	.00094	.00603	.11795	.00844	.120	.00147
%RSD	167.20	55.860	6.9174	21.168	12.016	80.068	.99227	78.733
#1	.00020	.00042	.01338	.02633	1.0139	.01791	12.003	.00351
#2	-.00057	.00157	.01453	.03529	1.0799	.00134	12.241	.00136
#3	-.00035	.00116	.01268	.02382	.85080	.01237	12.153	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	12.528	-.00123	.00509	-.00134	-.00035	-.00136	4.3626
Stddev	.00032	.026	.00095	.01517	.00147	.00729	.00401	.1038
%RSD	20.620	.21109	76.599	298.19	110.07	2060.5	294.51	2.3803
#1	.00138	12.559	-.00213	-.00513	.00020	.00791	.00309	4.4196
#2	.00191	12.513	-.00025	-.00213	-.00274	-.00307	-.00249	4.4255
#3	.00134	12.513	-.00132	.02253	-.00148	-.00590	-.00469	4.2428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606125201 Acquired: 6/28/2016 11:51:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.09497	-.00811	-.00165	-.00065	.14615	.00006
Stddev	.00084	.00057	.01110	.00179	.00026	.00541	.00097
%RSD	275.55	.59736	136.87	108.47	39.705	3.7017	1589.8
#1	-.00036	.09453	-.02080	-.00192	-.00082	.14952	-.00035
#2	.00002	.09561	-.00026	-.00330	-.00076	.14903	-.00064
#3	.00125	.09477	-.00326	.00026	-.00035	.13991	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9050.9	54259.	2611.6
Stddev	24.4	120.	10.7
%RSD	.26996	.22034	.40861
#1	9055.7	54242.	2602.0
#2	9072.5	54149.	2609.9
#3	9024.4	54386.	2623.1

Approved: June 29, 2016

Sample Name: L1606125201PS Acquired: 6/28/2016 11:55:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574476-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19713**	**4.9850**	**.19938**	**.98259**	**.53606**	**.02430**	**58.735**	**.02467**
Stddev	.00252	.0319	.00165	.00595	.00044	.00011	.100	.00014
%RSD	1.2789	.63905	.82752	.60524	.08260	.44321	.17011	.54992
#1	.19699	5.0215	.20128	.98818	.53631	.02437	58.848	.02453
#2	.19468	4.9705	.19832	.97634	.53633	.02417	58.701	.02479
#3	.19971	4.9630	.19854	.98325	.53555	.02435	58.657	.02469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09853**	**.24959**	**.25779**	**1.9940**	**25.955**	**.51235**	**15.607**	**.24725**
Stddev	.00015	.00271	.00101	.0002	.163	.00380	.184	.00385
%RSD	.14890	1.0852	.39099	.01202	.62623	.74157	1.1781	1.5551
#1	.09836	.25245	.25808	1.9940	26.102	.51077	15.685	.25049
#2	.09861	.24927	.25667	1.9942	25.780	.51669	15.739	.24827
#3	.09861	.24706	.25862	1.9938	25.981	.50960	15.397	.24300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50641**	**36.138**	**.24471**	**4.9220**	**.24277**	**.59332**	**.18728**	**6.2893**
Stddev	.00201	.141	.00057	.0106	.00369	.00471	.00450	.0036
%RSD	.39673	.38951	.23146	.21453	1.5208	.79362	2.4037	.05782
#1	.50751	36.227	.24534	4.9234	.23851	.58972	.18452	6.2906
#2	.50763	36.211	.24424	4.9318	.24479	.59865	.19247	6.2920
#3	.50409	35.975	.24455	4.9109	.24500	.59159	.18484	6.2851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606125201PS Acquired: 6/28/2016 11:55:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574476-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50287	.59203	.48462	.24484	.49847	.62032	.00031
Stddev	.00348	.00235	.01112	.00246	.00062	.00139	.00056
%RSD	.69291	.39643	2.2946	1.0047	.12404	.22456	180.38
#1	.50407	.59317	.49567	.24405	.49892	.62057	.00088
#2	.50560	.59358	.47343	.24759	.49776	.62157	-.00025
#3	.49894	.58933	.48477	.24287	.49872	.61882	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8956.0	53595.	2586.0
Stddev	7.2	179.	8.2
%RSD	.08052	.33342	.31697
#1	8962.8	53389.	2589.0
#2	8948.4	53695.	2576.8
#3	8956.9	53701.	2592.3

Approved: June 29, 2016

Sample Name: L1606125201SDL Acquired: 6/28/2016 11:59:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574476-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.01671	-.00017	.00590	.01366	.00008	12.549	-.00003
Stddev	.00109	.00831	.00155	.00052	.00114	.00007	.147	.00014
%RSD	490.08	49.726	924.95	8.8632	8.3647	94.657	1.1712	436.97
#1	-.00120	.02324	.00142	.00599	.01298	.00012	12.397	-.00020
#2	-.00041	.00736	-.00168	.00637	.01498	-.00001	12.691	.00004
#3	.00095	.01951	-.00024	.00534	.01302	.00012	12.559	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	-.00055	.00330	.02155	.18221	.00169	2.6697	.00154
Stddev	.00046	.00062	.00153	.05047	.05382	.00357	.1664	.00168
%RSD	347.45	113.82	46.434	234.17	29.535	210.70	6.2340	108.73
#1	-.00043	.00016	.00428	.07981	.17328	.00202	2.4947	.00080
#2	-.00035	-.00077	.00409	-.00886	.13342	.00509	2.8260	.00036
#3	.00039	-.00103	.00153	-.00630	.23993	-.00203	2.6883	.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	2.6194	-.00013	.00061	-.00141	.00494	-.00552	.91317
Stddev	.00033	.0355	.00106	.00742	.00364	.00102	.00604	.02111
%RSD	105.42	1.3554	806.80	1223.5	258.10	20.595	109.34	2.3117
#1	.00054	2.5862	-.00081	.00846	-.00288	.00400	-.00758	.92321
#2	.00047	2.6151	-.00067	-.00627	.00274	.00482	.00127	.92739
#3	-.00007	2.6568	.00109	-.00037	-.00409	.00602	-.01027	.88892
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606125201SDL Acquired: 6/28/2016 11:59:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574476-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.02020**	**-.00216**	**-.00071**	**.00054**	**.03260**	**-.00049**
Stddev	.00123	.00015	.01450	.00185	.00070	.00071	.00047
%RSD	952.10	.73452	670.38	260.03	131.19	2.1790	95.648
#1	.00112	.02029	-.00037	-.00281	-.00027	.03290	-.00001
#2	.00052	.02003	-.01747	.00063	.00085	.03311	-.00052
#3	-.00125	.02028	.01135	.00006	.00104	.03179	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8880.0**	**53367.**	**2505.0**
Stddev	8.8	162.	12.6
%RSD	.09890	.30282	.50213
#1	8876.4	53181.	2518.5
#2	8890.0	53447.	2493.6
#3	8873.6	53474.	2502.8

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 12:03:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39604	9.9338	.39063	.49129	.99294	.04901	9.8191	.04975
Stddev	.00115	.0144	.00305	.00317	.01061	.00012	.1615	.00008
%RSD	.29058	.14522	.78082	.64570	1.0682	.24533	1.6444	.16252
#1	.39472	9.9394	.39301	.48784	.98919	.04914	9.7373	.04966
#2	.39680	9.9174	.39169	.49407	1.0049	.04899	10.005	.04978
#3	.39661	9.9446	.38719	.49197	.98472	.04890	9.7148	.04982
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19938	.49368	.49836	3.9588	49.592	1.0011	10.136	.49600
Stddev	.00076	.00169	.00055	.0389	.495	.0160	.209	.00324
%RSD	.38333	.34266	.11061	.98134	.99848	1.5991	2.0667	.65357
#1	.19915	.49541	.49812	3.9156	49.268	1.0040	10.062	.49281
#2	.20024	.49360	.49899	3.9910	50.162	1.0155	10.372	.49929
#3	.19876	.49203	.49797	3.9698	49.346	.98384	9.9735	.49590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99694	49.459	.49353	9.8429	.49371	1.1831	.39955	4.9585
Stddev	.00198	.418	.00311	.0260	.00213	.0043	.00974	.0151
%RSD	.19873	.84487	.62974	.26365	.43098	.36417	2.4372	.30413
#1	.99853	49.324	.49702	9.8721	.49533	1.1881	.41022	4.9686
#2	.99758	49.928	.49253	9.8341	.49450	1.1811	.39115	4.9656
#3	.99472	49.126	.49105	9.8225	.49130	1.1803	.39729	4.9411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 12:03:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99925**	**.99620**	**.98765**	**.49522**	**.98406**	**.99406**	**.99798**
Stddev	.00409	.01037	.01478	.00173	.00289	.00196	.01227
%RSD	.40928	1.0406	1.4963	.35024	.29354	.19682	1.2297
#1	1.0037	.99304	.99034	.49484	.98708	.99630	1.0021
#2	.99836	1.0078	1.0009	.49371	.98377	.99319	1.0076
#3	.99567	.98778	.97171	.49712	.98132	.99269	.98417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8892.1**	**53022.**	**2559.8**
Stddev	30.1	42.	27.6
%RSD	.33893	.07993	1.0776
#1	8879.1	53044.	2558.6
#2	8870.6	53049.	2532.8
#3	8926.5	52973.	2588.0

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 12:06:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .39465	F 9.9931	F .39555	F .49345	F 1.0003	F .04972	F 9.8499
Stddev	.00164	.0211	.00073	.00199	.0066	.00034	.0718
%RSD	.41653	.21167	.18546	.40249	.65578	.67878	.72872
#1	.39279	10.018	.39637	.49550	.99845	.05006	9.8255
#2	.39529	9.9815	.39494	.49331	.99483	.04970	9.7935
#3	.39589	9.9803	.39535	.49153	1.0076	.04939	9.9307
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	.01000	.40000	.01000	.10000	.01000	.00050	.20000
Low Limit	-.01000	-.40000	-.01000	-.10000	-.01000	-.00050	-.20000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .04977	F .19951	F .49879	F .49849	F 3.9395	F 49.977	F .99931
Stddev	.00024	.00059	.00324	.00096	.0630	.291	.00350
%RSD	.48691	.29607	.64977	.19182	1.6002	.58270	.34995
#1	.04951	.19997	.50244	.49760	3.8939	50.029	.99545
#2	.04979	.19971	.49625	.49837	3.9132	49.664	1.0002
#3	.05000	.19884	.49769	.49950	4.0115	50.239	1.0023
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	.00050	.00500	.00300	.00500	.06000	1.0000	.10000
Low Limit	-.00050	-.00500	-.00300	-.00500	-.06000	-1.0000	-.10000

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 10.183	F .49950	F .99809	F 49.556	F .49691	F 9.8570	F .49710
Stddev	.118	.00483	.00208	.300	.00135	.0031	.00340
%RSD	1.1579	.96758	.20882	.60573	.27181	.03173	.68461
#1	10.053	.49446	.99874	49.416	.49598	9.8551	.49386
#2	10.284	.49996	.99977	49.351	.49846	9.8552	.50064
#3	10.211	.50409	.99576	49.900	.49629	9.8606	.49679
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	.50000	.01000	.03000	.50000	.04000	.01000	.00500
Low Limit	-.50000	-.01000	-.03000	-.50000	-.04000	-.01000	-.00500

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 12:06:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.1874	F .39718	F 4.9738	F .99992	F .99471	F .98567	F .49751
Stddev	.0050	.00732	.0146	.00106	.00668	.00514	.00393
%RSD	.42134	1.8429	.29372	.10565	.67114	.52154	.78948
#1	1.1930	.38926	4.9571	1.0004	.99317	.98490	.49328
#2	1.1832	.40370	4.9798	.99871	.98893	.98096	.50105
#3	1.1861	.39859	4.9845	1.0006	1.0020	.99115	.49819
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	.02000	.02000	1.0000	.10000	.01000	.02000	.04000
Low Limit	-.02000	-.02000	-1.0000	-.10000	-.01000	-.02000	-.04000

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F .99162	F .99392	F 1.0151
Stddev	.00177	.00034	.0047
%RSD	.17898	.03404	.46771
#1	.99365	.99368	1.0097
#2	.99037	.99430	1.0182
#3	.99084	.99377	1.0176
Check ?	Chk Fail	Chk Fail	Chk Fail
High Limit	.01000	.02000	.04000
Low Limit	-.01000	-.02000	-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8914.6	52945.	2529.2
Stddev	18.8	191.	6.1
%RSD	.21085	.36073	.24217
#1	8900.5	52726.	2535.8
#2	8907.5	53030.	2528.2
#3	8936.0	53078.	2523.7

Approved: June 29, 2016

Sample Name: L1606106804 Acquired: 6/28/2016 12:10:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.01338	-.00121	.00508	.03185	.00009	3.6877	.00017
Stddev	.00142	.00661	.00402	.00517	.00094	.00009	.0388	.00010
%RSD	287.71	49.409	332.18	101.76	2.9404	100.39	1.0532	57.471
#1	.00152	.00668	.00324	.00758	.03253	.00003	3.6435	.00017
#2	.00108	.01355	-.00456	-.00086	.03078	.00020	3.7163	.00027
#3	-.00113	.01990	-.00231	.00853	.03224	.00005	3.7035	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00005	-.00076	-.00822	.13727	.00256	2.7340	.00095
Stddev	.00016	.00066	.00166	.01850	.10390	.00635	.0183	.00367
%RSD	87.960	1442.0	217.75	225.20	75.690	248.06	.67093	387.13
#1	.00023	-.00018	.00101	-.00312	.24997	.00152	2.7317	-.00127
#2	.00000	-.00047	-.00227	-.02873	.11656	-.00321	2.7534	.00519
#3	.00030	.00079	-.00103	.00721	.04529	.00937	2.7169	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	13.446	-.00128	.00796	-.00240	.00107	-.00749	.89476
Stddev	.00012	.159	.00147	.00634	.00286	.00190	.00205	.03670
%RSD	59.407	1.1832	114.59	79.680	118.77	177.46	27.322	4.1020
#1	.00020	13.262	-.00199	.00652	-.00435	-.00100	-.00730	.93379
#2	.00031	13.548	-.00227	.01489	-.00374	.00273	-.00963	.88955
#3	.00008	13.526	.00041	.00246	.00087	.00148	-.00555	.86094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106804 Acquired: 6/28/2016 12:10:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.07848	-.00729	-.00293	.00035	.00081	.00010
Stddev	.00072	.00144	.00861	.00420	.00095	.00031	.00071
%RSD	282.15	1.8402	118.03	143.58	272.65	37.884	750.18
#1	.00103	.07682	-.01705	-.00519	-.00013	.00046	.00016
#2	-.00038	.07946	-.00079	-.00551	-.00027	.00097	-.00065
#3	.00011	.07915	-.00403	.00192	.00145	.00101	.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8391.9	52991.	2480.9
Stddev	209.3	303.	24.4
%RSD	2.4937	.57243	.98306
#1	8150.7	53076.	2506.3
#2	8526.1	52655.	2457.7
#3	8498.7	53243.	2478.7

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 12:17:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41677	10.617	.42173	.52317	1.0592	.05242	10.437	.05320
Stddev	.00494	.006	.00167	.00113	.0024	.00005	.036	.00038
%RSD	1.1855	.05241	.39551	.21611	.22327	.08862	.34169	.71563
#1	.41695	10.610	.42174	.52446	1.0569	.05239	10.436	.05292
#2	.42162	10.620	.42006	.52234	1.0617	.05239	10.473	.05363
#3	.41174	10.619	.42339	.52271	1.0591	.05247	10.402	.05304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21389	.52863	.53349	4.1544	52.704	1.0582	10.637	.53232
Stddev	.00028	.00120	.00163	.0414	.159	.0081	.061	.00322
%RSD	.12990	.22697	.30630	.99750	.30078	.76528	.57767	.60508
#1	.21406	.52875	.53304	4.1924	52.536	1.0673	10.687	.53406
#2	.21405	.52737	.53531	4.1605	52.724	1.0519	10.655	.53429
#3	.21357	.52976	.53213	4.1102	52.851	1.0553	10.568	.52860
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0701	52.715	.53198	10.580	.52742	1.2754	.42001	5.3332
Stddev	.0021	.187	.00144	.031	.00604	.0052	.00192	.0057
%RSD	.19737	.35393	.27059	.29310	1.1458	.40749	.45755	.10679
#1	1.0717	52.536	.53285	10.596	.53320	1.2801	.42135	5.3376
#2	1.0708	52.909	.53032	10.599	.52791	1.2764	.42087	5.3352
#3	1.0677	52.701	.53278	10.544	.52114	1.2698	.41781	5.3267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 12:17:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0702**	**1.0585**	**1.0486**	**.53559**	**1.0520**	**1.0670**	**1.0704**
Stddev	.0023	.0014	.0170	.00247	.0005	.0014	.0016
%RSD	.21754	.13581	1.6184	.46078	.04785	.13170	.14621
#1	1.0727	1.0578	1.0679	.53720	1.0518	1.0683	1.0710
#2	1.0698	1.0602	1.0416	.53275	1.0526	1.0673	1.0686
#3	1.0681	1.0576	1.0362	.53683	1.0516	1.0655	1.0716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8530.1**	**50935.**	**2446.7**
Stddev	12.6	71.	7.1
%RSD	.14738	.13921	.28868
#1	8532.0	50877.	2439.2
#2	8516.7	50915.	2447.6
#3	8541.6	51014.	2453.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 12:21:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00052**	**.01757**	**.00051**	**.00060**	**.00555**	**.00009**	**-.03141**	**-.00004**
Stddev	.00210	.00687	.00034	.00273	.00052	.00012	.03206	.00025
%RSD	401.46	39.083	66.709	452.47	9.4128	140.54	102.06	654.37
#1	-.00295	.02310	.00088	-.00156	.00610	.00020	.00184	-.00018
#2	.00077	.01972	.00044	.00368	.00548	.00010	-.03394	.00026
#3	.00061	.00988	.00021	-.00031	.00506	-.00004	-.06212	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**-.00085**	**.00138**	**-.03182**	**.02086**	**.00079**	**.04251**	**-.00303**
Stddev	.00049	.00020	.00101	.01677	.06898	.00220	.02283	.00146
%RSD	858.17	23.008	73.388	52.718	330.70	279.06	53.713	48.237
#1	-.00026	-.00088	.00207	-.01272	.03691	-.00149	.04644	-.00330
#2	.00062	-.00065	.00022	-.03857	.08040	.00095	.01796	-.00145
#3	-.00019	-.00104	.00186	-.04417	-.05474	.00290	.06311	-.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**.02638**	**-.00081**	**.00361**	**-.00013**	**.00136**	**-.00687**	**.00930**
Stddev	.00014	.01940	.00088	.00797	.00371	.00249	.00684	.00129
%RSD	43.475	73.535	108.60	220.58	2776.3	182.43	99.588	13.921
#1	.00044	.01661	-.00035	.01274	-.00311	.00320	.00102	.00948
#2	.00034	.01381	-.00025	.00014	.00403	-.00147	-.01039	.01050
#3	.00017	.04873	-.00183	-.00203	-.00132	.00237	-.01124	.00792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 12:21:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00024	.00247	-.00209	.00076	-.00001	-.00016
Stddev	.00084	.00071	.00879	.00248	.00067	.00030	.00058
%RSD	360.61	300.56	355.79	118.51	88.280	3028.0	367.13
#1	.00120	.00076	-.00623	-.00494	.00143	.00027	-.00032
#2	-.00033	-.00057	.01135	-.00041	.00075	.00002	.00048
#3	-.00017	.00052	.00229	-.00093	.00009	-.00032	-.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9061.7	52464.	2475.1
Stddev	58.5	188.	6.2
%RSD	.64581	.35783	.25222
#1	8996.0	52260.	2481.3
#2	9081.3	52501.	2468.8
#3	9108.0	52630.	2475.3

Approved: June 29, 2016

Sample Name: L1606119001 Acquired: 6/28/2016 12:25:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**3.7898**	**.00843**	**2.2113**	**.93713**	**.00029**	**73.518**
Stddev	.00241	.0251	.00321	.0173	.00590	.00011	.465
%RSD	579.81	.66230	38.057	.78270	.62931	37.980	.63263
#1	.00245	3.7774	.00479	2.1961	.93518	.00037	73.330
#2	-.00224	3.8186	.01084	2.2301	.94376	.00016	74.048
#3	.00104	3.7732	.00967	2.2078	.93246	.00033	73.177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.26930**	**.00396**	**.01111**	**.74577**	**10.780**	**91.314**	**5.0388**
Stddev	.00689	.00019	.00105	.02017	.009	.389	.0316
%RSD	2.5572	4.6850	9.4166	2.7048	.08645	.42570	.62740
#1	.27369	.00414	.01045	.75841	10.787	91.342	5.0432
#2	.27284	.00377	.01232	.75638	10.785	91.689	5.0680
#3	.26136	.00397	.01057	.72250	10.770	90.913	5.0052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.9578**	**.41341**	**.00495**	F **322.00**	**.03245**	**.51167**	**.23733**
Stddev	.0388	.00209	.00010	1.98	.00092	.00738	.00526
%RSD	.55712	.50459	2.0546	.61452	2.8333	1.4421	2.2181
#1	6.9132	.41312	.00504	321.58	.03349	.51560	.24197
#2	6.9766	.41563	.00497	324.15	.03208	.51624	.23840
#3	6.9836	.41148	.00484	320.26	.03177	.50315	.23161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606119001 Acquired: 6/28/2016 12:25:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	-.00226	8.1164	.11006	.28460	.06459	.00103
Stddev	.00474	.00305	.1340	.00508	.00251	.00944	.00141
%RSD	2924.3	135.05	1.6510	4.6133	.88362	14.611	136.61
#1	-.00531	.00126	8.1898	.11381	.28615	.07364	.00264
#2	.00284	-.00383	8.1977	.11208	.28594	.05481	.00043
#3	.00295	-.00421	7.9618	.10428	.28170	.06533	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01031	.51297	.00088
Stddev	.00146	.01667	.00015
%RSD	14.174	3.2493	16.646
#1	.01173	.52302	.00102
#2	.01039	.52215	.00073
#3	.00881	.49373	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9087.8	53911.	2652.7
Stddev	11.1	101.	11.7
%RSD	.12235	.18748	.44077
#1	9076.3	53852.	2662.2
#2	9098.5	53854.	2639.7
#3	9088.6	54028.	2656.3

Approved: June 29, 2016

Sample Name: L1606119002 Acquired: 6/28/2016 12:28:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	**4.7655**	**.00357**	**.82145**	**.35900**	**.00023**	**127.61**
Stddev	.00210	.0202	.00173	.00700	.00172	.00005	.83
%RSD	418.70	.42476	48.395	.85203	.47811	21.405	.64918
#1	-.00103	4.7888	.00554	.82869	.35756	.00023	127.22
#2	-.00228	4.7535	.00228	.82094	.36090	.00028	128.56
#3	.00181	4.7541	.00290	.81472	.35853	.00018	127.04
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.13601**	**.00630**	**.07860**	**2.9711**	**14.514**	**28.078**	**.44975**
Stddev	.00051	.00049	.00062	.0182	.129	.058	.00684
%RSD	.37797	7.8306	.79321	.61317	.88662	.20775	1.5205
#1	.13646	.00584	.07894	2.9863	14.410	28.114	.44275
#2	.13613	.00623	.07898	2.9761	14.658	28.010	.45641
#3	.13545	.00682	.07788	2.9509	14.474	28.108	.45009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**13.075**	**1.9805**	**.01310**	F **322.69**	**.06978**	**1.5045**	**.28408**
Stddev	.114	.0220	.00041	2.01	.00078	.0104	.00225
%RSD	.86971	1.1114	3.1207	.62252	1.1180	.69133	.79147
#1	12.950	1.9651	.01263	322.58	.07034	1.5043	.28667
#2	13.105	2.0058	.01333	324.75	.07012	1.5150	.28272
#3	13.171	1.9708	.01335	320.73	.06889	1.4942	.28283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606119002 Acquired: 6/28/2016 12:28:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00351	-.00222	7.1567	.34122	.93711	.07983	-.00060
Stddev	.00546	.00103	.0143	.00275	.00806	.00358	.00175
%RSD	155.33	46.531	.19985	.80486	.85994	4.4860	289.82
#1	-.00045	-.00104	7.1693	.34240	.93448	.07594	-.00003
#2	.00974	-.00267	7.1597	.34317	.94616	.08056	-.00257
#3	.00125	-.00296	7.1411	.33808	.93070	.08299	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01322	.43603	.00171
Stddev	.00064	.00396	.00089
%RSD	4.8731	.90805	51.957
#1	.01381	.43892	.00132
#2	.01331	.43765	.00108
#3	.01253	.43152	.00272
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8990.1	53592.	2679.4
Stddev	12.6	181.	12.2
%RSD	.14029	.33827	.45474
#1	9004.5	53800.	2682.8
#2	8981.0	53465.	2665.9
#3	8984.8	53512.	2689.5

Approved: June 29, 2016

Sample Name: L1606113002 Acquired: 6/28/2016 12:32:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.00964	.00218	.00589	.01061	.00005	14.366	.00022
Stddev	.00139	.00845	.00195	.00141	.00037	.00004	.110	.00037
%RSD	256.99	87.693	89.589	23.967	3.4831	65.158	.76837	164.56
#1	.00092	.00409	.00003	.00579	.01026	.00004	14.305	.00064
#2	-.00184	.01937	.00384	.00453	.01099	.00009	14.493	-.00002
#3	-.00070	.00546	.00265	.00735	.01059	.00003	14.299	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	-.00066	.00224	7.0016	.64344	-.00073	2.9261	.21249
Stddev	.00066	.00095	.00029	.0489	.12305	.00350	.1024	.00192
%RSD	1558.0	145.31	13.111	.69901	19.123	480.34	3.4986	.90146
#1	.00065	.00043	.00227	7.0215	.70582	.00331	2.9706	.21039
#2	-.00067	-.00136	.00251	7.0375	.50170	-.00263	2.9987	.21294
#3	-.00011	-.00104	.00193	6.9459	.72281	-.00287	2.8090	.21414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	7.4084	-.00034	.02764	-.00033	.00328	.00636	1.2813
Stddev	.00029	.0264	.00110	.00512	.00225	.00261	.00547	.0008
%RSD	86.515	.35650	327.89	18.533	676.62	79.623	86.012	.06472
#1	.00064	7.4354	.00065	.03157	-.00206	.00234	.01173	1.2807
#2	.00006	7.3826	-.00152	.02951	-.00115	.00126	.00657	1.2823
#3	.00032	7.4072	-.00014	.02185	.00222	.00622	.00079	1.2810
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113002 Acquired: 6/28/2016 12:32:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.04316	-.00341	-.00137	-.00043	.00134	-.00077
Stddev	.00044	.00035	.01120	.00427	.00126	.00015	.00075
%RSD	82.014	.80151	328.08	310.71	293.00	11.021	96.860
#1	.00105	.04344	.00282	-.00628	-.00096	.00117	.00009
#2	.00036	.04327	.00329	.00066	-.00133	.00146	-.00120
#3	.00021	.04278	-.01634	.00150	.00101	.00138	-.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8907.6	53531.	2524.4
Stddev	10.1	60.	6.0
%RSD	.11391	.11183	.23739
#1	8900.1	53468.	2527.8
#2	8903.7	53587.	2528.0
#3	8919.2	53538.	2517.5

Approved: June 29, 2016

Sample Name: L1606113003 Acquired: 6/28/2016 12:36:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.01861	-.00206	.00558	.00707	.00003	10.328	.00010
Stddev	.00106	.01054	.00074	.00327	.00096	.00005	.166	.00003
%RSD	1760.8	56.650	35.759	58.620	13.649	170.04	1.6032	27.231
#1	.00106	.00767	-.00130	.00838	.00816	-.00001	10.139	.00008
#2	.00016	.01945	-.00211	.00637	.00671	.00001	10.398	.00013
#3	-.00105	.02870	-.00277	.00199	.00633	.00009	10.447	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.02380	.00118	.43713	.30859	.00371	3.6737	.08669
Stddev	.00023	.00120	.00107	.03281	.13714	.00332	.0307	.00422
%RSD	110.49	5.0417	90.208	7.5052	44.440	89.431	.83598	4.8696
#1	-.00001	.02282	.00028	.47375	.37426	.00144	3.6555	.09075
#2	.00019	.02343	.00236	.42725	.40055	.00218	3.6565	.08700
#3	.00045	.02514	.00091	.41041	.15097	.00753	3.7092	.08232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	9.1912	.01331	.04027	-.00006	.00344	-.00704	1.2782
Stddev	.00026	.1694	.00203	.00077	.00185	.00489	.00234	.0259
%RSD	38.989	1.8436	15.245	1.9193	3027.6	142.10	33.280	2.0280
#1	.00094	9.0018	.01267	.04079	-.00200	.00905	-.00906	1.2518
#2	.00068	9.2436	.01168	.04064	.00170	.00010	-.00758	1.2792
#3	.00042	9.3283	.01558	.03938	.00011	.00117	-.00447	1.3037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113003 Acquired: 6/28/2016 12:36:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.06137	-.00305	-.00210	.00082	.00133	-.00058
Stddev	.00060	.00103	.00441	.00110	.00027	.00013	.00060
%RSD	439.98	1.6752	144.54	52.349	33.189	9.5496	104.64
#1	.00052	.06032	.00091	-.00241	.00105	.00145	-.00001
#2	-.00055	.06141	-.00226	-.00088	.00052	.00120	-.00050
#3	.00045	.06237	-.00781	-.00301	.00090	.00135	-.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8946.2	53500.	2545.9
Stddev	7.6	202.	12.1
%RSD	.08522	.37788	.47674
#1	8939.8	53704.	2554.9
#2	8944.2	53497.	2532.1
#3	8954.6	53300.	2550.7

Approved: June 29, 2016

Sample Name: L1606113004 Acquired: 6/28/2016 12:40:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.01809	-.00077	-.00297	.01150	-.00004	17.766	-.00020
Stddev	.00248	.00463	.00136	.00361	.00041	.00010	.240	.00018
%RSD	1046.0	25.617	176.90	121.87	3.5982	267.63	1.3496	89.328
#1	-.00243	.02260	-.00109	-.00662	.01167	-.00009	17.550	-.00001
#2	-.00073	.01334	-.00195	.00061	.01180	.00008	17.723	-.00036
#3	.00245	.01832	.00072	-.00289	.01103	-.00011	18.024	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	-.00049	.00113	11.978	.48918	.00583	2.9320	.17953
Stddev	.00016	.00104	.00263	.080	.02205	.00475	.1307	.00167
%RSD	29.412	210.00	231.85	.66571	4.5076	81.514	4.4592	.92948
#1	.00071	.00060	.00417	11.907	.46449	.00134	2.7961	.17819
#2	.00050	-.00062	-.00050	11.963	.50692	.01081	2.9429	.17900
#3	.00040	-.00146	-.00027	12.065	.49613	.00534	3.0569	.18140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	3.4886	.00079	.00034	-.00084	.00008	-.00358	1.4319
Stddev	.00037	.0303	.00108	.00465	.00493	.00454	.00459	.0399
%RSD	6980.2	.86819	137.12	1365.6	589.47	5537.2	127.98	2.7882
#1	-.00042	3.5017	.00204	.00553	-.00257	-.00483	-.00318	1.4507
#2	.00014	3.5101	.00028	-.00346	.00472	.00097	.00079	1.4590
#3	.00027	3.4540	.00006	-.00104	-.00466	.00411	-.00836	1.3861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113004 Acquired: 6/28/2016 12:40:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.05790	.00930	.00016	-.00139	.00147	-.00089
Stddev	.00098	.00075	.00706	.00120	.00037	.00013	.00021
%RSD	272.08	1.2926	75.921	741.78	26.600	8.7062	23.335
#1	-.00025	.05719	.01138	-.00002	-.00134	.00155	-.00101
#2	-.00016	.05868	.01508	-.00094	-.00104	.00132	-.00102
#3	.00150	.05784	.00143	.00144	-.00178	.00153	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8934.7	53539.	2547.3
Stddev	11.4	243.	6.4
%RSD	.12800	.45343	.25275
#1	8922.9	53678.	2554.2
#2	8935.5	53681.	2546.3
#3	8945.8	53259.	2541.4

Approved: June 29, 2016

Sample Name: L1606113005 Acquired: 6/28/2016 12:44:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.01198	-.00210	-.00164	.00301	-.00000	-.01159	-.00004
Stddev	.00141	.01055	.00136	.00247	.00082	.00009	.02499	.00026
%RSD	8281.9	88.039	64.731	150.47	27.174	3406.6	215.61	657.73
#1	-.00151	-.00013	-.00110	.00120	.00210	.00010	-.03630	.00007
#2	.00029	.01695	-.00155	-.00327	.00325	-.00006	.01366	.00015
#3	.00127	.01913	-.00365	-.00286	.00368	-.00005	-.01213	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00072	-.00086	-.00681	.13612	.00452	-.00411	-.00268
Stddev	.00035	.00054	.00121	.03393	.13157	.00463	.09255	.00149
%RSD	121.46	74.302	141.19	498.06	96.661	102.38	2250.3	55.603
#1	-.00047	.00035	-.00226	.03226	.24020	-.00067	-.10321	-.00194
#2	.00012	.00134	-.00019	-.02389	-.01177	.00603	.01080	-.00439
#3	-.00051	.00048	-.00012	-.02881	.17993	.00821	.08007	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00612	-.00010	-.00227	-.00119	.00203	.00281	-.01390
Stddev	.00016	.01574	.00083	.00326	.00065	.00303	.00207	.00142
%RSD	63.438	257.20	796.79	143.34	54.751	148.94	73.532	10.213
#1	-.00023	.01962	.00052	-.00416	-.00058	-.00145	.00097	-.01537
#2	-.00011	.00990	-.00104	-.00414	-.00188	.00405	.00505	-.01379
#3	-.00043	-.01116	.00021	.00149	-.00111	.00350	.00242	-.01254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113005 Acquired: 6/28/2016 12:44:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.00024	.00598	-.00423	-.00105	.00062	-.00054
Stddev	.00042	.00049	.01065	.00088	.00086	.00015	.00071
%RSD	166.82	202.02	177.94	20.764	82.165	23.770	132.28
#1	.00003	.00079	-.00224	-.00322	-.00048	.00048	-.00061
#2	.00074	-.00014	.00218	-.00482	-.00203	.00077	.00021
#3	-.00001	.00007	.01801	-.00465	-.00062	.00061	-.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9001.9	54024.	2557.5
Stddev	1.4	38.	4.0
%RSD	.01509	.07122	.15560
#1	9000.4	54033.	2562.1
#2	9002.0	54058.	2555.7
#3	9003.1	53982.	2554.8

Approved: June 29, 2016

Sample Name: L1606116411 Acquired: 6/28/2016 12:48:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.15451	-.00350	.03775	.01914	.00006	17.496	.00071
Stddev	.00064	.00207	.00555	.00311	.00096	.00006	.010	.00032
%RSD	895.05	1.3418	158.59	8.2436	5.0367	100.05	.05556	45.738
#1	.00036	.15691	-.00921	.03969	.01877	.00012	17.500	.00093
#2	.00023	.15334	-.00315	.03939	.02023	.00000	17.503	.00086
#3	-.00081	.15329	.00187	.03416	.01842	.00005	17.485	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	-.00079	.01211	.00467	1.2228	.00134	4.5617	.05182
Stddev	.00031	.00121	.00109	.02467	.0793	.00097	.0493	.00231
%RSD	37.826	152.51	8.9718	528.03	6.4818	72.554	1.0800	4.4566
#1	.00056	-.00158	.01238	.00794	1.2872	.00031	4.6166	.05236
#2	.00074	-.00139	.01092	-.02147	1.2470	.00223	4.5470	.04929
#3	.00116	.00060	.01304	.02754	1.1343	.00148	4.5214	.05381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	147.55	.00517	.17885	.00030	-.00139	-.00110	2.8258
Stddev	.00053	.34	.00060	.01359	.00349	.00151	.00321	.0017
%RSD	327.61	.23187	11.605	7.6006	1182.6	109.29	291.30	.06077
#1	.00045	147.36	.00485	.16363	.00281	-.00253	.00244	2.8278
#2	-.00045	147.95	.00586	.18316	.00177	.00033	-.00382	2.8246
#3	-.00049	147.35	.00479	.18977	-.00369	-.00196	-.00192	2.8252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606116411 Acquired: 6/28/2016 12:48:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.09596	-.00181	-.00373	.00021	.28203	.00032
Stddev	.00094	.00045	.00088	.00410	.00026	.00067	.00045
%RSD	349.19	.47142	48.709	109.75	123.26	.23930	138.59
#1	-.00080	.09544	-.00135	-.00237	.00002	.28265	.00011
#2	.00095	.09615	-.00283	-.00834	.00051	.28212	.00002
#3	.00066	.09628	-.00126	-.00049	.00011	.28131	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9005.5	53766.	2640.9
Stddev	16.7	224.	2.5
%RSD	.18548	.41670	.09612
#1	8990.9	53512.	2638.5
#2	9002.0	53850.	2640.7
#3	9023.7	53936.	2643.6

Approved: June 29, 2016

Sample Name: L1606125201 Acquired: 6/28/2016 12:52:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00129	.02165	-.00248	.01692	.04160	-.00001	59.586	.00010
Stddev	.00123	.00416	.00137	.00291	.00115	.00005	.518	.00026
%RSD	95.801	19.216	55.265	17.215	2.7688	473.44	.86976	263.07
#1	.00051	.02261	-.00142	.02017	.04292	-.00004	60.152	.00021
#2	.00271	.01709	-.00199	.01606	.04104	-.00004	59.136	-.00020
#3	.00064	.02524	-.00402	.01454	.04083	.00005	59.469	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00013	.01444	.02703	1.0062	.00850	11.899	.00064
Stddev	.00032	.00079	.00036	.02181	.0699	.00671	.190	.00094
%RSD	142.92	594.81	2.5182	80.678	6.9428	78.943	1.5983	147.02
#1	.00011	-.00078	.01433	.04967	1.0334	.01527	12.058	.00007
#2	-.00025	.00050	.01414	.00617	.92685	.00185	11.688	.00012
#3	-.00054	.00067	.01484	.02525	1.0584	.00837	11.951	.00173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	12.417	.00097	.00359	.00058	.00173	-.00540	4.4257
Stddev	.00023	.049	.00108	.00335	.00547	.00081	.00408	.0469
%RSD	14.809	.39598	110.69	93.301	945.36	46.838	75.601	1.0597
#1	.00130	12.360	.00206	.00037	-.00004	.00264	-.00697	4.4557
#2	.00176	12.443	.00096	.00706	.00633	.00146	-.00846	4.4497
#3	.00156	12.447	-.00010	.00334	-.00455	.00109	-.00076	4.3716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606125201 Acquired: 6/28/2016 12:52:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.09375	-.01059	-.00376	-.00096	.14846	-.00009
Stddev	.00046	.00020	.00430	.00170	.00027	.00282	.00014
%RSD	889.88	.21863	40.616	45.127	27.765	1.8964	162.80
#1	.00053	.09352	-.01507	-.00509	-.00082	.15050	-.00010
#2	-.00039	.09382	-.01019	-.00185	-.00079	.14964	.00006
#3	.00001	.09390	-.00650	-.00435	-.00127	.14525	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9046.7	54426.	2639.5
Stddev	5.6	47.	11.7
%RSD	.06203	.08606	.44426
#1	9047.5	54470.	2646.7
#2	9040.7	54430.	2645.8
#3	9051.9	54377.	2626.0

Approved: June 29, 2016

Sample Name: L1606113005PS Acquired: 6/28/2016 12:55:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574276-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.23710**	**6.1119**	**.25853**	**1.1827**	**.56629**	**.02969**	**5.7632**	**.03235**
Stddev	.00531	.1115	.00359	.0243	.00883	.00056	.1133	.00088
%RSD	2.2382	1.8239	1.3873	2.0549	1.5587	1.8898	1.9662	2.7146
#1	.23205	6.0117	.25594	1.1589	.55772	.02914	5.6706	.03134
#2	.23663	6.0922	.26262	1.1819	.56578	.02965	5.7294	.03278
#3	.24263	6.2320	.25703	1.2075	.57535	.03026	5.8895	.03293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12838**	**.29825**	**.32424**	**2.2596**	**28.378**	**.57291**	**5.7557**	**.27905**
Stddev	.00240	.00576	.00674	.0769	.298	.00617	.1009	.00395
%RSD	1.8707	1.9317	2.0773	3.4010	1.0488	1.0767	1.7530	1.4157
#1	.12561	.29278	.31691	2.2190	28.035	.56580	5.7393	.27488
#2	.12963	.29770	.32564	2.2116	28.539	.57612	5.6641	.27953
#3	.12989	.30426	.33016	2.3482	28.561	.57681	5.8639	.28273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.63702**	**28.482**	**.32021**	**6.3858**	**.32156**	**.76680**	**.26481**	**3.0255**
Stddev	.01158	.382	.00730	.1267	.00813	.01550	.00541	.0590
%RSD	1.8173	1.3412	2.2809	1.9843	2.5298	2.0212	2.0434	1.9491
#1	.62392	28.101	.31227	6.2466	.31241	.75013	.25870	2.9613
#2	.64128	28.479	.32173	6.4163	.32431	.76951	.26900	3.0381
#3	.64587	28.865	.32663	6.4945	.32797	.78077	.26672	3.0772
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113005PS Acquired: 6/28/2016 12:55:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574276-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.63969**	**.57282**	**.56662**	**.32033**	**.59043**	**.65161**	**.00037**
Stddev	.01089	.00891	.00918	.00410	.01004	.01220	.00038
%RSD	1.7019	1.5563	1.6202	1.2812	1.6999	1.8719	104.40
#1	.62840	.56390	.56153	.31578	.58130	.63808	.00013
#2	.64053	.57283	.56111	.32376	.58880	.65498	.00081
#3	.65013	.58173	.57721	.32144	.60118	.66177	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8751.7**	**53132.**	**2528.1**
Stddev	60.4	53.	3.0
%RSD	.69033	.09944	.11892
#1	8820.8	53193.	2527.4
#2	8725.4	53105.	2525.4
#3	8708.9	53099.	2531.3

Approved: June 29, 2016

Sample Name: L1606113005SDL Acquired: 6/28/2016 12:59:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574276-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**.01796**	**-.00051**	**.00421**	**.00435**	**.00004**	**-.04891**
Stddev	.00215	.00108	.00203	.00129	.00070	.00007	.03888
%RSD	208.21	6.0021	400.75	30.574	16.137	155.88	79.499
#1	-.00349	.01733	.00035	.00562	.00513	-.00001	-.08125
#2	-.00014	.01921	-.00283	.00310	.00377	.00012	-.00577
#3	.00053	.01735	.00096	.00392	.00414	.00002	-.05970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.00021**	**.00034**	**-.00130**	F **-.02855**	**.09256**	**-.00001**
Stddev	.00019	.00029	.00087	.00052	.03818	.11285	.00108
%RSD	135.21	139.53	256.35	40.003	133.73	121.92	12196.
#1	.00033	-.00017	.00003	-.00112	-.00187	-.03430	.00122
#2	.00015	.00006	-.00033	-.00089	-.07228	.18179	-.00043
#3	-.00005	-.00051	.00132	-.00188	-.01150	.13019	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04964**	**.00128**	**-.00009**	**-.03957**	**-.00092**	**.00133**	**.00059**
Stddev	.08575	.00365	.00020	.01448	.00047	.00474	.00362
%RSD	172.76	285.55	232.06	36.594	50.685	355.96	608.45
#1	-.01476	.00357	-.00013	-.03404	-.00146	.00407	-.00017
#2	.14698	-.00293	-.00026	-.02866	-.00064	-.00415	-.00258
#3	.01669	.00320	.00013	-.05599	-.00066	.00407	.00453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606113005SDL Acquired: 6/28/2016 12:59:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574276-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00115**	**.00220**	**-.01924**	**-.00065**	**-.00003**	**.00117**	**-.00175**
Stddev	.00111	.00032	.00072	.00026	.00026	.00353	.00064
%RSD	96.818	14.545	3.7264	40.121	751.34	302.16	36.404
#1	.00179	.00256	-.01991	-.00045	-.00033	.00149	-.00246
#2	.00179	.00208	-.01848	-.00056	.00003	.00452	-.00122
#3	-.00014	.00195	-.01932	-.00095	.00019	-.00251	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00037**	**.00004**	**.00006**
Stddev	.00133	.00016	.00091
%RSD	362.84	470.08	1572.9
#1	-.00190	.00017	.00111
#2	.00031	.00008	-.00050
#3	.00049	-.00015	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8934.0**	**53568.**	**2513.2**
Stddev	29.7	195.	12.2
%RSD	.33241	.36323	.48531
#1	8968.0	53408.	2517.4
#2	8913.6	53784.	2499.4
#3	8920.3	53512.	2522.7

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 13:03:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39336	9.9130	.39284	.49276	.98996	.04913	9.7806	.04958
Stddev	.00206	.0250	.00280	.00453	.00775	.00022	.1020	.00017
%RSD	.52294	.25249	.71387	.91843	.78274	.45192	1.0426	.33908
#1	.39555	9.8943	.39549	.49271	.98476	.04924	9.7809	.04947
#2	.39146	9.9033	.39312	.48826	.99887	.04887	9.8824	.04950
#3	.39308	9.9415	.38991	.49731	.98626	.04928	9.6784	.04977
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19911	.49357	.49698	3.9417	49.290	.99570	10.037	.49012
Stddev	.00056	.00102	.00099	.0647	.405	.00934	.166	.00587
%RSD	.28371	.20597	.19976	1.6421	.82182	.93815	1.6489	1.1977
#1	.19976	.49455	.49812	3.8892	49.011	1.0015	9.9546	.48688
#2	.19874	.49365	.49630	4.0140	49.755	1.0007	10.228	.49689
#3	.19883	.49252	.49652	3.9218	49.104	.98492	9.9293	.48657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99761	49.317	.49464	9.8819	.49704	1.1821	.39600	4.9694
Stddev	.00067	.437	.00153	.0272	.00775	.0053	.00447	.0102
%RSD	.06677	.88655	.30937	.27532	1.5587	.45187	1.1292	.20589
#1	.99834	49.066	.49637	9.8946	.49017	1.1760	.39998	4.9688
#2	.99747	49.822	.49411	9.9004	.50544	1.1860	.39116	4.9799
#3	.99703	49.064	.49345	9.8506	.49550	1.1842	.39685	4.9594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 13:03:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99893	.98924	.97761	.49219	.98422	.99536	1.0005
Stddev	.00341	.00988	.00968	.00058	.00242	.00222	.0071
%RSD	.34152	.99831	.99030	.11778	.24579	.22340	.71326
#1	.99825	.98412	.97111	.49255	.98277	.99710	1.0023
#2	1.0026	1.0006	.98873	.49250	.98289	.99612	1.0065
#3	.99591	.98298	.97298	.49152	.98702	.99285	.99261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8808.6	52540.	2520.5
Stddev	22.0	62.	15.2
%RSD	.24977	.11782	.60493
#1	8791.2	52557.	2515.2
#2	8801.3	52592.	2508.6
#3	8833.3	52472.	2537.7

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 13:07:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00082**	**.01053**	**-.00036**	**.00015**	**.00380**	**.00002**	**-.02913**	**.00012**
Stddev	.00164	.00730	.00278	.00170	.00038	.00004	.01234	.00023
%RSD	200.52	69.374	782.83	1134.5	9.9196	215.17	42.362	195.21
#1	-.00230	.01885	.00098	.00123	.00338	-.00001	-.02250	.00039
#2	.00094	.00755	-.00355	.00103	.00412	.00000	-.04337	.00002
#3	-.00109	.00518	.00151	-.00181	.00390	.00006	-.02152	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**-.00040**	**-.00056**	**-.03142**	**-.08528**	**.00138**	**.09579**	**.00138**
Stddev	.00026	.00054	.00111	.03234	.05121	.00380	.04905	.00114
%RSD	288.69	133.86	197.52	102.92	60.056	275.21	51.203	82.972
#1	.00039	.00012	.00067	.00375	-.10959	-.00091	.09891	.00250
#2	-.00005	-.00095	-.00089	-.03814	-.02643	.00576	.04526	.00142
#3	-.00007	-.00038	-.00146	-.05988	-.11980	-.00071	.14320	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00034**	**-.00082**	**.00453**	**.00067**	**.00273**	**-.00634**	**.01081**
Stddev	.00046	.03322	.00172	.00246	.00130	.00263	.00099	.00066
%RSD	1443.9	9865.4	210.49	54.266	194.38	96.401	15.628	6.1253
#1	-.00027	-.03144	-.00223	.00385	.00158	.00481	-.00722	.01120
#2	-.00032	-.00239	.00110	.00726	-.00082	.00361	-.00654	.01118
#3	.00050	.03484	-.00133	.00249	.00126	-.00023	-.00526	.01004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 13:07:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	-.00004	-.00011	-.00239	.00051	-.00009	.00046
Stddev	.00048	.00052	.01049	.00287	.00057	.00022	.00015
%RSD	141.44	1176.3	9514.5	120.28	111.99	260.70	33.023
#1	-.00017	.00049	-.00485	.00091	-.00011	-.00034	.00063
#2	.00078	-.00055	-.00739	-.00378	.00102	.00002	.00034
#3	.00040	-.00008	.01191	-.00430	.00063	.00007	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8877.7	53504.	2525.8
Stddev	7.8	98.	6.9
%RSD	.08803	.18354	.27296
#1	8875.6	53546.	2517.8
#2	8871.1	53575.	2530.1
#3	8886.3	53392.	2529.4

Approved: June 29, 2016

Sample Name: L1606106804 Acquired: 6/28/2016 13:11:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**.01493**	**-.00423**	**.00176**	**.03015**	**-.00003**	**3.6405**
Stddev	.00270	.00745	.00413	.00110	.00128	.00004	.0379
%RSD	326.75	49.870	97.505	62.290	4.2618	148.88	1.0420
#1	.00091	.00665	-.00573	.00301	.03092	-.00007	3.6017
#2	.00055	.01707	.00043	.00096	.02867	.00002	3.6775
#3	-.00393	.02109	-.00740	.00132	.03086	-.00003	3.6422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.00015**	**.00129**	**-.00149**	F **-.02186**	**.05820**	**.00564**
Stddev	.00033	.00012	.00022	.00079	.02615	.09648	.00301
%RSD	152.41	81.233	16.848	53.239	119.66	165.77	53.430
#1	.00056	.00029	.00112	-.00106	-.02018	.07061	.00912
#2	.00018	.00006	.00122	-.00240	.00342	-.04388	.00405
#3	-.00009	.00011	.00154	-.00100	-.04881	.14787	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.7402**	**.00088**	**-.00022**	**13.379**	**-.00112**	**.00621**	**-.00255**
Stddev	.0825	.00130	.00029	.125	.00063	.00226	.00432
%RSD	3.0123	147.46	130.54	.93109	55.815	36.397	169.94
#1	2.8157	.00026	.00011	13.280	-.00075	.00378	-.00737
#2	2.6521	.00001	-.00042	13.519	-.00185	.00825	.00097
#3	2.7529	.00238	-.00035	13.339	-.00077	.00660	-.00123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606106804 Acquired: 6/28/2016 13:11:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00140	.80989	.00026	.07823	.00230	-.00078
Stddev	.00354	.00473	.00437	.00092	.00095	.00620	.00164
%RSD	688.84	338.79	.53928	348.19	1.2119	269.39	209.76
#1	.00452	.00191	.80963	.00121	.07773	.00423	-.00129
#2	-.00219	-.00357	.80566	.00020	.07932	.00731	-.00210
#3	-.00078	.00585	.81439	-.00062	.07763	-.00464	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00017	.00062	.00008
Stddev	.00072	.00005	.00089
%RSD	415.57	7.9078	1128.7
#1	.00052	.00060	-.00014
#2	-.00012	.00059	-.00068
#3	-.00092	.00068	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8814.1	52984.	2489.1
Stddev	14.5	171.	14.5
%RSD	.16454	.32216	.58377
#1	8813.1	52905.	2486.3
#2	8829.0	52867.	2476.2
#3	8800.1	53180.	2504.9

Approved: June 29, 2016

Sample Name: L1606106805 Acquired: 6/28/2016 13:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.01476	-.00335	.00279	.03196	.00016	3.6115	.00006
Stddev	.00013	.01355	.00295	.00275	.00100	.00003	.0684	.00038
%RSD	26.179	91.766	87.876	98.584	3.1228	20.664	1.8938	648.50
#1	.00036	.00536	-.00601	.00187	.03088	.00015	3.5339	-.00033
#2	.00061	.03030	-.00387	.00588	.03216	.00014	3.6376	.00008
#3	.00055	.00864	-.00018	.00062	.03285	.00020	3.6629	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00124	-.00037	.00663	-.09688	.00565	2.6653	-.00201
Stddev	.00033	.00034	.00106	.05088	.15873	.00409	.0912	.00124
%RSD	108.45	27.910	282.74	767.75	163.84	72.409	3.4234	61.642
#1	.00054	.00159	.00005	.06285	.02031	.00145	2.7282	-.00343
#2	.00045	.00122	.00040	-.03623	-.27753	.00963	2.5606	-.00143
#3	-.00007	.00090	-.00158	-.00674	-.03343	.00587	2.7071	-.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	13.446	-.00011	.00621	-.00083	.00412	-.00378	.79854
Stddev	.00033	.084	.00067	.00374	.00294	.00421	.00411	.02914
%RSD	125.20	.62581	624.45	60.274	353.08	102.24	108.59	3.6487
#1	-.00051	13.385	.00031	.00824	-.00270	.00007	-.00672	.81403
#2	-.00038	13.412	.00025	.00851	.00255	.00381	.00091	.81667
#3	.00011	13.542	-.00087	.00189	-.00235	.00848	-.00555	.76493
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106805 Acquired: 6/28/2016 13:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00114**	**.07802**	**-.01175**	**-.00160**	**-.00071**	**.00064**	**-.00064**
Stddev	.00080	.00057	.00450	.00481	.00018	.00029	.00100
%RSD	70.173	.73637	38.340	300.68	25.129	45.592	156.76
#1	.00154	.07777	-.01564	-.00402	-.00054	.00032	-.00059
#2	.00022	.07761	-.01279	-.00472	-.00068	.00071	-.00166
#3	.00167	.07867	-.00682	.00394	-.00090	.00089	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8812.1**	**52840.**	**2480.2**
Stddev	18.2	110.	13.2
%RSD	.20629	.20796	.53284
#1	8829.9	52966.	2477.2
#2	8793.5	52795.	2494.7
#3	8813.1	52760.	2468.8

Approved: June 29, 2016

Sample Name: L1606113005PS Acquired: 6/28/2016 13:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574276-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21527**	**5.5207**	**.22885**	**1.0733**	**.53756**	**.02675**	**5.3843**	**.02798**
Stddev	.00177	.0241	.00604	.0068	.00866	.00017	.1256	.00062
%RSD	.82163	.43648	2.6407	.63358	1.6107	.62031	2.3326	2.2056
#1	.21494	5.4931	.22193	1.0693	.52821	.02656	5.2417	.02735
#2	.21370	5.5373	.23308	1.0694	.54530	.02683	5.4785	.02800
#3	.21719	5.5318	.23155	1.0812	.53918	.02687	5.4328	.02858
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11240**	**.26779**	**.28467**	**2.1409**	**26.588**	**.54010**	**5.6370**	**.26559**
Stddev	.00134	.00204	.00370	.0435	.354	.00874	.0613	.00133
%RSD	1.1923	.76133	1.2984	2.0304	1.3318	1.6179	1.0880	.50041
#1	.11114	.26666	.28128	2.0918	26.179	.53071	5.5700	.26421
#2	.11225	.27014	.28413	2.1745	26.784	.54800	5.6903	.26569
#3	.11381	.26657	.28861	2.1565	26.800	.54160	5.6507	.26686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55583**	**27.010**	**.28072**	**5.5936**	**.27785**	**.67635**	**.23788**	**2.6476**
Stddev	.00678	.332	.00179	.0702	.00294	.01038	.00437	.0376
%RSD	1.2200	1.2287	.63745	1.2556	1.0594	1.5353	1.8390	1.4181
#1	.54951	26.631	.27867	5.5246	.27615	.66586	.23509	2.6120
#2	.55500	27.250	.28160	5.5913	.27615	.67657	.23563	2.6439
#3	.56299	27.148	.28190	5.6650	.28125	.68663	.24292	2.6868
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113005PS Acquired: 6/28/2016 13:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574276-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55961**	**.54418**	**.52610**	**.27731**	**.53391**	**.57796**	**.00002**
Stddev	.00665	.00642	.00644	.00532	.00205	.00443	.00061
%RSD	1.1882	1.1791	1.2246	1.9177	.38439	.76707	3254.2
#1	.55276	.53680	.51967	.27196	.53154	.57285	.00055
#2	.56005	.54842	.52608	.27737	.53509	.58036	-.00064
#3	.56603	.54733	.53256	.28260	.53511	.58068	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8721.8**	**52045.**	**2470.1**
Stddev	12.9	159.	19.9
%RSD	.14792	.30493	.80385
#1	8712.6	52146.	2491.7
#2	8716.2	51863.	2452.6
#3	8736.5	52127.	2466.0

Approved: June 29, 2016

Sample Name: L1606106811 Acquired: 6/28/2016 13:22:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	1.4251	.00175	.00444	.02966	.00019	.75379	.00014
Stddev	.00254	.0230	.00237	.00185	.00178	.00007	.01953	.00030
%RSD	372.28	1.6113	134.90	41.704	5.9999	38.159	2.5915	208.89
#1	.00086	1.4176	.00360	.00231	.03158	.00013	.73878	.00028
#2	.00313	1.4068	.00258	.00562	.02807	.00027	.77588	-.00020
#3	-.00194	1.4508	-.00091	.00540	.02931	.00016	.74672	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	.00335	.00482	1.9991	.20881	.00441	.50207	.04768
Stddev	.00034	.00085	.00089	.0268	.14239	.00363	.02928	.00189
%RSD	37.329	25.343	18.412	1.3414	68.193	82.227	5.8325	3.9582
#1	.00066	.00431	.00413	2.0299	.05656	.00851	.48210	.04617
#2	.00080	.00306	.00583	1.9868	.23117	.00309	.48842	.04709
#3	.00131	.00269	.00451	1.9806	.33870	.00163	.53568	.04980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.82682	.00345	.02528	.00114	.00172	.00203	1.9469
Stddev	.00016	.02518	.00063	.00984	.00435	.00064	.00703	.0392
%RSD	106.86	3.0448	18.143	38.938	380.81	36.954	346.34	2.0118
#1	-.00021	.83413	.00274	.02291	.00446	.00124	-.00577	1.9065
#2	.00003	.84753	.00372	.03609	.00275	.00148	.00399	1.9496
#3	-.00028	.79880	.00390	.01684	-.00378	.00244	.00788	1.9846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106811 Acquired: 6/28/2016 13:22:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.01264**	**.01238**	**-.00117**	**.00334**	**.01101**	**-.00003**
Stddev	.00138	.00046	.00941	.00358	.00072	.00018	.00085
%RSD	320.63	3.6366	75.984	305.85	21.543	1.6013	2670.1
#1	-.00017	.01307	.00337	-.00435	.00366	.01090	.00070
#2	-.00193	.01271	.02213	.00271	.00383	.01092	-.00097
#3	.00080	.01215	.01164	-.00188	.00251	.01122	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8900.9**	**53614.**	**2515.0**
Stddev	10.3	101.	14.4
%RSD	.11598	.18784	.57294
#1	8911.7	53726.	2520.3
#2	8899.7	53531.	2498.6
#3	8891.2	53585.	2525.9

Approved: June 29, 2016

Sample Name: L1606106813 Acquired: 6/28/2016 13:26:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.08929**	**-.00063**	**.00006**	**.01168**	**.00007**	**.52951**
Stddev	.00235	.00667	.00336	.00302	.00069	.00007	.04393
%RSD	336.83	7.4648	536.52	4814.6	5.8717	106.69	8.2961
#1	.00033	.09297	.00116	-.00324	.01236	-.00001	.48000
#2	-.00338	.08159	.00146	.00268	.01099	.00008	.56380
#3	.00097	.09330	-.00450	.00075	.01168	.00014	.54475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00014**	**-.00032**	**-.00089**	**.50487**	**.06610**	**.00543**
Stddev	.00013	.00013	.00098	.00076	.03701	.02572	.00316
%RSD	54.751	94.669	310.30	85.305	7.3296	38.914	58.115
#1	.00037	-.00001	-.00100	-.00177	.54463	.05677	.00370
#2	.00011	.00024	.00081	-.00040	.47144	.04634	.00352
#3	.00023	.00017	-.00075	-.00051	.49854	.09518	.00907
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24782**	**.01542**	**-.00030**	**9.9493**	**.00196**	**.00299**	**-.00405**
Stddev	.06260	.00320	.00016	.0254	.00076	.00585	.00006
%RSD	25.260	20.782	55.007	.25544	38.518	195.64	1.5814
#1	.18176	.01748	-.00035	9.9649	.00283	-.00361	-.00412
#2	.30627	.01705	-.00011	9.9630	.00152	.00506	-.00399
#3	.25541	.01173	-.00043	9.9200	.00154	.00753	-.00403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606106813 Acquired: 6/28/2016 13:26:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	F -.01043	.44265	.00053	.00826	.00460	-.00109
Stddev	.00413	.00452	.00364	.00082	.00054	.00453	.00264
%RSD	281.76	43.304	.82158	152.78	6.5812	98.520	242.23
#1	-.00330	-.01335	.43851	-.00016	.00889	.00897	.00195
#2	.00406	-.01271	.44534	.00033	.00796	.00490	-.00281
#3	.00364	-.00523	.44409	.00143	.00793	-.00007	-.00241
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00066	.01438	-.00014
Stddev	.00142	.00018	.00049
%RSD	215.70	1.2745	349.23
#1	.00072	.01420	-.00057
#2	.00204	.01438	.00039
#3	-.00079	.01457	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8894.1	53345.	2527.6
Stddev	11.3	192.	9.0
%RSD	.12726	.35929	.35499
#1	8903.4	53287.	2524.9
#2	8897.4	53190.	2520.3
#3	8881.5	53560.	2537.6

Approved: June 29, 2016

Sample Name: L1606106815S Acquired: 6/28/2016 13:30:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01034	.48324	.01210	.05173	.03631	.00139	.81008	.00131
Stddev	.00168	.00913	.00454	.00211	.00077	.00002	.05542	.00034
%RSD	16.230	1.8901	37.543	4.0701	2.1243	1.7135	6.8408	26.091
#1	.00951	.48142	.01272	.04933	.03558	.00136	.84100	.00095
#2	.01227	.47515	.00728	.05327	.03711	.00140	.74610	.00163
#3	.00924	.49315	.01631	.05260	.03624	.00141	.84313	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00589	.01431	.01389	.60245	1.2703	.02598	.65226	.02740
Stddev	.00010	.00080	.00059	.02997	.1236	.00403	.12231	.00108
%RSD	1.6235	5.5726	4.2518	4.9754	9.7328	15.510	18.751	3.9595
#1	.00594	.01410	.01335	.62519	1.3214	.03061	.51621	.02751
#2	.00578	.01519	.01452	.61367	1.3602	.02401	.68749	.02626
#3	.00595	.01364	.01381	.56848	1.1293	.02331	.75309	.02842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02529	11.232	.01369	.25676	.01408	.03296	.00670	.76007
Stddev	.00074	.094	.00032	.00264	.00187	.00446	.00542	.01605
%RSD	2.9338	.83344	2.3164	1.0266	13.279	13.535	80.861	2.1112
#1	.02593	11.212	.01335	.25960	.01558	.03663	.00871	.76848
#2	.02547	11.334	.01397	.25627	.01467	.03425	.00057	.77017
#3	.02448	11.150	.01377	.25440	.01199	.02799	.01083	.74157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106815S Acquired: 6/28/2016 13:30:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02563	.03388	.01773	.01091	.02573	.03942	-.00028
Stddev	.00095	.00028	.00659	.00373	.00028	.00077	.00015
%RSD	3.7070	.81921	37.144	34.158	1.0704	1.9567	52.633
#1	.02654	.03356	.02444	.01329	.02542	.03966	-.00019
#2	.02571	.03399	.01750	.01283	.02582	.04004	-.00020
#3	.02465	.03408	.01127	.00662	.02595	.03856	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8867.8	53225.	2534.6
Stddev	20.8	148.	12.1
%RSD	.23412	.27882	.47921
#1	8887.9	53363.	2539.7
#2	8869.1	53068.	2520.7
#3	8846.4	53244.	2543.4

Approved: June 29, 2016

Sample Name: L1606106817SD Acquired: 6/28/2016 13:34:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00954	.55625	.00901	.04561	.03585	.00128	.75307	.00155
Stddev	.00085	.01106	.00306	.00213	.00056	.00014	.01847	.00025
%RSD	8.9440	1.9883	33.996	4.6764	1.5586	11.128	2.4524	16.149
#1	.00901	.54454	.01081	.04442	.03526	.00122	.75451	.00184
#2	.01052	.55769	.01075	.04434	.03593	.00144	.73392	.00139
#3	.00907	.56652	.00547	.04808	.03636	.00118	.77077	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00549	.01478	.01221	.77846	1.4049	.02129	.61217	.02711
Stddev	.00032	.00163	.00076	.01528	.1399	.00335	.01573	.00179
%RSD	5.8665	11.047	6.2537	1.9633	9.9619	15.732	2.5687	6.5920
#1	.00530	.01663	.01247	.78322	1.5650	.02299	.61554	.02504
#2	.00586	.01356	.01135	.79080	1.3061	.02345	.62594	.02816
#3	.00531	.01413	.01280	.76136	1.3434	.01743	.59504	.02812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02377	10.556	.01424	.23784	.01238	.03034	.00363	.87740
Stddev	.00044	.042	.00056	.00722	.00117	.00374	.01030	.00313
%RSD	1.8350	.39963	3.9141	3.0340	9.4640	12.322	283.48	.35703
#1	.02350	10.603	.01488	.24458	.01183	.02602	.00965	.87786
#2	.02427	10.521	.01398	.23870	.01159	.03248	-.00826	.88027
#3	.02354	10.545	.01386	.23023	.01373	.03252	.00951	.87406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106817SD Acquired: 6/28/2016 13:34:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02422	.03180	.02657	.00958	.02469	.04759	-.00024
Stddev	.00037	.00023	.00522	.00222	.00019	.00022	.00034
%RSD	1.5338	.72534	19.663	23.212	.77692	.46605	142.47
#1	.02456	.03201	.02173	.01169	.02478	.04734	.00013
#2	.02383	.03182	.02587	.00726	.02483	.04775	-.00054
#3	.02427	.03156	.03211	.00977	.02447	.04768	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8832.1	53126.	2512.3
Stddev	9.4	250.	6.6
%RSD	.10606	.47116	.26253
#1	8823.5	53414.	2505.6
#2	8830.8	53002.	2518.8
#3	8842.1	52962.	2512.4

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 13:38:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39992	10.123	.40264	.50115	1.0119	.05004	9.9930	.05061
Stddev	.00156	.020	.00072	.00146	.0056	.00004	.0193	.00069
%RSD	.38920	.19439	.17777	.29040	.55589	.08201	.19290	1.3554
#1	.40151	10.135	.40191	.50084	1.0167	.05004	10.012	.05093
#2	.39840	10.100	.40268	.50273	1.0057	.05009	9.9739	.05107
#3	.39986	10.133	.40334	.49987	1.0133	.05000	9.9927	.04982
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20347	.50495	.51127	4.0051	50.272	1.0063	10.156	.50245
Stddev	.00106	.00087	.00229	.0192	.057	.0069	.244	.00203
%RSD	.51854	.17321	.44767	.47891	.11298	.68238	2.4046	.40338
#1	.20248	.50414	.51231	4.0230	50.215	1.0132	9.9480	.50011
#2	.20458	.50482	.51284	4.0074	50.329	1.0062	10.425	.50357
#3	.20337	.50588	.50864	3.9849	50.271	.99951	10.095	.50368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0193	50.359	.50700	10.109	.50281	1.2148	.40917	5.0738
Stddev	.0035	.068	.00168	.015	.00071	.0017	.00995	.0074
%RSD	.34543	.13420	.33213	.14998	.14070	.14140	2.4316	.14602
#1	1.0203	50.417	.50661	10.106	.50215	1.2133	.40239	5.0667
#2	1.0222	50.285	.50884	10.125	.50356	1.2145	.42059	5.0815
#3	1.0154	50.374	.50554	10.095	.50271	1.2167	.40452	5.0731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 13:38:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0180**	**1.0116**	**1.0030**	**.50319**	**1.0036**	**1.0198**	**1.0177**
Stddev	.0017	.0008	.0100	.00318	.0045	.0016	.0066
%RSD	.16741	.07569	.99288	.63294	.45095	.15795	.65127
#1	1.0172	1.0125	1.0037	.50161	.99881	1.0184	1.0253
#2	1.0200	1.0110	1.0126	.50686	1.0078	1.0216	1.0148
#3	1.0168	1.0113	.99273	.50111	1.0043	1.0194	1.0130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8653.4**	**51777.**	**2497.9**
Stddev	13.9	203.	9.7
%RSD	.16072	.39139	.38989
#1	8647.5	52010.	2489.4
#2	8643.5	51649.	2495.7
#3	8669.3	51671.	2508.6

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 13:41:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	.00832	.00025	.00317	.00518	.00001	-.06282	-.00014
Stddev	.00113	.00232	.00379	.00237	.00098	.00007	.02008	.00018
%RSD	108.04	27.826	1523.1	74.803	18.875	1321.3	31.972	135.63
#1	-.00233	.00655	-.00397	.00515	.00475	.00008	-.08510	-.00031
#2	-.00027	.00747	.00339	.00383	.00450	-.00000	-.05722	.00006
#3	-.00052	.01094	.00133	.00054	.00631	-.00006	-.04612	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00005	.00000	.00765	.00800	.00105	.10373	-.00086
Stddev	.00041	.00054	.00032	.02751	.27697	.00210	.06003	.00167
%RSD	129.99	1044.3	24142.	359.43	3464.1	200.86	57.867	194.61
#1	-.00012	.00038	.00002	-.00198	-.22735	.00161	.13805	.00035
#2	.00037	-.00057	-.00033	-.01374	.31321	-.00128	.03442	-.00016
#3	.00069	.00035	.00032	.03868	-.06187	.00280	.13873	-.00277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.01774	-.00085	.00022	-.00383	.00347	-.00358	.01133
Stddev	.00023	.00564	.00091	.00322	.00198	.00075	.00308	.00240
%RSD	290.90	31.796	106.50	1451.8	51.642	21.670	86.137	21.191
#1	-.00018	-.02016	.00006	.00100	-.00507	.00310	-.00378	.01213
#2	.00018	-.01129	-.00176	.00298	-.00155	.00434	-.00040	.00863
#3	.00023	-.02177	-.00087	-.00331	-.00487	.00298	-.00656	.01323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 13:41:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	-.00020	-.00686	-.00117	-.00035	-.00007	-.00004
Stddev	.00093	.00056	.00673	.00291	.00054	.00018	.00058
%RSD	141.43	280.92	98.219	248.99	152.27	240.76	1409.3
#1	-.00040	-.00015	-.00234	.00198	.00011	-.00028	.00057
#2	.00138	-.00079	-.01460	-.00377	-.00094	.00005	-.00012
#3	.00100	.00034	-.00363	-.00172	-.00023	.00001	-.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8739.5	52609.	2487.4
Stddev	5.9	231.	25.7
%RSD	.06776	.43844	1.0317
#1	8738.4	52562.	2473.5
#2	8745.9	52406.	2471.8
#3	8734.2	52860.	2517.0

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/28/2016 13:45:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00736	.19083	.00295	.08111	.01169	.00173	.42567	.00083
Stddev	.00215	.00749	.00324	.00095	.00258	.00011	.07147	.00024
%RSD	29.248	3.9252	110.04	1.1726	22.036	6.3725	16.791	28.962
#1	.00643	.18891	.00590	.08220	.01078	.00161	.36982	.00072
#2	.00982	.19909	.00347	.08061	.01460	.00176	.50622	.00066
#3	.00583	.18448	-.00053	.08050	.00970	.00182	.40099	.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00405	.00421	.00347	.06656	.92169	.09021	.49979	.00778
Stddev	.00018	.00133	.00080	.01156	.07020	.00767	.10689	.00166
%RSD	4.4368	31.559	23.151	17.365	7.6164	8.4978	21.388	21.292
#1	.00387	.00286	.00290	.06880	.84213	.08382	.50249	.00852
#2	.00423	.00426	.00439	.05405	.97492	.09871	.60531	.00893
#3	.00404	.00551	.00313	.07683	.94800	.08810	.39157	.00588
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00824	.40026	.01713	.79167	.00734	.08280	.01420	.83284
Stddev	.00020	.05939	.00016	.00289	.00216	.00238	.00347	.00433
%RSD	2.4033	14.837	.95090	.36532	29.499	2.8801	24.464	.52024
#1	.00846	.37436	.01732	.79217	.00972	.08006	.01171	.83783
#2	.00811	.46821	.01704	.79429	.00549	.08442	.01272	.83000
#3	.00813	.35823	.01704	.78857	.00680	.08392	.01817	.83070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/28/2016 13:45:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41311**	**.04388**	**.02180**	**.15222**	**.00680**	**.01756**	**.04365**
Stddev	.00284	.00364	.00295	.00341	.00126	.00047	.00236
%RSD	.68722	8.3006	13.524	2.2432	18.554	2.6678	5.4105
#1	.41479	.04175	.01857	.15193	.00823	.01804	.04226
#2	.41472	.04809	.02246	.14896	.00635	.01755	.04638
#3	.40984	.04181	.02436	.15577	.00583	.01710	.04231
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8968.0**	**53610.**	**2478.4**
Stddev	17.5	218.	149.1
%RSD	.19522	.40702	6.0172
#1	8968.4	53836.	2571.5
#2	8985.3	53400.	2306.4
#3	8950.3	53594.	2557.4

Approved: June 29, 2016

Sample Name: PBW FB Acquired: 6/28/2016 13:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00087**	**.02038**	**.00047**	**-.00233**	**.00447**	**.00003**	**-.00809**
Stddev	.00077	.01026	.00092	.00070	.00161	.00010	.01414
%RSD	87.875	50.329	198.12	30.080	36.066	351.83	174.83
#1	.00102	.02586	.00110	-.00223	.00426	.00009	.00526
#2	.00004	.02673	.00089	-.00307	.00619	.00008	-.00661
#3	.00155	.00855	-.00059	-.00168	.00298	-.00009	-.02291
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**-.00013**	**-.00021**	**-.00020**	F **-.02980**	**-.06122**	**-.00080**
Stddev	.00011	.00037	.00090	.00203	.05319	.07805	.00227
%RSD	216.97	283.62	430.30	1027.0	178.53	127.49	282.96
#1	.00015	-.00011	-.00112	-.00202	-.00231	-.14344	-.00181
#2	-.00007	-.00051	-.00019	-.00056	.00403	-.05207	.00180
#3	.00007	.00023	.00068	.00199	-.09111	.01185	-.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05348**	**.00154**	**-.00031**	**-.01531**	**-.00101**	**.00072**	F **-.00564**
Stddev	.06861	.00047	.00024	.04577	.00073	.00883	.00089
%RSD	128.29	30.648	76.777	298.97	72.111	1223.2	15.852
#1	-.01835	.00108	-.00025	-.05048	-.00157	.01081	-.00509
#2	.06045	.00202	-.00011	-.03189	-.00019	-.00559	-.00667
#3	.11835	.00153	-.00058	.03644	-.00128	-.00306	-.00516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							225.00
Low Limit							-.00500

Approved: June 29, 2016

Sample Name: PBW FB Acquired: 6/28/2016 13:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	**-.00023**	**-.01671**	**.00024**	**-.00003**	**.00346**	**-.00227**
Stddev	.00348	.00224	.00217	.00048	.00014	.00679	.00206
%RSD	537.23	965.80	12.999	203.88	544.08	196.40	91.144
#1	-.00120	-.00236	-.01904	.00079	-.00017	.00308	-.00056
#2	.00308	.00211	-.01635	-.00008	.00010	.01042	-.00456
#3	-.00382	-.00045	-.01474	-.00000	-.00000	-.00313	-.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00131**	**-.00013**	**-.00037**
Stddev	.00074	.00032	.00054
%RSD	56.570	254.87	146.28
#1	-.00205	.00008	-.00061
#2	-.00057	-.00049	.00025
#3	-.00132	.00003	-.00075
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8902.6**	**52766.**	**2457.8**
Stddev	27.6	121.	33.4
%RSD	.30966	.22861	1.3598
#1	8874.6	52650.	2470.0
#2	8929.8	52756.	2420.0
#3	8903.5	52891.	2483.4

Approved: June 29, 2016

Sample Name: LCSW FB Acquired: 6/28/2016 13:53:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19900**	**5.0246**	**.20339**	**.97761**	**.50424**	**.02444**	**5.1220**	**.02524**
Stddev	.00408	.0181	.00015	.00343	.00078	.00018	.0265	.00018
%RSD	2.0517	.36103	.07344	.35073	.15497	.73251	.51681	.72858
#1	.19842	5.0082	.20346	.97720	.50470	.02423	5.1241	.02527
#2	.20334	5.0441	.20349	.98122	.50468	.02453	5.0945	.02541
#3	.19524	5.0216	.20322	.97440	.50334	.02455	5.1473	.02505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10172**	**.25359**	**.25466**	**1.9566**	**25.129**	**.51169**	**5.0823**	**.24884**
Stddev	.00117	.00149	.00174	.0183	.104	.00398	.0798	.00105
%RSD	1.1545	.58953	.68227	.93432	.41251	.77852	1.5695	.42348
#1	.10256	.25489	.25542	1.9763	25.248	.50761	5.1110	.24940
#2	.10222	.25196	.25590	1.9532	25.076	.51190	4.9922	.24950
#3	.10038	.25391	.25267	1.9402	25.063	.51556	5.1438	.24762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51178**	**25.253**	**.25676**	**4.9088**	**.25422**	**.59597**	**.18860**	**2.4342**
Stddev	.00524	.095	.00268	.0320	.00217	.01042	.00956	.0116
%RSD	1.0231	.37434	1.0420	.65246	.85430	1.7492	5.0693	.47799
#1	.51545	25.322	.25712	4.9122	.25650	.60794	.19825	2.4390
#2	.51410	25.145	.25924	4.9390	.25400	.59103	.17913	2.4426
#3	.50578	25.293	.25392	4.8752	.25217	.58893	.18842	2.4209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW FB Acquired: 6/28/2016 13:53:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50998	.51127	.49771	.25349	.50193	.50932	.00039
Stddev	.00635	.00050	.01112	.00112	.00034	.00540	.00060
%RSD	1.2450	.09829	2.2341	.44241	.06687	1.0610	152.55
#1	.51302	.51172	.51004	.25380	.50215	.51193	.00030
#2	.51424	.51073	.49468	.25443	.50209	.51292	.00103
#3	.50268	.51135	.48843	.25225	.50154	.50310	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9046.0	54533.	2638.4
Stddev	14.1	223.	12.5
%RSD	.15595	.40924	.47439
#1	9051.7	54651.	2624.5
#2	9030.0	54275.	2641.9
#3	9056.5	54672.	2648.8

Approved: June 29, 2016

Sample Name: L1606114201 Acquired: 6/28/2016 13:57:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.05867	-.00226	.01052	.07923	.00004	2.2270	.00045
Stddev	.00191	.00845	.00118	.00102	.00159	.00009	.0352	.00028
%RSD	281.54	14.410	52.249	9.6741	2.0032	236.41	1.5789	62.236
#1	-.00129	.05427	-.00108	.01155	.07914	.00005	2.1919	.00032
#2	.00253	.06842	-.00345	.01051	.07769	.00013	2.2622	.00026
#3	.00079	.05332	-.00227	.00951	.08086	-.00006	2.2269	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00611	.00086	.00022	4.6017	1.0549	.01036	1.7153	.22886
Stddev	.00021	.00091	.00108	.0366	.0934	.00385	.1156	.00109
%RSD	3.3884	105.55	488.55	.79525	8.8568	37.198	6.7381	.47751
#1	.00594	.00065	-.00085	4.5708	1.1252	.00825	1.8224	.23005
#2	.00634	.00008	.00131	4.5921	.94888	.01481	1.7306	.22791
#3	.00605	.00187	.00020	4.6421	1.0906	.00803	1.5928	.22861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	19.649	.00742	.06001	.00256	.00190	-.00560	15.630
Stddev	.00025	.047	.00125	.00498	.00162	.00400	.00341	.024
%RSD	36.725	.24068	16.819	8.3002	62.980	210.77	60.813	.15501
#1	.00039	19.680	.00649	.06119	.00330	-.00159	-.00593	15.642
#2	.00086	19.594	.00884	.05455	.00071	.00627	-.00204	15.602
#3	.00077	19.673	.00692	.06430	.00368	.00102	-.00884	15.646
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606114201 Acquired: 6/28/2016 13:57:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.04045	.00831	-.00411	-.00073	.00996	-.00035
Stddev	.00045	.00014	.00359	.00080	.00037	.00006	.00052
%RSD	311.96	.33991	43.132	19.576	51.383	.64259	148.00
#1	.00050	.04035	.00782	-.00352	-.00043	.00996	.00021
#2	-.00036	.04061	.01212	-.00378	-.00114	.01002	-.00081
#3	.00029	.04040	.00500	-.00502	-.00061	.00990	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9162.3	55345.	2645.7
Stddev	10.7	90.	11.1
%RSD	.11628	.16311	.41823
#1	9165.6	55439.	2634.7
#2	9171.0	55259.	2656.9
#3	9150.4	55338.	2645.6

Approved: June 29, 2016

Sample Name: L1606114203 Acquired: 6/28/2016 14:01:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.27324	.00028	.01119	.05232	.00009	6.9241	.00031
Stddev	.00101	.00614	.00251	.00136	.00133	.00010	.0879	.00018
%RSD	266.07	2.2463	905.28	12.143	2.5487	105.81	1.2689	57.110
#1	-.00028	.27239	.00087	.01128	.05314	.00018	6.9787	.00052
#2	-.00013	.27976	.00243	.00979	.05078	-.00001	6.8228	.00022
#3	.00154	.26758	-.00247	.01250	.05303	.00011	6.9709	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.00109	.00195	3.8878	1.4786	.00534	1.2697	.19674
Stddev	.00032	.00129	.00126	.0500	.0652	.00341	.0789	.00271
%RSD	41.154	117.52	64.945	1.2853	4.4076	63.859	6.2160	1.3769
#1	.00045	.00238	.00086	3.9201	1.4084	.00927	1.1830	.19458
#2	.00080	-.00019	.00334	3.8303	1.4901	.00355	1.2887	.19586
#3	.00109	.00110	.00164	3.9131	1.5372	.00319	1.3374	.19978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	4.0555	.00376	.09011	.00040	.00452	.00674	5.1074
Stddev	.00026	.0801	.00092	.00618	.00366	.00529	.00378	.0076
%RSD	43.606	1.9741	24.497	6.8539	912.10	116.99	56.046	.14975
#1	.00088	4.1283	.00348	.09257	-.00281	.00886	.01094	5.1157
#2	.00053	3.9698	.00480	.08308	-.00037	-.00137	.00566	5.1006
#3	.00037	4.0683	.00302	.09467	.00438	.00607	.00362	5.1060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606114203 Acquired: 6/28/2016 14:01:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.05564	.00818	-.00403	.00143	.00405	-.00066
Stddev	.00051	.00078	.00097	.00126	.00045	.00015	.00091
%RSD	99.768	1.3964	11.885	31.161	31.303	3.6828	139.20
#1	.00041	.05588	.00755	-.00404	.00187	.00404	-.00037
#2	.00106	.05477	.00930	-.00277	.00145	.00420	.00008
#3	.00006	.05627	.00769	-.00529	.00097	.00390	-.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9201.0	55505.	2656.0
Stddev	2.7	216.	28.0
%RSD	.02917	.38837	1.0526
#1	9204.0	55434.	2638.8
#2	9200.5	55334.	2688.3
#3	9198.7	55747.	2641.0

Approved: June 29, 2016

Sample Name: L1606114205 Acquired: 6/28/2016 14:05:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.29510	-.00399	.00877	.05188	-.00004	6.7570	.00011
Stddev	.00067	.00175	.00127	.00194	.00134	.00008	.0441	.00013
%RSD	252.45	.59391	31.797	22.120	2.5800	189.17	.65263	119.13
#1	.00002	.29353	-.00540	.01064	.05066	-.00012	6.7835	.00001
#2	.00022	.29699	-.00295	.00677	.05331	-.00003	6.7815	.00005
#3	-.00104	.29478	-.00362	.00890	.05166	.00003	6.7061	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00134	.00069	3.9328	1.3894	.00419	1.1700	.19925
Stddev	.00032	.00079	.00081	.0387	.1354	.00230	.0806	.00367
%RSD	36.699	59.423	117.74	.98304	9.7482	54.930	6.8871	1.8408
#1	.00124	.00156	.00082	3.9719	1.3019	.00307	1.2435	.19866
#2	.00081	.00045	-.00018	3.9318	1.5454	.00266	1.0838	.19590
#3	.00060	.00199	.00142	3.8946	1.3208	.00683	1.1826	.20317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	3.8918	.00306	.08988	-.00133	.00008	.00151	5.0348
Stddev	.00026	.0463	.00151	.00143	.00236	.00278	.01136	.0439
%RSD	31.031	1.1889	49.164	1.5872	177.57	3618.7	749.90	.87231
#1	.00109	3.8662	.00383	.09149	.00045	.00019	-.00515	5.0503
#2	.00058	3.8641	.00133	.08876	-.00400	.00280	.01463	5.0688
#3	.00081	3.9452	.00403	.08939	-.00043	-.00276	-.00494	4.9852
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606114205 Acquired: 6/28/2016 14:05:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.05416	.00822	-.00288	.00086	.00400	.00007
Stddev	.00016	.00040	.00287	.00338	.00029	.00007	.00049
%RSD	21.082	.73417	34.929	117.45	33.623	1.7284	732.53
#1	.00096	.05384	.01137	.00094	.00052	.00392	.00060
#2	.00065	.05403	.00754	-.00410	.00104	.00406	-.00038
#3	.00071	.05460	.00574	-.00548	.00100	.00401	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9201.1	55778.	2648.2
Stddev	37.4	65.	11.1
%RSD	.40596	.11714	.41951
#1	9204.5	55810.	2639.2
#2	9236.6	55821.	2660.6
#3	9162.1	55702.	2644.7

Approved: June 29, 2016

Sample Name: L1606117701 Acquired: 6/28/2016 14:08:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.02633	.00391	.09124	.00216	-.00001	.04445	.00021
Stddev	.00357	.00399	.00273	.00180	.00064	.00008	.02994	.00017
%RSD	633.00	15.134	69.874	1.9731	29.489	753.28	67.370	80.852
#1	.00209	.02913	.00092	.08925	.00161	-.00006	.02918	.00014
#2	-.00351	.02177	.00451	.09276	.00286	.00008	.02521	.00041
#3	.00311	.02809	.00628	.09171	.00201	-.00005	.07895	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00061	.00088	-.00762	.14322	.00304	.00749	-.00130
Stddev	.00014	.00092	.00010	.01515	.07780	.00086	.11866	.00374
%RSD	135.34	149.59	11.631	198.87	54.324	28.196	1585.3	287.00
#1	-.00026	.00164	.00082	.00409	.16832	.00379	.14380	.00278
#2	-.00007	.00031	.00100	-.00221	.20536	.00324	-.04864	-.00213
#3	.00002	-.00012	.00083	-.02474	.05596	.00210	-.07270	-.00457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00618	114.73	-.00098	.00713	-.00154	-.00199	-.00540	4.0889
Stddev	.00069	.24	.00089	.00359	.00371	.00107	.00275	.0405
%RSD	11.161	.20894	90.679	50.357	240.96	53.790	50.915	.99133
#1	.00671	114.98	-.00155	.00652	.00272	-.00177	-.00432	4.1112
#2	.00642	114.51	.00004	.00389	-.00331	-.00316	-.00853	4.1134
#3	.00540	114.71	-.00143	.01099	-.00403	-.00105	-.00335	4.0421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117701 Acquired: 6/28/2016 14:08:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00090**	**.00049**	**-.00033**	**-.00039**	**.00002**	**.04431**	**-.00003**
Stddev	.00033	.00085	.00164	.00116	.00035	.00083	.00029
%RSD	37.100	171.33	490.65	296.81	2057.2	1.8684	1114.3
#1	.00128	-.00025	.00001	.00095	-.00011	.04496	-.00018
#2	.00068	.00031	.00110	-.00114	-.00025	.04459	-.00021
#3	.00074	.00142	-.00212	-.00098	.00042	.04338	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8994.7**	**53956.**	**2615.7**
Stddev	16.7	185.	5.8
%RSD	.18524	.34302	.22052
#1	9004.1	53789.	2622.2
#2	8975.4	53925.	2611.4
#3	9004.5	54155.	2613.3

Approved: June 29, 2016

Sample Name: L1606117702S Acquired: 6/28/2016 14:12:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18856**	**4.8322**	**.19823**	**1.0372**	**.48497**	**.02389**	**4.8901**	**.02419**
Stddev	.00126	.0224	.00385	.0034	.00200	.00009	.0917	.00033
%RSD	.66628	.46355	1.9424	.32332	.41215	.38786	1.8745	1.3800
#1	.18738	4.8110	.20072	1.0333	.48716	.02398	4.9959	.02380
#2	.18843	4.8299	.20017	1.0396	.48325	.02391	4.8365	.02440
#3	.18988	4.8556	.19379	1.0386	.48450	.02379	4.8378	.02436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09773**	**.24028**	**.24429**	**1.9433**	**24.096**	**.49868**	**4.8729**	**.24053**
Stddev	.00042	.00128	.00172	.0409	.182	.00260	.0127	.00377
%RSD	.42582	.53446	.70316	2.1030	.75545	.52233	.26047	1.5680
#1	.09729	.23949	.24430	1.9193	24.200	.50110	4.8876	.23932
#2	.09777	.23959	.24600	1.9905	24.203	.49592	4.8649	.23751
#3	.09812	.24176	.24257	1.9202	23.886	.49901	4.8663	.24476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49903**	**133.30**	**.24372**	**4.7766**	**.24190**	**.58145**	**.19108**	**6.2503**
Stddev	.00177	.44	.00088	.0144	.00430	.00207	.00466	.0076
%RSD	.35510	.32916	.36129	.30177	1.7763	.35588	2.4370	.12137
#1	.49709	133.73	.24391	4.7678	.23751	.58233	.19481	6.2453
#2	.50057	133.32	.24450	4.7933	.24610	.58293	.19258	6.2590
#3	.49944	132.86	.24276	4.7689	.24208	.57908	.18586	6.2464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117702S Acquired: 6/28/2016 14:12:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49123**	**.49119**	**.47597**	**.23865**	**.48318**	**.53456**	**.00014**
Stddev	.00207	.00091	.01591	.00292	.00064	.00399	.00041
%RSD	.42144	.18556	3.3435	1.2227	.13247	.74582	297.24
#1	.48887	.49089	.46600	.23578	.48356	.53549	.00061
#2	.49273	.49048	.49433	.24161	.48244	.53800	-.00012
#3	.49210	.49222	.46759	.23856	.48353	.53019	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9062.2**	**54261.**	**2652.5**
Stddev	15.4	248.	3.2
%RSD	.16948	.45726	.12250
#1	9046.5	54417.	2651.6
#2	9063.0	54391.	2649.8
#3	9077.1	53975.	2656.1

Approved: June 29, 2016

Sample Name: L1606117703SD Acquired: 6/28/2016 14:16:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19356**	**4.9188**	**.20421**	**1.0578**	**.49216**	**.02440**	**4.9691**	**.02479**
Stddev	.00895	.1866	.00113	.0433	.00110	.00088	.0385	.00041
%RSD	4.6250	3.7942	.55157	4.0894	.22408	3.5915	.77489	1.6672
#1	.18329	4.7033	.20392	1.0080	.49332	.02338	4.9851	.02437
#2	.19968	5.0258	.20546	1.0792	.49113	.02490	4.9252	.02481
#3	.19771	5.0273	.20327	1.0862	.49201	.02491	4.9970	.02520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10078**	**.24659**	**.25170**	**1.9836**	**24.515**	**.50071**	**4.9089**	**.24206**
Stddev	.00071	.00855	.00324	.0197	.194	.00317	.0729	.00081
%RSD	.70462	3.4653	1.2865	.99364	.79032	.63278	1.4848	.33473
#1	.09996	.23678	.24814	1.9956	24.736	.50021	4.8669	.24188
#2	.10125	.25241	.25448	1.9609	24.376	.50410	4.8667	.24135
#3	.10112	.25058	.25247	1.9944	24.433	.49782	4.9931	.24294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51266**	**134.43**	**.24903**	**4.8929**	**.24866**	**.59669**	**.19110**	**6.3693**
Stddev	.00471	.21	.00178	.0290	.00195	.00618	.00196	.0537
%RSD	.91932	.15842	.71645	.59312	.78413	1.0357	1.0265	.84288
#1	.50722	134.58	.24697	4.8597	.24684	.59011	.19121	6.3079
#2	.51547	134.19	.24998	4.9131	.25072	.59760	.19300	6.3927
#3	.51529	134.54	.25013	4.9060	.24842	.60237	.18908	6.4074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117703SD Acquired: 6/28/2016 14:16:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50534	.49778	.47860	.24351	.49461	.54919	.00063
Stddev	.00438	.00222	.00954	.00352	.02044	.00714	.00039
%RSD	.86690	.44590	1.9934	1.4471	4.1324	1.2998	61.841
#1	.50028	.49612	.47958	.23954	.47101	.54095	.00098
#2	.50788	.49692	.46861	.24475	.50647	.55304	.00021
#3	.50786	.50030	.48762	.24625	.50636	.55358	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8931.1	53527.	2625.0
Stddev	64.6	1463.	5.1
%RSD	.72334	2.7322	.19309
#1	9005.7	55214.	2624.2
#2	8895.3	52620.	2620.4
#3	8892.4	52747.	2630.5

Approved: June 29, 2016

Sample Name: L1606118501 Acquired: 6/28/2016 14:20:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.01981**	**.00181**	**.02105**	**.20719**	**-.00013**	**36.631**	**-.00001**
Stddev	.00036	.00473	.00377	.00300	.00054	.00006	.042	.00033
%RSD	398.51	23.884	207.88	14.263	.26264	47.225	.11494	2546.0
#1	-.00016	.01435	-.00154	.02364	.20768	-.00019	36.658	.00036
#2	-.00041	.02230	.00590	.01776	.20660	-.00012	36.653	-.00025
#3	.00030	.02278	.00108	.02176	.20727	-.00007	36.583	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00085**	**.00210**	**.31623**	**1.4446**	**.01015**	**11.970**	**.18513**
Stddev	.00005	.00052	.00100	.01586	.0492	.00660	.209	.00173
%RSD	16.614	61.255	47.788	5.0151	3.4040	64.996	1.7496	.93595
#1	-.00038	.00138	.00318	.33404	1.4096	.01149	12.203	.18396
#2	-.00030	.00083	.00192	.30365	1.5008	.01598	11.910	.18712
#3	-.00028	.00034	.00120	.31100	1.4233	.00299	11.797	.18431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**4.4335**	**-.00023**	**.01231**	**-.00295**	**.00236**	**-.00468**	**4.3495**
Stddev	.00021	.0505	.00048	.00514	.00078	.00525	.00740	.0503
%RSD	43.336	1.1395	208.73	41.760	26.533	222.86	158.18	1.1577
#1	.00045	4.4850	.00005	.01702	-.00294	-.00332	-.00133	4.3685
#2	.00031	4.4315	.00005	.01308	-.00218	.00703	-.01316	4.3876
#3	.00073	4.3840	-.00078	.00682	-.00375	.00336	.00045	4.2924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606118501 Acquired: 6/28/2016 14:20:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.11439	-.00457	-.00192	-.00064	.00598	-.00008
Stddev	.00103	.00003	.00727	.00266	.00040	.00009	.00041
%RSD	320.31	.02290	159.11	138.96	63.165	1.5139	518.32
#1	.00044	.11442	-.01291	.00082	-.00076	.00593	-.00003
#2	-.00076	.11438	.00037	-.00206	-.00019	.00608	-.00051
#3	.00129	.11438	-.00116	-.00451	-.00097	.00592	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9080.6	54899.	2621.2
Stddev	26.5	80.	9.7
%RSD	.29154	.14617	.37101
#1	9071.9	54981.	2610.3
#2	9059.5	54897.	2628.8
#3	9110.3	54820.	2624.7

Approved: June 29, 2016

Sample Name: L1606118502 Acquired: 6/28/2016 14:24:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00183	.01781	-.00212	.01875	.20094	-.00005	36.701	.00026
Stddev	.00200	.00542	.00366	.00101	.00099	.00005	.201	.00011
%RSD	109.47	30.421	172.60	5.3632	.49395	109.70	.54766	41.230
#1	-.00099	.01285	-.00403	.01780	.20067	-.00004	36.930	.00018
#2	-.00038	.01699	-.00444	.01864	.20204	-.00010	36.622	.00038
#3	-.00412	.02359	.00210	.01980	.20011	-.00000	36.552	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	-.00029	.00156	-.00426	1.2802	.01013	12.015	.03565
Stddev	.00024	.00202	.00090	.01892	.1572	.00074	.100	.00090
%RSD	112.56	697.40	58.083	443.63	12.278	7.3510	.83356	2.5284
#1	-.00005	.00204	.00230	.01500	1.4475	.01081	12.082	.03464
#2	.00042	-.00155	.00182	-.02282	1.1357	.00933	11.900	.03639
#3	.00026	-.00136	.00055	-.00497	1.2574	.01025	12.063	.03591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	4.3567	.00008	.01630	.00178	.00663	.00318	4.3819
Stddev	.00047	.0319	.00036	.00510	.00496	.00405	.01096	.0031
%RSD	39.998	.73095	427.54	31.262	278.16	61.058	344.17	.06952
#1	.00164	4.3274	-.00016	.01074	-.00009	.00272	.01572	4.3834
#2	.00071	4.3906	.00050	.02076	.00741	.01080	-.00457	4.3838
#3	.00116	4.3521	-.00009	.01740	-.00197	.00638	-.00160	4.3783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606118502 Acquired: 6/28/2016 14:24:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.11567	-.00542	-.00245	-.00068	.00475	-.00073
Stddev	.00075	.00034	.00321	.00261	.00124	.00014	.00075
%RSD	138.82	.29531	59.328	106.53	183.90	3.0145	102.93
#1	.00127	.11569	-.00887	-.00098	-.00123	.00461	-.00010
#2	-.00024	.11600	-.00251	-.00547	-.00155	.00490	-.00156
#3	.00060	.11532	-.00488	-.00091	.00075	.00475	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9004.4	54315.	2596.8
Stddev	6.0	163.	7.5
%RSD	.06714	.30096	.28851
#1	8998.9	54182.	2588.9
#2	9003.4	54266.	2597.7
#3	9010.9	54497.	2603.8

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 14:27:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40478**	**10.178**	**.40422**	**.50272**	**1.0182**	**.05010**	**10.117**	**.05116**
Stddev	.00143	.039	.00189	.00370	.0036	.00010	.084	.00013
%RSD	.35403	.38613	.46653	.73542	.35070	.20789	.83028	.24807
#1	.40641	10.169	.40280	.50476	1.0158	.05021	10.021	.05130
#2	.40420	10.144	.40349	.49845	1.0223	.05006	10.175	.05112
#3	.40372	10.221	.40636	.50495	1.0166	.05001	10.156	.05105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20477**	**.50603**	**.51383**	**4.0435**	**50.597**	**1.0187**	**10.217**	**.50703**
Stddev	.00037	.00132	.00209	.0422	.398	.0115	.070	.00204
%RSD	.18089	.26016	.40633	1.0446	.78750	1.1266	.68585	.40329
#1	.20497	.50590	.51513	4.0309	50.226	1.0132	10.286	.50533
#2	.20499	.50478	.51142	4.0906	51.018	1.0319	10.145	.50646
#3	.20434	.50740	.51493	4.0091	50.545	1.0110	10.219	.50930
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0275**	**51.068**	**.51117**	**10.186**	**.50920**	**1.2210**	**.40575**	**5.1330**
Stddev	.0029	.260	.00076	.004	.00283	.0039	.00479	.0071
%RSD	.28249	.50917	.14897	.03557	.55508	.32091	1.1813	.13907
#1	1.0300	50.879	.51205	10.187	.50593	1.2169	.40023	5.1345
#2	1.0243	51.364	.51075	10.181	.51093	1.2247	.40878	5.1252
#3	1.0281	50.959	.51071	10.188	.51072	1.2213	.40825	5.1392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 14:27:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0262**	**1.0196**	**1.0035**	**.51029**	**1.0039**	**1.0274**	**1.0303**
Stddev	.0014	.0055	.0092	.00045	.0019	.0011	.0016
%RSD	.13372	.54345	.91866	.08898	.18612	.10889	.15402
#1	1.0260	1.0143	1.0059	.51073	1.0034	1.0271	1.0321
#2	1.0249	1.0254	1.0113	.51031	1.0024	1.0265	1.0292
#3	1.0277	1.0193	.99336	.50982	1.0060	1.0287	1.0296
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8845.5**	**52891.**	**2530.2**
Stddev	13.0	259.	2.3
%RSD	.14752	.48995	.09114
#1	8830.5	52920.	2531.0
#2	8853.6	53135.	2531.9
#3	8852.5	52619.	2527.6

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 14:31:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.01926	-.00013	.00341	.00468	-.00000	-.05543	-.00005
Stddev	.00124	.00642	.00202	.00053	.00158	.00004	.03472	.00018
%RSD	221.71	33.309	1579.8	15.620	33.778	1830.7	62.635	343.75
#1	.00075	.01319	-.00158	.00365	.00623	.00003	-.09510	-.00016
#2	-.00077	.01863	.00218	.00379	.00307	-.00005	-.04067	-.00015
#3	.00170	.02597	-.00098	.00280	.00476	.00001	-.03054	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	-.00003	.00065	-.03110	.00840	.00435	.07075	-.00353
Stddev	.00025	.00039	.00086	.05263	.04476	.00220	.05753	.00211
%RSD	170.85	1476.6	131.66	169.21	533.20	50.700	81.315	59.738
#1	-.00012	.00034	.00149	-.04084	-.04327	.00596	.13712	-.00186
#2	.00038	.00001	-.00022	-.07818	.03553	.00184	.03511	-.00590
#3	.00018	-.00043	.00068	.02571	.03293	.00525	.04002	-.00283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	-.00211	-.00140	.00654	-.00110	.00555	-.00142	.01151
Stddev	.00020	.02131	.00149	.00778	.00433	.00338	.00909	.00299
%RSD	53.690	1009.3	106.58	118.96	393.61	60.927	639.97	25.955
#1	.00016	.01887	-.00251	.00779	-.00569	.00828	-.01172	.01441
#2	.00056	-.02373	.00030	-.00179	-.00050	.00177	.00552	.01167
#3	.00042	-.00147	-.00200	.01362	.00290	.00661	.00193	.00844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 14:31:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00035	.00367	-.00382	-.00046	-.00011	.00019
Stddev	.00063	.00026	.00803	.00073	.00113	.00004	.00026
%RSD	443.88	75.185	218.90	19.094	247.43	37.683	132.20
#1	.00085	.00054	-.00558	-.00315	.00076	-.00006	-.00004
#2	-.00032	.00005	.00769	-.00370	-.00064	-.00014	.00015
#3	-.00011	.00044	.00889	-.00460	-.00149	-.00012	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8886.0	53560.	2532.4
Stddev	4.5	43.	39.0
%RSD	.05032	.07981	1.5390
#1	8890.3	53608.	2500.9
#2	8881.4	53525.	2520.3
#3	8886.2	53548.	2576.0

Approved: June 29, 2016

Sample Name: L1606118503 Acquired: 6/28/2016 14:35:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00202	.02161	.00180	.02007	.23617	-.00001	40.887	.00011
Stddev	.00099	.00769	.00222	.00262	.00121	.00007	.146	.00021
%RSD	48.705	35.578	123.21	13.077	.51256	1215.3	.35637	192.07
#1	.00244	.01680	.00349	.01716	.23640	.00004	41.054	-.00012
#2	.00090	.03047	.00262	.02077	.23725	-.00009	40.826	.00018
#3	.00273	.01755	-.00071	.02227	.23486	.00003	40.782	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.00109	.00511	.34655	1.1428	.00647	13.092	.53400
Stddev	.00026	.00045	.00092	.03444	.1788	.00519	.108	.00237
%RSD	72.904	41.467	17.980	9.9383	15.642	80.280	.82692	.44381
#1	-.00021	.00100	.00602	.30680	1.3477	.01159	13.138	.53641
#2	-.00065	.00158	.00418	.36745	1.0183	.00121	13.170	.53167
#3	-.00020	.00069	.00514	.36540	1.0626	.00661	12.968	.53391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	4.1492	-.00102	.01805	-.00349	.00349	.00192	5.3671
Stddev	.00011	.0311	.00076	.00623	.00340	.00523	.01036	.0746
%RSD	21.373	.74966	74.891	34.520	97.453	149.86	540.47	1.3897
#1	.00064	4.1661	-.00189	.02426	.00044	.00952	-.00363	5.3789
#2	.00041	4.1681	-.00053	.01807	-.00541	.00085	.01386	5.4352
#3	.00054	4.1133	-.00063	.01180	-.00550	.00011	-.00448	5.2874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606118503 Acquired: 6/28/2016 14:35:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.13606	.00942	-.00266	-.00026	.00502	-.00020
Stddev	.00060	.00122	.00692	.00135	.00016	.00014	.00047
%RSD	357.61	.89434	73.452	50.899	63.957	2.8606	234.85
#1	-.00048	.13568	.00705	-.00366	-.00039	.00516	-.00074
#2	.00030	.13742	.01721	-.00112	-.00030	.00503	.00008
#3	.00069	.13508	.00399	-.00321	-.00007	.00487	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8985.1	54141.	2607.5
Stddev	68.9	113.	9.9
%RSD	.76704	.20860	.37944
#1	8959.9	54010.	2596.2
#2	8932.3	54202.	2614.5
#3	9063.1	54210.	2611.9

Approved: June 29, 2016

Sample Name: L1606118504 Acquired: 6/28/2016 14:39:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00281	.01231	-.00378	.01715	.18396	.00002	39.241	.00007
Stddev	.00284	.01379	.00266	.00198	.00123	.00005	.068	.00012
%RSD	101.00	111.99	70.399	11.565	.67073	292.22	.17321	167.01
#1	.00318	.00084	-.00177	.01844	.18277	.00007	39.281	-.00007
#2	.00544	.00848	-.00679	.01486	.18523	-.00001	39.279	.00017
#3	-.00020	.02761	-.00277	.01813	.18389	-.00001	39.162	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00041	.00009	.02781	1.1592	.00635	12.544	.03306
Stddev	.00039	.00039	.00050	.00876	.0640	.00197	.136	.00335
%RSD	188.82	92.921	540.86	31.508	5.5188	31.058	1.0804	10.119
#1	.00008	.00055	.00066	.03789	1.2110	.00841	12.549	.02924
#2	-.00064	.00071	-.00009	.02355	1.1790	.00616	12.405	.03545
#3	-.00005	-.00002	-.00029	.02200	1.0877	.00448	12.676	.03450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	4.1142	-.00138	.00594	-.00243	.00156	-.00599	5.1014
Stddev	.00034	.0254	.00175	.00327	.00106	.00331	.00095	.0198
%RSD	45.159	.61799	126.82	55.033	43.497	212.54	15.883	.38751
#1	.00078	4.1406	-.00335	.00906	-.00309	.00514	-.00609	5.1189
#2	.00107	4.1121	-.00000	.00254	-.00299	-.00138	-.00499	5.1053
#3	.00040	4.0899	-.00079	.00621	-.00121	.00092	-.00688	5.0799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606118504 Acquired: 6/28/2016 14:39:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.13051	.00208	-.00195	-.00027	.00509	.00059
Stddev	.00121	.00032	.00140	.00224	.00072	.00006	.00068
%RSD	369.81	.24768	67.178	114.92	265.56	1.1916	116.72
#1	-.00071	.13048	.00143	.00041	-.00103	.00516	.00001
#2	.00166	.13085	.00368	-.00404	-.00020	.00504	.00040
#3	.00003	.13021	.00112	-.00222	.00041	.00508	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9024.1	54546.	2625.6
Stddev	23.0	44.	4.3
%RSD	.25529	.08000	.16349
#1	9001.2	54496.	2624.5
#2	9023.7	54565.	2622.0
#3	9047.3	54578.	2630.4

Approved: June 29, 2016

Sample Name: L1606122801 Acquired: 6/28/2016 14:43:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.05529	-.00070	.36414	.30012	-.00001	46.892	.00009
Stddev	.00151	.00695	.00227	.00169	.00185	.00017	.188	.00014
%RSD	346.68	12.576	323.44	.46322	.61527	1421.4	.40185	155.59
#1	.00087	.04779	-.00274	.36355	.29800	-.00020	46.812	.00026
#2	-.00009	.06153	-.00112	.36605	.30092	.00002	46.756	-.00001
#3	-.00208	.05656	.00175	.36283	.30142	.00014	47.107	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00032	.00146	.30139	.17266	.01007	27.595	.49689
Stddev	.00012	.00126	.00054	.02974	.11841	.00327	.189	.00972
%RSD	91.374	395.93	36.671	9.8684	68.580	32.469	.68458	1.9568
#1	.00001	-.00006	.00093	.33490	.15184	.00696	27.710	.49002
#2	.00013	-.00071	.00200	.27814	.30010	.01348	27.377	.49263
#3	.00024	.00172	.00146	.29113	.06604	.00977	27.698	.50801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	237.01	-.00001	.02821	-.00020	.00213	-.00175	7.7102
Stddev	.00031	.46	.00127	.00726	.00178	.00151	.00237	.2440
%RSD	83.135	.19280	12415.	25.738	882.16	71.025	135.79	3.1645
#1	.00029	236.67	.00144	.02218	.00151	.00387	-.00385	7.8512
#2	.00072	236.84	-.00093	.03627	-.00204	.00139	.00083	7.8510
#3	.00012	237.53	-.00054	.02617	-.00007	.00113	-.00222	7.4285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606122801 Acquired: 6/28/2016 14:43:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.34455**	**-.00087**	**-.00253**	**-.00056**	**.00291**	**.00028**
Stddev	.00021	.00144	.00857	.00209	.00024	.00016	.00019
%RSD	2796.0	.41714	985.87	82.630	43.945	5.4136	67.279
#1	-.00004	.34469	.00782	-.00199	-.00033	.00306	.00007
#2	-.00020	.34305	-.00111	-.00076	-.00082	.00291	.00033
#3	.00021	.34591	-.00931	-.00484	-.00053	.00275	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8828.3**	**52599.**	**2598.8**
Stddev	14.2	203.	6.7
%RSD	.16104	.38684	.25611
#1	8812.1	52510.	2599.4
#2	8834.0	52831.	2605.2
#3	8838.8	52454.	2591.9

Approved: June 29, 2016

Sample Name: L1606122802 Acquired: 6/28/2016 14:47:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.24773	.00384	.73133	.01985	-.00002	122.11
Stddev	.00047	.00814	.00183	.00266	.00172	.00008	.32
%RSD	59.094	3.2873	47.707	.36367	8.6676	533.02	.26379
#1	.00082	.25291	.00446	.72855	.02000	.00007	122.07
#2	.00127	.25194	.00178	.73385	.01805	-.00009	121.80
#3	.00032	.23835	.00528	.73160	.02148	-.00002	122.44
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00061	.00364	.00024	.13406	2.9490	.06033
Stddev	.00015	.00056	.00089	.00194	.02548	.0972	.00576
%RSD	117.68	90.548	24.400	804.45	19.009	3.2942	9.5438
#1	.00004	.00114	.00268	.00118	.11925	2.9091	.05431
#2	-.00018	.00003	.00380	-.00199	.16349	2.8781	.06090
#3	-.00025	.00067	.00443	.00154	.11945	3.0597	.06579
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	83.351	.00470	.00909	F 494.48	.00080	.00391	-.00095
Stddev	.200	.00054	.00063	6.35	.00043	.00506	.00498
%RSD	.23940	11.426	6.9165	1.2837	54.026	129.43	524.42
#1	83.122	.00411	.00921	489.88	.00098	.00975	-.00345
#2	83.439	.00515	.00964	491.83	.00112	.00093	.00479
#3	83.491	.00484	.00840	501.72	.00031	.00104	-.00419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606122802 Acquired: 6/28/2016 14:47:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00358	.01899	6.7737	-.00038	1.8734	-.00742	-.00303
Stddev	.00218	.00536	.3560	.00123	.0049	.00344	.00249
%RSD	60.879	28.229	5.2554	326.02	.26130	46.410	82.258
#1	.00385	.01350	6.9788	.00081	1.8729	-.00828	-.00125
#2	.00128	.02421	6.9797	-.00164	1.8688	-.01034	-.00196
#3	.00562	.01925	6.3627	-.00030	1.8786	-.00362	-.00587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00623	.00598	.00041
Stddev	.00042	.00040	.00025
%RSD	6.8000	6.6498	61.221
#1	.00579	.00621	.00070
#2	.00628	.00620	.00024
#3	.00663	.00552	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8633.2	51179.	2574.8
Stddev	3.5	175.	6.3
%RSD	.04019	.34160	.24339
#1	8636.7	51327.	2574.2
#2	8629.7	50986.	2581.4
#3	8633.1	51225.	2568.9

Approved: June 29, 2016

Sample Name: L1606122803 Acquired: 6/28/2016 14:50:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.70132	.00035	.02798	.05264	.00002	26.376	.00018
Stddev	.00162	.00440	.00311	.00147	.00140	.00003	.041	.00006
%RSD	184.77	.62782	894.60	5.2466	2.6558	152.86	.15454	34.633
#1	-.00094	.70274	-.00320	.02633	.05125	.00004	26.414	.00011
#2	.00141	.70484	.00260	.02849	.05405	-.00002	26.380	.00021
#3	.00217	.69638	.00165	.02913	.05261	.00004	26.333	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00205	.00225	.73691	10.431	.00316	4.0316	.01712
Stddev	.00044	.00223	.00120	.04104	.098	.00487	.0254	.00164
%RSD	87.419	109.09	53.600	5.5690	.94063	154.18	.63069	9.5496
#1	.00051	.00418	.00086	.72309	10.533	.00879	4.0148	.01636
#2	.00006	-.00027	.00302	.78307	10.423	.00024	4.0190	.01900
#3	.00093	.00223	.00287	.70456	10.338	.00045	4.0608	.01601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	3.6299	.00133	1.2655	.00018	.00234	-.00022	8.3262
Stddev	.00034	.0325	.00036	.0046	.00169	.00165	.00811	.0240
%RSD	44.819	.89431	26.962	.36391	940.84	70.433	3610.5	.28865
#1	.00046	3.6655	.00158	1.2659	-.00144	.00203	.00041	8.3324
#2	.00114	3.6221	.00149	1.2607	.00004	.00412	-.00863	8.3466
#3	.00071	3.6020	.00092	1.2699	.00194	.00087	.00755	8.2997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606122803 Acquired: 6/28/2016 14:50:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.16996	-.00049	-.00267	.00668	.02497	.00072
Stddev	.00041	.00057	.00459	.00213	.00167	.00013	.00052
%RSD	349.75	.33502	936.91	79.854	24.954	.51527	71.969
#1	-.00021	.16934	-.00062	-.00249	.00555	.02487	.00102
#2	-.00002	.17046	-.00501	-.00489	.00860	.02512	.00012
#3	.00058	.17007	.00416	-.00063	.00589	.02492	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9083.7	54994.	2625.8
Stddev	32.1	280.	15.6
%RSD	.35308	.50892	.59429
#1	9098.6	54788.	2630.5
#2	9105.6	54881.	2608.4
#3	9046.9	55313.	2638.5

Approved: June 29, 2016

Sample Name: L1606123101 Acquired: 6/28/2016 14:54:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00130	.03358	.00504	.10022	.06249	-.00004	40.181
Stddev	.00232	.01017	.00297	.00077	.00087	.00007	.051
%RSD	178.17	30.295	58.852	.77176	1.3950	168.73	.12715
#1	-.00102	.02445	.00772	.10047	.06331	.00000	40.179
#2	.00086	.04455	.00186	.09935	.06257	-.00012	40.233
#3	-.00374	.03174	.00554	.10084	.06157	-.00000	40.131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00050	.00076	.00060	.30063	.48774	.01354
Stddev	.00020	.00048	.00020	.00057	.02412	.07259	.00046
%RSD	61.093	95.301	26.045	94.150	8.0217	14.882	3.3817
#1	.00041	.00018	.00054	.00046	.32254	.40562	.01388
#2	.00010	.00105	.00083	.00012	.27479	.51432	.01372
#3	.00049	.00027	.00092	.00123	.30457	.54330	.01302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.461	.03824	.00059	F 356.14	.00012	.01554	-.00275
Stddev	.028	.00192	.00017	.68	.00104	.00351	.00164
%RSD	.11535	5.0184	29.467	.19191	857.75	22.597	59.838
#1	24.458	.03687	.00073	356.91	.00045	.01950	-.00190
#2	24.490	.03740	.00063	355.90	-.00104	.01431	-.00464
#3	24.434	.04043	.00040	355.61	.00096	.01280	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606123101 Acquired: 6/28/2016 14:54:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00131	7.6287	-.00030	.19994	.00193	-.00240
Stddev	.00444	.00542	.0664	.00070	.00063	.00368	.00183
%RSD	1440.4	414.59	.87064	236.14	.31690	190.57	76.335
#1	-.00481	.00201	7.6562	.00049	.19949	.00094	-.00434
#2	.00299	.00635	7.6769	-.00085	.19966	-.00115	-.00216
#3	.00274	-.00443	7.5529	-.00053	.20066	.00600	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01511	.00218	.00108
Stddev	.00115	.00003	.00059
%RSD	7.6271	1.5101	54.589
#1	.01378	.00217	.00040
#2	.01567	.00214	.00135
#3	.01587	.00221	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8764.2	51928.	2582.3
Stddev	13.1	149.	6.1
%RSD	.14999	.28773	.23656
#1	8779.2	52076.	2575.3
#2	8754.5	51777.	2586.0
#3	8759.0	51929.	2585.7

Approved: June 29, 2016

Sample Name: L1606123701 Acquired: 6/28/2016 14:58:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.86220	.00030	.02608	.10905	.00003	34.347	.00012
Stddev	.00174	.00170	.00301	.00186	.00127	.00006	.194	.00018
%RSD	564.65	.19754	1005.2	7.1209	1.1623	218.75	.56366	147.95
#1	-.00044	.86036	.00377	.02779	.11041	.00007	34.570	-.00000
#2	-.00093	.86249	-.00168	.02410	.10791	.00007	34.244	.00004
#3	.00230	.86373	-.00119	.02634	.10883	-.00004	34.227	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00221	.00193	1.0236	4.3467	.00729	4.7415	.08453
Stddev	.00030	.00072	.00043	.0191	.1897	.00550	.1021	.00257
%RSD	57.812	32.448	22.265	1.8647	4.3649	75.413	2.1527	3.0439
#1	.00031	.00244	.00238	1.0286	4.3693	.01127	4.7874	.08637
#2	.00087	.00279	.00153	1.0397	4.5240	.00960	4.8126	.08159
#3	.00039	.00141	.00188	1.0025	4.1466	.00102	4.6246	.08563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	6.7097	.00118	.75592	.00235	.00295	-.00415	8.7205
Stddev	.00023	.0742	.00086	.00849	.00308	.00098	.01006	.0164
%RSD	20.336	1.1057	73.223	1.1232	131.32	33.198	242.49	.18770
#1	.00107	6.7845	.00024	.76557	.00254	.00408	.00346	8.7339
#2	.00140	6.7083	.00193	.74963	-.00083	.00246	-.01555	8.7254
#3	.00096	6.6362	.00135	.75255	.00533	.00232	-.00036	8.7023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123701 Acquired: 6/28/2016 14:58:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.11631	.00910	.00032	.00557	.01002	.00056
Stddev	.00036	.00123	.00292	.00117	.00030	.00021	.00026
%RSD	527.06	1.0585	32.124	361.94	5.3880	2.1043	46.899
#1	.00026	.11720	.01159	-.00065	.00522	.01006	.00074
#2	-.00045	.11490	.00984	-.00001	.00572	.01021	.00069
#3	-.00001	.11683	.00588	.00162	.00576	.00979	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9045.5	54231.	2595.0
Stddev	15.9	47.	9.4
%RSD	.17556	.08717	.36382
#1	9027.4	54250.	2589.5
#2	9057.2	54265.	2589.7
#3	9051.8	54177.	2605.9

Approved: June 29, 2016

Sample Name: L1606123702 Acquired: 6/28/2016 15:02:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.35806	.00336	.05941	.10822	.00002	46.389	.00046
Stddev	.00125	.00967	.00137	.00155	.00090	.00006	.192	.00013
%RSD	482.05	2.7000	40.919	2.6148	.82997	317.17	.41342	27.749
#1	.00170	.36784	.00416	.05847	.10724	.00007	46.592	.00034
#2	-.00055	.34851	.00177	.05857	.10841	.00004	46.363	.00060
#3	-.00037	.35782	.00414	.06121	.10900	-.00005	46.212	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00145	-.00046	.00560	.25357	4.1249	.00811	8.4816	.40128
Stddev	.00040	.00126	.00080	.02259	.0851	.00405	.1416	.00234
%RSD	27.841	272.27	14.300	8.9081	2.0630	49.986	1.6691	.58357
#1	.00190	-.00083	.00652	.27800	4.0582	.00353	8.6301	.40195
#2	.00111	-.00150	.00510	.24927	4.2207	.01125	8.4664	.39868
#3	.00135	.00094	.00517	.23344	4.0957	.00953	8.3482	.40322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00897	49.739	.00323	1.1073	-.00122	.00595	-.00099	5.6031
Stddev	.00051	.226	.00083	.0035	.00339	.00416	.00714	.0065
%RSD	5.6716	.45382	25.644	.31913	277.57	69.947	722.21	.11513
#1	.00839	49.978	.00408	1.1111	.00163	.00612	-.00288	5.6106
#2	.00931	49.708	.00243	1.1068	-.00033	.01001	-.00699	5.5999
#3	.00922	49.530	.00318	1.1041	-.00497	.00170	.00691	5.5990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123702 Acquired: 6/28/2016 15:02:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**.20899**	**-.00484**	**-.00144**	**.01646**	**.01361**	**.00051**
Stddev	.00087	.00138	.00675	.00158	.00136	.00002	.00021
%RSD	203.97	.66158	139.51	109.79	8.2556	.18253	41.907
#1	-.00125	.21009	.00106	-.00321	.01502	.01359	.00038
#2	-.00051	.20944	-.00337	-.00019	.01772	.01362	.00039
#3	.00048	.20744	-.01221	-.00091	.01665	.01364	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8952.5**	**53938.**	**2591.9**
Stddev	13.8	60.	26.8
%RSD	.15432	.11034	1.0332
#1	8944.8	53877.	2561.4
#2	8944.3	53996.	2602.6
#3	8968.5	53941.	2611.7

Approved: June 29, 2016

Sample Name: L1606123703 Acquired: 6/28/2016 15:06:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.59752	.00235	.05887	.10953	.00010	45.449	.00061
Stddev	.00188	.01442	.00188	.00217	.00084	.00004	.107	.00021
%RSD	196.78	2.4125	80.080	3.6777	.76588	42.343	.23638	33.550
#1	.00313	.58363	.00149	.05668	.11041	.00011	45.572	.00080
#2	-.00012	.59652	.00451	.05892	.10874	.00014	45.399	.00039
#3	-.00015	.61241	.00105	.06101	.10945	.00006	45.375	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00197	.00107	.00451	.49836	4.3315	.00593	8.2564	.42750
Stddev	.00043	.00053	.00112	.03371	.0594	.00283	.1112	.00160
%RSD	21.959	49.735	24.752	6.7645	1.3702	47.678	1.3470	.37326
#1	.00240	.00061	.00515	.52558	4.3292	.00740	8.1328	.42566
#2	.00199	.00166	.00515	.50884	4.2733	.00773	8.3484	.42847
#3	.00153	.00095	.00322	.46065	4.3920	.00267	8.2880	.42838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00832	48.038	.00480	1.1170	.00156	.00449	.00211	5.9008
Stddev	.00018	.210	.00083	.0297	.00244	.00459	.00289	.1999
%RSD	2.1323	.43630	17.412	2.6556	156.67	102.18	136.97	3.3885
#1	.00840	48.278	.00408	1.1340	.00424	.00399	.00211	5.9955
#2	.00811	47.891	.00571	1.1343	.00096	.00932	.00500	6.0359
#3	.00843	47.944	.00459	1.0828	-.00053	.00018	-.00078	5.6711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123703 Acquired: 6/28/2016 15:06:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.20626	.00356	-.00259	.01810	.01007	.00072
Stddev	.00090	.00051	.00462	.00066	.00064	.00040	.00057
%RSD	217.27	.24848	129.94	25.342	3.5305	4.0008	79.254
#1	-.00027	.20622	-.00030	-.00198	.01883	.01026	.00015
#2	.00008	.20577	.00229	-.00252	.01778	.01034	.00071
#3	.00144	.20680	.00868	-.00328	.01768	.00961	.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8956.7	54106.	2597.5
Stddev	12.8	517.	14.5
%RSD	.14242	.95624	.55787
#1	8942.2	54146.	2581.2
#2	8966.2	54602.	2609.0
#3	8961.7	53569.	2602.4

Approved: June 29, 2016

Sample Name: L1606123704 Acquired: 6/28/2016 15:10:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.30584	.00022	.07806	.04631	-.00007	86.838	.00042
Stddev	.00185	.00268	.00345	.00265	.00063	.00003	.629	.00015
%RSD	374.03	.87790	1532.5	3.3999	1.3692	39.237	.72380	35.608
#1	.00256	.30452	-.00375	.07670	.04704	-.00006	87.235	.00033
#2	-.00102	.30893	.00199	.08111	.04591	-.00004	86.113	.00033
#3	-.00005	.30407	.00243	.07636	.04597	-.00010	87.164	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00311	.00019	.19183	1.3796	.02014	16.870	.00347
Stddev	.00041	.00038	.00119	.02141	.0940	.00375	.172	.00343
%RSD	112.87	12.382	625.05	11.160	6.8113	18.636	1.0218	99.013
#1	.00069	.00287	-.00117	.18943	1.4866	.02403	16.673	.00364
#2	.00049	.00289	.00103	.17172	1.3417	.01985	16.946	.00681
#3	-.00010	.00355	.00071	.21434	1.3105	.01654	16.992	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	124.13	.00130	.01394	-.00088	.00294	-.00088	8.2953
Stddev	.00049	.75	.00059	.00298	.00182	.00383	.00750	.1384
%RSD	85.759	.60252	45.422	21.349	207.01	130.44	850.09	1.6682
#1	.00111	124.41	.00134	.01734	-.00106	.00099	-.00390	8.4027
#2	.00013	123.28	.00069	.01271	-.00260	.00735	.00766	8.3442
#3	.00050	124.70	.00187	.01178	.00102	.00047	-.00640	8.1392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123704 Acquired: 6/28/2016 15:10:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.35168	-.01564	-.00152	.00864	.00392	.00056
Stddev	.00088	.00194	.00581	.00323	.00030	.00024	.00024
%RSD	61.207	.55033	37.169	212.41	3.4817	6.0324	43.195
#1	.00222	.35267	-.01694	-.00180	.00893	.00407	.00065
#2	.00162	.34945	-.00929	.00184	.00864	.00404	.00075
#3	.00048	.35293	-.02070	-.00461	.00833	.00365	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8830.3	52874.	2585.9
Stddev	30.5	305.	19.1
%RSD	.34580	.57739	.73803
#1	8801.9	53154.	2563.9
#2	8862.6	52918.	2596.7
#3	8826.4	52548.	2597.1

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 15:14:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42851	10.904	.43202	.53365	1.0713	.05416	10.632	.05436
Stddev	.00833	.207	.00698	.01060	.0092	.00113	.051	.00087
%RSD	1.9443	1.8987	1.6150	1.9855	.86162	2.0806	.48126	1.5946
#1	.43201	10.956	.42597	.53474	1.0624	.05432	10.627	.05433
#2	.43451	11.081	.43965	.54367	1.0708	.05520	10.583	.05525
#3	.41900	10.676	.43045	.52256	1.0808	.05296	10.685	.05351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21691	.54305	.54534	4.2422	53.589	1.0743	10.753	.53540
Stddev	.00265	.01079	.00663	.0250	.605	.0074	.243	.00955
%RSD	1.2229	1.9867	1.2161	.58983	1.1288	.68793	2.2611	1.7829
#1	.21785	.54548	.54617	4.2292	53.055	1.0693	10.485	.52508
#2	.21896	.55241	.55152	4.2264	53.466	1.0707	10.814	.54392
#3	.21391	.53125	.53833	4.2711	54.246	1.0827	10.959	.53721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0888	53.402	.54101	10.808	.54113	1.2945	.42478	5.4312
Stddev	.0125	.411	.00747	.101	.00400	.0128	.00597	.0423
%RSD	1.1472	.76993	1.3802	.93509	.73884	.98633	1.4059	.77953
#1	1.0938	53.143	.54400	10.826	.54038	1.2910	.42653	5.4334
#2	1.0980	53.187	.54652	10.899	.54546	1.3087	.42968	5.4724
#3	1.0746	53.876	.53251	10.699	.53757	1.2839	.41813	5.3878
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 15:14:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0880**	**1.0698**	**1.0587**	**.53918**	**1.0803**	**1.0912**	**1.0905**
Stddev	.0165	.0081	.0156	.00244	.0234	.0149	.0071
%RSD	1.5142	.75461	1.4705	.45291	2.1646	1.3620	.64790
#1	1.0951	1.0636	1.0407	.54192	1.0838	1.0967	1.0880
#2	1.0997	1.0668	1.0667	.53723	1.1018	1.1025	1.0984
#3	1.0692	1.0789	1.0686	.53839	1.0554	1.0744	1.0849
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8324.0**	**49682.**	**2402.2**
Stddev	17.8	544.	12.3
%RSD	.21421	1.0943	.51191
#1	8331.2	49629.	2414.5
#2	8303.7	49167.	2402.2
#3	8337.1	50251.	2389.9

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 15:17:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.02128**	**-.00359**	**.00020**	**.00645**	**.00016**	**.03104**	**-.00001**
Stddev	.00368	.00954	.00134	.00133	.00115	.00007	.03317	.00021
%RSD	2417.2	44.820	37.242	679.78	17.837	43.650	106.87	1643.1
#1	.00382	.03228	-.00217	-.00019	.00525	.00009	.04970	-.00011
#2	-.00083	.01540	-.00483	.00168	.00754	.00023	-.00726	.00022
#3	-.00345	.01615	-.00378	-.00090	.00658	.00016	.05067	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00009**	**.00060**	**-.00539**	**.06178**	**.00365**	**.11492**	**-.00042**
Stddev	.00027	.00249	.00114	.03062	.06298	.00114	.06730	.00281
%RSD	19519.	2863.7	188.91	568.14	101.95	31.357	58.557	670.16
#1	-.00023	-.00274	.00064	-.03327	.02851	.00462	.17314	-.00124
#2	-.00006	.00029	.00173	-.01028	.13442	.00395	.13040	-.00273
#3	.00029	.00220	-.00056	.02738	.02240	.00239	.04124	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.01334**	**-.00085**	**.00345**	**-.00265**	**-.00015**	**-.00929**	**.01410**
Stddev	.00037	.04028	.00161	.01368	.00462	.00549	.00635	.00099
%RSD	1184.4	301.84	190.56	396.12	174.30	3544.8	68.343	7.0250
#1	-.00012	-.03144	-.00246	-.00423	-.00155	.00467	-.00204	.01504
#2	.00038	.02488	.00077	.01925	.00132	.00100	-.01384	.01419
#3	-.00035	.04660	-.00085	-.00466	-.00772	-.00613	-.01201	.01306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 15:17:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00073**	**.00052**	**-.00203**	**-.00342**	**.00076**	**-.00006**	**-.00039**
Stddev	.00127	.00033	.00700	.00165	.00110	.00011	.00067
%RSD	172.70	63.242	344.78	48.219	143.65	179.28	173.07
#1	.00181	.00076	.00234	-.00524	.00041	-.00010	.00036
#2	.00105	.00064	.00167	-.00201	.00199	.00006	-.00094
#3	-.00066	.00015	-.01010	-.00302	-.00011	-.00014	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8189.4**	**49088.**	**2337.5**
Stddev	22.9	596.	43.0
%RSD	.28011	1.2145	1.8391
#1	8163.8	49132.	2317.2
#2	8196.5	48471.	2308.4
#3	8208.0	49661.	2386.9

Approved: June 29, 2016

Sample Name: L1606123705 Acquired: 6/28/2016 15:21:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00108	.04623	.00085	.21038	.07029	.00001	79.469	.00017
Stddev	.00222	.00535	.00227	.00117	.00065	.00009	.518	.00002
%RSD	204.79	11.577	266.22	.55809	.91995	677.50	.65241	13.277
#1	-.00065	.04058	.00026	.21146	.07103	.00002	80.066	.00020
#2	.00089	.05122	-.00106	.20913	.06992	.00010	79.135	.00015
#3	-.00348	.04691	.00336	.21054	.06991	-.00008	79.206	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.00131	.00140	.02187	.23359	.01641	19.643	.17357
Stddev	.00058	.00117	.00106	.01644	.12348	.00424	.180	.00442
%RSD	62.558	89.144	75.582	75.195	52.861	25.842	.91849	2.5439
#1	.00116	.00119	.00047	.03944	.34002	.01444	19.847	.17668
#2	.00027	.00021	.00119	.01931	.26254	.02128	19.578	.16852
#3	.00135	.00254	.00256	.00685	.09821	.01352	19.504	.17552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00508	130.27	.00168	.03531	-.00111	.00448	.00147	6.5007
Stddev	.00041	.61	.00031	.00544	.00373	.00088	.00174	.0441
%RSD	8.1653	.46503	18.265	15.412	336.79	19.641	118.95	.67865
#1	.00460	130.96	.00141	.03231	-.00538	.00518	.00241	6.5208
#2	.00530	130.06	.00163	.04159	.00057	.00349	.00254	6.5312
#3	.00533	129.80	.00202	.03203	.00149	.00478	-.00055	6.4501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123705 Acquired: 6/28/2016 15:21:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.29132**	**-.00812**	**-.00078**	**.00450**	**.01669**	**.00021**
Stddev	.00083	.00110	.00185	.00384	.00049	.00043	.00026
%RSD	188.82	.37699	22.765	492.55	10.842	2.5630	124.73
#1	-.00001	.29259	-.00799	-.00430	.00476	.01696	.00036
#2	-.00139	.29065	-.00634	.00332	.00394	.01692	-.00009
#3	.00009	.29073	-.01003	-.00136	.00481	.01620	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8582.9**	**51393.**	**2509.2**
Stddev	5.4	178.	27.4
%RSD	.06333	.34690	1.0927
#1	8588.2	51452.	2477.8
#2	8577.3	51534.	2521.9
#3	8583.3	51192.	2528.0

Approved: June 29, 2016

Sample Name: L1606123706 Acquired: 6/28/2016 15:25:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.05590	-.00086	.15524	.06415	.00015	38.707	.00004
Stddev	.00068	.00750	.00333	.00467	.00118	.00008	.048	.00037
%RSD	120.74	13.417	386.55	3.0061	1.8367	51.500	.12271	1019.0
#1	.00007	.06166	.00220	.16020	.06535	.00010	38.737	-.00020
#2	-.00048	.05862	-.00037	.15094	.06300	.00024	38.653	-.00015
#3	-.00127	.04742	-.00441	.15457	.06411	.00011	38.732	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00124	.00088	.04193	.59026	.01156	14.181	.00907
Stddev	.00030	.00041	.00134	.00712	.11627	.00296	.079	.00052
%RSD	1211.0	33.302	152.35	16.990	19.697	25.640	.55724	5.7259
#1	-.00010	.00169	.00098	.03411	.69162	.00926	14.090	.00959
#2	.00031	.00116	-.00051	.04804	.46334	.01050	14.233	.00905
#3	-.00028	.00087	.00216	.04365	.61583	.01490	14.220	.00856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01006	117.62	.00066	.02208	-.00217	.00519	-.00038	5.6043
Stddev	.00042	.67	.00047	.00386	.00193	.00564	.00551	.1074
%RSD	4.2259	.57374	71.751	17.493	88.780	108.55	1433.6	1.9158
#1	.01015	118.19	.00038	.02111	-.00386	-.00129	.00182	5.6411
#2	.01043	116.87	.00039	.02633	-.00257	.00795	-.00666	5.6884
#3	.00959	117.78	.00120	.01879	-.00007	.00892	.00368	5.4833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123706 Acquired: 6/28/2016 15:25:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.22497**	**-.00316**	**-.00133**	**.00900**	**.00431**	**-.00007**
Stddev	.00019	.00151	.00967	.00273	.00049	.00016	.00052
%RSD	80.655	.67150	306.39	204.69	5.4393	3.8183	767.12
#1	-.00029	.22594	-.01079	-.00244	.00856	.00434	.00052
#2	-.00002	.22323	.00772	.00177	.00890	.00446	-.00046
#3	-.00038	.22574	-.00641	-.00334	.00952	.00413	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8541.3**	**51659.**	**2526.2**
Stddev	32.8	370.	23.2
%RSD	.38388	.71629	.91927
#1	8579.1	51926.	2501.9
#2	8523.7	51815.	2548.1
#3	8521.0	51237.	2528.6

Approved: June 29, 2016

Sample Name: L1606123801 Acquired: 6/28/2016 15:29:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.02841	.00066	.32177	.09038	.00009	100.82	.00016
Stddev	.00404	.00560	.00333	.00725	.00172	.00003	.53	.00014
%RSD	31331.	19.726	502.38	2.2540	1.9010	27.369	.52928	84.386
#1	.00443	.03482	.00403	.31699	.08868	.00012	100.36	.00001
#2	-.00348	.02597	.00059	.33011	.09211	.00007	101.41	.00028
#3	-.00099	.02444	-.00263	.31820	.09034	.00009	100.71	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00165	-.00011	.04282	.34758	.02236	50.725	.10043
Stddev	.00006	.00110	.00050	.02588	.08170	.00650	.406	.00197
%RSD	8.7231	66.713	438.66	60.445	23.504	29.071	.80019	1.9636
#1	.00069	.00189	-.00059	.04711	.25812	.02918	50.261	.10255
#2	.00060	.00261	-.00015	.01506	.41822	.02165	51.011	.09864
#3	.00070	.00045	.00040	.06629	.36641	.01624	50.904	.10012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	135.14	-.00138	.02281	.00531	.00297	-.00440	7.8806
Stddev	.00015	.52	.00074	.00601	.00255	.00266	.00697	.1292
%RSD	39.646	.38483	53.444	26.359	47.957	89.611	158.44	1.6396
#1	.00055	134.83	-.00221	.02166	.00433	.00262	-.00926	7.9875
#2	.00030	135.74	-.00109	.01746	.00340	.00579	-.00753	7.9174
#3	.00028	134.84	-.00083	.02932	.00820	.00050	.00359	7.7370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123801 Acquired: 6/28/2016 15:29:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.69804**	**-.01792**	**-.00350**	**.00631**	**.00306**	**-.00006**
Stddev	.00089	.00322	.00937	.00240	.00064	.00010	.00062
%RSD	534.48	.46184	52.294	68.655	10.123	3.4173	981.45
#1	.00078	.69567	-.02467	-.00611	.00575	.00313	.00007
#2	-.00029	.70171	-.00722	-.00301	.00700	.00294	.00048
#3	-.00098	.69675	-.02186	-.00138	.00616	.00311	-.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8519.0**	**50868.**	**2492.0**
Stddev	24.4	171.	15.6
%RSD	.28672	.33552	.62561
#1	8492.6	50879.	2508.7
#2	8523.7	50692.	2489.6
#3	8540.8	51032.	2477.8

Approved: June 29, 2016

Sample Name: L1606123802 Acquired: 6/28/2016 15:33:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.10980	.00392	.94724	.02557	.00003	77.218
Stddev	.00183	.00971	.00125	.00776	.00106	.00007	.742
%RSD	329.00	8.8394	31.885	.81970	4.1264	245.57	.96108
#1	-.00056	.11256	.00341	.95373	.02525	.00004	76.910
#2	.00128	.11783	.00534	.94934	.02472	.00009	76.680
#3	-.00238	.09902	.00300	.93864	.02675	-.00005	78.065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00030	.00389	-.00035	.22634	2.6762	.04857
Stddev	.00016	.00014	.00093	.00186	.01305	.0714	.00761
%RSD	84.843	47.925	23.820	529.18	5.7658	2.6678	15.667
#1	.00027	.00025	.00485	-.00233	.22844	2.6021	.05624
#2	.00000	.00019	.00379	-.00009	.23821	2.6819	.04845
#3	.00030	.00046	.00301	.00137	.21237	2.7445	.04102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	46.632	.00252	.01010	F 345.47	-.00062	.00983	-.00176
Stddev	.509	.00191	.00020	2.85	.00048	.00266	.00080
%RSD	1.0915	75.779	1.9903	.82504	77.205	27.047	45.354
#1	46.118	.00384	.01033	344.78	-.00007	.00722	-.00125
#2	46.641	.00339	.00999	343.03	-.00083	.00973	-.00135
#3	47.136	.00033	.00998	348.60	-.00097	.01254	-.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606123802 Acquired: 6/28/2016 15:33:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00328**	**.00554**	**6.7719**	**-.00021**	**1.5406**	**-.01434**	**-.00073**
Stddev	.00167	.00590	.0156	.00147	.0167	.00367	.00386
%RSD	50.891	106.49	.22993	707.84	1.0842	25.593	526.75
#1	.00142	-.00114	6.7795	.00002	1.5371	-.01055	-.00140
#2	.00377	.01005	6.7823	-.00177	1.5260	-.01461	.00342
#3	.00466	.00771	6.7540	.00113	1.5588	-.01787	-.00422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01112**	**.00460**	**.00044**
Stddev	.00050	.00012	.00055
%RSD	4.4846	2.6197	123.27
#1	.01110	.00466	.00008
#2	.01163	.00446	.00107
#3	.01063	.00468	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8395.4**	**49805.**	**2522.8**
Stddev	34.6	239.	37.5
%RSD	.41206	.48030	1.4877
#1	8419.9	49616.	2519.8
#2	8410.5	49725.	2561.7
#3	8355.9	50074.	2486.8

Approved: June 29, 2016

Sample Name: L1606123801PS Acquired: 6/28/2016 15:37:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574350-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20566**	**5.2613**	**.20977**	**1.3242**	**.59672**	**.02593**	**94.859**	**.02633**
Stddev	.00128	.0235	.00601	.0130	.00240	.00012	.490	.00065
%RSD	.62377	.44726	2.8645	.98473	.40146	.45189	.51690	2.4555
#1	.20632	5.2753	.21194	1.3337	.59396	.02581	94.339	.02662
#2	.20419	5.2745	.21440	1.3296	.59799	.02605	94.923	.02678
#3	.20649	5.2342	.20298	1.3094	.59822	.02592	95.313	.02559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10300**	**.26033**	**.25484**	**2.0703**	**26.313**	**.53993**	**50.042**	**.34483**
Stddev	.00282	.00213	.00508	.0309	.165	.00242	.323	.00158
%RSD	2.7370	.81790	1.9951	1.4940	.62590	.44906	.64515	.45837
#1	.10411	.26128	.25729	2.0499	26.123	.54130	49.789	.34643
#2	.10509	.26182	.25823	2.0552	26.411	.54136	49.932	.34327
#3	.09979	.25789	.24899	2.1059	26.406	.53713	50.406	.34477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53067**	**146.32**	**.25190**	**5.2586**	**.25990**	**.62316**	**.19247**	**9.5907**
Stddev	.01382	.46	.00596	.1176	.00198	.01383	.00658	.1798
%RSD	2.6034	.31765	2.3647	2.2364	.76171	2.1199	3.4177	1.8743
#1	.53819	146.01	.25439	5.3290	.26193	.63457	.18659	9.6888
#2	.53909	146.08	.25620	5.3239	.25979	.62714	.19124	9.7000
#3	.51472	146.85	.24510	5.1228	.25797	.60777	.19957	9.3832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123801PS Acquired: 6/28/2016 15:37:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574350-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52525**	**1.1214**	**.49433**	**.25598**	**.53086**	**.51942**	**.00057**
Stddev	.01294	.0042	.01033	.00462	.00191	.01218	.00063
%RSD	2.4638	.36967	2.0899	1.8038	.35889	2.3458	110.78
#1	.53113	1.1189	.48240	.25460	.53295	.52541	.00036
#2	.53421	1.1192	.49999	.26112	.53042	.52746	.00007
#3	.51041	1.1262	.50059	.25220	.52921	.50540	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8305.6**	**49994.**	**2441.9**
Stddev	60.9	85.	13.6
%RSD	.73304	.17028	.55805
#1	8315.5	49940.	2454.5
#2	8240.4	49950.	2443.9
#3	8360.9	50092.	2427.4

Approved: June 29, 2016

Sample Name: L1606123801SDL Acquired: 6/28/2016 15:40:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574350-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.02473**	**-.00212**	**.07147**	**.02347**	**.00005**	**20.928**
Stddev	.00109	.00054	.00149	.00334	.00066	.00008	.186
%RSD	959.81	2.1896	70.454	4.6683	2.8226	151.78	.88836
#1	-.00121	.02419	-.00043	.06839	.02351	.00006	20.873
#2	.00098	.02528	-.00266	.07501	.02410	-.00003	20.775
#3	-.00011	.02472	-.00327	.07101	.02278	.00013	21.135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00020**	**.00129**	**-.00091**	F **-.02170**	**.07079**	**.00330**
Stddev	.00020	.00019	.00149	.00070	.02117	.10620	.00513
%RSD	152.92	96.557	115.37	76.358	97.585	150.02	155.31
#1	.00028	.00042	-.00040	-.00157	-.03475	.08932	-.00056
#2	-.00010	.00010	.00240	-.00018	-.03307	.16651	.00912
#3	.00022	.00008	.00187	-.00098	.00273	-.04346	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.841**	**.01654**	**-.00003**	**27.860**	**.00069**	**.00399**	**-.00141**
Stddev	.023	.00153	.00042	.220	.00116	.00351	.00048
%RSD	.21249	9.2697	1543.8	.79051	169.21	87.841	33.856
#1	10.864	.01533	-.00031	27.785	-.00065	.00007	-.00151
#2	10.840	.01604	-.00023	27.686	.00126	.00682	-.00183
#3	10.818	.01827	.00046	28.107	.00145	.00508	-.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606123801SDL Acquired: 6/28/2016 15:40:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574350-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00343**	**-.00608**	**1.6380**	**-.00029**	**.14366**	**-.00165**	**-.00327**
Stddev	.00269	.01052	.1152	.00086	.00186	.00409	.00319
%RSD	78.400	173.02	7.0326	294.81	1.2945	248.67	97.486
#1	.00612	-.01199	1.7682	-.00089	.14229	.00192	-.00269
#2	.00074	.00606	1.5494	.00069	.14292	-.00612	-.00041
#3	.00343	-.01230	1.5964	-.00067	.14578	-.00074	-.00670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00179**	**.00210**	**-.00083**
Stddev	.00019	.00035	.00068
%RSD	10.525	16.568	81.540
#1	.00157	.00187	-.00059
#2	.00190	.00193	-.00160
#3	.00189	.00250	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8980.6**	**51089.**	**2404.2**
Stddev	513.4	106.	3.2
%RSD	5.7168	.20814	.13357
#1	8390.5	50977.	2401.4
#2	9324.8	51188.	2403.4
#3	9226.6	51103.	2407.7

Approved: June 29, 2016

Sample Name: L1606123801SDL Acquired: 6/28/2016 15:44:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574350-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.00544	-.00466	.01306	.00527	.00004	3.9791	-.00005
Stddev	.00192	.00294	.00175	.00317	.00104	.00003	.0275	.00007
%RSD	192.17	54.006	37.652	24.284	19.652	67.711	.69174	155.22
#1	.00265	.00880	-.00547	.01616	.00425	.00007	3.9526	.00002
#2	.00146	.00337	-.00586	.01321	.00523	.00005	4.0075	-.00005
#3	-.00111	.00414	-.00264	.00982	.00632	.00001	3.9771	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00008	.00135	.00570	-.18715	-.00195	2.1695	.00167
Stddev	.00035	.00105	.00042	.01759	.08574	.00312	.1088	.00211
%RSD	329.62	1341.6	31.025	308.32	45.816	160.03	5.0156	125.86
#1	-.00043	-.00123	.00169	-.01195	-.20685	-.00263	2.0731	-.00042
#2	.00026	.00020	.00088	.02322	-.26133	.00145	2.2875	.00379
#3	-.00015	.00080	.00149	.00585	-.09327	-.00466	2.1479	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	5.4403	-.00105	.00422	.00008	.00091	-.00076	.31889
Stddev	.00014	.0432	.00018	.00137	.00143	.00279	.00380	.00752
%RSD	53.477	.79435	17.170	32.493	1733.1	305.96	502.20	2.3587
#1	-.00039	5.4024	-.00085	.00350	-.00067	.00351	.00289	.31022
#2	-.00012	5.4873	-.00118	.00336	.00173	.00127	-.00470	.32275
#3	-.00026	5.4311	-.00114	.00580	-.00081	-.00204	-.00046	.32370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123801SDL Acquired: 6/28/2016 15:44:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574350-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.02709**	**-.00343**	**.00004**	**-.00020**	**.00057**	**-.00020**
Stddev	.00007	.00027	.00150	.00159	.00059	.00007	.00002
%RSD	30.681	.98959	43.744	4248.5	287.84	11.467	11.328
#1	-.00016	.02726	-.00241	.00171	.00045	.00064	-.00022
#2	-.00025	.02722	-.00516	-.00145	-.00070	.00056	-.00019
#3	-.00030	.02678	-.00273	-.00015	-.00037	.00051	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9310.6**	**56752.**	**2686.9**
Stddev	63.1	308.	17.7
%RSD	.67723	.54199	.65719
#1	9346.3	56469.	2690.1
#2	9347.7	57079.	2667.9
#3	9237.8	56710.	2702.7

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 15:48:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37803**	**9.4509**	**.37927**	**.47338**	**.93970**	**.04711**	**9.3479**	**.04781**
Stddev	.00060	.0265	.00353	.00198	.00337	.00046	.0483	.00035
%RSD	.15821	.28063	.93117	.41832	.35812	.97758	.51686	.74077
#1	.37812	9.4602	.37661	.47340	.93759	.04659	9.2929	.04782
#2	.37857	9.4210	.38328	.47139	.94358	.04729	9.3677	.04744
#3	.37739	9.4716	.37792	.47535	.93794	.04746	9.3833	.04815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19084**	**.47601**	**.47860**	**3.7082**	**47.404**	**.94988**	**9.4725**	**.46603**
Stddev	.00018	.00437	.00180	.0182	.243	.00785	.0656	.00569
%RSD	.09392	.91738	.37524	.49034	.51322	.82606	.69243	1.2217
#1	.19064	.47138	.47677	3.7162	47.463	.95871	9.4046	.45960
#2	.19097	.47661	.48036	3.6874	47.613	.94719	9.5356	.47043
#3	.19092	.48005	.47868	3.7211	47.137	.94372	9.4773	.46806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95641**	**46.996**	**.47435**	**9.5039**	**.47492**	**1.1385**	**.37881**	**4.7730**
Stddev	.00103	.185	.00298	.0141	.00194	.0048	.00807	.0182
%RSD	.10794	.39464	.62734	.14807	.40903	.42443	2.1306	.38085
#1	.95599	46.794	.47098	9.4895	.47674	1.1343	.37621	4.7554
#2	.95758	47.158	.47546	9.5046	.47515	1.1438	.38785	4.7720
#3	.95565	47.035	.47662	9.5176	.47288	1.1374	.37235	4.7917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 15:48:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95895**	**.93858**	**.93355**	**.47987**	**.94590**	**.95388**	**.94289**
Stddev	.00233	.00125	.00061	.00084	.00826	.00045	.00708
%RSD	.24329	.13351	.06579	.17523	.87309	.04728	.75040
#1	.95863	.93915	.93330	.48029	.94284	.95418	.93557
#2	.95678	.93945	.93311	.48041	.93960	.95408	.94341
#3	.96142	.93715	.93425	.47890	.95525	.95336	.94969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9128.8**	**54572.**	**2652.9**
Stddev	10.8	125.	12.9
%RSD	.11881	.22890	.48483
#1	9120.0	54520.	2667.7
#2	9125.3	54480.	2647.0
#3	9140.9	54714.	2644.1

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 15:52:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.01657	-.00127	.00115	.00250	-.00001	-.01570	-.00008
Stddev	.00036	.00130	.00303	.00289	.00094	.00001	.05663	.00022
%RSD	176.13	7.8679	239.02	251.46	37.681	146.04	360.65	289.87
#1	-.00012	.01564	.00223	.00292	.00336	-.00002	.04213	-.00032
#2	.00015	.01600	-.00298	.00271	.00149	.00001	-.01819	.00011
#3	.00058	.01806	-.00306	-.00219	.00266	-.00002	-.07104	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.00043	-.00012	-.00756	.11853	.00019	.11865	-.00072
Stddev	.00021	.00071	.00013	.01917	.08400	.00373	.04872	.00393
%RSD	170.38	164.98	107.35	253.73	70.863	1929.0	41.059	547.65
#1	-.00008	.00011	-.00028	-.00923	.10917	-.00410	.07959	.00173
#2	.00010	-.00017	-.00004	.01240	.20682	.00202	.10312	-.00525
#3	.00034	-.00124	-.00005	-.02583	.03961	.00266	.17324	.00137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.03861	-.00041	-.00107	-.00082	.00445	-.00040	.00468
Stddev	.00011	.02350	.00123	.00234	.00156	.00285	.00220	.00283
%RSD	12754.	60.879	299.90	219.01	189.95	64.010	547.51	60.452
#1	-.00002	.01230	.00092	.00084	.00098	.00164	-.00293	.00399
#2	-.00009	.04600	-.00152	-.00368	-.00166	.00734	.00063	.00778
#3	.00012	.05752	-.00063	-.00036	-.00178	.00437	.00110	.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 15:52:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00014	-.00244	-.00182	-.00043	-.00006	.00022
Stddev	.00074	.00027	.01113	.00188	.00034	.00016	.00053
%RSD	275.25	191.71	456.10	103.32	79.604	249.56	242.25
#1	.00006	.00024	.00647	-.00399	-.00080	.00004	-.00010
#2	-.00034	.00035	-.01492	-.00065	-.00014	-.00025	.00084
#3	.00109	-.00016	.00112	-.00082	-.00034	.00002	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9233.0	55737.	2640.6
Stddev	13.3	35.	14.4
%RSD	.14406	.06308	.54390
#1	9239.5	55725.	2651.8
#2	9241.9	55777.	2645.7
#3	9217.7	55710.	2624.4

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/28/2016 15:56:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00768	.16617	.00778	.07829	.00901	.00151	.38054	.00078
Stddev	.00059	.00295	.00193	.00097	.00103	.00007	.07318	.00003
%RSD	7.6710	1.7771	24.811	1.2403	11.419	4.7078	19.231	3.8071
#1	.00795	.16515	.00562	.07934	.01014	.00143	.38882	.00081
#2	.00809	.16949	.00841	.07742	.00877	.00153	.30357	.00075
#3	.00701	.16386	.00933	.07809	.00813	.00156	.44923	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00392	.00406	.00277	.07220	.88839	.07750	.42309	.00647
Stddev	.00041	.00101	.00161	.00675	.06165	.00672	.10881	.00245
%RSD	10.423	24.871	58.208	9.3419	6.9397	8.6651	25.717	37.928
#1	.00348	.00448	.00393	.06545	.94580	.07065	.50818	.00416
#2	.00428	.00291	.00346	.07222	.82323	.07776	.30049	.00620
#3	.00399	.00479	.00093	.07894	.89615	.08408	.46061	.00904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00734	.42612	.01516	.74724	.00671	.07731	.01024	.78186
Stddev	.00014	.02288	.00056	.02937	.00279	.00543	.00225	.02095
%RSD	1.9299	5.3700	3.7208	3.9305	41.642	7.0266	22.010	2.6791
#1	.00738	.40444	.01558	.75304	.00961	.07477	.00846	.78889
#2	.00745	.42388	.01452	.77328	.00647	.07361	.00950	.79839
#3	.00718	.45004	.01539	.71540	.00404	.08355	.01278	.75830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/28/2016 15:56:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38759**	**.03962**	**.02473**	**.14477**	**.00726**	**.01644**	**.04043**
Stddev	.01743	.00052	.00802	.00281	.00047	.00057	.00036
%RSD	4.4976	1.3110	32.414	1.9392	6.4568	3.4888	.88409
#1	.39748	.04019	.03053	.14368	.00780	.01686	.04002
#2	.39782	.03951	.02808	.14796	.00696	.01668	.04064
#3	.36746	.03916	.01558	.14267	.00701	.01579	.04063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9278.8**	**55862.**	**2662.5**
Stddev	17.4	75.	12.2
%RSD	.18739	.13429	.45669
#1	9298.8	55917.	2661.6
#2	9268.8	55892.	2650.8
#3	9268.6	55777.	2675.0

Approved: June 29, 2016

Sample Name: PBW E3 Acquired: 6/28/2016 16:00:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**.00550**	**-.00520**	**-.00061**	**.00284**	**-.00002**	**-.01393**	**.00001**
Stddev	.00056	.00246	.00322	.00129	.00065	.00007	.02787	.00025
%RSD	83.137	44.655	61.978	212.48	22.799	453.28	200.02	1981.0
#1	-.00080	.00747	-.00760	.00073	.00209	-.00004	-.03036	.00018
#2	-.00115	.00275	-.00154	-.00183	.00313	.00006	.01824	.00014
#3	-.00006	.00629	-.00646	-.00072	.00328	-.00007	-.02968	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**-.00175**	**-.00007**	**-.01889**	**-.01522**	**.00715**	**.05791**	**-.00024**
Stddev	.00026	.00044	.00113	.02013	.06900	.00186	.02945	.00354
%RSD	1112.4	25.112	1698.9	106.58	453.40	25.993	50.851	1450.7
#1	-.00014	-.00137	.00024	-.02736	-.08990	.00755	.04372	-.00331
#2	-.00020	-.00164	-.00131	-.03340	-.00194	.00878	.09176	.00364
#3	.00027	-.00223	.00088	.00410	.04618	.00513	.03824	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.01548**	**.00101**	**-.00415**	**.00067**	**.00583**	**-.00128**	**.00641**
Stddev	.00066	.03272	.00114	.00104	.00400	.00217	.00175	.00141
%RSD	198.80	211.42	113.35	25.146	598.17	37.322	136.61	22.043
#1	.00000	-.00039	.00079	-.00336	-.00328	.00401	-.00289	.00803
#2	.00109	-.00628	.00224	-.00533	.00056	.00824	-.00152	.00541
#3	-.00010	.05311	-.00001	-.00375	.00473	.00523	.00058	.00580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW E3 Acquired: 6/28/2016 16:00:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.00018**	**.00251**	**-.00111**	**-.00059**	**.00005**	**-.00000**
Stddev	.00088	.00063	.00518	.00198	.00079	.00012	.00017
%RSD	418.04	345.63	206.19	177.70	134.04	250.99	18380.
#1	-.00080	.00059	-.00302	-.00206	-.00103	-.00003	-.00020
#2	.00081	-.00055	.00332	-.00244	-.00106	.00019	.00007
#3	.00062	.00051	.00724	.00116	.00032	-.00002	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9302.4**	**56171.**	**2670.9**
Stddev	30.2	35.	11.1
%RSD	.32472	.06178	.41452
#1	9337.2	56185.	2670.8
#2	9286.1	56197.	2659.9
#3	9283.7	56132.	2682.0

Approved: June 29, 2016

Sample Name: LCSW E3 Acquired: 6/28/2016 16:03:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19164**	**4.8348**	**.19399**	**.96238**	**.48851**	**.02340**	**4.9583**	**.02409**
Stddev	.00070	.0039	.00200	.00191	.00160	.00019	.0273	.00005
%RSD	.36607	.08097	1.0288	.19845	.32724	.81759	.55135	.21374
#1	.19241	4.8320	.19461	.96035	.48786	.02338	4.9331	.02405
#2	.19147	4.8332	.19175	.96264	.49033	.02360	4.9545	.02415
#3	.19104	4.8393	.19560	.96414	.48733	.02321	4.9874	.02408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09838**	**.24122**	**.24571**	**1.9415**	**24.306**	**.49959**	**5.0727**	**.23822**
Stddev	.00032	.00119	.00094	.0510	.052	.00122	.0794	.00107
%RSD	.32120	.49389	.38434	2.6263	.21259	.24402	1.5660	.44936
#1	.09855	.24092	.24516	1.9035	24.363	.49831	5.0865	.23888
#2	.09857	.24254	.24680	1.9995	24.262	.50073	5.1444	.23698
#3	.09802	.24022	.24517	1.9216	24.293	.49974	4.9873	.23879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49267**	**24.636**	**.24311**	**4.7132**	**.24277**	**.57388**	**.18611**	**2.4298**
Stddev	.00071	.059	.00031	.0018	.00139	.00584	.00559	.0037
%RSD	.14398	.24026	.12844	.03776	.57264	1.0177	3.0019	.15241
#1	.49330	24.611	.24347	4.7116	.24222	.57387	.19001	2.4294
#2	.49280	24.594	.24294	4.7151	.24173	.56804	.18862	2.4264
#3	.49190	24.704	.24293	4.7129	.24435	.57973	.17971	2.4338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW E3 Acquired: 6/28/2016 16:03:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48900**	**.49567**	**.46962**	**.24399**	**.47814**	**.48958**	**.00062**
Stddev	.00125	.00161	.00327	.00133	.00046	.00034	.00090
%RSD	.25648	.32520	.69633	.54666	.09619	.06849	146.54
#1	.49015	.49753	.46715	.24325	.47797	.48939	.00087
#2	.48919	.49488	.46839	.24318	.47866	.48996	-.00039
#3	.48766	.49462	.47333	.24553	.47779	.48937	.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9097.3**	**54813.**	**2632.8**
Stddev	16.7	109.	5.1
%RSD	.18401	.19922	.19486
#1	9101.7	54693.	2627.8
#2	9078.9	54840.	2638.1
#3	9111.5	54906.	2632.5

Approved: June 29, 2016

Sample Name: L1606137801 Acquired: 6/28/2016 16:07:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00133	.02995	-.00247	.00497	.00313	-.00004	.12563	.00022
Stddev	.00136	.01041	.00165	.00241	.00128	.00001	.07525	.00023
%RSD	102.23	34.771	66.713	48.415	40.906	37.046	59.900	104.72
#1	-.00291	.04066	-.00357	.00738	.00449	-.00003	.04003	.00049
#2	-.00050	.01986	-.00058	.00257	.00293	-.00005	.15547	.00013
#3	-.00059	.02933	-.00326	.00495	.00196	-.00004	.18138	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00067	.00962	.06701	.11243	.00301	.16999	-.00022
Stddev	.00042	.00098	.00044	.01189	.09990	.00323	.01565	.00390
%RSD	524.67	146.04	4.5944	17.737	88.858	107.10	9.2056	1768.4
#1	.00003	-.00046	.00945	.05635	.22726	.00117	.15968	.00351
#2	.00027	.00129	.01011	.06486	.04543	.00674	.18799	.00009
#3	-.00054	.00119	.00928	.07983	.06460	.00113	.16229	-.00427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.10552	.00028	.00468	.00047	.00320	-.00427	.00402
Stddev	.00036	.03871	.00041	.00975	.00165	.00377	.00708	.00338
%RSD	82.113	36.686	145.32	208.23	350.78	117.78	165.76	84.059
#1	.00083	.13385	.00075	-.00374	.00130	-.00089	-.01229	.00792
#2	.00032	.12132	-.00004	.01536	-.00143	.00652	-.00163	.00220
#3	.00015	.06141	.00014	.00242	.00155	.00397	.00111	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606137801 Acquired: 6/28/2016 16:07:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00119	.00220	-.00184	.00011	.00305	-.00009
Stddev	.00064	.00024	.00451	.00322	.00006	.00008	.00007
%RSD	1633.7	19.830	204.62	175.10	57.970	2.4756	76.127
#1	.00052	.00132	-.00187	-.00536	.00004	.00303	-.00003
#2	-.00069	.00133	.00704	-.00111	.00016	.00314	-.00016
#3	.00028	.00092	.00144	.00096	.00014	.00299	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9255.0	55896.	2662.5
Stddev	31.8	116.	12.9
%RSD	.34321	.20711	.48455
#1	9275.2	55940.	2674.4
#2	9271.5	55764.	2648.8
#3	9218.4	55982.	2664.3

Approved: June 29, 2016

Sample Name: L1606137802 Acquired: 6/28/2016 16:11:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.24127	-.00216	.00978	.00727	-.00000	.91725	.00010
Stddev	.00151	.00761	.00236	.00115	.00053	.00003	.01367	.00033
%RSD	154.09	3.1538	109.31	11.785	7.2310	5360.9	1.4902	319.09
#1	.00169	.23297	.00049	.01008	.00771	.00001	.91395	.00028
#2	-.00075	.24791	-.00403	.00851	.00741	.00002	.93226	.00031
#3	.00200	.24294	-.00293	.01075	.00669	-.00003	.90553	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00034	.02208	.19804	.10104	.00364	.28039	.00749
Stddev	.00057	.00062	.00090	.05727	.01689	.00502	.07826	.00133
%RSD	613.93	179.99	4.0773	28.920	16.719	137.96	27.912	17.702
#1	.00065	.00032	.02216	.21210	.11978	.00411	.20842	.00717
#2	.00012	-.00091	.02294	.13505	.09634	.00840	.36371	.00635
#3	-.00049	-.00043	.02114	.24698	.08699	-.00160	.26905	.00895
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.36176	.00023	.01940	.00079	.00029	-.00783	.41959
Stddev	.00014	.03222	.00168	.00181	.00348	.00484	.00345	.01536
%RSD	353.07	8.9077	738.46	9.3468	437.79	1683.6	44.023	3.6610
#1	.00018	.39404	.00214	.02073	.00068	.00448	-.00387	.42485
#2	.00004	.32959	-.00043	.02013	.00433	-.00501	-.00950	.43163
#3	-.00010	.36167	-.00103	.01733	-.00263	.00139	-.01012	.40229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606137802 Acquired: 6/28/2016 16:11:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.00639	.00238	-.00432	.00102	.00723	.00044
Stddev	.00074	.00025	.00737	.00078	.00072	.00034	.00043
%RSD	114.39	3.9538	310.16	18.130	70.551	4.6981	98.173
#1	.00125	.00616	.01079	-.00520	.00020	.00754	.00086
#2	-.00017	.00666	-.00073	-.00370	.00152	.00727	-.00001
#3	.00085	.00634	-.00293	-.00405	.00134	.00686	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9157.6	55840.	2649.1
Stddev	8.8	126.	16.6
%RSD	.09618	.22561	.62530
#1	9166.4	55974.	2664.8
#2	9157.6	55724.	2631.8
#3	9148.8	55822.	2650.6

Approved: June 29, 2016

Sample Name: L1606137803 Acquired: 6/28/2016 16:15:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00123	.03613	-.00107	.00717	.00261	.00001	.20229	.00004
Stddev	.00057	.00887	.00175	.00045	.00128	.00005	.03288	.00045
%RSD	46.612	24.549	164.26	6.2941	49.199	461.39	16.255	1093.4
#1	-.00154	.02644	-.00104	.00692	.00113	.00007	.18429	-.00031
#2	-.00158	.04384	.00067	.00689	.00338	-.00002	.24024	.00054
#3	-.00057	.03813	-.00284	.00769	.00331	-.00002	.18234	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.00125	.02974	.02446	.22250	.00496	.03287	.00243
Stddev	.00024	.00034	.00035	.03617	.07798	.00081	.11336	.00308
%RSD	66.571	27.354	1.1617	147.86	35.048	16.433	344.85	126.87
#1	.00058	-.00164	.02957	-.01471	.31086	.00411	.05459	.00539
#2	.00010	-.00107	.03014	.05658	.19336	.00574	.13379	-.00077
#3	.00041	-.00102	.02952	.03151	.16329	.00502	-.08977	.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.32876	.00072	.01481	.00334	.00498	-.00272	.03276
Stddev	.00069	.00872	.00029	.00640	.00320	.00234	.00271	.00135
%RSD	2428.7	2.6516	40.869	43.182	95.766	46.923	99.661	4.1065
#1	.00029	.31874	.00103	.00985	.00172	.00230	-.00358	.03164
#2	.00054	.33460	.00067	.02203	.00702	.00601	.00032	.03238
#3	-.00075	.33295	.00045	.01256	.00127	.00662	-.00489	.03425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606137803 Acquired: 6/28/2016 16:15:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00147	.00034	-.00167	-.00043	.00872	-.00013
Stddev	.00054	.00056	.00466	.00220	.00123	.00025	.00095
%RSD	56.877	37.984	1386.8	131.84	288.10	2.8588	736.06
#1	.00095	.00178	-.00140	-.00136	.00013	.00853	.00094
#2	.00041	.00083	.00561	.00036	-.00184	.00862	-.00047
#3	.00148	.00180	-.00321	-.00401	.00043	.00900	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9279.4	55188.	2617.5
Stddev	5.8	62.	13.4
%RSD	.06281	.11260	.51339
#1	9277.1	55217.	2631.1
#2	9286.0	55116.	2617.1
#3	9275.0	55230.	2604.2

Approved: June 29, 2016

Sample Name: L1606137804 Acquired: 6/28/2016 16:19:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.00583	-.00362	.00297	.00220	-.00003	.01525	.00015
Stddev	.00186	.01048	.00045	.00162	.00081	.00003	.03382	.00030
%RSD	567.99	179.69	12.428	54.580	36.950	109.52	221.79	195.99
#1	.00129	.00783	-.00389	.00475	.00158	-.00003	-.00321	.00012
#2	-.00236	.01516	-.00310	.00260	.00191	-.00005	.05427	-.00013
#3	.00008	-.00550	-.00387	.00157	.00312	.00001	-.00532	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00006	.00038	-.00080	.11004	.00434	.10714	-.00234
Stddev	.00015	.00068	.00115	.02641	.13143	.00212	.11999	.00115
%RSD	120.12	1104.2	304.96	3316.9	119.44	48.731	111.99	49.262
#1	.00030	.00084	.00160	.00792	.21872	.00201	.24567	-.00135
#2	.00003	-.00025	.00020	-.03047	.14744	.00615	.03567	-.00360
#3	.00004	-.00041	-.00068	.02016	-.03603	.00487	.04008	-.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.07562	.00088	-.00216	-.00036	.00498	.00348	-.02142
Stddev	.00039	.01403	.00154	.00376	.00510	.00407	.00646	.00069
%RSD	153.47	18.559	175.49	173.82	1407.8	81.770	185.82	3.2242
#1	-.00003	.08160	.00250	.00183	-.00607	.00888	.00840	-.02216
#2	-.00003	.05959	-.00057	-.00267	.00126	.00532	.00587	-.02080
#3	-.00070	.08568	.00071	-.00565	.00373	.00075	-.00384	-.02131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606137804 Acquired: 6/28/2016 16:19:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00029	.00515	-.00424	-.00024	.00234	.00012
Stddev	.00145	.00038	.00994	.00233	.00166	.00018	.00028
%RSD	2444.3	128.27	193.09	54.933	684.71	7.6940	243.78
#1	.00093	.00057	.01372	-.00155	.00160	.00213	.00004
#2	.00087	.00045	-.00575	-.00568	-.00070	.00247	-.00012
#3	-.00162	-.00014	.00748	-.00547	-.00163	.00241	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9250.6	56270.	2671.7
Stddev	7.7	175.	15.8
%RSD	.08274	.31170	.59260
#1	9250.0	56071.	2667.9
#2	9258.6	56337.	2658.1
#3	9243.3	56403.	2689.1

Approved: June 29, 2016

Sample Name: L1606138001 Acquired: 6/28/2016 16:23:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	18.881	.01121	.04582	.29039	.00157	84.977	.00008
Stddev	.00214	.028	.00257	.00283	.00147	.00003	.069	.00009
%RSD	760.43	.15027	22.957	6.1732	.50732	2.0312	.08124	101.89
#1	.00044	18.907	.01411	.04268	.28883	.00155	84.906	.00014
#2	-.00194	18.851	.00920	.04662	.29058	.00155	85.044	.00013
#3	.00234	18.884	.01031	.04817	.29175	.00161	84.981	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01286	.02713	.02544	25.071	4.7884	.04041	29.287	1.3847
Stddev	.00023	.00057	.00272	.102	.0770	.00278	.109	.0090
%RSD	1.7707	2.0963	10.709	.40653	1.6080	6.8777	.37299	.64781
#1	.01290	.02753	.02636	25.088	4.8757	.03765	29.161	1.3860
#2	.01306	.02648	.02759	24.961	4.7300	.04036	29.341	1.3751
#3	.01261	.02739	.02238	25.163	4.7596	.04321	29.358	1.3929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00487	6.5012	.02834	.77361	.03577	-.00040	-.00445	24.324
Stddev	.00048	.0395	.00143	.01408	.00193	.00077	.00299	.309
%RSD	9.7902	.60716	5.0582	1.8200	5.4033	194.49	67.253	1.2710
#1	.00474	6.4671	.02787	.77271	.03771	.00030	-.00208	24.356
#2	.00448	6.4920	.02995	.78811	.03385	-.00122	-.00346	24.616
#3	.00540	6.5445	.02721	.76000	.03574	-.00026	-.00782	24.000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138001 Acquired: 6/28/2016 16:23:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	.32243	.11171	-.00130	.03430	.48738	.00279
Stddev	.00095	.00109	.00577	.00271	.00009	.01023	.00049
%RSD	69.999	.33711	5.1618	208.64	.26249	2.0990	17.473
#1	.00224	.32130	.11837	-.00291	.03420	.49075	.00224
#2	.00148	.32253	.10821	.00183	.03437	.49550	.00298
#3	.00035	.32346	.10856	-.00282	.03432	.47589	.00316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9127.1	55258.	2659.8
Stddev	31.6	168.	9.9
%RSD	.34567	.30373	.37056
#1	9162.7	55122.	2666.0
#2	9102.6	55206.	2665.1
#3	9116.0	55446.	2648.5

Approved: June 29, 2016

Sample Name: L1606138002 Acquired: 6/28/2016 16:27:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	23.052	.01041	.04995	.27455	.00176	89.804	.00018
Stddev	.00155	.082	.00437	.00204	.00194	.00013	.487	.00012
%RSD	125.65	.35572	42.002	4.0787	.70771	7.3034	.54236	68.679
#1	.00299	23.127	.01537	.05225	.27502	.00178	89.890	.00009
#2	.00062	22.965	.00710	.04925	.27241	.00188	89.280	.00012
#3	.00009	23.063	.00876	.04836	.27621	.00162	90.243	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01514	.03329	.04031	30.770	5.4790	.04939	32.771	1.4662
Stddev	.00034	.00089	.00429	.139	.0866	.00299	.215	.0056
%RSD	2.2702	2.6859	10.637	.45045	1.5804	6.0611	.65743	.38355
#1	.01483	.03431	.04248	30.753	5.5759	.05008	32.805	1.4652
#2	.01507	.03264	.04307	30.640	5.4517	.05198	32.541	1.4611
#3	.01551	.03294	.03537	30.916	5.4093	.04611	32.968	1.4722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00568	6.9225	.04829	.81670	.03824	.00474	-.00326	28.829
Stddev	.00022	.0247	.00159	.00954	.00261	.00036	.00176	.340
%RSD	3.8794	.35719	3.2983	1.1676	6.8251	7.6137	53.869	1.1781
#1	.00542	6.9011	.04906	.82661	.03980	.00485	-.00372	29.055
#2	.00582	6.9168	.04936	.81588	.03970	.00503	-.00474	28.994
#3	.00579	6.9496	.04646	.80759	.03523	.00433	-.00132	28.438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138002 Acquired: 6/28/2016 16:27:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00159**	**.34526**	**.13497**	**-.00119**	**.04001**	**.16840**	**.00274**
Stddev	.00067	.00143	.00550	.00167	.00032	.00291	.00035
%RSD	41.910	.41554	4.0771	139.98	.79480	1.7261	12.734
#1	.00103	.34567	.14130	-.00077	.04036	.16974	.00234
#2	.00142	.34366	.13131	-.00303	.03974	.17040	.00288
#3	.00233	.34644	.13231	.00023	.03992	.16507	.00299
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8969.2**	**53823.**	**2585.6**
Stddev	28.5	121.	22.8
%RSD	.31768	.22430	.88148
#1	8943.3	53758.	2563.7
#2	8964.7	53962.	2609.2
#3	8999.7	53748.	2583.9

Approved: June 29, 2016

Sample Name: L1606138106 Acquired: 6/28/2016 16:30:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.02671	-.00035	.00219	.00470	.00004	.11044	-.00004
Stddev	.00038	.00978	.00157	.00132	.00024	.00006	.05141	.00009
%RSD	165.88	36.629	453.87	60.161	5.0940	180.89	46.554	218.04
#1	-.00009	.02052	-.00215	.00221	.00459	-.00002	.11853	.00006
#2	.00006	.03798	.00042	.00086	.00497	.00010	.15733	-.00007
#3	-.00066	.02162	.00070	.00350	.00453	.00002	.05546	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00005	.00232	.03313	-.06208	.00365	.11571	.00058
Stddev	.00026	.00107	.00141	.04609	.12036	.00290	.06176	.00147
%RSD	301.01	2205.9	60.777	139.12	193.89	79.577	53.372	255.27
#1	.00021	-.00039	.00332	-.01338	-.04214	.00473	.04833	.00099
#2	-.00027	-.00073	.00071	.03397	-.19116	.00585	.16963	-.00106
#3	-.00021	.00127	.00293	.07879	.04707	.00036	.12917	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	.24481	.00038	-.00234	-.00159	.00016	-.00878	.09592
Stddev	.00097	.01784	.00090	.00446	.00039	.00135	.00458	.00474
%RSD	88.792	7.2876	235.47	190.19	24.402	834.50	52.202	4.9452
#1	-.00001	.23411	.00143	-.00495	-.00164	.00032	-.00992	.10032
#2	.00182	.23491	-.00009	-.00489	-.00194	-.00126	-.00373	.09654
#3	.00146	.26540	-.00018	.00280	-.00117	.00142	-.01269	.09090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138106 Acquired: 6/28/2016 16:30:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00062	.00178	-.00320	-.00041	.00111	.00044
Stddev	.00070	.00028	.00840	.00027	.00016	.00005	.00090
%RSD	1472.0	44.552	471.90	8.3543	38.969	4.6667	202.68
#1	.00057	.00039	.01143	-.00294	-.00023	.00107	.00025
#2	.00032	.00054	-.00218	-.00347	-.00044	.00117	.00143
#3	-.00075	.00092	-.00391	-.00320	-.00054	.00111	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9023.2	54420.	2586.9
Stddev	15.6	552.	19.1
%RSD	.17278	1.0141	.73711
#1	9027.4	54765.	2565.0
#2	9005.9	53783.	2600.1
#3	9036.3	54711.	2595.6

Approved: June 29, 2016

Sample Name: L1606140101 Acquired: 6/28/2016 16:34:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00218**	**.03485**	**-.00002**	**.15342**	**.05582**	**.00004**	**124.06**
Stddev	.00377	.00379	.00309	.00144	.00081	.00010	.59
%RSD	173.24	10.886	14926.	.93675	1.4530	248.52	.47866
#1	-.00649	.03170	-.00302	.15179	.05540	-.00004	124.70
#2	.00049	.03906	-.00019	.15398	.05530	.00001	123.52
#3	-.00053	.03380	.00315	.15449	.05676	.00015	123.97
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.00081**	**.00157**	**.00148**	**-.00402**	**4.6678**	**.03748**
Stddev	.00028	.00030	.00094	.00090	.03288	.1961	.00193
%RSD	74.186	37.448	59.598	60.764	818.25	4.2000	5.1617
#1	.00032	.00047	.00131	.00240	-.04194	4.8019	.03666
#2	.00067	.00091	.00079	.00144	.01346	4.4428	.03610
#3	.00013	.00106	.00261	.00060	.01643	4.7587	.03969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**68.192**	**.05341**	**.00048**	F **466.83**	**.00047**	**.03766**	**-.00231**
Stddev	.481	.00218	.00034	3.88	.00102	.00627	.00128
%RSD	.70585	4.0834	70.291	.83087	216.30	16.655	55.400
#1	68.743	.05536	.00077	470.23	-.00050	.04431	-.00303
#2	67.983	.05105	.00011	462.61	.00152	.03184	-.00308
#3	67.851	.05382	.00058	467.64	.00039	.03685	-.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606140101 Acquired: 6/28/2016 16:34:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00400**	**-.00182**	**8.1478**	**-.00033**	**.59118**	**-.01873**	**-.00283**
Stddev	.00606	.00359	.2322	.00009	.00171	.00223	.00229
%RSD	151.32	197.31	2.8496	28.393	.28995	11.927	80.664
#1	.00315	.00214	8.2785	-.00022	.59313	-.01787	-.00251
#2	.01044	-.00486	8.2851	-.00038	.58988	-.01706	-.00073
#3	-.00158	-.00274	7.8797	-.00039	.59054	-.02127	-.00526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01052**	**.00862**	**-.00010**
Stddev	.00054	.00045	.00005
%RSD	5.1636	5.2265	48.833
#1	.01088	.00862	-.00007
#2	.00990	.00907	-.00016
#3	.01079	.00817	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8570.3**	**50744.**	**2512.0**
Stddev	3.6	222.	16.8
%RSD	.04183	.43745	.66696
#1	8571.5	50750.	2499.4
#2	8573.2	50964.	2505.5
#3	8566.3	50520.	2531.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 16:38:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37743	9.5469	.37580	.46956	.96306	.04732	9.5900	.04763
Stddev	.00032	.0457	.00153	.00617	.00655	.00061	.1412	.00029
%RSD	.08532	.47855	.40663	1.3148	.67978	1.2795	1.4727	.59955
#1	.37735	9.5820	.37757	.47612	.95760	.04798	9.4341	.04791
#2	.37715	9.4952	.37489	.46387	.97032	.04680	9.7095	.04764
#3	.37778	9.5634	.37495	.46868	.96126	.04718	9.6262	.04734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19060	.47605	.47829	3.8107	47.965	.96689	9.5619	.47181
Stddev	.00024	.00645	.00177	.0548	.355	.00545	.1009	.00470
%RSD	.12427	1.3544	.36908	1.4378	.74026	.56386	1.0554	.99639
#1	.19054	.48349	.47931	3.7975	47.711	.97312	9.5140	.46713
#2	.19086	.47251	.47932	3.7637	48.370	.96453	9.6779	.47176
#3	.19040	.47215	.47626	3.8709	47.812	.96301	9.4939	.47654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95597	48.254	.47535	9.4451	.47197	1.1388	.37546	4.7416
Stddev	.00130	.258	.00091	.0048	.00087	.0031	.00351	.0044
%RSD	.13561	.53539	.19143	.05067	.18424	.27052	.93376	.09185
#1	.95741	48.008	.47561	9.4415	.47108	1.1390	.37327	4.7366
#2	.95559	48.523	.47610	9.4505	.47281	1.1357	.37950	4.7447
#3	.95491	48.230	.47434	9.4432	.47203	1.1419	.37360	4.7435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 16:38:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95500	.96146	.94728	.47529	.94833	.95572	.95903
Stddev	.00332	.00652	.00706	.00206	.01224	.00202	.01434
%RSD	.34717	.67854	.74512	.43417	1.2902	.21119	1.4950
#1	.95726	.95688	.93938	.47767	.96203	.95768	.97550
#2	.95654	.96893	.95296	.47401	.93850	.95585	.95225
#3	.95119	.95858	.94951	.47419	.94446	.95365	.94934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8735.1	52223.	2511.8
Stddev	63.3	525.	1.7
%RSD	.72433	1.0049	.06962
#1	8662.4	52817.	2513.3
#2	8778.0	52030.	2509.9
#3	8764.8	51821.	2512.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 16:42:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01470**	**-.00025**	**.00262**	**.00329**	**.00012**	**-.02149**	**-.00003**
Stddev	.00154	.00095	.00292	.00132	.00173	.00009	.02627	.00031
%RSD	1544.9	6.4296	1158.7	50.561	52.631	76.669	122.21	1035.2
#1	-.00164	.01568	-.00292	.00112	.00524	.00002	.00862	.00001
#2	.00145	.01379	.00286	.00311	.00269	.00015	-.03344	-.00036
#3	-.00011	.01463	-.00070	.00362	.00193	.00019	-.03967	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00016**	**.00034**	**-.02214**	**.02979**	**.00145**	**.10931**	**.00271**
Stddev	.00051	.00066	.00090	.02571	.04548	.00077	.07392	.00140
%RSD	2067.0	426.18	262.93	116.12	152.66	52.848	67.621	51.511
#1	.00053	-.00060	-.00060	-.02698	.06941	.00057	.09763	.00431
#2	-.00012	.00064	.00044	.00564	-.01988	.00197	.04193	.00177
#3	-.00048	.00043	.00119	-.04508	.03985	.00181	.18838	.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.03000**	**-.00064**	**.00171**	**-.00372**	**.00640**	**-.00145**	**.00449**
Stddev	.00010	.02671	.00081	.00257	.00221	.00555	.00310	.00229
%RSD	83.710	89.031	127.20	149.94	59.483	86.786	214.27	50.847
#1	.00001	.05832	-.00087	.00364	-.00239	.01032	.00214	.00691
#2	.00015	.02642	.00026	-.00120	-.00627	.00882	-.00323	.00237
#3	.00022	.00526	-.00130	.00270	-.00250	.00004	-.00325	.00420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 16:42:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00049**	**-.01452**	**-.00036**	**-.00012**	**.00009**	**.00041**
Stddev	.00126	.00017	.00425	.00086	.00052	.00022	.00068
%RSD	855.56	34.806	29.266	240.24	446.61	242.31	167.64
#1	-.00110	.00067	-.01245	.00044	.00047	.00034	-.00033
#2	.00142	.00033	-.01941	-.00024	-.00053	-.00002	.00101
#3	.00012	.00048	-.01171	-.00127	-.00029	-.00005	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8858.9**	**52799.**	**2450.2**
Stddev	49.1	64.	4.8
%RSD	.55389	.12185	.19423
#1	8802.7	52841.	2455.1
#2	8893.3	52831.	2449.9
#3	8880.6	52725.	2445.6

Approved: June 29, 2016

Sample Name: L1606140201 Acquired: 6/28/2016 16:46:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00181	.18513	.02928	.14134	.38651	.00004	73.568
Stddev	.00241	.01412	.00193	.00546	.00425	.00001	.573
%RSD	133.09	7.6297	6.5893	3.8601	1.0993	29.408	.77835
#1	.00291	.20114	.02830	.14308	.39084	.00005	74.208
#2	-.00095	.17441	.03150	.13522	.38635	.00004	73.392
#3	.00347	.17984	.02803	.14571	.38234	.00003	73.104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00063	.00146	.00109	3.0011	.94204	.01461
Stddev	.00046	.00060	.00093	.00074	.0567	.07130	.00110
%RSD	261.16	95.173	63.756	68.332	1.8895	7.5684	7.5102
#1	-.00032	.00116	.00051	.00142	3.0614	.97099	.01585
#2	.00058	.00073	.00149	.00024	2.9931	.99432	.01377
#3	.00027	-.00002	.00237	.00161	2.9488	.86083	.01420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.058	.43706	.00004	F 295.60	.00193	.05522	.01773
Stddev	.228	.00233	.00047	2.46	.00047	.00807	.00162
%RSD	.59975	.53242	1121.0	.83240	24.555	14.612	9.1557
#1	38.300	.43535	.00053	298.43	.00156	.06449	.01703
#2	37.846	.43971	-.00002	294.41	.00176	.05148	.01657
#3	38.030	.43611	-.00039	293.96	.00247	.04971	.01958
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606140201 Acquired: 6/28/2016 16:46:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00237	8.7308	.00015	.49039	-.00143	-.00119
Stddev	.00063	.00758	.1924	.00050	.00229	.01348	.00163
%RSD	85.658	319.42	2.2032	321.51	.46707	942.90	137.19
#1	.00129	.00959	8.8327	.00016	.49271	.00974	-.00033
#2	.00085	-.00552	8.8507	.00065	.48813	.00238	-.00306
#3	.00005	.00305	8.5089	-.00035	.49034	-.01641	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00028	.03320	.00085
Stddev	.00126	.00113	.00030
%RSD	444.68	3.4045	35.186
#1	.00111	.03408	.00089
#2	-.00135	.03360	.00053
#3	-.00061	.03193	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8382.1	49791.	2432.6
Stddev	7.8	183.	38.6
%RSD	.09266	.36744	1.5885
#1	8375.1	49580.	2390.7
#2	8380.9	49886.	2440.4
#3	8390.4	49908.	2466.7

Approved: June 29, 2016

Sample Name: L1606140401 Acquired: 6/28/2016 16:50:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.03821**	**-.00140**	**.26467**	**.10202**	**.00005**	**50.693**
Stddev	.00024	.00694	.00356	.00502	.00099	.00006	.236
%RSD	804.72	18.151	253.62	1.8972	.97072	117.83	.46459
#1	.00030	.03117	.00222	.26303	.10113	.00002	50.662
#2	-.00006	.04503	-.00153	.26068	.10308	.00001	50.943
#3	-.00015	.03843	-.00490	.27031	.10184	.00011	50.475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00001**	**.00112**	**.06878**	F **-.02326**	**1.5239**	**.00630**
Stddev	.00003	.00031	.00147	.00150	.05164	.0926	.00419
%RSD	44.836	2286.3	131.16	2.1829	222.07	6.0793	66.532
#1	.00010	-.00018	.00053	.06940	-.04001	1.5675	.00989
#2	.00007	-.00020	.00280	.06987	-.06444	1.4175	.00733
#3	.00004	.00035	.00004	.06707	.03469	1.5866	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**44.442**	**.00063**	**.00036**	**72.140**	**.00050**	**.05225**	**-.00268**
Stddev	.059	.00064	.00040	.335	.00098	.00445	.00289
%RSD	.13305	101.22	111.41	.46490	195.38	8.5261	107.94
#1	44.502	.00028	.00021	72.178	-.00051	.05651	-.00492
#2	44.384	.00024	.00005	72.455	.00146	.04762	-.00370
#3	44.442	.00137	.00081	71.788	.00057	.05261	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606140401 Acquired: 6/28/2016 16:50:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00458**	**.00271**	**7.5828**	**-.00004**	**.40719**	**-.00830**	**-.00459**
Stddev	.00339	.00160	.1230	.00105	.00129	.01300	.00404
%RSD	74.002	59.221	1.6221	2834.0	.31705	156.70	88.066
#1	.00766	.00090	7.6391	-.00054	.40835	-.01367	-.00740
#2	.00095	.00327	7.6675	.00116	.40742	.00653	.00004
#3	.00513	.00396	7.4417	-.00074	.40580	-.01775	-.00642
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00580**	**.09151**	**-.00012**
Stddev	.00045	.00280	.00032
%RSD	7.8121	3.0615	257.30
#1	.00536	.09306	.00004
#2	.00577	.09320	-.00049
#3	.00626	.08828	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8505.3**	**50949.**	**2448.3**
Stddev	4.7	97.	7.2
%RSD	.05529	.19049	.29577
#1	8510.2	50847.	2451.9
#2	8504.8	51040.	2439.9
#3	8500.9	50960.	2453.0

Approved: June 29, 2016

Sample Name: L1606140801 Acquired: 6/28/2016 16:54:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00269	.05550	.00124	.10441	.03467	.00011	48.037	.00033
Stddev	.00032	.00542	.00441	.00240	.00077	.00017	.480	.00014
%RSD	12.026	9.7675	356.84	2.2960	2.2111	152.00	.99969	41.534
#1	-.00273	.05194	.00607	.10284	.03551	.00004	48.584	.00021
#2	-.00235	.05283	.00021	.10717	.03401	.00031	47.685	.00029
#3	-.00299	.06174	-.00257	.10322	.03449	-.00001	47.842	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00133	.00196	.02831	.61212	.01738	25.614	.03236
Stddev	.00024	.00079	.00030	.03168	.08741	.00355	.200	.00047
%RSD	139.58	59.723	15.107	111.90	14.280	20.412	.77912	1.4530
#1	.00039	.00162	.00174	-.00239	.54855	.01510	25.399	.03211
#2	-.00008	.00043	.00185	.02644	.57601	.01556	25.793	.03291
#3	.00020	.00194	.00230	.06087	.71180	.02146	25.650	.03207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	206.01	-.00120	.01021	-.00101	.00550	.00259	8.6735
Stddev	.00042	.68	.00076	.00625	.00147	.00271	.00758	.1899
%RSD	138.54	.32826	63.036	61.251	146.18	49.218	292.32	2.1896
#1	.00029	206.21	-.00200	.00303	.00017	.00243	-.00099	8.8411
#2	.00073	205.26	-.00109	.01314	-.00266	.00755	-.00253	8.7122
#3	-.00011	206.57	-.00050	.01446	-.00053	.00651	.01130	8.4672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606140801 Acquired: 6/28/2016 16:54:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.27833	-.01037	-.00392	.01481	.00801	.00028
Stddev	.00091	.00026	.01132	.00271	.00106	.00023	.00098
%RSD	440.50	.09448	109.12	69.013	7.1866	2.8324	351.91
#1	-.00123	.27804	.00144	-.00081	.01601	.00808	.00139
#2	.00012	.27839	-.02112	-.00572	.01398	.00819	-.00008
#3	.00049	.27855	-.01143	-.00524	.01444	.00775	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8483.8	50357.	2436.1
Stddev	58.6	54.	14.0
%RSD	.69075	.10730	.57272
#1	8442.5	50404.	2437.2
#2	8550.9	50298.	2449.4
#3	8458.1	50369.	2421.6

Approved: June 29, 2016

Sample Name: L1606140901 Acquired: 6/28/2016 16:58:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.04882	.00371	.20045	.03867	.00009	59.705	.00007
Stddev	.00072	.01173	.00262	.00323	.00088	.00009	.777	.00015
%RSD	72.631	24.027	70.725	1.6092	2.2861	93.237	1.3014	220.09
#1	.00019	.06057	.00264	.20394	.03863	.00006	60.594	-.00007
#2	.00118	.04879	.00670	.19758	.03957	.00003	59.158	.00005
#3	.00159	.03711	.00179	.19984	.03781	.00019	59.361	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00403	.00250	.01083	1.0006	.02725	29.385	-.00066
Stddev	.00047	.00069	.00086	.02070	.0638	.00443	.111	.00203
%RSD	152.21	17.223	34.415	191.17	6.3737	16.261	.37652	304.79
#1	.00046	.00463	.00157	.03441	1.0394	.02239	29.323	-.00206
#2	.00069	.00419	.00266	.00242	1.0354	.02829	29.320	-.00159
#3	-.00022	.00327	.00326	-.00435	.92699	.03107	29.513	.00166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	217.82	.00187	.00952	-.00078	.00397	.00052	12.937
Stddev	.00043	.68	.00072	.00413	.00349	.00593	.00750	.288
%RSD	36.550	.31139	38.549	43.374	445.42	149.39	1452.8	2.2279
#1	.00074	218.59	.00267	.00652	.00255	.00869	.00583	13.115
#2	.00160	217.56	.00168	.01423	-.00442	-.00268	.00378	13.092
#3	.00118	217.31	.00126	.00781	-.00049	.00590	-.00806	12.605
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606140901 Acquired: 6/28/2016 16:58:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.41800	-.01150	-.00534	.01663	.00273	-.00008
Stddev	.00115	.00113	.01412	.00229	.00053	.00022	.00050
%RSD	163.28	.27095	122.73	42.869	3.1942	7.9309	605.21
#1	.00042	.41714	.00226	-.00301	.01717	.00278	-.00039
#2	-.00028	.41928	-.01083	-.00542	.01611	.00292	-.00035
#3	.00197	.41759	-.02595	-.00759	.01661	.00250	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8381.2	49920.	2427.7
Stddev	31.2	187.	3.4
%RSD	.37235	.37554	.13931
#1	8401.2	49725.	2426.3
#2	8397.2	50098.	2425.3
#3	8345.2	49937.	2431.6

Approved: June 29, 2016

Sample Name: L1606141001 Acquired: 6/28/2016 17:01:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.02510	.00497	.20581	.20983	.00003	102.14	.00026
Stddev	.00030	.00820	.00130	.00289	.00164	.00004	.41	.00020
%RSD	132.67	32.679	26.145	1.4058	.78174	121.97	.39842	78.906
#1	-.00038	.02965	.00419	.20299	.20986	-.00001	102.16	.00008
#2	-.00042	.03003	.00425	.20877	.21146	.00008	102.53	.00047
#3	.00012	.01563	.00647	.20568	.20818	.00003	101.72	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00216	.00155	.00164	3.1291	.47793	.01373	63.988	1.5385
Stddev	.00048	.00052	.00154	.0242	.07621	.00416	.332	.0084
%RSD	22.492	33.181	93.521	.77254	15.946	30.274	.51854	.54910
#1	.00229	.00213	.00024	3.1377	.39525	.01480	63.844	1.5384
#2	.00256	.00113	.00328	3.1477	.49319	.01724	64.367	1.5470
#3	.00162	.00140	.00141	3.1017	.54536	.00914	63.752	1.5301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	24.785	.00318	.06025	-.00071	.00159	-.00450	8.1780
Stddev	.00021	.166	.00156	.01067	.00149	.00213	.00703	.0115
%RSD	21.778	.67072	48.863	17.704	209.43	133.71	156.14	.14010
#1	.00082	24.747	.00140	.05953	-.00225	.00279	-.01157	8.1903
#2	.00088	24.967	.00391	.07127	-.00060	.00285	.00248	8.1761
#3	.00122	24.640	.00424	.04997	.00072	-.00087	-.00441	8.1677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141001 Acquired: 6/28/2016 17:01:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.83498**	**-.01138**	**-.00652**	**-.00046**	**.00246**	**.00022**
Stddev	.00032	.01215	.00763	.00068	.00064	.00003	.00013
%RSD	732.85	1.4548	67.036	10.406	137.93	1.1193	58.335
#1	.00030	.84711	-.01222	-.00631	-.00099	.00248	.00014
#2	-.00009	.83502	-.00337	-.00728	-.00063	.00243	.00015
#3	-.00034	.82281	-.01855	-.00597	.00024	.00247	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8519.7**	**50943.**	**2455.8**
Stddev	41.5	104.	11.2
%RSD	.48695	.20482	.45529
#1	8476.0	50829.	2457.0
#2	8524.5	50968.	2444.1
#3	8558.5	51034.	2466.4

Approved: June 29, 2016

Sample Name: L1606141701 Acquired: 6/28/2016 17:05:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00052	.03393	-.00177	.10053	.08448	-.00004	53.590	.00002
Stddev	.00097	.00124	.00310	.00010	.00185	.00008	.041	.00011
%RSD	187.14	3.6575	175.63	.10167	2.1911	190.60	.07628	441.87
#1	-.00070	.03279	-.00174	.10063	.08240	-.00001	53.548	.00011
#2	.00053	.03374	.00132	.10054	.08594	-.00013	53.593	.00006
#3	-.00138	.03525	-.00488	.10042	.08511	.00002	53.630	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00044	.00128	-.00110	.33167	.01186	38.029	-.00243
Stddev	.00036	.00064	.00035	.02584	.15378	.00271	.064	.00614
%RSD	150.55	144.37	27.302	2350.8	46.367	22.894	.16857	253.12
#1	.00006	.00102	.00169	.02694	.15662	.01278	37.963	.00451
#2	-.00014	.00055	.00113	-.00629	.39337	.01399	38.033	-.00718
#3	-.00064	-.00024	.00104	-.02395	.44502	.00880	38.091	-.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	33.333	-.00018	.03468	-.00253	.00442	-.00992	5.5877
Stddev	.00036	.145	.00111	.00200	.00379	.00454	.00714	.0097
%RSD	59.623	.43463	614.27	5.7635	149.78	102.72	72.013	.17278
#1	.00028	33.231	.00062	.03279	-.00669	-.00040	-.01801	5.5766
#2	.00098	33.270	.00028	.03677	-.00163	.00861	-.00730	5.5928
#3	.00052	33.499	-.00144	.03448	.00073	.00504	-.00446	5.5938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141701 Acquired: 6/28/2016 17:05:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.44744**	**.00486**	**-.00242**	**.00397**	**.00215**	**-.00019**
Stddev	.00115	.00102	.01325	.00158	.00124	.00030	.00081
%RSD	273.06	.22830	272.58	65.278	31.160	14.124	423.65
#1	.00148	.44860	.01694	-.00104	.00255	.00245	.00001
#2	.00059	.44670	.00696	-.00207	.00454	.00184	-.00109
#3	-.00081	.44700	-.00931	-.00414	.00482	.00217	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8516.7**	**51136.**	**2430.8**
Stddev	5.8	216.	3.4
%RSD	.06805	.42159	.13898
#1	8511.4	51374.	2427.1
#2	8515.8	50955.	2431.5
#3	8522.9	51079.	2433.8

Approved: June 29, 2016

Sample Name: L1606141702 Acquired: 6/28/2016 17:09:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00121	.03639	-.00063	.10512	.02263	.00004	92.101
Stddev	.00265	.00570	.00129	.00214	.00133	.00009	.123
%RSD	218.85	15.676	205.46	2.0348	5.8751	237.61	.13318
#1	-.00148	.03441	-.00194	.10701	.02405	-.00003	92.180
#2	.00156	.04282	-.00060	.10554	.02243	.00000	91.959
#3	-.00372	.03194	.00065	.10280	.02142	.00015	92.163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00043	.00230	.00145	.01095	.92150	.01897
Stddev	.00016	.00030	.00101	.00055	.01537	.06607	.00536
%RSD	60.469	71.156	43.805	38.203	140.44	7.1694	28.272
#1	.00040	.00074	.00197	.00195	.00404	.99360	.01602
#2	.00009	.00013	.00344	.00085	.00024	.86385	.01572
#3	.00028	.00041	.00150	.00154	.02856	.90706	.02516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.394	-.00128	.00072	F 328.03	-.00024	.01343	-.00378
Stddev	.208	.00450	.00025	.24	.00131	.00969	.00030
%RSD	.76042	352.14	34.308	.07448	557.20	72.100	7.9547
#1	27.591	.00141	.00093	327.78	-.00038	.02137	-.00366
#2	27.176	-.00648	.00078	328.27	-.00147	.00264	-.00356
#3	27.416	.00124	.00045	328.04	.00114	.01629	-.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141702 Acquired: 6/28/2016 17:09:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00068**	**.00807**	**6.3322**	**.00006**	**.43551**	**-.01380**	**-.00128**
Stddev	.00415	.00304	.0529	.00114	.00058	.00955	.00057
%RSD	614.28	37.628	.83619	2038.7	.13254	69.207	44.382
#1	-.00042	.00804	6.2743	.00129	.43554	-.01279	-.00131
#2	-.00282	.00505	6.3439	-.00094	.43492	-.00480	-.00070
#3	.00526	.01112	6.3783	-.00018	.43608	-.02382	-.00184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00632**	**.00278**	**.00030**
Stddev	.00160	.00015	.00099
%RSD	25.307	5.4480	328.68
#1	.00451	.00293	.00136
#2	.00691	.00278	-.00061
#3	.00754	.00263	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8506.3**	**50580.**	**2460.8**
Stddev	18.6	37.	28.4
%RSD	.21858	.07230	1.1552
#1	8522.2	50576.	2432.4
#2	8485.9	50619.	2460.7
#3	8510.9	50546.	2489.2

Approved: June 29, 2016

Sample Name: L1606141703 Acquired: 6/28/2016 17:13:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.06301	-.00157	.10756	.02273	.00003	93.540
Stddev	.00063	.00870	.00342	.00417	.00053	.00004	.787
%RSD	81.445	13.806	217.64	3.8746	2.3136	138.93	.84165
#1	.00056	.06732	.00238	.10359	.02331	.00007	94.370
#2	.00147	.06870	-.00350	.10719	.02260	-.00001	93.445
#3	.00027	.05299	-.00360	.11190	.02228	.00003	92.804
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00058	.00377	.00076	.04301	1.0274	.02683
Stddev	.00022	.00022	.00232	.00027	.02476	.0852	.00237
%RSD	83.493	38.162	61.441	35.871	57.574	8.2920	8.8258
#1	.00023	.00040	.00271	.00068	.03982	1.0581	.02443
#2	.00006	.00082	.00217	.00106	.06921	1.0929	.02690
#3	.00049	.00051	.00643	.00053	.02000	.93107	.02916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.770	.00313	.00061	F 332.81	-.00044	.01690	-.00176
Stddev	.423	.00058	.00038	3.06	.00040	.00623	.00193
%RSD	1.5234	18.415	63.127	.91936	91.512	36.876	109.22
#1	28.198	.00356	.00025	336.04	.00001	.01696	-.00039
#2	27.758	.00247	.00101	332.45	-.00075	.02309	-.00397
#3	27.352	.00335	.00056	329.95	-.00058	.01063	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141703 Acquired: 6/28/2016 17:13:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00858**	**.01098**	**6.5142**	**.00063**	**.44020**	**-.01426**	**-.00360**
Stddev	.00279	.00554	.1057	.00026	.00270	.00856	.00203
%RSD	32.540	50.432	1.6223	41.814	.61389	60.018	56.525
#1	.00962	.01118	6.3931	.00093	.44308	-.01059	-.00516
#2	.01070	.00535	6.5621	.00043	.43979	-.02404	-.00433
#3	.00542	.01642	6.5875	.00053	.43772	-.00815	-.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00669**	**.00204**	**-.00040**
Stddev	.00083	.00018	.00060
%RSD	12.431	8.6576	149.18
#1	.00573	.00187	-.00046
#2	.00724	.00205	.00022
#3	.00709	.00222	-.00098
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8495.4**	**50392.**	**2471.0**
Stddev	66.1	29.	28.9
%RSD	.77818	.05745	1.1711
#1	8420.9	50365.	2455.1
#2	8518.1	50387.	2453.4
#3	8547.1	50423.	2504.4

Approved: June 29, 2016

Sample Name: L1606141704 Acquired: 6/28/2016 17:17:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	.02482	-.00058	.24745	.03445	.00011	46.133	.00013
Stddev	.00193	.01764	.00214	.00411	.00146	.00007	.158	.00013
%RSD	147.77	71.076	366.90	1.6599	4.2502	65.051	.34241	99.279
#1	-.00177	.00897	-.00061	.25084	.03426	.00013	46.315	.00028
#2	.00081	.04383	-.00271	.24288	.03309	.00018	46.057	.00008
#3	-.00297	.02167	.00157	.24864	.03600	.00003	46.028	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.00119	.00162	-.00306	.52222	.01059	18.887	-.00098
Stddev	.00017	.00069	.00127	.00742	.12961	.00196	.293	.00125
%RSD	37.399	57.908	78.405	242.24	24.820	18.472	1.5517	128.58
#1	.00027	.00063	.00172	-.01046	.43642	.00841	19.107	-.00051
#2	.00051	.00196	.00284	-.00310	.45891	.01218	18.554	-.00002
#3	.00061	.00099	.00030	.00437	.67132	.01118	18.999	-.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00251	211.55	.00005	.09692	-.00255	.00520	.00074	5.8088
Stddev	.00031	1.48	.00154	.00855	.00138	.00793	.00785	.0129
%RSD	12.444	.69803	3150.4	8.8176	54.182	152.43	1053.9	.22195
#1	.00230	213.19	-.00158	.08800	-.00410	-.00390	.00629	5.8189
#2	.00287	210.31	.00147	.10504	-.00145	.00891	-.00823	5.8132
#3	.00236	211.16	.00025	.09771	-.00210	.01060	.00418	5.7943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141704 Acquired: 6/28/2016 17:17:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00087**	**.24315**	**-.00010**	**.00005**	**.02598**	**.00233**	**-.00026**
Stddev	.00079	.00119	.00743	.00177	.00061	.00010	.00030
%RSD	90.563	.49112	7319.3	3564.4	2.3394	4.3126	117.95
#1	-.00043	.24447	-.00795	.00163	.02643	.00244	-.00018
#2	-.00040	.24280	.00683	-.00186	.02529	.00223	-.00059
#3	-.00178	.24216	.00082	.00037	.02622	.00233	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8783.8**	**51975.**	**2512.3**
Stddev	55.8	116.	24.2
%RSD	.63563	.22378	.96215
#1	8722.3	51847.	2485.1
#2	8798.0	52074.	2520.4
#3	8831.2	52004.	2531.4

Approved: June 29, 2016

Sample Name: L1606141705 Acquired: 6/28/2016 17:21:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.11762**	**.00112**	**.10521**	**.06752**	**.00001**	**96.827**
Stddev	.00144	.00687	.00475	.00641	.00069	.00009	.209
%RSD	266.03	5.8421	425.10	6.0937	1.0190	779.17	.21573
#1	.00025	.12457	.00638	.10747	.06826	-.00009	97.016
#2	-.00220	.11083	-.00017	.11018	.06690	.00006	96.862
#3	.00033	.11745	-.00286	.09797	.06740	.00006	96.602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.00042**	**.00173**	**.00085**	**.07794**	**1.1917**	**.02902**
Stddev	.00013	.00033	.00044	.00109	.03187	.0495	.00258
%RSD	266.30	77.268	25.434	127.96	40.886	4.1514	8.8807
#1	-.00005	.00044	.00124	.00186	.09460	1.1478	.03156
#2	.00000	.00009	.00207	.00099	.09803	1.1821	.02911
#3	.00019	.00074	.00190	-.00030	.04120	1.2453	.02640
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**26.446**	**.00090**	**.00036**	F **307.46**	**.00034**	**.04921**	**.00215**
Stddev	.192	.00233	.00015	.43	.00044	.00674	.00302
%RSD	.72707	257.45	43.349	.13955	128.77	13.697	140.25
#1	26.224	-.00095	.00040	307.47	.00021	.05695	.00186
#2	26.549	.00352	.00048	307.88	-.00002	.04463	-.00071
#3	26.565	.00014	.00018	307.02	.00082	.04604	.00531
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141705 Acquired: 6/28/2016 17:21:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00223**	**.01012**	**6.7901**	**.00005**	**.42714**	**-.01174**	**-.00258**
Stddev	.00151	.00578	.1318	.00082	.00162	.00247	.00377
%RSD	67.939	57.128	1.9417	1493.3	.37951	21.069	146.44
#1	.00395	.00984	6.8579	.00068	.42786	-.01002	.00062
#2	.00163	.00449	6.8743	-.00087	.42528	-.01457	-.00161
#3	.00110	.01604	6.6382	.00036	.42827	-.01063	-.00674
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00811**	**.00497**	**.00003**
Stddev	.00068	.00032	.00018
%RSD	8.4177	6.3841	661.65
#1	.00813	.00521	.00024
#2	.00742	.00509	-.00009
#3	.00878	.00461	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9194.6**	**53158.**	**2688.0**
Stddev	76.3	238.	10.9
%RSD	.83016	.44694	.40654
#1	9130.2	52915.	2686.1
#2	9174.7	53169.	2699.8
#3	9278.9	53389.	2678.2

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 17:25:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41063**	**10.434**	**.41428**	**.51216**	**1.0413**	**.05168**	**10.315**	**.05208**
Stddev	.00142	.012	.00197	.00241	.0092	.00008	.139	.00046
%RSD	.34482	.11024	.47507	.46985	.88353	.15858	1.3488	.87992
#1	.40968	10.421	.41378	.50971	1.0318	.05172	10.241	.05259
#2	.41226	10.438	.41644	.51224	1.0501	.05159	10.475	.05195
#3	.40996	10.443	.41260	.51453	1.0420	.05174	10.228	.05171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20970**	**.52123**	**.52471**	**4.0931**	**52.107**	**1.0384**	**10.427**	**.51647**
Stddev	.00019	.00093	.00318	.0350	.543	.0086	.193	.01133
%RSD	.09137	.17808	.60593	.85548	1.0418	.83105	1.8528	2.1946
#1	.20971	.52017	.52700	4.0605	51.502	1.0310	10.245	.50418
#2	.20989	.52190	.52606	4.1301	52.552	1.0479	10.630	.52652
#3	.20951	.52163	.52108	4.0888	52.265	1.0363	10.407	.51870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0482**	**51.967**	**.51895**	**10.327**	**.51794**	**1.2481**	**.41250**	**5.1601**
Stddev	.0026	.422	.00111	.039	.00260	.0051	.00656	.0088
%RSD	.24430	.81231	.21458	.37322	.50188	.41057	1.5909	.16973
#1	1.0496	51.513	.51962	10.370	.52089	1.2510	.40521	5.1697
#2	1.0497	52.348	.51956	10.315	.51696	1.2512	.41433	5.1579
#3	1.0452	52.039	.51766	10.296	.51597	1.2422	.41795	5.1526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 17:25:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0508**	**1.0412**	**1.0262**	**.51737**	**1.0382**	**1.0416**	**1.0509**
Stddev	.0050	.0079	.0142	.00345	.0016	.0036	.0045
%RSD	.47886	.76203	1.3860	.66661	.15530	.34623	.42861
#1	1.0543	1.0324	1.0107	.52109	1.0370	1.0443	1.0488
#2	1.0530	1.0478	1.0385	.51427	1.0400	1.0430	1.0561
#3	1.0450	1.0435	1.0296	.51675	1.0375	1.0375	1.0479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8847.3**	**52671.**	**2540.6**
Stddev	20.9	44.	7.8
%RSD	.23606	.08261	.30650
#1	8856.9	52626.	2545.5
#2	8823.3	52713.	2531.6
#3	8861.6	52672.	2544.7

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 17:28:54 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	.00864	.00114	-.00129	.00127	-.00000	-.01842	.00016
Stddev	.00208	.01298	.00369	.00160	.00030	.00002	.02089	.00015
%RSD	151.69	150.30	323.38	123.51	23.213	416.07	113.36	96.218
#1	.00296	.01546	.00540	-.00214	.00094	.00000	-.03653	.00004
#2	.00212	-.00633	-.00086	.00055	.00137	.00001	.00443	.00033
#3	-.00098	.01679	-.00111	-.00229	.00151	-.00003	-.02317	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00001	-.00021	-.02327	.02556	.00089	.03301	-.00177
Stddev	.00011	.00022	.00156	.02043	.19953	.00092	.03673	.00050
%RSD	58.035	3375.3	728.02	87.786	780.71	103.42	111.26	28.440
#1	-.00007	-.00024	-.00110	-.02841	.00357	.00171	.07479	-.00121
#2	-.00029	.00018	-.00114	-.04064	.23518	-.00011	.00581	-.00190
#3	-.00022	.00008	.00159	-.00076	-.16207	.00108	.01843	-.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.06157	-.00058	.00198	-.00199	.00000	.00086	.00395
Stddev	.00050	.00743	.00023	.00447	.00074	.00175	.00619	.00169
%RSD	183.95	12.061	39.085	225.38	37.403	67237.	719.77	42.864
#1	.00033	.06954	-.00076	.00470	-.00248	.00162	.00734	.00430
#2	-.00025	.05484	-.00065	-.00318	-.00235	.00025	.00023	.00543
#3	.00073	.06032	-.00032	.00443	-.00113	-.00186	-.00499	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 17:28:54 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	-.00008	-.01040	-.00139	-.00079	.00004	.00033
Stddev	.00046	.00033	.00366	.00282	.00058	.00008	.00063
%RSD	63.012	430.45	35.254	202.56	72.599	178.70	188.25
#1	.00097	.00029	-.00635	-.00462	-.00069	.00001	.00060
#2	.00104	-.00036	-.01349	-.00012	-.00141	-.00001	.00078
#3	.00020	-.00016	-.01135	.00056	-.00027	.00013	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9498.1	57616.	2748.5
Stddev	20.5	444.	8.5
%RSD	.21556	.76995	.30872
#1	9518.0	57981.	2752.3
#2	9477.1	57746.	2754.4
#3	9499.4	57122.	2738.8

Approved: June 29, 2016

Sample Name: L1606141706S Acquired: 6/28/2016 17:32:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19808	5.1906	.20655	1.1063	.57218	.02520	102.15
Stddev	.00320	.0196	.00418	.0036	.00217	.00008	.64
%RSD	1.6176	.37720	2.0223	.32409	.37887	.32992	.62171
#1	.19656	5.2063	.20695	1.1061	.57455	.02521	102.72
#2	.20176	5.1967	.20219	1.1100	.57029	.02512	102.28
#3	.19591	5.1687	.21052	1.1028	.57171	.02528	101.46
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02536	.10182	.25402	.25166	2.0225	26.938	.54649
Stddev	.00023	.00059	.00225	.00113	.0134	.195	.00157
%RSD	.90274	.57849	.88493	.45019	.66474	.72444	.28645
#1	.02538	.10156	.25429	.25139	2.0225	26.994	.54509
#2	.02512	.10141	.25164	.25291	2.0090	26.721	.54621
#3	.02558	.10250	.25611	.25069	2.0359	27.099	.54818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.531	.24839	.51920	F 332.57	.24791	5.1748	.24660
Stddev	.247	.00395	.00098	1.46	.00066	.0118	.00293
%RSD	.78179	1.5908	.18966	.43910	.26478	.22818	1.1879
#1	31.335	.25082	.52003	334.01	.24863	5.1884	.24946
#2	31.808	.25052	.51945	332.62	.24776	5.1669	.24361
#3	31.450	.24383	.51811	331.09	.24734	5.1692	.24672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141706S Acquired: 6/28/2016 17:32:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.61097	.20159	9.3307	.51429	.92047	.49095	.24148
Stddev	.00187	.00312	.0070	.00177	.00593	.00874	.00358
%RSD	.30591	1.5463	.07478	.34390	.64371	1.7794	1.4806
#1	.61249	.20339	9.3354	.51622	.92365	.50103	.24486
#2	.60888	.20339	9.3340	.51274	.92414	.48612	.24184
#3	.61152	.19799	9.3227	.51392	.91364	.48569	.23774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51988	.50708	.00128
Stddev	.00090	.00063	.00024
%RSD	.17257	.12519	18.835
#1	.51899	.50720	.00124
#2	.52079	.50640	.00105
#3	.51985	.50765	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8731.6	52119.	2623.8
Stddev	22.2	108.	5.5
%RSD	.25407	.20627	.21124
#1	8715.2	51996.	2617.7
#2	8722.7	52171.	2625.3
#3	8756.8	52191.	2628.5

Approved: June 29, 2016

Sample Name: L1606141707SD Acquired: 6/28/2016 17:36:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19904**	**5.1577**	**.20660**	**1.1125**	**.57944**	**.02527**	**106.96**
Stddev	.00340	.0324	.00258	.0072	.00374	.00015	.93
%RSD	1.7077	.62831	1.2482	.64388	.64630	.60260	.86711
#1	.20153	5.1918	.20939	1.1207	.58341	.02544	107.96
#2	.19517	5.1540	.20430	1.1077	.57895	.02523	106.79
#3	.20043	5.1273	.20611	1.1090	.57596	.02514	106.12
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02530**	**.10083**	**.25465**	**.25033**	**2.0157**	**27.093**	**.55071**
Stddev	.00018	.00022	.00034	.00103	.0346	.134	.00560
%RSD	.70257	.22081	.13182	.41222	1.7175	.49434	1.0172
#1	.02513	.10089	.25485	.25054	2.0488	27.229	.55640
#2	.02549	.10058	.25426	.25124	2.0186	27.089	.55053
#3	.02527	.10101	.25483	.24921	1.9797	26.961	.54520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**32.784**	**.25113**	**.51748**	F **347.90**	**.24681**	**5.1621**	**.24360**
Stddev	.318	.00113	.00098	2.92	.00070	.0064	.00204
%RSD	.96981	.45137	.18933	.83831	.28316	.12380	.83787
#1	33.099	.25131	.51706	350.96	.24677	5.1662	.24508
#2	32.463	.24992	.51678	347.61	.24753	5.1653	.24127
#3	32.791	.25217	.51860	345.15	.24614	5.1547	.24444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141707SD Acquired: 6/28/2016 17:36:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.60853	.20159	9.5063	.51055	.94598	.48772	.24112
Stddev	.00227	.00218	.0161	.00183	.00572	.00698	.00257
%RSD	.37335	1.0822	.16904	.35915	.60455	1.4306	1.0676
#1	.61075	.19909	9.5194	.50854	.95255	.48242	.24016
#2	.60861	.20252	9.5110	.51099	.94327	.49562	.23916
#3	.60621	.20315	9.4883	.51212	.94213	.48511	.24404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.52390	.50579	.00079
Stddev	.00181	.00036	.00028
%RSD	.34515	.07203	35.877
#1	.52594	.50600	.00091
#2	.52251	.50601	.00100
#3	.52323	.50537	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8701.2	52153.	2588.8
Stddev	22.5	132.	32.1
%RSD	.25813	.25395	1.2418
#1	8722.7	52088.	2562.7
#2	8703.0	52067.	2578.9
#3	8677.9	52306.	2624.7

Approved: June 29, 2016

Sample Name: L1606141709 Acquired: 6/28/2016 17:40:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**.02204**	**-.00015**	**.00568**	**.00369**	**.00002**	**.47478**	**.00028**
Stddev	.00045	.00870	.00406	.00129	.00006	.00006	.02804	.00019
%RSD	43.527	39.495	2684.0	22.677	1.7207	230.26	5.9059	67.226
#1	-.00109	.03207	-.00068	.00707	.00366	.00007	.49930	.00006
#2	-.00145	.01651	.00415	.00452	.00376	.00004	.44421	.00040
#3	-.00056	.01753	-.00393	.00546	.00365	-.00004	.48083	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.02074**	**.00159**	**.09814**	**.12915**	**.00263**	**.17253**	**.00183**
Stddev	.00019	.00087	.00109	.02609	.10413	.00216	.05728	.00183
%RSD	330.23	4.1809	68.745	26.582	80.624	82.131	33.199	99.777
#1	.00015	.01977	.00259	.09334	.07504	.00025	.14881	.00162
#2	-.00024	.02105	.00042	.07478	.06322	.00447	.13091	.00012
#3	-.00009	.02142	.00176	.12629	.24919	.00317	.23785	.00376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00330**	**.41183**	**.01258**	**.00202**	**.00096**	**-.00040**	**-.00693**	**.16243**
Stddev	.00024	.05071	.00143	.00577	.00237	.00111	.00365	.00635
%RSD	7.1652	12.314	11.384	285.46	247.83	277.45	52.696	3.9090
#1	.00340	.46553	.01410	-.00056	-.00071	-.00008	-.00639	.16499
#2	.00347	.40521	.01126	.00862	-.00009	-.00164	-.00357	.16710
#3	.00303	.36476	.01237	-.00200	.00367	.00051	-.01081	.15520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141709 Acquired: 6/28/2016 17:40:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.00211	-.00432	-.00552	-.00015	.00799	.00005
Stddev	.00091	.00055	.00239	.00248	.00116	.00023	.00041
%RSD	78.681	25.991	55.399	44.889	756.12	2.9356	786.44
#1	.00192	.00181	-.00182	-.00838	-.00117	.00818	-.00009
#2	.00142	.00275	-.00659	-.00412	.00112	.00805	-.00027
#3	.00015	.00178	-.00454	-.00406	-.00041	.00773	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9048.9	54685.	2582.3
Stddev	39.5	183.	15.2
%RSD	.43628	.33548	.58820
#1	9076.5	54575.	2577.5
#2	9066.5	54583.	2599.3
#3	9003.7	54897.	2570.1

Approved: June 29, 2016

Sample Name: L1606141708 Acquired: 6/28/2016 17:44:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00243	.04088	.00267	.26401	.02074	.00004	47.847
Stddev	.00156	.00747	.00452	.00205	.00069	.00006	.211
%RSD	64.389	18.266	169.40	.77531	3.3096	146.55	.44118
#1	.00245	.04279	-.00253	.26335	.02076	.00000	47.982
#2	.00398	.04720	.00490	.26237	.02005	.00001	47.955
#3	.00085	.03264	.00564	.26630	.02142	.00010	47.604
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00060	.00322	.00115	.00871	1.4455	.03114
Stddev	.00026	.00038	.00063	.00167	.01045	.0814	.00316
%RSD	92.339	63.370	19.723	144.37	119.94	5.6330	10.156
#1	.00029	.00050	.00255	.00254	.00807	1.5394	.02833
#2	.00053	.00102	.00329	.00161	.01948	1.3939	.03051
#3	.00002	.00028	.00381	-.00069	-.00140	1.4033	.03456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.580	.00101	.00380	F 309.24	.00068	.01262	.00097
Stddev	.048	.00103	.00020	2.61	.00100	.00203	.00350
%RSD	.18102	102.63	5.2895	.84510	146.78	16.065	362.04
#1	26.525	-.00017	.00403	311.99	.00029	.01371	.00191
#2	26.602	.00179	.00375	308.94	-.00007	.01387	.00390
#3	26.613	.00140	.00364	306.79	.00182	.01028	-.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141708 Acquired: 6/28/2016 17:44:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00603	-.00211	10.769	-.00049	.45330	.00227	.00090
Stddev	.00610	.00730	.105	.00096	.00324	.00961	.00040
%RSD	101.14	346.44	.97867	196.72	.71523	422.80	43.933
#1	.01107	-.00689	10.832	.00052	.45646	-.00118	.00055
#2	-.00075	.00629	10.827	-.00058	.45347	.01314	.00083
#3	.00777	-.00572	10.647	-.00140	.44998	-.00514	.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.02416	.00349	-.00002
Stddev	.00018	.00017	.00027
%RSD	.72781	4.8721	1121.0
#1	.02432	.00336	-.00019
#2	.02418	.00368	-.00016
#3	.02397	.00343	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8723.1	51951.	2551.9
Stddev	8.7	67.	17.3
%RSD	.09932	.12929	.67853
#1	8714.7	51875.	2544.1
#2	8722.7	51978.	2539.9
#3	8732.0	52001.	2571.8

Approved: June 29, 2016

Sample Name: L1606141708PS Acquired: 6/28/2016 17:48:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574351-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20259**	**5.1687**	**.21063**	**1.2212**	**.54196**	**.02561**	**44.961**	**.02555**
Stddev	.00156	.0084	.00541	.0004	.00321	.00011	.062	.00021
%RSD	.77095	.16245	2.5702	.03511	.59146	.43676	.13812	.83840
#1	.20436	5.1784	.21685	1.2216	.54096	.02570	44.969	.02567
#2	.20201	5.1643	.20696	1.2207	.54555	.02549	45.019	.02531
#3	.20140	5.1635	.20807	1.2214	.53937	.02565	44.896	.02568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10323**	**.25884**	**.25619**	**2.0636**	**26.644**	**.53793**	**21.729**	**.25488**
Stddev	.00046	.00092	.00047	.0109	.087	.00284	.132	.00399
%RSD	.44581	.35703	.18334	.52827	.32624	.52750	.60733	1.5672
#1	.10353	.25833	.25664	2.0633	26.595	.54042	21.633	.25244
#2	.10270	.25829	.25623	2.0528	26.745	.53851	21.880	.25949
#3	.10346	.25991	.25571	2.0746	26.593	.53484	21.675	.25271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52668**	**211.46**	**.25296**	**5.1993**	**.25070**	**.61175**	**.19559**	**7.5114**
Stddev	.00057	.61	.00083	.0189	.00209	.00406	.00531	.0237
%RSD	.10810	.29018	.32665	.36271	.83523	.66301	2.7154	.31540
#1	.52639	211.92	.25279	5.2151	.25160	.61155	.19173	7.5159
#2	.52734	211.69	.25223	5.1784	.24831	.60780	.20165	7.4857
#3	.52632	210.76	.25385	5.2044	.25219	.61590	.19340	7.5324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141708PS Acquired: 6/28/2016 17:48:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574351-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52241	.73587	.50781	.25087	.54413	.51477	.00060
Stddev	.00290	.00286	.00391	.00293	.00166	.00074	.00075
%RSD	.55542	.38921	.77060	1.1694	.30456	.14412	124.36
#1	.52548	.73778	.50331	.25358	.54423	.51470	-.00018
#2	.51972	.73725	.50974	.25127	.54243	.51407	.00132
#3	.52202	.73258	.51039	.24775	.54574	.51555	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8718.0	52220.	2556.6
Stddev	23.7	196.	14.1
%RSD	.27134	.37526	.55135
#1	8736.2	52007.	2546.0
#2	8726.6	52260.	2551.3
#3	8691.3	52392.	2572.6

Approved: June 29, 2016

Sample Name: L1606141708SDL Acquired: 6/28/2016 17:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574351-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.01090	-.00177	.05174	.01000	.00001	8.8372	-.00021
Stddev	.00417	.00346	.00166	.00113	.00148	.00006	.1364	.00021
%RSD	5352.3	31.779	93.638	2.1803	14.756	761.48	1.5432	99.645
#1	.00017	.00731	-.00114	.05151	.01145	.00003	8.8881	-.00044
#2	.00421	.01117	-.00365	.05297	.00850	-.00006	8.6827	-.00014
#3	-.00414	.01422	-.00052	.05075	.01005	.00005	8.9409	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00002	-.00037	.00887	.07836	.00595	3.7843	.00093
Stddev	.00016	.00091	.00083	.02803	.17140	.00666	.0653	.00243
%RSD	242.29	5773.0	224.03	316.15	218.73	111.94	1.7261	261.96
#1	.00012	.00086	.00008	.02549	.25974	-.00139	3.8020	-.00110
#2	-.00018	.00013	.00013	.02462	.05625	.01163	3.7120	.00361
#3	-.00014	-.00095	-.00132	-.02350	-.08091	.00762	3.8391	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	40.985	-.00098	.02316	-.00046	.00112	-.00399	1.1071
Stddev	.00050	.143	.00145	.00549	.00197	.00317	.00369	.0032
%RSD	158.02	.34971	148.07	23.714	432.35	283.73	92.483	.28900
#1	.00038	40.844	-.00095	.02909	-.00059	.00328	-.00185	1.1065
#2	.00079	41.130	-.00244	.01825	-.00236	-.00252	-.00825	1.1106
#3	-.00021	40.981	.00046	.02213	.00158	.00260	-.00187	1.1042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141708SDL Acquired: 6/28/2016 17:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574351-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.04740	-.00415	.00232	.00509	.00125	.00026
Stddev	.00038	.00027	.00885	.00316	.00105	.00019	.00028
%RSD	55.625	.56719	213.10	136.27	20.717	14.844	108.09
#1	.00036	.04714	.00557	.00596	.00466	.00104	.00057
#2	.00059	.04739	-.01172	.00027	.00432	.00135	.00002
#3	.00110	.04768	-.00631	.00073	.00629	.00137	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9108.9	55839.	2680.3
Stddev	144.9	45.	11.8
%RSD	1.5908	.07970	.44130
#1	9276.0	55823.	2679.3
#2	9017.9	55805.	2669.0
#3	9032.9	55889.	2692.6

Approved: June 29, 2016

Sample Name: L1606141708SDL Acquired: 6/28/2016 17:55:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574351-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00126**	**.00679**	**-.00461**	**.01048**	**.00757**	**.00011**	**2.0282**	**.00002**
Stddev	.00171	.00662	.00192	.00130	.00164	.00004	.0721	.00039
%RSD	135.72	97.538	41.786	12.376	21.676	33.161	3.5542	1576.6
#1	-.00322	.01267	-.00428	.00936	.00767	.00014	1.9808	-.00023
#2	-.00010	.00808	-.00667	.01019	.00916	.00013	1.9926	.00048
#3	-.00045	-.00038	-.00287	.01190	.00588	.00007	2.1111	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**-.00063**	**.00029**	**-.00169**	**-.06458**	**.00324**	**.94026**	**-.00186**
Stddev	.00030	.00093	.00186	.00633	.11707	.00642	.04956	.00422
%RSD	519.60	146.77	651.58	374.87	181.27	198.03	5.2707	227.50
#1	-.00038	-.00149	.00071	-.00880	-.05117	.01066	.99743	.00249
#2	.00001	-.00076	-.00175	.00336	-.18778	-.00040	.90962	-.00211
#3	.00020	.00035	.00190	.00037	.04520	-.00053	.91371	-.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**9.3983**	**.00052**	**.00643**	**-.00278**	**.00377**	**-.00358**	**.23575**
Stddev	.00058	.0421	.00029	.00838	.00339	.00244	.00209	.00590
%RSD	5118.0	.44773	56.366	130.29	121.91	64.746	58.308	2.5017
#1	.00064	9.3497	.00078	.01272	-.00577	.00122	-.00340	.23326
#2	-.00047	9.4246	.00057	.00965	-.00346	.00609	-.00159	.24249
#3	-.00020	9.4204	.00020	-.00308	.00090	.00400	-.00576	.23152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141708SDL Acquired: 6/28/2016 17:55:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574351-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**.01067**	**-.00653**	**-.00309**	**.00097**	**.00051**	**-.00036**
Stddev	.00026	.00020	.00256	.00383	.00052	.00006	.00045
%RSD	104.08	1.8650	39.262	124.14	53.131	10.829	124.08
#1	-.00034	.01058	-.00528	-.00684	.00060	.00050	-.00083
#2	.00004	.01054	-.00948	-.00325	.00157	.00046	.00006
#3	-.00045	.01090	-.00483	.00082	.00076	.00057	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8810.1**	**51837.**	**2375.6**
Stddev	22.4	803.	12.2
%RSD	.25452	1.5500	.51506
#1	8798.7	50934.	2387.5
#2	8795.7	52105.	2376.5
#3	8835.9	52472.	2363.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 17:59:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40953	10.358	.40325	.50569	1.0377	.05127	10.173	.05163
Stddev	.00263	.030	.00244	.00340	.0049	.00005	.046	.00026
%RSD	.64327	.29367	.60614	.67192	.46748	.10702	.44991	.49526
#1	.41131	10.365	.40190	.50898	1.0429	.05127	10.218	.05188
#2	.41078	10.384	.40178	.50219	1.0369	.05133	10.173	.05137
#3	.40651	10.324	.40607	.50590	1.0333	.05122	10.126	.05164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20801	.51774	.51845	4.0570	51.916	1.0358	10.380	.51050
Stddev	.00080	.00113	.00121	.0359	.257	.0087	.109	.00365
%RSD	.38296	.21789	.23327	.88438	.49446	.84111	1.0481	.71493
#1	.20753	.51704	.51738	4.0712	51.951	1.0448	10.412	.51462
#2	.20757	.51713	.51821	4.0836	52.154	1.0274	10.470	.50765
#3	.20893	.51904	.51976	4.0162	51.644	1.0352	10.259	.50923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0353	51.313	.51142	10.168	.51109	1.2278	.40810	5.0792
Stddev	.0016	.308	.00212	.020	.00397	.0065	.00283	.0118
%RSD	.15321	.60001	.41391	.19194	.77733	.52512	.69386	.23247
#1	1.0334	51.668	.50929	10.152	.51162	1.2205	.41062	5.0661
#2	1.0361	51.140	.51353	10.163	.50688	1.2303	.40503	5.0828
#3	1.0362	51.129	.51144	10.190	.51477	1.2327	.40864	5.0889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 17:59:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0405**	**1.0319**	**1.0258**	**.51595**	**1.0303**	**1.0251**	**1.0489**
Stddev	.0014	.0058	.0056	.00284	.0033	.0006	.0073
%RSD	.13748	.56547	.54363	.55091	.32022	.05544	.69634
#1	1.0389	1.0385	1.0307	.51844	1.0265	1.0248	1.0547
#2	1.0411	1.0296	1.0270	.51655	1.0327	1.0248	1.0513
#3	1.0416	1.0275	1.0197	.51285	1.0317	1.0258	1.0407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8637.3**	**51278.**	**2447.4**
Stddev	8.2	60.	15.8
%RSD	.09533	.11663	.64353
#1	8627.9	51221.	2433.5
#2	8641.0	51271.	2444.2
#3	8643.1	51341.	2464.5

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 18:03:06 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.01080	-.00271	.00248	.00477	.00007	-.01292	.00019
Stddev	.00093	.01033	.00298	.00158	.00062	.00003	.03053	.00023
%RSD	167.94	95.684	110.04	63.788	13.065	47.480	236.25	120.92
#1	-.00037	.02131	.00021	.00086	.00529	.00005	.01946	-.00005
#2	.00055	.00066	-.00259	.00256	.00494	.00011	-.01705	.00041
#3	.00149	.01043	-.00574	.00402	.00408	.00005	-.04118	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00071	-.00033	-.00673	.08495	.00461	-.03119	-.00165
Stddev	.00027	.00104	.00159	.02679	.11097	.00127	.02914	.00031
%RSD	626.90	146.32	486.02	398.01	130.63	27.579	93.428	18.937
#1	.00002	.00124	-.00155	-.03370	.21293	.00585	-.05176	-.00140
#2	.00019	-.00049	.00147	-.00638	.02640	.00467	-.04395	-.00200
#3	-.00034	.00140	-.00090	.01989	.01551	.00331	.00215	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.02578	-.00088	.00040	-.00098	-.00036	-.00052	.01027
Stddev	.00021	.03313	.00045	.00299	.00110	.00141	.00278	.00190
%RSD	46.697	128.47	50.984	754.22	112.15	395.94	532.06	18.530
#1	.00030	.06378	-.00037	-.00306	-.00117	-.00054	-.00113	.01167
#2	.00035	.01063	-.00119	.00206	-.00198	-.00167	-.00295	.01105
#3	.00068	.00295	-.00107	.00219	.00020	.00114	.00251	.00811
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 18:03:06 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00044	.00810	-.00323	.00026	-.00003	-.00076
Stddev	.00017	.00061	.00298	.00109	.00047	.00016	.00056
%RSD	206.40	138.10	36.823	33.645	180.38	466.73	74.263
#1	.00022	.00021	.00523	-.00378	.00040	.00014	-.00039
#2	-.00011	.00113	.01118	-.00394	.00064	-.00017	-.00141
#3	.00015	-.00002	.00788	-.00198	-.00026	-.00007	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9036.2	53954.	2557.7
Stddev	26.9	80.	23.2
%RSD	.29811	.14859	.90574
#1	9037.5	53990.	2536.5
#2	9008.6	53862.	2554.3
#3	9062.4	54009.	2582.4

Approved: June 29, 2016

Sample Name: PBW B2 Acquired: 6/28/2016 18:07:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00170	.01043	-.00052	-.00011	.00401	.00007	-.00778	-.00022
Stddev	.00200	.00199	.00155	.00108	.00075	.00012	.01103	.00049
%RSD	117.21	19.061	298.33	973.04	18.651	166.11	141.79	229.43
#1	.00033	.01227	.00099	.00098	.00488	.00019	-.00668	-.00044
#2	-.00177	.01070	-.00043	-.00014	.00355	-.00004	.00266	-.00056
#3	-.00366	.00832	-.00211	-.00118	.00361	.00007	-.01931	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00016	-.00003	-.00729	-.08053	.00362	.00599	-.00068
Stddev	.00020	.00072	.00044	.04593	.12257	.00210	.05243	.00472
%RSD	1586.2	448.35	1436.5	630.15	152.21	57.897	875.90	696.56
#1	.00025	-.00030	.00028	-.00464	.04618	.00556	-.04922	.00095
#2	-.00010	-.00021	.00017	-.05448	-.08928	.00391	.05511	.00302
#3	-.00011	.00099	-.00054	.03726	-.19848	.00140	.01207	-.00600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	-.04423	-.00022	.00531	-.00089	-.00119	.00160	-.02066
Stddev	.00010	.03208	.00087	.00542	.00193	.00297	.00550	.00313
%RSD	415.26	72.525	401.96	101.93	217.31	249.65	344.45	15.170
#1	-.00009	-.00833	-.00050	.00397	-.00247	-.00230	.00628	-.01727
#2	.00010	-.05429	.00076	.01128	.00126	.00217	.00297	-.02345
#3	.00005	-.07006	-.00091	.00070	-.00146	-.00344	-.00446	-.02126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW B2 Acquired: 6/28/2016 18:07:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00015	-.00225	-.00154	-.00086	.00116	.00006
Stddev	.00083	.00033	.00560	.00109	.00062	.00019	.00059
%RSD	296.10	220.11	249.29	70.822	71.238	16.407	922.03
#1	.00057	-.00047	-.00793	-.00227	-.00023	.00104	-.00013
#2	.00092	.00019	-.00209	-.00207	-.00091	.00107	-.00041
#3	-.00066	-.00017	.00327	-.00029	-.00146	.00138	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9262.0	55509.	2596.5
Stddev	18.3	93.	16.0
%RSD	.19752	.16788	.61454
#1	9274.8	55517.	2609.7
#2	9270.0	55412.	2600.9
#3	9241.0	55598.	2578.7

Approved: June 29, 2016

Sample Name: LCSW B2 Acquired: 6/28/2016 18:10:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19908**	**5.0837**	**.19736**	**.97686**	**.51693**	**.02483**	**5.1160**	**.02576**
Stddev	.00333	.0233	.00330	.00209	.00312	.00008	.0362	.00019
%RSD	1.6735	.45847	1.6711	.21444	.60374	.33692	.70721	.74443
#1	.20187	5.1093	.19698	.97458	.51353	.02488	5.0743	.02555
#2	.19539	5.0782	.19426	.97732	.51761	.02473	5.1397	.02592
#3	.19996	5.0637	.20083	.97869	.51966	.02488	5.1340	.02583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10460**	**.25742**	**.25769**	**2.0140**	**25.917**	**.52465**	**5.3350**	**.25267**
Stddev	.00067	.00235	.00084	.0526	.053	.00613	.0905	.00627
%RSD	.63742	.91298	.32425	2.6137	.20278	1.1691	1.6966	2.4834
#1	.10462	.25478	.25712	2.0495	25.966	.51774	5.4250	.24876
#2	.10392	.25819	.25865	1.9535	25.922	.52675	5.3359	.24934
#3	.10526	.25929	.25731	2.0391	25.861	.52946	5.2440	.25991
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51758**	**25.584**	**.25454**	**4.9065**	**.25584**	**.59881**	**.19289**	**2.4365**
Stddev	.00117	.139	.00175	.0056	.00447	.00308	.00511	.0047
%RSD	.22594	.54341	.68580	.11407	1.7469	.51446	2.6494	.19215
#1	.51794	25.441	.25346	4.9066	.25810	.60066	.18701	2.4311
#2	.51627	25.594	.25361	4.9121	.25069	.59525	.19551	2.4392
#3	.51853	25.718	.25655	4.9009	.25872	.60051	.19617	2.4392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW B2 Acquired: 6/28/2016 18:10:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51885**	**.51980**	**.51295**	**.25574**	**.51101**	**.50971**	**.00042**
Stddev	.00154	.00188	.00585	.00184	.00161	.00098	.00030
%RSD	.29738	.36262	1.1413	.71911	.31603	.19237	71.457
#1	.51820	.51785	.50904	.25411	.51259	.50924	.00060
#2	.51773	.51992	.51968	.25538	.51108	.50904	.00007
#3	.52061	.52162	.51013	.25773	.50936	.51083	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8877.1**	**53509.**	**2551.3**
Stddev	31.9	97.	7.5
%RSD	.35911	.18077	.29508
#1	8840.7	53429.	2556.0
#2	8900.2	53617.	2555.2
#3	8890.4	53481.	2542.6

Approved: June 29, 2016

Sample Name: L1606111601 Acquired: 6/28/2016 18:14:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00175	.75194	-.00188	.32623	.17213	.00042	25.558	.00036
Stddev	.00238	.00520	.00227	.00208	.00077	.00003	.203	.00028
%RSD	136.60	.69204	120.67	.63750	.44552	6.9430	.79597	78.709
#1	.00443	.75721	-.00276	.32666	.17289	.00039	25.699	.00066
#2	.00095	.74680	-.00356	.32806	.17213	.00044	25.649	.00033
#3	-.00014	.75181	.00070	.32397	.17136	.00044	25.324	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00162	.00161	.43834	3.6149	.00818	8.6223	1.3794
Stddev	.00029	.00043	.00106	.01562	.1050	.00271	.0664	.0124
%RSD	66.289	26.509	65.893	3.5643	2.9055	33.115	.76954	.89552
#1	.00018	.00211	.00097	.42430	3.6132	.00657	8.6870	1.3840
#2	.00037	.00131	.00283	.43554	3.7208	.00667	8.5544	1.3888
#3	.00075	.00144	.00102	.45517	3.5108	.01131	8.6255	1.3654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.82237	61.256	.01056	.10449	-.00054	.00079	-.00339	1.3032
Stddev	.01556	.433	.00155	.00880	.00214	.00072	.00094	.0137
%RSD	1.8916	.70641	14.638	8.4251	399.33	91.364	27.639	1.0523
#1	.82848	61.393	.00878	.10322	-.00275	-.00004	-.00252	1.3043
#2	.83394	61.603	.01153	.11386	.00153	.00114	-.00439	1.3164
#3	.80468	60.771	.01138	.09639	-.00039	.00126	-.00327	1.2890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111601 Acquired: 6/28/2016 18:14:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.12519	.00073	.00973	.28446	.03296	.00120
Stddev	.00125	.00052	.01152	.00045	.00234	.00077	.00065
%RSD	240.46	.41609	1586.8	4.5963	.82348	2.3343	53.563
#1	.00060	.12497	.00089	.01024	.28676	.03326	.00114
#2	-.00077	.12578	-.01088	.00945	.28455	.03352	.00188
#3	.00173	.12482	.01216	.00948	.28207	.03208	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8934.8	53164.	2570.5
Stddev	63.4	236.	32.6
%RSD	.70947	.44424	1.2681
#1	8865.2	53054.	2563.3
#2	8949.9	53003.	2542.1
#3	8989.3	53435.	2606.1

Approved: June 29, 2016

Sample Name: L1606111602 Acquired: 6/28/2016 18:18:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00167	.05684	-.00343	.33210	.01181	.00032	25.192	.00026
Stddev	.00070	.00702	.00218	.00119	.00056	.00011	.210	.00018
%RSD	41.704	12.357	63.446	.35804	4.7323	34.511	.83422	71.792
#1	-.00245	.04934	-.00499	.33083	.01149	.00038	24.963	.00046
#2	-.00144	.06326	-.00094	.33231	.01149	.00020	25.377	.00010
#3	-.00112	.05791	-.00437	.33318	.01246	.00039	25.236	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00054	.00098	.05399	3.4614	.00763	8.3315	1.1868
Stddev	.00037	.00050	.00047	.02106	.0611	.00138	.1473	.0089
%RSD	43.361	91.231	48.453	39.004	1.7663	18.129	1.7684	.75103
#1	.00123	.00086	.00114	.07669	3.4270	.00610	8.4685	1.1955
#2	.00088	.00080	.00135	.05019	3.5320	.00879	8.3503	1.1873
#3	.00048	-.00003	.00045	.03509	3.4252	.00801	8.1757	1.1777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.77485	61.289	.00273	.00726	-.00250	.00670	-.00397	.99945
Stddev	.02513	.173	.00112	.00756	.00399	.00495	.00812	.02573
%RSD	3.2436	.28163	41.035	104.18	159.14	73.879	204.64	2.5740
#1	.78995	61.413	.00210	.01493	-.00616	.01227	-.00779	1.0114
#2	.78875	61.363	.00402	.00703	.00175	.00505	.00536	1.0171
#3	.74583	61.092	.00207	-.00019	-.00310	.00279	-.00947	.96993
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111602 Acquired: 6/28/2016 18:18:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.11618	-.00756	.00607	.22798	.00125	.00119
Stddev	.00051	.00073	.00385	.00060	.00039	.00028	.00063
%RSD	167.15	.62850	50.905	9.9696	.17155	22.072	53.253
#1	.00088	.11591	-.00950	.00538	.22834	.00093	.00056
#2	-.00010	.11563	-.01005	.00634	.22804	.00143	.00118
#3	.00014	.11701	-.00313	.00649	.22756	.00138	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8986.7	53984.	2599.1
Stddev	18.2	25.	10.7
%RSD	.20235	.04593	.41189
#1	8972.4	53975.	2586.8
#2	8980.5	54013.	2604.3
#3	9007.1	53966.	2606.2

Approved: June 29, 2016

Sample Name: L1606111603 Acquired: 6/28/2016 18:22:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00223	1.1464	-.00441	.28841	.02792	.00827	8.9601	.00016
Stddev	.00052	.0149	.00268	.00355	.00152	.00004	.1383	.00022
%RSD	23.436	1.2979	60.747	1.2309	5.4320	.50015	1.5440	137.57
#1	.00165	1.1556	-.00488	.29186	.02923	.00831	8.9131	-.00009
#2	.00238	1.1543	-.00153	.28860	.02626	.00826	9.1158	.00031
#3	.00267	1.1292	-.00682	.28477	.02827	.00823	8.8514	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	-.00064	.00258	.07504	4.0785	.00681	3.0877	.00503
Stddev	.00006	.00074	.00165	.01492	.0121	.00176	.0490	.00383
%RSD	5.5066	116.09	64.203	19.881	.29670	25.819	1.5852	76.094
#1	.00112	-.00064	.00420	.07009	4.0833	.00756	3.1337	.00894
#2	.00102	.00010	.00263	.09181	4.0647	.00807	3.0931	.00128
#3	.00112	-.00138	.00089	.06323	4.0874	.00480	3.0363	.00488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0749	53.201	.00601	.03502	-.00442	.00758	.00168	.47187
Stddev	.0024	.169	.00041	.00508	.00342	.00227	.00368	.00413
%RSD	.11769	.31689	6.7944	14.494	77.276	29.913	219.34	.87606
#1	2.0777	53.286	.00597	.03074	-.00237	.00807	-.00232	.47663
#2	2.0732	53.311	.00644	.04063	-.00253	.00511	.00245	.46976
#3	2.0738	53.007	.00563	.03371	-.00837	.00956	.00491	.46922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111603 Acquired: 6/28/2016 18:22:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00105**	**.07044**	**-.00406**	**.19724**	**5.3313**	**.00345**	**.00238**
Stddev	.00044	.00089	.00986	.00504	.0090	.00003	.00019
%RSD	41.969	1.2705	243.00	2.5534	.16898	.76249	7.7882
#1	.00085	.07098	.00719	.20246	5.3414	.00348	.00217
#2	.00155	.06941	-.01123	.19241	5.3281	.00342	.00253
#3	.00074	.07094	-.00814	.19686	5.3242	.00346	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9079.8**	**54344.**	**2576.4**
Stddev	20.1	201.	12.9
%RSD	.22108	.37061	.50181
#1	9060.8	54116.	2567.7
#2	9077.8	54415.	2570.1
#3	9100.8	54499.	2591.2

Approved: June 29, 2016

Sample Name: L1606111604 Acquired: 6/28/2016 18:26:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00128	1.0608	.00027	.29379	.02626	.00838	8.9222	.00022
Stddev	.00216	.0148	.00204	.00040	.00119	.00001	.1772	.00016
%RSD	168.06	1.3915	765.02	.13570	4.5474	.16575	1.9866	70.345
#1	.00245	1.0777	.00249	.29425	.02614	.00839	9.1266	.00005
#2	.00261	1.0543	-.00017	.29358	.02751	.00837	8.8113	.00036
#3	-.00121	1.0505	-.00152	.29355	.02513	.00837	8.8286	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	-.00107	.00202	.01618	4.0008	.00398	2.9400	.00197
Stddev	.00046	.00041	.00114	.04826	.0713	.00315	.1370	.00199
%RSD	39.980	38.272	56.060	298.24	1.7824	79.084	4.6586	101.16
#1	.00066	-.00124	.00325	.00768	3.9409	.00747	2.9887	.00363
#2	.00157	-.00060	.00101	.06812	3.9817	.00310	2.7854	.00251
#3	.00122	-.00135	.00181	-.02726	4.0797	.00137	3.0460	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0707	53.672	.00227	.01864	.00250	.00843	.00429	.39329
Stddev	.0652	.416	.00124	.00348	.00202	.00309	.00847	.00926
%RSD	3.1464	.77539	54.674	18.645	80.869	36.635	197.40	2.3550
#1	2.1089	54.149	.00341	.01565	.00353	.01005	.01388	.39850
#2	2.1078	53.380	.00245	.02245	.00379	.01038	-.00217	.39878
#3	1.9955	53.488	.00095	.01781	.00017	.00487	.00116	.38260
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111604 Acquired: 6/28/2016 18:26:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.07097	-.00020	.19980	5.4078	.00087	.00220
Stddev	.00049	.00096	.00857	.00144	.0032	.00009	.00030
%RSD	88.077	1.3536	4391.4	.71878	.05937	10.899	13.574
#1	-.00002	.07208	.00167	.19930	5.4115	.00076	.00250
#2	-.00098	.07035	-.00954	.20141	5.4060	.00094	.00220
#3	-.00067	.07048	.00729	.19867	5.4059	.00090	.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9098.1	54839.	2634.9
Stddev	10.8	84.	19.7
%RSD	.11843	.15302	.74728
#1	9087.3	54934.	2612.4
#2	9098.3	54808.	2643.3
#3	9108.9	54775.	2649.1

Approved: June 29, 2016

Sample Name: L1606111605 Acquired: 6/28/2016 18:30:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	1.1046	-.00047	.29401	.02674	.00837	9.0902	.00018
Stddev	.00051	.0068	.00195	.00276	.00055	.00013	.1597	.00025
%RSD	183.66	.61449	418.42	.93718	2.0449	1.5797	1.7571	141.92
#1	.00052	1.1045	-.00089	.29719	.02618	.00851	9.2744	.00038
#2	.00062	1.1115	-.00216	.29244	.02678	.00825	9.0057	.00026
#3	-.00031	1.0979	.00166	.29240	.02727	.00833	8.9905	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.00036	.00344	-.00021	4.1151	.00307	3.0707	.00584
Stddev	.00007	.00085	.00090	.00481	.0581	.00406	.0774	.00070
%RSD	7.8761	232.39	26.094	2293.5	1.4117	132.06	2.5207	12.039
#1	.00097	-.00039	.00248	-.00372	4.1757	.00772	3.0599	.00646
#2	.00083	.00021	.00426	-.00219	4.0599	.00023	3.1530	.00598
#3	.00090	.00128	.00357	.00528	4.1097	.00126	2.9993	.00507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.1147	54.076	.00459	.02783	.00092	.00817	.00379	.45224
Stddev	.0030	.380	.00072	.00802	.00370	.00274	.00228	.00672
%RSD	.13986	.70301	15.787	28.835	402.73	33.495	60.194	1.4856
#1	2.1120	54.403	.00376	.02582	-.00328	.00502	.00533	.44893
#2	2.1143	54.165	.00509	.02100	.00372	.00962	.00117	.45997
#3	2.1179	53.659	.00493	.03667	.00232	.00988	.00488	.44781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111605 Acquired: 6/28/2016 18:30:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.07120**	**-.00047**	**.19870**	**5.4024**	**.00245**	**.00289**
Stddev	.00042	.00060	.00634	.00473	.0163	.00006	.00013
%RSD	119.85	.83776	1355.6	2.3784	.30238	2.3257	4.5179
#1	.00035	.07164	-.00580	.19939	5.4209	.00245	.00275
#2	-.00007	.07052	.00654	.19367	5.3901	.00251	.00301
#3	.00076	.07144	-.00215	.20304	5.3963	.00240	.00292
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9105.6**	**54691.**	**2624.7**
Stddev	15.2	82.	15.9
%RSD	.16696	.14967	.60539
#1	9119.5	54648.	2613.5
#2	9108.0	54785.	2617.8
#3	9089.3	54640.	2642.9

Approved: June 29, 2016

Sample Name: L1606111606 Acquired: 6/28/2016 18:33:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00148	1.0362	.00000	.29254	.02502	.00843	8.7484	.00005
Stddev	.00312	.0077	.00375	.00301	.00132	.00005	.0697	.00043
%RSD	211.26	.74553	75583.	1.0288	5.2832	.58296	.79709	890.62
#1	.00415	1.0304	-.00385	.29524	.02349	.00848	8.6784	.00054
#2	.00222	1.0450	.00023	.29310	.02572	.00839	8.7490	-.00026
#3	-.00195	1.0333	.00364	.28930	.02584	.00841	8.8179	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.00056	.00206	-.00926	3.9257	.00283	2.8857	.00118
Stddev	.00030	.00120	.00133	.03110	.1203	.00120	.1392	.00270
%RSD	18.711	214.76	64.670	335.83	3.0638	42.265	4.8225	229.65
#1	.00171	-.00081	.00219	.00883	3.9102	.00360	2.9016	-.00067
#2	.00185	.00144	.00067	-.04518	3.8138	.00345	3.0163	.00428
#3	.00127	.00105	.00332	.00856	4.0529	.00145	2.7393	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0536	53.544	.00308	.01428	-.00163	.00492	.00033	.39787
Stddev	.0614	.064	.00025	.00557	.00089	.00226	.00282	.00762
%RSD	2.9907	.12002	8.0178	39.006	54.415	45.871	859.62	1.9160
#1	2.0891	53.487	.00286	.00796	-.00119	.00750	-.00270	.40196
#2	2.0891	53.531	.00335	.01849	-.00105	.00334	.00287	.40259
#3	1.9827	53.613	.00302	.01638	-.00266	.00392	.00082	.38908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111606 Acquired: 6/28/2016 18:33:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.06946	.00006	.19289	5.3081	.00068	.00210
Stddev	.00064	.00041	.00383	.00136	.0126	.00024	.00069
%RSD	629.49	.59397	6372.8	.70403	.23798	34.528	32.797
#1	.00028	.06986	-.00421	.19344	5.3225	.00055	.00130
#2	-.00061	.06949	.00119	.19134	5.3025	.00054	.00247
#3	.00063	.06904	.00319	.19388	5.2992	.00096	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9170.7	54866.	2633.7
Stddev	6.0	273.	8.6
%RSD	.06522	.49683	.32757
#1	9164.6	54558.	2643.7
#2	9176.5	55078.	2628.0
#3	9171.0	54961.	2629.5

Approved: June 29, 2016

Sample Name: L1606111607 Acquired: 6/28/2016 18:37:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	1.1117	.00162	.28972	.02692	.00835	9.0280	.00021
Stddev	.00194	.0108	.00405	.00301	.00121	.00002	.1291	.00015
%RSD	92.265	.97432	250.36	1.0374	4.4977	.29176	1.4303	70.337
#1	.00010	1.1122	.00562	.28943	.02812	.00832	9.1025	.00016
#2	.00223	1.1223	.00172	.29286	.02570	.00836	8.8789	.00037
#3	.00398	1.1007	-.00249	.28687	.02693	.00836	9.1026	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	-.00114	.00389	.07623	4.0957	.00739	2.9495	.00442
Stddev	.00011	.00129	.00096	.01157	.0445	.00783	.0540	.00109
%RSD	8.1592	112.30	24.657	15.180	1.0873	106.06	1.8298	24.709
#1	.00140	-.00250	.00399	.08950	4.0447	.00034	2.9996	.00516
#2	.00120	-.00099	.00479	.06828	4.1157	.00599	2.8924	.00494
#3	.00137	.00006	.00288	.07090	4.1268	.01582	2.9566	.00317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0386	53.529	.00507	.03227	-.00061	.00632	.00043	.44078
Stddev	.0621	.302	.00017	.00294	.00248	.00399	.00658	.01514
%RSD	3.0463	.56438	3.4047	9.0970	405.64	63.116	1540.8	3.4349
#1	2.0762	53.822	.00487	.02889	.00186	.00185	-.00148	.44888
#2	2.0727	53.218	.00515	.03376	-.00310	.00759	.00775	.45015
#3	1.9669	53.546	.00518	.03416	-.00059	.00951	-.00499	.42332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111607 Acquired: 6/28/2016 18:37:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.07058	.00030	.20096	5.4024	.00417	.00203
Stddev	.00130	.00048	.01325	.00141	.0090	.00022	.00037
%RSD	1062.3	.67593	4477.7	.70349	.16631	5.2101	18.227
#1	-.00089	.07107	.00038	.19936	5.4094	.00435	.00234
#2	-.00033	.07054	.01350	.20205	5.4055	.00424	.00162
#3	.00158	.07012	-.01300	.20146	5.3923	.00393	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9201.6	55034.	2642.1
Stddev	7.1	79.	26.3
%RSD	.07703	.14385	.99526
#1	9205.8	54943.	2626.0
#2	9193.5	55085.	2672.5
#3	9205.7	55075.	2627.9

Approved: June 29, 2016

Sample Name: L1606111608 Acquired: 6/28/2016 18:41:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	1.0836	.00155	.29561	.02737	.00841	8.9137	-.00007
Stddev	.00156	.0090	.00338	.00146	.00064	.00008	.0643	.00007
%RSD	4624.4	.83043	217.43	.49435	2.3557	.95212	.72145	103.03
#1	.00100	1.0803	.00289	.29408	.02794	.00850	8.9526	-.00007
#2	-.00177	1.0767	-.00229	.29699	.02667	.00839	8.9490	.00000
#3	.00087	1.0938	.00407	.29576	.02749	.00834	8.8395	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	-.00027	.00315	-.00654	4.0822	.00491	2.9725	.00152
Stddev	.00045	.00163	.00123	.01841	.1560	.00365	.0835	.00117
%RSD	48.428	601.30	39.073	281.52	3.8212	74.269	2.8076	77.224
#1	.00143	.00001	.00352	.00348	4.1388	.00247	2.9149	.00036
#2	.00068	-.00203	.00414	-.02779	4.2020	.00911	3.0682	.00271
#3	.00064	.00120	.00177	.00468	3.9058	.00316	2.9344	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0716	54.124	.00334	.01569	-.00178	.00730	.00009	.38883
Stddev	.0672	.212	.00081	.00676	.00119	.00610	.00096	.00730
%RSD	3.2436	.39123	24.294	43.076	67.031	83.462	1099.7	1.8783
#1	2.1038	54.235	.00342	.00933	-.00315	.01434	-.00098	.39366
#2	2.1167	54.257	.00250	.01495	-.00107	.00369	.00088	.39241
#3	1.9944	53.880	.00412	.02278	-.00111	.00388	.00036	.38043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111608 Acquired: 6/28/2016 18:41:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.07040	-.00406	.20156	5.4999	.00103	.00270
Stddev	.00025	.00061	.01483	.00093	.0053	.00022	.00040
%RSD	48.871	.86374	364.91	.46232	.09575	21.050	14.848
#1	.00078	.06990	.01194	.20238	5.5013	.00078	.00314
#2	.00049	.07022	-.01733	.20055	5.5043	.00112	.00236
#3	.00028	.07108	-.00680	.20175	5.4940	.00118	.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9087.9	54467.	2610.4
Stddev	38.8	90.	2.9
%RSD	.42699	.16539	.10989
#1	9131.5	54444.	2612.9
#2	9057.3	54566.	2611.1
#3	9074.7	54390.	2607.3

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 18:45:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39229	9.9415	.39105	.49054	.99686	.04957	9.8857	.04959
Stddev	.00335	.0095	.00513	.00388	.00176	.00023	.0395	.00014
%RSD	.85319	.09541	1.3130	.79016	.17667	.46681	.39949	.28298
#1	.39521	9.9524	.38973	.48964	.99784	.04938	9.8418	.04971
#2	.38864	9.9353	.39671	.48720	.99791	.04983	9.9182	.04961
#3	.39302	9.9368	.38670	.49479	.99482	.04950	9.8972	.04943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19995	.49831	.49568	3.9005	50.426	1.0075	9.9621	.48878
Stddev	.00185	.00270	.00320	.0383	.052	.0078	.0603	.00225
%RSD	.92562	.54191	.64620	.98241	.10382	.77658	.60485	.46087
#1	.20112	.50117	.49741	3.9444	50.472	1.0071	9.9738	.49127
#2	.20092	.49581	.49765	3.8837	50.369	.99982	10.016	.48690
#3	.19782	.49794	.49199	3.8735	50.435	1.0155	9.8969	.48816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99302	49.356	.49108	9.7656	.49096	1.1720	.39192	4.8719
Stddev	.00566	.139	.00280	.0493	.00323	.0138	.00972	.0103
%RSD	.57015	.28252	.57000	.50534	.65722	1.1784	2.4806	.21075
#1	.99726	49.251	.49381	9.7998	.49123	1.1824	.39913	4.8781
#2	.99521	49.515	.49123	9.7879	.48761	1.1774	.39576	4.8777
#3	.98659	49.303	.48822	9.7090	.49404	1.1564	.38086	4.8601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 18:45:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99872	.99343	.98950	.50063	.99718	.98347	.99916
Stddev	.00591	.00326	.01354	.00208	.00090	.00598	.00568
%RSD	.59190	.32803	1.3679	.41514	.09036	.60831	.56812
#1	1.0032	.99072	.98506	.49978	.99708	.98808	.99430
#2	1.0009	.99705	.97874	.50300	.99813	.98561	.99778
#3	.99203	.99253	1.0047	.49911	.99633	.97671	1.0054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9221.9	54639.	2638.4
Stddev	13.6	202.	11.2
%RSD	.14695	.37013	.42347
#1	9211.2	54552.	2650.8
#2	9237.1	54495.	2629.1
#3	9217.4	54870.	2635.2

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 18:49:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.00990	-.00013	.00158	.00622	.00015	-.03448	-.00005
Stddev	.00201	.00440	.00170	.00465	.00108	.00012	.06651	.00006
%RSD	284.08	44.487	1351.7	293.28	17.312	75.433	192.88	107.88
#1	-.00024	.01493	.00061	.00689	.00663	.00014	.00916	-.00005
#2	-.00065	.00802	-.00207	-.00177	.00703	.00028	-.11104	.00000
#3	.00301	.00675	.00108	-.00037	.00500	.00005	-.00158	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	-.00059	-.00069	-.03680	.10197	.00489	.05898	.00047
Stddev	.00049	.00057	.00083	.01990	.12028	.00273	.03828	.00209
%RSD	250.97	96.139	120.16	54.083	117.96	55.806	64.899	448.61
#1	.00032	-.00064	.00011	-.05829	.13290	.00716	.01495	.00055
#2	-.00024	-.00000	-.00063	-.01900	.20376	.00186	.07761	-.00167
#3	-.00065	-.00113	-.00155	-.03311	-.03076	.00564	.08437	.00251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.03142	.00040	-.00674	.00048	.00402	.00227	.00817
Stddev	.00075	.00727	.00091	.00301	.00387	.00356	.00433	.00283
%RSD	299.38	23.154	227.74	44.575	805.42	88.468	190.77	34.630
#1	-.00012	-.03106	-.00003	-.01019	.00167	.00785	.00618	.01078
#2	-.00024	-.03887	.00145	-.00468	.00362	.00082	.00301	.00858
#3	.00112	-.02433	-.00022	-.00536	-.00385	.00340	-.00238	.00516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 18:49:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.00016**	**-.00514**	**-.00296**	**-.00003**	**-.00004**	**-.00000**
Stddev	.00082	.00022	.01243	.00218	.00079	.00006	.00076
%RSD	35165.	134.62	241.93	73.509	2857.6	158.73	314340.
#1	-.00095	.00039	-.01930	-.00352	.00021	-.00010	-.00021
#2	.00045	.00012	.00396	-.00481	-.00091	.00002	.00084
#3	.00049	-.00003	-.00008	-.00056	.00062	-.00004	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8657.8**	**52038.**	**2416.2**
Stddev	9.1	416.	5.6
%RSD	.10560	.80031	.23071
#1	8648.4	51987.	2418.7
#2	8666.6	52477.	2420.0
#3	8658.5	51649.	2409.8

Approved: June 29, 2016

Sample Name: L1606111609 Acquired: 6/28/2016 18:52:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00169	F -.24671	.00229	.31259	.02791	.01137	34.044
Stddev	.00182	.00332	.00272	.00627	.00207	.00015	.034
%RSD	108.17	1.3465	118.72	2.0066	7.4142	1.3347	.09998
#1	.00061	-.24434	.00262	.30730	.02980	.01136	34.020
#2	.00379	-.24528	-.00058	.31952	.02570	.01123	34.083
#3	.00066	-.25051	.00484	.31094	.02824	.01153	34.030
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00					
Low Limit		-.10000					

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00211	-.00014	.01058	.02927	8.1895	.00744
Stddev	.00018	.00013	.00056	.00103	.01880	.0223	.00285
%RSD	63.443	5.9452	413.29	9.7235	64.214	.27208	38.275
#1	.00044	.00214	-.00068	.01172	.05095	8.1784	.00919
#2	.00030	.00221	.00044	.00972	.01751	8.2152	.00415
#3	.00009	.00197	-.00017	.01030	.01936	8.1750	.00898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.085	.00986	3.4753	73.279	.01200	.10844	-.00023
Stddev	.146	.00193	.0933	.091	.00073	.01049	.00052
%RSD	1.1124	19.578	2.6833	.12431	6.1213	9.6747	220.87
#1	13.015	.01182	3.5272	73.382	.01266	.10696	.00034
#2	13.253	.00982	3.5310	73.212	.01121	.11959	-.00040
#3	12.988	.00796	3.3676	73.241	.01214	.09876	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606111609 Acquired: 6/28/2016 18:52:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01341**	**.00048**	**1.8767**	**.00012**	**.18806**	**-.01559**	**.26285**
Stddev	.00215	.00285	.0302	.00117	.00070	.00849	.00279
%RSD	16.054	593.98	1.6105	1001.4	.37260	54.468	1.0632
#1	.01137	.00362	1.9013	.00122	.18745	-.02478	.26486
#2	.01320	-.00195	1.8860	.00025	.18882	-.00803	.26404
#3	.01566	-.00023	1.8430	-.00111	.18791	-.01396	.25966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**7.1565**	**.01706**	**.00390**
Stddev	.0080	.00047	.00028
%RSD	.11254	2.7742	7.1930
#1	7.1473	.01735	.00373
#2	7.1594	.01731	.00422
#3	7.1626	.01651	.00374
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8637.3**	**51686.**	**2438.8**
Stddev	25.5	111.	18.4
%RSD	.29499	.21405	.75414
#1	8657.6	51701.	2418.8
#2	8645.7	51569.	2442.5
#3	8608.7	51789.	2455.0

Approved: June 29, 2016

Sample Name: L1606111610 Acquired: 6/28/2016 18:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00186**	F **-.26089**	**.00361**	**.32094**	**.02805**	**.01175**	**34.227**
Stddev	.00286	.00497	.00209	.00164	.00119	.00004	.119
%RSD	153.61	1.9054	57.885	.50971	4.2395	.35073	.34827
#1	.00418	-.26319	.00600	.32229	.02668	.01176	34.342
#2	-.00133	-.25518	.00273	.32140	.02867	.01178	34.236
#3	.00273	-.26429	.00211	.31912	.02880	.01170	34.104
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00					
Low Limit		-.10000					

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00133**	**.00023**	**.00630**	**.00366**	**8.0682**	**.00998**
Stddev	.00013	.00007	.00098	.00212	.02782	.0640	.00247
%RSD	59.800	5.5704	427.48	33.690	759.07	.79377	24.736
#1	.00035	.00141	-.00091	.00835	-.01455	8.1226	.00792
#2	.00022	.00127	.00077	.00411	-.01014	8.0843	.01271
#3	.00009	.00130	.00082	.00645	.03568	7.9976	.00929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**13.124**	**.00493**	**3.5460**	**74.032**	**.00990**	**.11211**	**-.00262**
Stddev	.040	.00133	.0477	.229	.00101	.00704	.00448
%RSD	.30775	26.938	1.3453	.30869	10.165	6.2824	171.27
#1	13.104	.00643	3.5704	74.144	.01095	.11324	.00151
#2	13.170	.00443	3.5766	74.183	.00982	.10457	-.00739
#3	13.097	.00392	3.4910	73.769	.00894	.11852	-.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606111610 Acquired: 6/28/2016 18:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01102**	**.00507**	**1.8845**	**.00126**	**.18824**	**.00050**	**.26949**
Stddev	.00429	.00618	.0149	.00056	.00018	.00574	.00545
%RSD	38.980	121.81	.79273	44.228	.09495	1156.8	2.0221
#1	.01018	.01016	1.8905	.00172	.18843	.00529	.26417
#2	.00720	-.00180	1.8955	.00064	.18807	.00206	.26925
#3	.01567	.00685	1.8675	.00140	.18821	-.00586	.27506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**7.2308**	**.01161**	**.00445**
Stddev	.0079	.00013	.00036
%RSD	.10869	1.0937	8.2072
#1	7.2225	.01163	.00451
#2	7.2316	.01172	.00405
#3	7.2381	.01147	.00477
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8565.6**	**51126.**	**2443.1**
Stddev	32.1	49.	10.7
%RSD	.37452	.09590	.43979
#1	8602.6	51159.	2447.6
#2	8546.8	51149.	2430.8
#3	8547.3	51069.	2450.8

Approved: June 29, 2016

Sample Name: L1606111611 Acquired: 6/28/2016 19:00:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.15531	.00139	.28793	.01827	.01349	24.276	.00009
Stddev	.00107	.01241	.00393	.00635	.00086	.00004	.280	.00036
%RSD	103.35	7.9927	283.58	2.2043	4.7272	.32117	1.1547	390.92
#1	.00070	.14804	-.00256	.29526	.01783	.01353	24.198	.00026
#2	.00018	.14825	.00142	.28441	.01927	.01344	24.587	-.00032
#3	.00224	.16965	.00531	.28413	.01772	.01350	24.043	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	.00300	.00201	.00864	6.5616	.01000	6.1571	.00075
Stddev	.00028	.00060	.00288	.05988	.1467	.00381	.1385	.00265
%RSD	17.628	19.937	142.86	693.02	2.2358	38.125	2.2501	355.75
#1	.00142	.00238	-.00123	.07744	6.6406	.01428	6.0978	-.00228
#2	.00141	.00307	.00426	-.01970	6.3924	.00877	6.0580	.00268
#3	.00189	.00357	.00301	-.03181	6.6519	.00695	6.3154	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.7556	61.390	.01872	.08689	.00039	.00398	.00545	3.8083
Stddev	.0037	.059	.00102	.00595	.00183	.00284	.00115	.0067
%RSD	.13597	.09548	5.4741	6.8505	472.50	71.316	21.148	.17711
#1	2.7593	61.416	.01989	.09312	-.00124	.00695	.00540	3.8145
#2	2.7559	61.431	.01827	.08126	.00237	.00367	.00432	3.8011
#3	2.7518	61.323	.01799	.08629	.00003	.00131	.00662	3.8092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111611 Acquired: 6/28/2016 19:00:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.11645**	**-.00318**	**.29346**	**7.9427**	**.02210**	**.00268**
Stddev	.00089	.00042	.00288	.00285	.0190	.00021	.00040
%RSD	424.15	.35948	90.314	.97028	.23929	.95091	14.963
#1	-.00007	.11631	-.00534	.29241	7.9282	.02188	.00233
#2	.00120	.11692	-.00429	.29668	7.9358	.02230	.00312
#3	-.00050	.11612	.00008	.29129	7.9642	.02211	.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8640.4**	**51497.**	**2440.2**
Stddev	.7	35.	3.8
%RSD	.00807	.06819	.15410
#1	8641.2	51534.	2436.1
#2	8640.2	51493.	2441.0
#3	8639.9	51464.	2443.5

Approved: June 29, 2016

Sample Name: L1606111612 Acquired: 6/28/2016 19:04:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00383	.04912	.00056	.28402	.01911	.01326	24.157	.00025
Stddev	.00060	.00917	.00387	.00359	.00131	.00019	.121	.00011
%RSD	15.694	18.661	688.23	1.2647	6.8730	1.4327	.50040	45.926
#1	.00354	.05967	-.00073	.28770	.01856	.01347	24.092	.00016
#2	.00452	.04305	.00491	.28053	.01816	.01310	24.082	.00038
#3	.00343	.04465	-.00250	.28382	.02061	.01321	24.296	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.00207	.00162	.00171	6.7063	.01259	6.4107	-.00251
Stddev	.00050	.00113	.00240	.00914	.0591	.00141	.1102	.00295
%RSD	39.655	54.778	148.14	535.36	.88143	11.226	1.7192	117.53
#1	.00128	.00310	.00395	.01079	6.6558	.01417	6.3134	-.00541
#2	.00075	.00085	-.00084	-.00748	6.7713	.01145	6.5304	.00048
#3	.00174	.00226	.00174	.00181	6.6917	.01215	6.3883	-.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.7810	60.169	.00746	.07950	-.00097	.00332	.01301	3.5713
Stddev	.0078	.217	.00129	.00746	.00078	.00182	.00602	.0121
%RSD	.28149	.36015	17.286	9.3799	80.451	54.684	46.276	.34028
#1	2.7863	60.279	.00610	.08231	-.00184	.00537	.00606	3.5680
#2	2.7847	60.308	.00763	.07105	-.00077	.00266	.01661	3.5847
#3	2.7720	59.919	.00866	.08515	-.00031	.00192	.01637	3.5611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111612 Acquired: 6/28/2016 19:04:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.11823	-.01269	.28756	7.9060	.00211	.00306
Stddev	.00060	.00069	.00639	.00445	.0044	.00031	.00049
%RSD	79.968	.58467	50.323	1.5482	.05612	14.573	16.027
#1	.00138	.11902	-.01137	.28902	7.9062	.00229	.00348
#2	.00018	.11773	-.01964	.28257	7.9103	.00227	.00320
#3	.00069	.11794	-.00707	.29111	7.9015	.00175	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8559.9	51268.	2442.1
Stddev	44.0	211.	7.2
%RSD	.51415	.41125	.29469
#1	8531.4	51489.	2434.3
#2	8537.7	51069.	2443.4
#3	8610.6	51245.	2448.5

Approved: June 29, 2016

Sample Name: L1606111613S Acquired: 6/28/2016 19:08:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19477**	**5.0228**	**.18939**	**1.2073**	**.49579**	**.03691**	**28.766**	**.02419**
Stddev	.00338	.0209	.00300	.0033	.00412	.00009	.267	.00009
%RSD	1.7336	.41639	1.5864	.27651	.83112	.24129	.92755	.35345
#1	.19088	5.0294	.18741	1.2112	.50051	.03686	29.074	.02421
#2	.19696	5.0396	.19284	1.2050	.49391	.03685	28.615	.02427
#3	.19647	4.9994	.18791	1.2058	.49294	.03701	28.608	.02410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09931**	**.24662**	**.24317**	**1.8719**	**31.139**	**.50428**	**11.097**	**.23993**
Stddev	.00047	.00109	.00134	.0365	.322	.00060	.031	.00147
%RSD	.47574	.44006	.55302	1.9526	1.0333	.11928	.28144	.61370
#1	.09976	.24549	.24417	1.8725	31.459	.50401	11.061	.24152
#2	.09882	.24765	.24370	1.9082	30.816	.50497	11.121	.23964
#3	.09936	.24674	.24164	1.8351	31.142	.50386	11.108	.23862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2182**	**84.368**	**.25735**	**4.7443**	**.23955**	**.56662**	**.19040**	**6.0686**
Stddev	.0227	.847	.00146	.0198	.00289	.00283	.00282	.0236
%RSD	.70479	1.0036	.56858	.41773	1.2060	.49958	1.4787	.38948
#1	3.2303	85.345	.25712	4.7563	.23856	.56753	.19307	6.0767
#2	3.2323	83.860	.25891	4.7552	.23729	.56889	.19066	6.0871
#3	3.1921	83.897	.25601	4.7214	.24281	.56345	.18746	6.0419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111613S Acquired: 6/28/2016 19:08:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48813	.60214	.48390	.53165	8.4149	.50011	.00340
Stddev	.00470	.00482	.00480	.00148	.0070	.00378	.00043
%RSD	.96282	.80038	.99193	.27906	.08316	.75545	12.759
#1	.49143	.60762	.48857	.52994	8.4205	.50262	.00309
#2	.49021	.59858	.48417	.53261	8.4071	.50196	.00321
#3	.48275	.60020	.47898	.53240	8.4172	.49577	.00389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8510.8	50989.	2449.9
Stddev	6.3	114.	33.0
%RSD	.07397	.22271	1.3464
#1	8503.9	50891.	2415.0
#2	8512.3	50963.	2454.1
#3	8516.3	51114.	2480.6

Approved: June 29, 2016

Sample Name: L1606111614S Acquired: 6/28/2016 19:11:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19976**	**5.1117**	**.20033**	**1.2397**	**.51862**	**.03817**	**29.160**	**.02517**
Stddev	.00238	.0040	.00143	.0029	.00064	.00013	.036	.00013
%RSD	1.1919	.07822	.71462	.23398	.12376	.34613	.12271	.50966
#1	.19785	5.1103	.19976	1.2364	.51935	.03832	29.152	.02502
#2	.20243	5.1086	.20196	1.2408	.51837	.03812	29.199	.02526
#3	.19900	5.1163	.19927	1.2419	.51815	.03807	29.129	.02522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10267**	**.25542**	**.25111**	**1.9749**	**32.092**	**.51979**	**11.538**	**.24636**
Stddev	.00038	.00140	.00135	.0226	.087	.00342	.033	.00382
%RSD	.36984	.54933	.53776	1.1454	.27022	.65811	.28987	1.5500
#1	.10308	.25694	.25257	2.0009	32.157	.51648	11.576	.24780
#2	.10260	.25514	.24991	1.9599	32.125	.52332	11.525	.24203
#3	.10233	.25417	.25084	1.9639	31.994	.51957	11.512	.24924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2930**	**85.625**	**.25474**	**4.9054**	**.24911**	**.58625**	**.19523**	**5.9056**
Stddev	.0102	.114	.00008	.0176	.00426	.00482	.00530	.0210
%RSD	.30930	.13280	.03193	.35965	1.7112	.82238	2.7172	.35590
#1	3.3047	85.748	.25482	4.9258	.24475	.58430	.19918	5.9288
#2	3.2880	85.523	.25466	4.8957	.25327	.59174	.18920	5.8877
#3	3.2862	85.605	.25475	4.8948	.24930	.58270	.19731	5.9004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111614S Acquired: 6/28/2016 19:11:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50712**	**.62989**	**.48967**	**.54077**	**8.4652**	**.49980**	**.00375**
Stddev	.00290	.00007	.00896	.00153	.0082	.00166	.00086
%RSD	.57187	.01071	1.8306	.28317	.09739	.33159	22.982
#1	.51044	.62981	.48549	.54245	8.4713	.50169	.00283
#2	.50507	.62993	.49996	.54041	8.4558	.49912	.00454
#3	.50584	.62992	.48355	.53945	8.4685	.49860	.00388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8539.3**	**50582.**	**2414.9**
Stddev	42.3	178.	.8
%RSD	.49581	.35193	.03111
#1	8490.5	50389.	2414.0
#2	8561.9	50739.	2415.4
#3	8565.6	50619.	2415.2

Approved: June 29, 2016

Sample Name: L1606111615SD Acquired: 6/28/2016 19:15:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19483**	**5.0631**	**.19408**	**1.2283**	**.50358**	**.03725**	**28.794**	**.02439**
Stddev	.00134	.0103	.00311	.0052	.00068	.00010	.078	.00026
%RSD	.68665	.20360	1.6033	.42015	.13592	.27409	.26967	1.0469
#1	.19572	5.0522	.19292	1.2310	.50432	.03719	28.759	.02459
#2	.19329	5.0727	.19172	1.2223	.50297	.03737	28.739	.02448
#3	.19549	5.0645	.19761	1.2315	.50343	.03719	28.883	.02410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10051**	**.25222**	**.24531**	**1.9227**	**31.387**	**.50736**	**11.086**	**.24417**
Stddev	.00036	.00165	.00180	.0406	.232	.00434	.198	.00465
%RSD	.35572	.65305	.73217	2.1114	.74000	.85470	1.7857	1.9034
#1	.10011	.25331	.24577	1.9166	31.361	.50253	10.859	.23883
#2	.10066	.25302	.24683	1.9661	31.168	.51091	11.218	.24727
#3	.10078	.25033	.24333	1.8856	31.631	.50863	11.182	.24642
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2181**	**85.276**	**.26287**	**4.8382**	**.24342**	**.57943**	**.19535**	**6.0855**
Stddev	.0060	.153	.00086	.0107	.00115	.00114	.00430	.0514
%RSD	.18621	.17890	.32739	.22191	.47258	.19717	2.1988	.84430
#1	3.2234	85.200	.26251	4.8499	.24473	.58070	.19814	6.1440
#2	3.2191	85.176	.26386	4.8357	.24298	.57910	.19751	6.0647
#3	3.2116	85.451	.26226	4.8289	.24256	.57849	.19040	6.0477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111615SD Acquired: 6/28/2016 19:15:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49741	.60939	.48961	.53564	8.4041	.50988	.00349
Stddev	.00079	.00397	.00999	.00166	.0095	.00077	.00075
%RSD	.15965	.65174	2.0396	.30908	.11341	.15171	21.486
#1	.49688	.60498	.48083	.53444	8.3943	.51072	.00337
#2	.49832	.61049	.50047	.53753	8.4133	.50974	.00280
#3	.49703	.61269	.48751	.53496	8.4047	.50919	.00429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8539.4	50792.	2446.6
Stddev	44.7	29.	15.5
%RSD	.52366	.05646	.63223
#1	8497.6	50788.	2447.9
#2	8534.2	50765.	2461.4
#3	8586.5	50822.	2430.5

Approved: June 29, 2016

Sample Name: L1606111616SD Acquired: 6/28/2016 19:19:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19566**	**5.0340**	**.19553**	**1.2462**	**.51633**	**.03826**	**29.342**	**.02460**
Stddev	.00296	.0138	.00253	.0064	.00627	.00019	.244	.00026
%RSD	1.5107	.27370	1.2962	.51335	1.2136	.50612	.83044	1.0564
#1	.19547	5.0283	.19831	1.2494	.52271	.03808	29.613	.02477
#2	.19280	5.0497	.19492	1.2503	.51019	.03846	29.141	.02474
#3	.19870	5.0240	.19335	1.2388	.51609	.03824	29.271	.02430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10113**	**.25397**	**.24998**	**1.9550**	**32.109**	**.51960**	**11.565**	**.24878**
Stddev	.00115	.00165	.00206	.0245	.390	.00560	.094	.00225
%RSD	1.1409	.65005	.82441	1.2540	1.2158	1.0784	.81447	.90305
#1	.10149	.25518	.24986	1.9783	32.535	.51825	11.457	.25104
#2	.10207	.25209	.25210	1.9294	31.767	.51479	11.631	.24655
#3	.09984	.25464	.24798	1.9572	32.026	.52575	11.608	.24874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2885**	**85.842**	**.25247**	**4.8800**	**.24597**	**.58377**	**.19459**	**5.8979**
Stddev	.0263	.672	.00277	.0334	.00227	.00367	.00306	.0457
%RSD	.80102	.78328	1.0953	.68517	.92218	.62874	1.5723	.77555
#1	3.2998	86.565	.25353	4.9123	.24665	.58202	.19353	5.9262
#2	3.3073	85.235	.25454	4.8822	.24782	.58799	.19220	5.9224
#3	3.2584	85.728	.24933	4.8456	.24344	.58131	.19804	5.8451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111616SD Acquired: 6/28/2016 19:19:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50068**	**.62675**	**.49003**	**.54097**	**8.4762**	**.49546**	**.00325**
Stddev	.00490	.00349	.00592	.00219	.0243	.00502	.00063
%RSD	.97814	.55741	1.2076	.40406	.28687	1.0134	19.262
#1	.50340	.62999	.48564	.54178	8.4602	.49873	.00394
#2	.50361	.62305	.48768	.54264	8.5042	.49797	.00312
#3	.49503	.62722	.49676	.53850	8.4642	.48968	.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8528.3**	**50976.**	**2438.2**
Stddev	27.5	232.	22.5
%RSD	.32190	.45566	.92424
#1	8510.6	51237.	2412.6
#2	8514.4	50792.	2454.8
#3	8559.9	50900.	2447.3

Approved: June 29, 2016

Sample Name: L1606111617 Acquired: 6/28/2016 19:22:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	1.0730	.00243	.94456	.02345	.00664	17.171	.00021
Stddev	.00060	.0107	.00330	.00310	.00170	.00011	.205	.00052
%RSD	48.268	.99365	135.53	.32796	7.2297	1.6862	1.1957	249.35
#1	.00156	1.0648	.00541	.94322	.02195	.00655	16.934	.00026
#2	.00163	1.0691	.00299	.94810	.02529	.00661	17.299	-.00034
#3	.00055	1.0851	-.00111	.94236	.02311	.00677	17.280	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00191	.00281	.25427	4.8595	.00560	5.8034	.00933
Stddev	.00016	.00103	.00070	.00526	.1531	.00470	.0236	.00159
%RSD	14.503	53.864	25.013	2.0678	3.1508	83.930	.40616	17.040
#1	.00127	.00295	.00200	.25974	4.7953	.00368	5.8137	.01117
#2	.00101	.00187	.00320	.24926	4.7490	.00216	5.7764	.00848
#3	.00097	.00090	.00323	.25382	5.0343	.01095	5.8200	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8732	108.42	.01899	.06575	.00152	.00875	-.00339	2.6514
Stddev	.0510	.52	.00065	.00357	.00326	.00209	.00602	.0593
%RSD	2.7232	.47845	3.4259	5.4245	214.84	23.862	177.37	2.2363
#1	1.9089	108.16	.01967	.06171	.00070	.00991	-.00992	2.6947
#2	1.8959	108.08	.01894	.06707	-.00126	.00999	-.00219	2.6757
#3	1.8147	109.02	.01837	.06847	.00511	.00634	.00193	2.5838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111617 Acquired: 6/28/2016 19:22:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.10483	.00185	.15786	4.3684	.01245	.00245
Stddev	.00024	.00064	.00471	.00205	.0215	.00016	.00037
%RSD	56.363	.60720	254.36	1.2973	.49093	1.2926	14.916
#1	.00019	.10503	.00197	.15899	4.3753	.01255	.00229
#2	.00043	.10411	-.00292	.15910	4.3855	.01252	.00287
#3	.00068	.10534	.00651	.15550	4.3443	.01226	.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8650.9	51835.	2476.1
Stddev	44.0	196.	5.9
%RSD	.50891	.37736	.23711
#1	8623.8	51739.	2476.2
#2	8701.7	51706.	2482.0
#3	8627.2	52060.	2470.2

Approved: June 29, 2016

Sample Name: L1606111618 Acquired: 6/28/2016 19:26:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**.56274**	**.00067**	**.98109**	**.02095**	**.00642**	**16.310**
Stddev	.00331	.00447	.00274	.01353	.00114	.00010	.137
%RSD	394.10	.79427	408.71	1.3790	5.4340	1.4834	.83691
#1	-.00455	.55904	.00292	.97246	.02155	.00652	16.441
#2	.00181	.56149	.00148	.97414	.01964	.00642	16.322
#3	.00022	.56771	-.00238	.99669	.02167	.00633	16.169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00100**	**.00142**	**.00119**	F **-.03203**	**4.7407**	**.00634**
Stddev	.00008	.00008	.00165	.00103	.02107	.2217	.00377
%RSD	96.854	7.8871	116.18	86.889	65.774	4.6773	59.434
#1	-.00016	.00103	-.00048	.00236	-.03693	4.9721	.00557
#2	-.00000	.00106	.00229	.00077	-.05021	4.5301	.00302
#3	-.00007	.00091	.00247	.00043	-.00894	4.7199	.01044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.7406**	**-.00088**	**1.9276**	**110.50**	**.00879**	**.04672**	**-.00257**
Stddev	.0231	.00321	.0069	.44	.00089	.00711	.00272
%RSD	.40167	363.18	.35848	.39919	10.179	15.225	105.97
#1	5.7191	-.00006	1.9325	110.73	.00978	.05410	-.00278
#2	5.7650	-.00442	1.9306	110.77	.00855	.03990	-.00517
#3	5.7377	.00183	1.9197	109.99	.00803	.04617	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606111618 Acquired: 6/28/2016 19:26:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00562**	**.00319**	**2.4858**	**.00030**	**.10363**	**-.00481**	**.15781**
Stddev	.00632	.00265	.0011	.00117	.00034	.00601	.00138
%RSD	112.44	83.121	.04373	394.14	.32381	124.77	.87536
#1	-.00139	.00622	2.4870	.00161	.10345	-.00946	.15828
#2	.00737	.00205	2.4854	-.00063	.10401	.00197	.15625
#3	.01088	.00129	2.4849	-.00009	.10341	-.00695	.15889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**4.3243**	**.00293**	**.00203**
Stddev	.0040	.00018	.00019
%RSD	.09253	6.0250	9.2239
#1	4.3200	.00309	.00196
#2	4.3251	.00274	.00224
#3	4.3278	.00296	.00188
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8649.2**	**51256.**	**2459.2**
Stddev	26.4	33.	12.7
%RSD	.30519	.06388	.51770
#1	8619.7	51249.	2448.1
#2	8670.6	51291.	2456.2
#3	8657.2	51227.	2473.1

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 19:30:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39393	9.9883	.38526	.48583	.99716	.04966	9.8788	.04935
Stddev	.00274	.0657	.00281	.00348	.00753	.00030	.0948	.00070
%RSD	.69453	.65784	.72864	.71673	.75560	.60690	.95943	1.4215
#1	.39152	9.9183	.38763	.48958	.99649	.04943	9.9453	.04941
#2	.39338	9.9981	.38600	.48519	1.0050	.04954	9.9209	.05002
#3	.39691	10.049	.38216	.48271	.98999	.05000	9.7703	.04862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19983	.49932	.49547	3.9046	50.536	1.0022	10.054	.48961
Stddev	.00147	.00411	.00502	.0586	.237	.0052	.125	.00704
%RSD	.73720	.82307	1.0132	1.4999	.46996	.51863	1.2450	1.4380
#1	.20016	.49579	.49771	3.8488	50.432	1.0027	9.9795	.48796
#2	.20111	.49833	.49897	3.8995	50.808	1.0072	10.199	.49733
#3	.19822	.50383	.48972	3.9656	50.368	.99679	9.9842	.48355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99313	49.311	.48871	9.7009	.48971	1.1713	.38503	4.8337
Stddev	.00735	.281	.00306	.0472	.00373	.0075	.00878	.0139
%RSD	.74006	.57071	.62643	.48696	.76211	.63694	2.2792	.28793
#1	.99583	49.366	.49104	9.7306	.49397	1.1682	.38711	4.8340
#2	.99875	49.561	.48985	9.7256	.48702	1.1798	.39257	4.8476
#3	.98481	49.006	.48524	9.6464	.48815	1.1659	.37540	4.8197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 19:30:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99640	.99015	.99144	.49657	1.0014	.98139	1.0163
Stddev	.00750	.00955	.01096	.00546	.0032	.00618	.0028
%RSD	.75223	.96471	1.1057	1.1003	.32191	.62995	.27980
#1	.99975	.98887	.98824	.50220	.99790	.98458	1.0194
#2	1.0016	1.0003	1.0036	.49622	1.0022	.98533	1.0138
#3	.98781	.98130	.98243	.49129	1.0042	.97427	1.0157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8569.8	50820.	2413.3
Stddev	22.8	215.	10.0
%RSD	.26631	.42243	.41304
#1	8596.2	51061.	2401.8
#2	8557.1	50752.	2419.5
#3	8556.2	50649.	2418.7

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 19:34:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.01126	-.00191	.00369	.00601	.00008	-.03261	.00023
Stddev	.00083	.00295	.00043	.00344	.00076	.00009	.04958	.00007
%RSD	2485.5	26.217	22.615	93.254	12.676	109.00	152.07	30.275
#1	-.00036	.01071	-.00159	.00497	.00514	.00011	-.00746	.00016
#2	.00091	.00862	-.00240	.00631	.00653	.00015	-.08972	.00029
#3	-.00065	.01445	-.00173	-.00021	.00638	-.00002	-.00063	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00036	.00042	-.02542	.08850	.00754	.02716	-.00001
Stddev	.00032	.00072	.00077	.03243	.07274	.00155	.02996	.00286
%RSD	101.42	198.05	182.72	127.59	82.190	20.545	110.27	20010.
#1	-.00001	-.00045	-.00017	.00826	.17224	.00907	.06169	-.00167
#2	-.00065	.00061	.00129	-.05644	.05213	.00598	.01173	-.00167
#3	-.00029	.00093	.00014	-.02808	.04111	.00758	.00807	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.02218	-.00022	.00390	-.00185	.00471	-.00735	.00643
Stddev	.00026	.02297	.00070	.00522	.00292	.00099	.00270	.00027
%RSD	72.849	103.55	318.05	133.94	157.68	20.938	36.741	4.2724
#1	.00022	-.00188	.00014	-.00158	-.00179	.00386	-.00755	.00620
#2	.00020	-.04711	.00023	.00445	.00104	.00446	-.00455	.00635
#3	.00066	-.01756	-.00102	.00882	-.00480	.00579	-.00994	.00673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 19:34:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.00011**	**-.00295**	**-.00216**	**-.00011**	**-.00020**	**.00008**
Stddev	.00025	.00026	.01036	.00538	.00059	.00009	.00023
%RSD	103.56	243.90	351.50	249.36	558.75	45.397	304.65
#1	-.00048	.00011	-.01053	-.00797	-.00074	-.00021	.00016
#2	-.00025	-.00016	-.00717	-.00113	.00043	-.00010	-.00018
#3	.00001	.00036	.00886	.00263	-.00001	-.00028	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8584.9**	**51861.**	**2415.8**
Stddev	34.0	193.	3.9
%RSD	.39651	.37302	.16307
#1	8587.6	51689.	2412.4
#2	8617.5	51822.	2415.0
#3	8549.6	52070.	2420.1

Approved: June 29, 2016

Sample Name: L1606111619 Acquired: 6/28/2016 19:38:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00160**	**.68300**	**.00298**	**.94890**	**.02124**	**.00623**	**16.028**	**.00009**
Stddev	.00153	.00929	.00216	.00311	.00159	.00004	.199	.00019
%RSD	95.469	1.3607	72.654	.32754	7.4787	.64700	1.2441	212.75
#1	-.00316	.69092	.00048	.94760	.02211	.00626	15.949	-.00013
#2	-.00154	.67277	.00421	.94665	.02219	.00618	16.255	.00019
#3	-.00011	.68530	.00424	.95245	.01940	.00624	15.880	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00083**	**.00146**	**.00101**	**.06660**	**4.6769**	**.00611**	**5.5653**	**.00232**
Stddev	.00038	.00087	.00102	.04994	.1055	.00291	.0608	.00117
%RSD	45.388	59.327	101.31	74.984	2.2547	47.587	1.0918	50.494
#1	.00042	.00046	.00001	.11500	4.7788	.00549	5.5199	.00343
#2	.00116	.00202	.00096	.06957	4.5682	.00927	5.6344	.00110
#3	.00091	.00190	.00205	.01524	4.6836	.00356	5.5417	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.8655**	**106.18**	**.00945**	**.05932**	**-.00122**	**.00524**	**-.00087**	**2.5232**
Stddev	.0051	.51	.00068	.00476	.00312	.00511	.00330	.0070
%RSD	.27431	.48054	7.1517	8.0194	256.67	97.554	378.34	.27855
#1	1.8613	105.69	.00978	.05706	-.00065	-.00032	.00289	2.5222
#2	1.8712	106.71	.00990	.05612	-.00459	.00631	-.00330	2.5307
#3	1.8639	106.14	.00867	.06479	.00159	.00973	-.00221	2.5168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111619 Acquired: 6/28/2016 19:38:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.10012	.00178	.15139	4.1196	.00540	.00233
Stddev	.00072	.00064	.00812	.00311	.0202	.00029	.00034
%RSD	74.194	.63498	455.71	2.0563	.49052	5.3242	14.549
#1	.00180	.09940	-.00592	.14827	4.1171	.00540	.00271
#2	.00065	.10061	.00100	.15450	4.1410	.00569	.00204
#3	.00047	.10035	.01027	.15138	4.1008	.00511	.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8557.6	51294.	2452.0
Stddev	21.8	241.	14.5
%RSD	.25502	.47029	.58949
#1	8579.3	51378.	2467.4
#2	8535.6	51022.	2438.8
#3	8557.8	51482.	2449.8

Approved: June 29, 2016

Sample Name: L1606111620 Acquired: 6/28/2016 19:42:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00295	.56244	.00280	.96687	.02135	.00630	16.074
Stddev	.00131	.01105	.00379	.00718	.00109	.00014	.120
%RSD	44.380	1.9644	135.37	.74234	5.1103	2.2934	.74460
#1	.00309	.56666	.00701	.96071	.02019	.00645	16.211
#2	.00158	.54991	-.00033	.96515	.02236	.00617	15.989
#3	.00419	.57076	.00172	.97476	.02150	.00629	16.022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00106	.00163	.00111	F -.02581	4.8505	.00840
Stddev	.00013	.00035	.00059	.00204	.01590	.1029	.00879
%RSD	305.99	32.498	35.872	184.93	61.610	2.1216	104.57
#1	-.00005	.00072	.00103	-.00124	-.02373	4.9502	.01854
#2	.00018	.00106	.00219	.00204	-.04264	4.7447	.00303
#3	-.00001	.00141	.00167	.00251	-.01105	4.8565	.00364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.6738	.00004	1.9119	109.76	.00809	.05682	-.00029
Stddev	.0837	.00164	.0022	.23	.00072	.00469	.00702
%RSD	1.4744	4418.1	.11247	.21081	8.8910	8.2569	2392.1
#1	5.5837	.00127	1.9095	109.90	.00791	.05158	.00755
#2	5.6886	-.00183	1.9135	109.49	.00889	.06062	-.00243
#3	5.7491	.00068	1.9128	109.89	.00748	.05828	-.00599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606111620 Acquired: 6/28/2016 19:42:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00855	.00850	2.4320	.00016	.10308	-.00383	.15782
Stddev	.00505	.00431	.0076	.00051	.00112	.00965	.00176
%RSD	59.103	50.745	.31126	313.39	1.0892	251.80	1.1132
#1	.01045	.00709	2.4269	.00075	.10291	-.01059	.15635
#2	.00282	.00507	2.4407	-.00017	.10206	.00722	.15734
#3	.01237	.01334	2.4285	-.00009	.10428	-.00812	.15976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	4.3294	.00391	.00237
Stddev	.0135	.00010	.00041
%RSD	.31202	2.6141	17.073
#1	4.3261	.00389	.00284
#2	4.3179	.00402	.00222
#3	4.3443	.00381	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8570.2	51185.	2431.1
Stddev	16.8	144.	4.2
%RSD	.19595	.28147	.17452
#1	8558.1	51035.	2427.6
#2	8563.2	51197.	2429.8
#3	8589.4	51322.	2435.8

Approved: June 29, 2016

Sample Name: L1606111622 Acquired: 6/28/2016 19:45:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.87307	.00376	1.0028	.01970	.00516	16.701	.00008
Stddev	.00275	.01177	.00328	.0087	.00207	.00001	.349	.00017
%RSD	453.56	1.3482	87.385	.86913	10.519	.21170	2.0900	213.70
#1	.00209	.88302	.00024	1.0005	.02079	.00517	17.020	-.00007
#2	.00229	.87610	.00674	1.0124	.01731	.00514	16.328	.00027
#3	-.00256	.86008	.00430	.99542	.02099	.00516	16.755	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00168	.00105	-.01952	4.8292	.00792	5.5250	.00337
Stddev	.00071	.00046	.00224	.03206	.0356	.00332	.0079	.00274
%RSD	108.36	27.467	213.78	164.20	.73811	41.960	.14350	81.451
#1	.00145	.00177	.00318	-.03204	4.8246	.00856	5.5330	.00028
#2	.00045	.00209	.00123	-.04344	4.7960	.01087	5.5172	.00553
#3	.00007	.00118	-.00128	.01691	4.8668	.00432	5.5248	.00429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8436	107.62	.00865	.05049	.00159	.00599	.00234	3.1978
Stddev	.0496	.66	.00102	.00782	.00359	.00355	.00678	.0507
%RSD	2.6901	.60916	11.825	15.489	225.27	59.251	290.12	1.5846
#1	1.8729	108.36	.00855	.05950	.00195	.00379	.00343	3.2178
#2	1.8715	107.10	.00972	.04548	.00500	.01009	.00851	3.2354
#3	1.7863	107.41	.00768	.04648	-.00216	.00410	-.00492	3.1402
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111622 Acquired: 6/28/2016 19:45:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.10520	.00129	.12933	3.5297	.00382	.00225
Stddev	.00032	.00026	.00903	.00111	.0124	.00014	.00048
%RSD	92.272	.24564	702.47	.85816	.35251	3.5780	21.396
#1	.00031	.10501	-.00520	.13061	3.5439	.00398	.00258
#2	.00067	.10509	-.00254	.12863	3.5204	.00376	.00169
#3	.00004	.10549	.01159	.12875	3.5250	.00373	.00247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8557.6	50978.	2435.4
Stddev	16.4	192.	22.1
%RSD	.19149	.37612	.90601
#1	8544.4	50773.	2411.3
#2	8575.9	51152.	2454.7
#3	8552.3	51009.	2440.1

Approved: June 29, 2016

Sample Name: L1606111621 Acquired: 6/28/2016 19:49:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	1.2480	.00198	1.0327	.02264	.00547	18.182	.00013
Stddev	.00194	.0178	.00129	.0087	.00195	.00004	.071	.00017
%RSD	1582.9	1.4252	65.077	.84575	8.6101	.76334	.39323	128.92
#1	-.00236	1.2432	.00313	1.0426	.02486	.00547	18.264	.00009
#2	.00108	1.2677	.00059	1.0293	.02122	.00551	18.132	-.00001
#3	.00091	1.2332	.00222	1.0261	.02183	.00542	18.150	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00131	.00266	.00073	.14945	4.9265	.00587	5.7574	.00778
Stddev	.00006	.00060	.00074	.03015	.0708	.00362	.0112	.00237
%RSD	4.8967	22.584	100.47	20.173	1.4368	61.782	.19527	30.414
#1	.00126	.00302	.00026	.16463	4.9515	.00548	5.7647	.00815
#2	.00138	.00197	.00035	.16899	4.8466	.00967	5.7445	.00525
#3	.00128	.00299	.00158	.11473	4.9815	.00245	5.7631	.00994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8844	110.24	.02602	.05230	-.00137	.00278	.00257	3.3575
Stddev	.0044	.94	.00041	.00319	.00128	.00231	.00425	.0100
%RSD	.23212	.85470	1.5924	6.1014	93.257	83.383	164.92	.29688
#1	1.8827	111.32	.02618	.05018	-.00027	.00406	-.00182	3.3660
#2	1.8812	109.79	.02554	.05597	-.00278	.00416	.00665	3.3599
#3	1.8894	109.61	.02632	.05075	-.00107	.00010	.00289	3.3465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111621 Acquired: 6/28/2016 19:49:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.10916**	**-.00035**	**.13194**	**3.5926**	**.02298**	**.00262**
Stddev	.00020	.00060	.00601	.00115	.0085	.00025	.00068
%RSD	658.00	.55090	1712.3	.87434	.23753	1.1059	25.841
#1	.00019	.10966	-.00350	.13204	3.5910	.02275	.00189
#2	-.00009	.10932	.00657	.13305	3.6018	.02325	.00322
#3	-.00019	.10849	-.00412	.13075	3.5849	.02293	.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8585.5**	**51290.**	**2447.3**
Stddev	16.4	232.	31.9
%RSD	.19058	.45271	1.3052
#1	8593.8	51548.	2410.7
#2	8596.0	51097.	2470.0
#3	8566.6	51224.	2461.0

Approved: June 29, 2016

Sample Name: L1606111621PS Acquired: 6/28/2016 19:53:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574353-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19468**	**6.0660**	**.19521**	**1.8722**	**.51246**	**.02949**	**20.753**	**.02465**
Stddev	.00142	.0372	.00389	.0114	.00429	.00037	.018	.00028
%RSD	.73007	.61388	1.9931	.60821	.83688	1.2477	.08755	1.1435
#1	.19470	6.0400	.19605	1.8777	.51629	.02940	20.759	.02497
#2	.19609	6.1086	.19862	1.8798	.51325	.02989	20.733	.02442
#3	.19325	6.0492	.19097	1.8591	.50782	.02917	20.768	.02457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10096**	**.25313**	**.24800**	**2.0910**	**29.458**	**.51484**	**10.216**	**.25050**
Stddev	.00033	.00389	.00199	.0653	.254	.00462	.022	.00499
%RSD	.32385	1.5373	.80283	3.1231	.86080	.89712	.21194	1.9907
#1	.10132	.25558	.25029	2.0630	29.743	.50967	10.211	.24512
#2	.10090	.25518	.24664	2.1657	29.378	.51857	10.240	.25143
#3	.10067	.24865	.24708	2.0444	29.255	.51628	10.197	.25496
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.1652**	**122.67**	**.26701**	**4.8421**	**.24685**	**.59094**	**.18681**	**5.2988**
Stddev	.0048	.55	.00141	.0071	.00697	.00238	.00199	.0076
%RSD	.22092	.45123	.52961	.14579	2.8222	.40196	1.0655	.14396
#1	2.1706	123.02	.26692	4.8361	.25240	.59112	.18463	5.3029
#2	2.1635	122.97	.26565	4.8499	.24912	.59322	.18854	5.3035
#3	2.1615	122.03	.26847	4.8402	.23904	.58848	.18724	5.2900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111621PS Acquired: 6/28/2016 19:53:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574353-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50175**	**.59885**	**.49702**	**.36149**	**3.6922**	**.51455**	**.00306**
Stddev	.00351	.00245	.00463	.00462	.0323	.00120	.00082
%RSD	.70040	.40928	.93221	1.2780	.87500	.23340	26.856
#1	.50530	.60156	.49256	.36198	3.6891	.51562	.00379
#2	.50167	.59818	.50181	.36585	3.7259	.51478	.00321
#3	.49827	.59680	.49668	.35664	3.6616	.51325	.00217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8416.7**	**50775.**	**2421.5**
Stddev	30.8	95.	12.5
%RSD	.36629	.18680	.51774
#1	8445.0	50804.	2409.6
#2	8421.4	50669.	2434.6
#3	8383.9	50852.	2420.4

Approved: June 29, 2016

Sample Name: L1606111621SDL Acquired: 6/28/2016 19:57:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574353-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00239**	**.31622**	**-.00231**	**.24437**	**.01409**	**.00137**	**4.1117**	**-.00020**
Stddev	.00194	.00515	.00245	.00449	.00108	.00004	.0487	.00022
%RSD	81.142	1.6301	106.06	1.8354	7.6473	2.7793	1.1848	106.31
#1	-.00074	.31773	-.00306	.24074	.01311	.00133	4.0568	-.00039
#2	-.00453	.31048	-.00429	.24299	.01392	.00138	4.1285	.00003
#3	-.00192	.32045	.00043	.24939	.01524	.00140	4.1497	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00147**	**-.00005**	**.04410**	**1.1455**	**.00290**	**1.4672**	**.00303**
Stddev	.00040	.00051	.00157	.01165	.0954	.00211	.0292	.00333
%RSD	310.14	34.335	3202.6	26.411	8.3248	72.704	1.9920	110.07
#1	.00038	.00191	-.00187	.05253	1.2446	.00496	1.4876	.00346
#2	-.00033	.00092	.00084	.04895	1.1376	.00075	1.4804	-.00050
#3	.00033	.00158	.00088	.03081	1.0544	.00298	1.4337	.00612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.44321**	**25.209**	**.00584**	**.01782**	**-.00254**	**.00758**	**-.00250**	**.77100**
Stddev	.00496	.261	.00097	.00869	.00142	.00840	.00573	.00711
%RSD	1.1184	1.0350	16.619	48.769	55.674	110.84	229.02	.92249
#1	.43981	24.910	.00677	.01707	-.00383	.00045	-.00909	.76316
#2	.44889	25.390	.00593	.02686	-.00103	.01683	.00129	.77702
#3	.44092	25.327	.00483	.00953	-.00278	.00544	.00030	.77283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111621SDL Acquired: 6/28/2016 19:57:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574353-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.02516**	**.00409**	**.02933**	**.84357**	**.00687**	**-.00052**
Stddev	.00046	.00033	.00903	.00490	.01043	.00013	.00018
%RSD	170.41	1.3067	221.08	16.711	1.2366	1.8237	34.157
#1	.00024	.02524	.00944	.03021	.84518	.00685	-.00063
#2	-.00039	.02544	-.00634	.02405	.83243	.00701	-.00032
#3	-.00066	.02480	.00916	.03373	.85310	.00676	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7962.9**	**47699.**	**2191.2**
Stddev	49.3	397.	19.0
%RSD	.61886	.83205	.86731
#1	8016.6	47547.	2212.4
#2	7952.4	48149.	2175.8
#3	7919.7	47400.	2185.5

Approved: June 29, 2016

Sample Name: L1606111621SDL Acquired: 6/28/2016 20:01:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574353-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00220	.08412	-.00098	.05898	.01353	.00054	.91615	.00008
Stddev	.00227	.00966	.00332	.00253	.00093	.00007	.00736	.00009
%RSD	102.97	11.484	337.90	4.2843	6.8634	12.877	.80313	114.45
#1	-.00454	.08593	-.00444	.06030	.01321	.00062	.91854	.00012
#2	-.00204	.09274	-.00069	.05606	.01457	.00052	.92201	-.00003
#3	-.00002	.07368	.00218	.06056	.01280	.00048	.90789	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	-.00003	.00020	.02649	.07159	-.00408	.31593	.00066
Stddev	.00029	.00145	.00079	.05924	.07718	.00166	.07825	.00318
%RSD	94.515	4957.5	402.59	223.60	107.81	40.645	24.770	481.89
#1	-.00055	.00121	-.00002	.02143	-.01732	-.00422	.38108	-.00178
#2	-.00037	-.00163	.00107	.08811	.11070	-.00567	.33757	.00425
#3	.00001	.00034	-.00046	-.03005	.12139	-.00236	.22913	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09882	5.7701	-.00007	.00258	-.00340	.00808	-.00626	.16219
Stddev	.00415	.0571	.00075	.01108	.00322	.00231	.00531	.00906
%RSD	4.2025	.99020	1059.0	429.05	94.662	28.564	84.871	5.5866
#1	.10108	5.7401	-.00079	-.00895	-.00365	.00648	-.00734	.16783
#2	.10135	5.8360	.00071	.00355	-.00007	.00703	-.00049	.16700
#3	.09403	5.7342	-.00014	.01314	-.00649	.01073	-.01095	.15174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111621SDL Acquired: 6/28/2016 20:01:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574353-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00540	-.00624	.00071	.19156	.00163	-.00080
Stddev	.00127	.00048	.01474	.00471	.00154	.00020	.00062
%RSD	695.58	8.9416	236.32	662.29	.80152	12.201	77.554
#1	-.00105	.00588	.01064	-.00385	.19251	.00153	-.00143
#2	.00148	.00492	-.01281	.00043	.18979	.00187	-.00018
#3	.00012	.00540	-.01655	.00555	.19238	.00151	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7627.8	45454.	2086.8
Stddev	55.0	364.	20.9
%RSD	.72101	.80095	.99922
#1	7592.7	45203.	2110.3
#2	7599.6	45872.	2070.5
#3	7691.2	45288.	2079.6

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 20:04:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39468	9.9919	.38524	.49000	.99891	.04984	9.8622	.04970
Stddev	.00284	.1069	.00529	.00663	.01100	.00082	.0586	.00006
%RSD	.72016	1.0695	1.3730	1.3520	1.1013	1.6424	.59433	.12719
#1	.39781	10.110	.38107	.49549	1.0050	.05079	9.8740	.04967
#2	.39225	9.9017	.39119	.49187	1.0056	.04935	9.9141	.04978
#3	.39399	9.9640	.38346	.48265	.98621	.04939	9.7986	.04966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20024	.50366	.49874	3.9042	50.609	1.0132	10.196	.49110
Stddev	.00088	.00890	.00204	.0671	.360	.0175	.032	.00179
%RSD	.43996	1.7676	.40940	1.7179	.71095	1.7241	.31502	.36464
#1	.20059	.51378	.49900	3.9752	50.665	1.0320	10.174	.49303
#2	.20090	.50017	.50064	3.8956	50.938	1.0101	10.180	.49076
#3	.19924	.49703	.49658	3.8419	50.225	.99743	10.233	.48950
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99465	49.418	.48986	9.7317	.48767	1.1715	.38878	4.8485
Stddev	.00335	.439	.00143	.0238	.00502	.0005	.00867	.0081
%RSD	.33685	.88754	.29263	.24474	1.0289	.04616	2.2296	.16675
#1	.99612	49.767	.49149	9.7202	.48543	1.1710	.37885	4.8466
#2	.99702	49.562	.48882	9.7590	.49341	1.1720	.39482	4.8574
#3	.99082	48.926	.48926	9.7158	.48416	1.1714	.39268	4.8415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 20:04:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0012**	**.99258**	**.98461**	**.49932**	**1.0047**	**.98518**	**1.0223**
Stddev	.0045	.00906	.01093	.00400	.0132	.00322	.0184
%RSD	.44880	.91273	1.1097	.80100	1.3181	.32655	1.8040
#1	1.0037	1.0004	.98097	.49605	1.0199	.98533	1.0410
#2	1.0040	.99468	.99690	.49812	.99898	.98832	1.0218
#3	.99605	.98265	.97597	.50378	.99532	.98189	1.0041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8343.7**	**49686.**	**2335.7**
Stddev	14.5	349.	32.0
%RSD	.17419	.70159	1.3697
#1	8333.7	49418.	2308.4
#2	8337.0	50080.	2327.9
#3	8360.4	49561.	2370.9

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 20:08:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.01307	.00097	.00455	.00820	.00010	-.02755	-.00021
Stddev	.00104	.01247	.00311	.00169	.00066	.00010	.03058	.00032
%RSD	296.10	95.448	320.02	37.046	8.0349	101.30	111.00	150.49
#1	.00149	.01497	-.00146	.00413	.00751	-.00001	-.02714	-.00053
#2	.00012	.02448	.00448	.00311	.00827	.00011	.00282	.00010
#3	-.00055	-.00025	-.00010	.00641	.00882	.00020	-.05835	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	-.00000	.00043	-.00987	-.13623	.00296	.02443	-.00127
Stddev	.00015	.00108	.00133	.02618	.16437	.00209	.07510	.00308
%RSD	37.578	222640.	306.60	265.31	120.65	70.680	307.46	241.97
#1	-.00035	-.00108	.00185	.01077	-.32571	.00231	.09619	-.00058
#2	-.00027	.00109	.00025	-.00105	-.03196	.00127	.03072	-.00464
#3	-.00056	-.00000	-.00079	-.03932	-.05103	.00530	-.05362	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	-.05415	-.00143	-.00451	-.00388	-.00043	.00021	.01035
Stddev	.00026	.03602	.00084	.00344	.00352	.00440	.01010	.00223
%RSD	51.899	66.528	58.470	76.294	90.757	1022.8	4717.4	21.569
#1	.00080	-.06463	-.00126	-.00419	-.00562	-.00551	-.00141	.01131
#2	.00032	-.01405	-.00234	-.00124	.00017	.00213	.01103	.00779
#3	.00038	-.08377	-.00070	-.00809	-.00620	.00209	-.00897	.01193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 20:08:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00039	.00182	-.00334	-.00065	-.00015	-.00062
Stddev	.00038	.00037	.00698	.00141	.00068	.00014	.00057
%RSD	65.200	93.117	384.19	42.173	104.96	95.152	92.632
#1	.00019	.00056	.00413	-.00255	-.00075	-.00020	-.00054
#2	.00096	.00065	.00734	-.00497	-.00127	.00001	-.00122
#3	.00061	-.00003	-.00603	-.00250	.00008	-.00025	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8377.9	50066.	2322.8
Stddev	11.8	39.	3.8
%RSD	.14096	.07868	.16426
#1	8391.1	50022.	2322.0
#2	8374.2	50099.	2326.9
#3	8368.4	50077.	2319.4

Approved: June 29, 2016

Sample Name: PBW 99 Acquired: 6/28/2016 20:12:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00088**	**.00750**	**-.00134**	**-.00155**	**.00809**	**.00007**	**-.02153**
Stddev	.00149	.00464	.00181	.00288	.00105	.00013	.04471
%RSD	169.29	61.817	134.89	186.22	12.953	183.95	207.73
#1	.00260	.00497	.00020	.00175	.00727	-.00007	-.01747
#2	-.00006	.00468	-.00089	-.00282	.00772	.00018	-.06813
#3	.00010	.01285	-.00333	-.00356	.00927	.00011	.02102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00026**	**.00092**	**.00045**	**-.01278**	**-.04738**	**.00421**
Stddev	.00009	.00055	.00029	.00138	.01257	.08734	.00306
%RSD	1683.4	210.81	31.581	306.14	98.384	184.34	72.672
#1	.00009	-.00085	.00096	-.00059	-.02606	-.10158	.00388
#2	-.00009	-.00016	.00061	-.00008	-.00106	-.09393	.00133
#3	-.00002	.00023	.00118	.00202	-.01122	.05337	.00743
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03706**	**-.00091**	**-.00010**	**-.03674**	**.00010**	**.00484**	F **-.00585**
Stddev	.09839	.00348	.00042	.04472	.00066	.00464	.00307
%RSD	265.47	380.96	421.16	121.74	644.83	95.895	52.587
#1	.06275	.00046	-.00036	-.08692	.00085	.00827	-.00286
#2	.12006	.00167	.00039	-.00107	-.00011	.00670	-.00900
#3	-.07162	-.00487	-.00033	-.02223	-.00043	-.00044	-.00569
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							225.00
Low Limit							-.00500

Approved: June 29, 2016

Sample Name: PBW 99 Acquired: 6/28/2016 20:12:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	-.00579	-.02078	-.00075	.00054	-.01132	-.00160
Stddev	.00341	.00609	.00098	.00105	.00081	.01400	.00202
%RSD	246.45	105.24	4.6969	139.55	148.11	123.66	126.66
#1	-.00243	.00090	-.01984	-.00028	.00065	.00478	-.00303
#2	.00243	-.01101	-.02072	-.00003	-.00031	-.01809	-.00248
#3	.00414	-.00726	-.02179	-.00195	.00130	-.02066	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00011	.00156	.00019
Stddev	.00141	.00019	.00025
%RSD	1303.5	12.265	129.05
#1	-.00167	.00153	.00046
#2	.00109	.00176	.00015
#3	.00025	.00138	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8356.4	50399.	2322.9
Stddev	8.3	118.	3.0
%RSD	.09907	.23470	.12985
#1	8347.2	50294.	2324.0
#2	8363.3	50377.	2325.3
#3	8358.7	50527.	2319.5

Approved: June 29, 2016

Sample Name: LCSW 99 Acquired: 6/28/2016 20:16:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19995	5.0912	.19748	.95968	.51139	.02486	5.1037	.02526
Stddev	.00032	.0354	.00084	.00286	.00382	.00010	.0403	.00037
%RSD	.15788	.69540	.42347	.29829	.74601	.41008	.78855	1.4664
#1	.19968	5.0507	.19653	.95642	.50904	.02497	5.0799	.02550
#2	.19986	5.1067	.19807	.96179	.50933	.02479	5.0811	.02546
#3	.20029	5.1162	.19785	.96084	.51579	.02480	5.1502	.02484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10303	.25830	.25596	2.0188	25.751	.52228	5.1309	.25135
Stddev	.00022	.00109	.00033	.0408	.160	.00512	.1085	.00253
%RSD	.21109	.42113	.12736	2.0199	.62027	.98007	2.1152	1.0066
#1	.10303	.25833	.25623	2.0032	25.831	.52616	5.0847	.25064
#2	.10325	.25719	.25607	1.9882	25.567	.51648	5.0530	.24926
#3	.10282	.25937	.25560	2.0651	25.854	.52419	5.2548	.25416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51177	25.309	.25293	4.8448	.25021	.59893	.18799	2.3541
Stddev	.00075	.047	.00239	.0104	.00425	.00108	.00919	.0027
%RSD	.14617	.18756	.94684	.21420	1.6966	.18076	4.8881	.11542
#1	.51116	25.262	.25394	4.8393	.24722	.59977	.17738	2.3529
#2	.51261	25.308	.25465	4.8568	.24835	.59930	.19305	2.3572
#3	.51156	25.357	.25020	4.8383	.25507	.59771	.19354	2.3522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW 99 Acquired: 6/28/2016 20:16:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51396**	**.51437**	**.50259**	**.25425**	**.51004**	**.50528**	**.00005**
Stddev	.00065	.00349	.00644	.00254	.00151	.00067	.00071
%RSD	.12647	.67931	1.2807	1.0005	.29615	.13296	1399.5
#1	.51408	.51338	.50618	.25171	.50839	.50499	.00085
#2	.51325	.51147	.50643	.25680	.51037	.50605	-.00049
#3	.51454	.51825	.49516	.25426	.51135	.50481	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8481.5**	**50727.**	**2391.5**
Stddev	11.9	137.	2.9
%RSD	.14054	.27002	.12169
#1	8473.9	50817.	2394.5
#2	8475.3	50570.	2388.7
#3	8495.2	50795.	2391.3

Approved: June 29, 2016

Sample Name: L1606103002 Acquired: 6/28/2016 20:20:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.08224	.00197	.00534	.01469	.00012	1.9817	.00031
Stddev	.00055	.00471	.00244	.00304	.00144	.00010	.0399	.00021
%RSD	63.865	5.7266	123.81	56.929	9.8322	85.543	2.0151	68.281
#1	-.00059	.08517	-.00019	.00319	.01626	.00019	1.9365	.00050
#2	-.00050	.08474	.00148	.00401	.01343	.00016	1.9965	.00034
#3	-.00149	.07681	.00462	.00882	.01437	.00000	2.0122	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	-.00045	.00074	.30708	.34575	.00631	.89402	.01274
Stddev	.00014	.00051	.00098	.04097	.11046	.00210	.02638	.00322
%RSD	184.58	113.87	132.95	13.342	31.947	33.270	2.9503	25.299
#1	.00012	-.00029	.00089	.28127	.35693	.00620	.87221	.01522
#2	.00018	-.00004	.00163	.35432	.45019	.00847	.88652	.01390
#3	-.00008	-.00103	-.00031	.28565	.23013	.00427	.92334	.00910
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	1.3755	.00035	.00032	-.00145	.00301	-.00742	3.3833
Stddev	.00021	.0193	.00083	.00254	.00345	.00433	.00137	.0020
%RSD	539.25	1.4022	233.79	793.81	238.34	143.91	18.400	.05809
#1	.00010	1.3556	-.00060	-.00199	.00238	-.00106	-.00608	3.3841
#2	-.00020	1.3942	.00076	-.00009	-.00242	.00756	-.00881	3.3848
#3	.00021	1.3766	.00090	.00305	-.00430	.00253	-.00738	3.3811
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103002 Acquired: 6/28/2016 20:20:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.01298	.00036	-.00177	-.00034	.00350	-.00071
Stddev	.00042	.00073	.01327	.00171	.00090	.00026	.00044
%RSD	81.181	5.6431	3661.7	96.392	259.96	7.4203	63.034
#1	.00034	.01321	.00513	-.00316	.00067	.00330	-.00071
#2	.00021	.01357	.01059	-.00230	-.00067	.00340	-.00115
#3	.00100	.01216	-.01464	.00014	-.00103	.00379	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8609.6	51561.	2393.0
Stddev	10.5	208.	9.5
%RSD	.12240	.40391	.39514
#1	8618.0	51346.	2384.4
#2	8597.8	51575.	2391.5
#3	8613.0	51762.	2403.2

Approved: June 29, 2016

Sample Name: L1606103005 Acquired: 6/28/2016 20:23:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00092	.07338	.00108	.00414	.01584	.00008	1.8416	.00020
Stddev	.00203	.00510	.00353	.00309	.00055	.00009	.0159	.00025
%RSD	220.00	6.9546	327.84	74.566	3.4564	105.80	.86203	127.67
#1	-.00182	.07796	-.00226	.00228	.01647	.00008	1.8588	.00043
#2	.00140	.07431	.00071	.00244	.01548	.00017	1.8275	-.00008
#3	-.00235	.06788	.00477	.00770	.01558	-.00000	1.8385	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00090	.00159	.27024	.13061	-.00133	.82130	.01111
Stddev	.00022	.00107	.00044	.03951	.12301	.00128	.07164	.00263
%RSD	139.18	119.00	27.684	14.621	94.178	95.818	8.7221	23.653
#1	.00038	.00192	.00121	.24967	.00755	-.00155	.90350	.00969
#2	-.00007	-.00021	.00207	.24525	.13071	-.00249	.77217	.00951
#3	.00017	.00099	.00150	.31579	.25356	.00004	.78824	.01415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	1.3092	-.00001	.00072	.00005	.00458	-.00378	3.3076
Stddev	.00020	.0283	.00086	.00100	.00271	.00195	.00824	.0156
%RSD	85.562	2.1605	12970.	139.93	5208.4	42.553	217.94	.47001
#1	.00023	1.3197	-.00058	.00088	-.00137	.00405	-.01271	3.3062
#2	.00003	1.3307	-.00042	-.00036	.00318	.00675	.00355	3.3238
#3	.00043	1.2772	.00098	.00162	-.00165	.00296	-.00220	3.2928
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103005 Acquired: 6/28/2016 20:23:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.01292	-.00204	-.00247	.00029	.00314	-.00035
Stddev	.00071	.00027	.00622	.00123	.00022	.00013	.00044
%RSD	152.45	2.1003	305.29	49.901	75.753	4.1400	124.35
#1	.00001	.01323	-.00350	-.00117	.00016	.00300	-.00025
#2	.00129	.01274	-.00740	-.00362	.00016	.00316	-.00084
#3	.00011	.01279	.00479	-.00262	.00054	.00326	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8591.7	51718.	2396.2
Stddev	32.8	139.	5.9
%RSD	.38213	.26800	.24697
#1	8553.8	51723.	2390.7
#2	8608.4	51854.	2395.5
#3	8612.8	51577.	2402.5

Approved: June 29, 2016

Sample Name: L1606103008 Acquired: 6/28/2016 20:27:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00248	.06335	-.00155	.00171	.01387	.00004	1.6732	.00015
Stddev	.00069	.00988	.00102	.00041	.00106	.00006	.0055	.00026
%RSD	27.761	15.595	65.691	24.128	7.6363	153.17	.32845	175.08
#1	-.00325	.07445	-.00144	.00165	.01367	-.00001	1.6770	-.00015
#2	-.00226	.06007	-.00261	.00215	.01292	.00003	1.6669	.00031
#3	-.00193	.05553	-.00059	.00133	.01501	.00011	1.6758	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00268	.00155	.25935	.21785	.00346	.90723	.00963
Stddev	.00047	.00094	.00044	.02869	.03338	.00211	.08643	.00343
%RSD	11692.	35.293	28.463	11.064	15.323	60.967	9.5265	35.627
#1	-.00015	.00179	.00186	.23014	.25226	.00217	.80749	.00585
#2	-.00037	.00256	.00176	.28750	.18560	.00232	.95414	.01255
#3	.00053	.00367	.00105	.26042	.21567	.00590	.96007	.01047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	1.6028	.00050	.00285	-.00172	.00432	-.00424	3.4372
Stddev	.00034	.0210	.00082	.00190	.00344	.00344	.00226	.0990
%RSD	117.08	1.3071	162.19	66.549	200.13	79.563	53.304	2.8817
#1	.00026	1.6264	.00111	.00504	-.00499	.00768	-.00276	3.4985
#2	-.00003	1.5953	-.00042	.00170	-.00202	.00447	-.00684	3.4902
#3	.00065	1.5866	.00082	.00181	.00186	.00081	-.00311	3.3230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103008 Acquired: 6/28/2016 20:27:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.01269	-.00096	-.00294	-.00047	.00324	-.00082
Stddev	.00041	.00020	.01187	.00205	.00058	.00036	.00004
%RSD	61.897	1.5519	1242.1	69.635	121.79	11.026	4.5093
#1	.00086	.01290	-.01258	-.00059	-.00094	.00364	-.00086
#2	.00019	.01251	.01115	-.00387	.00017	.00296	-.00080
#3	.00094	.01265	-.00143	-.00435	-.00065	.00312	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8606.8	51900.	2410.3
Stddev	16.7	132.	9.1
%RSD	.19431	.25415	.37944
#1	8598.2	51935.	2406.3
#2	8626.0	52011.	2420.8
#3	8596.0	51754.	2403.9

Approved: June 29, 2016

Sample Name: L1606103013 Acquired: 6/28/2016 20:31:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	.04624	-.00178	.00095	.01561	.00013	2.0066	.00029
Stddev	.00021	.00680	.00616	.00269	.00083	.00001	.0376	.00015
%RSD	16.871	14.707	345.25	283.48	5.3373	8.0351	1.8742	52.224
#1	.00114	.05286	.00318	.00378	.01466	.00012	1.9900	.00012
#2	.00107	.03927	.00014	-.00156	.01599	.00012	1.9801	.00033
#3	.00146	.04659	-.00868	.00062	.01619	.00014	2.0497	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.00029	.00151	.29221	.26761	.00398	1.1180	.00839
Stddev	.00019	.00101	.00091	.02806	.10146	.00258	.0551	.00336
%RSD	34.020	344.06	60.719	9.6032	37.912	64.760	4.9282	40.034
#1	-.00034	-.00082	.00255	.26127	.37672	.00184	1.1808	.00543
#2	-.00064	.00055	.00087	.31601	.17611	.00684	1.0778	.00769
#3	-.00069	.00115	.00110	.29936	.25000	.00325	1.0955	.01204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	2.1231	-.00118	.00513	-.00473	.00222	-.00603	4.1440
Stddev	.00017	.0465	.00037	.00302	.00167	.00456	.00114	.1226
%RSD	44.300	2.1922	31.218	58.874	35.342	205.45	18.846	2.9593
#1	.00039	2.0706	-.00115	.00459	-.00336	-.00152	-.00552	4.2262
#2	.00021	2.1594	-.00082	.00839	-.00423	.00089	-.00733	4.2027
#3	.00054	2.1393	-.00156	.00242	-.00659	.00729	-.00523	4.0030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103013 Acquired: 6/28/2016 20:31:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**.01567**	**-.00061**	**-.00476**	**.00024**	**.00140**	**.00136**
Stddev	.00090	.00032	.00297	.00325	.00067	.00012	.00036
%RSD	182.01	2.0296	488.92	68.203	279.71	8.5409	26.414
#1	.00112	.01532	-.00325	-.00849	.00036	.00144	.00160
#2	-.00054	.01594	-.00118	-.00260	-.00048	.00150	.00152
#3	.00089	.01575	.00260	-.00319	.00084	.00127	.00095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8578.5**	**51693.**	**2409.2**
Stddev	5.0	380.	28.4
%RSD	.05873	.73419	1.1788
#1	8583.0	51259.	2441.8
#2	8579.4	51855.	2395.8
#3	8573.1	51965.	2389.9

Approved: June 29, 2016

Sample Name: L1606103014S Acquired: 6/28/2016 20:35:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19712**	**5.1426**	**.19698**	**.95559**	**.52325**	**.02504**	**7.1364**	**.02503**
Stddev	.00387	.0305	.00335	.00861	.00545	.00008	.1283	.00025
%RSD	1.9618	.59258	1.7000	.90073	1.0423	.33543	1.7978	1.0117
#1	.19423	5.1194	.19313	.94725	.52465	.02497	7.2805	.02505
#2	.20152	5.1771	.19856	.96444	.52787	.02513	7.0347	.02477
#3	.19563	5.1313	.19924	.95509	.51723	.02503	7.0939	.02528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10214**	**.25928**	**.25338**	**2.3233**	**26.069**	**.52468**	**6.2318**	**.26664**
Stddev	.00135	.00040	.00160	.0125	.190	.00255	.1325	.00172
%RSD	1.3220	.15466	.63168	.53830	.72708	.48682	2.1255	.64432
#1	.10357	.25975	.25477	2.3215	26.081	.52258	6.1381	.26856
#2	.10088	.25905	.25163	2.3367	26.253	.52752	6.3833	.26525
#3	.10197	.25905	.25375	2.3118	25.874	.52393	6.1739	.26611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50844**	**27.294**	**.25043**	**4.7758**	**.25102**	**.58741**	**.18813**	**6.5890**
Stddev	.00349	.254	.00206	.0281	.00585	.00436	.00782	.0469
%RSD	.68643	.93201	.82062	.58817	2.3315	.74208	4.1588	.71105
#1	.50968	27.367	.25075	4.8009	.25595	.59104	.19682	6.6036
#2	.50450	27.505	.24824	4.7455	.24455	.58257	.18596	6.5365
#3	.51115	27.012	.25231	4.7809	.25256	.58861	.18163	6.6267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103014S Acquired: 6/28/2016 20:35:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50967	.53343	.50624	.24971	.50892	.50235	.00030
Stddev	.00450	.00383	.00683	.00270	.00053	.00313	.00028
%RSD	.88259	.71764	1.3493	1.0831	.10449	.62256	93.438
#1	.51146	.53276	.51236	.24681	.50919	.50409	.00052
#2	.50455	.53755	.49887	.25015	.50927	.49874	.00041
#3	.51300	.52998	.50747	.25217	.50831	.50421	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8552.5	50892.	2386.8
Stddev	54.7	220.	25.0
%RSD	.63959	.43158	1.0478
#1	8521.9	50991.	2379.9
#2	8615.7	50640.	2366.0
#3	8519.9	51045.	2414.5

Approved: June 29, 2016

Sample Name: L1606103015SD Acquired: 6/28/2016 20:39:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19945	5.1587	.19596	.96938	.52400	.02505	7.0900	.02511
Stddev	.00173	.0276	.00166	.00022	.00923	.00012	.1630	.00023
%RSD	.86965	.53434	.84677	.02230	1.7606	.49890	2.2987	.89707
#1	.19757	5.1745	.19499	.96955	.51782	.02518	7.0286	.02491
#2	.20100	5.1748	.19501	.96947	.53460	.02502	7.2748	.02508
#3	.19978	5.1269	.19788	.96914	.51957	.02493	6.9667	.02535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10337	.25841	.25831	2.3603	26.179	.52946	6.2591	.26435
Stddev	.00053	.00183	.00149	.0599	.253	.00794	.0416	.00468
%RSD	.51104	.70916	.57726	2.5380	.96484	1.4993	.66458	1.7695
#1	.10285	.25643	.25699	2.3235	25.984	.52081	6.3007	.26566
#2	.10390	.26004	.25993	2.4294	26.464	.53640	6.2175	.26822
#3	.10336	.25876	.25800	2.3280	26.088	.53118	6.2592	.25915
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51686	27.396	.25484	4.8687	.25758	.59782	.19383	6.6540
Stddev	.00352	.389	.00234	.0367	.00220	.00371	.00712	.0309
%RSD	.68063	1.4205	.91811	.75454	.85248	.62120	3.6739	.46516
#1	.51287	27.174	.25226	4.8340	.25694	.59358	.19131	6.6202
#2	.51954	27.845	.25683	4.9072	.25577	.59937	.20186	6.6810
#3	.51815	27.168	.25544	4.8648	.26002	.60051	.18830	6.6607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103015SD Acquired: 6/28/2016 20:39:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51888	.53421	.50143	.25567	.51178	.51917	-.00014
Stddev	.00271	.00813	.00412	.00076	.00169	.00325	.00025
%RSD	.52203	1.5219	.82169	.29775	.33018	.62683	177.03
#1	.51614	.52777	.50024	.25556	.51373	.51570	-.00031
#2	.52156	.54335	.50602	.25496	.51071	.52215	.00015
#3	.51894	.53152	.49804	.25648	.51089	.51968	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8578.1	51459.	2426.3
Stddev	28.4	147.	29.4
%RSD	.33082	.28491	1.2131
#1	8609.8	51467.	2430.4
#2	8555.2	51308.	2395.1
#3	8569.3	51601.	2453.5

Approved: June 29, 2016

Sample Name: L1606103020 Acquired: 6/28/2016 20:43:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.00877	-.00460	.00734	.00651	.00012	-.01988	.00004
Stddev	.00095	.00655	.00314	.00147	.00132	.00008	.02973	.00023
%RSD	113.31	74.670	68.199	20.026	20.246	69.398	149.59	546.82
#1	.00026	.00462	-.00377	.00900	.00698	.00005	-.02899	-.00013
#2	-.00133	.00538	-.00807	.00684	.00753	.00010	.01335	-.00004
#3	-.00146	.01633	-.00196	.00619	.00502	.00021	-.04399	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00085	.00015	-.01469	-.08758	-.00071	.02146	-.00067
Stddev	.00039	.00091	.00020	.03225	.15993	.00263	.03330	.00092
%RSD	722.61	106.86	135.15	219.57	182.60	369.20	155.19	138.50
#1	.00047	.00117	.00036	.01959	-.08635	-.00237	-.01567	-.00103
#2	-.00032	-.00018	-.00004	-.04444	-.24812	-.00209	.04870	.00038
#3	.00002	.00155	.00013	-.01922	.07172	.00232	.03135	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	1.4536	.00020	.00376	-.00365	.00289	-.00559	.47911
Stddev	.00033	.0476	.00046	.00579	.00477	.00166	.00612	.00016
%RSD	762.05	3.2713	232.76	153.90	130.81	57.274	109.47	.03278
#1	-.00021	1.4309	-.00026	.00280	-.00897	.00420	.00111	.47898
#2	.00042	1.4217	.00020	.00997	-.00221	.00344	-.00701	.47928
#3	-.00008	1.5083	.00065	-.00149	.00024	.00103	-.01088	.47906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103020 Acquired: 6/28/2016 20:43:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00110	.00023	.00531	-.00695	.00052	.00111	-.00094
Stddev	.00104	.00028	.00887	.00154	.00080	.00027	.00037
%RSD	94.401	122.88	167.05	22.192	152.73	24.492	38.941
#1	.00055	.00021	-.00034	-.00767	-.00026	.00097	-.00109
#2	.00045	.00052	.01554	-.00801	.00050	.00093	-.00122
#3	.00229	-.00004	.00074	-.00518	.00133	.00142	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8676.7	52192.	2438.5
Stddev	21.8	312.	21.6
%RSD	.25144	.59803	.88605
#1	8698.9	52061.	2422.8
#2	8655.3	52548.	2429.6
#3	8676.1	51966.	2463.1

Approved: June 29, 2016

Sample Name: L1606103023 Acquired: 6/28/2016 20:46:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00096	.03076	-.00276	.00673	.00671	.00004	.05475	.00017
Stddev	.00096	.00939	.00497	.00251	.00155	.00008	.07827	.00022
%RSD	99.279	30.538	179.87	37.370	23.180	233.89	142.96	130.78
#1	.00014	.03473	-.00086	.00447	.00515	-.00006	-.03529	.00042
#2	-.00159	.02004	.00098	.00628	.00671	.00008	.09300	-.00001
#3	-.00144	.03753	-.00840	.00943	.00826	.00009	.10653	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00042	.00160	.00802	-.07936	.00670	.15045	.00000
Stddev	.00034	.00040	.00030	.01615	.07275	.00052	.09119	.00197
%RSD	252.40	96.122	18.507	201.43	91.670	7.7603	60.608	39387.
#1	.00018	.00089	.00159	.00372	-.00710	.00612	.20505	-.00172
#2	-.00050	.00018	.00191	.02589	-.07840	.00713	.04519	.00215
#3	-.00009	.00019	.00131	-.00555	-.15259	.00684	.20113	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	1.4650	-.00008	-.00133	-.00359	.00243	-.00207	.48862
Stddev	.00012	.0168	.00079	.00979	.00280	.00016	.00574	.01993
%RSD	46.960	1.1474	959.93	737.61	77.930	6.5708	277.61	4.0787
#1	.00030	1.4786	-.00025	-.00456	-.00204	.00262	.00363	.50244
#2	.00036	1.4701	-.00078	.00967	-.00191	.00233	-.00784	.49764
#3	.00012	1.4462	.00078	-.00909	-.00683	.00235	-.00199	.46577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103023 Acquired: 6/28/2016 20:46:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00091	-.00161	-.00016	-.00030	.00149	-.00032
Stddev	.00042	.00021	.00547	.00220	.00012	.00020	.00112
%RSD	227.16	23.373	338.87	1370.6	39.551	13.167	345.43
#1	-.00021	.00113	-.00777	.00081	-.00028	.00135	-.00141
#2	.00014	.00070	.00268	-.00268	-.00042	.00139	-.00038
#3	.00062	.00089	.00025	.00139	-.00019	.00171	.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8702.3	52447.	2432.2
Stddev	19.4	88.	24.6
%RSD	.22259	.16845	1.0115
#1	8681.6	52435.	2433.5
#2	8720.0	52366.	2406.9
#3	8705.2	52541.	2456.1

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 20:50:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39387**	**10.025**	**.39209**	**.48927**	**.99341**	**.04979**	**9.8452**	**.05027**
Stddev	.00255	.030	.00174	.00801	.00147	.00030	.0611	.00024
%RSD	.64753	.29611	.44340	1.6369	.14776	.60772	.62029	.48017
#1	.39528	10.011	.39103	.48057	.99301	.04978	9.8212	.05054
#2	.39540	10.004	.39410	.49091	.99218	.05009	9.9146	.05017
#3	.39092	10.059	.39115	.49634	.99504	.04949	9.7997	.05008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20130**	**.50328**	**.50194**	**3.8976**	**50.161**	**.99794**	**9.9823**	**.49277**
Stddev	.00054	.00180	.00113	.0316	.096	.00307	.0048	.00233
%RSD	.27066	.35681	.22427	.80949	.19110	.30743	.04819	.47273
#1	.20072	.50134	.50064	3.8647	50.177	.99891	9.9878	.49045
#2	.20180	.50488	.50251	3.9005	50.058	.99450	9.9799	.49510
#3	.20139	.50362	.50266	3.9276	50.248	1.0004	9.9792	.49275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0041**	**49.461**	**.49722**	**9.8366**	**.49583**	**1.1908**	**.39387**	**4.9618**
Stddev	.0018	.062	.00041	.0283	.00102	.0064	.00958	.0100
%RSD	.18282	.12491	.08194	.28740	.20516	.53822	2.4318	.20201
#1	1.0023	49.480	.49734	9.8053	.49524	1.1847	.40206	4.9509
#2	1.0059	49.391	.49755	9.8603	.49525	1.1975	.38334	4.9705
#3	1.0042	49.510	.49676	9.8443	.49700	1.1901	.39620	4.9641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 20:50:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0071**	**.98955**	**.99924**	**.50029**	**1.0027**	**.99967**	**1.0262**
Stddev	.0029	.00102	.00558	.00094	.0071	.00173	.0015
%RSD	.28373	.10289	.55859	.18755	.70574	.17318	.15142
#1	1.0044	.99067	.99835	.50120	.99916	.99923	1.0257
#2	1.0069	.98868	.99416	.50035	1.0109	.99819	1.0280
#3	1.0101	.98929	1.0052	.49933	.99811	1.0016	1.0250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8509.8**	**50998.**	**2411.4**
Stddev	31.1	121.	5.1
%RSD	.36540	.23792	.21191
#1	8492.7	50959.	2406.2
#2	8545.7	51133.	2411.4
#3	8491.1	50900.	2416.4

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 20:54:31 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00097	.01028	-.00070	.00231	.00628	.00006	-.00151	.00026
Stddev	.00117	.00825	.00285	.00203	.00132	.00006	.05286	.00040
%RSD	121.50	80.294	406.96	87.692	20.977	99.683	3494.8	153.91
#1	.00016	.01966	.00239	.00134	.00484	.00005	.05735	-.00019
#2	-.00088	.00413	-.00127	.00096	.00743	.00012	-.01695	.00040
#3	-.00218	.00705	-.00323	.00465	.00656	.00001	-.04494	.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00019	.00124	.00012	.01193	.00194	.09408	-.00460
Stddev	.00035	.00047	.00168	.01222	.12968	.00350	.09956	.00259
%RSD	394.87	246.49	135.63	10327.	1086.9	179.97	105.82	56.340
#1	.00045	.00000	.00318	.00632	-.11270	.00119	.17982	-.00178
#2	.00006	-.00016	.00036	.00799	.14613	-.00112	.11753	-.00516
#3	-.00024	.00072	.00018	-.01395	.00236	.00576	-.01511	-.00687
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.08282	-.00179	.00255	-.00305	.00088	-.00266	.00929
Stddev	.00044	.02080	.00061	.00580	.00051	.00568	.00235	.00264
%RSD	390.13	25.120	34.102	227.36	16.768	645.68	88.410	28.446
#1	.00023	-.05883	-.00182	.00709	-.00359	.00496	-.00107	.01233
#2	-.00061	-.09382	-.00238	.00454	-.00296	.00329	-.00155	.00806
#3	.00004	-.09582	-.00116	-.00398	-.00258	-.00561	-.00536	.00749
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 20:54:31 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**-.00009**	**.00531**	**-.00285**	**-.00050**	**.00011**	**-.00047**
Stddev	.00107	.00038	.00364	.00117	.00035	.00019	.00041
%RSD	261.53	433.74	68.573	40.924	69.361	167.36	86.498
#1	-.00066	-.00053	.00158	-.00249	-.00082	.00015	-.00018
#2	.00041	.00010	.00885	-.00415	-.00057	.00029	-.00029
#3	.00148	.00017	.00551	-.00191	-.00013	-.00009	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8624.7**	**51659.**	**2390.8**
Stddev	26.4	102.	13.3
%RSD	.30619	.19728	.55665
#1	8650.5	51749.	2395.5
#2	8626.0	51679.	2375.8
#3	8597.7	51548.	2401.1

Approved: June 29, 2016

Sample Name: L1606106501 Acquired: 6/28/2016 20:58:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00122	.04246	.00096	.00933	.01907	.00012	48.210	.00018
Stddev	.00080	.00956	.00129	.00476	.00169	.00009	.667	.00040
%RSD	66.026	22.514	133.81	51.003	8.8376	74.850	1.3838	224.50
#1	-.00109	.03166	-.00051	.00441	.01870	.00022	47.543	-.00028
#2	-.00049	.04591	.00187	.01391	.02090	.00006	48.211	.00033
#3	-.00208	.04982	.00152	.00966	.01759	.00008	48.877	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.12034	.00337	.84538	4.8885	.00613	19.130	.19236
Stddev	.00035	.00062	.00185	.01733	.0577	.00353	.062	.00124
%RSD	42.451	.51230	55.118	2.0499	1.1811	57.613	.32623	.64546
#1	.00076	.11987	.00429	.84110	4.8268	.00687	19.058	.19093
#2	.00050	.12104	.00123	.83059	4.9412	.00229	19.167	.19314
#3	.00119	.12012	.00458	.86445	4.8975	.00923	19.166	.19300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00502	101.49	.03666	.05061	.00037	.00552	-.00691	4.2371
Stddev	.00063	.70	.00145	.00855	.00214	.00409	.00550	.0714
%RSD	12.644	.68806	3.9580	16.896	580.68	74.132	79.603	1.6841
#1	.00553	100.80	.03830	.04656	-.00196	.00856	-.01288	4.2787
#2	.00521	102.20	.03615	.06044	.00225	.00087	-.00206	4.2778
#3	.00431	101.47	.03554	.04484	.00082	.00713	-.00578	4.1547
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106501 Acquired: 6/28/2016 20:58:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.27982	-.00044	-.00323	.00081	.00487	-.00039
Stddev	.00124	.00141	.01103	.00191	.00135	.00030	.00090
%RSD	214.61	.50382	2503.1	59.084	167.35	6.2180	234.47
#1	.00005	.27832	-.00113	-.00441	-.00040	.00461	-.00063
#2	-.00031	.28112	-.01111	-.00103	.00055	.00520	-.00114
#3	.00199	.28001	.01092	-.00425	.00227	.00480	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8509.3	50804.	2422.1
Stddev	39.1	141.	10.1
%RSD	.45930	.27662	.41861
#1	8466.1	50939.	2433.8
#2	8542.3	50658.	2415.8
#3	8519.4	50814.	2416.7

Approved: June 29, 2016

Sample Name: L1606106502 Acquired: 6/28/2016 21:02:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00114	.04867	-.00289	.00851	.01762	.00016	35.936	.00020
Stddev	.00268	.00795	.00156	.00216	.00094	.00011	.343	.00034
%RSD	234.09	16.342	53.935	25.365	5.3376	68.879	.95434	175.42
#1	.00194	.04010	-.00140	.00603	.01790	.00019	36.093	.00008
#2	-.00255	.05010	-.00450	.00991	.01657	.00024	35.543	-.00007
#3	-.00282	.05581	-.00276	.00961	.01839	.00004	36.172	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00459	1.0529	.01632	5.0050	.94962	.00464	10.669	.16800
Stddev	.00041	.0021	.00038	.0194	.06132	.00481	.111	.00302
%RSD	9.0431	.19962	2.3454	.38836	6.4578	103.77	1.0376	1.7983
#1	.00412	1.0546	.01676	4.9982	.96223	.00667	10.667	.17029
#2	.00491	1.0537	.01605	4.9898	.88297	.00810	10.781	.16912
#3	.00473	1.0506	.01616	5.0269	1.0037	-.00086	10.559	.16457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02964	111.70	.04251	.05620	-.00251	-.00857	-.00677	5.3032
Stddev	.00092	.30	.00079	.00640	.00333	.00438	.01076	.0854
%RSD	3.1108	.26623	1.8609	11.382	132.84	51.124	158.88	1.6112
#1	.03041	111.57	.04282	.05992	-.00625	-.00890	-.00689	5.3352
#2	.02990	112.04	.04309	.05987	.00011	-.01278	-.01747	5.3680
#3	.02862	111.49	.04161	.04882	-.00137	-.00403	.00405	5.2064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106502 Acquired: 6/28/2016 21:02:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.12031	.00009	-.00450	.00634	.00260	-.00112
Stddev	.00029	.00088	.00398	.00333	.00034	.00025	.00041
%RSD	34.357	.73136	4483.1	74.119	5.3714	9.8103	36.698
#1	.00117	.11973	.00242	-.00289	.00663	.00269	-.00123
#2	.00063	.11988	.00235	-.00833	.00641	.00231	-.00066
#3	.00072	.12132	-.00450	-.00227	.00596	.00279	-.00146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8550.4	51133.	2443.3
Stddev	23.9	86.	5.6
%RSD	.27987	.16812	.22818
#1	8569.9	51216.	2438.0
#2	8523.7	51044.	2442.8
#3	8557.6	51139.	2449.1

Approved: June 29, 2016

Sample Name: L1606106503 Acquired: 6/28/2016 21:06:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.01851	-.00143	.00738	.04387	.00008	45.653	.00029
Stddev	.00152	.00228	.00115	.00348	.00218	.00006	.183	.00008
%RSD	414.82	12.329	80.342	47.166	4.9668	74.693	.40194	29.371
#1	-.00121	.01940	-.00262	.01046	.04591	.00013	45.864	.00034
#2	.00047	.01591	-.00034	.00806	.04157	.00001	45.552	.00019
#3	.00183	.02021	-.00132	.00361	.04412	.00011	45.542	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.16212	.00545	3.1219	1.3740	.00540	11.847	.51275
Stddev	.00044	.00101	.00037	.0120	.1362	.00337	.092	.00428
%RSD	27.935	.62303	6.8000	.38450	9.9150	62.457	.77861	.83566
#1	.00146	.16139	.00566	3.1123	1.2183	.00220	11.756	.51512
#2	.00123	.16169	.00502	3.1180	1.4714	.00892	11.844	.51533
#3	.00209	.16327	.00567	3.1354	1.4322	.00507	11.940	.50781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	174.62	.04481	.00362	-.00178	.00108	-.00296	4.4236
Stddev	.00017	1.14	.00119	.00421	.00226	.00281	.00929	.0795
%RSD	14.627	.65397	2.6463	116.24	127.13	258.91	313.99	1.7977
#1	.00095	175.93	.04559	.00590	.00071	.00419	.00728	4.4682
#2	.00127	174.11	.04540	.00619	-.00233	.00033	-.01085	4.4708
#3	.00118	173.82	.04345	-.00124	-.00371	-.00127	-.00530	4.3318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106503 Acquired: 6/28/2016 21:06:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.16890	-.00309	-.00225	-.00026	.00270	-.00035
Stddev	.00100	.00033	.00750	.00208	.00148	.00008	.00068
%RSD	483.66	.19786	242.96	92.738	566.95	2.9192	192.50
#1	.00079	.16911	.00487	-.00262	-.00195	.00276	-.00032
#2	.00078	.16908	-.00411	-.00000	.00082	.00261	.00031
#3	-.00095	.16852	-.01002	-.00412	.00034	.00274	-.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8510.3	50639.	2430.2
Stddev	7.5	23.	18.8
%RSD	.08869	.04463	.77216
#1	8519.0	50665.	2409.5
#2	8505.2	50628.	2435.0
#3	8506.7	50623.	2446.1

Approved: June 29, 2016

Sample Name: L1606106504 Acquired: 6/28/2016 21:10:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00213	.09096	-.00153	.00691	.01641	.00011	37.014	.00041
Stddev	.00056	.01201	.00090	.00198	.00229	.00006	.834	.00023
%RSD	26.320	13.200	58.781	28.617	13.939	54.878	2.2539	56.817
#1	-.00260	.08217	-.00057	.00917	.01902	.00005	37.973	.00016
#2	-.00228	.08608	-.00235	.00547	.01545	.00018	36.605	.00061
#3	-.00151	.10464	-.00168	.00611	.01476	.00011	36.463	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01035	.41103	.00712	3.8800	9.5189	.02111	18.430	.25101
Stddev	.00050	.00097	.00195	.0540	.1479	.00400	.267	.00484
%RSD	4.8232	.23525	27.322	1.3928	1.5538	18.953	1.4467	1.9274
#1	.01046	.40992	.00878	3.9419	9.3883	.02555	18.710	.25657
#2	.01079	.41171	.00760	3.8560	9.4889	.01780	18.402	.24876
#3	.00981	.41145	.00498	3.8422	9.6795	.01998	18.179	.24771
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00352	122.20	.09998	.03453	.00070	.00399	-.00526	5.7215
Stddev	.00039	1.45	.00206	.00291	.00260	.00243	.00421	.1201
%RSD	11.002	1.1895	2.0639	8.4366	372.00	61.032	80.108	2.0990
#1	.00375	123.86	.09940	.03333	.00304	.00199	-.00504	5.7577
#2	.00373	121.61	.10227	.03785	.00117	.00670	-.00958	5.8193
#3	.00307	121.14	.09827	.03241	-.00211	.00327	-.00116	5.5875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106504 Acquired: 6/28/2016 21:10:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.21514	-.00193	-.00213	.00339	.00785	-.00076
Stddev	.00062	.00319	.01407	.00225	.00062	.00025	.00024
%RSD	114.95	1.4817	727.11	106.00	18.385	3.1697	31.487
#1	-.00008	.21868	-.01773	-.00095	.00282	.00786	-.00068
#2	.00115	.21423	.00924	-.00472	.00328	.00810	-.00058
#3	.00055	.21250	.00269	-.00070	.00405	.00760	-.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8604.3	51216.	2448.5
Stddev	45.8	176.	25.8
%RSD	.53283	.34304	1.0528
#1	8580.4	51038.	2418.8
#2	8575.4	51389.	2463.9
#3	8657.2	51221.	2462.9

Approved: June 29, 2016

Sample Name: L1606106505 Acquired: 6/28/2016 21:13:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.02921	-.00384	.00411	.01418	.00007	21.596	.00014
Stddev	.00260	.01455	.00201	.00175	.00156	.00012	.210	.00028
%RSD	285.47	49.798	52.350	42.699	10.969	180.72	.97426	194.07
#1	.00036	.04383	-.00604	.00599	.01579	.00008	21.785	.00041
#2	-.00137	.02906	-.00336	.00383	.01407	-.00006	21.633	.00016
#3	.00374	.01474	-.00211	.00251	.01268	.00019	21.369	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.01331	.00184	.28146	42.106	.02502	24.386	.10216
Stddev	.00023	.00099	.00045	.02441	.255	.00418	.202	.00328
%RSD	74.655	7.4575	24.686	8.6720	.60615	16.715	.82951	3.2063
#1	.00037	.01445	.00205	.27951	42.035	.02729	24.208	.10074
#2	.00049	.01291	.00132	.25808	42.390	.02759	24.606	.10590
#3	.00005	.01259	.00215	.30678	41.894	.02020	24.342	.09983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	71.860	.01009	.01291	-.00001	.00666	-.00207	3.4334
Stddev	.00030	.672	.00042	.00086	.00201	.00229	.00662	.0871
%RSD	22.478	.93503	4.1380	6.6831	38038.	34.442	319.11	2.5378
#1	.00135	71.698	.01043	.01290	-.00221	.00546	.00549	3.4892
#2	.00102	72.598	.01021	.01205	.00049	.00930	-.00683	3.4780
#3	.00161	71.284	.00963	.01377	.00171	.00522	-.00488	3.3330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106505 Acquired: 6/28/2016 21:13:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.11257	-.00701	-.00258	-.00079	.00417	-.00019
Stddev	.00050	.00059	.00451	.00158	.00075	.00010	.00046
%RSD	710.42	.52043	64.379	61.242	94.617	2.3387	242.20
#1	.00015	.11286	-.00751	-.00313	-.00089	.00412	-.00046
#2	.00029	.11296	-.00227	-.00080	.00000	.00428	.00034
#3	-.00065	.11190	-.01126	-.00381	-.00148	.00411	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8614.1	51472.	2478.5
Stddev	5.8	202.	14.1
%RSD	.06752	.39279	.56993
#1	8607.5	51241.	2482.7
#2	8616.5	51619.	2462.8
#3	8618.3	51555.	2490.1

Approved: June 29, 2016

Sample Name: L1606106506 Acquired: 6/28/2016 21:17:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00158	.03183	.00137	.00857	.02635	.00004	82.528	.00016
Stddev	.00017	.00971	.00409	.00205	.00061	.00005	.363	.00031
%RSD	10.921	30.510	298.35	23.919	2.2963	131.49	.43946	194.55
#1	-.00141	.03589	.00503	.01061	.02646	.00008	82.864	-.00015
#2	-.00175	.02075	-.00305	.00651	.02569	.00004	82.576	.00046
#3	-.00159	.03886	.00214	.00859	.02689	-.00001	82.144	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00909	.00538	7.0235	1.4155	.00695	12.915	.85197
Stddev	.00018	.00062	.00113	.0060	.1772	.00130	.106	.00198
%RSD	58.487	6.8567	20.985	.08524	12.519	18.696	.82117	.23221
#1	.00037	.00928	.00506	7.0254	1.2352	.00616	12.934	.85425
#2	.00011	.00839	.00445	7.0168	1.5895	.00845	12.800	.85094
#3	.00046	.00960	.00664	7.0283	1.4219	.00623	13.010	.85072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	144.61	.00414	.05218	-.00444	.00163	-.00756	3.8921
Stddev	.00008	.67	.00044	.00345	.00182	.00509	.00113	.0069
%RSD	10.115	.46055	10.513	6.6114	41.057	312.15	14.927	.17602
#1	.00074	145.24	.00447	.04820	-.00234	.00737	-.00725	3.8999
#2	.00089	144.68	.00430	.05438	-.00538	-.00013	-.00661	3.8886
#3	.00088	143.92	.00365	.05395	-.00561	-.00234	-.00881	3.8876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106506 Acquired: 6/28/2016 21:17:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.28262	-.01096	-.00234	-.00027	.00256	-.00032
Stddev	.00025	.00036	.01126	.00040	.00113	.00013	.00040
%RSD	112.34	.12884	102.74	17.244	427.21	5.1943	124.24
#1	.00047	.28284	-.02222	-.00236	-.00117	.00256	-.00074
#2	-.00003	.28281	-.01096	-.00193	.00101	.00243	-.00026
#3	.00022	.28220	.00030	-.00273	-.00063	.00270	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8553.4	50864.	2455.9
Stddev	12.6	33.	15.0
%RSD	.14684	.06447	.61218
#1	8567.9	50893.	2443.3
#2	8545.3	50829.	2451.9
#3	8547.0	50870.	2472.6

Approved: June 29, 2016

Sample Name: L1606106601 Acquired: 6/28/2016 21:21:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.05733	.00013	.02509	.01675	.00006	41.897	-.00001
Stddev	.00135	.00660	.00335	.00142	.00111	.00014	.519	.00029
%RSD	143.38	11.514	2627.2	5.6694	6.6496	234.17	1.2380	2888.5
#1	.00055	.05738	-.00157	.02580	.01748	-.00008	42.496	-.00021
#2	.00244	.05071	-.00204	.02601	.01731	.00006	41.615	.00032
#3	-.00017	.06391	.00399	.02345	.01547	.00020	41.581	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00150	.00375	.10753	1.7660	.00792	6.7640	.37747
Stddev	.00046	.00032	.00079	.04103	.1722	.00282	.0311	.00284
%RSD	89.372	21.198	21.178	38.159	9.7541	35.537	.45978	.75243
#1	.00018	.00135	.00466	.11217	1.9288	.00664	6.7589	.37569
#2	.00032	.00186	.00321	.14605	1.5857	.00598	6.7358	.38075
#3	.00103	.00128	.00336	.06438	1.7834	.01115	6.7974	.37598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	6.4675	.00459	.04483	-.00411	-.00214	-.00687	1.9555
Stddev	.00003	.0420	.00107	.01033	.00284	.00195	.00638	.0168
%RSD	4.2619	.64927	23.394	23.036	69.131	91.184	92.837	.85655
#1	.00071	6.4802	.00522	.05673	-.00662	.00006	-.00932	1.9683
#2	.00077	6.5017	.00335	.03834	-.00102	-.00280	-.01166	1.9616
#3	.00075	6.4206	.00521	.03940	-.00470	-.00368	.00037	1.9365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106601 Acquired: 6/28/2016 21:21:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.11283	.00392	-.00305	.00047	.33904	-.00049
Stddev	.00054	.00044	.00554	.00319	.00027	.00188	.00070
%RSD	78.018	.39156	141.22	104.31	56.552	.55336	141.29
#1	.00130	.11256	.00656	-.00672	.00074	.33986	-.00115
#2	.00051	.11260	-.00244	-.00097	.00046	.34036	.00023
#3	.00027	.11334	.00764	-.00147	.00021	.33689	-.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8739.1	52488.	2461.2
Stddev	19.7	68.	11.7
%RSD	.22495	.12970	.47713
#1	8753.6	52516.	2461.6
#2	8716.7	52537.	2449.3
#3	8747.0	52410.	2472.8

Approved: June 29, 2016

Sample Name: L1606106602 Acquired: 6/28/2016 21:25:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00046	.01721	-.00296	.03350	.01766	.00005	126.67	.00054
Stddev	.00050	.00800	.00245	.00208	.00078	.00011	.63	.00011
%RSD	109.04	46.468	82.731	6.1998	4.4271	218.76	.50118	20.238
#1	-.00060	.00978	-.00457	.03491	.01741	.00017	126.16	.00043
#2	-.00087	.01618	-.00418	.03448	.01853	-.00005	127.38	.00054
#3	.00010	.02568	-.00014	.03112	.01703	.00003	126.47	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00096	.00718	.00525	3.3984	.03319	27.870	.32098
Stddev	.00008	.00104	.00040	.03706	.0389	.00390	.150	.00200
%RSD	36.271	108.18	5.6337	705.29	1.1462	11.750	.53992	.62385
#1	.00015	.00156	.00702	.03492	3.4430	.02922	27.743	.31869
#2	.00018	.00157	.00764	-.03628	3.3810	.03702	28.037	.32186
#3	.00029	-.00024	.00689	.01712	3.3711	.03334	27.832	.32239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	7.9568	.00808	.01457	-.00103	.00082	-.00252	4.0823
Stddev	.00027	.0423	.00084	.00435	.00417	.00306	.00511	.0358
%RSD	27.211	.53158	10.346	29.825	404.71	372.65	202.25	.87730
#1	.00131	7.9223	.00760	.01070	.00365	.00377	.00155	4.1012
#2	.00089	8.0040	.00905	.01927	-.00238	-.00234	-.00088	4.1048
#3	.00080	7.9440	.00760	.01373	-.00436	.00104	-.00825	4.0410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106602 Acquired: 6/28/2016 21:25:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.69108**	**-.02422**	**-.00202**	**-.00021**	**.92972**	**-.00088**
Stddev	.00073	.00328	.00761	.00348	.00114	.01192	.00037
%RSD	1124.6	.47509	31.395	172.68	544.07	1.2824	42.708
#1	.00025	.68768	-.03174	-.00293	-.00019	.93618	-.00131
#2	-.00090	.69423	-.02440	.00183	-.00135	.93701	-.00069
#3	.00046	.69134	-.01653	-.00495	.00092	.91596	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8615.2**	**51801.**	**2454.3**
Stddev	26.5	242.	3.2
%RSD	.30743	.46655	.13005
#1	8603.8	51557.	2457.9
#2	8596.2	52040.	2451.7
#3	8645.4	51806.	2453.4

Approved: June 29, 2016

Sample Name: L1606106603 Acquired: 6/28/2016 21:29:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00173	.36498	-.00171	.02440	.03685	.00017	69.851	.00055
Stddev	.00273	.00934	.00289	.00202	.00234	.00006	.658	.00005
%RSD	157.80	2.5588	168.91	8.2904	6.3439	36.518	.94238	8.8191
#1	.00060	.37414	.00151	.02477	.03915	.00011	70.340	.00053
#2	-.00025	.35547	-.00258	.02621	.03693	.00017	70.112	.00051
#3	.00484	.36534	-.00407	.02222	.03448	.00024	69.103	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	.00148	.00571	.64206	2.7655	.02243	19.201	.14255
Stddev	.00003	.00107	.00122	.07652	.0955	.00337	.326	.00224
%RSD	2.0740	72.233	21.333	11.918	3.4524	15.030	1.6982	1.5740
#1	.00146	.00206	.00710	.58376	2.7001	.02239	18.883	.14401
#2	.00145	.00214	.00480	.72871	2.8751	.02581	19.185	.14366
#3	.00151	.00025	.00524	.61371	2.7214	.01907	19.535	.13996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	3.0430	.00499	.01511	-.00185	.00358	-.00385	4.6375
Stddev	.00045	.0310	.00026	.00537	.00127	.00190	.00513	.0117
%RSD	87.312	1.0191	5.2903	35.507	68.817	52.995	133.19	.25255
#1	.00026	3.0201	.00477	.02129	-.00278	.00269	-.00042	4.6465
#2	.00025	3.0307	.00490	.01164	-.00235	.00230	-.00139	4.6243
#3	.00103	3.0783	.00528	.01241	-.00040	.00576	-.00975	4.6417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106603 Acquired: 6/28/2016 21:29:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.48630**	**-.01289**	**-.00215**	**-.00076**	**.45919**	**-.00029**
Stddev	.00139	.00323	.00210	.00305	.00079	.00017	.00032
%RSD	712.04	.66440	16.307	141.91	103.26	.03766	109.68
#1	.00037	.48604	-.01099	-.00551	.00014	.45931	-.00027
#2	.00083	.48966	-.01254	.00045	-.00114	.45927	.00002
#3	-.00178	.48321	-.01515	-.00139	-.00129	.45899	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8732.4**	**52177.**	**2462.7**
Stddev	20.3	54.	13.0
%RSD	.23191	.10365	.52811
#1	8709.0	52117.	2455.4
#2	8744.0	52190.	2455.1
#3	8744.2	52223.	2477.8

Approved: June 29, 2016

Sample Name: L1606106604 Acquired: 6/28/2016 21:33:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.02304**	**-.00165**	**.00067**	**.00485**	**.00005**	**.13530**	**.00025**
Stddev	.00174	.00560	.00089	.00160	.00009	.00013	.04003	.00020
%RSD	1057.4	24.313	53.680	240.55	1.7582	234.28	29.589	79.333
#1	-.00143	.01809	-.00247	.00206	.00495	-.00009	.15528	.00024
#2	-.00088	.02190	-.00178	.00103	.00479	.00014	.16141	.00046
#3	.00182	.02912	-.00071	-.00109	.00480	.00012	.08921	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**-.00028**	**.00384**	**-.00237**	**-.08280**	**.00575**	**.00931**	**.00331**
Stddev	.00028	.00070	.00074	.02982	.04654	.00319	.05212	.00164
%RSD	101.17	250.89	19.269	1258.4	56.201	55.378	559.70	49.631
#1	-.00033	.00034	.00360	.02974	-.13452	.00564	-.05087	.00491
#2	-.00053	-.00104	.00467	-.02920	-.06959	.00900	.03957	.00338
#3	.00003	-.00014	.00325	-.00765	-.04430	.00263	.03924	.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.19024**	**-.00085**	**.00306**	**-.00070**	**.00752**	**-.00658**	**.00832**
Stddev	.00018	.04205	.00044	.00554	.00157	.00438	.00441	.00165
%RSD	146.41	22.106	51.727	180.83	225.72	58.246	67.118	19.873
#1	.00006	.19030	-.00035	-.00122	.00046	.00812	-.01079	.00852
#2	-.00012	.14815	-.00101	.00932	-.00006	.01158	-.00199	.00657
#3	-.00030	.23226	-.00118	.00109	-.00249	.00288	-.00695	.00986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106604 Acquired: 6/28/2016 21:33:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00064	.00545	-.00336	-.00090	.00138	-.00024
Stddev	.00073	.00042	.00640	.00137	.00073	.00023	.00007
%RSD	328.97	65.140	117.35	40.879	80.825	16.816	28.554
#1	-.00060	.00107	-.00114	-.00247	-.00171	.00118	-.00029
#2	.00047	.00023	.00586	-.00494	-.00029	.00133	-.00016
#3	.00080	.00064	.01164	-.00267	-.00071	.00163	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8774.5	53148.	2468.5
Stddev	18.9	40.	21.3
%RSD	.21516	.07564	.86449
#1	8788.8	53138.	2443.9
#2	8753.1	53192.	2479.7
#3	8781.7	53113.	2481.9

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 21:37:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39973	10.108	.39636	.49128	1.0030	.05037	9.9826	.05037
Stddev	.00161	.031	.00538	.00660	.0054	.00040	.0796	.00027
%RSD	.40227	.30747	1.3561	1.3434	.53726	.79813	.79769	.52668
#1	.39827	10.073	.40184	.49693	1.0081	.05010	10.074	.05059
#2	.40145	10.121	.39615	.48403	1.0036	.05018	9.9267	.05044
#3	.39946	10.132	.39110	.49289	.99738	.05083	9.9473	.05007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20223	.50813	.50393	3.9109	50.905	1.0169	10.132	.49597
Stddev	.00031	.00309	.00152	.0391	.191	.0173	.111	.00237
%RSD	.15093	.60823	.30237	1.0004	.37447	1.6974	1.0972	.47821
#1	.20248	.50643	.50485	3.9094	51.119	1.0362	10.014	.49324
#2	.20231	.50627	.50217	3.9508	50.843	1.0112	10.235	.49743
#3	.20189	.51170	.50477	3.8726	50.754	1.0031	10.147	.49725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0097	50.118	.50038	9.9139	.50050	1.1943	.39418	4.9666
Stddev	.0018	.494	.00134	.0075	.00314	.0064	.01371	.0067
%RSD	.17790	.98650	.26717	.07528	.62691	.53237	3.4790	.13412
#1	1.0110	50.489	.50146	9.9177	.49695	1.2005	.39664	4.9686
#2	1.0105	50.309	.49889	9.9187	.50165	1.1878	.40650	4.9721
#3	1.0077	49.557	.50079	9.9053	.50291	1.1945	.37940	4.9592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 21:37:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0102**	**1.0008**	**1.0090**	**.50371**	**1.0109**	**1.0026**	**1.0337**
Stddev	.0011	.0082	.0140	.00342	.0098	.0015	.0091
%RSD	.11060	.81843	1.3826	.67900	.97198	.15021	.87957
#1	1.0110	1.0081	1.0239	.50460	1.0029	1.0041	1.0379
#2	1.0108	1.0024	1.0069	.49993	1.0080	1.0025	1.0399
#3	1.0089	.99194	.99622	.50660	1.0219	1.0011	1.0232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8691.4**	**51771.**	**2447.6**
Stddev	17.1	102.	28.5
%RSD	.19660	.19712	1.1648
#1	8710.9	51793.	2432.1
#2	8679.2	51660.	2430.3
#3	8684.1	51860.	2480.5

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 21:40:55 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00230**	**.02348**	**.00079**	**.00047**	**.00786**	**.00018**	**.01177**
Stddev	.00096	.01651	.00379	.00372	.00037	.00013	.04160
%RSD	41.591	70.337	482.07	783.24	4.6602	72.515	353.45
#1	-.00126	.02991	-.00187	-.00345	.00750	.00031	.00397
#2	-.00315	.03582	.00513	.00092	.00824	.00004	.05672
#3	-.00250	.00472	-.00090	.00395	.00784	.00020	-.02538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**-.00004**	**.00107**	**-.00001**	**.00019**	**.07602**	**.00268**
Stddev	.00009	.00025	.00159	.00135	.01328	.08213	.00385
%RSD	25.273	632.10	148.38	19006.	6889.7	108.05	143.60
#1	.00043	-.00027	.00031	-.00143	.01232	-.01693	.00613
#2	.00026	.00023	.00290	.00015	.00226	.13881	-.00146
#3	.00033	-.00008	.00001	.00125	-.01400	.10617	.00337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02421**	**-.00287**	**.00013**	**-.07567**	**-.00105**	**-.00288**	F **-.00510**
Stddev	.14641	.00299	.00020	.04275	.00176	.00467	.00166
%RSD	604.74	104.22	149.54	56.498	167.99	162.30	32.476
#1	.17026	-.00597	.00032	-.12254	-.00215	-.00071	-.00500
#2	.02494	-.00265	.00015	-.03883	-.00199	-.00824	-.00350
#3	-.12256	.00000	-.00007	-.06562	.00099	.00032	-.00681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 21:40:55 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	-.00493	.01371	-.00034	.00027	-.00092	-.00343
Stddev	.00210	.00240	.00112	.00073	.00037	.00774	.00240
%RSD	400.61	48.796	8.1935	212.64	134.38	841.10	69.734
#1	-.00285	-.00741	.01246	.00047	.00065	-.00106	-.00415
#2	.00126	-.00477	.01464	-.00055	-.00009	.00689	-.00076
#3	.00001	-.00260	.01404	-.00095	.00027	-.00859	-.00539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00092	-.00006	-.00074
Stddev	.00130	.00011	.00020
%RSD	140.65	194.82	26.527
#1	-.00015	.00005	-.00062
#2	-.00242	-.00018	-.00097
#3	-.00020	-.00005	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8260.5	48995.	2264.7
Stddev	38.9	34.	4.4
%RSD	.47079	.06981	.19247
#1	8254.9	49022.	2262.3
#2	8224.7	48957.	2262.1
#3	8301.9	49006.	2269.7

Approved: June 29, 2016

Sample Name: L1606112801 Acquired: 6/28/2016 21:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00126	6.6020	.00045	.01160	.10137	.00065	89.722	.00048
Stddev	.00051	.0809	.00394	.00130	.00139	.00003	.444	.00026
%RSD	40.081	1.2256	881.01	11.180	1.3750	5.0705	.49497	55.083
#1	-.00112	6.5919	-.00406	.01267	.10022	.00066	90.003	.00018
#2	-.00084	6.6875	.00325	.01199	.10292	.00061	89.952	.00066
#3	-.00182	6.5266	.00216	.01016	.10097	.00067	89.210	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00927	.01015	.01734	9.3384	2.8756	.00909	27.581	3.3145
Stddev	.00031	.00120	.00195	.1034	.1441	.00919	.176	.0157
%RSD	3.3697	11.836	11.222	1.1073	5.0108	101.13	.63765	.47468
#1	.00919	.00915	.01674	9.4457	3.0190	.01971	27.402	3.3263
#2	.00961	.01148	.01952	9.3301	2.7308	.00356	27.753	3.3205
#3	.00901	.00981	.01576	9.2394	2.8771	.00401	27.587	3.2966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	179.82	.00990	1.1598	.00365	.00463	-.00760	14.603
Stddev	.00021	1.25	.00112	.0071	.00319	.00725	.01197	.046
%RSD	66.922	.69527	11.336	.61274	87.319	156.46	157.61	.31395
#1	.00024	180.61	.01115	1.1668	.00089	-.00339	.00615	14.625
#2	.00016	180.48	.00957	1.1601	.00293	.00659	-.01320	14.633
#3	.00056	178.38	.00898	1.1526	.00715	.01070	-.01573	14.550
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112801 Acquired: 6/28/2016 21:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.32812**	**.27643**	**-.00273**	**.01512**	**.04982**	**.00275**
Stddev	.00096	.00293	.00218	.00221	.00018	.00020	.00062
%RSD	189.76	.89290	.78923	80.867	1.2130	.39717	22.527
#1	-.00059	.32919	.27449	-.00043	.01522	.04962	.00329
#2	.00116	.33038	.27600	-.00484	.01491	.05001	.00207
#3	.00094	.32481	.27879	-.00294	.01525	.04985	.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8325.9**	**49707.**	**2420.6**
Stddev	10.7	333.	17.2
%RSD	.12902	.66931	.71130
#1	8327.5	49554.	2417.7
#2	8314.4	49478.	2405.1
#3	8335.7	50088.	2439.1

Approved: June 29, 2016

Sample Name: L1606112802 Acquired: 6/28/2016 21:48:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00143**	**.09340**	**.02577**	**.01283**	**.03807**	**.00004**	**75.043**	**.00011**
Stddev	.00212	.00753	.00448	.00265	.00148	.00008	1.434	.00026
%RSD	147.93	8.0639	17.390	20.691	3.8920	211.55	1.9113	230.46
#1	-.00174	.08474	.03069	.01180	.03842	.00008	76.162	.00016
#2	.00082	.09699	.02192	.01584	.03935	.00009	75.542	.00034
#3	-.00338	.09846	.02470	.01084	.03645	-.00006	73.426	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00256**	**.00042**	**.00242**	**21.284**	**2.4576**	**.00843**	**12.599**	**.64431**
Stddev	.00040	.00092	.00111	.262	.1645	.00155	.042	.01215
%RSD	15.565	219.85	45.761	1.2315	6.6928	18.347	.33457	1.8852
#1	.00298	.00009	.00303	21.442	2.3550	.00665	12.584	.64760
#2	.00219	-.00029	.00309	21.428	2.6473	.00944	12.646	.65447
#3	.00251	.00146	.00114	20.981	2.3704	.00920	12.565	.63085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00061**	**109.87**	**.00156**	**.12368**	**.00708**	**.01401**	**-.00736**	**10.011**
Stddev	.00039	1.13	.00086	.00820	.00187	.00109	.00394	.102
%RSD	64.929	1.0247	55.389	6.6338	26.435	7.7786	53.526	1.0229
#1	.00016	109.93	.00215	.13208	.00744	.01525	-.00302	10.118
#2	.00091	110.97	.00196	.11568	.00875	.01358	-.00834	9.9991
#3	.00075	108.72	.00057	.12329	.00506	.01321	-.01070	9.9145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112802 Acquired: 6/28/2016 21:48:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.26989	-.00221	-.00203	.00052	.00463	-.00108
Stddev	.00059	.00192	.01536	.00088	.00043	.00003	.00047
%RSD	347.96	.71298	693.92	43.316	83.559	.73022	43.462
#1	.00080	.26979	-.00603	-.00248	.00037	.00465	-.00105
#2	.00006	.27186	-.01531	-.00259	.00018	.00459	-.00063
#3	-.00036	.26801	.01470	-.00102	.00101	.00465	-.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8612.0	50934.	2441.5
Stddev	51.1	190.	21.3
%RSD	.59296	.37328	.87422
#1	8555.4	50716.	2436.0
#2	8626.2	51018.	2423.5
#3	8654.5	51068.	2465.1

Approved: June 29, 2016

Sample Name: L1606112803 Acquired: 6/28/2016 21:52:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	10.535	.00189	.01142	.11626	.00079	98.814	.00034
Stddev	.00177	.148	.00298	.00095	.00142	.00002	1.200	.00026
%RSD	1594.6	1.4026	157.74	8.3374	1.2246	2.0752	1.2140	75.122
#1	.00006	10.645	.00445	.01111	.11595	.00080	97.453	.00005
#2	-.00196	10.593	-.00138	.01249	.11781	.00080	99.717	.00044
#3	.00157	10.367	.00259	.01066	.11501	.00077	99.273	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01269	.01633	.02038	16.450	3.4713	.02302	33.982	3.5230
Stddev	.00024	.00161	.00072	.240	.0597	.00431	.399	.0643
%RSD	1.8735	9.8301	3.5542	1.4610	1.7189	18.733	1.1733	1.8258
#1	.01276	.01759	.02108	16.172	3.4581	.02703	33.528	3.4508
#2	.01289	.01452	.02043	16.578	3.5364	.02358	34.277	3.5743
#3	.01243	.01688	.01963	16.598	3.4193	.01846	34.140	3.5438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	177.78	.01566	2.3781	.01017	.00458	.00154	17.494
Stddev	.00046	2.20	.00031	.0458	.00324	.00567	.00741	.335
%RSD	138.39	1.2365	1.9982	1.9246	31.815	123.68	482.45	1.9164
#1	.00086	175.28	.01531	2.3321	.00645	.01104	-.00628	17.130
#2	.00008	179.42	.01577	2.4236	.01171	.00230	.00241	17.790
#3	.00005	178.65	.01590	2.3786	.01235	.00041	.00847	17.563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112803 Acquired: 6/28/2016 21:52:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00194	.33225	.42590	-.00152	.02349	.08177	.00412
Stddev	.00069	.00446	.00364	.00092	.00102	.00175	.00011
%RSD	35.430	1.3426	.85533	60.584	4.3449	2.1409	2.7154
#1	.00163	.32718	.42347	-.00248	.02252	.08031	.00399
#2	.00273	.33556	.42414	-.00146	.02455	.08371	.00417
#3	.00146	.33402	.43009	-.00063	.02340	.08128	.00419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8675.3	50297.	2418.4
Stddev	148.1	449.	26.1
%RSD	1.7076	.89307	1.0785
#1	8846.2	49999.	2446.3
#2	8582.5	50079.	2394.7
#3	8597.3	50814.	2414.2

Approved: June 29, 2016

Sample Name: L1606112804 Acquired: 6/28/2016 21:56:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00094	.01965	-.00331	.00170	.00552	.00010	.05227	.00019
Stddev	.00209	.00679	.00295	.00183	.00070	.00003	.01579	.00009
%RSD	221.69	34.539	88.933	107.86	12.661	29.053	30.205	45.792
#1	.00131	.01674	-.00652	.00375	.00632	.00013	.06667	.00010
#2	-.00132	.01480	-.00269	.00112	.00517	.00009	.03539	.00027
#3	-.00281	.02740	-.00073	.00022	.00506	.00008	.05477	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00071	.00267	.01034	.01751	-.00294	.07074	-.00085
Stddev	.00057	.00072	.00087	.00956	.06462	.00447	.02273	.00293
%RSD	719.54	101.38	32.771	92.501	368.98	151.68	32.134	344.35
#1	-.00017	.00050	.00329	-.00070	-.05466	.00197	.07932	-.00361
#2	-.00060	.00012	.00167	.01592	.03721	-.00675	.08794	-.00115
#3	.00053	.00152	.00304	.01581	.06999	-.00405	.04497	.00221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.21454	-.00017	-.00100	.00001	.00141	-.00683	.00229
Stddev	.00011	.05619	.00160	.00204	.00183	.00153	.00705	.00107
%RSD	69.253	26.191	936.44	203.28	21825.	108.74	103.17	46.841
#1	-.00005	.18801	.00145	.00032	.00208	.00290	.00047	.00242
#2	-.00016	.27908	-.00021	-.00335	-.00071	-.00017	-.00737	.00116
#3	-.00026	.17652	-.00175	.00002	-.00135	.00151	-.01361	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112804 Acquired: 6/28/2016 21:56:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00011	-.00309	-.00145	-.00050	.00490	-.00036
Stddev	.00050	.00071	.00063	.00370	.00123	.00023	.00073
%RSD	84.759	627.39	20.331	254.92	247.66	4.6374	203.87
#1	.00014	.00011	-.00285	.00062	.00082	.00464	-.00007
#2	.00050	.00083	-.00380	-.00573	-.00071	.00507	.00019
#3	.00112	-.00060	-.00261	.00075	-.00160	.00499	-.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8819.2	53004.	2487.9
Stddev	17.1	187.	24.2
%RSD	.19396	.35229	.97464
#1	8810.0	52928.	2477.4
#2	8808.7	52868.	2515.7
#3	8839.0	53217.	2470.7

Approved: June 29, 2016

Sample Name: L1606112803PS Acquired: 6/28/2016 22:00:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574357-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20095**	**14.356**	**.21007**	**1.0121**	**.61454**	**.02613**	**91.444**	**.02600**
Stddev	.00481	.061	.00389	.0043	.00540	.00013	.473	.00017
%RSD	2.3919	.42364	1.8524	.42525	.87819	.48337	.51703	.64154
#1	.20638	14.390	.20954	1.0149	.61844	.02627	91.821	.02612
#2	.19724	14.393	.21420	1.0141	.60838	.02605	90.914	.02607
#3	.19924	14.286	.20647	1.0071	.61679	.02607	91.598	.02581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11359**	**.27131**	**.27123**	**16.370**	**29.233**	**.54468**	**34.678**	**3.3100**
Stddev	.00068	.00178	.00265	.137	.068	.00572	.153	.0190
%RSD	.59694	.65438	.97793	.83583	.23153	1.0504	.44001	.57504
#1	.11319	.27050	.27032	16.469	29.265	.54266	34.847	3.3073
#2	.11437	.27335	.27422	16.214	29.156	.54024	34.636	3.2925
#3	.11320	.27008	.26916	16.428	29.280	.55113	34.551	3.3302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52427**	**181.81**	**.26694**	**7.3186**	**.26296**	**.61666**	**.18939**	**18.508**
Stddev	.00210	1.02	.00124	.0166	.00398	.01135	.00558	.072
%RSD	.39994	.56052	.46561	.22700	1.5152	1.8411	2.9443	.38719
#1	.52344	182.62	.26633	7.3067	.26751	.60699	.18666	18.466
#2	.52665	180.67	.26837	7.3376	.26010	.62916	.19580	18.591
#3	.52271	182.14	.26613	7.3116	.26127	.61382	.18570	18.468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112803PS Acquired: 6/28/2016 22:00:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574357-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51709**	**.80563**	**.87003**	**.24848**	**.53655**	**.57886**	**.00411**
Stddev	.00316	.01295	.00934	.00030	.00121	.00554	.00024
%RSD	.61122	1.6072	1.0733	.11999	.22571	.95632	5.7393
#1	.51459	.81184	.86393	.24821	.53722	.57986	.00392
#2	.52065	.79075	.86539	.24844	.53727	.58383	.00405
#3	.51604	.81430	.88078	.24880	.53515	.57289	.00438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8563.6**	**51061.**	**2463.3**
Stddev	11.6	133.	17.7
%RSD	.13595	.26074	.71667
#1	8550.2	51001.	2450.1
#2	8569.8	50969.	2483.3
#3	8571.0	51214.	2456.3

Approved: June 29, 2016

Sample Name: L1606112803SDL Acquired: 6/28/2016 22:03:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574357-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	2.3653	-.00080	.00071	.03250	.00019	21.647	.00016
Stddev	.00316	.0441	.00432	.00148	.00027	.00002	.131	.00015
%RSD	464.59	1.8640	543.10	206.66	.83918	8.5968	.60578	92.705
#1	.00138	2.4022	-.00231	.00088	.03251	.00017	21.568	.00033
#2	.00090	2.3165	-.00415	.00210	.03223	.00021	21.798	.00006
#3	-.00432	2.3773	.00408	-.00084	.03278	.00019	21.574	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00291	.00430	.00502	3.5754	.78870	.00110	7.4514	.76169
Stddev	.00023	.00147	.00070	.0615	.07166	.00058	.1103	.00877
%RSD	7.7357	34.230	14.001	1.7196	9.0857	52.847	1.4803	1.1513
#1	.00300	.00450	.00487	3.5046	.87006	.00064	7.5321	.75196
#2	.00308	.00274	.00441	3.6152	.73494	.00175	7.3257	.76897
#3	.00266	.00566	.00579	3.6064	.76111	.00090	7.4964	.76415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	38.198	.00320	.53198	-.00107	.00060	-.00472	3.8999
Stddev	.00032	.372	.00123	.01450	.00685	.00503	.00573	.0839
%RSD	361.14	.97448	38.470	2.7254	640.05	841.28	121.39	2.1521
#1	.00046	37.770	.00281	.54432	-.00286	-.00142	.00062	3.9374
#2	-.00016	38.375	.00221	.53562	.00650	.00633	-.01076	3.9585
#3	-.00002	38.448	.00458	.51601	-.00685	-.00311	-.00401	3.8037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112803SDL Acquired: 6/28/2016 22:03:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574357-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.07216	.10212	-.00231	.00431	.01844	.00038
Stddev	.00133	.00117	.01163	.00109	.00028	.00061	.00039
%RSD	139.81	1.6216	11.386	47.354	6.3917	3.2919	103.05
#1	.00178	.07087	.10324	-.00353	.00402	.01856	.00004
#2	-.00058	.07246	.08998	-.00140	.00456	.01897	.00081
#3	.00165	.07315	.11315	-.00201	.00435	.01778	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8361.5	49819.	2293.8
Stddev	17.0	414.	11.1
%RSD	.20308	.83150	.48449
#1	8371.9	49341.	2306.4
#2	8370.6	50077.	2289.6
#3	8341.9	50038.	2285.5

Approved: June 29, 2016

Sample Name: L1606112803SDL Acquired: 6/28/2016 22:07:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574357-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00162**	**.47788**	**-.00227**	**-.00056**	**.01205**	**.00011**	**4.2713**	**-.00014**
Stddev	.00075	.01163	.00206	.00203	.00116	.00004	.0877	.00019
%RSD	46.251	2.4344	90.808	362.12	9.6597	38.275	2.0541	140.63
#1	-.00216	.46621	-.00032	.00059	.01219	.00006	4.2856	-.00036
#2	-.00193	.47795	-.00443	-.00290	.01082	.00014	4.1772	-.00003
#3	-.00076	.48948	-.00206	.00063	.01313	.00013	4.3509	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00051**	**.00135**	**.00081**	**.70827**	**-.00670**	**.00175**	**1.6675**	**.15266**
Stddev	.00036	.00138	.00156	.01174	.12685	.00342	.0917	.00439
%RSD	70.312	102.42	193.61	1.6582	1893.3	194.78	5.4974	2.8763
#1	.00076	.00267	-.00050	.72142	.10653	-.00105	1.7637	.14860
#2	.00010	.00144	.00038	.69883	-.14379	.00076	1.5812	.15207
#3	.00068	-.00008	.00254	.70455	.01716	.00556	1.6574	.15732
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**7.7362**	**-.00043**	**.10795**	**-.00209**	**.00389**	**.00185**	**.76606**
Stddev	.00023	.0714	.00020	.00783	.00156	.00375	.00575	.01334
%RSD	90.709	.92253	45.658	7.2541	74.799	96.576	310.52	1.7416
#1	.00014	7.7553	-.00031	.10438	-.00205	.00754	.00542	.76915
#2	.00053	7.6573	-.00033	.11693	-.00366	.00407	.00492	.77759
#3	.00010	7.7962	-.00066	.10255	-.00054	.00004	-.00478	.75145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112803SDL Acquired: 6/28/2016 22:07:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574357-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.01382**	**.01746**	**-.00635**	**.00012**	**.00409**	**-.00003**
Stddev	.00069	.00028	.00359	.00161	.00049	.00018	.00092
%RSD	183.96	2.0556	20.543	25.328	418.39	4.2845	2643.0
#1	.00006	.01368	.01735	-.00457	-.00044	.00393	.00099
#2	-.00116	.01415	.01394	-.00676	.00031	.00406	-.00031
#3	-.00002	.01364	.02111	-.00771	.00048	.00427	-.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8482.1**	**50509.**	**2297.3**
Stddev	19.5	251.	4.0
%RSD	.23043	.49685	.17596
#1	8501.8	50309.	2293.8
#2	8462.7	50428.	2301.7
#3	8481.9	50791.	2296.4

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 22:11:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40572**	**10.228**	**.40778**	**.50344**	**1.0288**	**.05092**	**10.169**	**.05113**
Stddev	.00314	.025	.00392	.00430	.0033	.00034	.070	.00010
%RSD	.77427	.24251	.96061	.85317	.32250	.67424	.69173	.19962
#1	.40916	10.221	.40874	.50657	1.0322	.05126	10.249	.05122
#2	.40300	10.207	.41114	.49854	1.0288	.05058	10.116	.05116
#3	.40501	10.255	.40348	.50520	1.0255	.05093	10.143	.05102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20555**	**.51334**	**.51382**	**4.0383**	**51.647**	**1.0392**	**10.217**	**.50448**
Stddev	.00151	.00479	.00222	.0333	.180	.0070	.054	.00584
%RSD	.73486	.93225	.43112	.82342	.34947	.67702	.52572	1.1579
#1	.20603	.51676	.51420	4.0121	51.784	1.0466	10.278	.51121
#2	.20676	.50787	.51582	4.0757	51.443	1.0326	10.191	.50138
#3	.20385	.51538	.51144	4.0272	51.715	1.0383	10.180	.50084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0275**	**51.414**	**.51049**	**10.139**	**.51106**	**1.2210**	**.41631**	**5.0808**
Stddev	.0045	.240	.00280	.062	.00613	.0093	.00996	.0304
%RSD	.44229	.46623	.54817	.61116	1.2004	.75913	2.3927	.59862
#1	1.0302	51.644	.51221	10.175	.51426	1.2272	.41472	5.0962
#2	1.0300	51.433	.51200	10.175	.51493	1.2253	.42698	5.1005
#3	1.0222	51.166	.50726	10.067	.50399	1.2103	.40725	5.0458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 22:11:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0285**	**1.0247**	**1.0020**	**.51174**	**1.0149**	**1.0240**	**1.0488**
Stddev	.0076	.0082	.0163	.00555	.0049	.0062	.0044
%RSD	.74427	.80293	1.6241	1.0847	.48551	.60338	.42003
#1	1.0309	1.0329	1.0205	.51033	1.0132	1.0279	1.0440
#2	1.0346	1.0248	.99569	.51786	1.0111	1.0272	1.0498
#3	1.0199	1.0165	.98987	.50703	1.0205	1.0168	1.0527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8678.6**	**51516.**	**2445.1**
Stddev	45.7	29.	5.4
%RSD	.52668	.05576	.22001
#1	8663.9	51536.	2449.9
#2	8642.0	51483.	2439.3
#3	8729.8	51529.	2446.2

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 22:15:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**.01093**	**-.00104**	**.00133**	**.00382**	**.00009**	**-.00048**	**.00002**
Stddev	.00188	.00631	.00224	.00072	.00217	.00014	.03647	.00017
%RSD	165.57	57.741	215.36	54.491	56.767	157.27	7575.1	819.46
#1	-.00328	.01759	-.00360	.00205	.00490	-.00007	-.04232	.00021
#2	.00023	.00503	.00062	.00060	.00523	.00020	.02457	-.00011
#3	-.00035	.01017	-.00015	.00133	.00132	.00013	.01631	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.00130**	**-.00003**	**.00471**	**-.17082**	**.00107**	**.07763**	**-.00159**
Stddev	.00008	.00102	.00244	.01922	.12011	.00243	.10018	.00118
%RSD	17.678	78.123	6991.8	407.68	70.313	226.77	129.04	74.398
#1	-.00055	.00013	.00120	.01111	-.16180	-.00099	-.03260	-.00250
#2	-.00047	.00194	-.00284	-.01689	-.29517	.00375	.16311	-.00025
#3	-.00039	.00184	.00154	.01992	-.05547	.00046	.10239	-.00202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**-.04420**	**-.00104**	**.00127**	**-.00270**	**.00108**	**-.00369**	**.01070**
Stddev	.00019	.01963	.00078	.00469	.00329	.00282	.00430	.00127
%RSD	85.105	44.403	74.947	368.86	121.95	262.24	116.56	11.870
#1	-.00021	-.06646	-.00192	.00316	.00110	.00244	-.00063	.01216
#2	-.00041	-.02938	-.00045	-.00407	-.00449	.00296	-.00183	.00984
#3	-.00004	-.03676	-.00074	.00473	-.00469	-.00217	-.00860	.01010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 22:15:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.00007	-.00497	-.00309	-.00064	.00009	-.00028
Stddev	.00131	.00026	.00562	.00208	.00140	.00004	.00053
%RSD	191.19	360.61	113.14	67.324	219.62	39.362	185.03
#1	.00036	.00023	-.00552	-.00204	.00054	.00008	-.00040
#2	-.00043	-.00023	-.01029	-.00175	-.00218	.00006	.00029
#3	.00213	.00021	.00091	-.00549	-.00027	.00013	-.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8755.8	52637.	2452.1
Stddev	10.5	105.	18.3
%RSD	.11982	.19865	.74545
#1	8744.3	52518.	2444.9
#2	8764.9	52679.	2438.5
#3	8758.1	52714.	2472.9

Approved: June 29, 2016

Sample Name: PBW 1C Acquired: 6/28/2016 22:19:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**.02526**	**.00019**	**-.00126**	**.00474**	**.00005**	**-.06440**
Stddev	.00133	.00097	.00079	.00039	.00092	.00008	.02795
%RSD	244.34	3.8298	424.05	30.922	19.421	160.84	43.410
#1	-.00187	.02587	.00106	-.00084	.00457	-.00003	-.06853
#2	.00080	.02577	-.00004	-.00132	.00392	.00005	-.09005
#3	-.00056	.02414	-.00046	-.00161	.00574	.00012	-.03461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00006**	**.00004**	**.00069**	**-.01050**	**-.08446**	**.00399**
Stddev	.00019	.00018	.00021	.00178	.00472	.04011	.00130
%RSD	121.72	319.28	500.05	257.41	44.944	47.484	32.424
#1	-.00037	.00018	.00005	-.00122	-.00949	-.05954	.00250
#2	.00000	-.00015	.00026	.00099	-.00637	-.06312	.00463
#3	-.00011	.00014	-.00017	.00231	-.01564	-.13073	.00485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.07442**	F **-.00430**	**-.00000**	**-.03320**	**.00047**	**.00033**	**-.00283**
Stddev	.16565	.00512	.00038	.01914	.00036	.00983	.00441
%RSD	222.60	119.13	36626.	57.648	77.208	2964.3	155.82
#1	-.00353	-.00406	-.00012	-.01395	.00031	.00271	.00178
#2	.26466	.00070	-.00031	-.05223	.00089	.00875	-.00700
#3	-.03788	-.00953	.00043	-.03344	.00022	-.01047	-.00327
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: June 29, 2016

Sample Name: PBW 1C Acquired: 6/28/2016 22:19:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00187	-.00564	.01154	.00035	.00053	-.00260	-.00298
Stddev	.00354	.00266	.00212	.00068	.00032	.00827	.00455
%RSD	188.84	47.177	18.346	195.26	60.764	317.95	152.51
#1	.00215	-.00544	.01047	-.00041	.00085	.00498	-.00808
#2	.00526	-.00840	.01398	.00054	.00053	-.00136	.00064
#3	-.00180	-.00309	.01017	.00091	.00020	-.01142	-.00150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00022	.00074	-.00068
Stddev	.00020	.00015	.00030
%RSD	90.741	19.670	43.452
#1	.00003	.00058	-.00080
#2	.00020	.00077	-.00090
#3	.00043	.00086	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8910.1	53689.	2496.9
Stddev	19.0	146.	12.6
%RSD	.21295	.27185	.50389
#1	8888.4	53854.	2492.7
#2	8917.8	53579.	2487.0
#3	8923.9	53632.	2511.1

Approved: June 29, 2016

Sample Name: LCSW 1C Acquired: 6/28/2016 22:23:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20404**	**5.1631**	**.20421**	**1.0014**	**.52128**	**.02521**	**5.2991**	**.02561**
Stddev	.00280	.0119	.00623	.0076	.00253	.00014	.0470	.00003
%RSD	1.3713	.22990	3.0485	.76107	.48529	.54123	.88764	.12887
#1	.20159	5.1496	.20785	.99456	.52403	.02523	5.3257	.02562
#2	.20343	5.1720	.20777	1.0096	.52076	.02506	5.2447	.02564
#3	.20709	5.1676	.19702	.99998	.51906	.02533	5.3267	.02557
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10436**	**.26054**	**.26124**	**2.0905**	**25.769**	**.53496**	**5.1879**	**.25915**
Stddev	.00080	.00255	.00082	.0795	.010	.00339	.0920	.00313
%RSD	.76572	.97787	.31411	3.8046	.04033	.63443	1.7740	1.2087
#1	.10510	.25765	.26079	2.1392	25.768	.53886	5.0993	.25829
#2	.10447	.26150	.26218	2.1337	25.780	.53341	5.2830	.26262
#3	.10352	.26247	.26074	1.9988	25.760	.53262	5.1814	.25654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52537**	**26.143**	**.26070**	**4.9992**	**.25777**	**.61678**	**.19947**	**2.4584**
Stddev	.00273	.080	.00155	.0135	.00340	.00487	.01034	.0045
%RSD	.51951	.30602	.59512	.27082	1.3194	.78946	5.1860	.18373
#1	.52631	26.235	.25959	5.0046	.26170	.61253	.18798	2.4607
#2	.52751	26.100	.26247	5.0092	.25571	.62209	.20805	2.4614
#3	.52230	26.093	.26005	4.9838	.25591	.61572	.20236	2.4532
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW 1C Acquired: 6/28/2016 22:23:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51944**	**.52676**	**.50888**	**.25733**	**.51326**	**.52069**	**.00091**
Stddev	.00368	.00097	.01396	.00225	.00359	.00299	.00071
%RSD	.70927	.18347	2.7425	.87396	.69915	.57451	78.366
#1	.52040	.52780	.52316	.25579	.50921	.52136	.00095
#2	.52255	.52659	.49527	.25991	.51455	.52330	.00161
#3	.51537	.52589	.50819	.25630	.51603	.51743	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8773.4**	**52628.**	**2505.9**
Stddev	31.5	151.	8.4
%RSD	.35958	.28754	.33514
#1	8809.4	52672.	2499.6
#2	8750.4	52753.	2515.4
#3	8760.5	52460.	2502.6

Approved: June 29, 2016

Sample Name: L1606090701 Acquired: 6/28/2016 22:26:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.20247	.70648	.23731	.05346	.00049	.47637
Stddev	.00453	.01902	.01020	.00474	.00090	.00011	.00516
%RSD	1221.6	9.3956	1.4434	1.9964	1.6844	23.047	1.0839
#1	.00534	.18337	.70812	.23191	.05262	.00038	.48206
#2	-.00353	.20262	.71575	.23925	.05337	.00050	.47199
#3	-.00070	.22142	.69556	.24077	.05441	.00060	.47505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00415	.02862	.00093	.10270	.46857	.00685
Stddev	.00039	.00030	.00044	.00084	.02803	.04045	.00114
%RSD	116.54	7.1863	1.5407	90.443	27.291	8.6325	16.609
#1	-.00000	.00449	.02829	.00068	.12172	.48022	.00762
#2	.00075	.00403	.02912	.00024	.07051	.50192	.00738
#3	.00024	.00393	.02845	.00187	.11586	.42358	.00554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47395	-.00153	.00856	F 1299.3	.04735	3.3563	-.00183
Stddev	.11995	.00088	.00070	14.8	.00184	.0605	.00319
%RSD	25.309	57.507	8.1580	1.1376	3.8948	1.8029	173.76
#1	.60272	-.00108	.00804	1312.4	.04531	3.3872	-.00182
#2	.45373	-.00097	.00935	1302.3	.04891	3.3952	-.00503
#3	.36539	-.00255	.00827	1283.3	.04783	3.2866	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090701 Acquired: 6/28/2016 22:26:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01444	-.00771	1.4228	.00372	.16630	.19886	.00097
Stddev	.00266	.00684	.0230	.00054	.00110	.01041	.00476
%RSD	18.436	88.776	1.6168	14.433	.66413	5.2364	489.80
#1	.01722	-.01490	1.4366	.00426	.16673	.19548	-.00309
#2	.01418	-.00696	1.4355	.00319	.16713	.19055	.00621
#3	.01192	-.00127	1.3962	.00371	.16505	.21054	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.09811	.00863	.04798
Stddev	.00119	.00010	.00066
%RSD	1.2143	1.1489	1.3715
#1	.09836	.00872	.04820
#2	.09915	.00866	.04850
#3	.09681	.00853	.04724
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8051.3	46745.	2322.8
Stddev	24.3	190.	26.3
%RSD	.30151	.40704	1.1338
#1	8077.3	46953.	2301.4
#2	8047.1	46580.	2314.8
#3	8029.3	46702.	2352.2

Approved: June 29, 2016

Sample Name: L1606090702 Acquired: 6/28/2016 22:30:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.12789**	**.78212**	**.25911**	**.04510**	**.00044**	**.29251**
Stddev	.00416	.00204	.04015	.00375	.00118	.00013	.04673
%RSD	1709.5	1.5928	5.1337	1.4478	2.6147	30.156	15.977
#1	-.00276	.12878	.80294	.26034	.04582	.00029	.26761
#2	-.00253	.12932	.80758	.25489	.04573	.00055	.34642
#3	.00456	.12555	.73583	.26208	.04374	.00048	.26349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.00446**	**.02542**	**.00097**	**.03210**	**.49071**	**.00689**
Stddev	.00021	.00018	.00107	.00162	.00935	.12505	.00134
%RSD	55.703	4.0075	4.2056	166.85	29.132	25.483	19.378
#1	.00017	.00467	.02432	.00112	.04087	.49772	.00816
#2	.00060	.00437	.02549	-.00072	.02226	.61210	.00550
#3	.00038	.00436	.02645	.00251	.03316	.36230	.00703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.29743**	**-.00100**	**.00979**	F **1332.3**	**.05469**	**3.0958**	**-.00494**
Stddev	.04778	.00165	.00042	7.8	.00235	.1690	.00326
%RSD	16.064	165.30	4.2654	.58822	4.2891	5.4596	66.047
#1	.35189	.00017	.00961	1324.6	.05628	3.1896	-.00696
#2	.26255	-.00289	.01026	1340.3	.05580	3.1972	-.00668
#3	.27785	-.00028	.00948	1332.0	.05200	2.9007	-.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090702 Acquired: 6/28/2016 22:30:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01286**	**.00017**	**1.3895**	**.00591**	**.14936**	**.14448**	**.00213**
Stddev	.00363	.00339	.0730	.00055	.00219	.01191	.00247
%RSD	28.193	1943.7	5.2542	9.3870	1.4656	8.2462	115.94
#1	.00873	-.00252	1.4256	.00645	.14987	.13233	.00187
#2	.01432	.00398	1.4374	.00594	.15125	.15614	.00472
#3	.01553	-.00093	1.3055	.00534	.14696	.14496	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.11003**	**.00718**	**.05092**
Stddev	.00070	.00058	.00075
%RSD	.63332	8.0564	1.4819
#1	.10929	.00774	.05172
#2	.11013	.00723	.05022
#3	.11067	.00658	.05082
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8056.2**	**46928.**	**2348.2**
Stddev	8.2	310.	23.7
%RSD	.10227	.66009	1.0082
#1	8051.3	47216.	2344.9
#2	8065.8	46600.	2326.3
#3	8051.7	46969.	2373.3

Approved: June 29, 2016

Sample Name: L1606090703 Acquired: 6/28/2016 22:34:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.21822	.91288	.25581	.05517	.00054	.50027
Stddev	.00200	.00882	.04933	.00386	.00034	.00010	.04190
%RSD	345.56	4.0400	5.4034	1.5075	.62106	17.932	8.3762
#1	.00247	.21173	.93681	.25152	.05494	.00064	.53835
#2	.00079	.21468	.94567	.25692	.05501	.00052	.50708
#3	-.00152	.22826	.85615	.25899	.05557	.00045	.45538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00493	.03469	.00014	.09214	.56022	.00836
Stddev	.00022	.00016	.00072	.00051	.02370	.09849	.00192
%RSD	45.113	3.2908	2.0715	363.89	25.718	17.581	22.978
#1	.00073	.00482	.03419	-.00033	.08643	.44861	.01057
#2	.00042	.00511	.03437	.00006	.11818	.63492	.00708
#3	.00031	.00484	.03551	.00069	.07183	.59714	.00744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.61119	-.00056	.01189	F 1334.7	.05087	3.6444	-.00456
Stddev	.01713	.00296	.00070	15.6	.00309	.2175	.00548
%RSD	2.8035	531.91	5.8615	1.1715	6.0695	5.9671	120.21
#1	.60865	-.00389	.01246	1319.5	.05224	3.7621	-.00857
#2	.59546	.00047	.01210	1334.0	.05304	3.7775	.00168
#3	.62945	.00176	.01111	1350.7	.04734	3.3934	-.00679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090703 Acquired: 6/28/2016 22:34:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01265	-.00629	1.5342	.00519	.17328	.25183	.00137
Stddev	.00236	.00192	.0849	.00050	.00293	.00765	.00343
%RSD	18.686	30.543	5.5340	9.5782	1.6931	3.0382	249.67
#1	.01081	-.00496	1.5818	.00485	.17075	.25533	.00530
#2	.01532	-.00543	1.5846	.00576	.17259	.25711	-.00011
#3	.01184	-.00850	1.4362	.00496	.17650	.24305	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.10623	.00853	.05422
Stddev	.00168	.00057	.00054
%RSD	1.5791	6.6217	.99216
#1	.10430	.00883	.05362
#2	.10728	.00889	.05438
#3	.10713	.00788	.05466
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8112.9	46934.	2373.1
Stddev	19.1	67.	8.5
%RSD	.23568	.14286	.35956
#1	8109.4	46928.	2363.7
#2	8095.8	46871.	2380.5
#3	8133.5	47004.	2375.0

Approved: June 29, 2016

Sample Name: L1606090704 Acquired: 6/28/2016 22:38:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.17494	.00497	.32040	.06352	-.00003	139.74	.00030
Stddev	.00119	.00286	.00470	.00160	.00110	.00008	2.95	.00025
%RSD	374.53	1.6346	94.501	.49976	1.7242	295.73	2.1089	83.199
#1	.00106	.17492	.00205	.31857	.06422	.00005	142.00	.00051
#2	-.00095	.17781	.01040	.32109	.06226	-.00011	140.82	.00003
#3	-.00106	.17209	.00247	.32154	.06408	-.00002	136.41	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00111	.00256	1.0822	3.9031	.04950	69.750	.15431
Stddev	.00071	.00119	.00142	.0787	.1085	.00334	1.215	.00158
%RSD	309.50	107.58	55.330	7.2741	2.7812	6.7370	1.7420	1.0263
#1	.00104	.00235	.00211	1.1580	4.0127	.04909	70.913	.15511
#2	-.00025	-.00002	.00143	1.0878	3.9011	.05302	69.848	.15534
#3	-.00010	.00099	.00415	1.0009	3.7956	.04639	68.489	.15249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	147.94	.00034	.01280	.00111	.00125	-.00760	7.7303
Stddev	.00015	3.31	.00058	.00224	.00503	.00297	.00295	.1525
%RSD	18.814	2.2398	171.11	17.506	453.42	236.93	38.834	1.9722
#1	.00091	150.42	.00094	.01352	.00164	.00194	-.01096	7.8177
#2	.00084	149.24	-.00021	.01029	.00586	.00382	-.00641	7.8188
#3	.00062	144.18	.00028	.01459	-.00416	-.00200	-.00542	7.5542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090704 Acquired: 6/28/2016 22:38:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	2.6834	-.02101	-.00193	-.00039	.00292	.00059
Stddev	.00145	.0622	.00529	.00167	.00032	.00031	.00010
%RSD	249.72	2.3172	25.156	86.729	81.495	10.722	17.819
#1	-.00052	2.7308	-.01626	-.00066	-.00034	.00285	.00056
#2	.00004	2.7065	-.02670	-.00382	-.00010	.00326	.00070
#3	.00223	2.6130	-.02007	-.00130	-.00073	.00265	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8658.8	51888.	2487.2
Stddev	9.9	148.	69.0
%RSD	.11468	.28592	2.7755
#1	8654.6	51738.	2521.7
#2	8651.7	51893.	2532.1
#3	8670.2	52035.	2407.7

Approved: June 29, 2016

Sample Name: L1606090705 Acquired: 6/28/2016 22:42:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.02159	.00561	.30320	.06274	.00002	137.80	.00024
Stddev	.00156	.00578	.00162	.00302	.00133	.00008	.48	.00030
%RSD	1169.5	26.784	28.929	.99639	2.1264	326.70	.34802	126.66
#1	.00118	.01941	.00433	.30596	.06334	.00006	138.36	.00017
#2	.00028	.01721	.00744	.29997	.06367	-.00006	137.52	.00057
#3	-.00186	.02814	.00507	.30366	.06121	.00008	137.53	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00085	.00036	.84842	3.8794	.05303	68.272	.14675
Stddev	.00018	.00119	.00129	.00435	.1739	.00302	.204	.00403
%RSD	105.03	140.13	361.75	.51297	4.4822	5.6928	.29863	2.7492
#1	.00037	.00018	-.00104	.84393	4.0068	.05284	68.461	.14708
#2	.00011	.00015	.00062	.85262	3.6813	.05011	68.056	.14255
#3	.00003	.00223	.00149	.84870	3.9500	.05614	68.298	.15060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	148.72	.00060	.00270	-.00210	.00669	-.00077	7.1810
Stddev	.00029	.55	.00115	.00224	.00157	.00298	.00974	.1338
%RSD	28.046	.37003	191.52	82.940	75.086	44.551	1260.3	1.8630
#1	.00086	149.35	.00186	.00114	-.00376	.00586	-.01160	7.2794
#2	.00138	148.49	-.00039	.00526	-.00190	.00999	.00201	7.2349
#3	.00089	148.32	.00033	.00169	-.00063	.00421	.00728	7.0286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090705 Acquired: 6/28/2016 22:42:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**2.6618**	**-.01517**	**-.00418**	**-.00152**	**.00293**	**-.00010**
Stddev	.00046	.0095	.01009	.00214	.00102	.00029	.00027
%RSD	208.97	.35779	66.496	51.120	67.379	10.065	276.76
#1	-.00061	2.6723	-.02480	-.00226	-.00057	.00310	-.00034
#2	.00029	2.6591	-.00468	-.00649	-.00139	.00309	-.00014
#3	-.00035	2.6538	-.01602	-.00381	-.00260	.00259	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8674.4**	**51820.**	**2498.2**
Stddev	32.9	175.	23.9
%RSD	.37941	.33839	.95480
#1	8655.0	51617.	2471.9
#2	8712.4	51919.	2518.5
#3	8655.8	51922.	2504.0

Approved: June 29, 2016

Sample Name: L1606090706 Acquired: 6/28/2016 22:46:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00090	.15373	.00403	.30250	.06188	-.00006	136.59	.00008
Stddev	.00131	.01001	.00352	.00314	.00039	.00009	.12	.00010
%RSD	146.19	6.5090	87.260	1.0395	.62550	147.12	.08614	120.77
#1	-.00023	.14243	.00610	.30562	.06154	-.00015	136.60	.00004
#2	-.00240	.16146	-.00003	.29933	.06180	-.00006	136.69	.00019
#3	-.00006	.15730	.00602	.30256	.06230	.00003	136.46	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00069	.00154	1.0178	3.8522	.04856	67.952	.14959
Stddev	.00011	.00084	.00094	.0208	.1250	.00071	.165	.00297
%RSD	287.57	121.84	61.318	2.0466	3.2435	1.4598	.24300	1.9863
#1	-.00009	.00158	.00258	.99741	3.7640	.04774	67.876	.15012
#2	.00008	.00057	.00074	1.0390	3.7975	.04899	68.142	.15226
#3	.00012	-.00009	.00130	1.0169	3.9952	.04895	67.839	.14639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	143.60	.00084	.00793	.00189	.00624	-.00491	7.3759
Stddev	.00024	.10	.00096	.00216	.00148	.00303	.01046	.0144
%RSD	31.262	.06631	114.15	27.183	78.406	48.515	213.04	.19504
#1	.00105	143.69	.00177	.00696	.00306	.00927	-.00685	7.3596
#2	.00073	143.50	.00091	.01041	.00237	.00321	.00638	7.3867
#3	.00057	143.61	-.00015	.00644	.00023	.00625	-.01426	7.3815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090706 Acquired: 6/28/2016 22:46:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	2.6312	-.02241	-.00027	-.00185	.00410	.00039
Stddev	.00066	.0032	.00434	.00181	.00059	.00019	.00047
%RSD	431.02	.12040	19.377	673.65	32.035	4.6825	118.72
#1	.00001	2.6346	-.01751	-.00130	-.00179	.00402	.00057
#2	.00087	2.6307	-.02577	.00182	-.00129	.00433	.00075
#3	-.00042	2.6283	-.02395	-.00133	-.00248	.00397	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8657.0	51883.	2499.7
Stddev	10.6	192.	2.4
%RSD	.12268	.36927	.09631
#1	8645.7	51825.	2499.6
#2	8666.7	51727.	2502.1
#3	8658.7	52097.	2497.3

Approved: June 29, 2016

Sample Name: L1606090707 Acquired: 6/28/2016 22:50:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**.07375**	**.70623**	**.33607**	**.07325**	**.00013**	**5.4165**
Stddev	.00058	.00357	.03344	.00389	.00301	.00005	.0795
%RSD	186.60	4.8345	4.7357	1.1586	4.1099	37.394	1.4682
#1	.00098	.06964	.72690	.33159	.07673	.00018	5.4977
#2	-.00006	.07564	.72414	.33855	.07162	.00013	5.4130
#3	.00001	.07598	.66764	.33808	.07141	.00008	5.3387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00137**	**.00186**	**.00186**	**.13231**	**1.7812**	**.01194**
Stddev	.00063	.00056	.00061	.00033	.00855	.0656	.00137
%RSD	100.58	40.601	32.549	17.672	6.4637	3.6831	11.472
#1	.00037	.00105	.00175	.00201	.12751	1.7109	.01081
#2	.00134	.00202	.00252	.00148	.14218	1.8407	.01346
#3	.00017	.00106	.00132	.00208	.12723	1.7919	.01155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.0009**	**.01807**	**.00288**	F **632.46**	**.00073**	**.07554**	**-.00359**
Stddev	.2970	.00121	.00074	7.98	.00139	.01500	.00381
%RSD	3.7122	6.7066	25.889	1.2624	189.72	19.859	106.12
#1	8.0051	.01910	.00358	628.03	.00117	.07361	.00081
#2	7.7019	.01674	.00210	641.68	.00185	.09142	-.00577
#3	8.2959	.01837	.00295	627.68	-.00082	.06160	-.00580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090707 Acquired: 6/28/2016 22:50:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00671	-.00605	4.2226	.00040	.59804	-.00277	-.00454
Stddev	.00347	.00661	.2109	.00102	.00214	.01232	.00349
%RSD	51.629	109.28	4.9938	255.44	.35786	444.35	76.911
#1	.01029	-.01053	4.3569	.00029	.59679	-.00286	-.00813
#2	.00648	.00154	4.3313	.00147	.60051	-.01505	-.00116
#3	.00337	-.00917	3.9795	-.00056	.59683	.00959	-.00431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00049	.00286	.00051
Stddev	.00080	.00026	.00019
%RSD	163.21	9.1726	36.456
#1	-.00139	.00288	.00066
#2	.00012	.00312	.00056
#3	-.00019	.00259	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8507.4	50781.	2448.7
Stddev	26.8	172.	22.3
%RSD	.31549	.33939	.91265
#1	8532.0	50586.	2429.1
#2	8511.6	50913.	2444.0
#3	8478.8	50844.	2473.0

Approved: June 29, 2016

Sample Name: L1606090708 Acquired: 6/28/2016 22:54:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00089**	**.02176**	**.71471**	**.33811**	**.07254**	**.00002**	**5.0730**
Stddev	.00183	.00345	.04493	.00058	.00161	.00009	.0292
%RSD	206.52	15.872	6.2858	.17285	2.2229	399.17	.57529
#1	-.00228	.02426	.73953	.33878	.07437	.00010	5.0414
#2	-.00158	.02321	.74175	.33786	.07193	.00005	5.0990
#3	.00119	.01782	.66285	.33769	.07132	-.00008	5.0787
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00088**	**.00106**	**.00161**	**-.00160**	**.00022**	**1.6878**	**.01046**
Stddev	.00022	.00018	.00152	.00051	.02286	.2081	.00428
%RSD	25.222	17.186	94.297	32.142	10180.	12.331	40.874
#1	.00101	.00121	.00011	-.00101	-.01033	1.5372	.01387
#2	.00062	.00110	.00315	-.00189	.02646	1.6009	.01186
#3	.00099	.00086	.00158	-.00190	-.01545	1.9252	.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.5862**	**.01686**	**.00321**	F **624.73**	**-.00051**	**.07940**	**.00105**
Stddev	.1396	.00137	.00063	16.41	.00145	.00521	.00014
%RSD	1.8406	8.1255	19.463	2.6262	285.59	6.5654	13.351
#1	7.7394	.01591	.00323	635.00	.00084	.07365	.00093
#2	7.5528	.01843	.00383	605.81	-.00204	.08381	.00120
#3	7.4662	.01624	.00258	633.40	-.00032	.08075	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090708 Acquired: 6/28/2016 22:54:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00382**	**-.00261**	**4.2531**	**-.00015**	**.57918**	**-.00135**	**-.00088**
Stddev	.00153	.00968	.2281	.00025	.00127	.00872	.00071
%RSD	40.120	370.97	5.3644	163.66	.21989	646.16	81.340
#1	.00451	.00347	4.3850	-.00018	.57780	-.01137	-.00170
#2	.00488	.00248	4.3845	-.00038	.57941	.00279	-.00040
#3	.00206	-.01378	3.9896	.00011	.58032	.00452	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00039**	**.00142**	**-.00001**
Stddev	.00093	.00008	.00004
%RSD	238.33	5.7809	430.75
#1	.00066	.00151	.00002
#2	-.00071	.00137	.00000
#3	-.00112	.00137	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8720.2**	**51336.**	**2488.0**
Stddev	11.3	289.	71.4
%RSD	.12924	.56321	2.8704
#1	8716.8	51002.	2405.8
#2	8732.7	51515.	2524.3
#3	8710.9	51489.	2534.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 22:58:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39344	9.8988	.39249	.49224	.99894	.04861	9.8375	.04953
Stddev	.00232	.0610	.00510	.00165	.00208	.00013	.0480	.00023
%RSD	.58958	.61629	1.2996	.33480	.20806	.26302	.48816	.47024
#1	.39269	9.9164	.39121	.49398	1.0005	.04864	9.7932	.04952
#2	.39604	9.9491	.38815	.49071	.99967	.04871	9.8308	.04977
#3	.39158	9.8310	.39811	.49203	.99659	.04847	9.8885	.04931
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19950	.49097	.49985	3.9366	49.669	1.0039	9.9168	.49251
Stddev	.00092	.00192	.00190	.0169	.237	.0038	.0981	.00169
%RSD	.46102	.39146	.38006	.43000	.47634	.37925	.98952	.34245
#1	.20054	.49018	.50105	3.9395	49.542	1.0056	9.8676	.49093
#2	.19920	.49316	.50084	3.9519	49.523	1.0066	9.8530	.49429
#3	.19877	.48957	.49766	3.9184	49.942	.99955	10.030	.49232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0011	50.743	.49860	9.8926	.50483	1.1979	.39869	4.9753
Stddev	.0024	.181	.00037	.0093	.00530	.0033	.00678	.0067
%RSD	.24044	.35752	.07415	.09361	1.0505	.27239	1.7002	.13442
#1	1.0035	50.865	.49899	9.8952	.49872	1.1997	.40291	4.9679
#2	1.0012	50.535	.49826	9.8824	.50755	1.1999	.39088	4.9770
#3	.99870	50.831	.49856	9.9004	.50822	1.1942	.40230	4.9810
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 22:58:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99767**	**.99373**	**.96406**	**.49618**	**.97586**	**1.0021**	**1.0208**
Stddev	.00239	.00053	.01473	.00080	.00425	.0005	.0053
%RSD	.23990	.05369	1.5278	.16191	.43595	.04913	.51729
#1	.99930	.99431	.95995	.49662	.97870	1.0018	1.0265
#2	.99492	.99361	.98040	.49526	.97791	1.0017	1.0160
#3	.99879	.99327	.95182	.49667	.97097	1.0026	1.0199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8992.4**	**54014.**	**2548.3**
Stddev	16.7	153.	12.1
%RSD	.18517	.28361	.47426
#1	9002.2	53936.	2534.7
#2	9001.8	53916.	2557.9
#3	8973.1	54191.	2552.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 23:02:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.00842	-.00230	.00116	.00400	.00005	-.04233	.00014
Stddev	.00182	.01035	.00099	.00018	.00131	.00006	.03657	.00020
%RSD	181.88	122.94	43.133	15.210	32.627	109.75	86.407	142.05
#1	.00262	.00341	-.00343	.00121	.00497	.00012	-.01453	.00036
#2	.00137	.02033	-.00158	.00130	.00252	.00002	-.02869	-.00000
#3	-.00098	.00153	-.00189	.00096	.00452	.00002	-.08376	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.00068	-.00021	.00012	.02280	.00716	.14734	-.00204
Stddev	.00036	.00099	.00052	.02768	.05559	.00282	.07268	.00369
%RSD	309.21	145.76	249.13	22189.	243.81	39.425	49.327	180.61
#1	-.00027	.00166	.00038	.00594	.06447	.00463	.06670	-.00567
#2	-.00037	.00072	-.00040	-.03000	.04426	.01020	.20779	-.00216
#3	.00030	-.00033	-.00061	.02443	-.04032	.00663	.16753	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.12092	.00014	.00488	-.00013	-.00107	.00087	.00687
Stddev	.00019	.00980	.00054	.01211	.00369	.00175	.00409	.00121
%RSD	60.294	8.1009	381.60	248.32	2776.9	163.54	471.54	17.539
#1	.00012	.11566	.00070	.01850	.00389	-.00115	.00253	.00754
#2	.00049	.11487	-.00036	.00084	-.00094	-.00278	-.00379	.00548
#3	.00032	.13222	.00008	-.00470	-.00334	.00072	.00386	.00760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 23:02:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00010**	**-.00017**	**-.00250**	**.00002**	**-.00009**	**-.00070**
Stddev	.00071	.00061	.00969	.00374	.00116	.00001	.00017
%RSD	1926.0	592.76	5554.2	149.55	5142.7	8.4484	24.855
#1	-.00059	.00055	.00970	.00174	-.00131	-.00008	-.00087
#2	-.00028	-.00020	-.00967	-.00390	.00076	-.00009	-.00069
#3	.00076	-.00066	-.00055	-.00533	.00062	-.00010	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9051.2**	**54427.**	**2508.0**
Stddev	17.0	197.	4.4
%RSD	.18779	.36147	.17683
#1	9069.0	54303.	2506.7
#2	9035.2	54324.	2512.9
#3	9049.2	54654.	2504.3

Approved: June 29, 2016

Sample Name: L1606090709 Acquired: 6/28/2016 23:06:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.08904**	**.70931**	**.33668**	**.07317**	**.00007**	**5.4108**
Stddev	.00023	.01573	.03728	.00368	.00092	.00002	.0048
%RSD	102.45	17.664	5.2553	1.0924	1.2568	32.392	.08917
#1	-.00004	.10613	.73018	.33255	.07211	.00008	5.4124
#2	.00036	.07518	.73148	.33961	.07369	.00004	5.4146
#3	.00036	.08580	.66628	.33788	.07371	.00008	5.4054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00121**	**.00143**	**-.00011**	**.08534**	**1.8682**	**.01053**
Stddev	.00027	.00057	.00102	.00206	.00736	.0683	.00158
%RSD	56.037	47.367	71.215	1896.7	8.6284	3.6542	15.010
#1	.00057	.00153	.00064	.00015	.08703	1.9454	.01051
#2	.00068	.00154	.00258	-.00229	.07728	1.8158	.01212
#3	.00018	.00055	.00107	.00181	.09172	1.8434	.00896
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.9578**	**.01679**	**.00329**	F **631.90**	**.00018**	**.07592**	**-.00095**
Stddev	.0271	.00359	.00013	.79	.00058	.01123	.00345
%RSD	.34071	21.404	3.9287	.12431	324.85	14.789	363.21
#1	7.9889	.01584	.00341	631.44	-.00006	.07663	-.00321
#2	7.9445	.01376	.00316	631.46	.00084	.08678	-.00265
#3	7.9398	.02076	.00331	632.81	-.00024	.06436	.00302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090709 Acquired: 6/28/2016 23:06:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00637	-.00876	4.2975	.00019	.59786	.00813	-.00327
Stddev	.00220	.00654	.2103	.00077	.00208	.00724	.00217
%RSD	34.543	74.679	4.8941	408.44	.34807	88.983	66.163
#1	.00831	-.00342	4.4325	.00026	.59619	.01154	-.00545
#2	.00398	-.00680	4.4049	.00092	.59720	-.00018	-.00111
#3	.00683	-.01606	4.0552	-.00061	.60019	.01303	-.00326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00013	.00214	.00012
Stddev	.00062	.00011	.00013
%RSD	463.70	5.1663	101.51
#1	.00051	.00222	.00005
#2	-.00072	.00219	.00027
#3	-.00019	.00201	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8576.6	50611.	2469.4
Stddev	28.5	223.	8.7
%RSD	.33249	.44051	.35190
#1	8552.3	50373.	2459.7
#2	8608.0	50645.	2476.6
#3	8569.3	50815.	2471.8

Approved: June 29, 2016

Sample Name: L1606090710 Acquired: 6/28/2016 23:10:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00116	.07123	.69978	.33683	.07153	.00003	5.2509
Stddev	.00269	.00183	.03909	.00290	.00172	.00010	.0210
%RSD	231.20	2.5745	5.5862	.86014	2.4047	323.75	.39931
#1	.00066	.07077	.72204	.33383	.07008	-.00001	5.2751
#2	-.00426	.07325	.72266	.33703	.07108	.00015	5.2375
#3	.00010	.06968	.65465	.33962	.07343	-.00004	5.2401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00133	.00103	.00035	.08426	1.6622	.01610
Stddev	.00034	.00039	.00026	.00054	.01504	.0838	.00599
%RSD	134.41	29.601	25.679	154.79	17.852	5.0401	37.195
#1	.00030	.00160	.00133	.00074	.08774	1.7067	.01003
#2	-.00011	.00150	.00091	.00058	.06778	1.5655	.02201
#3	.00057	.00088	.00085	-.00027	.09725	1.7142	.01628
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.8156	.01761	.00333	F 618.28	.00063	.07265	-.00419
Stddev	.1337	.00064	.00050	3.47	.00003	.00721	.00267
%RSD	1.7102	3.6403	15.005	.56098	4.6752	9.9227	63.740
#1	7.6942	.01720	.00381	615.78	.00063	.07234	-.00378
#2	7.7937	.01835	.00338	622.24	.00060	.08001	-.00174
#3	7.9588	.01729	.00281	616.81	.00065	.06560	-.00704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090710 Acquired: 6/28/2016 23:10:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00217	-.00567	4.1751	.00077	.58570	.01177	-.00436
Stddev	.00165	.00574	.2229	.00130	.00328	.00743	.00507
%RSD	75.844	101.25	5.3390	169.28	.56049	63.116	116.30
#1	.00029	-.01056	4.2974	.00224	.58523	.01020	-.00962
#2	.00289	.00066	4.3100	-.00023	.58919	.00525	.00049
#3	.00334	-.00712	3.9178	.00030	.58268	.01986	-.00394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00034	.00214	.00029
Stddev	.00041	.00018	.00078
%RSD	121.71	8.4377	264.45
#1	-.00045	.00193	-.00059
#2	.00012	.00222	.00087
#3	-.00068	.00226	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8615.9	50993.	2485.4
Stddev	19.1	101.	8.7
%RSD	.22196	.19826	.34997
#1	8599.4	50877.	2486.2
#2	8636.9	51045.	2476.3
#3	8611.5	51058.	2493.6

Approved: June 29, 2016

Sample Name: L1606090711 Acquired: 6/28/2016 23:14:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00097	.03556	.73169	.34795	.07439	.00003	5.2478
Stddev	.00024	.00485	.04137	.00163	.00035	.00006	.0392
%RSD	25.030	13.645	5.6546	.46954	.46963	202.86	.74701
#1	-.00117	.03016	.75338	.34674	.07421	-.00003	5.2114
#2	-.00105	.03698	.75772	.34980	.07479	.00004	5.2427
#3	-.00070	.03955	.68398	.34730	.07416	.00008	5.2893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.00109	.00075	-.00124	.01430	1.9312	.01121
Stddev	.00032	.00057	.00098	.00116	.01452	.0662	.00375
%RSD	40.847	52.643	130.59	93.056	101.50	3.4299	33.475
#1	.00065	.00148	.00185	-.00182	.00722	1.9905	.00707
#2	.00054	.00136	-.00002	-.00201	.00468	1.8597	.01218
#3	.00114	.00043	.00041	.00009	.03100	1.9435	.01438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.6988	.01630	.00313	F 663.81	.00018	.08187	.00053
Stddev	.0966	.00360	.00048	5.28	.00079	.00852	.00463
%RSD	1.2553	22.095	15.303	.79571	446.31	10.404	870.46
#1	7.7774	.01955	.00368	663.60	.00064	.09166	-.00463
#2	7.7282	.01692	.00294	669.19	.00063	.07782	.00192
#3	7.5909	.01243	.00279	658.64	-.00073	.07613	.00430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090711 Acquired: 6/28/2016 23:14:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00477	-.00947	4.3743	.00012	.59749	-.00341	-.00368
Stddev	.00205	.00703	.2235	.00071	.00261	.00718	.00482
%RSD	42.998	74.264	5.1088	610.33	.43726	210.78	131.07
#1	.00352	-.01297	4.5068	.00080	.59457	-.00637	-.00075
#2	.00366	-.01406	4.4999	-.00061	.59959	.00478	-.00105
#3	.00714	-.00137	4.1163	.00016	.59832	-.00864	-.00924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00067	.00187	.00016
Stddev	.00018	.00039	.00039
%RSD	26.132	20.991	250.81
#1	-.00048	.00224	.00013
#2	-.00072	.00192	-.00022
#3	-.00082	.00146	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8558.7	50968.	2468.0
Stddev	32.6	266.	12.5
%RSD	.38137	.52256	.50634
#1	8582.1	50678.	2474.2
#2	8572.7	51022.	2453.7
#3	8521.4	51203.	2476.3

Approved: June 29, 2016

Sample Name: L1606090712 Acquired: 6/28/2016 23:18:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.33933	.00030	.07127	.05688	.00016	2.0338
Stddev	.00237	.00787	.00132	.00246	.00045	.00012	.0603
%RSD	291.62	2.3179	435.76	3.4534	.79846	72.701	2.9649
#1	.00177	.33514	-.00021	.06852	.05740	.00027	2.1010
#2	-.00288	.33445	-.00068	.07204	.05653	.00003	1.9844
#3	-.00133	.34841	.00181	.07326	.05673	.00019	2.0160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00348	.00115	.14552	.01724	.92438	1.6617	.01097
Stddev	.00018	.00061	.00045	.00110	.03976	.0106	.00703
%RSD	5.1777	53.182	.30931	6.3566	4.3016	.63818	64.052
#1	.00353	.00097	.14500	.01788	.88776	1.6670	.01828
#2	.00362	.00183	.14581	.01597	.91871	1.6687	.00426
#3	.00327	.00065	.14575	.01786	.96668	1.6495	.01039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.3249	.01152	.00383	F 391.44	.00707	.86059	.02181
Stddev	.1530	.00179	.00054	2.81	.00137	.01152	.00342
%RSD	11.552	15.543	14.106	.71775	19.411	1.3389	15.698
#1	1.5007	.01088	.00325	388.59	.00558	.86948	.01787
#2	1.2531	.01014	.00432	391.52	.00829	.84757	.02352
#3	1.2210	.01354	.00392	394.20	.00735	.86472	.02403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090712 Acquired: 6/28/2016 23:18:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00348**	**.00035**	**1.9954**	**.01117**	**.32038**	**.22636**	**.00135**
Stddev	.00020	.00121	.0012	.00040	.00240	.00266	.00214
%RSD	5.8328	347.48	.06231	3.5705	.75050	1.1738	158.56
#1	.00370	.00157	1.9940	.01149	.31769	.22820	.00269
#2	.00345	.00033	1.9955	.01130	.32111	.22756	-.00112
#3	.00330	-.00085	1.9965	.01072	.32233	.22331	.00247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.04514**	**.17974**	**.02206**
Stddev	.00090	.00019	.00066
%RSD	1.9881	.10310	2.9925
#1	.04612	.17978	.02281
#2	.04436	.17953	.02156
#3	.04495	.17989	.02182
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8716.9**	**51451.**	**2449.4**
Stddev	48.4	29.	7.6
%RSD	.55475	.05648	.30870
#1	8664.0	51484.	2448.2
#2	8758.7	51440.	2457.4
#3	8728.0	51429.	2442.4

Approved: June 29, 2016

Sample Name: L1606090713 Acquired: 6/28/2016 23:22:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00219	.08213	.00368	.07443	.04854	.00011	.42469
Stddev	.00096	.00972	.00334	.00183	.00110	.00005	.01977
%RSD	43.698	11.832	90.686	2.4627	2.2723	40.957	4.6556
#1	-.00225	.09092	.00289	.07233	.04795	.00011	.40186
#2	-.00121	.08378	.00081	.07521	.04981	.00016	.43586
#3	-.00312	.07170	.00734	.07574	.04786	.00007	.43635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00222	.00137	.13907	.00317	.34040	1.7220	.00905
Stddev	.00025	.00028	.00123	.00071	.01243	.0003	.00271
%RSD	11.273	20.393	.88415	22.430	3.6529	.01888	29.930
#1	.00223	.00160	.13998	.00280	.34114	1.7219	.00629
#2	.00247	.00146	.13767	.00272	.32761	1.7224	.01170
#3	.00197	.00106	.13955	.00399	.35244	1.7218	.00916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0987	.00113	.00754	F 415.04	.00596	.74146	.00350
Stddev	.0280	.00202	.00033	2.37	.00037	.00798	.00379
%RSD	2.5471	178.69	4.3197	.57087	6.2471	1.0768	108.44
#1	1.1249	.00313	.00717	412.47	.00613	.73242	-.00053
#2	1.0692	.00117	.00780	417.13	.00621	.74754	.00700
#3	1.1020	-.00091	.00765	415.51	.00553	.74442	.00403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090713 Acquired: 6/28/2016 23:22:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00153**	**-.00521**	**1.6202**	**.00992**	**.32429**	**.20882**	**-.00046**
Stddev	.00624	.00387	.0074	.00050	.00323	.01892	.00304
%RSD	408.39	74.236	.45925	5.0727	.99564	9.0597	653.54
#1	.00863	-.00095	1.6128	.00948	.32128	.19072	-.00372
#2	-.00310	-.00851	1.6200	.01047	.32770	.22846	.00004
#3	-.00095	-.00616	1.6277	.00980	.32389	.20727	.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.03937**	**.07492**	**.02350**
Stddev	.00096	.00040	.00055
%RSD	2.4413	.53362	2.3494
#1	.04043	.07465	.02411
#2	.03855	.07474	.02336
#3	.03914	.07538	.02304
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8640.6**	**51402.**	**2468.9**
Stddev	11.6	25.	10.8
%RSD	.13368	.04908	.43542
#1	8653.3	51400.	2462.0
#2	8630.8	51378.	2463.4
#3	8637.6	51428.	2481.3

Approved: June 29, 2016

Sample Name: L1606090714 Acquired: 6/28/2016 23:25:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.05270	.00261	.14849	.04532	.00003	61.576
Stddev	.00185	.00318	.00454	.00253	.00179	.00010	.493
%RSD	687.89	6.0257	174.05	1.7055	3.9414	357.59	.80130
#1	-.00157	.04958	.00318	.15133	.04382	.00007	61.008
#2	-.00110	.05258	.00683	.14767	.04484	-.00009	61.890
#3	.00185	.05593	-.00219	.14646	.04729	.00010	61.831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00075	.00337	-.00019	.78003	7.3488	.01657
Stddev	.00021	.00021	.00077	.00126	.00831	.1082	.00291
%RSD	72.792	28.536	22.927	672.72	1.0653	1.4723	17.561
#1	.00008	.00100	.00398	.00126	.77075	7.4712	.01488
#2	.00027	.00062	.00363	-.00091	.78677	7.3091	.01993
#3	.00050	.00063	.00250	-.00091	.78257	7.2660	.01490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.360	.06191	.00071	F 463.30	-.00030	.21561	.00177
Stddev	.046	.00525	.00020	1.03	.00019	.00661	.00305
%RSD	.37543	8.4821	27.996	.22272	64.080	3.0658	172.41
#1	12.310	.05872	.00072	464.48	-.00041	.22283	.00423
#2	12.369	.06797	.00051	462.60	-.00008	.21412	-.00164
#3	12.401	.05903	.00091	462.81	-.00041	.20986	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090714 Acquired: 6/28/2016 23:25:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00300**	**-.00604**	**7.8267**	**-.00025**	**.74218**	**.01975**	**-.00197**
Stddev	.00421	.00260	.1047	.00019	.00050	.00124	.00109
%RSD	140.31	43.094	1.3380	77.158	.06708	6.2763	55.271
#1	.00785	-.00902	7.8821	-.00023	.74201	.02073	-.00317
#2	.00099	-.00423	7.8920	-.00045	.74274	.02016	-.00166
#3	.00018	-.00486	7.7059	-.00006	.74179	.01835	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00316**	**.00407**	**.00256**
Stddev	.00077	.00024	.00075
%RSD	24.497	5.8483	29.163
#1	.00354	.00412	.00330
#2	.00227	.00381	.00258
#3	.00367	.00428	.00181
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8639.6**	**51094.**	**2465.7**
Stddev	41.6	335.	13.0
%RSD	.48197	.65487	.52745
#1	8594.7	50709.	2451.1
#2	8647.1	51260.	2476.1
#3	8677.0	51313.	2469.8

Approved: June 29, 2016

Sample Name: L1606090715 Acquired: 6/28/2016 23:29:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00285	.04407	.00140	.14412	.04143	.00005	59.558
Stddev	.00231	.00586	.00072	.00507	.00040	.00007	.224
%RSD	81.027	13.303	51.277	3.5199	.95567	130.41	.37536
#1	-.00334	.04994	.00156	.14606	.04131	.00012	59.814
#2	-.00033	.03822	.00202	.13837	.04111	-.00001	59.406
#3	-.00486	.04404	.00061	.14794	.04188	.00004	59.452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00118	.00184	.00063	.76100	7.1671	.01922
Stddev	.00015	.00052	.00098	.00103	.01018	.0349	.00312
%RSD	163.96	43.892	53.087	163.96	1.3375	.48685	16.215
#1	.00011	.00058	.00246	-.00047	.77275	7.1527	.02093
#2	-.00007	.00153	.00071	.00158	.75530	7.1417	.01563
#3	.00022	.00141	.00236	.00077	.75494	7.2069	.02112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.054	.05684	.00116	F 450.35	.00088	.20516	-.00211
Stddev	.082	.00269	.00042	2.00	.00126	.00415	.00576
%RSD	.68190	4.7277	35.663	.44397	142.77	2.0226	273.36
#1	11.975	.05375	.00106	452.52	-.00055	.20427	-.00571
#2	12.048	.05807	.00162	449.96	.00139	.20968	.00454
#3	12.139	.05868	.00081	448.58	.00181	.20152	-.00515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090715 Acquired: 6/28/2016 23:29:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00081**	**-.00862**	**7.6795**	**-.00039**	**.71676**	**.00461**	**-.00278**
Stddev	.00283	.00291	.1196	.00106	.00041	.01298	.00101
%RSD	347.45	33.797	1.5570	275.08	.05661	281.78	36.497
#1	-.00157	-.00587	7.7419	-.00040	.71645	-.00429	-.00356
#2	.00007	-.01167	7.7550	.00069	.71722	.01951	-.00313
#3	.00394	-.00832	7.5417	-.00144	.71660	-.00140	-.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00152**	**.00115**	**.00113**
Stddev	.00105	.00008	.00105
%RSD	68.884	6.8866	93.346
#1	.00202	.00117	.00002
#2	.00032	.00106	.00212
#3	.00223	.00121	.00124
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8792.1**	**51880.**	**2496.3**
Stddev	133.4	299.	10.1
%RSD	1.5178	.57649	.40317
#1	8941.8	51623.	2484.7
#2	8685.6	51808.	2502.1
#3	8748.8	52208.	2502.2

Approved: June 29, 2016

Sample Name: L1606090716 Acquired: 6/28/2016 23:33:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00333**	**.06674**	**.00128**	**.14298**	**.04222**	**-.00000**	**59.504**
Stddev	.00201	.01138	.00278	.00064	.00070	.00007	.484
%RSD	60.249	17.058	217.94	.44859	1.6629	94045.	.81312
#1	-.00169	.07800	-.00194	.14246	.04294	.00002	59.231
#2	-.00557	.05523	.00286	.14278	.04219	.00006	60.063
#3	-.00273	.06698	.00291	.14369	.04154	-.00008	59.219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.00092**	**.00339**	**.00042**	**.74101**	**7.3675**	**.01893**
Stddev	.00006	.00016	.00146	.00135	.02065	.0749	.00240
%RSD	50.431	17.014	43.091	324.21	2.7866	1.0165	12.657
#1	.00017	.00075	.00375	-.00081	.76451	7.3956	.01995
#2	.00005	.00106	.00463	.00020	.72578	7.2826	.02065
#3	.00013	.00095	.00178	.00187	.73273	7.4242	.01619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.094**	**.05669**	**.00049**	F **451.79**	**.00147**	**.21191**	**-.00151**
Stddev	.163	.00550	.00036	.50	.00054	.00242	.00084
%RSD	1.3447	9.6932	73.725	.11164	37.077	1.1421	55.736
#1	12.012	.05647	.00070	451.99	.00147	.21046	-.00232
#2	11.990	.05131	.00007	452.16	.00201	.21470	-.00064
#3	12.282	.06230	.00070	451.22	.00092	.21056	-.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090716 Acquired: 6/28/2016 23:33:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00348**	**.00089**	**7.5669**	**.00117**	**.72443**	**.01709**	**-.00245**
Stddev	.00354	.00448	.1572	.00050	.00298	.00437	.00201
%RSD	101.58	501.51	2.0775	42.865	.41088	25.593	82.267
#1	.00281	-.00275	7.6956	.00118	.72247	.02126	-.00474
#2	.00033	-.00046	7.6136	.00167	.72297	.01748	-.00099
#3	.00731	.00590	7.3917	.00066	.72785	.01253	-.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00241**	**.00548**	**.00402**
Stddev	.00054	.00017	.00083
%RSD	22.212	3.0592	20.651
#1	.00257	.00567	.00416
#2	.00285	.00542	.00312
#3	.00181	.00535	.00476
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8690.3**	**52175.**	**2516.1**
Stddev	61.6	126.	8.6
%RSD	.70844	.24177	.34375
#1	8760.8	52034.	2508.6
#2	8663.2	52277.	2514.2
#3	8646.9	52214.	2525.5

Approved: June 29, 2016

Sample Name: L1606090717S Acquired: 6/28/2016 23:37:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19035**	**4.9212**	**.20242**	**1.1173**	**.53870**	**.02399**	**64.987**
Stddev	.00066	.0138	.00438	.0089	.00438	.00023	.548
%RSD	.34417	.28081	2.1640	.79744	.81379	.96737	.84372
#1	.19107	4.9363	.19945	1.1238	.54193	.02421	65.145
#2	.19018	4.9092	.20745	1.1071	.54046	.02375	65.440
#3	.18980	4.9181	.20036	1.1209	.53371	.02402	64.378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02424**	**.09697**	**.24272**	**.24153**	**2.7000**	**32.302**	**.53435**
Stddev	.00017	.00063	.00128	.00115	.0542	.305	.00423
%RSD	.69750	.64652	.52774	.47706	2.0085	.94343	.79145
#1	.02434	.09701	.24384	.24064	2.6890	32.507	.53012
#2	.02404	.09757	.24299	.24283	2.7589	32.447	.53858
#3	.02433	.09632	.24133	.24112	2.6521	31.952	.53434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**16.882**	**.30451**	**.49711**	F **482.71**	**.24091**	**5.1537**	**.23668**
Stddev	.177	.00348	.00560	3.01	.00269	.0308	.00218
%RSD	1.0459	1.1415	1.1272	.62426	1.1176	.59723	.92237
#1	16.684	.30381	.50102	485.98	.24166	5.1882	.23907
#2	16.940	.30143	.49961	480.04	.24314	5.1434	.23479
#3	17.023	.30828	.49069	482.12	.23792	5.1293	.23620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090717S Acquired: 6/28/2016 23:37:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58578**	**.18538**	**10.159**	**.48811**	**1.2154**	**.49634**	**.23046**
Stddev	.00448	.00618	.043	.00637	.0098	.00608	.00038
%RSD	.76433	3.3363	.42424	1.3058	.80446	1.2245	.16463
#1	.58622	.18565	10.182	.49235	1.2180	.50327	.23047
#2	.59002	.19142	10.185	.49120	1.2236	.49195	.23007
#3	.58110	.17906	10.109	.48078	1.2045	.49379	.23083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.48987**	**.55148**	**.00343**
Stddev	.00176	.00599	.00013
%RSD	.35980	1.0854	3.7809
#1	.49143	.55650	.00328
#2	.49024	.55309	.00353
#3	.48796	.54486	.00348
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8539.5**	**51024.**	**2450.9**
Stddev	15.7	223.	7.4
%RSD	.18405	.43733	.30335
#1	8544.9	50769.	2447.1
#2	8551.8	51123.	2446.2
#3	8521.8	51181.	2459.5

Approved: June 29, 2016

Sample Name: L1606090718S Acquired: 6/28/2016 23:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19819	5.0418	.21172	1.1474	.55608	.02463	66.735
Stddev	.00185	.0069	.00260	.0063	.00500	.00008	.403
%RSD	.93500	.13782	1.2291	.55360	.89834	.32817	.60319
#1	.19951	5.0496	.20902	1.1497	.56117	.02462	67.001
#2	.19607	5.0393	.21422	1.1402	.55588	.02472	66.933
#3	.19898	5.0364	.21193	1.1522	.55119	.02456	66.272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02500	.10059	.24966	.24894	2.7946	32.968	.54262
Stddev	.00038	.00067	.00147	.00202	.0041	.141	.00182
%RSD	1.5041	.66457	.58723	.81332	.14772	.42769	.33489
#1	.02475	.10047	.25066	.24998	2.7907	33.127	.54285
#2	.02543	.10131	.25035	.25022	2.7989	32.857	.54431
#3	.02482	.09999	.24798	.24660	2.7943	32.920	.54070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.345	.31116	.51510	F 490.28	.24919	5.3591	.24651
Stddev	.105	.00167	.00292	3.51	.00358	.0052	.00234
%RSD	.60374	.53669	.56649	.71621	1.4381	.09607	.95097
#1	17.354	.31227	.51623	493.94	.25164	5.3628	.24477
#2	17.445	.31197	.51728	489.95	.25087	5.3613	.24917
#3	17.236	.30924	.51178	486.94	.24508	5.3532	.24558
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090718S Acquired: 6/28/2016 23:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.61053	.18691	10.528	.50556	1.2260	.48937	.23724
Stddev	.00166	.00666	.059	.00312	.0084	.00665	.00363
%RSD	.27229	3.5608	.55758	.61700	.68851	1.3593	1.5298
#1	.60861	.19403	10.543	.50630	1.2334	.49010	.24128
#2	.61141	.18085	10.578	.50824	1.2277	.48238	.23618
#3	.61157	.18584	10.464	.50214	1.2168	.49562	.23425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50091	.51523	.00172
Stddev	.00126	.00263	.00010
%RSD	.25176	.51067	5.6499
#1	.50233	.51612	.00161
#2	.50044	.51730	.00180
#3	.49994	.51227	.00174
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8681.6	51146.	2422.3
Stddev	38.8	474.	15.3
%RSD	.44711	.92760	.63064
#1	8639.4	50613.	2406.1
#2	8715.8	51303.	2424.3
#3	8689.6	51522.	2436.4

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 23:44:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39087**	**9.8878**	**.39267**	**.49465**	**1.0058**	**.04827**	**9.9182**	**.04932**
Stddev	.00134	.0059	.00349	.00240	.0067	.00007	.1083	.00019
%RSD	.34212	.05973	.88952	.48553	.66475	.14231	1.0921	.38581
#1	.39238	9.8935	.39657	.49655	.99820	.04819	9.9431	.04942
#2	.39039	9.8883	.38984	.49195	1.0109	.04832	10.012	.04944
#3	.38985	9.8817	.39158	.49545	1.0082	.04830	9.7996	.04910
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19738**	**.48910**	**.49523**	**3.9669**	**49.882**	**1.0110**	**9.9379**	**.49619**
Stddev	.00146	.00249	.00033	.0535	.426	.0100	.0856	.00254
%RSD	.73891	.50943	.06565	1.3490	.85413	.98572	.86106	.51125
#1	.19864	.48643	.49560	3.9112	49.398	1.0025	9.9597	.49529
#2	.19771	.49137	.49512	4.0179	50.203	1.0219	10.010	.49906
#3	.19578	.48951	.49498	3.9715	50.043	1.0085	9.8435	.49423
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99366**	**51.102**	**.49479**	**9.8180**	**.49245**	**1.1839**	**.38331**	**4.9252**
Stddev	.00229	.296	.00112	.0436	.00417	.0076	.00756	.0162
%RSD	.23040	.57951	.22563	.44368	.84739	.64567	1.9734	.32807
#1	.99519	50.797	.49605	9.8652	.48874	1.1905	.38626	4.9385
#2	.99476	51.389	.49438	9.8094	.49696	1.1858	.38895	4.9300
#3	.99103	51.119	.49393	9.7793	.49165	1.1755	.37471	4.9072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 23:44:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98988	.99765	.95643	.49291	.97109	.99816	1.0264
Stddev	.00005	.00662	.00491	.00612	.00246	.00225	.0069
%RSD	.00544	.66367	.51341	1.2415	.25373	.22587	.66714
#1	.98986	.99154	.96068	.49817	.96993	.99855	1.0228
#2	.98985	1.0047	.95106	.49436	.97392	1.0002	1.0343
#3	.98995	.99673	.95756	.48619	.96943	.99574	1.0221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8852.4	53248.	2485.2
Stddev	68.1	165.	17.6
%RSD	.76947	.31035	.70769
#1	8891.9	53420.	2501.0
#2	8891.6	53232.	2466.3
#3	8773.7	53091.	2488.4

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 23:48:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00890	-.00396	.00204	.00494	-.00000	-.03955	.00028
Stddev	.00061	.00649	.00226	.00096	.00139	.00006	.02980	.00016
%RSD	121.10	72.941	57.036	47.171	28.084	1878.9	75.346	56.000
#1	.00012	.00140	-.00135	.00236	.00433	-.00007	-.00514	.00025
#2	.00019	.01256	-.00530	.00280	.00653	.00003	-.05651	.00014
#3	.00120	.01274	-.00524	.00096	.00396	.00003	-.05701	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.00009	-.00055	-.00135	.02566	.00472	.12990	-.00124
Stddev	.00026	.00133	.00103	.03748	.11658	.00694	.07003	.00153
%RSD	88.905	1496.9	185.85	2784.8	454.39	146.81	53.907	123.10
#1	-.00021	.00162	-.00060	-.04304	-.10891	.00709	.05840	.00042
#2	-.00009	-.00079	.00050	.02953	.08997	-.00309	.19836	-.00156
#3	-.00059	-.00057	-.00156	.00947	.09591	.01017	.13295	-.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.11232	.00016	-.00070	-.00263	.00402	-.00130	.00878
Stddev	.00052	.01221	.00035	.00315	.00378	.00429	.00491	.00194
%RSD	233.23	10.874	219.15	451.13	143.82	106.54	378.44	22.144
#1	.00018	.09853	.00056	-.00433	-.00468	.00891	-.00563	.01097
#2	.00076	.12179	-.00003	.00108	-.00494	.00227	.00404	.00808
#3	-.00027	.11663	-.00005	.00116	.00173	.00089	-.00230	.00727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 23:48:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00041	.00381	-.00016	-.00081	-.00009	-.00076
Stddev	.00089	.00029	.01190	.00136	.00028	.00006	.00080
%RSD	548.13	70.796	312.63	830.39	34.214	65.418	104.29
#1	.00094	.00011	.00779	-.00069	-.00088	-.00002	-.00004
#2	-.00080	.00043	-.00957	-.00118	-.00051	-.00014	-.00063
#3	.00035	.00070	.01320	.00138	-.00105	-.00011	-.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8917.9	53751.	2458.4
Stddev	22.4	401.	6.6
%RSD	.25103	.74546	.27049
#1	8939.0	53385.	2451.2
#2	8920.3	53689.	2464.4
#3	8894.4	54179.	2459.5

Approved: June 29, 2016

Sample Name: L1606090719SD Acquired: 6/28/2016 23:52:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19494	4.9876	.20649	1.1206	.54899	.02446	63.684
Stddev	.00341	.0267	.00227	.0072	.00266	.00017	.197
%RSD	1.7503	.53500	1.0987	.64357	.48472	.70636	.30953
#1	.19841	5.0143	.20896	1.1267	.55198	.02458	63.895
#2	.19159	4.9875	.20600	1.1224	.54814	.02454	63.505
#3	.19483	4.9610	.20450	1.1126	.54686	.02426	63.652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02431	.09859	.24820	.24356	2.7627	32.523	.53917
Stddev	.00024	.00035	.00106	.00236	.0104	.139	.00283
%RSD	.97941	.35770	.42716	.97084	.37521	.42742	.52434
#1	.02452	.09895	.24891	.24428	2.7631	32.683	.54200
#2	.02405	.09857	.24872	.24548	2.7521	32.438	.53915
#3	.02436	.09824	.24698	.24092	2.7728	32.447	.53635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.744	.30262	.50161	F 474.44	.24121	5.1977	.24211
Stddev	.092	.00376	.00063	1.95	.00134	.0033	.00235
%RSD	.55099	1.2423	.12466	.41010	.55486	.06327	.97156
#1	16.843	.30299	.50231	476.69	.24248	5.1948	.24104
#2	16.730	.29869	.50142	473.46	.24134	5.2012	.24049
#3	16.660	.30618	.50110	473.18	.23981	5.1970	.24481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090719SD Acquired: 6/28/2016 23:52:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-06

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.59430	.19071	9.9338	.49319	1.2061	.50455	.23257
Stddev	.00255	.00879	.0338	.00371	.0041	.01325	.00642
%RSD	.42853	4.6099	.34057	.75174	.34161	2.6270	2.7619
#1	.59360	.18296	9.9720	.49283	1.2102	.50667	.23886
#2	.59713	.20026	9.9217	.49706	1.2019	.49036	.23282
#3	.59219	.18890	9.9077	.48967	1.2063	.51661	.22602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.49849	.50582	.00353
Stddev	.00523	.00152	.00043
%RSD	1.0487	.30029	12.202
#1	.50407	.50610	.00382
#2	.49770	.50717	.00372
#3	.49371	.50417	.00303
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8401.5	50047.	2408.6
Stddev	47.5	258.	12.0
%RSD	.56522	.51528	.50025
#1	8347.1	50008.	2396.9
#2	8422.6	49810.	2408.1
#3	8434.7	50321.	2421.0

Approved: June 29, 2016

Sample Name: L1606090720SD Acquired: 6/28/2016 23:56:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19353**	**5.0216**	**.20252**	**1.1352**	**.55071**	**.02451**	**66.439**
Stddev	.00144	.0141	.00254	.0111	.00305	.00002	.233
%RSD	.74536	.28090	1.2537	.97553	.55460	.08092	.35135
#1	.19274	5.0377	.20544	1.1467	.55275	.02452	66.357
#2	.19265	5.0157	.20132	1.1247	.54720	.02453	66.259
#3	.19519	5.0114	.20080	1.1342	.55218	.02449	66.703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02480**	**.09885**	**.24939**	**.24699**	**2.8311**	**33.202**	**.54334**
Stddev	.00042	.00109	.00128	.00315	.0563	.083	.00155
%RSD	1.6782	1.1039	.51473	1.2735	1.9886	.24955	.28467
#1	.02471	.09937	.24793	.24805	2.7662	33.298	.54161
#2	.02525	.09958	.24991	.24947	2.8664	33.150	.54461
#3	.02443	.09759	.25034	.24345	2.8608	33.159	.54379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.468**	**.30738**	**.50680**	F **486.61**	**.24492**	**5.2693**	**.23893**
Stddev	.072	.00145	.00532	.70	.00225	.0369	.00191
%RSD	.41344	.47181	1.0490	.14406	.91921	.69961	.79970
#1	17.534	.30875	.50843	487.39	.24519	5.2707	.23692
#2	17.479	.30586	.51112	486.41	.24702	5.3054	.24072
#3	17.391	.30753	.50086	486.04	.24254	5.2317	.23916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090720SD Acquired: 6/28/2016 23:56:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.60142**	**.18637**	**10.363**	**.49767**	**1.2283**	**.48765**	**.23702**
Stddev	.00105	.00245	.038	.00779	.0034	.01138	.00072
%RSD	.17417	1.3166	.36865	1.5652	.27874	2.3335	.30474
#1	.60114	.18602	10.365	.50037	1.2270	.48994	.23679
#2	.60258	.18411	10.400	.50376	1.2257	.49771	.23784
#3	.60054	.18898	10.323	.48889	1.2322	.47530	.23645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.49895**	**.50500**	**.00250**
Stddev	.00095	.00538	.00016
%RSD	.19000	1.0655	6.4596
#1	.49928	.50545	.00254
#2	.49789	.51014	.00232
#3	.49969	.49940	.00263
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8545.4**	**50337.**	**2417.3**
Stddev	21.8	38.	36.4
%RSD	.25460	.07587	1.5070
#1	8520.7	50381.	2377.2
#2	8553.5	50312.	2448.3
#3	8561.9	50318.	2426.3

Approved: June 29, 2016

Sample Name: L1606090721 Acquired: 6/28/2016 23:59:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.02815	.15472	.21993	.04999	-.00009	89.088	.00036
Stddev	.00081	.00286	.00224	.00203	.00067	.00013	.252	.00044
%RSD	366.68	10.152	1.4476	.92302	1.3456	150.92	.28326	121.20
#1	-.00034	.03039	.15696	.22227	.04930	.00005	89.280	.00047
#2	-.00015	.02493	.15248	.21860	.05065	-.00021	89.181	.00073
#3	.00116	.02913	.15471	.21893	.05004	-.00011	88.802	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00053	-.00019	3.2279	4.7476	.04543	58.195	.03506
Stddev	.00051	.00109	.00130	.0396	.0330	.00398	.306	.00452
%RSD	326.23	207.39	678.63	1.2283	.69494	8.7612	.52530	12.890
#1	.00000	.00087	.00120	3.2707	4.7445	.04159	58.337	.03505
#2	.00073	-.00070	-.00039	3.2207	4.7162	.04953	57.844	.03055
#3	-.00026	.00141	-.00138	3.1923	4.7820	.04517	58.404	.03959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00255	148.09	.00067	.00784	-.00039	.00421	.00052	8.2957
Stddev	.00041	.74	.00056	.00761	.00326	.00112	.00642	.0916
%RSD	15.975	.49798	83.836	97.017	843.36	26.690	1239.6	1.1044
#1	.00242	148.81	.00126	.01662	.00333	.00379	.00730	8.3545
#2	.00222	148.12	.00060	.00379	-.00277	.00548	-.00546	8.3426
#3	.00300	147.34	.00015	.00312	-.00172	.00336	-.00029	8.1902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090721 Acquired: 6/28/2016 23:59:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**2.8879**	**-.00940**	**-.00107**	**-.00134**	**.00848**	**-.00035**
Stddev	.00043	.0149	.00196	.00331	.00181	.00045	.00038
%RSD	143.26	.51746	20.833	308.32	134.84	5.2706	107.75
#1	.00019	2.8997	-.00999	-.00402	.00042	.00893	-.00019
#2	-.00051	2.8929	-.00722	-.00170	-.00320	.00845	-.00008
#3	-.00059	2.8711	-.01100	.00251	-.00126	.00804	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8758.0**	**52368.**	**2466.4**
Stddev	37.5	325.	5.9
%RSD	.42875	.61986	.23758
#1	8801.1	52031.	2461.0
#2	8740.8	52395.	2465.6
#3	8732.2	52679.	2472.6

Approved: June 29, 2016

Sample Name: L1606090721PS Acquired: 6/29/2016 0:03:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574358-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20019**	**5.1576**	**.34766**	**1.2114**	**.56381**	**.02498**	**84.663**	**.02573**
Stddev	.00211	.0098	.00116	.0050	.00202	.00020	.418	.00033
%RSD	1.0557	.19056	.33293	.41263	.35822	.78492	.49396	1.2934
#1	.20254	5.1664	.34633	1.2164	.56443	.02520	84.492	.02609
#2	.19843	5.1594	.34818	1.2115	.56156	.02488	84.358	.02565
#3	.19962	5.1470	.34846	1.2064	.56545	.02485	85.140	.02544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10080**	**.25421**	**.24916**	**4.8701**	**30.624**	**.57779**	**56.693**	**.28817**
Stddev	.00058	.00200	.00195	.0302	.149	.00202	.131	.00453
%RSD	.57642	.78787	.78160	.62019	.48743	.34921	.23190	1.5720
#1	.10116	.25562	.25054	4.8792	30.503	.58012	56.633	.28367
#2	.10112	.25192	.25001	4.8364	30.577	.57659	56.844	.28809
#3	.10013	.25509	.24693	4.8947	30.791	.57665	56.603	.29273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52502**	**158.09**	**.24876**	**5.1636**	**.25008**	**.61265**	**.20014**	**9.8671**
Stddev	.00212	.60	.00180	.0181	.00331	.00479	.00936	.0394
%RSD	.40403	.38248	.72227	.35030	1.3223	.78195	4.6766	.39881
#1	.52705	157.73	.25045	5.1793	.25359	.61277	.21037	9.9112
#2	.52519	157.76	.24895	5.1678	.24962	.60780	.19201	9.8547
#3	.52282	158.79	.24687	5.1438	.24702	.61738	.19805	9.8355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090721PS Acquired: 6/29/2016 0:03:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574358-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51223**	**3.0821**	**.49582**	**.24982**	**.51140**	**.51568**	**.00008**
Stddev	.00186	.0080	.00627	.00152	.00318	.00201	.00023
%RSD	.36371	.25984	1.2655	.60916	.62230	.38914	288.95
#1	.51427	3.0793	.49082	.24918	.51445	.51741	-.00011
#2	.51181	3.0759	.50286	.24872	.51164	.51616	.00001
#3	.51062	3.0912	.49379	.25156	.50810	.51348	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8832.3**	**52453.**	**2508.5**
Stddev	83.5	84.	29.4
%RSD	.94590	.16065	1.1725
#1	8737.3	52363.	2520.1
#2	8865.3	52530.	2530.3
#3	8894.3	52465.	2475.0

Approved: June 29, 2016

Sample Name: L1606090721SDL Acquired: 6/29/2016 0:07:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574358-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00109**	**.01687**	**.03369**	**.04578**	**.01396**	**.00004**	**18.552**	**-.00004**
Stddev	.00056	.00689	.00354	.00177	.00096	.00009	.306	.00023
%RSD	51.289	40.861	10.514	3.8702	6.8513	202.11	1.6474	556.22
#1	-.00057	.01633	.03244	.04378	.01352	-.00003	18.207	-.00012
#2	-.00168	.02401	.03094	.04715	.01506	.00002	18.661	-.00023
#3	-.00102	.01026	.03768	.04641	.01331	.00014	18.789	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.00087**	**.00035**	**.65230**	**1.0355**	**.01184**	**12.221**	**.00894**
Stddev	.00063	.00100	.00121	.00671	.0941	.00202	.100	.00309
%RSD	228.11	115.30	345.85	1.0286	9.0852	17.078	.82191	34.543
#1	-.00017	.00049	.00025	.64609	1.1157	.01374	12.150	.00874
#2	-.00095	.00201	.00160	.65942	.93195	.00972	12.336	.01212
#3	.00029	.00011	-.00080	.65140	1.0588	.01205	12.177	.00595
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**30.325**	**-.00027**	**.00422**	**-.00298**	**-.00092**	**.00109**	**1.7914**
Stddev	.00016	.440	.00045	.00425	.00057	.00256	.00169	.0091
%RSD	27.689	1.4521	163.54	100.75	19.102	277.37	155.02	.50513
#1	.00039	29.824	.00017	.00885	-.00259	-.00352	.00170	1.7813
#2	.00063	30.649	-.00072	.00329	-.00363	.00160	.00240	1.7986
#3	.00068	30.503	-.00027	.00050	-.00270	-.00084	-.00082	1.7945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090721SDL Acquired: 6/29/2016 0:07:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574358-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.60742**	**-.00374**	**-.00166**	**-.00033**	**.00256**	**-.00085**
Stddev	.00088	.00734	.00118	.00273	.00106	.00022	.00027
%RSD	279.18	1.2083	31.693	164.00	318.25	8.4916	31.787
#1	.00070	.59907	-.00244	.00132	.00067	.00233	-.00090
#2	-.00077	.61036	-.00402	-.00403	-.00023	.00276	-.00109
#3	-.00087	.61284	-.00475	-.00228	-.00144	.00259	-.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9187.1**	**55503.**	**2599.5**
Stddev	26.1	119.	10.7
%RSD	.28437	.21476	.41022
#1	9217.2	55501.	2602.6
#2	9170.3	55385.	2587.6
#3	9173.8	55623.	2608.2

Approved: June 29, 2016

Sample Name: L1606090721SDL Acquired: 6/29/2016 0:11:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574358-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00118	.01500	.00516	.01043	.00379	.00000	3.7995	-.00012
Stddev	.00135	.01168	.00534	.00108	.00026	.00003	.1244	.00014
%RSD	115.03	77.862	103.64	10.384	6.8212	2470.3	3.2736	120.38
#1	.00206	.02216	.00814	.01042	.00375	-.00003	3.6648	-.00028
#2	.00185	.00152	-.00101	.01152	.00355	.00003	3.8235	-.00005
#3	-.00038	.02133	.00835	.00935	.00407	.00000	3.9101	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00065	-.00055	.11045	.13865	.00675	2.5225	.00092
Stddev	.00015	.00092	.00086	.02744	.23040	.00333	.0784	.00193
%RSD	109.63	141.35	157.85	24.848	166.17	49.354	3.1085	209.31
#1	.00002	-.00027	.00015	.09324	.28975	.00394	2.5026	.00021
#2	-.00015	.00158	-.00028	.14210	.25272	.01043	2.6090	-.00055
#3	-.00028	.00066	-.00151	.09600	-.12653	.00587	2.4560	.00311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	6.3739	.00039	-.00167	-.00065	-.00192	-.00400	.35805
Stddev	.00019	.1221	.00077	.00568	.00220	.00225	.00392	.00092
%RSD	80.325	1.9149	193.81	340.49	339.56	117.21	97.951	.25782
#1	-.00041	6.2501	.00122	.00247	-.00170	-.00154	.00049	.35884
#2	-.00025	6.3776	.00024	.00067	-.00212	-.00435	-.00579	.35826
#3	-.00004	6.4941	-.00028	-.00815	.00188	.00011	-.00671	.35703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090721SDL Acquired: 6/29/2016 0:11:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574358-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.12378**	**-.00436**	**-.00134**	**-.00055**	**.00073**	**-.00039**
Stddev	.00019	.00308	.00683	.00086	.00034	.00007	.00029
%RSD	53.797	2.4878	156.69	64.146	61.988	8.9830	73.514
#1	-.00044	.12023	-.00553	-.00058	-.00062	.00068	-.00036
#2	-.00014	.12543	.00298	-.00228	-.00018	.00081	-.00070
#3	-.00049	.12569	-.01052	-.00118	-.00084	.00071	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9402.9**	**57082.**	**2645.4**
Stddev	82.4	75.	15.8
%RSD	.87665	.13174	.59891
#1	9406.7	56995.	2659.6
#2	9483.5	57126.	2628.3
#3	9318.7	57125.	2648.2

Approved: June 29, 2016

Sample Name: L1606090722 Acquired: 6/29/2016 0:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.01028	.16985	.22958	.04883	-.00008	90.394	.00025
Stddev	.00324	.00963	.00396	.00222	.00061	.00002	.121	.00028
%RSD	4949.1	93.723	2.3290	.96586	1.2550	23.760	.13404	111.24
#1	-.00285	.02132	.16813	.22730	.04935	-.00010	90.382	.00038
#2	.00356	.00356	.17438	.23172	.04815	-.00006	90.279	.00045
#3	-.00051	.00596	.16705	.22972	.04898	-.00008	90.521	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00041	.00087	3.5026	4.9295	.04910	59.267	.03325
Stddev	.00022	.00111	.00098	.0284	.0894	.00151	.265	.00219
%RSD	60.847	271.25	113.61	.80943	1.8143	3.0855	.44788	6.5929
#1	.00021	.00134	-.00025	3.5352	5.0034	.05063	59.294	.03495
#2	.00061	-.00082	.00122	3.4887	4.9549	.04760	58.989	.03402
#3	.00025	.00070	.00163	3.4838	4.8301	.04907	59.518	.03077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00244	153.19	.00041	.00458	-.00053	.00040	-.00283	8.7875
Stddev	.00007	.41	.00041	.00497	.00262	.00456	.00573	.1224
%RSD	2.9584	.27064	99.304	108.46	489.40	1152.0	202.89	1.3923
#1	.00237	153.49	.00084	-.00022	.00239	-.00465	-.00944	8.8015
#2	.00251	152.72	.00004	.00427	-.00266	.00424	.00068	8.9022
#3	.00243	153.37	.00034	.00970	-.00134	.00160	.00029	8.6587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090722 Acquired: 6/29/2016 0:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	2.9518	-.00995	-.00362	-.00096	.00440	.00001
Stddev	.00028	.0074	.00793	.00237	.00054	.00006	.00056
%RSD	32.226	.25211	79.682	65.490	56.708	1.2532	6214.2
#1	.00100	2.9566	-.00351	-.00118	-.00042	.00436	.00025
#2	.00104	2.9432	-.00753	-.00591	-.00150	.00446	-.00063
#3	.00054	2.9556	-.01881	-.00378	-.00096	.00438	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9054.6	54099.	2585.8
Stddev	57.4	436.	25.2
%RSD	.63423	.80554	.97528
#1	8988.4	53629.	2556.7
#2	9090.0	54180.	2602.1
#3	9085.5	54489.	2598.5

Approved: June 29, 2016

Sample Name: L1606090701 Acquired: 6/29/2016 0:18:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.00128**	**.00101**	**.00061**	**.00104**	**-.00005**	**.00169**
Stddev	.00126	.00585	.00355	.00032	.00091	.00002	.04030
%RSD	221.80	456.51	353.52	53.224	87.506	37.484	2388.3
#1	-.00202	.00804	-.00224	.00024	.00004	-.00004	.00221
#2	.00024	-.00195	.00046	.00078	.00184	-.00004	.04172
#3	.00008	-.00224	.00480	.00082	.00125	-.00008	-.03887
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00013**	**.00013**	**-.00052**	F **-.02173**	**.03273**	**.00032**
Stddev	.00034	.00034	.00036	.00092	.03139	.06816	.00284
%RSD	181.69	267.06	267.98	175.61	144.44	208.24	885.16
#1	-.00016	-.00013	.00000	.00035	-.00211	-.02317	-.00284
#2	.00052	.00001	.00054	-.00148	-.05793	.01270	.00268
#3	.00020	.00050	-.00014	-.00044	-.00515	.10865	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03898**	**-.00058**	**-.00045**	**13.251**	**.00077**	**.02846**	**.00119**
Stddev	.01377	.00586	.00050	.124	.00076	.00679	.00468
%RSD	35.318	1010.5	110.38	.93889	99.705	23.842	394.31
#1	.05488	.00610	.00012	13.121	-.00004	.03395	.00279
#2	.03088	-.00485	-.00078	13.369	.00087	.03056	.00485
#3	.03118	-.00299	-.00069	13.262	.00148	.02087	-.00408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606090701 Acquired: 6/29/2016 0:18:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	-.00537	-.00914	-.00006	.00159	.00532	.00037
Stddev	.00582	.00242	.00090	.00019	.00051	.00299	.00136
%RSD	476.64	45.078	9.7969	317.95	32.073	56.250	371.00
#1	.00683	-.00708	-.00955	.00015	.00207	.00837	-.00054
#2	.00162	-.00260	-.00812	-.00022	.00105	.00517	.00193
#3	-.00479	-.00644	-.00976	-.00012	.00165	.00240	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00093	.00059	-.00016
Stddev	.00081	.00031	.00018
%RSD	87.282	53.168	114.46
#1	.00149	.00024	-.00018
#2	-.00000	.00070	.00003
#3	.00130	.00083	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10015.	59457.	2772.0
Stddev	42.	185.	13.1
%RSD	.41543	.31142	.47139
#1	9974.4	59316.	2765.7
#2	10014.	59389.	2763.3
#3	10058.	59667.	2787.0

Approved: June 29, 2016

Sample Name: L1606090702 Acquired: 6/29/2016 0:22:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.01099**	**.00749**	**.00123**	**.00036**	**-.00012**	**-.07492**	**-.00003**
Stddev	.00077	.00938	.00313	.00162	.00100	.00005	.00757	.00027
%RSD	273.98	85.420	41.773	131.72	279.74	40.850	10.106	1080.6
#1	-.00115	.00075	.00467	.00308	.00068	-.00017	-.07360	-.00000
#2	.00027	.01919	.00694	.00049	.00115	-.00008	-.08306	.00024
#3	.00004	.01302	.01085	.00011	-.00076	-.00011	-.06809	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00052**	**.00026**	**.00386**	**.16270**	**.00415**	**.04673**	**.00035**
Stddev	.00014	.00036	.00083	.03541	.08205	.00393	.05332	.00318
%RSD	207.94	70.672	315.94	916.99	50.431	94.730	114.10	912.30
#1	-.00005	-.00049	.00109	.03399	.24654	.00843	.09724	.00046
#2	.00003	-.00089	.00028	-.03514	.15901	.00071	-.00901	-.00289
#3	.00022	-.00017	-.00058	.01273	.08256	.00330	.05196	.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**13.268**	**.00028**	**.03344**	**-.00107**	**.00163**	**-.00334**	**-.00974**
Stddev	.00034	.166	.00066	.00168	.00231	.00202	.00700	.00231
%RSD	306.42	1.2519	239.13	5.0110	216.85	124.05	209.45	23.731
#1	-.00024	13.091	.00009	.03433	-.00011	.00058	-.00482	-.01123
#2	.00014	13.421	-.00027	.03151	-.00370	.00396	.00428	-.01090
#3	.00044	13.292	.00101	.03449	.00061	.00035	-.00947	-.00708
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090702 Acquired: 6/29/2016 0:22:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00164	-.00565	.00199	.00055	.00050	.00004
Stddev	.00079	.00045	.00790	.00125	.00014	.00028	.00055
%RSD	1277.4	27.361	139.76	62.800	24.818	56.699	1243.8
#1	-.00043	.00119	-.00017	.00104	.00045	.00053	.00062
#2	.00085	.00209	-.00208	.00153	.00070	.00020	-.00000
#3	-.00061	.00165	-.01471	.00341	.00048	.00076	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9738.1	60303.	2841.7
Stddev	547.0	130.	36.2
%RSD	5.6170	.21550	1.2725
#1	10017.	60254.	2883.1
#2	10090.	60205.	2816.3
#3	9107.9	60450.	2825.6

Approved: June 29, 2016

Sample Name: L1606090703 Acquired: 6/29/2016 0:26:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.01419	.00833	.00267	.00573	.00007	-.01298	.00028
Stddev	.00111	.00653	.00123	.00250	.00075	.00004	.01762	.00008
%RSD	324.10	46.043	14.722	93.692	13.099	59.317	135.74	30.625
#1	.00043	.01132	.00941	.00414	.00600	.00009	-.02179	.00028
#2	-.00162	.02166	.00699	-.00022	.00488	.00010	-.02446	.00036
#3	.00015	.00958	.00859	.00408	.00631	.00002	.00731	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00028	-.00007	.00093	-.08334	.00442	.05416	-.00223
Stddev	.00033	.00039	.00100	.03445	.03697	.00209	.12696	.00364
%RSD	714.65	138.78	1370.0	3703.8	44.357	47.372	234.43	163.51
#1	-.00035	-.00004	.00065	.03766	-.04634	.00636	-.08396	-.00517
#2	-.00009	.00071	.00035	-.03067	-.08341	.00220	.08067	-.00335
#3	.00030	.00016	-.00122	-.00419	-.12027	.00471	.16576	.00184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	12.860	.00056	.03060	.00372	.00167	-.00610	-.00860
Stddev	.00033	.114	.00047	.00278	.00309	.00242	.00720	.00231
%RSD	68.677	.88636	84.171	9.0836	83.096	145.58	118.12	26.807
#1	.00085	12.729	.00085	.03311	.00720	.00039	-.01435	-.00824
#2	.00020	12.918	.00082	.03107	.00133	.00015	-.00106	-.01107
#3	.00040	12.934	.00002	.02761	.00261	.00446	-.00289	-.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090703 Acquired: 6/29/2016 0:26:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00163	.00150	-.00142	-.00028	.00054	-.00031
Stddev	.00154	.00020	.00473	.00186	.00089	.00012	.00014
%RSD	833.10	12.147	314.69	131.50	317.50	23.204	44.658
#1	-.00148	.00177	.00555	.00056	-.00022	.00040	-.00038
#2	.00049	.00140	.00264	-.00313	-.00119	.00057	-.00015
#3	.00155	.00171	-.00369	-.00168	.00058	.00064	-.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8961.9	53770.	2483.7
Stddev	24.6	200.	12.6
%RSD	.27397	.37198	.50552
#1	8948.0	53948.	2494.1
#2	8947.6	53810.	2487.2
#3	8990.3	53554.	2469.8

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 0:30:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38698	9.7002	.38881	.48586	.97844	.04760	9.6997	.04862
Stddev	.00201	.0203	.00157	.00014	.00815	.00008	.1085	.00031
%RSD	.51885	.20953	.40456	.02940	.83333	.17484	1.1184	.62844
#1	.38537	9.7101	.38875	.48602	.97139	.04767	9.5885	.04859
#2	.38923	9.7137	.39041	.48575	.97656	.04751	9.7056	.04893
#3	.38635	9.6768	.38727	.48580	.98737	.04761	9.8052	.04833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19474	.48277	.49043	3.8560	48.915	.99456	9.7949	.48405
Stddev	.00051	.00254	.00033	.0609	.335	.00767	.1720	.00787
%RSD	.26333	.52661	.06686	1.5789	.68546	.77131	1.7563	1.6253
#1	.19457	.48338	.49081	3.8528	48.576	.99076	9.7412	.47822
#2	.19531	.48496	.49029	3.7967	48.921	.98953	9.9874	.49300
#3	.19433	.47998	.49020	3.9184	49.247	1.0034	9.6561	.48095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98170	49.583	.48813	9.7294	.48732	1.1783	.39418	4.8785
Stddev	.00158	.461	.00119	.0077	.00141	.0038	.00511	.0212
%RSD	.16102	.92944	.24398	.07901	.28900	.32524	1.2962	.43401
#1	.98309	49.171	.48947	9.7258	.48621	1.1793	.39983	4.8671
#2	.98204	49.497	.48720	9.7383	.48891	1.1815	.38987	4.9030
#3	.97998	50.081	.48770	9.7242	.48685	1.1740	.39285	4.8655
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 0:30:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97834	.97494	.95108	.49247	.96191	.98339	1.0034
Stddev	.00099	.00909	.00833	.00178	.00224	.00090	.0089
%RSD	.10136	.93258	.87586	.36227	.23243	.09113	.88886
#1	.97841	.96663	.94449	.49042	.96271	.98417	1.0004
#2	.97929	.97353	.96044	.49368	.96363	.98360	.99636
#3	.97731	.98465	.94830	.49330	.95938	.98241	1.0134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9122.8	54587.	2572.6
Stddev	38.4	60.	22.7
%RSD	.42057	.10952	.88400
#1	9080.2	54522.	2582.2
#2	9154.5	54598.	2589.0
#3	9133.9	54640.	2546.6

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 0:34:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00122	.00466	-.00017	.00093	.00303	.00003	-.00913	.00007
Stddev	.00162	.00478	.00123	.00265	.00146	.00003	.02230	.00003
%RSD	132.99	102.72	706.52	285.61	48.176	128.86	244.19	39.474
#1	-.00245	.00930	-.00082	.00154	.00139	-.00001	-.02871	.00006
#2	.00062	-.00026	-.00095	.00321	.00352	.00005	-.01382	.00010
#3	-.00182	.00494	.00125	-.00197	.00419	.00004	.01514	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00032	.00081	.00903	.11096	.00079	.11616	-.00064
Stddev	.00021	.00106	.00150	.00328	.08553	.00255	.04775	.00185
%RSD	92.337	329.80	184.91	36.276	77.077	324.20	41.108	287.40
#1	-.00031	.00116	.00012	.01041	.15087	-.00162	.12367	.00002
#2	.00001	-.00087	.00253	.01139	.16925	.00345	.06510	.00078
#3	-.00037	.00068	-.00022	.00529	.01278	.00053	.15972	-.00273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.03737	.00066	.00144	-.00082	.00340	-.00182	.00536
Stddev	.00029	.03843	.00053	.00265	.00132	.00154	.00313	.00166
%RSD	18406.	102.83	80.134	184.71	160.11	45.408	172.27	31.019
#1	-.00023	-.00602	.00051	.00428	-.00109	.00444	-.00083	.00643
#2	-.00008	.05101	.00125	-.00097	.00061	.00162	-.00533	.00344
#3	.00032	.06712	.00022	.00100	-.00199	.00412	.00070	.00619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 0:34:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00006**	**-.00104**	**-.00128**	**-.00041**	**-.00019**	**-.00004**
Stddev	.00023	.00034	.00413	.00294	.00104	.00017	.00025
%RSD	118.21	534.50	395.70	230.77	254.74	88.279	579.67
#1	-.00003	.00003	-.00572	-.00154	-.00150	-.00037	.00025
#2	.00043	-.00026	.00210	-.00408	.00058	-.00004	-.00020
#3	.00019	.00042	.00049	.00179	-.00032	-.00016	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9272.3**	**55978.**	**2591.0**
Stddev	17.3	111.	14.1
%RSD	.18630	.19762	.54251
#1	9287.0	55853.	2604.2
#2	9276.7	56064.	2576.2
#3	9253.3	56018.	2592.6

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 0:38:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**262.47**	**-.00206**	**-.02130**	**.00281**	**-.00000**	**250.14**
Stddev	.00247	1.07	.00184	.00233	.00097	.00005	2.94
%RSD	520.49	.40938	89.302	10.960	34.651	8633.1	1.1761
#1	-.00151	263.71	-.00344	-.02376	.00260	-.00002	251.91
#2	-.00030	261.77	-.00276	-.02102	.00386	-.00004	251.76
#3	.00324	261.93	.00003	-.01911	.00195	.00005	246.74
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**-.00148**	**-.00209**	F **.00553**	**97.120**	**.04934**	**.01710**
Stddev	.00029	.00036	.00124	.00159	1.989	.10530	.00684
%RSD	102.43	24.677	59.423	28.729	2.0482	213.42	39.969
#1	-.00058	-.00111	-.00306	.00402	99.151	-.05089	.02085
#2	.00000	-.00184	-.00069	.00538	97.032	.03984	.00921
#3	-.00028	-.00147	-.00253	.00719	95.176	.15907	.02125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**246.62**	**-.00237**	**-.00057**	**.08363**	**.00230**	**.02090**	**.00151**
Stddev	4.84	.00083	.00044	.01520	.00099	.00801	.00124
%RSD	1.9620	34.848	77.462	18.179	42.768	38.309	82.153
#1	250.97	-.00179	-.00098	.08232	.00251	.02109	.00293
#2	247.47	-.00201	-.00011	.06913	.00317	.02881	.00068
#3	241.41	-.00332	-.00061	.09945	.00123	.01280	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 0:38:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00153	.00160	.00135	.00065	.01387	-.00370
Stddev	.00668	.00418	.00084	.00065	.00032	.01328	.00337
%RSD	5905.2	273.58	52.462	48.380	49.235	95.708	91.188
#1	-.00013	-.00376	.00212	.00090	.00048	.02812	.00019
#2	-.00679	.00330	.00063	.00209	.00102	.01165	-.00584
#3	.00658	-.00412	.00205	.00104	.00045	.00184	-.00544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00278	-.00222	-.00352
Stddev	.00102	.00014	.00042
%RSD	36.742	6.2944	12.022
#1	-.00380	-.00209	-.00303
#2	-.00176	-.00220	-.00370
#3	-.00277	-.00237	-.00382
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8680.3	52289.	2546.4
Stddev	44.3	276.	34.7
%RSD	.51002	.52714	1.3639
#1	8712.8	51991.	2529.8
#2	8698.3	52534.	2523.1
#3	8629.9	52343.	2586.3

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 0:42:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50445	258.44	.25287	-.02137	.25789	.23434	248.80	.48765
Stddev	.00262	.64	.00200	.00127	.00279	.00053	1.58	.00305
%RSD	.51933	.24817	.79007	5.9512	1.0819	.22550	.63387	.62636
#1	.50738	258.98	.25156	-.02092	.26103	.23410	250.34	.49004
#2	.50363	257.73	.25188	-.02281	.25570	.23397	248.87	.48870
#3	.50233	258.62	.25517	-.02038	.25694	.23494	247.19	.48420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23586	.24441	.24607	95.941	5.0748	.01284	244.06	.24468
Stddev	.00239	.00022	.00330	.799	.2552	.00183	1.38	.00514
%RSD	1.0145	.09063	1.3420	.83270	5.0291	14.276	.56411	2.1022
#1	.23719	.24416	.24760	96.679	5.2910	.01485	245.62	.25020
#2	.23730	.24453	.24833	96.052	5.1401	.01124	243.56	.24384
#3	.23310	.24455	.24228	95.093	4.7933	.01244	243.01	.24001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00082	5.5086	.47332	.08682	.49116	.50117	.24881	-.01883
Stddev	.00020	.0636	.00452	.00312	.00773	.00981	.00506	.00303
%RSD	24.735	1.1550	.95592	3.5983	1.5729	1.9568	2.0355	16.104
#1	-.00060	5.5795	.47560	.08552	.49675	.50459	.25092	-.01667
#2	-.00101	5.4897	.47625	.09038	.49439	.50881	.24304	-.01753
#3	-.00086	5.4566	.46811	.08455	.48235	.49011	.25248	-.02230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 0:42:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00046**	**.01528**	**.45471**	**.24352**	**.47724**	**-.00365**
Stddev	.00022	.00062	.01129	.00542	.00062	.00539	.00054
%RSD	53.078	134.10	73.872	1.1924	.25306	1.1297	14.769
#1	.00016	.00017	.02136	.45909	.24299	.47979	-.00426
#2	.00054	.00004	.00226	.44865	.24337	.48089	-.00344
#3	.00057	.00118	.02221	.45639	.24420	.47105	-.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8595.4**	**51463.**	**2494.4**
Stddev	12.5	154.	16.1
%RSD	.14588	.29931	.64420
#1	8581.0	51365.	2476.0
#2	8601.3	51640.	2501.3
#3	8603.9	51383.	2505.9

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 0:45:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37249	9.3850	.37153	.46617	.94206	.04580	9.3425	.04736
Stddev	.00135	.0062	.00236	.00421	.00815	.00009	.1257	.00021
%RSD	.36335	.06605	.63425	.90259	.86541	.20303	1.3456	.44636
#1	.37201	9.3922	.37250	.46400	.93313	.04575	9.2021	.04760
#2	.37402	9.3815	.37325	.46348	.94911	.04591	9.4445	.04730
#3	.37145	9.3814	.36885	.47102	.94393	.04575	9.3811	.04719
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18881	.46476	.47375	3.7404	47.124	.95096	9.4232	.47238
Stddev	.00059	.00211	.00197	.0379	.346	.01412	.1940	.00206
%RSD	.31469	.45346	.41514	1.0141	.73325	1.4848	2.0589	.43640
#1	.18948	.46353	.47602	3.7313	46.726	.93751	9.5290	.47025
#2	.18859	.46356	.47266	3.7821	47.295	.96567	9.5413	.47436
#3	.18835	.46719	.47256	3.7079	47.350	.94969	9.1993	.47253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95052	47.859	.47282	9.4102	.47603	1.1343	.38138	4.6607
Stddev	.00385	.439	.00178	.0522	.00235	.0072	.00804	.0170
%RSD	.40470	.91770	.37626	.55421	.49431	.63621	2.1084	.36583
#1	.95410	47.399	.47476	9.4689	.47851	1.1426	.37301	4.6779
#2	.95101	48.274	.47244	9.3923	.47383	1.1311	.38207	4.6604
#3	.94645	47.904	.47126	9.3694	.47575	1.1293	.38905	4.6438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 0:45:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95197**	**.93702**	**.92263**	**.47643**	**.92448**	**.95160**	**.97507**
Stddev	.00473	.00838	.01693	.00143	.00063	.00382	.00104
%RSD	.49684	.89484	1.8346	.30081	.06802	.40092	.10630
#1	.95683	.92974	.90667	.47650	.92520	.95592	.97461
#2	.95171	.94619	.94038	.47783	.92404	.95023	.97626
#3	.94738	.93514	.92083	.47497	.92419	.94867	.97435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9087.0**	**54614.**	**2550.6**
Stddev	3.8	262.	13.9
%RSD	.04182	.47951	.54585
#1	9083.1	54480.	2543.1
#2	9087.3	54445.	2542.0
#3	9090.7	54915.	2566.6

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 0:49:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**.00400**	**.00139**	**.00122**	**.00267**	**.00003**	**.05025**	**.00011**
Stddev	.00251	.01163	.00213	.00125	.00165	.00007	.07513	.00012
%RSD	366.27	290.42	152.53	102.57	61.778	205.07	149.51	109.92
#1	-.00158	.01718	.00371	.00209	.00087	-.00002	.05175	.00020
#2	.00215	-.00482	-.00047	.00177	.00412	.00002	-.02562	.00016
#3	-.00262	-.00035	.00094	-.00021	.00303	.00011	.12463	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00016**	**-.00070**	**-.01893**	**.07755**	**.00375**	**.03834**	**-.00121**
Stddev	.00013	.00056	.00119	.00831	.13350	.00081	.08590	.00146
%RSD	171.58	345.66	170.55	43.884	172.14	21.694	224.04	120.18
#1	-.00006	.00072	-.00188	-.00946	.20051	.00374	-.05322	.00040
#2	-.00022	-.00040	.00049	-.02497	.09658	.00457	.05108	-.00244
#3	.00005	.00017	-.00070	-.02237	-.06444	.00295	.11717	-.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.01371**	**-.00046**	**-.00067**	**-.00131**	**.00551**	**-.00590**	**.00629**
Stddev	.00042	.03708	.00226	.00533	.00161	.00520	.00597	.00022
%RSD	217.83	270.34	492.60	796.20	122.75	94.376	101.19	3.4434
#1	.00027	-.00597	.00177	-.00182	-.00130	.00352	-.00607	.00632
#2	-.00054	.05648	-.00040	.00514	.00029	.00160	-.01178	.00649
#3	-.00030	-.00937	-.00275	-.00532	-.00293	.01141	.00016	.00606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 0:49:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00044	-.00315	-.00473	-.00034	.00003	.00018
Stddev	.00061	.00016	.00698	.00077	.00104	.00016	.00023
%RSD	455.77	35.798	221.58	16.356	310.41	589.77	124.55
#1	.00084	.00062	.00235	-.00465	.00045	.00020	.00037
#2	-.00027	.00040	-.00079	-.00401	.00006	-.00010	.00024
#3	-.00017	.00031	-.01101	-.00555	-.00152	-.00003	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9180.5	55417.	2549.1
Stddev	25.8	125.	21.9
%RSD	.28083	.22601	.86043
#1	9183.5	55274.	2554.0
#2	9204.7	55507.	2568.1
#3	9153.4	55471.	2525.1

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/29/2016 0:53:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00728	.16725	.00378	.07726	.01180	.00143	.35906	.00066
Stddev	.00137	.00666	.00178	.00289	.00157	.00004	.05069	.00023
%RSD	18.848	3.9821	47.186	3.7351	13.268	2.6821	14.119	34.256
#1	.00828	.16623	.00413	.07569	.01240	.00145	.41129	.00054
#2	.00785	.17436	.00184	.07549	.01298	.00145	.35585	.00053
#3	.00572	.16116	.00536	.08059	.01002	.00138	.31005	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00379	.00358	.00417	.08592	.63449	.08105	.42078	.00714
Stddev	.00037	.00061	.00084	.02959	.14149	.00217	.08217	.00569
%RSD	9.7874	16.945	20.280	34.437	22.301	2.6718	19.528	79.640
#1	.00409	.00347	.00508	.11985	.68708	.08034	.51284	.01145
#2	.00391	.00304	.00341	.07236	.74215	.08348	.39465	.00070
#3	.00338	.00424	.00401	.06554	.47423	.07932	.35486	.00927
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00745	.45225	.01495	.74739	.00741	.08220	.01330	.78982
Stddev	.00026	.01750	.00093	.01357	.00202	.00457	.00369	.00349
%RSD	3.4239	3.8702	6.2130	1.8157	27.283	5.5591	27.773	.44225
#1	.00762	.47114	.01588	.76086	.00541	.07740	.01396	.79161
#2	.00716	.43658	.01402	.74758	.00945	.08272	.01662	.79206
#3	.00758	.44903	.01495	.73372	.00736	.08649	.00932	.78580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/29/2016 0:53:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38988**	**.03952**	**.02710**	**.14360**	**.00710**	**.01660**	**.04091**
Stddev	.00438	.00037	.00041	.00006	.00032	.00023	.00032
%RSD	1.1233	.93136	1.5058	.04290	4.5228	1.3963	.77546
#1	.39331	.03950	.02704	.14359	.00677	.01680	.04127
#2	.39139	.03989	.02754	.14367	.00741	.01665	.04070
#3	.38495	.03916	.02673	.14354	.00712	.01634	.04075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9192.1**	**55588.**	**2554.1**
Stddev	31.9	43.	25.7
%RSD	.34691	.07750	1.0055
#1	9168.6	55539.	2529.3
#2	9179.3	55615.	2552.4
#3	9228.4	55612.	2580.5

Approved: June 29, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000196	0.047990	0.000000	1.000000
Al 308.215 {109}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000901	0.007651	0.000000	1.000000
As 189.042 {478}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000059	0.022693	0.000000	1.000000
B 249.678 {135}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000011	0.021306	0.000000	1.000000
Ba 455.403 { 74}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.025239	2.033102	0.000000	1.000000
Be 313.107 {108}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000137	0.920722	0.000000	1.000000
Ca 422.673 { 80}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000203	0.043704	0.000000	1.000000
Cd 228.802 {447}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000064	0.534006	0.000000	1.000000
Co 228.616 {447}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000100	0.338487	0.000000	1.000000
Cr 267.716 {126}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000351	0.055455	0.000000	1.000000
Cu 224.700 {450}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000309	0.117342	0.000000	1.000000
Fe 261.187 {129}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000420	0.020311	0.000000	1.000000
K 766.490 { 44}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.012203	0.064990	0.000000	1.000000
Li 670.784 { 50}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.010371	1.550017	0.000000	1.000000
Mg 279.079 {121}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000313	0.008074	0.000000	1.000000
Mn 257.610 {131}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000062	0.258342	0.000000	1.000000
Mo 202.030 {467}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000039	0.171526	0.000000	1.000000
Na 589.592 { 57}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.057864	0.176430	0.000000	1.000000
Ni 231.604 {446}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000833	0.127737	0.000000	1.000000
P 214.914 {457}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000207	0.012452	0.000000	1.000000
Pb 220.353 {453}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000812	0.059494	0.000000	1.000000
Sb 206.833 {463}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000048	0.028410	0.000000	1.000000
Se 196.090 {472}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000299	0.014866	0.000000	1.000000
Si 212.412 {459}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	0.001678	0.037859	0.000000	1.000000
Sn 189.989 {477}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	0.000047	0.065871	0.000000	1.000000
Sr 407.771 { 83}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	0.003016	3.365181	0.000000	1.000000
Ti 337.280 {100}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	-0.003144	0.113188	0.000000	1.000000
Tl 190.856 {477}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	-0.000461	0.027273	0.000000	1.000000
V 292.402 {115}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	-0.000106	0.064790	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	0.000213	0.399755	0.000000	1.000000
Zr 339.198 { 99}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	-0.018311	3.321003	0.000000	1.000000

Approved: June 29, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999904	0.000002	0.002705	0.009018	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999990	0.000002	0.011613	0.038710	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999844	0.000002	0.003811	0.012703	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999248	0.000004	0.003627	0.012092	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999993	0.000049	0.001401	0.004669	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999899	0.000004	0.000119	0.000398	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.998775	0.000137	0.053968	0.179895	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999581	0.000005	0.000328	0.001095	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999972	0.000003	0.000498	0.001659	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999958	0.000002	0.001490	0.004968	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999726	0.000009	0.001692	0.005639	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999702	0.000013	0.036905	0.123018	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999964	0.000176	0.118817	0.396058	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999889	0.000227	0.004949	0.016497	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999747	0.000018	0.104463	0.348210	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999861	0.000014	0.003389	0.011296	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999994	0.000004	0.000521	0.001736	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999966	0.000465	0.040386	0.134618	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999894	0.000006	0.001398	0.004661	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999991	0.000003	0.008925	0.029749	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.998411	0.000011	0.004359	0.014529	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999872	0.000003	0.005409	0.018030	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999294	0.000002	0.008435	0.028117	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999891	0.000018	0.002773	0.009244	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999973	0.000003	0.001075	0.003584	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999996	0.000063	0.000581	0.001938	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999125	0.000030	0.009303	0.031011	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999951	0.000001	0.003749	0.012498	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999987	0.000002	0.001236	0.004120	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999996	0.000007	0.000241	0.000803	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999991	0.000089	0.000706	0.002352	OK.	1.000000	0.000000	1	0

Approved: June 29, 2016

Sample Name: S0 Acquired: 6/29/2016 9:52:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00020**	**.00090**	**-.00006**	**.00001**	**.02524**	**.00014**	**-.00021**
Stddev	.00004	.00001	.00006	.00003	.00310	.00002	.00346
%RSD	22.411	.98399	104.57	240.96	12.265	12.424	1673.7
#1	-.00015	.00091	-.00011	.00003	.02283	.00015	.00154
#2	-.00020	.00091	-.00007	.00002	.02415	.00012	-.00419
#3	-.00024	.00089	.00001	-.00002	.02873	.00014	.00203

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00006**	**-.00010**	**.00035**	**-.00031**	**-.00042**	**-.01221**	**-.01037**
Stddev	.00014	.00018	.00006	.00025	.00031	.00332	.00949
%RSD	221.14	179.29	16.915	81.782	72.829	27.169	91.545
#1	.00008	-.00028	.00039	-.00014	-.00014	-.01249	-.00990
#2	-.00020	-.00009	.00038	-.00060	-.00038	-.01537	-.02008
#3	-.00007	.00007	.00028	-.00019	-.00074	-.00876	-.00112

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00031**	**.00006**	**-.00004**	**-.05787**	**-.00083**	**-.00021**	**-.00081**
Stddev	.00048	.00065	.00007	.00436	.00011	.00003	.00011
%RSD	153.72	1050.1	186.66	7.5353	12.837	16.794	13.738
#1	.00023	.00081	.00004	-.06291	-.00075	-.00022	-.00087
#2	-.00047	-.00032	-.00006	-.05532	-.00080	-.00023	-.00089
#3	-.00069	-.00031	-.00010	-.05539	-.00095	-.00017	-.00068

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00005**	**-.00030**	**.00168**	**.00005**	**.00302**	**-.00314**	**-.00046**
Stddev	.00012	.00011	.00005	.00005	.00223	.00113	.00011
%RSD	247.95	37.856	3.1434	111.20	73.864	36.032	23.262
#1	-.00008	-.00022	.00167	.00006	.00519	-.00401	-.00048
#2	.00016	-.00025	.00173	.00009	.00074	-.00186	-.00056
#3	.00007	-.00043	.00163	-.00001	.00311	-.00356	-.00034

Approved: June 29, 2016

Sample Name: S0 Acquired: 6/29/2016 9:52:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**-.00011**	**.00021**	**-.01831**
Stddev	.00008	.00009	.00440
%RSD	72.585	40.463	24.022
#1	-.00012	.00024	-.01431
#2	-.00002	.00012	-.01760
#3	-.00018	.00028	-.02302
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9115.5**	**54884.**	**2480.1**
Stddev	24.2	210.	22.3
%RSD	.26510	.38244	.90045
#1	9143.2	55110.	2454.9
#2	9099.0	54695.	2497.5
#3	9104.3	54847.	2488.0

Approved: June 29, 2016

Sample Name: S1 Acquired: 6/29/2016 9:55:58 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00003**	**.00149**	**.04238**	**.00061**	**.00581**	**.00027**	**.00038**
Stddev	.00014	.00004	.00174	.00001	.00174	.00016	.00008
%RSD	493.35	2.7596	4.1174	2.1805	29.926	60.533	21.804
#1	-.00006	.00145	.04420	.00060	.00395	.00044	.00048
#2	.00012	.00150	.04221	.00062	.00611	.00027	.00032
#3	-.00015	.00154	.04073	.00062	.00739	.00011	.00035

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00054**	**.00038**	**-.00008**	**.01707**	**.00101**	**.00131**	**.01790**
Stddev	.00006	.00006	.00059	.00268	.00063	.00008	.00342
%RSD	10.750	15.855	770.56	15.692	61.961	6.4456	19.090
#1	.00058	.00044	.00001	.01723	.00042	.00131	.02178
#2	.00048	.00033	-.00071	.01966	.00096	.00140	.01661
#3	.00057	.00035	.00047	.01431	.00167	.00123	.01532

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00043**	**.00074**	**-.00031**	**.00040**	**.00286**	**.00052**	**.02991**
Stddev	.00015	.00014	.00022	.00001	.00006	.00003	.00266
%RSD	34.679	18.970	71.060	2.7952	2.0014	6.7309	8.8928
#1	-.00037	.00078	-.00038	.00039	.00280	.00056	.02685
#2	-.00033	.00086	-.00049	.00040	.00291	.00050	.03167
#3	-.00061	.00059	-.00006	.00041	.00287	.00050	.03120

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00153**	**.00043**	**.00328**	**.00747**
Stddev	.00060	.00005	.00017	.00219
%RSD	39.113	10.913	5.1911	29.317
#1	-.00220	.00047	.00332	.00993
#2	-.00136	.00043	.00342	.00678
#3	-.00104	.00038	.00309	.00571

Approved: June 29, 2016

Sample Name: S1 Acquired: 6/29/2016 9:55:58 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9108.0**	**54989.**	**2477.7**
Stddev	25.7	207.	10.2
%RSD	.28175	.37676	.41037
#1	9129.4	55084.	2488.2
#2	9079.6	54752.	2467.9
#3	9115.0	55132.	2477.2

Approved: June 29, 2016

Sample Name: S2 Acquired: 6/29/2016 9:59:53 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00016	.00216	.00012	.00027	.05721	.00091	.00981
Stddev	.00014	.00005	.00001	.00002	.00061	.00004	.00076
%RSD	87.206	2.3473	6.3239	6.2998	1.0584	4.4038	7.7890
#1	.00026	.00210	.00012	.00029	.05687	.00087	.01007
#2	.00000	.00220	.00012	.00026	.05686	.00092	.01041
#3	.00021	.00218	.00011	.00026	.05791	.00095	.00895

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00042	.00093	.00077	.00069	.00085	.03865	.00938
Stddev	.00028	.00003	.00003	.00001	.00045	.00490	.00149
%RSD	66.365	3.0403	3.7171	1.8776	53.045	12.668	15.907
#1	.00059	.00096	.00074	.00069	.00137	.03348	.00933
#2	.00059	.00091	.00077	.00070	.00064	.04321	.01090
#3	.00010	.00092	.00080	.00067	.00054	.03926	.00792

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00058	.00168	.00261	.09115	.00006	.00175	-.00031
Stddev	.00098	.00052	.00014	.00432	.00032	.00013	.00028
%RSD	167.86	31.183	5.3329	4.7388	537.39	7.2792	90.400
#1	.00132	.00108	.00264	.08842	-.00027	.00190	.00000
#2	.00095	.00192	.00273	.09613	.00008	.00165	-.00039
#3	-.00052	.00204	.00246	.08890	.00036	.00170	-.00053

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00056	-.00025	.00443	.00103	.05569	-.00158	-.00025
Stddev	.00015	.00008	.00005	.00004	.00034	.00116	.00005
%RSD	27.350	31.837	1.1615	4.3714	.60840	73.502	21.152
#1	.00073	-.00018	.00438	.00107	.05552	-.00032	-.00020
#2	.00053	-.00034	.00448	.00102	.05547	-.00180	-.00030
#3	.00042	-.00024	.00443	.00099	.05608	-.00261	-.00024

Approved: June 29, 2016

Sample Name: S2 Acquired: 6/29/2016 9:59:53 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00098	.00643	.03194
Stddev	.00008	.00014	.00127
%RSD	8.1381	2.0985	3.9732
#1	.00089	.00650	.03225
#2	.00102	.00652	.03054
#3	.00104	.00628	.03302

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9104.6	54986.	2500.4
Stddev	11.8	96.	11.1
%RSD	.13007	.17414	.44486
#1	9116.7	54945.	2501.3
#2	9093.1	55096.	2488.9
#3	9103.9	54918.	2511.1

Approved: June 29, 2016

Sample Name: S3 Acquired: 6/29/2016 10:03:48 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01869	.07766	.00885	.01052	2.0517	.04687	.42972	.02883
Stddev	.00010	.00016	.00008	.00004	.0032	.00034	.00080	.00010
%RSD	.55151	.20479	.90829	.38019	.15653	.72788	.18609	.33451
#1	.01881	.07784	.00891	.01051	2.0489	.04676	.43025	.02887
#2	.01863	.07754	.00876	.01048	2.0510	.04660	.42880	.02890
#3	.01863	.07761	.00888	.01056	2.0552	.04725	.43010	.02872

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06718	.02796	.05899	.08098	3.2121	1.5387	.08004	.12886
Stddev	.00017	.00020	.00014	.00085	.0066	.0107	.00043	.00031
%RSD	.25123	.72026	.24482	1.0474	.20656	.69238	.54007	.24346
#1	.06716	.02788	.05915	.08049	3.2116	1.5363	.07955	.12919
#2	.06703	.02782	.05893	.08195	3.2056	1.5293	.08018	.12857
#3	.06736	.02819	.05888	.08048	3.2189	1.5503	.08038	.12881

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.17205	8.6822	.06315	.12174	.02914	.03341	.00565	.19356
Stddev	.00031	.0256	.00007	.00018	.00011	.00021	.00007	.00013
%RSD	.18051	.29494	.10895	.14761	.36256	.62587	1.1963	.06718
#1	.17198	8.6568	.06317	.12178	.02917	.03341	.00571	.19347
#2	.17178	8.6819	.06321	.12154	.02922	.03320	.00558	.19350
#3	.17239	8.7080	.06307	.12189	.02902	.03362	.00566	.19371

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06591	3.3569	.10885	.01218	.06423	.39984	3.3046
Stddev	.00009	.0081	.00139	.00005	.00041	.00013	.0223
%RSD	.13520	.24258	1.2796	.40879	.63272	.03282	.67478
#1	.06594	3.3482	.10985	.01212	.06402	.39998	3.2853
#2	.06581	3.3581	.10726	.01221	.06397	.39981	3.2995
#3	.06598	3.3643	.10945	.01220	.06470	.39972	3.3290

Approved: June 29, 2016

Sample Name: S3 Acquired: 6/29/2016 10:03:48 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8936.5**	**53607.**	**2459.5**
Stddev	17.8	172.	16.5
%RSD	.19869	.32046	.67053
#1	8948.3	53558.	2468.9
#2	8916.1	53798.	2469.2
#3	8945.2	53465.	2440.5

Approved: June 29, 2016

Sample Name: S4 Acquired: 6/29/2016 10:07:26 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03809	.15568	.01806	.02127	4.0977	.09410	.87546	.05845
Stddev	.00006	.00018	.00005	.00005	.0047	.00010	.00176	.00012
%RSD	.15008	.11845	.28737	.24709	.11559	.10855	.20067	.20874
#1	.03804	.15555	.01806	.02127	4.0931	.09422	.87715	.05832
#2	.03808	.15589	.01812	.02132	4.0975	.09404	.87365	.05856
#3	.03815	.15560	.01802	.02122	4.1026	.09405	.87559	.05848

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13549	.05605	.11769	.16222	6.5100	3.0957	.16128	.25943
Stddev	.00014	.00010	.00021	.00068	.0186	.0116	.00066	.00120
%RSD	.10476	.18095	.18082	.41633	.28563	.37530	.40965	.46423
#1	.13535	.05603	.11756	.16145	6.4930	3.0828	.16069	.25809
#2	.13564	.05616	.11759	.16267	6.5070	3.0989	.16199	.25977
#3	.13547	.05595	.11794	.16256	6.5298	3.1054	.16114	.26043

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.34251	17.654	.12703	.24567	.05867	.06706	.01164	.38042
Stddev	.00035	.052	.00035	.00016	.00046	.00002	.00006	.00039
%RSD	.10335	.29675	.27610	.06413	.78699	.02879	.52045	.10268
#1	.34211	17.621	.12664	.24575	.05814	.06708	.01160	.38040
#2	.34262	17.626	.12712	.24549	.05886	.06704	.01160	.38083
#3	.34279	17.714	.12732	.24578	.05900	.06708	.01171	.38004

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13155	6.7464	.22309	.02436	.12935	.79951	6.6243
Stddev	.00008	.0203	.00179	.00008	.00009	.00117	.0174
%RSD	.06203	.30098	.80453	.32304	.06859	.14600	.26196
#1	.13147	6.7274	.22250	.02431	.12945	.79836	6.6092
#2	.13163	6.7440	.22165	.02433	.12931	.79947	6.6432
#3	.13155	6.7678	.22510	.02445	.12929	.80069	6.6204

Approved: June 29, 2016

Sample Name: S4 Acquired: 6/29/2016 10:07:26 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8921.2**	**53238.**	**2473.0**
Stddev	18.3	108.	7.0
%RSD	.20479	.20318	.28323
#1	8919.4	53202.	2476.9
#2	8903.9	53152.	2464.9
#3	8940.3	53359.	2477.3

Approved: June 29, 2016

Sample Name: ICV Acquired: 6/29/2016 10:11:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40442	10.286	.41098	.50592	1.0366	.05070	10.092
Stddev	.00330	.017	.00346	.00271	.0026	.00003	.054
%RSD	.81540	.16712	.84291	.53476	.24579	.06427	.53421
#1	.40613	10.305	.41012	.50573	1.0391	.05071	10.144
#2	.40062	10.279	.41479	.50331	1.0340	.05067	10.037
#3	.40651	10.273	.40802	.50871	1.0367	.05073	10.095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05076	.20318	.50598	.50845	4.0917	51.004	1.0197
Stddev	.00051	.00054	.00159	.00095	.0399	.219	.0093
%RSD	1.0116	.26720	.31500	.18732	.97540	.42916	.91103
#1	.05134	.20361	.50423	.50846	4.0711	51.243	1.0299
#2	.05035	.20336	.50734	.50940	4.0664	50.814	1.0175
#3	.05060	.20257	.50638	.50749	4.1377	50.954	1.0117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.296	.51552	.96471	50.940	.50720	9.6966	.51063
Stddev	.141	.00366	.00146	.130	.00148	.0073	.00218
%RSD	1.3690	.71030	.15108	.25486	.29239	.07577	.42637
#1	10.212	.51660	.96636	51.086	.50872	9.6973	.50842
#2	10.216	.51144	.96419	50.892	.50575	9.7036	.51071
#3	10.458	.51852	.96359	50.840	.50712	9.6890	.51277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 29, 2016

Sample Name: ICV Acquired: 6/29/2016 10:11:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2312**	**.40824**	F **4.7353**	**1.0396**	**1.0085**	**1.0166**	**.51532**
Stddev	.0046	.00693	.0040	.0016	.0042	.0078	.00390
%RSD	.37161	1.6986	.08505	.15478	.41422	.76488	.75613
#1	1.2294	.40991	4.7343	1.0415	1.0119	1.0250	.51933
#2	1.2364	.41418	4.7320	1.0387	1.0098	1.0096	.51509
#3	1.2278	.40062	4.7398	1.0387	1.0038	1.0153	.51155
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			5.0000				
Range			-5.0000%				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0066**	**1.0167**	**1.0346**
Stddev	.0019	.0012	.0034
%RSD	.19382	.12004	.33211
#1	1.0066	1.0180	1.0376
#2	1.0085	1.0156	1.0352
#3	1.0046	1.0166	1.0308
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9016.8**	**54198.**	**2484.7**
Stddev	34.4	67.	10.4
%RSD	.38098	.12315	.41934
#1	8978.8	54206.	2472.8
#2	9045.6	54260.	2489.2
#3	9026.1	54128.	2492.2

Approved: June 29, 2016

Sample Name: ICB Acquired: 6/29/2016 10:14:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00201	.01836	-.00141	.00781	.00152	-.00001	.08366
Stddev	.00082	.00200	.00208	.00229	.00035	.00006	.01618
%RSD	40.698	10.891	147.26	29.310	23.077	485.21	19.340
#1	.00256	.01613	-.00355	.01041	.00168	.00003	.10066
#2	.00240	.02000	-.00131	.00608	.00177	.00002	.08186
#3	.00107	.01894	.00061	.00695	.00112	-.00008	.06845
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00008	-.00032	.00181	-.01955	.27921	.00178
Stddev	.00029	.00013	.00086	.00127	.03923	.09246	.00456
%RSD	372.03	169.87	270.02	70.363	200.64	33.116	256.70
#1	.00039	.00006	-.00040	.00064	-.02314	.17263	-.00171
#2	-.00019	-.00020	-.00113	.00162	.02135	.33788	.00694
#3	.00003	-.00008	.00058	.00317	-.05688	.32713	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.06410	.00147	.00078	.10419	.00112	F .01118	.00327
Stddev	.06961	.00309	.00063	.03713	.00057	.00173	.00107
%RSD	108.59	209.72	81.088	35.632	50.549	15.489	32.666
#1	.00071	.00251	.00146	.09352	.00159	.01283	.00317
#2	-.05535	-.00200	.00068	.14549	.00128	.00938	.00226
#3	-.13768	.00391	.00020	.07357	.00049	.01133	.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 29, 2016

Sample Name: ICB Acquired: 6/29/2016 10:14:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	-.00340	-.01473	.00060	.00124	.00125	.00059
Stddev	.00143	.00785	.00191	.00077	.00074	.00777	.00202
%RSD	166.00	230.78	13.002	128.34	59.622	619.73	344.29
#1	-.00250	-.01070	-.01252	.00136	.00133	.00946	.00101
#2	-.00011	.00490	-.01567	.00061	.00193	.00028	.00236
#3	.00003	-.00441	-.01599	-.00017	.00046	-.00599	-.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00253	.00100	.00081
Stddev	.00074	.00035	.00047
%RSD	29.384	34.824	58.912
#1	.00232	.00132	.00069
#2	.00335	.00106	.00040
#3	.00191	.00063	.00133
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9084.4	54980.	2488.4
Stddev	135.8	68.	2.1
%RSD	1.4949	.12377	.08443
#1	8930.5	55059.	2490.1
#2	9135.2	54945.	2489.0
#3	9187.4	54938.	2486.1

Approved: June 29, 2016

Sample Name: LLICV Acquired: 6/29/2016 10:18:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00872	.17063	.00885	.08373	.00860	.00157	.42073	.00073
Stddev	.00123	.00534	.00231	.00067	.00138	.00006	.03113	.00038
%RSD	14.065	3.1304	26.064	.79719	16.041	4.0340	7.3981	51.856
#1	.00819	.17652	.00868	.08307	.00712	.00164	.38707	.00037
#2	.01012	.16609	.00663	.08440	.00885	.00152	.42664	.00113
#3	.00785	.16929	.01123	.08372	.00984	.00155	.44848	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00391	.00455	.00624	.10276	1.0619	.07782	.31322	.00827
Stddev	.00043	.00092	.00112	.03246	.0112	.00430	.09347	.00037
%RSD	10.917	20.252	17.906	31.585	1.0560	5.5298	29.841	4.5346
#1	.00438	.00353	.00531	.07196	1.0586	.07424	.21886	.00787
#2	.00354	.00533	.00748	.09967	1.0743	.07662	.31502	.00831
#3	.00383	.00480	.00594	.13665	1.0526	.08260	.40577	.00862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00805	.42286	.01644	.79611	.01299	.08354	.01434	.72436
Stddev	.00028	.00902	.00098	.00141	.00416	.00232	.01207	.00478
%RSD	3.4369	2.1335	5.9790	.17658	32.054	2.7721	84.200	.65952
#1	.00810	.43087	.01534	.79702	.01757	.08599	.00418	.72986
#2	.00776	.42462	.01724	.79449	.01196	.08325	.01115	.72188
#3	.00831	.41309	.01675	.79681	.00943	.08139	.02769	.72132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLICV Acquired: 6/29/2016 10:18:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40263	.04084	.02518	.15168	.00937	.01675	.04172
Stddev	.00091	.00036	.00443	.00197	.00116	.00020	.00069
%RSD	.22645	.89206	17.576	1.3007	12.341	1.2016	1.6651
#1	.40366	.04125	.02007	.15388	.00804	.01687	.04096
#2	.40231	.04055	.02772	.15110	.01016	.01687	.04233
#3	.40192	.04073	.02775	.15006	.00991	.01652	.04187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9183.9	55097.	2506.7
Stddev	28.5	155.	11.4
%RSD	.31037	.28188	.45399
#1	9209.7	55255.	2496.9
#2	9153.3	55090.	2504.1
#3	9188.9	54945.	2519.2

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 10:22:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**256.78**	**-.00093**	**.01473**	**-.00127**	**-.00007**	**241.44**	**-.00048**
Stddev	.00094	.72	.00227	.00118	.00156	.00011	1.66	.00020
%RSD	111.40	.27959	242.95	8.0158	122.68	145.05	.68673	41.517
#1	-.00043	256.01	-.00202	.01467	-.00302	.00001	241.06	-.00037
#2	-.00191	256.91	.00168	.01595	-.00076	-.00019	243.25	-.00071
#3	-.00018	257.43	-.00246	.01359	-.00003	-.00004	240.00	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00193**	**-.00215**	**-.00098**	**96.233**	**.18223**	**.00799**	**245.73**	**.00118**
Stddev	.00010	.00124	.00101	.819	.15413	.00679	1.81	.00175
%RSD	5.1935	57.417	102.42	.85122	84.579	84.964	.73485	148.16
#1	-.00182	-.00123	-.00147	96.033	.32674	.01197	246.38	.00301
#2	-.00197	-.00168	.00018	97.134	.19995	.01185	247.11	-.00048
#3	-.00201	-.00356	-.00165	95.533	.02001	.00015	243.68	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00086**	**.01054**	**-.00048**	**.04095**	**-.00008**	**-.00728**	**.00425**	**-.01488**
Stddev	.00034	.02123	.00188	.01874	.00416	.00372	.00642	.00348
%RSD	39.777	201.47	393.65	45.749	5111.4	51.146	151.05	23.403
#1	-.00126	.02786	-.00189	.05055	.00446	-.00298	-.00308	-.01456
#2	-.00067	.01688	-.00120	.05295	-.00099	-.00943	.00887	-.01156
#3	-.00065	-.01314	.00166	.01936	-.00371	-.00943	.00697	-.01850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 10:22:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00073**	**.02193**	**-.00014**	**-.00166**	**-.00668**	**.00332**
Stddev	.00061	.00100	.00144	.00351	.00076	.00007	.00048
%RSD	112.55	136.67	6.5637	2422.7	45.900	1.0941	14.413
#1	-.00076	.00033	.02256	-.00301	-.00254	-.00665	.00376
#2	-.00100	-.00001	.02029	-.00120	-.00118	-.00663	.00339
#3	.00015	.00186	.02296	.00377	-.00126	-.00677	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8736.9**	**52049.**	**2498.5**
Stddev	24.9	58.	18.1
%RSD	.28538	.11097	.72548
#1	8711.7	52105.	2503.9
#2	8737.5	52051.	2478.3
#3	8761.6	51990.	2513.3

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 10:26:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50532	257.64	.24041	.01593	.24782	.25031	243.08	.48094
Stddev	.00171	.66	.00247	.00567	.00099	.00074	.60	.00095
%RSD	.33818	.25546	1.0272	35.576	.40061	.29554	.24559	.19763
#1	.50548	258.11	.23817	.01042	.24888	.25076	243.61	.48009
#2	.50694	257.93	.23999	.01562	.24691	.25072	242.43	.48077
#3	.50354	256.89	.24306	.02174	.24768	.24946	243.19	.48196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23496	.24688	.24059	94.984	5.3181	.00767	241.98	.24053
Stddev	.00079	.00037	.00198	.300	.0452	.00698	.24	.00042
%RSD	.33424	.14899	.82504	.31541	.84893	90.971	.09967	.17601
#1	.23490	.24729	.24016	95.186	5.3643	.00114	242.07	.24026
#2	.23577	.24675	.24276	94.640	5.2741	.00684	242.17	.24032
#3	.23421	.24659	.23886	95.126	5.3159	.01502	241.71	.24102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	5.2047	.46980	.03085	.48046	.48169	.25661	-.00890
Stddev	.00021	.0640	.00232	.00572	.00164	.00298	.00285	.00179
%RSD	46.426	1.2289	.49319	18.555	.34062	.61826	1.1093	20.104
#1	-.00036	5.2773	.46718	.02681	.48229	.48409	.25349	-.01095
#2	-.00069	5.1806	.47063	.03740	.47996	.48262	.25727	-.00770
#3	-.00031	5.1564	.47158	.02833	.47913	.47836	.25907	-.00803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 10:26:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.00077	.02203	.45802	.24979	.46986	.00245
Stddev	.00180	.00022	.00309	.00630	.00104	.00013	.00049
%RSD	408.40	28.979	14.011	1.3750	.41683	.02831	19.880
#1	.00248	.00101	.01849	.45999	.24918	.46991	.00235
#2	-.00021	.00058	.02346	.46310	.24919	.46995	.00202
#3	-.00094	.00070	.02414	.45097	.25099	.46970	.00298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8714.2	52027.	2490.8
Stddev	13.4	71.	10.7
%RSD	.15385	.13668	.42866
#1	8720.3	52047.	2479.5
#2	8723.4	51948.	2492.0
#3	8698.8	52086.	2500.8

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 10:29:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38545	9.7565	.37968	.47556	.96130	.04802	9.7563	.04801
Stddev	.00149	.0491	.00049	.00509	.00395	.00037	.1577	.00039
%RSD	.38566	.50355	.12878	1.0695	.41099	.76364	1.6159	.82135
#1	.38586	9.8125	.38024	.47673	.96416	.04784	9.8713	.04814
#2	.38380	9.7209	.37931	.47996	.96295	.04844	9.8211	.04833
#3	.38669	9.7360	.37950	.46999	.95679	.04777	9.5766	.04757
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19120	.47822	.47994	3.9564	48.202	.97060	9.9602	.48155
Stddev	.00043	.00297	.00073	.0398	.102	.01545	.2137	.00456
%RSD	.22626	.62097	.15125	1.0060	.21204	1.5918	2.1455	.94698
#1	.19093	.47906	.48045	4.0011	48.250	.98467	10.152	.47813
#2	.19170	.48067	.47911	3.9248	48.272	.97306	9.9994	.47980
#3	.19096	.47491	.48026	3.9433	48.085	.95407	9.7296	.48673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96357	47.886	.48088	9.5345	.47920	1.1504	.38429	4.8575
Stddev	.00295	.120	.00075	.0224	.00446	.0029	.00064	.0081
%RSD	.30570	.24971	.15493	.23468	.93138	.25485	.16589	.16756
#1	.96520	47.982	.48163	9.5372	.48008	1.1536	.38445	4.8590
#2	.96534	47.923	.48085	9.5554	.47437	1.1497	.38359	4.8649
#3	.96017	47.752	.48014	9.5109	.48317	1.1478	.38483	4.8488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 10:29:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95817	.96154	.97251	.48359	.95998	.95642	.95740
Stddev	.00212	.00517	.00473	.00288	.00538	.00175	.00901
%RSD	.22176	.53814	.48620	.59624	.56006	.18293	.94112
#1	.95810	.96589	.97320	.48316	.96144	.95616	.96570
#2	.96032	.96292	.97685	.48094	.96448	.95481	.95868
#3	.95607	.95582	.96747	.48666	.95403	.95828	.94782
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9329.2	56053.	2575.1
Stddev	2.5	209.	17.9
%RSD	.02702	.37346	.69466
#1	9328.4	55913.	2557.2
#2	9332.1	56294.	2575.2
#3	9327.3	55953.	2592.9

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 10:33:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00159**	**.04378**	**.00092**	**.00232**	**.00099**	**.00010**	**.10123**	**-.00004**
Stddev	.00231	.01305	.00241	.00272	.00047	.00006	.02043	.00004
%RSD	145.46	29.810	262.06	117.36	47.745	62.131	20.182	114.14
#1	.00341	.05304	.00368	.00105	.00154	.00016	.12224	-.00004
#2	-.00101	.04945	-.00075	.00543	.00069	.00004	.08144	-.00008
#3	.00238	.02885	-.00018	.00046	.00075	.00011	.10001	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00062**	**.00170**	**-.00155**	**.25334**	**.00056**	**-.00187**	**.00192**
Stddev	.00020	.00064	.00189	.00533	.06368	.00243	.07462	.00456
%RSD	222.29	102.61	111.38	344.66	25.136	433.45	3980.0	237.69
#1	.00014	.00070	.00306	-.00090	.21902	-.00061	-.07603	-.00263
#2	-.00021	.00122	.00250	-.00717	.21418	.00336	-.00280	.00190
#3	-.00020	-.00005	-.00046	.00343	.32682	-.00107	.07321	.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00065**	**.04437**	**.00005**	**.00934**	**.00350**	**.00059**	**.00215**	**-.01774**
Stddev	.00011	.04353	.00107	.00336	.00137	.00309	.00560	.00305
%RSD	17.530	98.104	2366.4	36.014	39.191	524.62	259.85	17.208
#1	.00066	.06944	-.00035	.01067	.00499	.00416	.00846	-.01471
#2	.00053	.06957	.00126	.01184	.00322	-.00108	.00023	-.01769
#3	.00076	-.00589	-.00077	.00552	.00229	-.00131	-.00222	-.02081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 10:33:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00049**	**.00458**	**.00189**	**.00092**	**.00197**	**.00039**
Stddev	.00025	.00045	.00174	.00327	.00053	.00007	.00094
%RSD	77.695	91.451	38.085	173.43	57.187	3.4706	242.63
#1	-.00060	.00046	.00257	.00351	.00093	.00199	.00131
#2	-.00021	.00094	.00553	-.00188	.00039	.00202	.00043
#3	-.00014	.00005	.00564	.00403	.00144	.00189	-.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9485.3**	**57413.**	**2581.2**
Stddev	17.0	57.	12.7
%RSD	.17947	.09957	.49264
#1	9465.7	57380.	2584.4
#2	9493.7	57380.	2592.0
#3	9496.5	57479.	2567.2

Approved: June 29, 2016

Sample Name: PBW FB Acquired: 6/29/2016 10:37:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.00760	.00035	.00218	-.00053	-.00002	.03562	-.00013
Stddev	.00198	.00612	.00271	.00167	.00078	.00003	.04893	.00014
%RSD	364.60	80.490	783.97	76.555	147.09	135.34	137.36	102.88
#1	.00122	.01052	-.00215	.00135	-.00070	-.00003	.06148	-.00018
#2	-.00015	.01171	.00323	.00108	-.00121	-.00005	-.02081	.00002
#3	-.00269	.00057	-.00005	.00409	.00032	.00001	.06620	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	-.00052	.00169	.01996	.05997	-.00167	-.04418	.00199
Stddev	.00020	.00118	.00100	.00706	.14566	.00254	.04322	.00383
%RSD	82.183	224.92	58.747	35.368	242.89	152.22	97.836	192.33
#1	-.00012	.00029	.00069	.02783	.21959	-.00044	-.07189	.00586
#2	-.00014	.00001	.00171	.01789	-.06574	-.00459	-.06627	.00191
#3	-.00048	-.00188	.00268	.01417	.02605	.00002	.00563	-.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.05592	.00048	.00581	.00515	-.00331	.00202	-.00473
Stddev	.00015	.04015	.00103	.00347	.00220	.00443	.00614	.00147
%RSD	47.719	71.802	215.60	59.752	42.733	133.91	303.26	31.020
#1	.00043	.03372	-.00059	.00869	.00763	.00172	.00313	-.00379
#2	.00015	.10227	.00055	.00195	.00437	-.00500	.00753	-.00642
#3	.00034	.03177	.00147	.00678	.00344	-.00663	-.00459	-.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW FB Acquired: 6/29/2016 10:37:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00049	.00691	.00109	.00028	.00077	.00045
Stddev	.00124	.00017	.00278	.00259	.00091	.00020	.00020
%RSD	344.68	34.296	40.227	238.75	329.09	25.996	44.233
#1	-.00012	.00038	.00665	.00014	.00131	.00066	.00068
#2	-.00057	.00041	.00981	-.00090	-.00042	.00066	.00029
#3	.00176	.00069	.00427	.00402	-.00006	.00100	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9661.3	58506.	2641.9
Stddev	8.4	39.	4.1
%RSD	.08722	.06636	.15529
#1	9654.6	58462.	2643.1
#2	9670.8	58536.	2637.3
#3	9658.6	58521.	2645.2

Approved: June 29, 2016

Sample Name: LCSW FB Acquired: 6/29/2016 10:41:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20370**	**5.1376**	**.20101**	**.98179**	**.51698**	**.02494**	**5.2688**	**.02554**
Stddev	.00114	.0040	.00301	.00487	.00277	.00006	.0279	.00009
%RSD	.55949	.07726	1.4964	.49570	.53639	.22903	.52991	.34850
#1	.20502	5.1375	.20328	.97672	.51912	.02487	5.2372	.02563
#2	.20306	5.1337	.19760	.98220	.51797	.02495	5.2792	.02545
#3	.20303	5.1417	.20215	.98643	.51385	.02499	5.2900	.02553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10323**	**.25700**	**.25880**	**2.0709**	**25.781**	**.52295**	**5.1906**	**.26094**
Stddev	.00023	.00047	.00162	.0098	.125	.00625	.1782	.00370
%RSD	.22183	.18355	.62622	.47068	.48649	1.1960	3.4341	1.4198
#1	.10340	.25753	.25784	2.0688	25.869	.52659	5.3964	.26359
#2	.10297	.25685	.26067	2.0815	25.837	.52654	5.0906	.26253
#3	.10331	.25662	.25789	2.0624	25.638	.51573	5.0847	.25671
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52023**	**25.915**	**.25965**	**4.9668**	**.26247**	**.61292**	**.19435**	**2.4853**
Stddev	.00079	.143	.00151	.0220	.00148	.00281	.00301	.0027
%RSD	.15259	.55270	.58218	.44282	.56222	.45892	1.5506	.10988
#1	.51932	26.010	.26100	4.9735	.26381	.61059	.19229	2.4822
#2	.52060	25.985	.25802	4.9422	.26271	.61604	.19295	2.4875
#3	.52078	25.751	.25992	4.9846	.26089	.61213	.19781	2.4862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW FB Acquired: 6/29/2016 10:41:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51760**	**.52472**	**.51670**	**.26018**	**.51344**	**.51480**	**.00106**
Stddev	.00084	.00343	.00531	.00450	.00220	.00032	.00068
%RSD	.16154	.65377	1.0277	1.7311	.42871	.06150	64.585
#1	.51772	.52728	.52254	.25881	.51503	.51503	.00153
#2	.51671	.52607	.51216	.25652	.51437	.51492	.00028
#3	.51837	.52083	.51541	.26521	.51093	.51444	.00137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9014.6**	**54430.**	**2511.5**
Stddev	17.6	205.	22.8
%RSD	.19522	.37586	.90940
#1	9034.7	54306.	2501.7
#2	9006.8	54318.	2495.1
#3	9002.2	54666.	2537.6

Approved: June 29, 2016

Sample Name: L1606117701 Acquired: 6/29/2016 10:45:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.02570	.00379	.09957	.00036	.00012	.06954	.00009
Stddev	.00188	.01108	.00366	.00112	.00044	.00008	.05770	.00023
%RSD	502.08	43.121	96.396	1.1256	123.03	65.043	82.983	264.23
#1	-.00172	.03569	.00193	.10021	.00070	.00019	.08438	.00006
#2	.00093	.02763	.00801	.09827	.00052	.00004	.00586	-.00013
#3	.00192	.01378	.00145	.10022	-.00014	.00013	.11837	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00003	.00182	.03157	.25886	-.00017	-.03062	.00402
Stddev	.00021	.00044	.00154	.02412	.07495	.00077	.10924	.00214
%RSD	234.47	1384.7	84.513	76.424	28.952	444.60	356.80	53.262
#1	-.00009	-.00022	.00346	.03078	.34415	-.00011	-.10112	.00381
#2	.00031	.00047	.00041	.00784	.20352	.00056	-.08595	.00199
#3	.00004	-.00035	.00159	.05607	.22892	-.00098	.09522	.00625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00689	115.28	.00054	.01609	.00211	.00016	.00064	4.1138
Stddev	.00033	.89	.00124	.00512	.00208	.00316	.00335	.0042
%RSD	4.7528	.77547	231.01	31.846	98.898	1988.7	523.66	.10156
#1	.00714	114.59	.00118	.01368	.00303	-.00237	-.00302	4.1168
#2	.00652	116.29	-.00089	.01262	-.00028	.00370	.00140	4.1156
#3	.00702	114.95	.00133	.02198	.00356	-.00085	.00354	4.1090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117701 Acquired: 6/29/2016 10:45:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**-.00027**	**.00449**	**.00390**	**.00174**	**.04403**	**.00026**
Stddev	.00025	.00048	.01014	.00210	.00045	.00018	.00052
%RSD	55.323	177.85	226.06	53.721	25.860	.39798	196.34
#1	-.00048	-.00013	-.00582	.00168	.00123	.04416	.00086
#2	-.00019	-.00080	.01446	.00420	.00208	.04383	.00000
#3	-.00069	.00012	.00483	.00584	.00191	.04409	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9044.4**	**54361.**	**2502.1**
Stddev	23.6	58.	19.2
%RSD	.26040	.10713	.76910
#1	9021.8	54294.	2520.4
#2	9068.8	54392.	2482.1
#3	9042.5	54397.	2503.7

Approved: June 29, 2016

Sample Name: L1606117702S Acquired: 6/29/2016 10:49:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19530**	**4.8939**	**.19914**	**1.0404**	**.49612**	**.02417**	**5.0444**	**.02435**
Stddev	.00251	.0122	.00165	.0028	.00442	.00010	.0185	.00056
%RSD	1.2864	.24990	.82634	.27278	.89114	.40757	.36689	2.3025
#1	.19406	4.8978	.20076	1.0389	.50121	.02422	5.0389	.02499
#2	.19365	4.8802	.19917	1.0387	.49326	.02406	5.0651	.02396
#3	.19819	4.9038	.19747	1.0437	.49389	.02423	5.0294	.02411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09720**	**.24421**	**.24503**	**1.9907**	**24.978**	**.50490**	**4.9655**	**.24535**
Stddev	.00108	.00153	.00339	.0160	.316	.00383	.1207	.00378
%RSD	1.1061	.62627	1.3815	.80251	1.2655	.75893	2.4314	1.5417
#1	.09784	.24393	.24719	1.9872	25.343	.50799	5.0551	.24575
#2	.09779	.24284	.24678	1.9768	24.788	.50061	4.8282	.24891
#3	.09596	.24586	.24113	2.0081	24.803	.50609	5.0131	.24138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49956**	**136.35**	**.24473**	**4.8026**	**.24494**	**.58098**	**.18789**	**6.4038**
Stddev	.00321	1.15	.00190	.0434	.00352	.00719	.00523	.0341
%RSD	.64184	.84473	.77812	.90272	1.4356	1.2369	2.7839	.53200
#1	.50201	137.68	.24501	4.8241	.24136	.58754	.18314	6.4187
#2	.50073	135.72	.24648	4.8309	.24839	.58208	.18703	6.4279
#3	.49593	135.65	.24270	4.7526	.24507	.57330	.19349	6.3648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117702S Acquired: 6/29/2016 10:49:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48929	.50112	.49418	.24358	.48863	.53562	.00050
Stddev	.00591	.00300	.00180	.00026	.00134	.00435	.00021
%RSD	1.2084	.59800	.36509	.10578	.27453	.81172	41.703
#1	.49224	.50455	.49562	.24333	.48964	.53849	.00070
#2	.49314	.49899	.49215	.24357	.48711	.53774	.00054
#3	.48248	.49983	.49475	.24385	.48914	.53061	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9081.9	54484.	2525.1
Stddev	10.5	190.	32.2
%RSD	.11569	.34939	1.2735
#1	9086.1	54548.	2488.8
#2	9070.0	54633.	2536.5
#3	9089.7	54269.	2550.0

Approved: June 29, 2016

Sample Name: L1606117703SD Acquired: 6/29/2016 10:52:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19451**	**4.8952**	**.20314**	**1.0415**	**.49496**	**.02429**	**5.0340**	**.02406**
Stddev	.00108	.0218	.00109	.0053	.00293	.00021	.0434	.00009
%RSD	.55729	.44561	.53676	.50951	.59283	.88227	.86146	.35903
#1	.19551	4.8713	.20438	1.0360	.49820	.02412	4.9842	.02411
#2	.19335	4.9141	.20231	1.0465	.49419	.02454	5.0552	.02412
#3	.19466	4.9001	.20274	1.0421	.49248	.02423	5.0628	.02396
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09901**	**.24380**	**.24679**	**1.9923**	**25.016**	**.50362**	**4.9359**	**.24624**
Stddev	.00059	.00289	.00206	.0277	.040	.00536	.0290	.00314
%RSD	.59286	1.1873	.83568	1.3898	.15802	1.0648	.58693	1.2753
#1	.09948	.24100	.24820	1.9793	24.975	.50095	4.9342	.24285
#2	.09835	.24364	.24442	2.0240	25.054	.50013	4.9657	.24905
#3	.09920	.24678	.24775	1.9734	25.019	.50980	4.9078	.24681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50578**	**135.15**	**.24586**	**4.8228**	**.24334**	**.58373**	**.18718**	**6.3663**
Stddev	.00085	.49	.00076	.0032	.00233	.00442	.00776	.0382
%RSD	.16843	.36540	.31021	.06703	.95674	.75665	4.1467	.59942
#1	.50657	135.27	.24671	4.8249	.24602	.58882	.17991	6.3664
#2	.50589	135.58	.24561	4.8243	.24217	.58089	.19536	6.4044
#3	.50488	134.61	.24525	4.8190	.24183	.58147	.18626	6.3281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117703SD Acquired: 6/29/2016 10:52:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49637**	**.50255**	**.50979**	**.24641**	**.49557**	**.53975**	**.00058**
Stddev	.00126	.00135	.01203	.00206	.00096	.00059	.00047
%RSD	.25315	.26867	2.3607	.83654	.19399	.10848	80.198
#1	.49603	.50372	.49709	.24704	.49511	.54043	.00110
#2	.49776	.50287	.51125	.24808	.49492	.53942	.00044
#3	.49531	.50107	.52102	.24410	.49667	.53941	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9098.0**	**54719.**	**2550.7**
Stddev	23.7	61.	3.5
%RSD	.26096	.11196	.13807
#1	9075.7	54671.	2553.6
#2	9095.4	54699.	2546.8
#3	9123.0	54788.	2551.7

Approved: June 29, 2016

Sample Name: L16060114201 Acquired: 6/29/2016 10:56:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.05384	-.00032	.01684	.07761	-.00004	2.2488	.00021
Stddev	.00119	.00770	.00187	.00396	.00106	.00006	.0225	.00011
%RSD	415.52	14.296	577.94	23.515	1.3614	145.16	.99944	50.495
#1	.00096	.06269	-.00245	.01306	.07883	.00002	2.2683	.00009
#2	-.00140	.04866	.00040	.02096	.07698	-.00004	2.2538	.00025
#3	-.00041	.05019	.00108	.01650	.07701	-.00010	2.2242	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00590	.00097	.00195	4.6344	1.1664	.00930	1.6448	.22938
Stddev	.00022	.00098	.00114	.0386	.0250	.00305	.1018	.00282
%RSD	3.6669	101.51	58.513	.83227	2.1468	32.789	6.1907	1.2305
#1	.00612	.00192	.00228	4.6599	1.1924	.00816	1.7294	.23103
#2	.00587	.00101	.00068	4.5901	1.1645	.00698	1.6731	.23098
#3	.00569	-.00004	.00290	4.6534	1.1425	.01275	1.5318	.22612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	19.811	.00759	.07218	.00239	.00125	-.00008	15.664
Stddev	.00040	.035	.00122	.00329	.00158	.00636	.00432	.082
%RSD	128.61	.17766	16.039	4.5625	66.322	506.95	5476.0	.52147
#1	-.00014	19.840	.00899	.06838	.00176	.00486	-.00406	15.721
#2	.00062	19.822	.00680	.07423	.00121	-.00609	.00451	15.701
#3	.00046	19.772	.00697	.07394	.00419	.00499	-.00069	15.571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114201 Acquired: 6/29/2016 10:56:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.04063	.00787	.00205	.00169	.01008	.00074
Stddev	.00031	.00072	.00259	.00031	.00086	.00030	.00060
%RSD	130.29	1.7665	32.862	14.961	51.026	2.9613	81.471
#1	.00031	.04071	.01082	.00236	.00268	.01018	.00029
#2	-.00010	.04131	.00603	.00205	.00112	.01033	.00142
#3	.00050	.03988	.00675	.00174	.00127	.00975	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9265.1	56620.	2599.8
Stddev	32.3	57.	16.0
%RSD	.34816	.10067	.61596
#1	9300.8	56597.	2581.4
#2	9256.7	56685.	2607.4
#3	9237.9	56579.	2610.6

Approved: June 29, 2016

Sample Name: L16060114203 Acquired: 6/29/2016 11:00:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00198	.26266	-.00256	.01654	.04946	.00008	7.0396	.00052
Stddev	.00042	.01082	.00139	.00188	.00123	.00012	.0573	.00004
%RSD	21.424	4.1184	54.375	11.371	2.4882	142.01	.81409	7.7118
#1	.00178	.27101	-.00401	.01835	.05088	.00020	7.0973	.00051
#2	.00169	.25044	-.00243	.01669	.04881	.00009	7.0386	.00049
#3	.00247	.26653	-.00124	.01459	.04869	-.00004	6.9827	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	-.00005	.00274	3.9448	1.6398	.00224	1.1106	.20239
Stddev	.00010	.00092	.00066	.0326	.1612	.00458	.0425	.00281
%RSD	13.101	1790.3	24.128	.82696	9.8324	204.48	3.8273	1.3861
#1	.00073	.00101	.00240	3.9720	1.8259	-.00214	1.0675	.19923
#2	.00088	-.00060	.00232	3.9087	1.5415	.00186	1.1525	.20459
#3	.00069	-.00056	.00350	3.9539	1.5520	.00700	1.1119	.20335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	4.1156	.00378	.08391	.00282	-.00087	-.00174	5.1219
Stddev	.00015	.0406	.00051	.00804	.00259	.00234	.00831	.0495
%RSD	20.086	.98643	13.451	9.5772	91.737	267.84	478.76	.96697
#1	.00063	4.1179	.00323	.07573	.00011	.00046	.00046	5.1453
#2	.00071	4.1550	.00423	.08423	.00527	.00049	-.01093	5.1553
#3	.00092	4.0739	.00388	.09179	.00309	-.00357	.00526	5.0650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114203 Acquired: 6/29/2016 11:00:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.05567	.01313	.00192	.00335	.00373	.00101
Stddev	.00129	.00058	.00273	.00330	.00039	.00020	.00009
%RSD	430.22	1.0337	20.797	172.02	11.633	5.2474	8.8281
#1	.00027	.05537	.01143	.00545	.00300	.00376	.00109
#2	.00060	.05633	.01628	.00140	.00377	.00352	.00103
#3	-.00177	.05531	.01168	-.00109	.00328	.00390	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9288.4	56422.	2559.6
Stddev	3.9	105.	13.3
%RSD	.04169	.18677	.51831
#1	9290.7	56395.	2551.0
#2	9284.0	56538.	2552.9
#3	9290.6	56332.	2574.9

Approved: June 29, 2016

Sample Name: L16060114205 Acquired: 6/29/2016 11:04:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	.31454	-.00074	.01756	.05047	.00008	6.9218	.00008
Stddev	.00260	.00412	.00201	.00145	.00123	.00006	.0836	.00022
%RSD	97.281	1.3114	271.27	8.2833	2.4347	78.389	1.2080	281.44
#1	.00126	.31884	.00027	.01892	.05118	.00001	6.9917	.00020
#2	.00108	.31061	-.00306	.01772	.05117	.00011	6.9446	-.00018
#3	.00567	.31418	.00056	.01603	.04905	.00012	6.8292	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00084	.00163	3.9780	1.4777	.00255	1.1076	.20275
Stddev	.00016	.00108	.00090	.0271	.0869	.00126	.1639	.00081
%RSD	31.175	128.55	55.227	.67991	5.8832	49.328	14.796	.39818
#1	.00060	.00178	.00084	3.9938	1.4991	.00201	.91841	.20198
#2	.00060	.00108	.00261	3.9935	1.3821	.00399	1.1975	.20269
#3	.00033	-.00034	.00145	3.9468	1.5520	.00166	1.2068	.20359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	3.9762	.00428	.09393	.00314	.00006	-.00349	5.0942
Stddev	.00050	.0505	.00061	.00534	.00346	.00302	.00814	.1419
%RSD	105.07	1.2700	14.343	5.6804	110.23	5362.3	232.89	2.7854
#1	-.00008	4.0322	.00467	.09370	.00372	.00154	-.00756	5.1798
#2	.00089	3.9623	.00458	.08871	-.00058	-.00341	-.00880	5.1725
#3	.00063	3.9341	.00357	.09938	.00627	.00204	.00588	4.9304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114205 Acquired: 6/29/2016 11:04:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.05376	.01657	.00180	.00232	.00388	.00099
Stddev	.00062	.00025	.00776	.00362	.00126	.00017	.00040
%RSD	848.78	.47096	46.800	201.27	54.318	4.2990	39.956
#1	.00015	.05405	.00962	-.00229	.00335	.00404	.00138
#2	-.00077	.05360	.01516	.00309	.00270	.00388	.00059
#3	.00040	.05362	.02493	.00459	.00091	.00371	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9261.4	56467.	2570.5
Stddev	29.2	271.	24.3
%RSD	.31523	.48004	.94686
#1	9257.6	56373.	2553.3
#2	9234.3	56773.	2559.8
#3	9292.3	56255.	2598.3

Approved: June 29, 2016

Sample Name: L16060114205PS Acquired: 6/29/2016 11:08:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574350-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19698**	**5.1836**	**.19690**	**.95704**	**.54220**	**.02421**	**11.138**	**.02453**
Stddev	.00135	.0090	.00208	.00306	.00204	.00007	.014	.00029
%RSD	.68306	.17341	1.0563	.32007	.37665	.29489	.12834	1.1976
#1	.19571	5.1940	.19609	.95996	.54402	.02421	11.124	.02467
#2	.19684	5.1782	.19927	.95385	.54259	.02428	11.138	.02473
#3	.19839	5.1786	.19536	.95732	.53999	.02414	11.153	.02419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09992**	**.24885**	**.24937**	**5.5654**	**26.142**	**.50983**	**5.9583**	**.42668**
Stddev	.00040	.00150	.00134	.0652	.048	.00495	.0267	.00252
%RSD	.39603	.60158	.53809	1.1713	.18369	.97095	.44863	.59093
#1	.09959	.24796	.24783	5.6405	26.194	.51229	5.9767	.42684
#2	.10036	.24801	.25032	5.5232	26.100	.51307	5.9277	.42408
#3	.09980	.25058	.24994	5.5325	26.132	.50413	5.9706	.42912
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50145**	**28.500**	**.25395**	**4.8917**	**.24863**	**.58871**	**.19215**	**6.9581**
Stddev	.00313	.082	.00223	.0255	.00074	.00657	.00526	.0108
%RSD	.62474	.28814	.87906	.52166	.29696	1.1164	2.7355	.15503
#1	.49785	28.540	.25157	4.8626	.24945	.58282	.18674	6.9490
#2	.50361	28.555	.25600	4.9103	.24801	.58751	.19245	6.9700
#3	.50288	28.406	.25429	4.9023	.24844	.59580	.19724	6.9553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114205PS Acquired: 6/29/2016 11:08:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574350-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49659**	**.55312**	**.50515**	**.25176**	**.49354**	**.49936**	**.00053**
Stddev	.00055	.00203	.00972	.00430	.00287	.00203	.00043
%RSD	.11132	.36752	1.9241	1.7078	.58090	.40709	81.497
#1	.49601	.55084	.50654	.24787	.49023	.49713	.00005
#2	.49663	.55474	.51410	.25103	.49532	.50111	.00063
#3	.49712	.55377	.49481	.25637	.49506	.49984	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9168.3**	**55703.**	**2548.0**
Stddev	10.0	145.	9.7
%RSD	.10905	.26037	.37880
#1	9175.4	55714.	2537.0
#2	9156.9	55553.	2551.5
#3	9172.8	55843.	2555.3

Approved: June 29, 2016

Sample Name: L16060114205SDL Acquired: 6/29/2016 11:11:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574350-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00237	.06917	.00008	.00708	.01120	.00005	1.4792	-.00005
Stddev	.00168	.00656	.00232	.00425	.00087	.00009	.0060	.00021
%RSD	70.898	9.4785	2824.2	60.070	7.7802	181.44	.40789	419.89
#1	.00108	.07431	.00214	.01059	.01168	-.00000	1.4731	-.00025
#2	.00177	.06178	-.00244	.00829	.01172	.00015	1.4795	-.00008
#3	.00428	.07140	.00054	.00235	.01019	-.00000	1.4851	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	-.00071	.00091	.83418	.42736	-.00138	.22801	.04289
Stddev	.00018	.00036	.00109	.02527	.03815	.00129	.10671	.00196
%RSD	512.99	51.088	118.89	3.0288	8.9277	93.122	46.801	4.5585
#1	.00017	-.00110	.00134	.83970	.40128	-.00154	.10601	.04084
#2	-.00012	-.00064	.00172	.80661	.47115	-.00259	.30399	.04310
#3	-.00015	-.00039	-.00032	.85623	.40964	-.00002	.27405	.04473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.85799	.00103	.02194	.00462	-.00136	-.00758	1.0687
Stddev	.00004	.00336	.00071	.00142	.00524	.00412	.00289	.0208
%RSD	26.931	.39213	68.406	6.4793	113.23	303.12	38.205	1.9437
#1	.00020	.86186	.00128	.02038	.00673	.00320	-.00885	1.0772
#2	.00014	.85578	.00024	.02229	.00848	-.00246	-.00961	1.0839
#3	.00013	.85633	.00158	.02316	-.00134	-.00482	-.00426	1.0450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114205SDL Acquired: 6/29/2016 11:11:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574350-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.01111**	**.00591**	**.00103**	**.00120**	**.00132**	**.00010**
Stddev	.00009	.00032	.00950	.00060	.00074	.00008	.00021
%RSD	23.226	2.8851	160.92	57.789	61.352	5.8407	213.09
#1	-.00042	.01076	.01610	.00110	.00193	.00124	-.00012
#2	-.00028	.01139	-.00271	.00040	.00122	.00139	.00012
#3	-.00044	.01117	.00433	.00159	.00046	.00132	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9326.3**	**56292.**	**2538.0**
Stddev	30.3	71.	19.8
%RSD	.32487	.12632	.77960
#1	9326.4	56243.	2531.8
#2	9295.9	56374.	2560.1
#3	9356.5	56260.	2522.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 11:15:39 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39775**	**9.8980**	**.39330**	**.49118**	**.99618**	**.04916**	**9.9003**	**.04913**
Stddev	.00028	.0560	.00344	.00440	.01235	.00018	.1516	.00043
%RSD	.07093	.56566	.87509	.89603	1.2396	.37112	1.5313	.87815
#1	.39800	9.8583	.39274	.48610	1.0087	.04918	10.059	.04947
#2	.39782	9.9620	.39698	.49355	.99581	.04933	9.8861	.04928
#3	.39744	9.8736	.39017	.49388	.98402	.04897	9.7563	.04864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19705**	**.49096**	**.49572**	**3.9516**	**49.948**	**.99803**	**9.8895**	**.49836**
Stddev	.00190	.00200	.00583	.0450	.591	.01343	.1159	.00804
%RSD	.96321	.40673	1.1755	1.1386	1.1829	1.3461	1.1717	1.6141
#1	.19783	.49013	.50017	4.0012	50.569	1.0122	9.8805	.50704
#2	.19843	.49324	.49786	3.9403	49.885	.99645	10.010	.49690
#3	.19488	.48952	.48912	3.9133	49.392	.98546	9.7784	.49115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99282**	**49.820**	**.49528**	**9.8340**	**.49480**	**1.1873**	**.39399**	**5.0133**
Stddev	.00974	.654	.00462	.0602	.00114	.0096	.00750	.0260
%RSD	.98116	1.3132	.93375	.61242	.23105	.81129	1.9029	.51928
#1	.99790	50.506	.49591	9.8634	.49609	1.1933	.39907	5.0261
#2	.99897	49.752	.49955	9.8740	.49439	1.1925	.39752	5.0304
#3	.98159	49.202	.49037	9.7648	.49392	1.1762	.38538	4.9833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 11:15:39 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98633	.99784	.99276	.49829	.98981	.98431	.99417
Stddev	.01201	.01332	.00694	.00399	.00642	.00973	.01444
%RSD	1.2180	1.3354	.69883	.80127	.64872	.98812	1.4527
#1	.99356	1.0107	.99799	.49978	.98669	.98877	1.0096
#2	.99298	.99878	.98489	.50132	.99720	.99101	.99184
#3	.97246	.98407	.99539	.49376	.98555	.97315	.98103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9186.3	54900.	2516.8
Stddev	45.8	223.	34.6
%RSD	.49897	.40661	1.3751
#1	9171.0	55098.	2480.3
#2	9150.1	54658.	2520.8
#3	9237.8	54946.	2549.2

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 11:19:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00004	.00204	.00557	-.00049	-.00001	.02351
Stddev	.00401	.00403	.00167	.00294	.00175	.00006	.04614
%RSD	755.35	9033.9	81.596	52.893	355.36	1009.0	196.26
#1	-.00253	-.00049	.00303	.00681	-.00252	-.00002	.06775
#2	-.00095	-.00369	.00012	.00768	.00050	.00006	.02710
#3	.00507	.00431	.00298	.00220	.00054	-.00006	-.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00012	-.00057	.00179	.02465	.20659	.00034
Stddev	.00019	.00060	.00072	.00137	.02370	.15089	.00074
%RSD	121.13	518.86	127.53	76.416	96.147	73.040	220.06
#1	-.00021	-.00076	-.00051	.00098	.05094	.21592	.00063
#2	.00005	-.00002	.00013	.00337	.00490	.35260	.00089
#3	-.00032	.00043	-.00132	.00102	.01812	.05125	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.05204	.00035	.00076	.01493	.00059	-.00104	F .00757
Stddev	.09746	.00246	.00010	.03176	.00037	.00811	.00219
%RSD	187.29	699.20	13.005	212.77	62.419	781.27	28.939
#1	.04085	.00315	.00085	.05137	.00088	-.00126	.00749
#2	-.04345	-.00145	.00078	.00022	.00072	.00718	.00542
#3	-.15351	-.00064	.00066	-.00682	.00018	-.00903	.00980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 11:19:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00467	-.00035	-.01690	.00078	-.00014	.00673	.00379
Stddev	.00277	.00516	.00351	.00037	.00010	.00281	.00201
%RSD	59.320	1473.1	20.751	47.408	71.238	41.680	52.985
#1	.00374	-.00628	-.01299	.00070	-.00020	.00667	.00592
#2	.00248	.00305	-.01976	.00118	-.00003	.00957	.00354
#3	.00779	.00218	-.01795	.00045	-.00019	.00396	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00120	.00155	.00079
Stddev	.00106	.00004	.00058
%RSD	88.613	2.8281	73.063
#1	.00020	.00158	.00024
#2	.00231	.00155	.00140
#3	.00108	.00150	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9303.5	56275.	2550.5
Stddev	46.8	137.	4.0
%RSD	.50277	.24398	.15699
#1	9269.0	56271.	2549.9
#2	9356.7	56140.	2546.8
#3	9284.8	56415.	2554.8

Approved: June 29, 2016

Sample Name: L1606090707 Acquired: 6/29/2016 11:23:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.00642	.01308	.00774	.00097	.00006	.04094	-.00017
Stddev	.00308	.00957	.00153	.00083	.00054	.00005	.05492	.00015
%RSD	443.75	149.09	11.694	10.686	55.811	85.531	134.17	91.439
#1	.00317	.01345	.01352	.00718	.00083	.00011	.04123	-.00006
#2	.00167	-.00448	.01138	.00869	.00052	.00000	.09572	-.00034
#3	-.00276	.01027	.01434	.00735	.00157	.00007	-.01413	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00042	.00267	.01617	.10414	.00178	.06017	.00283
Stddev	.00030	.00142	.00121	.01849	.09074	.00164	.06430	.00090
%RSD	175.42	336.02	45.126	114.35	87.136	91.951	106.87	31.946
#1	-.00017	-.00115	.00284	-.00445	.03631	.00287	.00821	.00205
#2	.00039	.00160	.00379	.03127	.06888	.00258	.04022	.00262
#3	.00028	.00082	.00139	.02168	.20722	-.00010	.13208	.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	6.7723	-.00046	.01207	.00641	-.00331	.00104	.04216
Stddev	.00018	.0474	.00104	.00626	.00490	.00324	.00440	.00349
%RSD	173.51	.70044	225.49	51.855	76.397	97.995	422.65	8.2776
#1	-.00011	6.7197	.00016	.01921	.01139	.00043	.00612	.03859
#2	.00023	6.7856	-.00167	.00752	.00626	-.00501	-.00121	.04556
#3	.00019	6.8117	.00012	.00948	.00159	-.00533	-.00178	.04233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090707 Acquired: 6/29/2016 11:23:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00614**	**-.00204**	**-.00136**	**.00101**	**.00038**	**-.00005**
Stddev	.00033	.00021	.00654	.00236	.00067	.00012	.00051
%RSD	57.776	3.4898	320.10	173.56	66.707	30.990	1055.7
#1	-.00075	.00635	.00273	-.00400	.00027	.00051	.00054
#2	-.00078	.00616	-.00950	-.00058	.00158	.00032	-.00032
#3	-.00019	.00592	.00064	.00051	.00118	.00030	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9018.4**	**54413.**	**2480.7**
Stddev	10.7	126.	2.2
%RSD	.11833	.23069	.08723
#1	9030.1	54490.	2480.6
#2	9016.0	54268.	2483.0
#3	9009.2	54481.	2478.6

Approved: June 29, 2016

Sample Name: L1606090710 Acquired: 6/29/2016 11:27:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	-.00080	.01196	.00653	.00077	.00000	.09228	-.00016
Stddev	.00195	.00455	.00605	.00233	.00085	.00006	.02540	.00014
%RSD	321.96	565.38	50.605	35.715	110.15	21021.	27.529	86.232
#1	.00271	-.00596	.01675	.00727	.00121	-.00000	.12116	-.00001
#2	-.00115	.00088	.00516	.00392	-.00021	.00006	.07341	-.00028
#3	.00025	.00266	.01396	.00841	.00130	-.00006	.08226	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	-.00028	.00205	.02121	.05093	-.00416	.07609	.00177
Stddev	.00043	.00042	.00125	.05029	.14808	.00259	.06210	.00182
%RSD	196.49	148.59	61.188	237.14	290.73	62.230	81.617	102.51
#1	-.00060	.00015	.00113	-.01674	.22192	-.00655	.14733	.00387
#2	-.00030	-.00069	.00154	.00211	-.03371	-.00451	.04756	.00070
#3	.00024	-.00031	.00347	.07824	-.03541	-.00141	.03338	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	6.7027	-.00060	.01357	.00560	-.00133	-.00797	.04302
Stddev	.00007	.0621	.00099	.00377	.00298	.00183	.00822	.00114
%RSD	26.393	.92649	164.56	27.775	53.184	137.72	103.16	2.6388
#1	.00019	6.6531	.00054	.01713	.00406	-.00257	-.00080	.04171
#2	.00027	6.6826	-.00123	.00962	.00372	-.00219	-.01695	.04375
#3	.00032	6.7724	-.00112	.01396	.00904	.00077	-.00616	.04360
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090710 Acquired: 6/29/2016 11:27:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00591	.00284	.00190	.00143	.00046	-.00031
Stddev	.00037	.00010	.00142	.00261	.00107	.00012	.00039
%RSD	72.988	1.6223	50.200	137.59	74.960	26.873	123.18
#1	.00063	.00590	.00447	.00250	.00210	.00033	-.00048
#2	.00080	.00582	.00218	-.00096	.00019	.00058	.00013
#3	.00009	.00601	.00186	.00416	.00199	.00048	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8995.4	54163.	2477.2
Stddev	21.3	65.	3.8
%RSD	.23688	.11987	.15296
#1	9016.5	54234.	2477.5
#2	8973.9	54146.	2473.3
#3	8995.9	54108.	2480.9

Approved: June 29, 2016

Sample Name: L1606090712 Acquired: 6/29/2016 11:31:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00088**	**.01896**	**-.00058**	**.00565**	**.00121**	**.00006**	**.01835**
Stddev	.00187	.00807	.00645	.00089	.00110	.00007	.04026
%RSD	214.15	42.553	1103.8	15.709	90.202	133.41	219.45
#1	.00293	.02231	.00055	.00483	.00007	.00014	.04911
#2	-.00073	.00975	-.00753	.00553	.00226	.00000	.03316
#3	.00042	.02480	.00523	.00660	.00132	.00002	-.02722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**-.00021**	**.00200**	**.00076**	F **-.02009**	**.10524**	**-.00315**
Stddev	.00013	.00056	.00100	.00046	.03765	.07386	.00106
%RSD	70.958	263.43	50.245	61.050	187.40	70.178	33.537
#1	.00019	-.00077	.00270	.00104	-.06176	.06677	-.00337
#2	.00029	.00035	.00085	.00101	-.00999	.19040	-.00407
#3	.00004	-.00022	.00244	.00022	.01148	.05857	-.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02634**	**-.00050**	**.00009**	**4.1202**	**-.00044**	**.01785**	**.00118**
Stddev	.02096	.00133	.00029	.0340	.00078	.00425	.00251
%RSD	79.590	264.37	333.72	.82527	175.42	23.835	213.44
#1	-.04939	-.00200	-.00025	4.1500	.00046	.01986	.00360
#2	-.02124	-.00008	.00025	4.0832	-.00086	.01296	.00134
#3	-.00840	.00057	.00027	4.1274	-.00092	.02071	-.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606090712 Acquired: 6/29/2016 11:31:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	-.00679	.01586	-.00087	.00309	-.00100	.00219
Stddev	.00258	.00308	.00057	.00061	.00014	.00496	.00259
%RSD	160.60	45.324	3.5701	69.809	4.4010	495.43	118.52
#1	.00436	-.00954	.01645	-.00065	.00295	-.00520	.00081
#2	.00119	-.00346	.01532	-.00155	.00310	-.00227	.00058
#3	-.00074	-.00736	.01581	-.00040	.00322	.00447	.00518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00163	.00262	-.00052
Stddev	.00061	.00030	.00108
%RSD	37.672	11.355	208.41
#1	.00220	.00249	-.00175
#2	.00171	.00240	-.00002
#3	.00098	.00295	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8859.6	53426.	2419.2
Stddev	22.6	111.	13.9
%RSD	.25560	.20706	.57304
#1	8855.4	53529.	2418.3
#2	8884.1	53439.	2433.4
#3	8839.4	53309.	2405.8

Approved: June 29, 2016

Sample Name: L1606090714 Acquired: 6/29/2016 11:35:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00510	.00399	.00362	.00127	.00005	.58262	-.00010
Stddev	.00173	.00299	.00186	.00149	.00148	.00015	.01830	.00029
%RSD	597.57	58.669	46.546	41.233	116.79	271.31	3.1402	278.65
#1	.00065	.00687	.00608	.00232	-.00037	-.00011	.60314	.00023
#2	.00076	.00165	.00341	.00330	.00166	.00015	.56800	-.00025
#3	-.00228	.00679	.00250	.00525	.00252	.00013	.57673	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00058	-.00007	.00094	.00525	.06024	.00065	.06442	-.00265
Stddev	.00047	.00092	.00185	.05553	.17905	.00338	.05158	.00254
%RSD	80.962	1408.9	196.96	1057.4	297.23	520.94	80.076	95.684
#1	-.00004	-.00109	.00199	-.03472	.17108	.00412	.00583	-.00557
#2	-.00077	.00069	-.00119	.06865	-.14633	.00047	.08444	-.00146
#3	-.00091	.00020	.00202	-.01818	.15597	-.00264	.10299	-.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	4.8479	-.00053	.01156	.00233	.00108	-.00182	.08400
Stddev	.00026	.0811	.00033	.00405	.00279	.00409	.00693	.00108
%RSD	702.98	1.6732	62.836	35.045	119.52	379.17	380.96	1.2822
#1	.00031	4.7775	-.00082	.01496	.00306	-.00207	-.00746	.08288
#2	-.00021	4.8297	-.00061	.01262	.00468	.00570	.00592	.08503
#3	.00000	4.9366	-.00017	.00708	-.00075	-.00039	-.00391	.08409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090714 Acquired: 6/29/2016 11:35:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00775**	**.00275**	**.00198**	**.00091**	**.00057**	**-.00060**
Stddev	.00031	.00043	.00297	.00184	.00113	.00033	.00031
%RSD	206.37	5.5462	108.08	92.892	123.55	57.792	50.999
#1	-.00046	.00726	.00143	.00362	.00222	.00084	-.00039
#2	-.00013	.00797	.00067	.00234	.00036	.00020	-.00095
#3	.00015	.00803	.00615	-.00001	.00017	.00068	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8955.2**	**53721.**	**2433.6**
Stddev	24.8	47.	8.7
%RSD	.27678	.08839	.35709
#1	8929.5	53679.	2443.6
#2	8957.2	53773.	2429.5
#3	8978.9	53711.	2427.7

Approved: June 29, 2016

Sample Name: L1606090717S Acquired: 6/29/2016 11:38:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00409	.07103	.00385	.01209	.00597	.00020	.73321	.00048
Stddev	.00201	.00400	.00261	.00266	.00149	.00003	.02661	.00015
%RSD	49.153	5.6316	67.876	21.985	25.026	13.360	3.6293	30.401
#1	.00600	.07445	.00488	.00937	.00524	.00018	.76390	.00052
#2	.00199	.07201	.00088	.01222	.00768	.00023	.71897	.00061
#3	.00429	.06663	.00579	.01468	.00498	.00020	.71674	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.00285	.00361	.04803	.41005	.00365	.14563	.00566
Stddev	.00020	.00031	.00028	.03389	.12460	.00311	.08051	.00310
%RSD	17.840	10.940	7.6373	70.562	30.386	85.115	55.284	54.744
#1	.00090	.00266	.00332	.07245	.36366	.00669	.22910	.00831
#2	.00129	.00320	.00365	.06230	.31531	.00048	.06844	.00225
#3	.00121	.00267	.00386	.00934	.55119	.00378	.13935	.00643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00546	5.1203	.00301	.06957	.00458	.00313	.00098	.10974
Stddev	.00004	.0766	.00041	.00538	.00059	.00477	.00430	.00403
%RSD	.71454	1.4950	13.793	7.7375	12.967	152.61	437.47	3.6722
#1	.00542	5.0411	.00260	.07294	.00510	.00222	.00045	.10670
#2	.00549	5.1258	.00299	.07241	.00393	-.00113	-.00302	.11431
#3	.00547	5.1939	.00343	.06336	.00470	.00829	.00552	.10821
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090717S Acquired: 6/29/2016 11:38:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00597	.01280	.00744	.00501	.00595	.00686	.00015
Stddev	.00062	.00032	.00844	.00181	.00114	.00010	.00021
%RSD	10.308	2.4761	113.38	36.111	19.232	1.4153	137.53
#1	.00598	.01246	-.00160	.00688	.00570	.00675	.00030
#2	.00657	.01309	.01511	.00327	.00495	.00690	-.00009
#3	.00534	.01283	.00882	.00488	.00719	.00694	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9118.4	54908.	2482.3
Stddev	18.5	107.	24.0
%RSD	.20329	.19521	.96747
#1	9118.0	54839.	2504.8
#2	9100.0	54853.	2485.1
#3	9137.1	55032.	2457.0

Approved: June 29, 2016

Sample Name: L1606090719SD Acquired: 6/29/2016 11:42:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00246	.06591	.00542	.01296	.00584	.00032	.69080	.00026
Stddev	.00143	.00624	.00267	.00164	.00050	.00005	.03527	.00009
%RSD	58.193	9.4623	49.158	12.639	8.5256	15.303	5.1052	34.475
#1	.00097	.07304	.00374	.01474	.00553	.00031	.67080	.00016
#2	.00257	.06322	.00850	.01152	.00641	.00027	.67008	.00034
#3	.00383	.06147	.00404	.01261	.00558	.00037	.73152	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.00245	.00307	.03604	.35441	.00514	.14600	.00348
Stddev	.00021	.00145	.00151	.02124	.06524	.00248	.02243	.00129
%RSD	20.162	59.060	49.275	58.941	18.409	48.372	15.361	36.881
#1	.00117	.00189	.00284	.05986	.28084	.00633	.14299	.00353
#2	.00081	.00137	.00169	.02920	.37718	.00228	.12523	.00218
#3	.00118	.00410	.00469	.01906	.40523	.00680	.16978	.00475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00610	5.0747	.00169	.06420	.00756	.00316	-.00333	.11191
Stddev	.00055	.0846	.00018	.00170	.00069	.00241	.00590	.00158
%RSD	9.0498	1.6668	10.601	2.6545	9.0655	76.054	177.28	1.4102
#1	.00572	4.9771	.00149	.06581	.00678	.00511	-.00488	.11026
#2	.00585	5.1201	.00182	.06242	.00808	.00390	.00319	.11207
#3	.00673	5.1269	.00176	.06437	.00782	.00047	-.00829	.11340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090719SD Acquired: 6/29/2016 11:42:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00511	.01246	.00522	.00524	.00731	.00639	.00004
Stddev	.00014	.00019	.00999	.00107	.00096	.00021	.00043
%RSD	2.7424	1.5379	191.31	20.455	13.197	3.3635	1034.5
#1	.00515	.01267	.01170	.00647	.00839	.00622	.00040
#2	.00496	.01229	.01026	.00450	.00653	.00631	-.00043
#3	.00523	.01242	-.00629	.00476	.00702	.00663	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9084.2	54806.	2516.4
Stddev	17.9	225.	16.0
%RSD	.19752	.40979	.63660
#1	9100.7	54871.	2534.9
#2	9086.8	54990.	2506.1
#3	9065.1	54556.	2508.3

Approved: June 29, 2016

Sample Name: L1606138001 Acquired: 6/29/2016 11:46:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	1.1667	.00020	.00408	.01597	.00013	4.9938	-.00017
Stddev	.00019	.0222	.00398	.00252	.00035	.00005	.1237	.00004
%RSD	24.691	1.9019	1956.1	61.841	2.2144	35.146	2.4774	25.063
#1	-.00094	1.1490	.00460	.00140	.01556	.00016	4.9039	-.00021
#2	-.00057	1.1594	-.00314	.00640	.01615	.00016	4.9426	-.00013
#3	-.00085	1.1916	-.00085	.00443	.01619	.00008	5.1349	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.00133	.00290	1.4752	.28705	-.00033	1.6814	.08145
Stddev	.00016	.00069	.00109	.0428	.05712	.00383	.0556	.00614
%RSD	19.902	51.826	37.557	2.9000	19.900	1174.2	3.3072	7.5336
#1	.00067	.00078	.00275	1.4561	.23781	-.00418	1.7308	.07457
#2	.00098	.00110	.00406	1.4452	.27367	.00348	1.6212	.08341
#3	.00075	.00210	.00190	1.5241	.34968	-.00028	1.6922	.08637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.38691	.00104	.05759	.00309	-.00157	-.00552	1.5832
Stddev	.00033	.05150	.00062	.00607	.00414	.00724	.00334	.0344
%RSD	204.05	13.310	60.083	10.538	133.91	460.69	60.490	2.1733
#1	-.00021	.33554	.00104	.05351	.00668	-.00972	-.00251	1.5443
#2	.00042	.38666	.00041	.05469	-.00144	.00087	-.00494	1.5955
#3	.00026	.43854	.00165	.06456	.00404	.00413	-.00911	1.6097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138001 Acquired: 6/29/2016 11:46:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.01816**	**.01395**	**.00473**	**.00341**	**.03308**	**.00038**
Stddev	.00041	.00010	.01270	.00264	.00070	.00082	.00043
%RSD	66.236	.55650	91.059	55.864	20.624	2.4793	111.37
#1	-.00019	.01825	.00675	.00199	.00284	.03213	.00003
#2	-.00102	.01816	.02862	.00727	.00420	.03351	.00086
#3	-.00066	.01805	.00648	.00493	.00319	.03359	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9144.8**	**55027.**	**2512.8**
Stddev	28.1	259.	16.1
%RSD	.30702	.47067	.63939
#1	9117.7	55113.	2531.3
#2	9143.0	55231.	2504.6
#3	9173.8	54736.	2502.4

Approved: June 29, 2016

Sample Name: L1606138002 Acquired: 6/29/2016 11:50:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00158**	**1.2783**	**.00236**	**.00735**	**.01468**	**.00009**	**4.8914**	**-.00002**
Stddev	.00195	.0110	.00294	.00192	.00057	.00008	.0458	.00032
%RSD	123.26	.86212	124.17	26.126	3.8829	83.161	.93618	1366.6
#1	-.00336	1.2812	.00574	.00897	.01518	.00001	4.8513	-.00023
#2	.00051	1.2875	.00098	.00786	.01480	.00010	4.9413	.00034
#3	-.00190	1.2661	.00037	.00523	.01406	.00016	4.8815	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00144**	**.00285**	**1.6811**	**.39676**	**-.00124**	**1.7322**	**.07966**
Stddev	.00025	.00026	.00072	.0633	.11078	.00243	.1159	.00213
%RSD	60.651	18.048	25.338	3.7640	27.922	196.25	6.6890	2.6737
#1	.00028	.00119	.00312	1.6276	.29955	-.00167	1.6330	.07756
#2	.00026	.00171	.00203	1.6648	.37336	.00138	1.7041	.08182
#3	.00070	.00141	.00339	1.7509	.51738	-.00343	1.8596	.07959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.34155**	**.00192**	**.05378**	**.00662**	**-.00042**	**-.00699**	**1.6268**
Stddev	.00020	.03838	.00088	.00515	.00130	.00140	.00800	.0234
%RSD	44.748	11.237	45.515	9.5799	19.632	329.79	114.44	1.4417
#1	.00032	.37444	.00183	.04800	.00798	-.00150	-.01542	1.6033
#2	.00036	.29938	.00110	.05790	.00539	-.00094	-.00603	1.6271
#3	.00069	.35085	.00285	.05543	.00648	.00116	.00048	1.6502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138002 Acquired: 6/29/2016 11:50:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	**.01800**	**.01045**	**.00374**	**.00287**	**.01012**	**.00034**
Stddev	.00116	.00037	.00673	.00355	.00097	.00034	.00009
%RSD	178.85	2.0304	64.422	94.960	33.958	3.3659	25.301
#1	-.00137	.01838	.01821	.00077	.00358	.00978	.00025
#2	-.00126	.01799	.00686	.00278	.00327	.01013	.00042
#3	.00069	.01764	.00627	.00767	.00176	.01046	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9065.8**	**54756.**	**2463.3**
Stddev	8.9	95.	2.1
%RSD	.09787	.17393	.08672
#1	9058.1	54717.	2464.0
#2	9075.5	54687.	2465.0
#3	9063.7	54865.	2460.9

Approved: June 29, 2016

Sample Name: L1606122707 Acquired: 6/29/2016 11:54:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.00440**	**-.00011**	**.00328**	**.04214**	**.00006**	**1.9802**	**-.00005**
Stddev	.00164	.00893	.00346	.00245	.00073	.00001	.0281	.00027
%RSD	521.57	202.86	3196.9	74.893	1.7389	15.703	1.4203	591.52
#1	-.00205	.00381	.00012	.00501	.04272	.00007	1.9590	.00005
#2	.00122	.01361	-.00367	.00047	.04238	.00005	2.0121	.00016
#3	-.00011	-.00422	.00323	.00435	.04132	.00006	1.9694	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**-.00170**	**.00213**	**3.1213**	**.16126**	**.00327**	**1.3586**	**.06579**
Stddev	.00011	.00044	.00065	.0243	.02784	.00383	.0505	.00051
%RSD	27.317	26.051	30.481	.77969	17.265	117.27	3.7158	.77306
#1	-.00027	-.00128	.00138	3.1145	.18303	-.00100	1.3676	.06616
#2	-.00040	-.00166	.00254	3.1011	.12989	.00440	1.4039	.06521
#3	-.00048	-.00216	.00247	3.1483	.17087	.00641	1.3042	.06600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**5.8464**	**.00204**	**.00518**	**.00310**	**.00048**	**-.00259**	**.72429**
Stddev	.00047	.0604	.00061	.00185	.00254	.00200	.00554	.00430
%RSD	93.786	1.0330	29.977	35.701	81.965	416.48	213.52	.59411
#1	.00042	5.7801	.00206	.00460	.00186	.00033	.00336	.71961
#2	.00008	5.8982	.00142	.00725	.00142	.00255	-.00354	.72807
#3	.00101	5.8608	.00264	.00368	.00603	-.00144	-.00760	.72520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606122707 Acquired: 6/29/2016 11:54:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00069**	**.04887**	**.00096**	**-.00153**	**.00119**	**.00082**	**.00021**
Stddev	.00043	.00042	.00368	.00165	.00078	.00003	.00017
%RSD	61.997	.85230	384.33	108.21	65.432	3.1027	80.254
#1	-.00052	.04842	.00226	-.00147	.00052	.00084	.00030
#2	-.00037	.04924	.00380	-.00320	.00205	.00079	.00002
#3	-.00118	.04895	-.00319	.00010	.00101	.00083	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9100.9**	**54688.**	**2494.3**
Stddev	28.1	202.	5.1
%RSD	.30861	.36873	.20433
#1	9090.5	54493.	2494.5
#2	9079.6	54677.	2499.2
#3	9132.7	54896.	2489.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 11:58:33 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39688	9.8512	.39413	.49321	.99016	.04879	9.7997	.04959
Stddev	.00059	.0088	.00450	.00624	.00545	.00031	.0491	.00026
%RSD	.14819	.08921	1.1421	1.2646	.55075	.63457	.50130	.53290
#1	.39706	9.8586	.38893	.48858	.98907	.04866	9.7569	.04929
#2	.39735	9.8535	.39656	.50030	.99608	.04914	9.7889	.04977
#3	.39622	9.8415	.39689	.49075	.98534	.04857	9.8534	.04971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19882	.49248	.49963	3.9490	49.398	.98997	9.9063	.49440
Stddev	.00152	.00367	.00355	.0476	.248	.00145	.0824	.00539
%RSD	.76310	.74448	.71137	1.2049	.50245	.14604	.83135	1.0893
#1	.19707	.48982	.49699	3.9059	49.346	.99147	9.8769	.48866
#2	.19983	.49666	.49824	4.0000	49.668	.98859	9.8427	.49934
#3	.19955	.49095	.50367	3.9411	49.180	.98985	9.9993	.49521
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0011	49.330	.49897	9.9418	.50080	1.1989	.40286	5.0396
Stddev	.0055	.294	.00338	.0547	.00281	.0006	.00365	.0347
%RSD	.55045	.59550	.67763	.54993	.56158	.04604	.90574	.68936
#1	.99477	49.221	.49536	9.8787	.50335	1.1983	.40072	5.0010
#2	1.0037	49.663	.49950	9.9712	.50126	1.1990	.40079	5.0498
#3	1.0048	49.106	.50206	9.9754	.49778	1.1993	.40708	5.0682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 11:58:33 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99492	.98797	.99267	.50603	.99004	.99110	.97683
Stddev	.00681	.00569	.02039	.00492	.00660	.00435	.00879
%RSD	.68434	.57612	2.0539	.97323	.66682	.43920	.89996
#1	.98706	.98517	.97657	.50037	.98733	.98654	.96886
#2	.99882	.99452	1.0156	.50832	.99756	.99154	.97537
#3	.99889	.98422	.98586	.50939	.98522	.99521	.98626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9140.1	54735.	2547.5
Stddev	23.3	354.	7.8
%RSD	.25497	.64585	.30650
#1	9137.6	54500.	2556.1
#2	9118.2	54563.	2540.9
#3	9164.6	55142.	2545.5

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 12:02:11 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00980**	**.00159**	**.00301**	**-.00231**	**-.00002**	**.05137**	**-.00003**
Stddev	.00080	.00182	.00313	.00160	.00141	.00005	.01990	.00032
%RSD	505.26	18.548	196.74	53.049	61.050	215.07	38.737	920.88
#1	.00042	.00836	.00201	.00131	-.00237	.00000	.07431	-.00028
#2	.00079	.00921	.00450	.00449	-.00088	.00001	.03866	-.00014
#3	-.00074	.01185	-.00173	.00325	-.00370	-.00008	.04115	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**-.00073**	**.00126**	**.00388**	**.19440**	**.00155**	**.00560**	**.00227**
Stddev	.00037	.00155	.00089	.02431	.04073	.00153	.02007	.00307
%RSD	183.17	213.46	70.395	626.79	20.950	98.550	358.11	135.41
#1	.00014	-.00231	.00074	.02353	.18263	.00179	-.00548	.00135
#2	-.00015	-.00066	.00076	.01142	.23971	.00296	.02877	.00569
#3	-.00060	.00079	.00229	-.02331	.16085	-.00008	-.00648	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.01512**	**.00140**	**.00444**	**.00378**	**.00415**	**.00061**	**-.01344**
Stddev	.00040	.03252	.00069	.00073	.00574	.00471	.00394	.00053
%RSD	319.62	215.15	49.153	16.405	151.98	113.38	647.74	3.9630
#1	.00019	.01151	.00071	.00432	.00792	-.00090	-.00163	-.01395
#2	.00049	-.01545	.00141	.00377	-.00278	.00842	-.00170	-.01289
#3	-.00030	.04929	.00209	.00521	.00620	.00494	.00516	-.01348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 12:02:11 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**-.00035**	**.00368**	**.00167**	**.00096**	**.00170**	**.00042**
Stddev	.00080	.00025	.00390	.00263	.00105	.00007	.00065
%RSD	95.968	71.594	105.89	157.91	108.47	3.9451	155.39
#1	-.00164	-.00013	-.00072	.00344	.00144	.00164	-.00028
#2	-.00084	-.00063	.00507	-.00136	.00169	.00169	.00099
#3	-.00003	-.00030	.00670	.00292	-.00024	.00178	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9151.3**	**55942.**	**2592.6**
Stddev	7.3	441.	22.9
%RSD	.08030	.78823	.88137
#1	9159.1	56371.	2600.0
#2	9150.4	55964.	2567.0
#3	9144.5	55490.	2610.8

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 12:06:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00060	255.94	-.00165	.01120	.00020	-.00007	243.01	-.00009
Stddev	.00151	.50	.00310	.00093	.00011	.00009	1.98	.00034
%RSD	253.76	.19515	188.20	8.3312	56.041	136.74	.81639	356.18
#1	-.00159	255.93	-.00519	.01174	.00034	-.00017	244.75	.00029
#2	.00114	255.44	-.00038	.01174	.00013	-.00004	243.43	-.00028
#3	-.00134	256.44	.00062	.01012	.00015	.00001	240.85	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00153	-.00160	-.00060	96.491	.02735	.00278	246.20	-.00125
Stddev	.00044	.00072	.00047	.805	.05129	.00162	2.62	.00339
%RSD	28.875	45.065	78.040	.83461	187.56	58.278	1.0622	271.35
#1	-.00170	-.00208	-.00101	97.354	.08389	.00139	248.59	-.00516
#2	-.00103	-.00194	-.00009	96.359	.01433	.00240	246.60	.00054
#3	-.00186	-.00077	-.00071	95.760	-.01618	.00456	243.41	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	.01110	-.00126	.04392	-.00149	-.00898	.00783	-.01528
Stddev	.00059	.02615	.00118	.00571	.00362	.00187	.00432	.00266
%RSD	92.708	235.62	93.325	13.010	243.00	20.819	55.216	17.436
#1	-.00119	.03843	-.00263	.03972	.00235	-.00709	.00686	-.01366
#2	-.00069	.00854	-.00059	.04162	-.00198	-.01083	.01255	-.01836
#3	-.00002	-.01368	-.00058	.05043	-.00484	-.00904	.00407	-.01383
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 12:06:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00023**	**.02224**	**.00386**	**-.00165**	**-.00654**	**.00214**
Stddev	.00041	.00067	.00086	.00086	.00091	.00017	.00039
%RSD	252.56	288.37	3.8484	22.351	55.189	2.6355	18.132
#1	-.00064	.00034	.02237	.00449	-.00126	-.00672	.00207
#2	.00010	.00084	.02132	.00421	-.00269	-.00638	.00256
#3	.00005	-.00048	.02302	.00288	-.00100	-.00653	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8766.0**	**52087.**	**2495.6**
Stddev	15.9	170.	14.3
%RSD	.18130	.32719	.57463
#1	8770.4	51898.	2479.2
#2	8748.4	52230.	2501.8
#3	8779.3	52132.	2505.8

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 12:09:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50734**	**257.51**	**.24131**	**.01272**	**.24807**	**.25068**	**241.07**	**.48446**
Stddev	.00412	.51	.00069	.00050	.00312	.00028	.90	.00013
%RSD	.81232	.19627	.28760	3.9448	1.2596	.11114	.37397	.02689
#1	.50266	256.93	.24196	.01329	.25140	.25037	241.62	.48432
#2	.51041	257.72	.24140	.01255	.24760	.25078	241.56	.48457
#3	.50896	257.88	.24058	.01233	.24520	.25090	240.03	.48449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.23503**	**.24726**	**.24440**	**94.269**	**5.2006**	**.00821**	**240.90**	**.23840**
Stddev	.00077	.00242	.00071	.402	.0996	.00307	1.07	.00309
%RSD	.32939	.97772	.29206	.42640	1.9143	37.378	.44384	1.2979
#1	.23436	.24536	.24387	94.628	5.3098	.00478	242.06	.23780
#2	.23487	.24645	.24412	94.344	5.1772	.01070	240.71	.24176
#3	.23588	.24998	.24521	93.834	5.1149	.00916	239.95	.23566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**5.2614**	**.47336**	**.02875**	**.48433**	**.48657**	**.26422**	**-.00770**
Stddev	.00022	.0150	.00189	.00931	.00753	.00736	.00883	.00451
%RSD	40.746	.28490	.39985	32.374	1.5551	1.5123	3.3416	58.647
#1	-.00080	5.2539	.47134	.03926	.47614	.48324	.27429	-.00256
#2	-.00038	5.2516	.47509	.02157	.48588	.49500	.26057	-.01103
#3	-.00046	5.2786	.47365	.02541	.49096	.48145	.25781	-.00951
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 12:09:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**.00030**	**.02351**	**.45762**	**.24854**	**.47227**	**.00297**
Stddev	.00061	.00056	.01175	.00173	.00079	.00099	.00060
%RSD	127.26	185.36	49.987	.37759	.31592	.20864	20.120
#1	-.00014	.00093	.01146	.45652	.24882	.47114	.00229
#2	-.00011	-.00012	.03494	.45674	.24765	.47274	.00320
#3	-.00118	.00008	.02412	.45961	.24914	.47294	.00341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8731.8**	**52174.**	**2509.6**
Stddev	26.4	65.	18.6
%RSD	.30284	.12375	.74252
#1	8706.6	52246.	2488.6
#2	8759.3	52121.	2516.0
#3	8729.4	52155.	2524.2

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 12:13:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40609	10.157	.40230	.50343	1.0188	.05040	10.091	.05079
Stddev	.00218	.021	.00331	.00384	.0017	.00017	.104	.00019
%RSD	.53746	.20256	.82232	.76263	.16380	.33206	1.0316	.36956
#1	.40725	10.157	.40572	.50548	1.0182	.05059	10.041	.05066
#2	.40744	10.137	.39912	.49900	1.0175	.05033	10.211	.05069
#3	.40357	10.178	.40205	.50581	1.0207	.05028	10.021	.05100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20237	.50550	.50987	4.0350	51.084	1.0203	10.173	.50788
Stddev	.00061	.00069	.00213	.0944	.085	.0107	.095	.00114
%RSD	.30016	.13658	.41783	2.3400	.16629	1.0496	.93296	.22508
#1	.20306	.50497	.51045	4.0483	51.023	1.0301	10.074	.50898
#2	.20209	.50628	.50751	4.1221	51.181	1.0220	10.182	.50796
#3	.20195	.50526	.51165	3.9346	51.047	1.0089	10.263	.50670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0221	50.841	.51050	10.150	.50802	1.2227	.40322	5.1413
Stddev	.0020	.110	.00140	.032	.00139	.0051	.00211	.0071
%RSD	.19823	.21590	.27448	.31495	.27358	.41346	.52414	.13833
#1	1.0244	50.756	.51103	10.186	.50962	1.2261	.40506	5.1426
#2	1.0208	50.802	.51156	10.139	.50738	1.2250	.40091	5.1336
#3	1.0210	50.965	.50891	10.124	.50707	1.2169	.40368	5.1476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 12:13:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0183**	**1.0207**	**1.0265**	**.51107**	**1.0132**	**1.0148**	**1.0193**
Stddev	.0024	.0008	.0082	.00055	.0045	.0019	.0027
%RSD	.23717	.07303	.79675	.10719	.44532	.18624	.26154
#1	1.0210	1.0209	1.0170	.51071	1.0179	1.0169	1.0163
#2	1.0174	1.0199	1.0314	.51170	1.0089	1.0143	1.0202
#3	1.0164	1.0214	1.0309	.51080	1.0127	1.0132	1.0214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9052.4**	**54332.**	**2495.9**
Stddev	5.6	56.	2.1
%RSD	.06235	.10276	.08611
#1	9053.4	54286.	2498.0
#2	9057.4	54394.	2495.9
#3	9046.3	54316.	2493.7

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 12:17:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00938	.00073	.00484	.00056	-.00003	.02976	.00014
Stddev	.00272	.00587	.00360	.00166	.00093	.00003	.02753	.00025
%RSD	3952.1	62.651	491.07	34.255	167.01	104.78	92.512	178.01
#1	-.00116	.00889	.00444	.00607	-.00046	-.00007	.05769	-.00010
#2	-.00182	.00376	.00050	.00296	.00137	-.00000	.02894	.00012
#3	.00318	.01548	-.00274	.00550	.00077	-.00002	.00265	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	-.00026	.00147	-.00293	.12048	-.00272	-.04259	.00250
Stddev	.00021	.00113	.00101	.00343	.05999	.00447	.05629	.00398
%RSD	34.132	429.11	68.864	117.02	49.796	164.55	132.18	159.06
#1	-.00078	-.00017	.00147	-.00611	.14692	-.00687	.00904	.00356
#2	-.00038	.00081	.00249	.00070	.05181	-.00330	-.10260	.00584
#3	-.00069	-.00143	.00046	-.00339	.16272	.00202	-.03421	-.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.05530	.00038	.00467	.00162	-.00085	-.00242	-.01369
Stddev	.00031	.01142	.00006	.00335	.00208	.00309	.01054	.00284
%RSD	52.972	20.647	15.524	71.745	128.71	365.68	436.19	20.744
#1	.00023	.05338	.00031	.00408	.00120	-.00340	-.00437	-.01086
#2	.00082	.04497	.00040	.00166	-.00022	.00259	.00896	-.01368
#3	.00072	.06756	.00042	.00828	.00388	-.00173	-.01183	-.01654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 12:17:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00132**	**-.00047**	**.00392**	**.00026**	**.00123**	**.00140**	**.00038**
Stddev	.00028	.00080	.00476	.00140	.00083	.00017	.00066
%RSD	21.568	168.21	121.48	547.41	67.923	11.972	173.11
#1	-.00117	-.00135	.00198	.00188	.00035	.00122	.00025
#2	-.00165	-.00029	.00043	-.00058	.00201	.00145	.00110
#3	-.00114	.00021	.00934	-.00052	.00133	.00154	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9021.4**	**54197.**	**2477.1**
Stddev	17.7	72.	12.5
%RSD	.19625	.13312	.50281
#1	9012.0	54182.	2480.1
#2	9010.4	54135.	2463.5
#3	9041.8	54276.	2487.8

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/29/2016 12:21:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00930	.18527	.00831	.08680	.00908	.00161	.46292	.00077
Stddev	.00154	.01126	.00208	.00248	.00073	.00005	.03175	.00030
%RSD	16.577	6.0796	25.075	2.8560	8.0173	3.0639	6.8582	38.937
#1	.00816	.18000	.01045	.08705	.00824	.00158	.43180	.00107
#2	.00868	.19820	.00628	.08421	.00939	.00159	.49526	.00074
#3	.01106	.17761	.00820	.08915	.00959	.00167	.46172	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00379	.00286	.00752	.07010	.88858	.08506	.33804	.00800
Stddev	.00040	.00061	.00070	.03490	.07168	.00359	.06707	.00189
%RSD	10.603	21.467	9.3740	49.790	8.0672	4.2234	19.840	23.594
#1	.00350	.00350	.00702	.04132	.97072	.08650	.27131	.01017
#2	.00425	.00280	.00721	.06005	.85638	.08771	.33737	.00668
#3	.00362	.00228	.00832	.10892	.83864	.08097	.40544	.00717
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00788	.43352	.01602	.82021	.01274	.08681	.01319	.74946
Stddev	.00004	.05212	.00057	.00536	.00288	.00276	.00456	.00433
%RSD	.56667	12.022	3.5785	.65372	22.621	3.1751	34.563	.57752
#1	.00787	.49352	.01554	.81561	.01320	.08794	.01438	.75216
#2	.00785	.39951	.01666	.82609	.01537	.08883	.00816	.75175
#3	.00794	.40753	.01587	.81892	.00966	.08367	.01704	.74446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/29/2016 12:21:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41310	.04246	.03184	.15616	.00889	.01771	.04320
Stddev	.00463	.00051	.00473	.00028	.00097	.00035	.00058
%RSD	1.1201	1.2065	14.851	.17819	10.855	1.9758	1.3315
#1	.41617	.04188	.02840	.15646	.00862	.01807	.04384
#2	.41536	.04283	.02988	.15612	.00996	.01768	.04304
#3	.40778	.04268	.03723	.15590	.00809	.01737	.04272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9101.1	54266.	2460.7
Stddev	26.1	395.	5.7
%RSD	.28689	.72780	.23021
#1	9083.8	53891.	2466.7
#2	9088.3	54227.	2460.1
#3	9131.1	54679.	2455.4

Approved: June 29, 2016

Sample Name: PBW 1A Acquired: 6/29/2016 12:25:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572926-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00969	.00038	.00219	.00001	-.00001	.03841	.00000
Stddev	.00208	.00740	.00389	.00299	.00060	.00005	.03188	.00011
%RSD	490.47	76.386	1019.5	136.75	9720.9	1068.5	83.004	4065.3
#1	-.00163	.00771	-.00079	.00162	-.00061	-.00004	.00538	-.00006
#2	.00253	.00348	-.00279	.00542	.00059	-.00003	.06900	.00013
#3	.00037	.01788	.00473	-.00048	.00004	.00006	.04083	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	-.00114	.00101	-.00743	.05403	-.00461	.00807	.00265
Stddev	.00016	.00115	.00139	.03073	.12944	.00184	.04739	.00241
%RSD	80.693	100.57	138.13	413.72	239.57	39.969	587.23	91.000
#1	-.00010	-.00093	-.00008	.02742	.18957	-.00661	-.02026	.00319
#2	-.00039	-.00012	.00257	-.03064	-.06829	-.00298	.06278	.00001
#3	-.00012	-.00239	.00052	-.01906	.04081	-.00425	-.01831	.00474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.01638	-.00012	-.00282	.00313	.00156	-.00004	-.01726
Stddev	.00031	.01737	.00058	.00451	.00088	.00443	.00754	.00313
%RSD	341.98	106.08	491.56	159.75	28.092	284.40	18390.	18.103
#1	-.00041	.02925	.00054	.00166	.00247	-.00307	-.00321	-.02086
#2	.00021	-.00339	-.00033	-.00735	.00279	.00198	-.00548	-.01579
#3	-.00007	.02327	-.00056	-.00277	.00413	.00577	.00856	-.01515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW 1A Acquired: 6/29/2016 12:25:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572926-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	-.00037	.00835	.00044	.00061	.00070	.00098
Stddev	.00035	.00043	.00581	.00403	.00043	.00006	.00029
%RSD	115.51	115.48	69.571	911.33	69.936	8.7596	29.722
#1	.00036	.00009	.00689	.00493	.00095	.00064	.00130
#2	-.00007	-.00075	.01476	-.00074	.00013	.00070	.00090
#3	.00063	-.00045	.00341	-.00287	.00076	.00076	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9077.8	55403.	2547.2
Stddev	29.0	136.	11.6
%RSD	.31944	.24610	.45692
#1	9090.8	55492.	2560.5
#2	9098.0	55246.	2541.9
#3	9044.6	55471.	2539.2

Approved: June 29, 2016

Sample Name: L1606000317 Acquired: 6/29/2016 12:51:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19942	4.9152	.19467	.94685	.49734	.02416	5.0301	.02449
Stddev	.00255	.0117	.00420	.00146	.00228	.00009	.0426	.00032
%RSD	1.2773	.23807	2.1585	.15423	.45856	.39192	.84644	1.2871
#1	.20196	4.9030	.19717	.94606	.49912	.02407	4.9810	.02484
#2	.19686	4.9263	.19702	.94595	.49814	.02414	5.0529	.02441
#3	.19945	4.9164	.18982	.94853	.49477	.02426	5.0564	.02422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09914	.24528	.24831	1.9921	24.590	.50338	4.9364	.24982
Stddev	.00028	.00273	.00169	.0121	.169	.00088	.1699	.00058
%RSD	.28422	1.1127	.68258	.60865	.68881	.17436	3.4428	.23154
#1	.09933	.24822	.24886	1.9942	24.551	.50339	5.0948	.25044
#2	.09928	.24282	.24641	1.9790	24.775	.50249	4.9575	.24929
#3	.09882	.24481	.24966	2.0030	24.443	.50425	4.7568	.24974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49762	24.927	.24842	4.7827	.24600	.58372	.18760	2.3385
Stddev	.00152	.049	.00111	.0046	.00502	.00040	.00394	.0041
%RSD	.30447	.19534	.44745	.09557	2.0396	.06777	2.1019	.17592
#1	.49904	24.918	.24747	4.7873	.24576	.58326	.18318	2.3426
#2	.49603	24.979	.24815	4.7781	.25113	.58396	.19076	2.3344
#3	.49780	24.883	.24964	4.7828	.24110	.58393	.18887	2.3384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606000317 Acquired: 6/29/2016 12:51:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49497	.50184	.49529	.24845	.49224	.49191	.50492
Stddev	.00275	.00140	.00808	.00021	.00139	.00069	.00249
%RSD	.55508	.27961	1.6310	.08451	.28222	.13974	.49288
#1	.49807	.50189	.50355	.24861	.49286	.49225	.50678
#2	.49397	.50322	.49491	.24821	.49321	.49112	.50588
#3	.49285	.50041	.48740	.24852	.49065	.49236	.50209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9106.9	54839.	2510.9
Stddev	31.7	98.	10.0
%RSD	.34778	.17793	.39937
#1	9070.5	54743.	2503.6
#2	9122.5	54837.	2506.9
#3	9127.7	54938.	2522.4

Approved: June 29, 2016

Sample Name: L1606000318 Acquired: 6/29/2016 12:54:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20311**	**5.0093**	**.20024**	**.96622**	**.50492**	**.02463**	**5.1020**	**.02493**
Stddev	.00134	.0069	.00123	.00653	.00175	.00006	.0248	.00009
%RSD	.65845	.13814	.61617	.67574	.34616	.23578	.48634	.37015
#1	.20259	5.0148	.19919	.97000	.50693	.02456	5.1289	.02499
#2	.20463	5.0115	.19994	.95868	.50405	.02465	5.0971	.02482
#3	.20211	5.0015	.20160	.96999	.50378	.02468	5.0800	.02497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10159**	**.25237**	**.25344**	**2.0243**	**25.196**	**.50983**	**4.9947**	**.25208**
Stddev	.00022	.00097	.00010	.0071	.064	.00473	.0322	.00383
%RSD	.21200	.38555	.03998	.34981	.25307	.92753	.64516	1.5175
#1	.10168	.25147	.25337	2.0230	25.166	.51502	5.0116	.25643
#2	.10134	.25340	.25339	2.0319	25.269	.50576	4.9576	.24922
#3	.10175	.25222	.25355	2.0179	25.153	.50870	5.0150	.25061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51133**	**25.314**	**.25403**	**4.8909**	**.25346**	**.59729**	**.19152**	**2.3900**
Stddev	.00025	.101	.00164	.0074	.00202	.00300	.01053	.0036
%RSD	.04800	.39933	.64387	.15059	.79518	.50201	5.4987	.15132
#1	.51138	25.371	.25300	4.8825	.25574	.59947	.18873	2.3859
#2	.51107	25.375	.25316	4.8948	.25274	.59387	.20316	2.3915
#3	.51155	25.198	.25591	4.8955	.25191	.59853	.18266	2.3926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606000318 Acquired: 6/29/2016 12:54:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50607**	**.51174**	**.50420**	**.25663**	**.50263**	**.50496**	**.50908**
Stddev	.00055	.00020	.00568	.00381	.00128	.00087	.00229
%RSD	.10798	.03949	1.1259	1.4837	.25367	.17237	.45012
#1	.50554	.51151	.49897	.26069	.50259	.50421	.50995
#2	.50604	.51186	.51023	.25313	.50137	.50476	.51082
#3	.50663	.51185	.50339	.25606	.50392	.50592	.50648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9125.2**	**55317.**	**2535.5**
Stddev	23.7	132.	16.3
%RSD	.26019	.23790	.64140
#1	9101.1	55178.	2528.3
#2	9125.8	55335.	2524.1
#3	9148.6	55439.	2554.1

Approved: June 29, 2016

Sample Name: L1606000319 Acquired: 6/29/2016 12:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20259	4.9748	.19670	.96312	.50177	.02447	5.1150	.02478
Stddev	.00335	.0120	.00105	.00730	.00329	.00011	.0459	.00019
%RSD	1.6539	.24134	.53322	.75754	.65553	.43752	.89800	.77153
#1	.20645	4.9806	.19550	.96677	.49884	.02441	5.0929	.02465
#2	.20083	4.9827	.19718	.95472	.50533	.02459	5.1678	.02500
#3	.20048	4.9610	.19743	.96787	.50112	.02441	5.0844	.02470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10071	.24983	.25372	1.9968	25.135	.51049	5.0317	.24909
Stddev	.00057	.00136	.00115	.0570	.092	.00078	.1042	.00287
%RSD	.57056	.54283	.45193	2.8535	.36573	.15242	2.0711	1.1532
#1	.10016	.24978	.25491	1.9675	25.037	.51039	5.1497	.24614
#2	.10067	.24850	.25364	2.0625	25.220	.51131	4.9934	.25187
#3	.10131	.25121	.25262	1.9605	25.147	.50977	4.9521	.24926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50759	25.260	.25300	4.8539	.25419	.59776	.19000	2.3625
Stddev	.00112	.047	.00099	.0055	.00338	.00476	.00429	.0019
%RSD	.21968	.18448	.39174	.11346	1.3288	.79571	2.2577	.07826
#1	.50884	25.244	.25400	4.8572	.25062	.59919	.19488	2.3643
#2	.50670	25.313	.25298	4.8570	.25460	.60164	.18834	2.3626
#3	.50723	25.224	.25202	4.8476	.25734	.59245	.18679	2.3606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606000319 Acquired: 6/29/2016 12:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50413	.51002	.49861	.25226	.49804	.50117	.50899
Stddev	.00077	.00178	.00782	.00363	.00110	.00076	.00148
%RSD	.15230	.34965	1.5686	1.4399	.22145	.15205	.29136
#1	.50501	.50928	.49725	.25039	.49679	.50174	.50957
#2	.50370	.51205	.49156	.25644	.49845	.50146	.50731
#3	.50367	.50873	.50702	.24994	.49888	.50030	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9138.5	55370.	2535.2
Stddev	33.9	132.	12.4
%RSD	.37093	.23838	.49071
#1	9127.8	55226.	2523.7
#2	9176.5	55486.	2548.4
#3	9111.3	55399.	2533.4

Approved: June 29, 2016

Sample Name: L1606000320 Acquired: 6/29/2016 13:01:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20245**	**4.9702**	**.19985**	**.96406**	**.50180**	**.02434**	**5.0941**	**.02476**
Stddev	.00212	.0121	.00304	.00165	.00115	.00010	.0121	.00025
%RSD	1.0488	.24344	1.5231	.17079	.22884	.43136	.23714	1.0220
#1	.20099	4.9792	.20327	.96261	.50290	.02434	5.0979	.02471
#2	.20148	4.9750	.19888	.96372	.50061	.02423	5.1038	.02503
#3	.20489	4.9565	.19742	.96585	.50189	.02444	5.0806	.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10089**	**.24943**	**.25316**	**2.0222**	**24.982**	**.50705**	**5.0147**	**.25129**
Stddev	.00012	.00066	.00186	.0200	.034	.00254	.1081	.00517
%RSD	.12332	.26387	.73297	.98746	.13790	.50173	2.1552	2.0577
#1	.10080	.25017	.25499	2.0000	25.004	.50412	4.9990	.24775
#2	.10103	.24921	.25320	2.0276	25.000	.50842	4.9153	.25722
#3	.10083	.24891	.25128	2.0388	24.942	.50862	5.1297	.24889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50686**	**25.213**	**.25335**	**4.8622**	**.25304**	**.59399**	**.19598**	**2.3602**
Stddev	.00079	.047	.00040	.0043	.00210	.00132	.00508	.0044
%RSD	.15635	.18575	.15834	.08895	.83025	.22140	2.5942	.18605
#1	.50769	25.260	.25297	4.8659	.25387	.59512	.19014	2.3653
#2	.50679	25.167	.25330	4.8631	.25460	.59430	.19839	2.3584
#3	.50611	25.211	.25377	4.8575	.25065	.59255	.19942	2.3571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606000320 Acquired: 6/29/2016 13:01:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50362	.51051	.50103	.25257	.50156	.50166	.46823
Stddev	.00072	.00045	.00604	.00391	.00108	.00067	.00088
%RSD	.14335	.08821	1.2065	1.5475	.21506	.13395	.18846
#1	.50381	.51034	.50396	.25632	.50267	.50161	.46861
#2	.50423	.51102	.49408	.25286	.50149	.50235	.46722
#3	.50282	.51017	.50505	.24852	.50052	.50101	.46886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9124.0	55260.	2545.8
Stddev	21.0	111.	3.4
%RSD	.23034	.20049	.13548
#1	9099.7	55218.	2542.6
#2	9137.3	55177.	2549.4
#3	9134.8	55386.	2545.3

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 13:05:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41728	10.443	.40824	.52559	1.0322	.05136	10.162	.05182
Stddev	.00237	.025	.00050	.00501	.0032	.00014	.032	.00015
%RSD	.56738	.23872	.12193	.95267	.30669	.26937	.31037	.28513
#1	.41466	10.419	.40772	.53075	1.0302	.05152	10.197	.05196
#2	.41928	10.441	.40828	.52075	1.0358	.05129	10.136	.05183
#3	.41789	10.469	.40871	.52528	1.0305	.05127	10.154	.05167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20840	.52211	.52309	4.1083	51.248	1.0398	10.307	.51344
Stddev	.00024	.00275	.00166	.0550	.066	.0053	.136	.00123
%RSD	.11505	.52680	.31759	1.3384	.12825	.50870	1.3228	.24045
#1	.20812	.52522	.52492	4.0977	51.292	1.0343	10.153	.51232
#2	.20852	.52000	.52270	4.1679	51.279	1.0449	10.411	.51476
#3	.20855	.52113	.52167	4.0595	51.173	1.0402	10.357	.51322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0440	51.386	.52438	10.412	.52053	1.2552	.42317	5.2692
Stddev	.0008	.067	.00122	.014	.00415	.0027	.01133	.0060
%RSD	.07805	.13026	.23220	.13293	.79813	.21836	2.6770	.11421
#1	1.0446	51.436	.52317	10.397	.52193	1.2543	.43284	5.2639
#2	1.0443	51.412	.52561	10.423	.52381	1.2530	.41071	5.2758
#3	1.0431	51.310	.52436	10.418	.51586	1.2583	.42597	5.2679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 13:05:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0436**	**1.0279**	**1.0340**	**.52273**	**1.0431**	**1.0402**	**1.0378**
Stddev	.0017	.0015	.0024	.00377	.0024	.0010	.0044
%RSD	.16567	.15092	.23240	.72085	.22837	.09675	.42077
#1	1.0418	1.0270	1.0313	.51970	1.0446	1.0399	1.0426
#2	1.0453	1.0297	1.0348	.52153	1.0404	1.0413	1.0368
#3	1.0436	1.0270	1.0359	.52695	1.0444	1.0394	1.0340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8816.9**	**52768.**	**2460.8**
Stddev	25.4	35.	11.8
%RSD	.28757	.06597	.47754
#1	8803.8	52804.	2449.9
#2	8800.7	52734.	2459.2
#3	8846.1	52767.	2473.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 13:09:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.02092	.00499	.00875	.00130	.00004	.04368	-.00006
Stddev	.00139	.00906	.00291	.00167	.00046	.00007	.03569	.00034
%RSD	96.487	43.295	58.180	19.023	35.727	172.04	81.714	579.33
#1	-.00003	.03119	.00427	.00901	.00142	.00008	.07806	.00020
#2	.00161	.01746	.00819	.00698	.00168	.00009	.04617	-.00044
#3	.00273	.01409	.00252	.01028	.00078	-.00004	.00681	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00027	.00060	.01159	.31430	-.00299	-.07103	.00030
Stddev	.00017	.00035	.00102	.02144	.01113	.00849	.06707	.00165
%RSD	89.290	130.31	170.26	185.01	3.5420	284.33	94.418	543.54
#1	-.00016	.00064	-.00052	.03505	.32409	.00279	-.03511	.00134
#2	-.00038	-.00004	.00147	.00668	.30219	.00098	-.02957	-.00160
#3	-.00004	.00020	.00085	-.00697	.31662	-.01273	-.14840	.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.03858	.00079	.00525	-.00017	-.00129	.00458	-.01015
Stddev	.00031	.05294	.00163	.00742	.00058	.00315	.00322	.00163
%RSD	57.139	137.21	205.93	141.12	341.19	244.71	70.209	16.103
#1	.00086	.07534	-.00107	.01276	-.00034	.00051	.00776	-.00828
#2	.00025	.06251	.00198	-.00207	-.00064	.00056	.00468	-.01133
#3	.00050	-.02210	.00147	.00507	.00047	-.00493	.00132	-.01083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 13:09:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00110	.00088	.00633	.00294	.00284	.00275	.00099
Stddev	.00009	.00010	.00393	.00140	.00074	.00017	.00049
%RSD	8.3685	11.846	62.098	47.766	25.940	6.0078	49.647
#1	.00119	.00080	.00973	.00137	.00199	.00268	.00093
#2	.00111	.00083	.00723	.00339	.00331	.00263	.00151
#3	.00100	.00099	.00203	.00407	.00320	.00294	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9069.1	54567.	2459.8
Stddev	34.3	946.	2.7
%RSD	.37865	1.7328	.10952
#1	9101.3	53961.	2456.7
#2	9072.9	54082.	2460.8
#3	9033.0	55656.	2461.9

Approved: June 29, 2016

Sample Name: PBW 9A Acquired: 6/29/2016 13:12:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00156	.01277	-.00057	.00128	.00058	.00012	.02846	-.00015
Stddev	.00243	.01074	.00129	.00102	.00108	.00009	.03509	.00028
%RSD	156.09	84.047	228.10	79.795	185.93	79.077	123.28	187.74
#1	.00307	.02394	-.00144	.00015	.00172	.00006	-.01063	.00011
#2	.00284	.00253	.00091	.00155	-.00043	.00006	.05722	-.00045
#3	-.00125	.01185	-.00117	.00214	.00046	.00022	.03879	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	-.00060	.00271	-.00172	.10278	-.00435	-.05155	.00144
Stddev	.00026	.00014	.00059	.02008	.11040	.00141	.03391	.00194
%RSD	215.36	23.355	21.966	1166.1	107.41	32.304	65.786	134.90
#1	-.00034	-.00045	.00248	-.02335	.22979	-.00298	-.08390	.00338
#2	.00017	-.00062	.00226	.00183	.04875	-.00429	-.01626	-.00050
#3	-.00019	-.00073	.00338	.01635	.02981	-.00578	-.05450	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	-.00949	-.00074	.00015	.00305	.00458	-.00220	-.00408
Stddev	.00019	.05710	.00110	.00555	.00336	.00036	.00500	.00163
%RSD	82.720	601.37	148.14	3741.8	110.48	7.8763	227.58	39.866
#1	-.00003	.00344	.00052	-.00258	.00028	.00434	.00356	-.00318
#2	-.00026	.04002	-.00124	-.00351	.00206	.00500	-.00470	-.00309
#3	-.00041	-.07195	-.00152	.00653	.00679	.00441	-.00544	-.00595
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW 9A Acquired: 6/29/2016 13:12:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00017**	**.00835**	**.00399**	**.00221**	**.00058**	**-.00007**
Stddev	.00032	.00034	.00260	.00541	.00092	.00007	.00034
%RSD	15258.	200.35	31.148	135.71	41.862	12.717	487.57
#1	.00036	-.00025	.00932	.00647	.00302	.00051	-.00045
#2	-.00009	.00021	.01032	-.00222	.00239	.00057	.00015
#3	-.00026	-.00047	.00540	.00771	.00120	.00065	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8979.3**	**53829.**	**2438.6**
Stddev	13.3	47.	17.0
%RSD	.14830	.08639	.69821
#1	8964.6	53864.	2422.5
#2	8982.6	53776.	2436.9
#3	8990.6	53846.	2456.4

Approved: June 29, 2016

Sample Name: LCSW 9A Acquired: 6/29/2016 13:16:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19153**	**4.8242**	**.19643**	**.93765**	**.48784**	**.02348**	**4.9390**	**.02367**
Stddev	.00023	.0092	.00257	.00737	.00434	.00005	.0641	.00018
%RSD	.11813	.19160	1.3078	.78564	.88908	.23086	1.2976	.76226
#1	.19126	4.8142	.19451	.94494	.48814	.02344	4.8736	.02347
#2	.19164	4.8259	.19935	.93779	.48336	.02354	4.9419	.02383
#3	.19167	4.8324	.19543	.93021	.49201	.02347	5.0016	.02369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09709**	**.24274**	**.24500**	**1.9526**	**24.264**	**.49676**	**4.8975**	**.24566**
Stddev	.00023	.00123	.00204	.0603	.156	.00276	.1134	.00298
%RSD	.24128	.50688	.83346	3.0892	.64109	.55474	2.3145	1.2147
#1	.09706	.24399	.24387	2.0191	24.150	.49989	4.8090	.24872
#2	.09733	.24270	.24736	1.9375	24.201	.49568	4.8582	.24275
#3	.09686	.24153	.24377	1.9014	24.441	.49470	5.0252	.24551
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48960**	**24.489**	**.24515**	**4.7214**	**.24653**	**.57645**	**.19208**	**2.2961**
Stddev	.00187	.110	.00154	.0246	.00069	.00338	.00416	.0083
%RSD	.38239	.44956	.62743	.52045	.28063	.58690	2.1678	.36040
#1	.48896	24.569	.24362	4.7202	.24577	.57275	.19660	2.2976
#2	.49171	24.364	.24670	4.7465	.24713	.57938	.18839	2.3035
#3	.48813	24.535	.24515	4.6974	.24668	.57723	.19124	2.2871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW 9A Acquired: 6/29/2016 13:16:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48754	.49440	.49346	.24467	.48567	.48631	.00100
Stddev	.00247	.00085	.00185	.00469	.00086	.00164	.00051
%RSD	.50612	.17214	.37585	1.9151	.17727	.33744	51.175
#1	.48669	.49487	.49132	.24095	.48611	.48510	.00106
#2	.49032	.49342	.49462	.24312	.48621	.48818	.00147
#3	.48562	.49491	.49443	.24993	.48467	.48564	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9069.4	54722.	2517.9
Stddev	20.8	63.	2.3
%RSD	.22881	.11570	.09293
#1	9045.5	54658.	2515.6
#2	9079.4	54722.	2520.2
#3	9083.3	54784.	2518.0

Approved: June 29, 2016

Sample Name: F BLANK Acquired: 6/29/2016 13:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574515-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.01538	-.00286	.01085	.00013	.00010	.02649	.00006
Stddev	.00233	.01023	.00247	.00313	.00061	.00008	.06500	.00010
%RSD	494.84	66.496	86.406	28.893	457.32	73.499	245.39	174.09
#1	.00221	.02702	-.00051	.01142	-.00013	.00005	-.03588	.00014
#2	-.00166	.00785	-.00264	.01365	-.00029	.00007	.02150	-.00005
#3	-.00197	.01126	-.00544	.00746	.00083	.00019	.09384	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00036	.00207	.00408	.13839	-.00066	.00872	.00046
Stddev	.00031	.00065	.00059	.02388	.03067	.00271	.00917	.00060
%RSD	184.06	183.11	28.679	586.09	22.159	413.43	105.15	130.31
#1	-.00037	-.00035	.00254	.03155	.16581	.00225	.01333	-.00014
#2	-.00031	.00093	.00225	-.01178	.14409	-.00312	-.00184	.00106
#3	.00019	.00049	.00140	-.00754	.10528	-.00109	.01466	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.07025	.00090	.00198	.00563	-.00130	.00142	-.01125
Stddev	.00037	.02627	.00077	.00663	.00114	.00219	.00085	.00286
%RSD	68.038	37.398	84.813	335.31	20.209	168.94	59.973	25.454
#1	.00097	.07572	.00026	-.00335	.00545	-.00054	.00074	-.00976
#2	.00033	.09337	.00175	.00941	.00684	.00041	.00113	-.00943
#3	.00033	.04168	.00070	-.00013	.00458	-.00377	.00237	-.01455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: F BLANK Acquired: 6/29/2016 13:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574515-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00033	.00749	.00139	.00161	.00366	.00033
Stddev	.00034	.00035	.00360	.00082	.00107	.00016	.00020
%RSD	875.38	106.02	48.045	59.255	66.263	4.2389	61.205
#1	.00037	.00050	.01150	.00203	.00236	.00357	.00056
#2	.00005	-.00007	.00452	.00046	.00039	.00384	.00018
#3	-.00031	.00056	.00646	.00167	.00209	.00357	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9236.9	55682.	2578.1
Stddev	14.9	456.	8.4
%RSD	.16086	.81916	.32679
#1	9251.7	55556.	2569.8
#2	9222.0	55302.	2577.9
#3	9237.0	56188.	2586.6

Approved: June 29, 2016

Sample Name: L1606153901 Acquired: 6/29/2016 13:24:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.04503	.00049	.02211	.17570	-.00002	50.971	.00006
Stddev	.00098	.00339	.00086	.00379	.00296	.00012	.598	.00011
%RSD	129.22	7.5349	175.62	17.128	1.6847	620.32	1.1738	202.33
#1	.00186	.04145	.00146	.02564	.17860	-.00014	51.468	.00019
#2	-.00001	.04542	.00020	.01811	.17268	.00009	50.307	-.00001
#3	.00042	.04821	-.00019	.02258	.17581	-.00001	51.138	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	-.00042	.00313	.01681	.98433	-.00212	4.8021	.00732
Stddev	.00016	.00050	.00067	.04138	.14623	.00172	.0876	.00134
%RSD	114.87	117.94	21.271	246.08	14.855	80.977	1.8235	18.291
#1	.00000	.00015	.00379	.05311	1.1527	-.00347	4.7574	.00857
#2	.00032	-.00074	.00246	-.02824	.88915	-.00271	4.7459	.00591
#3	.00010	-.00067	.00314	.02556	.91113	-.00019	4.9030	.00748
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	31.048	-.00039	-.00056	.00278	-.00117	.00307	4.4799
Stddev	.00023	.353	.00054	.00326	.00085	.00361	.00456	.0307
%RSD	97.571	1.1354	139.05	585.12	30.622	307.41	148.29	.68488
#1	.00008	31.353	-.00087	-.00289	.00268	.00154	.00769	4.4736
#2	.00013	30.662	.00019	.00316	.00368	-.00526	.00295	4.5132
#3	.00049	31.128	-.00049	-.00194	.00199	.00021	-.00142	4.4528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606153901 Acquired: 6/29/2016 13:24:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00049**	**.24437**	**-.00150**	**.00320**	**.00048**	**.00260**	**.00024**
Stddev	.00033	.00337	.00539	.00295	.00098	.00005	.00067
%RSD	66.819	1.3809	358.87	92.105	205.70	2.0652	282.05
#1	-.00061	.24636	-.00695	.00055	.00052	.00263	-.00005
#2	-.00075	.24048	.00382	.00267	.00143	.00263	-.00024
#3	-.00012	.24628	-.00137	.00638	-.00052	.00253	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9084.0**	**54917.**	**2530.0**
Stddev	37.9	437.	39.4
%RSD	.41716	.79561	1.5565
#1	9064.6	54983.	2496.9
#2	9059.8	55317.	2573.5
#3	9127.7	54450.	2519.5

Approved: June 29, 2016

Sample Name: L1606149601 Acquired: 6/29/2016 13:27:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.04490	.00155	.04404	.08099	-.00000	152.38	.00387
Stddev	.00184	.01056	.00185	.00277	.00097	.00005	1.60	.00031
%RSD	2651.7	23.512	119.01	6.2792	1.2002	3186.0	1.0468	8.0000
#1	-.00197	.05188	.00369	.04382	.08022	.00005	151.97	.00400
#2	.00161	.05006	.00038	.04138	.08208	-.00001	154.14	.00352
#3	.00057	.03276	.00059	.04690	.08067	-.00004	151.03	.00410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00078	.08572	.03952	2.3284	.00873	2.1016	.14257
Stddev	.00016	.00011	.00159	.02088	.1056	.00542	.0733	.00470
%RSD	91.389	14.348	1.8525	52.820	4.5346	62.073	3.4891	3.2950
#1	-.00001	.00067	.08649	.06019	2.4297	.00391	2.0986	.14083
#2	-.00033	.00077	.08678	.01844	2.2190	.01460	2.1763	.13899
#3	-.00019	.00090	.08390	.03994	2.3365	.00769	2.0298	.14789
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	3.9437	.00213	.48417	.04082	-.00093	.00085	.68513
Stddev	.00021	.0307	.00050	.01401	.00231	.00060	.00505	.00752
%RSD	196.10	.77890	23.717	2.8944	5.6647	64.335	591.18	1.0973
#1	-.00006	3.9619	.00255	.49011	.03817	-.00116	.00014	.69065
#2	.00004	3.9610	.00226	.49423	.04240	-.00137	.00622	.68818
#3	.00034	3.9082	.00157	.46816	.04190	-.00025	-.00380	.67657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601 Acquired: 6/29/2016 13:27:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.33940	-.01837	.00131	.00158	.15825	.00049
Stddev	.00026	.00192	.00599	.00263	.00030	.00187	.00017
%RSD	327.05	.56694	32.634	201.60	18.811	1.1847	35.786
#1	.00006	.34018	-.02023	.00434	.00192	.15890	.00029
#2	-.00017	.34080	-.01166	-.00037	.00138	.15971	.00056
#3	.00035	.33720	-.02321	-.00006	.00144	.15613	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9083.0	55048.	2572.1
Stddev	12.4	106.	20.0
%RSD	.13696	.19313	.77824
#1	9096.9	54966.	2569.4
#2	9073.0	55010.	2553.6
#3	9079.0	55168.	2593.3

Approved: June 29, 2016

Sample Name: L1606149601S Acquired: 6/29/2016 13:31:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19901	5.0835	.20422	1.0200	.58673	.02474	152.60	.02902
Stddev	.00268	.0032	.00478	.0050	.02151	.00017	5.66	.00010
%RSD	1.3471	.06200	2.3428	.48536	3.6654	.67464	3.7112	.33393
#1	.20137	5.0799	.20951	1.0256	.57631	.02491	149.80	.02906
#2	.19956	5.0853	.20018	1.0181	.57242	.02473	148.88	.02909
#3	.19609	5.0854	.20299	1.0163	.61146	.02458	159.12	.02891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09935	.25120	.32839	2.0167	27.699	.52373	7.0826	.38660
Stddev	.00019	.00042	.00321	.1390	1.135	.02634	.2402	.01337
%RSD	.19025	.16720	.97706	6.8918	4.0974	5.0297	3.3916	3.4593
#1	.09957	.25142	.32884	1.9876	27.155	.50789	7.1811	.37541
#2	.09926	.25071	.33135	1.8945	26.939	.50916	6.8087	.38299
#3	.09923	.25146	.32498	2.1679	29.004	.55414	7.2578	.40141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51367	29.242	.25007	5.5779	.28995	.61217	.19415	3.1202
Stddev	.00224	1.120	.00162	.0326	.00216	.00586	.00396	.0141
%RSD	.43553	3.8309	.64653	.58366	.74661	.95659	2.0391	.45211
#1	.51394	28.687	.25099	5.5840	.28950	.61568	.18974	3.1244
#2	.51576	28.508	.25102	5.6070	.29230	.61543	.19530	3.1318
#3	.51131	30.531	.24820	5.5427	.28804	.60541	.19741	3.1045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601S Acquired: 6/29/2016 13:31:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50841**	**.83006**	**.48317**	**.25181**	**.50876**	**.64056**	**.00125**
Stddev	.00279	.02809	.02264	.00257	.00177	.00306	.00069
%RSD	.54937	3.3838	4.6851	1.0190	.34844	.47814	55.275
#1	.51067	.82564	.48407	.24885	.50672	.64257	.00045
#2	.50927	.80445	.46010	.25339	.50984	.64208	.00164
#3	.50529	.86010	.50535	.25319	.50973	.63703	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8925.7**	**53605.**	**2514.8**
Stddev	32.1	114.	66.8
%RSD	.35995	.21348	2.6578
#1	8904.1	53541.	2533.4
#2	8910.5	53737.	2570.4
#3	8962.6	53536.	2440.7

Approved: June 29, 2016

Sample Name: L1606149601SD Acquired: 6/29/2016 13:35:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-10

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20298**	**5.1471**	**.20841**	**1.0355**	**.59469**	**.02517**	**161.77**	**.02948**
Stddev	.00333	.0076	.00366	.0045	.00331	.00008	.91	.00026
%RSD	1.6408	.14687	1.7558	.43354	.55680	.30956	.56220	.87127
#1	.20648	5.1503	.20791	1.0374	.59848	.02514	162.81	.02959
#2	.19985	5.1525	.21230	1.0303	.59237	.02511	161.35	.02966
#3	.20260	5.1385	.20503	1.0387	.59321	.02526	161.13	.02918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10040**	**.25341**	**.33794**	**2.0523**	**28.211**	**.52968**	**7.2091**	**.39606**
Stddev	.00033	.00261	.00159	.0236	.021	.00241	.0455	.00457
%RSD	.32394	1.0290	.46924	1.1505	.07537	.45466	.63062	1.1537
#1	.10022	.25630	.33827	2.0301	28.213	.53240	7.1616	.40061
#2	.10078	.25270	.33934	2.0771	28.231	.52782	7.2135	.39609
#3	.10021	.25123	.33622	2.0497	28.188	.52882	7.2522	.39147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52134**	**29.781**	**.25290**	**5.6983**	**.29509**	**.61618**	**.20300**	**3.2091**
Stddev	.00203	.140	.00096	.0096	.00142	.00461	.00627	.0089
%RSD	.38917	.46857	.37998	.16896	.48273	.74876	3.0907	.27566
#1	.52173	29.911	.25390	5.6911	.29670	.61861	.20133	3.2129
#2	.52315	29.799	.25283	5.7092	.29460	.61907	.20994	3.2154
#3	.51915	29.633	.25198	5.6946	.29398	.61086	.19773	3.1990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601SD Acquired: 6/29/2016 13:35:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-10

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51305**	**.85393**	**.50073**	**.25713**	**.51551**	**.65641**	**.00038**
Stddev	.00264	.01335	.00656	.00188	.00222	.00100	.00089
%RSD	.51363	1.5635	1.3091	.73265	.43057	.15215	234.39
#1	.51277	.86930	.50785	.25842	.51412	.65597	.00001
#2	.51581	.84733	.49495	.25497	.51434	.65755	.00139
#3	.51056	.84517	.49940	.25800	.51807	.65570	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8935.7**	**53938.**	**2524.0**
Stddev	22.6	87.	20.2
%RSD	.25300	.16207	.79942
#1	8946.9	54038.	2502.6
#2	8909.7	53879.	2527.0
#3	8950.6	53896.	2542.6

Approved: June 29, 2016

Sample Name: L1606149601PS Acquired: 6/29/2016 13:38:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574645-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20054	5.1036	.20832	1.0283	.58081	.02493	145.21	.02893
Stddev	.00093	.0139	.00310	.0064	.00420	.00017	1.06	.00029
%RSD	.46402	.27197	1.4885	.62248	.72276	.66614	.73188	1.0052
#1	.19971	5.0879	.20511	1.0209	.58524	.02475	146.21	.02918
#2	.20155	5.1142	.21130	1.0317	.58029	.02497	145.32	.02899
#3	.20037	5.1087	.20854	1.0323	.57690	.02508	144.09	.02861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10016	.25150	.32808	1.9934	27.533	.52384	6.9324	.37604
Stddev	.00016	.00018	.00185	.0266	.147	.00167	.1202	.00194
%RSD	.16020	.07268	.56512	1.3335	.53434	.31836	1.7343	.51548
#1	.10014	.25167	.32966	2.0240	27.661	.52244	6.9856	.37778
#2	.10001	.25131	.32855	1.9805	27.565	.52569	7.0169	.37639
#3	.10033	.25151	.32604	1.9757	27.372	.52341	6.7948	.37395
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51962	29.049	.25255	5.6296	.29024	.61643	.20214	3.1122
Stddev	.00075	.199	.00072	.0105	.00168	.00611	.01025	.0067
%RSD	.14413	.68651	.28652	.18630	.58005	.99164	5.0693	.21625
#1	.52008	29.270	.25178	5.6175	.29130	.61427	.19110	3.1145
#2	.52003	28.996	.25322	5.6359	.28830	.61169	.20398	3.1176
#3	.51876	28.882	.25264	5.6354	.29113	.62333	.21134	3.1047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601PS Acquired: 6/29/2016 13:38:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574645-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51169**	**.81148**	**.48297**	**.25279**	**.51036**	**.64217**	**.00009**
Stddev	.00096	.01402	.00273	.00253	.00157	.00146	.00054
%RSD	.18795	1.7283	.56579	.99895	.30669	.22793	566.34
#1	.51206	.82676	.48178	.25490	.51034	.64384	-.00036
#2	.51242	.80849	.48104	.24999	.50880	.64158	-.00005
#3	.51060	.79919	.48610	.25347	.51193	.64109	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8974.4**	**53921.**	**2529.2**
Stddev	18.9	362.	17.1
%RSD	.21065	.67063	.67636
#1	8952.7	53771.	2512.0
#2	8987.7	53659.	2529.4
#3	8982.6	54334.	2546.2

Approved: June 29, 2016

Sample Name: L1606149601SDL Acquired: 6/29/2016 13:42:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574645-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	.02265	.00439	.01861	.01991	.00001	34.038	.00076
Stddev	.00237	.00623	.00284	.00283	.00055	.00008	.351	.00013
%RSD	88.809	27.485	64.694	15.181	2.7467	583.76	1.0315	16.599
#1	.00540	.02732	.00767	.02173	.01932	.00010	33.853	.00073
#2	.00109	.02506	.00277	.01786	.02039	-.00004	33.818	.00066
#3	.00153	.01558	.00273	.01623	.02002	-.00002	34.443	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00062	.02070	.01263	.64040	-.00117	.47919	.03072
Stddev	.00027	.00059	.00049	.02795	.07398	.00191	.11296	.00112
%RSD	120.29	95.891	2.3478	221.37	11.553	162.93	23.573	3.6479
#1	-.00024	.00108	.02099	-.01237	.70940	-.00228	.43966	.03057
#2	.00005	.00082	.02097	.04281	.56228	.00103	.60660	.03191
#3	-.00050	-.00005	.02014	.00744	.64953	-.00227	.39131	.02968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.87973	.00039	.11914	.01170	.00038	.00064	.15165
Stddev	.00069	.03146	.00108	.00344	.00381	.00470	.00283	.00126
%RSD	1754.8	3.5762	278.53	2.8862	32.581	1243.0	444.64	.83076
#1	.00075	.89723	-.00063	.11919	.00995	.00542	-.00262	.15021
#2	-.00033	.84341	.00027	.12255	.01607	-.00387	.00211	.15222
#3	-.00054	.89854	.00153	.11567	.00907	-.00041	.00242	.15252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601SDL Acquired: 6/29/2016 13:42:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574645-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.07377	.00394	.00294	.00223	.03691	.00004
Stddev	.00105	.00059	.00619	.00218	.00071	.00013	.00071
%RSD	283.17	.80195	157.13	74.208	31.723	.34011	2011.1
#1	.00026	.07309	.00295	.00509	.00149	.03696	.00081
#2	-.00062	.07407	-.00170	.00073	.00229	.03677	-.00059
#3	.00147	.07415	.01056	.00299	.00290	.03700	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8856.7	53491.	2431.8
Stddev	12.0	145.	16.6
%RSD	.13541	.27109	.68401
#1	8870.2	53328.	2432.6
#2	8852.6	53606.	2448.0
#3	8847.3	53539.	2414.7

Approved: June 29, 2016

Sample Name: L1606149601SDL Acquired: 6/29/2016 13:46:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574645-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.01470**	**.00246**	**.00724**	**.00491**	**.00005**	**6.6349**	**-.00015**
Stddev	.00282	.00852	.00115	.00218	.00150	.00009	.0736	.00025
%RSD	451.73	57.984	46.707	30.143	30.632	193.02	1.1088	164.73
#1	-.00099	.00499	.00287	.00765	.00563	-.00000	6.5913	.00009
#2	-.00324	.01818	.00116	.00918	.00318	.00015	6.5937	-.00014
#3	.00236	.02093	.00335	.00488	.00592	-.00001	6.7199	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.00122**	**.00474**	**.03942**	**.19051**	**-.00406**	**.04822**	**.00545**
Stddev	.00034	.00021	.00192	.01779	.11336	.00307	.07286	.00352
%RSD	1047.4	17.030	40.519	45.138	59.504	75.613	151.09	64.471
#1	-.00030	-.00121	.00678	.05654	.17314	-.00053	.05234	.00330
#2	.00038	-.00143	.00448	.02103	.31155	-.00557	.11894	.00951
#3	.00002	-.00101	.00297	.04068	.08684	-.00608	-.02661	.00354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00077**	**.12457**	**.00002**	**.02721**	**.00302**	**-.00078**	**.00898**	**.02532**
Stddev	.00015	.01454	.00074	.00142	.00426	.00453	.00442	.00181
%RSD	19.478	11.672	3733.6	5.2076	141.20	578.54	49.243	7.1430
#1	.00088	.10778	.00072	.02560	.00160	.00186	.01203	.02733
#2	.00060	.13316	.00009	.02773	-.00035	-.00602	.01100	.02480
#3	.00082	.13275	-.00075	.02828	.00780	.00181	.00391	.02382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601SDL Acquired: 6/29/2016 13:46:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574645-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.01430	.00089	.00259	.00141	.00761	.00062
Stddev	.00074	.00024	.00368	.00450	.00065	.00017	.00019
%RSD	391.61	1.6814	415.80	174.00	46.484	2.1887	30.376
#1	.00037	.01408	-.00013	.00638	.00166	.00743	.00076
#2	.00082	.01455	-.00218	-.00238	.00066	.00767	.00070
#3	-.00062	.01428	.00497	.00376	.00189	.00775	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8865.8	53275.	2415.4
Stddev	4.0	113.	10.8
%RSD	.04531	.21270	.44617
#1	8867.2	53400.	2402.9
#2	8861.3	53179.	2421.7
#3	8869.0	53246.	2421.5

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 13:50:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43655	10.978	.43937	.54785	1.0971	.05438	10.826
Stddev	.00135	.026	.00061	.00327	.0027	.00007	.060
%RSD	.30979	.23937	.13954	.59651	.24424	.12669	.55629
#1	.43586	10.995	.43886	.54528	1.1000	.05445	10.888
#2	.43811	10.991	.44005	.54675	1.0947	.05439	10.823
#3	.43568	10.947	.43920	.55153	1.0965	.05431	10.768
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05470	.21964	.54715	F .55305	4.3512	54.438	1.0930
Stddev	.00008	.00037	.00087	.00183	.0224	.086	.0063
%RSD	.13926	.16924	.15951	.33062	.51567	.15724	.58110
#1	.05476	.21935	.54786	.55269	4.3680	54.532	1.0877
#2	.05473	.21950	.54618	.55503	4.3258	54.363	1.0911
#3	.05462	.22006	.54740	.55143	4.3599	54.420	1.1000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				.50000			
Range				10.000%			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.965	.54340	F 1.1048	54.727	F .55602	F 11.063	.54591
Stddev	.158	.00449	.0014	.079	.00146	.021	.00195
%RSD	1.4388	.82627	.12456	.14502	.26234	.18692	.35775
#1	10.792	.54102	1.1054	54.637	.55599	11.077	.54587
#2	11.001	.54858	1.1032	54.756	.55458	11.040	.54398
#3	11.101	.54060	1.1057	54.787	.55750	11.073	.54788
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass
Value			1.0000		.50000	10.000	
Range			10.000%		10.000%	10.000%	

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 13:50:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.3300	.43998	F 5.5688	F 1.1051	1.0953	1.0953	.54932
Stddev	.0066	.00256	.0043	.0016	.0007	.0085	.00440
%RSD	.49866	.58162	.07732	.14659	.06456	.77643	.80171
#1	1.3301	.44292	5.5647	1.1068	1.0952	1.0927	.55160
#2	1.3233	.43876	5.5685	1.1050	1.0960	1.1048	.54425
#3	1.3366	.43826	5.5733	1.1036	1.0946	1.0884	.55212
Check ?	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value	1.2000		5.0000	1.0000			
Range	10.000%		10.000%	10.000%			

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0920	F 1.1025	F 1.1012
Stddev	.0020	.0007	.0052
%RSD	.18361	.06332	.47550
#1	1.0932	1.1031	1.1050
#2	1.0931	1.1018	1.0952
#3	1.0897	1.1027	1.1034
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8606.2	51334.	2377.1
Stddev	13.1	255.	10.7
%RSD	.15266	.49713	.44883
#1	8591.7	51291.	2365.7
#2	8609.4	51102.	2386.9
#3	8617.4	51607.	2378.8

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 13:53:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	.03388	.00187	.00598	.00209	.00006	.08905
Stddev	.00312	.00279	.00177	.00274	.00071	.00009	.03047
%RSD	252.10	8.2384	94.700	45.781	34.047	152.64	34.214
#1	.00089	.03254	.00070	.00844	.00286	-.00002	.07588
#2	-.00170	.03709	.00391	.00647	.00146	.00004	.06738
#3	.00452	.03202	.00101	.00303	.00195	.00015	.12389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	-.00042	.00159	.00116	.00800	.16229	-.00336
Stddev	.00030	.00021	.00063	.00099	.05432	.13072	.00219
%RSD	163.94	50.275	39.779	85.074	679.20	80.545	65.297
#1	-.00048	-.00038	.00092	.00029	.00967	.31233	-.00486
#2	-.00018	-.00065	.00169	.00223	.06147	.07307	-.00438
#3	.00012	-.00023	.00218	.00096	-.04714	.10147	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01753	.00154	.00064	.09416	-.00033	F .01257	.00484
Stddev	.06865	.00210	.00048	.02475	.00047	.00868	.00535
%RSD	391.63	136.30	73.800	26.283	142.42	69.055	110.46
#1	.07238	-.00008	.00070	.09247	.00021	.01642	.00150
#2	.03967	.00391	.00109	.11972	-.00055	.01865	.00202
#3	-.05946	.00078	.00014	.07031	-.00064	.00263	.01101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 13:53:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	-.00632	-.00767	-.00022	.00107	.00097	-.00047
Stddev	.00830	.00559	.00085	.00084	.00074	.00244	.00305
%RSD	1178.3	88.429	11.038	380.90	69.167	251.33	652.95
#1	-.00453	-.01035	-.00808	-.00056	.00181	.00204	.00282
#2	.01028	-.00867	-.00670	.00073	.00108	-.00182	-.00100
#3	-.00363	.00006	-.00824	-.00083	.00033	.00270	-.00322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00266	.00298	.00156
Stddev	.00122	.00013	.00075
%RSD	45.925	4.4612	48.080
#1	.00394	.00304	.00243
#2	.00150	.00308	.00105
#3	.00253	.00283	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8689.4	52522.	2390.6
Stddev	12.8	95.	7.5
%RSD	.14773	.18164	.31458
#1	8704.2	52437.	2381.9
#2	8683.0	52504.	2394.6
#3	8681.0	52625.	2395.2

Approved: June 29, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW20-062016	**Prep Method:**	3015	**Prep Date:**	06/22/2016 13:25
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574522	**Analyst:**	BKT	**Run Date:**	06/28/2016 16:41
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	NI.062816.164105
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00100	U	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0918		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00274	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00808		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00996		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW20-062016	**Prep Method:**	3015	**Prep Date:**	06/22/2016 13:25
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574522	**Analyst:**	BKT	**Run Date:**	06/28/2016 18:46
Collect Date:	06/20/2016 07:55	**Dilution:**	10	**File ID:**	NI.062816.184632
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Total	7439-96-5	0.279		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW19F-062016	**Prep Method:**	3015	**Prep Date:**	06/22/2016 13:25
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574522	**Analyst:**	BKT	**Run Date:**	06/28/2016 16:44
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	NI.062816.164417
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000865	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0557		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00184	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00116	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00117	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.221		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00429	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00170	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW19FFD-062016	**Prep Method:**	3015	**Prep Date:**	06/22/2016 13:25
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574522	**Analyst:**	BKT	**Run Date:**	06/28/2016 16:47
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	NI.062816.164728
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000910	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0588		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00219	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00119	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00131	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.221		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00449	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00184	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573751
Analyst: VC
Spike Analyst: VC
Run Date: 06/22/2016 13:25
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/22/2016 13:30

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621
40 & 50 ML. DIGESTION TU COA18987

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573751-04	BLANK	1	20 mL	50 mL	183.635 g	183.628 g		
2	WG573751-05	LCS	1	20 mL	50 mL	184.614 g	184.604 g	.25 mL	
3	L16060916-01	SAMP	2	20 mL	50 mL	184.217 g	184.209 g		06/23/16
4	WG573751-01	REF	2	20 mL	50 mL	184.101 g	184.084 g		
5	L16060916-02	SAMP	2	20 mL	50 mL	184.101 g	184.084 g		06/23/16
6	L16061142-01	SAMP	1	20 mL	50 mL	182.493 g	182.489 g		07/01/16
7	L16061142-03	SAMP	1	20 mL	50 mL	182.681 g	182.672 g		07/01/16
8	L16061142-05	SAMP	1	20 mL	50 mL	184.726 g	184.715 g		07/01/16
9	WG573751-02	REF	1	20 mL	50 mL	182.734 g	182.725 g		
10	L16061151-01	RS01	1	20 mL	50 mL	182.734 g	182.725 g		06/28/16
11	L16061151-02	SAMP	1	20 mL	50 mL	181.045 g	181.025 g		06/28/16
12	WG573751-07	MS	1	20 mL	50 mL	181.147 g	181.137 g	.25 mL	
13	L16061151-03	MS01	1	20 mL	50 mL	181.147 g	181.137 g	.25 mL	06/28/16
14	WG573751-08	MSD	1	20 mL	50 mL	185.508 g	185.49 g	.25 mL	
15	L16061151-04	SD01	1	20 mL	50 mL	185.508 g	185.49 g	.25 mL	06/28/16
16	L16061151-05	SAMP	1	20 mL	50 mL	182.124 g	182.111 g		06/28/16
17	WG573751-03	REF	1	20 mL	50 mL	183.372 g	183.337 g		
18	L16061154-01	RS01	1	20 mL	50 mL	183.372 g	183.337 g		06/28/16
19	WG573751-09	MS	1	20 mL	50 mL	180.94 g	180.932 g	.25 mL	
20	L16061154-02	MS01	1	20 mL	50 mL	180.94 g	180.932 g	.25 mL	06/28/16
21	WG573751-10	MSD	1	20 mL	50 mL	183.536 g	183.502 g	.25 mL	
22	L16061154-03	SD01	1	20 mL	50 mL	183.536 g	183.502 g	.25 mL	06/28/16
23	L16061154-04	SAMP	1	20 mL	50 mL	183.126 g	183.106 g		06/28/16
24	L16061155-01	SAMP	1	20 mL	50 mL	180.844 g	180.818 g		06/28/16
25	L16061155-02	SAMP	1	20 mL	50 mL	181.822 g	181.809 g		06/28/16
26	L16061155-03	SAMP	1	20 mL	50 mL	183.256 g	183.255 g		06/28/16
27	WG573751-06	DUP	1	20 mL	50 mL	181.638 g	181.625 g		

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4819258
Report generated: 06/22/2016 14:23

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.062816.130257	Blank	Blank		1		06/28/16 13:02
2	NI.062816.130609	WG574537-01	Calibration Point		1		06/28/16 13:06
3	NI.062816.130921	WG574537-02	Calibration Point		1		06/28/16 13:09
4	NI.062816.131232	WG574537-03	Calibration Point		1		06/28/16 13:12
5	NI.062816.131544	WG574537-04	Calibration Point		1		06/28/16 13:15
6	NI.062816.131857	WG574537-05	Initial Calibration Verification		1		06/28/16 13:18
7	NI.062816.132210	WG574537-06	Initial Calib Blank		1		06/28/16 13:22
8	NI.062816.132523	WG574537-07	Low Level Initial Calibration V		1		06/28/16 13:25
9	NI.062816.132834	WG574537-08	Interference Check		1		06/28/16 13:28
10	NI.062816.133145	WG574537-09	Interference Check		1		06/28/16 13:31
11	NI.062816.133459	WG574537-10	CCV		1		06/28/16 13:34
12	NI.062816.133810	WG574537-11	CCB		1		06/28/16 13:38
13	NI.062816.134122	L16060362-03	6060227-03		10		06/28/16 13:41
14	NI.062816.134434	L16060362-04	6060227-04		1		06/28/16 13:44
15	NI.062816.134903	L16060362-03	6060227-03	20/50	10		06/28/16 13:49
16	NI.062816.135218	L16060362-04	6060227-04	20/50	1		06/28/16 13:52
17	NI.062816.135925	L16060362-05	6060227-05	20/50	1		06/28/16 13:59
18	NI.062816.140236	L16060362-06	6060227-06	20/50	1		06/28/16 14:02
19	NI.062816.140602	L16060362-07	6060227-07	20/50	1		06/28/16 14:06
20	NI.062816.140914	L16060362-08	6060227-08	20/50	1		06/28/16 14:09
21	NI.062816.141225	L16060362-09	6060227-09	20/50	1		06/28/16 14:12
22	NI.062816.141537	L16060362-10	6060227-10	20/50	1		06/28/16 14:15
23	NI.062816.141850	WG574537-12	CCV		1		06/28/16 14:18
24	NI.062816.142201	WG574537-13	CCB		1		06/28/16 14:22
25	NI.062816.142514	L16060362-11	6060227-11	20/50	1		06/28/16 14:25
26	NI.062816.142825	L16060362-12	6060227-12	20/50	1		06/28/16 14:28
27	NI.062816.143138	WG574537-14	CCV		1		06/28/16 14:31
28	NI.062816.143450	WG574537-15	CCB		1		06/28/16 14:34
29	NI.062816.143803	WG573333-03	Method/Prep Blank	.25/100	1		06/28/16 14:38
30	NI.062816.144114	WG573333-04	Laboratory Control S	.25/100	1		06/28/16 14:41
31	NI.062816.144426	WG573333-02	Reference Sample		1	L16061053-01	06/28/16 14:44
32	NI.062816.144737	WG573333-07	Matrix Spike	.253/100	1	L16061053-01	06/28/16 14:47
33	NI.062816.145049	WG573333-08	Matrix Spike Duplica	.252/100	1	L16061053-01	06/28/16 14:50
34	NI.062816.145400	L16061048-01	TR0062	.252/100	5		06/28/16 14:54

Page: 1 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.062816.145711	WG573475-03	Post Digestion Spike		5	L16061048-01	06/28/16 14:57
36	NI.062816.150023	WG573475-04	Serial Dilution		25	L16061048-01	06/28/16 15:00
37	NI.062816.150336	WG574537-16	Interference Check		1		06/28/16 15:03
38	NI.062816.150647	WG574537-17	Interference Check		1		06/28/16 15:06
39	NI.062816.151001	WG574537-18	CCV		1		06/28/16 15:10
40	NI.062816.151312	WG574537-19	CCB		1		06/28/16 15:13
41	NI.062816.151629	WG574537-20	Low Level Continuing Calibra		1		06/28/16 15:16
42	NI.062816.152424	WG573333-01	Reference Sample		10	L16060787-03	06/28/16 15:24
43	NI.062816.152735	WG573333-05	Matrix Spike	.256/100	10	L16060787-03	06/28/16 15:27
44	NI.062816.153046	WG573333-06	Matrix Spike Duplica	.253/100	10	L16060787-03	06/28/16 15:30
45	NI.062816.153358	L16060787-06	U517SS00512A	.256/100	10		06/28/16 15:33
46	NI.062816.153709	L16060787-08	U517SS00612A	.254/100	10		06/28/16 15:37
47	NI.062816.154021	L16060787-13	U517SS00708A	.252/100	10		06/28/16 15:40
48	NI.062816.154332	L16060787-15	U517SS00808A	.257/100	10		06/28/16 15:43
49	NI.062816.154644	L16060787-16	U517SS00808C	.255/100	10		06/28/16 15:46
50	NI.062816.154955	L16060787-17	U517SS00810A	.259/100	10		06/28/16 15:49
51	NI.062816.155308	WG574537-21	CCV		1		06/28/16 15:53
52	NI.062816.155620	WG574537-22	CCB		1		06/28/16 15:56
53	NI.062816.155933	WG573751-04	Method/Prep Blank	20/50	1		06/28/16 15:59
54	NI.062816.160244	WG573751-05	Laboratory Control S	20/50	1		06/28/16 16:02
55	NI.062816.160556	WG573751-02	Reference Sample		1	L16061151-01	06/28/16 16:05
56	NI.062816.160907	WG573751-07	Matrix Spike	20/50	1	L16061151-01	06/28/16 16:09
57	NI.062816.161219	WG573751-08	Matrix Spike Duplica	20/50	1	L16061151-01	06/28/16 16:12
58	NI.062816.161530	WG573751-01	Reference Sample		1	L16060916-02	06/28/16 16:15
59	NI.062816.161841	WG573751-06	Duplicate	20/50	1	L16060916-02	06/28/16 16:18
60	NI.062816.162153	L16060916-01	PHL 1 FRESHWATER IMPO	20/50	1		06/28/16 16:21
61	NI.062816.162504	WG574522-01	Post Digestion Spike		1	L16060916-01	06/28/16 16:25
62	NI.062816.162816	WG574522-02	Serial Dilution		5	L16060916-01	06/28/16 16:28
63	NI.062816.163129	WG574537-23	CCV		1		06/28/16 16:31
64	NI.062816.163441	WG574537-24	CCB		1		06/28/16 16:34
65	NI.062816.163754	WG574522-02	Serial Dilution		25	L16060916-01	06/28/16 16:37
66	NI.062816.164105	L16061142-01	18WW20-062016	20/50	1		06/28/16 16:41
67	NI.062816.164417	L16061142-03	18WW19F-062016	20/50	1		06/28/16 16:44
68	NI.062816.164728	L16061142-05	18WW19FFD-062016	20/50	1		06/28/16 16:47

Page: 2 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.062816.165039	L16061151-02	LF003SW0311-007 DUP	20/50	1		06/28/16 16:50
70	NI.062816.165351	L16061151-05	LF003SW0312-007	20/50	1		06/28/16 16:53
71	NI.062816.165702	WG573751-03	Reference Sample		1	L16061154-01	06/28/16 16:57
72	NI.062816.170014	WG573751-09	Matrix Spike	20/50	1	L16061154-01	06/28/16 17:00
73	NI.062816.170325	WG573751-10	Matrix Spike Duplica	20/50	1	L16061154-01	06/28/16 17:03
74	NI.062816.170637	L16061154-04	FQC-RB06201601-CB	20/50	1		06/28/16 17:06
75	NI.062816.170950	WG574537-25	CCV		1		06/28/16 17:09
76	NI.062816.171301	WG574537-26	CCB		1		06/28/16 17:13
77	NI.062816.171614	L16061155-01	ST008MW0812-007	20/50	1		06/28/16 17:16
78	NI.062816.171926	L16061155-02	ST008MW0809-007	20/50	1		06/28/16 17:19
79	NI.062816.172237	L16061155-03	ST008MW0816-007	20/50	1		06/28/16 17:22
80	NI.062816.172550	WG574537-27	CCV		1		06/28/16 17:25
81	NI.062816.172902	WG574537-28	CCB		1		06/28/16 17:29
82	NI.062816.184632	L16061142-01	18WW20-062016	20/50	10		06/28/16 18:46
83	NI.062816.184946	WG574537-29	CCV		1		06/28/16 18:49
84	NI.062816.185257	WG574537-30	CCB		1		06/28/16 18:52
85	NI.062816.185610	WG574537-31	Low Level Continuing Calibra		1		06/28/16 18:56
86	NI.062816.195129	WG574242-02	Method/Prep Blank	20/50	1		06/28/16 19:51
87	NI.062816.195440	WG574242-03	Laboratory Control S	20/50	1		06/28/16 19:54
88	NI.062816.195752	WG574242-01	Reference Sample		1	L16060839-01	06/28/16 19:57
89	NI.062816.200103	WG574242-04	Duplicate	20/50	1	L16060839-01	06/28/16 20:01
90	NI.062816.200414	WG574242-05	Matrix Spike	20/50	1	L16060839-01	06/28/16 20:04
91	NI.062816.200726	WG574242-06	Matrix Spike Duplica	20/50	1	L16060839-01	06/28/16 20:07
92	NI.062816.201037	L16060843-01	6060966-01	20/50	1		06/28/16 20:10
93	NI.062816.201349	WG574570-01	Post Digestion Spike		1	L16060843-01	06/28/16 20:13
94	NI.062816.201700	WG574570-02	Serial Dilution		5	L16060843-01	06/28/16 20:17
95	NI.062816.202012	WG574570-02	Serial Dilution		25	L16060843-01	06/28/16 20:20
96	NI.062816.202325	WG574537-32	CCV		1		06/28/16 20:23
97	NI.062816.202637	WG574537-33	CCB		1		06/28/16 20:26
98	NI.062816.202950	L16060794-01	A08-MW06-Y1S2	20/50	1		06/28/16 20:29
99	NI.062816.203301	L16060794-02	A08-MW09-Y1S2	20/50	1		06/28/16 20:33
100	NI.062816.203613	L16060794-03	A09-MW02-Y1S2	20/50	1		06/28/16 20:36
101	NI.062816.203924	L16060794-04	A09-MW07-Y1S2	20/50	1		06/28/16 20:39
102	NI.062816.204236	L16060822-02	18WW03F-061416	20/50	1		06/28/16 20:42

Page: 3 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.062816.204547	L16060822-03	18CPTMW04SW-061416	20/50	1		06/28/16 20:45
104	NI.062816.204859	L16060823-02	126F-061416	20/50	1		06/28/16 20:48
105	NI.062816.205210	L16060823-03	C08-061416	20/50	1		06/28/16 20:52
106	NI.062816.205522	L16060823-04	C03-061416	20/50	1		06/28/16 20:55
107	NI.062816.205833	L16060843-02	6060966-02	20/50	1		06/28/16 20:58
108	NI.062816.210146	WG574537-34	CCV		1		06/28/16 21:01
109	NI.062816.210457	WG574537-35	CCB		1		06/28/16 21:04
110	NI.062816.210810	L16061410-01	SS007MW0704-007	20/50	1		06/28/16 21:08
111	NI.062816.211122	L16061412-01	SS007MW0B05-007	20/50	1		06/28/16 21:11
112	NI.062816.211433	L16061412-02	SS007MW0B02-007	20/50	1		06/28/16 21:14
113	NI.062816.211745	L16061413-01	DP005MW0504-007	20/50	1		06/28/16 21:17
114	NI.062816.212056	L16061416-01	DP005MW0509-007	20/50	1		06/28/16 21:20
115	NI.062816.212408	L16061416-02	DP005MW0518-007	20/50	1		06/28/16 21:24
116	NI.062816.212719	L16061421-01	LF003MW03	20/50	1		06/28/16 21:27
117	NI.062816.213032	WG574537-36	CCV		1		06/28/16 21:30
118	NI.062816.213343	WG574537-37	CCB		1		06/28/16 21:33
119	NI.062816.213655	WG574205-02	Method/Prep Blank	20/50	1		06/28/16 21:36
120	NI.062816.214007	WG574205-03	Laboratory Control S	20/50	1		06/28/16 21:40
121	NI.062816.214318	WG574205-01	Reference Sample		1	L16061343-01	06/28/16 21:43
122	NI.062816.214630	WG574205-04	Duplicate	20/50	1	L16061343-01	06/28/16 21:46
123	NI.062816.214941	WG574205-05	Matrix Spike	20/50	1	L16061343-01	06/28/16 21:49
124	NI.062816.215253	WG574205-06	Matrix Spike Duplica	20/50	1	L16061343-01	06/28/16 21:52
125	NI.062816.215604	L16060732-01	LH18/24-SP650-6371-GRAB	20/50	1		06/28/16 21:56
126	NI.062816.215915	WG574571-01	Post Digestion Spike		1	L16060732-01	06/28/16 21:59
127	NI.062816.220227	WG574571-02	Serial Dilution		5	L16060732-01	06/28/16 22:02
128	NI.062816.220538	WG574571-02	Serial Dilution		25	L16060732-01	06/28/16 22:05
129	NI.062816.220851	WG574537-38	CCV		1		06/28/16 22:08
130	NI.062816.221202	WG574537-39	CCB		1		06/28/16 22:12
131	NI.062816.221514	L16060732-02	LH18/24-SP650-6371-COMP	20/50	1		06/28/16 22:15
132	NI.062816.221825	L16060762-01	MW-24-001	20/50	1		06/28/16 22:18
133	NI.062816.222137	L16061380-01	XU936TW003A	20/50	1		06/28/16 22:21
134	NI.062816.222448	L16061380-02	XU936TW003C	20/50	1		06/28/16 22:24
135	NI.062816.222800	L16061381-06	EB02	20/50	1		06/28/16 22:28
136	NI.062816.223111	L16061393-01	S6F0627-01	20/50	1		06/28/16 22:31

Page: 4 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.062816.223423	L16061393-02	S6F0627-02	20/50	1		06/28/16 22:34
138	NI.062816.223734	L16061393-03	S6F0627-03	20/50	1		06/28/16 22:37
139	NI.062816.224046	L16061393-04	S6F0627-04	20/50	1		06/28/16 22:40
140	NI.062816.224357	L16061393-05	S6F0627-05	20/50	1		06/28/16 22:43
141	NI.062816.224710	WG574537-40	CCV		1		06/28/16 22:47
142	NI.062816.225022	WG574537-41	CCB		1		06/28/16 22:50
143	NI.062816.225335	L16061393-06	S6F0627-06	20/50	1		06/28/16 22:53
144	NI.062816.225646	L16061393-07	S6F0627-07	20/50	1		06/28/16 22:56
145	NI.062816.225958	L16061401-01	DP005MW0501-007	20/50	1		06/28/16 22:59
146	NI.062816.230309	L16061402-01	SS007MW0715-007	20/50	1		06/28/16 23:03
147	NI.062816.230621	L16061404-01	DP005MW0503-007	20/50	1		06/28/16 23:06
148	NI.062816.230932	L16061408-01	DP005MW0508-007	20/50	1		06/28/16 23:09
149	NI.062816.231244	L16061409-01	ST008MW0818-007	20/50	1		06/28/16 23:12
150	NI.062816.231556	WG574537-42	CCV		1		06/28/16 23:15
151	NI.062816.231908	WG574537-43	CCB		1		06/28/16 23:19
152	NI.062816.232221	WG574537-44	Low Level Continuing Calibra		1		06/28/16 23:22
153	NI.062816.232534	WG574306-02	Method/Prep Blank	.25/100	1		06/28/16 23:25
154	NI.062816.232845	WG574306-03	Laboratory Control S	.25/100	1		06/28/16 23:28
155	NI.062816.233157	L16061297-07	XU936DS01700A		1	WG574306-01	06/28/16 23:31
156	NI.062816.233508	L16061297-08	XU936DS01700MS	.253/100	1	WG574306-04	06/28/16 23:35
157	NI.062816.233819	L16061297-09	XU936DS01700MSD	.255/100	1	WG574306-05	06/28/16 23:38
158	NI.062816.234131	L16061443-01	GS042QACF035SB062416-E	.256/100	1		06/28/16 23:41
159	NI.062816.234442	L16061443-02	GS042QACF035SB062416-E	.256/100	1		06/28/16 23:44
160	NI.062816.234754	WG574573-01	Post Digestion Spike		1	L16061443-02	06/28/16 23:47
161	NI.062816.235105	WG574573-02	Serial Dilution		5	L16061443-02	06/28/16 23:51
162	NI.062816.235417	WG574573-02	Serial Dilution		25	L16061443-02	06/28/16 23:54
163	NI.062816.235730	WG574537-45	CCV		1		06/28/16 23:57
164	NI.062916.000041	WG574537-46	CCB		1		06/29/16 00:00

Page: 5 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 28-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 574537
Runlog ID: 75986
Analytical Workgroups: 572184,573475,574522,574570,574571,574573

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	762,1380,1381
Level 4	732,787,822,823,1048,1142,1151,1154
Level 4	1155,1401,1402,1404,1408,1409,1410
Level 4	1412,1413,1416,1421,1443
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
29-JUN-2016

Secondary Reviewer:
29-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 15:32:08

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG574522

Login Number: L16061142

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW20-062016	01	06/20/16					06/22/2016	2.2	180		06/28/16	8.5	180	
18WW20-062016	01	06/20/16					06/22/2016	2.2	180		06/28/16	8.4	180	
18WW19F-062016	03	06/20/16					06/22/2016	2.2	180		06/28/16	8.3	180	
18WW19FFD-062016	05	06/20/16					06/22/2016	2.2	180		06/28/16	8.3	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4829575
Report generated 06/29/2016 08:10

METHOD BLANK SUMMARY

Login Number: L16061142
Blank File ID: NI.062816.155933
Prep Date: 06/22/16 13:25
Analyzed Date: 06/28/16 15:59
Analyst: BKT

Work Group: WG574522
Blank Sample ID: WG573751-04
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573751-05	NI.062816.160244	06/28/16 16:02	01
DUP	WG573751-06	NI.062816.161841	06/28/16 16:18	01
18WW20-062016	L16061142-01	NI.062816.164105	06/28/16 16:41	01
18WW19F-062016	L16061142-03	NI.062816.164417	06/28/16 16:44	01
18WW19FFD-062016	L16061142-05	NI.062816.164728	06/28/16 16:47	01
18WW20-062016	L16061142-01	NI.062816.184632	06/28/16 18:46	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4829576
Report generated 06/29/2016 08:10

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 06/22/16 13:25 Sample ID: WG573751-04
Instrument ID: ICP-MS2 Run Date: 06/28/16 15:59 Prep Method: 3015
File ID: NI.062816.155933 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG574522 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-28-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00171	1	J
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4829577
29-JUN-2016 08:10

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 Run Date: 06/28/2016 Sample ID: WG573751-05
Instrument ID: ICP-MS2 Run Time: 16:02 Prep Method: 3015
File ID: NI.062816.160244 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG574522 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-28-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.122	97.9	80 - 120	
Arsenic, Total	0.125	0.125	99.9	80 - 120	
Barium, Total	0.125	0.120	96.1	80 - 120	
Cadmium, Total	0.125	0.121	97.1	80 - 120	
Chromium, Total	0.125	0.125	100	80 - 120	
Cobalt, Total	0.125	0.127	102	80 - 120	
Copper, Total	0.125	0.126	101	80 - 120	
Lead, Total	0.125	0.129	104	80 - 120	
Manganese, Total	0.125	0.126	101	80 - 120	
Nickel, Total	0.125	0.125	100	80 - 120	
Silver, Total	0.125	0.121	97.0	80 - 120	
Thallium, Total	0.125	0.124	99.5	80 - 120	
Vanadium, Total	0.125	0.123	98.4	80 - 120	
Zinc, Total	0.125	0.127	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4829578
Report generated: 06/29/2016 08:10

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061142 Cal ID: ICP-MS2- Worknum: WG574522
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG573751-02 File ID: NI.062816.160556 Dil: 1 Matrix: WATER
Sample ID: WG573751-07 MS File ID: NI.062816.160907 Dil: 1 Units: mg/L
Sample ID: WG573751-08 MSD File ID: NI.062816.161219 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	ND	0.125	0.126	101	0.125	0.125	99.7	0.861	80 - 120	20	
Arsenic	0.00221	0.125	0.126	99.0	0.125	0.130	102	3.03	80 - 120	20	
Barium	0.0853	0.125	0.207	97.3	0.125	0.211	101	1.99	80 - 120	20	
Cadmium	ND	0.125	0.118	94.5	0.125	0.120	95.8	1.43	80 - 120	20	
Chromium	0.00134	0.125	0.121	96.0	0.125	0.128	101	5.32	80 - 120	20	
Cobalt	ND	0.125	0.116	93.1	0.125	0.126	101	7.91	80 - 120	20	
Copper	0.00228	0.125	0.121	95.0	0.125	0.126	99.0	4.00	80 - 120	20	
Lead	0.000651	0.125	0.124	98.4	0.125	0.127	101	2.96	80 - 120	20	
Manganese	0.0708	0.125	0.185	91.1	0.125	0.209	110	12.3	80 - 120	20	
Nickel	ND	0.125	0.120	95.7	0.125	0.125	100	4.71	80 - 120	20	
Silver	ND	0.125	0.119	95.3	0.125	0.118	94.8	0.549	80 - 120	20	
Thallium	0.000115	0.125	0.122	97.3	0.125	0.124	99.5	2.23	80 - 120	20	
Vanadium	0.00541	0.125	0.126	96.4	0.125	0.132	101	4.49	80 - 120	20	
Zinc	0.0131	0.125	0.137	99.4	0.125	0.149	109	8.01	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4829579
Report generated 06/29/2016 08:10

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061142 Cal ID: ICP-MS2- Worknum: WG574522
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG573751-03 File ID: NI.062816.165702 Dil: 1 Matrix: WATER
Sample ID: WG573751-09 MS File ID: NI.062816.170014 Dil: 1 Units: mg/L
Sample ID: WG573751-10 MSD File ID: NI.062816.170325 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	ND	0.125	0.131	105	0.125	0.129	103	1.68	80 - 120	20	
Arsenic	0.00500	0.125	0.139	107	0.125	0.144	111	3.49	80 - 120	20	
Barium	0.0233	0.125	0.147	98.8	0.125	0.144	96.7	1.77	80 - 120	20	
Cadmium	ND	0.125	0.121	96.5	0.125	0.121	96.7	0.209	80 - 120	20	
Chromium	0.00236	0.125	0.129	101	0.125	0.133	105	3.19	80 - 120	20	
Cobalt	0.00132	0.125	0.129	102	0.125	0.137	109	6.06	80 - 120	20	
Copper	0.00717	0.125	0.123	92.8	0.125	0.127	95.5	2.74	80 - 120	20	
Lead	ND	0.125	0.129	103	0.125	0.131	105	2.01	80 - 120	20	
Manganese	0.322	0.125	0.401	63.5	0.125	0.432	88.1	7.39	80 - 120	20	*
Nickel	0.0149	0.125	0.135	95.9	0.125	0.139	99.3	3.13	80 - 120	20	
Silver	ND	0.125	0.118	94.7	0.125	0.118	94.0	0.702	80 - 120	20	
Thallium	ND	0.125	0.129	103	0.125	0.130	104	0.817	80 - 120	20	
Vanadium	0.0222	0.125	0.154	105	0.125	0.159	110	3.58	80 - 120	20	
Zinc	0.0129	0.125	0.131	94.6	0.125	0.136	98.2	3.42	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4829579
Report generated 06/29/2016 08:10

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061142 **Worknum:** WG574522
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574522-02 **File ID:** NI.062816.162816 **Dil:** 5 **Units:** ug/L
Sample: L16060916-01 **File ID:** NI.062816.162153 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	2.08	F	6690.00	
Arsenic	ND	U	ND	U		
Barium	83.2		82.8		0.40	
Cadmium	ND	U	ND	U		
Chromium	0.420	F	ND	U		
Cobalt	ND	U	ND	U		
Copper	ND	U	ND	U		
Lead	ND	U	ND	U		
Manganese	9.79	X	10.6	X	8.40	
Nickel	ND	U	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	ND	U	ND	U		
Zinc	7.82	F	33.1	F	324.00	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4829573
06/29/2016 08:10

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061142 **Worknum:** WG574522
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574522-01 **File ID:** NI.062816.162504 **Dil:** 1 **Units:** ug/L
Sample ID: L16060916-01 **File ID:** NI.062816.162153 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	50.1		0	U	50	100.2	75 - 125	
ARSENIC	50.6		0	U	50	101.3	75 - 125	
BARIUM	129		83.2		50	92.1	75 - 125	
CADMIUM	49.0		0	U	50	97.9	75 - 125	
CHROMIUM	51.4		0.420	F	50	101.9	75 - 125	
COBALT	50.4		0	U	50	100.8	75 - 125	
COPPER	52.0		0	U	50	104.0	75 - 125	
LEAD	50.9		0	U	50	101.8	75 - 125	
MANGANESE	59.4		9.79		50	99.3	75 - 125	
NICKEL	51.0		0	U	50	102.1	75 - 125	
SILVER	49.7		0	U	50	99.3	75 - 125	
THALLIUM	50.0		0	U	50	100.0	75 - 125	
VANADIUM	50.9		0	U	50	101.9	75 - 125	
ZINC	57.1		7.82	F	50	98.6	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4829574
Report generated: 06/29/2016 08:10

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061142	Workgroup (AAB#):	WG574522
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG574537	Initial Calibration Date:	28-JUN-2016 13:15

	WG574537-01		WG574537-02		WG574537-03		WG574537-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	47.7	.4	303	50	245000	100	482000	.999953	
ARSENIC	0	-33.8	.4	11.1	50	59300	100	117000	.999972	
BARIUM	0	33.7	.4	159	50	107000	100	212000	.999991	
CADMIUM	0	3.30	.4	116	50	110000	100	219000	.999985	
CHROMIUM	0	7410	.4	8070	50	376000	100	727000	.999989	
COBALT	0	227	.4	599	50	370000	100	731000	.999947	
COPPER	0	135	.4	280	50	102000	100	195000	.999984	
LEAD	0	933	.4	2130	50	978000	100	1950000	.999942	
MANGANESE	0	835	.4	1350	50	340000	100	679000	.99986	
NICKEL	0	183	.4	306	50	100000	100	194000	1	
SILVER	0	79.0	.4	455	50	352000	100	679000	.999803	
THALLIUM	0	5.30	.4	473	50	438000	100	866000	.999971	
VANADIUM	0	1490	.4	1870	50	370000	100	719000	.999996	
ZINC	0	520	.4	1010	50	59300	100	114000	.999999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4829582
Report generated: 29-JUN-2016 08:10

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-06
Instrument ID: ICP-MS2
Run Time: 13:22
Method: 6020A
File ID: NI.062816.132210
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574522
Cal ID: ICP-MS2 - 28-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.405	*
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4829584
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-11
Instrument ID: ICP-MS2
Run Time: 13:38
Method: 6020A
File ID: NI.062816.133810
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.259	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829587
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-15
Instrument ID: ICP-MS2
Run Time: 14:34
Method: 6020A
File ID: NI.062816.143450
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829587
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-19
Instrument ID: ICP-MS2
Run Time: 15:13
Method: 6020A
File ID: NI.062816.151312
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.263	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829587
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-22
Instrument ID: ICP-MS2
Run Time: 15:56
Method: 6020A
File ID: NI.062816.155620
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829587
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-24
Instrument ID: ICP-MS2
Run Time: 16:34
Method: 6020A
File ID: NI.062816.163441
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829587
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-26
Instrument ID: ICP-MS2
Run Time: 17:13
Method: 6020A
File ID: NI.062816.171301
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829587
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-28
Instrument ID: ICP-MS2
Run Time: 17:29
Method: 6020A
File ID: NI.062816.172902
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829587
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-30
Instrument ID: ICP-MS2
Run Time: 18:52
Method: 6020A
File ID: NI.062816.185257
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829587
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061142 Run Date: 06/28/2016 Sample ID: WG574537-05
Instrument ID: ICP-MS2 Run Time: 13:18 Method: 6020A
File ID: NI.062816.131857 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG574522 Cal ID: ICP-MS - 28-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	48.3	96.6	90 - 110	
Arsenic		50	50.3	101	90 - 110	
Barium		50	48.2	96.4	90 - 110	
Cadmium		50	49.0	98.0	90 - 110	
Chromium		50	50.0	100	90 - 110	
Cobalt		50	50.2	100	90 - 110	
Copper		50	50.1	100	90 - 110	
Lead		50	48.9	97.7	90 - 110	
Manganese		50	50.2	100	90 - 110	
Nickel		50	49.7	99.4	90 - 110	
Silver		50	49.3	98.6	90 - 110	
Thallium		50	49.1	98.2	90 - 110	
Vanadium		50	49.7	99.5	90 - 110	
Zinc		50	50.7	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4829583
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/28/2016 Sample ID: WG574537-10
Instrument ID: ICP-MS2 Run Time: 13:34 Method: 6020A
File ID: NI.062816.133459 Analyst: BKT QC Key: DOD4
Workgroup (AAB#): WG574522 Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0492	mg/L	98.4	90 - 110		
Arsenic		0.0500	0.0495	mg/L	99.0	90 - 110		
Barium		0.0500	0.0487	mg/L	97.5	90 - 110		
Cadmium		0.0500	0.0487	mg/L	97.4	90 - 110		
Chromium		0.0500	0.0494	mg/L	98.8	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0496	mg/L	99.3	90 - 110		
Manganese		0.0500	0.0497	mg/L	99.5	90 - 110		
Nickel		0.0500	0.0495	mg/L	98.9	90 - 110		
Silver		0.0500	0.0487	mg/L	97.3	90 - 110		
Thallium		0.0500	0.0489	mg/L	97.7	90 - 110		
Vanadium		0.0500	0.0499	mg/L	99.8	90 - 110		
Zinc		0.0500	0.0495	mg/L	99.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829586
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-14
Instrument ID: ICP-MS2
Run Time: 14:31
Method: 6020A
File ID: NI.062816.143138
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0480	mg/L	96.1	90 - 110		
Arsenic		0.0500	0.0501	mg/L	100	90 - 110		
Barium		0.0500	0.0474	mg/L	94.9	90 - 110		
Cadmium		0.0500	0.0480	mg/L	96.1	90 - 110		
Chromium		0.0500	0.0496	mg/L	99.1	90 - 110		
Cobalt		0.0500	0.0531	mg/L	106	90 - 110		
Copper		0.0500	0.0499	mg/L	99.7	90 - 110		
Lead		0.0500	0.0506	mg/L	101	90 - 110		
Manganese		0.0500	0.0492	mg/L	98.5	90 - 110		
Nickel		0.0500	0.0495	mg/L	99.0	90 - 110		
Silver		0.0500	0.0484	mg/L	96.8	90 - 110		
Thallium		0.0500	0.0490	mg/L	98.1	90 - 110		
Vanadium		0.0500	0.0508	mg/L	102	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829586
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-18
Instrument ID: ICP-MS2
Run Time: 15:10
Method: 6020A
File ID: NI.062816.151001
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0504	mg/L	101	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.7	90 - 110		
Barium		0.0500	0.0485	mg/L	96.9	90 - 110		
Cadmium		0.0500	0.0487	mg/L	97.5	90 - 110		
Chromium		0.0500	0.0489	mg/L	97.9	90 - 110		
Cobalt		0.0500	0.0517	mg/L	103	90 - 110		
Copper		0.0500	0.0490	mg/L	97.9	90 - 110		
Lead		0.0500	0.0514	mg/L	103	90 - 110		
Manganese		0.0500	0.0487	mg/L	97.5	90 - 110		
Nickel		0.0500	0.0484	mg/L	96.8	90 - 110		
Silver		0.0500	0.0495	mg/L	98.9	90 - 110		
Thallium		0.0500	0.0506	mg/L	101	90 - 110		
Vanadium		0.0500	0.0498	mg/L	99.6	90 - 110		
Zinc		0.0500	0.0494	mg/L	98.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829586
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-21
Instrument ID: ICP-MS2
Run Time: 15:53
Method: 6020A
File ID: NI.062816.155308
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0499	mg/L	99.8	90 - 110		
Arsenic		0.0500	0.0507	mg/L	101	90 - 110		
Barium		0.0500	0.0489	mg/L	97.8	90 - 110		
Cadmium		0.0500	0.0493	mg/L	98.6	90 - 110		
Chromium		0.0500	0.0508	mg/L	102	90 - 110		
Cobalt		0.0500	0.0508	mg/L	102	90 - 110		
Copper		0.0500	0.0512	mg/L	102	90 - 110		
Lead		0.0500	0.0510	mg/L	102	90 - 110		
Manganese		0.0500	0.0496	mg/L	99.2	90 - 110		
Nickel		0.0500	0.0514	mg/L	103	90 - 110		
Silver		0.0500	0.0498	mg/L	99.6	90 - 110		
Thallium		0.0500	0.0499	mg/L	99.9	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0511	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829586
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/28/2016 Sample ID: WG574537-23
Instrument ID: ICP-MS2 Run Time: 16:31 Method: 6020A
File ID: NI.062816.163129 Analyst: BKT QC Key: DOD4
Workgroup (AAB#): WG574522 Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0508	mg/L	102	90 - 110		
Arsenic		0.0500	0.0507	mg/L	101	90 - 110		
Barium		0.0500	0.0494	mg/L	98.9	90 - 110		
Cadmium		0.0500	0.0499	mg/L	99.9	90 - 110		
Chromium		0.0500	0.0509	mg/L	102	90 - 110		
Cobalt		0.0500	0.0511	mg/L	102	90 - 110		
Copper		0.0500	0.0513	mg/L	103	90 - 110		
Lead		0.0500	0.0513	mg/L	103	90 - 110		
Manganese		0.0500	0.0495	mg/L	98.9	90 - 110		
Nickel		0.0500	0.0510	mg/L	102	90 - 110		
Silver		0.0500	0.0503	mg/L	101	90 - 110		
Thallium		0.0500	0.0508	mg/L	102	90 - 110		
Vanadium		0.0500	0.0508	mg/L	102	90 - 110		
Zinc		0.0500	0.0513	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829586
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-25
Instrument ID: ICP-MS2
Run Time: 17:09
Method: 6020A
File ID: NI.062816.170950
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0496	mg/L	99.1	90 - 110		
Arsenic		0.0500	0.0510	mg/L	102	90 - 110		
Barium		0.0500	0.0482	mg/L	96.5	90 - 110		
Cadmium		0.0500	0.0489	mg/L	97.8	90 - 110		
Chromium		0.0500	0.0511	mg/L	102	90 - 110		
Cobalt		0.0500	0.0534	mg/L	107	90 - 110		
Copper		0.0500	0.0507	mg/L	101	90 - 110		
Lead		0.0500	0.0519	mg/L	104	90 - 110		
Manganese		0.0500	0.0497	mg/L	99.5	90 - 110		
Nickel		0.0500	0.0507	mg/L	101	90 - 110		
Silver		0.0500	0.0496	mg/L	99.1	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0511	mg/L	102	90 - 110		
Zinc		0.0500	0.0512	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829586
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/28/2016 Sample ID: WG574537-27
Instrument ID: ICP-MS2 Run Time: 17:25 Method: 6020A
File ID: NI.062816.172550 Analyst: BKT QC Key: DOD4
Workgroup (AAB#): WG574522 Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0507	mg/L	101	90 - 110		
Arsenic		0.0500	0.0509	mg/L	102	90 - 110		
Barium		0.0500	0.0493	mg/L	98.6	90 - 110		
Cadmium		0.0500	0.0503	mg/L	101	90 - 110		
Chromium		0.0500	0.0502	mg/L	100	90 - 110		
Cobalt		0.0500	0.0530	mg/L	106	90 - 110		
Copper		0.0500	0.0506	mg/L	101	90 - 110		
Lead		0.0500	0.0532	mg/L	106	90 - 110		
Manganese		0.0500	0.0499	mg/L	99.7	90 - 110		
Nickel		0.0500	0.0503	mg/L	101	90 - 110		
Silver		0.0500	0.0508	mg/L	102	90 - 110		
Thallium		0.0500	0.0509	mg/L	102	90 - 110		
Vanadium		0.0500	0.0509	mg/L	102	90 - 110		
Zinc		0.0500	0.0506	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829586
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/28/2016 Sample ID: WG574537-29
Instrument ID: ICP-MS2 Run Time: 18:49 Method: 6020A
File ID: NI.062816.184946 Analyst: BKT QC Key: DOD4
Workgroup (AAB#): WG574522 Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0481	mg/L	96.2	90 - 110		
Arsenic		0.0500	0.0471	mg/L	94.1	90 - 110		
Barium		0.0500	0.0464	mg/L	92.9	90 - 110		
Cadmium		0.0500	0.0463	mg/L	92.7	90 - 110		
Chromium		0.0500	0.0469	mg/L	93.8	90 - 110		
Cobalt		0.0500	0.0469	mg/L	93.8	90 - 110		
Copper		0.0500	0.0475	mg/L	94.9	90 - 110		
Lead		0.0500	0.0484	mg/L	96.7	90 - 110		
Manganese		0.0500	0.0473	mg/L	94.6	90 - 110		
Nickel		0.0500	0.0476	mg/L	95.1	90 - 110		
Silver		0.0500	0.0474	mg/L	94.8	90 - 110		
Thallium		0.0500	0.0474	mg/L	94.8	90 - 110		
Vanadium		0.0500	0.0472	mg/L	94.5	90 - 110		
Zinc		0.0500	0.0472	mg/L	94.5	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829586
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-07
Instrument ID: ICP-MS2
Run Time: 13:25
Method: 6020A
File ID: NI.062816.132523
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.414	ug/L	104	70 - 130		
Arsenic		0.400	0.419	ug/L	105	70 - 130		
Barium		0.750	0.681	ug/L	90.8	70 - 130		
Cadmium		0.240	0.234	ug/L	97.7	70 - 130		
Chromium		0.800	0.628	ug/L	78.5	70 - 130		
Cobalt		0.400	0.384	ug/L	96.1	70 - 130		
Copper		0.800	0.759	ug/L	94.9	70 - 130		
Lead		0.200	0.183	ug/L	91.6	70 - 130		
Manganese		0.500	0.437	ug/L	87.4	70 - 130		
Nickel		1.60	1.53	ug/L	95.5	70 - 130		
Silver		0.400	0.372	ug/L	92.9	70 - 130		
Thallium		0.0800	0.0768	ug/L	96.0	70 - 130		
Vanadium		0.400	0.332	ug/L	83.0	70 - 130		
Zinc		6.25	6.14	ug/L	98.3	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829588
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-20
Instrument ID: ICP-MS2
Run Time: 15:16
Method: 6020A
File ID: NI.062816.151629
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.429	ug/L	107	70 - 130		
Arsenic		0.400	0.377	ug/L	94.2	70 - 130		
Barium		0.750	0.677	ug/L	90.2	70 - 130		
Cadmium		0.240	0.235	ug/L	98.1	70 - 130		
Chromium		0.800	0.595	ug/L	74.4	70 - 130		
Cobalt		0.400	0.388	ug/L	97.1	70 - 130		
Copper		0.800	0.739	ug/L	92.4	70 - 130		
Lead		0.200	0.192	ug/L	96.0	70 - 130		
Manganese		0.500	0.408	ug/L	81.6	70 - 130		
Nickel		1.60	1.48	ug/L	92.6	70 - 130		
Silver		0.400	0.384	ug/L	96.0	70 - 130		
Thallium		0.0800	0.0804	ug/L	101	70 - 130		
Vanadium		0.400	0.327	ug/L	81.9	70 - 130		
Zinc		6.25	6.24	ug/L	99.9	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829588
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-31
Instrument ID: ICP-MS2
Run Time: 18:56
Method: 6020A
File ID: NI.062816.185610
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.386	ug/L	96.6	70 - 130		
Arsenic		0.400	0.381	ug/L	95.2	70 - 130		
Barium		0.750	0.671	ug/L	89.5	70 - 130		
Cadmium		0.240	0.217	ug/L	90.2	70 - 130		
Chromium		0.800	0.581	ug/L	72.7	70 - 130		
Cobalt		0.400	0.365	ug/L	91.2	70 - 130		
Copper		0.800	0.726	ug/L	90.7	70 - 130		
Lead		0.200	0.188	ug/L	93.9	70 - 130		
Manganese		0.500	0.396	ug/L	79.2	70 - 130		
Nickel		1.60	1.44	ug/L	89.7	70 - 130		
Silver		0.400	0.365	ug/L	91.2	70 - 130		
Thallium		0.0800	0.0752	ug/L	94.0	70 - 130		
Vanadium		0.400	0.309	ug/L	77.3	70 - 130		
Zinc		6.25	5.67	ug/L	90.8	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829588
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061142
Instrument ID: ICP-MS2
Sol. A : WG574537-08 **File ID:** NI.062816.132834
Sol. AB : WG574537-09 **File ID:** NI.062816.133145

Workgroup (AAB#): WG574522
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0836	NS	100	94.7	94.7	
Arsenic	NS	-0.0118	NS	100	98.9	98.9	
Barium	NS	0.266	NS	100	94.5	94.5	
Cadmium	NS	-0.106	NS	100	95.6	95.6	
Chromium	NS	-0.0468	NS	100	96.5	96.5	
Cobalt	NS	0.0276	NS	100	97.7	97.7	
Copper	NS	0.231	NS	100	96.5	96.5	
Lead	NS	0.0352	NS	100	98.2	98.2	
Manganese	NS	0.0680	NS	100	97.7	97.7	
Nickel	NS	0.332	NS	100	96.0	96.0	
Silver	NS	0.0254	NS	100	89.5	89.5	
Thallium	NS	0.0257	NS	100	96.4	96.4	
Vanadium	NS	-0.0466	NS	100	96.5	96.5	
Zinc	NS	0.903	NS	100	101	101	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4829585
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061142
Instrument ID: ICP-MS2
Sol. A : WG574537-16 **File ID:** NI.062816.150336
Sol. AB : WG574537-17 **File ID:** NI.062816.150647

Workgroup (AAB#): WG574522
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.126	NS	100	101	101	
Arsenic	NS	-0.0170	NS	100	102	102	
Barium	NS	0.271	NS	100	98.3	98.3	
Cadmium	NS	-0.0956	NS	100	99.8	99.8	
Chromium	NS	-0.00590	NS	100	97.3	97.3	
Cobalt	NS	0.0242	NS	100	102	102	
Copper	NS	0.234	NS	100	97.4	97.4	
Lead	NS	0.0422	NS	100	102	102	
Manganese	NS	0.0683	NS	100	97.7	97.7	
Nickel	NS	0.343	NS	100	95.9	95.9	
Silver	NS	0.0228	NS	100	91.0	91.0	
Thallium	NS	0.0182	NS	100	99.2	99.2	
Vanadium	NS	-0.0922	NS	100	100	100	
Zinc	NS	0.968	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4829585
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061142 **Analytical Method:** 6020
Analytical Workgroup: WG574522 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 28-JUN-2016 13:06

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061142-01	SAMP	28-JUN-2016 16:41	99.255	96.551	101.401
L16061142-01	SAMP	28-JUN-2016 18:46	100.965	100.286	100.017
L16061142-03	SAMP	28-JUN-2016 16:44	101.048	100.945	100.342
L16061142-05	SAMP	28-JUN-2016 16:47	102.922	103.837	100.277
WG573751-04	BLANK	28-JUN-2016 15:59	103.478	101.272	101.942
WG573751-05	LCS	28-JUN-2016 16:02	101.311	100.028	102.068
WG574522-01	PSPK	28-JUN-2016 16:25	102.605	99.458	100.372
WG574522-02	SERIAL	28-JUN-2016 16:28	100.917	97.675	101.604
WG574537-05	ICV	28-JUN-2016 13:18	106.21	104.263	104.758
WG574537-06	ICB	28-JUN-2016 13:22	103.902	104.951	103.59
WG574537-07	LLICV	28-JUN-2016 13:25	104.131	100.167	102.925
WG574537-08	ICS	28-JUN-2016 13:28	105.453	105.812	102.55
WG574537-09	ICS	28-JUN-2016 13:31	104.707	103.975	104.833
WG574537-10	CCV	28-JUN-2016 13:34	105.977	103.288	105.534
WG574537-11	CCB	28-JUN-2016 13:38	102.403	102.67	102.767
WG574537-14	CCV	28-JUN-2016 14:31	103.407	95.988	101.793
WG574537-15	CCB	28-JUN-2016 14:34	104.225	98.805	100.724
WG574537-16	ICS	28-JUN-2016 15:03	99.952	99.435	100.043
WG574537-17	ICS	28-JUN-2016 15:06	101.575	99.874	97.332
WG574537-18	CCV	28-JUN-2016 15:10	100.244	98.973	99.201
WG574537-19	CCB	28-JUN-2016 15:13	103.776	99.505	101.81
WG574537-20	LLCCV	28-JUN-2016 15:16	99.051	96.111	96.093
WG574537-21	CCV	28-JUN-2016 15:53	102.325	99.988	101.736
WG574537-22	CCB	28-JUN-2016 15:56	100.66	98.559	102.089
WG574537-23	CCV	28-JUN-2016 16:31	100.569	98.236	98.84
WG574537-24	CCB	28-JUN-2016 16:34	98.016	97.516	98.396
WG574537-25	CCV	28-JUN-2016 17:09	103.008	97.514	102.105
WG574537-26	CCB	28-JUN-2016 17:13	100.776	97.768	98.614
WG574537-27	CCV	28-JUN-2016 17:25	103.598	102.656	103.011
WG574537-28	CCB	28-JUN-2016 17:29	102.284	100.798	98.989
WG574537-29	CCV	28-JUN-2016 18:49	100.019	101.137	98.931
WG574537-30	CCB	28-JUN-2016 18:52	100.148	99.202	100.624
WG574537-31	LLCCV	28-JUN-2016 18:56	95.839	97.87	93.931

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4829581
Report generated: 06/29/2016 08:10

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061142 **Analytical Method:** 6020
Analytical Workgroup: WG574522 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 28-JUN-2016 13:06

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060916-01	SAMP	28-JUN-2016 16:21	99.466	100.136	98.238

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4829581
Report generated: 06/29/2016 08:10

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061142 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4829580
Report generated: 06/29/2016 08:10

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexION Data\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Tuesday, June 28, 2016 12:45:36

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1331	2024	0.706	
Mg	23.985	24.025	4508	2020	0.701	
Co	58.933	58.925	11686	2022	0.701	
In	114.904	114.875	22861	2028	0.696	
U	238.050	238.025	47455	2043	0.688	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	5.573
5.575	2.596
5.625	3.076
5.675	2.368
5.725	2.568
5.775	3.011
5.825	2.517
5.875	2.694
5.925	1.595
5.975	3.373
6.025	3.068
6.075	2.439
6.125	2.845
6.175	3.293
6.225	6.959
6.275	54.149
6.325	79.756
6.375	69.722
6.425	99.103
6.475	35.972
6.525	19.569
6.575	4.348
6.625	4.647
6.675	4.116
6.725	2.239
6.775	2.849
6.825	1.600

Report Date/Time: Tuesday, June 28, 2016 12:48:47
Page 1

Approved: June 29, 2016

6.875	3.248
6.925	2.794
6.975	1.665
7.025	2.844
7.075	2.994
7.125	3.503
7.175	2.980
7.225	3.713
7.275	5.087
7.325	35.264
7.375	93.541
7.425	136.931
7.475	82.402
7.525	71.261
7.575	39.123
7.625	180.662
7.675	64.358
7.725	47.507
7.775	71.261
7.825	70.711
7.875	52.705
7.925	46.481
7.975	63.888
8.025	74.689
8.075	64.359
8.125	63.888
8.175	34.401
8.225	46.481
8.275	49.793
8.325	81.441
8.375	60.858
8.425	67.420
8.475	108.653
22.525	223.607
22.575	90.014
22.625	44.605
22.675	65.617
22.725	58.975
22.775	40.945
22.825	35.460
22.875	18.054
22.925	42.061
22.975	53.715
23.025	19.357
23.075	24.491
23.125	8.438
23.175	12.837

Report Date/Time: Tuesday, June 28, 2016 12:48:47
Page 2

Approved: June 29, 2016

23.225	30.858
23.275	24.845
23.325	45.141
23.375	26.438
23.425	14.816
23.475	14.263
23.525	12.137
23.575	3.832
23.625	2.363
23.675	1.595
23.725	2.170
23.775	2.317
23.825	1.497
23.875	1.501
23.925	1.731
23.975	0.863
24.025	2.634
24.075	2.734
24.125	2.053
24.175	2.398
24.225	2.993
24.275	2.883
24.325	7.686
24.375	28.384
24.425	36.617
24.475	12.141
24.525	3.189
24.575	0.926
24.625	1.585
24.675	1.547
24.725	2.051
24.775	1.408
24.825	2.678
24.875	1.711
24.925	1.949
24.975	2.595
25.025	3.005
25.075	2.962
25.125	2.366
25.175	2.463
25.225	2.722
25.275	9.971
25.325	31.599
25.375	47.140
25.425	64.885
25.475	6.734
57.525	8.866

Report Date/Time: Tuesday, June 28, 2016 12:48:47
Page 3

Approved: June 29, 2016

57.575	5.291
57.625	3.440
57.675	3.697
57.725	3.076
57.775	2.567
57.825	2.416
57.875	1.794
57.925	2.766
57.975	2.199
58.025	1.926
58.075	2.254
58.125	1.436
58.175	1.390
58.225	3.504
58.275	5.534
58.325	34.267
58.375	33.055
58.425	20.772
58.475	14.356
58.525	5.854
58.575	3.115
58.625	4.057
58.675	2.315
58.725	2.604
58.775	2.171
58.825	1.290
58.875	1.298
58.925	2.935
58.975	1.929
59.025	1.078
59.075	1.921
59.125	2.163
59.175	2.388
59.225	3.289
59.275	8.929
59.325	38.030
59.375	58.736
59.425	28.284
59.475	17.563
59.525	12.128
59.575	6.526
59.625	2.279
59.675	2.377
59.725	6.247
59.775	4.326
59.825	2.635
59.875	3.246

Report Date/Time: Tuesday, June 28, 2016 12:48:47
Page 4

Approved: June 29, 2016

59.925	1.954
59.975	3.753
60.025	5.882
60.075	3.380
60.125	2.788
60.175	3.075
60.225	4.430
60.275	18.947
60.325	43.241
60.375	22.017
60.425	79.756
60.475	50.461
113.525	7.111
113.575	1.614
113.625	3.295
113.675	3.378
113.725	2.143
113.775	2.366
113.825	3.191
113.875	4.581
113.925	1.498
113.975	2.463
114.025	3.675
114.075	2.767
114.125	4.064
114.175	2.276
114.225	6.994
114.275	28.008
114.325	41.691
114.375	17.526
114.425	9.127
114.475	6.547
114.525	3.985
114.575	2.757
114.625	3.785
114.675	2.945
114.725	3.014
114.775	2.252
114.825	1.319
114.875	1.984
114.925	1.415
114.975	0.577
115.025	0.422
115.075	1.851
115.125	0.695
115.175	3.426
115.225	3.732

Report Date/Time: Tuesday, June 28, 2016 12:48:47
Page 5

Approved: June 29, 2016

115.275	9.818
115.325	57.810
115.375	52.705
115.425	23.458
115.475	18.657
115.525	4.767
115.575	6.521
115.625	4.984
115.675	3.649
115.725	7.463
115.775	7.302
115.825	2.294
115.875	3.587
115.925	2.925
115.975	3.587
116.025	4.548
116.075	6.187
116.125	2.246
116.175	11.560
116.225	3.389
116.275	17.538
116.325	51.618
116.375	52.705
116.425	42.127
116.475	34.312
236.525	
236.575	28.853
236.625	56.165
236.675	51.701
236.725	11.620
236.775	50.775
236.825	27.217
236.875	33.431
236.925	29.881
236.975	45.955
237.025	46.771
237.075	7.402
237.125	30.162
237.175	24.686
237.225	34.297
237.275	16.110
237.325	20.328
237.375	28.770
237.425	26.702
237.475	18.887
237.525	24.816
237.575	6.725

Report Date/Time: Tuesday, June 28, 2016 12:48:47
Page 6

Approved: June 29, 2016

237.625	8.740
237.675	3.668
237.725	2.023
237.775	1.587
237.825	3.110
237.875	1.530
237.925	2.794
237.975	3.068
238.025	2.967
238.075	2.352
238.125	2.652
238.175	2.474
238.225	2.129
238.275	1.500
238.325	2.197
238.375	3.421
238.425	3.111
238.475	6.669
238.525	16.077
238.575	17.557
238.625	21.969
238.675	32.775
238.725	22.232
238.775	26.146
238.825	21.694
238.875	19.088
238.925	8.384
238.975	17.180
239.025	59.843
239.075	31.485
239.125	33.497
239.175	31.181
239.225	27.834
239.275	28.743
239.325	26.503
239.375	17.174
239.425	9.195
239.475	35.446

Approved: June 29, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/28/2016 12:50:43 PM
End Time: 6/28/2016 12:52:55 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 5221.30
        Obtained Intensity (Mg 23.985): 136183.87
        Obtained Intensity (In 114.904): 66441.11
        Obtained Intensity (U 238.05): 147068.09
        Obtained Intensity (Bkgd 220): 0.20
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3731.53 / 205818.69)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=890.23 / 205818.69)
```

Report Date/Time: Tuesday, June 28, 2016 12:52:56
Page 1

Approved: June 29, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/28/2016 12:50:43 PM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 5221.30
                Obtained Intensity (Mg 23.985): 136183.87
                Obtained Intensity (In 114.904): 66441.11
                Obtained Intensity (U 238.05): 147068.09
                Obtained Intensity (Bkgd 220): 0.20
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3731.53 / 205818.69)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=890.23 / 205818.69)
[Passed]  Optimum value(s): N/A

End Time: 6/28/2016 12:52:55 PM
```


Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Tuesday, June 28, 2016 13:02:57
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81760.1	2.0				ug/L		Standard
	Be	9	16.7	75.5				ug/L		Standard
	Al	27	1410.1	2.3				ug/L		Standard
	Sc	45	39543.2	2.7				ug/L		Standard
	Ti	47	39.0	9.2				ug/L		Standard
	V	51	1415.2	6.8				ug/L		Standard
	Cr	52	6946.3	1.7				ug/L		Standard
	Cr	53	328.3	14.1				ug/L		Standard
	Mn	55	823.0	8.8				ug/L		Standard
	Co	59	251.7	9.6				ug/L		Standard
	Ni	60	192.0	8.0				ug/L		Standard
	Cu	65	140.7	5.3				ug/L		Standard
	Zn	66	490.7	3.4				ug/L		Standard
>	Ge	72	515086.9	1.2				ug/L		Standard
	As	75	19.8	169.9				ug/L		Standard
	Se	82	15.3	19.8				ug/L		Standard
	Se-1	77	48.0	15.7				ug/L		Standard
>	Ga	71	90.0	5.6				mg/L		Standard
	Rb	85	23.3	68.9				ug/L		Standard
	Y	89	448509.9	0.5				ug/L		Standard
>	Rh	103	15.0	66.7				ug/L		Standard
	Mo	98	10.9	19.2				ug/L		Standard
	Ag	107	134.0	44.7				ug/L		Standard
	Cd	111	6.6	57.0				mg/L		Standard
	Cd	114	16.1	68.4				ug/L		Standard
>	In	115	611116.5	1.9				ug/L		Standard
	Sn	118	518.3	7.2				ug/L		Standard
	Sb	123	126.7	13.8				ug/L		Standard
	Ba	135	45.3	39.8				ug/L		Standard
	Ce	140	298.3	72.3				ug/L		Standard
>	Tb	159	977942.3	1.0				ug/L		Standard
	Ho	165	11.7	24.7				ug/L		Standard
	Tl	203	30.7	114.0				ug/L		Standard
	Tl	205	20.0	152.1				ug/L		Standard
	Pb	206	285.7	7.2				ug/L		Standard
	Pb	207	257.0	5.7				ug/L		Standard
	Pb	208	955.7	3.9				ug/L		Standard
	U	238	17.0	67.8				ug/L		Standard
>	Bi	209	557080.4	0.4				ug/L		Standard

Sample ID: Blank
Report Date/Time: Tuesday, June 28, 2016 13:05:14
Page 1

Approved: June 29, 2016

	Na	23	0.0		mg/L	Standard
	Mg	24	31.7	36.5	mg/L	Standard
	K	39	30.0	57.7	mg/L	Standard
	Ca	43	48.3	43.1	mg/L	Standard
	Fe	54	159.3	19.3	mg/L	Standard
	Fe	57	195.0	11.2	mg/L	Standard
>	**Sc-1**	45	39543.2	2.7	mg/L	Standard
	Cl	35	27641.9	2.8	ug/L	Standard
	Kr	83	2.0	50.0	ug/L	Standard
	Br	81	1646.8	11.1	ug/L	Standard
	P	31	15231.0	1.6	ug/L	Standard
	S	34	1845.1	7.5	ug/L	Standard
	Sr	88	70.0	12.4	ug/L	Standard
	C	12	113.3	28.4	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	12.4	122.2	mg/L	Standard
	Ho-1	165	11.7	24.7	mg/L	Standard
	Er	166	20.0	50.0	mg/L	Standard
	I	127	1161.7	12.0	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Blank
Report Date/Time: Tuesday, June 28, 2016 13:05:14
Page 2

Approved: June 29, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Tuesday, June 28, 2016 13:05:14
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Tuesday, June 28, 2016 13:06:09
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83638.6	0.9				ug/L	81760	Standard
	Be	9	11.7	49.5				ug/L	17	Standard
	Al	27	1445.1	4.5				ug/L	1410	Standard
	Sc	45	40184.9	2.0				ug/L	39543	Standard
	Ti	47	38.3	12.0				ug/L	39	Standard
	V	51	1492.6	2.6				ug/L	1415	Standard
	Cr	52	7409.5	2.1				ug/L	6946	Standard
	Cr	53	321.7	15.3				ug/L	328	Standard
	Mn	55	835.0	1.8				ug/L	823	Standard
	Co	59	226.7	11.0				ug/L	252	Standard
	Ni	60	182.7	5.1				ug/L	192	Standard
	Cu	65	134.7	15.9				ug/L	141	Standard
	Zn	66	519.7	4.6				ug/L	491	Standard
>	**Ge**	72	517782.5	2.4				ug/L	515087	Standard
	As	75	-33.8	72.0				ug/L	20	Standard
	Se	82	16.9	27.2				ug/L	15	Standard
	Se-1	77	48.7	14.9				ug/L	48	Standard
>	**Ga**	71	95.0	19.0				mg/L	90	Standard
	Rb	85	33.3	82.6				ug/L	23	Standard
	Y	89	456301.2	1.1				ug/L	448510	Standard
>	**Rh**	103	21.7	58.1				ug/L	15	Standard
	Mo	98	8.3	58.9				ug/L	11	Standard
	Ag	107	79.0	9.1				ug/L	134	Standard
	Cd	111	3.3	17.5				mg/L	7	Standard
	Cd	114	6.2	12.1				ug/L	16	Standard
>	**In**	115	624714.7	2.4				ug/L	611117	Standard
	Sn	118	515.0	5.4				ug/L	518	Standard
	Sb	123	47.7	15.0				ug/L	127	Standard
	Ba	135	33.7	27.6				ug/L	45	Standard
	Ce	140	86.7	24.0				ug/L	298	Standard
>	**Tb**	159	1001347.1	1.8				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	5.3	60.3				ug/L	31	Standard
	Tl	205	3.3	86.6				ug/L	20	Standard
	Pb	206	276.7	3.7				ug/L	286	Standard
	Pb	207	213.3	7.3				ug/L	257	Standard
	Pb	208	933.0	3.4				ug/L	956	Standard
	U	238	4.7	12.4				ug/L	17	Standard
>	**Bi**	209	562888.8	0.9				ug/L	557080	Standard

Sample ID: Standard 1
Report Date/Time: Tuesday, June 28, 2016 13:08:26
Page 1

Approved: June 29, 2016

	Na	23	0.0		mg/L	0	Standard
	Mg	24	36.7	7.9	mg/L	32	Standard
	K	39	28.3	44.4	mg/L	30	Standard
	Ca	43	36.7	28.4	mg/L	48	Standard
	Fe	54	172.5	32.0	mg/L	159	Standard
	Fe	57	211.7	34.4	mg/L	195	Standard
>	**Sc-1**	45	40184.9	2.0	mg/L	39543	Standard
	Cl	35	29114.6	1.1	ug/L	27642	Standard
	Kr	83	3.3	96.4	ug/L	2	Standard
	Br	81	1676.8	6.8	ug/L	1647	Standard
	P	31	15918.4	1.2	ug/L	15231	Standard
	S	34	1885.1	11.3	ug/L	1845	Standard
	Sr	88	58.3	21.6	ug/L	70	Standard
	C	12	116.7	24.7	mg/L	113	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	16.2	93.4	mg/L	12	Standard
	Ho-1	165	6.7	43.3	mg/L	12	Standard
	Er	166	10.0	100.0	mg/L	20	Standard
	I	127	1170.0	16.3	mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 1
Report Date/Time: Tuesday, June 28, 2016 13:08:26
Page 2

Approved: June 29, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Tuesday, June 28, 2016 13:08:26
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Tuesday, June 28, 2016 13:09:21
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82626.5	2.9				ug/L	81760	Standard
	Be	9	60.0	14.4				ug/L	17	Standard
	Al	27	10023.3	4.0				ug/L	1410	Standard
	Sc	45	41007.1	1.4				ug/L	39543	Standard
	Ti	47	69.0	5.8				ug/L	39	Standard
	V	51	1868.4	2.4				ug/L	1415	Standard
	Cr	52	8071.5	1.1				ug/L	6946	Standard
	Cr	53	360.0	4.2				ug/L	328	Standard
	Mn	55	1347.7	1.9				ug/L	823	Standard
	Co	59	599.0	5.9				ug/L	252	Standard
	Ni	60	305.7	5.8				ug/L	192	Standard
	Cu	65	280.3	2.3				ug/L	141	Standard
	Zn	66	1008.0	4.7				ug/L	491	Standard
>	**Ge**	72	539572.1	1.8				ug/L	515087	Standard
	As	75	11.1	230.1				ug/L	20	Standard
	Se	82	20.4	17.1				ug/L	15	Standard
	Se-1	77	60.7	1.9				ug/L	48	Standard
>	**Ga**	71	83.3	19.3				mg/L	90	Standard
	Rb	85	31.7	48.2				ug/L	23	Standard
	Y	89	463986.2	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	57.3				ug/L	15	Standard
	Mo	98	329.5	2.8				ug/L	11	Standard
	Ag	107	455.0	1.5				ug/L	134	Standard
	Cd	111	115.7	6.5				mg/L	7	Standard
	Cd	114	292.0	6.0				ug/L	16	Standard
>	**In**	115	625608.8	0.7				ug/L	611117	Standard
	Sn	118	920.0	9.2				ug/L	518	Standard
	Sb	123	303.4	7.6				ug/L	127	Standard
	Ba	135	158.7	8.0				ug/L	45	Standard
	Ce	140	88.3	42.5				ug/L	298	Standard
>	**Tb**	159	1002874.0	1.4				ug/L	977942	Standard
	Ho	165	11.7	24.7				ug/L	12	Standard
	Tl	203	472.7	2.0				ug/L	31	Standard
	Tl	205	391.7	11.0				ug/L	20	Standard
	Pb	206	628.7	5.7				ug/L	286	Standard
	Pb	207	539.3	6.7				ug/L	257	Standard
	Pb	208	2133.7	2.7				ug/L	956	Standard
	U	238	388.7	5.1				ug/L	17	Standard
>	**Bi**	209	570508.1	0.4				ug/L	557080	Standard

Sample ID: Standard 2
Report Date/Time: Tuesday, June 28, 2016 13:11:38
Page 1

Approved: June 29, 2016

Na	23	0.0		mg/L	0	Standard
Mg	24	48.3	26.0	mg/L	32	Standard
K	39	45.0	19.2	mg/L	30	Standard
Ca	43	36.7	43.8	mg/L	48	Standard
Fe	54	162.5	17.6	mg/L	159	Standard
Fe	57	193.3	3.0	mg/L	195	Standard
Sc-1	45	41007.1	1.4	mg/L	39543	Standard
Cl	35	29715.1	0.6	ug/L	27642	Standard
Kr	83	3.0	33.3	ug/L	2	Standard
Br	81	1836.8	4.6	ug/L	1647	Standard
P	31	16030.1	3.1	ug/L	15231	Standard
S	34	1895.1	1.4	ug/L	1845	Standard
Sr	88	61.7	9.4	ug/L	70	Standard
C	12	143.3	21.3	mg/L	113	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	0	Standard
Dy	164	19.5	50.0	mg/L	12	Standard
Ho-1	165	11.7	24.7	mg/L	12	Standard
Er	166	10.0	100.0	mg/L	20	Standard
I	127	1208.4	23.1	mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 2
Report Date/Time: Tuesday, June 28, 2016 13:11:38
Page 2

Approved: June 29, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Tuesday, June 28, 2016 13:11:38
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Tuesday, June 28, 2016 13:12:32
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83151.0	2.6				ug/L	81760	Standard
	Be	9	50594.4	3.3	**50.0000**	0.655	1.3	ug/L	17	Standard
	Al	27	7832644.8	2.3	**50.0000**	1.818	3.6	ug/L	1410	Standard
	Sc	45	42972.5	0.7				ug/L	39543	Standard
	Ti	47	26044.7	0.2	**100.0000**	1.044	1.0	ug/L	39	Standard
	V	51	369925.9	1.5	**50.0000**	0.431	0.9	ug/L	1415	Standard
	Cr	52	376035.2	0.6	**50.0000**	0.381	0.8	ug/L	6946	Standard
	Cr	53	47201.8	2.5	**50.0000**	1.648	3.3	ug/L	328	Standard
	Mn	55	339840.1	0.9	**50.0000**	0.028	0.1	ug/L	823	Standard
	Co	59	369835.8	1.4	**50.0000**	0.329	0.7	ug/L	252	Standard
	Ni	60	100390.8	0.3	**50.0000**	0.410	0.8	ug/L	192	Standard
	Cu	65	101743.1	0.9	**50.0000**	0.203	0.4	ug/L	141	Standard
	Zn	66	59304.5	0.9	**50.0000**	0.371	0.7	ug/L	491	Standard
>	**Ge**	72	547553.1	0.8				ug/L	515087	Standard
	As	75	59263.2	0.8	**50.0000**	0.205	0.4	ug/L	20	Standard
	Se	82	6019.0	1.0	**50.0000**	0.596	1.2	ug/L	15	Standard
	Se-1	77	4068.9	1.3	**50.0000**	0.434	0.9	ug/L	48	Standard
>	**Ga**	71	120.0	22.0				mg/L	90	Standard
	Rb	85	803.4	2.6				ug/L	23	Standard
	Y	89	462085.4	0.0				ug/L	448510	Standard
>	**Rh**	103	33.3	52.7				ug/L	15	Standard
	Mo	98	278482.4	0.5	**100.0000**	0.941	0.9	ug/L	11	Standard
	Ag	107	351728.0	0.3	**50.0000**	0.642	1.3	ug/L	134	Standard
	Cd	111	110396.3	1.4	**50.0000**	0.556	1.1	mg/L	7	Standard
	Cd	114	267604.2	1.4	**50.0000**	0.663	1.3	ug/L	16	Standard
>	**In**	115	627830.2	1.2				ug/L	611117	Standard
	Sn	118	304675.0	1.7	**50.0000**	0.618	1.2	ug/L	518	Standard
	Sb	123	244739.5	0.4	**50.0000**	0.675	1.4	ug/L	127	Standard
	Ba	135	106555.1	1.0	**50.0000**	0.097	0.2	ug/L	45	Standard
	Ce	140	116.7	9.9				ug/L	298	Standard
>	**Tb**	159	1018565.7	2.1				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	438004.0	1.2	**50.0000**	0.427	0.9	ug/L	31	Standard
	Tl	205	379940.6	1.7	**50.0000**	0.597	1.2	ug/L	20	Standard
	Pb	206	284208.1	0.3	**50.0000**	0.335	0.7	ug/L	286	Standard
	Pb	207	256392.2	0.5	**50.0000**	0.374	0.7	ug/L	257	Standard
	Pb	208	978425.0	1.4	**50.0000**	0.588	1.2	ug/L	956	Standard
	U	238	371095.6	0.5	**50.0000**	0.490	1.0	ug/L	17	Standard
>	**Bi**	209	583572.7	0.6				ug/L	557080	Standard

Sample ID: Standard 3
Report Date/Time: Tuesday, June 28, 2016 13:14:49
Page 1

Approved: June 29, 2016

Na	23	0.0					mg/L	0	Standard
Mg	24	4002.2	2.2	**5.0000**	0.144	2.9	mg/L	32	Standard
K	39	1640.1	4.4	**5.0000**	0.220	4.4	mg/L	30	Standard
Ca	43	73.3	27.6	**5.0000**	2.832	56.6	mg/L	48	Standard
Fe	54	6006.1	1.4	**5.0000**	0.034	0.7	mg/L	159	Standard
Fe	57	1818.4	10.7	**5.0000**	0.606	12.1	mg/L	195	Standard
> **Sc-1**	45	42972.5	0.7				mg/L	39543	Standard
Cl	35	31584.9	0.4				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1736.8	12.0				ug/L	1647	Standard
P	31	18696.5	1.2				ug/L	15231	Standard
S	34	2423.5	4.1				ug/L	1845	Standard
Sr	88	71.7	21.3				ug/L	70	Standard
C	12	110.0	39.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	18.6	110.3				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	30.0	33.3				mg/L	20	Standard
I	127	1405.1	8.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Standard 3
Report Date/Time: Tuesday, June 28, 2016 13:14:49
Page 2

Approved: June 29, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
Report Date/Time: Tuesday, June 28, 2016 13:14:49
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Tuesday, June 28, 2016 13:15:44
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81919.2	1.8				ug/L	81760	Standard
	Be	9	99366.8	4.2	**99.8402**	3.215	3.2	ug/L	17	Standard
	Al	27	15456145.8	2.8	**100.0514**	1.254	1.3	ug/L	1410	Standard
	Sc	45	41889.5	2.4				ug/L	39543	Standard
	Ti	47	52065.7	3.9	**203.2707**	7.861	3.9	ug/L	39	Standard
	V	51	718696.0	1.3	**100.2818**	2.594	2.6	ug/L	1415	Standard
	Cr	52	727396.2	2.7	**100.4747**	2.418	2.4	ug/L	6946	Standard
	Cr	53	90202.9	3.4	**99.4979**	3.023	3.0	ug/L	328	Standard
	Mn	55	679268.3	1.6	**101.6708**	2.363	2.3	ug/L	823	Standard
	Co	59	730686.9	1.6	**101.0312**	2.535	2.5	ug/L	252	Standard
	Ni	60	193870.4	2.0	**99.9159**	1.756	1.8	ug/L	192	Standard
	Cu	65	194619.8	1.4	**99.4389**	1.906	1.9	ug/L	141	Standard
	Zn	66	113576.2	1.7	**99.8564**	1.521	1.5	ug/L	491	Standard
>	**Ge**	72	530148.8	1.5				ug/L	515087	Standard
	As	75	116520.9	0.8	**100.7477**	1.604	1.6	ug/L	20	Standard
	Se	82	12083.5	1.4	**101.8724**	2.244	2.2	ug/L	15	Standard
	Se-1	77	7795.3	2.5	**99.8242**	2.540	2.5	ug/L	48	Standard
>	**Ga**	71	125.0	22.3				mg/L	90	Standard
	Rb	85	1618.4	10.1				ug/L	23	Standard
	Y	89	461192.2	0.4				ug/L	448510	Standard
>	**Rh**	103	56.7	20.4				ug/L	15	Standard
	Mo	98	556218.8	1.0	**199.4538**	3.118	1.6	ug/L	11	Standard
	Ag	107	678834.5	1.8	**98.0160**	2.327	2.4	ug/L	134	Standard
	Cd	111	219330.5	1.3	**99.4613**	1.808	1.8	mg/L	7	Standard
	Cd	114	534582.7	2.1	**99.7362**	2.615	2.6	ug/L	16	Standard
>	**In**	115	630478.6	0.6				ug/L	611117	Standard
	Sn	118	609964.7	1.0	**99.8933**	1.520	1.5	ug/L	518	Standard
	Sb	123	482106.0	1.2	**99.0353**	1.710	1.7	ug/L	127	Standard
	Ba	135	212119.9	0.9	**99.5711**	1.444	1.4	ug/L	45	Standard
	Ce	140	165.0	42.7				ug/L	298	Standard
>	**Tb**	159	1009801.9	0.4				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	865813.4	1.1	**100.7605**	1.348	1.3	ug/L	31	Standard
	Tl	205	752692.6	1.1	**100.8681**	0.657	0.7	ug/L	20	Standard
	Pb	206	549987.8	0.2	**99.7256**	0.843	0.8	ug/L	286	Standard
	Pb	207	495989.2	0.5	**99.7047**	0.496	0.5	ug/L	257	Standard
	Pb	208	1945321.0	0.5	**101.0779**	0.484	0.5	ug/L	956	Standard
	U	238	738847.3	0.4	**101.1182**	1.306	1.3	ug/L	17	Standard
>	**Bi**	209	568134.9	1.0				ug/L	557080	Standard

Sample ID: Standard 4
Report Date/Time: Tuesday, June 28, 2016 13:18:01
Page 1

Approved: June 29, 2016

Na	23	3.3	86.6	**19.9850**	17.308	86.6	mg/L	0	Standard
Mg	24	8245.6	0.3	**10.3081**	0.247	2.4	mg/L	32	Standard
K	39	3202.0	9.6	**10.0847**	1.159	11.5	mg/L	30	Standard
Ca	43	108.3	26.2	**10.2160**	4.199	41.1	mg/L	48	Standard
Fe	54	12180.7	3.3	**10.2708**	0.331	3.2	mg/L	159	Standard
Fe	57	3313.7	6.4	**9.9500**	0.928	9.3	mg/L	195	Standard
Sc-1	45	41889.5	2.4				mg/L	39543	Standard
Cl	35	30969.0	3.8				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1773.4	7.0				ug/L	1647	Standard
P	31	19072.0	2.1				ug/L	15231	Standard
S	34	2495.2	5.2				ug/L	1845	Standard
Sr	88	56.7	5.1				ug/L	70	Standard
C	12	143.3	29.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	13.0	113.4				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	6.7	173.2				mg/L	20	Standard
I	127	1551.7	12.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 4
Report Date/Time: Tuesday, June 28, 2016 13:18:01
Page 2

Approved: June 29, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Tuesday, June 28, 2016 13:18:01
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, June 28, 2016 13:18:57
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81910.8	1.2				ug/L	81760	Standard
	Be	9	50188.0	2.5	**50.4285**	0.671	1.3	ug/L	17	Standard
	Al	27	7919939.7	1.3	**51.2716**	0.184	0.4	ug/L	1410	Standard
	Sc	45	42151.9	1.0				ug/L	39543	Standard
	Ti	47	26799.3	0.9	**103.2216**	1.931	1.9	ug/L	39	Standard
	V	51	362002.1	2.3	**49.7477**	0.555	1.1	ug/L	1415	Standard
	Cr	52	370323.8	0.7	**49.9789**	0.741	1.5	ug/L	6946	Standard
	Cr	53	45478.3	5.4	**49.3268**	1.623	3.3	ug/L	328	Standard
	Mn	55	340081.6	0.1	**50.1792**	1.001	2.0	ug/L	823	Standard
	Co	59	367567.5	0.6	**50.1558**	0.780	1.6	ug/L	252	Standard
	Ni	60	97767.5	1.8	**49.6873**	0.150	0.3	ug/L	192	Standard
	Cu	65	99441.7	2.0	**50.1064**	0.391	0.8	ug/L	141	Standard
	Zn	66	58882.6	2.1	**50.6983**	0.019	0.0	ug/L	491	Standard
>	**Ge**	72	537043.0	2.1				ug/L	515087	Standard
	As	75	58926.0	1.4	**50.3136**	0.381	0.8	ug/L	20	Standard
	Se	82	6003.9	1.4	**49.9034**	0.396	0.8	ug/L	15	Standard
	Se-1	77	4037.5	1.3	**50.7056**	1.619	3.2	ug/L	48	Standard
>	**Ga**	71	113.3	22.2				mg/L	90	Standard
	Rb	85	626.7	7.4				ug/L	23	Standard
	Y	89	465817.4	0.7				ug/L	448510	Standard
>	**Rh**	103	43.3	24.0				ug/L	15	Standard
	Mo	98	284447.8	1.6	**100.4857**	3.626	3.6	ug/L	11	Standard
	Ag	107	346501.9	1.0	**49.2778**	1.406	2.9	ug/L	134	Standard
	Cd	111	109630.9	1.1	**48.9766**	1.535	3.1	mg/L	7	Standard
	Cd	114	266600.1	1.2	**48.9905**	1.146	2.3	ug/L	16	Standard
>	**In**	115	640190.8	2.0				ug/L	611117	Standard
	Sn	118	332613.3	1.3	**53.6148**	1.570	2.9	ug/L	518	Standard
	Sb	123	238639.0	2.2	**48.2943**	2.007	4.2	ug/L	127	Standard
	Ba	135	104330.0	1.0	**48.2232**	0.702	1.5	ug/L	45	Standard
	Ce	140	120.0	15.0				ug/L	298	Standard
>	**Tb**	159	1038346.1	1.3				ug/L	977942	Standard
	Ho	165	16.7	34.6				ug/L	12	Standard
	Tl	203	439433.3	1.3	**49.1017**	0.655	1.3	ug/L	31	Standard
	Tl	205	379171.3	1.2	**48.7970**	1.107	2.3	ug/L	20	Standard
	Pb	206	282861.9	1.4	**49.2211**	1.133	2.3	ug/L	286	Standard
	Pb	207	247275.0	1.2	**47.7052**	1.056	2.2	ug/L	257	Standard
	Pb	208	979823.4	0.2	**48.8569**	0.617	1.3	ug/L	956	Standard
	U	238	361651.7	0.7	**47.5263**	0.839	1.8	ug/L	17	Standard
>	**Bi**	209	591677.6	1.0				ug/L	557080	Standard

Sample ID: QC Std 1
Report Date/Time: Tuesday, June 28, 2016 13:21:14
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.0435**	17.387	173.1	mg/L	0	Standard
Mg	24	4277.3	3.5	**5.2835**	0.147	2.8	mg/L	32	Standard
K	39	1651.8	3.6	**5.0931**	0.136	2.7	mg/L	30	Standard
Ca	43	81.7	30.2	**6.2885**	3.508	55.8	mg/L	48	Standard
Fe	54	5996.6	1.6	**4.9548**	0.129	2.6	mg/L	159	Standard
Fe	57	1723.4	6.4	**4.8356**	0.391	8.1	mg/L	195	Standard
Sc-1	45	42151.9	1.0				mg/L	39543	Standard
Cl	35	29861.4	1.9				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1713.4	14.2				ug/L	1647	Standard
P	31	18880.1	1.3				ug/L	15231	Standard
S	34	2316.8	4.8				ug/L	1845	Standard
Sr	88	70.0	35.7				ug/L	70	Standard
C	12	156.7	32.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	46.2	33.1				mg/L	12	Standard
Ho-1	165	16.7	34.6				mg/L	12	Standard
Er	166	10.0					mg/L	20	Standard
I	127	1246.7	11.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.857		
Al	27	102.543		
Sc	45			
Ti	47	103.222		
V	51	99.495		
Cr	52	99.958		
Cr	53			
Mn	55	100.358		
Co	59	100.312		
Ni	60	99.375		
Cu	65	100.213		
Zn	66	101.397		
Ge	72		104.263	
As	75	100.627		
Se	82	99.807		
Se-1	77			
Ga	71			

Sample ID: QC Std 1
Report Date/Time: Tuesday, June 28, 2016 13:21:14
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.486		
Ag	107	98.556		
Cd	111	97.953		
Cd	114			
In	115		104.758	
Sn	118	107.230		
Sb	123	96.589		
Ba	135	96.446		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.203		
Tl	205			
Pb	206	98.442		
Pb	207	95.410		
Pb	208	97.714		
U	238	95.053		
Bi	209		106.210	
Na	23	200.869		
Mg	24	105.670		
K	39	101.861		
Ca	43	125.771		
Fe	54	99.097		
Fe	57	96.711		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
Report Date/Time: Tuesday, June 28, 2016 13:21:14
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, June 28, 2016 13:22:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81098.1	0.9				ug/L	81760	Standard
	Be	9	35.0	14.3	**0.0258**	0.005	18.6	ug/L	17	Standard
	Al	27	2568.6	16.6	**0.0024**	0.003	117.4	ug/L	1410	Standard
	Sc	45	40706.3	0.9				ug/L	39543	Standard
	Ti	47	40.7	7.5	**-0.0093**	0.010	110.5	ug/L	39	Standard
	V	51	1184.2	4.7	**-0.0443**	0.005	11.8	ug/L	1415	Standard
	Cr	52	6261.3	1.2	**-0.1999**	0.018	9.1	ug/L	6946	Standard
	Cr	53	338.3	3.7	**0.0258**	0.014	55.9	ug/L	328	Standard
	Mn	55	842.4	4.2	**-0.0247**	0.005	18.3	ug/L	823	Standard
	Co	59	286.0	9.3	**0.0074**	0.003	40.3	ug/L	252	Standard
	Ni	60	199.7	6.5	**-0.0040**	0.005	124.9	ug/L	192	Standard
	Cu	65	142.3	4.7	**-0.0195**	0.003	13.5	ug/L	141	Standard
	Zn	66	529.7	2.7	**-0.3672**	0.009	2.6	ug/L	491	Standard
>	**Ge**	72	540586.6	1.6				ug/L	515087	Standard
	As	75	16.4	99.5	**0.0543**	0.014	25.8	ug/L	20	Standard
	Se	82	18.7	7.6	**0.0353**	0.014	40.6	ug/L	15	Standard
	Se-1	77	50.3	10.9	**-0.0819**	0.075	91.1	ug/L	48	Standard
>	**Ga**	71	86.7	18.5				mg/L	90	Standard
	Rb	85	13.3	78.1				ug/L	23	Standard
	Y	89	464568.8	2.3				ug/L	448510	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	439.4	21.7	**0.1377**	0.033	23.9	ug/L	11	Standard
	Ag	107	149.7	25.4	**0.0053**	0.005	102.3	ug/L	134	Standard
	Cd	111	15.2	39.6	**0.0040**	0.003	67.9	mg/L	7	Standard
	Cd	114	45.8	32.1	**0.0036**	0.003	74.9	ug/L	16	Standard
>	**In**	115	633054.7	0.7				ug/L	611117	Standard
	Sn	118	1025.0	34.7	**0.0655**	0.058	89.1	ug/L	518	Standard
	Sb	123	2042.3	25.6	**0.4053**	0.108	26.7	ug/L	127	Standard
	Ba	135	49.7	4.2	**-0.0019**	0.001	60.7	ug/L	45	Standard
	Ce	140	36.7	20.8				ug/L	298	Standard
>	**Tb**	159	1001668.5	0.7				ug/L	977942	Standard
	Ho	165	10.0					ug/L	12	Standard
	Tl	203	78.0	41.6	**0.0041**	0.004	88.8	ug/L	31	Standard
	Tl	205	58.3	47.2	**0.0054**	0.004	66.7	ug/L	20	Standard
	Pb	206	315.3	11.1	**-0.0075**	0.006	81.9	ug/L	286	Standard
	Pb	207	291.3	4.8	**-0.0005**	0.003	477.4	ug/L	257	Standard
	Pb	208	1079.0	5.9	**-0.0054**	0.003	55.4	ug/L	956	Standard
	U	238	63.3	42.9	**0.0055**	0.004	65.2	ug/L	17	Standard
>	**Bi**	209	578819.3	0.5				ug/L	557080	Standard

Sample ID: QC Std 2
Report Date/Time: Tuesday, June 28, 2016 13:24:27
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	25.0	40.0	**-0.0249**	0.013	50.9	mg/L	32	Standard
K	39	31.7	9.1	**-0.0375**	0.009	24.5	mg/L	30	Standard
Ca	43	41.7	36.7	**0.7901**	2.216	280.5	mg/L	48	Standard
Fe	54	146.0	8.6	**-0.0087**	0.010	113.7	mg/L	159	Standard
Fe	57	195.0	25.3	**0.0139**	0.156	1122.4	mg/L	195	Standard
Sc-1	45	40706.3	0.9				mg/L	39543	Standard
Cl	35	29554.8	2.8				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1693.4	6.8				ug/L	1647	Standard
P	31	17536.8	2.2				ug/L	15231	Standard
S	34	2233.5	3.0				ug/L	1845	Standard
Sr	88	66.7	15.6				ug/L	70	Standard
C	12	96.7	33.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	49.8				mg/L	12	Standard
Ho-1	165	10.0					mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1260.1	15.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.951	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 2
Report Date/Time: Tuesday, June 28, 2016 13:24:27
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.590
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.902
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Ca	43	

Sample ID: QC Std 2
Report Date/Time: Tuesday, June 28, 2016 13:24:27
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, June 28, 2016 13:25:23
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79486.3	1.5				ug/L	81760	Standard
	Be	9	236.7	23.6	**0.2350**	0.054	23.1	ug/L	17	Standard
	Al	27	1635.1	14.9	**-0.0035**	0.001	42.0	ug/L	1410	Standard
	Sc	45	39860.7	2.7				ug/L	39543	Standard
	Ti	47	39.7	2.9	**-0.0059**	0.005	91.5	ug/L	39	Standard
	V	51	3750.6	3.6	**0.3321**	0.019	5.7	ug/L	1415	Standard
	Cr	52	11750.6	2.2	**0.6283**	0.044	7.0	ug/L	6946	Standard
	Cr	53	1020.0	3.7	**0.8185**	0.038	4.7	ug/L	328	Standard
	Mn	55	3800.5	0.2	**0.4368**	0.004	0.8	ug/L	823	Standard
	Co	59	2925.3	4.6	**0.3843**	0.020	5.3	ug/L	252	Standard
	Ni	60	3080.3	1.6	**1.5280**	0.033	2.2	ug/L	192	Standard
	Cu	65	1617.4	2.7	**0.7591**	0.027	3.5	ug/L	141	Standard
	Zn	66	7652.9	2.4	**6.1434**	0.191	3.1	ug/L	491	Standard
>	**Ge**	72	515947.7	0.4				ug/L	515087	Standard
	As	75	426.1	10.9	**0.4186**	0.040	9.6	ug/L	20	Standard
	Se	82	65.5	20.2	**0.4487**	0.114	25.5	ug/L	15	Standard
	Se-1	77	77.0	13.5	**0.3017**	0.140	46.4	ug/L	48	Standard
>	**Ga**	71	75.0	29.1				mg/L	90	Standard
	Rb	85	11.7	49.5				ug/L	23	Standard
	Y	89	454544.4	2.9				ug/L	448510	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	144.3	6.8	**0.0328**	0.004	11.5	ug/L	11	Standard
	Ag	107	2677.9	4.8	**0.3715**	0.022	5.8	ug/L	134	Standard
	Cd	111	522.1	8.6	**0.2344**	0.020	8.5	mg/L	7	Standard
	Cd	114	1313.6	1.7	**0.2408**	0.006	2.4	ug/L	16	Standard
>	**In**	115	628989.1	0.7				ug/L	611117	Standard
	Sn	118	611.7	1.9	**-0.0014**	0.001	96.1	ug/L	518	Standard
	Sb	123	2074.6	8.0	**0.4143**	0.033	7.9	ug/L	127	Standard
	Ba	135	1500.7	4.3	**0.6813**	0.036	5.2	ug/L	45	Standard
	Ce	140	23.3	24.7				ug/L	298	Standard
>	**Tb**	159	1002704.6	1.0				ug/L	977942	Standard
	Ho	165	21.7	35.3				ug/L	12	Standard
	Tl	203	715.4	2.1	**0.0768**	0.002	2.1	ug/L	31	Standard
	Tl	205	653.3	9.4	**0.0835**	0.008	10.1	ug/L	20	Standard
	Pb	206	1358.4	2.4	**0.1778**	0.007	3.8	ug/L	286	Standard
	Pb	207	1172.0	3.3	**0.1729**	0.010	5.8	ug/L	257	Standard
	Pb	208	4784.3	0.9	**0.1832**	0.004	2.4	ug/L	956	Standard
	U	238	2840.3	2.6	**0.3778**	0.014	3.6	ug/L	17	Standard
>	**Bi**	209	580093.5	1.0				ug/L	557080	Standard

Sample ID: QC Std 3
Report Date/Time: Tuesday, June 28, 2016 13:27:40
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	33.3	22.9	**-0.0129**	0.011	85.9	mg/L	32	Standard
K	39	38.3	45.8	**-0.0130**	0.059	454.3	mg/L	30	Standard
Ca	43	38.3	41.9	**0.4748**	2.540	535.0	mg/L	48	Standard
Fe	54	103.9	16.3	**-0.0436**	0.016	37.7	mg/L	159	Standard
Fe	57	210.0	19.5	**0.0806**	0.150	185.6	mg/L	195	Standard
> **Sc-1**	45	39860.7	2.7				mg/L	39543	Standard
Cl	35	28271.0	1.2				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1630.1	3.7				ug/L	1647	Standard
P	31	12470.1	4.9				ug/L	15231	Standard
S	34	2090.1	6.4				ug/L	1845	Standard
Sr	88	61.7	72.7				ug/L	70	Standard
C	12	146.7	7.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	26.0	116.4				mg/L	12	Standard
Ho-1	165	21.7	35.3				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	1031.7	25.9				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	117.475		
	Al	27	-0.351		
	Sc	45			
	Ti	47			
	V	51	83.021		
	Cr	52	78.533		
	Cr	53			
	Mn	55	87.355		
	Co	59	96.082		
	Ni	60	95.499		
	Cu	65	94.881		
	Zn	66	98.294		
>	Ge	72		100.167	
	As	75	104.644		
	Se	82	112.180		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 3
Report Date/Time: Tuesday, June 28, 2016 13:27:40
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	92.871		
Cd	111	97.662		
Cd	114			
> In	115			102.925
Sn	118			
Sb	123	103.570		
Ba	135	90.845		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.941		
Tl	205			
Pb	206			
Pb	207			
Pb	208	91.584		
U	238	94.451		
> Bi	209			104.131
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
Report Date/Time: Tuesday, June 28, 2016 13:27:40
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 28, 2016 13:28:34
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85379.9	0.7				ug/L	81760	Standard
	Be	9	28.3	44.4	**0.0176**	0.012	68.3	ug/L	17	Standard
	Al	27	7582301.1	0.5	**47.0918**	0.449	1.0	ug/L	1410	Standard
	Sc	45	42481.1	0.8				ug/L	39543	Standard
	Ti	47	26924.2	1.2	**102.1971**	2.644	2.6	ug/L	39	Standard
	V	51	1177.2	11.7	**-0.0466**	0.017	37.5	ug/L	1415	Standard
	Cr	52	7440.5	1.6	**-0.0468**	0.011	24.4	ug/L	6946	Standard
	Cr	53	2938.6	8.1	**2.8263**	0.310	11.0	ug/L	328	Standard
	Mn	55	1484.1	0.5	**0.0680**	0.007	9.9	ug/L	823	Standard
	Co	59	438.3	7.6	**0.0276**	0.004	13.4	ug/L	252	Standard
	Ni	60	870.4	2.5	**0.3318**	0.004	1.2	ug/L	192	Standard
	Cu	65	647.0	5.3	**0.2309**	0.010	4.5	ug/L	141	Standard
	Zn	66	2006.5	1.8	**0.9027**	0.019	2.1	ug/L	491	Standard
>	Ge	72	545025.5	2.5				ug/L	515087	Standard
	As	75	-62.2	34.4	**-0.0118**	0.017	144.3	ug/L	20	Standard
	Se	82	23.6	6.2	**0.0746**	0.009	12.7	ug/L	15	Standard
	Se-1	77	231.7	5.9	**2.1902**	0.222	10.1	ug/L	48	Standard
>	Ga	71	171.7	17.1				mg/L	90	Standard
	Rb	85	1090.0	4.4				ug/L	23	Standard
	Y	89	452797.1	1.4				ug/L	448510	Standard
>	Rh	103	10.0	100.0				ug/L	15	Standard
	Mo	98	263118.9	1.1	**94.9055**	0.578	0.6	ug/L	11	Standard
	Ag	107	286.7	3.7	**0.0254**	0.002	6.6	ug/L	134	Standard
	Cd	111	-226.3	7.3	**-0.1062**	0.009	8.1	mg/L	7	Standard
	Cd	114	466.4	13.0	**0.0826**	0.011	12.8	ug/L	16	Standard
>	In	115	626700.1	1.0				ug/L	611117	Standard
	Sn	118	941.7	5.7	**0.0533**	0.007	13.8	ug/L	518	Standard
	Sb	123	466.3	29.2	**0.0836**	0.028	33.8	ug/L	127	Standard
	Ba	135	616.7	6.0	**0.2662**	0.017	6.2	ug/L	45	Standard
	Ce	140	233.3	17.2				ug/L	298	Standard
>	Tb	159	1019781.5	0.4				ug/L	977942	Standard
	Ho	165	28.3	27.0				ug/L	12	Standard
	Tl	203	270.7	14.6	**0.0257**	0.004	17.2	ug/L	31	Standard
	Tl	205	205.0	17.1	**0.0243**	0.005	18.8	ug/L	20	Standard
	Pb	206	568.7	4.5	**0.0362**	0.004	12.0	ug/L	286	Standard
	Pb	207	508.0	2.4	**0.0408**	0.002	5.7	ug/L	257	Standard
	Pb	208	1902.0	8.6	**0.0352**	0.008	23.2	ug/L	956	Standard
	U	238	71.7	54.2	**0.0065**	0.005	78.6	ug/L	17	Standard
>	Bi	209	587460.1	0.4				ug/L	557080	Standard

Sample ID: QC Std 4
Report Date/Time: Tuesday, June 28, 2016 13:30:51
Page 1

Approved: June 29, 2016

Na	23	5.0	100.0	**29.8288**	29.665	99.5	mg/L	0	Standard
Mg	24	10050.0	1.2	**12.3961**	0.163	1.3	mg/L	32	Standard
K	39	1535.1	9.7	**4.6887**	0.503	10.7	mg/L	30	Standard
Ca	43	211.7	14.4	**24.5987**	4.529	18.4	mg/L	48	Standard
Fe	54	14184.2	1.5	**11.8132**	0.271	2.3	mg/L	159	Standard
Fe	57	3883.8	1.7	**11.5795**	0.109	0.9	mg/L	195	Standard
Sc-1	45	42481.1	0.8				mg/L	39543	Standard
Cl	35	27442.8	1.7				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1816.8	6.7				ug/L	1647	Standard
P	31	16744.2	0.2				ug/L	15231	Standard
S	34	1956.8	7.4				ug/L	1845	Standard
Sr	88	48.3	53.1				ug/L	70	Standard
C	12	220.0	25.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	0	Standard
Dy	164	24.9	47.6				mg/L	12	Standard
Ho-1	165	28.3	27.0				mg/L	12	Standard
Er	166	36.7	56.8				mg/L	20	Standard
I	127	1896.8	6.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.942		
Sc	45			
Ti	47	102.197		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.812	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 4
Report Date/Time: Tuesday, June 28, 2016 13:30:51
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	94.905		
Ag	107			
Cd	111			
Cd	114			
In	115			102.550
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			105.453
Na	23	238.631		
Mg	24	247.921		
K	39	93.774		
Ca	43	163.991		
Fe	54	94.506		
Fe	57	92.636		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

Sample ID: QC Std 4
Report Date/Time: Tuesday, June 28, 2016 13:30:51
Page 3

Approved: June 29, 2016

QC Std 4	Ca	43

Sample ID: QC Std 4
Report Date/Time: Tuesday, June 28, 2016 13:30:51
Page 4

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 28, 2016 13:31:45
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87031.0	2.2				ug/L	81760	Standard
	Be	9	104600.0	3.1	**98.9445**	2.636	2.7	ug/L	17	Standard
	Al	27	8235764.9	2.8	**50.1881**	1.494	3.0	ug/L	1410	Standard
	Sc	45	40814.9	1.3				ug/L	39543	Standard
	Ti	47	28557.9	2.6	**110.3128**	3.806	3.5	ug/L	39	Standard
	V	51	698774.9	0.6	**96.5097**	2.203	2.3	ug/L	1415	Standard
	Cr	52	706026.0	2.3	**96.5109**	2.799	2.9	ug/L	6946	Standard
	Cr	53	91691.9	3.7	**100.1429**	4.249	4.2	ug/L	328	Standard
	Mn	55	659133.1	0.8	**97.6603**	2.181	2.2	ug/L	823	Standard
	Co	59	714164.5	1.5	**97.7493**	2.387	2.4	ug/L	252	Standard
	Ni	60	188241.9	2.2	**96.0473**	2.835	3.0	ug/L	192	Standard
	Cu	65	190773.3	1.3	**96.4911**	2.052	2.1	ug/L	141	Standard
	Zn	66	115799.2	0.5	**100.8065**	2.067	2.1	ug/L	491	Standard
>	**Ge**	72	535562.3	1.7				ug/L	515087	Standard
	As	75	115513.0	0.8	**98.8727**	1.879	1.9	ug/L	20	Standard
	Se	82	11807.8	0.8	**98.5471**	2.365	2.4	ug/L	15	Standard
	Se-1	77	7973.8	0.6	**101.0979**	1.926	1.9	ug/L	48	Standard
>	**Ga**	71	195.0	2.6				mg/L	90	Standard
	Rb	85	900.0	5.1				ug/L	23	Standard
	Y	89	467512.1	1.1				ug/L	448510	Standard
>	**Rh**	103	41.7	61.6				ug/L	15	Standard
	Mo	98	278616.6	1.0	**98.3192**	1.671	1.7	ug/L	11	Standard
	Ag	107	629653.8	2.5	**89.4581**	1.609	1.8	ug/L	134	Standard
	Cd	111	214179.9	0.7	**95.5849**	1.082	1.1	mg/L	7	Standard
	Cd	114	513207.5	0.9	**94.2229**	0.578	0.6	ug/L	16	Standard
>	**In**	115	640649.3	1.3				ug/L	611117	Standard
	Sn	118	1085.0	2.4	**0.0732**	0.006	8.8	ug/L	518	Standard
	Sb	123	468645.5	2.2	**94.7292**	1.132	1.2	ug/L	127	Standard
	Ba	135	204538.3	1.7	**94.4814**	1.088	1.2	ug/L	45	Standard
	Ce	140	98.3	7.8				ug/L	298	Standard
>	**Tb**	159	1030592.0	2.2				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	850272.7	1.9	**96.3847**	2.377	2.5	ug/L	31	Standard
	Tl	205	753805.3	1.5	**98.4067**	2.429	2.5	ug/L	20	Standard
	Pb	206	560444.8	0.3	**98.9799**	0.961	1.0	ug/L	286	Standard
	Pb	207	485626.8	0.4	**95.0861**	1.259	1.3	ug/L	257	Standard
	Pb	208	1940003.2	1.2	**98.1909**	2.155	2.2	ug/L	956	Standard
	U	238	731621.6	1.7	**97.5330**	2.488	2.6	ug/L	17	Standard
>	**Bi**	209	583301.0	1.0				ug/L	557080	Standard

Sample ID: QC Std 5
Report Date/Time: Tuesday, June 28, 2016 13:34:02
Page 1

Approved: June 29, 2016

Na	23	5.0	100.0	**30.9951**	30.718	99.1	mg/L	0	Standard
Mg	24	10642.1	4.7	**13.6704**	0.697	5.1	mg/L	32	Standard
K	39	1555.1	3.7	**4.9498**	0.207	4.2	mg/L	30	Standard
Ca	43	191.7	19.9	**22.8900**	5.801	25.3	mg/L	48	Standard
Fe	54	15478.2	1.2	**13.4350**	0.150	1.1	mg/L	159	Standard
Fe	57	4137.2	0.8	**12.9082**	0.151	1.2	mg/L	195	Standard
> **Sc-1**	45	40814.9	1.3				mg/L	39543	Standard
Cl	35	27689.3	2.5				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1876.8	10.9				ug/L	1647	Standard
P	31	15799.9	3.3				ug/L	15231	Standard
S	34	1943.5	5.2				ug/L	1845	Standard
Sr	88	65.0	27.7				ug/L	70	Standard
C	12	256.7	13.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	127.8				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	1231.7	9.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.944		
Al	27	1.004		
Sc	45			
Ti	47	110.313		
V	51	96.510		
Cr	52	96.511		
Cr	53			
Mn	55	97.660		
Co	59	97.749		
Ni	60	96.047		
Cu	65	96.491		
Zn	66	100.807		
> Ge	72		103.975	
As	75	98.873		
Se	82	98.547		
Se-1	77			
> Ga	71			

Sample ID: QC Std 5
Report Date/Time: Tuesday, June 28, 2016 13:34:02
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.319		
Ag	107	89.458		
Cd	111	95.585		
Cd	114			
In	115		104.833	
Sn	118			
Sb	123	94.729		
Ba	135	94.481		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.385		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.191		
U	238	97.533		
Bi	209		104.707	
Na	23	247.961		
Mg	24	273.408		
K	39	98.997		
Ca	43	152.600		
Fe	54	107.480		
Fe	57	103.265		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
Report Date/Time: Tuesday, June 28, 2016 13:34:02
Page 3

Approved: June 29, 2016

QC Std 5	Ca	43

Sample ID: QC Std 5
Report Date/Time: Tuesday, June 28, 2016 13:34:02
Page 4

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 13:34:59
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85572.8	3.1				ug/L	81760	Standard
	Be	9	51348.6	3.0	**49.4131**	1.801	3.6	ug/L	17	Standard
	Al	27	7869928.8	0.7	**48.7904**	1.162	2.4	ug/L	1410	Standard
	Sc	45	41500.1	1.3				ug/L	39543	Standard
	Ti	47	25257.0	1.4	**98.1904**	2.232	2.3	ug/L	39	Standard
	V	51	359717.6	0.9	**49.9155**	1.252	2.5	ug/L	1415	Standard
	Cr	52	362752.3	1.0	**49.4079**	0.954	1.9	ug/L	6946	Standard
	Cr	53	45483.2	1.3	**49.8439**	1.589	3.2	ug/L	328	Standard
	Mn	55	333977.4	0.1	**49.7416**	1.012	2.0	ug/L	823	Standard
	Co	59	371364.3	0.2	**51.1559**	1.087	2.1	ug/L	252	Standard
	Ni	60	96391.0	0.8	**49.4567**	0.760	1.5	ug/L	192	Standard
	Cu	65	97494.7	0.8	**49.5943**	0.620	1.2	ug/L	141	Standard
	Zn	66	56948.5	0.8	**49.4853**	0.762	1.5	ug/L	491	Standard
>	**Ge**	72	532023.1	2.0				ug/L	515087	Standard
	As	75	57437.4	0.6	**49.5161**	1.180	2.4	ug/L	20	Standard
	Se	82	5946.0	0.9	**49.9013**	1.415	2.8	ug/L	15	Standard
	Se-1	77	4004.5	1.6	**50.7471**	0.199	0.4	ug/L	48	Standard
>	**Ga**	71	93.3	16.4				mg/L	90	Standard
	Rb	85	881.7	8.3				ug/L	23	Standard
	Y	89	456900.1	0.4				ug/L	448510	Standard
>	**Rh**	103	26.7	60.3				ug/L	15	Standard
	Mo	98	274645.7	0.6	**96.2670**	1.141	1.2	ug/L	11	Standard
	Ag	107	344865.6	0.2	**48.6675**	0.302	0.6	ug/L	134	Standard
	Cd	111	109918.0	0.6	**48.7237**	0.167	0.3	mg/L	7	Standard
	Cd	114	266820.9	0.9	**48.6598**	0.652	1.3	ug/L	16	Standard
>	**In**	115	644937.8	0.8				ug/L	611117	Standard
	Sn	118	304766.5	1.2	**48.7367**	0.172	0.4	ug/L	518	Standard
	Sb	123	245072.6	0.1	**49.2072**	0.383	0.8	ug/L	127	Standard
	Ba	135	106223.8	1.1	**48.7299**	0.483	1.0	ug/L	45	Standard
	Ce	140	76.7	21.0				ug/L	298	Standard
>	**Tb**	159	1040424.8	0.9				ug/L	977942	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	436254.3	0.9	**48.8621**	1.048	2.1	ug/L	31	Standard
	Tl	205	382952.9	1.1	**49.3898**	0.698	1.4	ug/L	20	Standard
	Pb	206	278752.3	0.9	**48.6168**	1.163	2.4	ug/L	286	Standard
	Pb	207	252906.4	1.0	**48.9055**	1.215	2.5	ug/L	257	Standard
	Pb	208	993060.2	1.0	**49.6339**	1.159	2.3	ug/L	956	Standard
	U	238	369537.8	0.4	**48.6731**	0.911	1.9	ug/L	17	Standard
>	**Bi**	209	590375.8	1.5				ug/L	557080	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 13:37:15
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4017.2	5.2	**5.0405**	0.318	6.3	mg/L	32	Standard
K	39	1600.1	5.0	**5.0128**	0.329	6.6	mg/L	30	Standard
Ca	43	98.3	19.3	**8.9105**	2.944	33.0	mg/L	48	Standard
Fe	54	5965.0	1.0	**5.0068**	0.016	0.3	mg/L	159	Standard
Fe	57	1785.1	5.1	**5.1208**	0.370	7.2	mg/L	195	Standard
> **Sc-1**	45	41500.1	1.3				mg/L	39543	Standard
Cl	35	29160.0	1.9				ug/L	27642	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1670.1	8.2				ug/L	1647	Standard
P	31	17116.3	2.7				ug/L	15231	Standard
S	34	2186.8	7.3				ug/L	1845	Standard
Sr	88	41.7	34.6				ug/L	70	Standard
C	12	130.0	42.8				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	23.3	24.7				mg/L	12	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	0.0					mg/L	20	Standard
I	127	1351.7	14.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.826		
Al	27	97.581		
Sc	45			
Ti	47	98.190		
V	51	99.831		
Cr	52	98.816		
Cr	53			
Mn	55	99.483		
Co	59	102.312		
Ni	60	98.913		
Cu	65	99.189		
Zn	66	98.971		
> Ge	72		103.288	
As	75	99.032		
Se	82	99.803		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 13:37:15
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	96.267		
Ag	107	97.335		
Cd	111	97.447		
Cd	114			
In	115			105.534
Sn	118	97.473		
Sb	123	98.414		
Ba	135	97.460		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.724		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.268		
U	238	97.346		
Bi	209			105.977
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 13:37:15
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 13:38:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82763.8	0.7				ug/L	81760	Standard
	Be	9	40.0	57.3	**0.0300**	0.023	75.9	ug/L	17	Standard
	Al	27	4257.4	63.2	**0.0129**	0.017	134.4	ug/L	1410	Standard
	Sc	45	40355.3	1.7				ug/L	39543	Standard
	Ti	47	44.3	23.5	**0.0085**	0.041	476.8	ug/L	39	Standard
	V	51	1283.7	14.1	**-0.0268**	0.025	92.2	ug/L	1415	Standard
	Cr	52	6366.3	1.6	**-0.1663**	0.013	7.9	ug/L	6946	Standard
	Cr	53	461.7	3.5	**0.1707**	0.014	8.3	ug/L	328	Standard
	Mn	55	939.4	15.6	**-0.0074**	0.022	294.6	ug/L	823	Standard
	Co	59	428.3	39.2	**0.0280**	0.023	82.9	ug/L	252	Standard
	Ni	60	218.7	25.5	**0.0081**	0.029	354.3	ug/L	192	Standard
	Cu	65	184.3	18.2	**0.0036**	0.017	469.2	ug/L	141	Standard
	Zn	66	515.3	2.3	**-0.3696**	0.014	3.7	ug/L	491	Standard
>	**Ge**	72	528838.2	0.8				ug/L	515087	Standard
	As	75	8.3	324.4	**0.0475**	0.023	49.1	ug/L	20	Standard
	Se	82	19.9	12.2	**0.0491**	0.021	43.7	ug/L	15	Standard
	Se-1	77	55.0	4.8	**-0.0079**	0.029	369.8	ug/L	48	Standard
>	**Ga**	71	56.7	39.8				mg/L	90	Standard
	Rb	85	10.0					ug/L	23	Standard
	Y	89	469796.8	1.6				ug/L	448510	Standard
>	**Rh**	103	20.0	25.0				ug/L	15	Standard
	Mo	98	452.3	25.3	**0.1439**	0.042	29.5	ug/L	11	Standard
	Ag	107	307.7	67.7	**0.0286**	0.031	108.2	ug/L	134	Standard
	Cd	111	45.2	95.8	**0.0178**	0.020	112.8	mg/L	7	Standard
	Cd	114	114.8	113.1	**0.0168**	0.025	147.3	ug/L	16	Standard
>	**In**	115	628024.0	1.4				ug/L	611117	Standard
	Sn	118	940.0	23.7	**0.0531**	0.039	73.1	ug/L	518	Standard
	Sb	123	1312.1	39.0	**0.2588**	0.110	42.3	ug/L	127	Standard
	Ba	135	79.3	75.1	**0.0125**	0.029	229.7	ug/L	45	Standard
	Ce	140	28.3	36.7				ug/L	298	Standard
>	**Tb**	159	1003248.8	1.6				ug/L	977942	Standard
	Ho	165	15.0	88.2				ug/L	12	Standard
	Tl	203	265.0	107.1	**0.0261**	0.033	127.7	ug/L	31	Standard
	Tl	205	163.3	84.5	**0.0196**	0.019	95.5	ug/L	20	Standard
	Pb	206	421.0	42.3	**0.0127**	0.033	261.4	ug/L	286	Standard
	Pb	207	362.0	44.3	**0.0147**	0.033	224.6	ug/L	257	Standard
	Pb	208	1358.7	30.8	**0.0100**	0.022	223.6	ug/L	956	Standard
	U	238	139.0	84.9	**0.0161**	0.016	101.8	ug/L	17	Standard
>	**Bi**	209	570467.7	1.7				ug/L	557080	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 13:40:27
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.3221**	17.870	173.1	mg/L	0	Standard
Mg	24	30.0	28.9	**-0.0179**	0.012	67.0	mg/L	32	Standard
K	39	31.7	24.1	**-0.0367**	0.024	65.4	mg/L	30	Standard
Ca	43	38.3	15.1	**0.3686**	0.952	258.2	mg/L	48	Standard
Fe	54	115.7	16.2	**-0.0344**	0.017	49.5	mg/L	159	Standard
Fe	57	198.3	8.1	**0.0320**	0.061	191.3	mg/L	195	Standard
> **Sc-1**	45	40355.3	1.7				mg/L	39543	Standard
Cl	35	29509.4	2.2				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1783.4	4.3				ug/L	1647	Standard
P	31	17421.7	1.2				ug/L	15231	Standard
S	34	2170.2	3.8				ug/L	1845	Standard
Sr	88	55.0	15.7				ug/L	70	Standard
C	12	93.3	40.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	8.9	120.7				mg/L	12	Standard
Ho-1	165	15.0	88.2				mg/L	12	Standard
Er	166	23.3	65.5				mg/L	20	Standard
I	127	1233.4	14.2				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.670	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 13:40:27
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.767
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.403
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 13:40:27
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Tuesday, June 28, 2016 13:41:22
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83400.5	10.2				ug/L	81760	Standard
	Be	9	11.7	65.5	**0.0015**	0.006	425.0	ug/L	17	Standard
	Al	27	3017.0	39.5	**0.0053**	0.009	165.2	ug/L	1410	Standard
	Sc	45	40218.8	12.0				ug/L	39543	Standard
	Ti	47	37.0	23.6	**-0.0163**	0.022	135.1	ug/L	39	Standard
	V	51	613.8	4.6	**-0.1167**	0.012	10.1	ug/L	1415	Standard
	Cr	52	3481.1	12.6	**-0.5531**	0.019	3.4	ug/L	6946	Standard
	Cr	53	250.0	27.5	**-0.0570**	0.057	99.8	ug/L	328	Standard
	Mn	55	1041.4	26.2	**0.0117**	0.027	231.5	ug/L	823	Standard
	Co	59	254.7	5.9	**0.0055**	0.004	71.3	ug/L	252	Standard
	Ni	60	206.3	13.3	**0.0056**	0.009	153.1	ug/L	192	Standard
	Cu	65	131.7	19.5	**-0.0206**	0.013	65.4	ug/L	141	Standard
	Zn	66	531.7	22.4	**-0.3419**	0.069	20.1	ug/L	491	Standard
>	**Ge**	72	510441.4	10.5				ug/L	515087	Standard
	As	75	44.6	25.0	**0.0799**	0.006	7.8	ug/L	20	Standard
	Se	82	38.3	36.8	**0.2107**	0.093	44.1	ug/L	15	Standard
	Se-1	77	32.0	11.3	**-0.2872**	0.062	21.6	ug/L	48	Standard
>	**Ga**	71	61.7	4.7				mg/L	90	Standard
	Rb	85	33.3	37.7				ug/L	23	Standard
	Y	89	399549.3	20.8				ug/L	448510	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	155.9	22.2	**0.0482**	0.023	47.8	ug/L	11	Standard
	Ag	107	121.0	24.4	**0.0044**	0.005	118.2	ug/L	134	Standard
	Cd	111	13.4	45.5	**0.0046**	0.004	96.5	mg/L	7	Standard
	Cd	114	43.9	10.7	**0.0047**	0.001	14.6	ug/L	16	Standard
>	**In**	115	541793.5	15.9				ug/L	611117	Standard
	Sn	118	351.7	31.7	**-0.0361**	0.012	32.5	ug/L	518	Standard
	Sb	123	283.1	30.2	**0.0538**	0.012	21.7	ug/L	127	Standard
	Ba	135	37.0	32.8	**-0.0052**	0.004	82.4	ug/L	45	Standard
	Ce	140	30.0	28.9				ug/L	298	Standard
>	**Tb**	159	879683.0	16.9				ug/L	977942	Standard
	Ho	165	8.3	34.6				ug/L	12	Standard
	Tl	203	99.7	75.1	**0.0097**	0.013	137.9	ug/L	31	Standard
	Tl	205	85.0	86.7	**0.0121**	0.015	120.6	ug/L	20	Standard
	Pb	206	313.0	1.9	**0.0011**	0.012	1036.8	ug/L	286	Standard
	Pb	207	266.0	5.5	**0.0034**	0.015	442.4	ug/L	257	Standard
	Pb	208	1233.7	12.3	**0.0133**	0.020	150.4	ug/L	956	Standard
	U	238	39.3	36.7	**0.0031**	0.002	60.3	ug/L	17	Standard
>	**Bi**	209	508733.8	16.9				ug/L	557080	Standard

Sample ID: L1606036203
Report Date/Time: Tuesday, June 28, 2016 13:43:39
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	21.7	13.3	**-0.0282**	0.008	27.2	mg/L	32	Standard
K	39	25.0	34.6	**-0.0591**	0.022	36.5	mg/L	30	Standard
Ca	43	40.0	12.5	**0.7483**	1.524	203.6	mg/L	48	Standard
Fe	54	113.2	25.1	**-0.0334**	0.039	117.8	mg/L	159	Standard
Fe	57	238.3	14.7	**0.1717**	0.127	73.7	mg/L	195	Standard
> **Sc-1**	45	40218.8	12.0				mg/L	39543	Standard
Cl	35	13831.7	10.0				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	810.0	8.9				ug/L	1647	Standard
P	31	10527.1	24.9				ug/L	15231	Standard
S	34	970.0	6.2				ug/L	1845	Standard
Sr	88	66.7	11.5				ug/L	70	Standard
C	12	110.0	9.1				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	124.8				mg/L	12	Standard
Ho-1	165	8.3	34.6				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	523.3	19.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.006	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.098	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606036203
Report Date/Time: Tuesday, June 28, 2016 13:43:39
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.656
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.321
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Lower	Cr	52	

Sample ID: L1606036203
Report Date/Time: Tuesday, June 28, 2016 13:43:39
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606036204
Sample Date/Time: Tuesday, June 28, 2016 13:44:34
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83225.5	7.5				ug/L	81760	Standard
	Be	9	31228.6	61.6	**31.9371**	21.971	68.8	ug/L	17	Standard
	Al	27	8471.1	48.6	**0.0411**	0.031	75.9	ug/L	1410	Standard
	Sc	45	40830.0	2.2				ug/L	39543	Standard
	Ti	47	34.3	11.8	**-0.0297**	0.018	59.1	ug/L	39	Standard
	V	51	224078.9	58.8	**31.3360**	18.302	58.4	ug/L	1415	Standard
	Cr	52	238015.8	57.7	**32.3999**	19.040	58.8	ug/L	6946	Standard
	Cr	53	29690.7	58.7	**32.7502**	19.168	58.5	ug/L	328	Standard
	Mn	55	213724.7	56.8	**32.1044**	18.055	56.2	ug/L	823	Standard
	Co	59	222487.2	58.7	**30.9454**	17.938	58.0	ug/L	252	Standard
	Ni	60	62090.3	57.3	**32.1492**	18.240	56.7	ug/L	192	Standard
	Cu	65	63757.0	57.0	**32.7355**	18.436	56.3	ug/L	141	Standard
	Zn	66	38227.9	57.9	**33.2873**	19.476	58.5	ug/L	491	Standard
>	**Ge**	72	525473.2	1.2				ug/L	515087	Standard
	As	75	36453.5	56.6	**31.7527**	17.695	55.7	ug/L	20	Standard
	Se	82	3780.3	55.0	**31.9968**	17.401	54.4	ug/L	15	Standard
	Se-1	77	2538.3	56.6	**32.2335**	18.366	57.0	ug/L	48	Standard
>	**Ga**	71	76.7	26.4				mg/L	90	Standard
	Rb	85	43.3	17.6				ug/L	23	Standard
	Y	89	474726.4	7.6				ug/L	448510	Standard
>	**Rh**	103	26.7	21.7				ug/L	15	Standard
	Mo	98	564.0	40.4	**0.1823**	0.089	49.0	ug/L	11	Standard
	Ag	107	212096.4	59.4	**30.6350**	19.274	62.9	ug/L	134	Standard
	Cd	111	68030.3	54.2	**30.8198**	17.865	58.0	mg/L	7	Standard
	Cd	114	165078.2	56.3	**30.7839**	18.487	60.1	ug/L	16	Standard
>	**In**	115	641067.2	4.2				ug/L	611117	Standard
	Sn	118	550.0	28.6	**-0.0125**	0.029	234.3	ug/L	518	Standard
	Sb	123	143570.7	60.9	**29.5172**	18.974	64.3	ug/L	127	Standard
	Ba	135	66133.4	54.2	**31.0035**	17.964	57.9	ug/L	45	Standard
	Ce	140	83.3	81.7				ug/L	298	Standard
>	**Tb**	159	1026938.7	4.8				ug/L	977942	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	274073.1	56.4	**30.7538**	17.663	57.4	ug/L	31	Standard
	Tl	205	243234.0	54.4	**31.4411**	17.425	55.4	ug/L	20	Standard
	Pb	206	180330.9	55.5	**31.4753**	17.798	56.5	ug/L	286	Standard
	Pb	207	158009.7	55.1	**30.5868**	17.206	56.3	ug/L	257	Standard
	Pb	208	646417.5	54.5	**32.3514**	17.977	55.6	ug/L	956	Standard
	U	238	234720.5	55.2	**30.9733**	17.414	56.2	ug/L	17	Standard
>	**Bi**	209	588853.8	4.4				ug/L	557080	Standard

Sample ID: L1606036204
Report Date/Time: Tuesday, June 28, 2016 13:46:51
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.1717**	17.609	173.1	mg/L	0	Standard
Mg	24	26.7	10.8	**-0.0228**	0.004	16.0	mg/L	32	Standard
K	39	36.7	43.8	**-0.0214**	0.052	244.2	mg/L	30	Standard
Ca	43	30.0	66.7	**-0.9172**	2.942	320.7	mg/L	48	Standard
Fe	54	107.6	36.8	**-0.0427**	0.035	81.3	mg/L	159	Standard
Fe	57	220.0	9.9	**0.0952**	0.078	81.4	mg/L	195	Standard
> **Sc-1**	45	40830.0	2.2				mg/L	39543	Standard
Cl	35	20640.2	29.5				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1230.1	37.8				ug/L	1647	Standard
P	31	11926.4	10.7				ug/L	15231	Standard
S	34	1536.7	28.4				ug/L	1845	Standard
Sr	88	66.7	11.5				ug/L	70	Standard
C	12	146.7	27.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.9	100.8				mg/L	12	Standard
Ho-1	165	11.7	65.5				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	785.0	24.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.016	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606036204
Report Date/Time: Tuesday, June 28, 2016 13:46:51
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.704
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Tuesday, June 28, 2016 13:49:03
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90942.6	5.2				ug/L	81760	Standard
	Be	9	53.3	85.1	**0.0399**	0.045	111.9	ug/L	17	Standard
	Al	27	693137.8	2.1	**4.0335**	0.159	3.9	ug/L	1410	Standard
	Sc	45	39909.2	1.1				ug/L	39543	Standard
	Ti	47	362.3	4.5	**1.2955**	0.068	5.3	ug/L	39	Standard
	V	51	2278.9	9.8	**0.1220**	0.031	25.8	ug/L	1415	Standard
	Cr	52	6909.6	1.4	**-0.0622**	0.012	19.7	ug/L	6946	Standard
	Cr	53	1090.0	12.5	**0.9032**	0.155	17.1	ug/L	328	Standard
	Mn	55	5526773.3	1.7	**854.3657**	14.322	1.7	ug/L	823	Standard
	Co	59	9370.2	5.6	**1.3053**	0.073	5.6	ug/L	252	Standard
	Ni	60	2122.5	1.2	**1.0247**	0.015	1.4	ug/L	192	Standard
	Cu	65	2498.9	0.1	**1.2274**	0.002	0.2	ug/L	141	Standard
	Zn	66	6516.4	0.8	**5.1316**	0.039	0.8	ug/L	491	Standard
>	**Ge**	72	513880.5	0.2				ug/L	515087	Standard
	As	75	3228.7	3.4	**2.9189**	0.105	3.6	ug/L	20	Standard
	Se	82	922.2	2.2	**7.9103**	0.196	2.5	ug/L	15	Standard
	Se-1	77	155.0	10.7	**1.3431**	0.217	16.2	ug/L	48	Standard
>	**Ga**	71	388.3	17.5				mg/L	90	Standard
	Rb	85	68372.4	3.2				ug/L	23	Standard
	Y	89	447009.0	1.5				ug/L	448510	Standard
>	**Rh**	103	111.7	20.2				ug/L	15	Standard
	Mo	98	1200247.1	0.8	**451.3790**	8.919	2.0	ug/L	11	Standard
	Ag	107	153.3	18.9	**0.0070**	0.004	61.8	ug/L	134	Standard
	Cd	111	-1054.6	0.6	**-0.5044**	0.004	0.7	mg/L	7	Standard
	Cd	114	1800.6	2.5	**0.3474**	0.013	3.8	ug/L	16	Standard
>	**In**	115	601262.2	1.3				ug/L	611117	Standard
	Sn	118	788.4	4.6	**0.0336**	0.006	17.8	ug/L	518	Standard
	Sb	123	1882.7	34.8	**0.3916**	0.136	34.8	ug/L	127	Standard
	Ba	135	4520.7	1.0	**2.2009**	0.051	2.3	ug/L	45	Standard
	Ce	140	6458.0	2.1				ug/L	298	Standard
>	**Tb**	159	1000527.6	0.4				ug/L	977942	Standard
	Ho	165	130.0	21.4				ug/L	12	Standard
	Tl	203	285.7	2.5	**0.0299**	0.000	1.6	ug/L	31	Standard
	Tl	205	403.3	76.1	**0.0543**	0.043	79.9	ug/L	20	Standard
	Pb	206	899.7	2.3	**0.1068**	0.005	4.7	ug/L	286	Standard
	Pb	207	732.0	4.6	**0.0957**	0.009	9.0	ug/L	257	Standard
	Pb	208	3524.8	26.8	**0.1310**	0.052	40.0	ug/L	956	Standard
	U	238	352.3	76.1	**0.0475**	0.039	81.4	ug/L	17	Standard
>	**Bi**	209	544253.0	1.1				ug/L	557080	Standard

Sample ID: L1606036203
Report Date/Time: Tuesday, June 28, 2016 13:51:20
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.4757**	18.136	173.1	mg/L	0	Standard
Mg	24	122834.3	0.9	**161.9583**	0.885	0.5	mg/L	32	Standard
K	39	4865.8	5.3	**16.1536**	1.001	6.2	mg/L	30	Standard
Ca	43	186.7	17.4	**22.7843**	5.205	22.8	mg/L	48	Standard
Fe	54	927.7	8.4	**0.6952**	0.076	10.9	mg/L	159	Standard
Fe	57	461.7	8.7	**0.9208**	0.151	16.4	mg/L	195	Standard
> **Sc-1**	45	39909.2	1.1				mg/L	39543	Standard
Cl	35	47371.9	1.0				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	196320.5	1.2				ug/L	1647	Standard
P	31	16525.7	2.7				ug/L	15231	Standard
S	34	2001.8	3.8				ug/L	1845	Standard
Sr	88	358.3	4.3				ug/L	70	Standard
C	12	246.7	19.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	211.1	26.7				mg/L	12	Standard
Ho-1	165	130.0	21.4				mg/L	12	Standard
Er	166	116.7	51.7				mg/L	20	Standard
I	127	1244078.5	12.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.231	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.766	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606036203
Report Date/Time: Tuesday, June 28, 2016 13:51:20
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.387
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.697
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606036203
Report Date/Time: Tuesday, June 28, 2016 13:51:20
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606036204
Sample Date/Time: Tuesday, June 28, 2016 13:52:18
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103725.5	0.9				ug/L	81760	Standard
	Be	9	18.3	41.7	**0.0048**	0.006	125.1	ug/L	17	Standard
	Al	27	23803073.4	2.1	**121.7007**	1.863	1.5	ug/L	1410	Standard
	Sc	45	41989.8	2.5				ug/L	39543	Standard
	Ti	47	198.3	8.2	**0.6152**	0.056	9.1	ug/L	39	Standard
	V	51	2022.8	10.2	**0.0784**	0.030	38.8	ug/L	1415	Standard
	Cr	52	8025.5	3.2	**0.0718**	0.049	68.1	ug/L	6946	Standard
	Cr	53	1725.1	14.9	**1.5845**	0.307	19.4	ug/L	328	Standard
	Mn	55	8347.3	4.1	**1.1117**	0.038	3.4	ug/L	823	Standard
	Co	59	1991.1	1.1	**0.2461**	0.003	1.1	ug/L	252	Standard
	Ni	60	2784.9	2.6	**1.3428**	0.049	3.7	ug/L	192	Standard
	Cu	65	1676.4	9.2	**0.7724**	0.072	9.4	ug/L	141	Standard
	Zn	66	3951.5	5.5	**2.7003**	0.153	5.7	ug/L	491	Standard
>	**Ge**	72	526193.8	1.1				ug/L	515087	Standard
	As	75	658.8	2.1	**0.6140**	0.018	3.0	ug/L	20	Standard
	Se	82	229.7	4.0	**1.8340**	0.092	5.0	ug/L	15	Standard
	Se-1	77	153.0	9.2	**1.2707**	0.204	16.0	ug/L	48	Standard
>	**Ga**	71	148.3	16.6				mg/L	90	Standard
	Rb	85	683.3	4.9				ug/L	23	Standard
	Y	89	453248.0	2.1				ug/L	448510	Standard
>	**Rh**	103	91.7	27.5				ug/L	15	Standard
	Mo	98	5026.0	6.3	**1.8280**	0.098	5.4	ug/L	11	Standard
	Ag	107	95.3	7.7	**-0.0021**	0.001	57.5	ug/L	134	Standard
	Cd	111	8.0	39.8	**0.0008**	0.001	178.0	mg/L	7	Standard
	Cd	114	50.5	30.0	**0.0047**	0.003	60.8	ug/L	16	Standard
>	**In**	115	615030.5	1.6				ug/L	611117	Standard
	Sn	118	1100.0	6.8	**0.0830**	0.014	16.4	ug/L	518	Standard
	Sb	123	686.5	31.6	**0.1319**	0.046	34.9	ug/L	127	Standard
	Ba	135	22769.8	0.9	**10.9347**	0.080	0.7	ug/L	45	Standard
	Ce	140	320.0	14.9				ug/L	298	Standard
>	**Tb**	159	1016190.3	1.0				ug/L	977942	Standard
	Ho	165	48.3	15.8				ug/L	12	Standard
	Tl	203	156.0	5.7	**0.0132**	0.001	7.6	ug/L	31	Standard
	Tl	205	153.3	14.7	**0.0181**	0.003	17.2	ug/L	20	Standard
	Pb	206	466.3	6.0	**0.0202**	0.005	24.4	ug/L	286	Standard
	Pb	207	405.3	5.2	**0.0227**	0.004	15.6	ug/L	257	Standard
	Pb	208	1478.0	2.2	**0.0157**	0.002	13.7	ug/L	956	Standard
	U	238	1957.8	2.0	**0.2625**	0.004	1.4	ug/L	17	Standard
>	**Bi**	209	573383.4	0.9				ug/L	557080	Standard

Sample ID: L1606036204
Report Date/Time: Tuesday, June 28, 2016 13:54:35
Page 1

Approved: June 29, 2016

Na	23	8.3	34.6	**50.1179**	16.456	32.8	mg/L	0	Standard
Mg	24	58420.8	1.2	**73.2244**	2.756	3.8	mg/L	32	Standard
K	39	723.4	8.7	**2.1601**	0.187	8.7	mg/L	30	Standard
Ca	43	463.3	11.9	**60.9213**	7.520	12.3	mg/L	48	Standard
Fe	54	191.2	7.7	**0.0260**	0.014	55.5	mg/L	159	Standard
Fe	57	531.7	2.7	**1.0656**	0.010	0.9	mg/L	195	Standard
> **Sc-1**	45	41989.8	2.5				mg/L	39543	Standard
Cl	35	37603.3	1.8				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	30841.4	4.4				ug/L	1647	Standard
P	31	21757.3	1.3				ug/L	15231	Standard
S	34	1778.4	1.5				ug/L	1845	Standard
Sr	88	246.7	9.1				ug/L	70	Standard
C	12	216.7	7.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	60.8	24.7				mg/L	12	Standard
Ho-1	165	48.3	15.8				mg/L	12	Standard
Er	166	53.3	10.8				mg/L	20	Standard
I	127	78536.8	23.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.866	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.156	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606036204
Report Date/Time: Tuesday, June 28, 2016 13:54:35
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.640
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.927
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606036204
Report Date/Time: Tuesday, June 28, 2016 13:54:35
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606036205
Sample Date/Time: Tuesday, June 28, 2016 13:59:25
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103215.4	0.9				ug/L	81760	Standard
	Be	9	20.0	50.0	**0.0063**	0.008	129.0	ug/L	17	Standard
	Al	27	14439258.9	3.3	**74.2049**	3.024	4.1	ug/L	1410	Standard
	Sc	45	39693.6	2.3				ug/L	39543	Standard
	Ti	47	140.0	4.0	**0.4180**	0.020	4.8	ug/L	39	Standard
	V	51	3604.7	5.2	**0.3305**	0.025	7.7	ug/L	1415	Standard
	Cr	52	7555.2	2.8	**0.0671**	0.025	36.8	ug/L	6946	Standard
	Cr	53	1441.7	2.8	**1.3602**	0.060	4.4	ug/L	328	Standard
	Mn	55	692335.2	1.4	**110.4896**	2.247	2.0	ug/L	823	Standard
	Co	59	1760.4	3.6	**0.2283**	0.011	4.9	ug/L	252	Standard
	Ni	60	2996.0	4.5	**1.5433**	0.085	5.5	ug/L	192	Standard
	Cu	65	1684.1	4.6	**0.8273**	0.040	4.8	ug/L	141	Standard
	Zn	66	2371.2	1.2	**1.4134**	0.020	1.4	ug/L	491	Standard
>	**Ge**	72	497232.9	0.8				ug/L	515087	Standard
	As	75	475.6	6.3	**0.4785**	0.029	6.0	ug/L	20	Standard
	Se	82	111.0	8.1	**0.8794**	0.084	9.6	ug/L	15	Standard
	Se-1	77	118.0	5.1	**0.9042**	0.095	10.5	ug/L	48	Standard
>	**Ga**	71	108.3	35.3				mg/L	90	Standard
	Rb	85	57350.0	0.9				ug/L	23	Standard
	Y	89	457066.8	2.1				ug/L	448510	Standard
>	**Rh**	103	28.3	44.4				ug/L	15	Standard
	Mo	98	255967.1	1.2	**93.6404**	2.667	2.8	ug/L	11	Standard
	Ag	107	89.3	9.3	**-0.0031**	0.001	44.5	ug/L	134	Standard
	Cd	111	-197.3	3.0	**-0.0942**	0.001	1.4	mg/L	7	Standard
	Cd	114	425.0	6.1	**0.0760**	0.006	8.0	ug/L	16	Standard
>	**In**	115	618093.1	1.7				ug/L	611117	Standard
	Sn	118	871.7	7.6	**0.0437**	0.009	20.3	ug/L	518	Standard
	Sb	123	474.5	27.0	**0.0866**	0.026	30.6	ug/L	127	Standard
	Ba	135	13314.9	2.5	**6.3544**	0.263	4.1	ug/L	45	Standard
	Ce	140	228.3	6.3				ug/L	298	Standard
>	**Tb**	159	1010942.5	1.3				ug/L	977942	Standard
	Ho	165	25.0	72.1				ug/L	12	Standard
	Tl	203	239.7	6.5	**0.0241**	0.002	9.5	ug/L	31	Standard
	Tl	205	181.7	22.1	**0.0230**	0.006	26.1	ug/L	20	Standard
	Pb	206	319.7	6.3	**-0.0035**	0.004	108.4	ug/L	286	Standard
	Pb	207	282.7	2.0	**0.0009**	0.002	252.3	ug/L	257	Standard
	Pb	208	1120.3	3.0	**-0.0001**	0.003	3300.1	ug/L	956	Standard
	U	238	733.7	3.0	**0.1011**	0.005	4.9	ug/L	17	Standard
>	**Bi**	209	548318.3	1.8				ug/L	557080	Standard

Sample ID: L1606036205
Report Date/Time: Tuesday, June 28, 2016 14:01:41
Page 1

Approved: June 29, 2016

Na	23	3.3	173.2	**21.6860**	37.553	173.2	mg/L	0	Standard
Mg	24	97569.9	1.9	**129.3694**	3.560	2.8	mg/L	32	Standard
K	39	4389.0	6.2	**14.6373**	1.001	6.8	mg/L	30	Standard
Ca	43	378.3	2.8	**51.9377**	2.720	5.2	mg/L	48	Standard
Fe	54	155.8	7.4	**0.0035**	0.012	336.9	mg/L	159	Standard
Fe	57	446.7	11.3	**0.8756**	0.135	15.4	mg/L	195	Standard
> **Sc-1**	45	39693.6	2.3				mg/L	39543	Standard
Cl	35	45044.9	1.9				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	18554.7	4.8				ug/L	1647	Standard
P	31	20283.6	3.2				ug/L	15231	Standard
S	34	1950.1	2.9				ug/L	1845	Standard
Sr	88	140.0	14.3				ug/L	70	Standard
C	12	253.3	26.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.4	35.9				mg/L	12	Standard
Ho-1	165	25.0	72.1				mg/L	12	Standard
Er	166	53.3	21.7				mg/L	20	Standard
I	127	81681.7	5.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.242	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.534	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606036205
Report Date/Time: Tuesday, June 28, 2016 14:01:41
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.142	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.427	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606036206
Sample Date/Time: Tuesday, June 28, 2016 14:02:36
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108188.3	1.9				ug/L	81760	Standard
	Be	9	25.0	69.3	**0.0094**	0.014	144.0	ug/L	17	Standard
	Al	27	23235387.8	1.2	**113.9176**	1.672	1.5	ug/L	1410	Standard
	Sc	45	42060.0	3.5				ug/L	39543	Standard
	Ti	47	152.7	7.7	**0.4364**	0.055	12.6	ug/L	39	Standard
	V	51	2674.6	4.0	**0.1700**	0.012	6.8	ug/L	1415	Standard
	Cr	52	8527.1	1.1	**0.1424**	0.031	21.5	ug/L	6946	Standard
	Cr	53	1513.4	3.0	**1.3470**	0.073	5.5	ug/L	328	Standard
	Mn	55	17845.5	5.4	**2.5461**	0.135	5.3	ug/L	823	Standard
	Co	59	1119.4	15.5	**0.1245**	0.023	18.8	ug/L	252	Standard
	Ni	60	2702.9	1.5	**1.3004**	0.041	3.1	ug/L	192	Standard
	Cu	65	753.4	4.7	**0.2972**	0.013	4.4	ug/L	141	Standard
	Zn	66	1481.1	2.0	**0.4954**	0.035	7.0	ug/L	491	Standard
>	**Ge**	72	526170.8	1.4				ug/L	515087	Standard
	As	75	291.6	5.2	**0.2943**	0.014	4.7	ug/L	20	Standard
	Se	82	87.6	19.6	**0.6269**	0.155	24.7	ug/L	15	Standard
	Se-1	77	124.0	13.8	**0.8941**	0.239	26.7	ug/L	48	Standard
>	**Ga**	71	93.3	13.5				mg/L	90	Standard
	Rb	85	1890.1	1.5				ug/L	23	Standard
	Y	89	457488.4	1.5				ug/L	448510	Standard
>	**Rh**	103	41.7	45.4				ug/L	15	Standard
	Mo	98	1289.7	27.8	**0.4294**	0.125	29.1	ug/L	11	Standard
	Ag	107	132.0	62.6	**0.0022**	0.011	517.7	ug/L	134	Standard
	Cd	111	14.8	9.0	**0.0036**	0.001	18.2	mg/L	7	Standard
	Cd	114	35.3	64.8	**0.0015**	0.004	279.2	ug/L	16	Standard
>	**In**	115	650440.2	1.2				ug/L	611117	Standard
	Sn	118	795.0	5.8	**0.0244**	0.006	26.1	ug/L	518	Standard
	Sb	123	299.9	40.5	**0.0467**	0.023	50.3	ug/L	127	Standard
	Ba	135	16583.1	1.2	**7.5223**	0.109	1.5	ug/L	45	Standard
	Ce	140	573.3	12.7				ug/L	298	Standard
>	**Tb**	159	1070413.0	0.5				ug/L	977942	Standard
	Ho	165	35.0	14.3				ug/L	12	Standard
	Tl	203	143.0	68.4	**0.0109**	0.011	100.1	ug/L	31	Standard
	Tl	205	173.3	55.8	**0.0194**	0.012	61.7	ug/L	20	Standard
	Pb	206	407.0	5.8	**0.0055**	0.005	85.2	ug/L	286	Standard
	Pb	207	361.0	20.9	**0.0099**	0.014	143.4	ug/L	257	Standard
	Pb	208	1551.4	24.3	**0.0150**	0.018	119.8	ug/L	956	Standard
	U	238	2137.8	4.4	**0.2708**	0.011	4.2	ug/L	17	Standard
>	**Bi**	209	607194.4	1.0				ug/L	557080	Standard

Sample ID: L1606036206
Report Date/Time: Tuesday, June 28, 2016 14:05:08
Page 1

Approved: June 29, 2016

Na	23	15.0	57.7	**91.7381**	54.279	59.2	mg/L	0	Standard
Mg	24	7570.2	0.6	**9.4255**	0.372	3.9	mg/L	32	Standard
K	39	228.3	12.1	**0.5833**	0.074	12.7	mg/L	30	Standard
Ca	43	403.3	9.3	**52.3767**	6.757	12.9	mg/L	48	Standard
Fe	54	189.4	6.8	**0.0240**	0.007	29.2	mg/L	159	Standard
Fe	57	486.7	15.4	**0.9208**	0.241	26.2	mg/L	195	Standard
> **Sc-1**	45	42060.0	3.5				mg/L	39543	Standard
Cl	35	35390.6	1.2				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	8392.3	5.9				ug/L	1647	Standard
P	31	21440.2	3.3				ug/L	15231	Standard
S	34	2026.8	8.3				ug/L	1845	Standard
Sr	88	143.3	29.0				ug/L	70	Standard
C	12	223.3	9.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.9	21.4				mg/L	12	Standard
Ho-1	165	35.0	14.3				mg/L	12	Standard
Er	166	43.3	35.3				mg/L	20	Standard
I	127	10155.1	10.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.324	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.152	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606036206
Report Date/Time: Tuesday, June 28, 2016 14:05:08
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.435
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.996
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606036207
Sample Date/Time: Tuesday, June 28, 2016 14:06:02
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107639.4	1.9				ug/L	81760	Standard
	Be	9	20.0	0.0	**0.0056**	0.000	5.4	ug/L	17	Standard
	Al	27	3476504.2	1.7	**17.1173**	0.043	0.3	ug/L	1410	Standard
	Sc	45	39367.8	2.7				ug/L	39543	Standard
	Ti	47	100.3	3.5	**0.2518**	0.007	3.0	ug/L	39	Standard
	V	51	5441.1	3.8	**0.6024**	0.020	3.4	ug/L	1415	Standard
	Cr	52	7747.6	3.6	**0.0931**	0.026	27.8	ug/L	6946	Standard
	Cr	53	1961.8	9.7	**1.9650**	0.153	7.8	ug/L	328	Standard
	Mn	55	12138.9	1.5	**1.7871**	0.034	1.9	ug/L	823	Standard
	Co	59	2054.5	1.6	**0.2711**	0.013	4.9	ug/L	252	Standard
	Ni	60	1564.4	4.1	**0.7535**	0.028	3.7	ug/L	192	Standard
	Cu	65	3547.1	3.0	**1.8404**	0.110	6.0	ug/L	141	Standard
	Zn	66	3174.7	2.0	**2.1684**	0.146	6.7	ug/L	491	Standard
>	**Ge**	72	498440.9	3.0				ug/L	515087	Standard
	As	75	2063.4	4.9	**1.9397**	0.147	7.6	ug/L	20	Standard
	Se	82	279.9	8.8	**2.3986**	0.288	12.0	ug/L	15	Standard
	Se-1	77	196.7	12.4	**1.9867**	0.408	20.5	ug/L	48	Standard
>	**Ga**	71	203.3	22.3				mg/L	90	Standard
	Rb	85	4590.7	1.6				ug/L	23	Standard
	Y	89	429873.2	1.1				ug/L	448510	Standard
>	**Rh**	103	36.7	15.7				ug/L	15	Standard
	Mo	98	411573.4	1.6	**157.7590**	2.905	1.8	ug/L	11	Standard
	Ag	107	97.0	12.7	**-0.0013**	0.002	144.7	ug/L	134	Standard
	Cd	111	-313.3	8.5	**-0.1547**	0.012	7.7	mg/L	7	Standard
	Cd	114	654.0	5.6	**0.1255**	0.007	5.6	ug/L	16	Standard
>	**In**	115	589803.8	0.9				ug/L	611117	Standard
	Sn	118	783.4	15.3	**0.0353**	0.020	57.5	ug/L	518	Standard
	Sb	123	727.4	9.3	**0.1468**	0.014	9.3	ug/L	127	Standard
	Ba	135	15565.3	1.0	**7.7872**	0.095	1.2	ug/L	45	Standard
	Ce	140	646.7	2.7				ug/L	298	Standard
>	**Tb**	159	991896.0	2.4				ug/L	977942	Standard
	Ho	165	86.7	18.5				ug/L	12	Standard
	Tl	203	276.7	3.3	**0.0282**	0.002	5.4	ug/L	31	Standard
	Tl	205	283.3	3.7	**0.0365**	0.002	4.5	ug/L	20	Standard
	Pb	206	399.0	5.4	**0.0104**	0.005	44.3	ug/L	286	Standard
	Pb	207	325.3	5.9	**0.0089**	0.004	45.8	ug/L	257	Standard
	Pb	208	1296.0	0.3	**0.0084**	0.001	12.8	ug/L	956	Standard
	U	238	1382.7	4.5	**0.1905**	0.008	4.1	ug/L	17	Standard
>	**Bi**	209	555677.7	1.4				ug/L	557080	Standard

Sample ID: L1606036207
Report Date/Time: Tuesday, June 28, 2016 14:08:19
Page 1

Approved: June 29, 2016

Na	23	3.3	86.6	**21.6985**	18.802	86.6	mg/L	0	Standard
Mg	24	201508.1	2.0	**269.4503**	5.984	2.2	mg/L	32	Standard
K	39	1843.4	2.4	**6.1200**	0.302	4.9	mg/L	30	Standard
Ca	43	86.7	16.7	**7.9004**	2.376	30.1	mg/L	48	Standard
Fe	54	134.1	6.8	**-0.0152**	0.007	45.6	mg/L	159	Standard
Fe	57	218.3	31.3	**0.1119**	0.215	192.0	mg/L	195	Standard
> **Sc-1**	45	39367.8	2.7				mg/L	39543	Standard
Cl	35	57177.0	0.5				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	35885.9	6.7				ug/L	1647	Standard
P	31	17845.5	1.4				ug/L	15231	Standard
S	34	1995.1	3.9				ug/L	1845	Standard
Sr	88	96.7	26.5				ug/L	70	Standard
C	12	250.0	28.0				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	68.0	19.9				mg/L	12	Standard
Ho-1	165	86.7	18.5				mg/L	12	Standard
Er	166	180.0	33.3				mg/L	20	Standard
I	127	352295.0	10.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.653	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.768	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606036207
Report Date/Time: Tuesday, June 28, 2016 14:08:19
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.512
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.748
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606036207
Report Date/Time: Tuesday, June 28, 2016 14:08:19
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606036208
Sample Date/Time: Tuesday, June 28, 2016 14:09:14
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	113878.0	0.7				ug/L	81760	Standard
	Be	9	15.0	33.3	**0.0011**	0.004	325.9	ug/L	17	Standard
	Al	27	36051659.4	1.3	**167.9026**	1.365	0.8	ug/L	1410	Standard
	Sc	45	40123.1	2.7				ug/L	39543	Standard
	Ti	47	157.7	1.6	**0.4795**	0.006	1.3	ug/L	39	Standard
	V	51	2374.4	7.5	**0.1409**	0.028	20.1	ug/L	1415	Standard
	Cr	52	8200.6	0.9	**0.1408**	0.017	11.9	ug/L	6946	Standard
	Cr	53	1531.7	7.2	**1.4329**	0.130	9.1	ug/L	328	Standard
	Mn	55	2760.9	2.4	**0.2845**	0.009	3.3	ug/L	823	Standard
	Co	59	1114.0	4.4	**0.1299**	0.007	5.8	ug/L	252	Standard
	Ni	60	3861.2	1.0	**1.9798**	0.033	1.7	ug/L	192	Standard
	Cu	65	1286.1	5.6	**0.5974**	0.039	6.5	ug/L	141	Standard
	Zn	66	2133.2	3.4	**1.1513**	0.069	6.0	ug/L	491	Standard
>	**Ge**	72	506573.0	0.6				ug/L	515087	Standard
	As	75	124.6	44.5	**0.1528**	0.050	32.6	ug/L	20	Standard
	Se	82	87.7	7.6	**0.6552**	0.055	8.5	ug/L	15	Standard
	Se-1	77	126.7	6.6	**0.9909**	0.116	11.7	ug/L	48	Standard
>	**Ga**	71	56.7	45.3				mg/L	90	Standard
	Rb	85	275.0	18.5				ug/L	23	Standard
	Y	89	450902.0	1.5				ug/L	448510	Standard
>	**Rh**	103	46.7	32.7				ug/L	15	Standard
	Mo	98	3181.2	4.8	**1.1379**	0.054	4.7	ug/L	11	Standard
	Ag	107	86.0	6.5	**-0.0036**	0.001	24.6	ug/L	134	Standard
	Cd	111	11.8	23.2	**0.0025**	0.001	50.9	mg/L	7	Standard
	Cd	114	54.8	27.0	**0.0054**	0.003	50.7	ug/L	16	Standard
>	**In**	115	621612.8	0.6				ug/L	611117	Standard
	Sn	118	878.4	13.7	**0.0442**	0.021	46.4	ug/L	518	Standard
	Sb	123	218.7	21.6	**0.0327**	0.010	30.0	ug/L	127	Standard
	Ba	135	24511.5	2.2	**11.6480**	0.297	2.5	ug/L	45	Standard
	Ce	140	126.7	17.8				ug/L	298	Standard
>	**Tb**	159	1020349.4	1.6				ug/L	977942	Standard
	Ho	165	38.3	41.9				ug/L	12	Standard
	Tl	203	70.7	5.4	**0.0034**	0.000	14.1	ug/L	31	Standard
	Tl	205	50.0	36.1	**0.0044**	0.002	54.4	ug/L	20	Standard
	Pb	206	339.3	6.0	**-0.0025**	0.003	133.5	ug/L	286	Standard
	Pb	207	287.3	3.0	**-0.0007**	0.002	279.9	ug/L	257	Standard
	Pb	208	1133.4	0.9	**-0.0020**	0.001	40.2	ug/L	956	Standard
	U	238	2248.5	2.1	**0.3023**	0.005	1.6	ug/L	17	Standard
>	**Bi**	209	572724.5	0.5				ug/L	557080	Standard

Sample ID: L1606036208
Report Date/Time: Tuesday, June 28, 2016 14:11:31
Page 1

Approved: June 29, 2016

Na	23	11.7	65.5	**74.1428**	49.752	67.1	mg/L	0	Standard
Mg	24	18449.6	1.2	**24.1624**	0.882	3.7	mg/L	32	Standard
K	39	318.3	12.8	**0.9203**	0.151	16.4	mg/L	30	Standard
Ca	43	671.7	8.0	**95.1609**	6.901	7.3	mg/L	48	Standard
Fe	54	172.3	21.8	**0.0165**	0.033	197.4	mg/L	159	Standard
Fe	57	548.3	9.0	**1.2014**	0.184	15.3	mg/L	195	Standard
> **Sc-1**	45	40123.1	2.7				mg/L	39543	Standard
Cl	35	45031.5	1.7				ug/L	27642	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	9216.1	3.8				ug/L	1647	Standard
P	31	22331.4	1.4				ug/L	15231	Standard
S	34	2088.5	6.2				ug/L	1845	Standard
Sr	88	246.7	15.5				ug/L	70	Standard
C	12	346.7	6.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	37.4	4.1				mg/L	12	Standard
Ho-1	165	38.3	41.9				mg/L	12	Standard
Er	166	53.3	60.3				mg/L	20	Standard
I	127	16496.5	38.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.283	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.347	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606036208
Report Date/Time: Tuesday, June 28, 2016 14:11:31
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.718
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.808
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606036209
Sample Date/Time: Tuesday, June 28, 2016 14:12:25
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107575.7	2.1				ug/L	81760	Standard
	Be	9	15.0	33.3	**0.0018**	0.004	223.3	ug/L	17	Standard
	Al	27	24368759.8	1.3	**120.1696**	2.653	2.2	ug/L	1410	Standard
	Sc	45	40144.8	3.7				ug/L	39543	Standard
	Ti	47	175.7	9.7	**0.5394**	0.064	11.9	ug/L	39	Standard
	V	51	1717.1	6.1	**0.0398**	0.013	33.2	ug/L	1415	Standard
	Cr	52	8804.6	0.4	**0.2048**	0.007	3.4	ug/L	6946	Standard
	Cr	53	1576.7	7.9	**1.4512**	0.154	10.6	ug/L	328	Standard
	Mn	55	1083613.1	0.9	**166.6059**	0.333	0.2	ug/L	823	Standard
	Co	59	2591.6	2.6	**0.3366**	0.007	2.1	ug/L	252	Standard
	Ni	60	4161.2	1.9	**2.0993**	0.030	1.4	ug/L	192	Standard
	Cu	65	1088.7	1.4	**0.4808**	0.011	2.3	ug/L	141	Standard
	Zn	66	3226.7	2.3	**2.1094**	0.068	3.2	ug/L	491	Standard
>	**Ge**	72	516304.1	0.8				ug/L	515087	Standard
	As	75	854.1	2.3	**0.7983**	0.019	2.4	ug/L	20	Standard
	Se	82	52.5	11.5	**0.3355**	0.056	16.6	ug/L	15	Standard
	Se-1	77	105.7	6.3	**0.6809**	0.097	14.3	ug/L	48	Standard
>	**Ga**	71	153.3	30.3				mg/L	90	Standard
	Rb	85	15286.0	2.4				ug/L	23	Standard
	Y	89	449805.6	1.9				ug/L	448510	Standard
>	**Rh**	103	36.7	43.8				ug/L	15	Standard
	Mo	98	1903.1	2.7	**0.6696**	0.018	2.6	ug/L	11	Standard
	Ag	107	88.0	6.3	**-0.0034**	0.001	30.6	ug/L	134	Standard
	Cd	111	24.4	20.6	**0.0083**	0.002	29.8	mg/L	7	Standard
	Cd	114	75.3	47.3	**0.0092**	0.007	71.3	ug/L	16	Standard
>	**In**	115	624865.1	1.8				ug/L	611117	Standard
	Sn	118	858.4	10.9	**0.0403**	0.018	44.8	ug/L	518	Standard
	Sb	123	598.6	8.7	**0.1114**	0.013	11.4	ug/L	127	Standard
	Ba	135	79235.0	1.1	**37.5150**	0.511	1.4	ug/L	45	Standard
	Ce	140	1043.4	5.0				ug/L	298	Standard
>	**Tb**	159	1006271.6	1.0				ug/L	977942	Standard
	Ho	165	31.7	55.5				ug/L	12	Standard
	Tl	203	94.7	10.4	**0.0060**	0.001	17.2	ug/L	31	Standard
	Tl	205	103.3	26.6	**0.0113**	0.003	31.1	ug/L	20	Standard
	Pb	206	1317.1	2.4	**0.1704**	0.008	4.5	ug/L	286	Standard
	Pb	207	1098.7	2.3	**0.1583**	0.006	3.8	ug/L	257	Standard
	Pb	208	4505.3	1.8	**0.1689**	0.006	3.3	ug/L	956	Standard
	U	238	1688.4	2.2	**0.2232**	0.003	1.5	ug/L	17	Standard
>	**Bi**	209	580367.6	0.9				ug/L	557080	Standard

Sample ID: L1606036209
Report Date/Time: Tuesday, June 28, 2016 14:14:42
Page 1

Approved: June 29, 2016

Na	23	5.0	100.0	**32.4402**	32.912	101.5	mg/L	0	Standard
Mg	24	8242.2	2.3	**10.7549**	0.236	2.2	mg/L	32	Standard
K	39	375.0	23.7	**1.1102**	0.318	28.6	mg/L	30	Standard
Ca	43	428.3	18.6	**58.5393**	9.751	16.7	mg/L	48	Standard
Fe	54	1288.6	9.8	**1.0145**	0.141	13.9	mg/L	159	Standard
Fe	57	713.4	8.9	**1.7461**	0.160	9.2	mg/L	195	Standard
Sc-1	45	40144.8	3.7				mg/L	39543	Standard
Cl	35	37853.9	1.3				ug/L	27642	Standard
Kr	83	2.3	173.2				ug/L	2	Standard
Br	81	8949.3	3.3				ug/L	1647	Standard
P	31	22830.5	2.4				ug/L	15231	Standard
S	34	2348.5	6.0				ug/L	1845	Standard
Sr	88	131.7	18.7				ug/L	70	Standard
C	12	320.0	23.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	57.1	19.2				mg/L	12	Standard
Ho-1	165	31.7	55.5				mg/L	12	Standard
Er	166	60.0	44.1				mg/L	20	Standard
I	127	12798.7	0.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		131.575	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.236	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606036209
Report Date/Time: Tuesday, June 28, 2016 14:14:42
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.250
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.180
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606036209
Report Date/Time: Tuesday, June 28, 2016 14:14:42
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606036210
Sample Date/Time: Tuesday, June 28, 2016 14:15:37
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112279.5	1.4				ug/L	81760	Standard
	Be	9	23.3	32.7	**0.0074**	0.006	75.4	ug/L	17	Standard
	Al	27	11519588.8	0.5	**54.4098**	0.542	1.0	ug/L	1410	Standard
	Sc	45	38345.1	1.2				ug/L	39543	Standard
	Ti	47	94.7	7.9	**0.2480**	0.026	10.6	ug/L	39	Standard
	V	51	2217.7	3.9	**0.1400**	0.014	10.3	ug/L	1415	Standard
	Cr	52	7580.6	0.1	**0.1258**	0.020	16.0	ug/L	6946	Standard
	Cr	53	2436.9	5.1	**2.6754**	0.201	7.5	ug/L	328	Standard
	Mn	55	75388.8	2.2	**12.4826**	0.333	2.7	ug/L	823	Standard
	Co	59	4144.2	3.9	**0.6094**	0.028	4.6	ug/L	252	Standard
	Ni	60	4832.4	1.6	**2.6820**	0.049	1.8	ug/L	192	Standard
	Cu	65	4625.4	2.6	**2.5532**	0.075	2.9	ug/L	141	Standard
	Zn	66	4203.9	2.1	**3.3383**	0.098	2.9	ug/L	491	Standard
>	**Ge**	72	474293.4	1.6				ug/L	515087	Standard
	As	75	1073.0	2.0	**1.0772**	0.038	3.5	ug/L	20	Standard
	Se	82	351.4	3.1	**3.1960**	0.130	4.1	ug/L	15	Standard
	Se-1	77	210.7	7.1	**2.3175**	0.198	8.5	ug/L	48	Standard
>	**Ga**	71	73.3	33.6				mg/L	90	Standard
	Rb	85	56526.9	1.1				ug/L	23	Standard
	Y	89	421082.0	1.6				ug/L	448510	Standard
>	**Rh**	103	96.7	14.9				ug/L	15	Standard
	Mo	98	257904.5	1.0	**100.5156**	1.205	1.2	ug/L	11	Standard
	Ag	107	79.7	12.8	**-0.0037**	0.002	45.1	ug/L	134	Standard
	Cd	111	-189.4	16.3	**-0.0962**	0.015	15.7	mg/L	7	Standard
	Cd	114	358.5	16.9	**0.0677**	0.012	17.5	ug/L	16	Standard
>	**In**	115	580013.8	0.6				ug/L	611117	Standard
	Sn	118	865.0	5.3	**0.0522**	0.009	16.9	ug/L	518	Standard
	Sb	123	234.3	5.5	**0.0395**	0.003	7.3	ug/L	127	Standard
	Ba	135	12298.0	0.4	**6.2513**	0.035	0.6	ug/L	45	Standard
	Ce	140	386.7	8.8				ug/L	298	Standard
>	**Tb**	159	979000.4	0.2				ug/L	977942	Standard
	Ho	165	86.7	26.6				ug/L	12	Standard
	Tl	203	556.3	8.3	**0.0635**	0.006	10.1	ug/L	31	Standard
	Tl	205	491.7	8.6	**0.0672**	0.007	10.1	ug/L	20	Standard
	Pb	206	339.7	4.4	**0.0013**	0.002	176.0	ug/L	286	Standard
	Pb	207	303.3	2.7	**0.0062**	0.001	17.9	ug/L	257	Standard
	Pb	208	1090.3	1.9	**-0.0007**	0.002	299.6	ug/L	956	Standard
	U	238	117.3	12.8	**0.0140**	0.002	17.0	ug/L	17	Standard
>	**Bi**	209	539461.3	1.8				ug/L	557080	Standard

Sample ID: L1606036210
Report Date/Time: Tuesday, June 28, 2016 14:17:54
Page 1

Approved: June 29, 2016

Na	23	8.3	34.6	**55.0323**	18.599	33.8	mg/L	0	Standard
Mg	24	255159.1	1.2	**350.2417**	6.027	1.7	mg/L	32	Standard
K	39	5237.6	3.5	**18.1047**	0.448	2.5	mg/L	30	Standard
Ca	43	815.0	11.2	**122.4307**	15.864	13.0	mg/L	48	Standard
Fe	54	150.7	21.1	**0.0038**	0.031	813.1	mg/L	159	Standard
Fe	57	818.4	11.3	**2.2227**	0.299	13.5	mg/L	195	Standard
> **Sc-1**	45	38345.1	1.2				mg/L	39543	Standard
Cl	35	84049.9	1.6				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	57144.3	3.2				ug/L	1647	Standard
P	31	18494.6	4.2				ug/L	15231	Standard
S	34	1918.5	8.3				ug/L	1845	Standard
Sr	88	445.0	8.9				ug/L	70	Standard
C	12	253.3	16.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	64.7	80.3				mg/L	12	Standard
Ho-1	165	86.7	26.6				mg/L	12	Standard
Er	166	110.0	9.1				mg/L	20	Standard
I	127	999438.0	9.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.328	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.080	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606036210
Report Date/Time: Tuesday, June 28, 2016 14:17:54
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.911
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.837
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 14:18:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108145.2	5.1				ug/L	81760	Standard
	Be	9	64242.8	4.5	**48.9113**	0.992	2.0	ug/L	17	Standard
	Al	27	8304059.2	3.3	**40.7429**	1.039	2.5	ug/L	1410	Standard
	Sc	45	37765.4	4.0				ug/L	39543	Standard
	Ti	47	23471.8	2.0	**97.1021**	1.269	1.3	ug/L	39	Standard
	V	51	349107.5	0.6	**51.5604**	0.772	1.5	ug/L	1415	Standard
	Cr	52	335198.9	1.2	**48.5745**	0.974	2.0	ug/L	6946	Standard
	Cr	53	41869.4	1.3	**48.8267**	1.454	3.0	ug/L	328	Standard
	Mn	55	314993.6	1.3	**49.9295**	0.954	1.9	ug/L	823	Standard
	Co	59	375345.6	0.1	**55.0339**	1.228	2.2	ug/L	252	Standard
	Ni	60	88766.6	0.5	**48.4746**	0.838	1.7	ug/L	192	Standard
	Cu	65	90675.9	1.2	**49.0916**	0.682	1.4	ug/L	141	Standard
	Zn	66	53067.8	0.6	**49.0759**	0.955	1.9	ug/L	491	Standard
>	**Ge**	72	499870.2	2.1				ug/L	515087	Standard
	As	75	55072.1	0.8	**50.5344**	1.449	2.9	ug/L	20	Standard
	Se	82	6022.1	1.2	**53.7900**	0.803	1.5	ug/L	15	Standard
	Se-1	77	3835.5	2.7	**51.7480**	1.296	2.5	ug/L	48	Standard
>	**Ga**	71	68.3	34.6				mg/L	90	Standard
	Rb	85	878.4	4.0				ug/L	23	Standard
	Y	89	444195.9	1.0				ug/L	448510	Standard
>	**Rh**	103	36.7	7.9				ug/L	15	Standard
	Mo	98	271765.3	0.4	**101.0586**	1.139	1.1	ug/L	11	Standard
	Ag	107	335937.1	0.8	**50.2935**	0.228	0.5	ug/L	134	Standard
	Cd	111	104881.4	1.9	**49.3201**	0.733	1.5	mg/L	7	Standard
	Cd	114	258223.7	2.1	**49.9610**	1.276	2.6	ug/L	16	Standard
>	**In**	115	607920.9	0.8				ug/L	611117	Standard
	Sn	118	297159.7	1.8	**50.4160**	0.583	1.2	ug/L	518	Standard
	Sb	123	233566.6	0.5	**49.7525**	0.427	0.9	ug/L	127	Standard
	Ba	135	100029.2	1.5	**48.6806**	0.509	1.0	ug/L	45	Standard
	Ce	140	56.7	27.0				ug/L	298	Standard
>	**Tb**	159	990459.3	1.9				ug/L	977942	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	438180.8	0.9	**49.9571**	0.368	0.7	ug/L	31	Standard
	Tl	205	400912.4	1.6	**52.6337**	0.214	0.4	ug/L	20	Standard
	Pb	206	285968.6	0.8	**50.7733**	0.808	1.6	ug/L	286	Standard
	Pb	207	258378.5	0.4	**50.8616**	0.645	1.3	ug/L	257	Standard
	Pb	208	1010283.1	0.5	**51.4021**	0.498	1.0	ug/L	956	Standard
	U	238	389330.8	1.6	**52.1963**	0.349	0.7	ug/L	17	Standard
>	**Bi**	209	579902.5	1.4				ug/L	557080	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 14:21:06
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4220.6	3.3	**5.8326**	0.328	5.6	mg/L	32	Standard
K	39	1343.4	3.1	**4.6154**	0.216	4.7	mg/L	30	Standard
Ca	43	66.7	37.7	**5.1699**	3.623	70.1	mg/L	48	Standard
Fe	54	5699.2	5.0	**5.2644**	0.205	3.9	mg/L	159	Standard
Fe	57	1620.1	3.2	**5.1052**	0.186	3.6	mg/L	195	Standard
> **Sc-1**	45	37765.4	4.0				mg/L	39543	Standard
Cl	35	31900.9	3.3				ug/L	27642	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	2500.2	16.5				ug/L	1647	Standard
P	31	18272.7	3.1				ug/L	15231	Standard
S	34	2018.5	1.5				ug/L	1845	Standard
Sr	88	43.3	24.0				ug/L	70	Standard
C	12	196.7	21.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	50.3				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	20.0	86.6				mg/L	20	Standard
I	127	32500.9	63.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	97.823		
Al	27	81.486		
Sc	45			
Ti	47	97.102		
V	51	103.121		
Cr	52	97.149		
Cr	53			
Mn	55	99.859		
Co	59	110.068		
Ni	60	96.949		
Cu	65	98.183		
Zn	66	98.152		
> Ge	72		97.046	
As	75	101.069		
Se	82	107.580		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 14:21:06
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	101.059		
Ag	107	100.587		
Cd	111	98.640		
Cd	114			
In	115			99.477
Sn	118	100.832		
Sb	123	99.505		
Ba	135	97.361		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.914		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.804		
U	238	104.393		
Bi	209			104.097
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 14:21:06
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 14:22:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101364.8	2.9				ug/L	81760	Standard
	Be	9	38.3	49.4	**0.0216**	0.016	74.7	ug/L	17	Standard
	Al	27	15489.3	94.8	**0.0675**	0.079	117.4	ug/L	1410	Standard
	Sc	45	38064.4	0.9				ug/L	39543	Standard
	Ti	47	37.3	29.4	**-0.0111**	0.045	403.8	ug/L	39	Standard
	V	51	1161.3	1.6	**-0.0351**	0.002	6.4	ug/L	1415	Standard
	Cr	52	5982.8	2.5	**-0.1747**	0.020	11.4	ug/L	6946	Standard
	Cr	53	318.3	7.1	**0.0308**	0.025	81.8	ug/L	328	Standard
	Mn	55	894.7	9.5	**-0.0068**	0.013	197.2	ug/L	823	Standard
	Co	59	241.0	14.9	**0.0039**	0.005	138.8	ug/L	252	Standard
	Ni	60	266.0	10.4	**0.0400**	0.015	37.4	ug/L	192	Standard
	Cu	65	200.0	8.9	**0.0172**	0.009	54.5	ug/L	141	Standard
	Zn	66	430.0	7.9	**-0.4249**	0.030	7.1	ug/L	491	Standard
>	**Ge**	72	501700.0	0.4				ug/L	515087	Standard
	As	75	1.5	1379.3	**0.0417**	0.019	44.5	ug/L	20	Standard
	Se	82	27.3	19.7	**0.1242**	0.049	39.3	ug/L	15	Standard
	Se-1	77	54.3	18.4	**0.0219**	0.139	635.7	ug/L	48	Standard
>	**Ga**	71	63.3	9.1				mg/L	90	Standard
	Rb	85	26.7	28.6				ug/L	23	Standard
	Y	89	434979.7	1.5				ug/L	448510	Standard
>	**Rh**	103	11.7	89.2				ug/L	15	Standard
	Mo	98	412.1	20.1	**0.1325**	0.026	19.5	ug/L	11	Standard
	Ag	107	133.7	24.7	**0.0036**	0.005	131.9	ug/L	134	Standard
	Cd	111	17.6	36.9	**0.0053**	0.003	55.6	mg/L	7	Standard
	Cd	114	37.0	22.5	**0.0022**	0.002	81.0	ug/L	16	Standard
>	**In**	115	612643.0	3.0				ug/L	611117	Standard
	Sn	118	796.7	19.5	**0.0328**	0.028	85.4	ug/L	518	Standard
	Sb	123	465.9	23.7	**0.0860**	0.025	29.2	ug/L	127	Standard
	Ba	135	55.7	25.4	**0.0018**	0.007	380.6	ug/L	45	Standard
	Ce	140	23.3	53.9				ug/L	298	Standard
>	**Tb**	159	991657.2	2.1				ug/L	977942	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	81.3	30.4	**0.0043**	0.003	63.5	ug/L	31	Standard
	Tl	205	65.0	13.3	**0.0061**	0.001	17.5	ug/L	20	Standard
	Pb	206	313.0	2.4	**-0.0091**	0.002	17.1	ug/L	286	Standard
	Pb	207	268.3	2.3	**-0.0063**	0.001	16.7	ug/L	257	Standard
	Pb	208	1057.3	6.3	**-0.0078**	0.003	38.5	ug/L	956	Standard
	U	238	61.3	40.7	**0.0051**	0.003	63.9	ug/L	17	Standard
>	**Bi**	209	592397.8	0.7				ug/L	557080	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 14:24:18
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	95.0	63.8	**0.0743**	0.084	112.6	mg/L	32	Standard
K	39	16.7	17.3	**-0.0829**	0.011	12.9	mg/L	30	Standard
Ca	43	31.7	36.5	**-0.3389**	1.874	552.9	mg/L	48	Standard
Fe	54	110.8	32.6	**-0.0331**	0.033	100.8	mg/L	159	Standard
Fe	57	168.3	28.5	**-0.0341**	0.169	494.5	mg/L	195	Standard
Sc-1	45	38064.4	0.9				mg/L	39543	Standard
Cl	35	31593.6	0.5				ug/L	27642	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1856.8	9.2				ug/L	1647	Standard
P	31	17672.0	1.1				ug/L	15231	Standard
S	34	2055.1	6.3				ug/L	1845	Standard
Sr	88	56.7	18.4				ug/L	70	Standard
C	12	170.0	20.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	173.2				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	12	Standard
Er	166	6.7	173.2				mg/L	20	Standard
I	127	7793.7	20.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.401	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 14:24:18
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.250
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.340
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 14:24:18
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606036211
Sample Date/Time: Tuesday, June 28, 2016 14:25:14
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100807.6	1.2				ug/L	81760	Standard
	Be	9	76.7	13.6	**0.0528**	0.008	15.0	ug/L	17	Standard
	Al	27	23829161.3	1.5	**125.3655**	0.841	0.7	ug/L	1410	Standard
	Sc	45	39760.5	3.7				ug/L	39543	Standard
	Ti	47	180.7	0.8	**0.5860**	0.014	2.4	ug/L	39	Standard
	V	51	2583.8	5.2	**0.1775**	0.016	9.1	ug/L	1415	Standard
	Cr	52	8684.5	0.7	**0.2325**	0.005	2.3	ug/L	6946	Standard
	Cr	53	1498.4	3.7	**1.4227**	0.048	3.4	ug/L	328	Standard
	Mn	55	44479.2	1.1	**6.9441**	0.116	1.7	ug/L	823	Standard
	Co	59	1598.1	1.9	**0.2038**	0.006	2.9	ug/L	252	Standard
	Ni	60	3161.3	2.5	**1.6303**	0.047	2.9	ug/L	192	Standard
	Cu	65	697.7	3.7	**0.2888**	0.018	6.1	ug/L	141	Standard
	Zn	66	2205.8	4.6	**1.2527**	0.096	7.7	ug/L	491	Standard
>	**Ge**	72	498311.0	1.0				ug/L	515087	Standard
	As	75	175.3	10.2	**0.2014**	0.015	7.3	ug/L	20	Standard
	Se	82	90.2	6.0	**0.6901**	0.041	6.0	ug/L	15	Standard
	Se-1	77	104.3	15.6	**0.7141**	0.236	33.0	ug/L	48	Standard
>	**Ga**	71	91.7	19.2				mg/L	90	Standard
	Rb	85	3617.1	1.0				ug/L	23	Standard
	Y	89	438807.3	1.1				ug/L	448510	Standard
>	**Rh**	103	23.3	24.7				ug/L	15	Standard
	Mo	98	5340.3	1.5	**1.9620**	0.035	1.8	ug/L	11	Standard
	Ag	107	313.7	8.5	**0.0307**	0.004	14.3	ug/L	134	Standard
	Cd	111	102.5	10.0	**0.0451**	0.004	9.9	mg/L	7	Standard
	Cd	114	269.5	9.6	**0.0471**	0.005	11.0	ug/L	16	Standard
>	**In**	115	609490.3	1.0				ug/L	611117	Standard
	Sn	118	888.4	6.3	**0.0488**	0.011	22.0	ug/L	518	Standard
	Sb	123	739.4	5.4	**0.1443**	0.009	6.4	ug/L	127	Standard
	Ba	135	23651.8	1.3	**11.4620**	0.117	1.0	ug/L	45	Standard
	Ce	140	2515.2	8.7				ug/L	298	Standard
>	**Tb**	159	994391.3	1.1				ug/L	977942	Standard
	Ho	165	61.7	16.9				ug/L	12	Standard
	Tl	203	495.7	2.3	**0.0524**	0.001	2.2	ug/L	31	Standard
	Tl	205	451.7	6.1	**0.0577**	0.003	5.9	ug/L	20	Standard
	Pb	206	782.0	4.2	**0.0770**	0.005	7.0	ug/L	286	Standard
	Pb	207	638.7	5.2	**0.0693**	0.006	8.1	ug/L	257	Standard
	Pb	208	2612.4	2.6	**0.0742**	0.003	3.5	ug/L	956	Standard
	U	238	3078.0	1.8	**0.4146**	0.006	1.5	ug/L	17	Standard
>	**Bi**	209	573149.3	0.8				ug/L	557080	Standard

Sample ID: L1606036211
Report Date/Time: Tuesday, June 28, 2016 14:27:31
Page 1

Approved: June 29, 2016

Na	23	10.0	50.0	**63.1287**	29.742	47.1	mg/L	0	Standard
Mg	24	8182.2	4.0	**10.7839**	0.556	5.2	mg/L	32	Standard
K	39	235.0	11.8	**0.6477**	0.082	12.7	mg/L	30	Standard
Ca	43	488.3	8.8	**68.4110**	5.631	8.2	mg/L	48	Standard
Fe	54	190.4	22.3	**0.0341**	0.036	104.7	mg/L	159	Standard
Fe	57	451.7	3.2	**0.8921**	0.019	2.1	mg/L	195	Standard
Sc-1	45	39760.5	3.7				mg/L	39543	Standard
Cl	35	36572.1	2.1				ug/L	27642	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	15501.3	5.9				ug/L	1647	Standard
P	31	22299.7	2.1				ug/L	15231	Standard
S	34	2183.5	4.1				ug/L	1845	Standard
Sr	88	141.7	11.3				ug/L	70	Standard
C	12	286.7	23.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	128.1	22.2				mg/L	12	Standard
Ho-1	165	61.7	16.9				mg/L	12	Standard
Er	166	110.0	63.6				mg/L	20	Standard
I	127	9539.7	2.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.297	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.743	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606036211
Report Date/Time: Tuesday, June 28, 2016 14:27:31
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.734	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.884	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606036212
Sample Date/Time: Tuesday, June 28, 2016 14:28:25
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101556.0	2.3				ug/L	81760	Standard
	Be	9	16.7	34.6	**0.0037**	0.005	121.7	ug/L	17	Standard
	Al	27	17765744.4	2.3	**92.8094**	3.109	3.3	ug/L	1410	Standard
	Sc	45	39087.0	2.2				ug/L	39543	Standard
	Ti	47	247.0	6.3	**0.8686**	0.057	6.6	ug/L	39	Standard
	V	51	2382.1	6.3	**0.1501**	0.021	13.9	ug/L	1415	Standard
	Cr	52	8300.6	1.1	**0.1842**	0.008	4.2	ug/L	6946	Standard
	Cr	53	1501.7	3.0	**1.4394**	0.046	3.2	ug/L	328	Standard
	Mn	55	1258376.0	0.7	**201.9190**	0.817	0.4	ug/L	823	Standard
	Co	59	3356.7	1.5	**0.4660**	0.012	2.5	ug/L	252	Standard
	Ni	60	3550.4	0.9	**1.8576**	0.023	1.3	ug/L	192	Standard
	Cu	65	1089.7	4.5	**0.5061**	0.022	4.4	ug/L	141	Standard
	Zn	66	2532.2	4.9	**1.5769**	0.099	6.3	ug/L	491	Standard
>	**Ge**	72	494799.1	0.8				ug/L	515087	Standard
	As	75	371.2	4.5	**0.3840**	0.014	3.7	ug/L	20	Standard
	Se	82	96.6	14.9	**0.7542**	0.127	16.9	ug/L	15	Standard
	Se-1	77	117.3	12.8	**0.9020**	0.200	22.2	ug/L	48	Standard
>	**Ga**	71	161.7	20.6				mg/L	90	Standard
	Rb	85	5996.2	5.2				ug/L	23	Standard
	Y	89	446186.9	1.4				ug/L	448510	Standard
>	**Rh**	103	35.0	37.8				ug/L	15	Standard
	Mo	98	1982.4	1.7	**0.7175**	0.021	3.0	ug/L	11	Standard
	Ag	107	87.7	6.7	**-0.0031**	0.001	30.7	ug/L	134	Standard
	Cd	111	81.3	17.6	**0.0353**	0.007	20.5	mg/L	7	Standard
	Cd	114	230.7	12.0	**0.0397**	0.006	14.9	ug/L	16	Standard
>	**In**	115	608659.5	1.3				ug/L	611117	Standard
	Sn	118	906.7	3.5	**0.0521**	0.007	12.9	ug/L	518	Standard
	Sb	123	394.5	7.6	**0.0711**	0.006	8.6	ug/L	127	Standard
	Ba	135	51224.8	1.3	**24.8890**	0.366	1.5	ug/L	45	Standard
	Ce	140	3013.6	4.4				ug/L	298	Standard
>	**Tb**	159	974496.5	1.8				ug/L	977942	Standard
	Ho	165	80.0	16.5				ug/L	12	Standard
	Tl	203	128.3	8.3	**0.0104**	0.001	10.4	ug/L	31	Standard
	Tl	205	91.7	22.0	**0.0102**	0.003	28.0	ug/L	20	Standard
	Pb	206	755.4	5.1	**0.0757**	0.008	10.8	ug/L	286	Standard
	Pb	207	644.0	3.0	**0.0736**	0.005	7.3	ug/L	257	Standard
	Pb	208	2468.4	2.8	**0.0700**	0.005	7.5	ug/L	956	Standard
	U	238	1502.1	3.5	**0.2059**	0.006	2.8	ug/L	17	Standard
>	**Bi**	209	559159.1	1.2				ug/L	557080	Standard

Sample ID: L1606036212
Report Date/Time: Tuesday, June 28, 2016 14:30:42
Page 1

Approved: June 29, 2016

Na	23	5.0	0.0	**32.4897**	0.713	2.2	mg/L	0	Standard
Mg	24	34367.3	2.9	**46.2225**	0.714	1.5	mg/L	32	Standard
K	39	518.3	10.6	**1.6321**	0.206	12.7	mg/L	30	Standard
Ca	43	333.3	3.5	**45.8704**	1.237	2.7	mg/L	48	Standard
Fe	54	313.8	12.6	**0.1508**	0.042	28.0	mg/L	159	Standard
Fe	57	493.3	3.3	**1.0616**	0.089	8.4	mg/L	195	Standard
> **Sc-1**	45	39087.0	2.2				mg/L	39543	Standard
Cl	35	40128.4	3.1				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	13105.7	7.2				ug/L	1647	Standard
P	31	21068.0	1.2				ug/L	15231	Standard
S	34	2031.8	3.8				ug/L	1845	Standard
Sr	88	195.0	14.3				ug/L	70	Standard
C	12	220.0	19.8				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	113.5	27.0				mg/L	12	Standard
Ho-1	165	80.0	16.5				mg/L	12	Standard
Er	166	66.7	48.2				mg/L	20	Standard
I	127	14735.5	4.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.212	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.061	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606036212
Report Date/Time: Tuesday, June 28, 2016 14:30:42
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.598	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.373	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 14:31:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96993.2	4.5				ug/L	81760	Standard
	Be	9	59018.4	6.5	**50.0965**	2.769	5.5	ug/L	17	Standard
	Al	27	7977258.4	4.2	**43.6214**	1.029	2.4	ug/L	1410	Standard
	Sc	45	38238.2	1.6				ug/L	39543	Standard
	Ti	47	23612.4	4.0	**98.7594**	3.955	4.0	ug/L	39	Standard
	V	51	340072.0	1.7	**50.7725**	1.247	2.5	ug/L	1415	Standard
	Cr	52	338200.8	3.5	**49.5590**	1.660	3.3	ug/L	6946	Standard
	Cr	53	42016.5	3.2	**49.5286**	1.703	3.4	ug/L	328	Standard
	Mn	55	307360.3	1.5	**49.2454**	0.735	1.5	ug/L	823	Standard
	Co	59	358545.3	2.7	**53.1356**	1.497	2.8	ug/L	252	Standard
	Ni	60	89705.8	2.1	**49.5206**	1.132	2.3	ug/L	192	Standard
	Cu	65	91128.3	2.1	**49.8745**	1.003	2.0	ug/L	141	Standard
	Zn	66	53559.8	1.4	**50.0843**	0.931	1.9	ug/L	491	Standard
>	**Ge**	72	494423.7	1.0				ug/L	515087	Standard
	As	75	53994.0	0.9	**50.0733**	0.496	1.0	ug/L	20	Standard
	Se	82	5715.9	0.2	**51.6065**	0.476	0.9	ug/L	15	Standard
	Se-1	77	3736.8	1.4	**50.9602**	0.952	1.9	ug/L	48	Standard
>	**Ga**	71	70.0	28.6				mg/L	90	Standard
	Rb	85	770.0	3.6				ug/L	23	Standard
	Y	89	445528.9	0.6				ug/L	448510	Standard
>	**Rh**	103	23.3	44.6				ug/L	15	Standard
	Mo	98	264652.3	1.1	**96.1672**	0.791	0.8	ug/L	11	Standard
	Ag	107	331013.3	2.8	**48.4244**	1.155	2.4	ug/L	134	Standard
	Cd	111	104542.0	2.3	**48.0434**	1.120	2.3	mg/L	7	Standard
	Cd	114	255433.5	4.1	**48.2912**	1.921	4.0	ug/L	16	Standard
>	**In**	115	622075.2	0.5				ug/L	611117	Standard
	Sn	118	295472.2	1.9	**48.9864**	0.743	1.5	ug/L	518	Standard
	Sb	123	230757.9	1.7	**48.0319**	0.618	1.3	ug/L	127	Standard
	Ba	135	99769.8	2.2	**47.4498**	0.988	2.1	ug/L	45	Standard
	Ce	140	73.3	7.9				ug/L	298	Standard
>	**Tb**	159	1000112.3	1.5				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	427237.6	2.4	**49.0359**	1.247	2.5	ug/L	31	Standard
	Tl	205	388094.9	2.7	**51.3011**	1.717	3.3	ug/L	20	Standard
	Pb	206	274003.7	2.0	**48.9721**	1.261	2.6	ug/L	286	Standard
	Pb	207	249924.4	1.5	**49.5263**	1.133	2.3	ug/L	257	Standard
	Pb	208	988217.1	0.7	**50.6156**	0.799	1.6	ug/L	956	Standard
	U	238	380024.3	2.2	**51.3005**	1.621	3.2	ug/L	17	Standard
>	**Bi**	209	576058.0	1.3				ug/L	557080	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 14:33:55
Page 1

Approved: June 29, 2016

Na	23	5.0	100.0	**33.2699**	32.995	99.2	mg/L	0	Standard
Mg	24	4203.9	5.4	**5.7315**	0.340	5.9	mg/L	32	Standard
K	39	1220.0	6.7	**4.1203**	0.250	6.1	mg/L	30	Standard
Ca	43	103.3	14.8	**10.9126**	2.675	24.5	mg/L	48	Standard
Fe	54	5915.4	3.1	**5.3996**	0.173	3.2	mg/L	159	Standard
Fe	57	1661.8	2.4	**5.1766**	0.085	1.6	mg/L	195	Standard
> **Sc-1**	45	38238.2	1.6				mg/L	39543	Standard
Cl	35	33728.9	2.6				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1893.5	8.5				ug/L	1647	Standard
P	31	18936.8	1.0				ug/L	15231	Standard
S	34	2451.9	4.7				ug/L	1845	Standard
Sr	88	73.3	14.2				ug/L	70	Standard
C	12	160.0	43.3				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	6.0				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	3007.0	16.4				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.193		
	Al	27	87.243		
	Sc	45			
	Ti	47	98.759		
	V	51	101.545		
	Cr	52	99.118		
	Cr	53			
	Mn	55	98.491		
	Co	59	106.271		
	Ni	60	99.041		
	Cu	65	99.749		
	Zn	66	100.169		
>	Ge	72		95.988	
	As	75	100.147		
	Se	82	103.213		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 14:33:55
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	96.167		
Ag	107	96.849		
Cd	111	96.087		
Cd	114			
In	115		101.793	
Sn	118	97.973		
Sb	123	96.064		
Ba	135	94.900		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.072		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.231		
U	238	102.601		
Bi	209		103.407	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 14:33:55
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 14:34:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92870.5	2.0				ug/L	81760	Standard
	Be	9	15.0	66.7	**0.0036**	0.009	245.7	ug/L	17	Standard
	Al	27	2743.6	21.7	**0.0013**	0.004	284.3	ug/L	1410	Standard
	Sc	45	38460.4	1.3				ug/L	39543	Standard
	Ti	47	30.7	8.2	**-0.0403**	0.010	23.8	ug/L	39	Standard
	V	51	1134.9	2.6	**-0.0414**	0.005	11.0	ug/L	1415	Standard
	Cr	52	5878.1	2.2	**-0.2023**	0.026	12.8	ug/L	6946	Standard
	Cr	53	310.0	1.6	**0.0160**	0.005	29.1	ug/L	328	Standard
	Mn	55	709.4	9.1	**-0.0377**	0.010	26.9	ug/L	823	Standard
	Co	59	233.7	1.1	**0.0023**	0.001	24.5	ug/L	252	Standard
	Ni	60	211.0	9.6	**0.0084**	0.011	126.5	ug/L	192	Standard
	Cu	65	155.3	8.6	**-0.0081**	0.008	96.4	ug/L	141	Standard
	Zn	66	394.0	4.1	**-0.4638**	0.014	3.1	ug/L	491	Standard
>	**Ge**	72	508932.6	0.9				ug/L	515087	Standard
	As	75	-34.1	13.4	**0.0096**	0.004	45.1	ug/L	20	Standard
	Se	82	19.4	20.9	**0.0515**	0.036	69.8	ug/L	15	Standard
	Se-1	77	46.7	12.2	**-0.0918**	0.077	84.0	ug/L	48	Standard
>	**Ga**	71	66.7	8.7				mg/L	90	Standard
	Rb	85	15.0	33.3				ug/L	23	Standard
	Y	89	445570.9	1.5				ug/L	448510	Standard
>	**Rh**	103	15.0	88.2				ug/L	15	Standard
	Mo	98	287.3	16.9	**0.0864**	0.017	20.0	ug/L	11	Standard
	Ag	107	124.0	22.6	**0.0021**	0.004	200.7	ug/L	134	Standard
	Cd	111	14.8	9.5	**0.0040**	0.001	16.6	mg/L	7	Standard
	Cd	114	48.0	37.7	**0.0043**	0.004	82.8	ug/L	16	Standard
>	**In**	115	615541.5	0.9				ug/L	611117	Standard
	Sn	118	883.4	22.9	**0.0465**	0.035	74.9	ug/L	518	Standard
	Sb	123	479.5	25.7	**0.0882**	0.027	30.1	ug/L	127	Standard
	Ba	135	35.7	10.6	**-0.0080**	0.002	22.2	ug/L	45	Standard
	Ce	140	21.7	48.0				ug/L	298	Standard
>	**Tb**	159	980265.4	0.4				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	63.0	23.1	**0.0024**	0.002	67.2	ug/L	31	Standard
	Tl	205	63.3	31.9	**0.0060**	0.003	42.7	ug/L	20	Standard
	Pb	206	313.3	5.4	**-0.0080**	0.003	36.6	ug/L	286	Standard
	Pb	207	273.0	6.7	**-0.0043**	0.004	87.0	ug/L	257	Standard
	Pb	208	1087.7	7.3	**-0.0051**	0.004	85.3	ug/L	956	Standard
	U	238	49.0	30.5	**0.0036**	0.002	56.1	ug/L	17	Standard
>	**Bi**	209	580619.2	1.2				ug/L	557080	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 14:37:07
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35.0	28.6	**-0.0091**	0.014	156.5	mg/L	32	Standard
K	39	36.7	28.4	**-0.0142**	0.035	248.1	mg/L	30	Standard
Ca	43	26.7	57.3	**-1.1996**	2.339	195.0	mg/L	48	Standard
Fe	54	140.8	15.9	**-0.0061**	0.021	341.9	mg/L	159	Standard
Fe	57	151.7	6.9	**-0.0978**	0.042	43.3	mg/L	195	Standard
> **Sc-1**	45	38460.4	1.3				mg/L	39543	Standard
Cl	35	32500.2	3.2				ug/L	27642	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	1736.8	3.3				ug/L	1647	Standard
P	31	17698.7	3.2				ug/L	15231	Standard
S	34	2320.2	10.5				ug/L	1845	Standard
Sr	88	73.3	21.9				ug/L	70	Standard
C	12	133.3	15.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	113.3				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	2206.8	20.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.805	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 14:37:07
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.724
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.225
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 14:37:07
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: PBS M7 WG573333-03
Sample Date/Time: Tuesday, June 28, 2016 14:38:03
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95050.7	3.1				ug/L	81760	Standard
	Be	9	18.3	87.7	**0.0062**	0.014	223.6	ug/L	17	Standard
	Al	27	17488.4	2.4	**0.0832**	0.003	3.2	ug/L	1410	Standard
	Sc	45	39132.2	2.7				ug/L	39543	Standard
	Ti	47	49.7	51.3	**0.0353**	0.101	286.1	ug/L	39	Standard
	V	51	1251.1	3.7	**-0.0255**	0.008	31.0	ug/L	1415	Standard
	Cr	52	8706.2	0.9	**0.2013**	0.013	6.2	ug/L	6946	Standard
	Cr	53	700.0	11.0	**0.4613**	0.093	20.2	ug/L	328	Standard
	Mn	55	1542.7	1.5	**0.0910**	0.006	6.6	ug/L	823	Standard
	Co	59	278.7	9.1	**0.0085**	0.003	38.3	ug/L	252	Standard
	Ni	60	602.0	5.9	**0.2166**	0.018	8.1	ug/L	192	Standard
	Cu	65	210.7	10.6	**0.0207**	0.012	58.0	ug/L	141	Standard
	Zn	66	1817.8	2.7	**0.8408**	0.028	3.4	ug/L	491	Standard
>	**Ge**	72	511962.6	1.0				ug/L	515087	Standard
	As	75	-35.9	60.1	**0.0082**	0.019	234.7	ug/L	20	Standard
	Se	82	20.1	18.9	**0.0563**	0.034	59.9	ug/L	15	Standard
	Se-1	77	44.7	10.1	**-0.1225**	0.058	47.0	ug/L	48	Standard
>	**Ga**	71	48.3	15.8				mg/L	90	Standard
	Rb	85	66.7	31.2				ug/L	23	Standard
	Y	89	442200.8	1.3				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	193.0	16.8	**0.0509**	0.011	21.8	ug/L	11	Standard
	Ag	107	97.0	17.0	**-0.0021**	0.002	110.1	ug/L	134	Standard
	Cd	111	7.4	64.2	**0.0005**	0.002	466.2	mg/L	7	Standard
	Cd	114	31.4	28.6	**0.0010**	0.002	163.8	ug/L	16	Standard
>	**In**	115	622890.2	1.7				ug/L	611117	Standard
	Sn	118	691.7	5.6	**0.0128**	0.005	38.1	ug/L	518	Standard
	Sb	123	212.1	15.5	**0.0312**	0.006	20.3	ug/L	127	Standard
	Ba	135	298.3	2.4	**0.1167**	0.001	1.2	ug/L	45	Standard
	Ce	140	113.3	24.3				ug/L	298	Standard
>	**Tb**	159	998579.7	1.5				ug/L	977942	Standard
	Ho	165	16.7	17.3				ug/L	12	Standard
	Tl	203	39.0	48.9	**-0.0004**	0.002	526.4	ug/L	31	Standard
	Tl	205	20.0	50.0	**0.0003**	0.001	421.9	ug/L	20	Standard
	Pb	206	313.7	9.3	**-0.0086**	0.005	56.5	ug/L	286	Standard
	Pb	207	273.0	2.4	**-0.0050**	0.001	28.4	ug/L	257	Standard
	Pb	208	1093.3	1.9	**-0.0055**	0.001	16.3	ug/L	956	Standard
	U	238	24.3	55.2	**0.0002**	0.002	711.6	ug/L	17	Standard
>	**Bi**	209	587793.8	0.5				ug/L	557080	Standard

Sample ID: PBS M7 WG573333-03
Report Date/Time: Tuesday, June 28, 2016 14:40:20
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	36.7	7.9	**-0.0078**	0.003	35.7	mg/L	32	Standard
K	39	35.0	51.5	**-0.0208**	0.064	309.0	mg/L	30	Standard
Ca	43	25.0	34.6	**-1.5082**	1.327	88.0	mg/L	48	Standard
Fe	54	165.5	15.5	**0.0140**	0.019	138.8	mg/L	159	Standard
Fe	57	203.3	9.9	**0.0704**	0.084	119.9	mg/L	195	Standard
> **Sc-1**	45	39132.2	2.7				mg/L	39543	Standard
Cl	35	33734.8	0.7				ug/L	27642	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1786.8	3.4				ug/L	1647	Standard
P	31	17722.0	1.9				ug/L	15231	Standard
S	34	2341.8	1.1				ug/L	1845	Standard
Sr	88	65.0	27.7				ug/L	70	Standard
C	12	180.0	47.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	93.3				mg/L	12	Standard
Ho-1	165	16.7	17.3				mg/L	12	Standard
Er	166	26.7	21.7				mg/L	20	Standard
I	127	1696.8	8.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.256	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.393	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBS M7 WG573333-03
Report Date/Time: Tuesday, June 28, 2016 14:40:20
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.927
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.513
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: LCSS M7 WG573333-04
Sample Date/Time: Tuesday, June 28, 2016 14:41:14
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92927.6	3.1				ug/L	81760	Standard
	Be	9	30111.6	3.7	**26.7031**	1.769	6.6	ug/L	17	Standard
	Al	27	18035.9	13.5	**0.0888**	0.016	18.2	ug/L	1410	Standard
	Sc	45	39361.1	1.9				ug/L	39543	Standard
	Ti	47	37.0	28.2	**-0.0130**	0.042	322.2	ug/L	39	Standard
	V	51	182372.3	3.8	**26.6531**	1.518	5.7	ug/L	1415	Standard
	Cr	52	189442.3	3.6	**26.8012**	1.501	5.6	ug/L	6946	Standard
	Cr	53	22922.3	1.8	**26.3866**	1.122	4.3	ug/L	328	Standard
	Mn	55	169435.1	3.2	**26.6017**	1.285	4.8	ug/L	823	Standard
	Co	59	193981.0	3.8	**28.2331**	1.651	5.8	ug/L	252	Standard
	Ni	60	48862.7	3.3	**26.4525**	1.352	5.1	ug/L	192	Standard
	Cu	65	49743.6	2.7	**26.7036**	1.173	4.4	ug/L	141	Standard
	Zn	66	30362.1	3.5	**27.5261**	1.455	5.3	ug/L	491	Standard
>	**Ge**	72	503563.1	2.3				ug/L	515087	Standard
	As	75	29155.1	3.3	**26.5827**	1.325	5.0	ug/L	20	Standard
	Se	82	3055.7	1.7	**27.0468**	1.107	4.1	ug/L	15	Standard
	Se-1	77	2068.5	3.5	**27.3757**	1.137	4.2	ug/L	48	Standard
>	**Ga**	71	53.3	14.3				mg/L	90	Standard
	Rb	85	78.3	16.1				ug/L	23	Standard
	Y	89	444634.7	2.0				ug/L	448510	Standard
>	**Rh**	103	18.3	41.7				ug/L	15	Standard
	Mo	98	104.5	23.9	**0.0190**	0.010	51.3	ug/L	11	Standard
	Ag	107	179344.1	3.7	**26.2092**	1.706	6.5	ug/L	134	Standard
	Cd	111	55845.5	2.3	**25.6355**	1.334	5.2	mg/L	7	Standard
	Cd	114	136877.4	2.6	**25.8483**	1.371	5.3	ug/L	16	Standard
>	**In**	115	623373.0	3.0				ug/L	611117	Standard
	Sn	118	755.0	11.3	**0.0235**	0.016	68.2	ug/L	518	Standard
	Sb	123	124890.1	3.5	**25.9676**	1.618	6.2	ug/L	127	Standard
	Ba	135	53944.6	3.3	**25.6212**	1.575	6.1	ug/L	45	Standard
	Ce	140	106.7	9.8				ug/L	298	Standard
>	**Tb**	159	976375.9	3.3				ug/L	977942	Standard
	Ho	165	15.0	57.7				ug/L	12	Standard
	Tl	203	229696.9	2.8	**26.5184**	1.549	5.8	ug/L	31	Standard
	Tl	205	205993.8	3.8	**27.3937**	1.852	6.8	ug/L	20	Standard
	Pb	206	150555.8	3.2	**27.0395**	1.637	6.1	ug/L	286	Standard
	Pb	207	130667.9	3.7	**26.0217**	1.699	6.5	ug/L	257	Standard
	Pb	208	532429.0	3.5	**27.4071**	1.756	6.4	ug/L	956	Standard
	U	238	197217.2	3.4	**26.7798**	1.720	6.4	ug/L	17	Standard
>	**Bi**	209	573273.6	3.1				ug/L	557080	Standard

Sample ID: LCSS M7 WG573333-04
Report Date/Time: Tuesday, June 28, 2016 14:43:31
Page 1

Approved: June 29, 2016

Na	23	3.3	86.6	**21.2655**	18.412	86.6	mg/L	0	Standard
Mg	24	50.0	43.6	**0.0096**	0.028	296.2	mg/L	32	Standard
K	39	30.0	100.0	**-0.0395**	0.101	254.9	mg/L	30	Standard
Ca	43	25.0	40.0	**-1.5307**	1.509	98.6	mg/L	48	Standard
Fe	54	141.7	2.7	**-0.0082**	0.003	33.7	mg/L	159	Standard
Fe	57	226.7	9.9	**0.1435**	0.065	45.0	mg/L	195	Standard
> **Sc-1**	45	39361.1	1.9				mg/L	39543	Standard
Cl	35	35061.2	2.7				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1886.8	4.9				ug/L	1647	Standard
P	31	18956.9	6.3				ug/L	15231	Standard
S	34	2375.2	1.6				ug/L	1845	Standard
Sr	88	65.0	30.8				ug/L	70	Standard
C	12	170.0	38.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	12.7	49.8				mg/L	12	Standard
Ho-1	165	15.0	57.7				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1553.4	15.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.659	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.763	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSS M7 WG573333-04
Report Date/Time: Tuesday, June 28, 2016 14:43:31
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.006
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.907
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M7 WG573333-04
Report Date/Time: Tuesday, June 28, 2016 14:43:31
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606105301 WG573333-02
Sample Date/Time: Tuesday, June 28, 2016 14:44:26
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92504.9	1.8				ug/L	81760	Standard
	Be	9	211.7	3.6	**0.1787**	0.009	5.2	ug/L	17	Standard
	Al	27	476632.7	0.6	**2.7192**	0.058	2.1	ug/L	1410	Standard
	Sc	45	39899.1	1.7				ug/L	39543	Standard
	Ti	47	7508.9	2.4	**29.9625**	0.867	2.9	ug/L	39	Standard
	V	51	54226.8	0.3	**7.5775**	0.105	1.4	ug/L	1415	Standard
	Cr	52	35510.9	0.6	**4.0327**	0.059	1.5	ug/L	6946	Standard
	Cr	53	3988.9	7.5	**4.1910**	0.323	7.7	ug/L	328	Standard
	Mn	55	226862.1	2.5	**34.7724**	1.274	3.7	ug/L	823	Standard
	Co	59	8803.9	0.2	**1.2188**	0.017	1.4	ug/L	252	Standard
	Ni	60	5989.2	1.6	**3.0677**	0.039	1.3	ug/L	192	Standard
	Cu	65	4442.7	0.7	**2.2418**	0.014	0.6	ug/L	141	Standard
	Zn	66	19698.8	1.0	**17.1048**	0.367	2.1	ug/L	491	Standard
>	**Ge**	72	516312.9	1.2				ug/L	515087	Standard
	As	75	2960.6	0.8	**2.6677**	0.048	1.8	ug/L	20	Standard
	Se	82	53.9	7.9	**0.3477**	0.042	12.1	ug/L	15	Standard
	Se-1	77	82.0	6.8	**0.3676**	0.085	23.1	ug/L	48	Standard
>	**Ga**	71	5075.9	3.2				mg/L	90	Standard
	Rb	85	19981.5	3.8				ug/L	23	Standard
	Y	89	472017.4	2.4				ug/L	448510	Standard
>	**Rh**	103	21.7	26.6				ug/L	15	Standard
	Mo	98	6655.2	1.4	**2.4116**	0.043	1.8	ug/L	11	Standard
	Ag	107	178.7	11.3	**0.0101**	0.003	29.0	ug/L	134	Standard
	Cd	111	244.9	9.1	**0.1102**	0.010	9.1	mg/L	7	Standard
	Cd	114	621.2	5.8	**0.1131**	0.007	6.2	ug/L	16	Standard
>	**In**	115	619055.2	0.3				ug/L	611117	Standard
	Sn	118	640.0	5.5	**0.0049**	0.006	124.7	ug/L	518	Standard
	Sb	123	463.5	5.3	**0.0841**	0.005	6.4	ug/L	127	Standard
	Ba	135	41539.5	1.0	**19.8378**	0.203	1.0	ug/L	45	Standard
	Ce	140	324520.8	1.6				ug/L	298	Standard
>	**Tb**	159	988287.6	1.4				ug/L	977942	Standard
	Ho	165	2263.5	6.3				ug/L	12	Standard
	Tl	203	550.3	1.1	**0.0581**	0.001	1.2	ug/L	31	Standard
	Tl	205	506.7	1.1	**0.0644**	0.001	1.1	ug/L	20	Standard
	Pb	206	143402.5	0.9	**25.4978**	0.319	1.3	ug/L	286	Standard
	Pb	207	120708.6	0.6	**23.7943**	0.166	0.7	ug/L	257	Standard
	Pb	208	491539.2	1.4	**25.0461**	0.389	1.6	ug/L	956	Standard
	U	238	1919.1	2.3	**0.2551**	0.006	2.5	ug/L	17	Standard
>	**Bi**	209	578289.7	0.5				ug/L	557080	Standard

Sample ID: L1606105301 WG573333-02
Report Date/Time: Tuesday, June 28, 2016 14:46:43
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.6918**	18.510	173.1	mg/L	0	Standard
Mg	24	41.7	30.2	**-0.0023**	0.016	678.2	mg/L	32	Standard
K	39	48.3	15.8	**0.0204**	0.026	126.1	mg/L	30	Standard
Ca	43	38.3	27.2	**0.4078**	1.458	357.4	mg/L	48	Standard
Fe	54	3682.2	3.4	**3.1665**	0.134	4.2	mg/L	159	Standard
Fe	57	1100.0	9.6	**3.0601**	0.408	13.3	mg/L	195	Standard
> **Sc-1**	45	39899.1	1.7				mg/L	39543	Standard
Cl	35	32895.7	2.7				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2153.5	9.2				ug/L	1647	Standard
P	31	17883.9	3.0				ug/L	15231	Standard
S	34	2195.2	9.1				ug/L	1845	Standard
Sr	88	71.7	4.0				ug/L	70	Standard
C	12	220.0	19.8				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	0	Standard
Dy	164	4107.1	8.5				mg/L	12	Standard
Ho-1	165	2263.5	6.3				mg/L	12	Standard
Er	166	2160.2	2.1				mg/L	20	Standard
I	127	7528.5	2.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.238	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606105301 WG573333-02
Report Date/Time: Tuesday, June 28, 2016 14:46:43
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.299
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.807
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606105302S WG573333-07
Sample Date/Time: Tuesday, June 28, 2016 14:47:37
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91483.8	2.5				ug/L	81760	Standard
	Be	9	28575.3	3.7	**25.7021**	0.502	2.0	ug/L	17	Standard
	Al	27	472647.5	0.9	**2.7267**	0.044	1.6	ug/L	1410	Standard
	Sc	45	40355.4	2.6				ug/L	39543	Standard
	Ti	47	8788.9	2.8	**34.8074**	0.551	1.6	ug/L	39	Standard
	V	51	216754.8	1.8	**30.6603**	0.748	2.4	ug/L	1415	Standard
	Cr	52	202224.9	0.6	**27.6955**	0.221	0.8	ug/L	6946	Standard
	Cr	53	25461.4	2.5	**28.3619**	0.467	1.6	ug/L	328	Standard
	Mn	55	374661.4	3.0	**57.0462**	1.611	2.8	ug/L	823	Standard
	Co	59	185021.8	2.1	**26.0317**	0.592	2.3	ug/L	252	Standard
	Ni	60	51684.0	1.6	**27.0535**	0.107	0.4	ug/L	192	Standard
	Cu	65	52133.2	1.4	**27.0623**	0.171	0.6	ug/L	141	Standard
	Zn	66	46187.6	0.8	**40.8778**	0.267	0.7	ug/L	491	Standard
>	**Ge**	72	520472.6	1.2				ug/L	515087	Standard
	As	75	27327.3	2.3	**24.0946**	0.465	1.9	ug/L	20	Standard
	Se	82	2628.8	2.4	**22.4788**	0.502	2.2	ug/L	15	Standard
	Se-1	77	1784.1	1.0	**22.7201**	0.347	1.5	ug/L	48	Standard
>	**Ga**	71	5215.9	5.7				mg/L	90	Standard
	Rb	85	16937.8	2.3				ug/L	23	Standard
	Y	89	458647.4	1.3				ug/L	448510	Standard
>	**Rh**	103	30.0	44.1				ug/L	15	Standard
	Mo	98	18905.8	1.4	**6.8731**	0.106	1.5	ug/L	11	Standard
	Ag	107	155307.6	0.6	**22.7819**	0.123	0.5	ug/L	134	Standard
	Cd	111	52492.7	0.7	**24.1959**	0.317	1.3	mg/L	7	Standard
	Cd	114	128079.2	0.4	**24.2856**	0.076	0.3	ug/L	16	Standard
>	**In**	115	620204.7	0.6				ug/L	611117	Standard
	Sn	118	685.0	20.9	**0.0121**	0.023	191.0	ug/L	518	Standard
	Sb	123	65087.0	0.8	**13.5800**	0.099	0.7	ug/L	127	Standard
	Ba	135	93846.7	0.6	**44.7672**	0.375	0.8	ug/L	45	Standard
	Ce	140	331961.2	1.7				ug/L	298	Standard
>	**Tb**	159	981697.8	0.7				ug/L	977942	Standard
	Ho	165	1903.5	2.0				ug/L	12	Standard
	Tl	203	213525.6	1.3	**24.5875**	0.365	1.5	ug/L	31	Standard
	Tl	205	191177.1	1.7	**25.3529**	0.481	1.9	ug/L	20	Standard
	Pb	206	446032.3	1.2	**80.0233**	1.190	1.5	ug/L	286	Standard
	Pb	207	376762.1	1.5	**74.9381**	1.277	1.7	ug/L	257	Standard
	Pb	208	1506170.9	0.7	**77.4336**	0.690	0.9	ug/L	956	Standard
	U	238	183525.9	0.8	**24.8532**	0.261	1.1	ug/L	17	Standard
>	**Bi**	209	574082.0	0.2				ug/L	557080	Standard

Sample ID: L1606105302S WG573333-07
Report Date/Time: Tuesday, June 28, 2016 14:49:54
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	51.7	22.3	**0.0106**	0.017	161.8	mg/L	32	Standard
K	39	33.3	8.7	**-0.0312**	0.007	21.8	mg/L	30	Standard
Ca	43	38.3	15.1	**0.3768**	1.024	271.7	mg/L	48	Standard
Fe	54	2984.3	5.7	**2.5132**	0.224	8.9	mg/L	159	Standard
Fe	57	1001.7	4.5	**2.6914**	0.198	7.3	mg/L	195	Standard
> **Sc-1**	45	40355.4	2.6				mg/L	39543	Standard
Cl	35	31360.4	1.4				ug/L	27642	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	2753.6	4.6				ug/L	1647	Standard
P	31	16745.9	1.5				ug/L	15231	Standard
S	34	2118.5	5.5				ug/L	1845	Standard
Sr	88	78.3	9.8				ug/L	70	Standard
C	12	286.7	29.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	100.3				mg/L	0	Standard
Dy	164	3434.6	3.8				mg/L	12	Standard
Ho-1	165	1903.5	2.0				mg/L	12	Standard
Er	166	1860.1	3.3				mg/L	20	Standard
I	127	5512.7	1.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.893	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.046	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606105302S WG573333-07
Report Date/Time: Tuesday, June 28, 2016 14:49:54
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.487
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.052
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606105303SD WG573333-08
Sample Date/Time: Tuesday, June 28, 2016 14:50:49
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90707.5	2.1				ug/L	81760	Standard
	Be	9	28490.1	1.5	**25.8507**	0.239	0.9	ug/L	17	Standard
	Al	27	517242.7	0.8	**3.0108**	0.045	1.5	ug/L	1410	Standard
	Sc	45	41104.0	1.1				ug/L	39543	Standard
	Ti	47	9706.8	1.9	**39.3684**	1.018	2.6	ug/L	39	Standard
	V	51	220560.4	0.1	**31.9323**	0.545	1.7	ug/L	1415	Standard
	Cr	52	204805.0	1.1	**28.7389**	0.342	1.2	ug/L	6946	Standard
	Cr	53	25147.5	3.9	**28.6674**	1.000	3.5	ug/L	328	Standard
	Mn	55	371807.0	1.2	**57.9433**	1.578	2.7	ug/L	823	Standard
	Co	59	187737.3	0.6	**27.0316**	0.558	2.1	ug/L	252	Standard
	Ni	60	52302.5	0.6	**28.0202**	0.336	1.2	ug/L	192	Standard
	Cu	65	51530.8	0.8	**27.3738**	0.234	0.9	ug/L	141	Standard
	Zn	66	58955.2	1.6	**53.6399**	0.321	0.6	ug/L	491	Standard
>	**Ge**	72	508670.0	1.6				ug/L	515087	Standard
	As	75	26613.2	0.3	**24.0128**	0.310	1.3	ug/L	20	Standard
	Se	82	2643.5	1.0	**23.1344**	0.377	1.6	ug/L	15	Standard
	Se-1	77	1782.1	1.4	**23.2396**	0.549	2.4	ug/L	48	Standard
>	**Ga**	71	5607.7	2.4				mg/L	90	Standard
	Rb	85	19120.4	0.8				ug/L	23	Standard
	Y	89	464944.5	0.8				ug/L	448510	Standard
>	**Rh**	103	20.0	66.1				ug/L	15	Standard
	Mo	98	6589.1	2.9	**2.3569**	0.065	2.7	ug/L	11	Standard
	Ag	107	161248.5	0.9	**23.3982**	0.239	1.0	ug/L	134	Standard
	Cd	111	52808.4	0.9	**24.0772**	0.233	1.0	mg/L	7	Standard
	Cd	114	128062.2	0.6	**24.0198**	0.192	0.8	ug/L	16	Standard
>	**In**	115	626980.9	0.2				ug/L	611117	Standard
	Sn	118	691.7	6.1	**0.0121**	0.007	57.7	ug/L	518	Standard
	Sb	123	64415.1	1.9	**13.2945**	0.276	2.1	ug/L	127	Standard
	Ba	135	100181.1	0.9	**47.2728**	0.453	1.0	ug/L	45	Standard
	Ce	140	306983.9	0.9				ug/L	298	Standard
>	**Tb**	159	992773.6	1.4				ug/L	977942	Standard
	Ho	165	1925.1	2.4				ug/L	12	Standard
	Tl	203	213931.4	0.2	**24.2345**	0.027	0.1	ug/L	31	Standard
	Tl	205	188875.1	1.2	**24.6411**	0.299	1.2	ug/L	20	Standard
	Pb	206	399455.5	0.3	**70.4964**	0.248	0.4	ug/L	286	Standard
	Pb	207	335397.3	0.3	**65.6206**	0.221	0.3	ug/L	257	Standard
	Pb	208	1377394.4	0.8	**69.6587**	0.536	0.8	ug/L	956	Standard
	U	238	183479.9	0.5	**24.4438**	0.133	0.5	ug/L	17	Standard
>	**Bi**	209	583538.4	0.1				ug/L	557080	Standard

Sample ID: L1606105303SD WG573333-08
Report Date/Time: Tuesday, June 28, 2016 14:53:06
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	45.0	11.1	**0.0005**	0.006	1275.5	mg/L	32	Standard
K	39	46.7	12.4	**0.0102**	0.018	179.3	mg/L	30	Standard
Ca	43	46.7	40.6	**1.4697**	2.764	188.0	mg/L	48	Standard
Fe	54	3552.4	2.1	**2.9565**	0.098	3.3	mg/L	159	Standard
Fe	57	1123.4	10.8	**3.0231**	0.384	12.7	mg/L	195	Standard
> **Sc-1**	45	41104.0	1.1				mg/L	39543	Standard
Cl	35	31493.4	1.6				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2126.8	11.6				ug/L	1647	Standard
P	31	16392.2	2.4				ug/L	15231	Standard
S	34	1988.5	3.7				ug/L	1845	Standard
Sr	88	56.7	20.4				ug/L	70	Standard
C	12	256.7	29.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	34.3				mg/L	0	Standard
Dy	164	3598.5	4.6				mg/L	12	Standard
Ho-1	165	1925.1	2.4				mg/L	12	Standard
Er	166	1710.1	5.6				mg/L	20	Standard
I	127	5772.8	6.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.943	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.754	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606105303SD WG573333-08
Report Date/Time: Tuesday, June 28, 2016 14:53:06
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.596
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.749
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606104801
Sample Date/Time: Tuesday, June 28, 2016 14:54:00
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87619.5	3.9				ug/L	81760	Standard
	Be	9	323.3	11.2	**0.2951**	0.044	15.0	ug/L	17	Standard
	Al	27	1546436.6	2.8	**9.3502**	0.142	1.5	ug/L	1410	Standard
	Sc	45	40666.2	2.1				ug/L	39543	Standard
	Ti	47	348.0	4.5	**1.2425**	0.055	4.4	ug/L	39	Standard
	V	51	27678.8	0.4	**3.7995**	0.033	0.9	ug/L	1415	Standard
	Cr	52	26992.7	1.5	**2.8437**	0.051	1.8	ug/L	6946	Standard
	Cr	53	2932.0	5.7	**3.0177**	0.170	5.6	ug/L	328	Standard
	Mn	55	139361.0	0.9	**21.4761**	0.101	0.5	ug/L	823	Standard
	Co	59	8883.9	1.8	**1.2405**	0.015	1.2	ug/L	252	Standard
	Ni	60	10083.0	1.9	**5.2809**	0.102	1.9	ug/L	192	Standard
	Cu	65	17655.3	1.5	**9.2565**	0.148	1.6	ug/L	141	Standard
	Zn	66	24172.6	2.4	**21.3574**	0.493	2.3	ug/L	491	Standard
>	**Ge**	72	512038.2	0.7				ug/L	515087	Standard
	As	75	255.5	6.8	**0.2688**	0.014	5.3	ug/L	20	Standard
	Se	82	53.2	11.2	**0.3458**	0.053	15.2	ug/L	15	Standard
	Se-1	77	80.3	12.8	**0.3545**	0.144	40.6	ug/L	48	Standard
>	**Ga**	71	3018.6	3.1				mg/L	90	Standard
	Rb	85	16969.5	1.9				ug/L	23	Standard
	Y	89	529226.2	0.9				ug/L	448510	Standard
>	**Rh**	103	10.0					ug/L	15	Standard
	Mo	98	313.0	4.7	**0.0960**	0.005	5.5	ug/L	11	Standard
	Ag	107	442.0	1.6	**0.0492**	0.001	1.7	ug/L	134	Standard
	Cd	111	534.5	3.9	**0.2456**	0.011	4.4	mg/L	7	Standard
	Cd	114	1438.1	5.6	**0.2703**	0.019	7.1	ug/L	16	Standard
>	**In**	115	614980.8	1.4				ug/L	611117	Standard
	Sn	118	1005.0	9.0	**0.0670**	0.016	23.2	ug/L	518	Standard
	Sb	123	831.9	19.2	**0.1627**	0.036	21.9	ug/L	127	Standard
	Ba	135	51902.4	2.2	**24.9562**	0.305	1.2	ug/L	45	Standard
	Ce	140	320029.2	2.5				ug/L	298	Standard
>	**Tb**	159	977861.1	0.7				ug/L	977942	Standard
	Ho	165	6373.0	4.5				ug/L	12	Standard
	Tl	203	276.7	7.5	**0.0277**	0.002	8.0	ug/L	31	Standard
	Tl	205	265.0	17.0	**0.0335**	0.006	17.4	ug/L	20	Standard
	Pb	206	33506.0	0.9	**6.0646**	0.072	1.2	ug/L	286	Standard
	Pb	207	27548.0	1.0	**5.5276**	0.068	1.2	ug/L	257	Standard
	Pb	208	115638.2	1.3	**6.0000**	0.078	1.3	ug/L	956	Standard
	U	238	6967.9	1.8	**0.9584**	0.022	2.3	ug/L	17	Standard
>	**Bi**	209	563593.3	0.7				ug/L	557080	Standard

Sample ID: L1606104801
Report Date/Time: Tuesday, June 28, 2016 14:56:17
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	36.3	**0.0057**	0.024	420.3	mg/L	32	Standard
K	39	71.7	21.3	**0.0944**	0.052	54.8	mg/L	30	Standard
Ca	43	58.3	17.8	**3.2603**	1.450	44.5	mg/L	48	Standard
Fe	54	2389.6	6.6	**1.9680**	0.178	9.0	mg/L	159	Standard
Fe	57	746.7	5.6	**1.8289**	0.182	10.0	mg/L	195	Standard
Sc-1	45	40666.2	2.1				mg/L	39543	Standard
Cl	35	32405.3	1.2				ug/L	27642	Standard
Kr	83	4.0	43.3				ug/L	2	Standard
Br	81	2003.5	7.8				ug/L	1647	Standard
P	31	17084.6	3.9				ug/L	15231	Standard
S	34	2108.5	4.8				ug/L	1845	Standard
Sr	88	73.3	30.7				ug/L	70	Standard
C	12	240.0	38.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	0	Standard
Dy	164	9760.8	1.5				mg/L	12	Standard
Ho-1	165	6373.0	4.5				mg/L	12	Standard
Er	166	5897.8	8.3				mg/L	20	Standard
I	127	2141.8	10.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.167	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.408	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606104801
Report Date/Time: Tuesday, June 28, 2016 14:56:17
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.632
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.169
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606104801PS WG573475-03
Sample Date/Time: Tuesday, June 28, 2016 14:57:11
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90811.3	0.7				ug/L	81760	Standard
	Be	9	56498.5	1.8	**51.2132**	1.080	2.1	ug/L	17	Standard
	Al	27	1545775.3	0.6	**9.0143**	0.017	0.2	ug/L	1410	Standard
	Sc	45	41961.4	1.6				ug/L	39543	Standard
	Ti	47	342.0	11.2	**1.1864**	0.157	13.2	ug/L	39	Standard
	V	51	392129.2	0.5	**55.2170**	0.488	0.9	ug/L	1415	Standard
	Cr	52	384433.3	0.4	**53.1980**	0.445	0.8	ug/L	6946	Standard
	Cr	53	48853.7	2.8	**54.3367**	1.767	3.3	ug/L	328	Standard
	Mn	55	478138.1	0.8	**72.3045**	0.492	0.7	ug/L	823	Standard
	Co	59	389747.9	0.3	**54.4630**	0.290	0.5	ug/L	252	Standard
	Ni	60	106262.0	0.3	**55.3242**	0.400	0.7	ug/L	192	Standard
	Cu	65	114943.7	0.4	**59.3369**	0.368	0.6	ug/L	141	Standard
	Zn	66	80976.1	0.1	**71.7501**	0.396	0.6	ug/L	491	Standard
>	**Ge**	72	524333.4	0.5				ug/L	515087	Standard
	As	75	59243.0	1.9	**51.8077**	1.242	2.4	ug/L	20	Standard
	Se	82	6211.1	2.1	**52.8798**	1.213	2.3	ug/L	15	Standard
	Se-1	77	4085.6	1.2	**52.5558**	0.559	1.1	ug/L	48	Standard
>	**Ga**	71	3287.0	1.8				mg/L	90	Standard
	Rb	85	16744.3	3.7				ug/L	23	Standard
	Y	89	522998.5	1.8				ug/L	448510	Standard
>	**Rh**	103	28.3	36.7				ug/L	15	Standard
	Mo	98	332.0	9.1	**0.1017**	0.011	11.1	ug/L	11	Standard
	Ag	107	350941.4	1.0	**51.3750**	0.335	0.7	ug/L	134	Standard
	Cd	111	110107.7	1.0	**50.6313**	0.348	0.7	mg/L	7	Standard
	Cd	114	268982.1	1.5	**50.8849**	0.677	1.3	ug/L	16	Standard
>	**In**	115	621693.0	0.4				ug/L	611117	Standard
	Sn	118	1258.4	5.6	**0.1073**	0.012	10.9	ug/L	518	Standard
	Sb	123	241746.4	1.3	**50.3512**	0.498	1.0	ug/L	127	Standard
	Ba	135	155747.4	0.9	**74.1325**	0.655	0.9	ug/L	45	Standard
	Ce	140	312396.1	0.8				ug/L	298	Standard
>	**Tb**	159	997317.5	1.6				ug/L	977942	Standard
	Ho	165	6548.1	1.9				ug/L	12	Standard
	Tl	203	447292.7	0.3	**50.4657**	0.615	1.2	ug/L	31	Standard
	Tl	205	398193.6	1.5	**51.7351**	0.805	1.6	ug/L	20	Standard
	Pb	206	325033.3	0.1	**57.1116**	0.488	0.9	ug/L	286	Standard
	Pb	207	282464.7	0.8	**55.0228**	0.100	0.2	ug/L	257	Standard
	Pb	208	1144735.7	1.0	**57.6431**	0.938	1.6	ug/L	956	Standard
	U	238	386201.4	1.1	**51.2415**	0.797	1.6	ug/L	17	Standard
>	**Bi**	209	586004.9	0.9				ug/L	557080	Standard

Sample ID: L1606104801PS WG573475-03
Report Date/Time: Tuesday, June 28, 2016 14:59:28
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	41.8	**0.0038**	0.026	698.9	mg/L	32	Standard
K	39	65.0	20.4	**0.0660**	0.045	68.1	mg/L	30	Standard
Ca	43	46.7	27.0	**1.3158**	1.694	128.8	mg/L	48	Standard
Fe	54	2337.7	11.4	**1.8584**	0.246	13.3	mg/L	159	Standard
Fe	57	760.0	13.2	**1.7916**	0.300	16.7	mg/L	195	Standard
> **Sc-1**	45	41961.4	1.6				mg/L	39543	Standard
Cl	35	32737.3	1.7				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2180.2	6.6				ug/L	1647	Standard
P	31	17061.3	3.2				ug/L	15231	Standard
S	34	2245.2	3.3				ug/L	1845	Standard
Sr	88	81.7	12.7				ug/L	70	Standard
C	12	226.7	6.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	0	Standard
Dy	164	10105.0	3.1				mg/L	12	Standard
Ho-1	165	6548.1	1.9				mg/L	12	Standard
Er	166	5884.5	3.8				mg/L	20	Standard
I	127	2158.5	15.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		111.071	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.795	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606104801PS WG573475-03
Report Date/Time: Tuesday, June 28, 2016 14:59:28
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.731
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.192
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606104801SDL WG573475-04
Sample Date/Time: Tuesday, June 28, 2016 15:00:23
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89188.5	2.4				ug/L	81760	Standard
	Be	9	71.7	4.0	**0.0564**	0.001	2.3	ug/L	17	Standard
	Al	27	302683.6	0.7	**1.7866**	0.056	3.1	ug/L	1410	Standard
	Sc	45	41125.8	3.4				ug/L	39543	Standard
	Ti	47	82.7	6.2	**0.1644**	0.030	18.2	ug/L	39	Standard
	V	51	6527.8	1.5	**0.7233**	0.030	4.1	ug/L	1415	Standard
	Cr	52	10512.6	0.6	**0.4384**	0.054	12.4	ug/L	6946	Standard
	Cr	53	805.0	22.0	**0.5666**	0.199	35.2	ug/L	328	Standard
	Mn	55	27749.4	1.2	**4.0892**	0.112	2.7	ug/L	823	Standard
	Co	59	1936.1	6.5	**0.2412**	0.012	4.8	ug/L	252	Standard
	Ni	60	2147.2	1.2	**1.0241**	0.047	4.6	ug/L	192	Standard
	Cu	65	3398.4	1.3	**1.6803**	0.070	4.1	ug/L	141	Standard
	Zn	66	7011.6	1.2	**5.5054**	0.150	2.7	ug/L	491	Standard
>	**Ge**	72	520536.2	3.0				ug/L	515087	Standard
	As	75	60.9	66.9	**0.0932**	0.035	37.4	ug/L	20	Standard
	Se	82	24.2	49.2	**0.0869**	0.099	113.8	ug/L	15	Standard
	Se-1	77	55.3	11.8	**0.0096**	0.103	1081.5	ug/L	48	Standard
>	**Ga**	71	663.3	7.6				mg/L	90	Standard
	Rb	85	3270.4	5.2				ug/L	23	Standard
	Y	89	464717.5	1.9				ug/L	448510	Standard
>	**Rh**	103	16.7	121.2				ug/L	15	Standard
	Mo	98	80.8	3.1	**0.0096**	0.001	7.0	ug/L	11	Standard
	Ag	107	180.0	20.5	**0.0094**	0.005	54.7	ug/L	134	Standard
	Cd	111	113.9	5.5	**0.0481**	0.003	5.7	mg/L	7	Standard
	Cd	114	303.5	12.8	**0.0510**	0.007	13.8	ug/L	16	Standard
>	**In**	115	638226.3	1.3				ug/L	611117	Standard
	Sn	118	801.7	13.2	**0.0279**	0.017	59.8	ug/L	518	Standard
	Sb	123	2112.7	26.2	**0.4158**	0.111	26.6	ug/L	127	Standard
	Ba	135	10186.4	1.4	**4.7001**	0.102	2.2	ug/L	45	Standard
	Ce	140	62112.1	0.6				ug/L	298	Standard
>	**Tb**	159	1019737.0	1.0				ug/L	977942	Standard
	Ho	165	1263.4	4.0				ug/L	12	Standard
	Tl	203	113.0	16.9	**0.0078**	0.002	24.0	ug/L	31	Standard
	Tl	205	118.3	30.6	**0.0128**	0.004	33.6	ug/L	20	Standard
	Pb	206	6901.2	1.0	**1.1348**	0.029	2.6	ug/L	286	Standard
	Pb	207	5663.1	0.8	**1.0321**	0.019	1.9	ug/L	257	Standard
	Pb	208	22745.7	0.6	**1.0713**	0.025	2.3	ug/L	956	Standard
	U	238	1347.1	2.4	**0.1734**	0.003	1.5	ug/L	17	Standard
>	**Bi**	209	593755.8	1.9				ug/L	557080	Standard

Sample ID: L1606104801SDL WG573475-04
Report Date/Time: Tuesday, June 28, 2016 15:02:40
Page 1

Approved: June 29, 2016

	Na	23	0.0		**0.0050**			mg/L	0	Standard
	Mg	24	45.0	40.1	**0.0009**	0.025	2626.8	mg/L	32	Standard
	K	39	30.0	28.9	**-0.0443**	0.026	58.3	mg/L	30	Standard
	Ca	43	28.3	20.4	**-1.2169**	0.752	61.8	mg/L	48	Standard
	Fe	54	584.0	13.3	**0.3714**	0.068	18.2	mg/L	159	Standard
	Fe	57	295.0	14.5	**0.3314**	0.118	35.5	mg/L	195	Standard
>	**Sc-1**	45	41125.8	3.4				mg/L	39543	Standard
	Cl	35	31826.1	1.1				ug/L	27642	Standard
	Kr	83	2.7	21.7				ug/L	2	Standard
	Br	81	1903.5	3.4				ug/L	1647	Standard
	P	31	16692.5	3.1				ug/L	15231	Standard
	S	34	2128.5	4.6				ug/L	1845	Standard
	Sr	88	68.3	36.1				ug/L	70	Standard
	C	12	176.7	42.9				mg/L	113	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	0	Standard
	Dy	164	1953.3	7.3				mg/L	12	Standard
	Ho-1	165	1263.4	4.0				mg/L	12	Standard
	Er	166	1116.7	6.8				mg/L	20	Standard
	I	127	1450.1	11.9				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.086	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.058	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606104801SDL WG573475-04
Report Date/Time: Tuesday, June 28, 2016 15:02:40
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.436
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.584
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 28, 2016 15:03:36
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89282.3	1.4				ug/L	81760	Standard
	Be	9	15.0	33.3	**0.0041**	0.005	114.8	ug/L	17	Standard
	Al	27	7897505.8	1.4	**46.9037**	0.018	0.0	ug/L	1410	Standard
	Sc	45	39757.1	3.6				ug/L	39543	Standard
	Ti	47	27232.5	2.5	**109.9775**	3.234	2.9	ug/L	39	Standard
	V	51	789.3	35.9	**-0.0922**	0.042	45.6	ug/L	1415	Standard
	Cr	52	7275.7	2.2	**-0.0059**	0.028	478.1	ug/L	6946	Standard
	Cr	53	6823.2	10.4	**7.4758**	0.819	11.0	ug/L	328	Standard
	Mn	55	1397.7	2.4	**0.0683**	0.004	5.9	ug/L	823	Standard
	Co	59	388.0	3.6	**0.0242**	0.002	7.5	ug/L	252	Standard
	Ni	60	839.0	6.3	**0.3431**	0.028	8.3	ug/L	192	Standard
	Cu	65	614.0	0.9	**0.2341**	0.001	0.3	ug/L	141	Standard
	Zn	66	1957.1	1.8	**0.9682**	0.037	3.8	ug/L	491	Standard
>	Ge	72	512179.1	1.0				ug/L	515087	Standard
	As	75	-64.0	70.1	**-0.0170**	0.040	237.0	ug/L	20	Standard
	Se	82	21.9	13.2	**0.0720**	0.027	37.3	ug/L	15	Standard
	Se-1	77	397.7	7.2	**4.5923**	0.428	9.3	ug/L	48	Standard
>	Ga	71	168.3	7.5				mg/L	90	Standard
	Rb	85	1135.0	8.9				ug/L	23	Standard
	Y	89	442720.4	1.1				ug/L	448510	Standard
>	Rh	103	10.0	50.0				ug/L	15	Standard
	Mo	98	272741.3	0.7	**100.8481**	1.185	1.2	ug/L	11	Standard
	Ag	107	262.0	2.0	**0.0228**	0.001	4.1	ug/L	134	Standard
	Cd	111	-198.2	9.3	**-0.0956**	0.008	8.7	mg/L	7	Standard
	Cd	114	465.1	17.4	**0.0845**	0.015	17.7	ug/L	16	Standard
>	In	115	611378.2	0.9				ug/L	611117	Standard
	Sn	118	743.4	13.4	**0.0238**	0.017	73.3	ug/L	518	Standard
	Sb	123	656.7	25.2	**0.1264**	0.036	28.5	ug/L	127	Standard
	Ba	135	610.7	6.5	**0.2705**	0.017	6.2	ug/L	45	Standard
	Ce	140	266.7	9.2				ug/L	298	Standard
>	Tb	159	977869.4	2.5				ug/L	977942	Standard
	Ho	165	16.7	17.3				ug/L	12	Standard
	Tl	203	193.3	8.8	**0.0182**	0.002	10.2	ug/L	31	Standard
	Tl	205	168.3	10.4	**0.0207**	0.002	10.8	ug/L	20	Standard
	Pb	206	552.7	5.7	**0.0387**	0.005	12.2	ug/L	286	Standard
	Pb	207	474.0	2.6	**0.0392**	0.001	3.3	ug/L	257	Standard
	Pb	208	1934.7	0.9	**0.0422**	0.002	5.1	ug/L	956	Standard
	U	238	35.3	29.7	**0.0020**	0.001	71.8	ug/L	17	Standard
>	Bi	209	556811.8	1.3				ug/L	557080	Standard

Sample ID: QC Std 4
Report Date/Time: Tuesday, June 28, 2016 15:05:53
Page 1

Approved: June 29, 2016

Na	23	3.3	173.2	**20.5038**	35.505	173.2	mg/L	0	Standard
Mg	24	10406.9	1.4	**13.7318**	0.472	3.4	mg/L	32	Standard
K	39	1353.4	4.9	**4.4093**	0.243	5.5	mg/L	30	Standard
Ca	43	183.3	3.1	**22.3899**	1.779	7.9	mg/L	48	Standard
Fe	54	14710.0	1.7	**13.1205**	0.693	5.3	mg/L	159	Standard
Fe	57	4182.2	3.4	**13.4196**	0.181	1.3	mg/L	195	Standard
Sc-1	45	39757.1	3.6				mg/L	39543	Standard
Cl	35	33087.4	2.4				ug/L	27642	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	1766.8	6.4				ug/L	1647	Standard
P	31	17728.7	3.7				ug/L	15231	Standard
S	34	2340.2	3.3				ug/L	1845	Standard
Sr	88	45.0	0.0				ug/L	70	Standard
C	12	306.7	6.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	12.4				mg/L	0	Standard
Dy	164	15.1	45.8				mg/L	12	Standard
Ho-1	165	16.7	17.3				mg/L	12	Standard
Er	166	33.3	75.5				mg/L	20	Standard
I	127	1891.8	6.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.938		
Sc	45			
Ti	47	109.978		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.435	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 4
Report Date/Time: Tuesday, June 28, 2016 15:05:53
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	100.848		
Ag	107			
Cd	111			
Cd	114			
> In	115		100.043	
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209		99.952	
Na	23	164.030		
Mg	24	274.635		
K	39	88.187		
Ca	43	149.266		
Fe	54	104.964		
Fe	57	107.357		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

Sample ID: QC Std 4
Report Date/Time: Tuesday, June 28, 2016 15:05:53
Page 3

Approved: June 29, 2016

QC Std 4	Ca	43

Sample ID: QC Std 4
Report Date/Time: Tuesday, June 28, 2016 15:05:53
Page 4

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 28, 2016 15:06:47
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87968.0	1.5				ug/L	81760	Standard
	Be	9	111223.4	1.1	**104.1090**	2.678	2.6	ug/L	17	Standard
	Al	27	8303576.6	1.0	**50.0632**	1.083	2.2	ug/L	1410	Standard
	Sc	45	38970.1	2.5				ug/L	39543	Standard
	Ti	47	28030.6	1.5	**112.6949**	1.093	1.0	ug/L	39	Standard
	V	51	696349.8	1.4	**100.1131**	1.784	1.8	ug/L	1415	Standard
	Cr	52	683707.3	0.8	**97.2904**	0.687	0.7	ug/L	6946	Standard
	Cr	53	91713.5	1.8	**104.2725**	1.761	1.7	ug/L	328	Standard
	Mn	55	633248.9	0.6	**97.6578**	0.701	0.7	ug/L	823	Standard
	Co	59	716430.9	0.3	**102.0719**	1.125	1.1	ug/L	252	Standard
	Ni	60	180604.4	0.8	**95.9232**	1.625	1.7	ug/L	192	Standard
	Cu	65	185052.2	0.7	**97.4326**	1.562	1.6	ug/L	141	Standard
	Zn	66	113502.2	0.3	**102.8618**	0.650	0.6	ug/L	491	Standard
>	**Ge**	72	514438.0	0.9				ug/L	515087	Standard
	As	75	114188.1	0.3	**101.7361**	0.865	0.8	ug/L	20	Standard
	Se	82	11752.5	0.4	**102.0988**	1.402	1.4	ug/L	15	Standard
	Se-1	77	8079.2	0.7	**106.6610**	0.727	0.7	ug/L	48	Standard
>	**Ga**	71	190.0	7.0				mg/L	90	Standard
	Rb	85	893.4	6.0				ug/L	23	Standard
	Y	89	434662.6	1.6				ug/L	448510	Standard
>	**Rh**	103	38.3	52.7				ug/L	15	Standard
	Mo	98	282406.5	1.5	**107.3339**	1.537	1.4	ug/L	11	Standard
	Ag	107	594345.7	0.8	**90.9666**	1.393	1.5	ug/L	134	Standard
	Cd	111	207638.0	0.2	**99.8149**	1.587	1.6	mg/L	7	Standard
	Cd	114	499764.2	0.7	**98.8323**	1.071	1.1	ug/L	16	Standard
>	**In**	115	594810.8	1.6				ug/L	611117	Standard
	Sn	118	1138.4	7.8	**0.0959**	0.015	15.6	ug/L	518	Standard
	Sb	123	463528.1	1.1	**100.9493**	2.612	2.6	ug/L	127	Standard
	Ba	135	197524.5	0.1	**98.2892**	1.431	1.5	ug/L	45	Standard
	Ce	140	85.0	21.2				ug/L	298	Standard
>	**Tb**	159	967938.8	1.8				ug/L	977942	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	848553.4	0.8	**99.1555**	1.255	1.3	ug/L	31	Standard
	Tl	205	762572.5	0.3	**102.6175**	1.400	1.4	ug/L	20	Standard
	Pb	206	559247.5	0.6	**101.8213**	1.258	1.2	ug/L	286	Standard
	Pb	207	488004.9	0.6	**98.5027**	1.226	1.2	ug/L	257	Standard
	Pb	208	1955600.4	0.4	**102.0354**	1.641	1.6	ug/L	956	Standard
	U	238	737824.6	0.7	**101.3974**	2.083	2.1	ug/L	17	Standard
>	**Bi**	209	565855.3	1.5				ug/L	557080	Standard

Sample ID: QC Std 5
Report Date/Time: Tuesday, June 28, 2016 15:09:04
Page 1

Approved: June 29, 2016

Na	23	3.3	86.6	**21.8863**	18.964	86.6	mg/L	0	Standard
Mg	24	10742.1	1.4	**14.4601**	0.490	3.4	mg/L	32	Standard
K	39	1261.7	7.3	**4.1815**	0.232	5.5	mg/L	30	Standard
Ca	43	183.3	29.9	**22.9918**	8.781	38.2	mg/L	48	Standard
Fe	54	15164.6	1.1	**13.7950**	0.409	3.0	mg/L	159	Standard
Fe	57	4003.9	4.1	**13.0952**	0.606	4.6	mg/L	195	Standard
Sc-1	45	38970.1	2.5				mg/L	39543	Standard
Cl	35	31476.7	2.0				ug/L	27642	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	1726.8	7.1				ug/L	1647	Standard
P	31	16804.3	1.0				ug/L	15231	Standard
S	34	2221.8	2.4				ug/L	1845	Standard
Sr	88	46.7	22.3				ug/L	70	Standard
C	12	280.0	21.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	25.2	45.9				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	30.0	66.7				mg/L	20	Standard
I	127	1238.4	19.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.109		
Al	27	1.001		
Sc	45			
Ti	47	112.695		
V	51	100.113		
Cr	52	97.290		
Cr	53			
Mn	55	97.658		
Co	59	102.072		
Ni	60	95.923		
Cu	65	97.433		
Zn	66	102.862		
Ge	72		99.874	
As	75	101.736		
Se	82	102.099		
Se-1	77			
Ga	71			

Sample ID: QC Std 5
Report Date/Time: Tuesday, June 28, 2016 15:09:04
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	107.334		
Ag	107	90.967		
Cd	111	99.815		
Cd	114			
In	115		97.332	
Sn	118			
Sb	123	100.949		
Ba	135	98.289		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.155		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.035		
U	238	101.397		
Bi	209		101.575	
Na	23	175.090		
Mg	24	289.203		
K	39	83.630		
Ca	43	153.278		
Fe	54	110.360		
Fe	57	104.761		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
Report Date/Time: Tuesday, June 28, 2016 15:09:04
Page 3

Approved: June 29, 2016

QC Std 5	Ca	43

Sample ID: QC Std 5
Report Date/Time: Tuesday, June 28, 2016 15:09:04
Page 4

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 15:10:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85172.2	3.3				ug/L	81760	Standard
	Be	9	53236.8	4.1	**51.4767**	2.435	4.7	ug/L	17	Standard
	Al	27	7628795.8	0.6	**47.5256**	1.416	3.0	ug/L	1410	Standard
	Sc	45	37696.8	2.0				ug/L	39543	Standard
	Ti	47	24164.9	0.9	**98.0401**	2.312	2.4	ug/L	39	Standard
	V	51	343835.2	0.1	**49.7831**	0.751	1.5	ug/L	1415	Standard
	Cr	52	344282.1	1.0	**48.9253**	1.054	2.2	ug/L	6946	Standard
	Cr	53	43472.3	1.9	**49.7131**	1.693	3.4	ug/L	328	Standard
	Mn	55	313567.9	1.4	**48.7360**	1.405	2.9	ug/L	823	Standard
	Co	59	359786.6	1.1	**51.7171**	1.082	2.1	ug/L	252	Standard
	Ni	60	90351.3	0.3	**48.3759**	0.827	1.7	ug/L	192	Standard
	Cu	65	92251.0	0.7	**48.9699**	0.708	1.4	ug/L	141	Standard
	Zn	66	54515.2	1.1	**49.4372**	1.191	2.4	ug/L	491	Standard
>	**Ge**	72	509796.1	1.5				ug/L	515087	Standard
	As	75	55417.4	0.8	**49.8530**	1.118	2.2	ug/L	20	Standard
	Se	82	5885.8	2.0	**51.5527**	1.791	3.5	ug/L	15	Standard
	Se-1	77	3913.8	2.3	**51.7920**	1.979	3.8	ug/L	48	Standard
>	**Ga**	71	60.0	14.4				mg/L	90	Standard
	Rb	85	760.0	3.9				ug/L	23	Standard
	Y	89	437496.8	1.0				ug/L	448510	Standard
>	**Rh**	103	35.0	28.6				ug/L	15	Standard
	Mo	98	271668.8	0.6	**101.2993**	0.747	0.7	ug/L	11	Standard
	Ag	107	329448.9	0.2	**49.4598**	0.339	0.7	ug/L	134	Standard
	Cd	111	103364.2	1.7	**48.7409**	0.531	1.1	mg/L	7	Standard
	Cd	114	251263.5	1.7	**48.7432**	0.553	1.1	ug/L	16	Standard
>	**In**	115	606236.0	0.6				ug/L	611117	Standard
	Sn	118	288784.4	0.3	**49.1320**	0.341	0.7	ug/L	518	Standard
	Sb	123	235993.4	0.4	**50.4089**	0.456	0.9	ug/L	127	Standard
	Ba	135	99324.5	0.4	**48.4735**	0.237	0.5	ug/L	45	Standard
	Ce	140	126.7	35.6				ug/L	298	Standard
>	**Tb**	159	959991.8	0.1				ug/L	977942	Standard
	Ho	165	8.3	34.6				ug/L	12	Standard
	Tl	203	427212.2	0.6	**50.5774**	0.492	1.0	ug/L	31	Standard
	Tl	205	380951.0	2.1	**51.9422**	1.422	2.7	ug/L	20	Standard
	Pb	206	273119.7	0.4	**50.3511**	0.572	1.1	ug/L	286	Standard
	Pb	207	248886.2	0.4	**50.8720**	0.472	0.9	ug/L	257	Standard
	Pb	208	972505.1	1.3	**51.3811**	0.993	1.9	ug/L	956	Standard
	U	238	367751.0	1.4	**51.2030**	1.055	2.1	ug/L	17	Standard
>	**Bi**	209	558440.3	0.7				ug/L	557080	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 15:12:17
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4133.9	5.5	**5.7164**	0.326	5.7	mg/L	32	Standard
K	39	1253.4	8.2	**4.3011**	0.352	8.2	mg/L	30	Standard
Ca	43	70.0	37.8	**5.7557**	4.052	70.4	mg/L	48	Standard
Fe	54	5742.0	2.6	**5.3173**	0.253	4.8	mg/L	159	Standard
Fe	57	1578.4	3.1	**4.9652**	0.143	2.9	mg/L	195	Standard
Sc-1	45	37696.8	2.0				mg/L	39543	Standard
Cl	35	31580.2	0.9				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1660.1	9.6				ug/L	1647	Standard
P	31	16826.0	2.3				ug/L	15231	Standard
S	34	2313.5	5.0				ug/L	1845	Standard
Sr	88	61.7	26.1				ug/L	70	Standard
C	12	133.3	18.9				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	13.3	114.6				mg/L	12	Standard
Ho-1	165	8.3	34.6				mg/L	12	Standard
Er	166	0.0					mg/L	20	Standard
I	127	1290.1	24.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.953		
Al	27	95.051		
Sc	45			
Ti	47	98.040		
V	51	99.566		
Cr	52	97.851		
Cr	53			
Mn	55	97.472		
Co	59	103.434		
Ni	60	96.752		
Cu	65	97.940		
Zn	66	98.874		
Ge	72		98.973	
As	75	99.706		
Se	82	103.105		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 15:12:17
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	101.299		
Ag	107	98.920		
Cd	111	97.482		
Cd	114			
In	115			99.201
Sn	118	98.264		
Sb	123	100.818		
Ba	135	96.947		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.155		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.762		
U	238	102.406		
Bi	209			100.244
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 15:12:17
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 15:13:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88670.5	2.8				ug/L	81760	Standard
	Be	9	51.7	24.4	**0.0381**	0.010	27.4	ug/L	17	Standard
	Al	27	5021.0	57.4	**0.0153**	0.016	105.4	ug/L	1410	Standard
	Sc	45	39924.2	3.2				ug/L	39543	Standard
	Ti	47	36.7	33.9	**-0.0173**	0.048	276.4	ug/L	39	Standard
	V	51	1293.4	14.6	**-0.0198**	0.025	126.5	ug/L	1415	Standard
	Cr	52	6153.2	0.9	**-0.1686**	0.020	12.1	ug/L	6946	Standard
	Cr	53	480.0	7.9	**0.2078**	0.038	18.2	ug/L	328	Standard
	Mn	55	818.0	20.7	**-0.0219**	0.025	112.7	ug/L	823	Standard
	Co	59	362.0	35.7	**0.0203**	0.018	87.2	ug/L	252	Standard
	Ni	60	216.7	22.5	**0.0105**	0.024	233.6	ug/L	192	Standard
	Cu	65	206.0	48.8	**0.0177**	0.051	290.8	ug/L	141	Standard
	Zn	66	512.3	23.8	**-0.3586**	0.106	29.6	ug/L	491	Standard
>	**Ge**	72	512537.5	1.6				ug/L	515087	Standard
	As	75	16.6	529.1	**0.0544**	0.078	142.5	ug/L	20	Standard
	Se	82	20.8	66.0	**0.0610**	0.117	191.3	ug/L	15	Standard
	Se-1	77	56.0	20.1	**0.0270**	0.140	518.0	ug/L	48	Standard
>	**Ga**	71	48.3	15.8				mg/L	90	Standard
	Rb	85	23.3	32.7				ug/L	23	Standard
	Y	89	442158.0	1.4				ug/L	448510	Standard
>	**Rh**	103	8.3	69.3				ug/L	15	Standard
	Mo	98	390.5	34.5	**0.1230**	0.050	40.8	ug/L	11	Standard
	Ag	107	293.7	71.4	**0.0269**	0.031	115.5	ug/L	134	Standard
	Cd	111	93.5	118.9	**0.0403**	0.052	128.0	mg/L	7	Standard
	Cd	114	191.9	127.3	**0.0316**	0.047	147.6	ug/L	16	Standard
>	**In**	115	622178.9	0.7				ug/L	611117	Standard
	Sn	118	798.4	19.1	**0.0306**	0.025	81.3	ug/L	518	Standard
	Sb	123	1327.2	22.5	**0.2633**	0.061	23.3	ug/L	127	Standard
	Ba	135	121.3	95.4	**0.0329**	0.056	169.3	ug/L	45	Standard
	Ce	140	156.7	109.9				ug/L	298	Standard
>	**Tb**	159	979098.8	1.1				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	319.0	100.9	**0.0316**	0.036	115.5	ug/L	31	Standard
	Tl	205	186.7	86.1	**0.0222**	0.021	94.2	ug/L	20	Standard
	Pb	206	461.3	35.4	**0.0186**	0.029	153.9	ug/L	286	Standard
	Pb	207	392.3	40.1	**0.0194**	0.031	157.4	ug/L	257	Standard
	Pb	208	1505.0	29.2	**0.0164**	0.022	134.2	ug/L	956	Standard
	U	238	157.3	69.9	**0.0181**	0.015	80.5	ug/L	17	Standard
>	**Bi**	209	578116.8	1.4				ug/L	557080	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 15:15:29
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	18.2	**-0.0152**	0.009	57.6	mg/L	32	Standard
K	39	23.3	49.5	**-0.0625**	0.040	64.6	mg/L	30	Standard
Ca	43	25.0	40.0	**-1.6032**	1.411	88.0	mg/L	48	Standard
Fe	54	127.6	20.0	**-0.0223**	0.025	111.2	mg/L	159	Standard
Fe	57	173.3	7.3	**-0.0450**	0.038	85.1	mg/L	195	Standard
> **Sc-1**	45	39924.2	3.2				mg/L	39543	Standard
Cl	35	32496.1	0.6				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1573.4	6.5				ug/L	1647	Standard
P	31	17568.5	2.8				ug/L	15231	Standard
S	34	2373.5	3.0				ug/L	1845	Standard
Sr	88	50.0	26.5				ug/L	70	Standard
C	12	106.7	19.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.5	38.4				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	16.7	124.9				mg/L	20	Standard
I	127	1251.7	20.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.505	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 15:15:29
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.810
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.776
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 15:15:29
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 28, 2016 15:16:29
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81011.1	2.2				ug/L	81760	Standard
	Be	9	195.0	20.5	**0.1880**	0.037	19.7	ug/L	17	Standard
	Al	27	1493.4	21.7	**-0.0047**	0.002	41.0	ug/L	1410	Standard
	Sc	45	36542.4	1.6				ug/L	39543	Standard
	Ti	47	30.7	9.4	**-0.0369**	0.011	30.3	ug/L	39	Standard
	V	51	3567.1	2.8	**0.3274**	0.017	5.3	ug/L	1415	Standard
	Cr	52	11052.7	0.9	**0.5951**	0.027	4.6	ug/L	6946	Standard
	Cr	53	1095.0	4.8	**0.9563**	0.056	5.9	ug/L	328	Standard
	Mn	55	3466.7	0.6	**0.4079**	0.007	1.6	ug/L	823	Standard
	Co	59	2834.6	2.1	**0.3884**	0.006	1.6	ug/L	252	Standard
	Ni	60	2871.9	0.5	**1.4818**	0.019	1.3	ug/L	192	Standard
	Cu	65	1515.4	2.2	**0.7391**	0.023	3.1	ug/L	141	Standard
	Zn	66	7448.8	1.9	**6.2435**	0.137	2.2	ug/L	491	Standard
>	**Ge**	72	495055.6	0.7				ug/L	515087	Standard
	As	75	363.8	8.2	**0.3769**	0.025	6.6	ug/L	20	Standard
	Se	82	58.7	3.6	**0.4109**	0.015	3.7	ug/L	15	Standard
	Se-1	77	71.3	17.1	**0.2665**	0.171	64.2	ug/L	48	Standard
>	**Ga**	71	38.3	19.9				mg/L	90	Standard
	Rb	85	26.7	28.6				ug/L	23	Standard
	Y	89	415588.9	2.9				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	101.2	14.2	**0.0199**	0.005	26.4	ug/L	11	Standard
	Ag	107	2581.2	2.0	**0.3840**	0.010	2.6	ug/L	134	Standard
	Cd	111	489.5	5.9	**0.2354**	0.013	5.3	mg/L	7	Standard
	Cd	114	1118.1	7.7	**0.2189**	0.015	6.9	ug/L	16	Standard
>	**In**	115	587241.6	1.2				ug/L	611117	Standard
	Sn	118	508.3	8.2	**-0.0124**	0.008	65.2	ug/L	518	Standard
	Sb	123	2001.1	5.7	**0.4288**	0.031	7.2	ug/L	127	Standard
	Ba	135	1392.4	6.1	**0.6767**	0.039	5.8	ug/L	45	Standard
	Ce	140	30.0	44.1				ug/L	298	Standard
>	**Tb**	159	929212.6	0.4				ug/L	977942	Standard
	Ho	165	13.3	57.3				ug/L	12	Standard
	Tl	203	711.0	4.8	**0.0804**	0.004	5.1	ug/L	31	Standard
	Tl	205	656.7	5.8	**0.0883**	0.005	5.1	ug/L	20	Standard
	Pb	206	1347.1	1.6	**0.1880**	0.004	2.0	ug/L	286	Standard
	Pb	207	1117.4	2.9	**0.1733**	0.005	3.1	ug/L	257	Standard
	Pb	208	4713.3	2.2	**0.1919**	0.007	3.7	ug/L	956	Standard
	U	238	2843.3	0.8	**0.3977**	0.005	1.3	ug/L	17	Standard
>	**Bi**	209	551791.7	0.8				ug/L	557080	Standard

Sample ID: QC Std 8
Report Date/Time: Tuesday, June 28, 2016 15:18:46
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	26.7	39.0	**-0.0189**	0.015	77.3	mg/L	32	Standard
K	39	20.0	25.0	**-0.0684**	0.018	25.7	mg/L	30	Standard
Ca	43	25.0	40.0	**-1.2235**	1.703	139.2	mg/L	48	Standard
Fe	54	112.3	6.9	**-0.0270**	0.008	31.0	mg/L	159	Standard
Fe	57	200.0	28.8	**0.1050**	0.205	195.5	mg/L	195	Standard
> **Sc-1**	45	36542.4	1.6				mg/L	39543	Standard
Cl	35	31755.9	1.1				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1523.4	8.9				ug/L	1647	Standard
P	31	12263.3	0.6				ug/L	15231	Standard
S	34	2283.5	2.6				ug/L	1845	Standard
Sr	88	63.3	25.4				ug/L	70	Standard
C	12	146.7	38.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	15.9	37.5				mg/L	12	Standard
Ho-1	165	13.3	57.3				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	20	Standard
I	127	1103.4	23.7				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	94.012		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	81.855		
	Cr	52	74.385		
	Cr	53			
	Mn	55	81.586		
	Co	59	97.096		
	Ni	60	92.611		
	Cu	65	92.383		
	Zn	66	99.896		
>	Ge	72		96.111	
	As	75	94.213		
	Se	82	102.730		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 8
Report Date/Time: Tuesday, June 28, 2016 15:18:46
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.001		
Cd	111	98.068		
Cd	114			
> In	115			96.093
Sn	118			
Sb	123	107.193		
Ba	135	90.223		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.519		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.932		
U	238	99.422		
> Bi	209			99.051
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078703 WG573333-01
Sample Date/Time: Tuesday, June 28, 2016 15:24:24
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77973.6	3.5				ug/L	81760	Standard
	Be	9	93.3	32.7	**0.0882**	0.029	33.1	ug/L	17	Standard
	Al	27	522182.4	1.6	**3.5410**	0.149	4.2	ug/L	1410	Standard
	Sc	45	36268.4	3.8				ug/L	39543	Standard
	Ti	47	171.7	14.8	**0.5849**	0.118	20.2	ug/L	39	Standard
	V	51	8345.2	3.6	**1.0965**	0.041	3.8	ug/L	1415	Standard
	Cr	52	9135.4	1.3	**0.3675**	0.032	8.6	ug/L	6946	Standard
	Cr	53	715.0	6.0	**0.5424**	0.045	8.2	ug/L	328	Standard
	Mn	55	230272.3	2.4	**38.4029**	0.677	1.8	ug/L	823	Standard
	Co	59	4116.2	4.4	**0.6044**	0.024	3.9	ug/L	252	Standard
	Ni	60	2251.2	4.1	**1.1925**	0.054	4.6	ug/L	192	Standard
	Cu	65	1784.1	4.6	**0.9285**	0.051	5.5	ug/L	141	Standard
	Zn	66	3508.4	21.7	**2.6509**	0.786	29.6	ug/L	491	Standard
>	**Ge**	72	474556.6	0.9				ug/L	515087	Standard
	As	75	172.3	13.5	**0.2068**	0.024	11.5	ug/L	20	Standard
	Se	82	19.4	8.6	**0.0638**	0.017	27.3	ug/L	15	Standard
	Se-1	77	47.7	3.2	**-0.0320**	0.028	88.4	ug/L	48	Standard
>	**Ga**	71	883.4	11.6				mg/L	90	Standard
	Rb	85	7710.3	5.5				ug/L	23	Standard
	Y	89	442484.5	1.8				ug/L	448510	Standard
>	**Rh**	103	20.0	25.0				ug/L	15	Standard
	Mo	98	50.0	20.9	**0.0005**	0.004	864.7	ug/L	11	Standard
	Ag	107	103.7	35.8	**0.0001**	0.006	5294.7	ug/L	134	Standard
	Cd	111	33.9	43.4	**0.0139**	0.007	52.6	mg/L	7	Standard
	Cd	114	75.2	57.1	**0.0104**	0.009	84.2	ug/L	16	Standard
>	**In**	115	577946.8	0.2				ug/L	611117	Standard
	Sn	118	366.7	11.4	**-0.0364**	0.008	20.8	ug/L	518	Standard
	Sb	123	219.5	27.2	**0.0364**	0.013	37.0	ug/L	127	Standard
	Ba	135	15089.5	2.8	**7.7036**	0.230	3.0	ug/L	45	Standard
	Ce	140	101663.3	0.5				ug/L	298	Standard
>	**Tb**	159	912358.4	0.5				ug/L	977942	Standard
	Ho	165	1823.4	12.2				ug/L	12	Standard
	Tl	203	96.3	39.3	**0.0070**	0.005	65.1	ug/L	31	Standard
	Tl	205	60.0	22.0	**0.0062**	0.002	29.8	ug/L	20	Standard
	Pb	206	5271.9	0.9	**0.9471**	0.013	1.4	ug/L	286	Standard
	Pb	207	4329.0	2.2	**0.8620**	0.023	2.7	ug/L	257	Standard
	Pb	208	18126.6	1.5	**0.9354**	0.019	2.1	ug/L	956	Standard
	U	238	313.3	4.9	**0.0423**	0.002	4.7	ug/L	17	Standard
>	**Bi**	209	537668.4	0.5				ug/L	557080	Standard

Sample ID: L1606078703 WG573333-01
Report Date/Time: Tuesday, June 28, 2016 15:26:41
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	30.0	60.1	**-0.0138**	0.025	183.5	mg/L	32	Standard
K	39	53.3	37.9	**0.0534**	0.067	124.6	mg/L	30	Standard
Ca	43	48.3	6.0	**2.6636**	0.532	20.0	mg/L	48	Standard
Fe	54	632.5	2.4	**0.4873**	0.016	3.2	mg/L	159	Standard
Fe	57	343.3	3.0	**0.6393**	0.010	1.6	mg/L	195	Standard
> **Sc-1**	45	36268.4	3.8				mg/L	39543	Standard
Cl	35	30788.6	1.3				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1480.1	1.8				ug/L	1647	Standard
P	31	7060.0	1.2				ug/L	15231	Standard
S	34	2285.2	6.0				ug/L	1845	Standard
Sr	88	48.3	21.5				ug/L	70	Standard
C	12	146.7	76.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3101.1	5.7				mg/L	12	Standard
Ho-1	165	1823.4	12.2				mg/L	12	Standard
Er	166	1723.4	3.7				mg/L	20	Standard
I	127	1973.5	19.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.369	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.131	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606078703 WG573333-01
Report Date/Time: Tuesday, June 28, 2016 15:26:41
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.572
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.515
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078704S WG573333-05
Sample Date/Time: Tuesday, June 28, 2016 15:27:35
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77117.5	2.8				ug/L	81760	Standard
	Be	9	2866.9	4.2	**3.0501**	0.044	1.4	ug/L	17	Standard
	Al	27	530634.0	2.5	**3.6356**	0.032	0.9	ug/L	1410	Standard
	Sc	45	36769.6	1.1				ug/L	39543	Standard
	Ti	47	373.0	7.6	**1.4053**	0.111	7.9	ug/L	39	Standard
	V	51	27357.6	1.0	**3.9153**	0.028	0.7	ug/L	1415	Standard
	Cr	52	27754.1	2.5	**3.1178**	0.072	2.3	ug/L	6946	Standard
	Cr	53	3205.3	2.9	**3.4822**	0.093	2.7	ug/L	328	Standard
	Mn	55	199454.4	1.6	**32.0700**	0.433	1.4	ug/L	823	Standard
	Co	59	21527.3	1.4	**3.1772**	0.038	1.2	ug/L	252	Standard
	Ni	60	6879.6	1.3	**3.7203**	0.017	0.5	ug/L	192	Standard
	Cu	65	6482.7	2.3	**3.4817**	0.050	1.4	ug/L	141	Standard
	Zn	66	6297.6	0.7	**5.1896**	0.074	1.4	ug/L	491	Standard
>	**Ge**	72	491870.4	0.9				ug/L	515087	Standard
	As	75	2731.5	2.2	**2.5846**	0.063	2.4	ug/L	20	Standard
	Se	82	265.3	2.1	**2.2945**	0.068	3.0	ug/L	15	Standard
	Se-1	77	206.7	1.5	**2.1542**	0.060	2.8	ug/L	48	Standard
>	**Ga**	71	993.4	9.7				mg/L	90	Standard
	Rb	85	7418.5	3.4				ug/L	23	Standard
	Y	89	432036.7	0.9				ug/L	448510	Standard
>	**Rh**	103	6.7	86.6				ug/L	15	Standard
	Mo	98	97.6	12.4	**0.0190**	0.004	23.4	ug/L	11	Standard
	Ag	107	16692.5	1.2	**2.6046**	0.053	2.0	ug/L	134	Standard
	Cd	111	5558.2	2.0	**2.7376**	0.075	2.7	mg/L	7	Standard
	Cd	114	13660.0	0.7	**2.7659**	0.042	1.5	ug/L	16	Standard
>	**In**	115	579914.2	0.8				ug/L	611117	Standard
	Sn	118	355.0	9.2	**-0.0387**	0.005	13.8	ug/L	518	Standard
	Sb	123	2408.5	2.5	**0.5252**	0.017	3.2	ug/L	127	Standard
	Ba	135	18788.0	0.3	**9.5654**	0.079	0.8	ug/L	45	Standard
	Ce	140	97333.3	0.8				ug/L	298	Standard
>	**Tb**	159	916801.1	0.1				ug/L	977942	Standard
	Ho	165	2003.5	4.3				ug/L	12	Standard
	Tl	203	21211.2	1.5	**2.5655**	0.023	0.9	ug/L	31	Standard
	Tl	205	18352.8	1.2	**2.5587**	0.022	0.9	ug/L	20	Standard
	Pb	206	18796.3	1.3	**3.4874**	0.034	1.0	ug/L	286	Standard
	Pb	207	16054.8	0.9	**3.3044**	0.015	0.5	ug/L	257	Standard
	Pb	208	66020.8	0.7	**3.5136**	0.008	0.2	ug/L	956	Standard
	U	238	18577.7	1.3	**2.6444**	0.019	0.7	ug/L	17	Standard
>	**Bi**	209	545605.1	0.6				ug/L	557080	Standard

Sample ID: L1606078704S WG573333-05
Report Date/Time: Tuesday, June 28, 2016 15:29:52
Page 1

Approved: June 29, 2016

Na	23	3.3	86.6	**23.0608**	19.970	86.6	mg/L	0	Standard
Mg	24	33.3	17.3	**-0.0095**	0.008	83.3	mg/L	32	Standard
K	39	50.0	30.0	**0.0407**	0.057	139.0	mg/L	30	Standard
Ca	43	23.3	86.6	**-1.5565**	3.262	209.6	mg/L	48	Standard
Fe	54	789.3	5.9	**0.6315**	0.054	8.6	mg/L	159	Standard
Fe	57	388.3	19.5	**0.7873**	0.291	37.0	mg/L	195	Standard
Sc-1	45	36769.6	1.1				mg/L	39543	Standard
Cl	35	31616.3	0.3				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1516.7	10.3				ug/L	1647	Standard
P	31	7133.3	2.5				ug/L	15231	Standard
S	34	2288.5	0.7				ug/L	1845	Standard
Sr	88	63.3	12.1				ug/L	70	Standard
C	12	90.0	50.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3099.8	4.3				mg/L	12	Standard
Ho-1	165	2003.5	4.3				mg/L	12	Standard
Er	166	1750.1	2.1				mg/L	20	Standard
I	127	2031.8	18.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		94.322	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.493	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606078704S WG573333-05
Report Date/Time: Tuesday, June 28, 2016 15:29:52
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.894
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.940
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078705SD WG573333-06
Sample Date/Time: Tuesday, June 28, 2016 15:30:46
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74501.2	2.9				ug/L	81760	Standard
	Be	9	2816.9	5.3	**3.1033**	0.143	4.6	ug/L	17	Standard
	Al	27	652490.2	1.4	**4.6325**	0.073	1.6	ug/L	1410	Standard
	Sc	45	35373.0	4.0				ug/L	39543	Standard
	Ti	47	288.0	4.5	**1.0503**	0.068	6.5	ug/L	39	Standard
	V	51	27556.1	4.5	**3.9507**	0.115	2.9	ug/L	1415	Standard
	Cr	52	29741.5	2.7	**3.4242**	0.036	1.1	ug/L	6946	Standard
	Cr	53	3408.7	4.0	**3.7308**	0.095	2.5	ug/L	328	Standard
	Mn	55	239390.4	1.7	**38.5872**	0.363	0.9	ug/L	823	Standard
	Co	59	21175.8	2.9	**3.1300**	0.064	2.1	ug/L	252	Standard
	Ni	60	7152.0	2.5	**3.8782**	0.013	0.3	ug/L	192	Standard
	Cu	65	6817.5	3.4	**3.6719**	0.046	1.3	ug/L	141	Standard
	Zn	66	6491.4	2.6	**5.3843**	0.067	1.2	ug/L	491	Standard
>	**Ge**	72	491074.4	2.2				ug/L	515087	Standard
	As	75	2669.0	1.7	**2.5305**	0.018	0.7	ug/L	20	Standard
	Se	82	259.6	0.9	**2.2467**	0.073	3.2	ug/L	15	Standard
	Se-1	77	214.7	9.1	**2.2690**	0.247	10.9	ug/L	48	Standard
>	**Ga**	71	1028.4	8.9				mg/L	90	Standard
	Rb	85	7220.1	2.0				ug/L	23	Standard
	Y	89	434100.4	1.8				ug/L	448510	Standard
>	**Rh**	103	11.7	24.7				ug/L	15	Standard
	Mo	98	220.7	3.6	**0.0685**	0.004	5.3	ug/L	11	Standard
	Ag	107	16241.0	2.2	**2.5784**	0.042	1.6	ug/L	134	Standard
	Cd	111	5563.7	4.0	**2.7880**	0.091	3.3	mg/L	7	Standard
	Cd	114	13468.2	1.0	**2.7750**	0.021	0.8	ug/L	16	Standard
>	**In**	115	569849.5	0.7				ug/L	611117	Standard
	Sn	118	353.3	16.1	**-0.0379**	0.010	26.3	ug/L	518	Standard
	Sb	123	2719.7	5.6	**0.6052**	0.030	5.0	ug/L	127	Standard
	Ba	135	20622.4	3.5	**10.6862**	0.314	2.9	ug/L	45	Standard
	Ce	140	98046.3	2.6				ug/L	298	Standard
>	**Tb**	159	907491.8	2.5				ug/L	977942	Standard
	Ho	165	2030.1	2.1				ug/L	12	Standard
	Tl	203	20792.6	2.1	**2.5412**	0.024	1.0	ug/L	31	Standard
	Tl	205	18564.7	0.9	**2.6157**	0.018	0.7	ug/L	20	Standard
	Pb	206	19134.8	4.2	**3.5891**	0.137	3.8	ug/L	286	Standard
	Pb	207	16318.5	3.9	**3.3949**	0.097	2.9	ug/L	257	Standard
	Pb	208	68373.0	0.9	**3.6800**	0.027	0.7	ug/L	956	Standard
	U	238	18425.5	1.4	**2.6505**	0.039	1.5	ug/L	17	Standard
>	**Bi**	209	539937.0	1.4				ug/L	557080	Standard

Sample ID: L1606078705SD WG573333-06
Report Date/Time: Tuesday, June 28, 2016 15:33:03
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	30.0	44.1	**-0.0120**	0.022	182.1	mg/L	32	Standard
K	39	43.3	29.0	**0.0214**	0.044	203.2	mg/L	30	Standard
Ca	43	31.7	50.8	**-0.0240**	2.524	10500.7	mg/L	48	Standard
Fe	54	837.2	3.3	**0.7115**	0.061	8.6	mg/L	159	Standard
Fe	57	390.0	5.9	**0.8507**	0.142	16.6	mg/L	195	Standard
> **Sc-1**	45	35373.0	4.0				mg/L	39543	Standard
Cl	35	30539.4	1.3				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1456.7	10.3				ug/L	1647	Standard
P	31	7050.0	3.7				ug/L	15231	Standard
S	34	2141.8	2.3				ug/L	1845	Standard
Sr	88	61.7	12.4				ug/L	70	Standard
C	12	110.0	32.8				mg/L	113	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3163.0	6.4				mg/L	12	Standard
Ho-1	165	2030.1	2.1				mg/L	12	Standard
Er	166	1753.4	8.6				mg/L	20	Standard
I	127	1965.1	14.8				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		91.122	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.338	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606078705SD WG573333-06
Report Date/Time: Tuesday, June 28, 2016 15:33:03
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.247
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.923
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078706
Sample Date/Time: Tuesday, June 28, 2016 15:33:58
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76028.8	3.5				ug/L	81760	Standard
	Be	9	38.3	19.9	**0.0318**	0.009	27.2	ug/L	17	Standard
	Al	27	238262.4	1.5	**1.6489**	0.050	3.0	ug/L	1410	Standard
	Sc	45	37198.9	1.1				ug/L	39543	Standard
	Ti	47	135.7	11.8	**0.3914**	0.065	16.6	ug/L	39	Standard
	V	51	5276.5	1.4	**0.5679**	0.012	2.1	ug/L	1415	Standard
	Cr	52	6498.4	1.5	**-0.1047**	0.015	14.1	ug/L	6946	Standard
	Cr	53	391.7	9.7	**0.1138**	0.045	39.3	ug/L	328	Standard
	Mn	55	119285.7	3.0	**18.6233**	0.543	2.9	ug/L	823	Standard
	Co	59	1493.7	2.3	**0.1855**	0.005	2.9	ug/L	252	Standard
	Ni	60	894.4	1.7	**0.3795**	0.008	2.0	ug/L	192	Standard
	Cu	65	697.3	2.0	**0.2836**	0.007	2.5	ug/L	141	Standard
	Zn	66	2625.6	1.0	**1.6163**	0.028	1.8	ug/L	491	Standard
>	**Ge**	72	504872.7	0.1				ug/L	515087	Standard
	As	75	131.9	5.5	**0.1599**	0.007	4.3	ug/L	20	Standard
	Se	82	16.6	26.9	**0.0277**	0.040	143.8	ug/L	15	Standard
	Se-1	77	42.3	11.2	**-0.1455**	0.065	44.4	ug/L	48	Standard
>	**Ga**	71	331.7	11.3				mg/L	90	Standard
	Rb	85	2800.3	5.6				ug/L	23	Standard
	Y	89	425969.9	0.3				ug/L	448510	Standard
>	**Rh**	103	21.7	96.1				ug/L	15	Standard
	Mo	98	33.2	18.6	**-0.0062**	0.003	40.5	ug/L	11	Standard
	Ag	107	87.7	13.4	**-0.0025**	0.002	77.6	ug/L	134	Standard
	Cd	111	11.3	20.5	**0.0026**	0.001	43.1	mg/L	7	Standard
	Cd	114	30.9	19.2	**0.0013**	0.001	87.3	ug/L	16	Standard
>	**In**	115	583702.0	1.1				ug/L	611117	Standard
	Sn	118	278.3	22.7	**-0.0527**	0.011	20.3	ug/L	518	Standard
	Sb	123	103.7	16.2	**0.0102**	0.004	35.3	ug/L	127	Standard
	Ba	135	9187.1	1.4	**4.6338**	0.016	0.3	ug/L	45	Standard
	Ce	140	45456.4	1.3				ug/L	298	Standard
>	**Tb**	159	930779.6	1.7				ug/L	977942	Standard
	Ho	165	850.0	2.4				ug/L	12	Standard
	Tl	203	23.3	23.6	**-0.0020**	0.001	31.7	ug/L	31	Standard
	Tl	205	35.0	37.8	**0.0025**	0.002	71.7	ug/L	20	Standard
	Pb	206	2536.5	1.2	**0.4062**	0.009	2.2	ug/L	286	Standard
	Pb	207	2050.5	1.7	**0.3630**	0.010	2.7	ug/L	257	Standard
	Pb	208	8421.9	1.7	**0.3865**	0.010	2.6	ug/L	956	Standard
	U	238	103.3	13.1	**0.0115**	0.002	17.1	ug/L	17	Standard
>	**Bi**	209	556617.5	0.8				ug/L	557080	Standard

Sample ID: L1606078706
Report Date/Time: Tuesday, June 28, 2016 15:36:15
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**11.3116**	19.584	173.1	mg/L	0	Standard
Mg	24	31.7	9.1	**-0.0123**	0.005	37.6	mg/L	32	Standard
K	39	50.0	10.0	**0.0383**	0.020	51.6	mg/L	30	Standard
Ca	43	18.3	103.3	**-2.3989**	3.033	126.4	mg/L	48	Standard
Fe	54	317.8	14.7	**0.1684**	0.043	25.3	mg/L	159	Standard
Fe	57	280.0	19.3	**0.3807**	0.196	51.6	mg/L	195	Standard
> **Sc-1**	45	37198.9	1.1				mg/L	39543	Standard
Cl	35	30150.0	0.9				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1330.1	6.0				ug/L	1647	Standard
P	31	7115.0	3.6				ug/L	15231	Standard
S	34	2203.5	6.4				ug/L	1845	Standard
Sr	88	73.3	23.9				ug/L	70	Standard
C	12	136.7	33.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	1461.3	2.6				mg/L	12	Standard
Ho-1	165	850.0	2.4				mg/L	12	Standard
Er	166	740.0	2.3				mg/L	20	Standard
I	127	1331.7	15.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.990	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.017	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606078706
Report Date/Time: Tuesday, June 28, 2016 15:36:15
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.514
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.917
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078708
Sample Date/Time: Tuesday, June 28, 2016 15:37:09
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75812.6	2.8				ug/L	81760	Standard
	Be	9	48.3	21.5	**0.0428**	0.011	26.6	ug/L	17	Standard
	Al	27	1071474.1	1.0	**7.4874**	0.284	3.8	ug/L	1410	Standard
	Sc	45	37513.1	2.1				ug/L	39543	Standard
	Ti	47	158.0	12.8	**0.5014**	0.093	18.5	ug/L	39	Standard
	V	51	6689.1	0.4	**0.8020**	0.010	1.2	ug/L	1415	Standard
	Cr	52	7515.2	0.4	**0.0743**	0.008	10.8	ug/L	6946	Standard
	Cr	53	588.3	8.1	**0.3608**	0.056	15.4	ug/L	328	Standard
	Mn	55	205213.7	2.8	**33.0324**	1.280	3.9	ug/L	823	Standard
	Co	59	2212.5	3.2	**0.2987**	0.013	4.3	ug/L	252	Standard
	Ni	60	1404.4	3.4	**0.6767**	0.035	5.1	ug/L	192	Standard
	Cu	65	1102.0	3.5	**0.5169**	0.018	3.4	ug/L	141	Standard
	Zn	66	2607.9	0.9	**1.6660**	0.041	2.5	ug/L	491	Standard
>	**Ge**	72	491532.3	1.1				ug/L	515087	Standard
	As	75	127.5	11.1	**0.1592**	0.014	8.7	ug/L	20	Standard
	Se	82	17.3	29.3	**0.0385**	0.047	123.2	ug/L	15	Standard
	Se-1	77	43.3	11.6	**-0.1157**	0.075	64.9	ug/L	48	Standard
>	**Ga**	71	450.0	13.5				mg/L	90	Standard
	Rb	85	3788.8	1.3				ug/L	23	Standard
	Y	89	433725.3	2.1				ug/L	448510	Standard
>	**Rh**	103	18.3	31.5				ug/L	15	Standard
	Mo	98	38.5	4.2	**-0.0045**	0.000	10.9	ug/L	11	Standard
	Ag	107	93.3	12.0	**-0.0020**	0.002	78.2	ug/L	134	Standard
	Cd	111	23.9	23.2	**0.0085**	0.003	31.3	mg/L	7	Standard
	Cd	114	45.7	16.0	**0.0041**	0.001	34.3	ug/L	16	Standard
>	**In**	115	598611.3	0.9				ug/L	611117	Standard
	Sn	118	346.7	46.9	**-0.0421**	0.028	66.0	ug/L	518	Standard
	Sb	123	86.1	26.8	**0.0058**	0.005	89.2	ug/L	127	Standard
	Ba	135	10124.4	4.3	**4.9826**	0.248	5.0	ug/L	45	Standard
	Ce	140	56269.4	3.6				ug/L	298	Standard
>	**Tb**	159	935742.2	1.5				ug/L	977942	Standard
	Ho	165	1033.4	8.1				ug/L	12	Standard
	Tl	203	29.7	5.1	**-0.0013**	0.000	18.3	ug/L	31	Standard
	Tl	205	31.7	18.2	**0.0020**	0.001	35.8	ug/L	20	Standard
	Pb	206	3055.6	2.0	**0.5003**	0.022	4.4	ug/L	286	Standard
	Pb	207	2503.2	3.8	**0.4542**	0.030	6.6	ug/L	257	Standard
	Pb	208	10181.4	1.0	**0.4779**	0.016	3.3	ug/L	956	Standard
	U	238	166.3	6.9	**0.0202**	0.002	9.9	ug/L	17	Standard
>	**Bi**	209	558847.5	2.0				ug/L	557080	Standard

Sample ID: L1606078708
Report Date/Time: Tuesday, June 28, 2016 15:39:26
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	26.7	28.6	**-0.0198**	0.010	52.5	mg/L	32	Standard
K	39	46.7	22.3	**0.0253**	0.040	158.3	mg/L	30	Standard
Ca	43	46.7	43.3	**2.1703**	3.421	157.6	mg/L	48	Standard
Fe	54	430.9	12.9	**0.2746**	0.059	21.6	mg/L	159	Standard
Fe	57	336.7	7.3	**0.5728**	0.068	12.0	mg/L	195	Standard
> **Sc-1**	45	37513.1	2.1				mg/L	39543	Standard
Cl	35	31262.2	0.8				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1390.1	8.3				ug/L	1647	Standard
P	31	7195.0	0.6				ug/L	15231	Standard
S	34	2350.2	4.3				ug/L	1845	Standard
Sr	88	86.7	13.3				ug/L	70	Standard
C	12	130.0	15.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	1824.8	9.6				mg/L	12	Standard
Ho-1	165	1033.4	8.1				mg/L	12	Standard
Er	166	946.7	6.2				mg/L	20	Standard
I	127	1363.4	17.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.726	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606078708
Report Date/Time: Tuesday, June 28, 2016 15:39:26
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.954
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.317
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078713
Sample Date/Time: Tuesday, June 28, 2016 15:40:21
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75663.5	2.7				ug/L	81760	Standard
	Be	9	81.7	30.2	**0.0793**	0.028	34.9	ug/L	17	Standard
	Al	27	416574.6	1.3	**2.9066**	0.048	1.7	ug/L	1410	Standard
	Sc	45	36378.7	3.4				ug/L	39543	Standard
	Ti	47	126.3	10.5	**0.3773**	0.057	15.2	ug/L	39	Standard
	V	51	8315.3	0.5	**1.0708**	0.007	0.7	ug/L	1415	Standard
	Cr	52	8765.5	1.6	**0.2875**	0.022	7.8	ug/L	6946	Standard
	Cr	53	728.4	7.9	**0.5445**	0.070	12.8	ug/L	328	Standard
	Mn	55	93455.4	1.8	**15.2441**	0.287	1.9	ug/L	823	Standard
	Co	59	3649.1	3.3	**0.5232**	0.019	3.5	ug/L	252	Standard
	Ni	60	1651.1	5.4	**0.8312**	0.052	6.2	ug/L	192	Standard
	Cu	65	1200.0	2.8	**0.5835**	0.019	3.3	ug/L	141	Standard
	Zn	66	2593.9	1.4	**1.6993**	0.037	2.2	ug/L	491	Standard
>	**Ge**	72	482399.4	0.1				ug/L	515087	Standard
	As	75	167.0	21.6	**0.1989**	0.034	17.3	ug/L	20	Standard
	Se	82	15.9	30.3	**0.0282**	0.045	158.8	ug/L	15	Standard
	Se-1	77	52.3	6.7	**0.0228**	0.050	216.8	ug/L	48	Standard
>	**Ga**	71	573.3	13.4				mg/L	90	Standard
	Rb	85	5119.2	1.4				ug/L	23	Standard
	Y	89	439888.1	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	78.1				ug/L	15	Standard
	Mo	98	43.4	10.8	**-0.0024**	0.002	79.1	ug/L	11	Standard
	Ag	107	106.7	10.0	**0.0002**	0.002	826.8	ug/L	134	Standard
	Cd	111	22.9	46.1	**0.0082**	0.005	63.6	mg/L	7	Standard
	Cd	114	51.2	44.0	**0.0052**	0.004	84.1	ug/L	16	Standard
>	**In**	115	591171.7	0.9				ug/L	611117	Standard
	Sn	118	328.3	8.7	**-0.0445**	0.005	12.1	ug/L	518	Standard
	Sb	123	88.5	32.5	**0.0066**	0.006	98.7	ug/L	127	Standard
	Ba	135	15979.8	0.8	**7.9763**	0.029	0.4	ug/L	45	Standard
	Ce	140	70630.9	0.7				ug/L	298	Standard
>	**Tb**	159	919155.3	2.1				ug/L	977942	Standard
	Ho	165	1308.4	8.9				ug/L	12	Standard
	Tl	203	43.3	33.8	**0.0005**	0.002	355.9	ug/L	31	Standard
	Tl	205	45.0	58.8	**0.0041**	0.004	93.0	ug/L	20	Standard
	Pb	206	4127.6	1.0	**0.7213**	0.011	1.5	ug/L	286	Standard
	Pb	207	3419.4	2.4	**0.6628**	0.016	2.5	ug/L	257	Standard
	Pb	208	14423.4	1.0	**0.7255**	0.013	1.8	ug/L	956	Standard
	U	238	157.3	5.4	**0.0196**	0.001	6.2	ug/L	17	Standard
>	**Bi**	209	542054.4	0.7				ug/L	557080	Standard

Sample ID: L1606078713
Report Date/Time: Tuesday, June 28, 2016 15:42:38
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	38.3	7.5	**-0.0016**	0.005	296.7	mg/L	32	Standard
K	39	31.7	55.5	**-0.0245**	0.065	264.7	mg/L	30	Standard
Ca	43	18.3	56.8	**-2.3425**	1.620	69.1	mg/L	48	Standard
Fe	54	638.8	9.9	**0.4927**	0.076	15.4	mg/L	159	Standard
Fe	57	368.3	10.9	**0.7248**	0.101	14.0	mg/L	195	Standard
> **Sc-1**	45	36378.7	3.4				mg/L	39543	Standard
Cl	35	31640.3	1.2				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1476.7	9.6				ug/L	1647	Standard
P	31	7046.6	3.0				ug/L	15231	Standard
S	34	2278.5	11.1				ug/L	1845	Standard
Sr	88	80.0	28.6				ug/L	70	Standard
C	12	116.7	26.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2168.9	5.7				mg/L	12	Standard
Ho-1	165	1308.4	8.9				mg/L	12	Standard
Er	166	1140.0	7.8				mg/L	20	Standard
I	127	1385.1	16.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.543	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.654	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606078713
Report Date/Time: Tuesday, June 28, 2016 15:42:38
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.736
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.303
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078715
Sample Date/Time: Tuesday, June 28, 2016 15:43:32
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72672.4	3.8				ug/L	81760	Standard
	Be	9	136.7	16.5	**0.1453**	0.027	18.6	ug/L	17	Standard
	Al	27	1143496.8	3.3	**8.3341**	0.197	2.4	ug/L	1410	Standard
	Sc	45	36597.5	3.0				ug/L	39543	Standard
	Ti	47	230.0	1.3	**0.8041**	0.017	2.1	ug/L	39	Standard
	V	51	11413.9	1.0	**1.5144**	0.038	2.5	ug/L	1415	Standard
	Cr	52	15036.8	0.3	**1.2067**	0.029	2.4	ug/L	6946	Standard
	Cr	53	1373.4	5.7	**1.2975**	0.078	6.0	ug/L	328	Standard
	Mn	55	293360.4	0.3	**47.2738**	0.683	1.4	ug/L	823	Standard
	Co	59	6852.2	0.9	**0.9907**	0.018	1.8	ug/L	252	Standard
	Ni	60	4182.9	0.4	**2.2225**	0.021	0.9	ug/L	192	Standard
	Cu	65	2749.2	1.6	**1.4253**	0.010	0.7	ug/L	141	Standard
	Zn	66	5934.8	0.5	**4.8465**	0.046	1.0	ug/L	491	Standard
>	**Ge**	72	491565.9	1.3				ug/L	515087	Standard
	As	75	281.2	9.9	**0.3023**	0.024	7.9	ug/L	20	Standard
	Se	82	16.6	41.5	**0.0313**	0.062	197.6	ug/L	15	Standard
	Se-1	77	52.7	11.4	**0.0136**	0.082	602.5	ug/L	48	Standard
>	**Ga**	71	1726.8	3.8				mg/L	90	Standard
	Rb	85	17453.4	2.4				ug/L	23	Standard
	Y	89	433246.4	2.7				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	40.4	18.8	**-0.0027**	0.003	116.5	ug/L	11	Standard
	Ag	107	118.3	7.6	**0.0030**	0.002	54.7	ug/L	134	Standard
	Cd	111	36.9	12.4	**0.0159**	0.002	13.6	mg/L	7	Standard
	Cd	114	100.1	28.9	**0.0161**	0.006	36.4	ug/L	16	Standard
>	**In**	115	559969.6	1.0				ug/L	611117	Standard
	Sn	118	245.0	14.3	**-0.0567**	0.006	11.1	ug/L	518	Standard
	Sb	123	73.5	14.6	**0.0042**	0.003	63.0	ug/L	127	Standard
	Ba	135	26697.5	0.7	**14.0890**	0.209	1.5	ug/L	45	Standard
	Ce	140	126090.9	1.2				ug/L	298	Standard
>	**Tb**	159	888471.0	0.2				ug/L	977942	Standard
	Ho	165	2013.5	3.3				ug/L	12	Standard
	Tl	203	105.3	16.7	**0.0083**	0.002	26.4	ug/L	31	Standard
	Tl	205	98.3	26.1	**0.0118**	0.004	31.7	ug/L	20	Standard
	Pb	206	7239.7	1.0	**1.3394**	0.022	1.6	ug/L	286	Standard
	Pb	207	5907.2	0.7	**1.2110**	0.009	0.7	ug/L	257	Standard
	Pb	208	24779.9	1.0	**1.3155**	0.008	0.6	ug/L	956	Standard
	U	238	285.0	3.3	**0.0387**	0.001	3.3	ug/L	17	Standard
>	**Bi**	209	531928.0	0.6				ug/L	557080	Standard

Sample ID: L1606078715
Report Date/Time: Tuesday, June 28, 2016 15:45:49
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**11.1992**	19.389	173.1	mg/L	0	Standard
Mg	24	35.0	0.0	**-0.0068**	0.002	22.3	mg/L	32	Standard
K	39	70.0	24.7	**0.1145**	0.065	56.7	mg/L	30	Standard
Ca	43	41.7	48.5	**1.5107**	3.417	226.2	mg/L	48	Standard
Fe	54	1498.6	2.3	**1.3298**	0.075	5.6	mg/L	159	Standard
Fe	57	515.0	3.5	**1.2558**	0.109	8.7	mg/L	195	Standard
> **Sc-1**	45	36597.5	3.0				mg/L	39543	Standard
Cl	35	30785.2	1.5				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1506.7	9.5				ug/L	1647	Standard
P	31	6974.9	2.8				ug/L	15231	Standard
S	34	2301.8	4.8				ug/L	1845	Standard
Sr	88	70.0	28.6				ug/L	70	Standard
C	12	113.3	31.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3365.6	4.6				mg/L	12	Standard
Ho-1	165	2013.5	3.3				mg/L	12	Standard
Er	166	1770.1	9.2				mg/L	20	Standard
I	127	1690.1	9.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.434	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606078715
Report Date/Time: Tuesday, June 28, 2016 15:45:49
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.631
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.485
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078716
Sample Date/Time: Tuesday, June 28, 2016 15:46:44
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72657.2	3.0				ug/L	81760	Standard
	Be	9	110.0	13.6	**0.1151**	0.019	16.6	ug/L	17	Standard
	Al	27	964168.3	0.2	**7.0283**	0.202	2.9	ug/L	1410	Standard
	Sc	45	36550.7	1.7				ug/L	39543	Standard
	Ti	47	122.3	2.9	**0.3511**	0.018	5.2	ug/L	39	Standard
	V	51	5582.1	3.3	**0.6361**	0.029	4.5	ug/L	1415	Standard
	Cr	52	12113.5	1.9	**0.7686**	0.019	2.4	ug/L	6946	Standard
	Cr	53	1075.0	5.2	**0.9442**	0.085	9.0	ug/L	328	Standard
	Mn	55	296391.3	0.6	**47.8289**	1.096	2.3	ug/L	823	Standard
	Co	59	5108.9	2.5	**0.7319**	0.032	4.3	ug/L	252	Standard
	Ni	60	3102.7	1.4	**1.6241**	0.056	3.4	ug/L	192	Standard
	Cu	65	3067.6	0.7	**1.6034**	0.043	2.7	ug/L	141	Standard
	Zn	66	5597.7	1.7	**4.5323**	0.178	3.9	ug/L	491	Standard
>	**Ge**	72	490975.8	1.9				ug/L	515087	Standard
	As	75	34.9	42.7	**0.0731**	0.015	20.1	ug/L	20	Standard
	Se	82	17.1	13.6	**0.0368**	0.020	54.2	ug/L	15	Standard
	Se-1	77	53.7	6.0	**0.0281**	0.032	114.8	ug/L	48	Standard
>	**Ga**	71	1235.1	6.5				mg/L	90	Standard
	Rb	85	7633.6	0.9				ug/L	23	Standard
	Y	89	431776.8	2.6				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	19.3	30.7	**-0.0115**	0.002	20.4	ug/L	11	Standard
	Ag	107	114.7	7.5	**0.0018**	0.001	48.3	ug/L	134	Standard
	Cd	111	65.3	10.2	**0.0294**	0.003	8.8	mg/L	7	Standard
	Cd	114	154.6	13.1	**0.0266**	0.003	12.9	ug/L	16	Standard
>	**In**	115	577281.8	2.6				ug/L	611117	Standard
	Sn	118	261.7	10.5	**-0.0551**	0.004	6.8	ug/L	518	Standard
	Sb	123	70.5	12.0	**0.0029**	0.001	50.3	ug/L	127	Standard
	Ba	135	31515.4	1.1	**16.1422**	0.456	2.8	ug/L	45	Standard
	Ce	140	108483.7	1.5				ug/L	298	Standard
>	**Tb**	159	919053.3	0.1				ug/L	977942	Standard
	Ho	165	2146.8	3.5				ug/L	12	Standard
	Tl	203	55.7	15.3	**0.0020**	0.001	51.1	ug/L	31	Standard
	Tl	205	56.7	10.2	**0.0057**	0.001	13.8	ug/L	20	Standard
	Pb	206	8383.7	0.8	**1.5358**	0.026	1.7	ug/L	286	Standard
	Pb	207	6950.9	2.1	**1.4122**	0.046	3.3	ug/L	257	Standard
	Pb	208	28623.6	0.6	**1.5044**	0.028	1.9	ug/L	956	Standard
	U	238	278.7	6.7	**0.0371**	0.002	6.0	ug/L	17	Standard
>	**Bi**	209	540360.9	1.3				ug/L	557080	Standard

Sample ID: L1606078716
Report Date/Time: Tuesday, June 28, 2016 15:49:01
Page 1

Approved: June 29, 2016

Na	23	3.3	86.6	**23.0232**	19.940	86.6	mg/L	0	Standard
Mg	24	31.7	36.5	**-0.0117**	0.016	134.2	mg/L	32	Standard
K	39	40.0	57.3	**0.0042**	0.082	1950.6	mg/L	30	Standard
Ca	43	45.0	19.2	**2.0338**	1.285	63.2	mg/L	48	Standard
Fe	54	558.7	3.5	**0.4103**	0.028	6.8	mg/L	159	Standard
Fe	57	366.7	19.3	**0.7123**	0.240	33.7	mg/L	195	Standard
Sc-1	45	36550.7	1.7				mg/L	39543	Standard
Cl	35	30424.5	0.4				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1540.1	8.3				ug/L	1647	Standard
P	31	6878.2	1.3				ug/L	15231	Standard
S	34	2278.5	4.6				ug/L	1845	Standard
Sr	88	71.7	29.0				ug/L	70	Standard
C	12	150.0	33.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	3587.7	5.2				mg/L	12	Standard
Ho-1	165	2146.8	3.5				mg/L	12	Standard
Er	166	1936.8	10.5				mg/L	20	Standard
I	127	1943.5	8.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		88.866	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.319	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606078716
Report Date/Time: Tuesday, June 28, 2016 15:49:01
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.463
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.999
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078717
Sample Date/Time: Tuesday, June 28, 2016 15:49:55
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72923.4	1.2				ug/L	81760	Standard
	Be	9	50.0	43.6	**0.0466**	0.024	52.0	ug/L	17	Standard
	Al	27	245816.4	0.3	**1.7738**	0.027	1.5	ug/L	1410	Standard
	Sc	45	37411.1	1.3				ug/L	39543	Standard
	Ti	47	150.7	7.6	**0.4619**	0.045	9.8	ug/L	39	Standard
	V	51	5992.6	2.2	**0.6857**	0.015	2.1	ug/L	1415	Standard
	Cr	52	7687.3	1.9	**0.0860**	0.027	31.9	ug/L	6946	Standard
	Cr	53	518.3	10.1	**0.2697**	0.061	22.7	ug/L	328	Standard
	Mn	55	119301.5	0.3	**18.8992**	0.085	0.4	ug/L	823	Standard
	Co	59	2188.2	2.9	**0.2910**	0.008	2.8	ug/L	252	Standard
	Ni	60	1191.7	0.5	**0.5500**	0.007	1.2	ug/L	192	Standard
	Cu	65	843.0	2.1	**0.3684**	0.010	2.8	ug/L	141	Standard
	Zn	66	2526.9	1.6	**1.5588**	0.051	3.2	ug/L	491	Standard
>	**Ge**	72	497647.3	0.6				ug/L	515087	Standard
	As	75	96.2	13.8	**0.1289**	0.013	9.7	ug/L	20	Standard
	Se	82	10.6	36.2	**-0.0241**	0.035	144.8	ug/L	15	Standard
	Se-1	77	46.0	14.3	**-0.0871**	0.088	100.8	ug/L	48	Standard
>	**Ga**	71	388.3	9.7				mg/L	90	Standard
	Rb	85	3552.1	4.5				ug/L	23	Standard
	Y	89	408184.3	3.4				ug/L	448510	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	62.0	6.5	**0.0053**	0.001	22.5	ug/L	11	Standard
	Ag	107	95.7	11.7	**-0.0010**	0.002	195.1	ug/L	134	Standard
	Cd	111	10.9	9.2	**0.0025**	0.001	23.6	mg/L	7	Standard
	Cd	114	23.2	24.4	**-0.0002**	0.001	811.4	ug/L	16	Standard
>	**In**	115	574185.6	1.8				ug/L	611117	Standard
	Sn	118	255.0	18.7	**-0.0561**	0.008	14.6	ug/L	518	Standard
	Sb	123	68.2	5.6	**0.0025**	0.001	35.8	ug/L	127	Standard
	Ba	135	10138.1	0.2	**5.2024**	0.085	1.6	ug/L	45	Standard
	Ce	140	49457.3	0.9				ug/L	298	Standard
>	**Tb**	159	906877.5	2.2				ug/L	977942	Standard
	Ho	165	853.4	7.8				ug/L	12	Standard
	Tl	203	26.0	16.8	**-0.0016**	0.001	32.4	ug/L	31	Standard
	Tl	205	21.7	26.6	**0.0008**	0.001	106.7	ug/L	20	Standard
	Pb	206	2799.3	1.6	**0.4682**	0.011	2.3	ug/L	286	Standard
	Pb	207	2286.8	2.0	**0.4236**	0.011	2.7	ug/L	257	Standard
	Pb	208	9380.8	1.4	**0.4502**	0.009	2.0	ug/L	956	Standard
	U	238	106.7	2.9	**0.0123**	0.000	3.6	ug/L	17	Standard
>	**Bi**	209	542636.2	0.5				ug/L	557080	Standard

Sample ID: L1606078717
Report Date/Time: Tuesday, June 28, 2016 15:52:12
Page 1

Approved: June 29, 2016

Na	23	3.3	86.6	**22.4620**	19.449	86.6	mg/L	0	Standard
Mg	24	26.7	21.7	**-0.0196**	0.008	42.2	mg/L	32	Standard
K	39	36.7	7.9	**-0.0105**	0.010	94.8	mg/L	30	Standard
Ca	43	36.7	56.8	**0.5265**	3.309	628.5	mg/L	48	Standard
Fe	54	389.3	2.1	**0.2354**	0.013	5.4	mg/L	159	Standard
Fe	57	280.0	3.1	**0.3744**	0.024	6.3	mg/L	195	Standard
> **Sc-1**	45	37411.1	1.3				mg/L	39543	Standard
Cl	35	30529.4	0.4				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1530.1	5.4				ug/L	1647	Standard
P	31	7263.4	2.6				ug/L	15231	Standard
S	34	2140.2	5.9				ug/L	1845	Standard
Sr	88	53.3	23.6				ug/L	70	Standard
C	12	100.0	75.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	1448.1	5.9				mg/L	12	Standard
Ho-1	165	853.4	7.8				mg/L	12	Standard
Er	166	736.7	15.9				mg/L	20	Standard
I	127	6059.5	4.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.192	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.614	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606078717
Report Date/Time: Tuesday, June 28, 2016 15:52:12
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.957
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.407
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 15:53:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80037.6	2.2				ug/L	81760	Standard
	Be	9	50415.4	0.4	**51.8632**	1.062	2.0	ug/L	17	Standard
	Al	27	7611642.9	1.2	**50.4371**	0.677	1.3	ug/L	1410	Standard
	Sc	45	41097.3	0.2				ug/L	39543	Standard
	Ti	47	25369.9	1.7	**101.8781**	2.068	2.0	ug/L	39	Standard
	V	51	351293.9	2.1	**50.3394**	0.543	1.1	ug/L	1415	Standard
	Cr	52	361193.1	2.4	**50.8341**	0.636	1.3	ug/L	6946	Standard
	Cr	53	45189.0	2.1	**51.1421**	0.625	1.2	ug/L	328	Standard
	Mn	55	322540.4	1.4	**49.6098**	0.122	0.2	ug/L	823	Standard
	Co	59	356756.8	0.9	**50.7536**	0.285	0.6	ug/L	252	Standard
	Ni	60	97064.3	2.1	**51.4369**	0.357	0.7	ug/L	192	Standard
	Cu	65	97360.2	2.2	**51.1525**	0.591	1.2	ug/L	141	Standard
	Zn	66	56918.1	2.1	**51.1056**	0.446	0.9	ug/L	491	Standard
>	Ge	72	515026.5	1.4				ug/L	515087	Standard
	As	75	56903.6	1.1	**50.6598**	0.179	0.4	ug/L	20	Standard
	Se	82	5856.2	1.8	**50.7515**	0.222	0.4	ug/L	15	Standard
	Se-1	77	3927.8	0.7	**51.4293**	0.511	1.0	ug/L	48	Standard
>	Ga	71	66.7	30.3				mg/L	90	Standard
	Rb	85	760.0	4.6				ug/L	23	Standard
	Y	89	447852.9	1.0				ug/L	448510	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	271272.3	0.9	**98.6404**	1.710	1.7	ug/L	11	Standard
	Ag	107	339950.6	2.5	**49.7752**	1.742	3.5	ug/L	134	Standard
	Cd	111	107240.7	1.0	**49.3177**	0.985	2.0	mg/L	7	Standard
	Cd	114	262943.6	0.6	**49.7461**	0.816	1.6	ug/L	16	Standard
>	In	115	621725.8	1.1				ug/L	611117	Standard
	Sn	118	299388.1	2.0	**49.6643**	0.590	1.2	ug/L	518	Standard
	Sb	123	239448.5	1.8	**49.8807**	1.390	2.8	ug/L	127	Standard
	Ba	135	102748.9	0.7	**48.8974**	0.441	0.9	ug/L	45	Standard
	Ce	140	90.0	5.6				ug/L	298	Standard
>	Tb	159	985013.6	1.3				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	430595.1	1.2	**49.9408**	0.227	0.5	ug/L	31	Standard
	Tl	205	380549.9	0.8	**50.8302**	0.446	0.9	ug/L	20	Standard
	Pb	206	272066.9	1.5	**49.1343**	0.429	0.9	ug/L	286	Standard
	Pb	207	246215.9	1.8	**49.3013**	0.781	1.6	ug/L	257	Standard
	Pb	208	985827.4	0.9	**51.0241**	0.323	0.6	ug/L	956	Standard
	U	238	363383.0	0.6	**49.5660**	0.508	1.0	ug/L	17	Standard
>	Bi	209	570034.9	1.5				ug/L	557080	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 15:55:25
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.2894**	17.813	173.1	mg/L	0	Standard
Mg	24	3815.5	2.6	**4.8299**	0.134	2.8	mg/L	32	Standard
K	39	1281.7	1.9	**4.0254**	0.078	1.9	mg/L	30	Standard
Ca	43	63.3	19.9	**3.9099**	1.840	47.1	mg/L	48	Standard
Fe	54	5945.2	1.8	**5.0400**	0.102	2.0	mg/L	159	Standard
Fe	57	1733.4	4.2	**5.0061**	0.238	4.8	mg/L	195	Standard
Sc-1	45	41097.3	0.2				mg/L	39543	Standard
Cl	35	35020.4	1.1				ug/L	27642	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1666.8	6.4				ug/L	1647	Standard
P	31	18748.3	2.5				ug/L	15231	Standard
S	34	2583.6	5.3				ug/L	1845	Standard
Sr	88	53.3	28.6				ug/L	70	Standard
C	12	110.0	24.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	101.7				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1388.4	22.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.726		
Al	27	100.874		
Sc	45			
Ti	47	101.878		
V	51	100.679		
Cr	52	101.668		
Cr	53			
Mn	55	99.220		
Co	59	101.507		
Ni	60	102.874		
Cu	65	102.305		
Zn	66	102.211		
Ge	72		99.988	
As	75	101.320		
Se	82	101.503		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 15:55:25
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	98.640		
Ag	107	99.550		
Cd	111	98.635		
Cd	114			
> In	115			101.736
Sn	118	99.329		
Sb	123	99.761		
Ba	135	97.795		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.882		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.048		
U	238	99.132		
> Bi	209			102.325
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 15:55:25
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 15:56:20
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79843.2	1.6				ug/L	81760	Standard
	Be	9	23.3	75.3	**0.0144**	0.018	125.7	ug/L	17	Standard
	Al	27	2505.2	18.4	**0.0022**	0.003	136.7	ug/L	1410	Standard
	Sc	45	39966.0	1.7				ug/L	39543	Standard
	Ti	47	35.3	11.4	**-0.0209**	0.017	83.6	ug/L	39	Standard
	V	51	1133.0	9.8	**-0.0412**	0.016	39.7	ug/L	1415	Standard
	Cr	52	6206.9	2.0	**-0.1524**	0.017	11.1	ug/L	6946	Standard
	Cr	53	315.0	2.7	**0.0227**	0.013	56.9	ug/L	328	Standard
	Mn	55	686.0	7.5	**-0.0412**	0.007	17.6	ug/L	823	Standard
	Co	59	254.3	2.2	**0.0054**	0.001	12.6	ug/L	252	Standard
	Ni	60	171.3	1.2	**-0.0127**	0.001	8.3	ug/L	192	Standard
	Cu	65	123.3	12.6	**-0.0250**	0.008	31.0	ug/L	141	Standard
	Zn	66	449.3	3.1	**-0.4117**	0.013	3.2	ug/L	491	Standard
>	**Ge**	72	507665.8	0.8				ug/L	515087	Standard
	As	75	-25.2	101.2	**0.0174**	0.023	132.3	ug/L	20	Standard
	Se	82	17.2	13.7	**0.0322**	0.020	60.6	ug/L	15	Standard
	Se-1	77	51.3	10.7	**-0.0277**	0.072	260.3	ug/L	48	Standard
>	**Ga**	71	48.3	15.8				mg/L	90	Standard
	Rb	85	30.0	44.1				ug/L	23	Standard
	Y	89	444982.9	1.9				ug/L	448510	Standard
>	**Rh**	103	16.7	34.6				ug/L	15	Standard
	Mo	98	252.7	24.3	**0.0725**	0.022	30.7	ug/L	11	Standard
	Ag	107	129.7	3.6	**0.0027**	0.001	26.2	ug/L	134	Standard
	Cd	111	17.2	9.0	**0.0050**	0.001	14.0	mg/L	7	Standard
	Cd	114	47.7	10.5	**0.0041**	0.001	23.1	ug/L	16	Standard
>	**In**	115	623883.8	0.1				ug/L	611117	Standard
	Sn	118	770.0	14.1	**0.0256**	0.018	70.0	ug/L	518	Standard
	Sb	123	507.4	30.1	**0.0925**	0.032	34.2	ug/L	127	Standard
	Ba	135	38.7	5.4	**-0.0068**	0.001	14.6	ug/L	45	Standard
	Ce	140	40.0	21.7				ug/L	298	Standard
>	**Tb**	159	974680.3	0.5				ug/L	977942	Standard
	Ho	165	13.3	78.1				ug/L	12	Standard
	Tl	203	68.0	6.7	**0.0032**	0.001	15.5	ug/L	31	Standard
	Tl	205	66.7	11.5	**0.0068**	0.001	14.7	ug/L	20	Standard
	Pb	206	289.3	1.4	**-0.0104**	0.001	6.9	ug/L	286	Standard
	Pb	207	250.7	7.8	**-0.0070**	0.004	55.4	ug/L	257	Standard
	Pb	208	1099.7	2.8	**-0.0025**	0.002	60.9	ug/L	956	Standard
	U	238	62.3	42.5	**0.0057**	0.004	64.1	ug/L	17	Standard
>	**Bi**	209	560756.1	0.5				ug/L	557080	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 15:58:37
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	33.3	45.8	**-0.0130**	0.021	161.7	mg/L	32	Standard
K	39	33.3	17.3	**-0.0301**	0.018	60.0	mg/L	30	Standard
Ca	43	38.3	27.2	**0.4086**	1.513	370.3	mg/L	48	Standard
Fe	54	141.0	17.0	**-0.0107**	0.022	208.8	mg/L	159	Standard
Fe	57	213.3	13.7	**0.0887**	0.105	118.5	mg/L	195	Standard
> **Sc-1**	45	39966.0	1.7				mg/L	39543	Standard
Cl	35	34581.4	2.4				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1706.8	4.2				ug/L	1647	Standard
P	31	18139.2	2.9				ug/L	15231	Standard
S	34	2418.5	8.0				ug/L	1845	Standard
Sr	88	68.3	11.2				ug/L	70	Standard
C	12	130.0	53.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	101.7				mg/L	12	Standard
Ho-1	165	13.3	78.1				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	20	Standard
I	127	1121.7	18.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.559	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 15:58:37
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.089
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.660
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 15:58:37
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: PBW 45 WG573751-04
Sample Date/Time: Tuesday, June 28, 2016 15:59:33
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80427.9	0.7				ug/L	81760	Standard
	Be	9	20.0	43.3	**0.0107**	0.009	82.0	ug/L	17	Standard
	Al	27	16896.1	3.6	**0.0970**	0.004	4.0	ug/L	1410	Standard
	Sc	45	39630.1	2.3				ug/L	39543	Standard
	Ti	47	34.3	28.0	**-0.0290**	0.037	127.4	ug/L	39	Standard
	V	51	1241.7	7.6	**-0.0303**	0.012	39.4	ug/L	1415	Standard
	Cr	52	8808.2	2.5	**0.1923**	0.015	7.8	ug/L	6946	Standard
	Cr	53	705.0	11.9	**0.4526**	0.107	23.5	ug/L	328	Standard
	Mn	55	5471.7	0.3	**0.6851**	0.014	2.1	ug/L	823	Standard
	Co	59	272.7	7.3	**0.0070**	0.003	48.0	ug/L	252	Standard
	Ni	60	321.0	11.4	**0.0633**	0.019	30.2	ug/L	192	Standard
	Cu	65	232.7	11.6	**0.0301**	0.014	46.8	ug/L	141	Standard
	Zn	66	2018.1	1.4	**0.9905**	0.004	0.4	ug/L	491	Standard
>	**Ge**	72	521638.1	1.4				ug/L	515087	Standard
	As	75	-54.9	36.7	**-0.0079**	0.017	218.9	ug/L	20	Standard
	Se	82	10.0	20.3	**-0.0338**	0.018	54.1	ug/L	15	Standard
	Se-1	77	48.0	14.4	**-0.0888**	0.100	112.7	ug/L	48	Standard
>	**Ga**	71	53.3	28.6				mg/L	90	Standard
	Rb	85	156.7	21.7				ug/L	23	Standard
	Y	89	436462.5	0.8				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	82.2	21.1	**0.0108**	0.006	59.5	ug/L	11	Standard
	Ag	107	93.7	16.2	**-0.0025**	0.002	87.2	ug/L	134	Standard
	Cd	111	11.9	25.2	**0.0025**	0.001	54.5	mg/L	7	Standard
	Cd	114	46.6	47.9	**0.0039**	0.004	108.7	ug/L	16	Standard
>	**In**	115	622987.2	0.5				ug/L	611117	Standard
	Sn	118	873.4	7.7	**0.0429**	0.010	24.2	ug/L	518	Standard
	Sb	123	225.0	36.0	**0.0339**	0.017	49.6	ug/L	127	Standard
	Ba	135	668.7	0.9	**0.2926**	0.004	1.5	ug/L	45	Standard
	Ce	140	103.3	7.4				ug/L	298	Standard
>	**Tb**	159	980754.1	0.6				ug/L	977942	Standard
	Ho	165	13.3	78.1				ug/L	12	Standard
	Tl	203	31.7	30.7	**-0.0012**	0.001	94.5	ug/L	31	Standard
	Tl	205	30.0	86.6	**0.0017**	0.003	203.8	ug/L	20	Standard
	Pb	206	380.3	5.4	**0.0044**	0.003	72.4	ug/L	286	Standard
	Pb	207	331.3	8.5	**0.0076**	0.005	67.3	ug/L	257	Standard
	Pb	208	1302.7	2.5	**0.0063**	0.001	19.3	ug/L	956	Standard
	U	238	25.3	53.6	**0.0004**	0.002	408.2	ug/L	17	Standard
>	**Bi**	209	576453.2	0.7				ug/L	557080	Standard

Sample ID: PBW 45 WG573751-04
Report Date/Time: Tuesday, June 28, 2016 16:01:50
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	33.3	8.7	**-0.0129**	0.003	22.5	mg/L	32	Standard
K	39	48.3	15.8	**0.0218**	0.028	129.2	mg/L	30	Standard
Ca	43	18.3	78.7	**-2.5918**	2.118	81.7	mg/L	48	Standard
Fe	54	122.7	28.9	**-0.0266**	0.030	114.3	mg/L	159	Standard
Fe	57	223.3	24.1	**0.1269**	0.176	138.7	mg/L	195	Standard
Sc-1	45	39630.1	2.3				mg/L	39543	Standard
Cl	35	33807.0	1.7				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1633.4	2.0				ug/L	1647	Standard
P	31	17535.1	2.2				ug/L	15231	Standard
S	34	2338.5	7.5				ug/L	1845	Standard
Sr	88	75.0	30.6				ug/L	70	Standard
C	12	106.7	19.5				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	3.0				mg/L	12	Standard
Ho-1	165	13.3	78.1				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	955.0	19.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.272	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: PBW 45 WG573751-04
Report Date/Time: Tuesday, June 28, 2016 16:01:50
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.942
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.478
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: LCSW 45 WG573451-05
Sample Date/Time: Tuesday, June 28, 2016 16:02:44
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81285.8	1.4				ug/L	81760	Standard
	Be	9	49444.0	4.0	**50.0648**	1.744	3.5	ug/L	17	Standard
	Al	27	14440.2	1.6	**0.0798**	0.002	2.1	ug/L	1410	Standard
	Sc	45	40522.5	4.2				ug/L	39543	Standard
	Ti	47	35.7	14.1	**-0.0217**	0.021	96.5	ug/L	39	Standard
	V	51	343445.8	1.5	**49.2175**	1.714	3.5	ug/L	1415	Standard
	Cr	52	355835.3	1.6	**50.0593**	1.026	2.0	ug/L	6946	Standard
	Cr	53	43403.8	4.1	**49.0831**	1.336	2.7	ug/L	328	Standard
	Mn	55	327263.1	1.9	**50.3439**	1.847	3.7	ug/L	823	Standard
	Co	59	357909.9	1.9	**50.9146**	1.589	3.1	ug/L	252	Standard
	Ni	60	94484.4	2.0	**50.0595**	0.992	2.0	ug/L	192	Standard
	Cu	65	95887.5	1.7	**50.3702**	0.997	2.0	ug/L	141	Standard
	Zn	66	56697.9	0.9	**50.8990**	0.801	1.6	ug/L	491	Standard
>	**Ge**	72	515232.3	2.4				ug/L	515087	Standard
	As	75	56137.8	1.3	**49.9742**	1.270	2.5	ug/L	20	Standard
	Se	82	5754.2	0.4	**49.8676**	1.316	2.6	ug/L	15	Standard
	Se-1	77	3847.2	2.4	**50.3547**	1.829	3.6	ug/L	48	Standard
>	**Ga**	71	80.0	38.0				mg/L	90	Standard
	Rb	85	45.0	58.8				ug/L	23	Standard
	Y	89	449389.0	2.2				ug/L	448510	Standard
>	**Rh**	103	28.3	66.8				ug/L	15	Standard
	Mo	98	72.0	12.6	**0.0070**	0.003	48.7	ug/L	11	Standard
	Ag	107	332360.6	2.0	**48.5009**	1.256	2.6	ug/L	134	Standard
	Cd	111	105950.1	2.1	**48.5677**	1.420	2.9	mg/L	7	Standard
	Cd	114	259244.9	2.6	**48.8950**	1.818	3.7	ug/L	16	Standard
>	**In**	115	623755.7	1.2				ug/L	611117	Standard
	Sn	118	950.0	6.3	**0.0554**	0.008	14.9	ug/L	518	Standard
	Sb	123	235787.4	1.4	**48.9583**	1.261	2.6	ug/L	127	Standard
	Ba	135	101234.2	2.5	**48.0272**	1.604	3.3	ug/L	45	Standard
	Ce	140	53.3	5.4				ug/L	298	Standard
>	**Tb**	159	962831.7	2.3				ug/L	977942	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	424492.3	2.2	**49.7361**	1.545	3.1	ug/L	31	Standard
	Tl	205	378457.4	1.6	**51.0672**	1.520	3.0	ug/L	20	Standard
	Pb	206	276584.3	1.3	**50.4636**	1.380	2.7	ug/L	286	Standard
	Pb	207	241372.6	1.3	**48.8258**	1.366	2.8	ug/L	257	Standard
	Pb	208	990155.6	1.9	**51.7752**	1.712	3.3	ug/L	956	Standard
	U	238	358184.2	2.6	**49.3578**	1.903	3.9	ug/L	17	Standard
>	**Bi**	209	564381.2	1.4				ug/L	557080	Standard

Sample ID: LCSW 45 WG573451-05
Report Date/Time: Tuesday, June 28, 2016 16:05:01
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.8762**	18.829	173.1	mg/L	0	Standard
Mg	24	28.3	71.3	**-0.0199**	0.028	139.9	mg/L	32	Standard
K	39	45.0	40.1	**0.0061**	0.057	941.7	mg/L	30	Standard
Ca	43	25.0	60.0	**-1.6629**	2.211	133.0	mg/L	48	Standard
Fe	54	141.6	12.0	**-0.0123**	0.010	79.8	mg/L	159	Standard
Fe	57	180.0	5.6	**-0.0319**	0.009	26.7	mg/L	195	Standard
Sc-1	45	40522.5	4.2				mg/L	39543	Standard
Cl	35	33285.9	3.1				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	5364.3	7.6				ug/L	1647	Standard
P	31	17471.7	4.0				ug/L	15231	Standard
S	34	2361.9	6.4				ug/L	1845	Standard
Sr	88	63.3	24.1				ug/L	70	Standard
C	12	126.7	43.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	34.8				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	856.7	31.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.420	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.028	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 45 WG573451-05
Report Date/Time: Tuesday, June 28, 2016 16:05:01
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.068
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.311
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 45 WG573451-05
Report Date/Time: Tuesday, June 28, 2016 16:05:01
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115101 WG573751-02
Sample Date/Time: Tuesday, June 28, 2016 16:05:56
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77671.9	1.4				ug/L	81760	Standard
	Be	9	26.7	39.0	**0.0185**	0.011	58.4	ug/L	17	Standard
	Al	27	13955917.4	1.2	**95.3134**	2.493	2.6	ug/L	1410	Standard
	Sc	45	39321.0	0.9				ug/L	39543	Standard
	Ti	47	301.7	10.7	**1.0707**	0.148	13.8	ug/L	39	Standard
	V	51	16198.5	2.2	**2.1650**	0.025	1.2	ug/L	1415	Standard
	Cr	52	10911.9	4.6	**0.5376**	0.044	8.1	ug/L	6946	Standard
	Cr	53	3267.0	16.4	**3.4384**	0.551	16.0	ug/L	328	Standard
	Mn	55	181411.8	1.7	**28.3397**	0.987	3.5	ug/L	823	Standard
	Co	59	976.7	3.3	**0.1102**	0.006	5.4	ug/L	252	Standard
	Ni	60	1471.7	0.7	**0.6905**	0.022	3.2	ug/L	192	Standard
	Cu	65	1872.1	2.6	**0.9119**	0.023	2.5	ug/L	141	Standard
	Zn	66	6550.4	2.0	**5.2541**	0.063	1.2	ug/L	491	Standard
>	**Ge**	72	506178.8	2.0				ug/L	515087	Standard
	As	75	931.2	4.4	**0.8837**	0.051	5.8	ug/L	20	Standard
	Se	82	231.2	4.1	**1.9256**	0.108	5.6	ug/L	15	Standard
	Se-1	77	230.7	3.7	**2.3974**	0.119	5.0	ug/L	48	Standard
>	**Ga**	71	195.0	5.1				mg/L	90	Standard
	Rb	85	19537.6	1.2				ug/L	23	Standard
	Y	89	432314.6	1.1				ug/L	448510	Standard
>	**Rh**	103	61.7	12.4				ug/L	15	Standard
	Mo	98	3291.8	1.3	**1.2330**	0.013	1.0	ug/L	11	Standard
	Ag	107	150.7	8.2	**0.0069**	0.002	29.9	ug/L	134	Standard
	Cd	111	62.2	4.0	**0.0270**	0.001	5.4	mg/L	7	Standard
	Cd	114	153.0	45.9	**0.0254**	0.014	55.2	ug/L	16	Standard
>	**In**	115	594394.0	1.1				ug/L	611117	Standard
	Sn	118	883.4	9.5	**0.0516**	0.013	25.0	ug/L	518	Standard
	Sb	123	639.6	8.2	**0.1265**	0.011	8.6	ug/L	127	Standard
	Ba	135	68518.2	0.3	**34.1005**	0.460	1.3	ug/L	45	Standard
	Ce	140	2645.2	17.9				ug/L	298	Standard
>	**Tb**	159	950271.0	0.7				ug/L	977942	Standard
	Ho	165	53.3	10.8				ug/L	12	Standard
	Tl	203	411.7	14.6	**0.0459**	0.008	17.1	ug/L	31	Standard
	Tl	205	376.7	19.3	**0.0511**	0.011	20.8	ug/L	20	Standard
	Pb	206	1679.8	1.4	**0.2582**	0.003	1.3	ug/L	286	Standard
	Pb	207	1366.4	3.8	**0.2322**	0.009	3.7	ug/L	257	Standard
	Pb	208	5841.1	1.9	**0.2602**	0.004	1.4	ug/L	956	Standard
	U	238	9731.1	2.1	**1.4034**	0.022	1.5	ug/L	17	Standard
>	**Bi**	209	537950.1	0.8				ug/L	557080	Standard

Sample ID: L1606115101 WG573751-02
Report Date/Time: Tuesday, June 28, 2016 16:08:13
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	34736.4	1.4	**46.4420**	0.278	0.6	mg/L	32	Standard
K	39	261.7	6.7	**0.7474**	0.052	7.0	mg/L	30	Standard
Ca	43	178.3	24.5	**21.8549**	6.453	29.5	mg/L	48	Standard
Fe	54	262.3	8.0	**0.1018**	0.020	19.8	mg/L	159	Standard
Fe	57	341.7	2.2	**0.5353**	0.023	4.3	mg/L	195	Standard
Sc-1	45	39321.0	0.9				mg/L	39543	Standard
Cl	35	35275.1	3.8				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	35124.1	4.7				ug/L	1647	Standard
P	31	18164.2	1.2				ug/L	15231	Standard
S	34	2260.2	2.8				ug/L	1845	Standard
Sr	88	231.7	13.9				ug/L	70	Standard
C	12	256.7	41.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	63.6	33.9				mg/L	12	Standard
Ho-1	165	53.3	10.8				mg/L	12	Standard
Er	166	63.3	36.5				mg/L	20	Standard
I	127	311901.7	7.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.000	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.271	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606115101 WG573751-02
Report Date/Time: Tuesday, June 28, 2016 16:08:13
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.264
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.566
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115103S WG573751-07
Sample Date/Time: Tuesday, June 28, 2016 16:09:07
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82738.6	0.2				ug/L	81760	Standard
	Be	9	50932.1	1.3	**50.6700**	0.765	1.5	ug/L	17	Standard
	Al	27	14256616.7	2.2	**91.3792**	1.822	2.0	ug/L	1410	Standard
	Sc	45	41140.8	1.3				ug/L	39543	Standard
	Ti	47	371.0	4.6	**1.3119**	0.075	5.7	ug/L	39	Standard
	V	51	355266.5	2.0	**50.3881**	1.016	2.0	ug/L	1415	Standard
	Cr	52	348734.5	0.9	**48.5348**	0.604	1.2	ug/L	6946	Standard
	Cr	53	45906.1	1.2	**51.4332**	1.330	2.6	ug/L	328	Standard
	Mn	55	484874.0	0.4	**73.8916**	1.228	1.7	ug/L	823	Standard
	Co	59	330526.6	1.2	**46.5427**	1.213	2.6	ug/L	252	Standard
	Ni	60	91208.4	1.4	**47.8307**	0.262	0.5	ug/L	192	Standard
	Cu	65	93139.1	0.3	**48.4331**	0.711	1.5	ug/L	141	Standard
	Zn	66	61775.3	0.7	**54.9696**	1.209	2.2	ug/L	491	Standard
>	**Ge**	72	520412.6	1.6				ug/L	515087	Standard
	As	75	57188.6	0.5	**50.3925**	0.724	1.4	ug/L	20	Standard
	Se	82	5643.2	0.1	**48.4036**	0.791	1.6	ug/L	15	Standard
	Se-1	77	3992.2	4.4	**51.7398**	2.452	4.7	ug/L	48	Standard
>	**Ga**	71	230.0	28.3				mg/L	90	Standard
	Rb	85	19777.9	1.1				ug/L	23	Standard
	Y	89	433897.5	1.4				ug/L	448510	Standard
>	**Rh**	103	81.7	39.4				ug/L	15	Standard
	Mo	98	3301.1	2.4	**1.2202**	0.040	3.3	ug/L	11	Standard
	Ag	107	315385.8	0.9	**47.6558**	0.862	1.8	ug/L	134	Standard
	Cd	111	99498.3	0.6	**47.2265**	0.833	1.8	mg/L	7	Standard
	Cd	114	242671.7	0.4	**47.3834**	0.530	1.1	ug/L	16	Standard
>	**In**	115	602380.0	1.2				ug/L	611117	Standard
	Sn	118	866.7	11.7	**0.0467**	0.016	33.5	ug/L	518	Standard
	Sb	123	233832.7	0.4	**50.2714**	0.769	1.5	ug/L	127	Standard
	Ba	135	168472.5	0.5	**82.7716**	1.205	1.5	ug/L	45	Standard
	Ce	140	3190.3	1.8				ug/L	298	Standard
>	**Tb**	159	975538.4	0.7				ug/L	977942	Standard
	Ho	165	55.0	50.6				ug/L	12	Standard
	Tl	203	405391.8	0.6	**48.6809**	0.381	0.8	ug/L	31	Standard
	Tl	205	349844.8	1.2	**48.3796**	0.623	1.3	ug/L	20	Standard
	Pb	206	268733.3	0.7	**50.2550**	0.909	1.8	ug/L	286	Standard
	Pb	207	232854.8	1.2	**48.2799**	1.141	2.4	ug/L	257	Standard
	Pb	208	923192.2	0.6	**49.4693**	0.366	0.7	ug/L	956	Standard
	U	238	355626.8	0.4	**50.2227**	0.621	1.2	ug/L	17	Standard
>	**Bi**	209	550570.6	1.2				ug/L	557080	Standard

Sample ID: L1606115103S WG573751-07
Report Date/Time: Tuesday, June 28, 2016 16:11:24
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35867.4	1.9	**45.8327**	0.548	1.2	mg/L	32	Standard
K	39	318.3	2.4	**0.8927**	0.038	4.2	mg/L	30	Standard
Ca	43	141.7	5.4	**15.3452**	1.333	8.7	mg/L	48	Standard
Fe	54	233.9	13.6	**0.0666**	0.029	43.8	mg/L	159	Standard
Fe	57	373.3	5.1	**0.5873**	0.073	12.3	mg/L	195	Standard
> **Sc-1**	45	41140.8	1.3				mg/L	39543	Standard
Cl	35	36665.0	1.2				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	38074.5	2.7				ug/L	1647	Standard
P	31	19512.6	0.4				ug/L	15231	Standard
S	34	2426.9	4.9				ug/L	1845	Standard
Sr	88	241.7	11.4				ug/L	70	Standard
C	12	183.3	31.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	66.3	40.2				mg/L	12	Standard
Ho-1	165	55.0	50.6				mg/L	12	Standard
Er	166	76.7	15.1				mg/L	20	Standard
I	127	311628.4	3.8				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.197	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.034	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606115103S WG573751-07
Report Date/Time: Tuesday, June 28, 2016 16:11:24
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.570
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.831
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115304SD WG573751-08
Sample Date/Time: Tuesday, June 28, 2016 16:12:19
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82914.6	1.7				ug/L	81760	Standard
	Be	9	51258.3	2.2	**50.8925**	1.250	2.5	ug/L	17	Standard
	Al	27	15399778.5	0.9	**98.5192**	1.923	2.0	ug/L	1410	Standard
	Sc	45	40084.7	2.9				ug/L	39543	Standard
	Ti	47	640.0	9.7	**2.4715**	0.230	9.3	ug/L	39	Standard
	V	51	358753.7	1.2	**52.7008**	0.680	1.3	ug/L	1415	Standard
	Cr	52	354784.4	1.1	**51.1849**	0.073	0.1	ug/L	6946	Standard
	Cr	53	47661.6	3.5	**55.3029**	1.433	2.6	ug/L	328	Standard
	Mn	55	529314.6	1.5	**83.5469**	1.579	1.9	ug/L	823	Standard
	Co	59	345503.9	1.1	**50.3773**	0.891	1.8	ug/L	252	Standard
	Ni	60	92308.7	1.0	**50.1355**	0.426	0.9	ug/L	192	Standard
	Cu	65	93613.0	1.4	**50.4100**	0.723	1.4	ug/L	141	Standard
	Zn	66	64567.0	0.6	**59.5553**	0.411	0.7	ug/L	491	Standard
>	**Ge**	72	502524.4	1.0				ug/L	515087	Standard
	As	75	56933.1	0.7	**51.9453**	0.162	0.3	ug/L	20	Standard
	Se	82	5947.1	1.7	**52.8275**	0.666	1.3	ug/L	15	Standard
	Se-1	77	3965.5	2.7	**53.2435**	1.801	3.4	ug/L	48	Standard
>	**Ga**	71	291.7	11.2				mg/L	90	Standard
	Rb	85	22576.8	1.0				ug/L	23	Standard
	Y	89	439067.8	2.2				ug/L	448510	Standard
>	**Rh**	103	73.3	7.9				ug/L	15	Standard
	Mo	98	3536.7	2.2	**1.2876**	0.021	1.6	ug/L	11	Standard
	Ag	107	318639.0	0.2	**47.3947**	0.683	1.4	ug/L	134	Standard
	Cd	111	102545.7	0.7	**47.9082**	0.269	0.6	mg/L	7	Standard
	Cd	114	249882.8	0.5	**48.0284**	0.370	0.8	ug/L	16	Standard
>	**In**	115	611940.4	1.2				ug/L	611117	Standard
	Sn	118	1045.0	4.1	**0.0745**	0.005	6.8	ug/L	518	Standard
	Sb	123	235512.7	0.7	**49.8406**	0.693	1.4	ug/L	127	Standard
	Ba	135	174610.3	1.9	**84.4342**	0.545	0.6	ug/L	45	Standard
	Ce	140	5954.5	2.4				ug/L	298	Standard
>	**Tb**	159	973344.6	0.2				ug/L	977942	Standard
	Ho	165	121.7	6.3				ug/L	12	Standard
	Tl	203	413217.7	0.6	**49.7797**	0.456	0.9	ug/L	31	Standard
	Tl	205	363310.0	1.7	**50.4036**	0.986	2.0	ug/L	20	Standard
	Pb	206	270026.6	0.5	**50.6539**	0.212	0.4	ug/L	286	Standard
	Pb	207	235774.0	0.4	**49.0358**	0.293	0.6	ug/L	257	Standard
	Pb	208	947837.4	0.9	**50.9548**	0.634	1.2	ug/L	956	Standard
	U	238	363550.4	1.8	**51.5051**	1.028	2.0	ug/L	17	Standard
>	**Bi**	209	548791.6	0.3				ug/L	557080	Standard

Sample ID: L1606115304SD WG573751-08
Report Date/Time: Tuesday, June 28, 2016 16:14:36
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.4900**	18.160	173.1	mg/L	0	Standard
Mg	24	38714.4	0.7	**50.8180**	1.880	3.7	mg/L	32	Standard
K	39	343.3	15.2	**1.0066**	0.203	20.2	mg/L	30	Standard
Ca	43	156.7	1.8	**18.1495**	1.124	6.2	mg/L	48	Standard
Fe	54	374.0	6.7	**0.1967**	0.015	7.7	mg/L	159	Standard
Fe	57	400.0	0.0	**0.7083**	0.040	5.6	mg/L	195	Standard
Sc-1	45	40084.7	2.9				mg/L	39543	Standard
Cl	35	38416.6	0.8				ug/L	27642	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	40474.1	6.0				ug/L	1647	Standard
P	31	20383.7	1.9				ug/L	15231	Standard
S	34	2388.5	6.8				ug/L	1845	Standard
Sr	88	235.0	8.5				ug/L	70	Standard
C	12	253.3	25.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	175.2	19.1				mg/L	12	Standard
Ho-1	165	121.7	6.3				mg/L	12	Standard
Er	166	100.0	26.5				mg/L	20	Standard
I	127	354555.7	8.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.412	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.561	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606115304SD WG573751-08
Report Date/Time: Tuesday, June 28, 2016 16:14:36
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.135
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.512
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091602 WG573751-01
Sample Date/Time: Tuesday, June 28, 2016 16:15:30
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83752.6	2.6				ug/L	81760	Standard
	Be	9	50.0	26.5	**0.0395**	0.014	34.7	ug/L	17	Standard
	Al	27	2701508.7	2.5	**17.0954**	0.130	0.8	ug/L	1410	Standard
	Sc	45	39755.5	3.1				ug/L	39543	Standard
	Ti	47	56.0	11.2	**0.0633**	0.027	42.8	ug/L	39	Standard
	V	51	1924.8	3.9	**0.0741**	0.009	12.6	ug/L	1415	Standard
	Cr	52	10285.8	1.8	**0.4408**	0.012	2.7	ug/L	6946	Standard
	Cr	53	1156.7	1.7	**0.9947**	0.041	4.2	ug/L	328	Standard
	Mn	55	253930.8	1.4	**39.5649**	0.851	2.1	ug/L	823	Standard
	Co	59	1951.8	2.9	**0.2502**	0.004	1.8	ug/L	252	Standard
	Ni	60	1859.1	3.7	**0.8956**	0.027	3.0	ug/L	192	Standard
	Cu	65	1000.0	2.6	**0.4428**	0.017	3.9	ug/L	141	Standard
	Zn	66	2280.8	1.9	**1.2819**	0.026	2.1	ug/L	491	Standard
>	**Ge**	72	508105.2	1.4				ug/L	515087	Standard
	As	75	151.5	17.1	**0.1768**	0.022	12.7	ug/L	20	Standard
	Se	82	39.2	12.0	**0.2256**	0.041	18.4	ug/L	15	Standard
	Se-1	77	70.3	2.2	**0.2277**	0.025	11.1	ug/L	48	Standard
>	**Ga**	71	73.3	3.9				mg/L	90	Standard
	Rb	85	9319.5	3.0				ug/L	23	Standard
	Y	89	446629.7	1.4				ug/L	448510	Standard
>	**Rh**	103	35.0	37.8				ug/L	15	Standard
	Mo	98	255.3	4.6	**0.0742**	0.003	4.3	ug/L	11	Standard
	Ag	107	140.0	17.3	**0.0044**	0.004	86.0	ug/L	134	Standard
	Cd	111	34.5	15.3	**0.0130**	0.002	17.2	mg/L	7	Standard
	Cd	114	78.1	40.8	**0.0099**	0.006	59.3	ug/L	16	Standard
>	**In**	115	618896.7	1.2				ug/L	611117	Standard
	Sn	118	878.4	9.4	**0.0447**	0.013	28.2	ug/L	518	Standard
	Sb	123	309.3	20.5	**0.0520**	0.014	26.9	ug/L	127	Standard
	Ba	135	35857.7	1.5	**17.1253**	0.158	0.9	ug/L	45	Standard
	Ce	140	1368.4	3.3				ug/L	298	Standard
>	**Tb**	159	968292.7	1.7				ug/L	977942	Standard
	Ho	165	100.0	15.0				ug/L	12	Standard
	Tl	203	175.7	13.5	**0.0159**	0.003	15.9	ug/L	31	Standard
	Tl	205	158.3	30.0	**0.0192**	0.006	31.5	ug/L	20	Standard
	Pb	206	469.3	2.7	**0.0227**	0.001	2.5	ug/L	286	Standard
	Pb	207	387.3	8.4	**0.0210**	0.006	30.5	ug/L	257	Standard
	Pb	208	1635.4	0.6	**0.0258**	0.001	5.1	ug/L	956	Standard
	U	238	220.3	6.6	**0.0276**	0.001	5.0	ug/L	17	Standard
>	**Bi**	209	560335.5	2.1				ug/L	557080	Standard

Sample ID: L1606091602 WG573751-01
Report Date/Time: Tuesday, June 28, 2016 16:17:47
Page 1

Approved: June 29, 2016

Na	23	3.3	173.2	**20.5537**	35.591	173.2	mg/L	0	Standard
Mg	24	3380.4	0.3	**4.4213**	0.131	3.0	mg/L	32	Standard
K	39	168.3	9.1	**0.4237**	0.034	8.1	mg/L	30	Standard
Ca	43	108.3	14.8	**11.0098**	2.304	20.9	mg/L	48	Standard
Fe	54	282.4	10.4	**0.1178**	0.034	28.5	mg/L	159	Standard
Fe	57	291.7	21.2	**0.3561**	0.217	61.0	mg/L	195	Standard
> **Sc-1**	45	39755.5	3.1				mg/L	39543	Standard
Cl	35	40081.0	2.5				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	4644.1	13.8				ug/L	1647	Standard
P	31	18102.5	2.7				ug/L	15231	Standard
S	34	2331.8	2.8				ug/L	1845	Standard
Sr	88	118.3	8.8				ug/L	70	Standard
C	12	123.3	9.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	117.9	56.1				mg/L	12	Standard
Ho-1	165	100.0	15.0				mg/L	12	Standard
Er	166	43.3	48.0				mg/L	20	Standard
I	127	21574.4	25.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.437	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.645	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606091602 WG573751-01
Report Date/Time: Tuesday, June 28, 2016 16:17:47
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.584
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091602DP WG573751-06
Sample Date/Time: Tuesday, June 28, 2016 16:18:41
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81912.6	2.5				ug/L	81760	Standard
	Be	9	38.3	32.8	**0.0286**	0.012	41.1	ug/L	17	Standard
	Al	27	2661315.3	2.5	**17.2245**	0.558	3.2	ug/L	1410	Standard
	Sc	45	39553.2	2.2				ug/L	39543	Standard
	Ti	47	60.3	10.8	**0.0810**	0.030	36.5	ug/L	39	Standard
	V	51	1771.3	1.7	**0.0516**	0.003	5.3	ug/L	1415	Standard
	Cr	52	10216.4	1.4	**0.4303**	0.018	4.2	ug/L	6946	Standard
	Cr	53	1328.4	4.4	**1.1923**	0.072	6.1	ug/L	328	Standard
	Mn	55	248102.9	0.7	**38.6399**	0.746	1.9	ug/L	823	Standard
	Co	59	1844.8	1.4	**0.2347**	0.001	0.3	ug/L	252	Standard
	Ni	60	1828.1	4.4	**0.8792**	0.056	6.4	ug/L	192	Standard
	Cu	65	995.0	2.4	**0.4399**	0.012	2.7	ug/L	141	Standard
	Zn	66	2165.5	0.6	**1.1746**	0.022	1.8	ug/L	491	Standard
>	**Ge**	72	508291.1	1.3				ug/L	515087	Standard
	As	75	90.4	12.4	**0.1217**	0.009	7.5	ug/L	20	Standard
	Se	82	34.1	11.8	**0.1803**	0.032	17.6	ug/L	15	Standard
	Se-1	77	74.3	14.5	**0.2819**	0.154	54.5	ug/L	48	Standard
>	**Ga**	71	68.3	30.5				mg/L	90	Standard
	Rb	85	9142.8	6.3				ug/L	23	Standard
	Y	89	450226.3	2.8				ug/L	448510	Standard
>	**Rh**	103	21.7	58.1				ug/L	15	Standard
	Mo	98	245.2	4.8	**0.0704**	0.005	7.4	ug/L	11	Standard
	Ag	107	87.7	6.3	**-0.0033**	0.001	21.6	ug/L	134	Standard
	Cd	111	23.2	17.5	**0.0078**	0.002	23.8	mg/L	7	Standard
	Cd	114	58.3	13.8	**0.0061**	0.001	23.6	ug/L	16	Standard
>	**In**	115	619551.5	1.3				ug/L	611117	Standard
	Sn	118	933.4	2.4	**0.0538**	0.006	10.7	ug/L	518	Standard
	Sb	123	201.2	19.7	**0.0293**	0.009	30.0	ug/L	127	Standard
	Ba	135	34661.9	0.9	**16.5369**	0.177	1.1	ug/L	45	Standard
	Ce	140	1260.1	4.6				ug/L	298	Standard
>	**Tb**	159	963340.8	1.2				ug/L	977942	Standard
	Ho	165	88.3	18.2				ug/L	12	Standard
	Tl	203	85.3	6.5	**0.0054**	0.001	13.0	ug/L	31	Standard
	Tl	205	83.3	17.3	**0.0091**	0.002	21.1	ug/L	20	Standard
	Pb	206	415.0	2.1	**0.0134**	0.001	8.9	ug/L	286	Standard
	Pb	207	359.0	2.4	**0.0158**	0.001	8.8	ug/L	257	Standard
	Pb	208	1485.0	2.9	**0.0185**	0.003	14.1	ug/L	956	Standard
	U	238	164.0	3.4	**0.0200**	0.001	3.7	ug/L	17	Standard
>	**Bi**	209	555403.6	0.6				ug/L	557080	Standard

Sample ID: L1606091602DP WG573751-06
Report Date/Time: Tuesday, June 28, 2016 16:20:58
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3443.7	5.9	**4.5314**	0.377	8.3	mg/L	32	Standard
K	39	158.3	7.9	**0.3934**	0.041	10.4	mg/L	30	Standard
Ca	43	93.3	12.4	**8.8061**	1.479	16.8	mg/L	48	Standard
Fe	54	304.0	6.5	**0.1380**	0.017	12.0	mg/L	159	Standard
Fe	57	313.3	6.4	**0.4340**	0.087	20.1	mg/L	195	Standard
> **Sc-1**	45	39553.2	2.2				mg/L	39543	Standard
Cl	35	40893.8	1.8				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3857.2	4.5				ug/L	1647	Standard
P	31	18868.4	1.0				ug/L	15231	Standard
S	34	2383.5	7.0				ug/L	1845	Standard
Sr	88	95.0	13.9				ug/L	70	Standard
C	12	200.0	17.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	96.2	30.5				mg/L	12	Standard
Ho-1	165	88.3	18.2				mg/L	12	Standard
Er	166	80.0	37.5				mg/L	20	Standard
I	127	15653.1	0.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.187	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.681	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606091602DP WG573751-06
Report Date/Time: Tuesday, June 28, 2016 16:20:58
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.380	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.699	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091601
Sample Date/Time: Tuesday, June 28, 2016 16:21:53
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81664.5	1.8				ug/L	81760	Standard
	Be	9	26.7	28.6	**0.0172**	0.008	47.1	ug/L	17	Standard
	Al	27	4275643.4	2.5	**27.7561**	0.463	1.7	ug/L	1410	Standard
	Sc	45	38087.8	3.0				ug/L	39543	Standard
	Ti	47	54.7	26.0	**0.0548**	0.059	108.3	ug/L	39	Standard
	V	51	1697.6	8.1	**0.0374**	0.021	56.8	ug/L	1415	Standard
	Cr	52	10296.2	0.8	**0.4201**	0.020	4.7	ug/L	6946	Standard
	Cr	53	1460.1	7.5	**1.3201**	0.135	10.2	ug/L	328	Standard
	Mn	55	64493.4	3.0	**9.7887**	0.389	4.0	ug/L	823	Standard
	Co	59	427.0	5.1	**0.0294**	0.004	12.3	ug/L	252	Standard
	Ni	60	847.0	2.5	**0.3443**	0.016	4.7	ug/L	192	Standard
	Cu	65	826.7	6.2	**0.3435**	0.022	6.5	ug/L	141	Standard
	Zn	66	9487.6	0.7	**7.8171**	0.052	0.7	ug/L	491	Standard
>	**Ge**	72	515789.8	1.2				ug/L	515087	Standard
	As	75	95.2	47.1	**0.1249**	0.040	32.1	ug/L	20	Standard
	Se	82	32.5	28.2	**0.1620**	0.079	48.7	ug/L	15	Standard
	Se-1	77	78.3	8.3	**0.3202**	0.098	30.6	ug/L	48	Standard
>	**Ga**	71	58.3	50.2				mg/L	90	Standard
	Rb	85	8367.3	1.9				ug/L	23	Standard
	Y	89	424791.4	2.4				ug/L	448510	Standard
>	**Rh**	103	81.7	19.7				ug/L	15	Standard
	Mo	98	367.2	2.9	**0.1192**	0.004	3.5	ug/L	11	Standard
	Ag	107	119.3	48.0	**0.0019**	0.009	460.3	ug/L	134	Standard
	Cd	111	50.7	68.6	**0.0212**	0.017	78.0	mg/L	7	Standard
	Cd	114	102.4	71.8	**0.0151**	0.014	95.2	ug/L	16	Standard
>	**In**	115	600349.6	1.0				ug/L	611117	Standard
	Sn	118	1276.7	2.5	**0.1178**	0.004	3.0	ug/L	518	Standard
	Sb	123	200.9	15.6	**0.0306**	0.007	23.5	ug/L	127	Standard
	Ba	135	168683.5	0.8	**83.1505**	0.843	1.0	ug/L	45	Standard
	Ce	140	160.0	17.4				ug/L	298	Standard
>	**Tb**	159	943339.1	0.8				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	103.7	83.0	**0.0076**	0.010	135.3	ug/L	31	Standard
	Tl	205	65.0	38.5	**0.0066**	0.003	51.6	ug/L	20	Standard
	Pb	206	449.7	4.5	**0.0200**	0.004	18.4	ug/L	286	Standard
	Pb	207	373.7	5.2	**0.0190**	0.004	20.9	ug/L	257	Standard
	Pb	208	1469.0	1.7	**0.0178**	0.001	8.0	ug/L	956	Standard
	U	238	195.0	9.9	**0.0244**	0.003	11.1	ug/L	17	Standard
>	**Bi**	209	554105.5	0.2				ug/L	557080	Standard

Sample ID: L1606091601
Report Date/Time: Tuesday, June 28, 2016 16:24:10
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**11.2769**	19.523	173.1	mg/L	0	Standard
Mg	24	4872.5	3.1	**6.6831**	0.365	5.5	mg/L	32	Standard
K	39	180.0	11.1	**0.4891**	0.054	11.0	mg/L	30	Standard
Ca	43	71.7	49.5	**5.8566**	5.217	89.1	mg/L	48	Standard
Fe	54	187.0	32.7	**0.0391**	0.060	153.5	mg/L	159	Standard
Fe	57	275.0	13.7	**0.3422**	0.158	46.1	mg/L	195	Standard
> **Sc-1**	45	38087.8	3.0				mg/L	39543	Standard
Cl	35	39985.4	2.3				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	5007.5	9.4				ug/L	1647	Standard
P	31	18170.9	2.8				ug/L	15231	Standard
S	34	2413.5	5.6				ug/L	1845	Standard
Sr	88	318.3	14.3				ug/L	70	Standard
C	12	223.3	5.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	59.7	16.8				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	27700.4	6.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.883	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.136	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606091601
Report Date/Time: Tuesday, June 28, 2016 16:24:10
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.238
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091601PS WG574522-01
Sample Date/Time: Tuesday, June 28, 2016 16:25:04
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84128.0	1.7				ug/L	81760	Standard
	Be	9	52619.6	0.9	**51.4982**	1.298	2.5	ug/L	17	Standard
	Al	27	4326633.2	0.4	**27.2707**	0.550	2.0	ug/L	1410	Standard
	Sc	45	39650.1	0.7				ug/L	39543	Standard
	Ti	47	62.3	14.0	**0.0872**	0.038	43.9	ug/L	39	Standard
	V	51	353435.0	1.4	**50.9243**	0.391	0.8	ug/L	1415	Standard
	Cr	52	362779.9	0.9	**51.3507**	0.534	1.0	ug/L	6946	Standard
	Cr	53	45635.3	3.2	**51.9244**	0.938	1.8	ug/L	328	Standard
	Mn	55	384138.6	0.3	**59.4407**	0.957	1.6	ug/L	823	Standard
	Co	59	352427.3	0.4	**50.4121**	0.778	1.5	ug/L	252	Standard
	Ni	60	95802.0	1.3	**51.0471**	0.630	1.2	ug/L	192	Standard
	Cu	65	98413.6	0.9	**51.9931**	0.640	1.2	ug/L	141	Standard
	Zn	66	63162.1	1.4	**57.1168**	0.348	0.6	ug/L	491	Standard
>	**Ge**	72	512293.3	1.9				ug/L	515087	Standard
	As	75	56566.0	1.5	**50.6330**	0.812	1.6	ug/L	20	Standard
	Se	82	5805.6	1.0	**50.5901**	0.677	1.3	ug/L	15	Standard
	Se-1	77	3921.2	1.4	**51.6223**	0.909	1.8	ug/L	48	Standard
>	**Ga**	71	60.0	50.7				mg/L	90	Standard
	Rb	85	8215.6	0.6				ug/L	23	Standard
	Y	89	438501.2	1.8				ug/L	448510	Standard
>	**Rh**	103	71.7	28.2				ug/L	15	Standard
	Mo	98	368.8	5.9	**0.1169**	0.008	6.7	ug/L	11	Standard
	Ag	107	334626.2	0.5	**49.6506**	0.360	0.7	ug/L	134	Standard
	Cd	111	105047.6	0.7	**48.9601**	0.529	1.1	mg/L	7	Standard
	Cd	114	254060.7	2.8	**48.7162**	1.522	3.1	ug/L	16	Standard
>	**In**	115	613389.4	0.3				ug/L	611117	Standard
	Sn	118	1936.8	37.5	**0.2241**	0.121	54.0	ug/L	518	Standard
	Sb	123	237358.9	1.9	**50.1080**	0.980	2.0	ug/L	127	Standard
	Ba	135	267735.0	1.3	**129.1838**	2.081	1.6	ug/L	45	Standard
	Ce	140	231.7	21.3				ug/L	298	Standard
>	**Tb**	159	964479.2	1.1				ug/L	977942	Standard
	Ho	165	18.3	56.8				ug/L	12	Standard
	Tl	203	432424.0	0.5	**50.0145**	0.262	0.5	ug/L	31	Standard
	Tl	205	382714.9	0.3	**50.9759**	0.183	0.4	ug/L	20	Standard
	Pb	206	282966.8	1.1	**50.9646**	0.635	1.2	ug/L	286	Standard
	Pb	207	246387.7	1.3	**49.1992**	0.690	1.4	ug/L	257	Standard
	Pb	208	985942.4	0.8	**50.8876**	0.399	0.8	ug/L	956	Standard
	U	238	365334.3	1.0	**49.6910**	0.475	1.0	ug/L	17	Standard
>	**Bi**	209	571593.5	0.1				ug/L	557080	Standard

Sample ID: L1606091601PS WG574522-01
Report Date/Time: Tuesday, June 28, 2016 16:27:21
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4890.8	3.1	**6.4355**	0.187	2.9	mg/L	32	Standard
K	39	161.7	23.2	**0.4031**	0.125	30.9	mg/L	30	Standard
Ca	43	113.3	24.3	**11.8087**	4.086	34.6	mg/L	48	Standard
Fe	54	177.2	7.7	**0.0228**	0.011	49.5	mg/L	159	Standard
Fe	57	255.0	15.6	**0.2338**	0.132	56.3	mg/L	195	Standard
> **Sc-1**	45	39650.1	0.7				mg/L	39543	Standard
Cl	35	40732.7	2.1				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	4914.1	11.2				ug/L	1647	Standard
P	31	18529.7	1.8				ug/L	15231	Standard
S	34	2476.9	6.8				ug/L	1845	Standard
Sr	88	310.0	4.8				ug/L	70	Standard
C	12	160.0	18.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	12.7	117.1				mg/L	12	Standard
Ho-1	165	18.3	56.8				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	27421.5	4.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.896	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.458	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606091601PS WG574522-01
Report Date/Time: Tuesday, June 28, 2016 16:27:21
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.372
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.605
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091601SDL WG574522-02
Sample Date/Time: Tuesday, June 28, 2016 16:28:16
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82723.6	2.3				ug/L	81760	Standard
	Be	9	23.3	12.4	**0.0135**	0.003	18.7	ug/L	17	Standard
	Al	27	900313.9	2.1	**5.7596**	0.136	2.4	ug/L	1410	Standard
	Sc	45	39763.8	0.8				ug/L	39543	Standard
	Ti	47	29.7	9.7	**-0.0430**	0.012	28.1	ug/L	39	Standard
	V	51	1735.9	7.6	**0.0491**	0.020	40.6	ug/L	1415	Standard
	Cr	52	8352.3	2.2	**0.1715**	0.035	20.7	ug/L	6946	Standard
	Cr	53	645.0	2.8	**0.4109**	0.024	5.9	ug/L	328	Standard
	Mn	55	14377.5	0.8	**2.1221**	0.018	0.8	ug/L	823	Standard
	Co	59	301.0	11.3	**0.0125**	0.005	41.5	ug/L	252	Standard
	Ni	60	410.7	1.2	**0.1183**	0.004	3.1	ug/L	192	Standard
	Cu	65	611.3	5.6	**0.2385**	0.017	7.2	ug/L	141	Standard
	Zn	66	7975.8	0.8	**6.6226**	0.085	1.3	ug/L	491	Standard
>	**Ge**	72	503109.1	0.7				ug/L	515087	Standard
	As	75	19.7	109.3	**0.0582**	0.020	33.7	ug/L	20	Standard
	Se	82	17.8	58.3	**0.0388**	0.092	237.9	ug/L	15	Standard
	Se-1	77	57.7	14.7	**0.0653**	0.120	183.5	ug/L	48	Standard
>	**Ga**	71	58.3	44.0				mg/L	90	Standard
	Rb	85	1753.4	3.2				ug/L	23	Standard
	Y	89	444634.9	0.6				ug/L	448510	Standard
>	**Rh**	103	21.7	48.0				ug/L	15	Standard
	Mo	98	88.5	3.1	**0.0131**	0.001	5.4	ug/L	11	Standard
	Ag	107	142.0	4.2	**0.0046**	0.001	16.3	ug/L	134	Standard
	Cd	111	23.2	23.8	**0.0077**	0.002	31.6	mg/L	7	Standard
	Cd	114	28.0	34.6	**0.0004**	0.002	477.3	ug/L	16	Standard
>	**In**	115	620921.1	1.0				ug/L	611117	Standard
	Sn	118	821.7	5.2	**0.0348**	0.006	16.8	ug/L	518	Standard
	Sb	123	2051.2	21.4	**0.4156**	0.096	23.0	ug/L	127	Standard
	Ba	135	34796.2	0.2	**16.5640**	0.119	0.7	ug/L	45	Standard
	Ce	140	63.3	12.1				ug/L	298	Standard
>	**Tb**	159	973024.2	1.8				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	97.0	5.7	**0.0066**	0.000	6.5	ug/L	31	Standard
	Tl	205	68.3	44.1	**0.0070**	0.004	57.1	ug/L	20	Standard
	Pb	206	360.7	11.0	**0.0024**	0.006	236.3	ug/L	286	Standard
	Pb	207	322.3	9.7	**0.0075**	0.006	86.2	ug/L	257	Standard
	Pb	208	1339.4	1.1	**0.0099**	0.001	10.7	ug/L	956	Standard
	U	238	86.3	6.6	**0.0090**	0.001	5.9	ug/L	17	Standard
>	**Bi**	209	562189.7	2.5				ug/L	557080	Standard

Sample ID: L1606091601SDL WG574522-02
Report Date/Time: Tuesday, June 28, 2016 16:30:33
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	991.7	7.3	**1.2554**	0.092	7.3	mg/L	32	Standard
K	39	51.7	11.2	**0.0323**	0.021	64.1	mg/L	30	Standard
Ca	43	40.0	45.1	**0.6884**	2.694	391.4	mg/L	48	Standard
Fe	54	140.9	19.7	**-0.0104**	0.024	229.0	mg/L	159	Standard
Fe	57	241.7	4.8	**0.1865**	0.032	17.2	mg/L	195	Standard
> **Sc-1**	45	39763.8	0.8				mg/L	39543	Standard
Cl	35	40635.1	0.7				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2310.2	7.5				ug/L	1647	Standard
P	31	19332.3	4.6				ug/L	15231	Standard
S	34	2451.9	6.9				ug/L	1845	Standard
Sr	88	125.0	21.2				ug/L	70	Standard
C	12	163.3	25.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.5	88.8				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	7598.6	6.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.179	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.675	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606091601SDL WG574522-02
Report Date/Time: Tuesday, June 28, 2016 16:30:33
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.604
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.917
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 16:31:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79881.8	2.3				ug/L	81760	Standard
	Be	9	50840.2	1.3	**52.4015**	1.145	2.2	ug/L	17	Standard
	Al	27	7585830.9	1.9	**50.3677**	1.194	2.4	ug/L	1410	Standard
	Sc	45	39128.8	0.6				ug/L	39543	Standard
	Ti	47	24998.6	0.9	**102.1788**	1.762	1.7	ug/L	39	Standard
	V	51	348429.9	1.4	**50.8229**	0.271	0.5	ug/L	1415	Standard
	Cr	52	355416.3	0.4	**50.9232**	0.579	1.1	ug/L	6946	Standard
	Cr	53	44443.4	1.1	**51.2031**	0.906	1.8	ug/L	328	Standard
	Mn	55	315927.2	0.8	**49.4624**	0.575	1.2	ug/L	823	Standard
	Co	59	353189.3	0.9	**51.1457**	0.854	1.7	ug/L	252	Standard
	Ni	60	94600.8	0.9	**51.0293**	0.136	0.3	ug/L	192	Standard
	Cu	65	95833.5	0.4	**51.2541**	0.406	0.8	ug/L	141	Standard
	Zn	66	56109.7	0.5	**51.2906**	0.852	1.7	ug/L	491	Standard
>	**Ge**	72	505999.1	1.2				ug/L	515087	Standard
	As	75	55945.5	0.4	**50.6968**	0.402	0.8	ug/L	20	Standard
	Se	82	5756.3	0.8	**50.7852**	1.001	2.0	ug/L	15	Standard
	Se-1	77	3889.8	1.1	**51.8484**	1.021	2.0	ug/L	48	Standard
>	**Ga**	71	51.7	20.1				mg/L	90	Standard
	Rb	85	811.7	9.0				ug/L	23	Standard
	Y	89	426423.1	2.5				ug/L	448510	Standard
>	**Rh**	103	31.7	24.1				ug/L	15	Standard
	Mo	98	265386.1	0.2	**99.3199**	0.619	0.6	ug/L	11	Standard
	Ag	107	333927.0	1.2	**50.3137**	0.313	0.6	ug/L	134	Standard
	Cd	111	105484.6	1.1	**49.9277**	0.764	1.5	mg/L	7	Standard
	Cd	114	258596.4	2.6	**50.3494**	1.108	2.2	ug/L	16	Standard
>	**In**	115	604027.1	0.8				ug/L	611117	Standard
	Sn	118	295796.4	1.2	**50.5150**	0.923	1.8	ug/L	518	Standard
	Sb	123	237014.9	1.1	**50.8107**	0.333	0.7	ug/L	127	Standard
	Ba	135	100914.0	1.4	**49.4318**	0.852	1.7	ug/L	45	Standard
	Ce	140	80.0	0.0				ug/L	298	Standard
>	**Tb**	159	968181.4	1.1				ug/L	977942	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	430250.2	1.2	**50.7804**	1.115	2.2	ug/L	31	Standard
	Tl	205	381434.8	2.3	**51.8414**	1.366	2.6	ug/L	20	Standard
	Pb	206	273103.8	0.8	**50.1867**	0.395	0.8	ug/L	286	Standard
	Pb	207	246704.6	0.5	**50.2667**	0.621	1.2	ug/L	257	Standard
	Pb	208	974193.4	0.6	**51.3084**	0.901	1.8	ug/L	956	Standard
	U	238	366221.1	0.4	**50.8280**	0.746	1.5	ug/L	17	Standard
>	**Bi**	209	560252.8	1.6				ug/L	557080	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 16:33:46
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3943.8	5.4	**5.2490**	0.301	5.7	mg/L	32	Standard
K	39	1356.7	5.3	**4.4904**	0.223	5.0	mg/L	30	Standard
Ca	43	83.3	18.3	**7.4389**	2.295	30.8	mg/L	48	Standard
Fe	54	5957.3	2.0	**5.3112**	0.093	1.8	mg/L	159	Standard
Fe	57	1600.1	10.0	**4.8365**	0.580	12.0	mg/L	195	Standard
Sc-1	45	39128.8	0.6				mg/L	39543	Standard
Cl	35	37049.3	3.3				ug/L	27642	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	1520.1	14.1				ug/L	1647	Standard
P	31	19898.1	2.1				ug/L	15231	Standard
S	34	2718.6	2.9				ug/L	1845	Standard
Sr	88	73.3	20.8				ug/L	70	Standard
C	12	120.0	43.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	113.3				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	2098.5	16.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.803		
Al	27	100.735		
Sc	45			
Ti	47	102.179		
V	51	101.646		
Cr	52	101.846		
Cr	53			
Mn	55	98.925		
Co	59	102.291		
Ni	60	102.059		
Cu	65	102.508		
Zn	66	102.581		
Ge	72		98.236	
As	75	101.394		
Se	82	101.570		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 16:33:46
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	99.320		
Ag	107	100.627		
Cd	111	99.855		
Cd	114			
In	115			98.840
Sn	118	101.030		
Sb	123	101.621		
Ba	135	98.864		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.561		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.617		
U	238	101.656		
Bi	209			100.569
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 16:33:46
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 16:34:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77653.6	3.2				ug/L	81760	Standard
	Be	9	28.3	27.0	**0.0205**	0.009	43.8	ug/L	17	Standard
	Al	27	2033.5	6.8	**-0.0005**	0.001	113.9	ug/L	1410	Standard
	Sc	45	38149.6	0.7				ug/L	39543	Standard
	Ti	47	33.0	16.0	**-0.0290**	0.023	78.1	ug/L	39	Standard
	V	51	1124.7	5.5	**-0.0407**	0.010	23.8	ug/L	1415	Standard
	Cr	52	6085.9	0.6	**-0.1604**	0.016	10.1	ug/L	6946	Standard
	Cr	53	345.0	11.5	**0.0612**	0.041	67.1	ug/L	328	Standard
	Mn	55	652.0	2.2	**-0.0453**	0.002	5.1	ug/L	823	Standard
	Co	59	236.0	7.4	**0.0031**	0.003	92.5	ug/L	252	Standard
	Ni	60	163.3	9.5	**-0.0160**	0.008	51.9	ug/L	192	Standard
	Cu	65	132.3	11.7	**-0.0193**	0.009	47.2	ug/L	141	Standard
	Zn	66	446.3	5.3	**-0.4102**	0.017	4.3	ug/L	491	Standard
>	**Ge**	72	502289.8	1.3				ug/L	515087	Standard
	As	75	-42.3	118.5	**0.0014**	0.046	3304.8	ug/L	20	Standard
	Se	82	15.3	48.7	**0.0168**	0.064	382.8	ug/L	15	Standard
	Se-1	77	51.0	21.6	**-0.0257**	0.142	551.0	ug/L	48	Standard
>	**Ga**	71	38.3	27.2				mg/L	90	Standard
	Rb	85	10.0	86.6				ug/L	23	Standard
	Y	89	438316.4	0.6				ug/L	448510	Standard
>	**Rh**	103	15.0	0.0				ug/L	15	Standard
	Mo	98	228.3	18.4	**0.0667**	0.015	22.0	ug/L	11	Standard
	Ag	107	123.7	9.2	**0.0025**	0.002	72.5	ug/L	134	Standard
	Cd	111	11.3	56.7	**0.0024**	0.003	123.9	mg/L	7	Standard
	Cd	114	32.3	39.0	**0.0014**	0.003	178.7	ug/L	16	Standard
>	**In**	115	601315.6	1.3				ug/L	611117	Standard
	Sn	118	783.4	33.2	**0.0331**	0.047	140.5	ug/L	518	Standard
	Sb	123	646.2	31.1	**0.1267**	0.045	35.7	ug/L	127	Standard
	Ba	135	40.3	7.6	**-0.0052**	0.002	33.4	ug/L	45	Standard
	Ce	140	38.3	19.9				ug/L	298	Standard
>	**Tb**	159	937082.2	1.4				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	49.7	12.9	**0.0012**	0.001	66.7	ug/L	31	Standard
	Tl	205	40.0	57.3	**0.0033**	0.003	97.6	ug/L	20	Standard
	Pb	206	275.3	5.0	**-0.0116**	0.003	25.8	ug/L	286	Standard
	Pb	207	258.0	7.0	**-0.0041**	0.003	84.6	ug/L	257	Standard
	Pb	208	1051.3	3.4	**-0.0036**	0.002	41.9	ug/L	956	Standard
	U	238	50.3	16.2	**0.0042**	0.001	28.1	ug/L	17	Standard
>	**Bi**	209	546028.7	0.7				ug/L	557080	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 16:36:58
Page 1

Approved: June 29, 2016

Na	23	3.3	86.6	**22.1550**	19.184	86.6	mg/L	0	Standard
Mg	24	31.7	50.8	**-0.0134**	0.022	167.6	mg/L	32	Standard
K	39	30.0	28.9	**-0.0362**	0.031	85.5	mg/L	30	Standard
Ca	43	30.0	66.7	**-0.6084**	3.177	522.1	mg/L	48	Standard
Fe	54	168.0	24.0	**0.0206**	0.039	187.8	mg/L	159	Standard
Fe	57	143.3	24.5	**-0.1229**	0.124	101.2	mg/L	195	Standard
Sc-1	45	38149.6	0.7				mg/L	39543	Standard
Cl	35	36673.0	2.0				ug/L	27642	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	1570.1	7.0				ug/L	1647	Standard
P	31	19050.3	3.5				ug/L	15231	Standard
S	34	2736.9	0.8				ug/L	1845	Standard
Sr	88	48.3	15.8				ug/L	70	Standard
C	12	133.3	4.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	5.7	217.0				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	20.0	100.0				mg/L	20	Standard
I	127	1683.4	18.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.516	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 16:36:58
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.396
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.016
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091601SDL WG574522-02
Sample Date/Time: Tuesday, June 28, 2016 16:37:54
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80481.5	1.5				ug/L	81760	Standard
	Be	9	31.7	9.1	**0.0226**	0.003	11.9	ug/L	17	Standard
	Al	27	181010.0	1.7	**1.1789**	0.039	3.3	ug/L	1410	Standard
	Sc	45	40285.2	2.7				ug/L	39543	Standard
	Ti	47	30.3	10.1	**-0.0420**	0.014	34.3	ug/L	39	Standard
	V	51	1262.3	9.3	**-0.0236**	0.014	61.0	ug/L	1415	Standard
	Cr	52	6637.8	2.8	**-0.0958**	0.014	14.1	ug/L	6946	Standard
	Cr	53	403.3	17.4	**0.1211**	0.074	61.5	ug/L	328	Standard
	Mn	55	3292.4	3.2	**0.3636**	0.014	3.8	ug/L	823	Standard
	Co	59	275.7	13.5	**0.0082**	0.005	64.5	ug/L	252	Standard
	Ni	60	218.7	22.1	**0.0120**	0.025	207.8	ug/L	192	Standard
	Cu	65	189.7	2.7	**0.0098**	0.003	33.4	ug/L	141	Standard
	Zn	66	2022.1	5.3	**1.0328**	0.100	9.7	ug/L	491	Standard
>	**Ge**	72	510876.9	1.9				ug/L	515087	Standard
	As	75	-16.1	411.9	**0.0255**	0.059	233.0	ug/L	20	Standard
	Se	82	17.9	79.1	**0.0373**	0.123	328.7	ug/L	15	Standard
	Se-1	77	53.0	5.0	**-0.0093**	0.040	429.4	ug/L	48	Standard
>	**Ga**	71	26.7	10.8				mg/L	90	Standard
	Rb	85	385.0	11.5				ug/L	23	Standard
	Y	89	434970.9	1.3				ug/L	448510	Standard
>	**Rh**	103	13.3	57.3				ug/L	15	Standard
	Mo	98	105.1	23.0	**0.0193**	0.009	45.6	ug/L	11	Standard
	Ag	107	160.3	33.6	**0.0074**	0.008	107.2	ug/L	134	Standard
	Cd	111	27.8	77.7	**0.0099**	0.010	100.3	mg/L	7	Standard
	Cd	114	89.4	76.6	**0.0121**	0.013	107.6	ug/L	16	Standard
>	**In**	115	618555.8	0.1				ug/L	611117	Standard
	Sn	118	705.0	14.2	**0.0159**	0.017	105.2	ug/L	518	Standard
	Sb	123	323.1	28.2	**0.0548**	0.019	34.7	ug/L	127	Standard
	Ba	135	6967.6	1.3	**3.3092**	0.040	1.2	ug/L	45	Standard
	Ce	140	23.3	65.5				ug/L	298	Standard
>	**Tb**	159	976647.8	1.4				ug/L	977942	Standard
	Ho	165	15.0	57.7				ug/L	12	Standard
	Tl	203	112.7	67.1	**0.0081**	0.009	105.4	ug/L	31	Standard
	Tl	205	90.0	29.4	**0.0096**	0.003	35.2	ug/L	20	Standard
	Pb	206	345.7	14.3	**-0.0019**	0.008	437.8	ug/L	286	Standard
	Pb	207	297.3	11.3	**0.0008**	0.006	736.1	ug/L	257	Standard
	Pb	208	1206.4	8.6	**0.0013**	0.005	370.6	ug/L	956	Standard
	U	238	79.3	55.4	**0.0077**	0.006	75.6	ug/L	17	Standard
>	**Bi**	209	576852.7	1.1				ug/L	557080	Standard

Sample ID: L1606091601SDL WG574522-02
Report Date/Time: Tuesday, June 28, 2016 16:40:10
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	251.7	21.2	**0.2729**	0.077	28.4	mg/L	32	Standard
K	39	35.0	75.6	**-0.0238**	0.089	375.8	mg/L	30	Standard
Ca	43	41.7	66.1	**0.8623**	4.157	482.1	mg/L	48	Standard
Fe	54	139.7	6.2	**-0.0128**	0.010	79.6	mg/L	159	Standard
Fe	57	215.0	8.1	**0.0878**	0.054	61.5	mg/L	195	Standard
Sc-1	45	40285.2	2.7				mg/L	39543	Standard
Cl	35	36209.9	2.0				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1783.4	3.4				ug/L	1647	Standard
P	31	18659.8	1.9				ug/L	15231	Standard
S	34	2565.2	1.9				ug/L	1845	Standard
Sr	88	76.7	26.4				ug/L	70	Standard
C	12	126.7	24.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	19.2	52.1				mg/L	12	Standard
Ho-1	165	15.0	57.7				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	2670.2	2.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.436	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.183	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606091601SDL WG574522-02
Report Date/Time: Tuesday, June 28, 2016 16:40:10
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.217
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.549
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606114201
Sample Date/Time: Tuesday, June 28, 2016 16:41:05
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80520.1	1.9				ug/L	81760	Standard
	Be	9	30.0	16.7	**0.0209**	0.005	21.7	ug/L	17	Standard
	Al	27	1224587.7	1.8	**8.0560**	0.286	3.6	ug/L	1410	Standard
	Sc	45	42140.2	1.9				ug/L	39543	Standard
	Ti	47	397.3	21.3	**1.4906**	0.359	24.1	ug/L	39	Standard
	V	51	2122.9	0.3	**0.1097**	0.002	1.5	ug/L	1415	Standard
	Cr	52	14472.9	1.3	**1.0963**	0.024	2.2	ug/L	6946	Standard
	Cr	53	2878.6	1.5	**3.0550**	0.050	1.6	ug/L	328	Standard
	Mn	55	698464.2	0.4	**111.4396**	0.282	0.3	ug/L	823	Standard
	Co	59	22132.5	0.4	**3.2312**	0.012	0.4	ug/L	252	Standard
	Ni	60	7435.8	1.3	**3.9843**	0.043	1.1	ug/L	192	Standard
	Cu	65	724.4	2.6	**0.3040**	0.008	2.7	ug/L	141	Standard
	Zn	66	6121.2	1.0	**4.9565**	0.034	0.7	ug/L	491	Standard
>	**Ge**	72	497323.9	0.5				ug/L	515087	Standard
	As	75	171.3	19.9	**0.1980**	0.031	15.4	ug/L	20	Standard
	Se	82	64.0	10.3	**0.4560**	0.056	12.4	ug/L	15	Standard
	Se-1	77	106.7	7.0	**0.7479**	0.110	14.7	ug/L	48	Standard
>	**Ga**	71	88.3	6.5				mg/L	90	Standard
	Rb	85	4614.0	1.5				ug/L	23	Standard
	Y	89	442742.2	2.0				ug/L	448510	Standard
>	**Rh**	103	21.7	35.3				ug/L	15	Standard
	Mo	98	335.3	5.4	**0.1033**	0.008	7.8	ug/L	11	Standard
	Ag	107	92.0	14.2	**-0.0027**	0.002	71.5	ug/L	134	Standard
	Cd	111	86.4	7.6	**0.0370**	0.004	9.6	mg/L	7	Standard
	Cd	114	204.2	9.6	**0.0339**	0.004	12.0	ug/L	16	Standard
>	**In**	115	619678.1	1.4				ug/L	611117	Standard
	Sn	118	898.4	6.0	**0.0480**	0.011	22.7	ug/L	518	Standard
	Sb	123	324.0	26.0	**0.0551**	0.019	33.6	ug/L	127	Standard
	Ba	135	76873.5	0.9	**36.7017**	0.677	1.8	ug/L	45	Standard
	Ce	140	3832.2	0.5				ug/L	298	Standard
>	**Tb**	159	963958.5	1.3				ug/L	977942	Standard
	Ho	165	96.7	23.3				ug/L	12	Standard
	Tl	203	122.3	9.5	**0.0098**	0.001	14.0	ug/L	31	Standard
	Tl	205	126.7	13.9	**0.0151**	0.002	14.9	ug/L	20	Standard
	Pb	206	564.7	2.8	**0.0417**	0.003	6.6	ug/L	286	Standard
	Pb	207	477.0	3.5	**0.0406**	0.003	8.6	ug/L	257	Standard
	Pb	208	2018.4	2.1	**0.0474**	0.002	3.2	ug/L	956	Standard
	U	238	92.7	4.5	**0.0101**	0.001	6.9	ug/L	17	Standard
>	**Bi**	209	552929.6	1.0				ug/L	557080	Standard

Sample ID: L1606114201
Report Date/Time: Tuesday, June 28, 2016 16:43:22
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.1351**	17.546	173.1	mg/L	0	Standard
Mg	24	7430.2	1.6	**9.2261**	0.222	2.4	mg/L	32	Standard
K	39	131.7	22.3	**0.2750**	0.084	30.6	mg/L	30	Standard
Ca	43	50.0	10.0	**1.7747**	0.605	34.1	mg/L	48	Standard
Fe	54	2749.1	1.6	**2.1977**	0.008	0.4	mg/L	159	Standard
Fe	57	918.4	0.8	**2.2851**	0.038	1.7	mg/L	195	Standard
> **Sc-1**	45	42140.2	1.9				mg/L	39543	Standard
Cl	35	36101.6	0.8				ug/L	27642	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	12138.2	7.4				ug/L	1647	Standard
P	31	25736.8	1.2				ug/L	15231	Standard
S	34	2443.5	6.8				ug/L	1845	Standard
Sr	88	88.3	31.2				ug/L	70	Standard
C	12	360.0	10.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	87.0	21.3				mg/L	12	Standard
Ho-1	165	96.7	23.3				mg/L	12	Standard
Er	166	63.3	48.2				mg/L	20	Standard
I	127	223077.6	8.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.483	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.551	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606114201
Report Date/Time: Tuesday, June 28, 2016 16:43:22
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.401	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.255	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606114203
Sample Date/Time: Tuesday, June 28, 2016 16:44:17
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81992.9	1.1				ug/L	81760	Standard
	Be	9	28.3	27.0	**0.0187**	0.008	41.6	ug/L	17	Standard
	Al	27	794059.8	1.7	**5.1234**	0.139	2.7	ug/L	1410	Standard
	Sc	45	39785.5	1.2				ug/L	39543	Standard
	Ti	47	377.0	7.0	**1.3367**	0.105	7.9	ug/L	39	Standard
	V	51	6234.1	1.0	**0.6819**	0.005	0.8	ug/L	1415	Standard
	Cr	52	12611.2	0.3	**0.7377**	0.006	0.8	ug/L	6946	Standard
	Cr	53	1423.4	7.9	**1.2652**	0.132	10.4	ug/L	328	Standard
	Mn	55	579693.3	1.0	**88.4369**	1.228	1.4	ug/L	823	Standard
	Co	59	3503.7	1.5	**0.4627**	0.007	1.6	ug/L	252	Standard
	Ni	60	3465.4	2.9	**1.7179**	0.054	3.1	ug/L	192	Standard
	Cu	65	1070.0	1.6	**0.4670**	0.008	1.6	ug/L	141	Standard
	Zn	66	3004.0	2.3	**1.8876**	0.071	3.8	ug/L	491	Standard
>	**Ge**	72	519952.2	0.4				ug/L	515087	Standard
	As	75	346.7	9.3	**0.3458**	0.028	8.2	ug/L	20	Standard
	Se	82	27.6	23.7	**0.1179**	0.056	47.6	ug/L	15	Standard
	Se-1	77	61.3	6.2	**0.0875**	0.047	53.2	ug/L	48	Standard
>	**Ga**	71	168.3	22.5				mg/L	90	Standard
	Rb	85	8202.2	4.2				ug/L	23	Standard
	Y	89	450084.2	2.9				ug/L	448510	Standard
>	**Rh**	103	20.0	50.0				ug/L	15	Standard
	Mo	98	804.4	3.7	**0.2777**	0.016	5.8	ug/L	11	Standard
	Ag	107	104.7	4.0	**-0.0007**	0.001	91.7	ug/L	134	Standard
	Cd	111	177.3	6.3	**0.0797**	0.005	6.4	mg/L	7	Standard
	Cd	114	412.5	12.7	**0.0743**	0.011	14.2	ug/L	16	Standard
>	**In**	115	613204.5	2.4				ug/L	611117	Standard
	Sn	118	838.4	3.1	**0.0394**	0.004	11.4	ug/L	518	Standard
	Sb	123	255.2	2.7	**0.0411**	0.003	6.6	ug/L	127	Standard
	Ba	135	46232.8	2.2	**22.2974**	0.510	2.3	ug/L	45	Standard
	Ce	140	10413.6	4.0				ug/L	298	Standard
>	**Tb**	159	959024.8	2.1				ug/L	977942	Standard
	Ho	165	235.0	14.0				ug/L	12	Standard
	Tl	203	65.0	35.5	**0.0028**	0.003	94.5	ug/L	31	Standard
	Tl	205	33.3	45.8	**0.0022**	0.002	93.6	ug/L	20	Standard
	Pb	206	995.4	6.0	**0.1186**	0.010	8.6	ug/L	286	Standard
	Pb	207	825.7	1.1	**0.1096**	0.003	2.3	ug/L	257	Standard
	Pb	208	3331.5	0.8	**0.1144**	0.002	1.9	ug/L	956	Standard
	U	238	237.0	6.0	**0.0298**	0.002	6.6	ug/L	17	Standard
>	**Bi**	209	562917.3	0.4				ug/L	557080	Standard

Sample ID: L1606114203
Report Date/Time: Tuesday, June 28, 2016 16:46:33
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	1456.7	5.2	**1.8709**	0.119	6.4	mg/L	32	Standard
K	39	195.0	2.6	**0.5136**	0.022	4.3	mg/L	30	Standard
Ca	43	66.7	37.7	**4.7333**	3.876	81.9	mg/L	48	Standard
Fe	54	1995.7	3.8	**1.6587**	0.089	5.4	mg/L	159	Standard
Fe	57	716.7	4.0	**1.7796**	0.068	3.8	mg/L	195	Standard
Sc-1	45	39785.5	1.2				mg/L	39543	Standard
Cl	35	34494.6	2.9				ug/L	27642	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	3500.4	9.9				ug/L	1647	Standard
P	31	20160.1	3.5				ug/L	15231	Standard
S	34	2286.8	4.4				ug/L	1845	Standard
Sr	88	110.0	28.4				ug/L	70	Standard
C	12	216.7	25.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	341.7	16.9				mg/L	12	Standard
Ho-1	165	235.0	14.0				mg/L	12	Standard
Er	166	243.3	11.9				mg/L	20	Standard
I	127	25506.6	11.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.285	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.945	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606114203
Report Date/Time: Tuesday, June 28, 2016 16:46:33
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.342
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.048
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606114205
Sample Date/Time: Tuesday, June 28, 2016 16:47:28
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82787.3	1.4				ug/L	81760	Standard
	Be	9	48.3	23.9	**0.0383**	0.011	29.1	ug/L	17	Standard
	Al	27	819185.4	1.5	**5.2350**	0.125	2.4	ug/L	1410	Standard
	Sc	45	40940.2	1.5				ug/L	39543	Standard
	Ti	47	480.0	5.9	**1.6939**	0.112	6.6	ug/L	39	Standard
	V	51	6800.6	1.0	**0.7356**	0.007	0.9	ug/L	1415	Standard
	Cr	52	13980.4	1.6	**0.8771**	0.035	4.0	ug/L	6946	Standard
	Cr	53	1753.4	3.0	**1.5823**	0.062	3.9	ug/L	328	Standard
	Mn	55	596277.6	1.3	**88.4306**	1.209	1.4	ug/L	823	Standard
	Co	59	3687.4	0.3	**0.4741**	0.004	0.7	ug/L	252	Standard
	Ni	60	3717.1	1.3	**1.7958**	0.025	1.4	ug/L	192	Standard
	Cu	65	1213.0	2.2	**0.5240**	0.015	2.9	ug/L	141	Standard
	Zn	66	2977.6	2.2	**1.7886**	0.052	2.9	ug/L	491	Standard
>	**Ge**	72	534849.8	0.4				ug/L	515087	Standard
	As	75	377.9	7.0	**0.3640**	0.023	6.2	ug/L	20	Standard
	Se	82	30.4	15.6	**0.1347**	0.040	29.6	ug/L	15	Standard
	Se-1	77	66.7	7.4	**0.1333**	0.063	47.3	ug/L	48	Standard
>	**Ga**	71	223.3	16.2				mg/L	90	Standard
	Rb	85	9057.7	1.9				ug/L	23	Standard
	Y	89	448330.1	1.0				ug/L	448510	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	830.0	4.5	**0.2872**	0.016	5.5	ug/L	11	Standard
	Ag	107	122.7	18.8	**0.0020**	0.004	175.3	ug/L	134	Standard
	Cd	111	156.2	7.4	**0.0700**	0.006	8.4	mg/L	7	Standard
	Cd	114	373.1	12.2	**0.0667**	0.009	13.8	ug/L	16	Standard
>	**In**	115	612810.6	0.7				ug/L	611117	Standard
	Sn	118	755.0	9.6	**0.0254**	0.012	48.6	ug/L	518	Standard
	Sb	123	285.8	9.7	**0.0476**	0.006	12.8	ug/L	127	Standard
	Ba	135	48731.6	0.5	**23.5144**	0.057	0.2	ug/L	45	Standard
	Ce	140	12518.5	3.0				ug/L	298	Standard
>	**Tb**	159	979236.7	1.3				ug/L	977942	Standard
	Ho	165	273.3	12.2				ug/L	12	Standard
	Tl	203	95.3	25.1	**0.0062**	0.003	47.7	ug/L	31	Standard
	Tl	205	61.7	4.7	**0.0059**	0.000	5.9	ug/L	20	Standard
	Pb	206	1176.7	3.8	**0.1481**	0.011	7.4	ug/L	286	Standard
	Pb	207	985.7	2.0	**0.1385**	0.005	4.0	ug/L	257	Standard
	Pb	208	4033.5	3.6	**0.1475**	0.011	7.5	ug/L	956	Standard
	U	238	279.0	8.7	**0.0349**	0.004	10.9	ug/L	17	Standard
>	**Bi**	209	573358.0	1.7				ug/L	557080	Standard

Sample ID: L1606114205
Report Date/Time: Tuesday, June 28, 2016 16:49:45
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.1692**	17.605	173.1	mg/L	0	Standard
Mg	24	1471.7	7.4	**1.8343**	0.119	6.5	mg/L	32	Standard
K	39	181.7	21.4	**0.4516**	0.129	28.5	mg/L	30	Standard
Ca	43	60.0	36.3	**3.4344**	3.118	90.8	mg/L	48	Standard
Fe	54	2300.2	8.7	**1.8724**	0.148	7.9	mg/L	159	Standard
Fe	57	716.7	8.3	**1.7108**	0.158	9.3	mg/L	195	Standard
Sc-1	45	40940.2	1.5				mg/L	39543	Standard
Cl	35	34657.6	1.8				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3160.3	4.1				ug/L	1647	Standard
P	31	20585.6	2.1				ug/L	15231	Standard
S	34	2273.5	1.5				ug/L	1845	Standard
Sr	88	120.0	11.0				ug/L	70	Standard
C	12	246.7	23.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	334.1	26.2				mg/L	12	Standard
Ho-1	165	273.3	12.2				mg/L	12	Standard
Er	166	263.3	24.4				mg/L	20	Standard
I	127	21154.8	6.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.256	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.837	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606114205
Report Date/Time: Tuesday, June 28, 2016 16:49:45
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.277
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.922
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115102
Sample Date/Time: Tuesday, June 28, 2016 16:50:39
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83962.1	2.2				ug/L	81760	Standard
	Be	9	23.3	32.7	**0.0132**	0.008	57.7	ug/L	17	Standard
	Al	27	14475219.3	2.2	**91.4576**	2.716	3.0	ug/L	1410	Standard
	Sc	45	40821.6	0.4				ug/L	39543	Standard
	Ti	47	413.3	6.2	**1.5180**	0.138	9.1	ug/L	39	Standard
	V	51	16629.8	2.6	**2.2151**	0.113	5.1	ug/L	1415	Standard
	Cr	52	10947.0	2.1	**0.5345**	0.067	12.6	ug/L	6946	Standard
	Cr	53	3965.5	4.7	**4.2265**	0.126	3.0	ug/L	328	Standard
	Mn	55	185468.7	3.9	**28.8128**	1.697	5.9	ug/L	823	Standard
	Co	59	997.7	2.0	**0.1124**	0.006	4.9	ug/L	252	Standard
	Ni	60	1478.4	4.6	**0.6898**	0.053	7.7	ug/L	192	Standard
	Cu	65	1958.8	1.9	**0.9525**	0.040	4.2	ug/L	141	Standard
	Zn	66	8106.5	2.8	**6.6572**	0.319	4.8	ug/L	491	Standard
>	**Ge**	72	509236.4	2.2				ug/L	515087	Standard
	As	75	962.9	2.3	**0.9070**	0.035	3.9	ug/L	20	Standard
	Se	82	228.1	4.7	**1.8861**	0.120	6.4	ug/L	15	Standard
	Se-1	77	223.7	5.0	**2.2872**	0.212	9.3	ug/L	48	Standard
>	**Ga**	71	265.0	37.9				mg/L	90	Standard
	Rb	85	21039.6	2.1				ug/L	23	Standard
	Y	89	444144.2	0.6				ug/L	448510	Standard
>	**Rh**	103	50.0	20.0				ug/L	15	Standard
	Mo	98	3394.4	4.1	**1.2339**	0.051	4.2	ug/L	11	Standard
	Ag	107	107.3	13.1	**-0.0003**	0.002	751.8	ug/L	134	Standard
	Cd	111	62.6	4.9	**0.0263**	0.001	5.7	mg/L	7	Standard
	Cd	114	195.9	21.1	**0.0327**	0.008	24.5	ug/L	16	Standard
>	**In**	115	612517.0	0.3				ug/L	611117	Standard
	Sn	118	836.7	5.7	**0.0392**	0.008	20.1	ug/L	518	Standard
	Sb	123	547.1	4.7	**0.1028**	0.005	5.0	ug/L	127	Standard
	Ba	135	71666.8	2.3	**34.6081**	0.699	2.0	ug/L	45	Standard
	Ce	140	3362.0	2.6				ug/L	298	Standard
>	**Tb**	159	988372.6	0.5				ug/L	977942	Standard
	Ho	165	63.3	75.9				ug/L	12	Standard
	Tl	203	105.7	10.4	**0.0078**	0.001	16.0	ug/L	31	Standard
	Tl	205	108.3	39.8	**0.0125**	0.006	45.9	ug/L	20	Standard
	Pb	206	1800.1	2.5	**0.2697**	0.008	3.1	ug/L	286	Standard
	Pb	207	1518.4	2.6	**0.2536**	0.007	2.9	ug/L	257	Standard
	Pb	208	6212.5	1.8	**0.2692**	0.011	4.0	ug/L	956	Standard
	U	238	10075.0	2.3	**1.4043**	0.047	3.4	ug/L	17	Standard
>	**Bi**	209	556782.3	1.6				ug/L	557080	Standard

Sample ID: L1606115102
Report Date/Time: Tuesday, June 28, 2016 16:52:56
Page 1

Approved: June 29, 2016

Na	23	3.3	86.6	**20.7586**	17.973	86.6	mg/L	0	Standard
Mg	24	36599.2	3.6	**47.1388**	1.781	3.8	mg/L	32	Standard
K	39	311.7	20.3	**0.8782**	0.204	23.2	mg/L	30	Standard
Ca	43	200.0	10.0	**24.0730**	2.845	11.8	mg/L	48	Standard
Fe	54	272.4	27.9	**0.1018**	0.067	65.8	mg/L	159	Standard
Fe	57	400.0	17.2	**0.6830**	0.221	32.3	mg/L	195	Standard
Sc-1	45	40821.6	0.4				mg/L	39543	Standard
Cl	35	37764.4	4.8				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	41179.3	5.9				ug/L	1647	Standard
P	31	20392.0	1.6				ug/L	15231	Standard
S	34	2350.2	4.9				ug/L	1845	Standard
Sr	88	246.7	3.1				ug/L	70	Standard
C	12	240.0	16.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	93.2	27.3				mg/L	12	Standard
Ho-1	165	63.3	75.9				mg/L	12	Standard
Er	166	73.3	7.9				mg/L	20	Standard
I	127	267945.4	8.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.693	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.864	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606115102
Report Date/Time: Tuesday, June 28, 2016 16:52:56
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.229
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.946
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115105
Sample Date/Time: Tuesday, June 28, 2016 16:53:51
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81681.4	3.1				ug/L	81760	Standard
	Be	9	16.7	45.8	**0.0069**	0.007	104.2	ug/L	17	Standard
	Al	27	18070414.8	1.1	**117.3803**	2.444	2.1	ug/L	1410	Standard
	Sc	45	40721.3	2.6				ug/L	39543	Standard
	Ti	47	244.7	8.0	**0.8457**	0.069	8.1	ug/L	39	Standard
	V	51	17618.4	3.0	**2.3985**	0.046	1.9	ug/L	1415	Standard
	Cr	52	10888.2	1.3	**0.5506**	0.002	0.4	ug/L	6946	Standard
	Cr	53	4290.6	7.0	**4.6855**	0.402	8.6	ug/L	328	Standard
	Mn	55	234137.7	1.0	**36.9743**	0.056	0.2	ug/L	823	Standard
	Co	59	907.0	1.1	**0.1013**	0.001	0.9	ug/L	252	Standard
	Ni	60	1595.4	2.1	**0.7658**	0.017	2.3	ug/L	192	Standard
	Cu	65	1678.8	2.6	**0.8172**	0.017	2.1	ug/L	141	Standard
	Zn	66	5525.3	1.2	**4.3540**	0.048	1.1	ug/L	491	Standard
>	**Ge**	72	501124.8	1.2				ug/L	515087	Standard
	As	75	1072.7	4.1	**1.0212**	0.046	4.5	ug/L	20	Standard
	Se	82	264.0	5.9	**2.2378**	0.139	6.2	ug/L	15	Standard
	Se-1	77	284.0	16.7	**3.1586**	0.667	21.1	ug/L	48	Standard
>	**Ga**	71	116.7	13.8				mg/L	90	Standard
	Rb	85	15923.4	4.0				ug/L	23	Standard
	Y	89	444308.5	1.8				ug/L	448510	Standard
>	**Rh**	103	68.3	40.3				ug/L	15	Standard
	Mo	98	3823.6	1.7	**1.4182**	0.006	0.4	ug/L	11	Standard
	Ag	107	76.3	4.0	**-0.0047**	0.001	10.8	ug/L	134	Standard
	Cd	111	40.8	13.4	**0.0165**	0.003	15.5	mg/L	7	Standard
	Cd	114	111.3	16.3	**0.0169**	0.004	22.4	ug/L	16	Standard
>	**In**	115	601437.2	1.6				ug/L	611117	Standard
	Sn	118	1256.7	47.3	**0.1130**	0.098	86.7	ug/L	518	Standard
	Sb	123	502.0	6.8	**0.0953**	0.009	9.3	ug/L	127	Standard
	Ba	135	85456.0	1.5	**42.0358**	0.440	1.0	ug/L	45	Standard
	Ce	140	1221.7	20.4				ug/L	298	Standard
>	**Tb**	159	951914.7	0.8				ug/L	977942	Standard
	Ho	165	38.3	39.8				ug/L	12	Standard
	Tl	203	109.0	4.0	**0.0087**	0.001	7.8	ug/L	31	Standard
	Tl	205	100.0	13.2	**0.0120**	0.002	15.9	ug/L	20	Standard
	Pb	206	942.7	3.4	**0.1187**	0.004	3.7	ug/L	286	Standard
	Pb	207	751.4	3.5	**0.1031**	0.007	7.3	ug/L	257	Standard
	Pb	208	3320.1	1.9	**0.1235**	0.005	4.4	ug/L	956	Standard
	U	238	12716.0	1.7	**1.8521**	0.048	2.6	ug/L	17	Standard
>	**Bi**	209	533061.4	1.1				ug/L	557080	Standard

Sample ID: L1606115105
Report Date/Time: Tuesday, June 28, 2016 16:56:08
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.4978**	18.174	173.1	mg/L	0	Standard
Mg	24	45127.2	3.7	**58.2718**	1.297	2.2	mg/L	32	Standard
K	39	268.3	17.6	**0.7391**	0.156	21.1	mg/L	30	Standard
Ca	43	230.0	5.8	**28.6229**	2.753	9.6	mg/L	48	Standard
Fe	54	227.2	16.5	**0.0631**	0.037	58.2	mg/L	159	Standard
Fe	57	321.7	8.6	**0.4294**	0.079	18.3	mg/L	195	Standard
> **Sc-1**	45	40721.3	2.6				mg/L	39543	Standard
Cl	35	40535.5	2.1				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	42472.8	3.2				ug/L	1647	Standard
P	31	21144.7	2.2				ug/L	15231	Standard
S	34	2520.2	4.3				ug/L	1845	Standard
Sr	88	268.3	23.3				ug/L	70	Standard
C	12	270.0	30.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	48.6	21.1				mg/L	12	Standard
Ho-1	165	38.3	39.8				mg/L	12	Standard
Er	166	30.0	33.3				mg/L	20	Standard
I	127	357293.3	4.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.904	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.289	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606115105
Report Date/Time: Tuesday, June 28, 2016 16:56:08
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.416
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606115105
Report Date/Time: Tuesday, June 28, 2016 16:56:08
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115401 WG573751-03
Sample Date/Time: Tuesday, June 28, 2016 16:57:02
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100430.3	2.8				ug/L	81760	Standard
	Be	9	28.3	56.7	**0.0134**	0.013	96.3	ug/L	17	Standard
	Al	27	81335563.7	1.7	**429.6767**	8.046	1.9	ug/L	1410	Standard
	Sc	45	36054.5	1.3				ug/L	39543	Standard
	Ti	47	276.7	4.4	**1.0861**	0.041	3.8	ug/L	39	Standard
	V	51	56034.7	2.7	**8.8625**	0.243	2.7	ug/L	1415	Standard
	Cr	52	12377.7	0.7	**0.9433**	0.019	2.0	ug/L	6946	Standard
	Cr	53	23940.6	3.3	**30.3443**	1.215	4.0	ug/L	328	Standard
	Mn	55	741944.6	0.9	**128.6152**	2.806	2.2	ug/L	823	Standard
	Co	59	3502.1	2.3	**0.5295**	0.021	4.0	ug/L	252	Standard
	Ni	60	10135.4	1.6	**5.9492**	0.102	1.7	ug/L	192	Standard
	Cu	65	4993.5	1.7	**2.8661**	0.085	3.0	ug/L	141	Standard
	Zn	66	5821.5	1.7	**5.1486**	0.184	3.6	ug/L	491	Standard
>	**Ge**	72	457910.9	1.5				ug/L	515087	Standard
	As	75	1957.2	6.1	**1.9997**	0.145	7.2	ug/L	20	Standard
	Se	82	3071.1	3.5	**29.9014**	1.486	5.0	ug/L	15	Standard
	Se-1	77	4244.3	1.8	**62.6742**	2.070	3.3	ug/L	48	Standard
>	**Ga**	71	138.3	10.4				mg/L	90	Standard
	Rb	85	9993.3	0.6				ug/L	23	Standard
	Y	89	397349.5	0.4				ug/L	448510	Standard
>	**Rh**	103	1400.1	6.9				ug/L	15	Standard
	Mo	98	28731.5	0.6	**12.2349**	0.110	0.9	ug/L	11	Standard
	Ag	107	395.7	2.6	**0.0517**	0.002	4.3	ug/L	134	Standard
	Cd	111	92.0	15.6	**0.0467**	0.008	17.2	mg/L	7	Standard
	Cd	114	319.4	5.6	**0.0659**	0.004	5.6	ug/L	16	Standard
>	**In**	115	530125.1	0.7				ug/L	611117	Standard
	Sn	118	1140.0	5.3	**0.1203**	0.011	8.8	ug/L	518	Standard
	Sb	123	532.5	6.0	**0.1172**	0.007	5.9	ug/L	127	Standard
	Ba	135	16736.6	1.8	**9.3206**	0.182	2.0	ug/L	45	Standard
	Ce	140	1620.1	9.0				ug/L	298	Standard
>	**Tb**	159	890828.2	2.0				ug/L	977942	Standard
	Ho	165	38.3	27.2				ug/L	12	Standard
	Tl	203	267.7	7.7	**0.0327**	0.003	10.1	ug/L	31	Standard
	Tl	205	231.7	6.6	**0.0350**	0.002	6.9	ug/L	20	Standard
	Pb	206	883.7	4.8	**0.1290**	0.007	5.4	ug/L	286	Standard
	Pb	207	738.7	4.5	**0.1206**	0.010	8.0	ug/L	257	Standard
	Pb	208	2811.4	0.6	**0.1152**	0.004	3.5	ug/L	956	Standard
	U	238	63722.1	1.7	**10.4767**	0.095	0.9	ug/L	17	Standard
>	**Bi**	209	472777.8	1.7				ug/L	557080	Standard

Sample ID: L1606115401 WG573751-03
Report Date/Time: Tuesday, June 28, 2016 16:59:19
Page 1

Approved: June 29, 2016

Na	23	15.0	33.3	**105.9031**	36.283	34.3	mg/L	0	Standard
Mg	24	356514.1	0.8	**520.5310**	10.800	2.1	mg/L	32	Standard
K	39	430.0	2.3	**1.4525**	0.056	3.9	mg/L	30	Standard
Ca	43	1840.1	5.6	**301.0738**	13.488	4.5	mg/L	48	Standard
Fe	54	188.6	12.1	**0.0500**	0.021	41.8	mg/L	159	Standard
Fe	57	1585.1	2.5	**5.2457**	0.200	3.8	mg/L	195	Standard
Sc-1	45	36054.5	1.3				mg/L	39543	Standard
Cl	35	90598.1	1.3				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	42312.4	3.9				ug/L	1647	Standard
P	31	19347.4	2.8				ug/L	15231	Standard
S	34	2421.9	2.4				ug/L	1845	Standard
Sr	88	6231.3	0.9				ug/L	70	Standard
C	12	243.3	12.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	37.9	25.6				mg/L	12	Standard
Ho-1	165	38.3	27.2				mg/L	12	Standard
Er	166	43.3	96.1				mg/L	20	Standard
I	127	118064.4	6.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.900	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606115401 WG573751-03
Report Date/Time: Tuesday, June 28, 2016 16:59:19
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	86.747
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	84.867
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606115401 WG573751-03
Report Date/Time: Tuesday, June 28, 2016 16:59:19
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115402S WG573751-09
Sample Date/Time: Tuesday, June 28, 2016 17:00:14
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	111794.4	2.2				ug/L	81760	Standard
	Be	9	61074.6	3.8	**44.9573**	0.853	1.9	ug/L	17	Standard
	Al	27	84589452.8	4.6	**401.1886**	9.792	2.4	ug/L	1410	Standard
	Sc	45	39148.9	4.1				ug/L	39543	Standard
	Ti	47	272.0	24.8	**0.9934**	0.318	32.0	ug/L	39	Standard
	V	51	406216.4	3.4	**61.4172**	0.609	1.0	ug/L	1415	Standard
	Cr	52	347340.1	3.9	**51.5532**	0.830	1.6	ug/L	6946	Standard
	Cr	53	63548.0	2.3	**76.0057**	0.198	0.3	ug/L	328	Standard
	Mn	55	986761.6	2.9	**160.3601**	1.162	0.7	ug/L	823	Standard
	Co	59	344414.5	2.6	**51.6648**	0.567	1.1	ug/L	252	Standard
	Ni	60	96461.7	3.6	**53.9005**	0.670	1.2	ug/L	192	Standard
	Cu	65	88941.7	2.7	**49.2712**	0.171	0.3	ug/L	141	Standard
	Zn	66	55366.0	3.1	**52.4384**	0.443	0.8	ug/L	491	Standard
>	**Ge**	72	488431.6	2.5				ug/L	515087	Standard
	As	75	59145.7	4.0	**55.5035**	0.877	1.6	ug/L	20	Standard
	Se	82	9257.9	4.7	**84.6512**	1.891	2.2	ug/L	15	Standard
	Se-1	77	8241.9	2.0	**114.6628**	0.599	0.5	ug/L	48	Standard
>	**Ga**	71	135.0	3.7				mg/L	90	Standard
	Rb	85	11232.5	8.2				ug/L	23	Standard
	Y	89	424780.5	4.2				ug/L	448510	Standard
>	**Rh**	103	1410.1	5.3				ug/L	15	Standard
	Mo	98	28554.4	4.0	**11.2353**	0.049	0.4	ug/L	11	Standard
	Ag	107	298500.0	4.4	**47.3531**	0.325	0.7	ug/L	134	Standard
	Cd	111	96838.7	4.3	**48.2572**	0.264	0.5	mg/L	7	Standard
	Cd	114	236461.6	3.9	**48.4818**	0.307	0.6	ug/L	16	Standard
>	**In**	115	573601.2	3.7				ug/L	611117	Standard
	Sn	118	926.7	16.3	**0.0649**	0.025	39.2	ug/L	518	Standard
	Sb	123	232072.7	4.2	**52.3852**	0.509	1.0	ug/L	127	Standard
	Ba	135	113861.5	4.7	**58.7202**	0.562	1.0	ug/L	45	Standard
	Ce	140	1120.0	4.0				ug/L	298	Standard
>	**Tb**	159	960238.4	4.5				ug/L	977942	Standard
	Ho	165	33.3	75.5				ug/L	12	Standard
	Tl	203	395828.3	3.1	**51.4711**	0.762	1.5	ug/L	31	Standard
	Tl	205	346560.1	3.5	**51.8878**	0.159	0.3	ug/L	20	Standard
	Pb	206	263890.3	2.7	**53.4438**	0.979	1.8	ug/L	286	Standard
	Pb	207	230261.5	2.5	**51.7030**	0.928	1.8	ug/L	257	Standard
	Pb	208	887552.6	2.9	**51.5030**	0.554	1.1	ug/L	956	Standard
	U	238	419873.0	2.9	**64.2072**	0.642	1.0	ug/L	17	Standard
>	**Bi**	209	508536.8	3.8				ug/L	557080	Standard

Sample ID: L1606115402S WG573751-09
Report Date/Time: Tuesday, June 28, 2016 17:02:31
Page 1

Approved: June 29, 2016

Na	23	21.7	35.3	**139.6053**	45.304	32.5	mg/L	0	Standard
Mg	24	357824.7	2.8	**481.2852**	10.577	2.2	mg/L	32	Standard
K	39	491.7	6.5	**1.5399**	0.155	10.1	mg/L	30	Standard
Ca	43	1775.1	1.7	**267.3999**	15.688	5.9	mg/L	48	Standard
Fe	54	171.9	15.3	**0.0199**	0.020	102.8	mg/L	159	Standard
Fe	57	1550.1	0.6	**4.6666**	0.208	4.5	mg/L	195	Standard
Sc-1	45	39148.9	4.1				mg/L	39543	Standard
Cl	35	91435.3	3.5				ug/L	27642	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	45418.1	6.1				ug/L	1647	Standard
P	31	20330.3	5.5				ug/L	15231	Standard
S	34	2288.5	3.3				ug/L	1845	Standard
Sr	88	6416.4	6.4				ug/L	70	Standard
C	12	206.7	37.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	21.9	50.9				mg/L	12	Standard
Ho-1	165	33.3	75.5				mg/L	12	Standard
Er	166	30.0	57.7				mg/L	20	Standard
I	127	49499.1	2.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.825	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606115402S WG573751-09
Report Date/Time: Tuesday, June 28, 2016 17:02:31
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.861
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.286
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606115402S WG573751-09
Report Date/Time: Tuesday, June 28, 2016 17:02:31
Page 3

Approved: June 29, 2016

Se-1 77 Upper, S, EEE Se-1 77

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115403SD WG573751-10
Sample Date/Time: Tuesday, June 28, 2016 17:03:25
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	118994.0	2.6				ug/L	81760	Standard
	Be	9	64654.3	0.9	**44.7357**	0.820	1.8	ug/L	17	Standard
	Al	27	87741403.7	3.4	**391.0655**	6.582	1.7	ug/L	1410	Standard
	Sc	45	41172.5	1.6				ug/L	39543	Standard
	Ti	47	259.3	3.7	**0.9238**	0.057	6.2	ug/L	39	Standard
	V	51	425385.5	3.2	**63.6566**	1.295	2.0	ug/L	1415	Standard
	Cr	52	362069.3	1.9	**53.2267**	0.604	1.1	ug/L	6946	Standard
	Cr	53	64441.8	2.0	**76.2717**	0.872	1.1	ug/L	328	Standard
	Mn	55	1073606.3	3.1	**172.6721**	4.096	2.4	ug/L	823	Standard
	Co	59	369825.3	3.2	**54.8942**	1.128	2.1	ug/L	252	Standard
	Ni	60	100548.2	1.5	**55.6131**	0.149	0.3	ug/L	192	Standard
	Cu	65	92359.0	1.3	**50.6385**	0.319	0.6	ug/L	141	Standard
	Zn	66	57865.3	2.6	**54.2651**	0.864	1.6	ug/L	491	Standard
>	**Ge**	72	493572.0	1.8				ug/L	515087	Standard
	As	75	61885.0	3.3	**57.4777**	1.381	2.4	ug/L	20	Standard
	Se	82	9664.4	3.7	**87.4717**	2.250	2.6	ug/L	15	Standard
	Se-1	77	8366.3	3.5	**115.1653**	2.897	2.5	ug/L	48	Standard
>	**Ga**	71	118.3	21.7				mg/L	90	Standard
	Rb	85	11170.8	6.4				ug/L	23	Standard
	Y	89	447220.0	3.1				ug/L	448510	Standard
>	**Rh**	103	1640.1	8.8				ug/L	15	Standard
	Mo	98	29726.0	4.1	**11.0857**	0.160	1.4	ug/L	11	Standard
	Ag	107	312572.9	2.2	**47.0220**	0.762	1.6	ug/L	134	Standard
	Cd	111	102356.1	3.3	**48.3584**	0.794	1.6	mg/L	7	Standard
	Cd	114	246212.9	4.6	**47.8408**	0.884	1.8	ug/L	16	Standard
>	**In**	115	605206.5	3.7				ug/L	611117	Standard
	Sn	118	1233.4	10.6	**0.1085**	0.018	16.3	ug/L	518	Standard
	Sb	123	240651.4	1.9	**51.5127**	0.935	1.8	ug/L	127	Standard
	Ba	135	117995.0	3.4	**57.6913**	0.169	0.3	ug/L	45	Standard
	Ce	140	1415.1	2.3				ug/L	298	Standard
>	**Tb**	159	994298.0	3.0				ug/L	977942	Standard
	Ho	165	46.7	12.4				ug/L	12	Standard
	Tl	203	412661.0	1.3	**51.8933**	0.197	0.4	ug/L	31	Standard
	Tl	205	366877.2	3.6	**53.1179**	1.107	2.1	ug/L	20	Standard
	Pb	206	275320.1	2.3	**53.9118**	0.413	0.8	ug/L	286	Standard
	Pb	207	238830.1	2.6	**51.8469**	0.552	1.1	ug/L	257	Standard
	Pb	208	936516.1	2.9	**52.5472**	0.756	1.4	ug/L	956	Standard
	U	238	442147.9	3.9	**65.3698**	1.598	2.4	ug/L	17	Standard
>	**Bi**	209	525736.2	1.5				ug/L	557080	Standard

Sample ID: L1606115403SD WG573751-10
Report Date/Time: Tuesday, June 28, 2016 17:05:42
Page 1

Approved: June 29, 2016

Na	23	31.7	48.2	**194.7966**	93.559	48.0	mg/L	0	Standard
Mg	24	381865.2	2.0	**488.2175**	12.226	2.5	mg/L	32	Standard
K	39	475.0	11.9	**1.3985**	0.159	11.4	mg/L	30	Standard
Ca	43	1828.4	7.5	**261.2707**	17.620	6.7	mg/L	48	Standard
Fe	54	210.4	5.2	**0.0459**	0.012	26.9	mg/L	159	Standard
Fe	57	1693.4	5.0	**4.8640**	0.189	3.9	mg/L	195	Standard
> **Sc-1**	45	41172.5	1.6				mg/L	39543	Standard
Cl	35	96785.1	3.5				ug/L	27642	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	48665.0	7.0				ug/L	1647	Standard
P	31	21074.7	3.4				ug/L	15231	Standard
S	34	2411.9	0.6				ug/L	1845	Standard
Sr	88	7001.6	9.4				ug/L	70	Standard
C	12	253.3	28.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	54.1	45.2				mg/L	12	Standard
Ho-1	165	46.7	12.4				mg/L	12	Standard
Er	166	53.3	28.6				mg/L	20	Standard
I	127	96813.1	12.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		145.540	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.823	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606115403SD WG573751-10
Report Date/Time: Tuesday, June 28, 2016 17:05:42
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.033
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.373
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606115403SD WG573751-10
Report Date/Time: Tuesday, June 28, 2016 17:05:42
Page 3

Approved: June 29, 2016

Se-1 77 Upper, S, EEE	Se-1	77	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115404
Sample Date/Time: Tuesday, June 28, 2016 17:06:37
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100804.3	1.4				ug/L	81760	Standard
	Be	9	43.3	6.7	**0.0257**	0.002	9.1	ug/L	17	Standard
	Al	27	95134.9	5.2	**0.4862**	0.026	5.4	ug/L	1410	Standard
	Sc	45	38767.9	2.5				ug/L	39543	Standard
	Ti	47	56.0	17.6	**0.0568**	0.042	74.0	ug/L	39	Standard
	V	51	2653.2	7.2	**0.1688**	0.023	13.6	ug/L	1415	Standard
	Cr	52	16846.0	0.3	**1.3242**	0.040	3.0	ug/L	6946	Standard
	Cr	53	2448.5	10.3	**2.4055**	0.318	13.2	ug/L	328	Standard
	Mn	55	6416.4	0.3	**0.8254**	0.012	1.5	ug/L	823	Standard
	Co	59	385.0	5.1	**0.0226**	0.003	13.2	ug/L	252	Standard
	Ni	60	1595.4	9.2	**0.7282**	0.071	9.8	ug/L	192	Standard
	Cu	65	1383.7	5.1	**0.6260**	0.046	7.3	ug/L	141	Standard
	Zn	66	3329.0	1.8	**2.1614**	0.092	4.3	ug/L	491	Standard
>	**Ge**	72	523540.2	1.3				ug/L	515087	Standard
	As	75	21.6	288.4	**0.0594**	0.054	91.4	ug/L	20	Standard
	Se	82	48.4	30.2	**0.2956**	0.131	44.3	ug/L	15	Standard
	Se-1	77	118.7	6.2	**0.8319**	0.117	14.0	ug/L	48	Standard
>	**Ga**	71	35.0	51.5				mg/L	90	Standard
	Rb	85	285.0	10.7				ug/L	23	Standard
	Y	89	449294.4	0.5				ug/L	448510	Standard
>	**Rh**	103	35.0	14.3				ug/L	15	Standard
	Mo	98	461.6	2.9	**0.1485**	0.005	3.0	ug/L	11	Standard
	Ag	107	143.3	7.2	**0.0047**	0.002	32.8	ug/L	134	Standard
	Cd	111	43.9	7.3	**0.0172**	0.002	8.8	mg/L	7	Standard
	Cd	114	151.5	5.9	**0.0237**	0.002	7.4	ug/L	16	Standard
>	**In**	115	622732.4	0.3				ug/L	611117	Standard
	Sn	118	3920.5	2.1	**0.5488**	0.015	2.8	ug/L	518	Standard
	Sb	123	270.3	27.2	**0.0434**	0.015	35.5	ug/L	127	Standard
	Ba	135	1327.1	1.7	**0.6057**	0.011	1.9	ug/L	45	Standard
	Ce	140	168.3	16.4				ug/L	298	Standard
>	**Tb**	159	980536.6	0.9				ug/L	977942	Standard
	Ho	165	21.7	13.3				ug/L	12	Standard
	Tl	203	266.3	8.1	**0.0259**	0.003	10.5	ug/L	31	Standard
	Tl	205	201.7	5.7	**0.0244**	0.001	5.0	ug/L	20	Standard
	Pb	206	459.0	5.5	**0.0188**	0.005	29.2	ug/L	286	Standard
	Pb	207	389.7	6.3	**0.0195**	0.006	29.5	ug/L	257	Standard
	Pb	208	1625.7	6.2	**0.0231**	0.006	26.8	ug/L	956	Standard
	U	238	121.7	7.4	**0.0135**	0.001	9.9	ug/L	17	Standard
>	**Bi**	209	574701.5	1.2				ug/L	557080	Standard

Sample ID: L1606115404
Report Date/Time: Tuesday, June 28, 2016 17:08:54
Page 1

Approved: June 29, 2016

Na	23	5.0	100.0	**32.7163**	32.227	98.5	mg/L	0	Standard
Mg	24	330.0	22.9	**0.3898**	0.094	24.2	mg/L	32	Standard
K	39	33.3	43.3	**-0.0268**	0.048	179.7	mg/L	30	Standard
Ca	43	33.3	43.3	**-0.2011**	2.146	1067.4	mg/L	48	Standard
Fe	54	141.8	17.1	**-0.0059**	0.025	416.6	mg/L	159	Standard
Fe	57	216.7	23.3	**0.1207**	0.166	137.9	mg/L	195	Standard
> **Sc-1**	45	38767.9	2.5				mg/L	39543	Standard
Cl	35	43132.0	0.5				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	3107.0	8.7				ug/L	1647	Standard
P	31	17094.6	3.8				ug/L	15231	Standard
S	34	2171.8	4.7				ug/L	1845	Standard
Sr	88	71.7	31.5				ug/L	70	Standard
C	12	180.0	44.1				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	86.6				mg/L	12	Standard
Ho-1	165	21.7	13.3				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	6683.3	38.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		123.293	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.641	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606115404
Report Date/Time: Tuesday, June 28, 2016 17:08:54
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.163
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 17:09:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98106.9	3.9				ug/L	81760	Standard
	Be	9	60781.9	5.8	**50.9762**	1.224	2.4	ug/L	17	Standard
	Al	27	8271215.1	2.8	**44.7180**	0.568	1.3	ug/L	1410	Standard
	Sc	45	39052.0	5.6				ug/L	39543	Standard
	Ti	47	24646.4	4.4	**101.4481**	2.619	2.6	ug/L	39	Standard
	V	51	347970.7	1.4	**51.1411**	0.534	1.0	ug/L	1415	Standard
	Cr	52	354198.6	3.4	**51.1178**	0.779	1.5	ug/L	6946	Standard
	Cr	53	44595.6	4.3	**51.7475**	1.396	2.7	ug/L	328	Standard
	Mn	55	315347.9	1.9	**49.7410**	0.694	1.4	ug/L	823	Standard
	Co	59	365725.5	2.3	**53.3530**	0.828	1.6	ug/L	252	Standard
	Ni	60	93315.9	2.3	**50.7083**	0.301	0.6	ug/L	192	Standard
	Cu	65	94072.6	2.8	**50.6778**	0.428	0.8	ug/L	141	Standard
	Zn	66	55586.5	1.6	**51.1865**	0.432	0.8	ug/L	491	Standard
>	**Ge**	72	502280.1	2.3				ug/L	515087	Standard
	As	75	55868.4	1.2	**51.0087**	0.746	1.5	ug/L	20	Standard
	Se	82	5921.1	2.6	**52.6309**	1.371	2.6	ug/L	15	Standard
	Se-1	77	3936.2	0.2	**52.8821**	1.332	2.5	ug/L	48	Standard
>	**Ga**	71	43.3	6.7				mg/L	90	Standard
	Rb	85	853.4	12.0				ug/L	23	Standard
	Y	89	445806.9	0.5				ug/L	448510	Standard
>	**Rh**	103	45.0	61.9				ug/L	15	Standard
	Mo	98	273081.8	2.1	**98.9265**	1.774	1.8	ug/L	11	Standard
	Ag	107	339843.9	2.2	**49.5651**	0.762	1.5	ug/L	134	Standard
	Cd	111	106758.1	1.3	**48.9107**	0.367	0.7	mg/L	7	Standard
	Cd	114	258025.9	1.5	**48.6321**	0.403	0.8	ug/L	16	Standard
>	**In**	115	623979.7	0.7				ug/L	611117	Standard
	Sn	118	298451.0	1.1	**49.3312**	0.224	0.5	ug/L	518	Standard
	Sb	123	238781.4	2.0	**49.5506**	0.796	1.6	ug/L	127	Standard
	Ba	135	101752.9	1.4	**48.2444**	0.388	0.8	ug/L	45	Standard
	Ce	140	83.3	6.9				ug/L	298	Standard
>	**Tb**	159	999812.3	3.7				ug/L	977942	Standard
	Ho	165	18.3	56.8				ug/L	12	Standard
	Tl	203	438487.8	2.0	**50.5214**	0.372	0.7	ug/L	31	Standard
	Tl	205	396911.7	0.7	**52.6785**	1.200	2.3	ug/L	20	Standard
	Pb	206	278860.8	1.5	**50.0350**	0.542	1.1	ug/L	286	Standard
	Pb	207	252734.9	2.4	**50.2714**	0.461	0.9	ug/L	257	Standard
	Pb	208	1008405.1	1.0	**51.8566**	0.775	1.5	ug/L	956	Standard
	U	238	385967.4	0.9	**52.3060**	0.849	1.6	ug/L	17	Standard
>	**Bi**	209	573840.1	2.4				ug/L	557080	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 17:12:07
Page 1

Approved: June 29, 2016

Na	23	6.7	43.3	**42.7715**	15.957	37.3	mg/L	0	Standard
Mg	24	4330.6	4.7	**5.7850**	0.241	4.2	mg/L	32	Standard
K	39	1310.1	5.5	**4.3410**	0.087	2.0	mg/L	30	Standard
Ca	43	75.0	17.6	**6.2533**	2.500	40.0	mg/L	48	Standard
Fe	54	6082.2	3.3	**5.4477**	0.350	6.4	mg/L	159	Standard
Fe	57	1690.1	5.8	**5.1531**	0.140	2.7	mg/L	195	Standard
Sc-1	45	39052.0	5.6				mg/L	39543	Standard
Cl	35	36312.2	3.9				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2130.1	3.3				ug/L	1647	Standard
P	31	18776.6	1.2				ug/L	15231	Standard
S	34	2388.5	6.0				ug/L	1845	Standard
Sr	88	65.0	13.3				ug/L	70	Standard
C	12	133.3	33.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	43.5				mg/L	12	Standard
Ho-1	165	18.3	56.8				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	2708.6	18.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.952		
Al	27	89.436		
Sc	45			
Ti	47	101.448		
V	51	102.282		
Cr	52	102.236		
Cr	53			
Mn	55	99.482		
Co	59	106.706		
Ni	60	101.417		
Cu	65	101.356		
Zn	66	102.373		
Ge	72		97.514	
As	75	102.017		
Se	82	105.262		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 17:12:07
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	98.926		
Ag	107	99.130		
Cd	111	97.821		
Cd	114			
> In	115		102.105	
Sn	118	98.662		
Sb	123	99.101		
Ba	135	96.489		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.043		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.713		
U	238	104.612		
> Bi	209		103.008	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 17:12:07
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 17:13:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92565.4	2.9				ug/L	81760	Standard
	Be	9	53.3	124.8	**0.0389**	0.062	158.6	ug/L	17	Standard
	Al	27	40870.6	146.9	**0.2266**	0.357	157.4	ug/L	1410	Standard
	Sc	45	37247.5	4.3				ug/L	39543	Standard
	Ti	47	28.7	28.0	**-0.0471**	0.033	70.8	ug/L	39	Standard
	V	51	1306.5	27.0	**-0.0143**	0.053	368.2	ug/L	1415	Standard
	Cr	52	6317.0	3.9	**-0.1289**	0.039	29.9	ug/L	6946	Standard
	Cr	53	723.4	11.4	**0.5015**	0.098	19.5	ug/L	328	Standard
	Mn	55	1084.7	54.0	**0.0228**	0.093	407.7	ug/L	823	Standard
	Co	59	338.3	37.8	**0.0179**	0.019	104.7	ug/L	252	Standard
	Ni	60	322.7	24.3	**0.0703**	0.043	61.2	ug/L	192	Standard
	Cu	65	237.7	21.2	**0.0371**	0.027	74.0	ug/L	141	Standard
	Zn	66	487.7	9.0	**-0.3725**	0.041	11.1	ug/L	491	Standard
>	**Ge**	72	503592.6	0.3				ug/L	515087	Standard
	As	75	-19.3	188.6	**0.0227**	0.033	146.0	ug/L	20	Standard
	Se	82	22.8	34.7	**0.0835**	0.070	83.8	ug/L	15	Standard
	Se-1	77	71.3	3.2	**0.2496**	0.032	12.8	ug/L	48	Standard
>	**Ga**	71	43.3	46.6				mg/L	90	Standard
	Rb	85	33.3	37.7				ug/L	23	Standard
	Y	89	434857.2	0.6				ug/L	448510	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	288.2	19.1	**0.0890**	0.021	23.1	ug/L	11	Standard
	Ag	107	295.0	92.5	**0.0287**	0.042	146.5	ug/L	134	Standard
	Cd	111	58.8	115.8	**0.0253**	0.033	130.1	mg/L	7	Standard
	Cd	114	179.7	150.5	**0.0306**	0.054	175.0	ug/L	16	Standard
>	**In**	115	602649.0	1.7				ug/L	611117	Standard
	Sn	118	880.0	23.1	**0.0494**	0.037	75.1	ug/L	518	Standard
	Sb	123	564.4	53.6	**0.1091**	0.067	61.4	ug/L	127	Standard
	Ba	135	113.7	104.6	**0.0312**	0.059	190.7	ug/L	45	Standard
	Ce	140	26.7	21.7				ug/L	298	Standard
>	**Tb**	159	956287.2	0.6				ug/L	977942	Standard
	Ho	165	6.7	173.2				ug/L	12	Standard
	Tl	203	302.3	107.0	**0.0307**	0.038	123.1	ug/L	31	Standard
	Tl	205	353.3	119.4	**0.0454**	0.057	124.8	ug/L	20	Standard
	Pb	206	425.3	47.1	**0.0143**	0.036	251.9	ug/L	286	Standard
	Pb	207	353.0	32.9	**0.0137**	0.023	168.1	ug/L	257	Standard
	Pb	208	1674.0	55.6	**0.0274**	0.048	175.9	ug/L	956	Standard
	U	238	298.0	132.6	**0.0381**	0.054	142.5	ug/L	17	Standard
>	**Bi**	209	561401.5	0.7				ug/L	557080	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 17:15:18
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	206.7	141.8	**0.2403**	0.424	176.4	mg/L	32	Standard
K	39	28.3	71.3	**-0.0379**	0.076	200.2	mg/L	30	Standard
Ca	43	35.0	24.7	**0.2817**	1.299	461.1	mg/L	48	Standard
Fe	54	147.7	17.2	**0.0057**	0.030	525.6	mg/L	159	Standard
Fe	57	195.0	14.3	**0.0744**	0.099	133.6	mg/L	195	Standard
Sc-1	45	37247.5	4.3				mg/L	39543	Standard
Cl	35	35032.5	2.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1893.5	11.2				ug/L	1647	Standard
P	31	18479.6	2.3				ug/L	15231	Standard
S	34	2273.5	3.9				ug/L	1845	Standard
Sr	88	81.7	3.5				ug/L	70	Standard
C	12	186.7	15.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	186.3				mg/L	12	Standard
Ho-1	165	6.7	173.2				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	2043.5	19.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.768	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 17:15:18
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.614
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.776
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 17:15:18
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115501
Sample Date/Time: Tuesday, June 28, 2016 17:16:14
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92590.4	1.6				ug/L	81760	Standard
	Be	9	26.7	47.2	**0.0141**	0.012	82.4	ug/L	17	Standard
	Al	27	22123057.0	1.6	**126.7281**	1.652	1.3	ug/L	1410	Standard
	Sc	45	39028.5	1.1				ug/L	39543	Standard
	Ti	47	160.7	8.5	**0.5119**	0.051	9.9	ug/L	39	Standard
	V	51	4388.8	2.7	**0.4554**	0.016	3.5	ug/L	1415	Standard
	Cr	52	10159.7	1.1	**0.4737**	0.053	11.2	ug/L	6946	Standard
	Cr	53	1711.8	8.9	**1.7064**	0.233	13.7	ug/L	328	Standard
	Mn	55	4816073.5	0.9	**779.0277**	27.654	3.5	ug/L	823	Standard
	Co	59	2714.6	0.9	**0.3738**	0.009	2.5	ug/L	252	Standard
	Ni	60	3772.1	1.1	**1.9951**	0.039	2.0	ug/L	192	Standard
	Cu	65	754.7	3.1	**0.3255**	0.008	2.4	ug/L	141	Standard
	Zn	66	4017.9	2.4	**3.0152**	0.057	1.9	ug/L	491	Standard
>	**Ge**	72	491414.0	2.7				ug/L	515087	Standard
	As	75	1051.2	2.3	**1.0210**	0.045	4.4	ug/L	20	Standard
	Se	82	143.6	4.5	**1.1879**	0.030	2.5	ug/L	15	Standard
	Se-1	77	105.7	15.2	**0.7547**	0.249	32.9	ug/L	48	Standard
>	**Ga**	71	188.3	17.7				mg/L	90	Standard
	Rb	85	950.0	0.9				ug/L	23	Standard
	Y	89	424439.8	0.9				ug/L	448510	Standard
>	**Rh**	103	96.7	7.9				ug/L	15	Standard
	Mo	98	5849.5	0.5	**2.2126**	0.029	1.3	ug/L	11	Standard
	Ag	107	89.7	21.1	**-0.0024**	0.003	128.8	ug/L	134	Standard
	Cd	111	11.8	58.9	**0.0028**	0.003	121.4	mg/L	7	Standard
	Cd	114	46.1	44.3	**0.0042**	0.004	96.2	ug/L	16	Standard
>	**In**	115	592706.9	1.7				ug/L	611117	Standard
	Sn	118	891.7	9.5	**0.0535**	0.013	23.6	ug/L	518	Standard
	Sb	123	236.5	14.9	**0.0388**	0.007	18.8	ug/L	127	Standard
	Ba	135	171509.6	0.5	**85.6510**	1.837	2.1	ug/L	45	Standard
	Ce	140	703.3	3.9				ug/L	298	Standard
>	**Tb**	159	954495.6	1.0				ug/L	977942	Standard
	Ho	165	26.7	60.3				ug/L	12	Standard
	Tl	203	128.7	6.5	**0.0108**	0.001	9.4	ug/L	31	Standard
	Tl	205	116.7	2.5	**0.0140**	0.000	2.9	ug/L	20	Standard
	Pb	206	518.0	5.9	**0.0341**	0.006	17.0	ug/L	286	Standard
	Pb	207	434.7	5.8	**0.0328**	0.005	16.1	ug/L	257	Standard
	Pb	208	1843.7	3.4	**0.0392**	0.003	8.9	ug/L	956	Standard
	U	238	11694.2	0.7	**1.6602**	0.012	0.7	ug/L	17	Standard
>	**Bi**	209	546693.4	0.1				ug/L	557080	Standard

Sample ID: L1606115501
Report Date/Time: Tuesday, June 28, 2016 17:18:31
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.9680**	18.988	173.1	mg/L	0	Standard
Mg	24	30276.9	1.0	**40.7793**	0.477	1.2	mg/L	32	Standard
K	39	240.0	12.5	**0.6798**	0.099	14.5	mg/L	30	Standard
Ca	43	255.0	15.3	**33.9356**	6.415	18.9	mg/L	48	Standard
Fe	54	184.3	20.5	**0.0318**	0.034	107.2	mg/L	159	Standard
Fe	57	341.7	3.0	**0.5441**	0.035	6.5	mg/L	195	Standard
> **Sc-1**	45	39028.5	1.1				mg/L	39543	Standard
Cl	35	37440.9	1.2				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	32190.8	1.7				ug/L	1647	Standard
P	31	22541.8	0.7				ug/L	15231	Standard
S	34	2386.9	3.2				ug/L	1845	Standard
Sr	88	303.3	20.6				ug/L	70	Standard
C	12	480.0	6.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	27.6	75.9				mg/L	12	Standard
Ho-1	165	26.7	60.3				mg/L	12	Standard
Er	166	50.0	40.0				mg/L	20	Standard
I	127	1264643.9	6.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.247	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.404	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606115501
Report Date/Time: Tuesday, June 28, 2016 17:18:31
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.988
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.135
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606115501
Report Date/Time: Tuesday, June 28, 2016 17:18:31
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115502
Sample Date/Time: Tuesday, June 28, 2016 17:19:26
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94157.1	4.7				ug/L	81760	Standard
	Be	9	20.0	50.0	**0.0078**	0.009	115.3	ug/L	17	Standard
	Al	27	28931934.4	4.0	**163.0048**	1.392	0.9	ug/L	1410	Standard
	Sc	45	40320.3	3.5				ug/L	39543	Standard
	Ti	47	168.3	17.1	**0.5232**	0.117	22.4	ug/L	39	Standard
	V	51	1551.4	10.5	**0.0205**	0.027	130.5	ug/L	1415	Standard
	Cr	52	10328.9	2.0	**0.4515**	0.024	5.3	ug/L	6946	Standard
	Cr	53	2665.2	7.9	**2.7435**	0.199	7.2	ug/L	328	Standard
	Mn	55	1534029.1	1.0	**240.4438**	3.129	1.3	ug/L	823	Standard
	Co	59	1102.0	2.8	**0.1281**	0.004	3.4	ug/L	252	Standard
	Ni	60	1786.8	2.8	**0.8597**	0.029	3.3	ug/L	192	Standard
	Cu	65	955.7	1.4	**0.4206**	0.012	3.0	ug/L	141	Standard
	Zn	66	3611.4	2.8	**2.5229**	0.115	4.5	ug/L	491	Standard
>	**Ge**	72	506659.2	1.8				ug/L	515087	Standard
	As	75	1883.3	1.6	**1.7433**	0.024	1.4	ug/L	20	Standard
	Se	82	155.4	0.8	**1.2536**	0.030	2.4	ug/L	15	Standard
	Se-1	77	168.7	6.6	**1.5590**	0.181	11.6	ug/L	48	Standard
>	**Ga**	71	140.0	15.6				mg/L	90	Standard
	Rb	85	1435.1	8.2				ug/L	23	Standard
	Y	89	449200.8	1.5				ug/L	448510	Standard
>	**Rh**	103	93.3	16.4				ug/L	15	Standard
	Mo	98	2699.1	0.6	**0.9667**	0.027	2.8	ug/L	11	Standard
	Ag	107	94.7	12.7	**-0.0023**	0.002	96.2	ug/L	134	Standard
	Cd	111	15.7	16.0	**0.0044**	0.001	31.4	mg/L	7	Standard
	Cd	114	28.9	55.3	**0.0006**	0.003	513.8	ug/L	16	Standard
>	**In**	115	619397.8	3.1				ug/L	611117	Standard
	Sn	118	1035.0	8.9	**0.0707**	0.012	17.4	ug/L	518	Standard
	Sb	123	177.5	18.8	**0.0244**	0.008	32.9	ug/L	127	Standard
	Ba	135	342505.9	1.5	**163.7121**	2.675	1.6	ug/L	45	Standard
	Ce	140	470.0	1.8				ug/L	298	Standard
>	**Tb**	159	978535.3	2.3				ug/L	977942	Standard
	Ho	165	33.3	17.3				ug/L	12	Standard
	Tl	203	95.7	2.4	**0.0067**	0.000	2.7	ug/L	31	Standard
	Tl	205	98.3	7.8	**0.0112**	0.001	8.1	ug/L	20	Standard
	Pb	206	616.7	3.3	**0.0513**	0.003	5.5	ug/L	286	Standard
	Pb	207	520.0	3.8	**0.0494**	0.003	5.9	ug/L	257	Standard
	Pb	208	2224.4	1.1	**0.0583**	0.001	1.4	ug/L	956	Standard
	U	238	39.7	29.5	**0.0026**	0.002	61.0	ug/L	17	Standard
>	**Bi**	209	553220.4	1.1				ug/L	557080	Standard

Sample ID: L1606115502
Report Date/Time: Tuesday, June 28, 2016 17:21:43
Page 1

Approved: June 29, 2016

Na	23	5.0	0.0	**31.5109**	1.087	3.4	mg/L	0	Standard
Mg	24	25140.9	3.4	**32.7721**	0.865	2.6	mg/L	32	Standard
K	39	73.3	23.9	**0.1023**	0.063	61.8	mg/L	30	Standard
Ca	43	243.3	6.6	**30.9203**	2.535	8.2	mg/L	48	Standard
Fe	54	2629.1	2.7	**2.1972**	0.059	2.7	mg/L	159	Standard
Fe	57	1076.7	7.2	**2.9489**	0.380	12.9	mg/L	195	Standard
> **Sc-1**	45	40320.3	3.5				mg/L	39543	Standard
Cl	35	39998.8	2.6				ug/L	27642	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	32989.2	3.3				ug/L	1647	Standard
P	31	24089.1	1.8				ug/L	15231	Standard
S	34	2583.6	5.0				ug/L	1845	Standard
Sr	88	433.3	4.7				ug/L	70	Standard
C	12	350.0	5.7				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	25.7	20.9				mg/L	12	Standard
Ho-1	165	33.3	17.3				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	377170.1	0.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.364	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606115502
Report Date/Time: Tuesday, June 28, 2016 17:21:43
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.355	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.307	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606115502
Report Date/Time: Tuesday, June 28, 2016 17:21:43
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115503
Sample Date/Time: Tuesday, June 28, 2016 17:22:37
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93460.7	0.5				ug/L	81760	Standard
	Be	9	35.0	14.3	**0.0211**	0.004	21.2	ug/L	17	Standard
	Al	27	14187081.3	1.7	**80.5012**	1.275	1.6	ug/L	1410	Standard
	Sc	45	39556.6	4.7				ug/L	39543	Standard
	Ti	47	229.0	18.7	**0.7435**	0.168	22.5	ug/L	39	Standard
	V	51	2172.0	8.1	**0.1016**	0.022	21.3	ug/L	1415	Standard
	Cr	52	10167.4	1.5	**0.3846**	0.034	8.8	ug/L	6946	Standard
	Cr	53	1090.0	15.2	**0.8840**	0.185	20.9	ug/L	328	Standard
	Mn	55	1432250.3	1.3	**217.9180**	5.450	2.5	ug/L	823	Standard
	Co	59	795.7	6.2	**0.0804**	0.008	9.7	ug/L	252	Standard
	Ni	60	1574.1	4.4	**0.7198**	0.033	4.6	ug/L	192	Standard
	Cu	65	1999.1	3.4	**0.9475**	0.036	3.8	ug/L	141	Standard
	Zn	66	5797.8	1.6	**4.3927**	0.080	1.8	ug/L	491	Standard
>	**Ge**	72	521945.3	1.2				ug/L	515087	Standard
	As	75	168.7	6.2	**0.1883**	0.009	4.6	ug/L	20	Standard
	Se	82	81.0	7.2	**0.5749**	0.055	9.6	ug/L	15	Standard
	Se-1	77	72.3	14.9	**0.2276**	0.131	57.6	ug/L	48	Standard
>	**Ga**	71	155.0	23.3				mg/L	90	Standard
	Rb	85	10031.7	2.6				ug/L	23	Standard
	Y	89	435099.7	2.5				ug/L	448510	Standard
>	**Rh**	103	70.0	28.6				ug/L	15	Standard
	Mo	98	145.2	5.2	**0.0354**	0.003	8.7	ug/L	11	Standard
	Ag	107	85.3	8.5	**-0.0033**	0.001	30.7	ug/L	134	Standard
	Cd	111	76.7	2.3	**0.0335**	0.001	2.5	mg/L	7	Standard
	Cd	114	203.1	19.3	**0.0347**	0.008	22.4	ug/L	16	Standard
>	**In**	115	602973.5	0.6				ug/L	611117	Standard
	Sn	118	941.7	4.9	**0.0595**	0.009	14.6	ug/L	518	Standard
	Sb	123	323.8	6.4	**0.0567**	0.004	7.5	ug/L	127	Standard
	Ba	135	119338.2	0.9	**58.5639**	0.899	1.5	ug/L	45	Standard
	Ce	140	855.0	10.9				ug/L	298	Standard
>	**Tb**	159	952983.8	1.5				ug/L	977942	Standard
	Ho	165	36.7	41.7				ug/L	12	Standard
	Tl	203	88.7	6.9	**0.0057**	0.001	14.0	ug/L	31	Standard
	Tl	205	55.0	27.3	**0.0052**	0.002	38.2	ug/L	20	Standard
	Pb	206	861.0	5.9	**0.0956**	0.010	10.1	ug/L	286	Standard
	Pb	207	708.7	5.0	**0.0873**	0.008	9.7	ug/L	257	Standard
	Pb	208	2964.1	2.3	**0.0967**	0.005	5.3	ug/L	956	Standard
	U	238	696.7	2.0	**0.0942**	0.003	2.9	ug/L	17	Standard
>	**Bi**	209	557355.1	1.0				ug/L	557080	Standard

Sample ID: L1606115503
Report Date/Time: Tuesday, June 28, 2016 17:24:54
Page 1

Approved: June 29, 2016

Na	23	6.7	43.3	**42.2849**	16.098	38.1	mg/L	0	Standard
Mg	24	19544.3	4.8	**25.9961**	1.909	7.3	mg/L	32	Standard
K	39	113.3	15.5	**0.2405**	0.047	19.5	mg/L	30	Standard
Ca	43	286.7	25.9	**38.5627**	12.897	33.4	mg/L	48	Standard
Fe	54	997.4	5.8	**0.7664**	0.064	8.4	mg/L	159	Standard
Fe	57	530.0	13.9	**1.1674**	0.275	23.5	mg/L	195	Standard
> **Sc-1**	45	39556.6	4.7				mg/L	39543	Standard
Cl	35	38409.3	3.3				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	17249.8	6.1				ug/L	1647	Standard
P	31	22414.9	3.0				ug/L	15231	Standard
S	34	2625.2	3.4				ug/L	1845	Standard
Sr	88	228.3	6.7				ug/L	70	Standard
C	12	260.0	15.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	21.4	67.1				mg/L	12	Standard
Ho-1	165	36.7	41.7				mg/L	12	Standard
Er	166	40.0	75.0				mg/L	20	Standard
I	127	663837.8	8.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.311	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.332	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606115503
Report Date/Time: Tuesday, June 28, 2016 17:24:54
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.668
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.049
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606115503
Report Date/Time: Tuesday, June 28, 2016 17:24:54
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 17:25:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91554.4	4.0				ug/L	81760	Standard
	Be	9	59302.5	0.5	**53.3655**	1.843	3.5	ug/L	17	Standard
	Al	27	8323459.6	1.6	**48.2773**	2.634	5.5	ug/L	1410	Standard
	Sc	45	40460.6	1.5				ug/L	39543	Standard
	Ti	47	25609.3	2.1	**100.1533**	1.793	1.8	ug/L	39	Standard
	V	51	364470.3	1.4	**50.8781**	0.853	1.7	ug/L	1415	Standard
	Cr	52	366105.1	1.7	**50.1771**	0.675	1.3	ug/L	6946	Standard
	Cr	53	45260.8	0.4	**49.8893**	0.509	1.0	ug/L	328	Standard
	Mn	55	332731.4	2.3	**49.8507**	1.205	2.4	ug/L	823	Standard
	Co	59	382266.4	2.9	**52.9683**	1.437	2.7	ug/L	252	Standard
	Ni	60	97387.3	1.2	**50.2694**	0.545	1.1	ug/L	192	Standard
	Cu	65	98831.3	1.3	**50.5786**	0.557	1.1	ug/L	141	Standard
	Zn	66	57834.9	1.6	**50.5762**	0.877	1.7	ug/L	491	Standard
>	**Ge**	72	528768.9	1.2				ug/L	515087	Standard
	As	75	58724.5	1.2	**50.9203**	0.224	0.4	ug/L	20	Standard
	Se	82	6151.0	1.0	**51.9261**	0.245	0.5	ug/L	15	Standard
	Se-1	77	4089.2	2.2	**52.1522**	0.563	1.1	ug/L	48	Standard
>	**Ga**	71	85.0	21.2				mg/L	90	Standard
	Rb	85	851.7	6.5				ug/L	23	Standard
	Y	89	456324.8	0.4				ug/L	448510	Standard
>	**Rh**	103	36.7	39.4				ug/L	15	Standard
	Mo	98	284202.4	1.9	**102.0947**	3.648	3.6	ug/L	11	Standard
	Ag	107	351396.4	1.1	**50.8197**	1.435	2.8	ug/L	134	Standard
	Cd	111	110732.8	1.5	**50.3025**	1.470	2.9	mg/L	7	Standard
	Cd	114	271688.9	2.3	**50.7793**	1.915	3.8	ug/L	16	Standard
>	**In**	115	629514.4	1.7				ug/L	611117	Standard
	Sn	118	310739.2	0.7	**50.9245**	0.924	1.8	ug/L	518	Standard
	Sb	123	246166.6	1.6	**50.6553**	1.659	3.3	ug/L	127	Standard
	Ba	135	104825.0	0.9	**49.2805**	1.265	2.6	ug/L	45	Standard
	Ce	140	70.0	55.8				ug/L	298	Standard
>	**Tb**	159	987475.2	1.7				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	444397.7	1.4	**50.9180**	1.232	2.4	ug/L	31	Standard
	Tl	205	396866.3	1.6	**52.3722**	1.695	3.2	ug/L	20	Standard
	Pb	206	284750.7	1.1	**50.8069**	1.281	2.5	ug/L	286	Standard
	Pb	207	259280.5	1.3	**51.2940**	1.414	2.8	ug/L	257	Standard
	Pb	208	1040337.0	1.7	**53.1998**	1.656	3.1	ug/L	956	Standard
	U	238	390662.1	1.3	**52.6405**	1.349	2.6	ug/L	17	Standard
>	**Bi**	209	577126.2	1.6				ug/L	557080	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 17:28:07
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4445.7	6.0	**5.7289**	0.397	6.9	mg/L	32	Standard
K	39	1320.1	5.5	**4.2194**	0.276	6.5	mg/L	30	Standard
Ca	43	81.7	24.7	**6.7579**	2.904	43.0	mg/L	48	Standard
Fe	54	5927.1	5.8	**5.1036**	0.243	4.8	mg/L	159	Standard
Fe	57	1661.8	3.7	**4.8569**	0.121	2.5	mg/L	195	Standard
> **Sc-1**	45	40460.6	1.5				mg/L	39543	Standard
Cl	35	38764.2	1.7				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	2123.5	9.4				ug/L	1647	Standard
P	31	21915.8	3.2				ug/L	15231	Standard
S	34	2866.9	6.9				ug/L	1845	Standard
Sr	88	56.7	10.2				ug/L	70	Standard
C	12	170.0	44.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	173.2				mg/L	0	Standard
Dy	164	9.7	103.3				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	21360.9	50.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.731		
Al	27	96.555		
Sc	45			
Ti	47	100.153		
V	51	101.756		
Cr	52	100.354		
Cr	53			
Mn	55	99.701		
Co	59	105.937		
Ni	60	100.539		
Cu	65	101.157		
Zn	66	101.152		
> Ge	72		102.656	
As	75	101.841		
Se	82	103.852		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 17:28:07
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	102.095		
Ag	107	101.639		
Cd	111	100.605		
Cd	114			
> In	115			103.011
Sn	118	101.849		
Sb	123	101.311		
Ba	135	98.561		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.836		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.400		
U	238	105.281		
> Bi	209			103.598
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 17:28:07
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 17:29:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89289.0	1.1				ug/L	81760	Standard
	Be	9	35.0	51.5	**0.0225**	0.017	74.1	ug/L	17	Standard
	Al	27	14272.5	142.7	**0.0706**	0.122	172.0	ug/L	1410	Standard
	Sc	45	39427.9	1.8				ug/L	39543	Standard
	Ti	47	28.0	28.3	**-0.0534**	0.032	59.3	ug/L	39	Standard
	V	51	1205.0	11.4	**-0.0346**	0.020	56.4	ug/L	1415	Standard
	Cr	52	6173.6	1.1	**-0.1773**	0.009	5.0	ug/L	6946	Standard
	Cr	53	500.0	6.0	**0.2236**	0.034	15.3	ug/L	328	Standard
	Mn	55	1435.1	83.0	**0.0711**	0.182	256.2	ug/L	823	Standard
	Co	59	252.7	26.0	**0.0043**	0.009	214.7	ug/L	252	Standard
	Ni	60	265.7	8.4	**0.0350**	0.012	33.5	ug/L	192	Standard
	Cu	65	144.0	13.3	**-0.0157**	0.010	63.6	ug/L	141	Standard
	Zn	66	428.7	4.3	**-0.4396**	0.017	3.8	ug/L	491	Standard
>	**Ge**	72	519199.6	0.1				ug/L	515087	Standard
	As	75	-13.2	109.3	**0.0287**	0.013	44.2	ug/L	20	Standard
	Se	82	24.7	35.1	**0.0933**	0.075	79.8	ug/L	15	Standard
	Se-1	77	53.0	16.4	**-0.0209**	0.115	551.4	ug/L	48	Standard
>	**Ga**	71	56.7	41.7				mg/L	90	Standard
	Rb	85	13.3	78.1				ug/L	23	Standard
	Y	89	435848.4	0.6				ug/L	448510	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	252.5	21.9	**0.0755**	0.022	29.1	ug/L	11	Standard
	Ag	107	123.0	3.3	**0.0023**	0.000	14.7	ug/L	134	Standard
	Cd	111	11.8	114.0	**0.0027**	0.006	236.7	mg/L	7	Standard
	Cd	114	47.6	83.9	**0.0044**	0.008	178.8	ug/L	16	Standard
>	**In**	115	604937.7	1.9				ug/L	611117	Standard
	Sn	118	835.0	26.8	**0.0403**	0.035	87.6	ug/L	518	Standard
	Sb	123	438.3	28.1	**0.0807**	0.025	30.6	ug/L	127	Standard
	Ba	135	40.7	30.0	**-0.0052**	0.006	117.6	ug/L	45	Standard
	Ce	140	35.0	37.8				ug/L	298	Standard
>	**Tb**	159	968167.7	1.8				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	65.7	40.9	**0.0028**	0.003	111.1	ug/L	31	Standard
	Tl	205	198.3	119.2	**0.0243**	0.032	131.1	ug/L	20	Standard
	Pb	206	312.0	4.9	**-0.0071**	0.003	48.0	ug/L	286	Standard
	Pb	207	265.7	2.9	**-0.0047**	0.002	47.8	ug/L	257	Standard
	Pb	208	1274.7	38.3	**0.0057**	0.026	450.9	ug/L	956	Standard
	U	238	172.3	130.6	**0.0207**	0.031	149.9	ug/L	17	Standard
>	**Bi**	209	569803.2	1.6				ug/L	557080	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 17:31:19
Page 1

Approved: June 29, 2016

Na	23	3.3	86.6	**21.6890**	18.779	86.6	mg/L	0	Standard
Mg	24	61.7	47.5	**0.0256**	0.040	158.0	mg/L	32	Standard
K	39	26.7	10.8	**-0.0510**	0.010	20.5	mg/L	30	Standard
Ca	43	21.7	48.0	**-2.0553**	1.552	75.5	mg/L	48	Standard
Fe	54	129.4	21.4	**-0.0198**	0.024	119.8	mg/L	159	Standard
Fe	57	196.7	34.5	**0.0395**	0.221	559.0	mg/L	195	Standard
Sc-1	45	39427.9	1.8				mg/L	39543	Standard
Cl	35	37196.3	1.0				ug/L	27642	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1853.4	7.9				ug/L	1647	Standard
P	31	20680.8	2.7				ug/L	15231	Standard
S	34	2700.2	3.5				ug/L	1845	Standard
Sr	88	68.3	23.5				ug/L	70	Standard
C	12	133.3	38.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	107.6				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	7115.0	15.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.798	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 17:31:19
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.989
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.284
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 17:31:19
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606114201
Sample Date/Time: Tuesday, June 28, 2016 18:46:32
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78164.5	2.4				ug/L	81760	Standard
	Be	9	18.3	41.7	**0.0097**	0.008	86.8	ug/L	17	Standard
	Al	27	121659.9	1.7	**0.8116**	0.028	3.5	ug/L	1410	Standard
	Sc	45	40555.9	2.8				ug/L	39543	Standard
	Ti	47	55.7	15.0	**0.0583**	0.036	61.2	ug/L	39	Standard
	V	51	1460.1	6.7	**0.0028**	0.012	438.4	ug/L	1415	Standard
	Cr	52	7975.8	0.8	**0.0855**	0.018	21.3	ug/L	6946	Standard
	Cr	53	690.0	12.1	**0.4421**	0.091	20.5	ug/L	328	Standard
	Mn	55	73452.6	0.4	**11.1499**	0.088	0.8	ug/L	823	Standard
	Co	59	2365.9	3.2	**0.3044**	0.010	3.2	ug/L	252	Standard
	Ni	60	956.0	2.8	**0.4012**	0.010	2.4	ug/L	192	Standard
	Cu	65	203.7	5.3	**0.0160**	0.005	33.1	ug/L	141	Standard
	Zn	66	1994.1	0.1	**0.9866**	0.018	1.8	ug/L	491	Standard
>	**Ge**	72	516559.4	1.0				ug/L	515087	Standard
	As	75	-28.9	32.9	**0.0147**	0.008	56.4	ug/L	20	Standard
	Se	82	19.3	15.0	**0.0479**	0.026	53.5	ug/L	15	Standard
	Se-1	77	59.0	13.2	**0.0614**	0.097	157.2	ug/L	48	Standard
>	**Ga**	71	36.7	51.6				mg/L	90	Standard
	Rb	85	463.3	2.5				ug/L	23	Standard
	Y	89	448462.9	2.6				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	65.9	7.4	**0.0053**	0.002	42.6	ug/L	11	Standard
	Ag	107	82.7	4.2	**-0.0039**	0.001	16.6	ug/L	134	Standard
	Cd	111	8.9	29.8	**0.0012**	0.001	94.7	mg/L	7	Standard
	Cd	114	20.4	73.3	**-0.0010**	0.003	278.6	ug/L	16	Standard
>	**In**	115	611220.6	1.9				ug/L	611117	Standard
	Sn	118	670.0	14.0	**0.0115**	0.017	148.1	ug/L	518	Standard
	Sb	123	214.2	30.6	**0.0326**	0.014	43.4	ug/L	127	Standard
	Ba	135	7677.9	3.5	**3.6947**	0.165	4.5	ug/L	45	Standard
	Ce	140	396.7	10.7				ug/L	298	Standard
>	**Tb**	159	963569.5	0.7				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	21.7	17.5	**-0.0022**	0.000	19.5	ug/L	31	Standard
	Tl	205	13.3	21.7	**-0.0005**	0.000	79.8	ug/L	20	Standard
	Pb	206	368.7	4.6	**0.0040**	0.003	86.3	ug/L	286	Standard
	Pb	207	283.0	4.1	**-0.0005**	0.002	459.4	ug/L	257	Standard
	Pb	208	1139.7	3.0	**-0.0006**	0.002	246.5	ug/L	956	Standard
	U	238	10.3	39.1	**-0.0015**	0.001	36.3	ug/L	17	Standard
>	**Bi**	209	562456.7	0.5				ug/L	557080	Standard

Sample ID: L1606114201
Report Date/Time: Tuesday, June 28, 2016 18:48:49
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	763.4	13.7	**0.9351**	0.146	15.6	mg/L	32	Standard
K	39	31.7	39.7	**-0.0363**	0.045	123.6	mg/L	30	Standard
Ca	43	18.3	31.5	**-2.6404**	0.796	30.1	mg/L	48	Standard
Fe	54	359.1	17.1	**0.1792**	0.047	26.3	mg/L	159	Standard
Fe	57	273.3	13.7	**0.2778**	0.149	53.6	mg/L	195	Standard
> **Sc-1**	45	40555.9	2.8				mg/L	39543	Standard
Cl	35	37427.5	0.7				ug/L	27642	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	2536.9	6.5				ug/L	1647	Standard
P	31	19003.6	0.9				ug/L	15231	Standard
S	34	2375.2	4.8				ug/L	1845	Standard
Sr	88	91.7	13.7				ug/L	70	Standard
C	12	86.7	29.0				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	29.2	34.3				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	22815.7	12.2				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		95.602	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.286	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606114201
Report Date/Time: Tuesday, June 28, 2016 18:48:49
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.017
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.965
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 18:49:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77476.0	3.1				ug/L	81760	Standard
	Be	9	45015.2	3.8	**47.8878**	3.193	6.7	ug/L	17	Standard
	Al	27	6953697.9	2.2	**47.6359**	2.288	4.8	ug/L	1410	Standard
	Sc	45	38896.5	2.1				ug/L	39543	Standard
	Ti	47	23530.3	2.9	**93.4171**	3.639	3.9	ug/L	39	Standard
	V	51	333406.5	0.5	**47.2267**	0.631	1.3	ug/L	1415	Standard
	Cr	52	337441.2	2.6	**46.8861**	1.719	3.7	ug/L	6946	Standard
	Cr	53	42128.5	3.1	**47.1231**	1.874	4.0	ug/L	328	Standard
	Mn	55	311025.1	1.6	**47.2965**	1.233	2.6	ug/L	823	Standard
	Co	59	333541.6	0.3	**46.9106**	0.523	1.1	ug/L	252	Standard
	Ni	60	90766.5	2.7	**47.5598**	1.737	3.7	ug/L	192	Standard
	Cu	65	91363.1	2.5	**47.4629**	1.646	3.5	ug/L	141	Standard
	Zn	66	53283.5	1.9	**47.2487**	1.367	2.9	ug/L	491	Standard
>	Ge	72	520941.4	1.0				ug/L	515087	Standard
	As	75	53453.8	0.5	**47.0530**	0.571	1.2	ug/L	20	Standard
	Se	82	5409.0	0.9	**46.3406**	0.883	1.9	ug/L	15	Standard
	Se-1	77	3695.1	1.5	**47.7773**	0.360	0.8	ug/L	48	Standard
>	Ga	71	58.3	27.6				mg/L	90	Standard
	Rb	85	731.7	6.2				ug/L	23	Standard
	Y	89	433135.5	0.5				ug/L	448510	Standard
>	Rh	103	21.7	13.3				ug/L	15	Standard
	Mo	98	251705.5	0.6	**94.1208**	1.331	1.4	ug/L	11	Standard
	Ag	107	314845.2	1.8	**47.3955**	0.605	1.3	ug/L	134	Standard
	Cd	111	98007.4	2.2	**46.3425**	0.750	1.6	mg/L	7	Standard
	Cd	114	239351.7	3.2	**46.5659**	1.544	3.3	ug/L	16	Standard
>	In	115	604583.1	1.4				ug/L	611117	Standard
	Sn	118	276455.2	2.3	**47.1543**	0.498	1.1	ug/L	518	Standard
	Sb	123	224560.9	2.5	**48.0923**	0.641	1.3	ug/L	127	Standard
	Ba	135	94923.9	3.0	**46.4488**	1.094	2.4	ug/L	45	Standard
	Ce	140	80.0	22.5				ug/L	298	Standard
>	Tb	159	958457.8	2.2				ug/L	977942	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	399564.4	2.5	**47.4112**	1.332	2.8	ug/L	31	Standard
	Tl	205	347775.3	2.0	**47.5216**	1.083	2.3	ug/L	20	Standard
	Pb	206	259967.8	1.3	**48.0301**	0.722	1.5	ug/L	286	Standard
	Pb	207	236539.5	0.9	**48.4530**	0.488	1.0	ug/L	257	Standard
	Pb	208	913309.7	2.1	**48.3569**	1.176	2.4	ug/L	956	Standard
	U	238	337839.3	1.6	**47.1413**	0.910	1.9	ug/L	17	Standard
>	Bi	209	557186.5	0.3				ug/L	557080	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 18:52:03
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3633.8	7.1	**4.8666**	0.455	9.3	mg/L	32	Standard
K	39	1313.4	12.2	**4.3752**	0.599	13.7	mg/L	30	Standard
Ca	43	51.7	20.1	**2.6371**	1.625	61.6	mg/L	48	Standard
Fe	54	5289.1	7.8	**4.7357**	0.483	10.2	mg/L	159	Standard
Fe	57	1531.7	10.1	**4.6389**	0.613	13.2	mg/L	195	Standard
> **Sc-1**	45	38896.5	2.1				mg/L	39543	Standard
Cl	35	35022.4	1.4				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1490.1	8.7				ug/L	1647	Standard
P	31	19075.3	3.9				ug/L	15231	Standard
S	34	2581.9	1.6				ug/L	1845	Standard
Sr	88	70.0	18.9				ug/L	70	Standard
C	12	143.3	33.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	6.0	193.9				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	2193.5	28.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	95.776		
Al	27	95.272		
Sc	45			
Ti	47	93.417		
V	51	94.453		
Cr	52	93.772		
Cr	53			
Mn	55	94.593		
Co	59	93.821		
Ni	60	95.120		
Cu	65	94.926		
Zn	66	94.497		
> Ge	72		101.137	
As	75	94.106		
Se	82	92.681		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 18:52:03
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	94.121		
Ag	107	94.791		
Cd	111	92.685		
Cd	114			
> In	115			98.931
Sn	118	94.309		
Sb	123	96.185		
Ba	135	92.898		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.822		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.714		
U	238	94.283		
> Bi	209			100.019
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 18:52:03
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 18:52:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75264.9	3.1				ug/L	81760	Standard
	Be	9	28.3	44.4	**0.0211**	0.013	62.2	ug/L	17	Standard
	Al	27	1848.4	7.3	**-0.0014**	0.001	57.2	ug/L	1410	Standard
	Sc	45	39733.8	3.9				ug/L	39543	Standard
	Ti	47	30.7	21.2	**-0.0408**	0.026	64.0	ug/L	39	Standard
	V	51	1157.9	3.5	**-0.0386**	0.007	18.1	ug/L	1415	Standard
	Cr	52	6209.6	2.0	**-0.1578**	0.015	9.7	ug/L	6946	Standard
	Cr	53	373.3	6.7	**0.0873**	0.028	32.1	ug/L	328	Standard
	Mn	55	647.3	1.5	**-0.0478**	0.002	4.7	ug/L	823	Standard
	Co	59	232.0	9.1	**0.0019**	0.003	163.0	ug/L	252	Standard
	Ni	60	166.3	9.0	**-0.0160**	0.007	44.1	ug/L	192	Standard
	Cu	65	124.7	14.0	**-0.0248**	0.008	34.1	ug/L	141	Standard
	Zn	66	405.0	8.1	**-0.4552**	0.029	6.3	ug/L	491	Standard
>	**Ge**	72	510975.0	1.4				ug/L	515087	Standard
	As	75	-43.1	41.4	**0.0017**	0.016	900.9	ug/L	20	Standard
	Se	82	19.6	25.0	**0.0525**	0.045	86.4	ug/L	15	Standard
	Se-1	77	59.7	5.9	**0.0797**	0.050	62.7	ug/L	48	Standard
>	**Ga**	71	36.7	39.4				mg/L	90	Standard
	Rb	85	23.3	32.7				ug/L	23	Standard
	Y	89	435979.5	2.5				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	250.3	25.6	**0.0730**	0.024	32.3	ug/L	11	Standard
	Ag	107	100.0	11.8	**-0.0014**	0.002	125.8	ug/L	134	Standard
	Cd	111	11.9	34.0	**0.0026**	0.002	71.6	mg/L	7	Standard
	Cd	114	45.3	6.7	**0.0038**	0.000	13.0	ug/L	16	Standard
>	**In**	115	614932.8	1.3				ug/L	611117	Standard
	Sn	118	795.0	23.6	**0.0316**	0.031	97.7	ug/L	518	Standard
	Sb	123	431.0	25.7	**0.0779**	0.023	29.6	ug/L	127	Standard
	Ba	135	30.3	24.3	**-0.0105**	0.003	32.1	ug/L	45	Standard
	Ce	140	20.0	66.1				ug/L	298	Standard
>	**Tb**	159	946813.4	1.4				ug/L	977942	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	48.3	29.0	**0.0009**	0.002	172.8	ug/L	31	Standard
	Tl	205	35.0	86.9	**0.0025**	0.004	165.9	ug/L	20	Standard
	Pb	206	284.0	5.8	**-0.0111**	0.003	26.2	ug/L	286	Standard
	Pb	207	257.7	11.7	**-0.0053**	0.006	110.9	ug/L	257	Standard
	Pb	208	990.3	3.8	**-0.0080**	0.002	20.6	ug/L	956	Standard
	U	238	43.0	24.2	**0.0030**	0.001	48.0	ug/L	17	Standard
>	**Bi**	209	557905.1	0.6				ug/L	557080	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 18:55:14
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	18.2	**-0.0149**	0.009	60.8	mg/L	32	Standard
K	39	20.0	50.0	**-0.0742**	0.034	46.2	mg/L	30	Standard
Ca	43	35.0	62.3	**-0.0114**	3.447	30330.8	mg/L	48	Standard
Fe	54	144.1	21.6	**-0.0065**	0.032	498.8	mg/L	159	Standard
Fe	57	238.3	3.2	**0.1775**	0.054	30.7	mg/L	195	Standard
Sc-1	45	39733.8	3.9				mg/L	39543	Standard
Cl	35	35783.5	1.7				ug/L	27642	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1466.7	6.9				ug/L	1647	Standard
P	31	19612.7	1.4				ug/L	15231	Standard
S	34	2756.9	2.6				ug/L	1845	Standard
Sr	88	66.7	37.0				ug/L	70	Standard
C	12	86.7	6.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	32.7	47.4				mg/L	12	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	1593.4	21.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.202	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 18:55:14
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.624
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.148
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 28, 2016 18:56:10
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71096.5	2.9				ug/L	81760	Standard
	Be	9	180.0	15.5	**0.1982**	0.026	13.3	ug/L	17	Standard
	Al	27	1130.0	11.5	**-0.0060**	0.001	12.9	ug/L	1410	Standard
	Sc	45	37422.8	0.9				ug/L	39543	Standard
	Ti	47	25.0	10.6	**-0.0625**	0.010	16.0	ug/L	39	Standard
	V	51	3508.6	1.4	**0.3092**	0.005	1.6	ug/L	1415	Standard
	Cr	52	11162.1	1.4	**0.5814**	0.031	5.3	ug/L	6946	Standard
	Cr	53	975.0	4.9	**0.7938**	0.066	8.3	ug/L	328	Standard
	Mn	55	3454.1	1.9	**0.3960**	0.015	3.8	ug/L	823	Standard
	Co	59	2721.9	4.1	**0.3646**	0.019	5.1	ug/L	252	Standard
	Ni	60	2839.3	1.0	**1.4356**	0.026	1.8	ug/L	192	Standard
	Cu	65	1518.4	2.5	**0.7258**	0.025	3.5	ug/L	141	Standard
	Zn	66	6972.6	1.8	**5.6720**	0.065	1.1	ug/L	491	Standard
>	**Ge**	72	504116.3	0.9				ug/L	515087	Standard
	As	75	374.9	9.7	**0.3808**	0.031	8.0	ug/L	20	Standard
	Se	82	63.0	8.6	**0.4404**	0.052	11.9	ug/L	15	Standard
	Se-1	77	80.7	10.3	**0.3758**	0.122	32.5	ug/L	48	Standard
>	**Ga**	71	33.3	52.7				mg/L	90	Standard
	Rb	85	16.7	96.4				ug/L	23	Standard
	Y	89	427965.8	1.5				ug/L	448510	Standard
>	**Rh**	103	20.0	25.0				ug/L	15	Standard
	Mo	98	72.3	5.2	**0.0094**	0.001	12.5	ug/L	11	Standard
	Ag	107	2402.2	4.6	**0.3647**	0.015	4.1	ug/L	134	Standard
	Cd	111	440.5	3.4	**0.2165**	0.007	3.2	mg/L	7	Standard
	Cd	114	1158.4	0.8	**0.2324**	0.001	0.2	ug/L	16	Standard
>	**In**	115	574029.4	1.1				ug/L	611117	Standard
	Sn	118	496.7	16.4	**-0.0124**	0.016	125.3	ug/L	518	Standard
	Sb	123	1769.4	0.8	**0.3864**	0.003	0.7	ug/L	127	Standard
	Ba	135	1350.1	0.7	**0.6712**	0.012	1.8	ug/L	45	Standard
	Ce	140	15.0	0.0				ug/L	298	Standard
>	**Tb**	159	914394.0	1.1				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	645.7	4.5	**0.0752**	0.004	4.8	ug/L	31	Standard
	Tl	205	546.7	2.9	**0.0757**	0.002	3.3	ug/L	20	Standard
	Pb	206	1234.7	1.4	**0.1748**	0.002	1.1	ug/L	286	Standard
	Pb	207	1077.0	1.2	**0.1725**	0.004	2.3	ug/L	257	Standard
	Pb	208	4484.6	3.2	**0.1877**	0.008	4.4	ug/L	956	Standard
	U	238	2602.6	1.7	**0.3761**	0.010	2.6	ug/L	17	Standard
>	**Bi**	209	533901.6	0.9				ug/L	557080	Standard

Sample ID: QC Std 8
Report Date/Time: Tuesday, June 28, 2016 18:58:27
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	26.7	10.8	**-0.0196**	0.004	19.0	mg/L	32	Standard
K	39	28.3	10.2	**-0.0403**	0.010	24.0	mg/L	30	Standard
Ca	43	38.3	7.5	**0.8090**	0.513	63.4	mg/L	48	Standard
Fe	54	99.0	17.7	**-0.0423**	0.018	41.4	mg/L	159	Standard
Fe	57	198.3	16.4	**0.0831**	0.119	142.8	mg/L	195	Standard
Sc-1	45	37422.8	0.9				mg/L	39543	Standard
Cl	35	34311.5	2.9				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1263.4	4.0				ug/L	1647	Standard
P	31	12998.9	1.6				ug/L	15231	Standard
S	34	2533.5	5.7				ug/L	1845	Standard
Sr	88	71.7	29.0				ug/L	70	Standard
C	12	70.0	24.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.9	100.8				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	1311.7	25.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.121		
Al	27			
Sc	45			
Ti	47			
V	51	77.290		
Cr	52	72.680		
Cr	53			
Mn	55	79.198		
Co	59	91.138		
Ni	60	89.723		
Cu	65	90.724		
Zn	66	90.752		
Ge	72		97.870	
As	75	95.209		
Se	82	110.096		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
Report Date/Time: Tuesday, June 28, 2016 18:58:27
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	91.178		
Cd	111	90.212		
Cd	114			
> In	115			93.931
Sn	118			
Sb	123	96.601		
Ba	135	89.490		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	93.978		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.825		
U	238	94.023		
> Bi	209			95.839
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Tuesday, June 28, 2016 18:58:27
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: PBW A9 WG572242-02
Sample Date/Time: Tuesday, June 28, 2016 19:51:29
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73456.0	1.1				ug/L	81760	Standard
	Be	9	13.3	21.7	**0.0052**	0.003	59.5	ug/L	17	Standard
	Al	27	9322.9	1.9	**0.0529**	0.001	1.2	ug/L	1410	Standard
	Sc	45	38756.2	2.9				ug/L	39543	Standard
	Ti	47	33.7	15.2	**-0.0290**	0.022	74.1	ug/L	39	Standard
	V	51	1394.3	5.5	**-0.0051**	0.010	198.0	ug/L	1415	Standard
	Cr	52	7883.4	0.8	**0.0807**	0.013	16.5	ug/L	6946	Standard
	Cr	53	506.7	16.0	**0.2387**	0.095	39.9	ug/L	328	Standard
	Mn	55	1210.0	2.0	**0.0390**	0.005	11.7	ug/L	823	Standard
	Co	59	188.0	6.5	**-0.0045**	0.002	42.5	ug/L	252	Standard
	Ni	60	230.3	1.3	**0.0179**	0.002	10.0	ug/L	192	Standard
	Cu	65	157.0	8.9	**-0.0078**	0.008	102.0	ug/L	141	Standard
	Zn	66	1546.4	2.1	**0.5897**	0.023	3.8	ug/L	491	Standard
>	**Ge**	72	512703.5	0.7				ug/L	515087	Standard
	As	75	-32.6	48.2	**0.0111**	0.014	127.3	ug/L	20	Standard
	Se	82	19.2	20.1	**0.0486**	0.034	70.8	ug/L	15	Standard
	Se-1	77	50.0	10.6	**-0.0518**	0.075	145.3	ug/L	48	Standard
>	**Ga**	71	33.3	34.6				mg/L	90	Standard
	Rb	85	33.3	31.2				ug/L	23	Standard
	Y	89	438886.4	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	27.2	14.3	**-0.0088**	0.001	17.0	ug/L	11	Standard
	Ag	107	75.7	8.8	**-0.0047**	0.001	18.4	ug/L	134	Standard
	Cd	111	4.3	48.7	**-0.0009**	0.001	113.9	mg/L	7	Standard
	Cd	114	21.5	41.2	**-0.0007**	0.002	246.6	ug/L	16	Standard
>	**In**	115	598021.6	1.3				ug/L	611117	Standard
	Sn	118	688.3	6.3	**0.0170**	0.007	40.8	ug/L	518	Standard
	Sb	123	162.8	37.0	**0.0223**	0.013	56.3	ug/L	127	Standard
	Ba	135	50.0	12.0	**-0.0003**	0.003	1000.2	ug/L	45	Standard
	Ce	140	36.7	78.7				ug/L	298	Standard
>	**Tb**	159	940667.7	2.2				ug/L	977942	Standard
	Ho	165	18.3	56.8				ug/L	12	Standard
	Tl	203	9.0	22.2	**-0.0037**	0.000	6.2	ug/L	31	Standard
	Tl	205	5.0	0.0	**-0.0016**	0.000	0.7	ug/L	20	Standard
	Pb	206	302.0	8.3	**-0.0074**	0.006	75.2	ug/L	286	Standard
	Pb	207	237.7	5.4	**-0.0090**	0.003	32.3	ug/L	257	Standard
	Pb	208	966.3	1.0	**-0.0090**	0.001	6.5	ug/L	956	Standard
	U	238	4.3	48.0	**-0.0024**	0.000	12.3	ug/L	17	Standard
>	**Bi**	209	554162.6	1.6				ug/L	557080	Standard

Sample ID: PBW A9 WG572242-02
Report Date/Time: Tuesday, June 28, 2016 19:53:46
Page 1

Approved: June 29, 2016

	Na	23	0.0		**0.0050**			mg/L	0	Standard
	Mg	24	41.7	18.3	**-0.0005**	0.010	2017.0	mg/L	32	Standard
	K	39	30.0	33.3	**-0.0385**	0.033	84.7	mg/L	30	Standard
	Ca	43	16.7	91.7	**-2.7218**	2.434	89.4	mg/L	48	Standard
	Fe	54	121.1	16.6	**-0.0249**	0.021	84.8	mg/L	159	Standard
	Fe	57	230.0	15.2	**0.1658**	0.100	60.0	mg/L	195	Standard
>	**Sc-1**	45	38756.2	2.9				mg/L	39543	Standard
	Cl	35	36900.9	1.9				ug/L	27642	Standard
	Kr	83	1.3	43.3				ug/L	2	Standard
	Br	81	1656.8	8.0				ug/L	1647	Standard
	P	31	17782.1	2.2				ug/L	15231	Standard
	S	34	2408.5	10.1				ug/L	1845	Standard
	Sr	88	75.0	29.1				ug/L	70	Standard
	C	12	50.0	52.9				mg/L	113	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	9.5	105.0				mg/L	12	Standard
	Ho-1	165	18.3	56.8				mg/L	12	Standard
	Er	166	10.0					mg/L	20	Standard
	I	127	1248.4	23.8				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		89.843	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.537	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: PBW A9 WG572242-02
Report Date/Time: Tuesday, June 28, 2016 19:53:46
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.857
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.476
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: LCSW A9 WG572242-03
Sample Date/Time: Tuesday, June 28, 2016 19:54:40
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74125.9	0.7				ug/L	81760	Standard
	Be	9	45613.6	2.5	**50.6567**	1.536	3.0	ug/L	17	Standard
	Al	27	52265.0	2.7	**0.3596**	0.008	2.3	ug/L	1410	Standard
	Sc	45	39738.7	2.1				ug/L	39543	Standard
	Ti	47	34.0	10.6	**-0.0277**	0.015	52.7	ug/L	39	Standard
	V	51	340531.5	1.6	**49.0319**	0.683	1.4	ug/L	1415	Standard
	Cr	52	354579.7	0.6	**50.1386**	0.494	1.0	ug/L	6946	Standard
	Cr	53	44436.8	3.3	**50.5389**	1.845	3.7	ug/L	328	Standard
	Mn	55	331885.6	0.6	**51.3034**	0.483	0.9	ug/L	823	Standard
	Co	59	341252.7	1.0	**48.7823**	0.497	1.0	ug/L	252	Standard
	Ni	60	94292.8	0.4	**50.2138**	0.089	0.2	ug/L	192	Standard
	Cu	65	96497.7	0.5	**50.9494**	0.130	0.3	ug/L	141	Standard
	Zn	66	57251.0	0.4	**51.6689**	0.417	0.8	ug/L	491	Standard
>	**Ge**	72	512516.5	0.4				ug/L	515087	Standard
	As	75	55356.1	0.6	**49.5225**	0.094	0.2	ug/L	20	Standard
	Se	82	5489.9	0.8	**47.8062**	0.574	1.2	ug/L	15	Standard
	Se-1	77	3699.5	2.3	**48.6318**	0.978	2.0	ug/L	48	Standard
>	**Ga**	71	51.7	29.6				mg/L	90	Standard
	Rb	85	58.3	27.6				ug/L	23	Standard
	Y	89	427399.3	0.3				ug/L	448510	Standard
>	**Rh**	103	20.0	66.1				ug/L	15	Standard
	Mo	98	50.9	5.4	**0.0000**	0.001	4406.4	ug/L	11	Standard
	Ag	107	325451.5	0.2	**49.1242**	0.412	0.8	ug/L	134	Standard
	Cd	111	100950.5	1.5	**47.8617**	0.611	1.3	mg/L	7	Standard
	Cd	114	243935.8	0.5	**47.5806**	0.389	0.8	ug/L	16	Standard
>	**In**	115	602979.8	0.8				ug/L	611117	Standard
	Sn	118	653.3	9.2	**0.0100**	0.010	97.1	ug/L	518	Standard
	Sb	123	224336.4	0.4	**48.1778**	0.461	1.0	ug/L	127	Standard
	Ba	135	98286.4	0.2	**48.2270**	0.385	0.8	ug/L	45	Standard
	Ce	140	205.0	19.4				ug/L	298	Standard
>	**Tb**	159	962904.7	0.9				ug/L	977942	Standard
	Ho	165	11.7	49.5				ug/L	12	Standard
	Tl	203	409811.5	0.9	**48.6592**	0.503	1.0	ug/L	31	Standard
	Tl	205	358097.5	0.9	**48.9662**	0.679	1.4	ug/L	20	Standard
	Pb	206	272798.6	0.1	**50.4414**	0.712	1.4	ug/L	286	Standard
	Pb	207	236678.2	0.4	**48.5210**	0.945	1.9	ug/L	257	Standard
	Pb	208	941837.1	1.1	**49.9011**	0.393	0.8	ug/L	956	Standard
	U	238	343975.4	0.3	**48.0328**	0.703	1.5	ug/L	17	Standard
>	**Bi**	209	556837.1	1.5				ug/L	557080	Standard

Sample ID: LCSW A9 WG572242-03
Report Date/Time: Tuesday, June 28, 2016 19:56:57
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.3983**	18.002	173.1	mg/L	0	Standard
Mg	24	58.3	27.6	**0.0205**	0.023	110.8	mg/L	32	Standard
K	39	16.7	45.8	**-0.0851**	0.027	31.2	mg/L	30	Standard
Ca	43	23.3	32.7	**-1.8206**	1.160	63.7	mg/L	48	Standard
Fe	54	118.7	10.7	**-0.0303**	0.010	31.4	mg/L	159	Standard
Fe	57	200.0	10.0	**0.0482**	0.079	163.5	mg/L	195	Standard
Sc-1	45	39738.7	2.1				mg/L	39543	Standard
Cl	35	36016.8	1.9				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3627.1	7.0				ug/L	1647	Standard
P	31	18584.7	0.6				ug/L	15231	Standard
S	34	2266.8	5.1				ug/L	1845	Standard
Sr	88	53.3	23.6				ug/L	70	Standard
C	12	126.7	32.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	9.0	105.3				mg/L	12	Standard
Ho-1	165	11.7	49.5				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	1253.4	17.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.663	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW A9 WG572242-03
Report Date/Time: Tuesday, June 28, 2016 19:56:57
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.669
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.956
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW A9 WG572242-03
Report Date/Time: Tuesday, June 28, 2016 19:56:57
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606083901 WG574242-01
Sample Date/Time: Tuesday, June 28, 2016 19:57:52
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73849.6	1.9				ug/L	81760	Standard
	Be	9	25.0	0.0	**0.0181**	0.001	2.9	ug/L	17	Standard
	Al	27	15521751.4	1.0	**111.4854**	1.467	1.3	ug/L	1410	Standard
	Sc	45	39103.8	3.8				ug/L	39543	Standard
	Ti	47	591.7	5.1	**2.3246**	0.153	6.6	ug/L	39	Standard
	V	51	4219.1	3.4	**0.4282**	0.015	3.5	ug/L	1415	Standard
	Cr	52	8895.6	2.0	**0.2798**	0.040	14.2	ug/L	6946	Standard
	Cr	53	3360.4	10.4	**3.6642**	0.437	11.9	ug/L	328	Standard
	Mn	55	16077.2	1.4	**2.4454**	0.007	0.3	ug/L	823	Standard
	Co	59	1032.0	3.9	**0.1223**	0.006	4.9	ug/L	252	Standard
	Ni	60	3143.3	2.0	**1.6407**	0.018	1.1	ug/L	192	Standard
	Cu	65	3355.0	2.0	**1.7559**	0.016	0.9	ug/L	141	Standard
	Zn	66	14991.7	0.7	**13.4797**	0.137	1.0	ug/L	491	Standard
>	**Ge**	72	492452.2	1.1				ug/L	515087	Standard
	As	75	562.8	15.9	**0.5640**	0.084	14.9	ug/L	20	Standard
	Se	82	67.0	15.0	**0.4895**	0.090	18.3	ug/L	15	Standard
	Se-1	77	207.3	11.8	**2.1604**	0.344	15.9	ug/L	48	Standard
>	**Ga**	71	103.3	23.9				mg/L	90	Standard
	Rb	85	20340.3	1.9				ug/L	23	Standard
	Y	89	439150.3	1.0				ug/L	448510	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	1185.2	3.1	**0.4267**	0.016	3.7	ug/L	11	Standard
	Ag	107	124.0	3.2	**0.0026**	0.001	26.5	ug/L	134	Standard
	Cd	111	35.9	29.2	**0.0141**	0.005	34.6	mg/L	7	Standard
	Cd	114	96.0	6.6	**0.0139**	0.001	9.0	ug/L	16	Standard
>	**In**	115	601194.2	0.6				ug/L	611117	Standard
	Sn	118	770.0	3.2	**0.0304**	0.004	13.3	ug/L	518	Standard
	Sb	123	1910.7	20.7	**0.3992**	0.088	22.0	ug/L	127	Standard
	Ba	135	33674.7	0.4	**16.5556**	0.054	0.3	ug/L	45	Standard
	Ce	140	1643.4	3.5				ug/L	298	Standard
>	**Tb**	159	946228.9	1.7				ug/L	977942	Standard
	Ho	165	41.7	36.7				ug/L	12	Standard
	Tl	203	211.3	8.6	**0.0215**	0.002	11.4	ug/L	31	Standard
	Tl	205	188.3	11.1	**0.0247**	0.003	12.3	ug/L	20	Standard
	Pb	206	2721.9	1.8	**0.4638**	0.014	3.1	ug/L	286	Standard
	Pb	207	2208.8	1.5	**0.4164**	0.010	2.4	ug/L	257	Standard
	Pb	208	9386.5	1.8	**0.4607**	0.014	3.1	ug/L	956	Standard
	U	238	2364.2	1.6	**0.3425**	0.008	2.2	ug/L	17	Standard
>	**Bi**	209	532104.5	1.0				ug/L	557080	Standard

Sample ID: L1606083901 WG574242-01
Report Date/Time: Tuesday, June 28, 2016 20:00:08
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.9240**	18.912	173.1	mg/L	0	Standard
Mg	24	14932.4	1.8	**20.0717**	1.109	5.5	mg/L	32	Standard
K	39	851.7	12.5	**2.7753**	0.419	15.1	mg/L	30	Standard
Ca	43	323.3	7.9	**44.3168**	3.500	7.9	mg/L	48	Standard
Fe	54	180.7	15.7	**0.0282**	0.024	84.5	mg/L	159	Standard
Fe	57	355.0	6.1	**0.5869**	0.046	7.9	mg/L	195	Standard
> **Sc-1**	45	39103.8	3.8				mg/L	39543	Standard
Cl	35	38446.7	1.8				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	10497.0	5.2				ug/L	1647	Standard
P	31	21567.0	1.7				ug/L	15231	Standard
S	34	2493.5	2.8				ug/L	1845	Standard
Sr	88	151.7	7.6				ug/L	70	Standard
C	12	210.0	39.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	67.9	17.5				mg/L	12	Standard
Ho-1	165	41.7	36.7				mg/L	12	Standard
Er	166	43.3	93.3				mg/L	20	Standard
I	127	29340.1	3.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.325	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.606	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606083901 WG574242-01
Report Date/Time: Tuesday, June 28, 2016 20:00:08
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.376
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.517
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606083901DP WG574242-04
Sample Date/Time: Tuesday, June 28, 2016 20:01:03
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74496.0	1.1				ug/L	81760	Standard
	Be	9	20.0	25.0	**0.0124**	0.006	45.8	ug/L	17	Standard
	Al	27	15458448.5	1.4	**110.0484**	0.587	0.5	ug/L	1410	Standard
	Sc	45	38253.3	3.4				ug/L	39543	Standard
	Ti	47	558.7	5.4	**2.1548**	0.155	7.2	ug/L	39	Standard
	V	51	4067.8	2.6	**0.3973**	0.009	2.2	ug/L	1415	Standard
	Cr	52	9024.7	1.6	**0.2811**	0.031	11.1	ug/L	6946	Standard
	Cr	53	3592.1	3.4	**3.8809**	0.090	2.3	ug/L	328	Standard
	Mn	55	13517.4	2.1	**2.0039**	0.068	3.4	ug/L	823	Standard
	Co	59	1022.7	3.5	**0.1189**	0.006	5.0	ug/L	252	Standard
	Ni	60	3054.6	1.9	**1.5691**	0.041	2.6	ug/L	192	Standard
	Cu	65	3452.1	3.2	**1.7838**	0.034	1.9	ug/L	141	Standard
	Zn	66	14844.3	0.5	**13.1506**	0.169	1.3	ug/L	491	Standard
>	**Ge**	72	499109.4	1.4				ug/L	515087	Standard
	As	75	584.5	8.0	**0.5768**	0.041	7.2	ug/L	20	Standard
	Se	82	58.0	10.0	**0.3998**	0.046	11.4	ug/L	15	Standard
	Se-1	77	200.7	10.2	**2.0328**	0.318	15.6	ug/L	48	Standard
>	**Ga**	71	100.0	13.2				mg/L	90	Standard
	Rb	85	19739.5	1.7				ug/L	23	Standard
	Y	89	436250.9	1.8				ug/L	448510	Standard
>	**Rh**	103	38.3	7.5				ug/L	15	Standard
	Mo	98	1219.4	1.0	**0.4525**	0.003	0.7	ug/L	11	Standard
	Ag	107	99.7	5.7	**-0.0007**	0.001	125.7	ug/L	134	Standard
	Cd	111	32.6	12.4	**0.0130**	0.002	14.9	mg/L	7	Standard
	Cd	114	81.5	18.5	**0.0115**	0.003	24.6	ug/L	16	Standard
>	**In**	115	584572.0	1.4				ug/L	611117	Standard
	Sn	118	751.7	6.1	**0.0310**	0.009	27.5	ug/L	518	Standard
	Sb	123	786.1	12.1	**0.1616**	0.023	14.4	ug/L	127	Standard
	Ba	135	32184.1	0.9	**16.2729**	0.095	0.6	ug/L	45	Standard
	Ce	140	490.0	7.4				ug/L	298	Standard
>	**Tb**	159	929479.8	0.3				ug/L	977942	Standard
	Ho	165	31.7	24.1				ug/L	12	Standard
	Tl	203	152.7	10.6	**0.0145**	0.002	14.7	ug/L	31	Standard
	Tl	205	146.7	17.2	**0.0191**	0.004	18.8	ug/L	20	Standard
	Pb	206	2610.2	1.4	**0.4511**	0.005	1.2	ug/L	286	Standard
	Pb	207	2110.5	2.5	**0.4033**	0.013	3.2	ug/L	257	Standard
	Pb	208	8866.0	0.9	**0.4405**	0.006	1.4	ug/L	956	Standard
	U	238	2335.8	3.1	**0.3444**	0.010	2.9	ug/L	17	Standard
>	**Bi**	209	522741.7	0.4				ug/L	557080	Standard

Sample ID: L1606083901DP WG574242-04
Report Date/Time: Tuesday, June 28, 2016 20:03:20
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**11.1196**	19.251	173.1	mg/L	0	Standard
Mg	24	14720.5	1.4	**20.2196**	0.936	4.6	mg/L	32	Standard
K	39	903.4	10.8	**3.0129**	0.317	10.5	mg/L	30	Standard
Ca	43	308.3	1.9	**43.1033**	1.939	4.5	mg/L	48	Standard
Fe	54	132.3	23.0	**-0.0139**	0.024	174.3	mg/L	159	Standard
Fe	57	371.7	11.8	**0.6755**	0.185	27.4	mg/L	195	Standard
> **Sc-1**	45	38253.3	3.4				mg/L	39543	Standard
Cl	35	39853.0	2.0				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	7995.4	3.8				ug/L	1647	Standard
P	31	20689.1	2.4				ug/L	15231	Standard
S	34	2350.2	5.7				ug/L	1845	Standard
Sr	88	115.0	7.5				ug/L	70	Standard
C	12	266.7	11.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	41.7	57.7				mg/L	12	Standard
Ho-1	165	31.7	24.1				mg/L	12	Standard
Er	166	33.3	75.5				mg/L	20	Standard
I	127	28308.1	3.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.115	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606083901DP WG574242-04
Report Date/Time: Tuesday, June 28, 2016 20:03:20
Page 2

Approved: June 29, 2016

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	95.656
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	93.836
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606083901DP WG574242-04
Report Date/Time: Tuesday, June 28, 2016 20:03:20
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606083901S WG574242-05
Sample Date/Time: Tuesday, June 28, 2016 20:04:14
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77052.1	1.2				ug/L	81760	Standard
	Be	9	48365.4	1.4	**51.6767**	1.282	2.5	ug/L	17	Standard
	Al	27	15205678.0	0.8	**104.6750**	1.999	1.9	ug/L	1410	Standard
	Sc	45	39767.1	2.3				ug/L	39543	Standard
	Ti	47	566.0	2.6	**2.1182**	0.041	1.9	ug/L	39	Standard
	V	51	345428.5	0.5	**49.6572**	0.625	1.3	ug/L	1415	Standard
	Cr	52	342558.9	0.4	**48.3219**	0.886	1.8	ug/L	6946	Standard
	Cr	53	45610.2	2.6	**51.7999**	1.901	3.7	ug/L	328	Standard
	Mn	55	334844.2	1.7	**51.6671**	0.130	0.3	ug/L	823	Standard
	Co	59	340587.2	2.1	**48.5963**	0.256	0.5	ug/L	252	Standard
	Ni	60	92425.4	0.6	**49.1352**	0.675	1.4	ug/L	192	Standard
	Cu	65	94140.2	0.6	**49.6217**	0.865	1.7	ug/L	141	Standard
	Zn	66	68169.3	0.4	**61.5791**	1.173	1.9	ug/L	491	Standard
>	**Ge**	72	513441.7	1.6				ug/L	515087	Standard
	As	75	56899.2	0.6	**50.8164**	0.583	1.1	ug/L	20	Standard
	Se	82	5653.4	1.3	**49.1454**	0.462	0.9	ug/L	15	Standard
	Se-1	77	3932.8	1.5	**51.6632**	1.250	2.4	ug/L	48	Standard
>	**Ga**	71	93.3	35.7				mg/L	90	Standard
	Rb	85	19300.6	2.7				ug/L	23	Standard
	Y	89	425453.4	2.7				ug/L	448510	Standard
>	**Rh**	103	45.0	19.2				ug/L	15	Standard
	Mo	98	1218.6	0.9	**0.4503**	0.008	1.7	ug/L	11	Standard
	Ag	107	314898.7	0.6	**48.8175**	0.102	0.2	ug/L	134	Standard
	Cd	111	99777.7	0.5	**48.5906**	0.622	1.3	mg/L	7	Standard
	Cd	114	243059.8	0.9	**48.6969**	0.795	1.6	ug/L	16	Standard
>	**In**	115	587073.7	0.8				ug/L	611117	Standard
	Sn	118	733.4	7.3	**0.0272**	0.010	36.7	ug/L	518	Standard
	Sb	123	223776.0	1.4	**49.3561**	0.290	0.6	ug/L	127	Standard
	Ba	135	127336.9	0.7	**64.1810**	0.344	0.5	ug/L	45	Standard
	Ce	140	335.0	9.1				ug/L	298	Standard
>	**Tb**	159	937062.8	1.0				ug/L	977942	Standard
	Ho	165	41.7	79.9				ug/L	12	Standard
	Tl	203	401801.7	0.6	**49.2378**	0.579	1.2	ug/L	31	Standard
	Tl	205	351031.6	0.7	**49.5383**	0.691	1.4	ug/L	20	Standard
	Pb	206	267916.7	0.7	**51.1246**	0.591	1.2	ug/L	286	Standard
	Pb	207	234005.3	0.9	**49.5047**	0.372	0.8	ug/L	257	Standard
	Pb	208	924903.3	0.8	**50.5781**	0.765	1.5	ug/L	956	Standard
	U	238	349197.5	0.5	**50.3229**	0.614	1.2	ug/L	17	Standard
>	**Bi**	209	539520.7	0.7				ug/L	557080	Standard

Sample ID: L1606083901S WG574242-05
Report Date/Time: Tuesday, June 28, 2016 20:06:31
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.8832**	18.842	173.1	mg/L	0	Standard
Mg	24	14542.0	3.3	**19.1893**	0.286	1.5	mg/L	32	Standard
K	39	753.4	10.6	**2.3925**	0.305	12.7	mg/L	30	Standard
Ca	43	295.0	12.2	**39.3051**	6.421	16.3	mg/L	48	Standard
Fe	54	140.6	16.7	**-0.0107**	0.020	183.5	mg/L	159	Standard
Fe	57	348.3	9.1	**0.5437**	0.082	15.1	mg/L	195	Standard
> **Sc-1**	45	39767.1	2.3				mg/L	39543	Standard
Cl	35	39860.4	1.2				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	7565.2	10.7				ug/L	1647	Standard
P	31	21044.6	3.8				ug/L	15231	Standard
S	34	2540.2	5.7				ug/L	1845	Standard
Sr	88	145.0	22.6				ug/L	70	Standard
C	12	196.7	11.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	48.4	54.7				mg/L	12	Standard
Ho-1	165	41.7	79.9				mg/L	12	Standard
Er	166	33.3	45.8				mg/L	20	Standard
I	127	26943.9	1.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.242	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.681	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606083901S WG574242-05
Report Date/Time: Tuesday, June 28, 2016 20:06:31
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.066
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.848
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606083901S WG574242-05
Report Date/Time: Tuesday, June 28, 2016 20:06:31
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606083901SD WG574242-06
Sample Date/Time: Tuesday, June 28, 2016 20:07:26
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77184.4	1.1				ug/L	81760	Standard
	Be	9	48315.3	1.2	**51.5258**	0.436	0.8	ug/L	17	Standard
	Al	27	15387465.4	1.3	**105.7299**	0.773	0.7	ug/L	1410	Standard
	Sc	45	40039.5	2.3				ug/L	39543	Standard
	Ti	47	554.0	4.1	**2.1409**	0.093	4.3	ug/L	39	Standard
	V	51	332776.2	1.5	**49.3498**	0.268	0.5	ug/L	1415	Standard
	Cr	52	340776.8	0.8	**49.6175**	0.095	0.2	ug/L	6946	Standard
	Cr	53	45466.5	0.7	**53.2763**	0.775	1.5	ug/L	328	Standard
	Mn	55	324192.4	1.4	**51.6123**	0.258	0.5	ug/L	823	Standard
	Co	59	327045.3	2.1	**48.1461**	0.569	1.2	ug/L	252	Standard
	Ni	60	91364.7	1.1	**50.1099**	0.072	0.1	ug/L	192	Standard
	Cu	65	91854.3	0.9	**49.9479**	0.081	0.2	ug/L	141	Standard
	Zn	66	66866.6	0.8	**62.3204**	0.118	0.2	ug/L	491	Standard
>	**Ge**	72	497622.9	1.0				ug/L	515087	Standard
	As	75	54845.8	1.7	**50.5323**	0.480	1.0	ug/L	20	Standard
	Se	82	5429.5	1.2	**48.6954**	0.265	0.5	ug/L	15	Standard
	Se-1	77	3850.8	1.9	**52.1872**	0.544	1.0	ug/L	48	Standard
>	**Ga**	71	85.0	11.8				mg/L	90	Standard
	Rb	85	19015.3	1.2				ug/L	23	Standard
	Y	89	421533.6	0.8				ug/L	448510	Standard
>	**Rh**	103	55.0	15.7				ug/L	15	Standard
	Mo	98	1205.1	2.4	**0.4408**	0.012	2.7	ug/L	11	Standard
	Ag	107	307002.5	0.8	**47.1551**	0.386	0.8	ug/L	134	Standard
	Cd	111	97425.8	0.9	**47.0062**	0.430	0.9	mg/L	7	Standard
	Cd	114	239795.9	0.5	**47.5975**	0.300	0.6	ug/L	16	Standard
>	**In**	115	592518.8	0.1				ug/L	611117	Standard
	Sn	118	761.7	9.1	**0.0309**	0.012	38.7	ug/L	518	Standard
	Sb	123	220298.1	1.2	**48.1440**	0.631	1.3	ug/L	127	Standard
	Ba	135	125301.0	0.6	**62.5732**	0.412	0.7	ug/L	45	Standard
	Ce	140	340.0	1.5				ug/L	298	Standard
>	**Tb**	159	948091.3	1.9				ug/L	977942	Standard
	Ho	165	23.3	65.5				ug/L	12	Standard
	Tl	203	394026.8	0.4	**48.4831**	0.151	0.3	ug/L	31	Standard
	Tl	205	348699.1	1.4	**49.4146**	1.048	2.1	ug/L	20	Standard
	Pb	206	261711.9	1.4	**50.1430**	0.483	1.0	ug/L	286	Standard
	Pb	207	228078.7	1.5	**48.4479**	0.479	1.0	ug/L	257	Standard
	Pb	208	906176.6	0.5	**49.7571**	0.517	1.0	ug/L	956	Standard
	U	238	340376.9	0.5	**49.2541**	0.514	1.0	ug/L	17	Standard
>	**Bi**	209	537295.6	0.7				ug/L	557080	Standard

Sample ID: L1606083901SD WG574242-06
Report Date/Time: Tuesday, June 28, 2016 20:09:43
Page 1

Approved: June 29, 2016

Na	23	3.3	86.6	**20.8666**	18.067	86.6	mg/L	0	Standard
Mg	24	14582.0	2.3	**19.1163**	0.419	2.2	mg/L	32	Standard
K	39	795.0	3.8	**2.5139**	0.164	6.5	mg/L	30	Standard
Ca	43	345.0	2.9	**46.4459**	2.697	5.8	mg/L	48	Standard
Fe	54	142.5	14.7	**-0.0097**	0.018	187.3	mg/L	159	Standard
Fe	57	408.3	2.5	**0.7378**	0.065	8.9	mg/L	195	Standard
> **Sc-1**	45	40039.5	2.3				mg/L	39543	Standard
Cl	35	39300.2	1.1				ug/L	27642	Standard
Kr	83	1.7	173.2				ug/L	2	Standard
Br	81	7651.9	3.5				ug/L	1647	Standard
P	31	20634.0	3.2				ug/L	15231	Standard
S	34	2398.5	2.0				ug/L	1845	Standard
Sr	88	180.0	15.5				ug/L	70	Standard
C	12	226.7	27.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	27.4	58.7				mg/L	12	Standard
Ho-1	165	23.3	65.5				mg/L	12	Standard
Er	166	53.3	108.3				mg/L	20	Standard
I	127	27065.8	3.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.404	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.610	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606083901SD WG574242-06
Report Date/Time: Tuesday, June 28, 2016 20:09:43
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.957
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.448
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606083901SD WG574242-06
Report Date/Time: Tuesday, June 28, 2016 20:09:43
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606084301
Sample Date/Time: Tuesday, June 28, 2016 20:10:37
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80372.6	1.6				ug/L	81760	Standard
	Be	9	41.7	45.4	**0.0330**	0.020	59.2	ug/L	17	Standard
	Al	27	7042054.5	1.4	**46.4726**	1.334	2.9	ug/L	1410	Standard
	Sc	45	38211.6	5.6				ug/L	39543	Standard
	Ti	47	149.3	19.8	**0.4676**	0.133	28.4	ug/L	39	Standard
	V	51	1769.8	3.9	**0.0612**	0.007	10.9	ug/L	1415	Standard
	Cr	52	8360.6	4.6	**0.2060**	0.044	21.1	ug/L	6946	Standard
	Cr	53	938.4	5.4	**0.7826**	0.048	6.1	ug/L	328	Standard
	Mn	55	4412856.2	0.9	**715.8990**	5.361	0.7	ug/L	823	Standard
	Co	59	49628.8	1.9	**7.3983**	0.034	0.5	ug/L	252	Standard
	Ni	60	31518.1	1.1	**17.4994**	0.073	0.4	ug/L	192	Standard
	Cu	65	1083.7	2.3	**0.5092**	0.018	3.5	ug/L	141	Standard
	Zn	66	58737.0	1.3	**55.5464**	0.787	1.4	ug/L	491	Standard
>	**Ge**	72	489683.3	1.5				ug/L	515087	Standard
	As	75	118.1	28.8	**0.1508**	0.032	21.2	ug/L	20	Standard
	Se	82	133.7	3.3	**1.1023**	0.049	4.4	ug/L	15	Standard
	Se-1	77	146.3	10.3	**1.3266**	0.239	18.0	ug/L	48	Standard
>	**Ga**	71	230.0	39.9				mg/L	90	Standard
	Rb	85	13262.5	1.5				ug/L	23	Standard
	Y	89	437622.3	1.3				ug/L	448510	Standard
>	**Rh**	103	40.0	43.3				ug/L	15	Standard
	Mo	98	84.3	2.5	**0.0124**	0.001	5.4	ug/L	11	Standard
	Ag	107	135.7	14.4	**0.0042**	0.003	69.6	ug/L	134	Standard
	Cd	111	325.5	6.3	**0.1508**	0.009	6.1	mg/L	7	Standard
	Cd	114	800.8	5.2	**0.1507**	0.008	5.1	ug/L	16	Standard
>	**In**	115	605376.8	0.3				ug/L	611117	Standard
	Sn	118	716.7	15.8	**0.0204**	0.019	93.4	ug/L	518	Standard
	Sb	123	1846.5	24.8	**0.3824**	0.099	25.9	ug/L	127	Standard
	Ba	135	61196.0	0.7	**29.8977**	0.107	0.4	ug/L	45	Standard
	Ce	140	4327.3	3.4				ug/L	298	Standard
>	**Tb**	159	946751.9	1.1				ug/L	977942	Standard
	Ho	165	113.3	17.8				ug/L	12	Standard
	Tl	203	274.7	6.5	**0.0286**	0.002	7.3	ug/L	31	Standard
	Tl	205	308.3	53.1	**0.0408**	0.023	55.8	ug/L	20	Standard
	Pb	206	584.3	5.1	**0.0470**	0.006	11.8	ug/L	286	Standard
	Pb	207	484.3	1.7	**0.0436**	0.002	3.9	ug/L	257	Standard
	Pb	208	2242.1	13.2	**0.0611**	0.016	25.8	ug/L	956	Standard
	U	238	167.0	68.8	**0.0208**	0.016	78.4	ug/L	17	Standard
>	**Bi**	209	544741.6	0.3				ug/L	557080	Standard

Sample ID: L1606084301
Report Date/Time: Tuesday, June 28, 2016 20:12:54
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	6142.9	1.9	**8.4190**	0.399	4.7	mg/L	32	Standard
K	39	320.0	19.2	**0.9720**	0.149	15.3	mg/L	30	Standard
Ca	43	193.3	18.7	**25.2140**	6.755	26.8	mg/L	48	Standard
Fe	54	272.9	8.2	**0.1197**	0.034	28.2	mg/L	159	Standard
Fe	57	298.3	20.0	**0.4171**	0.202	48.3	mg/L	195	Standard
> **Sc-1**	45	38211.6	5.6				mg/L	39543	Standard
Cl	35	43040.4	2.1				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3493.7	8.6				ug/L	1647	Standard
P	31	19535.9	3.1				ug/L	15231	Standard
S	34	2298.5	3.2				ug/L	1845	Standard
Sr	88	191.7	4.0				ug/L	70	Standard
C	12	103.3	24.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	171.7	2.4				mg/L	12	Standard
Ho-1	165	113.3	17.8				mg/L	12	Standard
Er	166	103.3	43.6				mg/L	20	Standard
I	127	15184.3	1.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.303	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.068	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606084301
Report Date/Time: Tuesday, June 28, 2016 20:12:54
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.061
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.785
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606084301
Report Date/Time: Tuesday, June 28, 2016 20:12:54
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606084301PS WG574570-01
Sample Date/Time: Tuesday, June 28, 2016 20:13:49
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84132.9	0.3				ug/L	81760	Standard
	Be	9	53800.4	2.5	**52.6389**	1.459	2.8	ug/L	17	Standard
	Al	27	7286262.3	0.5	**45.9217**	0.095	0.2	ug/L	1410	Standard
	Sc	45	39187.3	1.8				ug/L	39543	Standard
	Ti	47	167.0	8.4	**0.5053**	0.064	12.8	ug/L	39	Standard
	V	51	355576.0	1.4	**50.8299**	0.802	1.6	ug/L	1415	Standard
	Cr	52	356673.6	1.0	**50.0684**	1.233	2.5	ug/L	6946	Standard
	Cr	53	44503.6	1.2	**50.2498**	1.575	3.1	ug/L	328	Standard
	Mn	55	4859292.5	1.8	**747.6759**	17.580	2.4	ug/L	823	Standard
	Co	59	417615.7	1.3	**59.2660**	0.892	1.5	ug/L	252	Standard
	Ni	60	125871.4	1.4	**66.5870**	2.033	3.1	ug/L	192	Standard
	Cu	65	97106.5	1.0	**50.8947**	0.717	1.4	ug/L	141	Standard
	Zn	66	127581.2	0.7	**115.3025**	1.913	1.7	ug/L	491	Standard
>	Ge	72	516403.0	2.2				ug/L	515087	Standard
	As	75	57691.6	2.0	**51.2302**	0.986	1.9	ug/L	20	Standard
	Se	82	6053.8	2.8	**52.3316**	1.116	2.1	ug/L	15	Standard
	Se-1	77	3949.2	3.8	**51.5591**	1.119	2.2	ug/L	48	Standard
>	Ga	71	251.7	10.0				mg/L	90	Standard
	Rb	85	13841.3	3.1				ug/L	23	Standard
	Y	89	444794.9	3.0				ug/L	448510	Standard
>	Rh	103	78.3	24.2				ug/L	15	Standard
	Mo	98	86.4	4.3	**0.0128**	0.001	7.7	ug/L	11	Standard
	Ag	107	327259.4	2.3	**48.6313**	0.643	1.3	ug/L	134	Standard
	Cd	111	105349.6	1.3	**49.1793**	0.322	0.7	mg/L	7	Standard
	Cd	114	257271.1	1.0	**49.4173**	1.101	2.2	ug/L	16	Standard
>	In	115	612449.2	2.0				ug/L	611117	Standard
	Sn	118	941.7	3.9	**0.0570**	0.004	7.5	ug/L	518	Standard
	Sb	123	235069.6	1.3	**49.7050**	0.359	0.7	ug/L	127	Standard
	Ba	135	161643.1	1.4	**78.1070**	0.551	0.7	ug/L	45	Standard
	Ce	140	4429.0	1.8				ug/L	298	Standard
>	Tb	159	958659.2	2.3				ug/L	977942	Standard
	Ho	165	101.7	15.0				ug/L	12	Standard
	Tl	203	432017.4	2.0	**50.9163**	0.725	1.4	ug/L	31	Standard
	Tl	205	384793.0	2.1	**52.2411**	1.764	3.4	ug/L	20	Standard
	Pb	206	286141.9	1.8	**52.5195**	0.925	1.8	ug/L	286	Standard
	Pb	207	249240.4	1.8	**50.7143**	0.544	1.1	ug/L	257	Standard
	Pb	208	995726.4	2.1	**52.3723**	1.044	2.0	ug/L	956	Standard
	U	238	370701.4	1.5	**51.3906**	1.394	2.7	ug/L	17	Standard
>	Bi	209	561025.3	2.5				ug/L	557080	Standard

Sample ID: L1606084301PS WG574570-01
Report Date/Time: Tuesday, June 28, 2016 20:16:06
Page 1

Approved: June 29, 2016

Na	23	5.0	0.0	**32.4034**	0.594	1.8	mg/L	0	Standard
Mg	24	6414.7	1.1	**8.5623**	0.246	2.9	mg/L	32	Standard
K	39	321.7	9.1	**0.9561**	0.110	11.5	mg/L	30	Standard
Ca	43	185.0	8.1	**22.9936**	1.940	8.4	mg/L	48	Standard
Fe	54	250.2	14.1	**0.0912**	0.029	32.3	mg/L	159	Standard
Fe	57	306.7	15.8	**0.4183**	0.145	34.7	mg/L	195	Standard
> **Sc-1**	45	39187.3	1.8				mg/L	39543	Standard
Cl	35	43079.8	1.6				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	3410.4	11.2				ug/L	1647	Standard
P	31	19879.7	4.3				ug/L	15231	Standard
S	34	2313.5	2.6				ug/L	1845	Standard
Sr	88	201.7	5.2				ug/L	70	Standard
C	12	140.0	32.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	196.2	20.7				mg/L	12	Standard
Ho-1	165	101.7	15.0				mg/L	12	Standard
Er	166	80.0	76.0				mg/L	20	Standard
I	127	16267.1	4.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.902	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.256	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606084301PS WG574570-01
Report Date/Time: Tuesday, June 28, 2016 20:16:06
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.218
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.708
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606084301SDL WG574570-02
Sample Date/Time: Tuesday, June 28, 2016 20:17:00
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84610.6	1.2				ug/L	81760	Standard
	Be	9	31.7	24.1	**0.0210**	0.007	33.6	ug/L	17	Standard
	Al	27	1535529.0	0.5	**9.6123**	0.084	0.9	ug/L	1410	Standard
	Sc	45	40586.0	2.0				ug/L	39543	Standard
	Ti	47	54.0	14.5	**0.0442**	0.029	66.4	ug/L	39	Standard
	V	51	1510.6	4.6	**0.0030**	0.011	356.0	ug/L	1415	Standard
	Cr	52	7700.6	1.7	**0.0097**	0.022	221.3	ug/L	6946	Standard
	Cr	53	548.3	6.2	**0.2609**	0.037	14.0	ug/L	328	Standard
	Mn	55	927997.3	1.4	**137.8897**	1.374	1.0	ug/L	823	Standard
	Co	59	10741.5	3.1	**1.4429**	0.042	2.9	ug/L	252	Standard
	Ni	60	6856.2	1.9	**3.4057**	0.060	1.7	ug/L	192	Standard
	Cu	65	384.3	5.5	**0.1042**	0.011	10.3	ug/L	141	Standard
	Zn	66	13504.0	1.8	**11.0531**	0.162	1.5	ug/L	491	Standard
>	**Ge**	72	534132.0	0.6				ug/L	515087	Standard
	As	75	-8.2	426.8	**0.0333**	0.030	90.7	ug/L	20	Standard
	Se	82	34.3	14.2	**0.1678**	0.041	24.5	ug/L	15	Standard
	Se-1	77	77.7	7.3	**0.2756**	0.079	28.6	ug/L	48	Standard
>	**Ga**	71	133.3	12.1				mg/L	90	Standard
	Rb	85	2885.3	6.5				ug/L	23	Standard
	Y	89	438369.8	1.0				ug/L	448510	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	33.0	37.7	**-0.0070**	0.005	64.6	ug/L	11	Standard
	Ag	107	108.0	7.3	**-0.0003**	0.002	523.1	ug/L	134	Standard
	Cd	111	82.3	4.3	**0.0351**	0.001	2.2	mg/L	7	Standard
	Cd	114	247.3	23.3	**0.0421**	0.011	25.9	ug/L	16	Standard
>	**In**	115	618448.1	2.5				ug/L	611117	Standard
	Sn	118	536.7	11.9	**-0.0124**	0.008	66.9	ug/L	518	Standard
	Sb	123	2208.8	28.0	**0.4480**	0.119	26.5	ug/L	127	Standard
	Ba	135	12894.8	1.5	**6.1480**	0.082	1.3	ug/L	45	Standard
	Ce	140	871.7	9.1				ug/L	298	Standard
>	**Tb**	159	974992.3	2.7				ug/L	977942	Standard
	Ho	165	33.3	48.2				ug/L	12	Standard
	Tl	203	98.0	7.7	**0.0064**	0.001	11.0	ug/L	31	Standard
	Tl	205	90.0	24.2	**0.0096**	0.003	27.9	ug/L	20	Standard
	Pb	206	392.7	2.7	**0.0066**	0.003	42.8	ug/L	286	Standard
	Pb	207	318.0	2.7	**0.0050**	0.001	23.7	ug/L	257	Standard
	Pb	208	1352.7	4.0	**0.0088**	0.002	18.5	ug/L	956	Standard
	U	238	56.0	29.8	**0.0046**	0.002	47.0	ug/L	17	Standard
>	**Bi**	209	576774.8	1.6				ug/L	557080	Standard

Sample ID: L1606084301SDL WG574570-02
Report Date/Time: Tuesday, June 28, 2016 20:19:17
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.6259**	18.396	173.1	mg/L	0	Standard
Mg	24	1335.1	0.6	**1.6748**	0.038	2.2	mg/L	32	Standard
K	39	83.3	27.1	**0.1320**	0.069	52.2	mg/L	30	Standard
Ca	43	66.7	4.3	**4.5227**	0.490	10.8	mg/L	48	Standard
Fe	54	158.9	15.8	**0.0030**	0.021	715.4	mg/L	159	Standard
Fe	57	226.7	20.8	**0.1225**	0.167	136.7	mg/L	195	Standard
> **Sc-1**	45	40586.0	2.0				mg/L	39543	Standard
Cl	35	41629.1	0.8				ug/L	27642	Standard
Kr	83	4.7	24.7				ug/L	2	Standard
Br	81	2016.8	5.8				ug/L	1647	Standard
P	31	19454.2	1.7				ug/L	15231	Standard
S	34	2286.8	4.6				ug/L	1845	Standard
Sr	88	108.3	9.6				ug/L	70	Standard
C	12	106.7	39.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	58.6	31.0				mg/L	12	Standard
Ho-1	165	33.3	48.2				mg/L	12	Standard
Er	166	30.0	57.7				mg/L	20	Standard
I	127	4460.7	6.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.486	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.697	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606084301SDL WG574570-02
Report Date/Time: Tuesday, June 28, 2016 20:19:17
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.200
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606084301SDL WG574570-02
Sample Date/Time: Tuesday, June 28, 2016 20:20:12
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84917.5	3.2				ug/L	81760	Standard
	Be	9	15.0	66.7	**0.0050**	0.010	200.3	ug/L	17	Standard
	Al	27	312447.8	1.9	**1.9378**	0.034	1.7	ug/L	1410	Standard
	Sc	45	41284.5	3.3				ug/L	39543	Standard
	Ti	47	45.7	48.8	**0.0117**	0.082	700.7	ug/L	39	Standard
	V	51	1463.2	5.6	**-0.0026**	0.007	263.9	ug/L	1415	Standard
	Cr	52	7659.3	1.8	**0.0098**	0.004	44.8	ug/L	6946	Standard
	Cr	53	423.3	16.3	**0.1274**	0.086	67.2	ug/L	328	Standard
	Mn	55	187375.9	0.8	**27.8813**	0.482	1.7	ug/L	823	Standard
	Co	59	2308.5	0.8	**0.2873**	0.008	2.8	ug/L	252	Standard
	Ni	60	1540.7	3.0	**0.6883**	0.022	3.2	ug/L	192	Standard
	Cu	65	216.7	7.3	**0.0197**	0.006	31.0	ug/L	141	Standard
	Zn	66	4319.6	1.9	**2.9936**	0.025	0.8	ug/L	491	Standard
>	**Ge**	72	531260.9	2.2				ug/L	515087	Standard
	As	75	-47.8	76.7	**-0.0014**	0.032	2343.8	ug/L	20	Standard
	Se	82	17.0	17.8	**0.0237**	0.023	96.9	ug/L	15	Standard
	Se-1	77	59.0	6.1	**0.0400**	0.030	74.0	ug/L	48	Standard
>	**Ga**	71	86.7	31.8				mg/L	90	Standard
	Rb	85	596.7	10.5				ug/L	23	Standard
	Y	89	453907.4	1.0				ug/L	448510	Standard
>	**Rh**	103	8.3	34.6				ug/L	15	Standard
	Mo	98	28.3	9.0	**-0.0090**	0.001	10.4	ug/L	11	Standard
	Ag	107	92.0	2.2	**-0.0030**	0.000	8.2	ug/L	134	Standard
	Cd	111	15.3	15.1	**0.0040**	0.001	27.2	mg/L	7	Standard
	Cd	114	38.2	13.4	**0.0022**	0.001	41.3	ug/L	16	Standard
>	**In**	115	632674.4	0.8				ug/L	611117	Standard
	Sn	118	625.0	9.7	**0.0002**	0.010	5977.1	ug/L	518	Standard
	Sb	123	614.9	31.7	**0.1128**	0.039	34.5	ug/L	127	Standard
	Ba	135	2594.2	0.9	**1.1887**	0.008	0.6	ug/L	45	Standard
	Ce	140	198.3	20.2				ug/L	298	Standard
>	**Tb**	159	988615.6	0.9				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	26.7	16.9	**-0.0018**	0.000	28.3	ug/L	31	Standard
	Tl	205	16.7	75.5	**-0.0001**	0.002	1448.6	ug/L	20	Standard
	Pb	206	345.0	3.1	**-0.0028**	0.002	58.3	ug/L	286	Standard
	Pb	207	303.3	7.6	**0.0012**	0.004	352.8	ug/L	257	Standard
	Pb	208	1152.7	2.7	**-0.0023**	0.002	71.0	ug/L	956	Standard
	U	238	16.0	21.7	**-0.0008**	0.000	54.8	ug/L	17	Standard
>	**Bi**	209	585233.9	0.6				ug/L	557080	Standard

Sample ID: L1606084301SDL WG574570-02
Report Date/Time: Tuesday, June 28, 2016 20:22:29
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	291.7	12.4	**0.3140**	0.035	11.1	mg/L	32	Standard
K	39	48.3	6.0	**0.0153**	0.013	86.9	mg/L	30	Standard
Ca	43	35.0	28.6	**-0.2811**	1.306	464.6	mg/L	48	Standard
Fe	54	153.8	34.6	**-0.0038**	0.045	1180.2	mg/L	159	Standard
Fe	57	170.0	8.8	**-0.0754**	0.036	48.4	mg/L	195	Standard
Sc-1	45	41284.5	3.3				mg/L	39543	Standard
Cl	35	41099.7	0.8				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1820.1	5.7				ug/L	1647	Standard
P	31	19375.7	1.6				ug/L	15231	Standard
S	34	2545.2	4.1				ug/L	1845	Standard
Sr	88	58.3	27.6				ug/L	70	Standard
C	12	110.0	39.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.2	93.4				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	36.7	15.7				mg/L	20	Standard
I	127	1790.1	13.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.862	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.140	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606084301SDL WG574570-02
Report Date/Time: Tuesday, June 28, 2016 20:22:29
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.528
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.054
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 20:23:25
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82271.2	2.6				ug/L	81760	Standard
	Be	9	51878.7	2.6	**51.9060**	0.474	0.9	ug/L	17	Standard
	Al	27	7912369.8	3.4	**50.9914**	0.481	0.9	ug/L	1410	Standard
	Sc	45	40149.8	1.3				ug/L	39543	Standard
	Ti	47	25445.3	0.9	**101.2486**	0.646	0.6	ug/L	39	Standard
	V	51	355257.7	1.2	**50.4501**	0.253	0.5	ug/L	1415	Standard
	Cr	52	364176.4	2.0	**50.7897**	0.304	0.6	ug/L	6946	Standard
	Cr	53	45239.1	0.4	**50.7395**	0.592	1.2	ug/L	328	Standard
	Mn	55	333791.7	0.4	**50.8845**	0.584	1.1	ug/L	823	Standard
	Co	59	367088.8	1.7	**51.7480**	0.425	0.8	ug/L	252	Standard
	Ni	60	95399.1	1.8	**50.0959**	0.391	0.8	ug/L	192	Standard
	Cu	65	97309.2	2.1	**50.6606**	0.365	0.7	ug/L	141	Standard
	Zn	66	56912.4	2.6	**50.6269**	0.602	1.2	ug/L	491	Standard
>	**Ge**	72	519736.7	1.5				ug/L	515087	Standard
	As	75	56554.6	1.5	**49.8917**	0.034	0.1	ug/L	20	Standard
	Se	82	5843.7	2.8	**50.1784**	0.757	1.5	ug/L	15	Standard
	Se-1	77	3965.5	1.4	**51.4490**	0.315	0.6	ug/L	48	Standard
>	**Ga**	71	118.3	13.6				mg/L	90	Standard
	Rb	85	848.4	6.2				ug/L	23	Standard
	Y	89	451425.6	1.6				ug/L	448510	Standard
>	**Rh**	103	31.7	71.2				ug/L	15	Standard
	Mo	98	272060.7	0.6	**99.5752**	0.551	0.6	ug/L	11	Standard
	Ag	107	339081.9	1.7	**49.9711**	1.119	2.2	ug/L	134	Standard
	Cd	111	106686.1	0.8	**49.3843**	0.588	1.2	mg/L	7	Standard
	Cd	114	259655.5	1.7	**49.4494**	1.121	2.3	ug/L	16	Standard
>	**In**	115	617617.8	0.6				ug/L	611117	Standard
	Sn	118	302897.0	2.2	**50.5905**	1.415	2.8	ug/L	518	Standard
	Sb	123	239436.4	1.3	**50.2037**	0.916	1.8	ug/L	127	Standard
	Ba	135	101930.1	0.6	**48.8299**	0.530	1.1	ug/L	45	Standard
	Ce	140	63.3	9.1				ug/L	298	Standard
>	**Tb**	159	978625.5	0.9				ug/L	977942	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	434700.2	0.8	**50.4033**	0.455	0.9	ug/L	31	Standard
	Tl	205	381183.1	1.9	**50.8972**	0.874	1.7	ug/L	20	Standard
	Pb	206	277544.1	1.7	**50.1113**	0.892	1.8	ug/L	286	Standard
	Pb	207	250965.9	2.0	**50.2393**	1.021	2.0	ug/L	257	Standard
	Pb	208	994830.3	0.3	**51.4752**	0.269	0.5	ug/L	956	Standard
	U	238	372750.7	1.1	**50.8268**	0.592	1.2	ug/L	17	Standard
>	**Bi**	209	570174.9	0.2				ug/L	557080	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 20:25:42
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4207.3	2.1	**5.4598**	0.160	2.9	mg/L	32	Standard
K	39	1353.4	1.9	**4.3620**	0.034	0.8	mg/L	30	Standard
Ca	43	68.3	23.5	**4.8558**	2.284	47.0	mg/L	48	Standard
Fe	54	6096.4	4.5	**5.2968**	0.235	4.4	mg/L	159	Standard
Fe	57	1726.8	6.1	**5.1204**	0.425	8.3	mg/L	195	Standard
Sc-1	45	40149.8	1.3				mg/L	39543	Standard
Cl	35	38223.5	2.9				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1710.1	6.5				ug/L	1647	Standard
P	31	20984.5	3.6				ug/L	15231	Standard
S	34	2836.9	3.0				ug/L	1845	Standard
Sr	88	73.3	32.2				ug/L	70	Standard
C	12	176.7	8.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	26.3	80.0				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	1388.4	24.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.812		
Al	27	101.983		
Sc	45			
Ti	47	101.249		
V	51	100.900		
Cr	52	101.579		
Cr	53			
Mn	55	101.769		
Co	59	103.496		
Ni	60	100.192		
Cu	65	101.321		
Zn	66	101.254		
Ge	72		100.903	
As	75	99.783		
Se	82	100.357		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 20:25:42
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	99.575		
Ag	107	99.942		
Cd	111	98.769		
Cd	114			
In	115			101.064
Sn	118	101.181		
Sb	123	100.407		
Ba	135	97.660		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.807		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.950		
U	238	101.654		
Bi	209			102.351
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 20:25:42
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 20:26:37
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77291.7	2.7				ug/L	81760	Standard
	Be	9	25.0	40.0	**0.0170**	0.011	63.1	ug/L	17	Standard
	Al	27	2576.9	24.9	**0.0032**	0.004	126.1	ug/L	1410	Standard
	Sc	45	39050.3	1.7				ug/L	39543	Standard
	Ti	47	33.7	13.4	**-0.0246**	0.019	78.0	ug/L	39	Standard
	V	51	1167.6	8.0	**-0.0323**	0.013	41.5	ug/L	1415	Standard
	Cr	52	6011.5	1.2	**-0.1610**	0.012	7.3	ug/L	6946	Standard
	Cr	53	398.3	5.1	**0.1293**	0.022	17.0	ug/L	328	Standard
	Mn	55	883.7	9.4	**-0.0071**	0.013	183.2	ug/L	823	Standard
	Co	59	243.0	13.8	**0.0045**	0.005	107.7	ug/L	252	Standard
	Ni	60	165.0	10.4	**-0.0141**	0.009	65.1	ug/L	192	Standard
	Cu	65	129.3	4.3	**-0.0202**	0.003	14.1	ug/L	141	Standard
	Zn	66	451.0	1.9	**-0.4007**	0.009	2.3	ug/L	491	Standard
>	**Ge**	72	496420.0	0.5				ug/L	515087	Standard
	As	75	-52.8	22.7	**-0.0085**	0.011	133.2	ug/L	20	Standard
	Se	82	7.8	31.0	**-0.0491**	0.022	44.9	ug/L	15	Standard
	Se-1	77	52.0	3.8	**-0.0027**	0.026	948.5	ug/L	48	Standard
>	**Ga**	71	61.7	18.7				mg/L	90	Standard
	Rb	85	18.3	103.3				ug/L	23	Standard
	Y	89	442161.2	1.2				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	281.8	35.5	**0.0839**	0.034	41.1	ug/L	11	Standard
	Ag	107	122.3	22.2	**0.0018**	0.004	200.6	ug/L	134	Standard
	Cd	111	14.5	44.1	**0.0038**	0.003	74.5	mg/L	7	Standard
	Cd	114	43.1	30.3	**0.0033**	0.002	70.6	ug/L	16	Standard
>	**In**	115	615841.7	2.0				ug/L	611117	Standard
	Sn	118	753.4	17.4	**0.0248**	0.024	98.6	ug/L	518	Standard
	Sb	123	596.8	25.3	**0.1131**	0.034	30.2	ug/L	127	Standard
	Ba	135	38.0	16.0	**-0.0069**	0.003	39.0	ug/L	45	Standard
	Ce	140	8.3	91.7				ug/L	298	Standard
>	**Tb**	159	956084.4	3.2				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	73.0	30.8	**0.0039**	0.003	64.7	ug/L	31	Standard
	Tl	205	60.0	44.1	**0.0059**	0.003	58.6	ug/L	20	Standard
	Pb	206	307.3	5.4	**-0.0063**	0.002	32.6	ug/L	286	Standard
	Pb	207	254.3	1.8	**-0.0055**	0.000	8.7	ug/L	257	Standard
	Pb	208	1093.3	8.1	**-0.0021**	0.004	180.6	ug/L	956	Standard
	U	238	62.0	42.0	**0.0057**	0.004	62.4	ug/L	17	Standard
>	**Bi**	209	552726.9	1.8				ug/L	557080	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 20:28:53
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.8094**	18.714	173.1	mg/L	0	Standard
Mg	24	20.0	100.0	**-0.0300**	0.027	91.7	mg/L	32	Standard
K	39	31.7	50.8	**-0.0336**	0.053	157.9	mg/L	30	Standard
Ca	43	16.7	17.3	**-2.7773**	0.490	17.6	mg/L	48	Standard
Fe	54	136.0	26.0	**-0.0122**	0.034	282.8	mg/L	159	Standard
Fe	57	233.3	19.3	**0.1724**	0.147	85.5	mg/L	195	Standard
Sc-1	45	39050.3	1.7				mg/L	39543	Standard
Cl	35	37106.7	0.9				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1596.8	5.3				ug/L	1647	Standard
P	31	19597.7	1.6				ug/L	15231	Standard
S	34	2643.6	3.6				ug/L	1845	Standard
Sr	88	53.3	61.0				ug/L	70	Standard
C	12	110.0	32.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	9.4	104.3				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	1173.4	25.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.376	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 20:28:53
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.773
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.219
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 20:28:53
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606079401
Sample Date/Time: Tuesday, June 28, 2016 20:29:50
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76244.9	4.1				ug/L	81760	Standard
	Be	9	31.7	63.8	**0.0239**	0.020	83.5	ug/L	17	Standard
	Al	27	4859544.3	1.6	**33.8379**	1.720	5.1	ug/L	1410	Standard
	Sc	45	41316.3	3.1				ug/L	39543	Standard
	Ti	47	1613.1	8.6	**6.3222**	0.521	8.2	ug/L	39	Standard
	V	51	5296.6	3.8	**0.5556**	0.022	4.0	ug/L	1415	Standard
	Cr	52	9948.6	1.0	**0.3727**	0.012	3.3	ug/L	6946	Standard
	Cr	53	1300.1	3.5	**1.1398**	0.032	2.8	ug/L	328	Standard
	Mn	55	10830112.5	0.4	**1671.2513**	23.447	1.4	ug/L	823	Standard
	Co	59	98900.4	0.9	**14.0508**	0.072	0.5	ug/L	252	Standard
	Ni	60	5918.2	0.8	**3.0389**	0.039	1.3	ug/L	192	Standard
	Cu	65	1492.7	4.1	**0.6949**	0.022	3.2	ug/L	141	Standard
	Zn	66	3606.1	2.5	**2.4634**	0.043	1.7	ug/L	491	Standard
>	**Ge**	72	514893.7	1.4				ug/L	515087	Standard
	As	75	2838.5	0.7	**2.5661**	0.029	1.1	ug/L	20	Standard
	Se	82	67.5	5.6	**0.4677**	0.041	8.7	ug/L	15	Standard
	Se-1	77	72.7	2.9	**0.2462**	0.031	12.7	ug/L	48	Standard
>	**Ga**	71	795.0	2.5				mg/L	90	Standard
	Rb	85	32504.8	2.3				ug/L	23	Standard
	Y	89	435925.3	2.8				ug/L	448510	Standard
>	**Rh**	103	93.3	3.1				ug/L	15	Standard
	Mo	98	343.6	1.5	**0.1114**	0.005	4.3	ug/L	11	Standard
	Ag	107	117.7	11.3	**0.0018**	0.002	118.8	ug/L	134	Standard
	Cd	111	40.7	19.8	**0.0166**	0.004	21.3	mg/L	7	Standard
	Cd	114	97.5	38.9	**0.0145**	0.008	54.8	ug/L	16	Standard
>	**In**	115	595657.1	2.2				ug/L	611117	Standard
	Sn	118	961.7	5.9	**0.0649**	0.008	12.2	ug/L	518	Standard
	Sb	123	345.9	22.0	**0.0622**	0.015	24.5	ug/L	127	Standard
	Ba	135	208994.2	0.7	**103.8626**	2.069	2.0	ug/L	45	Standard
	Ce	140	33943.0	0.8				ug/L	298	Standard
>	**Tb**	159	940708.8	1.0				ug/L	977942	Standard
	Ho	165	610.0	7.0				ug/L	12	Standard
	Tl	203	714.0	4.8	**0.0811**	0.003	4.2	ug/L	31	Standard
	Tl	205	651.7	8.6	**0.0881**	0.009	9.8	ug/L	20	Standard
	Pb	206	1354.7	2.2	**0.1905**	0.003	1.6	ug/L	286	Standard
	Pb	207	1119.4	1.4	**0.1747**	0.005	2.8	ug/L	257	Standard
	Pb	208	4748.3	2.1	**0.1947**	0.004	1.9	ug/L	956	Standard
	U	238	416.3	2.3	**0.0559**	0.002	3.0	ug/L	17	Standard
>	**Bi**	209	549596.9	1.2				ug/L	557080	Standard

Sample ID: L1606079401
Report Date/Time: Tuesday, June 28, 2016 20:32:07
Page 1

Approved: June 29, 2016

Na	23	6.7	114.6	**41.1239**	47.883	116.4	mg/L	0	Standard
Mg	24	3483.7	2.6	**4.3856**	0.231	5.3	mg/L	32	Standard
K	39	496.7	14.5	**1.4639**	0.222	15.1	mg/L	30	Standard
Ca	43	190.0	16.0	**22.2436**	4.083	18.4	mg/L	48	Standard
Fe	54	7377.0	1.5	**6.2559**	0.190	3.0	mg/L	159	Standard
Fe	57	2103.5	3.2	**6.1801**	0.414	6.7	mg/L	195	Standard
Sc-1	45	41316.3	3.1				mg/L	39543	Standard
Cl	35	35106.6	2.5				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	13476.0	5.7				ug/L	1647	Standard
P	31	22598.5	5.8				ug/L	15231	Standard
S	34	2571.9	2.2				ug/L	1845	Standard
Sr	88	433.3	9.8				ug/L	70	Standard
C	12	150.0	35.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	882.4	15.5				mg/L	12	Standard
Ho-1	165	610.0	7.0				mg/L	12	Standard
Er	166	576.7	6.6				mg/L	20	Standard
I	127	50022.6	4.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.254	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606079401
Report Date/Time: Tuesday, June 28, 2016 20:32:07
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.470
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.657
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606079402
Sample Date/Time: Tuesday, June 28, 2016 20:33:01
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75678.5	1.2				ug/L	81760	Standard
	Be	9	111.7	13.7	**0.1118**	0.017	15.0	ug/L	17	Standard
	Al	27	1429595.1	1.1	**10.0072**	0.228	2.3	ug/L	1410	Standard
	Sc	45	39138.8	1.6				ug/L	39543	Standard
	Ti	47	278.3	21.3	**0.9895**	0.212	21.4	ug/L	39	Standard
	V	51	1557.1	6.8	**0.0252**	0.009	34.9	ug/L	1415	Standard
	Cr	52	8352.6	6.5	**0.1848**	0.041	22.0	ug/L	6946	Standard
	Cr	53	1770.1	12.2	**1.7430**	0.191	11.0	ug/L	328	Standard
	Mn	55	34175.5	2.4	**5.3156**	0.224	4.2	ug/L	823	Standard
	Co	59	3266.0	5.1	**0.4499**	0.010	2.1	ug/L	252	Standard
	Ni	60	1953.8	3.9	**0.9695**	0.017	1.8	ug/L	192	Standard
	Cu	65	1358.7	2.9	**0.6499**	0.011	1.6	ug/L	141	Standard
	Zn	66	4870.4	2.4	**3.7758**	0.058	1.5	ug/L	491	Standard
>	**Ge**	72	497312.9	3.3				ug/L	515087	Standard
	As	75	54.7	94.2	**0.0915**	0.049	53.2	ug/L	20	Standard
	Se	82	40.7	27.3	**0.2488**	0.112	45.1	ug/L	15	Standard
	Se-1	77	77.0	9.4	**0.3389**	0.077	22.7	ug/L	48	Standard
>	**Ga**	71	155.0	28.1				mg/L	90	Standard
	Rb	85	30158.3	1.3				ug/L	23	Standard
	Y	89	432228.9	1.1				ug/L	448510	Standard
>	**Rh**	103	11.7	49.5				ug/L	15	Standard
	Mo	98	72.4	21.3	**0.0082**	0.006	70.5	ug/L	11	Standard
	Ag	107	118.3	24.0	**0.0017**	0.004	249.1	ug/L	134	Standard
	Cd	111	44.6	10.6	**0.0183**	0.002	12.1	mg/L	7	Standard
	Cd	114	123.7	31.0	**0.0193**	0.007	38.8	ug/L	16	Standard
>	**In**	115	600554.1	0.2				ug/L	611117	Standard
	Sn	118	733.4	8.7	**0.0243**	0.011	44.6	ug/L	518	Standard
	Sb	123	231.2	28.1	**0.0370**	0.014	37.8	ug/L	127	Standard
	Ba	135	65483.6	1.3	**32.2516**	0.425	1.3	ug/L	45	Standard
	Ce	140	2745.2	3.0				ug/L	298	Standard
>	**Tb**	159	936903.6	1.4				ug/L	977942	Standard
	Ho	165	75.0	17.6				ug/L	12	Standard
	Tl	203	221.3	13.5	**0.0222**	0.003	15.7	ug/L	31	Standard
	Tl	205	186.7	13.2	**0.0239**	0.003	14.3	ug/L	20	Standard
	Pb	206	523.0	7.4	**0.0358**	0.006	17.6	ug/L	286	Standard
	Pb	207	464.7	6.5	**0.0400**	0.008	19.0	ug/L	257	Standard
	Pb	208	1837.7	5.9	**0.0397**	0.005	13.6	ug/L	956	Standard
	U	238	125.7	23.1	**0.0151**	0.004	27.1	ug/L	17	Standard
>	**Bi**	209	541937.8	1.7				ug/L	557080	Standard

Sample ID: L1606079402
Report Date/Time: Tuesday, June 28, 2016 20:35:18
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	2726.9	0.4	**3.6111**	0.076	2.1	mg/L	32	Standard
K	39	506.7	5.1	**1.5885**	0.091	5.7	mg/L	30	Standard
Ca	43	36.7	15.7	**0.2847**	0.917	322.3	mg/L	48	Standard
Fe	54	182.6	18.3	**0.0302**	0.033	110.1	mg/L	159	Standard
Fe	57	203.3	25.6	**0.0706**	0.187	264.3	mg/L	195	Standard
> **Sc-1**	45	39138.8	1.6				mg/L	39543	Standard
Cl	35	34567.4	3.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	6558.1	13.2				ug/L	1647	Standard
P	31	21156.4	3.6				ug/L	15231	Standard
S	34	2326.8	9.7				ug/L	1845	Standard
Sr	88	76.7	13.6				ug/L	70	Standard
C	12	236.7	44.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	150.6	9.6				mg/L	12	Standard
Ho-1	165	75.0	17.6				mg/L	12	Standard
Er	166	56.7	40.8				mg/L	20	Standard
I	127	9424.6	4.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.549	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606079402
Report Date/Time: Tuesday, June 28, 2016 20:35:18
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.272
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.282
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606079403
Sample Date/Time: Tuesday, June 28, 2016 20:36:13
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76753.9	0.3				ug/L	81760	Standard
	Be	9	53.3	32.9	**0.0475**	0.019	39.7	ug/L	17	Standard
	Al	27	2019995.9	2.1	**13.9455**	0.321	2.3	ug/L	1410	Standard
	Sc	45	39648.5	2.7				ug/L	39543	Standard
	Ti	47	884.4	21.1	**3.3748**	0.755	22.4	ug/L	39	Standard
	V	51	4216.0	3.5	**0.3970**	0.022	5.5	ug/L	1415	Standard
	Cr	52	11350.6	1.0	**0.5656**	0.020	3.6	ug/L	6946	Standard
	Cr	53	3082.0	1.2	**3.1525**	0.043	1.4	ug/L	328	Standard
	Mn	55	1462715.3	1.2	**224.3814**	2.702	1.2	ug/L	823	Standard
	Co	59	3343.0	3.0	**0.4421**	0.013	2.9	ug/L	252	Standard
	Ni	60	3343.7	2.8	**1.6618**	0.047	2.8	ug/L	192	Standard
	Cu	65	1050.7	3.0	**0.4594**	0.015	3.2	ug/L	141	Standard
	Zn	66	4988.5	1.4	**3.7017**	0.077	2.1	ug/L	491	Standard
>	**Ge**	72	517603.4	0.3				ug/L	515087	Standard
	As	75	193.9	14.0	**0.2119**	0.024	11.1	ug/L	20	Standard
	Se	82	57.1	5.5	**0.3743**	0.026	6.9	ug/L	15	Standard
	Se-1	77	124.7	7.3	**0.9281**	0.125	13.4	ug/L	48	Standard
>	**Ga**	71	286.7	21.7				mg/L	90	Standard
	Rb	85	31280.6	0.6				ug/L	23	Standard
	Y	89	445698.9	0.7				ug/L	448510	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	229.5	3.6	**0.0662**	0.004	6.0	ug/L	11	Standard
	Ag	107	129.3	14.3	**0.0031**	0.003	91.8	ug/L	134	Standard
	Cd	111	79.6	15.3	**0.0346**	0.006	17.8	mg/L	7	Standard
	Cd	114	219.2	32.9	**0.0375**	0.014	38.3	ug/L	16	Standard
>	**In**	115	608521.7	1.3				ug/L	611117	Standard
	Sn	118	713.4	5.3	**0.0192**	0.007	34.1	ug/L	518	Standard
	Sb	123	215.5	21.1	**0.0330**	0.009	27.4	ug/L	127	Standard
	Ba	135	73971.5	1.1	**35.9586**	0.191	0.5	ug/L	45	Standard
	Ce	140	14728.8	3.9				ug/L	298	Standard
>	**Tb**	159	956871.9	1.4				ug/L	977942	Standard
	Ho	165	336.7	6.7				ug/L	12	Standard
	Tl	203	279.3	8.0	**0.0283**	0.003	10.3	ug/L	31	Standard
	Tl	205	295.0	11.9	**0.0379**	0.004	11.8	ug/L	20	Standard
	Pb	206	724.7	2.0	**0.0702**	0.002	2.4	ug/L	286	Standard
	Pb	207	605.7	5.7	**0.0660**	0.008	12.2	ug/L	257	Standard
	Pb	208	2584.1	3.2	**0.0763**	0.006	7.3	ug/L	956	Standard
	U	238	605.0	8.8	**0.0814**	0.008	10.1	ug/L	17	Standard
>	**Bi**	209	558048.4	1.1				ug/L	557080	Standard

Sample ID: L1606079403
Report Date/Time: Tuesday, June 28, 2016 20:38:30
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4734.1	2.7	**6.2297**	0.190	3.1	mg/L	32	Standard
K	39	378.3	13.8	**1.1326**	0.165	14.5	mg/L	30	Standard
Ca	43	55.0	18.2	**3.0097**	1.672	55.5	mg/L	48	Standard
Fe	54	512.5	3.2	**0.3260**	0.027	8.3	mg/L	159	Standard
Fe	57	288.3	19.9	**0.3473**	0.203	58.5	mg/L	195	Standard
> **Sc-1**	45	39648.5	2.7				mg/L	39543	Standard
Cl	35	35720.7	1.2				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	10650.4	4.7				ug/L	1647	Standard
P	31	21555.3	1.7				ug/L	15231	Standard
S	34	2313.5	4.4				ug/L	1845	Standard
Sr	88	90.0	14.7				ug/L	70	Standard
C	12	206.7	17.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	611.8	5.5				mg/L	12	Standard
Ho-1	165	336.7	6.7				mg/L	12	Standard
Er	166	310.0	11.6				mg/L	20	Standard
I	127	51010.9	6.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.877	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.489	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606079403
Report Date/Time: Tuesday, June 28, 2016 20:38:30
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.575	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.174	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606079403
Report Date/Time: Tuesday, June 28, 2016 20:38:30
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606079404
Sample Date/Time: Tuesday, June 28, 2016 20:39:24
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77373.8	1.6				ug/L	81760	Standard
	Be	9	33.3	45.8	**0.0257**	0.016	61.7	ug/L	17	Standard
	Al	27	6530294.9	1.7	**44.7685**	1.484	3.3	ug/L	1410	Standard
	Sc	45	40462.3	2.9				ug/L	39543	Standard
	Ti	47	1753.8	22.2	**6.9932**	1.564	22.4	ug/L	39	Standard
	V	51	4913.4	4.4	**0.5113**	0.026	5.2	ug/L	1415	Standard
	Cr	52	10044.0	5.5	**0.4080**	0.064	15.7	ug/L	6946	Standard
	Cr	53	2381.9	7.8	**2.4159**	0.236	9.8	ug/L	328	Standard
	Mn	55	8647420.3	0.2	**1354.8198**	14.536	1.1	ug/L	823	Standard
	Co	59	169235.6	0.5	**24.4356**	0.161	0.7	ug/L	252	Standard
	Ni	60	12361.0	0.9	**6.5619**	0.023	0.4	ug/L	192	Standard
	Cu	65	806.0	0.9	**0.3401**	0.009	2.5	ug/L	141	Standard
	Zn	66	7577.2	1.7	**6.1942**	0.082	1.3	ug/L	491	Standard
>	**Ge**	72	507111.0	1.2				ug/L	515087	Standard
	As	75	265.8	16.5	**0.2802**	0.037	13.2	ug/L	20	Standard
	Se	82	64.6	10.0	**0.4504**	0.053	11.9	ug/L	15	Standard
	Se-1	77	107.0	10.8	**0.7228**	0.140	19.4	ug/L	48	Standard
>	**Ga**	71	598.3	9.8				mg/L	90	Standard
	Rb	85	32554.9	1.8				ug/L	23	Standard
	Y	89	447221.5	3.0				ug/L	448510	Standard
>	**Rh**	103	20.0	50.0				ug/L	15	Standard
	Mo	98	99.0	16.4	**0.0174**	0.006	35.0	ug/L	11	Standard
	Ag	107	155.7	70.8	**0.0069**	0.016	237.9	ug/L	134	Standard
	Cd	111	107.8	50.7	**0.0474**	0.026	54.2	mg/L	7	Standard
	Cd	114	265.0	52.4	**0.0460**	0.027	58.4	ug/L	16	Standard
>	**In**	115	613219.8	0.3				ug/L	611117	Standard
	Sn	118	870.0	6.6	**0.0447**	0.010	22.4	ug/L	518	Standard
	Sb	123	214.6	24.5	**0.0325**	0.011	34.6	ug/L	127	Standard
	Ba	135	118463.0	0.8	**57.1584**	0.254	0.4	ug/L	45	Standard
	Ce	140	43559.2	3.6				ug/L	298	Standard
>	**Tb**	159	953430.3	1.1				ug/L	977942	Standard
	Ho	165	631.7	5.3				ug/L	12	Standard
	Tl	203	508.0	24.8	**0.0560**	0.015	27.1	ug/L	31	Standard
	Tl	205	431.7	17.4	**0.0571**	0.010	17.4	ug/L	20	Standard
	Pb	206	1022.0	12.5	**0.1271**	0.024	19.0	ug/L	286	Standard
	Pb	207	848.0	9.6	**0.1173**	0.017	14.2	ug/L	257	Standard
	Pb	208	3317.1	5.1	**0.1168**	0.009	7.7	ug/L	956	Standard
	U	238	210.3	17.6	**0.0266**	0.005	19.3	ug/L	17	Standard
>	**Bi**	209	552632.4	0.7				ug/L	557080	Standard

Sample ID: L1606079404
Report Date/Time: Tuesday, June 28, 2016 20:41:41
Page 1

Approved: June 29, 2016

Na	23	3.3	86.6	**20.7118**	17.947	86.6	mg/L	0	Standard
Mg	24	5764.4	1.5	**7.4467**	0.270	3.6	mg/L	32	Standard
K	39	563.3	10.2	**1.7170**	0.152	8.8	mg/L	30	Standard
Ca	43	75.0	17.6	**5.8105**	2.161	37.2	mg/L	48	Standard
Fe	54	999.2	5.7	**0.7481**	0.074	9.9	mg/L	159	Standard
Fe	57	490.0	3.5	**0.9936**	0.094	9.5	mg/L	195	Standard
Sc-1	45	40462.3	2.9				mg/L	39543	Standard
Cl	35	35374.6	1.6				ug/L	27642	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	12395.1	8.6				ug/L	1647	Standard
P	31	20597.3	1.4				ug/L	15231	Standard
S	34	2416.9	2.7				ug/L	1845	Standard
Sr	88	128.3	19.6				ug/L	70	Standard
C	12	236.7	2.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	1138.1	44.8				mg/L	12	Standard
Ho-1	165	631.7	5.3				mg/L	12	Standard
Er	166	596.7	6.3				mg/L	20	Standard
I	127	203787.2	10.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.635	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.452	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606079404
Report Date/Time: Tuesday, June 28, 2016 20:41:41
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.344
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.202
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606082202
Sample Date/Time: Tuesday, June 28, 2016 20:42:36
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79831.5	1.5				ug/L	81760	Standard
	Be	9	18.3	63.0	**0.0091**	0.012	129.5	ug/L	17	Standard
	Al	27	3326140.8	2.2	**22.0876**	0.529	2.4	ug/L	1410	Standard
	Sc	45	40903.5	2.4				ug/L	39543	Standard
	Ti	47	258.3	7.7	**0.8950**	0.111	12.4	ug/L	39	Standard
	V	51	1427.8	26.8	**0.0038**	0.061	1620.7	ug/L	1415	Standard
	Cr	52	8606.8	1.2	**0.2025**	0.023	11.3	ug/L	6946	Standard
	Cr	53	7031.6	3.4	**7.8173**	0.215	2.7	ug/L	328	Standard
	Mn	55	245282.9	2.4	**38.3872**	0.371	1.0	ug/L	823	Standard
	Co	59	360.0	5.7	**0.0208**	0.001	6.7	ug/L	252	Standard
	Ni	60	675.7	7.1	**0.2607**	0.030	11.7	ug/L	192	Standard
	Cu	65	319.3	4.0	**0.0805**	0.011	13.1	ug/L	141	Standard
	Zn	66	1777.8	5.5	**0.8236**	0.060	7.3	ug/L	491	Standard
>	**Ge**	72	505790.0	3.0				ug/L	515087	Standard
	As	75	361.2	27.3	**0.3676**	0.091	24.7	ug/L	20	Standard
	Se	82	151.2	10.8	**1.2184**	0.141	11.6	ug/L	15	Standard
	Se-1	77	286.7	5.2	**3.1548**	0.107	3.4	ug/L	48	Standard
>	**Ga**	71	148.3	15.6				mg/L	90	Standard
	Rb	85	12600.2	4.8				ug/L	23	Standard
	Y	89	440998.1	2.4				ug/L	448510	Standard
>	**Rh**	103	48.3	6.0				ug/L	15	Standard
	Mo	98	329.5	7.2	**0.1031**	0.007	6.5	ug/L	11	Standard
	Ag	107	82.7	3.0	**-0.0039**	0.000	4.5	ug/L	134	Standard
	Cd	111	39.1	14.9	**0.0154**	0.002	16.0	mg/L	7	Standard
	Cd	114	93.5	42.9	**0.0131**	0.008	57.9	ug/L	16	Standard
>	**In**	115	609428.7	1.7				ug/L	611117	Standard
	Sn	118	616.7	6.1	**0.0027**	0.008	296.4	ug/L	518	Standard
	Sb	123	172.8	22.7	**0.0238**	0.008	32.2	ug/L	127	Standard
	Ba	135	142178.1	1.8	**69.0335**	0.137	0.2	ug/L	45	Standard
	Ce	140	378.3	16.5				ug/L	298	Standard
>	**Tb**	159	949587.4	3.3				ug/L	977942	Standard
	Ho	165	25.0	20.0				ug/L	12	Standard
	Tl	203	147.7	1.7	**0.0134**	0.001	4.1	ug/L	31	Standard
	Tl	205	166.7	29.1	**0.0214**	0.007	33.5	ug/L	20	Standard
	Pb	206	309.7	2.3	**-0.0043**	0.001	31.8	ug/L	286	Standard
	Pb	207	262.7	4.1	**-0.0022**	0.002	83.4	ug/L	257	Standard
	Pb	208	1080.7	3.0	**-0.0011**	0.001	98.3	ug/L	956	Standard
	U	238	30.0	28.9	**0.0014**	0.001	94.3	ug/L	17	Standard
>	**Bi**	209	537934.0	1.4				ug/L	557080	Standard

Sample ID: L1606082202
Report Date/Time: Tuesday, June 28, 2016 20:44:53
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.6139**	18.375	173.1	mg/L	0	Standard
Mg	24	32371.2	3.9	**41.6322**	2.388	5.7	mg/L	32	Standard
K	39	260.0	20.1	**0.7087**	0.176	24.8	mg/L	30	Standard
Ca	43	58.3	19.8	**3.1978**	1.533	48.0	mg/L	48	Standard
Fe	54	1294.3	5.1	**0.9965**	0.083	8.3	mg/L	159	Standard
Fe	57	445.0	8.5	**0.8270**	0.105	12.6	mg/L	195	Standard
> **Sc-1**	45	40903.5	2.4				mg/L	39543	Standard
Cl	35	36431.1	1.6				ug/L	27642	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	35805.7	4.9				ug/L	1647	Standard
P	31	25079.1	3.1				ug/L	15231	Standard
S	34	2408.5	3.8				ug/L	1845	Standard
Sr	88	206.7	19.6				ug/L	70	Standard
C	12	176.7	45.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	28.1	3.0				mg/L	12	Standard
Ho-1	165	25.0	20.0				mg/L	12	Standard
Er	166	40.0	43.3				mg/L	20	Standard
I	127	201681.5	7.3				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.641	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.195	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606082202
Report Date/Time: Tuesday, June 28, 2016 20:44:53
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.724
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.563
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606082203
Sample Date/Time: Tuesday, June 28, 2016 20:45:47
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90191.0	1.0				ug/L	81760	Standard
	Be	9	23.3	68.9	**0.0116**	0.015	127.2	ug/L	17	Standard
	Al	27	11365406.0	0.9	**66.8332**	1.185	1.8	ug/L	1410	Standard
	Sc	45	43861.8	3.4				ug/L	39543	Standard
	Ti	47	293.7	8.7	**0.9575**	0.101	10.6	ug/L	39	Standard
	V	51	2061.8	11.0	**0.0753**	0.031	41.0	ug/L	1415	Standard
	Cr	52	35560.4	1.1	**3.7982**	0.065	1.7	ug/L	6946	Standard
	Cr	53	13979.8	6.4	**14.7966**	1.011	6.8	ug/L	328	Standard
	Mn	55	581441.7	2.8	**85.0974**	2.668	3.1	ug/L	823	Standard
	Co	59	11104.7	2.7	**1.4708**	0.043	3.0	ug/L	252	Standard
	Ni	60	4756.1	1.3	**2.2951**	0.027	1.2	ug/L	192	Standard
	Cu	65	585.0	3.7	**0.2018**	0.012	5.9	ug/L	141	Standard
	Zn	66	4219.9	2.2	**2.8317**	0.093	3.3	ug/L	491	Standard
>	**Ge**	72	541965.4	0.4				ug/L	515087	Standard
	As	75	1879.3	4.8	**1.6291**	0.081	5.0	ug/L	20	Standard
	Se	82	403.3	6.2	**3.2102**	0.210	6.5	ug/L	15	Standard
	Se-1	77	499.0	5.4	**5.5758**	0.322	5.8	ug/L	48	Standard
>	**Ga**	71	170.0	12.8				mg/L	90	Standard
	Rb	85	898318.0	1.7				ug/L	23	Standard
	Y	89	454033.5	1.6				ug/L	448510	Standard
>	**Rh**	103	158.3	15.6				ug/L	15	Standard
	Mo	98	390.2	3.3	**0.1238**	0.006	4.6	ug/L	11	Standard
	Ag	107	91.7	18.8	**-0.0027**	0.003	94.7	ug/L	134	Standard
	Cd	111	57.3	18.5	**0.0236**	0.005	19.9	mg/L	7	Standard
	Cd	114	162.3	23.5	**0.0261**	0.008	29.2	ug/L	16	Standard
>	**In**	115	617377.1	1.4				ug/L	611117	Standard
	Sn	118	971.7	10.6	**0.0609**	0.019	30.8	ug/L	518	Standard
	Sb	123	275.2	12.0	**0.0450**	0.008	16.8	ug/L	127	Standard
	Ba	135	754414.8	1.4	**361.7131**	4.988	1.4	ug/L	45	Standard
	Ce	140	4038.9	3.4				ug/L	298	Standard
>	**Tb**	159	972701.2	1.2				ug/L	977942	Standard
	Ho	165	60.0					ug/L	12	Standard
	Tl	203	156.0	13.2	**0.0138**	0.002	16.1	ug/L	31	Standard
	Tl	205	116.7	13.1	**0.0137**	0.002	15.9	ug/L	20	Standard
	Pb	206	526.0	2.4	**0.0341**	0.004	10.3	ug/L	286	Standard
	Pb	207	425.7	3.6	**0.0296**	0.004	13.9	ug/L	257	Standard
	Pb	208	1793.4	1.5	**0.0349**	0.002	5.6	ug/L	956	Standard
	U	238	113.7	2.7	**0.0130**	0.001	4.0	ug/L	17	Standard
>	**Bi**	209	555248.6	1.3				ug/L	557080	Standard

Sample ID: L1606082203
Report Date/Time: Tuesday, June 28, 2016 20:48:04
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**9.3851**	16.247	173.1	mg/L	0	Standard
Mg	24	35620.2	1.5	**42.7261**	1.684	3.9	mg/L	32	Standard
K	39	6901.6	2.1	**20.9070**	1.156	5.5	mg/L	30	Standard
Ca	43	215.0	12.3	**24.1234**	3.813	15.8	mg/L	48	Standard
Fe	54	3077.7	3.9	**2.3743**	0.067	2.8	mg/L	159	Standard
Fe	57	1036.7	11.9	**2.5246**	0.275	10.9	mg/L	195	Standard
Sc-1	45	43861.8	3.4				mg/L	39543	Standard
Cl	35	37418.9	4.6				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	90214.6	3.4				ug/L	1647	Standard
P	31	25815.3	2.7				ug/L	15231	Standard
S	34	2615.2	3.8				ug/L	1845	Standard
Sr	88	703.3	5.7				ug/L	70	Standard
C	12	206.7	5.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	96.0	27.7				mg/L	12	Standard
Ho-1	165	60.0					mg/L	12	Standard
Er	166	83.3	6.9				mg/L	20	Standard
I	127	135411.8	5.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.312	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.218	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606082203
Report Date/Time: Tuesday, June 28, 2016 20:48:04
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.024	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.671	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606082302
Sample Date/Time: Tuesday, June 28, 2016 20:48:59
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108277.4	2.9				ug/L	81760	Standard
	Be	9	45.0	44.4	**0.0244**	0.015	61.4	ug/L	17	Standard
	Al	27	155300534.6	2.6	**761.2127**	30.613	4.0	ug/L	1410	Standard
	Sc	45	45277.6	3.5				ug/L	39543	Standard
	Ti	47	403.3	5.8	**1.4273**	0.064	4.5	ug/L	39	Standard
	V	51	3112.6	16.0	**0.2334**	0.070	30.2	ug/L	1415	Standard
	Cr	52	14043.2	7.2	**0.9232**	0.105	11.4	ug/L	6946	Standard
	Cr	53	48930.1	15.5	**54.3111**	7.500	13.8	ug/L	328	Standard
	Mn	55	2748271.5	3.9	**416.1426**	7.847	1.9	ug/L	823	Standard
	Co	59	187853.6	1.8	**26.2312**	0.060	0.2	ug/L	252	Standard
	Ni	60	24191.7	7.1	**12.5042**	0.665	5.3	ug/L	192	Standard
	Cu	65	2608.9	7.7	**1.2568**	0.078	6.2	ug/L	141	Standard
	Zn	66	8434.7	3.5	**6.7297**	0.123	1.8	ug/L	491	Standard
>	**Ge**	72	524401.5	2.0				ug/L	515087	Standard
	As	75	6667.1	7.6	**5.8608**	0.340	5.8	ug/L	20	Standard
	Se	82	2463.0	3.4	**20.8902**	0.307	1.5	ug/L	15	Standard
	Se-1	77	5803.1	9.1	**74.8730**	5.475	7.3	ug/L	48	Standard
>	**Ga**	71	283.3	11.5				mg/L	90	Standard
	Rb	85	14086.5	1.8				ug/L	23	Standard
	Y	89	450377.0	4.3				ug/L	448510	Standard
>	**Rh**	103	1153.4	2.0				ug/L	15	Standard
	Mo	98	228.3	2.1	**0.0678**	0.002	2.3	ug/L	11	Standard
	Ag	107	100.7	7.3	**-0.0008**	0.001	114.3	ug/L	134	Standard
	Cd	111	85.9	11.5	**0.0385**	0.005	14.0	mg/L	7	Standard
	Cd	114	207.5	20.1	**0.0360**	0.007	20.1	ug/L	16	Standard
>	**In**	115	594734.3	2.8				ug/L	611117	Standard
	Sn	118	838.4	7.1	**0.0436**	0.007	15.0	ug/L	518	Standard
	Sb	123	341.7	13.9	**0.0614**	0.008	13.7	ug/L	127	Standard
	Ba	135	7531184.6	2.9	**3748.3398**	4.365	0.1	ug/L	45	Standard
	Ce	140	2656.9	7.0				ug/L	298	Standard
>	**Tb**	159	994456.1	1.2				ug/L	977942	Standard
	Ho	165	153.3	5.0				ug/L	12	Standard
	Tl	203	149.0	11.0	**0.0143**	0.002	16.0	ug/L	31	Standard
	Tl	205	131.7	44.0	**0.0171**	0.008	49.5	ug/L	20	Standard
	Pb	206	558.3	2.7	**0.0476**	0.002	3.6	ug/L	286	Standard
	Pb	207	480.7	4.4	**0.0481**	0.004	8.4	ug/L	257	Standard
	Pb	208	1800.4	1.7	**0.0423**	0.001	2.5	ug/L	956	Standard
	U	238	2848.6	3.5	**0.4250**	0.011	2.7	ug/L	17	Standard
>	**Bi**	209	517504.0	1.7				ug/L	557080	Standard

Sample ID: L1606082302
Report Date/Time: Tuesday, June 28, 2016 20:51:16
Page 1

Approved: June 29, 2016

Na	23	15.0	33.3	**83.8040**	26.058	31.1	mg/L	0	Standard
Mg	24	304856.8	3.2	**354.4066**	5.599	1.6	mg/L	32	Standard
K	39	523.3	14.8	**1.3989**	0.174	12.4	mg/L	30	Standard
Ca	43	1175.0	5.2	**150.6324**	9.407	6.2	mg/L	48	Standard
Fe	54	2706.9	4.6	**2.0025**	0.071	3.5	mg/L	159	Standard
Fe	57	1593.4	6.7	**4.0698**	0.154	3.8	mg/L	195	Standard
> **Sc-1**	45	45277.6	3.5				mg/L	39543	Standard
Cl	35	40644.4	1.3				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	610984.3	3.4				ug/L	1647	Standard
P	31	30180.0	2.7				ug/L	15231	Standard
S	34	2781.9	5.2				ug/L	1845	Standard
Sr	88	4374.0	2.8				ug/L	70	Standard
C	12	443.3	22.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	166.1	26.6				mg/L	12	Standard
Ho-1	165	153.3	5.0				mg/L	12	Standard
Er	166	220.0	28.4				mg/L	20	Standard
I	127	589063.3	13.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.433	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.808	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606082302
Report Date/Time: Tuesday, June 28, 2016 20:51:16
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.319
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.896
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606082302
Report Date/Time: Tuesday, June 28, 2016 20:51:16
Page 3

Approved: June 29, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606082303
Sample Date/Time: Tuesday, June 28, 2016 20:52:10
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93244.4	1.1				ug/L	81760	Standard
	Be	9	28.3	10.2	**0.0153**	0.003	16.9	ug/L	17	Standard
	Al	27	94744933.1	0.6	**538.9798**	6.462	1.2	ug/L	1410	Standard
	Sc	45	47113.2	4.5				ug/L	39543	Standard
	Ti	47	553.7	11.7	**2.0175**	0.206	10.2	ug/L	39	Standard
	V	51	4328.2	13.5	**0.4057**	0.092	22.6	ug/L	1415	Standard
	Cr	52	14490.9	2.4	**0.9864**	0.018	1.8	ug/L	6946	Standard
	Cr	53	43709.7	3.6	**48.5418**	1.565	3.2	ug/L	328	Standard
	Mn	55	8319616.3	2.0	**1259.6840**	13.722	1.1	ug/L	823	Standard
	Co	59	19767.9	2.2	**2.7309**	0.056	2.1	ug/L	252	Standard
	Ni	60	10810.2	4.4	**5.5279**	0.127	2.3	ug/L	192	Standard
	Cu	65	2456.2	2.4	**1.1782**	0.021	1.8	ug/L	141	Standard
	Zn	66	5426.0	2.4	**4.0320**	0.062	1.5	ug/L	491	Standard
>	**Ge**	72	524719.7	2.2				ug/L	515087	Standard
	As	75	3752.6	7.8	**3.3171**	0.255	7.7	ug/L	20	Standard
	Se	82	1738.6	3.2	**14.7077**	0.502	3.4	ug/L	15	Standard
	Se-1	77	4761.1	4.1	**61.3297**	2.628	4.3	ug/L	48	Standard
>	**Ga**	71	408.3	8.7				mg/L	90	Standard
	Rb	85	9714.8	3.7				ug/L	23	Standard
	Y	89	460620.0	3.3				ug/L	448510	Standard
>	**Rh**	103	891.7	10.4				ug/L	15	Standard
	Mo	98	389.5	4.4	**0.1260**	0.003	2.4	ug/L	11	Standard
	Ag	107	110.7	7.4	**0.0004**	0.001	272.1	ug/L	134	Standard
	Cd	111	332.6	3.0	**0.1538**	0.007	4.3	mg/L	7	Standard
	Cd	114	853.2	3.8	**0.1605**	0.008	5.1	ug/L	16	Standard
>	**In**	115	607039.3	2.6				ug/L	611117	Standard
	Sn	118	751.7	13.7	**0.0260**	0.016	61.8	ug/L	518	Standard
	Sb	123	376.4	10.5	**0.0674**	0.007	10.4	ug/L	127	Standard
	Ba	135	4357695.0	1.8	**2125.2206**	17.296	0.8	ug/L	45	Standard
	Ce	140	11329.2	2.7				ug/L	298	Standard
>	**Tb**	159	992575.1	2.0				ug/L	977942	Standard
	Ho	165	278.3	9.0				ug/L	12	Standard
	Tl	203	135.0	5.8	**0.0123**	0.001	6.8	ug/L	31	Standard
	Tl	205	110.0	27.6	**0.0138**	0.004	31.4	ug/L	20	Standard
	Pb	206	907.4	3.0	**0.1159**	0.005	4.7	ug/L	286	Standard
	Pb	207	750.0	6.5	**0.1064**	0.009	8.4	ug/L	257	Standard
	Pb	208	3103.1	4.1	**0.1154**	0.005	4.4	ug/L	956	Standard
	U	238	44356.2	2.2	**6.6145**	0.107	1.6	ug/L	17	Standard
>	**Bi**	209	521151.7	1.4				ug/L	557080	Standard

Sample ID: L1606082303
Report Date/Time: Tuesday, June 28, 2016 20:54:27
Page 1

Approved: June 29, 2016

Na	23	10.0	86.6	**54.6526**	47.439	86.8	mg/L	0	Standard
Mg	24	287663.3	3.0	**321.5385**	8.440	2.6	mg/L	32	Standard
K	39	226.7	14.2	**0.5032**	0.104	20.6	mg/L	30	Standard
Ca	43	1070.0	2.9	**131.3674**	10.299	7.8	mg/L	48	Standard
Fe	54	476.6	5.9	**0.2261**	0.038	16.9	mg/L	159	Standard
Fe	57	1008.4	3.2	**2.2367**	0.165	7.4	mg/L	195	Standard
Sc-1	45	47113.2	4.5				mg/L	39543	Standard
Cl	35	40790.8	0.7				ug/L	27642	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	436089.5	3.9				ug/L	1647	Standard
P	31	27271.2	4.0				ug/L	15231	Standard
S	34	2836.9	4.2				ug/L	1845	Standard
Sr	88	2816.9	2.8				ug/L	70	Standard
C	12	376.7	12.5				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	345.0	17.3				mg/L	12	Standard
Ho-1	165	278.3	9.0				mg/L	12	Standard
Er	166	243.3	18.5				mg/L	20	Standard
I	127	900084.0	10.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.046	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.870	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606082303
Report Date/Time: Tuesday, June 28, 2016 20:54:27
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.333
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.551
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606082303
Report Date/Time: Tuesday, June 28, 2016 20:54:27
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606082304
Sample Date/Time: Tuesday, June 28, 2016 20:55:22
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74476.1	3.3				ug/L	81760	Standard
	Be	9	15.0	115.5	**0.0072**	0.020	276.2	ug/L	17	Standard
	Al	27	20080706.8	2.9	**143.0136**	1.080	0.8	ug/L	1410	Standard
	Sc	45	42894.0	3.7				ug/L	39543	Standard
	Ti	47	325.7	10.6	**1.1562**	0.137	11.8	ug/L	39	Standard
	V	51	1429.9	29.9	**0.0011**	0.063	5474.1	ug/L	1415	Standard
	Cr	52	7720.6	1.3	**0.0621**	0.011	18.4	ug/L	6946	Standard
	Cr	53	9723.1	6.1	**10.8363**	0.676	6.2	ug/L	328	Standard
	Mn	55	4663144.1	0.8	**725.7255**	4.778	0.7	ug/L	823	Standard
	Co	59	1828.4	1.1	**0.2313**	0.003	1.3	ug/L	252	Standard
	Ni	60	1442.4	3.3	**0.6679**	0.026	3.9	ug/L	192	Standard
	Cu	65	719.0	5.1	**0.2910**	0.019	6.5	ug/L	141	Standard
	Zn	66	7525.5	1.3	**6.1013**	0.101	1.7	ug/L	491	Standard
>	**Ge**	72	510419.4	0.4				ug/L	515087	Standard
	As	75	3004.5	4.7	**2.7368**	0.118	4.3	ug/L	20	Standard
	Se	82	527.6	3.3	**4.5049**	0.149	3.3	ug/L	15	Standard
	Se-1	77	877.0	5.5	**11.0280**	0.616	5.6	ug/L	48	Standard
>	**Ga**	71	135.0	44.9				mg/L	90	Standard
	Rb	85	21460.2	1.4				ug/L	23	Standard
	Y	89	449502.6	1.2				ug/L	448510	Standard
>	**Rh**	103	240.0	18.2				ug/L	15	Standard
	Mo	98	71.6	8.8	**0.0080**	0.002	28.5	ug/L	11	Standard
	Ag	107	77.3	9.2	**-0.0044**	0.001	24.3	ug/L	134	Standard
	Cd	111	102.2	7.3	**0.0460**	0.004	8.2	mg/L	7	Standard
	Cd	114	276.1	15.2	**0.0494**	0.008	16.6	ug/L	16	Standard
>	**In**	115	597587.3	0.9				ug/L	611117	Standard
	Sn	118	641.7	5.5	**0.0090**	0.005	57.4	ug/L	518	Standard
	Sb	123	117.8	11.7	**0.0127**	0.003	24.6	ug/L	127	Standard
	Ba	135	1219381.1	1.8	**603.9591**	5.851	1.0	ug/L	45	Standard
	Ce	140	360.0	14.7				ug/L	298	Standard
>	**Tb**	159	948906.4	1.3				ug/L	977942	Standard
	Ho	165	16.7	17.3				ug/L	12	Standard
	Tl	203	82.3	3.1	**0.0057**	0.000	3.2	ug/L	31	Standard
	Tl	205	61.7	24.8	**0.0067**	0.002	33.3	ug/L	20	Standard
	Pb	206	418.0	3.1	**0.0190**	0.003	17.6	ug/L	286	Standard
	Pb	207	378.0	5.3	**0.0247**	0.003	13.2	ug/L	257	Standard
	Pb	208	1532.7	1.1	**0.0263**	0.002	6.1	ug/L	956	Standard
	U	238	34.3	24.8	**0.0022**	0.001	61.6	ug/L	17	Standard
>	**Bi**	209	521633.3	1.5				ug/L	557080	Standard

Sample ID: L1606082304
Report Date/Time: Tuesday, June 28, 2016 20:57:38
Page 1

Approved: June 29, 2016

Na	23	3.3	173.2	**19.9869**	34.610	173.2	mg/L	0	Standard
Mg	24	52154.6	2.1	**63.9697**	1.039	1.6	mg/L	32	Standard
K	39	548.3	16.2	**1.5625**	0.223	14.3	mg/L	30	Standard
Ca	43	246.7	5.1	**29.2175**	2.054	7.0	mg/L	48	Standard
Fe	54	45285.0	1.2	**37.6782**	1.468	3.9	mg/L	159	Standard
Fe	57	11722.9	3.7	**35.8594**	0.146	0.4	mg/L	195	Standard
> **Sc-1**	45	42894.0	3.7				mg/L	39543	Standard
Cl	35	35015.1	2.5				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	123689.6	1.5				ug/L	1647	Standard
P	31	28713.9	1.8				ug/L	15231	Standard
S	34	2633.6	10.4				ug/L	1845	Standard
Sr	88	703.3	3.4				ug/L	70	Standard
C	12	210.0	12.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	32.1	16.4				mg/L	12	Standard
Ho-1	165	16.7	17.3				mg/L	12	Standard
Er	166	26.7	57.3				mg/L	20	Standard
I	127	194264.8	2.9				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		91.091	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.094	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606082304
Report Date/Time: Tuesday, June 28, 2016 20:57:38
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.786
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.637
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606082304
Report Date/Time: Tuesday, June 28, 2016 20:57:38
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606084302
Sample Date/Time: Tuesday, June 28, 2016 20:58:33
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77271.6	2.1				ug/L	81760	Standard
	Be	9	30.0	44.1	**0.0221**	0.014	61.6	ug/L	17	Standard
	Al	27	13023291.9	1.0	**89.3957**	1.109	1.2	ug/L	1410	Standard
	Sc	45	41354.7	3.2				ug/L	39543	Standard
	Ti	47	172.3	20.3	**0.4975**	0.149	29.9	ug/L	39	Standard
	V	51	1869.8	10.2	**0.0496**	0.023	45.4	ug/L	1415	Standard
	Cr	52	9029.4	5.3	**0.1789**	0.049	27.5	ug/L	6946	Standard
	Cr	53	1933.5	16.3	**1.7631**	0.385	21.8	ug/L	328	Standard
	Mn	55	2010517.0	2.2	**295.6150**	12.044	4.1	ug/L	823	Standard
	Co	59	28381.9	0.9	**3.8204**	0.101	2.6	ug/L	252	Standard
	Ni	60	51973.3	1.5	**26.2049**	0.504	1.9	ug/L	192	Standard
	Cu	65	2375.5	2.3	**1.1012**	0.038	3.5	ug/L	141	Standard
	Zn	66	19572.0	0.3	**16.1981**	0.371	2.3	ug/L	491	Standard
>	**Ge**	72	540385.6	2.0				ug/L	515087	Standard
	As	75	349.5	8.0	**0.3364**	0.018	5.2	ug/L	20	Standard
	Se	82	126.5	4.8	**0.9278**	0.047	5.1	ug/L	15	Standard
	Se-1	77	166.7	13.3	**1.3933**	0.317	22.7	ug/L	48	Standard
>	**Ga**	71	106.7	22.2				mg/L	90	Standard
	Rb	85	40220.0	0.6				ug/L	23	Standard
	Y	89	449597.2	1.4				ug/L	448510	Standard
>	**Rh**	103	146.7	12.0				ug/L	15	Standard
	Mo	98	594.8	3.0	**0.2021**	0.008	3.8	ug/L	11	Standard
	Ag	107	92.7	31.3	**-0.0024**	0.004	183.9	ug/L	134	Standard
	Cd	111	161.3	7.4	**0.0729**	0.005	7.5	mg/L	7	Standard
	Cd	114	441.9	5.3	**0.0806**	0.004	5.2	ug/L	16	Standard
>	**In**	115	608035.7	0.5				ug/L	611117	Standard
	Sn	118	676.7	9.6	**0.0131**	0.012	88.5	ug/L	518	Standard
	Sb	123	188.3	22.2	**0.0273**	0.009	32.4	ug/L	127	Standard
	Ba	135	24154.9	0.6	**11.7345**	0.088	0.8	ug/L	45	Standard
	Ce	140	2120.1	7.8				ug/L	298	Standard
>	**Tb**	159	946861.5	2.0				ug/L	977942	Standard
	Ho	165	63.3	29.9				ug/L	12	Standard
	Tl	203	1826.8	0.7	**0.2203**	0.002	1.1	ug/L	31	Standard
	Tl	205	1685.1	3.3	**0.2367**	0.005	2.2	ug/L	20	Standard
	Pb	206	439.0	7.7	**0.0207**	0.006	26.8	ug/L	286	Standard
	Pb	207	381.0	5.7	**0.0231**	0.004	17.6	ug/L	257	Standard
	Pb	208	1509.0	1.3	**0.0226**	0.000	0.8	ug/L	956	Standard
	U	238	1189.4	4.4	**0.1693**	0.007	4.4	ug/L	17	Standard
>	**Bi**	209	536700.0	1.2				ug/L	557080	Standard

Sample ID: L1606084302
Report Date/Time: Tuesday, June 28, 2016 21:00:50
Page 1

Approved: June 29, 2016

Na	23	5.0	100.0	**30.9676**	31.632	102.1	mg/L	0	Standard
Mg	24	21311.6	1.7	**27.0900**	1.076	4.0	mg/L	32	Standard
K	39	978.4	4.6	**3.0186**	0.057	1.9	mg/L	30	Standard
Ca	43	386.7	7.5	**50.8608**	4.765	9.4	mg/L	48	Standard
Fe	54	204.3	23.4	**0.0400**	0.042	106.1	mg/L	159	Standard
Fe	57	446.7	11.3	**0.8216**	0.208	25.3	mg/L	195	Standard
Sc-1	45	41354.7	3.2				mg/L	39543	Standard
Cl	35	48993.8	3.0				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	7075.0	5.6				ug/L	1647	Standard
P	31	18566.4	1.9				ug/L	15231	Standard
S	34	2263.5	0.1				ug/L	1845	Standard
Sr	88	423.3	3.6				ug/L	70	Standard
C	12	123.3	40.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	104.0	29.5				mg/L	12	Standard
Ho-1	165	63.3	29.9				mg/L	12	Standard
Er	166	56.7	27.0				mg/L	20	Standard
I	127	48509.5	7.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.510	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.912	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606084302
Report Date/Time: Tuesday, June 28, 2016 21:00:50
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.496
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606084302
Report Date/Time: Tuesday, June 28, 2016 21:00:50
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 21:01:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77410.6	1.1				ug/L	81760	Standard
	Be	9	48694.9	4.0	**51.7876**	2.330	4.5	ug/L	17	Standard
	Al	27	7498260.2	2.7	**51.3685**	1.536	3.0	ug/L	1410	Standard
	Sc	45	39994.4	1.6				ug/L	39543	Standard
	Ti	47	24919.8	1.5	**100.1235**	0.955	1.0	ug/L	39	Standard
	V	51	352037.7	1.5	**50.4818**	0.410	0.8	ug/L	1415	Standard
	Cr	52	359056.3	3.2	**50.5608**	1.258	2.5	ug/L	6946	Standard
	Cr	53	45264.2	3.2	**51.2590**	1.232	2.4	ug/L	328	Standard
	Mn	55	341978.2	1.6	**52.6439**	0.559	1.1	ug/L	823	Standard
	Co	59	358967.4	0.9	**51.1022**	0.460	0.9	ug/L	252	Standard
	Ni	60	95904.1	3.3	**50.8527**	1.284	2.5	ug/L	192	Standard
	Cu	65	96846.7	3.1	**50.9133**	1.132	2.2	ug/L	141	Standard
	Zn	66	56366.4	2.4	**50.6359**	0.804	1.6	ug/L	491	Standard
>	Ge	72	514670.0	0.9				ug/L	515087	Standard
	As	75	56653.0	2.7	**50.4646**	0.946	1.9	ug/L	20	Standard
	Se	82	5738.6	2.7	**49.7611**	0.957	1.9	ug/L	15	Standard
	Se-1	77	3922.2	4.5	**51.3791**	2.097	4.1	ug/L	48	Standard
>	Ga	71	78.3	3.7				mg/L	90	Standard
	Rb	85	913.4	7.9				ug/L	23	Standard
	Y	89	449629.1	4.0				ug/L	448510	Standard
>	Rh	103	26.7	60.3				ug/L	15	Standard
	Mo	98	269192.0	0.5	**99.9193**	1.745	1.7	ug/L	11	Standard
	Ag	107	324356.7	1.6	**48.4664**	0.560	1.2	ug/L	134	Standard
	Cd	111	104800.0	2.8	**49.1868**	1.080	2.2	mg/L	7	Standard
	Cd	114	253765.7	3.7	**48.9997**	1.658	3.4	ug/L	16	Standard
>	In	115	609141.6	2.1				ug/L	611117	Standard
	Sn	118	292076.9	3.3	**49.4485**	0.824	1.7	ug/L	518	Standard
	Sb	123	232366.9	1.6	**49.3998**	0.394	0.8	ug/L	127	Standard
	Ba	135	100964.1	2.8	**49.0412**	1.097	2.2	ug/L	45	Standard
	Ce	140	81.7	25.5				ug/L	298	Standard
>	Tb	159	939122.1	2.3				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	411985.1	1.5	**50.6376**	0.301	0.6	ug/L	31	Standard
	Tl	205	371737.4	2.9	**52.6085**	0.609	1.2	ug/L	20	Standard
	Pb	206	267607.7	0.9	**51.2233**	0.555	1.1	ug/L	286	Standard
	Pb	207	243032.3	0.6	**51.5800**	0.780	1.5	ug/L	257	Standard
	Pb	208	974203.2	1.1	**53.4395**	0.502	0.9	ug/L	956	Standard
	U	238	359093.2	2.3	**51.8989**	0.179	0.3	ug/L	17	Standard
>	Bi	209	537912.3	2.0				ug/L	557080	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 21:04:03
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3960.5	5.8	**5.1535**	0.239	4.6	mg/L	32	Standard
K	39	1450.1	5.1	**4.7011**	0.180	3.8	mg/L	30	Standard
Ca	43	56.7	22.2	**3.1676**	1.896	59.9	mg/L	48	Standard
Fe	54	5602.2	1.3	**4.8773**	0.145	3.0	mg/L	159	Standard
Fe	57	1671.8	3.1	**4.9554**	0.149	3.0	mg/L	195	Standard
Sc-1	45	39994.4	1.6				mg/L	39543	Standard
Cl	35	34924.3	5.3				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	3010.3	3.5				ug/L	1647	Standard
P	31	18342.8	3.8				ug/L	15231	Standard
S	34	2438.5	4.7				ug/L	1845	Standard
Sr	88	55.0	47.2				ug/L	70	Standard
C	12	96.7	23.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	23.2	100.3				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	20	Standard
I	127	10668.8	10.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.575		
Al	27	102.737		
Sc	45			
Ti	47	100.123		
V	51	100.964		
Cr	52	101.122		
Cr	53			
Mn	55	105.288		
Co	59	102.204		
Ni	60	101.705		
Cu	65	101.827		
Zn	66	101.272		
> Ge	72		99.919	
As	75	100.929		
Se	82	99.522		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 21:04:03
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	99.919		
Ag	107	96.933		
Cd	111	98.374		
Cd	114			
> In	115			99.677
Sn	118	98.897		
Sb	123	98.800		
Ba	135	98.082		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.275		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.879		
U	238	103.798		
> Bi	209			96.559
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 21:04:03
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 21:04:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76325.1	1.4				ug/L	81760	Standard
	Be	9	36.7	47.9	**0.0297**	0.018	61.9	ug/L	17	Standard
	Al	27	7433.8	52.1	**0.0370**	0.026	70.5	ug/L	1410	Standard
	Sc	45	39083.7	0.3				ug/L	39543	Standard
	Ti	47	29.0	21.5	**-0.0509**	0.024	47.8	ug/L	39	Standard
	V	51	1130.0	4.7	**-0.0473**	0.008	16.3	ug/L	1415	Standard
	Cr	52	6124.9	1.6	**-0.1950**	0.012	6.3	ug/L	6946	Standard
	Cr	53	786.7	2.0	**0.5367**	0.019	3.5	ug/L	328	Standard
	Mn	55	1151.0	22.6	**0.0255**	0.040	155.2	ug/L	823	Standard
	Co	59	234.7	8.8	**0.0014**	0.003	211.9	ug/L	252	Standard
	Ni	60	158.3	5.7	**-0.0226**	0.005	21.5	ug/L	192	Standard
	Cu	65	164.3	12.7	**-0.0061**	0.011	179.5	ug/L	141	Standard
	Zn	66	470.3	2.4	**-0.4072**	0.010	2.5	ug/L	491	Standard
>	Ge	72	525676.3	0.2				ug/L	515087	Standard
	As	75	-22.3	21.6	**0.0209**	0.004	19.9	ug/L	20	Standard
	Se	82	22.8	31.8	**0.0747**	0.062	82.4	ug/L	15	Standard
	Se-1	77	66.0	18.9	**0.1398**	0.164	117.4	ug/L	48	Standard
>	Ga	71	56.7	10.2				mg/L	90	Standard
	Rb	85	51.7	11.2				ug/L	23	Standard
	Y	89	445574.4	3.2				ug/L	448510	Standard
>	Rh	103	28.3	36.7				ug/L	15	Standard
	Mo	98	286.8	35.9	**0.0884**	0.038	42.5	ug/L	11	Standard
	Ag	107	119.3	19.2	**0.0018**	0.003	188.2	ug/L	134	Standard
	Cd	111	12.1	17.7	**0.0028**	0.001	35.0	mg/L	7	Standard
	Cd	114	42.6	30.2	**0.0034**	0.003	75.4	ug/L	16	Standard
>	In	115	602370.1	0.9				ug/L	611117	Standard
	Sn	118	773.4	17.1	**0.0309**	0.024	76.6	ug/L	518	Standard
	Sb	123	433.3	25.4	**0.0805**	0.024	30.2	ug/L	127	Standard
	Ba	135	290.7	43.2	**0.1174**	0.060	51.4	ug/L	45	Standard
	Ce	140	18.3	56.8				ug/L	298	Standard
>	Tb	159	950012.1	0.7				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	71.7	40.5	**0.0037**	0.004	95.1	ug/L	31	Standard
	Tl	205	85.0	56.1	**0.0094**	0.007	71.5	ug/L	20	Standard
	Pb	206	271.0	4.2	**-0.0136**	0.003	20.1	ug/L	286	Standard
	Pb	207	260.3	8.3	**-0.0047**	0.005	107.3	ug/L	257	Standard
	Pb	208	1029.7	7.7	**-0.0060**	0.005	82.3	ug/L	956	Standard
	U	238	47.7	42.8	**0.0037**	0.003	79.6	ug/L	17	Standard
>	Bi	209	558519.2	1.3				ug/L	557080	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 21:07:14
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	11.9	**0.0079**	0.008	95.2	mg/L	32	Standard
K	39	18.3	56.8	**-0.0788**	0.036	45.2	mg/L	30	Standard
Ca	43	31.7	24.1	**-0.4803**	1.172	244.0	mg/L	48	Standard
Fe	54	125.9	16.2	**-0.0218**	0.019	87.4	mg/L	159	Standard
Fe	57	238.3	12.6	**0.1894**	0.102	54.0	mg/L	195	Standard
> **Sc-1**	45	39083.7	0.3				mg/L	39543	Standard
Cl	35	33723.5	2.9				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	2386.9	5.5				ug/L	1647	Standard
P	31	18112.5	4.7				ug/L	15231	Standard
S	34	2391.9	4.0				ug/L	1845	Standard
Sr	88	68.3	29.6				ug/L	70	Standard
C	12	100.0	36.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	18.9	54.4				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	23.3	65.5				mg/L	20	Standard
I	127	7351.8	8.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.056	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 21:07:14
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.569
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.258
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 21:07:14
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606141001
Sample Date/Time: Tuesday, June 28, 2016 21:08:10
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79030.6	2.3				ug/L	81760	Standard
	Be	9	11.7	89.2	**0.0026**	0.011	425.8	ug/L	17	Standard
	Al	27	44776805.2	0.7	**300.5948**	6.187	2.1	ug/L	1410	Standard
	Sc	45	43343.6	2.1				ug/L	39543	Standard
	Ti	47	192.3	8.0	**0.6107**	0.056	9.2	ug/L	39	Standard
	V	51	4772.2	4.6	**0.4823**	0.029	6.1	ug/L	1415	Standard
	Cr	52	9840.2	0.5	**0.3614**	0.015	4.2	ug/L	6946	Standard
	Cr	53	1230.1	5.5	**1.0645**	0.072	6.7	ug/L	328	Standard
	Mn	55	4769620.0	0.5	**738.1503**	9.110	1.2	ug/L	823	Standard
	Co	59	9207.1	1.6	**1.2837**	0.028	2.2	ug/L	252	Standard
	Ni	60	5238.9	2.1	**2.6865**	0.062	2.3	ug/L	192	Standard
	Cu	65	718.7	4.1	**0.2886**	0.013	4.4	ug/L	141	Standard
	Zn	66	2924.3	0.9	**1.8496**	0.029	1.6	ug/L	491	Standard
>	**Ge**	72	513321.3	0.8				ug/L	515087	Standard
	As	75	4203.4	1.1	**3.7919**	0.050	1.3	ug/L	20	Standard
	Se	82	127.5	8.3	**0.9927**	0.098	9.9	ug/L	15	Standard
	Se-1	77	88.3	31.6	**0.4581**	0.375	81.9	ug/L	48	Standard
>	**Ga**	71	145.0	24.1				mg/L	90	Standard
	Rb	85	2930.3	3.3				ug/L	23	Standard
	Y	89	443412.2	1.4				ug/L	448510	Standard
>	**Rh**	103	140.0	15.6				ug/L	15	Standard
	Mo	98	1185.9	4.8	**0.4170**	0.022	5.4	ug/L	11	Standard
	Ag	107	98.0	15.7	**-0.0017**	0.002	128.2	ug/L	134	Standard
	Cd	111	19.9	13.4	**0.0063**	0.001	18.0	mg/L	7	Standard
	Cd	114	87.1	38.1	**0.0117**	0.006	53.6	ug/L	16	Standard
>	**In**	115	614969.4	1.2				ug/L	611117	Standard
	Sn	118	790.0	17.2	**0.0309**	0.023	75.8	ug/L	518	Standard
	Sb	123	280.0	20.4	**0.0462**	0.012	26.5	ug/L	127	Standard
	Ba	135	192282.6	1.4	**92.5375**	1.689	1.8	ug/L	45	Standard
	Ce	140	2006.8	4.1				ug/L	298	Standard
>	**Tb**	159	961897.3	2.5				ug/L	977942	Standard
	Ho	165	81.7	52.8				ug/L	12	Standard
	Tl	203	119.7	8.5	**0.0099**	0.002	15.4	ug/L	31	Standard
	Tl	205	98.3	15.5	**0.0116**	0.002	19.8	ug/L	20	Standard
	Pb	206	482.7	4.9	**0.0287**	0.002	8.4	ug/L	286	Standard
	Pb	207	424.0	4.8	**0.0319**	0.005	14.5	ug/L	257	Standard
	Pb	208	1694.0	1.8	**0.0325**	0.004	11.5	ug/L	956	Standard
	U	238	15563.7	1.1	**2.2446**	0.071	3.2	ug/L	17	Standard
>	**Bi**	209	538649.3	2.3				ug/L	557080	Standard

Sample ID: L1606141001
Report Date/Time: Tuesday, June 28, 2016 21:10:27
Page 1

Approved: June 29, 2016

Na	23	16.7	75.5	**98.5166**	75.230	76.4	mg/L	0	Standard
Mg	24	9014.3	3.2	**10.8981**	0.573	5.3	mg/L	32	Standard
K	39	116.7	19.3	**0.2184**	0.072	32.8	mg/L	30	Standard
Ca	43	525.0	6.7	**67.4527**	5.707	8.5	mg/L	48	Standard
Fe	54	1820.8	2.9	**1.3668**	0.058	4.2	mg/L	159	Standard
Fe	57	973.4	7.5	**2.3749**	0.248	10.4	mg/L	195	Standard
> **Sc-1**	45	43343.6	2.1				mg/L	39543	Standard
Cl	35	38331.8	2.6				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	27825.5	3.4				ug/L	1647	Standard
P	31	23363.0	0.7				ug/L	15231	Standard
S	34	2495.2	2.5				ug/L	1845	Standard
Sr	88	533.3	5.7				ug/L	70	Standard
C	12	353.3	5.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	83.6	23.1				mg/L	12	Standard
Ho-1	165	81.7	52.8				mg/L	12	Standard
Er	166	63.3	50.8				mg/L	20	Standard
I	127	532195.8	11.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.662	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.657	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141001
Report Date/Time: Tuesday, June 28, 2016 21:10:27
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.630
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.691
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606141201
Sample Date/Time: Tuesday, June 28, 2016 21:11:22
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79318.7	0.7				ug/L	81760	Standard
	Be	9	16.7	45.8	**0.0076**	0.008	106.2	ug/L	17	Standard
	Al	27	14913651.7	1.4	**99.7256**	2.143	2.1	ug/L	1410	Standard
	Sc	45	40395.5	2.6				ug/L	39543	Standard
	Ti	47	500.3	4.7	**1.8979**	0.055	2.9	ug/L	39	Standard
	V	51	36055.9	2.6	**5.1139**	0.040	0.8	ug/L	1415	Standard
	Cr	52	13456.3	2.4	**0.9269**	0.086	9.3	ug/L	6946	Standard
	Cr	53	9844.9	11.5	**11.1480**	1.101	9.9	ug/L	328	Standard
	Mn	55	27340.3	1.0	**4.1779**	0.048	1.1	ug/L	823	Standard
	Co	59	924.7	1.8	**0.1037**	0.005	4.9	ug/L	252	Standard
	Ni	60	2165.5	2.9	**1.0744**	0.025	2.4	ug/L	192	Standard
	Cu	65	1308.7	4.1	**0.6156**	0.023	3.7	ug/L	141	Standard
	Zn	66	7243.7	2.3	**5.9517**	0.120	2.0	ug/L	491	Standard
>	**Ge**	72	502171.0	2.0				ug/L	515087	Standard
	As	75	1256.7	3.1	**1.1867**	0.017	1.5	ug/L	20	Standard
	Se	82	736.7	2.2	**6.4443**	0.037	0.6	ug/L	15	Standard
	Se-1	77	926.0	3.3	**11.8887**	0.285	2.4	ug/L	48	Standard
>	**Ga**	71	176.7	6.5				mg/L	90	Standard
	Rb	85	2561.9	8.5				ug/L	23	Standard
	Y	89	439495.0	0.9				ug/L	448510	Standard
>	**Rh**	103	90.0	38.9				ug/L	15	Standard
	Mo	98	758.7	2.1	**0.2744**	0.005	1.7	ug/L	11	Standard
	Ag	107	112.7	8.8	**0.0013**	0.001	110.1	ug/L	134	Standard
	Cd	111	18.4	13.8	**0.0061**	0.001	20.0	mg/L	7	Standard
	Cd	114	55.1	29.0	**0.0062**	0.003	52.0	ug/L	16	Standard
>	**In**	115	584464.7	0.6				ug/L	611117	Standard
	Sn	118	741.7	7.5	**0.0292**	0.010	34.2	ug/L	518	Standard
	Sb	123	322.5	19.3	**0.0586**	0.014	23.6	ug/L	127	Standard
	Ba	135	23648.1	1.5	**11.9524**	0.216	1.8	ug/L	45	Standard
	Ce	140	4514.0	4.6				ug/L	298	Standard
>	**Tb**	159	922323.8	0.6				ug/L	977942	Standard
	Ho	165	91.7	12.6				ug/L	12	Standard
	Tl	203	130.7	10.2	**0.0124**	0.002	15.2	ug/L	31	Standard
	Tl	205	113.3	46.8	**0.0149**	0.008	53.9	ug/L	20	Standard
	Pb	206	585.3	3.6	**0.0562**	0.004	7.1	ug/L	286	Standard
	Pb	207	533.0	4.2	**0.0629**	0.005	7.8	ug/L	257	Standard
	Pb	208	2107.4	5.4	**0.0632**	0.008	12.1	ug/L	956	Standard
	U	238	32845.9	1.3	**5.0682**	0.050	1.0	ug/L	17	Standard
>	**Bi**	209	503585.9	0.8				ug/L	557080	Standard

Sample ID: L1606141201
Report Date/Time: Tuesday, June 28, 2016 21:13:39
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	118021.2	0.8	**153.7808**	2.811	1.8	mg/L	32	Standard
K	39	101.7	17.3	**0.1948**	0.058	29.7	mg/L	30	Standard
Ca	43	335.0	15.7	**44.3505**	6.519	14.7	mg/L	48	Standard
Fe	54	237.2	9.3	**0.0729**	0.016	22.5	mg/L	159	Standard
Fe	57	498.3	12.0	**1.0226**	0.198	19.4	mg/L	195	Standard
> **Sc-1**	45	40395.5	2.6				mg/L	39543	Standard
Cl	35	43781.2	1.0				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	58978.2	6.0				ug/L	1647	Standard
P	31	22017.7	1.7				ug/L	15231	Standard
S	34	2351.8	1.8				ug/L	1845	Standard
Sr	88	240.0	11.0				ug/L	70	Standard
C	12	356.7	26.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	169.3	7.0				mg/L	12	Standard
Ho-1	165	91.7	12.6				mg/L	12	Standard
Er	166	83.3	13.9				mg/L	20	Standard
I	127	31387.7	30.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.014	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.492	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141201
Report Date/Time: Tuesday, June 28, 2016 21:13:39
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.639
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.397
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606141202
Sample Date/Time: Tuesday, June 28, 2016 21:14:33
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83650.3	1.0				ug/L	81760	Standard
	Be	9	21.7	53.3	**0.0115**	0.011	97.0	ug/L	17	Standard
	Al	27	38632215.5	2.3	**244.9578**	5.868	2.4	ug/L	1410	Standard
	Sc	45	43420.5	1.6				ug/L	39543	Standard
	Ti	47	186.0	10.8	**0.5354**	0.077	14.4	ug/L	39	Standard
	V	51	26880.1	4.2	**3.4128**	0.061	1.8	ug/L	1415	Standard
	Cr	52	10918.6	2.1	**0.4115**	0.017	4.1	ug/L	6946	Standard
	Cr	53	7481.8	4.1	**7.6462**	0.526	6.9	ug/L	328	Standard
	Mn	55	33664.4	1.6	**4.7149**	0.144	3.1	ug/L	823	Standard
	Co	59	762.7	5.1	**0.0704**	0.007	10.1	ug/L	252	Standard
	Ni	60	2375.2	1.6	**1.0759**	0.011	1.0	ug/L	192	Standard
	Cu	65	711.7	7.3	**0.2600**	0.027	10.4	ug/L	141	Standard
	Zn	66	3134.0	1.7	**1.8510**	0.112	6.1	ug/L	491	Standard
>	**Ge**	72	550214.2	2.6				ug/L	515087	Standard
	As	75	794.1	8.2	**0.7027**	0.072	10.2	ug/L	20	Standard
	Se	82	234.2	3.9	**1.7863**	0.091	5.1	ug/L	15	Standard
	Se-1	77	482.0	4.4	**5.2700**	0.176	3.3	ug/L	48	Standard
>	**Ga**	71	80.0	16.5				mg/L	90	Standard
	Rb	85	1268.4	2.0				ug/L	23	Standard
	Y	89	467702.3	2.0				ug/L	448510	Standard
>	**Rh**	103	125.0	4.0				ug/L	15	Standard
	Mo	98	395.0	8.4	**0.1254**	0.010	8.1	ug/L	11	Standard
	Ag	107	91.7	6.0	**-0.0027**	0.001	31.4	ug/L	134	Standard
	Cd	111	17.7	18.1	**0.0053**	0.002	30.5	mg/L	7	Standard
	Cd	114	70.4	32.3	**0.0084**	0.004	47.5	ug/L	16	Standard
>	**In**	115	618005.7	2.3				ug/L	611117	Standard
	Sn	118	668.3	14.3	**0.0101**	0.018	180.4	ug/L	518	Standard
	Sb	123	172.5	13.4	**0.0233**	0.005	22.3	ug/L	127	Standard
	Ba	135	80657.5	2.0	**38.6136**	0.662	1.7	ug/L	45	Standard
	Ce	140	231.7	23.7				ug/L	298	Standard
>	**Tb**	159	976289.5	2.7				ug/L	977942	Standard
	Ho	165	20.0	50.0				ug/L	12	Standard
	Tl	203	130.7	0.4	**0.0112**	0.000	4.3	ug/L	31	Standard
	Tl	205	103.3	15.6	**0.0123**	0.003	20.6	ug/L	20	Standard
	Pb	206	343.3	3.7	**0.0019**	0.004	206.6	ug/L	286	Standard
	Pb	207	309.0	3.8	**0.0073**	0.004	55.0	ug/L	257	Standard
	Pb	208	1267.4	6.3	**0.0088**	0.006	66.3	ug/L	956	Standard
	U	238	23437.4	1.1	**3.3661**	0.068	2.0	ug/L	17	Standard
>	**Bi**	209	541066.6	2.7				ug/L	557080	Standard

Sample ID: L1606141202
Report Date/Time: Tuesday, June 28, 2016 21:16:50
Page 1

Approved: June 29, 2016

Na	23	10.0	100.0	**57.8886**	57.492	99.3	mg/L	0	Standard
Mg	24	42571.4	0.8	**51.5637**	1.207	2.3	mg/L	32	Standard
K	39	90.0	30.9	**0.1357**	0.087	64.2	mg/L	30	Standard
Ca	43	438.3	26.2	**55.1842**	15.190	27.5	mg/L	48	Standard
Fe	54	177.1	8.1	**0.0090**	0.012	139.0	mg/L	159	Standard
Fe	57	461.7	5.0	**0.7949**	0.071	8.9	mg/L	195	Standard
Sc-1	45	43420.5	1.6				mg/L	39543	Standard
Cl	35	42170.0	2.1				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	34382.4	5.6				ug/L	1647	Standard
P	31	23767.0	4.2				ug/L	15231	Standard
S	34	2608.6	3.1				ug/L	1845	Standard
Sr	88	431.7	5.4				ug/L	70	Standard
C	12	273.3	10.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	32.2	46.2				mg/L	12	Standard
Ho-1	165	20.0	50.0				mg/L	12	Standard
Er	166	23.3	89.2				mg/L	20	Standard
I	127	35633.6	4.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.312	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.820	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606141202
Report Date/Time: Tuesday, June 28, 2016 21:16:50
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.127	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.125	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141202
Report Date/Time: Tuesday, June 28, 2016 21:16:50
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606141301
Sample Date/Time: Tuesday, June 28, 2016 21:17:45
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79916.9	1.5				ug/L	81760	Standard
	Be	9	28.3	27.0	**0.0194**	0.007	38.6	ug/L	17	Standard
	Al	27	38023288.5	2.1	**252.3385**	1.857	0.7	ug/L	1410	Standard
	Sc	45	42571.5	4.4				ug/L	39543	Standard
	Ti	47	396.7	7.8	**1.4239**	0.097	6.8	ug/L	39	Standard
	V	51	6119.0	6.6	**0.6719**	0.073	10.9	ug/L	1415	Standard
	Cr	52	11441.3	0.3	**0.5818**	0.031	5.4	ug/L	6946	Standard
	Cr	53	9654.8	11.4	**10.6403**	1.449	13.6	ug/L	328	Standard
	Mn	55	1634887.0	2.2	**251.2478**	2.194	0.9	ug/L	823	Standard
	Co	59	3215.3	1.8	**0.4249**	0.007	1.5	ug/L	252	Standard
	Ni	60	4170.9	0.8	**2.1033**	0.039	1.9	ug/L	192	Standard
	Cu	65	1200.4	3.8	**0.5391**	0.026	4.9	ug/L	141	Standard
	Zn	66	3234.7	1.4	**2.1147**	0.035	1.7	ug/L	491	Standard
>	**Ge**	72	516685.2	1.8				ug/L	515087	Standard
	As	75	16545.6	0.8	**14.7132**	0.205	1.4	ug/L	20	Standard
	Se	82	192.8	5.0	**1.5497**	0.062	4.0	ug/L	15	Standard
	Se-1	77	648.0	6.7	**7.8638**	0.716	9.1	ug/L	48	Standard
>	**Ga**	71	125.0	18.3				mg/L	90	Standard
	Rb	85	1723.4	7.4				ug/L	23	Standard
	Y	89	425819.3	3.1				ug/L	448510	Standard
>	**Rh**	103	118.3	17.1				ug/L	15	Standard
	Mo	98	4050.2	1.8	**1.5330**	0.030	2.0	ug/L	11	Standard
	Ag	107	94.7	12.2	**-0.0016**	0.002	127.1	ug/L	134	Standard
	Cd	111	117.7	9.5	**0.0542**	0.007	12.3	mg/L	7	Standard
	Cd	114	297.9	4.3	**0.0546**	0.005	8.5	ug/L	16	Standard
>	**In**	115	590223.7	3.4				ug/L	611117	Standard
	Sn	118	1010.0	10.9	**0.0746**	0.013	17.7	ug/L	518	Standard
	Sb	123	1963.6	1.5	**0.4183**	0.013	3.0	ug/L	127	Standard
	Ba	135	194231.1	1.1	**97.4394**	2.308	2.4	ug/L	45	Standard
	Ce	140	3857.2	6.5				ug/L	298	Standard
>	**Tb**	159	963155.2	4.7				ug/L	977942	Standard
	Ho	165	81.7	25.5				ug/L	12	Standard
	Tl	203	50.3	12.9	**0.0015**	0.001	66.6	ug/L	31	Standard
	Tl	205	46.7	32.7	**0.0044**	0.002	52.1	ug/L	20	Standard
	Pb	206	2455.5	1.0	**0.4110**	0.018	4.4	ug/L	286	Standard
	Pb	207	2061.1	1.1	**0.3836**	0.016	4.1	ug/L	257	Standard
	Pb	208	8494.6	1.5	**0.4098**	0.011	2.7	ug/L	956	Standard
	U	238	9671.1	1.3	**1.4065**	0.038	2.7	ug/L	17	Standard
>	**Bi**	209	533828.4	3.8				ug/L	557080	Standard

Sample ID: L1606141301
Report Date/Time: Tuesday, June 28, 2016 21:20:02
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	104970.9	3.0	**129.8006**	2.883	2.2	mg/L	32	Standard
K	39	241.7	3.2	**0.6187**	0.058	9.4	mg/L	30	Standard
Ca	43	386.7	15.6	**49.0389**	6.282	12.8	mg/L	48	Standard
Fe	54	7303.8	3.7	**6.0094**	0.321	5.3	mg/L	159	Standard
Fe	57	2221.8	6.0	**6.3400**	0.172	2.7	mg/L	195	Standard
> **Sc-1**	45	42571.5	4.4				mg/L	39543	Standard
Cl	35	37833.2	3.5				ug/L	27642	Standard
Kr	83	4.7	44.6				ug/L	2	Standard
Br	81	42533.0	4.1				ug/L	1647	Standard
P	31	23852.1	1.0				ug/L	15231	Standard
S	34	2610.2	4.2				ug/L	1845	Standard
Sr	88	403.3	5.0				ug/L	70	Standard
C	12	1170.0	10.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	115.7	9.7				mg/L	12	Standard
Ho-1	165	81.7	25.5				mg/L	12	Standard
Er	166	90.0	29.4				mg/L	20	Standard
I	127	137002.4	10.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.746	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.310	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141301
Report Date/Time: Tuesday, June 28, 2016 21:20:02
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.581
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.826
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606141301
Report Date/Time: Tuesday, June 28, 2016 21:20:02
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606141601
Sample Date/Time: Tuesday, June 28, 2016 21:20:56
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92372.4	1.4				ug/L	81760	Standard
	Be	9	16.7	45.8	**0.0051**	0.007	132.4	ug/L	17	Standard
	Al	27	74980741.0	2.1	**430.5985**	11.194	2.6	ug/L	1410	Standard
	Sc	45	42273.9	1.4				ug/L	39543	Standard
	Ti	47	206.0	5.5	**0.6860**	0.049	7.2	ug/L	39	Standard
	V	51	76665.0	2.1	**11.1242**	0.138	1.2	ug/L	1415	Standard
	Cr	52	20589.0	2.5	**1.9813**	0.052	2.6	ug/L	6946	Standard
	Cr	53	16427.3	7.3	**18.8858**	1.445	7.7	ug/L	328	Standard
	Mn	55	4403.6	9.9	**0.5498**	0.075	13.7	ug/L	823	Standard
	Co	59	1375.4	0.7	**0.1698**	0.002	1.0	ug/L	252	Standard
	Ni	60	4849.1	3.4	**2.5400**	0.080	3.2	ug/L	192	Standard
	Cu	65	2467.2	2.0	**1.2432**	0.032	2.6	ug/L	141	Standard
	Zn	66	3268.7	3.6	**2.2359**	0.099	4.4	ug/L	491	Standard
>	**Ge**	72	501391.0	1.2				ug/L	515087	Standard
	As	75	1723.8	1.9	**1.6153**	0.015	1.0	ug/L	20	Standard
	Se	82	1818.6	2.0	**16.1069**	0.131	0.8	ug/L	15	Standard
	Se-1	77	2238.8	2.0	**29.8099**	0.421	1.4	ug/L	48	Standard
>	**Ga**	71	70.0	35.7				mg/L	90	Standard
	Rb	85	6024.5	1.3				ug/L	23	Standard
	Y	89	451516.3	2.4				ug/L	448510	Standard
>	**Rh**	103	580.0	3.0				ug/L	15	Standard
	Mo	98	4894.1	3.5	**1.7784**	0.027	1.5	ug/L	11	Standard
	Ag	107	107.3	12.0	**-0.0004**	0.002	428.3	ug/L	134	Standard
	Cd	111	61.6	14.8	**0.0258**	0.005	19.6	mg/L	7	Standard
	Cd	114	169.0	6.0	**0.0274**	0.002	5.8	ug/L	16	Standard
>	**In**	115	615602.8	3.1				ug/L	611117	Standard
	Sn	118	783.4	1.3	**0.0296**	0.003	11.3	ug/L	518	Standard
	Sb	123	203.3	3.5	**0.0299**	0.001	4.8	ug/L	127	Standard
	Ba	135	8199.6	0.5	**3.9202**	0.126	3.2	ug/L	45	Standard
	Ce	140	360.0	9.7				ug/L	298	Standard
>	**Tb**	159	979932.9	1.3				ug/L	977942	Standard
	Ho	165	28.3	20.4				ug/L	12	Standard
	Tl	203	89.3	17.1	**0.0065**	0.002	28.6	ug/L	31	Standard
	Tl	205	80.0	25.0	**0.0093**	0.003	29.8	ug/L	20	Standard
	Pb	206	345.7	2.0	**0.0043**	0.002	47.1	ug/L	286	Standard
	Pb	207	309.7	5.2	**0.0094**	0.004	39.7	ug/L	257	Standard
	Pb	208	1290.0	0.3	**0.0121**	0.001	10.3	ug/L	956	Standard
	U	238	27903.3	2.3	**4.1288**	0.057	1.4	ug/L	17	Standard
>	**Bi**	209	525055.5	1.5				ug/L	557080	Standard

Sample ID: L1606141601
Report Date/Time: Tuesday, June 28, 2016 21:23:13
Page 1

Approved: June 29, 2016

Na	23	21.7	48.0	**130.4724**	63.085	48.4	mg/L	0	Standard
Mg	24	101248.9	2.2	**126.0185**	2.508	2.0	mg/L	32	Standard
K	39	313.3	18.1	**0.8505**	0.192	22.6	mg/L	30	Standard
Ca	43	933.4	7.3	**127.1886**	7.858	6.2	mg/L	48	Standard
Fe	54	133.4	13.8	**-0.0242**	0.015	63.9	mg/L	159	Standard
Fe	57	858.4	5.3	**2.0873**	0.173	8.3	mg/L	195	Standard
Sc-1	45	42273.9	1.4				mg/L	39543	Standard
Cl	35	65275.0	2.4				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	32608.5	7.2				ug/L	1647	Standard
P	31	23807.1	4.7				ug/L	15231	Standard
S	34	2403.5	5.0				ug/L	1845	Standard
Sr	88	2410.2	4.8				ug/L	70	Standard
C	12	193.3	34.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	21.1	69.3				mg/L	12	Standard
Ho-1	165	28.3	20.4				mg/L	12	Standard
Er	166	46.7	53.9				mg/L	20	Standard
I	127	42467.9	5.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.980	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.341	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606141601
Report Date/Time: Tuesday, June 28, 2016 21:23:13
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.734	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.251	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141601
Report Date/Time: Tuesday, June 28, 2016 21:23:13
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606141602
Sample Date/Time: Tuesday, June 28, 2016 21:24:08
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88434.1	2.2				ug/L	81760	Standard
	Be	9	13.3	57.3	**0.0028**	0.007	262.6	ug/L	17	Standard
	Al	27	52144460.9	0.4	**312.8622**	8.112	2.6	ug/L	1410	Standard
	Sc	45	37740.3	1.5				ug/L	39543	Standard
	Ti	47	227.7	10.0	**0.8076**	0.101	12.5	ug/L	39	Standard
	V	51	38489.9	1.8	**5.6761**	0.140	2.5	ug/L	1415	Standard
	Cr	52	19640.1	1.0	**1.9398**	0.010	0.5	ug/L	6946	Standard
	Cr	53	17715.4	1.9	**21.0942**	0.301	1.4	ug/L	328	Standard
	Mn	55	4373.0	6.9	**0.5679**	0.048	8.4	ug/L	823	Standard
	Co	59	870.4	1.6	**0.1002**	0.001	1.2	ug/L	252	Standard
	Ni	60	2666.6	2.1	**1.3989**	0.023	1.6	ug/L	192	Standard
	Cu	65	1074.7	4.8	**0.5100**	0.030	5.9	ug/L	141	Standard
	Zn	66	2890.6	2.0	**1.9736**	0.048	2.4	ug/L	491	Standard
>	**Ge**	72	484924.7	0.7				ug/L	515087	Standard
	As	75	2458.8	5.8	**2.3632**	0.133	5.6	ug/L	20	Standard
	Se	82	892.7	6.7	**8.1181**	0.571	7.0	ug/L	15	Standard
	Se-1	77	1757.1	0.5	**24.0557**	0.109	0.5	ug/L	48	Standard
>	**Ga**	71	76.7	13.6				mg/L	90	Standard
	Rb	85	4900.8	2.1				ug/L	23	Standard
	Y	89	417881.5	5.4				ug/L	448510	Standard
>	**Rh**	103	255.0	18.7				ug/L	15	Standard
	Mo	98	772.2	2.1	**0.2950**	0.006	2.2	ug/L	11	Standard
	Ag	107	68.7	21.6	**-0.0049**	0.003	53.5	ug/L	134	Standard
	Cd	111	15.0	33.1	**0.0048**	0.003	56.9	mg/L	7	Standard
	Cd	114	24.6	131.5	**0.0004**	0.007	1725.2	ug/L	16	Standard
>	**In**	115	555990.7	3.0				ug/L	611117	Standard
	Sn	118	696.7	10.1	**0.0278**	0.015	54.6	ug/L	518	Standard
	Sb	123	106.5	16.8	**0.0120**	0.005	38.5	ug/L	127	Standard
	Ba	135	12524.8	3.0	**6.6489**	0.344	5.2	ug/L	45	Standard
	Ce	140	808.4	5.3				ug/L	298	Standard
>	**Tb**	159	897664.5	1.7				ug/L	977942	Standard
	Ho	165	23.3	68.9				ug/L	12	Standard
	Tl	203	89.0	17.6	**0.0071**	0.002	31.3	ug/L	31	Standard
	Tl	205	90.0	0.0	**0.0115**	0.000	1.5	ug/L	20	Standard
	Pb	206	365.7	4.1	**0.0124**	0.004	32.4	ug/L	286	Standard
	Pb	207	325.3	1.4	**0.0169**	0.000	0.6	ug/L	257	Standard
	Pb	208	1289.4	1.1	**0.0163**	0.000	2.7	ug/L	956	Standard
	U	238	25222.0	1.6	**3.9519**	0.013	0.3	ug/L	17	Standard
>	**Bi**	209	495840.1	1.2				ug/L	557080	Standard

Sample ID: L1606141602
Report Date/Time: Tuesday, June 28, 2016 21:26:25
Page 1

Approved: June 29, 2016

Na	23	3.3	86.6	**22.3577**	19.364	86.6	mg/L	0	Standard
Mg	24	65916.4	2.1	**91.8901**	2.205	2.4	mg/L	32	Standard
K	39	221.7	4.7	**0.6432**	0.031	4.9	mg/L	30	Standard
Ca	43	530.0	9.4	**79.0853**	9.116	11.5	mg/L	48	Standard
Fe	54	138.0	10.0	**-0.0062**	0.012	195.9	mg/L	159	Standard
Fe	57	510.0	5.1	**1.1793**	0.086	7.3	mg/L	195	Standard
> **Sc-1**	45	37740.3	1.5				mg/L	39543	Standard
Cl	35	44130.9	1.6				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	28483.4	4.0				ug/L	1647	Standard
P	31	20263.6	4.9				ug/L	15231	Standard
S	34	2148.5	1.6				ug/L	1845	Standard
Sr	88	1128.4	6.6				ug/L	70	Standard
C	12	163.3	25.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	36.0	33.6				mg/L	12	Standard
Ho-1	165	23.3	68.9				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	19656.1	3.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141602
Report Date/Time: Tuesday, June 28, 2016 21:26:25
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.979
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.007
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606142101
Sample Date/Time: Tuesday, June 28, 2016 21:27:19
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86072.2	1.7				ug/L	81760	Standard
	Be	9	31.7	65.7	**0.0204**	0.019	95.2	ug/L	17	Standard
	Al	27	37149346.8	0.4	**228.9677**	4.521	2.0	ug/L	1410	Standard
	Sc	45	40693.0	3.6				ug/L	39543	Standard
	Ti	47	211.7	4.5	**0.7055**	0.031	4.4	ug/L	39	Standard
	V	51	19470.4	0.9	**2.6593**	0.027	1.0	ug/L	1415	Standard
	Cr	52	9577.4	0.5	**0.3506**	0.020	5.8	ug/L	6946	Standard
	Cr	53	13504.4	2.9	**15.3965**	0.370	2.4	ug/L	328	Standard
	Mn	55	2482687.2	1.9	**391.6677**	8.445	2.2	ug/L	823	Standard
	Co	59	1010.4	4.1	**0.1158**	0.006	5.6	ug/L	252	Standard
	Ni	60	2375.2	1.3	**1.1855**	0.029	2.4	ug/L	192	Standard
	Cu	65	1289.7	5.2	**0.6034**	0.030	5.0	ug/L	141	Standard
	Zn	66	3124.3	3.5	**2.0882**	0.083	4.0	ug/L	491	Standard
>	**Ge**	72	503476.5	0.9				ug/L	515087	Standard
	As	75	9860.1	0.9	**9.0129**	0.111	1.2	ug/L	20	Standard
	Se	82	502.3	2.2	**4.3447**	0.140	3.2	ug/L	15	Standard
	Se-1	77	853.4	2.0	**10.8689**	0.134	1.2	ug/L	48	Standard
>	**Ga**	71	115.0	32.8				mg/L	90	Standard
	Rb	85	655.0	2.3				ug/L	23	Standard
	Y	89	413248.4	1.0				ug/L	448510	Standard
>	**Rh**	103	123.3	18.3				ug/L	15	Standard
	Mo	98	77.7	17.1	**0.0125**	0.006	46.7	ug/L	11	Standard
	Ag	107	81.3	4.3	**-0.0029**	0.001	26.3	ug/L	134	Standard
	Cd	111	15.2	10.0	**0.0049**	0.001	14.6	mg/L	7	Standard
	Cd	114	38.3	10.8	**0.0032**	0.001	30.4	ug/L	16	Standard
>	**In**	115	557968.8	1.5				ug/L	611117	Standard
	Sn	118	745.0	12.3	**0.0359**	0.015	41.7	ug/L	518	Standard
	Sb	123	991.0	1.5	**0.2172**	0.002	1.1	ug/L	127	Standard
	Ba	135	220850.7	1.1	**117.1448**	0.521	0.4	ug/L	45	Standard
	Ce	140	1566.7	2.4				ug/L	298	Standard
>	**Tb**	159	920767.6	2.2				ug/L	977942	Standard
	Ho	165	58.3	38.7				ug/L	12	Standard
	Tl	203	55.7	23.2	**0.0023**	0.002	74.7	ug/L	31	Standard
	Tl	205	45.0	38.5	**0.0043**	0.003	60.7	ug/L	20	Standard
	Pb	206	169197.9	0.8	**33.4745**	0.521	1.6	ug/L	286	Standard
	Pb	207	142071.0	0.5	**31.1598**	0.218	0.7	ug/L	257	Standard
	Pb	208	579992.3	2.5	**32.8772**	0.549	1.7	ug/L	956	Standard
	U	238	648.7	2.7	**0.0940**	0.004	4.0	ug/L	17	Standard
>	**Bi**	209	520066.6	1.1				ug/L	557080	Standard

Sample ID: L1606142101
Report Date/Time: Tuesday, June 28, 2016 21:29:36
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.0185**	17.344	173.1	mg/L	0	Standard
Mg	24	83474.3	1.3	**108.0258**	4.532	4.2	mg/L	32	Standard
K	39	53.3	28.6	**0.0335**	0.050	147.9	mg/L	30	Standard
Ca	43	435.0	11.3	**58.7409**	4.908	8.4	mg/L	48	Standard
Fe	54	1115.5	8.0	**0.8464**	0.111	13.2	mg/L	159	Standard
Fe	57	721.7	4.0	**1.7451**	0.132	7.5	mg/L	195	Standard
> **Sc-1**	45	40693.0	3.6				mg/L	39543	Standard
Cl	35	37196.3	1.1				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	117004.1	4.8				ug/L	1647	Standard
P	31	21849.1	2.8				ug/L	15231	Standard
S	34	2463.5	4.3				ug/L	1845	Standard
Sr	88	470.0	11.8				ug/L	70	Standard
C	12	400.0	4.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.0	20.8				mg/L	12	Standard
Ho-1	165	58.3	38.7				mg/L	12	Standard
Er	166	63.3	9.1				mg/L	20	Standard
I	127	290371.1	9.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.274	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142101
Report Date/Time: Tuesday, June 28, 2016 21:29:36
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	91.303
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.356
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606142101
Report Date/Time: Tuesday, June 28, 2016 21:29:36
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 21:30:32
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80064.5	3.2				ug/L	81760	Standard
	Be	9	49945.6	4.7	**51.3339**	1.054	2.1	ug/L	17	Standard
	Al	27	7446953.3	1.3	**49.3416**	1.021	2.1	ug/L	1410	Standard
	Sc	45	39994.4	3.1				ug/L	39543	Standard
	Ti	47	24563.6	1.8	**103.4611**	0.538	0.5	ug/L	39	Standard
	V	51	332459.7	1.4	**49.9760**	0.258	0.5	ug/L	1415	Standard
	Cr	52	346732.4	1.5	**51.2013**	0.219	0.4	ug/L	6946	Standard
	Cr	53	44092.4	3.1	**52.3486**	0.902	1.7	ug/L	328	Standard
	Mn	55	316773.7	1.0	**51.1225**	0.963	1.9	ug/L	823	Standard
	Co	59	338255.6	0.9	**50.4803**	0.452	0.9	ug/L	252	Standard
	Ni	60	91110.2	2.0	**50.6466**	0.186	0.4	ug/L	192	Standard
	Cu	65	91902.3	2.1	**50.6488**	0.160	0.3	ug/L	141	Standard
	Zn	66	53757.9	1.1	**50.6325**	0.663	1.3	ug/L	491	Standard
>	Ge	72	490984.9	1.8				ug/L	515087	Standard
	As	75	53512.8	1.1	**49.9767**	0.363	0.7	ug/L	20	Standard
	Se	82	5576.6	0.4	**50.7061**	0.891	1.8	ug/L	15	Standard
	Se-1	77	3693.5	2.8	**50.7124**	1.021	2.0	ug/L	48	Standard
>	Ga	71	63.3	29.9				mg/L	90	Standard
	Rb	85	831.7	5.0				ug/L	23	Standard
	Y	89	421530.5	1.2				ug/L	448510	Standard
>	Rh	103	28.3	44.4				ug/L	15	Standard
	Mo	98	254944.7	0.2	**97.5527**	0.365	0.4	ug/L	11	Standard
	Ag	107	312741.7	1.2	**48.1812**	0.687	1.4	ug/L	134	Standard
	Cd	111	100992.4	1.1	**48.8720**	0.473	1.0	mg/L	7	Standard
	Cd	114	246539.5	0.8	**49.0819**	0.317	0.6	ug/L	16	Standard
>	In	115	590755.4	0.3				ug/L	611117	Standard
	Sn	118	285297.8	0.9	**49.8102**	0.309	0.6	ug/L	518	Standard
	Sb	123	223087.7	1.5	**48.8998**	0.798	1.6	ug/L	127	Standard
	Ba	135	97286.0	1.5	**48.7240**	0.868	1.8	ug/L	45	Standard
	Ce	140	78.3	36.9				ug/L	298	Standard
>	Tb	159	940662.6	1.7				ug/L	977942	Standard
	Ho	165	20.0	25.0				ug/L	12	Standard
	Tl	203	402817.7	0.9	**49.5894**	0.553	1.1	ug/L	31	Standard
	Tl	205	361515.5	0.7	**51.2534**	0.688	1.3	ug/L	20	Standard
	Pb	206	256836.7	1.0	**49.2334**	0.527	1.1	ug/L	286	Standard
	Pb	207	233772.2	1.4	**49.6819**	0.304	0.6	ug/L	257	Standard
	Pb	208	939106.3	0.8	**51.5898**	0.228	0.4	ug/L	956	Standard
	U	238	351652.3	0.3	**50.9098**	0.427	0.8	ug/L	17	Standard
>	Bi	209	537054.5	1.2				ug/L	557080	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 21:32:49
Page 1

Approved: June 29, 2016

Na	23	5.0	173.2	**32.8471**	56.884	173.2	mg/L	0	Standard
Mg	24	4075.5	3.9	**5.3128**	0.340	6.4	mg/L	32	Standard
K	39	1373.4	2.2	**4.4475**	0.053	1.2	mg/L	30	Standard
Ca	43	71.7	22.4	**5.4062**	2.324	43.0	mg/L	48	Standard
Fe	54	5589.4	3.1	**4.8672**	0.205	4.2	mg/L	159	Standard
Fe	57	1635.1	4.9	**4.8331**	0.203	4.2	mg/L	195	Standard
> **Sc-1**	45	39994.4	3.1				mg/L	39543	Standard
Cl	35	35754.8	4.0				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	3610.5	34.2				ug/L	1647	Standard
P	31	19324.0	4.2				ug/L	15231	Standard
S	34	2706.9	5.1				ug/L	1845	Standard
Sr	88	63.3	27.7				ug/L	70	Standard
C	12	143.3	42.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	5.9	100.8				mg/L	12	Standard
Ho-1	165	20.0	25.0				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	9711.8	44.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.668		
	Al	27	98.683		
	Sc	45			
	Ti	47	103.461		
	V	51	99.952		
	Cr	52	102.403		
	Cr	53			
	Mn	55	102.245		
	Co	59	100.961		
	Ni	60	101.293		
	Cu	65	101.298		
	Zn	66	101.265		
>	Ge	72		95.321	
	As	75	99.953		
	Se	82	101.412		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 21:32:49
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	97.553		
Ag	107	96.362		
Cd	111	97.744		
Cd	114			
> In	115			96.668
Sn	118	99.620		
Sb	123	97.800		
Ba	135	97.448		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.179		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.180		
U	238	101.820		
> Bi	209			96.405
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 21:32:49
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 21:33:43
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77306.8	2.0				ug/L	81760	Standard
	Be	9	21.7	26.6	**0.0134**	0.006	48.3	ug/L	17	Standard
	Al	27	7303.5	27.4	**0.0355**	0.013	36.3	ug/L	1410	Standard
	Sc	45	38198.1	0.8				ug/L	39543	Standard
	Ti	47	25.7	25.3	**-0.0566**	0.027	47.6	ug/L	39	Standard
	V	51	1109.0	7.8	**-0.0386**	0.015	38.5	ug/L	1415	Standard
	Cr	52	6097.9	0.7	**-0.1350**	0.015	10.8	ug/L	6946	Standard
	Cr	53	763.4	6.1	**0.5733**	0.039	6.9	ug/L	328	Standard
	Mn	55	836.4	10.1	**-0.0128**	0.011	87.4	ug/L	823	Standard
	Co	59	230.3	21.5	**0.0031**	0.007	222.1	ug/L	252	Standard
	Ni	60	176.3	3.3	**-0.0064**	0.005	75.2	ug/L	192	Standard
	Cu	65	147.3	9.8	**-0.0093**	0.007	71.2	ug/L	141	Standard
	Zn	66	414.7	6.5	**-0.4297**	0.019	4.3	ug/L	491	Standard
>	**Ge**	72	489415.0	1.8				ug/L	515087	Standard
	As	75	-13.4	315.6	**0.0274**	0.040	146.9	ug/L	20	Standard
	Se	82	21.4	39.0	**0.0756**	0.076	100.0	ug/L	15	Standard
	Se-1	77	62.3	3.3	**0.1522**	0.035	23.1	ug/L	48	Standard
>	**Ga**	71	55.0	41.7				mg/L	90	Standard
	Rb	85	21.7	26.6				ug/L	23	Standard
	Y	89	425437.4	1.2				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	273.7	29.6	**0.0854**	0.031	36.3	ug/L	11	Standard
	Ag	107	107.7	30.0	**0.0003**	0.005	1550.1	ug/L	134	Standard
	Cd	111	12.2	52.2	**0.0030**	0.003	103.1	mg/L	7	Standard
	Cd	114	23.6	69.2	**-0.0002**	0.003	1385.1	ug/L	16	Standard
>	**In**	115	592746.5	0.3				ug/L	611117	Standard
	Sn	118	735.0	15.8	**0.0262**	0.020	76.7	ug/L	518	Standard
	Sb	123	418.9	32.2	**0.0787**	0.029	37.2	ug/L	127	Standard
	Ba	135	58.7	27.6	**0.0042**	0.008	193.4	ug/L	45	Standard
	Ce	140	16.7	34.6				ug/L	298	Standard
>	**Tb**	159	928666.7	1.6				ug/L	977942	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	77.0	34.1	**0.0046**	0.003	68.4	ug/L	31	Standard
	Tl	205	76.7	35.9	**0.0085**	0.004	45.8	ug/L	20	Standard
	Pb	206	287.0	11.8	**-0.0088**	0.007	78.2	ug/L	286	Standard
	Pb	207	252.0	6.9	**-0.0047**	0.004	83.8	ug/L	257	Standard
	Pb	208	1038.7	6.8	**-0.0037**	0.004	102.1	ug/L	956	Standard
	U	238	52.3	19.6	**0.0046**	0.001	32.5	ug/L	17	Standard
>	**Bi**	209	540535.6	1.1				ug/L	557080	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 21:36:00
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**11.1254**	19.261	173.1	mg/L	0	Standard
Mg	24	41.7	25.0	**0.0002**	0.014	5858.2	mg/L	32	Standard
K	39	25.0	20.0	**-0.0539**	0.018	33.4	mg/L	30	Standard
Ca	43	40.0	25.0	**0.9508**	1.613	169.6	mg/L	48	Standard
Fe	54	117.8	25.5	**-0.0268**	0.028	102.8	mg/L	159	Standard
Fe	57	235.0	7.7	**0.1964**	0.057	28.8	mg/L	195	Standard
Sc-1	45	38198.1	0.8				mg/L	39543	Standard
Cl	35	35245.6	1.5				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2320.2	7.7				ug/L	1647	Standard
P	31	18950.2	2.2				ug/L	15231	Standard
S	34	2475.2	4.2				ug/L	1845	Standard
Sr	88	68.3	27.7				ug/L	70	Standard
C	12	103.3	5.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	8.9	118.0				mg/L	12	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	23.3	49.5				mg/L	20	Standard
I	127	4469.0	13.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.016	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 21:36:00
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.994
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.030
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 21:36:00
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: PBW 82 WG574205-02
Sample Date/Time: Tuesday, June 28, 2016 21:36:55
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77750.7	1.6				ug/L	81760	Standard
	Be	9	23.3	24.7	**0.0149**	0.006	38.5	ug/L	17	Standard
	Al	27	11095.9	27.0	**0.0614**	0.021	33.8	ug/L	1410	Standard
	Sc	45	39309.3	3.2				ug/L	39543	Standard
	Ti	47	35.7	19.9	**-0.0160**	0.027	171.9	ug/L	39	Standard
	V	51	1269.4	3.8	**-0.0162**	0.012	71.1	ug/L	1415	Standard
	Cr	52	7452.2	2.1	**0.0582**	0.015	26.3	ug/L	6946	Standard
	Cr	53	805.0	4.3	**0.6140**	0.043	7.0	ug/L	328	Standard
	Mn	55	3268.0	4.0	**0.3772**	0.034	9.1	ug/L	823	Standard
	Co	59	296.7	4.7	**0.0126**	0.001	9.3	ug/L	252	Standard
	Ni	60	300.3	5.8	**0.0613**	0.013	21.5	ug/L	192	Standard
	Cu	65	252.7	4.2	**0.0478**	0.009	19.3	ug/L	141	Standard
	Zn	66	1868.1	1.9	**0.9480**	0.028	3.0	ug/L	491	Standard
>	**Ge**	72	494530.1	2.9				ug/L	515087	Standard
	As	75	-37.6	66.7	**0.0055**	0.023	429.2	ug/L	20	Standard
	Se	82	15.9	27.5	**0.0238**	0.038	158.5	ug/L	15	Standard
	Se-1	77	56.7	8.0	**0.0642**	0.051	79.2	ug/L	48	Standard
>	**Ga**	71	51.7	31.1				mg/L	90	Standard
	Rb	85	45.0	48.4				ug/L	23	Standard
	Y	89	413936.1	2.9				ug/L	448510	Standard
>	**Rh**	103	23.3	32.7				ug/L	15	Standard
	Mo	98	83.2	8.2	**0.0127**	0.003	23.0	ug/L	11	Standard
	Ag	107	95.3	10.0	**-0.0016**	0.002	102.9	ug/L	134	Standard
	Cd	111	39.5	14.4	**0.0162**	0.003	18.5	mg/L	7	Standard
	Cd	114	83.7	13.3	**0.0117**	0.002	21.2	ug/L	16	Standard
>	**In**	115	592344.0	1.8				ug/L	611117	Standard
	Sn	118	795.0	11.2	**0.0369**	0.017	47.0	ug/L	518	Standard
	Sb	123	176.9	20.5	**0.0258**	0.007	28.3	ug/L	127	Standard
	Ba	135	88.3	8.2	**0.0191**	0.004	22.5	ug/L	45	Standard
	Ce	140	48.3	15.8				ug/L	298	Standard
>	**Tb**	159	936174.2	1.5				ug/L	977942	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	128.0	4.9	**0.0106**	0.001	7.1	ug/L	31	Standard
	Tl	205	116.7	44.6	**0.0139**	0.007	52.1	ug/L	20	Standard
	Pb	206	358.0	3.9	**0.0036**	0.003	73.1	ug/L	286	Standard
	Pb	207	341.0	6.5	**0.0129**	0.005	36.4	ug/L	257	Standard
	Pb	208	1292.4	1.6	**0.0090**	0.001	13.2	ug/L	956	Standard
	U	238	93.7	24.0	**0.0103**	0.003	31.1	ug/L	17	Standard
>	**Bi**	209	549438.7	0.1				ug/L	557080	Standard

Sample ID: PBW 82 WG574205-02
Report Date/Time: Tuesday, June 28, 2016 21:39:12
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.5912**	18.336	173.1	mg/L	0	Standard
Mg	24	55.0	47.2	**0.0170**	0.036	211.2	mg/L	32	Standard
K	39	38.3	52.7	**-0.0104**	0.070	678.8	mg/L	30	Standard
Ca	43	46.7	16.4	**1.7858**	1.139	63.8	mg/L	48	Standard
Fe	54	125.7	11.9	**-0.0224**	0.015	66.3	mg/L	159	Standard
Fe	57	226.7	12.1	**0.1455**	0.093	63.6	mg/L	195	Standard
> **Sc-1**	45	39309.3	3.2				mg/L	39543	Standard
Cl	35	34398.3	0.8				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1940.1	5.9				ug/L	1647	Standard
P	31	18074.1	0.8				ug/L	15231	Standard
S	34	2498.5	3.0				ug/L	1845	Standard
Sr	88	61.7	46.1				ug/L	70	Standard
C	12	113.3	13.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.2	3.0				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	3242.0	12.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.009	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 82 WG574205-02
Report Date/Time: Tuesday, June 28, 2016 21:39:12
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.928
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.628
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: LCSW 82 WG574205-03
Sample Date/Time: Tuesday, June 28, 2016 21:40:07
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77370.5	2.5				ug/L	81760	Standard
	Be	9	47069.7	3.6	**50.0685**	0.762	1.5	ug/L	17	Standard
	Al	27	8339.0	0.8	**0.0428**	0.001	2.3	ug/L	1410	Standard
	Sc	45	38442.1	2.3				ug/L	39543	Standard
	Ti	47	32.3	15.3	**-0.0274**	0.023	83.9	ug/L	39	Standard
	V	51	328373.9	1.3	**49.7728**	1.098	2.2	ug/L	1415	Standard
	Cr	52	340284.0	1.1	**50.6522**	0.528	1.0	ug/L	6946	Standard
	Cr	53	43268.4	1.2	**51.8066**	1.337	2.6	ug/L	328	Standard
	Mn	55	314954.5	0.2	**51.2439**	0.720	1.4	ug/L	823	Standard
	Co	59	331722.8	0.6	**49.9116**	0.628	1.3	ug/L	252	Standard
	Ni	60	91188.9	0.7	**51.1120**	0.365	0.7	ug/L	192	Standard
	Cu	65	91760.4	1.1	**50.9900**	0.227	0.4	ug/L	141	Standard
	Zn	66	54150.6	1.3	**51.4287**	0.106	0.2	ug/L	491	Standard
>	**Ge**	72	486985.3	1.4				ug/L	515087	Standard
	As	75	52577.5	0.5	**49.5070**	0.430	0.9	ug/L	20	Standard
	Se	82	5439.8	1.4	**49.8572**	0.058	0.1	ug/L	15	Standard
	Se-1	77	3674.8	1.0	**50.8806**	0.838	1.6	ug/L	48	Standard
>	**Ga**	71	70.0	21.4				mg/L	90	Standard
	Rb	85	35.0	37.8				ug/L	23	Standard
	Y	89	431830.9	0.7				ug/L	448510	Standard
>	**Rh**	103	38.3	15.1				ug/L	15	Standard
	Mo	98	69.3	10.5	**0.0074**	0.003	42.1	ug/L	11	Standard
	Ag	107	312423.9	0.2	**48.0443**	1.285	2.7	ug/L	134	Standard
	Cd	111	99250.2	0.2	**47.9394**	1.102	2.3	mg/L	7	Standard
	Cd	114	241436.3	0.5	**47.9735**	0.947	2.0	ug/L	16	Standard
>	**In**	115	592091.2	2.5				ug/L	611117	Standard
	Sn	118	838.4	9.3	**0.0444**	0.014	30.4	ug/L	518	Standard
	Sb	123	213126.5	0.4	**46.6279**	1.103	2.4	ug/L	127	Standard
	Ba	135	94941.2	1.6	**47.4531**	1.010	2.1	ug/L	45	Standard
	Ce	140	68.3	22.4				ug/L	298	Standard
>	**Tb**	159	920874.0	1.0				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	395784.4	0.5	**49.2144**	0.506	1.0	ug/L	31	Standard
	Tl	205	352148.8	0.9	**50.4246**	0.261	0.5	ug/L	20	Standard
	Pb	206	261292.0	1.2	**50.5931**	0.633	1.3	ug/L	286	Standard
	Pb	207	229140.8	1.1	**49.1895**	0.516	1.0	ug/L	257	Standard
	Pb	208	939702.2	0.3	**52.1447**	0.484	0.9	ug/L	956	Standard
	U	238	338970.6	0.7	**49.5659**	0.166	0.3	ug/L	17	Standard
>	**Bi**	209	531689.3	0.7				ug/L	557080	Standard

Sample ID: LCSW 82 WG574205-03
Report Date/Time: Tuesday, June 28, 2016 21:42:24
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35.0	0.0	**-0.0092**	0.001	12.0	mg/L	32	Standard
K	39	35.0	42.9	**-0.0195**	0.052	268.3	mg/L	30	Standard
Ca	43	38.3	32.8	**0.6220**	1.885	303.1	mg/L	48	Standard
Fe	54	132.7	8.8	**-0.0133**	0.014	103.8	mg/L	159	Standard
Fe	57	226.7	10.4	**0.1628**	0.084	51.6	mg/L	195	Standard
> **Sc-1**	45	38442.1	2.3				mg/L	39543	Standard
Cl	35	35188.8	3.0				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1823.4	6.0				ug/L	1647	Standard
P	31	17611.9	0.6				ug/L	15231	Standard
S	34	2310.2	2.3				ug/L	1845	Standard
Sr	88	75.0	17.6				ug/L	70	Standard
C	12	96.7	46.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.9	194.5				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	2716.9	12.2				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		94.631	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.544	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: LCSW 82 WG574205-03
Report Date/Time: Tuesday, June 28, 2016 21:42:24
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.887
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.442
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 82 WG574205-03
Report Date/Time: Tuesday, June 28, 2016 21:42:24
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606134301 WG574205-01
Sample Date/Time: Tuesday, June 28, 2016 21:43:18
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74323.5	0.8				ug/L	81760	Standard
	Be	9	31.7	36.5	**0.0253**	0.013	49.8	ug/L	17	Standard
	Al	27	2998278.2	0.6	**21.3833**	0.050	0.2	ug/L	1410	Standard
	Sc	45	38510.6	3.3				ug/L	39543	Standard
	Ti	47	232.7	4.1	**0.8126**	0.032	3.9	ug/L	39	Standard
	V	51	1652.5	23.4	**0.0414**	0.055	131.6	ug/L	1415	Standard
	Cr	52	135321.3	0.7	**19.2638**	0.330	1.7	ug/L	6946	Standard
	Cr	53	19187.1	1.5	**22.5044**	0.281	1.2	ug/L	328	Standard
	Mn	55	3959.9	4.4	**0.4904**	0.040	8.1	ug/L	823	Standard
	Co	59	833.7	4.3	**0.0927**	0.008	8.3	ug/L	252	Standard
	Ni	60	44655.7	0.7	**24.6837**	0.632	2.6	ug/L	192	Standard
	Cu	65	31746.9	0.7	**17.3740**	0.276	1.6	ug/L	141	Standard
	Zn	66	57137.2	0.4	**53.6669**	1.121	2.1	ug/L	491	Standard
>	**Ge**	72	492860.3	1.9				ug/L	515087	Standard
	As	75	122.8	20.0	**0.1545**	0.023	14.7	ug/L	20	Standard
	Se	82	36.2	8.8	**0.2097**	0.035	16.8	ug/L	15	Standard
	Se-1	77	205.3	7.5	**2.1323**	0.253	11.9	ug/L	48	Standard
>	**Ga**	71	501.7	15.2				mg/L	90	Standard
	Rb	85	10964.0	0.9				ug/L	23	Standard
	Y	89	418533.1	1.8				ug/L	448510	Standard
>	**Rh**	103	56.7	31.0				ug/L	15	Standard
	Mo	98	2829.4	1.2	**1.1053**	0.009	0.8	ug/L	11	Standard
	Ag	107	25274.7	1.2	**4.0283**	0.033	0.8	ug/L	134	Standard
	Cd	111	119.1	9.1	**0.0569**	0.005	9.6	mg/L	7	Standard
	Cd	114	490.9	6.4	**0.0966**	0.006	6.7	ug/L	16	Standard
>	**In**	115	568910.2	0.4				ug/L	611117	Standard
	Sn	118	49674.7	2.3	**8.9227**	0.228	2.6	ug/L	518	Standard
	Sb	123	2415.2	17.6	**0.5368**	0.095	17.6	ug/L	127	Standard
	Ba	135	20410.1	0.9	**10.5946**	0.091	0.9	ug/L	45	Standard
	Ce	140	566.7	11.5				ug/L	298	Standard
>	**Tb**	159	895351.1	0.7				ug/L	977942	Standard
	Ho	165	20.0	25.0				ug/L	12	Standard
	Tl	203	216.3	14.7	**0.0231**	0.004	18.6	ug/L	31	Standard
	Tl	205	211.7	17.7	**0.0291**	0.005	18.1	ug/L	20	Standard
	Pb	206	14582.7	1.0	**2.8682**	0.053	1.8	ug/L	286	Standard
	Pb	207	11703.2	0.8	**2.5502**	0.014	0.5	ug/L	257	Standard
	Pb	208	49274.0	0.6	**2.7782**	0.042	1.5	ug/L	956	Standard
	U	238	116.0	23.9	**0.0146**	0.004	29.7	ug/L	17	Standard
>	**Bi**	209	512746.8	0.9				ug/L	557080	Standard

Sample ID: L1606134301 WG574205-01
Report Date/Time: Tuesday, June 28, 2016 21:45:35
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23663.5	1.4	**32.3162**	1.385	4.3	mg/L	32	Standard
K	39	683.3	9.3	**2.2286**	0.197	8.8	mg/L	30	Standard
Ca	43	95.0	32.9	**9.3774**	4.330	46.2	mg/L	48	Standard
Fe	54	183.2	7.6	**0.0331**	0.009	27.1	mg/L	159	Standard
Fe	57	263.3	14.4	**0.2873**	0.119	41.4	mg/L	195	Standard
> **Sc-1**	45	38510.6	3.3				mg/L	39543	Standard
Cl	35	35170.8	1.9				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	3347.0	4.4				ug/L	1647	Standard
P	31	18034.1	2.9				ug/L	15231	Standard
S	34	2231.8	5.1				ug/L	1845	Standard
Sr	88	143.3	22.7				ug/L	70	Standard
C	12	123.3	47.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	12.4	90.1				mg/L	12	Standard
Ho-1	165	20.0	25.0				mg/L	12	Standard
Er	166	20.0	86.6				mg/L	20	Standard
I	127	33806.0	2.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.904	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.685	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606134301 WG574205-01
Report Date/Time: Tuesday, June 28, 2016 21:45:35
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.094
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.042
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606134301DP WG574205-04
Sample Date/Time: Tuesday, June 28, 2016 21:46:30
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75650.1	1.3				ug/L	81760	Standard
	Be	9	38.3	7.5	**0.0320**	0.004	11.5	ug/L	17	Standard
	Al	27	3034197.2	1.7	**21.2640**	0.568	2.7	ug/L	1410	Standard
	Sc	45	38358.5	1.6				ug/L	39543	Standard
	Ti	47	242.3	3.4	**0.8481**	0.030	3.6	ug/L	39	Standard
	V	51	2921.5	21.4	**0.2301**	0.091	39.7	ug/L	1415	Standard
	Cr	52	132102.7	0.7	**18.6755**	0.034	0.2	ug/L	6946	Standard
	Cr	53	19672.8	2.2	**22.9627**	0.596	2.6	ug/L	328	Standard
	Mn	55	13082.6	2.2	**1.9497**	0.036	1.8	ug/L	823	Standard
	Co	59	922.0	4.8	**0.1051**	0.006	5.6	ug/L	252	Standard
	Ni	60	44071.0	1.0	**24.2264**	0.187	0.8	ug/L	192	Standard
	Cu	65	31222.8	1.1	**16.9947**	0.096	0.6	ug/L	141	Standard
	Zn	66	55768.5	0.9	**52.0764**	0.197	0.4	ug/L	491	Standard
>	**Ge**	72	495382.5	0.5				ug/L	515087	Standard
	As	75	105.3	17.2	**0.1377**	0.017	12.5	ug/L	20	Standard
	Se	82	31.4	9.3	**0.1642**	0.025	15.2	ug/L	15	Standard
	Se-1	77	224.7	3.6	**2.3824**	0.126	5.3	ug/L	48	Standard
>	**Ga**	71	485.0	9.9				mg/L	90	Standard
	Rb	85	10640.4	0.2				ug/L	23	Standard
	Y	89	407749.6	1.6				ug/L	448510	Standard
>	**Rh**	103	56.7	27.0				ug/L	15	Standard
	Mo	98	2759.9	2.4	**1.0902**	0.013	1.1	ug/L	11	Standard
	Ag	107	24718.5	0.6	**3.9851**	0.067	1.7	ug/L	134	Standard
	Cd	111	119.1	7.2	**0.0577**	0.005	8.8	mg/L	7	Standard
	Cd	114	389.6	30.3	**0.0764**	0.024	30.9	ug/L	16	Standard
>	**In**	115	562489.2	1.2				ug/L	611117	Standard
	Sn	118	48104.7	5.2	**8.7400**	0.532	6.1	ug/L	518	Standard
	Sb	123	1085.9	11.8	**0.2370**	0.026	11.2	ug/L	127	Standard
	Ba	135	21279.9	0.9	**11.1745**	0.156	1.4	ug/L	45	Standard
	Ce	140	1446.7	1.7				ug/L	298	Standard
>	**Tb**	159	899809.7	0.9				ug/L	977942	Standard
	Ho	165	38.3	37.7				ug/L	12	Standard
	Tl	203	211.3	8.9	**0.0223**	0.003	11.4	ug/L	31	Standard
	Tl	205	171.7	14.4	**0.0230**	0.004	16.6	ug/L	20	Standard
	Pb	206	14329.4	1.7	**2.7934**	0.069	2.5	ug/L	286	Standard
	Pb	207	11471.7	1.5	**2.4775**	0.050	2.0	ug/L	257	Standard
	Pb	208	48196.5	1.3	**2.6929**	0.035	1.3	ug/L	956	Standard
	U	238	162.0	9.3	**0.0214**	0.002	11.2	ug/L	17	Standard
>	**Bi**	209	517046.0	0.7				ug/L	557080	Standard

Sample ID: L1606134301DP WG574205-04
Report Date/Time: Tuesday, June 28, 2016 21:48:47
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23364.7	1.2	**32.0144**	0.886	2.8	mg/L	32	Standard
K	39	620.0	6.9	**2.0197**	0.176	8.7	mg/L	30	Standard
Ca	43	98.3	39.5	**10.0220**	6.022	60.1	mg/L	48	Standard
Fe	54	175.4	14.5	**0.0269**	0.026	96.7	mg/L	159	Standard
Fe	57	298.3	7.6	**0.4146**	0.094	22.7	mg/L	195	Standard
> **Sc-1**	45	38358.5	1.6				mg/L	39543	Standard
Cl	35	35843.0	1.2				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	4177.2	4.7				ug/L	1647	Standard
P	31	18070.8	1.2				ug/L	15231	Standard
S	34	2273.5	5.8				ug/L	1845	Standard
Sr	88	125.0	20.0				ug/L	70	Standard
C	12	143.3	21.3				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	45.4	50.3				mg/L	12	Standard
Ho-1	165	38.3	37.7				mg/L	12	Standard
Er	166	26.7	21.7				mg/L	20	Standard
I	127	32309.4	0.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.527	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.175	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606134301DP WG574205-04
Report Date/Time: Tuesday, June 28, 2016 21:48:47
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.043
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.814
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606134301S WG574205-05
Sample Date/Time: Tuesday, June 28, 2016 21:49:41
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76159.4	2.8				ug/L	81760	Standard
	Be	9	48450.7	1.7	**52.3785**	0.949	1.8	ug/L	17	Standard
	Al	27	2895043.9	1.0	**20.1618**	0.737	3.7	ug/L	1410	Standard
	Sc	45	38742.8	1.9				ug/L	39543	Standard
	Ti	47	240.0	7.2	**0.8720**	0.082	9.4	ug/L	39	Standard
	V	51	323841.2	0.8	**49.8512**	0.902	1.8	ug/L	1415	Standard
	Cr	52	453207.8	1.4	**68.8842**	0.591	0.9	ug/L	6946	Standard
	Cr	53	60472.1	1.8	**73.6607**	0.780	1.1	ug/L	328	Standard
	Mn	55	309167.0	1.2	**51.0846**	0.705	1.4	ug/L	823	Standard
	Co	59	322466.2	0.8	**49.2767**	0.754	1.5	ug/L	252	Standard
	Ni	60	129806.7	1.0	**73.9391**	0.553	0.7	ug/L	192	Standard
	Cu	65	118360.2	1.2	**66.8253**	0.317	0.5	ug/L	141	Standard
	Zn	66	105137.5	0.6	**102.2235**	1.030	1.0	ug/L	491	Standard
>	Ge	72	479488.8	1.1				ug/L	515087	Standard
	As	75	53941.4	1.7	**51.5891**	1.400	2.7	ug/L	20	Standard
	Se	82	5350.1	0.9	**49.8082**	0.982	2.0	ug/L	15	Standard
	Se-1	77	3727.1	2.1	**52.4361**	1.513	2.9	ug/L	48	Standard
>	Ga	71	476.7	2.2				mg/L	90	Standard
	Rb	85	10533.7	3.9				ug/L	23	Standard
	Y	89	417307.7	1.3				ug/L	448510	Standard
>	Rh	103	73.3	25.8				ug/L	15	Standard
	Mo	98	2762.6	0.6	**1.0591**	0.012	1.2	ug/L	11	Standard
	Ag	107	321242.3	0.9	**50.4672**	0.741	1.5	ug/L	134	Standard
	Cd	111	96845.5	0.4	**47.7898**	0.498	1.0	mg/L	7	Standard
	Cd	114	233334.7	1.1	**47.3688**	0.646	1.4	ug/L	16	Standard
>	In	115	579360.0	0.8				ug/L	611117	Standard
	Sn	118	55146.4	13.8	**9.7304**	1.292	13.3	ug/L	518	Standard
	Sb	123	221114.9	0.1	**49.4220**	0.385	0.8	ug/L	127	Standard
	Ba	135	112895.7	0.5	**57.6594**	0.626	1.1	ug/L	45	Standard
	Ce	140	313.3	11.5				ug/L	298	Standard
>	Tb	159	912553.5	0.8				ug/L	977942	Standard
	Ho	165	15.0	66.7				ug/L	12	Standard
	Tl	203	384933.8	0.5	**49.0255**	0.608	1.2	ug/L	31	Standard
	Tl	205	344367.9	0.4	**50.5097**	0.783	1.5	ug/L	20	Standard
	Pb	206	266968.5	0.3	**52.9500**	0.690	1.3	ug/L	286	Standard
	Pb	207	232893.3	0.6	**51.2096**	0.463	0.9	ug/L	257	Standard
	Pb	208	948808.9	1.4	**53.9303**	1.097	2.0	ug/L	956	Standard
	U	238	335133.4	0.9	**50.1950**	0.747	1.5	ug/L	17	Standard
>	Bi	209	519140.8	1.4				ug/L	557080	Standard

Sample ID: L1606134301S WG574205-05
Report Date/Time: Tuesday, June 28, 2016 21:51:58
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23122.6	1.5	**31.3670**	0.821	2.6	mg/L	32	Standard
K	39	550.0	13.4	**1.7528**	0.224	12.8	mg/L	30	Standard
Ca	43	93.3	3.1	**9.1209**	0.222	2.4	mg/L	48	Standard
Fe	54	147.8	38.5	**0.0002**	0.055	34709.4	mg/L	159	Standard
Fe	57	261.7	11.7	**0.2782**	0.120	43.1	mg/L	195	Standard
> **Sc-1**	45	38742.8	1.9				mg/L	39543	Standard
Cl	35	35887.1	0.6				ug/L	27642	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	3013.6	4.3				ug/L	1647	Standard
P	31	18511.3	3.1				ug/L	15231	Standard
S	34	2173.5	7.9				ug/L	1845	Standard
Sr	88	115.0	4.3				ug/L	70	Standard
C	12	143.3	35.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	12.7	50.0				mg/L	12	Standard
Ho-1	165	15.0	66.7				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	29318.3	1.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.150	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.089	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606134301S WG574205-05
Report Date/Time: Tuesday, June 28, 2016 21:51:58
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.804
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.190
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606134301S WG574205-05
Report Date/Time: Tuesday, June 28, 2016 21:51:58
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606134301SD WG574205-06
Sample Date/Time: Tuesday, June 28, 2016 21:52:53
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74233.3	4.4				ug/L	81760	Standard
	Be	9	46944.3	0.7	**52.1161**	2.208	4.2	ug/L	17	Standard
	Al	27	2867977.1	1.8	**20.5130**	1.211	5.9	ug/L	1410	Standard
	Sc	45	37107.1	4.7				ug/L	39543	Standard
	Ti	47	208.3	2.4	**0.7439**	0.023	3.1	ug/L	39	Standard
	V	51	314357.5	0.7	**48.8632**	0.269	0.5	ug/L	1415	Standard
	Cr	52	443013.9	1.2	**67.9920**	0.699	1.0	ug/L	6946	Standard
	Cr	53	57726.4	1.5	**71.0049**	0.771	1.1	ug/L	328	Standard
	Mn	55	299003.6	1.5	**49.8899**	0.541	1.1	ug/L	823	Standard
	Co	59	310607.5	1.9	**47.9296**	0.658	1.4	ug/L	252	Standard
	Ni	60	125816.0	1.4	**72.3742**	0.740	1.0	ug/L	192	Standard
	Cu	65	116930.9	2.0	**66.6728**	1.005	1.5	ug/L	141	Standard
	Zn	66	105389.9	0.9	**103.4925**	0.359	0.3	ug/L	491	Standard
>	**Ge**	72	474757.8	0.5				ug/L	515087	Standard
	As	75	52320.0	1.0	**50.5276**	0.214	0.4	ug/L	20	Standard
	Se	82	5199.8	1.3	**48.8839**	0.776	1.6	ug/L	15	Standard
	Se-1	77	3645.4	2.7	**51.7794**	1.336	2.6	ug/L	48	Standard
>	**Ga**	71	471.7	1.2				mg/L	90	Standard
	Rb	85	10923.9	0.7				ug/L	23	Standard
	Y	89	414912.1	1.8				ug/L	448510	Standard
>	**Rh**	103	51.7	22.3				ug/L	15	Standard
	Mo	98	2810.6	3.1	**1.1098**	0.050	4.5	ug/L	11	Standard
	Ag	107	309794.3	1.1	**50.0964**	1.925	3.8	ug/L	134	Standard
	Cd	111	92939.1	0.1	**47.2004**	1.405	3.0	mg/L	7	Standard
	Cd	114	227712.2	0.8	**47.5835**	1.757	3.7	ug/L	16	Standard
>	**In**	115	563239.5	3.0				ug/L	611117	Standard
	Sn	118	48800.3	6.0	**8.8657**	0.749	8.5	ug/L	518	Standard
	Sb	123	213681.9	0.5	**49.1574**	1.598	3.3	ug/L	127	Standard
	Ba	135	108173.8	0.8	**56.8630**	1.899	3.3	ug/L	45	Standard
	Ce	140	258.3	11.8				ug/L	298	Standard
>	**Tb**	159	874543.1	3.3				ug/L	977942	Standard
	Ho	165	16.7	62.4				ug/L	12	Standard
	Tl	203	370949.6	0.9	**49.2226**	1.185	2.4	ug/L	31	Standard
	Tl	205	332170.0	0.6	**50.7579**	1.084	2.1	ug/L	20	Standard
	Pb	206	260124.0	0.8	**53.7518**	1.191	2.2	ug/L	286	Standard
	Pb	207	226333.8	1.1	**51.8538**	1.336	2.6	ug/L	257	Standard
	Pb	208	924176.8	1.2	**54.7310**	1.509	2.8	ug/L	956	Standard
	U	238	327055.2	1.2	**51.0349**	1.235	2.4	ug/L	17	Standard
>	**Bi**	209	498348.0	1.6				ug/L	557080	Standard

Sample ID: L1606134301SD WG574205-06
Report Date/Time: Tuesday, June 28, 2016 21:55:09
Page 1

Approved: June 29, 2016

Na	23	5.0	173.2	**33.3751**	57.799	173.2	mg/L	0	Standard
Mg	24	22616.9	1.7	**32.0867**	1.983	6.2	mg/L	32	Standard
K	39	585.0	8.2	**1.9630**	0.088	4.5	mg/L	30	Standard
Ca	43	106.7	21.1	**11.9418**	3.627	30.4	mg/L	48	Standard
Fe	54	143.6	9.6	**0.0016**	0.013	810.1	mg/L	159	Standard
Fe	57	260.0	25.0	**0.3188**	0.279	87.4	mg/L	195	Standard
> **Sc-1**	45	37107.1	4.7				mg/L	39543	Standard
Cl	35	35012.4	2.2				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3463.7	1.0				ug/L	1647	Standard
P	31	17954.0	1.9				ug/L	15231	Standard
S	34	2235.2	3.1				ug/L	1845	Standard
Sr	88	115.0	27.2				ug/L	70	Standard
C	12	173.3	16.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	16.2	97.3				mg/L	12	Standard
Ho-1	165	16.7	62.4				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	29468.6	2.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.794	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.170	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606134301SD WG574205-06
Report Date/Time: Tuesday, June 28, 2016 21:55:09
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.166
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	89.457
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606134301SD WG574205-06
Report Date/Time: Tuesday, June 28, 2016 21:55:09
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606073201
Sample Date/Time: Tuesday, June 28, 2016 21:56:04
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79995.7	1.9				ug/L	81760	Standard
	Be	9	111.7	43.0	**0.1055**	0.050	47.4	ug/L	17	Standard
	Al	27	26418031.8	2.7	**175.1861**	5.381	3.1	ug/L	1410	Standard
	Sc	45	39758.8	3.3				ug/L	39543	Standard
	Ti	47	586.7	3.3	**2.3079**	0.104	4.5	ug/L	39	Standard
	V	51	2345.3	13.2	**0.1468**	0.044	29.9	ug/L	1415	Standard
	Cr	52	26092.8	3.1	**2.8709**	0.089	3.1	ug/L	6946	Standard
	Cr	53	22536.8	6.4	**26.5559**	1.479	5.6	ug/L	328	Standard
	Mn	55	128770.6	1.1	**20.6681**	0.068	0.3	ug/L	823	Standard
	Co	59	4370.6	1.2	**0.6206**	0.009	1.4	ug/L	252	Standard
	Ni	60	4217.9	1.8	**2.2421**	0.029	1.3	ug/L	192	Standard
	Cu	65	1551.7	2.2	**0.7650**	0.010	1.3	ug/L	141	Standard
	Zn	66	53557.8	1.5	**50.3807**	0.333	0.7	ug/L	491	Standard
>	**Ge**	72	491490.5	1.0				ug/L	515087	Standard
	As	75	918.5	14.0	**0.8957**	0.112	12.5	ug/L	20	Standard
	Se	82	316.6	5.4	**2.7619**	0.129	4.7	ug/L	15	Standard
	Se-1	77	1234.4	4.8	**16.4500**	0.704	4.3	ug/L	48	Standard
>	**Ga**	71	80.0	6.3				mg/L	90	Standard
	Rb	85	7720.3	1.4				ug/L	23	Standard
	Y	89	403861.7	0.4				ug/L	448510	Standard
>	**Rh**	103	80.0	50.0				ug/L	15	Standard
	Mo	98	355.0	5.6	**0.1283**	0.008	5.9	ug/L	11	Standard
	Ag	107	141.3	9.2	**0.0074**	0.002	31.2	ug/L	134	Standard
	Cd	111	202.7	10.3	**0.1036**	0.012	11.2	mg/L	7	Standard
	Cd	114	507.6	13.6	**0.1047**	0.015	13.9	ug/L	16	Standard
>	**In**	115	544497.8	0.6				ug/L	611117	Standard
	Sn	118	1023.4	24.9	**0.0925**	0.050	53.7	ug/L	518	Standard
	Sb	123	669.1	12.6	**0.1463**	0.019	13.2	ug/L	127	Standard
	Ba	135	206763.5	2.5	**112.3722**	2.187	1.9	ug/L	45	Standard
	Ce	140	411.7	6.1				ug/L	298	Standard
>	**Tb**	159	889575.8	1.3				ug/L	977942	Standard
	Ho	165	35.0	37.8				ug/L	12	Standard
	Tl	203	749.0	2.3	**0.0953**	0.003	3.6	ug/L	31	Standard
	Tl	205	685.0	13.9	**0.1029**	0.013	12.2	ug/L	20	Standard
	Pb	206	776.0	1.1	**0.0981**	0.006	5.8	ug/L	286	Standard
	Pb	207	670.3	1.0	**0.0968**	0.005	4.8	ug/L	257	Standard
	Pb	208	2692.4	0.9	**0.1003**	0.005	4.6	ug/L	956	Standard
	U	238	1446.7	3.3	**0.2244**	0.006	2.7	ug/L	17	Standard
>	**Bi**	209	494871.3	2.5				ug/L	557080	Standard

Sample ID: L1606073201
Report Date/Time: Tuesday, June 28, 2016 21:58:21
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.6945**	18.515	173.1	mg/L	0	Standard
Mg	24	122893.2	2.3	**162.6797**	1.668	1.0	mg/L	32	Standard
K	39	163.3	4.7	**0.4080**	0.035	8.6	mg/L	30	Standard
Ca	43	160.0	24.8	**18.8525**	6.186	32.8	mg/L	48	Standard
Fe	54	210.9	15.7	**0.0529**	0.031	58.0	mg/L	159	Standard
Fe	57	311.7	8.2	**0.4207**	0.052	12.3	mg/L	195	Standard
Sc-1	45	39758.8	3.3				mg/L	39543	Standard
Cl	35	36983.1	0.7				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	75233.3	4.9				ug/L	1647	Standard
P	31	24466.4	2.9				ug/L	15231	Standard
S	34	2258.5	3.0				ug/L	1845	Standard
Sr	88	378.3	24.5				ug/L	70	Standard
C	12	350.0	10.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	120.9	45.9				mg/L	12	Standard
Ho-1	165	35.0	37.8				mg/L	12	Standard
Er	166	50.0	20.0				mg/L	20	Standard
I	127	539973.2	10.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.842	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.419	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606073201
Report Date/Time: Tuesday, June 28, 2016 21:58:21
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	89.099
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	88.833
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606073201
Report Date/Time: Tuesday, June 28, 2016 21:58:21
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606073201PS WG574571-01
Sample Date/Time: Tuesday, June 28, 2016 21:59:15
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83254.8	1.5				ug/L	81760	Standard
	Be	9	50562.6	1.1	**49.9976**	0.969	1.9	ug/L	17	Standard
	Al	27	27107676.6	2.1	**172.7073**	3.970	2.3	ug/L	1410	Standard
	Sc	45	41809.3	4.0				ug/L	39543	Standard
	Ti	47	632.7	1.1	**2.4753**	0.055	2.2	ug/L	39	Standard
	V	51	341856.0	1.3	**50.8320**	0.708	1.4	ug/L	1415	Standard
	Cr	52	363663.1	1.5	**53.1642**	1.402	2.6	ug/L	6946	Standard
	Cr	53	65238.5	1.6	**76.7756**	0.750	1.0	ug/L	328	Standard
	Mn	55	438903.0	0.5	**70.1258**	2.130	3.0	ug/L	823	Standard
	Co	59	331676.0	1.2	**48.9632**	1.267	2.6	ug/L	252	Standard
	Ni	60	91787.9	1.2	**50.4717**	0.832	1.6	ug/L	192	Standard
	Cu	65	90254.4	2.3	**49.1926**	0.475	1.0	ug/L	141	Standard
	Zn	66	107316.4	1.1	**100.7774**	1.488	1.5	ug/L	491	Standard
>	**Ge**	72	496483.6	2.5				ug/L	515087	Standard
	As	75	55410.9	1.5	**51.1805**	0.552	1.1	ug/L	20	Standard
	Se	82	5728.8	0.9	**51.5315**	1.616	3.1	ug/L	15	Standard
	Se-1	77	4873.5	1.7	**66.4041**	0.559	0.8	ug/L	48	Standard
>	**Ga**	71	86.7	34.8				mg/L	90	Standard
	Rb	85	8242.2	2.9				ug/L	23	Standard
	Y	89	419418.3	1.5				ug/L	448510	Standard
>	**Rh**	103	96.7	18.2				ug/L	15	Standard
	Mo	98	373.5	3.6	**0.1304**	0.006	4.5	ug/L	11	Standard
	Ag	107	276030.5	2.3	**44.4706**	1.418	3.2	ug/L	134	Standard
	Cd	111	97190.1	1.0	**49.1769**	0.174	0.4	mg/L	7	Standard
	Cd	114	234963.3	0.8	**48.9150**	0.797	1.6	ug/L	16	Standard
>	**In**	115	564991.8	0.9				ug/L	611117	Standard
	Sn	118	1183.4	5.3	**0.1145**	0.011	9.2	ug/L	518	Standard
	Sb	123	221298.1	1.9	**50.7268**	1.390	2.7	ug/L	127	Standard
	Ba	135	302634.3	0.9	**158.5372**	1.746	1.1	ug/L	45	Standard
	Ce	140	460.0	11.5				ug/L	298	Standard
>	**Tb**	159	913205.8	1.2				ug/L	977942	Standard
	Ho	165	30.0	16.7				ug/L	12	Standard
	Tl	203	392737.2	0.1	**50.5926**	0.297	0.6	ug/L	31	Standard
	Tl	205	346685.2	1.3	**51.4296**	0.576	1.1	ug/L	20	Standard
	Pb	206	257242.2	1.9	**51.6050**	1.169	2.3	ug/L	286	Standard
	Pb	207	223447.5	1.6	**49.6960**	0.910	1.8	ug/L	257	Standard
	Pb	208	904356.3	0.4	**51.9882**	0.250	0.5	ug/L	956	Standard
	U	238	346838.0	0.8	**52.5438**	0.601	1.1	ug/L	17	Standard
>	**Bi**	209	513215.0	0.6				ug/L	557080	Standard

Sample ID: L1606073201PS WG574571-01
Report Date/Time: Tuesday, June 28, 2016 22:01:32
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**9.7143**	16.817	173.1	mg/L	0	Standard
Mg	24	126816.9	1.1	**159.8003**	7.491	4.7	mg/L	32	Standard
K	39	205.0	11.2	**0.5135**	0.066	12.9	mg/L	30	Standard
Ca	43	170.0	5.9	**19.0779**	1.160	6.1	mg/L	48	Standard
Fe	54	195.8	12.4	**0.0303**	0.016	52.3	mg/L	159	Standard
Fe	57	350.0	26.8	**0.4863**	0.252	51.8	mg/L	195	Standard
> **Sc-1**	45	41809.3	4.0				mg/L	39543	Standard
Cl	35	38499.5	1.5				ug/L	27642	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	75812.6	2.8				ug/L	1647	Standard
P	31	25067.4	2.7				ug/L	15231	Standard
S	34	2465.2	4.5				ug/L	1845	Standard
Sr	88	373.3	2.8				ug/L	70	Standard
C	12	380.0	17.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	29.2	88.7				mg/L	12	Standard
Ho-1	165	30.0	16.7				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	574284.0	7.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.828	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.388	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606073201PS WG574571-01
Report Date/Time: Tuesday, June 28, 2016 22:01:32
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.452
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.126
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606073201PS WG574571-01
Report Date/Time: Tuesday, June 28, 2016 22:01:32
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606073202SDL WG574571-02
Sample Date/Time: Tuesday, June 28, 2016 22:02:27
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80721.2	1.7				ug/L	81760	Standard
	Be	9	38.3	19.9	**0.0293**	0.007	25.3	ug/L	17	Standard
	Al	27	5438081.5	1.8	**35.7222**	0.611	1.7	ug/L	1410	Standard
	Sc	45	40838.3	2.8				ug/L	39543	Standard
	Ti	47	147.3	1.4	**0.4611**	0.014	3.1	ug/L	39	Standard
	V	51	1818.8	6.0	**0.0702**	0.022	30.8	ug/L	1415	Standard
	Cr	52	11457.0	0.2	**0.6827**	0.037	5.5	ug/L	6946	Standard
	Cr	53	6112.9	0.7	**7.0202**	0.190	2.7	ug/L	328	Standard
	Mn	55	27400.4	0.7	**4.3193**	0.101	2.3	ug/L	823	Standard
	Co	59	1102.0	5.1	**0.1343**	0.005	3.9	ug/L	252	Standard
	Ni	60	1029.7	4.0	**0.4727**	0.014	2.9	ug/L	192	Standard
	Cu	65	552.3	3.6	**0.2164**	0.013	6.0	ug/L	141	Standard
	Zn	66	17277.2	1.2	**15.8333**	0.273	1.7	ug/L	491	Standard
>	**Ge**	72	487411.0	2.0				ug/L	515087	Standard
	As	75	241.2	19.0	**0.2666**	0.040	15.0	ug/L	20	Standard
	Se	82	96.0	8.9	**0.7616**	0.066	8.7	ug/L	15	Standard
	Se-1	77	318.7	3.3	**3.7527**	0.181	4.8	ug/L	48	Standard
>	**Ga**	71	61.7	24.8				mg/L	90	Standard
	Rb	85	1698.4	2.7				ug/L	23	Standard
	Y	89	428587.6	1.1				ug/L	448510	Standard
>	**Rh**	103	33.3	37.7				ug/L	15	Standard
	Mo	98	99.2	5.5	**0.0185**	0.002	11.0	ug/L	11	Standard
	Ag	107	280.0	31.3	**0.0265**	0.013	49.6	ug/L	134	Standard
	Cd	111	57.2	23.8	**0.0245**	0.006	26.0	mg/L	7	Standard
	Cd	114	159.7	10.5	**0.0266**	0.003	11.9	ug/L	16	Standard
>	**In**	115	596430.5	0.6				ug/L	611117	Standard
	Sn	118	631.7	19.2	**0.0076**	0.022	282.9	ug/L	518	Standard
	Sb	123	2037.7	21.9	**0.4301**	0.100	23.2	ug/L	127	Standard
	Ba	135	42595.5	1.1	**21.1150**	0.168	0.8	ug/L	45	Standard
	Ce	140	145.0	24.9				ug/L	298	Standard
>	**Tb**	159	930009.8	1.5				ug/L	977942	Standard
	Ho	165	10.0					ug/L	12	Standard
	Tl	203	287.0	3.9	**0.0311**	0.001	3.3	ug/L	31	Standard
	Tl	205	238.3	17.8	**0.0321**	0.006	20.0	ug/L	20	Standard
	Pb	206	467.7	4.1	**0.0276**	0.003	10.6	ug/L	286	Standard
	Pb	207	403.3	2.0	**0.0292**	0.001	2.3	ug/L	257	Standard
	Pb	208	1685.7	2.5	**0.0338**	0.002	5.7	ug/L	956	Standard
	U	238	344.0	11.7	**0.0476**	0.005	11.0	ug/L	17	Standard
>	**Bi**	209	528241.9	1.3				ug/L	557080	Standard

Sample ID: L1606073202SDL WG574571-02
Report Date/Time: Tuesday, June 28, 2016 22:04:44
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	25095.8	1.4	**32.3042**	0.912	2.8	mg/L	32	Standard
K	39	53.3	28.6	**0.0336**	0.053	158.1	mg/L	30	Standard
Ca	43	51.7	14.8	**2.2359**	0.907	40.5	mg/L	48	Standard
Fe	54	140.6	10.4	**-0.0136**	0.016	114.2	mg/L	159	Standard
Fe	57	253.3	13.1	**0.2033**	0.104	51.3	mg/L	195	Standard
Sc-1	45	40838.3	2.8				mg/L	39543	Standard
Cl	35	38490.2	0.9				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	17116.3	3.1				ug/L	1647	Standard
P	31	18993.6	2.2				ug/L	15231	Standard
S	34	2316.8	7.4				ug/L	1845	Standard
Sr	88	121.7	17.1				ug/L	70	Standard
C	12	150.0	13.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	5.2	126.3				mg/L	12	Standard
Ho-1	165	10.0					mg/L	12	Standard
Er	166	30.0	57.7				mg/L	20	Standard
I	127	133767.9	0.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.729	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.627	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606073202SDL WG574571-02
Report Date/Time: Tuesday, June 28, 2016 22:04:44
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.597
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.823
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606073202SDL WG574571-02
Sample Date/Time: Tuesday, June 28, 2016 22:05:38
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76053.8	2.7				ug/L	81760	Standard
	Be	9	25.0	34.6	**0.0174**	0.009	54.5	ug/L	17	Standard
	Al	27	1128796.7	0.4	**7.8615**	0.198	2.5	ug/L	1410	Standard
	Sc	45	38686.0	0.8				ug/L	39543	Standard
	Ti	47	55.3	34.5	**0.0617**	0.078	127.2	ug/L	39	Standard
	V	51	1638.9	5.5	**0.0337**	0.013	38.4	ug/L	1415	Standard
	Cr	52	8717.5	0.5	**0.2193**	0.011	4.9	ug/L	6946	Standard
	Cr	53	2070.1	6.6	**2.0621**	0.160	7.7	ug/L	328	Standard
	Mn	55	6629.8	1.0	**0.8938**	0.008	0.9	ug/L	823	Standard
	Co	59	385.0	3.7	**0.0245**	0.002	8.1	ug/L	252	Standard
	Ni	60	384.7	1.7	**0.1032**	0.003	2.7	ug/L	192	Standard
	Cu	65	339.7	2.9	**0.0913**	0.005	5.2	ug/L	141	Standard
	Zn	66	9883.2	1.3	**8.3627**	0.143	1.7	ug/L	491	Standard
>	**Ge**	72	505388.6	0.3				ug/L	515087	Standard
	As	75	-13.0	254.9	**0.0286**	0.030	104.7	ug/L	20	Standard
	Se	82	27.4	29.7	**0.1233**	0.072	58.7	ug/L	15	Standard
	Se-1	77	108.0	8.5	**0.7425**	0.129	17.3	ug/L	48	Standard
>	**Ga**	71	48.3	46.6				mg/L	90	Standard
	Rb	85	370.0	8.2				ug/L	23	Standard
	Y	89	428119.2	2.9				ug/L	448510	Standard
>	**Rh**	103	23.3	44.6				ug/L	15	Standard
	Mo	98	45.2	4.1	**-0.0015**	0.001	60.8	ug/L	11	Standard
	Ag	107	113.3	16.4	**0.0016**	0.003	172.3	ug/L	134	Standard
	Cd	111	14.3	24.6	**0.0041**	0.002	39.1	mg/L	7	Standard
	Cd	114	49.9	58.5	**0.0052**	0.006	113.8	ug/L	16	Standard
>	**In**	115	579695.7	1.7				ug/L	611117	Standard
	Sn	118	626.7	2.3	**0.0098**	0.004	44.1	ug/L	518	Standard
	Sb	123	500.2	33.4	**0.0994**	0.039	39.6	ug/L	127	Standard
	Ba	135	8786.5	0.8	**4.4621**	0.051	1.1	ug/L	45	Standard
	Ce	140	53.3	19.5				ug/L	298	Standard
>	**Tb**	159	899038.1	0.5				ug/L	977942	Standard
	Ho	165	3.3	86.6				ug/L	12	Standard
	Tl	203	124.3	3.7	**0.0110**	0.001	5.1	ug/L	31	Standard
	Tl	205	108.3	13.3	**0.0136**	0.002	15.1	ug/L	20	Standard
	Pb	206	338.3	5.2	**0.0034**	0.004	109.0	ug/L	286	Standard
	Pb	207	309.3	7.0	**0.0098**	0.005	45.9	ug/L	257	Standard
	Pb	208	1266.0	2.0	**0.0114**	0.001	11.9	ug/L	956	Standard
	U	238	68.0	9.6	**0.0072**	0.001	13.2	ug/L	17	Standard
>	**Bi**	209	520681.9	0.4				ug/L	557080	Standard

Sample ID: L1606073202SDL WG574571-02
Report Date/Time: Tuesday, June 28, 2016 22:07:55
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	5104.2	1.7	**6.8887**	0.170	2.5	mg/L	32	Standard
K	39	40.0	37.5	**-0.0032**	0.052	1630.6	mg/L	30	Standard
Ca	43	30.0	57.7	**-0.6841**	2.704	395.3	mg/L	48	Standard
Fe	54	149.1	25.4	**0.0007**	0.034	4947.2	mg/L	159	Standard
Fe	57	220.0	14.9	**0.1340**	0.108	80.4	mg/L	195	Standard
Sc-1	45	38686.0	0.8				mg/L	39543	Standard
Cl	35	39148.5	1.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	4957.5	4.0				ug/L	1647	Standard
P	31	18357.8	2.1				ug/L	15231	Standard
S	34	2318.5	4.4				ug/L	1845	Standard
Sr	88	78.3	18.4				ug/L	70	Standard
C	12	130.0	27.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	116.5				mg/L	12	Standard
Ho-1	165	3.3	86.6				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	20	Standard
I	127	32523.3	5.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		93.021	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.117	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606073202SDL WG574571-02
Report Date/Time: Tuesday, June 28, 2016 22:07:55
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.858
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 22:08:51
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74027.2	2.8				ug/L	81760	Standard
	Be	9	46885.8	2.2	**52.1458**	1.090	2.1	ug/L	17	Standard
	Al	27	7258519.9	1.3	**52.0333**	2.108	4.1	ug/L	1410	Standard
	Sc	45	37711.9	1.9				ug/L	39543	Standard
	Ti	47	24276.8	0.9	**101.7561**	0.915	0.9	ug/L	39	Standard
	V	51	338117.2	0.9	**50.5811**	0.467	0.9	ug/L	1415	Standard
	Cr	52	344759.2	1.1	**50.6515**	0.612	1.2	ug/L	6946	Standard
	Cr	53	43998.8	1.8	**51.9886**	0.950	1.8	ug/L	328	Standard
	Mn	55	319756.8	1.7	**51.3453**	0.844	1.6	ug/L	823	Standard
	Co	59	342187.7	2.1	**50.8146**	1.023	2.0	ug/L	252	Standard
	Ni	60	91463.9	0.8	**50.5986**	0.401	0.8	ug/L	192	Standard
	Cu	65	92539.7	0.2	**50.7558**	0.132	0.3	ug/L	141	Standard
	Zn	66	54475.1	1.3	**51.0616**	0.732	1.4	ug/L	491	Standard
>	**Ge**	72	493368.3	0.1				ug/L	515087	Standard
	As	75	54361.0	0.4	**50.5191**	0.195	0.4	ug/L	20	Standard
	Se	82	5570.4	0.7	**50.3948**	0.327	0.6	ug/L	15	Standard
	Se-1	77	3889.2	2.7	**53.1789**	1.513	2.8	ug/L	48	Standard
>	**Ga**	71	56.7	13.5				mg/L	90	Standard
	Rb	85	710.0	9.2				ug/L	23	Standard
	Y	89	427120.1	2.2				ug/L	448510	Standard
>	**Rh**	103	20.0	50.0				ug/L	15	Standard
	Mo	98	255476.4	1.0	**100.3761**	0.479	0.5	ug/L	11	Standard
	Ag	107	311158.3	0.6	**49.2259**	0.757	1.5	ug/L	134	Standard
	Cd	111	98620.7	1.2	**49.0052**	0.618	1.3	mg/L	7	Standard
	Cd	114	238558.2	0.5	**48.7672**	0.251	0.5	ug/L	16	Standard
>	**In**	115	575337.5	0.9				ug/L	611117	Standard
	Sn	118	277257.2	0.9	**49.7064**	0.586	1.2	ug/L	518	Standard
	Sb	123	223054.4	0.8	**50.2070**	0.812	1.6	ug/L	127	Standard
	Ba	135	94954.3	0.7	**48.8337**	0.782	1.6	ug/L	45	Standard
	Ce	140	61.7	16.9				ug/L	298	Standard
>	**Tb**	159	913449.5	0.5				ug/L	977942	Standard
	Ho	165	10.0	86.6				ug/L	12	Standard
	Tl	203	397249.4	0.6	**50.3639**	0.352	0.7	ug/L	31	Standard
	Tl	205	354959.8	0.3	**51.8245**	0.065	0.1	ug/L	20	Standard
	Pb	206	256290.8	0.6	**50.5971**	0.273	0.5	ug/L	286	Standard
	Pb	207	233188.9	1.2	**51.0418**	0.565	1.1	ug/L	257	Standard
	Pb	208	935979.9	1.1	**52.9561**	0.623	1.2	ug/L	956	Standard
	U	238	344850.7	0.5	**51.4151**	0.322	0.6	ug/L	17	Standard
>	**Bi**	209	521458.9	0.2				ug/L	557080	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 22:11:08
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3802.1	3.0	**5.2525**	0.237	4.5	mg/L	32	Standard
K	39	1311.7	9.2	**4.5102**	0.493	10.9	mg/L	30	Standard
Ca	43	78.3	7.4	**7.1225**	0.723	10.1	mg/L	48	Standard
Fe	54	5407.8	4.5	**4.9980**	0.312	6.2	mg/L	159	Standard
Fe	57	1643.4	4.4	**5.1911**	0.156	3.0	mg/L	195	Standard
> **Sc-1**	45	37711.9	1.9				mg/L	39543	Standard
Cl	35	36184.5	2.9				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1690.1	2.4				ug/L	1647	Standard
P	31	19537.6	2.2				ug/L	15231	Standard
S	34	2665.2	5.3				ug/L	1845	Standard
Sr	88	80.0	12.5				ug/L	70	Standard
C	12	116.7	9.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	9.4	109.4				mg/L	12	Standard
Ho-1	165	10.0	86.6				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	5821.1	15.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	104.292		
	Al	27	104.067		
	Sc	45			
	Ti	47	101.756		
	V	51	101.162		
	Cr	52	101.303		
	Cr	53			
	Mn	55	102.691		
	Co	59	101.629		
	Ni	60	101.197		
	Cu	65	101.512		
	Zn	66	102.123		
>	Ge	72		95.784	
	As	75	101.038		
	Se	82	100.790		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 22:11:08
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.376		
Ag	107	98.452		
Cd	111	98.010		
Cd	114			
In	115			94.145
Sn	118	99.413		
Sb	123	100.414		
Ba	135	97.667		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.728		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.912		
U	238	102.830		
Bi	209			93.606
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 22:11:08
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 22:12:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72720.8	1.4				ug/L	81760	Standard
	Be	9	31.7	9.1	**0.0261**	0.003	13.4	ug/L	17	Standard
	Al	27	3567.1	29.0	**0.0117**	0.008	67.2	ug/L	1410	Standard
	Sc	45	39132.1	1.1				ug/L	39543	Standard
	Ti	47	37.0	21.5	**-0.0116**	0.034	290.1	ug/L	39	Standard
	V	51	1125.9	7.5	**-0.0395**	0.013	33.1	ug/L	1415	Standard
	Cr	52	6280.0	4.7	**-0.1269**	0.043	33.9	ug/L	6946	Standard
	Cr	53	665.0	3.8	**0.4397**	0.027	6.1	ug/L	328	Standard
	Mn	55	716.0	7.9	**-0.0346**	0.009	26.9	ug/L	823	Standard
	Co	59	261.7	5.4	**0.0070**	0.002	26.9	ug/L	252	Standard
	Ni	60	220.7	25.5	**0.0158**	0.031	194.2	ug/L	192	Standard
	Cu	65	175.7	31.3	**0.0045**	0.030	664.0	ug/L	141	Standard
	Zn	66	494.7	12.2	**-0.3623**	0.056	15.6	ug/L	491	Standard
>	**Ge**	72	499522.9	0.5				ug/L	515087	Standard
	As	75	-22.4	199.4	**0.0197**	0.041	208.7	ug/L	20	Standard
	Se	82	18.1	44.1	**0.0430**	0.071	165.8	ug/L	15	Standard
	Se-1	77	56.7	13.4	**0.0566**	0.102	180.9	ug/L	48	Standard
>	**Ga**	71	45.0	38.5				mg/L	90	Standard
	Rb	85	31.7	45.6				ug/L	23	Standard
	Y	89	417360.5	0.9				ug/L	448510	Standard
>	**Rh**	103	6.7	114.6				ug/L	15	Standard
	Mo	98	287.6	23.9	**0.0927**	0.026	27.9	ug/L	11	Standard
	Ag	107	190.3	4.8	**0.0136**	0.002	11.9	ug/L	134	Standard
	Cd	111	25.8	62.0	**0.0098**	0.008	81.4	mg/L	7	Standard
	Cd	114	75.5	64.7	**0.0104**	0.010	96.5	ug/L	16	Standard
>	**In**	115	581386.0	1.0				ug/L	611117	Standard
	Sn	118	788.4	29.5	**0.0382**	0.041	108.2	ug/L	518	Standard
	Sb	123	553.2	30.8	**0.1105**	0.038	34.6	ug/L	127	Standard
	Ba	135	104.3	62.1	**0.0282**	0.034	119.2	ug/L	45	Standard
	Ce	140	15.0	88.2				ug/L	298	Standard
>	**Tb**	159	916886.1	2.0				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	96.0	40.0	**0.0072**	0.005	66.3	ug/L	31	Standard
	Tl	205	80.0	25.0	**0.0092**	0.003	29.7	ug/L	20	Standard
	Pb	206	283.3	0.7	**-0.0085**	0.001	14.2	ug/L	286	Standard
	Pb	207	242.3	7.5	**-0.0058**	0.004	64.9	ug/L	257	Standard
	Pb	208	1066.3	4.7	**-0.0011**	0.002	176.0	ug/L	956	Standard
	U	238	68.3	24.9	**0.0070**	0.002	33.1	ug/L	17	Standard
>	**Bi**	209	530213.7	1.5				ug/L	557080	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 22:14:19
Page 1

Approved: June 29, 2016

Na	23	5.0	100.0	**32.2313**	32.195	99.9	mg/L	0	Standard
Mg	24	43.3	46.6	**0.0012**	0.027	2331.0	mg/L	32	Standard
K	39	38.3	41.9	**-0.0103**	0.056	538.4	mg/L	30	Standard
Ca	43	25.0	20.0	**-1.5137**	0.732	48.3	mg/L	48	Standard
Fe	54	136.0	18.8	**-0.0125**	0.025	197.8	mg/L	159	Standard
Fe	57	235.0	17.0	**0.1764**	0.130	73.9	mg/L	195	Standard
Sc-1	45	39132.1	1.1				mg/L	39543	Standard
Cl	35	35003.7	1.3				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1530.1	14.2				ug/L	1647	Standard
P	31	18486.3	1.6				ug/L	15231	Standard
S	34	2496.9	3.2				ug/L	1845	Standard
Sr	88	51.7	31.1				ug/L	70	Standard
C	12	86.7	52.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	5.0				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	4170.6	14.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.978	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 22:14:19
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.135
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.177
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 22:14:19
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606073202
Sample Date/Time: Tuesday, June 28, 2016 22:15:14
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76318.4	2.0				ug/L	81760	Standard
	Be	9	40.0	69.6	**0.0330**	0.029	88.9	ug/L	17	Standard
	Al	27	23571551.0	1.4	**163.8296**	2.147	1.3	ug/L	1410	Standard
	Sc	45	39020.2	3.0				ug/L	39543	Standard
	Ti	47	595.0	5.6	**2.3771**	0.145	6.1	ug/L	39	Standard
	V	51	1578.4	25.4	**0.0346**	0.061	176.4	ug/L	1415	Standard
	Cr	52	21713.5	1.1	**2.2571**	0.032	1.4	ug/L	6946	Standard
	Cr	53	25227.7	4.6	**30.1930**	1.400	4.6	ug/L	328	Standard
	Mn	55	113835.4	1.3	**18.5078**	0.247	1.3	ug/L	823	Standard
	Co	59	3991.2	2.2	**0.5722**	0.015	2.6	ug/L	252	Standard
	Ni	60	3905.8	1.2	**2.0985**	0.020	1.0	ug/L	192	Standard
	Cu	65	1542.7	2.9	**0.7718**	0.023	3.0	ug/L	141	Standard
	Zn	66	25635.3	1.1	**24.0224**	0.322	1.3	ug/L	491	Standard
>	**Ge**	72	484802.3	0.3				ug/L	515087	Standard
	As	75	911.4	10.9	**0.9016**	0.094	10.4	ug/L	20	Standard
	Se	82	285.6	1.4	**2.5161**	0.032	1.3	ug/L	15	Standard
	Se-1	77	1182.4	4.2	**15.9563**	0.701	4.4	ug/L	48	Standard
>	**Ga**	71	88.3	32.7				mg/L	90	Standard
	Rb	85	8777.5	4.2				ug/L	23	Standard
	Y	89	401864.9	0.9				ug/L	448510	Standard
>	**Rh**	103	95.0	19.0				ug/L	15	Standard
	Mo	98	789.3	4.8	**0.3176**	0.018	5.8	ug/L	11	Standard
	Ag	107	101.3	14.3	**0.0012**	0.002	197.6	ug/L	134	Standard
	Cd	111	81.6	8.8	**0.0411**	0.003	8.4	mg/L	7	Standard
	Cd	114	236.0	13.0	**0.0475**	0.007	15.0	ug/L	16	Standard
>	**In**	115	530144.7	1.0				ug/L	611117	Standard
	Sn	118	770.0	10.1	**0.0481**	0.014	28.6	ug/L	518	Standard
	Sb	123	728.9	13.4	**0.1651**	0.022	13.6	ug/L	127	Standard
	Ba	135	185424.0	0.3	**103.5140**	0.966	0.9	ug/L	45	Standard
	Ce	140	496.7	18.3				ug/L	298	Standard
>	**Tb**	159	867434.9	1.9				ug/L	977942	Standard
	Ho	165	20.0	0.0				ug/L	12	Standard
	Tl	203	239.3	4.0	**0.0278**	0.001	4.3	ug/L	31	Standard
	Tl	205	225.0	20.4	**0.0330**	0.007	22.5	ug/L	20	Standard
	Pb	206	582.0	1.5	**0.0598**	0.001	1.4	ug/L	286	Standard
	Pb	207	480.3	3.9	**0.0549**	0.005	9.4	ug/L	257	Standard
	Pb	208	1935.7	1.6	**0.0572**	0.003	4.8	ug/L	956	Standard
	U	238	1057.0	6.3	**0.1661**	0.010	5.7	ug/L	17	Standard
>	**Bi**	209	486031.1	0.8				ug/L	557080	Standard

Sample ID: L1606073202
Report Date/Time: Tuesday, June 28, 2016 22:17:31
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	123145.1	1.2	**166.1283**	3.309	2.0	mg/L	32	Standard
K	39	193.3	27.9	**0.5225**	0.193	37.0	mg/L	30	Standard
Ca	43	155.0	19.6	**18.5842**	5.220	28.1	mg/L	48	Standard
Fe	54	201.4	15.9	**0.0482**	0.034	70.8	mg/L	159	Standard
Fe	57	301.7	7.8	**0.4095**	0.108	26.4	mg/L	195	Standard
> **Sc-1**	45	39020.2	3.0				mg/L	39543	Standard
Cl	35	36882.8	1.2				ug/L	27642	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	66321.6	2.9				ug/L	1647	Standard
P	31	23950.6	0.8				ug/L	15231	Standard
S	34	2285.2	3.2				ug/L	1845	Standard
Sr	88	326.7	6.4				ug/L	70	Standard
C	12	383.3	11.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	24.1	87.6				mg/L	12	Standard
Ho-1	165	20.0	0.0				mg/L	12	Standard
Er	166	53.3	28.6				mg/L	20	Standard
I	127	490270.4	8.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.344	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.121	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606073202
Report Date/Time: Tuesday, June 28, 2016 22:17:31
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.750
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.246
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606073202
Report Date/Time: Tuesday, June 28, 2016 22:17:31
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606076201
Sample Date/Time: Tuesday, June 28, 2016 22:18:25
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74725.5	1.6				ug/L	81760	Standard
	Be	9	33.3	56.8	**0.0272**	0.022	79.2	ug/L	17	Standard
	Al	27	1272215.4	1.6	**9.0180**	0.230	2.5	ug/L	1410	Standard
	Sc	45	40079.6	0.9				ug/L	39543	Standard
	Ti	47	73.0	21.4	**0.1312**	0.065	49.6	ug/L	39	Standard
	V	51	1912.1	11.7	**0.0708**	0.033	46.3	ug/L	1415	Standard
	Cr	52	9243.8	1.7	**0.2820**	0.015	5.4	ug/L	6946	Standard
	Cr	53	1550.1	16.6	**1.4381**	0.284	19.7	ug/L	328	Standard
	Mn	55	4050.6	51.7	**0.4818**	0.327	67.8	ug/L	823	Standard
	Co	59	576.0	42.1	**0.0513**	0.035	68.0	ug/L	252	Standard
	Ni	60	659.3	6.6	**0.2481**	0.023	9.5	ug/L	192	Standard
	Cu	65	493.7	5.0	**0.1712**	0.013	7.5	ug/L	141	Standard
	Zn	66	2294.8	5.3	**1.2839**	0.114	8.9	ug/L	491	Standard
>	**Ge**	72	510757.4	0.7				ug/L	515087	Standard
	As	75	-15.4	127.0	**0.0265**	0.018	66.6	ug/L	20	Standard
	Se	82	23.9	38.0	**0.0895**	0.079	87.8	ug/L	15	Standard
	Se-1	77	93.7	16.1	**0.5342**	0.193	36.2	ug/L	48	Standard
>	**Ga**	71	58.3	17.8				mg/L	90	Standard
	Rb	85	1476.7	6.6				ug/L	23	Standard
	Y	89	432514.2	1.7				ug/L	448510	Standard
>	**Rh**	103	26.7	39.0				ug/L	15	Standard
	Mo	98	146.0	48.2	**0.0371**	0.027	72.5	ug/L	11	Standard
	Ag	107	112.7	13.4	**0.0013**	0.002	181.1	ug/L	134	Standard
	Cd	111	43.2	14.9	**0.0182**	0.003	18.1	mg/L	7	Standard
	Cd	114	109.3	34.7	**0.0170**	0.007	43.8	ug/L	16	Standard
>	**In**	115	586396.8	0.9				ug/L	611117	Standard
	Sn	118	771.7	15.6	**0.0341**	0.022	63.3	ug/L	518	Standard
	Sb	123	236.4	15.7	**0.0394**	0.008	21.0	ug/L	127	Standard
	Ba	135	3173.0	2.9	**1.5769**	0.056	3.5	ug/L	45	Standard
	Ce	140	2270.2	3.3				ug/L	298	Standard
>	**Tb**	159	916697.6	0.7				ug/L	977942	Standard
	Ho	165	490.0	12.4				ug/L	12	Standard
	Tl	203	130.7	10.3	**0.0114**	0.002	13.6	ug/L	31	Standard
	Tl	205	215.0	77.4	**0.0282**	0.023	82.9	ug/L	20	Standard
	Pb	206	395.3	3.6	**0.0126**	0.003	22.5	ug/L	286	Standard
	Pb	207	368.7	19.2	**0.0207**	0.015	70.3	ug/L	257	Standard
	Pb	208	1630.7	27.1	**0.0295**	0.024	80.4	ug/L	956	Standard
	U	238	158.7	69.5	**0.0200**	0.016	79.0	ug/L	17	Standard
>	**Bi**	209	534609.1	0.7				ug/L	557080	Standard

Sample ID: L1606076201
Report Date/Time: Tuesday, June 28, 2016 22:20:42
Page 1

Approved: June 29, 2016

Na	23	5.0	100.0	**31.5470**	31.355	99.4	mg/L	0	Standard
Mg	24	598.3	11.5	**0.7287**	0.091	12.5	mg/L	32	Standard
K	39	176.7	18.2	**0.4475**	0.107	24.0	mg/L	30	Standard
Ca	43	93.3	48.6	**8.6233**	6.782	78.6	mg/L	48	Standard
Fe	54	114.2	15.8	**-0.0351**	0.016	46.3	mg/L	159	Standard
Fe	57	271.7	7.4	**0.2806**	0.074	26.3	mg/L	195	Standard
> **Sc-1**	45	40079.6	0.9				mg/L	39543	Standard
Cl	35	37059.3	1.9				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	3193.7	9.3				ug/L	1647	Standard
P	31	19133.7	1.0				ug/L	15231	Standard
S	34	2435.2	3.0				ug/L	1845	Standard
Sr	88	116.7	19.8				ug/L	70	Standard
C	12	110.0	24.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	699.7	7.7				mg/L	12	Standard
Ho-1	165	490.0	12.4				mg/L	12	Standard
Er	166	563.3	4.5				mg/L	20	Standard
I	127	24296.3	37.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.396	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.159	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606076201
Report Date/Time: Tuesday, June 28, 2016 22:20:42
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.966
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606138001
Sample Date/Time: Tuesday, June 28, 2016 22:21:37
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79317.1	2.1				ug/L	81760	Standard
	Be	9	923.4	3.6	**0.9491**	0.046	4.8	ug/L	17	Standard
	Al	27	22322355.7	1.2	**149.2842**	1.816	1.2	ug/L	1410	Standard
	Sc	45	50147.9	2.6				ug/L	39543	Standard
	Ti	47	26223.7	0.7	**107.9697**	0.846	0.8	ug/L	39	Standard
	V	51	127306.3	1.5	**18.5751**	0.291	1.6	ug/L	1415	Standard
	Cr	52	100654.9	1.1	**13.7705**	0.145	1.1	ug/L	6946	Standard
	Cr	53	12865.5	4.5	**14.6884**	0.707	4.8	ug/L	328	Standard
	Mn	55	4304305.9	0.4	**680.6871**	4.381	0.6	ug/L	823	Standard
	Co	59	49359.3	0.1	**7.1725**	0.024	0.3	ug/L	252	Standard
	Ni	60	30538.1	1.5	**16.5228**	0.280	1.7	ug/L	192	Standard
	Cu	65	24616.6	0.6	**13.1942**	0.101	0.8	ug/L	141	Standard
	Zn	66	126791.0	1.1	**117.7932**	1.321	1.1	ug/L	491	Standard
>	**Ge**	72	502314.8	0.3				ug/L	515087	Standard
	As	75	6358.7	2.6	**5.8397**	0.152	2.6	ug/L	20	Standard
	Se	82	52.0	15.4	**0.3436**	0.072	20.9	ug/L	15	Standard
	Se-1	77	111.0	6.5	**0.7919**	0.097	12.2	ug/L	48	Standard
>	**Ga**	71	15155.9	0.2				mg/L	90	Standard
	Rb	85	244761.5	1.6				ug/L	23	Standard
	Y	89	581808.2	2.1				ug/L	448510	Standard
>	**Rh**	103	81.7	28.3				ug/L	15	Standard
	Mo	98	7400.1	1.4	**2.8571**	0.099	3.5	ug/L	11	Standard
	Ag	107	359.7	8.1	**0.0401**	0.005	12.7	ug/L	134	Standard
	Cd	111	226.0	4.7	**0.1082**	0.006	6.0	mg/L	7	Standard
	Cd	114	572.5	10.7	**0.1110**	0.014	12.9	ug/L	16	Standard
>	**In**	115	581977.2	2.1				ug/L	611117	Standard
	Sn	118	1150.0	8.4	**0.1021**	0.013	12.6	ug/L	518	Standard
	Sb	123	1041.4	3.0	**0.2191**	0.011	5.1	ug/L	127	Standard
	Ba	135	264934.9	0.4	**134.7601**	2.267	1.7	ug/L	45	Standard
	Ce	140	872470.7	0.6				ug/L	298	Standard
>	**Tb**	159	944063.2	1.7				ug/L	977942	Standard
	Ho	165	13182.4	3.3				ug/L	12	Standard
	Tl	203	1500.7	3.5	**0.1808**	0.008	4.2	ug/L	31	Standard
	Tl	205	1268.4	3.4	**0.1783**	0.007	4.2	ug/L	20	Standard
	Pb	206	85066.5	1.3	**16.3322**	0.328	2.0	ug/L	286	Standard
	Pb	207	70090.8	1.2	**14.9184**	0.287	1.9	ug/L	257	Standard
	Pb	208	293052.1	0.7	**16.1237**	0.113	0.7	ug/L	956	Standard
	U	238	6791.5	1.5	**0.9844**	0.021	2.1	ug/L	17	Standard
>	**Bi**	209	534845.3	0.8				ug/L	557080	Standard

Sample ID: L1606138001
Report Date/Time: Tuesday, June 28, 2016 22:23:54
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	2491.9	2.3	**2.5590**	0.057	2.2	mg/L	32	Standard
K	39	860.0	5.6	**2.1528**	0.183	8.5	mg/L	30	Standard
Ca	43	481.7	3.2	**52.3892**	3.048	5.8	mg/L	48	Standard
Fe	54	14060.9	4.3	**9.8944**	0.202	2.0	mg/L	159	Standard
Fe	57	4057.2	4.0	**10.1835**	0.599	5.9	mg/L	195	Standard
> **Sc-1**	45	50147.9	2.6				mg/L	39543	Standard
Cl	35	34061.6	1.3				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	3443.7	4.1				ug/L	1647	Standard
P	31	33871.2	1.5				ug/L	15231	Standard
S	34	2461.9	2.1				ug/L	1845	Standard
Sr	88	305.0	8.2				ug/L	70	Standard
C	12	206.7	29.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	0	Standard
Dy	164	22121.1	1.8				mg/L	12	Standard
Ho-1	165	13182.4	3.3				mg/L	12	Standard
Er	166	12021.4	0.9				mg/L	20	Standard
I	127	158658.4	11.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.012	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.520	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138001
Report Date/Time: Tuesday, June 28, 2016 22:23:54
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.232
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.009
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 29, 2016

Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606138002
Sample Date/Time: Tuesday, June 28, 2016 22:24:48
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80508.4	1.6				ug/L	81760	Standard
	Be	9	865.0	8.5	**0.8749**	0.075	8.6	ug/L	17	Standard
	Al	27	22868958.8	1.7	**150.6704**	2.885	1.9	ug/L	1410	Standard
	Sc	45	49400.4	2.8				ug/L	39543	Standard
	Ti	47	23164.7	1.4	**96.5938**	1.528	1.6	ug/L	39	Standard
	V	51	124883.8	1.8	**18.4559**	0.304	1.6	ug/L	1415	Standard
	Cr	52	103466.8	1.3	**14.3825**	0.239	1.7	ug/L	6946	Standard
	Cr	53	12758.7	1.5	**14.7559**	0.244	1.7	ug/L	328	Standard
	Mn	55	4407919.2	0.3	**706.0993**	3.755	0.5	ug/L	823	Standard
	Co	59	51228.1	1.3	**7.5421**	0.111	1.5	ug/L	252	Standard
	Ni	60	30969.0	1.2	**16.9756**	0.235	1.4	ug/L	192	Standard
	Cu	65	25034.7	0.7	**13.5947**	0.118	0.9	ug/L	141	Standard
	Zn	66	152662.0	1.2	**143.8470**	1.906	1.3	ug/L	491	Standard
>	**Ge**	72	495895.8	0.2				ug/L	515087	Standard
	As	75	6401.6	1.0	**5.9544**	0.051	0.9	ug/L	20	Standard
	Se	82	65.6	3.6	**0.4728**	0.020	4.3	ug/L	15	Standard
	Se-1	77	120.3	12.9	**0.9403**	0.215	22.9	ug/L	48	Standard
>	**Ga**	71	15282.7	1.5				mg/L	90	Standard
	Rb	85	248664.6	2.3				ug/L	23	Standard
	Y	89	598252.6	1.6				ug/L	448510	Standard
>	**Rh**	103	61.7	4.7				ug/L	15	Standard
	Mo	98	8173.4	1.7	**3.0442**	0.032	1.1	ug/L	11	Standard
	Ag	107	334.0	5.8	**0.0342**	0.003	8.9	ug/L	134	Standard
	Cd	111	175.2	4.5	**0.0802**	0.004	5.0	mg/L	7	Standard
	Cd	114	424.7	8.5	**0.0779**	0.007	8.4	ug/L	16	Standard
>	**In**	115	603234.5	0.7				ug/L	611117	Standard
	Sn	118	1006.7	2.2	**0.0706**	0.004	6.0	ug/L	518	Standard
	Sb	123	981.2	4.8	**0.1979**	0.011	5.8	ug/L	127	Standard
	Ba	135	265403.3	0.1	**130.2141**	0.915	0.7	ug/L	45	Standard
	Ce	140	904460.6	1.2				ug/L	298	Standard
>	**Tb**	159	953156.2	1.3				ug/L	977942	Standard
	Ho	165	13287.5	2.7				ug/L	12	Standard
	Tl	203	1338.1	1.2	**0.1623**	0.004	2.2	ug/L	31	Standard
	Tl	205	1380.1	21.0	**0.1966**	0.045	23.0	ug/L	20	Standard
	Pb	206	85143.9	1.2	**16.5139**	0.424	2.6	ug/L	286	Standard
	Pb	207	70337.2	0.8	**15.1235**	0.335	2.2	ug/L	257	Standard
	Pb	208	299122.5	0.5	**16.6275**	0.345	2.1	ug/L	956	Standard
	U	238	7037.6	3.1	**1.0308**	0.048	4.7	ug/L	17	Standard
>	**Bi**	209	529543.6	1.6				ug/L	557080	Standard

Sample ID: L1606138002
Report Date/Time: Tuesday, June 28, 2016 22:27:05
Page 1

Approved: June 29, 2016

Na	23	5.0	0.0	**25.7128**	0.720	2.8	mg/L	0	Standard
Mg	24	2751.9	1.6	**2.8760**	0.054	1.9	mg/L	32	Standard
K	39	820.0	12.4	**2.0772**	0.274	13.2	mg/L	30	Standard
Ca	43	460.0	15.1	**50.7618**	10.089	19.9	mg/L	48	Standard
Fe	54	14800.2	1.5	**10.5924**	0.445	4.2	mg/L	159	Standard
Fe	57	4213.9	2.7	**10.7740**	0.623	5.8	mg/L	195	Standard
Sc-1	45	49400.4	2.8				mg/L	39543	Standard
Cl	35	34900.8	0.4				ug/L	27642	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	3303.7	3.6				ug/L	1647	Standard
P	31	33101.1	2.4				ug/L	15231	Standard
S	34	2478.5	3.3				ug/L	1845	Standard
Sr	88	288.3	13.9				ug/L	70	Standard
C	12	206.7	17.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	65.8				mg/L	0	Standard
Dy	164	23538.0	3.9				mg/L	12	Standard
Ho-1	165	13287.5	2.7				mg/L	12	Standard
Er	166	12271.6	4.5				mg/L	20	Standard
I	127	174817.7	8.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.469	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.274	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606138002
Report Date/Time: Tuesday, June 28, 2016 22:27:05
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.710
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.057
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606138002
Report Date/Time: Tuesday, June 28, 2016 22:27:05
Page 3

Approved: June 29, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606138106
Sample Date/Time: Tuesday, June 28, 2016 22:28:00
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75884.6	2.0				ug/L	81760	Standard
	Be	9	26.7	10.8	**0.0192**	0.003	17.5	ug/L	17	Standard
	Al	27	26057.5	7.4	**0.1676**	0.010	6.0	ug/L	1410	Standard
	Sc	45	39473.0	0.8				ug/L	39543	Standard
	Ti	47	39.3	21.6	**-0.0051**	0.035	681.9	ug/L	39	Standard
	V	51	1622.1	7.1	**0.0295**	0.017	56.8	ug/L	1415	Standard
	Cr	52	8616.4	0.2	**0.1952**	0.003	1.5	ug/L	6946	Standard
	Cr	53	775.0	5.7	**0.5518**	0.051	9.2	ug/L	328	Standard
	Mn	55	5073.2	5.2	**0.6432**	0.042	6.5	ug/L	823	Standard
	Co	59	305.3	2.9	**0.0126**	0.001	10.1	ug/L	252	Standard
	Ni	60	336.7	8.9	**0.0759**	0.016	21.2	ug/L	192	Standard
	Cu	65	1953.8	0.6	**0.9495**	0.006	0.6	ug/L	141	Standard
	Zn	66	2327.2	0.6	**1.3204**	0.013	1.0	ug/L	491	Standard
>	**Ge**	72	509122.8	0.0				ug/L	515087	Standard
	As	75	-29.7	15.9	**0.0136**	0.004	31.1	ug/L	20	Standard
	Se	82	19.1	15.2	**0.0489**	0.026	52.3	ug/L	15	Standard
	Se-1	77	54.3	12.9	**0.0108**	0.094	874.4	ug/L	48	Standard
>	**Ga**	71	61.7	23.4				mg/L	90	Standard
	Rb	85	193.3	9.8				ug/L	23	Standard
	Y	89	438080.9	2.7				ug/L	448510	Standard
>	**Rh**	103	13.3	94.4				ug/L	15	Standard
	Mo	98	1348.1	2.9	**0.4917**	0.018	3.6	ug/L	11	Standard
	Ag	107	96.0	6.3	**-0.0016**	0.001	59.2	ug/L	134	Standard
	Cd	111	29.0	10.6	**0.0110**	0.001	13.2	mg/L	7	Standard
	Cd	114	62.4	58.3	**0.0074**	0.007	97.2	ug/L	16	Standard
>	**In**	115	596825.6	0.5				ug/L	611117	Standard
	Sn	118	1153.4	11.3	**0.0978**	0.023	23.4	ug/L	518	Standard
	Sb	123	161.5	18.7	**0.0222**	0.007	29.7	ug/L	127	Standard
	Ba	135	505.0	6.7	**0.2253**	0.016	7.0	ug/L	45	Standard
	Ce	140	233.3	21.5				ug/L	298	Standard
>	**Tb**	159	918727.2	0.8				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	77.0	15.3	**0.0048**	0.001	30.3	ug/L	31	Standard
	Tl	205	70.0	7.1	**0.0078**	0.001	10.7	ug/L	20	Standard
	Pb	206	353.0	8.2	**0.0052**	0.006	124.2	ug/L	286	Standard
	Pb	207	316.0	5.0	**0.0102**	0.004	41.5	ug/L	257	Standard
	Pb	208	1279.0	2.9	**0.0109**	0.002	20.1	ug/L	956	Standard
	U	238	66.0	9.1	**0.0067**	0.001	13.4	ug/L	17	Standard
>	**Bi**	209	529518.6	1.3				ug/L	557080	Standard

Sample ID: L1606138106
Report Date/Time: Tuesday, June 28, 2016 22:30:17
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.6931**	18.512	173.1	mg/L	0	Standard
Mg	24	105.0	31.2	**0.0830**	0.044	52.9	mg/L	32	Standard
K	39	31.7	9.1	**-0.0342**	0.011	31.1	mg/L	30	Standard
Ca	43	30.0	66.7	**-0.7662**	3.081	402.2	mg/L	48	Standard
Fe	54	132.0	13.9	**-0.0174**	0.016	93.3	mg/L	159	Standard
Fe	57	243.3	16.5	**0.1990**	0.142	71.4	mg/L	195	Standard
Sc-1	45	39473.0	0.8				mg/L	39543	Standard
Cl	35	35269.0	1.4				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	2306.8	8.4				ug/L	1647	Standard
P	31	16594.1	0.5				ug/L	15231	Standard
S	34	2131.8	6.4				ug/L	1845	Standard
Sr	88	88.3	36.8				ug/L	70	Standard
C	12	163.3	23.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	9.0	110.6				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	20.0	0.0				mg/L	20	Standard
I	127	8462.7	47.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.842	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606138106
Report Date/Time: Tuesday, June 28, 2016 22:30:17
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.661
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.052
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139301
Sample Date/Time: Tuesday, June 28, 2016 22:31:11
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75653.4	0.9				ug/L	81760	Standard
	Be	9	36.7	15.7	**0.0301**	0.006	19.8	ug/L	17	Standard
	Al	27	730309.3	1.1	**5.1065**	0.100	1.9	ug/L	1410	Standard
	Sc	45	40455.6	1.8				ug/L	39543	Standard
	Ti	47	3049.6	0.8	**12.0214**	0.208	1.7	ug/L	39	Standard
	V	51	20044.5	0.4	**2.6590**	0.030	1.1	ug/L	1415	Standard
	Cr	52	14783.9	1.2	**1.0533**	0.031	2.9	ug/L	6946	Standard
	Cr	53	1555.1	3.4	**1.4185**	0.043	3.0	ug/L	328	Standard
	Mn	55	57374.1	1.8	**8.6446**	0.070	0.8	ug/L	823	Standard
	Co	59	1706.1	0.5	**0.2099**	0.002	1.1	ug/L	252	Standard
	Ni	60	1958.1	2.2	**0.9282**	0.028	3.1	ug/L	192	Standard
	Cu	65	11994.7	1.9	**6.1812**	0.063	1.0	ug/L	141	Standard
	Zn	66	20161.1	0.6	**17.4500**	0.168	1.0	ug/L	491	Standard
>	**Ge**	72	518413.1	1.4				ug/L	515087	Standard
	As	75	157.8	25.1	**0.1801**	0.037	20.6	ug/L	20	Standard
	Se	82	23.1	48.8	**0.0801**	0.098	121.9	ug/L	15	Standard
	Se-1	77	63.3	7.3	**0.1169**	0.069	59.2	ug/L	48	Standard
>	**Ga**	71	505.0	4.5				mg/L	90	Standard
	Rb	85	7842.0	2.0				ug/L	23	Standard
	Y	89	431479.5	0.9				ug/L	448510	Standard
>	**Rh**	103	15.0	100.0				ug/L	15	Standard
	Mo	98	468.3	2.4	**0.1592**	0.005	3.4	ug/L	11	Standard
	Ag	107	177.3	7.3	**0.0110**	0.002	18.6	ug/L	134	Standard
	Cd	111	203.8	5.3	**0.0952**	0.005	5.7	mg/L	7	Standard
	Cd	114	524.4	13.4	**0.0989**	0.013	13.5	ug/L	16	Standard
>	**In**	115	593880.8	0.6				ug/L	611117	Standard
	Sn	118	2320.2	4.6	**0.3018**	0.016	5.3	ug/L	518	Standard
	Sb	123	1520.6	3.7	**0.3188**	0.011	3.4	ug/L	127	Standard
	Ba	135	21231.5	1.4	**10.5571**	0.086	0.8	ug/L	45	Standard
	Ce	140	21453.5	1.1				ug/L	298	Standard
>	**Tb**	159	941666.6	1.6				ug/L	977942	Standard
	Ho	165	511.7	11.3				ug/L	12	Standard
	Tl	203	106.0	9.9	**0.0082**	0.001	16.0	ug/L	31	Standard
	Tl	205	85.0	31.1	**0.0097**	0.004	38.6	ug/L	20	Standard
	Pb	206	17358.9	1.4	**3.2466**	0.044	1.3	ug/L	286	Standard
	Pb	207	14395.2	1.0	**2.9852**	0.035	1.2	ug/L	257	Standard
	Pb	208	59327.6	0.5	**3.1814**	0.019	0.6	ug/L	956	Standard
	U	238	205.3	8.1	**0.0266**	0.002	9.0	ug/L	17	Standard
>	**Bi**	209	540531.5	0.2				ug/L	557080	Standard

Sample ID: L1606139301
Report Date/Time: Tuesday, June 28, 2016 22:33:28
Page 1

Approved: June 29, 2016

Na	23	3.3	173.2	**21.0062**	36.375	173.2	mg/L	0	Standard
Mg	24	250.0	13.1	**0.2677**	0.037	13.9	mg/L	32	Standard
K	39	110.0	28.4	**0.2220**	0.104	47.1	mg/L	30	Standard
Ca	43	51.7	20.1	**2.3448**	1.674	71.4	mg/L	48	Standard
Fe	54	595.3	12.6	**0.3888**	0.057	14.6	mg/L	159	Standard
Fe	57	388.3	11.5	**0.6585**	0.168	25.5	mg/L	195	Standard
> **Sc-1**	45	40455.6	1.8				mg/L	39543	Standard
Cl	35	34669.0	0.4				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	3693.8	7.2				ug/L	1647	Standard
P	31	17358.3	1.4				ug/L	15231	Standard
S	34	2180.2	7.0				ug/L	1845	Standard
Sr	88	80.0	38.0				ug/L	70	Standard
C	12	186.7	21.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	0	Standard
Dy	164	723.1	8.6				mg/L	12	Standard
Ho-1	165	511.7	11.3				mg/L	12	Standard
Er	166	493.3	12.2				mg/L	20	Standard
I	127	46309.3	8.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.531	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.646	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606139301
Report Date/Time: Tuesday, June 28, 2016 22:33:28
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.180
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.029
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139302
Sample Date/Time: Tuesday, June 28, 2016 22:34:23
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76487.6	0.6				ug/L	81760	Standard
	Be	9	26.7	57.3	**0.0190**	0.016	86.6	ug/L	17	Standard
	Al	27	422387.9	1.8	**2.9148**	0.060	2.0	ug/L	1410	Standard
	Sc	45	40846.7	1.8				ug/L	39543	Standard
	Ti	47	1809.8	2.0	**7.1474**	0.208	2.9	ug/L	39	Standard
	V	51	13250.7	0.8	**1.7088**	0.032	1.8	ug/L	1415	Standard
	Cr	52	14384.8	1.8	**1.0188**	0.008	0.8	ug/L	6946	Standard
	Cr	53	1510.1	5.3	**1.3859**	0.061	4.4	ug/L	328	Standard
	Mn	55	44577.2	1.1	**6.7600**	0.108	1.6	ug/L	823	Standard
	Co	59	1155.0	3.6	**0.1339**	0.008	5.8	ug/L	252	Standard
	Ni	60	2034.1	3.4	**0.9799**	0.027	2.8	ug/L	192	Standard
	Cu	65	13331.2	1.6	**6.9601**	0.242	3.5	ug/L	141	Standard
	Zn	66	18863.7	1.1	**16.4635**	0.229	1.4	ug/L	491	Standard
>	**Ge**	72	512762.7	2.0				ug/L	515087	Standard
	As	75	120.3	20.8	**0.1481**	0.025	16.6	ug/L	20	Standard
	Se	82	22.7	50.1	**0.0800**	0.103	128.5	ug/L	15	Standard
	Se-1	77	66.7	3.8	**0.1706**	0.046	27.2	ug/L	48	Standard
>	**Ga**	71	313.3	7.5				mg/L	90	Standard
	Rb	85	9062.7	6.6				ug/L	23	Standard
	Y	89	438095.5	1.1				ug/L	448510	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	749.7	5.2	**0.2622**	0.015	5.9	ug/L	11	Standard
	Ag	107	250.0	4.9	**0.0215**	0.002	9.3	ug/L	134	Standard
	Cd	111	268.7	5.4	**0.1246**	0.007	5.7	mg/L	7	Standard
	Cd	114	686.3	8.9	**0.1290**	0.012	9.4	ug/L	16	Standard
>	**In**	115	602735.5	0.4				ug/L	611117	Standard
	Sn	118	2001.8	9.6	**0.2412**	0.032	13.1	ug/L	518	Standard
	Sb	123	1551.7	1.3	**0.3206**	0.005	1.5	ug/L	127	Standard
	Ba	135	10171.4	0.7	**4.9702**	0.026	0.5	ug/L	45	Standard
	Ce	140	10203.4	3.4				ug/L	298	Standard
>	**Tb**	159	943711.5	1.3				ug/L	977942	Standard
	Ho	165	201.7	2.9				ug/L	12	Standard
	Tl	203	136.7	14.9	**0.0117**	0.003	21.7	ug/L	31	Standard
	Tl	205	126.7	4.6	**0.0153**	0.001	5.0	ug/L	20	Standard
	Pb	206	13666.8	0.5	**2.5119**	0.014	0.6	ug/L	286	Standard
	Pb	207	11351.3	1.7	**2.3133**	0.023	1.0	ug/L	257	Standard
	Pb	208	47777.6	0.4	**2.5197**	0.028	1.1	ug/L	956	Standard
	U	238	179.7	5.5	**0.0226**	0.001	5.2	ug/L	17	Standard
>	**Bi**	209	546981.3	0.8				ug/L	557080	Standard

Sample ID: L1606139302
Report Date/Time: Tuesday, June 28, 2016 22:36:40
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	296.7	10.2	**0.3250**	0.036	11.0	mg/L	32	Standard
K	39	131.7	25.3	**0.2905**	0.116	40.0	mg/L	30	Standard
Ca	43	28.3	44.4	**-1.1569**	1.919	165.9	mg/L	48	Standard
Fe	54	412.0	10.8	**0.2238**	0.038	16.8	mg/L	159	Standard
Fe	57	300.0	5.8	**0.3560**	0.058	16.2	mg/L	195	Standard
Sc-1	45	40846.7	1.8				mg/L	39543	Standard
Cl	35	35351.2	2.0				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2080.1	6.1				ug/L	1647	Standard
P	31	17501.8	0.9				ug/L	15231	Standard
S	34	2256.8	4.2				ug/L	1845	Standard
Sr	88	83.3	24.2				ug/L	70	Standard
C	12	216.7	41.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	66.7				mg/L	0	Standard
Dy	164	374.4	8.4				mg/L	12	Standard
Ho-1	165	201.7	2.9				mg/L	12	Standard
Er	166	186.7	17.2				mg/L	20	Standard
I	127	9588.0	8.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		93.551	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.549	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606139302
Report Date/Time: Tuesday, June 28, 2016 22:36:40
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.629
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.187
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139303
Sample Date/Time: Tuesday, June 28, 2016 22:37:34
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75224.7	2.8				ug/L	81760	Standard
	Be	9	26.7	47.2	**0.0195**	0.014	72.7	ug/L	17	Standard
	Al	27	335427.7	1.4	**2.3514**	0.039	1.7	ug/L	1410	Standard
	Sc	45	40873.4	3.2				ug/L	39543	Standard
	Ti	47	1306.7	3.3	**5.2014**	0.227	4.4	ug/L	39	Standard
	V	51	16739.3	1.3	**2.2527**	0.061	2.7	ug/L	1415	Standard
	Cr	52	12212.3	0.6	**0.7342**	0.019	2.6	ug/L	6946	Standard
	Cr	53	1208.4	9.2	**1.0637**	0.123	11.6	ug/L	328	Standard
	Mn	55	30356.4	1.8	**4.6331**	0.125	2.7	ug/L	823	Standard
	Co	59	971.0	0.7	**0.1098**	0.003	2.3	ug/L	252	Standard
	Ni	60	1423.4	2.9	**0.6666**	0.013	2.0	ug/L	192	Standard
	Cu	65	8494.4	2.1	**4.4744**	0.140	3.1	ug/L	141	Standard
	Zn	66	12099.5	0.6	**10.4446**	0.200	1.9	ug/L	491	Standard
>	**Ge**	72	504506.4	1.3				ug/L	515087	Standard
	As	75	95.4	18.1	**0.1269**	0.016	12.6	ug/L	20	Standard
	Se	82	22.1	16.3	**0.0773**	0.034	44.4	ug/L	15	Standard
	Se-1	77	59.3	9.3	**0.0847**	0.065	76.5	ug/L	48	Standard
>	**Ga**	71	286.7	13.3				mg/L	90	Standard
	Rb	85	4860.8	3.1				ug/L	23	Standard
	Y	89	447487.9	1.5				ug/L	448510	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	335.7	2.2	**0.1056**	0.003	3.1	ug/L	11	Standard
	Ag	107	149.3	7.8	**0.0061**	0.002	27.6	ug/L	134	Standard
	Cd	111	92.8	5.9	**0.0407**	0.003	6.7	mg/L	7	Standard
	Cd	114	275.4	18.0	**0.0483**	0.009	19.4	ug/L	16	Standard
>	**In**	115	608945.1	0.4				ug/L	611117	Standard
	Sn	118	2160.2	6.9	**0.2646**	0.024	9.0	ug/L	518	Standard
	Sb	123	1475.9	3.1	**0.3011**	0.011	3.5	ug/L	127	Standard
	Ba	135	7298.8	1.0	**3.5230**	0.049	1.4	ug/L	45	Standard
	Ce	140	7186.7	3.0				ug/L	298	Standard
>	**Tb**	159	941207.0	0.6				ug/L	977942	Standard
	Ho	165	175.0	29.8				ug/L	12	Standard
	Tl	203	127.3	10.7	**0.0108**	0.002	16.0	ug/L	31	Standard
	Tl	205	91.7	22.0	**0.0106**	0.003	26.7	ug/L	20	Standard
	Pb	206	10382.9	0.6	**1.9175**	0.012	0.6	ug/L	286	Standard
	Pb	207	8724.8	0.9	**1.7876**	0.028	1.6	ug/L	257	Standard
	Pb	208	36599.7	1.1	**1.9407**	0.035	1.8	ug/L	956	Standard
	U	238	138.7	9.6	**0.0170**	0.002	11.7	ug/L	17	Standard
>	**Bi**	209	540229.2	0.6				ug/L	557080	Standard

Sample ID: L1606139303
Report Date/Time: Tuesday, June 28, 2016 22:39:51
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	201.7	23.0	**0.2027**	0.061	30.0	mg/L	32	Standard
K	39	85.0	15.6	**0.1365**	0.043	31.8	mg/L	30	Standard
Ca	43	46.7	34.4	**1.4659**	2.107	143.8	mg/L	48	Standard
Fe	54	348.6	7.5	**0.1680**	0.018	11.0	mg/L	159	Standard
Fe	57	325.0	9.4	**0.4364**	0.086	19.7	mg/L	195	Standard
Sc-1	45	40873.4	3.2				mg/L	39543	Standard
Cl	35	35045.8	0.8				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	1873.4	9.4				ug/L	1647	Standard
P	31	17319.9	1.5				ug/L	15231	Standard
S	34	2126.8	6.5				ug/L	1845	Standard
Sr	88	78.3	28.8				ug/L	70	Standard
C	12	160.0	25.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	0	Standard
Dy	164	223.9	25.3				mg/L	12	Standard
Ho-1	165	175.0	29.8				mg/L	12	Standard
Er	166	126.7	25.4				mg/L	20	Standard
I	127	7363.5	5.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.007	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.946	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606139303
Report Date/Time: Tuesday, June 28, 2016 22:39:51
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.645
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139304
Sample Date/Time: Tuesday, June 28, 2016 22:40:46
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74628.4	2.8				ug/L	81760	Standard
	Be	9	20.0	25.0	**0.0122**	0.005	40.5	ug/L	17	Standard
	Al	27	327323.4	5.6	**2.3109**	0.073	3.1	ug/L	1410	Standard
	Sc	45	39232.4	1.5				ug/L	39543	Standard
	Ti	47	1081.7	2.8	**4.2827**	0.197	4.6	ug/L	39	Standard
	V	51	17364.8	3.6	**2.3462**	0.053	2.3	ug/L	1415	Standard
	Cr	52	11969.4	3.2	**0.6998**	0.018	2.6	ug/L	6946	Standard
	Cr	53	1151.7	1.8	**0.9999**	0.045	4.5	ug/L	328	Standard
	Mn	55	27710.7	5.0	**4.2196**	0.194	4.6	ug/L	823	Standard
	Co	59	805.7	4.4	**0.0858**	0.004	4.6	ug/L	252	Standard
	Ni	60	1156.4	2.7	**0.5226**	0.014	2.7	ug/L	192	Standard
	Cu	65	7318.8	3.6	**3.8448**	0.072	1.9	ug/L	141	Standard
	Zn	66	9717.1	4.5	**8.2301**	0.259	3.2	ug/L	491	Standard
>	**Ge**	72	504100.5	3.0				ug/L	515087	Standard
	As	75	86.2	19.2	**0.1185**	0.013	11.2	ug/L	20	Standard
	Se	82	21.0	26.2	**0.0675**	0.052	77.2	ug/L	15	Standard
	Se-1	77	57.7	9.6	**0.0648**	0.094	144.5	ug/L	48	Standard
>	**Ga**	71	233.3	13.9				mg/L	90	Standard
	Rb	85	3882.2	6.3				ug/L	23	Standard
	Y	89	430223.1	5.6				ug/L	448510	Standard
>	**Rh**	103	8.3	124.9				ug/L	15	Standard
	Mo	98	801.5	6.3	**0.2860**	0.012	4.3	ug/L	11	Standard
	Ag	107	120.7	5.8	**0.0023**	0.000	18.3	ug/L	134	Standard
	Cd	111	92.6	9.2	**0.0417**	0.004	9.3	mg/L	7	Standard
	Cd	114	241.3	24.7	**0.0431**	0.013	29.2	ug/L	16	Standard
>	**In**	115	593856.9	3.7				ug/L	611117	Standard
	Sn	118	1755.1	4.0	**0.2036**	0.011	5.3	ug/L	518	Standard
	Sb	123	1169.8	3.7	**0.2423**	0.004	1.7	ug/L	127	Standard
	Ba	135	5956.2	4.1	**2.9440**	0.065	2.2	ug/L	45	Standard
	Ce	140	5319.3	7.3				ug/L	298	Standard
>	**Tb**	159	910819.3	2.0				ug/L	977942	Standard
	Ho	165	128.3	12.5				ug/L	12	Standard
	Tl	203	88.0	5.7	**0.0062**	0.001	12.2	ug/L	31	Standard
	Tl	205	70.0	25.8	**0.0077**	0.003	33.5	ug/L	20	Standard
	Pb	206	8718.5	3.6	**1.6271**	0.072	4.4	ug/L	286	Standard
	Pb	207	7163.0	4.3	**1.4818**	0.072	4.9	ug/L	257	Standard
	Pb	208	29853.9	4.1	**1.5981**	0.065	4.1	ug/L	956	Standard
	U	238	115.3	2.6	**0.0139**	0.000	1.6	ug/L	17	Standard
>	**Bi**	209	531672.0	1.7				ug/L	557080	Standard

Sample ID: L1606139304
Report Date/Time: Tuesday, June 28, 2016 22:43:03
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	220.0	2.3	**0.2381**	0.006	2.4	mg/L	32	Standard
K	39	73.3	3.9	**0.1083**	0.007	6.4	mg/L	30	Standard
Ca	43	31.7	24.1	**-0.5049**	1.115	220.9	mg/L	48	Standard
Fe	54	263.9	12.4	**0.1035**	0.028	27.1	mg/L	159	Standard
Fe	57	248.3	16.1	**0.2213**	0.145	65.6	mg/L	195	Standard
> **Sc-1**	45	39232.4	1.5				mg/L	39543	Standard
Cl	35	34033.6	5.9				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1946.8	12.8				ug/L	1647	Standard
P	31	16857.7	2.7				ug/L	15231	Standard
S	34	2100.1	4.5				ug/L	1845	Standard
Sr	88	66.7	28.4				ug/L	70	Standard
C	12	176.7	23.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	134.9	39.4				mg/L	12	Standard
Ho-1	165	128.3	12.5				mg/L	12	Standard
Er	166	106.7	10.8				mg/L	20	Standard
I	127	6791.5	2.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.277	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.867	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606139304
Report Date/Time: Tuesday, June 28, 2016 22:43:03
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.176
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139305
Sample Date/Time: Tuesday, June 28, 2016 22:43:57
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74899.7	0.9				ug/L	81760	Standard
	Be	9	18.3	15.7	**0.0104**	0.003	29.0	ug/L	17	Standard
	Al	27	328437.1	1.5	**2.3115**	0.035	1.5	ug/L	1410	Standard
	Sc	45	40647.8	2.1				ug/L	39543	Standard
	Ti	47	1117.7	1.6	**4.2600**	0.050	1.2	ug/L	39	Standard
	V	51	13332.6	0.8	**1.6821**	0.023	1.4	ug/L	1415	Standard
	Cr	52	11640.1	0.5	**0.5893**	0.015	2.6	ug/L	6946	Standard
	Cr	53	1158.4	10.6	**0.9575**	0.132	13.8	ug/L	328	Standard
	Mn	55	25508.1	0.7	**3.7255**	0.023	0.6	ug/L	823	Standard
	Co	59	795.0	2.3	**0.0800**	0.002	2.0	ug/L	252	Standard
	Ni	60	1111.4	4.5	**0.4759**	0.022	4.7	ug/L	192	Standard
	Cu	65	7781.0	2.0	**3.9419**	0.127	3.2	ug/L	141	Standard
	Zn	66	11686.8	2.5	**9.6690**	0.148	1.5	ug/L	491	Standard
>	**Ge**	72	523177.1	1.2				ug/L	515087	Standard
	As	75	150.7	20.5	**0.1724**	0.029	16.5	ug/L	20	Standard
	Se	82	42.9	7.7	**0.2478**	0.029	11.9	ug/L	15	Standard
	Se-1	77	60.7	2.5	**0.0739**	0.016	21.3	ug/L	48	Standard
>	**Ga**	71	226.7	1.3				mg/L	90	Standard
	Rb	85	5315.9	7.9				ug/L	23	Standard
	Y	89	431953.8	1.9				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	276.3	6.3	**0.0857**	0.006	6.9	ug/L	11	Standard
	Ag	107	169.0	7.2	**0.0096**	0.002	19.7	ug/L	134	Standard
	Cd	111	162.4	6.5	**0.0750**	0.005	6.0	mg/L	7	Standard
	Cd	114	335.5	8.9	**0.0613**	0.005	8.9	ug/L	16	Standard
>	**In**	115	595959.3	0.7				ug/L	611117	Standard
	Sn	118	1471.7	5.0	**0.1534**	0.014	9.4	ug/L	518	Standard
	Sb	123	1173.4	5.5	**0.2422**	0.014	5.7	ug/L	127	Standard
	Ba	135	5837.1	3.3	**2.8740**	0.084	2.9	ug/L	45	Standard
	Ce	140	5496.0	2.0				ug/L	298	Standard
>	**Tb**	159	937149.5	1.0				ug/L	977942	Standard
	Ho	165	138.3	7.5				ug/L	12	Standard
	Tl	203	94.3	16.1	**0.0066**	0.002	26.5	ug/L	31	Standard
	Tl	205	66.7	26.3	**0.0070**	0.002	32.8	ug/L	20	Standard
	Pb	206	8082.5	0.7	**1.4592**	0.036	2.4	ug/L	286	Standard
	Pb	207	6688.5	1.5	**1.3390**	0.041	3.1	ug/L	257	Standard
	Pb	208	27392.7	1.4	**1.4181**	0.004	0.2	ug/L	956	Standard
	U	238	108.7	8.4	**0.0125**	0.002	12.3	ug/L	17	Standard
>	**Bi**	209	547233.0	1.6				ug/L	557080	Standard

Sample ID: L1606139305
Report Date/Time: Tuesday, June 28, 2016 22:46:14
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.3347**	17.892	173.1	mg/L	0	Standard
Mg	24	221.7	15.4	**0.2295**	0.039	17.1	mg/L	32	Standard
K	39	100.0	17.3	**0.1871**	0.055	29.3	mg/L	30	Standard
Ca	43	26.7	60.3	**-1.4304**	2.300	160.8	mg/L	48	Standard
Fe	54	289.4	9.6	**0.1178**	0.025	21.2	mg/L	159	Standard
Fe	57	271.7	9.3	**0.2686**	0.097	36.1	mg/L	195	Standard
Sc-1	45	40647.8	2.1				mg/L	39543	Standard
Cl	35	33690.1	1.5				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	7261.7	1.9				ug/L	1647	Standard
P	31	16325.5	0.4				ug/L	15231	Standard
S	34	1950.1	10.4				ug/L	1845	Standard
Sr	88	81.7	9.4				ug/L	70	Standard
C	12	186.7	18.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	222.3	16.3				mg/L	12	Standard
Ho-1	165	138.3	7.5				mg/L	12	Standard
Er	166	160.0	6.3				mg/L	20	Standard
I	127	6493.1	4.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		91.609	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.571	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606139305
Report Date/Time: Tuesday, June 28, 2016 22:46:14
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.520
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.232
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 22:47:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71793.2	3.7				ug/L	81760	Standard
	Be	9	44618.9	1.2	**51.1958**	1.696	3.3	ug/L	17	Standard
	Al	27	6865175.8	2.0	**50.7482**	1.963	3.9	ug/L	1410	Standard
	Sc	45	39468.0	3.1				ug/L	39543	Standard
	Ti	47	23906.5	1.3	**96.7870**	2.402	2.5	ug/L	39	Standard
	V	51	334011.6	0.6	**48.2557**	0.941	2.0	ug/L	1415	Standard
	Cr	52	340377.2	0.5	**48.2561**	1.001	2.1	ug/L	6946	Standard
	Cr	53	42902.3	1.0	**48.9484**	1.164	2.4	ug/L	328	Standard
	Mn	55	309303.1	1.2	**47.9606**	0.591	1.2	ug/L	823	Standard
	Co	59	332037.9	0.8	**47.6215**	0.384	0.8	ug/L	252	Standard
	Ni	60	90431.4	0.3	**48.3175**	0.794	1.6	ug/L	192	Standard
	Cu	65	91394.5	0.3	**48.4155**	0.851	1.8	ug/L	141	Standard
	Zn	66	53482.9	1.3	**48.3851**	1.341	2.8	ug/L	491	Standard
>	Ge	72	510859.4	1.5				ug/L	515087	Standard
	As	75	54007.5	0.9	**48.4846**	1.105	2.3	ug/L	20	Standard
	Se	82	5360.1	0.8	**46.8280**	0.601	1.3	ug/L	15	Standard
	Se-1	77	3686.4	1.7	**48.6230**	0.812	1.7	ug/L	48	Standard
>	Ga	71	56.7	18.4				mg/L	90	Standard
	Rb	85	810.0	4.5				ug/L	23	Standard
	Y	89	431931.2	2.6				ug/L	448510	Standard
>	Rh	103	26.7	43.3				ug/L	15	Standard
	Mo	98	251225.1	0.7	**96.8468**	1.378	1.4	ug/L	11	Standard
	Ag	107	304440.8	0.4	**47.2505**	0.474	1.0	ug/L	134	Standard
	Cd	111	96060.5	0.9	**46.8341**	0.834	1.8	mg/L	7	Standard
	Cd	114	238889.8	1.2	**47.9103**	0.301	0.6	ug/L	16	Standard
>	In	115	586435.3	1.3				ug/L	611117	Standard
	Sn	118	269259.0	2.4	**47.3660**	1.700	3.6	ug/L	518	Standard
	Sb	123	219432.6	0.9	**48.4541**	0.360	0.7	ug/L	127	Standard
	Ba	135	92563.9	0.7	**46.7027**	0.660	1.4	ug/L	45	Standard
	Ce	140	88.3	61.1				ug/L	298	Standard
>	Tb	159	918919.9	0.8				ug/L	977942	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	386832.4	0.9	**48.5637**	0.777	1.6	ug/L	31	Standard
	Tl	205	343277.1	1.0	**49.6247**	0.132	0.3	ug/L	20	Standard
	Pb	206	249448.7	0.4	**48.7606**	0.291	0.6	ug/L	286	Standard
	Pb	207	228146.2	0.6	**49.4471**	0.531	1.1	ug/L	257	Standard
	Pb	208	902842.6	0.2	**50.5774**	0.397	0.8	ug/L	956	Standard
	U	238	333363.3	0.9	**49.2162**	0.753	1.5	ug/L	17	Standard
>	Bi	209	526646.5	0.9				ug/L	557080	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 22:49:27
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.4874**	18.156	173.1	mg/L	0	Standard
Mg	24	3567.1	3.5	**4.7067**	0.317	6.7	mg/L	32	Standard
K	39	1421.7	5.7	**4.6773**	0.373	8.0	mg/L	30	Standard
Ca	43	60.0	8.3	**3.7779**	0.573	15.2	mg/L	48	Standard
Fe	54	5303.1	4.9	**4.6695**	0.087	1.9	mg/L	159	Standard
Fe	57	1570.1	3.9	**4.6916**	0.328	7.0	mg/L	195	Standard
> **Sc-1**	45	39468.0	3.1				mg/L	39543	Standard
Cl	35	34178.5	1.9				ug/L	27642	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1696.8	1.5				ug/L	1647	Standard
P	31	17313.2	2.3				ug/L	15231	Standard
S	34	2535.2	5.3				ug/L	1845	Standard
Sr	88	81.7	40.8				ug/L	70	Standard
C	12	120.0	14.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	11.2				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	23.3	89.2				mg/L	20	Standard
I	127	2468.5	18.6				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.392		
	Al	27	101.496		
	Sc	45			
	Ti	47	96.787		
	V	51	96.511		
	Cr	52	96.512		
	Cr	53			
	Mn	55	95.921		
	Co	59	95.243		
	Ni	60	96.635		
	Cu	65	96.831		
	Zn	66	96.770		
>	Ge	72		99.179	
	As	75	96.969		
	Se	82	93.656		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 22:49:27
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	96.847		
Ag	107	94.501		
Cd	111	93.668		
Cd	114			
> In	115			95.961
Sn	118	94.732		
Sb	123	96.908		
Ba	135	93.405		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.127		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.155		
U	238	98.432		
> Bi	209			94.537
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 22:49:27
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 22:50:22
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72519.8	1.9				ug/L	81760	Standard
	Be	9	21.7	113.8	**0.0146**	0.027	188.1	ug/L	17	Standard
	Al	27	2256.8	25.0	**0.0021**	0.004	187.1	ug/L	1410	Standard
	Sc	45	39016.8	1.3				ug/L	39543	Standard
	Ti	47	28.7	19.2	**-0.0470**	0.020	43.5	ug/L	39	Standard
	V	51	1194.9	2.1	**-0.0301**	0.006	21.3	ug/L	1415	Standard
	Cr	52	6354.0	0.6	**-0.1199**	0.015	12.7	ug/L	6946	Standard
	Cr	53	495.0	4.6	**0.2373**	0.020	8.3	ug/L	328	Standard
	Mn	55	724.7	7.6	**-0.0338**	0.007	19.6	ug/L	823	Standard
	Co	59	253.7	9.1	**0.0057**	0.003	47.4	ug/L	252	Standard
	Ni	60	174.7	5.0	**-0.0098**	0.003	33.3	ug/L	192	Standard
	Cu	65	124.0	10.1	**-0.0239**	0.006	23.4	ug/L	141	Standard
	Zn	66	416.7	1.4	**-0.4373**	0.011	2.5	ug/L	491	Standard
>	**Ge**	72	501758.9	1.8				ug/L	515087	Standard
	As	75	-30.1	127.3	**0.0123**	0.035	285.9	ug/L	20	Standard
	Se	82	17.1	40.3	**0.0328**	0.058	178.2	ug/L	15	Standard
	Se-1	77	51.3	18.1	**-0.0207**	0.113	545.7	ug/L	48	Standard
>	**Ga**	71	38.3	27.2				mg/L	90	Standard
	Rb	85	28.3	36.7				ug/L	23	Standard
	Y	89	432168.4	0.3				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	274.3	30.4	**0.0862**	0.033	37.9	ug/L	11	Standard
	Ag	107	126.3	11.5	**0.0033**	0.002	71.2	ug/L	134	Standard
	Cd	111	15.5	45.6	**0.0046**	0.003	75.0	mg/L	7	Standard
	Cd	114	32.8	69.1	**0.0016**	0.005	280.8	ug/L	16	Standard
>	**In**	115	589750.3	1.0				ug/L	611117	Standard
	Sn	118	705.0	18.1	**0.0215**	0.021	98.3	ug/L	518	Standard
	Sb	123	430.7	24.1	**0.0816**	0.022	27.0	ug/L	127	Standard
	Ba	135	35.7	21.2	**-0.0072**	0.004	55.2	ug/L	45	Standard
	Ce	140	38.3	41.9				ug/L	298	Standard
>	**Tb**	159	920829.0	0.8				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	59.7	35.8	**0.0027**	0.003	98.6	ug/L	31	Standard
	Tl	205	48.3	29.9	**0.0047**	0.002	43.8	ug/L	20	Standard
	Pb	206	270.0	6.9	**-0.0110**	0.004	33.8	ug/L	286	Standard
	Pb	207	257.3	3.4	**-0.0024**	0.002	65.9	ug/L	257	Standard
	Pb	208	1000.7	8.0	**-0.0046**	0.004	92.2	ug/L	956	Standard
	U	238	61.0	23.2	**0.0060**	0.002	34.0	ug/L	17	Standard
>	**Bi**	209	528739.4	0.7				ug/L	557080	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 22:52:39
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23.3	86.6	**-0.0259**	0.027	103.6	mg/L	32	Standard
K	39	31.7	48.2	**-0.0333**	0.052	155.8	mg/L	30	Standard
Ca	43	30.0	72.6	**-0.7014**	3.391	483.5	mg/L	48	Standard
Fe	54	129.4	20.1	**-0.0182**	0.025	139.3	mg/L	159	Standard
Fe	57	250.0	16.4	**0.2316**	0.148	64.1	mg/L	195	Standard
> **Sc-1**	45	39016.8	1.3				mg/L	39543	Standard
Cl	35	33625.3	1.5				ug/L	27642	Standard
Kr	83	3.3	124.9				ug/L	2	Standard
Br	81	1580.1	13.5				ug/L	1647	Standard
P	31	17735.4	1.8				ug/L	15231	Standard
S	34	2481.9	5.6				ug/L	1845	Standard
Sr	88	73.3	14.2				ug/L	70	Standard
C	12	113.3	41.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	9.4	5.9				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1860.1	15.9				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.412	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 22:52:39
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.504
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.913
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 22:52:39
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139306
Sample Date/Time: Tuesday, June 28, 2016 22:53:35
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70220.8	3.4				ug/L	81760	Standard
	Be	9	21.7	48.0	**0.0156**	0.012	75.7	ug/L	17	Standard
	Al	27	339019.6	1.3	**2.5478**	0.066	2.6	ug/L	1410	Standard
	Sc	45	39077.0	1.3				ug/L	39543	Standard
	Ti	47	1359.1	3.4	**5.3458**	0.211	3.9	ug/L	39	Standard
	V	51	13893.8	2.6	**1.8093**	0.072	4.0	ug/L	1415	Standard
	Cr	52	10697.1	2.4	**0.4928**	0.058	11.9	ug/L	6946	Standard
	Cr	53	1106.7	6.2	**0.9306**	0.098	10.5	ug/L	328	Standard
	Mn	55	27827.9	2.7	**4.1809**	0.179	4.3	ug/L	823	Standard
	Co	59	887.0	0.6	**0.0960**	0.003	2.8	ug/L	252	Standard
	Ni	60	1041.0	6.1	**0.4528**	0.043	9.5	ug/L	192	Standard
	Cu	65	6718.2	2.4	**3.4752**	0.137	3.9	ug/L	141	Standard
	Zn	66	10492.3	2.9	**8.8264**	0.376	4.3	ug/L	491	Standard
>	**Ge**	72	510902.9	1.6				ug/L	515087	Standard
	As	75	95.4	28.2	**0.1256**	0.023	18.4	ug/L	20	Standard
	Se	82	17.2	18.1	**0.0307**	0.025	82.4	ug/L	15	Standard
	Se-1	77	52.3	18.1	**-0.0171**	0.139	811.5	ug/L	48	Standard
>	**Ga**	71	256.7	6.0				mg/L	90	Standard
	Rb	85	4037.2	4.0				ug/L	23	Standard
	Y	89	441838.7	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	321.3	2.1	**0.1057**	0.004	4.2	ug/L	11	Standard
	Ag	107	134.7	13.7	**0.0048**	0.003	55.1	ug/L	134	Standard
	Cd	111	94.4	13.5	**0.0434**	0.006	14.4	mg/L	7	Standard
	Cd	114	184.5	30.3	**0.0322**	0.011	33.4	ug/L	16	Standard
>	**In**	115	582517.6	1.6				ug/L	611117	Standard
	Sn	118	1633.4	8.5	**0.1881**	0.027	14.5	ug/L	518	Standard
	Sb	123	1202.8	2.0	**0.2547**	0.009	3.5	ug/L	127	Standard
	Ba	135	5625.0	0.7	**2.8338**	0.047	1.7	ug/L	45	Standard
	Ce	140	7943.7	1.7				ug/L	298	Standard
>	**Tb**	159	895525.5	0.4				ug/L	977942	Standard
	Ho	165	181.7	15.7				ug/L	12	Standard
	Tl	203	104.3	12.5	**0.0084**	0.002	20.6	ug/L	31	Standard
	Tl	205	91.7	22.0	**0.0111**	0.003	27.4	ug/L	20	Standard
	Pb	206	6727.8	0.5	**1.2603**	0.018	1.4	ug/L	286	Standard
	Pb	207	5614.0	0.6	**1.1666**	0.017	1.4	ug/L	257	Standard
	Pb	208	23664.6	2.1	**1.2740**	0.038	3.0	ug/L	956	Standard
	U	238	141.7	17.4	**0.0181**	0.004	20.7	ug/L	17	Standard
>	**Bi**	209	523874.2	0.9				ug/L	557080	Standard

Sample ID: L1606139306
Report Date/Time: Tuesday, June 28, 2016 22:55:52
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	196.7	25.5	**0.2078**	0.067	32.2	mg/L	32	Standard
K	39	58.3	32.5	**0.0586**	0.068	115.6	mg/L	30	Standard
Ca	43	33.3	48.2	**-0.2427**	2.425	998.9	mg/L	48	Standard
Fe	54	342.2	5.9	**0.1765**	0.023	12.8	mg/L	159	Standard
Fe	57	293.3	7.1	**0.3778**	0.076	20.2	mg/L	195	Standard
Sc-1	45	39077.0	1.3				mg/L	39543	Standard
Cl	35	33443.5	2.1				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1690.1	11.7				ug/L	1647	Standard
P	31	17176.4	4.2				ug/L	15231	Standard
S	34	2306.8	4.6				ug/L	1845	Standard
Sr	88	88.3	31.2				ug/L	70	Standard
C	12	143.3	10.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	280.6	4.7				mg/L	12	Standard
Ho-1	165	181.7	15.7				mg/L	12	Standard
Er	166	196.7	36.8				mg/L	20	Standard
I	127	4592.4	1.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		85.886	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.188	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606139306
Report Date/Time: Tuesday, June 28, 2016 22:55:52
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.320
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.039
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139307
Sample Date/Time: Tuesday, June 28, 2016 22:56:46
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72494.7	0.8				ug/L	81760	Standard
	Be	9	18.3	15.7	**0.0111**	0.003	30.5	ug/L	17	Standard
	Al	27	342418.0	1.1	**2.4911**	0.036	1.4	ug/L	1410	Standard
	Sc	45	40101.3	1.0				ug/L	39543	Standard
	Ti	47	932.7	2.7	**3.5634**	0.149	4.2	ug/L	39	Standard
	V	51	14612.8	2.1	**1.8826**	0.024	1.3	ug/L	1415	Standard
	Cr	52	11386.6	1.0	**0.5692**	0.057	10.1	ug/L	6946	Standard
	Cr	53	1260.1	6.9	**1.0869**	0.132	12.1	ug/L	328	Standard
	Mn	55	23640.1	1.0	**3.4768**	0.122	3.5	ug/L	823	Standard
	Co	59	741.4	0.2	**0.0735**	0.003	3.5	ug/L	252	Standard
	Ni	60	1110.0	3.0	**0.4811**	0.030	6.3	ug/L	192	Standard
	Cu	65	7534.9	0.8	**3.8515**	0.130	3.4	ug/L	141	Standard
	Zn	66	11297.5	1.4	**9.4161**	0.135	1.4	ug/L	491	Standard
>	**Ge**	72	518404.2	2.6				ug/L	515087	Standard
	As	75	185.7	13.2	**0.2041**	0.018	8.6	ug/L	20	Standard
	Se	82	58.4	11.2	**0.3845**	0.051	13.1	ug/L	15	Standard
	Se-1	77	57.0	12.3	**0.0333**	0.095	284.1	ug/L	48	Standard
>	**Ga**	71	201.7	7.6				mg/L	90	Standard
	Rb	85	5255.9	2.3				ug/L	23	Standard
	Y	89	429044.9	0.4				ug/L	448510	Standard
>	**Rh**	103	18.3	68.6				ug/L	15	Standard
	Mo	98	299.7	1.8	**0.0961**	0.002	1.9	ug/L	11	Standard
	Ag	107	153.3	22.0	**0.0075**	0.005	67.1	ug/L	134	Standard
	Cd	111	143.0	17.2	**0.0665**	0.011	16.8	mg/L	7	Standard
	Cd	114	356.8	31.1	**0.0663**	0.022	32.5	ug/L	16	Standard
>	**In**	115	588246.1	1.2				ug/L	611117	Standard
	Sn	118	1550.1	10.3	**0.1702**	0.025	14.7	ug/L	518	Standard
	Sb	123	1125.9	6.3	**0.2350**	0.013	5.6	ug/L	127	Standard
	Ba	135	5627.4	4.0	**2.8066**	0.107	3.8	ug/L	45	Standard
	Ce	140	5279.3	1.4				ug/L	298	Standard
>	**Tb**	159	929768.7	1.5				ug/L	977942	Standard
	Ho	165	90.0	24.2				ug/L	12	Standard
	Tl	203	125.7	60.8	**0.0104**	0.009	86.4	ug/L	31	Standard
	Tl	205	76.7	65.3	**0.0084**	0.007	82.2	ug/L	20	Standard
	Pb	206	9321.2	0.6	**1.7003**	0.038	2.2	ug/L	286	Standard
	Pb	207	7700.6	1.2	**1.5576**	0.043	2.8	ug/L	257	Standard
	Pb	208	32126.4	0.5	**1.6815**	0.027	1.6	ug/L	956	Standard
	U	238	95.0	19.2	**0.0106**	0.002	23.3	ug/L	17	Standard
>	**Bi**	209	544815.4	1.6				ug/L	557080	Standard

Sample ID: L1606139307
Report Date/Time: Tuesday, June 28, 2016 22:59:03
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	241.7	8.4	**0.2600**	0.024	9.1	mg/L	32	Standard
K	39	93.3	13.5	**0.1697**	0.044	25.8	mg/L	30	Standard
Ca	43	48.3	11.9	**1.8938**	0.874	46.1	mg/L	48	Standard
Fe	54	296.6	3.5	**0.1277**	0.009	7.4	mg/L	159	Standard
Fe	57	275.0	13.7	**0.2917**	0.134	46.0	mg/L	195	Standard
> **Sc-1**	45	40101.3	1.0				mg/L	39543	Standard
Cl	35	33371.4	1.5				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	12191.6	6.9				ug/L	1647	Standard
P	31	16642.5	2.2				ug/L	15231	Standard
S	34	2221.8	1.3				ug/L	1845	Standard
Sr	88	81.7	3.5				ug/L	70	Standard
C	12	180.0	14.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	0	Standard
Dy	164	179.2	25.7				mg/L	12	Standard
Ho-1	165	90.0	24.2				mg/L	12	Standard
Er	166	86.7	26.6				mg/L	20	Standard
I	127	5902.8	5.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.668	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.644	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606139307
Report Date/Time: Tuesday, June 28, 2016 22:59:03
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.258
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.798
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606140101
Sample Date/Time: Tuesday, June 28, 2016 22:59:58
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81815.4	2.6				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0121**	0.003	22.9	ug/L	17	Standard
	Al	27	45785308.7	4.2	**296.7336**	5.244	1.8	ug/L	1410	Standard
	Sc	45	41065.6	3.8				ug/L	39543	Standard
	Ti	47	178.0	12.2	**0.5887**	0.089	15.1	ug/L	39	Standard
	V	51	35448.4	4.1	**5.1643**	0.153	3.0	ug/L	1415	Standard
	Cr	52	9787.8	5.7	**0.4235**	0.068	16.1	ug/L	6946	Standard
	Cr	53	17411.8	14.2	**20.5297**	2.734	13.3	ug/L	328	Standard
	Mn	55	165972.1	5.7	**26.8086**	1.220	4.6	ug/L	823	Standard
	Co	59	1056.4	5.8	**0.1270**	0.007	5.7	ug/L	252	Standard
	Ni	60	3143.3	7.3	**1.6522**	0.109	6.6	ug/L	192	Standard
	Cu	65	2057.8	4.7	**1.0496**	0.040	3.9	ug/L	141	Standard
	Zn	66	6024.5	5.7	**4.9599**	0.261	5.3	ug/L	491	Standard
>	**Ge**	72	489001.5	1.3				ug/L	515087	Standard
	As	75	1112.2	8.9	**1.0817**	0.080	7.4	ug/L	20	Standard
	Se	82	302.7	9.2	**2.6482**	0.222	8.4	ug/L	15	Standard
	Se-1	77	1245.1	18.8	**16.6637**	3.078	18.5	ug/L	48	Standard
>	**Ga**	71	58.3	55.1				mg/L	90	Standard
	Rb	85	2691.9	5.7				ug/L	23	Standard
	Y	89	432812.2	6.0				ug/L	448510	Standard
>	**Rh**	103	128.3	14.8				ug/L	15	Standard
	Mo	98	642.1	7.2	**0.2310**	0.011	4.8	ug/L	11	Standard
	Ag	107	89.7	20.6	**-0.0021**	0.003	162.7	ug/L	134	Standard
	Cd	111	183.2	13.1	**0.0876**	0.014	15.6	mg/L	7	Standard
	Cd	114	423.4	6.2	**0.0810**	0.006	6.9	ug/L	16	Standard
>	**In**	115	580206.4	3.0				ug/L	611117	Standard
	Sn	118	1115.0	4.7	**0.0968**	0.010	9.8	ug/L	518	Standard
	Sb	123	200.7	10.2	**0.0319**	0.003	10.9	ug/L	127	Standard
	Ba	135	44440.1	3.3	**22.6462**	0.082	0.4	ug/L	45	Standard
	Ce	140	446.7	12.1				ug/L	298	Standard
>	**Tb**	159	929235.2	2.2				ug/L	977942	Standard
	Ho	165	38.3	7.5				ug/L	12	Standard
	Tl	203	126.0	16.1	**0.0119**	0.003	21.7	ug/L	31	Standard
	Tl	205	103.3	17.0	**0.0135**	0.003	21.8	ug/L	20	Standard
	Pb	206	396.7	5.3	**0.0183**	0.002	11.9	ug/L	286	Standard
	Pb	207	341.7	4.5	**0.0202**	0.002	8.5	ug/L	257	Standard
	Pb	208	1505.0	2.0	**0.0286**	0.002	5.8	ug/L	956	Standard
	U	238	10687.1	4.8	**1.6615**	0.054	3.3	ug/L	17	Standard
>	**Bi**	209	499114.9	2.7				ug/L	557080	Standard

Sample ID: L1606140101
Report Date/Time: Tuesday, June 28, 2016 23:02:15
Page 1

Approved: June 29, 2016

Na	23	8.3	91.7	**52.4138**	47.655	90.9	mg/L	0	Standard
Mg	24	165387.3	4.5	**211.9511**	6.406	3.0	mg/L	32	Standard
K	39	600.0	13.6	**1.8174**	0.318	17.5	mg/L	30	Standard
Ca	43	581.7	9.4	**79.6243**	5.149	6.5	mg/L	48	Standard
Fe	54	126.1	20.1	**-0.0269**	0.024	89.8	mg/L	159	Standard
Fe	57	591.7	6.9	**1.2999**	0.139	10.7	mg/L	195	Standard
> **Sc-1**	45	41065.6	3.8				mg/L	39543	Standard
Cl	35	47499.7	3.6				ug/L	27642	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	60832.3	7.6				ug/L	1647	Standard
P	31	21663.8	6.1				ug/L	15231	Standard
S	34	2320.2	3.1				ug/L	1845	Standard
Sr	88	470.0	1.1				ug/L	70	Standard
C	12	286.7	5.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	31.1	36.4				mg/L	12	Standard
Ho-1	165	38.3	7.5				mg/L	12	Standard
Er	166	46.7	44.6				mg/L	20	Standard
I	127	79897.5	13.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.068	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.936	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140101
Report Date/Time: Tuesday, June 28, 2016 23:02:15
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.942
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.595
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606140101
Report Date/Time: Tuesday, June 28, 2016 23:02:15
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606140201
Sample Date/Time: Tuesday, June 28, 2016 23:03:09
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76605.0	3.1				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0135**	0.003	20.6	ug/L	17	Standard
	Al	27	26105502.1	1.1	**180.8194**	3.801	2.1	ug/L	1410	Standard
	Sc	45	39097.0	0.2				ug/L	39543	Standard
	Ti	47	562.0	2.4	**2.2655**	0.057	2.5	ug/L	39	Standard
	V	51	4742.4	3.6	**0.5271**	0.022	4.2	ug/L	1415	Standard
	Cr	52	10082.4	1.2	**0.5007**	0.019	3.8	ug/L	6946	Standard
	Cr	53	12313.3	5.4	**14.7485**	0.907	6.2	ug/L	328	Standard
	Mn	55	1295871.4	1.2	**214.8489**	3.945	1.8	ug/L	823	Standard
	Co	59	1407.4	1.1	**0.1841**	0.002	1.1	ug/L	252	Standard
	Ni	60	4305.3	1.8	**2.3535**	0.034	1.4	ug/L	192	Standard
	Cu	65	1020.0	5.2	**0.4867**	0.034	6.9	ug/L	141	Standard
	Zn	66	18219.9	0.4	**17.0511**	0.173	1.0	ug/L	491	Standard
>	**Ge**	72	478933.9	0.7				ug/L	515087	Standard
	As	75	17040.6	2.0	**16.3399**	0.219	1.3	ug/L	20	Standard
	Se	82	892.6	3.4	**8.2180**	0.229	2.8	ug/L	15	Standard
	Se-1	77	753.4	7.3	**10.0390**	0.842	8.4	ug/L	48	Standard
>	**Ga**	71	218.3	6.6				mg/L	90	Standard
	Rb	85	3558.8	1.6				ug/L	23	Standard
	Y	89	416573.3	1.7				ug/L	448510	Standard
>	**Rh**	103	118.3	21.3				ug/L	15	Standard
	Mo	98	260.0	1.1	**0.0877**	0.004	4.4	ug/L	11	Standard
	Ag	107	80.3	26.9	**-0.0029**	0.004	134.9	ug/L	134	Standard
	Cd	111	40.9	26.1	**0.0184**	0.006	33.2	mg/L	7	Standard
	Cd	114	102.6	27.3	**0.0171**	0.006	37.8	ug/L	16	Standard
>	**In**	115	551143.5	2.5				ug/L	611117	Standard
	Sn	118	835.0	12.0	**0.0548**	0.020	37.1	ug/L	518	Standard
	Sb	123	829.1	3.5	**0.1820**	0.004	2.4	ug/L	127	Standard
	Ba	135	332622.5	0.7	**178.6804**	3.714	2.1	ug/L	45	Standard
	Ce	140	6094.6	2.7				ug/L	298	Standard
>	**Tb**	159	884304.9	2.4				ug/L	977942	Standard
	Ho	165	73.3	20.8				ug/L	12	Standard
	Tl	203	115.3	18.9	**0.0110**	0.003	28.4	ug/L	31	Standard
	Tl	205	95.0	13.9	**0.0127**	0.002	15.2	ug/L	20	Standard
	Pb	206	48021.0	1.3	**10.1649**	0.107	1.1	ug/L	286	Standard
	Pb	207	40222.3	0.8	**9.4401**	0.093	1.0	ug/L	257	Standard
	Pb	208	168471.0	1.1	**10.2223**	0.060	0.6	ug/L	956	Standard
	U	238	714.0	7.4	**0.1118**	0.009	8.4	ug/L	17	Standard
>	**Bi**	209	483931.7	1.1				ug/L	557080	Standard

Sample ID: L1606140201
Report Date/Time: Tuesday, June 28, 2016 23:05:26
Page 1

Approved: June 29, 2016

Na	23	8.3	34.6	**54.1394**	18.829	34.8	mg/L	0	Standard
Mg	24	106065.1	2.2	**142.7401**	3.063	2.1	mg/L	32	Standard
K	39	148.3	8.5	**0.3655**	0.044	12.0	mg/L	30	Standard
Ca	43	363.3	11.2	**50.4710**	6.294	12.5	mg/L	48	Standard
Fe	54	1618.9	1.4	**1.3448**	0.023	1.7	mg/L	159	Standard
Fe	57	835.0	5.7	**2.2263**	0.157	7.1	mg/L	195	Standard
Sc-1	45	39097.0	0.2				mg/L	39543	Standard
Cl	35	36261.3	1.4				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	214333.6	4.1				ug/L	1647	Standard
P	31	21892.5	1.8				ug/L	15231	Standard
S	34	2305.2	3.8				ug/L	1845	Standard
Sr	88	363.3	12.3				ug/L	70	Standard
C	12	390.0	0.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	133.0	23.5				mg/L	12	Standard
Ho-1	165	73.3	20.8				mg/L	12	Standard
Er	166	76.7	66.9				mg/L	20	Standard
I	127	398539.7	6.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.695	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.981	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140201
Report Date/Time: Tuesday, June 28, 2016 23:05:26
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.186
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.869
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606140201
Report Date/Time: Tuesday, June 28, 2016 23:05:26
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606140401
Sample Date/Time: Tuesday, June 28, 2016 23:06:21
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74993.5	0.5				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0141**	0.003	22.5	ug/L	17	Standard
	Al	27	30278310.9	1.4	**214.1402**	2.917	1.4	ug/L	1410	Standard
	Sc	45	39486.4	2.9				ug/L	39543	Standard
	Ti	47	193.3	4.5	**0.6334**	0.048	7.5	ug/L	39	Standard
	V	51	22966.6	2.4	**3.1851**	0.035	1.1	ug/L	1415	Standard
	Cr	52	11319.6	0.7	**0.6125**	0.031	5.1	ug/L	6946	Standard
	Cr	53	1811.8	4.8	**1.7776**	0.107	6.0	ug/L	328	Standard
	Mn	55	8657.1	1.2	**1.2226**	0.034	2.8	ug/L	823	Standard
	Co	59	565.7	7.8	**0.0513**	0.007	13.0	ug/L	252	Standard
	Ni	60	1945.8	2.7	**0.9557**	0.026	2.7	ug/L	192	Standard
	Cu	65	60353.0	0.9	**32.5191**	0.515	1.6	ug/L	141	Standard
	Zn	66	48175.8	1.3	**44.3004**	1.008	2.3	ug/L	491	Standard
>	**Ge**	72	501772.7	1.4				ug/L	515087	Standard
	As	75	367.9	8.8	**0.3760**	0.025	6.7	ug/L	20	Standard
	Se	82	110.4	13.6	**0.8639**	0.120	13.9	ug/L	15	Standard
	Se-1	77	129.0	8.1	**1.0381**	0.123	11.8	ug/L	48	Standard
>	**Ga**	71	68.3	27.7				mg/L	90	Standard
	Rb	85	1198.4	2.3				ug/L	23	Standard
	Y	89	417957.0	1.4				ug/L	448510	Standard
>	**Rh**	103	78.3	35.2				ug/L	15	Standard
	Mo	98	388.3	6.2	**0.1355**	0.009	6.9	ug/L	11	Standard
	Ag	107	94.3	4.8	**-0.0011**	0.001	61.6	ug/L	134	Standard
	Cd	111	42.7	19.5	**0.0186**	0.004	22.3	mg/L	7	Standard
	Cd	114	106.8	24.4	**0.0172**	0.005	31.6	ug/L	16	Standard
>	**In**	115	568064.8	0.3				ug/L	611117	Standard
	Sn	118	741.7	8.4	**0.0330**	0.012	35.5	ug/L	518	Standard
	Sb	123	163.0	3.3	**0.0243**	0.001	4.6	ug/L	127	Standard
	Ba	135	87619.3	0.7	**45.6318**	0.199	0.4	ug/L	45	Standard
	Ce	140	530.0	5.7				ug/L	298	Standard
>	**Tb**	159	902463.1	0.6				ug/L	977942	Standard
	Ho	165	31.7	24.1				ug/L	12	Standard
	Tl	203	89.3	3.6	**0.0068**	0.000	7.0	ug/L	31	Standard
	Tl	205	80.0	18.8	**0.0096**	0.002	23.2	ug/L	20	Standard
	Pb	206	4637.4	0.5	**0.8697**	0.009	1.0	ug/L	286	Standard
	Pb	207	3892.8	1.5	**0.8106**	0.017	2.1	ug/L	257	Standard
	Pb	208	15697.9	1.6	**0.8448**	0.009	1.1	ug/L	956	Standard
	U	238	6211.6	0.5	**0.9400**	0.010	1.1	ug/L	17	Standard
>	**Bi**	209	512163.0	0.7				ug/L	557080	Standard

Sample ID: L1606140401
Report Date/Time: Tuesday, June 28, 2016 23:08:38
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.8762**	18.829	173.1	mg/L	0	Standard
Mg	24	25888.8	0.8	**34.4779**	1.238	3.6	mg/L	32	Standard
K	39	206.7	17.0	**0.5565**	0.104	18.6	mg/L	30	Standard
Ca	43	238.3	20.2	**30.9565**	7.726	25.0	mg/L	48	Standard
Fe	54	118.7	26.0	**-0.0297**	0.026	88.1	mg/L	159	Standard
Fe	57	376.7	12.0	**0.6523**	0.186	28.5	mg/L	195	Standard
> **Sc-1**	45	39486.4	2.9				mg/L	39543	Standard
Cl	35	38202.8	1.2				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	11808.0	7.7				ug/L	1647	Standard
P	31	21151.4	0.3				ug/L	15231	Standard
S	34	2466.9	2.1				ug/L	1845	Standard
Sr	88	291.7	10.5				ug/L	70	Standard
C	12	196.7	43.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.2	2.0				mg/L	12	Standard
Ho-1	165	31.7	24.1				mg/L	12	Standard
Er	166	36.7	31.5				mg/L	20	Standard
I	127	34317.5	11.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.724	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.415	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140401
Report Date/Time: Tuesday, June 28, 2016 23:08:38
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.937
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606140401
Report Date/Time: Tuesday, June 28, 2016 23:08:38
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606140801
Sample Date/Time: Tuesday, June 28, 2016 23:09:32
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78174.6	2.2				ug/L	81760	Standard
	Be	9	35.0	24.7	**0.0270**	0.008	30.6	ug/L	17	Standard
	Al	27	18286645.8	1.2	**124.0948**	2.663	2.1	ug/L	1410	Standard
	Sc	45	40988.7	1.5				ug/L	39543	Standard
	Ti	47	225.3	13.4	**0.7985**	0.121	15.1	ug/L	39	Standard
	V	51	51258.6	3.2	**7.6390**	0.153	2.0	ug/L	1415	Standard
	Cr	52	11486.4	2.6	**0.6992**	0.069	9.9	ug/L	6946	Standard
	Cr	53	8145.5	5.8	**9.5287**	0.474	5.0	ug/L	328	Standard
	Mn	55	98520.0	1.7	**16.0208**	0.120	0.7	ug/L	823	Standard
	Co	59	769.4	2.9	**0.0851**	0.002	2.7	ug/L	252	Standard
	Ni	60	1615.4	2.4	**0.8080**	0.032	4.0	ug/L	192	Standard
	Cu	65	1131.0	3.0	**0.5425**	0.014	2.7	ug/L	141	Standard
	Zn	66	4403.0	3.4	**3.4460**	0.103	3.0	ug/L	491	Standard
>	**Ge**	72	484103.1	1.4				ug/L	515087	Standard
	As	75	1970.8	6.0	**1.9047**	0.087	4.5	ug/L	20	Standard
	Se	82	191.5	8.8	**1.6489**	0.132	8.0	ug/L	15	Standard
	Se-1	77	529.7	10.7	**6.7555**	0.697	10.3	ug/L	48	Standard
>	**Ga**	71	85.0	31.1				mg/L	90	Standard
	Rb	85	2531.9	3.1				ug/L	23	Standard
	Y	89	421592.5	4.0				ug/L	448510	Standard
>	**Rh**	103	66.7	30.3				ug/L	15	Standard
	Mo	98	353.3	5.0	**0.1209**	0.007	5.4	ug/L	11	Standard
	Ag	107	105.0	57.1	**0.0006**	0.010	1741.0	ug/L	134	Standard
	Cd	111	58.7	7.1	**0.0265**	0.001	5.4	mg/L	7	Standard
	Cd	114	139.6	12.3	**0.0238**	0.003	13.4	ug/L	16	Standard
>	**In**	115	570844.6	2.8				ug/L	611117	Standard
	Sn	118	760.0	5.7	**0.0358**	0.009	25.3	ug/L	518	Standard
	Sb	123	136.8	41.6	**0.0182**	0.013	71.7	ug/L	127	Standard
	Ba	135	27343.0	2.9	**14.1534**	0.097	0.7	ug/L	45	Standard
	Ce	140	1776.8	2.1				ug/L	298	Standard
>	**Tb**	159	907261.5	0.9				ug/L	977942	Standard
	Ho	165	38.3	32.8				ug/L	12	Standard
	Tl	203	160.7	51.8	**0.0162**	0.011	66.8	ug/L	31	Standard
	Tl	205	123.3	9.4	**0.0162**	0.002	11.0	ug/L	20	Standard
	Pb	206	469.0	16.1	**0.0318**	0.015	47.2	ug/L	286	Standard
	Pb	207	405.3	12.5	**0.0333**	0.011	33.4	ug/L	257	Standard
	Pb	208	1576.7	3.7	**0.0314**	0.003	10.7	ug/L	956	Standard
	U	238	14465.9	3.7	**2.2164**	0.080	3.6	ug/L	17	Standard
>	**Bi**	209	506765.8	0.4				ug/L	557080	Standard

Sample ID: L1606140801
Report Date/Time: Tuesday, June 28, 2016 23:11:49
Page 1

Approved: June 29, 2016

Na	23	3.3	86.6	**20.4816**	17.733	86.6	mg/L	0	Standard
Mg	24	76429.0	2.1	**98.0879**	0.872	0.9	mg/L	32	Standard
K	39	103.3	20.1	**0.1958**	0.071	36.2	mg/L	30	Standard
Ca	43	268.3	18.7	**34.0467**	7.923	23.3	mg/L	48	Standard
Fe	54	210.5	5.9	**0.0466**	0.009	18.4	mg/L	159	Standard
Fe	57	346.7	13.1	**0.5032**	0.132	26.3	mg/L	195	Standard
Sc-1	45	40988.7	1.5				mg/L	39543	Standard
Cl	35	41040.2	0.8				ug/L	27642	Standard
Kr	83	2.0	173.2				ug/L	2	Standard
Br	81	20580.7	5.3				ug/L	1647	Standard
P	31	21832.4	1.0				ug/L	15231	Standard
S	34	2461.9	6.1				ug/L	1845	Standard
Sr	88	228.3	13.2				ug/L	70	Standard
C	12	196.7	34.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	38.1	77.6				mg/L	12	Standard
Ho-1	165	38.3	32.8				mg/L	12	Standard
Er	166	40.0	90.1				mg/L	20	Standard
I	127	105209.9	5.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.615	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.985	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140801
Report Date/Time: Tuesday, June 28, 2016 23:11:49
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.410
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.968
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606140801
Report Date/Time: Tuesday, June 28, 2016 23:11:49
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606140901
Sample Date/Time: Tuesday, June 28, 2016 23:12:44
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78595.1	3.1				ug/L	81760	Standard
	Be	9	26.7	57.3	**0.0179**	0.015	85.3	ug/L	17	Standard
	Al	27	20167615.6	1.1	**136.1889**	4.854	3.6	ug/L	1410	Standard
	Sc	45	39818.9	1.9				ug/L	39543	Standard
	Ti	47	311.7	10.4	**1.1846**	0.135	11.4	ug/L	39	Standard
	V	51	55787.4	0.6	**8.4391**	0.018	0.2	ug/L	1415	Standard
	Cr	52	16179.6	1.9	**1.4466**	0.047	3.2	ug/L	6946	Standard
	Cr	53	12833.8	2.8	**15.4070**	0.434	2.8	ug/L	328	Standard
	Mn	55	13187.4	1.1	**2.0427**	0.028	1.4	ug/L	823	Standard
	Co	59	670.0	4.7	**0.0714**	0.005	7.2	ug/L	252	Standard
	Ni	60	2540.2	2.3	**1.3479**	0.032	2.4	ug/L	192	Standard
	Cu	65	810.4	1.3	**0.3686**	0.005	1.5	ug/L	141	Standard
	Zn	66	2808.3	3.3	**1.9320**	0.083	4.3	ug/L	491	Standard
>	**Ge**	72	478186.0	0.4				ug/L	515087	Standard
	As	75	1572.1	0.9	**1.5465**	0.010	0.6	ug/L	20	Standard
	Se	82	338.5	3.3	**3.0475**	0.114	3.7	ug/L	15	Standard
	Se-1	77	792.0	6.7	**10.6055**	0.757	7.1	ug/L	48	Standard
>	**Ga**	71	71.7	10.7				mg/L	90	Standard
	Rb	85	3450.4	2.1				ug/L	23	Standard
	Y	89	421286.0	4.0				ug/L	448510	Standard
>	**Rh**	103	76.7	10.0				ug/L	15	Standard
	Mo	98	1179.3	2.2	**0.4594**	0.016	3.6	ug/L	11	Standard
	Ag	107	70.0	6.5	**-0.0048**	0.001	13.6	ug/L	134	Standard
	Cd	111	26.3	13.5	**0.0106**	0.002	18.0	mg/L	7	Standard
	Cd	114	71.5	14.0	**0.0102**	0.002	20.9	ug/L	16	Standard
>	**In**	115	557486.7	1.6				ug/L	611117	Standard
	Sn	118	753.4	2.1	**0.0377**	0.003	7.4	ug/L	518	Standard
	Sb	123	140.1	13.9	**0.0197**	0.005	23.1	ug/L	127	Standard
	Ba	135	30044.1	2.0	**15.9271**	0.116	0.7	ug/L	45	Standard
	Ce	140	1501.7	8.9				ug/L	298	Standard
>	**Tb**	159	887600.8	1.1				ug/L	977942	Standard
	Ho	165	38.3	27.2				ug/L	12	Standard
	Tl	203	136.3	15.5	**0.0135**	0.003	21.6	ug/L	31	Standard
	Tl	205	116.7	8.9	**0.0158**	0.002	10.2	ug/L	20	Standard
	Pb	206	477.7	6.1	**0.0364**	0.006	16.6	ug/L	286	Standard
	Pb	207	398.0	3.8	**0.0344**	0.003	8.7	ug/L	257	Standard
	Pb	208	1707.0	2.5	**0.0420**	0.002	4.6	ug/L	956	Standard
	U	238	23354.0	0.6	**3.6864**	0.026	0.7	ug/L	17	Standard
>	**Bi**	209	492176.6	0.6				ug/L	557080	Standard

Sample ID: L1606140901
Report Date/Time: Tuesday, June 28, 2016 23:15:01
Page 1

Approved: June 29, 2016

Na	23	8.3	124.9	**53.9308**	68.028	126.1	mg/L	0	Standard
Mg	24	78221.4	0.2	**103.3688**	1.796	1.7	mg/L	32	Standard
K	39	181.7	9.7	**0.4684**	0.061	12.9	mg/L	30	Standard
Ca	43	295.0	5.9	**39.1939**	3.495	8.9	mg/L	48	Standard
Fe	54	173.9	5.6	**0.0192**	0.007	35.0	mg/L	159	Standard
Fe	57	403.3	17.1	**0.7302**	0.251	34.4	mg/L	195	Standard
> **Sc-1**	45	39818.9	1.9				mg/L	39543	Standard
Cl	35	38063.1	1.8				ug/L	27642	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	39401.2	2.9				ug/L	1647	Standard
P	31	23753.6	2.5				ug/L	15231	Standard
S	34	2233.5	3.9				ug/L	1845	Standard
Sr	88	295.0	6.1				ug/L	70	Standard
C	12	220.0	31.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	222.1	127.8				mg/L	12	Standard
Ho-1	165	38.3	27.2				mg/L	12	Standard
Er	166	26.7	78.1				mg/L	20	Standard
I	127	56189.0	1.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.129	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.836	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140901
Report Date/Time: Tuesday, June 28, 2016 23:15:01
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	91.224
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	88.349
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 23:15:56
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73471.1	1.2				ug/L	81760	Standard
	Be	9	47618.1	3.0	**53.3659**	2.229	4.2	ug/L	17	Standard
	Al	27	7287296.4	1.0	**52.5966**	0.249	0.5	ug/L	1410	Standard
	Sc	45	40183.2	3.0				ug/L	39543	Standard
	Ti	47	24656.7	0.7	**99.9368**	1.445	1.4	ug/L	39	Standard
	V	51	342959.6	1.5	**49.6067**	0.741	1.5	ug/L	1415	Standard
	Cr	52	350575.7	1.6	**49.7880**	0.923	1.9	ug/L	6946	Standard
	Cr	53	44859.7	1.2	**51.2482**	0.358	0.7	ug/L	328	Standard
	Mn	55	313688.7	1.9	**48.6980**	0.765	1.6	ug/L	823	Standard
	Co	59	336351.1	1.2	**48.2963**	0.507	1.1	ug/L	252	Standard
	Ni	60	92893.3	2.1	**49.6893**	0.993	2.0	ug/L	192	Standard
	Cu	65	92858.0	0.8	**49.2454**	0.445	0.9	ug/L	141	Standard
	Zn	66	54854.1	1.5	**49.6985**	0.961	1.9	ug/L	491	Standard
>	**Ge**	72	510232.1	0.7				ug/L	515087	Standard
	As	75	53972.2	1.6	**48.5043**	0.935	1.9	ug/L	20	Standard
	Se	82	5467.9	0.8	**47.8296**	0.724	1.5	ug/L	15	Standard
	Se-1	77	3829.5	1.2	**50.5966**	0.465	0.9	ug/L	48	Standard
>	**Ga**	71	55.0	32.8				mg/L	90	Standard
	Rb	85	740.0	22.2				ug/L	23	Standard
	Y	89	417471.8	0.9				ug/L	448510	Standard
>	**Rh**	103	28.3	40.8				ug/L	15	Standard
	Mo	98	255774.9	1.1	**100.4324**	1.068	1.1	ug/L	11	Standard
	Ag	107	314263.4	0.6	**49.6826**	0.310	0.6	ug/L	134	Standard
	Cd	111	99244.0	2.0	**49.2800**	0.642	1.3	mg/L	7	Standard
	Cd	114	244609.6	0.7	**49.9721**	0.117	0.2	ug/L	16	Standard
>	**In**	115	575695.1	0.7				ug/L	611117	Standard
	Sn	118	277518.7	1.2	**49.7196**	0.393	0.8	ug/L	518	Standard
	Sb	123	223405.3	1.0	**50.2498**	0.315	0.6	ug/L	127	Standard
	Ba	135	95362.2	0.9	**49.0082**	0.194	0.4	ug/L	45	Standard
	Ce	140	66.7	18.9				ug/L	298	Standard
>	**Tb**	159	900469.8	1.2				ug/L	977942	Standard
	Ho	165	0.0					ug/L	12	Standard
	Tl	203	399704.8	0.8	**50.1537**	0.324	0.6	ug/L	31	Standard
	Tl	205	354566.9	2.1	**51.2307**	0.689	1.3	ug/L	20	Standard
	Pb	206	258134.8	1.1	**50.4360**	0.346	0.7	ug/L	286	Standard
	Pb	207	234508.0	1.0	**50.8014**	0.140	0.3	ug/L	257	Standard
	Pb	208	934488.0	0.8	**52.3272**	0.390	0.7	ug/L	956	Standard
	U	238	348175.4	0.3	**51.3787**	0.514	1.0	ug/L	17	Standard
>	**Bi**	209	526902.0	1.3				ug/L	557080	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 23:18:13
Page 1

Approved: June 29, 2016

Na	23	5.0	100.0	**32.0442**	31.868	99.5	mg/L	0	Standard
Mg	24	3947.2	3.3	**5.1157**	0.206	4.0	mg/L	32	Standard
K	39	1291.7	6.0	**4.1569**	0.313	7.5	mg/L	30	Standard
Ca	43	78.3	13.3	**6.3383**	1.191	18.8	mg/L	48	Standard
Fe	54	5567.6	3.6	**4.8270**	0.308	6.4	mg/L	159	Standard
Fe	57	1653.4	2.1	**4.8734**	0.265	5.4	mg/L	195	Standard
Sc-1	45	40183.2	3.0				mg/L	39543	Standard
Cl	35	36099.6	2.2				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2486.9	19.4				ug/L	1647	Standard
P	31	18199.3	2.9				ug/L	15231	Standard
S	34	2558.5	2.4				ug/L	1845	Standard
Sr	88	88.3	13.1				ug/L	70	Standard
C	12	123.3	18.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.5	205.9				mg/L	12	Standard
Ho-1	165	0.0					mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	3410.4	24.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.732		
Al	27	105.193		
Sc	45			
Ti	47	99.937		
V	51	99.213		
Cr	52	99.576		
Cr	53			
Mn	55	97.396		
Co	59	96.593		
Ni	60	99.379		
Cu	65	98.491		
Zn	66	99.397		
Ge	72		99.057	
As	75	97.009		
Se	82	95.659		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 23:18:13
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.432		
Ag	107	99.365		
Cd	111	98.560		
Cd	114			
In	115			94.204
Sn	118	99.439		
Sb	123	100.500		
Ba	135	98.016		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.307		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.654		
U	238	102.757		
Bi	209			94.583
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 23:18:13
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 23:19:08
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74688.6	0.5				ug/L	81760	Standard
	Be	9	23.3	68.9	**0.0159**	0.018	110.7	ug/L	17	Standard
	Al	27	6963.5	51.4	**0.0350**	0.025	72.0	ug/L	1410	Standard
	Sc	45	39526.5	2.8				ug/L	39543	Standard
	Ti	47	29.3	2.0	**-0.0430**	0.003	6.9	ug/L	39	Standard
	V	51	1022.6	3.0	**-0.0543**	0.006	11.1	ug/L	1415	Standard
	Cr	52	6275.6	1.6	**-0.1243**	0.005	4.1	ug/L	6946	Standard
	Cr	53	655.0	2.0	**0.4308**	0.021	5.0	ug/L	328	Standard
	Mn	55	708.0	10.7	**-0.0355**	0.011	31.8	ug/L	823	Standard
	Co	59	254.0	9.4	**0.0060**	0.003	53.0	ug/L	252	Standard
	Ni	60	190.7	1.6	**-0.0002**	0.001	475.8	ug/L	192	Standard
	Cu	65	144.3	16.1	**-0.0123**	0.012	100.6	ug/L	141	Standard
	Zn	66	441.0	4.3	**-0.4114**	0.015	3.7	ug/L	491	Standard
>	**Ge**	72	497792.7	1.0				ug/L	515087	Standard
	As	75	-15.2	258.6	**0.0262**	0.036	138.8	ug/L	20	Standard
	Se	82	23.5	16.0	**0.0916**	0.033	35.7	ug/L	15	Standard
	Se-1	77	63.7	3.3	**0.1558**	0.037	23.6	ug/L	48	Standard
>	**Ga**	71	50.0	34.6				mg/L	90	Standard
	Rb	85	33.3	56.8				ug/L	23	Standard
	Y	89	425942.8	1.0				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	281.0	37.4	**0.0876**	0.040	45.9	ug/L	11	Standard
	Ag	107	137.7	21.7	**0.0048**	0.005	95.8	ug/L	134	Standard
	Cd	111	15.2	29.8	**0.0044**	0.002	50.1	mg/L	7	Standard
	Cd	114	43.1	89.6	**0.0036**	0.008	212.7	ug/L	16	Standard
>	**In**	115	595727.8	0.7				ug/L	611117	Standard
	Sn	118	753.4	17.4	**0.0287**	0.023	78.8	ug/L	518	Standard
	Sb	123	441.8	17.1	**0.0832**	0.016	19.8	ug/L	127	Standard
	Ba	135	56.0	54.4	**0.0027**	0.015	556.5	ug/L	45	Standard
	Ce	140	23.3	12.4				ug/L	298	Standard
>	**Tb**	159	931120.0	0.7				ug/L	977942	Standard
	Ho	165	10.0	86.6				ug/L	12	Standard
	Tl	203	88.3	51.6	**0.0060**	0.006	92.0	ug/L	31	Standard
	Tl	205	63.3	63.8	**0.0066**	0.006	85.2	ug/L	20	Standard
	Pb	206	308.0	15.6	**-0.0049**	0.009	177.6	ug/L	286	Standard
	Pb	207	259.7	11.6	**-0.0032**	0.006	187.4	ug/L	257	Standard
	Pb	208	1046.3	7.8	**-0.0033**	0.004	126.3	ug/L	956	Standard
	U	238	64.3	43.1	**0.0063**	0.004	62.8	ug/L	17	Standard
>	**Bi**	209	540861.2	0.7				ug/L	557080	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 23:21:25
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.5148**	18.203	173.1	mg/L	0	Standard
Mg	24	55.0	41.7	**0.0162**	0.030	187.5	mg/L	32	Standard
K	39	25.0	20.0	**-0.0566**	0.019	34.0	mg/L	30	Standard
Ca	43	33.3	34.6	**-0.2594**	1.827	704.2	mg/L	48	Standard
Fe	54	134.2	10.1	**-0.0157**	0.009	57.1	mg/L	159	Standard
Fe	57	241.7	9.3	**0.1932**	0.098	50.6	mg/L	195	Standard
Sc-1	45	39526.5	2.8				mg/L	39543	Standard
Cl	35	35813.0	1.8				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1830.1	10.1				ug/L	1647	Standard
P	31	18830.0	1.9				ug/L	15231	Standard
S	34	2625.2	3.0				ug/L	1845	Standard
Sr	88	65.0	33.5				ug/L	70	Standard
C	12	80.0	21.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.2	93.8				mg/L	12	Standard
Ho-1	165	10.0	86.6				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	20	Standard
I	127	2391.9	12.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.642	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 23:21:25
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.482
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.089
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 28, 2016 23:22:21
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70209.0	1.7				ug/L	81760	Standard
	Be	9	180.0	16.9	**0.2017**	0.039	19.3	ug/L	17	Standard
	Al	27	5133.2	109.4	**0.0240**	0.041	173.1	ug/L	1410	Standard
	Sc	45	36931.6	2.6				ug/L	39543	Standard
	Ti	47	20.7	36.3	**-0.0758**	0.033	44.0	ug/L	39	Standard
	V	51	3515.4	3.3	**0.3352**	0.014	4.2	ug/L	1415	Standard
	Cr	52	11116.7	0.6	**0.6541**	0.028	4.2	ug/L	6946	Standard
	Cr	53	1220.0	4.0	**1.1474**	0.049	4.3	ug/L	328	Standard
	Mn	55	3585.8	2.9	**0.4442**	0.023	5.1	ug/L	823	Standard
	Co	59	2687.2	1.7	**0.3785**	0.013	3.3	ug/L	252	Standard
	Ni	60	2873.6	1.1	**1.5299**	0.031	2.0	ug/L	192	Standard
	Cu	65	1483.4	2.9	**0.7455**	0.015	2.0	ug/L	141	Standard
	Zn	66	6969.9	1.2	**5.9869**	0.185	3.1	ug/L	491	Standard
>	**Ge**	72	480794.8	1.6				ug/L	515087	Standard
	As	75	396.5	4.3	**0.4183**	0.021	5.0	ug/L	20	Standard
	Se	82	61.9	5.1	**0.4561**	0.020	4.4	ug/L	15	Standard
	Se-1	77	78.3	14.0	**0.3969**	0.172	43.4	ug/L	48	Standard
>	**Ga**	71	46.7	32.7				mg/L	90	Standard
	Rb	85	21.7	13.3				ug/L	23	Standard
	Y	89	400775.4	1.5				ug/L	448510	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	70.5	1.1	**0.0095**	0.000	1.9	ug/L	11	Standard
	Ag	107	2377.2	2.1	**0.3719**	0.012	3.3	ug/L	134	Standard
	Cd	111	440.9	3.8	**0.2230**	0.005	2.1	mg/L	7	Standard
	Cd	114	1065.8	11.0	**0.2200**	0.026	11.9	ug/L	16	Standard
>	**In**	115	557761.4	1.6				ug/L	611117	Standard
	Sn	118	468.3	18.8	**-0.0150**	0.017	116.5	ug/L	518	Standard
	Sb	123	1709.9	1.5	**0.3843**	0.009	2.4	ug/L	127	Standard
	Ba	135	1358.4	3.9	**0.6957**	0.022	3.2	ug/L	45	Standard
	Ce	140	15.0	33.3				ug/L	298	Standard
>	**Tb**	159	873882.2	1.3				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	633.3	2.0	**0.0774**	0.002	2.5	ug/L	31	Standard
	Tl	205	590.0	17.7	**0.0858**	0.015	17.2	ug/L	20	Standard
	Pb	206	1230.0	0.6	**0.1853**	0.002	0.8	ug/L	286	Standard
	Pb	207	1060.4	4.9	**0.1798**	0.012	6.4	ug/L	257	Standard
	Pb	208	4496.6	3.9	**0.2002**	0.009	4.3	ug/L	956	Standard
	U	238	2637.6	2.9	**0.3996**	0.008	2.0	ug/L	17	Standard
>	**Bi**	209	509391.4	0.9				ug/L	557080	Standard

Sample ID: QC Std 8
Report Date/Time: Tuesday, June 28, 2016 23:24:38
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	38.3	30.1	**-0.0027**	0.016	586.9	mg/L	32	Standard
K	39	28.3	44.4	**-0.0396**	0.043	109.0	mg/L	30	Standard
Ca	43	26.7	43.3	**-1.0379**	1.747	168.3	mg/L	48	Standard
Fe	54	112.3	22.9	**-0.0284**	0.024	85.0	mg/L	159	Standard
Fe	57	253.3	17.2	**0.2902**	0.150	51.8	mg/L	195	Standard
Sc-1	45	36931.6	2.6				mg/L	39543	Standard
Cl	35	34628.2	2.2				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1663.4	2.8				ug/L	1647	Standard
P	31	13167.4	6.3				ug/L	15231	Standard
S	34	2550.2	3.7				ug/L	1845	Standard
Sr	88	81.7	12.7				ug/L	70	Standard
C	12	96.7	15.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.7	104.3				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	13.3	173.2				mg/L	20	Standard
I	127	1815.1	19.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.854		
Al	27			
Sc	45			
Ti	47			
V	51	83.798		
Cr	52	81.760		
Cr	53			
Mn	55	88.848		
Co	59	94.629		
Ni	60	95.622		
Cu	65	93.183		
Zn	66	95.791		
Ge	72		93.342	
As	75	104.574		
Se	82	114.027		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
Report Date/Time: Tuesday, June 28, 2016 23:24:38
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	92.977		
Cd	111	92.929		
Cd	114			
> In	115			91.269
Sn	118			
Sb	123	96.075		
Ba	135	92.766		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.789		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.122		
U	238	99.892		
> Bi	209			91.439
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: PBS M4 WG574306-02
Sample Date/Time: Tuesday, June 28, 2016 23:25:34
Number of Replicates: 3
Autosampler Position: 401
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73219.9	2.0				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0146**	0.003	19.0	ug/L	17	Standard
	Al	27	8870.9	1.6	**0.0499**	0.001	2.1	ug/L	1410	Standard
	Sc	45	39242.4	3.0				ug/L	39543	Standard
	Ti	47	26.0	21.4	**-0.0565**	0.021	37.8	ug/L	39	Standard
	V	51	1183.1	4.4	**-0.0293**	0.008	27.7	ug/L	1415	Standard
	Cr	52	7819.4	0.5	**0.1132**	0.035	31.1	ug/L	6946	Standard
	Cr	53	706.7	5.7	**0.4968**	0.043	8.6	ug/L	328	Standard
	Mn	55	910.4	1.2	**-0.0022**	0.005	247.3	ug/L	823	Standard
	Co	59	210.7	7.4	**-0.0001**	0.003	2281.1	ug/L	252	Standard
	Ni	60	270.7	10.1	**0.0449**	0.018	40.4	ug/L	192	Standard
	Cu	65	197.3	7.2	**0.0174**	0.009	50.7	ug/L	141	Standard
	Zn	66	1637.4	3.9	**0.7282**	0.056	7.7	ug/L	491	Standard
>	**Ge**	72	494675.2	2.7				ug/L	515087	Standard
	As	75	-22.9	72.5	**0.0188**	0.016	85.6	ug/L	20	Standard
	Se	82	19.6	24.9	**0.0572**	0.041	70.8	ug/L	15	Standard
	Se-1	77	57.0	14.0	**0.0674**	0.090	134.0	ug/L	48	Standard
>	**Ga**	71	43.3	17.6				mg/L	90	Standard
	Rb	85	43.3	35.3				ug/L	23	Standard
	Y	89	424600.8	0.9				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	68.5	24.2	**0.0070**	0.006	90.8	ug/L	11	Standard
	Ag	107	79.3	10.7	**-0.0041**	0.001	32.3	ug/L	134	Standard
	Cd	111	8.5	44.3	**0.0012**	0.002	151.3	mg/L	7	Standard
	Cd	114	29.3	97.6	**0.0009**	0.006	647.6	ug/L	16	Standard
>	**In**	115	594639.0	0.2				ug/L	611117	Standard
	Sn	118	648.3	4.2	**0.0107**	0.005	42.7	ug/L	518	Standard
	Sb	123	146.0	12.4	**0.0190**	0.004	20.5	ug/L	127	Standard
	Ba	135	94.3	2.4	**0.0219**	0.001	5.5	ug/L	45	Standard
	Ce	140	41.7	27.7				ug/L	298	Standard
>	**Tb**	159	926166.4	1.8				ug/L	977942	Standard
	Ho	165	11.7	24.7				ug/L	12	Standard
	Tl	203	20.7	43.9	**-0.0022**	0.001	49.4	ug/L	31	Standard
	Tl	205	15.0	33.3	**-0.0001**	0.001	484.0	ug/L	20	Standard
	Pb	206	313.0	7.9	**-0.0032**	0.004	138.6	ug/L	286	Standard
	Pb	207	286.3	1.1	**0.0033**	0.001	36.5	ug/L	257	Standard
	Pb	208	1144.7	1.9	**0.0029**	0.001	51.3	ug/L	956	Standard
	U	238	10.7	32.9	**-0.0014**	0.001	35.7	ug/L	17	Standard
>	**Bi**	209	533593.4	0.9				ug/L	557080	Standard

Sample ID: PBS M4 WG574306-02
Report Date/Time: Tuesday, June 28, 2016 23:27:51
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	39.7	**-0.0149**	0.016	104.8	mg/L	32	Standard
K	39	41.7	69.3	**0.0013**	0.101	7981.1	mg/L	30	Standard
Ca	43	18.3	15.7	**-2.5418**	0.422	16.6	mg/L	48	Standard
Fe	54	144.2	9.3	**-0.0052**	0.016	301.7	mg/L	159	Standard
Fe	57	226.7	13.5	**0.1451**	0.083	57.3	mg/L	195	Standard
Sc-1	45	39242.4	3.0				mg/L	39543	Standard
Cl	35	36295.4	2.3				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2233.5	3.2				ug/L	1647	Standard
P	31	18441.2	3.0				ug/L	15231	Standard
S	34	2560.2	3.7				ug/L	1845	Standard
Sr	88	61.7	26.1				ug/L	70	Standard
C	12	130.0	20.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.9	112.2				mg/L	12	Standard
Ho-1	165	11.7	24.7				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	1601.8	24.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.555	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.037	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBS M4 WG574306-02
Report Date/Time: Tuesday, June 28, 2016 23:27:51
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.304
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.784
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: LCSS M4 WG574306-03
Sample Date/Time: Tuesday, June 28, 2016 23:28:45
Number of Replicates: 3
Autosampler Position: 402
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72376.0	3.8				ug/L	81760	Standard
	Be	9	23423.1	1.4	**26.6532**	0.807	3.0	ug/L	17	Standard
	Al	27	9074.4	3.8	**0.0521**	0.003	4.9	ug/L	1410	Standard
	Sc	45	39197.3	2.4				ug/L	39543	Standard
	Ti	47	29.3	7.1	**-0.0442**	0.007	16.8	ug/L	39	Standard
	V	51	169885.7	0.8	**24.8594**	0.272	1.1	ug/L	1415	Standard
	Cr	52	181506.5	1.2	**25.6821**	0.081	0.3	ug/L	6946	Standard
	Cr	53	22394.9	2.0	**25.8190**	0.261	1.0	ug/L	328	Standard
	Mn	55	162938.5	1.1	**25.6253**	0.137	0.5	ug/L	823	Standard
	Co	59	171171.6	1.4	**24.9527**	0.363	1.5	ug/L	252	Standard
	Ni	60	47214.1	1.2	**25.6031**	0.067	0.3	ug/L	192	Standard
	Cu	65	47011.2	0.9	**25.2811**	0.042	0.2	ug/L	141	Standard
	Zn	66	28788.3	1.3	**26.1066**	0.165	0.6	ug/L	491	Standard
>	**Ge**	72	502290.9	1.0				ug/L	515087	Standard
	As	75	27387.3	0.6	**25.0208**	0.130	0.5	ug/L	20	Standard
	Se	82	2754.4	0.7	**24.4154**	0.147	0.6	ug/L	15	Standard
	Se-1	77	1916.1	0.9	**25.3637**	0.129	0.5	ug/L	48	Standard
>	**Ga**	71	55.0	18.2				mg/L	90	Standard
	Rb	85	31.7	18.2				ug/L	23	Standard
	Y	89	439399.0	0.9				ug/L	448510	Standard
>	**Rh**	103	31.7	24.1				ug/L	15	Standard
	Mo	98	98.7	7.7	**0.0186**	0.002	12.0	ug/L	11	Standard
	Ag	107	158446.9	0.8	**24.3265**	0.298	1.2	ug/L	134	Standard
	Cd	111	51639.0	0.8	**24.9106**	0.321	1.3	mg/L	7	Standard
	Cd	114	123238.5	0.9	**24.4562**	0.275	1.1	ug/L	16	Standard
>	**In**	115	592677.3	1.9				ug/L	611117	Standard
	Sn	118	653.3	6.2	**0.0119**	0.005	41.0	ug/L	518	Standard
	Sb	123	110361.6	0.7	**24.1094**	0.310	1.3	ug/L	127	Standard
	Ba	135	48745.3	0.9	**24.3246**	0.340	1.4	ug/L	45	Standard
	Ce	140	51.7	39.1				ug/L	298	Standard
>	**Tb**	159	905963.3	1.2				ug/L	977942	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	202415.8	0.8	**25.4126**	0.129	0.5	ug/L	31	Standard
	Tl	205	180512.3	0.1	**26.1008**	0.236	0.9	ug/L	20	Standard
	Pb	206	132596.7	0.6	**25.8949**	0.268	1.0	ug/L	286	Standard
	Pb	207	115831.1	1.1	**25.0809**	0.349	1.4	ug/L	257	Standard
	Pb	208	485807.7	1.5	**27.1937**	0.548	2.0	ug/L	956	Standard
	U	238	174705.5	0.6	**25.7950**	0.133	0.5	ug/L	17	Standard
>	**Bi**	209	526543.8	0.9				ug/L	557080	Standard

Sample ID: LCSS M4 WG574306-03
Report Date/Time: Tuesday, June 28, 2016 23:31:02
Page 1

Approved: June 29, 2016

	Na	23	0.0		**0.0050**			mg/L	0	Standard
	Mg	24	28.3	53.9	**-0.0192**	0.020	104.0	mg/L	32	Standard
	K	39	18.3	78.7	**-0.0794**	0.048	60.3	mg/L	30	Standard
	Ca	43	26.7	21.7	**-1.2726**	0.799	62.8	mg/L	48	Standard
	Fe	54	143.6	13.2	**-0.0059**	0.017	289.5	mg/L	159	Standard
	Fe	57	241.7	12.5	**0.2002**	0.121	60.5	mg/L	195	Standard
>	**Sc-1**	45	39197.3	2.4				mg/L	39543	Standard
	Cl	35	35988.7	2.8				ug/L	27642	Standard
	Kr	83	3.3	17.3				ug/L	2	Standard
	Br	81	1690.1	11.1				ug/L	1647	Standard
	P	31	17910.6	1.0				ug/L	15231	Standard
	S	34	2548.5	6.5				ug/L	1845	Standard
	Sr	88	75.0	24.0				ug/L	70	Standard
	C	12	120.0	16.7				mg/L	113	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	16.5	68.3				mg/L	12	Standard
	Ho-1	165	11.7	65.5				mg/L	12	Standard
	Er	166	3.3	173.2				mg/L	20	Standard
	I	127	1618.4	15.4				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		88.522	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.516	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: LCSS M4 WG574306-03
Report Date/Time: Tuesday, June 28, 2016 23:31:02
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.983
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.518
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M4 WG574306-03
Report Date/Time: Tuesday, June 28, 2016 23:31:02
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606129707 WG574306-01
Sample Date/Time: Tuesday, June 28, 2016 23:31:57
Number of Replicates: 3
Autosampler Position: 403
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73039.0	1.3				ug/L	81760	Standard
	Be	9	626.7	10.9	**0.6973**	0.086	12.3	ug/L	17	Standard
	Al	27	6016122.3	2.0	**43.6794**	0.992	2.3	ug/L	1410	Standard
	Sc	45	43592.6	1.8				ug/L	39543	Standard
	Ti	47	1645.1	1.5	**6.4955**	0.085	1.3	ug/L	39	Standard
	V	51	103833.7	2.4	**14.8338**	0.288	1.9	ug/L	1415	Standard
	Cr	52	59851.7	1.4	**7.6005**	0.153	2.0	ug/L	6946	Standard
	Cr	53	7268.4	3.1	**7.9966**	0.305	3.8	ug/L	328	Standard
	Mn	55	3268160.2	1.2	**507.4707**	9.760	1.9	ug/L	823	Standard
	Co	59	39533.2	0.9	**5.6343**	0.098	1.7	ug/L	252	Standard
	Ni	60	18874.4	2.7	**9.9863**	0.299	3.0	ug/L	192	Standard
	Cu	65	69246.2	1.1	**36.6021**	0.305	0.8	ug/L	141	Standard
	Zn	66	86637.7	0.8	**78.7605**	0.745	0.9	ug/L	491	Standard
>	**Ge**	72	511586.4	0.8				ug/L	515087	Standard
	As	75	4823.9	1.5	**4.3600**	0.029	0.7	ug/L	20	Standard
	Se	82	100.3	6.0	**0.7578**	0.047	6.2	ug/L	15	Standard
	Se-1	77	133.3	1.1	**1.0631**	0.006	0.6	ug/L	48	Standard
>	**Ga**	71	7216.7	0.8				mg/L	90	Standard
	Rb	85	77067.2	0.1				ug/L	23	Standard
	Y	89	607493.8	2.8				ug/L	448510	Standard
>	**Rh**	103	25.0	34.6				ug/L	15	Standard
	Mo	98	512.0	2.8	**0.1759**	0.005	2.9	ug/L	11	Standard
	Ag	107	750.4	6.7	**0.0988**	0.008	7.8	ug/L	134	Standard
	Cd	111	815.5	1.0	**0.3898**	0.005	1.3	mg/L	7	Standard
	Cd	114	2038.2	2.1	**0.3989**	0.010	2.4	ug/L	16	Standard
>	**In**	115	593721.9	0.4				ug/L	611117	Standard
	Sn	118	941.7	10.4	**0.0620**	0.016	26.6	ug/L	518	Standard
	Sb	123	1005.8	16.4	**0.2066**	0.037	17.7	ug/L	127	Standard
	Ba	135	393236.3	1.1	**196.0335**	2.433	1.2	ug/L	45	Standard
	Ce	140	857283.3	2.5				ug/L	298	Standard
>	**Tb**	159	944884.3	0.7				ug/L	977942	Standard
	Ho	165	15139.2	2.1				ug/L	12	Standard
	Tl	203	479.0	10.1	**0.0546**	0.006	10.6	ug/L	31	Standard
	Tl	205	396.7	12.4	**0.0544**	0.008	14.1	ug/L	20	Standard
	Pb	206	209606.6	0.8	**40.4302**	0.428	1.1	ug/L	286	Standard
	Pb	207	173972.5	0.8	**37.2011**	0.310	0.8	ug/L	257	Standard
	Pb	208	734775.6	0.6	**40.6204**	0.824	2.0	ug/L	956	Standard
	U	238	3055.0	2.6	**0.4423**	0.014	3.2	ug/L	17	Standard
>	**Bi**	209	533598.4	1.5				ug/L	557080	Standard

Sample ID: L1606129707 WG574306-01
Report Date/Time: Tuesday, June 28, 2016 23:34:13
Page 1

Approved: June 29, 2016

Na	23	3.3	173.2	**19.2926**	33.407	173.2	mg/L	0	Standard
Mg	24	75.0	26.7	**0.0334**	0.024	70.8	mg/L	32	Standard
K	39	210.0	4.8	**0.5021**	0.023	4.7	mg/L	30	Standard
Ca	43	75.0	29.1	**4.9537**	2.848	57.5	mg/L	48	Standard
Fe	54	6552.0	2.8	**5.2441**	0.230	4.4	mg/L	159	Standard
Fe	57	1841.8	2.3	**5.0156**	0.091	1.8	mg/L	195	Standard
> **Sc-1**	45	43592.6	1.8				mg/L	39543	Standard
Cl	35	34528.0	1.5				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	3080.3	6.6				ug/L	1647	Standard
P	31	18262.7	4.8				ug/L	15231	Standard
S	34	2550.2	4.9				ug/L	1845	Standard
Sr	88	106.7	7.2				ug/L	70	Standard
C	12	370.0	20.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	40.0				mg/L	0	Standard
Dy	164	25551.2	3.2				mg/L	12	Standard
Ho-1	165	15139.2	2.1				mg/L	12	Standard
Er	166	14156.6	1.1				mg/L	20	Standard
I	127	14104.9	1.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.333	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.320	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129707 WG574306-01
Report Date/Time: Tuesday, June 28, 2016 23:34:13
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.154
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.785
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606129708S WG574306-04
Sample Date/Time: Tuesday, June 28, 2016 23:35:08
Number of Replicates: 3
Autosampler Position: 404
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77425.7	0.5				ug/L	81760	Standard
	Be	9	24978.9	2.1	**26.5514**	0.597	2.2	ug/L	17	Standard
	Al	27	20723622.4	0.1	**141.9584**	0.685	0.5	ug/L	1410	Standard
	Sc	45	47225.2	3.2				ug/L	39543	Standard
	Ti	47	4499.3	2.9	**18.2724**	0.558	3.1	ug/L	39	Standard
	V	51	344846.0	0.3	**50.3538**	0.699	1.4	ug/L	1415	Standard
	Cr	52	312957.5	0.8	**44.7646**	1.096	2.4	ug/L	6946	Standard
	Cr	53	39581.6	1.4	**45.6150**	1.229	2.7	ug/L	328	Standard
	Mn	55	5573425.5	1.4	**875.8629**	6.350	0.7	ug/L	823	Standard
	Co	59	254404.2	1.0	**36.8653**	0.333	0.9	ug/L	252	Standard
	Ni	60	98601.5	0.1	**53.2500**	0.840	1.6	ug/L	192	Standard
	Cu	65	83052.3	0.8	**44.4536**	0.827	1.9	ug/L	141	Standard
	Zn	66	91760.7	0.8	**84.4843**	0.972	1.2	ug/L	491	Standard
>	**Ge**	72	505521.9	1.6				ug/L	515087	Standard
	As	75	29384.3	0.4	**26.6737**	0.341	1.3	ug/L	20	Standard
	Se	82	1902.3	1.0	**16.7176**	0.177	1.1	ug/L	15	Standard
	Se-1	77	1368.1	4.0	**17.7813**	0.553	3.1	ug/L	48	Standard
>	**Ga**	71	22081.1	1.8				mg/L	90	Standard
	Rb	85	217862.7	3.0				ug/L	23	Standard
	Y	89	681158.2	0.5				ug/L	448510	Standard
>	**Rh**	103	41.7	13.9				ug/L	15	Standard
	Mo	98	502.0	0.9	**0.1763**	0.003	1.6	ug/L	11	Standard
	Ag	107	151390.6	0.2	**23.7106**	0.326	1.4	ug/L	134	Standard
	Cd	111	50168.4	0.1	**24.6878**	0.285	1.2	mg/L	7	Standard
	Cd	114	122073.8	0.4	**24.7133**	0.372	1.5	ug/L	16	Standard
>	**In**	115	580961.0	1.3				ug/L	611117	Standard
	Sn	118	790.0	7.7	**0.0385**	0.009	23.5	ug/L	518	Standard
	Sb	123	3165.4	5.9	**0.6928**	0.037	5.4	ug/L	127	Standard
	Ba	135	532338.7	0.4	**271.2464**	4.110	1.5	ug/L	45	Standard
	Ce	140	1309534.5	1.1				ug/L	298	Standard
>	**Tb**	159	945803.3	0.3				ug/L	977942	Standard
	Ho	165	21665.5	2.8				ug/L	12	Standard
	Tl	203	195988.5	0.7	**24.3661**	0.181	0.7	ug/L	31	Standard
	Tl	205	172319.6	2.0	**24.6721**	0.452	1.8	ug/L	20	Standard
	Pb	206	254741.0	0.7	**49.3204**	0.423	0.9	ug/L	286	Standard
	Pb	207	216152.1	1.4	**46.3962**	0.722	1.6	ug/L	257	Standard
	Pb	208	888930.7	0.3	**49.3200**	0.099	0.2	ug/L	956	Standard
	U	238	171966.4	0.9	**25.1430**	0.188	0.7	ug/L	17	Standard
>	**Bi**	209	531711.1	0.2				ug/L	557080	Standard

Sample ID: L1606129708S WG574306-04
Report Date/Time: Tuesday, June 28, 2016 23:37:25
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	125.0	34.9	**0.0812**	0.045	55.3	mg/L	32	Standard
K	39	518.3	8.6	**1.3288**	0.177	13.3	mg/L	30	Standard
Ca	43	238.3	9.5	**24.9959**	3.131	12.5	mg/L	48	Standard
Fe	54	18930.5	0.8	**14.2167**	0.407	2.9	mg/L	159	Standard
Fe	57	5154.2	3.0	**13.9467**	0.213	1.5	mg/L	195	Standard
> **Sc-1**	45	47225.2	3.2				mg/L	39543	Standard
Cl	35	33388.1	1.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2326.8	4.2				ug/L	1647	Standard
P	31	19087.0	1.5				ug/L	15231	Standard
S	34	2648.6	1.1				ug/L	1845	Standard
Sr	88	121.7	17.1				ug/L	70	Standard
C	12	206.7	36.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	0	Standard
Dy	164	35480.3	0.5				mg/L	12	Standard
Ho-1	165	21665.5	2.8				mg/L	12	Standard
Er	166	19556.0	2.5				mg/L	20	Standard
I	127	13694.5	2.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.699	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.143	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129708S WG574306-04
Report Date/Time: Tuesday, June 28, 2016 23:37:25
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.065
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.446
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129708S WG574306-04
Report Date/Time: Tuesday, June 28, 2016 23:37:25
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606129709SD WG574306-05
Sample Date/Time: Tuesday, June 28, 2016 23:38:19
Number of Replicates: 3
Autosampler Position: 405
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74161.1	1.1				ug/L	81760	Standard
	Be	9	23705.2	3.8	**26.3039**	0.872	3.3	ug/L	17	Standard
	Al	27	6111125.0	1.3	**43.6951**	0.516	1.2	ug/L	1410	Standard
	Sc	45	44620.6	1.2				ug/L	39543	Standard
	Ti	47	2932.6	3.4	**11.8635**	0.492	4.1	ug/L	39	Standard
	V	51	246865.2	0.2	**36.0158**	0.450	1.2	ug/L	1415	Standard
	Cr	52	213059.8	1.6	**30.1549**	0.173	0.6	ug/L	6946	Standard
	Cr	53	26094.1	1.0	**29.9771**	0.650	2.2	ug/L	328	Standard
	Mn	55	1521366.7	1.6	**239.1613**	2.815	1.2	ug/L	823	Standard
	Co	59	194513.2	1.8	**28.2005**	0.410	1.5	ug/L	252	Standard
	Ni	60	61728.2	1.1	**33.3195**	0.163	0.5	ug/L	192	Standard
	Cu	65	74436.8	1.3	**39.8619**	0.705	1.8	ug/L	141	Standard
	Zn	66	58904.3	0.8	**53.9789**	0.545	1.0	ug/L	491	Standard
>	**Ge**	72	505111.3	1.2				ug/L	515087	Standard
	As	75	31837.0	1.5	**28.9187**	0.503	1.7	ug/L	20	Standard
	Se	82	2328.1	1.1	**20.5054**	0.470	2.3	ug/L	15	Standard
	Se-1	77	1619.4	1.4	**21.2042**	0.440	2.1	ug/L	48	Standard
>	**Ga**	71	6334.7	3.0				mg/L	90	Standard
	Rb	85	74980.1	1.6				ug/L	23	Standard
	Y	89	605551.0	0.9				ug/L	448510	Standard
>	**Rh**	103	31.7	39.7				ug/L	15	Standard
	Mo	98	404.4	5.7	**0.1335**	0.008	5.8	ug/L	11	Standard
	Ag	107	149725.6	1.6	**22.7377**	0.610	2.7	ug/L	134	Standard
	Cd	111	49979.3	1.2	**23.8462**	0.386	1.6	mg/L	7	Standard
	Cd	114	121386.1	1.5	**23.8269**	0.554	2.3	ug/L	16	Standard
>	**In**	115	599198.2	1.3				ug/L	611117	Standard
	Sn	118	811.7	7.5	**0.0382**	0.012	32.5	ug/L	518	Standard
	Sb	123	19138.7	1.5	**4.1252**	0.117	2.8	ug/L	127	Standard
	Ba	135	258930.8	0.8	**127.9040**	1.896	1.5	ug/L	45	Standard
	Ce	140	760518.7	0.8				ug/L	298	Standard
>	**Tb**	159	951283.8	0.9				ug/L	977942	Standard
	Ho	165	14106.6	0.1				ug/L	12	Standard
	Tl	203	188730.2	0.5	**23.1187**	0.087	0.4	ug/L	31	Standard
	Tl	205	170134.9	1.0	**24.0027**	0.337	1.4	ug/L	20	Standard
	Pb	206	208981.3	1.7	**39.8515**	0.361	0.9	ug/L	286	Standard
	Pb	207	178505.4	0.4	**37.7421**	0.330	0.9	ug/L	257	Standard
	Pb	208	755416.1	1.2	**41.2868**	0.479	1.2	ug/L	956	Standard
	U	238	170025.1	1.0	**24.4935**	0.095	0.4	ug/L	17	Standard
>	**Bi**	209	539649.3	0.9				ug/L	557080	Standard

Sample ID: L1606129709SD WG574306-05
Report Date/Time: Tuesday, June 28, 2016 23:40:36
Page 1

Approved: June 29, 2016

Na	23	3.3	86.6	**19.0051**	16.458	86.6	mg/L	0	Standard
Mg	24	83.3	27.7	**0.0410**	0.026	64.1	mg/L	32	Standard
K	39	181.7	7.9	**0.4027**	0.045	11.2	mg/L	30	Standard
Ca	43	75.0	26.7	**4.7351**	2.622	55.4	mg/L	48	Standard
Fe	54	5650.5	3.5	**4.3963**	0.211	4.8	mg/L	159	Standard
Fe	57	1623.4	7.9	**4.2316**	0.365	8.6	mg/L	195	Standard
> **Sc-1**	45	44620.6	1.2				mg/L	39543	Standard
Cl	35	32136.0	1.3				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1900.1	7.1				ug/L	1647	Standard
P	31	17840.5	2.2				ug/L	15231	Standard
S	34	2363.5	5.1				ug/L	1845	Standard
Sr	88	98.3	20.5				ug/L	70	Standard
C	12	150.0	37.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	0	Standard
Dy	164	23948.7	0.5				mg/L	12	Standard
Ho-1	165	14106.6	0.1				mg/L	12	Standard
Er	166	12898.8	4.1				mg/L	20	Standard
I	127	5567.7	3.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.706	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.063	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129709SD WG574306-05
Report Date/Time: Tuesday, June 28, 2016 23:40:36
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.050
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.871
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129709SD WG574306-05
Report Date/Time: Tuesday, June 28, 2016 23:40:36
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606144301
Sample Date/Time: Tuesday, June 28, 2016 23:41:31
Number of Replicates: 3
Autosampler Position: 406
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72988.8	2.0				ug/L	81760	Standard
	Be	9	916.7	4.9	**1.0251**	0.070	6.9	ug/L	17	Standard
	Al	27	29327581.2	1.7	**213.1994**	7.066	3.3	ug/L	1410	Standard
	Sc	45	42180.3	1.1				ug/L	39543	Standard
	Ti	47	15217.0	2.1	**62.4530**	1.008	1.6	ug/L	39	Standard
	V	51	58550.8	0.3	**8.4144**	0.093	1.1	ug/L	1415	Standard
	Cr	52	50375.3	2.1	**6.3484**	0.119	1.9	ug/L	6946	Standard
	Cr	53	5892.8	2.4	**6.5282**	0.148	2.3	ug/L	328	Standard
	Mn	55	1501608.8	1.0	**236.8837**	1.387	0.6	ug/L	823	Standard
	Co	59	11082.4	1.1	**1.5829**	0.023	1.4	ug/L	252	Standard
	Ni	60	9938.9	1.0	**5.2962**	0.105	2.0	ug/L	192	Standard
	Cu	65	12880.8	1.6	**6.8461**	0.032	0.5	ug/L	141	Standard
	Zn	66	52551.7	1.1	**48.2375**	0.337	0.7	ug/L	491	Standard
>	**Ge**	72	503346.2	1.1				ug/L	515087	Standard
	As	75	9638.5	1.8	**8.8128**	0.107	1.2	ug/L	20	Standard
	Se	82	89.1	11.5	**0.6728**	0.088	13.1	ug/L	15	Standard
	Se-1	77	112.0	20.6	**0.8047**	0.328	40.8	ug/L	48	Standard
>	**Ga**	71	5402.6	1.6				mg/L	90	Standard
	Rb	85	27092.5	2.9				ug/L	23	Standard
	Y	89	512619.4	0.7				ug/L	448510	Standard
>	**Rh**	103	40.0	45.1				ug/L	15	Standard
	Mo	98	2129.4	2.5	**0.7922**	0.032	4.0	ug/L	11	Standard
	Ag	107	397.3	28.5	**0.0446**	0.016	36.8	ug/L	134	Standard
	Cd	111	847.6	0.8	**0.4054**	0.009	2.1	mg/L	7	Standard
	Cd	114	2047.7	3.4	**0.4008**	0.011	2.7	ug/L	16	Standard
>	**In**	115	593663.8	1.5				ug/L	611117	Standard
	Sn	118	1955.1	5.4	**0.2386**	0.021	8.9	ug/L	518	Standard
	Sb	123	857.9	5.2	**0.1744**	0.012	7.0	ug/L	127	Standard
	Ba	135	91007.2	1.4	**45.3648**	1.263	2.8	ug/L	45	Standard
	Ce	140	427372.5	1.2				ug/L	298	Standard
>	**Tb**	159	914890.2	3.3				ug/L	977942	Standard
	Ho	165	5369.3	2.3				ug/L	12	Standard
	Tl	203	3260.4	2.3	**0.4133**	0.015	3.6	ug/L	31	Standard
	Tl	205	2856.9	4.2	**0.4193**	0.011	2.7	ug/L	20	Standard
	Pb	206	241551.6	0.7	**48.2276**	1.641	3.4	ug/L	286	Standard
	Pb	207	199984.5	0.7	**44.2621**	1.381	3.1	ug/L	257	Standard
	Pb	208	845904.8	0.5	**48.3946**	1.395	2.9	ug/L	956	Standard
	U	238	4244.6	0.7	**0.6370**	0.016	2.5	ug/L	17	Standard
>	**Bi**	209	515907.9	2.8				ug/L	557080	Standard

Sample ID: L1606144301
Report Date/Time: Tuesday, June 28, 2016 23:43:48
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.1607**	17.590	173.1	mg/L	0	Standard
Mg	24	176.7	13.4	**0.1635**	0.031	19.2	mg/L	32	Standard
K	39	111.7	29.8	**0.2126**	0.107	50.1	mg/L	30	Standard
Ca	43	486.7	20.1	**63.9109**	13.520	21.2	mg/L	48	Standard
Fe	54	4570.1	3.9	**3.7396**	0.111	3.0	mg/L	159	Standard
Fe	57	1611.8	3.6	**4.4774**	0.217	4.9	mg/L	195	Standard
Sc-1	45	42180.3	1.1				mg/L	39543	Standard
Cl	35	34952.3	0.5				ug/L	27642	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2820.3	6.2				ug/L	1647	Standard
P	31	18733.3	7.5				ug/L	15231	Standard
S	34	2421.9	7.6				ug/L	1845	Standard
Sr	88	105.0	16.5				ug/L	70	Standard
C	12	266.7	9.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	83.3	60.4				mg/L	0	Standard
Dy	164	8334.8	4.4				mg/L	12	Standard
Ho-1	165	5369.3	2.3				mg/L	12	Standard
Er	166	5100.9	4.8				mg/L	20	Standard
I	127	10480.3	8.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.272	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.721	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144301
Report Date/Time: Tuesday, June 28, 2016 23:43:48
Page 2

Approved: June 29, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.144
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.609
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606144301
Report Date/Time: Tuesday, June 28, 2016 23:43:48
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606144302
Sample Date/Time: Tuesday, June 28, 2016 23:44:42
Number of Replicates: 3
Autosampler Position: 407
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71243.8	1.4				ug/L	81760	Standard
	Be	9	1080.0	8.5	**1.2377**	0.094	7.6	ug/L	17	Standard
	Al	27	5504266.2	2.7	**40.9647**	0.928	2.3	ug/L	1410	Standard
	Sc	45	42188.7	3.4				ug/L	39543	Standard
	Ti	47	15737.8	0.6	**62.0152**	0.652	1.1	ug/L	39	Standard
	V	51	45512.4	1.5	**6.2276**	0.158	2.5	ug/L	1415	Standard
	Cr	52	44821.9	1.8	**5.2702**	0.176	3.3	ug/L	6946	Standard
	Cr	53	5345.9	2.2	**5.6430**	0.187	3.3	ug/L	328	Standard
	Mn	55	1510551.7	1.4	**228.8078**	5.482	2.4	ug/L	823	Standard
	Co	59	8314.6	0.3	**1.1314**	0.011	1.0	ug/L	252	Standard
	Ni	60	7372.1	1.0	**3.7410**	0.046	1.2	ug/L	192	Standard
	Cu	65	13129.7	1.4	**6.6988**	0.146	2.2	ug/L	141	Standard
	Zn	66	50712.1	0.8	**44.6331**	0.723	1.6	ug/L	491	Standard
>	**Ge**	72	524277.6	1.0				ug/L	515087	Standard
	As	75	7848.1	0.4	**6.8989**	0.093	1.3	ug/L	20	Standard
	Se	82	94.2	13.2	**0.6849**	0.109	15.9	ug/L	15	Standard
	Se-1	77	110.0	9.5	**0.7149**	0.123	17.2	ug/L	48	Standard
>	**Ga**	71	4740.7	7.0				mg/L	90	Standard
	Rb	85	22735.4	3.5				ug/L	23	Standard
	Y	89	510942.2	1.8				ug/L	448510	Standard
>	**Rh**	103	18.3	110.2				ug/L	15	Standard
	Mo	98	3616.2	2.9	**1.3869**	0.053	3.8	ug/L	11	Standard
	Ag	107	415.3	27.2	**0.0487**	0.017	35.1	ug/L	134	Standard
	Cd	111	879.6	1.3	**0.4294**	0.003	0.8	mg/L	7	Standard
	Cd	114	2156.4	4.6	**0.4311**	0.017	3.9	ug/L	16	Standard
>	**In**	115	581659.3	1.0				ug/L	611117	Standard
	Sn	118	1941.8	8.1	**0.2429**	0.025	10.2	ug/L	518	Standard
	Sb	123	795.2	3.5	**0.1642**	0.005	3.1	ug/L	127	Standard
	Ba	135	105670.2	0.5	**53.7566**	0.798	1.5	ug/L	45	Standard
	Ce	140	489350.3	0.7				ug/L	298	Standard
>	**Tb**	159	914906.3	0.9				ug/L	977942	Standard
	Ho	165	5852.8	3.2				ug/L	12	Standard
	Tl	203	2193.8	7.0	**0.2695**	0.018	6.5	ug/L	31	Standard
	Tl	205	1858.4	8.2	**0.2655**	0.024	8.9	ug/L	20	Standard
	Pb	206	250441.6	1.0	**48.7728**	1.107	2.3	ug/L	286	Standard
	Pb	207	208820.1	0.2	**45.0828**	0.807	1.8	ug/L	257	Standard
	Pb	208	871187.9	1.2	**48.6248**	1.437	3.0	ug/L	956	Standard
	U	238	4748.1	0.9	**0.6954**	0.016	2.3	ug/L	17	Standard
>	**Bi**	209	528719.9	1.7				ug/L	557080	Standard

Sample ID: L1606144302
Report Date/Time: Tuesday, June 28, 2016 23:46:59
Page 1

Approved: June 29, 2016

Na	23	6.7	43.3	**39.8641**	16.152	40.5	mg/L	0	Standard
Mg	24	568.3	2.7	**0.6523**	0.023	3.6	mg/L	32	Standard
K	39	88.3	11.8	**0.1385**	0.034	24.4	mg/L	30	Standard
Ca	43	236.7	18.2	**28.4335**	6.608	23.2	mg/L	48	Standard
Fe	54	3607.3	1.4	**2.9257**	0.132	4.5	mg/L	159	Standard
Fe	57	1208.4	3.1	**3.2044**	0.245	7.6	mg/L	195	Standard
> **Sc-1**	45	42188.7	3.4				mg/L	39543	Standard
Cl	35	33795.0	1.6				ug/L	27642	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	2200.2	4.1				ug/L	1647	Standard
P	31	17892.2	3.9				ug/L	15231	Standard
S	34	2398.5	0.8				ug/L	1845	Standard
Sr	88	86.7	23.3				ug/L	70	Standard
C	12	246.7	15.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	76.7	30.1				mg/L	0	Standard
Dy	164	8934.1	5.5				mg/L	12	Standard
Ho-1	165	5852.8	3.2				mg/L	12	Standard
Er	166	5817.8	2.9				mg/L	20	Standard
I	127	10927.3	3.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.784	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144302
Report Date/Time: Tuesday, June 28, 2016 23:46:59
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.180
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.909
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606144302PS WG574573-01
Sample Date/Time: Tuesday, June 28, 2016 23:47:54
Number of Replicates: 3
Autosampler Position: 408
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74517.8	1.0				ug/L	81760	Standard
	Be	9	49025.9	0.9	**54.1590**	0.839	1.5	ug/L	17	Standard
	Al	27	5488864.5	1.0	**39.0606**	0.777	2.0	ug/L	1410	Standard
	Sc	45	43992.1	1.6				ug/L	39543	Standard
	Ti	47	15590.7	1.3	**62.0794**	2.775	4.5	ug/L	39	Standard
	V	51	384779.8	0.6	**54.7401**	1.764	3.2	ug/L	1415	Standard
	Cr	52	400124.0	1.3	**56.0091**	2.445	4.4	ug/L	6946	Standard
	Cr	53	50664.6	1.6	**56.9262**	0.956	1.7	ug/L	328	Standard
	Mn	55	1785071.4	0.4	**273.1709**	9.729	3.6	ug/L	823	Standard
	Co	59	343226.4	0.5	**48.4551**	1.560	3.2	ug/L	252	Standard
	Ni	60	101539.8	1.7	**53.4214**	2.390	4.5	ug/L	192	Standard
	Cu	65	107630.3	0.5	**56.1285**	1.666	3.0	ug/L	141	Standard
	Zn	66	105446.7	0.4	**94.6554**	2.823	3.0	ug/L	491	Standard
>	**Ge**	72	519316.9	3.3				ug/L	515087	Standard
	As	75	63635.8	1.4	**56.2203**	2.024	3.6	ug/L	20	Standard
	Se	82	5672.0	2.3	**48.8026**	2.645	5.4	ug/L	15	Standard
	Se-1	77	3855.8	0.1	**50.0819**	1.642	3.3	ug/L	48	Standard
>	**Ga**	71	4749.1	6.7				mg/L	90	Standard
	Rb	85	22398.2	1.3				ug/L	23	Standard
	Y	89	511504.7	2.1				ug/L	448510	Standard
>	**Rh**	103	58.3	34.6				ug/L	15	Standard
	Mo	98	3550.9	0.5	**1.3279**	0.015	1.1	ug/L	11	Standard
	Ag	107	317741.2	0.8	**48.5166**	0.462	1.0	ug/L	134	Standard
	Cd	111	103027.6	1.2	**49.4156**	0.686	1.4	mg/L	7	Standard
	Cd	114	250223.1	1.7	**49.3820**	1.399	2.8	ug/L	16	Standard
>	**In**	115	596094.6	1.6				ug/L	611117	Standard
	Sn	118	2016.8	5.9	**0.2476**	0.017	6.7	ug/L	518	Standard
	Sb	123	226110.3	0.9	**49.1269**	0.970	2.0	ug/L	127	Standard
	Ba	135	199376.6	0.4	**98.9961**	1.356	1.4	ug/L	45	Standard
	Ce	140	473631.7	1.6				ug/L	298	Standard
>	**Tb**	159	946510.9	0.6				ug/L	977942	Standard
	Ho	165	5706.1	1.8				ug/L	12	Standard
	Tl	203	404565.2	1.6	**49.2192**	0.432	0.9	ug/L	31	Standard
	Tl	205	358549.4	2.4	**50.2279**	0.323	0.6	ug/L	20	Standard
	Pb	206	506766.3	0.6	**96.0764**	1.688	1.8	ug/L	286	Standard
	Pb	207	430425.5	0.4	**90.4686**	1.648	1.8	ug/L	257	Standard
	Pb	208	1789019.3	1.0	**97.1851**	0.775	0.8	ug/L	956	Standard
	U	238	348425.0	0.3	**49.8561**	0.765	1.5	ug/L	17	Standard
>	**Bi**	209	543434.9	1.8				ug/L	557080	Standard

Sample ID: L1606144302PS WG574573-01
Report Date/Time: Tuesday, June 28, 2016 23:50:11
Page 1

Approved: June 29, 2016

Na	23	3.3	86.6	**19.2423**	16.666	86.6	mg/L	0	Standard
Mg	24	530.0	3.8	**0.5773**	0.030	5.2	mg/L	32	Standard
K	39	95.0	5.3	**0.1471**	0.014	9.3	mg/L	30	Standard
Ca	43	235.0	26.6	**26.8058**	8.969	33.5	mg/L	48	Standard
Fe	54	3632.6	2.6	**2.8189**	0.112	4.0	mg/L	159	Standard
Fe	57	1290.1	7.8	**3.2920**	0.337	10.2	mg/L	195	Standard
> **Sc-1**	45	43992.1	1.6				mg/L	39543	Standard
Cl	35	33127.5	1.3				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	2050.1	2.6				ug/L	1647	Standard
P	31	18372.8	5.1				ug/L	15231	Standard
S	34	2410.2	0.9				ug/L	1845	Standard
Sr	88	108.3	17.5				ug/L	70	Standard
C	12	236.7	47.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	70.5				mg/L	0	Standard
Dy	164	8282.4	2.8				mg/L	12	Standard
Ho-1	165	5706.1	1.8				mg/L	12	Standard
Er	166	5427.6	1.3				mg/L	20	Standard
I	127	10600.4	5.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.821	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144302PS WG574573-01
Report Date/Time: Tuesday, June 28, 2016 23:50:11
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.542
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.551
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606144302PS WG574573-01
Report Date/Time: Tuesday, June 28, 2016 23:50:11
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606144302SDL WG574573-02
Sample Date/Time: Tuesday, June 28, 2016 23:51:05
Number of Replicates: 3
Autosampler Position: 409
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73539.7	0.5				ug/L	81760	Standard
	Be	9	228.3	17.7	**0.2458**	0.045	18.1	ug/L	17	Standard
	Al	27	1128305.0	2.6	**8.1231**	0.173	2.1	ug/L	1410	Standard
	Sc	45	40995.4	3.1				ug/L	39543	Standard
	Ti	47	3133.3	3.6	**12.6953**	0.331	2.6	ug/L	39	Standard
	V	51	9700.8	3.1	**1.2183**	0.050	4.1	ug/L	1415	Standard
	Cr	52	13743.6	3.1	**0.9582**	0.044	4.6	ug/L	6946	Standard
	Cr	53	1285.1	5.5	**1.1537**	0.099	8.6	ug/L	328	Standard
	Mn	55	302649.7	2.2	**47.5055**	0.538	1.1	ug/L	823	Standard
	Co	59	1856.8	5.3	**0.2384**	0.012	4.9	ug/L	252	Standard
	Ni	60	1619.8	3.4	**0.7729**	0.024	3.1	ug/L	192	Standard
	Cu	65	2766.6	1.1	**1.3956**	0.008	0.6	ug/L	141	Standard
	Zn	66	11859.0	1.8	**10.2169**	0.056	0.5	ug/L	491	Standard
>	**Ge**	72	504593.5	1.7				ug/L	515087	Standard
	As	75	1530.8	2.0	**1.4307**	0.048	3.3	ug/L	20	Standard
	Se	82	33.4	31.2	**0.1774**	0.094	53.0	ug/L	15	Standard
	Se-1	77	64.7	12.6	**0.1577**	0.113	71.7	ug/L	48	Standard
>	**Ga**	71	975.0	10.5				mg/L	90	Standard
	Rb	85	4577.4	4.1				ug/L	23	Standard
	Y	89	452862.0	1.2				ug/L	448510	Standard
>	**Rh**	103	23.3	32.7				ug/L	15	Standard
	Mo	98	722.3	4.5	**0.2491**	0.011	4.3	ug/L	11	Standard
	Ag	107	159.0	11.1	**0.0076**	0.003	35.4	ug/L	134	Standard
	Cd	111	175.3	14.8	**0.0794**	0.012	14.8	mg/L	7	Standard
	Cd	114	462.3	4.9	**0.0844**	0.004	4.5	ug/L	16	Standard
>	**In**	115	608749.5	0.7				ug/L	611117	Standard
	Sn	118	845.0	9.9	**0.0416**	0.014	34.5	ug/L	518	Standard
	Sb	123	2112.7	19.6	**0.4370**	0.091	20.8	ug/L	127	Standard
	Ba	135	21046.6	3.7	**10.2079**	0.317	3.1	ug/L	45	Standard
	Ce	140	96335.3	1.6				ug/L	298	Standard
>	**Tb**	159	932545.8	1.3				ug/L	977942	Standard
	Ho	165	1166.7	10.3				ug/L	12	Standard
	Tl	203	511.3	6.9	**0.0588**	0.004	6.8	ug/L	31	Standard
	Tl	205	456.7	14.9	**0.0631**	0.009	14.8	ug/L	20	Standard
	Pb	206	50001.0	0.8	**9.6268**	0.026	0.3	ug/L	286	Standard
	Pb	207	41687.9	1.1	**8.8985**	0.042	0.5	ug/L	257	Standard
	Pb	208	175842.9	0.5	**9.7051**	0.030	0.3	ug/L	956	Standard
	U	238	977.7	3.5	**0.1400**	0.006	4.1	ug/L	17	Standard
>	**Bi**	209	531859.1	0.7				ug/L	557080	Standard

Sample ID: L1606144302SDL WG574573-02
Report Date/Time: Tuesday, June 28, 2016 23:53:22
Page 1

Approved: June 29, 2016

Na	23	3.3	86.6	**20.9199**	18.126	86.6	mg/L	0	Standard
Mg	24	148.3	20.6	**0.1326**	0.034	25.5	mg/L	32	Standard
K	39	35.0	24.7	**-0.0267**	0.032	120.4	mg/L	30	Standard
Ca	43	75.0	20.0	**5.6602**	2.270	40.1	mg/L	48	Standard
Fe	54	775.4	6.3	**0.5410**	0.062	11.5	mg/L	159	Standard
Fe	57	435.0	3.0	**0.7919**	0.003	0.4	mg/L	195	Standard
> **Sc-1**	45	40995.4	3.1				mg/L	39543	Standard
Cl	35	32746.0	2.5				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1743.4	12.5				ug/L	1647	Standard
P	31	17056.3	1.5				ug/L	15231	Standard
S	34	2336.8	6.2				ug/L	1845	Standard
Sr	88	78.3	20.5				ug/L	70	Standard
C	12	126.7	27.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	0	Standard
Dy	164	1870.0	3.5				mg/L	12	Standard
Ho-1	165	1166.7	10.3				mg/L	12	Standard
Er	166	1116.7	18.2				mg/L	20	Standard
I	127	3388.7	11.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.946	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144302SDL WG574573-02
Report Date/Time: Tuesday, June 28, 2016 23:53:22
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.613	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.473	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606144302SDL WG574573-02
Sample Date/Time: Tuesday, June 28, 2016 23:54:17
Number of Replicates: 3
Autosampler Position: 410
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70935.7	2.2				ug/L	81760	Standard
	Be	9	55.0	15.7	**0.0540**	0.009	16.0	ug/L	17	Standard
	Al	27	218570.5	1.6	**1.6201**	0.011	0.7	ug/L	1410	Standard
	Sc	45	39984.4	1.2				ug/L	39543	Standard
	Ti	47	627.7	4.3	**2.4198**	0.114	4.7	ug/L	39	Standard
	V	51	2847.0	3.0	**0.2129**	0.013	6.1	ug/L	1415	Standard
	Cr	52	7618.6	1.2	**0.0637**	0.011	17.1	ug/L	6946	Standard
	Cr	53	580.0	9.6	**0.3354**	0.068	20.2	ug/L	328	Standard
	Mn	55	61547.4	1.3	**9.5745**	0.188	2.0	ug/L	823	Standard
	Co	59	523.0	3.3	**0.0449**	0.003	6.0	ug/L	252	Standard
	Ni	60	493.7	5.6	**0.1635**	0.016	10.1	ug/L	192	Standard
	Cu	65	675.0	3.2	**0.2729**	0.010	3.6	ug/L	141	Standard
	Zn	66	4565.4	1.3	**3.4380**	0.075	2.2	ug/L	491	Standard
>	**Ge**	72	502988.1	0.7				ug/L	515087	Standard
	As	75	269.2	10.7	**0.2856**	0.028	9.7	ug/L	20	Standard
	Se	82	20.7	22.3	**0.0646**	0.042	64.7	ug/L	15	Standard
	Se-1	77	45.7	15.4	**-0.0984**	0.093	94.5	ug/L	48	Standard
>	**Ga**	71	186.7	12.1				mg/L	90	Standard
	Rb	85	835.0	12.4				ug/L	23	Standard
	Y	89	441201.2	2.7				ug/L	448510	Standard
>	**Rh**	103	13.3	94.4				ug/L	15	Standard
	Mo	98	189.0	7.0	**0.0532**	0.006	12.0	ug/L	11	Standard
	Ag	107	91.3	11.0	**-0.0021**	0.002	87.0	ug/L	134	Standard
	Cd	111	37.0	12.7	**0.0150**	0.002	15.9	mg/L	7	Standard
	Cd	114	85.9	30.8	**0.0122**	0.005	43.3	ug/L	16	Standard
>	**In**	115	591854.8	2.3				ug/L	611117	Standard
	Sn	118	648.3	6.3	**0.0113**	0.007	65.4	ug/L	518	Standard
	Sb	123	522.8	33.2	**0.1022**	0.041	39.7	ug/L	127	Standard
	Ba	135	4107.2	1.3	**2.0294**	0.025	1.2	ug/L	45	Standard
	Ce	140	18988.6	1.0				ug/L	298	Standard
>	**Tb**	159	914076.3	1.3				ug/L	977942	Standard
	Ho	165	253.3	13.1				ug/L	12	Standard
	Tl	203	112.3	10.6	**0.0094**	0.002	17.3	ug/L	31	Standard
	Tl	205	90.0	29.4	**0.0108**	0.004	36.1	ug/L	20	Standard
	Pb	206	10230.5	2.1	**1.9438**	0.049	2.5	ug/L	286	Standard
	Pb	207	8531.4	1.5	**1.7976**	0.010	0.6	ug/L	257	Standard
	Pb	208	36086.5	0.6	**1.9686**	0.029	1.5	ug/L	956	Standard
	U	238	209.0	10.0	**0.0280**	0.003	11.9	ug/L	17	Standard
>	**Bi**	209	525348.3	0.9				ug/L	557080	Standard

Sample ID: L1606144302SDL WG574573-02
Report Date/Time: Tuesday, June 28, 2016 23:56:34
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	68.3	18.4	**0.0329**	0.017	52.2	mg/L	32	Standard
K	39	41.7	42.1	**-0.0025**	0.057	2323.2	mg/L	30	Standard
Ca	43	35.0	49.5	**-0.0873**	2.606	2984.1	mg/L	48	Standard
Fe	54	276.1	10.3	**0.1102**	0.028	25.1	mg/L	159	Standard
Fe	57	273.3	14.9	**0.2889**	0.146	50.5	mg/L	195	Standard
> **Sc-1**	45	39984.4	1.2				mg/L	39543	Standard
Cl	35	32328.5	1.4				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1603.4	8.8				ug/L	1647	Standard
P	31	16148.6	1.7				ug/L	15231	Standard
S	34	2251.8	6.8				ug/L	1845	Standard
Sr	88	76.7	35.9				ug/L	70	Standard
C	12	146.7	10.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	330.4	18.3				mg/L	12	Standard
Ho-1	165	253.3	13.1				mg/L	12	Standard
Er	166	270.0	22.5				mg/L	20	Standard
I	127	1720.1	18.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.761	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.651	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144302SDL WG574573-02
Report Date/Time: Tuesday, June 28, 2016 23:56:34
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.848
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.304
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 23:57:30
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72062.8	4.4				ug/L	81760	Standard
	Be	9	45152.2	3.9	**51.5939**	1.461	2.8	ug/L	17	Standard
	Al	27	7383002.3	3.7	**54.3407**	0.756	1.4	ug/L	1410	Standard
	Sc	45	39518.2	3.2				ug/L	39543	Standard
	Ti	47	24690.4	0.9	**102.0722**	0.550	0.5	ug/L	39	Standard
	V	51	333814.0	1.2	**49.2501**	0.769	1.6	ug/L	1415	Standard
	Cr	52	345665.5	1.2	**50.0774**	0.577	1.2	ug/L	6946	Standard
	Cr	53	43291.8	1.9	**50.4406**	0.792	1.6	ug/L	328	Standard
	Mn	55	319563.2	0.6	**50.6110**	0.452	0.9	ug/L	823	Standard
	Co	59	337944.7	0.8	**49.4985**	0.535	1.1	ug/L	252	Standard
	Ni	60	91064.9	0.9	**49.6861**	0.418	0.8	ug/L	192	Standard
	Cu	65	92447.5	0.3	**50.0106**	0.369	0.7	ug/L	141	Standard
	Zn	66	53973.0	1.5	**49.8813**	0.957	1.9	ug/L	491	Standard
>	Ge	72	500217.2	0.4				ug/L	515087	Standard
	As	75	53742.2	1.5	**49.2630**	0.862	1.7	ug/L	20	Standard
	Se	82	5467.6	1.7	**48.7858**	1.017	2.1	ug/L	15	Standard
	Se-1	77	3788.8	1.0	**51.0702**	0.720	1.4	ug/L	48	Standard
>	Ga	71	51.7	5.6				mg/L	90	Standard
	Rb	85	820.0	10.6				ug/L	23	Standard
	Y	89	441206.7	0.2				ug/L	448510	Standard
>	Rh	103	33.3	8.7				ug/L	15	Standard
	Mo	98	251795.6	1.0	**94.4274**	1.474	1.6	ug/L	11	Standard
	Ag	107	307525.6	0.6	**46.4306**	0.349	0.8	ug/L	134	Standard
	Cd	111	100206.1	1.3	**47.5308**	1.177	2.5	mg/L	7	Standard
	Cd	114	244073.0	1.7	**47.6209**	0.821	1.7	ug/L	16	Standard
>	In	115	602825.2	1.4				ug/L	611117	Standard
	Sn	118	281047.8	1.1	**48.0844**	0.236	0.5	ug/L	518	Standard
	Sb	123	222239.4	0.2	**47.7427**	0.588	1.2	ug/L	127	Standard
	Ba	135	96470.5	0.6	**47.3499**	0.512	1.1	ug/L	45	Standard
	Ce	140	125.0	48.0				ug/L	298	Standard
>	Tb	159	921870.8	1.1				ug/L	977942	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	392459.6	0.5	**49.4989**	0.479	1.0	ug/L	31	Standard
	Tl	205	352339.7	0.4	**51.1783**	0.770	1.5	ug/L	20	Standard
	Pb	206	250499.8	0.3	**49.1963**	0.428	0.9	ug/L	286	Standard
	Pb	207	226961.6	0.5	**49.4195**	0.337	0.7	ug/L	257	Standard
	Pb	208	926488.8	0.6	**52.1497**	0.850	1.6	ug/L	956	Standard
	U	238	343296.3	1.3	**50.9156**	0.444	0.9	ug/L	17	Standard
>	Bi	209	524204.3	1.1				ug/L	557080	Standard

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 23:59:47
Page 1

Approved: June 29, 2016

Na	23	1.7	173.2	**10.4692**	18.124	173.1	mg/L	0	Standard
Mg	24	3737.1	0.3	**4.9245**	0.180	3.7	mg/L	32	Standard
K	39	1403.4	10.2	**4.6088**	0.536	11.6	mg/L	30	Standard
Ca	43	78.3	16.1	**6.5318**	1.619	24.8	mg/L	48	Standard
Fe	54	5604.3	1.6	**4.9425**	0.217	4.4	mg/L	159	Standard
Fe	57	1713.4	2.9	**5.1658**	0.187	3.6	mg/L	195	Standard
Sc-1	45	39518.2	3.2				mg/L	39543	Standard
Cl	35	33439.5	0.8				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1523.4	5.0				ug/L	1647	Standard
P	31	18217.6	1.7				ug/L	15231	Standard
S	34	2641.9	8.4				ug/L	1845	Standard
Sr	88	48.3	11.9				ug/L	70	Standard
C	12	93.3	12.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.4	104.5				mg/L	12	Standard
Ho-1	165	11.7	65.5				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	1510.1	17.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.188		
Al	27	108.681		
Sc	45			
Ti	47	102.072		
V	51	98.500		
Cr	52	100.155		
Cr	53			
Mn	55	101.222		
Co	59	98.997		
Ni	60	99.372		
Cu	65	100.021		
Zn	66	99.763		
Ge	72		97.113	
As	75	98.526		
Se	82	97.572		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 23:59:47
Page 2

Approved: June 29, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	94.427		
Ag	107	92.861		
Cd	111	95.062		
Cd	114			
In	115			98.643
Sn	118	96.169		
Sb	123	95.485		
Ba	135	94.700		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.998		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.299		
U	238	101.831		
Bi	209			94.098
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 23:59:47
Page 3

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 00:00:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70070.0	1.8				ug/L	81760	Standard
	Be	9	30.0	16.7	**0.0256**	0.006	25.2	ug/L	17	Standard
	Al	27	3812.2	30.7	**0.0144**	0.008	57.9	ug/L	1410	Standard
	Sc	45	40014.5	4.3				ug/L	39543	Standard
	Ti	47	26.7	12.1	**-0.0568**	0.013	23.6	ug/L	39	Standard
	V	51	1145.1	6.3	**-0.0403**	0.010	25.4	ug/L	1415	Standard
	Cr	52	6171.9	1.7	**-0.1619**	0.014	8.6	ug/L	6946	Standard
	Cr	53	411.7	3.9	**0.1320**	0.019	14.5	ug/L	328	Standard
	Mn	55	924.7	19.7	**-0.0044**	0.029	653.9	ug/L	823	Standard
	Co	59	261.3	12.2	**0.0062**	0.005	75.0	ug/L	252	Standard
	Ni	60	171.3	8.8	**-0.0131**	0.008	64.0	ug/L	192	Standard
	Cu	65	132.0	5.3	**-0.0207**	0.004	18.6	ug/L	141	Standard
	Zn	66	427.3	9.5	**-0.4339**	0.039	8.9	ug/L	491	Standard
>	**Ge**	72	510161.6	0.4				ug/L	515087	Standard
	As	75	-21.8	127.1	**0.0207**	0.025	120.4	ug/L	20	Standard
	Se	82	17.0	25.9	**0.0293**	0.038	129.6	ug/L	15	Standard
	Se-1	77	53.7	12.0	**0.0005**	0.088	17869.4	ug/L	48	Standard
>	**Ga**	71	35.0	28.6				mg/L	90	Standard
	Rb	85	33.3	60.6				ug/L	23	Standard
	Y	89	437929.1	1.0				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	269.2	32.9	**0.0838**	0.033	39.3	ug/L	11	Standard
	Ag	107	120.7	16.7	**0.0024**	0.003	124.0	ug/L	134	Standard
	Cd	111	21.8	34.3	**0.0077**	0.004	48.1	mg/L	7	Standard
	Cd	114	36.7	62.4	**0.0024**	0.005	190.6	ug/L	16	Standard
>	**In**	115	590666.4	0.9				ug/L	611117	Standard
	Sn	118	743.4	12.2	**0.0282**	0.017	60.4	ug/L	518	Standard
	Sb	123	532.5	22.4	**0.1040**	0.027	25.7	ug/L	127	Standard
	Ba	135	71.0	29.1	**0.0104**	0.010	96.8	ug/L	45	Standard
	Ce	140	91.7	65.8				ug/L	298	Standard
>	**Tb**	159	911246.7	0.8				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	81.7	41.2	**0.0055**	0.004	77.1	ug/L	31	Standard
	Tl	205	68.3	66.0	**0.0076**	0.007	85.7	ug/L	20	Standard
	Pb	206	297.7	10.9	**-0.0054**	0.007	123.4	ug/L	286	Standard
	Pb	207	283.7	16.0	**0.0035**	0.010	283.6	ug/L	257	Standard
	Pb	208	1155.4	11.3	**0.0043**	0.008	176.0	ug/L	956	Standard
	U	238	70.3	39.4	**0.0074**	0.004	55.5	ug/L	17	Standard
>	**Bi**	209	527005.8	1.2				ug/L	557080	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 00:02:58
Page 1

Approved: June 29, 2016

Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	25.0	20.0	**-0.0244**	0.005	21.9	mg/L	32	Standard
K	39	18.3	31.5	**-0.0799**	0.021	26.0	mg/L	30	Standard
Ca	43	16.7	17.3	**-2.8535**	0.318	11.1	mg/L	48	Standard
Fe	54	122.6	39.6	**-0.0261**	0.047	179.6	mg/L	159	Standard
Fe	57	230.0	17.0	**0.1451**	0.148	101.7	mg/L	195	Standard
Sc-1	45	40014.5	4.3				mg/L	39543	Standard
Cl	35	33255.8	1.4				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1523.4	4.7				ug/L	1647	Standard
P	31	17488.4	2.6				ug/L	15231	Standard
S	34	2358.5	3.1				ug/L	1845	Standard
Sr	88	70.0	25.8				ug/L	70	Standard
C	12	73.3	39.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	100.0				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	1368.4	18.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.044	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 00:02:58
Page 2

Approved: June 29, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.654
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.601
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 00:02:58
Page 3

Approved: June 29, 2016

2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW20-062016	**Prep Method:**	7470A	**Prep Date:**	06/22/2016 07:32
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/29/2016 12:57
Workgroup #:	WG573906	**Analyst:**	AMA	**Run Date:**	06/29/2016 13:26
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	M7.062916.132604
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW19F-062016	**Prep Method:**	7470A	**Prep Date:**	06/22/2016 07:32
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/29/2016 12:57
Workgroup #:	WG573906	**Analyst:**	AMA	**Run Date:**	06/29/2016 13:28
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	M7.062916.132836
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW19FFD-062016	**Prep Method:**	7470A	**Prep Date:**	06/22/2016 07:32
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/29/2016 12:57
Workgroup #:	WG573906	**Analyst:**	AMA	**Run Date:**	06/29/2016 13:31
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	M7.062916.133109
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG573654
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/22/2016 07:32
Hotblock Start Temp: 95.1 @ 07:15
Hotblock End Temp: 95 @ 09:15
Instrument: HB2

SOP: ME404 Revison 17
Spike Solution: STD76757
Spike Witness: VC
H2SO4 Lot #: COA18359
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
K2S2O8 1:1 Lot #: RGT37046
KMnO4 1:1 Lot #: RGT37128
Mercury Water ICV Lot #: STD76759
HG H2O STDS 10PPM Lot #: STD76765

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG573654-04	BLANK	1	40 mL	40 mL		
2	WG573654-05	LCS	1	40 mL	40 mL	4 mL	
3	L16061142-01	SAMP	1	40 mL	40 mL		07/01/16
4	L16061142-03	SAMP	1	40 mL	40 mL		07/01/16
5	L16061142-05	SAMP	1	40 mL	40 mL		07/01/16
6	L16061148-01	SAMP	1	40 mL	40 mL		06/28/16
7	L16061148-02	SAMP	1	40 mL	40 mL		06/28/16
8	L16061150-01	SAMP	1	40 mL	40 mL		06/28/16
9	L16061150-02	SAMP	1	40 mL	40 mL		06/28/16
10	WG573654-01	REF	1	40 mL	40 mL		
11	L16061151-01	RS01	1	40 mL	40 mL		06/28/16
12	L16061151-02	SAMP	1	40 mL	40 mL		06/28/16
13	WG573654-06	MS	1	36 mL	40 mL	4 mL	
14	L16061151-03	MS01	1	36 mL	40 mL	4 mL	06/28/16
15	WG573654-07	MSD	1	36 mL	40 mL	4 mL	
16	L16061151-04	SD01	1	36 mL	40 mL	4 mL	06/28/16
17	L16061151-05	SAMP	1	40 mL	40 mL		06/28/16
18	WG573654-02	REF	1	40 mL	40 mL		
19	L16061154-01	RS01	1	40 mL	40 mL		06/28/16
20	WG573654-08	MS	1	36 mL	40 mL	4 mL	
21	L16061154-02	MS01	1	36 mL	40 mL	4 mL	06/28/16
22	WG573654-09	MSD	1	36 mL	40 mL	4 mL	
23	L16061154-03	SD01	1	36 mL	40 mL	4 mL	06/28/16
24	L16061154-04	SAMP	1	40 mL	40 mL		06/28/16
25	L16061155-01	SAMP	1	40 mL	40 mL		06/28/16
26	L16061155-02	SAMP	1	40 mL	40 mL		06/28/16
27	L16061155-03	SAMP	1	40 mL	40 mL		06/28/16
28	L16061158-01	SAMP	2	40 mL	40 mL		06/28/16
29	WG573654-03	REF	2	40 mL	40 mL		
30	L16061158-02	SAMP	2	40 mL	40 mL		06/28/16
31	WG573654-10	DUP	1	40 mL	40 mL		

Analyst: [signature]

Reviewer: [signature]

HB_DIG - Modified 07/26/2012
PDF ID: 4819080
Report generated: 06/22/2016 13:22

Microbac

Microbac Laboratories Inc.
Metals Digest Log

Workgroup:	WG573654	SOP:	ME404 Revison 17
Analyst:	REK	Spike Solution:	STD76757
Spike Analyst:	REK	Spike Witness:	VC
Method:	7470A	H2SO4 Lot #:	COA18359
Run Date:	06/22/2016 07:32	HNO3 Lot #:	COA18905
Hotblock Start Temp:	95.1 @ 07:15	40 & 50 ML. DIGESTION TU	COA18987
Hotblock End Temp:	95 @ 09:15	K2S2O8 1:1 Lot #:	RGT37046
Instrument:	HB2	KMnO4 1:1 Lot #:	RGT37128
		Mercury Water ICV Lot #:	STD76759
		HG H2O STDS 10PPM Lot #:	STD76765

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4819080
Report generated: 06/22/2016 13:22

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062916D.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76765 ICV Std: STD76759 Post Spike: STD76765

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573906

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.062916.124425	WG574759-01	Calibration Point		1		06/29/16 12:44
2	M7.062916.124656	WG574759-02	Calibration Point		1		06/29/16 12:46
3	M7.062916.124928	WG574759-03	Calibration Point		1		06/29/16 12:49
4	M7.062916.125200	WG574759-04	Calibration Point		1		06/29/16 12:52
5	M7.062916.125433	WG574759-05	Calibration Point		1		06/29/16 12:54
6	M7.062916.125707	WG574759-06	Calibration Point		1		06/29/16 12:57
7	M7.062916.125941	WG574759-07	ICV		1		06/29/16 12:59
8	M7.062916.130320	WG574759-08	Initial Calibration Verification		1		06/29/16 13:03
9	M7.062916.130551	WG574759-09	Initial Calib Blank		1		06/29/16 13:05
10	M7.062916.130823	WG574759-10	CCV		1		06/29/16 13:08
11	M7.062916.131054	WG574759-11	CCB		1		06/29/16 13:10
12	M7.062916.131325	WG573654-04	Method/Prep Blank	40/40	1		06/29/16 13:13
13	M7.062916.131556	WG573654-05	Laboratory Control S	40/40	1		06/29/16 13:15
14	M7.062916.131828	WG573654-03	Reference Sample	40/40	1	L16061158-02	06/29/16 13:18
15	M7.062916.132059	WG573906-01	Post Digestion Spike		1	L16061158-02	06/29/16 13:20
16	M7.062916.132331	WG573654-10	Duplicate	40/40	1	L16061158-02	06/29/16 13:23
17	M7.062916.132604	L16061142-01	18WW20-062016	40/40	1		06/29/16 13:26
18	M7.062916.132836	L16061142-03	18WW19F-062016	40/40	1		06/29/16 13:28
19	M7.062916.133109	L16061142-05	18WW19FFD-062016	40/40	1		06/29/16 13:31
20	M7.062916.133342	L16061148-01	DP005SW0513-007	40/40	1		06/29/16 13:33
21	M7.062916.133615	L16061148-02	DP005SW0514-007	40/40	1		06/29/16 13:36
22	M7.062916.133848	WG574759-12	CCV		1		06/29/16 13:38
23	M7.062916.134119	WG574759-13	CCB		1		06/29/16 13:41
24	M7.062916.134352	L16061150-01	SS007SW0709-007	40/40	1		06/29/16 13:43
25	M7.062916.134626	L16061150-02	SS007SW0710-007	40/40	1		06/29/16 13:46
26	M7.062916.134856	WG573654-01	Reference Sample	40/40	1	L16061151-01	06/29/16 13:48
27	M7.062916.135127	L16061151-02	LF003SW0311-007 DUP	40/40	1		06/29/16 13:51
28	M7.062916.135358	L16061151-03	LF003SW0311-007 MS	36/40	1	WG573654-06	06/29/16 13:53
29	M7.062916.135629	L16061151-04	LF003SW0311-007 MSD	36/40	1	WG573654-07	06/29/16 13:56
30	M7.062916.135900	L16061151-05	LF003SW0312-007	40/40	1		06/29/16 13:59
31	M7.062916.140132	WG573654-02	Reference Sample	40/40	1	L16061154-01	06/29/16 14:01
32	M7.062916.140404	L16061154-02	SS007MW0707-007 MS	36/40	1	WG573654-08	06/29/16 14:04
33	M7.062916.140637	L16061154-03	SS007MW0707-007 MSD	36/40	1	WG573654-09	06/29/16 14:06
34	M7.062916.140909	WG574759-14	CCV		1		06/29/16 14:09

Page: 1 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062916D.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76765 ICV Std: STD76759 Post Spike: STD76765

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573906

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.062916.141140	WG574759-15	CCB		1		06/29/16 14:11
36	M7.062916.141412	L16061154-04	FQC-RB06201601-CB	40/40	1		06/29/16 14:14
37	M7.062916.141645	L16061155-01	ST008MW0812-007	40/40	1		06/29/16 14:16
38	M7.062916.141919	L16061155-02	ST008MW0809-007	40/40	1		06/29/16 14:19
39	M7.062916.142152	L16061155-03	ST008MW0816-007	40/40	1		06/29/16 14:21
40	M7.062916.142423	L16061158-01	16F1217-01	40/40	1		06/29/16 14:24
41	M7.062916.142655	WG574759-16	CCV		1		06/29/16 14:26
42	M7.062916.142926	WG574759-17	CCB		1		06/29/16 14:29

Page: 2 Approved: June 30, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 574759
Runlog ID: 76026
Analytical Workgroups: 573906

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1142, 1148, 1150, 1151
Case Narrative	1154, 1155, 1158
Client Forms	X
Level X	
Level 3	
Level 4	1142,1148,1150,1151,1154,1155
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
30-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
30-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-30-2016 13:17:13

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG573906

Login Number: L16061142

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW20-062016	01	06/20/16					06/22/2016	2	28		06/29/16	9.2	28	
18WW19F-062016	03	06/20/16					06/22/2016	1.9	28		06/29/16	9.2	28	
18WW19FFD-062016	05	06/20/16					06/22/2016	1.9	28		06/29/16	9.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4832204
Report generated 06/30/2016 09:30

METHOD BLANK SUMMARY

Login Number: L16061142
Blank File ID: M7.062916.131325
Prep Date: 06/22/16 07:32
Analyzed Date: 06/29/16 13:13
Analyst: AMA

Work Group: WG573906
Blank Sample ID: WG573654-04
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573654-05	M7.062916.131556	06/29/16 13:15	01
DUP	WG573654-10	M7.062916.132331	06/29/16 13:23	01
18WW20-062016	L16061142-01	M7.062916.132604	06/29/16 13:26	01
18WW19F-062016	L16061142-03	M7.062916.132836	06/29/16 13:28	01
18WW19FFD-062016	L16061142-05	M7.062916.133109	06/29/16 13:31	01

Report Name: BLANK_SUMMARY
PDF File ID: 4832205
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 06/22/16 07:32 Sample ID: WG573654-04
Instrument ID: CVAA1 Run Date: 06/29/16 13:13 Prep Method: 7470A
File ID: M7.062916.131325 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573906 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-29-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	-0.000174	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4832206
30-JUN-2016 09:30

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 Run Date: 06/29/2016 Sample ID: WG573654-05
Instrument ID: CVAA1 Run Time: 13:15 Prep Method: 7470A
File ID: M7.062916.131556 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573906 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76757 Cal ID: CVAA1-29-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00441	110	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4832207
Report generated: 06/30/2016 09:30

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061142 Cal ID: CVAA1 - Worknum: WG573906
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG573654-01 File ID: M7.062916.134856 Dil: 1 Matrix: WATER
Sample ID: WG573654-06 MS File ID: M7.062916.135358 Dil: 1 Units: mg/L
Sample ID: WG573654-07 MSD File ID: M7.062916.135629 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00476	107	0.00444	0.00442	99.5	7.45	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4832208
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061142 Cal ID: CVAA1 - Worknum: WG573906
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG573654-02 File ID: M7.062916.140132 Dil: 1 Matrix: WATER
Sample ID: WG573654-08 MS File ID: M7.062916.140404 Dil: 1 Units: mg/L
Sample ID: WG573654-09 MSD File ID: M7.062916.140637 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00457	103	0.00444	0.00485	109	5.83	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4832208
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061142 **Worknum:** WG573906
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG573906-01 **File ID:** M7.062916.132059 **Dil:** 1 **Units:** ug/L
Sample ID: L16061158-02 **File ID:** M7.062916.131828 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	0.947		0	U	1	94.7	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4832203
Report generated: 06/30/2016 09:30

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061142
Analytical Method: 7470A
ICAL Worknum: WG574759

Workgroup (AAB#): WG573906
Instrument ID: CVAA1
Initial Calibration Date: 06/29/2016 12:57

Analyte	WG574759-01		WG574759-02		WG574759-03		WG574759-04		WG574759-05		WG574759-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	16.97	0.200	2365	1.00	13040	2.00	26380	5.00	62980	10.0	111700

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4832209
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061142
Analytical Method: 7470A
ICAL Worknum: WG574759

Workgroup (AAB#): WG573906
Instrument ID: CVAA1
Initial Calibration Date: 06/29/2016 12:57

Analyte	R	Q
Mercury	0.9980	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4832209
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061142
Instrument ID: CVAA1
File ID: M7.062916.130551
Workgroup (AAB#): WG573906
Matrix: WATER

Run Date: 06/29/2016
Run Time: 13:05
Analyst: AMA
Cal ID: CVAA1 - 29-JUN-16

Sample ID: WG574759-09
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	-.176	F

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4832211
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574759-11
Instrument ID: CVAA1
Run Time: 13:10
Method: 7470A
File ID: M7.062916.131054
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573906
Cal ID: CVAA1 - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	-0.176	F

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4832213
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574759-13
Instrument ID: CVAA1
Run Time: 13:41
Method: 7470A
File ID: M7.062916.134119
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573906
Cal ID: CVAA1 - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	-0.178	F

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4832213
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574759-08
Instrument ID: CVAA1
Run Time: 13:03
Method: 7470A
File ID: M7.062916.130320
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573906
Cal ID: CVAA1 - 29-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	1.98	99.0	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4832210
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574759-10
Instrument ID: CVAA1
Run Time: 13:08
Method: 7470A
File ID: M7.062916.130823
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573906
Cal ID: CVAA1 - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00213	mg/L	107	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4832212
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574759-12
Instrument ID: CVAA1
Run Time: 13:38
Method: 7470A
File ID: M7.062916.133848
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573906
Cal ID: CVAA1 - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00214	mg/L	107	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4832212
Report generated 06/30/2016 09:30

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\062916D.wsz
Date Started: 6/29/2016 12:09:19 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/29/16 12:44:25 pm	0.0000	17	158.16		1.00
Replicates	10.5	-5.2	6.6	56.0							
Standard #1 (0.2 ug/L)					STD	06/29/16 12:46:56 pm	0.2000	2365	0.59		1.00
Replicates	2357.4	2355.9	2385.5	2361.4							
Standard #2 (1.0 ug/L)					STD	06/29/16 12:49:28 pm	1.0000	13045	0.18		1.00
Replicates	13050.4	13045.1	13070.6	13012.4							
Standard #3 (2.0 ug/L)					STD	06/29/16 12:52:00 pm	2.0000	26379	0.62		1.00
Replicates	26145.1	26388.6	26467.6	26514.0							
Standard #4 (5.0 ug/L)					STD	06/29/16 12:54:33 pm	5.0000	62979	0.31		1.00
Replicates	62704.2	62984.8	63115.0	63113.5							
Standard #5 (10.0 ug/L)					STD	06/29/16 12:57:07 pm	10.0000	111692	0.20		1.00
Replicates	111353.3	111757.4	111839.1	111819.9							

Calibration

Equation: A = 1971.824 + 11244.300C
R2: 0.99565
SEE: 3212.9470
Flags:

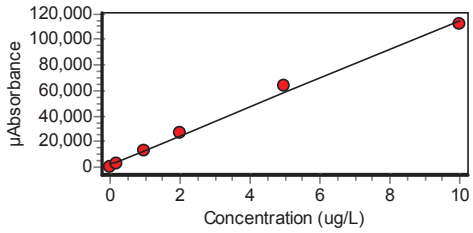

ICV					ICV	06/29/16 12:59:41 pm	2.1280	25900	0.31	Q	1.00
Replicates	25937.8	25974.8	25896.8	25789.5							
% Recovery	106.40										

Approved: June 30, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICV					ICV	06/29/16 01:03:20 pm	1.9790	24219	0.32		1.00
	Replicates	24259.0	24289.2	24213.2	24114.3						
	% Recovery	98.93									
ICB					ICB	06/29/16 01:05:51 pm	-0.1760	-7	304.32		1.00
	Replicates	14.2	6.6	-18.4	-29.4						
CCV					CCV	06/29/16 01:08:23 pm	2.1300	25924	0.14		1.00
	Replicates	25874.1	25936.0	25961.0	25924.9						
	% Recovery	106.51									
CCB					CCB	06/29/16 01:10:54 pm	-0.1764	-12	71.36		1.00
	Replicates	-17.1	0.1	-17.7	-11.6						
WG573654-04					MB	06/29/16 01:13:25 pm	-0.1744	11	105.38		1.00
	Replicates	-4.6	9.2	21.2	18.3						
WG573654-05					LCS	06/29/16 01:15:56 pm	4.4070	51525	0.28		1.00
	Replicates	51320.3	51523.4	51611.9	51646.1						
	% Recovery	110.17									
L1606115802					UNK	06/29/16 01:18:28 pm	-0.1739	17	60.09		1.00
	Replicates	5.9	13.1	29.9	18.2						
WG573906-01					SPK	06/29/16 01:20:59 pm	0.9473	12623	0.30		1.00
	Replicates	12645.2	12665.8	12596.5	12586.0						
	% Recovery	112.12									
WG573654-10					UNK	06/29/16 01:23:31 pm	-0.1693	68	18.66		1.00
	Replicates	69.8	69.6	50.6	81.1						
L1606114201					UNK	06/29/16 01:26:04 pm	-0.1744	11	170.80		1.00
	Replicates	15.7	33.7	-5.2	-2.2						
L1606114203					UNK	06/29/16 01:28:36 pm	-0.1710	49	21.67		1.00
	Replicates	44.4	37.4	51.1	62.3						
L1606114205					UNK	06/29/16 01:31:09 pm	-0.1724	33	45.57		1.00
	Replicates	11.6	34.3	40.6	46.0						

Approved: June 30, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606114801					UNK	06/29/16 01:33:42 pm	-0.1741	14	108.66		1.00
Replicates	32.5	10.8	-3.7	15.4							
L1606114802					UNK	06/29/16 01:36:15 pm	-0.1729	28	50.47		1.00
Replicates	30.0	21.8	13.7	46.8							
CCV					CCV	06/29/16 01:38:48 pm	2.1390	26023	0.14		1.00
Replicates	25987.4	26051.6	26057.9	25995.2							
% Recovery	106.95										
CCB					CCB	06/29/16 01:41:19 pm	-0.1784	-34	18.80		1.00
Replicates	-38.1	-31.2	-40.5	-26.5							
L1606115001					UNK	06/29/16 01:43:52 pm	-0.1730	26	92.91		1.00
Replicates	22.3	53.3	-5.0	35.0							
L1606115002					UNK	06/29/16 01:46:26 pm	-0.1718	41	32.34		1.00
Replicates	35.5	44.2	25.7	56.6							
L1606115101					UNK	06/29/16 01:48:56 pm	-0.1733	23	49.76		1.00
Replicates	36.9	8.5	24.7	23.3							
L1606115102					UNK	06/29/16 01:51:27 pm	-0.1729	27	26.49		1.00
Replicates	20.7	33.1	34.1	21.4							
WG573654-06					UNK	06/29/16 01:53:58 pm	4.2880	50192	0.10		1.00
Replicates	50201.3	50245.2	50197.9	50123.1							
WG573654-07					UNK	06/29/16 01:56:29 pm	3.9800	46728	0.11		1.00
Replicates	46733.2	46785.8	46728.3	46663.3							
L1606115105					UNK	06/29/16 01:59:00 pm	-0.1804	-56	11.95		1.00
Replicates	-53.1	-64.7	-49.0	-57.7							
L1606115401					UNK	06/29/16 02:01:32 pm	-0.1787	-37	35.00		1.00
Replicates	-28.8	-34.4	-56.5	-29.5							

Approved: June 30, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
WG573654-08					UNK	06/29/16 02:04:04 pm	4.1140	48233	0.28		1.00
Replicates	48325.7	48349.7	48204.6	48051.9							
WG573654-09					UNK	06/29/16 02:06:37 pm	4.3610	51013	0.25		1.00
Replicates	50824.4	51080.3	51091.3	51056.5							
CCV					CCV	06/29/16 02:09:09 pm	2.1850	26535	0.12		1.00
Replicates	26495.6	26554.4	26564.7	26525.7							
% Recovery	109.23										
CCB					CCB	06/29/16 02:11:40 pm	-0.1770	-19	110.09		1.00
Replicates	-20.7	-16.8	-43.8	6.5							
L1606115404					UNK	06/29/16 02:14:12 pm	-0.1782	-32	69.22		1.00
Replicates	-41.3	-57.0	-4.8	-25.7							
L1606115501					UNK	06/29/16 02:16:45 pm	-0.1761	-8	221.52		1.00
Replicates	-20.8	-21.2	-9.5	18.1							
L1606115502					UNK	06/29/16 02:19:19 pm	-0.1735	21	39.50		1.00
Replicates	17.4	12.8	32.0	20.6							
L1606115503					UNK	06/29/16 02:21:52 pm	-0.1753	1	499.21		1.00
Replicates	-0.1	-5.5	25.5	-17.0							
L1606115801					UNK	06/29/16 02:24:23 pm	-0.1677	86	19.93		1.00
Replicates	76.5	67.2	101.1	100.9							
CCV					CCV	06/29/16 02:26:55 pm	2.2180	26910	0.12	Q	1.00
Replicates	26893.0	26907.1	26957.5	26884.3							
% Recovery	110.89										
CCB					CCB	06/29/16 02:29:26 pm	-0.1777	-26	73.38		1.00
Replicates	-16.8	-29.3	-52.3	-7.5							

Approved: June 30, 2016
Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 14, 2016

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - Hanah D. Coe
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RNP - RICK N. PETTY
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 14, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 14, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD		
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18WW20-062016			6/20/16	0755		✓	W	7	✓	✓	✓	✓					
	18WW19-062016			6/20/16	0855		✓	W	4	✓	✓							
	18WW19F-062016			6/20/16	0855		✓	W	1			✓						
	18WW19FD-062016			6/20/16	0855		✓	W	4	✓	✓							
	18WW19FFD-062016			6/20/16	0855		✓	W	1			✓						
	18WW08-062016			6/20/16	1010		✓	W	6	✓	✓		✓					
	18WW09-062016			6/20/16	1110		✓	W	6	✓	✓		✓					
	TRIP BLANK			6/20/16			✓	W	2	✓								

Comments: **STANDARD TAT**

	Date	Time	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	6/20/16	1545					
Relinquished by: (Signature)	Date	Time	Received for Lab (Signature)				Remarks:

Microbac OVD
Received: 06/21/2016 10:32
By: BRENDA GREGORY
221000087493

Brenda Gregory

•Homogenize all composite samples prior to analysis

...k QA/QC Manager

00721501

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061142
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061142-01	763864	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:13	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:13	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:13	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Samplenum	Container ID	Products
L16061142-01	763865	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	PREP	W1	EXT	23-JUN-2016 13:30	CPD	CLS	
3	ANALYZ*	EXT	SEMI	27-JUN-2016 10:41	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061142-01	763866	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061142
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061142-01	763867	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	PREP	W1	DIG	21-JUN-2016 15:40	ERP	CLS	
3	ANALYZ*	DIG	METALS	23-JUN-2016 12:10	AMA	ERP	
4	STORE	DIG	A1	23-JUN-2016 12:54	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061142-02	763868	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Samplenum	Container ID	Products
L16061142-02	763869	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061142
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061142-03	763870	K MG MN-MS NA NI-MS PB-MS SB-MS SE-AX TL-MS V-

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	PREP	W1	DIG	21-JUN-2016 15:40	ERP	CLS	
3	ANALYZ*	DIG	METALS	23-JUN-2016 12:10	AMA	ERP	
4	STORE	DIG	A1	23-JUN-2016 12:54	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061142-04	763871	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Samplenum	Container ID	Products
L16061142-04	763872	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061142
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061142-05	763873	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	PREP	W1	DIG	21-JUN-2016 15:40	ERP	CLS	
3	ANALYZ*	DIG	METALS	23-JUN-2016 12:10	AMA	ERP	
4	STORE	DIG	A1	23-JUN-2016 12:54	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061142-06	763874	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061142
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061142-06	763875	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	PREP	W1	EXT	23-JUN-2016 13:30	CPD	CLS	
3	ANALYZ*	EXT	SEMI	27-JUN-2016 10:41	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	STORE	W1	A1	24-JUN-2016 10:00	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061142-06	763876	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16061142-07	763877	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061142
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061142-07	763878	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	PREP	W1	EXT	23-JUN-2016 13:30	CPD	CLS	
3	ANALYZ*	EXT	SEMI	27-JUN-2016 10:41	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061142-07	763879	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16061142-08	763880	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16061144

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 12 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0019158	H	2.0		J2317164948	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18WW06-062016	L16061144-01	06/20/2016 13:45	06/21/2016 10:35
18WW06FD-062016	L16061144-02	06/20/2016 13:45	06/21/2016 10:35
MW17-062016	L16061144-03	06/20/2016 15:00	06/21/2016 10:35
TRIP BLANK	L16061144-04	06/20/2016 00:01	06/21/2016 10:35

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16061144
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 19
2.0 Full Sample Data Package 38
2.1 Volatiles Data 39
2.1.1 Volatiles GCMS Data (8260) 40
2.1.1.1 Summary Data 41
2.1.1.2 QC Summary Data 54
2.1.1.3 Sample Data 86
2.1.1.4 Standards Data 97
2.1.1.5 Raw QC Data 173
2.2 Semivolatiles Data 256
2.2.1 Semivolatiles GC/MS Data (Dioxane) 183
2.2.1.1 Summary Data 184
2.2.1.2 QC Summary Data 189
2.2.1.3 Sample Data 214
2.2.1.4 Standards Data 221
2.2.1.5 Raw QC Data 241
2.2 General Chromatography Data 256
2.2.2 6850 LC/MS Data 257
2.2.2.1 Summary Data 258
2.2.2.2 QC Summary Data 263
2.2.2.3 Sample Data 333
2.2.2.4 Standards Data 340
2.2.2.5 Raw QC Data 401
3.0 Attachments 408

1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	8260
Prep Batch Number(s):	574410,	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-07-11 20:49:30

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	8260
Prep Batch Number(s):	574410,	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	8260
Prep Batch Number(s):	574410,	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	8260
Prep Batch Number(s):	574410,	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	8260
Prep Batch Number(s):	574410,	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	8260
Prep Batch Number(s):	574410,	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)1,2-Dichloroethane-d4 exceeded the UCL in the surrogate standards.
2)Acetone, Carbon Tetrachloride, 1,2-Dichloroethane, 1,2-Dichloroethane, 1,1,1-Trichloroethane, and Trichlorofluoromethane exceeded the UCL in the CCV analyzed 06/27/16 om HPMS8.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-06-28 18:21:40

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?		X			ER1
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER1 The LCS/LCSD exceeded RPD criteria.

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW06-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/28/2016 04:23
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	8M413297
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW06-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 18:31
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	15M18608
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	36.3	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW06-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 05:18
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	1LM.LM35492
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW06FD-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/28/2016 04:52
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	8M413298
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	123	70	120	*
Toluene-d8	102	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW06FD-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 18:54
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	15M18609
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	48.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW06FD-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 05:37
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	1LM.LM35493
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW17-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/28/2016 05:21
Collect Date:	06/20/2016 15:00	**Dilution:**	1	**File ID:**	8M413299
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.410	J	1.00	0.500	0.250

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW17-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 19:17
Collect Date:	06/20/2016 15:00	**Dilution:**	1	**File ID:**	15M18610
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	46.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW17-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 20:56
Collect Date:	06/20/2016 15:00	**Dilution:**	1	**File ID:**	1LM.LM35507
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/27/2016 21:08
Collect Date:	06/20/2016 00:01	**Dilution:**	1	**File ID:**	8M413282
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	98.4	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW06-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/28/2016 04:23
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	8M413297
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW06FD-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/28/2016 04:52
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	8M413298
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	123	70	120	*
Toluene-d8	102	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW17-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/28/2016 05:21
Collect Date:	06/20/2016 15:00	**Dilution:**	1	**File ID:**	8M413299
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.410	J	1.00	0.500	0.250

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/27/2016 21:08
Collect Date:	06/20/2016 00:01	**Dilution:**	1	**File ID:**	8M413282
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	98.4	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Analyst(s): CPD
Date: 6/22/16
Filter Lot #: 9697607

Agitator Speed 30 ± 2 rpm ☑

Analyst / Date		Analyst / Date	
CPD	6/22/16	CPD	6/23/16
Time On	Temp On °C	Time Off	Temp Off °C
1457	23.1	0812	21.7

ZHE	Sample #	Pressure √	PSI ON	PSI OFF	Method	Fluid #	Matrix*	%Solid	Size Reduction Yes	Size Reduction No	Int. Wt. (g)	Fluid Vol. (mL)
A												
B												
C												
D												
E												
F												
G	06-1164-11	✓	10	10	1311	FI-182	S	100		✓	25.00	500
H												
I												
J												
K												
L												
M												
N												
O												
P												
Q												
R												
S												
NA	FBIK1	NA	NA	NA	1311	FI-182	NA	NA	NA	NA	40	40

CPD 6/22/16

*Matrix Code = (S-solid) (SS-sand, soil or sludge) (P-paint) (O-organic) (W-water or waste)

Comments: N/A

Peer Review By: Allie Alfred 06/23/2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

Sarah Vandenberg

Microbac

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062716
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76715 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574410

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413275	WG574409-01 BFB 50ng 8260	NA	1	1	STD76496	06/27/16 17:45
8M413276	WG574409-02 50ug/L CCV 8260	NA	1	1	STD76715	06/27/16 18:10
8M413277	WG574409-02 50ug/L CCV 8260	NA	1	1	STD76578	06/27/16 18:40
8M413278	WG574XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	06/27/16 19:13
8M413279	WG574410-01 BLANK 8260	NA	1	1		06/27/16 19:42
8M413280	WG574410-02 20ug/L LCS 8260	NA	1	1	STD76744	06/27/16 20:11
8M413281	L16061055-07 1000X C 826-SPE D2	NA	1	1000		06/27/16 20:39
8M413282	L16061144-04 TB A 826-LOW	<2	1	1		06/27/16 21:08
8M413283	L16061151-06 TB A 826-SPE	<2	1	1		06/27/16 21:37
8M413284	L16061068-18 TB B 826-SPE	<2	1	1		06/27/16 22:06
8M413285	L16061148-03 TB B 826-SPE	<2	1	1		06/27/16 22:35
8M413286	L16061151-03 MS A 826-SPE	<2	1	1	STD76744	06/27/16 23:04
8M413287	L16061151-04 MSD A 826-SPE	<2	1	1	STD76744	06/27/16 23:34
8M413288	L16061164-11 10X 826-TC	NA	17	10		06/28/16 00:02
8M413289	L16061151-02 A 826-SPE	<2	1	1		06/28/16 00:31
8M413290	L16061151-01 REF A 826-SPE	<2	1	1		06/28/16 01:00
8M413291	L16061151-05 A 826-SPE	<2	1	1		06/28/16 01:29
8M413292	L16061150-01 A 826-SPE	<2	1	1		06/28/16 01:58
8M413293	L16061150-02 A 826-SPE	<2	1	1		06/28/16 02:27
8M413294	L16061155-01 A 826-SPE	<2	1	1		06/28/16 02:56
8M413295	L16061155-02 A 826-SPE	<2	1	1		06/28/16 03:25
8M413296	L16061155-03 A 826-SPE	<2	1	1		06/28/16 03:54
8M413297	L16061144-01 A 826-LOW	<2	1	1		06/28/16 04:23
8M413298	L16061144-02 A 826-LOW	<2	1	1		06/28/16 04:52
8M413299	L16061144-03 A 826-LOW	<2	1	1		06/28/16 05:21
8M413300	CCV	NA	1	1		06/28/16 05:50
8M413301	RINSE	NA	1	1		06/28/16 06:19
8M413302	RINSE	NA	1	1		06/28/16 06:48
8M413303	WG573693-01 10X FBLK	NA	17	10		06/28/16 07:17

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			

Approved: July 08, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062716
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76715 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574410

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 8M413276				
	VC was high, DNR.			
4				
File ID: 8M413278				
	Not needed, DNR.			
7				
File ID: 8M413281				
	Could not read the pH because the sample was too dark.			
21	X	1	Surrogate standard failure	
File ID: 8M413295				

Approved: July 08, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 76035
Analytical Workgroups: WG574410

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	ADC
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
30-JUN-2016
Tiffany Bailey

Secondary Reviewer:
08-JUL-2016
Cathy Cater

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-08-2016 12:26:26

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG574410

Login Number: L16061144

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW06-062016	01	06/20/16					06/28/2016	7.6	14		06/28/16	7.6	14	
18WW06FD-062016	02	06/20/16					06/28/2016	7.6	14		06/28/16	7.6	14	
MW17-062016	03	06/20/16					06/28/2016	7.6	14		06/28/16	7.6	14	
TRIP BLANK	04	06/20/16					06/27/2016	7.9	14		06/27/16	7.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4833232
Report generated 07/11/2016 16:25

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061144
Instrument Id: HPMS8
Workgroup (AAB#): WG574410

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061144-01	1.00	01	118	113	102	101
L16061144-02	1.00	01	123	114	103	102
L16061144-03	1.00	01	118	113	99.7	101
L16061144-04	1.00	01	118	113	98.4	102
WG574410-01	1.00	01	114	113	100	103
WG574410-02	1.00	01	114	110	99.3	103

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4833238
Report generated: 07/11/2016 16:25

METHOD BLANK SUMMARY

Login Number: L16061144
Blank File ID: 8M413279
Prep Date: 06/27/16 19:42
Analyzed Date: 06/27/16 19:42
Analyst: FJB

Work Group: WG574410
Blank Sample ID: WG574410-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574410-02	8M413280	06/27/16 20:11	01
TRIP BLANK	L16061144-04	8M413282	06/27/16 21:08	01
18WW06-062016	L16061144-01	8M413297	06/28/16 04:23	01
18WW06FD-062016	L16061144-02	8M413298	06/28/16 04:52	01
MW17-062016	L16061144-03	8M413299	06/28/16 05:21	01

Report Name: BLANK_SUMMARY
PDF File ID: 4845082
Report generated 07/11/2016 16:25

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061144 Prep Date: 06/27/16 19:42 Sample ID: WG574410-01
Instrument ID: HPMS8 Run Date: 06/27/16 19:42 Prep Method: 5030B/5030C/503
File ID: 8M413279 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG574410 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4833233
11-JUL-2016 16:25

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061144 Prep Date: 06/27/16 19:42 Sample ID: WG574410-01
Instrument ID: HPMS8 Run Date: 06/27/16 19:42 Prep Method: 5030B/5030C/503
File ID: 8M413279 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG574410 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	113	85 - 115	PASS
1,2-Dichloroethane-d4	114	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	100	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4833233
11-JUL-2016 16:25

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061144 | Run Date: 06/27/2016 | Sample ID: WG574410-02
Instrument ID: HPMS8 | Run Time: 20:11 | Prep Method: 5030B/5030C/503
File ID: 8M413280 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG574410 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	25.4	127	40 - 140	
Benzene	20.0	21.6	108	80 - 120	
Bromobenzene	20.0	19.0	94.8	75 - 125	
Bromochloromethane	20.0	21.5	108	65 - 130	
Bromodichloromethane	20.0	23.5	118	75 - 120	
Bromoform	20.0	19.9	99.5	70 - 130	
Bromomethane	20.0	16.9	84.7	30 - 145	
2-Butanone	20.0	20.5	103	30 - 150	
n-Butylbenzene	20.0	18.7	93.6	70 - 135	
sec-Butylbenzene	20.0	19.6	98.1	70 - 125	
tert-Butylbenzene	20.0	19.5	97.5	70 - 130	
Carbon disulfide	20.0	20.6	103	35 - 160	
Carbon tetrachloride	20.0	24.3	121	65 - 140	
Chlorobenzene	20.0	20.3	101	80 - 120	
Chlorodibromomethane	20.0	20.4	102	60 - 135	
Chloroethane	20.0	23.1	115	60 - 135	
Chloroform	20.0	23.0	115	65 - 135	
Chloromethane	20.0	22.5	113	40 - 125	
2-Chlorotoluene	20.0	18.2	90.8	75 - 125	
4-Chlorotoluene	20.0	21.4	107	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	17.9	89.4	50 - 130	
1,2-Dibromoethane	20.0	19.6	97.8	80 - 120	
Dibromomethane	20.0	20.3	102	75 - 125	
1,2-Dichlorobenzene	20.0	19.0	95.1	70 - 120	
1,3-Dichlorobenzene	20.0	19.7	98.4	75 - 125	
1,4-Dichlorobenzene	20.0	19.3	96.7	75 - 125	
Dichlorodifluoromethane	20.0	25.4	127	30 - 155	
1,1-Dichloroethane	20.0	21.2	106	70 - 135	
1,2-Dichloroethane	20.0	24.7	124	70 - 130	
1,1-Dichloroethene	20.0	21.6	108	70 - 130	
cis-1,2-Dichloroethene	20.0	21.9	109	70 - 125	
trans-1,2-Dichloroethene	20.0	22.3	112	60 - 140	
1,2-Dichloropropane	20.0	20.8	104	75 - 125	
1,3-Dichloropropane	20.0	20.7	103	75 - 125	
2,2-Dichloropropane	20.0	24.5	123	70 - 135	
cis-1,3-Dichloropropene	20.0	24.2	121	70 - 130	
trans-1,3-Dichloropropene	20.0	20.8	104	55 - 140	
1,1-Dichloropropene	20.0	22.1	110	75 - 130	
Ethylbenzene	20.0	19.8	98.8	75 - 125	
2-Hexanone	20.0	17.1	85.3	55 - 130	
Hexachlorobutadiene	20.0	19.8	98.9	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4833234
Report generated: 07/11/2016 16:25

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061144 | Run Date: 06/27/2016 | Sample ID: WG574410-02
Instrument ID: HPMS8 | Run Time: 20:11 | Prep Method: 5030B/5030C/503
File ID: 8M413280 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG574410 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.5	107	75 - 125	
p-Isopropyltoluene	20.0	19.6	98.0	75 - 130	
4-Methyl-2-pentanone	20.0	18.3	91.7	60 - 135	
Methylene chloride	20.0	20.9	105	55 - 140	
Naphthalene	20.0	15.6	77.9	55 - 140	
n-Propylbenzene	20.0	20.1	101	70 - 130	
Styrene	20.0	20.7	104	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.6	103	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	16.6	83.2	65 - 130	
Tetrachloroethene	20.0	20.5	103	45 - 150	
Toluene	20.0	19.8	99.2	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.1	85.4	55 - 140	
1,2,4-Trichlorobenzene	20.0	18.2	90.9	65 - 135	
1,1,1-Trichloroethane	20.0	24.0	120	65 - 130	
1,1,2-Trichloroethane	20.0	19.3	96.7	75 - 125	
Trichloroethene	20.0	23.3	117	70 - 125	
Trichlorofluoromethane	20.0	24.4	122	60 - 145	
1,2,3-Trichloropropane	20.0	18.4	92.2	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.7	98.6	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.2	101	75 - 130	
Vinyl chloride	20.0	26.2	131	50 - 145	
o-Xylene	20.0	20.5	102	80 - 120	
m-,p-Xylene	40.0	41.3	103	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	114	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	99.3	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4833234
Report generated: 07/11/2016 16:25

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061144
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4833236
Report generated 07/11/2016 16:25

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061144
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4833236
Report generated 07/11/2016 16:25

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061144
Instrument: HPMS8
Analyst: FJB
Workgroup: WG574409

Tune ID: WG574409-01
Run Date: 06/27/2016
Run Time: 17:45
File ID: 8M413275
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.5	9667	PASS
75.0	95.0	30.0	60.0	57.7	30122	PASS
95.0	95.0	100	100	100	52181	PASS
96.0	95.0	5.00	9.00	6.82	3559	PASS
173	174	0	2.00	0.363	160	PASS
174	95.0	50.0	100	84.5	44069	PASS
175	174	5.00	9.00	7.30	3216	PASS
176	174	95.0	101	98.9	43568	PASS
177	176	5.00	9.00	6.07	2646	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574409-02	CCV	01	06/27/2016 18:40	
WG574410-01	BLANK	01	06/27/2016 19:42	
WG574410-02	LCS	01	06/27/2016 20:11	
L16061144-04	TRIP BLANK	01	06/27/2016 21:08	
L16061144-01	18WW06-062016	01	06/28/2016 04:23	
L16061144-02	18WW06FD-062016	01	06/28/2016 04:52	
L16061144-03	MW17-062016	01	06/28/2016 05:21	
WG573693-01	FBLK1	DL01	06/28/2016 07:17	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4833236
Report generated 07/11/2016 16:25

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061144 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4833235
Report generated 07/11/2016 16:25

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061144 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4833235
Report generated 07/11/2016 16:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061144 Run Date: 06/27/2016 Sample ID: WG574409-02
Instrument ID: HPMS8 Run Time: 18:40 Method: 8260B
File ID: 8M413277 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG574410 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	56.5	ug/L	0.615	13.0	20	
1,1-Dichloroethene	CCC	50.0	55.7	ug/L	0.450	11.3	20	
1,2-Dichloropropane	CCC	50.0	51.2	ug/L	0.234	2.31	20	
Ethylbenzene	CCC	50.0	48.1	ug/L	0.550	3.89	20	
Toluene	CCC	50.0	48.6	ug/L	1.51	2.82	20	
Vinyl Chloride	CCC	50.0	55.4	ug/L	0.321	10.7	20	
Bromoform	SPCC	50.0	53.4	ug/L	0.227	6.82	20	
Chlorobenzene	SPCC	50.0	48.6	ug/L	1.02	2.71	20	
Chloromethane	SPCC	50.0	47.4	ug/L	0.232	5.15	20	
1,1-Dichloroethane	SPCC	50.0	54.2	ug/L	0.500	8.46	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	44.4	ug/L	0.446	11.2	20	
Xylenes		150	147	ug/L	0.647	2.29	20	
Acetone		50.0	61.8	ug/L	0.0348	23.5	20	*
Benzene		50.0	52.9	ug/L	1.09	5.84	20	
Bromobenzene		50.0	47.6	ug/L	0.765	4.71	20	
Bromochloromethane		50.0	54.7	ug/L	0.161	9.36	20	
Bromodichloromethane		50.0	58.1	ug/L	0.467	16.2	20	
Bromomethane		50.0	44.9	ug/L	0.157	10.1	20	
2-Butanone		50.0	52.3	ug/L	0.0432	4.63	20	
n-Butylbenzene		50.0	47.3	ug/L	2.65	5.48	20	
sec-Butylbenzene		50.0	47.6	ug/L	3.18	4.82	20	
tert-Butylbenzene		50.0	46.6	ug/L	0.518	6.82	20	
Carbon Disulfide		50.0	59.1	ug/L	1.00	18.2	20	
Carbon Tetrachloride		50.0	61.6	ug/L	0.566	23.2	20	*
Dibromochloromethane		50.0	50.8	ug/L	0.363	1.57	20	
Chloroethane		50.0	50.8	ug/L	0.162	1.69	20	
2-Chlorotoluene		50.0	48.6	ug/L	2.65	2.74	20	
4-Chlorotoluene		50.0	44.8	ug/L	2.21	10.3	20	
1,2-Dibromo-3-Chloropropane		50.0	46.0	ug/L	0.0927	7.99	20	
1,2-Dibromoethane		50.0	48.7	ug/L	0.238	2.57	20	
Dibromomethane		50.0	54.0	ug/L	0.146	7.97	20	
1,2-Dichlorobenzene		50.0	46.4	ug/L	1.28	7.10	20	
1,3-Dichlorobenzene		50.0	48.0	ug/L	1.48	4.07	20	
1,4-Dichlorobenzene		50.0	46.6	ug/L	1.45	6.70	20	
Dichlorodifluoromethane		50.0	45.5	ug/L	0.382	8.98	20	
1,2-Dichloroethane		50.0	60.2	ug/L	0.422	20.3	20	*
cis-1,2-Dichloroethene		50.0	52.9	ug/L	0.304	5.75	20	
trans-1,2-Dichloroethene		50.0	54.0	ug/L	0.401	8.05	20	
1,3-Dichloropropane		50.0	48.0	ug/L	0.418	4.07	20	
2,2-Dichloropropane		50.0	64.1	ug/L	0.623	28.2	20	*
cis-1,3-Dichloropropene		50.0	56.3	ug/L	0.461	12.7	20	
trans-1,3-Dichloropropene		50.0	52.1	ug/L	0.542	4.14	20	

CCV - Modified 03/05/2008
PDF File ID: 4833237
Report generated 07/11/2016 16:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061144 Run Date: 06/27/2016 Sample ID: WG574409-02
Instrument ID: HPMS8 Run Time: 18:40 Method: 8260B
File ID: 8M413277 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG574410 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	56.7	ug/L	0.447	13.3	20	
2-Hexanone		50.0	47.2	ug/L	0.0486	5.63	20	
Hexachlorobutadiene		50.0	49.1	ug/L	0.472	1.72	20	
Isopropylbenzene		50.0	50.9	ug/L	1.78	1.84	20	
p-Isopropyltoluene		50.0	47.7	ug/L	2.71	4.55	20	
4-Methyl-2-Pentanone		50.0	50.6	ug/L	0.0406	1.24	20	
Methylene Chloride		50.0	52.3	ug/L	0.269	4.59	20	
Naphthalene		50.0	44.8	ug/L	1.37	10.4	20	
n-Propylbenzene		50.0	47.7	ug/L	3.72	4.64	20	
Styrene		50.0	50.0	ug/L	1.08	0.0298	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/L	0.414	1.98	20	
Tetrachloroethene		50.0	52.5	ug/L	0.349	4.93	20	
1,2,3-Trichlorobenzene		50.0	44.5	ug/L	0.771	11.1	20	
1,2,4-Trichlorobenzene		50.0	47.6	ug/L	0.977	4.90	20	
1,1,1-Trichloroethane		50.0	60.8	ug/L	0.629	21.5	20	*
1,1,2-Trichloroethane		50.0	46.9	ug/L	0.230	6.12	20	
Trichloroethene		50.0	55.0	ug/L	0.301	9.96	20	
Trichlorofluoromethane		50.0	60.2	ug/L	0.650	20.4	20	*
1,2,3-Trichloropropane		50.0	47.0	ug/L	0.145	5.96	20	
1,2,4-Trimethylbenzene		50.0	48.2	ug/L	2.82	3.51	20	
1,3,5-Trimethylbenzene		50.0	48.3	ug/L	2.75	3.32	20	
o-Xylene		50.0	48.3	ug/L	0.635	3.34	20	
m-,p-Xylene		100	98.2	ug/L	0.660	1.76	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4833237
Report generated 07/11/2016 16:25

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061144
Instrument ID: HPMS8
Workgroup (AAB#): WG574410

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16061144-01	1.00	01	290600	516879	645801
L16061144-02	1.00	01	284900	514911	636097
L16061144-03	1.00	01	282669	509550	634418
L16061144-04	1.00	01	298716	519452	649248
WG574410-01	1.00	01	302642	539767	679552
WG574410-02	1.00	01	303369	528164	681082

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4845087
Report generated 07/11/2016 16:25

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061144
Instrument ID: HPMS8
Workgroup (AAB#): WG574410

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16061144-01	1.00	01	17.6	14.57	10.71
L16061144-02	1.00	01	17.6	14.57	10.71
L16061144-03	1.00	01	17.6	14.58	10.71
L16061144-04	1.00	01	17.6	14.58	10.71
WG574410-01	1.00	01	17.6	14.57	10.71
WG574410-02	1.00	01	17.6	14.58	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4845088
Report generated: 07/11/2016 16:25

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413297.D Vial: 23
Acq On : 28 Jun 2016 4:23 Operator: FJB
Sample : L16061144-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:58:40 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	645801	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	516879	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	290600	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	196879	28.3745 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.48%		
43) 1,2-Dichloroethane-d4	10.30	65	219907	29.5578 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 118.24%		
58) Toluene-d8	12.68	98	684866	25.3175 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.28%		
80) p-Bromofluorobenzene	16.08	95	305490	25.3879 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.56%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M413297.D 8260WT.M Wed Jun 29 08:58:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413297.D Vial: 23
Acq On : 28 Jun 2016 4:23 Operator: FJB
Sample : L16061144-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:58 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

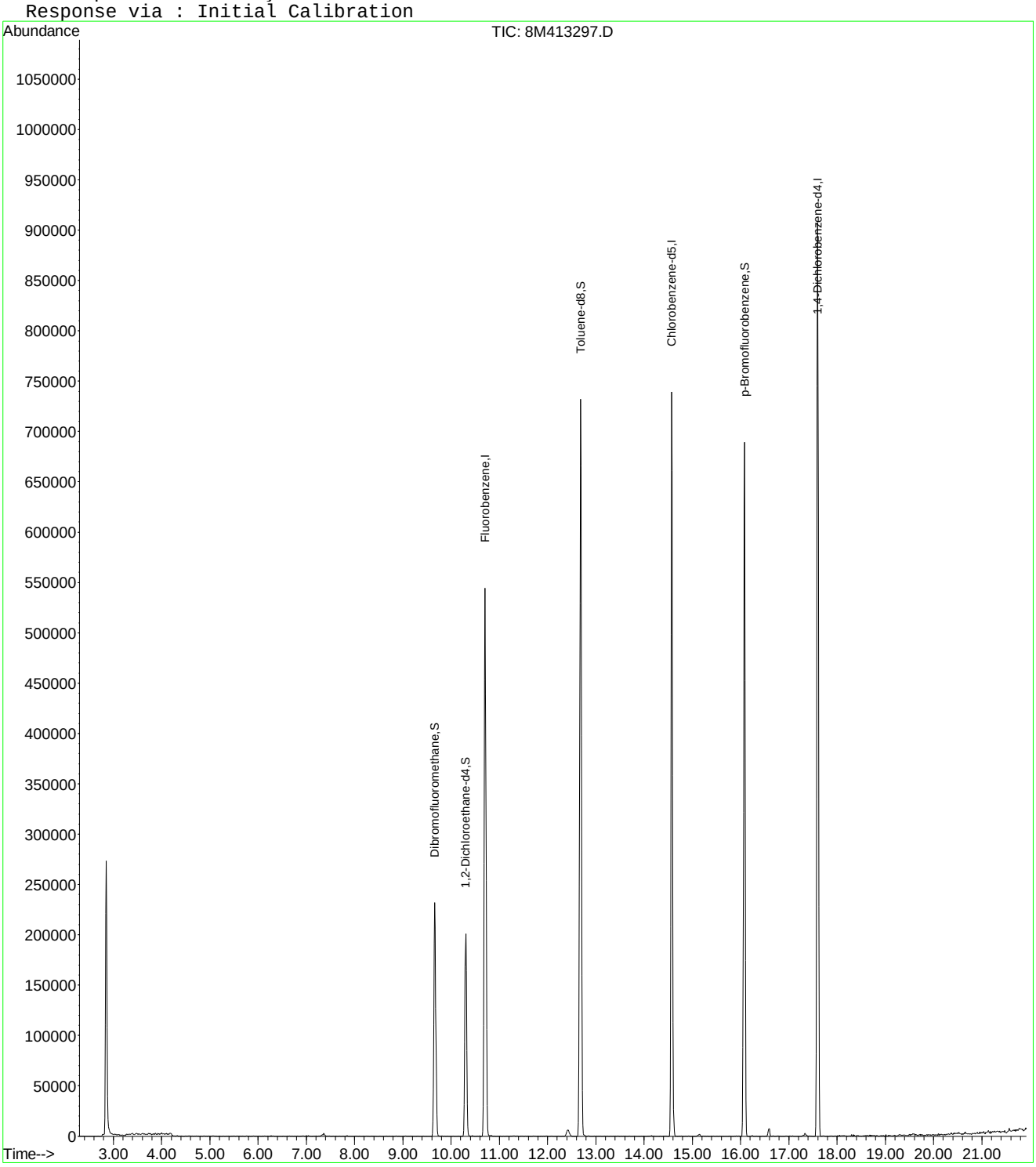

8M413297.D 8260WT.M Wed Jun 29 08:58:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413298.D Vial: 24
Acq On : 28 Jun 2016 4:52 Operator: FJB
Sample : L16061144-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:58:45 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	636097	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	514911	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	284900	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	194980	28.5295 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 114.12%		
43) 1,2-Dichloroethane-d4	10.30	65	224691	30.6616 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 122.64%#		
58) Toluene-d8	12.68	98	689402	25.5826 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.32%		
80) p-Bromofluorobenzene	16.07	95	303022	25.6866 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.76%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M413298.D 8260WT.M Wed Jun 29 08:58:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413298.D Vial: 24
Acq On : 28 Jun 2016 4:52 Operator: FJB
Sample : L16061144-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:58 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

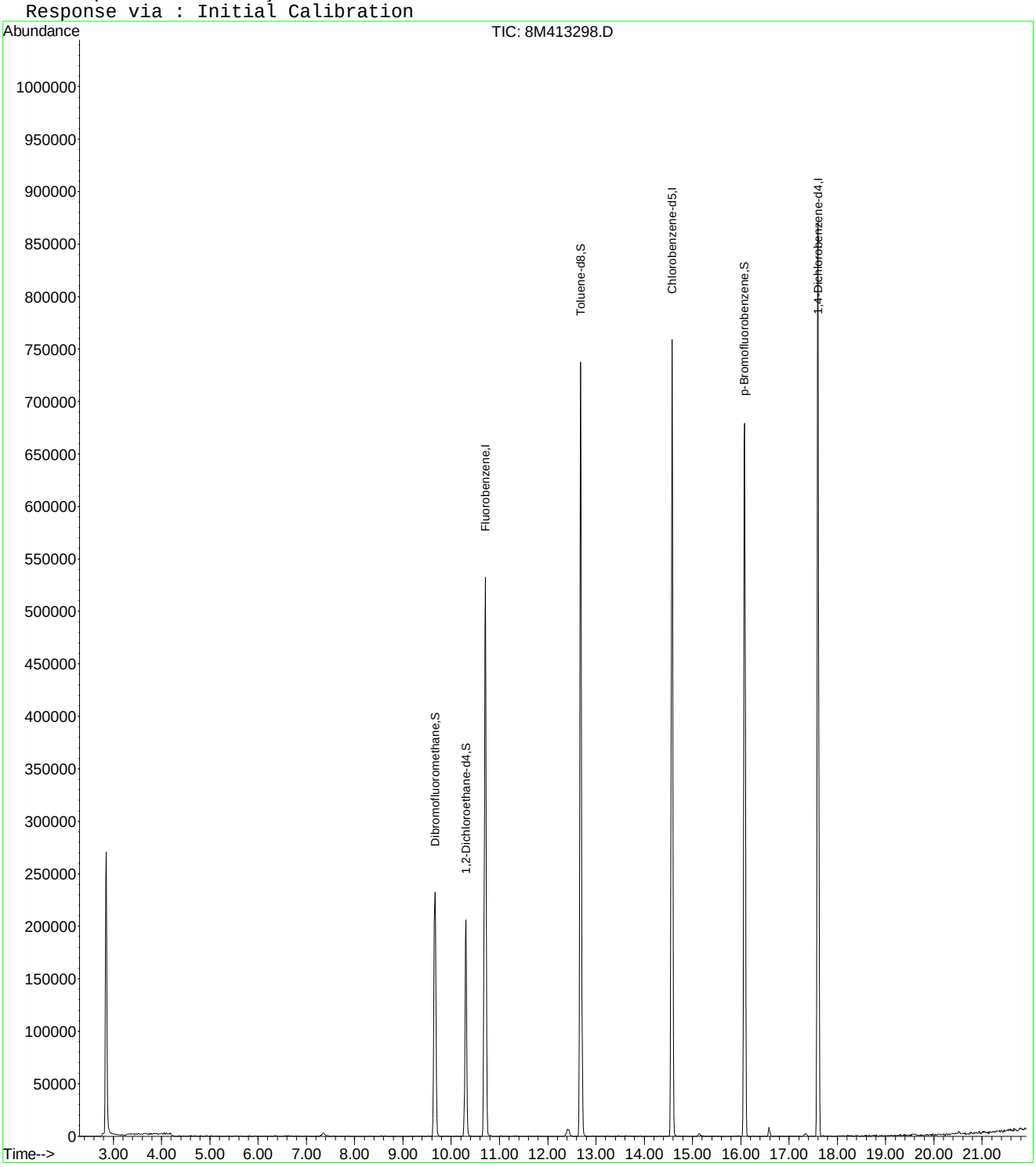

8M413298.D 8260WT.M Wed Jun 29 08:58:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413299.D Vial: 25
Acq On : 28 Jun 2016 5:21 Operator: FJB
Sample : L16061144-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:58:50 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	634418	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	509550	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	282669	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	193052	28.3222 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.28%		
43) 1,2-Dichloroethane-d4	10.31	65	216322	29.5977 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 118.40%		
58) Toluene-d8	12.68	98	674918	25.3086 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.24%		
80) p-Bromofluorobenzene	16.07	95	291787	24.9294 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.72%		

Target Compounds					Qvalue
32) cis-1,2-Dichloroethene	9.17	96	2989	0.4104 ug/L	67

(#) = qualifier out of range (m) = manual integration
8M413299.D 8260WT.M Wed Jun 29 08:58:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413299.D Vial: 25
Acq On : 28 Jun 2016 5:21 Operator: FJB
Sample : L16061144-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:58 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

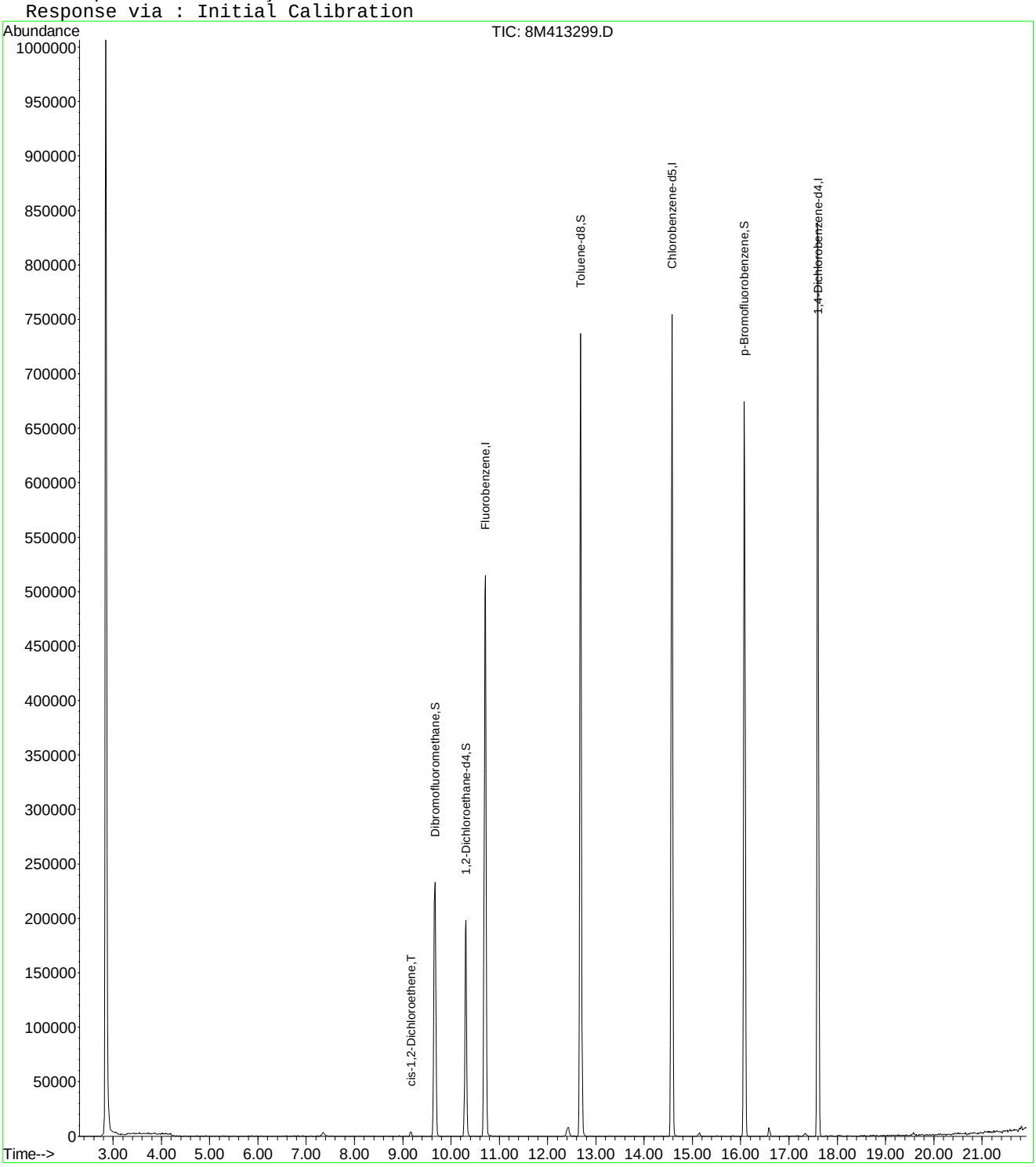

8M413299.D 8260WT.M Wed Jun 29 08:58:54 2016 Page 2

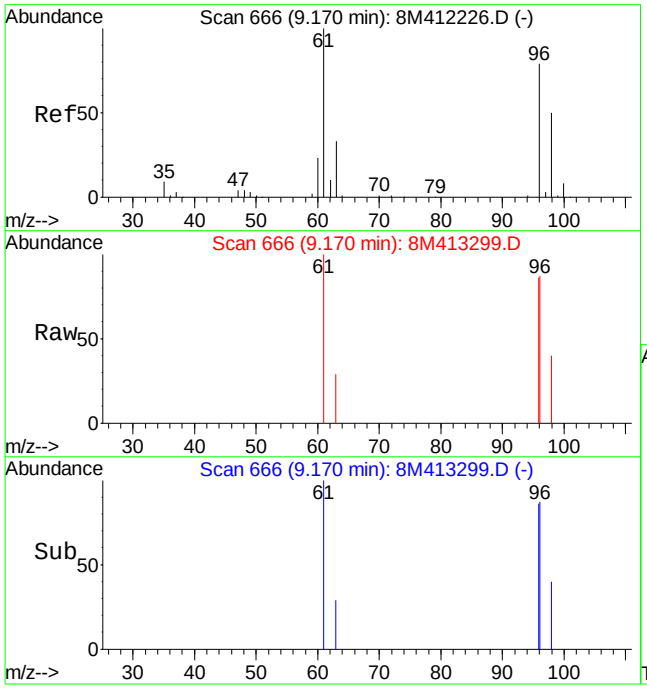

#32
cis-1,2-Dichloroethene
Concen: 0.41 ug/L
RT: 9.17 min Scan# 666
Delta R.T. 0.00 min
Lab File: 8M413299.D
Acq: 28 Jun 2016 5:21

Tgt Ion: 96 Resp: 2989

Ion	Ratio	Lower	Upper
96	100		
61	109.9	91.5	213.5

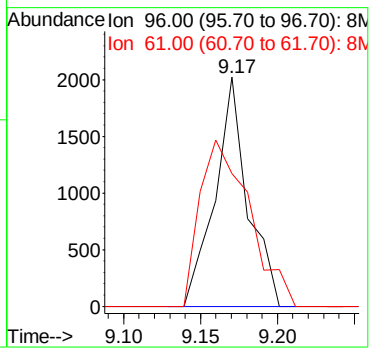

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413282.D Vial: 8
Acq On : 27 Jun 2016 21:08 Operator: FJB
Sample : L16061144-04 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:57:18 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	649248	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	519452	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	298716	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	197213	28.2718 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.08%		
43) 1,2-Dichloroethane-d4	10.30	65	220197	29.4397 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.76%		
58) Toluene-d8	12.68	98	694890	25.5609 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.24%		
80) p-Bromofluorobenzene	16.07	95	304195	24.5934 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.36%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.62	42	1023	1.4472 ug/L #	38
70) Chlorobenzene	14.62	112	3484	0.1602 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M413282.D 8260WT.M Wed Jun 29 08:57:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413282.D Vial: 8
Acq On : 27 Jun 2016 21:08 Operator: FJB
Sample : L16061144-04 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:57 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

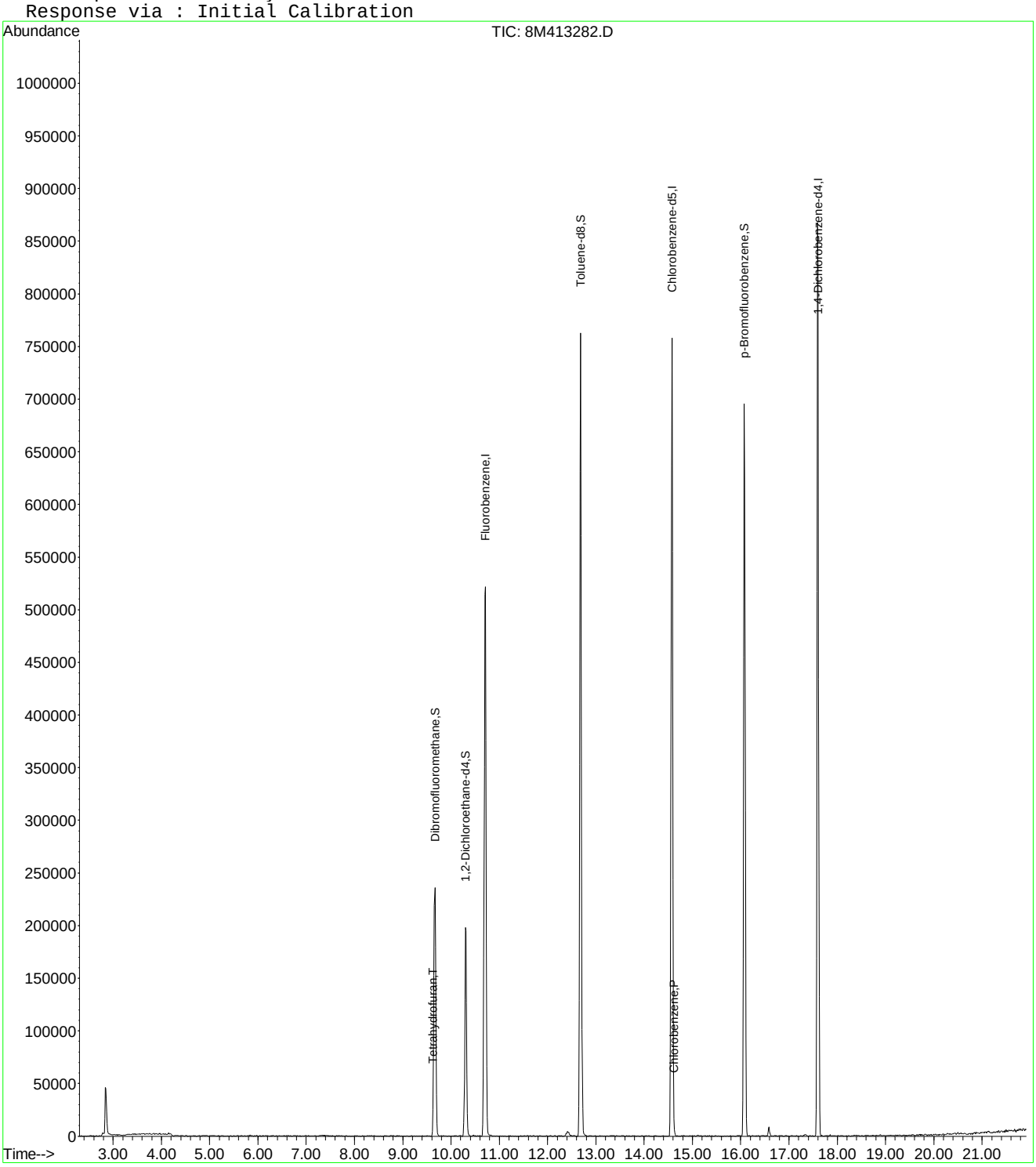

8M413282.D 8260WT.M Wed Jun 29 08:57:21 2016 Page 2

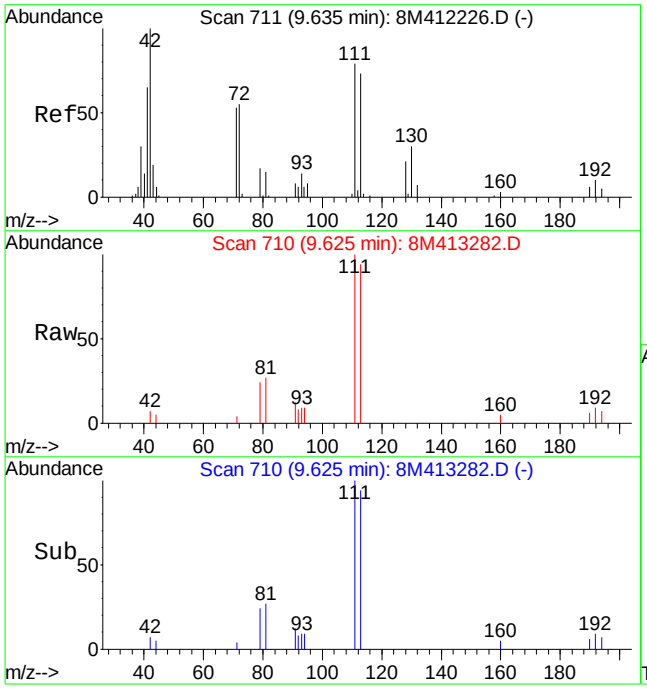

#36
Tetrahydrofuran
Concen: 1.45 ug/L
RT: 9.62 min Scan# 710
Delta R.T. -0.01 min
Lab File: 8M413282.D
Acq: 27 Jun 2016 21:08

Tgt Ion: 42 Resp: 1023

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	19.7	32.0	74.8#

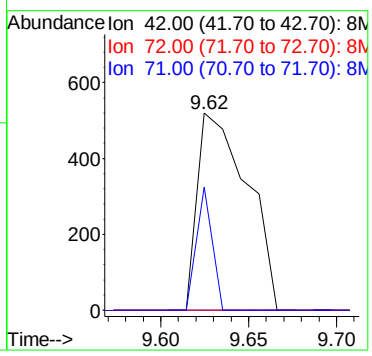

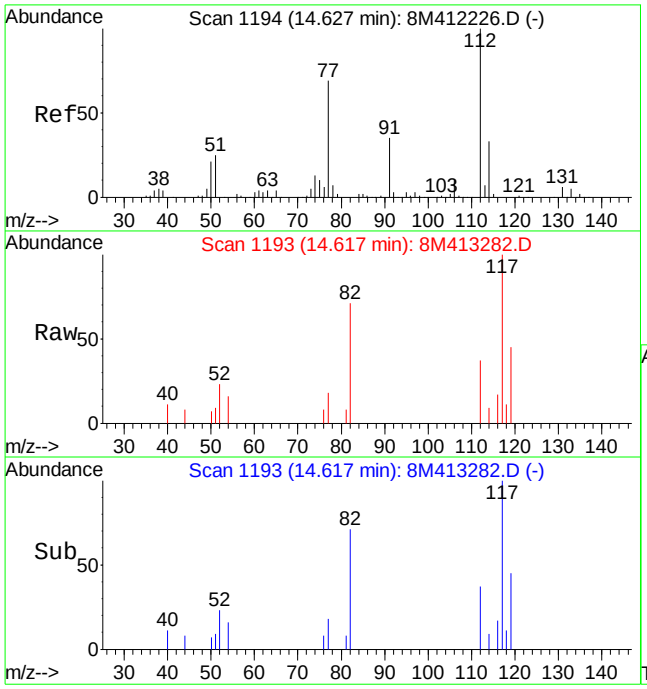

#70
Chlorobenzene
Concen: 0.16 ug/L
RT: 14.62 min Scan# 1193
Delta R.T. -0.01 min
Lab File: 8M413282.D
Acq: 27 Jun 2016 21:08

Tgt Ion:112 Resp: 3484

Ion	Ratio	Lower	Upper
112	100		
77	209.2	49.7	115.9#

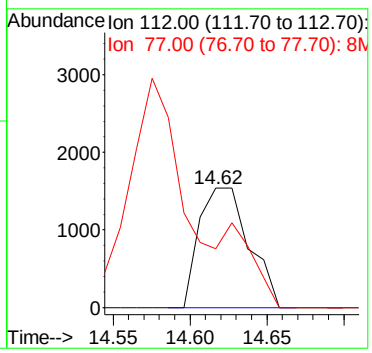

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:55 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

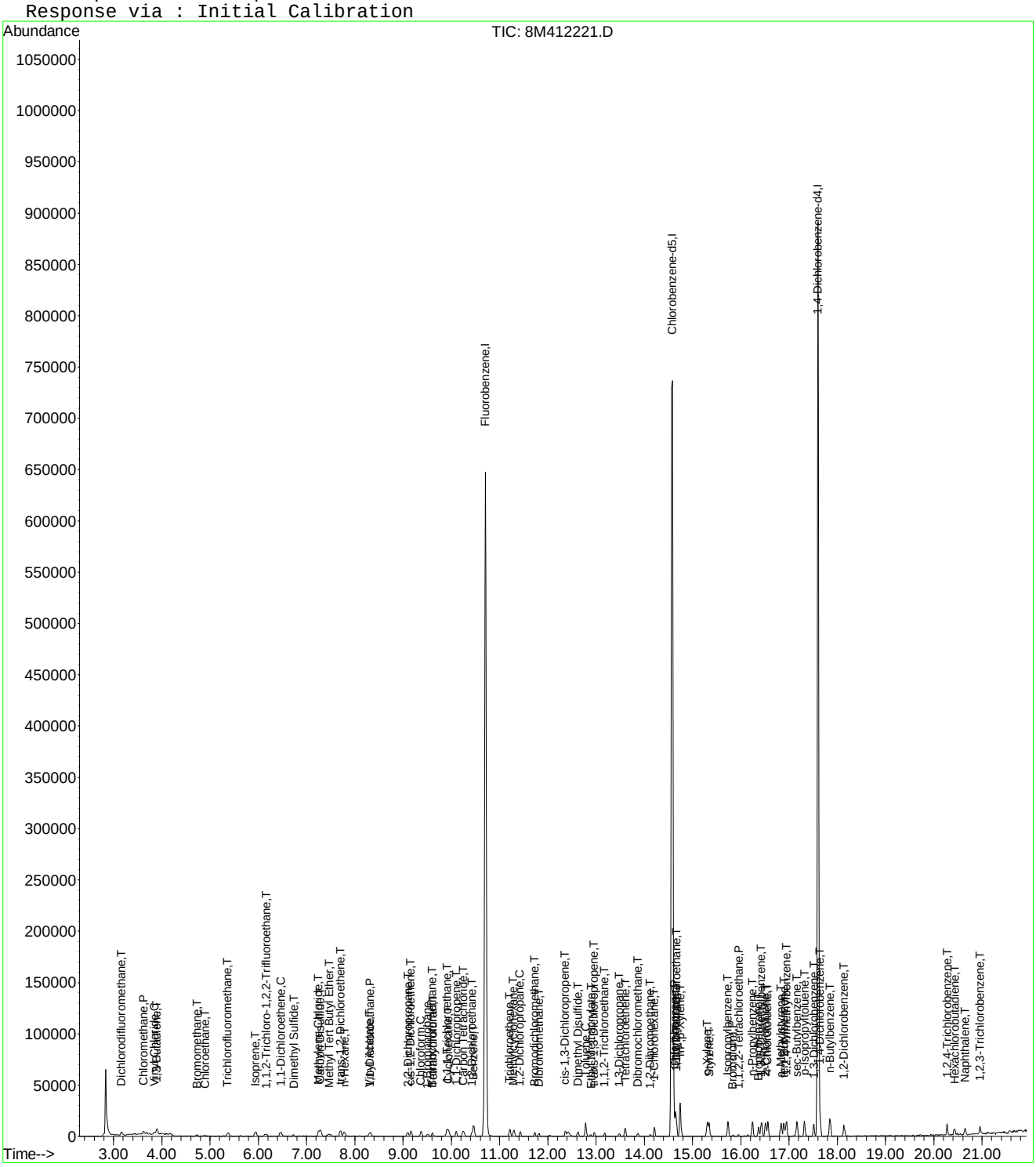

8M412221.D 8260WT.M Fri May 13 14:20:40 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

8M412221.D 8260WT.M Sat May 14 18:03:54 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

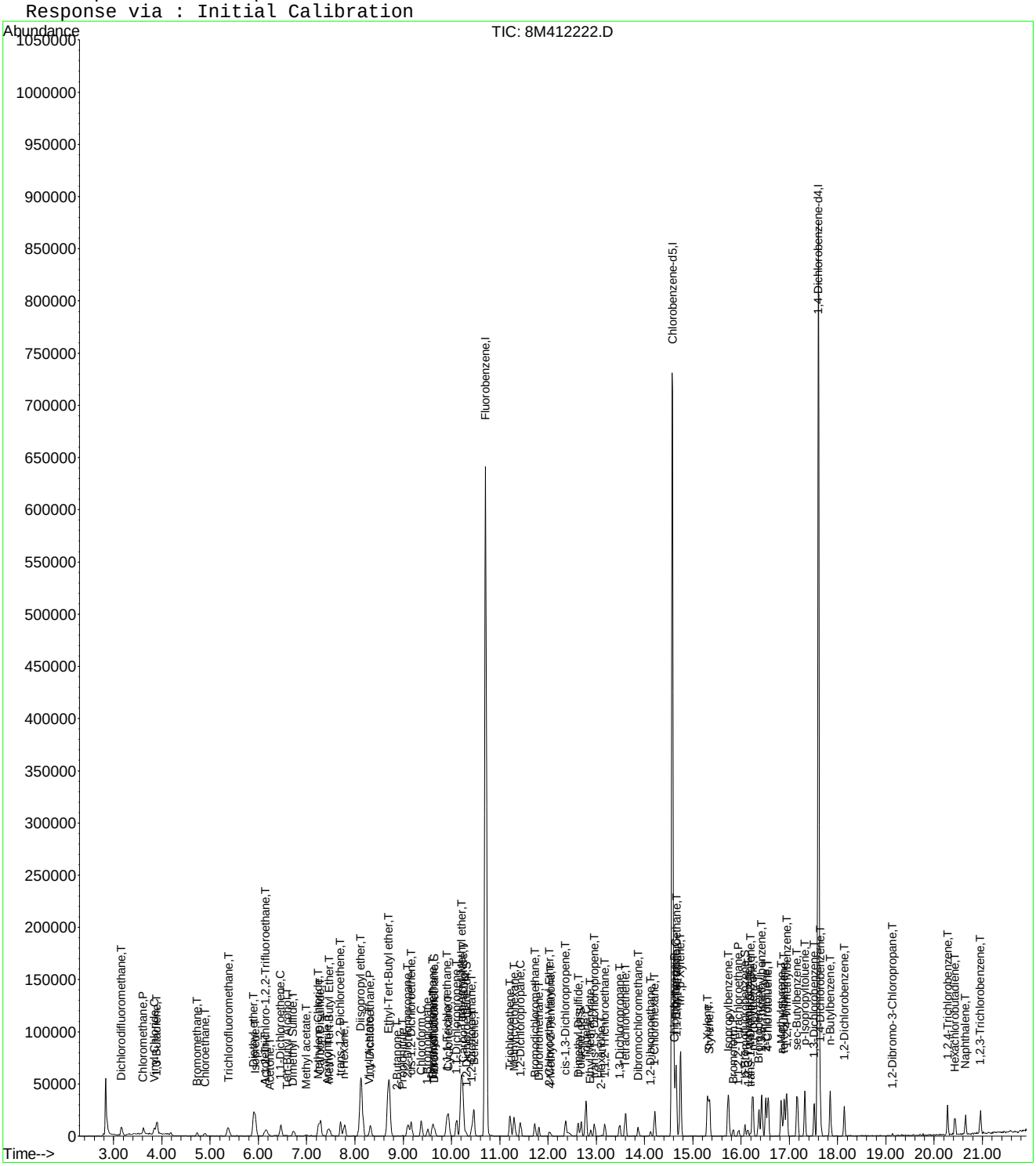

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412222.D 8260WT.M Sat May 14 18:05:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	8161	0.8307 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#	
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#	
58) Toluene-d8	12.68	98	28135	1.0016 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#	
80) p-Bromofluorobenzene	16.08	95	12079	1.0302 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166 ug/L	98
3) Chloromethane	3.62	50	16106	1.0425 ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792 ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360 ug/L	92
6) Bromomethane	4.73	94	8329	1.8804 ug/L	94
7) Chloroethane	4.90	64	9562	1.4006 ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885 ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420 ug/L	79
10) Isoprene	5.93	67	20936	1.9757 ug/L	73
11) Acrolein	6.14	56	4864	8.6444 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751 ug/L	99
13) Acetone	6.23	43	1519	0.7908 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798 ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725 ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953 ug/L	79
17) Iodomethane	6.98	142	1211	1.3472 ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821 ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010 ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683 ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089 ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688 ug/L	88
24) n-Hexane	7.79	57	18282	1.2105 ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128 ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318 ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250 ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313 ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479 ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309 ug/L	91
33) Chloroform	9.37	83	33543	1.8156 ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014 ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632 ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529 ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324 ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029 ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

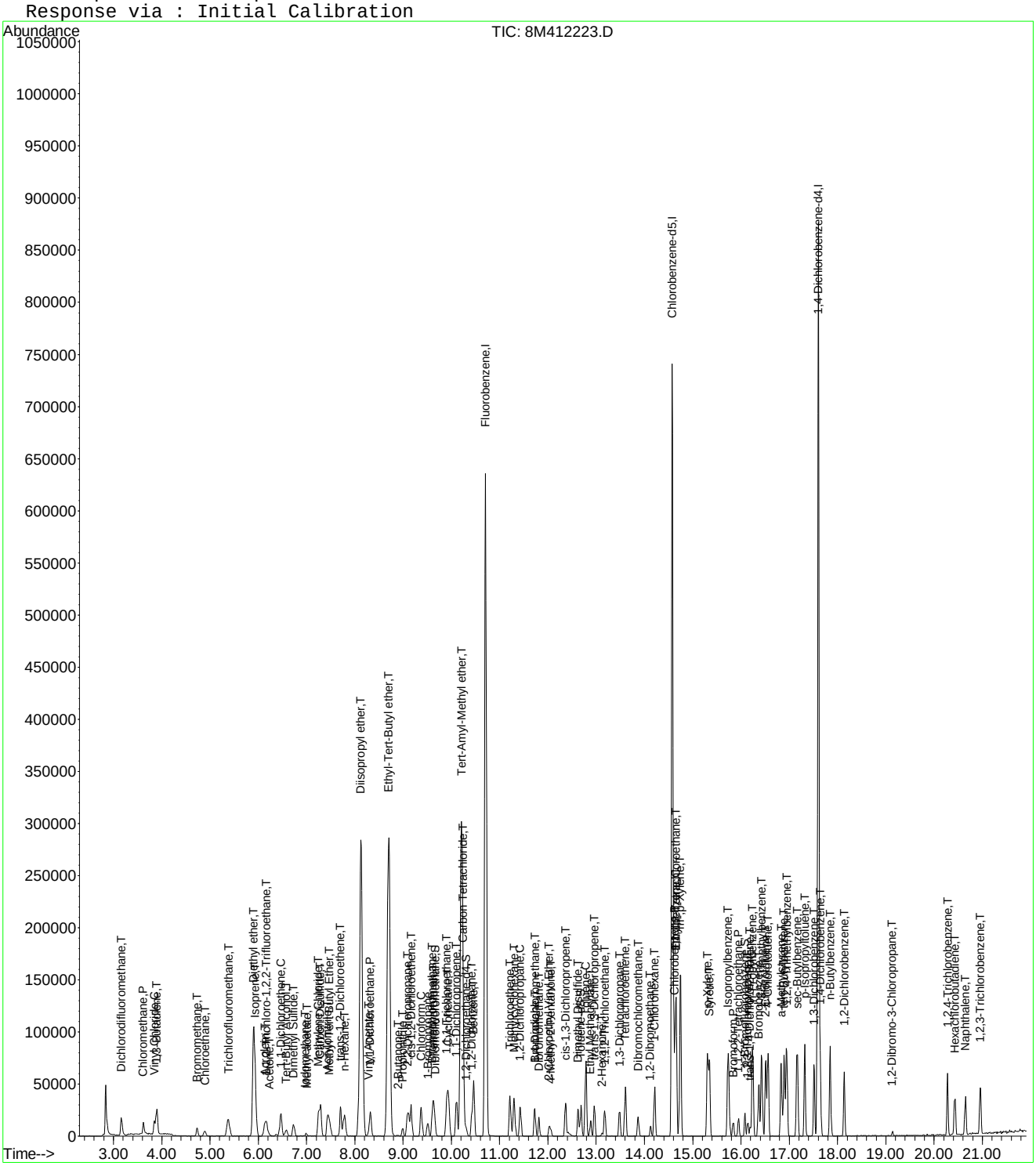

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	19775	2.0496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750 ug/L	99
3) Chloromethane	3.62	50	34194	2.2538 ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488 ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976 ug/L	93
6) Bromomethane	4.72	94	19582	3.4204 ug/L	94
7) Chloroethane	4.90	64	22000	3.2814 ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212 ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955 ug/L	79
10) Isoprene	5.94	67	44975	4.3218 ug/L	78
11) Acrolein	6.15	56	7712	13.9568 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591 ug/L	99
13) Acetone	6.24	43	3578	1.8967 ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897 ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597 ug/L	77
17) Iodomethane	6.99	142	3667	1.8964 ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398 ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823 ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097 ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108 ug/L	94
24) n-Hexane	7.78	57	40758	2.7480 ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337 ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113 ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852 ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738 ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726 ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950 ug/L	89
33) Chloroform	9.37	83	78227	4.3116 ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986 ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009 ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633 ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958 ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

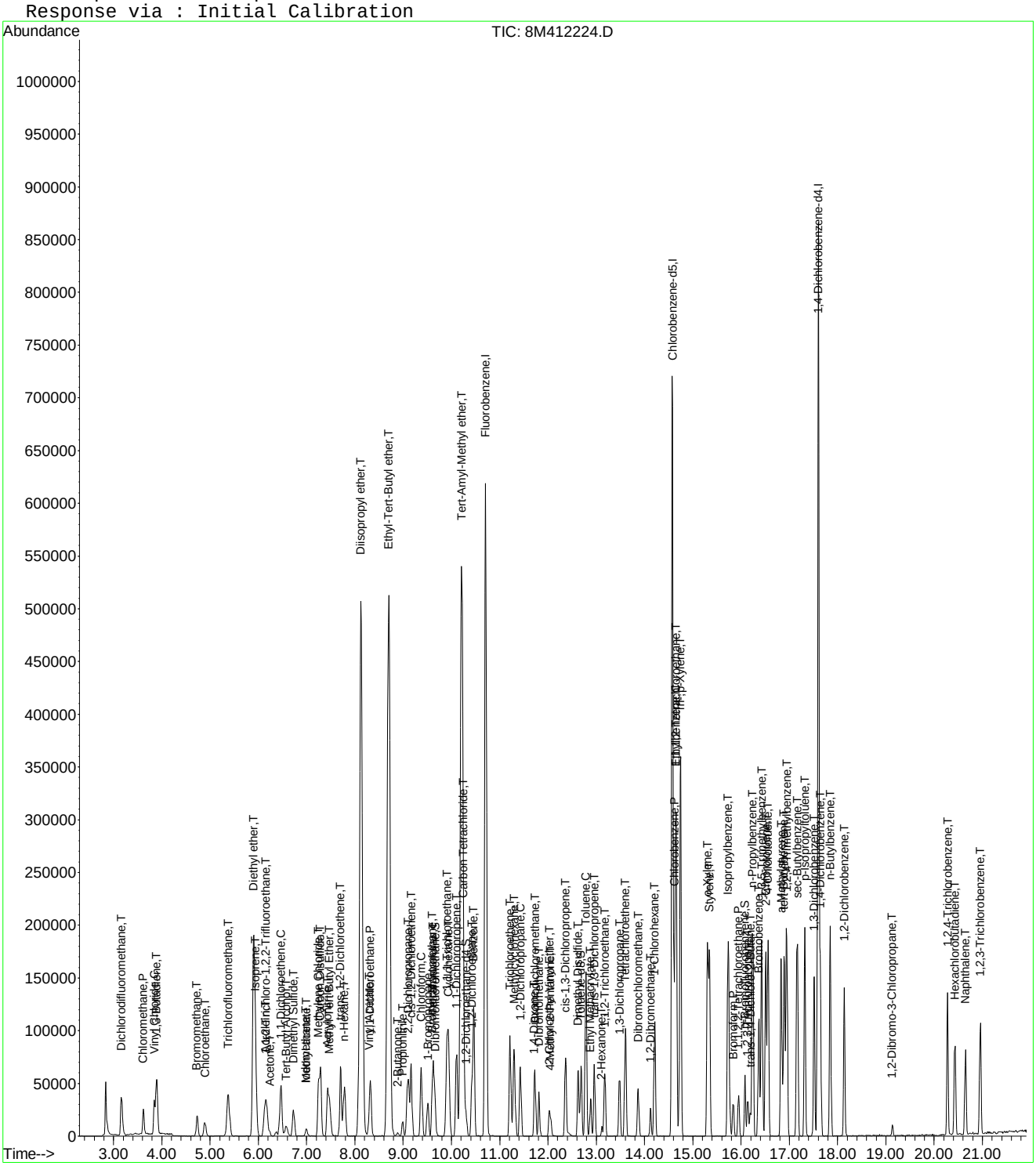

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

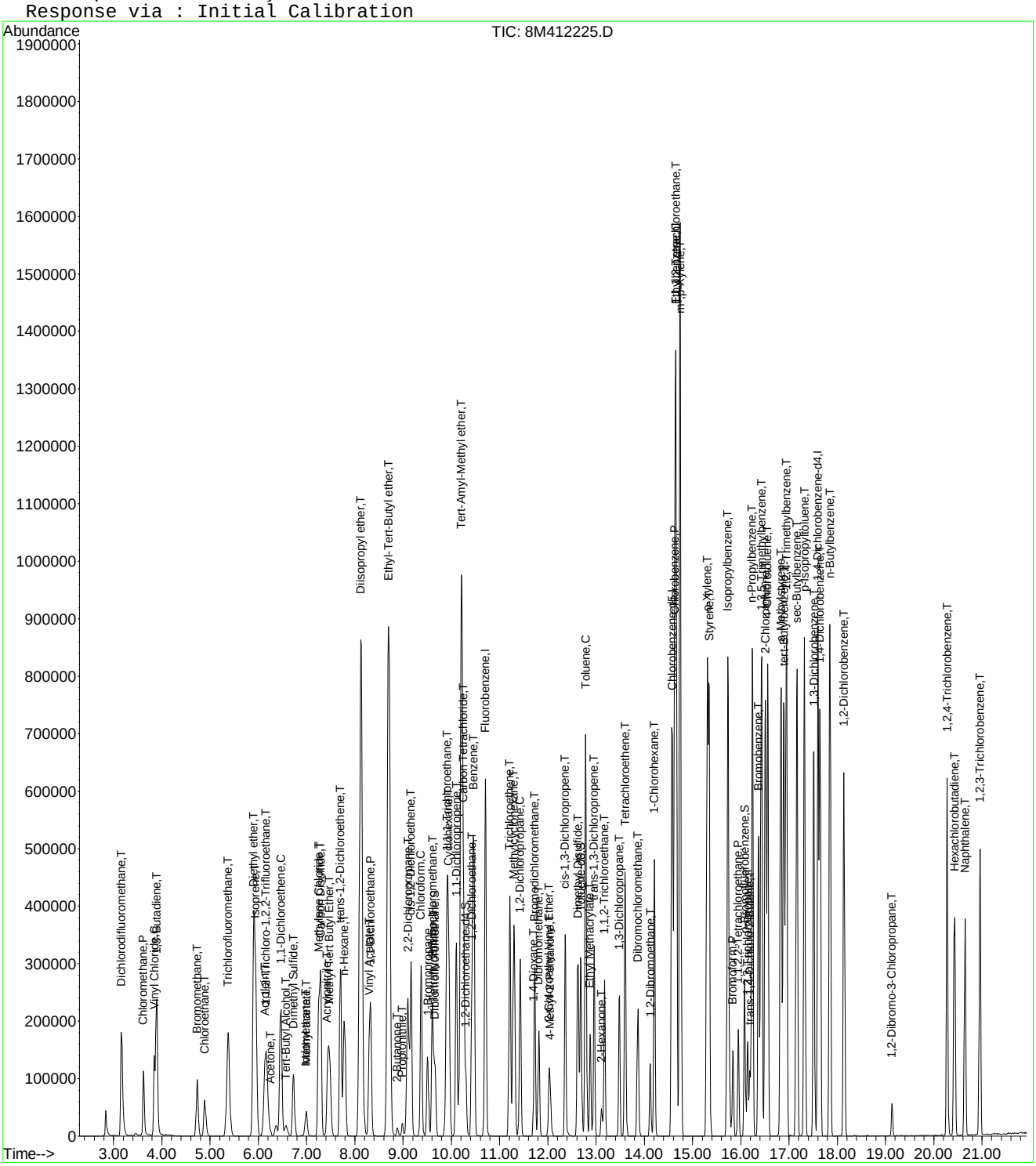

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

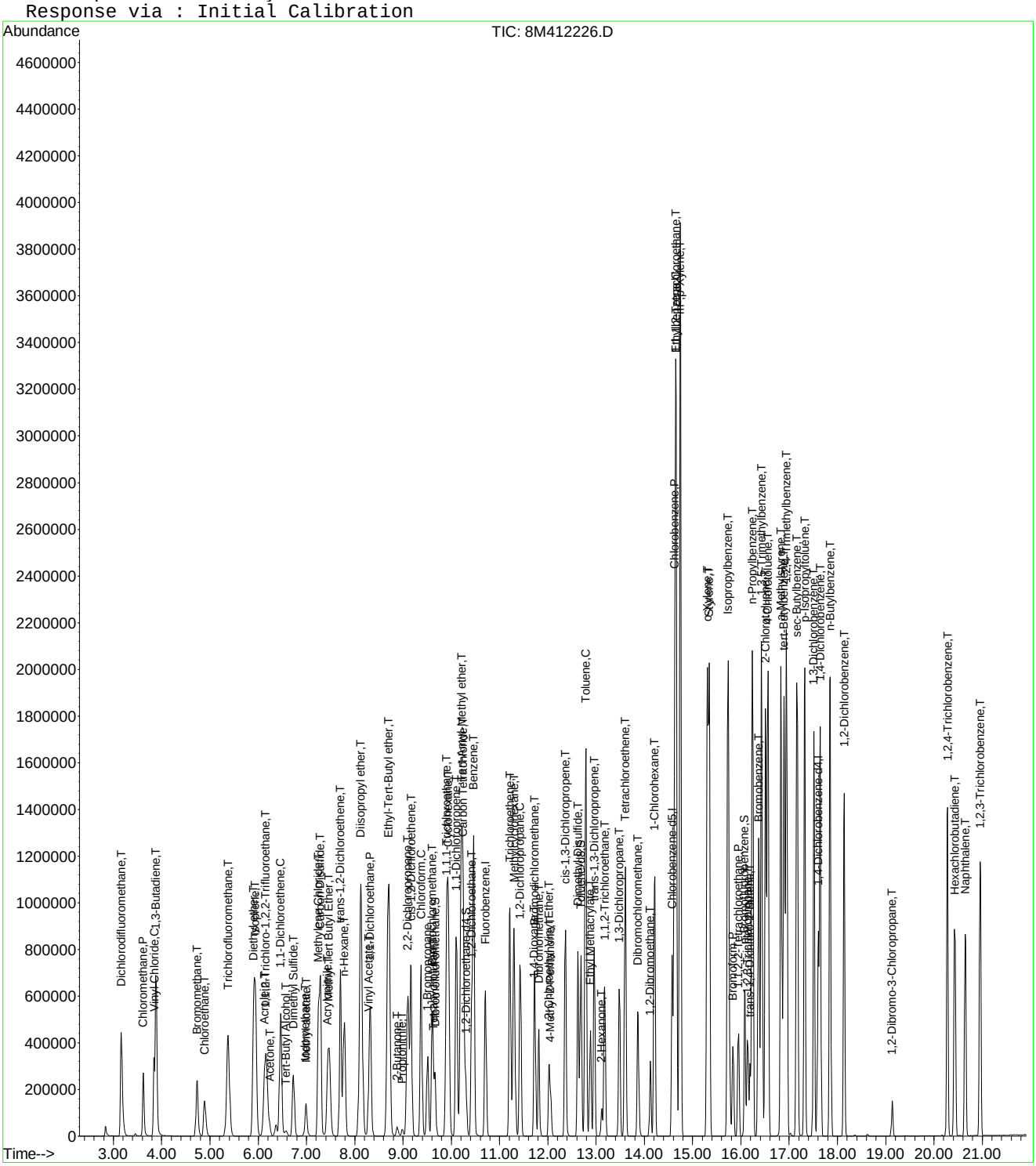

8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

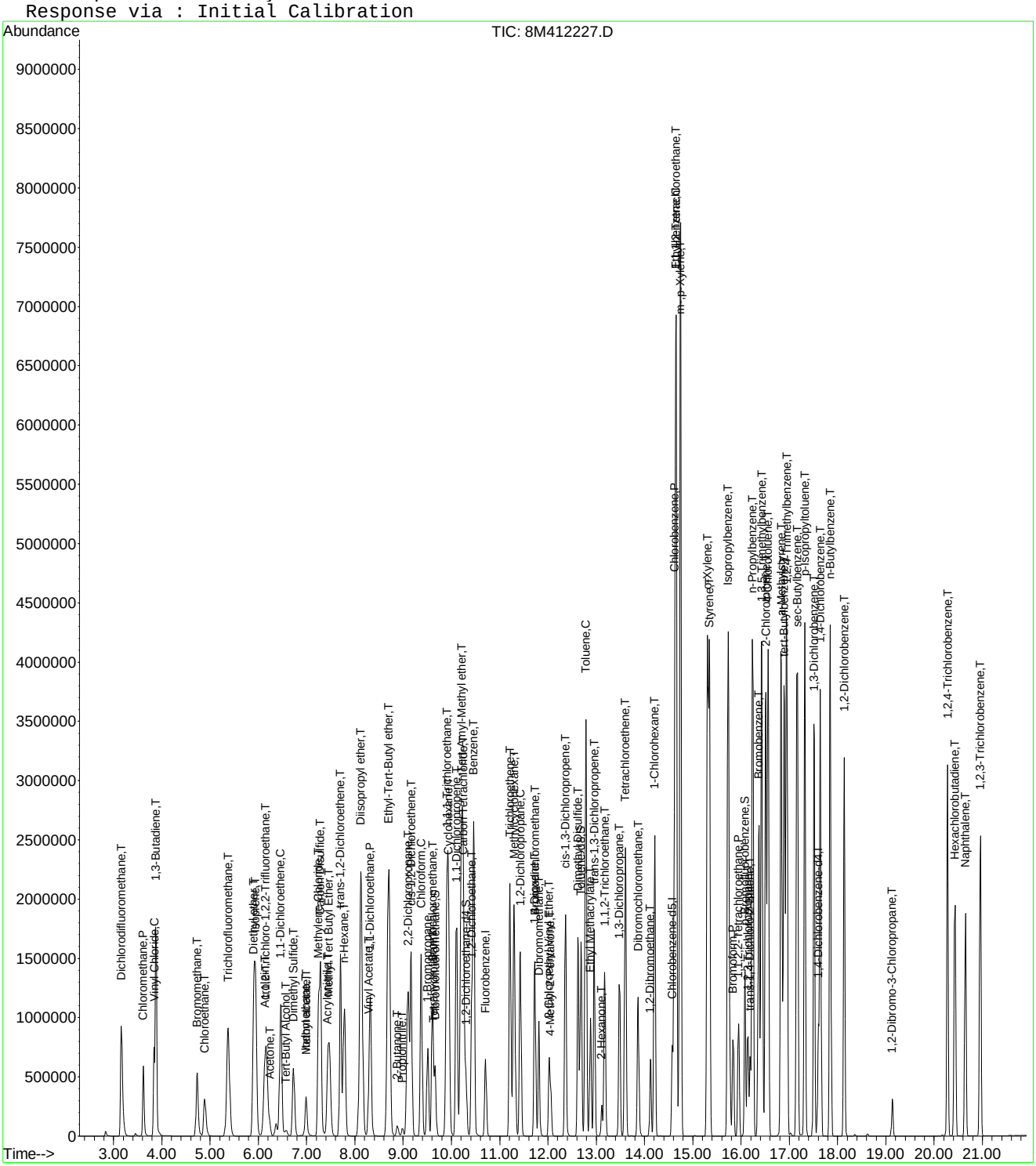

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

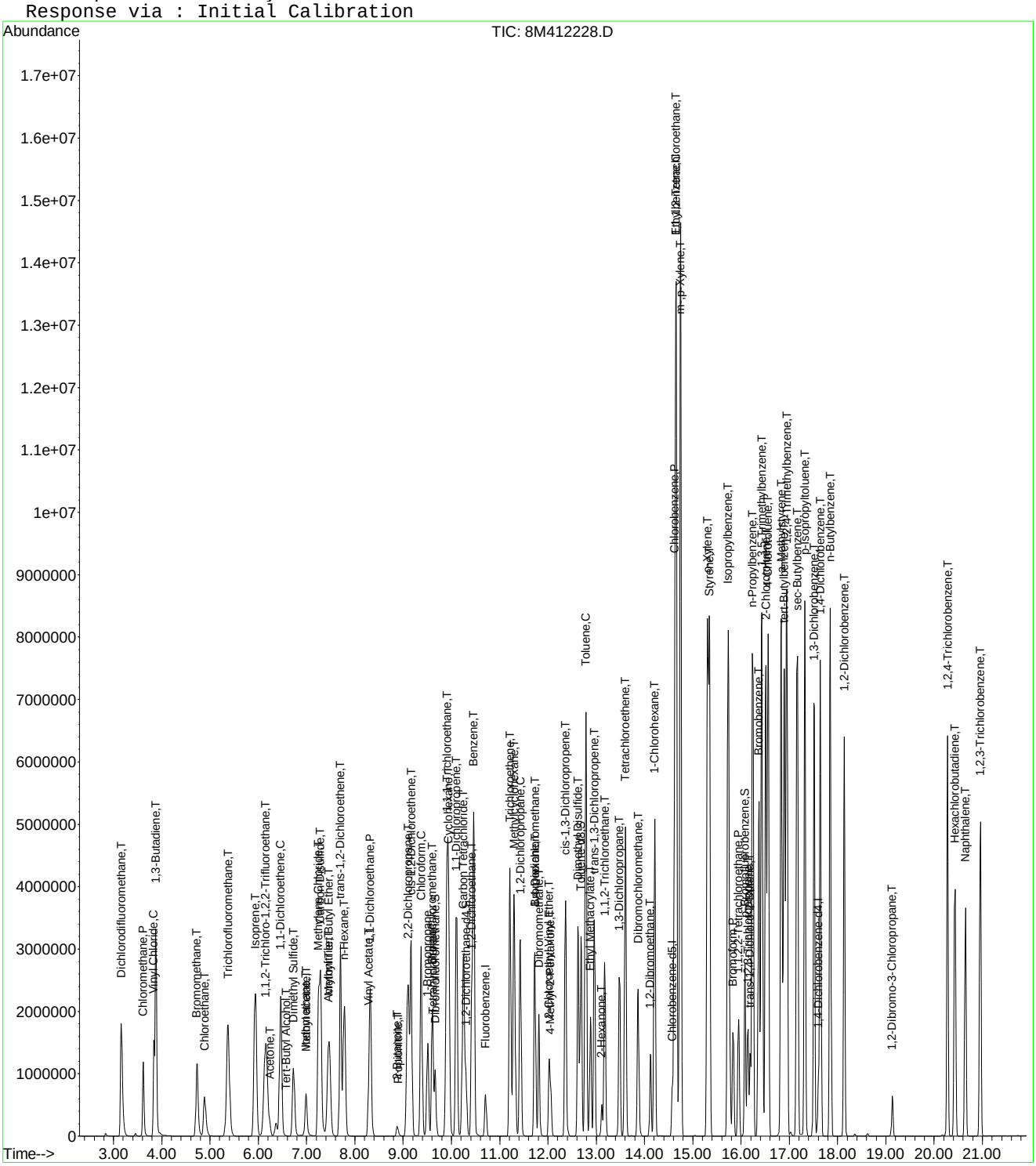

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726 ug/L	86
46)	Benzene	10.46	78	9065861	250.7462 ug/L	93
47)	Trichloroethene	11.21	130	2772282	295.1106 ug/L	97
48)	Methylcyclohexane	11.30	83	4327357	304.8748 ug/L	84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718 ug/L	74
50)	Bromodichloromethane	11.73	83	4051493	294.7973 ug/L	99
51)	1,4-Dioxane	11.72	88	26614	699.8767 ug/L	67
52)	Dibromomethane	11.81	93	1369945	295.3776 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917 ug/L	90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522 ug/L #	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431 ug/L	97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911 ug/L	94
59)	Toluene	12.78	91	9135213	236.4669 ug/L	90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240 ug/L	96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104 ug/L	100
64)	2-Hexanone	13.11	58	381967	311.8816 ug/L #	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141 ug/L	76
66)	Tetrachloroethene	13.60	164	2374435	297.7522 ug/L	96
67)	Dibromochloromethane	13.87	129	2638145	310.7838 ug/L	100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085 ug/L	99
69)	1-Chlorohexane	14.21	91	3712592	290.5924 ug/L	84
70)	Chlorobenzene	14.63	112	6754240	263.7433 ug/L	90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001 ug/L	100
72)	Ethylbenzene	14.65	106	4014412	290.7661 ug/L	70
73)	m-,p-Xylene	14.75	106	8357822	505.3514 ug/L	70
74)	o-Xylene	15.31	106	4530840	285.4488 ug/L	88
75)	Styrene	15.35	104	7050702	269.0641 ug/L	82
76)	Bromoform	15.84	173	1602587	321.7373 ug/L	99
77)	Isopropylbenzene	15.73	105	9900817	226.7477 ug/L	90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861 ug/L	98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176 ug/L	61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601 ug/L	82
83)	n-Propylbenzene	16.25	91	10768378	214.4110 ug/L	86
84)	Bromobenzene	16.37	156	2947671	300.5290 ug/L	99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580 ug/L	92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449 ug/L	92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687 ug/L	93
88)	a-Methylstyrene	16.84	118	4955768	300.9205 ug/L	86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701 ug/L	95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932 ug/L	89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051 ug/L	91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155 ug/L	94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806 ug/L	87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593 ug/L	88
95)	n-Butylbenzene	17.85	91	8408157	234.6279 ug/L	92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787 ug/L	87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741 ug/L	91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206 ug/L	98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378 ug/L	96
100)	Naphthalene	20.65	128	5216751	275.8542 ug/L	95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

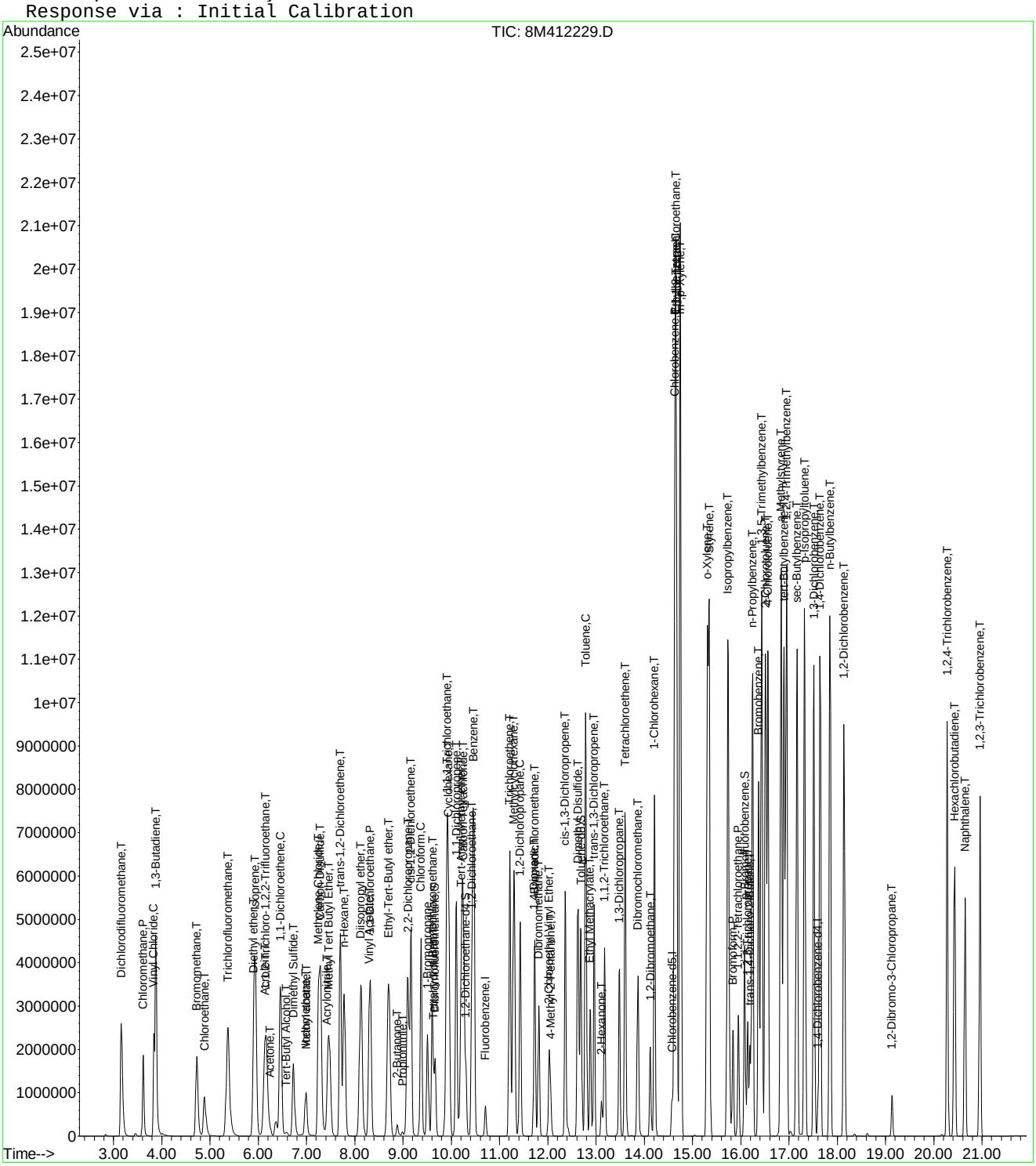

8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 3

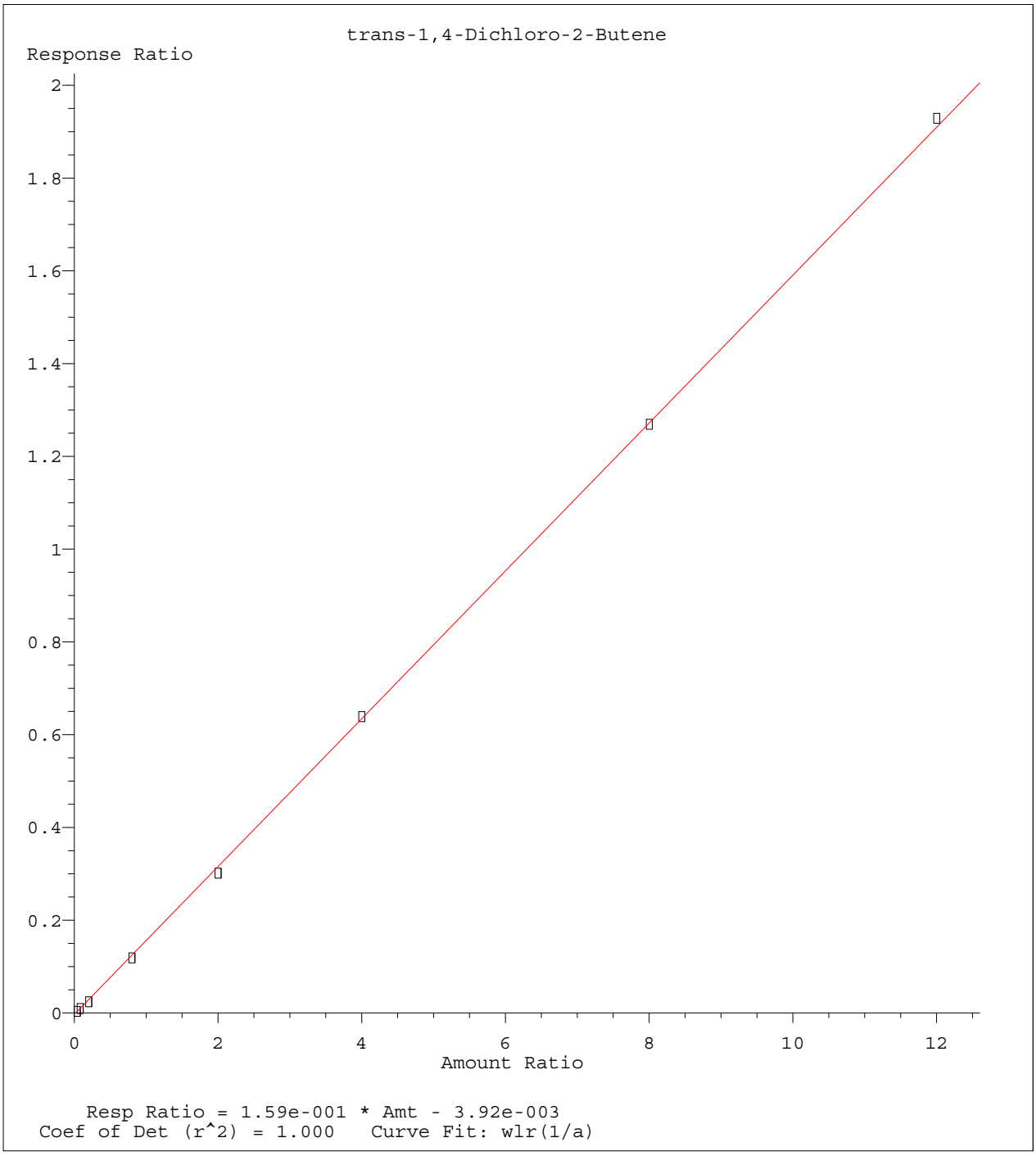

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

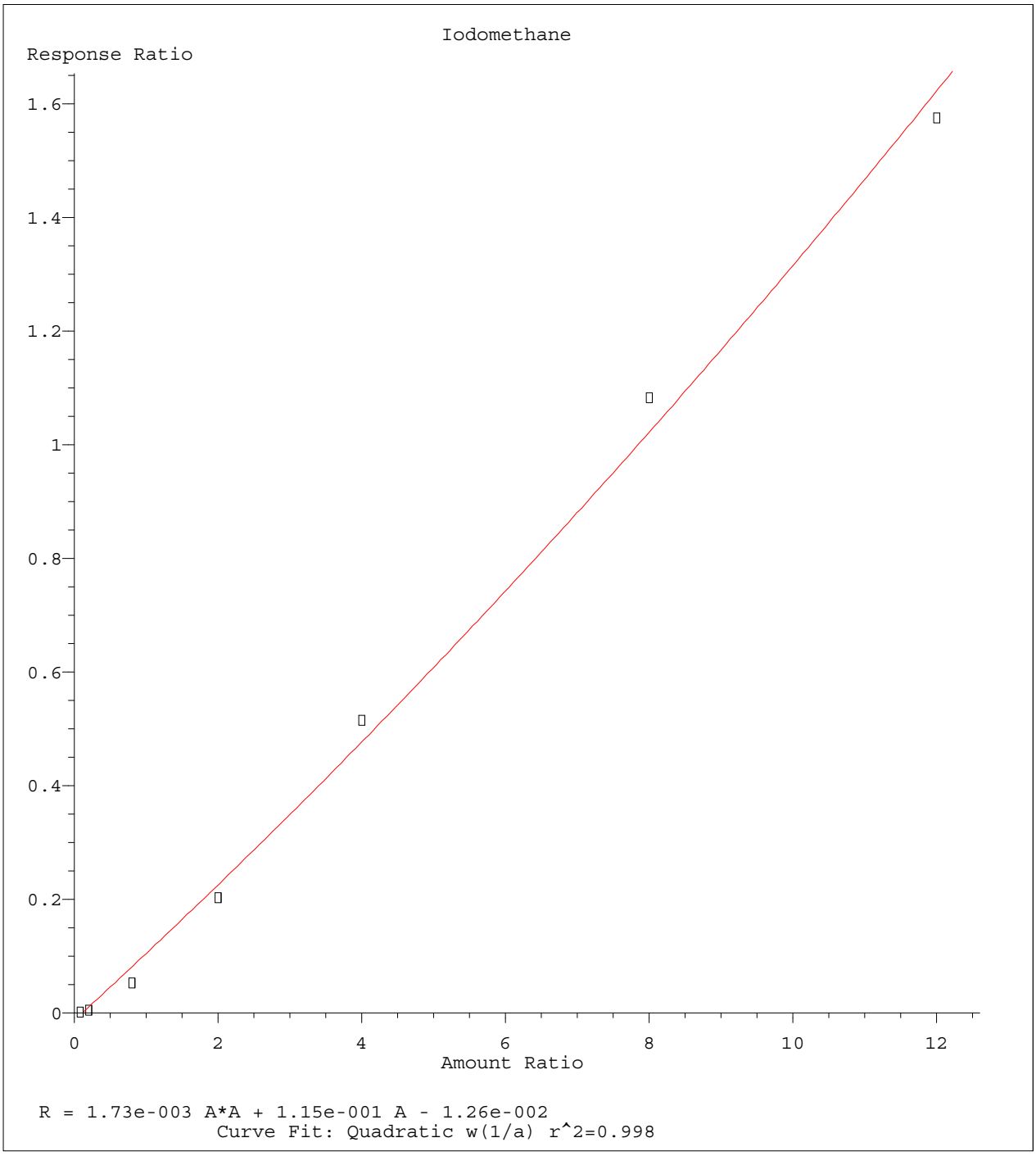

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

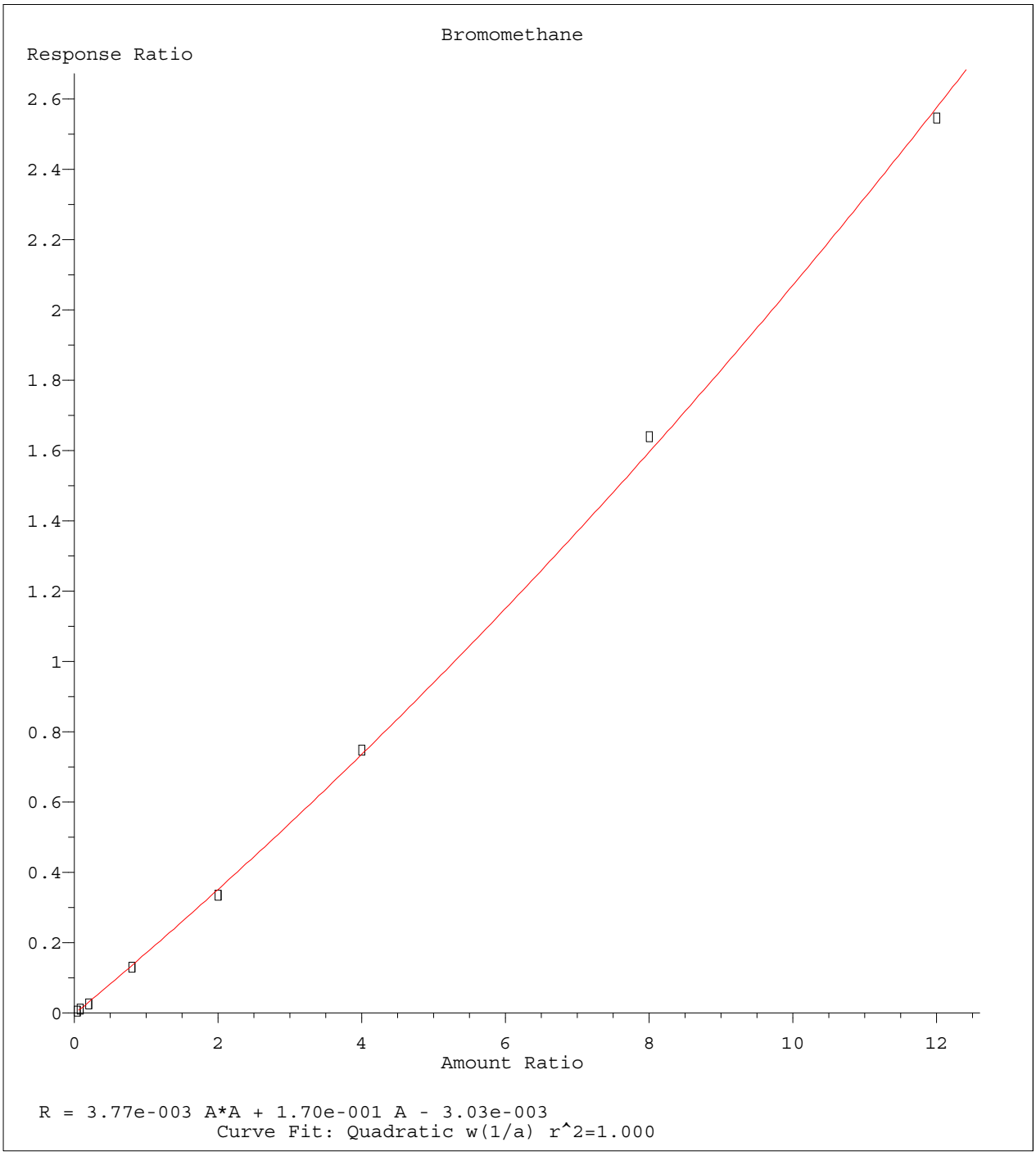

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

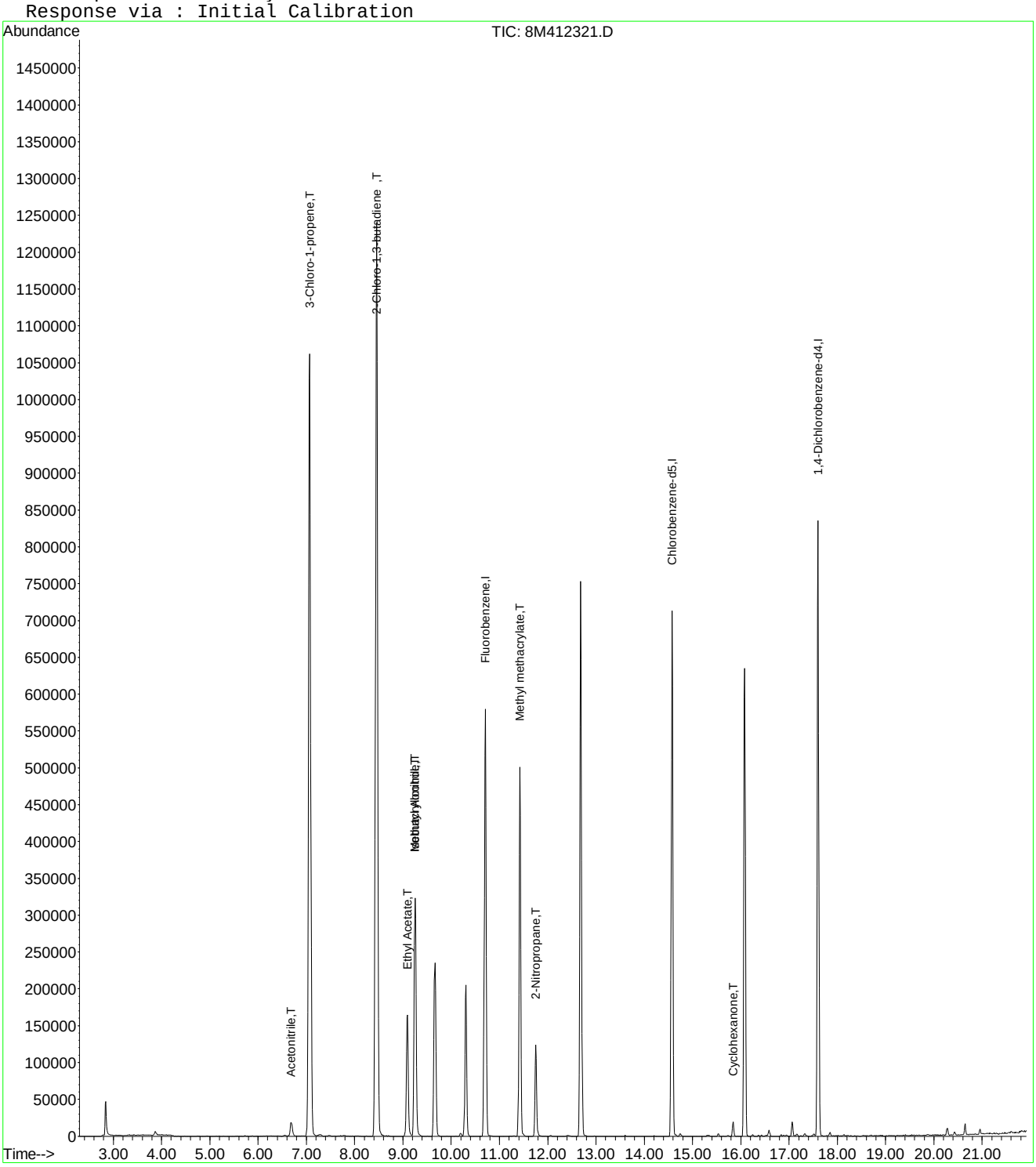

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

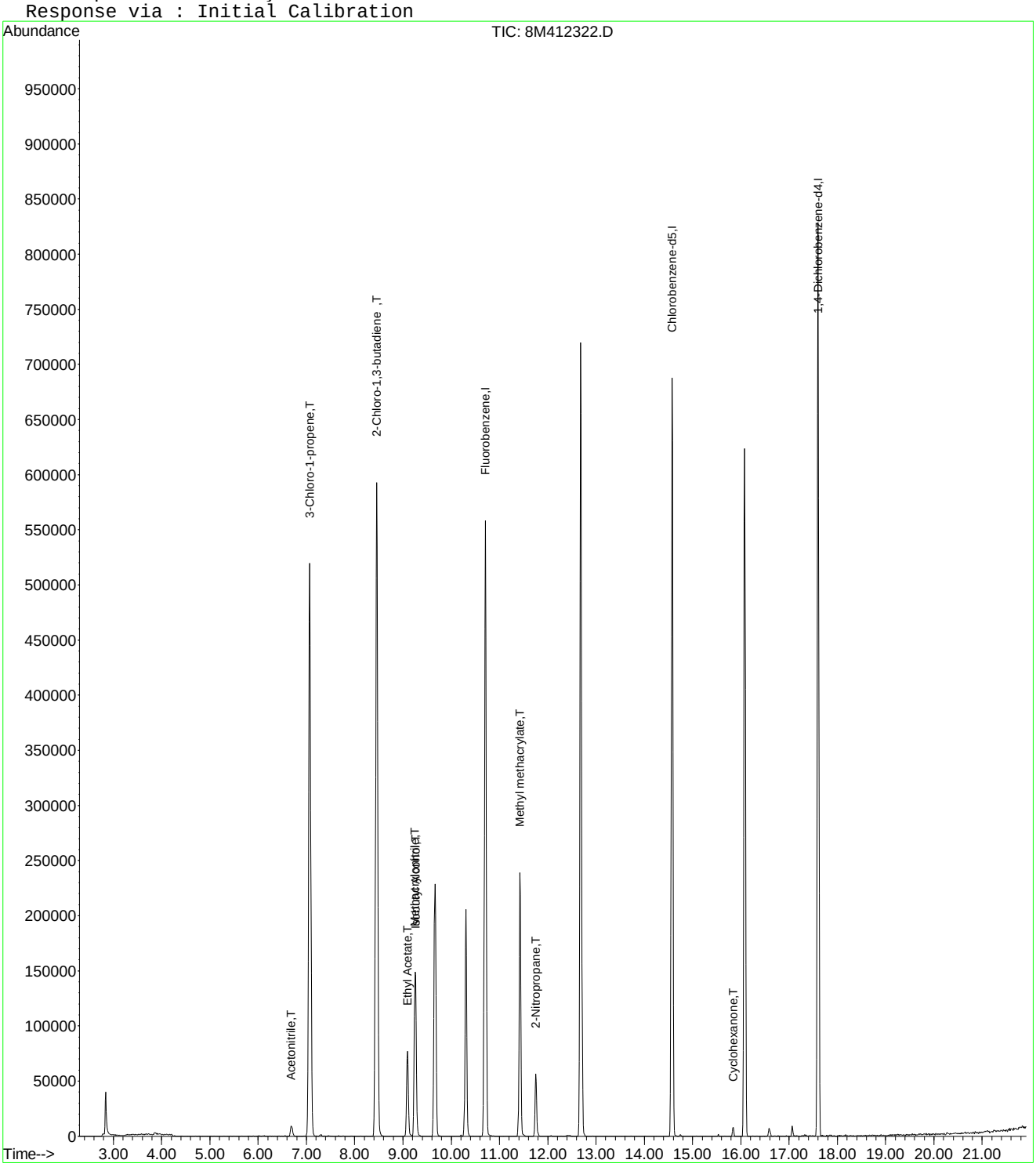

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

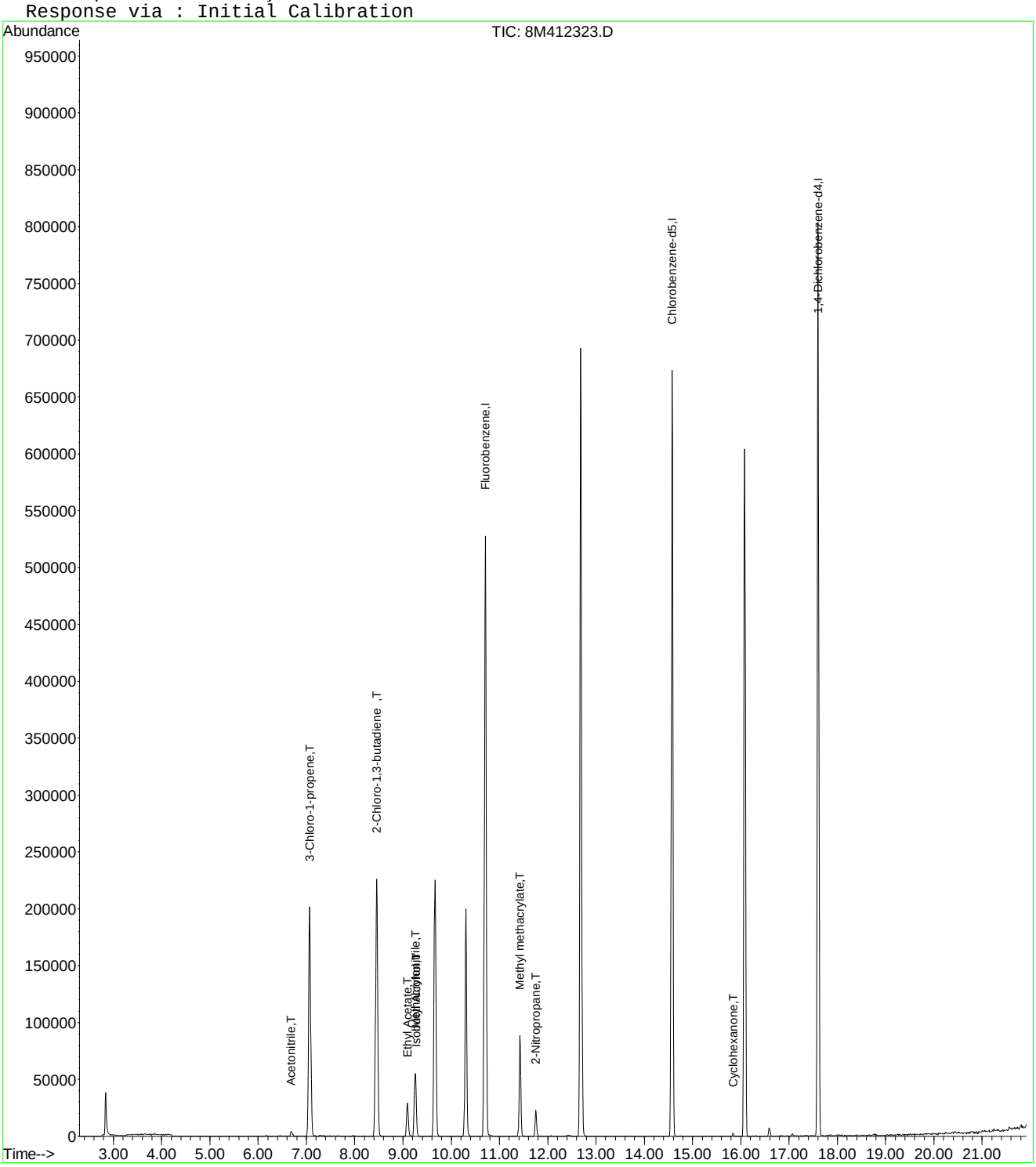

8M412323.D A9FOOWT.M Thu May 19 09:22:34 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

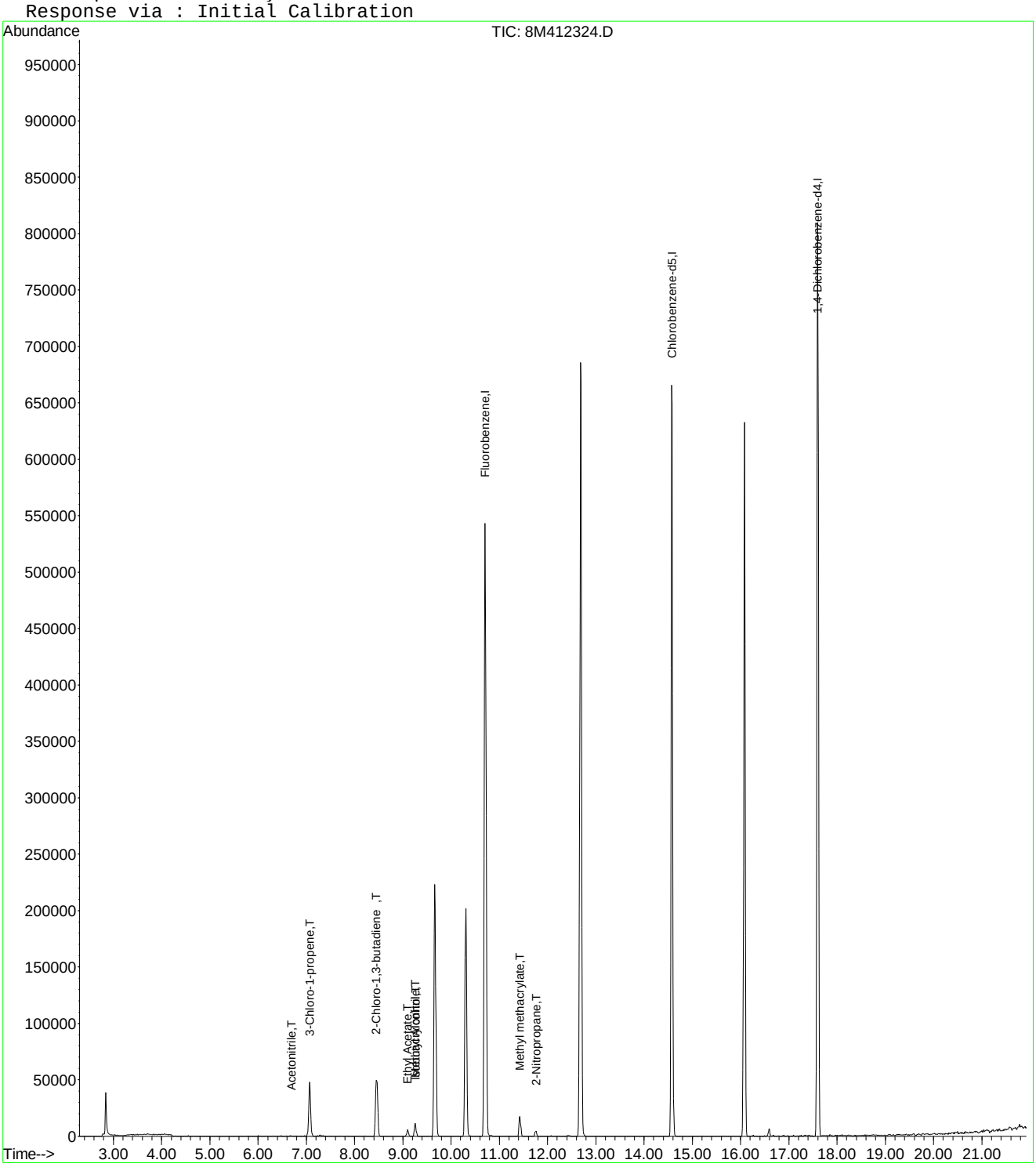

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

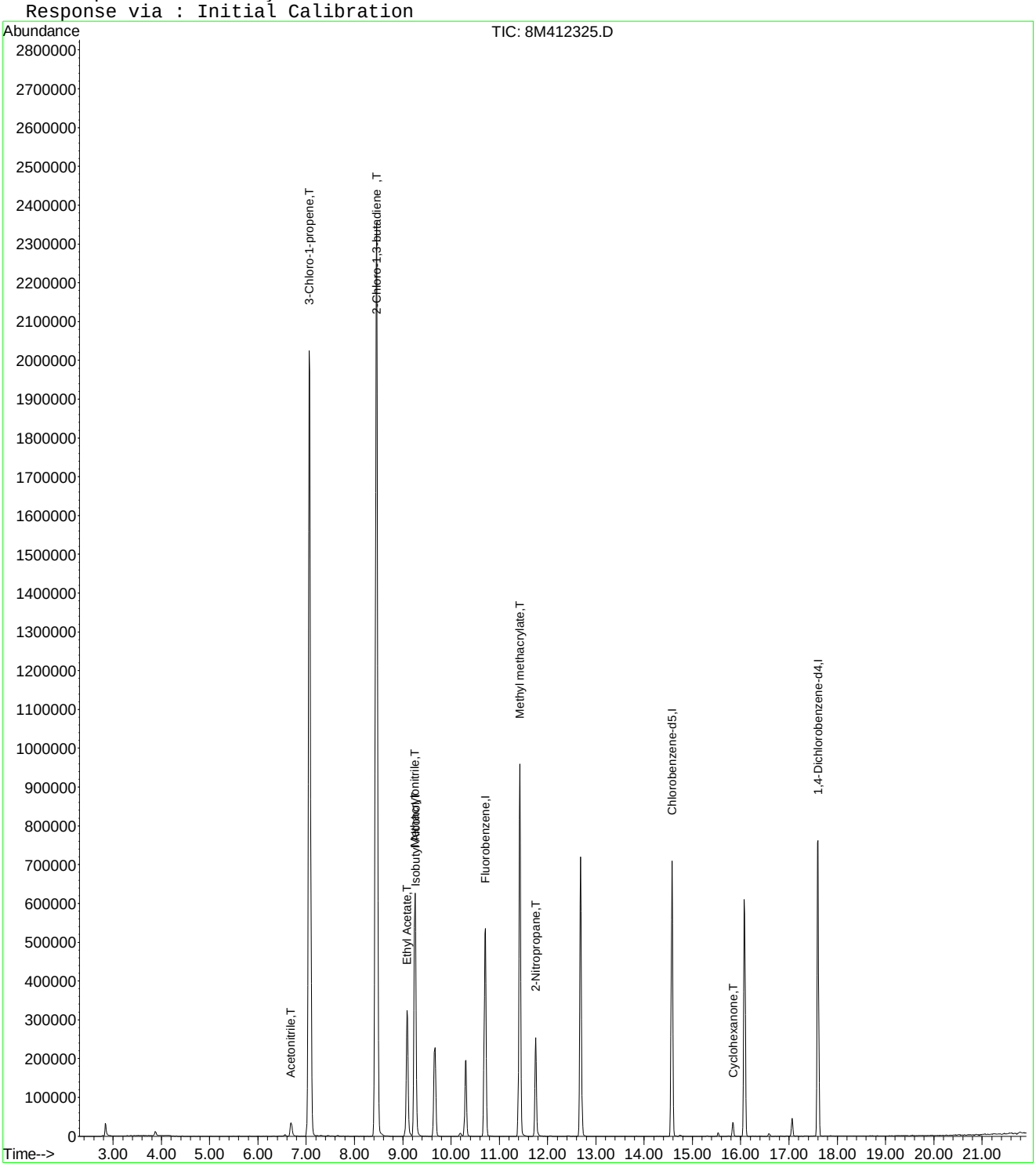

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	81471	303.8636 ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562 ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424 ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374 ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836 ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132 ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456 ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412326.D A9FOOWT.M Thu May 19 09:01:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

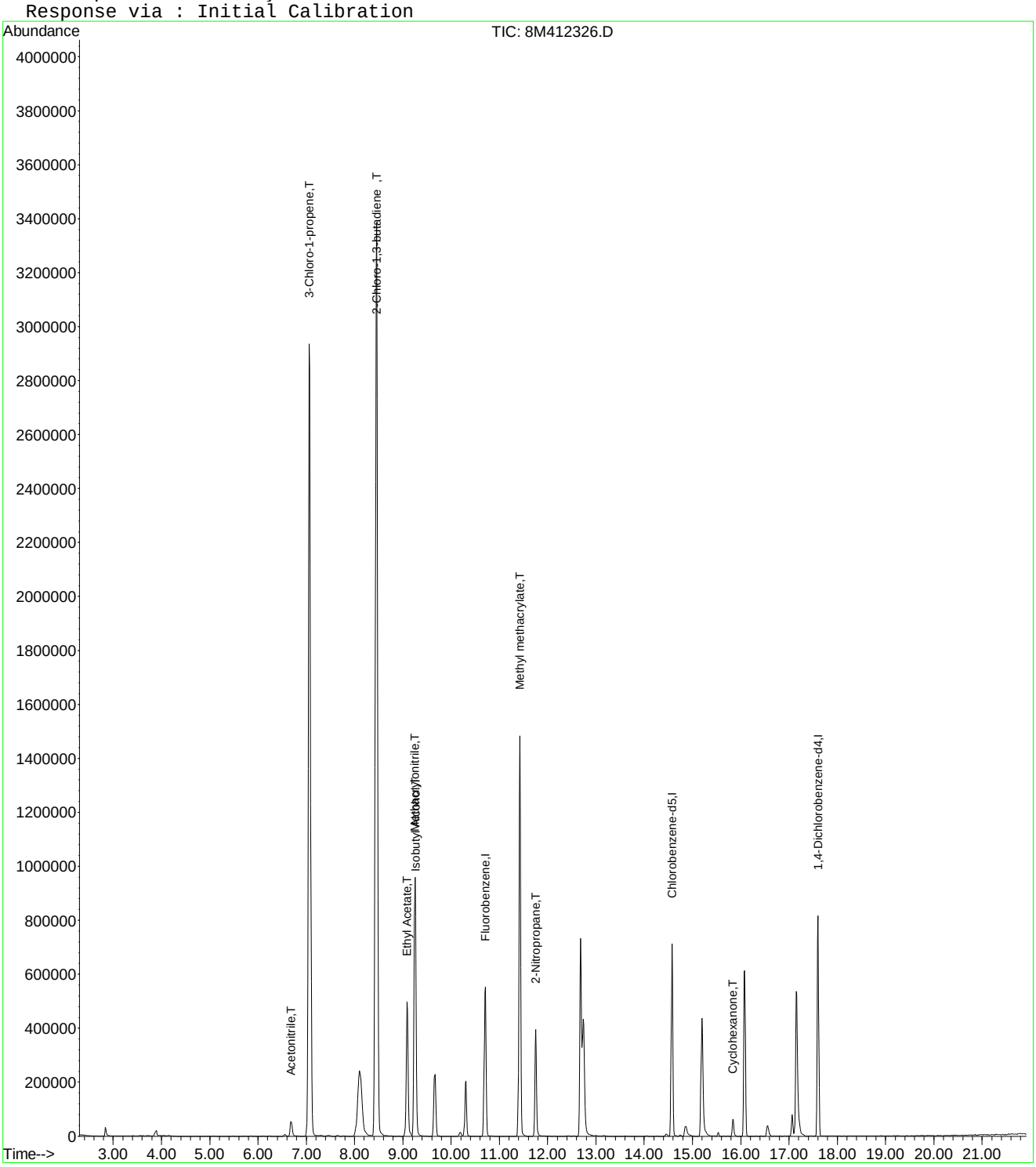

8M412326.D A9FOOWT.M Thu May 19 09:01:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	110761	409.7980	ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353	ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705	ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642	ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517	ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862	ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153	ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760	ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575	ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

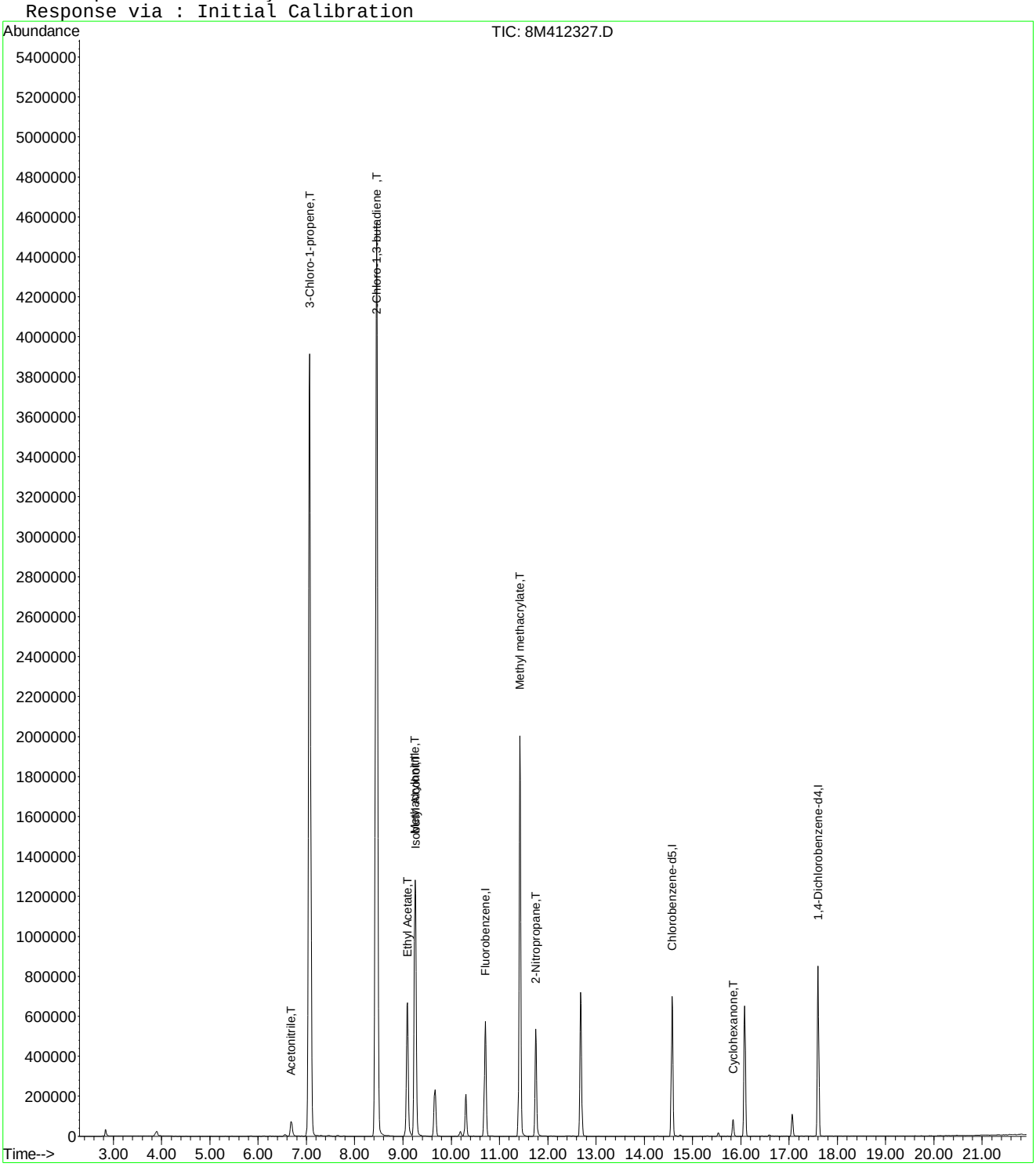

8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	132245	492.6753	ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834	ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693	ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017	ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083	ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367	ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877	ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956	ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160	ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

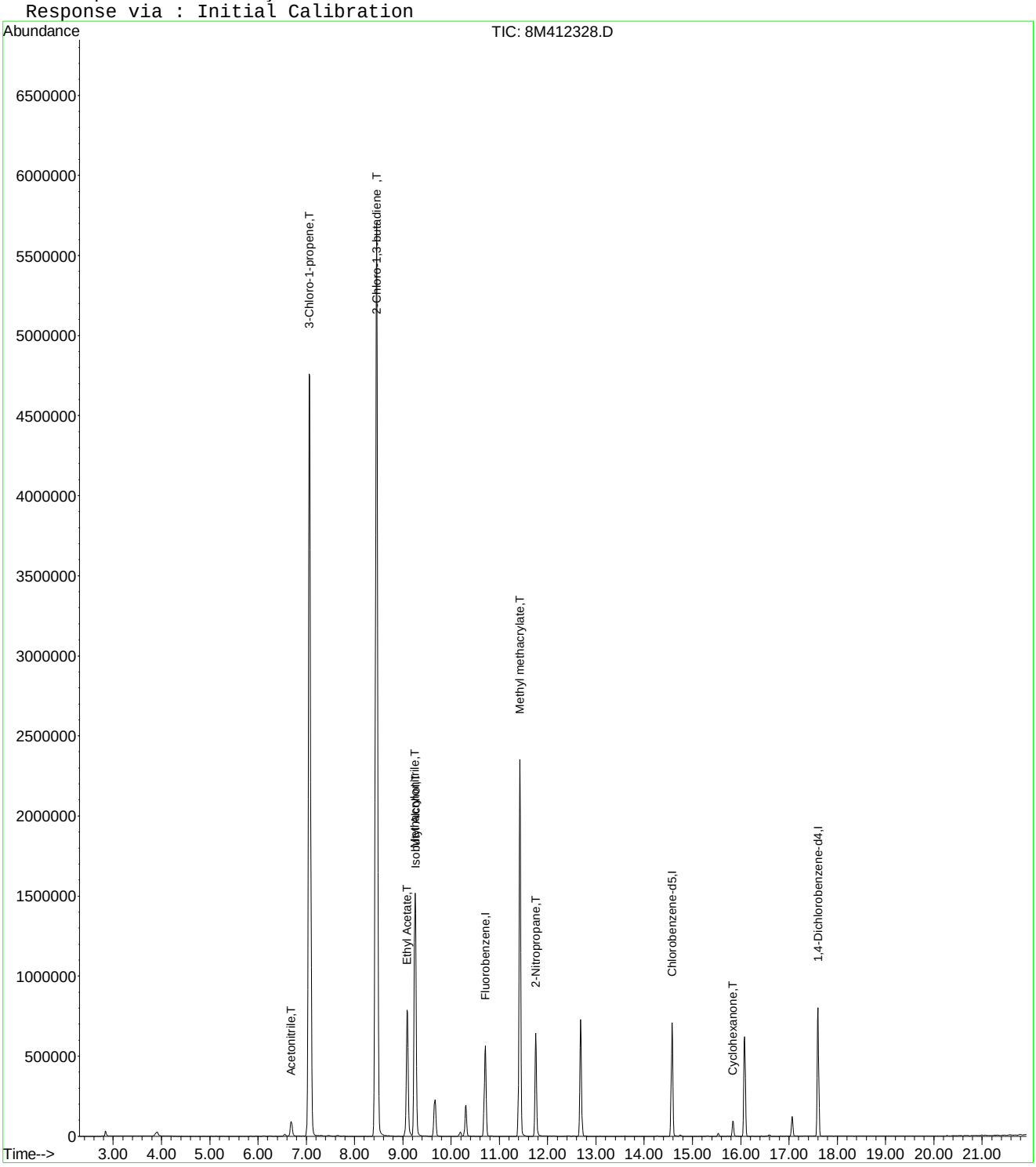

8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	29876	114.4154 ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803 ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317 ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509 ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285 ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508 ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716 ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189 ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

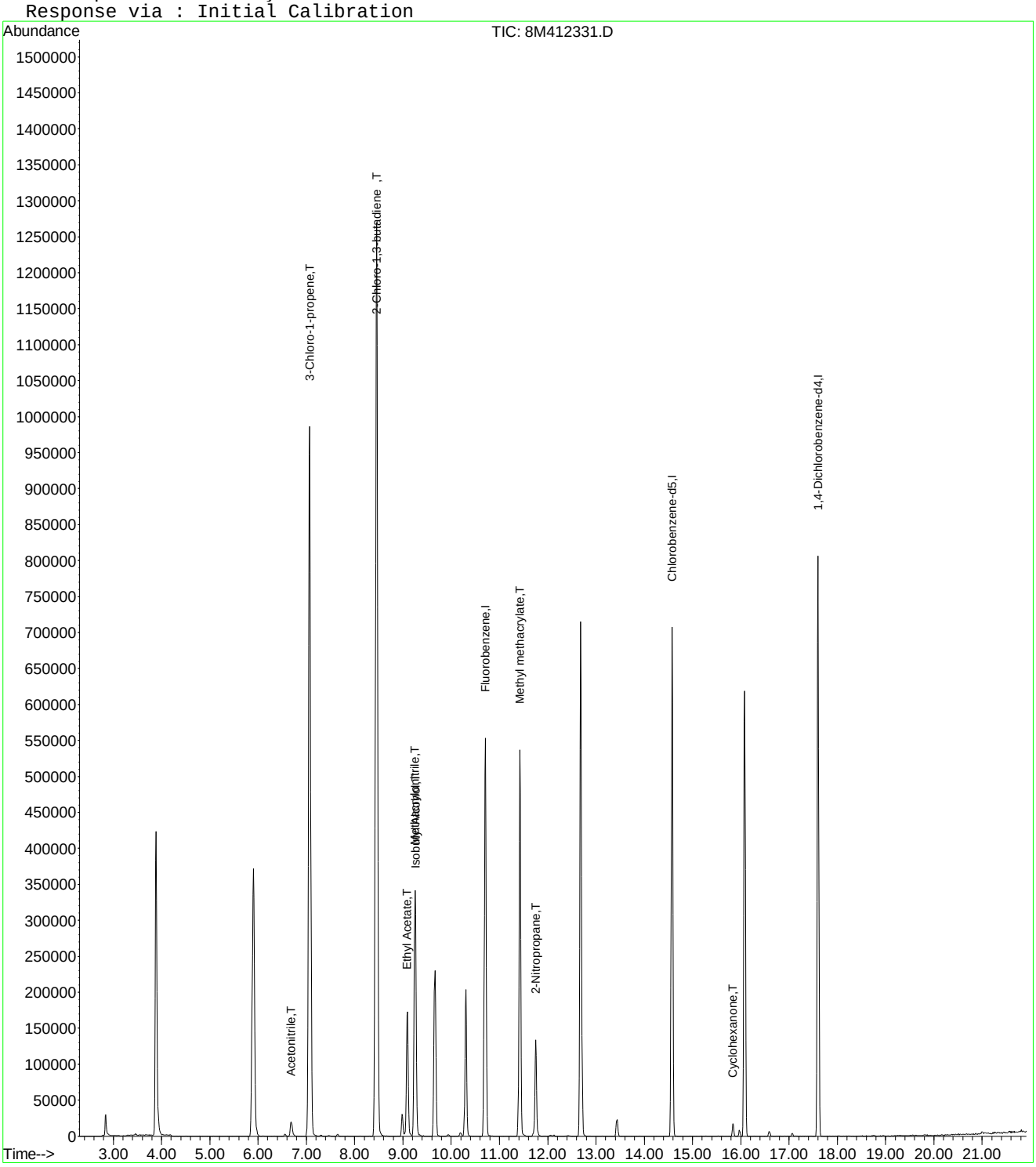

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:23:32 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	708255	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	558123	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	315137	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	212502	27.9255 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.72%		
43) 1,2-Dichloroethane-d4	10.30	65	237357	29.0901 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 116.36%		
58) Toluene-d8	12.68	98	736182	25.2035 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.80%		
80) p-Bromofluorobenzene	16.07	95	333093	25.5265 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.12%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	540391	45.5083 ug/L	100
3) Chloromethane	3.62	50	328739	47.4272 ug/L	99
4) Vinyl Chloride	3.84	62	455331	55.3679 ug/L	99
5) 1,3-Butadiene	3.89	54	493105	71.5007 ug/L	97
6) Bromomethane	4.73	94	222431	44.9412 ug/L	98
7) Chloroethane	4.89	64	230089	50.8474 ug/L	97
8) Trichlorofluoromethane	5.37	101	921029	60.1899 ug/L	99
9) Diethyl ether	5.90	59	329176	90.1084 ug/L	97
10) Isoprene	5.94	67	543864	58.5277 ug/L	97
11) Acrolein	6.13	56	10450	31.9493 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	397606	55.2781 ug/L	96
13) Acetone	6.23	43	49224	61.7730 ug/L	95
14) 1,1-Dichloroethene	6.46	61	637496	55.6639 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	56211	220.1264 ug/L	96
16) Dimethyl Sulfide	6.73	62	208344	50.8787 ug/L	99
17) Iodomethane	6.98	142	170642	53.2063 ug/L	99
18) Methyl acetate	7.00	43	133012	61.7522 ug/L	99
19) Methylene Chloride	7.25	84	381140	52.2953 ug/L	99
20) Carbon Disulfide	7.29	76	1416153	59.0884 ug/L	100
21) Acrylonitrile	7.43	53	55176	53.3667 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	890658	56.4640 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	568436	54.0257 ug/L	100
24) n-Hexane	7.78	57	473111	60.5549 ug/L	100
25) Diisopropyl ether	8.12	45	1653566	100.8228 ug/L	96
26) Vinyl Acetate	8.29	43	289159	38.5078 ug/L	99
27) 1,1-Dichloroethane	8.32	63	708581	54.2278 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1927676	109.7014 ug/L	99
29) 2-Butanone	8.88	43	61250	52.3161 ug/L	94
30) Propionitrile	8.99	54	36343	106.5209 ug/L	100
31) 2,2-Dichloropropane	9.10	77	882692	64.1025 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	429873	52.8759 ug/L	96
33) Chloroform	9.37	83	871320	56.4751 ug/L	99
34) 1-Bromopropane	9.51	122	75427	64.7720 ug/L	98
35) Bromochloromethane	9.60	130	227968	54.6822 ug/L	94
36) Tetrahydrofuran	9.63	42	70838	91.8656 ug/L	95
38) 1,1,1-Trichloroethane	9.91	97	890583	60.7694 ug/L	100
39) Cyclohexane	9.94	56	583136	57.4735 ug/L	97
40) 1,1-Dichloropropene	10.10	75	632920	56.6604 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1794513	112.4396 ug/L	99
42) Carbon Tetrachloride	10.25	117	801759	61.6093 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:23:32 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	597374	60.1571 ug/L	98
46)	Benzene	10.46	78	1539572	52.9185 ug/L	99
47)	Trichloroethene	11.21	130	426598	54.9776 ug/L	98
48)	Methylcyclohexane	11.30	83	704621	59.7740 ug/L	99
49)	1,2-Dichloropropane	11.43	63	331303	51.1548 ug/L	90
50)	Bromodichloromethane	11.72	83	661441	58.1077 ug/L	99
51)	1,4-Dioxane	11.72	88	7409	227.7362 ug/L	88
52)	Dibromomethane	11.81	93	206969	53.9859 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	130048	46.7184 ug/L	94
54)	4-Methyl-2-Pentanone	12.05	58	57560	50.6207 ug/L	92
55)	cis-1,3-Dichloropropene	12.36	75	652717	56.3352 ug/L	100
56)	Dimethyl Disulfide	12.62	79	371318	60.0446 ug/L	97
59)	Toluene	12.78	91	1683635	48.5909 ug/L	100
60)	Ethyl Methacrylate	12.88	69	348427	52.3617 ug/L	98
62)	trans-1,3-Dichloropropene	12.96	75	604607	52.0693 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	256636	46.9382 ug/L	99
64)	2-Hexanone	13.12	58	54211	47.1829 ug/L #	96
65)	1,3-Dichloropropane	13.48	76	466904	47.9644 ug/L	98
66)	Tetrachloroethene	13.60	164	389465	52.4633 ug/L	97
67)	Dibromochloromethane	13.87	129	405413	50.7826 ug/L	100
68)	1,2-Dibromoethane	14.12	107	265443	48.7130 ug/L	99
69)	1-Chlorohexane	14.21	91	620553	52.4666 ug/L	95
70)	Chlorobenzene	14.62	112	1136584	48.6448 ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.66	131	461555	50.9898 ug/L	100
72)	Ethylbenzene	14.66	106	614295	48.0532 ug/L	100
73)	m-,p-Xylene	14.74	106	1473086	98.2418 ug/L	98
74)	o-Xylene	15.31	106	708507	48.3302 ug/L	97
75)	Styrene	15.34	104	1201852	49.9851 ug/L	96
76)	Bromoform	15.83	173	252897	53.4078 ug/L	99
77)	Isopropylbenzene	15.73	105	1983006	50.9193 ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.95	83	280807	44.3910 ug/L	99
81)	1,2,3-Trichloropropane	16.14	110	91595	47.0214 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	16.18	53	97851	49.2908 ug/L	76
83)	n-Propylbenzene	16.24	91	2344121	47.6788 ug/L	99
84)	Bromobenzene	16.37	156	481835	47.6468 ug/L	95
85)	1,3,5-Trimethylbenzene	16.42	105	1731219	48.3397 ug/L	99
86)	2-Chlorotoluene	16.51	91	1669268	48.6302 ug/L	99
87)	4-Chlorotoluene	16.56	91	1390077	44.8326 ug/L	98
88)	a-Methylstyrene	16.83	118	838059	49.3226 ug/L	99
89)	tert-Butylbenzene	16.89	134	326432	46.5903 ug/L	98
90)	1,2,4-Trimethylbenzene	16.94	105	1776678	48.2454 ug/L	99
91)	sec-Butylbenzene	17.16	105	2005098	47.5907 ug/L	99
92)	p-Isopropyltoluene	17.32	119	1707286	47.7248 ug/L	98
93)	1,3-Dichlorobenzene	17.51	146	933961	47.9634 ug/L	98
94)	1,4-Dichlorobenzene	17.64	146	915806	46.6497 ug/L	100
95)	n-Butylbenzene	17.85	91	1671344	47.2585 ug/L	99
96)	1,2-Dichlorobenzene	18.14	146	804434	46.4491 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	58417	46.0055 ug/L	97
98)	1,2,4-Trichlorobenzene	20.28	180	615552	47.5508 ug/L	100
99)	Hexachlorobutadiene	20.43	225	297223	49.1403 ug/L	97
100)	Naphthalene	20.65	128	861244	44.7800 ug/L	98
101)	1,2,3-Trichlorobenzene	20.96	180	485630	44.4665 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:23 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

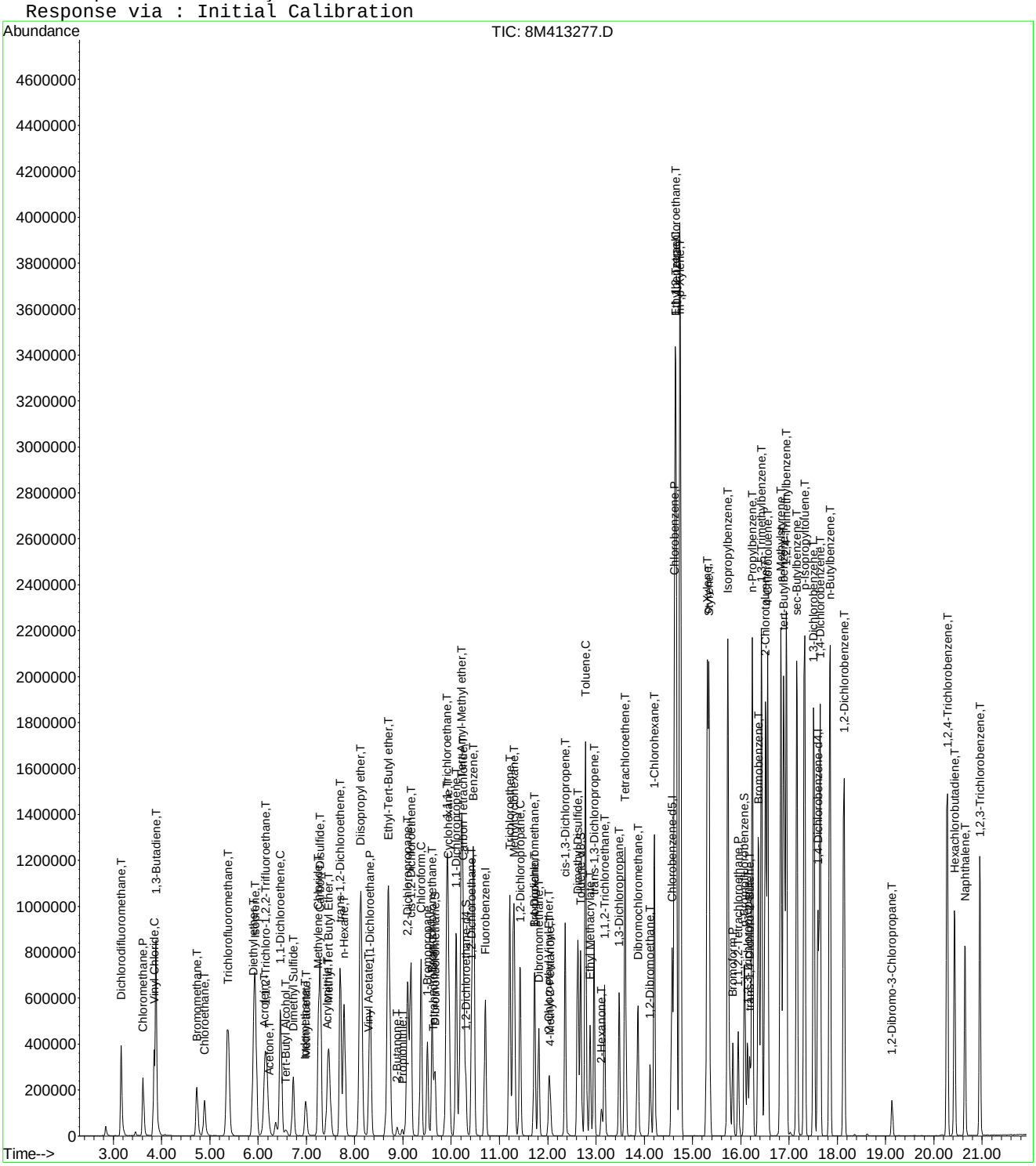

8M413277.D 8260WT.M Wed Jun 29 08:23:39 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	91	0.00
2	T	Dichlorodifluoromethane	0.4192	0.3815	9.0	79	0.00
3	P	Chloromethane	0.2447	0.2321	5.1	88	0.00
4	C	Vinyl Chloride	0.2903	0.3215	-10.7	100	0.00
5	T	1,3-Butadiene	0.2434	0.3481	-43.0#	126	0.00
6	T	Bromomethane	0.1654	0.1570	5.1	85	0.00
7	T	Chloroethane	0.1597	0.1624	-1.7	94	0.00
8	T	Trichlorofluoromethane	0.5401	0.6502	-20.4	110	0.00
9	T	Diethyl ether	0.1290	0.1162	9.9	85	0.00
10	T	Isoprene	0.3280	0.3840	-17.1	109	0.00
11	T	Acrolein	0.0116	0.0074	36.1#	59	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2807	-10.6	103	0.00
13	T	Acetone	0.0281	0.0348	-23.5	107	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4501	-11.3	103	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0099	-10.1	101	0.00
16	T	Dimethyl Sulfide	0.1445	0.1471	-1.8	94	0.00
17	T	Iodomethane	0.0866	0.1205	-39.2#	108	0.00
18	T	Methyl acetate	0.0760	0.0939	-23.5	116	0.00
19	T	Methylene Chloride	0.2573	0.2691	-4.6	98	0.00
20	T	Carbon Disulfide	0.8460	0.9998	-18.2	112	0.00
21	T	Acrylonitrile	0.0365	0.0389	-6.7	92	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.6288	-12.9	99	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.4013	-8.1	99	0.00
24	T	n-Hexane	0.2758	0.3340	-21.1	113	0.00
25	T	Diisopropyl ether	0.5789	0.5837	-0.8	93	0.00
26	T	Vinyl Acetate	0.2651	0.2041	23.0	67	0.00
27	P	1,1-Dichloroethane	0.4612	0.5002	-8.5	98	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6804	-9.7	99	0.00
29	T	2-Butanone	0.0413	0.0432	-4.6	92	0.00
30	T	Propionitrile	0.0120	0.0128	-6.6	95	0.00
31	T	2,2-Dichloropropane	0.4860	0.6231	-28.2#	115	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.3035	-5.7	98	0.00
33	C	Chloroform	0.5446	0.6151	-13.0	103	0.00
34		1-Bromopropane	0.0411	0.0532	-29.6#	119	0.00
35	T	Bromochloromethane	0.1472	0.1609	-9.4	99	0.00
36	T	Tetrahydrofuran	0.0272	0.0250	8.2	89	0.00
37	S	Dibromofluoromethane	0.2686	0.3000	-11.7	101	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6287	-21.5	109	0.00
39	T	Cyclohexane	0.3581	0.4117	-14.9	109	0.00
40	T	1,1-Dichloropropene	0.3943	0.4468	-13.3	103	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.6334	-12.4	101	0.00
42	T	Carbon Tetrachloride	0.4593	0.5660	-23.2	111	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3351	-16.4	103	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.4217	-20.3	106	0.00
46	T	Benzene	1.0269	1.0869	-5.8	96	0.00
47	T	Trichloroethene	0.2739	0.3012	-10.0	100	0.00
48	T	Methylcyclohexane	0.4161	0.4974	-19.5	111	0.00
49	C	1,2-Dichloropropane	0.2286	0.2339	-2.3	94	0.00
50	T	Bromodichloromethane	0.4018	0.4669	-16.2	101	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-13.9	98	0.00
52	T	Dibromomethane	0.1353	0.1461	-8.0	99	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0918	6.6	80	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0406	-1.2	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4608	-12.7	98	0.00
56	T	Dimethyl Disulfide	0.2183	0.2621	-20.1	108	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	104	0.00
58	S	Toluene-d8	1.3084	1.3190	-0.8	102	0.00
59	C	Toluene	1.5520	1.5083	2.8	100	0.00
60	T	Ethyl Methacrylate	0.2981	0.3121	-4.7	103	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5416	-4.1	102	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2299	6.1	96	0.00
64	T	2-Hexanone	0.0515	0.0486	5.6	95	0.00
65	T	1,3-Dichloropropane	0.4360	0.4183	4.1	95	0.00
66	T	Tetrachloroethene	0.3325	0.3489	-4.9	111	0.00
67	T	Dibromochloromethane	0.3576	0.3632	-1.6	101	0.00
68	T	1,2-Dibromoethane	0.2441	0.2378	2.6	97	0.00
69	T	1-Chlorohexane	0.5298	0.5559	-4.9	111	0.00
70	P	Chlorobenzene	1.0466	1.0182	2.7	102	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4135	-2.0	103	0.00
72	C	Ethylbenzene	0.5726	0.5503	3.9	102	0.00
73	T	m-,p-Xylene	0.6716	0.6598	1.8	102	0.00
74	T	o-Xylene	0.6566	0.6347	3.3	100	0.00
75	T	Styrene	1.0770	1.0767	0.0	99	0.00
76	P	Bromoform	0.2121	0.2266	-6.8	106	0.00
77	T	Isopropylbenzene	1.7444	1.7765	-1.8	103	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	109	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4455	11.2	95	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0570	-2.1	114	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1453	6.0	103	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1553	-12.9	113	0.00
83	T	n-Propylbenzene	3.9003	3.7192	4.6	103	0.00
84	T	Bromobenzene	0.8022	0.7645	4.7	105	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.7468	3.3	104	0.00
86	T	2-Chlorotoluene	2.7231	2.6485	2.7	104	0.00
87	T	4-Chlorotoluene	2.4597	2.2055	10.3	104	0.00
88	T	a-Methylstyrene	1.3479	1.3297	1.4	108	0.00
89	T	tert-Butylbenzene	0.5558	0.5179	6.8	106	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8189	3.5	106	0.00
91	T	sec-Butylbenzene	3.3424	3.1813	4.8	104	0.00
92	T	p-Isopropyltoluene	2.8379	2.7088	4.6	105	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.4818	4.1	106	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4530	6.7	105	0.00
95	T	n-Butylbenzene	2.8056	2.6518	5.5	104	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2763	7.1	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0927	8.0	98	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9766	4.9	105	0.00
99	T	Hexachlorobutadiene	0.4798	0.4716	1.7	112	0.00
100	T	Naphthalene	1.5257	1.3665	10.4	96	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7705	11.1	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413277.D 8260WT.M Wed Jun 29 08:37:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	91	0.00
2	T	Dichlorodifluoromethane	50.0000	45.5083	9.0	79	0.00
3	P	Chloromethane	50.0000	47.4272	5.1	88	0.00
4	C	Vinyl Chloride	50.0000	55.3678	-10.7	100	0.00
5	T	1,3-Butadiene	50.0000	71.5007	-43.0#	126	0.00
6	T	Bromomethane	50.0000	44.9412	10.1	85	0.00
7	T	Chloroethane	50.0000	50.8474	-1.7	94	0.00
8	T	Trichlorofluoromethane	50.0000	60.1899	-20.4	110	0.00
9	T	Diethyl ether	100.0000	90.1084	9.9	85	0.00
10	T	Isoprene	50.0000	58.5277	-17.1	109	0.00
11	T	Acrolein	50.0000	31.9493	36.1#	59	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.2781	-10.6	103	0.00
13	T	Acetone	50.0000	61.7730	-23.5	107	-0.01
14	C	1,1-Dichloroethene	50.0000	55.6639	-11.3	103	0.00
15	T	Tert-Butyl Alcohol	200.0000	220.1264	-10.1	101	0.00
16	T	Dimethyl Sulfide	50.0000	50.8787	-1.8	94	0.00
17	T	Iodomethane	50.0000	53.2063	-6.4	108	0.00
18	T	Methyl acetate	50.0000	61.7522	-23.5	116	0.00
19	T	Methylene Chloride	50.0000	52.2953	-4.6	98	0.00
20	T	Carbon Disulfide	50.0000	59.0884	-18.2	112	0.00
21	T	Acrylonitrile	50.0000	53.3667	-6.7	92	0.00
22	T	Methyl Tert Butyl Ether	50.0000	56.4641	-12.9	99	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.0257	-8.1	99	0.00
24	T	n-Hexane	50.0000	60.5549	-21.1	113	0.00
25	T	Diisopropyl ether	100.0000	100.8228	-0.8	93	0.00
26	T	Vinyl Acetate	50.0000	38.5078	23.0	67	0.00
27	P	1,1-Dichloroethane	50.0000	54.2278	-8.5	98	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	109.7014	-9.7	99	0.00
29	T	2-Butanone	50.0000	52.3161	-4.6	92	0.00
30	T	Propionitrile	100.0000	106.5209	-6.5	95	0.00
31	T	2,2-Dichloropropane	50.0000	64.1025	-28.2#	115	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.8759	-5.8	98	0.00
33	C	Chloroform	50.0000	56.4751	-13.0	103	0.00
34		1-Bromopropane	50.0000	64.7720	-29.5#	119	0.00
35	T	Bromochloromethane	50.0000	54.6822	-9.4	99	0.00
36	T	Tetrahydrofuran	100.0000	91.8656	8.1	89	0.00
37	S	Dibromofluoromethane	25.0000	27.9255	-11.7	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	60.7694	-21.5	109	0.00
39	T	Cyclohexane	50.0000	57.4735	-14.9	109	0.00
40	T	1,1-Dichloropropene	50.0000	56.6604	-13.3	103	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	112.4396	-12.4	101	0.00
42	T	Carbon Tetrachloride	50.0000	61.6093	-23.2	111	0.00
43	S	1,2-Dichloroethane-d4	25.0000	29.0901	-16.4	103	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	60.1572	-20.3	106	0.00
46	T	Benzene	50.0000	52.9185	-5.8	96	0.00
47	T	Trichloroethene	50.0000	54.9776	-10.0	100	0.00
48	T	Methylcyclohexane	50.0000	59.7741	-19.5	111	0.00
49	C	1,2-Dichloropropane	50.0000	51.1548	-2.3	94	0.00
50	T	Bromodichloromethane	50.0000	58.1077	-16.2	101	0.00
51	T	1,4-Dioxane	200.0000	227.7362	-13.9	98	0.00
52	T	Dibromomethane	50.0000	53.9859	-8.0	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	46.7184	6.6	80	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.6208	-1.2	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.3352	-12.7	98	0.00
56	T	Dimethyl Disulfide	50.0000	60.0446	-20.1	108	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	104	0.00
58	S	Toluene-d8	25.0000	25.2035	-0.8	102	0.00
59	C	Toluene	50.0000	48.5909	2.8	100	0.00
60	T	Ethyl Methacrylate	50.0000	52.3617	-4.7	103	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	52.0693	-4.1	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.9382	6.1	96	0.00
64	T	2-Hexanone	50.0000	47.1829	5.6	95	0.00
65	T	1,3-Dichloropropane	50.0000	47.9644	4.1	95	0.00
66	T	Tetrachloroethene	50.0000	52.4633	-4.9	111	0.00
67	T	Dibromochloromethane	50.0000	50.7826	-1.6	101	0.00
68	T	1,2-Dibromoethane	50.0000	48.7131	2.6	97	0.00
69	T	1-Chlorohexane	50.0000	52.4666	-4.9	111	0.00
70	P	Chlorobenzene	50.0000	48.6448	2.7	102	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.9898	-2.0	103	0.00
72	C	Ethylbenzene	50.0000	48.0532	3.9	102	0.00
73	T	m-,p-Xylene	100.0000	98.2418	1.8	102	0.00
74	T	o-Xylene	50.0000	48.3302	3.3	100	0.00
75	T	Styrene	50.0000	49.9851	0.0	99	0.00
76	P	Bromoform	50.0000	53.4078	-6.8	106	0.00
77	T	Isopropylbenzene	50.0000	50.9192	-1.8	103	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	109	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	44.3910	11.2	95	0.00
80	S	p-Bromofluorobenzene	25.0000	25.5265	-2.1	114	0.00
81	T	1,2,3-Trichloropropane	50.0000	47.0214	6.0	103	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	49.2908	1.4	113	0.00
83	T	n-Propylbenzene	50.0000	47.6788	4.6	103	0.00
84	T	Bromobenzene	50.0000	47.6468	4.7	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.3397	3.3	104	0.00
86	T	2-Chlorotoluene	50.0000	48.6302	2.7	104	0.00
87	T	4-Chlorotoluene	50.0000	44.8326	10.3	104	0.00
88	T	a-Methylstyrene	50.0000	49.3226	1.4	108	0.00
89	T	tert-Butylbenzene	50.0000	46.5903	6.8	106	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.2454	3.5	106	0.00
91	T	sec-Butylbenzene	50.0000	47.5907	4.8	104	0.00
92	T	p-Isopropyltoluene	50.0000	47.7248	4.6	105	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.9634	4.1	106	0.00
94	T	1,4-Dichlorobenzene	50.0000	46.6497	6.7	105	0.00
95	T	n-Butylbenzene	50.0000	47.2585	5.5	104	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.4491	7.1	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	46.0055	8.0	98	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.5508	4.9	105	0.00
99	T	Hexachlorobutadiene	50.0000	49.1403	1.7	112	0.00
100	T	Naphthalene	50.0000	44.7800	10.4	96	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	44.4665	11.1	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413277.D 8260WT.M Wed Jun 29 08:37:40 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D          Vial: 3
Acq On    : 13 May 2016  12:36                       Operator: TMB
Sample    : WG568561-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

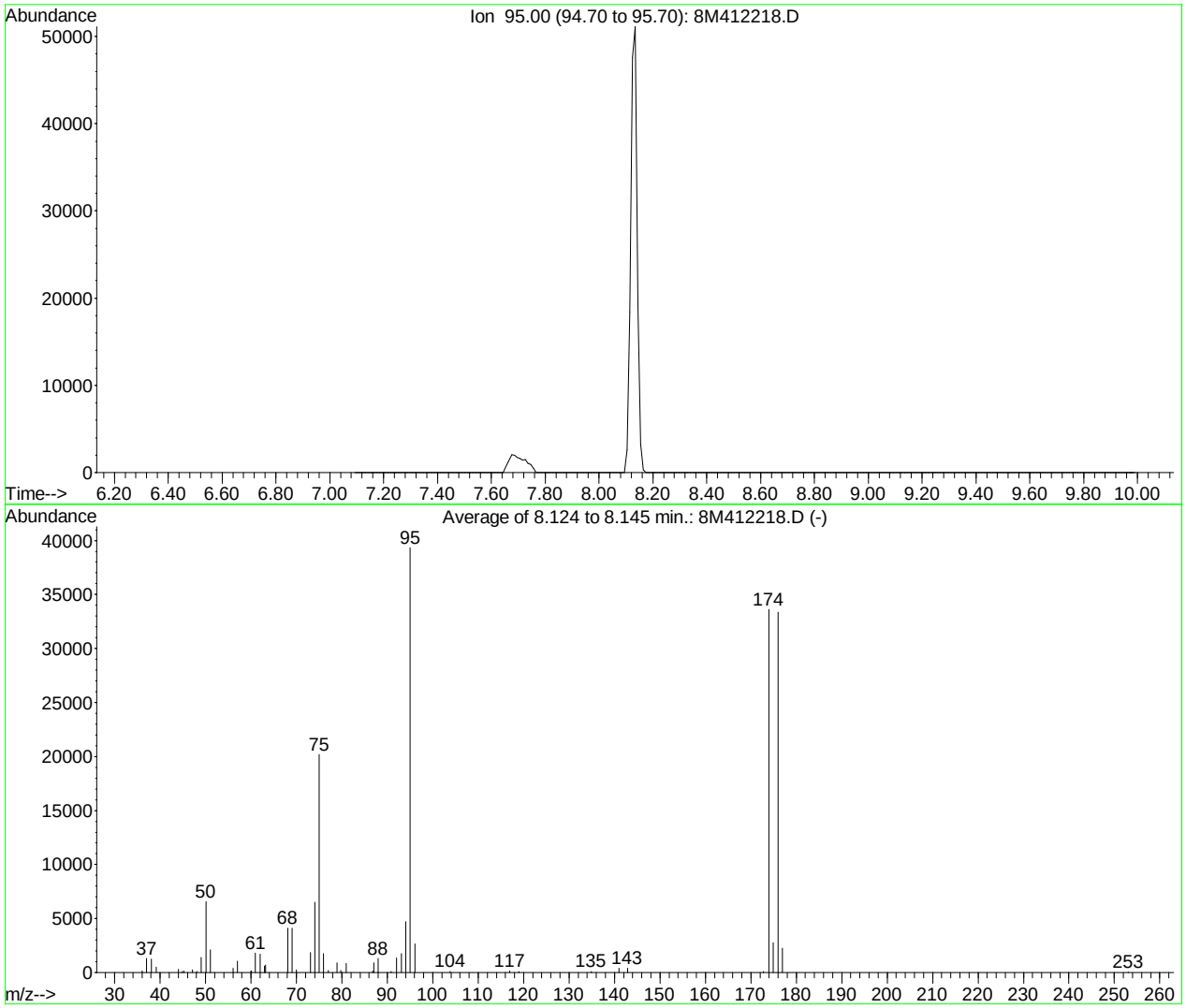

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413275.D Vial: 1
Acq On    : 27 Jun 2016  17:45                        Operator: FJB
Sample    : WG574409-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

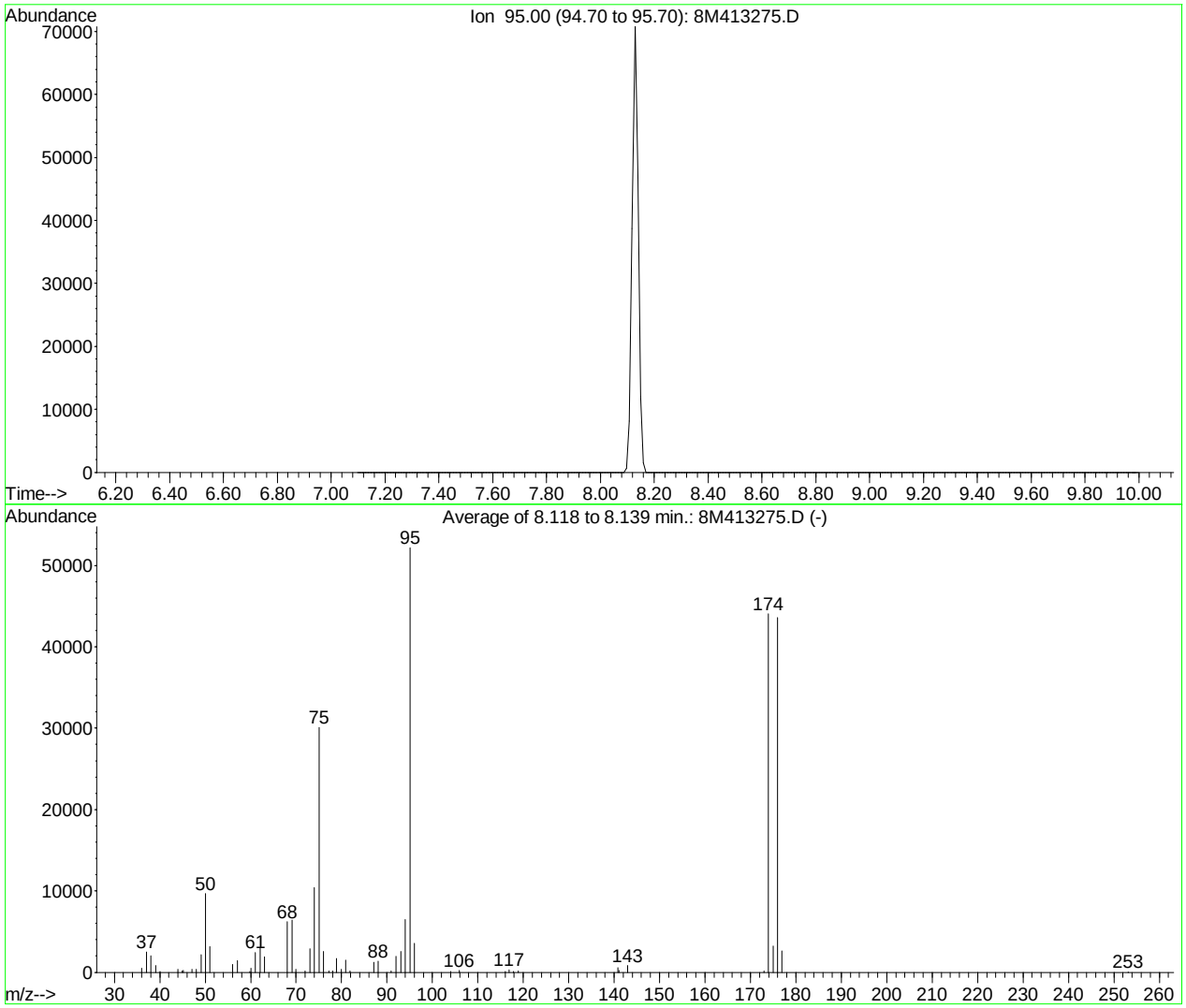

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.5	9667	PASS
75	95	30	60	57.7	30122	PASS
95	95	100	100	100.0	52181	PASS
96	95	5	9	6.8	3559	PASS
173	174	0.00	2	0.4	160	PASS
174	95	50	100	84.5	44069	PASS
175	174	5	9	7.3	3216	PASS
176	174	95	101	98.9	43568	PASS
177	176	5	9	6.1	2646	PASS

8M413275.D 8260WT.M Wed Jun 29 08:37:20 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413279.D Vial: 5
Acq On : 27 Jun 2016 19:42 Operator: FJB
Sample : WG574410-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:57:05 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	679552	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	539767	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	302642	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	205706	28.1742 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.68%		
43) 1,2-Dichloroethane-d4	10.30	65	222351	28.4020 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.60%		
58) Toluene-d8	12.68	98	726188	25.7068 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.84%		
80) p-Bromofluorobenzene	16.08	95	314092	25.0641 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.24%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.64	42	699	0.9448 ug/L #	56

(#) = qualifier out of range (m) = manual integration
8M413279.D 8260WT.M Wed Jun 29 08:57:08 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413279.D Vial: 5
Acq On : 27 Jun 2016 19:42 Operator: FJB
Sample : WG574410-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:57 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

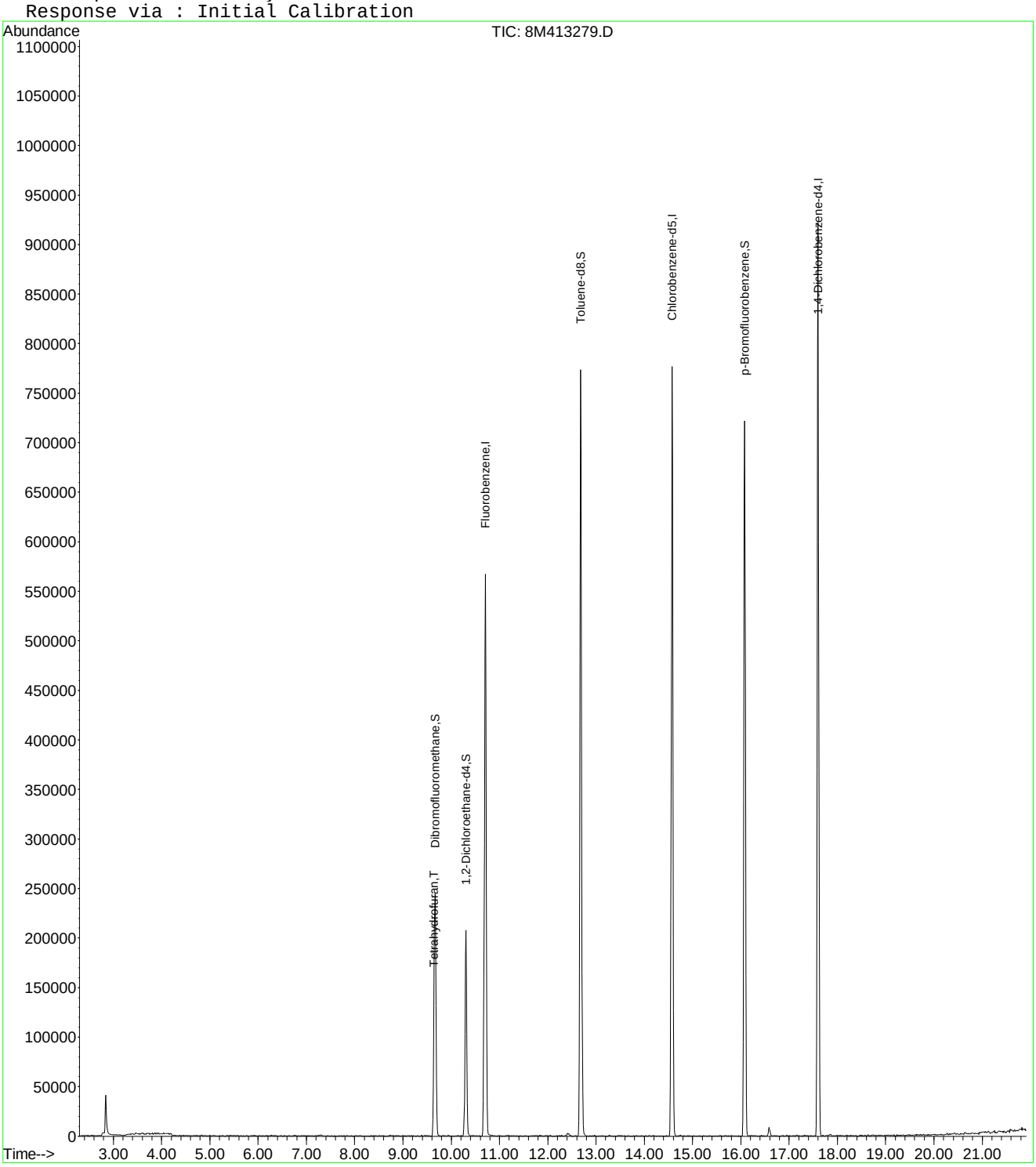

8M413279.D 8260WT.M Wed Jun 29 08:57:08 2016 Page 2

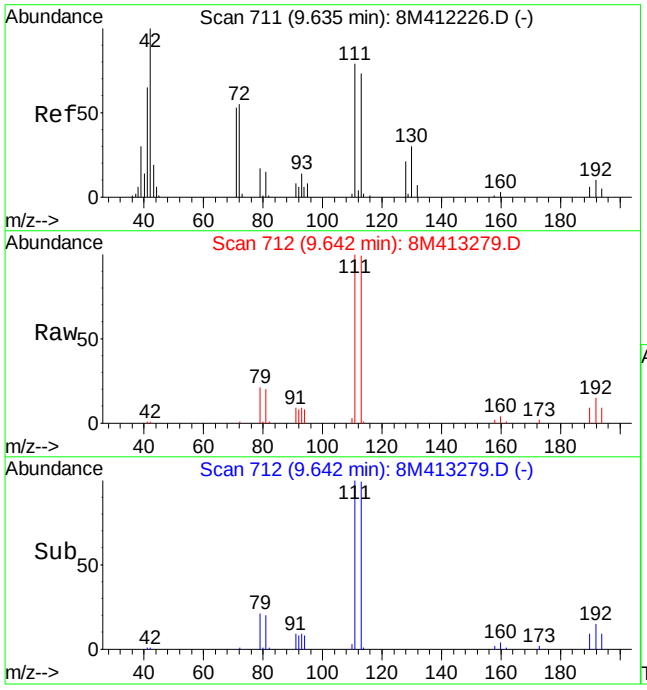

#36
Tetrahydrofuran
Concen: 0.94 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M413279.D
Acq: 27 Jun 2016 19:42

Tgt Ion: 42 Resp: 699

Ion	Ratio	Lower	Upper
42	100		
72	67.0	33.8	78.8
71	0.0	32.0	74.8#

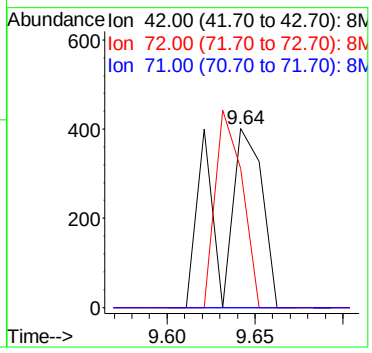

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413280.D Vial: 6
Acq On : 27 Jun 2016 20:11 Operator: FJB
Sample : WG574410-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:23:54 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	681082	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	528164	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	303369	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	201383	27.5202 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.08%		
43) 1,2-Dichloroethane-d4	10.31	65	224098	28.5608 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.24%		
58) Toluene-d8	12.68	98	715116	25.8710 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.48%		
80) p-Bromofluorobenzene	16.07	95	311755	24.8180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	290548	25.4443 ug/L	99
3) Chloromethane	3.62	50	150178	22.5306 ug/L	97
4) Vinyl Chloride	3.84	62	207577	26.2482 ug/L	98
5) 1,3-Butadiene	3.88	54	103786	15.6495 ug/L	98
6) Bromomethane	4.73	94	77353	16.9327 ug/L	98
7) Chloroethane	4.88	64	100493	23.0940 ug/L	97
8) Trichlorofluoromethane	5.37	101	358613	24.3706 ug/L	99
9) Diethyl ether	5.90	59	350742	99.8424 ug/L	98
10) Isoprene	5.94	67	214217	23.9726 ug/L	99
11) Acrolein	6.13	56	22309	70.9276 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	158184	22.8693 ug/L	95
13) Acetone	6.25	43	19484	25.4267 ug/L	94
14) 1,1-Dichloroethene	6.46	61	238182	21.6269 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	49065	199.8080 ug/L	98
16) Dimethyl Sulfide	6.73	62	144988	36.8195 ug/L	99
17) Iodomethane	6.98	142	69030	24.3285 ug/L	100
18) Methyl acetate	7.00	43	41707	20.1354 ug/L	95
19) Methylene Chloride	7.25	84	146530	20.9071 ug/L	99
20) Carbon Disulfide	7.29	76	474119	20.5717 ug/L	99
21) Acrylonitrile	7.43	53	20023	20.1391 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	349130	23.0165 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	225867	22.3235 ug/L	98
24) n-Hexane	7.79	57	160733	21.3935 ug/L	99
25) Diisopropyl ether	8.13	45	1611083	102.1516 ug/L	96
26) Vinyl Acetate	8.29	43	116387	16.1178 ug/L	100
27) 1,1-Dichloroethane	8.32	63	266239	21.1882 ug/L	99
28) Ethyl-Tert-Butyl ether	8.69	59	1732266	102.5140 ug/L	98
29) 2-Butanone	8.88	43	23100	20.5178 ug/L	100
30) Propionitrile	8.98	54	31306	95.4184 ug/L	98
31) 2,2-Dichloropropane	9.10	77	324518	24.5072 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	171028	21.8763 ug/L	99
33) Chloroform	9.38	83	341403	23.0111 ug/L	98
34) 1-Bromopropane	9.51	122	36558	32.6462 ug/L	98
35) Bromochloromethane	9.60	130	86317	21.5307 ug/L	96
36) Tetrahydrofuran	9.62	42	61031	82.3052 ug/L	94
38) 1,1,1-Trichloroethane	9.90	97	338469	24.0170 ug/L	100
39) Cyclohexane	9.93	56	201814	20.6842 ug/L	96
40) 1,1-Dichloropropene	10.10	75	236903	22.0542 ug/L	97
41) Tert-Amyl-Methyl ether	10.20	73	1661227	108.2411 ug/L	100
42) Carbon Tetrachloride	10.24	117	303524	24.2541 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413280.D 8260WT.M Wed Jun 29 08:23:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413280.D Vial: 6
Acq On : 27 Jun 2016 20:11 Operator: FJB
Sample : WG574410-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:23:54 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	236082	24.7226 ug/L		98
46)	Benzene	10.46	78	605519	21.6434 ug/L		99
47)	Trichloroethene	11.22	130	174082	23.3298 ug/L		99
48)	Methylcyclohexane	11.30	83	251982	22.2288 ug/L		100
49)	1,2-Dichloropropane	11.42	63	129626	20.8134 ug/L		88
50)	Bromodichloromethane	11.72	83	257769	23.5485 ug/L		99
51)	1,4-Dioxane	11.71	88	4652	148.6971 ug/L		93
52)	Dibromomethane	11.81	93	74844	20.3012 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	52144	19.4795 ug/L		93
54)	4-Methyl-2-Pentanone	12.06	58	20053	18.3391 ug/L		88
55)	cis-1,3-Dichloropropene	12.36	75	269581	24.1955 ug/L		98
56)	Dimethyl Disulfide	12.62	79	135405	22.7695 ug/L		93
59)	Toluene	12.79	91	650563	19.8407 ug/L		100
60)	Ethyl Methacrylate	12.88	69	126680	20.1174 ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	228531	20.7977 ug/L		100
63)	1,1,2-Trichloroethane	13.17	97	100026	19.3323 ug/L		98
64)	2-Hexanone	13.12	58	18558	17.0683 ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	190456	20.6751 ug/L		99
66)	Tetrachloroethene	13.60	164	144130	20.5165 ug/L		97
67)	Dibromochloromethane	13.86	129	153794	20.3572 ug/L		99
68)	1,2-Dibromoethane	14.12	107	100863	19.5599 ug/L		98
69)	1-Chlorohexane	14.21	91	225215	20.1216 ug/L		100
70)	Chlorobenzene	14.63	112	448084	20.2654 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	176797	20.6393 ug/L		100
72)	Ethylbenzene	14.65	106	239033	19.7590 ug/L		97
73)	m-,p-Xylene	14.74	106	586089	41.3041 ug/L		96
74)	o-Xylene	15.31	106	284203	20.4864 ug/L		94
75)	Styrene	15.34	104	471198	20.7088 ug/L		96
76)	Bromoform	15.84	173	89190	19.9039 ug/L		98
77)	Isopropylbenzene	15.73	105	790764	21.4569 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	101272	16.6305 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	34568	18.4343 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	30633	16.4440 ug/L		89
83)	n-Propylbenzene	16.24	91	952312	20.1212 ug/L		99
84)	Bromobenzene	16.36	156	184517	18.9540 ug/L		92
85)	1,3,5-Trimethylbenzene	16.43	105	697206	20.2228 ug/L		98
86)	2-Chlorotoluene	16.51	91	599994	18.1575 ug/L		93
87)	4-Chlorotoluene	16.56	91	640125	21.4461 ug/L		92
88)	a-Methylstyrene	16.83	118	338335	20.6846 ug/L		99
89)	tert-Butylbenzene	16.89	134	131548	19.5036 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	699066	19.7194 ug/L		98
91)	sec-Butylbenzene	17.16	105	795429	19.6117 ug/L		100
92)	p-Isopropyltoluene	17.32	119	675309	19.6096 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	368775	19.6730 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	365385	19.3341 ug/L		99
95)	n-Butylbenzene	17.84	91	637234	18.7172 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	316991	19.0135 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	21850	17.8752 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	226638	18.1867 ug/L		97
99)	Hexachlorobutadiene	20.43	225	115147	19.7759 ug/L		98
100)	Naphthalene	20.64	128	288316	15.5724 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	179526	17.0759 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413280.D 8260WT.M Wed Jun 29 08:23:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413280.D Vial: 6
Acq On : 27 Jun 2016 20:11 Operator: FJB
Sample : WG574410-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:23 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

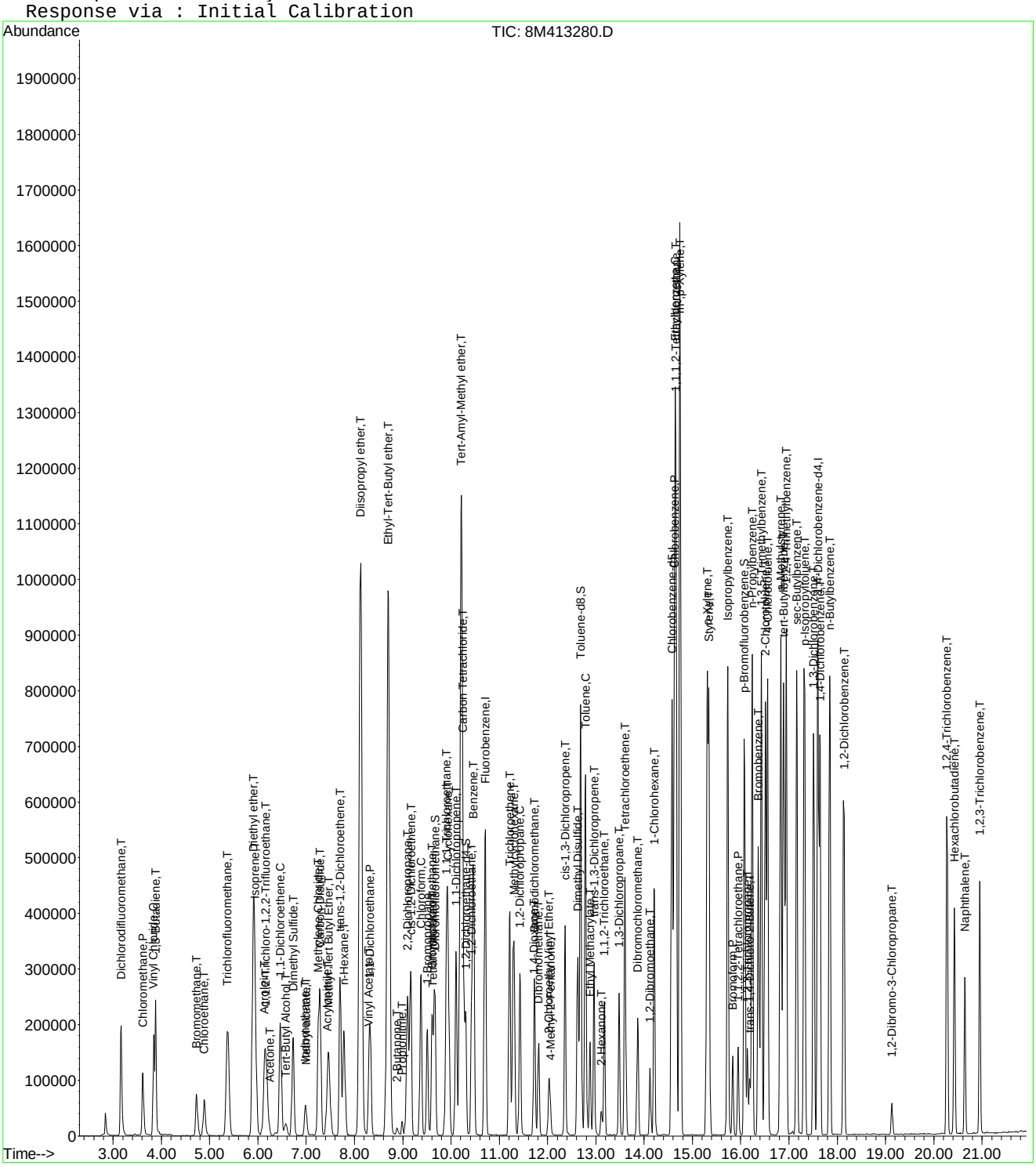

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW06-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 18:31
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	15M18608
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	36.3	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW06FD-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 18:54
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	15M18609
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	48.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW17-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 19:17
Collect Date:	06/20/2016 15:00	**Dilution:**	1	**File ID:**	15M18610
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	46.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG573812
Analyst: CPD
Spike Analyst: 001
Method: 3520C
Run Date: 06/22/2016 13:51
SOP: EXB01 Revison 20
Spike Witness: JDH
Surr Solution: STD76628

TIME ON: 14:35 OFF: 09:00 ON: 14:30 OFF: 08:30

CH2CL2 Lot #: COA18982
1:1 H2SO4 Lot #: RGT36755
sodium sulfate Lot #: COA18814

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16061124-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16061142-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
3	L16061142-06	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
4	L16061142-07	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	L16061144-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	L16061144-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
7	L16061144-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
8	L16061227-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
9	L16061227-06	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
10	L16061227-07	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
11	L16061233-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
12	WG573812-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
13	WG573812-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
14	WG573812-03	LCS2		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent

Analyst: Chelsie Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4825364
Report generated: 06/27/2016 08:29

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

Page: 1 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062716
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574301,WG574187,WG574186,WG573853

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments: All samples associated with extraction workgroup WG573815 are being re-extracted due to low LCSDUP recovery: L16060637-02,756-01 to-03,809-01 and -02,930-01 and -02, 1213-01 to -06.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18584	BAKEOUT	1	1		06/27/16 08:21
13	15M18585	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 08:41
14	15M18586	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 08:58
2	15M18587	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 09:22
3	15M18588	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 09:38
4	15M18589	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 10:23
5	15M18590	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 11:15
6	15M18591	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 11:32
7	15M18592	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 12:20
8	15M18593	WG574241-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/27/16 12:37
9	15M18594	WG573975-03 LCSDUP 6/24 RR	7	1	SOIL	06/27/16 13:15
10	15M18595	WG573815-02 LCS 6/23 RR	7	1	SOIL	06/27/16 13:37
11	15M18596	WG573815-03 LCSDUP 6/23 RR	7	1	SOIL	06/27/16 13:59
12	15M18597	WG573812-01 BLANK 6/22	1	1		06/27/16 14:22
15	15M18598	WG573812-02 LCS 6/22	1	1		06/27/16 14:45
16	15M18599	WG573812-03 LCSDUP 6/22	1	1		06/27/16 15:07
17	15M18600	L16061026-05 40X	1	40		06/27/16 15:30
18	15M18601	L16061213-05 827-DIOX	7	1	SOIL	06/27/16 15:52
19	15M18602	L16061213-06 827-DIOX	7	1		06/27/16 16:15
20	15M18603	L16061233-02 827-DIOX	1	1		06/27/16 16:38
21	15M18604	L16061124-01	1	1		06/27/16 17:01
22	15M18605	L16061142-01	1	1		06/27/16 17:23
23	15M18606	L16061142-06	1	1		06/27/16 17:46
24	15M18607	L16061142-07	1	1		06/27/16 18:09
25	15M18608	L16061144-01	1	1		06/27/16 18:31
26	15M18609	L16061144-02	1	1		06/27/16 18:54
27	15M18610	L16061144-03	1	1		06/27/16 19:17
28	15M18611	L16061227-01	1	1		06/27/16 19:39
29	15M18612	L16061227-06	1	1		06/27/16 20:02
30	15M18613	L16061227-07	1	1		06/27/16 20:25
31	15M18614	L16061124-01 2X	1	2		06/27/16 20:47
32	15M18615	BAKEOUT	1	1		06/27/16 21:10
33	15M18616	BAKEOUT	1	1		06/27/16 21:32

Page: 1 Approved: 28-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062716

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574301,WG574187,WG574186,WG573853

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18617	BAKEOUT	1	1		06/27/16 21:55

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13				
	Rerun DFTPP, wrong standard was analyzed.			
14				
	Rerun DFTPP, wrong standard was analyzed.			
2				
	Rerun DFTPP, ion failures. Liner needs changed.			
3				
	Rerun DFTPP, degradation >20%.			
4				
	Rerun DFTPP, degradation >20%. Changed the gold seal.			
5				
	Rerun DFTPP, benzidine tailing >2.			
6				
	Rerun DFTPP, benzidine tailing >2. Clipped 5cm from the column.			
9				
	WG573975-03 LCSDUP 6/24 RR recovery is acceptable. Not reporting the run from 6/25/16.			
11				
	WG573815-03 LCSDUP 6/23 RR low recovery; confirms the original run.			
21	X	2	Over Calibration Range	
	L16061124-01			
28				
	L16061227-01 Needs re-extracted; surrogate recovery is low.			

Page: 2 Approved: 28-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75949
Analytical Workgroups: L16061026,061213,WG573956-LCSDUP RR,061124,1142,1144,1227,123

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
28-JUN-2016

Secondary Reviewer:
28-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 14:33:27

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG574301

Login Number: L16061144

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW06-062016	01	06/20/16					06/22/2016	2	7		06/27/16	5.2	40	
18WW06FD-062016	02	06/20/16					06/22/2016	2	7		06/27/16	5.2	40	
MW17-062016	03	06/20/16					06/22/2016	2	7		06/27/16	5.2	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4828110
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061144
Instrument Id: HPMS15
Workgroup (AAB#): WG574301

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16061144-01	1.00	01	36.3
L16061144-02	1.00	01	48.5
L16061144-03	1.00	01	46.8
WG573812-01	1.00	01	29.1
WG573812-02	1.00	01	33.3
WG573812-03	1.00	01	61.4

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4828116
Report generated: 06/29/2016 08:19

METHOD BLANK SUMMARY

Login Number: L16061144
Blank File ID: 15M18597
Prep Date: 06/22/16 13:51
Analyzed Date: 06/27/16 14:22
Analyst: MES

Work Group: WG574301
Blank Sample ID: WG573812-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573812-02	15M18598	06/27/16 14:45	01
LCS2	WG573812-03	15M18599	06/27/16 15:07	01
18WW06-062016	L16061144-01	15M18608	06/27/16 18:31	01
18WW06FD-062016	L16061144-02	15M18609	06/27/16 18:54	01
MW17-062016	L16061144-03	15M18610	06/27/16 19:17	01

Report Name: BLANK_SUMMARY
PDF File ID: 4828893
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061144 Prep Date: 06/22/16 13:51 Sample ID: WG573812-01
Instrument ID: HPMS15 Run Date: 06/27/16 14:22 Prep Method: 3520C
File ID: 15M18597 Analyst: MES Method: 8270D
Workgroup (AAB#): WG574301 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	29.1	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4828111
29-JUN-2016 08:19

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061144 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG574301 Units: ug/L
QC Key: DOD4 Lot #: STD75256

Sample ID: WG573812-02 LCS File ID: 15M18598 Run Date: 06/27/2016 14:45
Sample ID: WG573812-03 LCS2 File ID: 15M18599 Run Date: 06/27/2016 15:07

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	1.59	31.8	5.00	3.00	60.0	61.5	30 - 104	30	#

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	33.3	61.4	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4828112
Report generated: 06/29/2016 08:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061144
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4828113
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061144
Instrument: HPMS15
Analyst: MES
Workgroup: WG574241

Tune ID: WG574241-01
Run Date: 06/27/2016
Run Time: 12:20
File ID: 15M18592
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	33.2	31989	PASS
68.0	69.0	0	2.00	1.61	580	PASS
69.0	198	0	100	37.4	35954	PASS
70.0	69.0	0	2.00	0.617	222	PASS
127	198	40.0	60.0	50.4	48459	PASS
197	198	0	1.00	0.425	409	PASS
198	198	100	100	100	96232	PASS
199	198	5.00	9.00	6.65	6399	PASS
275	198	10.0	30.0	25.2	24236	PASS
365	198	1.00	100	2.50	2410	PASS
441	443	0.0100	100	75.7	10371	PASS
442	198	40.0	100	73.9	71133	PASS
443	442	17.0	23.0	19.3	13708	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574241-02	CCV	01	06/27/2016 12:37	
WG573812-01	BLANK	01	06/27/2016 14:22	
WG573812-02	LCS	01	06/27/2016 14:45	
WG573812-03	LCS2	01	06/27/2016 15:07	
L16061144-01	18WW06-062016	01	06/27/2016 18:31	
L16061144-02	18WW06FD-062016	01	06/27/2016 18:54	
L16061144-03	MW17-062016	01	06/27/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4828113
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061144
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4828894
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061144

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4828894
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061144
Analytical Method: 8270D

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4828894
Report generated 06/29/2016 08:19

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061144 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4828895
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061144
Run Date: 06/27/2016
Sample ID: WG574241-02
Instrument ID: HPMS15
Run Time: 12:37
Method: 8270D
File ID: 15M18593
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG574301
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4360	ug/L	0.267	12.8	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4828114
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061144
Instrument ID: HPMS15
Workgroup (AAB#): WG574301

ICAL CCV Number: WG573501-02
CAL ID: HPMS15 - 21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16061144-01	1.00	01	47380
L16061144-02	1.00	01	44627
L16061144-03	1.00	01	49277
WG573812-01	1.00	01	38478
WG573812-02	1.00	01	47423
WG573812-03	1.00	01	50712

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4828115
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061144
Instrument ID: HPMS15
Workgroup (AAB#): WG574301

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	6.93
Upper Limit	NA	NA	7.43
Lower Limit	NA	NA	6.43
L16061144-01	1.00	01	6.896
L16061144-02	1.00	01	6.896
L16061144-03	1.00	01	6.896
WG573812-01	1.00	01	6.896
WG573812-02	1.00	01	6.896
WG573812-03	1.00	01	6.896

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4828896
Report generated: 06/29/2016 08:19

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18608.D
Acq On : 27 Jun 2016 18:31
Operator : MES
Sample : L16061144-01
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 28 08:07:02 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	47380	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.770	96	35418	1.8167	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	36.40%	
4) Nitrobenzene-d5	7.404	82	1006	0.0201	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.40%	
5) 2-Fluorobiphenyl	8.889	172	102	0.0008	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.151	244	270	0.0022	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18608.D
Acq On : 27 Jun 2016 18:31
Operator : MES
Sample : L16061144-01
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 28 08:07:02 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

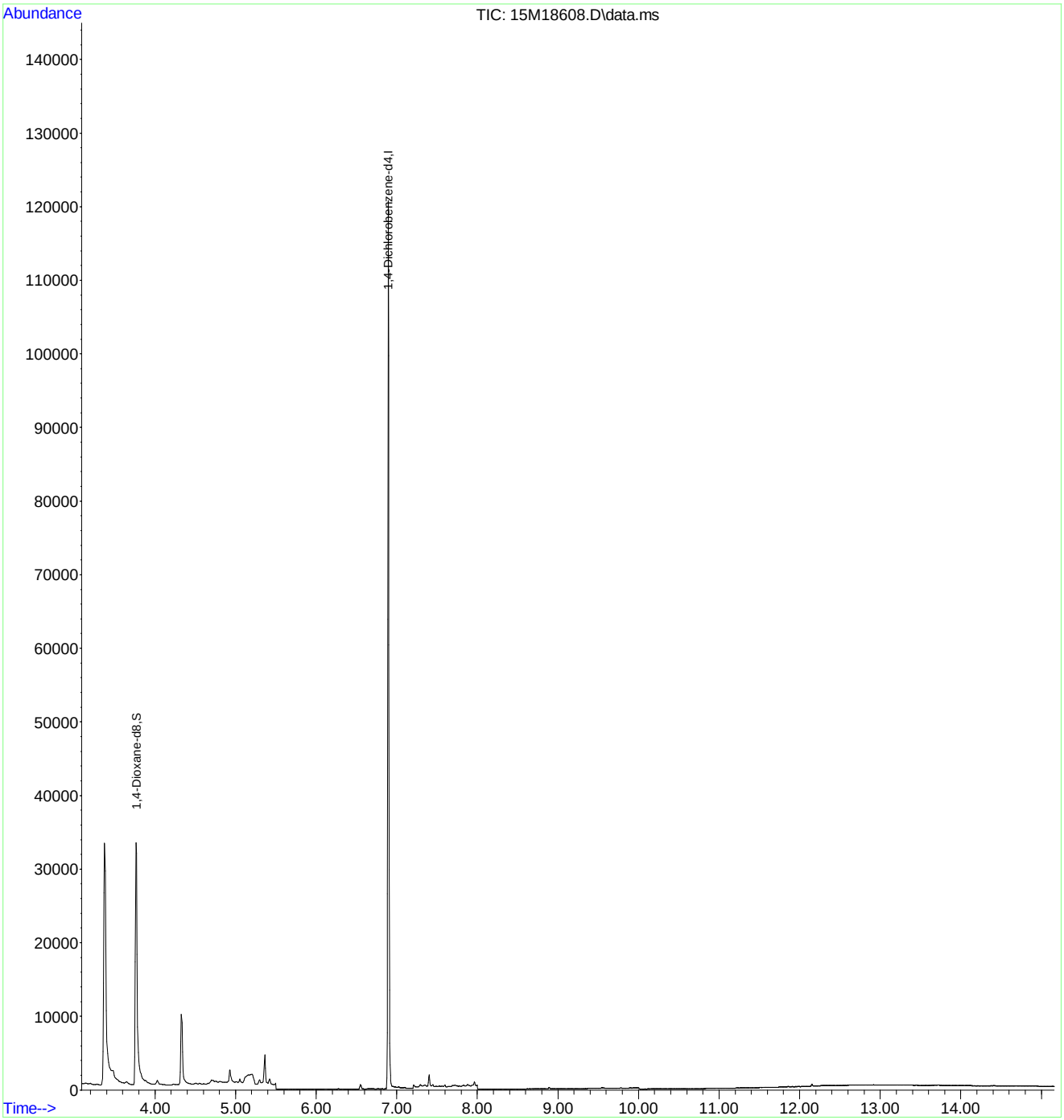

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18609.D
Acq On : 27 Jun 2016 18:54
Operator : MES
Sample : L16061144-02
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 28 08:07:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	44627	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.763	96	44560	2.4266	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	48.60%	
4) Nitrobenzene-d5	7.404	82	1166	0.0247	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.40%	
5) 2-Fluorobiphenyl	8.889	172	190	0.0016	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.140	244	573	0.0050	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18609.D
Acq On : 27 Jun 2016 18:54
Operator : MES
Sample : L16061144-02
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 28 08:07:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

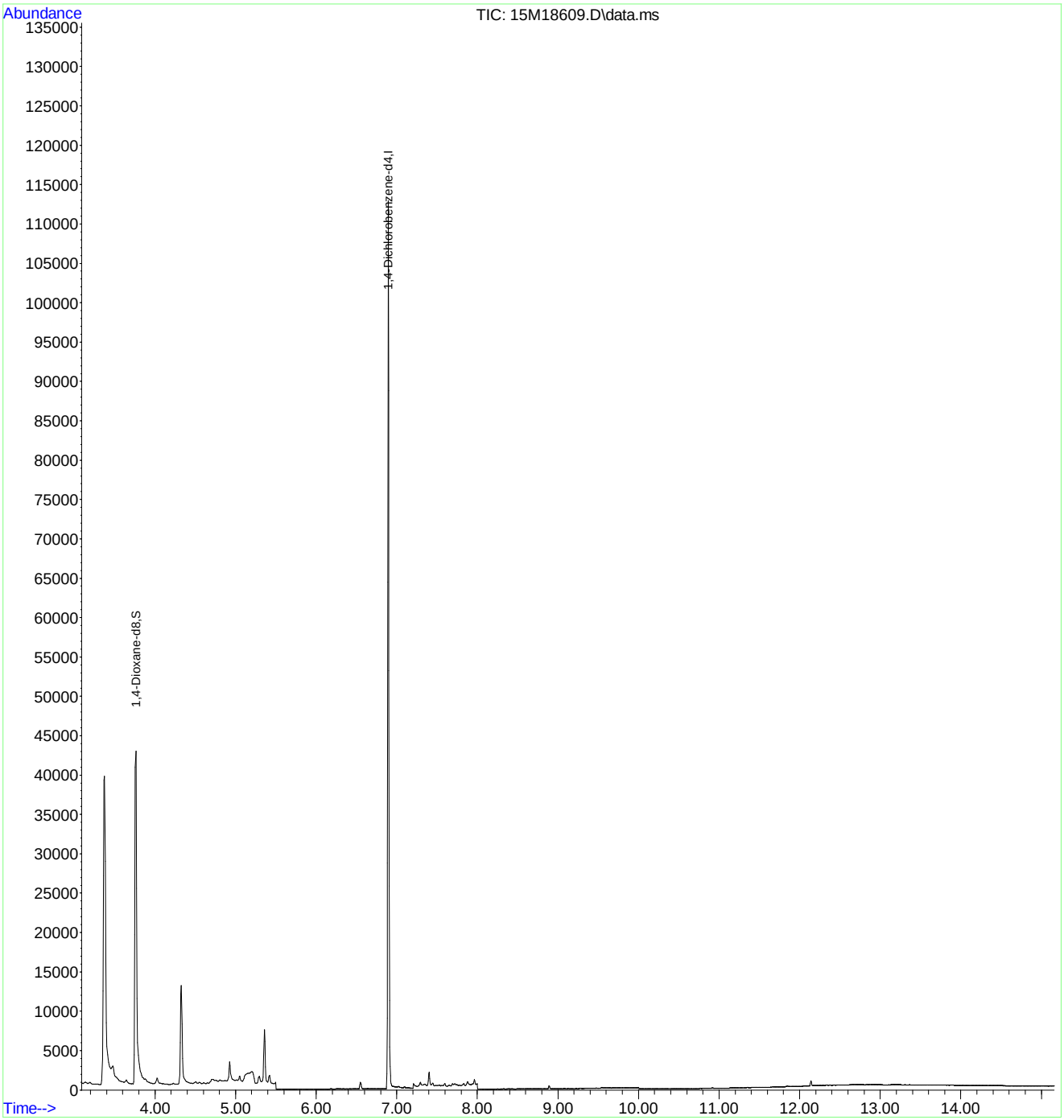

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18610.D
Acq On : 27 Jun 2016 19:17
Operator : MES
Sample : L16061144-03
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 28 08:07:08 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	49277	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.764	96	47477	2.3415	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	46.80%	
4) Nitrobenzene-d5	7.404	82	1503	0.0289	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.889	172	211	0.0016	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.148	244	797	0.0063	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18610.D
Acq On : 27 Jun 2016 19:17
Operator : MES
Sample : L16061144-03
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 28 08:07:08 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

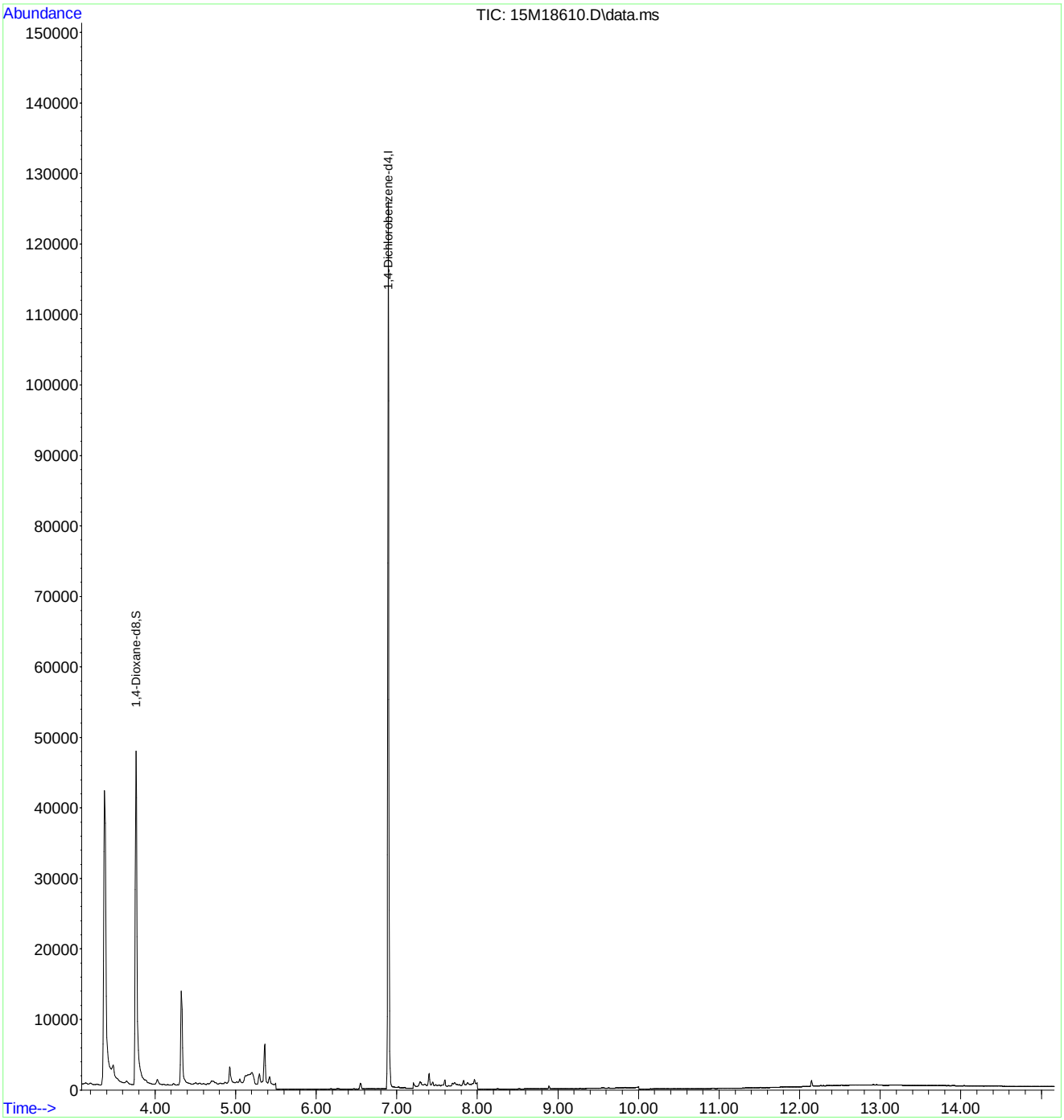

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

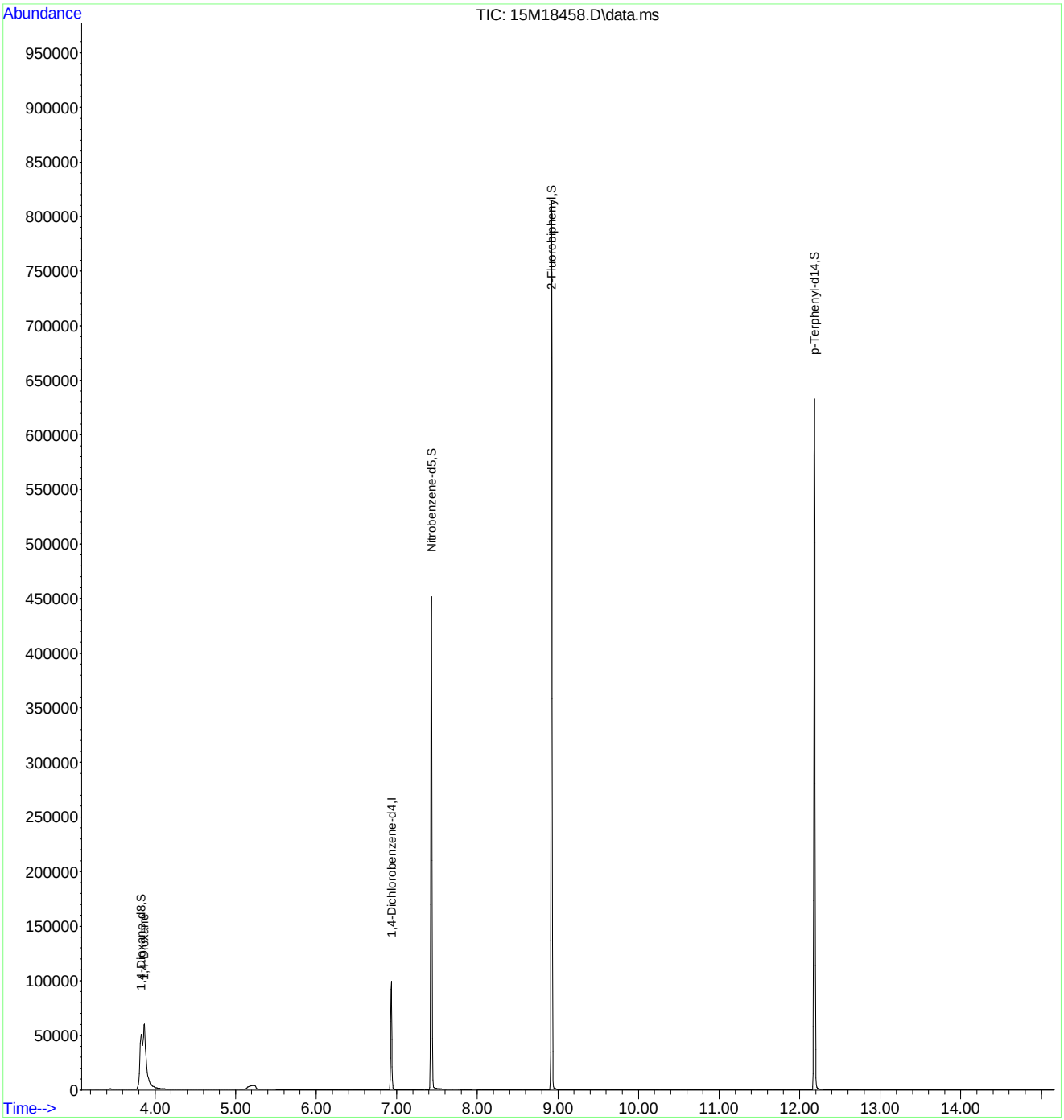

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

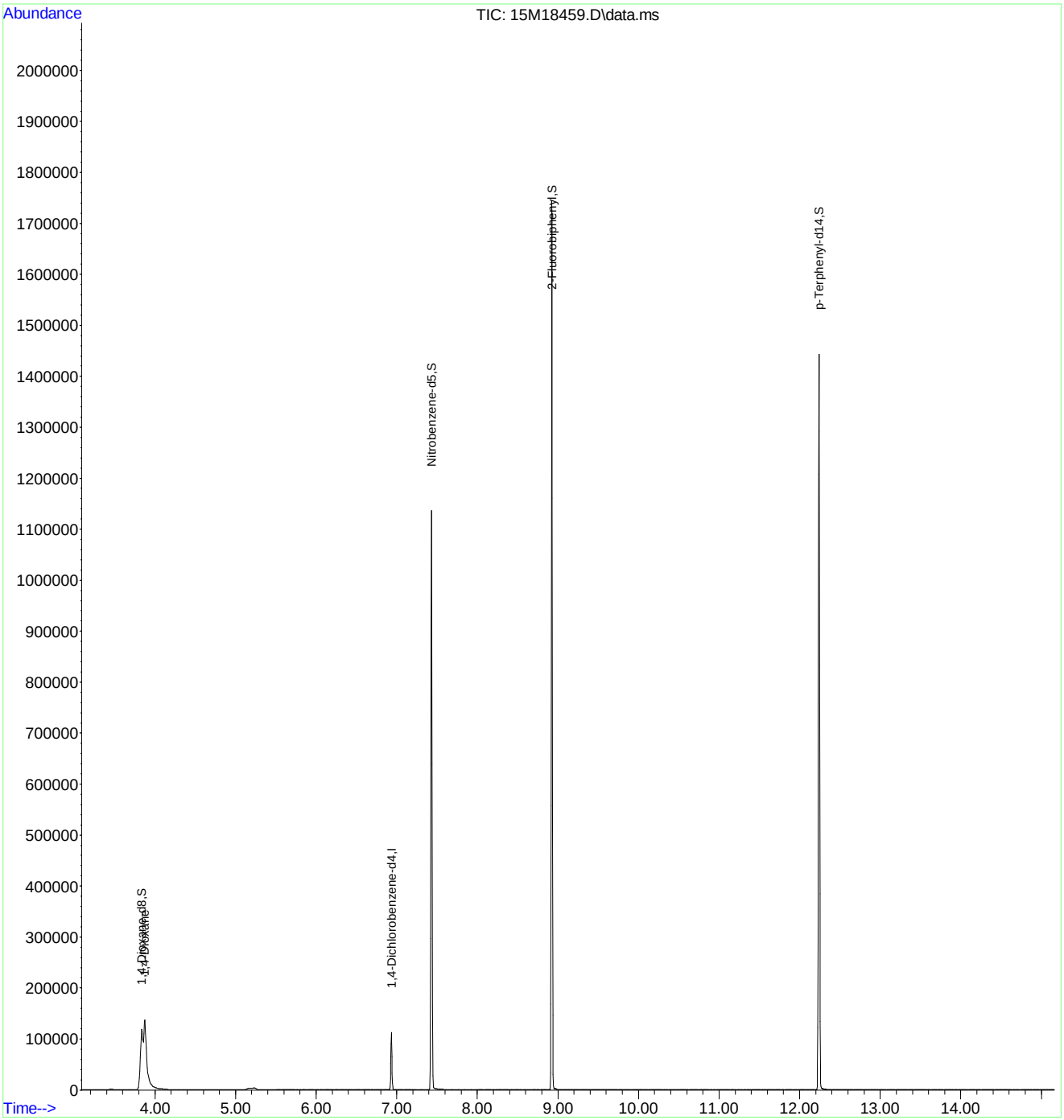

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

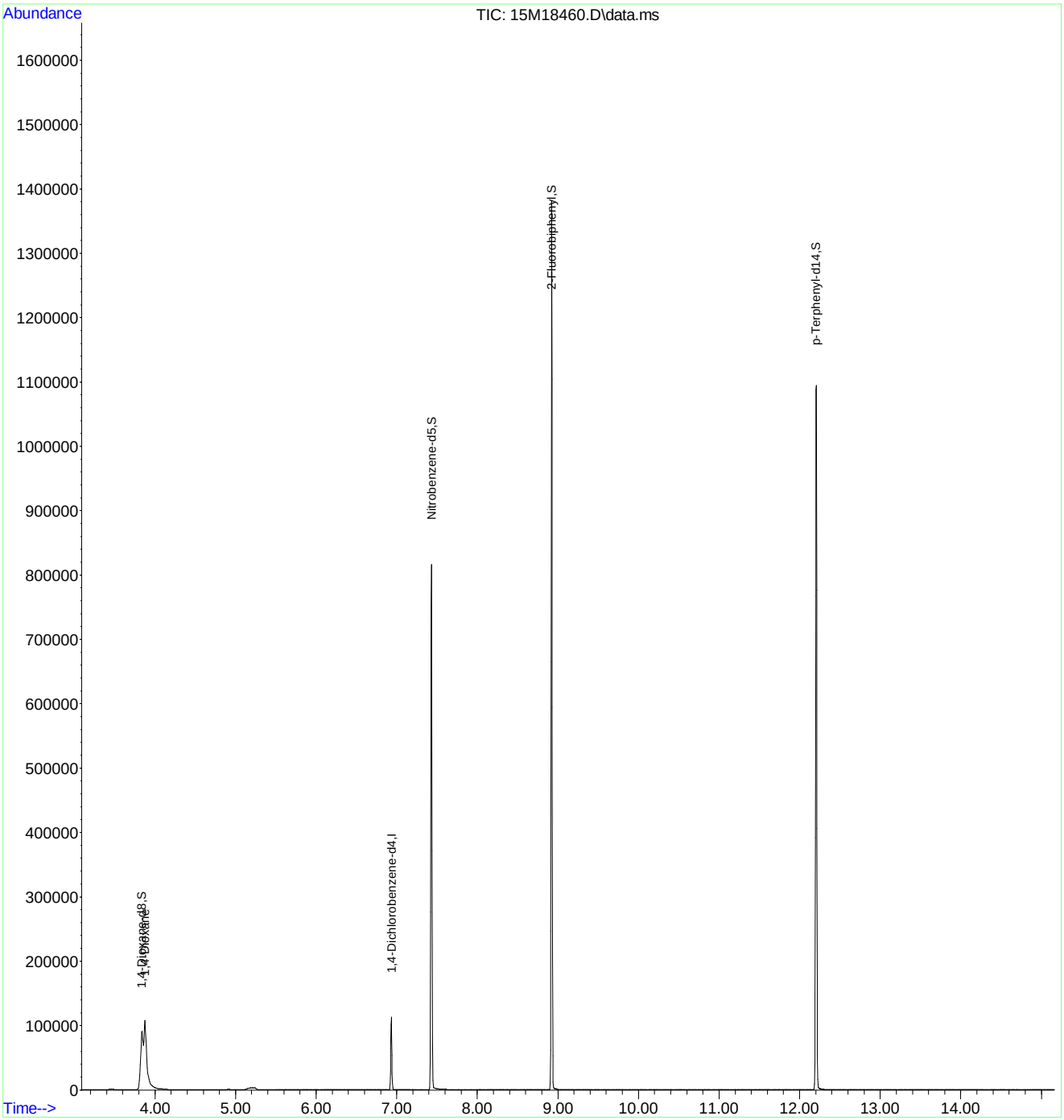

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406 ug/L	0.00
Spiked Amount 5.000			Recovery	= 48.80%	
4) Nitrobenzene-d5	7.431	82	88869	2.3714 ug/L	0.00
Spiked Amount 5.000			Recovery	= 47.40%	
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579 ug/L	0.00
Spiked Amount 5.000			Recovery	= 49.20%	
6) p-Terphenyl-d14	12.199	244	218191	2.3930 ug/L	0.02
Spiked Amount 5.000			Recovery	= 47.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259 ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

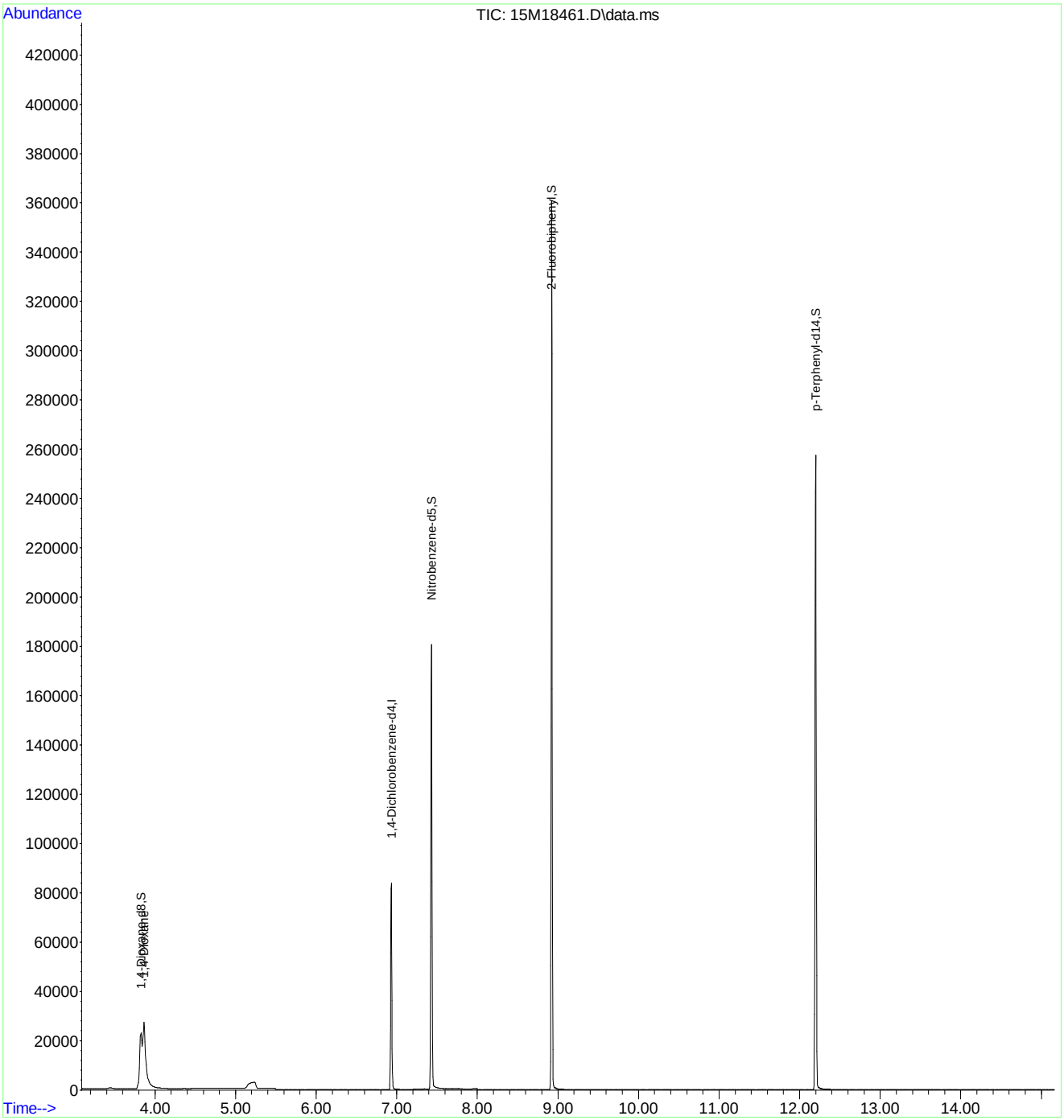

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607 ug/L	0.01
Spiked Amount 5.000			Recovery	= 19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776 ug/L	0.00
Spiked Amount 5.000			Recovery	= 17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612 ug/L	0.00
Spiked Amount 5.000			Recovery	= 19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208 ug/L	0.02
Spiked Amount 5.000			Recovery	= 18.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694 ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

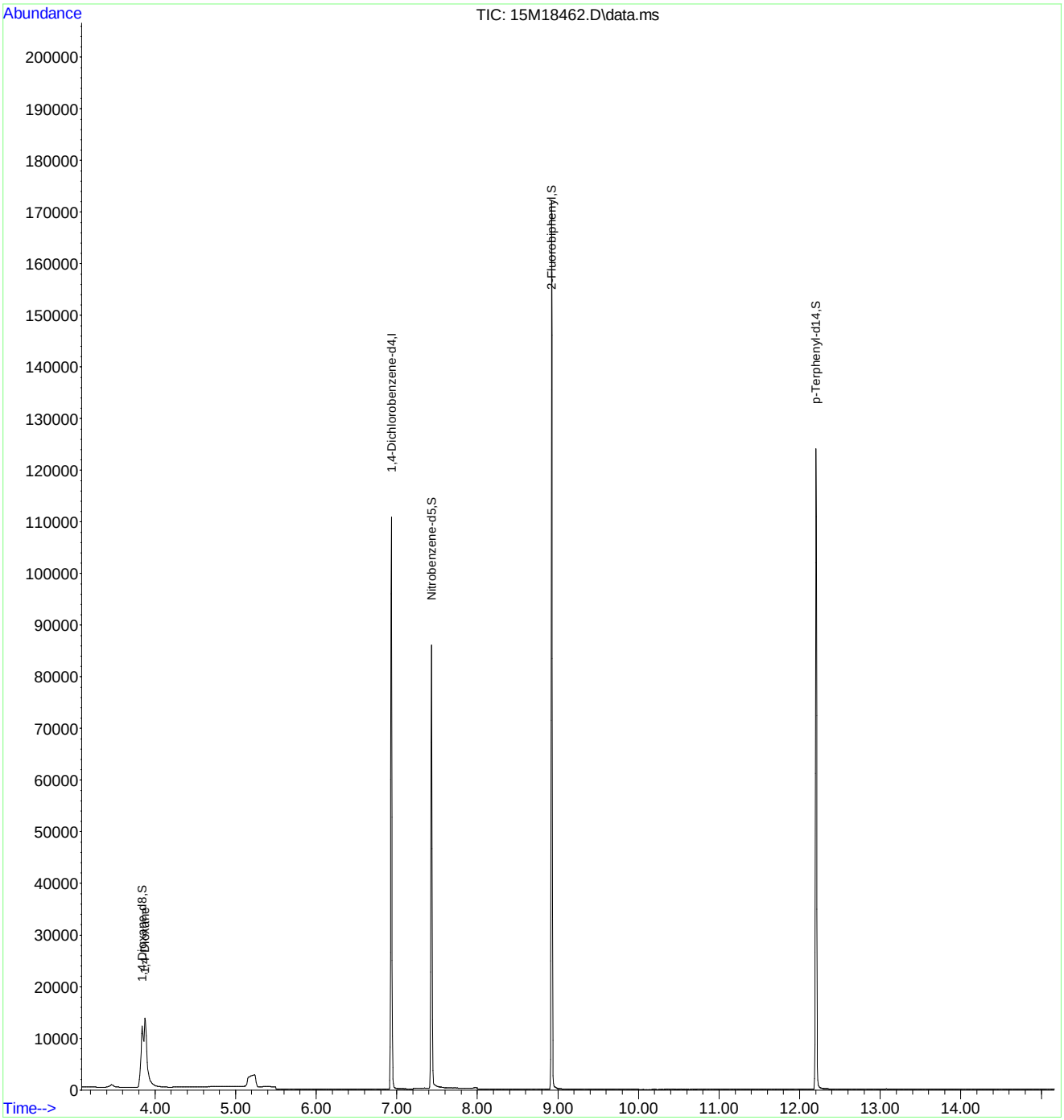

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

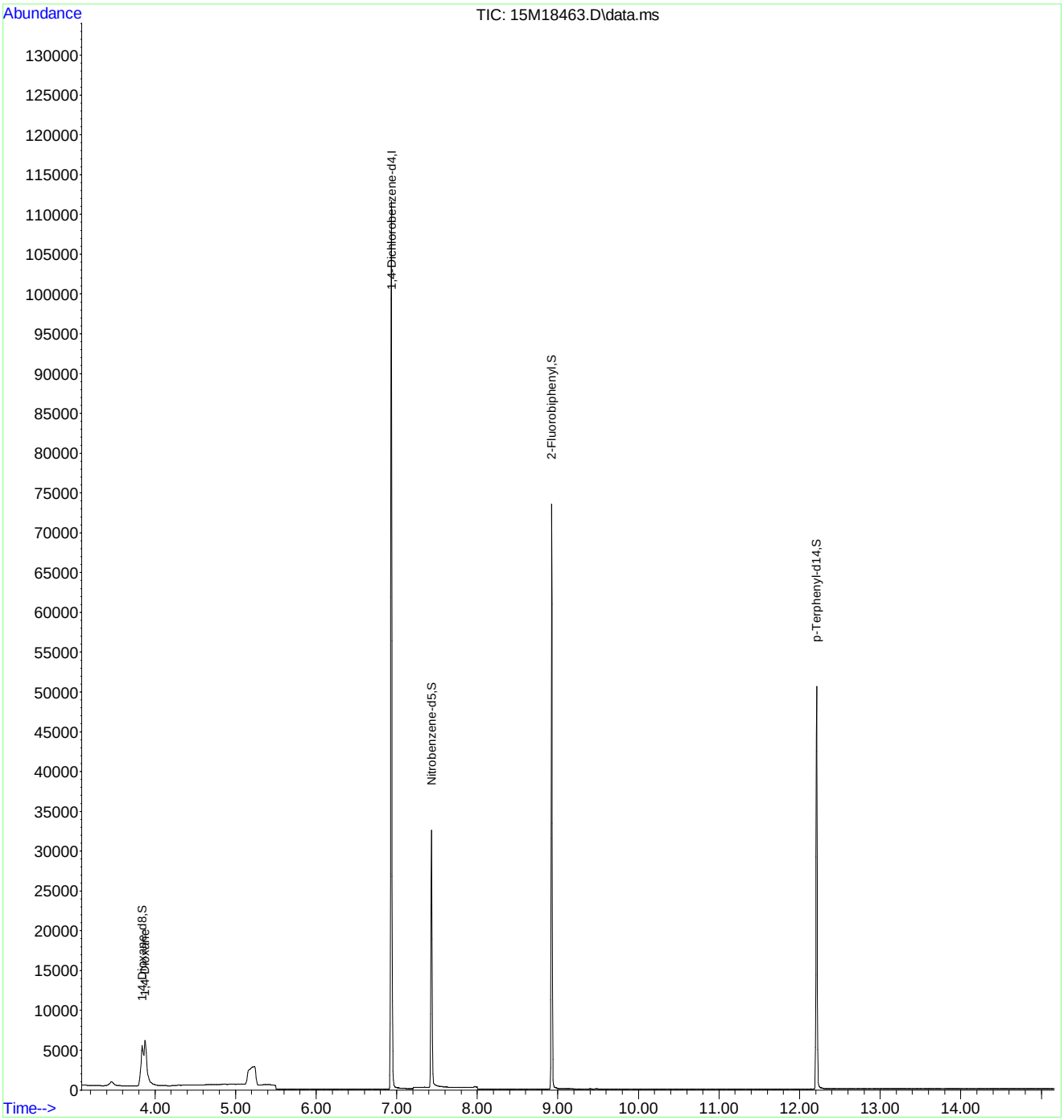

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

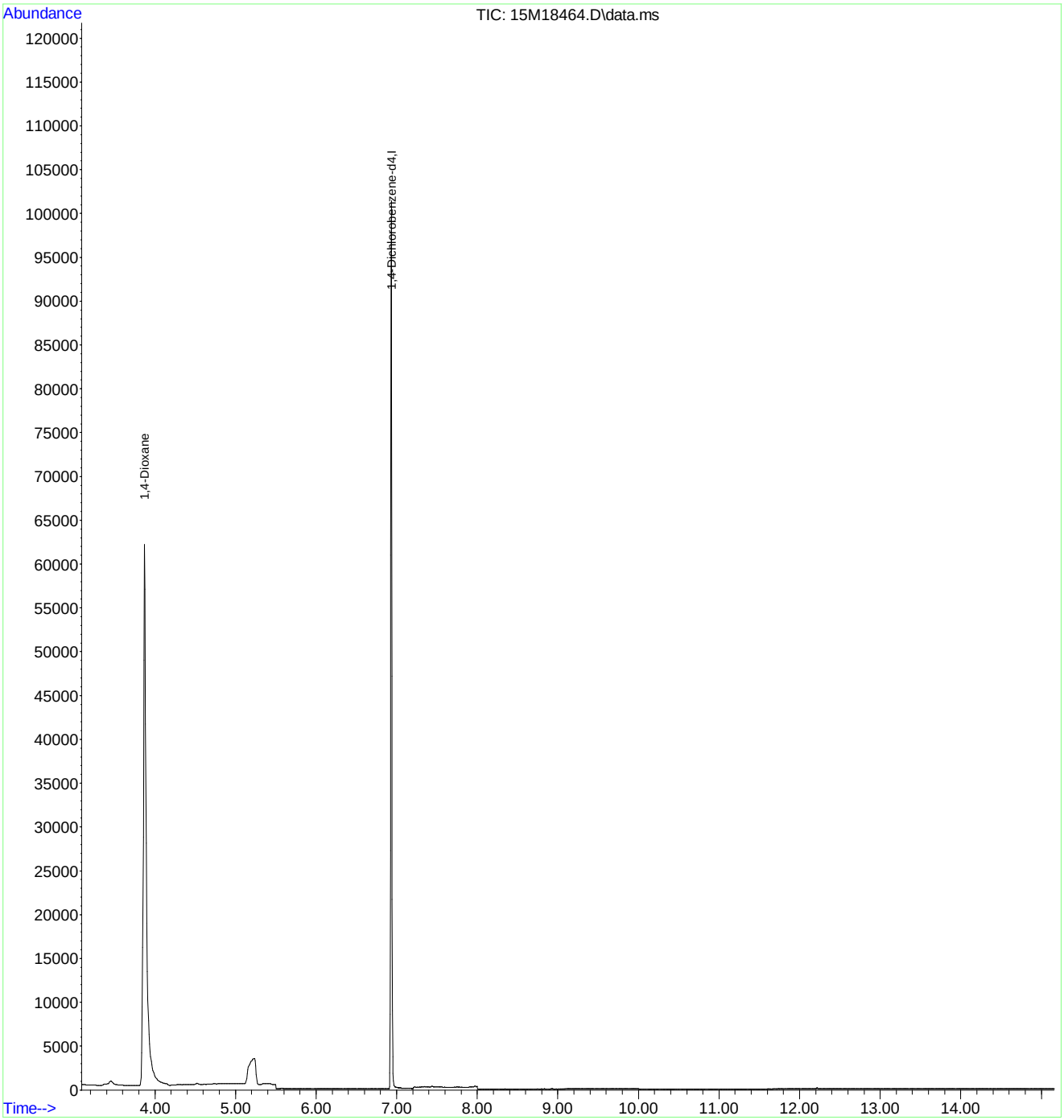

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2	1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3 S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4 S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.892	152	42974	1.0000 ug/mL	#-0.04
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.749	96	78711	4.4512 ug/L	-0.08
Spiked Amount 5.000			Recovery	= 89.00%	
4) Nitrobenzene-d5	7.393	82	235288	5.1833 ug/L	-0.04
Spiked Amount 5.000			Recovery	= 103.60%	
5) 2-Fluorobiphenyl	8.886	172	551093	4.8097 ug/L	-0.04
Spiked Amount 5.000			Recovery	= 96.20%	
6) p-Terphenyl-d14	12.170	244	561144	5.0809 ug/L	-0.01
Spiked Amount 5.000			Recovery	= 101.60%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.785	58	57358	4.3623 ug/L	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

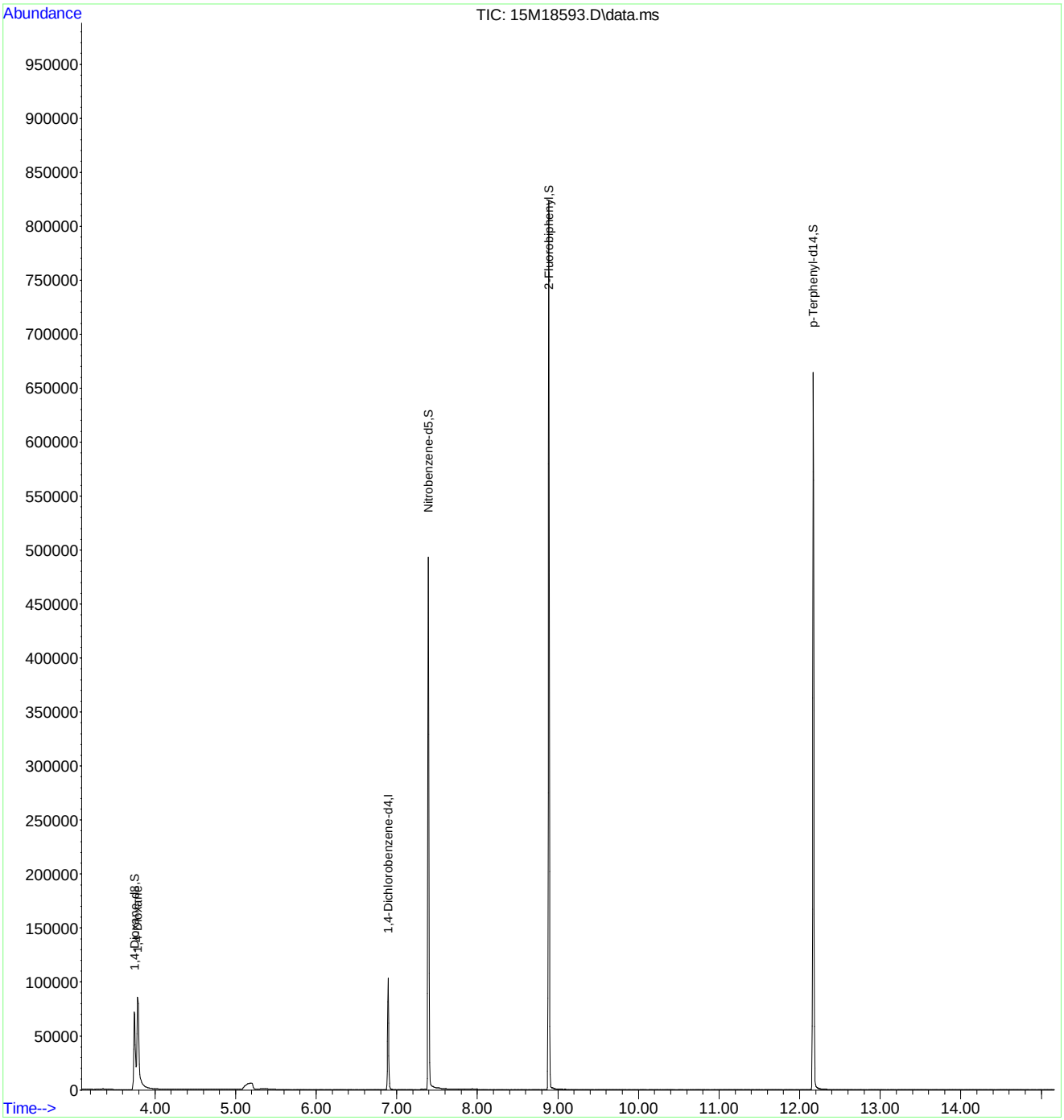

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	-0.04
2	1,4-Dioxane	0.306	0.267	12.7	94	-0.08
3 S	1,4-Dioxane-d8	0.411	0.366	10.9	95	-0.08
4 S	Nitrobenzene-d5	1.056	1.095	-3.7	105	-0.04
5 S	2-Fluorobiphenyl	2.666	2.565	3.8	103	-0.04
6 S	p-Terphenyl-d14	2.570	2.612	-1.6	108	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	-0.04
2	1,4-Dioxane	5.000	4.362	12.8	94	-0.08
3 S	1,4-Dioxane-d8	5.000	4.451	11.0	95	-0.08
4 S	Nitrobenzene-d5	5.000	5.183	-3.7	105	-0.04
5 S	2-Fluorobiphenyl	5.000	4.810	3.8	103	-0.04
6 S	p-Terphenyl-d14	5.000	5.081	-1.6	108	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

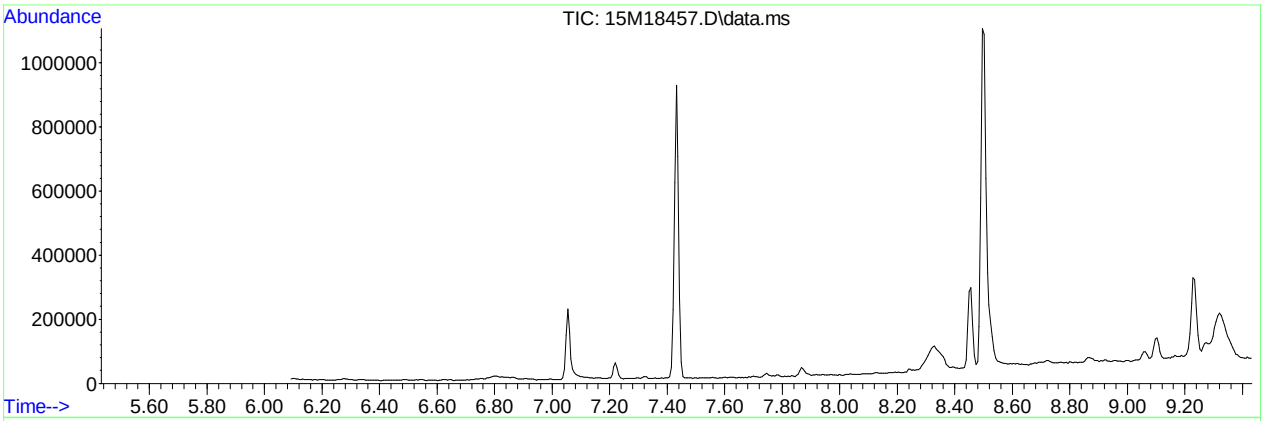

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

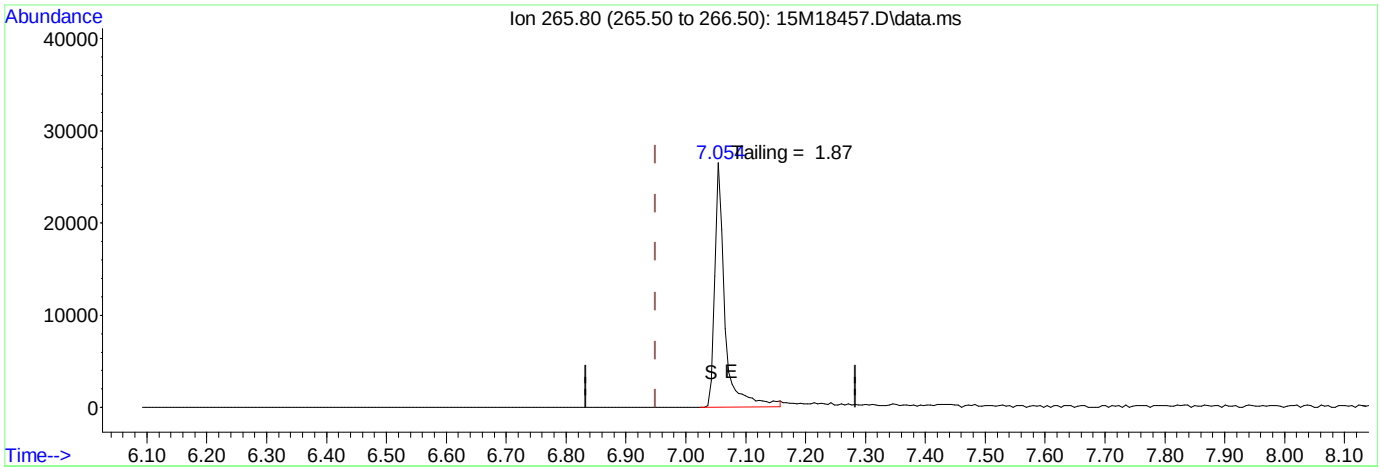

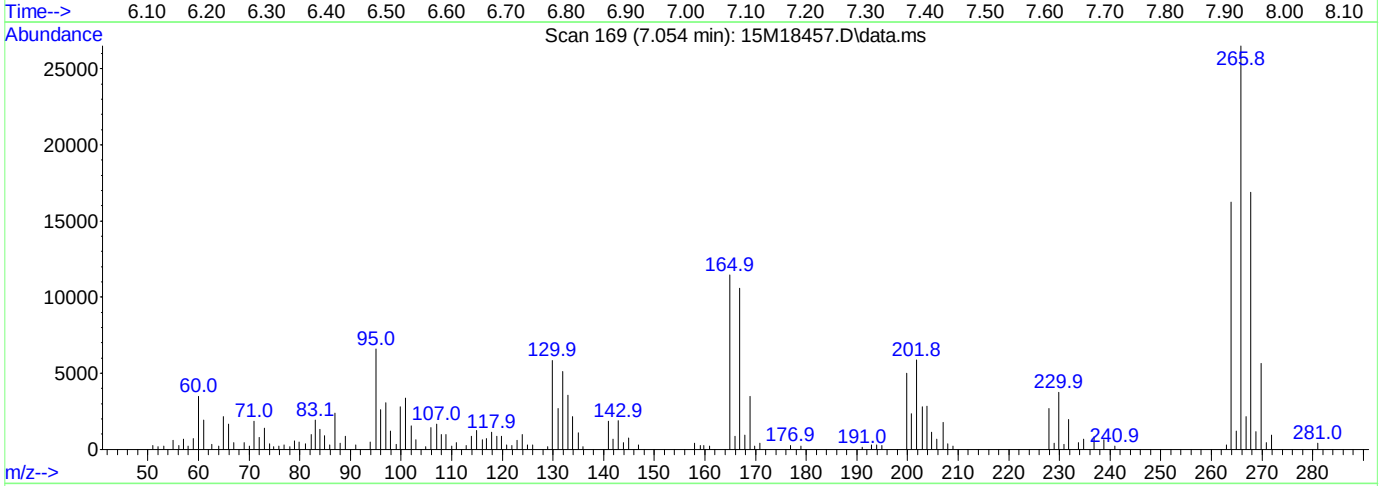

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

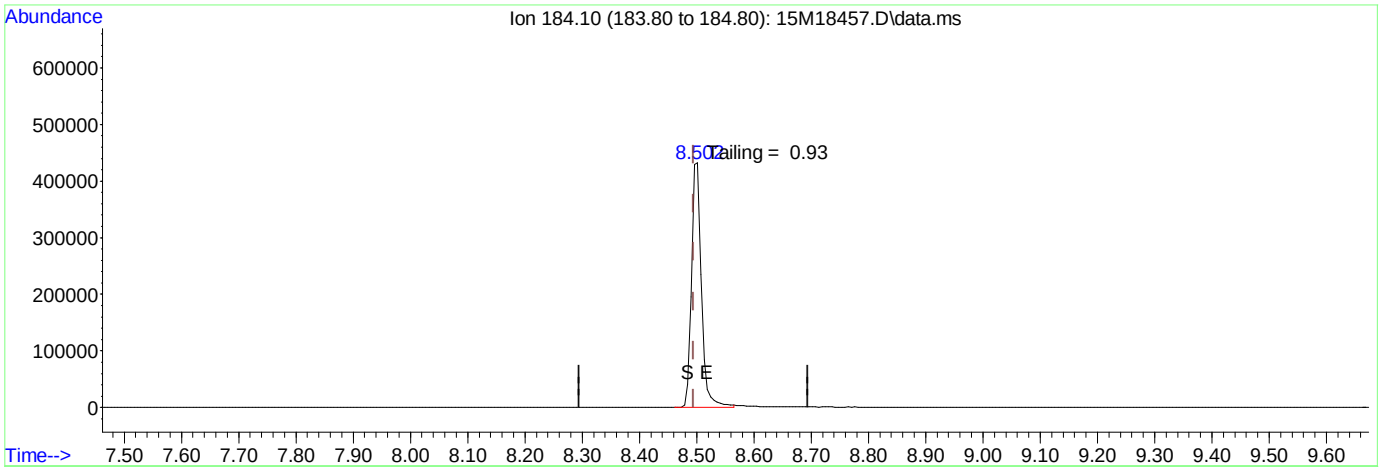

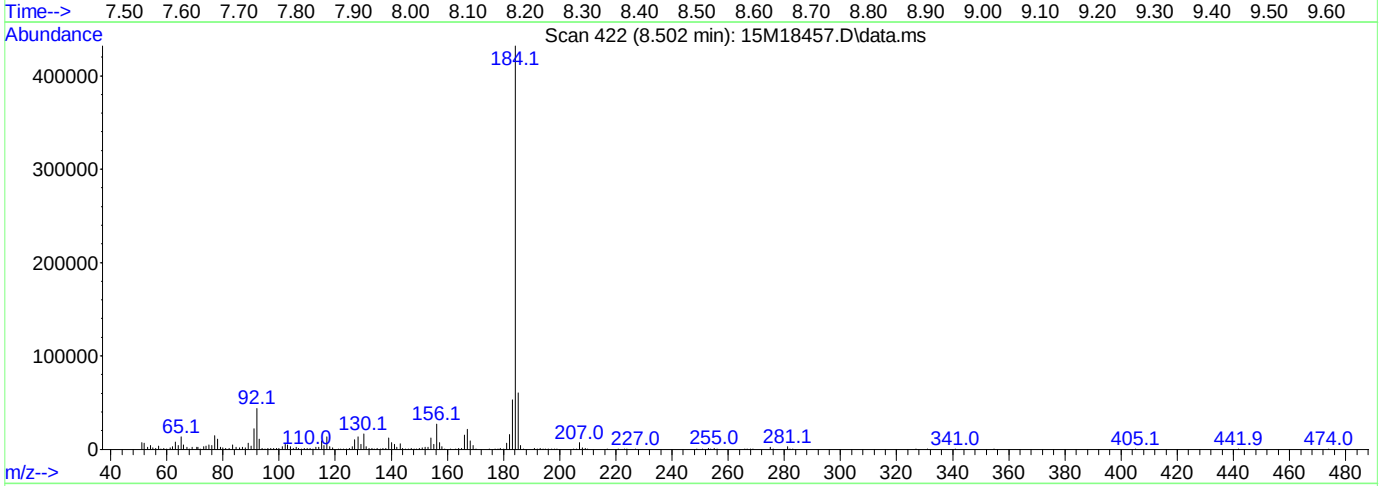

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

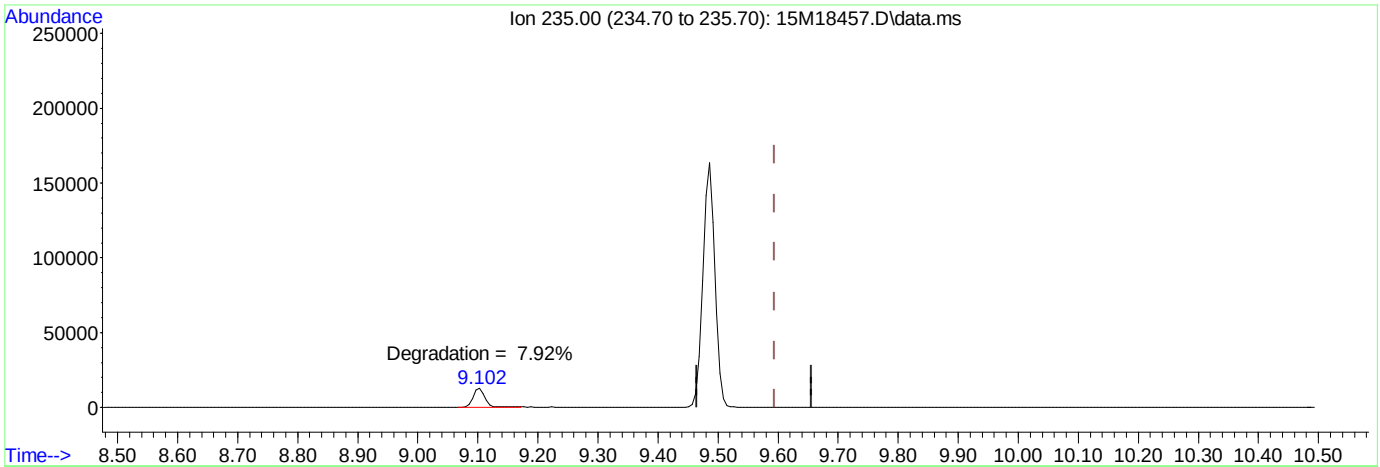

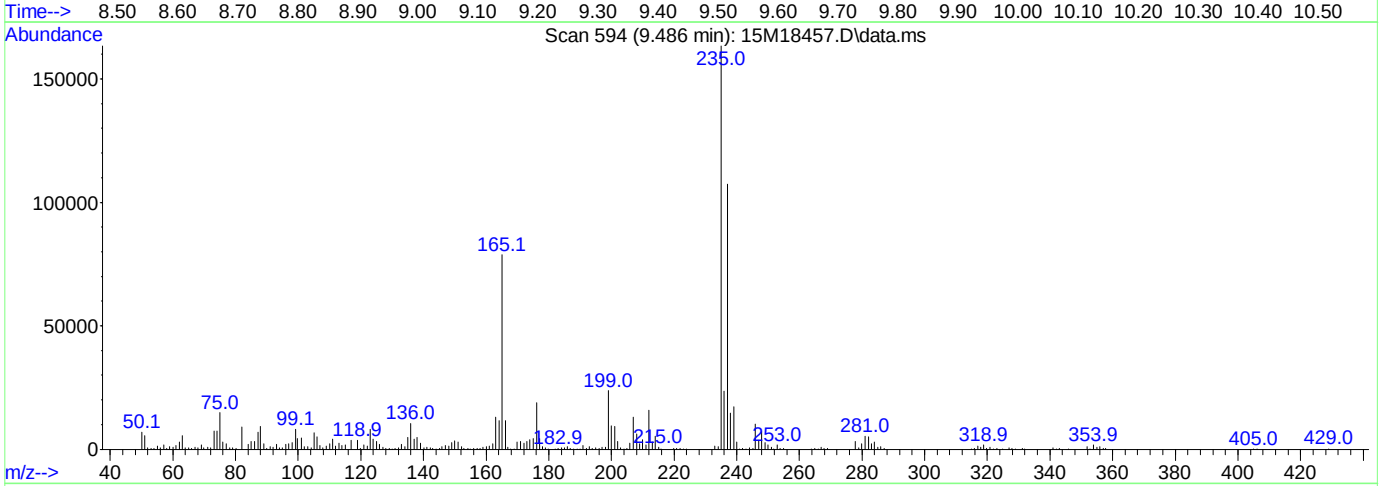

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

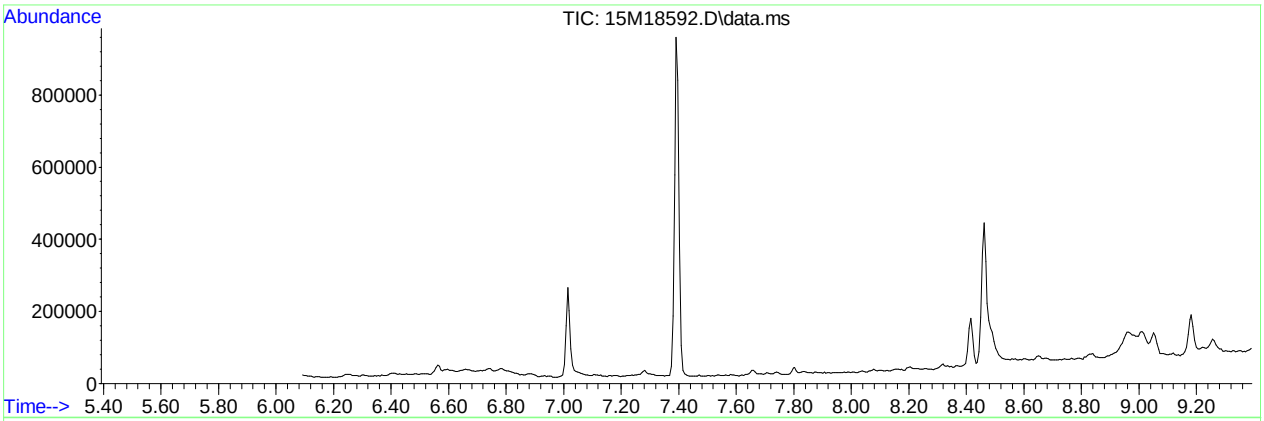

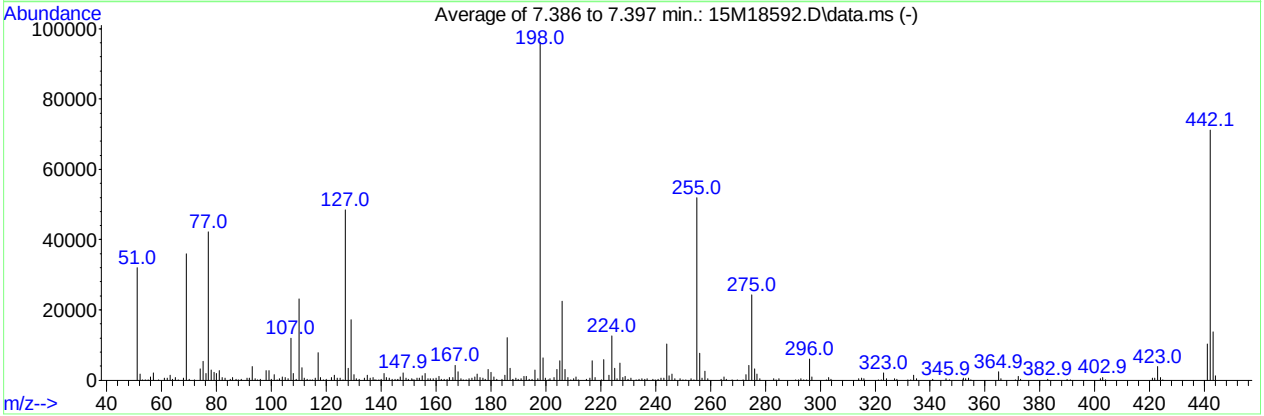

AutoFind: Scans 227, 228, 229; Background Corrected with Scan 221

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	33.2	31989	PASS
68	69	0.00	2	1.6	580	PASS
69	198	0.00	100	37.4	35954	PASS
70	69	0.00	2	0.6	222	PASS
127	198	40	60	50.4	48459	PASS
197	198	0.00	1	0.4	409	PASS
198	198	100	100	100.0	96232	PASS
199	198	5	9	6.6	6399	PASS
275	198	10	30	25.2	24236	PASS
365	198	1	100	2.5	2410	PASS
441	443	0.01	100	75.7	10371	PASS
442	198	40	100	73.9	71133	PASS
443	442	17	23	19.3	13708	PASS

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

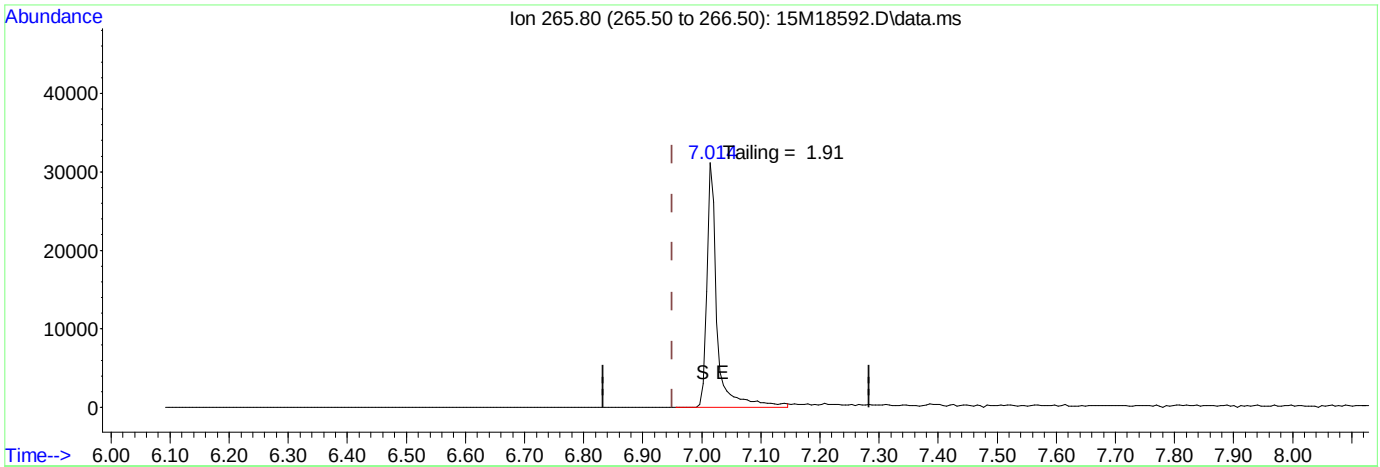

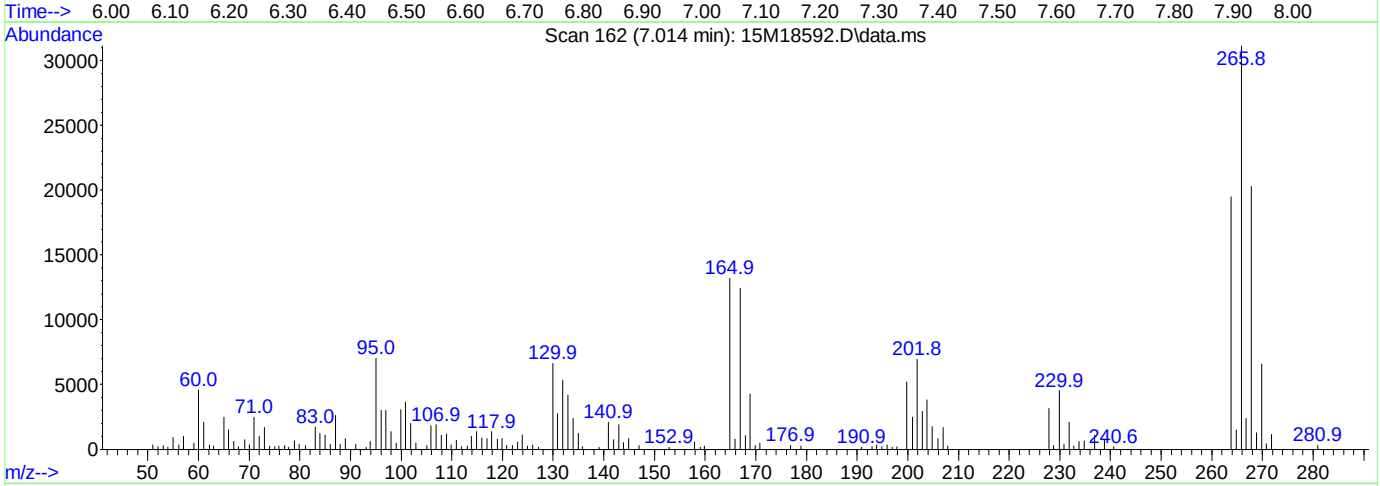

(1) Pentachlorophenol

7.014min (+ 0.065) 0.00 ug/ml

response 37276

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

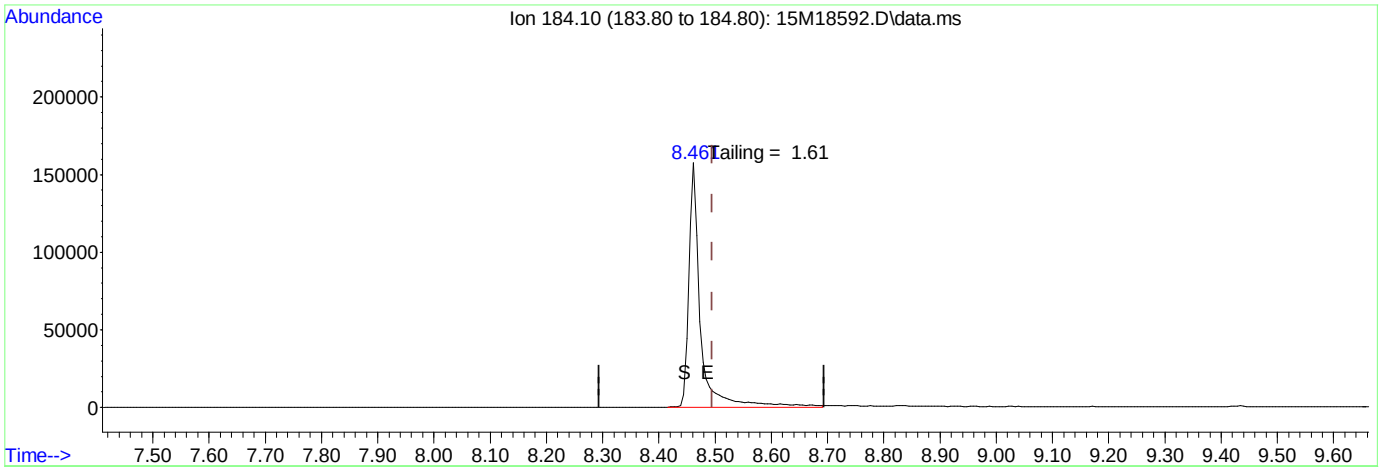

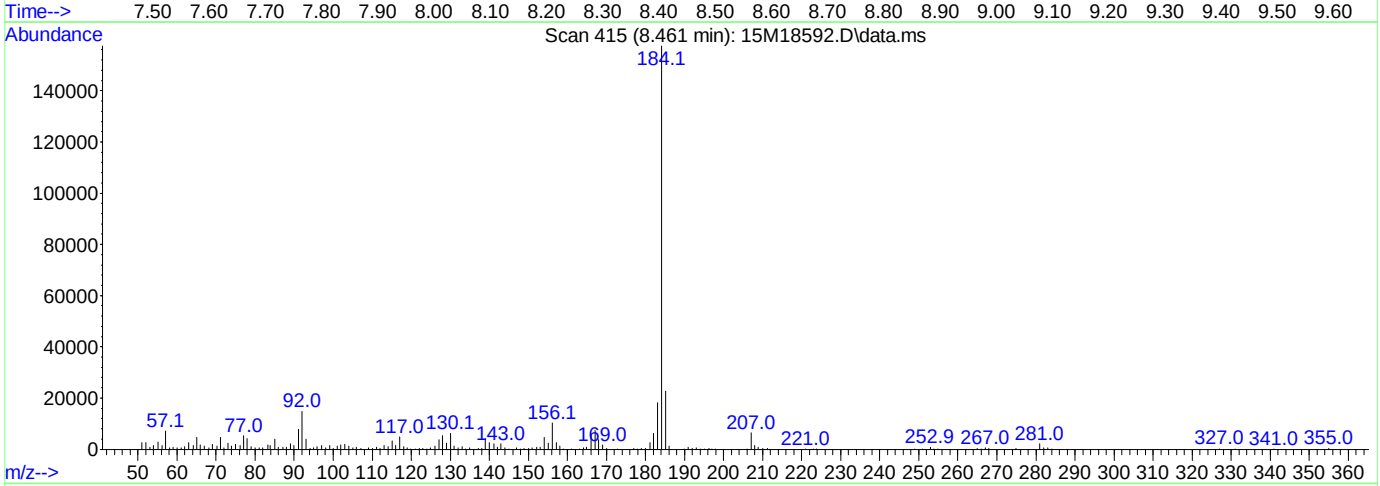

TIC: 15M18592.D\data.ms

(2) Benzidine

8.461min (-0.033) 0.00 ug/ml

response 225697

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

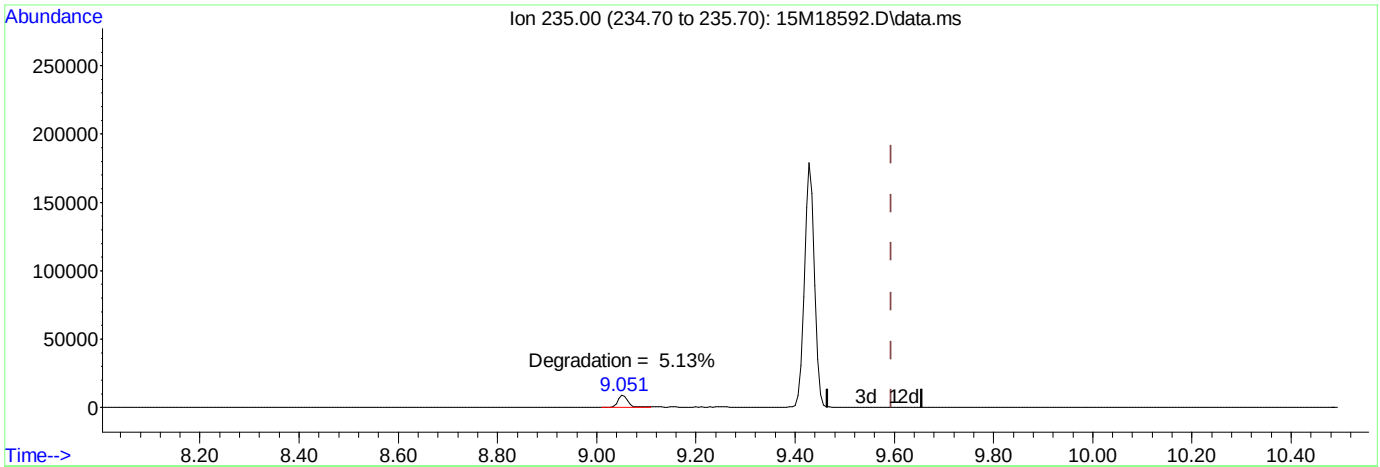

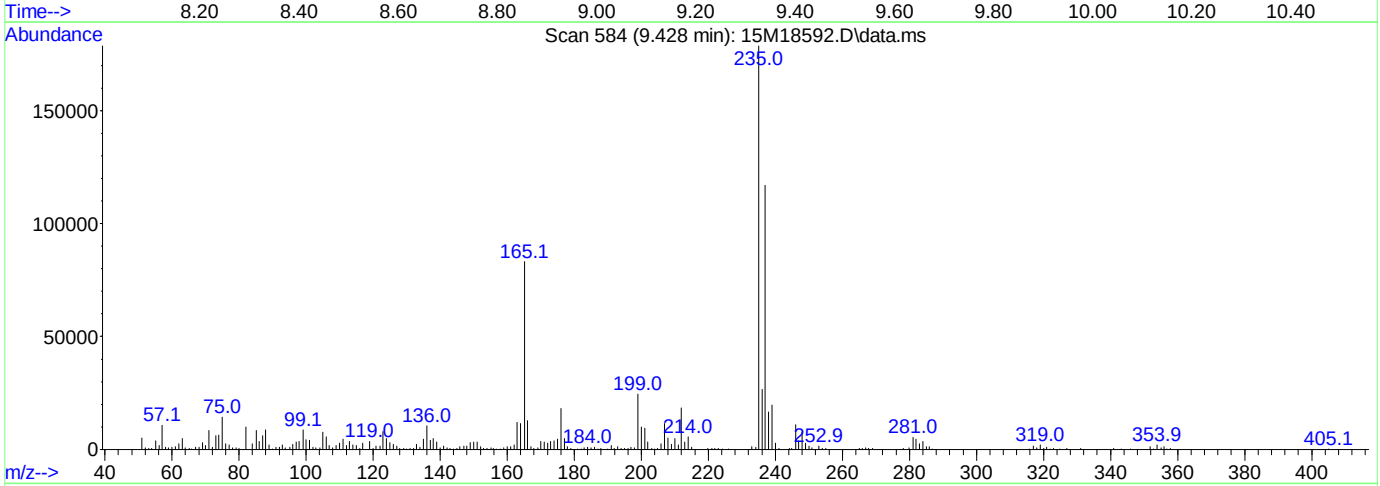

(3) DDT

9.428min (-0.166) 0.00 ug/ml mint

response 273417

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18597.D
Acq On : 27 Jun 2016 14:22
Operator : MES
Sample : WG573812-01 BLANK 6/22
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 27 17:44:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	38478	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.749	96	23026	1.4543	ug/L	-0.08
Spiked Amount 5.000			Recovery = 29.00%			
4) Nitrobenzene-d5	7.393	82	809059	19.9059	ug/L	-0.04
Spiked Amount 5.000			Recovery = 398.20%			
5) 2-Fluorobiphenyl	8.889	172	1650481	16.0878	ug/L	-0.03
Spiked Amount 5.000			Recovery = 321.80%			
6) p-Terphenyl-d14	12.184	244	3974204	40.1893	ug/L	0.00
Spiked Amount 5.000			Recovery = 803.80%			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18597.D
Acq On : 27 Jun 2016 14:22
Operator : MES
Sample : WG573812-01 BLANK 6/22
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 27 17:44:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

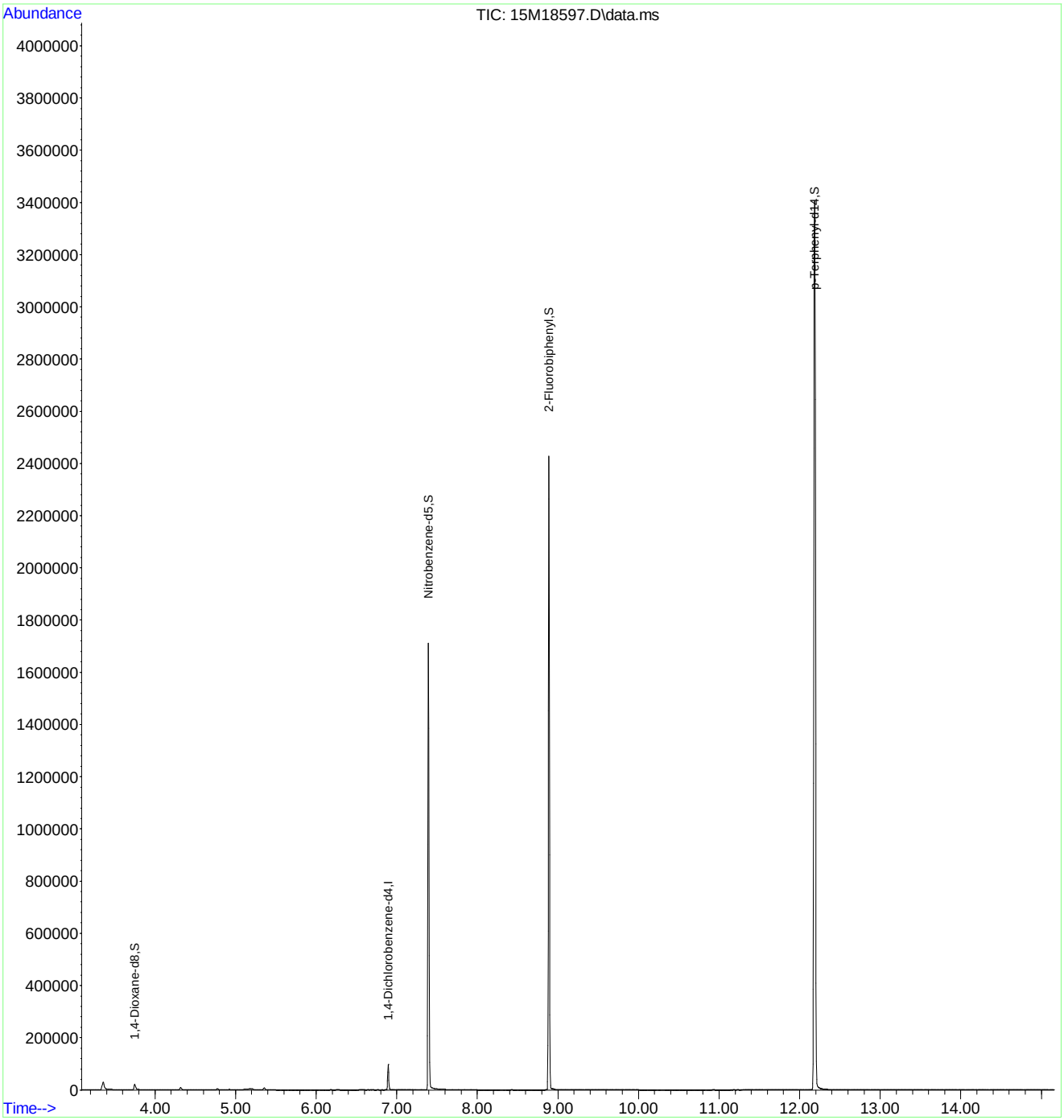

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18598.D
Acq On : 27 Jun 2016 14:45
Operator : MES
Sample : WG573812-02 LCS 6/22
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 27 17:47:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	47423	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.764	96	32479	1.6644	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	33.20%	
4) Nitrobenzene-d5	7.404	82	1302	0.0260	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.890	172	587	0.0046	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.199	244	733	0.0060	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	23052	1.5887	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18598.D
Acq On : 27 Jun 2016 14:45
Operator : MES
Sample : WG573812-02 LCS 6/22
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 27 17:47:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

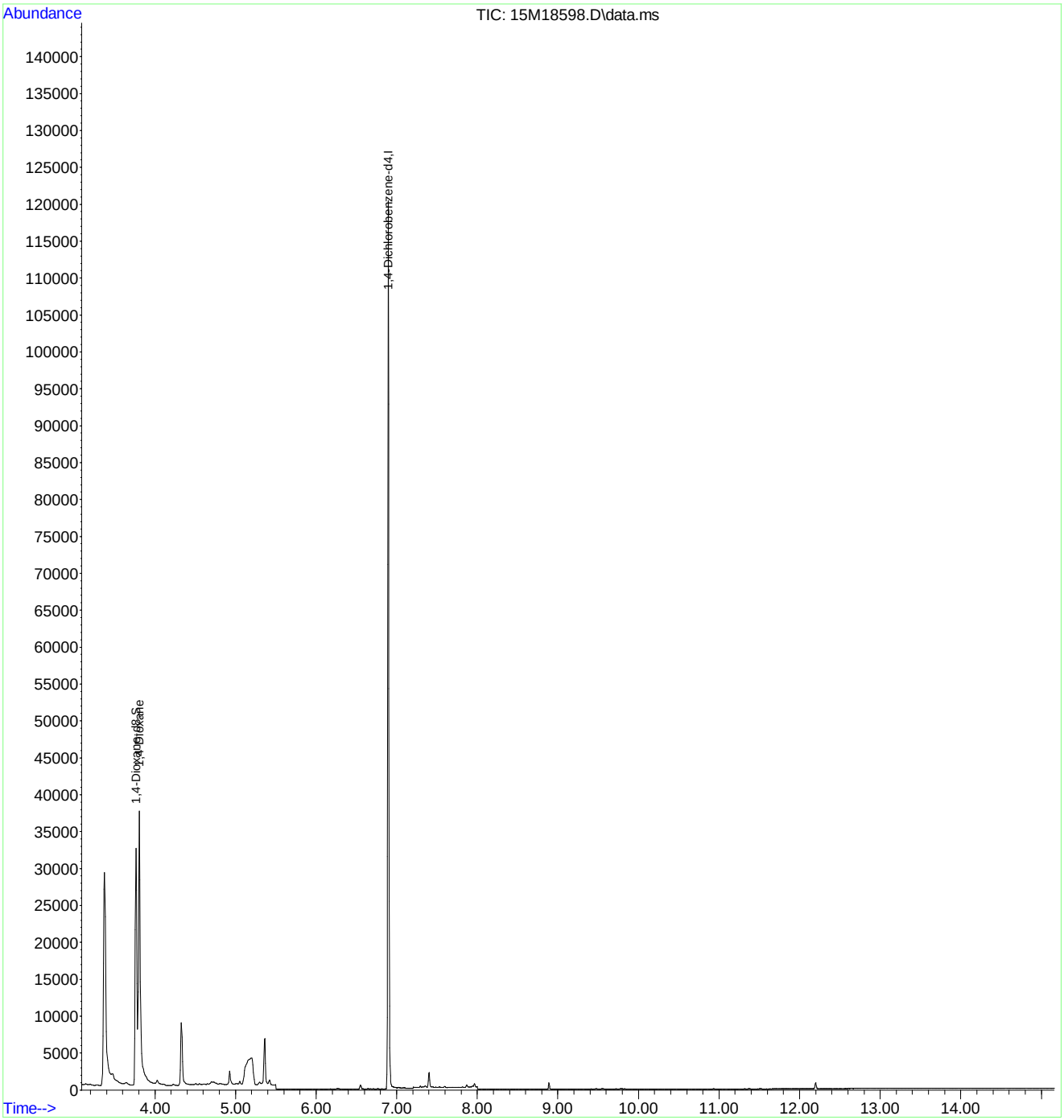

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18599.D
Acq On : 27 Jun 2016 15:07
Operator : MES
Sample : WG573812-03 LCSDUP 6/22
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 27 17:47:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	50712	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.763	96	64077	3.0707	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	61.40%	
4) Nitrobenzene-d5	7.404	82	2658	0.0496	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.889	172	2319	0.0172	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.195	244	557	0.0043	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	46522	2.9983	ug/L	86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18599.D
Acq On : 27 Jun 2016 15:07
Operator : MES
Sample : WG573812-03 LCSDUP 6/22
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 27 17:47:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

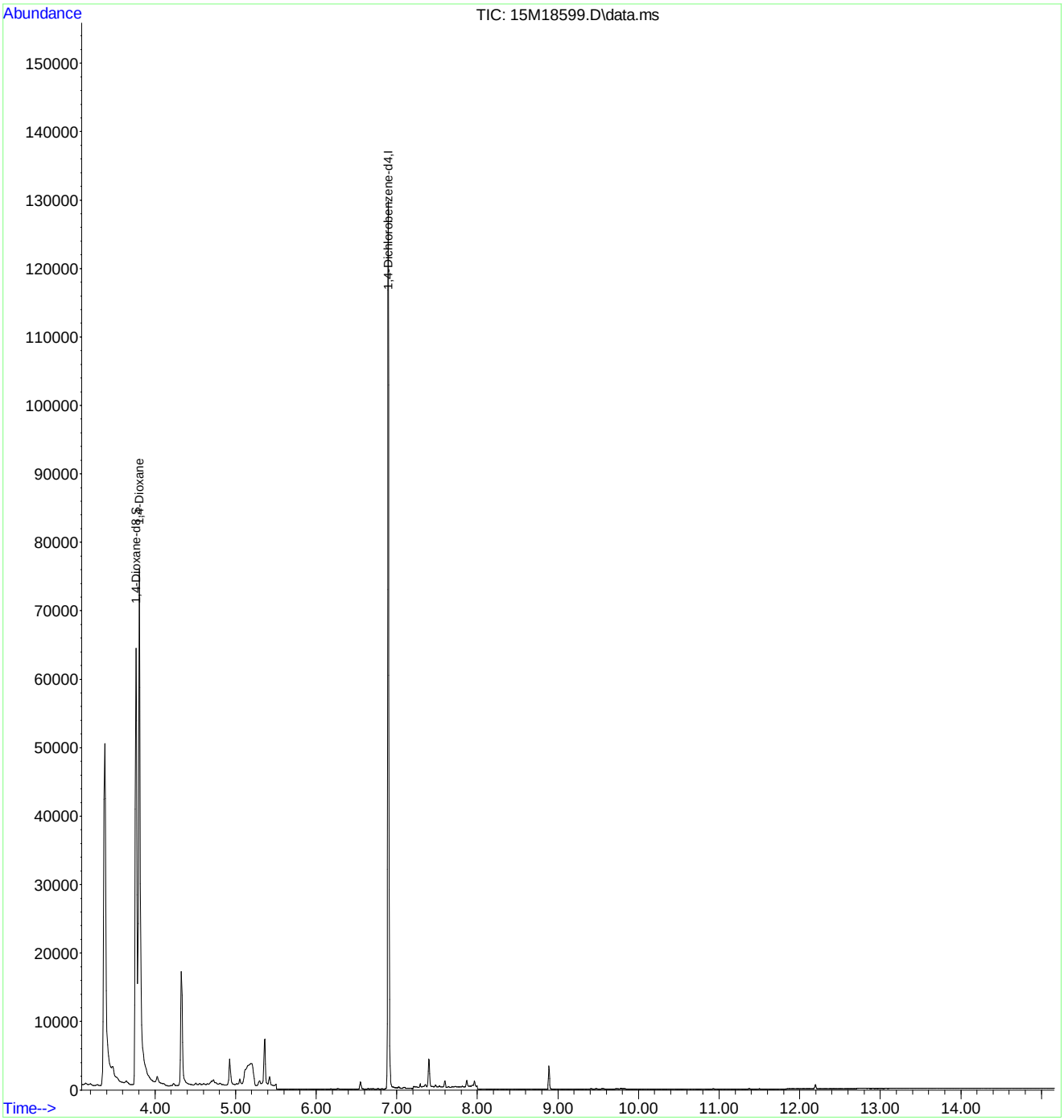

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW06-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 05:18
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	1LM.LM35492
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW06FD-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 05:37
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	1LM.LM35493
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW17-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 20:56
Collect Date:	06/20/2016 15:00	**Dilution:**	1	**File ID:**	1LM.LM35507
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1380 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG574101-01 MCT	9,990.	
-02 Blank	0.33	
-03 LCS	0.48	
-04 LCS2	0.51	
L16060823-01	9,120.	
-03	7,440.	
-04	1,943.	
L16060927-01	750.	
-02	652.	
-03	446.	
-04	162.7	
L16061026-01	6,910.	
-03	238.	
-04	965.	
-05	1,526.	
-07	220.	
L16061142-01	165.3	
-02	81.1	
-04	83.1	
-06	728.	
-07	74.2	
L16061144-01	118.6	
-02	118.7	
-03	110.1	

Analyst: John Richards

Date/Time: 06/27/16 / 20:00

DCN#119317

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples initially analyzed at dilutions were done so based on their historical results. Samples tagged with (NR) did not conform to their historical results. These samples were reanalyzed on the end of the sequence as neat or at dilutions based on the results of their initial analysis.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35462	WG574102-01 CCB	1	1		06/24/16 19:50
2	1LM.LM35463	WG574102-02 CCV (1.0ug/L)	1	1	STD75510	06/24/16 20:09
3	1LM.LM35464	WG574101-05 MRL (0.2ug/L)	1	1	STD75510	06/24/16 20:28
4	1LM.LM35465	WG574101-01 MCT (0.2ug/L)	1	1	STD75512	06/24/16 20:47
5	1LM.LM35466	WG574101-02 BLANK	1	1		06/24/16 21:06
6	1LM.LM35467	WG574101-03 LCS (0.2ug/L)	1	1	STD75512	06/24/16 21:25
7	1LM.LM35468	L16060823-01	1	1		06/24/16 21:44
8	1LM.LM35469	L16060823-03	1	1		06/24/16 22:03
9	1LM.LM35470	L16060823-04 (10x)	1	10		06/24/16 22:22
10	1LM.LM35471	L16060927-01 (100x) (NR)	1	100		06/24/16 22:41
11	1LM.LM35472	L16060927-02 (100x) (NR)	1	100		06/24/16 23:00
12	1LM.LM35473	L16060927-03	1	1		06/24/16 23:18
13	1LM.LM35474	L16060927-04	1	1		06/24/16 23:37
14	1LM.LM35475	WG574102-03 CCV (1.0ug/L)	1	1	STD75510	06/24/16 23:56
15	1LM.LM35476	WG574101-06 MRL (0.2ug/L)	1	1	STD75510	06/25/16 00:15
16	1LM.LM35477	WG574102-04 CCB	1	1		06/25/16 00:34
17	1LM.LM35478	L16061026-01 (100x) (NR)	1	100		06/25/16 00:53
18	1LM.LM35479	L16061026-03 (100x)	1	100		06/25/16 01:12
19	1LM.LM35480	L16061026-04 (10,000x)	1	10000		06/25/16 01:31
20	1LM.LM35481	L16061026-05 (100,000x) (NR)	1	100000		06/25/16 01:50
21	1LM.LM35482	L16061026-07 (10x) (NR)	1	10		06/25/16 02:09
22	1LM.LM35483	L16061142-01	1	1		06/25/16 02:28
23	1LM.LM35484	L16061142-02	1	1		06/25/16 02:47
24	1LM.LM35485	L16061142-04	1	1		06/25/16 03:06
25	1LM.LM35486	L16061142-06 (10x) (NR)	1	10		06/25/16 03:25
26	1LM.LM35487	L16061142-07	1	1		06/25/16 03:44
27	1LM.LM35488	WG574102-05 CCV (1.0ug/L)	1	1	STD75510	06/25/16 04:03
28	1LM.LM35489	WG574101-07 MRL (0.2ug/L)	1	1	STD75510	06/25/16 04:22
29	1LM.LM35490	WG574102-06 CCB	1	1		06/25/16 04:40
30	1LM.LM35491	WG574101-04 LCS2 (0.2ug/L)	1	1	STD75512	06/25/16 04:59
31	1LM.LM35492	L16061144-01	1	1		06/25/16 05:18
32	1LM.LM35493	L16061144-02	1	1		06/25/16 05:37
33	1LM.LM35494	L16061144-03 (10x) (NR)	1	10		06/25/16 05:56

Page: 1 Approved: 28-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35495	WG574102-07 CCV (1.0ug/L)	1	1	STD75510	06/25/16 06:15
35	1LM.LM35496	WG574101-08 MRL (0.2ug/L)	1	1	STD75510	06/25/16 06:34
36	1LM.LM35497	WG574102-08 CCB	1	1		06/25/16 06:53
37	1LM.LM35498	WG574102-09 CCV (1.0ug/L)	1	1	STD75510	06/25/16 18:06
38	1LM.LM35499	WG574101-09 MRL (0.2ug/L)	1	1	STD75510	06/25/16 18:25
39	1LM.LM35500	WG574102-10 CCB	1	1		06/25/16 18:44
40	1LM.LM35501	L16060927-01 (RR Neat)	1	1		06/25/16 19:02
41	1LM.LM35502	L16060927-02 (RR 1000x)	1	1000		06/25/16 19:21
42	1LM.LM35503	L16061026-01 (RR Neat)	1	1		06/25/16 19:40
43	1LM.LM35504	L16061026-05 (RR 10,000x)	1	10000		06/25/16 19:59
44	1LM.LM35505	L16061026-07 (RR 50x)	1	50		06/25/16 20:18
45	1LM.LM35506	L16061142-06 (RR Neat)	1	1		06/25/16 20:37
46	1LM.LM35507	L16061144-03 (RR Neat)	1	1		06/25/16 20:56
47	1LM.LM35508	WG574102-11 CCV (1.0ug/L)	1	1	STD75510	06/25/16 21:15
48	1LM.LM35509	WG574101-10 MRL (0.2ug/L)	1	1	STD75510	06/25/16 21:34
49	1LM.LM35510	WG574102-12 CCB	1	1		06/25/16 21:53

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 28-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75960
Analytical Workgroups: L16060823, 0927, 1026, 1142, 1144

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
27-JUN-2016

Secondary Reviewer:
28-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 14:00:55

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG574101

Login Number: L16061144

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW06-062016	01	06/20/16					06/24/2016	4.2	28		06/25/16	.4	28	
18WW06FD-062016	02	06/20/16					06/24/2016	4.2	28		06/25/16	.4	28	
MW17-062016	03	06/20/16					06/24/2016	4.2	28		06/25/16	1.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4827794
Report generated 06/28/2016 14:17

METHOD BLANK SUMMARY

Login Number: L16061144
Blank File ID: 1LM.LM35466
Prep Date: 06/24/16 19:00
Analyzed Date: 06/24/16 21:06
Analyst: JWR

Work Group: WG574101
Blank Sample ID: WG574101-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG574101-05	1LM.LM35464	06/24/16 20:28	01
MCT	WG574101-01	1LM.LM35465	06/24/16 20:47	01
LCS	WG574101-03	1LM.LM35467	06/24/16 21:25	01
QCMRL	WG574101-06	1LM.LM35476	06/25/16 00:15	01
QCMRL	WG574101-07	1LM.LM35489	06/25/16 04:22	01
LCS2	WG574101-04	1LM.LM35491	06/25/16 04:59	01
18WW06-062016	L16061144-01	1LM.LM35492	06/25/16 05:18	01
18WW06FD-062016	L16061144-02	1LM.LM35493	06/25/16 05:37	01
QCMRL	WG574101-08	1LM.LM35496	06/25/16 06:34	01
QCMRL	WG574101-09	1LM.LM35499	06/25/16 18:25	01
MW17-062016	L16061144-03	1LM.LM35507	06/25/16 20:56	01
QCMRL	WG574101-10	1LM.LM35509	06/25/16 21:34	01

Report Name: BLANK_SUMMARY
PDF File ID: 4827795
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061144 Prep Date: 06/24/16 19:00 Sample ID: WG574101-02
Instrument ID: LCMS1 Run Date: 06/24/16 21:06 Prep Method: 6850
File ID: 1LM.LM35466 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4827796
28-JUN-2016 14:18

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061144 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG574101 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG574101-03 LCS File ID: 1LM.LM35467 Run Date: 06/24/2016 21:25
Sample ID: WG574101-04 LCS2 File ID: 1LM.LM35491 Run Date: 06/25/2016 04:59

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.208	104	0.200	0.213	107	2.38	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4827797
Report generated: 06/28/2016 14:18

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061144
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4828787
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061144

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4828787
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061144

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4828787
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061144

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4828787
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061144 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4828788
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061144
Run Date: 06/24/2016
Sample ID: WG574102-01
Instrument ID: LCMS1
Run Time: 19:50
Method: 6850
File ID: 1LM.LM35462
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827800
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061144
Run Date: 06/25/2016
Sample ID: WG574102-04
Instrument ID: LCMS1
Run Time: 00:34
Method: 6850
File ID: 1LM.LM35477
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827800
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061144
Run Date: 06/25/2016
Sample ID: WG574102-06
Instrument ID: LCMS1
Run Time: 04:40
Method: 6850
File ID: 1LM.LM35490
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827800
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061144
Run Date: 06/25/2016
Sample ID: WG574102-08
Instrument ID: LCMS1
Run Time: 06:53
Method: 6850
File ID: 1LM.LM35497
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827800
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061144
Run Date: 06/25/2016
Sample ID: WG574102-10
Instrument ID: LCMS1
Run Time: 18:44
Method: 6850
File ID: 1LM.LM35500
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827800
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061144
Run Date: 06/25/2016
Sample ID: WG574102-12
Instrument ID: LCMS1
Run Time: 21:53
Method: 6850
File ID: 1LM.LM35510
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827800
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061144
Run Date: 06/24/2016
Sample ID: WG574102-02
Instrument ID: LCMS1
Run Time: 20:09
Method: 6850
File ID: 1LM.LM35463
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827799
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061144
Run Date: 06/24/2016
Sample ID: WG574102-03
Instrument ID: LCMS1
Run Time: 23:56
Method: 6850
File ID: 1LM.LM35475
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827799
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061144
Run Date: 06/25/2016
Sample ID: WG574102-05
Instrument ID: LCMS1
Run Time: 04:03
Method: 6850
File ID: 1LM.LM35488
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827799
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061144
Run Date: 06/25/2016
Sample ID: WG574102-07
Instrument ID: LCMS1
Run Time: 06:15
Method: 6850
File ID: 1LM.LM35495
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827799
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061144
Run Date: 06/25/2016
Sample ID: WG574102-09
Instrument ID: LCMS1
Run Time: 18:06
Method: 6850
File ID: 1LM.LM35498
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.76	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827799
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061144
Run Date: 06/25/2016
Sample ID: WG574102-11
Instrument ID: LCMS1
Run Time: 21:15
Method: 6850
File ID: 1LM.LM35508
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.73	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827799
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061144 Run Date: 06/24/2016 Sample ID: WG574101-05
Instrument ID: LCMS1 Run Time: 20:28 Prep Method: 6850
File ID: 1LM.LM35464 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827798
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061144 Run Date: 06/25/2016 Sample ID: WG574101-06
Instrument ID: LCMS1 Run Time: 00:15 Prep Method: 6850
File ID: 1LM.LM35476 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.198	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827798
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061144 Run Date: 06/25/2016 Sample ID: WG574101-07
Instrument ID: LCMS1 Run Time: 04:22 Prep Method: 6850
File ID: 1LM.LM35489 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.211	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827798
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061144 Run Date: 06/25/2016 Sample ID: WG574101-08
Instrument ID: LCMS1 Run Time: 06:34 Prep Method: 6850
File ID: 1LM.LM35496 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827798
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061144 Run Date: 06/25/2016 Sample ID: WG574101-09
Instrument ID: LCMS1 Run Time: 18:25 Prep Method: 6850
File ID: 1LM.LM35499 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827798
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061144 Run Date: 06/25/2016 Sample ID: WG574101-10
Instrument ID: LCMS1 Run Time: 21:34 Prep Method: 6850
File ID: 1LM.LM35509 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827798
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061144
Instrument ID: LCMS1
Workgroup (AAB#): WG574101

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061144-01	1.00	01	512000
L16061144-02	1.00	01	502000
L16061144-03	1.00	01	424000
WG574101-02	1.00	01	443000
WG574101-03	1.00	01	444000
WG574101-04	1.00	01	526000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4827801
Report generated 06/28/2016 14:18

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	L16061144-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35492
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 05:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1040	780	1.33	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	L16061144-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35493
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 05:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2360	1310	1.80	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	L16061144-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35507
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 20:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2280	866	2.63	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35465
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28100	10000	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35466
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35467
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	11800	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-04
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35491
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38300	14000	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-05
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35464
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	12100	2.61	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-06
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35476
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	13100	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-07
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35489
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38900	13400	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-08
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35496
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38000	14100	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-09
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35499
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32900	11500	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-10
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35509
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37900	14000	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:50	**File ID:**	1LM.LM35462
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 19:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 20:09	**File ID:**	1LM.LM35463
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	152000	55500	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 23:56	**File ID:**	1LM.LM35475
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 23:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	170000	57500	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-04
Instrument:	LCMS1	**Prep Date:**	06/25/2016 00:34	**File ID:**	1LM.LM35477
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	824	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-05
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:03	**File ID:**	1LM.LM35488
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	60200	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-06
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:40	**File ID:**	1LM.LM35490
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-07
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:15	**File ID:**	1LM.LM35495
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	189000	63400	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-08
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:53	**File ID:**	1LM.LM35497
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	518	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-09
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:06	**File ID:**	1LM.LM35498
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	161000	56700	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-10
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:44	**File ID:**	1LM.LM35500
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-11
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:15	**File ID:**	1LM.LM35508
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	59300	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-12
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:53	**File ID:**	1LM.LM35510
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:49 PM

Data File	LM35492.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 5:18:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061144-01	**Injection Vial**	25.00
Data File	LM35492.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 5:18:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061144-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.56	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.040e+03	9.55	N/A	0.0022
Perchlorate conf	7.800e+02	9.57	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.56(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

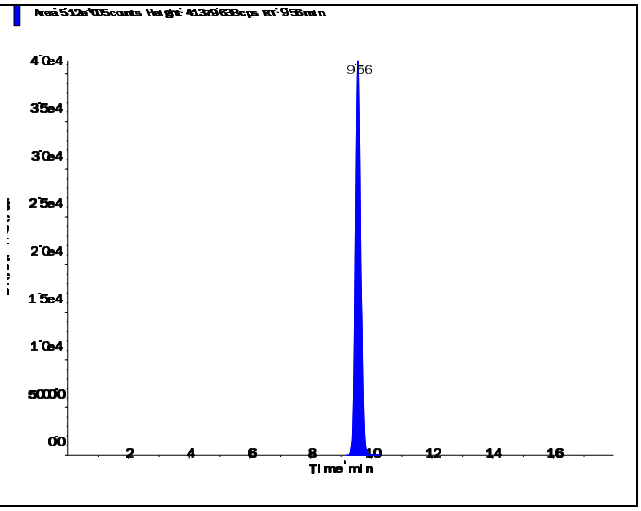

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.55 (9.84) min
Calculated conc:	0.0022 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

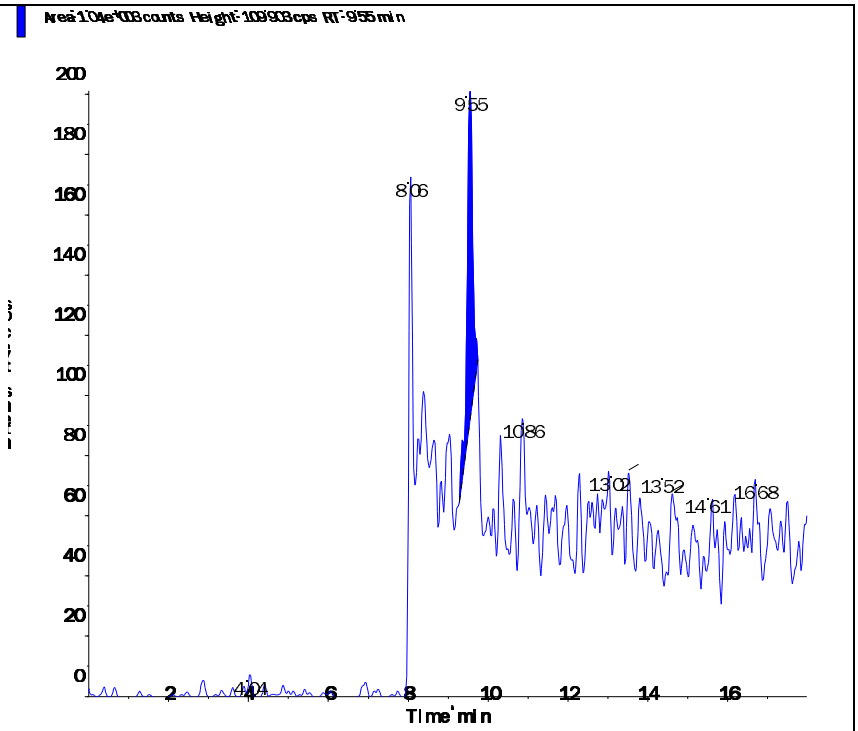

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

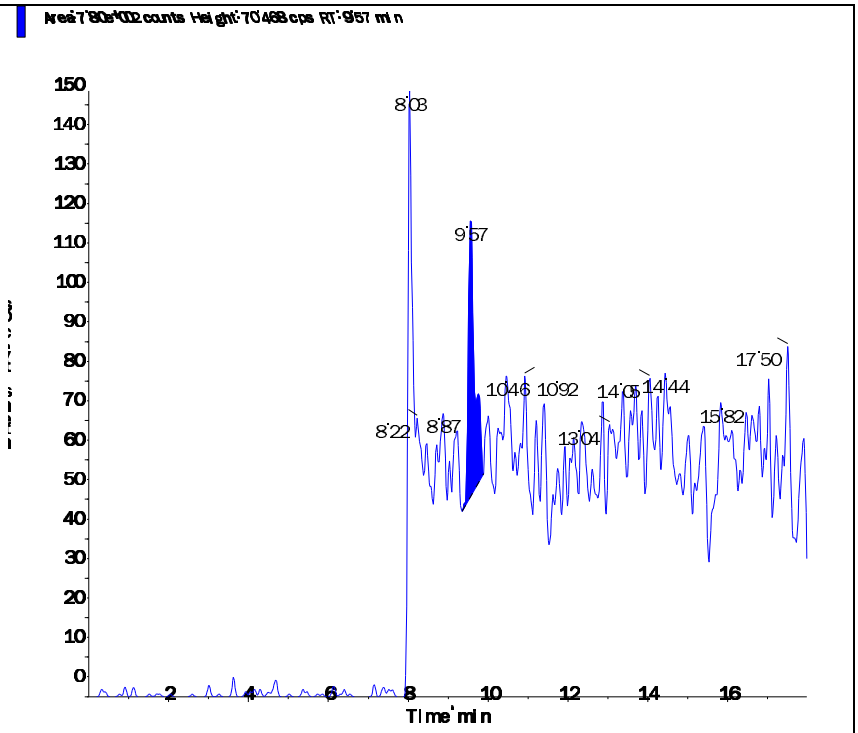

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:49 PM

Data File	LM35493.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 5:37:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061144-02	**Injection Vial**	26.00
Data File	LM35493.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 5:37:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061144-02	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.55	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.360e+03	9.57	N/A	0.0102
Perchlorate conf	1.310e+03	9.56	N/A	0.003

O18LP (Internal Standard)

RT (Exp. RT): 9.55(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

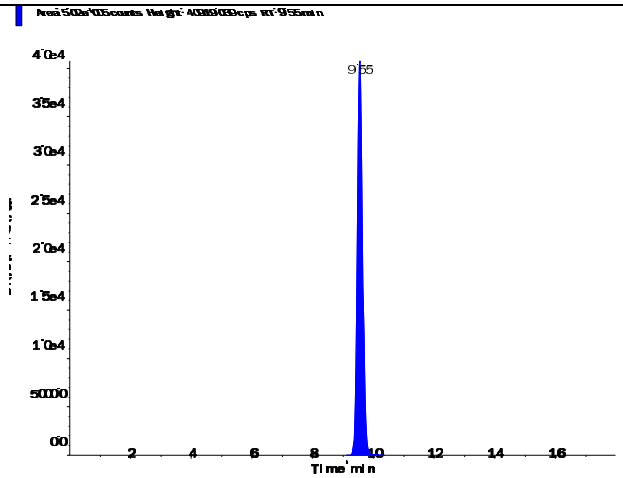

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	0.0102 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

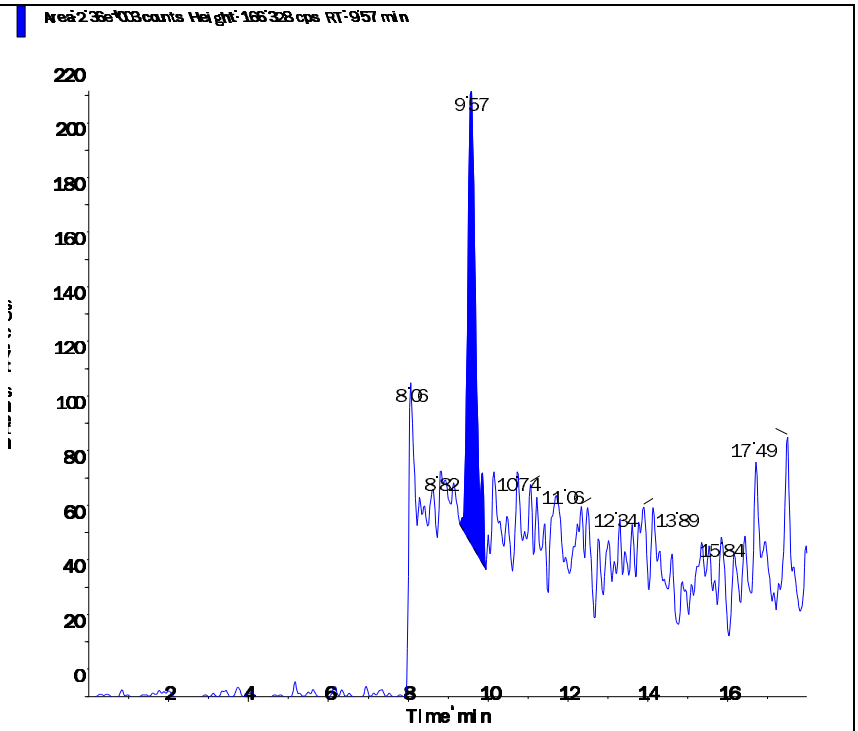

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.56 (9.84) min
Calculated conc:	0.003 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

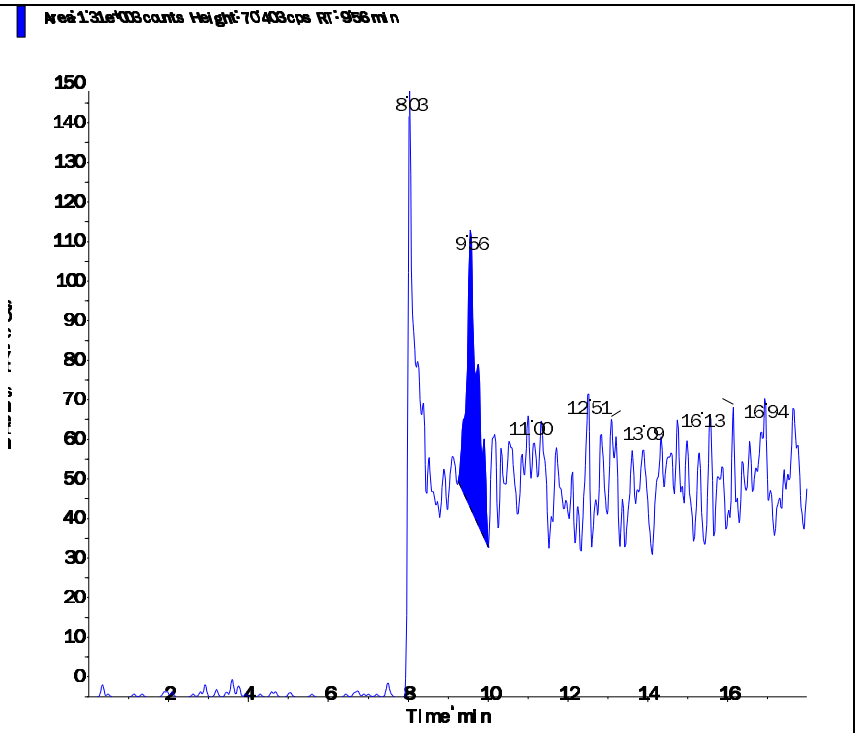

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:55 PM

Data File	LM35507.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 8:56:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061144-03 (RR Neat)	**Injection Vial**	34.00
Data File	LM35507.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 8:56:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061144-03	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.240e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.280e+03	9.54	N/A	0.0122
Perchlorate conf	8.660e+02	9.54	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

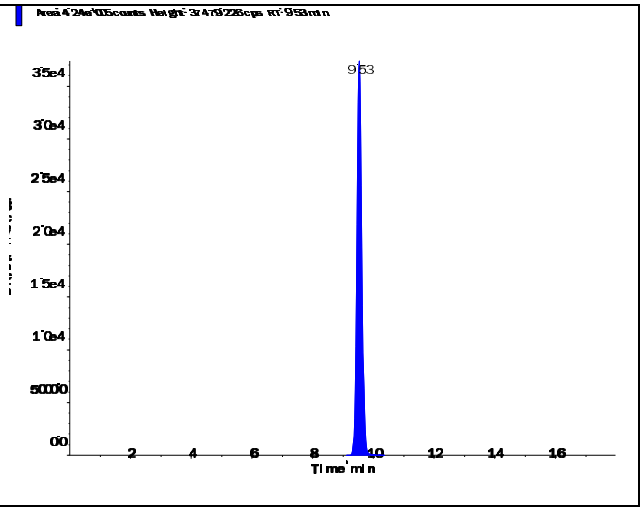

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:55 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	0.0122 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

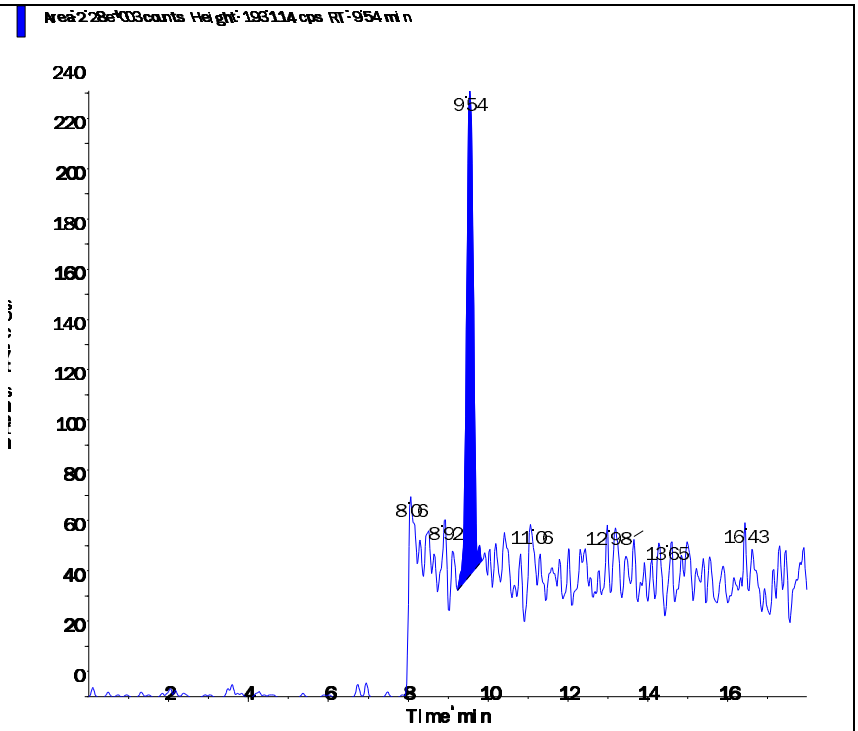

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

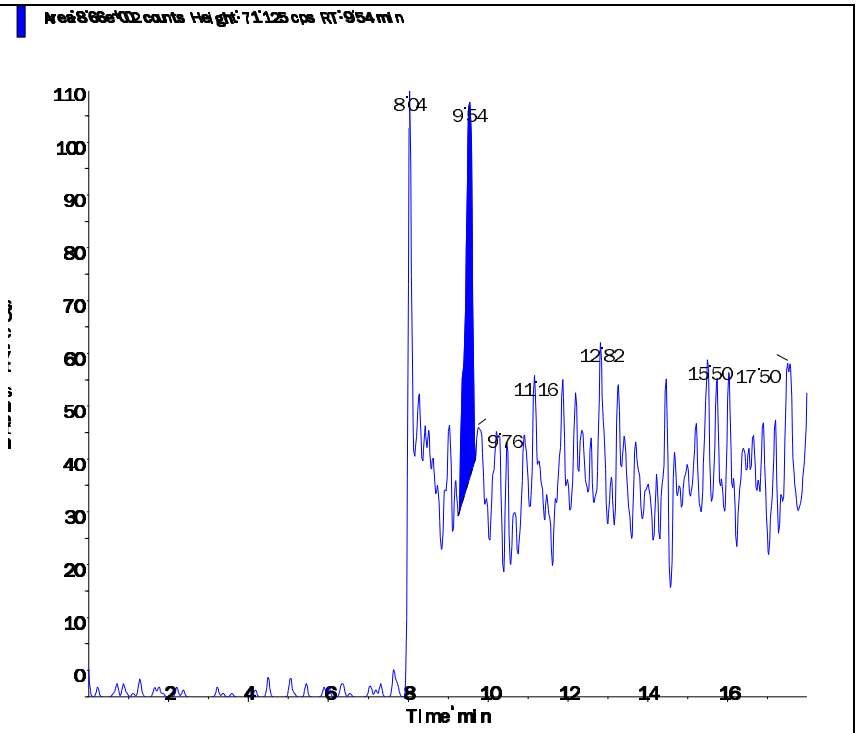

s.dataFile Page 2 of 2

2.2.2.4 Standards Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:36 PM

Data File	LM34686.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

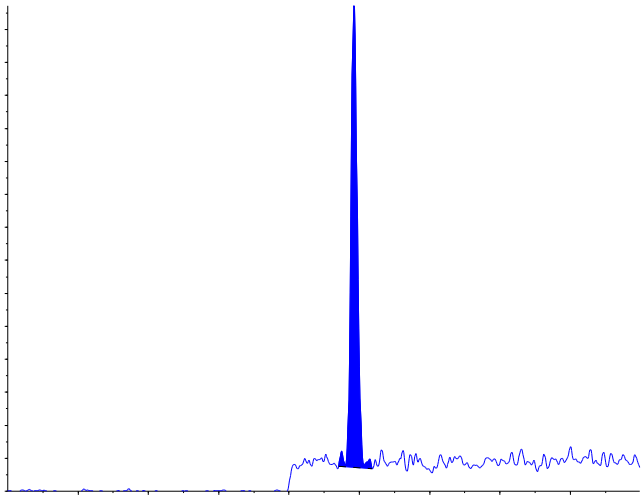

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:36 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	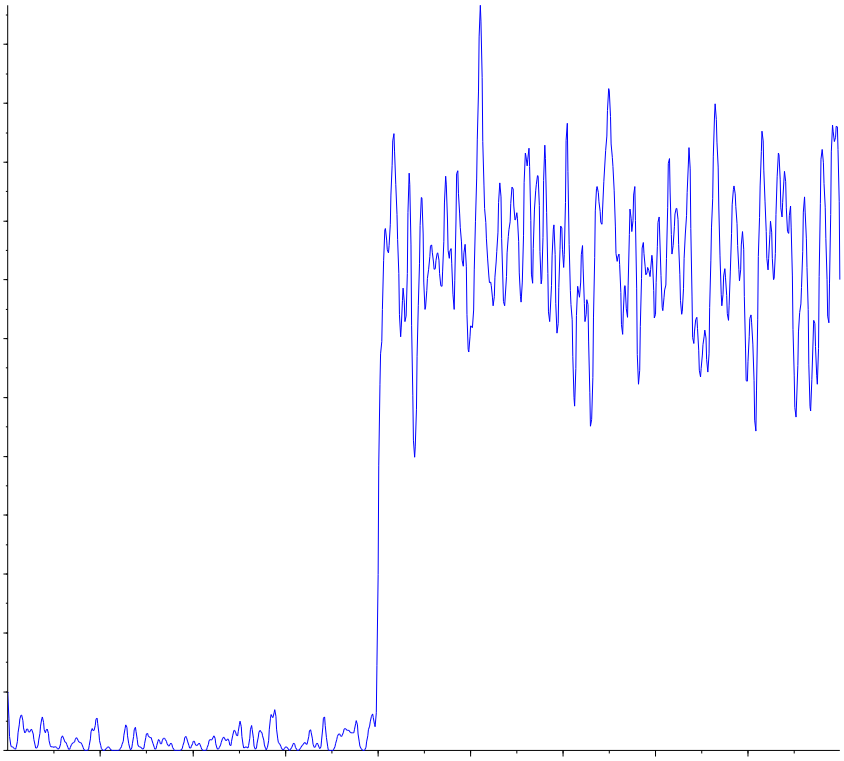
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	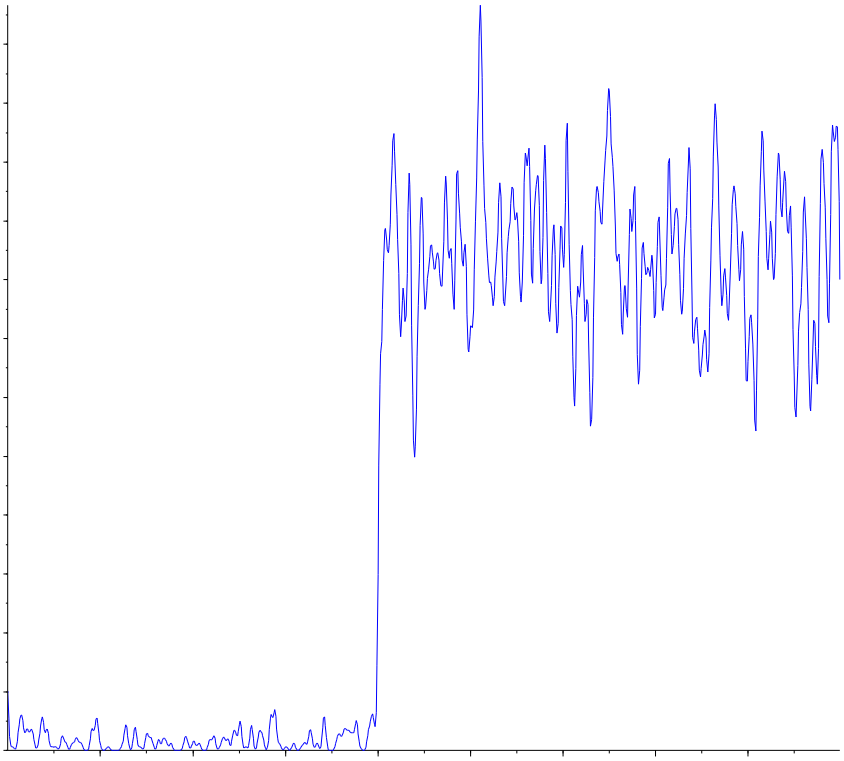

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

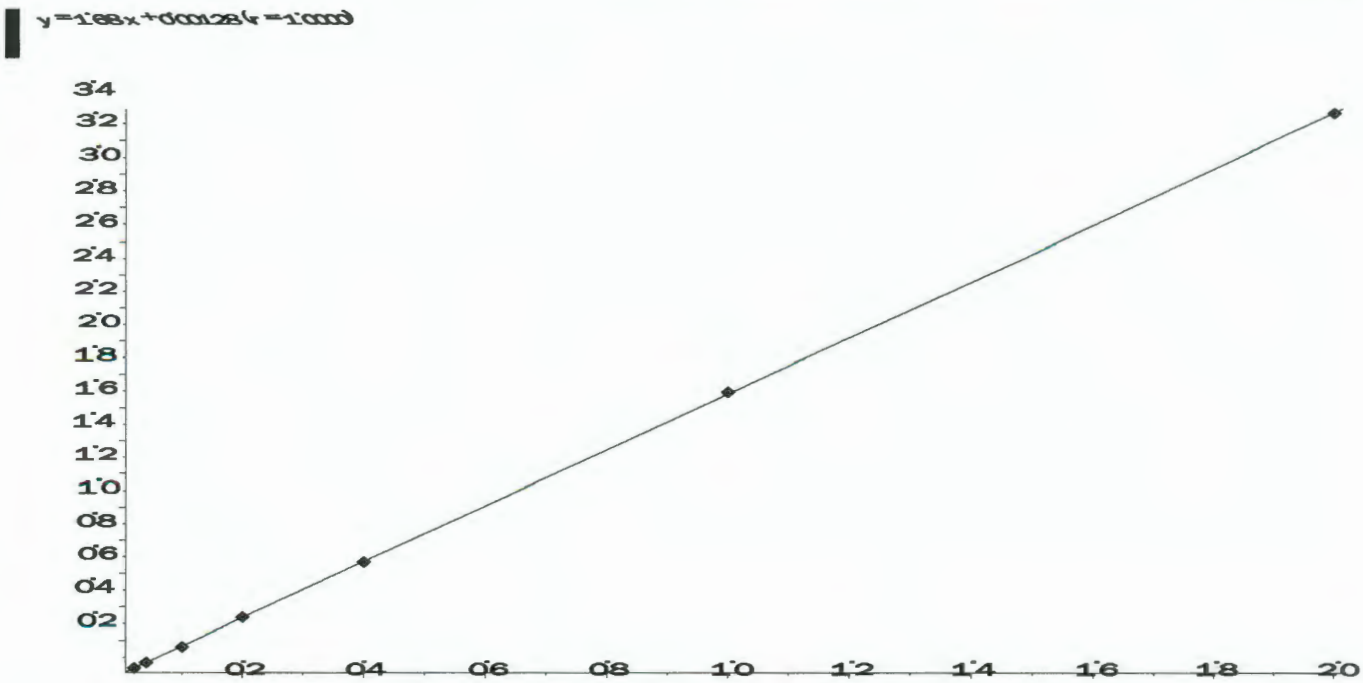

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

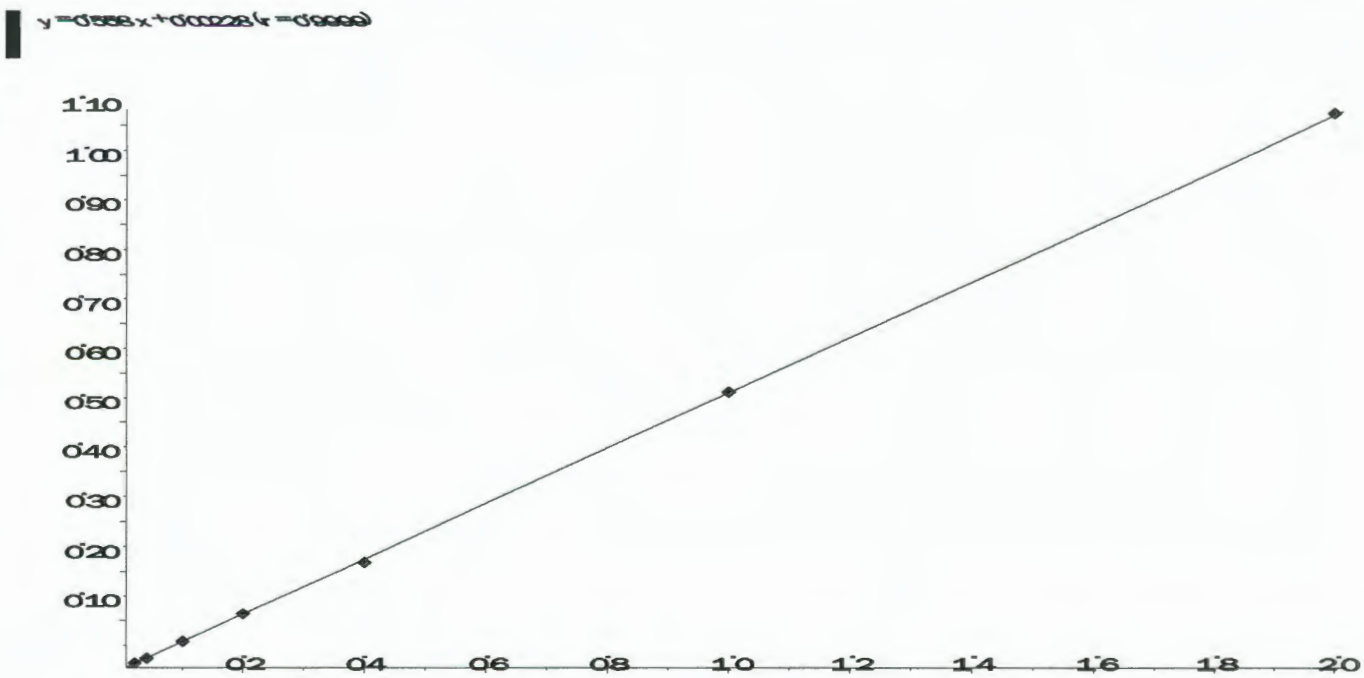

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:36 PM

Data File	LM34687.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

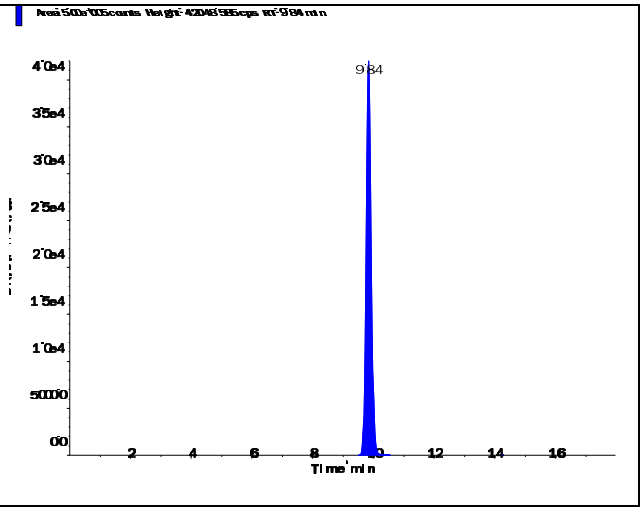

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:36 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.103 ng/ml Area Ratio: 0.036 Sample Type: (Standard)	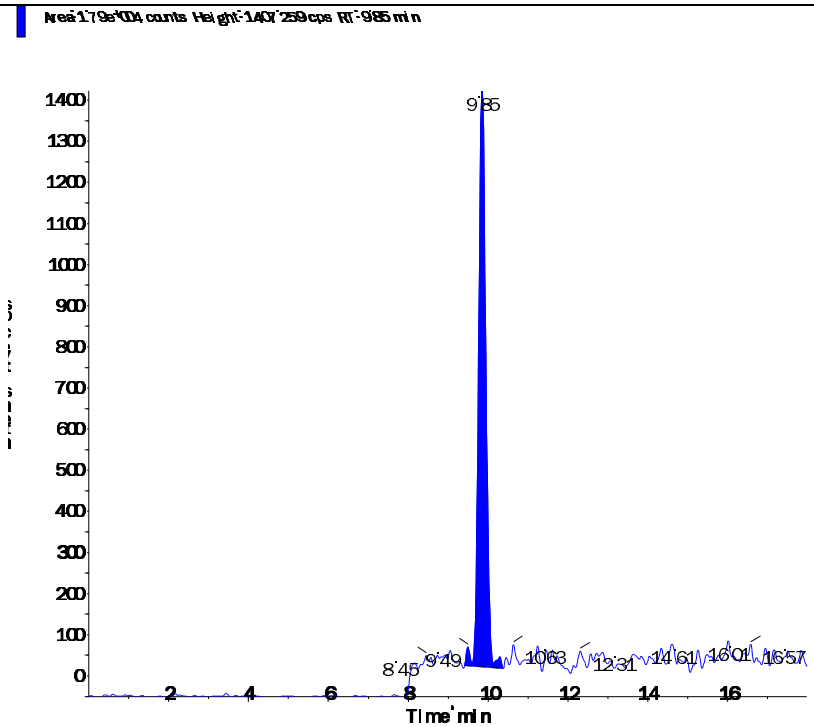
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 0.104 ng/ml Area Ratio: 0.014 Sample Type: (Standard)	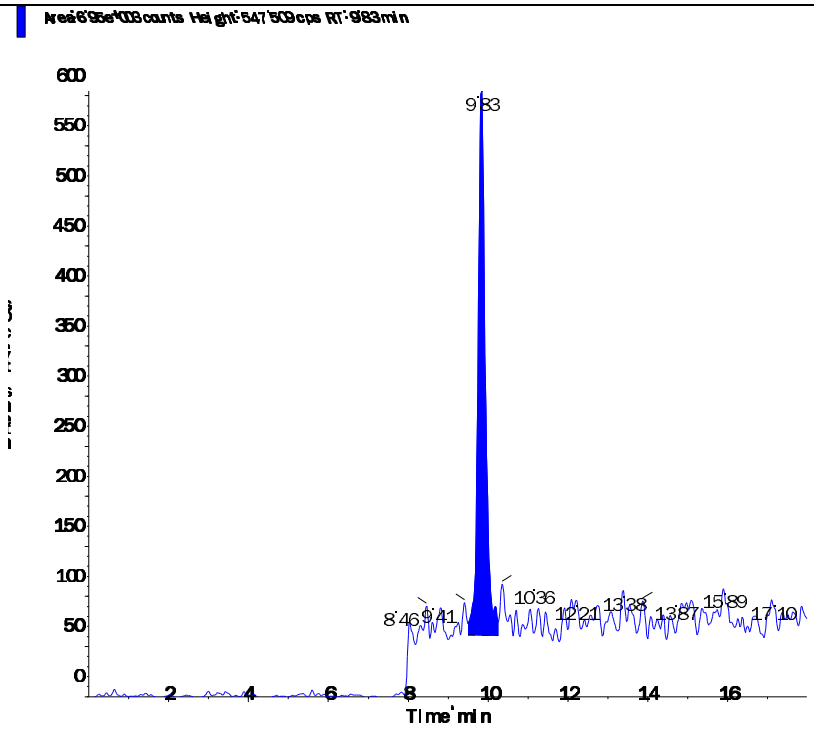

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:37 PM

Data File	LM34688.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

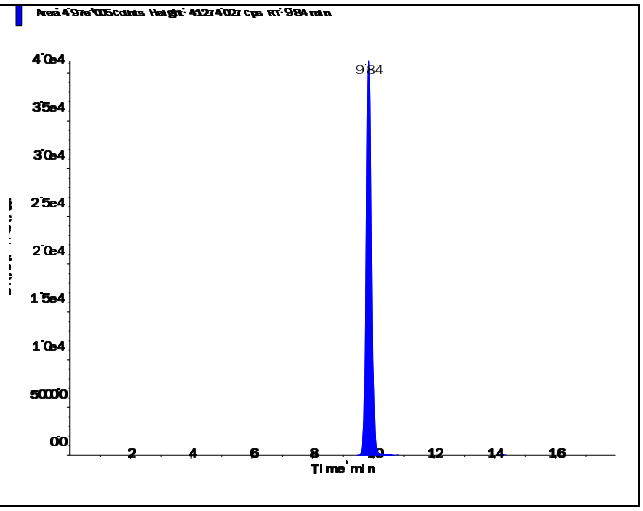

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

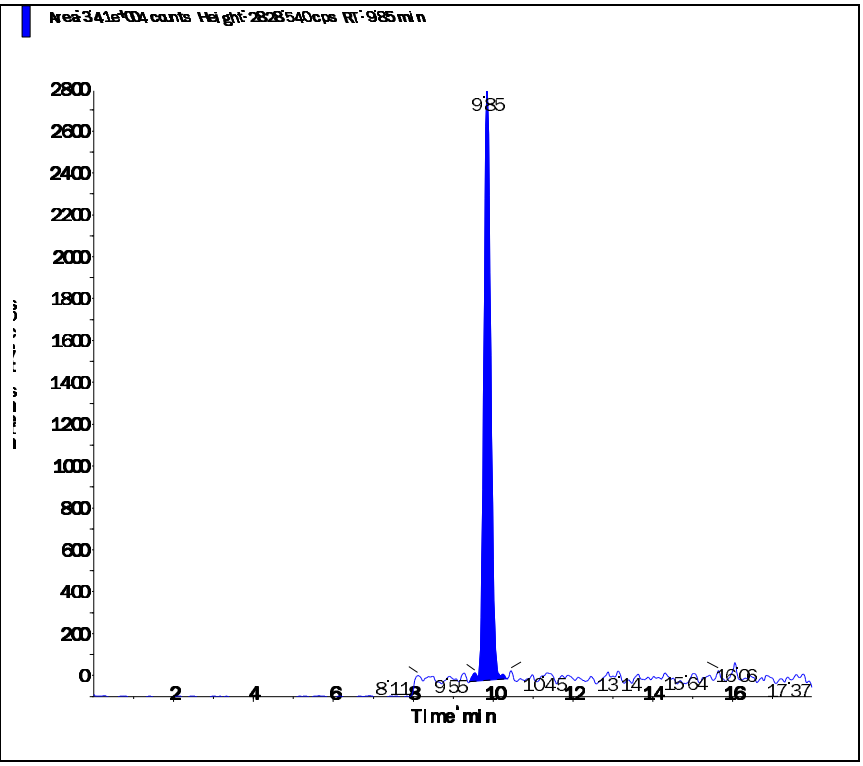

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

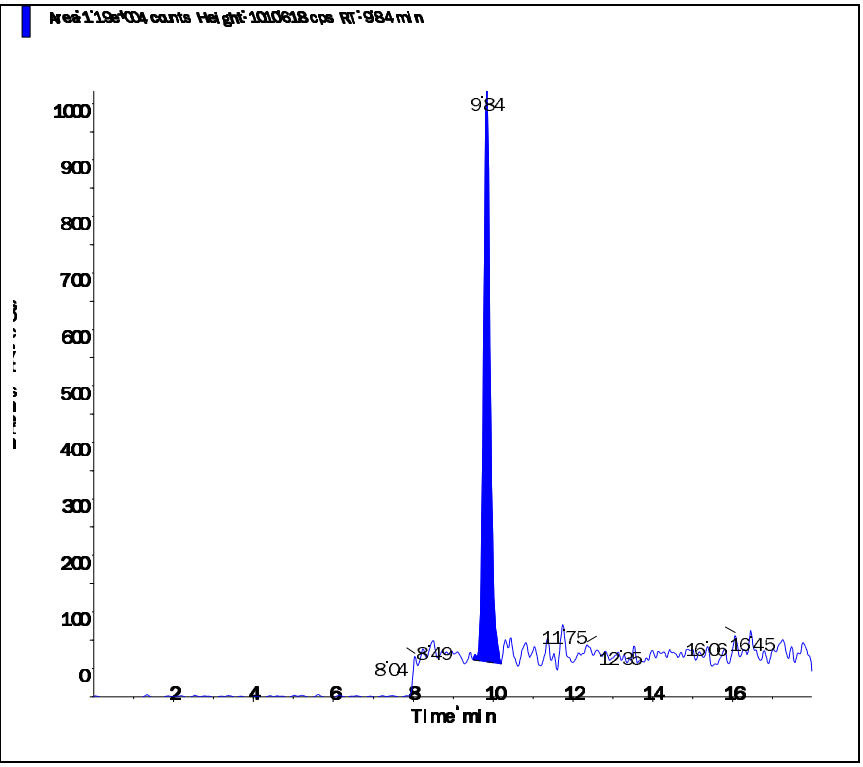

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:37 PM

Data File	LM34689.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

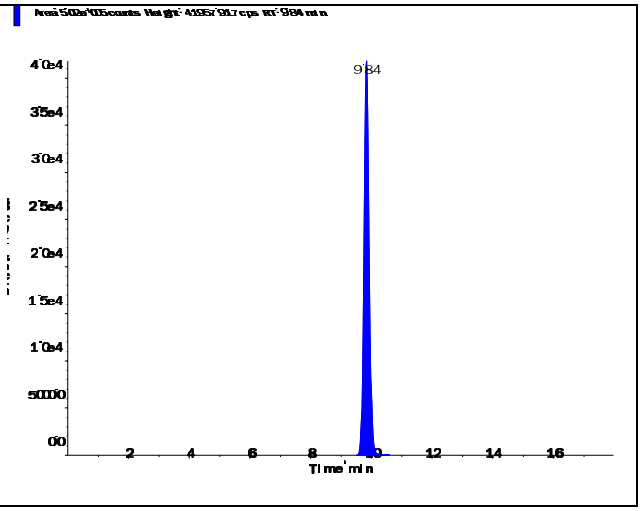

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.483 ng/ml Area Ratio: 0.164 Sample Type: (Standard)	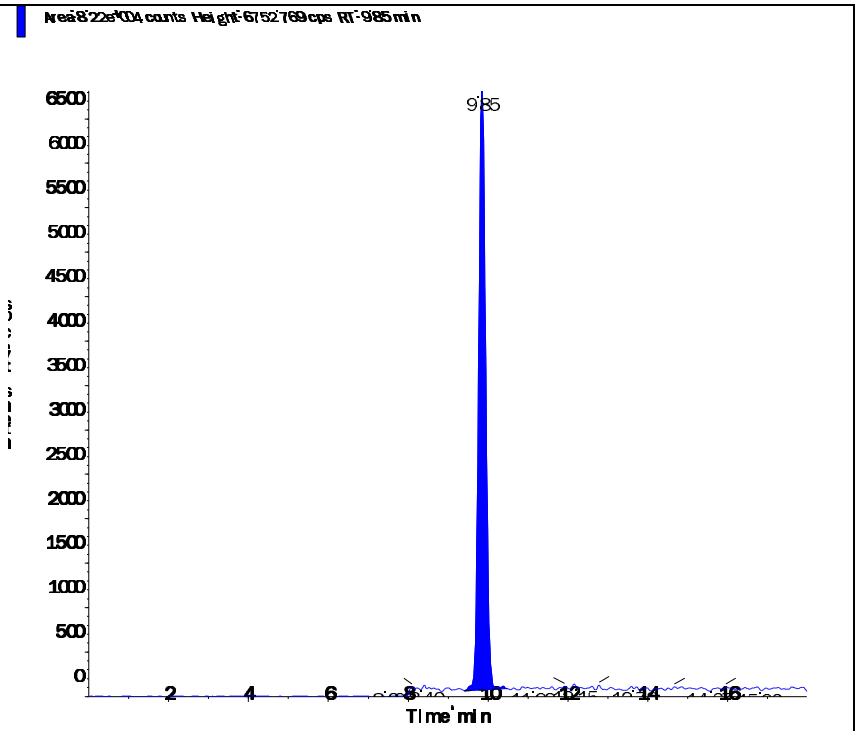
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.503 ng/ml Area Ratio: 0.058 Sample Type: (Standard)	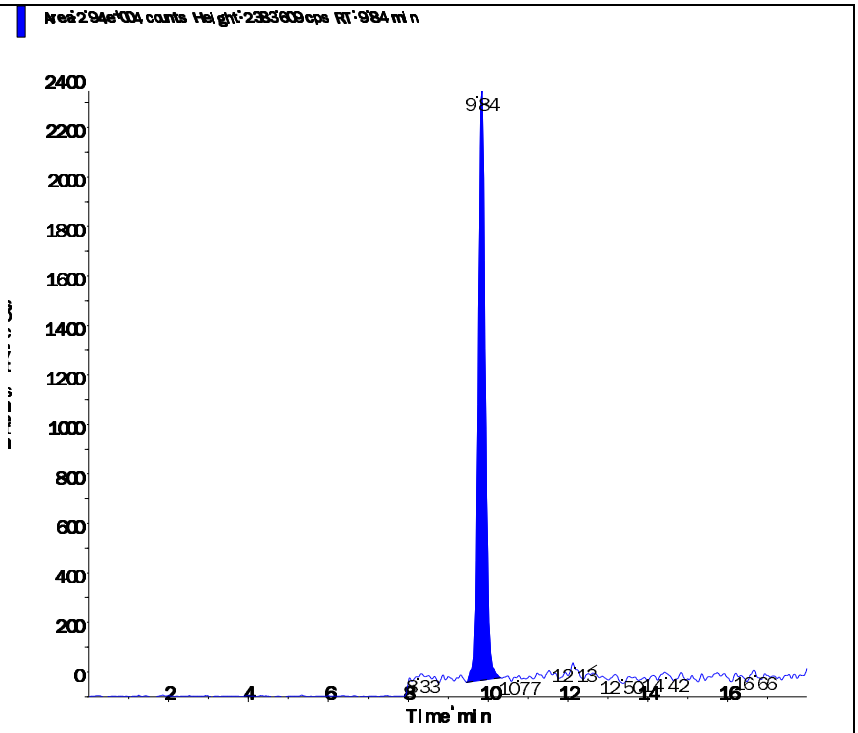

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:37 PM

Data File	LM34690.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

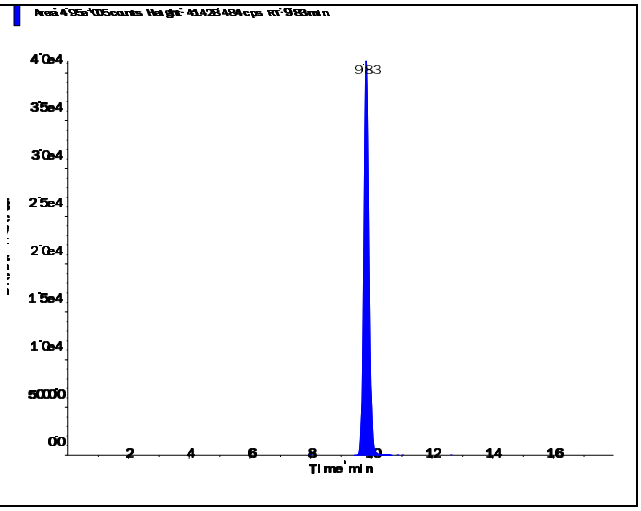

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

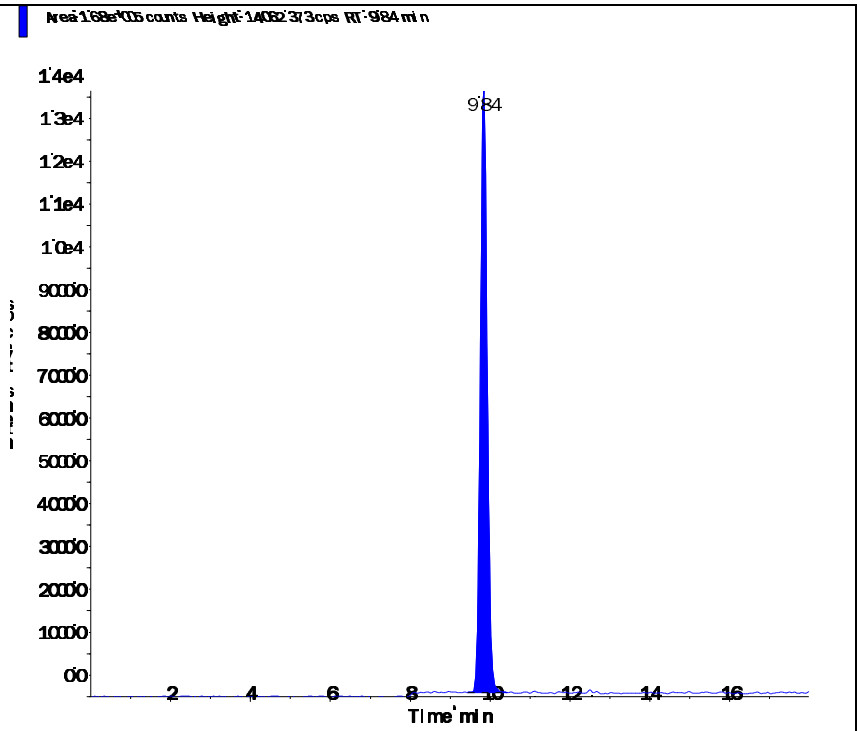

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

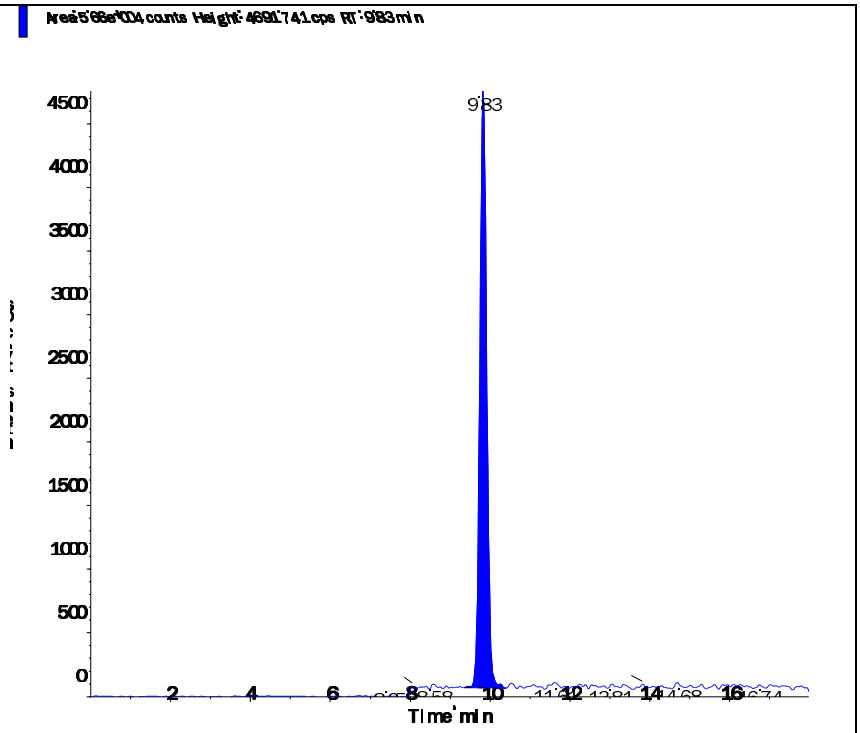

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:37 PM

Data File	LM34691.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

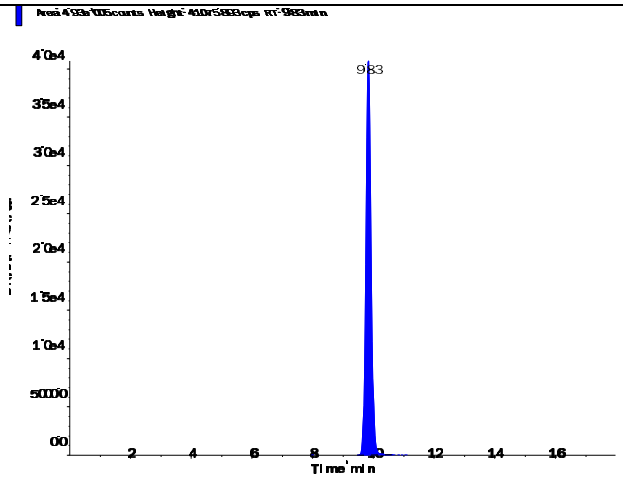

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:37 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

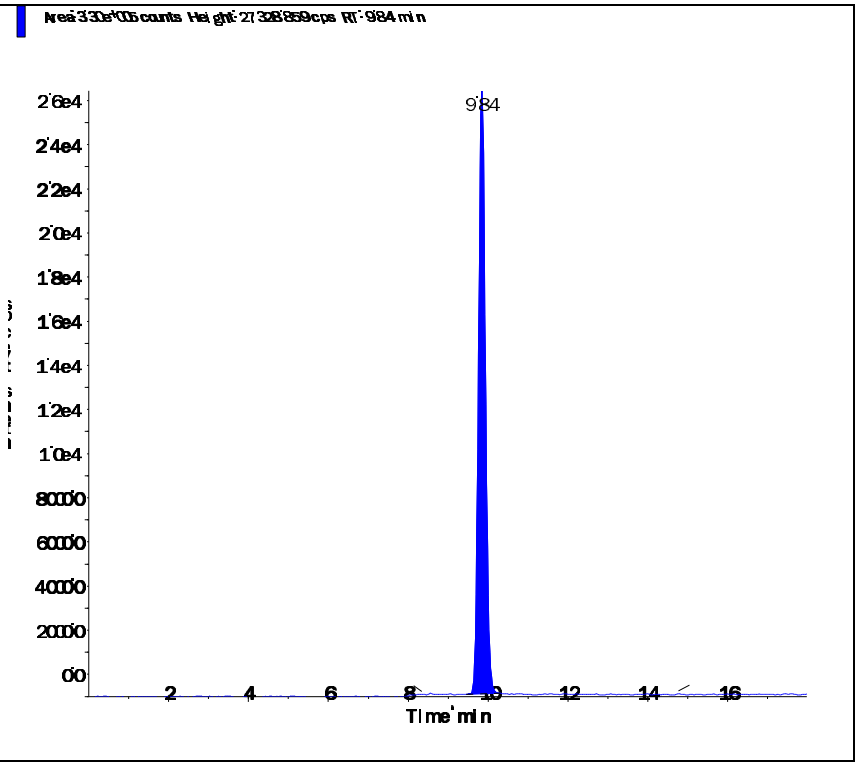

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

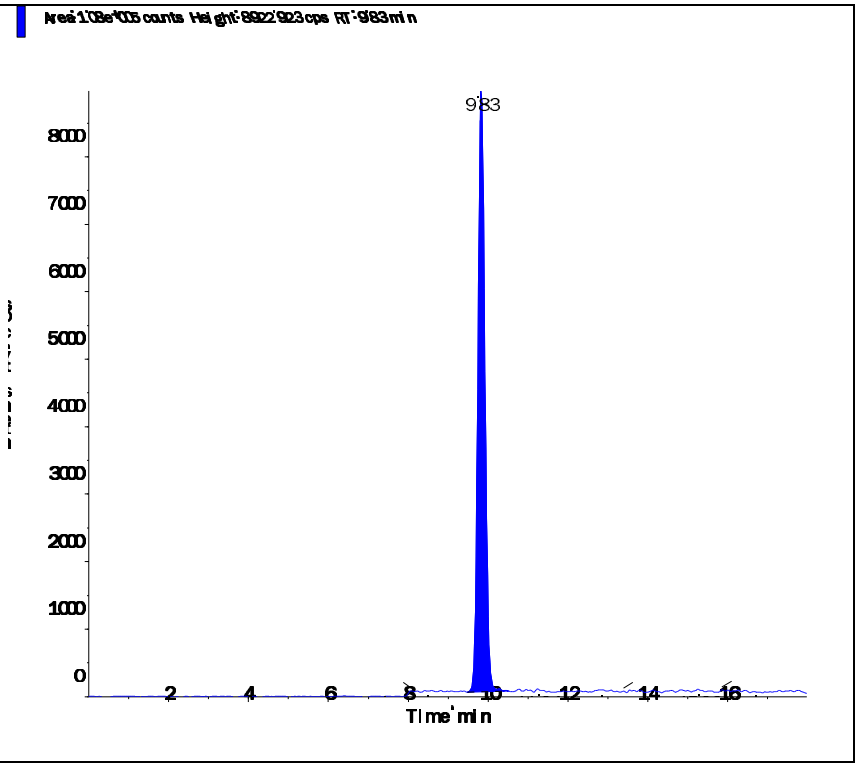

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:38 PM

Data File	LM34692.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

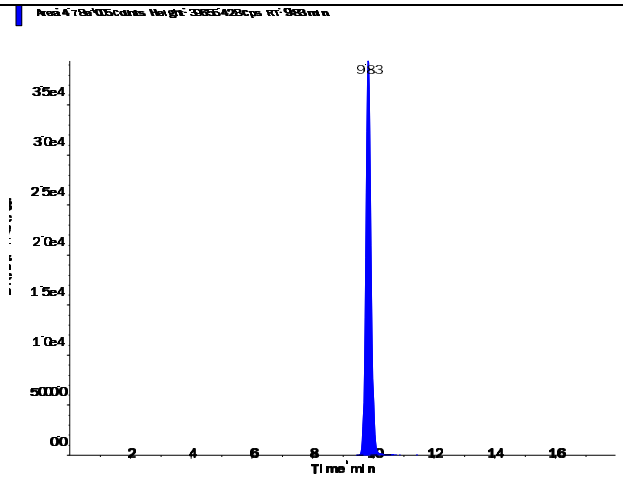

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:38 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

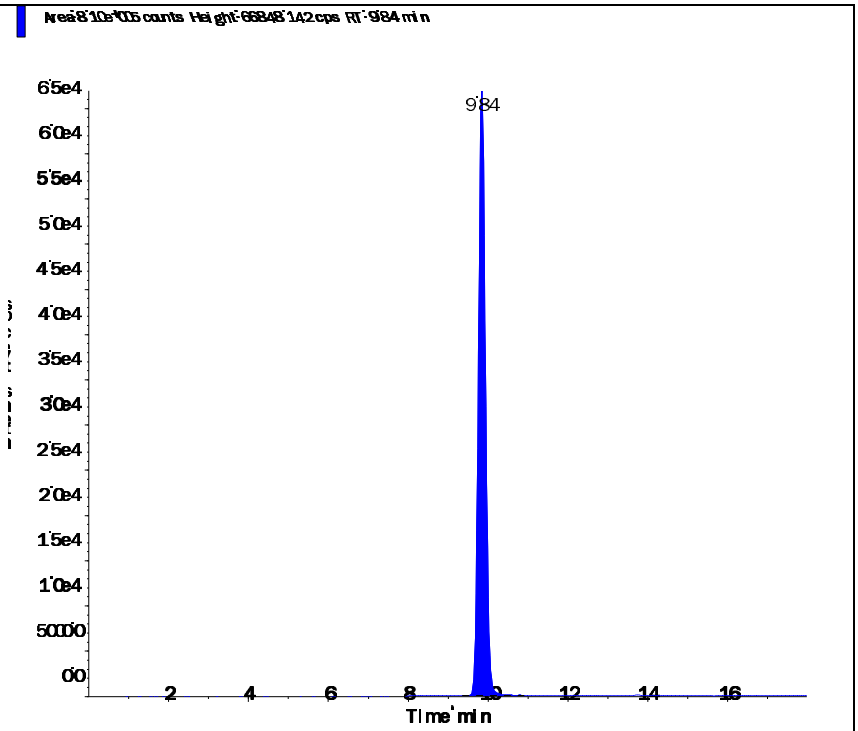

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

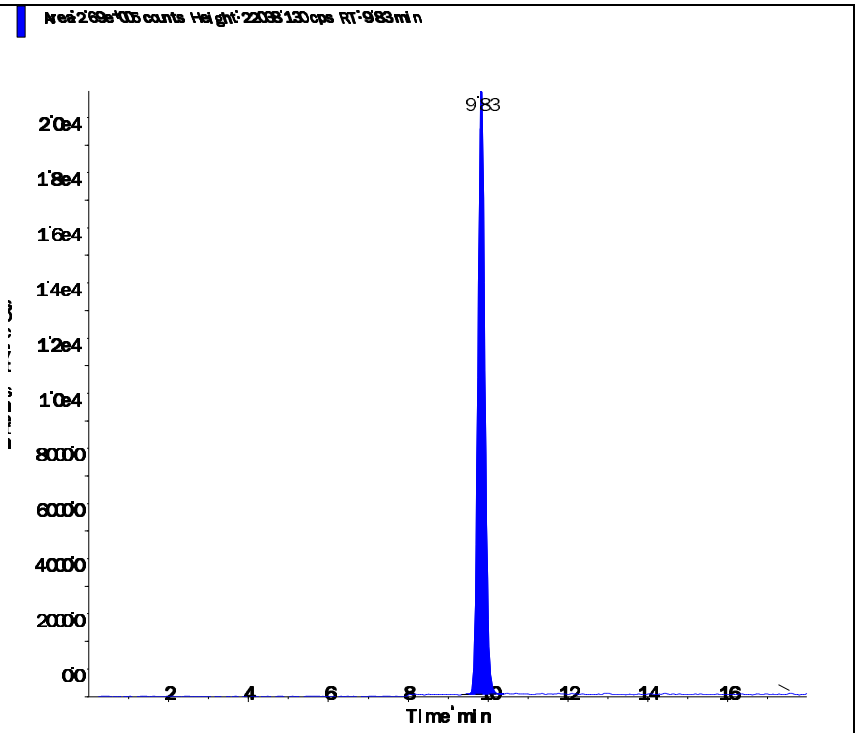

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:38 PM

Data File	LM34693.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

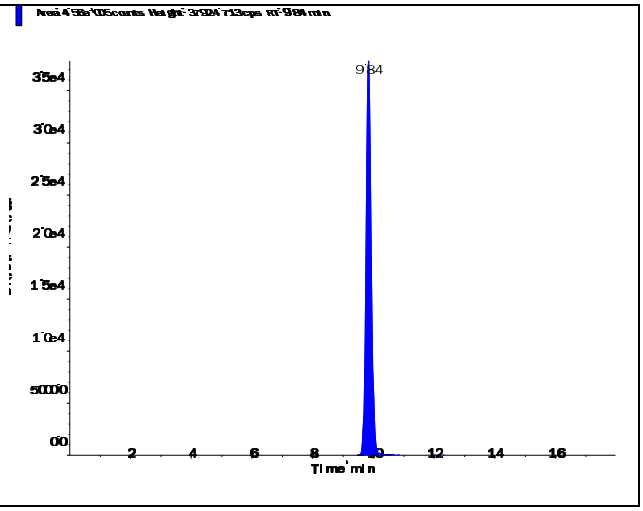

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

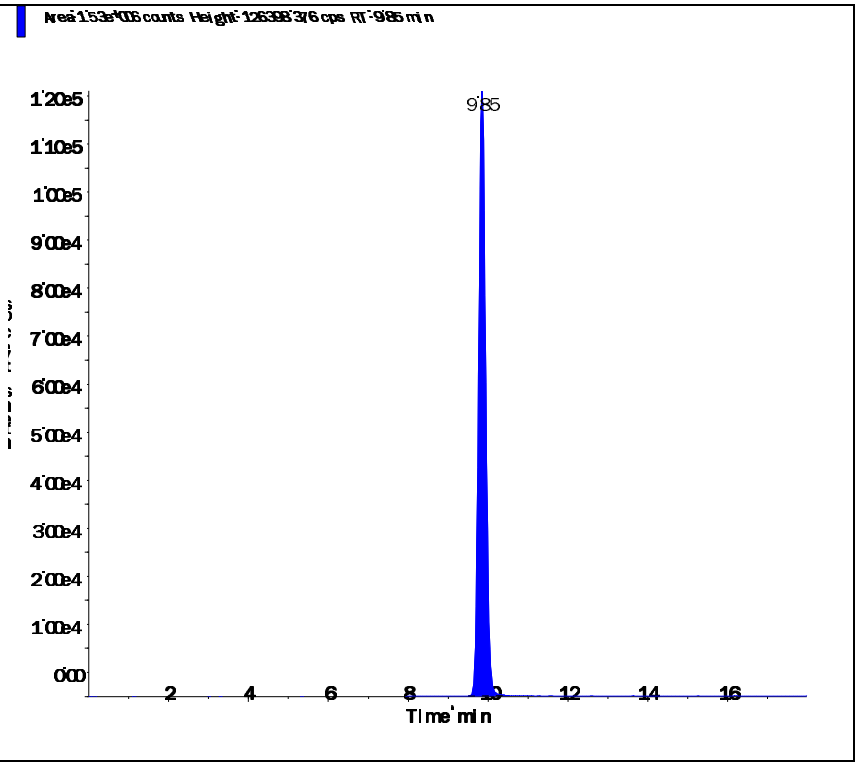

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

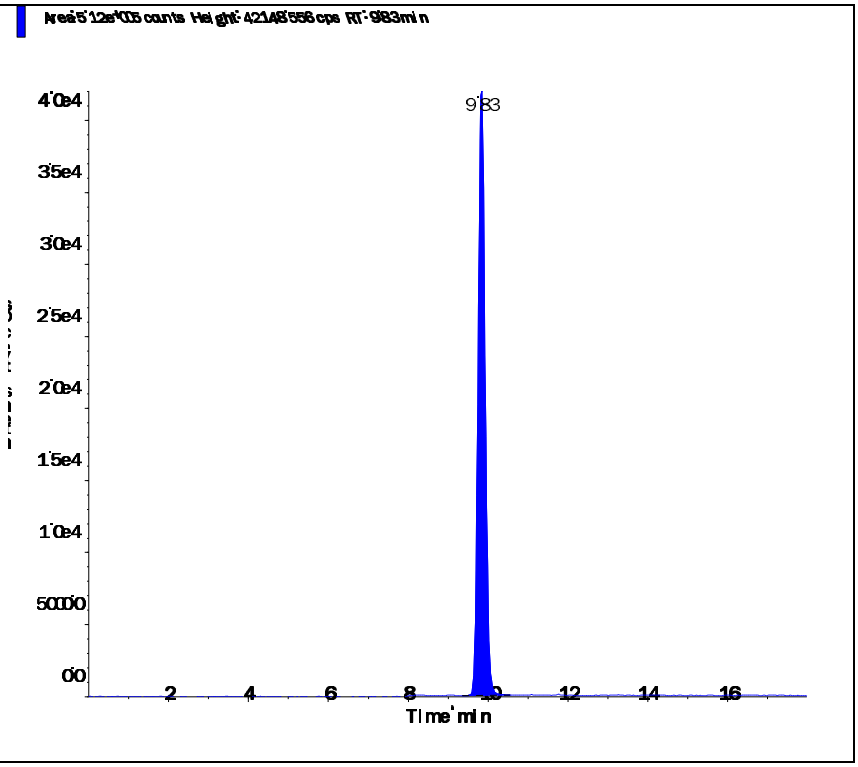

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

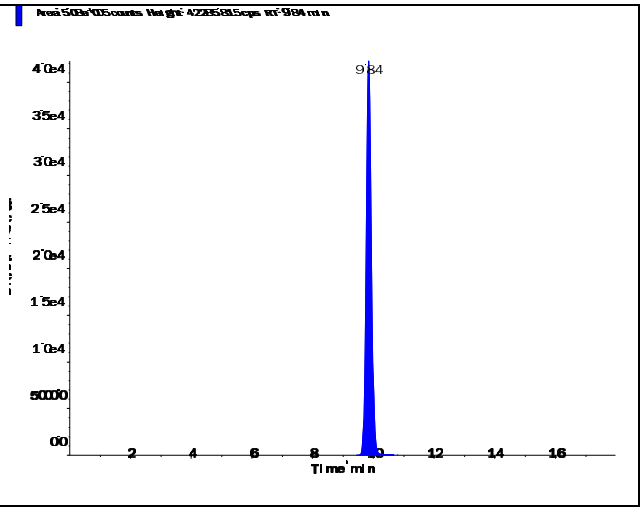

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

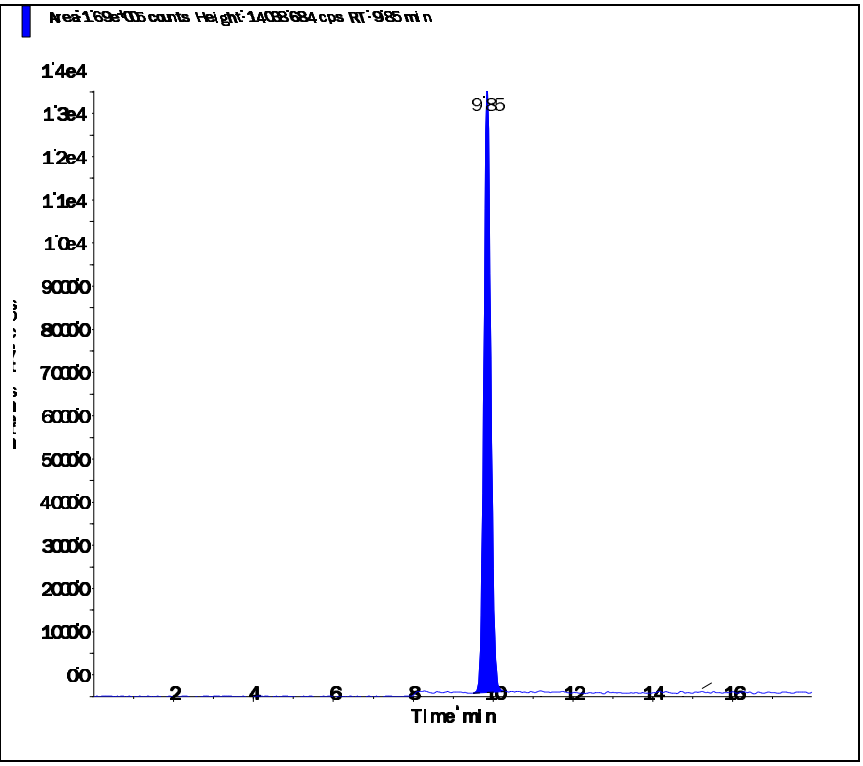

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

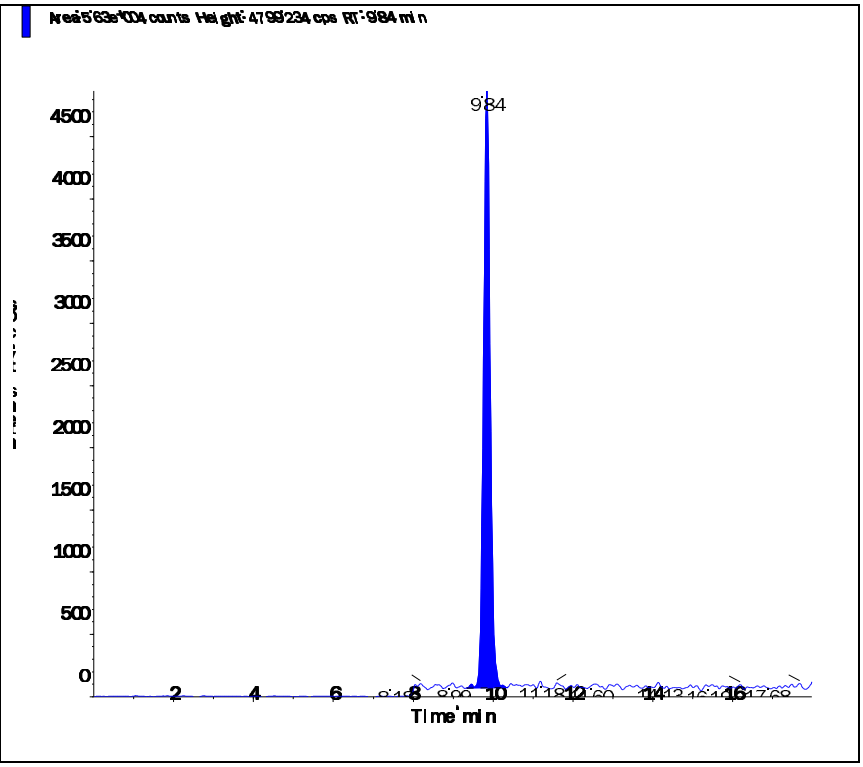

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:39 PM

Data File	LM35463.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35463.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.520e+05	9.35	1.00	1.01
Perchlorate conf	5.550e+04	9.33	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

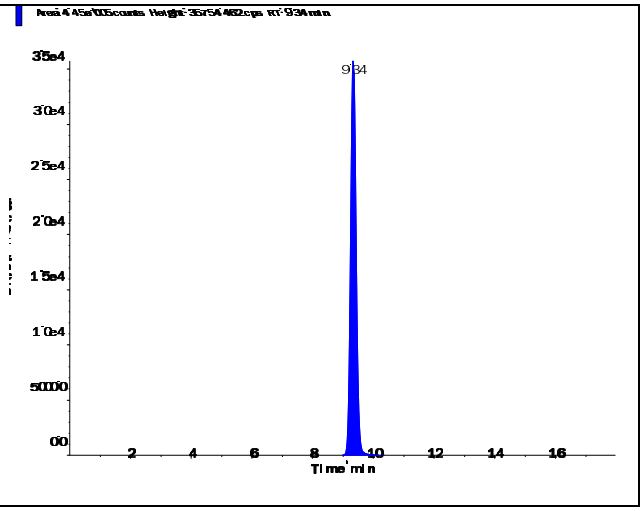

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:39 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

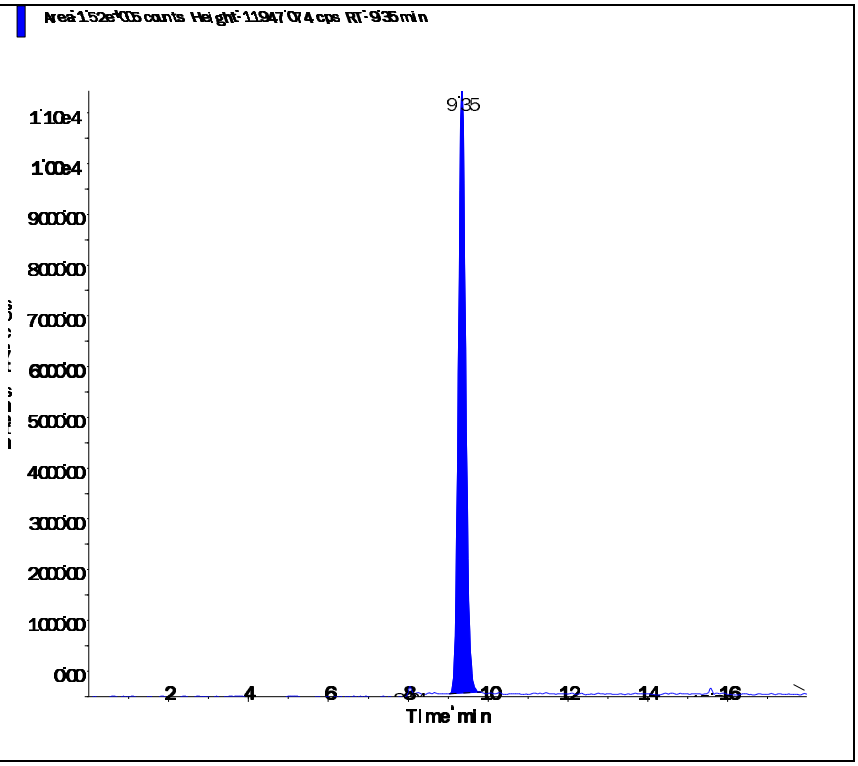

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

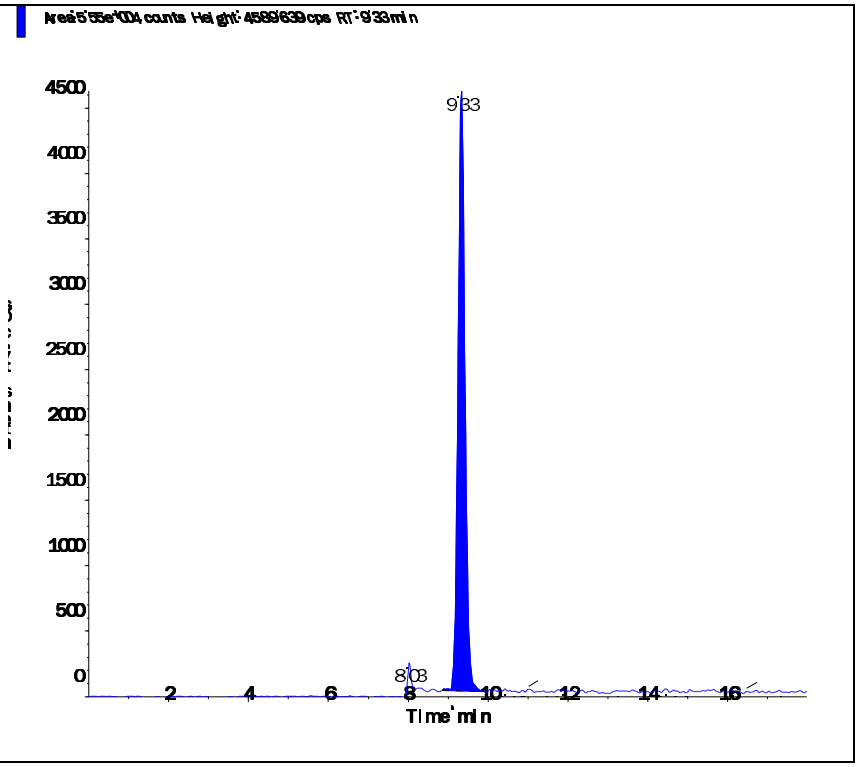

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:43 PM

Data File	LM35475.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35475.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.32	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.700e+05	9.33	1.00	1.01
Perchlorate conf	5.750e+04	9.32	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.32(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

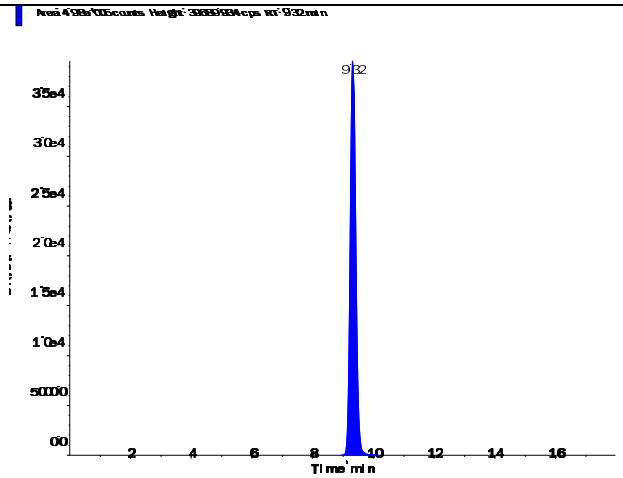

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:43 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

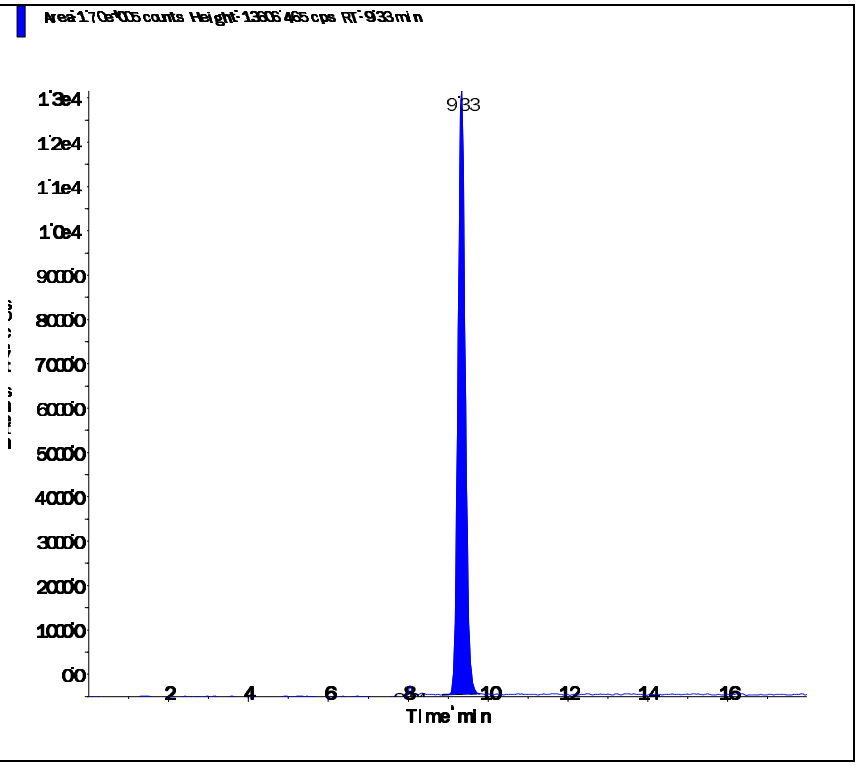

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

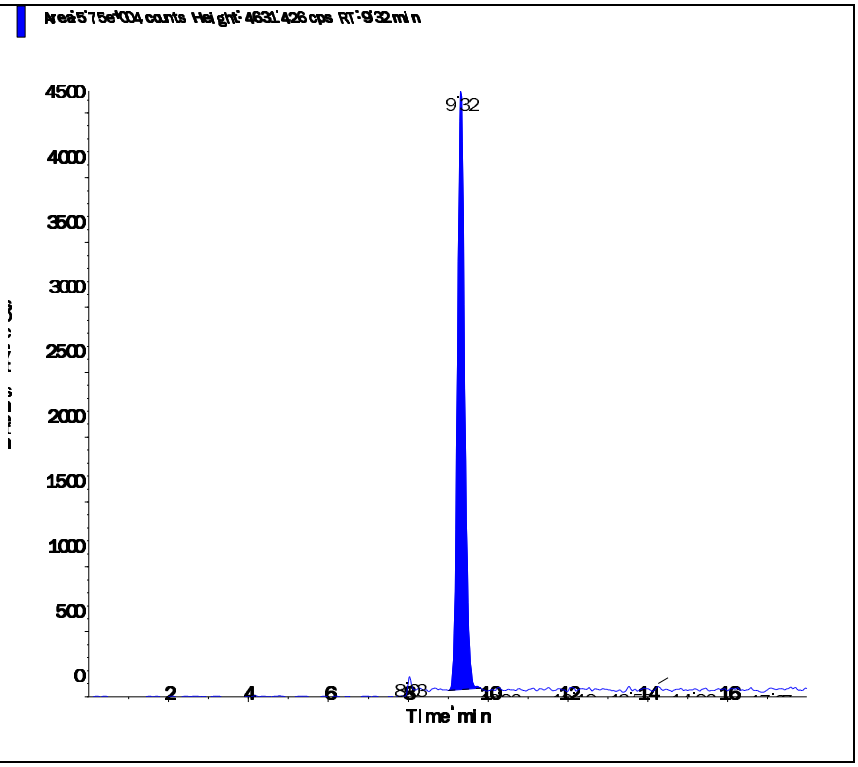

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:47 PM

Data File	LM35488.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35488.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.34	1.00	1.04
Perchlorate conf	6.020e+04	9.32	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

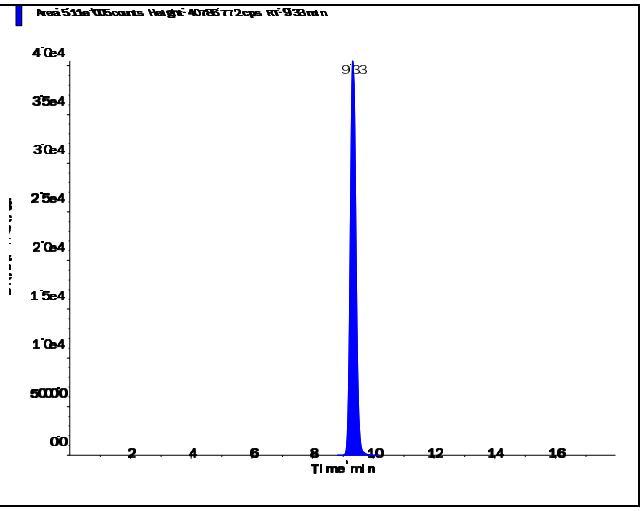

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.35
Sample Type:	(Quality Control)

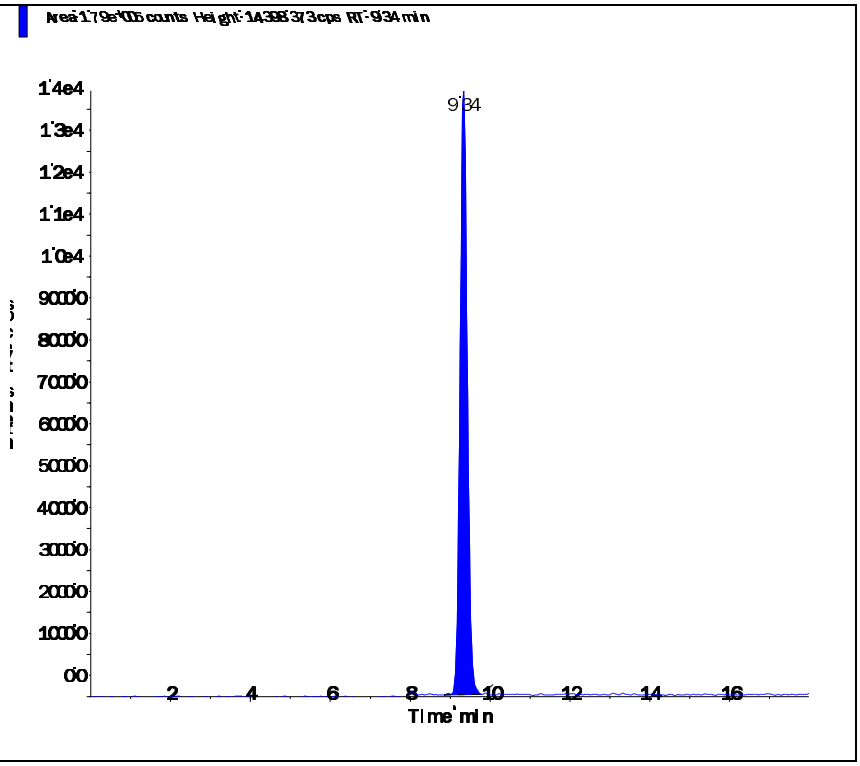

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

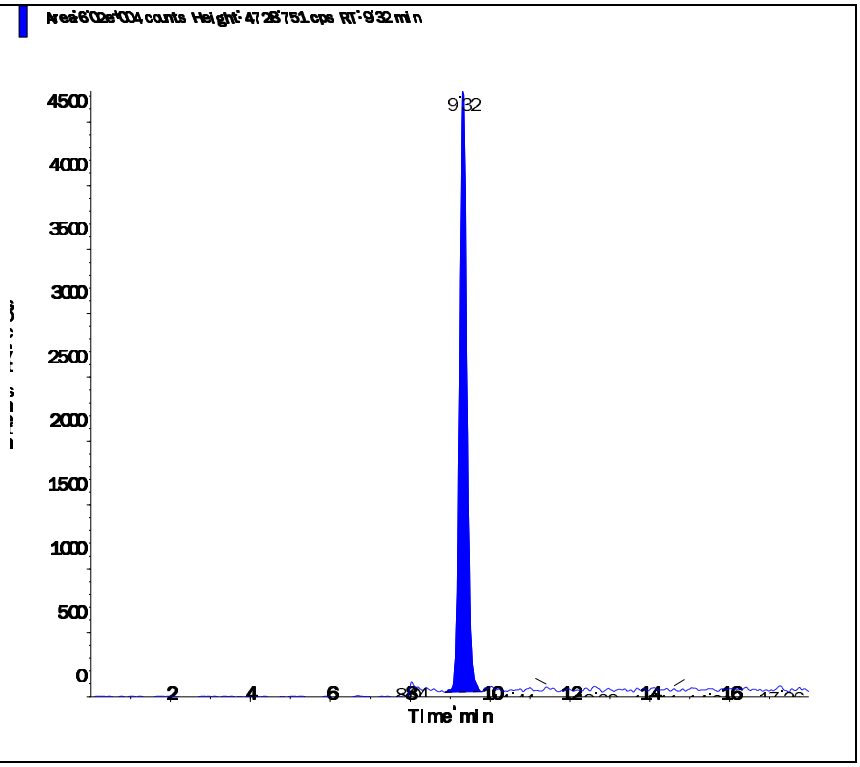

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:50 PM

Data File	LM35495.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35495.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.500e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.890e+05	9.35	1.00	1.02
Perchlorate conf	6.340e+04	9.33	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

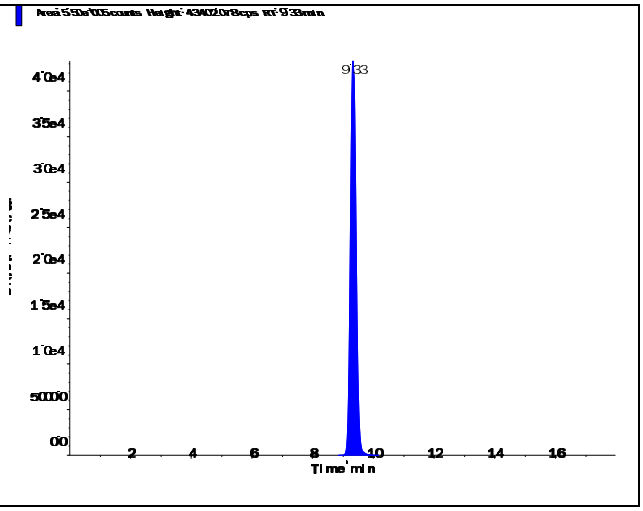

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

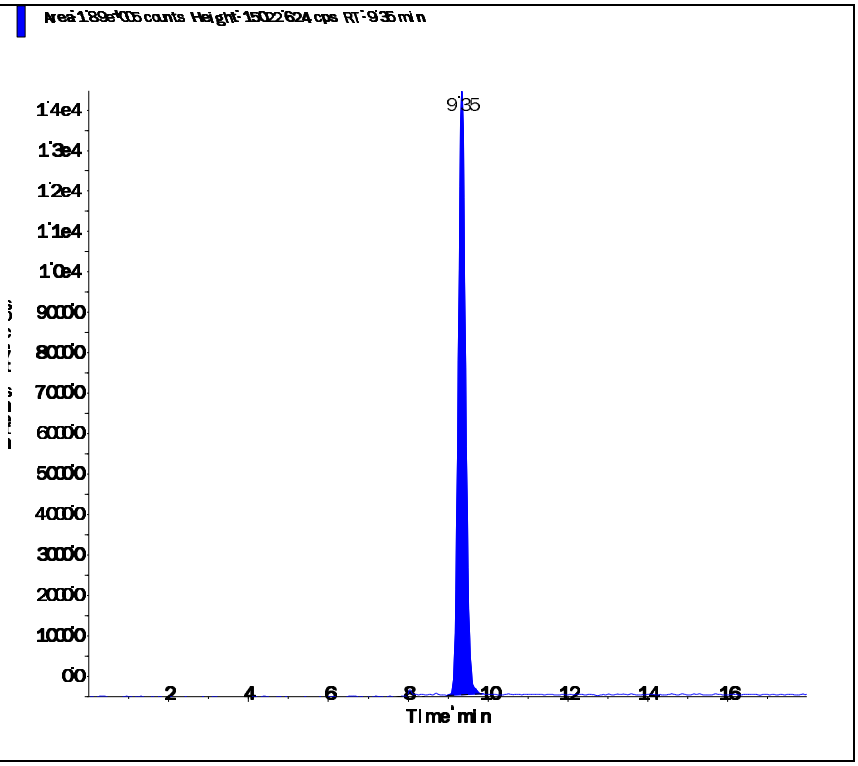

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

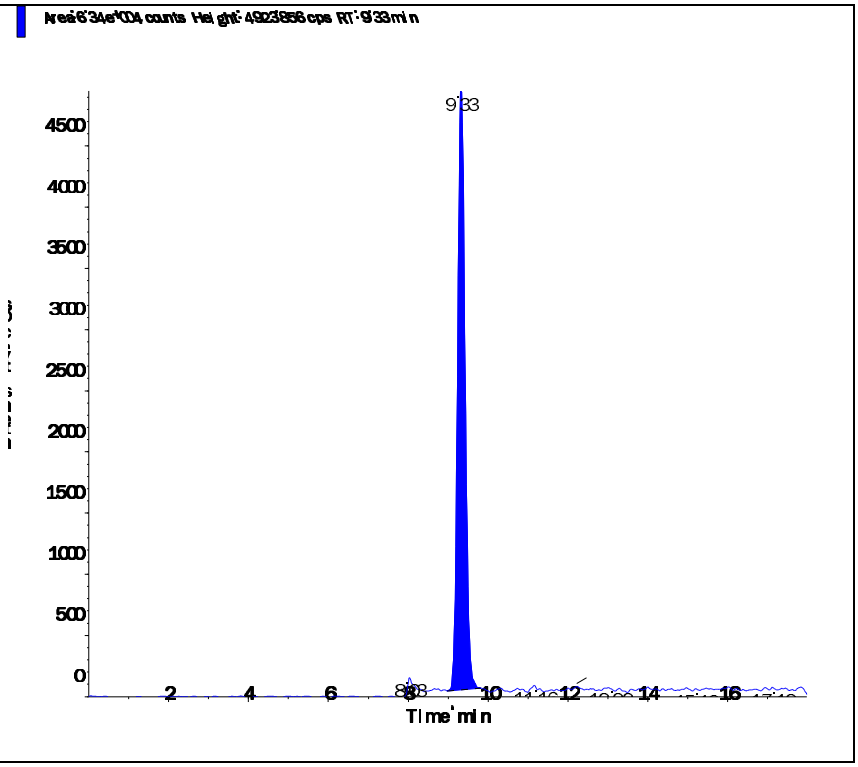

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:51 PM

Data File	LM35498.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35498.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.610e+05	9.35	1.00	1.04
Perchlorate conf	5.670e+04	9.34	1.00	1.09

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

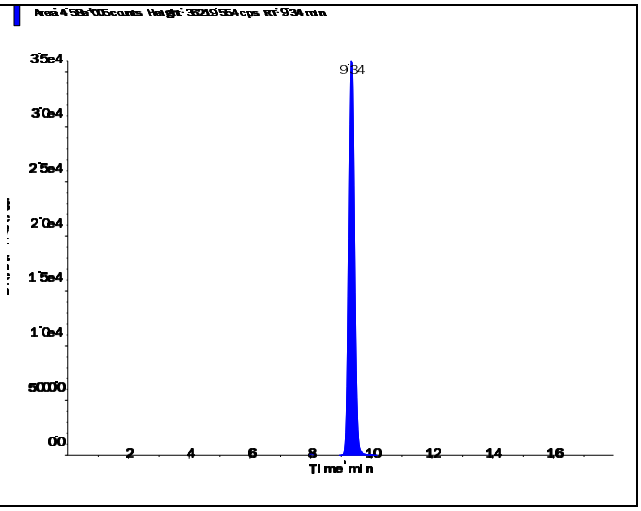

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

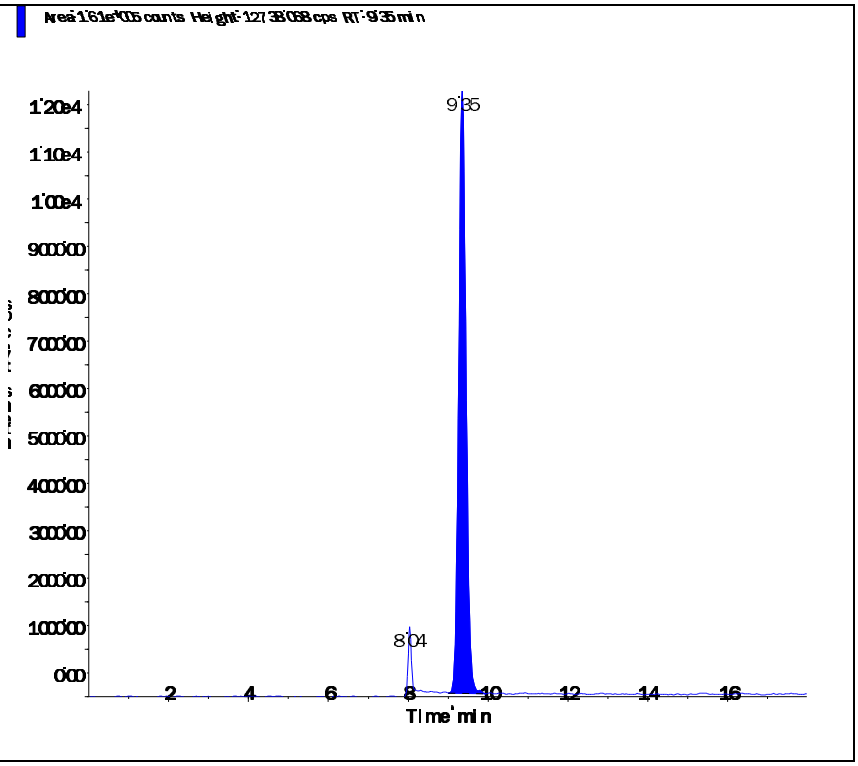

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.124
Sample Type:	(Quality Control)

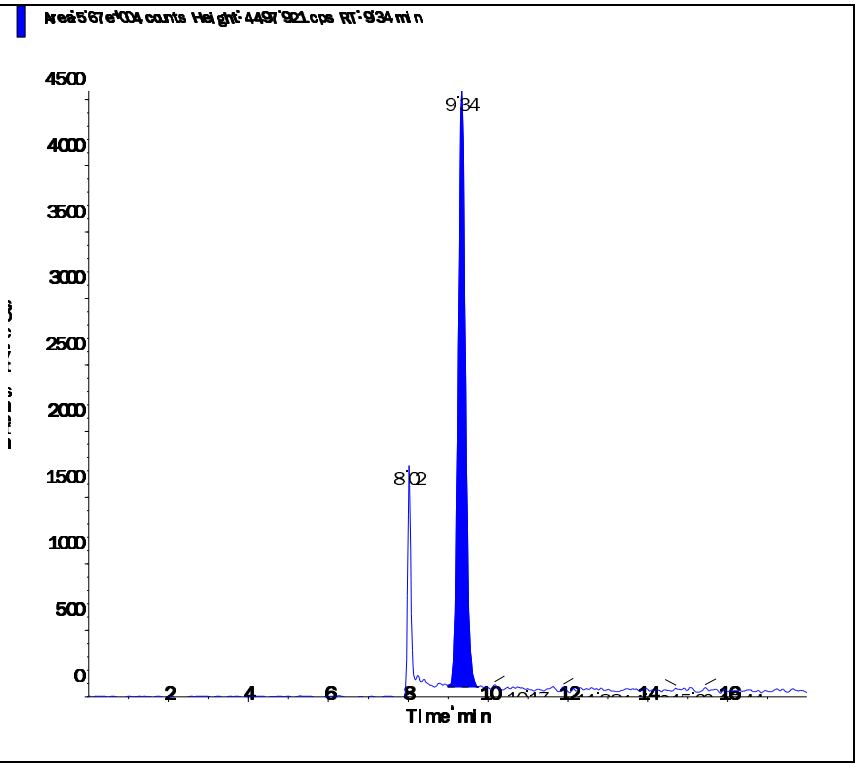

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:55 PM

Data File	LM35508.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35508.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.35	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.36	1.00	1.02
Perchlorate conf	5.930e+04	9.35	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.35(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

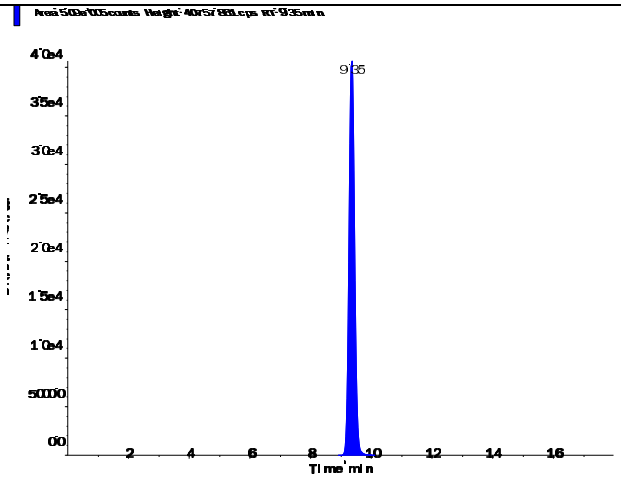

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

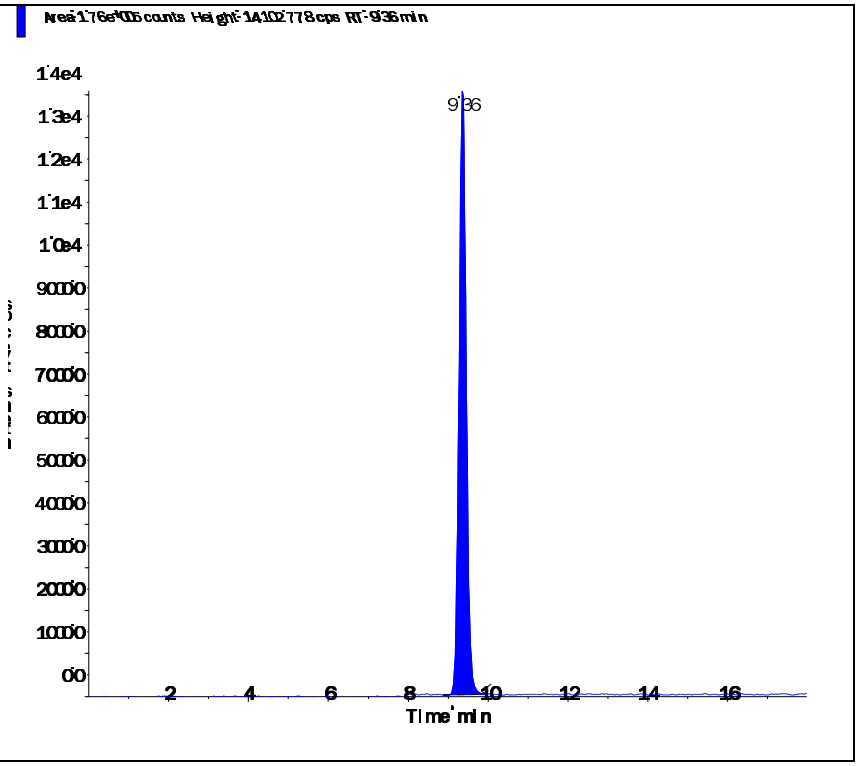

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

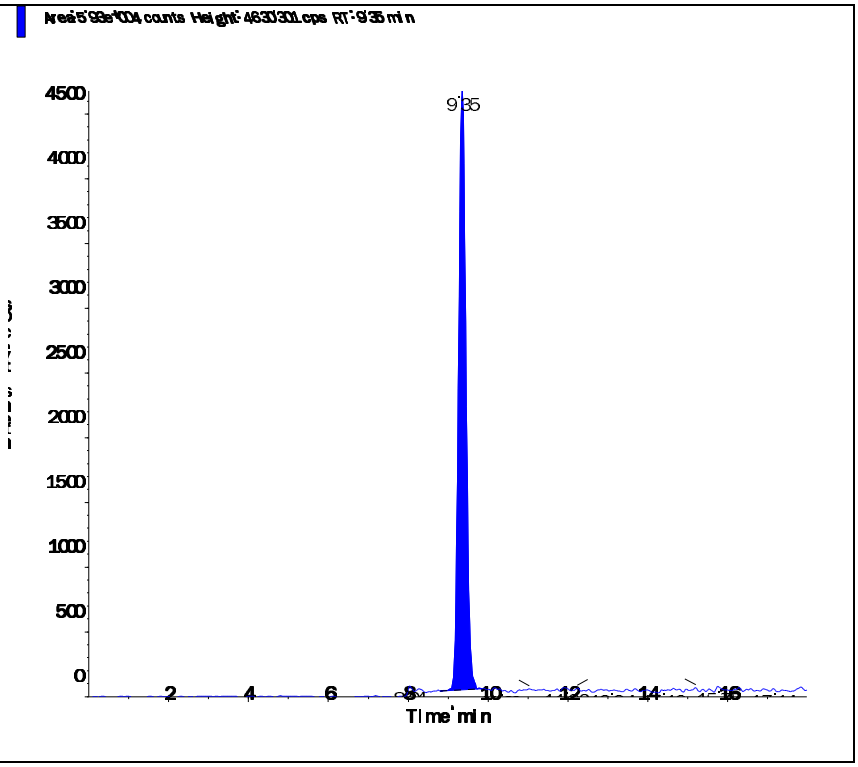

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:39 PM

Data File	LM35464.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35464.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.40	N/A	0.206
Perchlorate conf	1.210e+04	9.37	N/A	0.222

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

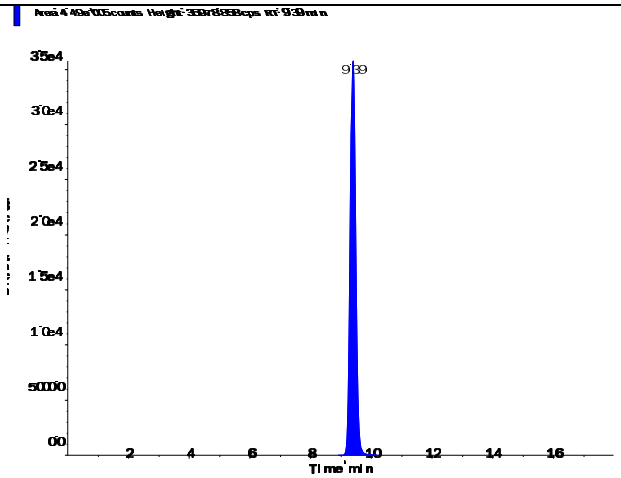

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

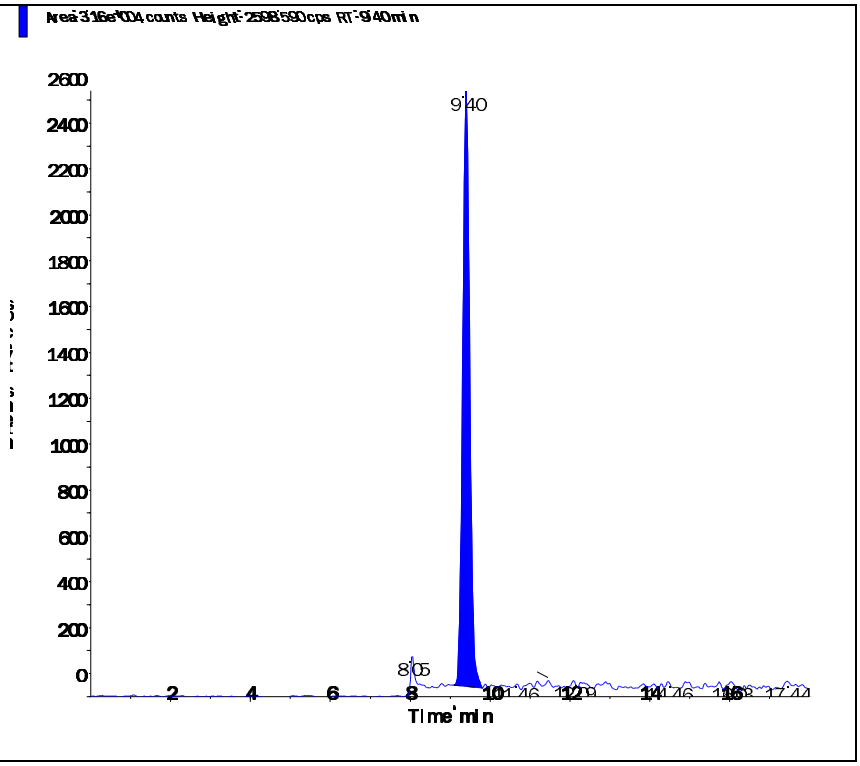

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.222 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

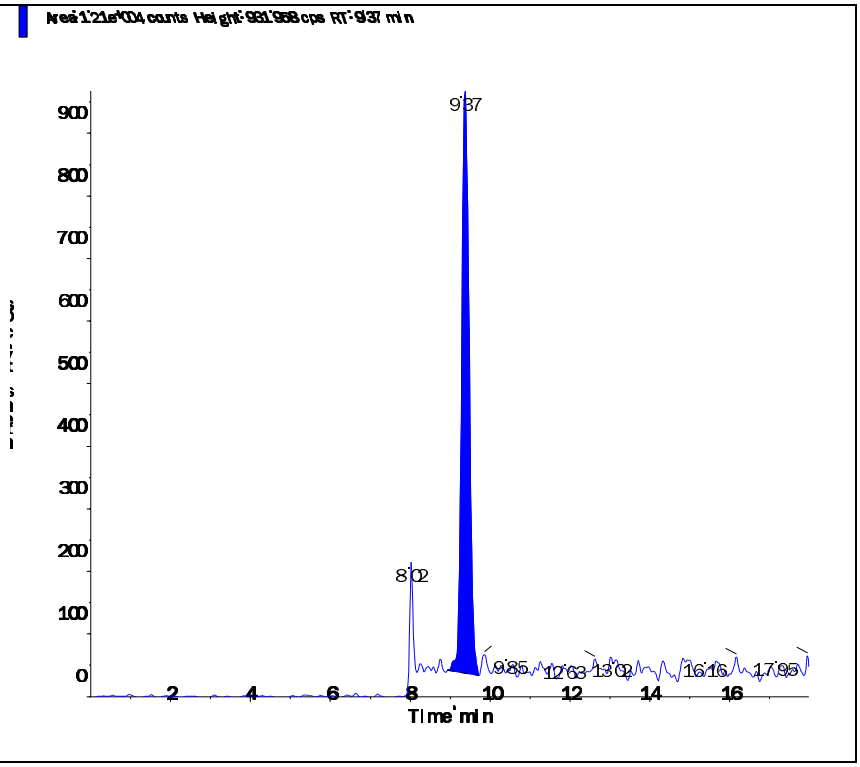

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:43 PM

Data File	LM35476.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35476.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.37	N/A	0.198
Perchlorate conf	1.310e+04	9.35	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

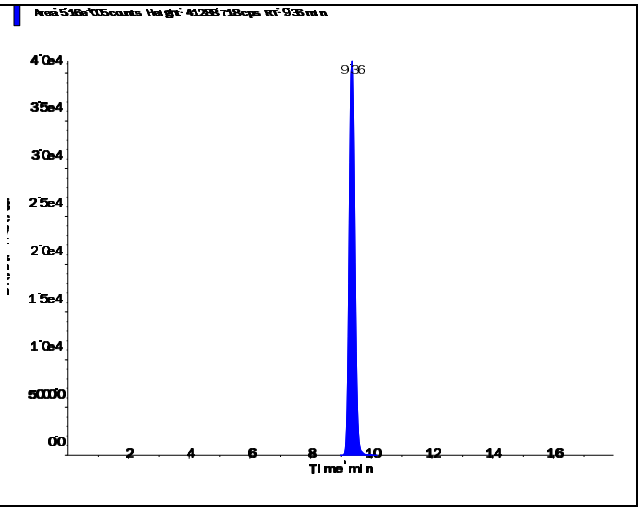

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

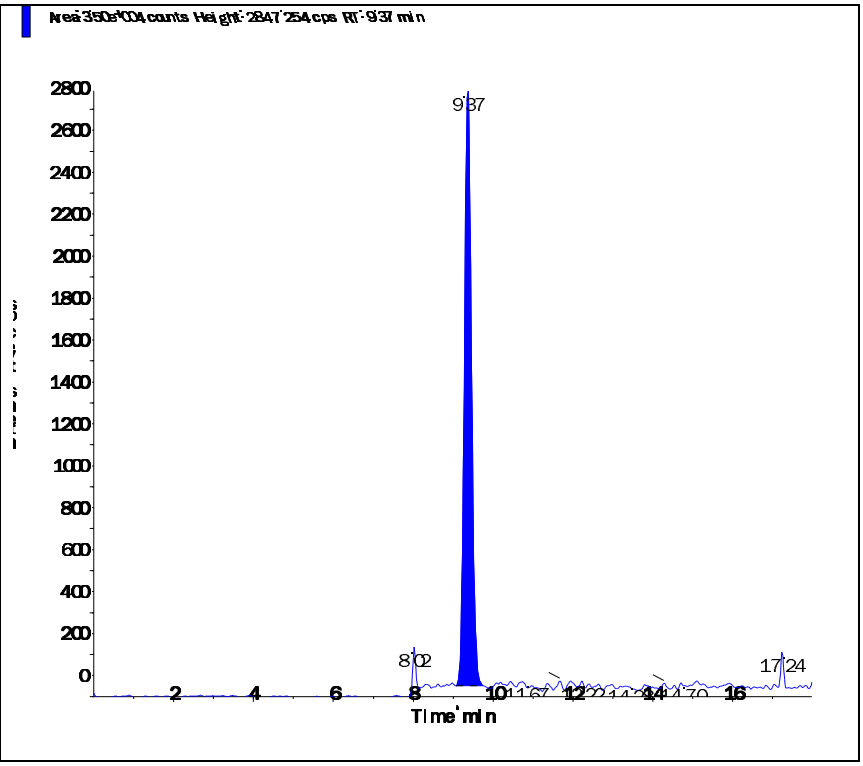

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

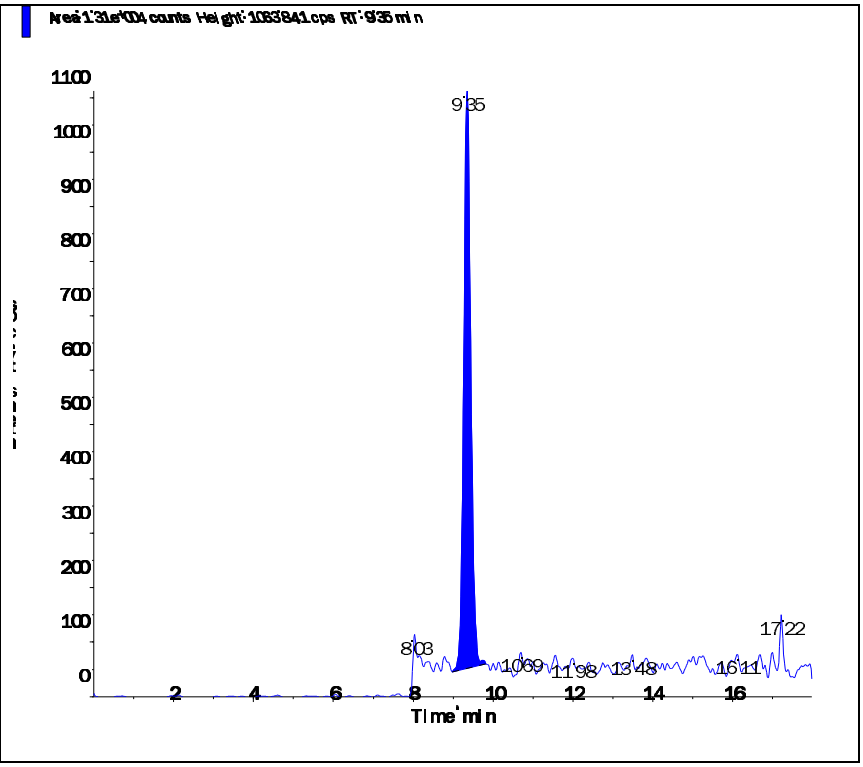

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Data File	LM35489.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35489.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.890e+04	9.39	N/A	0.211
Perchlorate conf	1.340e+04	9.38	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

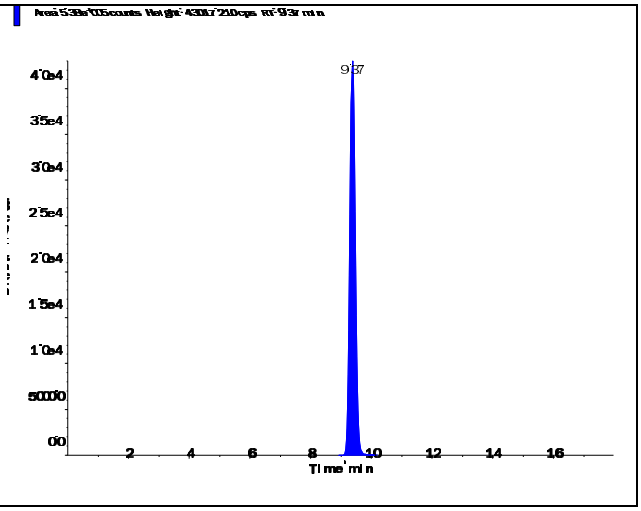

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

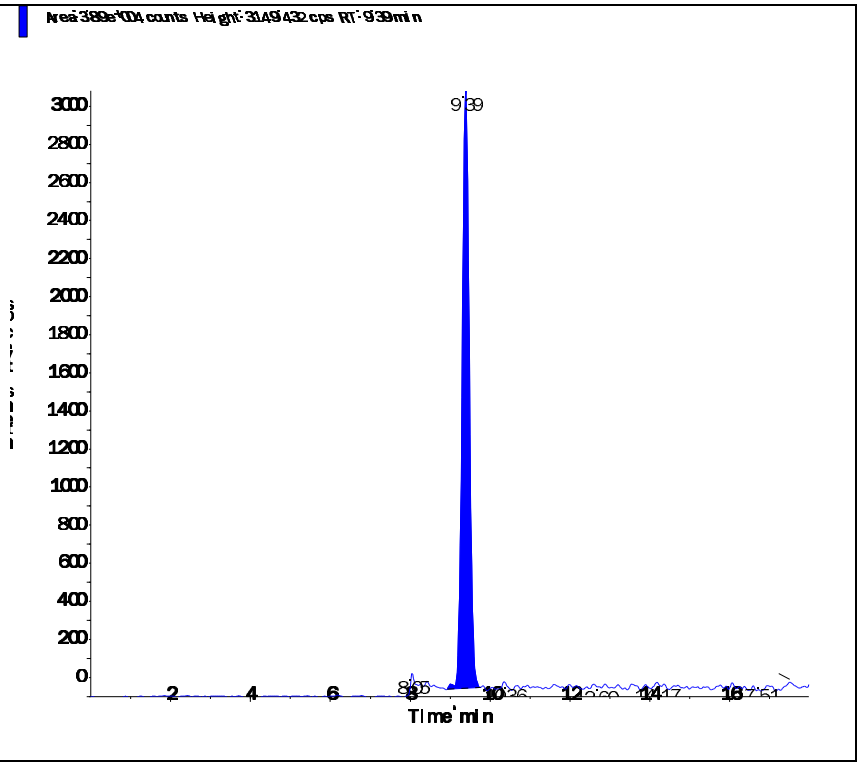

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

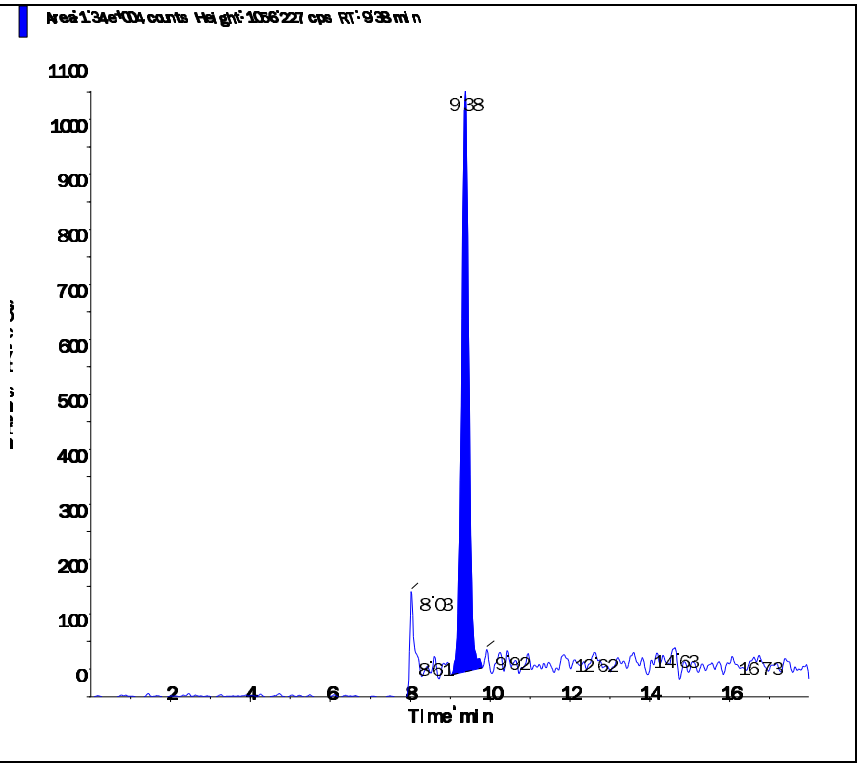

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:50 PM

Data File	LM35496.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35496.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.520e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.800e+04	9.39	N/A	0.201
Perchlorate conf	1.410e+04	9.38	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

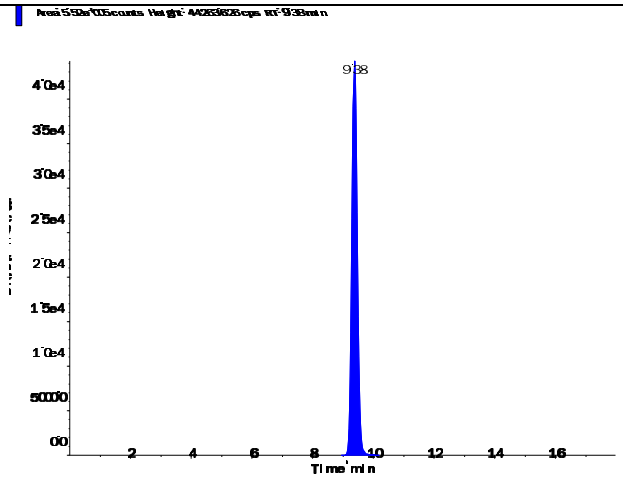

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:50 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

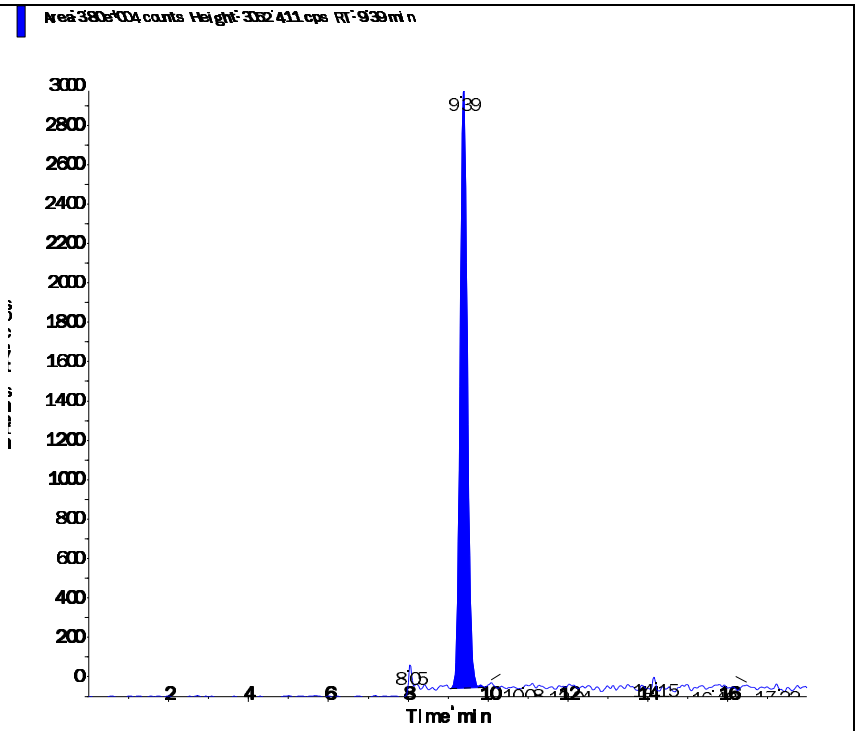

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

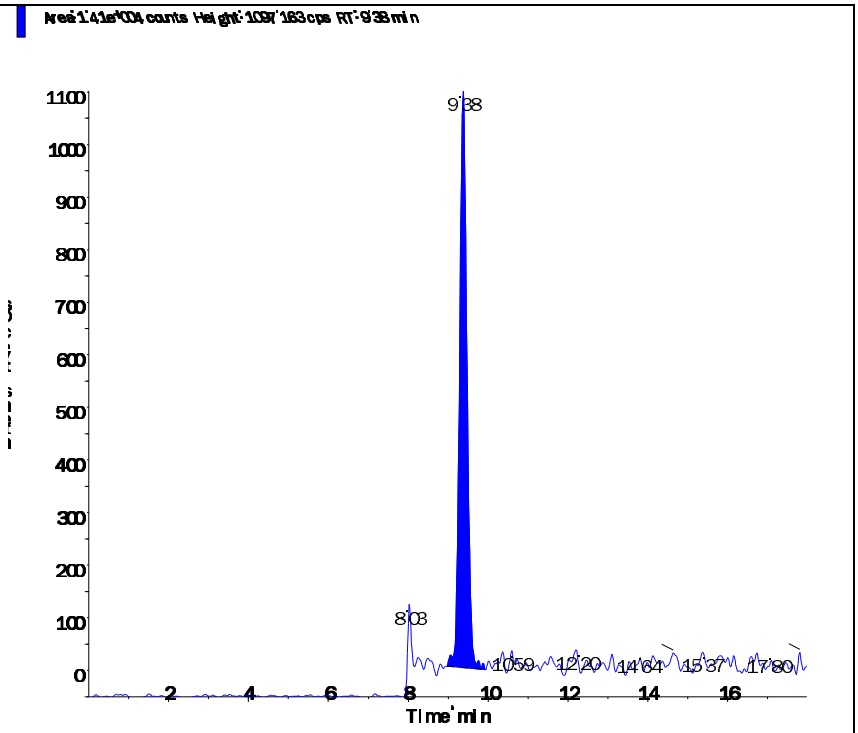

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:52 PM

Data File	LM35499.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35499.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.290e+04	9.40	N/A	0.207
Perchlorate conf	1.150e+04	9.38	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

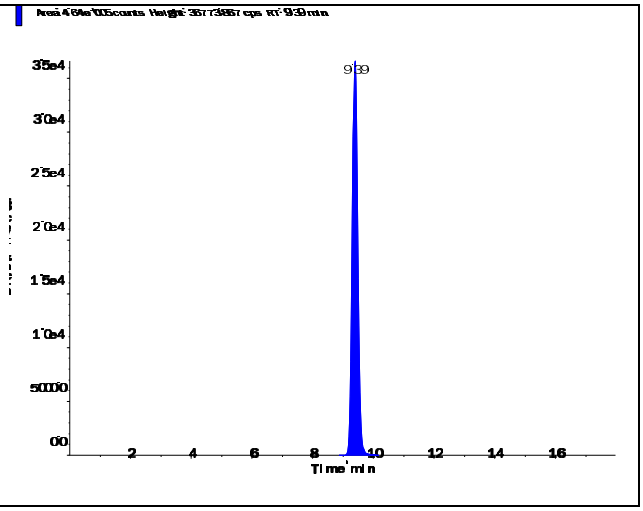

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:52 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.40 (9.84) min Calculated conc: 0.207 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	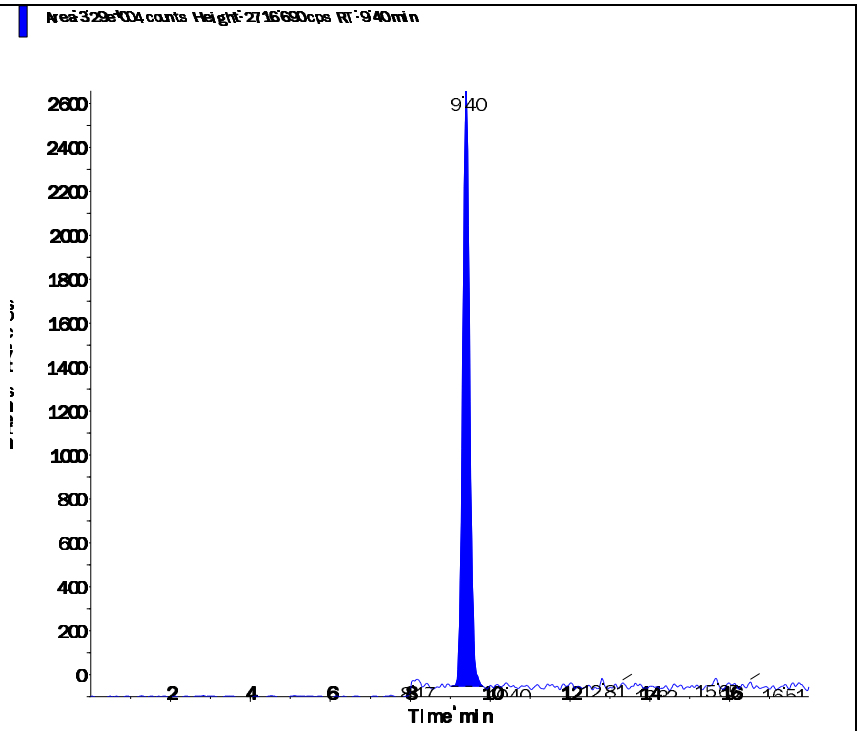
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.38 (9.84) min Calculated conc: 0.201 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	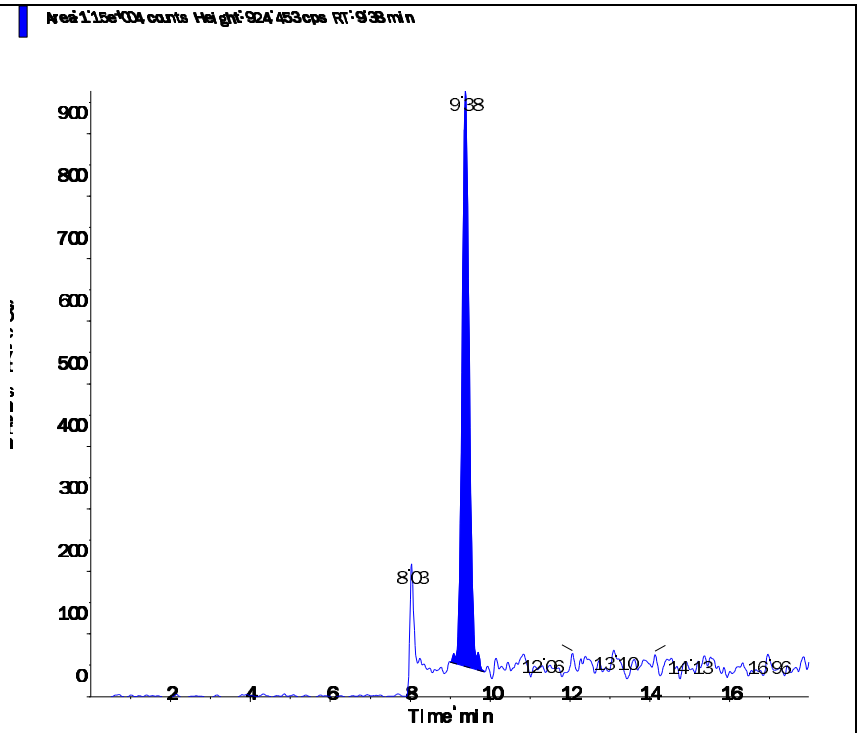

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:55 PM

Data File	LM35509.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35509.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.370e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.790e+04	9.40	N/A	0.206
Perchlorate conf	1.400e+04	9.39	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

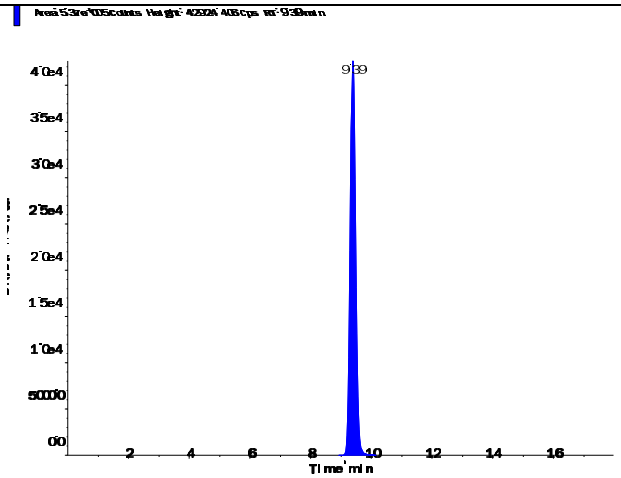

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:55 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

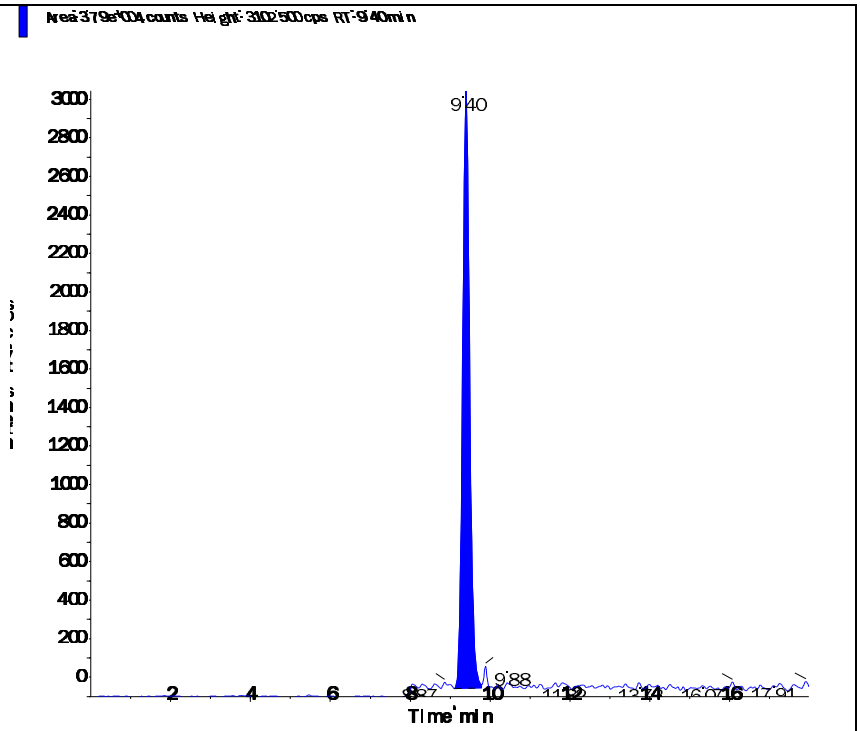

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

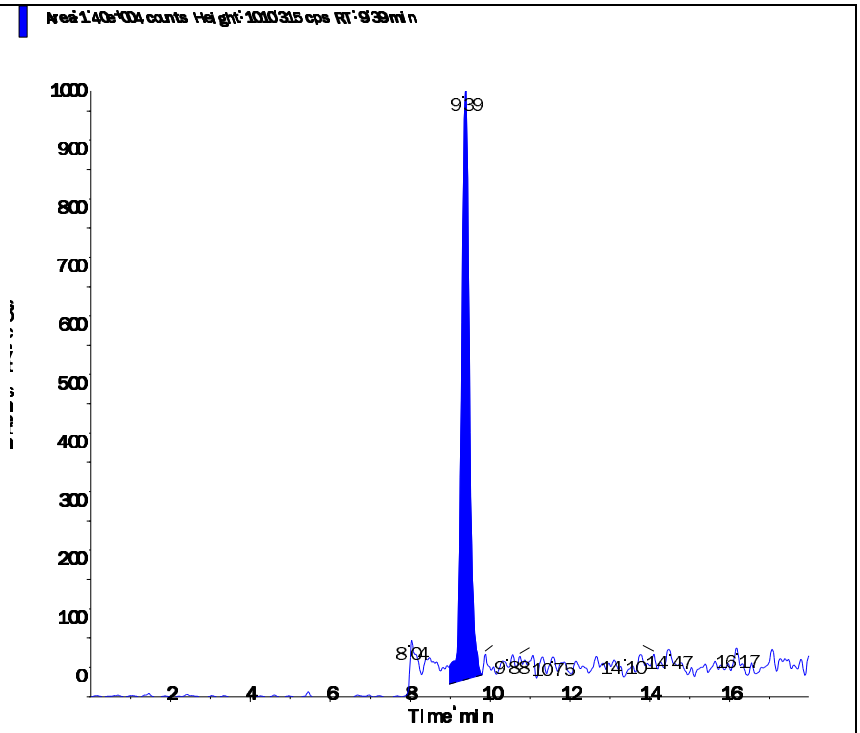

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:38 PM

Data File	LM35462.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-01 CCB	**Injection Vial**	1.00
Data File	LM35462.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

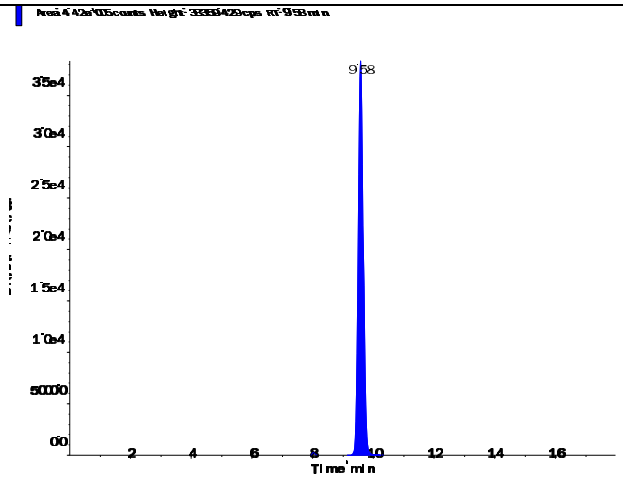

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

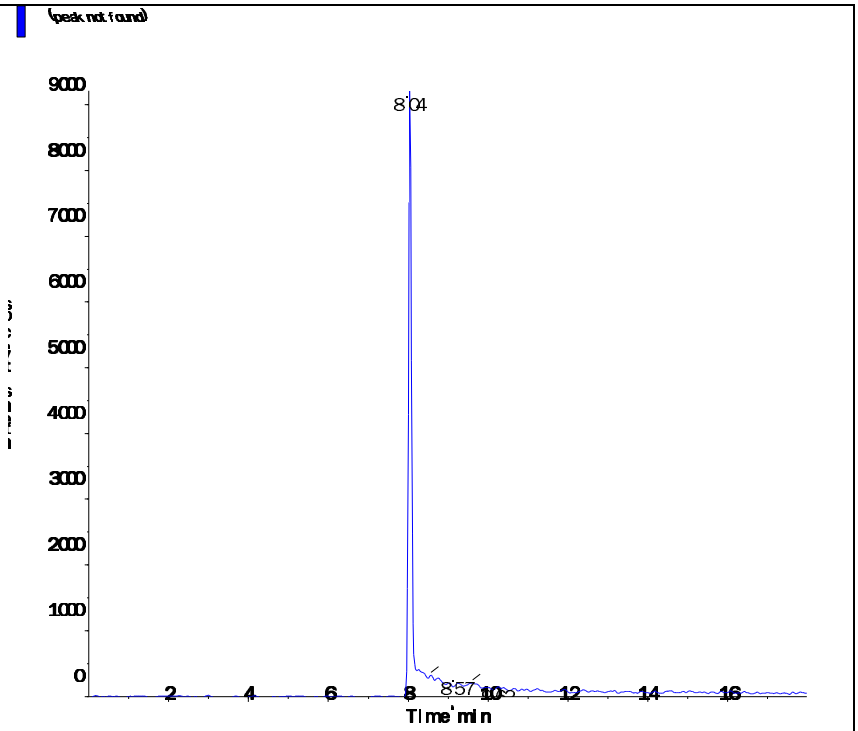

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

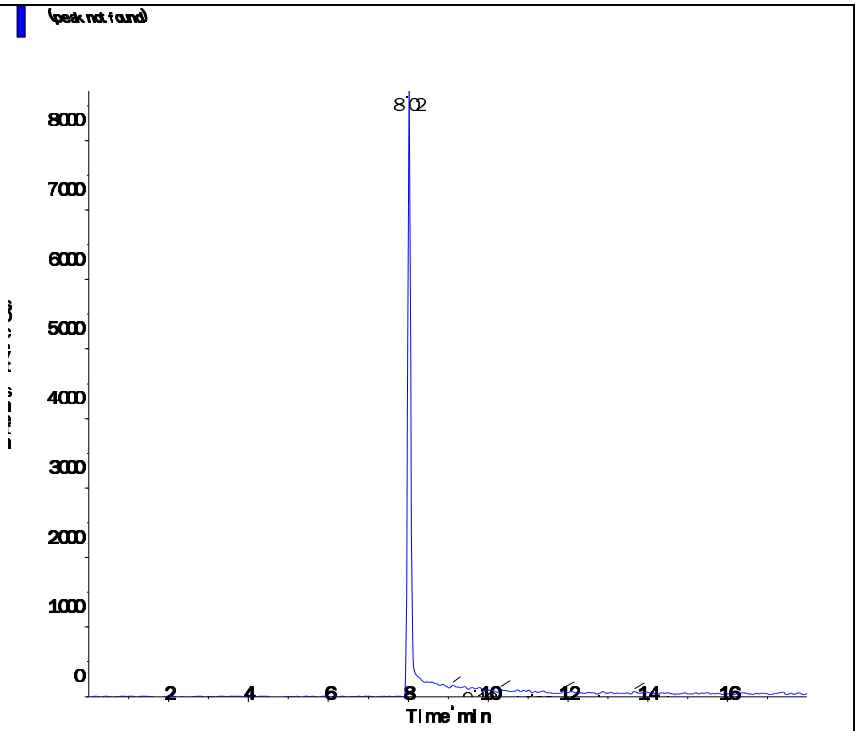

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:43 PM

Data File	LM35477.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-04 CCB	**Injection Vial**	1.00
Data File	LM35477.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	8.240e+02	9.53	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

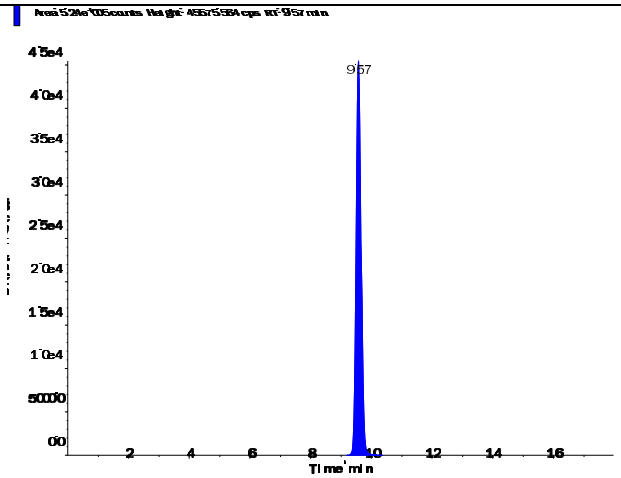

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:43 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

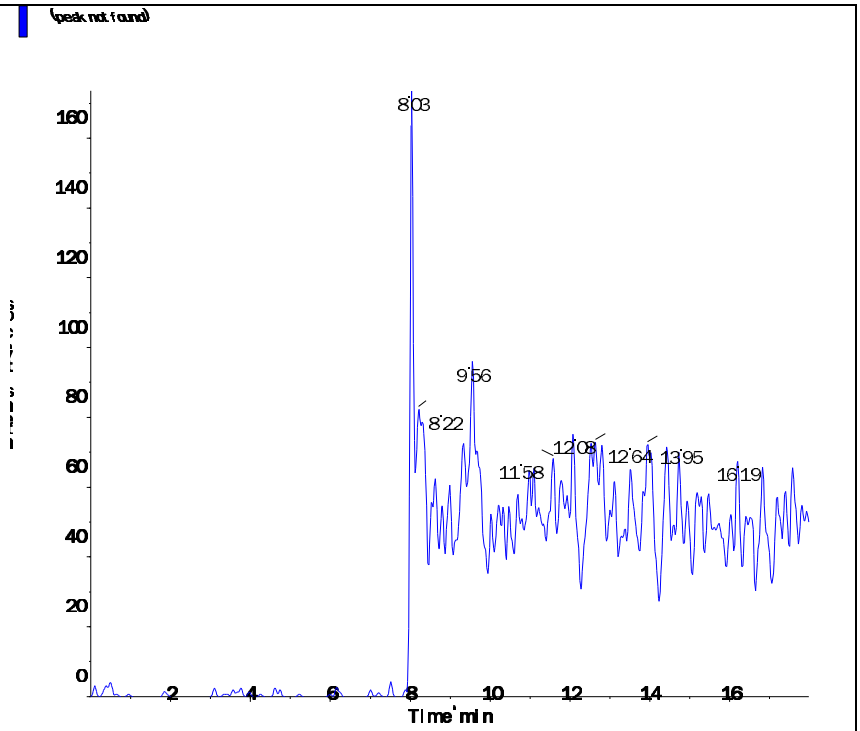

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

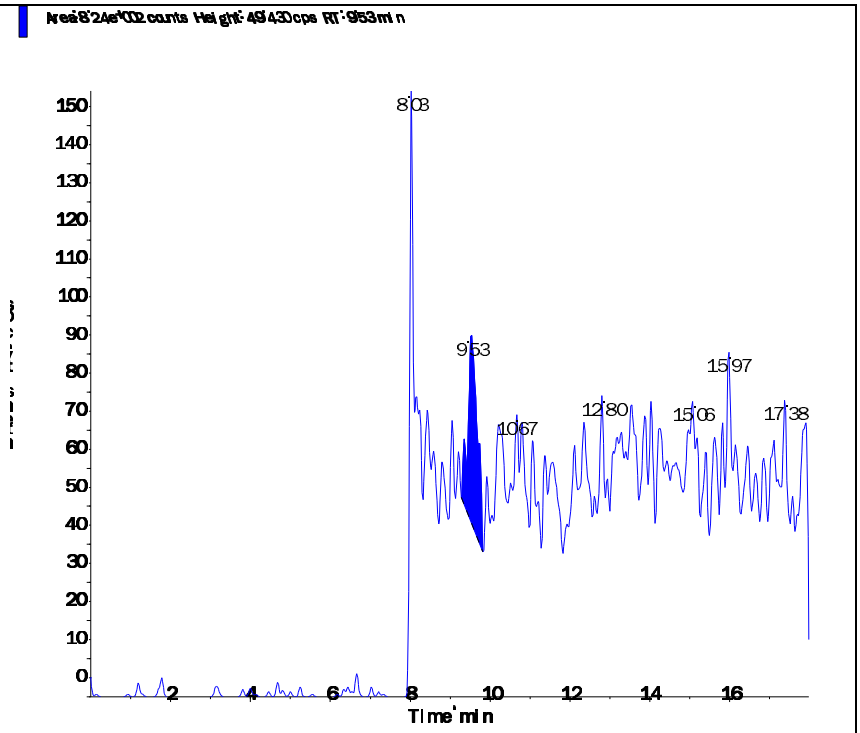

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Data File	LM35490.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-06 CCB	**Injection Vial**	1.00
Data File	LM35490.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

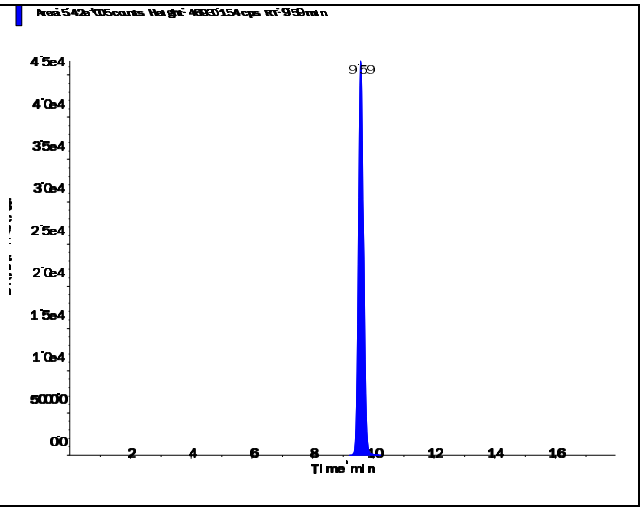

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

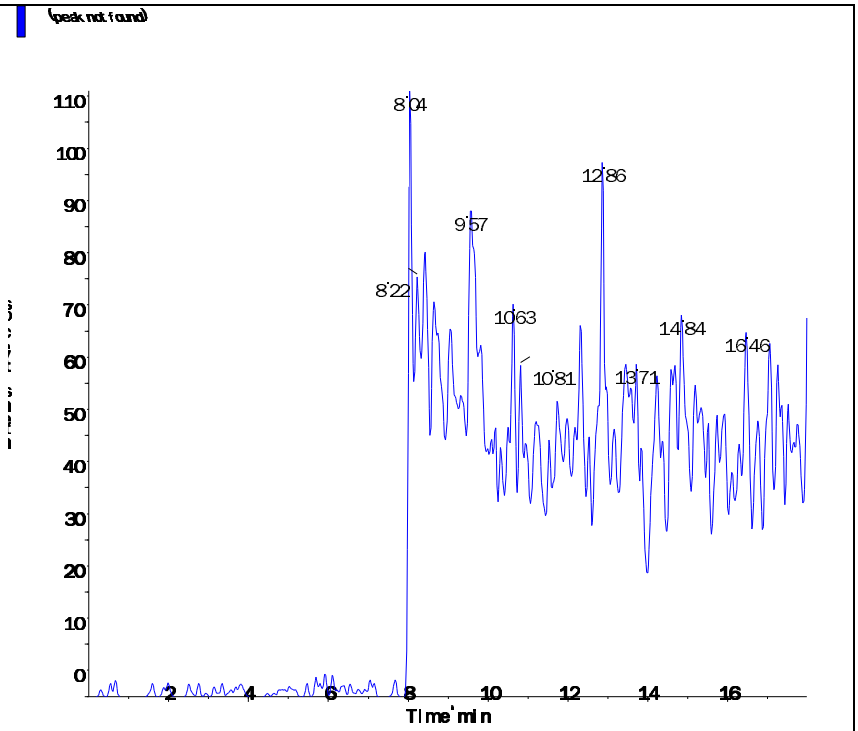

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

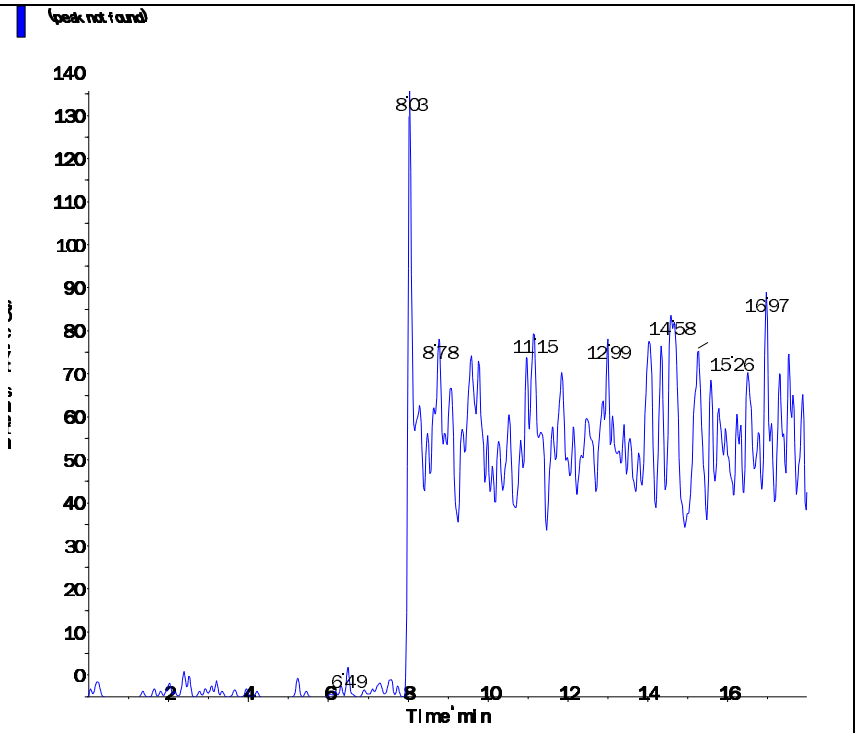

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:51 PM

Data File	LM35497.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-08 CCB	**Injection Vial**	1.00
Data File	LM35497.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.180e+02	9.63	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

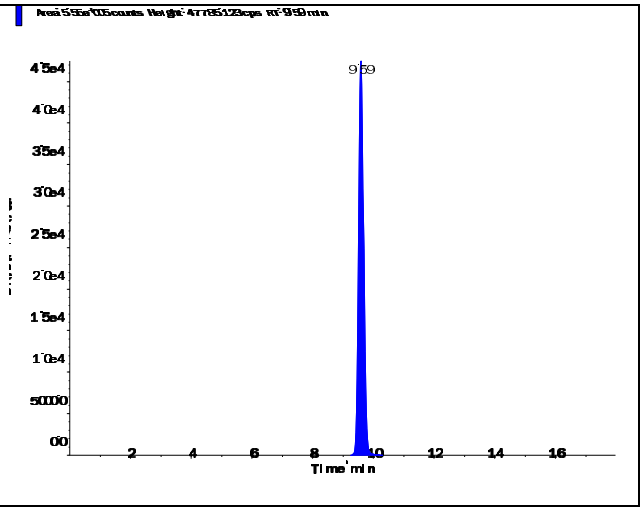

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:51 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

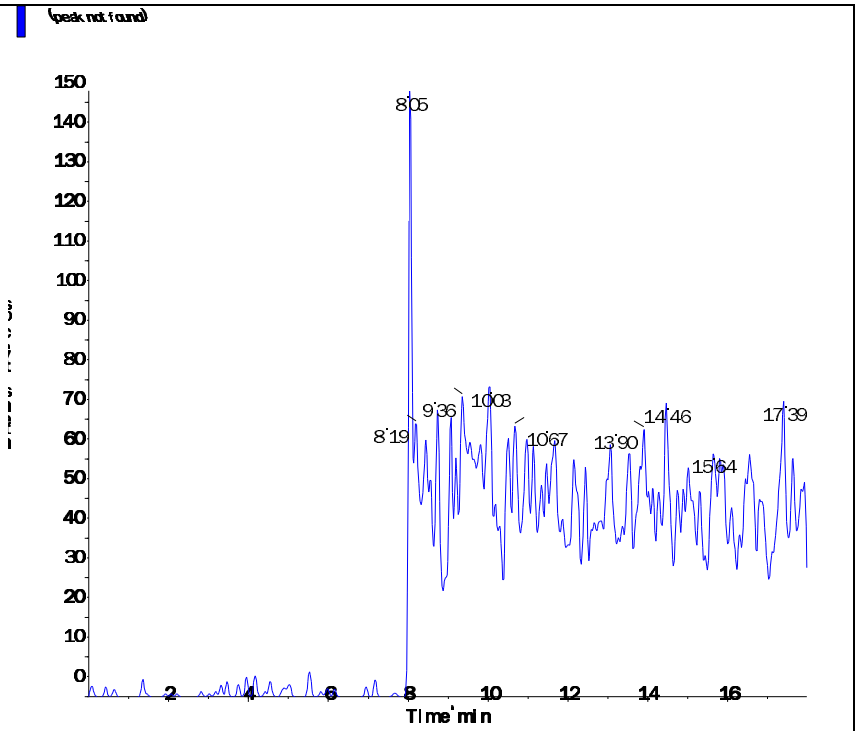

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

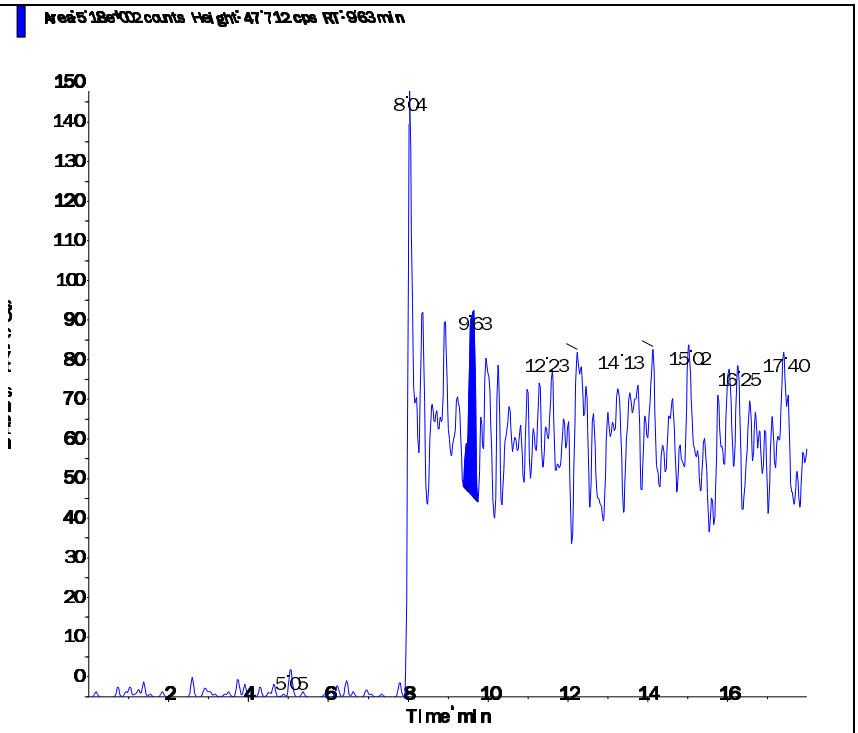

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:52 PM

Data File	LM35500.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-10 CCB	**Injection Vial**	1.00
Data File	LM35500.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

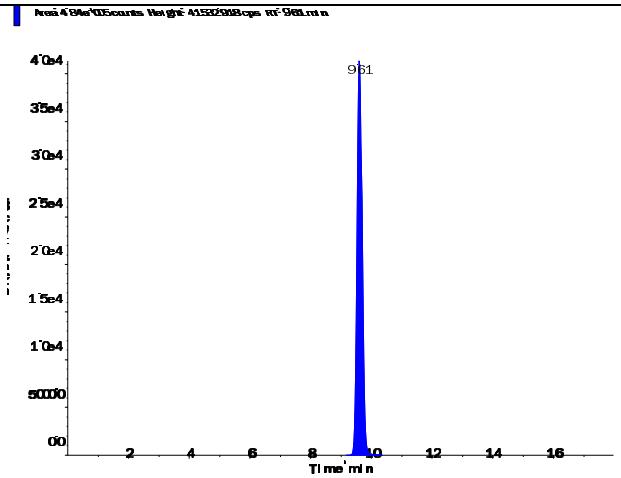

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

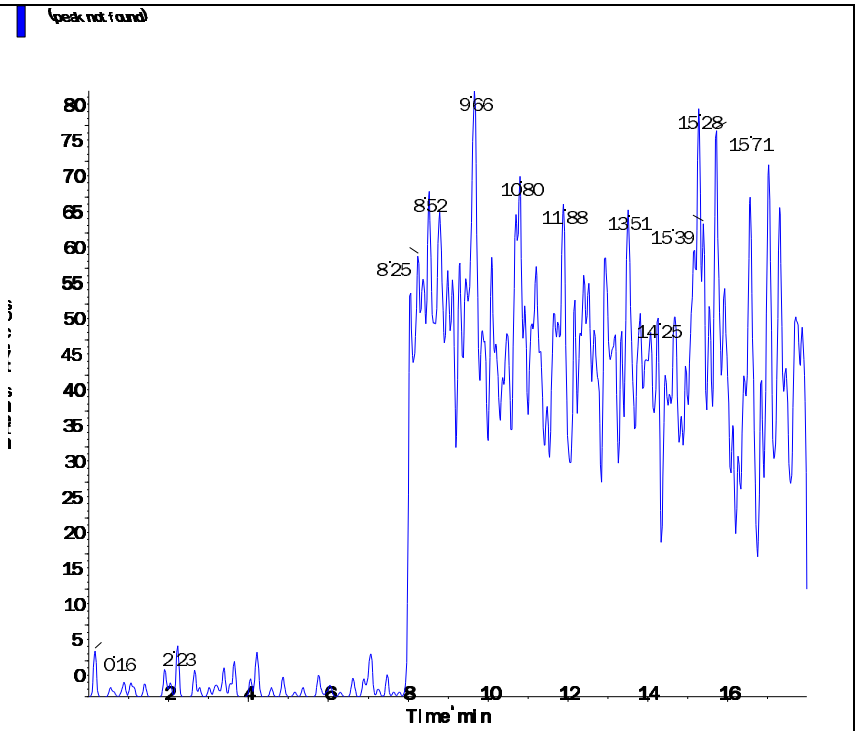

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

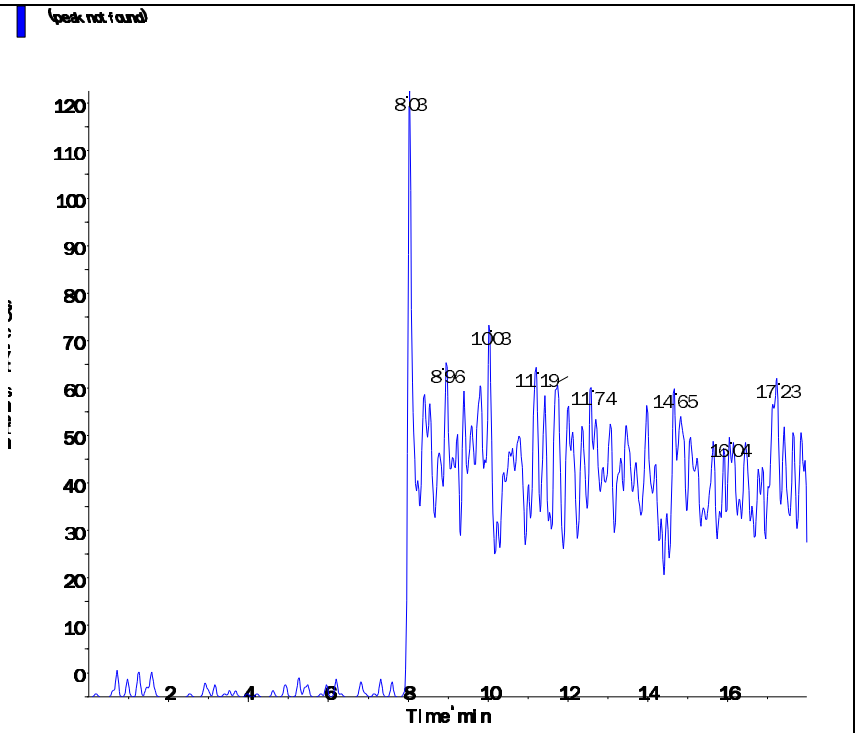

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:56 PM

Data File	LM35510.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-12 CCB	**Injection Vial**	1.00
Data File	LM35510.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

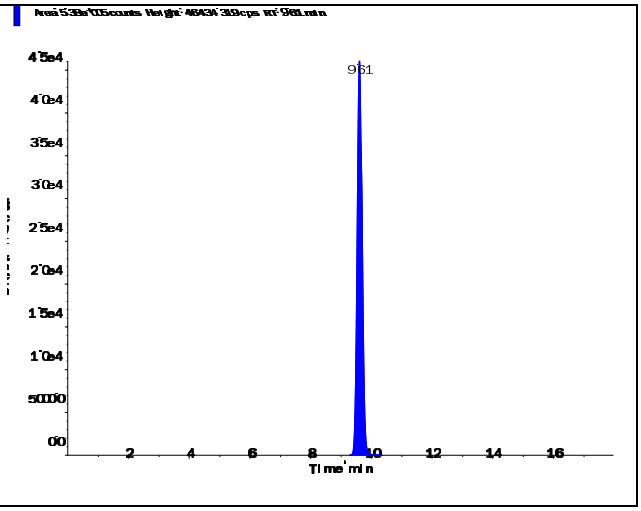

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:56 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

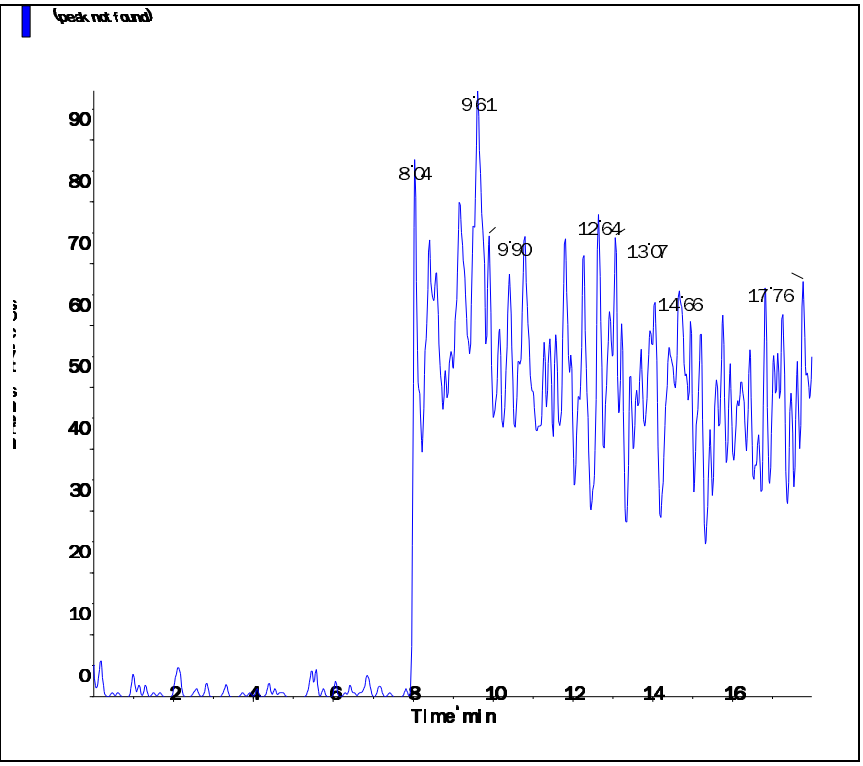

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

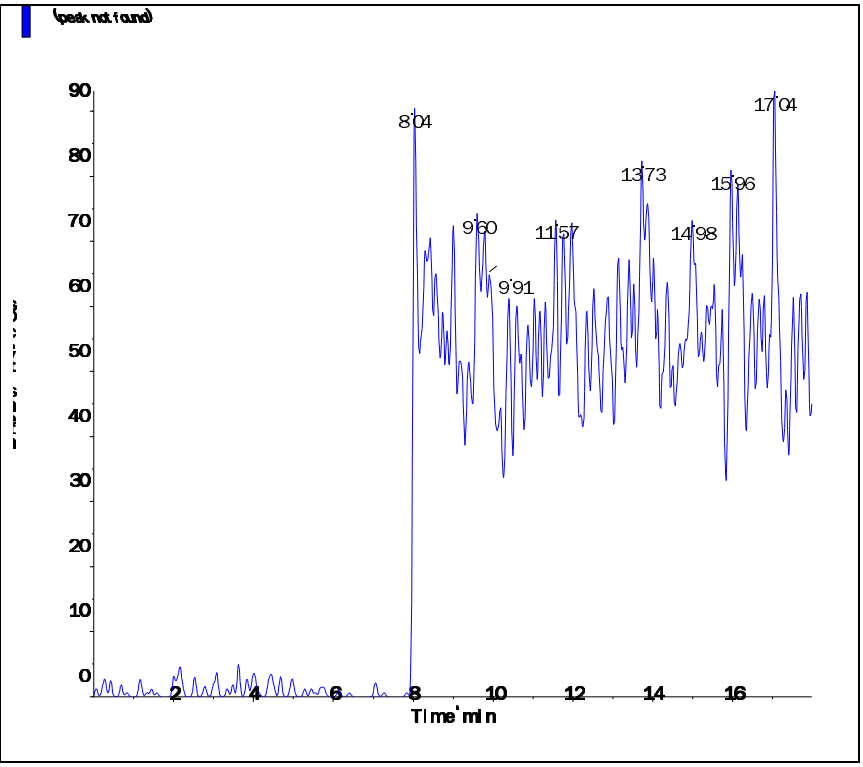

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:39 PM

Data File	LM35465.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35465.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.320e+05	8.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.810e+04	8.97	N/A	0.19
Perchlorate conf	1.000e+04	8.95	N/A	0.188

O18LP (Internal Standard)

RT (Exp. RT): 8.95(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

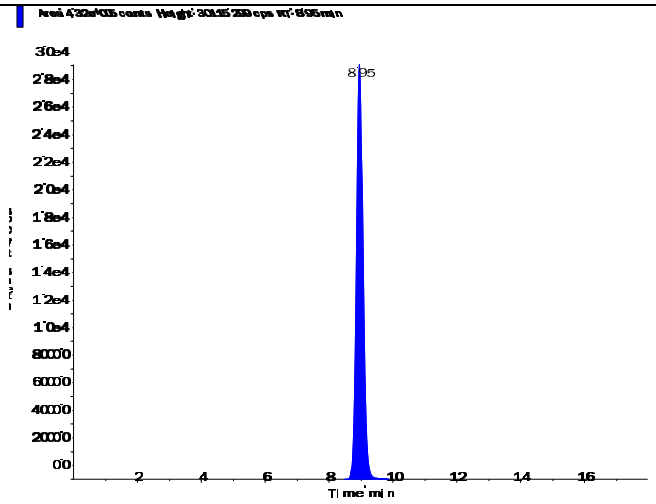

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:39 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	8.97 (9.84) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.065
Sample Type:	(Unknown)

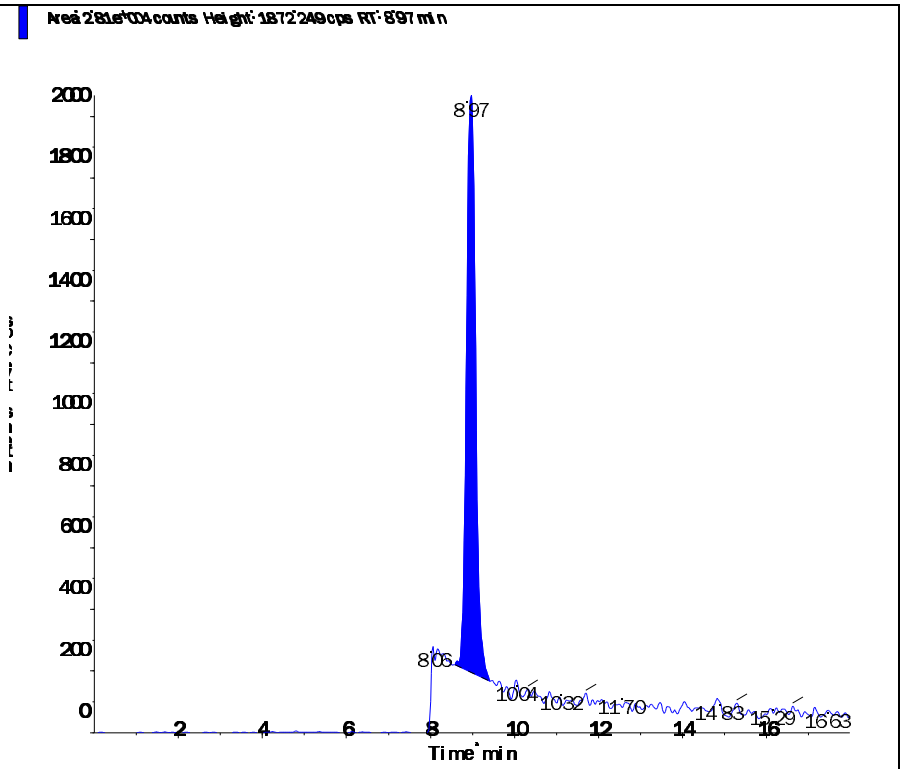

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	8.95 (9.84) min
Calculated conc:	0.188 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

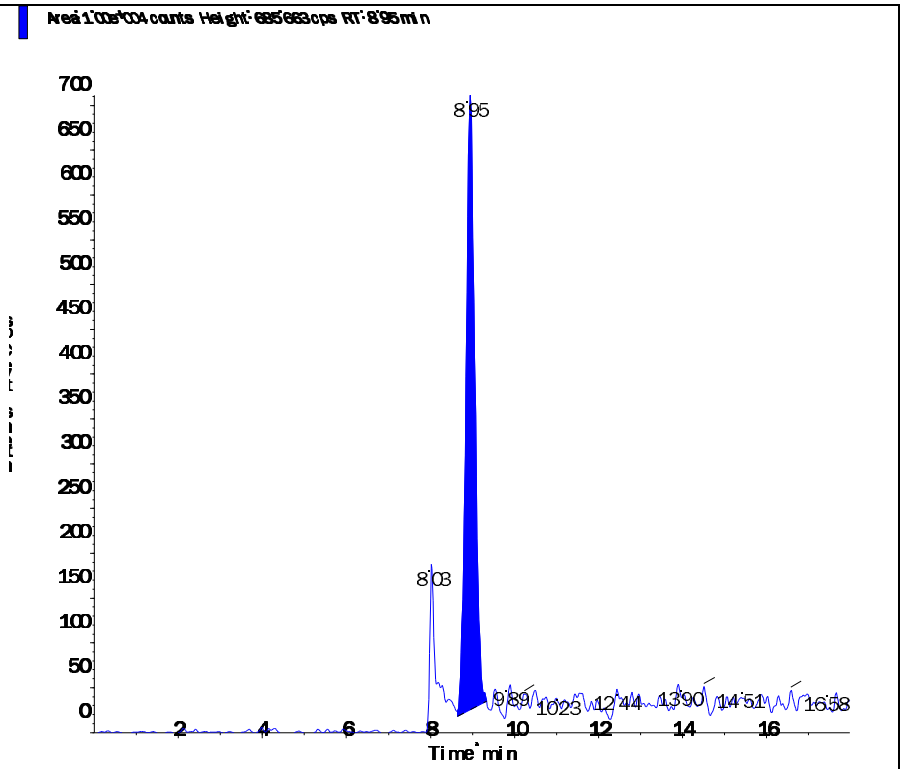

Printing Time: 4:34:28 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.219 ug/L
Acq. Date:	6/24/2016
Acq. Time:	8:47:28 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	8.97 min
Area:	3.23e+004 counts
Height:	1951.523 cps
Start Time:	8.526 min
End Time:	9.417 min

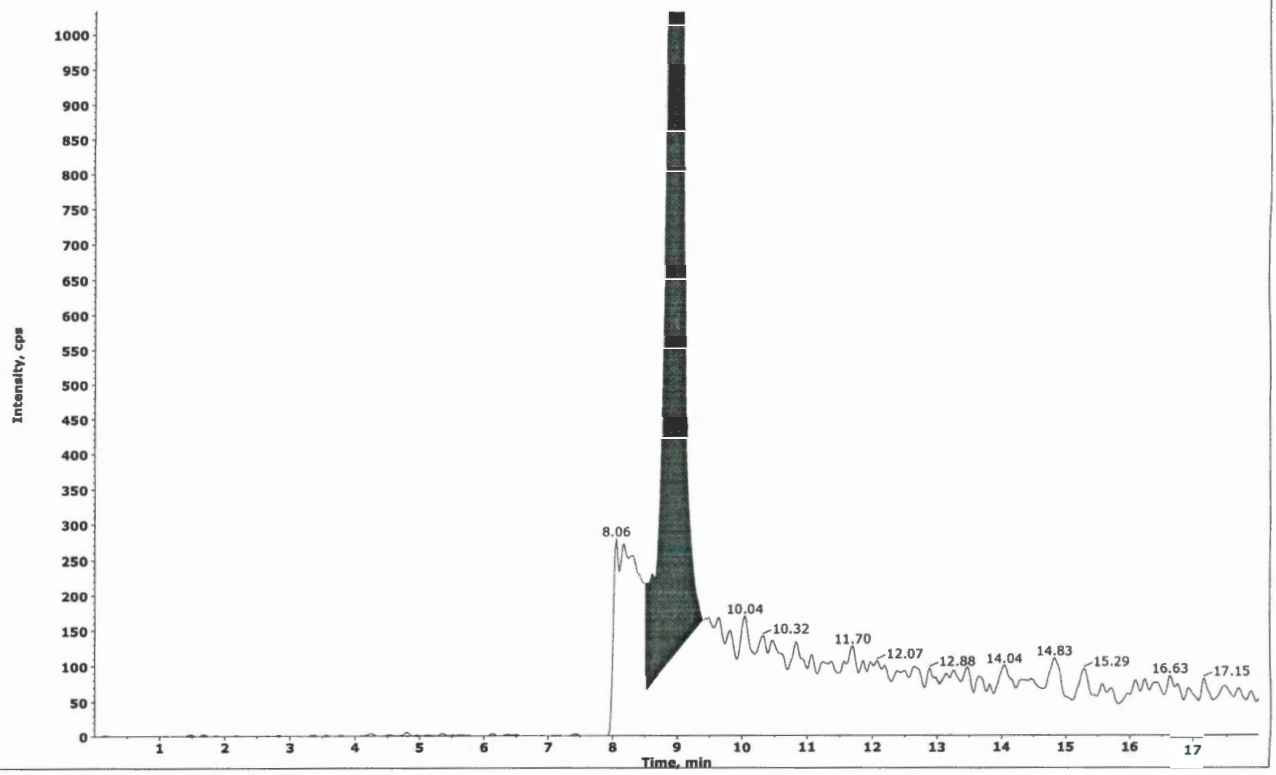

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

Printing Time: 4:36:56 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.190 ug/L
Acq. Date:	6/24/2016
Acq. Time:	8:47:28 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	8.97 min
Area:	2.81e+004 counts
Height:	1872.249 cps
Start Time:	8.587 min
End Time:	9.417 min

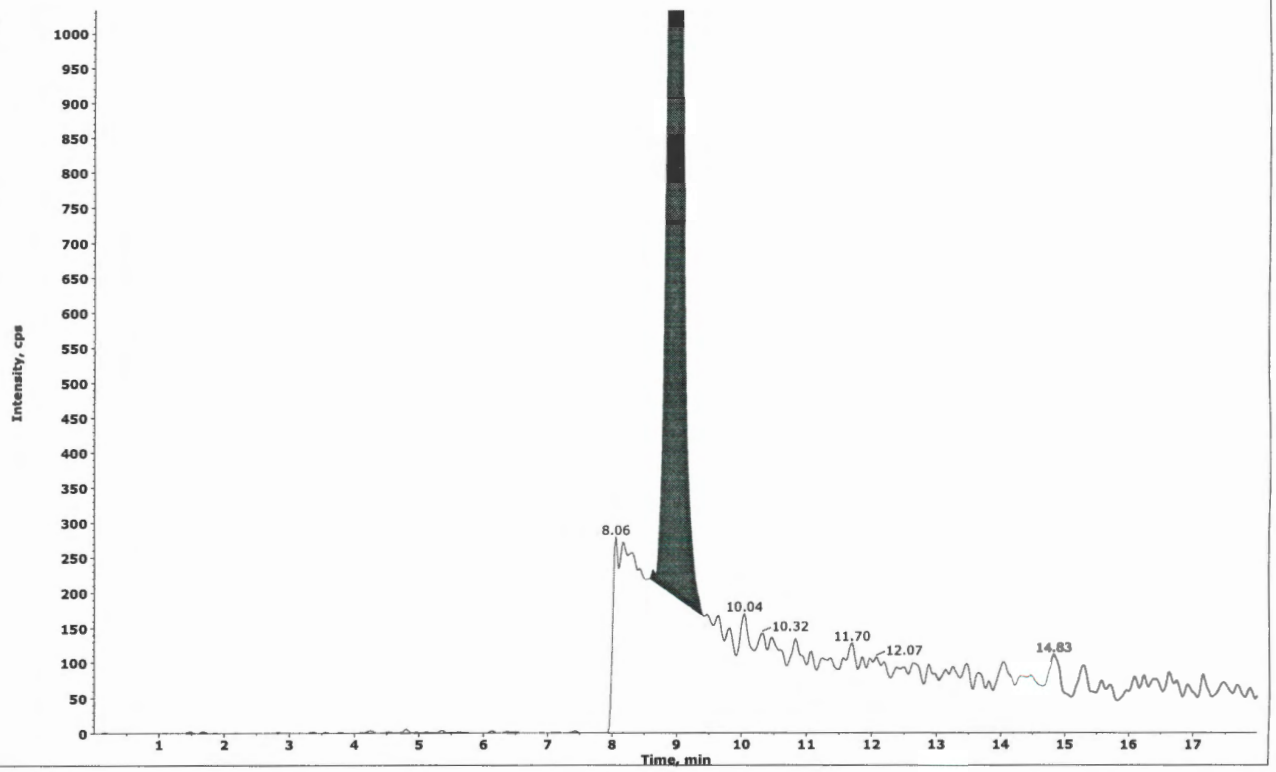

#4
JWR 06/25/16

✓ WTD
06-28-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Data File	LM35466.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-02 BLANK	**Injection Vial**	5.00
Data File	LM35466.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

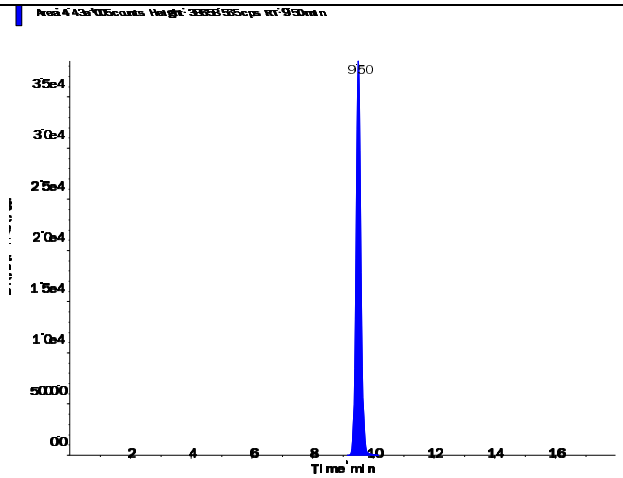

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

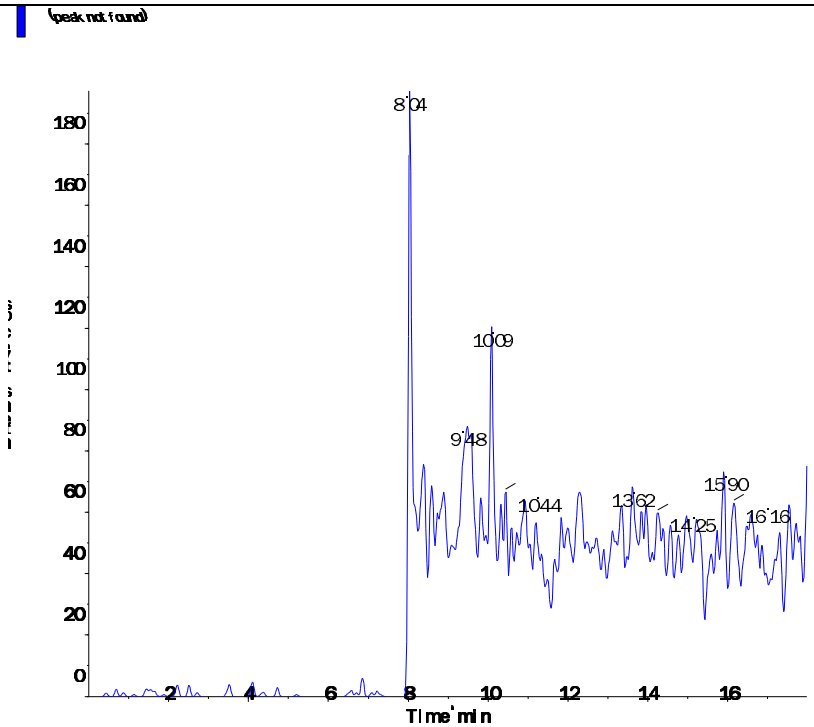

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

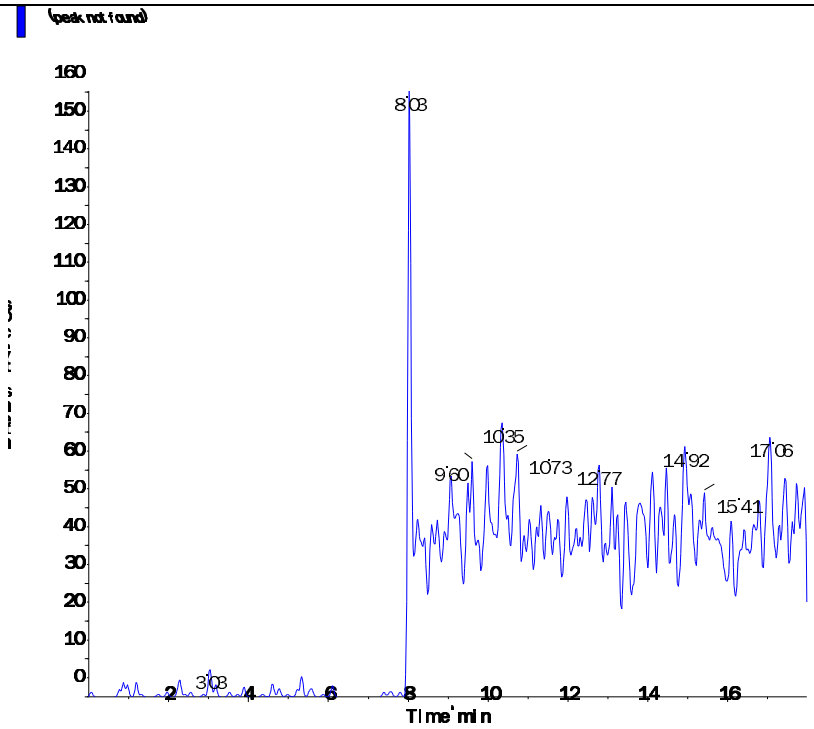

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Data File	LM35467.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35467.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.54	N/A	0.208
Perchlorate conf	1.180e+04	9.53	N/A	0.217

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

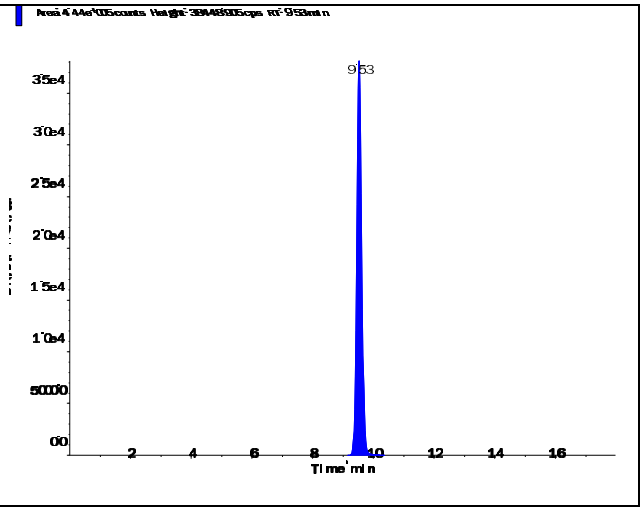

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

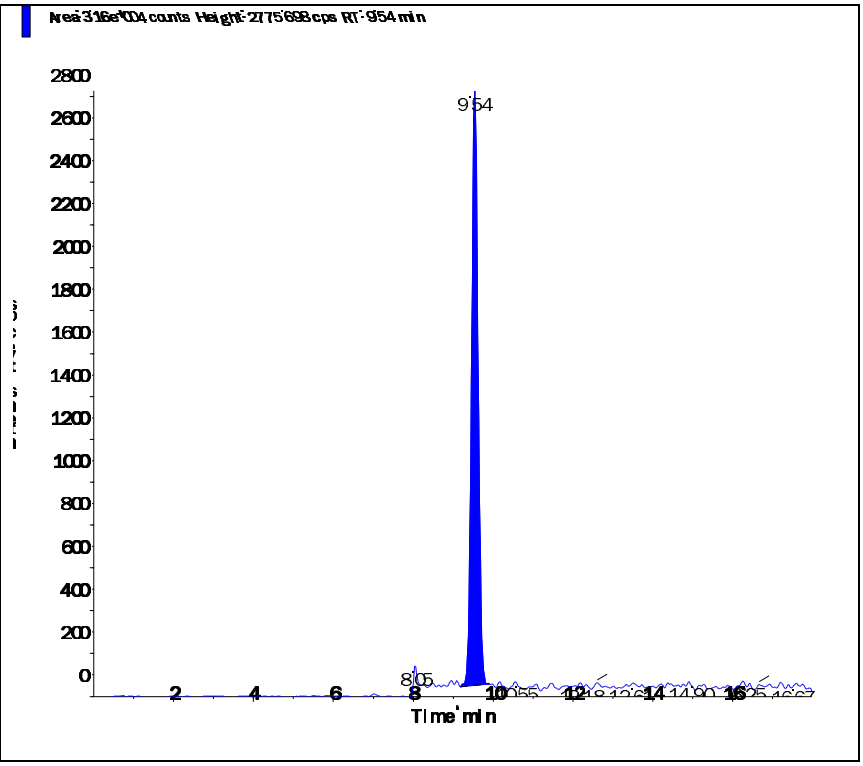

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	0.217 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

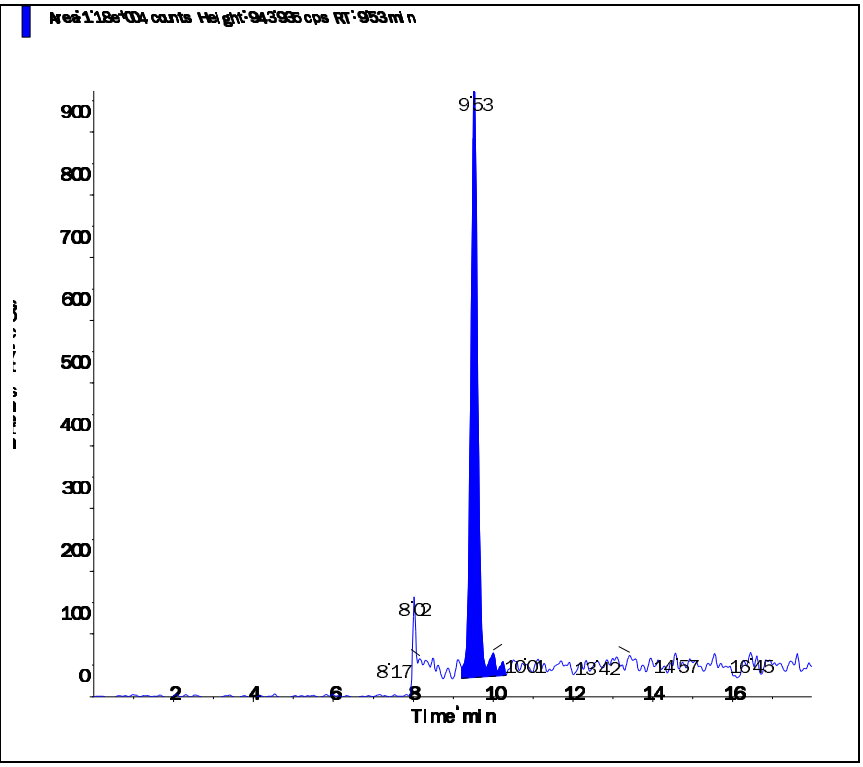

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Data File	LM35491.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35491.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.830e+04	9.59	N/A	0.213
Perchlorate conf	1.400e+04	9.57	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

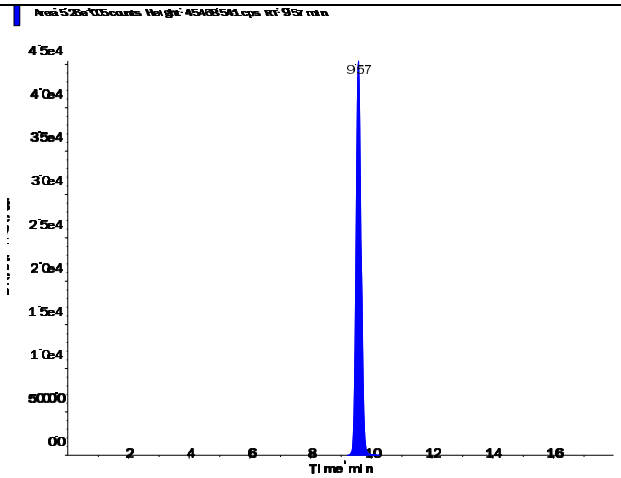

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

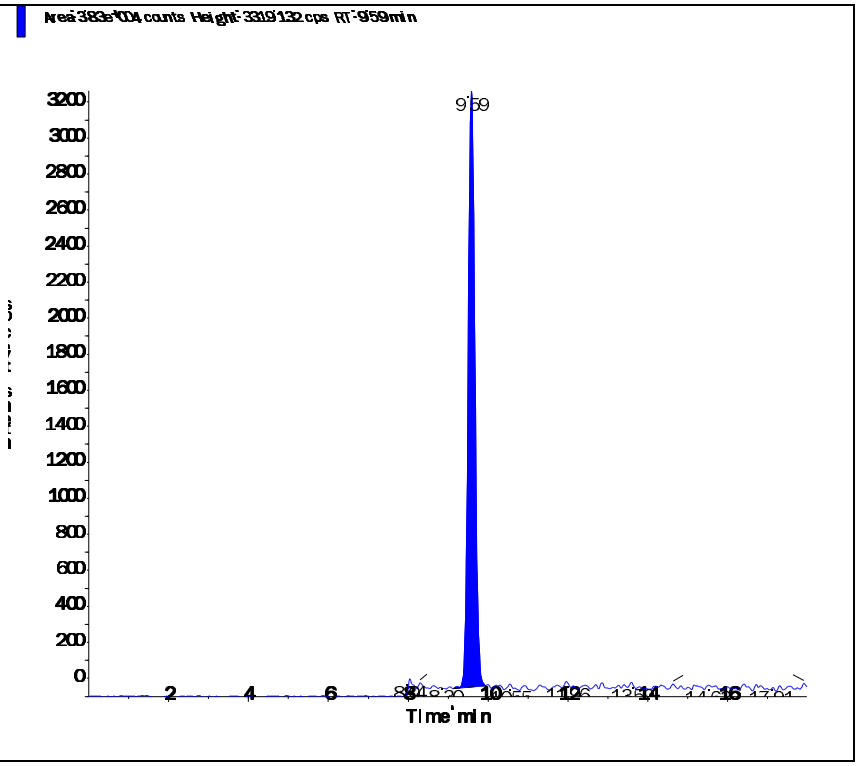

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	0.218 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

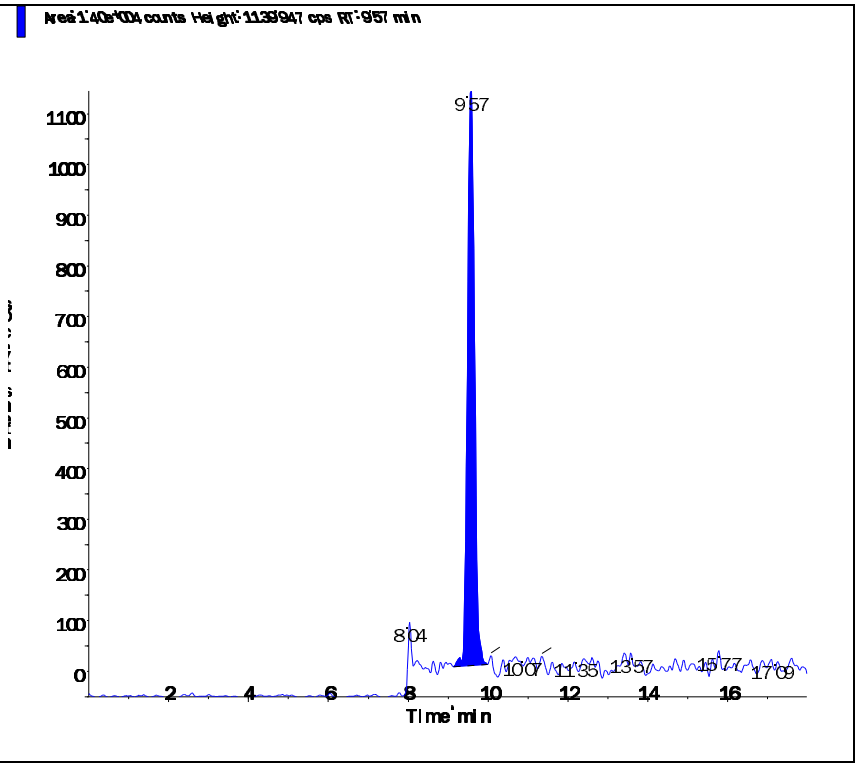

s.dataFile Page 2 of 2

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 12, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - Hanah D. Coe
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 12, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 12, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1, 4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18WW06-062016			6/20/16	1345		✓	W	6	✓	✓		✓					
	18WW06FD-062016			6/20/16	1345		✓	W	6	✓	✓		✓					
	MW17-062016			6/20/16	1500		✓	W	6	✓	✓		✓					
	TRip Blank			6/20/16			✓	W	2	✓								

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 6/20/16	Time 1545	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Rece (Sign			Time	Remarks:

Microbac OVD
Received: 06/21/2016 10:35
By: BRENDA GREGORY 221000087494

Brenda Gregory

*Homogenize all composite samples prior to analysis

...ager, Pink QA/QC Manager

00721923

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061144
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061144-01	763890	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Samplenum	Container ID	Products
L16061144-01	763891	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:54	CLS		
2	PREP	W1	EXT	23-JUN-2016 13:30	CPD	CLS	
3	ANALYZ*	EXT	SEMI	27-JUN-2016 10:41	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:54	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061144-01	763892	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:54	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061144
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061144-02	763893	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Samplenum	Container ID	Products
L16061144-02	763894	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:54	CLS		
2	PREP	W1	EXT	23-JUN-2016 13:30	CPD	CLS	
3	ANALYZ*	EXT	SEMI	27-JUN-2016 10:41	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:54	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061144-02	763895	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:54	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061144
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061144-03	763896	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	

Samplenum	Container ID	Products
L16061144-03	763897	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:54	CLS		
2	PREP	W1	EXT	23-JUN-2016 13:30	CPD	CLS	
3	ANALYZ*	EXT	SEMI	27-JUN-2016 10:41	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:54	CLS		
2	STORE	W1	A1	24-JUN-2016 10:00	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061144-03	763898	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:54	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061144
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061144-04	763899	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16061227

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 12 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
Sample ID: CO4-062116 (6/21 @ 08:55). COC marked for 1,4-Dioxane. NO Semi's received. BRG Sample ID: CO4FD-062116 (6/21 @ 08:55). COC marked for 1,4-Dioxane. NO semi's received. BRG	Please proceed. MRT
Sample ID: 18WW17-062116 (6/21 @ 11:40). 1 of 3 voa vials received w/headspace. BRG	Please proceed.MRT

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112155	I	4.0		J2317164920	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	No
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	No

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18WW22-062116	L16061227-01	06/21/2016 07:55	06/22/2016 10:14
C04-062116	L16061227-02	06/21/2016 08:55	06/22/2016 10:14
C04F-062116	L16061227-03	06/21/2016 08:55	06/22/2016 10:14
C04FD-062116	L16061227-04	06/21/2016 08:55	06/22/2016 10:14
C04FFD-062116	L16061227-05	06/21/2016 08:55	06/22/2016 10:14
18CPTMW18-062116	L16061227-06	06/21/2016 10:05	06/22/2016 10:14
18WW18-062116	L16061227-07	06/21/2016 11:15	06/22/2016 10:14
18WW17-062116	L16061227-08	06/21/2016 11:40	06/22/2016 10:14
TRIP BLANK	L16061227-09	06/21/2016 00:01	06/22/2016 10:14

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16061227
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 37
2.0 Full Sample Data Package 91
2.1 Volatiles Data 92
2.1.1 Volatiles GCMS Data (8260) 93
2.1.1.1 Summary Data 94
2.1.1.2 QC Summary Data 116
2.1.1.3 Sample Data 146
2.1.1.4 Standards Data 176
2.1.1.5 Raw QC Data 290
2.2 Semivolatiles Data 410
2.2.1 Semivolatiles GC/MS Data (Dioxane) 307
2.2.1.1 Summary Data 308
2.2.1.2 QC Summary Data 314
2.2.1.3 Sample Data 349
2.2.1.4 Standards Data 358
2.2.1.5 Raw QC Data 385
2.2 General Chromatography Data 410
2.2.2 6850 LC/MS Data 411
2.2.2.1 Summary Data 412
2.2.2.2 QC Summary Data 418
2.2.2.3 Sample Data 490
2.2.2.4 Standards Data 503
2.2.2.5 Raw QC Data 564
2.3 Metals Data 569
2.3.1 Metals I C P Data 570
2.3.1.1 Summary Data 571
2.3.1.2 QC Summary Data 581
2.3.1.3 Raw Data 665
2.3.2 Metals ICP-MS Data 1377
2.3.2.1 Summary Data 1378
2.3.2.2 QC Summary Data 1390
2.3.2.3 Raw Data 1429
2.3.3 Metals CVAA Data (Mercury) 2054
2.3.3.1 Summary Data 2055
2.3.3.2 QC Summary 2062
2.3.3.3 Raw Data 2090
3.0 Attachments 2098

1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2016-07-07 17:55:43

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Chloromethane is marginally below the LCL in ICV WG574723-12 analyzed 06/30/2016 on HPMS6.

2) Trichlorofluoromethane is marginally above the UCL in CCV WG574938-02 analyzed 07/01/2016 on HPMS6.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812, WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-07-12 12:21:21

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812, WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?		X			1
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			2
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812, WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?		X			3
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812, WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812, WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812, WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Sample 01 was re-extracted out of hold time.
2. Sample 01 yielded a recovery for the surrogate that was below the acceptance criteria.
3. The RPD was greater than the upper limit for WG573812, however all recoveries were within acceptance criteria.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-01 13:10:09

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			ER1
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER1 MS/MSD analyses were not associated with this sample delivery group. Three sets of MS/MSDs were analyzed in Batch WG574701. Recoveries in the first set MS and MSD are out of range due to high level of target analyte in the reference sample and required dilutions to obtain results within the calibration range for Sample 01. Acceptable recoveries were observed in the MS/MSD set 02 and 03.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-11 17:10:28

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client samples 06 and 07 required dilution analyses in order to obtain results for magnesium and sodium within the calibration range. Client sample 07 required dilution analysis in order to obtain a result for iron within the calibration range. Client samples 01, 06 and 07 required dilution analyses in order to obtain results for calcium within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573859	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-11 17:08:12

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573859	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573859	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573859	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573859	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573859	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW22-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 16:24
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	6M140338
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	85	115	
1,2-Dichloroethane-d4	99.3	70	120	
Toluene-d8	99.3	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW22-062116	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 19:39
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	15M18611
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	18.3	20	129	*

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW22-062116	**Prep Method:**	3520C	**Prep Date:**	06/30/2016 16:00
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG575045	**Analyst:**	MES	**Run Date:**	07/05/2016 18:15
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	15M18726
Sample Tag:	RE	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U,H1	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.2	20	129	

U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW22-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 00:14
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	1LM.LM35540
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.53		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW22-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:13
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	T3.062416.141350
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	2.57		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.0825		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.09		1.00	0.500	0.250
Potassium, Total	7440-09-7	8.42		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00528	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	60.6		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW22-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/25/2016 15:17
Collect Date:	06/21/2016 07:55	**Dilution:**	20	**File ID:**	T3.062516.151743
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	193		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW22-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 12:55
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	NI.063016.125503
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00523		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.114		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00110	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00449		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.00227	J	0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00569	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0767		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW22-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:42
Collect Date:	06/21/2016 07:55	**Dilution:**	20	**File ID:**	NI.063016.144253
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.353		0.120	0.0600	0.0300

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW22-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:38
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	M7.062816.163856
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	C04-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 16:56
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	6M140339
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.24	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.6	85	115	
1,2-Dichloroethane-d4	97.4	70	120	
Toluene-d8	99.9	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C04-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 00:33
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	1LM.LM35541
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C04F-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:17
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	T3.062416.141746
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	13.9		0.500	0.250	0.125
Iron, Total	7439-89-6	7.76		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	7.73		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.89	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	27.9		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C04F-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 12:58
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	NI.063016.125815
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000967	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00355	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C04F-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:46
Collect Date:	06/21/2016 08:55	**Dilution:**	20	**File ID:**	NI.063016.144605
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.311		0.120	0.0600	0.0300
Manganese, Total	7439-96-5	0.287		0.0800	0.0400	0.0200

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C04F-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:46
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	M7.062816.164630
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	C04FD-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 17:28
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	6M140340
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.0	85	115	
1,2-Dichloroethane-d4	97.5	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C04FD-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 00:52
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	1LM.LM35542
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C04FFD-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:21
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	T3.062416.142142
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	14.0		0.500	0.250	0.125
Iron, Total	7439-89-6	7.21		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	7.47		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.89	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00539	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	27.5		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C04FFD-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 13:01
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	NI.063016.130126
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000991	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00186	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.247		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C04FFD-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:49
Collect Date:	06/21/2016 08:55	**Dilution:**	20	**File ID:**	NI.063016.144917
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.288		0.120	0.0600	0.0300

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C04FFD-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:49
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	M7.062816.164902
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW18-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 18:00
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	6M140341
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.39	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	99.0	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW18-062116	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 20:02
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	15M18612
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	55.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW18-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 02:07
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	1LM.LM35546
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW18-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:25
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	T3.062416.142526
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.271		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	2.44		0.200	0.100	0.0500
Potassium, Total	7440-09-7	7.88		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00770	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW18-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/25/2016 15:21
Collect Date:	06/21/2016 10:05	**Dilution:**	20	**File ID:**	T3.062516.152125
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	337		10.0	5.00	2.50
Magnesium, Total	7439-95-4	203		20.0	10.0	5.00
Sodium, Total	7440-23-5	849		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW18-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 13:04
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	NI.063016.130438
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0161		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0130		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0229		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00266	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0270		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000115	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00313		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0175	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW18-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:52
Collect Date:	06/21/2016 10:05	**Dilution:**	100	**File ID:**	NI.063016.145228
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.713		0.600	0.300	0.150
Manganese, Total	7439-96-5	2.81		0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW18-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:51
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	M7.062816.165134
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW18-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 18:33
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	6M140342
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.41	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	85	115	
1,2-Dichloroethane-d4	98.5	70	120	
Toluene-d8	99.5	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW18-062116	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 20:25
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	15M18613
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.0	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW18-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 02:26
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM35547
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW18-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:48
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	T3.062416.144853
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.75		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW18-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/29/2016 10:07
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/29/2016 11:54
Collect Date:	06/21/2016 11:15	**Dilution:**	20	**File ID:**	T3.062916.115438
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	49.5		10.0	5.00	2.50
Iron, Total	7439-89-6	78.0		4.00	2.00	1.00
Magnesium, Total	7439-95-4	34.0		20.0	10.0	5.00
Sodium, Total	7440-23-5	146		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW18-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 13:07
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	NI.063016.130749
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00541		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00126	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00107	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0497		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW18-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:55
Collect Date:	06/21/2016 11:15	**Dilution:**	100	**File ID:**	NI.063016.145540
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	1.01		0.600	0.300	0.150
Manganese, Total	7439-96-5	1.55		0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW18-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:54
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	M7.062816.165406
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW17-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 19:05
Collect Date:	06/21/2016 11:40	**Dilution:**	1	**File ID:**	6M140343
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.275	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.703	J	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	46.3		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.9	85	115	
1,2-Dichloroethane-d4	98.5	70	120	
Toluene-d8	99.4	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW17-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 02:45
Collect Date:	06/21/2016 11:40	**Dilution:**	10000	**File ID:**	1LM.LM35548
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	82900		4000	2000	1000

Certificate of Analysis

Sample #:	L16061227-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 15:19
Collect Date:	06/21/2016 00:01	**Dilution:**	1	**File ID:**	6M140336
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.6	85	115	
1,2-Dichloroethane-d4	96.2	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW22-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 16:24
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	6M140338
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	85	115	
1,2-Dichloroethane-d4	99.3	70	120	
Toluene-d8	99.3	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	C04-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 16:56
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	6M140339
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.24	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.6	85	115	
1,2-Dichloroethane-d4	97.4	70	120	
Toluene-d8	99.9	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	C04FD-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 17:28
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	6M140340
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.0	85	115	
1,2-Dichloroethane-d4	97.5	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW18-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 18:00
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	6M140341
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.39	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	99.0	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW18-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 18:33
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	6M140342
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.41	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	85	115	
1,2-Dichloroethane-d4	98.5	70	120	
Toluene-d8	99.5	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW17-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 19:05
Collect Date:	06/21/2016 11:40	**Dilution:**	1	**File ID:**	6M140343
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.275	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.703	J	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	46.3		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.9	85	115	
1,2-Dichloroethane-d4	98.5	70	120	
Toluene-d8	99.4	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 15:19
Collect Date:	06/21/2016 00:01	**Dilution:**	1	**File ID:**	6M140336
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.6	85	115	
1,2-Dichloroethane-d4	96.2	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 042416
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75498 Surrogate Standard: STD75498
CCV: STD75791 LCS: STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566155

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M138749	RINSE	NA	1	1		04/24/16 16:05
6M138750	WG566155-01 50ng BFB 826-A9	NA	1	1	STD75485	04/24/16 16:33
6M138751	WG566155-02 5ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 16:59
6M138752	WG566155-03 20ug/L STD 826-A	NA	1	1	STD75791	04/24/16 17:31
6M138753	WG566155-04 50ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 18:03
6M138754	WG566155-05 100ug/L STD 826-A	NA	1	1	STD75791	04/24/16 18:36
6M138755	WG566155-06 200ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:08
6M138756	WG566155-07 300ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:40
6M138757	WG566155-08 400ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:12
6M138758	WG566155-09 500ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:44
6M138759	RINSE	NA	1	1		04/24/16 21:16
6M138760	RINSE	NA	1	1		04/24/16 21:49
6M138761	WG566155-10 100ug/L ALT SRC	NA	1	1	STD75801	04/24/16 22:21
6M138762	RINSE	NA	1	1		04/24/16 22:53
6M138763	RINSE	NA	1	1		04/24/16 23:25

Approved: April 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 063016
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53798

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76744 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574723

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140313	WG574723-01 50ng BFB STD 8260	NA	1	1	STD76496	06/30/16 11:36
6M140314	WG574723-02 0.3ug/L STD 8260	NA	1	1	STD76892	06/30/16 12:03
6M140315	WG574723-03 0.4ug/L STD 8260	NA	1	1	STD76892	06/30/16 12:35
6M140316	WG574723-04 1ug/L STD 8260	NA	1	1	STD76892	06/30/16 13:08
6M140317	WG574723-05 2ug/L STD 8260	NA	1	1	STD76892	06/30/16 13:40
6M140318	WG574723-06 5ug/L STD 8260	NA	1	1	STD76892	06/30/16 14:12
6M140319	WG574723-07 20ug/L STD 8260	NA	1	1	STD76892	06/30/16 14:44
6M140320	WG574723-08 50ug/L STD 8260	NA	1	1	STD76892	06/30/16 15:16
6M140321	WG574723-09 100ug/L STD 8260	NA	1	1	STD76892	06/30/16 15:48
6M140322	WG574723-10 200ug/L STD 8260	NA	1	1	STD76892	06/30/16 16:21
6M140323	WG574723-11 300ug/L STD 8260	NA	1	1	STD76892	06/30/16 16:53
6M140324	RINSE	NA	1	1		06/30/16 17:27
6M140325	RINSE	NA	1	1		06/30/16 17:59
6M140326	WG574723-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76744	06/30/16 18:31
6M140327	RINSE	NA	1	1		06/30/16 19:04

Approved: July 07, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 070116
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76744 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574939

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140328	WG574938-01 50ng BFB STD 8260	NA	1	1	STD76496	07/01/16 11:08
6M140329	WG574938-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/01/16 11:34
6M140330	WG574938-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/01/16 12:06
6M140331	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	07/01/16 12:38
6M140332	WG574939-01 VBLK0701 BLANK STD 826	NA	1	1		07/01/16 13:10
6M140333	WG574939-02 20ug/L LCS STD 8260	NA	1	1	STD76744	07/01/16 13:43
6M140334	WG574939-03 20ug/L LCS2 STD 8260	NA	1	1	STD76744	07/01/16 14:15
6M140335	L16061260-02 A 10X 826-TC	NA	17	10		07/01/16 14:47
6M140336	L16061227-09 A TB 826-SPE	<2	1	1		07/01/16 15:19
6M140337	L16061404-02 A TB 826-SPE	<2	1	1		07/01/16 15:51
6M140338	L16061227-01 A 826-LOW	<2	1	1		07/01/16 16:24
6M140339	L16061227-02 A 826-LOW	<2	1	1		07/01/16 16:56
6M140340	L16061227-04 A 826-LOW	<2	1	1		07/01/16 17:28
6M140341	L16061227-06 A 826-LOW	<2	1	1		07/01/16 18:00
6M140342	L16061227-07 A 826-LOW	<2	1	1		07/01/16 18:33
6M140343	L16061227-08 A 826-LOW	<2	1	1		07/01/16 19:05
6M140344	L16061404-01 A 826-SPE	<2	1	1		07/01/16 19:37
6M140345	L16061211-13 A 826-SPE	<2	1	1		07/01/16 20:09
6M140346	L16061211-19 A 826-SPE	<2	1	1		07/01/16 20:41
6M140347	L16061211-16 A 826-SPE	<2	1	1		07/01/16 21:13
6M140348	L16061211-20 A 826-SPE	<2	1	1		07/01/16 21:46
6M140349	L16061211-17 A 826-SPE	<2	1	1		07/01/16 22:18
6M140350	L16061211-18 A 826-SPE	<2	1	1		07/01/16 22:50
6M140351	RINSE	NA	1	1		07/01/16 23:22
6M140352	WG574939-04 VBLK0701 BLANK STD 624	NA	2	1		07/01/16 23:54
6M140353	L16061650-02 A 624-SPE	6	2	1		07/02/16 00:26
6M140354	L16070047-01 A 624-SPE	6	2	1		07/02/16 00:58
6M140355	L16070047-02 A 624-SPE	6	2	1		07/02/16 01:30
6M140356	L16070038-07 A 10X 624-SPE	7	2	10		07/02/16 02:02
6M140357	CCV	NA	1	1		07/02/16 02:34
6M140358	RINSE	NA	1	1		07/02/16 03:06
6M140359	RINSE	NA	1	1		07/02/16 03:38
6M140360	ANTIFOAM BLANK	NA	1	1		07/02/16 04:10
6M140361	WG573894-01 A FBLK 10X 826-TC	NA	17	10		07/02/16 04:42

Approved: July 05, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 070116
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76744 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574939

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M140329				
	Ketones were low, DNR.			
4				
File ID: 6M140331				
	Not needed, DNR.			

Approved: July 05, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 24-APR-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74754
Analytical Workgroups: WG566155

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-APR-2016
Tiffany Bailey

Secondary Reviewer:
29-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-29-2016 12:29:57

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76082
Analytical Workgroups: WG574723

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-JUL-2016
Tiffany Bailey

Secondary Reviewer:
07-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-07-2016 13:59:59

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76105
Analytical Workgroups: WG574939

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
05-JUL-2016
Tiffany Bailey

Secondary Reviewer:
05-JUL-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 16:02:07

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG574939

Login Number: L16061227

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW22-062116	01	06/21/16					07/01/2016	10.4	14		07/01/16	10.4	14	
C04-062116	02	06/21/16					07/01/2016	10.3	14		07/01/16	10.3	14	
C04FD-062116	04	06/21/16					07/01/2016	10.4	14		07/01/16	10.4	14	
18CPTMW18-062116	06	06/21/16					07/01/2016	10.3	14		07/01/16	10.3	14	
18WW18-062116	07	06/21/16					07/01/2016	10.3	14		07/01/16	10.3	14	
18WW17-062116	08	06/21/16					07/01/2016	10.3	14		07/01/16	10.3	14	
TRIP BLANK	09	06/21/16					07/01/2016	10.6	14		07/01/16	10.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4838758
Report generated 07/07/2016 11:53

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061227
Instrument Id: HPMS6
Workgroup (AAB#): WG574939

Method: 8260
CAL ID: HPMS6-30-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061227-01	1.00	01	99.3	99.2	102	99.3
L16061227-02	1.00	01	97.4	98.6	102	99.9
L16061227-04	1.00	01	97.5	98.0	103	100
L16061227-06	1.00	01	99.0	100	101	101
L16061227-07	1.00	01	98.5	99.2	102	99.5
L16061227-08	1.00	01	98.5	99.9	101	99.4
L16061227-09	1.00	01	96.2	97.6	102	100
WG574939-01	1.00	01	96.7	95.9	102	99.8
WG574939-02	1.00	01	96.9	98.6	99.2	99.1
WG574939-03	1.00	01	96.9	98.1	99.1	99.6
WG574939-04	1.00	01	101	101	102	99.5

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4838764
Report generated: 07/07/2016 11:53

METHOD BLANK SUMMARY

Login Number: L16061227
Blank File ID: 6M140332
Prep Date: 07/01/16 13:10
Analyzed Date: 07/01/16 13:10
Analyst: TMB

Work Group: WG574939
Blank Sample ID: WG574939-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574939-02	6M140333	07/01/16 13:43	01
LCS2	WG574939-03	6M140334	07/01/16 14:15	01
TRIP BLANK	L16061227-09	6M140336	07/01/16 15:19	01
18WW22-062116	L16061227-01	6M140338	07/01/16 16:24	01
C04-062116	L16061227-02	6M140339	07/01/16 16:56	01
C04FD-062116	L16061227-04	6M140340	07/01/16 17:28	01
18CPTMW18-062116	L16061227-06	6M140341	07/01/16 18:00	01
18WW18-062116	L16061227-07	6M140342	07/01/16 18:33	01
18WW17-062116	L16061227-08	6M140343	07/01/16 19:05	01

Report Name: BLANK_SUMMARY
PDF File ID: 4842604
Report generated 07/07/2016 11:53

METHOD BLANK SUMMARY

Login Number: L16061227
Blank File ID: 6M140352
Prep Date: 07/01/16 23:54
Analyzed Date: 07/01/16 23:54
Analyst: TMB

Work Group: WG574939
Blank Sample ID: WG574939-04
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574939-02	6M140333	07/01/16 13:43	01
LCS2	WG574939-03	6M140334	07/01/16 14:15	01
TRIP BLANK	L16061227-09	6M140336	07/01/16 15:19	01
18WW22-062116	L16061227-01	6M140338	07/01/16 16:24	01
C04-062116	L16061227-02	6M140339	07/01/16 16:56	01
C04FD-062116	L16061227-04	6M140340	07/01/16 17:28	01
18CPTMW18-062116	L16061227-06	6M140341	07/01/16 18:00	01
18WW18-062116	L16061227-07	6M140342	07/01/16 18:33	01
18WW17-062116	L16061227-08	6M140343	07/01/16 19:05	01

Report Name: BLANK_SUMMARY
PDF File ID: 4842604
Report generated 07/07/2016 11:53

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061227 Prep Date: 07/01/16 13:10 Sample ID: WG574939-01
Instrument ID: HPMS6 Run Date: 07/01/16 13:10 Prep Method: 5030B/5030C/503
File ID: 6M140332 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG574939 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4838759
07-JUL-2016 11:53

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061227 Prep Date: 07/01/16 13:10 Sample ID: WG574939-01
Instrument ID: HPMS6 Run Date: 07/01/16 13:10 Prep Method: 5030B/5030C/503
File ID: 6M140332 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG574939 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	95.9	85 - 115	PASS
1,2-Dichloroethane-d4	96.7	70 - 120	PASS
Toluene-d8	99.8	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4838759
07-JUL-2016 11:53

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061227 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG574939 Units: ug/L
QC Key: DOD4 Lot #: STD76744

Sample ID: WG574939-02 LCS File ID: 6M140333 Run Date: 07/01/2016 13:43
Sample ID: WG574939-03 LCS2 File ID: 6M140334 Run Date: 07/01/2016 14:15

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.8	109	20.0	21.6	108	0.889	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.0	100	20.0	19.8	99.1	0.872	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	22.3	111	20.0	22.7	114	2.18	65 - 130	30	
1,1,2-Trichloroethane	20.0	21.9	110	20.0	21.3	107	2.73	75 - 125	30	
1,1-Dichloroethane	20.0	18.9	94.4	20.0	18.7	93.5	0.925	70 - 135	30	
1,1-Dichloroethene	20.0	17.5	87.6	20.0	17.4	87.1	0.656	70 - 130	30	
1,1-Dichloropropene	20.0	19.2	95.9	20.0	19.2	96.0	0.0917	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	22.2	111	20.0	22.3	112	0.665	55 - 140	30	
1,2,3-Trichloropropane	20.0	23.4	117	20.0	22.8	114	2.75	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	22.2	111	20.0	22.3	112	0.510	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	21.9	109	20.0	21.7	109	0.610	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	22.8	114	20.0	24.3	121	6.06	50 - 130	30	
1,2-Dibromoethane	20.0	21.8	109	20.0	21.4	107	1.90	80 - 120	30	
1,2-Dichlorobenzene	20.0	22.4	112	20.0	22.2	111	0.967	70 - 120	30	
1,2-Dichloroethane	20.0	20.7	104	20.0	20.3	102	2.01	70 - 130	30	
1,2-Dichloropropane	20.0	21.3	106	20.0	21.0	105	1.41	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	22.1	110	20.0	22.0	110	0.435	75 - 130	30	
1,3-Dichlorobenzene	20.0	21.7	108	20.0	21.6	108	0.389	75 - 125	30	
1,3-Dichloropropane	20.0	22.3	112	20.0	21.9	109	1.96	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.6	108	20.0	21.7	108	0.135	75 - 125	30	
2,2-Dichloropropane	20.0	19.8	98.9	20.0	21.1	106	6.50	70 - 135	30	
2-Butanone	20.0	21.2	106	20.0	20.9	105	1.22	30 - 150	30	
2-Chlorotoluene	20.0	21.9	110	20.0	20.5	103	6.58	75 - 125	30	
2-Hexanone	20.0	20.8	104	20.0	21.0	105	1.11	55 - 130	30	
4-Chlorotoluene	20.0	21.3	107	20.0	22.8	114	6.63	75 - 130	30	
4-Methyl-2-pentanone	20.0	21.4	107	20.0	21.1	105	1.47	60 - 135	30	
Acetone	20.0	21.0	105	20.0	20.4	102	2.57	40 - 140	30	
Benzene	20.0	20.1	101	20.0	19.9	99.4	1.14	80 - 120	30	
Bromobenzene	20.0	21.0	105	20.0	21.0	105	0.338	75 - 125	30	
Bromochloromethane	20.0	20.0	100	20.0	19.9	99.7	0.330	65 - 130	30	
Bromodichloromethane	20.0	21.0	105	20.0	20.7	104	1.25	75 - 120	30	
Bromoform	20.0	20.5	102	20.0	19.7	98.7	3.64	70 - 130	30	
Bromomethane	20.0	19.3	96.4	20.0	19.0	94.9	1.58	30 - 145	30	
Carbon disulfide	20.0	17.5	87.4	20.0	17.7	88.4	1.06	35 - 160	30	
Carbon tetrachloride	20.0	20.2	101	20.0	20.1	101	0.0578	65 - 140	30	
Chlorobenzene	20.0	21.4	107	20.0	21.1	106	1.17	80 - 120	30	
Chloroethane	20.0	20.4	102	20.0	19.8	98.9	3.01	60 - 135	30	
Chloroform	20.0	19.7	98.5	20.0	19.4	97.0	1.50	65 - 135	30	
Chloromethane	20.0	15.9	79.3	20.0	16.1	80.3	1.26	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.5	102	20.0	20.2	101	1.53	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4838760
Report generated: 07/07/2016 11:53

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061227 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG574939 Units: ug/L
QC Key: DOD4 Lot #: STD76744

Sample ID: WG574939-02 LCS File ID: 6M140333 Run Date: 07/01/2016 13:43
Sample ID: WG574939-03 LCS2 File ID: 6M140334 Run Date: 07/01/2016 14:15

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	23.0	115	20.0	23.0	115	0.194	70 - 130	30	
Chlorodibromomethane	20.0	21.7	109	20.0	21.6	108	0.513	60 - 135	30	
Dibromomethane	20.0	20.5	103	20.0	20.0	100	2.68	75 - 125	30	
Dichlorodifluoromethane	20.0	15.7	78.7	20.0	15.6	77.8	1.10	30 - 155	30	
Ethylbenzene	20.0	21.5	108	20.0	21.4	107	0.919	75 - 125	30	
Hexachlorobutadiene	20.0	23.0	115	20.0	23.3	117	1.30	50 - 140	30	
Isopropylbenzene	20.0	22.0	110	20.0	21.9	109	0.705	75 - 125	30	
m-,p-Xylene	40.0	43.6	109	40.0	43.0	107	1.48	75 - 130	30	
Methylene chloride	20.0	19.3	96.4	20.0	19.1	95.3	1.13	55 - 140	30	
n-Butylbenzene	20.0	21.9	110	20.0	22.0	110	0.229	70 - 135	30	
n-Propylbenzene	20.0	22.4	112	20.0	22.5	112	0.561	70 - 130	30	
Naphthalene	20.0	21.1	106	20.0	21.2	106	0.180	55 - 140	30	
o-Xylene	20.0	22.3	112	20.0	22.3	111	0.205	80 - 120	30	
p-Isopropyltoluene	20.0	22.1	111	20.0	22.1	111	0.0535	75 - 130	30	
sec-Butylbenzene	20.0	22.3	111	20.0	22.4	112	0.611	70 - 125	30	
Styrene	20.0	22.2	111	20.0	22.1	111	0.452	65 - 135	30	
tert-Butylbenzene	20.0	22.4	112	20.0	22.1	110	1.42	70 - 130	30	
Tetrachloroethene	20.0	20.1	101	20.0	20.0	99.9	0.638	45 - 150	30	
Toluene	20.0	20.6	103	20.0	20.3	102	1.20	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.2	96.0	20.0	18.9	94.7	1.41	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.8	109	20.0	21.7	109	0.357	55 - 140	30	
Trichloroethene	20.0	20.4	102	20.0	19.9	99.5	2.69	70 - 125	30	
Trichlorofluoromethane	20.0	23.2	116	20.0	23.5	117	1.11	60 - 145	30	
Vinyl chloride	20.0	19.0	95.0	20.0	18.7	93.7	1.37	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	96.9	96.9	70 - 120	PASS
Dibromofluoromethane	98.6	98.1	85 - 115	PASS
4-Bromofluorobenzene	99.2	99.1	75 - 120	PASS
Toluene-d8	99.1	99.6	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4838760
Report generated: 07/07/2016 11:53

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061227
Instrument: HPMS6
Analyst: JDS
Workgroup: WG566155

Tune ID: WG566155-01
Run Date: 04/24/2016
Run Time: 16:33
File ID: 6M138750
Cal ID: HPMS6 - 24-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	10010	PASS
75.0	95.0	30.0	60.0	52.0	23152	PASS
95.0	95.0	100	100	100	44552	PASS
96.0	95.0	5.00	9.00	6.92	3085	PASS
173	174	0	2.00	0.346	113	PASS
174	95.0	50.0	100	73.2	32632	PASS
175	174	5.00	9.00	7.16	2336	PASS
176	174	95.0	101	99.2	32384	PASS
177	176	5.00	9.00	6.95	2251	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566155-02	STD	01	04/24/2016 16:59	
WG566155-03	STD	01	04/24/2016 17:31	
WG566155-04	STD	01	04/24/2016 18:03	
WG566155-05	STD-CCV	01	04/24/2016 18:36	
WG566155-06	STD	01	04/24/2016 19:08	
WG566155-07	STD	01	04/24/2016 19:40	
WG566155-08	STD	01	04/24/2016 20:12	
WG566155-09	STD	01	04/24/2016 20:44	
WG566155-10	SSCV	01	04/24/2016 22:21	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4838762
Report generated 07/07/2016 11:53

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061227
Instrument: HPMS6
Analyst: TMB
Workgroup: WG574723

Tune ID: WG574723-01
Run Date: 06/30/2016
Run Time: 11:36
File ID: 6M140313
Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.0	8707	PASS
75.0	95.0	30.0	60.0	49.7	19699	PASS
95.0	95.0	100	100	100	39664	PASS
96.0	95.0	5.00	9.00	6.69	2652	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.8	29282	PASS
175	174	5.00	9.00	7.28	2131	PASS
176	174	95.0	101	99.6	29157	PASS
177	176	5.00	9.00	6.75	1969	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574723-02	STD	01	06/30/2016 12:03	
WG574723-03	STD	01	06/30/2016 12:35	
WG574723-04	STD	01	06/30/2016 13:08	
WG574723-05	STD	01	06/30/2016 13:40	
WG574723-06	STD	01	06/30/2016 14:12	
WG574723-07	STD	01	06/30/2016 14:44	
WG574723-08	STD-CCV	01	06/30/2016 15:16	
WG574723-09	STD	01	06/30/2016 15:48	
WG574723-10	STD	01	06/30/2016 16:21	
WG574723-11	STD	01	06/30/2016 16:53	
WG574723-12	SSCV	01	06/30/2016 18:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4838762
Report generated 07/07/2016 11:53

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061227
Instrument: HPMS6
Analyst: TMB
Workgroup: WG574938

Tune ID: WG574938-01
Run Date: 07/01/2016
Run Time: 11:08
File ID: 6M140328
Cal ID: HPMS6 - 30-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.7	10717	PASS
75.0	95.0	30.0	60.0	51.3	24277	PASS
95.0	95.0	100	100	100	47296	PASS
96.0	95.0	5.00	9.00	7.03	3326	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	74.7	35325	PASS
175	174	5.00	9.00	6.90	2437	PASS
176	174	95.0	101	97.6	34493	PASS
177	176	5.00	9.00	7.10	2450	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574938-02	CCV	01	07/01/2016 12:06	
WG574939-01	BLANK	01	07/01/2016 13:10	
WG574939-02	LCS	01	07/01/2016 13:43	
WG574939-03	LCS2	01	07/01/2016 14:15	
L16061227-09	TRIP BLANK	01	07/01/2016 15:19	
L16061227-01	18WW22-062116	01	07/01/2016 16:24	
L16061227-02	C04-062116	01	07/01/2016 16:56	
L16061227-04	C04FD-062116	01	07/01/2016 17:28	
L16061227-06	18CPTMW18-062116	01	07/01/2016 18:00	
L16061227-07	18WW18-062116	01	07/01/2016 18:33	
L16061227-08	18WW17-062116	01	07/01/2016 19:05	
WG574939-04	BLANK2	01	07/01/2016 23:54	*
WG573894-01	FBLK1	DL01	07/02/2016 04:42	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4838762
Report generated 07/07/2016 11:53

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 042416 - HPMS6
Last Calibration: Wed Apr 27 16:03:33 2016
Curve: WG566155
Calibration Files

	Compound	5 6M138751.D	20 6M138752.D	50 6M138753.D	100 6M138754.D	200 6M138755.D	300 6M138756.D	400 6M138757.D	500 6M138758.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.036	0.037	0.039	0.038	0.038	0.038	0.038	0.036	0.037	2.606
T	3-Chloro-1-propene	0.567	0.621	0.656	0.672	0.635	0.622	0.617	0.603	0.624	5.157
T	2-Chloro-1,3-butadiene	0.415	0.507	0.558	0.590	0.558	0.553	0.556	0.548	0.535	10.001
T	Ethyl Acetate	0.229	0.259	0.279	0.281	0.277	0.272	0.279	0.268	0.268	6.419
T	Methacrylonitrile	0.071	0.089	0.099	0.099	0.097	0.095	0.096	0.093	0.092	9.852
T	Isobutyl Alcohol		0.008	0.008	0.007	0.007	0.008	0.010	0.010	0.009	13.654
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.159	0.200	0.231	0.244	0.244	0.241	0.246	0.236	0.225	13.591
T	2-Nitropropane			0.079	0.082	0.085	0.085	0.088	0.084	0.084	3.643
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.026	0.027	0.032	0.034	0.035	0.033	0.031	12.127

Wed Apr 27 16:05:59 2016

Calibration Table Report
Method: 8260WTR.M
Title: 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Calibration: Fri Jul 01 09:28:30 2016
Curve: WG574723
Calibration Files

	Compound	0.3 6M140314.D	0.4 6M140315.D	1 6M140316.D	2 6M140317.D	5 6M140318.D	20 6M140319.D	50 6M140320.D	100 6M140321.D	200 6M140322.D	300 6M140323.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.401	0.398	0.362	0.449	0.438	0.462	0.444	0.391	0.418	8.327		
P	Chloromethane			0.564	0.519	0.446	0.512	0.463	0.436	0.411	0.381	0.467	13.089		
C	Vinyl Chloride		0.237	0.280	0.277	0.251	0.252	0.260	0.267	0.257	0.225	0.256	6.911		
T	1,3-Butadiene					0.175	0.204	0.154	0.154	0.147	0.132	0.161	15.792	0.991	
T	Bromomethane			0.179	0.184	0.166	0.178	0.161	0.164	0.170	0.160	0.170	5.344		
T	Chloroethane			0.158	0.158	0.155	0.170	0.162	0.163	0.168	0.162	0.162	3.146		
T	Trichlorofluoromethane		0.448	0.383	0.389	0.372	0.394	0.373	0.402	0.383	0.374	0.391	6.074		
T	Diethyl ether			0.240	0.244	0.238	0.231	0.237	0.234		0.190	0.231	7.911		
T	Isoprene					0.332	0.374	0.357	0.358	0.361	0.310	0.349	6.639		
T	Acrolein				0.039	0.038	0.038	0.038	0.039		0.039	0.038	1.589		
T	1,1,2-Trichloro-1,2,2-Trifluoroet			0.245	0.246	0.231	0.246	0.239	0.249	0.248	0.242	0.243	2.486		
T	Acetone					0.086	0.083	0.080	0.078	0.078	0.075	0.080	4.861		
C	1,1-Dichloroethene		0.475	0.488	0.483	0.447	0.475	0.469	0.477	0.473	0.459	0.472	2.614		
T	Tert-Butyl Alcohol			0.023	0.024	0.024	0.024	0.024	0.026		0.028	0.024	7.165		
T	Dimethyl Sulfide					0.197	0.217	0.208	0.206	0.206	0.201	0.206	3.230		
T	Iodomethane			0.076	0.076	0.099	0.149	0.180	0.188	0.180	0.164	0.139	34.268	0.996	
T	Methyl acetate					0.218	0.224	0.214	0.217	0.211	0.216	0.217	2.077		
T	Methylene Chloride			0.310	0.299	0.265	0.271	0.261	0.263	0.254	0.240	0.271	8.561		
T	Carbon Disulfide			0.926	0.900	0.839	0.925	0.868	0.856	0.834	0.768	0.864	6.148		
T	Acrylonitrile			0.090	0.096	0.098	0.098	0.102	0.104		0.108	0.099	5.795		
T	Methyl Tert Butyl Ether			0.716	0.725	0.704	0.737	0.716	0.729	0.714	0.694	0.717	1.916		
T	trans-1,2-Dichloroethene		0.263	0.254	0.262	0.245	0.253	0.250	0.255	0.251	0.241	0.253	2.748		
T	n-Hexane					0.432	0.456	0.424	0.426	0.424	0.412	0.429	3.449		
T	Diisopropyl ether			1.208	1.209	1.172	1.157	1.153	1.123		1.058	1.154	4.538		
T	Vinyl Acetate					0.458	0.448	0.486	0.493	0.523	0.482	0.482	5.502		
P	1,1-Dichloroethane		0.561	0.556	0.569	0.531	0.553	0.540	0.544	0.533	0.509	0.544	3.330		
T	Ethyl-Tert-Butyl ether			0.953	0.955	0.939	0.931	0.928	0.916		0.878	0.929	2.832		
T	2-Butanone					0.118	0.124	0.125	0.127	0.123	0.118	0.123	3.167		
T	Propionitrile			0.032	0.033	0.033	0.033	0.034	0.035		0.032	0.033	3.279		
T	2,2-Dichloropropane		0.396	0.421	0.439	0.414	0.411	0.401	0.411	0.407	0.393	0.410	3.381		
T	cis-1,2-Dichloroethene		0.295	0.285	0.269	0.267	0.280	0.277	0.280	0.274	0.262	0.277	3.558		
C	Chloroform	0.615	0.457	0.478	0.484	0.466	0.487	0.476	0.482	0.474	0.454	0.487	9.510		
T	1-Bromopropane			0.024	0.033	0.038	0.044	0.045	0.044	0.045	0.043	0.039	19.340	1.000	
T	Bromochloromethane		0.141	0.141	0.148	0.149	0.155	0.153	0.155	0.152	0.145	0.149	3.658		
T	Tetrahydrofuran			0.104	0.087	0.084	0.081	0.081	0.083		0.078	0.086	9.999		
S	Dibromofluoromethane				0.254	0.258	0.262	0.257	0.250	0.249	0.245	0.254	2.416		
T	1,1,1-Trichloroethane		0.395	0.436	0.430	0.412	0.430	0.430	0.438	0.432	0.414	0.424	3.334		
T	Cyclohexane			0.589	0.567	0.521	0.577	0.543	0.550	0.543	0.524	0.552	4.390		
T	1,1-Dichloropropene			0.377	0.376	0.356	0.370	0.367	0.375	0.373	0.362	0.370	2.060		
T	Tert-Amyl-Methyl ether			0.710	0.726	0.713	0.703	0.708	0.705		0.671	0.705	2.388		
T	Carbon Tetrachloride		0.271	0.305	0.33	0.33	0.37	0.377	0.39	0.391	0.371	0.3484	11.955		
S	1,2-Dichloroethane-d4				0.33	0.331	0.333	0.318	0.316	0.31	0.304	0.3202	3.5321		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.391	0.394	0.406	0.375	0.399	0.393	0.397	0.39	0.373	0.3907	2.7505		
T	Benzene		1.155	1.094	1.109	1.038	1.052	1.035	1.03	0.983	0.89	1.043	7.3599		
T	Trichloroethene		0.277	0.267	0.265	0.253	0.263	0.256	0.255	0.246	0.234	0.2574	4.9066		
T	Methylcyclohexane					0.396	0.428	0.4	0.409	0.404	0.387	0.404	3.4238		
C	1,2-Dichloropropane		0.311	0.293	0.305	0.293	0.306	0.302	0.305	0.3	0.288	0.3004	2.5217		
T	1,4-Dioxane					0.002	0.002	0.002	0.002		0.002	0.002	6.9968		
T	Bromodichloromethane		0.323	0.353	0.365	0.351	0.371	0.375	0.386	0.378	0.359	0.3624	5.1801		
T	Dibromomethane		0.125	0.137	0.148	0.143	0.153	0.151	0.156	0.151	0.145	0.1453	6.6336		
T	2-Chloroethyl Vinyl Ether				0.138	0.135	0.158	0.161	0.16	0.155	0.146	0.1506	7.0765		
T	4-Methyl-2-Pentanone					0.085	0.094	0.095	0.098	0.096	0.089	0.0927	5.3799		
T	cis-1,3-Dichloropropene		0.415	0.394	0.426	0.409	0.431	0.433	0.443	0.433	0.404	0.4208	3.888		
T	Dimethyl Disulfide					0.199	0.239	0.242	0.246	0.245	0.233	0.2342	7.589		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8				1.304	1.297	1.272	1.226	1.166	1.162	1.19	1.2311	4.9151		
C	Toluene		1.699	1.583	1.601	1.454	1.503	1.467	1.44	1.369	1.294	1.49	8.2924		
T	Ethyl Methacrylate			0.37	0.406	0.396	0.455	0.443	0.443	0.439	0.44	0.4239	6.9571		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.49	0.514	0.506	0.547	0.548	0.551	0.543	0.539	0.5298	4.3368		
T	1,1,2-Trichloroethane		0.262	0.278	0.282	0.27	0.285	0.28	0.281	0.274	0.269	0.2757	2.687		
T	2-Hexanone					0.237	0.266	0.269	0.271	0.267	0.261	0.2618	4.9035		
T	1,3-Dichloropropane		0.55	0.526	0.539	0.51	0.52	0.519	0.517	0.503	0.493	0.5197	3.397		
T	Tetrachloroethene		0.362	0.364	0.373	0.351	0.354	0.353	0.352	0.344	0.343	0.3551	2.7537		
T	Dibromochloromethane		0.278	0.3	0.318	0.322	0.353	0.36	0.37	0.36	0.352	0.3348	9.4942		
T	1,2-Dibromoethane		0.238	0.259	0.265	0.259	0.277	0.274	0.281	0.274	0.268	0.2662	4.8464		
T	1-Chlorohexane		0.507	0.497	0.506	0.475	0.52	0.501	0.495	0.488	0.474	0.4959	3.0436		
P	Chlorobenzene		1.087	1.01	1.026	0.933	0.963	0.947	0.932	0.878	0.824	0.9556	8.2302		
T	1,1,1,2-Tetrachloroethane		0.327	0.335	0.343	0.328	0.352	0.354	0.356	0.342	0.323	0.34	3.6316		
C	Ethylbenzene		0.509	0.503	0.522	0.5	0.517	0.508	0.509	0.481	0.452	0.5002	4.2933		
T	m-,p-Xylene		0.651	0.636	0.652	0.606	0.626	0.612	0.603	0.553	0.501	0.6045	8.1404		
T	o-Xylene			0.61	0.633	0.59	0.625	0.619	0.618	0.585	0.544	0.6029	4.778		
T	Styrene		0.992	0.978	1.025	0.988	1.072	1.065	1.072	1.013	0.924	1.0143	4.9363		
P	Bromoform			0.172	0.184	0.183	0.215	0.22	0.234	0.231	0.222	0.2076	11.743		
T	Isopropylbenzene		1.684	1.642	1.648	1.582	1.619	1.599	1.602	1.477	1.304	1.5731	7.3897		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.542	0.561	0.589	0.589	0.619	0.616	0.651	0.654	0.639	0.6067	6.4625		
S	p-Bromofluorobenzene				1.007	1.02	1.012	0.972	0.933	0.96	0.949	0.9791	3.484		

T	1,2,3-Trichloropropane		0.131	0.176	0.189	0.19	0.187	0.19	0.191	0.185	0.1799	11.385
T	trans-1,4-Dichloro-2-Butene		0.158	0.209	0.218	0.244	0.244	0.253	0.256	0.254	0.2294	14.64
T	n-Propylbenzene	4.147	3.945	3.827	3.612	3.693	3.558	3.522	3.223	2.802	3.5921	11.066
T	Bromobenzene	0.822	0.753	0.776	0.753	0.761	0.736	0.737	0.723	0.695	0.7506	4.7215
T	1,3,5-Trimethylbenzene	2.687	2.633	2.638	2.51	2.587	2.52	2.523	2.394	2.166	2.5177	6.2882
T	2-Chlorotoluene	2.919	2.675	2.482	2.32	2.324	2.405	2.382	2.249	2.107	2.4293	9.9295
T	4-Chlorotoluene	2.561	2.355	2.535	2.399	2.452	2.211	2.223	2.179	1.93	2.316	8.6649
T	a-Methylstyrene				1.171	1.369	1.303	1.3	1.265	1.19	1.2663	5.9075
T	tert-Butylbenzene		0.522	0.53	0.496	0.527	0.502	0.507	0.492	0.47	0.5058	3.9858
T	1,2,4-Trimethylbenzene		2.731	2.759	2.607	2.688	2.607	2.616	2.454	2.207	2.5836	6.9171
T	sec-Butylbenzene		3.3	3.29	3.02	3.128	3.02	3.014	2.818	2.521	3.0139	8.4375
T	p-Isopropyltoluene		2.762	2.734	2.57	2.677	2.59	2.601	2.425	2.188	2.5685	7.2625
T	1,3-Dichlorobenzene	1.666	1.555	1.538	1.459	1.494	1.448	1.455	1.387	1.293	1.4773	7.1422
T	1,4-Dichlorobenzene	1.73	1.6	1.574	1.462	1.495	1.451	1.46	1.383	1.287	1.4936	8.6114
T	n-Butylbenzene		2.725	2.645	2.516	2.61	2.545	2.566	2.387	2.156	2.5188	7.0194
T	1,2-Dichlorobenzene	1.544	1.461	1.436	1.375	1.404	1.371	1.382	1.297	1.212	1.387	6.8449
T	1,2-Dibromo-3-Chloropropane			0.093	0.097	0.122	0.122	0.134	0.134	0.13	0.1188	14.398
T	1,2,4-Trichlorobenzene	1.156	0.963	0.98	0.936	0.999	0.975	0.988	0.944	0.882	0.9804	7.5963
T	Hexachlorobutadiene	0.47	0.405	0.413	0.39	0.407	0.402	0.408	0.395	0.377	0.4076	6.3393
T	Naphthalene	1.978	1.873	1.94	1.955	2.174	2.126	2.159	2.015	1.813	2.0036	6.3217
T	1,2,3-Trichlorobenzene	0.987	0.959	0.905	0.88	0.936	0.904	0.915	0.87	0.813	0.9078	5.6179

Fri Jul 01 14:48:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061227 Run Date: 06/30/2016 Sample ID: WG574723-12
Instrument ID: HPMS6 Run Time: 18:31 Method: 8260B
File ID: 6M140326 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG574723 Cal ID: HPMS6 - 30-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.9	ug/L	0.467	4.30	20	
1,1-Dichloroethene	CCC	50.0	44.2	ug/L	0.417	11.7	20	
1,2-Dichloropropane	CCC	50.0	52.0	ug/L	0.313	4.10	20	
Ethylbenzene	CCC	50.0	51.7	ug/L	0.517	3.40	20	
Toluene	CCC	50.0	50.2	ug/L	1.50	0.400	20	
Vinyl Chloride	CCC	50.0	46.1	ug/L	0.237	7.70	20	
Bromoform	SPCC	50.0	49.4	ug/L	0.205	1.20	20	
Chlorobenzene	SPCC	50.0	51.0	ug/L	0.974	1.90	20	
Chloromethane	SPCC	50.0	39.1	ug/L	0.365	21.7	20	*
1,1-Dichloroethane	SPCC	50.0	46.5	ug/L	0.506	7.10	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.5	ug/L	0.673	11.0	20	
Acetone		50.0	46.9	ug/L	0.0752	6.10	20	
Benzene		50.0	48.8	ug/L	1.02	2.40	20	
Bromobenzene		50.0	50.7	ug/L	0.761	1.40	20	
Bromochloromethane		50.0	48.9	ug/L	0.145	2.20	20	
Bromodichloromethane		50.0	51.3	ug/L	0.372	2.60	20	
Bromomethane		50.0	48.4	ug/L	0.165	3.20	20	
2-Butanone		50.0	50.7	ug/L	0.124	1.50	20	
n-Butylbenzene		50.0	51.3	ug/L	2.59	2.70	20	
sec-Butylbenzene		50.0	52.6	ug/L	3.17	5.10	20	
tert-Butylbenzene		50.0	53.2	ug/L	0.538	6.40	20	
Carbon Disulfide		50.0	43.6	ug/L	0.755	12.7	20	
Carbon Tetrachloride		50.0	51.4	ug/L	0.358	2.90	20	
Dibromochloromethane		50.0	53.8	ug/L	0.360	7.60	20	
Chloroethane		50.0	51.7	ug/L	0.168	3.50	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.57	5.70	20	
4-Chlorotoluene		50.0	50.9	ug/L	2.36	1.80	20	
1,2-Dibromo-3-Chloropropane		50.0	55.7	ug/L	0.132	11.3	20	
1,2-Dibromoethane		50.0	52.4	ug/L	0.279	4.90	20	
Dibromomethane		50.0	49.0	ug/L	0.142	2.00	20	
1,2-Dichlorobenzene		50.0	52.5	ug/L	1.46	4.90	20	
1,3-Dichlorobenzene		50.0	51.3	ug/L	1.52	2.60	20	
1,4-Dichlorobenzene		50.0	51.8	ug/L	1.55	3.60	20	
Dichlorodifluoromethane		50.0	40.7	ug/L	0.340	18.6	20	
1,2-Dichloroethane		50.0	49.4	ug/L	0.386	1.20	20	
cis-1,2-Dichloroethene		50.0	49.8	ug/L	0.275	0.500	20	
trans-1,2-Dichloroethene		50.0	47.1	ug/L	0.238	5.90	20	
1,3-Dichloropropane		50.0	53.2	ug/L	0.553	6.30	20	
2,2-Dichloropropane		50.0	50.7	ug/L	0.416	1.40	20	
cis-1,3-Dichloropropene		50.0	56.3	ug/L	0.474	12.6	20	
trans-1,3-Dichloropropene		50.0	53.4	ug/L	0.565	6.70	20	
1,1-Dichloropropene		50.0	48.1	ug/L	0.356	3.80	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4838761
Report generated 07/07/2016 11:53

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061227 Run Date: 06/30/2016 Sample ID: WG574723-12
Instrument ID: HPMS6 Run Time: 18:31 Method: 8260B
File ID: 6M140326 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG574723 Cal ID: HPMS6 - 30-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	49.7	ug/L	0.260	0.600	20	
Hexachlorobutadiene		50.0	52.6	ug/L	0.429	5.20	20	
Isopropylbenzene		50.0	51.7	ug/L	1.63	3.30	20	
p-Isopropyltoluene		50.0	51.7	ug/L	2.65	3.40	20	
4-Methyl-2-Pentanone		50.0	50.7	ug/L	0.0939	1.40	20	
Methylene Chloride		50.0	46.6	ug/L	0.252	6.80	20	
Naphthalene		50.0	49.3	ug/L	1.98	1.40	20	
n-Propylbenzene		50.0	53.7	ug/L	3.86	7.40	20	
Styrene		50.0	52.9	ug/L	1.07	5.90	20	
1,1,1,2-Tetrachloroethane		50.0	52.6	ug/L	0.358	5.20	20	
Tetrachloroethene		50.0	48.7	ug/L	0.346	2.50	20	
1,2,3-Trichlorobenzene		50.0	51.1	ug/L	0.928	2.20	20	
1,2,4-Trichlorobenzene		50.0	51.4	ug/L	1.01	2.90	20	
1,1,1-Trichloroethane		50.0	49.4	ug/L	0.419	1.20	20	
1,1,2-Trichloroethane		50.0	52.1	ug/L	0.287	4.10	20	
Trichloroethene		50.0	49.0	ug/L	0.252	2.10	20	
Trichlorofluoromethane		50.0	47.1	ug/L	0.368	5.70	20	
1,2,3-Trichloropropane		50.0	54.9	ug/L	0.197	9.80	20	
1,2,4-Trimethylbenzene		50.0	51.6	ug/L	2.66	3.10	20	
1,3,5-Trimethylbenzene		50.0	52.6	ug/L	2.65	5.10	20	
o-Xylene		50.0	53.4	ug/L	0.644	6.80	20	
m-,p-Xylene		100	104	ug/L	0.627	3.70	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4838761
Report generated 07/07/2016 11:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227 Run Date: 07/01/2016 Sample ID: WG574938-02
Instrument ID: HPMS6 Run Time: 12:06 Method: 8260B
File ID: 6M140330 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG574939 Cal ID: HPMS6 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.5	ug/L	0.482	1.05	20	
1,1-Dichloroethene	CCC	50.0	51.0	ug/L	0.481	2.02	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.306	1.91	20	
Ethylbenzene	CCC	50.0	51.6	ug/L	0.517	3.28	20	
Toluene	CCC	50.0	50.2	ug/L	1.50	0.495	20	
Vinyl Chloride	CCC	50.0	50.1	ug/L	0.257	0.290	20	
Bromoform	SPCC	50.0	53.5	ug/L	0.222	6.91	20	
Chlorobenzene	SPCC	50.0	49.9	ug/L	0.953	0.254	20	
Chloromethane	SPCC	50.0	47.3	ug/L	0.442	5.30	20	
1,1-Dichloroethane	SPCC	50.0	50.2	ug/L	0.546	0.398	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.5	ug/L	0.674	11.1	20	
Xylenes		150	155	ug/L	0.625	3.44	20	
Acetone		50.0	46.7	ug/L	0.0747	6.68	20	
Benzene		50.0	50.3	ug/L	1.05	0.579	20	
Bromobenzene		50.0	50.6	ug/L	0.760	1.24	20	
Bromochloromethane		50.0	52.5	ug/L	0.156	4.98	20	
Bromodichloromethane		50.0	52.3	ug/L	0.379	4.57	20	
Bromomethane		50.0	47.7	ug/L	0.162	4.68	20	
2-Butanone		50.0	50.0	ug/L	0.123	0.0326	20	
n-Butylbenzene		50.0	53.1	ug/L	2.68	6.21	20	
sec-Butylbenzene		50.0	52.6	ug/L	3.17	5.15	20	
tert-Butylbenzene		50.0	52.3	ug/L	0.529	4.64	20	
Carbon Disulfide		50.0	50.9	ug/L	0.879	1.70	20	
Carbon Tetrachloride		50.0	55.0	ug/L	0.384	10.1	20	
Dibromochloromethane		50.0	54.1	ug/L	0.362	8.19	20	
Chloroethane		50.0	48.6	ug/L	0.157	2.79	20	
2-Chlorotoluene		50.0	51.7	ug/L	2.51	3.30	20	
4-Chlorotoluene		50.0	49.3	ug/L	2.28	1.46	20	
1,2-Dibromo-3-Chloropropane		50.0	55.4	ug/L	0.132	10.8	20	
1,2-Dibromoethane		50.0	52.4	ug/L	0.279	4.76	20	
Dibromomethane		50.0	52.7	ug/L	0.153	5.45	20	
1,2-Dichlorobenzene		50.0	50.6	ug/L	1.40	1.26	20	
1,3-Dichlorobenzene		50.0	51.0	ug/L	1.51	1.96	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.51	0.999	20	
Dichlorodifluoromethane		50.0	54.5	ug/L	0.455	8.94	20	
1,2-Dichloroethane		50.0	50.2	ug/L	0.392	0.401	20	
cis-1,2-Dichloroethene		50.0	51.0	ug/L	0.282	2.06	20	
trans-1,2-Dichloroethene		50.0	51.2	ug/L	0.259	2.36	20	
1,3-Dichloropropane		50.0	50.2	ug/L	0.521	0.316	20	
2,2-Dichloropropane		50.0	55.1	ug/L	0.453	10.3	20	
cis-1,3-Dichloropropene		50.0	52.9	ug/L	0.445	5.80	20	
trans-1,3-Dichloropropene		50.0	53.1	ug/L	0.563	6.22	20	

CCV - Modified 03/05/2008
PDF File ID: 4838763
Report generated 07/07/2016 11:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227 Run Date: 07/01/2016 Sample ID: WG574938-02
Instrument ID: HPMS6 Run Time: 12:06 Method: 8260B
File ID: 6M140330 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG574939 Cal ID: HPMS6 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.3	ug/L	0.379	2.64	20	
2-Hexanone		50.0	50.6	ug/L	0.265	1.20	20	
Hexachlorobutadiene		50.0	52.0	ug/L	0.424	4.04	20	
Isopropylbenzene		50.0	51.6	ug/L	1.62	3.19	20	
p-Isopropyltoluene		50.0	53.0	ug/L	2.72	6.06	20	
4-Methyl-2-Pentanone		50.0	51.0	ug/L	0.0946	2.02	20	
Methylene Chloride		50.0	49.4	ug/L	0.267	1.24	20	
Naphthalene		50.0	54.4	ug/L	2.18	8.88	20	
n-Propylbenzene		50.0	52.2	ug/L	3.75	4.39	20	
Styrene		50.0	52.8	ug/L	1.07	5.61	20	
1,1,1,2-Tetrachloroethane		50.0	52.5	ug/L	0.357	5.00	20	
Tetrachloroethene		50.0	51.3	ug/L	0.364	2.52	20	
1,2,3-Trichlorobenzene		50.0	51.1	ug/L	0.927	2.16	20	
1,2,4-Trichlorobenzene		50.0	51.4	ug/L	1.01	2.72	20	
1,1,1-Trichloroethane		50.0	51.3	ug/L	0.435	2.61	20	
1,1,2-Trichloroethane		50.0	51.7	ug/L	0.285	3.49	20	
Trichloroethene		50.0	49.0	ug/L	0.252	1.99	20	
Trichlorofluoromethane		50.0	60.3	ug/L	0.472	20.6	20	*
1,2,3-Trichloropropane		50.0	53.6	ug/L	0.193	7.16	20	
1,2,4-Trimethylbenzene		50.0	52.5	ug/L	2.71	4.98	20	
1,3,5-Trimethylbenzene		50.0	52.2	ug/L	2.63	4.47	20	
o-Xylene		50.0	52.0	ug/L	0.627	3.91	20	
m-,p-Xylene		100	103	ug/L	0.624	3.21	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4838763
Report generated 07/07/2016 11:53

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061227
Instrument ID: HPMS6
Workgroup (AAB#): WG574939

ICAL CCV Number: WG574723-08
CAL ID: HPMS6-30-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG574723-08	NA	NA	264882	476977	665194
Upper Limit	NA	NA	529764	953954	1330388
Lower Limit	NA	NA	132441	238489	332597
L16061227-01	1.00	01	224470	439057	622904
L16061227-02	1.00	01	222600	432310	615962
L16061227-04	1.00	01	219154	426974	612094
L16061227-06	1.00	01	221247	423456	606310
L16061227-07	1.00	01	214283	421104	597077
L16061227-08	1.00	01	215057	421541	593443
L16061227-09	1.00	01	227983	446539	638332
WG574939-01	1.00	01	233968	460683	653506
WG574939-02	1.00	01	244926	452149	632534
WG574939-03	1.00	01	240618	446803	627951

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4842605
Report generated 07/07/2016 11:53

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061227
Instrument ID: HPMS6
Workgroup (AAB#): WG574939

ICAL CCV Number: WG574723-08
CAL ID: HPMS6-30-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG574723-08	NA	NA	18.81	15.25	10.77
Upper Limit	NA	NA	19.31	15.75	11.27
Lower Limit	NA	NA	18.31	14.75	10.27
L16061227-01	1.00	01	18.81	15.25	10.77
L16061227-02	1.00	01	18.8	15.25	10.77
L16061227-04	1.00	01	18.8	15.25	10.77
L16061227-06	1.00	01	18.81	15.24	10.77
L16061227-07	1.00	01	18.81	15.24	10.77
L16061227-08	1.00	01	18.81	15.25	10.77
L16061227-09	1.00	01	18.81	15.25	10.77
WG574939-01	1.00	01	18.81	15.25	10.76
WG574939-02	1.00	01	18.81	15.25	10.76
WG574939-03	1.00	01	18.8	15.25	10.77

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4842606
Report generated: 07/07/2016 11:54

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140338.D Vial: 11
Acq On : 1 Jul 2016 16:24 Operator: TMB
Sample : L16061227-01 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:33:54 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	622904	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	439057	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	224470	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	156693	24.7944 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.16%		
43) 1,2-Dichloroethane-d4	10.31	65	198006	24.8194 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.28%		
58) Toluene-d8	13.04	98	536501	24.8145 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.24%		
80) p-Bromofluorobenzene	17.02	95	224722	25.5625 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.24%		

Target Compounds					Qvalue
3) Chloromethane	3.37	50	2072	0.1782 ug/L	93
13) Acetone	5.90	43	4037	2.0229 ug/L #	57
29) 2-Butanone	8.55	43	812	0.2658 ug/L #	57

(#) = qualifier out of range (m) = manual integration
6M140338.D 8260WTR.M Sat Jul 02 10:33:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140338.D Vial: 11
Acq On : 1 Jul 2016 16:24 Operator: TMB
Sample : L16061227-01 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:33 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

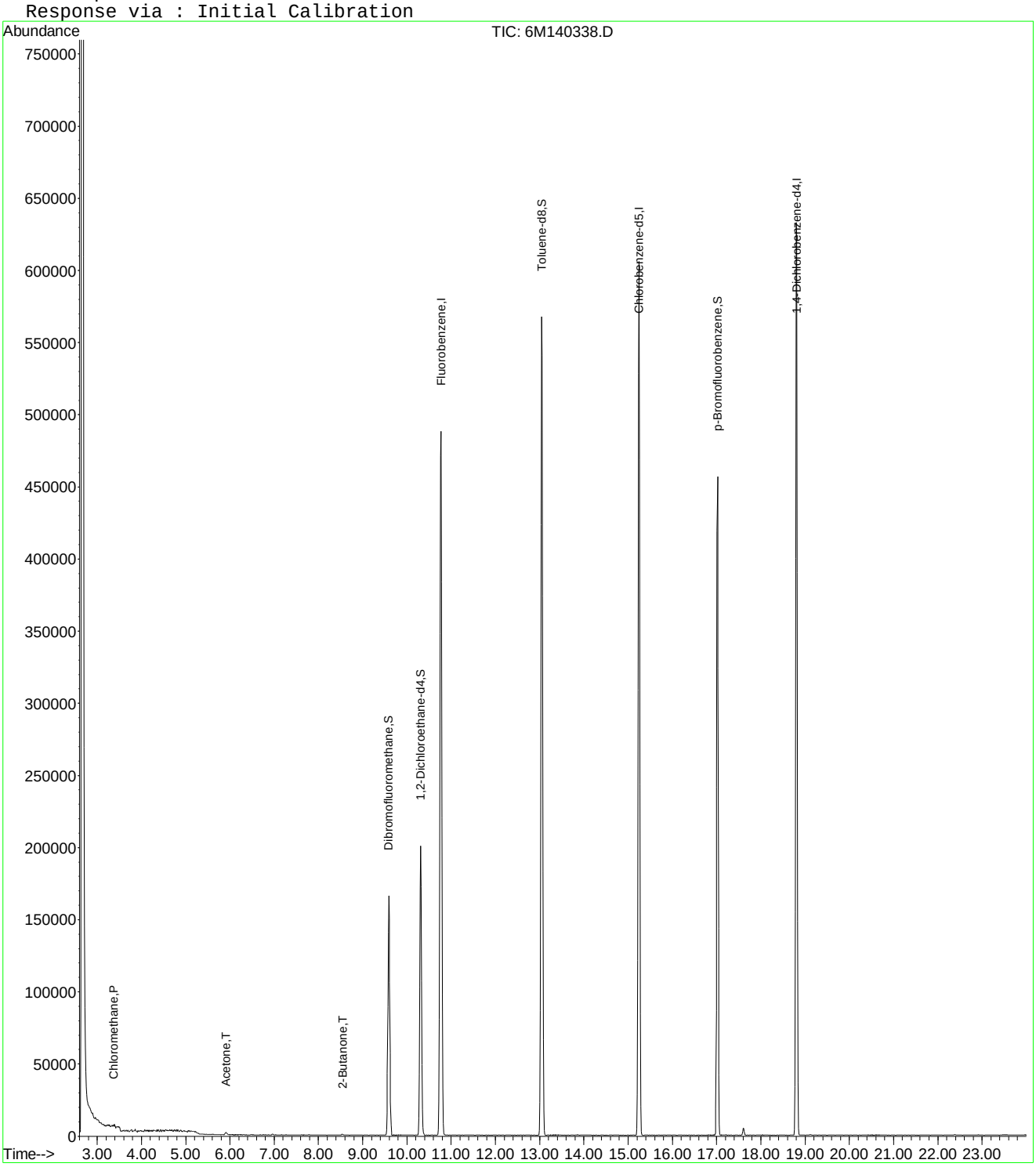

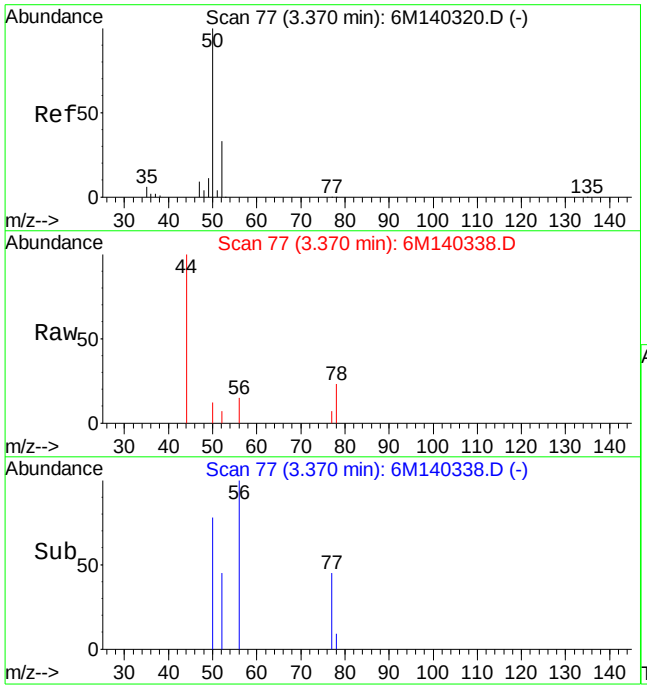

#3
Chloromethane
Concen: 0.18 ug/L
RT: 3.37 min Scan# 77
Delta R.T. 0.01 min
Lab File: 6M140338.D
Acq: 1 Jul 2016 16:24

Tgt Ion: 50 Resp: 2072

Ion	Ratio	Lower	Upper
50	100		
52	28.8	19.8	46.2

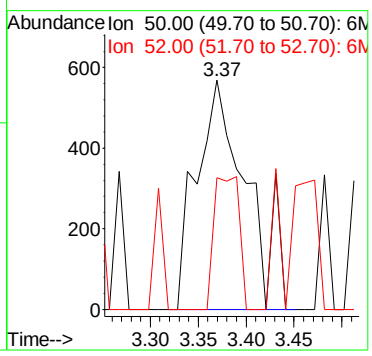

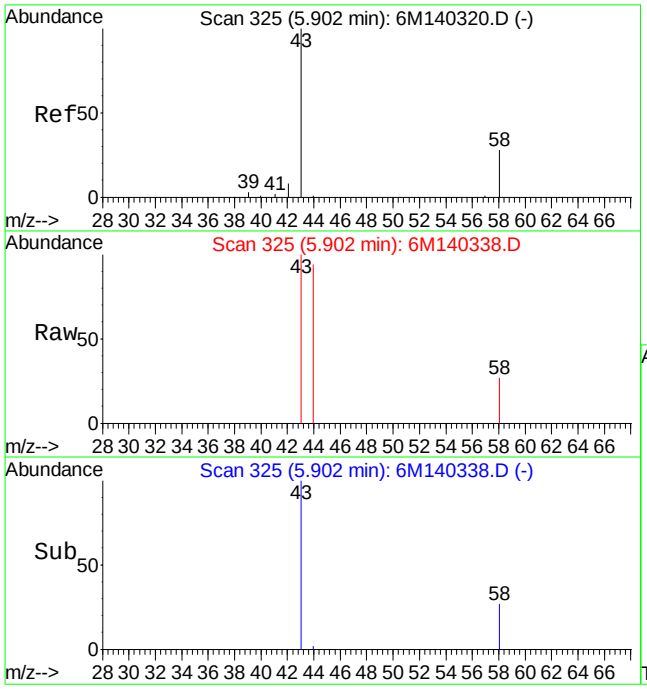

#13
Acetone
Concen: 2.02 ug/L
RT: 5.90 min Scan# 325
Delta R.T. -0.00 min
Lab File: 6M140338.D
Acq: 1 Jul 2016 16:24

Tgt Ion: 43 Resp: 4037

Ion	Ratio	Lower	Upper
43	100		
58	5.0	16.4	38.2#

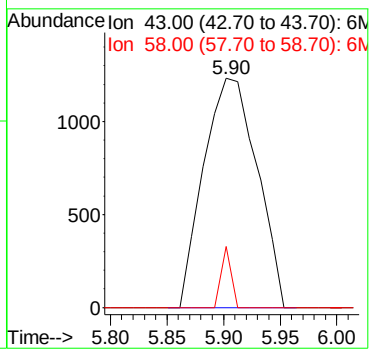

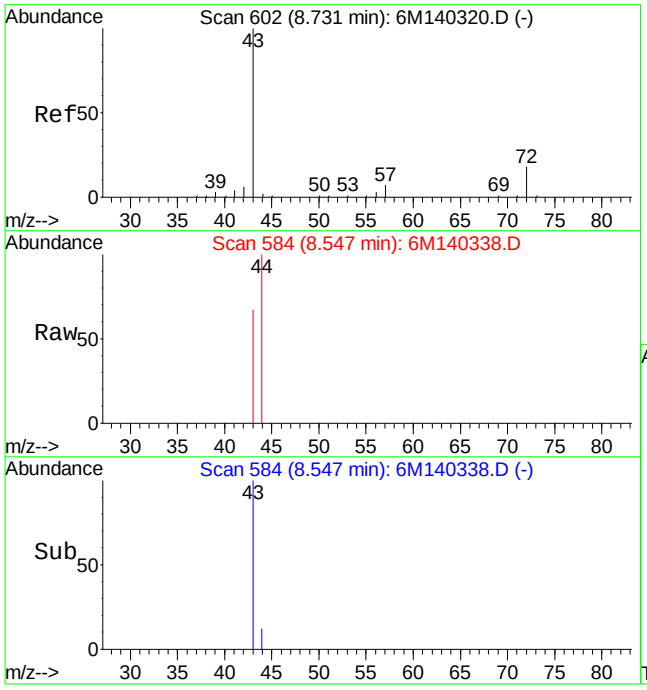

#29
2-Butanone
Concen: 0.27 ug/L
RT: 8.55 min Scan# 584
Delta R.T. -0.19 min
Lab File: 6M140338.D
Acq: 1 Jul 2016 16:24

Tgt Ion: 43 Resp: 812

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.9	27.9#

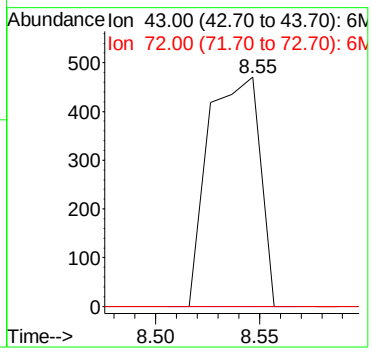

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140339.D Vial: 12
Acq On : 1 Jul 2016 16:56 Operator: TMB
Sample : L16061227-02 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:34:00 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	615962	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	432310	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	222600	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	154116	24.6615 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.64%		
43) 1,2-Dichloroethane-d4	10.32	65	192166	24.3588 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.44%		
58) Toluene-d8	13.04	98	531564	24.9699 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.88%		
80) p-Bromofluorobenzene	17.02	95	222902	25.5685 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.28%		

Target Compounds					Qvalue
3) Chloromethane	3.37	50	1426	0.1240 ug/L	77
13) Acetone	5.91	43	6398	3.2421 ug/L	97
29) 2-Butanone	8.52	43	442	0.1463 ug/L #	57

(#) = qualifier out of range (m) = manual integration
6M140339.D 8260WTR.M Sat Jul 02 10:34:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140339.D Vial: 12
Acq On : 1 Jul 2016 16:56 Operator: TMB
Sample : L16061227-02 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:33 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

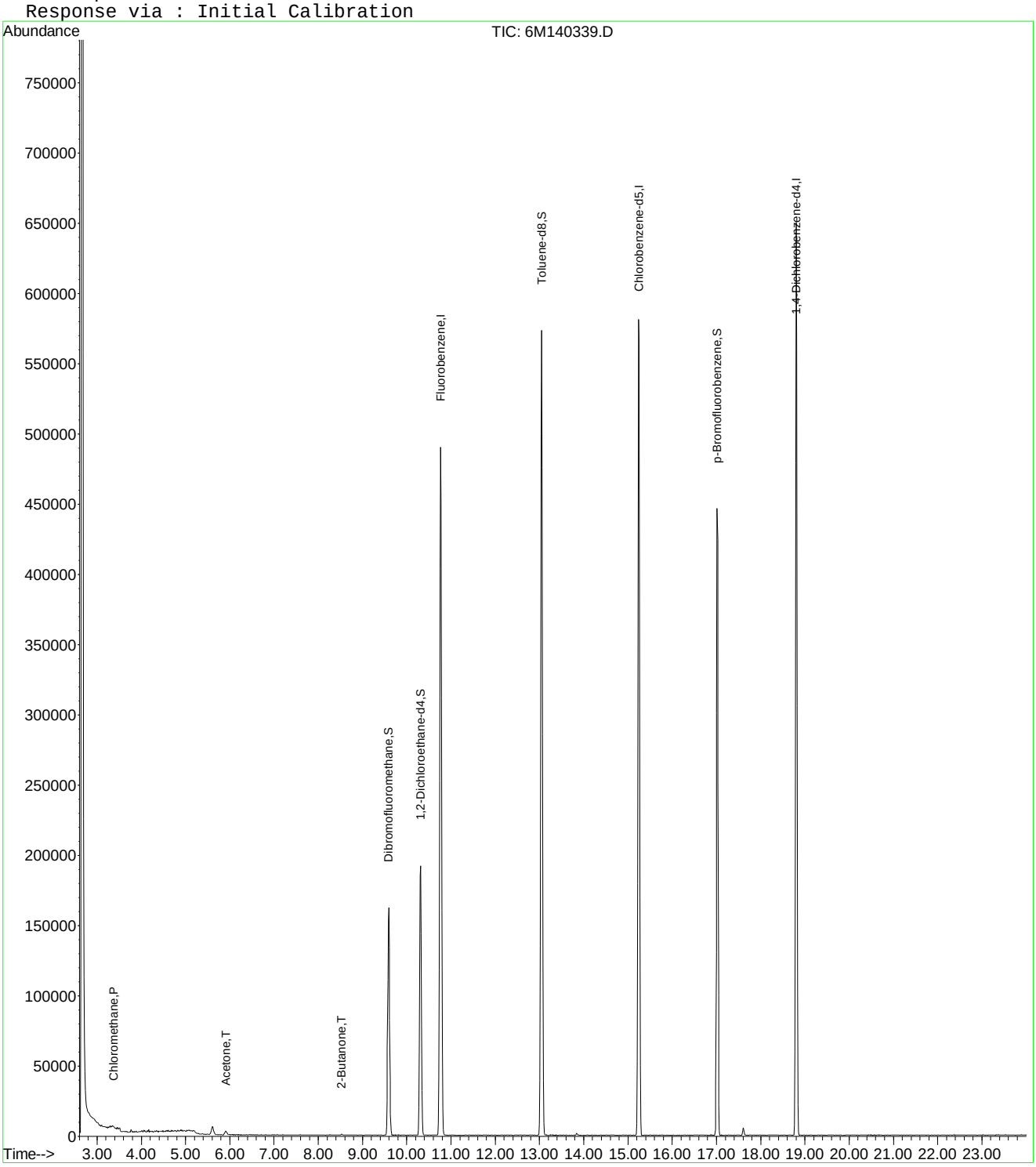

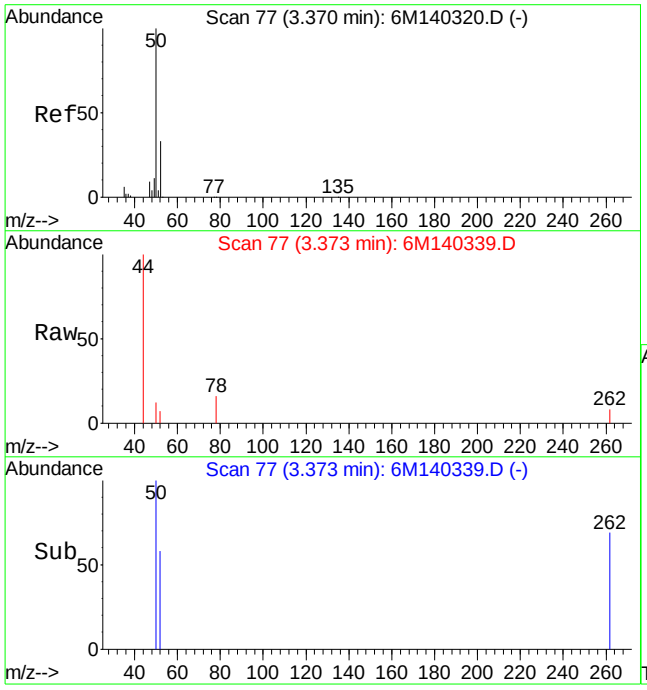

#3
Chloromethane
Concen: 0.12 ug/L
RT: 3.37 min Scan# 77
Delta R.T. 0.01 min
Lab File: 6M140339.D
Acq: 1 Jul 2016 16:56

Tgt Ion: 50 Resp: 1426

Ion	Ratio	Lower	Upper
50	100		
52	46.1	19.8	46.2

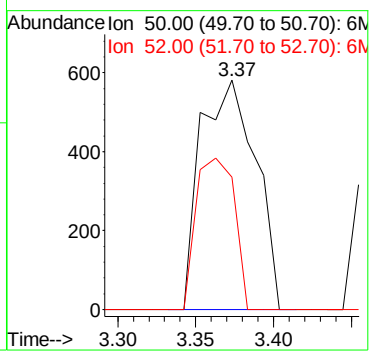

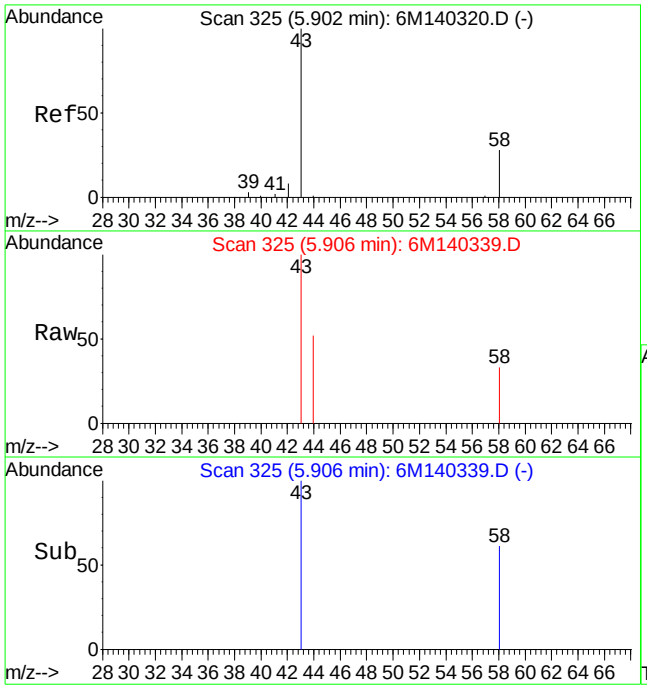

#13
Acetone
Concen: 3.24 ug/L
RT: 5.91 min Scan# 325
Delta R.T. 0.00 min
Lab File: 6M140339.D
Acq: 1 Jul 2016 16:56

Tgt Ion: 43 Resp: 6398

Ion	Ratio	Lower	Upper
43	100		
58	25.8	16.4	38.2

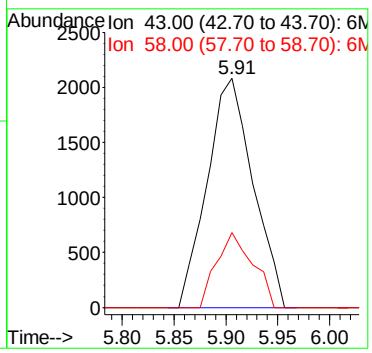

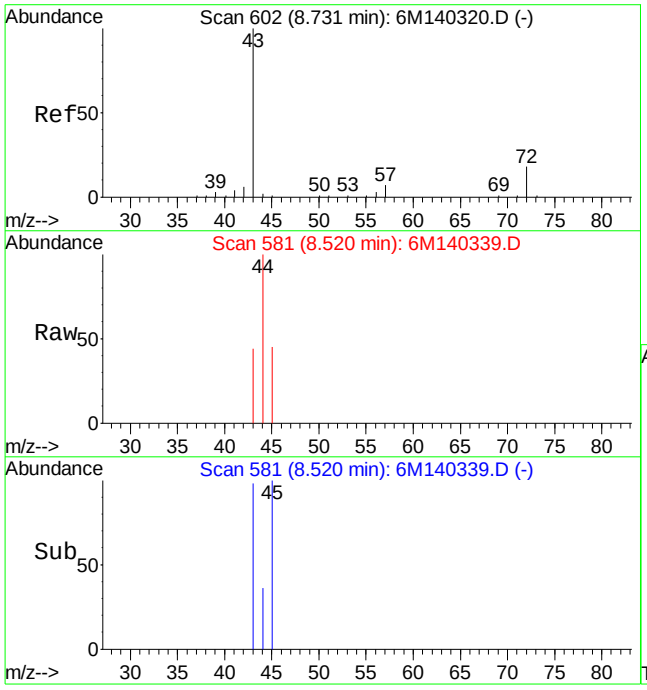

#29
2-Butanone
Concen: 0.15 ug/L
RT: 8.52 min Scan# 581
Delta R.T. -0.21 min
Lab File: 6M140339.D
Acq: 1 Jul 2016 16:56

Tgt Ion: 43 Resp: 442

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.9	27.9#

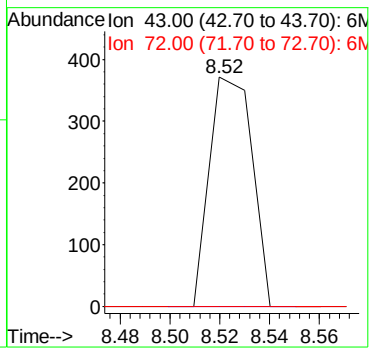

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140340.D Vial: 13
Acq On : 1 Jul 2016 17:28 Operator: TMB
Sample : L16061227-04 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:34:07 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	612094	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	426974	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	219154	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	152114	24.4950 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.32	65	191117	24.3789 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.52%		
58) Toluene-d8	13.04	98	528141	25.1191 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.48%		
80) p-Bromofluorobenzene	17.02	95	220005	25.6330 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.52%		

Target Compounds					Qvalue
3) Chloromethane	3.38	50	1782	0.1560 ug/L	78
13) Acetone	5.91	43	1260	0.6425 ug/L #	48

(#) = qualifier out of range (m) = manual integration
6M140340.D 8260WTR.M Sat Jul 02 10:34:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140340.D Vial: 13
Acq On : 1 Jul 2016 17:28 Operator: TMB
Sample : L16061227-04 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:34 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

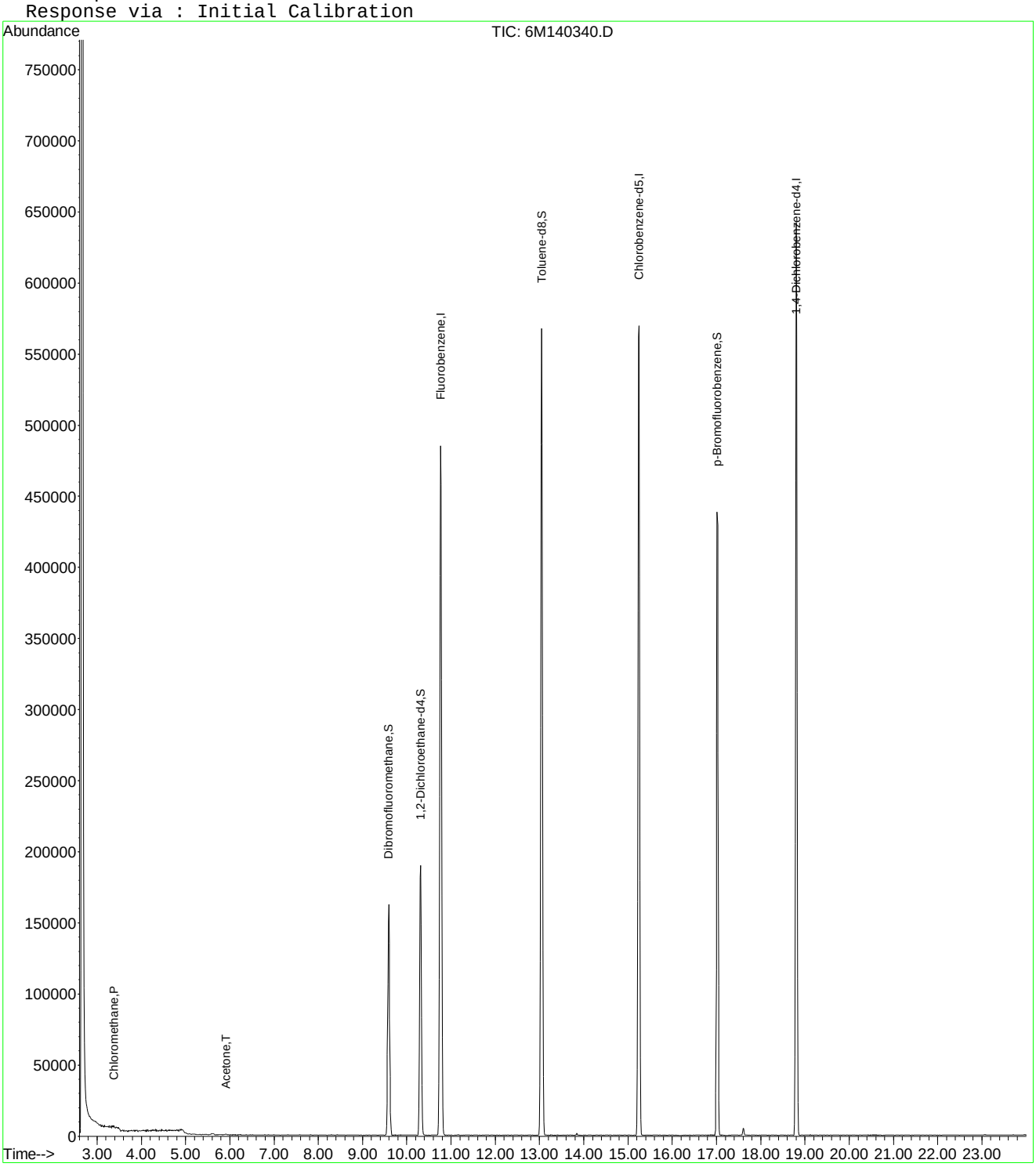

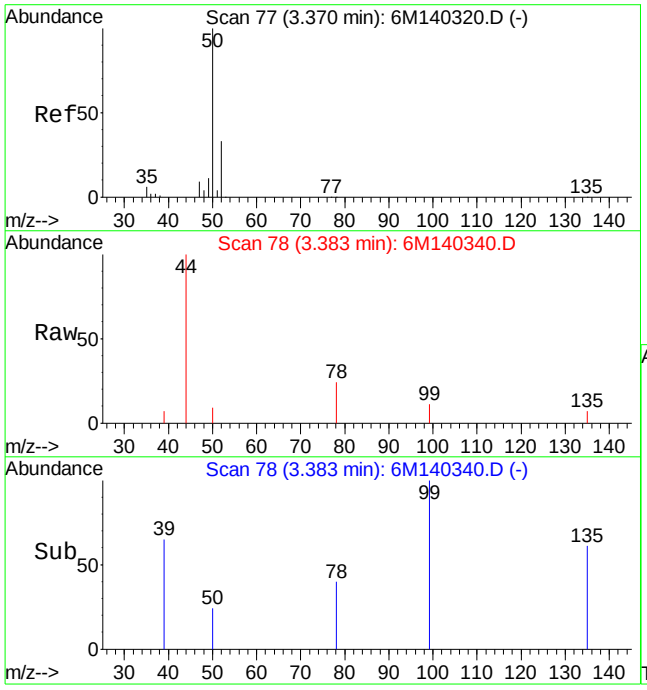

#3
Chloromethane
Concen: 0.16 ug/L
RT: 3.38 min Scan# 78
Delta R.T. 0.02 min
Lab File: 6M140340.D
Acq: 1 Jul 2016 17:28

Tgt Ion: 50 Resp: 1782

Ion	Ratio	Lower	Upper
50	100		
52	20.7	19.8	46.2

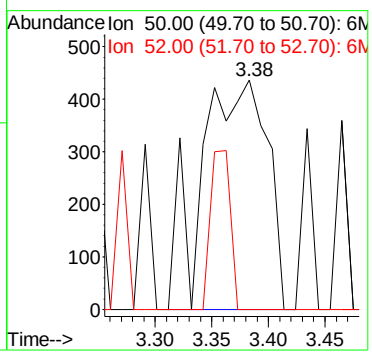

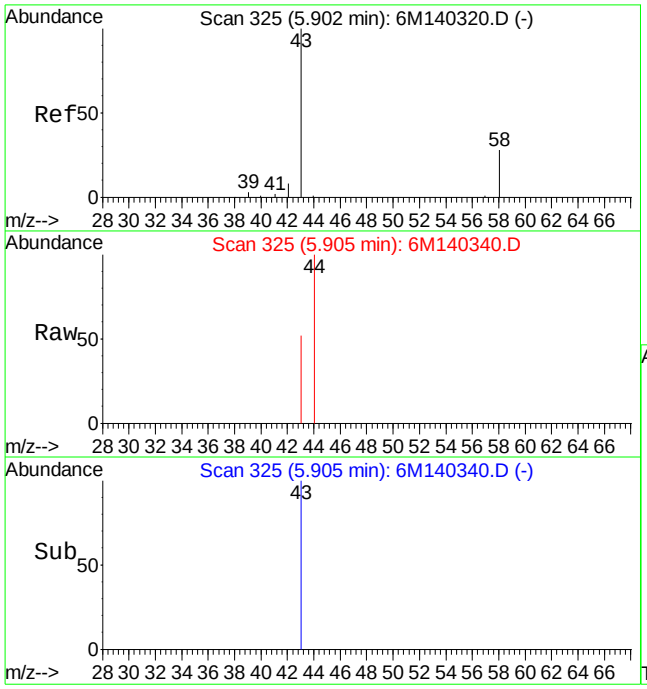

#13
Acetone
Concen: 0.64 ug/L
RT: 5.91 min Scan# 325
Delta R.T. -0.00 min
Lab File: 6M140340.D
Acq: 1 Jul 2016 17:28

Tgt Ion: 43 Resp: 1260

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

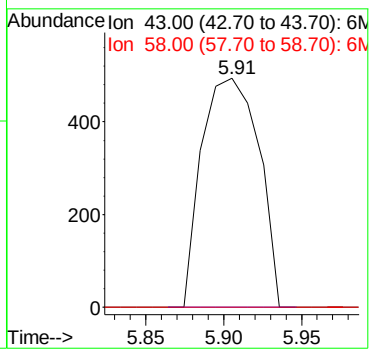

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140341.D Vial: 14
Acq On : 1 Jul 2016 18:00 Operator: TMB
Sample : L16061227-06 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:34:13 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	606310	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.24	117	423456	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	221247	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	154055	25.0442 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.16%		
43) 1,2-Dichloroethane-d4	10.31	65	192233	24.7552 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.04%		
58) Toluene-d8	13.04	98	527312	25.2880 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.16%		
80) p-Bromofluorobenzene	17.02	95	219746	25.3606 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.44%		

Target Compounds					Qvalue
3) Chloromethane	3.37	50	2432	0.2149 ug/L	98
13) Acetone	5.90	43	6587	3.3910 ug/L	89

(#) = qualifier out of range (m) = manual integration
6M140341.D 8260WTR.M Sat Jul 02 10:34:16 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140341.D Vial: 14
Acq On : 1 Jul 2016 18:00 Operator: TMB
Sample : L16061227-06 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:34 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

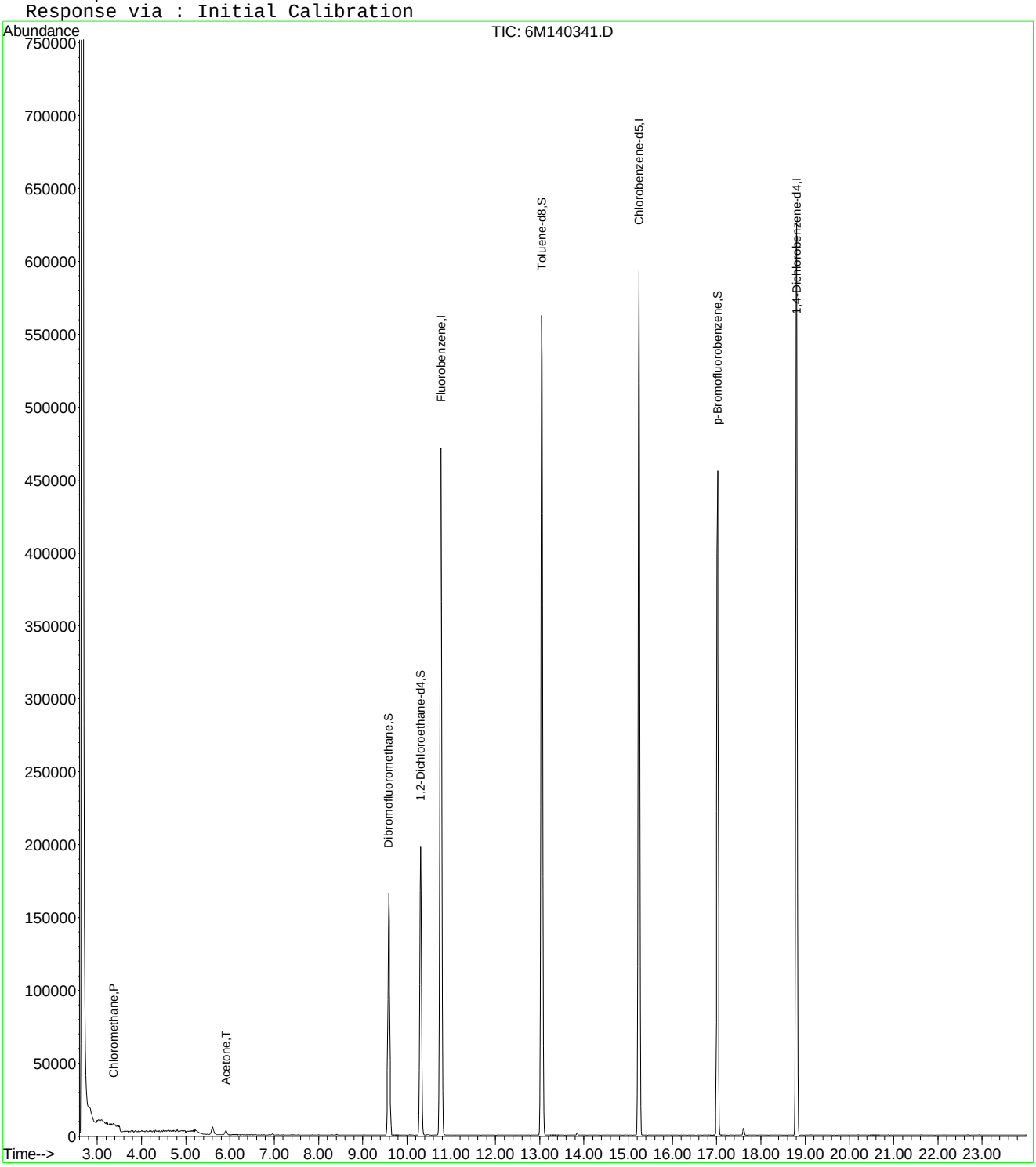

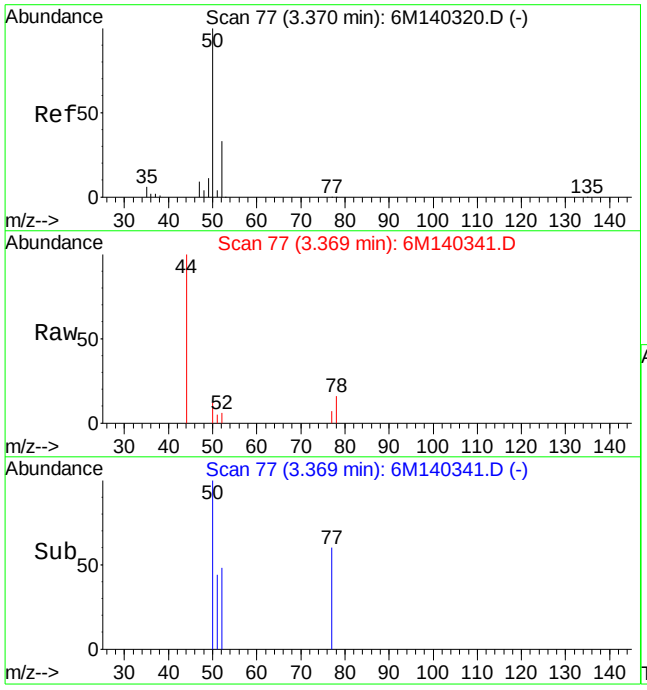

#3
Chloromethane
Concen: 0.21 ug/L
RT: 3.37 min Scan# 77
Delta R.T. 0.01 min
Lab File: 6M140341.D
Acq: 1 Jul 2016 18:00

Tgt Ion: 50 Resp: 2432

Ion	Ratio	Lower	Upper
50	100		
52	34.4	19.8	46.2

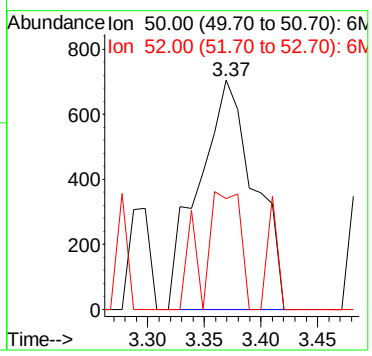

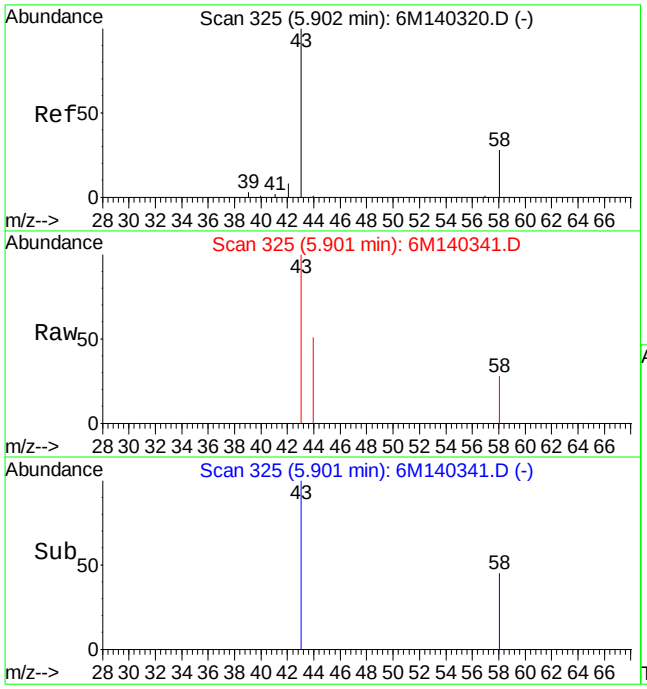

#13
Acetone
Concen: 3.39 ug/L
RT: 5.90 min Scan# 325
Delta R.T. -0.00 min
Lab File: 6M140341.D
Acq: 1 Jul 2016 18:00

Tgt Ion: 43 Resp: 6587

Ion	Ratio	Lower	Upper
43	100		
58	21.6	16.4	38.2

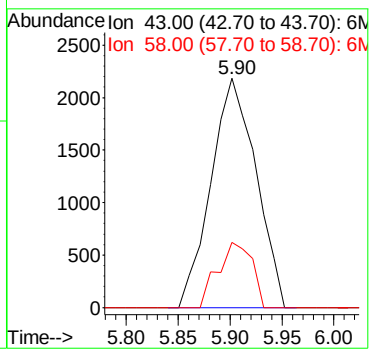

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140342.D Vial: 15
Acq On : 1 Jul 2016 18:33 Operator: TMB
Sample : L16061227-07 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:34:19 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	597077	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.24	117	421104	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	214283	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	150229	24.7999 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.20%		
43) 1,2-Dichloroethane-d4	10.31	65	188228	24.6143 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.44%		
58) Toluene-d8	13.04	98	515593	24.8641 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.44%		
80) p-Bromofluorobenzene	17.02	95	214385	25.5460 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.20%		
Target Compounds					Qvalue
3) Chloromethane	3.36	50	1871	0.1679 ug/L #	29
13) Acetone	5.91	43	8429	4.4064 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140342.D 8260WTR.M Sat Jul 02 10:34:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140342.D Vial: 15
Acq On : 1 Jul 2016 18:33 Operator: TMB
Sample : L16061227-07 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:34 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

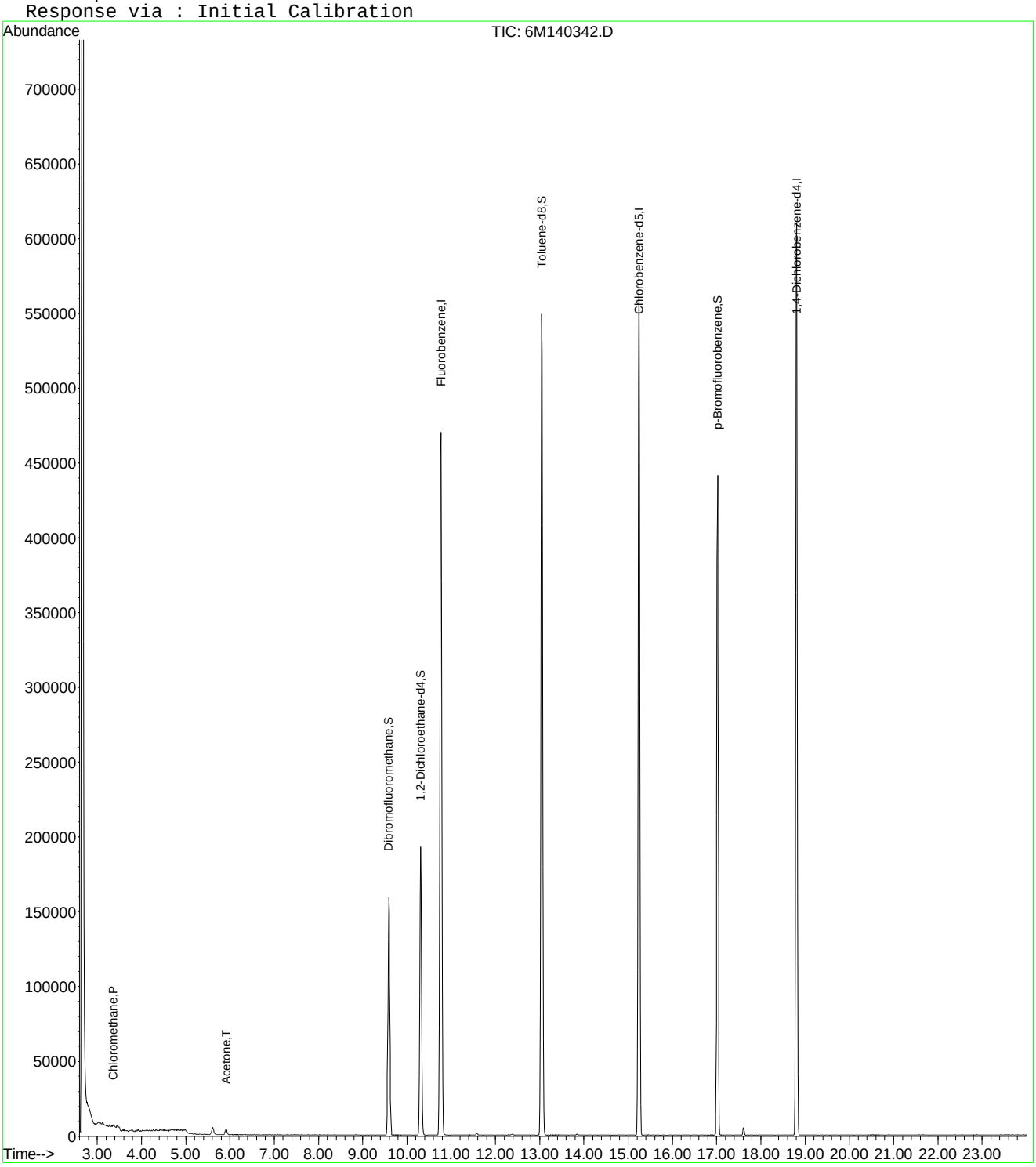

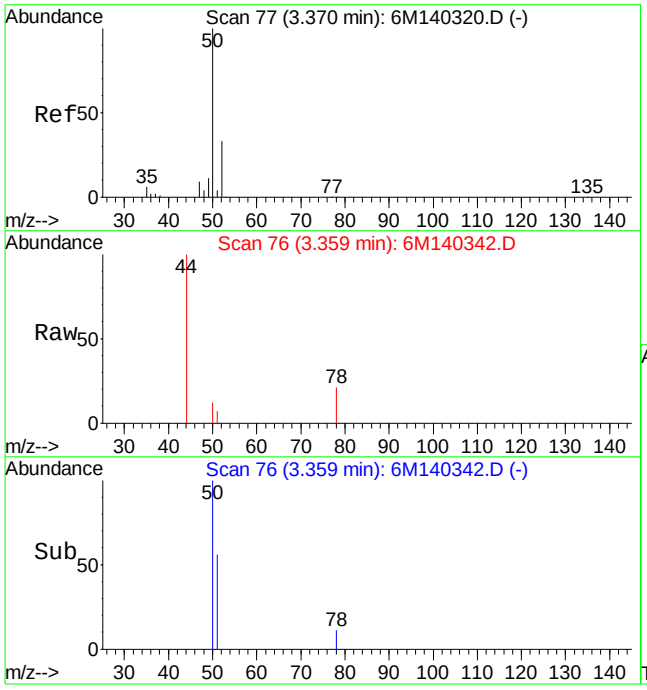

#3
Chloromethane
Concen: 0.17 ug/L
RT: 3.36 min Scan# 76
Delta R.T. -0.00 min
Lab File: 6M140342.D
Acq: 1 Jul 2016 18:33

Tgt Ion: 50 Resp: 1871

Ion	Ratio	Lower	Upper
50	100		
52	73.1	19.8	46.2#

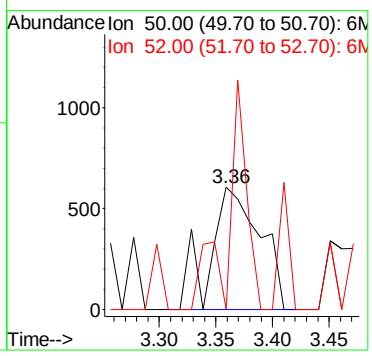

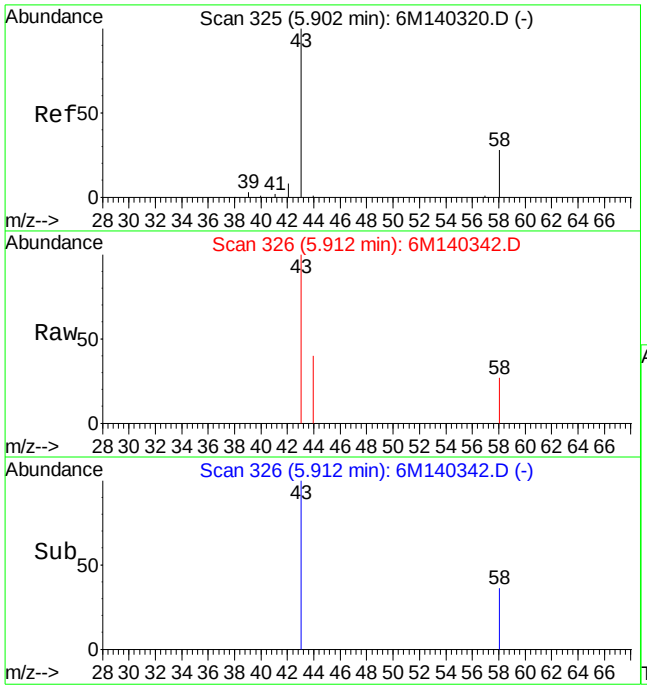

#13
Acetone
Concen: 4.41 ug/L
RT: 5.91 min Scan# 326
Delta R.T. 0.01 min
Lab File: 6M140342.D
Acq: 1 Jul 2016 18:33

Tgt Ion: 43 Resp: 8429

Ion	Ratio	Lower	Upper
43	100		
58	26.2	16.4	38.2

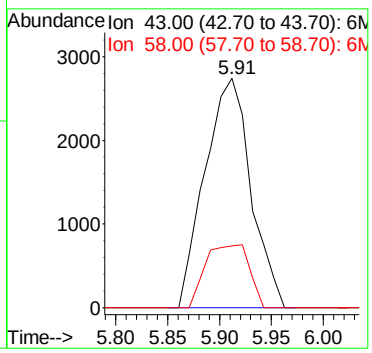

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140343.D Vial: 16
Acq On : 1 Jul 2016 19:05 Operator: TMB
Sample : L16061227-08 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:34:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	593443	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	421541	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	215057	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	150323	24.9673 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.88%		
43) 1,2-Dichloroethane-d4	10.31	65	187249	24.6362 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.56%		
58) Toluene-d8	13.04	98	515872	24.8518 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.40%		
80) p-Bromofluorobenzene	17.02	95	213271	25.3218 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.28%		

Target Compounds					Qvalue
3) Chloromethane	3.37	50	2927	0.2643 ug/L	79
9) Diethyl ether	5.80	59	11870	2.1687 ug/L #	11
10) Isoprene	5.80	67	7418	0.8960 ug/L #	10
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	1251237	216.7900 ug/L	97
13) Acetone	5.91	43	4072	2.1417 ug/L	80
14) 1,1-Dichloroethene	6.11	61	1371	0.1224 ug/L #	25
32) cis-1,2-Dichloroethene	9.04	96	4612	0.7025 ug/L	83
33) Chloroform	9.26	83	3186	0.2754 ug/L #	90
47) Trichloroethene	11.34	130	282598	46.2572 ug/L	90
48) Methylcyclohexane	11.34	83	3860	0.4025 ug/L #	1
49) 1,2-Dichloropropane	11.33	63	884	0.1240 ug/L #	35

(#) = qualifier out of range (m) = manual integration
6M140343.D 8260WTR.M Sat Jul 02 10:34:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140343.D Vial: 16
Acq On : 1 Jul 2016 19:05 Operator: TMB
Sample : L16061227-08 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:34 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

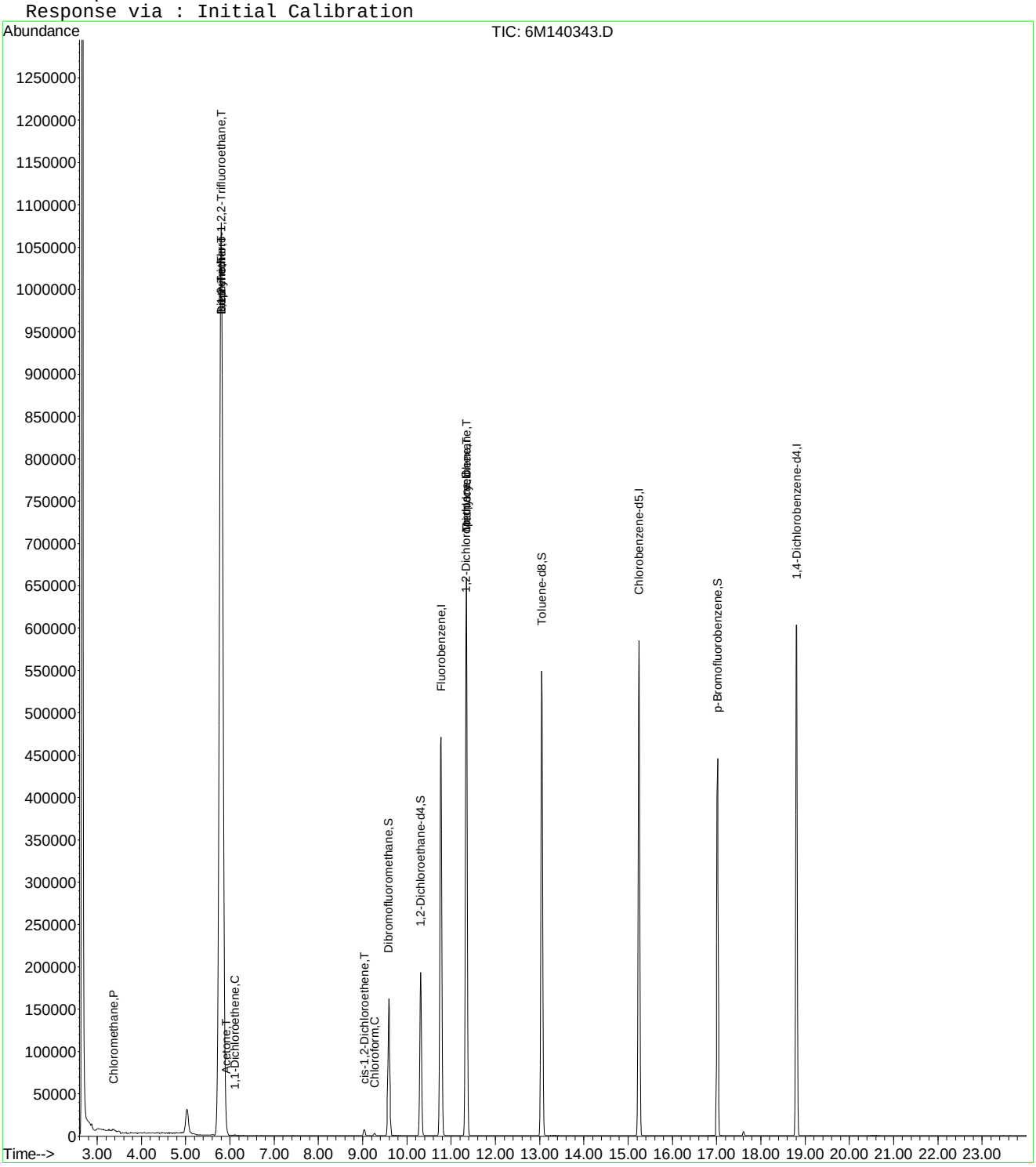

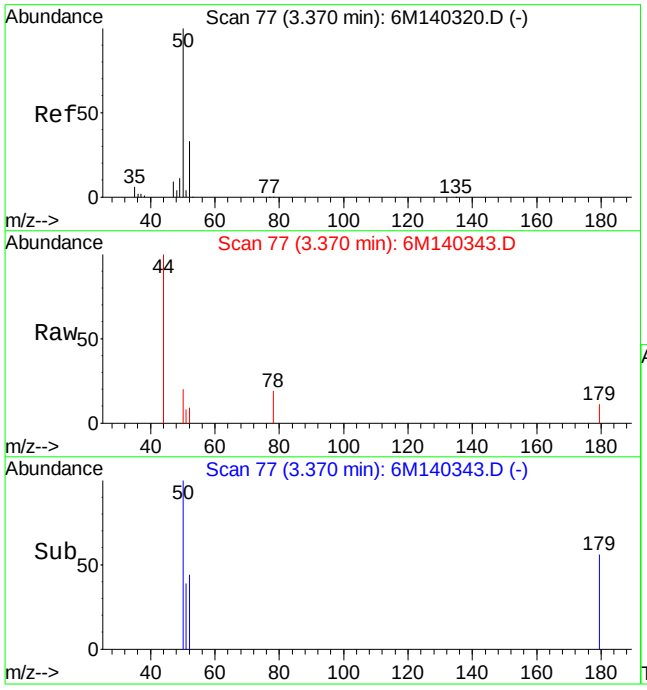

#3
Chloromethane
Concen: 0.26 ug/L
RT: 3.37 min Scan# 77
Delta R.T. 0.01 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion: 50 Resp: 2927

Ion	Ratio	Lower	Upper
50	100		
52	45.0	19.8	46.2

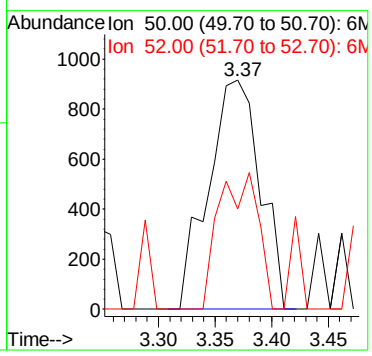

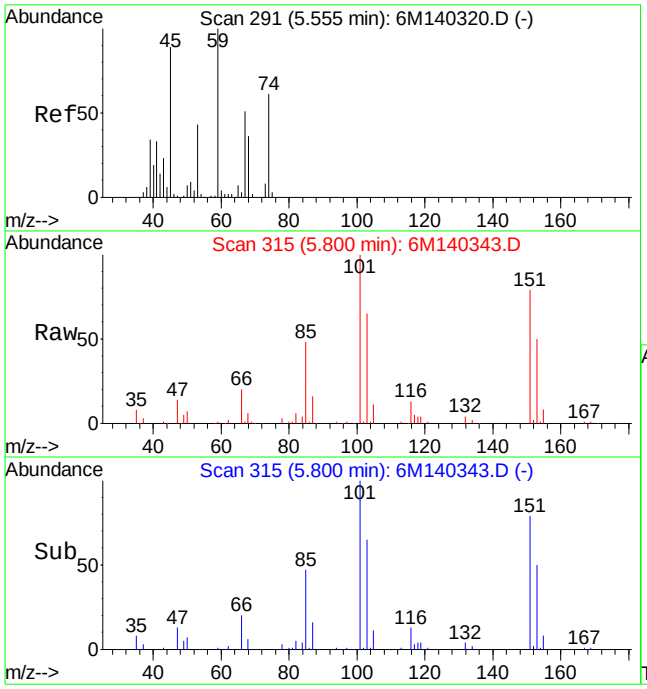

#9
Diethyl ether
Concen: 2.17 ug/L
RT: 5.80 min Scan# 315
Delta R.T. 0.25 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion: 59 Resp: 11870

Ion	Ratio	Lower	Upper
59	100		
45	0.0	51.5	120.3#
74	0.0	38.5	89.7#

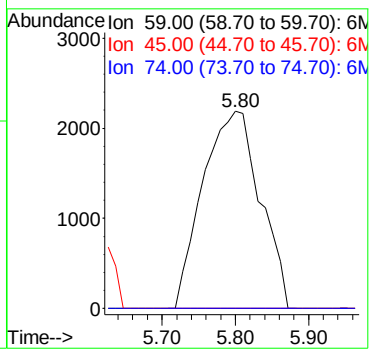

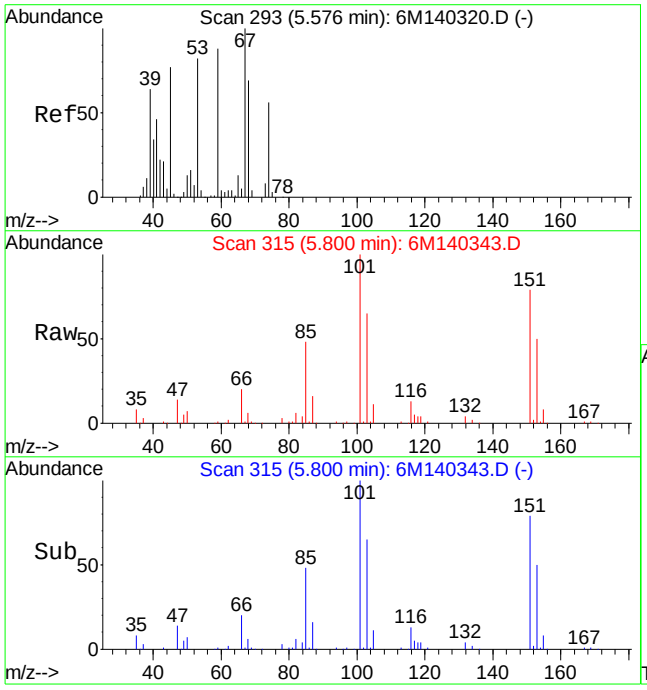

#10
Isoprene
Concen: 0.90 ug/L
RT: 5.80 min Scan# 315
Delta R.T. 0.23 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion: 67 Resp: 7418

Ion	Ratio	Lower	Upper
67	100		
53	0.0	47.4	110.6#

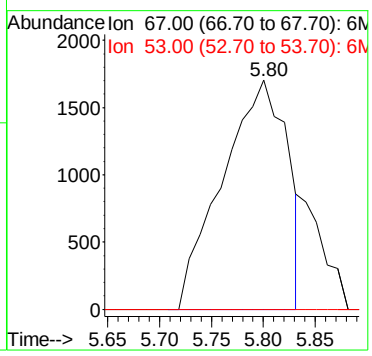

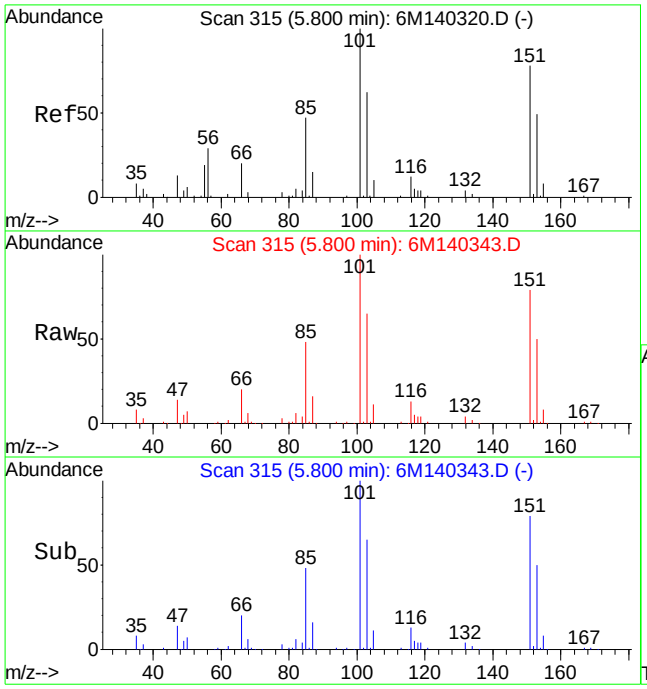

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 216.79 ug/L
RT: 5.80 min Scan# 315
Delta R.T. 0.02 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion:101 Resp: 1251237

Ion	Ratio	Lower	Upper
101	100		
151	77.0	49.4	115.2
103	64.8	38.8	90.4

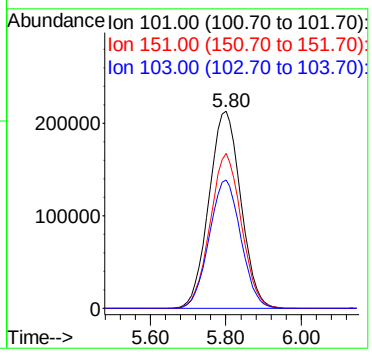

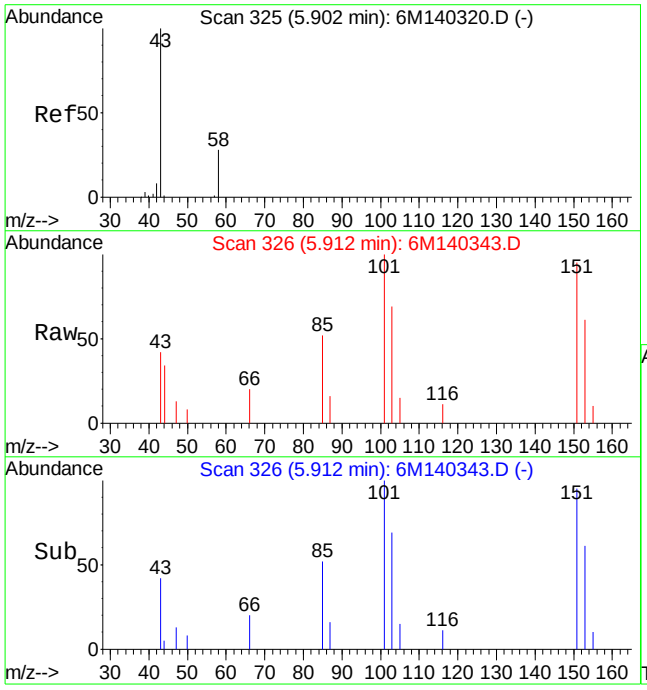

#13
Acetone
Concen: 2.14 ug/L
RT: 5.91 min Scan# 326
Delta R.T. 0.01 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion: 43 Resp: 4072

Ion	Ratio	Lower	Upper
43	100		
58	16.7	16.4	38.2

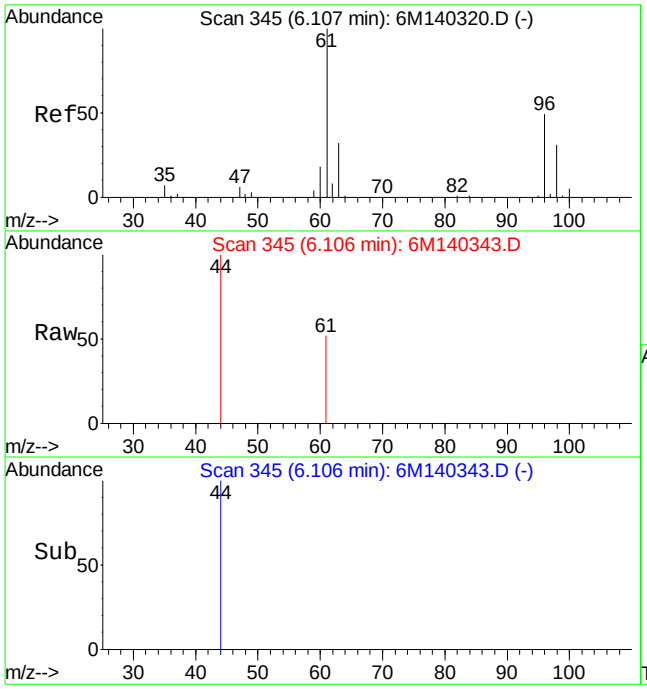

#14
1,1-Dichloroethene
Concen: 0.12 ug/L
RT: 6.11 min Scan# 345
Delta R.T. 0.01 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion: 61 Resp: 1371

Ion	Ratio	Lower	Upper
61	100		
96	0.0	32.0	74.6#

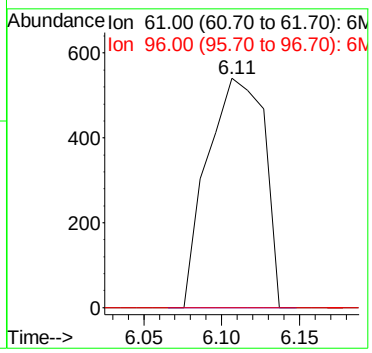

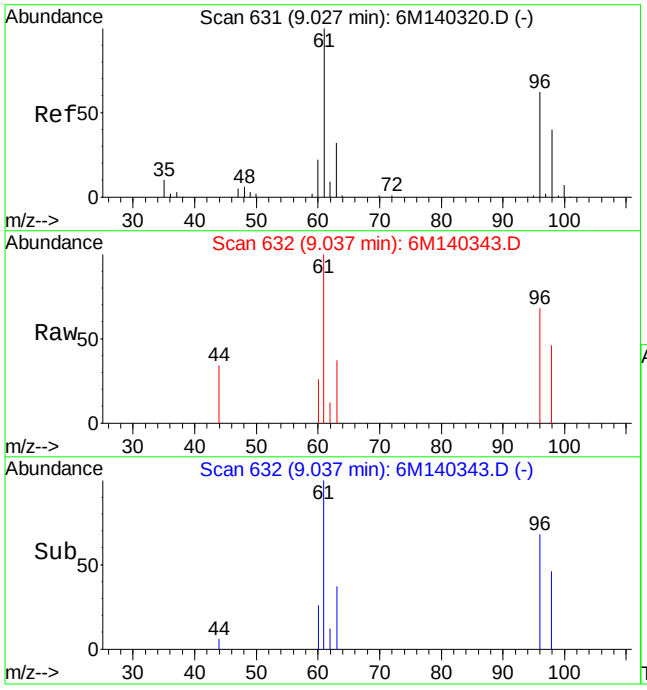

#32
cis-1,2-Dichloroethene
Concen: 0.70 ug/L
RT: 9.04 min Scan# 632
Delta R.T. 0.01 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion: 96 Resp: 4612

Ion	Ratio	Lower	Upper
96	100		
61	169.7	89.2	208.2

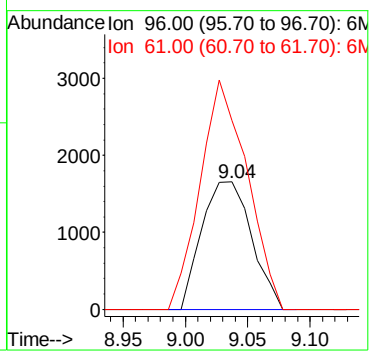

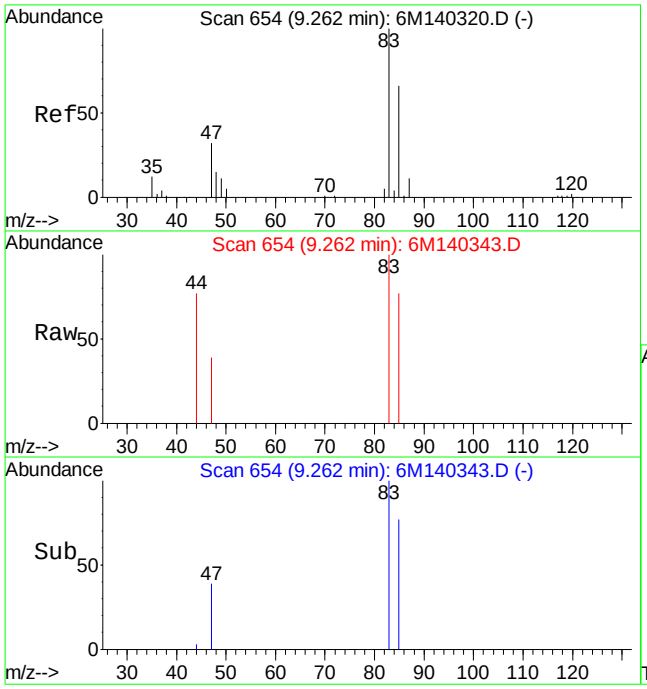

#33
Chloroform
Concen: 0.28 ug/L
RT: 9.26 min Scan# 654
Delta R.T. -0.00 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion: 83 Resp: 3186

Ion	Ratio	Lower	Upper
83	100		
85	64.1	39.0	91.0
47	14.6	18.5	43.1#

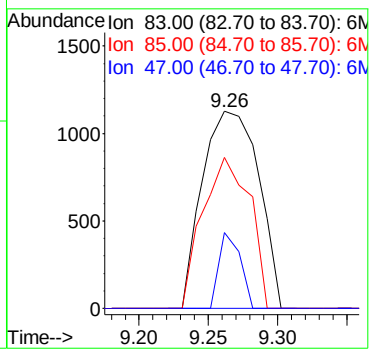

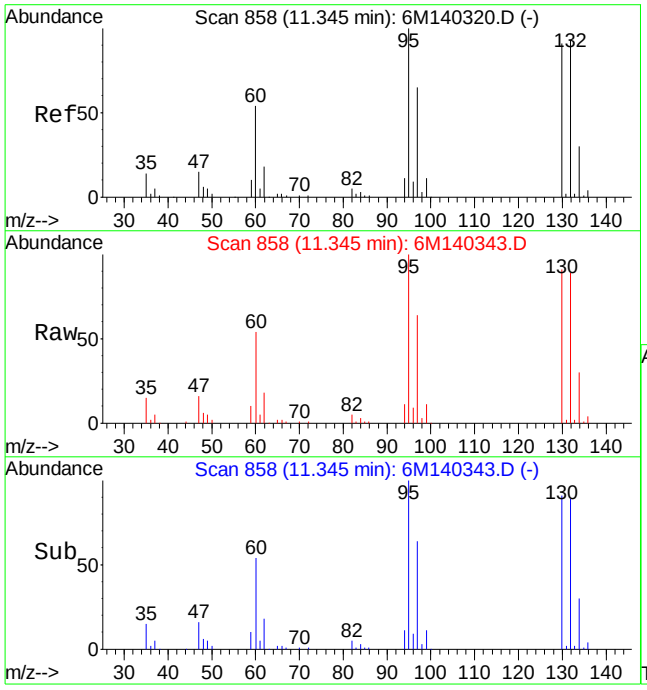

#47
Trichloroethene
Concen: 46.26 ug/L
RT: 11.34 min Scan# 858
Delta R.T. 0.01 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion:130 Resp: 282598

Ion	Ratio	Lower	Upper
130	100		
60	60.7	32.0	74.6

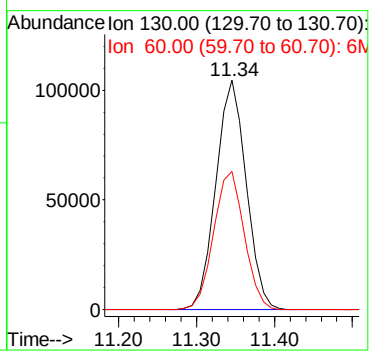

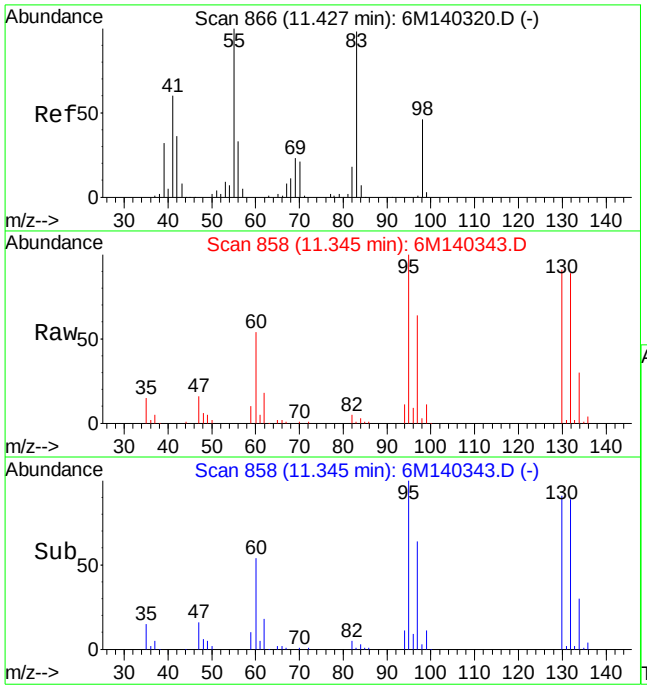

#48
Methylcyclohexane
Concen: 0.40 ug/L
RT: 11.34 min Scan# 858
Delta R.T. -0.08 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion: 83 Resp: 3860

Ion	Ratio	Lower	Upper
83	100		
55	0.0	56.3	131.3#
98	205.5	28.4	66.4#

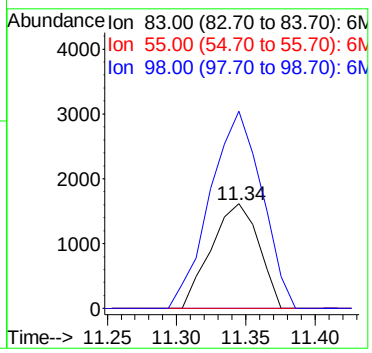

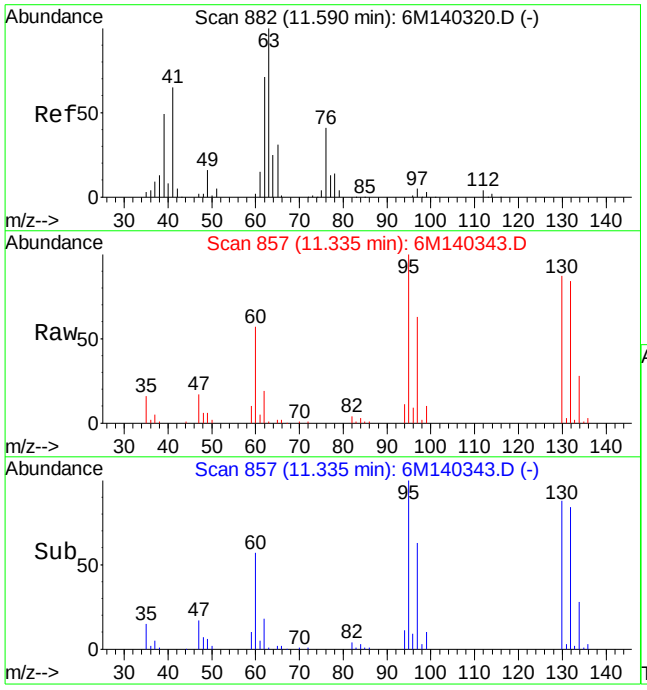

#49
1,2-Dichloropropane
Concen: 0.12 ug/L
RT: 11.33 min Scan# 857
Delta R.T. -0.26 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion: 63 Resp: 884

Ion	Ratio	Lower	Upper
63	100		
76	0.0	24.2	56.4#

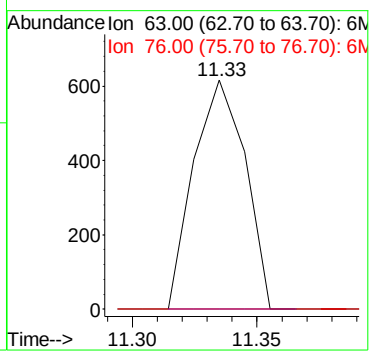

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140336.D Vial: 9
Acq On : 1 Jul 2016 15:19 Operator: TMB
Sample : L16061227-09 A TB 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:33:41 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	638332	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	446539	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	227983	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	157948	24.3890 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.56%		
43) 1,2-Dichloroethane-d4	10.31	65	196609	24.0486 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.20%		
58) Toluene-d8	13.04	98	550198	25.0216 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.08%		
80) p-Bromofluorobenzene	17.02	95	228425	25.5834 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.32%		

Target Compounds

					Qvalue
13) Acetone	5.90	43	1427	0.6978 ug/L #	48
29) 2-Butanone	8.55	43	3662	1.1697 ug/L #	57
36) Tetrahydrofuran	9.56	42	3183	1.4577 ug/L #	66
100) Naphthalene	22.38	128	2285	0.1251 ug/L #	67

(#) = qualifier out of range (m) = manual integration
6M140336.D 8260WTR.M Sat Jul 02 10:33:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140336.D Vial: 9
Acq On : 1 Jul 2016 15:19 Operator: TMB
Sample : L16061227-09 A TB 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:33 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

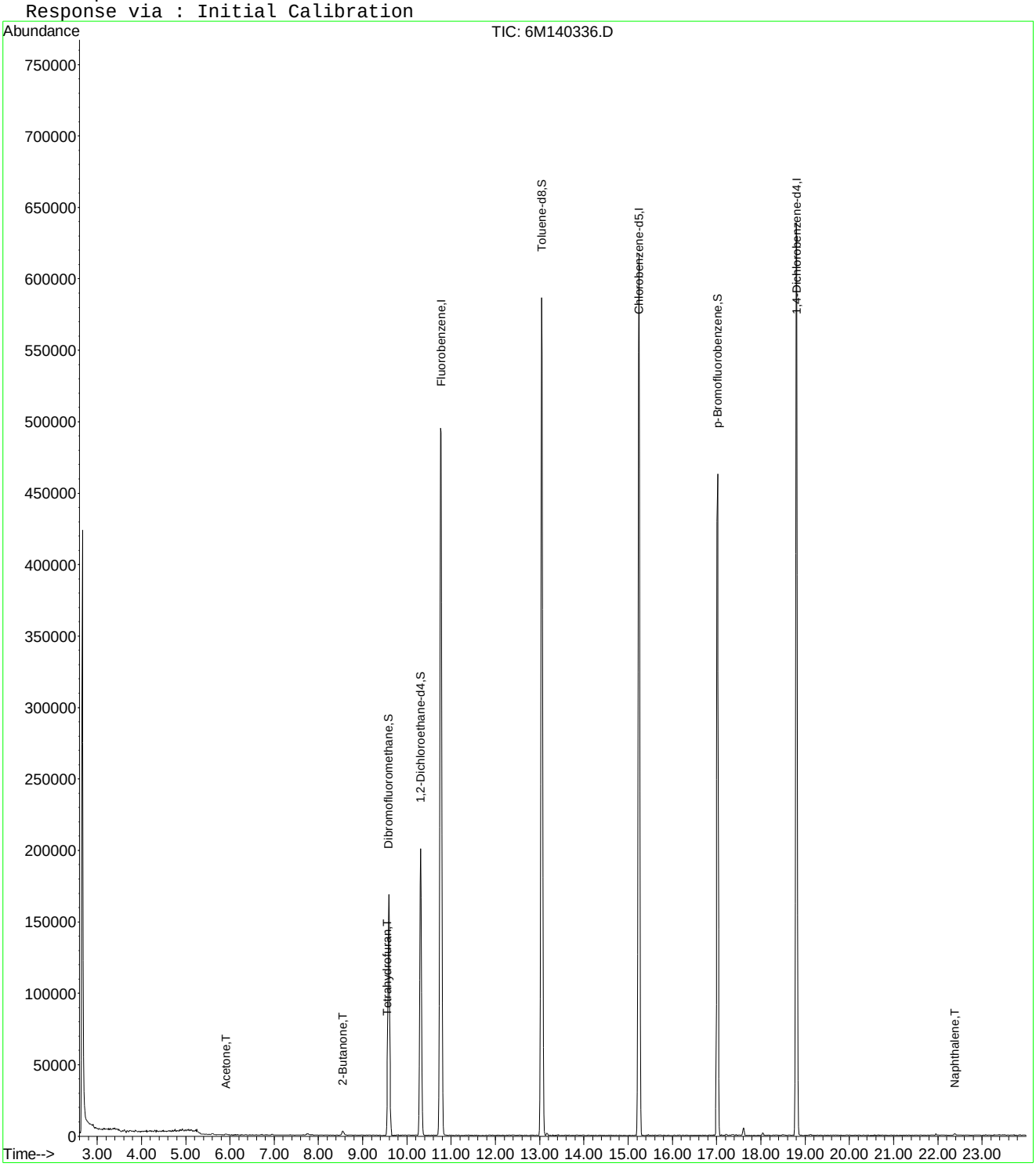

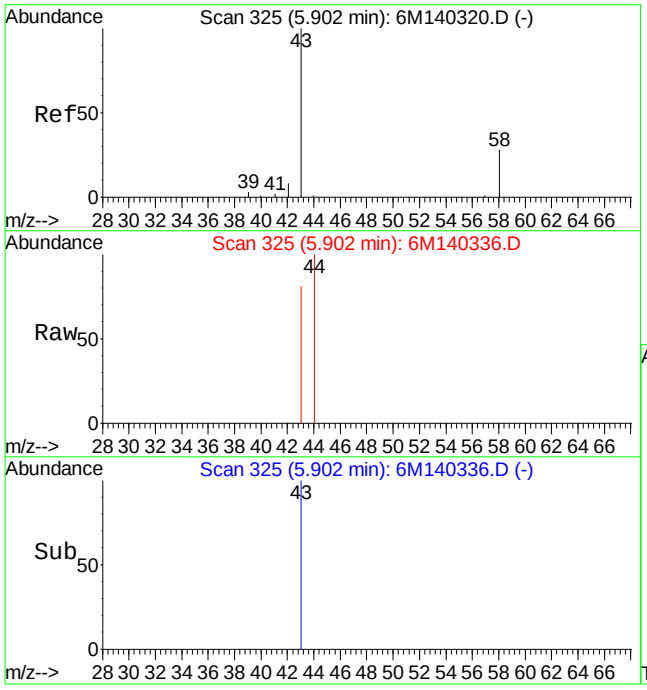

#13
Acetone
Concen: 0.70 ug/L
RT: 5.90 min Scan# 325
Delta R.T. -0.00 min
Lab File: 6M140336.D
Acq: 1 Jul 2016 15:19

Tgt Ion: 43 Resp: 1427

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

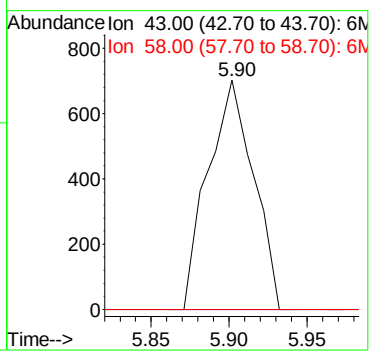

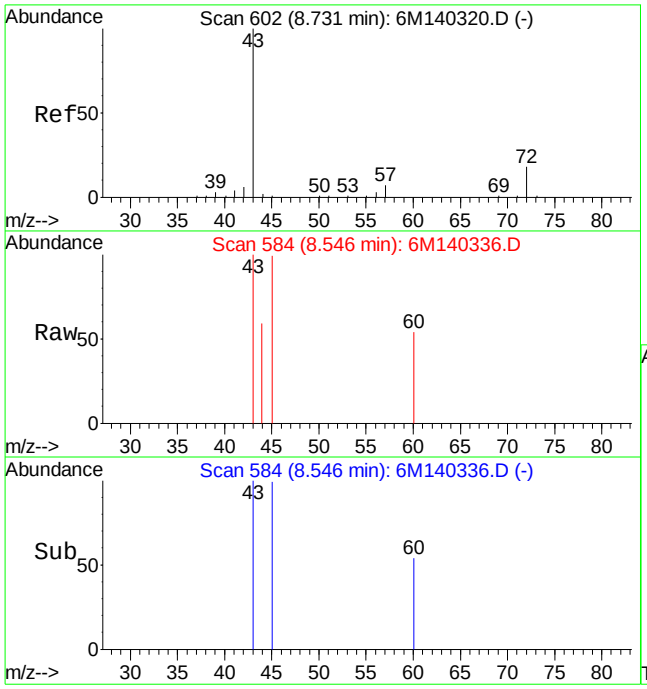

#29
2-Butanone
Concen: 1.17 ug/L
RT: 8.55 min Scan# 584
Delta R.T. -0.19 min
Lab File: 6M140336.D
Acq: 1 Jul 2016 15:19

Tgt Ion: 43 Resp: 3662

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.9	27.9#

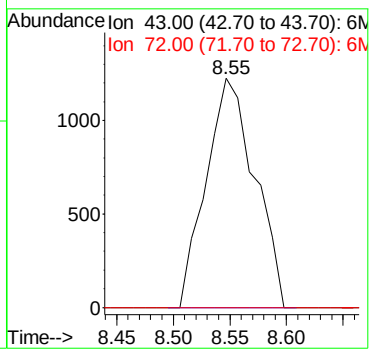

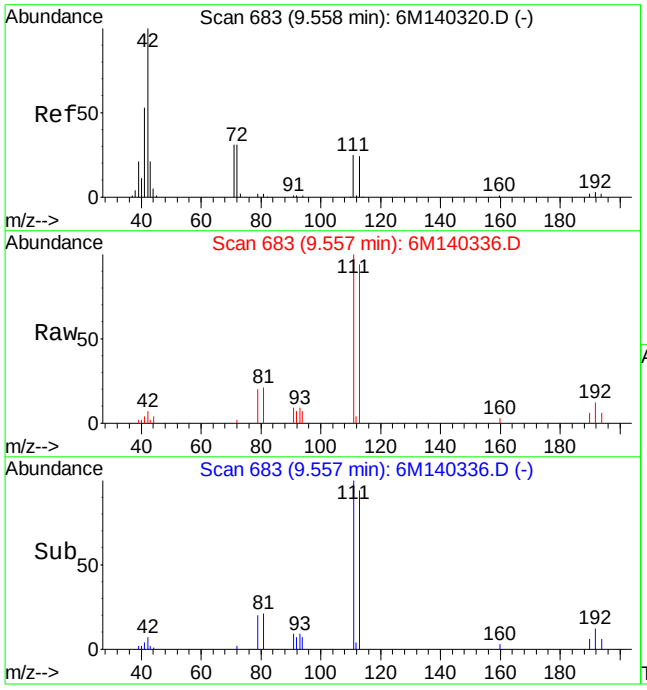

#36
Tetrahydrofuran
Concen: 1.46 ug/L
RT: 9.56 min Scan# 683
Delta R.T. -0.00 min
Lab File: 6M140336.D
Acq: 1 Jul 2016 15:19

Tgt Ion: 42 Resp: 3183

Ion	Ratio	Lower	Upper
42	100		
72	22.2	20.8	48.4
71	6.9	19.9	46.5#

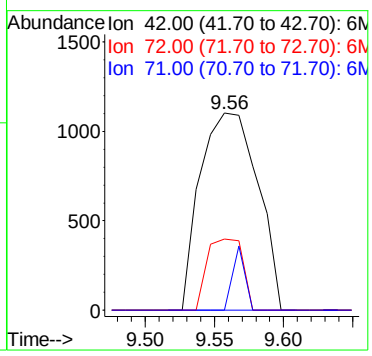

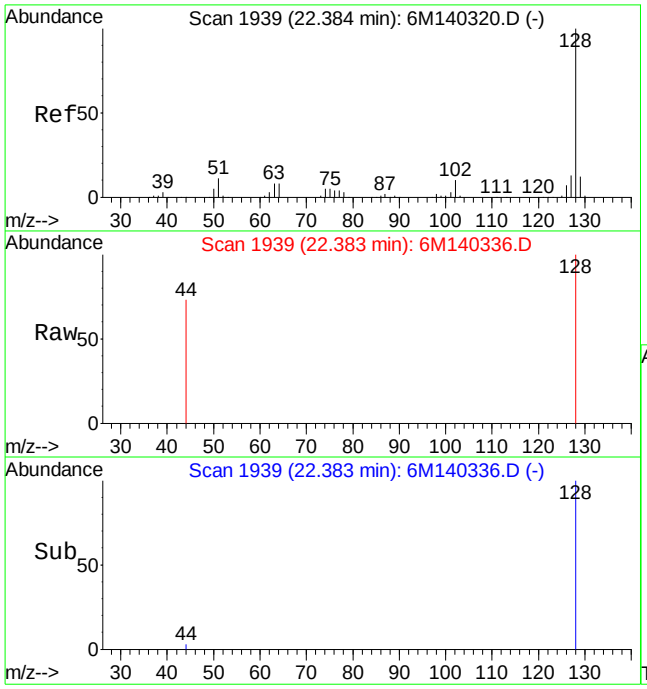

#100
Naphthalene
Concen: 0.13 ug/L
RT: 22.38 min Scan# 1939
Delta R.T. -0.00 min
Lab File: 6M140336.D
Acq: 1 Jul 2016 15:19

Tgt Ion:128 Resp: 2285

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.8	18.2#

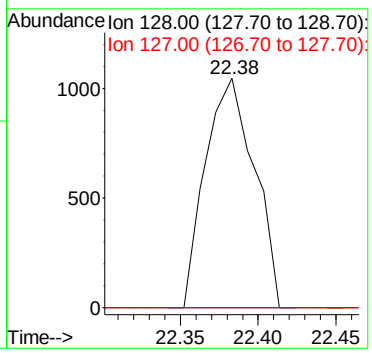

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:46 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	173671	27.7488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.00%		
43) 1,2-Dichloroethane-d4	11.12	65	203570	26.8000 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.20%		
58) Toluene-d8	13.86	98	554047	26.0139 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.04%		
80) p-Bromofluorobenzene	17.85	95	229998	27.1525 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.60%		

Target Compounds					Qvalue
13) Acetone	6.67	43	1325	0.6992 ug/L #	46
20) Carbon Disulfide	7.54	76	18747	0.9622 ug/L #	39
29) 2-Butanone	9.31	43	1188	0.4247 ug/L #	1
36) Tetrahydrofuran	10.36	42	2769	1.5196 ug/L #	58
60) Ethyl Methacrylate	13.87	69	899	0.1270 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

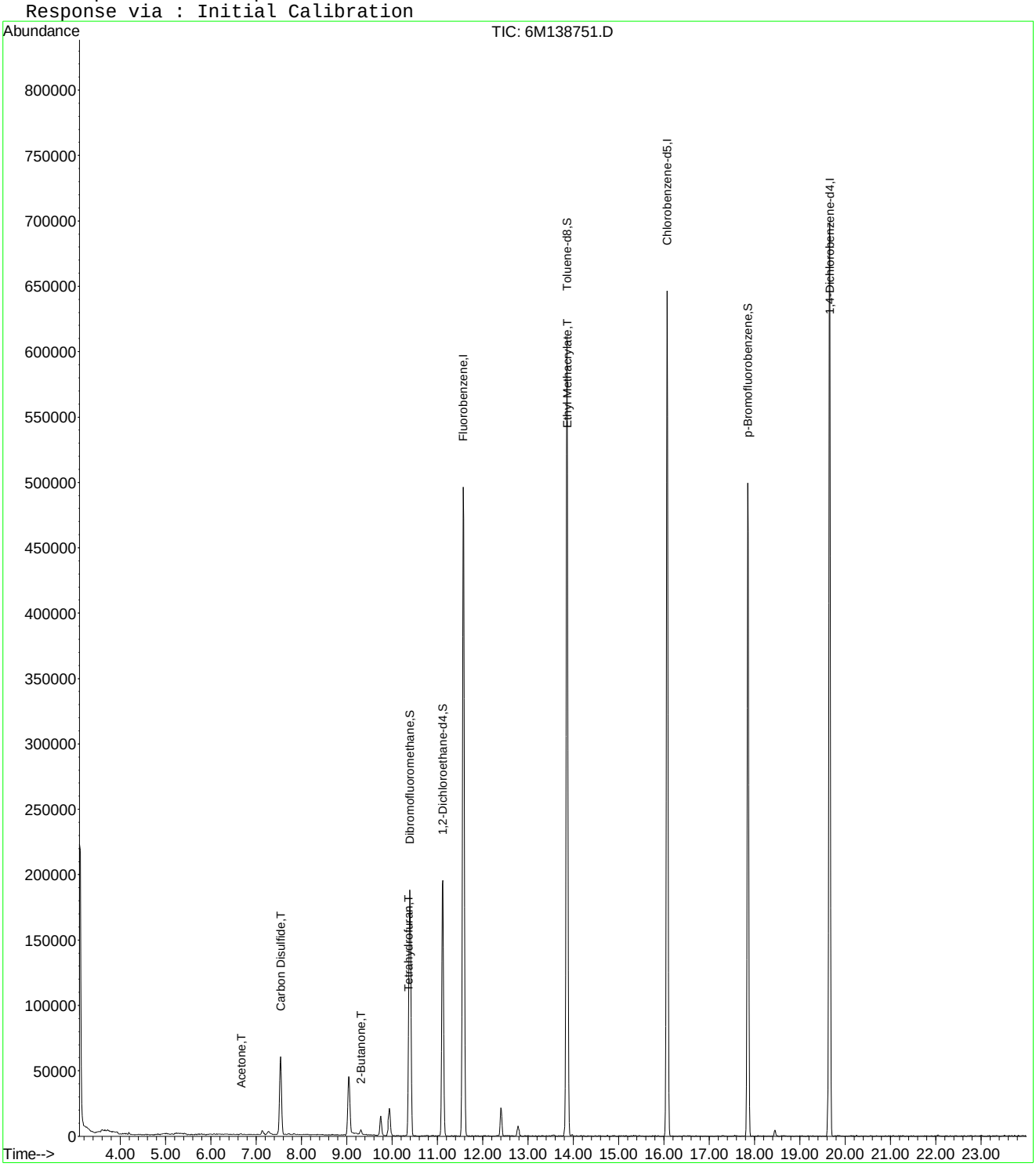

6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:52 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	3.7209 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.2301 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.6002 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.3499 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.5173 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	3.4767 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.0338 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.7392 ug/L	93
13) Cyclohexanone	17.57	55	447	0.5159 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Mon Apr 25 15:45:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

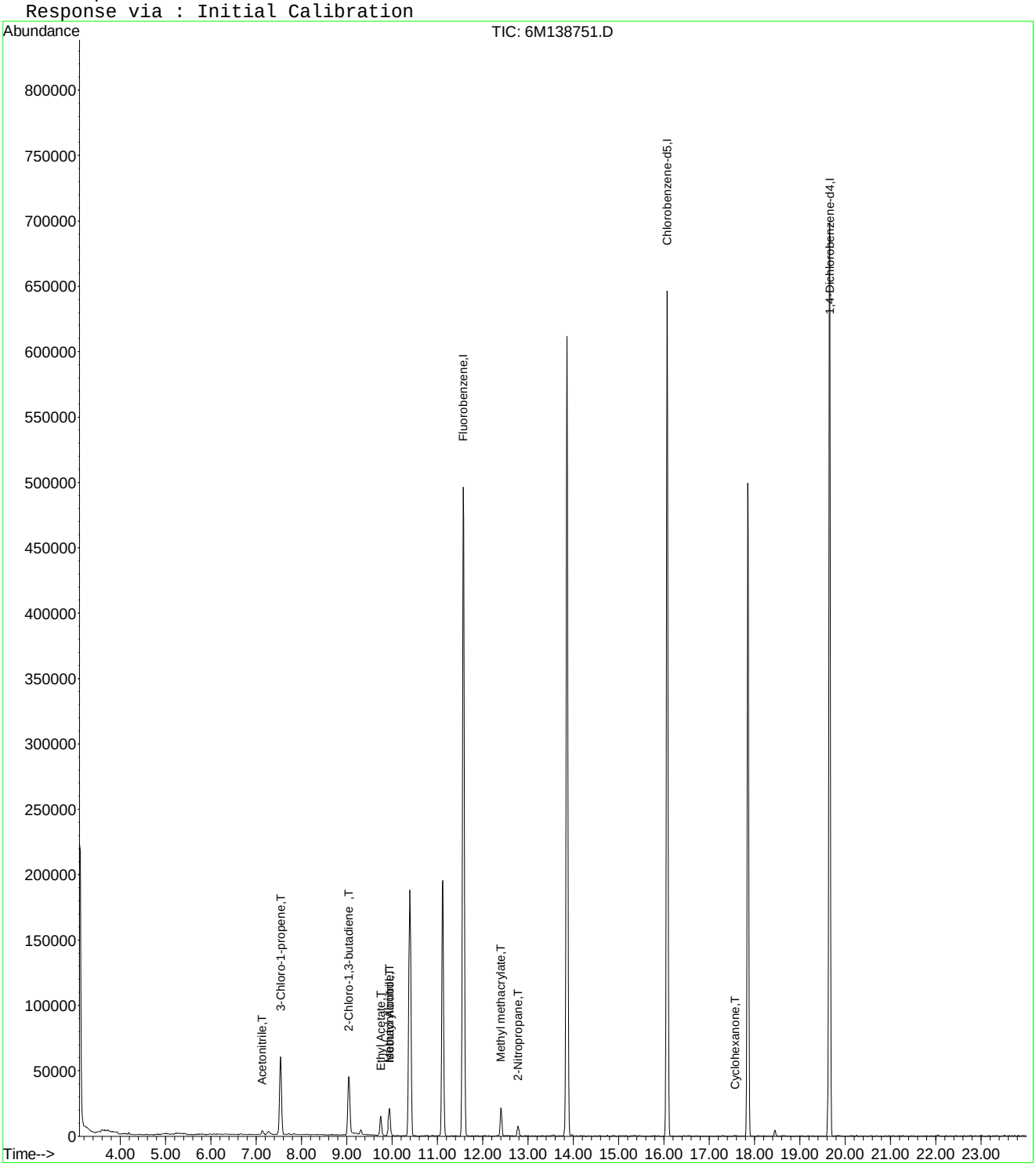

6M138751.D A9FOOWT.M Mon Apr 25 15:45:53 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:56 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	4.7698 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.5408 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.8775 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.2792 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.8601 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	5.9076 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.5356 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.4543 ug/L	93
13) Cyclohexanone	17.57	55	447	1.4133 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Wed Apr 27 16:04:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

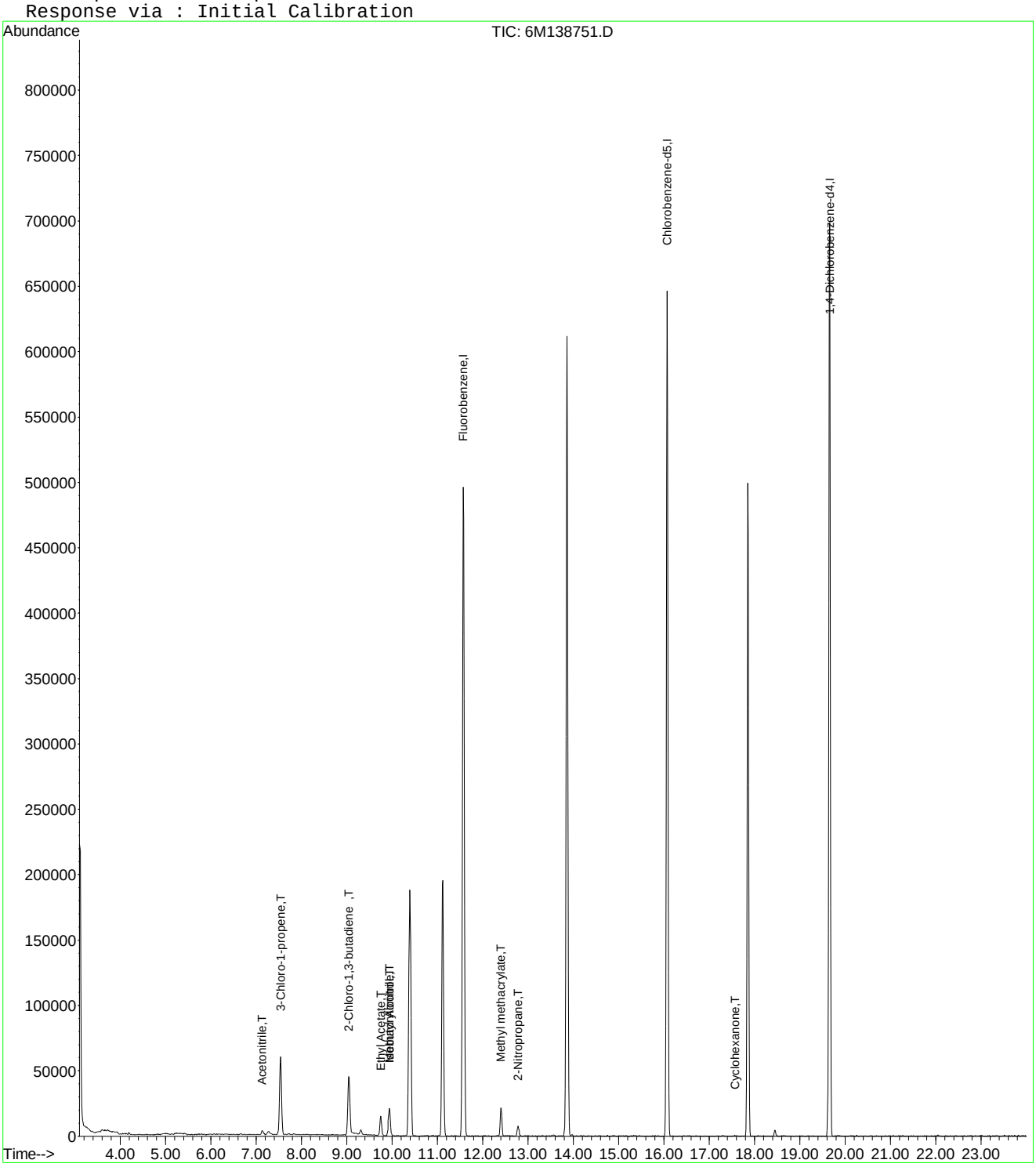

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	4.7698	4.6	100	0.00
3	T	3-Chloro-1-propene	5.0000	4.5408	9.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	3.8775	22.5	100	0.00
5	T	Ethyl Acetate	5.0000	4.2792	14.4	100	0.00
6	T	Methacrylonitrile	5.0000	3.8601	22.8	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.9076	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.99#
9	T	Methyl methacrylate	5.0000	3.5356	29.3	100	0.00
10	T	2-Nitropropane	-1.0000	3.4543	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	1.4133	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138751.D A9FOOWT.M Wed Apr 27 16:04:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	171577	27.9669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.88%		
43) 1,2-Dichloroethane-d4	11.12	65	207390	27.8532 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.40%		
58) Toluene-d8	13.86	98	547786	26.2796 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.12%		
80) p-Bromofluorobenzene	17.85	95	228171	27.5052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.04%		

Target Compounds					Qvalue
13) Acetone	6.67	43	2739	1.4745 ug/L #	59
20) Carbon Disulfide	7.54	76	81493	4.2668 ug/L #	36
27) 1,1-Dichloroethane	9.05	63	3411	0.2688 ug/L #	42
29) 2-Butanone	9.31	43	3879	1.4148 ug/L #	1
36) Tetrahydrofuran	10.37	42	3350	1.8754 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1183	0.1708 ug/L #	27

(#) = qualifier out of range (m) = manual integration
6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

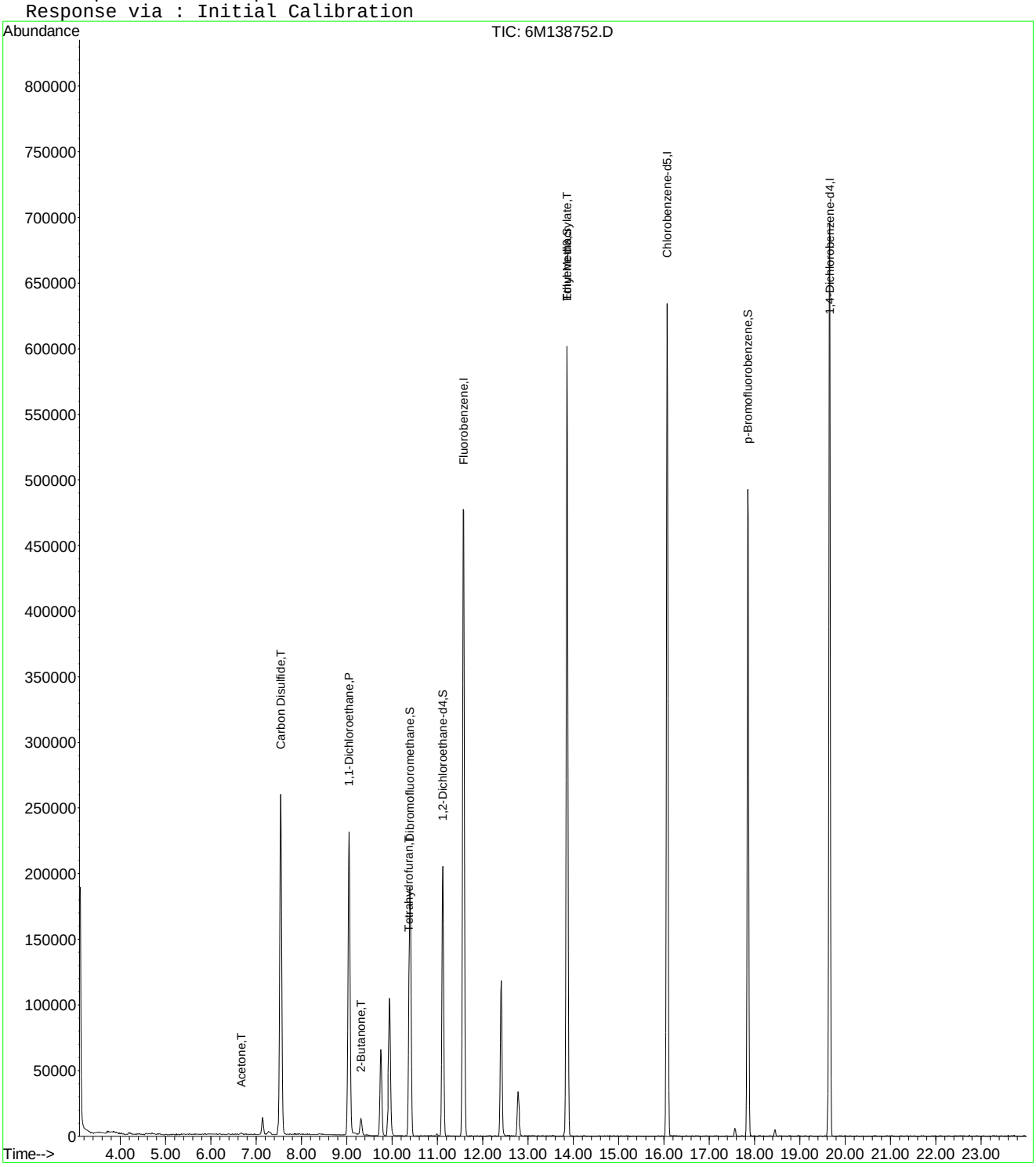

6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:54 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	15.4242 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	18.5457 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	17.5823 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.6403 ug/L	93
6) Methacrylonitrile	9.93	67	42708	17.5719 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	22.9203 ug/L #	85
8) 1-Butanol	10.98	41	982	6.5662 ug/L #	52
9) Methyl methacrylate	12.41	41	95824	15.2291 ug/L	81
10) 2-Nitropropane	12.78	43	34207	18.4403 ug/L	92
13) Cyclohexanone	17.57	55	4053	4.7763 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Mon Apr 25 15:45:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

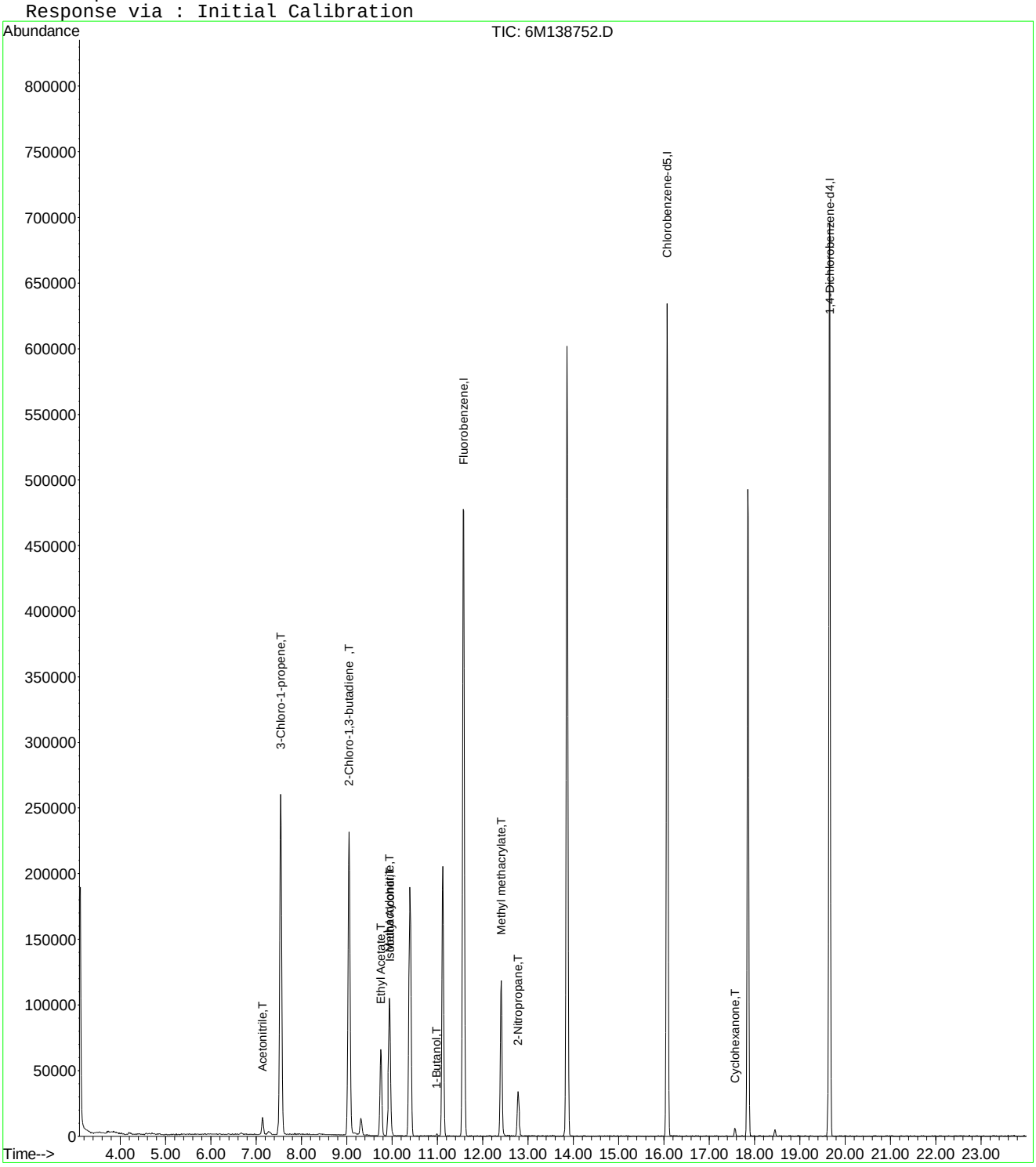

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	19.7725 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	19.9080 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	18.9362 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.3209 ug/L	93
6) Methacrylonitrile	9.93	67	42708	19.2846 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	38.9462 ug/L #	85
9) Methyl methacrylate	12.41	41	95824	17.7480 ug/L	81
10) 2-Nitropropane	12.78	43	34207	17.0355 ug/L	92
13) Cyclohexanone	17.57	55	4053	13.0852 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

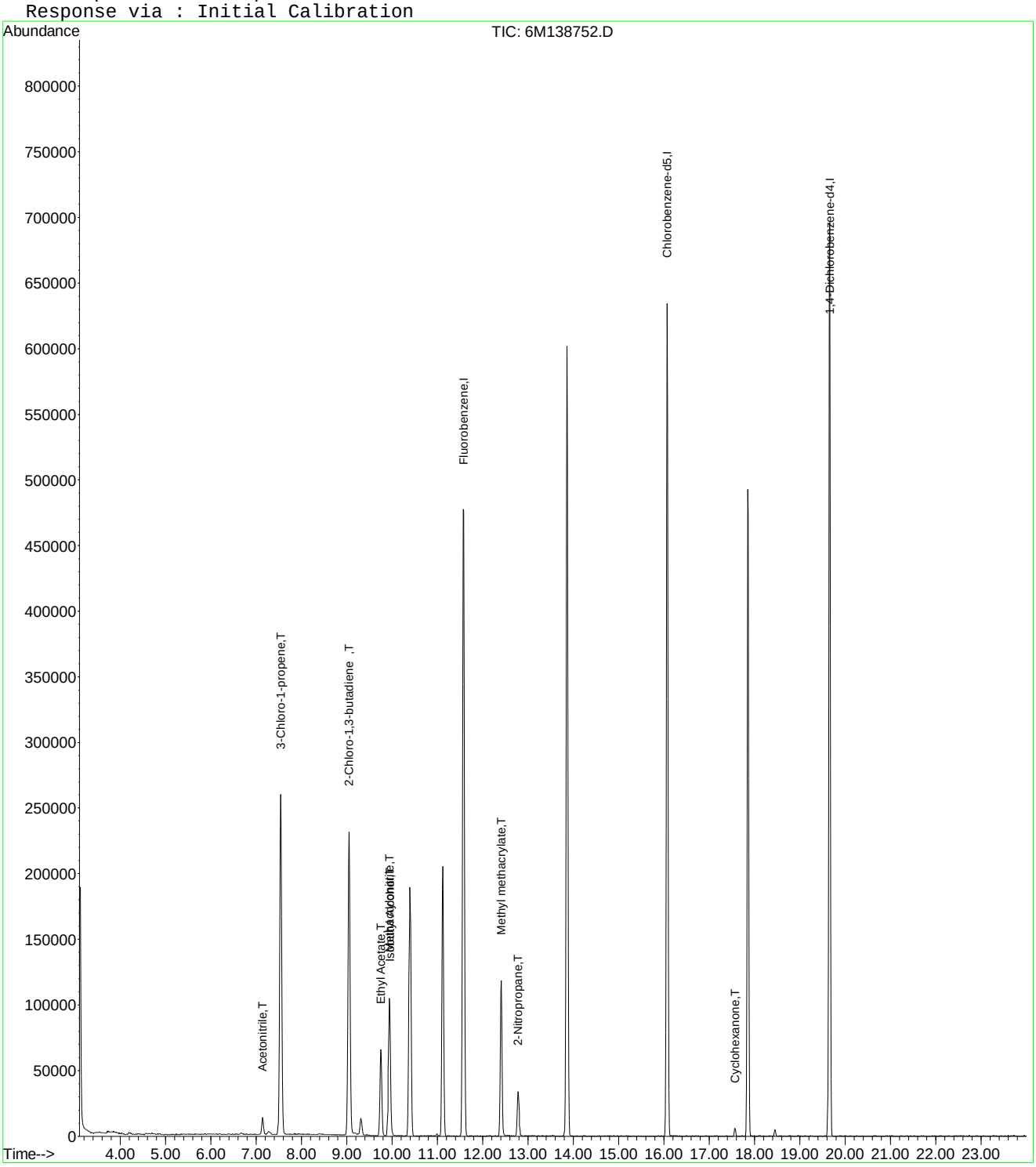

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.7724	1.1	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.9080	0.5	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.9362	5.3	100	0.00
5	T	Ethyl Acetate	20.0000	19.3209	3.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.2846	3.6	100	0.00
7	T	Isobutyl Alcohol	40.0000	38.9462	2.6	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	20.0000	17.7480	11.3	100	0.00
10	T	2-Nitropropane	-1.0000	17.0355	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	13.0852	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138752.D A9FOOWT.M Wed Apr 27 16:04:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172256	27.8132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	208744	27.7711 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.08%		
58) Toluene-d8	13.86	98	553191	26.2235 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	17.85	95	239542	28.1954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.80%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	3732	1.9901 ug/L #	57
20) Carbon Disulfide	7.54	76	220780	11.4508 ug/L #	36
26) Vinyl Acetate	9.04	43	2704	0.2791 ug/L #	8
27) 1,1-Dichloroethane	9.05	63	9803	0.7652 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	152978	7.3579 ug/L #	39
29) 2-Butanone	9.53	43	660	0.2385 ug/L #	52
36) Tetrahydrofuran	10.37	42	3746	2.0774 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1423	0.2030 ug/L #	9

(#) = qualifier out of range (m) = manual integration
6M138753.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

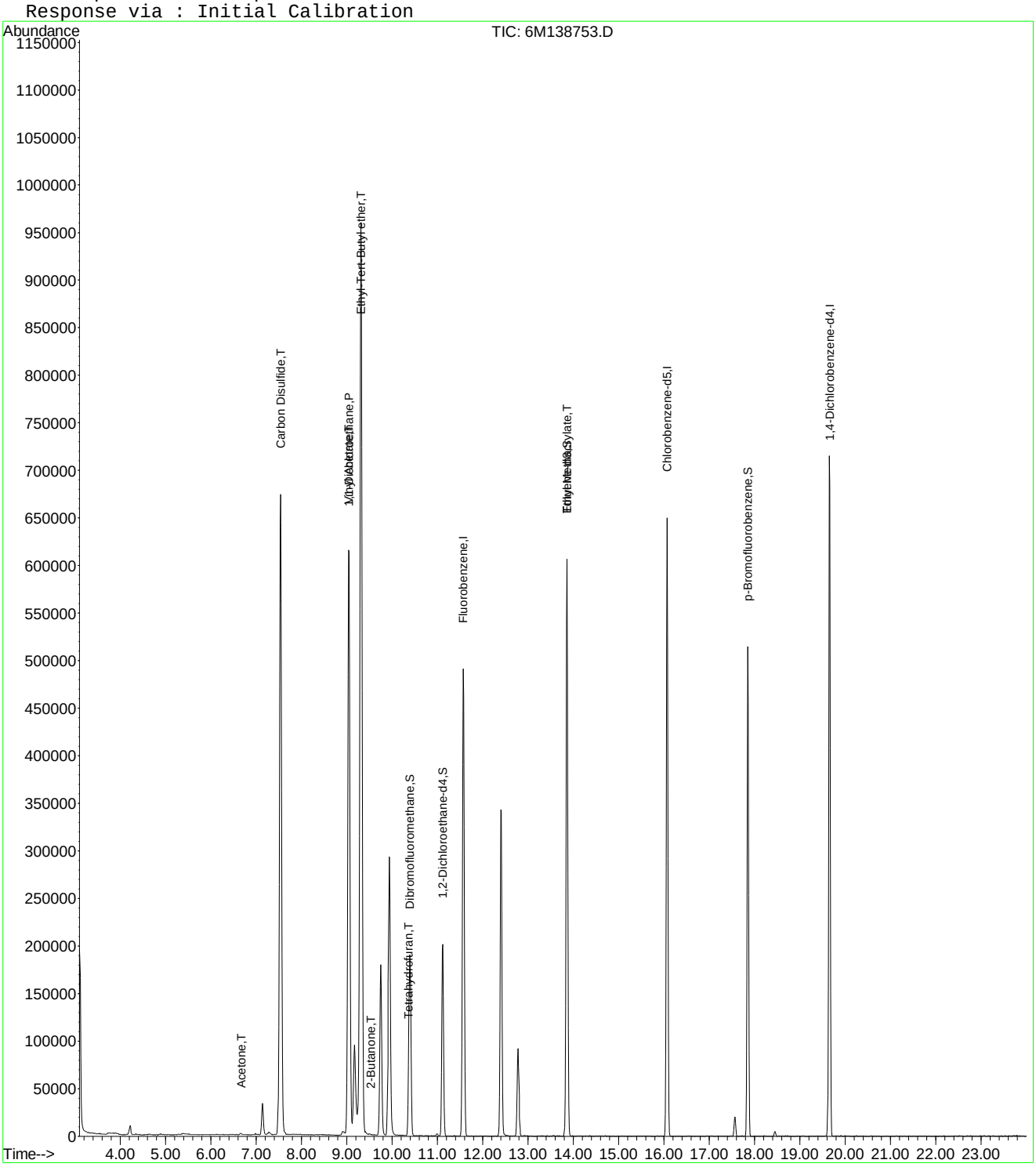

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:55 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	40.3072 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	48.9454 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	48.3496 ug/L	83
5) Ethyl Acetate	9.75	43	336975	52.8234 ug/L	93
6) Methacrylonitrile	9.94	67	119267	48.6097 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	57.3741 ug/L #	99
8) 1-Butanol	10.98	41	1474	9.7632 ug/L	77
9) Methyl methacrylate	12.40	41	279157	43.9482 ug/L	81
10) 2-Nitropropane	12.79	43	95327	50.9052 ug/L	94
13) Cyclohexanone	17.56	55	13241	15.2363 ug/L	91

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

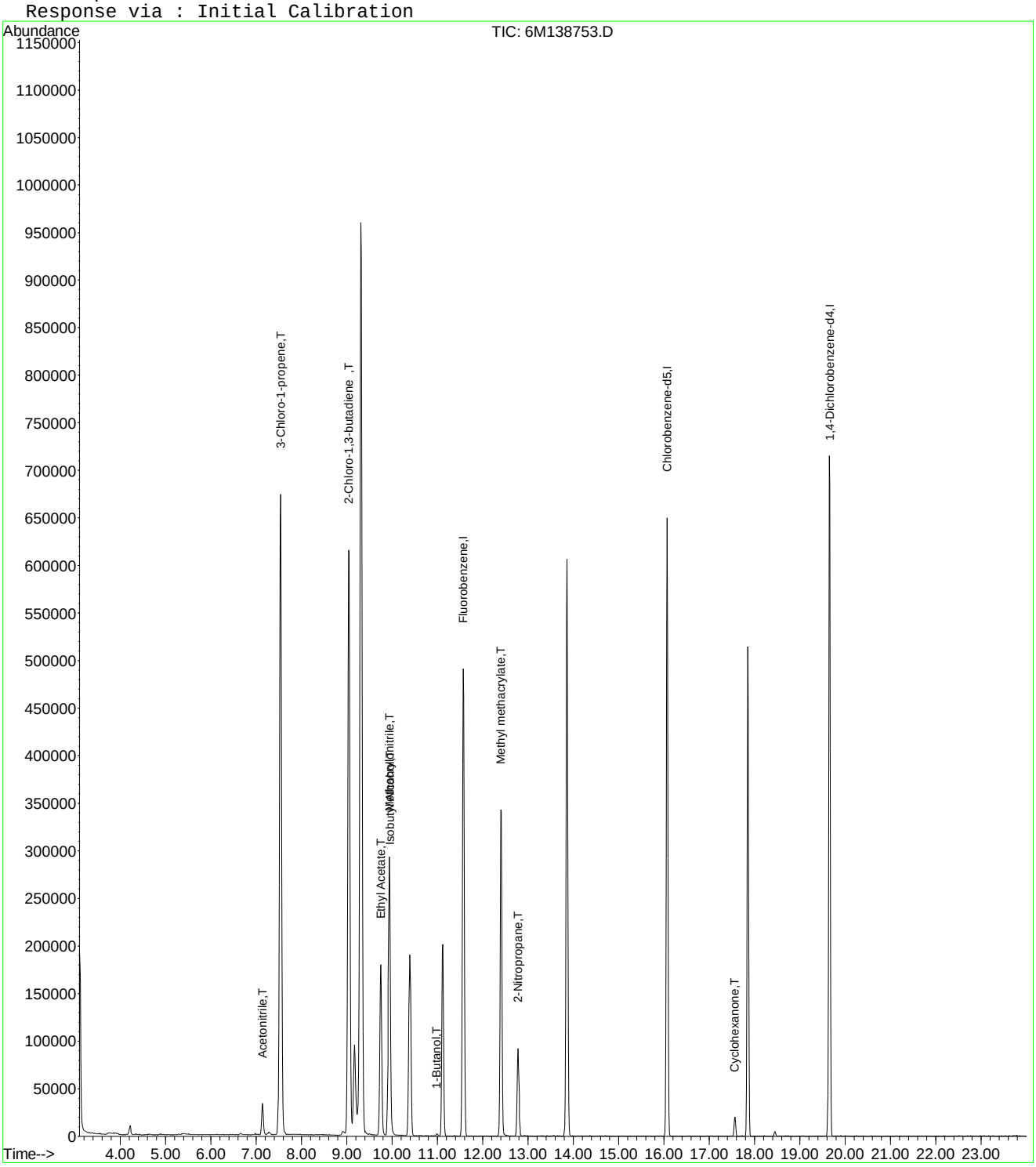

6M138753.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	51.6701 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	52.5409 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	52.0726 ug/L	83
5) Ethyl Acetate	9.75	43	336975	51.9646 ug/L	93
6) Methacrylonitrile	9.94	67	119267	53.3476 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	97.4900 ug/L #	99
9) Methyl methacrylate	12.40	41	279157	51.2171 ug/L	81
10) 2-Nitropropane	12.79	43	95327	47.0270 ug/L	94
13) Cyclohexanone	17.56	55	13241	41.7415 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

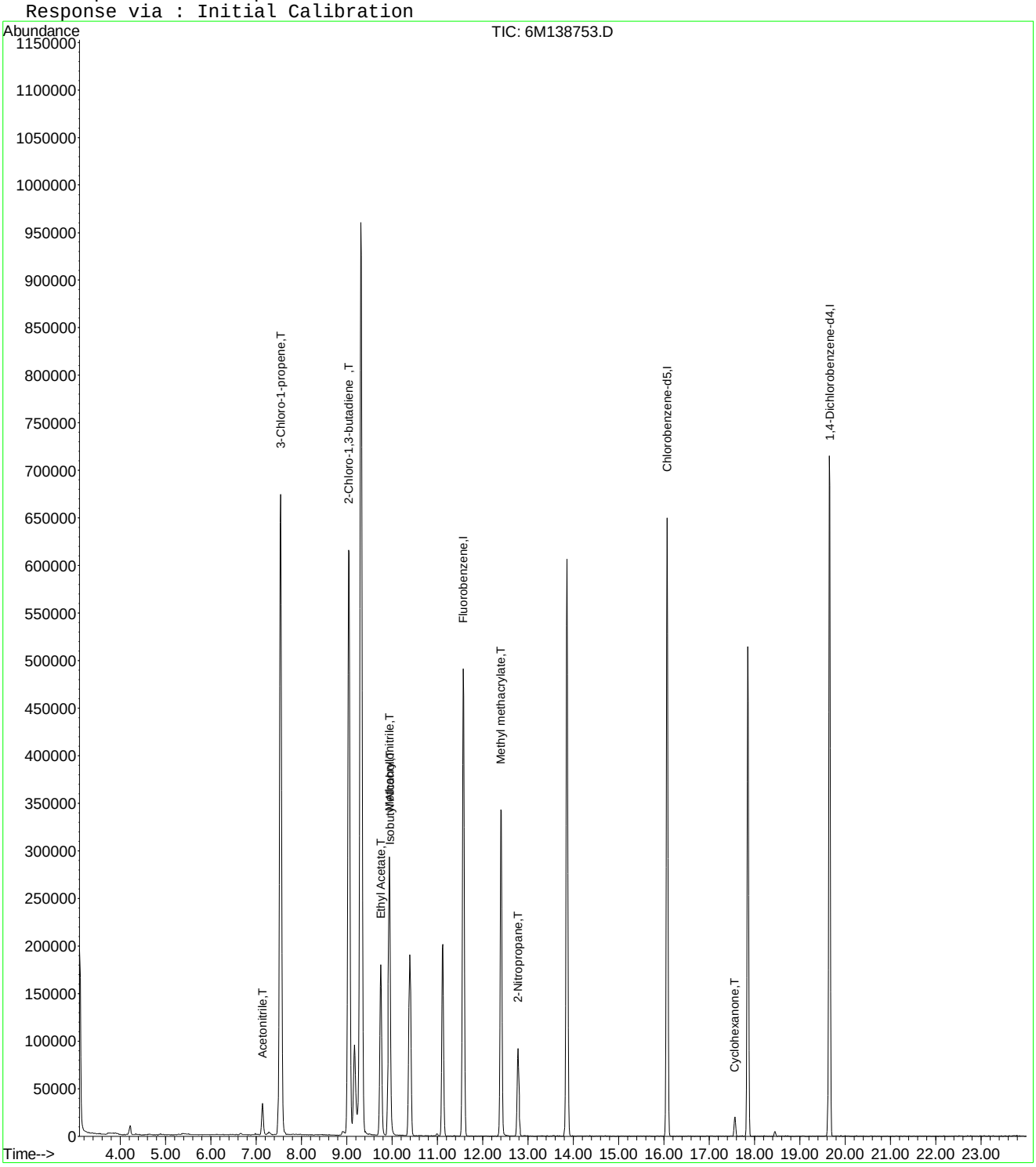

6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.6701	-3.3	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.5409	-5.1	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.0726	-4.1	100	0.00
5	T	Ethyl Acetate	50.0000	51.9646	-3.9	100	0.00
6	T	Methacrylonitrile	50.0000	53.3476	-6.7	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.4900	2.5	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	50.0000	51.2171	-2.4	100	0.00
10	T	2-Nitropropane	50.0000	47.0270	5.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	41.7415	16.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138753.D A9FOOWT.M Wed Apr 27 16:04:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:49 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169577	27.6373 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.56%		
43) 1,2-Dichloroethane-d4	11.12	65	210119	28.2161 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.88%		
58) Toluene-d8	13.86	98	550953	26.1877 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.76%		
80) p-Bromofluorobenzene	17.85	95	239480	28.0420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.16%		

Target Compounds

					Qvalue
13) Acetone	6.66	43	6960	3.7463 ug/L	82
16) Dimethyl Sulfide	7.15	62	732	0.1448 ug/L #	1
18) Methyl acetate	7.53	43	1419	0.2750 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	2141	0.1320 ug/L #	72
27) 1,1-Dichloroethane	9.05	63	20725	1.6328 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	76666	3.7220 ug/L #	39
29) 2-Butanone	9.53	43	1176	0.4289 ug/L #	52
34) 1-Bromopropane	10.00	122	702	0.6817 ug/L #	1
36) Tetrahydrofuran	10.35	42	4425	2.4769 ug/L #	60
48) Methylcyclohexane	12.41	83	1461	0.1681 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1083	0.1549 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1910	0.3066 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138754.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

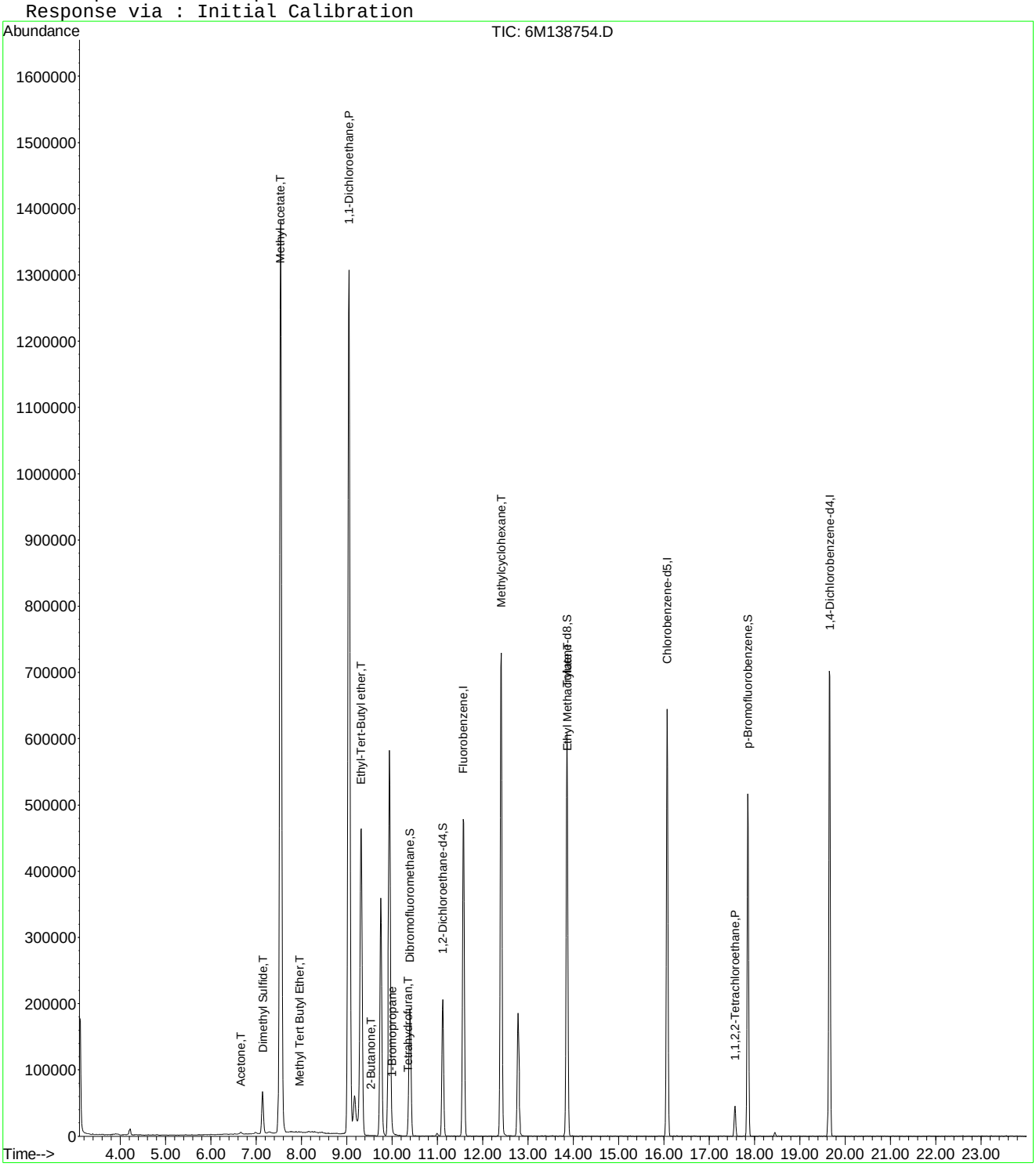

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:57 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	79.0019 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	100.3335 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	102.2884 ug/L	83
5) Ethyl Acetate	9.75	43	673221	106.5217 ug/L	93
6) Methacrylonitrile	9.94	67	237219	97.5895 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	97.4937 ug/L #	85
8) 1-Butanol	11.00	41	2978	19.9099 ug/L #	64
9) Methyl methacrylate	12.41	41	585839	93.0942 ug/L	80
10) 2-Nitropropane	12.78	43	197598	106.5074 ug/L	97
13) Cyclohexanone	17.57	55	27547	31.5338 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

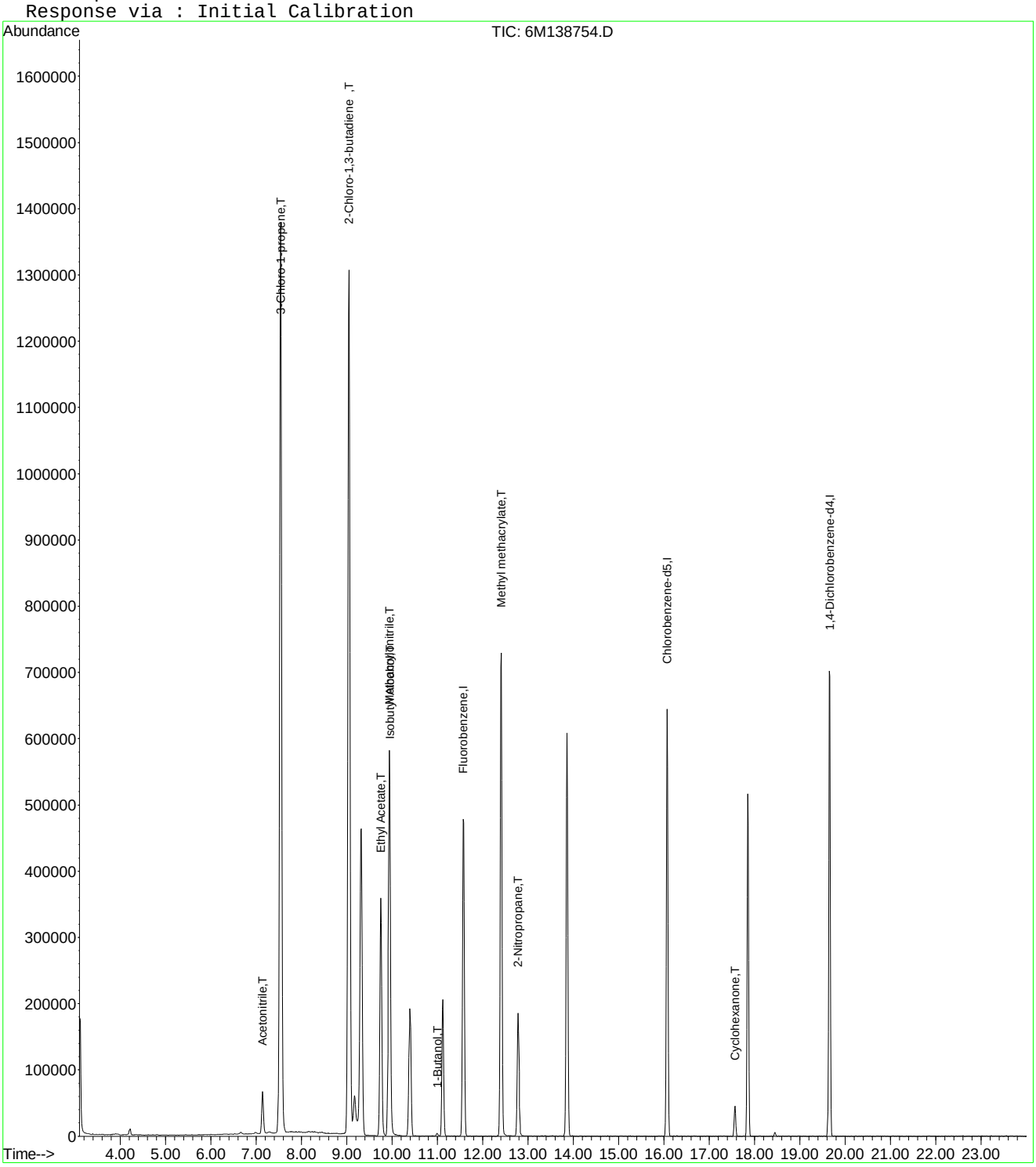

6M138754.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	101.2731 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	107.7041 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	110.1648 ug/L	83
5) Ethyl Acetate	9.75	43	673221	104.7898 ug/L	93
6) Methacrylonitrile	9.94	67	237219	107.1014 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	165.6613 ug/L #	85
9) Methyl methacrylate	12.41	41	585839	108.4917 ug/L	80
10) 2-Nitropropane	12.78	43	197598	98.3932 ug/L	97
13) Cyclohexanone	17.57	55	27547	86.3902 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

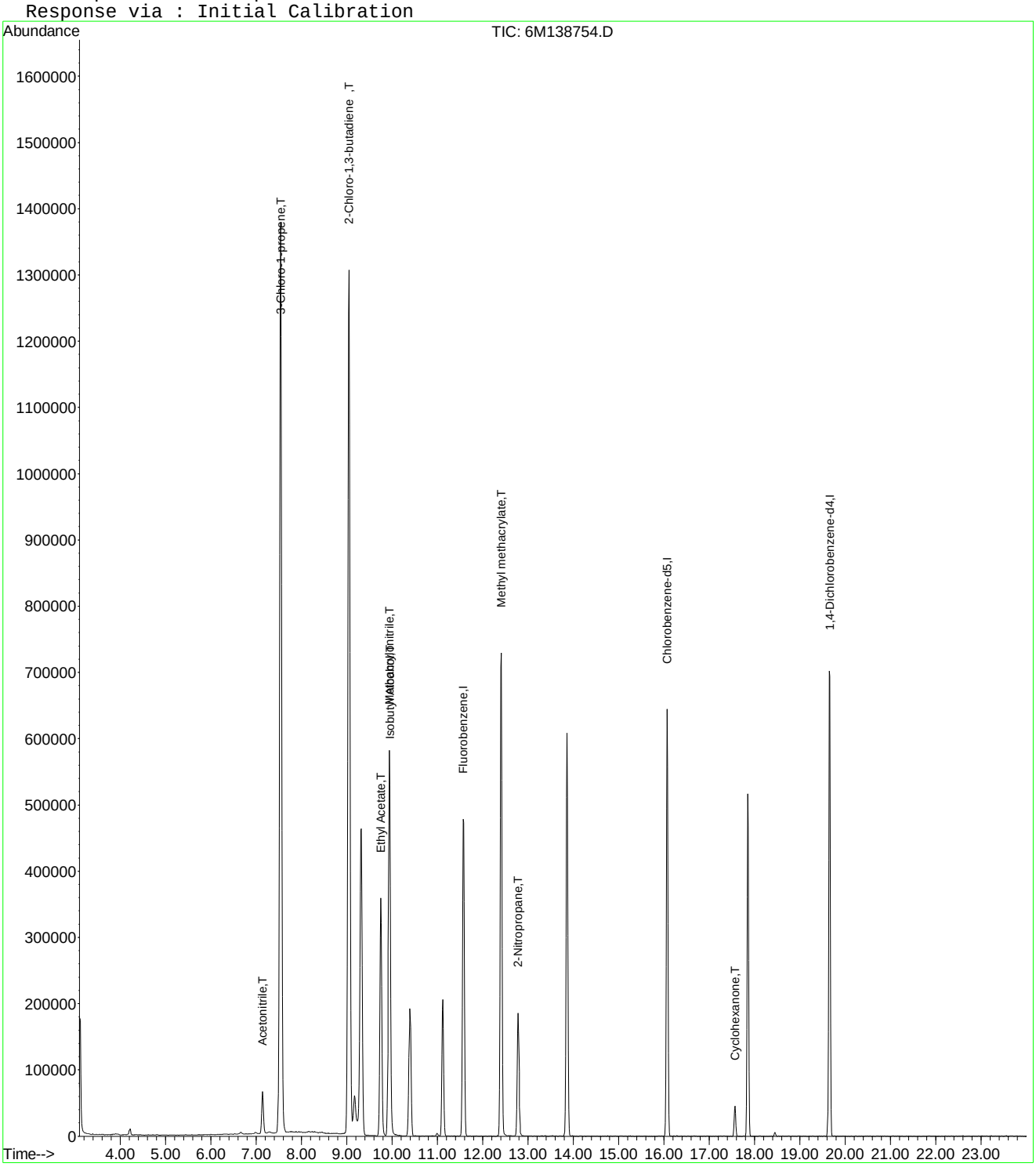

6M138754.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473187	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172341	27.7160 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.88%		
43) 1,2-Dichloroethane-d4	11.12	65	211249	27.9923 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.96%		
58) Toluene-d8	13.86	98	552831	25.9510 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.80%		
80) p-Bromofluorobenzene	17.85	95	247709	28.6419 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 114.56%		

Target Compounds

					Qvalue
9) Diethyl ether	6.31	59	653	0.1225 ug/L #	12
13) Acetone	6.66	43	9406	4.9959 ug/L #	64
15) Tert-Butyl Alcohol	6.98	59	449	0.8301 ug/L #	1
16) Dimethyl Sulfide	7.16	62	680	0.1328 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	3926	0.2388 ug/L	83
24) n-Hexane	8.30	57	1777	0.2040 ug/L	87
27) 1,1-Dichloroethane	9.05	63	41640	3.2372 ug/L #	47
28) Ethyl-Tert-Butyl ether	9.31	59	272648	13.0615 ug/L #	38
29) 2-Butanone	9.51	43	2992	1.0767 ug/L #	67
30) Propionitrile	9.93	54	258	0.3232 ug/L #	57
34) 1-Bromopropane	9.99	122	1417	1.3579 ug/L #	1
36) Tetrahydrofuran	10.37	42	4839	2.6728 ug/L #	62
48) Methylcyclohexane	12.40	83	2976	0.3378 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1202	0.1698 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	5192	0.8231 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138755.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

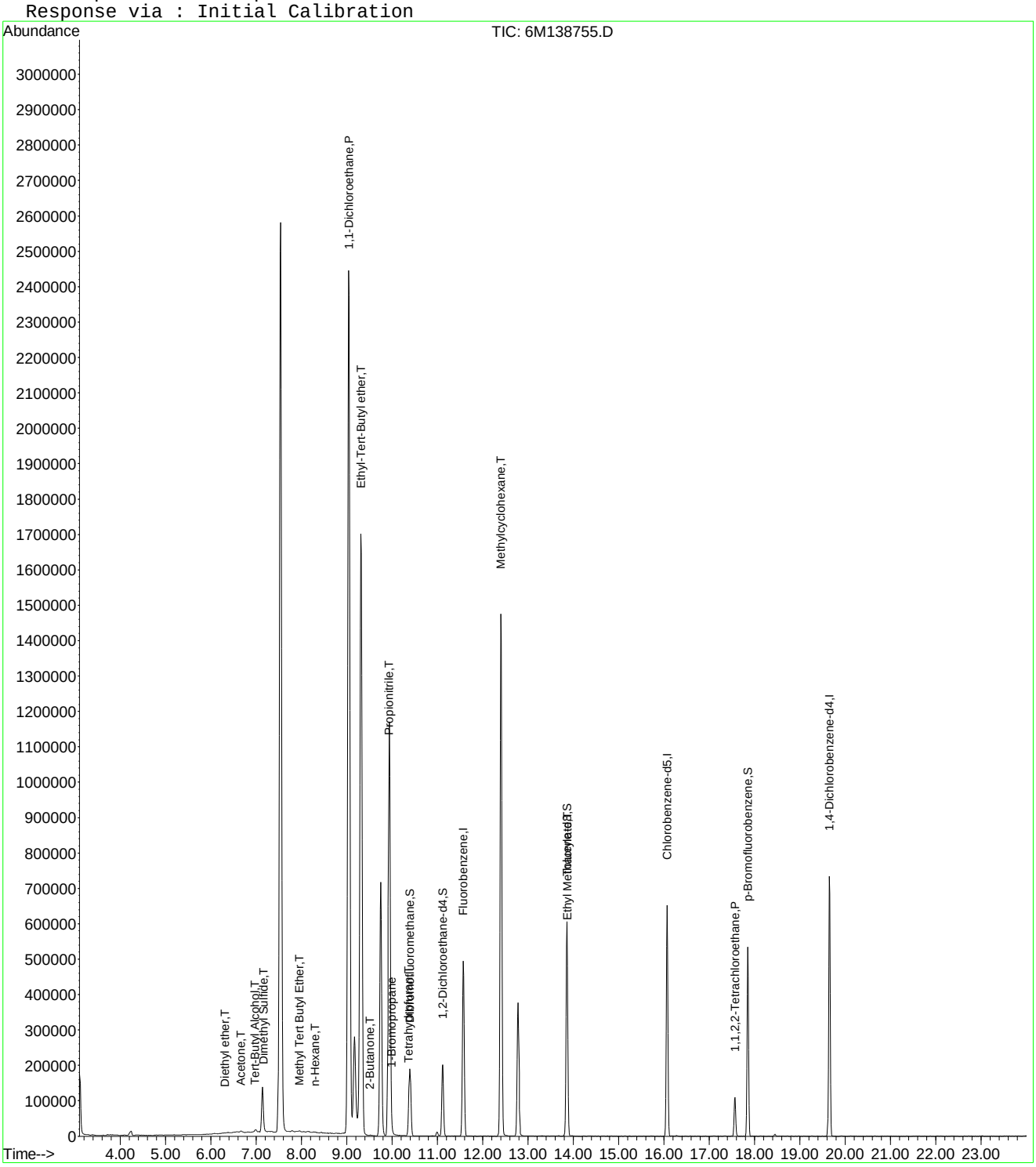

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	157.5150	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	189.6828	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	193.4336	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	210.2391	ug/L	94
6) Methacrylonitrile	9.94	67	471538	191.4186	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	206.4864	ug/L #	92
8) 1-Butanol	10.99	41	8815	58.1542	ug/L #	64
9) Methyl methacrylate	12.40	41	1186381	186.0295	ug/L	80
10) 2-Nitropropane	12.79	43	410702	218.4428	ug/L	99
13) Cyclohexanone	17.57	55	67080	75.8254	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

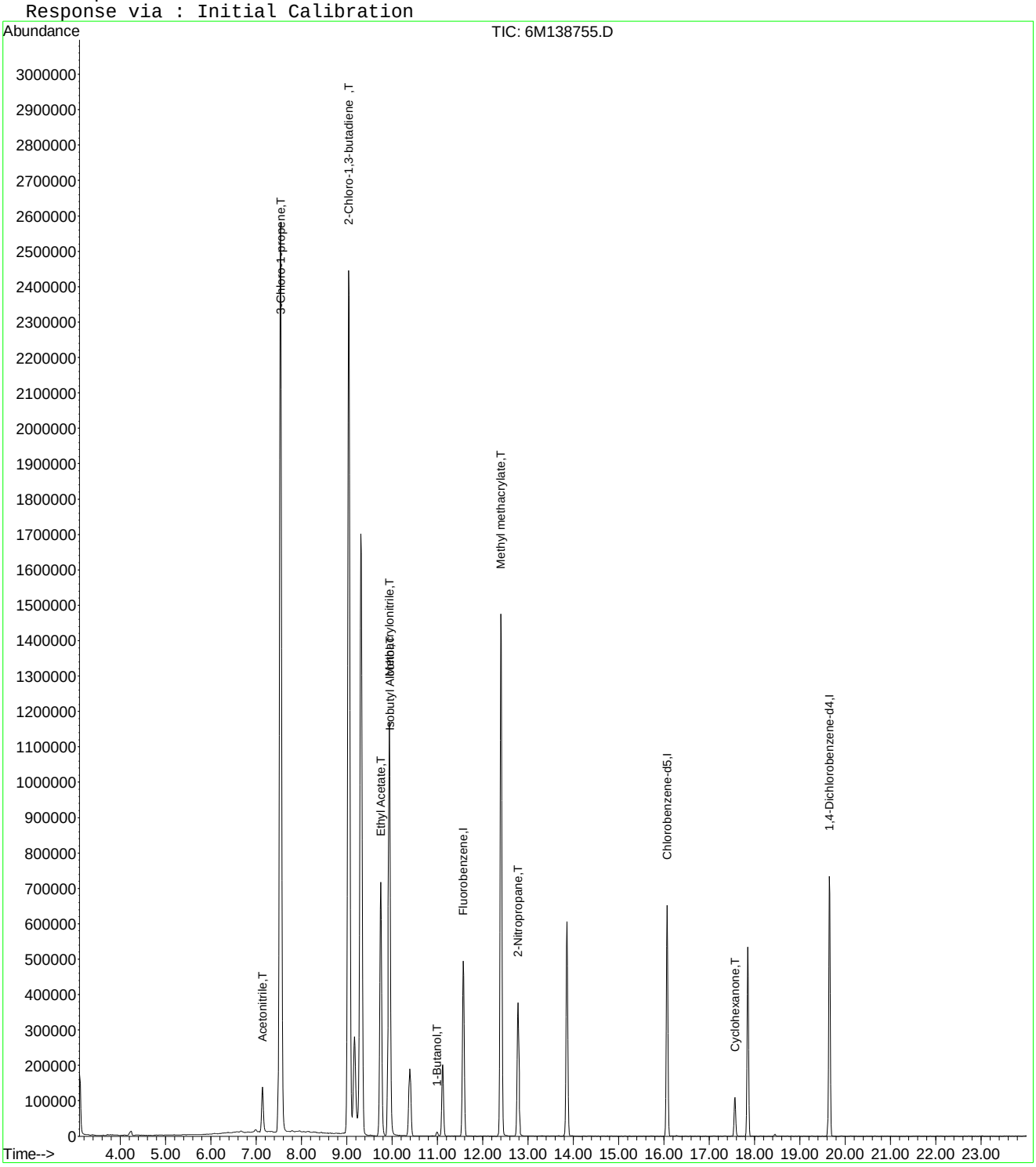

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	201.9195	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	203.6170	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	208.3284	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	206.8209	ug/L	94
6) Methacrylonitrile	9.94	67	471538	210.0757	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	350.8618	ug/L #	92
9) Methyl methacrylate	12.40	41	1186381	216.7982	ug/L	80
10) 2-Nitropropane	12.79	43	410702	201.8008	ug/L	99
13) Cyclohexanone	17.57	55	67080	207.7320	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

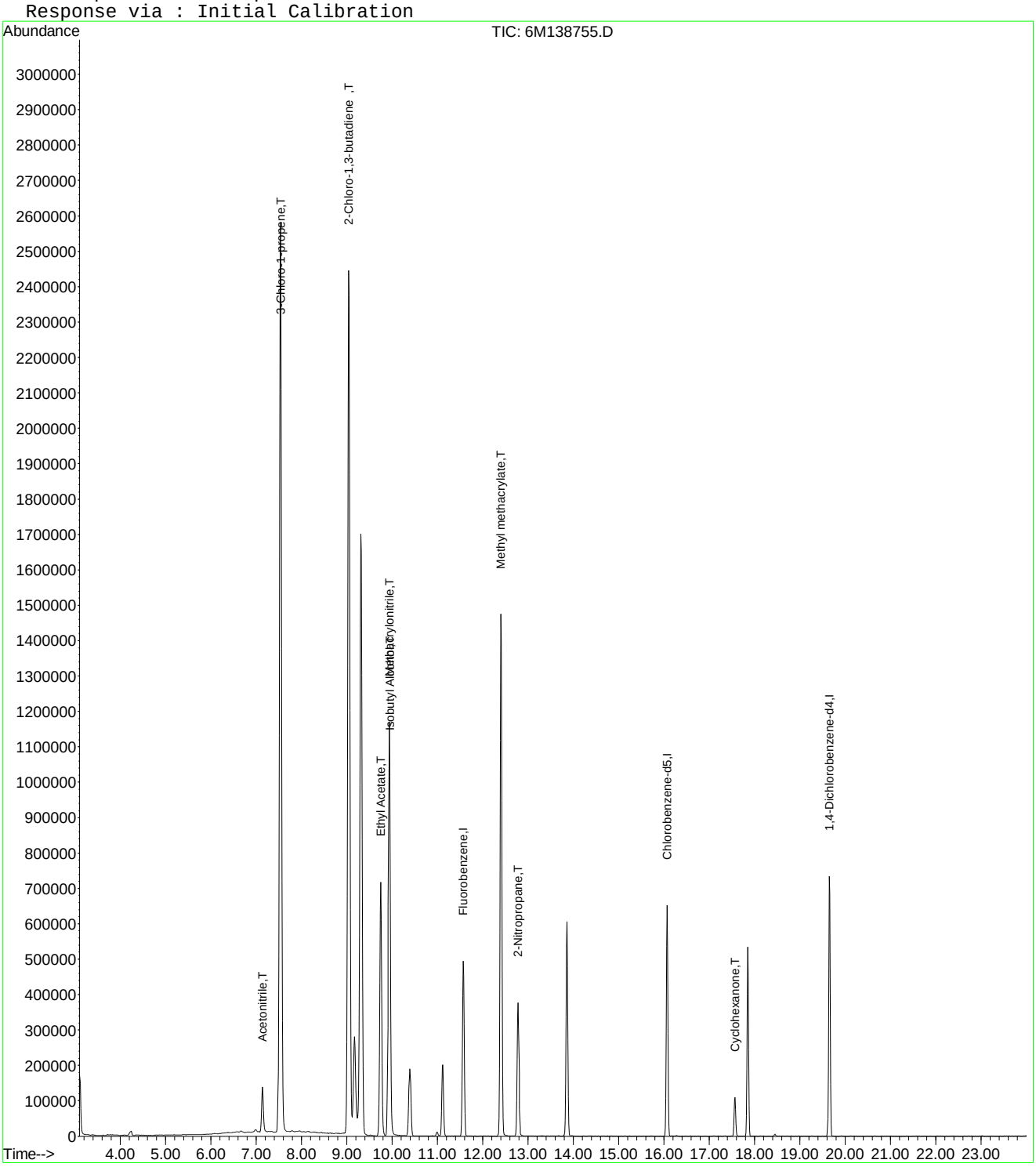

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169983	27.5546 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.20%		
43) 1,2-Dichloroethane-d4	11.12	65	207199	27.6745 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.68%		
58) Toluene-d8	13.86	98	553023	25.9875 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	17.85	95	247939	28.0615 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.24%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	13666	7.3164 ug/L #	77
15) Tert-Butyl Alcohol	7.06	59	467	0.8703 ug/L #	59
16) Dimethyl Sulfide	7.14	62	668	0.1315 ug/L #	1
18) Methyl acetate	7.54	43	3262	0.6289 ug/L #	1
22) Methyl Tert Butyl Ether	7.97	73	10591	0.6492 ug/L #	53
24) n-Hexane	8.28	57	3576	0.4138 ug/L #	56
27) 1,1-Dichloroethane	9.04	63	60743	4.7600 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	155796	7.5231 ug/L #	39
29) 2-Butanone	9.52	43	4002	1.4516 ug/L	97
30) Propionitrile	9.95	54	1113	1.4052 ug/L #	1
34) 1-Bromopropane	9.99	122	1450	1.4006 ug/L #	1
36) Tetrahydrofuran	10.36	42	4902	2.7292 ug/L #	61
48) Methylcyclohexane	12.41	83	4626	0.5293 ug/L #	1
60) Ethyl Methacrylate	13.88	69	1599	0.2261 ug/L #	1
72) Ethylbenzene	16.28	106	1349	0.1427 ug/L	56
73) m-,p-Xylene	16.28	106	1349	0.1203 ug/L	81
79) 1,1,2,2-Tetrachloroethane	17.57	83	8744	1.3569 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

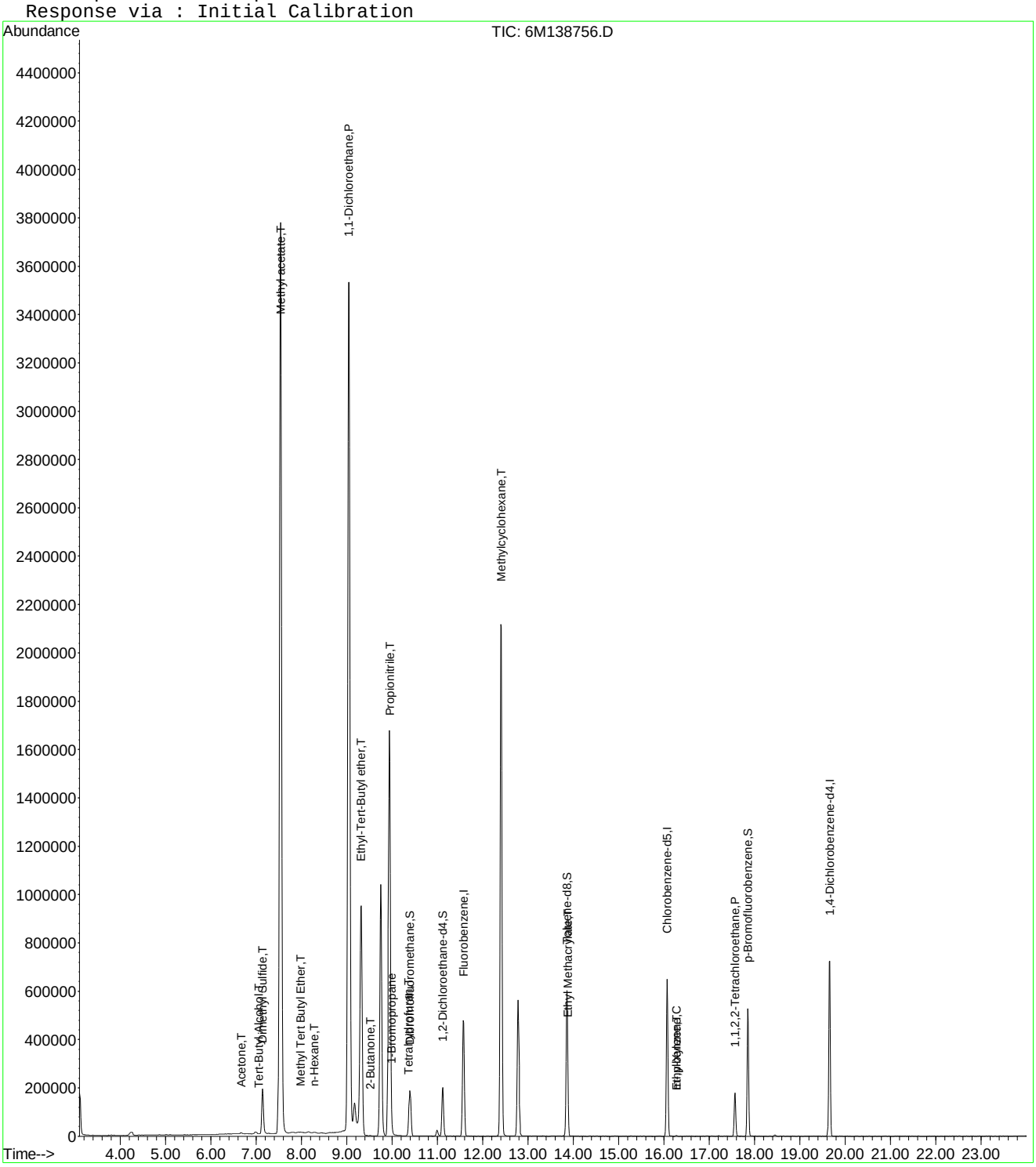

6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00	ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	472685	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	273003	236.0468	ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	278.3729	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	287.5093	ug/L	83
5) Ethyl Acetate	9.75	43	1967613	309.6573	ug/L	94
6) Methacrylonitrile	9.94	67	686612	280.9484	ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	347.5212	ug/L #	90
8) 1-Butanol	10.99	41	18116	120.4672	ug/L	69
9) Methyl methacrylate	12.40	41	1742413	275.3954	ug/L	81
10) 2-Nitropropane	12.78	43	613081	328.6824	ug/L	99
13) Cyclohexanone	17.57	55	106618	117.9661	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

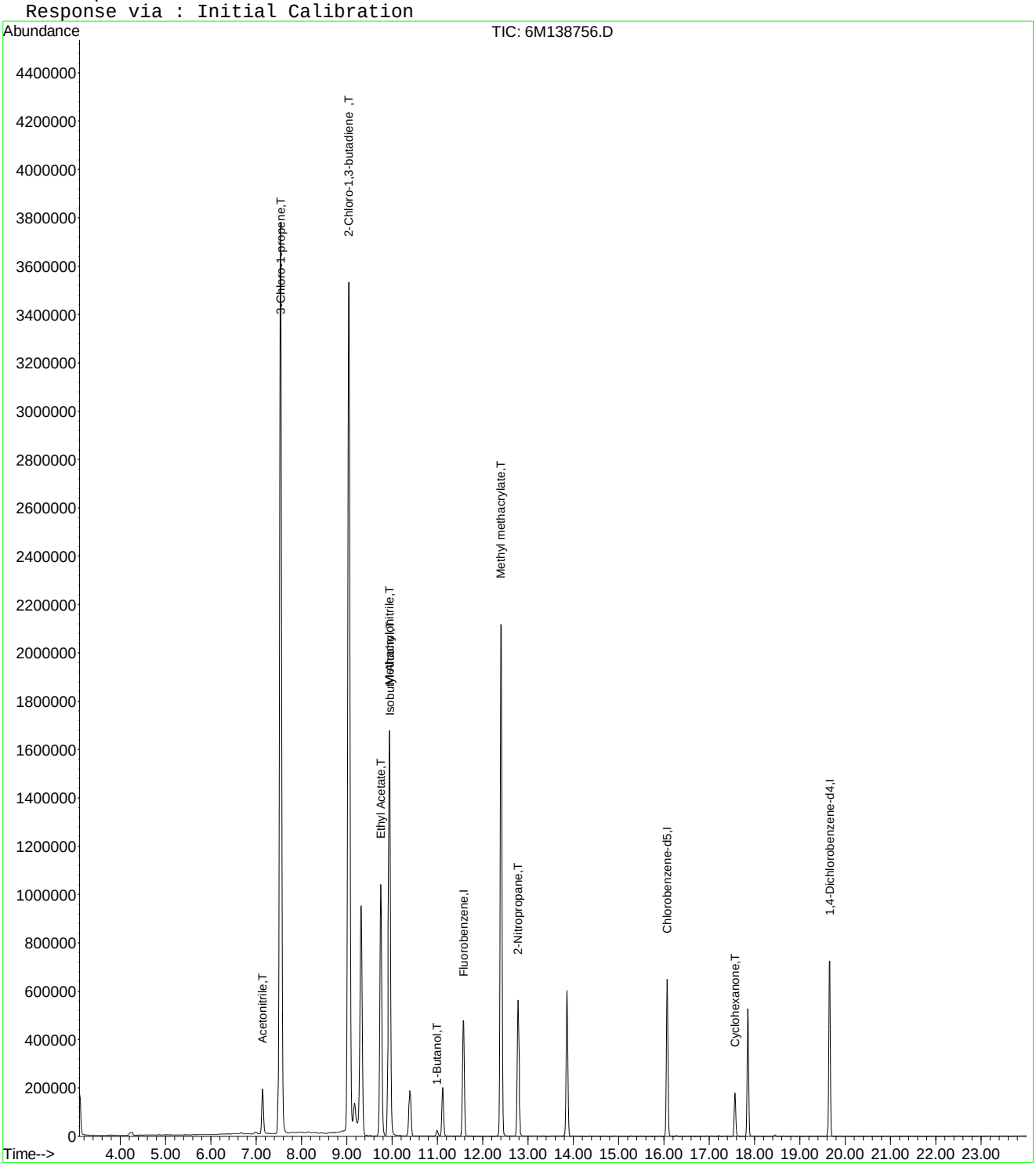

6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	0.01
11) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	273003	302.5900 ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	298.8224 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	309.6481 ug/L	83
5) Ethyl Acetate	9.75	43	1967613	304.6228 ug/L	94
6) Methacrylonitrile	9.94	67	686612	308.3318 ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	590.5081 ug/L #	90
9) Methyl methacrylate	12.40	41	1742413	320.9449 ug/L	81
10) 2-Nitropropane	12.78	43	613081	303.6419 ug/L	99
13) Cyclohexanone	17.57	55	106618	323.1811 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

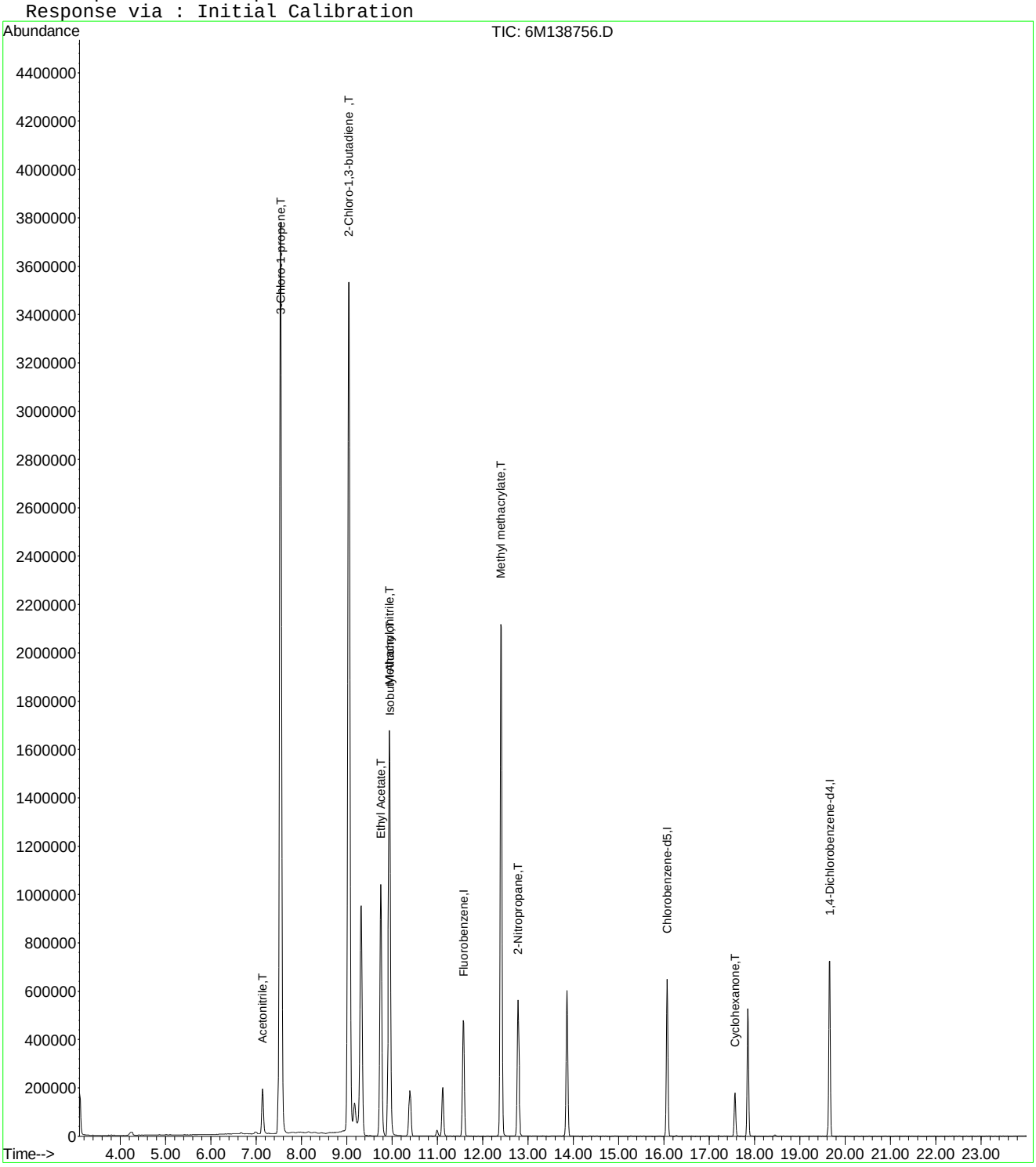

6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:51 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	170708	27.6598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.64%		
43) 1,2-Dichloroethane-d4	11.11	65	208757	27.8702 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.48%		
58) Toluene-d8	13.86	98	554316	25.9150 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	17.85	95	246698	27.9116 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.64%		

Target Compounds					Qvalue
13) Acetone	6.66	43	14063	7.5256 ug/L	99
15) Tert-Butyl Alcohol	7.05	59	807	1.5033 ug/L #	59
16) Dimethyl Sulfide	7.16	62	1034	0.2034 ug/L #	1
18) Methyl acetate	7.48	43	1103	0.2125 ug/L #	60
19) Methylene Chloride	7.73	84	1123	0.1699 ug/L #	40
22) Methyl Tert Butyl Ether	7.97	73	18318	1.1224 ug/L #	53
24) n-Hexane	8.28	57	5609	0.6488 ug/L	75
27) 1,1-Dichloroethane	9.04	63	82912	6.4943 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.32	59	139043	6.7111 ug/L #	38
29) 2-Butanone	9.53	43	4129	1.4970 ug/L	86
30) Propionitrile	9.72	54	202	0.2549 ug/L #	1
34) 1-Bromopropane	9.99	122	1978	1.9098 ug/L #	1
36) Tetrahydrofuran	10.37	42	5444	3.0296 ug/L #	63
48) Methylcyclohexane	12.40	83	6593	0.7540 ug/L #	1
60) Ethyl Methacrylate	13.85	69	1165	0.1639 ug/L #	1
73) m-,p-Xylene	16.28	106	1795	0.1593 ug/L	72
79) 1,1,2,2-Tetrachloroethane	17.57	83	12875	1.9973 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138757.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

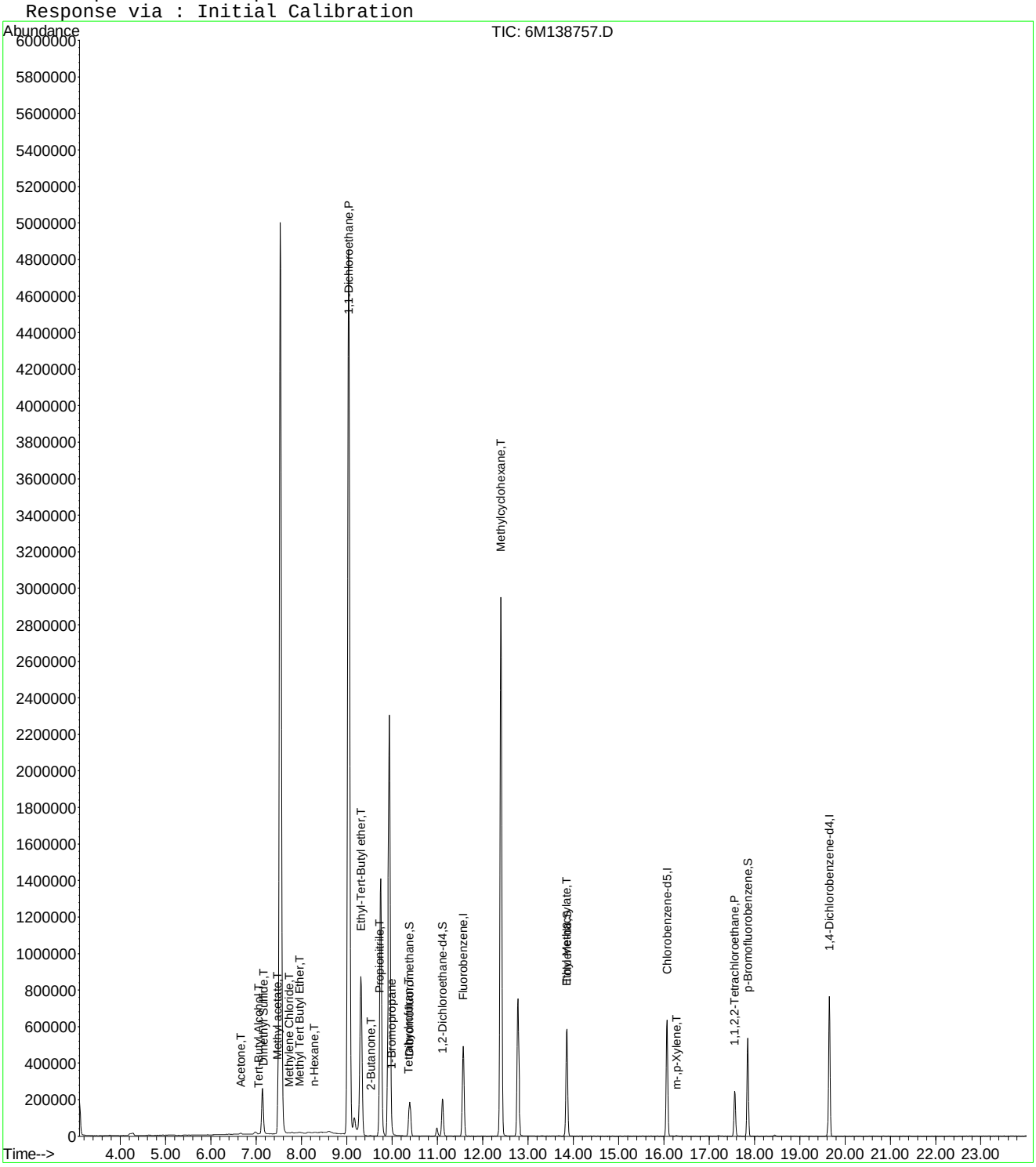

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	318.0524 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	368.4088 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	385.5211 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	423.1975 ug/L	94
6) Methacrylonitrile	9.94	67	929265	380.0675 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	550.6158 ug/L #	89
8) 1-Butanol	10.99	41	29815	198.1744 ug/L	75
9) Methyl methacrylate	12.40	41	2375132	375.2316 ug/L	81
10) 2-Nitropropane	12.79	43	849210	455.0717 ug/L	98
13) Cyclohexanone	17.57	55	149420	165.2683 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Mon Apr 25 15:46:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

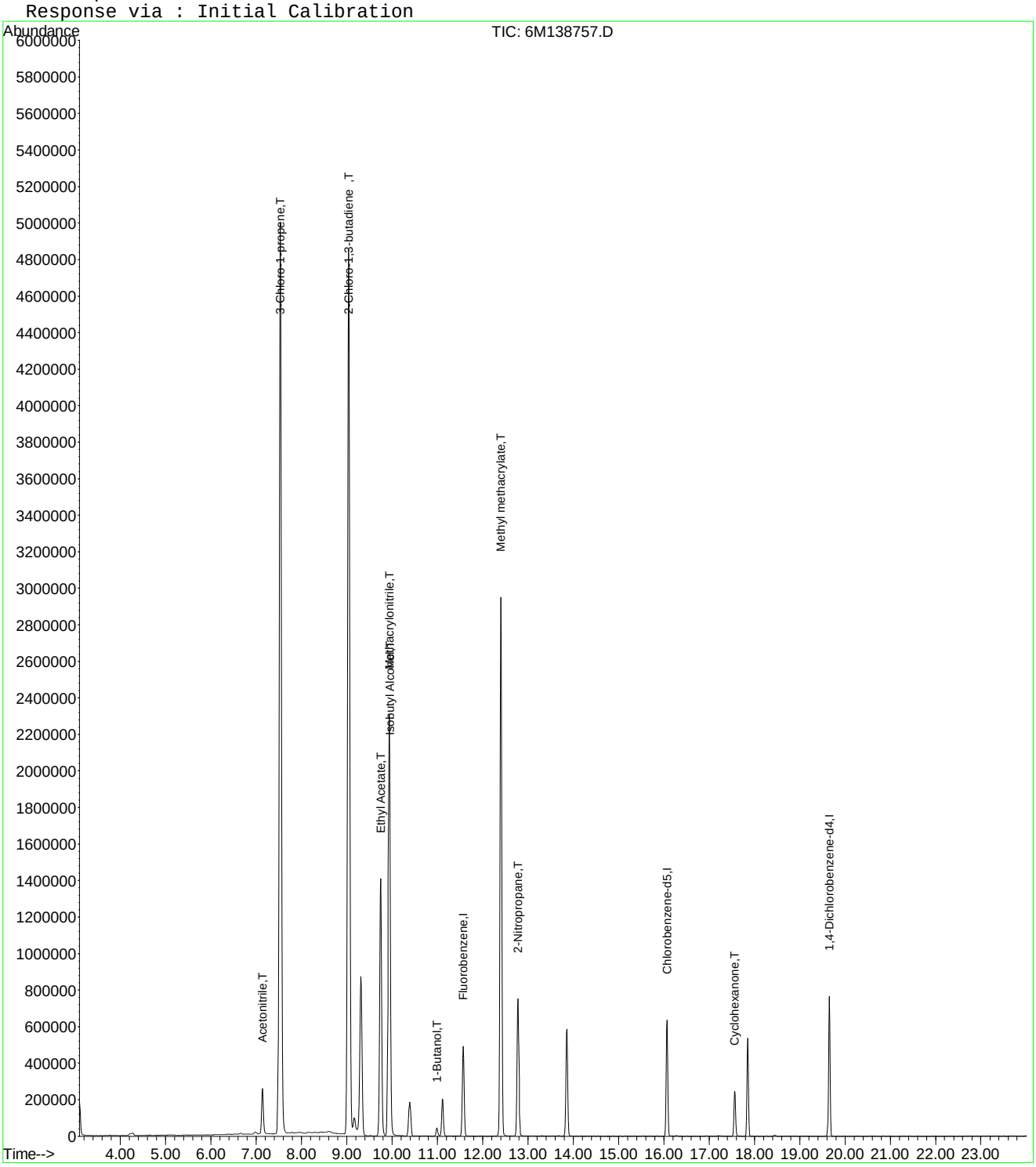

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.08	117	475117	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	368012	407.7137	ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	395.4723	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	415.2070	ug/L	83
5) Ethyl Acetate	9.76	43	2690267	416.3170	ug/L	94
6) Methacrylonitrile	9.94	67	929265	417.1119	ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	935.6065	ug/L #	89
9) Methyl methacrylate	12.40	41	2375132	437.2937	ug/L	81
10) 2-Nitropropane	12.79	43	849210	420.4022	ug/L	98
13) Cyclohexanone	17.57	55	149420	452.7705	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

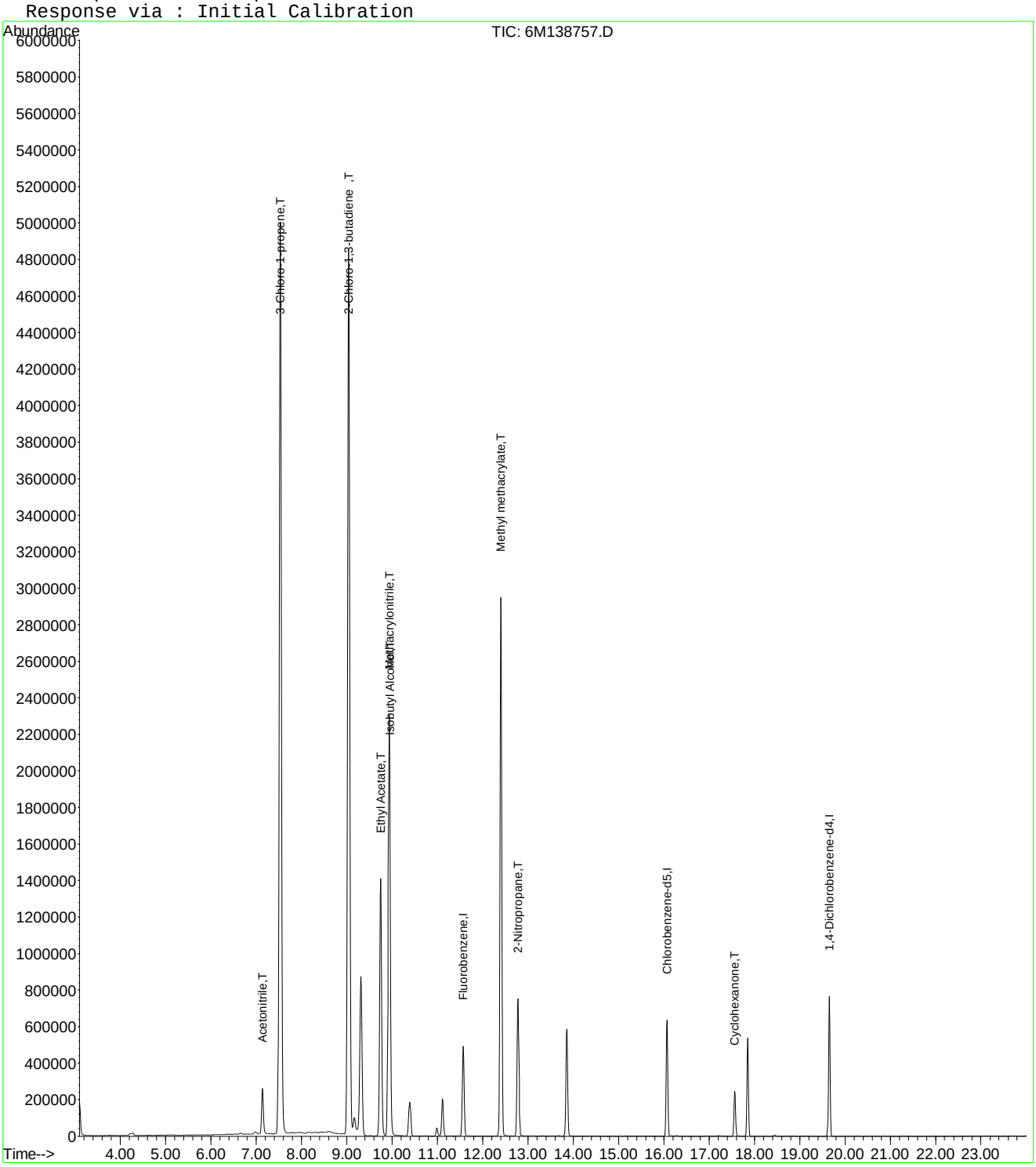

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:52 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	485048	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	175239	27.7556 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.04%		
43) 1,2-Dichloroethane-d4	11.12	65	210644	27.4898 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.96%		
58) Toluene-d8	13.86	98	563297	25.7957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	17.85	95	249406	27.7824 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.12%		

Target Compounds					Qvalue
13) Acetone	6.67	43	15233	7.9684 ug/L	89
15) Tert-Butyl Alcohol	7.06	59	370	0.6737 ug/L #	59
18) Methyl acetate	7.46	43	1079	0.2032 ug/L #	34
19) Methylene Chloride	7.73	84	1471	0.2176 ug/L	66
20) Carbon Disulfide	7.78	76	2765	0.1407 ug/L #	74
22) Methyl Tert Butyl Ether	7.96	73	25284	1.5144 ug/L #	53
24) n-Hexane	8.28	57	5266	0.5954 ug/L	97
27) 1,1-Dichloroethane	9.05	63	105121	8.0488 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	124099	5.8551 ug/L #	39
29) 2-Butanone	9.52	43	4475	1.5860 ug/L #	72
30) Propionitrile	9.71	54	473	0.5835 ug/L #	1
34) 1-Bromopropane	10.00	122	2117	1.9980 ug/L #	1
36) Tetrahydrofuran	10.36	42	5652	3.0747 ug/L #	54
48) Methylcyclohexane	12.40	83	8011	0.8956 ug/L #	1
59) Toluene	13.98	91	3373	0.1249 ug/L	84
60) Ethyl Methacrylate	13.87	69	1585	0.2184 ug/L #	1
73) m-,p-Xylene	16.28	106	2521	0.2191 ug/L	79
79) 1,1,2,2-Tetrachloroethane	17.57	83	14350	2.1917 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

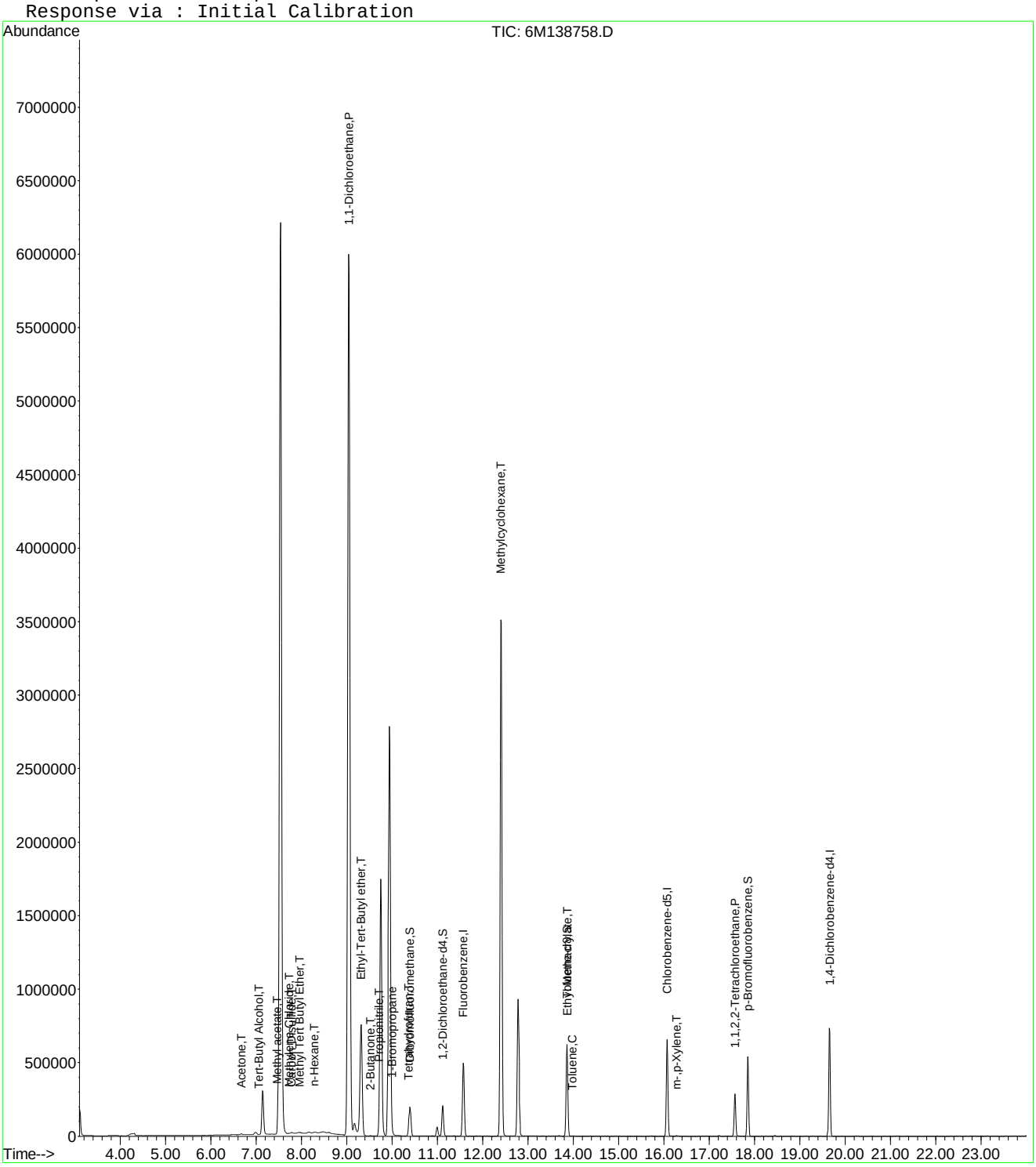

6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	379.8136	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	449.8223	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	474.8265	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	508.5794	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	457.8027	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	701.6799	ug/L #	90
8) 1-Butanol	10.99	41	42236	274.4224	ug/L	75
9) Methyl methacrylate	12.40	41	2914815	450.1389	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	543.0629	ug/L	99
13) Cyclohexanone	17.57	55	176545	192.2558	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

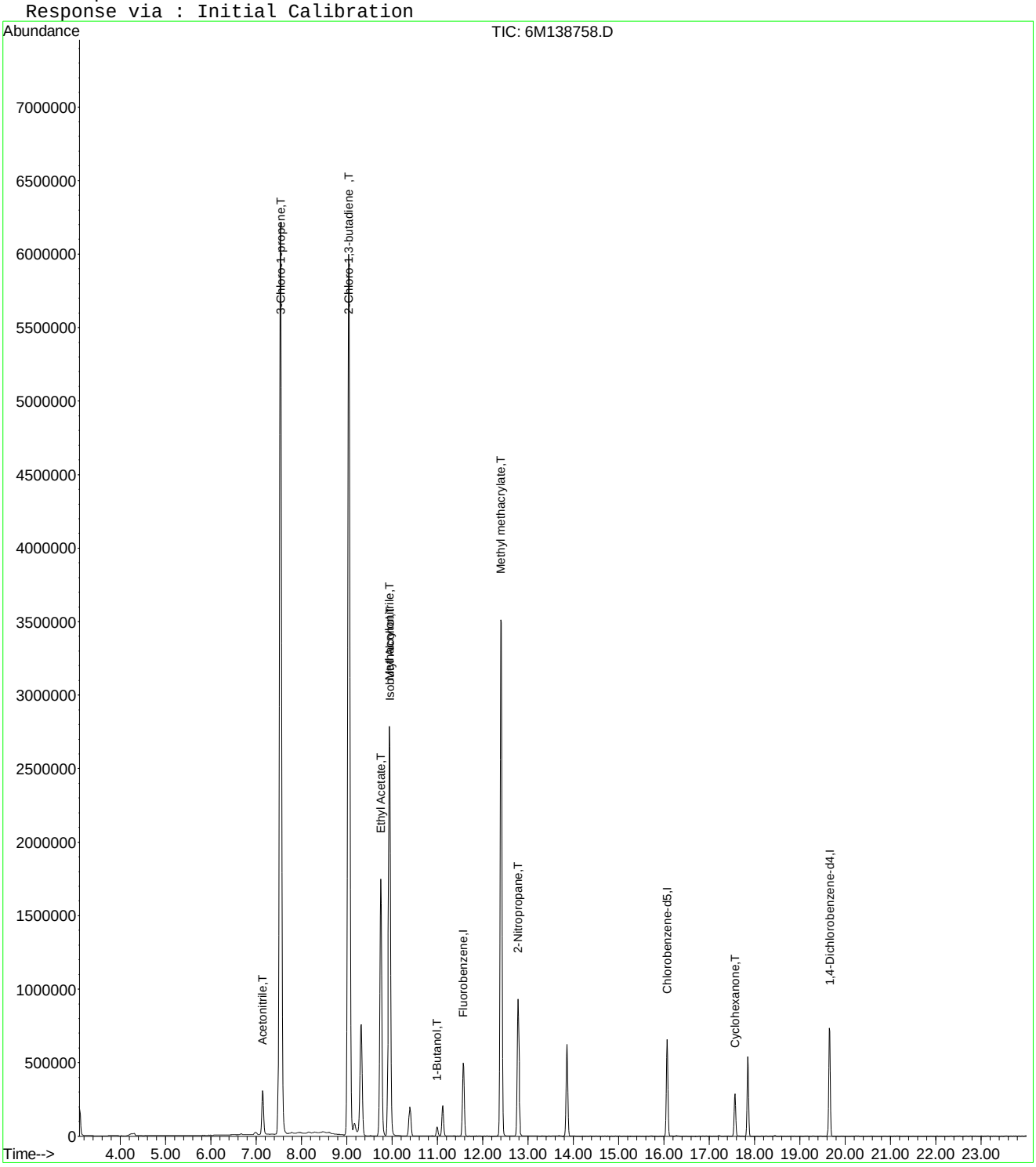

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	486.8858	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	482.8665	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	511.3891	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	500.3107	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	502.4237	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	1192.2947	ug/L #	90
9) Methyl methacrylate	12.40	41	2914815	524.5904	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	501.6898	ug/L	99
13) Cyclohexanone	17.57	55	176545	526.7057	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

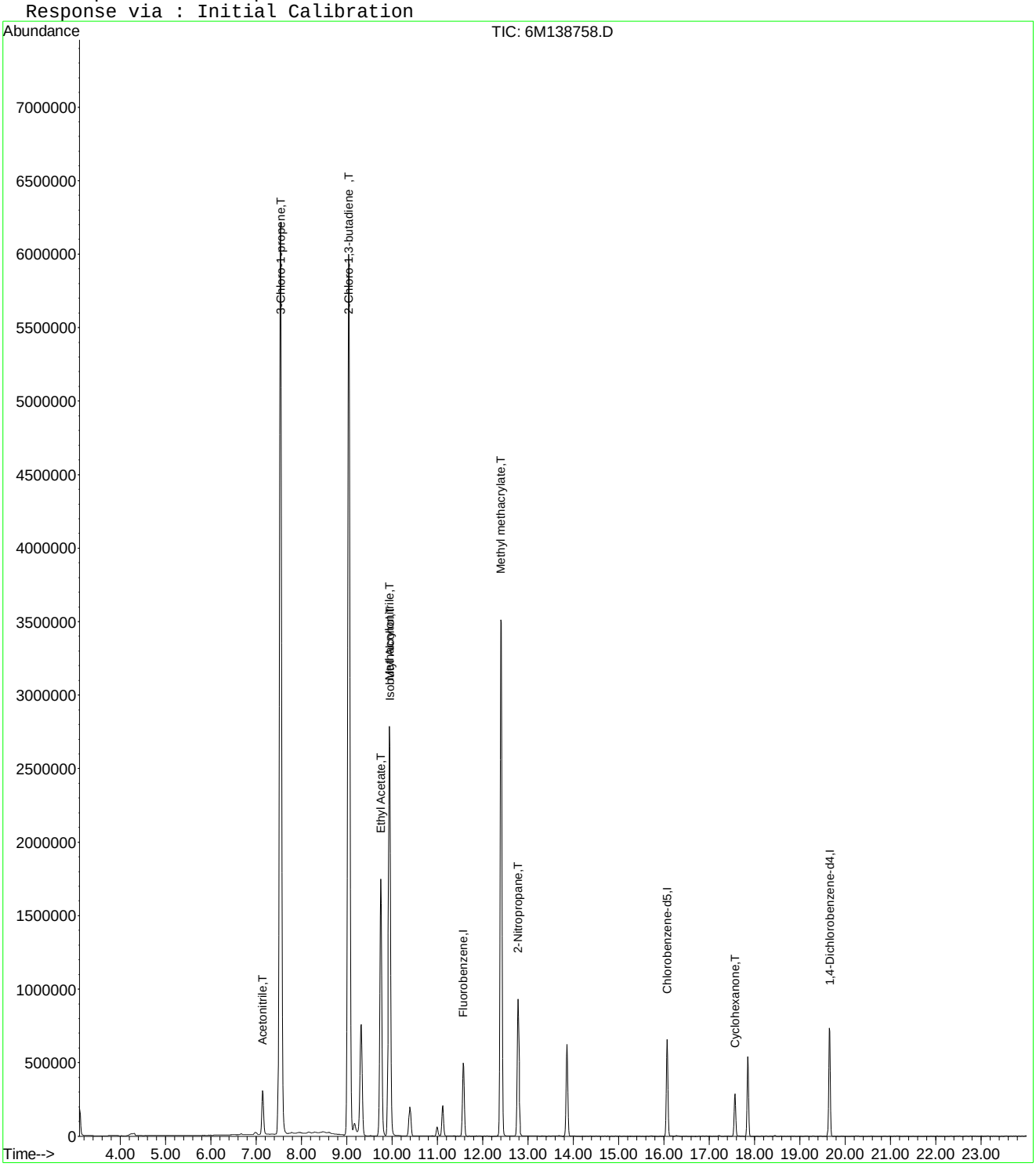

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:54 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.40	111	171708	27.8099 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	210067	28.0330 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.12%		
58) Toluene-d8	13.86	98	553825	26.0829 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.32%		
80) p-Bromofluorobenzene	17.85	95	243088	28.3441 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 113.36%		
Target Compounds					Qvalue
5) 1,3-Butadiene	4.21	54	367749	92.2302 ug/L	88
9) Diethyl ether	6.30	59	700386	132.3612 ug/L	92
13) Acetone	6.67	43	6570	3.5143 ug/L	81
16) Dimethyl Sulfide	7.14	62	2726	0.5361 ug/L #	1
20) Carbon Disulfide	7.54	76	432674	22.5096 ug/L #	36
22) Methyl Tert Butyl Ether	7.97	73	2916	0.1786 ug/L #	53
26) Vinyl Acetate	9.05	43	5230	0.5414 ug/L #	1
27) 1,1-Dichloroethane	9.04	63	22472	1.7594 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.32	59	4063	0.1960 ug/L #	35
29) 2-Butanone	9.52	43	6076	2.2019 ug/L #	66
30) Propionitrile	9.64	54	91341	115.2239 ug/L	96
36) Tetrahydrofuran	10.36	42	4030	2.2418 ug/L #	52
39) Cyclohexane	10.69	56	2387	0.2138 ug/L	79
48) Methylcyclohexane	12.40	83	1353	0.1547 ug/L #	1
50) 1,4-Dioxane	12.73	88	9231	177.0935 ug/L	71
60) Ethyl Methacrylate	13.86	69	1222	0.1732 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1146	0.1832 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

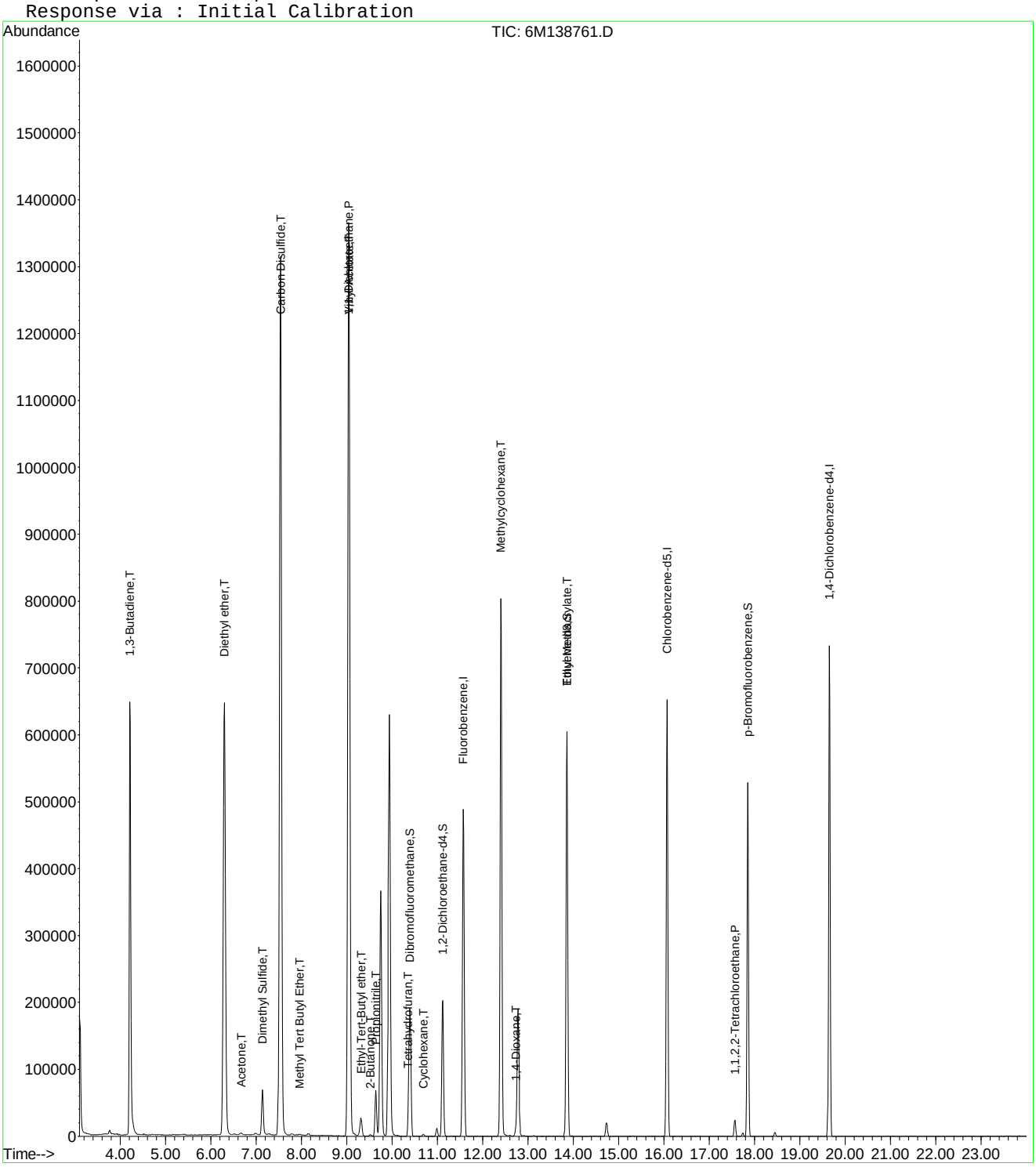

6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	96564	83.4191 ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	96.0797 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	108.7756 ug/L	83
5) Ethyl Acetate	9.75	43	691566	108.7414 ug/L	93
6) Methacrylonitrile	9.94	67	252030	103.0355 ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	146.2409 ug/L #	93
8) 1-Butanol	10.99	41	7584	50.3877 ug/L	72
9) Methyl methacrylate	12.40	41	635574	100.3670 ug/L	81
10) 2-Nitropropane	12.79	43	211020	113.0321 ug/L	98
13) Cyclohexanone	17.57	55	15491	17.6579 ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Mon Apr 25 15:46:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

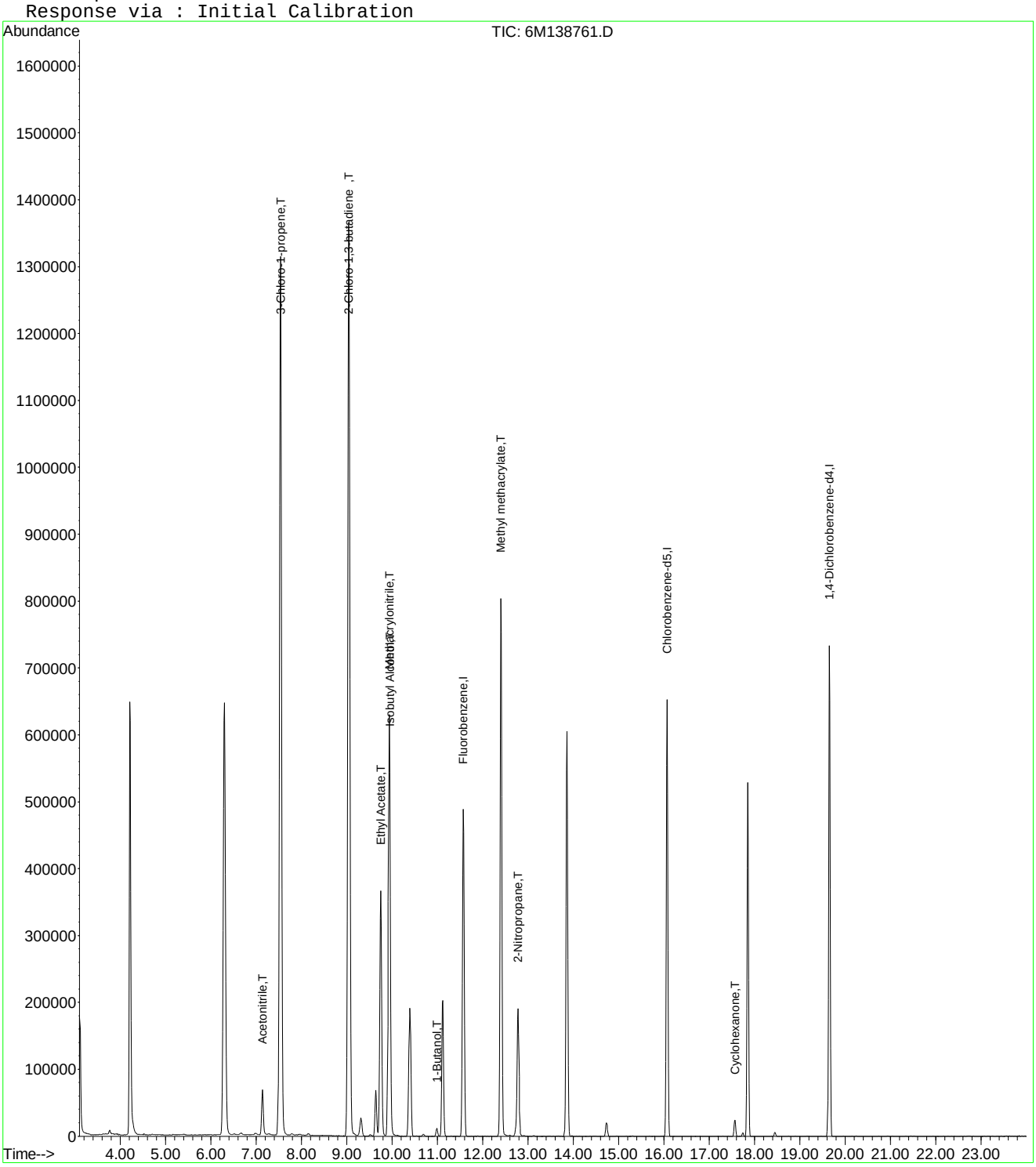

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:02 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	106.9355	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	103.1378	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	117.1516	ug/L	83
5) Ethyl Acetate	9.75	43	691566	106.9734	ug/L	93
6) Methacrylonitrile	9.94	67	252030	113.0781	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	248.4926	ug/L #	93
9) Methyl methacrylate	12.40	41	635574	116.9674	ug/L	81
10) 2-Nitropropane	12.79	43	211020	104.4208	ug/L	98
13) Cyclohexanone	17.57	55	15491	48.3758	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

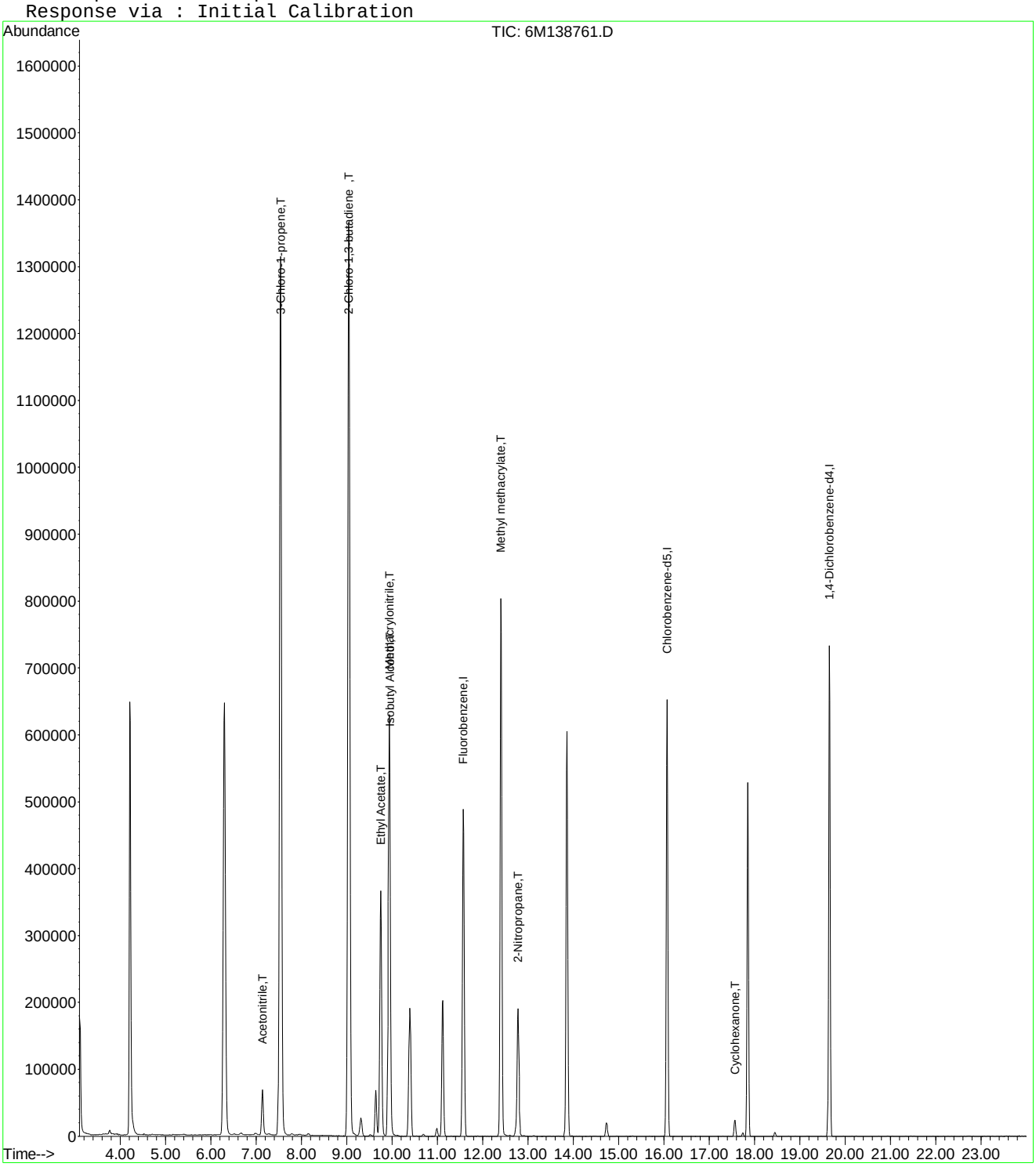

6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	101	0.00
2	T	Acetonitrile	100.0000	106.9355	-6.9	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.1378	-3.1	96	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	117.1516	-17.2	107	0.00
5	T	Ethyl Acetate	100.0000	106.9734	-7.0	103	0.00
6	T	Methacrylonitrile	100.0000	113.0781	-13.1	106	0.00
7	T	Isobutyl Alcohol	200.0000	248.4926	-24.2	151	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	116.9674	-17.0	108	0.00
10	T	2-Nitropropane	100.0000	104.4208	-4.4	107	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	48.3758	51.6	56	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138761.D A9FOOWT.M Wed Apr 27 16:05:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:28 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	782166	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	545154	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	278489	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	4426	0.5577 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.24%#	
43) 1,2-Dichloroethane-d4	10.31	65	6633	0.6621 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.64%#	
58) Toluene-d8	13.04	98	14915	0.5556 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.24%#	
80) p-Bromofluorobenzene	17.02	95	6529	0.5986 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.40%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	7859	0.6011 ug/L #	80
3) Chloromethane	3.36	50	10543	0.7222 ug/L	88
4) Vinyl Chloride	3.57	62	6524	0.8138 ug/L	85
5) 1,3-Butadiene	3.62	54	5236	Below Cal #	53
6) Bromomethane	4.39	94	2681	0.5033 ug/L	75
7) Chloroethane	4.55	64	2218	0.4379 ug/L #	74
8) Trichlorofluoromethane	5.01	101	7455	0.6097 ug/L #	89
10) Isoprene	5.58	67	5099	0.4673 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.81	101	3458	0.4546 ug/L	87
13) Acetone	5.90	43	5483	2.1880 ug/L	88
14) 1,1-Dichloroethene	6.11	61	8367	0.5669 ug/L	89
16) Dimethyl Sulfide	6.39	62	2618	0.4067 ug/L	92
17) Iodomethane	6.65	142	580	1.0028 ug/L #	32
18) Methyl acetate	6.68	43	2212	0.3262 ug/L #	66
19) Methylene Chloride	6.95	84	4491	0.5306 ug/L	87
20) Carbon Disulfide	6.97	76	28617	1.0581 ug/L	97
22) Methyl Tert Butyl Ether	7.17	73	6219	0.2772 ug/L #	56
23) trans-1,2-Dichloroethene	7.42	96	5255	0.6648 ug/L	83
24) n-Hexane	7.50	57	14948	1.1142 ug/L	95
26) Vinyl Acetate	8.09	43	2544	0.1688 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	6467	0.3800 ug/L	91
29) 2-Butanone	8.74	43	738	0.1924 ug/L #	57
31) 2,2-Dichloropropane	8.96	77	4273	0.3328 ug/L	92
32) cis-1,2-Dichloroethene	9.04	96	4541	0.5248 ug/L	70
33) Chloroform	9.26	83	5775	0.3788 ug/L	94
35) Bromochloromethane	9.52	130	2012	0.4327 ug/L	92
36) Tetrahydrofuran	9.55	42	2953	1.1037 ug/L #	55
38) 1,1,1-Trichloroethane	9.86	97	4483	0.3377 ug/L	92
39) Cyclohexane	9.87	56	8253	0.4779 ug/L	90
40) 1,1-Dichloropropene	10.08	75	6696	0.5791 ug/L	91
42) Carbon Tetrachloride	10.23	117	3257	0.2988 ug/L #	92
45) 1,2-Dichloroethane	10.45	62	5310	0.4344 ug/L #	89
46) Benzene	10.48	78	15173	0.4650 ug/L	96
47) Trichloroethene	11.35	130	5387	0.6690 ug/L	99
48) Methylcyclohexane	11.43	83	7364	0.5825 ug/L	88
49) 1,2-Dichloropropane	11.58	63	3158	0.3361 ug/L	79
51) Bromodichloromethane	11.94	83	4017	0.3543 ug/L	95
52) Dibromomethane	12.03	93	2564	0.5639 ug/L	85
53) 2-Chloroethyl Vinyl Ether	12.31	63	1255	0.2664 ug/L #	41
55) cis-1,3-Dichloropropene	12.69	75	6354	0.4827 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M140314.D 8260WTR.M Fri Jul 01 14:20:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:28 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.96	79	2244	0.3062 ug/L #	47
59)	Toluene	13.16	91	16171	0.4977 ug/L	100
60)	Ethyl Methacrylate	13.33	69	2168	0.2345 ug/L	77
62)	trans-1,3-Dichloropropene	13.39	75	6685	0.5786 ug/L	82
63)	1,1,2-Trichloroethane	13.62	97	2098	0.3489 ug/L	91
64)	2-Hexanone	13.58	43	1202	0.2105 ug/L #	54
65)	1,3-Dichloropropane	13.99	76	4378	0.3863 ug/L	85
66)	Tetrachloroethene	14.10	166	4661	0.6020 ug/L	99
67)	Dibromochloromethane	14.41	129	2599	0.3560 ug/L	98
68)	1,2-Dibromoethane	14.71	107	3093	0.5329 ug/L	98
69)	1-Chlorohexane	14.85	91	5951	0.5504 ug/L	88
70)	Chlorobenzene	15.30	112	13354	0.6409 ug/L	99
71)	1,1,1,2-Tetrachloroethane	15.35	131	2310	0.3116 ug/L	94
72)	Ethylbenzene	15.35	106	5305	0.4864 ug/L	85
73)	m-,p-Xylene	15.45	106	13647	1.0353 ug/L	91
74)	o-Xylene	16.11	106	5438	0.4136 ug/L	85
75)	Styrene	16.16	104	10471	0.4734 ug/L	91
76)	Bromoform	16.71	173	1433	0.3165 ug/L #	50
77)	Isopropylbenzene	16.63	105	15560	0.4536 ug/L	92
79)	1,1,2,2-Tetrachloroethane	16.88	83	1987	0.2940 ug/L	77
81)	1,2,3-Trichloropropane	17.10	110	241	0.1203 ug/L #	1
82)	trans-1,4-Dichloro-2-Buten	17.19	53	903	0.3534 ug/L	88
83)	n-Propylbenzene	17.22	91	21456	0.5362 ug/L #	94
84)	Bromobenzene	17.34	156	5484	0.6559 ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	12453	0.4440 ug/L	96
86)	2-Chlorotoluene	17.52	91	13840	0.5114 ug/L	95
87)	4-Chlorotoluene	17.59	91	17422	0.6753 ug/L	95
88)	a-Methylstyrene	17.92	118	6165	0.4370 ug/L	93
89)	tert-Butylbenzene	17.98	134	2101	0.3729 ug/L #	24
90)	1,2,4-Trimethylbenzene	18.05	105	13753	0.4779 ug/L	100
91)	sec-Butylbenzene	18.30	105	18042	0.5374 ug/L	92
92)	p-Isopropyltoluene	18.51	119	14633	0.5114 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	11689	0.7103 ug/L	99
94)	1,4-Dichlorobenzene	18.85	146	12500	0.7513 ug/L	97
95)	n-Butylbenzene	19.12	91	17799	0.6344 ug/L	93
96)	1,2-Dichlorobenzene	19.43	146	9545	0.6178 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	20.62	75	229	0.1730 ug/L #	1
98)	1,2,4-Trichlorobenzene	21.96	180	8749	0.8011 ug/L	91
99)	Hexachlorobutadiene	22.15	225	2944	0.6484 ug/L	95
100)	Naphthalene	22.39	128	14249	0.6384 ug/L	95
101)	1,2,3-Trichlorobenzene	22.76	180	7092	0.7013 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140314.D 8260WTR.M Fri Jul 01 14:20:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:20 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

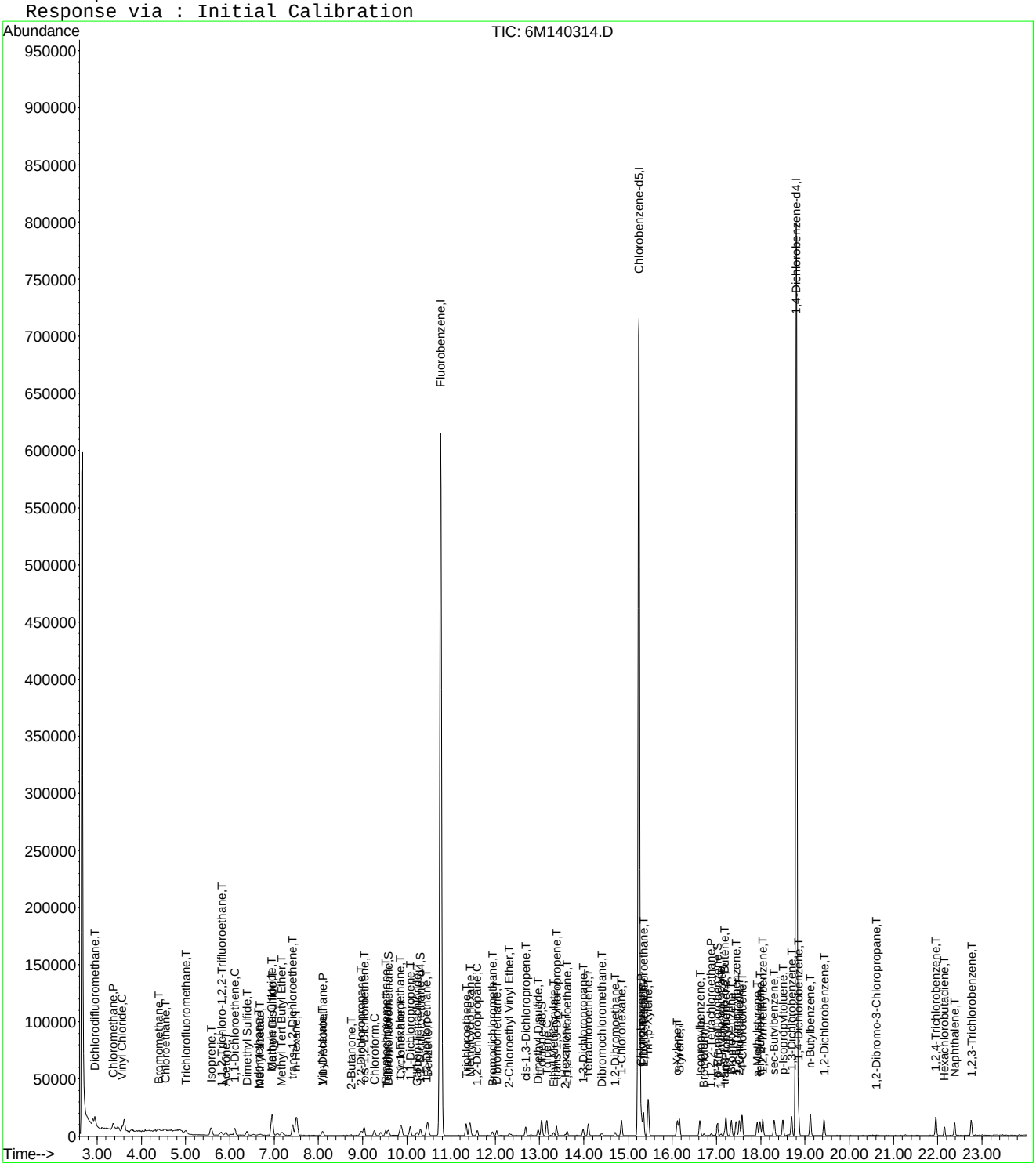

6M140314.D 8260WTR.M Fri Jul 01 14:20:34 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.6011	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.7222	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.8138	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.9896	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.5033	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.4379	0.0	100	0.02
8	T	Trichlorofluoromethane	-1.0000	0.6097	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0280	0.0	100	0.00
10	T	Isoprene	-1.0000	0.4673	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.4546	0.0	100	0.03
13	T	Acetone	-1.0000	2.1880	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5669	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.4067	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.0028	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.3262	0.0	100	-0.01
19	T	Methylene Chloride	-1.0000	0.5306	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	1.0581	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.15#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2772	0.0	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.6648	0.0	100	0.00
24	T	n-Hexane	-1.0000	1.1142	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.90#
26	T	Vinyl Acetate	-1.0000	0.1688	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3800	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.53#
29	T	2-Butanone	-1.0000	0.1924	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.86#
31	T	2,2-Dichloropropane	-1.0000	0.3328	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.5248	0.0	100	0.00
33	C	Chloroform	0.3000	0.3788	-26.3#	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.41#
35	T	Bromochloromethane	-1.0000	0.4327	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.1037	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.5577	0.0	100	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.3377	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.4779	0.0	100	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.5791	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0293	0.0	100	-0.13
42	T	Carbon Tetrachloride	-1.0000	0.2988	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.6621	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	-1.0000	0.4344	0.0	100	0.00
46	T	Benzene	-1.0000	0.4650	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.6690	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.5825	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3361	0.0	100	-0.01
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	-1.0000	0.3543	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.5639	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2664	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0645	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.4827	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.3062	0.0	100	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5556	0.0	100	0.00
59	C	Toluene	-1.0000	0.4977	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2345	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	-1.0000	0.5786	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.3489	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.2105	0.0	100	0.00
65	T	1,3-Dichloropropane	-1.0000	0.3863	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.6020	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.3560	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.5329	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.5504	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.6409	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3116	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.4864	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	1.0353	0.0	100	-0.01
74	T	o-Xylene	-1.0000	0.4136	0.0	100	-0.01
75	T	Styrene	-1.0000	0.4734	0.0	100	0.00
76	P	Bromoform	-1.0000	0.3165	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.4536	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2940	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5986	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1203	0.0	100	-0.01
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.3534	0.0	100	0.00
83	T	n-Propylbenzene	-1.0000	0.5362	0.0	100	0.00
84	T	Bromobenzene	-1.0000	0.6559	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.4440	0.0	100	-0.01
86	T	2-Chlorotoluene	-1.0000	0.5114	0.0	79	-0.01
87	T	4-Chlorotoluene	-1.0000	0.6753	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.4370	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3729	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.4779	0.0	100	-0.01
91	T	sec-Butylbenzene	-1.0000	0.5374	0.0	100	-0.01
92	T	p-Isopropyltoluene	-1.0000	0.5114	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.7103	0.0	100	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.7513	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.6344	0.0	100	0.00
96	T	1,2-Dichlorobenzene	-1.0000	0.6178	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.1730	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	0.8011	0.0	100	-0.01
99	T	Hexachlorobutadiene	-1.0000	0.6484	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.6384	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	0.7013	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
6M140314.D 8260WTR.M Fri Jul 01 14:34:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:36 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	711040	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	496934	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	254758	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	13.04	98	1118	0.0457 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.20%#	
80) p-Bromofluorobenzene	17.01	95	723	0.0725 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	4029	0.3390 ug/L #	64
3) Chloromethane	3.37	50	7908	0.5959 ug/L	82
4) Vinyl Chloride	3.56	62	2700	0.3705 ug/L	78
5) 1,3-Butadiene	3.62	54	3035	Below Cal #	51
6) Bromomethane	4.39	94	1885	0.3892 ug/L	95
7) Chloroethane	4.55	64	1384	0.3006 ug/L #	43
8) Trichlorofluoromethane	5.00	101	5096	0.4585 ug/L #	91
10) Isoprene	5.57	67	4197	0.4231 ug/L	86
12) 1,1,2-Trichloro-1,2,2-Trif	5.82	101	2196	0.3176 ug/L	83
13) Acetone	5.90	43	1650	0.7243 ug/L #	48
14) 1,1-Dichloroethene	6.11	61	5407	0.4030 ug/L	90
16) Dimethyl Sulfide	6.38	62	2288	0.3910 ug/L	87
18) Methyl acetate	6.69	43	1819	0.2951 ug/L #	66
19) Methylene Chloride	6.93	84	3320	0.4315 ug/L	82
20) Carbon Disulfide	6.97	76	11427	0.4648 ug/L	99
22) Methyl Tert Butyl Ether	7.18	73	8255	0.4048 ug/L #	75
23) trans-1,2-Dichloroethene	7.42	96	2988	0.4158 ug/L	82
24) n-Hexane	7.51	57	5670	0.4649 ug/L	92
26) Vinyl Acetate	8.09	43	2906	0.2121 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	6380	0.4124 ug/L	89
29) 2-Butanone	8.74	43	1046	0.3000 ug/L #	57
31) 2,2-Dichloropropane	8.95	77	4509	0.3863 ug/L	96
32) cis-1,2-Dichloroethene	9.03	96	3353	0.4263 ug/L	94
33) Chloroform	9.27	83	5194	0.3747 ug/L	99
35) Bromochloromethane	9.53	130	1601	0.3788 ug/L	83
36) Tetrahydrofuran	9.56	42	3379	1.3892 ug/L #	67
38) 1,1,1-Trichloroethane	9.87	97	4496	0.3726 ug/L	93
39) Cyclohexane	9.89	56	6498	0.4139 ug/L	94
40) 1,1-Dichloropropene	10.08	75	4389	0.4176 ug/L	94
42) Carbon Tetrachloride	10.24	117	3081	0.3110 ug/L #	88
45) 1,2-Dichloroethane	10.45	62	4443	0.3998 ug/L #	81
46) Benzene	10.48	78	13145	0.4431 ug/L	97
47) Trichloroethene	11.34	130	3154	0.4309 ug/L	93
48) Methylcyclohexane	11.42	83	4969	0.4324 ug/L	87
49) 1,2-Dichloropropane	11.59	63	3543	0.4147 ug/L	87
51) Bromodichloromethane	11.93	83	3676	0.3566 ug/L	92
52) Dibromomethane	12.03	93	1420	0.3436 ug/L	100
53) 2-Chloroethyl Vinyl Ether	12.31	63	1186	0.2769 ug/L #	41
54) 4-Methyl-2-Pentanone	12.35	58	422	0.1601 ug/L #	38
55) cis-1,3-Dichloropropene	12.67	75	4716	0.3941 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140315.D 8260WTR.M Fri Jul 01 14:20:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:36 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.97	79	1919	0.2881 ug/L #	68
59)	Toluene	13.16	91	13506	0.4560 ug/L	97
60)	Ethyl Methacrylate	13.32	69	2728	0.3238 ug/L	91
62)	trans-1,3-Dichloropropene	13.39	75	3780	0.3589 ug/L	86
63)	1,1,2-Trichloroethane	13.63	97	2086	0.3806 ug/L	93
64)	2-Hexanone	13.58	43	1538	0.2955 ug/L	72
65)	1,3-Dichloropropane	13.98	76	4376	0.4236 ug/L	95
66)	Tetrachloroethene	14.10	166	2876	0.4075 ug/L	95
67)	Dibromochloromethane	14.41	129	2210	0.3321 ug/L	93
68)	1,2-Dibromoethane	14.72	107	1896	0.3584 ug/L	87
69)	1-Chlorohexane	14.86	91	4030	0.4089 ug/L	91
70)	Chlorobenzene	15.30	112	8640	0.4549 ug/L	96
71)	1,1,1,2-Tetrachloroethane	15.35	131	2601	0.3848 ug/L	92
72)	Ethylbenzene	15.35	106	4049	0.4073 ug/L	76
73)	m-,p-Xylene	15.45	106	10358	0.8620 ug/L	87
74)	o-Xylene	16.10	106	5184	0.4326 ug/L	96
75)	Styrene	16.16	104	7888	0.3912 ug/L	83
76)	Bromoform	16.72	173	1146	0.2777 ug/L #	68
77)	Isopropylbenzene	16.62	105	13388	0.4282 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.88	83	2211	0.3576 ug/L	95
81)	1,2,3-Trichloropropane	17.11	110	427	0.2329 ug/L #	1
83)	n-Propylbenzene	17.22	91	16903	0.4618 ug/L #	94
84)	Bromobenzene	17.34	156	3349	0.4379 ug/L	93
85)	1,3,5-Trimethylbenzene	17.44	105	10954	0.4269 ug/L	99
86)	2-Chlorotoluene	17.51	91	11900	0.4807 ug/L	93
87)	4-Chlorotoluene	17.57	91	10437	0.4422 ug/L	94
88)	a-Methylstyrene	17.92	118	4645	0.3600 ug/L	98
89)	tert-Butylbenzene	17.98	134	2361	0.4580 ug/L	87
90)	1,2,4-Trimethylbenzene	18.04	105	11026	0.4188 ug/L	95
91)	sec-Butylbenzene	18.31	105	13954	0.4543 ug/L	95
92)	p-Isopropyltoluene	18.50	119	11850	0.4527 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	6789	0.4510 ug/L	100
94)	1,4-Dichlorobenzene	18.85	146	7052	0.4633 ug/L	99
95)	n-Butylbenzene	19.12	91	11908	0.4639 ug/L	90
96)	1,2-Dichlorobenzene	19.42	146	6295	0.4454 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	20.62	75	204	0.1685 ug/L #	1
98)	1,2,4-Trichlorobenzene	21.96	180	4710	0.4715 ug/L	93
99)	Hexachlorobutadiene	22.15	225	1916	0.4613 ug/L	98
100)	Naphthalene	22.38	128	8061	0.3948 ug/L	90
101)	1,2,3-Trichlorobenzene	22.75	180	4023	0.4349 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140315.D 8260WTR.M Fri Jul 01 14:20:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:20 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

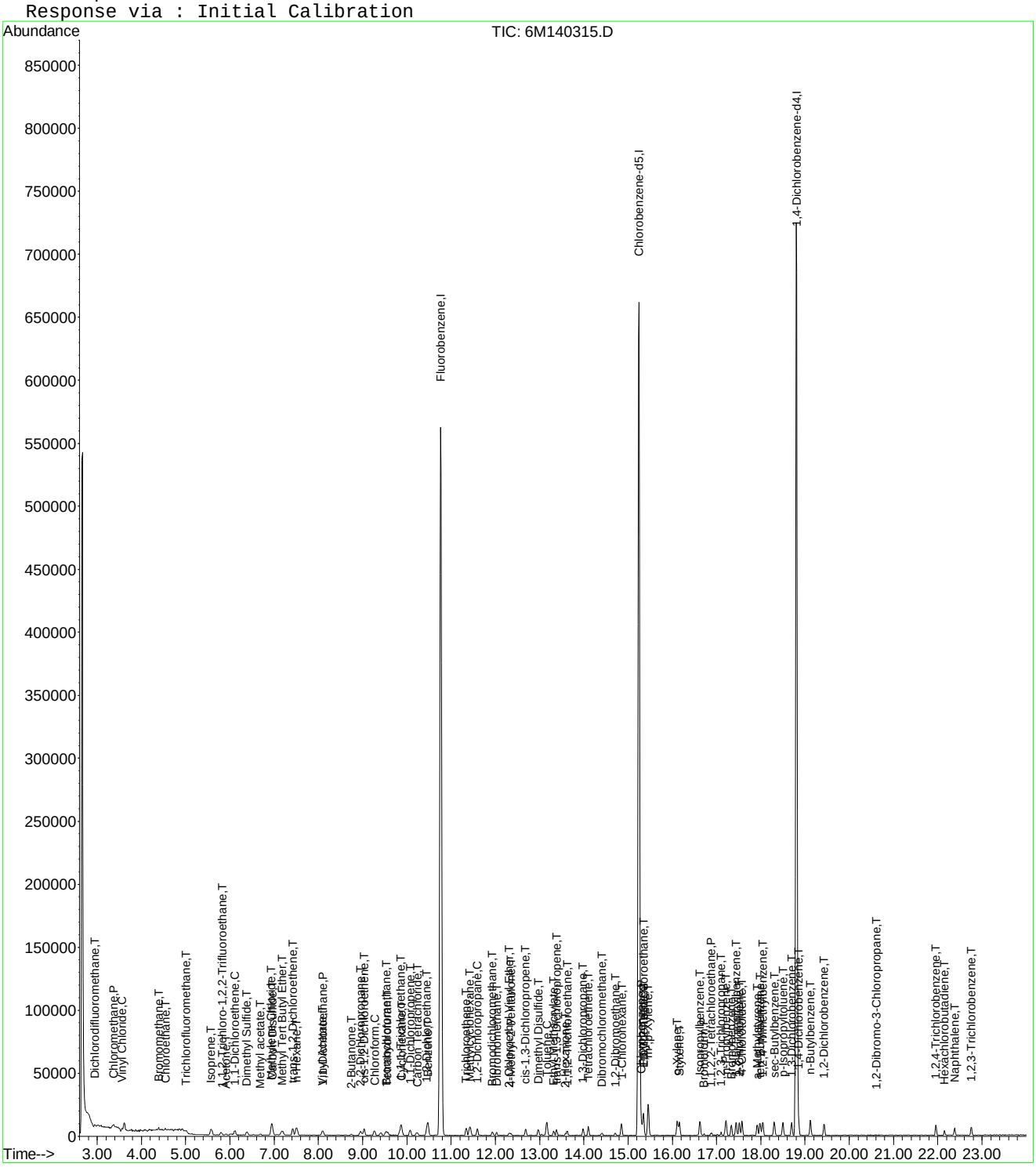

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3390	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5959	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3705	7.4	100	0.00
5	T	1,3-Butadiene	-1.0000	-2.4246	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.3892	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.3006	0.0	100	0.02
8	T	Trichlorofluoromethane	0.4000	0.4585	-14.6	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.55#
10	T	Isoprene	-1.0000	0.4231	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3176	0.0	100	0.04
13	T	Acetone	-1.0000	0.7243	0.0	100	0.00
14	C	1,1-Dichloroethene	0.4000	0.4030	-0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.3910	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.64#
18	T	Methyl acetate	-1.0000	0.2951	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4315	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4648	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.15#
22	T	Methyl Tert Butyl Ether	-1.0000	0.4048	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4158	-4.0	100	0.00
24	T	n-Hexane	-1.0000	0.4649	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.90#
26	T	Vinyl Acetate	-1.0000	0.2121	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.4124	-3.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.53#
29	T	2-Butanone	-1.0000	0.3000	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.86#
31	T	2,2-Dichloropropane	0.4000	0.3863	3.4	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4263	-6.6	100	0.00
33	C	Chloroform	0.4000	0.3747	6.3	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.41#
35	T	Bromochloromethane	0.4000	0.3787	5.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.3892	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.59#
38	T	1,1,1-Trichloroethane	0.4000	0.3726	6.9	100	0.02
39	T	Cyclohexane	-1.0000	0.4139	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4176	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3110	22.3#	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	0.4000	0.3998	0.1	100	0.00
46	T	Benzene	0.4000	0.4431	-10.8	100	0.00
47	T	Trichloroethene	0.4000	0.4309	-7.7	100	0.00
48	T	Methylcyclohexane	-1.0000	0.4324	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4147	-3.7	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	0.4000	0.3566	10.8	100	0.00
52	T	Dibromomethane	0.4000	0.3436	14.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2769	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.1601	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3941	1.5	100	-0.01
56	T	Dimethyl Disulfide	-1.0000	0.2881	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0457	0.0	100	0.00
59	C	Toluene	0.4000	0.4560	-14.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3238	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.16#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3589	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3806	4.9	100	0.00
64	T	2-Hexanone	-1.0000	0.2955	0.0	100	0.00
65	T	1,3-Dichloropropane	0.4000	0.4236	-5.9	100	-0.01
66	T	Tetrachloroethene	0.4000	0.4075	-1.9	100	0.00
67	T	Dibromochloromethane	0.4000	0.3321	17.0	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3584	10.4	100	0.00
69	T	1-Chlorohexane	0.4000	0.4089	-2.2	100	0.00
70	P	Chlorobenzene	0.4000	0.4549	-13.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3848	3.8	100	0.00
72	C	Ethylbenzene	0.4000	0.4073	-1.8	100	0.00
73	T	m-,p-Xylene	0.8000	0.8620	-7.8	100	-0.01
74	T	o-Xylene	-1.0000	0.4326	0.0	100	-0.01
75	T	Styrene	0.4000	0.3912	2.2	100	0.00
76	P	Bromoform	-1.0000	0.2777	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4282	-7.0	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3576	10.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0725	0.0	100	-0.01
81	T	1,2,3-Trichloropropane	-1.0000	0.2329	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1005	0.0	100	0.00
83	T	n-Propylbenzene	0.4000	0.4618	-15.4	100	0.00
84	T	Bromobenzene	0.4000	0.4379	-9.5	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4270	-6.7	100	-0.01
86	T	2-Chlorotoluene	0.4000	0.4807	-20.2#	100	-0.01
87	T	4-Chlorotoluene	0.4000	0.4422	-10.6	100	-0.01
88	T	a-Methylstyrene	-1.0000	0.3600	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.4580	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.4188	0.0	100	-0.01
91	T	sec-Butylbenzene	-1.0000	0.4543	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4527	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4510	-12.7	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4633	-15.8	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4639	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4454	-11.4	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.1685	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	0.4000	0.4714	-17.9	100	-0.01
99	T	Hexachlorobutadiene	0.4000	0.4613	-15.3	100	0.00
100	T	Naphthalene	0.4000	0.3948	1.3	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4349	-8.7	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140315.D 8260WTR.M Fri Jul 01 14:35:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	687429	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	485381	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	251587	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	3444	0.4938 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.96%#	
43) 1,2-Dichloroethane-d4	10.31	65	4418	0.5018 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.00%#	
58) Toluene-d8	13.04	98	12734	0.5328 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.12%#	
80) p-Bromofluorobenzene	17.01	95	5390	0.5470 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.20%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	11016	0.9586 ug/L #	84
3) Chloromethane	3.37	50	15509	1.2088 ug/L	95
4) Vinyl Chloride	3.56	62	7694	1.0920 ug/L	94
5) 1,3-Butadiene	3.62	54	7756	Below Cal #	68
6) Bromomethane	4.39	94	4929	1.0528 ug/L	86
7) Chloroethane	4.53	64	4342	0.9753 ug/L	93
8) Trichlorofluoromethane	5.01	101	10531	0.9800 ug/L	96
9) Diethyl ether	5.55	59	32999	5.2047 ug/L	95
10) Isoprene	5.57	67	9716	1.0131 ug/L	99
11) Acrolein	5.79	56	2538	2.4066 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	6731	1.0068 ug/L	91
13) Acetone	5.90	43	3178	1.4430 ug/L #	76
14) 1,1-Dichloroethene	6.12	61	13411	1.0339 ug/L	87
15) Tert-Butyl Alcohol	6.25	59	6206	9.2151 ug/L #	84
16) Dimethyl Sulfide	6.38	62	5231	0.9246 ug/L	96
17) Iodomethane	6.65	142	2100	1.3352 ug/L	82
18) Methyl acetate	6.69	43	5561	0.9331 ug/L #	66
19) Methylene Chloride	6.94	84	8529	1.1466 ug/L	84
20) Carbon Disulfide	6.97	76	25467	1.0714 ug/L	99
21) Acrylonitrile	7.16	53	6206	2.2695 ug/L	94
22) Methyl Tert Butyl Ether	7.18	73	19700	0.9991 ug/L	95
23) trans-1,2-Dichloroethene	7.42	96	6984	1.0053 ug/L	82
24) n-Hexane	7.51	57	13051	1.1069 ug/L	96
25) Diisopropyl ether	7.90	45	166032	5.2317 ug/L	96
26) Vinyl Acetate	8.09	43	9104	0.6872 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	15277	1.0213 ug/L	96
28) Ethyl-Tert-Butyl ether	8.53	59	131034	5.1323 ug/L	97
29) 2-Butanone	8.73	43	3268	0.9693 ug/L #	57
30) Propionitrile	8.85	54	4333	4.7359 ug/L	96
31) 2,2-Dichloropropane	8.95	77	11579	1.0261 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	7838	1.0307 ug/L	88
33) Chloroform	9.26	83	13154	0.9816 ug/L	99
34) 1-Bromopropane	9.41	122	659	1.0190 ug/L	80
35) Bromochloromethane	9.52	130	3868	0.9465 ug/L	100
36) Tetrahydrofuran	9.55	42	14306	6.0837 ug/L	89
38) 1,1,1-Trichloroethane	9.84	97	11995	1.0282 ug/L	99
39) Cyclohexane	9.89	56	16203	1.0675 ug/L	92
40) 1,1-Dichloropropene	10.08	75	10372	1.0207 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	97548	5.0317 ug/L	97
42) Carbon Tetrachloride	10.22	117	8394	0.8763 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M140316.D 8260WTR.M Fri Jul 01 14:21:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	10834	1.0084 ug/L #	94
46)	Benzene	10.48	78	30089	1.0492 ug/L	98
47)	Trichloroethene	11.35	130	7344	1.0378 ug/L	95
48)	Methylcyclohexane	11.43	83	11566	1.0410 ug/L	92
49)	1,2-Dichloropropane	11.59	63	8057	0.9755 ug/L	94
51)	Bromodichloromethane	11.93	83	9704	0.9738 ug/L	95
52)	Dibromomethane	12.02	93	3754	0.9395 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	3750	0.9056 ug/L	89
54)	4-Methyl-2-Pentanone	12.35	58	1943	0.7624 ug/L #	38
55)	cis-1,3-Dichloropropene	12.68	75	10823	0.9354 ug/L	99
56)	Dimethyl Disulfide	12.97	79	5005	0.7771 ug/L	92
59)	Toluene	13.16	91	30726	1.0622 ug/L	99
60)	Ethyl Methacrylate	13.32	69	7189	0.8735 ug/L	94
62)	trans-1,3-Dichloropropene	13.39	75	9521	0.9256 ug/L	92
63)	1,1,2-Trichloroethane	13.63	97	5389	1.0066 ug/L	99
64)	2-Hexanone	13.58	43	4641	0.9130 ug/L	84
65)	1,3-Dichloropropane	13.99	76	10212	1.0121 ug/L	95
66)	Tetrachloroethene	14.10	166	7069	1.0254 ug/L	90
67)	Dibromochloromethane	14.41	129	5818	0.8951 ug/L	98
68)	1,2-Dibromoethane	14.71	107	5034	0.9742 ug/L	100
69)	1-Chlorohexane	14.85	91	9657	1.0031 ug/L	86
70)	Chlorobenzene	15.30	112	19612	1.0571 ug/L	95
71)	1,1,1,2-Tetrachloroethane	15.35	131	6511	0.9863 ug/L	95
72)	Ethylbenzene	15.35	106	9761	1.0051 ug/L	83
73)	m-,p-Xylene	15.45	106	24695	2.1041 ug/L	92
74)	o-Xylene	16.11	106	11834	1.0110 ug/L	92
75)	Styrene	16.16	104	18993	0.9644 ug/L	88
76)	Bromoform	16.72	173	3330	0.8262 ug/L #	88
77)	Isopropylbenzene	16.61	105	31878	1.0438 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.88	83	5647	0.9248 ug/L	93
81)	1,2,3-Trichloropropane	17.11	110	1314	0.7259 ug/L #	16
82)	trans-1,4-Dichloro-2-Buten	17.18	53	1593	0.6900 ug/L	82
83)	n-Propylbenzene	17.22	91	39699	1.0982 ug/L	95
84)	Bromobenzene	17.34	156	7581	1.0037 ug/L	87
85)	1,3,5-Trimethylbenzene	17.44	105	26502	1.0460 ug/L	94
86)	2-Chlorotoluene	17.51	91	26919	1.1011 ug/L	97
87)	4-Chlorotoluene	17.58	91	23704	1.0170 ug/L	96
88)	a-Methylstyrene	17.92	118	11597	0.9100 ug/L	97
89)	tert-Butylbenzene	17.98	134	5253	1.0319 ug/L	63
90)	1,2,4-Trimethylbenzene	18.04	105	27482	1.0570 ug/L	95
91)	sec-Butylbenzene	18.30	105	33207	1.0949 ug/L	94
92)	p-Isopropyltoluene	18.50	119	27800	1.0755 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	15649	1.0526 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	16097	1.0710 ug/L #	64
95)	n-Butylbenzene	19.12	91	27428	1.0821 ug/L	93
96)	1,2-Dichlorobenzene	19.43	146	14706	1.0536 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	20.62	75	1058	0.8847 ug/L	65
98)	1,2,4-Trichlorobenzene	21.97	180	9695	0.9827 ug/L	98
99)	Hexachlorobutadiene	22.15	225	4079	0.9944 ug/L	93
100)	Naphthalene	22.38	128	18851	0.9349 ug/L	92
101)	1,2,3-Trichlorobenzene	22.75	180	9647	1.0560 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M140316.D 8260WTR.M Fri Jul 01 14:21:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

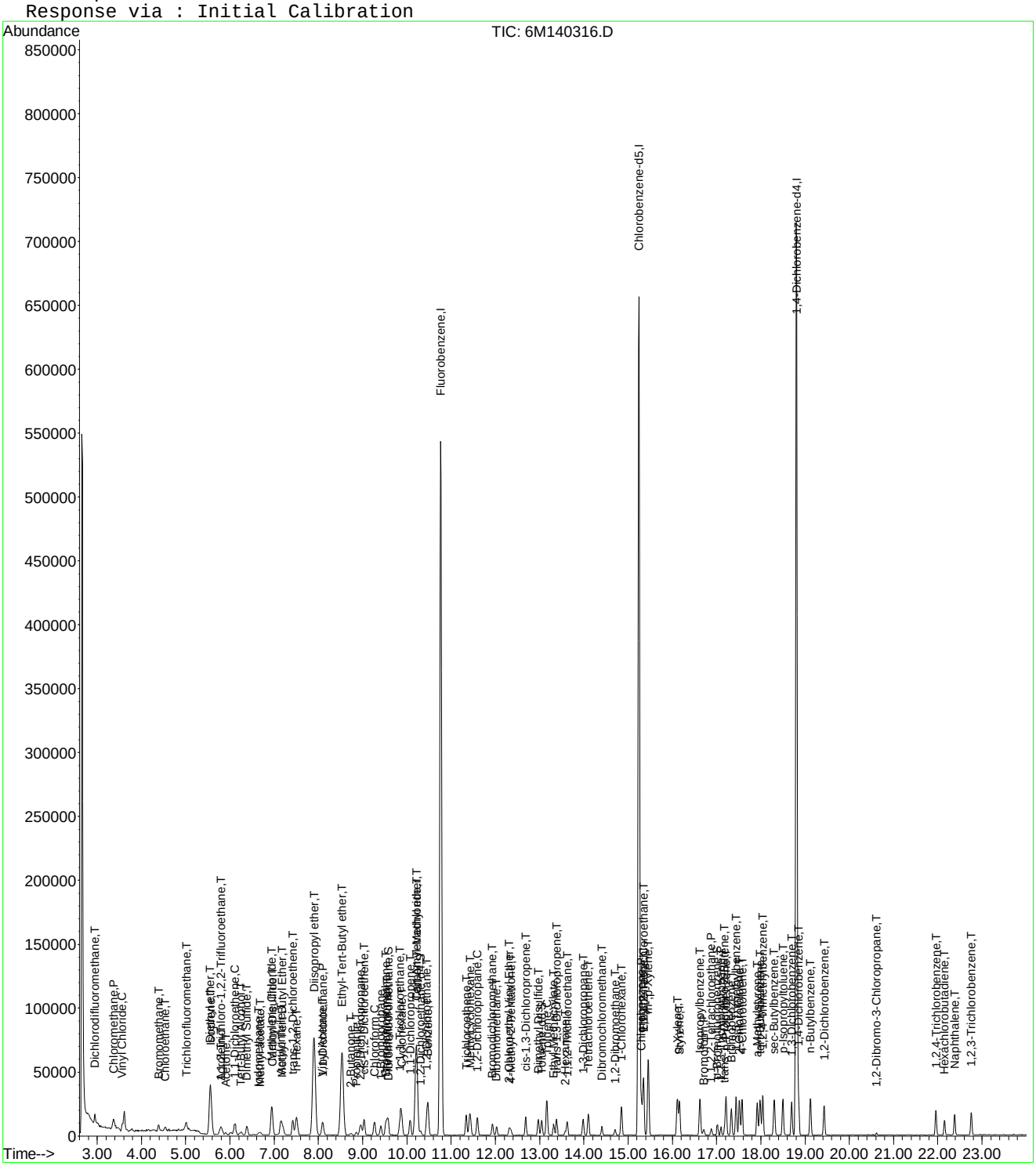

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9586	4.1	100	0.00
3	P	Chloromethane	1.0000	1.2088	-20.9#	100	0.00
4	C	Vinyl Chloride	1.0000	1.0920	-9.2	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.1669	0.0	0	0.03
6	T	Bromomethane	1.0000	1.0528	-5.3	100	0.02
7	T	Chloroethane	1.0000	0.9753	2.5	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9800	2.0	100	0.02
9	T	Diethyl ether	5.0000	5.2047	-4.1	100	0.00
10	T	Isoprene	-1.0000	1.0131	0.0	100	0.00
11	T	Acrolein	-1.0000	2.4066	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0068	-0.7	100	0.00
13	T	Acetone	-1.0000	1.4430	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0338	-3.4	100	0.02
15	T	Tert-Butyl Alcohol	10.0000	9.2151	7.8	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	0.9246	0.0	100	0.00
17	T	Iodomethane	1.0000	1.3352	-33.5#	100	0.00
18	T	Methyl acetate	-1.0000	0.9331	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.1466	-14.7	100	0.00
20	T	Carbon Disulfide	1.0000	1.0714	-7.1	100	0.00
21	T	Acrylonitrile	2.5000	2.2695	9.2	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9991	0.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0053	-0.5	100	0.00
24	T	n-Hexane	-1.0000	1.1069	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.2317	-4.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.6872	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0213	-2.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.1323	-2.6	100	0.00
29	T	2-Butanone	-1.0000	0.9693	0.0	100	0.00
30	T	Propionitrile	5.0000	4.7359	5.3	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0261	-2.6	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0307	-3.1	100	0.00
33	C	Chloroform	1.0000	0.9816	1.8	100	0.00
34		1-Bromopropane	1.0000	1.0190	-1.9	100	0.00
35	T	Bromochloromethane	1.0000	0.9465	5.3	100	0.00
36	T	Tetrahydrofuran	5.0000	6.0837	-21.7#	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.4938	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	1.0282	-2.8	100	0.00
39	T	Cyclohexane	1.0000	1.0675	-6.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0207	-2.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0317	-0.6	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.8763	12.4	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.5018	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	-0.01
45	T	1,2-Dichloroethane	1.0000	1.0084	-0.8	100	0.00
46	T	Benzene	1.0000	1.0492	-4.9	100	0.00
47	T	Trichloroethene	1.0000	1.0378	-3.8	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0410	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9756	2.4	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	1.0000	0.9738	2.6	100	0.00
52	T	Dibromomethane	1.0000	0.9395	6.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.9056	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.7624	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9355	6.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7771	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5328	0.0	100	0.00
59	C	Toluene	1.0000	1.0621	-6.2	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8735	12.7	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	1.0000	0.9256	7.4	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	1.0066	-0.7	100	0.00
64	T	2-Hexanone	-1.0000	0.9130	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	1.0121	-1.2	100	0.00
66	T	Tetrachloroethene	1.0000	1.0254	-2.5	100	0.00
67	T	Dibromochloromethane	1.0000	0.8951	10.5	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9742	2.6	100	0.00
69	T	1-Chlorohexane	1.0000	1.0031	-0.3	100	0.00
70	P	Chlorobenzene	1.0000	1.0571	-5.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9863	1.4	100	0.00
72	C	Ethylbenzene	1.0000	1.0051	-0.5	100	0.00
73	T	m-,p-Xylene	2.0000	2.1041	-5.2	100	-0.01
74	T	o-Xylene	1.0000	1.0110	-1.1	100	0.00
75	T	Styrene	1.0000	0.9645	3.6	100	0.00
76	P	Bromoform	1.0000	0.8262	17.4	100	0.00
77	T	Isopropylbenzene	1.0000	1.0438	-4.4	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9248	7.5	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5470	0.0	100	-0.01
81	T	1,2,3-Trichloropropane	1.0000	0.7259	27.4#	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.6900	31.0#	100	0.00
83	T	n-Propylbenzene	1.0000	1.0982	-9.8	100	0.00
84	T	Bromobenzene	1.0000	1.0037	-0.4	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0460	-4.6	100	-0.01
86	T	2-Chlorotoluene	1.0000	1.1011	-10.1	100	-0.01
87	T	4-Chlorotoluene	1.0000	1.0171	-1.7	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9100	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0319	-3.2	100	-0.01
90	T	1,2,4-Trimethylbenzene	1.0000	1.0570	-5.7	100	-0.01
91	T	sec-Butylbenzene	1.0000	1.0949	-9.5	100	-0.01
92	T	p-Isopropyltoluene	1.0000	1.0755	-7.6	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0526	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0710	-7.1	100	0.00
95	T	n-Butylbenzene	1.0000	1.0821	-8.2	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0536	-5.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.8847	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9827	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9944	0.6	100	0.00
100	T	Naphthalene	1.0000	0.9349	6.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0560	-5.6	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140316.D 8260WTR.M Fri Jul 01 14:35:27 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	681288	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	479716	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	253621	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	6933	1.0030 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.00%#	
43) 1,2-Dichloroethane-d4	10.32	65	9000	1.0314 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.12%#	
58) Toluene-d8	13.04	98	25015	1.0589 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.24%#	
80) p-Bromofluorobenzene	17.02	95	10214	1.0283 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	21693	1.9048 ug/L	92
3) Chloromethane	3.37	50	28294	2.2252 ug/L	99
4) Vinyl Chloride	3.57	62	15095	2.1618 ug/L	90
5) 1,3-Butadiene	3.61	54	14228	0.5548 ug/L	81
6) Bromomethane	4.39	94	10021	2.1597 ug/L	92
7) Chloroethane	4.54	64	8637	1.9576 ug/L	99
8) Trichlorofluoromethane	5.01	101	21198	1.9905 ug/L	99
9) Diethyl ether	5.55	59	166163	26.4440 ug/L	96
10) Isoprene	5.58	67	20113	2.1161 ug/L	98
11) Acrolein	5.79	56	13232	12.6601 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	13403	2.0228 ug/L	98
13) Acetone	5.90	43	5431	2.4882 ug/L	86
14) 1,1-Dichloroethene	6.11	61	26310	2.0465 ug/L	95
15) Tert-Butyl Alcohol	6.25	59	32448	48.6151 ug/L	96
16) Dimethyl Sulfide	6.39	62	10884	1.9412 ug/L	92
17) Iodomethane	6.64	142	4160	1.7736 ug/L	99
18) Methyl acetate	6.68	43	11835	2.0038 ug/L #	83
19) Methylene Chloride	6.94	84	16307	2.2119 ug/L	88
20) Carbon Disulfide	6.96	76	49030	2.0813 ug/L	98
21) Acrylonitrile	7.14	53	32708	12.0688 ug/L	93
22) Methyl Tert Butyl Ether	7.17	73	39510	2.0219 ug/L	98
23) trans-1,2-Dichloroethene	7.43	96	14262	2.0714 ug/L	91
24) n-Hexane	7.51	57	25227	2.1588 ug/L	95
25) Diisopropyl ether	7.90	45	823711	26.1894 ug/L	97
26) Vinyl Acetate	8.09	43	22167	1.6883 ug/L	93
27) 1,1-Dichloroethane	8.10	63	31011	2.0919 ug/L	96
28) Ethyl-Tert-Butyl ether	8.53	59	650758	25.7185 ug/L	98
29) 2-Butanone	8.72	43	6560	1.9633 ug/L #	79
30) Propionitrile	8.86	54	22752	25.0916 ug/L	98
31) 2,2-Dichloropropane	8.95	77	23903	2.1372 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	14680	1.9478 ug/L	78
33) Chloroform	9.27	83	26391	1.9872 ug/L	98
34) 1-Bromopropane	9.42	122	1777	1.9534 ug/L	97
35) Bromochloromethane	9.52	130	8058	1.9896 ug/L	93
36) Tetrahydrofuran	9.55	42	58983	25.3089 ug/L	92
38) 1,1,1-Trichloroethane	9.86	97	23448	2.0280 ug/L	99
39) Cyclohexane	9.88	56	30890	2.0535 ug/L	95
40) 1,1-Dichloropropene	10.08	75	20511	2.0367 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	494429	25.7332 ug/L	97
42) Carbon Tetrachloride	10.23	117	18006	1.8966 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140317.D 8260WTR.M Fri Jul 01 14:21:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	22120	2.0774 ug/L	98
46)	Benzene	10.48	78	60457	2.1271 ug/L	100
47)	Trichloroethene	11.35	130	14433	2.0579 ug/L	92
48)	Methylcyclohexane	11.43	83	23167	2.1040 ug/L	93
49)	1,2-Dichloropropane	11.59	63	16607	2.0289 ug/L	96
50)	1,4-Dioxane	11.94	88	2503	45.1726 ug/L	97
51)	Bromodichloromethane	11.93	83	19917	2.0166 ug/L	98
52)	Dibromomethane	12.02	93	8051	2.0330 ug/L	95
53)	2-Chloroethyl Vinyl Ether	12.31	63	7544	1.8383 ug/L	94
54)	4-Methyl-2-Pentanone	12.35	58	4674	1.8506 ug/L	83
55)	cis-1,3-Dichloropropene	12.69	75	23212	2.0243 ug/L	98
56)	Dimethyl Disulfide	12.97	79	10618	1.6635 ug/L	98
59)	Toluene	13.16	91	61452	2.1494 ug/L	98
60)	Ethyl Methacrylate	13.32	69	15594	1.9171 ug/L	93
62)	trans-1,3-Dichloropropene	13.38	75	19722	1.9399 ug/L	94
63)	1,1,2-Trichloroethane	13.63	97	10814	2.0438 ug/L	96
64)	2-Hexanone	13.59	43	9516	1.8942 ug/L	94
65)	1,3-Dichloropropane	13.98	76	20700	2.0758 ug/L	97
66)	Tetrachloroethene	14.11	166	14321	2.1019 ug/L	97
67)	Dibromochloromethane	14.41	129	12204	1.8998 ug/L	99
68)	1,2-Dibromoethane	14.71	107	10178	1.9929 ug/L	98
69)	1-Chlorohexane	14.85	91	19403	2.0392 ug/L	87
70)	Chlorobenzene	15.30	112	39367	2.1469 ug/L	81
71)	1,1,1,2-Tetrachloroethane	15.35	131	13145	2.0147 ug/L	96
72)	Ethylbenzene	15.35	106	20014	2.0853 ug/L	88
73)	m-,p-Xylene	15.45	106	50059	4.3155 ug/L	94
74)	o-Xylene	16.11	106	24284	2.0991 ug/L	92
75)	Styrene	16.16	104	39349	2.0217 ug/L	93
76)	Bromoform	16.71	173	7051	1.7700 ug/L	91
77)	Isopropylbenzene	16.62	105	63245	2.0952 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.87	83	11943	1.9403 ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	3577	1.9601 ug/L	70
82)	trans-1,4-Dichloro-2-Buten	17.18	53	4235	1.8198 ug/L	92
83)	n-Propylbenzene	17.22	91	77640	2.1306 ug/L	97
84)	Bromobenzene	17.34	156	15737	2.0668 ug/L	90
85)	1,3,5-Trimethylbenzene	17.45	105	53524	2.0955 ug/L	96
86)	2-Chlorotoluene	17.52	91	50361	2.0435 ug/L	96
87)	4-Chlorotoluene	17.58	91	51425	2.1888 ug/L	96
88)	a-Methylstyrene	17.91	118	23705	1.8452 ug/L	90
89)	tert-Butylbenzene	17.99	134	10746	2.0941 ug/L	69
90)	1,2,4-Trimethylbenzene	18.05	105	55973	2.1356 ug/L	97
91)	sec-Butylbenzene	18.30	105	66761	2.1835 ug/L	94
92)	p-Isopropyltoluene	18.50	119	55466	2.1287 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	31212	2.0827 ug/L	98
94)	1,4-Dichlorobenzene	18.85	146	31934	2.1076 ug/L	79
95)	n-Butylbenzene	19.12	91	53671	2.1004 ug/L	95
96)	1,2-Dichlorobenzene	19.44	146	29144	2.0713 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	20.61	75	1880	1.5595 ug/L	96
98)	1,2,4-Trichlorobenzene	21.96	180	19883	1.9991 ug/L	99
99)	Hexachlorobutadiene	22.15	225	8377	2.0258 ug/L	98
100)	Naphthalene	22.38	128	39370	1.9369 ug/L	98
101)	1,2,3-Trichlorobenzene	22.75	180	18357	1.9933 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140317.D 8260WTR.M Fri Jul 01 14:21:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

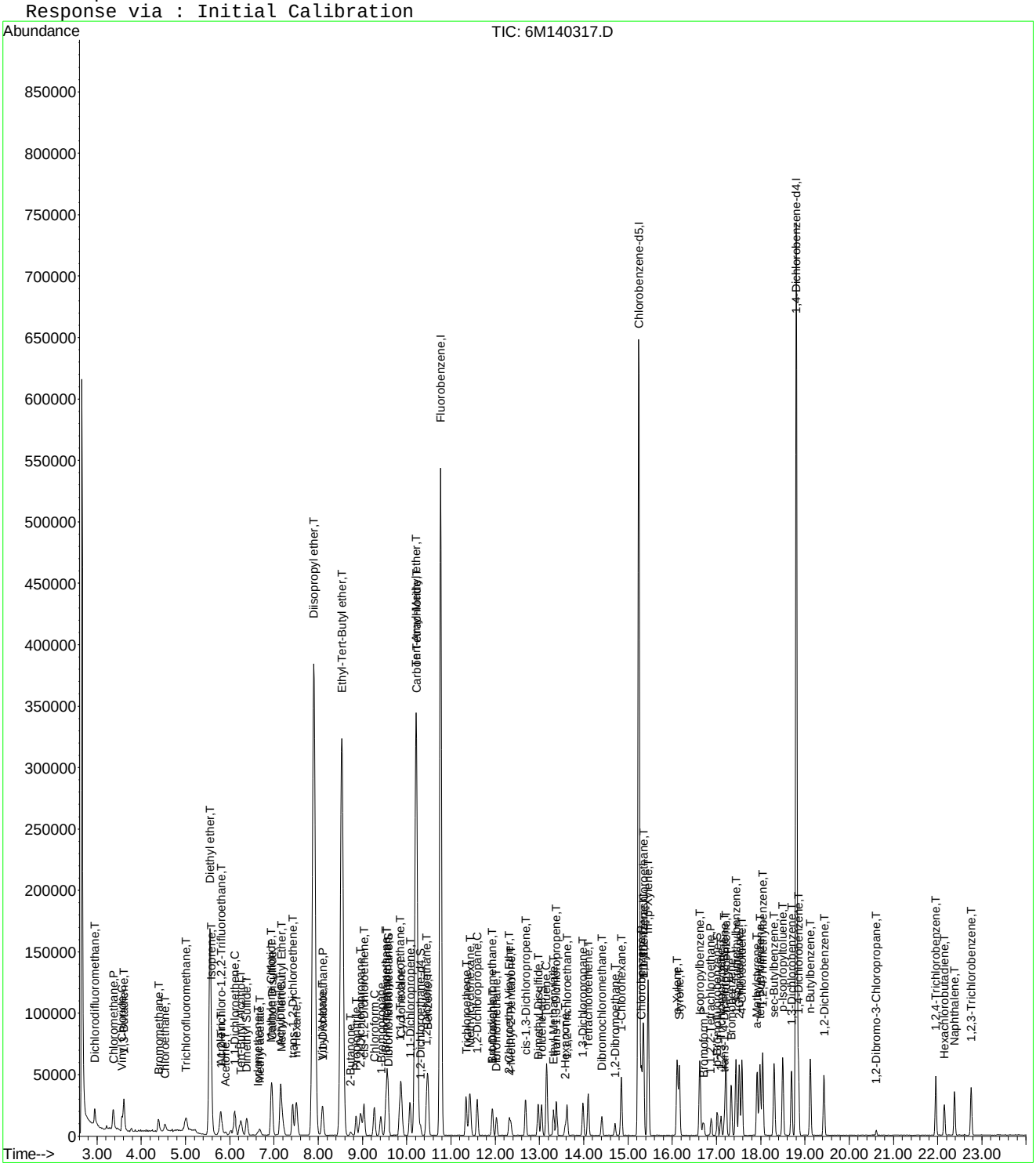

6M140317.D 8260WTR.M Fri Jul 01 14:21:24 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.9048	4.8	100	0.01
3	P	Chloromethane	2.0000	2.2252	-11.3	100	0.01
4	C	Vinyl Chloride	2.0000	2.1618	-8.1	100	0.01
5	T	1,3-Butadiene	-1.0000	0.5548	0.0	0	0.02
6	T	Bromomethane	2.0000	2.1597	-8.0	100	0.02
7	T	Chloroethane	2.0000	1.9576	2.1	100	0.01
8	T	Trichlorofluoromethane	2.0000	1.9905	0.5	100	0.01
9	T	Diethyl ether	25.0000	26.4441	-5.8	100	0.00
10	T	Isoprene	-1.0000	2.1161	0.0	100	0.01
11	T	Acrolein	12.5000	12.6601	-1.3	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.0228	-1.1	100	0.02
13	T	Acetone	-1.0000	2.4882	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0465	-2.3	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	48.6152	2.8	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	1.9412	0.0	100	0.00
17	T	Iodomethane	2.0000	1.7736	11.3	100	0.00
18	T	Methyl acetate	-1.0000	2.0038	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.2119	-10.6	100	0.00
20	T	Carbon Disulfide	2.0000	2.0813	-4.1	100	0.00
21	T	Acrylonitrile	12.5000	12.0688	3.4	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0219	-1.1	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0714	-3.6	100	0.01
24	T	n-Hexane	-1.0000	2.1588	0.0	100	0.01
25	T	Diisopropyl ether	25.0000	26.1894	-4.8	100	0.00
26	T	Vinyl Acetate	-1.0000	1.6883	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0919	-4.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.7185	-2.9	100	0.00
29	T	2-Butanone	-1.0000	1.9633	0.0	100	0.00
30	T	Propionitrile	25.0000	25.0916	-0.4	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1372	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9478	2.6	100	0.00
33	C	Chloroform	2.0000	1.9872	0.6	100	0.00
34		1-Bromopropane	2.0000	1.9534	2.3	100	0.01
35	T	Bromochloromethane	2.0000	1.9896	0.5	100	0.00
36	T	Tetrahydrofuran	25.0000	25.3089	-1.2	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0030	-0.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0280	-1.4	100	0.01
39	T	Cyclohexane	2.0000	2.0535	-2.7	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0367	-1.8	100	0.01
41	T	Tert-Amyl-Methyl ether	25.0000	25.7333	-2.9	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.8966	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0314	-3.1	100	0.01
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	2.0000	2.0774	-3.9	100	0.00
46	T	Benzene	2.0000	2.1271	-6.4	100	0.00
47	T	Trichloroethene	2.0000	2.0579	-2.9	100	0.01
48	T	Methylcyclohexane	-1.0000	2.1040	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0289	-1.4	100	0.00
50	T	1,4-Dioxane	-1.0000	45.1726	0.0	100	0.00
51	T	Bromodichloromethane	2.0000	2.0166	-0.8	100	0.00
52	T	Dibromomethane	2.0000	2.0330	-1.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.8383	8.1	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.8506	0.0	100	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	2.0243	-1.2	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.6635	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0589	-5.9	100	0.00
59	C	Toluene	2.0000	2.1494	-7.5	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9171	4.1	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	2.0000	1.9399	3.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	2.0438	-2.2	100	0.00
64	T	2-Hexanone	-1.0000	1.8942	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0758	-3.8	100	0.00
66	T	Tetrachloroethene	2.0000	2.1019	-5.1	100	0.00
67	T	Dibromochloromethane	2.0000	1.8998	5.0	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9929	0.4	100	0.00
69	T	1-Chlorohexane	2.0000	2.0392	-2.0	100	0.00
70	P	Chlorobenzene	2.0000	2.1469	-7.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	2.0147	-0.7	100	0.00
72	C	Ethylbenzene	2.0000	2.0853	-4.3	100	0.00
73	T	m-,p-Xylene	4.0000	4.3156	-7.9	100	0.00
74	T	o-Xylene	2.0000	2.0991	-5.0	100	0.00
75	T	Styrene	2.0000	2.0217	-1.1	100	0.00
76	P	Bromoform	2.0000	1.7700	11.5	100	0.00
77	T	Isopropylbenzene	2.0000	2.0952	-4.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9403	3.0	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0283	-2.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.9601	2.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.8198	9.0	100	0.00
83	T	n-Propylbenzene	2.0000	2.1306	-6.5	100	0.00
84	T	Bromobenzene	2.0000	2.0668	-3.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0955	-4.8	100	0.00
86	T	2-Chlorotoluene	2.0000	2.0435	-2.2	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1888	-9.4	100	0.00
88	T	a-Methylstyrene	-1.0000	1.8452	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0941	-4.7	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1356	-6.8	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1835	-9.2	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1287	-6.4	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.0827	-4.1	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1076	-5.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1004	-5.0	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0713	-3.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.5595	22.0#	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.9991	0.0	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0258	-1.3	100	0.00
100	T	Naphthalene	2.0000	1.9369	3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9933	0.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140317.D 8260WTR.M Fri Jul 01 14:35:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	665911	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	475530	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	251113	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	17208	2.5471 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.20%#		
43) 1,2-Dichloroethane-d4	10.32	65	22015	2.5813 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.32%#		
58) Toluene-d8	13.04	98	61675	2.6338 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.52%#		
80) p-Bromofluorobenzene	17.01	95	25621	2.6052 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.44%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	48247	4.3342 ug/L	98
3) Chloromethane	3.37	50	59455	4.7839 ug/L	98
4) Vinyl Chloride	3.57	62	33485	4.9063 ug/L	98
5) 1,3-Butadiene	3.60	54	23338	3.0943 ug/L	87
6) Bromomethane	4.39	94	22163	4.8867 ug/L	97
7) Chloroethane	4.54	64	20579	4.7720 ug/L	97
8) Trichlorofluoromethane	5.02	101	49493	4.7547 ug/L	100
9) Diethyl ether	5.55	59	316870	51.5928 ug/L	96
10) Isoprene	5.58	67	44245	4.7626 ug/L	95
11) Acrolein	5.79	56	25354	24.8183 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	30711	4.7419 ug/L	96
13) Acetone	5.90	43	11460	5.3716 ug/L	98
14) 1,1-Dichloroethene	6.11	61	59549	4.7390 ug/L	93
15) Tert-Butyl Alcohol	6.26	59	62697	96.1048 ug/L	99
16) Dimethyl Sulfide	6.39	62	26287	4.7966 ug/L	98
17) Iodomethane	6.65	142	13226	3.7502 ug/L	97
18) Methyl acetate	6.69	43	29044	5.0309 ug/L	94
19) Methylene Chloride	6.95	84	35243	4.8909 ug/L	87
20) Carbon Disulfide	6.97	76	111679	4.8502 ug/L	99
21) Acrylonitrile	7.15	53	65252	24.6331 ug/L	96
22) Methyl Tert Butyl Ether	7.18	73	93809	4.9114 ug/L	100
23) trans-1,2-Dichloroethene	7.43	96	32653	4.8519 ug/L	90
24) n-Hexane	7.51	57	57537	5.0375 ug/L	99
25) Diisopropyl ether	7.91	45	1560840	50.7720 ug/L	98
26) Vinyl Acetate	8.09	43	61001	4.7533 ug/L	96
27) 1,1-Dichloroethane	8.10	63	70715	4.8804 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	1249973	50.5407 ug/L	98
29) 2-Butanone	8.73	43	15743	4.8205 ug/L	90
30) Propionitrile	8.86	54	44610	50.3332 ug/L	100
31) 2,2-Dichloropropane	8.96	77	55177	5.0475 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	35623	4.8356 ug/L	87
33) Chloroform	9.26	83	62050	4.7802 ug/L	99
34) 1-Bromopropane	9.42	122	5012	4.7391 ug/L	100
35) Bromochloromethane	9.52	130	19897	5.0261 ug/L	99
36) Tetrahydrofuran	9.56	42	111306	48.8630 ug/L	94
38) 1,1,1-Trichloroethane	9.86	97	54902	4.8581 ug/L	98
39) Cyclohexane	9.88	56	69439	4.7228 ug/L	96
40) 1,1-Dichloropropene	10.08	75	47385	4.8139 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	949512	50.5598 ug/L	97
42) Carbon Tetrachloride	10.23	117	43932	4.7343 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140318.D 8260WTR.M Fri Jul 01 14:21:29 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	49969	4.8012	ug/L	99
46)	Benzene	10.48	78	138207	4.9748	ug/L	98
47)	Trichloroethene	11.35	130	33708	4.9171	ug/L	90
48)	Methylcyclohexane	11.43	83	52733	4.8997	ug/L	94
49)	1,2-Dichloropropane	11.59	63	39044	4.8802	ug/L	100
50)	1,4-Dioxane	11.94	88	4972	91.8036	ug/L	77
51)	Bromodichloromethane	11.93	83	46783	4.8462	ug/L	100
52)	Dibromomethane	12.02	93	19034	4.9173	ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	18004	4.4884	ug/L	97
54)	4-Methyl-2-Pentanone	12.35	58	11300	4.5774	ug/L	94
55)	cis-1,3-Dichloropropene	12.69	75	54408	4.8545	ug/L	99
56)	Dimethyl Disulfide	12.97	79	26532	4.2526	ug/L	100
59)	Toluene	13.15	91	138309	4.8802	ug/L	99
60)	Ethyl Methacrylate	13.32	69	37662	4.6708	ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	48146	4.7775	ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	25707	4.9014	ug/L	99
64)	2-Hexanone	13.58	43	22497	4.5176	ug/L	99
65)	1,3-Dichloropropane	13.99	76	48531	4.9096	ug/L	95
66)	Tetrachloroethene	14.10	166	33388	4.9436	ug/L	96
67)	Dibromochloromethane	14.41	129	30609	4.8067	ug/L	100
68)	1,2-Dibromoethane	14.71	107	24604	4.8600	ug/L	99
69)	1-Chlorohexane	14.85	91	45159	4.7879	ug/L	91
70)	Chlorobenzene	15.30	112	88763	4.8834	ug/L	87
71)	1,1,1,2-Tetrachloroethane	15.35	131	31237	4.8298	ug/L	97
72)	Ethylbenzene	15.35	106	47581	5.0011	ug/L	93
73)	m-,p-Xylene	15.45	106	115328	10.0299	ug/L	93
74)	o-Xylene	16.11	106	56158	4.8969	ug/L	90
75)	Styrene	16.16	104	93922	4.8681	ug/L	93
76)	Bromoform	16.71	173	17414	4.4099	ug/L	98
77)	Isopropylbenzene	16.62	105	150490	5.0295	ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.88	83	29598	4.8565	ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	9483	5.2483	ug/L	91
82)	trans-1,4-Dichloro-2-Buten	17.18	53	10928	4.7426	ug/L	99
83)	n-Propylbenzene	17.22	91	181410	5.0279	ug/L	97
84)	Bromobenzene	17.34	156	37810	5.0153	ug/L	91
85)	1,3,5-Trimethylbenzene	17.44	105	126034	4.9837	ug/L	97
86)	2-Chlorotoluene	17.52	91	116508	4.7747	ug/L	100
87)	4-Chlorotoluene	17.58	91	120486	5.1793	ug/L	93
88)	a-Methylstyrene	17.92	118	58815	4.6239	ug/L	99
89)	tert-Butylbenzene	17.98	134	24935	4.9076	ug/L	64
90)	1,2,4-Trimethylbenzene	18.05	105	130919	5.0449	ug/L	98
91)	sec-Butylbenzene	18.30	105	151691	5.0108	ug/L	98
92)	p-Isopropyltoluene	18.50	119	129076	5.0032	ug/L	96
93)	1,3-Dichlorobenzene	18.70	146	73279	4.9385	ug/L	97
94)	1,4-Dichlorobenzene	18.85	146	73402	4.8928	ug/L	89
95)	n-Butylbenzene	19.12	91	126335	4.9935	ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	69034	4.9553	ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	4890	4.0969	ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	46999	4.7727	ug/L	99
99)	Hexachlorobutadiene	22.15	225	19578	4.7818	ug/L	97
100)	Naphthalene	22.39	128	98169	4.8780	ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	44211	4.8487	ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

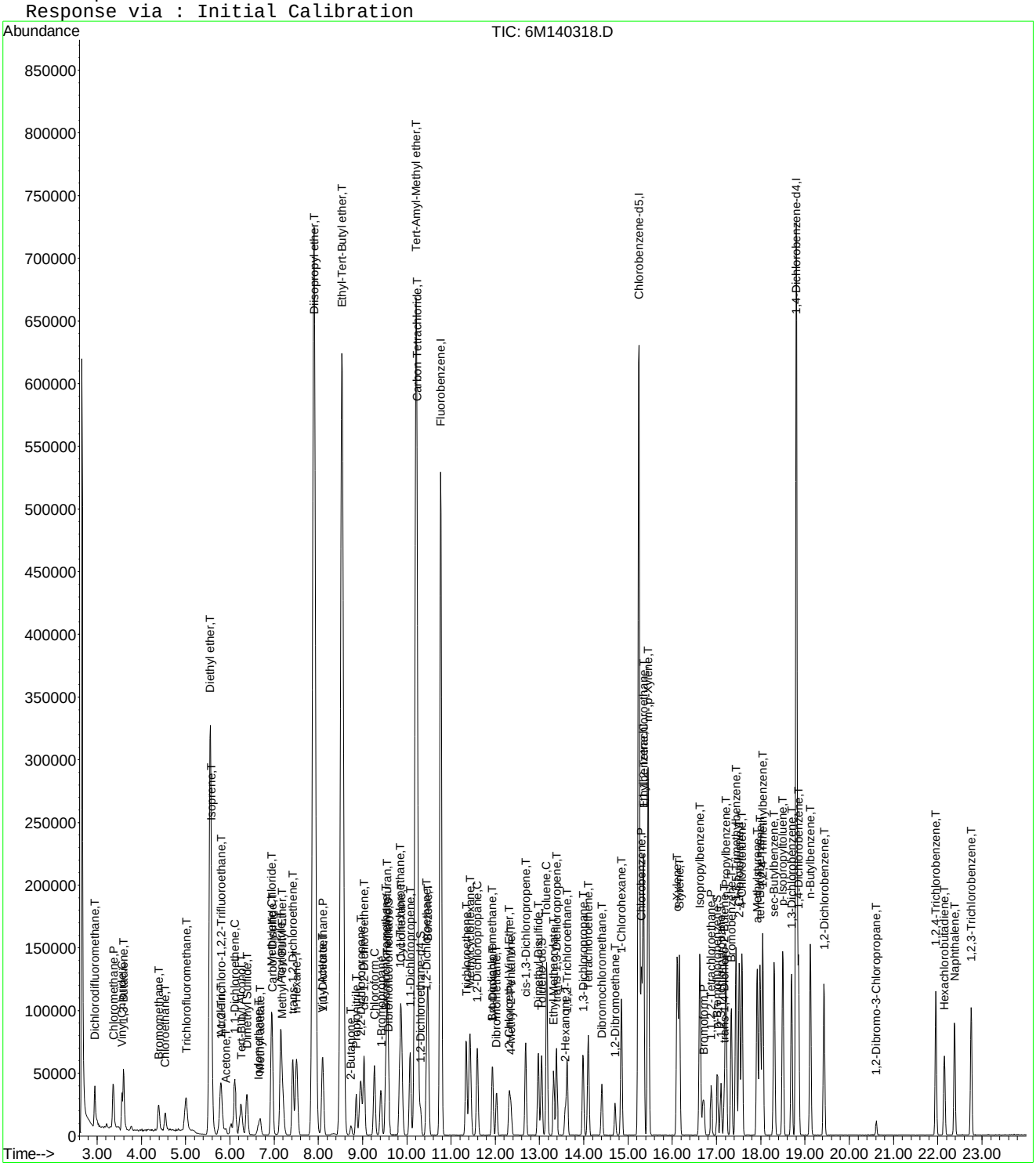

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3342	13.3	100	0.00
3	P	Chloromethane	5.0000	4.7839	4.3	100	0.00
4	C	Vinyl Chloride	5.0000	4.9063	1.9	100	0.00
5	T	1,3-Butadiene	5.0000	3.0943	38.1#	100	0.00
6	T	Bromomethane	5.0000	4.8868	2.3	100	0.02
7	T	Chloroethane	5.0000	4.7720	4.6	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7547	4.9	100	0.02
9	T	Diethyl ether	50.0000	51.5928	-3.2	100	0.00
10	T	Isoprene	5.0000	4.7626	4.7	100	0.00
11	T	Acrolein	25.0000	24.8183	0.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7420	5.2	100	0.02
13	T	Acetone	5.0000	5.3716	-7.4	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7390	5.2	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	96.1048	3.9	100	-0.03
16	T	Dimethyl Sulfide	5.0000	4.7966	4.1	100	0.00
17	T	Iodomethane	5.0000	3.7502	25.0#	100	0.01
18	T	Methyl acetate	5.0000	5.0309	-0.6	100	0.00
19	T	Methylene Chloride	5.0000	4.8909	2.2	100	0.00
20	T	Carbon Disulfide	5.0000	4.8502	3.0	100	0.00
21	T	Acrylonitrile	25.0000	24.6331	1.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.9113	1.8	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.8519	3.0	100	0.00
24	T	n-Hexane	5.0000	5.0375	-0.7	100	0.00
25	T	Diisopropyl ether	50.0000	50.7719	-1.5	100	0.00
26	T	Vinyl Acetate	5.0000	4.7533	4.9	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.8804	2.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	50.5407	-1.1	100	0.00
29	T	2-Butanone	5.0000	4.8205	3.6	100	0.00
30	T	Propionitrile	50.0000	50.3332	-0.7	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.0475	-0.9	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8356	3.3	100	0.00
33	C	Chloroform	5.0000	4.7802	4.4	100	0.00
34		1-Bromopropane	5.0000	4.7391	5.2	100	0.01
35	T	Bromochloromethane	5.0000	5.0261	-0.5	100	0.00
36	T	Tetrahydrofuran	50.0000	48.8630	2.3	100	0.00
37	S	Dibromofluoromethane	2.5000	2.5471	-1.9	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8581	2.8	100	0.00
39	T	Cyclohexane	5.0000	4.7228	5.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.8139	3.7	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	50.5598	-1.1	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.7344	5.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5813	-3.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	5.0000	4.8012	4.0	100	0.00
46	T	Benzene	5.0000	4.9748	0.5	100	0.00
47	T	Trichloroethene	5.0000	4.9171	1.7	100	0.00
48	T	Methylcyclohexane	5.0000	4.8997	2.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.8802	2.4	100	0.00
50	T	1,4-Dioxane	100.0000	91.8036	8.2	100	0.00
51	T	Bromodichloromethane	5.0000	4.8463	3.1	100	0.00
52	T	Dibromomethane	5.0000	4.9173	1.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.4884	10.2	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.5774	8.5	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8545	2.9	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2526	14.9	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6338	-5.4	100	0.00
59	C	Toluene	5.0000	4.8802	2.4	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.6708	6.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	5.0000	4.7775	4.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.9014	2.0	100	0.00
64	T	2-Hexanone	5.0000	4.5176	9.6	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9096	1.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.9436	1.1	100	0.00
67	T	Dibromochloromethane	5.0000	4.8067	3.9	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.8600	2.8	100	0.00
69	T	1-Chlorohexane	5.0000	4.7880	4.2	100	0.00
70	P	Chlorobenzene	5.0000	4.8834	2.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.8298	3.4	100	0.00
72	C	Ethylbenzene	5.0000	5.0011	-0.0	100	0.00
73	T	m-,p-Xylene	10.0000	10.0299	-0.3	100	-0.01
74	T	o-Xylene	5.0000	4.8970	2.1	100	-0.01
75	T	Styrene	5.0000	4.8681	2.6	100	0.00
76	P	Bromoform	5.0000	4.4099	11.8	100	0.00
77	T	Isopropylbenzene	5.0000	5.0295	-0.6	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8565	2.9	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6052	-4.2	100	-0.01
81	T	1,2,3-Trichloropropane	5.0000	5.2483	-5.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.7426	5.1	100	0.00
83	T	n-Propylbenzene	5.0000	5.0279	-0.6	100	0.00
84	T	Bromobenzene	5.0000	5.0153	-0.3	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9837	0.3	100	-0.01
86	T	2-Chlorotoluene	5.0000	4.7747	4.5	100	-0.01
87	T	4-Chlorotoluene	5.0000	5.1794	-3.6	100	-0.01
88	T	a-Methylstyrene	5.0000	4.6239	7.5	100	0.00
89	T	tert-Butylbenzene	5.0000	4.9076	1.8	100	-0.01
90	T	1,2,4-Trimethylbenzene	5.0000	5.0449	-0.9	100	-0.01
91	T	sec-Butylbenzene	5.0000	5.0108	-0.2	100	-0.01
92	T	p-Isopropyltoluene	5.0000	5.0032	-0.1	100	-0.01
93	T	1,3-Dichlorobenzene	5.0000	4.9385	1.2	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8928	2.1	100	0.00
95	T	n-Butylbenzene	5.0000	4.9935	0.1	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.9553	0.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.0969	18.1	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7727	4.5	100	-0.01
99	T	Hexachlorobutadiene	5.0000	4.7818	4.4	100	0.00
100	T	Naphthalene	5.0000	4.8780	2.4	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.8487	3.0	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140318.D 8260WTR.M Fri Jul 01 14:36:23 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:33 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	668919	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	478690	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	258443	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	70098	10.3290 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.32%#		
43) 1,2-Dichloroethane-d4	10.31	65	89020	10.3908 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.56%#		
58) Toluene-d8	13.04	98	243575	10.3332 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.32%#		
80) p-Bromofluorobenzene	17.01	95	104612	10.3355 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	240030	21.4659 ug/L	100
3) Chloromethane	3.37	50	274164	21.9607 ug/L	99
4) Vinyl Chloride	3.56	62	134656	19.6412 ug/L	99
5) 1,3-Butadiene	3.60	54	109113	26.0590 ug/L	94
6) Bromomethane	4.39	94	95323	20.9234 ug/L	99
7) Chloroethane	4.54	64	90881	20.9793 ug/L	97
8) Trichlorofluoromethane	5.00	101	210753	20.1557 ug/L	99
9) Diethyl ether	5.55	59	494080	80.0844 ug/L	96
10) Isoprene	5.58	67	199958	21.4269 ug/L	96
11) Acrolein	5.79	56	40308	39.2789 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	131653	20.2365 ug/L	96
13) Acetone	5.89	43	44542	20.7841 ug/L	99
14) 1,1-Dichloroethene	6.11	61	254255	20.1429 ug/L	95
15) Tert-Butyl Alcohol	6.25	59	101804	155.3480 ug/L	98
16) Dimethyl Sulfide	6.39	62	115970	21.0658 ug/L	96
17) Iodomethane	6.65	142	79774	18.0326 ug/L	94
18) Methyl acetate	6.69	43	119945	20.6831 ug/L	98
19) Methylene Chloride	6.93	84	145226	20.0632 ug/L	90
20) Carbon Disulfide	6.97	76	495098	21.4053 ug/L	100
21) Acrylonitrile	7.15	53	104807	39.3874 ug/L	95
22) Methyl Tert Butyl Ether	7.18	73	394607	20.5667 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	135387	20.0268 ug/L	87
24) n-Hexane	7.51	57	243963	21.2635 ug/L	99
25) Diisopropyl ether	7.89	45	2475744	80.1704 ug/L	98
26) Vinyl Acetate	8.09	43	239974	18.6153 ug/L	97
27) 1,1-Dichloroethane	8.10	63	295851	20.3263 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	1992124	80.1862 ug/L	98
29) 2-Butanone	8.73	43	66102	20.1493 ug/L	96
30) Propionitrile	8.85	54	71515	80.3272 ug/L	99
31) 2,2-Dichloropropane	8.96	77	220142	20.0476 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	149673	20.2260 ug/L	73
33) Chloroform	9.26	83	260745	19.9968 ug/L	99
34) 1-Bromopropane	9.42	122	23773	20.6056 ug/L	99
35) Bromochloromethane	9.52	130	82689	20.7938 ug/L	100
36) Tetrahydrofuran	9.56	42	173501	75.8239 ug/L	94
38) 1,1,1-Trichloroethane	9.86	97	230314	20.2881 ug/L	98
39) Cyclohexane	9.88	56	309021	20.9230 ug/L	96
40) 1,1-Dichloropropene	10.08	75	198240	20.0489 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1504867	79.7712 ug/L	98
42) Carbon Tetrachloride	10.23	117	197807	21.2209 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140319.D 8260WTR.M Fri Jul 01 14:21:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:33 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	213475	20.4192	ug/L	98
46)	Benzene	10.48	78	563224	20.1824	ug/L	97
47)	Trichloroethene	11.35	130	140565	20.4123	ug/L	91
48)	Methylcyclohexane	11.43	83	229029	21.1847	ug/L	95
49)	1,2-Dichloropropane	11.59	63	163803	20.3822	ug/L	99
50)	1,4-Dioxane	11.94	88	8245	151.5521	ug/L	87
51)	Bromodichloromethane	11.94	83	198529	20.4731	ug/L	99
52)	Dibromomethane	12.02	93	81976	21.0826	ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.31	63	84440	20.9563	ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	50113	20.2084	ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	230873	20.5069	ug/L	99
56)	Dimethyl Disulfide	12.97	79	127875	20.4039	ug/L	99
59)	Toluene	13.15	91	575595	20.1756	ug/L	100
60)	Ethyl Methacrylate	13.32	69	174096	21.4487	ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	209635	20.6648	ug/L	96
63)	1,1,2-Trichloroethane	13.62	97	109279	20.6980	ug/L	99
64)	2-Hexanone	13.58	43	101714	20.2903	ug/L	96
65)	1,3-Dichloropropane	13.99	76	199227	20.0217	ug/L	94
66)	Tetrachloroethene	14.10	166	135754	19.9678	ug/L	93
67)	Dibromochloromethane	14.41	129	135289	21.1051	ug/L	100
68)	1,2-Dibromoethane	14.71	107	105892	20.7786	ug/L	100
69)	1-Chlorohexane	14.85	91	199253	20.9862	ug/L	90
70)	Chlorobenzene	15.30	112	368915	20.1622	ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	134691	20.6882	ug/L	97
72)	Ethylbenzene	15.35	106	198149	20.6895	ug/L	94
73)	m-,p-Xylene	15.45	106	479614	41.4358	ug/L	94
74)	o-Xylene	16.10	106	239170	20.7178	ug/L	94
75)	Styrene	16.16	104	410666	21.1448	ug/L	94
76)	Bromoform	16.71	173	82284	20.7000	ug/L	97
77)	Isopropylbenzene	16.62	105	620142	20.5887	ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	128022	20.4105	ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	39329	21.1491	ug/L	80
82)	trans-1,4-Dichloro-2-Buten	17.18	53	50449	21.2733	ug/L	99
83)	n-Propylbenzene	17.22	91	763535	20.5616	ug/L	97
84)	Bromobenzene	17.34	156	157241	20.2655	ug/L	90
85)	1,3,5-Trimethylbenzene	17.44	105	534922	20.5522	ug/L	97
86)	2-Chlorotoluene	17.52	91	480540	19.1348	ug/L	100
87)	4-Chlorotoluene	17.58	91	506904	21.1723	ug/L	93
88)	a-Methylstyrene	17.92	118	283013	21.6190	ug/L	99
89)	tert-Butylbenzene	17.98	134	108977	20.8400	ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	555658	20.8047	ug/L	98
91)	sec-Butylbenzene	18.30	105	646673	20.7557	ug/L	97
92)	p-Isopropyltoluene	18.50	119	553560	20.8482	ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	308829	20.2225	ug/L	96
94)	1,4-Dichlorobenzene	18.85	146	309174	20.0243	ug/L	95
95)	n-Butylbenzene	19.12	91	539602	20.7232	ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	290193	20.2396	ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	25172	20.4911	ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	206634	20.3883	ug/L	99
99)	Hexachlorobutadiene	22.15	225	84200	19.9820	ug/L	100
100)	Naphthalene	22.38	128	449397	21.6970	ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	193555	20.6254	ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140319.D 8260WTR.M Fri Jul 01 14:21:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

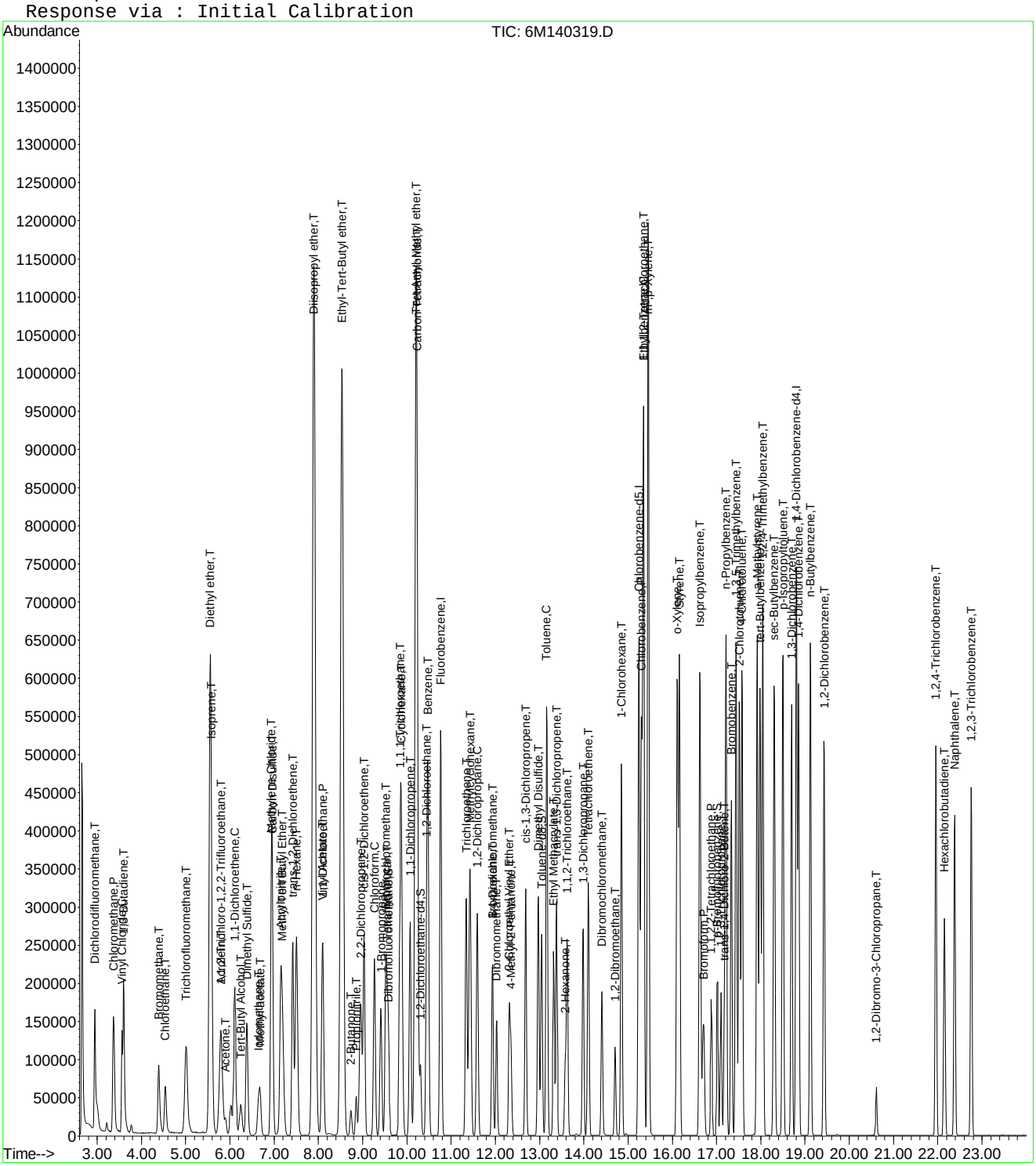

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:42 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	665194	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	476977	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	264882	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	171183	25.3652 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.48%		
43) 1,2-Dichloroethane-d4	10.31	65	211795	24.8600 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.44%		
58) Toluene-d8	13.04	98	584965	24.9051 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.64%		
80) p-Bromofluorobenzene	17.02	95	257496	24.8219 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.28%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	582153	52.3535 ug/L	99
3) Chloromethane	3.37	50	615809	49.6030 ug/L	100
4) Vinyl Chloride	3.56	62	346419	50.8123 ug/L	99
5) 1,3-Butadiene	3.59	54	204917	52.0480 ug/L	96
6) Bromomethane	4.39	94	214126	47.2638 ug/L	99
7) Chloroethane	4.53	64	215766	50.0871 ug/L	96
8) Trichlorofluoromethane	5.00	101	495602	47.6630 ug/L	100
9) Diethyl ether	5.56	59	630517	102.7715 ug/L	96
10) Isoprene	5.58	67	475494	51.2378 ug/L	96
11) Acrolein	5.79	56	50160	49.1531 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	318041	49.1602 ug/L	97
13) Acetone	5.90	43	105863	49.6741 ug/L	100
14) 1,1-Dichloroethene	6.11	61	623813	49.6972 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	129177	198.2217 ug/L	99
16) Dimethyl Sulfide	6.39	62	276319	50.4741 ug/L	95
17) Iodomethane	6.65	142	239373	52.6044 ug/L	93
18) Methyl acetate	6.69	43	285035	49.4262 ug/L	98
19) Methylene Chloride	6.94	84	347634	48.2950 ug/L	88
20) Carbon Disulfide	6.96	76	1155252	50.2265 ug/L	100
21) Acrylonitrile	7.15	53	135608	51.2481 ug/L	98
22) Methyl Tert Butyl Ether	7.18	73	953213	49.9591 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	333111	49.5507 ug/L	89
24) n-Hexane	7.51	57	564061	49.4381 ug/L	98
25) Diisopropyl ether	7.90	45	3068443	99.9198 ug/L	98
26) Vinyl Acetate	8.09	43	646413	50.4243 ug/L	98
27) 1,1-Dichloroethane	8.10	63	718876	49.6666 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2470202	99.9864 ug/L	98
29) 2-Butanone	8.73	43	166904	51.1609 ug/L	95
30) Propionitrile	8.85	54	90037	101.6978 ug/L	100
31) 2,2-Dichloropropane	8.96	77	533000	48.8104 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	368400	50.0623 ug/L	73
33) Chloroform	9.26	83	633467	48.8534 ug/L	99
34) 1-Bromopropane	9.42	122	59330	50.9944 ug/L	99
35) Bromochloromethane	9.52	130	203288	51.4071 ug/L	99
36) Tetrahydrofuran	9.56	42	216772	95.2648 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	572724	50.7331 ug/L	99
39) Cyclohexane	9.87	56	723056	49.2305 ug/L	96
40) 1,1-Dichloropropene	10.08	75	488493	49.6802 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	1883625	100.4078 ug/L	98
42) Carbon Tetrachloride	10.23	117	502186	54.1766 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140320.D 8260WTR.M Fri Jul 01 14:21:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:42 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	522936	50.2998 ug/L	99
46)	Benzene	10.48	78	1376892	49.6154 ug/L	97
47)	Trichloroethene	11.35	130	341168	49.8206 ug/L	91
48)	Methylcyclohexane	11.43	83	532584	49.5388 ug/L	95
49)	1,2-Dichloropropane	11.59	63	402187	50.3249 ug/L	99
50)	1,4-Dioxane	11.94	88	11316	209.1652 ug/L	91
51)	Bromodichloromethane	11.94	83	499306	51.7788 ug/L	99
52)	Dibromomethane	12.03	93	200679	51.8998 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	214371	53.5004 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	126993	51.4974 ug/L	97
55)	cis-1,3-Dichloropropene	12.68	75	576590	51.5014 ug/L	99
56)	Dimethyl Disulfide	12.97	79	322099	51.6823 ug/L	98
59)	Toluene	13.15	91	1399906	49.2452 ug/L	99
60)	Ethyl Methacrylate	13.32	69	422208	52.2030 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	522454	51.6858 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	267159	50.7830 ug/L	98
64)	2-Hexanone	13.58	43	256820	51.4155 ug/L	96
65)	1,3-Dichloropropane	13.99	76	494920	49.9167 ug/L	94
66)	Tetrachloroethene	14.10	166	336402	49.6585 ug/L	94
67)	Dibromochloromethane	14.41	129	343402	53.7632 ug/L	100
68)	1,2-Dibromoethane	14.70	107	261585	51.5137 ug/L	100
69)	1-Chlorohexane	14.85	91	477655	50.4894 ug/L	92
70)	Chlorobenzene	15.30	112	903124	49.5353 ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.35	131	337691	52.0547 ug/L	98
72)	Ethylbenzene	15.35	106	484831	50.8048 ug/L	94
73)	m-,p-Xylene	15.46	106	1167250	101.2056 ug/L	95
74)	o-Xylene	16.11	106	590057	51.2966 ug/L	94
75)	Styrene	16.15	104	1015963	52.4987 ug/L	92
76)	Bromoform	16.72	173	210299	53.0943 ug/L	98
77)	Isopropylbenzene	16.62	105	1525364	50.8239 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	326482	50.7855 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	98816	51.8463 ug/L	83
82)	trans-1,4-Dichloro-2-Buten	17.18	53	129320	53.2061 ug/L	97
83)	n-Propylbenzene	17.22	91	1885010	49.5285 ug/L	98
84)	Bromobenzene	17.34	156	390005	49.0426 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	1335066	50.0475 ug/L	97
86)	2-Chlorotoluene	17.52	91	1274044	49.4983 ug/L	96
87)	4-Chlorotoluene	17.58	91	1171374	47.7365 ug/L	96
88)	a-Methylstyrene	17.92	118	690404	51.4571 ug/L	95
89)	tert-Butylbenzene	17.98	134	265842	49.6018 ug/L	70
90)	1,2,4-Trimethylbenzene	18.04	105	1381292	50.4604 ug/L	98
91)	sec-Butylbenzene	18.31	105	1599719	50.0966 ug/L	98
92)	p-Isopropyltoluene	18.50	119	1372031	50.4173 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	767298	49.0222 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	768779	48.5813 ug/L	95
95)	n-Butylbenzene	19.12	91	1348420	50.5266 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	726470	49.4362 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.62	75	64455	51.1937 ug/L	86
98)	1,2,4-Trichlorobenzene	21.97	180	516677	49.7405 ug/L	99
99)	Hexachlorobutadiene	22.16	225	213166	49.3581 ug/L	100
100)	Naphthalene	22.38	128	1126213	53.0520 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	479054	49.8076 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140320.D 8260WTR.M Fri Jul 01 14:21:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

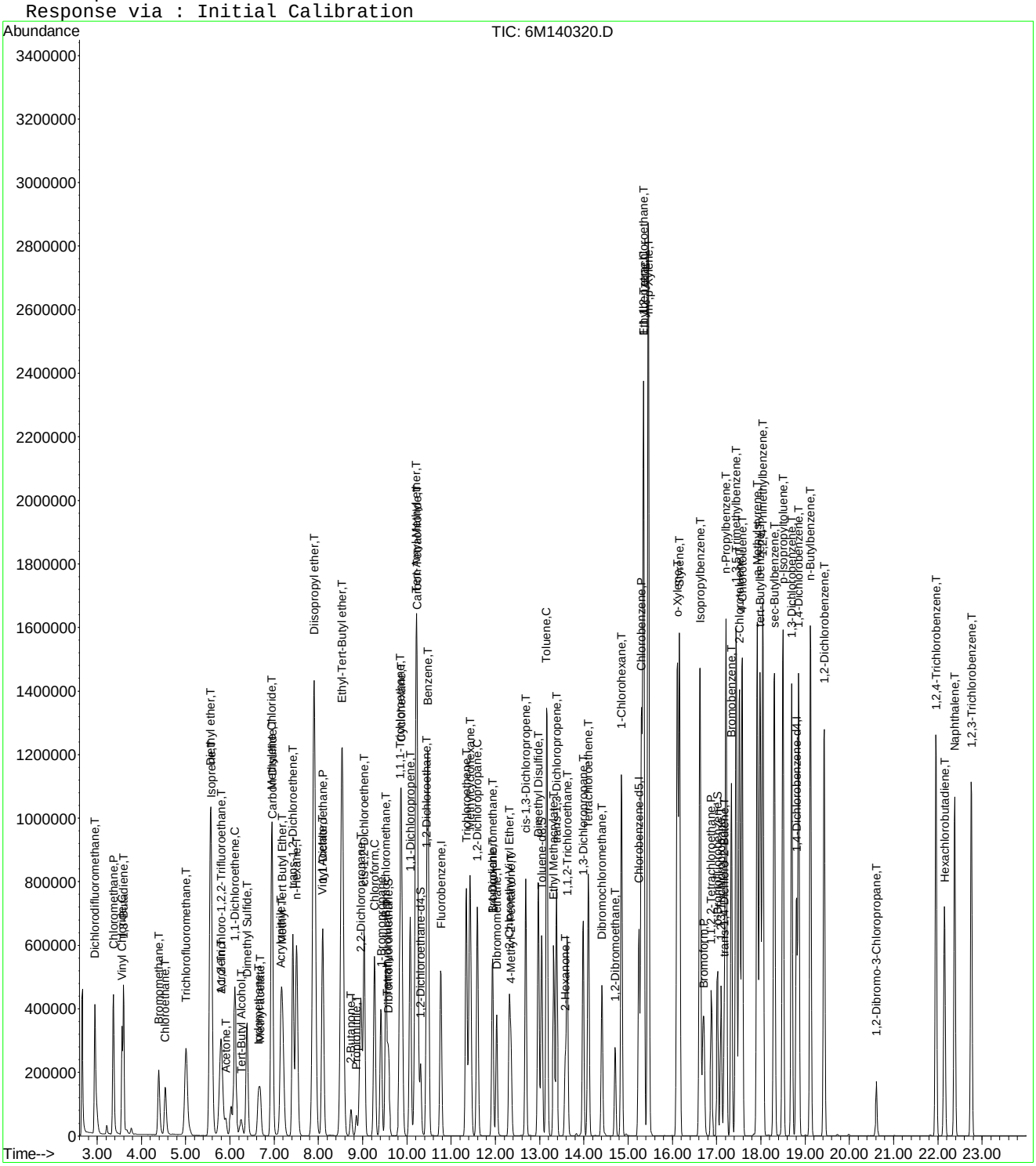

6M140320.D 8260WTR.M Fri Jul 01 14:21:49 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:51 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	646485	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	471613	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	268377	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	322733	49.2052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 196.84%#		
43) 1,2-Dichloroethane-d4	10.31	65	408267	49.3082 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 197.24%#		
58) Toluene-d8	13.04	98	1099687	47.3521 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 189.40%#		
80) p-Bromofluorobenzene	17.02	95	500608	47.6287 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 190.52%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	1195098	110.5865 ug/L	100
3) Chloromethane	3.37	50	1126306	93.3487 ug/L	100
4) Vinyl Chloride	3.56	62	690730	104.2475 ug/L	100
5) 1,3-Butadiene	3.59	54	397047	106.9364 ug/L	97
6) Bromomethane	4.38	94	423232	96.1231 ug/L	100
7) Chloroethane	4.53	64	421078	100.5763 ug/L	96
8) Trichlorofluoromethane	5.00	101	1039911	102.9045 ug/L	99
9) Diethyl ether	5.56	59	1210825	203.0707 ug/L	96
10) Isoprene	5.57	67	926995	102.7810 ug/L	96
11) Acrolein	5.79	56	100610	101.4435 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	644973	102.5798 ug/L	97
13) Acetone	5.90	43	202374	97.7080 ug/L	98
14) 1,1-Dichloroethene	6.11	61	1233915	101.1469 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	264298	417.3014 ug/L	98
16) Dimethyl Sulfide	6.39	62	533770	100.3234 ug/L	95
17) Iodomethane	6.65	142	485581	108.8245 ug/L	92
18) Methyl acetate	6.69	43	562111	100.2930 ug/L	98
19) Methylene Chloride	6.94	84	680086	97.2151 ug/L	90
20) Carbon Disulfide	6.96	76	2214357	99.0589 ug/L	100
21) Acrylonitrile	7.15	53	269273	104.7069 ug/L	97
22) Methyl Tert Butyl Ether	7.18	73	1885141	101.6619 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	659412	100.9269 ug/L	89
24) n-Hexane	7.51	57	1100352	99.2333 ug/L	97
25) Diisopropyl ether	7.90	45	5806079	194.5388 ug/L	99
26) Vinyl Acetate	8.09	43	1275603	102.3848 ug/L	98
27) 1,1-Dichloroethane	8.10	63	1407131	100.0311 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	4736533	197.2691 ug/L	99
29) 2-Butanone	8.73	43	329619	103.9617 ug/L	96
30) Propionitrile	8.85	54	180672	209.9768 ug/L	99
31) 2,2-Dichloropropane	8.96	77	1063724	100.2315 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	723748	101.1973 ug/L	73
33) Chloroform	9.26	83	1245839	98.8604 ug/L	99
34) 1-Bromopropane	9.42	122	114449	100.7473 ug/L	100
35) Bromochloromethane	9.52	130	399705	104.0018 ug/L	100
36) Tetrahydrofuran	9.56	42	431461	195.1016 ug/L	95
38) 1,1,1-Trichloroethane	9.85	97	1132312	103.2053 ug/L	98
39) Cyclohexane	9.87	56	1422141	99.6310 ug/L	96
40) 1,1-Dichloropropene	10.08	75	970489	101.5559 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	3648605	200.1197 ug/L	98
42) Carbon Tetrachloride	10.23	117	1008047	111.8968 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140321.D 8260WTR.M Fri Jul 01 14:21:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:51 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	1026377	101.5814 ug/L	99
46)	Benzene	10.48	78	2663898	98.7698 ug/L	96
47)	Trichloroethene	11.35	130	659415	99.0807 ug/L	89
48)	Methylcyclohexane	11.43	83	1057163	101.1788 ug/L	95
49)	1,2-Dichloropropane	11.59	63	787420	101.3798 ug/L	97
50)	1,4-Dioxane	11.94	88	22910	435.7239 ug/L	83
51)	Bromodichloromethane	11.94	83	998026	106.4921 ug/L	100
52)	Dibromomethane	12.03	93	402229	107.0352 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	414426	106.4211 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	253505	105.7748 ug/L	99
55)	cis-1,3-Dichloropropene	12.68	75	1145435	105.2719 ug/L	99
56)	Dimethyl Disulfide	12.97	79	637376	105.2297 ug/L	98
59)	Toluene	13.16	91	2716275	96.6387 ug/L	99
60)	Ethyl Methacrylate	13.32	69	835175	104.4378 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	1039244	103.9807 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	530894	102.0629 ug/L	98
64)	2-Hexanone	13.58	43	511940	103.6564 ug/L	98
65)	1,3-Dichloropropane	13.99	76	975019	99.4570 ug/L	94
66)	Tetrachloroethene	14.10	166	663843	99.1087 ug/L	93
67)	Dibromochloromethane	14.41	129	698275	110.5657 ug/L	100
68)	1,2-Dibromoethane	14.70	107	530245	105.6082 ug/L	100
69)	1-Chlorohexane	14.86	91	934249	99.8757 ug/L	91
70)	Chlorobenzene	15.30	112	1757753	97.5073 ug/L	90
71)	1,1,1,2-Tetrachloroethane	15.35	131	672232	104.8024 ug/L	97
72)	Ethylbenzene	15.35	106	960737	101.8195 ug/L	96
73)	m-,p-Xylene	15.46	106	2273350	199.3511 ug/L	96
74)	o-Xylene	16.11	106	1166695	102.5802 ug/L	94
75)	Styrene	16.15	104	2021937	105.6696 ug/L	91
76)	Bromoform	16.72	173	442224	112.9184 ug/L	98
77)	Isopropylbenzene	16.62	105	3022582	101.8554 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	699051	107.3240 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	204344	105.8180 ug/L	81
82)	trans-1,4-Dichloro-2-Buten	17.18	53	271253	110.1481 ug/L	96
83)	n-Propylbenzene	17.22	91	3780776	98.0459 ug/L	98
84)	Bromobenzene	17.34	156	791175	98.1936 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	2708977	100.2286 ug/L	97
86)	2-Chlorotoluene	17.52	91	2557008	98.0494 ug/L	97
87)	4-Chlorotoluene	17.58	91	2386130	95.9746 ug/L	97
88)	a-Methylstyrene	17.92	118	1396050	102.6951 ug/L	95
89)	tert-Butylbenzene	17.99	134	544776	100.3227 ug/L	72
90)	1,2,4-Trimethylbenzene	18.04	105	2808112	101.2481 ug/L	99
91)	sec-Butylbenzene	18.31	105	3235910	100.0157 ug/L	98
92)	p-Isopropyltoluene	18.50	119	2792332	101.2720 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	1561532	98.4661 ug/L	94
94)	1,4-Dichlorobenzene	18.86	146	1567098	97.7396 ug/L	94
95)	n-Butylbenzene	19.12	91	2754111	101.8553 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	1483394	99.6302 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	20.62	75	143837	112.7555 ug/L	86
98)	1,2,4-Trichlorobenzene	21.97	180	1060844	100.7975 ug/L	98
99)	Hexachlorobutadiene	22.15	225	438054	100.1094 ug/L	100
100)	Naphthalene	22.38	128	2317282	107.7376 ug/L	99
101)	1,2,3-Trichlorobenzene	22.76	180	982434	100.8141 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140321.D 8260WTR.M Fri Jul 01 14:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

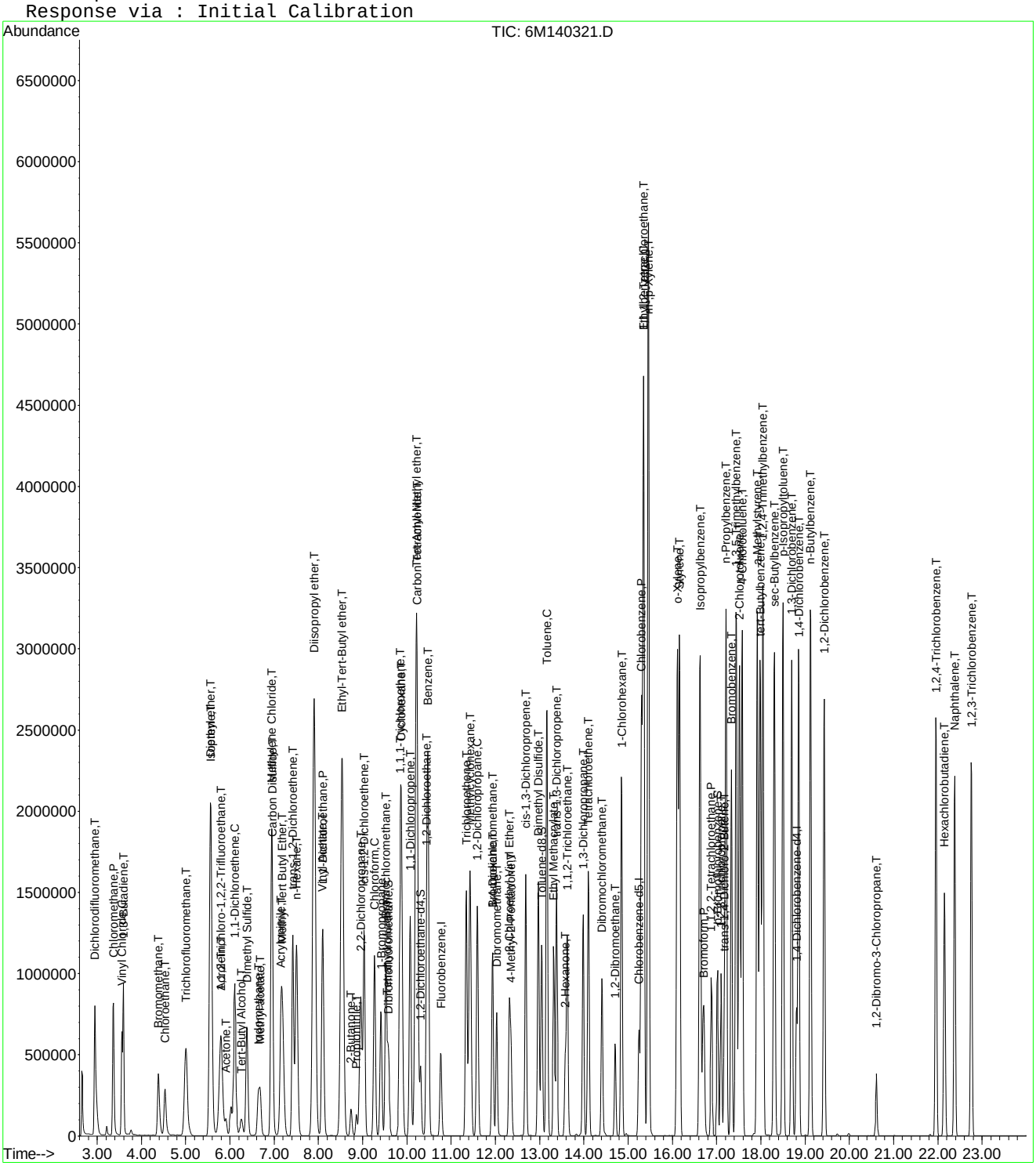

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:59 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	674210	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	486785	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	271900	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	671839	98.2191 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 392.88%#		
43) 1,2-Dichloroethane-d4	10.31	65	835948	96.8094 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 387.24%#		
58) Toluene-d8	13.04	98	2262915	94.4033 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 377.60%#		
80) p-Bromofluorobenzene	17.02	95	1044558	98.0934 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 392.36%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	2.95	85	2392226	212.2580 ug/L	100
3) Chloromethane	3.37	50	2218722	176.3266 ug/L	100
4) Vinyl Chloride	3.56	62	1383750	200.2527 ug/L	99
5) 1,3-Butadiene	3.59	54	790286	206.9928 ug/L	97
6) Bromomethane	4.38	94	916596	199.6138 ug/L	100
7) Chloroethane	4.53	64	905382	207.3615 ug/L	96
8) Trichlorofluoromethane	5.00	101	2065931	196.0277 ug/L	99
10) Isoprene	5.57	67	1944884	206.7723 ug/L	96
11) Acrolein	5.78	56	1541	1.4899 ug/L	69
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	1336247	203.7841 ug/L	97
13) Acetone	5.90	43	421648	195.2041 ug/L	99
14) 1,1-Dichloroethene	6.11	61	2551648	200.5632 ug/L	94
15) Tert-Butyl Alcohol	6.28	59	3198	4.8417 ug/L #	57
16) Dimethyl Sulfide	6.38	62	1109294	199.9208 ug/L	95
17) Iodomethane	6.65	142	972879	208.2422 ug/L	92
18) Methyl acetate	6.69	43	1135963	194.3462 ug/L	99
19) Methylene Chloride	6.94	84	1372201	188.0837 ug/L	89
20) Carbon Disulfide	6.96	76	4495945	192.8546 ug/L	99
21) Acrylonitrile	7.18	53	44700	16.6668 ug/L #	33
22) Methyl Tert Butyl Ether	7.18	73	3851369	199.1557 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	1353415	198.6299 ug/L	88
24) n-Hexane	7.51	57	2284673	197.5664 ug/L	97
26) Vinyl Acetate	8.09	43	2820141	217.0472 ug/L	98
27) 1,1-Dichloroethane	8.10	63	2873257	195.8566 ug/L	99
28) Ethyl-Tert-Butyl ether	8.56	59	6764	0.2701 ug/L #	47
29) 2-Butanone	8.73	43	664492	200.9620 ug/L	97
30) Propionitrile	8.74	54	1576	1.7563 ug/L #	81
31) 2,2-Dichloropropane	8.96	77	2196313	198.4415 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	1477699	198.1211 ug/L	88
33) Chloroform	9.26	83	2557143	194.5712 ug/L	99
34) 1-Bromopropane	9.41	122	241562	203.4107 ug/L	99
35) Bromochloromethane	9.52	130	819022	204.3432 ug/L	99
36) Tetrahydrofuran	9.56	42	4224	1.8315 ug/L #	75
38) 1,1,1-Trichloroethane	9.85	97	2330454	203.6760 ug/L	98
39) Cyclohexane	9.87	56	2930205	196.8399 ug/L	96
40) 1,1-Dichloropropene	10.08	75	2009314	201.6162 ug/L	98
42) Carbon Tetrachloride	10.23	117	2106944	224.2607 ug/L	99
45) 1,2-Dichloroethane	10.45	62	2101049	199.3915 ug/L	99
46) Benzene	10.48	78	5301493	188.4813 ug/L	94
47) Trichloroethene	11.34	130	1327069	191.1997 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M140322.D 8260WTR.M Fri Jul 01 14:22:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:59 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methylcyclohexane	11.43	83	2178870	199.9595 ug/L	95
49)	1,2-Dichloropropane	11.59	63	1619228	199.9016 ug/L	98
50)	1,4-Dioxane	11.93	88	2818	51.3914 ug/L #	14
51)	Bromodichloromethane	11.94	83	2039115	208.6317 ug/L	99
52)	Dibromomethane	12.03	93	816650	208.3783 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	836577	205.9918 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	515506	206.2494 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	2333363	205.6305 ug/L	99
56)	Dimethyl Disulfide	12.97	79	1322167	209.3111 ug/L	97
59)	Toluene	13.16	91	5329560	183.7033 ug/L	98
60)	Ethyl Methacrylate	13.32	69	1710374	207.2144 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	2115027	205.0216 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	1065320	198.4215 ug/L	98
64)	2-Hexanone	13.58	43	1038924	203.8025 ug/L	98
65)	1,3-Dichloropropane	13.99	76	1956962	193.3985 ug/L	94
66)	Tetrachloroethene	14.11	166	1338320	193.5775 ug/L	92
67)	Dibromochloromethane	14.41	129	1402954	215.2216 ug/L	99
68)	1,2-Dibromoethane	14.70	107	1067268	205.9412 ug/L	100
69)	1-Chlorohexane	14.86	91	1899241	196.7097 ug/L	91
70)	Chlorobenzene	15.31	112	3420251	183.8172 ug/L	87
71)	1,1,1,2-Tetrachloroethane	15.35	131	1330581	200.9750 ug/L	97
72)	Ethylbenzene	15.35	106	1873240	192.3394 ug/L	99
73)	m-,p-Xylene	15.46	106	4310843	366.2377 ug/L	95
74)	o-Xylene	16.11	106	2276447	193.9154 ug/L	96
75)	Styrene	16.16	104	3942983	199.6439 ug/L	88
76)	Bromoform	16.72	173	900340	222.7294 ug/L	97
77)	Isopropylbenzene	16.62	105	5752842	187.8178 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.88	83	1421698	215.4425 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	415115	212.1790 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	17.19	53	555836	222.7847 ug/L	92
83)	n-Propylbenzene	17.22	91	7011461	179.4705 ug/L	99
84)	Bromobenzene	17.34	156	1573131	192.7133 ug/L	88
85)	1,3,5-Trimethylbenzene	17.45	105	5208297	190.2034 ug/L	98
86)	2-Chlorotoluene	17.52	91	4893039	185.1943 ug/L	96
87)	4-Chlorotoluene	17.58	91	4739568	188.1643 ug/L	97
88)	a-Methylstyrene	17.92	118	2750894	199.7372 ug/L	94
89)	tert-Butylbenzene	17.99	134	1070344	194.5543 ug/L	74
90)	1,2,4-Trimethylbenzene	18.05	105	5338361	189.9838 ug/L	98
91)	sec-Butylbenzene	18.31	105	6128752	186.9735 ug/L	99
92)	p-Isopropyltoluene	18.50	119	5274399	188.8129 ug/L	100
93)	1,3-Dichlorobenzene	18.70	146	3017581	187.8153 ug/L	92
94)	1,4-Dichlorobenzene	18.86	146	3009321	185.2589 ug/L	92
95)	n-Butylbenzene	19.13	91	5193206	189.5718 ug/L	98
96)	1,2-Dichlorobenzene	19.43	146	2821487	187.0461 ug/L	91
97)	1,2-Dibromo-3-Chloropropan	20.62	75	291664	225.6764 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	2052522	192.4961 ug/L	98
99)	Hexachlorobutadiene	22.16	225	860118	194.0178 ug/L	100
100)	Naphthalene	22.38	128	4383238	201.1498 ug/L	99
101)	1,2,3-Trichlorobenzene	22.76	180	1893203	191.7570 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140322.D 8260WTR.M Fri Jul 01 14:22:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

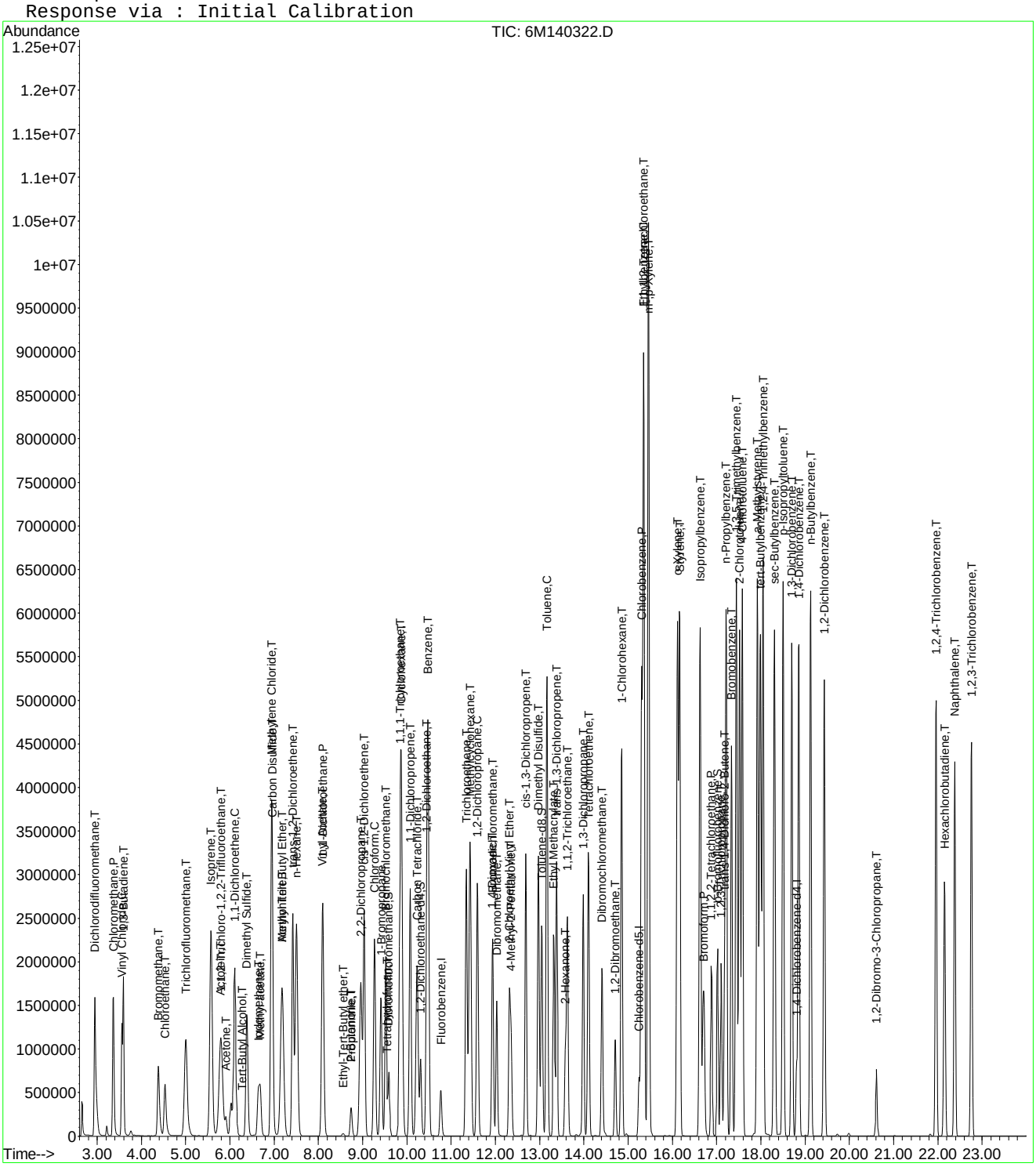

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:07 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	768752	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	513418	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	277427	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	1128188	144.6508 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 578.60%#		
43) 1,2-Dichloroethane-d4	10.31	65	1400537	142.2465 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 569.00%#		
58) Toluene-d8	13.04	98	3666921	145.0395 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 580.16%#		
80) p-Bromofluorobenzene	17.03	95	1580313	145.4490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 581.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.94	85	3603130	280.3824 ug/L	99
3) Chloromethane	3.36	50	3514669	244.9674 ug/L	99
4) Vinyl Chloride	3.56	62	2074164	263.2526 ug/L	98
5) 1,3-Butadiene	3.59	54	1213545	279.8694 ug/L	97
6) Bromomethane	4.37	94	1474577	281.6365 ug/L	100
7) Chloroethane	4.53	64	1490836	299.4574 ug/L	96
8) Trichlorofluoromethane	5.00	101	3451196	287.1972 ug/L	99
9) Diethyl ether	5.55	59	1755505	247.5940 ug/L	97
10) Isoprene	5.57	67	2862617	266.9137 ug/L	94
11) Acrolein	5.79	56	179556	152.2492 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	2228863	298.1095 ug/L	97
13) Acetone	5.91	43	694471	281.9693 ug/L	98
14) 1,1-Dichloroethene	6.10	61	4231203	291.6778 ug/L	94
15) Tert-Butyl Alcohol	6.29	59	515078	683.9134 ug/L	92
16) Dimethyl Sulfide	6.39	62	1850710	292.5220 ug/L	96
17) Iodomethane	6.64	142	1511597	283.4374 ug/L	92
18) Methyl acetate	6.69	43	1992359	298.9430 ug/L	99
19) Methylene Chloride	6.94	84	2215285	266.3004 ug/L	89
20) Carbon Disulfide	6.96	76	7083320	266.4739 ug/L	98
21) Acrylonitrile	7.15	53	497546	162.7001 ug/L	96
22) Methyl Tert Butyl Ether	7.18	73	6401984	290.3361 ug/L	98
23) trans-1,2-Dichloroethene	7.42	96	2224367	286.3050 ug/L	87
24) n-Hexane	7.50	57	3799046	288.1194 ug/L	96
25) Diisopropyl ether	7.90	45	9759184	274.9849 ug/L	99
26) Vinyl Acetate	8.09	43	4448993	300.2991 ug/L	99
27) 1,1-Dichloroethane	8.10	63	4699381	280.9398 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	8098177	283.6338 ug/L	99
29) 2-Butanone	8.73	43	1086721	288.2380 ug/L	98
30) Propionitrile	8.86	54	298217	291.4641 ug/L	98
31) 2,2-Dichloropropane	8.95	77	3622985	287.0872 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	2417494	284.2622 ug/L	71
33) Chloroform	9.26	83	4185224	279.2874 ug/L	99
34) 1-Bromopropane	9.41	122	399109	294.5307 ug/L	100
35) Bromochloromethane	9.52	130	1339573	293.1163 ug/L	99
36) Tetrahydrofuran	9.56	42	723977	275.3063 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3817009	292.5710 ug/L	97
39) Cyclohexane	9.88	56	4836948	284.9676 ug/L	96
40) 1,1-Dichloropropene	10.07	75	3335607	293.5361 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	6187488	285.3971 ug/L	98
42) Carbon Tetrachloride	10.23	117	3426898	319.8971 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140323.D 8260WTR.M Fri Jul 01 14:22:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:07 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	3436626	286.0301 ug/L	99
46)	Benzene	10.48	78	8206846	255.8911 ug/L	92
47)	Trichloroethene	11.34	130	2157856	272.6623 ug/L	85
48)	Methylcyclohexane	11.43	83	3572510	287.5366 ug/L	94
49)	1,2-Dichloropropane	11.59	63	2654885	287.4504 ug/L	98
50)	1,4-Dioxane	11.94	88	37500	599.7769 ug/L	90
51)	Bromodichloromethane	11.93	83	3309122	296.9343 ug/L	99
52)	Dibromomethane	12.02	93	1336996	299.1959 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	1349189	291.3572 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	816641	286.5491 ug/L	98
55)	cis-1,3-Dichloropropene	12.69	75	3726475	288.0131 ug/L	98
56)	Dimethyl Disulfide	12.97	79	2153813	299.0355 ug/L	97
59)	Toluene	13.16	91	7972275	260.5398 ug/L	94
60)	Ethyl Methacrylate	13.32	69	2708040	311.0642 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	3319850	305.1184 ug/L	96
63)	1,1,2-Trichloroethane	13.62	97	1658699	292.9155 ug/L	98
64)	2-Hexanone	13.58	43	1609874	299.4219 ug/L	99
65)	1,3-Dichloropropane	13.99	76	3035134	284.3902 ug/L	93
66)	Tetrachloroethene	14.10	166	2112313	289.6805 ug/L	90
67)	Dibromochloromethane	14.41	129	2168054	315.3397 ug/L	99
68)	1,2-Dibromoethane	14.71	107	1650327	301.9297 ug/L	99
69)	1-Chlorohexane	14.85	91	2920904	286.8330 ug/L	90
70)	Chlorobenzene	15.30	112	5078928	258.8012 ug/L	85
71)	1,1,1,2-Tetrachloroethane	15.35	131	1989897	284.9688 ug/L	97
72)	Ethylbenzene	15.35	106	2784005	271.0260 ug/L	89
73)	m-,p-Xylene	15.46	106	6169523	496.9567 ug/L	82
74)	o-Xylene	16.12	106	3353804	270.8685 ug/L	99
75)	Styrene	16.16	104	5692194	273.2606 ug/L	85
76)	Bromoform	16.71	173	1364903	320.1393 ug/L	96
77)	Isopropylbenzene	16.63	105	8032217	248.6314 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.88	83	2127089	315.9149 ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	617415	309.2940 ug/L	88
82)	trans-1,4-Dichloro-2-Buten	17.18	53	846450	332.5067 ug/L	93
83)	n-Propylbenzene	17.22	91	9328034	234.0103 ug/L	95
84)	Bromobenzene	17.34	156	2312758	277.6754 ug/L	88
85)	1,3,5-Trimethylbenzene	17.45	105	7210752	258.0855 ug/L	99
86)	2-Chlorotoluene	17.53	91	7014220	260.1890 ug/L	97
87)	4-Chlorotoluene	17.59	91	6424073	249.9594 ug/L	98
88)	a-Methylstyrene	17.92	118	3960625	281.8443 ug/L	93
89)	tert-Butylbenzene	18.00	134	1565290	278.8513 ug/L	79
90)	1,2,4-Trimethylbenzene	18.06	105	7348747	256.3200 ug/L	97
91)	sec-Butylbenzene	18.31	105	8392860	250.9449 ug/L	98
92)	p-Isopropyltoluene	18.51	119	7284847	255.5874 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	4306096	262.6735 ug/L	90
94)	1,4-Dichlorobenzene	18.85	146	4284929	258.5323 ug/L	90
95)	n-Butylbenzene	19.12	91	7177388	256.7823 ug/L	99
96)	1,2-Dichlorobenzene	19.44	146	4035185	262.1770 ug/L	90
97)	1,2-Dibromo-3-Chloropropan	20.61	75	433780	328.9526 ug/L	84
98)	1,2,4-Trichlorobenzene	21.97	180	2937231	269.9807 ug/L	97
99)	Hexachlorobutadiene	22.15	225	1256182	277.7132 ug/L	99
100)	Naphthalene	22.39	128	6036194	271.4865 ug/L	97
101)	1,2,3-Trichlorobenzene	22.76	180	2707781	268.7993 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140323.D 8260WTR.M Fri Jul 01 14:22:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

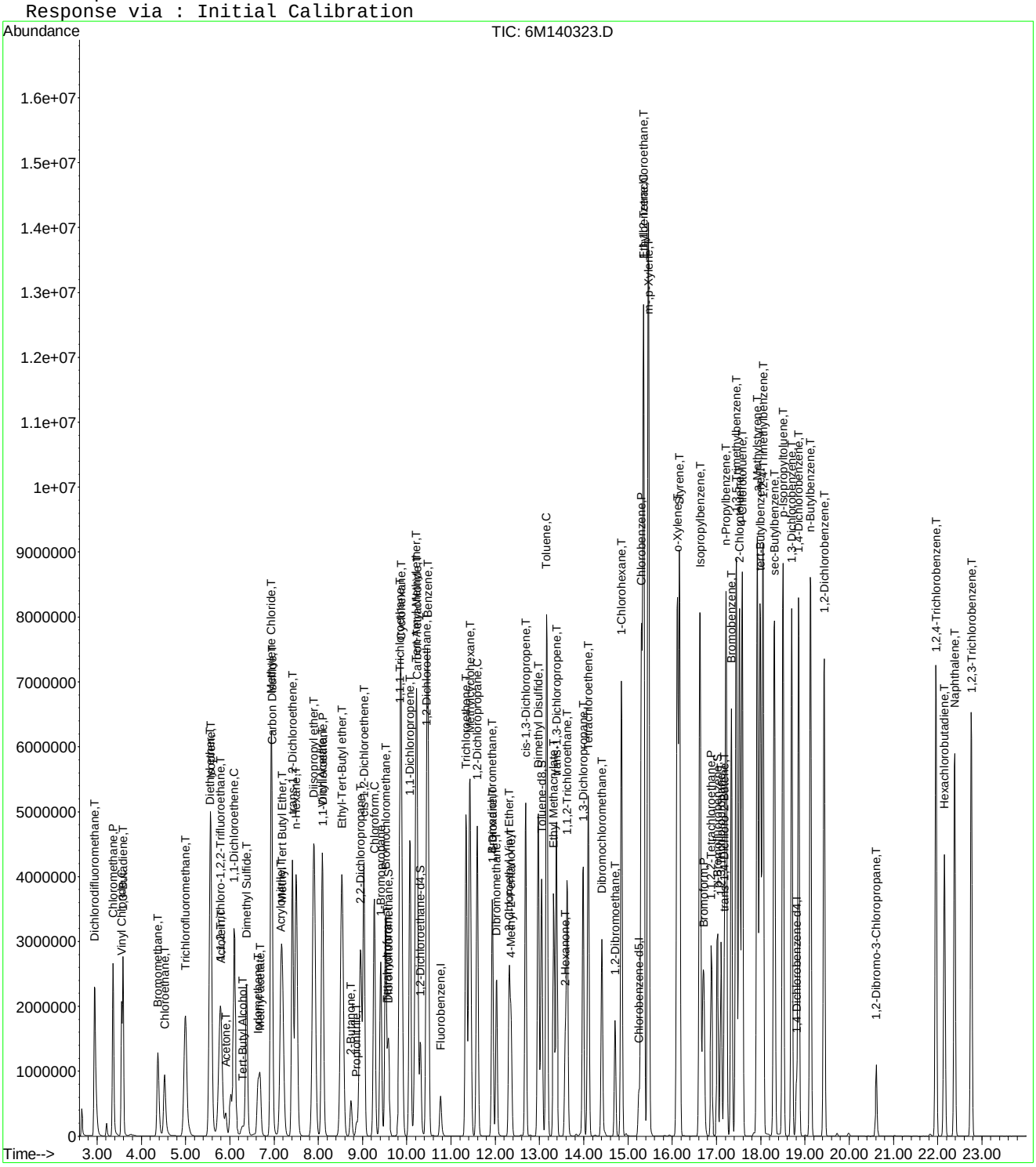

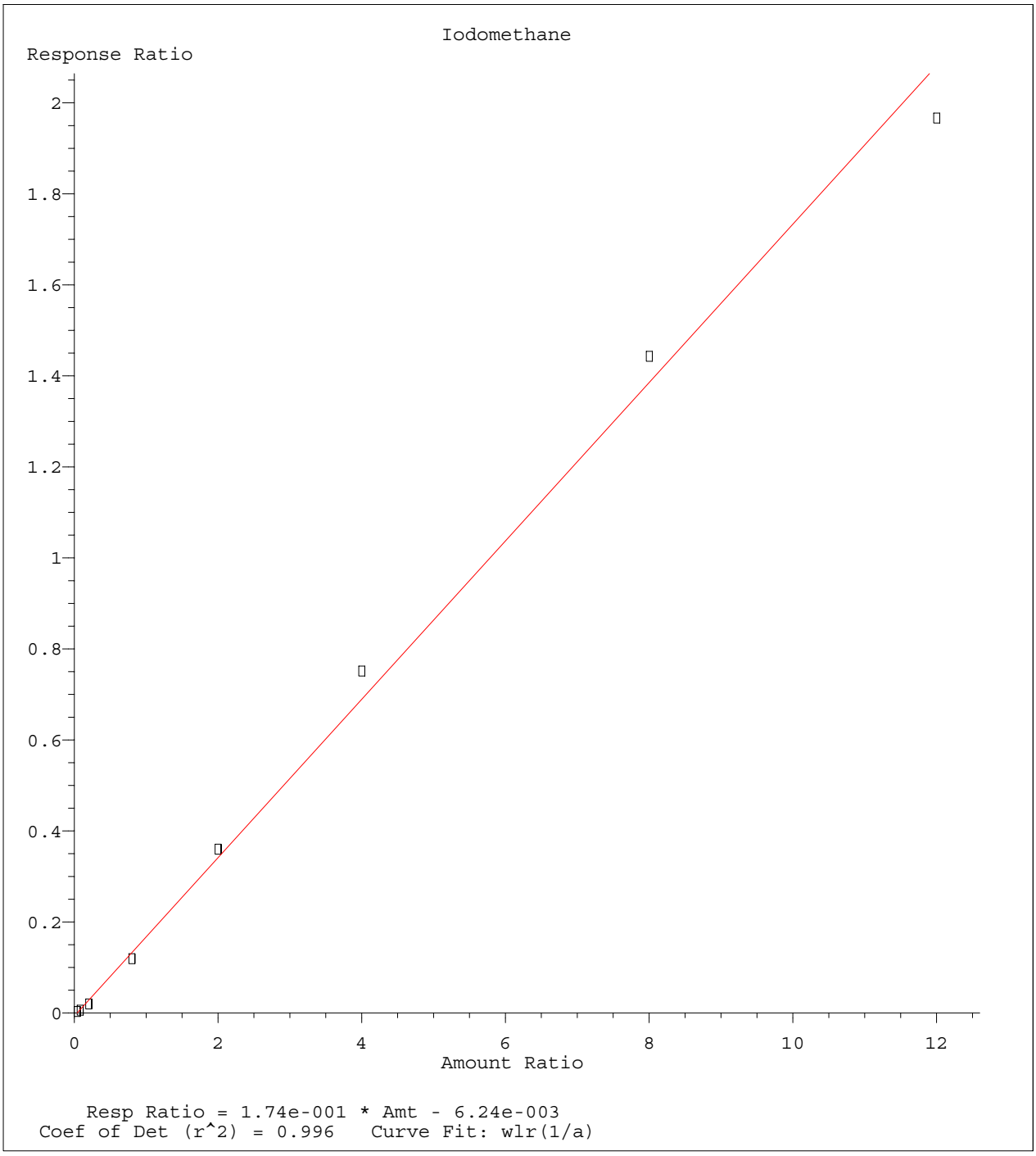

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

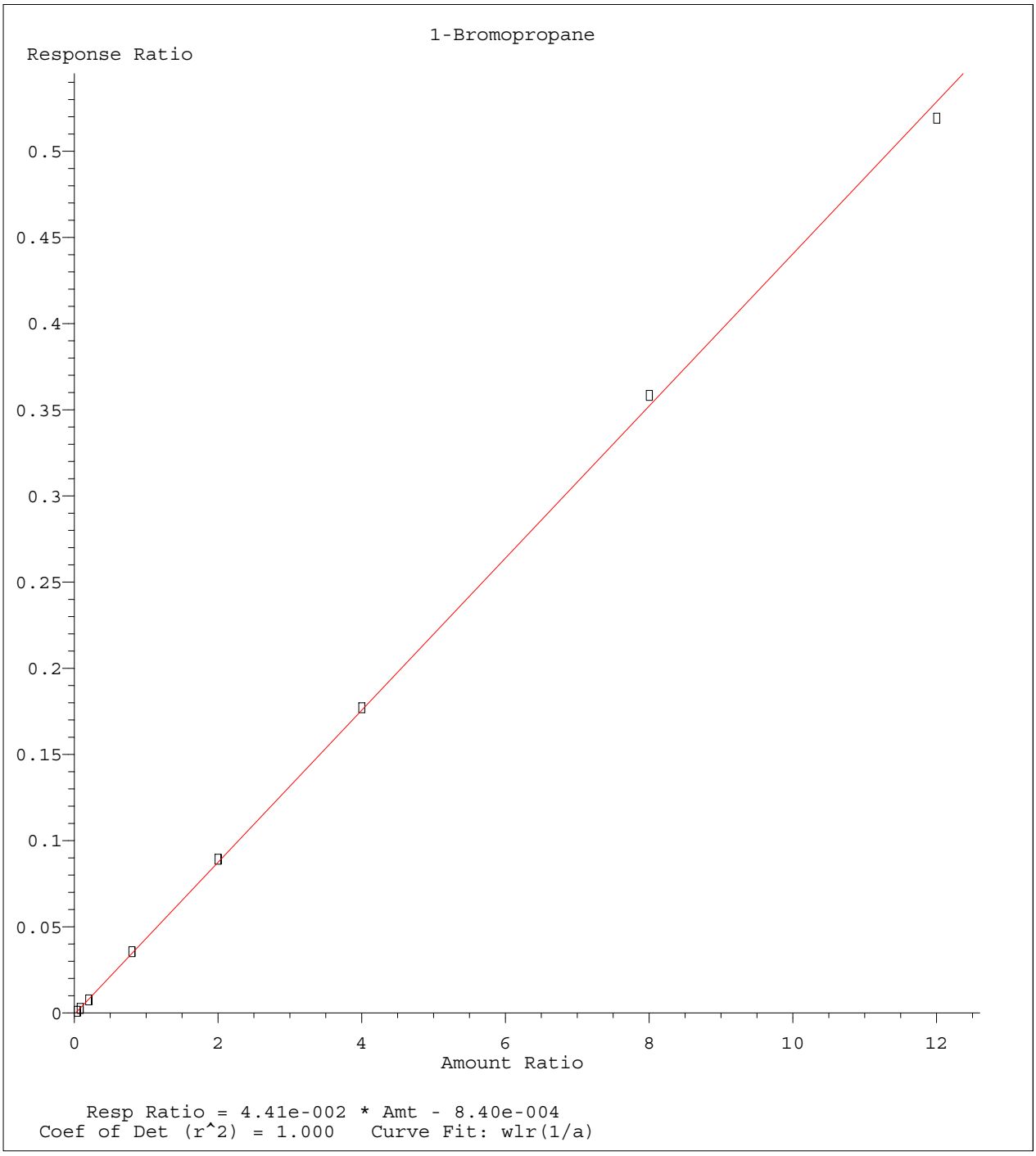

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

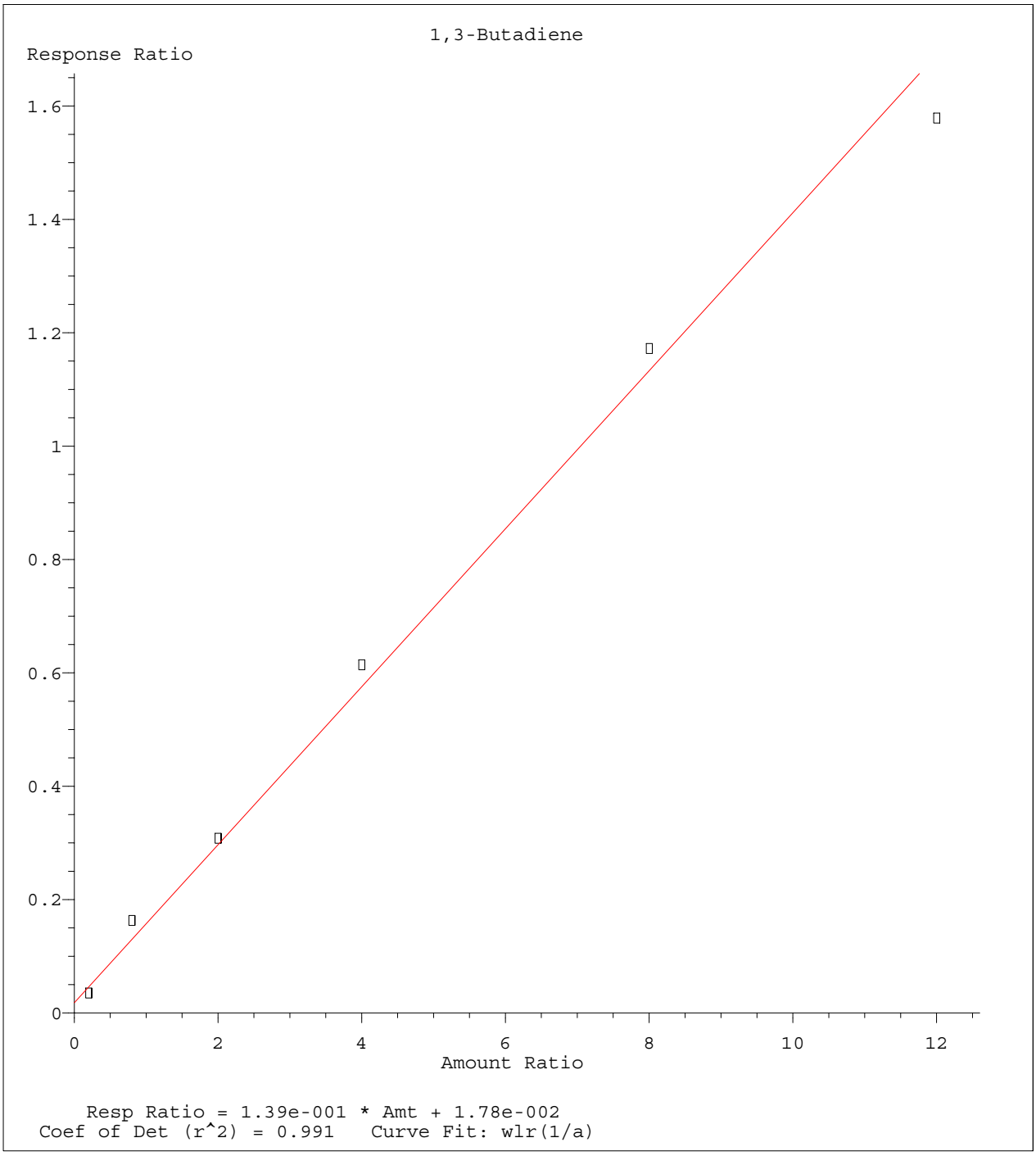

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:31 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	713701	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	500221	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	261664	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	181470	25.0619 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.24%		
43) 1,2-Dichloroethane-d4	10.31	65	220889	24.1652 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.68%		
58) Toluene-d8	13.04	98	608395	24.6990 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.80%		
80) p-Bromofluorobenzene	17.02	95	256905	25.0695 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	485701	40.7108 ug/L	100
3) Chloromethane	3.37	50	521316	39.1377 ug/L	100
4) Vinyl Chloride	3.55	62	337528	46.1434 ug/L	100
5) 1,3-Butadiene	3.60	54	155736	35.9374 ug/L	97
6) Bromomethane	4.37	94	235295	48.4066 ug/L	100
7) Chloroethane	4.52	64	239156	51.7436 ug/L	97
8) Trichlorofluoromethane	4.99	101	525851	47.1350 ug/L	100
9) Diethyl ether	5.56	59	680169	103.3296 ug/L	97
10) Isoprene	5.57	67	555397	55.7803 ug/L	96
11) Acrolein	5.79	56	131596	120.1899 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	356202	51.3167 ug/L	97
13) Acetone	5.91	43	107340	46.9439 ug/L	98
14) 1,1-Dichloroethene	6.11	61	594692	44.1572 ug/L	95
15) Tert-Butyl Alcohol	6.28	59	140341	200.7163 ug/L	98
16) Dimethyl Sulfide	6.38	62	515949	87.8409 ug/L	96
17) Iodomethane	6.64	142	294876	60.2646 ug/L	92
18) Methyl acetate	6.69	43	338698	54.7398 ug/L	99
19) Methylene Chloride	6.93	84	359823	46.5909 ug/L	90
20) Carbon Disulfide	6.95	76	1077126	43.6470 ug/L	100
21) Acrylonitrile	7.15	53	146978	51.7699 ug/L	100
22) Methyl Tert Butyl Ether	7.18	73	1049922	51.2877 ug/L	100
23) trans-1,2-Dichloroethene	7.41	96	339388	47.0532 ug/L	88
24) n-Hexane	7.51	57	547762	44.7466 ug/L	97
25) Diisopropyl ether	7.90	45	3459050	104.9838 ug/L	98
26) Vinyl Acetate	8.09	43	697771	50.7312 ug/L	98
27) 1,1-Dichloroethane	8.10	63	721539	46.4625 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2578321	97.2697 ug/L	98
29) 2-Butanone	8.73	43	177594	50.7378 ug/L	96
30) Propionitrile	8.85	54	95623	100.6665 ug/L	96
31) 2,2-Dichloropropane	8.96	77	593953	50.6955 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	392808	49.7512 ug/L	72
33) Chloroform	9.26	83	665890	47.8636 ug/L	100
34) 1-Bromopropane	9.41	122	83509	66.7495 ug/L	100
35) Bromochloromethane	9.52	130	207412	48.8852 ug/L	100
36) Tetrahydrofuran	9.56	42	224799	92.0780 ug/L	95
38) 1,1,1-Trichloroethane	9.85	97	598191	49.3876 ug/L	99
39) Cyclohexane	9.88	56	748359	47.4902 ug/L	96
40) 1,1-Dichloropropene	10.08	75	507584	48.1132 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	2097011	104.1851 ug/L	98
42) Carbon Tetrachloride	10.23	117	511641	51.4451 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140326.D 8260WTR.M Fri Jul 01 14:22:35 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:31 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	551012	49.3981 ug/L	98
46)	Benzene	10.48	78	1452601	48.7860 ug/L	97
47)	Trichloroethene	11.35	130	359806	48.9712 ug/L	90
48)	Methylcyclohexane	11.43	83	563704	48.8698 ug/L	95
49)	1,2-Dichloropropane	11.59	63	446228	52.0408 ug/L	99
50)	1,4-Dioxane	11.94	88	11529	198.6187 ug/L	84
51)	Bromodichloromethane	11.94	83	530754	51.2992 ug/L	100
52)	Dibromomethane	12.03	93	203238	48.9892 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	227435	52.9030 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	134103	50.6846 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	676117	56.2867 ug/L	100
56)	Dimethyl Disulfide	12.97	79	359470	53.7585 ug/L	98
59)	Toluene	13.15	91	1496307	50.1905 ug/L	99
60)	Ethyl Methacrylate	13.32	69	454272	53.5575 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	565632	53.3572 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	287265	52.0675 ug/L	98
64)	2-Hexanone	13.58	43	260461	49.7214 ug/L	97
65)	1,3-Dichloropropane	13.99	76	552828	53.1662 ug/L	94
66)	Tetrachloroethene	14.10	166	346278	48.7411 ug/L	93
67)	Dibromochloromethane	14.41	129	360309	53.7889 ug/L	99
68)	1,2-Dibromoethane	14.71	107	279233	52.4339 ug/L	100
69)	1-Chlorohexane	14.85	91	508330	51.2350 ug/L	92
70)	Chlorobenzene	15.30	112	974362	50.9593 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	357715	52.5791 ug/L	98
72)	Ethylbenzene	15.35	106	517345	51.6928 ug/L	93
73)	m-,p-Xylene	15.46	106	1254856	103.7457 ug/L	95
74)	o-Xylene	16.11	106	643998	53.3844 ug/L	94
75)	Styrene	16.16	104	1074202	52.9288 ug/L	92
76)	Bromoform	16.72	173	205149	49.3874 ug/L	98
77)	Isopropylbenzene	16.62	105	1626117	51.6632 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	352344	55.4825 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	103329	54.8809 ug/L	79
82)	trans-1,4-Dichloro-2-Buten	17.18	53	121642	50.6626 ug/L	96
83)	n-Propylbenzene	17.22	91	2019179	53.7062 ug/L	98
84)	Bromobenzene	17.34	156	398353	50.7084 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	1384872	52.5530 ug/L	97
86)	2-Chlorotoluene	17.52	91	1343673	52.8455 ug/L	96
87)	4-Chlorotoluene	17.58	91	1234147	50.9132 ug/L	97
88)	a-Methylstyrene	17.92	118	769488	58.0567 ug/L	95
89)	tert-Butylbenzene	17.98	134	281622	53.1924 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	1394233	51.5596 ug/L	98
91)	sec-Butylbenzene	18.30	105	1658086	52.5630 ug/L	97
92)	p-Isopropyltoluene	18.50	119	1389218	51.6766 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	793356	51.3104 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	809665	51.7942 ug/L	94
95)	n-Butylbenzene	19.12	91	1353617	51.3451 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	761556	52.4611 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.62	75	69221	55.6553 ug/L	83
98)	1,2,4-Trichlorobenzene	21.97	180	527905	51.4464 ug/L	99
99)	Hexachlorobutadiene	22.15	225	224309	52.5770 ug/L	99
100)	Naphthalene	22.38	128	1033625	49.2893 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	485666	51.1160 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

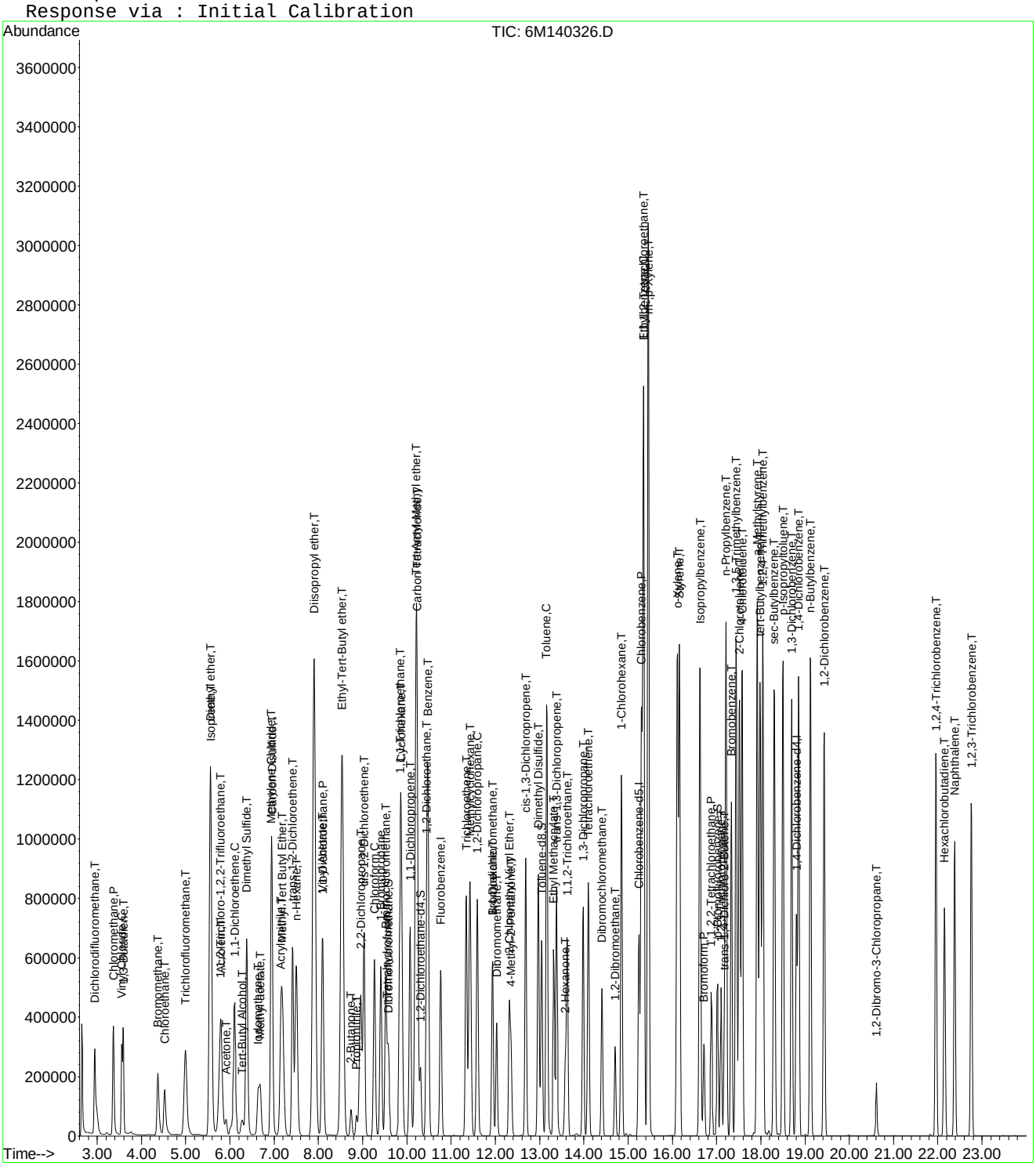

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	40.7108	18.6	83	0.00
3	P	Chloromethane	50.0000	39.1377	21.7#	85	0.00
4	C	Vinyl Chloride	50.0000	46.1434	7.7	97	0.00
5	T	1,3-Butadiene	50.0000	35.9374	28.1#	76	0.00
6	T	Bromomethane	50.0000	48.4066	3.2	110	0.00
7	T	Chloroethane	50.0000	51.7436	-3.5	111	0.00
8	T	Trichlorofluoromethane	50.0000	47.1350	5.7	106	0.00
9	T	Diethyl ether	100.0000	103.3296	-3.3	108	0.00
10	T	Isoprene	50.0000	55.7803	-11.6	117	0.00
11	T	Acrolein	50.0000	120.1899	-140.4#	262	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3167	-2.6	112	0.00
13	T	Acetone	50.0000	46.9439	6.1	101	0.00
14	C	1,1-Dichloroethene	50.0000	44.1572	11.7	95	0.00
15	T	Tert-Butyl Alcohol	200.0000	200.7163	-0.4	109	-0.01
16	T	Dimethyl Sulfide	50.0000	87.8409	-75.7#	187	0.00
17	T	Iodomethane	50.0000	60.2646	-20.5#	123	0.00
18	T	Methyl acetate	50.0000	54.7398	-9.5	119	0.00
19	T	Methylene Chloride	50.0000	46.5909	6.8	104	0.00
20	T	Carbon Disulfide	50.0000	43.6470	12.7	93	0.00
21	T	Acrylonitrile	50.0000	51.7698	-3.5	108	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.2877	-2.6	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	47.0532	5.9	102	0.00
24	T	n-Hexane	50.0000	44.7466	10.5	97	0.00
25	T	Diisopropyl ether	100.0000	104.9838	-5.0	113	0.00
26	T	Vinyl Acetate	50.0000	50.7312	-1.5	108	0.00
27	P	1,1-Dichloroethane	50.0000	46.4625	7.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	97.2697	2.7	104	0.00
29	T	2-Butanone	50.0000	50.7378	-1.5	106	0.00
30	T	Propionitrile	100.0000	100.6665	-0.7	106	0.00
31	T	2,2-Dichloropropane	50.0000	50.6955	-1.4	111	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.7512	0.5	107	0.00
33	C	Chloroform	50.0000	47.8636	4.3	105	0.00
34		1-Bromopropane	50.0000	66.7495	-33.5#	141	0.00
35	T	Bromochloromethane	50.0000	48.8852	2.2	102	0.00
36	T	Tetrahydrofuran	100.0000	92.0780	7.9	104	0.00
37	S	Dibromofluoromethane	25.0000	25.0619	-0.2	106	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.3876	1.2	104	0.00
39	T	Cyclohexane	50.0000	47.4902	5.0	103	0.00
40	T	1,1-Dichloropropene	50.0000	48.1132	3.8	104	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	104.1851	-4.2	111	0.00
42	T	Carbon Tetrachloride	50.0000	51.4451	-2.9	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.1652	3.3	104	0.00
44		Heptane	-1.0000	0.0000	0.0	111	0.00
45	T	1,2-Dichloroethane	50.0000	49.3981	1.2	105	0.00
46	T	Benzene	50.0000	48.7860	2.4	105	0.00
47	T	Trichloroethene	50.0000	48.9712	2.1	105	0.00
48	T	Methylcyclohexane	50.0000	48.8698	2.3	106	0.00
49	C	1,2-Dichloropropane	50.0000	52.0408	-4.1	111	0.00
50	T	1,4-Dioxane	200.0000	198.6187	0.7	102	0.00
51	T	Bromodichloromethane	50.0000	51.2992	-2.6	106	0.00
52	T	Dibromomethane	50.0000	48.9892	2.0	101	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.9030	-5.8	106	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.6846	-1.4	106	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.2867	-12.6	117	0.00
56	T	Dimethyl Disulfide	50.0000	53.7585	-7.5	112	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
58	S	Toluene-d8	25.0000	24.6990	1.2	104	0.00
59	C	Toluene	50.0000	50.1905	-0.4	107	0.00
60	T	Ethyl Methacrylate	50.0000	53.5575	-7.1	108	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	107	0.00
62	T	trans-1,3-Dichloropropene	50.0000	53.3572	-6.7	108	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.0675	-4.1	108	0.00
64	T	2-Hexanone	50.0000	49.7214	0.6	101	0.00
65	T	1,3-Dichloropropane	50.0000	53.1662	-6.3	112	0.00
66	T	Tetrachloroethene	50.0000	48.7411	2.5	103	0.00
67	T	Dibromochloromethane	50.0000	53.7889	-7.6	105	0.00
68	T	1,2-Dibromoethane	50.0000	52.4339	-4.9	107	0.00
69	T	1-Chlorohexane	50.0000	51.2350	-2.5	106	0.00
70	P	Chlorobenzene	50.0000	50.9593	-1.9	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.5791	-5.2	106	0.00
72	C	Ethylbenzene	50.0000	51.6928	-3.4	107	0.00
73	T	m-,p-Xylene	100.0000	103.7457	-3.7	108	0.00
74	T	o-Xylene	50.0000	53.3844	-6.8	109	0.00
75	T	Styrene	50.0000	52.9288	-5.9	106	0.00
76	P	Bromoform	50.0000	49.3873	1.2	98	0.00
77	T	Isopropylbenzene	50.0000	51.6632	-3.3	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	99	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.4825	-11.0	108	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0695	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	50.0000	54.8809	-9.8	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	50.6626	-1.3	94	0.00
83	T	n-Propylbenzene	50.0000	53.7062	-7.4	107	0.00
84	T	Bromobenzene	50.0000	50.7084	-1.4	102	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.5530	-5.1	104	-0.01
86	T	2-Chlorotoluene	50.0000	52.8455	-5.7	105	0.00
87	T	4-Chlorotoluene	50.0000	50.9132	-1.8	105	0.00
88	T	a-Methylstyrene	50.0000	58.0567	-16.1	111	0.00
89	T	tert-Butylbenzene	50.0000	53.1924	-6.4	106	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	51.5596	-3.1	101	-0.01
91	T	sec-Butylbenzene	50.0000	52.5630	-5.1	104	-0.01
92	T	p-Isopropyltoluene	50.0000	51.6766	-3.4	101	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.3104	-2.6	103	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7942	-3.6	105	0.00
95	T	n-Butylbenzene	50.0000	51.3451	-2.7	100	0.00
96	T	1,2-Dichlorobenzene	50.0000	52.4611	-4.9	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	55.6553	-11.3	107	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.4464	-2.9	102	0.00
99	T	Hexachlorobutadiene	50.0000	52.5770	-5.2	105	0.00
100	T	Naphthalene	50.0000	49.2893	1.4	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	51.1160	-2.2	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140326.D 8260WTR.M Fri Jul 01 14:37:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140330.D Vial: 3
Acq On : 1 Jul 2016 12:06 Operator: TMB
Sample : WG574938-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:43:49 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	678188	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	485516	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	260540	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	167819	24.3903 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.56%		
43) 1,2-Dichloroethane-d4	10.31	65	207479	23.8868 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.56%		
58) Toluene-d8	13.04	98	591717	24.7495 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.00%		
80) p-Bromofluorobenzene	17.02	95	254483	24.9403 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.76%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	617537	54.4716 ug/L	99
3) Chloromethane	3.36	50	599316	47.3496 ug/L	99
4) Vinyl Chloride	3.56	62	348549	50.1452 ug/L	99
5) 1,3-Butadiene	3.60	54	204683	50.9278 ug/L	96
6) Bromomethane	4.38	94	220148	47.6620 ug/L	99
7) Chloroethane	4.53	64	213472	48.6051 ug/L	96
8) Trichlorofluoromethane	5.00	101	639495	60.3231 ug/L	100
9) Diethyl ether	5.55	59	633340	101.2538 ug/L	97
10) Isoprene	5.57	67	496316	52.4568 ug/L	97
11) Acrolein	5.79	56	54373	52.2606 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	345309	52.3524 ug/L	97
13) Acetone	5.90	43	101386	46.6618 ug/L	99
14) 1,1-Dichloroethene	6.11	61	652800	51.0101 ug/L	95
15) Tert-Butyl Alcohol	6.25	59	126710	190.7108 ug/L	99
16) Dimethyl Sulfide	6.38	62	266921	47.8232 ug/L	96
17) Iodomethane	6.65	142	217547	46.9892 ug/L	94
18) Methyl acetate	6.69	43	289063	49.1643 ug/L	98
19) Methylene Chloride	6.93	84	362375	49.3784 ug/L	91
20) Carbon Disulfide	6.96	76	1192490	50.8521 ug/L	100
21) Acrylonitrile	7.15	53	135856	50.3581 ug/L	97
22) Methyl Tert Butyl Ether	7.18	73	992013	50.9965 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	350776	51.1786 ug/L	90
24) n-Hexane	7.51	57	624862	53.7178 ug/L	98
25) Diisopropyl ether	7.89	45	3078657	98.3315 ug/L	97
26) Vinyl Acetate	8.09	43	798262	61.0765 ug/L	98
27) 1,1-Dichloroethane	8.10	63	740774	50.1989 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2487759	98.7677 ug/L	98
29) 2-Butanone	8.73	43	166249	49.9837 ug/L	96
30) Propionitrile	8.85	54	90882	100.6854 ug/L	99
31) 2,2-Dichloropropane	8.96	77	613820	55.1346 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	382874	51.0324 ug/L	72
33) Chloroform	9.26	83	654061	49.4751 ug/L	100
34) 1-Bromopropane	9.42	122	60213	50.7639 ug/L	99
35) Bromochloromethane	9.52	130	211631	52.4915 ug/L	100
36) Tetrahydrofuran	9.56	42	219242	94.5042 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	590469	51.3028 ug/L	99
39) Cyclohexane	9.88	56	761787	50.8738 ug/L	96
40) 1,1-Dichloropropene	10.08	75	514472	51.3198 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1909015	99.8115 ug/L	98
42) Carbon Tetrachloride	10.23	117	520188	55.0434 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140330.D 8260WTR.M Fri Jul 01 14:43:53 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140330.D Vial: 3
Acq On : 1 Jul 2016 12:06 Operator: TMB
Sample : WG574938-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:43:49 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	532100	50.2006 ug/L	98
46)	Benzene	10.48	78	1422862	50.2896 ug/L	97
47)	Trichloroethene	11.35	130	342142	49.0055 ug/L	91
48)	Methylcyclohexane	11.43	83	571431	52.1338 ug/L	95
49)	1,2-Dichloropropane	11.59	63	415157	50.9525 ug/L	99
50)	1,4-Dioxane	11.94	88	10696	193.9171 ug/L	83
51)	Bromodichloromethane	11.94	83	514022	52.2836 ug/L	99
52)	Dibromomethane	12.03	93	207850	52.7244 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.32	63	214688	52.5529 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	128247	51.0095 ug/L	99
55)	cis-1,3-Dichloropropene	12.68	75	603789	52.8975 ug/L	99
56)	Dimethyl Disulfide	12.97	79	326551	51.3928 ug/L	98
59)	Toluene	13.15	91	1453970	50.2475 ug/L	100
60)	Ethyl Methacrylate	13.32	69	435341	52.8801 ug/L	97
62)	trans-1,3-Dichloropropene	13.39	75	546478	53.1117 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	277093	51.7449 ug/L	98
64)	2-Hexanone	13.58	43	257265	50.5988 ug/L	96
65)	1,3-Dichloropropane	13.99	76	506215	50.1579 ug/L	95
66)	Tetrachloroethene	14.10	166	353460	51.2588 ug/L	94
67)	Dibromochloromethane	14.41	129	351718	54.0967 ug/L	100
68)	1,2-Dibromoethane	14.71	107	270743	52.3794 ug/L	99
69)	1-Chlorohexane	14.85	91	498236	51.7386 ug/L	92
70)	Chlorobenzene	15.30	112	925560	49.8731 ug/L	91
71)	1,1,1,2-Tetrachloroethane	15.35	131	346661	52.4976 ug/L	98
72)	Ethylbenzene	15.35	106	501641	51.6418 ug/L	94
73)	m-,p-Xylene	15.46	106	1211716	103.2132 ug/L	95
74)	o-Xylene	16.11	106	608315	51.9537 ug/L	95
75)	Styrene	16.16	104	1040199	52.8058 ug/L	93
76)	Bromoform	16.72	173	215518	53.4550 ug/L	98
77)	Isopropylbenzene	16.62	105	1576267	51.5962 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	351215	55.5433 ug/L	98
81)	1,2,3-Trichloropropane	17.10	110	100447	53.5804 ug/L	82
82)	trans-1,4-Dichloro-2-Buten	17.18	53	133751	55.9462 ug/L	96
83)	n-Propylbenzene	17.22	91	1953988	52.1965 ug/L	98
84)	Bromobenzene	17.34	156	395949	50.6198 ug/L	88
85)	1,3,5-Trimethylbenzene	17.44	105	1370623	52.2366 ug/L	97
86)	2-Chlorotoluene	17.52	91	1307685	51.6520 ug/L	97
87)	4-Chlorotoluene	17.58	91	1189230	49.2719 ug/L	97
88)	a-Methylstyrene	17.92	118	694342	52.6130 ug/L	99
89)	tert-Butylbenzene	17.98	134	275815	52.3203 ug/L	72
90)	1,2,4-Trimethylbenzene	18.04	105	1413235	52.4877 ug/L	98
91)	sec-Butylbenzene	18.31	105	1651321	52.5744 ug/L	98
92)	p-Isopropyltoluene	18.50	119	1419478	53.0301 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	784875	50.9809 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	786033	50.4994 ug/L	95
95)	n-Butylbenzene	19.12	91	1393975	53.1041 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	731842	50.6317 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.62	75	68614	55.4052 ug/L	85
98)	1,2,4-Trichlorobenzene	21.97	180	524743	51.3589 ug/L	99
99)	Hexachlorobutadiene	22.15	225	220984	52.0211 ug/L	99
100)	Naphthalene	22.38	128	1136742	54.4404 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	483245	51.0806 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140330.D Vial: 3
Acq On : 1 Jul 2016 12:06 Operator: TMB
Sample : WG574938-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:43 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

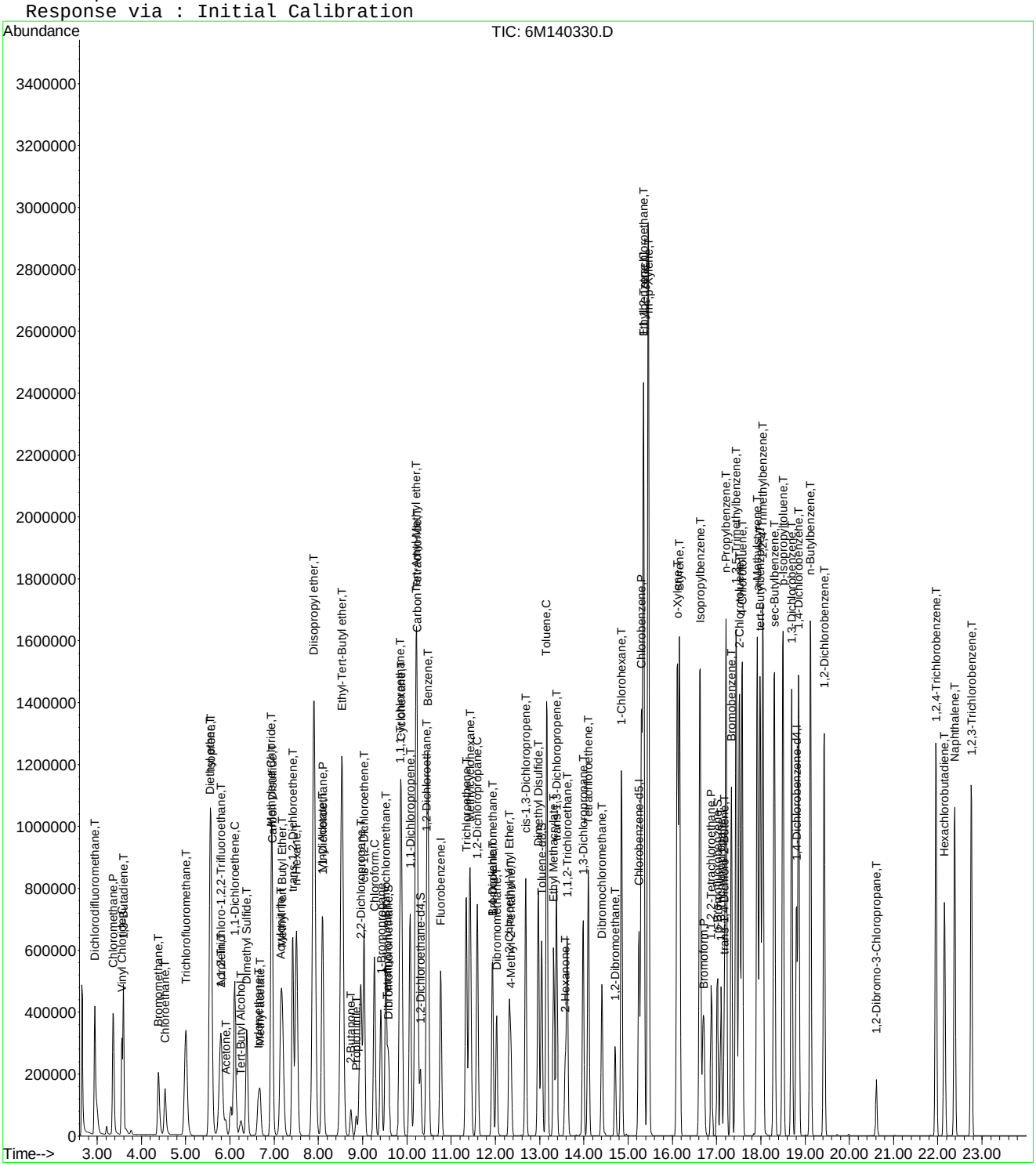

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140330.D Vial: 3
Acq On : 1 Jul 2016 12:06 Operator: TMB
Sample : WG574938-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	102	0.00
2	T	Dichlorodifluoromethane	0.4179	0.4553	-8.9	106	0.00
3	P	Chloromethane	0.4666	0.4419	5.3	97	0.00
4	C	Vinyl Chloride	0.2562	0.2570	-0.3	101	0.00
5	T	1,3-Butadiene	0.1608	0.1509	6.2	100	0.00
6	T	Bromomethane	0.1703	0.1623	4.7	103	0.00
7	T	Chloroethane	0.1619	0.1574	2.8	99	0.00
8	T	Trichlorofluoromethane	0.3908	0.4715	-20.6#	129	0.00
9	T	Diethyl ether	0.2306	0.2335	-1.3	100	0.00
10	T	Isoprene	0.3488	0.3659	-4.9	104	0.00
11	T	Acrolein	0.0384	0.0401	-4.5	108	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2431	0.2546	-4.7	109	0.00
13	T	Acetone	0.0801	0.0747	6.7	96	0.00
14	C	1,1-Dichloroethene	0.4718	0.4813	-2.0	105	0.00
15	T	Tert-Butyl Alcohol	0.0245	0.0233	4.7	98	-0.04
16	T	Dimethyl Sulfide	0.2057	0.1968	4.4	97	0.00
17	T	Iodomethane	0.1391	0.1604	-15.3	91	0.00
18	T	Methyl acetate	0.2167	0.2131	1.7	101	0.00
19	T	Methylene Chloride	0.2705	0.2672	1.2	104	0.00
20	T	Carbon Disulfide	0.8644	0.8792	-1.7	103	0.00
21	T	Acrylonitrile	0.0994	0.1002	-0.7	100	0.00
22	T	Methyl Tert Butyl Ether	0.7171	0.7314	-2.0	104	0.00
23	T	trans-1,2-Dichloroethene	0.2527	0.2586	-2.4	105	0.00
24	T	n-Hexane	0.4288	0.4607	-7.4	111	0.00
25	T	Diisopropyl ether	1.1541	1.1349	1.7	100	0.00
26	T	Vinyl Acetate	0.4818	0.5885	-22.2#	123	0.00
27	P	1,1-Dichloroethane	0.5440	0.5461	-0.4	103	0.00
28	T	Ethyl-Tert-Butyl ether	0.9285	0.9171	1.2	101	0.00
29	T	2-Butanone	0.1226	0.1226	0.0	100	0.00
30	T	Propionitrile	0.0333	0.0335	-0.7	101	0.00
31	T	2,2-Dichloropropane	0.4104	0.4525	-10.3	115	0.00
32	T	cis-1,2-Dichloroethene	0.2766	0.2823	-2.1	104	0.00
33	C	Chloroform	0.4873	0.4822	1.1	103	0.00
34		1-Bromopropane	0.0394	0.0444	-12.6	101	0.00
35	T	Bromochloromethane	0.1486	0.1560	-5.0	104	0.00
36	T	Tetrahydrofuran	0.0855	0.0808	5.5	101	0.00
37	S	Dibromofluoromethane	0.2536	0.2475	2.4	98	0.00
38	T	1,1,1-Trichloroethane	0.4243	0.4353	-2.6	103	0.00
39	T	Cyclohexane	0.5520	0.5616	-1.7	105	0.00
40	T	1,1-Dichloropropene	0.3695	0.3793	-2.6	105	0.00
41	T	Tert-Amyl-Methyl ether	0.7050	0.7037	0.2	101	0.00
42	T	Carbon Tetrachloride	0.3484	0.3835	-10.1	104	0.00
43	S	1,2-Dichloroethane-d4	0.3202	0.3059	4.5	98	0.00
44		Heptane	0.0000	0.0000	0.0	98	0.00
45	T	1,2-Dichloroethane	0.3907	0.3923	-0.4	102	0.00
46	T	Benzene	1.0430	1.0490	-0.6	103	0.00
47	T	Trichloroethene	0.2574	0.2522	2.0	100	0.00
48	T	Methylcyclohexane	0.4041	0.4213	-4.3	107	0.00
49	C	1,2-Dichloropropane	0.3004	0.3061	-1.9	103	0.00
50	T	1,4-Dioxane	0.0020	0.0020	3.0	95	0.00
51	T	Bromodichloromethane	0.3624	0.3790	-4.6	103	0.00
52	T	Dibromomethane	0.1453	0.1532	-5.5	104	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1506	0.1583	-5.1	100	0.00
54	T	4-Methyl-2-Pentanone	0.0927	0.0945	-2.0	101	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140330.D Vial: 3
Acq On : 1 Jul 2016 12:06 Operator: TMB
Sample : WG574938-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4208	0.4451	-5.8	105	0.00
56	T	Dimethyl Disulfide	0.2342	0.2407	-2.8	101	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	102	0.00
58	S	Toluene-d8	1.2311	1.2187	1.0	101	0.00
59	C	Toluene	1.4900	1.4974	-0.5	104	0.00
60	T	Ethyl Methacrylate	0.4239	0.4483	-5.8	103	0.00
61		Paraldehyde	0.0000	0.0000	0.0	105	0.00
62	T	trans-1,3-Dichloropropene	0.5298	0.5628	-6.2	105	0.00
63	T	1,1,2-Trichloroethane	0.2757	0.2854	-3.5	104	0.00
64	T	2-Hexanone	0.2618	0.2649	-1.2	100	0.00
65	T	1,3-Dichloropropane	0.5197	0.5213	-0.3	102	0.00
66	T	Tetrachloroethene	0.3551	0.3640	-2.5	105	0.00
67	T	Dibromochloromethane	0.3348	0.3622	-8.2	102	0.00
68	T	1,2-Dibromoethane	0.2662	0.2788	-4.8	104	0.00
69	T	1-Chlorohexane	0.4959	0.5131	-3.5	104	0.00
70	P	Chlorobenzene	0.9556	0.9532	0.3	102	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3400	0.3570	-5.0	103	0.00
72	C	Ethylbenzene	0.5002	0.5166	-3.3	103	0.00
73	T	m-,p-Xylene	0.6045	0.6239	-3.2	104	0.00
74	T	o-Xylene	0.6029	0.6265	-3.9	103	0.00
75	T	Styrene	1.0143	1.0712	-5.6	102	0.00
76	P	Bromoform	0.2076	0.2220	-6.9	102	0.00
77	T	Isopropylbenzene	1.5731	1.6233	-3.2	103	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	98	0.00
79	P	1,1,2,2-Tetrachloroethane	0.6068	0.6740	-11.1	108	0.00
80	S	p-Bromofluorobenzene	0.9791	0.9768	0.2	99	0.00
81	T	1,2,3-Trichloropropane	0.1799	0.1928	-7.2	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2294	0.2567	-11.9	103	0.00
83	T	n-Propylbenzene	3.5921	3.7499	-4.4	104	0.00
84	T	Bromobenzene	0.7506	0.7599	-1.2	102	0.00
85	T	1,3,5-Trimethylbenzene	2.5177	2.6304	-4.5	103	-0.01
86	T	2-Chlorotoluene	2.4293	2.5096	-3.3	103	0.00
87	T	4-Chlorotoluene	2.3160	2.2822	1.5	102	0.00
88	T	a-Methylstyrene	1.2663	1.3325	-5.2	101	0.00
89	T	tert-Butylbenzene	0.5058	0.5293	-4.6	104	-0.01
90	T	1,2,4-Trimethylbenzene	2.5836	2.7121	-5.0	102	-0.01
91	T	sec-Butylbenzene	3.0139	3.1690	-5.1	103	0.00
92	T	p-Isopropyltoluene	2.5685	2.7241	-6.1	103	0.00
93	T	1,3-Dichlorobenzene	1.4773	1.5063	-2.0	102	0.00
94	T	1,4-Dichlorobenzene	1.4935	1.5085	-1.0	102	0.00
95	T	n-Butylbenzene	2.5188	2.6752	-6.2	103	0.00
96	T	1,2-Dichlorobenzene	1.3869	1.4045	-1.3	101	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1188	0.1317	-10.8	106	0.00
98	T	1,2,4-Trichlorobenzene	0.9804	1.0070	-2.7	102	0.00
99	T	Hexachlorobutadiene	0.4076	0.4241	-4.0	104	0.00
100	T	Naphthalene	2.0036	2.1815	-8.9	101	0.00
101	T	1,2,3-Trichlorobenzene	0.9078	0.9274	-2.2	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140330.D 8260WTR.M Fri Jul 01 14:44:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140330.D Vial: 3
Acq On : 1 Jul 2016 12:06 Operator: TMB
Sample : WG574938-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	102	0.00
2	T	Dichlorodifluoromethane	50.0000	54.4716	-8.9	106	0.00
3	P	Chloromethane	50.0000	47.3496	5.3	97	0.00
4	C	Vinyl Chloride	50.0000	50.1452	-0.3	101	0.00
5	T	1,3-Butadiene	50.0000	50.9278	-1.9	100	0.00
6	T	Bromomethane	50.0000	47.6620	4.7	103	0.00
7	T	Chloroethane	50.0000	48.6051	2.8	99	0.00
8	T	Trichlorofluoromethane	50.0000	60.3231	-20.6#	129	0.00
9	T	Diethyl ether	100.0000	101.2538	-1.3	100	0.00
10	T	Isoprene	50.0000	52.4568	-4.9	104	0.00
11	T	Acrolein	50.0000	52.2606	-4.5	108	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.3524	-4.7	109	0.00
13	T	Acetone	50.0000	46.6619	6.7	96	0.00
14	C	1,1-Dichloroethene	50.0000	51.0101	-2.0	105	0.00
15	T	Tert-Butyl Alcohol	200.0000	190.7108	4.6	98	-0.04
16	T	Dimethyl Sulfide	50.0000	47.8233	4.4	97	0.00
17	T	Iodomethane	50.0000	46.9892	6.0	91	0.00
18	T	Methyl acetate	50.0000	49.1643	1.7	101	0.00
19	T	Methylene Chloride	50.0000	49.3784	1.2	104	0.00
20	T	Carbon Disulfide	50.0000	50.8521	-1.7	103	0.00
21	T	Acrylonitrile	50.0000	50.3581	-0.7	100	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.9965	-2.0	104	0.00
23	T	trans-1,2-Dichloroethene	50.0000	51.1786	-2.4	105	0.00
24	T	n-Hexane	50.0000	53.7178	-7.4	111	0.00
25	T	Diisopropyl ether	100.0000	98.3315	1.7	100	0.00
26	T	Vinyl Acetate	50.0000	61.0765	-22.2#	123	0.00
27	P	1,1-Dichloroethane	50.0000	50.1989	-0.4	103	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.7677	1.2	101	0.00
29	T	2-Butanone	50.0000	49.9837	0.0	100	0.00
30	T	Propionitrile	100.0000	100.6854	-0.7	101	0.00
31	T	2,2-Dichloropropane	50.0000	55.1346	-10.3	115	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.0324	-2.1	104	0.00
33	C	Chloroform	50.0000	49.4751	1.0	103	0.00
34		1-Bromopropane	50.0000	50.7639	-1.5	101	0.00
35	T	Bromochloromethane	50.0000	52.4915	-5.0	104	0.00
36	T	Tetrahydrofuran	100.0000	94.5042	5.5	101	0.00
37	S	Dibromofluoromethane	25.0000	24.3903	2.4	98	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.3028	-2.6	103	0.00
39	T	Cyclohexane	50.0000	50.8738	-1.7	105	0.00
40	T	1,1-Dichloropropene	50.0000	51.3197	-2.6	105	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.8115	0.2	101	0.00
42	T	Carbon Tetrachloride	50.0000	55.0434	-10.1	104	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.8868	4.5	98	0.00
44		Heptane	-1.0000	0.0000	0.0	98	0.00
45	T	1,2-Dichloroethane	50.0000	50.2006	-0.4	102	0.00
46	T	Benzene	50.0000	50.2896	-0.6	103	0.00
47	T	Trichloroethene	50.0000	49.0055	2.0	100	0.00
48	T	Methylcyclohexane	50.0000	52.1338	-4.3	107	0.00
49	C	1,2-Dichloropropane	50.0000	50.9525	-1.9	103	0.00
50	T	1,4-Dioxane	200.0000	193.9171	3.0	95	0.00
51	T	Bromodichloromethane	50.0000	52.2836	-4.6	103	0.00
52	T	Dibromomethane	50.0000	52.7244	-5.4	104	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.5529	-5.1	100	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.0095	-2.0	101	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140330.D Vial: 3
Acq On : 1 Jul 2016 12:06 Operator: TMB
Sample : WG574938-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.8975	-5.8	105	0.00
56	T	Dimethyl Disulfide	50.0000	51.3928	-2.8	101	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	102	0.00
58	S	Toluene-d8	25.0000	24.7495	1.0	101	0.00
59	C	Toluene	50.0000	50.2475	-0.5	104	0.00
60	T	Ethyl Methacrylate	50.0000	52.8801	-5.8	103	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	105	0.00
62	T	trans-1,3-Dichloropropene	50.0000	53.1117	-6.2	105	0.00
63	T	1,1,2-Trichloroethane	50.0000	51.7449	-3.5	104	0.00
64	T	2-Hexanone	50.0000	50.5988	-1.2	100	0.00
65	T	1,3-Dichloropropane	50.0000	50.1579	-0.3	102	0.00
66	T	Tetrachloroethene	50.0000	51.2588	-2.5	105	0.00
67	T	Dibromochloromethane	50.0000	54.0967	-8.2	102	0.00
68	T	1,2-Dibromoethane	50.0000	52.3794	-4.8	104	0.00
69	T	1-Chlorohexane	50.0000	51.7386	-3.5	104	0.00
70	P	Chlorobenzene	50.0000	49.8731	0.3	102	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.4976	-5.0	103	0.00
72	C	Ethylbenzene	50.0000	51.6418	-3.3	103	0.00
73	T	m-,p-Xylene	100.0000	103.2132	-3.2	104	0.00
74	T	o-Xylene	50.0000	51.9537	-3.9	103	0.00
75	T	Styrene	50.0000	52.8058	-5.6	102	0.00
76	P	Bromoform	50.0000	53.4550	-6.9	102	0.00
77	T	Isopropylbenzene	50.0000	51.5962	-3.2	103	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	98	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.5433	-11.1	108	0.00
80	S	p-Bromofluorobenzene	25.0000	24.9402	0.2	99	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.5804	-7.2	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	55.9462	-11.9	103	0.00
83	T	n-Propylbenzene	50.0000	52.1965	-4.4	104	0.00
84	T	Bromobenzene	50.0000	50.6198	-1.2	102	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.2366	-4.5	103	-0.01
86	T	2-Chlorotoluene	50.0000	51.6520	-3.3	103	0.00
87	T	4-Chlorotoluene	50.0000	49.2719	1.5	102	0.00
88	T	a-Methylstyrene	50.0000	52.6130	-5.2	101	0.00
89	T	tert-Butylbenzene	50.0000	52.3203	-4.6	104	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	52.4877	-5.0	102	-0.01
91	T	sec-Butylbenzene	50.0000	52.5744	-5.1	103	0.00
92	T	p-Isopropyltoluene	50.0000	53.0301	-6.1	103	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.9809	-2.0	102	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4994	-1.0	102	0.00
95	T	n-Butylbenzene	50.0000	53.1041	-6.2	103	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.6317	-1.3	101	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	55.4053	-10.8	106	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.3589	-2.7	102	0.00
99	T	Hexachlorobutadiene	50.0000	52.0211	-4.0	104	0.00
100	T	Naphthalene	50.0000	54.4404	-8.9	101	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	51.0806	-2.2	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140330.D 8260WTR.M Fri Jul 01 14:44:57 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\042416\6M138750.D          Vial: 1
Acq On    : 24 Apr 2016  16:33                       Operator: JDS
Sample    : WG566155-01 50ng BFB 826-A9              Inst    : HPMS6
Misc      : 1,1 STD75485                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

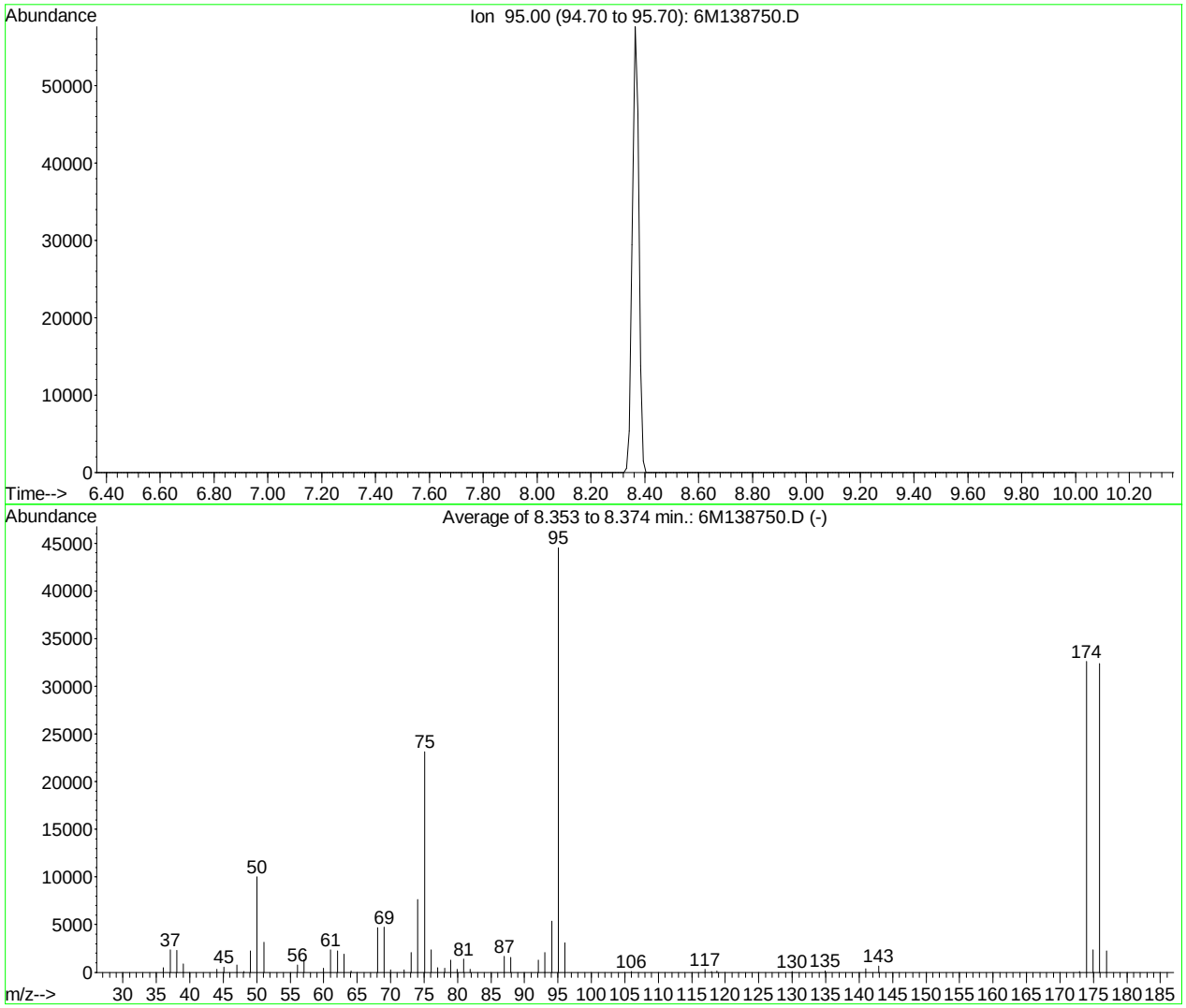

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	10010	PASS
75	95	30	60	52.0	23152	PASS
95	95	100	100	100.0	44552	PASS
96	95	5	9	6.9	3085	PASS
173	174	0.00	2	0.3	113	PASS
174	95	50	100	73.2	32632	PASS
175	174	5	9	7.2	2336	PASS
176	174	95	101	99.2	32384	PASS
177	176	5	9	7.0	2251	PASS

6M138750.D BFB.M Mon Apr 25 09:21:54 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140313.D Vial: 1
Acq On    : 30 Jun 2016  11:36                        Operator: TMB
Sample    : WG574723-01 50ng BFB STD 8260             Inst    : HPMS6
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:MSV01  06-30-16 - HPMS6
```

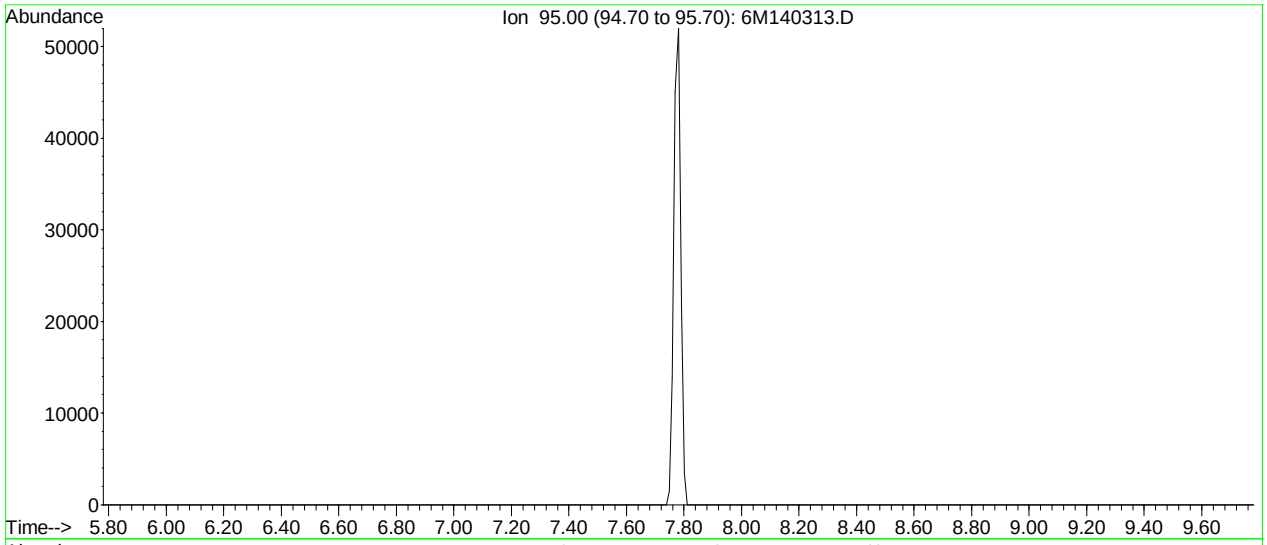

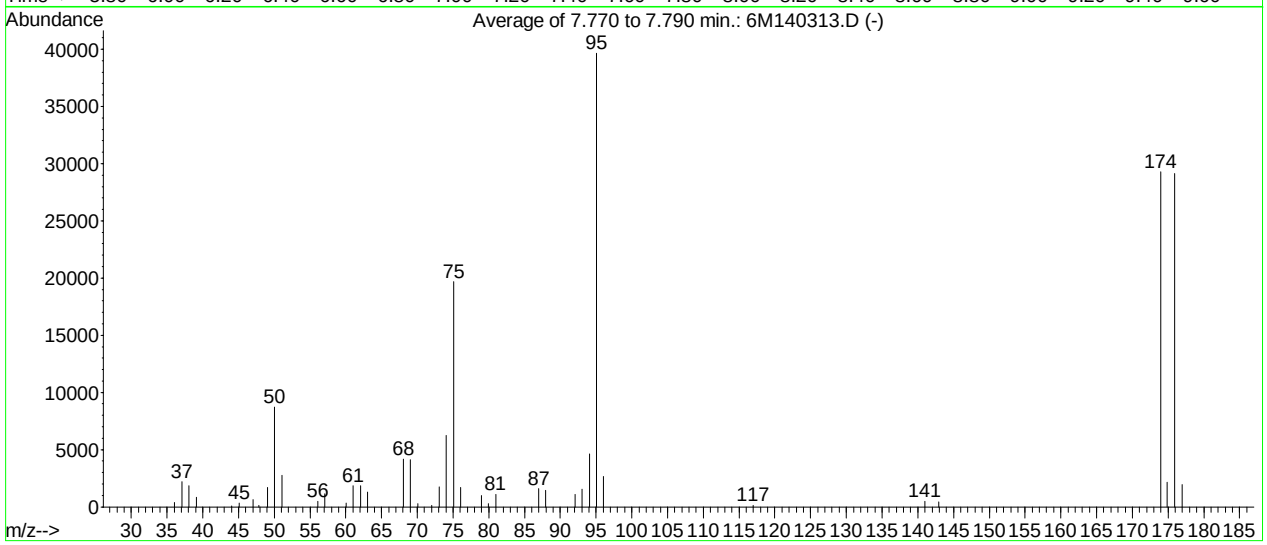

AutoFind: Scans 263, 264, 265; Background Corrected with Scan 258

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.0	8707	PASS
75	95	30	60	49.7	19699	PASS
95	95	100	100	100.0	39664	PASS
96	95	5	9	6.7	2652	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.8	29282	PASS
175	174	5	9	7.3	2131	PASS
176	174	95	101	99.6	29157	PASS
177	176	5	9	6.8	1969	PASS

6M140313.D 8260WTR.M Fri Jul 01 14:33:49 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140328.D Vial: 1
Acq On    :  1 Jul 2016  11:08                        Operator: TMB
Sample    : WG574938-01 50ng BFB STD 8260             Inst    : HPMS6
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:MSV01  06-30-16 - HPMS6
```

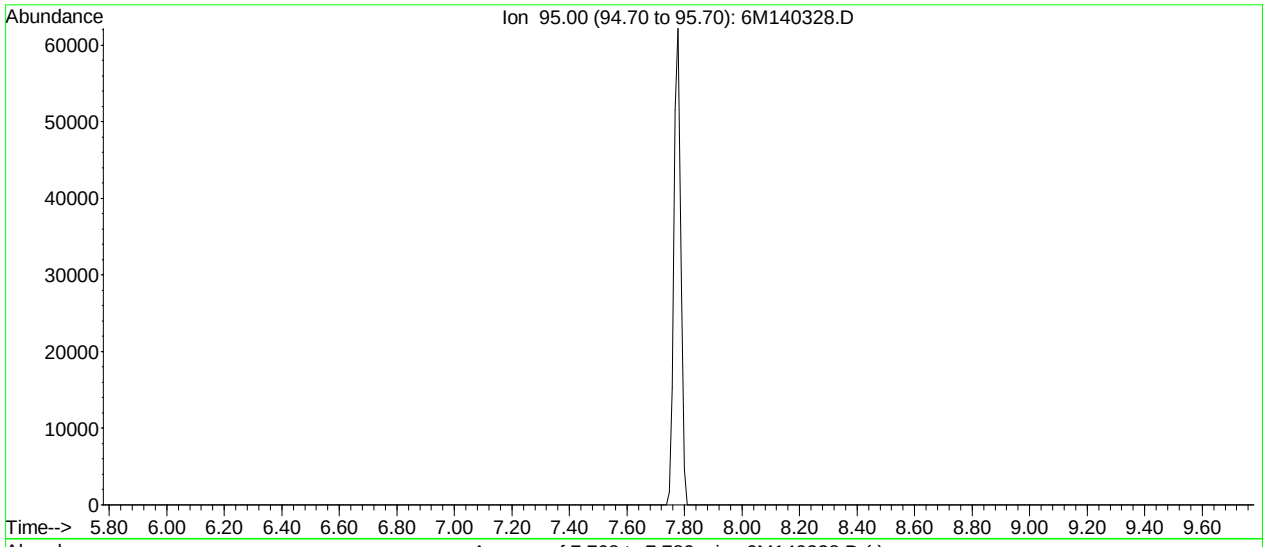

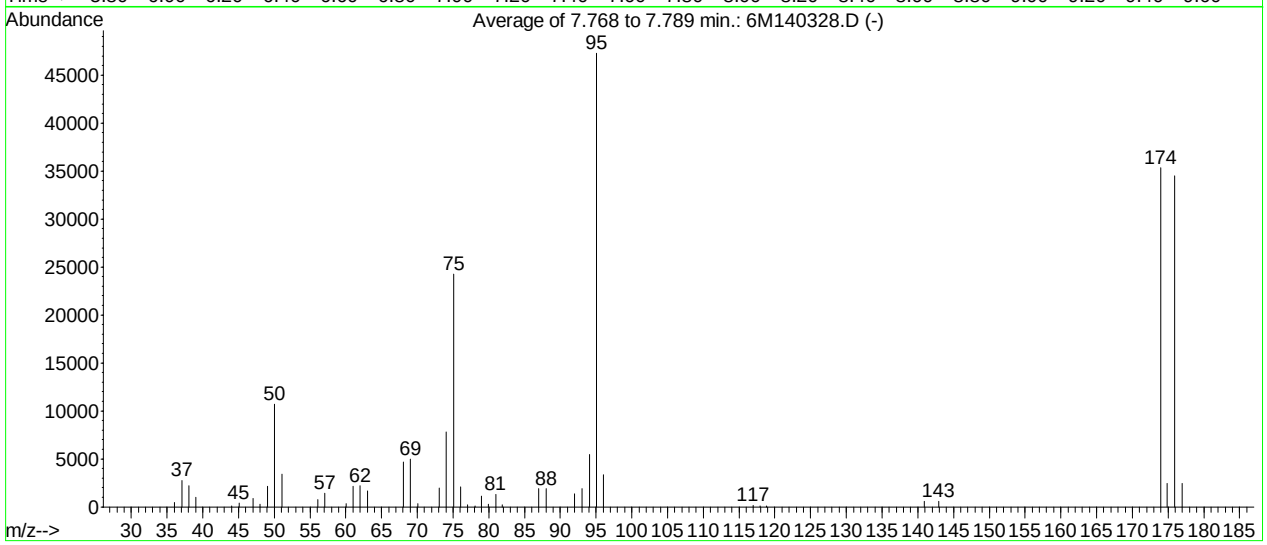

AutoFind: Scans 263, 264, 265; Background Corrected with Scan 258

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.7	10717	PASS
75	95	30	60	51.3	24277	PASS
95	95	100	100	100.0	47296	PASS
96	95	5	9	7.0	3326	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	74.7	35325	PASS
175	174	5	9	6.9	2437	PASS
176	174	95	101	97.6	34493	PASS
177	176	5	9	7.1	2450	PASS

6M140328.D 8260WTR.M Fri Jul 01 14:44:22 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140332.D Vial: 5
Acq On : 1 Jul 2016 13:10 Operator: TMB
Sample : WG574939-01 VBLK0701 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:33:20 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	653506	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	460683	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	233968	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	159019	23.9842 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.92%		
43) 1,2-Dichloroethane-d4	10.31	65	202415	24.1839 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.72%		
58) Toluene-d8	13.04	98	565928	24.9468 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.80%		
80) p-Bromofluorobenzene	17.02	95	234181	25.5571 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.24%		

Target Compounds					Qvalue
3) Chloromethane	3.36	50	1553	0.1273 ug/L #	67
36) Tetrahydrofuran	9.57	42	2744	1.2275 ug/L #	47

(#) = qualifier out of range (m) = manual integration
6M140332.D 8260WTR.M Sat Jul 02 10:33:23 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140332.D Vial: 5
Acq On : 1 Jul 2016 13:10 Operator: TMB
Sample : WG574939-01 VBLK0701 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:33 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

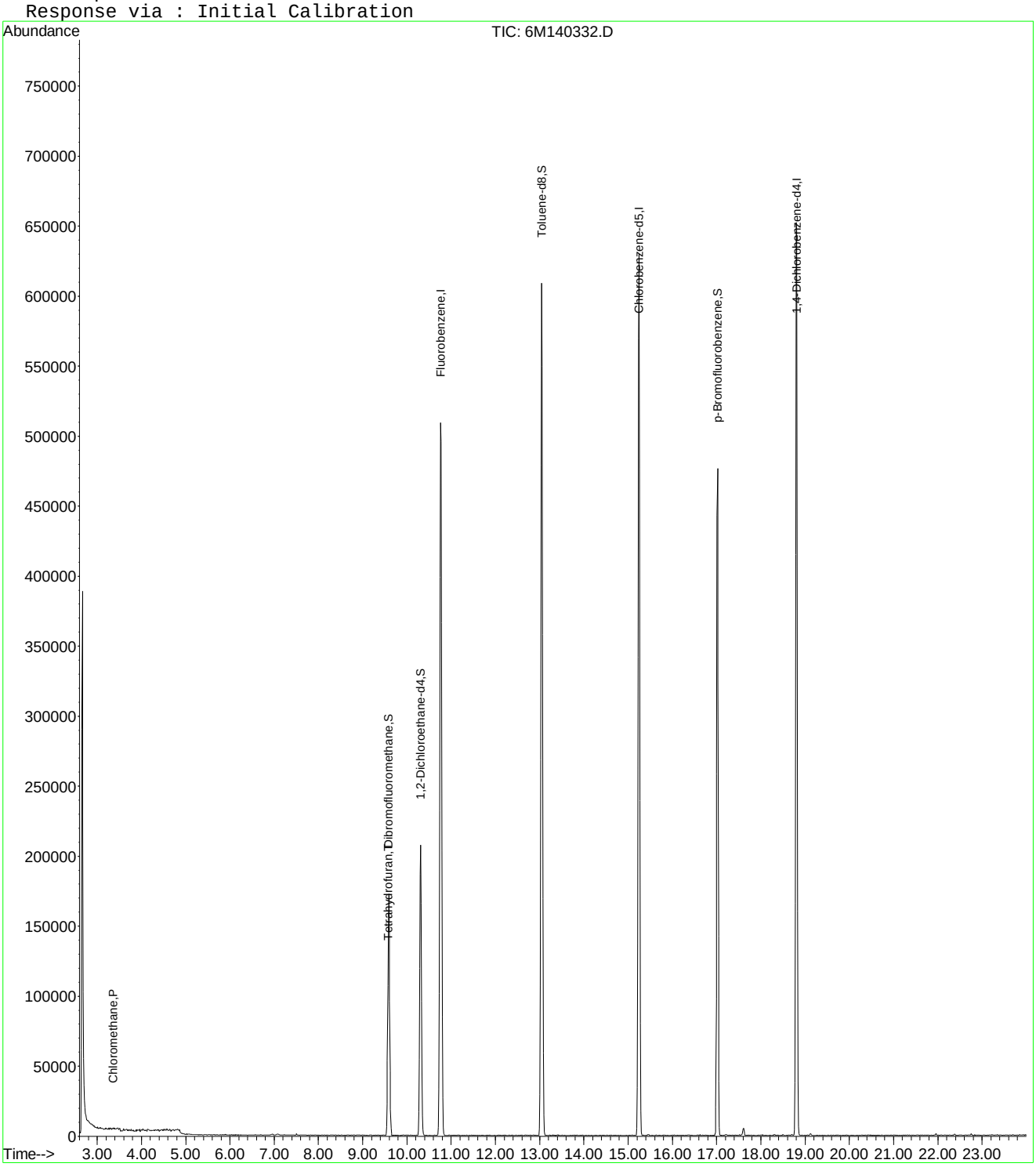

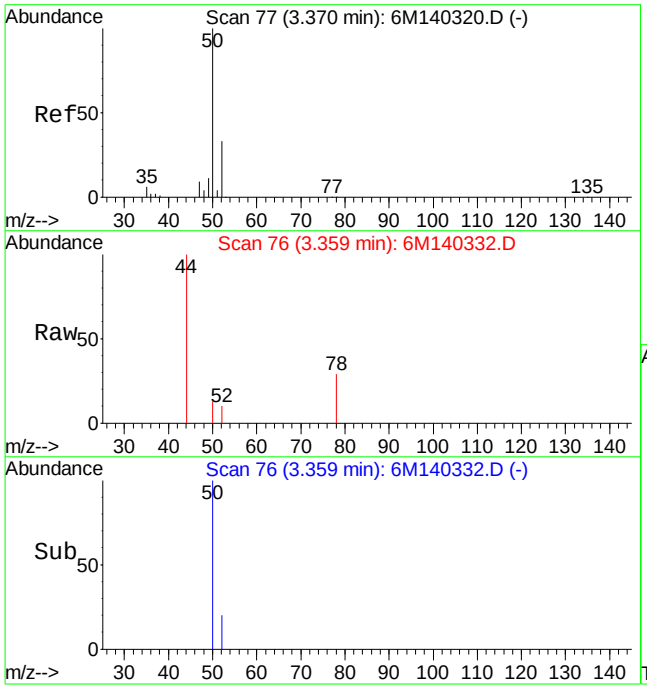

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.36 min Scan# 76
Delta R.T. -0.00 min
Lab File: 6M140332.D
Acq: 1 Jul 2016 13:10

Tgt Ion: 50 Resp: 1553

Ion	Ratio	Lower	Upper
50	100		
52	14.2	19.8	46.2#

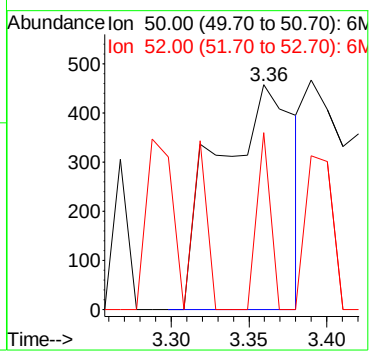

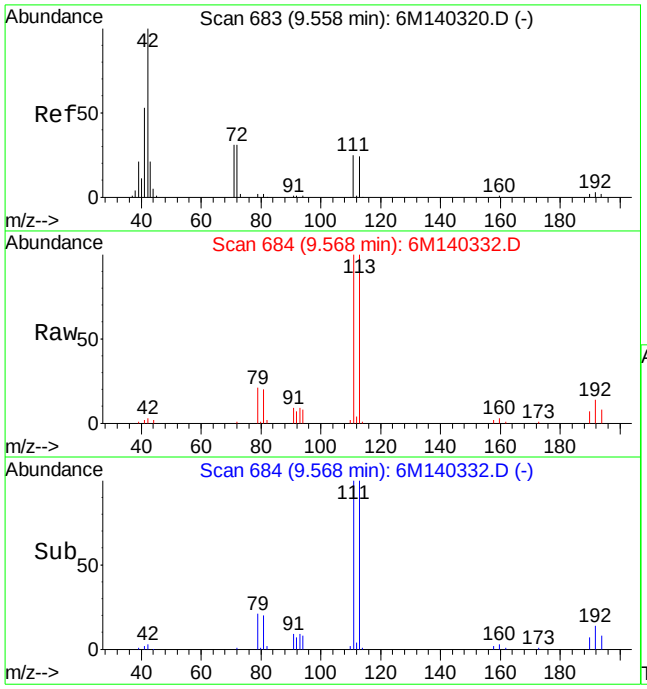

#36
Tetrahydrofuran
Concen: 1.23 ug/L
RT: 9.57 min Scan# 684
Delta R.T. 0.01 min
Lab File: 6M140332.D
Acq: 1 Jul 2016 13:10

Tgt Ion: 42 Resp: 2744

Ion	Ratio	Lower	Upper
42	100		
72	7.5	20.8	48.4#
71	0.0	19.9	46.5#

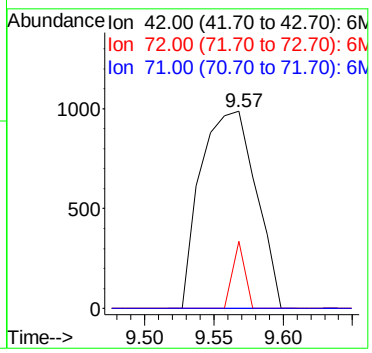

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140352.D Vial: 25
Acq On : 1 Jul 2016 23:54 Operator: TMB
Sample : WG574939-04 VBLK0701 BLANK STD 624 Inst : HPMS6
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:35:33 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	542074	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	384959	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	196906	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	138984	25.2716 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.08%		
43) 1,2-Dichloroethane-d4	10.31	65	174879	25.1891 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.76%		
58) Toluene-d8	13.04	98	471401	24.8675 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.48%		
80) p-Bromofluorobenzene	17.02	95	196346	25.4612 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.84%		

Target Compounds					Qvalue
3) Chloromethane	3.36	50	1241	0.1227 ug/L	95
36) Tetrahydrofuran	9.57	42	2691	1.4512 ug/L #	41

(#) = qualifier out of range (m) = manual integration
6M140352.D 8260WTR.M Sat Jul 02 10:35:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140352.D Vial: 25
Acq On : 1 Jul 2016 23:54 Operator: TMB
Sample : WG574939-04 VBLK0701 BLANK STD 624 Inst : HPMS6
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:35 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

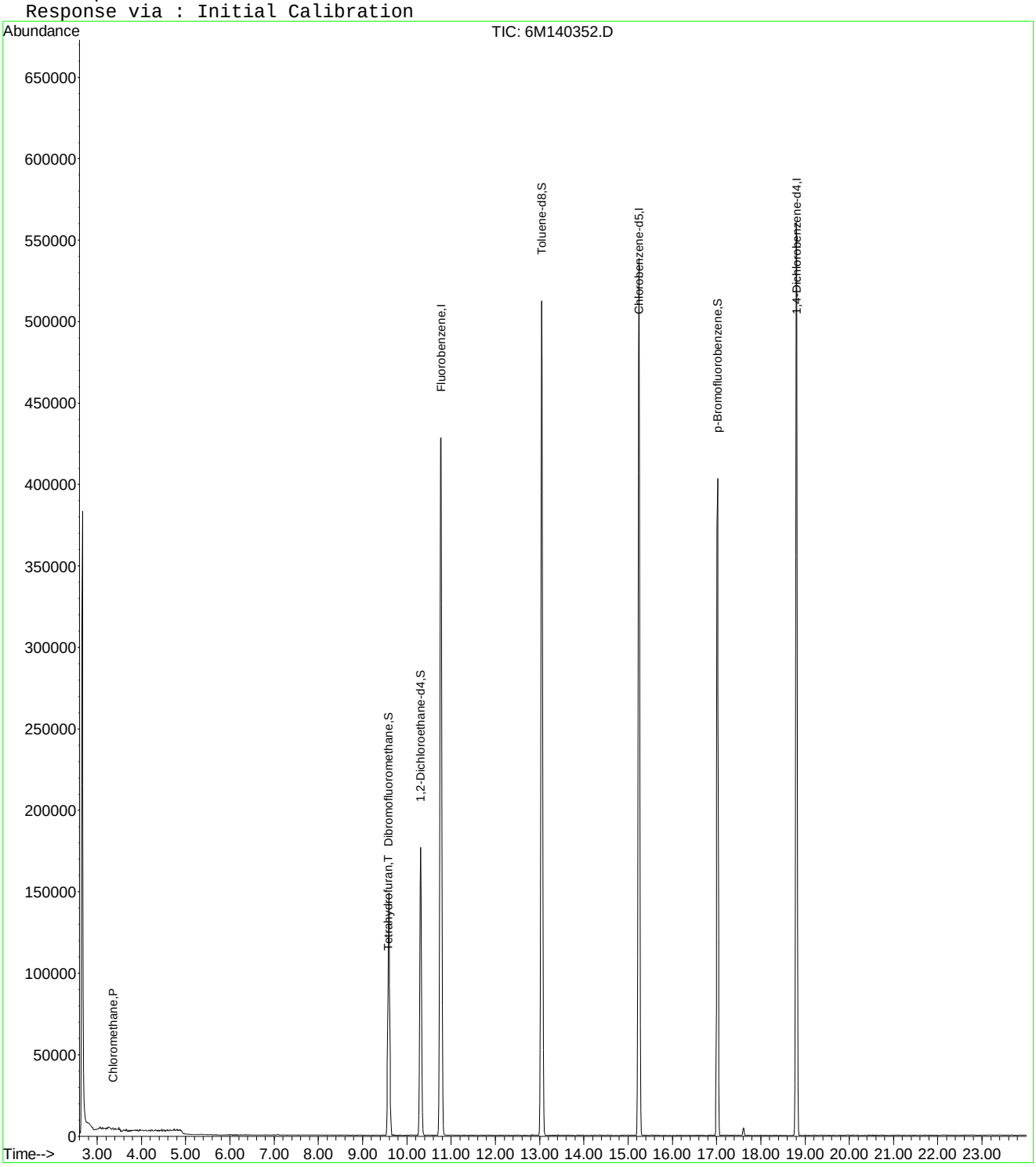

6M140352.D 8260WTR.M Sat Jul 02 10:35:37 2016 Page 2

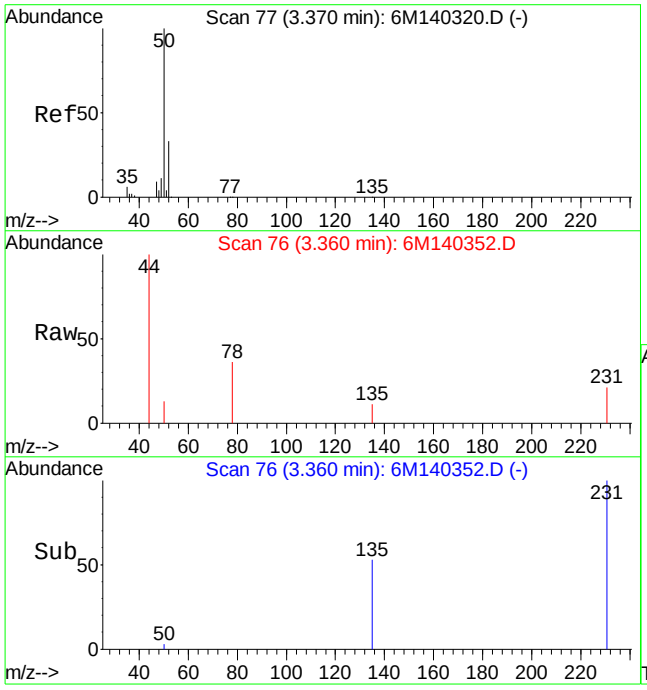

#3
Chloromethane
Concen: 0.12 ug/L
RT: 3.36 min Scan# 76
Delta R.T. -0.00 min
Lab File: 6M140352.D
Acq: 1 Jul 2016 23:54

Tgt Ion: 50 Resp: 1241

Ion	Ratio	Lower	Upper
50	100		
52	30.2	19.8	46.2

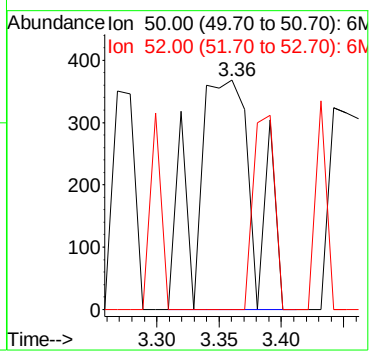

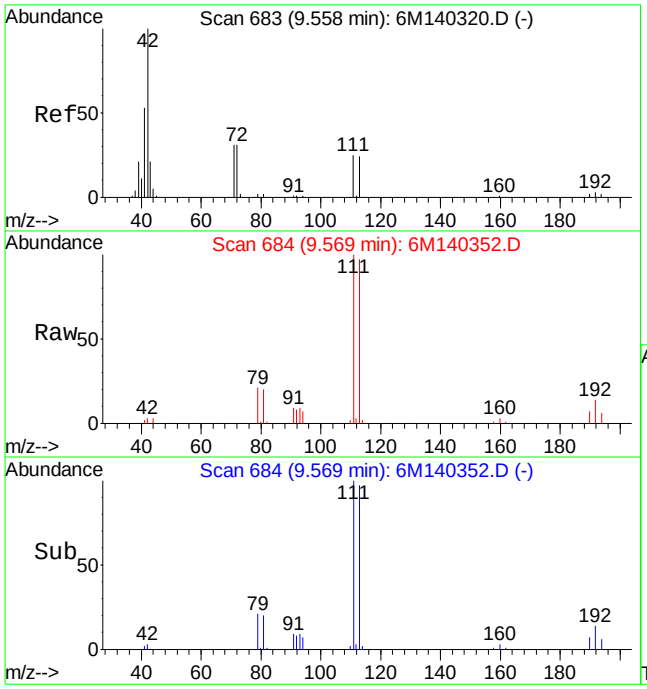

#36
Tetrahydrofuran
Concen: 1.45 ug/L
RT: 9.57 min Scan# 684
Delta R.T. 0.01 min
Lab File: 6M140352.D
Acq: 1 Jul 2016 23:54

Tgt Ion: 42 Resp: 2691

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	0.0	19.9	46.5#

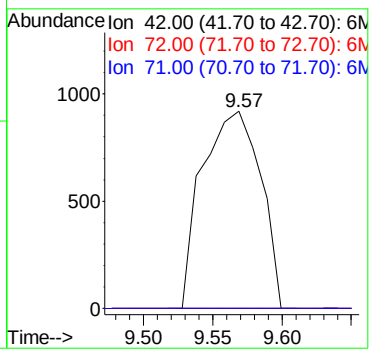

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140333.D Vial: 6
Acq On : 1 Jul 2016 13:43 Operator: TMB
Sample : WG574939-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:25:10 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	632534	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	452149	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	244926	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	158225	24.6557 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.64%		
43) 1,2-Dichloroethane-d4	10.31	65	196240	24.2235 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.88%		
58) Toluene-d8	13.04	98	551857	24.7857 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.16%		
80) p-Bromofluorobenzene	17.02	95	237905	24.8019 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.20%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	166419	15.7390 ug/L	100
3) Chloromethane	3.37	50	187201	15.8575 ug/L	100
4) Vinyl Chloride	3.55	62	123171	18.9994 ug/L	100
5) 1,3-Butadiene	3.59	54	57311	13.0566 ug/L	94
6) Bromomethane	4.38	94	83028	19.2730 ug/L	99
7) Chloroethane	4.53	64	83521	20.3893 ug/L	95
8) Trichlorofluoromethane	5.00	101	229498	23.2109 ug/L	100
9) Diethyl ether	5.55	59	562880	96.4842 ug/L	96
10) Isoprene	5.57	67	193585	21.9372 ug/L	97
11) Acrolein	5.79	56	111477	114.8796 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	124158	20.1823 ug/L	98
13) Acetone	5.91	43	42509	20.9764 ug/L	98
14) 1,1-Dichloroethene	6.11	61	209220	17.5285 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	127889	206.3782 ug/L	99
16) Dimethyl Sulfide	6.38	62	185307	35.5971 ug/L	96
17) Iodomethane	6.65	142	105892	24.9516 ug/L	94
18) Methyl acetate	6.69	43	124626	22.7265 ug/L	97
19) Methylene Chloride	6.93	84	132004	19.2855 ug/L	90
20) Carbon Disulfide	6.95	76	382467	17.4870 ug/L	99
21) Acrylonitrile	7.15	53	53832	21.3943 ug/L	97
22) Methyl Tert Butyl Ether	7.18	73	383709	21.1490 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	122778	19.2064 ug/L	90
24) n-Hexane	7.51	57	199602	18.3978 ug/L	98
25) Diisopropyl ether	7.90	45	2967736	101.6303 ug/L	98
26) Vinyl Acetate	8.09	43	234321	19.2223 ug/L	98
27) 1,1-Dichloroethane	8.10	63	259760	18.8733 ug/L	100
28) Ethyl-Tert-Butyl ether	8.54	59	2225048	94.7136 ug/L	98
29) 2-Butanone	8.73	43	65661	21.1662 ug/L	96
30) Propionitrile	8.85	54	88427	105.0364 ug/L	97
31) 2,2-Dichloropropane	8.96	77	205408	19.7819 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	143226	20.4681 ug/L	73
33) Chloroform	9.26	83	242849	19.6957 ug/L	100
34) 1-Bromopropane	9.41	122	29500	26.8917 ug/L	98
35) Bromochloromethane	9.52	130	75197	19.9975 ug/L	99
36) Tetrahydrofuran	9.56	42	205464	94.9576 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	214596	19.9909 ug/L	99
39) Cyclohexane	9.87	56	271723	19.4560 ug/L	96
40) 1,1-Dichloropropene	10.08	75	179342	19.1810 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	1836265	102.9373 ug/L	98
42) Carbon Tetrachloride	10.23	117	177640	20.1536 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140333.D 8260WTR.M Sat Jul 02 10:25:13 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140333.D Vial: 6
Acq On : 1 Jul 2016 13:43 Operator: TMB
Sample : WG574939-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:25:10 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	204826	20.7189 ug/L	98
46)	Benzene	10.48	78	530433	20.1007 ug/L	98
47)	Trichloroethene	11.34	130	133112	20.4419 ug/L	90
48)	Methylcyclohexane	11.43	83	205071	20.0598 ug/L	95
49)	1,2-Dichloropropane	11.59	63	161738	21.2829 ug/L	100
50)	1,4-Dioxane	11.94	88	10586	205.7751 ug/L	85
51)	Bromodichloromethane	11.94	83	192412	20.9837 ug/L	100
52)	Dibromomethane	12.03	93	75523	20.5403 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	85055	22.3231 ug/L	98
54)	4-Methyl-2-Pentanone	12.36	58	50210	21.4122 ug/L	99
55)	cis-1,3-Dichloropropene	12.68	75	244447	22.9615 ug/L	99
56)	Dimethyl Disulfide	12.97	79	125446	21.1677 ug/L	99
59)	Toluene	13.16	91	553971	20.5574 ug/L	100
60)	Ethyl Methacrylate	13.32	69	166455	21.7111 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	209138	21.8259 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	109231	21.9033 ug/L	98
64)	2-Hexanone	13.58	43	98478	20.7979 ug/L	98
65)	1,3-Dichloropropane	13.99	76	209705	22.3118 ug/L	93
66)	Tetrachloroethene	14.10	166	129103	20.1042 ug/L	94
67)	Dibromochloromethane	14.41	129	131405	21.7025 ug/L	98
68)	1,2-Dibromoethane	14.70	107	104860	21.7839 ug/L	99
69)	1-Chlorohexane	14.85	91	184839	20.6108 ug/L	91
70)	Chlorobenzene	15.30	112	369255	21.3654 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	133984	21.7876 ug/L	98
72)	Ethylbenzene	15.35	106	194921	21.5471 ug/L	94
73)	m-,p-Xylene	15.46	106	477085	43.6367 ug/L	94
74)	o-Xylene	16.11	106	243609	22.3411 ug/L	94
75)	Styrene	16.15	104	407583	22.2179 ug/L	93
76)	Bromoform	16.72	173	76905	20.4824 ug/L	98
77)	Isopropylbenzene	16.62	105	626168	22.0090 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	132286	22.2542 ug/L	99
81)	1,2,3-Trichloropropane	17.10	110	41327	23.4500 ug/L	83
82)	trans-1,4-Dichloro-2-Buten	17.18	53	44264	19.6953 ug/L	99
83)	n-Propylbenzene	17.22	91	786894	22.3602 ug/L	97
84)	Bromobenzene	17.34	156	154150	20.9635 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	544511	22.0751 ug/L	98
86)	2-Chlorotoluene	17.52	91	521425	21.9086 ug/L	96
87)	4-Chlorotoluene	17.58	91	483812	21.3231 ug/L	97
88)	a-Methylstyrene	17.92	118	295193	23.7939 ug/L	96
89)	tert-Butylbenzene	17.98	134	111007	22.3997 ug/L	72
90)	1,2,4-Trimethylbenzene	18.04	105	553242	21.8574 ug/L	98
91)	sec-Butylbenzene	18.31	105	658149	22.2898 ug/L	97
92)	p-Isopropyltoluene	18.50	119	556855	22.1297 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	313875	21.6872 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	316550	21.6335 ug/L	93
95)	n-Butylbenzene	19.12	91	541149	21.9295 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	304743	22.4274 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.62	75	26594	22.8434 ug/L	82
98)	1,2,4-Trichlorobenzene	21.96	180	213101	22.1868 ug/L	99
99)	Hexachlorobutadiene	22.16	225	91950	23.0255 ug/L	99
100)	Naphthalene	22.38	128	414697	21.1266 ug/L	99
101)	1,2,3-Trichlorobenzene	22.76	180	197343	22.1896 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140333.D Vial: 6
Acq On : 1 Jul 2016 13:43 Operator: TMB
Sample : WG574939-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:25 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

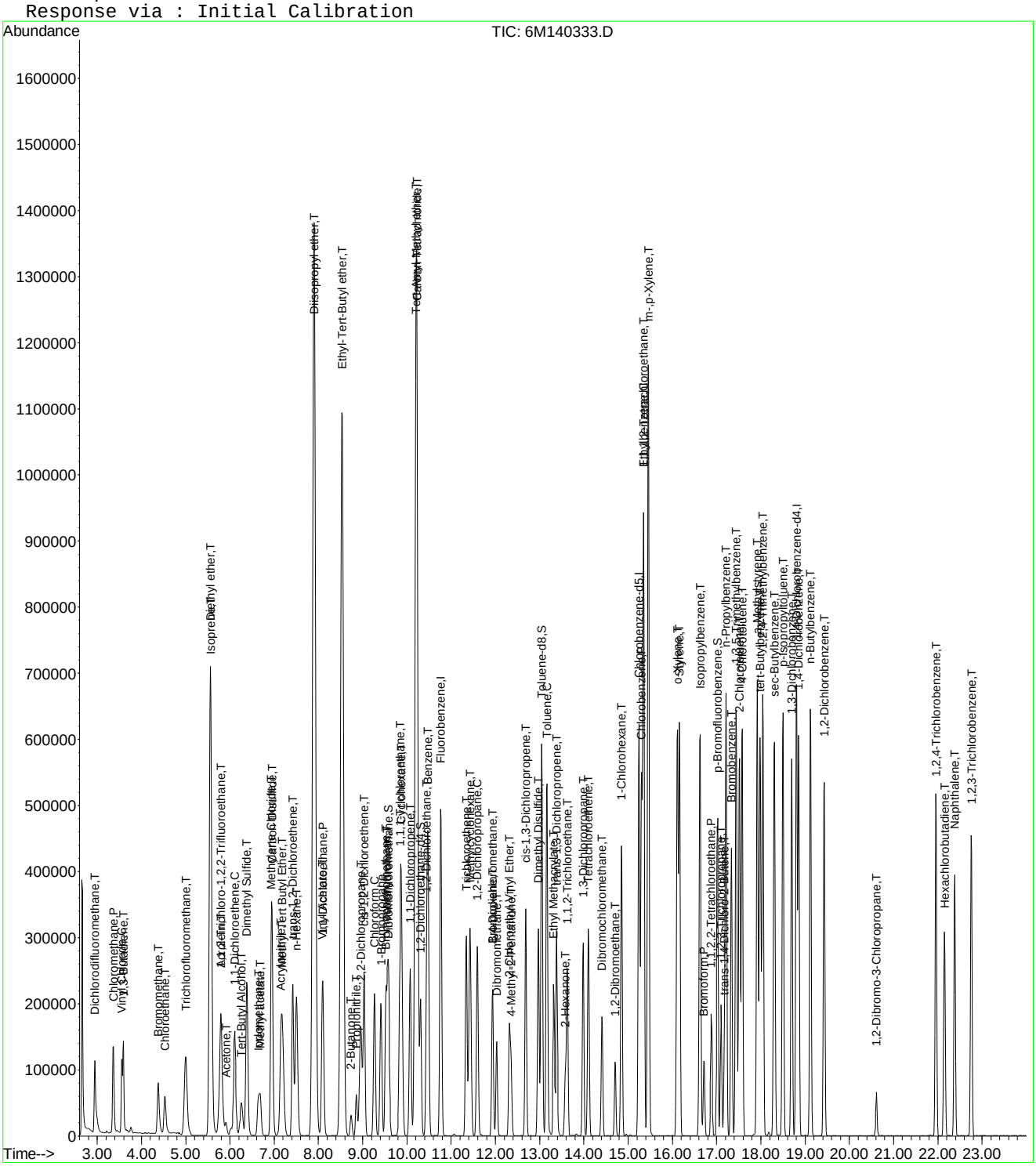

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140334.D Vial: 7
Acq On : 1 Jul 2016 14:15 Operator: TMB
Sample : WG574939-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:25:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	627951	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	446803	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	240618	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.58	111	156241	24.5242 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.08%		
43) 1,2-Dichloroethane-d4	10.32	65	194773	24.2179 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.88%		
58) Toluene-d8	13.04	98	547886	24.9018 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.60%		
80) p-Bromofluorobenzene	17.01	95	233420	24.7700 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.08%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.94	85	163410	15.5672 ug/L	99
3) Chloromethane	3.36	50	188202	16.0586 ug/L	100
4) Vinyl Chloride	3.56	62	120619	18.7416 ug/L	99
5) 1,3-Butadiene	3.59	54	57827	13.3225 ug/L	94
6) Bromomethane	4.37	94	81138	18.9717 ug/L	99
7) Chloroethane	4.53	64	80454	19.7840 ug/L	98
8) Trichlorofluoromethane	5.00	101	230387	23.4709 ug/L	100
9) Diethyl ether	5.55	59	591090	102.0592 ug/L	96
10) Isoprene	5.57	67	193007	22.0314 ug/L	95
11) Acrolein	5.79	56	117300	121.7625 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	129689	21.2352 ug/L	96
13) Acetone	5.90	43	41129	20.4436 ug/L	99
14) 1,1-Dichloroethene	6.11	61	206346	17.4139 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	121431	197.3869 ug/L	99
16) Dimethyl Sulfide	6.38	62	184425	35.6862 ug/L	95
17) Iodomethane	6.64	142	116823	27.6284 ug/L	92
18) Methyl acetate	6.69	43	119583	21.9660 ug/L	98
19) Methylene Chloride	6.94	84	129570	19.0681 ug/L	89
20) Carbon Disulfide	6.96	76	383734	17.6729 ug/L	99
21) Acrylonitrile	7.15	53	52930	21.1893 ug/L	99
22) Methyl Tert Butyl Ether	7.18	73	385052	21.3780 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	120176	18.9365 ug/L	89
24) n-Hexane	7.51	57	209262	19.4289 ug/L	98
25) Diisopropyl ether	7.90	45	3022707	104.2682 ug/L	98
26) Vinyl Acetate	8.09	43	281969	23.2999 ug/L	97
27) 1,1-Dichloroethane	8.10	63	255504	18.6995 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	2258706	96.8480 ug/L	98
29) 2-Butanone	8.73	43	64398	20.9106 ug/L	96
30) Propionitrile	8.86	54	86501	103.4985 ug/L	100
31) 2,2-Dichloropropane	8.96	77	217625	21.1114 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	140025	20.1567 ug/L	71
33) Chloroform	9.26	83	237507	19.4030 ug/L	100
34) 1-Bromopropane	9.41	122	28658	26.3250 ug/L	100
35) Bromochloromethane	9.52	130	74406	19.9316 ug/L	100
36) Tetrahydrofuran	9.56	42	200396	93.2913 ug/L	94
38) 1,1,1-Trichloroethane	9.86	97	211192	19.8174 ug/L	99
39) Cyclohexane	9.88	56	276268	19.9258 ug/L	96
40) 1,1-Dichloropropene	10.08	75	178206	19.1986 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1848821	104.3976 ug/L	98
42) Carbon Tetrachloride	10.23	117	176251	20.1419 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140334.D 8260WTR.M Sat Jul 02 10:25:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140334.D Vial: 7
Acq On : 1 Jul 2016 14:15 Operator: TMB
Sample : WG574939-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:25:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	199297	20.3068 ug/L	98
46)	Benzene	10.48	78	520645	19.8738 ug/L	97
47)	Trichloroethene	11.35	130	128637	19.8989 ug/L	91
48)	Methylcyclohexane	11.43	83	210345	20.7259 ug/L	95
49)	1,2-Dichloropropane	11.59	63	158316	20.9847 ug/L	99
50)	1,4-Dioxane	11.94	88	11559	226.3285 ug/L	87
51)	Bromodichloromethane	11.93	83	188643	20.7228 ug/L	99
52)	Dibromomethane	12.02	93	72991	19.9966 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	85812	22.6862 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	49117	21.0989 ug/L	98
55)	cis-1,3-Dichloropropene	12.69	75	243147	23.0061 ug/L	99
56)	Dimethyl Disulfide	12.97	79	125368	21.3089 ug/L	98
59)	Toluene	13.15	91	540880	20.3118 ug/L	99
60)	Ethyl Methacrylate	13.32	69	166728	22.0069 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	205928	21.7480 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	105033	21.3135 ug/L	98
64)	2-Hexanone	13.58	43	98399	21.0299 ug/L	96
65)	1,3-Dichloropropane	13.99	76	203195	21.8779 ug/L	94
66)	Tetrachloroethene	14.10	166	126765	19.9763 ug/L	95
67)	Dibromochloromethane	14.41	129	129187	21.5915 ug/L	100
68)	1,2-Dibromoethane	14.71	107	101674	21.3747 ug/L	99
69)	1-Chlorohexane	14.85	91	188938	21.3199 ug/L	91
70)	Chlorobenzene	15.30	112	360660	21.1177 ug/L	91
71)	1,1,1,2-Tetrachloroethane	15.35	131	131228	21.5948 ug/L	98
72)	Ethylbenzene	15.35	106	190855	21.3501 ug/L	94
73)	m-,p-Xylene	15.45	106	464517	42.9956 ug/L	94
74)	o-Xylene	16.11	106	240235	22.2952 ug/L	94
75)	Styrene	16.16	104	400947	22.1177 ug/L	93
76)	Bromoform	16.71	173	73277	19.7497 ug/L	98
77)	Isopropylbenzene	16.62	105	614416	21.8544 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	132824	22.7448 ug/L	98
81)	1,2,3-Trichloropropane	17.11	110	39497	22.8128 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	17.18	53	46047	20.8555 ug/L	100
83)	n-Propylbenzene	17.22	91	777403	22.4860 ug/L	97
84)	Bromobenzene	17.34	156	151951	21.0345 ug/L	90
85)	1,3,5-Trimethylbenzene	17.44	105	532611	21.9793 ug/L	97
86)	2-Chlorotoluene	17.52	91	479598	20.5120 ug/L	97
87)	4-Chlorotoluene	17.58	91	507919	22.7863 ug/L	96
88)	a-Methylstyrene	17.92	118	294908	24.1965 ug/L	96
89)	tert-Butylbenzene	17.98	134	107518	22.0841 ug/L	68
90)	1,2,4-Trimethylbenzene	18.05	105	540207	21.7245 ug/L	97
91)	sec-Butylbenzene	18.30	105	650535	22.4264 ug/L	97
92)	p-Isopropyltoluene	18.50	119	547353	22.1415 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	307156	21.6029 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	311402	21.6627 ug/L	94
95)	n-Butylbenzene	19.12	91	532850	21.9798 ug/L	96
96)	1,2-Dichlorobenzene	19.42	146	296501	22.2115 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	27758	24.2702 ug/L	83
98)	1,2,4-Trichlorobenzene	21.96	180	210424	22.3003 ug/L	99
99)	Hexachlorobutadiene	22.15	225	91519	23.3279 ug/L	100
100)	Naphthalene	22.38	128	408138	21.1647 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	195165	22.3376 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140334.D 8260WTR.M Sat Jul 02 10:25:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140334.D Vial: 7
Acq On : 1 Jul 2016 14:15 Operator: TMB
Sample : WG574939-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:25 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

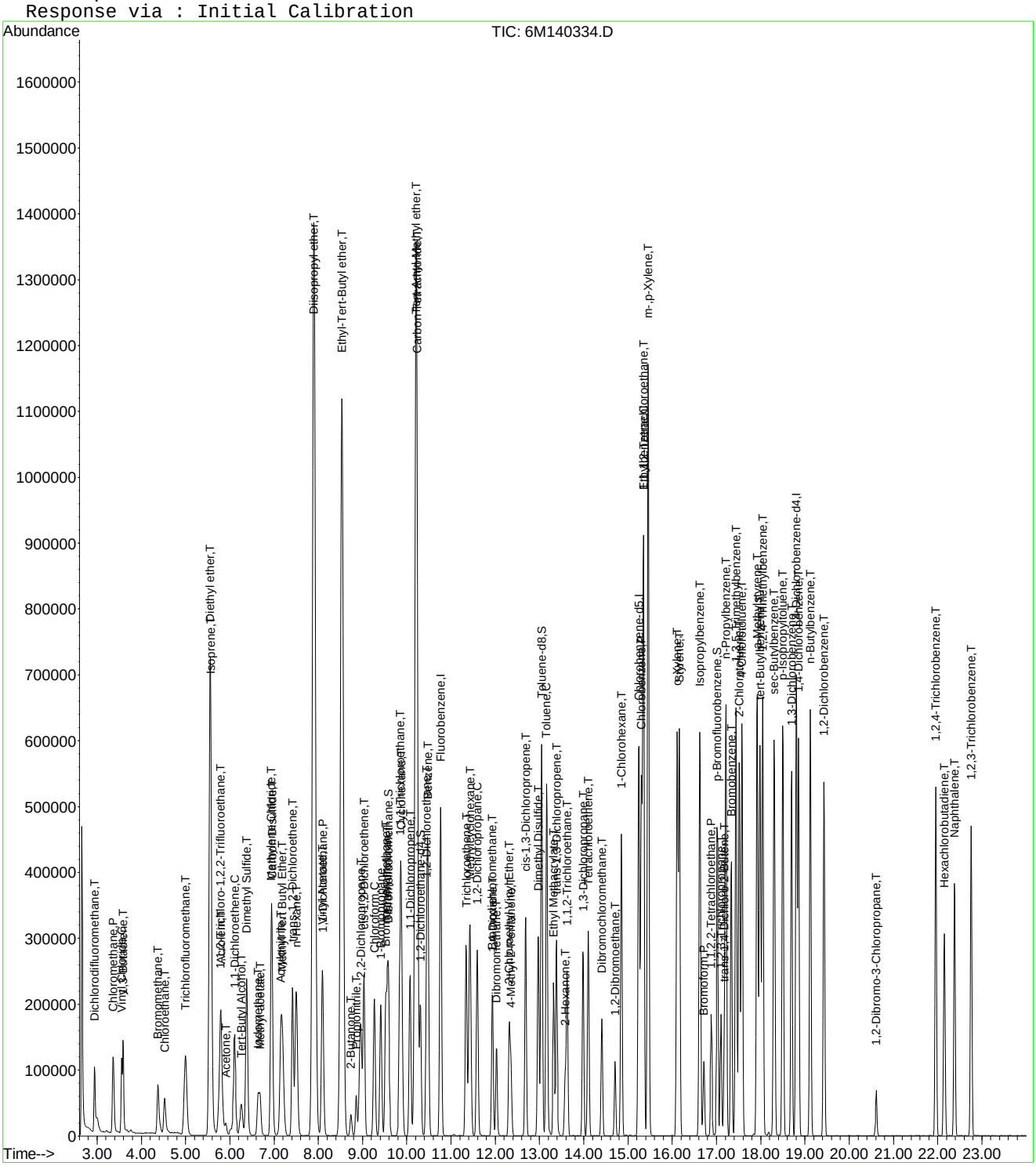

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW22-062116	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 19:39
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	15M18611
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	18.3	20	129	*

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW22-062116	**Prep Method:**	3520C	**Prep Date:**	06/30/2016 16:00
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG575045	**Analyst:**	MES	**Run Date:**	07/05/2016 18:15
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	15M18726
Sample Tag:	RE	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U,H1	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.2	20	129	

U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW18-062116	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 20:02
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	15M18612
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	55.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW18-062116	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 20:25
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	15M18613
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.0	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG573812
Analyst: CPD
Spike Analyst: 001
Method: 3520C
Run Date: 06/22/2016 13:51
SOP: EXB01 Revison 20
Spike Witness: JDH
Surr Solution: STD76628

TIME ON: 14:35 OFF: 09:00 ON: 14:30 OFF: 08:30

CH2CL2 Lot #: COA18982
1:1 H2SO4 Lot #: RGT36755
sodium sulfate Lot #: COA18814

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16061124-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16061142-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
3	L16061142-06	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
4	L16061142-07	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	L16061144-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	L16061144-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
7	L16061144-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
8	L16061227-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
9	L16061227-06	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
10	L16061227-07	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
11	L16061233-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
12	WG573812-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
13	WG573812-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
14	WG573812-03	LCS2		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent

Analyst: Chelsie Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4825362
Report generated: 06/27/2016 08:29

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG574706
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/30/2016 16:00
SOP: EXB01 Revison 20
Spike Witness: JDH
Surr Solution: STD76628

TIME ON: 16:45 OFF: 10:25 ON: _____ OFF: _____

CH2CL2 Lot #: COA18982
Sodium Sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16061227-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16061560-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
3	L16061648-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
4	WG574706-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	WG574706-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
6	WG574706-03	LCS2		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent

Due to insufficient sample volume, this preparation batch failed to include the method prescribed MS and MSD.

L16061227-01	RE-EXT OUT OF HOLD
WG574706-02	TURBO VAP 1 CELL CELL 5
WG574706-03	TURBO VAP 1 CELL CELL 6

Analyst: Rebecca Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4837080
Report generated: 07/01/2016 15:12

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

Page: 1 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062716
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574301,WG574187,WG574186,WG573853

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments: All samples associated with extraction workgroup WG573815 are being re-extracted due to low LCSDUP recovery: L16060637-02,756-01 to-03,809-01 and -02,930-01 and -02, 1213-01 to -06.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18584	BAKEOUT	1	1		06/27/16 08:21
13	15M18585	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 08:41
14	15M18586	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 08:58
2	15M18587	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 09:22
3	15M18588	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 09:38
4	15M18589	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 10:23
5	15M18590	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 11:15
6	15M18591	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 11:32
7	15M18592	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 12:20
8	15M18593	WG574241-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/27/16 12:37
9	15M18594	WG573975-03 LCSDUP 6/24 RR	7	1	SOIL	06/27/16 13:15
10	15M18595	WG573815-02 LCS 6/23 RR	7	1	SOIL	06/27/16 13:37
11	15M18596	WG573815-03 LCSDUP 6/23 RR	7	1	SOIL	06/27/16 13:59
12	15M18597	WG573812-01 BLANK 6/22	1	1		06/27/16 14:22
15	15M18598	WG573812-02 LCS 6/22	1	1		06/27/16 14:45
16	15M18599	WG573812-03 LCSDUP 6/22	1	1		06/27/16 15:07
17	15M18600	L16061026-05 40X	1	40		06/27/16 15:30
18	15M18601	L16061213-05 827-DIOX	7	1	SOIL	06/27/16 15:52
19	15M18602	L16061213-06 827-DIOX	7	1		06/27/16 16:15
20	15M18603	L16061233-02 827-DIOX	1	1		06/27/16 16:38
21	15M18604	L16061124-01	1	1		06/27/16 17:01
22	15M18605	L16061142-01	1	1		06/27/16 17:23
23	15M18606	L16061142-06	1	1		06/27/16 17:46
24	15M18607	L16061142-07	1	1		06/27/16 18:09
25	15M18608	L16061144-01	1	1		06/27/16 18:31
26	15M18609	L16061144-02	1	1		06/27/16 18:54
27	15M18610	L16061144-03	1	1		06/27/16 19:17
28	15M18611	L16061227-01	1	1		06/27/16 19:39
29	15M18612	L16061227-06	1	1		06/27/16 20:02
30	15M18613	L16061227-07	1	1		06/27/16 20:25
31	15M18614	L16061124-01 2X	1	2		06/27/16 20:47
32	15M18615	BAKEOUT	1	1		06/27/16 21:10
33	15M18616	BAKEOUT	1	1		06/27/16 21:32

Page: 1 Approved: 28-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062716
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574301,WG574187,WG574186,WG573853

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18617	BAKEOUT	1	1		06/27/16 21:55

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13				
	Rerun DFTPP, wrong standard was analyzed.			
14				
	Rerun DFTPP, wrong standard was analyzed.			
2				
	Rerun DFTPP, ion failures. Liner needs changed.			
3				
	Rerun DFTPP, degradation >20%.			
4				
	Rerun DFTPP, degradation >20%. Changed the gold seal.			
5				
	Rerun DFTPP, benzidine tailing >2.			
6				
	Rerun DFTPP, benzidine tailing >2. Clipped 5cm from the column.			
9				
	WG573975-03 LCSDUP 6/24 RR recovery is acceptable. Not reporting the run from 6/25/16.			
11				
	WG573815-03 LCSDUP 6/23 RR low recovery; confirms the original run.			
21	X	2	Over Calibration Range	
	L16061124-01			
28				
	L16061227-01 Needs re-extracted; surrogate recovery is low.			

Page: 2 Approved: 28-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments: File 15M18715 does not exist.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18708	BAKEOUT	1	1		07/05/16 10:31
2	15M18709	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 10:51
3	15M18710	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 11:11
4	15M18711	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 11:33
5	15M18712	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 12:30
6	15M18713	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 12:47
7	15M18714	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 14:14
8	15M18716	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 14:33
9	15M18717	WG575159-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	07/05/16 14:51
10	15M18718	WG574706-01 BLANK 6/30	1	1		07/05/16 15:14
11	15M18719	WG574706-02 LCS 6/30	1	1		07/05/16 15:38
12	15M18720	WG574706-03 LCSDUP 6/30	1	1		07/05/16 16:01
13	15M18721	WG574873-01 BLANK 7/1	7	1	SOIL	07/05/16 16:23
14	15M18722	WG574873-02 LCS 7/1	7	1	SOIL	07/05/16 16:45
15	15M18723	WG574873-03 LCSDUP 7/1	7	1	SOIL	07/05/16 17:07
16	15M18724	L16061290-02 5X 827-DIOX	1	5		07/05/16 17:29
17	15M18725	L16061289-01 10X 827-DIOX	1	10		07/05/16 17:52
18	15M18726	L16061227-01 RE 827-DIOX	1	10		07/05/16 18:15
19	15M18727	L16061290-06 827-DIOX	1	1		07/05/16 18:37
20	15M18728	L16061345-08 827-DIOX	1	1		07/05/16 19:00
21	15M18729	L16061345-04 REF 827-DIOX	1	1		07/05/16 19:23
22	15M18730	L16061345-05 MS 827-DIOX	1	1		07/05/16 19:45
23	15M18731	L16061345-06 MSD 827-DIOX	1	1		07/05/16 20:08
24	15M18732	L16061345-03 RE 827-DIOX	7	1	SOIL	07/05/16 20:31
25	15M18733	L16061345-01 RE 827-DIOX	7	1	SOIL	07/05/16 20:54
26	15M18734	L16061560-01 827-DIOX	1	1		07/05/16 21:16
27	15M18735	L16061648-01 827-DIOX	1	1		07/05/16 21:39
28	15M18736	L16061452-01 827-DIOX	1	1		07/05/16 22:02
29	15M18737	L16061452-02 827-DIOX	1	1		07/05/16 22:24
30	15M18738	L16061452-03 827-DIOX	1	1		07/05/16 22:46
31	15M18739	L16061453-01 827-DIOX	1	1		07/05/16 23:09
32	15M18740	L16061453-02 827-DIOX	1	1		07/05/16 23:32
33	15M18741	L16061453-03 827-DIOX	1	1		07/05/16 23:54

Page: 1 Approved: 11-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18742	L16061450-04 827-DIOX	1	1		07/06/16 00:17
35	15M18743	L16061450-05 827-DIOX	1	1		07/06/16 00:39
36	15M18744	BAKEOUT	1	1		07/06/16 01:02
37	15M18745	BAKEOUT	1	1		07/06/16 01:25
38	15M18746	BAKEOUT	1	1		07/06/16 01:47
39	15M18747	BAKEOUT	1	1		07/06/16 02:10
40	15M18748	BAKEOUT	1	1		07/06/16 02:32
41	15M18749	BAKEOUT	1	1		07/06/16 02:55
42	15M18750	BAKEOUT	1	1		07/06/16 03:17
43	15M18751	BAKEOUT	1	1		07/06/16 03:40
44	15M18752	BAKEOUT	1	1		07/06/16 04:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	Rerun DFTPP, ion ratio fails.			
3				
	Rerun DFTPP, ion ratio fails. Performed a quicktune.			
4				
	Rerun DFTPP, ion ratio fails. Changed the liner.			
5				
	Rerun DFTPP, ion ratio fails. Retuned.			
6				
	Rerun DFTPP, PCP tailing >2.			
7				
	Rerun DFTPP, PCP tailing >2. Clipping the column.			
13				
	WG574873-01 BLANK 7/1 surrogate is low.			
17				
	L16061289-01 10X 827-DIOX confirms high surrogate recovery; DNR. Surrogate is high due to SMI. Sample is not being re-extracted.			
18				
	L16061227-01 RE 827-DIOX surrogate recovery is good; does not confirm original extraction.			
21	X	20	Over Calibration Range	
	L16061345-04 REF			
22				
	L16061345-05 MS 827-DIOX DNR-sample is spiked for 827-SPE-DIOX			

Page: 2 Approved: 11-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
23				
	L16061345-06 MSD 827-DIOX DNR-sample is spiked for 827-SPE-DIOX			
24				
	L16061345-03 RE 827-DIOX confirms low surrogate recovery.			
25				
	L16061345-01 RE 827-DIOX confirms low surrogate recovery.			
26	X	5	Over Calibration Range	
	L16061560-01 827-DIOX			
30	X	2	Over Calibration Range	
	L16061452-03 827-DIOX			
31	X	10	Surrogate standard failure	
	L16061453-01 surrogate high due to SMI. Not re-extracting.			

Page: 3 Approved: 11-JUL-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75949
Analytical Workgroups: L16061026,061213,WG573956-LCSDUP RR,061124,1142,1144,1227,123

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 28-JUN-2016

Secondary Reviewer: 28-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-28-2016 14:33:27

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 76120
Analytical Workgroups: L16061345, 061227, 1560, 1648, 1290, 1450, 1452, 1453

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 06-JUL-2016

Secondary Reviewer: 11-JUL-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUL-11-2016 11:01:30

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG574301

Login Number: L16061227

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW22-062116	01	06/21/16					06/22/2016	1.2	7		06/27/16	5.2	40	
18CPTMW18-062116	06	06/21/16					06/22/2016	1.2	7		06/27/16	5.3	40	
18WW18-062116	07	06/21/16					06/22/2016	1.1	7		06/27/16	5.3	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4828117
Report generated 07/06/2016 11:09

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG575045

Login Number: L16061227

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW22-062116	01	06/21/16					06/30/2016	9.3	7	*	07/05/16	5.1	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4828117
Report generated 07/06/2016 11:09

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061227
Instrument Id: HPMS15
Workgroup (AAB#): WG574301

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16061227-01	1.00	01	18.3
L16061227-06	1.00	01	55.5
L16061227-07	1.00	01	35.0
WG573812-01	1.00	01	29.1
WG573812-02	1.00	01	33.3
WG573812-03	1.00	01	61.4

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4828123
Report generated: 07/06/2016 11:10

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061227
Instrument Id: HPMS15
Workgroup (AAB#): WG575045

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16061227-01	1.00	RE	35.2
WG574706-01	1.00	01	28.3
WG574706-02	1.00	01	29.8
WG574706-03	1.00	01	35.9

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4828123
Report generated: 07/06/2016 11:10

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061227 Prep Date: 06/22/16 13:51 Sample ID: WG573812-01
Instrument ID: HPMS15 Run Date: 06/27/16 14:22 Prep Method: 3520C
File ID: 15M18597 Analyst: MES Method: 8270D
Workgroup (AAB#): WG574301 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	29.1	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4828118
06-JUL-2016 11:09

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061227 Prep Date: 06/30/16 16:00 Sample ID: WG574706-01
Instrument ID: HPMS15 Run Date: 07/05/16 15:14 Prep Method: 3520C
File ID: 15M18718 Analyst: MES Method: 8270D
Workgroup (AAB#): WG575045 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	28.3	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4828118
06-JUL-2016 11:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061227 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG575045 Units: ug/L
QC Key: DOD4 Lot #: STD75256

Sample ID: WG574706-02 LCS File ID: 15M18719 Run Date: 07/05/2016 15:38
Sample ID: WG574706-03 LCS2 File ID: 15M18720 Run Date: 07/05/2016 16:01

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	1.55	31.0	5.00	2.07	41.3	28.5	30 - 104	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	29.8	35.9	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4828119
Report generated: 07/06/2016 11:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061227 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG574301 Units: ug/L
QC Key: DOD4 Lot #: STD75256

Sample ID: WG573812-02 LCS File ID: 15M18598 Run Date: 06/27/2016 14:45
Sample ID: WG573812-03 LCS2 File ID: 15M18599 Run Date: 06/27/2016 15:07

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	1.59	31.8	5.00	3.00	60.0	61.5	30 - 104	30	#

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	33.3	61.4	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4828119
Report generated: 07/06/2016 11:09

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061227
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4828120
Report generated 07/06/2016 11:09

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061227
Instrument: HPMS15
Analyst: MES
Workgroup: WG574241

Tune ID: WG574241-01
Run Date: 06/27/2016
Run Time: 12:20
File ID: 15M18592
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	33.2	31989	PASS
68.0	69.0	0	2.00	1.61	580	PASS
69.0	198	0	100	37.4	35954	PASS
70.0	69.0	0	2.00	0.617	222	PASS
127	198	40.0	60.0	50.4	48459	PASS
197	198	0	1.00	0.425	409	PASS
198	198	100	100	100	96232	PASS
199	198	5.00	9.00	6.65	6399	PASS
275	198	10.0	30.0	25.2	24236	PASS
365	198	1.00	100	2.50	2410	PASS
441	443	0.0100	100	75.7	10371	PASS
442	198	40.0	100	73.9	71133	PASS
443	442	17.0	23.0	19.3	13708	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574241-02	CCV	01	06/27/2016 12:37	
WG573812-01	BLANK	01	06/27/2016 14:22	
WG573812-02	LCS	01	06/27/2016 14:45	
WG573812-03	LCS2	01	06/27/2016 15:07	
L16061227-01	18WW22-062116	01	06/27/2016 19:39	
L16061227-06	18CPTMW18-062116	01	06/27/2016 20:02	
L16061227-07	18WW18-062116	01	06/27/2016 20:25	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4828120
Report generated 07/06/2016 11:09

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061227
Instrument: HPMS15
Analyst: MES
Workgroup: WG575159

Tune ID: WG575159-01
Run Date: 07/05/2016
Run Time: 14:33
File ID: 15M18716
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	46.2	37745	PASS
68.0	69.0	0	2.00	1.95	734	PASS
69.0	198	0	100	46.2	37667	PASS
70.0	69.0	0	2.00	0.337	127	PASS
127	198	40.0	60.0	57.5	46941	PASS
197	198	0	1.00	0.380	310	PASS
198	198	100	100	100	81613	PASS
199	198	5.00	9.00	7.55	6162	PASS
275	198	10.0	30.0	24.6	20072	PASS
365	198	1.00	100	2.93	2392	PASS
441	443	0.0100	100	70.8	8479	PASS
442	198	40.0	100	73.3	59805	PASS
443	442	17.0	23.0	20.0	11980	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575159-02	CCV	01	07/05/2016 14:51	
WG574706-01	BLANK	01	07/05/2016 15:14	
WG574706-02	LCS	01	07/05/2016 15:38	
WG574706-03	LCS2	01	07/05/2016 16:01	
L16061227-01	18WW22-062116	RE	07/05/2016 18:15	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4828120
Report generated 07/06/2016 11:09

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061227
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4840529
Report generated 07/06/2016 11:09

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061227

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4840529
Report generated 07/06/2016 11:09

INITIAL CALIBRATION DATA

Login Number: L16061227
Analytical Method: 8270D

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4840529
Report generated 07/06/2016 11:09

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061227 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4840530
Report generated 07/06/2016 11:09

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/27/2016
Sample ID: WG574241-02
Instrument ID: HPMS15
Run Time: 12:37
Method: 8270D
File ID: 15M18593
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG574301
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4360	ug/L	0.267	12.8	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4828121
Report generated 07/06/2016 11:10

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 07/05/2016
Sample ID: WG575159-02
Instrument ID: HPMS15
Run Time: 14:51
Method: 8270D
File ID: 15M18717
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG575045
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5230	ug/L	0.320	4.63	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4828121
Report generated 07/06/2016 11:10

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061227
Instrument ID: HPMS15
Workgroup (AAB#): WG574301

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16061227-01	1.00	01	48694
L16061227-06	1.00	01	37679
L16061227-07	1.00	01	44225
WG573812-01	1.00	01	38478
WG573812-02	1.00	01	47423
WG573812-03	1.00	01	50712

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4828122
Report generated 07/06/2016 11:10

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061227
Instrument ID: HPMS15
Workgroup (AAB#): WG575045

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16061227-01	1.00	RE	30375
WG574706-01	1.00	01	36576
WG574706-02	1.00	01	36960
WG574706-03	1.00	01	37076

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4828122
Report generated 07/06/2016 11:10

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18611.D
Acq On : 27 Jun 2016 19:39
Operator : MES
Sample : L16061227-01
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 28 08:07:11 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	48694	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.764	96	18335	0.9151	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	18.40%	
4) Nitrobenzene-d5	7.404	82	1371	0.0267	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.889	172	121	0.0009	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.133	244	1023	0.0082	ug/L	-0.05
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18611.D
Acq On : 27 Jun 2016 19:39
Operator : MES
Sample : L16061227-01
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 28 08:07:11 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

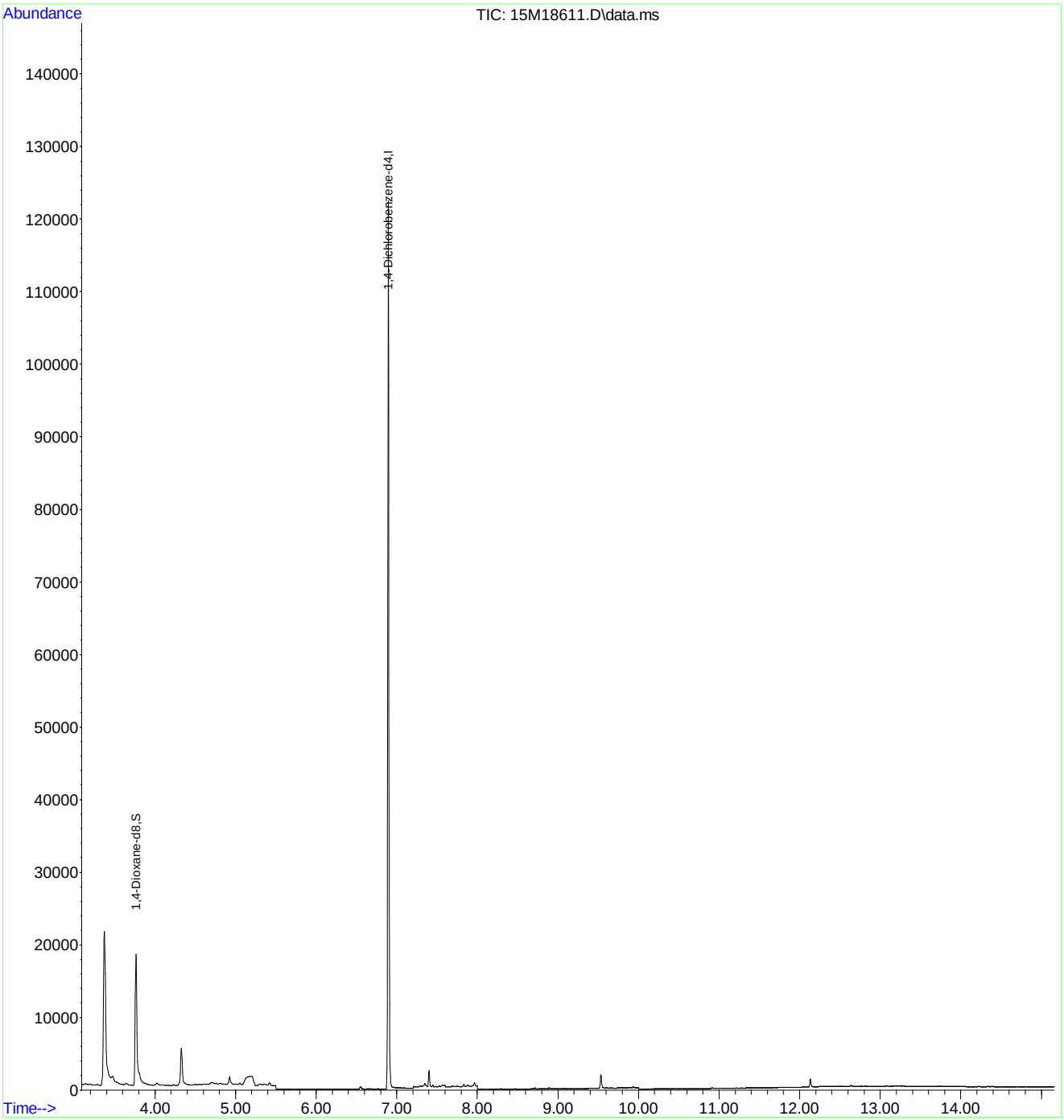

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18726.D
Acq On : 5 Jul 2016 18:15
Operator : MES
Sample : L16061227-01 RE 827-DIOX
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jul 06 10:56:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.867	152	30375	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.763	96	22015	1.7614	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	35.20%	
4) Nitrobenzene-d5	7.372	82	2383	0.0743	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.853	172	119	0.0015	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.096	244	1684	0.0216	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18726.D
Acq On : 5 Jul 2016 18:15
Operator : MES
Sample : L16061227-01 RE 827-DIOX
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jul 06 10:56:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

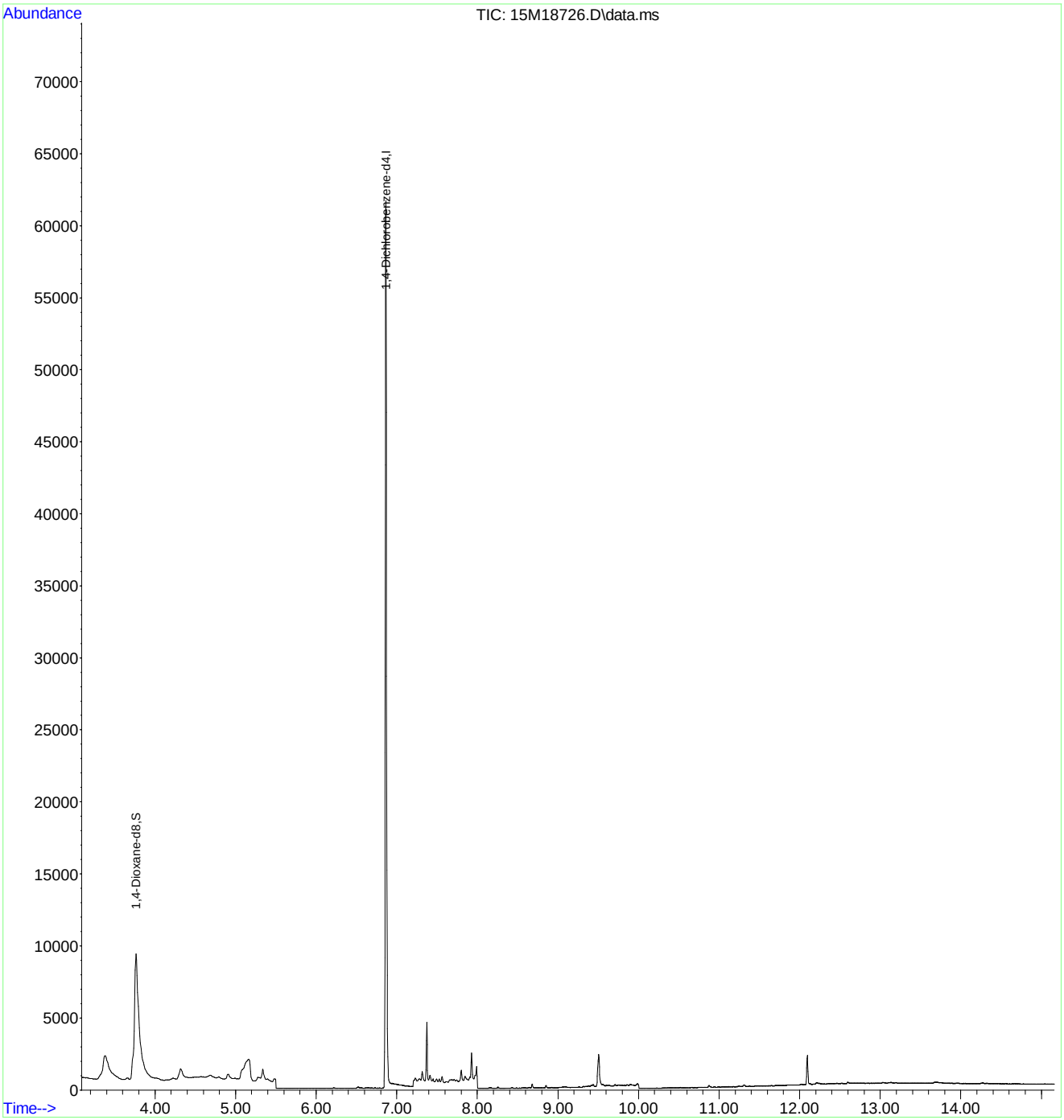

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18612.D
Acq On : 27 Jun 2016 20:02
Operator : MES
Sample : L16061227-06
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 28 08:07:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	37679	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.749	96	43035	2.7757	ug/L	-0.08
Spiked Amount 5.000			Recovery	=	55.60%	
4) Nitrobenzene-d5	7.404	82	1694	0.0426	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.80%	
5) 2-Fluorobiphenyl	8.889	172	274	0.0027	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.147	244	36456	0.3765	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	7.60%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18612.D
Acq On : 27 Jun 2016 20:02
Operator : MES
Sample : L16061227-06
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 28 08:07:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

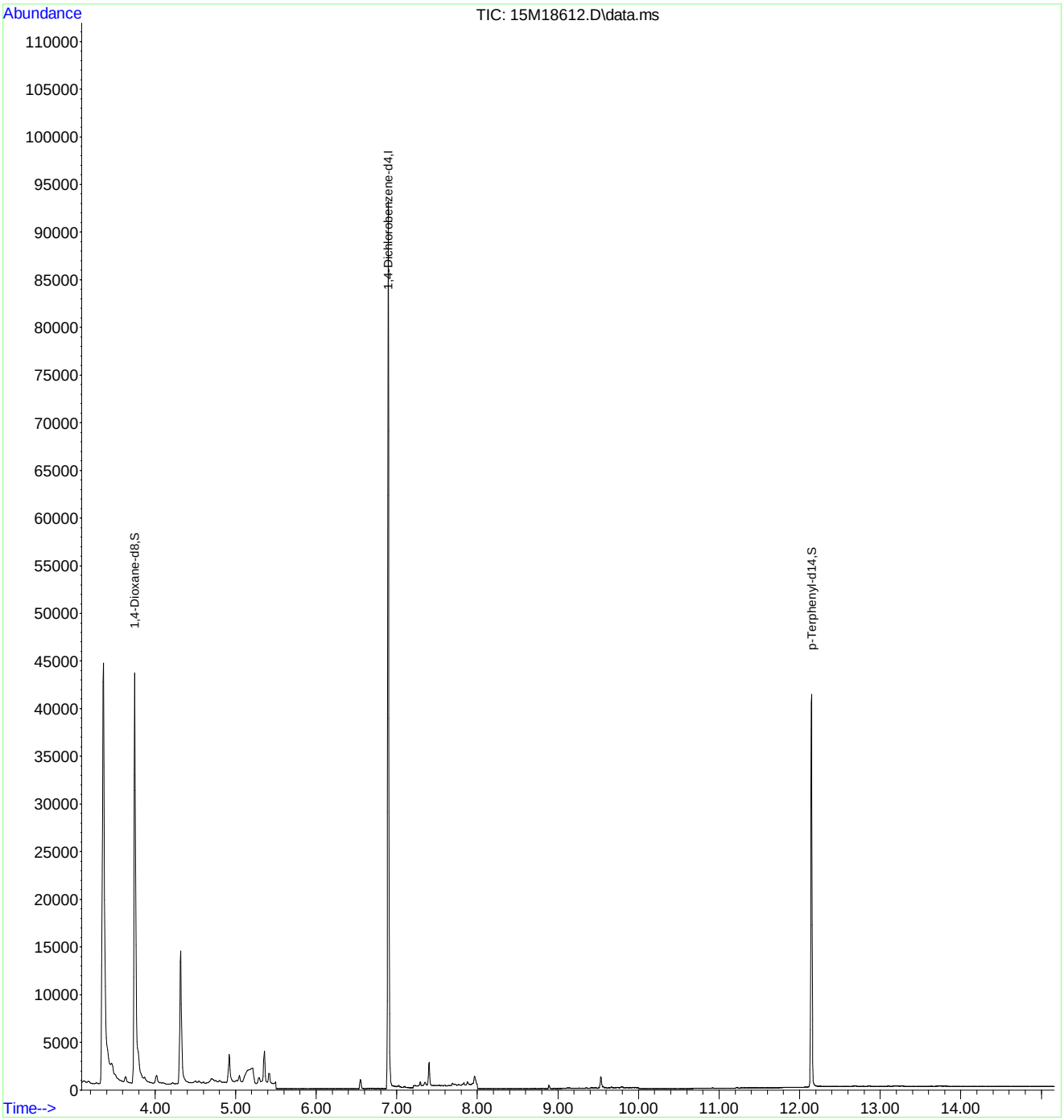

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18613.D
Acq On : 27 Jun 2016 20:25
Operator : MES
Sample : L16061227-07
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 28 08:07:17 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	44225	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.763	96	31814	1.7482	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	35.00%	
4) Nitrobenzene-d5	7.404	82	1100	0.0235	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.40%	
5) 2-Fluorobiphenyl	8.889	172	260	0.0022	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.136	244	105270	0.9262	ug/L	-0.05
Spiked Amount 5.000			Recovery	=	18.60%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18613.D
Acq On : 27 Jun 2016 20:25
Operator : MES
Sample : L16061227-07
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 28 08:07:17 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

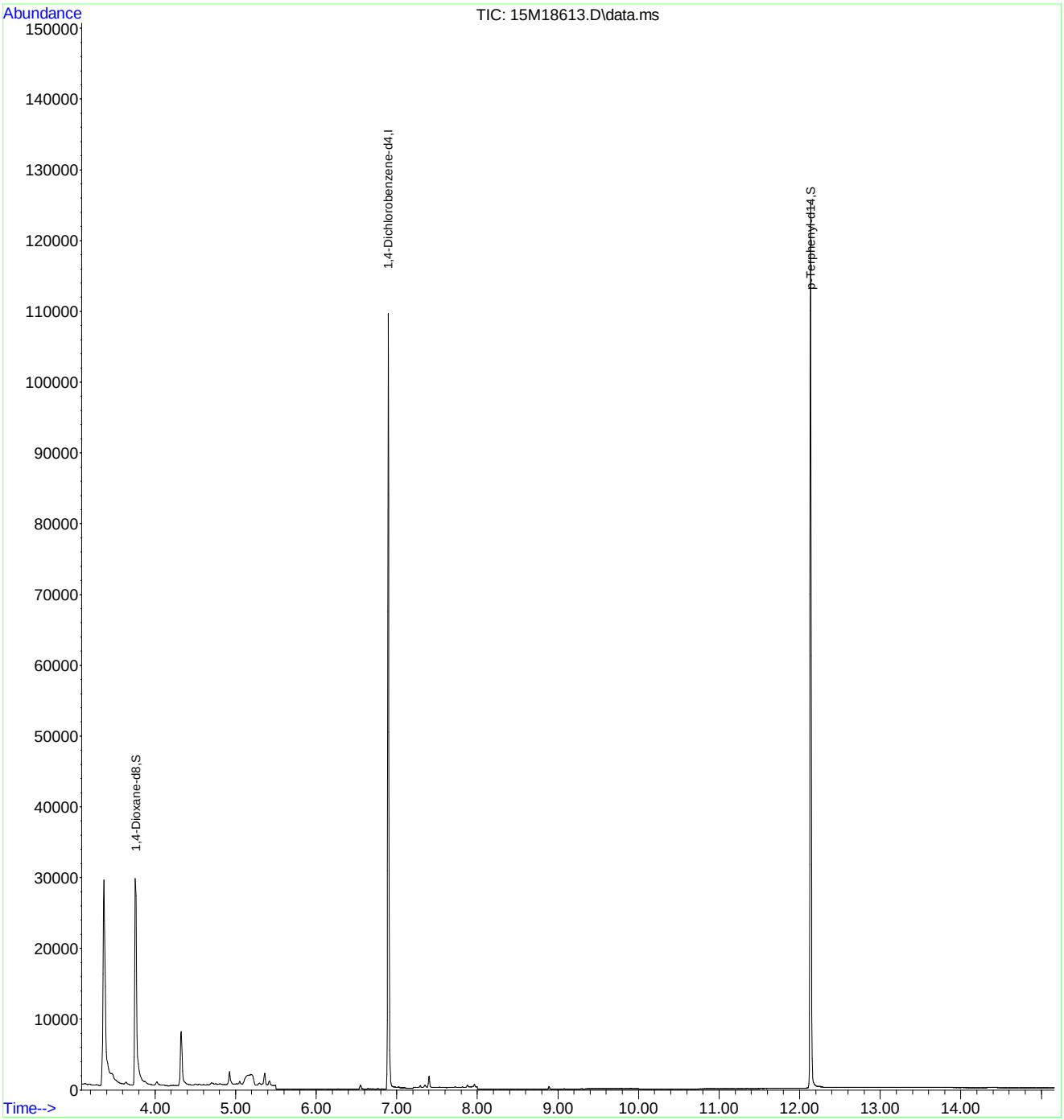

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 10:23:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	60	0.00
2	1,4-Dioxane	0.325	0.307	5.5	57	-0.03
3 S	1,4-Dioxane-d8	0.419	0.417	0.5	60	-0.04
4 S	Nitrobenzene-d5	0.904	1.128	-24.8	69	0.00
5 S	2-Fluorobiphenyl	2.613	2.691	-3.0	63	0.00
6 S	p-Terphenyl-d14	2.562	2.622	-2.3	61	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 10:23:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	60	0.00
2	1,4-Dioxane	5.000	4.721	5.6	57	-0.03
3 S	1,4-Dioxane-d8	5.000	4.979	0.4	60	-0.04
4 S	Nitrobenzene-d5	5.000	5.474	-9.5	69	0.00
5 S	2-Fluorobiphenyl	5.000	5.150	-3.0	63	0.00
6 S	p-Terphenyl-d14	5.000	5.115	-2.3	61	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

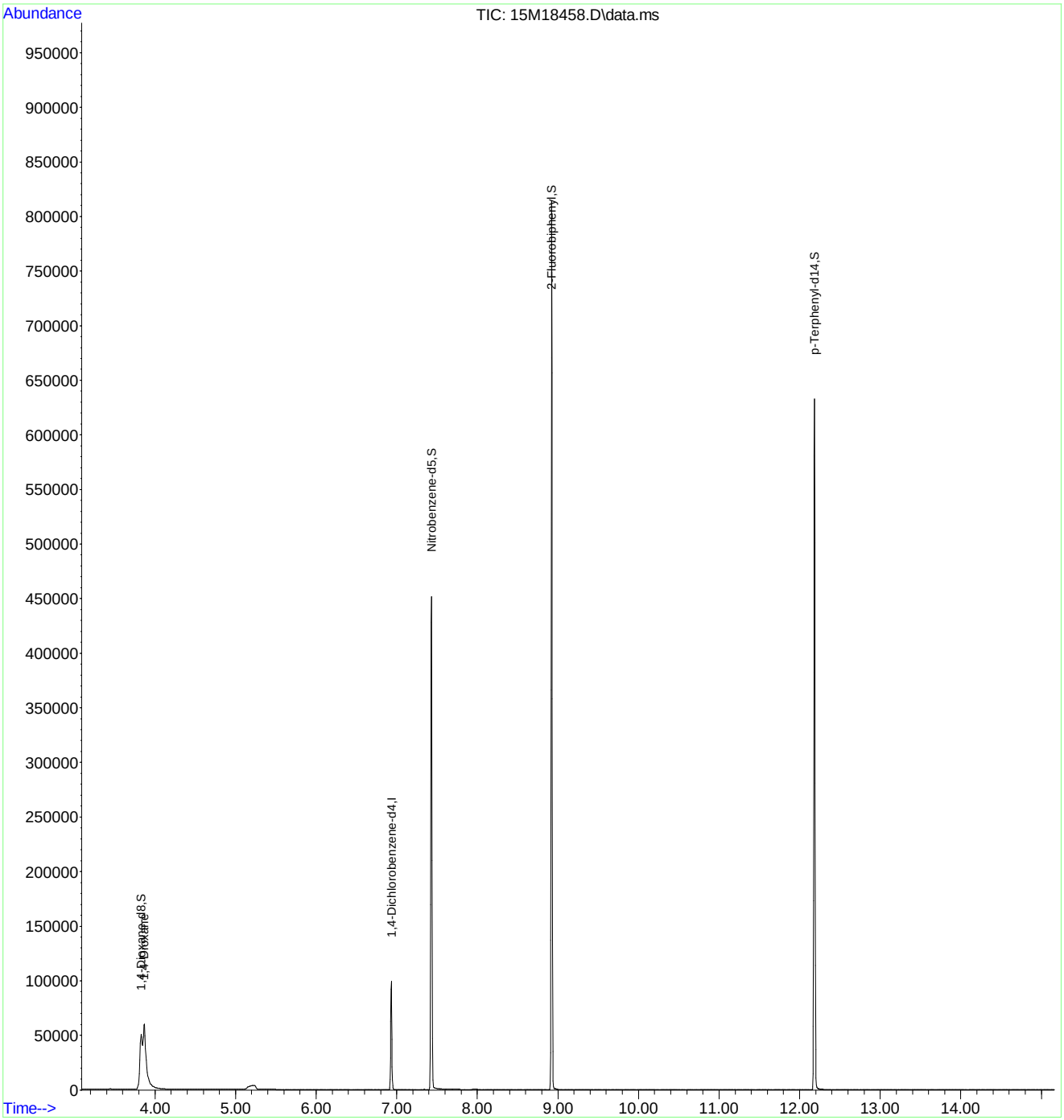

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

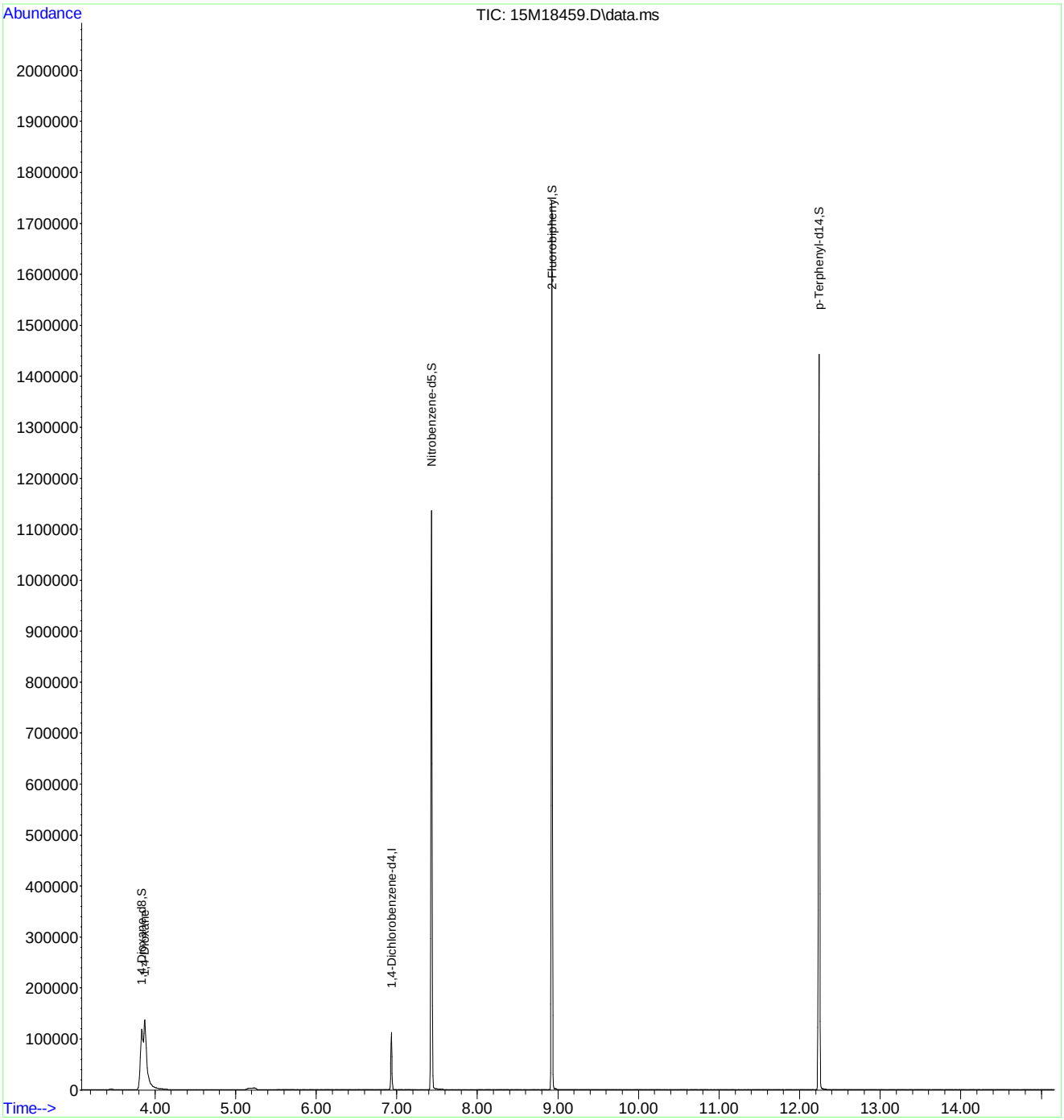

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

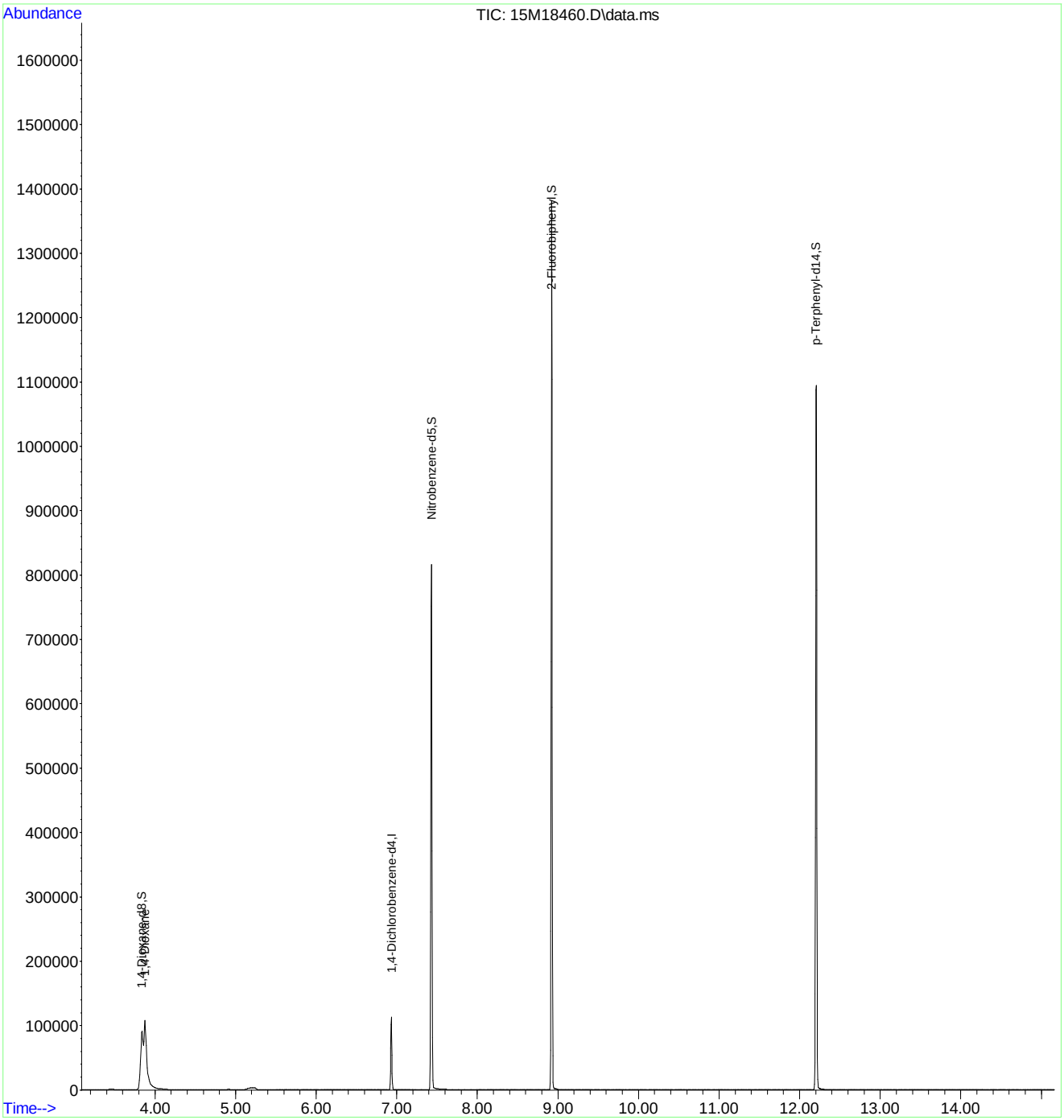

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406	ug/L	0.00
Spiked Amount 5.000			Recovery = 48.80%			
4) Nitrobenzene-d5	7.431	82	88869	2.3714	ug/L	0.00
Spiked Amount 5.000			Recovery = 47.40%			
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.20%			
6) p-Terphenyl-d14	12.199	244	218191	2.3930	ug/L	0.02
Spiked Amount 5.000			Recovery = 47.80%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

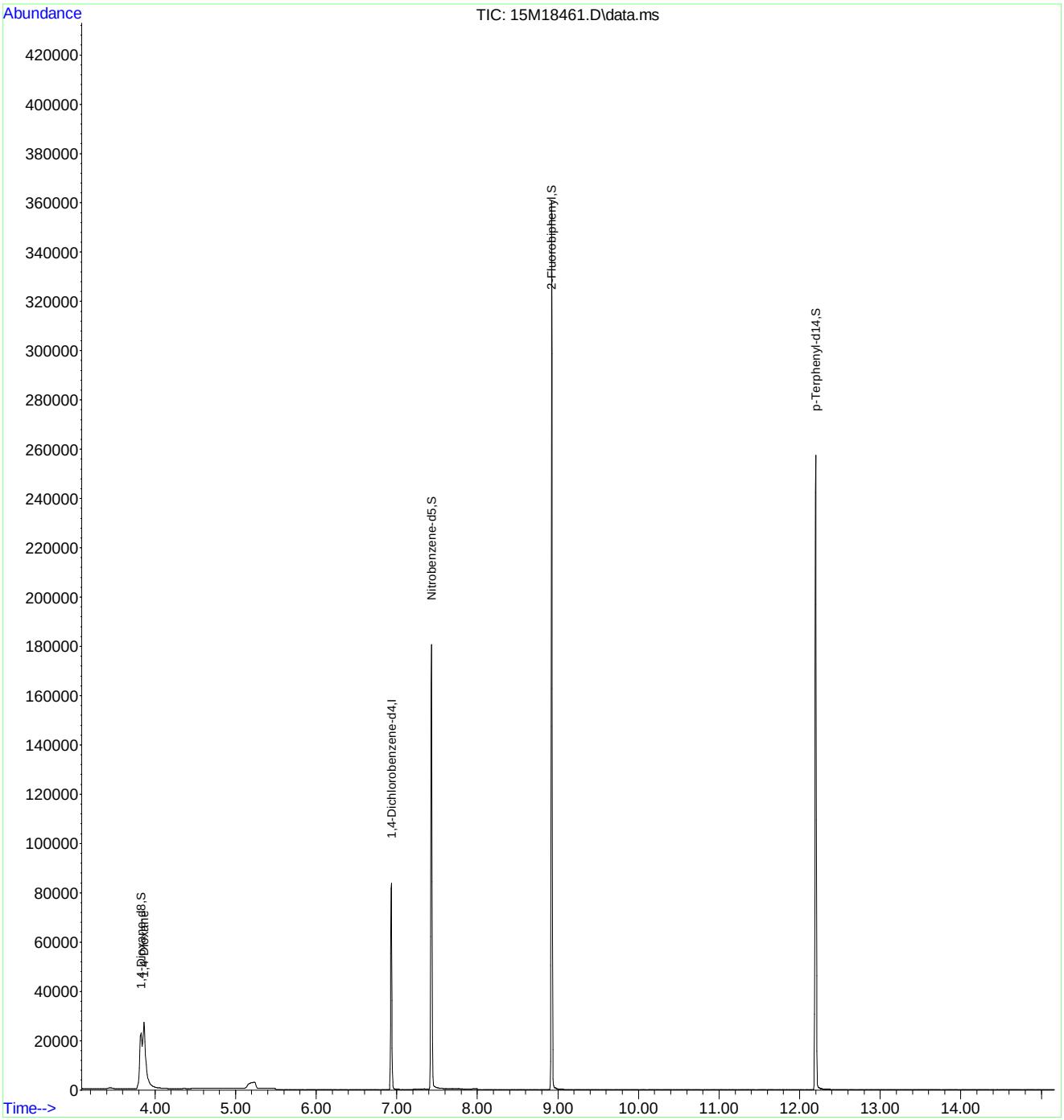

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607 ug/L	0.01
Spiked Amount 5.000			Recovery	= 19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776 ug/L	0.00
Spiked Amount 5.000			Recovery	= 17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612 ug/L	0.00
Spiked Amount 5.000			Recovery	= 19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208 ug/L	0.02
Spiked Amount 5.000			Recovery	= 18.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694 ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

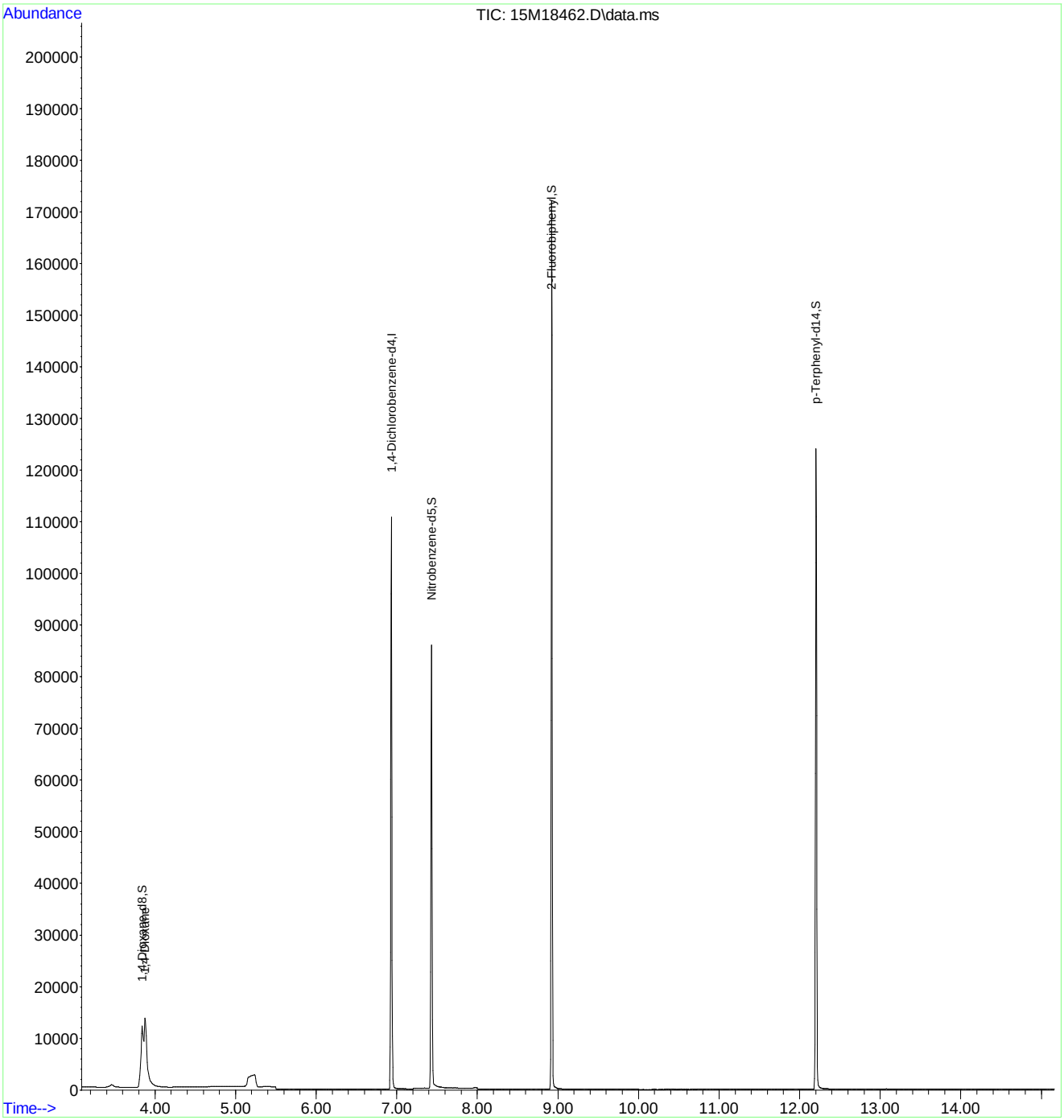

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

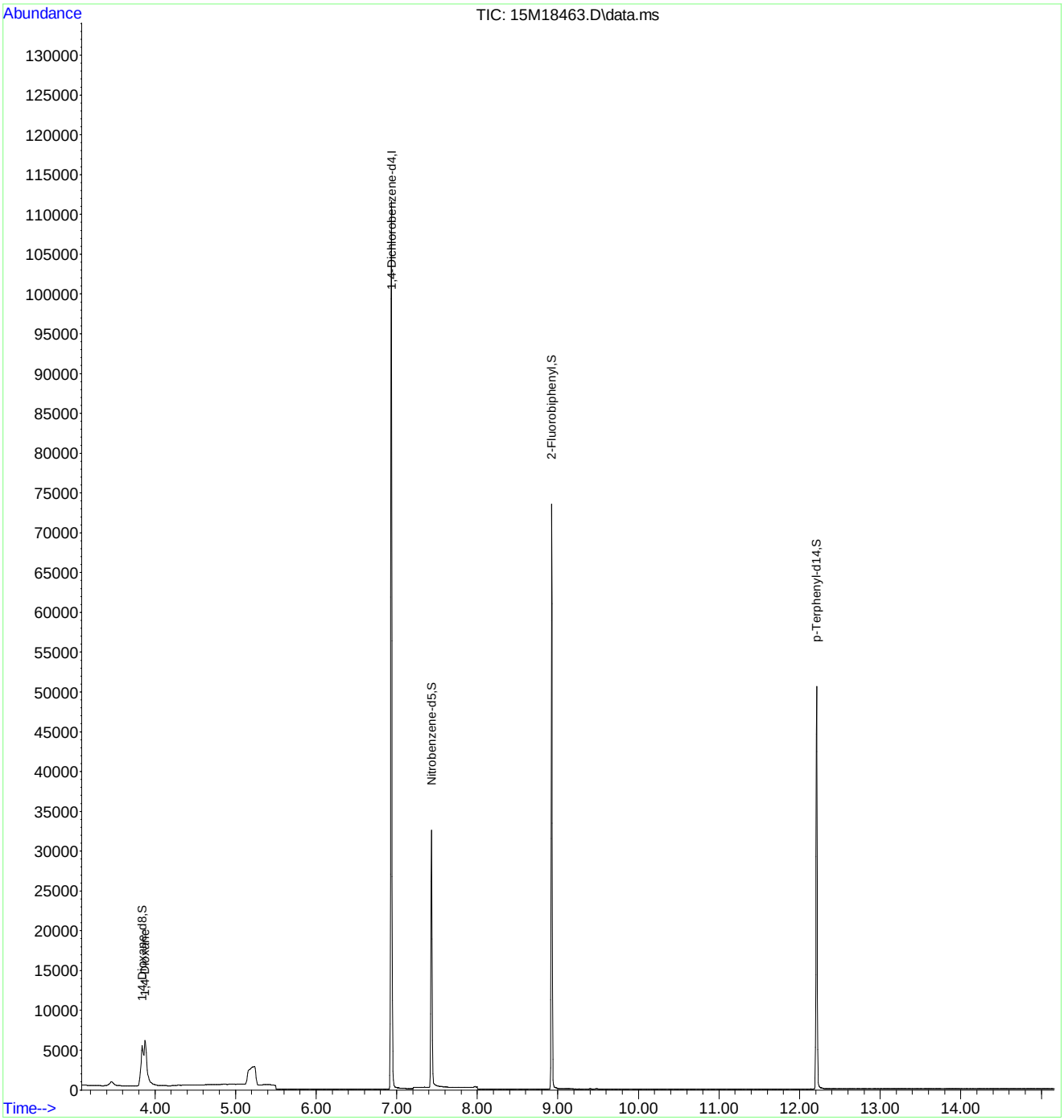

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2	1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3 S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4 S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

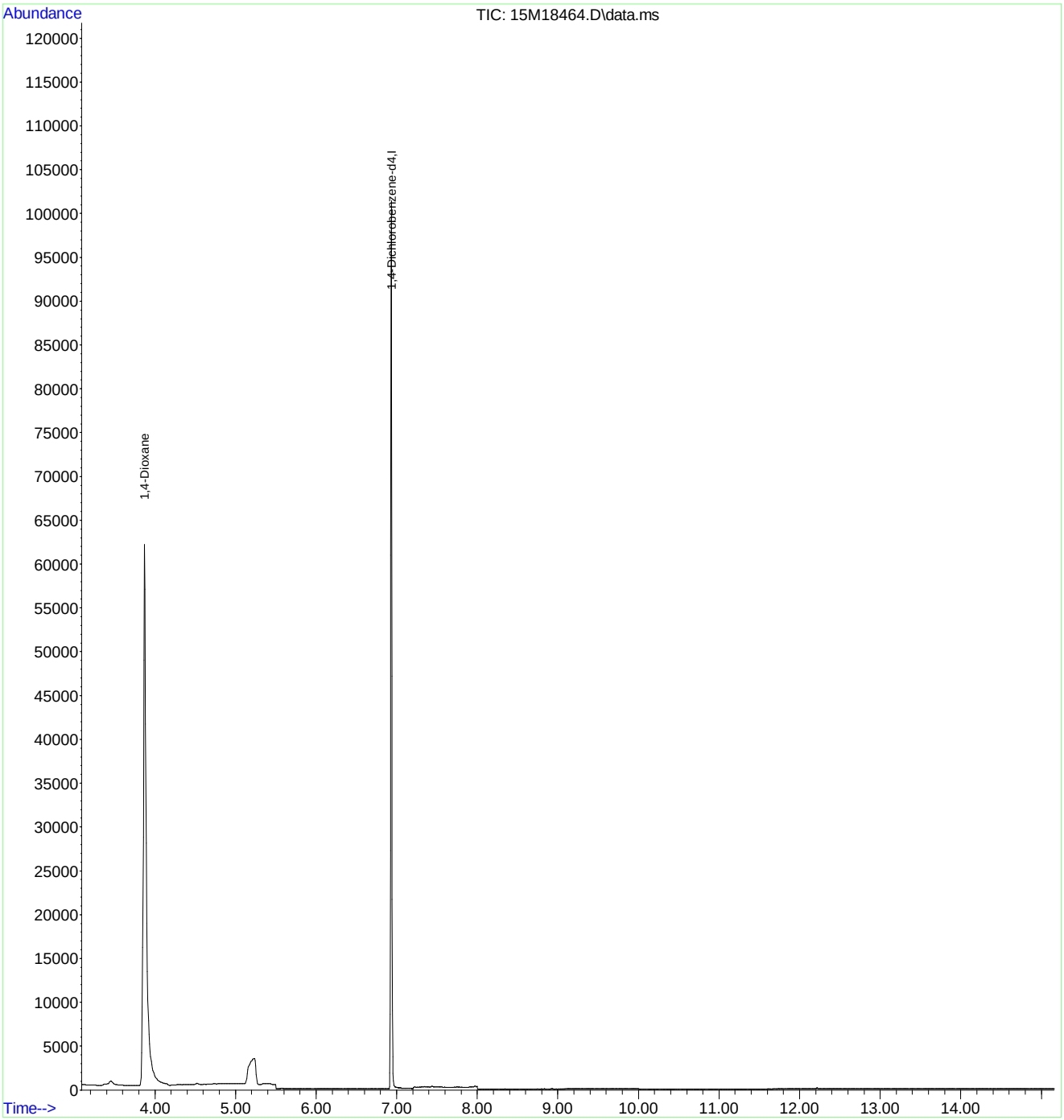

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.892	152	42974	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.749	96	78711	4.4512	ug/L	-0.08
Spiked Amount 5.000			Recovery	=	89.00%	
4) Nitrobenzene-d5	7.393	82	235288	5.1833	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	103.60%	
5) 2-Fluorobiphenyl	8.886	172	551093	4.8097	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	96.20%	
6) p-Terphenyl-d14	12.170	244	561144	5.0809	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	101.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.785	58	57358	4.3623	ug/L	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Continuing Calibration Area and RT check

Instrument: HPMS15
Initial cal date: 06/21/16
CCV date: 06/27/16
CCV Filename: 15M18593

1,4-Dichlorobenzene-d4

	Amount	RT
InitCal	39637	6.93
CCV	42974	6.89

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	-0.04
2	1,4-Dioxane	0.306	0.267	12.7	94	-0.08
3 S	1,4-Dioxane-d8	0.411	0.366	10.9	95	-0.08
4 S	Nitrobenzene-d5	1.056	1.095	-3.7	105	-0.04
5 S	2-Fluorobiphenyl	2.666	2.565	3.8	103	-0.04
6 S	p-Terphenyl-d14	2.570	2.612	-1.6	108	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	-0.04
2	1,4-Dioxane	5.000	4.362	12.8	94	-0.08
3 S	1,4-Dioxane-d8	5.000	4.451	11.0	95	-0.08
4 S	Nitrobenzene-d5	5.000	5.183	-3.7	105	-0.04
5 S	2-Fluorobiphenyl	5.000	4.810	3.8	103	-0.04
6 S	p-Terphenyl-d14	5.000	5.081	-1.6	108	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

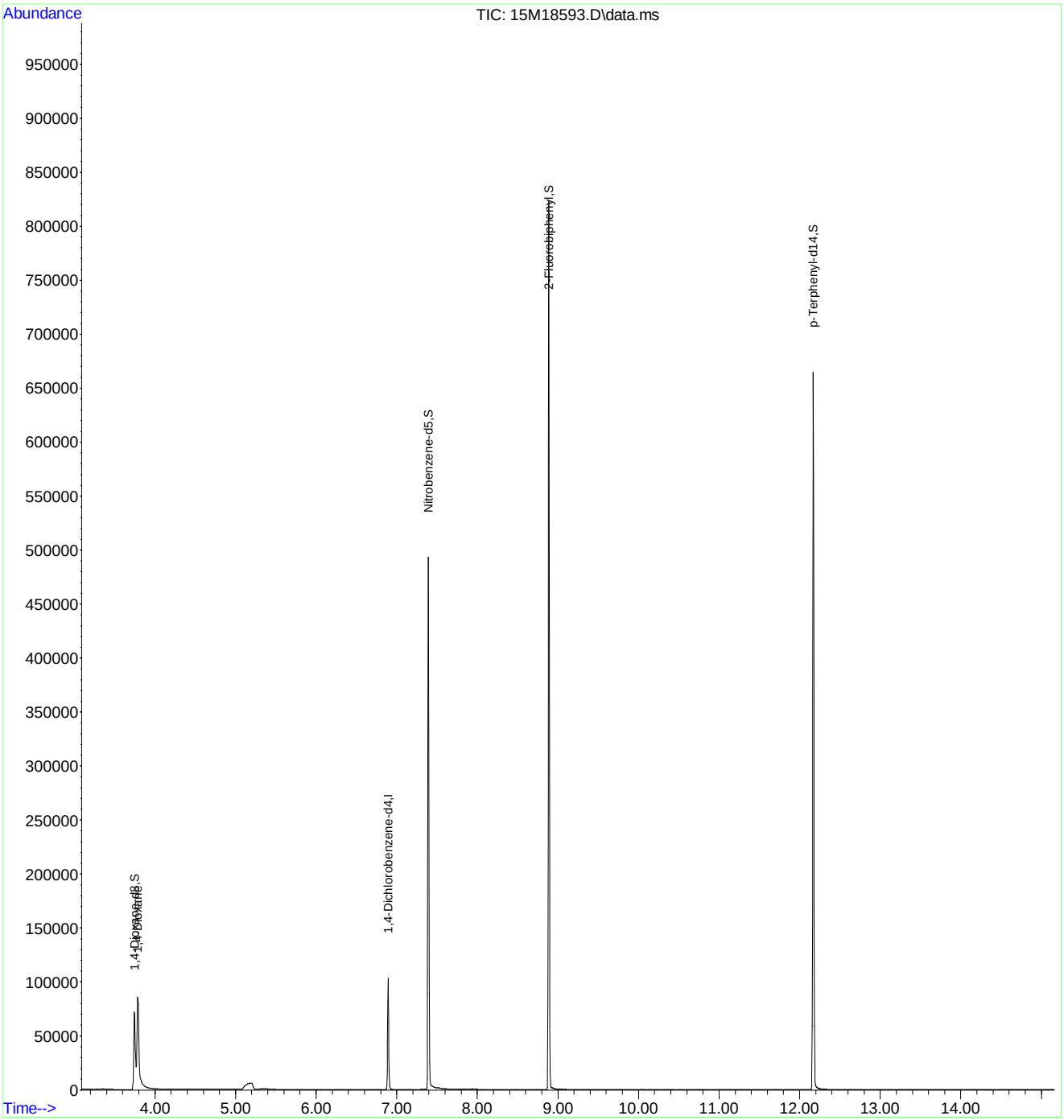

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.867	152	50685	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.778	96	100564	4.8218 ug/L	0.00
Spiked Amount 5.000			Recovery	= 96.40%	
4) Nitrobenzene-d5	7.367	82	310249	5.7949 ug/L	0.00
Spiked Amount 5.000			Recovery	= 115.80%	
5) 2-Fluorobiphenyl	8.853	172	677739	5.0151 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.40%	
6) p-Terphenyl-d14	12.122	244	688752	5.2876 ug/L	0.03
Spiked Amount 5.000			Recovery	= 105.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.813	58	81128	5.2314 ug/L	78

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Continuing Calibration Area and RT check

Instrument: HPMS15
Initial cal date: 06/21/16
CCV date: 07/05/16
CCV Filename: 15M18717

1,4-Dichlorobenzene-d4

	Amount	RT
InitCal	39637	6.93
CCV	50685	6.87

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	128	0.00
2	1,4-Dioxane	5.000	5.231	-4.6	133	0.00
3 S	1,4-Dioxane-d8	5.000	4.822	3.6	122	0.00
4 S	Nitrobenzene-d5	5.000	5.795	-15.9	139	0.00
5 S	2-Fluorobiphenyl	5.000	5.015	-0.3	127	0.00
6 S	p-Terphenyl-d14	5.000	5.288	-5.8	133	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

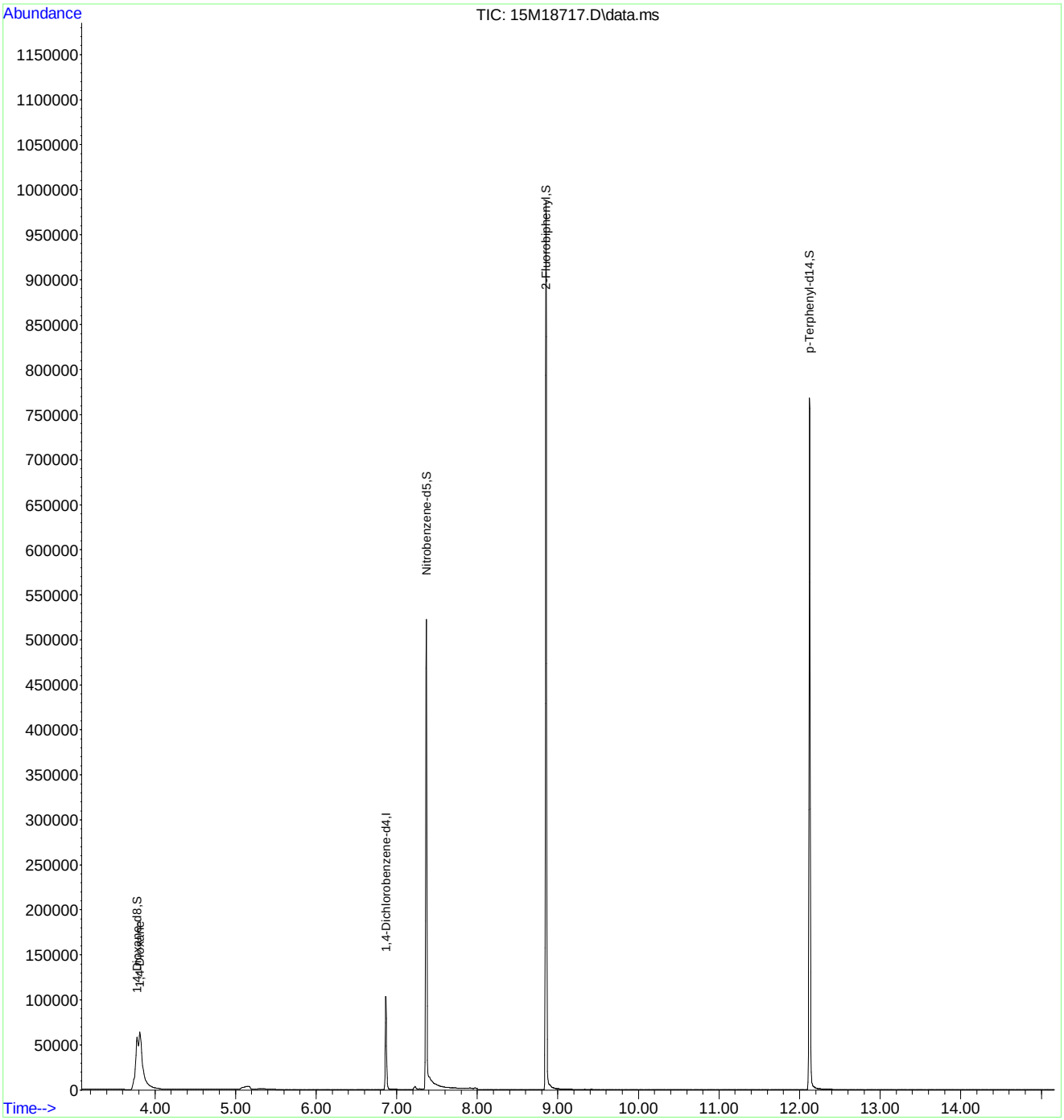

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

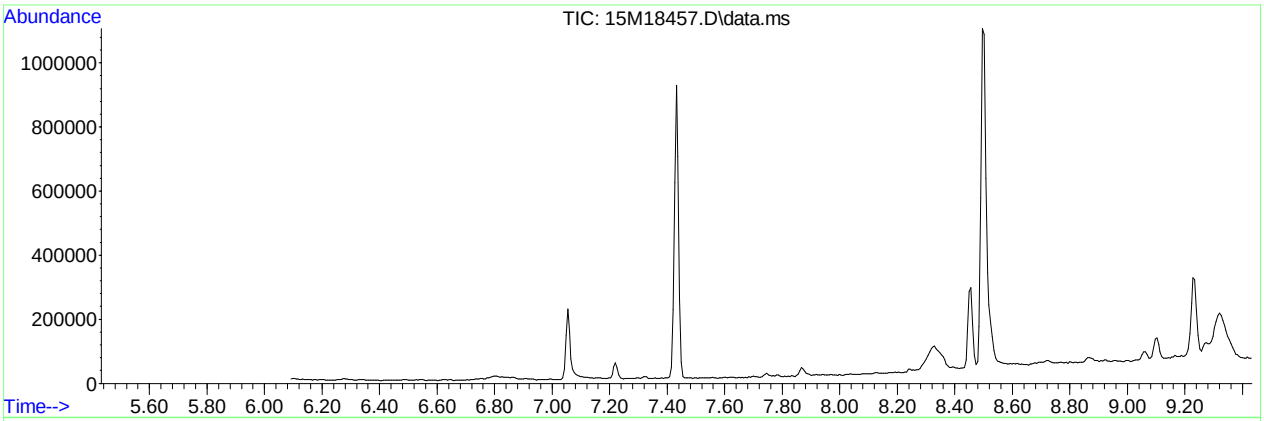

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

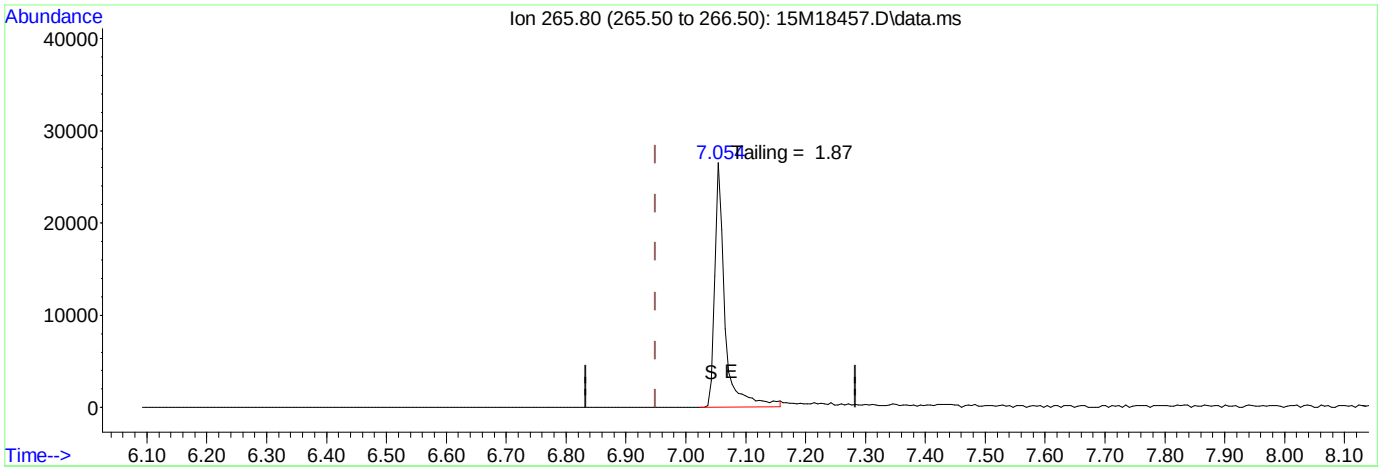

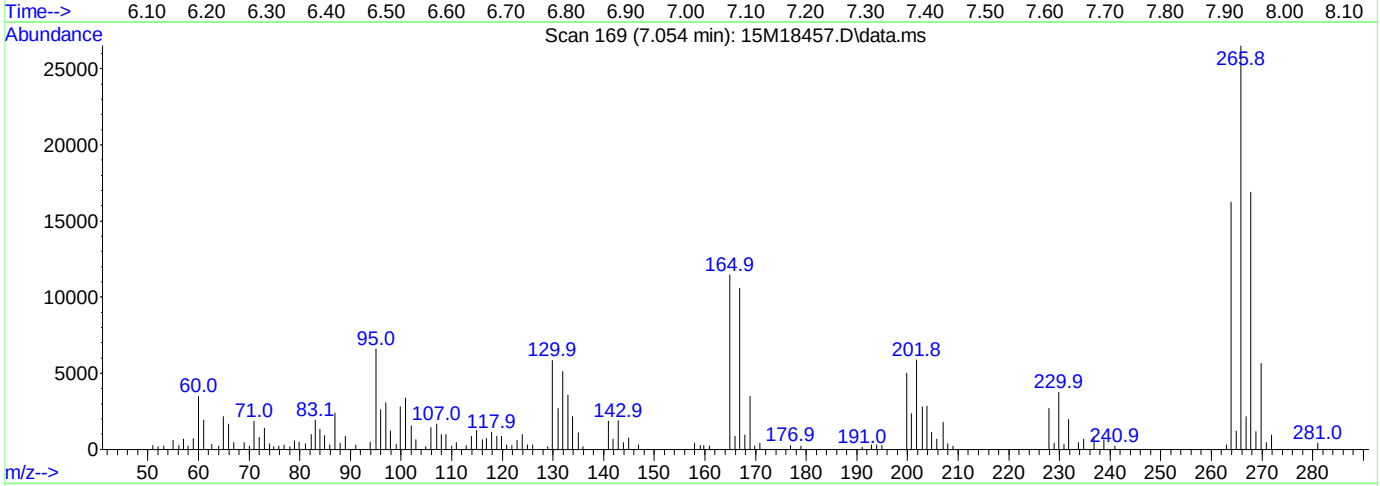

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

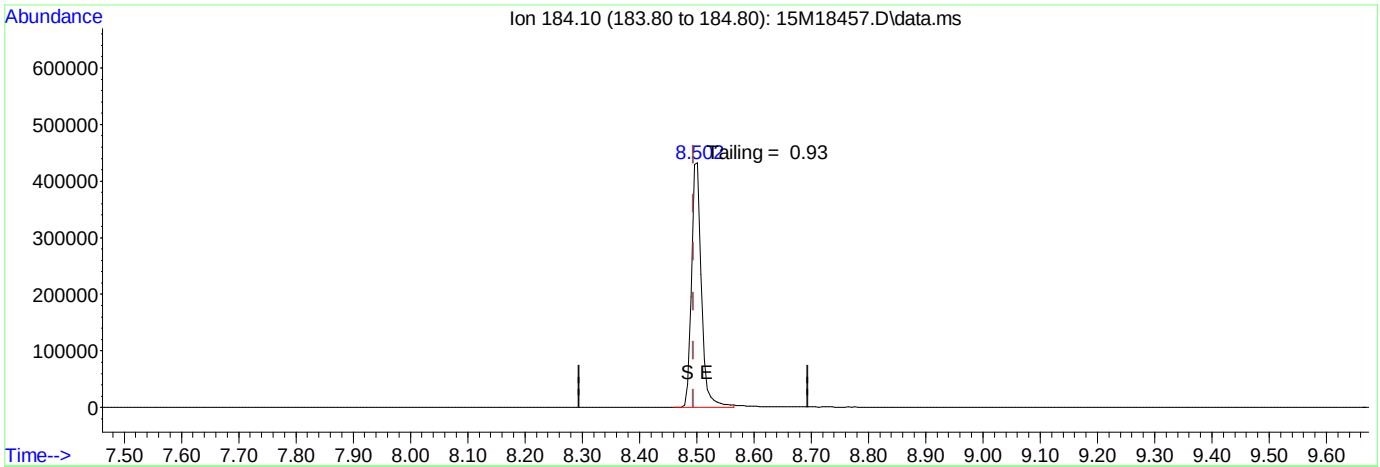

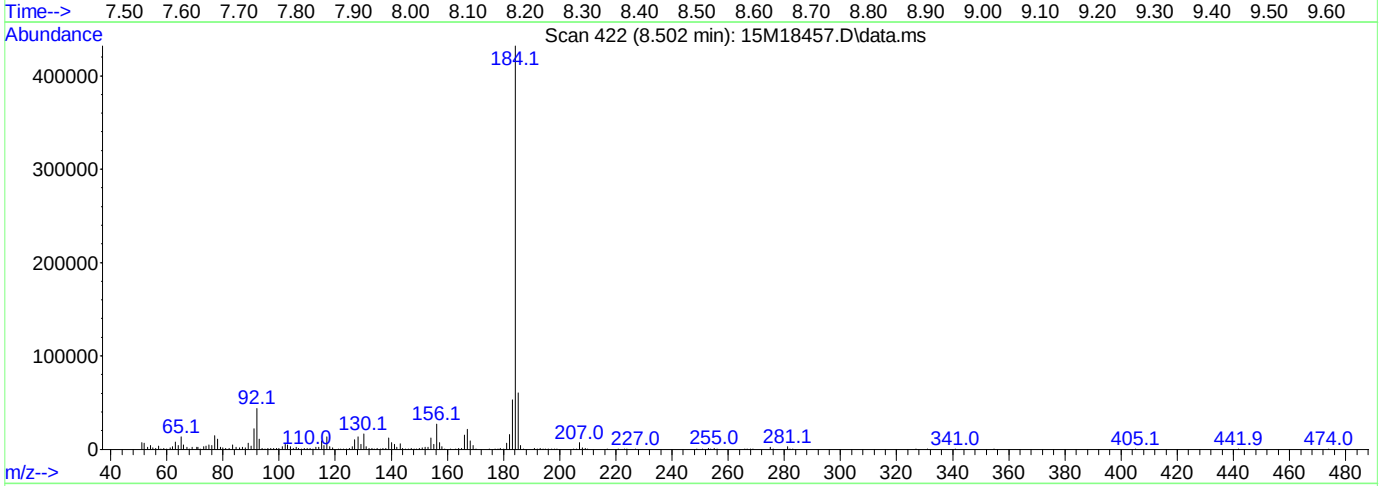

TIC: 15M18457.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

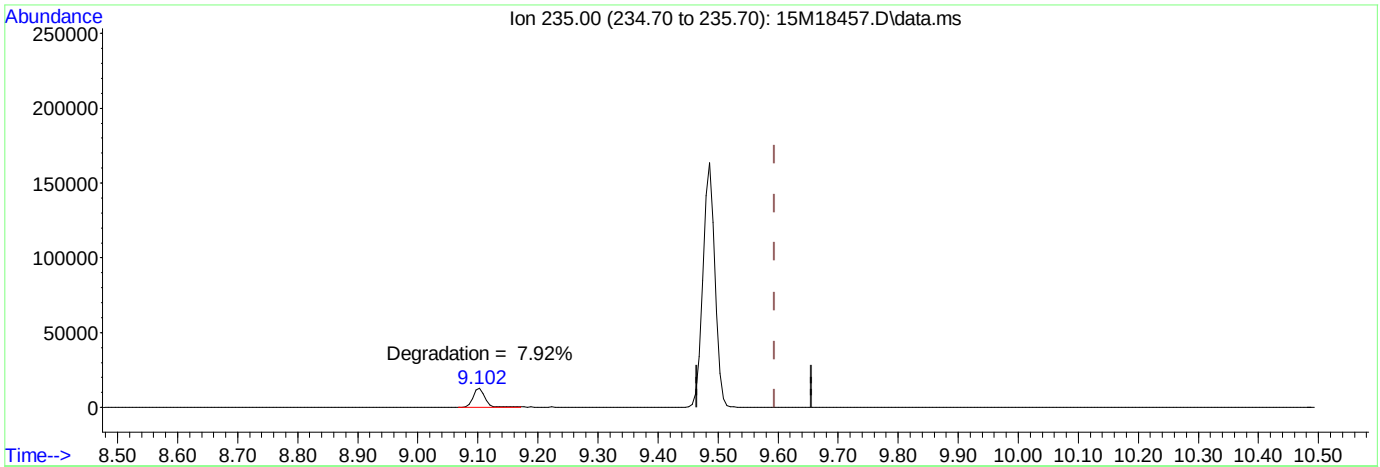

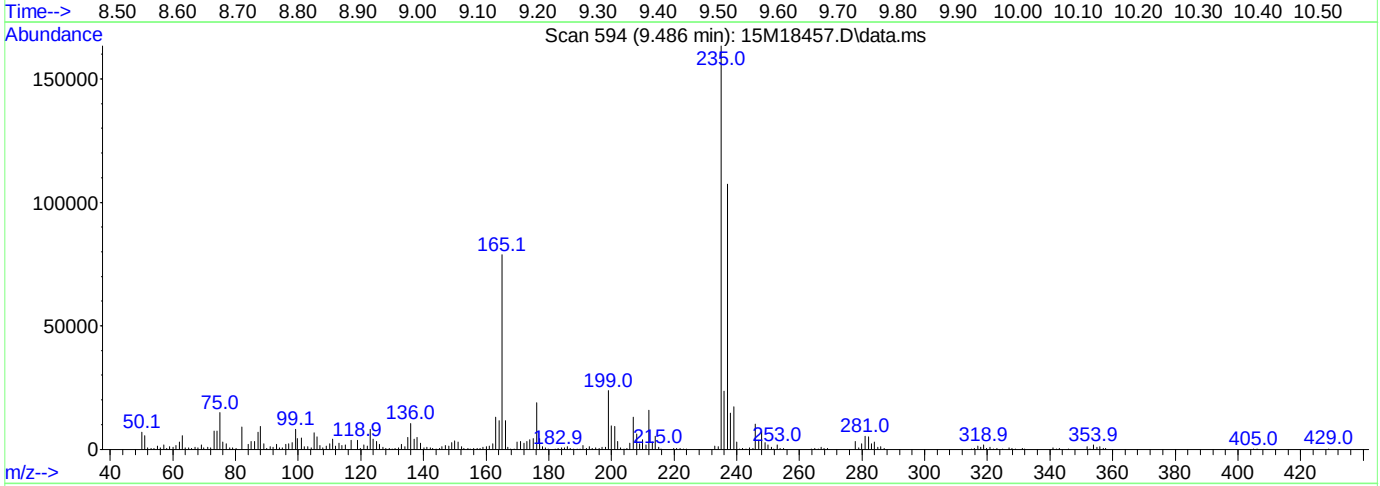

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

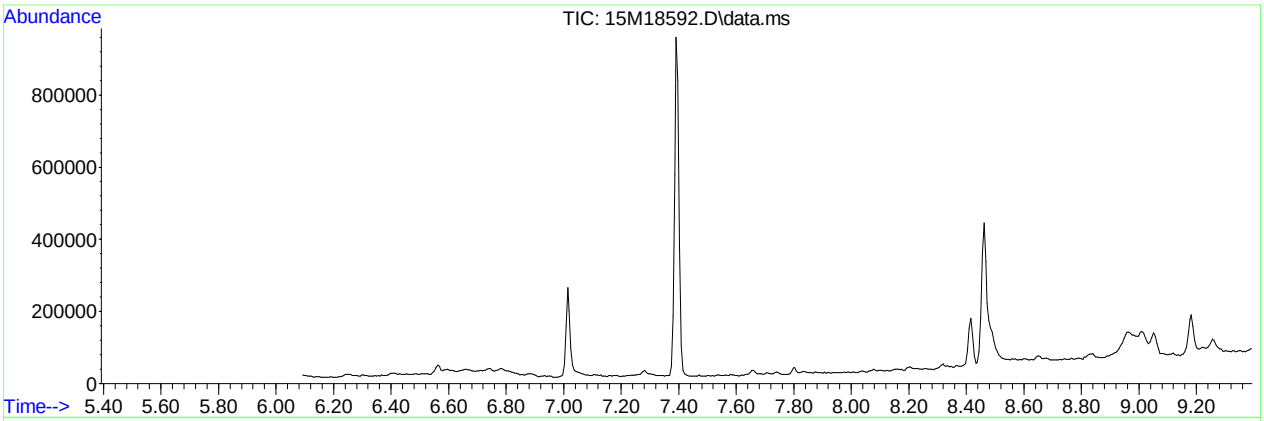

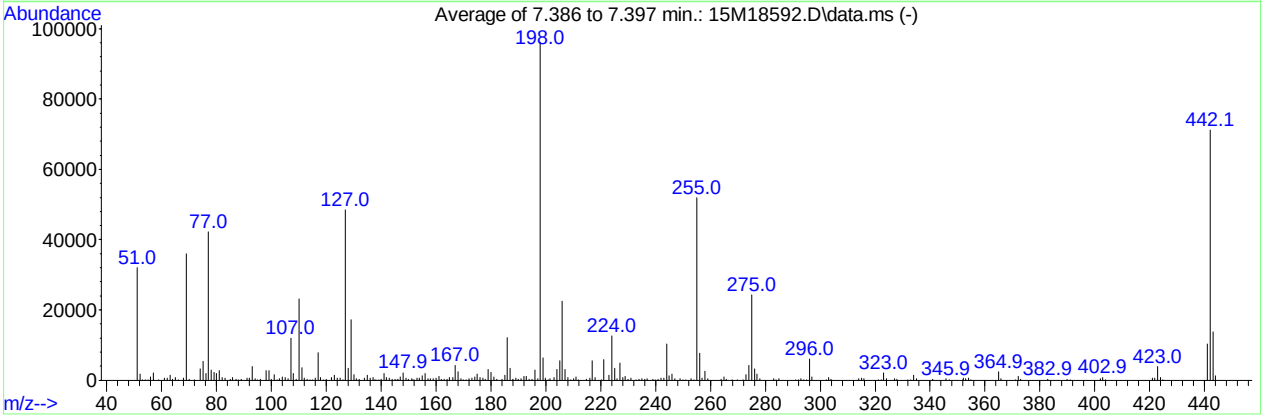

AutoFind: Scans 227, 228, 229; Background Corrected with Scan 221

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	33.2	31989	PASS
68	69	0.00	2	1.6	580	PASS
69	198	0.00	100	37.4	35954	PASS
70	69	0.00	2	0.6	222	PASS
127	198	40	60	50.4	48459	PASS
197	198	0.00	1	0.4	409	PASS
198	198	100	100	100.0	96232	PASS
199	198	5	9	6.6	6399	PASS
275	198	10	30	25.2	24236	PASS
365	198	1	100	2.5	2410	PASS
441	443	0.01	100	75.7	10371	PASS
442	198	40	100	73.9	71133	PASS
443	442	17	23	19.3	13708	PASS

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

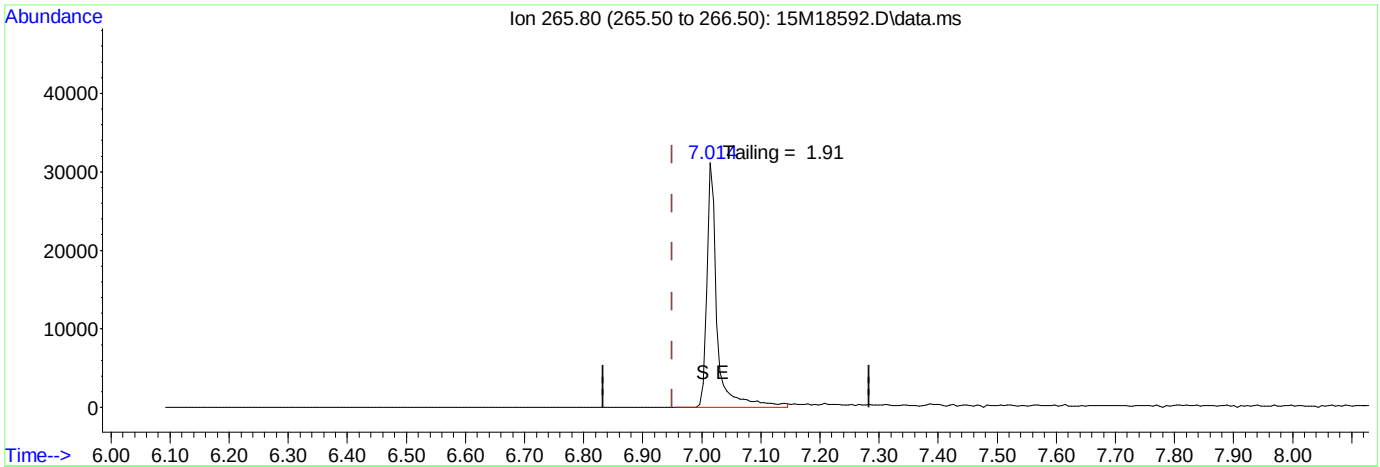

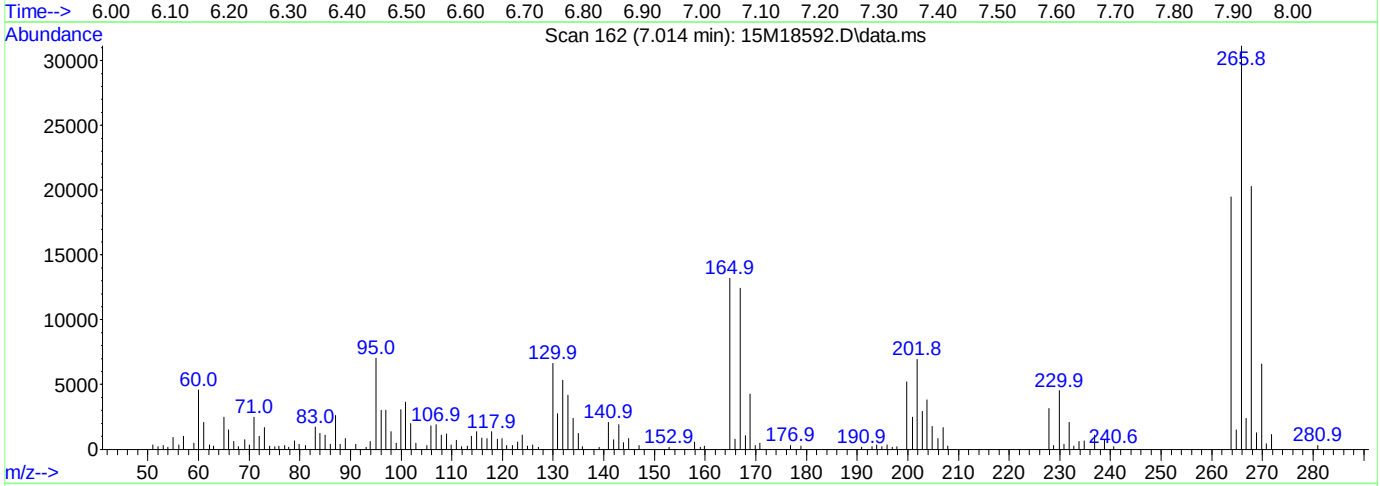

TIC: 15M18592.D\data.ms

(1) Pentachlorophenol

7.014min (+ 0.065) 0.00 ug/ml

response 37276

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

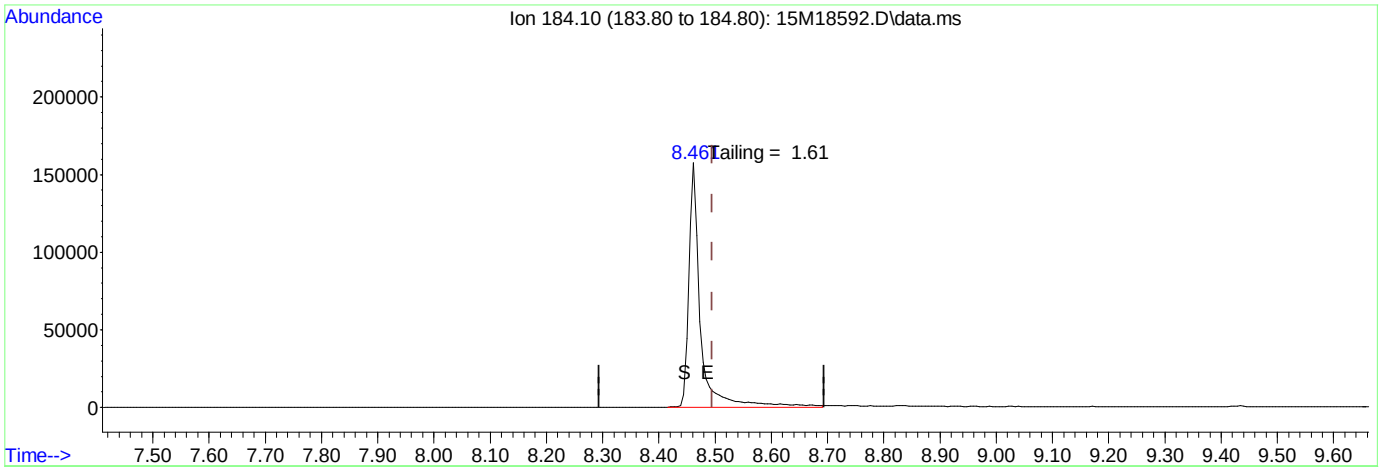

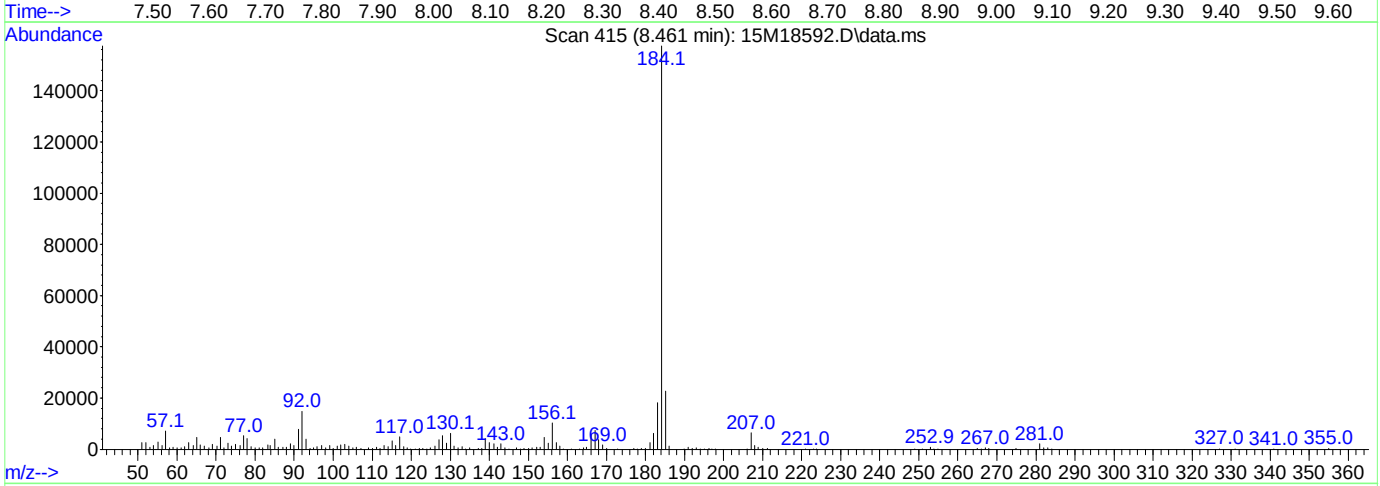

TIC: 15M18592.D\data.ms

(2) Benzidine

8.461min (-0.033) 0.00 ug/ml

response 225697

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

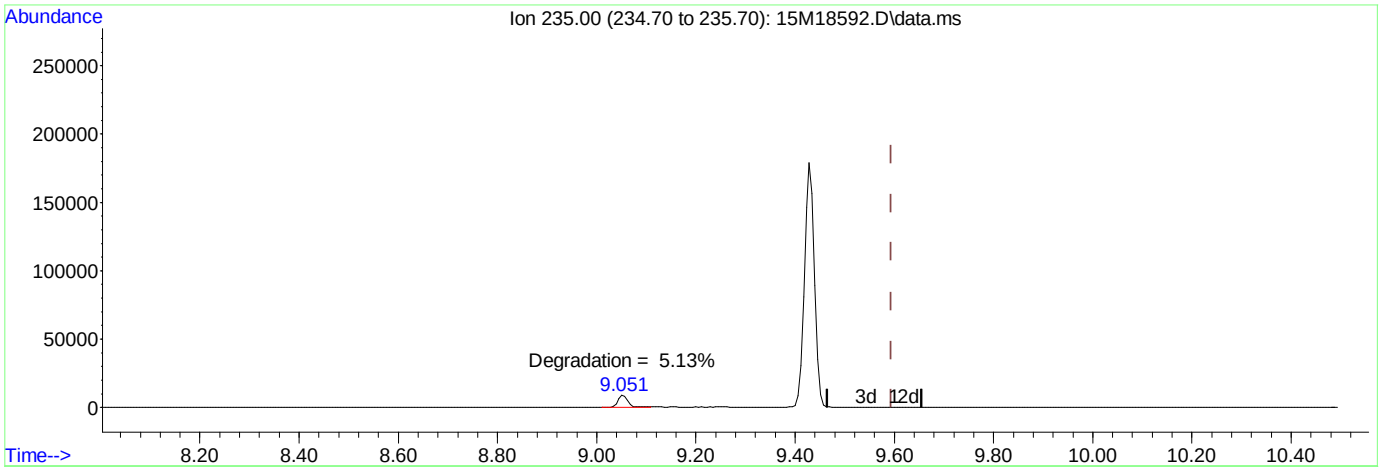

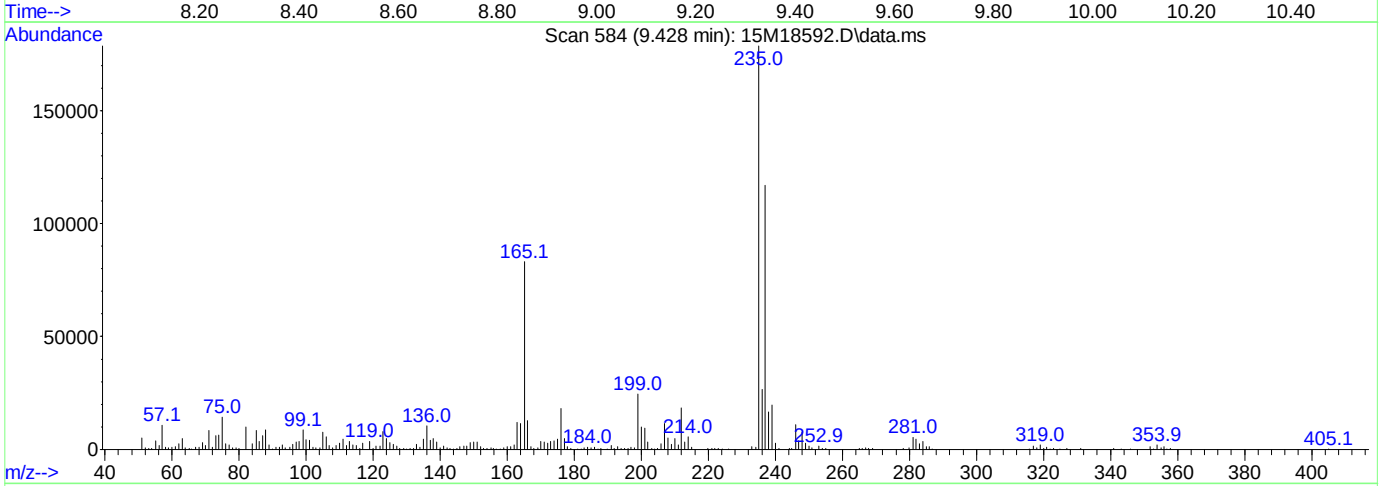

(3) DDT

9.428min (-0.166) 0.00 ug/ml mint

response 273417

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

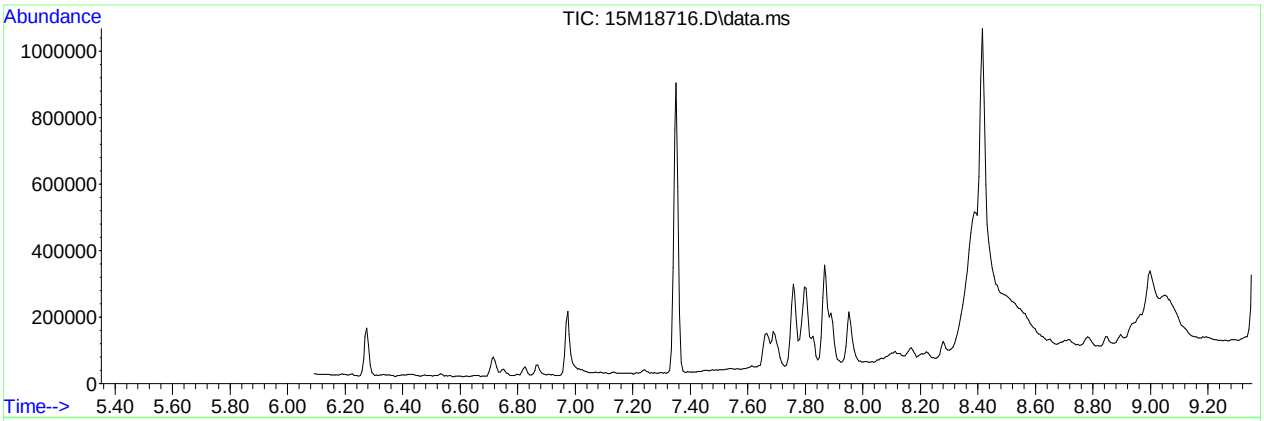

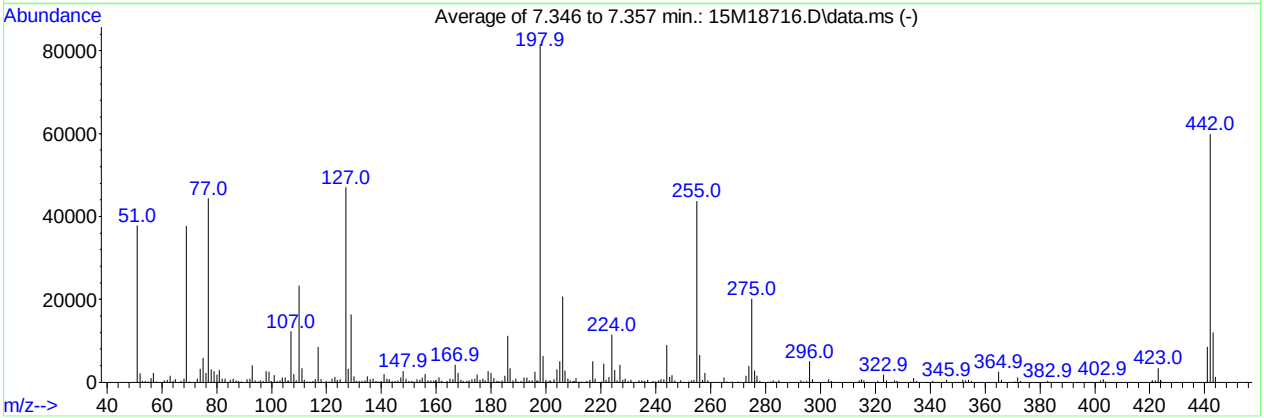

AutoFind: Scans 220, 221, 222; Background Corrected with Scan 214

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	46.2	37745	PASS
68	69	0.00	2	1.9	734	PASS
69	198	0.00	100	46.2	37667	PASS
70	69	0.00	2	0.3	127	PASS
127	198	40	60	57.5	46941	PASS
197	198	0.00	1	0.4	310	PASS
198	198	100	100	100.0	81613	PASS
199	198	5	9	7.6	6162	PASS
275	198	10	30	24.6	20072	PASS
365	198	1	100	2.9	2392	PASS
441	443	0.01	100	70.8	8479	PASS
442	198	40	100	73.3	59805	PASS
443	442	17	23	20.0	11980	PASS

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

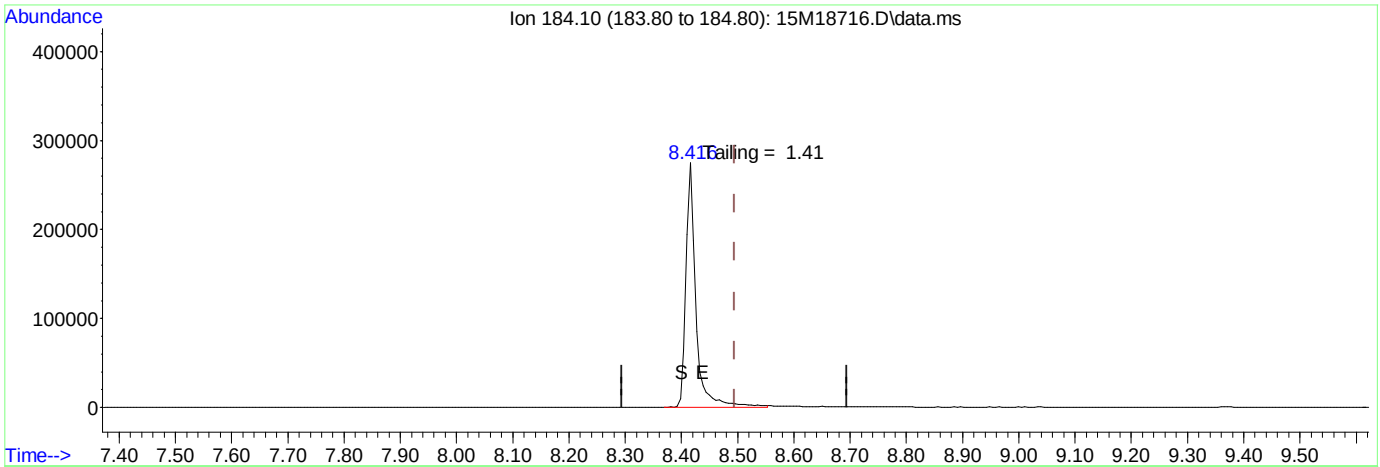

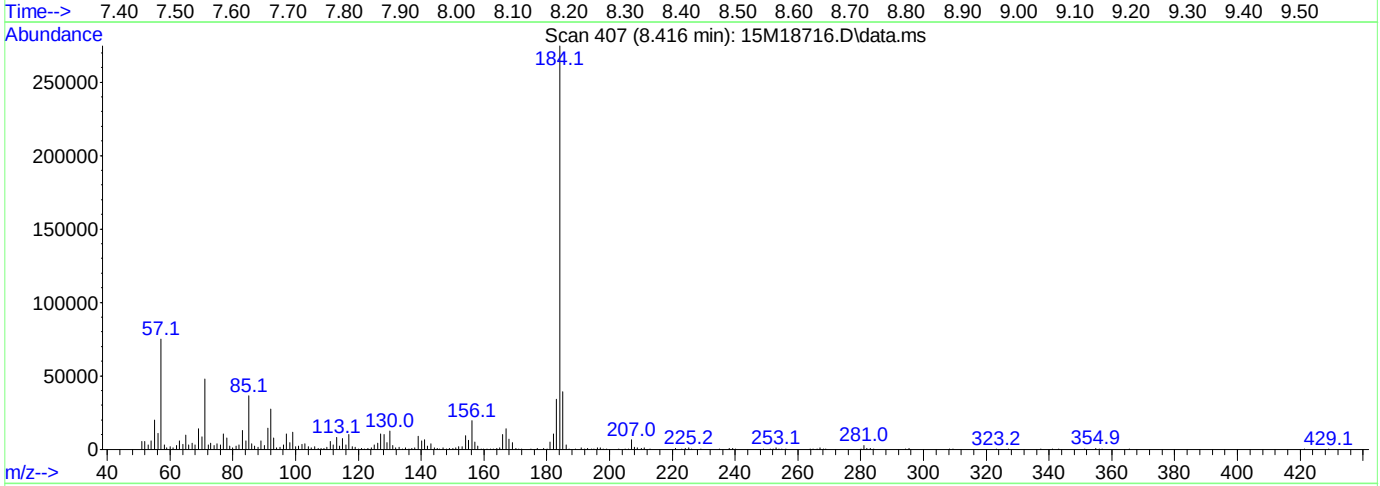

TIC: 15M18716.D\data.ms

(2) Benzidine

8.416min (-0.078) 0.00 ug/ml

response 340801

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

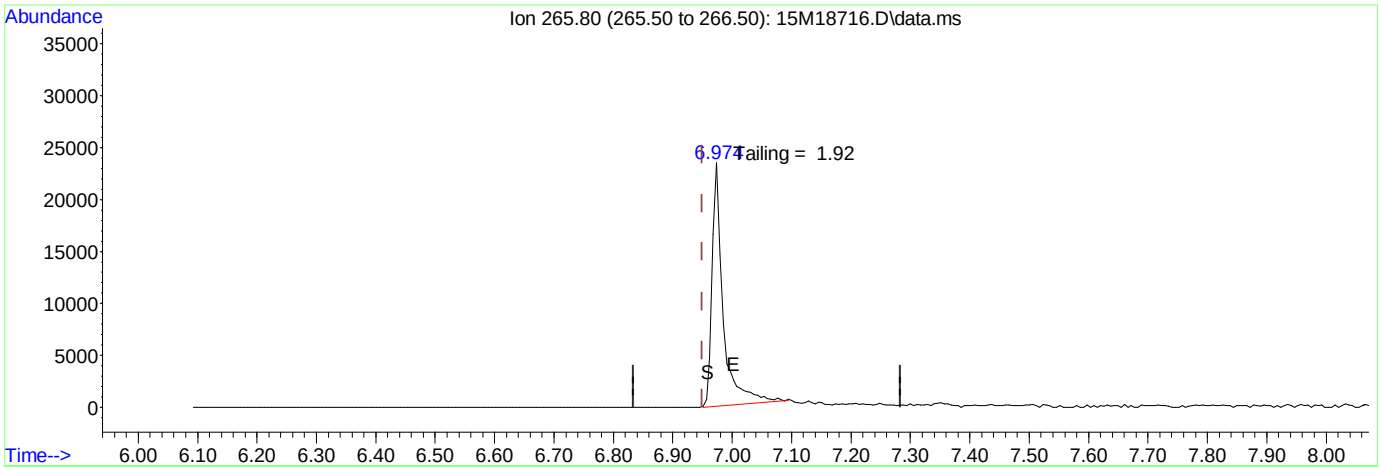

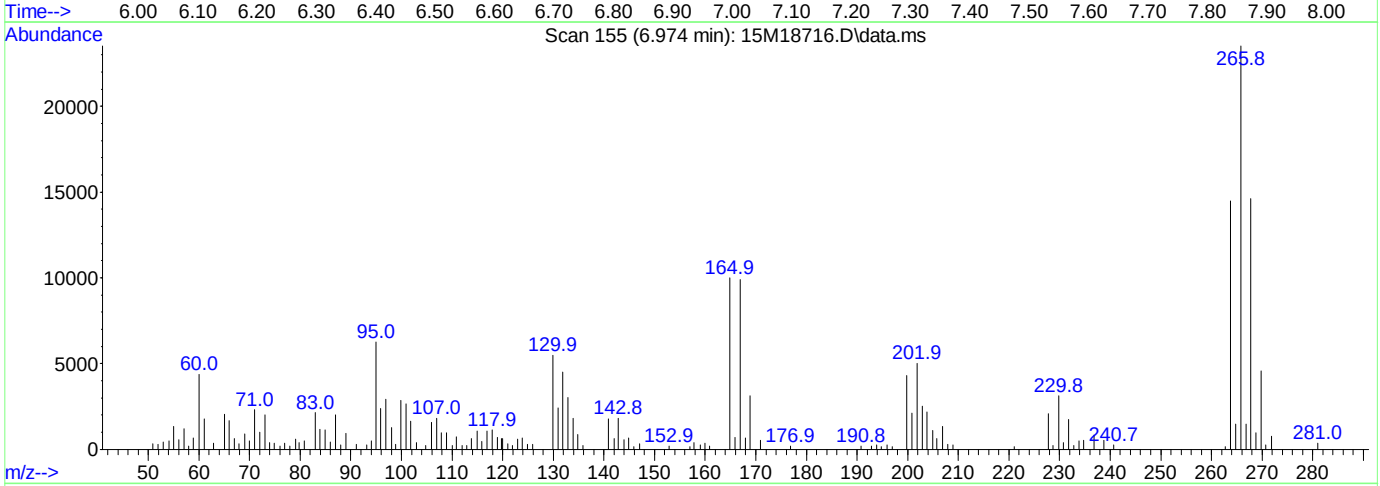

TIC: 15M18716.D\data.ms

(1) Pentachlorophenol

6.974min (+ 0.025) 0.00 ug/ml

response 32364

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

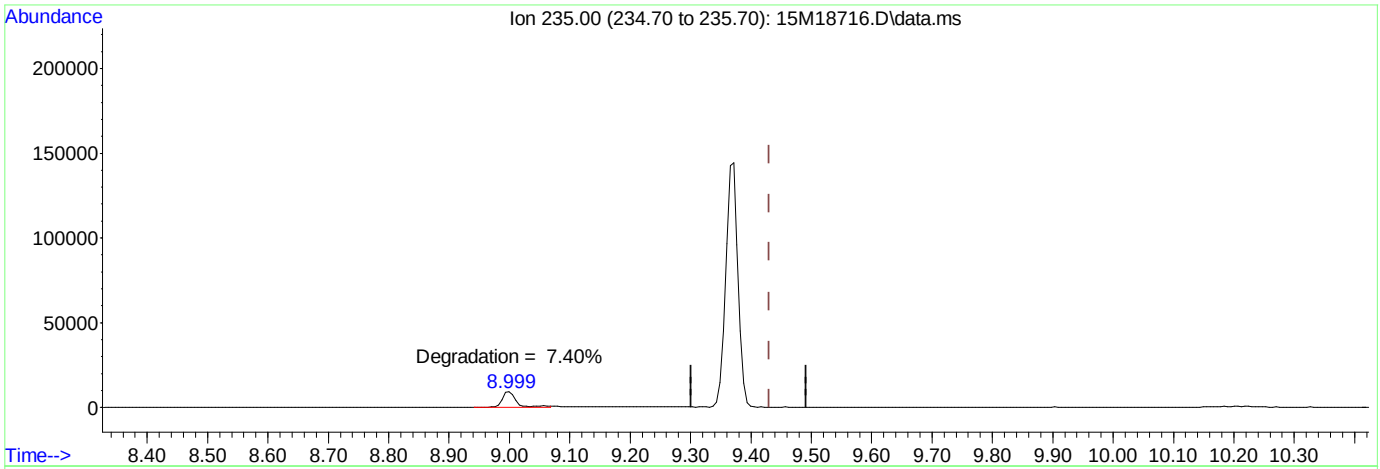

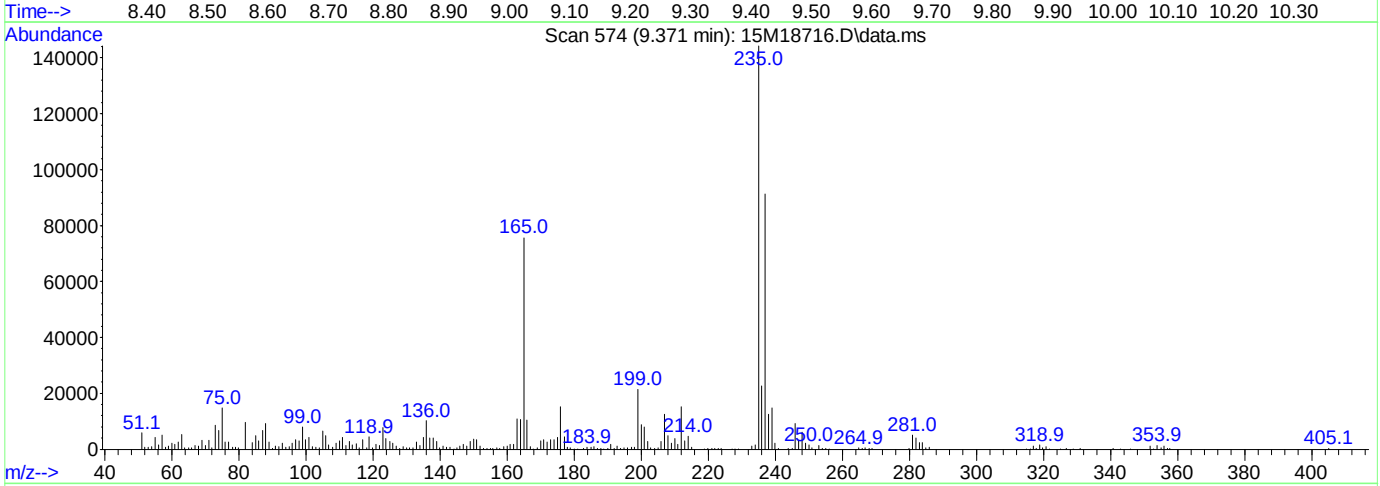

TIC: 15M18716.D\data.ms

(3) DDT

9.371min (-0.059) 0.00 ug/ml

response 208755

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18597.D
Acq On : 27 Jun 2016 14:22
Operator : MES
Sample : WG573812-01 BLANK 6/22
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 27 17:44:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	38478	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.749	96	23026	1.4543	ug/L	-0.08
Spiked Amount 5.000			Recovery = 29.00%			
4) Nitrobenzene-d5	7.393	82	809059	19.9059	ug/L	-0.04
Spiked Amount 5.000			Recovery = 398.20%			
5) 2-Fluorobiphenyl	8.889	172	1650481	16.0878	ug/L	-0.03
Spiked Amount 5.000			Recovery = 321.80%			
6) p-Terphenyl-d14	12.184	244	3974204	40.1893	ug/L	0.00
Spiked Amount 5.000			Recovery = 803.80%			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18597.D
Acq On : 27 Jun 2016 14:22
Operator : MES
Sample : WG573812-01 BLANK 6/22
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 27 17:44:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

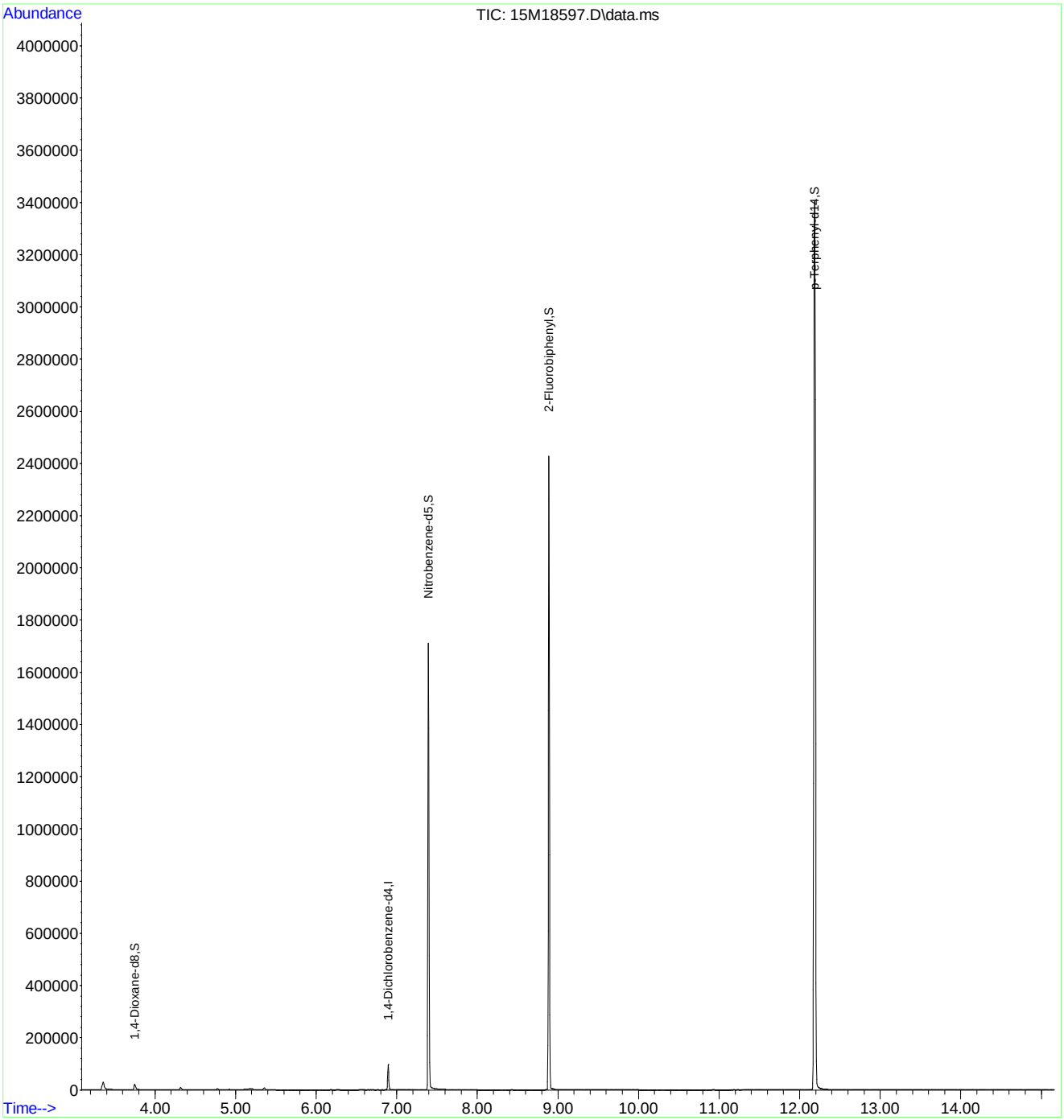

DIOXANE_D8.M Mon Jun 27 17:44:11 2016 Page: 2

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18718.D
Acq On : 5 Jul 2016 15:14
Operator : MES
Sample : WG574706-01 BLANK 6/30
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 05 16:37:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.867	152	36576	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.785	96	21271	1.4133	ug/L	0.00
Spiked Amount 5.000			Recovery	=	28.20%	
4) Nitrobenzene-d5	7.372	82	1968	0.0509	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.853	172	65	0.0007	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.114	244	1088	0.0116	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18718.D
Acq On : 5 Jul 2016 15:14
Operator : MES
Sample : WG574706-01 BLANK 6/30
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 05 16:37:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

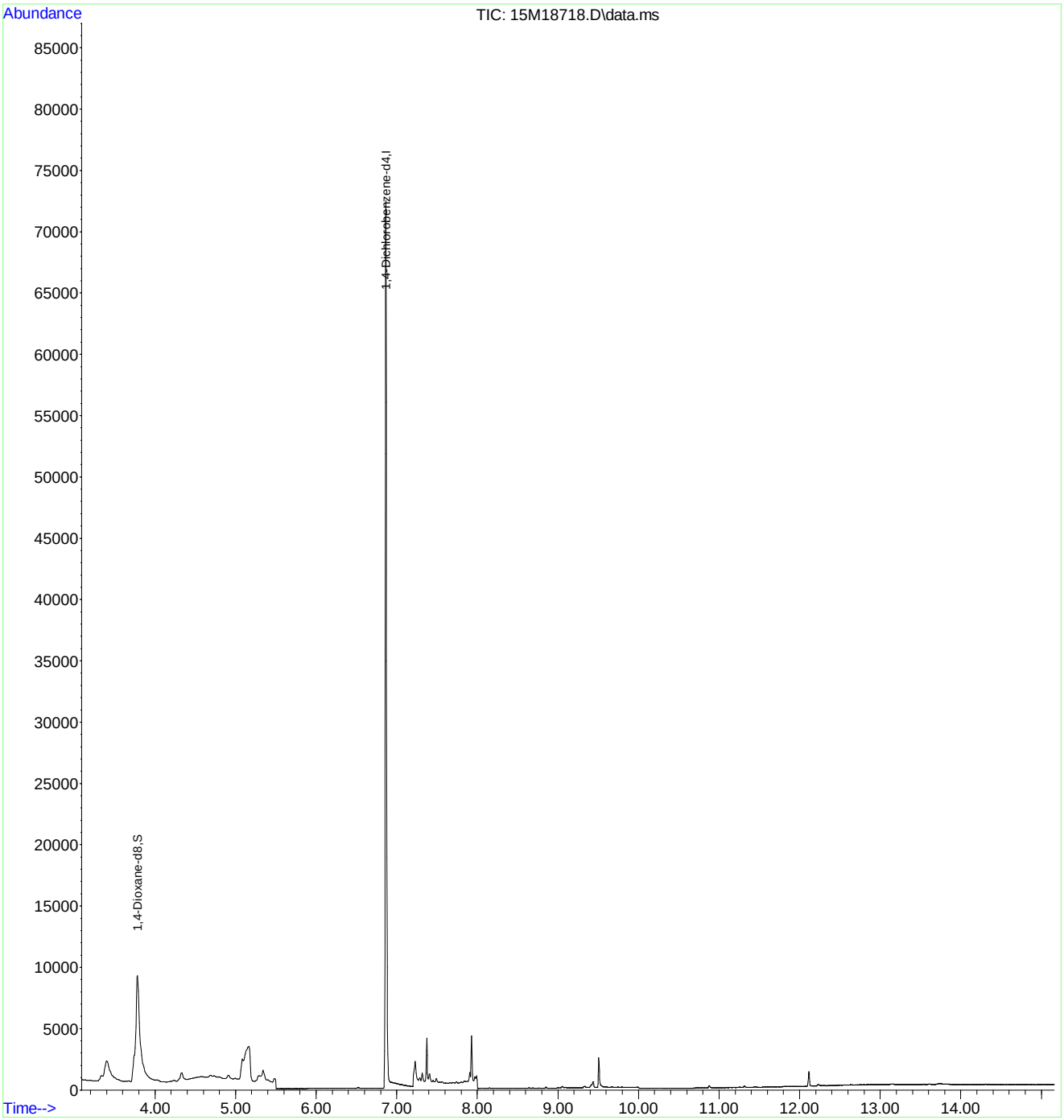

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18598.D
Acq On : 27 Jun 2016 14:45
Operator : MES
Sample : WG573812-02 LCS 6/22
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 27 17:47:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	47423	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.764	96	32479	1.6644	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	33.20%	
4) Nitrobenzene-d5	7.404	82	1302	0.0260	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.890	172	587	0.0046	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.199	244	733	0.0060	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	23052	1.5887	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18598.D
Acq On : 27 Jun 2016 14:45
Operator : MES
Sample : WG573812-02 LCS 6/22
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 27 17:47:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

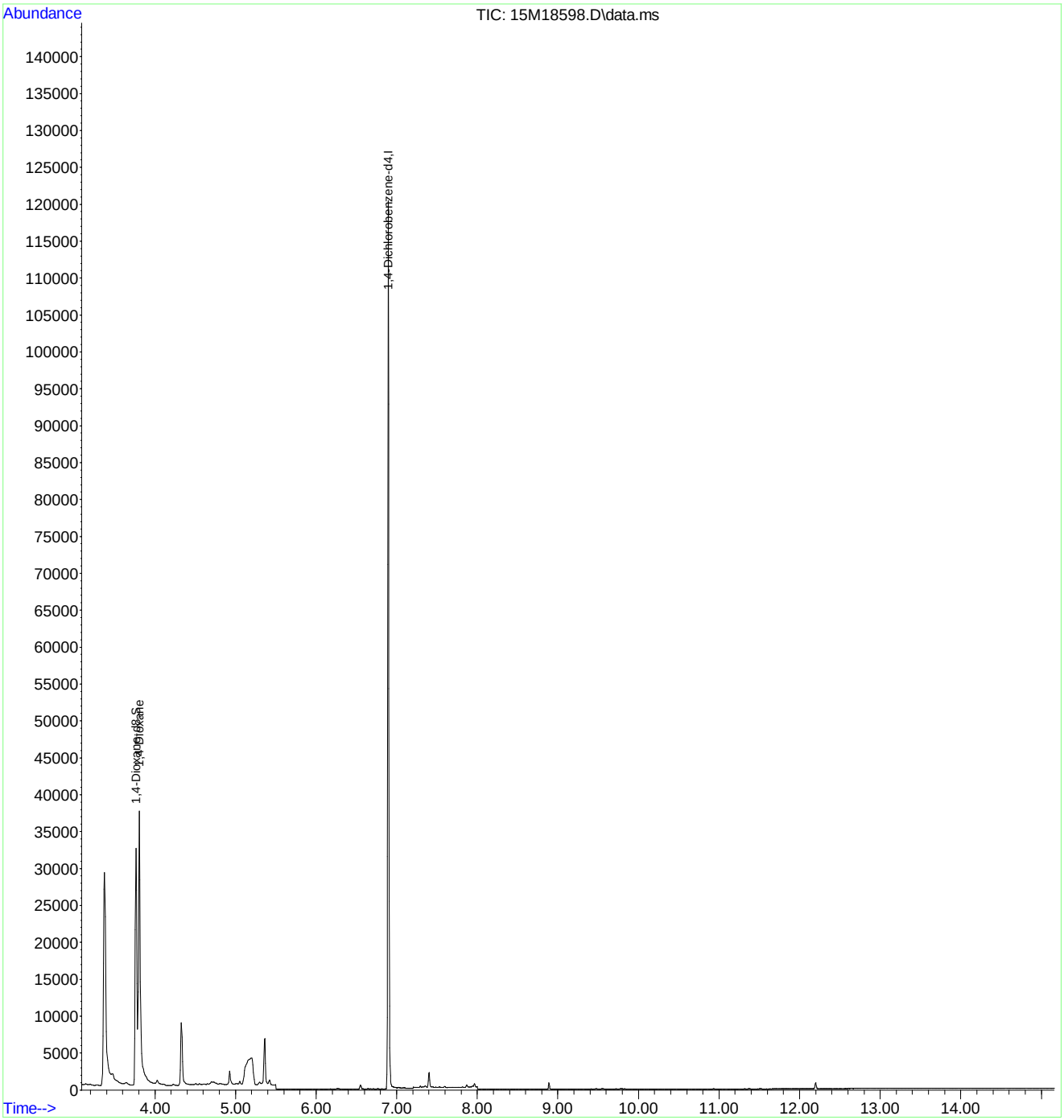

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18719.D
Acq On : 5 Jul 2016 15:38
Operator : MES
Sample : WG574706-02 LCS 6/30
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 05 16:37:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.867	152	36960	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	22635	1.4883	ug/L	0.00
Spiked Amount 5.000			Recovery	=	29.80%	
4) Nitrobenzene-d5	7.372	82	1139	0.0292	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.853	172	78	0.0008	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.122	244	1819	0.0192	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.813	58	17552	1.5521	ug/L	77

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18719.D
Acq On : 5 Jul 2016 15:38
Operator : MES
Sample : WG574706-02 LCS 6/30
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 05 16:37:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

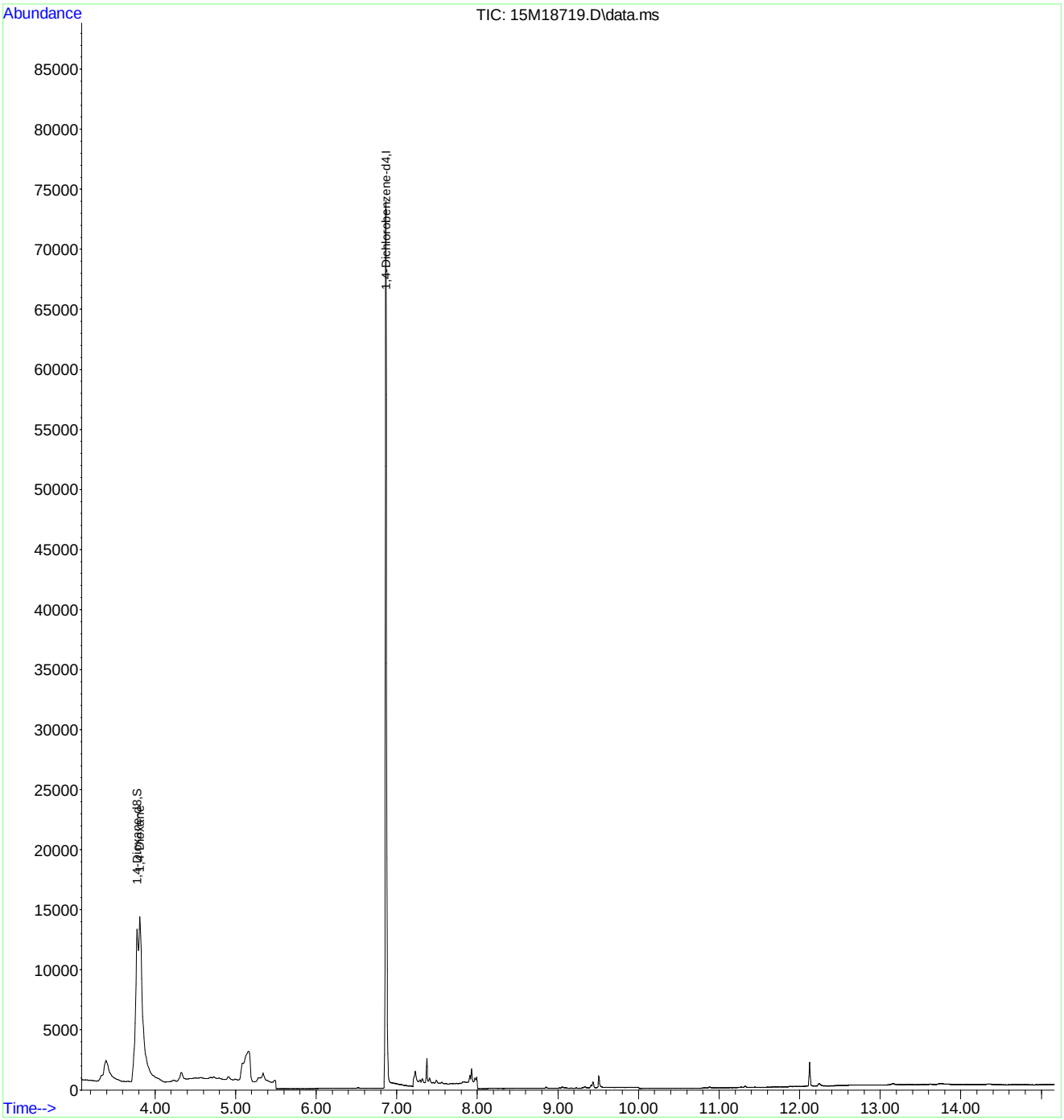

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18599.D
Acq On : 27 Jun 2016 15:07
Operator : MES
Sample : WG573812-03 LCSDUP 6/22
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 27 17:47:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	50712	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.763	96	64077	3.0707	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	61.40%	
4) Nitrobenzene-d5	7.404	82	2658	0.0496	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.889	172	2319	0.0172	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.195	244	557	0.0043	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	46522	2.9983	ug/L	86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18599.D
Acq On : 27 Jun 2016 15:07
Operator : MES
Sample : WG573812-03 LCSDUP 6/22
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 27 17:47:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

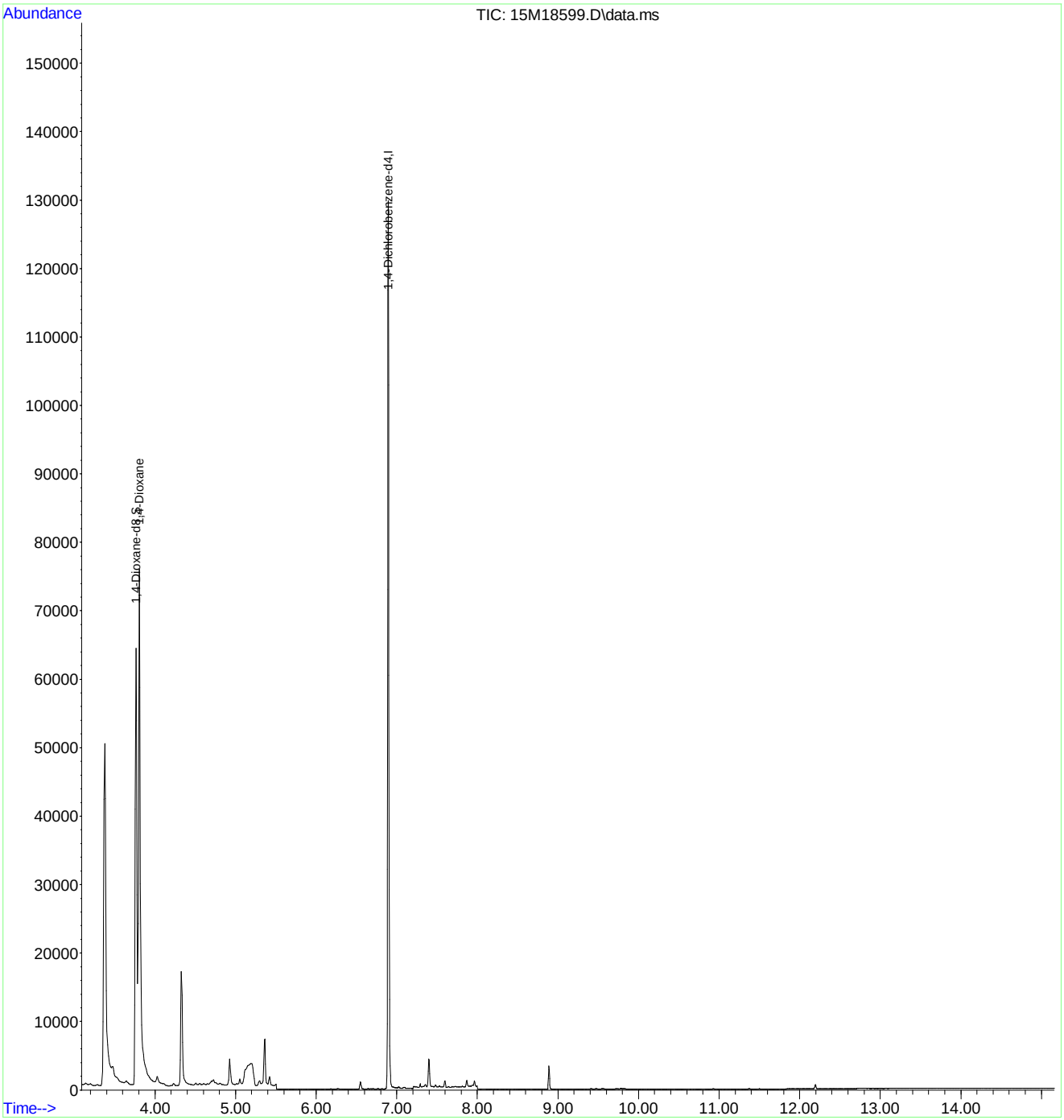

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18720.D
Acq On : 5 Jul 2016 16:01
Operator : MES
Sample : WG574706-03 LCSDUP 6/30
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 05 16:37:24 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.866	152	37076	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.777	96	27386	1.7951	ug/L	0.00
Spiked Amount 5.000			Recovery	=	36.00%	
4) Nitrobenzene-d5	7.371	82	1899	0.0485	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.852	172	144	0.0015	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.129	244	334	0.0035	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.813	58	23450	2.0672	ug/L	78

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18720.D
Acq On : 5 Jul 2016 16:01
Operator : MES
Sample : WG574706-03 LCSDUP 6/30
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 05 16:37:24 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

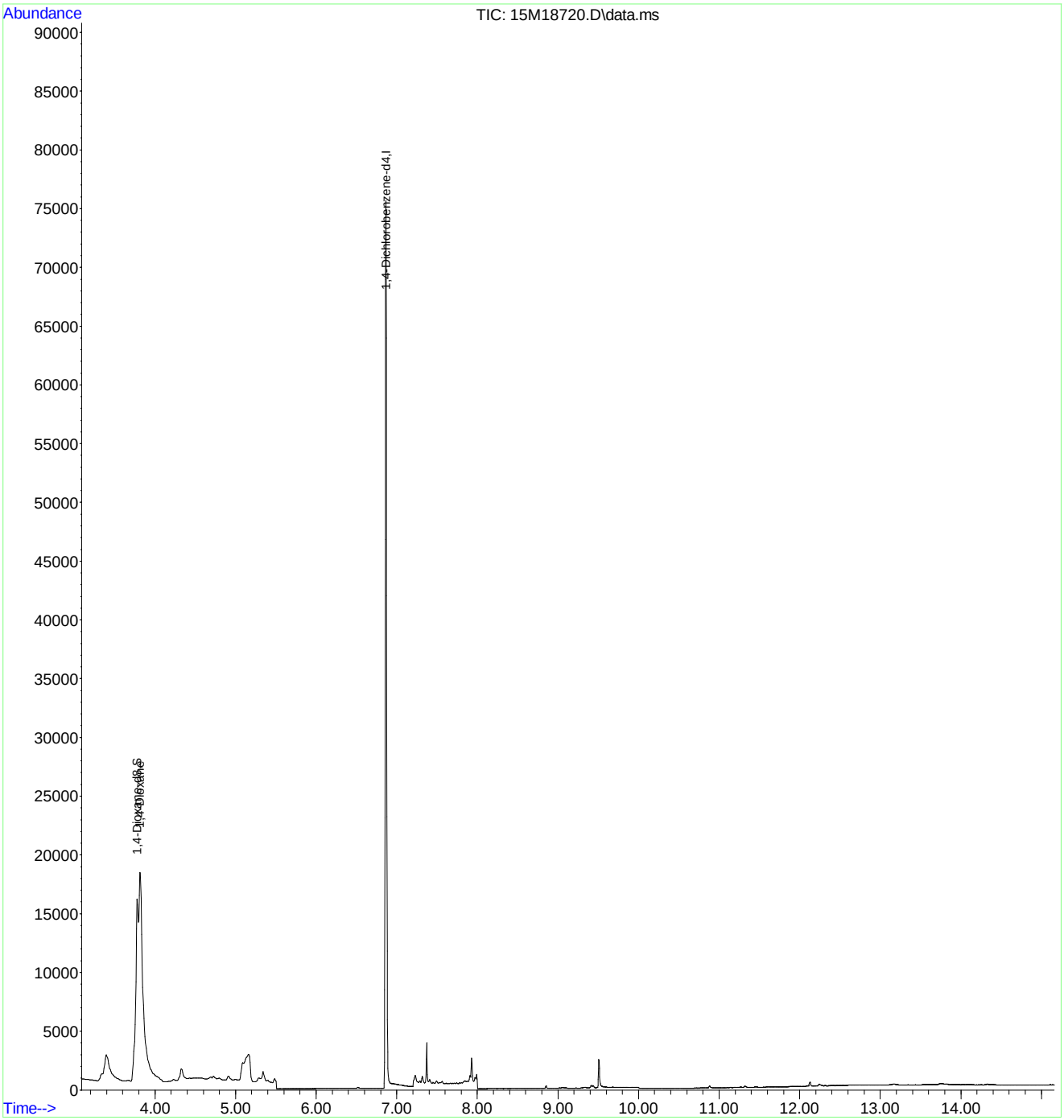

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW22-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 00:14
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	1LM.LM35540
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.53		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061227-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C04-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 00:33
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	1LM.LM35541
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C04FD-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 00:52
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	1LM.LM35542
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW18-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 02:07
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	1LM.LM35546
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW18-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 02:26
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM35547
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW17-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 02:45
Collect Date:	06/21/2016 11:40	**Dilution:**	10000	**File ID:**	1LM.LM35548
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	82900		4000	2000	1000

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1405 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG574701-01 MCT	10,030.	
-02 Blank	0.43	
-03 LCS	0.65	
L16061068-01 RS	1,959.	
-02 MS	1,957.	
-03 MSD	1,961.	
-04	3,020.	
-05	3,020.	
-06	170.3	
-07 RS	615.	
-08 MS	615.	
-09 MSD	607.	
-10	146.5	
-12 RS	1409.	
-14 MS	1412.	
-16 MSD	1398.	
L16061227-01	1242.	
-02	317.	
-04	317.	
-06	9,000.	
-07	1,645.	
-08	10,310.	
L16061549-01	3,090.	

Analyst: John Richards

Date/Time: 06/30/16 1430

DCN#119395

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062916_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574701 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: Samples L16061068(-01RS,-02MS,-03MSD) and L16061227-08 were analyzed at 10,000x dilutions based on their historical results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35517	WG574710-01 CCB	1	1		06/29/16 16:58
2	1LM.LM35518	WG574710-02 CCV (1.0ug/L)	1	1	STD75510	06/29/16 17:17
3	1LM.LM35519	WG574701-13 MRL (0.2ug/L)	1	1	STD75510	06/29/16 17:36
4	1LM.LM35520	WG574701-01 MCT (0.2ug/L)	1	1	STD75512	06/29/16 17:55
5	1LM.LM35521	WG574701-02 BLANK	1	1		06/29/16 18:14
6	1LM.LM35522	WG574701-03 LCS (0.2ug/L)	1	1	STD75512	06/29/16 18:33
7	1LM.LM35523	L16061549-01	1	1		06/29/16 18:52
8	1LM.LM35524	L16061068-01 RS (10.000x)	1	10000		06/29/16 19:11
9	1LM.LM35525	L16061068-02 MS (10.000x)	1	10000	STD75512	06/29/16 19:30
10	1LM.LM35526	L16061068-03 MSD (10.000x)	1	10000	STD75512	06/29/16 19:49
11	1LM.LM35527	L16061068-04	1	1		06/29/16 20:08
12	1LM.LM35528	L16061068-05	1	1		06/29/16 20:26
13	1LM.LM35529	L16061068-06	1	1		06/29/16 20:45
14	1LM.LM35530	WG574710-03 CCV (1.0ug/L)	1	1	STD75510	06/29/16 21:04
15	1LM.LM35531	WG574701-14 MRL (0.2ug/L)	1	1	STD75510	06/29/16 21:23
16	1LM.LM35532	WG574710-04 CCB	1	1		06/29/16 21:42
17	1LM.LM35533	L16061068-07 RS	1	1		06/29/16 22:01
18	1LM.LM35534	L16061068-08 MS	1	1	STD75512	06/29/16 22:20
19	1LM.LM35535	L16061068-09 MSD	1	1	STD75512	06/29/16 22:39
20	1LM.LM35536	L16061068-10 (NR)	1	1		06/29/16 22:58
21	1LM.LM35537	L16061068-12 RS	1	1		06/29/16 23:17
22	1LM.LM35538	L16061068-14 MS	1	1	STD75512	06/29/16 23:36
23	1LM.LM35539	L16061068-16 MSD	1	1	STD75512	06/29/16 23:55
24	1LM.LM35540	L16061227-01	1	1		06/30/16 00:14
25	1LM.LM35541	L16061227-02	1	1		06/30/16 00:33
26	1LM.LM35542	L16061227-04	1	1		06/30/16 00:52
27	1LM.LM35543	WG574710-05 CCV (1.0ug/L)	1	1	STD75510	06/30/16 01:11
28	1LM.LM35544	WG574701-15 MRL (0.2ug/L)	1	1	STD75510	06/30/16 01:29
29	1LM.LM35545	WG574710-06 CCB	1	1		06/30/16 01:48
30	1LM.LM35546	L16061227-06	1	1		06/30/16 02:07
31	1LM.LM35547	L16061227-07	1	1		06/30/16 02:26
32	1LM.LM35548	L16061227-08 (10,000x)	1	10000		06/30/16 02:45
33	1LM.LM35549	WG574710-07 CCV (1.0ug/L)	1	1	STD75510	06/30/16 03:04

Page: 1 Approved: 01-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062916_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574701 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35550	WG574701-16 MRL (0.2ug/L)	1	1	STD75510	06/30/16 03:23
35	1LM.LM35551	WG574710-08 CCB	1	1		06/30/16 03:42
36	1LM.LM35552	WG574710-09 CCV (1.0ug/L)	1	1	STD75510	06/30/16 12:56
37	1LM.LM35553	WG574701-17 MRL (0.2ug/L)	1	1	STD75510	06/30/16 13:15
38	1LM.LM35554	WG574710-10 CCB	1	1		06/30/16 13:34
39	1LM.LM35555	L16061068-10 (RR 5x)	1	5		06/30/16 13:53
40	1LM.LM35556	WG574710-11 CCV (1.0ug/L)	1	1	STD75510	06/30/16 14:12
41	1LM.LM35557	WG574701-18 MRL (0.2ug/L)	1	1	STD75510	06/30/16 14:31
42	1LM.LM35558	WG574710-12 CCB	1	1		06/30/16 14:50

Comments

Seq.	Rerun	Dil.	Reason	Analytes
9				
	L16061068-02 MS (10.000x) : The MS %Rec is above the advisory limit. At this level of dilution, the spiked amount added to the MS has been diluted below the method detection limit.			
10				
	L16061068-03 MSD (10.000x) : The MSD %Rec is above the advisory limit. At this level of dilution, the spiked amount added to the MSD has been diluted below the method detection limit.			
20	X	5	Over Calibration Range	
	L16061068-10 (NR) : This sample was reanalyzed at a 5x dilution on the end of this sequence.			

Page: 2 Approved: 01-JUL-16

Wadei D

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 76038
Analytical Workgroups: L16061068, 1227, 1549

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 30-JUN-2016 John Richards

Secondary Reviewer: 01-JUL-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-01-2016 09:20:44

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG574701

Login Number: L16061227

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW22-062116	01	06/21/16					06/29/2016	8.3	28		06/30/16	.4	28	
C04-062116	02	06/21/16					06/29/2016	8.3	28		06/30/16	.4	28	
C04FD-062116	04	06/21/16					06/29/2016	8.3	28		06/30/16	.4	28	
18CPTMW18-062116	06	06/21/16					06/29/2016	8.2	28		06/30/16	.5	28	
18WW18-062116	07	06/21/16					06/29/2016	8.2	28		06/30/16	.5	28	
18WW17-062116	08	06/21/16					06/29/2016	8.1	28		06/30/16	.5	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4834049
Report generated 07/01/2016 09:08

METHOD BLANK SUMMARY

Login Number: L16061227
Blank File ID: 1LM.LM35521
Prep Date: 06/29/16 15:00
Analyzed Date: 06/29/16 18:14
Analyst: JWR

Work Group: WG574701
Blank Sample ID: WG574701-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG574701-13	1LM.LM35519	06/29/16 17:36	01
MCT	WG574701-01	1LM.LM35520	06/29/16 17:55	01
LCS	WG574701-03	1LM.LM35522	06/29/16 18:33	01
QCMRL	WG574701-14	1LM.LM35531	06/29/16 21:23	01
18WW22-062116	L16061227-01	1LM.LM35540	06/30/16 00:14	01
C04-062116	L16061227-02	1LM.LM35541	06/30/16 00:33	01
C04FD-062116	L16061227-04	1LM.LM35542	06/30/16 00:52	01
QCMRL	WG574701-15	1LM.LM35544	06/30/16 01:29	01
18CPTMW18-062116	L16061227-06	1LM.LM35546	06/30/16 02:07	01
18WW18-062116	L16061227-07	1LM.LM35547	06/30/16 02:26	01
18WW17-062116	L16061227-08	1LM.LM35548	06/30/16 02:45	DL01
QCMRL	WG574701-16	1LM.LM35550	06/30/16 03:23	01
QCMRL	WG574701-17	1LM.LM35553	06/30/16 13:15	01
QCMRL	WG574701-18	1LM.LM35557	06/30/16 14:31	01

Report Name: BLANK_SUMMARY
PDF File ID: 4834050
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061227 Prep Date: 06/29/16 15:00 Sample ID: WG574701-02
Instrument ID: LCMS1 Run Date: 06/29/16 18:14 Prep Method: 6850
File ID: 1LM.LM35521 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4834051
01-JUL-2016 09:08

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061227 Run Date: 06/29/2016 Sample ID: WG574701-03
Instrument ID: LCMS1 Run Time: 18:33 Prep Method: 6850
File ID: 1LM.LM35522 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.201	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4834052
Report generated: 07/01/2016 09:08

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061227
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4834759
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061227

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4834759
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061227

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4834759
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061227

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4834759
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061227 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4834760
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574710-01
Instrument ID: LCMS1
Run Time: 16:58
Method: 6850
File ID: 1LM.LM35517
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834055
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574710-04
Instrument ID: LCMS1
Run Time: 21:42
Method: 6850
File ID: 1LM.LM35532
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834055
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574710-06
Instrument ID: LCMS1
Run Time: 01:48
Method: 6850
File ID: 1LM.LM35545
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834055
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574710-08
Instrument ID: LCMS1
Run Time: 03:42
Method: 6850
File ID: 1LM.LM35551
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834055
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574710-10
Instrument ID: LCMS1
Run Time: 13:34
Method: 6850
File ID: 1LM.LM35554
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834055
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574710-12
Instrument ID: LCMS1
Run Time: 14:50
Method: 6850
File ID: 1LM.LM35558
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834055
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227 Run Date: 06/29/2016 Sample ID: WG574710-02
Instrument ID: LCMS1 Run Time: 17:17 Method: 6850
File ID: 1LM.LM35518 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574701 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.73	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834054
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574710-03
Instrument ID: LCMS1
Run Time: 21:04
Method: 6850
File ID: 1LM.LM35530
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.996	ug/L	1.68	0.400	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834054
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574710-05
Instrument ID: LCMS1
Run Time: 01:11
Method: 6850
File ID: 1LM.LM35543
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834054
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574710-07
Instrument ID: LCMS1
Run Time: 03:04
Method: 6850
File ID: 1LM.LM35549
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834054
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574710-09
Instrument ID: LCMS1
Run Time: 12:56
Method: 6850
File ID: 1LM.LM35552
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834054
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574710-11
Instrument ID: LCMS1
Run Time: 14:12
Method: 6850
File ID: 1LM.LM35556
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834054
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061227 Run Date: 06/29/2016 Sample ID: WG574701-13
Instrument ID: LCMS1 Run Time: 17:36 Prep Method: 6850
File ID: 1LM.LM35519 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.203	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834053
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061227 Run Date: 06/29/2016 Sample ID: WG574701-14
Instrument ID: LCMS1 Run Time: 21:23 Prep Method: 6850
File ID: 1LM.LM35531 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834053
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061227 Run Date: 06/30/2016 Sample ID: WG574701-15
Instrument ID: LCMS1 Run Time: 01:29 Prep Method: 6850
File ID: 1LM.LM35544 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834053
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061227 Run Date: 06/30/2016 Sample ID: WG574701-16
Instrument ID: LCMS1 Run Time: 03:23 Prep Method: 6850
File ID: 1LM.LM35550 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.208	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834053
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061227 Run Date: 06/30/2016 Sample ID: WG574701-17
Instrument ID: LCMS1 Run Time: 13:15 Prep Method: 6850
File ID: 1LM.LM35553 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.204	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834053
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061227 Run Date: 06/30/2016 Sample ID: WG574701-18
Instrument ID: LCMS1 Run Time: 14:31 Prep Method: 6850
File ID: 1LM.LM35557 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834053
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061227
Instrument ID: LCMS1
Workgroup (AAB#): WG574701

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061227-01	1.00	01	380000
L16061227-02	1.00	01	421000
L16061227-04	1.00	01	418000
L16061227-06	1.00	01	378000
L16061227-07	1.00	01	393000
L16061227-08	10000	DL01	465000
WG574701-02	1.00	01	465000
WG574701-03	1.00	01	462000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4834056
Report generated 07/01/2016 09:08

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	L16061227-01
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35540
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 00:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	196000	66200	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	L16061227-02
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35541
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 00:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7180	2670	2.69	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	L16061227-04
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35542
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 00:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7800	3170	2.46	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	L16061227-06
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35546
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 02:07	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	13000	3510	3.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	L16061227-07
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35547
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 02:26	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7840	3160	2.48	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	L16061227-08
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35548
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 02:45	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1300000	434000	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	WG574701-01
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35520
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 17:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30100	11300	2.66	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	WG574701-02
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35521
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 18:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	WG574701-03
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35522
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 18:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31800	11300	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	WG574701-13
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35519
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 17:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32700	12200	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	WG574701-14
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35531
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 21:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37300	12900	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	WG574701-15
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35544
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 01:29	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38200	13200	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	WG574701-16
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35550
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 03:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38900	13900	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	WG574701-17
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35553
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 13:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32600	11300	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	WG574701-18
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35557
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 14:31	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34700	12600	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35517
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 16:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35518
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 17:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	162000	57400	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35530
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 21:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	59400	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35532
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 21:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35543
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 01:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	187000	65800	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35545
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 01:48	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	264	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35549
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 03:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	188000	65500	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35551
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 03:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35552
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 12:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	162000	55700	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35554
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 13:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	445	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35556
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 14:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	60800	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35558
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 14:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:36 PM

Data File	LM35540.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 12:14:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061227-01	**Injection Vial**	21.00
Data File	LM35540.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 12:14:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061227-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.800e+05	9.15	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.960e+05	9.16	N/A	1.53
Perchlorate conf	6.620e+04	9.14	N/A	1.54

O18LP (Internal Standard)

RT (Exp. RT): 9.15(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

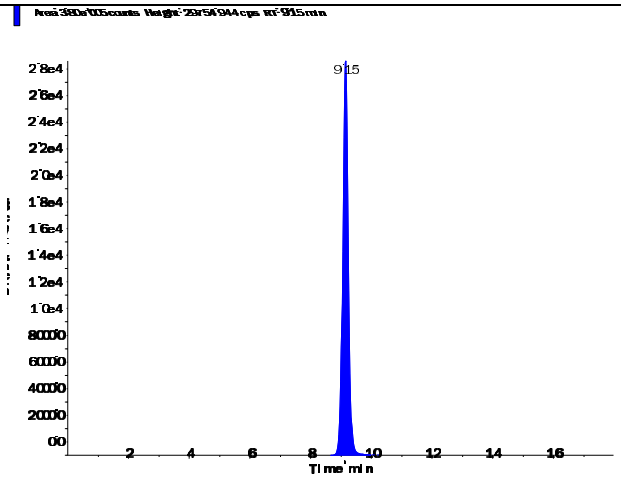

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.16 (9.84) min Calculated conc: 1.53 ng/ml Area Ratio: 0.515 Sample Type: (Unknown)	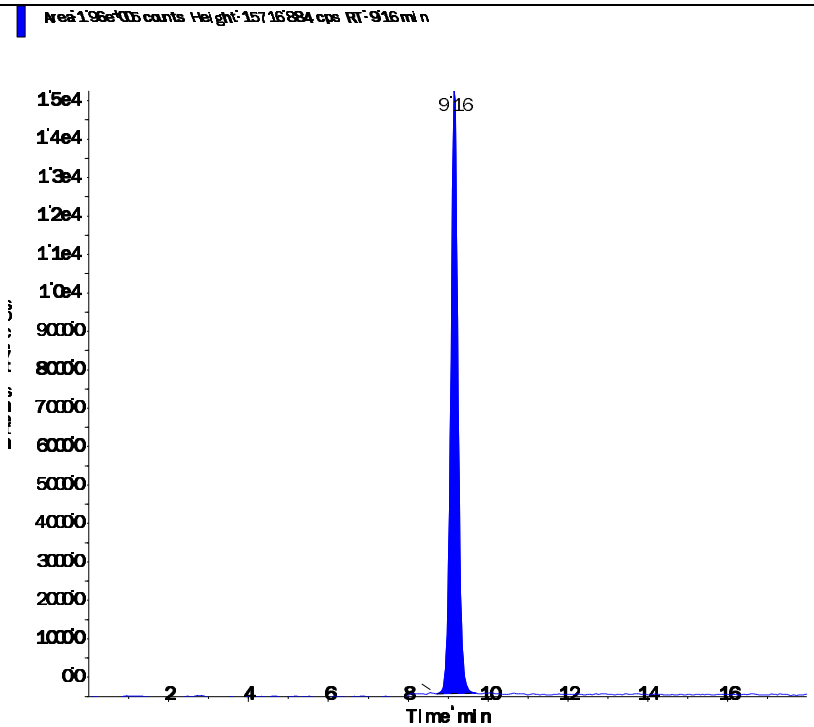
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.14 (9.84) min Calculated conc: 1.54 ng/ml Area Ratio: 0.174 Sample Type: (Unknown)	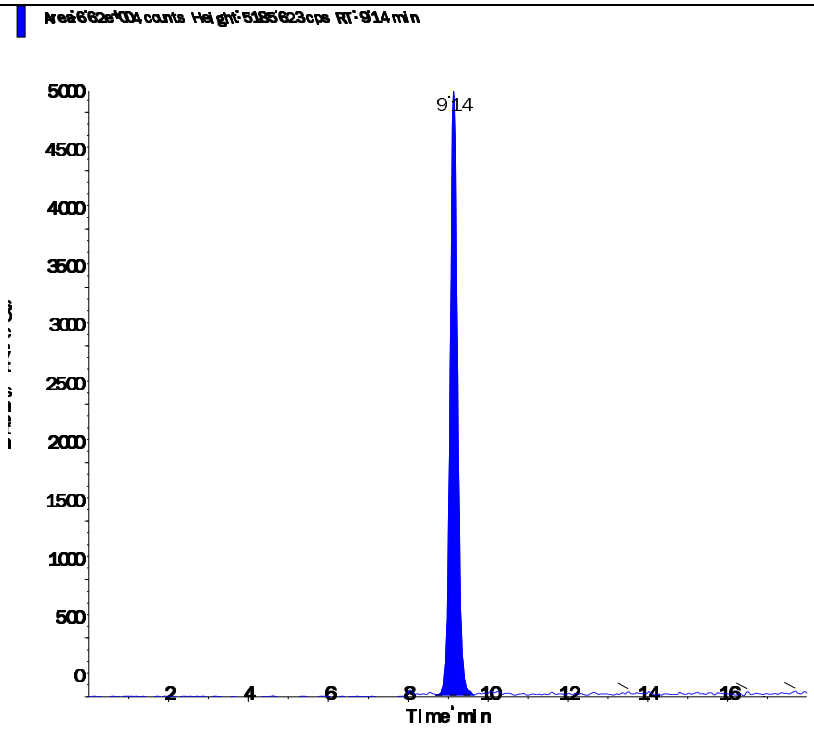

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:37 PM

Data File	LM35541.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 12:33:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061227-02	**Injection Vial**	22.00
Data File	LM35541.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 12:33:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061227-02	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.210e+05	9.47	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.180e+03	9.48	N/A	0.0469
Perchlorate conf	2.670e+03	9.49	N/A	0.0363

O18LP (Internal Standard)

RT (Exp. RT): 9.47(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

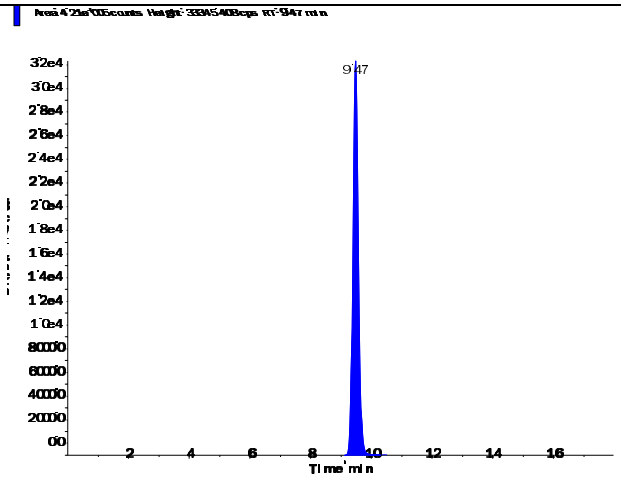

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:37 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.48 (9.84) min
Calculated conc:	0.0469 ng/ml
Area Ratio:	0.017
Sample Type:	(Unknown)

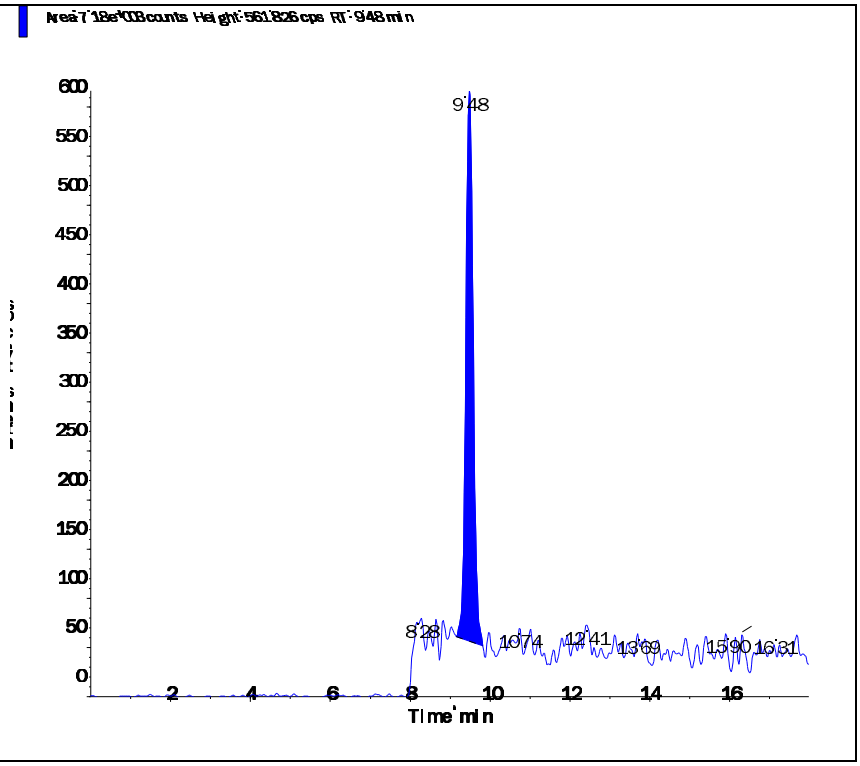

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.49 (9.84) min
Calculated conc:	0.0363 ng/ml
Area Ratio:	0.006
Sample Type:	(Unknown)

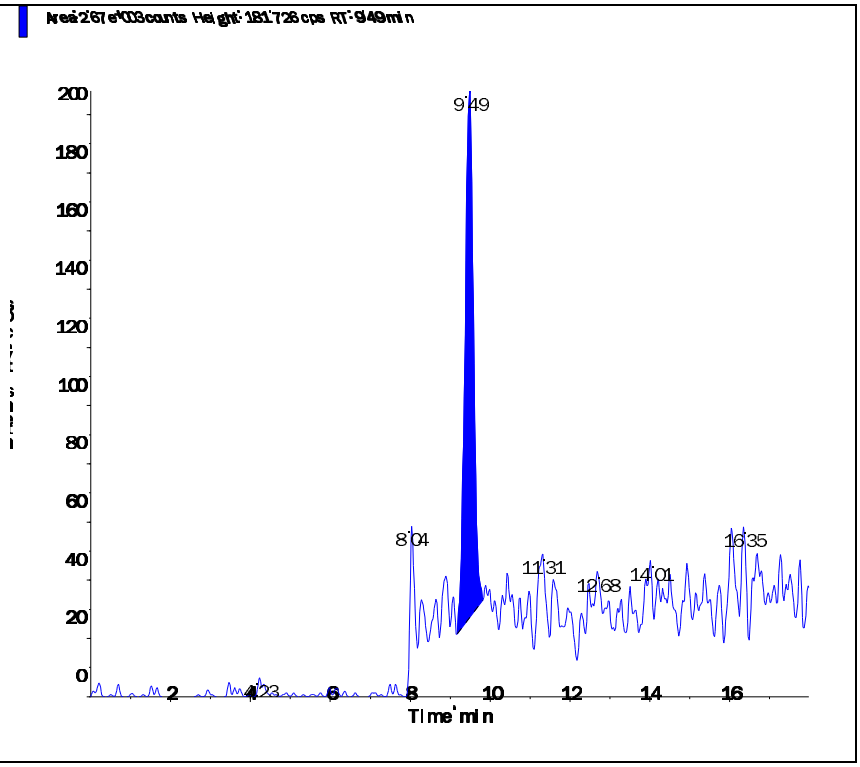

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:37 PM

Data File	LM35542.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 12:52:08 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061227-04	**Injection Vial**	23.00
Data File	LM35542.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 12:52:08 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061227-04	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.48	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.800e+03	9.49	N/A	0.0517
Perchlorate conf	3.170e+03	9.49	N/A	0.0476

O18LP (Internal Standard)

RT (Exp. RT): 9.48(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

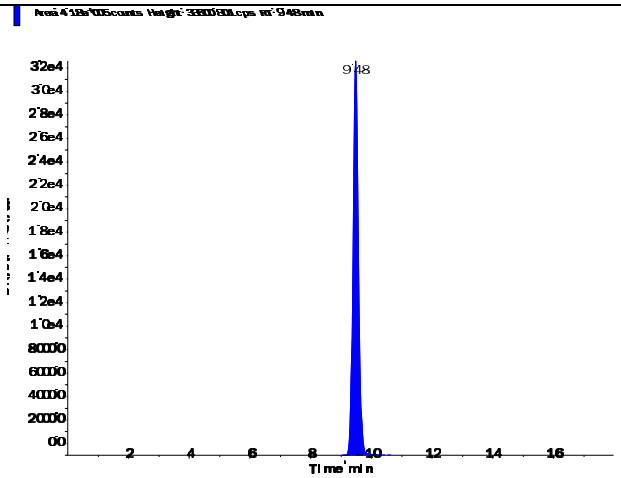

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.49 (9.84) min
Calculated conc:	0.0517 ng/ml
Area Ratio:	0.019
Sample Type:	(Unknown)

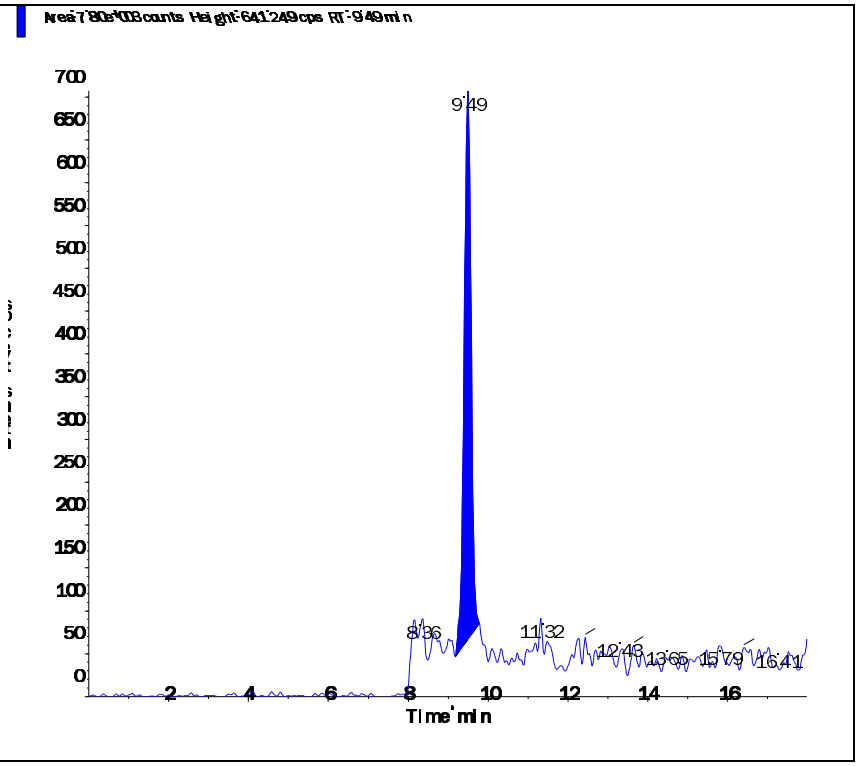

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.49 (9.84) min
Calculated conc:	0.0476 ng/ml
Area Ratio:	0.008
Sample Type:	(Unknown)

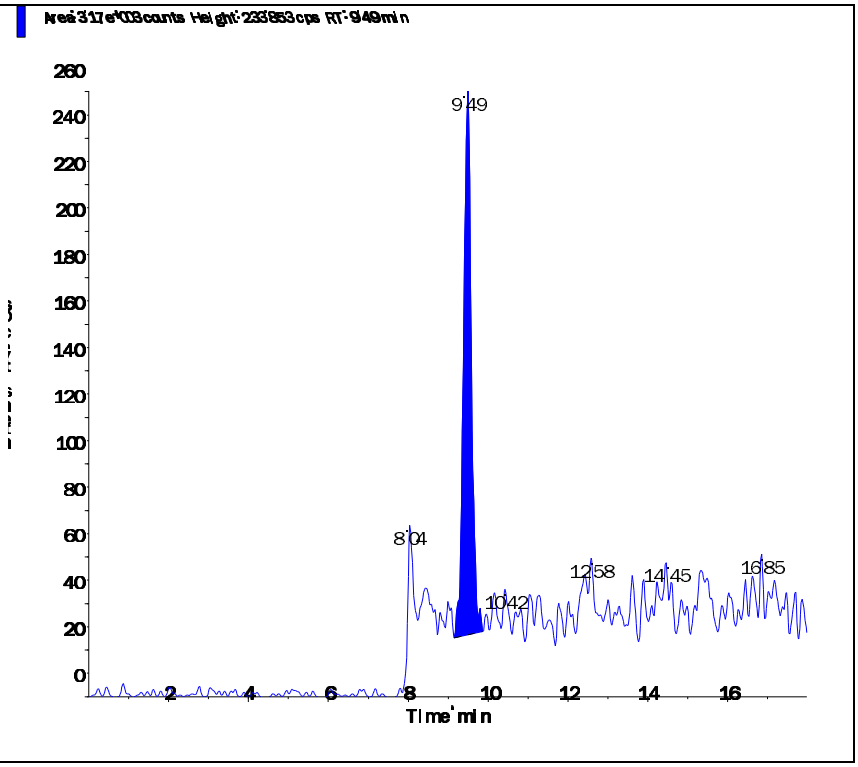

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:38 PM

Data File	LM35546.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 2:07:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061227-06	**Injection Vial**	24.00
Data File	LM35546.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 2:07:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061227-06	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.780e+05	9.12	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.300e+04	9.13	N/A	0.0986
Perchlorate conf	3.510e+03	9.13	N/A	0.0627

O18LP (Internal Standard)

RT (Exp. RT): 9.12(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

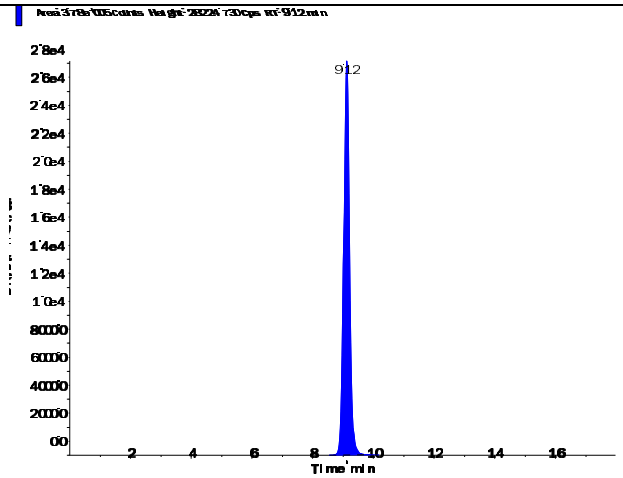

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:38 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.13 (9.84) min
Calculated conc:	0.0986 ng/ml
Area Ratio:	0.034
Sample Type:	(Unknown)

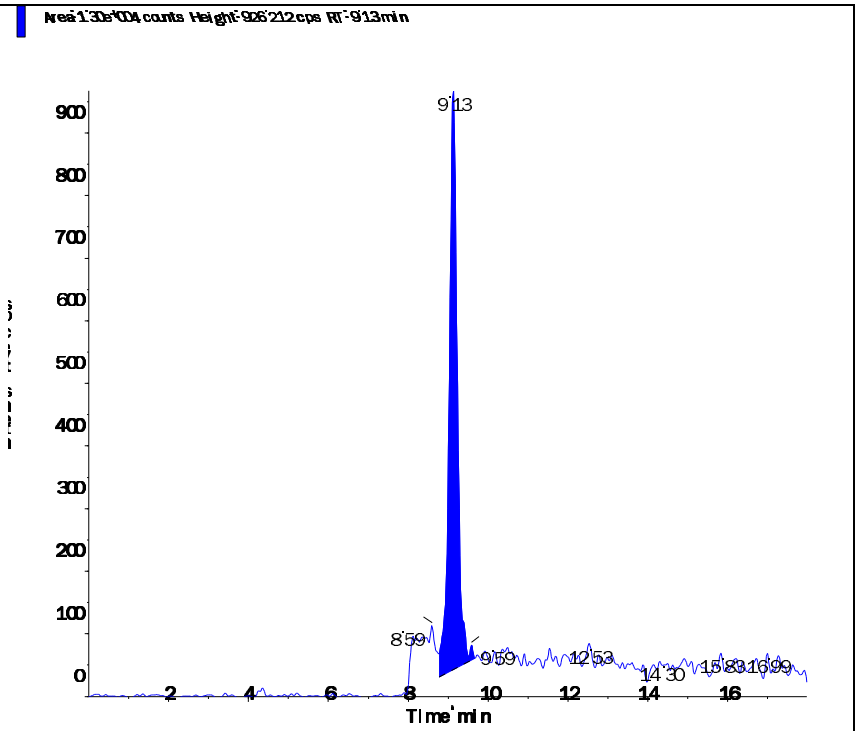

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.13 (9.84) min
Calculated conc:	0.0627 ng/ml
Area Ratio:	0.009
Sample Type:	(Unknown)

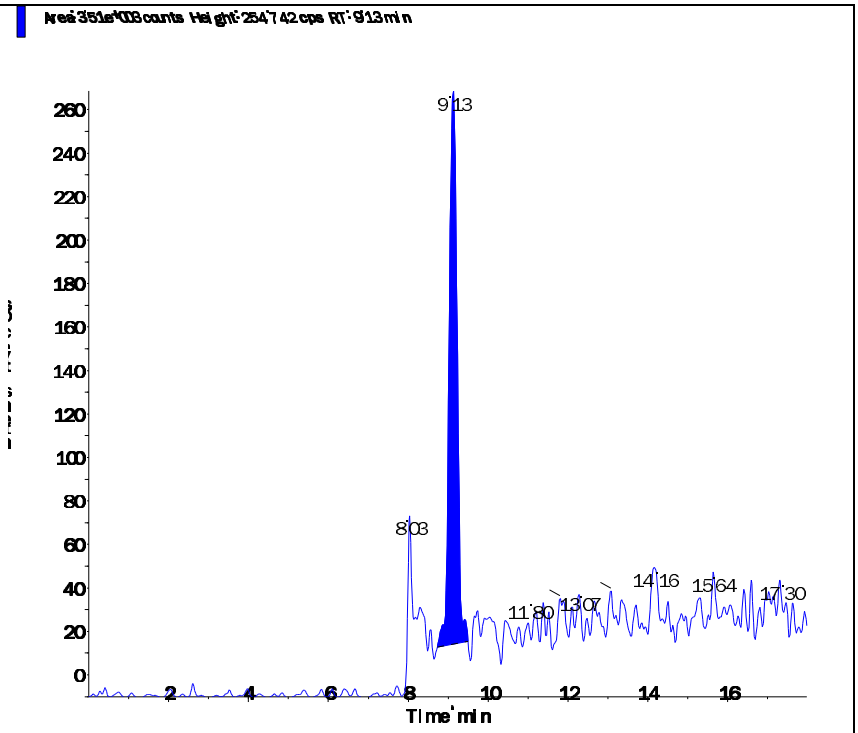

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:38 PM

Data File	LM35547.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 2:26:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061227-07	**Injection Vial**	25.00
Data File	LM35547.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 2:26:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061227-07	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.930e+05	9.35	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.840e+03	9.37	N/A	0.0556
Perchlorate conf	3.160e+03	9.34	N/A	0.0518

O18LP (Internal Standard)

RT (Exp. RT): 9.35(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

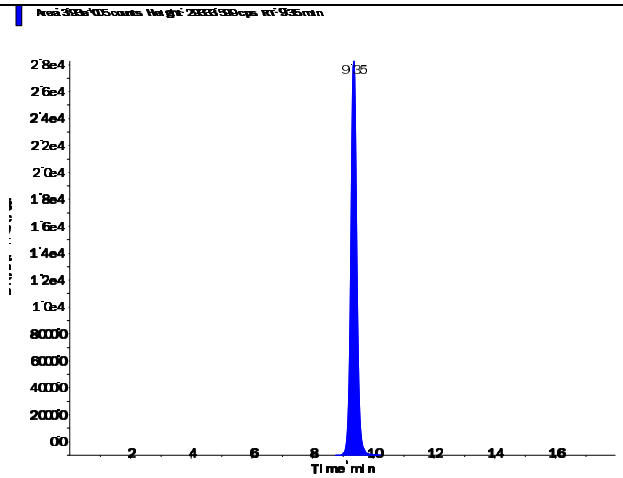

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:38 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.0556 ng/ml
Area Ratio:	0.02
Sample Type:	(Unknown)

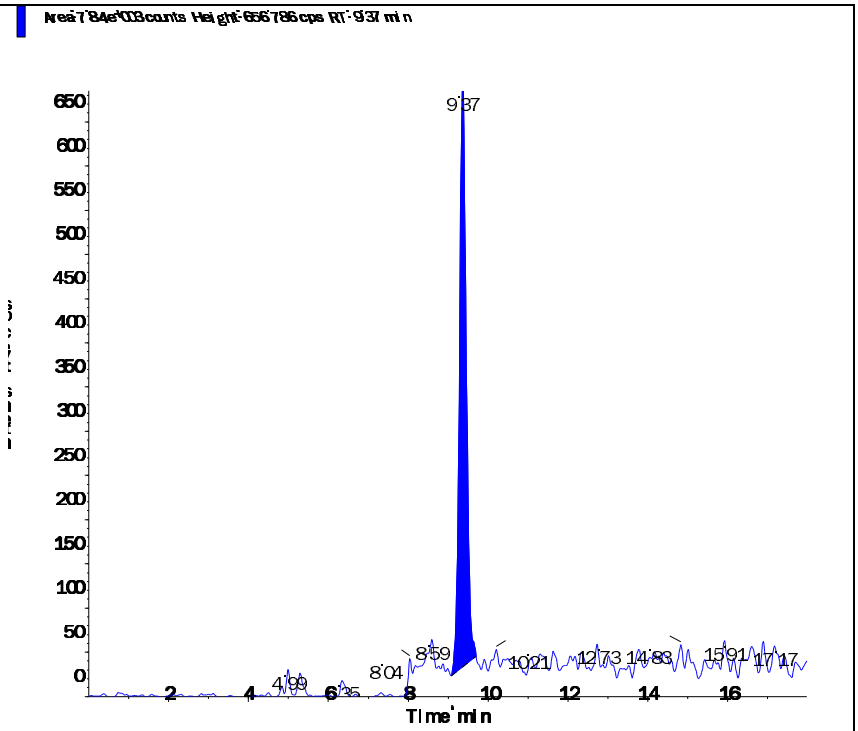

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	0.0518 ng/ml
Area Ratio:	0.008
Sample Type:	(Unknown)

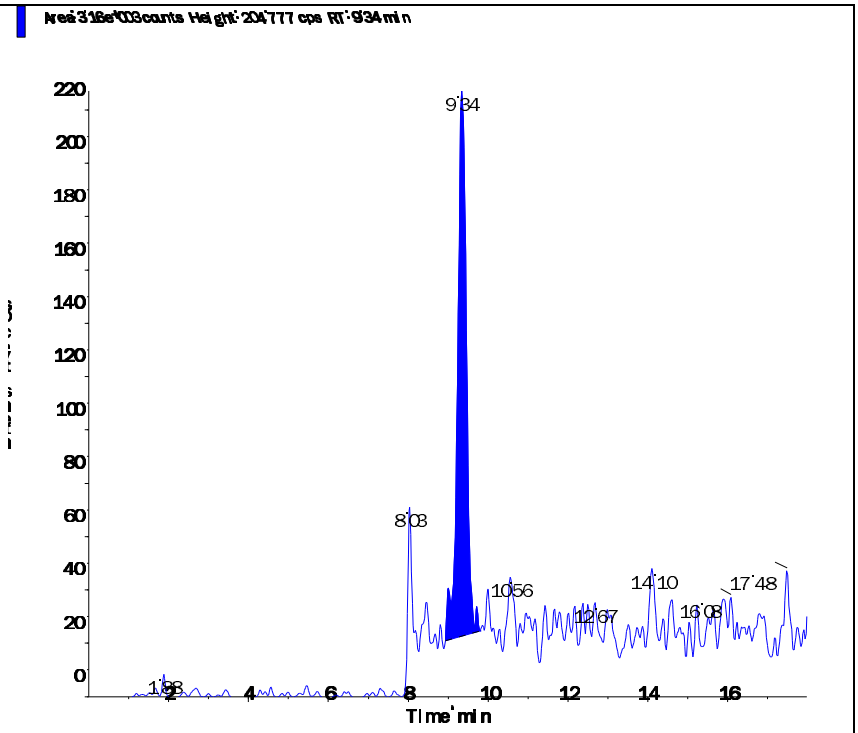

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:39 PM

Data File	LM35548.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 2:45:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061227-08 (10,000x)	**Injection Vial**	26.00
Data File	LM35548.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 2:45:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061227-08	**Dilution Factor**	1.00
Sample Comment	1,10000 (screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.300e+06	9.67	N/A	8.29
Perchlorate conf	4.340e+05	9.66	N/A	8.33

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

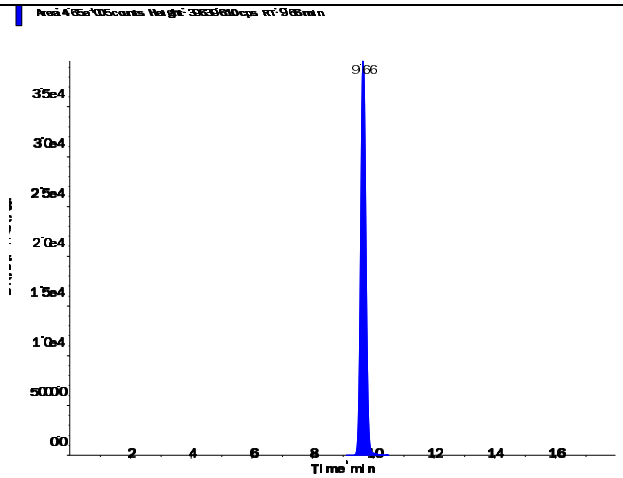

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:39 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	8.29 ng/ml
Area Ratio:	2.791
Sample Type:	(Unknown)

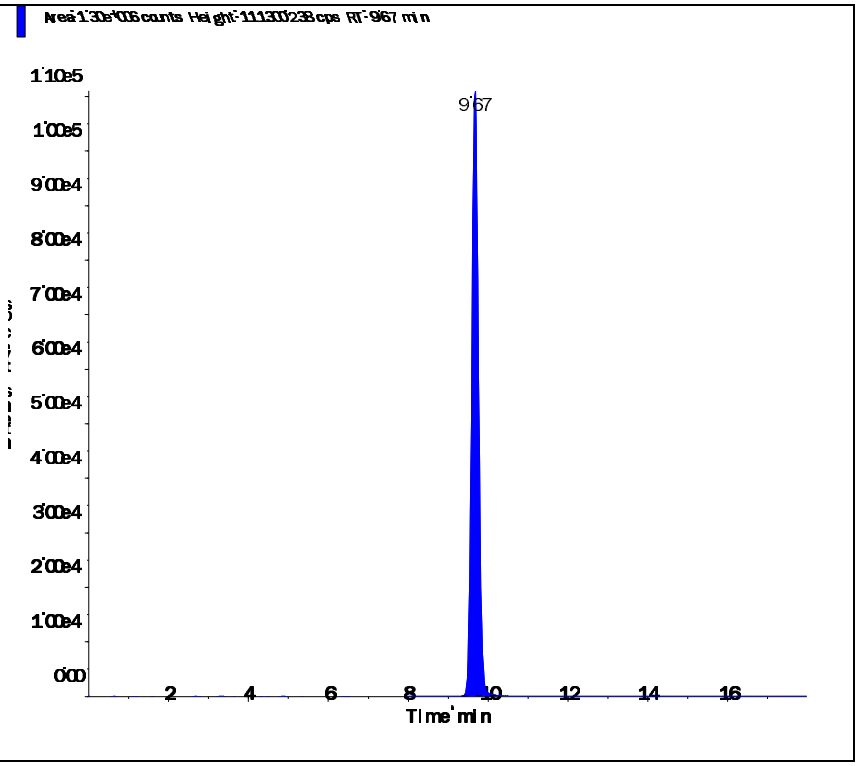

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	8.33 ng/ml
Area Ratio:	0.932
Sample Type:	(Unknown)

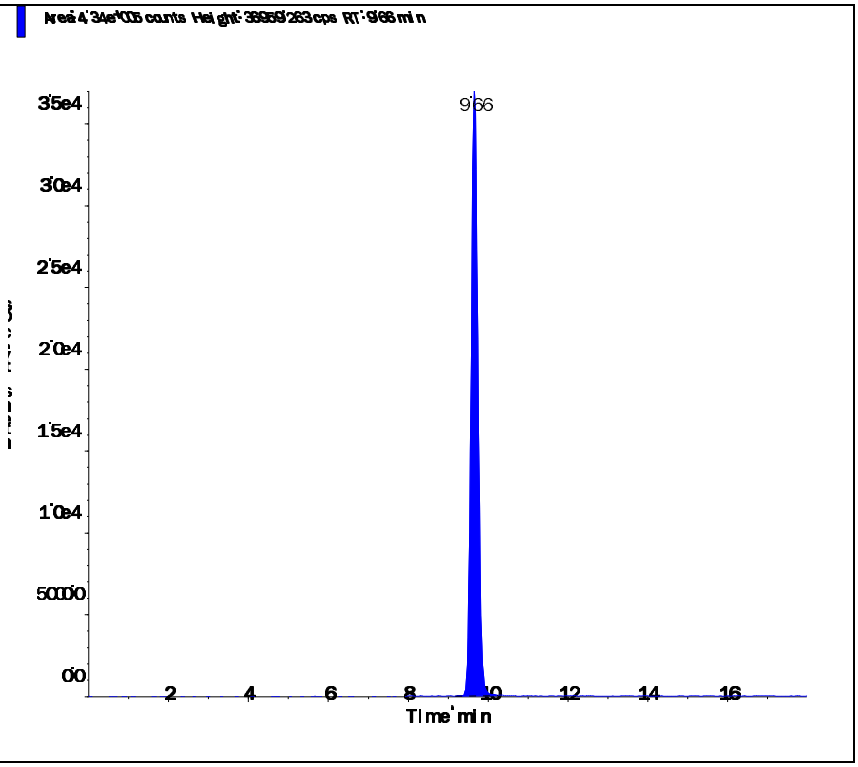

s.dataFile Page 2 of 2

2.2.2.4 Standards Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:27 PM

Data File	LM34686.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

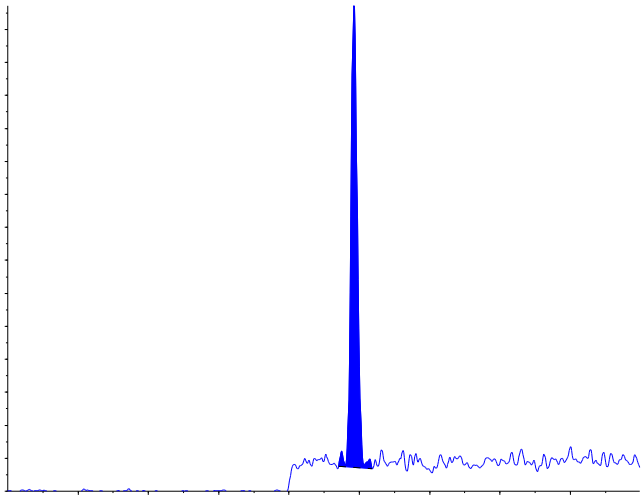

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:27 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	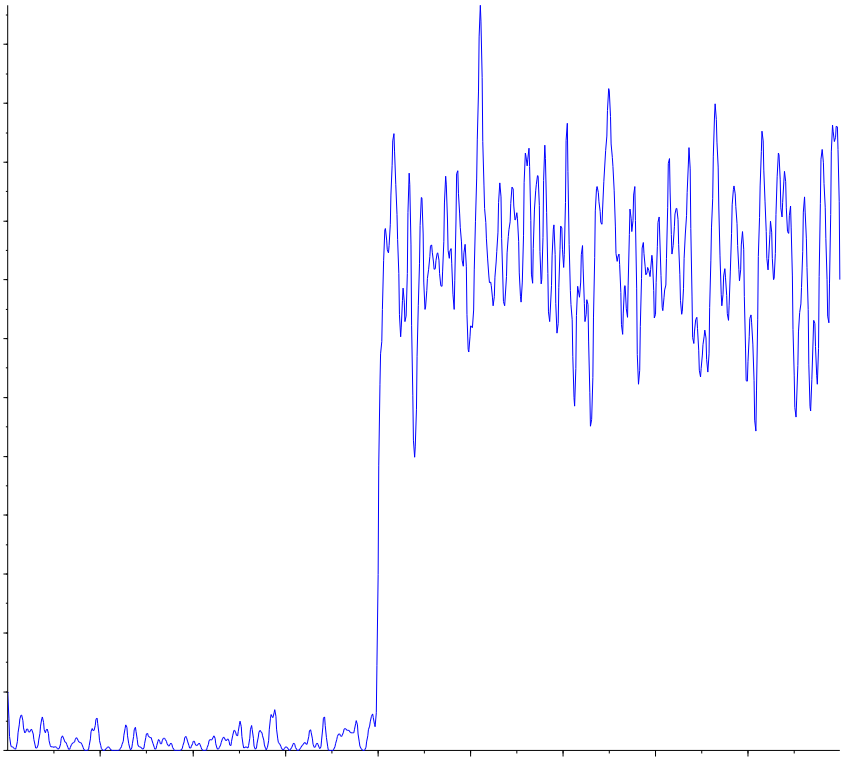
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	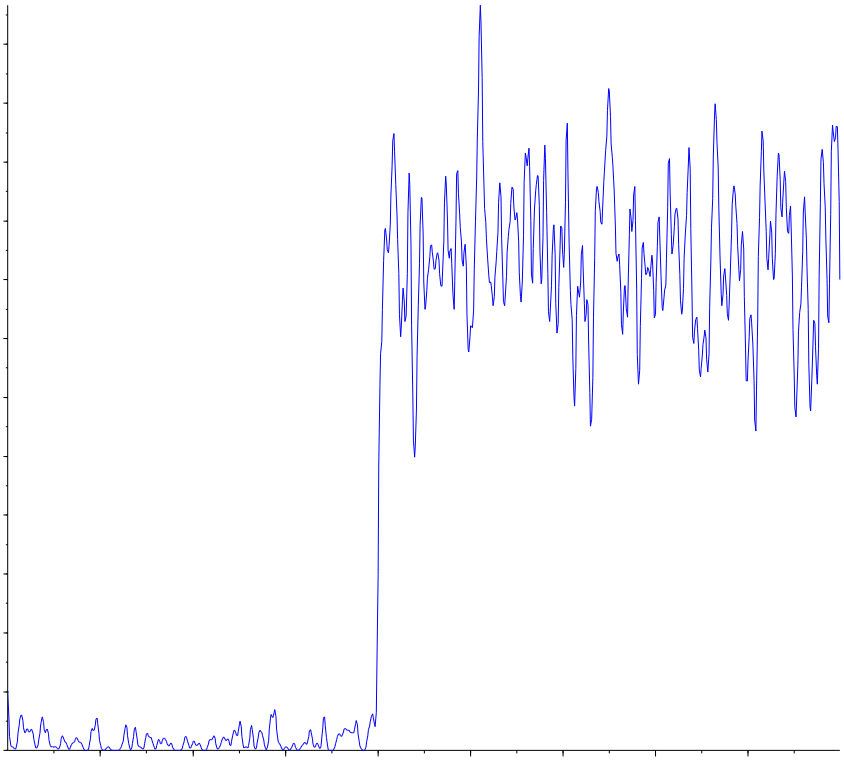

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

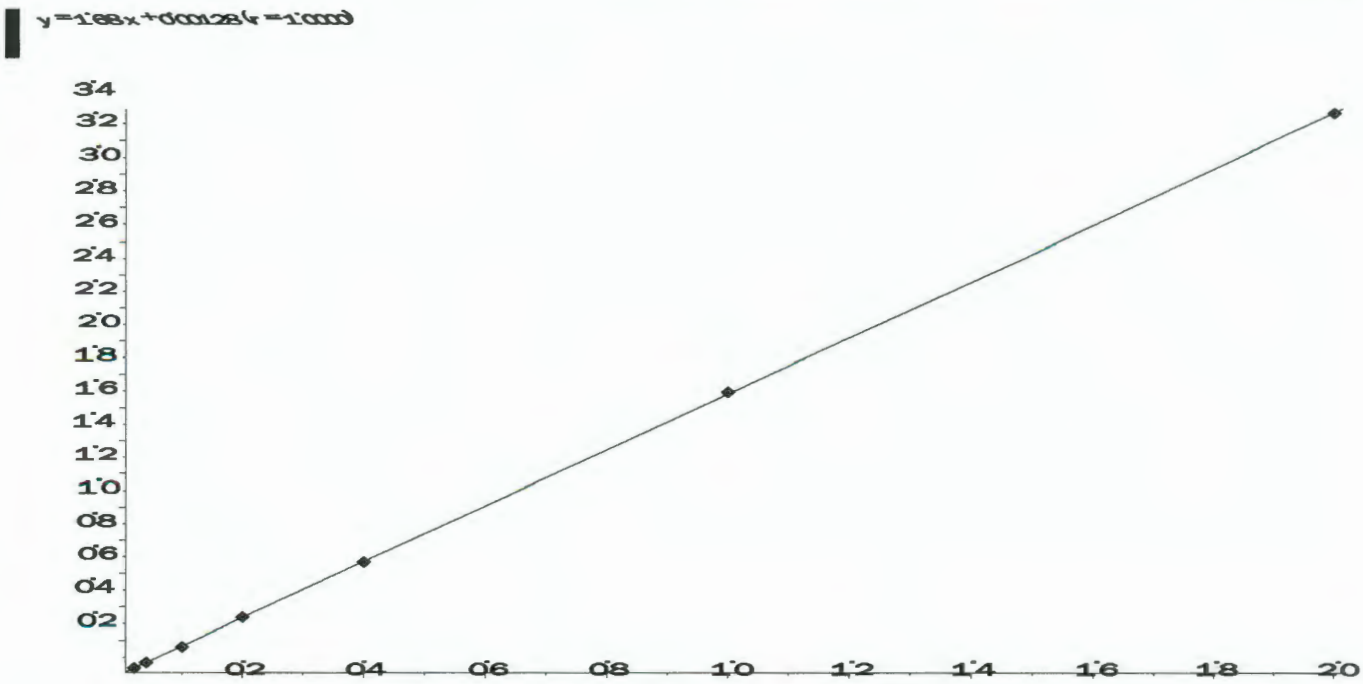

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

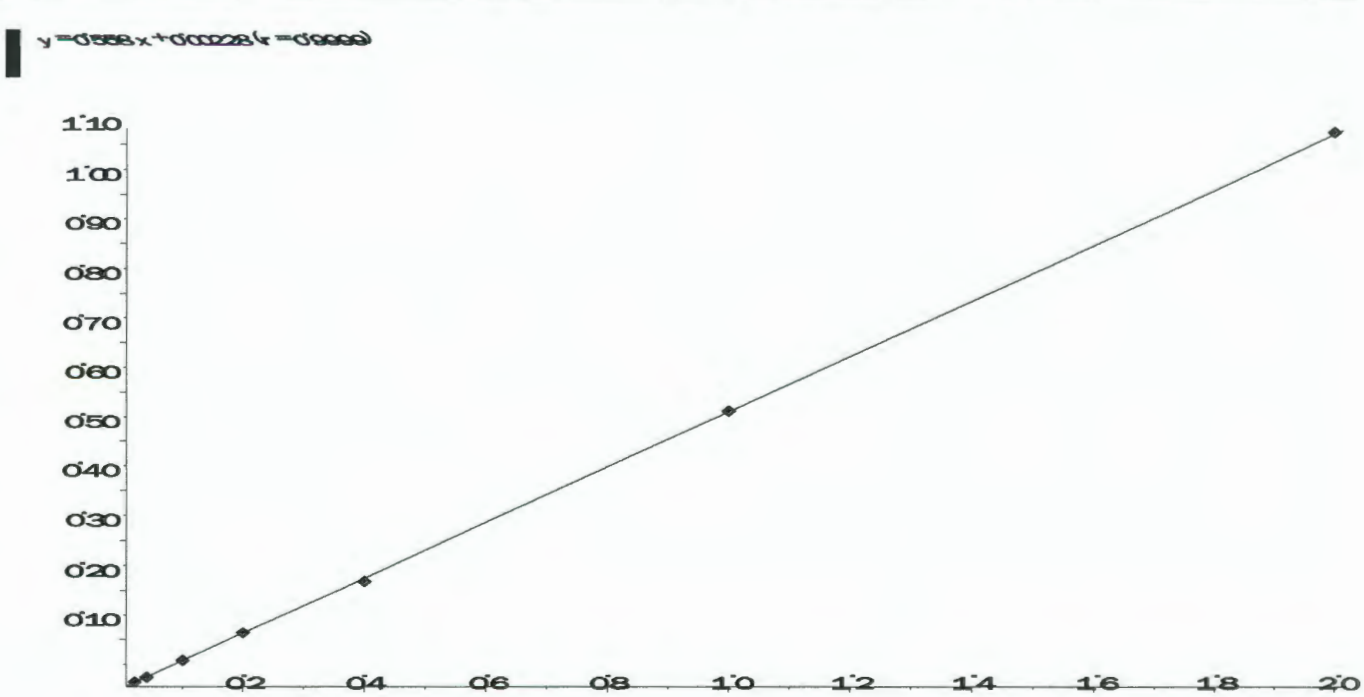

Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:27 PM

Data File	LM34687.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

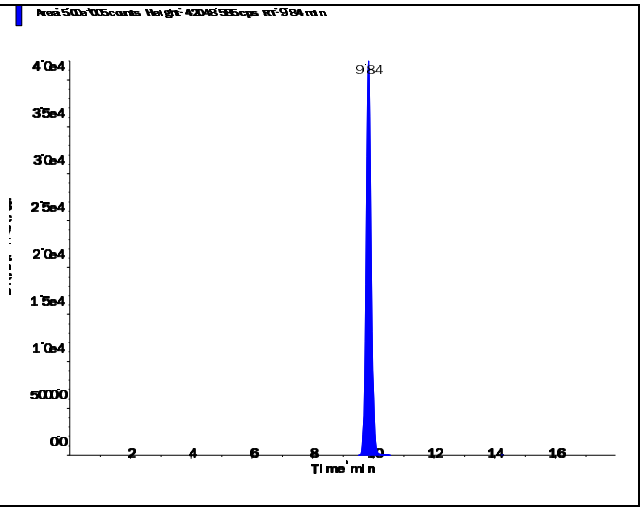

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

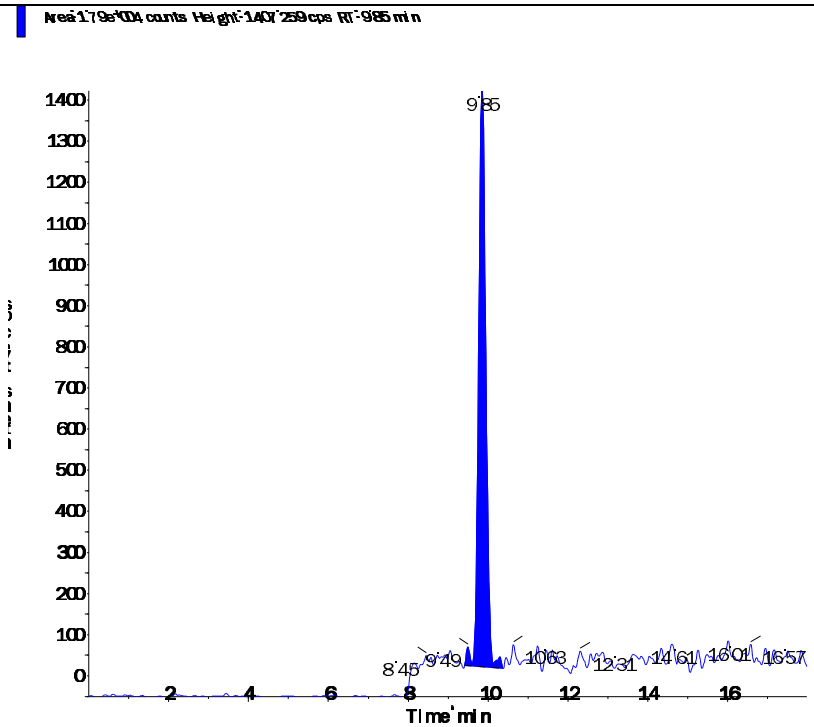

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

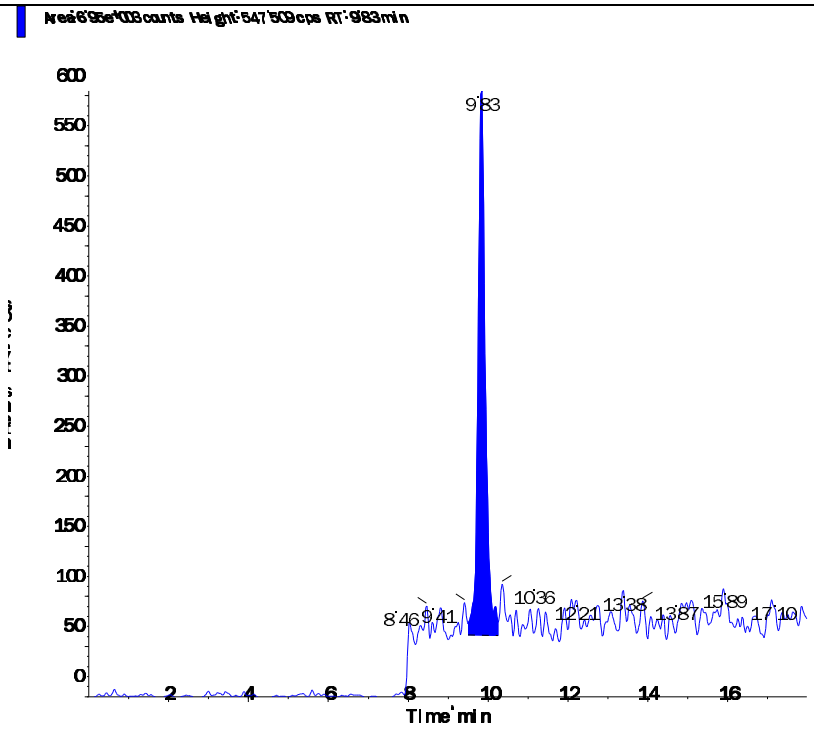

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:28 PM

Data File	LM34688.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

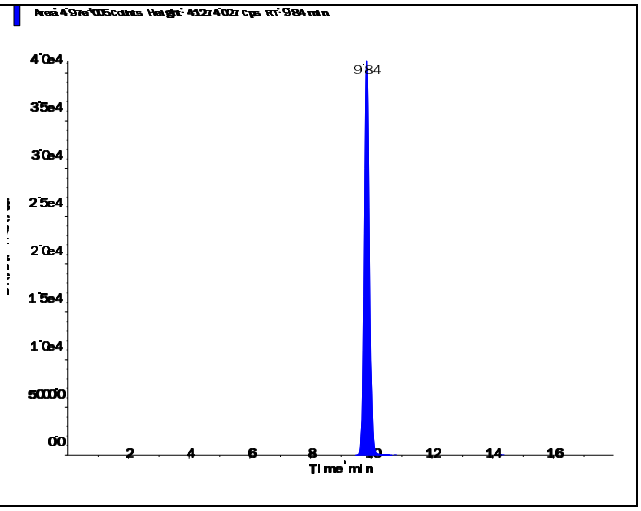

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:28 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

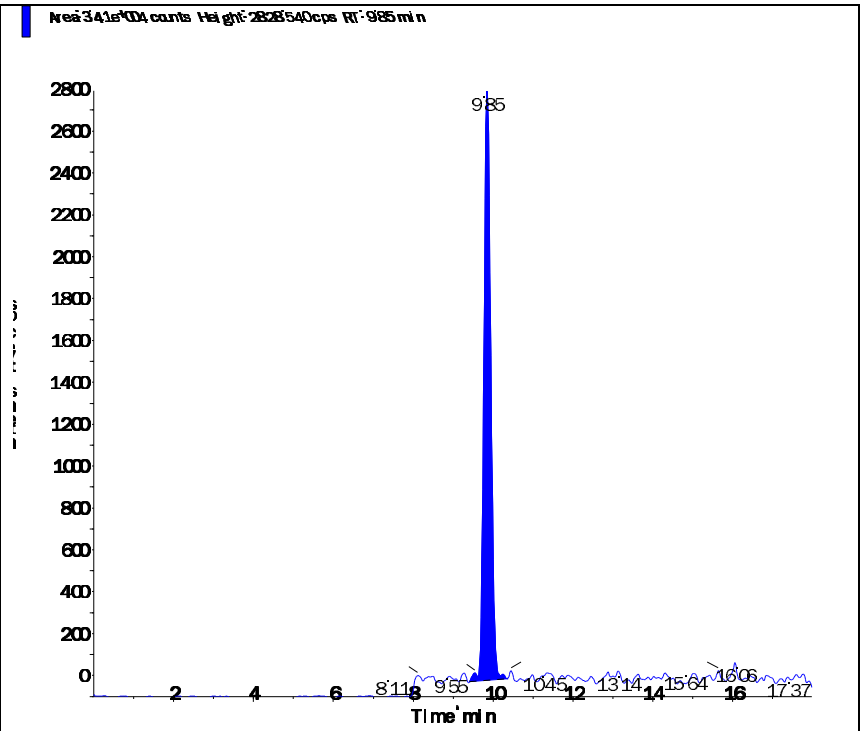

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

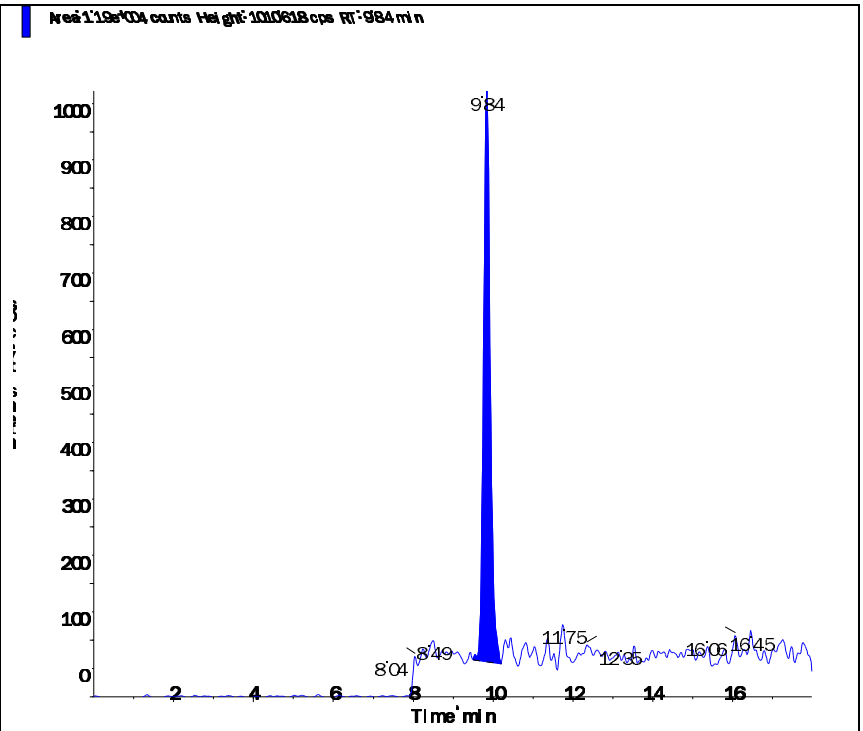

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:28 PM

Data File	LM34689.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

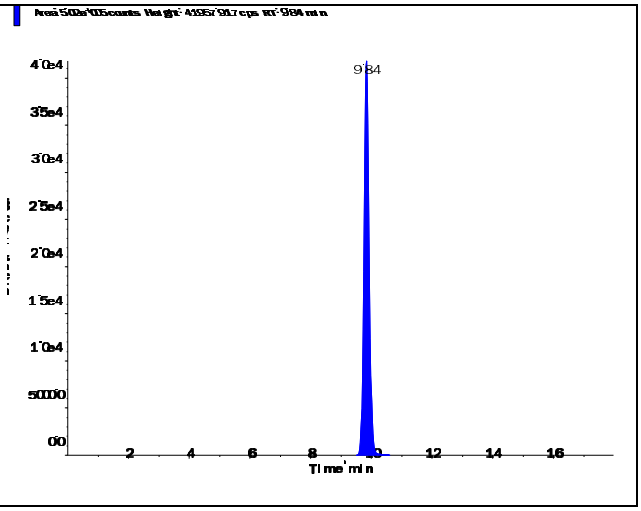

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

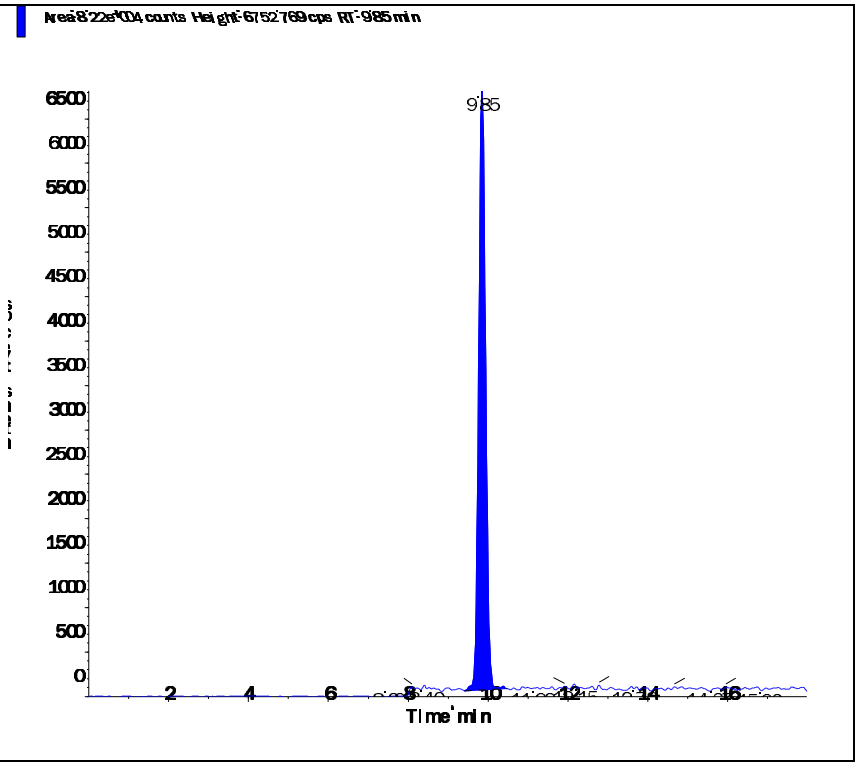

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

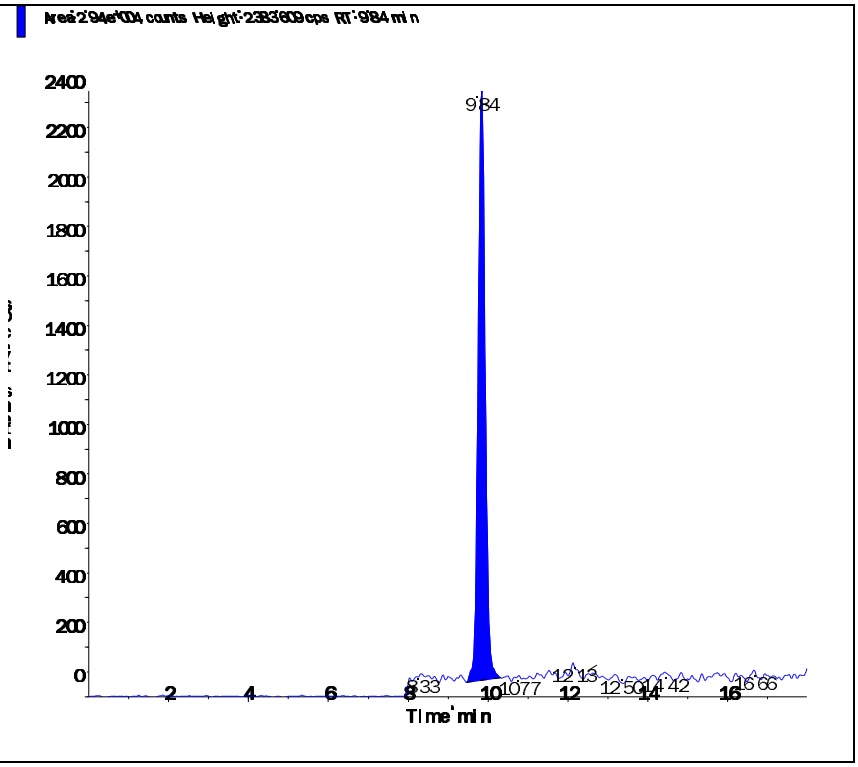

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:28 PM

Data File	LM34690.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

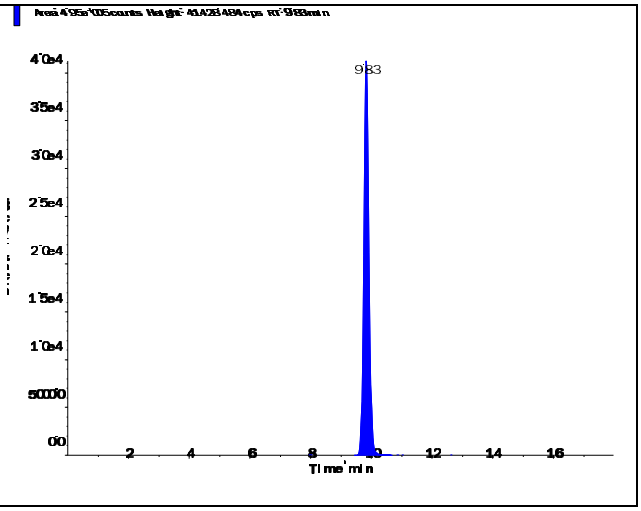

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:28 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

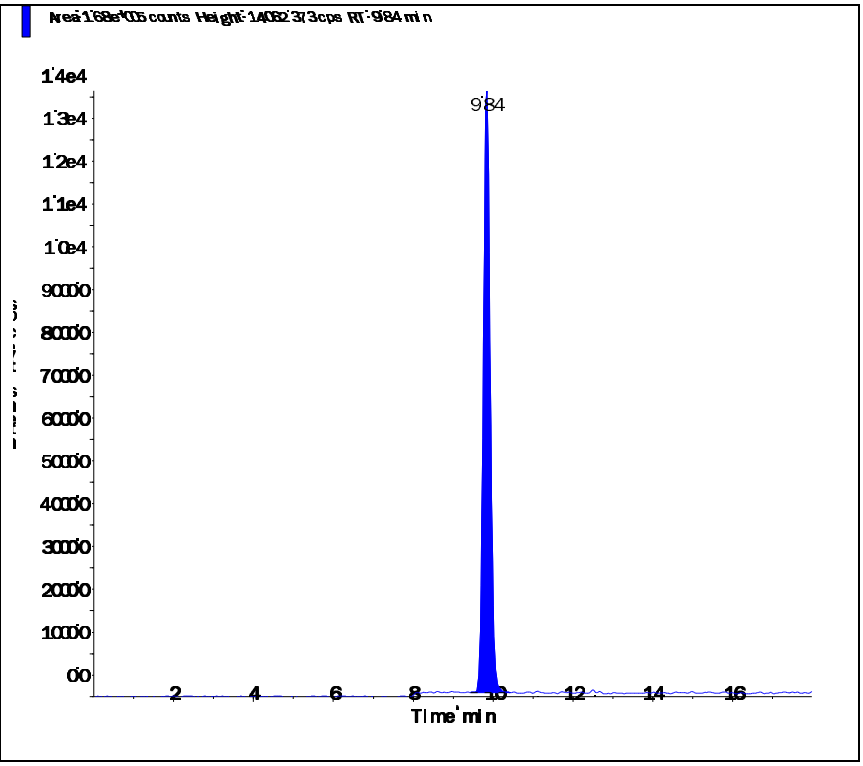

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

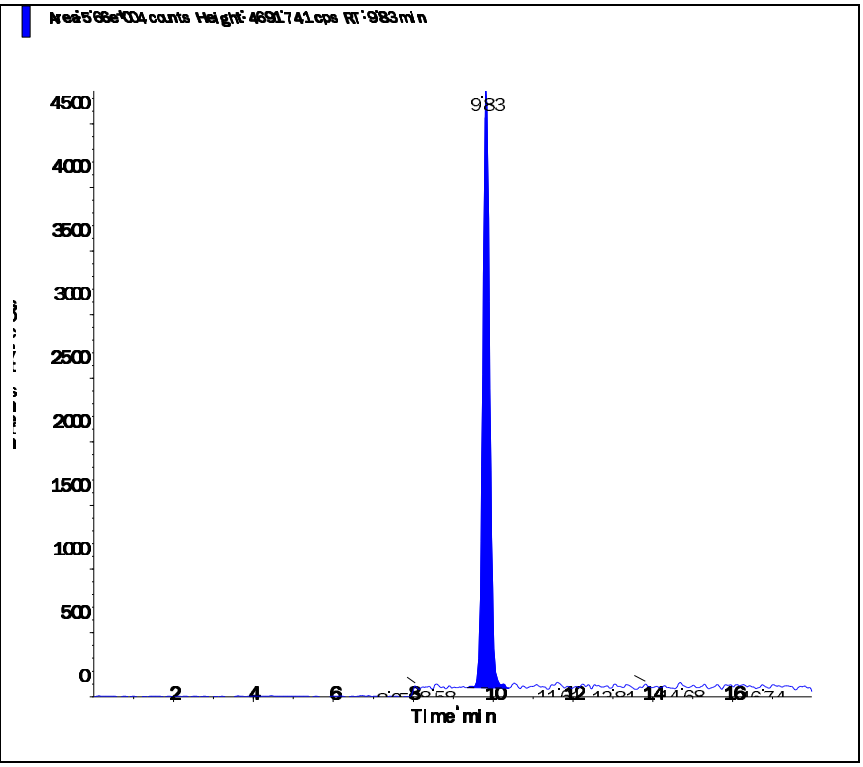

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:29 PM

Data File	LM34691.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

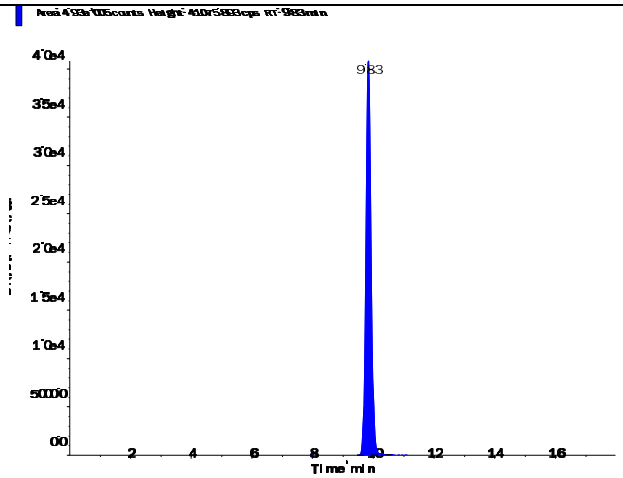

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

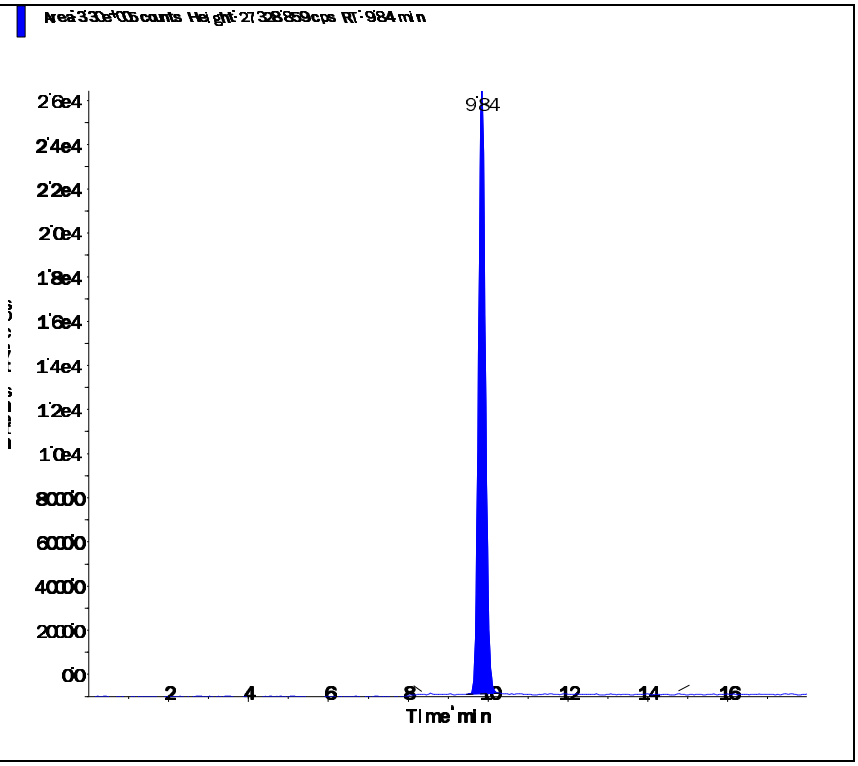

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

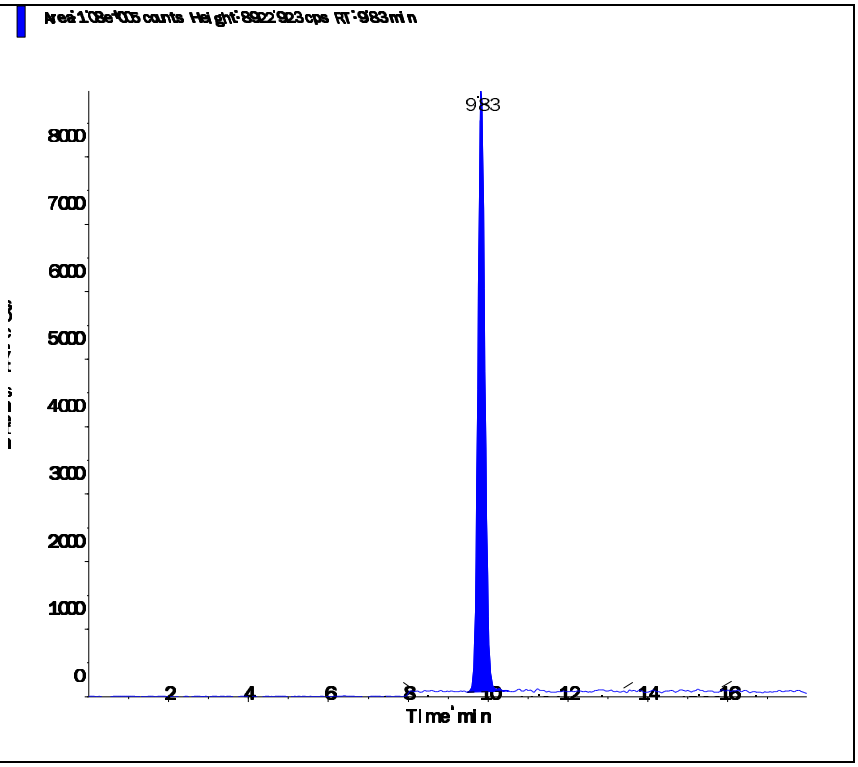

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:29 PM

Data File	LM34692.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

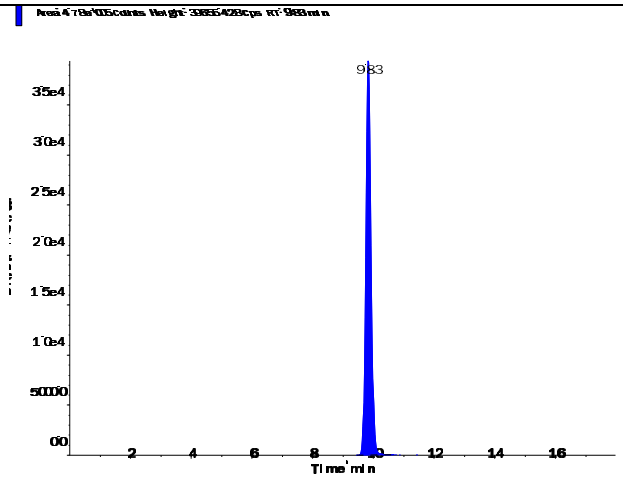

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

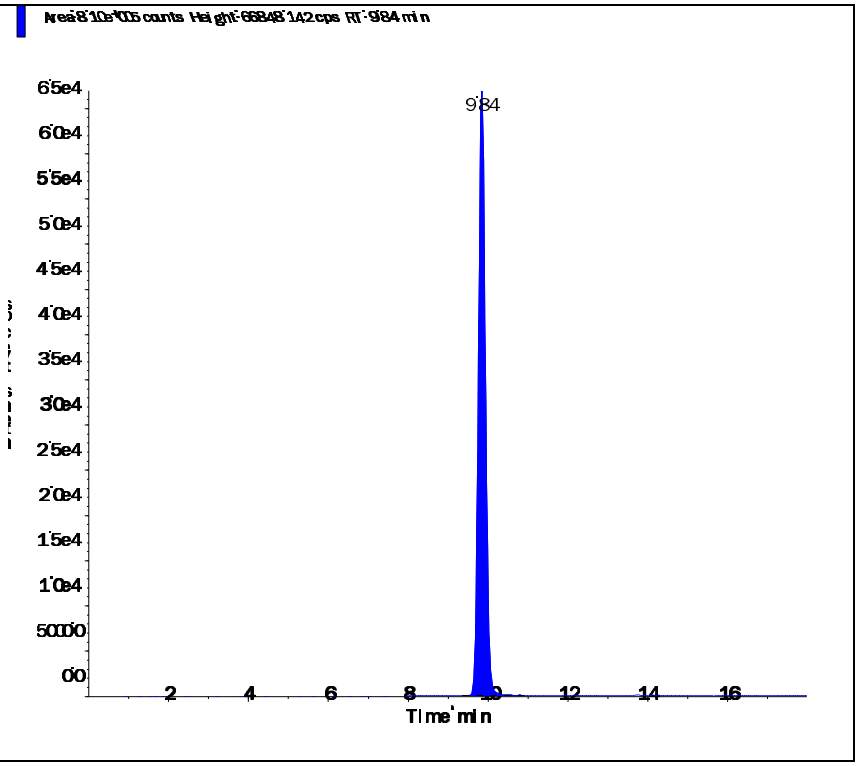

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

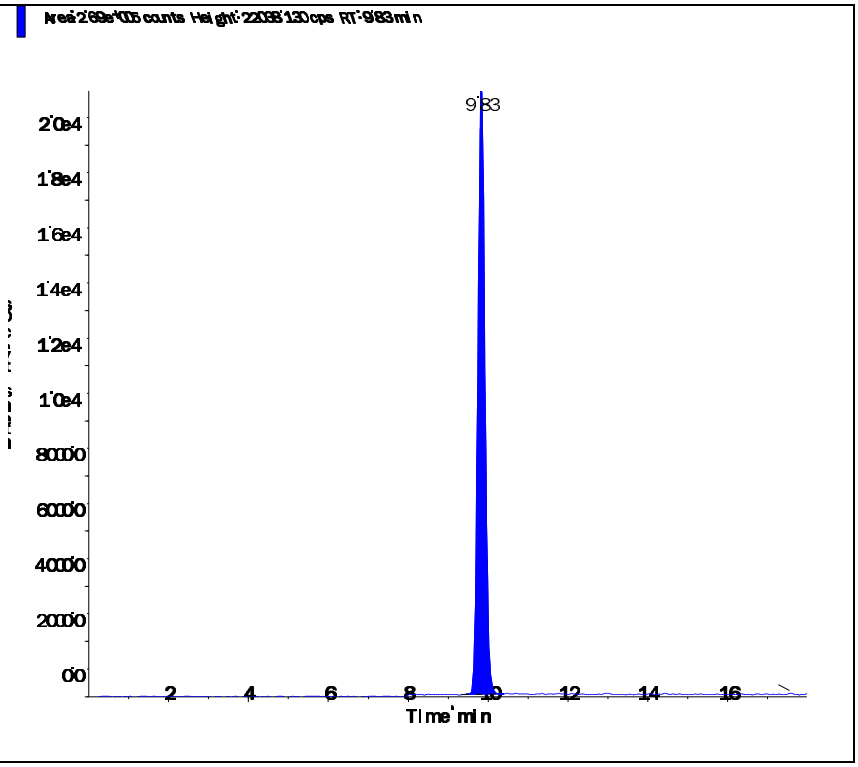

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:29 PM

Data File	LM34693.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

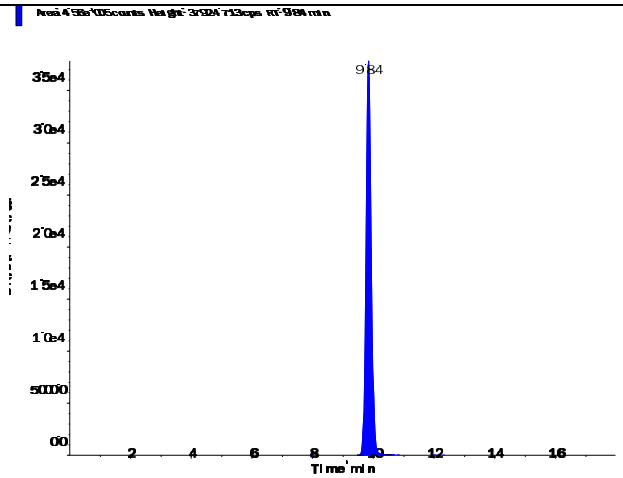

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:29 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

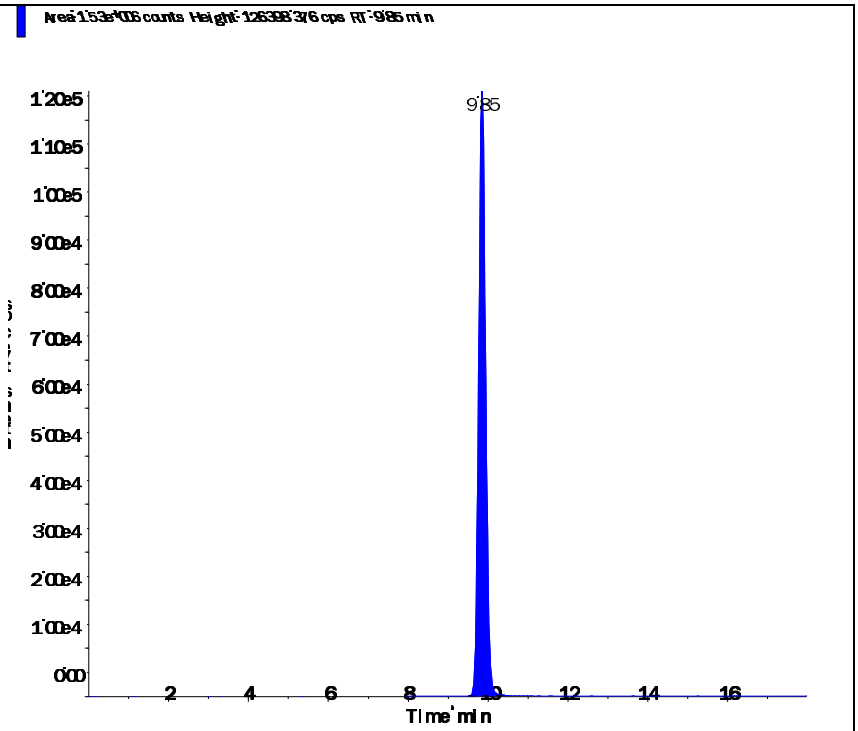

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

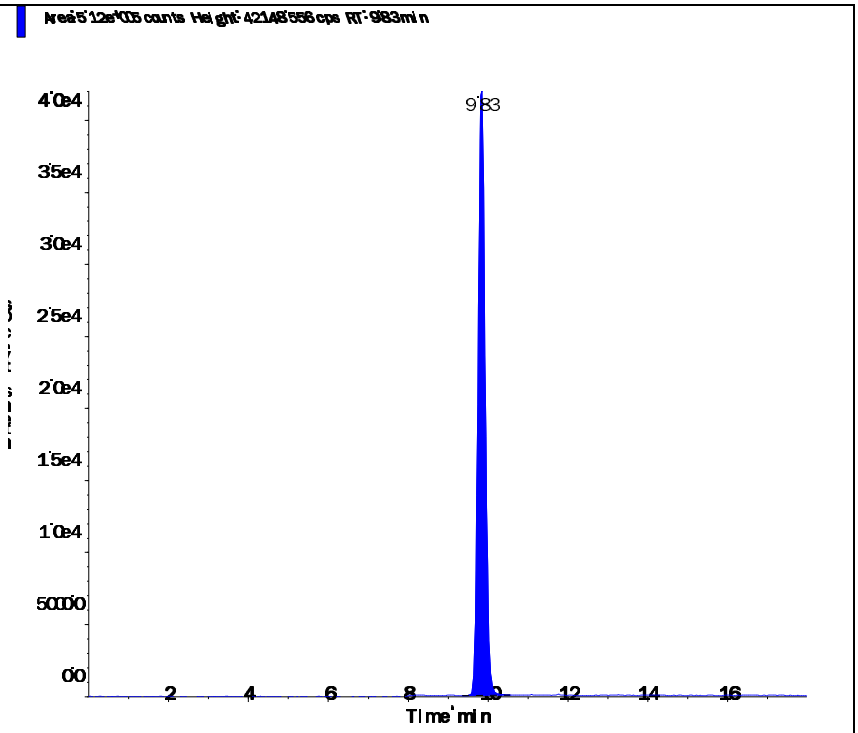

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

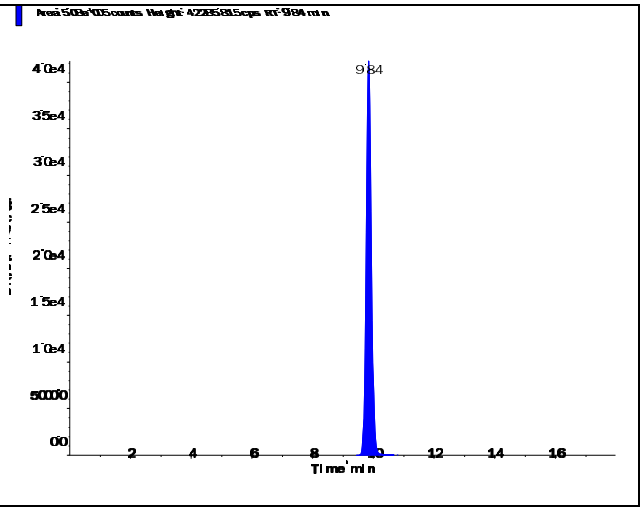

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

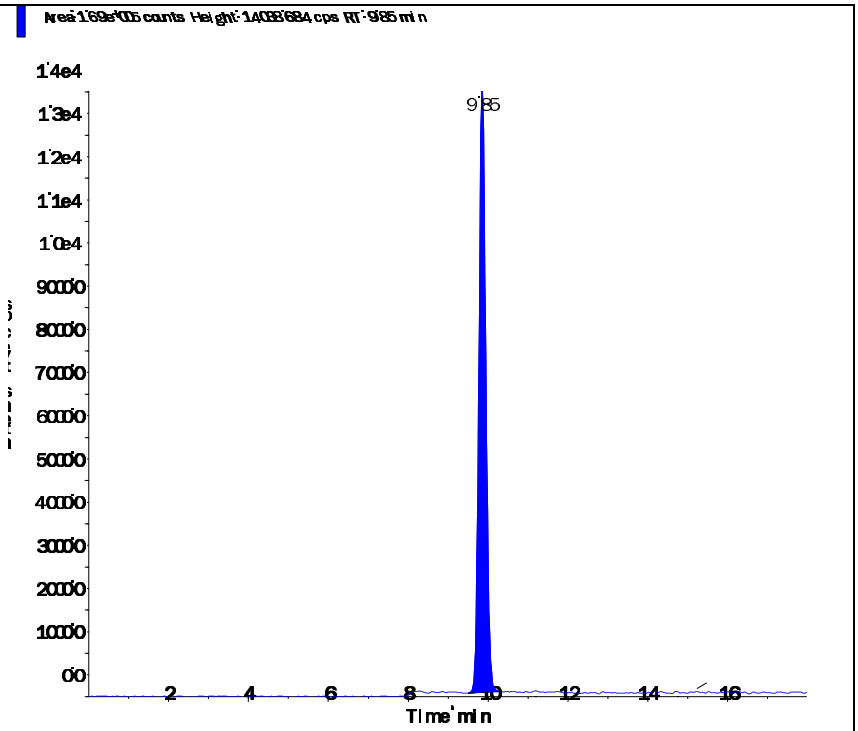

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

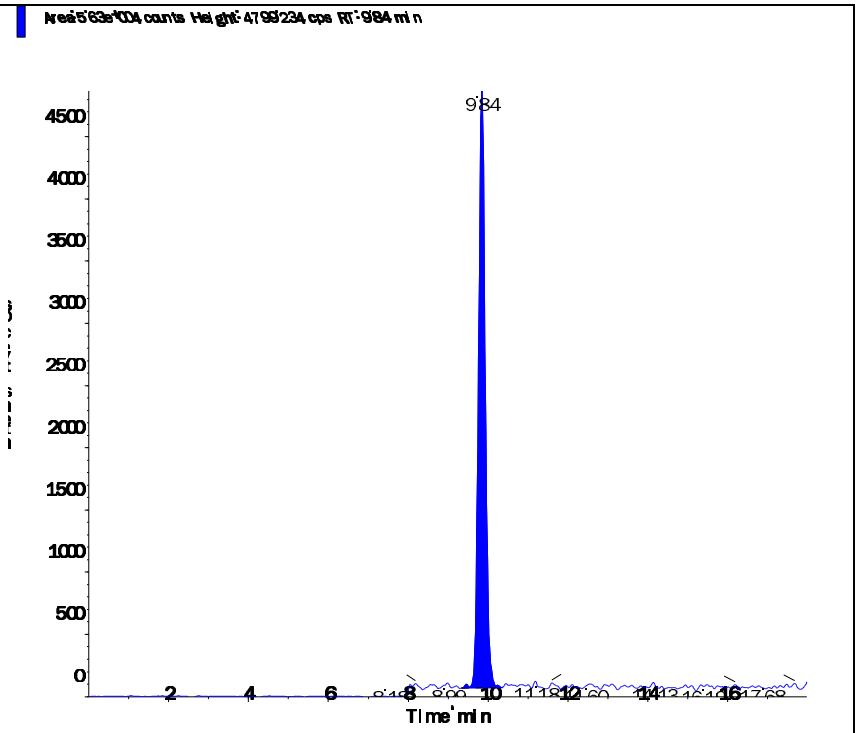

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:30 PM

Data File	LM35518.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 5:17:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35518.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 5:17:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.700e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+05	9.40	1.00	1.02
Perchlorate conf	5.740e+04	9.39	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

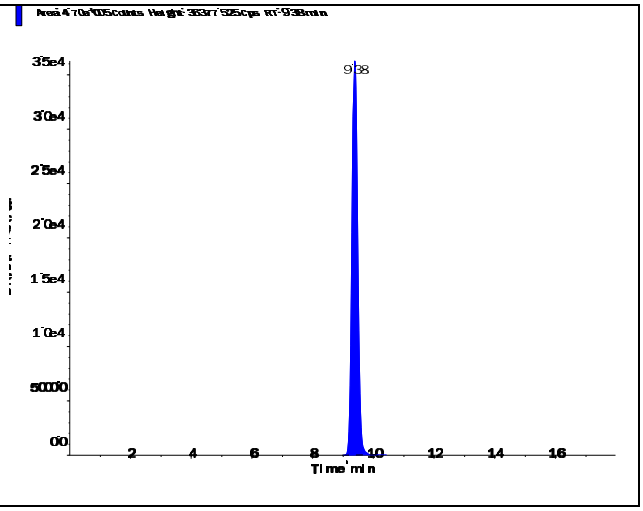

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:30 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

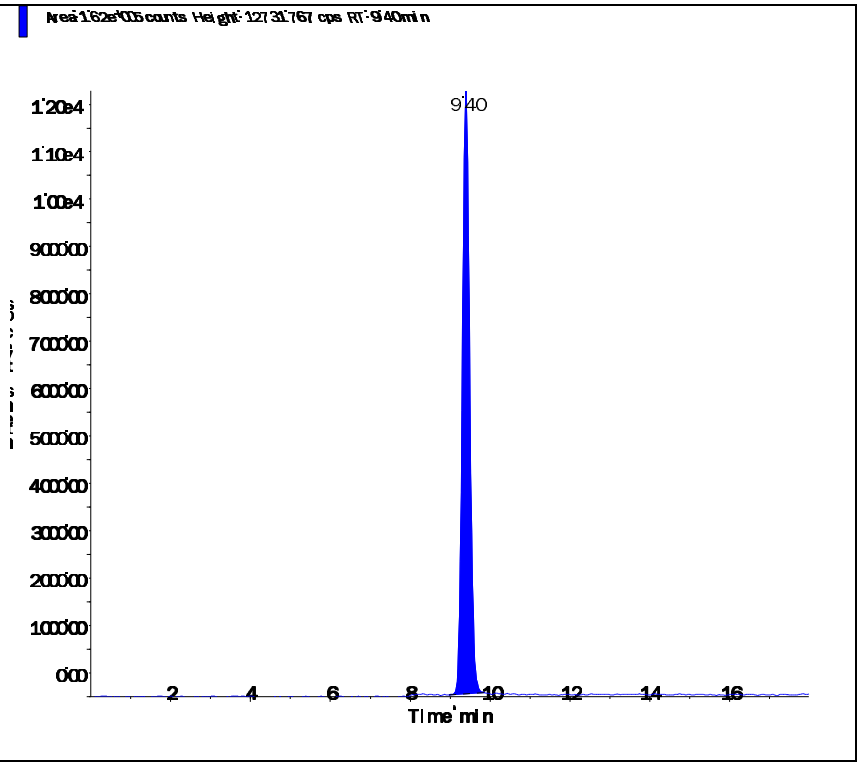

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.122
Sample Type:	(Quality Control)

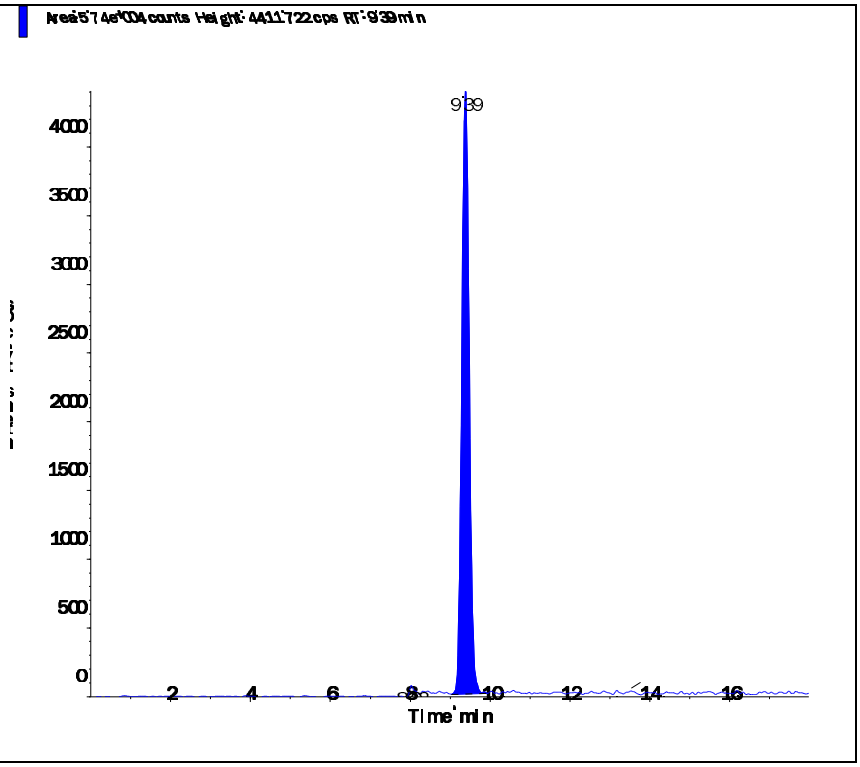

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:33 PM

Data File	LM35530.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 9:04:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35530.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 9:04:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.39	1.00	0.996
Perchlorate conf	5.940e+04	9.38	1.00	0.994

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

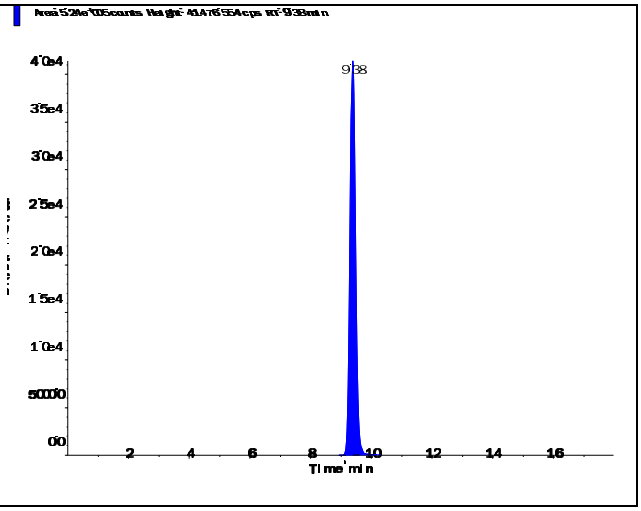

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:33 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.39 (9.84) min Calculated conc: 0.996 ng/ml Area Ratio: 0.336 Sample Type: (Quality Control)	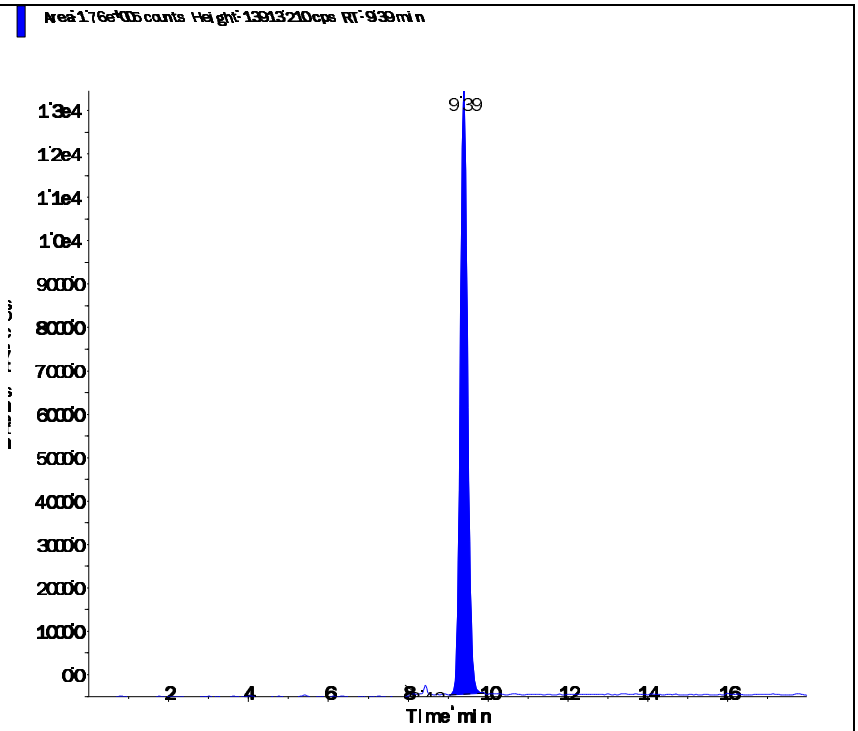
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.38 (9.84) min Calculated conc: 0.994 ng/ml Area Ratio: 0.113 Sample Type: (Quality Control)	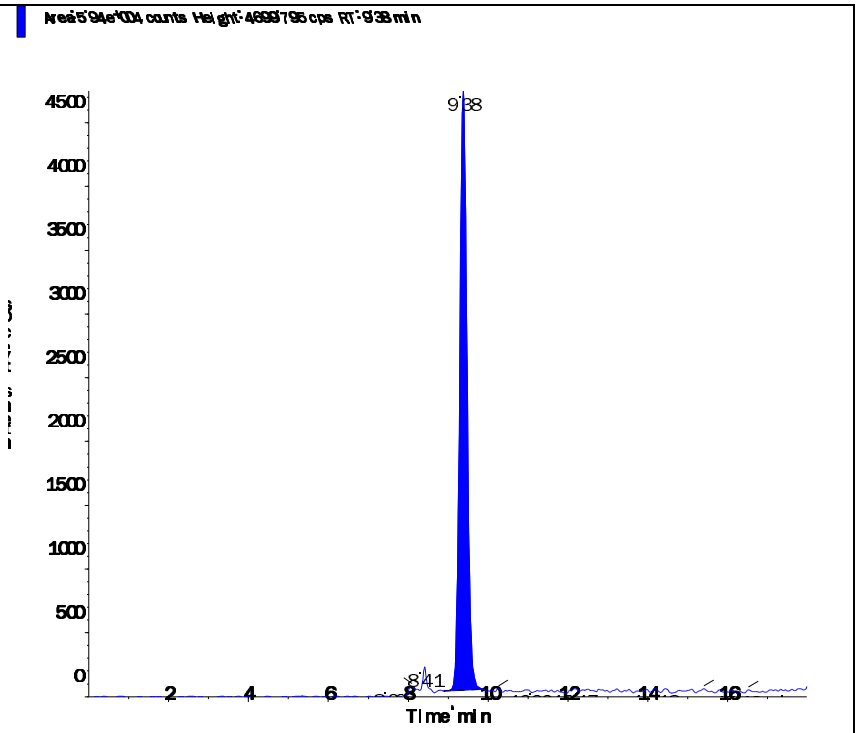

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:37 PM

Data File	LM35543.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:11:03 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35543.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:11:03 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.400e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.870e+05	9.38	1.00	1.03
Perchlorate conf	6.580e+04	9.37	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

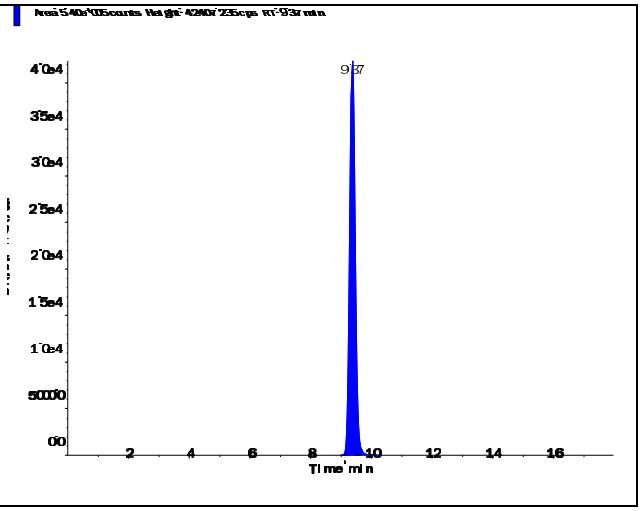

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.347
Sample Type:	(Quality Control)

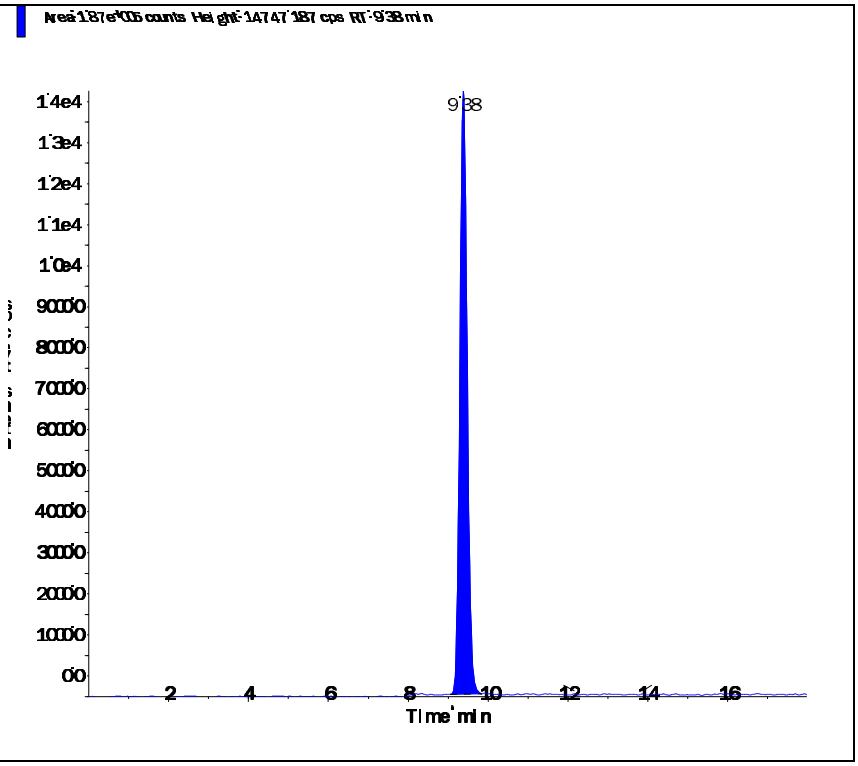

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.122
Sample Type:	(Quality Control)

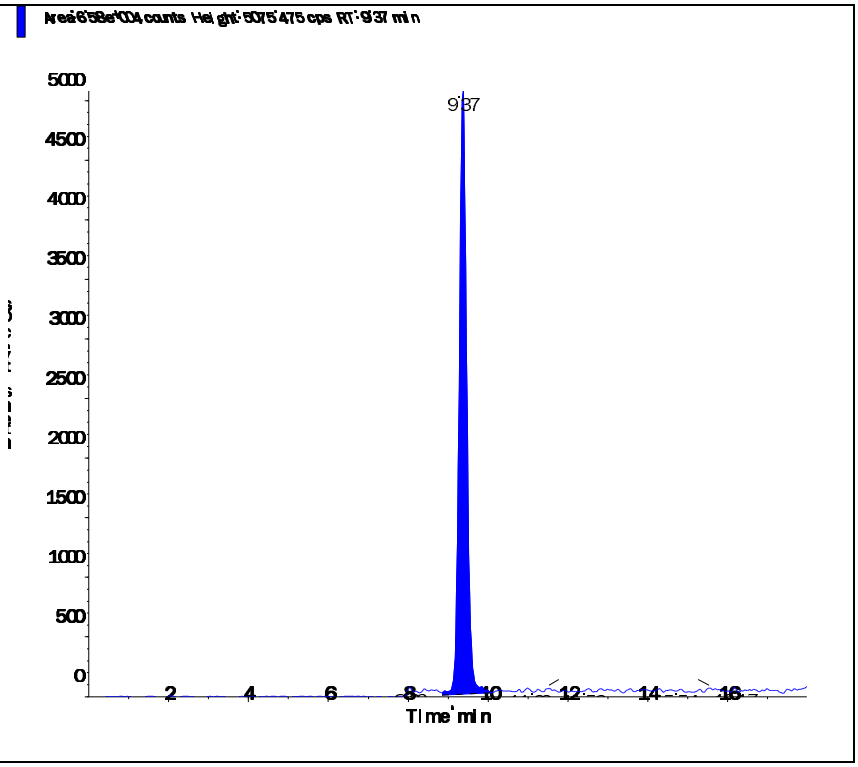

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:39 PM

Data File	LM35549.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 3:04:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35549.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 3:04:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.430e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.880e+05	9.38	1.00	1.03
Perchlorate conf	6.550e+04	9.37	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

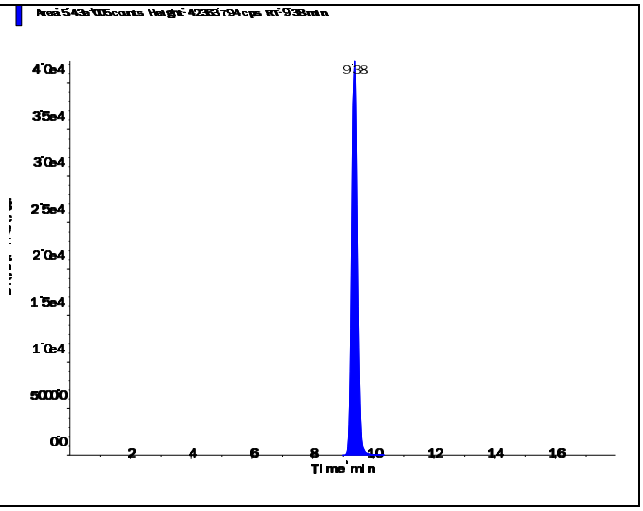

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:39 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

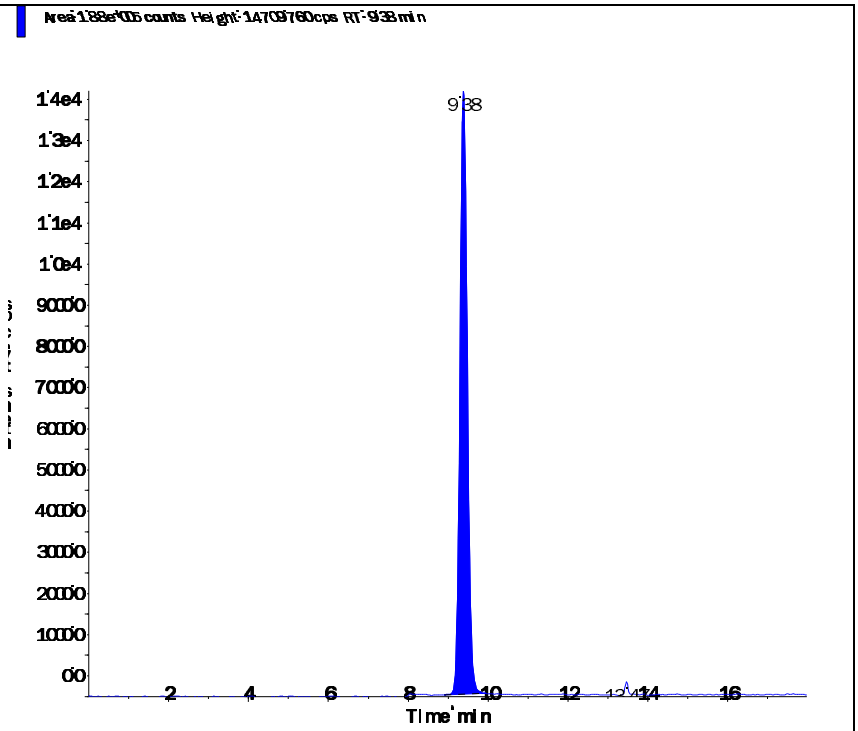

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

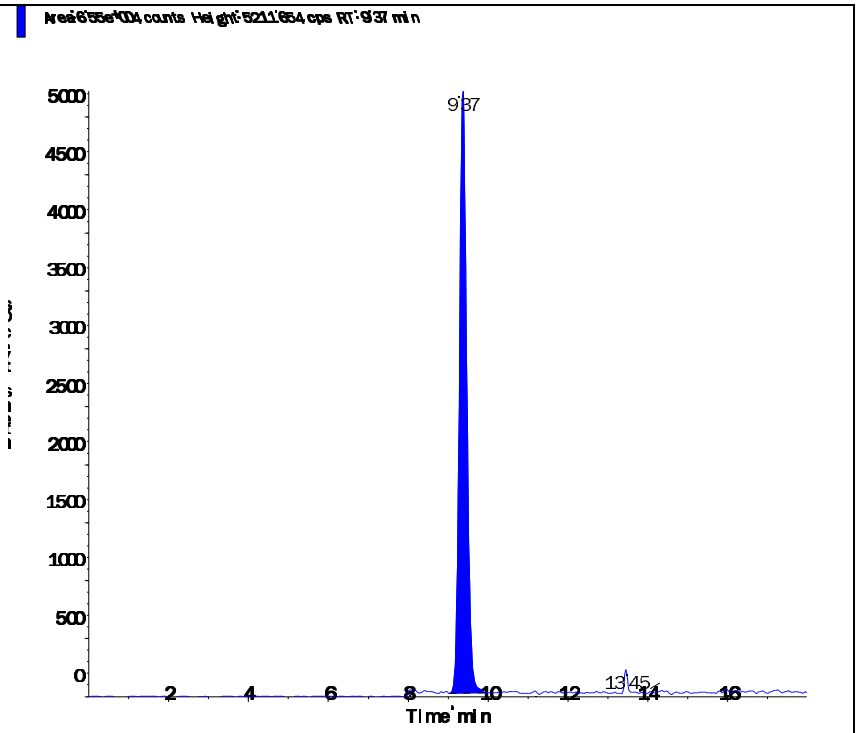

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:40 PM

Data File	LM35552.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 12:56:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35552.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 12:56:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+05	9.40	1.00	1.02
Perchlorate conf	5.570e+04	9.38	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

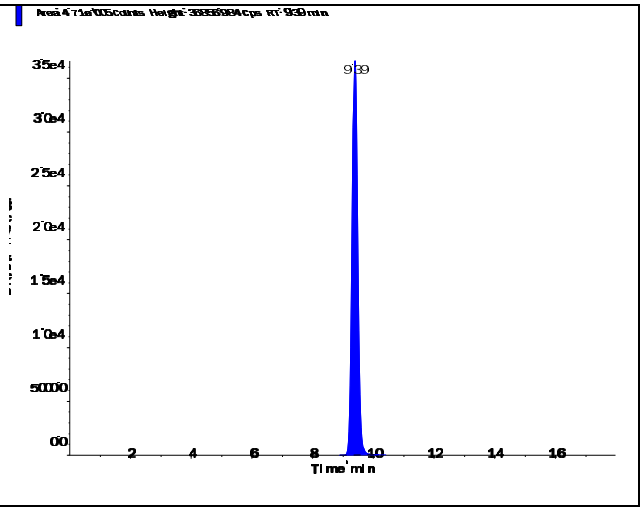

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:40 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.344
Sample Type:	(Quality Control)

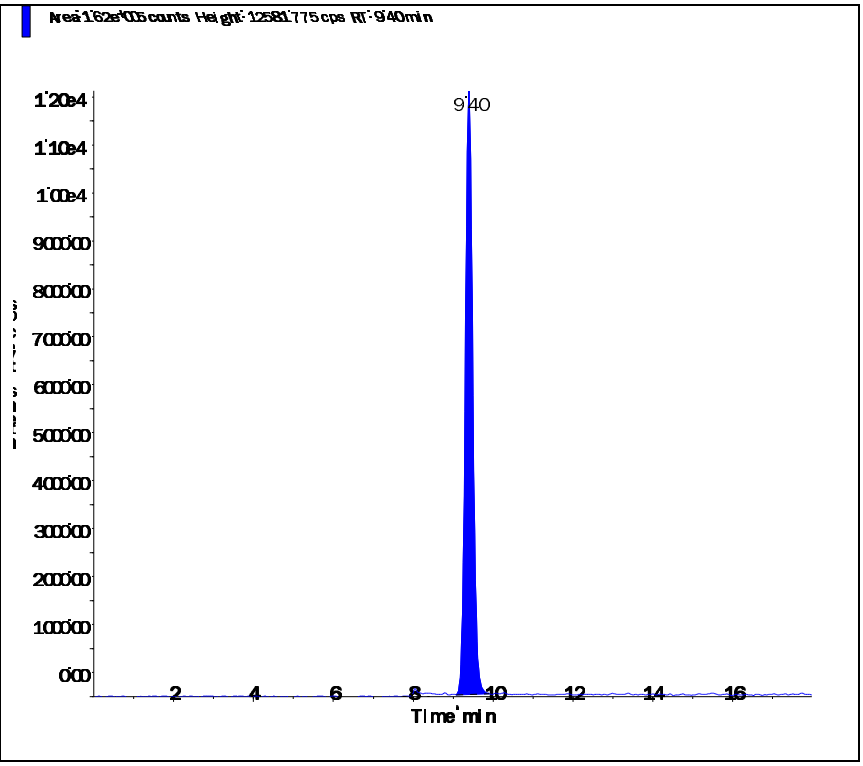

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

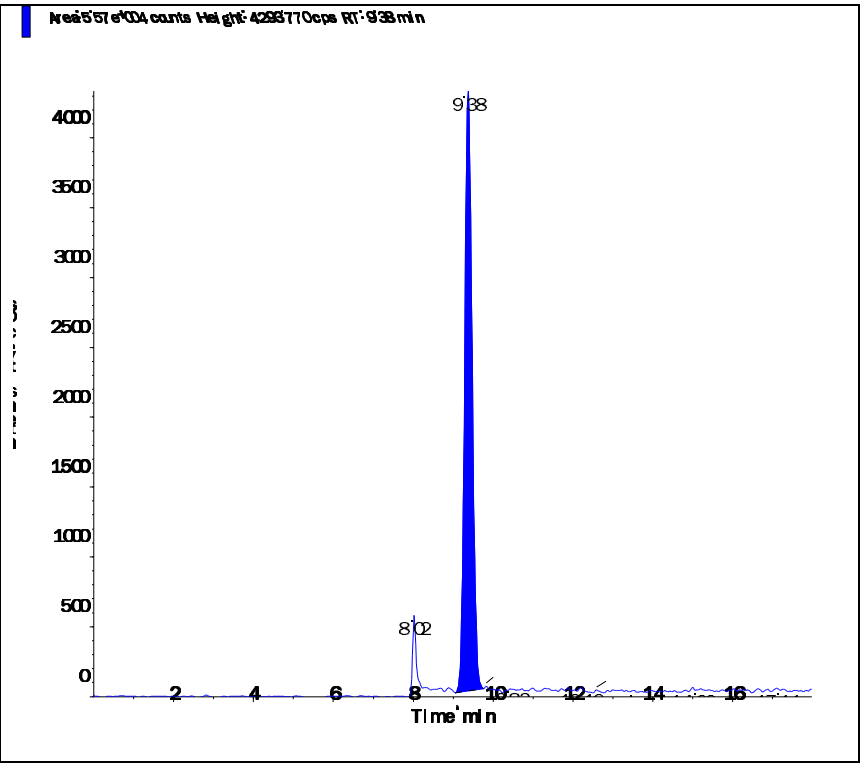

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:41 PM

Data File	LM35556.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 2:12:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35556.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 2:12:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.40	1.00	1.03
Perchlorate conf	6.080e+04	9.39	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

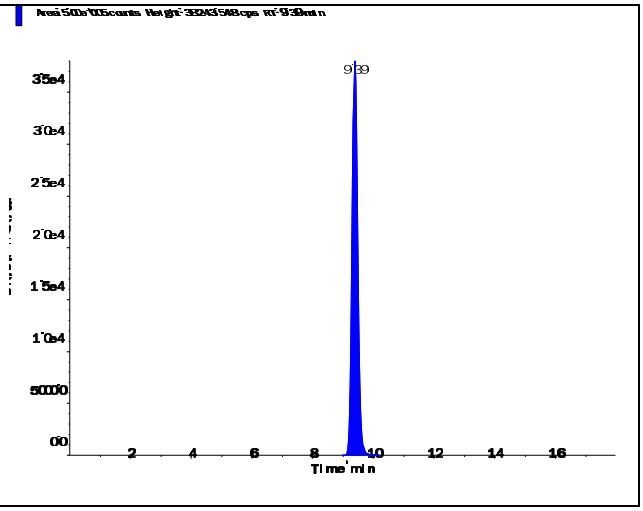

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:41 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

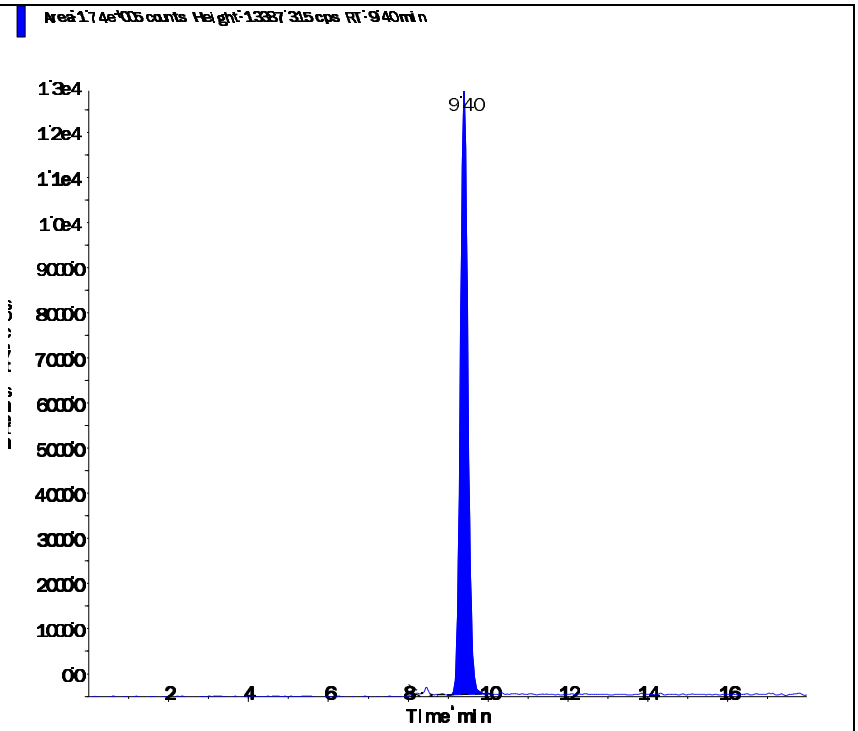

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

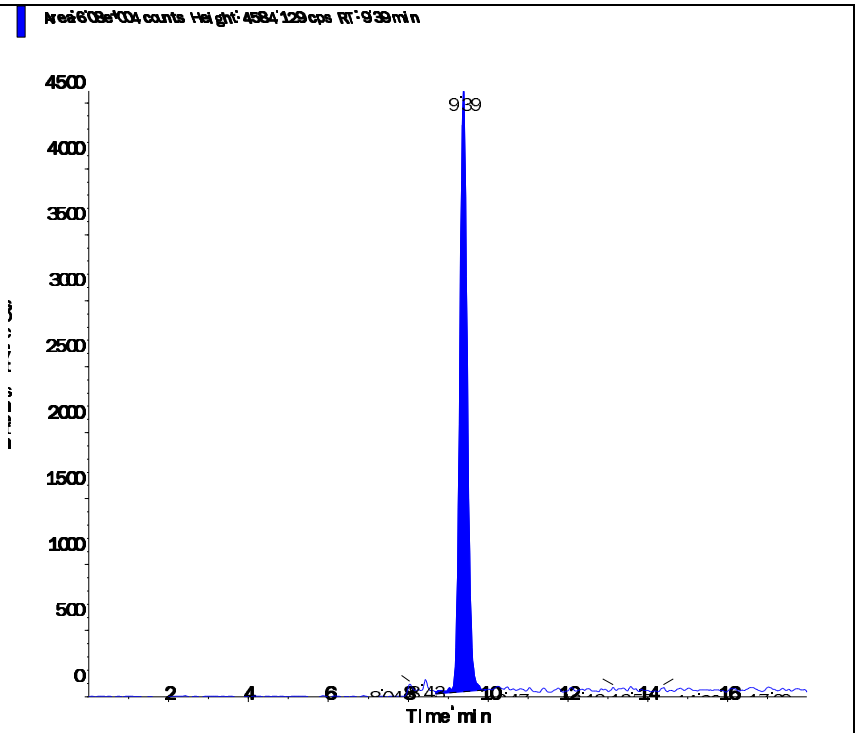

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:30 PM

Data File	LM35519.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 5:36:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-13 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35519.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 5:36:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.700e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.270e+04	9.44	N/A	0.203
Perchlorate conf	1.220e+04	9.43	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

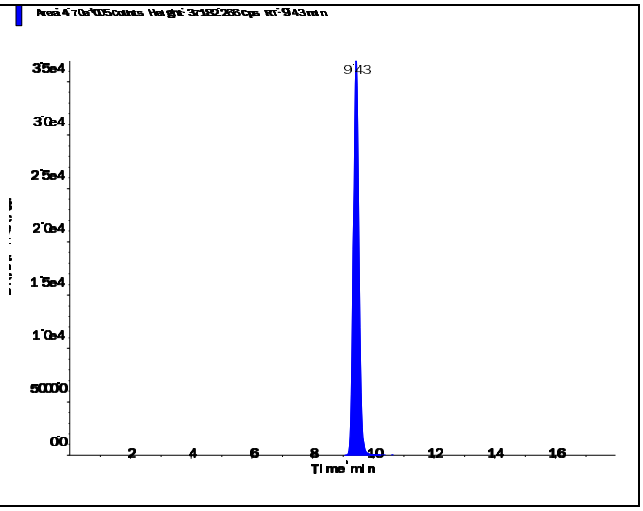

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

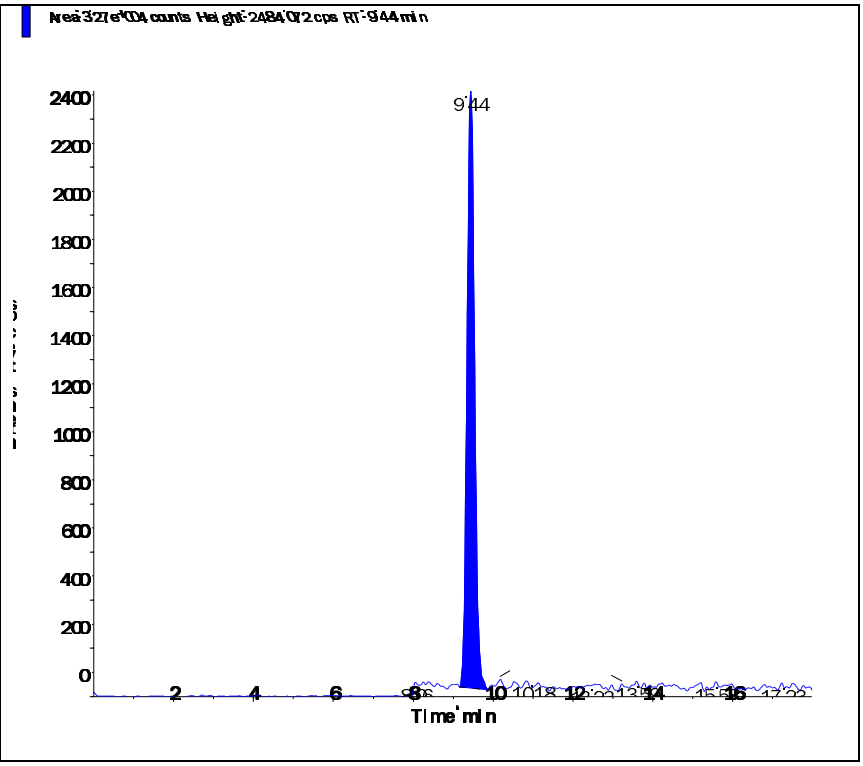

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

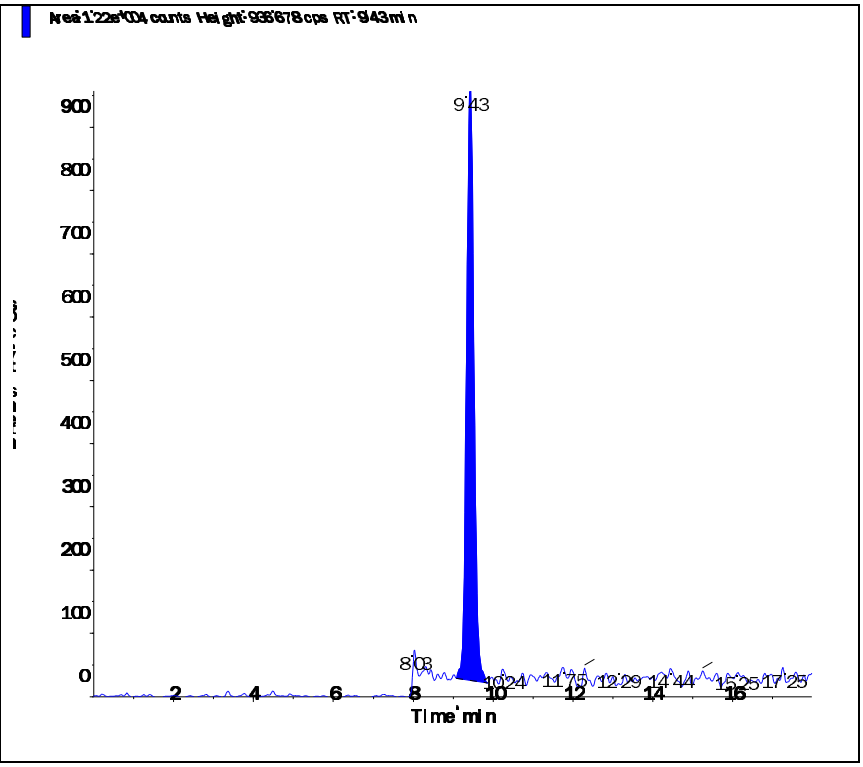

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:34 PM

Data File	LM35531.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 9:23:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-14 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35531.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 9:23:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-14	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.220e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.730e+04	9.43	N/A	0.209
Perchlorate conf	1.290e+04	9.43	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.42(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

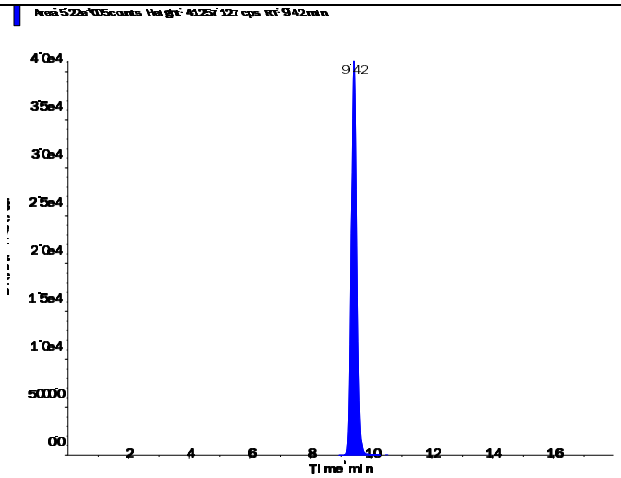

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

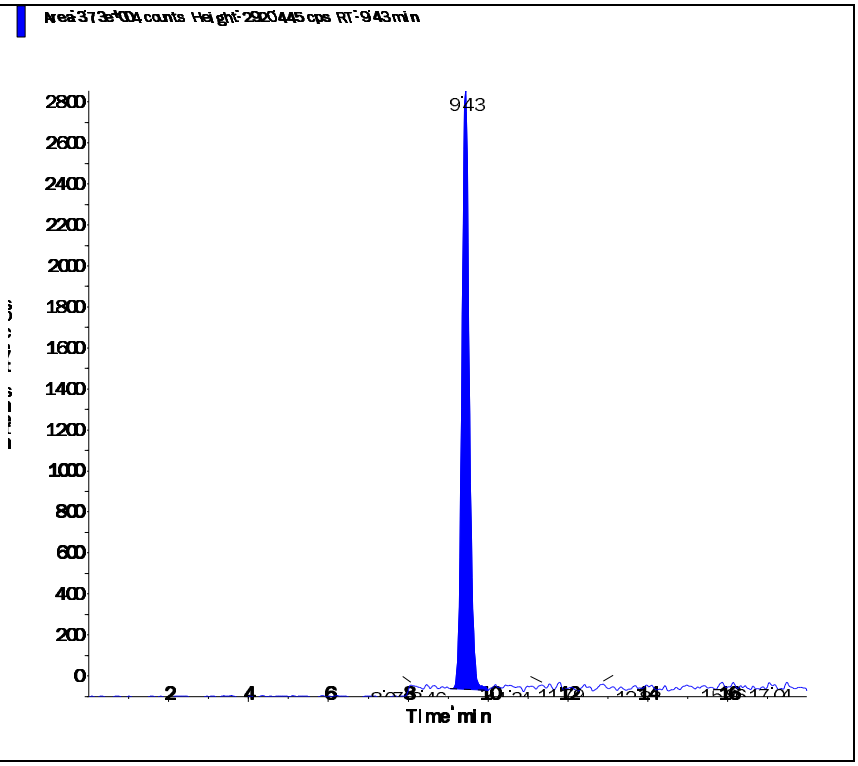

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

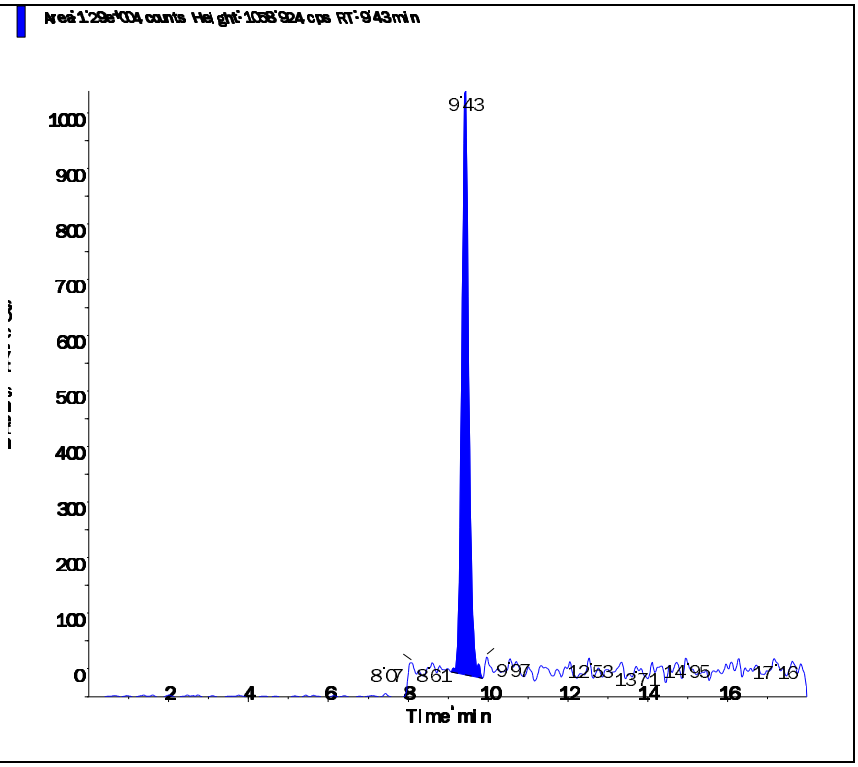

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:37 PM

Data File	LM35544.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:29:59 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-15 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35544.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:29:59 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-15	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.540e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.820e+04	9.43	N/A	0.201
Perchlorate conf	1.320e+04	9.42	N/A	0.193

O18LP (Internal Standard)

RT (Exp. RT): 9.42(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

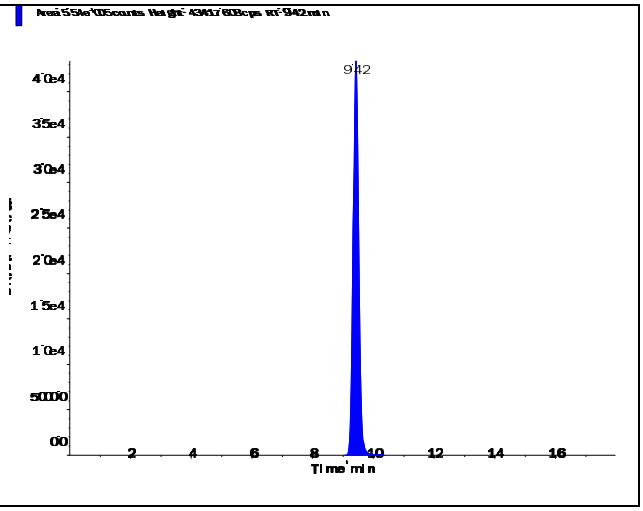

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

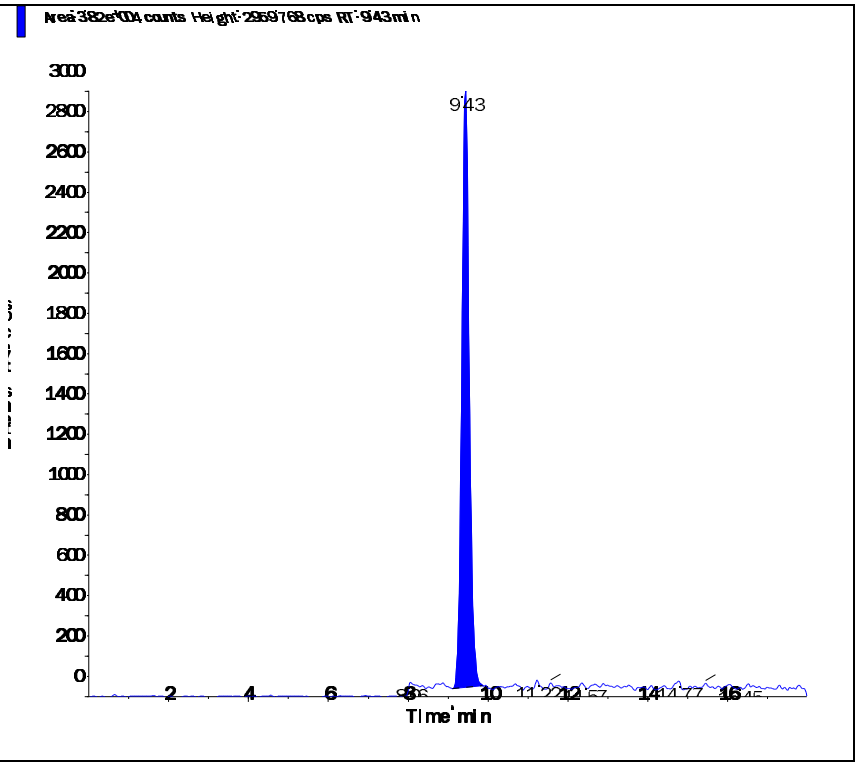

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

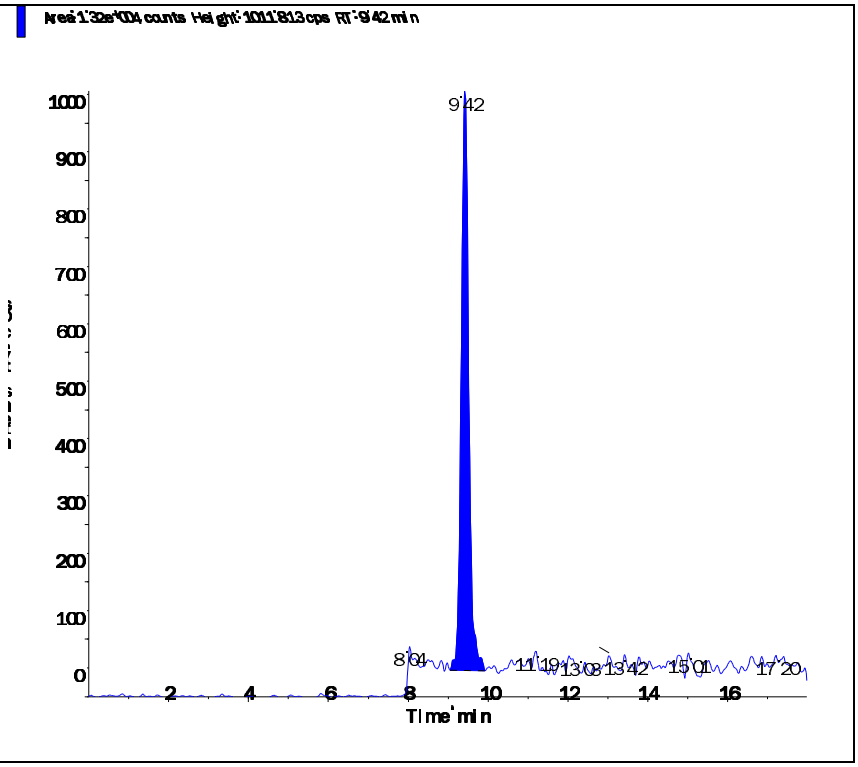

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:39 PM

Data File	LM35550.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 3:23:36 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-16 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35550.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 3:23:36 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-16	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.460e+05	9.41	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.890e+04	9.41	N/A	0.208
Perchlorate conf	1.390e+04	9.41	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.41(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

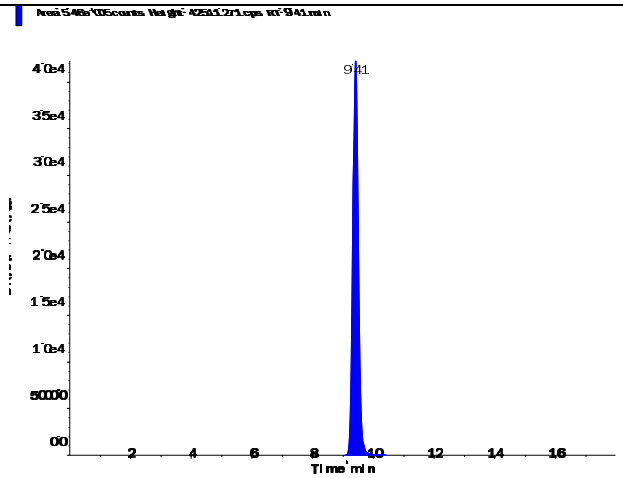

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:39 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.41 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

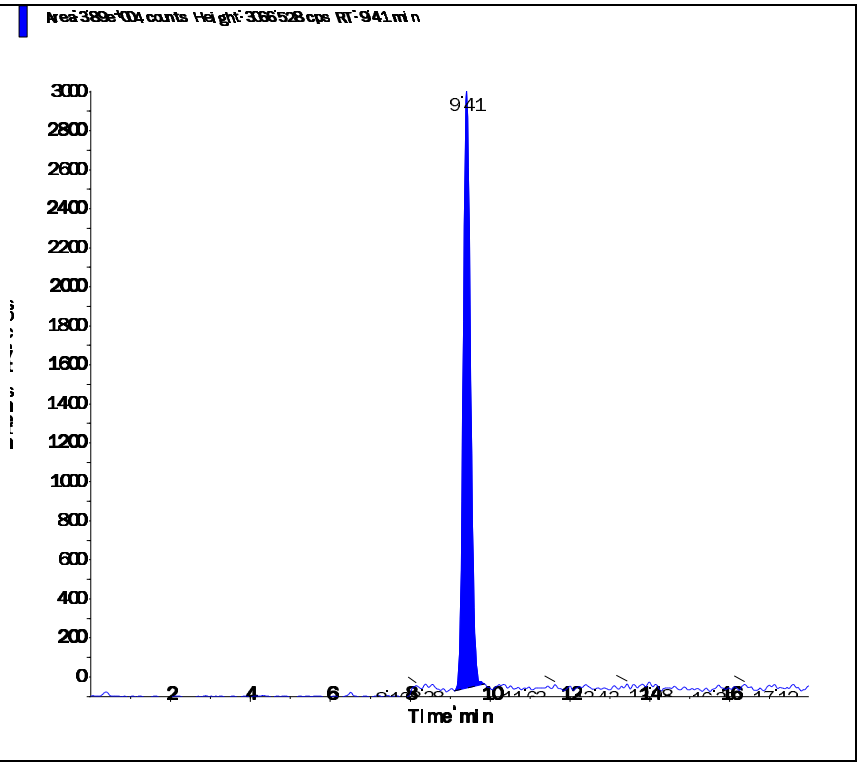

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.41 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

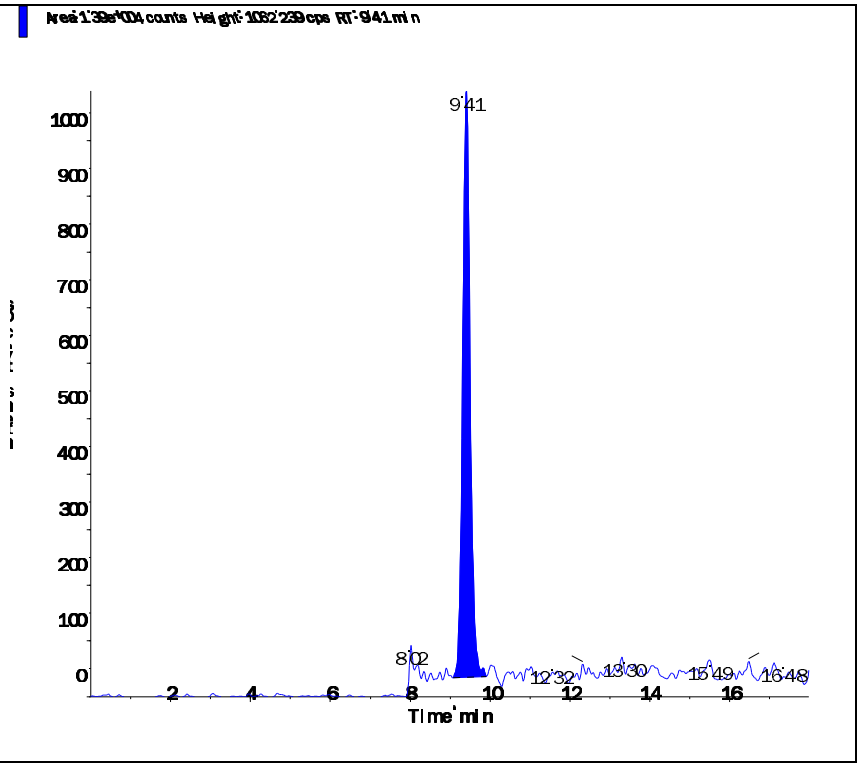

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:40 PM

Data File	LM35553.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:15:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-17 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35553.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:15:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-17	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.670e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.260e+04	9.45	N/A	0.204
Perchlorate conf	1.130e+04	9.44	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

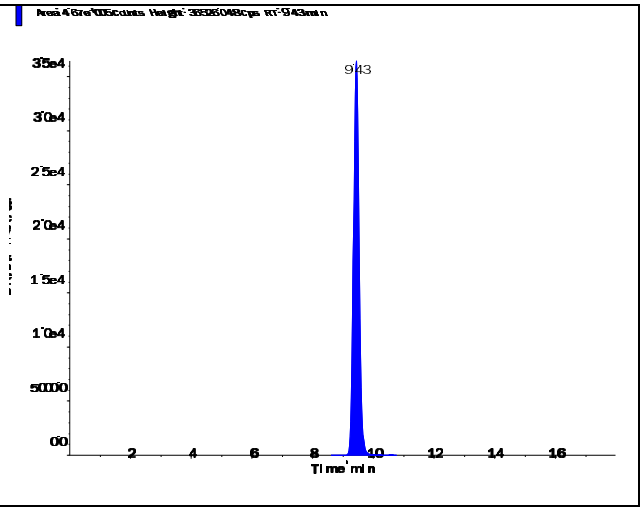

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

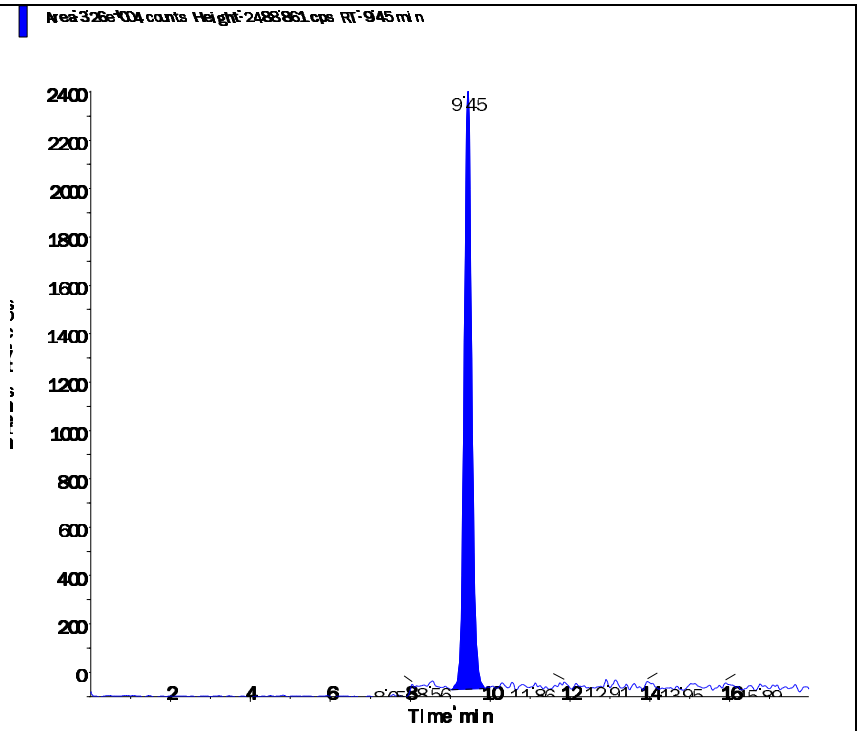

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

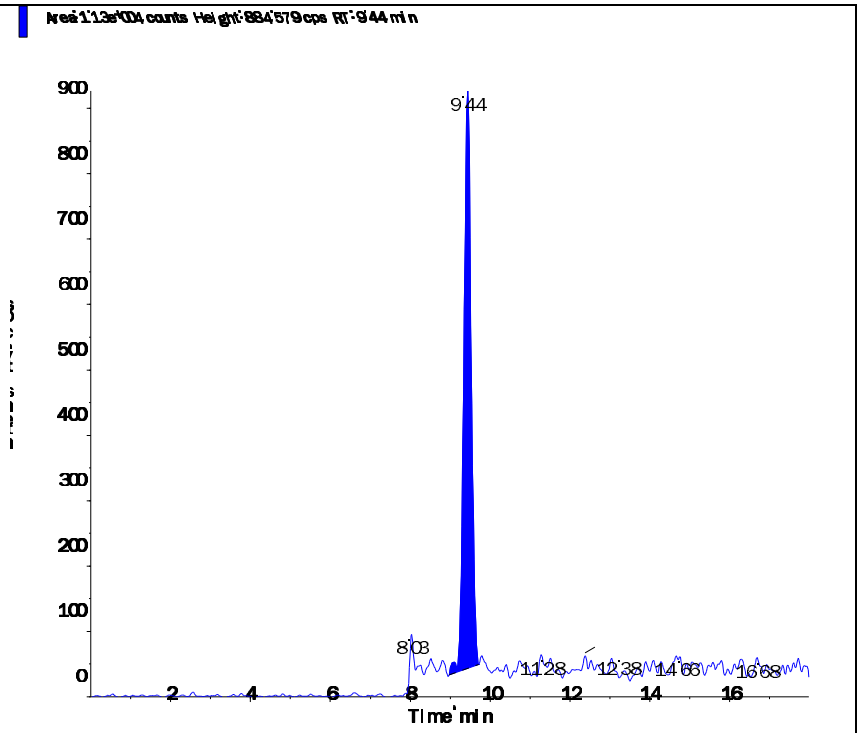

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:42 PM

Data File	LM35557.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 2:31:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-18 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35557.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 2:31:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-18	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.470e+04	9.44	N/A	0.206
Perchlorate conf	1.260e+04	9.43	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

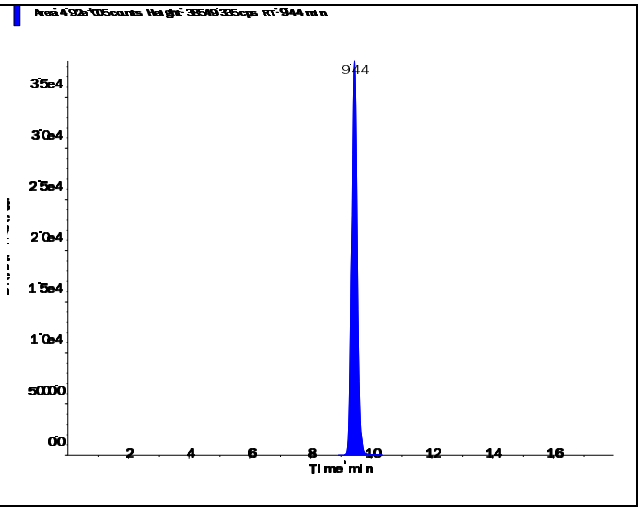

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:42 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

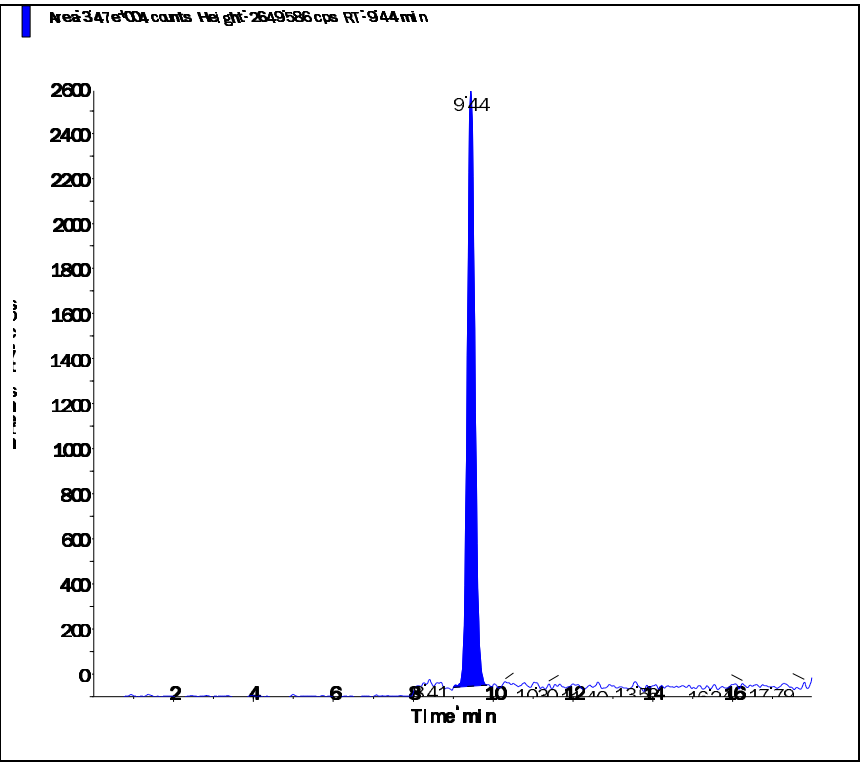

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

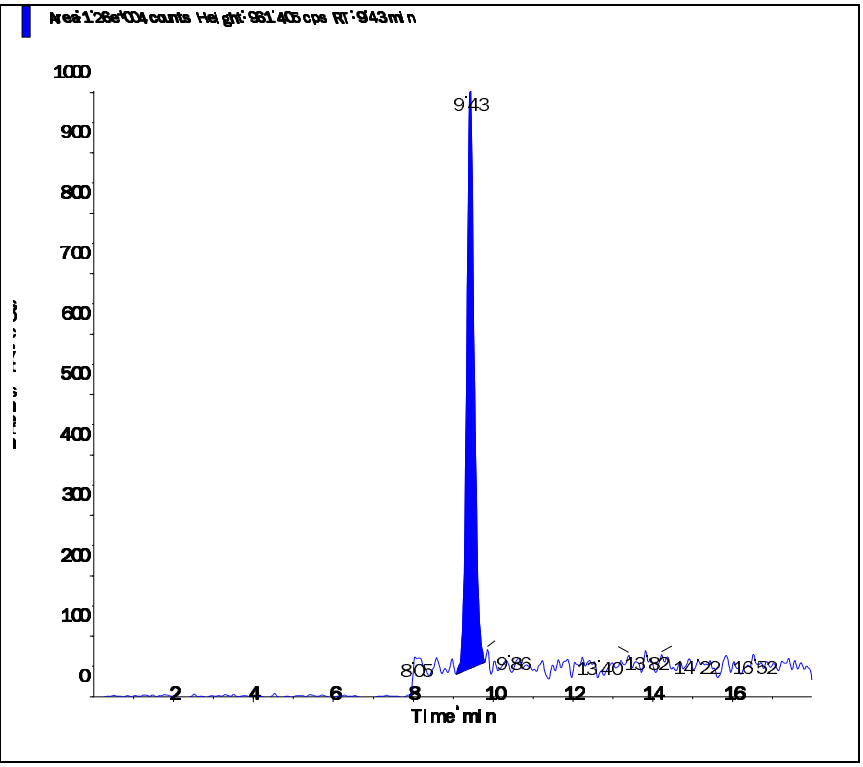

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:29 PM

Data File	LM35517.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 4:58:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-01 CCB	**Injection Vial**	1.00
Data File	LM35517.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 4:58:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

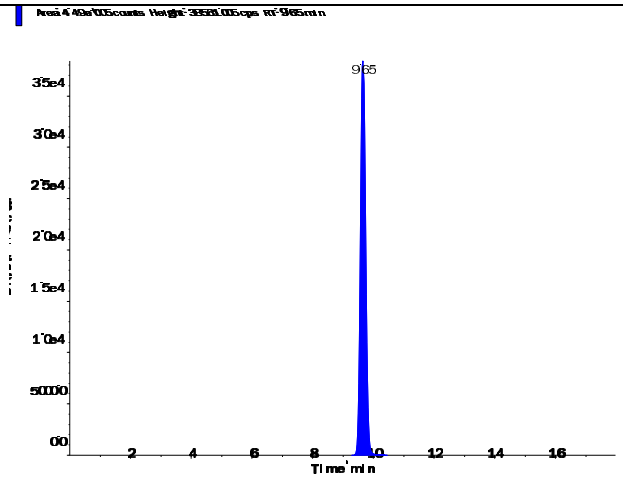

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:29 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

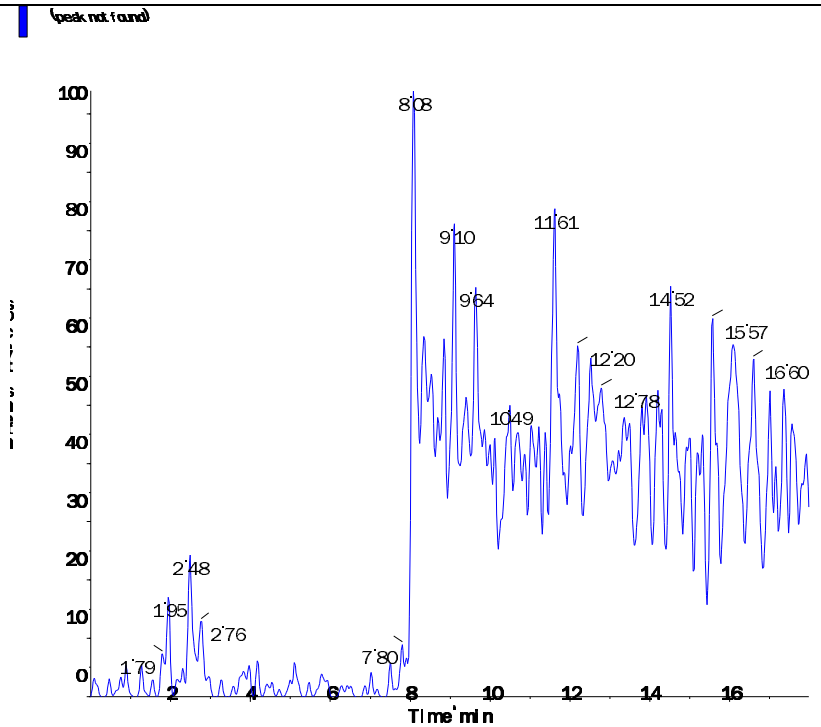

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

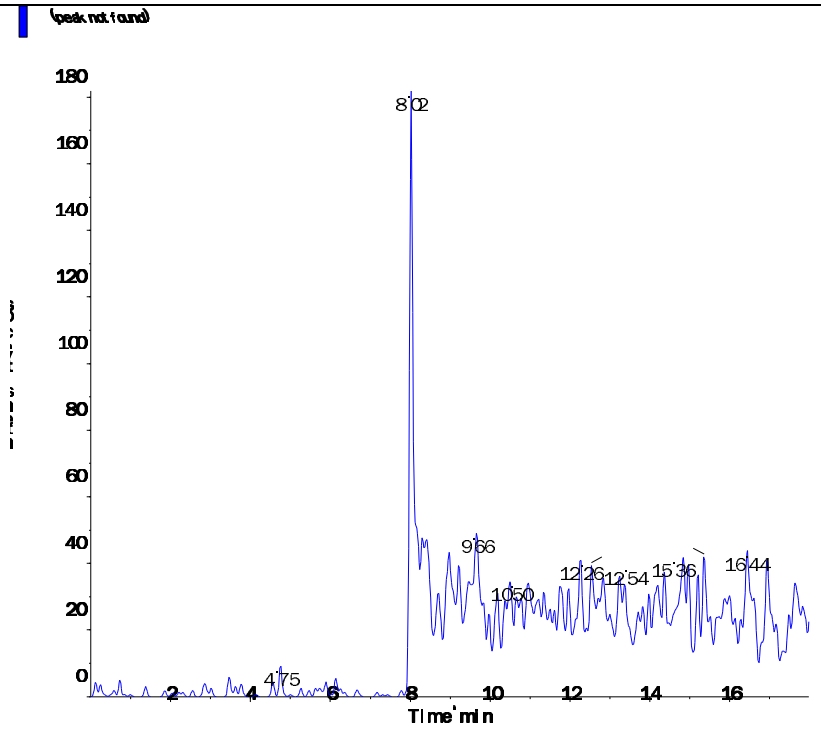

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:34 PM

Data File	LM35532.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 9:42:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-04 CCB	**Injection Vial**	1.00
Data File	LM35532.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 9:42:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

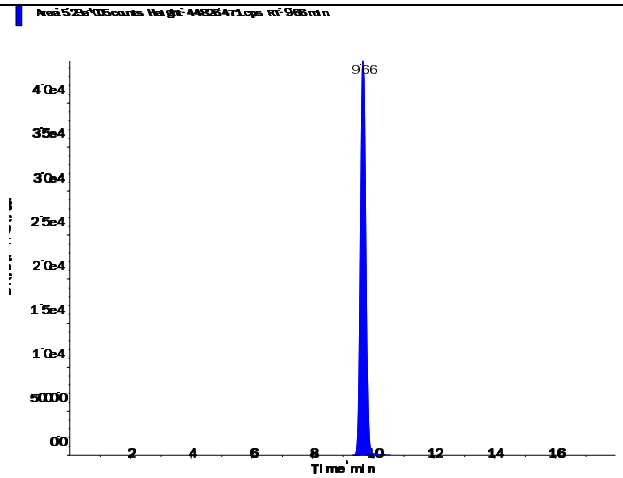

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:34 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

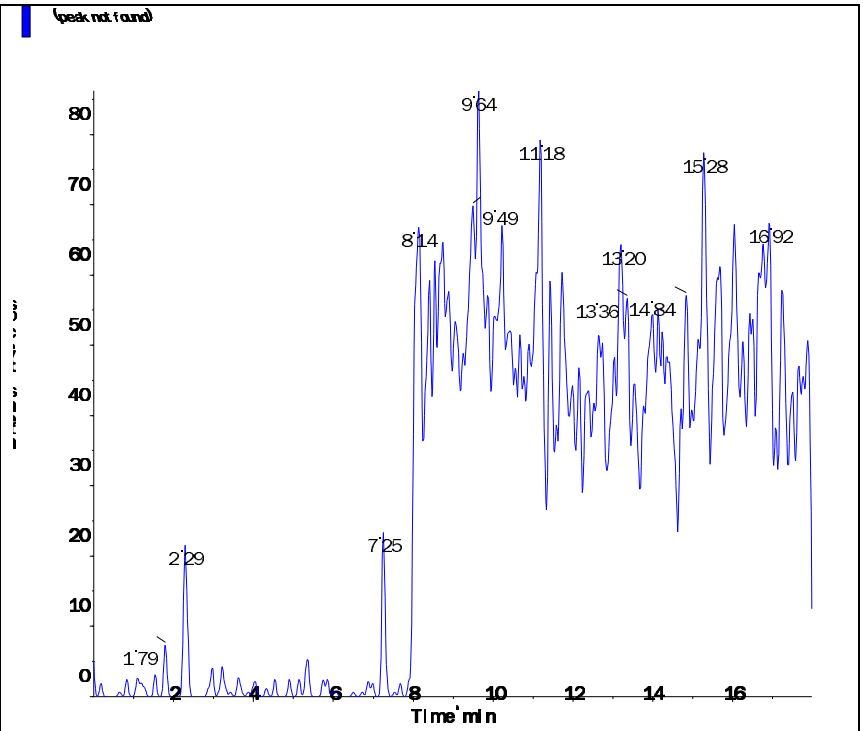

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

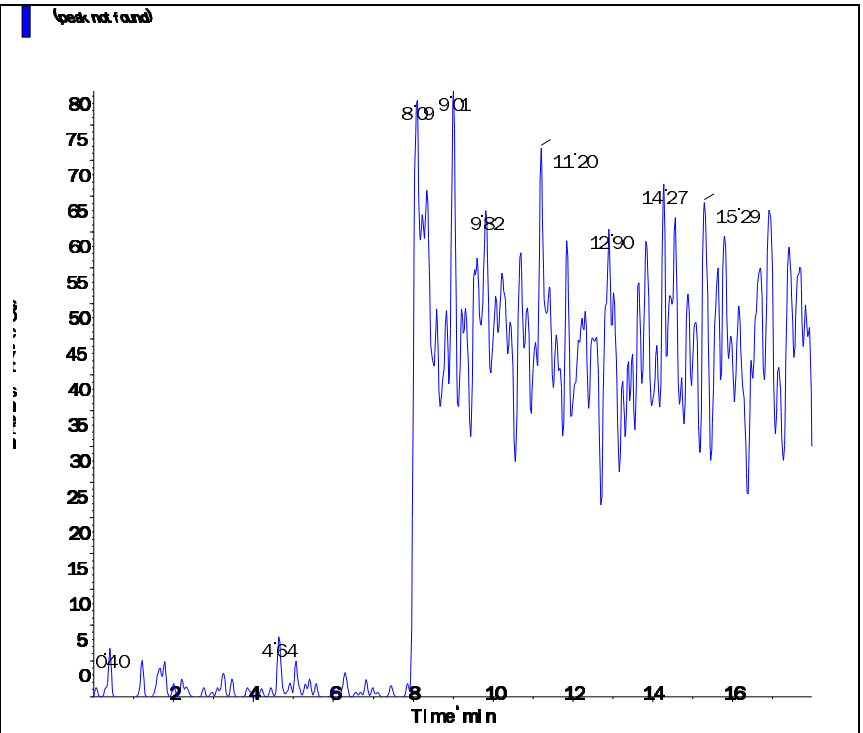

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:38 PM

Data File	LM35545.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:48:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-06 CCB	**Injection Vial**	1.00
Data File	LM35545.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:48:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.640e+02	9.60	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

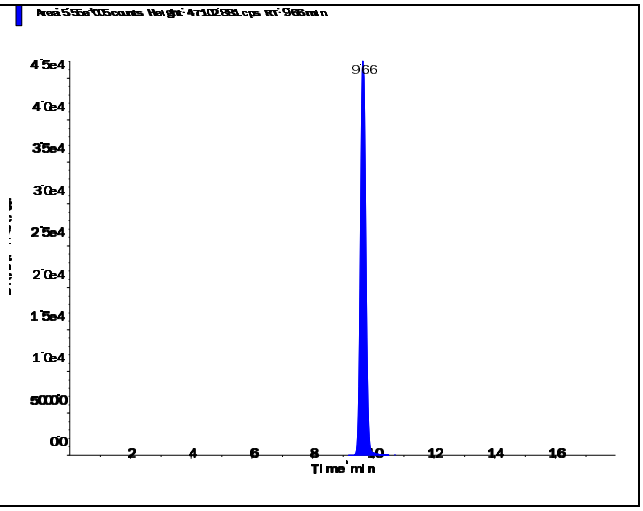

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:38 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

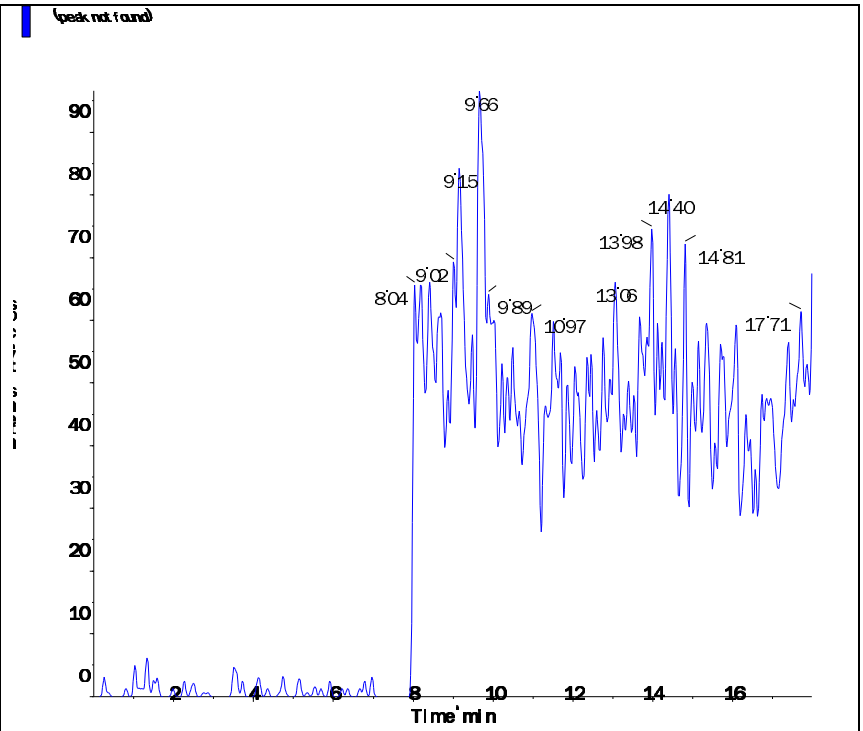

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

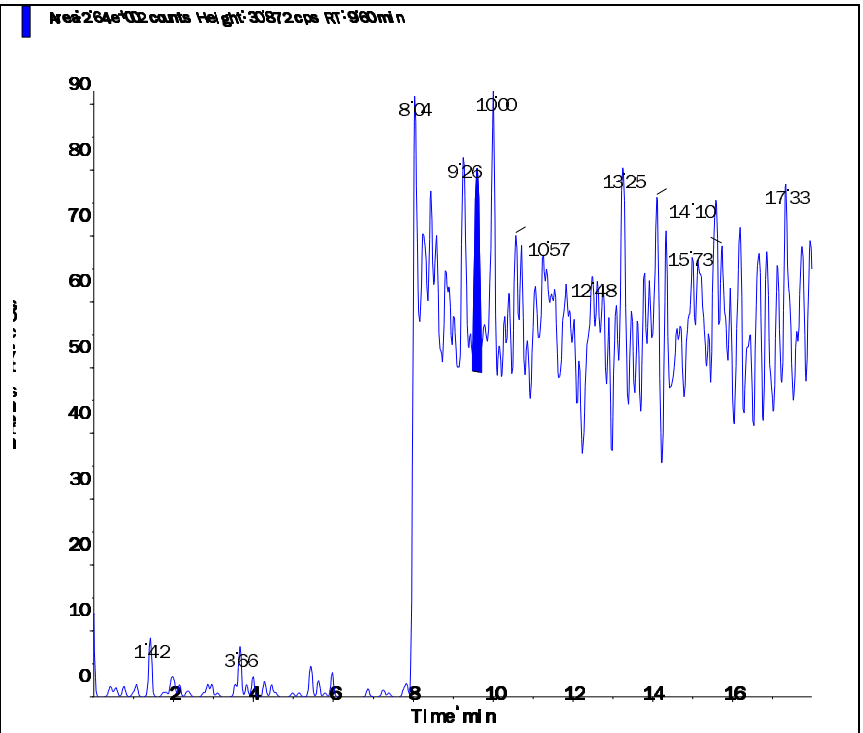

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:40 PM

Data File	LM35551.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 3:42:32 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-08 CCB	**Injection Vial**	1.00
Data File	LM35551.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 3:42:32 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.530e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

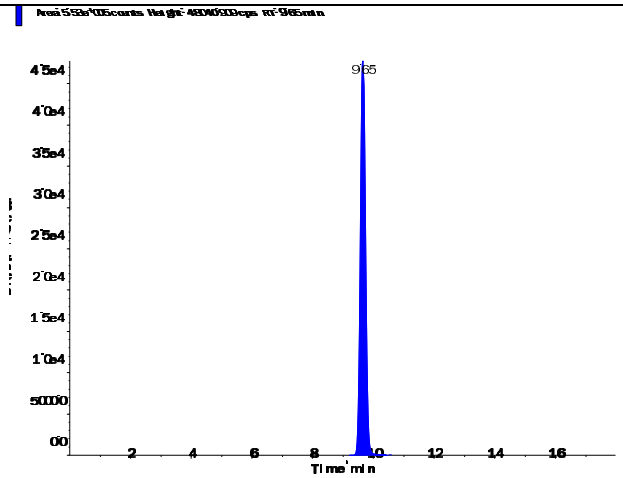

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:40 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

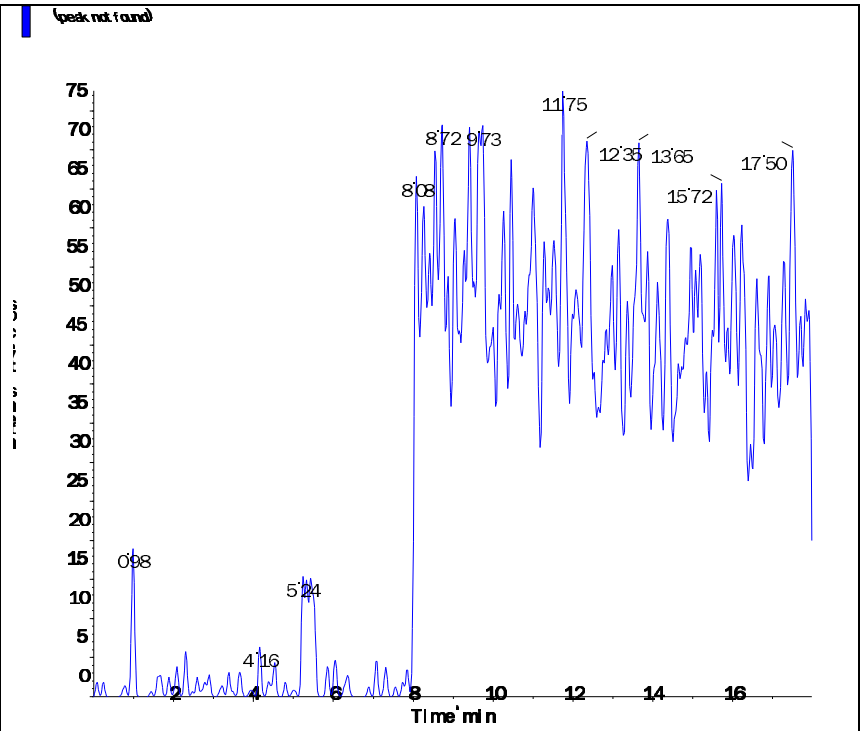

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

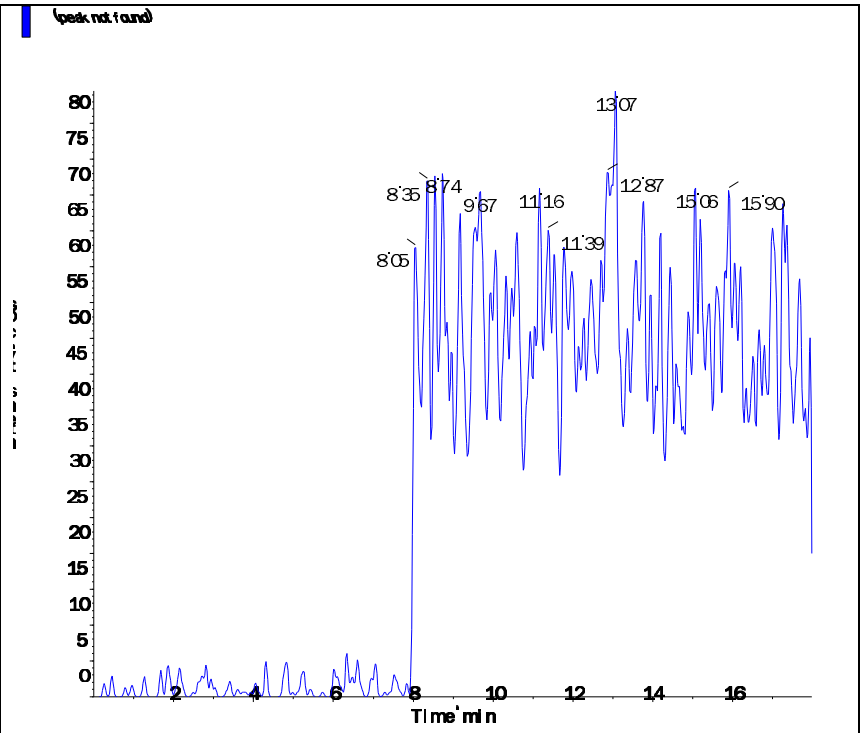

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:40 PM

Data File	LM35554.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:34:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-10 CCB	**Injection Vial**	1.00
Data File	LM35554.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:34:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.450e+02	9.65	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

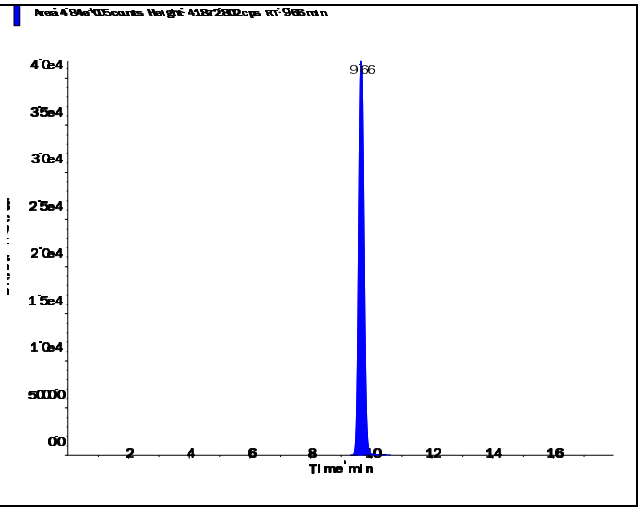

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

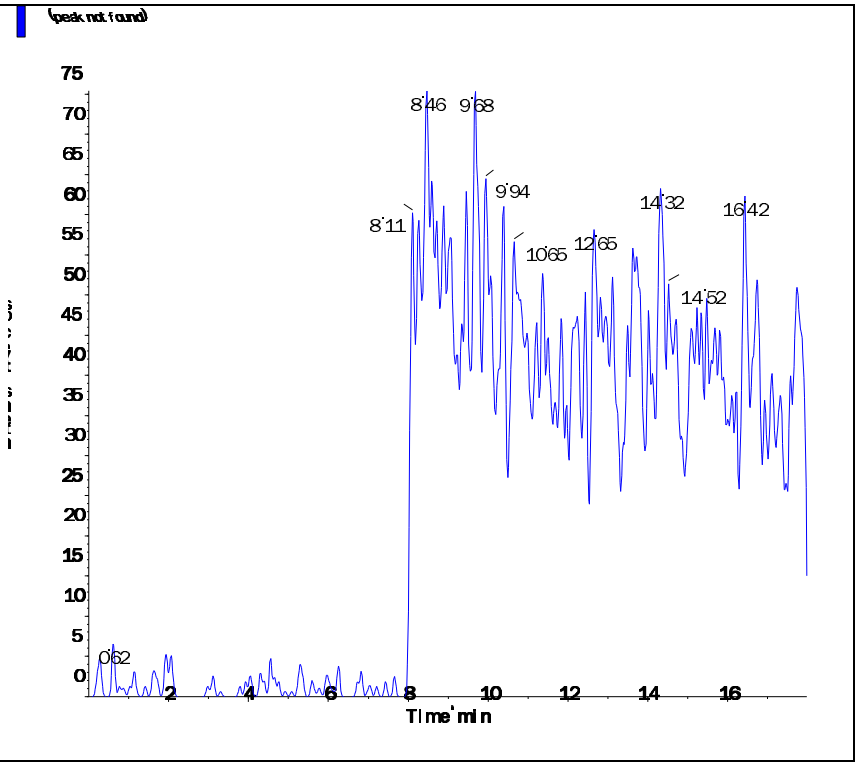

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

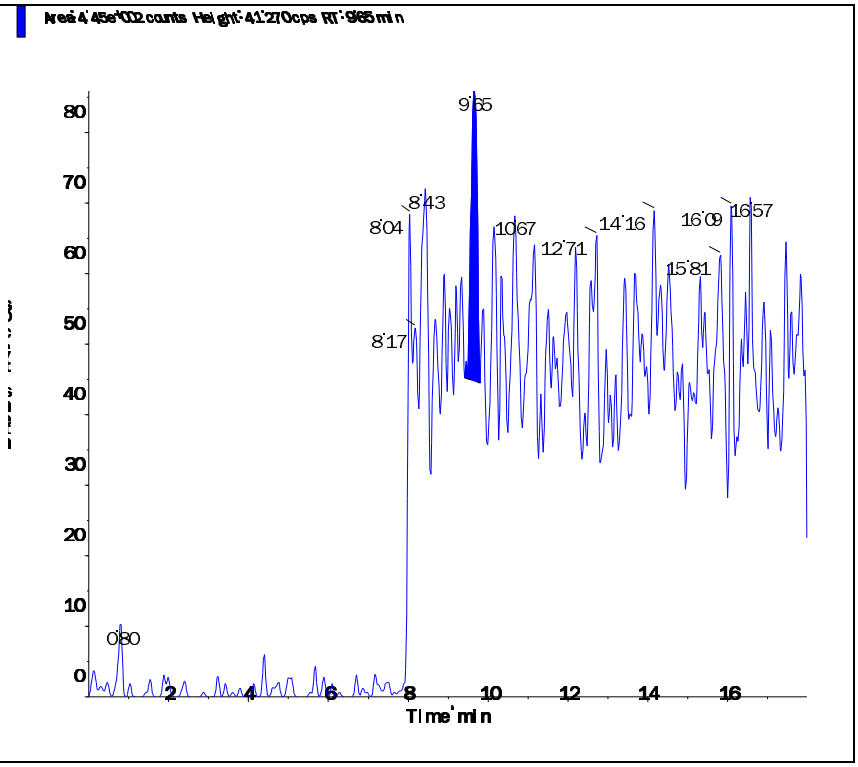

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:42 PM

Data File	LM35558.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 2:50:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-12 CCB	**Injection Vial**	1.00
Data File	LM35558.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 2:50:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

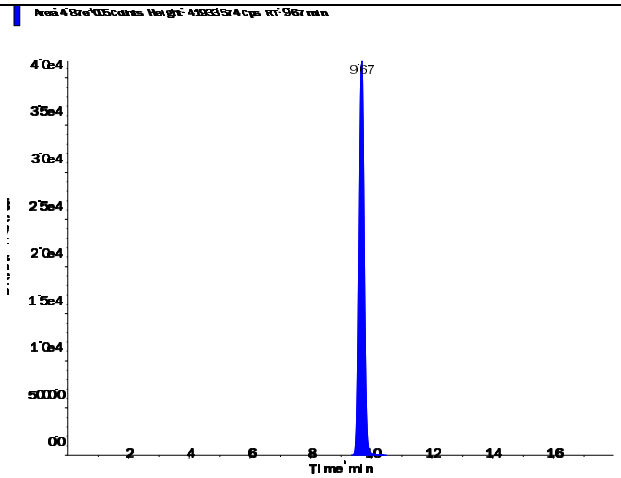

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:42 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

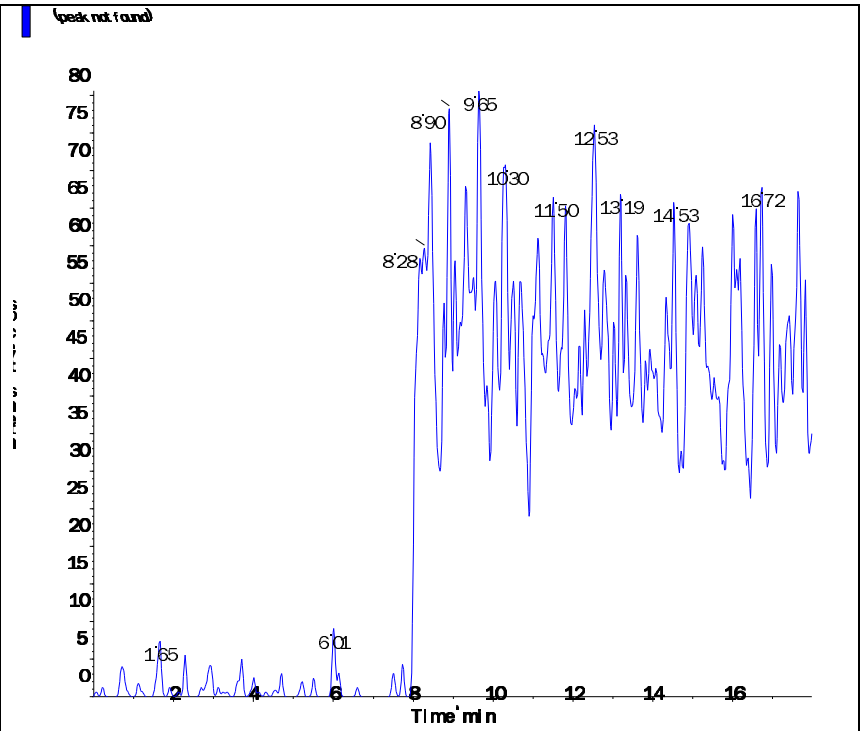

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

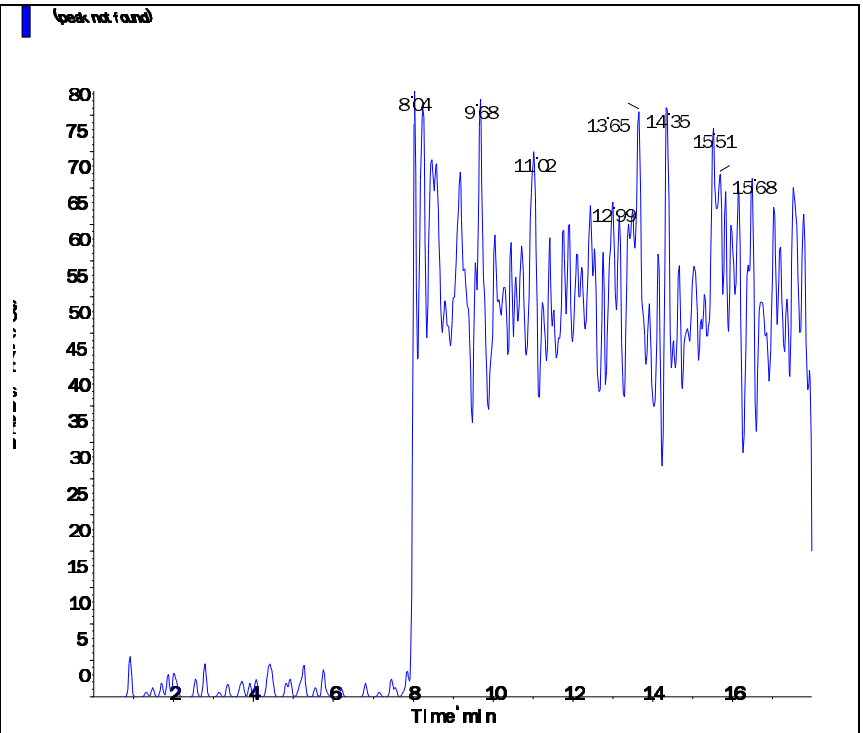

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:30 PM

Data File	LM35520.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 5:55:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35520.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 5:55:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.03	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.010e+04	9.04	N/A	0.197
Perchlorate conf	1.130e+04	9.03	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.03(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

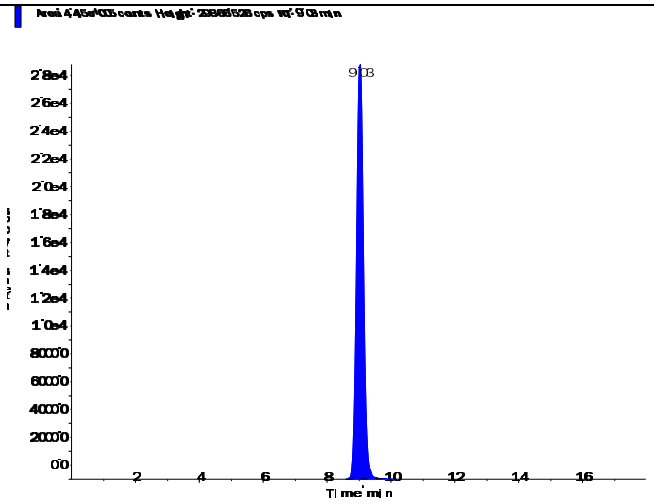

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:30 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.04 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

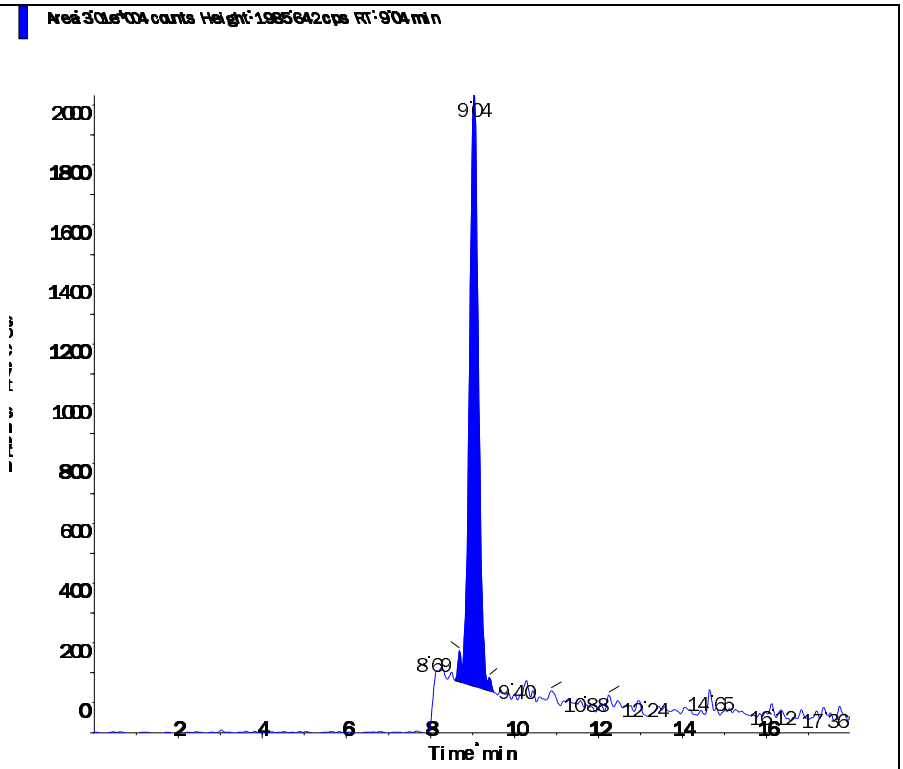

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.03 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

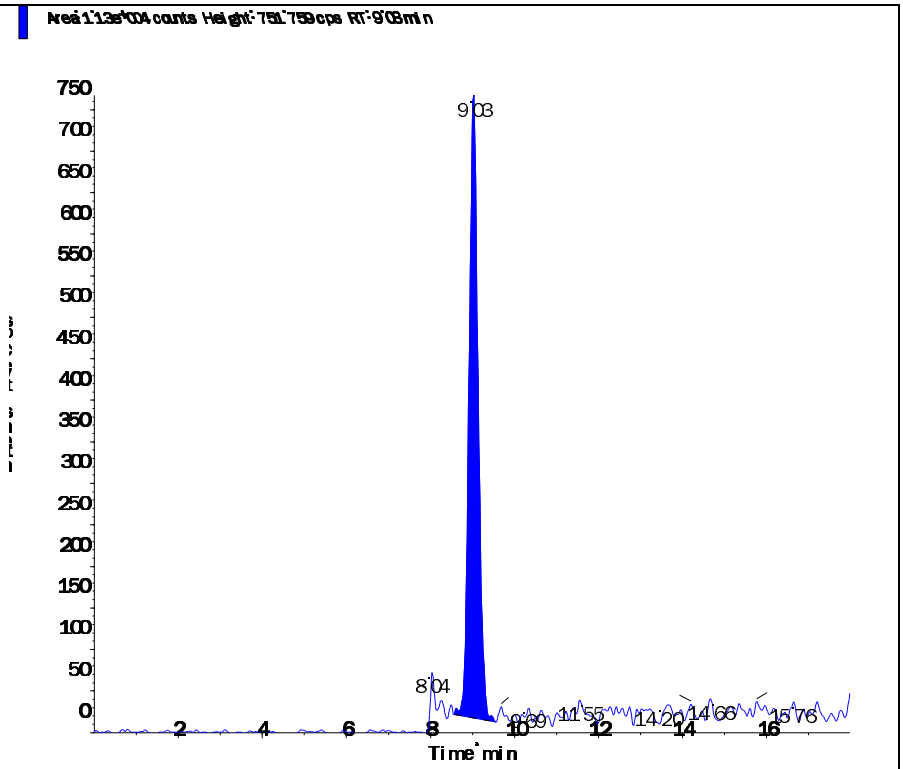

s.dataFile Page 2 of 2

Printing Time: 2:10:45 PM
Printing Date: Thursday, June 30, 2016

Sample Name: "WG574701-01 MCT (0.2ug/L)" Sample ID: "WG574701-01" File: "LM35520.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.223 ug/L
Acq. Date:	6/29/2016
Acq. Time:	5:55:30 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.04 min
Area:	3.39e+004 counts
Height:	2055.212 cps
Start Time:	8.587 min
End Time:	9.579 min

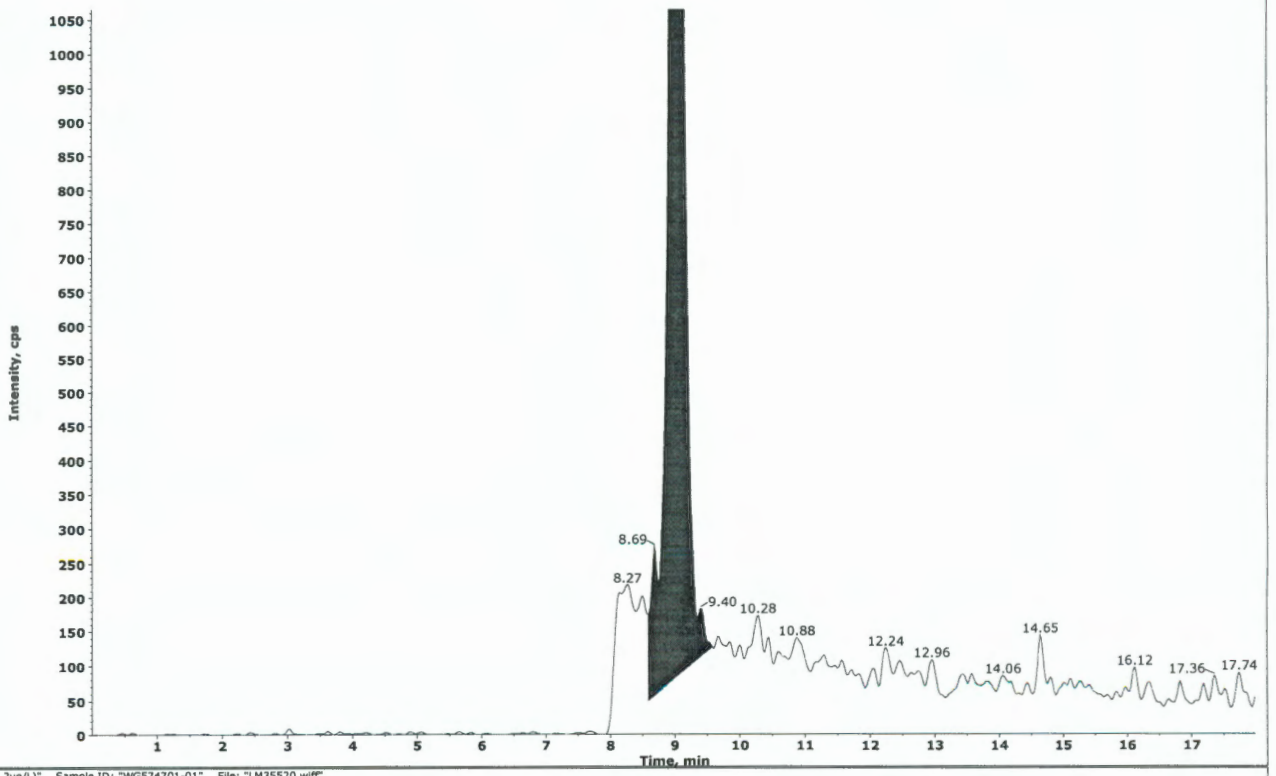

Sample Name: "WG574701-01 MCT (0.2ug/L)" Sample ID: "WG574701-01" File: "LM35520.wiff"
Peak Name: "Perchlorate conf" Mass(es): "100.8/85.2 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.220 ug/L
Acq. Date:	6/29/2016
Acq. Time:	5:55:30 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	7.14 cps
Area Threshold:	35.71 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.03 min
Area:	1.20e+004 counts
Height:	760.490 cps
Start Time:	8.384 min
End Time:	9.538 min

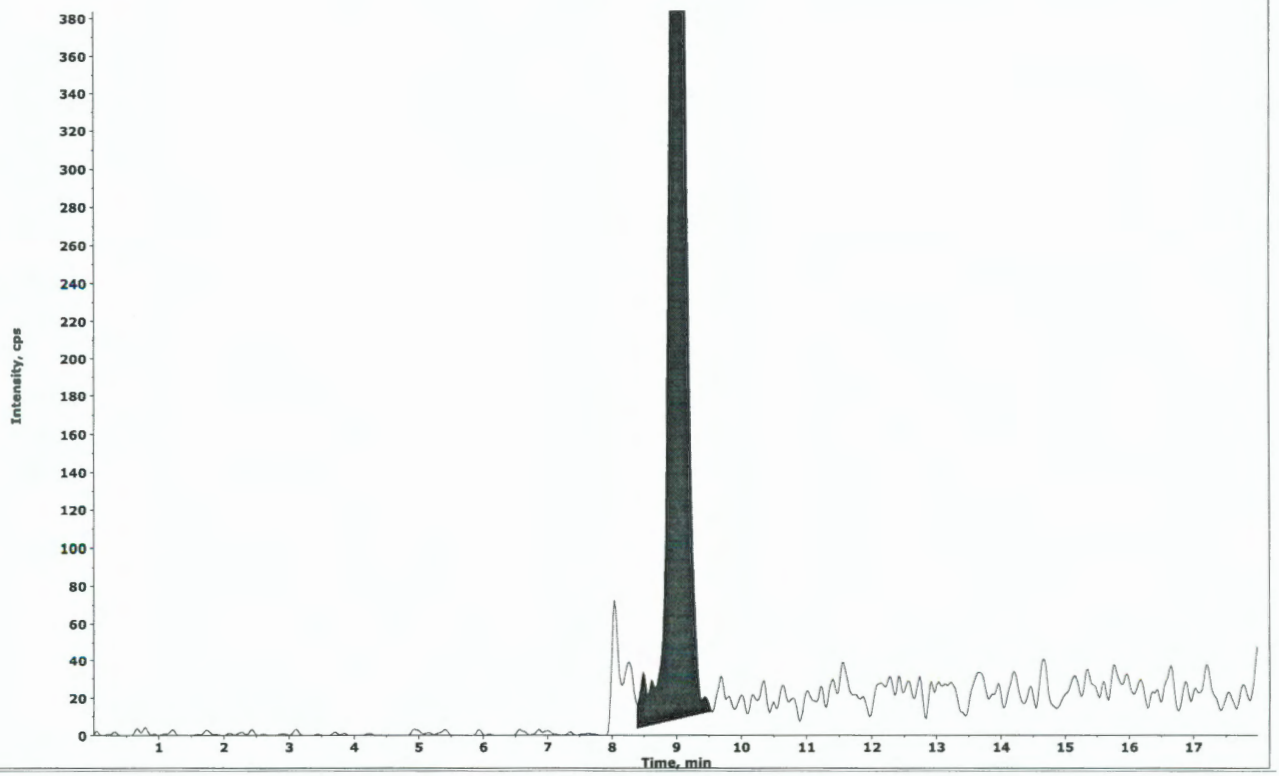

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 2:12:53 PM
Printing Date: Thursday, June 30, 2016

Sample Name: "WG574701-01 MCT (0.2ug/L)" Sample ID: "WG574701-01" File: "LM35520.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.197 ug/L
Acq. Date: 6/29/2016
Acq. Time: 5:55:30 PM

Modified: Yes
Proc. Algorithm: Analyst Classic
Smoothing Factor: 2
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Exp. Width: 0.20
Exp. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Manual
Retention Time: 9.04 min
Area: 3.01e+004 counts
Height: 1985.642 cps
Start Time: 8.587 min
End Time: 9.498 min

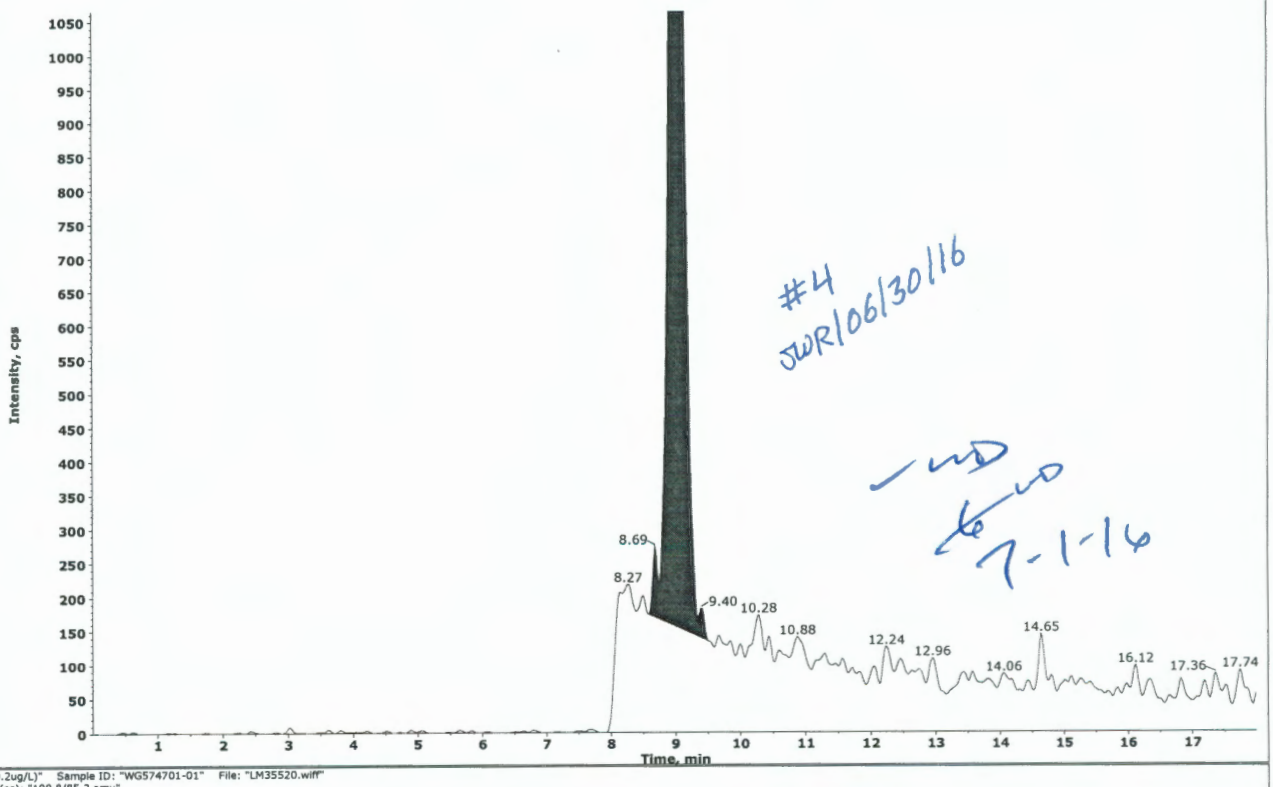

Sample Name: "WG574701-01 MCT (0.2ug/L)" Sample ID: "WG574701-01" File: "LM35520.wiff"
Peak Name: "Perchlorate conf" Mass(es): "100.8/85.2 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.206 ug/L
Acq. Date: 6/29/2016
Acq. Time: 5:55:30 PM

Modified: Yes
Proc. Algorithm: Analyst Classic
Smoothing Factor: 2
Noise Threshold: 7.14 cps
Area Threshold: 35.71 cps
Num. Smooths: 5
Exp. Width: 0.20
Exp. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Manual
Retention Time: 9.03 min
Area: 1.13e+004 counts
Height: 751.759 cps
Start Time: 8.566 min
End Time: 9.538 min

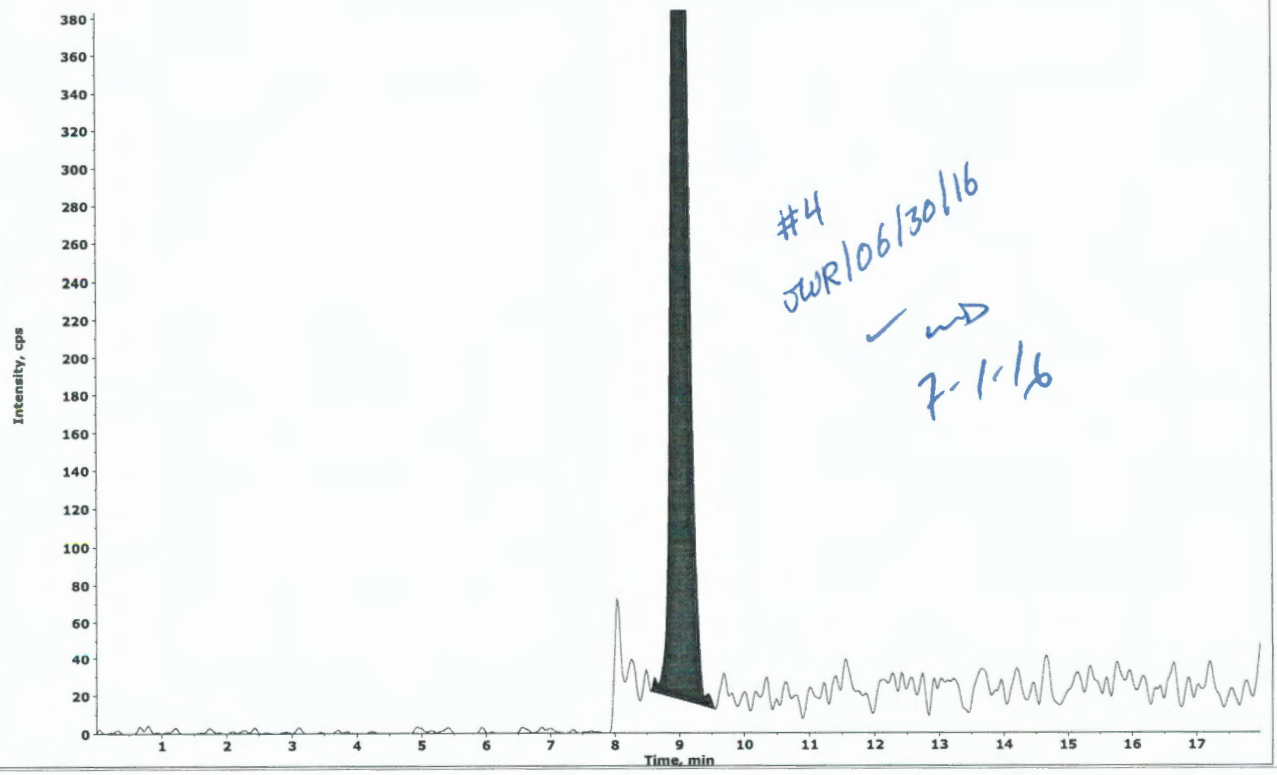

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:31 PM

Data File	LM35521.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 6:14:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-02 BLANK	**Injection Vial**	5.00
Data File	LM35521.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 6:14:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.56	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.56(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

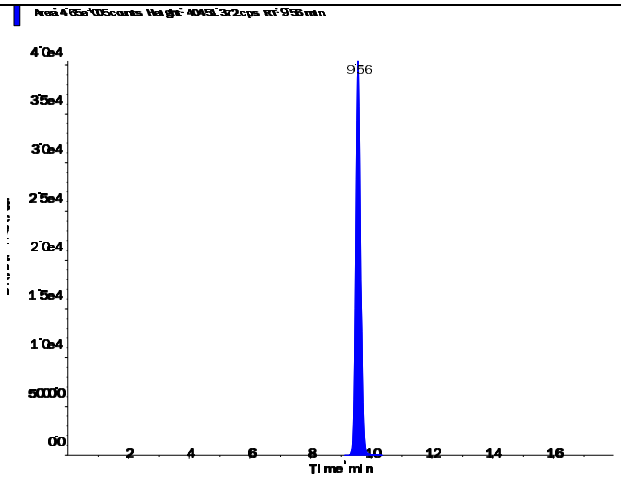

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:31 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

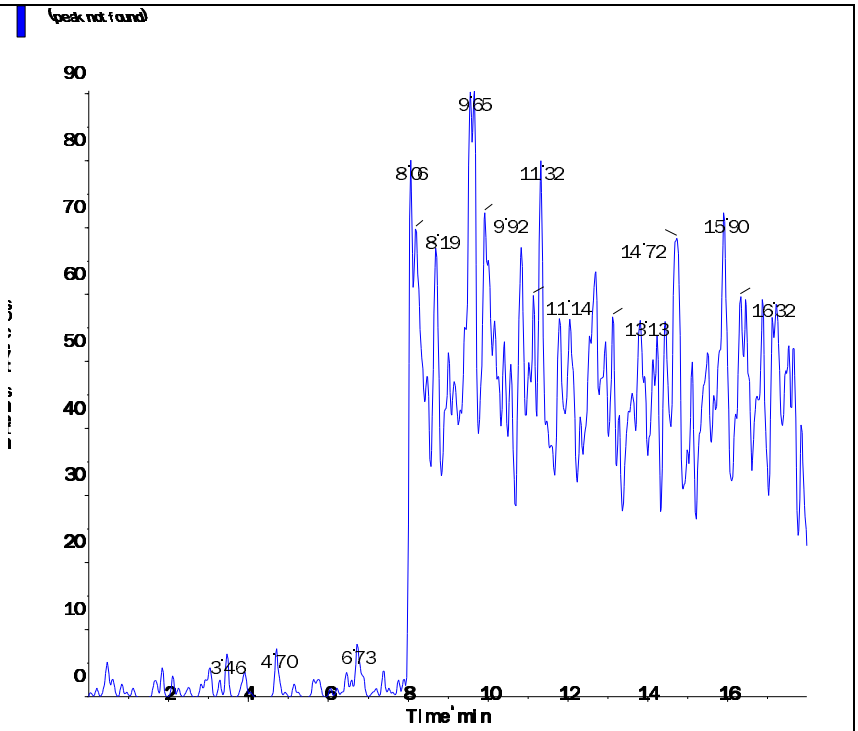

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

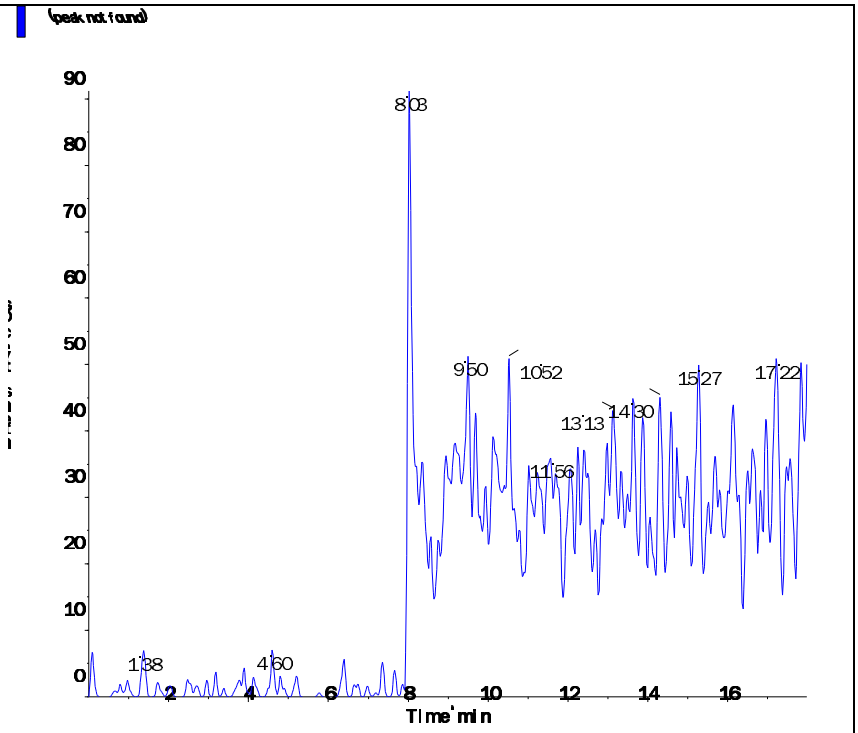

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:31 PM

Data File	LM35522.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 6:33:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35522.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 6:33:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.620e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.180e+04	9.60	N/A	0.201
Perchlorate conf	1.130e+04	9.58	N/A	0.199

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

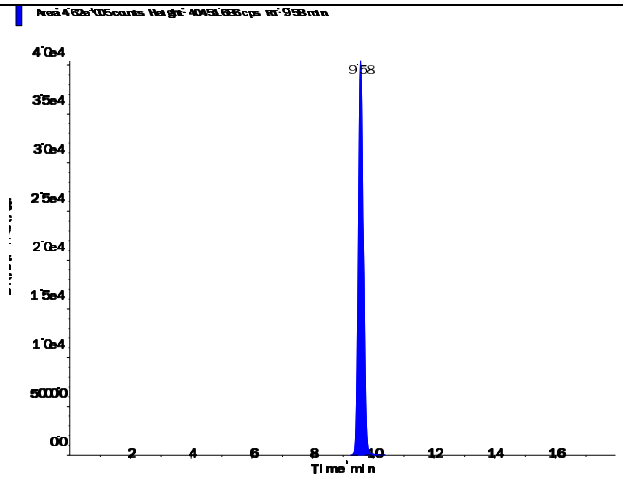

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:31 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

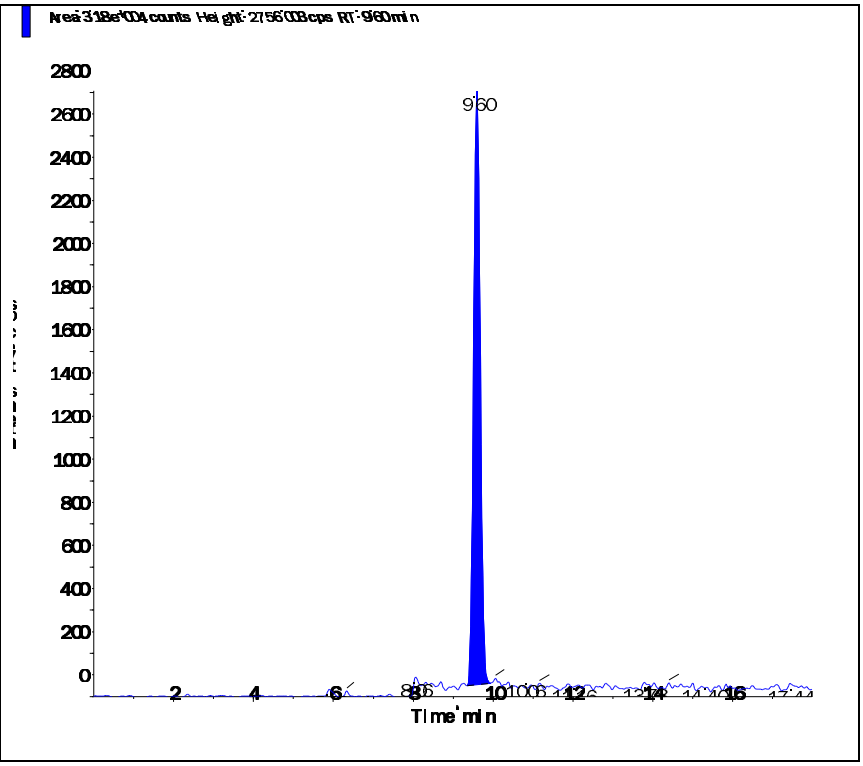

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.58 (9.84) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

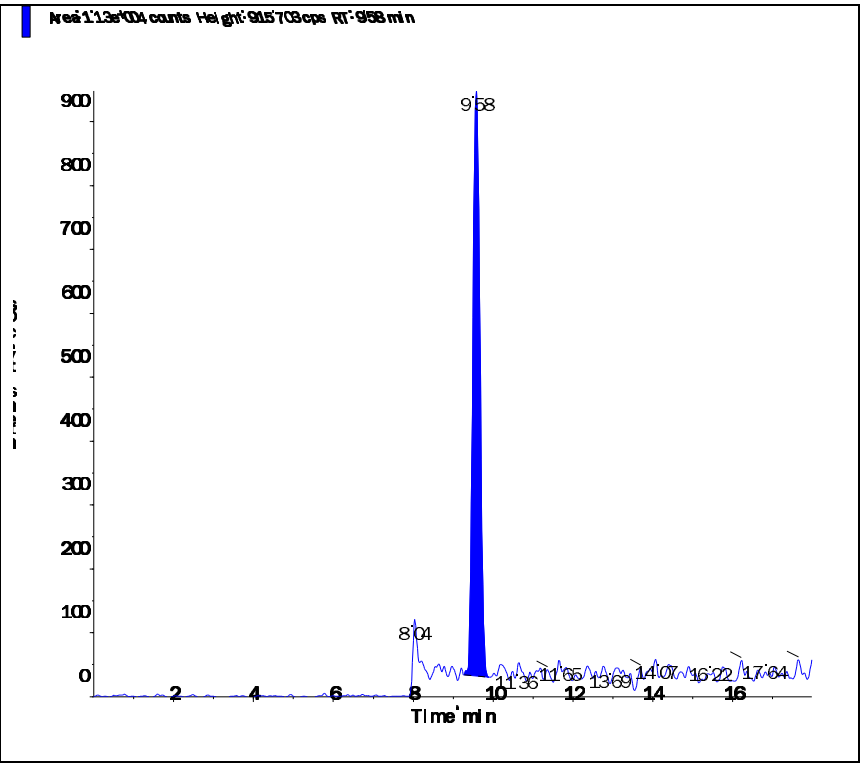

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW22-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:13
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	T3.062416.141350
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	2.57		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.0825		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.09		1.00	0.500	0.250
Potassium, Total	7440-09-7	8.42		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00528	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	60.6		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW22-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/25/2016 15:17
Collect Date:	06/21/2016 07:55	**Dilution:**	20	**File ID:**	T3.062516.151743
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	193		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C04F-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:17
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	T3.062416.141746
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	13.9		0.500	0.250	0.125
Iron, Total	7439-89-6	7.76		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	7.73		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.89	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	27.9		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C04FFD-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:21
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	T3.062416.142142
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	14.0		0.500	0.250	0.125
Iron, Total	7439-89-6	7.21		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	7.47		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.89	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00539	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	27.5		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW18-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:25
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	T3.062416.142526
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.271		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	2.44		0.200	0.100	0.0500
Potassium, Total	7440-09-7	7.88		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00770	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW18-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/25/2016 15:21
Collect Date:	06/21/2016 10:05	**Dilution:**	20	**File ID:**	T3.062516.152125
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	337		10.0	5.00	2.50
Magnesium, Total	7439-95-4	203		20.0	10.0	5.00
Sodium, Total	7440-23-5	849		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW18-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:48
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	T3.062416.144853
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.75		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW18-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/29/2016 10:07
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/29/2016 11:54
Collect Date:	06/21/2016 11:15	**Dilution:**	20	**File ID:**	T3.062916.115438
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	49.5		10.0	5.00	2.50
Iron, Total	7439-89-6	78.0		4.00	2.00	1.00
Magnesium, Total	7439-95-4	34.0		20.0	10.0	5.00
Sodium, Total	7440-23-5	146		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573994
Analyst: ERP
Spike Analyst: ERP
Run Date: 06/24/2016 07:18
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 06/24/2016 07:38

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: VC
HNO3 Lot #: COA18905
HCL Lot #: COA18769
40 & 50 ML. DIGESTION TU COA18987
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573994-02	BLANK	1	40 mL	50 mL	205.799 g	205.793 g		
2	WG573994-03	LCS	1	40 mL	50 mL	211.523 g	211.513 g	5 mL	
3	L16060961-03	SAMP	1	40 mL	50 mL	205.052 g	205.037 g		06/24/16
4	L16061129-01	SAMP	1	40 mL	50 mL	206.124 g	206.112 g		07/05/16
5	L16061129-02	SAMP	1	40 mL	50 mL	206.489 g	206.476 g		07/05/16
6	L16061129-03	SAMP	1	40 mL	50 mL	205.825 g	205.808 g		07/05/16
7	L16061129-04	SAMP	1	40 mL	50 mL	205.354 g	205.348 g		07/05/16
8	L16061129-05	SAMP	1	40 mL	50 mL	205.317 g	205.299 g		07/05/16
9	L16061227-01	SAMP	1	40 mL	50 mL	204.465 g	204.443 g		07/01/16
10	L16061227-03	SAMP	1	40 mL	50 mL	204.813 g	204.793 g		07/01/16
11	L16061227-05	SAMP	1	40 mL	50 mL	206.069 g	206.05 g		07/01/16
12	L16061227-06	SAMP	1	40 mL	50 mL	202.826 g	202.812 g		07/01/16
13	L16061227-07	SAMP	1	40 mL	50 mL	205.408 g	205.392 g		07/01/16
14	L16061272-01	SAMP	1	40 mL	50 mL	206.813 g	206.794 g		06/30/16
15	L16061272-02	SAMP	1	40 mL	50 mL	208.22 g	208.202 g		06/30/16
16	L16061279-01	SAMP	1	40 mL	50 mL	206.107 g	206.09 g		06/28/16
17	WG573994-01	REF	1	40 mL	50 mL	204.432 g	204.415 g		
18	L16061279-02	RS01	1	40 mL	50 mL	204.432 g	204.415 g		06/28/16
19	WG573994-04	MS	1	40 mL	50 mL	213.413 g	213.398 g	5 mL	
20	L16061279-03	MS01	1	40 mL	50 mL	213.413 g	213.398 g	5 mL	06/28/16
21	WG573994-05	MSD	1	40 mL	50 mL	211.644 g	211.636 g	5 mL	
22	L16061279-04	SD01	1	40 mL	50 mL	211.644 g	211.636 g	5 mL	06/28/16
23	L16061279-05	SAMP	1	40 mL	50 mL	206.357 g	206.345 g		06/28/16
24	L16061289-01	SAMP	1	40 mL	50 mL	208.182 g	208.164 g		07/04/16
25	L16061289-04	SAMP	1	40 mL	50 mL	204.262 g	204.255 g		07/04/16
26	L16061290-03	SAMP	1	40 mL	50 mL	208.194 g	208.183 g		07/04/16
27	L16061290-05	SAMP	1	40 mL	50 mL	205.844 g	205.821 g		07/04/16

L16061279-03	filtered digestate
L16061279-04	filtered digestate
L16061279-01	filtered digestate
L16061279-02	filtered digestate
WG573994-01	filtered digestate
WG573994-04	filtered digestate
WG573994-05	filtered digestate
L16061279-05	filtered digestate

MW_DIG - Modified 09/30/2009
PDF ID: 4821837
Report generated: 06/24/2016 08:17

Microbac Laboratories Inc.
Microwave Digestion Log

Analyst: Erin Potter

SOP:
Spike Solution:
Reviewer: Jackie Collins
Spike Witness:

Method:
Balance:
Instrument:
Instrument Start:

MW_DIG - Modified 09/30/2009
PDF ID: 4821837
Report generated: 06/24/2016 08:17

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062416.100206	WG574123-01	Calibration Point		1		06/24/16 10:02
2	T3.062416.100606	WG574123-02	Calibration Point		1		06/24/16 10:06
3	T3.062416.101006	WG574123-03	Calibration Point		1		06/24/16 10:10
4	T3.062416.101405	WG574123-04	Calibration Point		1		06/24/16 10:14
5	T3.062416.101742	WG574123-05	Calibration Point		1		06/24/16 10:17
6	T3.062416.102118	WG574123-06	Initial Calibration Verification		1		06/24/16 10:21
7	T3.062416.102444	WG574123-07	Initial Calib Blank		1		06/24/16 10:24
8	T3.062416.102843	WG574123-08	Low Level Initial Calibration V		1		06/24/16 10:28
9	T3.062416.103239	WG574123-09	Low Level Initial Calibration V		1		06/24/16 10:32
10	T3.062416.103634	WG574123-10	Interference Check		1		06/24/16 10:36
11	T3.062416.104027	WG574123-11	Interference Check		1		06/24/16 10:40
12	T3.062416.104409	WG574123-12	CCV		1		06/24/16 10:44
13	T3.062416.104746	WG574123-13	CCB		1		06/24/16 10:47
14	T3.062416.105146	WG573823-01	Method/Prep Blank	1/50	1		06/24/16 10:51
15	T3.062416.105915	WG573823-02	Laboratory Control S	1/50	1		06/24/16 10:59
16	T3.062416.110255	WG573823-03	Laboratory Control S	1/50	1		06/24/16 11:02
17	T3.062416.110635	L16061143-01	500662-WP-002	1/50	1		06/24/16 11:06
18	T3.062416.111030	L16061143-02	500662-WP-003	1/50	1		06/24/16 11:10
19	T3.062416.111424	L16061143-03	500662-WP-004	1/50	1		06/24/16 11:14
20	T3.062416.111816	WG574050-01	Post Digestion Spike		1	L16061143-03	06/24/16 11:18
21	T3.062416.112154	WG574050-02	Serial Dilution		5	L16061143-03	06/24/16 11:21
22	T3.062416.112553	L16060724-01	ABW_06142016	40/50	1000		06/24/16 11:25
23	T3.062416.112949	L16060787-10	U517TW006C	40/50	10		06/24/16 11:29
24	T3.062416.113347	WG574123-14	CCV		1		06/24/16 11:33
25	T3.062416.113725	WG574123-15	CCB		1		06/24/16 11:37
26	T3.062416.114112	L16060787-18	U517TW008A	40/50	10		06/24/16 11:41
27	T3.062416.114510	WG573707-03	Method/Prep Blank	40/50	1		06/24/16 11:45
28	T3.062416.114908	WG573707-04	Laboratory Control S	40/50	1		06/24/16 11:49
29	T3.062416.115249	WG573594-01	Fluid Blank 1		1		06/24/16 11:52
30	T3.062416.115648	WG573594-02	Fluid Blank 2		1		06/24/16 11:56
31	T3.062416.120048	WG573707-01	Reference Sample		1	L16061151-01	06/24/16 12:00
32	T3.062416.120443	WG573707-05	Matrix Spike	40/50	1	L16061151-01	06/24/16 12:04
33	T3.062416.120811	WG573707-06	Matrix Spike Duplica	40/50	1	L16061151-01	06/24/16 12:08
34	T3.062416.121149	L16061140-01	60500-SSP0042-SSP0042	5/50	1		06/24/16 12:11

Page: 1 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062416.121541	WG574055-02	Serial Dilution		5	L16061140-01	06/24/16 12:15
36	T3.062416.121926	WG574123-16	CCV		1		06/24/16 12:19
37	T3.062416.122304	WG574123-17	CCB		1		06/24/16 12:23
38	T3.062416.122703	WG574055-01	Post Digestion Spike		1	L16061140-01	06/24/16 12:27
39	T3.062416.123043	L16061140-03	60500-SSP0037-SPLP023	5/50	1		06/24/16 12:30
40	T3.062416.123437	WG572980-02	Method/Prep Blank	40/50	1		06/24/16 12:34
41	T3.062416.123836	WG572980-03	Laboratory Control S	40/50	1		06/24/16 12:38
42	T3.062416.124216	L16060732-01	LH18/24-SP650-6371-GRAB	40/50	1		06/24/16 12:42
43	T3.062416.124614	WG572980-01	Reference Sample		1	L16060796-01	06/24/16 12:46
44	T3.062416.125002	WG572980-04	Matrix Spike	5/50	1	L16060796-01	06/24/16 12:50
45	T3.062416.125340	WG572980-05	Matrix Spike Duplica	5/50	1	L16060796-01	06/24/16 12:53
46	T3.062416.125716	L16060732-02	LH18/24-SP650-6371-COMP	40/50	1		06/24/16 12:57
47	T3.062416.130110	L16060794-01	A08-MW06-Y1S2	40/50	10		06/24/16 13:01
48	T3.062416.130507	WG574123-18	CCV		1		06/24/16 13:05
49	T3.062416.130845	WG574123-19	CCB		1		06/24/16 13:08
50	T3.062416.131244	L16060794-04	A09-MW07-Y1S2	40/50	10		06/24/16 13:12
51	T3.062416.131643	L16060796-04	500662-DS-002	5/50	1		06/24/16 13:16
52	T3.062416.132032	WG573149-01	Post Digestion Spike		1	L16060796-04	06/24/16 13:20
53	T3.062416.132408	WG573149-02	Serial Dilution		5	L16060796-04	06/24/16 13:24
54	T3.062416.132801	WG573149-02	Serial Dilution		25	L16060796-04	06/24/16 13:28
55	T3.062416.133159	WG573994-02	Method/Prep Blank	40/50	1		06/24/16 13:31
56	T3.062416.133557	WG573994-03	Laboratory Control S	40/50	1		06/24/16 13:35
57	T3.062416.133937	WG573994-01	Reference Sample		1	L16061279-02	06/24/16 13:39
58	T3.062416.134328	WG573994-04	Matrix Spike	40/50	1	L16061279-02	06/24/16 13:43
59	T3.062416.134705	WG573994-05	Matrix Spike Duplica	40/50	1	L16061279-02	06/24/16 13:47
60	T3.062416.135042	WG574123-20	CCV		1		06/24/16 13:50
61	T3.062416.135419	WG574123-21	CCB		1		06/24/16 13:54
62	T3.062416.135818	L16060961-03	GH58HS_MELZER_03-03-0	40/50	1		06/24/16 13:58
63	T3.062416.140215	WG574076-01	Post Digestion Spike		1	L16060961-03	06/24/16 14:02
64	T3.062416.140555	WG574076-02	Serial Dilution		5	L16060961-03	06/24/16 14:05
65	T3.062416.140952	WG574076-02	Serial Dilution		25	L16060961-03	06/24/16 14:09
66	T3.062416.141350	L16061227-01	18WW22-062116	40/50	1		06/24/16 14:13
67	T3.062416.141746	L16061227-03	C04F-062116	40/50	1		06/24/16 14:17
68	T3.062416.142142	L16061227-05	C04FFD-062116	40/50	1		06/24/16 14:21

Page: 2 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062416.142526	L16061227-06	18CPTMW18-062116	40/50	1		06/24/16 14:25
70	T3.062416.142928	L16061227-01	18WW22-062116		10		06/24/16 14:29
71	T3.062416.143326	WG574123-22	CCV		1		06/24/16 14:33
72	T3.062416.143703	WG574123-23	CCB		1		06/24/16 14:37
73	T3.062416.144104	WG574123-24	Low Level Continuing Calibra		1		06/24/16 14:41
74	T3.062416.144501	WG574123-25	Low Level Continuing Calibra		1		06/24/16 14:45
75	T3.062416.144853	L16061227-07	18WW18-062116	40/50	1		06/24/16 14:48
76	T3.062416.145235	L16061289-01	MW21-062216	40/50	1		06/24/16 14:52
77	T3.062416.145634	L16061289-04	18WW02F-062216	40/50	1		06/24/16 14:56
78	T3.062416.150030	L16061290-03	MW16F-062116	40/50	1		06/24/16 15:00
79	T3.062416.150424	L16061290-05	109-062216	40/50	1		06/24/16 15:04
80	T3.062416.150820	L16061129-01	MW-22-002	40/50	1		06/24/16 15:08
81	T3.062416.151215	L16061129-02	MW-22-010	40/50	1		06/24/16 15:12
82	T3.062416.151609	L16061129-03	MW-22-007	40/50	1		06/24/16 15:16
83	T3.062416.152008	WG574123-26	CCV		1		06/24/16 15:20
84	T3.062416.152346	WG574123-27	CCB		1		06/24/16 15:23
85	T3.062416.152745	L16061129-04	FD061716	40/50	1		06/24/16 15:27
86	T3.062416.153140	L16061129-05	EB-WATER A	40/50	1		06/24/16 15:31
87	T3.062416.153539	L16061272-01	SS007MW0B18-007	40/50	1		06/24/16 15:35
88	T3.062416.153937	L16061272-02	SS007MWN752-007	40/50	1		06/24/16 15:39
89	T3.062416.154332	L16061279-01	XU936TW007A	40/50	1		06/24/16 15:43
90	T3.062416.154725	L16061279-05	XU936TW019A	40/50	1		06/24/16 15:47
91	T3.062416.155118	L16060729-01	A09-MW10-Y1S2	40/50	1		06/24/16 15:51
92	T3.062416.155514	L16060729-02	A09-MW11-Y1S2	40/50	1		06/24/16 15:55
93	T3.062416.155910	L16060729-03	A09-MW12-Y1S2	40/50	1		06/24/16 15:59
94	T3.062416.160303	WG574123-28	CCV		1		06/24/16 16:03
95	T3.062416.160640	WG574123-29	CCB		1		06/24/16 16:06
96	T3.062416.161038	L16061148-01	DP005SW0513-007		1		06/24/16 16:10
97	T3.062416.161432	L16061148-02	DP005SW0514-007		1		06/24/16 16:14
98	T3.062416.161828	L16061150-01	SS007SW0709-007		1		06/24/16 16:18
99	T3.062416.162223	L16061150-02	SS007SW0710-007		1		06/24/16 16:22
100	T3.062416.162617	L16061151-02	LF003SW0311-007 DUP		1		06/24/16 16:26
101	T3.062416.163012	L16061151-05	LF003SW0312-007		1		06/24/16 16:30
102	T3.062416.163406	WG573707-02	Reference Sample		1	L16061154-01	06/24/16 16:34

Page: 3 Approved: June 24, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062416.163809	WG573707-07	Matrix Spike		1	L16061154-01	06/24/16 16:38
104	T3.062416.164156	WG573707-08	Matrix Spike Duplica		1	L16061154-01	06/24/16 16:41
105	T3.062416.164542	L16061154-04	FQC-RB06201601-CB		1		06/24/16 16:45
106	T3.062416.164941	WG574123-30	CCV		1		06/24/16 16:49
107	T3.062416.165319	WG574123-31	CCB		1		06/24/16 16:53
108	T3.062416.165718	L16061155-01	ST008MW0812-007		1		06/24/16 16:57
109	T3.062416.170338	WG574123-32	CCV		1		06/24/16 17:03
110	T3.062416.170715	WG574123-33	CCB		1		06/24/16 17:07
111	T3.062416.171114	WG574123-34	Low Level Continuing Calibra		1		06/24/16 17:11
112	T3.062416.171510	WG574123-35	Low Level Continuing Calibra		1		06/24/16 17:15

Page: 4 Approved: June 24, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062516.122104	WG574249-01	Calibration Point		1		06/25/16 12:21
2	T3.062516.122502	WG574249-02	Calibration Point		1		06/25/16 12:25
3	T3.062516.122900	WG574249-03	Calibration Point		1		06/25/16 12:29
4	T3.062516.123256	WG574249-04	Calibration Point		1		06/25/16 12:32
5	T3.062516.123634	WG574249-05	Calibration Point		1		06/25/16 12:36
6	T3.062516.124009	WG574249-06	Initial Calibration Verification		1		06/25/16 12:40
7	T3.062516.124348	WG574249-07	Initial Calib Blank		1		06/25/16 12:43
8	T3.062516.124745	WG574249-08	Low Level Initial Calibration V		1		06/25/16 12:47
9	T3.062516.125139	WG574249-09	Low Level Initial Calibration V		1		06/25/16 12:51
10	T3.062516.125529	WG574249-10	Interference Check		1		06/25/16 12:55
11	T3.062516.125921	WG574249-11	Interference Check		1		06/25/16 12:59
12	T3.062516.130304	WG574249-12	CCV		1		06/25/16 13:03
13	T3.062516.130641	WG574249-13	CCB		1		06/25/16 13:06
14	T3.062516.131816	WG573190-03	Method/Prep Blank	40/50	1		06/25/16 13:18
15	T3.062516.132214	WG573190-04	Laboratory Control S	40/50	1		06/25/16 13:22
16	T3.062516.132554	WG573190-02	Reference Sample		1	L16060808-01	06/25/16 13:25
17	T3.062516.132950	WG573190-07	Matrix Spike	40/50	1	L16060808-01	06/25/16 13:29
18	T3.062516.133327	WG573190-08	Matrix Spike Duplica	40/50	1	L16060808-01	06/25/16 13:33
19	T3.062516.133704	L16060822-03	18CPTMW04SW-061416	40/50	1		06/25/16 13:37
20	T3.062516.134058	L16060822-02	18WW03F-061416	40/50	1		06/25/16 13:40
21	T3.062516.134452	WG573973-03	Post Digestion Spike		1	L16060822-02	06/25/16 13:44
22	T3.062516.134830	WG573973-04	Serial Dilution		5	L16060822-02	06/25/16 13:48
23	T3.062516.135227	WG573973-04	Serial Dilution		25	L16060822-02	06/25/16 13:52
24	T3.062516.135622	WG574249-14	CCV		1		06/25/16 13:56
25	T3.062516.140001	WG574249-15	CCB		1		06/25/16 14:00
26	T3.062516.140359	L16060823-02	126F-061416	40/50	1		06/25/16 14:03
27	T3.062516.140759	L16060823-03	C08-061416	40/50	1		06/25/16 14:07
28	T3.062516.141200	L16060823-04	C03-061416	40/50	1		06/25/16 14:12
29	T3.062516.141551	L16061148-01	DP005SW0513-007	40/50	1		06/25/16 14:15
30	T3.062516.141945	L16061148-02	DP005SW0514-007	40/50	1		06/25/16 14:19
31	T3.062516.142340	L16061150-01	SS007SW0709-007	40/50	1		06/25/16 14:23
32	T3.062516.142732	L16061150-02	SS007SW0710-007	40/50	1		06/25/16 14:27
33	T3.062516.143125	L16061151-02	LF003SW0311-007 DUP	40/50	1		06/25/16 14:31
34	T3.062516.143519	L16061151-05	LF003SW0312-007	40/50	1		06/25/16 14:35

Page: 1 Approved: June 27, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062516.143913	WG573707-02	Reference Sample		1	L16061154-01	06/25/16 14:39
36	T3.062516.144313	WG574249-16	CCV		1		06/25/16 14:43
37	T3.062516.144639	WG574249-17	CCB		1		06/25/16 14:46
38	T3.062516.145037	WG573707-07	Matrix Spike	40/50	1	L16061154-01	06/25/16 14:50
39	T3.062516.145424	WG573707-08	Matrix Spike Duplica	40/50	1	L16061154-01	06/25/16 14:54
40	T3.062516.145809	L16061154-04	FQC-RB06201601-CB	40/50	1		06/25/16 14:58
41	T3.062516.150207	L16061155-01	ST008MW0812-007	40/50	1		06/25/16 15:02
42	T3.062516.150559	L16061155-02	ST008MW0809-007	40/50	1		06/25/16 15:05
43	T3.062516.150954	L16061155-03	ST008MW0816-007	40/50	1		06/25/16 15:09
44	T3.062516.151348	L16061178-01	2016PRE-7217NEWENGLAN	40/50	1		06/25/16 15:13
45	T3.062516.151743	L16061227-01	18WW22-062116	40/50	20		06/25/16 15:17
46	T3.062516.152125	L16061227-06	18CPTMW18-062116	40/50	20		06/25/16 15:21
47	T3.062516.152518	WG573994-01	Reference Sample		20	L16061279-02	06/25/16 15:25
48	T3.062516.152911	WG574249-18	CCV		1		06/25/16 15:29
49	T3.062516.153248	WG574249-19	CCB		1		06/25/16 15:32
50	T3.062516.153646	WG573994-04	Matrix Spike	40/50	20	L16061279-02	06/25/16 15:36
51	T3.062516.154039	WG573994-05	Matrix Spike Duplica	40/50	20	L16061279-02	06/25/16 15:40
52	T3.062516.154432	L16061289-01	MW21-062216	40/50	20		06/25/16 15:44
53	T3.062516.154826	L16061129-01	MW-22-002		20		06/25/16 15:48
54	T3.062516.155222	L16061129-02	MW-22-010		20		06/25/16 15:52
55	T3.062516.155620	L16061129-03	MW-22-007		20		06/25/16 15:56
56	T3.062516.160018	L16061129-04	FD061716		20		06/25/16 16:00
57	T3.062516.160415	L16061272-01	SS007MW0B18-007		20		06/25/16 16:04
58	T3.062516.160812	L16061272-02	SS007MWN752-007		20		06/25/16 16:08
59	T3.062516.161208	L16061279-01	XU936TW007A	40/50	20		06/25/16 16:12
60	T3.062516.161603	WG574249-20	CCV		1		06/25/16 16:16
61	T3.062516.161940	WG574249-21	CCB		1		06/25/16 16:19
62	T3.062516.162338	L16061279-05	XU936TW019A	40/50	20		06/25/16 16:23
63	T3.062516.162733	L16061148-01	DP005SW0513-007		20		06/25/16 16:27
64	T3.062516.163130	L16061148-02	DP005SW0514-007		20		06/25/16 16:31
65	T3.062516.163527	L16061150-01	SS007SW0709-007		20		06/25/16 16:35
66	T3.062516.163912	L16061151-02	LF003SW0311-007 DUP		20		06/25/16 16:39
67	T3.062516.164310	L16061151-05	LF003SW0312-007		20		06/25/16 16:43
68	T3.062516.164706	WG573707-02	Reference Sample		20	L16061154-01	06/25/16 16:47

Page: 2 Approved: June 27, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062516.165101	WG573707-07	Matrix Spike	40/50	20	L16061154-01	06/25/16 16:51
70	T3.062516.165454	L16061279-08	XU936TW011MSD	40/50	20	WG573707-08	06/25/16 16:54
71	T3.062516.165848	WG574249-22	CCV		1		06/25/16 16:58
72	T3.062516.170225	WG574249-23	CCB		1		06/25/16 17:02
73	T3.062516.170624	L16061155-01	ST008MW0812-007		20		06/25/16 17:06
74	T3.062516.171010	L16061155-02	ST008MW0809-007		20		06/25/16 17:10
75	T3.062516.171407	L16061155-03	ST008MW0816-007		20		06/25/16 17:14
76	T3.062516.171804	WG574249-24	CCV		1		06/25/16 17:18
77	T3.062516.172142	WG574249-25	CCB		1		06/25/16 17:21
78	T3.062516.172540	WG574249-26	Low Level Continuing Calibra		1		06/25/16 17:25
79	T3.062516.172933	WG573530-03	Method/Prep Blank	40/50	1		06/25/16 17:29
80	T3.062516.173331	WG573530-04	Laboratory Control S	40/50	1		06/25/16 17:33
81	T3.062516.173711	WG573530-05	Filter Blank		1		06/25/16 17:37
82	T3.062516.174110	L16060986-02	MW-07-04	40/50	1		06/25/16 17:41
83	T3.062516.174505	L16060986-04	MW-01-10	40/50	1		06/25/16 17:45
84	T3.062516.174856	L16060986-06	MW-03-12	40/50	1		06/25/16 17:48
85	T3.062516.175251	L16060986-08	MW-01-07	40/50	1		06/25/16 17:52
86	T3.062516.175646	WG574216-01	Post Digestion Spike		1	L16060986-08	06/25/16 17:56
87	T3.062516.180025	WG574216-02	Serial Dilution		5	L16060986-08	06/25/16 18:00
88	T3.062516.180418	WG574216-02	Serial Dilution		25	L16060986-08	06/25/16 18:04
89	T3.062516.180815	WG574249-27	CCV		1		06/25/16 18:08
90	T3.062516.181152	WG574249-28	CCB		1		06/25/16 18:11
91	T3.062516.181548	L16060986-10	MW-03-11		1		06/25/16 18:15
92	T3.062516.181942	L16060986-12	MW-01-01		1		06/25/16 18:19
93	T3.062516.182332	L16060986-14	MW-03-09		1		06/25/16 18:23
94	T3.062516.182724	L16060986-16	MW-01-08		1		06/25/16 18:27
95	T3.062516.183114	L16060986-18	MW-03-06		1		06/25/16 18:31
96	T3.062516.183511	L16060986-20	MW-03-05		1		06/25/16 18:35
97	T3.062516.183905	WG573530-01	Reference Sample		1	L16060986-22	06/25/16 18:39
98	T3.062516.184258	WG573530-02	Reference Sample		1	L16060986-24	06/25/16 18:42
99	T3.062516.184649	L16060986-26	MW-01-02		1		06/25/16 18:46
100	T3.062516.185044	L16060986-28	DUP 1		1		06/25/16 18:50
101	T3.062516.185437	WG574249-29	CCV		1		06/25/16 18:54
102	T3.062516.185815	WG574249-30	CCB		1		06/25/16 18:58

Page: 3 Approved: June 27, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062516.190211	L16060986-30	DUP 2		1		06/25/16 19:02
104	T3.062516.190604	WG573530-06	Matrix Spike		1	L16060986-22	06/25/16 19:06
105	T3.062516.190942	WG573530-07	Matrix Spike Duplica		1	L16060986-22	06/25/16 19:09
106	T3.062516.191321	WG573530-08	Matrix Spike		1	L16060986-24	06/25/16 19:13
107	T3.062516.191658	WG573530-09	Matrix Spike Duplica		1	L16060986-24	06/25/16 19:16
108	T3.062516.192035	L16060986-40	EQUIP BLANK 1		1		06/25/16 19:20
109	T3.062516.192431	L16060986-42	EQUIP BLANK 2		1		06/25/16 19:24
110	T3.062516.192827	WG574249-31	CCV		1		06/25/16 19:28
111	T3.062516.193205	WG574249-32	CCB		1		06/25/16 19:32
112	T3.062516.193603	WG573544-03	Method/Prep Blank	40/50	1		06/25/16 19:36
113	T3.062516.193959	WG573544-04	Laboratory Control S	40/50	1		06/25/16 19:39
114	T3.062516.194338	L16060907-23	MW36-061516	40/50	1		06/25/16 19:43
115	T3.062516.194731	L16060986-01	MW-07-04	40/50	1		06/25/16 19:47
116	T3.062516.195124	L16060986-03	MW-01-10	40/50	1		06/25/16 19:51
117	T3.062516.195515	L16060986-05	MW-03-12	40/50	1		06/25/16 19:55
118	T3.062516.195905	L16060986-07	MW-01-07	40/50	1		06/25/16 19:59
119	T3.062516.200300	WG574215-01	Post Digestion Spike		1	L16060986-07	06/25/16 20:03
120	T3.062516.200637	WG574215-02	Serial Dilution		5	L16060986-07	06/25/16 20:06
121	T3.062516.201030	WG574215-02	Serial Dilution		25	L16060986-07	06/25/16 20:10
122	T3.062516.201426	WG574249-33	CCV		1		06/25/16 20:14
123	T3.062516.201803	WG574249-34	CCB		1		06/25/16 20:18
124	T3.062516.202200	L16060986-09	MW-03-11	40/50	1		06/25/16 20:22
125	T3.062516.202553	L16060986-11	MW-01-01	40/50	1		06/25/16 20:25
126	T3.062516.202942	L16060986-13	MW-03-09	40/50	1		06/25/16 20:29
127	T3.062516.203332	L16060986-15	MW-01-08	40/50	1		06/25/16 20:33
128	T3.062516.203723	L16060986-17	MW-03-06	40/50	1		06/25/16 20:37
129	T3.062516.204116	L16060986-19	MW-03-05	40/50	1		06/25/16 20:41
130	T3.062516.204510	WG573544-01	Reference Sample		1	L16060986-21	06/25/16 20:45
131	T3.062516.204903	WG573544-02	Reference Sample		1	L16060986-23	06/25/16 20:49
132	T3.062516.205255	L16060986-25	MW-01-02	40/50	1		06/25/16 20:52
133	T3.062516.205646	L16060986-27	DUP 1	40/50	1		06/25/16 20:56
134	T3.062516.210036	WG574249-35	CCV		1		06/25/16 21:00
135	T3.062516.210414	WG574249-36	CCB		1		06/25/16 21:04
136	T3.062516.210812	L16060986-29	DUP 2	40/50	1		06/25/16 21:08

Page: 4 Approved: June 27, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.062516.211202	WG573544-05	Matrix Spike	40/50	1	L16060986-21	06/25/16 21:12
138	T3.062516.211541	WG573544-06	Matrix Spike Duplica	40/50	1	L16060986-21	06/25/16 21:15
139	T3.062516.211919	WG573544-07	Matrix Spike	40/50	1	L16060986-23	06/25/16 21:19
140	T3.062516.212256	WG573544-08	Matrix Spike Duplica	40/50	1	L16060986-23	06/25/16 21:22
141	T3.062516.212633	L16060986-39	EQUIP BLANK 1	40/50	1		06/25/16 21:26
142	T3.062516.213031	L16060986-41	EQUIP BLANK 2	40/50	1		06/25/16 21:30
143	T3.062516.213430	WG574249-37	CCV		1		06/25/16 21:34
144	T3.062516.213807	WG574249-38	CCB		1		06/25/16 21:38
145	T3.062516.214203	WG573102-02	Method/Prep Blank	40/50	1		06/25/16 21:42
146	T3.062516.214559	WG573102-03	Laboratory Control S	40/50	1		06/25/16 21:45
147	T3.062516.214937	WG573102-04	Filter Blank		1		06/25/16 21:49
148	T3.062516.215335	WG573102-01	Reference Sample		1	L16060787-09	06/25/16 21:53
149	T3.062516.215728	WG573102-05	Matrix Spike	40/50	1	L16060787-09	06/25/16 21:57
150	T3.062516.220106	WG573102-06	Matrix Spike Duplica	40/50	1	L16060787-09	06/25/16 22:01
151	T3.062516.220444	L16060787-01	EB04	40/50	1		06/25/16 22:04
152	T3.062516.220842	WG573561-03	Post Digestion Spike		1	L16060787-01	06/25/16 22:08
153	T3.062516.221220	WG573561-04	Serial Dilution		5	L16060787-01	06/25/16 22:12
154	T3.062516.221616	WG573561-04	Serial Dilution		25	L16060787-01	06/25/16 22:16
155	T3.062516.222012	WG574249-39	CCV		1		06/25/16 22:20
156	T3.062516.222349	WG574249-40	CCB		1		06/25/16 22:23
157	T3.062516.222746	L16060787-10	U517TW006C	40/50	1		06/25/16 22:27
158	T3.062516.223140	L16060787-18	U517TW008A	40/50	1		06/25/16 22:31
159	T3.062516.223534	L16060787-19	EB05	40/50	1		06/25/16 22:35
160	T3.062516.223931	WG573102-01	Reference Sample		20	L16060787-09	06/25/16 22:39
161	T3.062516.224326	WG573102-05	Matrix Spike	40/50	20	L16060787-09	06/25/16 22:43
162	T3.062516.224719	WG573102-06	Matrix Spike Duplica	40/50	20	L16060787-09	06/25/16 22:47
163	T3.062516.225113	WG574249-41	CCV		1		06/25/16 22:51
164	T3.062516.225451	WG574249-42	CCB		1		06/25/16 22:54
165	T3.062516.225848	WG573484-02	Method/Prep Blank	40/50	1		06/25/16 22:58
166	T3.062516.230246	WG573484-03	Laboratory Control S	40/50	1		06/25/16 23:02
167	T3.062516.230624	WG573484-01	Reference Sample		1	L16060764-04	06/25/16 23:06
168	T3.062516.231017	WG573484-04	Matrix Spike	40/50	1	L16060764-04	06/25/16 23:10
169	T3.062516.231356	WG573484-05	Matrix Spike Duplica	40/50	1	L16060764-04	06/25/16 23:13
170	T3.062516.231733	L16060991-02	MW31-061616	40/50	10		06/25/16 23:17

Page: 5 Approved: June 27, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	T3.062516.232126	WG573952-03	Post Digestion Spike		10	L16060991-02	06/25/16 23:21
172	T3.062516.232503	WG573952-04	Serial Dilution		50	L16060991-02	06/25/16 23:25
173	T3.062516.232900	L16060995-01	UNTREATED	40/50	1000		06/25/16 23:29
174	T3.062516.233253	L16060995-02	AFTER	40/50	1000		06/25/16 23:32
175	T3.062516.233647	WG574249-43	CCV		1		06/25/16 23:36
176	T3.062516.234025	WG574249-44	CCB		1		06/25/16 23:40
177	T3.062516.234420	WG574249-45	Interference Check		1		06/25/16 23:44
178	T3.062516.234809	WG574249-46	Interference Check		1		06/25/16 23:48
179	T3.062516.235152	WG574249-47	CCV		1		06/25/16 23:51
180	T3.062516.235530	WG574249-48	CCB		1		06/25/16 23:55
181	T3.062516.235927	WG574249-49	Low Level Continuing Calibra		1		06/25/16 23:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
69				
Seq. 69-70: wrong WG numbers JYH				

Page: 6 Approved: June 27, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062916T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574350574358,574351,574076,574637

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062916.095202	WG574675-01	Calibration Point		1		06/29/16 09:52
2	T3.062916.095558	WG574675-02	Calibration Point		1		06/29/16 09:55
3	T3.062916.095953	WG574675-03	Calibration Point		1		06/29/16 09:59
4	T3.062916.100348	WG574675-04	Calibration Point		1		06/29/16 10:03
5	T3.062916.100726	WG574675-05	Calibration Point		1		06/29/16 10:07
6	T3.062916.101102	WG574675-06	Initial Calibration Verification		1		06/29/16 10:11
7	T3.062916.101440	WG574675-07	Initial Calib Blank		1		06/29/16 10:14
8	T3.062916.101836	WG574675-08	Low Level Initial Calibration V		1		06/29/16 10:18
9	T3.062916.102229	WG574675-09	Interference Check		1		06/29/16 10:22
10	T3.062916.102611	WG574675-10	Interference Check		1		06/29/16 10:26
11	T3.062916.102953	WG574675-11	CCV		1		06/29/16 10:29
12	T3.062916.103333	WG574675-12	CCB		1		06/29/16 10:33
13	T3.062916.103731	WG573828-02	Method/Prep Blank	40/50	1		06/29/16 10:37
14	T3.062916.104127	WG573828-03	Laboratory Control S	40/50	1		06/29/16 10:41
15	T3.062916.104507	WG573828-01	Reference Sample		1	L16061177-01	06/29/16 10:45
16	T3.062916.104902	WG573828-04	Matrix Spike	40/50	1	L16061177-01	06/29/16 10:49
17	T3.062916.105243	WG573828-05	Matrix Spike Duplica	40/50	1	L16061177-01	06/29/16 10:52
18	T3.062916.105622	L160601142-01	L16060114201	40/50	1		06/29/16 10:56
19	T3.062916.110017	L160601142-03	L16060114203	40/50	1		06/29/16 11:00
20	T3.062916.110411	L160601142-05	L16060114205	40/50	1		06/29/16 11:04
21	T3.062916.110805	WG574350-03	Post Digestion Spike		1	L16061142-05	06/29/16 11:08
22	T3.062916.111145	WG574350-04	Serial Dilution		5	L16061142-05	06/29/16 11:11
23	T3.062916.111539	WG574675-13	CCV		1		06/29/16 11:15
24	T3.062916.111916	WG574675-14	CCB		1		06/29/16 11:19
25	T3.062916.112313	L16060907-07	MW11S-061516	40/50	100		06/29/16 11:23
26	T3.062916.112709	L16060907-10	DUP-GW-061516	40/50	100		06/29/16 11:27
27	T3.062916.113106	L16060907-12	MW31-061516	40/50	500		06/29/16 11:31
28	T3.062916.113502	WG573685-01	Reference Sample		100	L16060907-14	06/29/16 11:35
29	T3.062916.113857	WG573685-05	Matrix Spike	40/50	100	L16060907-14	06/29/16 11:38
30	T3.062916.114254	WG573685-06	Matrix Spike Duplica	40/50	100	L16060907-14	06/29/16 11:42
31	T3.062916.114650	L16061380-01	XU936TW003A	40/50	20		06/29/16 11:46
32	T3.062916.115043	L16061380-02	XU936TW003C	40/50	20		06/29/16 11:50
33	T3.062916.115438	L16061227-07	18WW18-062116	40/50	20		06/29/16 11:54
34	T3.062916.115833	WG574675-15	CCV		1		06/29/16 11:58

Page: 1 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062916T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574350574358,574351,574076,574637

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062916.120211	WG574675-16	CCB		1		06/29/16 12:02
36	T3.062916.120607	WG574675-17	Interference Check		1		06/29/16 12:06
37	T3.062916.120959	WG574675-18	Interference Check		1		06/29/16 12:09
38	T3.062916.121342	WG574675-19	CCV		1		06/29/16 12:13
39	T3.062916.121718	WG574675-20	CCB		1		06/29/16 12:17
40	T3.062916.122116	WG574675-21	Low Level Continuing Calibra		1		06/29/16 12:21
41	T3.062916.122508	WG572926-01	Method/Prep Blank	40/50	1		06/29/16 12:25
42	T3.062916.125108	L16060003-17	DOC-17	40/50	1		06/29/16 12:51
43	T3.062916.125443	L16060003-18	DOC-18	40/50	1		06/29/16 12:54
44	T3.062916.125818	L16060003-19	DOC-19	40/50	1		06/29/16 12:58
45	T3.062916.130153	L16060003-20	DOC-20	40/50	1		06/29/16 13:01
46	T3.062916.130527	WG574675-22	CCV		1		06/29/16 13:05
47	T3.062916.130900	WG574675-23	CCB		1		06/29/16 13:09
48	T3.062916.131252	WG574597-07	Method/Prep Blank		1		06/29/16 13:12
49	T3.062916.131644	WG574597-08	Laboratory Control S		1		06/29/16 13:16
50	T3.062916.132019	WG574515-01	Fluid Blank 1		1		06/29/16 13:20
51	T3.062916.132411	L16061539-01	27-12-9 RPW3		1		06/29/16 13:24
52	T3.062916.132758	WG574597-06	Reference Sample		1	L16061496-01	06/29/16 13:27
53	T3.062916.133144	WG574597-09	Matrix Spike		1	L16061496-01	06/29/16 13:31
54	T3.062916.133518	WG574597-10	Matrix Spike Duplica		1	L16061496-01	06/29/16 13:35
55	T3.062916.133852	WG574645-01	Post Digestion Spike		1	L16061539-01	06/29/16 13:38
56	T3.062916.134226	WG574645-02	Serial Dilution		5	L16061539-01	06/29/16 13:42
57	T3.062916.134616	WG574645-02	Serial Dilution		25	L16061539-01	06/29/16 13:46
58	T3.062916.135007	WG574675-24	CCV		1		06/29/16 13:50
59	T3.062916.135340	WG574675-25	CCB		1		06/29/16 13:53

Page: 2 Approved: June 30, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574123
Runlog ID: 75912
Analytical Workgroups: 574050,574055,574076,573560,573149,573561

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1129
Level 4	1140,1143,1151,1227,1272,1279
	1289,1290,729,732,794,787,724
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer:
26-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-26-2016 10:34:20

Microbac Laboratories Inc.

Data Checklist

Date: 25-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574249
Runlog ID: 75923
Analytical Workgroups: 573973,574055,574076,574216,574215,573952

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1178
Level 4	822,823,1148,1150,1151,1154,1155
	1227,1279,1289,986,787,991,995
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer: 27-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-27-2016 14:55:21

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574675
Runlog ID: 76005
Analytical Workgroups: 574350574358,574351,574076,574637

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1380
Level 4	1142,907,1227,0003
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
30-JUN-2016

Secondary Reviewer:
30-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-30-2016 10:49:34

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG574076

Login Number: L16061227

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW22-062116	01	06/21/16					06/24/2016	3	180		06/25/16	4.3	180	
18WW22-062116	01	06/21/16					06/24/2016	3	180		06/24/16	3.3	180	
C04F-062116	03	06/21/16					06/24/2016	2.9	180		06/24/16	3.2	180	
C04FFD-062116	05	06/21/16					06/24/2016	2.9	180		06/24/16	3.2	180	
18CPTMW18-062116	06	06/21/16					06/24/2016	2.9	180		06/25/16	4.2	180	
18CPTMW18-062116	06	06/21/16					06/24/2016	2.9	180		06/24/16	3.2	180	
18WW18-062116	07	06/21/16					06/24/2016	2.8	180		06/29/16	8	180	
18WW18-062116	07	06/21/16					06/24/2016	2.8	180		06/24/16	3.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4824666
Report generated 06/29/2016 13:51

METHOD BLANK SUMMARY

Login Number: L16061227
Blank File ID: T3.062416.133159
Prep Date: 06/24/16 07:18
Analyzed Date: 06/24/16 13:31
Analyst: JYH

Work Group: WG574076
Blank Sample ID: WG573994-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573994-03	T3.062416.133557	06/24/16 13:35	01
18WW22-062116	L16061227-01	T3.062416.141350	06/24/16 14:13	01
C04F-062116	L16061227-03	T3.062416.141746	06/24/16 14:17	01
C04FFD-062116	L16061227-05	T3.062416.142142	06/24/16 14:21	01
18CPTMW18-062116	L16061227-06	T3.062416.142526	06/24/16 14:25	01
18WW18-062116	L16061227-07	T3.062416.144853	06/24/16 14:48	01
18WW22-062116	L16061227-01	T3.062516.151743	06/25/16 15:17	DL01
18CPTMW18-062116	L16061227-06	T3.062516.152125	06/25/16 15:21	DL01
18WW18-062116	L16061227-07	T3.062916.115438	06/29/16 11:54	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4824667
Report generated 06/29/2016 13:59

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061227 Prep Date: 06/24/16 07:18 Sample ID: WG573994-02
Instrument ID: ICP-THERMO3 Run Date: 06/24/16 13:31 Prep Method: 3015
File ID: T3.062416.133159 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574076 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-24-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0719	1	J
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.182	1	J
Iron, Total	0.0500	0.200	0.0950	1	J
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4824668
29-JUN-2016 13:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061227 Run Date: 06/24/2016 Sample ID: WG573994-03
Instrument ID: ICP-THERMO3 Run Time: 13:35 Prep Method: 3015
File ID: T3.062416.133557 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574076 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-24-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.37	102	80 - 120	
Beryllium, Total	0.0313	0.0306	97.8	80 - 120	
Calcium, Total	6.25	6.65	106	80 - 120	
Iron, Total	2.50	2.53	101	80 - 120	
Magnesium, Total	6.25	6.45	103	80 - 120	
Potassium, Total	31.3	32.7	105	80 - 120	
Selenium, Total	0.250	0.251	101	80 - 120	
Sodium, Total	31.3	32.8	105	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4824669
Report generated: 06/29/2016 13:59

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061227 Cal ID: ICP-THERMO3 - Worknum: WG574076
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573994-01 File ID: T3.062416.133937 Dil: 1 Matrix: WATER
Sample ID: WG573994-04 MS File ID: T3.062416.134328 Dil: 1 Units: mg/L
Sample ID: WG573994-05 MSD File ID: T3.062416.134705 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	19.7	6.25	25.8	97.8	6.25	27.1	119	4.89	80 - 120	20	
Beryllium	ND	0.0313	0.0301	96.4	0.0313	0.0309	98.8	2.42	80 - 120	20	
Potassium	7.81	31.3	38.1	96.9	31.3	39.6	102	3.81	80 - 120	20	
Selenium	ND	0.250	0.243	97.1	0.250	0.246	98.5	1.53	80 - 120	20	
Sodium	23.5	31.3	54.5	98.9	31.3	55.6	103	2.15	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4824670
Report generated 06/29/2016 13:59

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061227 Cal ID: ICP-THERMO3 - Worknum: WG574076
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573994-01 File ID: T3.062516.152518 Dil: 20 Matrix: WATER
Sample ID: WG573994-04 MS File ID: T3.062516.153646 Dil: 20 Units: mg/L
Sample ID: WG573994-05 MSD File ID: T3.062516.154039 Dil: 20

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Calcium	234	6.25	249	243	6.25	247	200	1.10	80 - 120	20	*
Iron	27.6	2.50	26.9	-27.9	2.50	26.4	-47.0	1.79	80 - 120	20	*
Magnesium	95.8	6.25	106	157	6.25	105	154	0.173	80 - 120	20	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4824670
Report generated 06/29/2016 13:59

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061227 **Worknum:** WG574076
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574076-02 **File ID:** T3.062416.140555 **Dil:** 5 **Units:** ug/L
Sample: L16060961-03 **File ID:** T3.062416.135818 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	91.4		87.2		4.65	
Beryllium	ND	U	0.300		3100.00	
Calcium	50100		49300		1.56	
Iron	36.6		77.9		113.00	E
Magnesium	15200		15200		0.54	
Potassium	1350		1740		28.90	E
Selenium	4.57		26.5		480.00	E
Sodium	9650		9940		3.08	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4824664
06/29/2016 13:51

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061227 **Worknum:** WG574076
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574076-01 **File ID:** T3.062416.140215 **Dil:** 1 **Units:** ug/L
Sample ID: L16060961-03 **File ID:** T3.062416.135818 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5160		91.4	F	5000	101.5	75 - 125	
BERYLLIUM	24.6		0	U	25	98.3	75 - 125	
CALCIUM	50300		50100		5000	104.5	75 - 125	
IRON	2080		0	U	2000	103.9	75 - 125	
MAGNESIUM	18800		15200		5000	102.3	75 - 125	
POTASSIUM	27400		1350	F	25000	104.7	75 - 125	
SELENIUM	208		4.57	F	200	102.1	75 - 125	
SODIUM	34900		9650		25000	105.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4824665
Report generated: 06/29/2016 13:59

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061227	Workgroup (AAB#):	WG574076
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574123	Initial Calibration Date:	24-JUN-2016 10:17

	WG574123-01		WG574123-02		WG574123-03		WG574123-04		WG574123-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000920	.1	0.00153	.2	0.00215	10	0.0811	20	0.159	.999969	
BERYLLIUM	0	0.000510	.0005	0.000790	.001	0.00116	.05	0.0467	.1	0.0919	.999879	
CALCIUM	0	0.000820	.1	0.00503	.2	0.00837	10	0.457	20	0.881	.999811	
IRON	0	-0.000100	.04	0.000570	.08	0.00116	4	0.0886	8	0.172	.999867	
MAGNESIUM	0	-0.000440	NA	NA	.2	0.000830	10	0.0815	20	0.157	.999846	
POTASSIUM	0	-0.0108	.5	0.0152	1	0.0397	50	3.07	100	5.95	.999864	
SELENIUM	0	-0.000160	NA	NA	.008	-0.000100	.4	0.00655	.8	0.0133	.999466	
SODIUM	0	-0.0319	.5	0.0316	1	0.0972	50	8.45	100	16.4	.999892	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4824673
Report generated: 29-JUN-2016 13:52

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061227	Workgroup (AAB#):	WG574076
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574249	Initial Calibration Date:	25-JUN-2016 12:36

	WG574249-01		WG574249-02		WG574249-03		WG574249-04		WG574249-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000800	.1	0.00148	.2	0.00220	10	0.0828	20	0.162	.99995	
BERYLLIUM	0	0.000480	.0005	0.000970	.001	0.00139	.05	0.0482	.1	0.0948	.999766	
CALCIUM	0	0.00288	.1	0.00582	.2	0.00931	10	0.466	20	0.917	.99989	
IRON	0	-0.000710	.04	0.000330	.08	0.00148	4	0.0965	8	0.191	.99933	
MAGNESIUM	0	-0.000260	NA	NA	.2	0.00109	10	0.0796	20	0.159	.99999	
POTASSIUM	0	-0.00661	.5	0.0195	1	0.0419	50	3.07	100	6.10	.999988	
SELENIUM	0	-0.000510	NA	NA	.008	-0.000340	.4	0.00649	.8	0.0134	.999238	
SODIUM	0	-0.0478	.5	0.0267	1	0.108	50	9.20	100	18.4	.99999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4824673
Report generated: 29-JUN-2016 13:52

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061227	Workgroup (AAB#):	WG574076
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574675	Initial Calibration Date:	29-JUN-2016 10:07

	WG574675-01		WG574675-02		WG574675-03		WG574675-04		WG574675-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000900	.1	0.00149	.2	0.00216	10	0.0777	20	0.156	.99999	
BERYLLIUM	0	0.000140	.0005	0.000610	.001	0.000910	.05	0.0469	.1	0.0941	.999899	
CALCIUM	0	-0.000210	.1	0.00581	.2	0.00981	10	0.430	20	0.875	.998775	
IRON	0	-0.000420	.04	-0.0000800	.08	0.000850	4	0.0810	8	0.162	.999702	
MAGNESIUM	0	-0.000310	NA	NA	.2	0.000580	10	0.0800	20	0.161	.999747	
POTASSIUM	0	-0.0122	.5	0.0171	1	0.0387	50	3.21	100	6.51	.999964	
SELENIUM	0	-0.000300	NA	NA	.008	-0.000250	.4	0.00565	.8	0.0116	.999294	
SODIUM	0	-0.0579	.5	0.0179	1	0.0912	50	8.68	100	17.7	.999966	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4824673
Report generated: 29-JUN-2016 13:52

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-07
Instrument ID: ICP-THERMO3
Run Time: 10:24
Method: 6010C
File ID: T3.062416.102444
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-THERI - 24-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.0052	F
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4824675
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-07
Instrument ID: ICP-THERMO3
Run Time: 12:43
Method: 6010C
File ID: T3.062516.124348
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-THERI - 25-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.0087	*
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4824675
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-07
Instrument ID: ICP-THERMO3
Run Time: 10:14
Method: 6010C
File ID: T3.062916.101440
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-THERI - 29-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4824675
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-13
Instrument ID: ICP-THERMO3
Run Time: 10:47
Method: 6010C
File ID: T3.062416.104746
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-19
Instrument ID: ICP-THERMO3
Run Time: 13:08
Method: 6010C
File ID: T3.062416.130845
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-21
Instrument ID: ICP-THERMO3
Run Time: 13:54
Method: 6010C
File ID: T3.062416.135419
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-23
Instrument ID: ICP-THERMO3
Run Time: 14:37
Method: 6010C
File ID: T3.062416.143703
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-27
Instrument ID: ICP-THERMO3
Run Time: 15:23
Method: 6010C
File ID: T3.062416.152346
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-13
Instrument ID: ICP-THERMO3
Run Time: 13:06
Method: 6010C
File ID: T3.062516.130641
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00482	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-17
Instrument ID: ICP-THERMO3
Run Time: 14:46
Method: 6010C
File ID: T3.062516.144639
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00512	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-19
Instrument ID: ICP-THERMO3
Run Time: 15:32
Method: 6010C
File ID: T3.062516.153248
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00412	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-44
Instrument ID: ICP-THERMO3
Run Time: 23:40
Method: 6010C
File ID: T3.062516.234025
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-48
Instrument ID: ICP-THERMO3
Run Time: 23:55
Method: 6010C
File ID: T3.062516.235530
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-12
Instrument ID: ICP-THERMO3
Run Time: 10:33
Method: 6010C
File ID: T3.062916.103333
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0438	F
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.101	F
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-14
Instrument ID: ICP-THERMO3
Run Time: 11:19
Method: 6010C
File ID: T3.062916.111916
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-16
Instrument ID: ICP-THERMO3
Run Time: 12:02
Method: 6010C
File ID: T3.062916.120211
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-20
Instrument ID: ICP-THERMO3
Run Time: 12:17
Method: 6010C
File ID: T3.062916.121718
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-06
Instrument ID: ICP-THERMO3
Run Time: 10:11
Method: 6010C
File ID: T3.062916.101102
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.3	103	90 - 110	
Beryllium		.05	0.0507	101	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.09	102	90 - 110	
Magnesium		10	10.3	103	90 - 110	
Potassium		50	51.0	102	90 - 110	
Selenium		.4	0.408	102	90 - 110	
Sodium		50	50.9	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4824674
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-06
Instrument ID: ICP-THERMO3
Run Time: 10:21
Method: 6010C
File ID: T3.062416.102118
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0499	99.9	90 - 110	
Calcium		10	9.97	99.7	90 - 110	
Iron		4	4.01	100	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.4	101	90 - 110	
Selenium		.4	0.410	102	90 - 110	
Sodium		50	50.2	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4824674
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-06
Instrument ID: ICP-THERMO3
Run Time: 12:40
Method: 6010C
File ID: T3.062516.124009
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0504	101	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.05	101	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.3	101	90 - 110	
Selenium		.4	0.400	100	90 - 110	
Sodium		50	50.1	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4824674
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-12
Instrument ID: ICP-THERMO3
Run Time: 10:44
Method: 6010C
File ID: T3.062416.104409
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0500	mg/L	100	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.08	mg/L	102	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.409	mg/L	102	90 - 110		
Sodium		50.0	50.8	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824677
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-18
Instrument ID: ICP-THERMO3
Run Time: 13:05
Method: 6010C
File ID: T3.062416.130507
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0505	mg/L	101	90 - 110		
Calcium		10.0	10.6	mg/L	106	90 - 110		
Iron		4.00	4.16	mg/L	104	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	53.3	mg/L	107	90 - 110		
Selenium		0.400	0.423	mg/L	106	90 - 110		
Sodium		50.0	52.9	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824677
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-20
Instrument ID: ICP-THERMO3
Run Time: 13:50
Method: 6010C
File ID: T3.062416.135042
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.60	mg/L	96.0	90 - 110		
Beryllium		0.0500	0.0470	mg/L	93.9	90 - 110		
Calcium		10.0	9.67	mg/L	96.7	90 - 110		
Iron		4.00	3.83	mg/L	95.8	90 - 110		
Magnesium		10.0	9.49	mg/L	94.9	90 - 110		
Potassium		50.0	49.1	mg/L	98.2	90 - 110		
Selenium		0.400	0.391	mg/L	97.8	90 - 110		
Sodium		50.0	48.8	mg/L	97.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824677
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-22
Instrument ID: ICP-THERMO3
Run Time: 14:33
Method: 6010C
File ID: T3.062416.143326
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0505	mg/L	101	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	4.19	mg/L	105	90 - 110		
Magnesium		10.0	10.5	mg/L	105	90 - 110		
Potassium		50.0	53.3	mg/L	107	90 - 110		
Selenium		0.400	0.417	mg/L	104	90 - 110		
Sodium		50.0	53.0	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824677
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-26
Instrument ID: ICP-THERMO3
Run Time: 15:20
Method: 6010C
File ID: T3.062416.152008
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0508	mg/L	102	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.13	mg/L	103	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	52.6	mg/L	105	90 - 110		
Selenium		0.400	0.416	mg/L	104	90 - 110		
Sodium		50.0	52.2	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824677
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-12
Instrument ID: ICP-THERMO3
Run Time: 13:03
Method: 6010C
File ID: T3.062516.130304
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0498	mg/L	99.6	90 - 110		
Calcium		10.0	9.94	mg/L	99.4	90 - 110		
Iron		4.00	4.00	mg/L	99.9	90 - 110		
Magnesium		10.0	9.92	mg/L	99.2	90 - 110		
Potassium		50.0	49.2	mg/L	98.4	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	49.3	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824677
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-16
Instrument ID: ICP-THERMO3
Run Time: 14:43
Method: 6010C
File ID: T3.062516.144313
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.5	mg/L	105	90 - 110		
Beryllium		0.0500	0.0519	mg/L	104	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	4.13	mg/L	103	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	50.7	mg/L	101	90 - 110		
Selenium		0.400	0.413	mg/L	103	90 - 110		
Sodium		50.0	51.4	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824677
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-18
Instrument ID: ICP-THERMO3
Run Time: 15:29
Method: 6010C
File ID: T3.062516.152911
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.5	mg/L	105	90 - 110		
Beryllium		0.0500	0.0522	mg/L	104	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.15	mg/L	104	90 - 110		
Magnesium		10.0	9.96	mg/L	99.6	90 - 110		
Potassium		50.0	50.6	mg/L	101	90 - 110		
Selenium		0.400	0.412	mg/L	103	90 - 110		
Sodium		50.0	51.2	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824677
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-43
Instrument ID: ICP-THERMO3
Run Time: 23:36
Method: 6010C
File ID: T3.062516.233647
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0497	mg/L	99.5	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.06	mg/L	102	90 - 110		
Magnesium		10.0	9.72	mg/L	97.2	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	52.1	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824677
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-47
Instrument ID: ICP-THERMO3
Run Time: 23:51
Method: 6010C
File ID: T3.062516.235152
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0502	mg/L	100	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	4.08	mg/L	102	90 - 110		
Magnesium		10.0	9.81	mg/L	98.1	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.412	mg/L	103	90 - 110		
Sodium		50.0	51.8	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824677
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-11
Instrument ID: ICP-THERMO3
Run Time: 10:29
Method: 6010C
File ID: T3.062916.102953
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.76	mg/L	97.6	90 - 110		
Beryllium		0.0500	0.0480	mg/L	96.0	90 - 110		
Calcium		10.0	9.76	mg/L	97.6	90 - 110		
Iron		4.00	3.96	mg/L	98.9	90 - 110		
Magnesium		10.0	9.96	mg/L	99.6	90 - 110		
Potassium		50.0	48.2	mg/L	96.4	90 - 110		
Selenium		0.400	0.384	mg/L	96.1	90 - 110		
Sodium		50.0	47.9	mg/L	95.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824677
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-13
Instrument ID: ICP-THERMO3
Run Time: 11:15
Method: 6010C
File ID: T3.062916.111539
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.90	mg/L	99.0	90 - 110		
Beryllium		0.0500	0.0492	mg/L	98.3	90 - 110		
Calcium		10.0	9.90	mg/L	99.0	90 - 110		
Iron		4.00	3.95	mg/L	98.8	90 - 110		
Magnesium		10.0	9.89	mg/L	98.9	90 - 110		
Potassium		50.0	49.9	mg/L	99.9	90 - 110		
Selenium		0.400	0.394	mg/L	98.5	90 - 110		
Sodium		50.0	49.8	mg/L	99.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824677
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-15
Instrument ID: ICP-THERMO3
Run Time: 11:58
Method: 6010C
File ID: T3.062916.115833
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.85	mg/L	98.5	90 - 110		
Beryllium		0.0500	0.0488	mg/L	97.6	90 - 110		
Calcium		10.0	9.80	mg/L	98.0	90 - 110		
Iron		4.00	3.95	mg/L	98.7	90 - 110		
Magnesium		10.0	9.91	mg/L	99.1	90 - 110		
Potassium		50.0	49.4	mg/L	98.8	90 - 110		
Selenium		0.400	0.403	mg/L	101	90 - 110		
Sodium		50.0	49.3	mg/L	98.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824677
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-19
Instrument ID: ICP-THERMO3
Run Time: 12:13
Method: 6010C
File ID: T3.062916.121342
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0504	mg/L	101	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.04	mg/L	101	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.403	mg/L	101	90 - 110		
Sodium		50.0	50.8	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824677
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-08
Instrument ID: ICP-THERMO3
Run Time: 10:28
Method: 6010C
File ID: T3.062416.102843
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.175	mg/L	109	70 - 130		
Beryllium		0.00160	0.00162	mg/L	101	70 - 130		
Calcium		0.400	0.420	mg/L	105	70 - 130		
Iron		0.0800	0.0855	mg/L	107	70 - 130		
Magnesium		0.400	0.437	mg/L	109	70 - 130		
Potassium		0.800	0.954	mg/L	119	70 - 130		
Selenium		0.0160	0.0180	mg/L	112	70 - 130		
Sodium		0.400	0.448	mg/L	112	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824679
Report generated 06/29/2016 13:59

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-24
Instrument ID: ICP-THERMO3
Run Time: 14:41
Method: 6010C
File ID: T3.062416.144104
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.168	mg/L	105	70 - 130		
Beryllium		0.00160	0.00164	mg/L	103	70 - 130		
Calcium		0.400	0.416	mg/L	104	70 - 130		
Iron		0.0800	0.0993	mg/L	124	70 - 130		
Magnesium		0.400	0.414	mg/L	103	70 - 130		
Potassium		0.800	0.972	mg/L	121	70 - 130		
Selenium		0.0160	0.0132	mg/L	82.7	70 - 130		
Sodium		0.400	0.473	mg/L	118	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824679
Report generated 06/29/2016 13:59

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-34
Instrument ID: ICP-THERMO3
Run Time: 17:11
Method: 6010C
File ID: T3.062416.171114
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.171	mg/L	107	70 - 130		
Beryllium		0.00160	0.00166	mg/L	104	70 - 130		
Calcium		0.400	0.434	mg/L	109	70 - 130		
Iron		0.0800	0.0873	mg/L	109	70 - 130		
Magnesium		0.400	0.381	mg/L	95.2	70 - 130		
Potassium		0.800	0.824	mg/L	103	70 - 130		
Selenium		0.0160	0.0183	mg/L	115	70 - 130		
Sodium		0.400	0.490	mg/L	123	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824679
Report generated 06/29/2016 13:59

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-08
Instrument ID: ICP-THERMO3
Run Time: 12:47
Method: 6010C
File ID: T3.062516.124745
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.165	mg/L	103	70 - 130		
Beryllium		0.00160	0.00166	mg/L	104	70 - 130		
Calcium		0.400	0.414	mg/L	103	70 - 130		
Iron		0.0800	0.0939	mg/L	117	70 - 130		
Magnesium		0.400	0.441	mg/L	110	70 - 130		
Potassium		0.800	0.887	mg/L	111	70 - 130		
Selenium		0.0160	0.0204	mg/L	127	70 - 130		
Sodium		0.400	0.442	mg/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824679
Report generated 06/29/2016 13:59

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-26
Instrument ID: ICP-THERMO3
Run Time: 17:25
Method: 6010C
File ID: T3.062516.172540
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.163	mg/L	102	70 - 130		
Beryllium		0.00160	0.00172	mg/L	108	70 - 130		
Calcium		0.400	0.375	mg/L	93.8	70 - 130		
Iron		0.0800	0.0950	mg/L	119	70 - 130		
Magnesium		0.400	0.339	mg/L	84.7	70 - 130		
Potassium		0.800	0.714	mg/L	89.2	70 - 130		
Selenium		0.0160	0.0209	mg/L	131	70 - 130		*
Sodium		0.400	0.408	mg/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824679
Report generated 06/29/2016 13:59

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-08
Instrument ID: ICP-THERMO3
Run Time: 10:18
Method: 6010C
File ID: T3.062916.101836
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.171	mg/L	107	70 - 130		
Beryllium		0.00160	0.00157	mg/L	98.1	70 - 130		
Calcium		0.400	0.421	mg/L	105	70 - 130		
Iron		0.0800	0.103	mg/L	128	70 - 130		
Magnesium		0.400	0.313	mg/L	78.3	70 - 130		
Selenium		0.0160	0.0143	mg/L	89.6	70 - 130		
Sodium		0.400	0.423	mg/L	106	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824679
Report generated 06/29/2016 13:59

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-21
Instrument ID: ICP-THERMO3
Run Time: 12:21
Method: 6010C
File ID: T3.062916.122116
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.185	mg/L	116	70 - 130		
Beryllium		0.00160	0.00161	mg/L	101	70 - 130		
Calcium		0.400	0.463	mg/L	116	70 - 130		
Iron		0.0800	0.0701	mg/L	87.6	70 - 130		
Magnesium		0.400	0.338	mg/L	84.5	70 - 130		
Selenium		0.0160	0.0132	mg/L	82.4	70 - 130		
Sodium		0.400	0.434	mg/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824679
Report generated 06/29/2016 13:59

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061227
Instrument ID: ICP-THERMO3
Sol. A : WG574123-10 **File ID:** T3.062416.103634
Sol. AB : WG574123-11 **File ID:** T3.062416.104027

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	272	109	250	274	110	
Beryllium	NS	-0.0000400	NS	0.250	0.246	98.4	
Calcium	250	256	102	250	255	102	
Iron	100	102	102	100	99.9	99.9	
Magnesium	250	260	104	250	256	102	
Potassium	NS	0.0930	NS	5.00	5.48	110	
Selenium	NS	0.00445	NS	0.250	0.267	107	
Sodium	NS	0.0388	NS	5.00	5.59	112	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4824676
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061227
Instrument ID: ICP-THERMO3
Sol. A : WG574249-10 **File ID:** T3.062516.125529
Sol. AB : WG574249-11 **File ID:** T3.062516.125921

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	266	106	250	268	107	
Beryllium	NS	0.000110	NS	0.250	0.245	98.0	
Calcium	250	244	97.6	250	247	98.8	
Iron	100	96.8	96.8	100	96.5	96.5	
Magnesium	250	249	99.6	250	249	99.6	
Potassium	NS	0.0533	NS	5.00	5.19	104	
Selenium	NS	-0.00224	NS	0.250	0.249	99.6	
Sodium	NS	0.0404	NS	5.00	5.32	106	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4824676
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061227
Instrument ID: ICP-THERMO3
Sol. A : WG574249-45 **File ID:** T3.062516.234420
Sol. AB : WG574249-46 **File ID:** T3.062516.234809

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	263	105	250	271	108	
Beryllium	NS	0.000140	NS	0.250	0.244	97.6	
Calcium	250	248	99.2	250	254	102	
Iron	100	95.6	95.6	100	96.1	96.1	
Magnesium	250	236	94.4	250	239	95.6	
Potassium	NS	-0.0460	NS	5.00	5.21	104	
Selenium	NS	-0.00782	NS	0.250	0.238	95.2	
Sodium	NS	0.0818	NS	5.00	5.50	110	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4824676
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061227
Instrument ID: ICP-THERMO3
Sol. A : WG574675-09 **File ID:** T3.062916.102229
Sol. AB : WG574675-10 **File ID:** T3.062916.102611

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	257	103	250	258	103	
Beryllium	NS	-0.0000700	NS	0.250	0.250	100	
Calcium	250	241	96.4	250	243	97.2	
Iron	100	96.2	96.2	100	95.0	95.0	
Magnesium	250	246	98.4	250	242	96.8	
Potassium	NS	0.182	NS	5.00	5.32	106	
Selenium	NS	0.00425	NS	0.250	0.257	103	
Sodium	NS	0.0105	NS	5.00	5.20	104	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4824676
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061227
Instrument ID: ICP-THERMO3
Sol. A : WG574675-17 **File ID:** T3.062916.120607
Sol. AB : WG574675-18 **File ID:** T3.062916.120959

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	256	102	250	258	103	
Beryllium	NS	-0.0000700	NS	0.250	0.251	100	
Calcium	250	243	97.2	250	241	96.4	
Iron	100	96.5	96.5	100	94.3	94.3	
Magnesium	250	246	98.4	250	241	96.4	
Potassium	NS	0.0274	NS	5.00	5.20	104	
Selenium	NS	0.00783	NS	0.250	0.264	106	
Sodium	NS	0.0111	NS	5.00	5.26	105	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4824676
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061227 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824672
Report generated: 06/29/2016 13:52

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061227 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824672
Report generated: 06/29/2016 13:52

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061227 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824672
Report generated: 06/29/2016 13:52

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061227 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824672
Report generated: 06/29/2016 13:52

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061227 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824672
Report generated: 06/29/2016 13:52

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061227 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824672
Report generated: 06/29/2016 13:52

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061227 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824672
Report generated: 06/29/2016 13:52

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061227 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4824671
Report generated: 06/29/2016 13:51

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000141	0.050748	0.000000	1.000000
Al 308.215 {109}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000916	0.007866	0.000000	1.000000
As 189.042 {478}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000058	0.023675	0.000000	1.000000
B 249.678 {135}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000060	0.022039	0.000000	1.000000
Ba 455.403 { 74}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.014298	2.093262	0.000000	1.000000
Be 313.107 {108}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000510	0.898055	0.000000	1.000000
Ca 422.673 { 80}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000824	0.044581	0.000000	1.000000
Cd 228.802 {447}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000030	0.563251	0.000000	1.000000
Co 228.616 {447}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000034	0.344510	0.000000	1.000000
Cr 267.716 {126}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000180	0.055863	0.000000	1.000000
Cu 224.700 {450}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000060	0.121643	0.000000	1.000000
Fe 261.187 {129}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000103	0.021701	0.000000	1.000000
K 766.490 { 44}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.010819	0.060325	0.000000	1.000000
Li 670.784 { 50}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.007531	1.496173	0.000000	1.000000
Mg 279.079 {121}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000442	0.008016	0.000000	1.000000
Mn 257.610 {131}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000827	0.279912	0.000000	1.000000
Mo 202.030 {467}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000039	0.179523	0.000000	1.000000
Na 589.592 { 57}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.031897	0.166281	0.000000	1.000000
Ni 231.604 {446}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000651	0.129323	0.000000	1.000000
P 214.914 {457}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000172	0.012827	0.000000	1.000000
Pb 220.353 {453}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000520	0.058788	0.000000	1.000000
Sb 206.833 {463}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000001	0.030127	0.000000	1.000000
Se 196.090 {472}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000164	0.016794	0.000000	1.000000
Si 212.412 {459}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000911	0.038950	0.000000	1.000000
Sn 189.989 {477}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000052	0.066907	0.000000	1.000000
Sr 407.771 { 83}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.002037	3.549642	0.000000	1.000000
Ti 337.280 {100}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.001943	0.119996	0.000000	1.000000
Tl 190.856 {477}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000361	0.028102	0.000000	1.000000
V 292.402 {115}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000023	0.065920	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000153	0.391840	0.000000	1.000000
Zr 339.198 { 99}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.012098	2.809224	0.000000	1.000000

Approved: June 25, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999737	0.000003	0.002049	0.006830	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999969	0.000004	0.009025	0.030084	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999986	0.000000	0.003104	0.010346	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999939	0.000001	0.002779	0.009264	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999858	0.000224	0.000982	0.003272	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999879	0.000005	0.000094	0.000312	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999811	0.000055	0.038318	0.127728	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999763	0.000004	0.000260	0.000866	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999919	0.000006	0.000408	0.001359	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999801	0.000004	0.001181	0.003936	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999857	0.000007	0.001355	0.004518	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999867	0.000009	0.021737	0.072458	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999864	0.000316	0.090153	0.300511	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999907	0.000200	0.003625	0.012085	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999846	0.000014	0.078797	0.262658	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999412	0.000030	0.002338	0.007792	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999986	0.000006	0.000418	0.001395	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999892	0.000776	0.030119	0.100396	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999935	0.000005	0.001154	0.003846	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999988	0.000004	0.007248	0.024159	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999843	0.000003	0.003678	0.012262	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999953	0.000002	0.004278	0.014260	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999466	0.000002	0.006279	0.020930	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999584	0.000036	0.002252	0.007507	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999937	0.000005	0.000895	0.002983	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999850	0.000390	0.000401	0.001336	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999443	0.000025	0.006504	0.021681	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999820	0.000002	0.003079	0.010263	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999965	0.000003	0.000964	0.003213	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999941	0.000027	0.000206	0.000686	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999713	0.000427	0.000581	0.001936	OK.	1.000000	0.000000	1	0

Approved: June 25, 2016

Sample Name: S0 Acquired: 6/24/2016 10:02:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00014**	**.00092**	**-.00006**	**.00006**	**.01430**	**.00051**	**.00082**
Stddev	.00007	.00003	.00003	.00005	.00089	.00003	.00150
%RSD	48.462	3.7804	46.676	91.000	6.2407	5.9747	181.89
#1	-.00007	.00091	-.00009	.00011	.01533	.00048	-.00036
#2	-.00014	.00089	-.00003	.00007	.01383	.00054	.00251
#3	-.00021	.00095	-.00005	.00000	.01373	.00052	.00032

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00003**	**.00003**	**.00018**	**-.00006**	**-.00010**	**-.01082**	**-.00753**
Stddev	.00009	.00005	.00004	.00017	.00045	.00335	.00353
%RSD	281.39	147.40	23.426	287.67	438.41	30.962	46.865
#1	.00005	.00004	.00020	-.00025	.00041	-.00724	-.00439
#2	-.00003	-.00002	.00013	-.00002	-.00044	-.01389	-.00686
#3	-.00012	.00008	.00021	.00009	-.00028	-.01133	-.01135

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00044**	**.00083**	**-.00004**	**-.03189**	**-.00065**	**-.00017**	**-.00052**
Stddev	.00045	.00015	.00006	.00093	.00012	.00009	.00017
%RSD	102.79	17.791	163.60	2.9103	19.006	49.513	32.607
#1	-.00010	.00071	.00001	-.03192	-.00069	-.00027	-.00032
#2	-.00096	.00099	-.00002	-.03095	-.00051	-.00010	-.00062
#3	-.00026	.00079	-.00011	-.03280	-.00075	-.00015	-.00062

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00000**	**-.00016**	**.00091**	**.00005**	**.00204**	**-.00194**	**-.00036**
Stddev	.00012	.00004	.00007	.00002	.00021	.00013	.00002
%RSD	19810.	21.583	7.1930	34.140	10.449	6.4605	4.5673
#1	-.00014	-.00013	.00087	.00005	.00206	-.00182	-.00038
#2	.00005	-.00020	.00088	.00007	.00181	-.00194	-.00035
#3	.00009	-.00016	.00099	.00004	.00224	-.00207	-.00035

Approved: June 25, 2016

Sample Name: S0 Acquired: 6/24/2016 10:02:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00002	.00015	-.01209
Stddev	.00007	.00001	.00188
%RSD	312.68	7.9561	15.539
#1	.00011	.00015	-.01411
#2	-.00002	.00014	-.01039
#3	-.00002	.00017	-.01176
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10103.	63387.	3436.7
Stddev	24.	229.	8.8
%RSD	.23353	.36169	.25626
#1	10111.	63214.	3446.2
#2	10121.	63647.	3428.8
#3	10076.	63299.	3435.0

Approved: June 25, 2016

Sample Name: S1 Acquired: 6/24/2016 10:06:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00005**	**.00153**	**.03093**	**.00079**	**.00503**	**.00010**	**.00049**
Stddev	.00003	.00005	.00195	.00002	.00170	.00011	.00005
%RSD	59.232	2.9452	6.3135	3.1378	33.768	117.90	11.244
#1	-.00004	.00157	.02902	.00082	.00307	-.00000	.00053
#2	-.00008	.00153	.03085	.00078	.00607	.00007	.00051
#3	-.00003	.00148	.03292	.00077	.00594	.00022	.00042

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00047**	**.00031**	**.00057**	**.01522**	**.00155**	**.00132**	**.03160**
Stddev	.00005	.00001	.00017	.00200	.00074	.00003	.00575
%RSD	11.209	2.0951	30.554	13.113	47.893	2.1780	18.185
#1	.00046	.00031	.00053	.01296	.00101	.00135	.02748
#2	.00052	.00030	.00076	.01674	.00123	.00133	.02916
#3	.00042	.00031	.00042	.01597	.00239	.00129	.03817

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00014**	**.00081**	**-.00022**	**.00030**	**.00226**	**.00054**	**.03050**
Stddev	.00010	.00005	.00018	.00003	.00007	.00002	.00065
%RSD	73.955	5.5812	79.260	8.9775	2.9020	4.3963	2.1231
#1	-.00011	.00077	-.00030	.00033	.00229	.00052	.03078
#2	-.00005	.00086	-.00002	.00028	.00230	.00056	.02976
#3	-.00025	.00081	-.00035	.00030	.00218	.00052	.03096

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00144**	**.00052**	**.00324**	**.00445**
Stddev	.00042	.00004	.00013	.00179
%RSD	29.218	7.4619	4.0938	40.182
#1	-.00191	.00057	.00337	.00539
#2	-.00110	.00049	.00325	.00556
#3	-.00131	.00051	.00311	.00239

Approved: June 25, 2016

Sample Name: S1 Acquired: 6/24/2016 10:06:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10065.**	**62767.**	**3441.4**
Stddev	30.	97.	22.9
%RSD	.29930	.15510	.66663
#1	10069.	62771.	3417.8
#2	10093.	62861.	3463.7
#3	10033.	62667.	3442.7

Approved: June 25, 2016

Sample Name: S2 Acquired: 6/24/2016 10:10:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00021	.00215	.00010	.00026	.04762	.00116	.00837
Stddev	.00002	.00007	.00007	.00004	.00057	.00005	.00106
%RSD	8.9724	3.4344	65.774	15.619	1.1893	4.2144	12.640
#1	.00023	.00213	.00004	.00025	.04721	.00122	.00897
#2	.00020	.00223	.00018	.00022	.04739	.00114	.00715
#3	.00021	.00209	.00009	.00031	.04827	.00113	.00899

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00040	.00105	.00069	.00083	.00116	.03965	.01598
Stddev	.00005	.00003	.00003	.00008	.00031	.00217	.00181
%RSD	12.890	2.9404	4.0733	9.8734	26.550	5.4632	11.347
#1	.00035	.00103	.00067	.00092	.00083	.03746	.01389
#2	.00040	.00103	.00072	.00079	.00144	.03971	.01716
#3	.00045	.00108	.00068	.00077	.00121	.04179	.01688

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00083	.00238	.00276	.09724	.00041	.00174	-.00009
Stddev	.00012	.00062	.00011	.00164	.00010	.00006	.00030
%RSD	14.311	26.076	3.9026	1.6822	25.278	3.1866	350.41
#1	.00094	.00257	.00281	.09776	.00035	.00177	-.00007
#2	.00070	.00169	.00283	.09541	.00036	.00177	.00021
#3	.00086	.00289	.00264	.09856	.00053	.00168	-.00039

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00052	-.00010	.00385	.00103	.05810	-.00053	-.00015
Stddev	.00006	.00007	.00008	.00003	.00070	.00022	.00003
%RSD	12.430	68.938	2.1687	3.1112	1.2101	41.302	21.567
#1	.00055	-.00017	.00394	.00106	.05859	-.00045	-.00014
#2	.00056	-.00003	.00384	.00103	.05729	-.00036	-.00018
#3	.00045	-.00011	.00378	.00100	.05842	-.00077	-.00012

Approved: June 25, 2016

Sample Name: S2 Acquired: 6/24/2016 10:10:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00100	.00632	.02594
Stddev	.00007	.00019	.00102
%RSD	6.6145	2.9709	3.9200
#1	.00097	.00638	.02711
#2	.00108	.00648	.02521
#3	.00096	.00611	.02551

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10036.	62714.	3425.0
Stddev	5.	277.	24.9
%RSD	.04560	.44190	.72564
#1	10035.	62498.	3405.6
#2	10031.	62619.	3453.0
#3	10040.	63027.	3416.3

Approved: June 25, 2016

Sample Name: S3 Acquired: 6/24/2016 10:14:05 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02012**	**.08112**	**.00937**	**.01100**	**2.1577**	**.04667**	**.45680**	**.03089**
Stddev	.00014	.00067	.00024	.00003	.0127	.00048	.00088	.00088
%RSD	.68506	.82535	2.5122	.26795	.58663	1.0260	.19280	2.8481
#1	.02016	.08148	.00911	.01102	2.1723	.04686	.45715	.02988
#2	.02024	.08154	.00955	.01102	2.1508	.04702	.45579	.03151
#3	.01997	.08035	.00946	.01097	2.1500	.04612	.45745	.03127

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06952**	**.02847**	**.06168**	**.08857**	**3.0711**	**1.5176**	**.08149**	**.14484**
Stddev	.00185	.00019	.00161	.00089	.0148	.0183	.00050	.00149
%RSD	2.6617	.68366	2.6084	1.0060	.48208	1.2061	.60781	1.0306
#1	.06739	.02860	.05982	.08958	3.0854	1.5375	.08112	.14654
#2	.07070	.02858	.06252	.08789	3.0720	1.5016	.08130	.14374
#3	.07047	.02825	.06269	.08824	3.0558	1.5136	.08205	.14425

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.18057**	**8.4539**	**.06503**	**.12666**	**.02949**	**.03516**	**.00655**	**.20419**
Stddev	.00413	.0477	.00183	.00333	.00086	.00099	.00019	.00532
%RSD	2.2896	.56431	2.8080	2.6258	2.9031	2.8239	2.8275	2.6074
#1	.17586	8.5022	.06294	.12282	.02853	.03401	.00634	.19804
#2	.18358	8.4528	.06629	.12868	.02978	.03578	.00666	.20727
#3	.18229	8.4068	.06587	.12849	.03017	.03568	.00667	.20725

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06764**	**3.6392**	**.12025**	**.01285**	**.06639**	**.39780**	**2.8658**
Stddev	.00187	.0221	.00095	.00032	.00069	.00999	.0226
%RSD	2.7649	.60748	.79359	2.4638	1.0447	2.5111	.78950
#1	.06551	3.6628	.12131	.01249	.06673	.38631	2.8817
#2	.06902	3.6359	.11996	.01298	.06685	.40437	2.8758
#3	.06839	3.6189	.11946	.01308	.06559	.40274	2.8399

Approved: June 25, 2016

Sample Name: S3 Acquired: 6/24/2016 10:14:05 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9803.5	60605.	3302.4
Stddev	185.3	628.	25.0
%RSD	1.8907	1.0370	.75704
#1	10017.	60237.	3292.4
#2	9686.1	60248.	3283.9
#3	9707.3	61331.	3330.8

Approved: June 25, 2016

Sample Name: S4 Acquired: 6/24/2016 10:17:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04037	.15882	.01874	.02204	4.1509	.09188	.88125	.06147
Stddev	.00017	.00011	.00011	.00010	.0087	.00023	.00269	.00039
%RSD	.41570	.06765	.58871	.45251	.20975	.25568	.30549	.62850
#1	.04024	.15875	.01878	.02202	4.1571	.09190	.88218	.06177
#2	.04056	.15877	.01882	.02215	4.1547	.09211	.88335	.06161
#3	.04031	.15895	.01861	.02196	4.1410	.09164	.87821	.06104

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13710	.05562	.12100	.17176	5.9519	2.9563	.15745	.27789
Stddev	.00070	.00009	.00059	.00098	.0096	.0021	.00153	.00068
%RSD	.50874	.16610	.48875	.57160	.16058	.07181	.96992	.24355
#1	.13749	.05558	.12123	.17129	5.9624	2.9588	.15599	.27711
#2	.13751	.05557	.12144	.17289	5.9495	2.9553	.15904	.27832
#3	.13629	.05573	.12033	.17109	5.9438	2.9549	.15733	.27824

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.35800	16.431	.12763	.25198	.05815	.07137	.01334	.38448
Stddev	.00153	.049	.00061	.00022	.00023	.00008	.00003	.00032
%RSD	.42830	.29740	.47754	.08776	.39302	.10858	.22101	.08296
#1	.35959	16.449	.12796	.25213	.05792	.07142	.01337	.38462
#2	.35789	16.469	.12801	.25208	.05838	.07141	.01335	.38412
#3	.35653	16.376	.12693	.25172	.05815	.07128	.01331	.38471

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13295	7.0149	.23633	.02503	.13104	.77753	5.5495
Stddev	.00033	.0145	.00010	.00014	.00013	.00089	.0276
%RSD	.24509	.20672	.04320	.55584	.09686	.11476	.49668
#1	.13312	7.0177	.23635	.02504	.13089	.77820	5.5811
#2	.13314	7.0278	.23621	.02517	.13109	.77787	5.5303
#3	.13257	6.9992	.23641	.02489	.13113	.77652	5.5370

Approved: June 25, 2016

Sample Name: S4 Acquired: 6/24/2016 10:17:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9688.2**	**60219.**	**3370.4**
Stddev	7.1	189.	23.3
%RSD	.07324	.31409	.69082
#1	9691.6	60213.	3345.2
#2	9693.0	60033.	3375.0
#3	9680.0	60411.	3391.1

Approved: June 25, 2016

Sample Name: ICV Acquired: 6/24/2016 10:21:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39846**	**10.055**	**.40187**	**.50195**	**1.0043**	**.04994**	**9.9690**	**.05093**
Stddev	.00107	.004	.00071	.00352	.0049	.00015	.0985	.00023
%RSD	.26882	.04093	.17558	.70141	.48280	.30027	.98769	.44509
#1	.39801	10.053	.40263	.49813	1.0045	.04992	9.9634	.05069
#2	.39768	10.052	.40124	.50265	1.0091	.04980	10.070	.05113
#3	.39968	10.059	.40172	.50506	.99939	.05010	9.8735	.05098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20275**	**.50186**	**.50806**	**4.0077**	**50.412**	**.99409**	**10.076**	**.50349**
Stddev	.00040	.00174	.00074	.0287	.156	.00370	.047	.00310
%RSD	.19601	.34705	.14641	.71708	.31025	.37246	.46653	.61637
#1	.20246	.50009	.50763	4.0406	50.449	.99815	10.023	.50004
#2	.20321	.50191	.50892	3.9950	50.546	.99323	10.093	.50606
#3	.20259	.50357	.50763	3.9874	50.240	.99090	10.113	.50436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0161**	**50.208**	**.50900**	**10.102**	**.50737**	**1.1976**	**.40954**	**5.2491**
Stddev	.0035	.189	.00106	.014	.00059	.0046	.00351	.0132
%RSD	.34222	.37709	.20816	.13865	.11567	.38093	.85796	.25182
#1	1.0181	50.185	.50781	10.089	.50756	1.1956	.40737	5.2341
#2	1.0182	50.408	.50932	10.117	.50784	1.2028	.40767	5.2590
#3	1.0121	50.031	.50986	10.099	.50671	1.1944	.41360	5.2542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: ICV Acquired: 6/24/2016 10:21:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0142**	**1.0055**	**1.0016**	**.51308**	**1.0042**	**1.0176**	**1.0099**
Stddev	.0008	.0052	.0045	.00359	.0054	.0023	.0053
%RSD	.07353	.51381	.45332	.69940	.53899	.22236	.52327
#1	1.0146	1.0049	1.0056	.51163	1.0037	1.0169	1.0108
#2	1.0147	1.0110	.99666	.51043	.99912	1.0202	1.0042
#3	1.0134	1.0007	1.0027	.51716	1.0099	1.0158	1.0147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9784.6**	**61155.**	**3360.6**
Stddev	16.4	126.	16.3
%RSD	.16756	.20531	.48534
#1	9800.9	61010.	3348.1
#2	9785.0	61229.	3379.0
#3	9768.1	61226.	3354.6

Approved: June 25, 2016

Sample Name: ICB Acquired: 6/24/2016 10:24:44 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00039	.00064	.00491	.00035	-.00004	.01970	-.00008
Stddev	.00118	.00395	.00185	.00079	.00095	.00004	.02171	.00007
%RSD	1355.8	1016.1	287.94	16.133	270.92	92.692	110.19	83.262
#1	.00054	-.00464	.00266	.00474	.00126	-.00001	.02755	-.00005
#2	-.00125	.00030	-.00097	.00577	-.00064	-.00002	.03640	-.00016
#3	.00097	.00318	.00023	.00421	.00044	-.00008	-.00484	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00131	-.00137	.02320	.06358	-.00066	.03856	-.00312
Stddev	.00017	.00055	.00043	.00941	.08768	.00266	.00747	.00261
%RSD	51.480	41.866	31.575	40.581	137.91	406.13	19.360	83.590
#1	-.00049	.00166	-.00107	.01306	.06334	-.00147	.03003	-.00355
#2	-.00033	.00160	-.00186	.03167	.15137	-.00281	.04179	-.00549
#3	-.00015	.00068	-.00116	.02486	-.02399	.00232	.04387	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00441	.05025	.00065	-.00381	-.00087	.00778	.00520	.00608
Stddev	.00033	.01048	.00078	.00461	.00397	.00208	.00680	.00201
%RSD	7.4861	20.853	119.99	121.10	458.20	26.759	130.76	33.156
#1	.00405	.05291	.00003	-.00874	-.00277	.00736	.00296	.00721
#2	.00448	.03870	.00040	.00039	.00370	.01003	-.00020	.00727
#3	.00470	.05914	.00153	-.00306	-.00353	.00593	.01285	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: ICB Acquired: 6/24/2016 10:24:44 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00012**	**.00094**	**.00181**	**-.00101**	**.00060**	**.00145**
Stddev	.00042	.00009	.00041	.00207	.00005	.00020	.00038
%RSD	513.90	78.925	43.774	114.17	4.9873	33.766	26.340
#1	.00040	.00003	.00072	-.00054	-.00105	.00057	.00107
#2	-.00028	.00022	.00068	.00334	-.00102	.00042	.00183
#3	-.00036	.00011	.00141	.00262	-.00096	.00082	.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9828.6**	**62200.**	**3394.8**
Stddev	28.2	217.	16.2
%RSD	.28655	.34911	.47848
#1	9855.6	62450.	3410.7
#2	9830.8	62058.	3378.2
#3	9799.4	62092.	3395.6

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:28:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00861	.17456	.00875	.08415	.00845	.00162	.42018	.00080
Stddev	.00241	.00320	.00584	.00044	.00062	.00010	.04537	.00016
%RSD	28.028	1.8340	66.707	.52598	7.3619	6.0745	10.799	19.768
#1	.00915	.17680	.01356	.08464	.00808	.00156	.43983	.00091
#2	.00598	.17599	.00226	.08403	.00809	.00173	.36829	.00086
#3	.01071	.17089	.01043	.08378	.00916	.00156	.45241	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00400	.00560	.00345	.08548	.95350	.08105	.43655	.00707
Stddev	.00008	.00034	.00088	.01230	.04581	.00390	.09350	.00382
%RSD	2.0075	6.1076	25.604	14.389	4.8041	4.8127	21.418	54.018
#1	.00403	.00571	.00253	.09530	.99396	.07722	.34739	.00473
#2	.00391	.00522	.00353	.07168	.96278	.08091	.42840	.01148
#3	.00406	.00588	.00429	.08946	.90376	.08502	.53386	.00500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00937	.44836	.01641	.81013	.00755	.08949	.01796	.80576
Stddev	.00033	.00782	.00043	.01533	.00353	.00603	.00226	.00882
%RSD	3.5349	1.7431	2.6293	1.8922	46.785	6.7340	12.603	1.0947
#1	.00911	.45731	.01596	.82200	.00588	.09248	.01611	.81287
#2	.00974	.44487	.01647	.81558	.01161	.09343	.02049	.80853
#3	.00925	.44289	.01682	.79283	.00517	.08255	.01729	.79589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:28:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41092**	**.04172**	**.02043**	**.15548**	**.00810**	**.01698**	**.04605**
Stddev	.00936	.00016	.00448	.00254	.00066	.00050	.00187
%RSD	2.2770	.37475	21.916	1.6360	8.1067	2.9288	4.0649
#1	.41622	.04190	.02523	.15718	.00756	.01728	.04465
#2	.41644	.04163	.01969	.15671	.00791	.01725	.04533
#3	.40012	.04164	.01637	.15256	.00883	.01640	.04818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9545.8**	**59931.**	**3275.5**
Stddev	15.6	83.	34.7
%RSD	.16333	.13820	1.0584
#1	9534.4	59838.	3252.2
#2	9539.4	59961.	3315.3
#3	9563.5	59995.	3258.9

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:32:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02155	.40824	.02077	.20167	.02174	.00400	1.0366	.00202
Stddev	.00054	.00443	.00281	.00124	.00028	.00001	.0243	.00009
%RSD	2.5225	1.0863	13.516	.61328	1.2824	.22063	2.3424	4.3173
#1	.02133	.41154	.02394	.20052	.02183	.00399	1.0194	.00205
#2	.02115	.40999	.01859	.20150	.02142	.00401	1.0644	.00192
#3	.02216	.40320	.01978	.20298	.02196	.00400	1.0260	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00994	.01113	.01102	.16765	2.1953	.20551	1.0506	.01921
Stddev	.00018	.00047	.00052	.00874	.0565	.00363	.0388	.00199
%RSD	1.8457	4.1791	4.7625	5.2113	2.5738	1.7653	3.6929	10.372
#1	.01014	.01147	.01043	.15847	2.1428	.20211	1.0170	.02151
#2	.00990	.01060	.01123	.17586	2.2551	.20509	1.0931	.01818
#3	.00978	.01132	.01141	.16862	2.1879	.20933	1.0419	.01794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02056	1.0699	.04161	2.0283	.02093	.22105	.04598	1.9872
Stddev	.00073	.0134	.00029	.0213	.00141	.00521	.00230	.0146
%RSD	3.5426	1.2493	.69643	1.0505	6.7264	2.3551	5.0056	.73437
#1	.02134	1.0745	.04129	2.0517	.02096	.22638	.04821	1.9992
#2	.02046	1.0548	.04165	2.0232	.01951	.21598	.04361	1.9913
#3	.01989	1.0803	.04187	2.0101	.02232	.22080	.04611	1.9709
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:32:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0190**	**.10349**	**.06088**	**.38102**	**.01945**	**.04193**	**.10461**
Stddev	.0194	.00012	.00319	.00475	.00050	.00058	.00065
%RSD	1.9018	.11797	5.2343	1.2466	2.5499	1.3820	.62471
#1	1.0324	.10361	.06403	.38543	.01945	.04208	.10441
#2	1.0279	.10348	.06095	.38164	.01995	.04242	.10534
#3	.99680	.10337	.05766	.37599	.01896	.04129	.10408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9527.9**	**60013.**	**3283.4**
Stddev	15.1	148.	21.9
%RSD	.15821	.24736	.66596
#1	9513.0	59863.	3269.8
#2	9527.6	60160.	3271.8
#3	9543.1	60017.	3308.6

Approved: June 25, 2016

Sample Name: ICSA Acquired: 6/24/2016 10:36:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	272.29	-.00639	.01187	.00097	-.00004	255.70	-.00011
Stddev	.00186	.14	.00204	.00102	.00103	.00005	.88	.00012
%RSD	388.65	.05142	31.923	8.6029	106.35	111.27	.34460	113.29
#1	-.00160	272.44	-.00702	.01157	.00211	-.00001	256.63	-.00021
#2	.00199	272.24	-.00411	.01301	.00068	-.00002	255.62	.00003
#3	.00104	272.17	-.00804	.01104	.00011	-.00009	254.87	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00172	.00015	-.00116	101.53	.09300	.00567	259.96	-.00382
Stddev	.00042	.00130	.00167	.28	.03409	.00366	.64	.00294
%RSD	24.472	881.01	143.42	.27829	36.657	64.638	.24529	76.986
#1	-.00152	-.00007	-.00240	101.84	.05558	.00951	260.50	-.00473
#2	-.00143	-.00103	.00073	101.29	.10113	.00529	260.13	-.00620
#3	-.00220	.00155	-.00182	101.47	.12229	.00221	259.26	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.03878	-.00045	.04376	.00245	-.00458	.00445	.01844
Stddev	.00046	.04600	.00064	.01101	.00539	.00310	.00348	.00549
%RSD	287.16	118.61	140.72	25.160	220.05	67.775	78.148	29.762
#1	.00025	.00054	.00028	.04277	.00150	-.00104	.00050	.01603
#2	-.00065	.08983	-.00075	.03327	.00825	-.00682	.00580	.01457
#3	-.00008	.02597	-.00089	.05522	-.00240	-.00589	.00705	.02472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: ICSA Acquired: 6/24/2016 10:36:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00019	-.01134	-.00093	-.00397	-.00488	.00384
Stddev	.00032	.00049	.00588	.00258	.00006	.00039	.00038
%RSD	95.122	259.22	51.833	278.90	1.5390	7.9827	9.8011
#1	.00019	.00071	-.01724	.00196	-.00401	-.00532	.00366
#2	.00071	-.00024	-.00549	-.00301	-.00400	-.00461	.00427
#3	.00012	.00009	-.01128	-.00172	-.00390	-.00469	.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8869.1	55471.	3153.2
Stddev	26.5	151.	18.0
%RSD	.29867	.27155	.57209
#1	8897.8	55567.	3139.7
#2	8845.6	55550.	3146.3
#3	8864.0	55298.	3173.7

Approved: June 25, 2016

Sample Name: ICSAB Acquired: 6/24/2016 10:40:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52801	273.86	.25914	.01325	.26102	.24578	255.40	.50739
Stddev	.00250	.16	.00666	.00063	.00070	.00039	.53	.00146
%RSD	.47355	.05748	2.5695	4.7909	.26706	.16053	.20826	.28726
#1	.52830	274.03	.26069	.01398	.26152	.24535	255.50	.50785
#2	.52537	273.71	.26489	.01290	.26131	.24586	254.82	.50857
#3	.53035	273.85	.25184	.01286	.26022	.24613	255.87	.50576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.24727	.25565	.25562	99.861	5.4779	.00519	256.26	.25260
Stddev	.00097	.00095	.00265	.277	.0348	.00184	.86	.00168
%RSD	.39106	.37321	1.0376	.27690	.63446	35.421	.33443	.66352
#1	.24802	.25466	.25814	99.853	5.4700	.00385	255.90	.25222
#2	.24762	.25656	.25586	99.588	5.5160	.00443	255.64	.25443
#3	.24618	.25572	.25285	100.14	5.4478	.00728	257.24	.25115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	5.5858	.49274	.02117	.50583	.50989	.26678	.01309
Stddev	.00050	.0197	.00095	.01408	.00041	.00290	.00610	.00127
%RSD	250.13	.35306	.19217	66.536	.08120	.56902	2.2850	9.6691
#1	.00037	5.6063	.49240	.00688	.50630	.51290	.26722	.01358
#2	-.00039	5.5669	.49381	.02158	.50553	.50963	.27265	.01404
#3	-.00058	5.5841	.49200	.03503	.50566	.50712	.26048	.01165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: ICSAB Acquired: 6/24/2016 10:40:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00171**	**.00067**	**-.01040**	**.47266**	**.25528**	**.50449**	**.00315**
Stddev	.00100	.00032	.00325	.00524	.00094	.00232	.00022
%RSD	58.680	47.423	31.248	1.1093	.36860	.45903	6.9061
#1	.00125	.00096	-.01186	.47276	.25634	.50607	.00293
#2	.00102	.00072	-.01267	.47786	.25494	.50556	.00318
#3	.00286	.00033	-.00668	.46737	.25455	.50183	.00336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8976.9**	**56220.**	**3187.5**
Stddev	14.0	172.	27.3
%RSD	.15560	.30511	.85579
#1	8966.6	56386.	3171.0
#2	8992.8	56232.	3219.0
#3	8971.4	56043.	3172.5

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 10:44:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40510**	**10.227**	**.40997**	**.50470**	**1.0199**	**.05000**	**10.224**	**.05209**
Stddev	.00259	.020	.00313	.00376	.0032	.00018	.050	.00003
%RSD	.63884	.19087	.76260	.74531	.31908	.36523	.48810	.05352
#1	.40303	10.211	.40694	.50216	1.0162	.04979	10.170	.05206
#2	.40800	10.220	.40978	.50293	1.0222	.05008	10.235	.05212
#3	.40426	10.248	.41318	.50902	1.0213	.05013	10.268	.05208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20659**	**.50266**	**.51958**	**4.0815**	**51.148**	**1.0118**	**10.141**	**.51100**
Stddev	.00025	.00146	.00022	.0426	.163	.0071	.045	.00204
%RSD	.12249	.29059	.04172	1.0445	.31821	.70440	.43990	.39976
#1	.20659	.50117	.51956	4.0379	50.961	1.0054	10.140	.50966
#2	.20684	.50409	.51937	4.1230	51.259	1.0106	10.186	.51335
#3	.20634	.50270	.51980	4.0835	51.225	1.0195	10.097	.50999
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0360**	**50.833**	**.51458**	**10.241**	**.51207**	**1.2224**	**.40899**	**5.3321**
Stddev	.0063	.180	.00026	.014	.00288	.0026	.00371	.0135
%RSD	.60708	.35445	.05040	.13553	.56209	.21445	.90595	.25328
#1	1.0403	50.639	.51460	10.242	.51048	1.2194	.41231	5.3186
#2	1.0389	50.864	.51483	10.254	.51034	1.2245	.40499	5.3456
#3	1.0288	50.996	.51431	10.227	.51539	1.2232	.40965	5.3320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 10:44:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0297**	**1.0232**	**1.0245**	**.52009**	**1.0074**	**1.0340**	**1.0135**
Stddev	.0029	.0039	.0041	.00364	.0035	.0016	.0058
%RSD	.27812	.38337	.40197	.69967	.34932	.15074	.57645
#1	1.0298	1.0187	1.0198	.51637	1.0034	1.0332	1.0152
#2	1.0325	1.0257	1.0262	.52364	1.0085	1.0358	1.0070
#3	1.0267	1.0252	1.0274	.52025	1.0102	1.0330	1.0183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9522.9**	**60073.**	**3307.5**
Stddev	11.7	184.	13.2
%RSD	.12286	.30629	.39835
#1	9509.8	60132.	3293.3
#2	9526.4	59867.	3319.3
#3	9532.4	60221.	3310.0

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 10:47:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	-.00231	.00174	.00317	.00089	.00008	.01478	-.00009
Stddev	.00098	.00197	.00138	.00099	.00051	.00008	.01897	.00016
%RSD	1615.6	85.585	79.150	31.308	57.430	97.913	128.33	176.75
#1	.00074	-.00458	.00332	.00208	.00145	.00015	-.00627	-.00026
#2	.00050	-.00127	.00081	.00403	.00044	.00008	.02007	-.00007
#3	-.00106	-.00107	.00109	.00339	.00079	.00000	.03055	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.00201	-.00144	.01198	.09764	.00160	-.01376	-.00139
Stddev	.00007	.00062	.00140	.00633	.05541	.00323	.09391	.00206
%RSD	9.5195	30.966	97.276	52.810	56.748	201.98	682.68	147.81
#1	-.00064	.00243	-.00111	.01172	.03926	.00278	.06859	-.00281
#2	-.00066	.00129	-.00023	.00579	.14949	-.00205	-.11603	-.00233
#3	-.00076	.00231	-.00297	.01844	.10416	.00406	.00617	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	.05554	.00020	-.00275	-.00017	.00433	.00267	.00326
Stddev	.00008	.01502	.00042	.00646	.00019	.00156	.00847	.00120
%RSD	2.3629	27.048	205.82	234.70	111.96	35.900	317.53	36.710
#1	.00322	.04802	.00003	.00456	-.00027	.00254	.00057	.00458
#2	.00336	.07283	-.00010	-.00514	.00005	.00529	.01198	.00225
#3	.00323	.04576	.00069	-.00769	-.00029	.00517	-.00456	.00295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 10:47:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00050**	**-.00470**	**-.00050**	**-.00052**	**.00020**	**.00116**
Stddev	.00046	.00047	.00508	.00198	.00127	.00011	.00086
%RSD	806.59	93.281	108.17	398.14	242.75	53.066	73.939
#1	.00001	.00104	-.00897	.00149	-.00184	.00011	.00135
#2	.00036	.00017	-.00606	-.00052	-.00043	.00032	.00022
#3	-.00055	.00030	.00092	-.00246	.00070	.00017	.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9455.5**	**60247.**	**3262.6**
Stddev	21.9	389.	18.3
%RSD	.23119	.64505	.56229
#1	9449.8	59825.	3242.4
#2	9479.6	60328.	3267.4
#3	9437.0	60589.	3278.1

Approved: June 25, 2016

Sample Name: PBS DH Acquired: 6/24/2016 10:51:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.06424	.00963	.02920	.00211	-.00012	.91755	.00095
Stddev	.00146	.00403	.00255	.00180	.00069	.00002	.02625	.00023
%RSD	154.86	6.2780	26.453	6.1638	32.462	16.135	2.8607	24.438
#1	.00027	.06611	.00687	.03111	.00143	-.00014	.93724	.00119
#2	.00262	.05961	.01011	.02753	.00212	-.00010	.92766	.00096
#3	-.00006	.06700	.01190	.02897	.00280	-.00012	.88775	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.00196	.02606	.05611	.86754	-.00266	2.2157	.00096
Stddev	.00046	.00074	.00067	.01940	.03735	.00126	.0698	.00076
%RSD	132.65	37.622	2.5777	34.579	4.3057	47.393	3.1523	79.295
#1	-.00064	.00148	.02576	.06271	.88691	-.00288	2.1420	.00166
#2	.00018	.00281	.02683	.07136	.89123	-.00379	2.2810	.00015
#3	-.00057	.00159	.02558	.03427	.82448	-.00130	2.2241	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00347	1.2358	.00309	.40462	.00290	.01813	.08932	.52615
Stddev	.00027	.0193	.00147	.02012	.00064	.00254	.00325	.01166
%RSD	7.8234	1.5654	47.492	4.9731	22.045	14.035	3.6331	2.2168
#1	.00357	1.2508	.00188	.42577	.00296	.01803	.09153	.53855
#2	.00367	1.2140	.00472	.40239	.00223	.02071	.09083	.52450
#3	.00316	1.2428	.00266	.38571	.00351	.01563	.08560	.51539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBS DH Acquired: 6/24/2016 10:51:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01154	.00411	.00342	-.03779	-.00138	1.3066	.00905
Stddev	.00028	.00050	.00647	.00170	.00059	.0332	.00154
%RSD	2.4661	12.170	189.43	4.4933	42.724	2.5423	17.055
#1	.01162	.00444	.00927	-.03729	-.00161	1.3427	.00767
#2	.01122	.00436	-.00353	-.03639	-.00071	1.2998	.00877
#3	.01177	.00354	.00451	-.03968	-.00182	1.2773	.01072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9550.6	62753.	3709.8
Stddev	143.7	354.	18.2
%RSD	1.5048	.56355	.49089
#1	9384.7	62418.	3722.3
#2	9637.3	62720.	3688.9
#3	9629.7	63122.	3718.1

Approved: June 25, 2016

Sample Name: LCSS DH Acquired: 6/24/2016 10:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18247**	**4.5986**	**.19429**	**.89801**	**.50201**	**.02364**	**6.0280**	**.02381**
Stddev	.00498	.0862	.00294	.01488	.00719	.00048	.0822	.00026
%RSD	2.7299	1.8745	1.5140	1.6566	1.4323	2.0299	1.3633	1.0767
#1	.18767	4.6908	.19687	.91506	.49496	.02417	5.9363	.02410
#2	.18199	4.5849	.19109	.89128	.50174	.02351	6.0524	.02372
#3	.17774	4.5200	.19490	.88769	.50933	.02323	6.0952	.02362
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09575**	**.24396**	**.26604**	**2.0685**	**25.217**	**.49155**	**7.2727**	**.24507**
Stddev	.00128	.00454	.00424	.0072	.406	.00739	.2108	.00531
%RSD	1.3405	1.8602	1.5932	.34707	1.6111	1.5036	2.8983	2.1657
#1	.09698	.24884	.27087	2.0602	24.814	.48835	7.0584	.24165
#2	.09442	.24317	.26294	2.0726	25.211	.48631	7.2799	.24237
#3	.09586	.23987	.26432	2.0727	25.626	.50001	7.4798	.25118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49901**	**25.673**	**.23896**	**5.1500**	**.23582**	**.55555**	**.23212**	**3.3580**
Stddev	.00666	.317	.00299	.0593	.00138	.00716	.00897	.0420
%RSD	1.3352	1.2341	1.2511	1.1512	.58344	1.2890	3.8646	1.2518
#1	.50607	25.359	.24230	5.2165	.23738	.56336	.24189	3.4044
#2	.49283	25.668	.23655	5.1025	.23531	.54930	.22426	3.3223
#3	.49814	25.992	.23802	5.1310	.23477	.55398	.23021	3.3474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSS DH Acquired: 6/24/2016 10:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47087**	**.50955**	**.50009**	**.22590**	**.48434**	**2.0632**	**.00627**
Stddev	.00683	.00732	.00690	.00326	.01049	.0277	.00044
%RSD	1.4508	1.4356	1.3790	1.4427	2.1662	1.3435	7.0255
#1	.47818	.50245	.49214	.22809	.49569	2.0928	.00585
#2	.46464	.50912	.50437	.22215	.48231	2.0378	.00625
#3	.46981	.51706	.50378	.22746	.47500	2.0590	.00673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9997.3**	**62835.**	**3576.8**
Stddev	90.8	1056.	48.3
%RSD	.90842	1.6801	1.3504
#1	9896.1	61710.	3631.4
#2	10072.	62993.	3559.4
#3	10024.	63803.	3539.7

Approved: June 25, 2016

Sample Name: LCSS DP Acquired: 6/24/2016 11:02:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.17820**	**4.3366**	**.22875**	**.90184**	**.50529**	**.02446**	**5.8810**	**.02577**
Stddev	.00193	.0746	.01418	.01394	.01186	.00029	.1832	.00151
%RSD	1.0838	1.7190	6.1991	1.5457	2.3469	1.1886	3.1144	5.8704
#1	.17769	4.3180	.24506	.90296	.49226	.02426	5.6858	.02746
#2	.17657	4.2731	.22184	.88737	.51544	.02431	6.0491	.02530
#3	.18033	4.4187	.21935	.91519	.50818	.02479	5.9081	.02455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10444**	**.24563**	**.28336**	**1.9956**	**24.666**	**.49175**	**7.0829**	**.24263**
Stddev	.00645	.00190	.01874	.0724	.577	.01385	.2327	.00720
%RSD	6.1730	.77249	6.6147	3.6300	2.3398	2.8160	3.2852	2.9669
#1	.11189	.24455	.30494	1.9215	24.049	.47780	6.8155	.23468
#2	.10090	.24453	.27395	2.0663	25.192	.50549	7.1939	.24871
#3	.10054	.24782	.27118	1.9991	24.758	.49196	7.2394	.24449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55730**	**25.233**	**.26065**	**5.6927**	**.24891**	**.61155**	**.33091**	**3.1863**
Stddev	.03375	.569	.01436	.3577	.01270	.03374	.01816	.1852
%RSD	6.0554	2.2563	5.5090	6.2841	5.1039	5.5171	5.4865	5.8116
#1	.59622	24.626	.27718	6.1055	.26343	.65012	.35188	3.3998
#2	.53962	25.755	.25355	5.4986	.23984	.59708	.32033	3.0888
#3	.53608	25.317	.25122	5.4739	.24345	.58746	.32053	3.0702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSS DP Acquired: 6/24/2016 11:02:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51198**	**.51153**	**.50880**	**.21284**	**.49128**	**2.1277**	**.00181**
Stddev	.03023	.01298	.01459	.01301	.00684	.1239	.00013
%RSD	5.9037	2.5381	2.8677	6.1112	1.3917	5.8220	7.2522
#1	.54684	.49772	.49512	.22747	.49101	2.2706	.00196
#2	.49599	.52349	.52416	.20844	.48458	2.0612	.00173
#3	.49310	.51336	.50711	.20260	.49825	2.0512	.00173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9072.1**	**62124.**	**3651.9**
Stddev	334.9	431.	66.7
%RSD	3.6913	.69305	1.8269
#1	8685.5	62374.	3723.4
#2	9261.7	62371.	3591.3
#3	9269.2	61627.	3640.9

Approved: June 25, 2016

Sample Name: L1606114301 Acquired: 6/24/2016 11:06:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00340	.63384	.00605	.03311	.02504	-.00013	1.8306	.00360
Stddev	.00146	.01591	.00255	.00247	.00039	.00009	.0364	.00013
%RSD	42.981	2.5096	42.114	7.4636	1.5650	72.615	1.9881	3.6185
#1	.00487	.64708	.00405	.03597	.02496	-.00022	1.8648	.00356
#2	.00194	.61620	.00892	.03168	.02547	-.00004	1.8345	.00375
#3	.00340	.63825	.00519	.03170	.02471	-.00013	1.7924	.00350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.05627	.80386	5.1093	1.0547	.00294	1.5234	.06438
Stddev	.00009	.00071	.01373	.0178	.0718	.00145	.0795	.00165
%RSD	5.5825	1.2566	1.7075	.34819	6.8037	49.424	5.2181	2.5676
#1	.00161	.05677	.81424	5.0951	1.0867	.00418	1.5850	.06354
#2	.00168	.05546	.80905	5.1293	1.1049	.00329	1.5515	.06628
#3	.00150	.05659	.78830	5.1035	.97252	.00134	1.4337	.06332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00632	1.2820	.04272	.30849	.10441	.02066	.07677	.84241
Stddev	.00030	.0102	.00117	.00874	.00199	.00387	.00489	.01140
%RSD	4.8199	.79829	2.7325	2.8327	1.9073	18.733	6.3709	1.3529
#1	.00599	1.2908	.04257	.31674	.10484	.02431	.07533	.85254
#2	.00639	1.2708	.04396	.30939	.10616	.02107	.08222	.84461
#3	.00659	1.2845	.04164	.29933	.10225	.01660	.07276	.83007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114301 Acquired: 6/24/2016 11:06:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01737	.00705	.05358	-.03179	.00265	5.9842	.00421
Stddev	.00159	.00017	.00866	.00194	.00017	.0953	.00010
%RSD	9.1419	2.4404	16.162	6.1073	6.4079	1.5932	2.3093
#1	.01793	.00724	.04586	-.03088	.00248	6.0574	.00413
#2	.01859	.00700	.06294	-.03048	.00266	6.0188	.00432
#3	.01557	.00691	.05193	-.03402	.00282	5.8764	.00418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9433.8	62273.	3673.3
Stddev	13.8	108.	33.0
%RSD	.14593	.17345	.89868
#1	9423.3	62153.	3665.0
#2	9449.4	62303.	3645.2
#3	9428.7	62363.	3709.6

Approved: June 25, 2016

Sample Name: L1606114302 Acquired: 6/24/2016 11:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.70974	.00483	.03211	.03431	-.00008	3.7526	.00880
Stddev	.00086	.00429	.00488	.00269	.00095	.00003	.0801	.00018
%RSD	286.06	.60458	101.04	8.3916	2.7576	37.081	2.1342	2.0709
#1	.00079	.71454	.00872	.03444	.03386	-.00010	3.7049	.00896
#2	.00080	.70628	.00640	.03273	.03367	-.00010	3.7078	.00884
#3	-.00069	.70840	-.00064	.02916	.03539	-.00005	3.8450	.00860
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03006	.01986	.07908	1.9614	1.7476	.00189	1.7739	.07217
Stddev	.00057	.00040	.00176	.0337	.0301	.00072	.0437	.00266
%RSD	1.8855	2.0050	2.2306	1.7184	1.7202	38.094	2.4665	3.6877
#1	.02997	.01958	.08079	1.9631	1.7210	.00189	1.7325	.07238
#2	.03067	.01968	.07918	1.9269	1.7417	.00118	1.8197	.06941
#3	.02955	.02032	.07727	1.9943	1.7802	.00262	1.7695	.07472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	3.1867	.29445	.97828	.08164	.18406	.05191	.60601
Stddev	.00039	.0400	.00282	.02017	.00359	.00750	.00201	.00524
%RSD	25.606	1.2539	.95732	2.0615	4.3941	4.0727	3.8629	.86420
#1	.00122	3.1678	.29637	.99318	.08425	.18826	.05038	.60880
#2	.00138	3.1598	.29576	.98632	.08312	.18852	.05418	.60926
#3	.00195	3.2326	.29122	.95533	.07755	.17541	.05116	.59997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114302 Acquired: 6/24/2016 11:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03851	.01220	.05871	-.02123	.00148	.92404	.00252
Stddev	.00125	.00043	.00052	.00163	.00043	.01192	.00035
%RSD	3.2486	3.5183	.88626	7.6964	29.162	1.2895	13.799
#1	.03869	.01230	.05838	-.02100	.00130	.93196	.00257
#2	.03966	.01173	.05843	-.02297	.00197	.92983	.00284
#3	.03718	.01257	.05931	-.01972	.00117	.91034	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9579.3	62698.	3582.6
Stddev	23.6	409.	31.5
%RSD	.24595	.65242	.88053
#1	9558.8	62230.	3582.4
#2	9574.2	62875.	3614.3
#3	9605.1	62989.	3551.2

Approved: June 25, 2016

Sample Name: L1606114303 Acquired: 6/24/2016 11:14:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	4.8207	.00231	.09925	.06384	-.00014	20.352	.03065
Stddev	.00115	.0169	.00244	.00272	.00062	.00004	.361	.00032
%RSD	57.119	.35023	105.60	2.7419	.97505	30.491	1.7725	1.0317
#1	.00068	4.8310	-.00033	.10036	.06456	-.00017	20.604	.03098
#2	.00273	4.8012	.00278	.09615	.06348	-.00009	19.939	.03063
#3	.00261	4.8299	.00448	.10125	.06347	-.00016	20.514	.03035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00385	.02269	.31038	.72640	3.9876	.00384	1.7996	.03505
Stddev	.00028	.00031	.00455	.03117	.1244	.00103	.0301	.00196
%RSD	7.3418	1.3582	1.4671	4.2904	3.1197	26.784	1.6740	5.6019
#1	.00418	.02300	.31423	.75545	4.1176	.00266	1.8228	.03702
#2	.00370	.02267	.31155	.69348	3.8697	.00453	1.7655	.03503
#3	.00368	.02239	.30535	.73028	3.9755	.00433	1.8103	.03309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	69.304	.01792	.75789	.92900	.21972	.06124	1.0845
Stddev	.00052	1.191	.00091	.01147	.01251	.00309	.00193	.0066
%RSD	36.480	1.7182	5.0997	1.5130	1.3471	1.4069	3.1453	.61193
#1	.00085	70.245	.01893	.76639	.93239	.22277	.05909	1.0852
#2	.00156	67.965	.01715	.76244	.93946	.21982	.06281	1.0908
#3	.00187	69.701	.01768	.74485	.91513	.21659	.06183	1.0776
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114303 Acquired: 6/24/2016 11:14:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.06697**	**.02914**	**.17767**	**-.02618**	**.00084**	**1.1510**	**.00805**
Stddev	.00103	.00029	.00367	.00124	.00100	.0176	.00078
%RSD	1.5441	1.0005	2.0643	4.7450	119.01	1.5335	9.6465
#1	.06805	.02923	.17998	-.02601	.00069	1.1598	.00715
#2	.06687	.02881	.17959	-.02504	.00191	1.1626	.00843
#3	.06599	.02937	.17344	-.02750	-.00008	1.1307	.00856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9381.8**	**61970.**	**3689.1**
Stddev	33.6	321.	57.3
%RSD	.35761	.51747	1.5540
#1	9391.7	61677.	3628.9
#2	9344.4	62313.	3743.0
#3	9409.2	61920.	3695.5

Approved: June 25, 2016

Sample Name: L1606114303PS Acquired: 6/24/2016 11:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574050-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19282**	**9.1030**	**.21930**	**1.0209**	**.57480**	**.02552**	**23.549**	**.05319**
Stddev	.00378	.1224	.00387	.0139	.00847	.00050	.384	.00014
%RSD	1.9610	1.3448	1.7659	1.3603	1.4741	1.9641	1.6292	.25923
#1	.19718	9.2398	.22265	1.0369	.57451	.02610	23.500	.05313
#2	.19085	9.0654	.22018	1.0119	.58342	.02525	23.955	.05335
#3	.19044	9.0038	.21506	1.0138	.56648	.02522	23.192	.05310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10838**	**.27489**	**.53510**	**2.6325**	**28.426**	**.51916**	**6.4335**	**.28113**
Stddev	.00048	.00487	.00271	.0470	.438	.00652	.0658	.00732
%RSD	.44135	1.7702	.50609	1.7864	1.5402	1.2563	1.0234	2.6026
#1	.10883	.28050	.53765	2.6400	28.393	.51849	6.4132	.27737
#2	.10842	.27183	.53540	2.6753	28.879	.52600	6.5071	.28956
#3	.10788	.27234	.53226	2.5822	28.005	.51300	6.3802	.27645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55563**	**88.072**	**.27127**	**5.7330**	**1.0887**	**.80555**	**.28267**	**3.5801**
Stddev	.00233	1.489	.00140	.0340	.0052	.00245	.00476	.0110
%RSD	.41977	1.6902	.51481	.59236	.48130	.30394	1.6852	.30687
#1	.55781	87.868	.27253	5.7647	1.0876	.80600	.27727	3.5781
#2	.55592	89.652	.27153	5.7371	1.0944	.80774	.28448	3.5920
#3	.55317	86.695	.26977	5.6971	1.0841	.80291	.28627	3.5703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114303PS Acquired: 6/24/2016 11:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574050-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55832**	**.55250**	**.68468**	**.22830**	**.51898**	**1.4956**	**.00754**
Stddev	.00108	.00586	.00982	.00156	.00603	.0050	.00034
%RSD	.19343	1.0607	1.4349	.68445	1.1613	.33628	4.5321
#1	.55934	.55124	.67374	.23005	.52593	1.4982	.00780
#2	.55844	.55889	.69276	.22777	.51583	1.4988	.00765
#3	.55719	.54737	.68753	.22706	.51518	1.4898	.00715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9369.0**	**61127.**	**3634.8**
Stddev	22.7	764.	54.2
%RSD	.24213	1.2496	1.4904
#1	9362.2	60252.	3618.8
#2	9350.5	61471.	3590.4
#3	9394.3	61659.	3695.1

Approved: June 25, 2016

Sample Name: L1606114303SDL Acquired: 6/24/2016 11:21:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574050-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	1.0261	.00297	.02318	.01266	-.00007	4.1845	.00623
Stddev	.00123	.0061	.00330	.00327	.00031	.00005	.0503	.00014
%RSD	365.72	.59880	111.06	14.127	2.4185	73.446	1.2012	2.2131
#1	-.00107	1.0196	.00542	.02404	.01302	-.00002	4.1771	.00614
#2	.00083	1.0267	-.00078	.01956	.01249	-.00012	4.1383	.00639
#3	.00124	1.0319	.00428	.02594	.01249	-.00008	4.2380	.00617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00540	.06226	.15898	.95529	-.00007	.39328	.00447
Stddev	.00025	.00082	.00151	.01807	.04331	.00277	.02612	.00106
%RSD	50.129	15.194	2.4288	11.369	4.5341	3914.2	6.6415	23.792
#1	.00077	.00446	.06382	.13919	.97561	-.00233	.38332	.00500
#2	.00037	.00596	.06216	.17463	.98470	.00302	.42292	.00517
#3	.00033	.00577	.06080	.16312	.90555	-.00090	.37361	.00325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	14.368	.00341	.14113	.19112	.04241	.01311	.21447
Stddev	.00015	.033	.00044	.00572	.00278	.00110	.00399	.00347
%RSD	22.588	.22958	12.788	4.0544	1.4560	2.5835	30.424	1.6176
#1	.00054	14.331	.00376	.14763	.19272	.04265	.01583	.21733
#2	.00066	14.378	.00292	.13686	.19273	.04121	.00853	.21548
#3	.00085	14.394	.00355	.13890	.18791	.04336	.01496	.21061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114303SDL Acquired: 6/24/2016 11:21:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574050-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01266	.00566	.03785	-.00383	-.00075	.23612	.00185
Stddev	.00065	.00028	.00383	.00311	.00045	.00453	.00029
%RSD	5.1470	5.0211	10.115	81.132	60.764	1.9188	15.554
#1	.01193	.00542	.03347	-.00556	-.00022	.23954	.00216
#2	.01290	.00558	.03952	-.00024	-.00102	.23784	.00159
#3	.01316	.00597	.04057	-.00569	-.00099	.23098	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10057.	64667.	3566.1
Stddev	24.	239.	18.3
%RSD	.24189	.36921	.51318
#1	10061.	64539.	3548.5
#2	10080.	64942.	3585.1
#3	10031.	64519.	3564.7

Approved: June 25, 2016

Sample Name: L1606072401 Acquired: 6/24/2016 11:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00315	.00035	.10432	.27002	-.00002	19.485	-.00008
Stddev	.00044	.00317	.00249	.00108	.00200	.00009	.116	.00017
%RSD	1758.5	100.57	717.90	1.0354	.74150	535.21	.59419	213.12
#1	.00051	-.00633	.00240	.10390	.26802	.00008	19.352	-.00022
#2	-.00037	.00001	.00106	.10555	.27202	-.00009	19.546	-.00012
#3	-.00006	-.00313	-.00242	.10352	.27001	-.00003	19.558	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.00046	-.00104	.04832	1.6362	.06448	1.9423	.00728
Stddev	.00032	.00099	.00074	.01250	.0309	.00265	.0169	.00214
%RSD	60.154	216.03	70.782	25.871	1.8896	4.1051	.87020	29.355
#1	-.00026	.00125	-.00020	.06077	1.6689	.06381	1.9502	.00486
#2	-.00046	.00077	-.00159	.04843	1.6074	.06740	1.9228	.00808
#3	-.00090	-.00065	-.00133	.03577	1.6323	.06224	1.9537	.00891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	45.826	-.00085	.00269	-.00068	-.00086	.00607	.02783
Stddev	.00032	.230	.00099	.00141	.00111	.00064	.00697	.00182
%RSD	148.51	.50191	116.77	52.456	163.34	74.836	114.77	6.5364
#1	.00042	45.682	-.00200	.00191	-.00152	-.00014	.00291	.02894
#2	-.00016	46.091	-.00033	.00185	-.00108	-.00138	.01406	.02882
#3	.00039	45.704	-.00023	.00433	.00057	-.00105	.00124	.02573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072401 Acquired: 6/24/2016 11:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**3.7849**	**-.00208**	**.00102**	**-.00025**	**.00077**	**.00029**
Stddev	.00032	.0200	.00520	.00060	.00104	.00010	.00043
%RSD	74.660	.52945	249.46	58.995	412.82	12.438	148.48
#1	-.00041	3.7649	.00110	.00076	-.00044	.00066	.00051
#2	-.00012	3.8049	.00073	.00059	.00087	.00082	-.00021
#3	-.00077	3.7849	-.00808	.00171	-.00118	.00083	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9875.5**	**62339.**	**3387.9**
Stddev	19.3	92.	22.4
%RSD	.19558	.14698	.65977
#1	9880.5	62376.	3412.5
#2	9891.8	62234.	3382.5
#3	9854.1	62405.	3368.8

Approved: June 25, 2016

Sample Name: L1606078710 Acquired: 6/24/2016 11:29:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.01245**	**.00093**	**.00672**	**.00888**	**-.00004**	**5.1268**	**-.00003**
Stddev	.00207	.00513	.00062	.00160	.00032	.00006	.0280	.00009
%RSD	1015.8	41.172	67.473	23.880	3.6189	161.49	.54640	338.65
#1	-.00259	.01156	.00060	.00537	.00890	.00003	5.1020	.00003
#2	.00103	.01797	.00053	.00629	.00918	-.00004	5.1212	-.00013
#3	.00095	.00783	.00164	.00850	.00854	-.00010	5.1572	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.00129**	**-.00031**	**.02121**	**.09124**	**.00142**	**1.6609**	**.00016**
Stddev	.00030	.00103	.00028	.02108	.02779	.00443	.0362	.00043
%RSD	83.898	80.266	88.228	99.367	30.455	310.98	2.1784	267.47
#1	-.00002	.00013	-.00000	.02577	.07595	.00096	1.6192	.00066
#2	-.00047	.00163	-.00042	.03964	.12332	.00607	1.6798	-.00009
#3	-.00058	.00211	-.00052	-.00177	.07447	-.00275	1.6837	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.40629**	**-.00019**	**.02344**	**.00142**	**.00036**	**.00428**	**.86102**
Stddev	.00008	.01566	.00070	.00293	.00389	.00131	.00308	.00301
%RSD	282.85	3.8547	375.84	12.494	274.41	367.61	71.795	.35006
#1	-.00005	.39122	-.00061	.02282	-.00202	-.00116	.00142	.85766
#2	.00002	.40516	.00062	.02087	.00564	.00112	.00390	.86349
#3	.00011	.42248	-.00056	.02663	.00064	.00110	.00753	.86190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606078710 Acquired: 6/24/2016 11:29:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.01418	.00262	.00104	-.00029	.00070	.00018
Stddev	.00037	.00086	.00142	.00185	.00024	.00007	.00067
%RSD	43.228	6.0990	54.198	178.45	83.020	9.6277	377.85
#1	-.00122	.01515	.00146	.00231	-.00032	.00062	-.00035
#2	-.00082	.01393	.00221	.00189	-.00003	.00073	.00093
#3	-.00049	.01347	.00421	-.00108	-.00051	.00074	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9908.1	62790.	3396.7
Stddev	24.3	134.	24.8
%RSD	.24489	.21371	.72925
#1	9883.2	62654.	3377.5
#2	9909.3	62793.	3388.0
#3	9931.7	62922.	3424.7

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 11:33:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38810**	**9.7098**	**.39689**	**.47714**	**.99058**	**.04739**	**9.8701**	**.05060**
Stddev	.00283	.0174	.01197	.00133	.00631	.00022	.0513	.00128
%RSD	.72928	.17891	3.0148	.27927	.63726	.46575	.51962	2.5352
#1	.39081	9.7194	.38991	.47646	.98553	.04761	9.8110	.04949
#2	.38516	9.6898	.39005	.47629	.99766	.04716	9.9033	.05031
#3	.38833	9.7203	.41070	.47868	.98855	.04739	9.8959	.05200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20045**	**.47745**	**.50304**	**3.8652**	**49.851**	**.98139**	**9.6090**	**.49428**
Stddev	.00476	.00182	.01308	.0187	.275	.00271	.1197	.00115
%RSD	2.3737	.38128	2.6009	.48458	.55213	.27645	1.2457	.23357
#1	.19707	.47916	.49332	3.8535	49.648	.97918	9.5187	.49428
#2	.19839	.47554	.49789	3.8554	50.165	.98442	9.7448	.49544
#3	.20589	.47766	.51792	3.8868	49.742	.98056	9.5635	.49313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0051**	**49.395**	**.49829**	**9.9011**	**.49766**	**1.1837**	**.40223**	**5.1765**
Stddev	.0221	.266	.01338	.2380	.01263	.0295	.01301	.1331
%RSD	2.2022	.53859	2.6859	2.4036	2.5373	2.4958	3.2354	2.5717
#1	.99057	49.185	.48864	9.7382	.49052	1.1641	.39764	5.0820
#2	.99416	49.694	.49266	9.7909	.49023	1.1694	.39213	5.1189
#3	1.0306	49.307	.51357	10.174	.51224	1.2177	.41691	5.3288
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 11:33:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99780	.99494	.99460	.50316	.95384	.99778	.96366
Stddev	.02505	.00582	.00941	.01064	.00112	.02481	.00332
%RSD	2.5106	.58510	.94620	2.1156	.11735	2.4862	.34462
#1	.98222	.99006	.98399	.49648	.95510	.98037	.96166
#2	.98449	1.0014	.99788	.49756	.95296	.98679	.96750
#3	1.0267	.99339	1.0019	.51543	.95347	1.0262	.96183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9609.5	61484.	3367.3
Stddev	179.1	149.	17.5
%RSD	1.8637	.24184	.51943
#1	9727.0	61424.	3387.4
#2	9698.3	61653.	3355.3
#3	9403.4	61374.	3359.2

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 11:37:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00172**	**-.00134**	**.00309**	**.00209**	**.00125**	**-.00002**	**-.01440**	**-.00007**
Stddev	.00091	.00614	.00420	.00059	.00035	.00008	.00898	.00028
%RSD	52.779	459.15	136.12	28.437	28.440	502.17	62.405	405.50
#1	-.00077	-.00780	.00268	.00192	.00104	-.00008	-.01028	-.00013
#2	-.00183	-.00062	-.00090	.00275	.00104	-.00004	-.00821	-.00031
#3	-.00257	.00441	.00748	.00160	.00165	.00007	-.02470	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00219**	**-.00096**	**.01429**	**.07201**	**-.00051**	**-.01423**	**-.00338**
Stddev	.00025	.00091	.00116	.02391	.02885	.00127	.05533	.00160
%RSD	42.952	41.583	120.36	167.30	40.061	249.18	388.71	47.289
#1	-.00086	.00313	-.00216	.03857	.05729	-.00120	.01249	-.00407
#2	-.00049	.00132	.00015	-.00924	.05349	.00096	-.07785	-.00452
#3	-.00039	.00212	-.00087	.01355	.10524	-.00129	.02266	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00397**	**.05772**	**.00049**	**.00166**	**.00060**	**.00709**	**.00415**	**.00501**
Stddev	.00025	.00897	.00091	.00777	.00062	.00346	.00064	.00058
%RSD	6.2010	15.535	183.67	469.35	103.11	48.715	15.417	11.538
#1	.00371	.06438	.00022	.00269	-.00009	.00377	.00431	.00485
#2	.00402	.04752	-.00024	.00886	.00078	.01067	.00470	.00452
#3	.00419	.06126	.00151	-.00658	.00112	.00684	.00345	.00565
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 11:37:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00004**	**-.00290**	**-.00180**	**-.00095**	**.00026**	**.00127**
Stddev	.00126	.00040	.00531	.00104	.00030	.00018	.00033
%RSD	720.33	1037.6	182.93	57.739	31.840	69.543	26.201
#1	-.00138	.00030	.00232	-.00292	-.00094	.00041	.00115
#2	-.00028	-.00048	-.00273	-.00162	-.00066	.00030	.00101
#3	.00113	.00007	-.00830	-.00087	-.00126	.00006	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9475.4**	**60828.**	**3302.4**
Stddev	15.9	240.	28.2
%RSD	.16749	.39397	.85256
#1	9486.2	60837.	3325.2
#2	9482.7	61063.	3270.9
#3	9457.1	60584.	3311.0

Approved: June 25, 2016

Sample Name: L1606078718 Acquired: 6/24/2016 11:41:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.12278**	**-.00107**	**.00913**	**.01523**	**.00001**	**5.3107**	**-.00005**
Stddev	.00135	.00087	.00075	.00238	.00045	.00002	.0439	.00007
%RSD	307.59	.71051	70.678	26.118	2.9624	290.46	.82581	147.98
#1	-.00119	.12179	-.00040	.01179	.01472	.00003	5.2601	-.00013
#2	-.00124	.12310	-.00188	.00842	.01537	.00000	5.3382	.00001
#3	.00112	.12344	-.00091	.00718	.01559	-.00001	5.3338	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00156**	**.00001**	**.12761**	**.28289**	**-.00057**	**2.0930**	**.00966**
Stddev	.00025	.00095	.00078	.01136	.02940	.00292	.1311	.00143
%RSD	123.91	60.819	13550.	8.9048	10.391	511.67	6.2613	14.807
#1	.00004	.00136	.00041	.11857	.31451	-.00375	2.2066	.00912
#2	-.00046	.00072	.00051	.14037	.25639	.00005	1.9496	.00858
#3	-.00018	.00259	-.00090	.12389	.27778	.00199	2.1228	.01128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00091**	**.96070**	**.00021**	**.01639**	**.00142**	**.00012**	**.00174**	**.95670**
Stddev	.00022	.02144	.00152	.00378	.00110	.00353	.00315	.00064
%RSD	24.211	2.2317	705.53	23.047	77.668	2852.2	180.36	.06663
#1	.00066	.96380	-.00103	.01922	.00239	-.00367	.00218	.95743
#2	.00108	.98042	.00190	.01784	.00022	.00073	-.00160	.95644
#3	.00099	.93788	-.00022	.01210	.00165	.00331	.00465	.95624
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606078718 Acquired: 6/24/2016 11:41:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.02113	-.00261	.00155	.00015	.00102	.00007
Stddev	.00039	.00013	.00231	.00262	.00009	.00008	.00015
%RSD	3458.6	.60621	88.436	169.06	60.666	7.5915	217.66
#1	-.00027	.02099	-.00355	.00304	.00004	.00110	-.00006
#2	.00044	.02124	.00002	-.00148	.00020	.00094	.00004
#3	-.00021	.02116	-.00429	.00309	.00019	.00102	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9833.8	62560.	3368.7
Stddev	10.6	179.	20.6
%RSD	.10814	.28665	.61199
#1	9837.0	62447.	3366.4
#2	9821.9	62767.	3349.3
#3	9842.4	62467.	3390.3

Approved: June 25, 2016

Sample Name: PBW 76 Acquired: 6/24/2016 11:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00756**	**-.00027**	**.00227**	**.00060**	**.00001**	**.00703**	**.00010**
Stddev	.00134	.00214	.00202	.00255	.00065	.00005	.01557	.00013
%RSD	7726.0	28.331	745.35	112.37	108.24	426.81	221.55	123.75
#1	.00015	.00960	.00041	.00019	.00119	.00007	-.00446	.00001
#2	.00123	.00774	.00132	.00150	-.00010	-.00002	.02475	.00024
#3	-.00144	.00533	-.00255	.00512	.00071	-.00001	.00079	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00074**	**.00189**	**-.00169**	**.00228**	**.02645**	**-.00293**	**.08622**	**-.00171**
Stddev	.00036	.00154	.00145	.01650	.09764	.00154	.04513	.00322
%RSD	48.622	81.673	85.412	724.65	369.14	52.587	52.347	188.75
#1	-.00110	.00346	-.00193	.01977	.12997	-.00130	.13664	-.00066
#2	-.00076	.00182	-.00301	.00009	-.06399	-.00437	.04959	-.00532
#3	-.00037	.00038	-.00014	-.01302	.01337	-.00312	.07244	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**.03990**	**-.00047**	**-.00713**	**-.00416**	**-.00155**	**-.00282**	**.01609**
Stddev	.00011	.02208	.00015	.00734	.00167	.00446	.00425	.00127
%RSD	17.385	55.332	31.359	102.96	40.213	287.62	150.70	7.8845
#1	.00065	.03197	-.00031	-.00456	-.00533	.00097	.00195	.01464
#2	.00055	.02288	-.00051	-.01540	-.00224	.00108	-.00421	.01696
#3	.00078	.06484	-.00059	-.00142	-.00490	-.00670	-.00621	.01668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBW 76 Acquired: 6/24/2016 11:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**-.00012**	**-.00291**	**.00062**	**-.00065**	**.00076**	**.00063**
Stddev	.00117	.00017	.00323	.00163	.00060	.00007	.00005
%RSD	281.50	146.61	111.08	263.50	92.819	8.5570	7.9907
#1	.00066	.00000	-.00316	-.00124	-.00007	.00071	.00069
#2	-.00166	-.00004	-.00601	.00179	-.00127	.00074	.00060
#3	-.00025	-.00031	.00044	.00131	-.00060	.00084	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9158.3**	**58514.**	**3173.6**
Stddev	21.5	54.	54.1
%RSD	.23481	.09167	1.7045
#1	9170.2	58456.	3116.8
#2	9171.2	58527.	3224.6
#3	9133.5	58561.	3179.5

Approved: June 25, 2016

Sample Name: LCSW 76 Acquired: 6/24/2016 11:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19957**	**5.0577**	**.20359**	**.97778**	**.51970**	**.02459**	**5.2560**	**.02583**
Stddev	.00111	.0209	.00144	.00585	.00573	.00009	.0253	.00026
%RSD	.55649	.41409	.70902	.59861	1.1018	.38272	.48154	.99696
#1	.19952	5.0735	.20526	.97949	.51449	.02469	5.2312	.02570
#2	.19848	5.0657	.20267	.98260	.51879	.02457	5.2550	.02613
#3	.20070	5.0340	.20285	.97127	.52583	.02451	5.2818	.02566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10438**	**.25143**	**.25975**	**2.0526**	**25.715**	**.51843**	**5.1244**	**.25887**
Stddev	.00049	.00212	.00051	.0472	.222	.00558	.0767	.00446
%RSD	.46631	.84222	.19672	2.2997	.86399	1.0771	1.4961	1.7214
#1	.10490	.25326	.25929	2.0703	25.495	.51419	5.0400	.25801
#2	.10428	.25193	.25965	1.9991	25.711	.51635	5.1897	.25491
#3	.10394	.24911	.26030	2.0884	25.939	.52476	5.1436	.26370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53107**	**25.841**	**.25948**	**4.9583**	**.25768**	**.61986**	**.20199**	**2.6208**
Stddev	.00128	.248	.00088	.0110	.00363	.00187	.00566	.0027
%RSD	.24060	.95967	.33951	.22193	1.4073	.30098	2.7997	.10443
#1	.53215	25.579	.25869	4.9612	.25468	.61882	.19650	2.6225
#2	.53139	25.870	.26043	4.9675	.25665	.62201	.20780	2.6222
#3	.52966	26.073	.25932	4.9461	.26171	.61875	.20168	2.6176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSW 76 Acquired: 6/24/2016 11:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51623**	**.53123**	**.52244**	**.25565**	**.49959**	**.51393**	**.00579**
Stddev	.00132	.00381	.00132	.00319	.00144	.00042	.00111
%RSD	.25652	.71784	.25180	1.2488	.28878	.08123	19.246
#1	.51555	.52808	.52357	.25635	.50112	.51432	.00458
#2	.51775	.53013	.52276	.25844	.49939	.51397	.00604
#3	.51538	.53547	.52100	.25217	.49826	.51349	.00677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9055.9**	**57815.**	**3183.8**
Stddev	4.9	347.	20.8
%RSD	.05361	.60036	.65296
#1	9054.8	57514.	3207.6
#2	9061.2	57737.	3174.7
#3	9051.7	58195.	3169.1

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:52:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.01913	.00045	.00564	.00075	.00006	.03446	.00003
Stddev	.00067	.00249	.00285	.00093	.00023	.00008	.05634	.00010
%RSD	248.40	13.009	640.39	16.412	30.810	153.80	163.51	360.07
#1	-.00005	.01749	.00372	.00458	.00101	.00001	.06139	-.00008
#2	-.00018	.01791	-.00146	.00604	.00070	.00015	-.03030	.00007
#3	.00104	.02200	-.00093	.00630	.00056	.00000	.07228	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00253	-.00156	-.00596	.16777	.00070	.01889	-.00191
Stddev	.00044	.00121	.00070	.01626	.08879	.00348	.08939	.00126
%RSD	226.82	47.714	44.960	272.74	52.925	500.27	473.10	66.049
#1	-.00068	.00392	-.00085	-.00089	.18512	.00292	-.08304	-.00336
#2	-.00006	.00176	-.00226	-.02415	.07158	-.00331	.08391	-.00130
#3	.00016	.00191	-.00157	.00716	.24660	.00248	.05581	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	146.88	-.00010	-.00997	-.00192	-.00060	.00086	.01689
Stddev	.00007	2.32	.00022	.01062	.00306	.00058	.00486	.00219
%RSD	5.9044	1.5789	217.75	106.58	159.22	97.608	562.25	12.982
#1	.00123	147.49	-.00010	-.00418	.00110	-.00085	.00099	.01941
#2	.00122	144.32	-.00032	-.02223	-.00503	-.00101	-.00405	.01582
#3	.00135	148.83	.00012	-.00350	-.00184	.00007	.00565	.01544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:52:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00019	.00465	-.00056	-.00077	.00385	.00047
Stddev	.00062	.00009	.00622	.00067	.00006	.00008	.00058
%RSD	351.13	48.859	133.64	119.24	7.9259	2.1598	122.28
#1	-.00018	.00019	.00196	-.00117	-.00080	.00376	.00110
#2	.00090	.00028	.00023	-.00067	-.00082	.00387	.00035
#3	-.00018	.00010	.01176	.00016	-.00070	.00392	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9082.3	57649.	3191.0
Stddev	16.5	168.	36.6
%RSD	.18193	.29213	1.1475
#1	9087.4	57544.	3194.2
#2	9063.8	57561.	3225.9
#3	9095.7	57844.	3152.9

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00681	-.00106	.00396	-.00038	.00008	.00787
Stddev	.00115	.00552	.00081	.00188	.00038	.00004	.02622
%RSD	428.61	81.084	76.687	47.340	102.50	53.257	333.03
#1	.00038	.01319	-.00187	.00403	-.00074	.00010	-.00305
#2	-.00094	.00367	-.00107	.00205	.00003	.00010	-.01112
#3	.00136	.00358	-.00024	.00580	-.00042	.00003	.03779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00070	.00137	-.00027	-.00002	.15945	-.00128
Stddev	.00010	.00002	.00054	.00110	.02466	.06888	.00479
%RSD	101.48	2.8007	39.168	401.57	161320.	43.197	373.14
#1	-.00002	-.00067	.00075	-.00109	-.02191	.10599	.00293
#2	.00017	-.00071	.00165	-.00072	-.00485	.13518	-.00650
#3	.00015	-.00071	.00170	.00098	.02671	.23717	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01684	F -.00418	.00067	.09707	-.00070	-.01284	.00022
Stddev	.07248	.00187	.00051	.02145	.00086	.00271	.00131
%RSD	430.41	44.681	75.988	22.093	121.92	21.113	591.13
#1	-.09127	-.00633	.00026	.09161	-.00137	-.01596	.00169
#2	-.01277	-.00318	.00124	.12072	.00026	-.01112	-.00022
#3	.05352	-.00303	.00051	.07889	-.00100	-.01143	-.00081
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	-.00165	.01154	-.00016	-.00000	.00524	-.00258
Stddev	.00243	.00564	.00134	.00055	.00028	.00100	.00016
%RSD	433.82	342.87	11.581	341.26	38088.	19.138	6.0823
#1	.00049	-.00470	.01307	-.00007	.00005	.00482	-.00263
#2	-.00334	.00486	.01061	.00034	.00025	.00451	-.00270
#3	.00117	-.00510	.01094	-.00075	-.00031	.00638	-.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00082	.00321	.00040
Stddev	.00090	.00006	.00064
%RSD	109.84	1.7754	160.28
#1	-.00106	.00319	-.00006
#2	-.00159	.00327	.00013
#3	.00017	.00316	.00114
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9251.2	59193.	3228.6
Stddev	29.0	219.	50.6
%RSD	.31309	.36916	1.5681
#1	9282.5	58943.	3171.4
#2	9245.5	59348.	3246.5
#3	9225.4	59289.	3267.8

Approved: June 25, 2016

Sample Name: L1606115101 Acquired: 6/24/2016 12:00:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.15830	.00196	.12061	.07888	-.00001	37.815	.00010
Stddev	.00120	.00530	.00056	.00140	.00081	.00003	.248	.00022
%RSD	304.15	3.3498	28.525	1.1602	1.0231	231.96	.65454	212.58
#1	-.00079	.16067	.00184	.12082	.07945	-.00001	38.100	.00001
#2	.00095	.15223	.00257	.12189	.07796	.00002	37.690	-.00006
#3	-.00134	.16201	.00147	.11912	.07925	-.00005	37.655	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.00290	.00097	.21119	2.5400	.00368	20.418	.06424
Stddev	.00015	.00059	.00066	.01074	.0733	.00380	.216	.00165
%RSD	27.920	20.440	67.678	5.0831	2.8878	103.15	1.0559	2.5751
#1	-.00061	.00239	.00022	.21267	2.5710	.00761	20.667	.06262
#2	-.00065	.00277	.00126	.22111	2.4562	.00340	20.289	.06593
#3	-.00037	.00355	.00144	.19979	2.5927	.00003	20.297	.06416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00311	101.77	.00045	.04117	.00135	.00380	.00157	5.3677
Stddev	.00045	.72	.00047	.00987	.00181	.00230	.00252	.0303
%RSD	14.570	.71009	104.97	23.979	133.91	60.522	159.90	.56381
#1	.00300	102.57	.00075	.03748	.00144	.00202	.00106	5.3896
#2	.00272	101.55	.00069	.05236	.00312	.00299	-.00065	5.3804
#3	.00360	101.18	-.00009	.03367	-.00050	.00640	.00431	5.3332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115101 Acquired: 6/24/2016 12:00:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.24842**	**-.00797**	**-.00198**	**.00331**	**.01122**	**.00043**
Stddev	.00079	.00184	.00414	.00305	.00081	.00007	.00023
%RSD	148.48	.74257	51.976	153.47	24.555	.58389	52.792
#1	-.00089	.25043	-.00512	-.00050	.00292	.01123	.00048
#2	.00038	.24800	-.01272	-.00549	.00277	.01128	.00018
#3	-.00108	.24682	-.00607	.00004	.00425	.01115	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9014.8**	**57274.**	**3214.0**
Stddev	3.7	444.	16.2
%RSD	.04144	.77607	.50389
#1	9010.8	56777.	3196.3
#2	9018.1	57410.	3228.0
#3	9015.6	57634.	3217.6

Approved: June 25, 2016

Sample Name: L1606115103S Acquired: 6/24/2016 12:04:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19866**	**5.2333**	**.20489**	**1.0841**	**.58829**	**.02453**	**41.795**	**.02565**
Stddev	.00248	.0391	.00312	.0094	.00934	.00022	.762	.00024
%RSD	1.2478	.74796	1.5219	.86801	1.5872	.88296	1.8223	.94310
#1	.20143	5.2782	.20405	1.0949	.59855	.02478	42.664	.02538
#2	.19665	5.2065	.20834	1.0778	.58603	.02443	41.476	.02586
#3	.19791	5.2153	.20228	1.0795	.58029	.02438	41.245	.02571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10099**	**.24641**	**.25195**	**2.2589**	**28.126**	**.51539**	**24.622**	**.31292**
Stddev	.00052	.00196	.00102	.0296	.653	.00581	.350	.00628
%RSD	.51212	.79406	.40526	1.3088	2.3212	1.1278	1.4196	2.0063
#1	.10114	.24829	.25234	2.2928	28.857	.52178	24.997	.31972
#2	.10142	.24656	.25272	2.2452	27.918	.51397	24.564	.31172
#3	.10041	.24438	.25079	2.2387	27.601	.51042	24.305	.30733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52635**	**123.51**	**.24930**	**5.0586**	**.24835**	**.61205**	**.20210**	**7.9483**
Stddev	.00263	2.21	.00102	.0099	.00401	.00458	.01142	.0147
%RSD	.50034	1.7930	.40840	.19611	1.6157	.74825	5.6519	.18492
#1	.52939	126.01	.25035	5.0677	.24616	.61628	.19120	7.9616
#2	.52472	122.75	.24832	5.0480	.25298	.61267	.20111	7.9508
#3	.52495	121.78	.24922	5.0600	.24590	.60719	.21398	7.9325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115103S Acquired: 6/24/2016 12:04:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50472**	**.74393**	**.51319**	**.24877**	**.50017**	**.50921**	**.00163**
Stddev	.00229	.01406	.00107	.00330	.00462	.00094	.00046
%RSD	.45343	1.8895	.20946	1.3249	.92272	.18364	28.196
#1	.50713	.75976	.51270	.24643	.50544	.51012	.00133
#2	.50447	.73914	.51244	.24733	.49686	.50925	.00215
#3	.50257	.73289	.51442	.25254	.49821	.50826	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8967.8**	**56968.**	**3188.4**
Stddev	14.4	310.	46.6
%RSD	.16024	.54356	1.4614
#1	8982.4	56611.	3137.2
#2	8953.6	57142.	3228.2
#3	8967.3	57152.	3199.9

Approved: June 25, 2016

Sample Name: L1606115104SD Acquired: 6/24/2016 12:08:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20050**	**5.5362**	**.21145**	**1.1171**	**.60094**	**.02473**	**43.628**	**.02602**
Stddev	.00367	.0392	.00196	.0038	.00661	.00023	.422	.00015
%RSD	1.8310	.70851	.92588	.33636	1.0992	.92800	.96702	.56220
#1	.20453	5.5755	.20937	1.1208	.60449	.02497	43.830	.02607
#2	.19734	5.5360	.21326	1.1133	.60501	.02469	43.911	.02586
#3	.19964	5.4970	.21172	1.1174	.59332	.02452	43.143	.02614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10332**	**.25201**	**.25751**	**2.4745**	**28.765**	**.52930**	**25.537**	**.32828**
Stddev	.00022	.00113	.00140	.0515	.250	.00229	.203	.00242
%RSD	.20838	.44890	.54386	2.0800	.86748	.43222	.79310	.73866
#1	.10312	.25327	.25864	2.4622	28.794	.52881	25.355	.33071
#2	.10331	.25107	.25594	2.5310	28.999	.53179	25.755	.32826
#3	.10355	.25171	.25796	2.4303	28.503	.52730	25.502	.32586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53696**	**128.06**	**.25435**	**5.1848**	**.25573**	**.62539**	**.20371**	**8.6826**
Stddev	.00235	1.16	.00112	.0104	.00231	.00094	.00431	.0179
%RSD	.43756	.90349	.43872	.20045	.90135	.15109	2.1170	.20639
#1	.53930	128.62	.25342	5.1916	.25485	.62446	.19905	8.6946
#2	.53698	128.84	.25558	5.1899	.25835	.62536	.20453	8.6911
#3	.53460	126.73	.25403	5.1728	.25400	.62635	.20756	8.6620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115104SD Acquired: 6/24/2016 12:08:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51403**	**.76306**	**.52079**	**.25353**	**.50800**	**.54740**	**.00120**
Stddev	.00207	.00813	.00728	.00246	.00215	.00115	.00023
%RSD	.40270	1.0651	1.3976	.96966	.42297	.21071	19.008
#1	.51525	.76972	.51741	.25073	.51047	.54816	.00120
#2	.51521	.76547	.52914	.25449	.50702	.54797	.00097
#3	.51164	.75401	.51581	.25536	.50652	.54608	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8971.1**	**57029.**	**3176.4**
Stddev	7.5	275.	37.9
%RSD	.08397	.48302	1.1936
#1	8971.7	56728.	3149.0
#2	8963.3	57269.	3160.4
#3	8978.3	57089.	3219.6

Approved: June 25, 2016

Sample Name: L1606114001 Acquired: 6/24/2016 12:11:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.02288	.00406	.04082	.07775	.00002	146.18	.00803
Stddev	.00117	.00176	.00168	.00145	.00148	.00006	1.41	.00013
%RSD	105.07	7.7135	41.352	3.5486	1.9065	431.51	.96792	1.6005
#1	-.00015	.02175	.00435	.04246	.07857	-.00005	147.59	.00799
#2	.00217	.02197	.00557	.04032	.07604	.00008	144.76	.00794
#3	.00133	.02491	.00225	.03970	.07864	.00002	146.20	.00818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00113	.15059	.00257	2.0589	.00836	2.1895	.15039
Stddev	.00020	.00056	.00328	.04967	.1178	.00105	.0405	.00204
%RSD	197.71	50.139	2.1779	1935.6	5.7222	12.511	1.8515	1.3546
#1	-.00033	.00053	.15163	.05781	2.1539	.00743	2.1519	.15272
#2	.00004	.00166	.15323	-.01173	1.9271	.00816	2.2324	.14950
#3	-.00002	.00119	.14692	-.03838	2.0957	.00949	2.1841	.14894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	4.5457	.00499	.37451	.09772	.00116	.00727	.91983
Stddev	.00011	.0157	.00049	.00549	.00291	.00520	.00545	.00530
%RSD	11.074	.34568	9.8108	1.4647	2.9765	448.88	74.937	.57580
#1	.00106	4.5461	.00536	.38066	.10096	.00620	.00098	.92472
#2	.00085	4.5299	.00444	.37010	.09534	-.00419	.01057	.92057
#3	.00099	4.5613	.00518	.37278	.09685	.00146	.01027	.91421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114001 Acquired: 6/24/2016 12:11:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.43857**	**-.02336**	**-.00142**	**-.00154**	**.50322**	**.00005**
Stddev	.00104	.00448	.00196	.00344	.00065	.00330	.00027
%RSD	131.08	1.0215	8.3791	242.90	42.008	.65521	545.16
#1	.00012	.44211	-.02243	-.00473	-.00200	.50529	-.00008
#2	-.00193	.43353	-.02204	-.00165	-.00182	.50495	.00036
#3	-.00058	.44006	-.02561	.00214	-.00080	.49942	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9099.5**	**58355.**	**3254.5**
Stddev	20.8	103.	52.9
%RSD	.22848	.17565	1.6262
#1	9103.9	58241.	3200.3
#2	9076.9	58438.	3306.0
#3	9117.7	58387.	3257.0

Approved: June 25, 2016

Sample Name: L1606114001SDL Acquired: 6/24/2016 12:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574055-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.01331	.00099	.00780	.01560	.00000	29.557	.00158
Stddev	.00087	.00321	.00169	.00203	.00098	.00002	.054	.00027
%RSD	236.49	24.147	171.32	26.026	6.2683	4328.2	.18417	17.124
#1	.00062	.01694	-.00029	.00636	.01450	-.00002	29.529	.00183
#2	-.00104	.01084	.00035	.00692	.01636	.00002	29.620	.00130
#3	-.00069	.01214	.00290	.01013	.01596	.00000	29.522	.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00132	.03151	.00499	.41194	.00149	.47888	.02876
Stddev	.00033	.00049	.00083	.01420	.07529	.00168	.04968	.00203
%RSD	299.16	36.877	2.6222	284.58	18.277	112.60	10.373	7.0541
#1	.00017	.00076	.03108	.02107	.49470	.00200	.52478	.03053
#2	-.00047	.00152	.03098	-.00580	.34749	-.00038	.48574	.02654
#3	-.00003	.00167	.03246	-.00031	.39365	.00285	.42614	.02921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.89244	.00037	.07391	.02034	.00194	-.00119	.19852
Stddev	.00030	.03461	.00035	.00616	.00060	.00167	.00867	.00138
%RSD	58.379	3.8778	96.553	8.3343	2.9674	86.300	729.26	.69508
#1	.00070	.85307	.00064	.08066	.02076	.00316	-.00830	.19746
#2	.00017	.90617	.00049	.07249	.02062	.00003	.00847	.19802
#3	.00070	.91807	-.00003	.06859	.01965	.00263	-.00373	.20008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114001SDL Acquired: 6/24/2016 12:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574055-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.08546**	**-.00162**	**-.00038**	**-.00143**	**.10505**	**.00026**
Stddev	.00052	.00084	.00796	.00370	.00041	.00083	.00026
%RSD	132.53	.98750	491.04	963.99	29.011	.78998	99.384
#1	-.00083	.08458	.00175	-.00262	-.00159	.10430	-.00004
#2	.00018	.08626	.00410	-.00242	-.00096	.10490	.00043
#3	-.00052	.08553	-.01071	.00389	-.00173	.10594	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9347.7**	**59748.**	**3254.8**
Stddev	37.4	288.	18.3
%RSD	.39956	.48239	.56188
#1	9390.7	59990.	3243.3
#2	9323.6	59429.	3245.1
#3	9328.6	59825.	3275.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 12:19:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42650**	**10.713**	**.42746**	**.52823**	**1.0913**	**.05212**	**10.834**
Stddev	.00317	.052	.00096	.00261	.0070	.00012	.031
%RSD	.74327	.48970	.22392	.49473	.63946	.22148	.28418
#1	.43016	10.771	.42726	.53089	1.0867	.05225	10.857
#2	.42452	10.698	.42850	.52814	1.0879	.05204	10.799
#3	.42483	10.670	.42662	.52566	1.0994	.05205	10.846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05499**	**.21760**	**.52572**	**.54475**	**4.2777**	**54.613**	**1.0769**
Stddev	.00032	.00106	.00228	.00053	.0326	.264	.0102
%RSD	.58459	.48849	.43328	.09756	.76212	.48255	.94636
#1	.05491	.21872	.52812	.54439	4.2464	54.561	1.0684
#2	.05534	.21660	.52545	.54450	4.2752	54.379	1.0742
#3	.05472	.21750	.52359	.54536	4.3115	54.899	1.0882
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.527**	**.54567**	**1.0931**	**54.266**	**.54162**	**10.766**	**.54062**
Stddev	.021	.00325	.0051	.187	.00238	.011	.00023
%RSD	.20378	.59558	.46292	.34370	.43925	.10654	.04330
#1	10.503	.54270	1.0987	54.187	.54208	10.764	.54087
#2	10.533	.54517	1.0919	54.131	.53904	10.778	.54059
#3	10.545	.54914	1.0888	54.479	.54373	10.755	.54040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 12:19:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2945**	**.43428**	F **5.6098**	**1.0799**	**1.0949**	F **1.1021**	**.54481**
Stddev	.0041	.00361	.0019	.0026	.0045	.0067	.00469
%RSD	.31714	.83239	.03336	.24374	.40814	.60549	.86133
#1	1.2974	.43838	5.6080	1.0827	1.0928	1.1058	.54545
#2	1.2963	.43289	5.6096	1.0794	1.0919	1.0944	.54914
#3	1.2898	.43156	5.6117	1.0775	1.1000	1.1060	.53983
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value			5.0000			1.0000	
Range			10.000%			10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0454**	**1.0803**	**1.0570**
Stddev	.0034	.0013	.0088
%RSD	.32628	.12126	.82774
#1	1.0490	1.0816	1.0630
#2	1.0452	1.0790	1.0470
#3	1.0422	1.0802	1.0611
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8984.8**	**56710.**	**3113.2**
Stddev	45.5	317.	15.4
%RSD	.50651	.55948	.49324
#1	8944.0	56442.	3100.3
#2	9033.9	56628.	3130.2
#3	8976.6	57060.	3109.1

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 12:23:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00344	.00145	.00294	.00035	-.00004	.02215	-.00021
Stddev	.00041	.00219	.00240	.00079	.00121	.00010	.03194	.00009
%RSD	124.54	63.593	165.80	26.762	344.83	259.48	144.18	42.051
#1	.00029	.00529	.00096	.00384	-.00003	.00006	.00228	-.00030
#2	-.00006	.00400	.00406	.00262	.00171	-.00003	.00518	-.00013
#3	.00075	.00102	-.00067	.00237	-.00062	-.00014	.05900	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.00201	-.00150	-.01822	.10568	.00099	.05713	-.00256
Stddev	.00021	.00106	.00016	.00191	.02617	.00205	.07243	.00079
%RSD	59.613	52.971	10.403	10.463	24.764	207.53	126.79	30.925
#1	-.00051	.00267	-.00144	-.02010	.13480	-.00038	.04350	-.00234
#2	-.00011	.00078	-.00167	-.01829	.08413	-.00000	.13541	-.00189
#3	-.00044	.00258	-.00137	-.01629	.09812	.00334	-.00752	-.00343
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	.06866	.00015	-.00196	-.00068	.00350	-.00029	.00611
Stddev	.00028	.01714	.00016	.00299	.00126	.00201	.00292	.00286
%RSD	7.7510	24.965	113.48	152.53	184.92	57.392	1023.3	46.714
#1	.00336	.04977	.00032	-.00175	-.00073	.00541	.00071	.00898
#2	.00392	.08323	.00011	.00092	.00060	.00371	.00201	.00327
#3	.00361	.07297	-.00000	-.00506	-.00193	.00140	-.00357	.00609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 12:23:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.00010**	**.00153**	**.00025**	**-.00049**	**.00022**	**.00163**
Stddev	.00020	.00030	.00816	.00155	.00055	.00013	.00062
%RSD	35.071	304.81	532.55	618.43	111.20	57.646	37.867
#1	-.00034	-.00011	.00782	-.00052	-.00106	.00017	.00094
#2	-.00065	.00044	.00447	.00204	-.00045	.00013	.00184
#3	-.00071	-.00004	-.00769	-.00077	.00003	.00037	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9479.9**	**60625.**	**3266.1**
Stddev	27.2	250.	24.0
%RSD	.28740	.41169	.73490
#1	9455.0	60338.	3293.8
#2	9475.6	60791.	3252.7
#3	9509.0	60746.	3251.7

Approved: June 25, 2016

Sample Name: L1606114001PS Acquired: 6/24/2016 12:27:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574055-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20275**	**5.1419**	**.21333**	**1.0253**	**.59504**	**.02467**	**139.85**	**.03335**
Stddev	.00382	.0464	.00182	.0020	.00731	.00012	1.53	.00017
%RSD	1.8833	.90229	.85200	.19620	1.2293	.48386	1.0954	.51011
#1	.20665	5.1917	.21522	1.0245	.60106	.02477	141.22	.03328
#2	.20258	5.0999	.21318	1.0237	.58690	.02454	138.19	.03323
#3	.19902	5.1341	.21159	1.0275	.59717	.02471	140.14	.03355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10344**	**.25015**	**.39465**	**2.0433**	**28.277**	**.53767**	**7.1211**	**.39716**
Stddev	.00038	.00249	.00031	.0120	.363	.00734	.1390	.00381
%RSD	.37083	.99698	.07885	.58514	1.2820	1.3649	1.9524	.95928
#1	.10301	.25285	.39486	2.0474	28.575	.54252	7.2778	.40080
#2	.10376	.24793	.39481	2.0298	27.873	.52923	7.0126	.39320
#3	.10354	.24968	.39430	2.0526	28.383	.54126	7.0729	.39748
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53753**	**30.414**	**.25886**	**5.5881**	**.34388**	**.63595**	**.21104**	**3.5188**
Stddev	.00106	.282	.00133	.0038	.00319	.00220	.00441	.0017
%RSD	.19634	.92682	.51475	.06847	.92887	.34549	2.0903	.04959
#1	.53826	30.705	.25820	5.5918	.34514	.63840	.21585	3.5208
#2	.53800	30.142	.26040	5.5842	.34625	.63530	.21010	3.5182
#3	.53632	30.394	.25800	5.5882	.34025	.63416	.20718	3.5175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114001PS Acquired: 6/24/2016 12:27:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574055-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51595**	**.91725**	**.50579**	**.25689**	**.50349**	**.95723**	**.00511**
Stddev	.00180	.01150	.00924	.00144	.00222	.00117	.00123
%RSD	.34968	1.2533	1.8261	.55957	.44179	.12188	24.042
#1	.51532	.92818	.50881	.25546	.50563	.95817	.00409
#2	.51798	.90526	.49543	.25686	.50119	.95761	.00476
#3	.51455	.91830	.51315	.25834	.50365	.95593	.00647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8910.4**	**56997.**	**3158.7**
Stddev	14.9	491.	36.1
%RSD	.16773	.86203	1.1429
#1	8920.8	56440.	3132.1
#2	8917.3	57366.	3199.8
#3	8893.3	57187.	3144.2

Approved: June 25, 2016

Sample Name: L1606114003 Acquired: 6/24/2016 12:30:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.01986	.00301	.09457	.03965	-.00002	99.687	.00252
Stddev	.00131	.00825	.00228	.00100	.00036	.00012	.899	.00019
%RSD	294.41	41.551	75.602	1.0569	.91914	587.37	.90168	7.4764
#1	.00190	.01049	.00563	.09524	.04006	.00003	99.938	.00273
#2	.00009	.02603	.00186	.09504	.03938	.00007	98.690	.00241
#3	-.00065	.02306	.00154	.09342	.03950	-.00016	100.43	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.00208	.10263	.00520	1.9156	.00501	1.6642	.08675
Stddev	.00011	.00029	.00205	.01228	.0169	.00341	.0459	.00101
%RSD	52.022	14.106	2.0016	236.15	.88223	68.128	2.7554	1.1666
#1	-.00011	.00239	.10453	-.00392	1.9128	.00145	1.6708	.08733
#2	-.00033	.00205	.10292	.01917	1.9003	.00533	1.6155	.08558
#3	-.00020	.00181	.10045	.00036	1.9337	.00825	1.7065	.08735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00442	143.17	.00079	-.00261	.00210	.00294	.00376	1.6066
Stddev	.00010	1.44	.00082	.00325	.00305	.00131	.00329	.0083
%RSD	2.2634	1.0055	104.33	124.46	145.56	44.519	87.514	.51571
#1	.00431	143.63	.00159	-.00023	.00390	.00415	.00530	1.6124
#2	.00444	141.56	.00083	-.00129	-.00143	.00311	-.00002	1.6103
#3	.00450	144.33	-.00005	-.00631	.00382	.00155	.00599	1.5971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114003 Acquired: 6/24/2016 12:30:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.24737	-.01388	-.00120	-.00079	.01628	.00040
Stddev	.00066	.00187	.00938	.00377	.00043	.00034	.00030
%RSD	1229.4	.75472	67.590	313.73	54.177	2.1058	74.950
#1	-.00005	.24839	-.01059	-.00290	-.00056	.01656	.00005
#2	-.00054	.24522	-.00658	-.00383	-.00128	.01637	.00055
#3	.00076	.24851	-.02446	.00312	-.00053	.01589	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8916.0	56782.	3182.3
Stddev	15.2	240.	28.8
%RSD	.17040	.42235	.90629
#1	8911.2	56706.	3188.3
#2	8903.7	56590.	3207.7
#3	8933.0	57051.	3151.0

Approved: June 25, 2016

Sample Name: PBW 61 Acquired: 6/24/2016 12:34:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00076	-.00110	.00309	.00002	-.00001	.04326	.00013
Stddev	.00120	.00826	.00369	.00133	.00052	.00010	.01711	.00011
%RSD	135.53	1088.1	334.09	43.079	2914.6	1198.4	39.552	82.637
#1	.00082	.00363	-.00464	.00435	-.00058	.00006	.02365	.00001
#2	.00212	.00720	-.00139	.00170	.00038	-.00013	.05514	.00017
#3	-.00028	-.00856	.00272	.00323	.00025	.00004	.05100	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.00182	-.00080	-.00810	.10020	-.00237	-.01055	-.00142
Stddev	.00016	.00010	.00134	.00626	.03798	.00342	.06161	.00080
%RSD	28.563	5.2588	167.88	77.374	37.898	144.42	583.87	56.732
#1	-.00040	.00172	-.00029	-.01312	.14090	.00069	-.02862	-.00057
#2	-.00073	.00183	-.00231	-.01009	.09401	-.00173	.05807	-.00217
#3	-.00055	.00191	.00021	-.00108	.06571	-.00606	-.06110	-.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.11467	.00021	-.00772	.00041	.00316	.00139	.00970
Stddev	.00036	.04360	.00087	.00814	.00175	.00439	.00571	.00153
%RSD	54.368	38.021	410.51	105.39	431.56	139.19	411.25	15.736
#1	.00069	.16070	-.00007	-.00034	.00056	.00189	-.00497	.00794
#2	.00029	.10932	.00118	-.00638	-.00141	-.00047	.00607	.01053
#3	.00101	.07400	-.00048	-.01645	.00207	.00804	.00307	.01063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBW 61 Acquired: 6/24/2016 12:34:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00027	-.00192	-.00257	-.00043	.00076	.00010
Stddev	.00031	.00059	.00385	.00044	.00062	.00010	.00031
%RSD	110.25	220.35	200.29	17.018	145.00	13.528	301.29
#1	.00056	.00090	-.00630	-.00275	.00014	.00080	.00026
#2	-.00005	.00016	.00092	-.00207	-.00033	.00065	.00030
#3	.00034	-.00026	-.00038	-.00288	-.00109	.00084	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9302.1	60410.	3281.7
Stddev	66.0	229.	39.4
%RSD	.71003	.37905	1.2004
#1	9378.1	60509.	3291.2
#2	9269.4	60574.	3315.5
#3	9258.7	60149.	3238.5

Approved: June 25, 2016

Sample Name: LCSW 61 Acquired: 6/24/2016 12:38:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20555**	**5.1784**	**.21096**	**1.0013**	**.53967**	**.02506**	**5.4631**	**.02661**
Stddev	.00138	.0089	.00216	.0010	.00107	.00006	.0285	.00023
%RSD	.67151	.17182	1.0226	.10140	.19803	.23645	.52091	.86362
#1	.20492	5.1749	.20961	1.0025	.54073	.02507	5.4711	.02660
#2	.20459	5.1885	.21345	1.0007	.53859	.02511	5.4315	.02684
#3	.20713	5.1718	.20982	1.0007	.53967	.02500	5.4867	.02638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10709**	**.25748**	**.26833**	**2.1158**	**26.774**	**.53895**	**5.2920**	**.26712**
Stddev	.00110	.00150	.00102	.0163	.146	.00177	.0899	.00207
%RSD	1.0293	.58418	.37911	.77089	.54628	.32794	1.6996	.77309
#1	.10822	.25770	.26921	2.1123	26.910	.54072	5.3158	.26847
#2	.10704	.25587	.26857	2.1015	26.620	.53718	5.1925	.26474
#3	.10601	.25886	.26722	2.1335	26.793	.53894	5.3676	.26814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54645**	**26.922**	**.26606**	**5.0982**	**.26690**	**.63372**	**.20697**	**2.6537**
Stddev	.00284	.049	.00199	.0187	.00116	.00467	.00438	.0104
%RSD	.51896	.18215	.74936	.36751	.43630	.73649	2.1177	.39305
#1	.54806	26.978	.26787	5.1053	.26563	.63639	.20777	2.6597
#2	.54811	26.888	.26639	5.1123	.26792	.63643	.21090	2.6598
#3	.54317	26.899	.26392	5.0769	.26714	.62833	.20224	2.6417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSW 61 Acquired: 6/24/2016 12:38:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52855	.54930	.53444	.26386	.50928	.52661	.00239
Stddev	.00351	.00114	.00402	.00245	.00130	.00227	.00045
%RSD	.66494	.20774	.75201	.92725	.25500	.43047	18.960
#1	.53111	.55029	.53018	.26437	.51078	.52813	.00281
#2	.53000	.54956	.53500	.26601	.50848	.52769	.00191
#3	.52455	.54805	.53816	.26120	.50859	.52400	.00243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8971.4	57490.	3144.1
Stddev	22.2	244.	32.0
%RSD	.24747	.42367	1.0188
#1	8950.2	57763.	3107.1
#2	8969.5	57293.	3162.4
#3	8994.5	57415.	3162.7

Approved: June 25, 2016

Sample Name: L1606073201 Acquired: 6/24/2016 12:42:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.02820	.00033	.03332	.25570	.00005	29.348
Stddev	.00081	.00477	.00048	.00258	.00135	.00008	.107
%RSD	1060.6	16.901	146.21	7.7292	.52666	149.81	.36550
#1	-.00060	.02574	.00042	.03159	.25466	.00010	29.343
#2	.00085	.02517	.00076	.03208	.25522	.00010	29.244
#3	-.00048	.03370	-.00019	.03628	.25722	-.00004	29.458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00130	.00737	-.00082	.13349	1.5334	.02731
Stddev	.00012	.00035	.00052	.00188	.00764	.0113	.00141
%RSD	74.130	26.900	7.0457	230.52	5.7259	.73635	5.1517
#1	.00029	.00115	.00727	-.00281	.12571	1.5462	.02848
#2	.00008	.00170	.00692	-.00056	.14099	1.5249	.02772
#3	.00010	.00105	.00794	.00093	.13376	1.5292	.02575
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.404	.04547	.00090	F 358.79	.00311	1.6349	.00068
Stddev	.236	.00197	.00021	5.43	.00059	.0190	.00121
%RSD	.60011	4.3318	23.625	1.5145	19.047	1.1597	178.50
#1	39.143	.04349	.00067	363.98	.00244	1.6526	-.00059
#2	39.604	.04743	.00109	359.24	.00355	1.6374	.00080
#3	39.464	.04549	.00094	353.14	.00335	1.6149	.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606073201 Acquired: 6/24/2016 12:42:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	-.00067	16.076	-.00001	.55040	-.00810	-.00164
Stddev	.00164	.00536	.145	.00052	.00274	.00406	.00137
%RSD	293.19	800.42	.90295	6770.2	.49860	50.069	83.155
#1	.00126	.00045	16.195	.00001	.55128	-.00732	-.00243
#2	-.00103	.00404	16.119	.00051	.54733	-.01249	-.00007
#3	-.00191	-.00650	15.914	-.00054	.55260	-.00449	-.00243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00202	.11146	.00024
Stddev	.00089	.00179	.00037
%RSD	44.331	1.6093	152.52
#1	-.00107	.11286	-.00010
#2	-.00215	.11208	.00019
#3	-.00284	.10944	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8764.9	55502.	3127.7
Stddev	30.2	118.	26.0
%RSD	.34400	.21327	.83247
#1	8763.7	55639.	3097.6
#2	8735.4	55438.	3142.4
#3	8795.6	55430.	3143.0

Approved: June 25, 2016

Sample Name: L1606079601 Acquired: 6/24/2016 12:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	3.2297	-.00034	1.2911	.04906	.00162	186.51	.23531
Stddev	.00208	.0109	.00397	.0030	.00128	.00007	1.50	.00040
%RSD	132.18	.33690	1166.8	.23101	2.6157	4.4542	.80345	.17130
#1	.00186	3.2175	-.00327	1.2892	.05043	.00168	188.24	.23541
#2	-.00064	3.2328	.00418	1.2895	.04885	.00163	185.56	.23565
#3	.00350	3.2386	-.00192	1.2945	.04789	.00154	185.75	.23486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00732	.00840	.45442	1.2197	3.3021	.04141	30.000	3.1182
Stddev	.00026	.00095	.00241	.0142	.0440	.00123	.108	.0244
%RSD	3.6023	11.313	.53119	1.1615	1.3334	2.9646	.35889	.78321
#1	.00761	.00870	.45446	1.2311	3.3071	.04020	30.001	3.1462
#2	.00710	.00734	.45681	1.2038	3.2557	.04266	30.107	3.1009
#3	.00725	.00917	.45198	1.2241	3.3434	.04138	29.892	3.1075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	11.561	.03416	.23588	1.4062	.27976	.00687	32.216
Stddev	.00020	.096	.00128	.00330	.0033	.00623	.00652	.075
%RSD	6.5058	.82760	3.7349	1.4007	.23470	2.2270	94.974	.23255
#1	.00335	11.669	.03517	.23243	1.4095	.28680	.00689	32.264
#2	.00296	11.487	.03459	.23620	1.4062	.27751	.01338	32.254
#3	.00305	11.527	.03273	.23902	1.4029	.27496	.00033	32.130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079601 Acquired: 6/24/2016 12:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00507	.47885	.00429	-.00276	-.00000	9.0027	.00215
Stddev	.00101	.00357	.00463	.00394	.00060	.0349	.00057
%RSD	19.835	.74545	107.79	142.73	15473.	.38752	26.596
#1	.00531	.48291	.00292	-.00082	-.00067	9.0287	.00188
#2	.00397	.47741	.00051	-.00017	.00016	9.0163	.00176
#3	.00594	.47623	.00946	-.00729	.00049	8.9631	.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8969.1	57515.	3201.7
Stddev	26.5	246.	24.8
%RSD	.29529	.42843	.77548
#1	8939.3	57271.	3173.1
#2	8989.8	57764.	3217.4
#3	8978.3	57511.	3214.7

Approved: June 25, 2016

Sample Name: L1606079602S Acquired: 6/24/2016 12:50:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20637**	**8.4667**	**.21215**	**2.3299**	**.55765**	**.02670**	**211.15**
Stddev	.00096	.0253	.00204	.0051	.00324	.00014	1.09
%RSD	.46531	.29867	.96304	.22080	.58025	.52132	.51779
#1	.20600	8.4950	.21018	2.3354	.56090	.02681	212.24
#2	.20746	8.4589	.21426	2.3291	.55443	.02675	210.05
#3	.20566	8.4462	.21202	2.3252	.55761	.02655	211.18
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22906**	**.10963**	**.25719**	**.36273**	**3.8155**	**30.167**	**.57896**
Stddev	.00047	.00050	.00101	.00163	.0076	.190	.00294
%RSD	.20432	.45993	.39435	.45055	.20055	.62859	.50762
#1	.22922	.11004	.25752	.36247	3.8169	30.297	.58056
#2	.22942	.10977	.25800	.36448	3.8224	29.949	.57557
#3	.22853	.10907	.25606	.36125	3.8073	30.255	.58076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**37.556**	**3.7302**	**.53671**	**36.032**	**.27262**	**5.4147**	**1.3723**
Stddev	.123	.0178	.00271	.149	.00159	.0196	.0051
%RSD	.32741	.47715	.50439	.41445	.58430	.36193	.37180
#1	37.642	3.7506	.53723	36.198	.27244	5.4232	1.3668
#2	37.610	3.7181	.53911	35.908	.27429	5.4287	1.3769
#3	37.415	3.7219	.53377	35.990	.27112	5.3923	1.3731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 25, 2016

Sample Name: L1606079602S Acquired: 6/24/2016 12:50:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.83295**	**.19904**	F **39.559**	**.51924**	**1.0206**	**.52855**	**.25056**
Stddev	.00381	.00362	.080	.00060	.0057	.00488	.00264
%RSD	.45758	1.8206	.20246	.11565	.55920	.92319	1.0541
#1	.83134	.19546	39.613	.51864	1.0248	.53056	.24812
#2	.83021	.20271	39.596	.51984	1.0141	.53210	.25336
#3	.83731	.19894	39.467	.51925	1.0230	.52298	.25020
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50387**	**8.9533**	**.00345**
Stddev	.00127	.0255	.00012
%RSD	.25293	.28527	3.4468
#1	.50516	8.9684	.00349
#2	.50262	8.9677	.00353
#3	.50382	8.9238	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8874.4**	**56986.**	**3197.8**
Stddev	22.9	183.	31.1
%RSD	.25749	.32104	.97251
#1	8874.8	56794.	3162.9
#2	8851.3	57004.	3208.1
#3	8897.0	57159.	3222.4

Approved: June 25, 2016

Sample Name: L1606079603SD Acquired: 6/24/2016 12:53:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20348**	**8.3907**	**.20803**	**2.3205**	**.55659**	**.02675**	**210.01**
Stddev	.00067	.0070	.00227	.0041	.00308	.00007	1.03
%RSD	.32994	.08394	1.0916	.17615	.55344	.27317	.49200
#1	.20367	8.3952	.20541	2.3200	.55995	.02674	211.18
#2	.20273	8.3942	.20930	2.3249	.55593	.02682	209.61
#3	.20403	8.3826	.20938	2.3168	.55390	.02668	209.24
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22784**	**.10941**	**.25693**	**.36070**	**3.7620**	**30.137**	**.57482**
Stddev	.00074	.00005	.00145	.00097	.0431	.085	.00367
%RSD	.32525	.04726	.56542	.26971	1.1460	.28231	.63776
#1	.22787	.10946	.25585	.36143	3.8070	30.228	.57882
#2	.22856	.10941	.25858	.36107	3.7577	30.060	.57405
#3	.22708	.10936	.25635	.35959	3.7211	30.123	.57161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**37.283**	**3.7093**	**.53679**	**35.887**	**.27192**	**5.4059**	**1.3646**
Stddev	.065	.0166	.00208	.175	.00166	.0027	.0036
%RSD	.17309	.44772	.38783	.48671	.61140	.04904	.26708
#1	37.346	3.7273	.53879	36.088	.27204	5.4084	1.3687
#2	37.217	3.6945	.53693	35.772	.27352	5.4063	1.3630
#3	37.287	3.7060	.53464	35.802	.27020	5.4031	1.3620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 25, 2016

Sample Name: L1606079603SD Acquired: 6/24/2016 12:53:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.82814**	**.20815**	F **39.014**	**.51935**	**1.0179**	**.52731**	**.25200**
Stddev	.00575	.00609	.081	.00143	.0071	.00449	.00183
%RSD	.69405	2.9239	.20860	.27470	.69999	.85144	.72692
#1	.83047	.20229	39.103	.52035	1.0259	.52320	.25130
#2	.83236	.21444	38.997	.52000	1.0123	.53210	.25063
#3	.82159	.20773	38.943	.51772	1.0154	.52662	.25408
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50350**	**8.8879**	**.00305**
Stddev	.00153	.0209	.00040
%RSD	.30487	.23506	13.114
#1	.50377	8.9078	.00308
#2	.50488	8.8897	.00344
#3	.50184	8.8661	.00264
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8883.7**	**57187.**	**3189.9**
Stddev	10.5	142.	22.6
%RSD	.11868	.24879	.70751
#1	8871.6	57137.	3171.1
#2	8889.1	57077.	3183.6
#3	8890.5	57348.	3214.9

Approved: June 25, 2016

Sample Name: L1606073202 Acquired: 6/24/2016 12:57:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.02813	.00029	.04299	.22283	-.00000	25.162
Stddev	.00134	.00280	.00082	.00132	.00277	.00003	.241
%RSD	252.84	9.9565	284.55	3.0648	1.2409	1017.5	.95893
#1	.00086	.02578	-.00044	.04447	.22588	-.00003	25.435
#2	-.00095	.03123	.00118	.04255	.22048	-.00000	24.976
#3	.00168	.02737	.00013	.04195	.22213	.00002	25.076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00120	.00613	.00149	.12035	1.4886	.02096
Stddev	.00024	.00046	.00062	.00013	.01000	.0590	.00309
%RSD	67.894	38.073	10.067	8.8118	8.3106	3.9648	14.734
#1	.00061	.00150	.00611	.00148	.12839	1.5495	.01933
#2	.00031	.00067	.00552	.00163	.10915	1.4316	.01904
#3	.00014	.00141	.00675	.00137	.12352	1.4846	.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	34.325	.04040	.00125	F 349.63	.00292	1.6666	-.00030
Stddev	.171	.00030	.00019	3.15	.00063	.0019	.00596
%RSD	.49775	.74283	15.066	.90066	21.672	.11272	1957.9
#1	34.517	.04074	.00107	353.18	.00219	1.6662	-.00079
#2	34.189	.04026	.00124	347.17	.00327	1.6687	.00588
#3	34.268	.04019	.00144	348.55	.00329	1.6650	-.00601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606073202 Acquired: 6/24/2016 12:57:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	-.00482	14.835	.00019	.47317	-.00604	-.00166
Stddev	.00130	.00284	.080	.00103	.00252	.00346	.00171
%RSD	85.788	58.877	.53712	538.43	.53296	57.319	103.01
#1	.00271	-.00798	14.887	-.00082	.47605	-.00268	-.00297
#2	.00013	-.00397	14.874	.00125	.47138	-.00959	-.00227
#3	.00172	-.00250	14.743	.00015	.47207	-.00585	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00139	.05739	-.00049
Stddev	.00087	.00042	.00019
%RSD	62.489	.72596	39.112
#1	-.00058	.05772	-.00067
#2	-.00129	.05752	-.00029
#3	-.00232	.05692	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8802.2	55900.	3156.1
Stddev	11.1	153.	34.7
%RSD	.12621	.27340	1.0995
#1	8812.1	55724.	3124.8
#2	8804.3	55980.	3193.4
#3	8790.1	55996.	3150.2

Approved: June 25, 2016

Sample Name: L1606079401 Acquired: 6/24/2016 13:01:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.02285	.00059	.01157	.02302	.00000	4.1138	-.00026
Stddev	.00123	.00652	.00275	.00121	.00057	.00006	.0762	.00008
%RSD	894.56	28.519	469.79	10.441	2.4922	18199.	1.8516	31.902
#1	.00152	.03028	.00311	.01119	.02254	.00007	4.0311	-.00021
#2	-.00086	.01808	-.00234	.01292	.02366	-.00004	4.1811	-.00035
#3	-.00024	.02020	.00099	.01059	.02287	-.00003	4.1291	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00282	.00194	-.00143	1.2835	.37695	-.00156	.69132	.35802
Stddev	.00007	.00024	.00107	.0207	.07463	.00067	.08990	.00400
%RSD	2.5452	12.396	74.963	1.6127	19.797	43.171	13.004	1.1172
#1	.00277	.00188	-.00074	1.2630	.41442	-.00084	.58775	.35346
#2	.00278	.00173	-.00266	1.2831	.42541	-.00165	.73706	.35965
#3	.00290	.00220	-.00088	1.3044	.29101	-.00218	.74916	.36094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	1.0149	.00037	.00773	.00315	-.00108	-.00499	.64556
Stddev	.00014	.0157	.00052	.00611	.00167	.00193	.00347	.00397
%RSD	56.327	1.5446	141.49	79.119	52.980	178.21	69.644	.61433
#1	.00011	1.0219	.00010	.00835	.00264	.00009	-.00688	.64105
#2	.00039	.99693	.00097	.00133	.00501	-.00331	-.00098	.64715
#3	.00023	1.0258	.00003	.01351	.00179	-.00003	-.00710	.64849
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079401 Acquired: 6/24/2016 13:01:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00092	.05805	-.00327	-.00056	-.00053	.00096	.00059
Stddev	.00114	.00063	.00604	.00146	.00079	.00036	.00072
%RSD	123.36	1.0876	184.48	261.81	147.56	37.712	123.27
#1	.00038	.05734	-.01006	-.00036	-.00137	.00094	.00093
#2	-.00142	.05854	-.00127	-.00211	-.00042	.00132	.00107
#3	-.00173	.05828	.00151	.00080	.00019	.00060	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9564.9	61114.	3314.5
Stddev	38.3	230.	20.8
%RSD	.40006	.37594	.62656
#1	9609.1	60917.	3337.8
#2	9542.4	61367.	3307.7
#3	9543.2	61059.	3298.0

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:05:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41271	10.424	.41660	.51679	1.0602	.05053	10.566	.05362
Stddev	.00072	.006	.00234	.00241	.0072	.00015	.111	.00017
%RSD	.17421	.06111	.56160	.46715	.67846	.30430	1.0504	.32244
#1	.41217	10.431	.41393	.51409	1.0550	.05068	10.515	.05356
#2	.41352	10.425	.41825	.51875	1.0572	.05054	10.490	.05381
#3	.41242	10.418	.41764	.51753	1.0684	.05038	10.693	.05348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21181	.51018	.52957	4.1573	53.268	1.0472	10.263	.52911
Stddev	.00033	.00144	.00298	.0756	.251	.0098	.140	.00211
%RSD	.15714	.28312	.56359	1.8185	.47129	.93371	1.3615	.39822
#1	.21169	.51128	.52701	4.1046	53.131	1.0438	10.102	.52758
#2	.21219	.51070	.53285	4.1234	53.116	1.0395	10.336	.52824
#3	.21155	.50854	.52885	4.2439	53.558	1.0582	10.352	.53151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0610	52.921	.52624	10.442	.52470	1.2541	.42316	5.4481
Stddev	.0035	.320	.00081	.014	.00136	.0015	.01147	.0021
%RSD	.33117	.60540	.15460	.13298	.25996	.12313	2.7101	.03871
#1	1.0639	52.775	.52615	10.457	.52471	1.2556	.42209	5.4501
#2	1.0620	52.700	.52548	10.441	.52332	1.2541	.43512	5.4484
#3	1.0571	53.289	.52710	10.429	.52605	1.2526	.41226	5.4459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:05:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0484**	**1.0667**	**1.0685**	**.52661**	**1.0185**	**1.0523**	**1.0248**
Stddev	.0029	.0081	.0058	.00076	.0042	.0021	.0004
%RSD	.27896	.76213	.54537	.14465	.41241	.19459	.03894
#1	1.0494	1.0599	1.0694	.52577	1.0227	1.0505	1.0248
#2	1.0508	1.0645	1.0623	.52727	1.0143	1.0545	1.0251
#3	1.0451	1.0757	1.0739	.52677	1.0186	1.0520	1.0243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8882.5**	**56177.**	**3089.4**
Stddev	29.7	314.	12.2
%RSD	.33414	.55818	.39365
#1	8886.9	55855.	3082.5
#2	8850.9	56481.	3103.4
#3	8909.8	56196.	3082.2

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:08:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00717	.00127	.00627	.00069	-.00006	.00287	-.00006
Stddev	.00063	.00318	.00265	.00132	.00023	.00015	.01707	.00010
%RSD	166.42	44.334	208.86	21.039	33.283	255.17	595.44	163.89
#1	-.00060	.00479	-.00178	.00475	.00046	-.00015	.01040	.00004
#2	-.00086	.00594	.00294	.00693	.00092	.00012	-.01667	-.00008
#3	.00033	.01078	.00264	.00712	.00068	-.00014	.01487	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00066	.00118	-.00013	.00795	.06402	.00192	.03240	-.00221
Stddev	.00031	.00059	.00046	.01622	.02889	.00308	.06616	.00161
%RSD	46.769	49.794	363.48	203.93	45.129	160.88	204.20	72.497
#1	-.00075	.00088	-.00022	-.00484	.09445	.00205	.07082	-.00406
#2	-.00091	.00081	-.00053	.00251	.06064	.00493	.07038	-.00147
#3	-.00031	.00186	.00037	.02619	.03696	-.00123	-.04400	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00371	.05101	-.00022	.00146	-.00202	.00697	.00163	.00460
Stddev	.00026	.03364	.00082	.00530	.00080	.00025	.00566	.00230
%RSD	6.8808	65.949	378.04	362.25	39.756	3.5609	347.26	49.896
#1	.00342	.02221	.00011	.00725	-.00248	.00705	-.00479	.00356
#2	.00389	.08799	-.00115	-.00314	-.00109	.00717	.00590	.00724
#3	.00383	.04284	.00039	.00027	-.00249	.00669	.00378	.00301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:08:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00033**	**.00076**	**.00152**	**-.00024**	**.00025**	**.00081**
Stddev	.00122	.00031	.00671	.00233	.00128	.00006	.00064
%RSD	703.43	94.176	886.46	153.63	523.84	22.798	78.759
#1	-.00032	.00041	-.00664	.00398	-.00158	.00031	.00152
#2	.00111	-.00001	.00247	-.00065	-.00011	.00025	.00027
#3	-.00131	.00061	.00645	.00122	.00096	.00019	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9421.6**	**60299.**	**3256.8**
Stddev	40.2	274.	24.0
%RSD	.42621	.45387	.73587
#1	9409.1	60564.	3247.8
#2	9466.5	60316.	3284.0
#3	9389.1	60018.	3238.7

Approved: June 25, 2016

Sample Name: L1606079404 Acquired: 6/24/2016 13:12:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00130	.03039	.00126	.01940	.01369	-.00002	1.1950	-.00001
Stddev	.00260	.00196	.00092	.00094	.00095	.00007	.0239	.00007
%RSD	199.44	6.4564	73.167	4.8262	6.9231	344.58	2.0032	832.28
#1	.00428	.03265	.00020	.01939	.01470	-.00010	1.1970	-.00005
#2	-.00048	.02933	.00188	.02034	.01282	.00002	1.2179	.00007
#3	.00011	.02918	.00170	.01847	.01356	.00002	1.1702	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00476	.00102	-.00131	.16723	.50681	.00113	.89694	.29822
Stddev	.00006	.00143	.00104	.01047	.10066	.00302	.04328	.00708
%RSD	1.2851	139.37	79.584	6.2602	19.860	268.19	4.8253	2.3747
#1	.00479	.00230	-.00080	.16355	.51557	-.00071	.91414	.29874
#2	.00479	.00129	-.00063	.17904	.60281	.00461	.84771	.29089
#3	.00469	-.00052	-.00251	.15910	.40207	-.00053	.92899	.30502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	1.7317	.00193	.00148	-.00119	.00062	-.00351	.47199
Stddev	.00027	.0084	.00075	.00037	.00298	.00284	.00231	.00520
%RSD	36.771	.48737	38.705	24.708	250.89	456.80	65.733	1.1011
#1	.00105	1.7226	.00246	.00187	.00075	-.00174	-.00431	.47009
#2	.00065	1.7392	.00108	.00115	-.00462	-.00018	-.00531	.47787
#3	.00053	1.7334	.00225	.00142	.00031	.00378	-.00091	.46801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079404 Acquired: 6/24/2016 13:12:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.01018**	**-.00222**	**-.00094**	**-.00079**	**.00167**	**-.00018**
Stddev	.00054	.00018	.00543	.00236	.00070	.00023	.00054
%RSD	144.91	1.8060	245.09	251.26	89.393	13.688	304.63
#1	-.00075	.01035	.00066	-.00355	-.00160	.00168	.00043
#2	.00024	.00998	.00118	.00103	-.00040	.00190	-.00060
#3	-.00060	.01019	-.00848	-.00029	-.00036	.00144	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9520.7**	**60796.**	**3261.1**
Stddev	19.0	197.	21.3
%RSD	.19963	.32380	.65193
#1	9542.3	60651.	3283.6
#2	9506.7	61020.	3258.3
#3	9513.1	60717.	3241.3

Approved: June 25, 2016

Sample Name: L1606079604 Acquired: 6/24/2016 13:16:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.21348	.00260	.19976	.03690	-.00001	52.193	.22780
Stddev	.00107	.00411	.00425	.00172	.00071	.00003	.631	.00068
%RSD	113.51	1.9260	163.38	.86255	1.9207	405.78	1.2096	.29779
#1	.00212	.21057	.00526	.20093	.03689	-.00005	52.321	.22786
#2	.00003	.21818	-.00230	.20058	.03620	.00001	51.507	.22845
#3	.00068	.21169	.00486	.19779	.03761	.00001	52.750	.22710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05125	.00479	.36483	1.6560	14.660	.00877	5.5763	1.7147
Stddev	.00059	.00039	.00218	.0283	.159	.00350	.1053	.0147
%RSD	1.1535	8.1173	.59715	1.7093	1.0875	39.833	1.8880	.85941
#1	.05172	.00435	.36580	1.6545	14.708	.00650	5.6506	1.7174
#2	.05144	.00493	.36636	1.6284	14.482	.00702	5.4558	1.6988
#3	.05059	.00509	.36234	1.6850	14.789	.01280	5.6224	1.7279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00313	144.14	.03035	1.0211	.07552	1.1557	.00411	6.5697
Stddev	.00027	1.70	.00122	.0047	.00250	.0045	.00525	.0440
%RSD	8.5563	1.1770	4.0360	.45700	3.3107	.39015	127.81	.67014
#1	.00330	144.93	.02943	1.0218	.07815	1.1592	.00478	6.5572
#2	.00282	142.19	.02987	1.0254	.07523	1.1572	-.00145	6.6186
#3	.00326	145.29	.03174	1.0161	.07318	1.1506	.00899	6.5332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604 Acquired: 6/24/2016 13:16:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.18481	-.00844	-.00188	-.00071	5.6059	.00341
Stddev	.00069	.00240	.00426	.00360	.00127	.0265	.00050
%RSD	794.10	1.2974	50.412	191.50	178.39	.47276	14.789
#1	-.00018	.18518	-.01246	-.00564	-.00052	5.6217	.00292
#2	.00087	.18225	-.00889	.00153	-.00206	5.6207	.00337
#3	-.00043	.18700	-.00398	-.00152	.00045	5.5753	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8988.0	57229.	3212.0
Stddev	23.6	64.	31.1
%RSD	.26299	.11256	.96670
#1	8965.7	57166.	3192.3
#2	9012.7	57227.	3247.8
#3	8985.6	57294.	3196.0

Approved: June 25, 2016

Sample Name: L1606079604PS Acquired: 6/24/2016 13:20:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573149-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20280**	**5.3027**	**.21231**	**1.1801**	**.55540**	**.02495**	**51.809**	**.23407**
Stddev	.00015	.0166	.00321	.0002	.00387	.00010	.375	.00041
%RSD	.07637	.31377	1.5120	.01812	.69757	.40956	.72434	.17452
#1	.20297	5.3201	.20923	1.1802	.55963	.02507	52.222	.23449
#2	.20267	5.2869	.21564	1.1802	.55202	.02492	51.489	.23404
#3	.20275	5.3010	.21207	1.1798	.55456	.02487	51.718	.23367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.15079**	**.25382**	**.59150**	**3.4910**	**39.388**	**.53018**	**9.9531**	**1.8085**
Stddev	.00020	.00094	.00182	.0662	.329	.00406	.0974	.0116
%RSD	.13400	.36852	.30736	1.8955	.83526	.76532	.97892	.64231
#1	.15097	.25482	.59345	3.5674	39.766	.53137	9.9424	1.8174
#2	.15082	.25365	.58986	3.4523	39.170	.52566	10.055	1.7953
#3	.15057	.25298	.59118	3.4533	39.227	.53351	9.8614	1.8127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53968**	**156.98**	**.28383**	**6.1212**	**.32198**	**1.6775**	**.20819**	**8.6076**
Stddev	.00242	1.04	.00051	.0203	.00460	.0049	.00352	.0069
%RSD	.44873	.66195	.17819	.33148	1.4283	.29355	1.6930	.08070
#1	.54031	158.15	.28435	6.1431	.31988	1.6722	.20467	8.6149
#2	.54173	156.18	.28379	6.1177	.32725	1.6786	.21172	8.6066
#3	.53701	156.60	.28334	6.1030	.31880	1.6818	.20817	8.6011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604PS Acquired: 6/24/2016 13:20:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573149-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51592**	**.68475**	**.51913**	**.25074**	**.50296**	**5.5697**	**.00437**
Stddev	.00194	.00530	.00608	.00071	.00238	.0089	.00064
%RSD	.37560	.77350	1.1715	.28316	.47332	.16068	14.638
#1	.51652	.69043	.51759	.25150	.50454	5.5773	.00374
#2	.51749	.67994	.51397	.25009	.50413	5.5720	.00435
#3	.51376	.68387	.52584	.25065	.50022	5.5599	.00502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8909.6**	**56843.**	**3204.4**
Stddev	1.8	290.	30.2
%RSD	.02032	.50970	.94121
#1	8908.8	56575.	3171.8
#2	8911.6	56804.	3210.2
#3	8908.2	57150.	3231.3

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.04368	.00122	.04349	.00806	.00002	10.277	.04768
Stddev	.00134	.00228	.00094	.00292	.00145	.00002	.058	.00062
%RSD	180.24	5.2256	77.601	6.7258	18.013	78.531	.56466	1.2952
#1	.00171	.04149	.00122	.04259	.00639	.00001	10.219	.04698
#2	-.00079	.04604	.00027	.04676	.00878	.00002	10.275	.04788
#3	.00130	.04352	.00216	.04112	.00901	.00005	10.335	.04817
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01026	.00202	.07565	.33169	2.8985	.00465	1.0790	.33882
Stddev	.00047	.00069	.00245	.00173	.0396	.00433	.0895	.00405
%RSD	4.6085	33.927	3.2368	.52127	1.3666	93.002	8.2910	1.1946
#1	.01002	.00234	.07292	.33127	2.9371	.00369	1.1027	.33415
#2	.00994	.00249	.07637	.33358	2.9004	.00938	1.1541	.34103
#3	.01080	.00123	.07766	.33020	2.8580	.00089	.98002	.34129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	28.363	.00700	.21122	.01400	.23816	-.00306	1.3640
Stddev	.00041	.289	.00119	.00332	.00222	.00413	.00166	.0164
%RSD	40.909	1.0206	17.017	1.5709	15.868	1.7347	54.387	1.2062
#1	.00110	28.030	.00564	.20999	.01155	.23760	-.00373	1.3521
#2	.00054	28.554	.00752	.20870	.01588	.24255	-.00116	1.3571
#3	.00133	28.504	.00785	.21498	.01456	.23435	-.00428	1.3828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.03606**	**-.00264**	**.00053**	**-.00029**	**1.2005**	**.00050**
Stddev	.00043	.00042	.00853	.00500	.00064	.0141	.00037
%RSD	124.76	1.1669	322.65	938.33	219.25	1.1743	73.895
#1	-.00085	.03565	.00325	-.00513	-.00080	1.1865	.00067
#2	-.00013	.03603	.00124	.00430	.00042	1.2003	.00008
#3	-.00007	.03649	-.01242	.00243	-.00049	1.2147	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9105.6**	**58170.**	**3212.7**
Stddev	27.3	280.	23.5
%RSD	.30017	.48123	.73253
#1	9103.8	58409.	3225.9
#2	9133.8	57862.	3185.5
#3	9079.2	58239.	3226.6

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:28:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00040**	**.00857**	**.00134**	**.01061**	**.00165**	**-.00001**	**1.9132**	**.00874**
Stddev	.00181	.00667	.00234	.00249	.00017	.00001	.0173	.00010
%RSD	455.89	77.825	174.32	23.446	10.373	116.47	.90342	1.1541
#1	-.00243	.00394	-.00136	.01199	.00166	-.00002	1.8935	.00866
#2	.00104	.01621	.00261	.01210	.00181	.00000	1.9199	.00871
#3	.00020	.00555	.00278	.00774	.00147	-.00001	1.9261	.00885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00120**	**.00140**	**.01276**	**.04419**	**.61000**	**-.00198**	**.19513**	**.06168**
Stddev	.00016	.00155	.00074	.02220	.04844	.00354	.07685	.00239
%RSD	13.116	110.63	5.7727	50.228	7.9412	178.84	39.385	3.8731
#1	.00124	-.00031	.01191	.06977	.66578	-.00239	.22434	.06192
#2	.00103	.00272	.01324	.03282	.57847	.00175	.25310	.06394
#3	.00134	.00179	.01313	.02998	.58575	-.00529	.10796	.05918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**5.4833**	**.00115**	**.03698**	**.00356**	**.04416**	**-.00362**	**.25512**
Stddev	.00017	.0430	.00058	.00189	.00182	.00432	.00289	.00216
%RSD	41.091	.78460	50.355	5.1167	51.028	9.7754	79.738	.84721
#1	.00022	5.4343	.00122	.03480	.00150	.04644	-.00041	.25572
#2	.00054	5.5006	.00054	.03817	.00427	.04686	-.00445	.25692
#3	.00047	5.5150	.00169	.03798	.00492	.03918	-.00600	.25272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:28:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.00660	-.00393	.00088	-.00118	.21826	.00069
Stddev	.00041	.00021	.00248	.00276	.00061	.00108	.00021
%RSD	65.439	3.1746	63.297	315.82	51.724	.49261	30.159
#1	-.00015	.00666	-.00674	-.00231	-.00182	.21725	.00045
#2	-.00090	.00637	-.00302	.00267	-.00111	.21814	.00079
#3	-.00081	.00678	-.00202	.00226	-.00060	.21939	.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9580.6	61020.	3283.6
Stddev	11.6	138.	12.0
%RSD	.12149	.22602	.36655
#1	9581.4	60926.	3271.0
#2	9591.8	60956.	3294.9
#3	9568.6	61178.	3284.8

Approved: June 25, 2016

Sample Name: PBW 96 Acquired: 6/24/2016 13:31:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00073**	**.05750**	**-.00115**	**.00379**	**.00035**	**.00004**	**.14547**	**-.00001**
Stddev	.00114	.00534	.00113	.00242	.00047	.00004	.01120	.00032
%RSD	155.47	9.2868	98.477	63.976	132.21	109.74	7.6992	4547.8
#1	-.00055	.06232	.00006	.00550	.00089	.00008	.15412	.00029
#2	.00165	.05843	-.00133	.00485	.00009	.00004	.13282	-.00034
#3	.00110	.05176	-.00218	.00102	.00008	-.00000	.14948	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00132**	**-.00117**	**.07602**	**.06648**	**-.00036**	**.02744**	**.00190**
Stddev	.00018	.00131	.00109	.00738	.09369	.00127	.07199	.00082
%RSD	89.489	99.783	93.607	9.7097	140.92	355.05	262.29	42.953
#1	-.00009	.00101	-.00242	.07287	.07235	-.00017	-.04949	.00102
#2	-.00011	.00276	-.00042	.08445	.15710	.00081	.09317	.00263
#3	-.00041	.00019	-.00066	.07074	-.03000	-.00171	.03866	.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.10510**	**.00092**	**-.01236**	**.00247**	**-.00114**	**-.00226**	**.03159**
Stddev	.00026	.02680	.00039	.01242	.00253	.00255	.00507	.00112
%RSD	54.501	25.498	41.922	100.45	102.42	223.14	224.49	3.5471
#1	.00035	.09773	.00136	-.02382	-.00008	-.00396	-.00341	.03261
#2	.00078	.08276	.00067	-.01410	.00250	-.00049	.00329	.03178
#3	.00031	.13482	.00072	.00083	.00497	.00102	-.00665	.03039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBW 96 Acquired: 6/24/2016 13:31:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00097**	**.00038**	**-.00465**	**.00081**	**-.00039**	**.00272**	**.00004**
Stddev	.00085	.00027	.00283	.00149	.00021	.00004	.00053
%RSD	87.746	71.935	60.728	183.22	53.537	1.5511	1208.2
#1	-.00022	.00065	-.00629	.00062	-.00015	.00268	-.00031
#2	-.00189	.00011	-.00139	-.00057	-.00048	.00274	.00065
#3	-.00079	.00036	-.00628	.00240	-.00054	.00276	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9001.9**	**57577.**	**3145.6**
Stddev	5.1	289.	25.4
%RSD	.05668	.50260	.80877
#1	9003.5	57315.	3116.7
#2	8996.2	57888.	3155.1
#3	9006.1	57528.	3164.8

Approved: June 25, 2016

Sample Name: LCSW 96 Acquired: 6/24/2016 13:35:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19950**	**5.0939**	**.20372**	**1.0208**	**.52299**	**.02445**	**5.3163**	**.02590**
Stddev	.00336	.0048	.00192	.0030	.00511	.00010	.0742	.00036
%RSD	1.6828	.09397	.94086	.29468	.97686	.41134	1.3965	1.3919
#1	.20287	5.0993	.20151	1.0195	.52801	.02450	5.4020	.02630
#2	.19946	5.0902	.20478	1.0242	.51780	.02452	5.2747	.02561
#3	.19616	5.0921	.20487	1.0186	.52318	.02434	5.2723	.02578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10423**	**.25027**	**.26092**	**2.0255**	**26.189**	**.52677**	**5.1629**	**.25877**
Stddev	.00040	.00138	.00033	.0200	.298	.00291	.1198	.00454
%RSD	.38380	.55012	.12503	.98782	1.1361	.55208	2.3196	1.7548
#1	.10469	.25146	.26057	2.0378	26.464	.52733	5.0560	.26368
#2	.10408	.24876	.26099	2.0025	25.873	.52362	5.2924	.25792
#3	.10393	.25058	.26122	2.0363	26.231	.52935	5.1404	.25472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53131**	**26.270**	**.25798**	**4.9905**	**.25688**	**.61782**	**.20100**	**2.6938**
Stddev	.00094	.237	.00094	.0107	.00325	.00214	.00148	.0078
%RSD	.17719	.90374	.36573	.21426	1.2655	.34651	.73738	.28974
#1	.53238	26.488	.25831	5.0026	.26007	.61978	.20078	2.7028
#2	.53091	26.017	.25692	4.9867	.25701	.61816	.20257	2.6890
#3	.53063	26.306	.25872	4.9822	.25357	.61554	.19963	2.6897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSW 96 Acquired: 6/24/2016 13:35:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51498	.53518	.52231	.25730	.49620	.51662	.00156
Stddev	.00201	.00522	.00398	.00216	.00213	.00142	.00028
%RSD	.38972	.97497	.76237	.83781	.43000	.27422	18.205
#1	.51604	.54037	.52691	.25811	.49794	.51823	.00133
#2	.51624	.52993	.51991	.25486	.49685	.51608	.00147
#3	.51266	.53524	.52012	.25893	.49382	.51556	.00188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8976.4	57450.	3148.6
Stddev	16.7	311.	9.0
%RSD	.18579	.54143	.28702
#1	8994.0	57165.	3138.5
#2	8960.8	57403.	3156.0
#3	8974.5	57782.	3151.2

Approved: June 25, 2016

Sample Name: L1606127902 Acquired: 6/24/2016 13:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	15.737	.00504	.17704	.19989	.00100	197.77	.00050
Stddev	.00231	.039	.00324	.00132	.00099	.00006	.59	.00022
%RSD	1507.6	.25058	64.174	.74832	.49635	5.6554	.29748	43.504
#1	.00250	15.783	.00357	.17765	.20103	.00098	198.43	.00025
#2	-.00170	15.713	.00280	.17553	.19919	.00095	197.29	.00066
#3	-.00126	15.717	.00875	.17796	.19946	.00106	197.58	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01128	.04276	.02006	22.872	6.2512	.04284	80.521	2.6589
Stddev	.00030	.00028	.00041	.038	.0825	.00592	.183	.0133
%RSD	2.6928	.64348	2.0282	.16663	1.3204	13.819	.22689	.50023
#1	.01147	.04247	.01996	22.869	6.1704	.04629	80.723	2.6697
#2	.01143	.04279	.02051	22.835	6.3354	.03601	80.469	2.6441
#3	.01093	.04302	.01971	22.911	6.2479	.04623	80.369	2.6630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00681	18.837	.02941	.79338	.01403	-.00060	.00131	29.051
Stddev	.00038	.047	.00138	.00484	.00107	.00255	.00127	.105
%RSD	5.5050	.25020	4.6749	.61023	7.5974	423.13	97.049	.36059
#1	.00646	18.890	.03067	.78819	.01333	-.00349	.00219	29.106
#2	.00720	18.818	.02794	.79419	.01526	.00035	-.00015	29.116
#3	.00678	18.801	.02963	.79777	.01350	.00133	.00188	28.930
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127902 Acquired: 6/24/2016 13:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.96724	.15250	.00117	.03346	.15890	.00476
Stddev	.00040	.00326	.00547	.00105	.00024	.00053	.00041
%RSD	34.705	.33744	3.5900	89.594	.72954	.33381	8.5619
#1	.00163	.97101	.14892	.00229	.03370	.15915	.00519
#2	.00097	.96527	.14979	.00101	.03348	.15926	.00472
#3	.00090	.96545	.15881	.00021	.03321	.15829	.00438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8809.1	56197.	3156.2
Stddev	17.1	169.	15.4
%RSD	.19391	.29996	.48903
#1	8823.3	56057.	3138.5
#2	8813.9	56150.	3167.0
#3	8790.1	56384.	3163.0

Approved: June 25, 2016

Sample Name: L1606127903S Acquired: 6/24/2016 13:43:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19326**	**20.629**	**.20505**	**1.1242**	**.67887**	**.02411**	**202.49**	**.02516**
Stddev	.00124	.031	.00568	.0038	.00396	.00002	1.42	.00004
%RSD	.63990	.14876	2.7693	.33476	.58405	.08259	.70154	.15637
#1	.19467	20.662	.20382	1.1250	.68345	.02412	204.10	.02518
#2	.19238	20.624	.21124	1.1275	.67642	.02413	201.40	.02512
#3	.19273	20.601	.20009	1.1201	.67675	.02409	201.97	.02518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10665**	**.26645**	**.25704**	**21.289**	**30.486**	**.53447**	**84.560**	**2.9029**
Stddev	.00029	.00084	.00157	.139	.180	.01012	.672	.0309
%RSD	.27245	.31377	.61183	.65337	.58896	1.8942	.79485	1.0632
#1	.10698	.26680	.25771	21.445	30.561	.54519	85.295	2.9385
#2	.10646	.26550	.25817	21.245	30.281	.52507	83.976	2.8873
#3	.10650	.26706	.25524	21.177	30.616	.53315	84.410	2.8830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50244**	**43.573**	**.26189**	**5.8590**	**.25372**	**.55116**	**.19410**	**32.382**
Stddev	.00157	.327	.00132	.0159	.00269	.00988	.00408	.058
%RSD	.31334	.74940	.50585	.27121	1.0586	1.7922	2.1037	.17891
#1	.50275	43.950	.26334	5.8677	.25501	.56055	.18982	32.390
#2	.50384	43.381	.26161	5.8686	.25064	.54086	.19452	32.435
#3	.50074	43.388	.26073	5.8406	.25553	.55206	.19795	32.320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127903S Acquired: 6/24/2016 13:43:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48639**	**1.4540**	**.59410**	**.23913**	**.50539**	**.70433**	**.01017**
Stddev	.00047	.0117	.00764	.00139	.00117	.00111	.00008
%RSD	.09761	.80721	1.2860	.58290	.23204	.15818	.79769
#1	.48692	1.4674	.59934	.23991	.50616	.70442	.01015
#2	.48623	1.4457	.58533	.23752	.50597	.70539	.01010
#3	.48602	1.4488	.59762	.23995	.50404	.70317	.01026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8732.4**	**55709.**	**3136.3**
Stddev	12.8	133.	9.5
%RSD	.14604	.23913	.30143
#1	8741.8	55582.	3125.8
#2	8737.4	55848.	3138.8
#3	8717.9	55698.	3144.2

Approved: June 25, 2016

Sample Name: L1606127904SD Acquired: 6/24/2016 13:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19840**	**21.664**	**.21549**	**1.1518**	**.68554**	**.02470**	**203.86**
Stddev	.00350	.173	.00239	.0093	.00255	.00012	.48
%RSD	1.7631	.79987	1.1079	.81137	.37163	.47958	.23568
#1	.19923	21.766	.21789	1.1585	.68363	.02482	204.27
#2	.20141	21.762	.21547	1.1557	.68843	.02468	203.97
#3	.19456	21.464	.21311	1.1411	.68456	.02459	203.33
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02560**	**.10985**	**.27087**	**.26369**	**21.250**	**31.671**	**.54653**
Stddev	.00010	.00064	.00286	.00112	.102	.097	.00418
%RSD	.40730	.58209	1.0577	.42589	.48182	.30643	.76563
#1	.02572	.11059	.27368	.26496	21.309	31.764	.54887
#2	.02555	.10947	.27099	.26284	21.310	31.678	.54902
#3	.02554	.10950	.26795	.26328	21.132	31.570	.54170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**85.131**	**2.9406**	**.52074**	**44.518**	**.26846**	**6.1103**	**.26144**
Stddev	.178	.0135	.00200	.085	.00112	.0182	.00268
%RSD	.20906	.45814	.38482	.19000	.41689	.29863	1.0264
#1	84.960	2.9560	.52294	44.584	.26874	6.1155	.26438
#2	85.315	2.9345	.52024	44.548	.26723	6.0900	.26081
#3	85.119	2.9312	.51903	44.423	.26941	6.1253	.25913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 25, 2016

Sample Name: L1606127904SD Acquired: 6/24/2016 13:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.57453**	**.19709**	F **36.344**	**.50382**	**1.4735**	**.64850**	**.24413**
Stddev	.00418	.00789	.056	.00257	.0019	.00602	.00132
%RSD	.72824	4.0016	.15274	.50962	.13256	.92766	.53874
#1	.57287	.19772	36.404	.50677	1.4750	.65107	.24435
#2	.57929	.20464	36.334	.50206	1.4742	.65280	.24272
#3	.57143	.18890	36.295	.50263	1.4713	.64162	.24532
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.52196**	**.56684**	**.01080**
Stddev	.00375	.00342	.00015
%RSD	.71940	.60354	1.3985
#1	.52583	.56511	.01079
#2	.52171	.56462	.01095
#3	.51833	.57078	.01065
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8712.5**	**55773.**	**3120.2**
Stddev	3.2	331.	12.8
%RSD	.03729	.59418	.41169
#1	8713.6	55403.	3119.9
#2	8708.8	55873.	3107.5
#3	8715.0	56043.	3133.2

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:50:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38140**	**9.6036**	**.38549**	**.47990**	**.97583**	**.04697**	**9.6736**	**.04936**
Stddev	.00083	.0155	.00161	.00272	.00700	.00039	.0481	.00043
%RSD	.21651	.16083	.41796	.56755	.71776	.83544	.49724	.87879
#1	.38093	9.6166	.38518	.48096	.97193	.04728	9.6575	.04905
#2	.38235	9.6078	.38723	.48193	.97165	.04709	9.6356	.04986
#3	.38091	9.5866	.38405	.47680	.98392	.04652	9.7277	.04917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19524**	**.47322**	**.49109**	**3.8323**	**49.097**	**.96492**	**9.4888**	**.48870**
Stddev	.00085	.00448	.00144	.0650	.263	.00666	.0433	.00395
%RSD	.43326	.94684	.29398	1.6953	.53510	.68973	.45628	.80862
#1	.19584	.47670	.49055	3.7748	48.999	.96096	9.4388	.48630
#2	.19562	.47480	.49272	3.8193	48.897	.96120	9.5117	.48654
#3	.19427	.46817	.48999	3.9028	49.395	.97260	9.5158	.49326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98079**	**48.817**	**.48770**	**9.6771**	**.48808**	**1.1568**	**.39117**	**5.0500**
Stddev	.00652	.291	.00120	.0180	.00541	.0169	.00115	.0077
%RSD	.66469	.59531	.24539	.18616	1.1087	1.4624	.29359	.15164
#1	.98623	48.688	.48889	9.6790	.49412	1.1640	.39004	5.0445
#2	.98257	48.614	.48771	9.6941	.48368	1.1689	.39234	5.0588
#3	.97357	49.150	.48649	9.6582	.48644	1.1374	.39112	5.0467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:50:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.97107**	**.97794**	**.98195**	**.48922**	**.94029**	**.97547**	**.95262**
Stddev	.00207	.00590	.00292	.00294	.00290	.00075	.01313
%RSD	.21287	.60287	.29764	.60052	.30843	.07725	1.3786
#1	.97343	.97629	.98320	.49172	.94213	.97546	.93766
#2	.96960	.97304	.97861	.48994	.93695	.97623	.95795
#3	.97018	.98448	.98404	.48598	.94180	.97472	.96224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9252.7**	**58629.**	**3212.3**
Stddev	24.3	490.	28.7
%RSD	.26211	.83545	.89213
#1	9236.4	58082.	3245.1
#2	9241.1	58779.	3198.9
#3	9280.5	59026.	3192.7

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:54:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	-.00051	.00183	.00655	.00026	-.00000	.00852	-.00022
Stddev	.00064	.00733	.00105	.00104	.00009	.00005	.04466	.00023
%RSD	179.80	1430.7	57.749	15.843	35.947	4708.9	523.90	106.47
#1	.00048	.00366	.00121	.00743	.00035	-.00005	.04854	-.00006
#2	-.00034	-.00897	.00123	.00681	.00027	-.00001	-.03965	-.00048
#3	.00092	.00378	.00304	.00540	.00016	.00005	.01668	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00227	-.00072	-.01318	.07124	.00049	.08648	-.00199
Stddev	.00023	.00064	.00050	.02673	.03864	.00139	.01953	.00183
%RSD	260.70	28.077	69.839	202.79	54.246	286.14	22.586	92.121
#1	-.00012	.00157	-.00036	-.03888	.08538	-.00076	.08196	-.00332
#2	-.00029	.00242	-.00130	-.01513	.10082	.00022	.10787	-.00274
#3	.00016	.00282	-.00051	.01447	.02752	.00199	.06960	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00342	.05697	-.00032	.00309	.00127	.00324	.00119	.00515
Stddev	.00032	.02946	.00116	.00580	.00261	.00123	.00629	.00054
%RSD	9.4112	51.713	361.47	187.66	205.38	38.030	528.76	10.506
#1	.00378	.04217	.00100	-.00305	.00285	.00465	.00735	.00465
#2	.00317	.09090	-.00078	.00846	.00271	.00268	.00143	.00572
#3	.00331	.03785	-.00118	.00386	-.00175	.00238	-.00522	.00507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:54:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.00036**	**.00418**	**-.00158**	**-.00051**	**.00017**	**.00102**
Stddev	.00053	.00033	.01062	.00055	.00051	.00029	.00036
%RSD	171.93	91.019	254.34	34.602	100.39	177.91	35.103
#1	-.00010	.00004	.00137	-.00145	-.00031	.00038	.00135
#2	-.00091	.00035	.01591	-.00218	-.00013	.00029	.00064
#3	.00009	.00069	-.00476	-.00111	-.00109	-.00017	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9545.2**	**60729.**	**3266.7**
Stddev	24.9	237.	23.8
%RSD	.26058	.39065	.72829
#1	9540.3	60493.	3240.2
#2	9523.2	60727.	3286.2
#3	9572.2	60967.	3273.7

Approved: June 25, 2016

Sample Name: L1606096103 Acquired: 6/24/2016 13:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.09140	.00112	.03611	.03358	-.00001	50.084	.00013
Stddev	.00022	.00238	.00188	.00195	.00041	.00008	.422	.00018
%RSD	185.41	2.6039	167.01	5.3975	1.2258	580.55	.84237	141.64
#1	.00013	.08878	-.00078	.03488	.03351	-.00003	50.499	.00032
#2	-.00026	.09197	.00117	.03835	.03321	.00007	49.656	-.00003
#3	-.00023	.09344	.00297	.03508	.03403	-.00009	50.096	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00184	-.00114	.03656	1.3467	.00581	15.245	.00051
Stddev	.00014	.00073	.00091	.02407	.0686	.00337	.260	.00254
%RSD	61.138	39.585	79.397	65.853	5.0911	58.003	1.7074	500.61
#1	-.00015	.00167	-.00218	.01202	1.2696	.00901	15.489	.00250
#2	-.00015	.00121	-.00074	.03751	1.4008	.00612	14.971	.00138
#3	-.00040	.00264	-.00050	.06014	1.3699	.00229	15.275	-.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00260	9.6468	.00019	-.00521	-.00233	.00331	.00457	4.0826
Stddev	.00028	.0838	.00028	.00366	.00219	.00207	.00459	.0345
%RSD	10.599	.86900	141.53	70.238	94.267	62.612	100.63	.84571
#1	.00231	9.7410	.00004	-.00109	.00018	.00092	.00224	4.1042
#2	.00263	9.6187	.00051	-.00810	-.00328	.00434	.00160	4.1009
#3	.00286	9.5806	.00003	-.00645	-.00389	.00466	.00986	4.0428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606096103 Acquired: 6/24/2016 13:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**.25691**	**-.00637**	**-.00259**	**-.00050**	**.00292**	**.00135**
Stddev	.00049	.00223	.00705	.00153	.00034	.00040	.00049
%RSD	72.565	.86751	110.76	58.917	67.376	13.663	36.114
#1	-.00091	.25924	-.00795	-.00331	-.00034	.00317	.00087
#2	-.00099	.25480	.00134	-.00084	-.00090	.00314	.00133
#3	-.00011	.25669	-.01249	-.00363	-.00028	.00246	.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8942.3**	**57388.**	**3165.4**
Stddev	36.0	169.	10.5
%RSD	.40295	.29363	.33091
#1	8915.6	57232.	3155.7
#2	8928.0	57367.	3176.5
#3	8983.2	57567.	3163.9

Approved: June 25, 2016

Sample Name: L1606096103PS Acquired: 6/24/2016 14:02:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574076-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20212	5.1577	.20995	1.0218	.55067	.02458	50.301	.02595
Stddev	.00257	.0134	.00150	.0020	.00278	.00001	.286	.00016
%RSD	1.2694	.25951	.71236	.19511	.50565	.03510	.56934	.61701
#1	.20209	5.1522	.20849	1.0233	.55372	.02459	50.529	.02608
#2	.19957	5.1479	.20988	1.0196	.54826	.02458	49.980	.02599
#3	.20470	5.1729	.21148	1.0227	.55003	.02457	50.394	.02577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10297	.25008	.25544	2.0785	27.389	.52844	18.834	.25830
Stddev	.00023	.00157	.00241	.0113	.185	.00335	.039	.00347
%RSD	.22302	.62649	.94504	.54163	.67510	.63326	.20820	1.3448
#1	.10320	.25049	.25823	2.0826	27.472	.53144	18.843	.26189
#2	.10274	.25140	.25409	2.0658	27.177	.52483	18.867	.25495
#3	.10299	.24834	.25401	2.0872	27.518	.52905	18.790	.25805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53490	34.932	.25626	5.1271	.25681	.62874	.20828	6.2999
Stddev	.00204	.144	.00031	.0135	.00377	.00039	.00270	.0306
%RSD	.38190	.41152	.12115	.26248	1.4693	.06250	1.2974	.48507
#1	.53528	35.050	.25602	5.1233	.25437	.62829	.20809	6.2859
#2	.53673	34.772	.25661	5.1420	.26116	.62899	.21107	6.2787
#3	.53270	34.975	.25617	5.1159	.25492	.62895	.20567	6.3349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606096103PS Acquired: 6/24/2016 14:02:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574076-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51595	.74881	.52242	.25818	.49972	.51357	.00455
Stddev	.00103	.00313	.00297	.00309	.00213	.00106	.00114
%RSD	.19954	.41852	.56925	1.1985	.42627	.20581	24.932
#1	.51562	.75083	.52020	.25542	.50129	.51430	.00341
#2	.51710	.74520	.52125	.26152	.49729	.51406	.00457
#3	.51512	.75039	.52580	.25759	.50057	.51236	.00568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8833.6	56651.	3119.7
Stddev	9.3	223.	21.6
%RSD	.10547	.39347	.69133
#1	8823.9	56539.	3116.6
#2	8834.3	56908.	3142.7
#3	8842.5	56506.	3099.9

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:05:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.01743	-.00053	.01293	.00637	.00006	9.8603	-.00009
Stddev	.00112	.00543	.00066	.00212	.00093	.00006	.1510	.00026
%RSD	749.50	31.156	123.78	16.425	14.637	106.44	1.5314	273.36
#1	.00120	.01486	-.00015	.01142	.00533	.00013	9.7000	-.00016
#2	-.00103	.01376	-.00130	.01536	.00714	.00001	9.8810	.00019
#3	.00028	.02366	-.00015	.01201	.00663	.00003	9.9999	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.00166	-.00081	.01557	.34726	.00184	3.0327	-.00090
Stddev	.00014	.00107	.00071	.01602	.05466	.00348	.0951	.00076
%RSD	37.681	64.012	87.782	102.86	15.742	189.11	3.1367	84.164
#1	-.00021	.00202	-.00151	.03338	.29666	.00458	2.9721	-.00121
#2	-.00048	.00047	-.00085	.00235	.40524	-.00207	2.9836	-.00147
#3	-.00039	.00251	-.00008	.01099	.33988	.00301	3.1423	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	1.9887	-.00002	.00349	-.00035	.00256	.00530	.86568
Stddev	.00011	.0321	.00087	.00714	.00172	.00490	.00381	.00616
%RSD	11.175	1.6161	4064.9	204.77	495.04	191.24	71.852	.71180
#1	.00095	1.9586	.00085	.00447	-.00202	.00804	.00476	.85861
#2	.00114	1.9850	-.00088	.01010	.00141	-.00140	.00179	.86846
#3	.00094	2.0226	-.00004	-.00409	-.00043	.00105	.00936	.86996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:05:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.05064**	**-.00115**	**-.00120**	**-.00043**	**.00102**	**.00056**
Stddev	.00024	.00069	.00525	.00297	.00106	.00012	.00014
%RSD	123.48	1.3651	458.63	247.68	244.53	11.508	24.672
#1	-.00046	.05019	-.00523	.00208	-.00117	.00096	.00072
#2	.00002	.05028	.00478	-.00371	.00078	.00115	.00045
#3	-.00016	.05143	-.00298	-.00197	-.00092	.00094	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9336.0**	**59375.**	**3208.5**
Stddev	30.5	401.	15.3
%RSD	.32641	.67506	.47725
#1	9354.3	58920.	3216.8
#2	9352.8	59525.	3217.8
#3	9300.8	59678.	3190.8

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:09:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**-.00610**	**.00005**	**.00302**	**.00139**	**.00003**	**1.6849**
Stddev	.00180	.00456	.00220	.00222	.00079	.00007	.0160
%RSD	1577.6	74.679	4707.9	73.380	56.616	247.76	.94725
#1	-.00191	-.00084	.00190	.00055	.00194	-.00002	1.6688
#2	.00156	-.00881	-.00239	.00484	.00049	.00011	1.6853
#3	.00069	-.00865	.00063	.00368	.00173	-.00000	1.7007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00034**	**.00088**	**-.00158**	**-.01440**	**.06844**	**-.00175**
Stddev	.00002	.00023	.00083	.00061	.02220	.06326	.00363
%RSD	17.353	67.549	94.267	38.708	154.12	92.431	206.96
#1	-.00013	-.00058	.00179	-.00208	-.00955	.00265	-.00311
#2	-.00013	-.00034	.00017	-.00175	.00496	.07385	.00236
#3	-.00017	-.00012	.00067	-.00090	-.03863	.12882	-.00450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50957**	F **-.00383**	**.00039**	**.34445**	**-.00062**	**.00381**	**.00016**
Stddev	.01311	.00095	.00039	.03811	.00071	.00070	.00411
%RSD	2.5722	24.725	100.59	11.064	115.35	18.437	2540.0
#1	.51930	-.00358	.00051	.30657	-.00144	.00305	.00427
#2	.49466	-.00488	-.00005	.34400	-.00029	.00397	.00016
#3	.51474	-.00303	.00071	.38278	-.00013	.00443	-.00394
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:09:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00087	-.00357	.15888	-.00031	.00850	-.00426	-.00009
Stddev	.00426	.00083	.00168	.00044	.00026	.00237	.00296
%RSD	491.21	23.304	1.0573	142.12	3.0361	55.651	3369.4
#1	-.00335	-.00426	.16039	-.00013	.00878	-.00423	-.00261
#2	.00077	-.00382	.15707	.00001	.00827	-.00191	-.00083
#3	.00518	-.00265	.15920	-.00080	.00846	-.00665	.00318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00092	.00058	.00040
Stddev	.00059	.00015	.00004
%RSD	63.347	25.599	9.4015
#1	-.00155	.00045	.00043
#2	-.00084	.00056	.00036
#3	-.00039	.00074	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9633.6	61477.	3283.0
Stddev	23.5	199.	25.8
%RSD	.24437	.32309	.78547
#1	9635.1	61706.	3253.9
#2	9656.4	61364.	3291.9
#3	9609.4	61360.	3303.1

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:13:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	2.0538	.00424	.05679	.30137	.00008	160.95	.00040
Stddev	.00099	.0179	.00360	.00161	.00191	.00003	.73	.00020
%RSD	625.72	.87190	84.976	2.8342	.63262	40.857	.45089	48.680
#1	.00035	2.0639	.00523	.05846	.30342	.00005	161.69	.00049
#2	.00047	2.0331	.00724	.05525	.30104	.00011	160.24	.00018
#3	-.00129	2.0644	.00025	.05665	.29964	.00010	160.92	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.05022	.00244	.06600	6.7325	.04174	.86990	-.00077
Stddev	.00001	.00071	.00046	.01751	.0793	.00094	.03086	.00154
%RSD	53.643	1.4082	18.989	26.534	1.1771	2.2575	3.5476	200.44
#1	.00001	.04993	.00251	.08607	6.8151	.04258	.83482	-.00255
#2	.00004	.04971	.00286	.05817	6.6571	.04192	.89287	.00018
#3	.00002	.05103	.00194	.05378	6.7254	.04072	.88200	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	48.508	-.00031	.00741	.00060	.00514	.00422	24.472
Stddev	.00063	.271	.00042	.00441	.00602	.00302	.00618	.118
%RSD	17.442	.55872	138.52	59.544	1003.1	58.729	146.53	.48061
#1	.00434	48.810	.00008	.00233	-.00322	.00761	.00742	24.541
#2	.00342	48.287	-.00076	.00957	-.00252	.00604	.00813	24.539
#3	.00313	48.427	-.00023	.01033	.00753	.00178	-.00291	24.336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:13:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	5.2882	-.02037	.00182	.05925	.00281	.00089
Stddev	.00045	.0260	.00947	.00098	.00078	.00019	.00080
%RSD	393.62	.49150	46.471	53.984	1.3207	6.6303	89.786
#1	.00029	5.3179	-.02819	.00291	.05902	.00280	.00160
#2	-.00060	5.2694	-.00985	.00102	.05861	.00264	.00002
#3	-.00003	5.2773	-.02308	.00151	.06012	.00301	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8732.6	55925.	3130.6
Stddev	32.6	420.	35.3
%RSD	.37294	.75148	1.1265
#1	8752.4	55468.	3120.1
#2	8695.0	56294.	3101.8
#3	8750.3	56014.	3169.9

Approved: June 25, 2016

Sample Name: L1606122703 Acquired: 6/24/2016 14:17:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00125	.01521	-.00287	.00860	.24123	.00006	11.154	.00028
Stddev	.00085	.00707	.00119	.00183	.00246	.00004	.069	.00007
%RSD	68.571	46.481	41.621	21.280	1.0214	57.404	.61514	23.989
#1	-.00147	.01209	-.00178	.00649	.24385	.00010	11.223	.00034
#2	-.00030	.02330	-.00414	.00957	.24090	.00003	11.086	.00021
#3	-.00196	.01024	-.00269	.00975	.23895	.00006	11.152	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00080	.00213	-.00033	6.2073	1.5140	.01688	6.1835	.21929
Stddev	.00038	.00091	.00079	.0143	.0539	.00306	.0220	.00289
%RSD	47.624	42.694	240.58	.23060	3.5610	18.131	.35514	1.3175
#1	-.00036	.00194	-.00091	6.2218	1.4901	.01738	6.2077	.21708
#2	-.00104	.00133	-.00064	6.2069	1.5757	.01967	6.1777	.22256
#3	-.00101	.00312	.00057	6.1932	1.4762	.01361	6.1650	.21823
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	22.350	-.00018	.00938	-.00137	-.00029	-.00050	19.516
Stddev	.00056	.096	.00083	.00138	.00104	.00383	.01117	.085
%RSD	465.42	.43143	468.12	14.678	75.834	1305.1	2216.4	.43604
#1	.00023	22.450	-.00078	.01058	-.00249	.00050	.00759	19.566
#2	-.00049	22.343	.00077	.00788	-.00044	.00308	-.01325	19.564
#3	.00062	22.257	-.00052	.00969	-.00117	-.00445	.00414	19.418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122703 Acquired: 6/24/2016 14:17:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.28084**	**-.00425**	**-.00304**	**-.00105**	**.00790**	**.00058**
Stddev	.00052	.00163	.00869	.00081	.00050	.00008	.00060
%RSD	129.02	.57971	204.61	26.615	47.317	.97873	103.43
#1	.00050	.28163	-.01407	-.00299	-.00104	.00799	-.00005
#2	-.00016	.28192	-.00109	-.00388	-.00056	.00785	.00113
#3	.00088	.27897	.00242	-.00226	-.00155	.00786	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8914.3**	**56961.**	**3130.5**
Stddev	14.2	82.	32.4
%RSD	.15879	.14313	1.0351
#1	8914.6	56997.	3101.6
#2	8928.4	57018.	3165.5
#3	8900.0	56867.	3124.5

Approved: June 25, 2016

Sample Name: L1606122705 Acquired: 6/24/2016 14:21:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.01545	-.00191	.01058	.23750	.00006	11.195	.00012
Stddev	.00118	.00798	.00344	.00158	.00031	.00003	.021	.00013
%RSD	328.15	51.664	180.02	14.936	.13063	48.409	.18618	104.64
#1	-.00055	.02466	-.00569	.01043	.23772	.00010	11.181	.00021
#2	-.00143	.01046	-.00109	.01223	.23762	.00004	11.184	-.00002
#3	.00090	.01124	.00105	.00908	.23714	.00005	11.219	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.00085	.00038	5.7661	1.5123	.01984	5.9756	.21100
Stddev	.00025	.00106	.00080	.0245	.0653	.00200	.0212	.00231
%RSD	56.521	123.64	211.76	.42500	4.3208	10.094	.35441	1.0971
#1	-.00018	.00141	.00088	5.7931	1.5331	.01943	5.9657	.21198
#2	-.00046	-.00036	.00081	5.7454	1.5646	.02202	5.9611	.20836
#3	-.00068	.00152	-.00055	5.7597	1.4390	.01808	5.9999	.21267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	21.980	.00038	.00585	.00105	.00337	.00431	19.270
Stddev	.00021	.073	.00055	.00335	.00503	.00336	.00279	.078
%RSD	47.614	.33289	144.30	57.337	476.55	99.815	64.659	.40393
#1	.00067	22.029	.00075	.00771	.00214	-.00034	.00547	19.312
#2	.00029	21.896	-.00025	.00198	-.00442	.00622	.00113	19.317
#3	.00034	22.015	.00065	.00787	.00545	.00421	.00633	19.180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122705 Acquired: 6/24/2016 14:21:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.27996**	**-.00062**	**-.00391**	**-.00113**	**.00732**	**.00022**
Stddev	.00053	.00057	.00735	.00180	.00037	.00025	.00038
%RSD	211.26	.20369	1193.3	46.137	32.740	3.4555	174.33
#1	.00056	.27981	-.00799	-.00285	-.00106	.00752	.00033
#2	-.00036	.27948	-.00055	-.00288	-.00079	.00740	.00052
#3	.00056	.28059	.00670	-.00599	-.00152	.00703	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8854.7**	**56642.**	**3127.3**
Stddev	12.3	243.	13.9
%RSD	.13917	.42956	.44340
#1	8861.1	56590.	3116.3
#2	8840.5	56906.	3122.8
#3	8862.4	56428.	3142.9

Approved: June 25, 2016

Sample Name: L1606122706 Acquired: 6/24/2016 14:25:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.21684**	**.00222**	**.01917**	**.58049**	**.00013**	F **284.46**
Stddev	.00156	.00289	.00054	.00104	.00288	.00003	1.45
%RSD	398.54	1.3347	24.456	5.4065	.49594	21.763	.51127
#1	-.00197	.21619	.00253	.01999	.58052	.00015	284.58
#2	-.00036	.22000	.00160	.01951	.57760	.00015	282.95
#3	.00116	.21433	.00254	.01800	.58336	.00010	285.86
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.01684**	**.00998**	**.00007**	**1.9553**	**6.3020**	**.09974**
Stddev	.00017	.00034	.00117	.00099	.0143	.1315	.00214
%RSD	224.89	2.0370	11.743	1484.4	.73067	2.0859	2.1442
#1	.00026	.01703	.01112	-.00102	1.9407	6.1530	.09856
#2	-.00001	.01704	.01006	.00031	1.9692	6.3513	.10221
#3	-.00004	.01644	.00877	.00091	1.9560	6.4016	.09846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**176.37**	**2.2714**	**.00006**	F **731.74**	**.01123**	**.01665**	**.00357**
Stddev	1.24	.0213	.00040	6.78	.00115	.00399	.00138
%RSD	.70410	.93819	724.13	.92699	10.201	23.948	38.657
#1	175.84	2.2688	.00050	724.41	.01123	.01905	.00394
#2	175.48	2.2515	-.00029	737.80	.01238	.01886	.00473
#3	177.79	2.2938	-.00004	733.01	.01008	.01205	.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606122706 Acquired: 6/24/2016 14:25:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00122**	**.00616**	**15.356**	**.00023**	**6.6069**	F **-.03816**	**-.00311**
Stddev	.00529	.00300	.153	.00037	.0311	.00253	.00229
%RSD	434.20	48.780	.99792	161.00	.47035	6.6290	73.823
#1	.00695	.00959	15.424	.00029	6.6061	-.03560	-.00215
#2	.00016	.00487	15.464	.00056	6.5762	-.04066	-.00573
#3	-.00346	.00401	15.181	-.00017	6.6383	-.03822	-.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00168**	**.01200**	**.00044**
Stddev	.00075	.00025	.00035
%RSD	44.955	2.0469	79.672
#1	-.00143	.01227	.00080
#2	-.00252	.01195	.00041
#3	-.00108	.01179	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8072.3**	**51267.**	**2974.1**
Stddev	26.3	41.	21.1
%RSD	.32607	.08087	.70892
#1	8102.7	51312.	2967.6
#2	8056.8	51231.	2997.7
#3	8057.4	51256.	2957.1

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s -.00023	s -.00927	s .00164	s .00296	F -10.167	s .00041
Stddev	.00419	.07786	.00312	.00485	17.626	.00078
%RSD	1785.1	839.67	190.10	164.03	173.37	190.38
#1	k .00417	k -.06650	s .00369	k .00589	-30.520	k -.00012
#2	-.00072	-.04071	-.00195	-.00264	.0178	.00004
#3	s -.00416	s .07939	s .00318	s .00563	.0011	s .00131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit					45.000	
Low Limit					-.00500	

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.030	sF -.00051	s -.00092	s .00395	sF -.01544	k 24.560
Stddev	69.051	.00101	.00091	.00756	.02567	42.585
%RSD	172.50	198.69	98.282	191.07	166.28	173.39
#1	119.76	s -.00168	s -.00047	k -.00260	s -.04508	73.733
#2	.3162	.00002	-.00033	.00225	-.00024	-.06625
#3	.0107	s .00013	s -.00197	s .01222	s -.00100	k .01283
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit		4.5000			180.00	
Low Limit		-.00050			-.00500	

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	372.11	8.6195	k 47.738	k .33032	s .00028	133.30
Stddev	645.21	14.952	82.949	.57767	.00009	230.76
%RSD	173.39	173.47	173.76	174.88	32.225	173.11
#1	1117.1	25.884	k 143.52	k .99736	s .00023	399.76
#2	-.711	-.02432	-.3221	-.00440	.00022	-.0382
#3	-.088	-.00165	k .0166	k -.00198	s .00038	.1779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00045**	s **-.03655**	s **.00172**	s **-.00108**	s **.00075**	s **.01008**
Stddev	.00179	.02808	.00469	.00283	.00609	.01972
%RSD	400.97	76.830	273.03	261.89	809.17	195.59
#1	s -.00054	s -.06589	s .00446	s -.00311	s .00551	s -.00694
#2	.00139	-.00993	.00440	.00215	.00286	.00550
#3	s -.00220	s -.03383	s -.00370	s -.00228	s -.00611	s .03169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00057**	F **-1.1360**	k **20.365**	s **.00055**	s **-.00167**	s **.00003**
Stddev	.00097	1.9693	35.298	.00527	.00210	.00029
%RSD	171.04	173.35	173.32	963.15	126.00	986.03
#1	s -.00081	-3.4099	k 61.124	s .00555	k -.00082	s -.00019
#2	-.00139	.00126	-.03016	.00104	-.00012	-.00009
#3	s .00050	.00067	k .00214	s -.00495	s -.00406	s .00036
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		9.0000				
Low Limit		-.01000				

Elem	Zr3391
Units	ppm
Avg	k **4.7431**
Stddev	8.2177
%RSD	173.26
#1	14.232
#2	-.00307
#3	k .00025
Check ?	Chk Pass
High Limit	
Low Limit	

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	^ *****	^ *****	**1491.6**
Stddev	-----	-----	1744.8
%RSD	-----	-----	116.98
#1	^ -----	96744.	-.833
#2	11739.	67740.	1065.6
#3	^ -----	^ -----	3409.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 14:33:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41166**	**10.425**	**.41797**	**.51029**	**1.0577**	**.05047**	**10.520**	**.05316**
Stddev	.00099	.032	.00238	.00238	.0098	.00020	.066	.00029
%RSD	.24027	.31060	.57018	.46712	.92494	.40032	.62805	.55014
#1	.41078	10.417	.41616	.50822	1.0524	.05037	10.498	.05343
#2	.41273	10.461	.42067	.50975	1.0690	.05033	10.595	.05285
#3	.41147	10.398	.41708	.51289	1.0516	.05070	10.468	.05319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21206**	**.51386**	**.53059**	**4.1899**	**53.263**	**1.0467**	**10.468**	**.52856**
Stddev	.00073	.00321	.00100	.0374	.462	.0063	.076	.00530
%RSD	.34314	.62500	.18884	.89375	.86682	.60297	.72564	1.0030
#1	.21259	.51287	.52997	4.1684	53.043	1.0454	10.485	.52611
#2	.21236	.51126	.53175	4.2331	53.794	1.0536	10.535	.53465
#3	.21123	.51745	.53006	4.1681	52.952	1.0412	10.385	.52494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0576**	**52.995**	**.52777**	**10.435**	**.52686**	**1.2496**	**.41651**	**5.4396**
Stddev	.0040	.485	.00212	.015	.00639	.0066	.00244	.0073
%RSD	.37921	.91430	.40168	.14821	1.2125	.52987	.58470	.13514
#1	1.0613	52.838	.52972	10.450	.53351	1.2484	.41859	5.4468
#2	1.0581	53.538	.52809	10.437	.52631	1.2567	.41712	5.4400
#3	1.0533	52.608	.52552	10.419	.52077	1.2437	.41383	5.4321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 14:33:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0505**	**1.0599**	**1.0626**	**.52487**	**1.0199**	**1.0599**	**1.0481**
Stddev	.0030	.0080	.0069	.00177	.0063	.0016	.0076
%RSD	.28497	.75748	.64716	.33685	.61433	.14858	.72179
#1	1.0520	1.0581	1.0658	.52283	1.0139	1.0617	1.0532
#2	1.0524	1.0687	1.0673	.52604	1.0264	1.0591	1.0518
#3	1.0471	1.0529	1.0547	.52572	1.0194	1.0589	1.0394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8638.4**	**54702.**	**2962.1**
Stddev	25.7	232.	26.1
%RSD	.29729	.42351	.88130
#1	8638.5	54949.	2963.0
#2	8664.0	54489.	2935.5
#3	8612.6	54670.	2987.7

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 14:37:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00059	.00701	.00029	.00414	.00107	.00004	.00238	-.00012
Stddev	.00084	.00406	.00078	.00126	.00076	.00005	.01029	.00020
%RSD	141.95	57.911	270.00	30.394	71.506	123.23	431.54	160.84
#1	-.00109	.01100	-.00061	.00436	.00031	-.00001	.01410	-.00018
#2	.00038	.00714	.00070	.00527	.00106	.00009	-.00516	-.00029
#3	-.00106	.00289	.00078	.00278	.00183	.00005	-.00179	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00101	-.00109	-.00812	.09168	-.00067	.00355	-.00145
Stddev	.00012	.00041	.00020	.01093	.16535	.00286	.05597	.00191
%RSD	587.69	41.101	17.982	134.63	180.37	426.73	1575.4	131.49
#1	-.00012	.00144	-.00126	-.01947	.12855	-.00390	-.02086	.00074
#2	.00007	.00098	-.00088	.00235	.23548	.00155	.06758	-.00233
#3	.00010	.00061	-.00113	-.00724	-.08900	.00034	-.03606	-.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00376	.06309	-.00078	-.00146	-.00295	.00728	.00080	.00640
Stddev	.00004	.00813	.00031	.00130	.00447	.00341	.00273	.00142
%RSD	1.1880	12.887	39.066	89.596	151.30	46.848	341.20	22.217
#1	.00379	.05447	-.00081	-.00002	-.00292	.00343	-.00228	.00491
#2	.00377	.07062	-.00047	-.00257	.00150	.00849	.00178	.00774
#3	.00371	.06419	-.00108	-.00177	-.00745	.00993	.00291	.00656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 14:37:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00030**	**-.00170**	**-.00383**	**-.00049**	**.00017**	**.00063**
Stddev	.00071	.00015	.00190	.00217	.00068	.00011	.00064
%RSD	416.03	50.304	111.76	56.611	138.47	65.323	100.79
#1	-.00090	-.00046	-.00195	-.00355	.00013	.00005	.00048
#2	.00053	-.00016	.00031	-.00613	-.00121	.00020	.00009
#3	-.00015	-.00029	-.00347	-.00182	-.00039	.00026	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8962.4**	**57043.**	**3076.8**
Stddev	9.4	202.	30.1
%RSD	.10495	.35434	.97741
#1	8959.6	57191.	3062.7
#2	8973.0	57124.	3056.5
#3	8954.8	56812.	3111.4

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:41:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00718**	**.16778**	**.00705**	**.07965**	**.00910**	**.00164**	**.41639**	**.00077**
Stddev	.00111	.00850	.00155	.00224	.00038	.00008	.03685	.00016
%RSD	15.437	5.0649	22.016	2.8126	4.2151	4.9707	8.8498	21.171
#1	.00835	.16257	.00591	.07934	.00933	.00163	.41364	.00096
#2	.00706	.17759	.00643	.08204	.00930	.00156	.38099	.00069
#3	.00615	.16318	.00882	.07759	.00865	.00172	.45453	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00372**	**.00553**	**.00388**	**.09928**	**.97152**	**.08315**	**.41379**	**.00739**
Stddev	.00019	.00133	.00032	.02549	.05199	.00523	.08500	.00248
%RSD	5.0726	23.979	8.3772	25.673	5.3513	6.2898	20.543	33.559
#1	.00382	.00499	.00359	.11432	.99435	.08891	.42868	.00950
#2	.00350	.00456	.00423	.06985	1.0082	.08183	.49036	.00801
#3	.00383	.00704	.00382	.11368	.91202	.07870	.32232	.00466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00887**	**.47333**	**.01623**	**.81221**	**.00542**	**.09064**	**.01323**	**.80543**
Stddev	.00034	.01785	.00027	.00285	.00284	.00218	.00846	.00484
%RSD	3.8186	3.7704	1.6489	.35135	52.439	2.4043	63.964	.60120
#1	.00857	.45283	.01639	.81336	.00707	.09020	.00353	.80991
#2	.00924	.48541	.01638	.81431	.00704	.08871	.01911	.80609
#3	.00882	.48176	.01592	.80897	.00214	.09300	.01705	.80029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:41:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40870**	**.04207**	**.01931**	**.15366**	**.00710**	**.01712**	**.04603**
Stddev	.00512	.00019	.00171	.00094	.00077	.00047	.00074
%RSD	1.2534	.44963	8.8459	.61383	10.891	2.7601	1.5991
#1	.41191	.04225	.01832	.15474	.00771	.01740	.04532
#2	.41140	.04187	.02128	.15326	.00736	.01737	.04598
#3	.40280	.04210	.01832	.15299	.00623	.01657	.04679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8982.1**	**57067.**	**3060.2**
Stddev	26.2	300.	11.7
%RSD	.29148	.52636	.38103
#1	8991.8	56753.	3059.1
#2	8952.5	57352.	3072.4
#3	9002.1	57094.	3049.1

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:45:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01869**	**.41297**	**.02026**	**.19746**	**.02185**	**.00383**	**1.0200**	**.00188**
Stddev	.00035	.00586	.00154	.00067	.00147	.00014	.0338	.00015
%RSD	1.8526	1.4186	7.6007	.34025	6.7142	3.6282	3.3179	7.8964
#1	.01874	.40831	.01848	.19818	.02288	.00367	1.0151	.00196
#2	.01900	.41106	.02109	.19686	.02017	.00390	1.0560	.00198
#3	.01832	.41955	.02120	.19732	.02249	.00393	.98885	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00984**	**.01123**	**.00919**	**.18681**	**2.1247**	**.20721**	**.93148**	**.01619**
Stddev	.00014	.00068	.00093	.01106	.0926	.00369	.07781	.00078
%RSD	1.4606	6.0688	10.105	5.9217	4.3598	1.7823	8.3530	4.8206
#1	.01001	.01162	.00904	.19951	2.2112	.20690	.86422	.01547
#2	.00973	.01162	.00834	.18161	2.0269	.21106	.91352	.01702
#3	.00979	.01044	.01018	.17930	2.1360	.20369	1.0167	.01609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02014**	**1.0870**	**.04071**	**1.9977**	**.02135**	**.21673**	**.03821**	**1.9741**
Stddev	.00016	.0210	.00055	.0167	.00069	.00325	.00268	.0082
%RSD	.80007	1.9300	1.3616	.83571	3.2506	1.4993	7.0016	.41651
#1	.02032	1.0994	.04122	2.0148	.02110	.22042	.03544	1.9835
#2	.02003	1.0989	.04080	1.9969	.02082	.21547	.04077	1.9682
#3	.02006	1.0628	.04012	1.9814	.02214	.21430	.03841	1.9708
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:45:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0107**	**.10392**	**.05575**	**.37550**	**.01879**	**.04191**	**.10568**
Stddev	.0090	.00047	.00558	.00228	.00032	.00016	.00084
%RSD	.89117	.44849	9.9995	.60763	1.6789	.38616	.79660
#1	1.0189	.10438	.05893	.37732	.01895	.04186	.10565
#2	1.0122	.10392	.05901	.37624	.01842	.04209	.10485
#3	1.0011	.10345	.04932	.37294	.01899	.04177	.10653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9009.7**	**57472.**	**3066.3**
Stddev	19.1	37.	13.0
%RSD	.21156	.06500	.42365
#1	9017.9	57429.	3056.0
#2	9023.2	57498.	3080.9
#3	8987.9	57490.	3062.1

Approved: June 25, 2016

Sample Name: L1606122707 Acquired: 6/24/2016 14:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.02228	-.00310	.03187	.86009	.00012	39.489	.00003
Stddev	.00018	.00656	.00152	.00057	.00717	.00003	.379	.00032
%RSD	46.468	29.432	49.079	1.8038	.83341	26.472	.96018	1147.1
#1	-.00055	.02985	-.00161	.03125	.86719	.00008	39.879	-.00019
#2	-.00020	.01820	-.00302	.03199	.86023	.00013	39.466	-.00011
#3	-.00040	.01880	-.00465	.03238	.85285	.00015	39.122	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00072	-.00028	.00013	59.587	2.9995	.04414	25.073	1.2878
Stddev	.00057	.00083	.00110	.643	.1016	.00412	.231	.0116
%RSD	79.076	299.88	865.71	1.0796	3.3860	9.3424	.92024	.90415
#1	-.00051	.00068	-.00113	60.213	3.0838	.04323	25.311	1.3011
#2	-.00137	-.00084	.00089	59.621	2.8867	.04865	25.057	1.2792
#3	-.00029	-.00068	.00062	58.928	3.0279	.04055	24.851	1.2831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	115.27	.04203	.01368	.00281	-.00143	.00296	14.747
Stddev	.00037	1.33	.00072	.00307	.00173	.00239	.00365	.039
%RSD	499.83	1.1534	1.7107	22.425	61.439	167.46	123.56	.26370
#1	.00026	116.59	.04143	.01139	.00244	-.00272	.00713	14.784
#2	-.00048	115.27	.04283	.01716	.00130	.00133	.00141	14.750
#3	-.00000	113.93	.04183	.01248	.00470	-.00289	.00033	14.707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122707 Acquired: 6/24/2016 14:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.95862**	**.00605**	**-.00068**	**-.00091**	**.00548**	**.00149**
Stddev	.00073	.01229	.00320	.00267	.00068	.00026	.00022
%RSD	553.72	1.2819	52.980	390.15	74.575	4.7467	14.628
#1	-.00098	.96985	.00245	.00197	-.00106	.00564	.00171
#2	.00022	.96050	.00860	-.00066	-.00151	.00563	.00127
#3	.00036	.94549	.00708	-.00336	-.00017	.00518	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8796.8**	**55980.**	**3081.4**
Stddev	13.6	173.	49.3
%RSD	.15430	.30941	1.6006
#1	8782.9	56135.	3034.1
#2	8810.1	56011.	3077.6
#3	8797.3	55793.	3132.6

Approved: June 25, 2016

Sample Name: L1606128901 Acquired: 6/24/2016 14:52:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.04962**	**.00112**	**.00988**	**5.2736**	**-.00000**	**172.96**
Stddev	.00150	.00386	.00106	.00285	.0237	.00005	.90
%RSD	521.82	7.7690	94.694	28.895	.44889	7806.7	.52141
#1	.00036	.05342	.00225	.00730	5.2908	-.00004	173.59
#2	.00175	.04571	.00014	.00938	5.2466	.00005	171.93
#3	-.00125	.04974	.00097	.01295	5.2835	-.00001	173.36
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00136**	**.04532**	**.13640**	**.02803**	**.82377**	**2.0910**	**.06524**
Stddev	.00008	.00075	.00127	.00169	.01843	.0634	.00121
%RSD	6.1045	1.6593	.93452	6.0401	2.2378	3.0301	1.8477
#1	.00135	.04615	.13543	.02951	.80742	2.1500	.06406
#2	.00144	.04511	.13594	.02618	.82014	2.0990	.06519
#3	.00128	.04469	.13784	.02838	.84375	2.0241	.06647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**132.57**	**1.5484**	**.00399**	F **475.43**	**.60664**	**-.00181**	**.00112**
Stddev	1.22	.0105	.00019	6.67	.00940	.00176	.00123
%RSD	.92353	.67771	4.8057	1.4023	1.5491	97.473	109.90
#1	133.54	1.5549	.00379	480.67	.61634	-.00043	.00090
#2	131.19	1.5363	.00417	477.68	.60602	-.00120	.00245
#3	132.97	1.5541	.00401	467.92	.59758	-.00379	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606128901 Acquired: 6/24/2016 14:52:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.00044**	**20.411**	**-.00001**	**3.3220**	**-.02680**	**-.00165**
Stddev	.00177	.00688	.223	.00059	.0144	.00356	.00200
%RSD	411.04	1578.1	1.0946	9208.5	.43324	13.269	121.77
#1	-.00012	.00683	20.657	.00066	3.3359	-.02623	-.00015
#2	-.00234	.00133	20.356	-.00024	3.3072	-.03061	-.00392
#3	.00117	-.00685	20.220	-.00044	3.3229	-.02356	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00230**	**.01606**	**-.00030**
Stddev	.00111	.00038	.00039
%RSD	48.336	2.3357	128.61
#1	-.00215	.01640	.00003
#2	-.00348	.01614	-.00073
#3	-.00127	.01566	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8386.8**	**53296.**	**3021.6**
Stddev	37.8	223.	29.3
%RSD	.45026	.41852	.97129
#1	8352.5	53490.	2991.9
#2	8427.3	53347.	3050.6
#3	8380.7	53052.	3022.3

Approved: June 25, 2016

Sample Name: L1606128904 Acquired: 6/24/2016 14:56:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.89254**	**-.00069**	**.01964**	**.04255**	**.00011**	**5.6683**	**.00028**
Stddev	.00076	.01581	.00109	.00257	.00109	.00004	.0152	.00014
%RSD	98.022	1.7713	158.41	13.060	2.5725	41.643	.26758	50.825
#1	-.00164	.87537	-.00125	.01833	.04129	.00015	5.6815	.00024
#2	-.00048	.89576	.00057	.01800	.04324	.00007	5.6517	.00016
#3	-.00021	.90650	-.00137	.02260	.04312	.00010	5.6716	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00425**	**.00494**	**1.2848**	**1.7945**	**.00004**	**1.0750**	**.06944**
Stddev	.00027	.00147	.00133	.0357	.1112	.00319	.1047	.00259
%RSD	122.02	34.538	27.001	2.7795	6.1951	7919.7	9.7411	3.7251
#1	-.00019	.00333	.00648	1.3254	1.8687	-.00206	1.1443	.06646
#2	-.00051	.00594	.00405	1.2582	1.8481	.00371	1.1263	.07089
#3	.00003	.00347	.00430	1.2709	1.6666	-.00153	.95457	.07099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00253**	**11.300**	**.00403**	**.05743**	**-.00017**	**-.00179**	**.00195**	**3.8550**
Stddev	.00020	.072	.00110	.00105	.00329	.00658	.00226	.1069
%RSD	7.7182	.63637	27.173	1.8233	1906.1	368.28	115.87	2.7717
#1	.00264	11.368	.00517	.05829	.00210	-.00819	-.00037	3.9182
#2	.00264	11.309	.00299	.05627	-.00395	.00496	.00208	3.9152
#3	.00230	11.225	.00394	.05774	.00133	-.00213	.00413	3.7317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606128904 Acquired: 6/24/2016 14:56:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.05757**	**.02633**	**-.00071**	**.00137**	**.00722**	**.00200**
Stddev	.00035	.00023	.00560	.00355	.00071	.00007	.00033
%RSD	91.722	.39740	21.269	498.75	51.627	.91462	16.350
#1	-.00073	.05778	.02000	-.00383	.00175	.00716	.00162
#2	-.00038	.05732	.02834	-.00145	.00181	.00729	.00222
#3	-.00003	.05760	.03065	.00315	.00055	.00719	.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8865.6**	**56649.**	**3059.6**
Stddev	13.5	96.	21.0
%RSD	.15270	.17031	.68631
#1	8866.0	56591.	3042.3
#2	8878.9	56761.	3053.7
#3	8851.9	56596.	3083.0

Approved: June 25, 2016

Sample Name: L1606129003 Acquired: 6/24/2016 15:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.23085	.01034	.01559	.36719	.00005	21.705	.00048
Stddev	.00066	.01132	.00405	.00112	.00034	.00003	.125	.00008
%RSD	83.316	4.9053	39.209	7.1670	.09361	52.637	.57576	16.613
#1	-.00053	.21806	.00670	.01651	.36734	.00007	21.802	.00057
#2	-.00154	.23489	.01470	.01592	.36743	.00007	21.749	.00042
#3	-.00030	.23961	.00961	.01435	.36680	.00002	21.564	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00832	.00224	.00061	33.420	3.2767	.01261	13.855	.58209
Stddev	.00025	.00111	.00133	.070	.0433	.00234	.192	.00232
%RSD	3.0553	49.670	217.79	.20879	1.3202	18.546	1.3850	.39779
#1	.00834	.00100	.00061	33.467	3.2844	.00992	14.064	.58474
#2	.00805	.00316	.00195	33.452	3.3155	.01415	13.814	.58108
#3	.00856	.00256	-.00072	33.340	3.2300	.01376	13.686	.58045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	119.40	.01660	.07210	.00341	.00143	.00513	10.118
Stddev	.00033	.47	.00077	.00340	.00220	.00378	.00738	.080
%RSD	1430.2	.39268	4.6557	4.7101	64.624	264.86	143.85	.79057
#1	.00020	119.78	.01610	.06894	.00133	.00564	-.00235	10.112
#2	-.00035	119.55	.01749	.07569	.00317	-.00168	.00533	10.200
#3	.00022	118.87	.01621	.07166	.00572	.00033	.01240	10.041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606129003 Acquired: 6/24/2016 15:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00825	.48338	.01285	-.00007	-.00099	.02470	.00130
Stddev	.00046	.00133	.00609	.00020	.00008	.00029	.00043
%RSD	5.5459	.27526	47.375	267.50	8.5468	1.1648	33.241
#1	.00847	.48381	.01168	-.00026	-.00091	.02465	.00080
#2	.00855	.48444	.00743	-.00009	-.00108	.02501	.00160
#3	.00772	.48189	.01943	.00013	-.00099	.02444	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8589.3	54682.	3050.6
Stddev	24.0	271.	24.0
%RSD	.27972	.49573	.78517
#1	8590.4	54964.	3023.0
#2	8564.7	54423.	3063.9
#3	8612.7	54659.	3065.0

Approved: June 25, 2016

Sample Name: L1606129005 Acquired: 6/24/2016 15:04:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00093	2.8940	.00006	.01007	.07684	.00018	1.8409	.00000
Stddev	.00144	.0184	.00220	.00073	.00162	.00006	.0138	.00046
%RSD	154.30	.63640	3601.3	7.2287	2.1026	31.323	.75067	9347.2
#1	-.00260	2.9086	-.00247	.00925	.07870	.00012	1.8257	.00046
#2	-.00011	2.9000	.00139	.01032	.07576	.00019	1.8444	.00000
#3	-.00010	2.8733	.00126	.01063	.07607	.00023	1.8526	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.00434	-.00038	3.1829	.55321	.00872	1.5188	.02267
Stddev	.00018	.00090	.00079	.0133	.03931	.00184	.0455	.00119
%RSD	20.184	20.776	205.81	.41668	7.1064	21.146	2.9981	5.2528
#1	.00112	.00469	-.00125	3.1779	.59786	.01068	1.4921	.02373
#2	.00082	.00502	.00029	3.1979	.52378	.00846	1.5714	.02138
#3	.00078	.00332	-.00019	3.1728	.53798	.00702	1.4930	.02289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	27.020	.00272	.08458	.00016	.00433	.00430	18.456
Stddev	.00073	.100	.00065	.00188	.00203	.00206	.00371	.304
%RSD	171.02	.37092	23.861	2.2211	1248.4	47.523	86.151	1.6472
#1	-.00010	27.134	.00249	.08421	.00247	.00531	.00264	18.631
#2	.00012	26.983	.00222	.08662	-.00061	.00572	.00172	18.633
#3	.00126	26.944	.00345	.08292	-.00137	.00197	.00855	18.105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606129005 Acquired: 6/24/2016 15:04:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.03803	.06036	-.00240	.00545	.00944	.00214
Stddev	.00054	.00054	.00300	.00069	.00057	.00004	.00035
%RSD	54.381	1.4172	4.9720	28.734	10.423	.45223	16.538
#1	.00056	.03865	.06382	-.00184	.00519	.00939	.00180
#2	.00160	.03778	.05850	-.00219	.00610	.00947	.00213
#3	.00083	.03766	.05876	-.00318	.00505	.00946	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8715.6	55373.	3004.3
Stddev	28.8	88.	20.9
%RSD	.33098	.15973	.69504
#1	8735.4	55391.	2980.2
#2	8728.9	55276.	3014.4
#3	8682.5	55450.	3018.2

Approved: June 25, 2016

Sample Name: L1606112901 Acquired: 6/24/2016 15:08:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00153	.04742	-.00095	.03453	.02713	.00001	86.360	.00034
Stddev	.00217	.00415	.00049	.00360	.00063	.00009	.224	.00044
%RSD	141.80	8.7609	51.957	10.417	2.3220	657.60	.25919	128.64
#1	-.00346	.04486	-.00039	.03082	.02758	-.00008	86.344	.00072
#2	-.00196	.04519	-.00115	.03800	.02641	.00009	86.145	-.00014
#3	.00082	.05221	-.00131	.03476	.02740	.00002	86.592	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00312	.00177	.94597	3.2694	-.00206	18.533	.11547
Stddev	.00014	.00126	.00037	.01236	.0834	.00303	.037	.00006
%RSD	78.771	40.351	21.042	1.3061	2.5502	147.38	.19767	.05424
#1	-.00029	.00408	.00217	.94560	3.3573	-.00518	18.524	.11541
#2	-.00002	.00169	.00170	.93380	3.1914	.00088	18.501	.11554
#3	-.00020	.00357	.00144	.95851	3.2594	-.00189	18.573	.11545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	63.757	.00088	-.00345	-.00001	.00390	.00201	4.3369
Stddev	.00012	.098	.00080	.00790	.00073	.00356	.00350	.0154
%RSD	20.681	.15440	91.170	229.23	11400.	91.387	174.14	.35496
#1	.00052	63.708	.00165	-.00774	-.00051	.00796	-.00076	4.3485
#2	.00048	63.692	.00005	.00567	-.00034	.00129	.00594	4.3428
#3	.00070	63.870	.00094	-.00827	.00083	.00245	.00085	4.3194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112901 Acquired: 6/24/2016 15:08:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.26173	-.00856	-.00313	-.00118	.00293	.00052
Stddev	.00080	.00134	.00446	.00054	.00143	.00016	.00098
%RSD	51.891	.51077	52.060	17.221	121.68	5.3885	189.16
#1	.00076	.26032	-.01247	-.00264	-.00215	.00304	.00128
#2	.00236	.26190	-.00951	-.00371	.00047	.00300	.00086
#3	.00153	.26298	-.00371	-.00305	-.00185	.00275	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8540.9	54113.	2989.8
Stddev	45.6	156.	19.9
%RSD	.53331	.28793	.66720
#1	8508.8	54182.	2978.9
#2	8520.8	53935.	2977.6
#3	8593.0	54223.	3012.8

Approved: June 25, 2016

Sample Name: L1606112902 Acquired: 6/24/2016 15:12:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.29983	.00210	.00463	.01662	.00001	61.912	.00008
Stddev	.00140	.00599	.00218	.00166	.00062	.00006	.415	.00006
%RSD	851.26	1.9983	103.64	35.749	3.7122	644.92	.67074	85.148
#1	.00063	.30673	.00242	.00653	.01642	-.00001	62.250	.00000
#2	.00065	.29672	.00410	.00344	.01613	.00007	61.449	.00009
#3	-.00178	.29603	-.00022	.00393	.01731	-.00004	62.038	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.01059	.00129	.94804	2.0675	.00069	20.139	.47034
Stddev	.00027	.00122	.00016	.02696	.0775	.00357	.320	.00402
%RSD	2948.5	11.527	12.380	2.8436	3.7492	519.77	1.5901	.85492
#1	-.00008	.00944	.00121	.97580	2.0012	.00465	20.332	.47062
#2	-.00020	.01048	.00148	.92196	2.0486	-.00226	19.770	.46619
#3	.00031	.01187	.00119	.94637	2.1528	-.00033	20.317	.47422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	30.320	.00364	.05395	.00396	.00836	-.00176	4.3013
Stddev	.00027	.212	.00081	.00668	.00208	.00440	.00252	.0395
%RSD	24.472	.70024	22.172	12.380	52.449	52.578	143.06	.91824
#1	.00086	30.527	.00437	.06160	.00615	.01344	-.00322	4.3162
#2	.00138	30.102	.00277	.04930	.00201	.00571	.00115	4.3312
#3	.00102	30.330	.00377	.05095	.00373	.00594	-.00320	4.2566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112902 Acquired: 6/24/2016 15:12:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.22725**	**.00528**	**-.00256**	**-.00043**	**.00529**	**.00068**
Stddev	.00083	.00096	.00459	.00338	.00037	.00010	.00058
%RSD	564.50	.42062	86.815	132.11	87.049	1.8289	84.780
#1	-.00087	.22693	.00443	-.00640	-.00011	.00518	.00078
#2	.00076	.22649	.00118	-.00002	-.00084	.00537	.00006
#3	-.00033	.22832	.01024	-.00126	-.00035	.00532	.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8571.6**	**54279.**	**2969.2**
Stddev	16.1	210.	28.2
%RSD	.18756	.38604	.95029
#1	8572.3	54497.	2938.5
#2	8555.3	54260.	2975.3
#3	8587.4	54079.	2993.9

Approved: June 25, 2016

Sample Name: L1606112903 Acquired: 6/24/2016 15:16:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00206	.02810	.00131	.04316	.02401	.00003	88.103	-.00001
Stddev	.00163	.00424	.00349	.00036	.00097	.00004	.414	.00006
%RSD	79.332	15.095	266.64	.84369	4.0298	138.71	.47027	1013.7
#1	-.00372	.03153	.00085	.04353	.02406	.00000	88.569	-.00003
#2	-.00046	.02336	-.00193	.04281	.02302	.00007	87.962	-.00006
#3	-.00199	.02942	.00501	.04314	.02496	.00001	87.777	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00060	.00253	.00131	.96589	1.3495	.00123	21.585	.10128
Stddev	.00042	.00035	.00067	.03405	.0842	.00325	.244	.00173
%RSD	70.727	13.720	51.685	3.5257	6.2420	263.39	1.1308	1.7072
#1	-.00095	.00223	.00070	.96112	1.2530	.00259	21.821	.10325
#2	-.00013	.00291	.00203	1.0021	1.4081	.00359	21.599	.10062
#3	-.00070	.00244	.00119	.93447	1.3875	-.00247	21.334	.09998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	45.687	-.00078	-.00721	.00004	.00503	.00046	5.7282
Stddev	.00004	.226	.00053	.00474	.00119	.00065	.00200	.0193
%RSD	10.964	.49543	68.227	65.769	3232.3	13.018	432.45	.33624
#1	.00035	45.948	-.00018	-.00213	-.00052	.00542	.00277	5.7412
#2	.00034	45.538	-.00095	-.00799	.00140	.00427	-.00053	5.7373
#3	.00041	45.576	-.00121	-.01151	-.00077	.00539	-.00085	5.7061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112903 Acquired: 6/24/2016 15:16:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.26833**	**-.01816**	**-.00283**	**-.00066**	**.00168**	**-.00020**
Stddev	.00078	.00133	.00789	.00034	.00071	.00025	.00040
%RSD	532.76	.49719	43.454	11.860	108.55	14.856	199.35
#1	-.00105	.26982	-.01296	-.00288	-.00092	.00197	-.00067
#2	.00022	.26790	-.02724	-.00248	.00015	.00158	-.00001
#3	.00038	.26726	-.01427	-.00314	-.00120	.00151	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8598.7**	**54568.**	**2985.2**
Stddev	14.7	155.	28.7
%RSD	.17099	.28360	.96063
#1	8589.5	54461.	2952.2
#2	8615.7	54497.	2998.6
#3	8591.0	54745.	3004.7

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 15:20:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40824	10.420	.41623	.50512	1.0434	.05077	10.410	.05303
Stddev	.00102	.011	.00166	.00159	.0051	.00011	.048	.00003
%RSD	.24985	.10317	.39821	.31537	.48909	.20971	.45682	.05731
#1	.40928	10.415	.41742	.50640	1.0406	.05065	10.460	.05302
#2	.40724	10.413	.41433	.50561	1.0402	.05085	10.366	.05306
#3	.40821	10.433	.41693	.50333	1.0493	.05082	10.403	.05300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21118	.51349	.53049	4.1296	52.613	1.0448	10.282	.52373
Stddev	.00035	.00153	.00198	.0197	.215	.0121	.119	.00095
%RSD	.16775	.29847	.37336	.47674	.40803	1.1621	1.1607	.18074
#1	.21141	.51175	.53242	4.1285	52.846	1.0585	10.343	.52404
#2	.21135	.51410	.53058	4.1499	52.423	1.0356	10.145	.52448
#3	.21077	.51463	.52847	4.1106	52.571	1.0402	10.359	.52266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0543	52.234	.52970	10.421	.53044	1.2449	.41601	5.4104
Stddev	.0058	.138	.00167	.015	.00320	.0077	.00786	.0069
%RSD	.55132	.26343	.31583	.14051	.60281	.61774	1.8884	.12671
#1	1.0591	52.228	.53040	10.408	.52788	1.2425	.41688	5.4032
#2	1.0560	52.100	.53092	10.437	.53402	1.2535	.42340	5.4168
#3	1.0478	52.375	.52780	10.419	.52942	1.2386	.40776	5.4113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 15:20:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0527**	**1.0427**	**1.0445**	**.52624**	**1.0215**	**1.0629**	**1.0377**
Stddev	.0032	.0041	.0034	.00504	.0054	.0007	.0080
%RSD	.30129	.38916	.32629	.95804	.53233	.06397	.77418
#1	1.0545	1.0426	1.0412	.52173	1.0217	1.0629	1.0451
#2	1.0546	1.0387	1.0480	.53168	1.0159	1.0636	1.0389
#3	1.0491	1.0468	1.0444	.52530	1.0268	1.0623	1.0291
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8453.3**	**53500.**	**2924.6**
Stddev	46.2	193.	16.5
%RSD	.54695	.36073	.56251
#1	8402.3	53503.	2906.8
#2	8492.4	53692.	2927.9
#3	8465.1	53306.	2939.2

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 15:23:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00065	.00992	.00234	.00351	.00116	.00005	.02900	-.00001
Stddev	.00127	.00415	.00228	.00015	.00102	.00007	.00886	.00016
%RSD	194.64	41.872	97.529	4.1352	87.524	137.88	30.568	1159.7
#1	-.00112	.01430	-.00008	.00361	.00056	.00012	.03894	-.00002
#2	-.00162	.00942	.00265	.00358	.00234	-.00001	.02614	.00015
#3	.00078	.00604	.00445	.00334	.00060	.00004	.02192	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00116	-.00112	-.00648	.12931	-.00349	.00279	-.00148
Stddev	.00033	.00174	.00093	.02647	.07085	.00052	.12182	.00041
%RSD	102.16	151.03	83.446	408.59	54.789	15.028	4365.9	27.406
#1	-.00027	.00292	-.00056	-.01439	.08320	-.00296	.07318	-.00103
#2	-.00002	.00111	-.00220	.02304	.09384	-.00350	-.13788	-.00160
#3	-.00068	-.00057	-.00060	-.02808	.21088	-.00401	.07307	-.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00377	.03069	-.00012	-.00362	.00099	.00980	-.00258	.00553
Stddev	.00021	.00731	.00017	.00052	.00072	.00250	.00356	.00133
%RSD	5.5503	23.828	141.85	14.411	72.602	25.470	137.60	24.033
#1	.00400	.03907	-.00021	-.00421	.00089	.01055	-.00604	.00429
#2	.00359	.02561	-.00021	-.00320	.00174	.01183	.00106	.00693
#3	.00372	.02739	.00007	-.00346	.00032	.00701	-.00278	.00538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 15:23:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00006	.00390	-.00184	-.00019	.00017	.00074
Stddev	.00034	.00047	.00298	.00079	.00043	.00010	.00028
%RSD	126.24	847.27	76.444	42.940	222.76	60.338	37.477
#1	.00001	-.00046	.00433	-.00204	-.00069	.00029	.00091
#2	.00066	.00046	.00665	-.00251	.00004	.00014	.00042
#3	.00015	.00017	.00073	-.00097	.00007	.00009	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9150.0	58046.	3103.6
Stddev	34.2	243.	28.5
%RSD	.37419	.41787	.91849
#1	9166.8	58132.	3091.9
#2	9172.6	58235.	3082.8
#3	9110.6	57773.	3136.1

Approved: June 25, 2016

Sample Name: L1606112904 Acquired: 6/24/2016 15:27:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.30610	.00349	.00484	.01680	-.00005	61.162	.00024
Stddev	.00266	.00425	.00225	.00067	.00024	.00004	.150	.00011
%RSD	1354.1	1.3879	64.385	13.909	1.4087	89.396	.24565	45.340
#1	-.00149	.30821	.00608	.00459	.01688	-.00002	61.102	.00011
#2	-.00119	.30889	.00214	.00560	.01653	-.00010	61.332	.00032
#3	.00327	.30121	.00224	.00432	.01699	-.00002	61.050	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.01616	.00247	1.0511	2.1639	.00265	19.710	.53272
Stddev	.00012	.00059	.00049	.0193	.0834	.00241	.173	.00246
%RSD	129.55	3.6203	19.814	1.8330	3.8560	91.029	.87731	.46259
#1	-.00009	.01640	.00191	1.0288	2.1065	.00152	19.534	.52992
#2	.00002	.01659	.00280	1.0622	2.1255	.00541	19.716	.53455
#3	-.00022	.01550	.00269	1.0622	2.2596	.00101	19.880	.53369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00224	29.844	.00743	.06304	.00618	.01638	.00390	4.1954
Stddev	.00008	.159	.00126	.00450	.00021	.00264	.00288	.0213
%RSD	3.3560	.53301	16.998	7.1387	3.3773	16.138	73.999	.50670
#1	.00231	29.838	.00709	.06811	.00642	.01793	.00356	4.2121
#2	.00224	30.006	.00883	.05951	.00606	.01788	.00693	4.2026
#3	.00216	29.688	.00638	.06151	.00605	.01333	.00119	4.1715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112904 Acquired: 6/24/2016 15:27:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.22406	.00181	.00036	-.00058	.00615	.00172
Stddev	.00007	.00022	.00734	.00244	.00087	.00015	.00076
%RSD	17.459	.09649	406.25	670.43	150.42	2.4773	44.222
#1	.00049	.22431	-.00276	.00318	.00042	.00630	.00086
#2	.00040	.22393	-.00209	-.00113	-.00100	.00600	.00231
#3	.00035	.22394	.01028	-.00095	-.00117	.00614	.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8744.7	55412.	3026.9
Stddev	38.5	169.	22.6
%RSD	.44021	.30480	.74756
#1	8749.8	55267.	3016.4
#2	8780.4	55372.	3011.4
#3	8703.9	55597.	3052.8

Approved: June 25, 2016

Sample Name: L1606112905 Acquired: 6/24/2016 15:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.01140	.00022	.00122	.00193	.00011	.07553	.00012
Stddev	.00193	.01011	.00272	.00166	.00083	.00003	.00088	.00020
%RSD	340.70	88.707	1246.3	135.40	43.103	31.594	1.1614	171.20
#1	.00179	.01735	.00330	.00313	.00287	.00010	.07465	-.00009
#2	.00157	.01711	-.00076	.00011	.00161	.00008	.07641	.00013
#3	-.00166	-.00028	-.00188	.00044	.00131	.00014	.07552	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.00179	-.00013	-.00208	.05937	-.00493	.01993	-.00020
Stddev	.00039	.00092	.00162	.01996	.01936	.00171	.04297	.00398
%RSD	69.405	51.134	1287.4	957.73	32.612	34.778	215.57	2030.5
#1	-.00019	.00143	.00175	.00550	.07429	-.00691	-.01080	-.00459
#2	-.00097	.00283	-.00102	-.02473	.03749	-.00396	.06904	.00316
#3	-.00052	.00111	-.00111	.01297	.06632	-.00392	.00157	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.19673	.00066	-.00598	-.00007	.00185	.00246	.04335
Stddev	.00032	.01934	.00099	.00702	.00356	.00034	.00251	.00410
%RSD	52.254	9.8320	149.70	117.31	5122.7	18.375	102.19	9.4602
#1	.00034	.21710	.00051	-.01339	.00401	.00225	.00393	.03880
#2	.00096	.17861	-.00025	-.00514	-.00170	.00164	-.00044	.04677
#3	.00053	.19448	.00171	.00057	-.00252	.00167	.00389	.04446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112905 Acquired: 6/24/2016 15:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00050	.00137	-.00139	-.00093	.00257	-.00038
Stddev	.00056	.00024	.01168	.00187	.00042	.00002	.00017
%RSD	55.495	48.882	850.09	134.64	45.297	.75245	45.272
#1	.00129	.00076	.00019	-.00328	-.00062	.00258	-.00051
#2	.00036	.00028	.01360	.00046	-.00076	.00255	-.00018
#3	.00137	.00046	-.00967	-.00135	-.00142	.00257	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8734.1	55771.	2977.0
Stddev	61.0	169.	16.5
%RSD	.69849	.30321	.55417
#1	8730.3	55638.	2990.1
#2	8797.0	55713.	2958.5
#3	8675.1	55961.	2982.4

Approved: June 25, 2016

Sample Name: L1606127201 Acquired: 6/24/2016 15:35:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.02906	.00201	.10271	.01218	.00003	20.213	.00009
Stddev	.00117	.00902	.00030	.00201	.00114	.00005	.197	.00012
%RSD	4520.9	31.026	14.913	1.9615	9.3835	162.60	.97382	138.86
#1	.00128	.03946	.00223	.10504	.01090	.00001	20.371	.00012
#2	-.00038	.02417	.00215	.10159	.01253	-.00000	19.992	.00020
#3	-.00097	.02355	.00167	.10152	.01310	.00009	20.275	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.00322	.00018	.00370	.50036	.00507	3.7531	-.00235
Stddev	.00050	.00044	.00072	.02394	.09084	.00627	.0578	.00152
%RSD	321.71	13.795	410.19	646.53	18.154	123.69	1.5413	64.541
#1	.00023	.00369	.00101	-.02389	.60518	.00467	3.7411	-.00063
#2	.00003	.00318	-.00019	.01903	.44485	-.00099	3.8160	-.00291
#3	-.00072	.00280	-.00029	.01596	.45103	.01152	3.7022	-.00351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	138.48	-.00049	.00895	.00151	.00220	.00648	4.7916
Stddev	.00020	.68	.00066	.00484	.00341	.00275	.00555	.0247
%RSD	16.240	.49155	133.40	54.067	226.53	125.05	85.629	.51620
#1	.00108	138.86	-.00055	.01077	-.00143	.00260	.01252	4.8079
#2	.00145	137.70	.00019	.01263	.00069	-.00073	.00536	4.8036
#3	.00114	138.89	-.00113	.00347	.00525	.00472	.00158	4.7631
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127201 Acquired: 6/24/2016 15:35:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.06627	-.00304	-.00129	.00718	.00237	.00290
Stddev	.00103	.00053	.00409	.00463	.00068	.00008	.00098
%RSD	265.57	.80562	134.51	357.80	9.5384	3.2543	33.907
#1	.00080	.06650	-.00069	-.00660	.00664	.00231	.00179
#2	-.00096	.06566	-.00067	.00082	.00695	.00246	.00367
#3	-.00101	.06665	-.00777	.00190	.00795	.00235	.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8640.6	54537.	2976.3
Stddev	33.4	414.	2.8
%RSD	.38600	.75997	.09304
#1	8644.3	54100.	2977.4
#2	8672.0	54589.	2978.3
#3	8605.6	54924.	2973.1

Approved: June 25, 2016

Sample Name: L1606127202 Acquired: 6/24/2016 15:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00186	.20642	.00481	.36475	.06011	.00013	99.662
Stddev	.00151	.00493	.00284	.00380	.00039	.00009	.247
%RSD	81.194	2.3881	58.969	1.0428	.65090	70.313	.24793
#1	-.00316	.20852	.00188	.36055	.06036	.00024	99.944
#2	-.00221	.20995	.00754	.36574	.06030	.00009	99.557
#3	-.00020	.20079	.00500	.36796	.05966	.00007	99.485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	-.00019	.00432	.00026	.09326	2.6088	.04279
Stddev	.00015	.00023	.00087	.00198	.00865	.0720	.00422
%RSD	400.35	123.60	20.116	760.87	9.2780	2.7582	9.8647
#1	.00014	-.00025	.00365	-.00200	.10250	2.6023	.04293
#2	-.00013	.00007	.00402	.00170	.09194	2.6838	.03850
#3	.00011	-.00038	.00531	.00108	.08535	2.5403	.04694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	56.637	.00259	.00352	F 291.42	.00153	.00653	.00125
Stddev	.045	.00205	.00017	.68	.00123	.00611	.00197
%RSD	.08009	79.394	4.9276	.23185	80.436	93.561	157.56
#1	56.602	.00444	.00340	292.14	.00132	.01203	-.00086
#2	56.688	.00294	.00372	291.32	.00042	.00760	.00158
#3	56.620	.00038	.00344	290.80	.00286	-.00004	.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606127202 Acquired: 6/24/2016 15:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00336	.01090	9.4240	.00071	1.0342	-.01392	-.00220
Stddev	.00383	.00615	.0240	.00151	.0037	.00663	.00343
%RSD	114.00	56.427	.25425	212.99	.35481	47.596	156.09
#1	.00463	.00381	9.4269	.00142	1.0381	-.00964	-.00233
#2	-.00094	.01477	9.4464	-.00103	1.0335	-.02155	-.00556
#3	.00639	.01413	9.3988	.00174	1.0309	-.01057	.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00964	.00621	.00119
Stddev	.00038	.00006	.00099
%RSD	3.9446	.99408	82.742
#1	.00988	.00626	.00026
#2	.00920	.00614	.00109
#3	.00983	.00622	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8435.9	53530.	2970.9
Stddev	12.7	193.	17.9
%RSD	.15053	.36100	.60288
#1	8449.6	53485.	2950.4
#2	8433.7	53742.	2979.1
#3	8424.5	53363.	2983.2

Approved: June 25, 2016

Sample Name: L1606127901 Acquired: 6/24/2016 15:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00142	4.7663	.00159	.19149	.18987	.00044	117.30	.00019
Stddev	.00097	.0101	.00508	.00228	.00171	.00003	.36	.00019
%RSD	68.564	.21115	319.18	1.1931	.90121	7.9858	.30828	101.16
#1	-.00138	4.7733	-.00262	.19304	.18994	.00044	117.72	.00036
#2	-.00047	4.7548	.00724	.19255	.18812	.00047	117.12	-.00002
#3	-.00241	4.7708	.00015	.18886	.19154	.00040	117.06	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00381	.02665	.00736	7.4592	1.7020	.01711	47.630	.93316
Stddev	.00023	.00138	.00126	.0357	.0635	.00342	.150	.00698
%RSD	6.1636	5.1938	17.091	.47804	3.7303	19.974	.31555	.74834
#1	.00401	.02594	.00596	7.4987	1.7516	.02100	47.481	.93898
#2	.00386	.02577	.00840	7.4496	1.7241	.01458	47.626	.92542
#3	.00355	.02825	.00770	7.4293	1.6305	.01576	47.782	.93509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00556	8.7030	.01355	.23085	.00447	-.00025	.00322	15.121
Stddev	.00008	.0290	.00146	.00413	.00381	.00657	.00291	.053
%RSD	1.3705	.33347	10.784	1.7907	85.136	2585.4	90.596	.35335
#1	.00557	8.7074	.01369	.22722	.00571	.00305	.00109	15.155
#2	.00548	8.6721	.01493	.23000	.00751	.00401	.00202	15.147
#3	.00563	8.7296	.01202	.23535	.00020	-.00782	.00654	15.059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127901 Acquired: 6/24/2016 15:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00095**	**.60203**	**.04472**	**-.00029**	**.01037**	**.12433**	**.00197**
Stddev	.00031	.00068	.00309	.00162	.00044	.00100	.00042
%RSD	32.369	.11312	6.9034	565.97	4.2747	.80201	21.277
#1	.00130	.60249	.04781	-.00207	.01047	.12469	.00218
#2	.00073	.60125	.04470	.00012	.00988	.12510	.00223
#3	.00082	.60235	.04164	.00109	.01075	.12321	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8541.6**	**54387.**	**2958.0**
Stddev	16.9	129.	6.0
%RSD	.19780	.23665	.20194
#1	8551.3	54242.	2952.3
#2	8522.0	54430.	2964.2
#3	8551.3	54488.	2957.4

Approved: June 25, 2016

Sample Name: L1606127905 Acquired: 6/24/2016 15:47:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	8.8519	.00642	.19520	.18168	.00060	88.855	.00021
Stddev	.00244	.0381	.00178	.00225	.00180	.00002	.745	.00017
%RSD	304.73	.43060	27.774	1.1510	.99112	4.1261	.83808	83.018
#1	-.00092	8.8959	.00767	.19423	.18198	.00060	88.810	.00015
#2	.00359	8.8302	.00438	.19361	.18331	.00058	89.621	.00007
#3	-.00027	8.8295	.00720	.19777	.17975	.00063	88.133	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00371	.01642	.00773	9.7705	2.6089	.02290	51.286	.37067
Stddev	.00016	.00003	.00088	.0365	.0601	.00215	.182	.00572
%RSD	4.3765	.17741	11.436	.37305	2.3051	9.3850	.35555	1.5433
#1	.00374	.01645	.00699	9.7786	2.6549	.02048	51.464	.37725
#2	.00353	.01639	.00870	9.8021	2.5408	.02367	51.099	.36781
#3	.00386	.01643	.00749	9.7306	2.6308	.02456	51.296	.36694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00429	17.960	.01399	.58938	.00723	.00345	.01660	21.595
Stddev	.00025	.178	.00089	.00540	.00230	.00161	.00485	.031
%RSD	5.7811	.99221	6.3701	.91546	31.747	46.678	29.224	.14556
#1	.00411	17.965	.01309	.59443	.00477	.00160	.01386	21.612
#2	.00457	18.136	.01402	.58370	.00760	.00453	.01374	21.615
#3	.00418	17.779	.01487	.59001	.00932	.00422	.02220	21.559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127905 Acquired: 6/24/2016 15:47:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00678	.39124	.08635	-.00072	.01938	.20486	.00337
Stddev	.00081	.00258	.00286	.00091	.00084	.00112	.00043
%RSD	12.000	.65984	3.3097	126.77	4.3495	.54646	12.804
#1	.00772	.39217	.08786	-.00156	.01996	.20592	.00287
#2	.00628	.39323	.08814	.00025	.01978	.20498	.00362
#3	.00633	.38833	.08306	-.00084	.01842	.20369	.00361
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8506.2	53713.	2954.1
Stddev	7.0	248.	24.6
%RSD	.08199	.46129	.83302
#1	8500.8	53999.	2935.6
#2	8503.6	53563.	2944.7
#3	8514.1	53577.	2982.0

Approved: June 25, 2016

Sample Name: L1606072901 Acquired: 6/24/2016 15:51:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	1.8041	.00151	.01140	.10342	.00036	3.3368	.00006
Stddev	.00108	.0244	.00306	.00144	.00016	.00001	.0325	.00013
%RSD	427.84	1.3517	203.06	12.597	.15291	1.6360	.97262	213.80
#1	-.00004	1.8139	.00460	.01195	.10325	.00036	3.3478	.00020
#2	.00071	1.7764	.00145	.01248	.10357	.00035	3.3623	.00000
#3	-.00142	1.8221	-.00153	.00977	.10345	.00036	3.3003	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00601	.00511	.00285	8.2259	3.9554	.00145	2.3354	.17823
Stddev	.00015	.00146	.00144	.0492	.0266	.00103	.0397	.00509
%RSD	2.5410	28.552	50.611	.59798	.67201	71.162	1.7012	2.8559
#1	.00590	.00675	.00119	8.2785	3.9276	.00182	2.3174	.17617
#2	.00596	.00394	.00359	8.2184	3.9579	.00029	2.3079	.18402
#3	.00619	.00465	.00379	8.1810	3.9806	.00225	2.3809	.17449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	8.3779	.00603	.06450	.00384	.00090	.00053	7.1161
Stddev	.00020	.1155	.00102	.00385	.00543	.00485	.00847	.0228
%RSD	31.960	1.3781	16.958	5.9688	141.68	539.69	1590.2	.32114
#1	.00082	8.4900	.00592	.06848	.00179	-.00460	.00777	7.1376
#2	.00068	8.3843	.00710	.06080	-.00028	.00272	-.00879	7.1186
#3	.00042	8.2593	.00507	.06423	.01000	.00457	.00261	7.0921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072901 Acquired: 6/24/2016 15:51:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.04015	.03567	-.00369	.00716	.03681	.00098
Stddev	.00043	.00039	.00196	.00299	.00019	.00045	.00038
%RSD	304.20	.97044	5.5017	80.892	2.6476	1.2228	39.254
#1	.00025	.04034	.03670	-.00592	.00694	.03696	.00089
#2	-.00033	.04041	.03689	-.00486	.00725	.03716	.00065
#3	.00052	.03970	.03340	-.00030	.00729	.03630	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8601.0	55071.	2949.1
Stddev	22.1	435.	50.8
%RSD	.25740	.79039	1.7219
#1	8576.7	54573.	2940.0
#2	8620.1	55377.	2903.5
#3	8606.2	55264.	3003.9

Approved: June 25, 2016

Sample Name: L1606072902 Acquired: 6/24/2016 15:55:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00183	.07171	-.00004	.00877	.08968	.00017	3.1101	.00014
Stddev	.00133	.00367	.00088	.00181	.00076	.00008	.0257	.00041
%RSD	72.550	5.1181	2064.2	20.689	.84741	48.064	.82680	296.40
#1	-.00115	.07091	-.00060	.01060	.09049	.00019	3.1398	.00007
#2	-.00335	.06851	.00097	.00697	.08956	.00008	3.0951	.00058
#3	-.00098	.07572	-.00050	.00874	.08898	.00025	3.0953	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	.00242	-.00092	.10471	3.8808	.00116	2.1628	.09158
Stddev	.00017	.00058	.00163	.02662	.0547	.00465	.0847	.00129
%RSD	8.4444	23.790	177.68	25.419	1.4105	401.58	3.9169	1.4137
#1	.00216	.00221	-.00063	.12487	3.9348	.00494	2.1162	.09307
#2	.00216	.00307	-.00267	.07454	3.8824	.00256	2.1116	.09074
#3	.00186	.00198	.00055	.11471	3.8253	-.00403	2.2606	.09093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	8.6660	.00357	-.01372	-.00186	.00337	.00433	5.4192
Stddev	.00050	.0276	.00104	.00287	.00136	.00414	.00201	.0141
%RSD	81.607	.31795	29.178	20.893	72.911	123.08	46.400	.26036
#1	.00102	8.6437	.00292	-.01305	-.00038	.00625	.00365	5.4112
#2	.00005	8.6574	.00477	-.01686	-.00305	-.00138	.00275	5.4355
#3	.00077	8.6968	.00302	-.01125	-.00214	.00523	.00659	5.4109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072902 Acquired: 6/24/2016 15:55:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.04141	.00013	-.00361	-.00026	.00979	-.00013
Stddev	.00063	.00072	.00249	.00115	.00139	.00018	.00021
%RSD	803.32	1.7354	1938.9	31.844	526.60	1.8652	168.23
#1	.00042	.04184	.00137	-.00388	-.00173	.00988	.00006
#2	.00046	.04058	.00175	-.00235	-.00009	.00991	-.00008
#3	-.00065	.04180	-.00274	-.00460	.00103	.00958	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8610.5	55271.	2985.6
Stddev	26.5	458.	16.5
%RSD	.30752	.82920	.55375
#1	8583.1	55190.	2988.7
#2	8612.5	55764.	2967.7
#3	8635.9	54858.	3000.3

Approved: June 25, 2016

Sample Name: L1606072903 Acquired: 6/24/2016 15:59:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00118	3.0417	.00235	.05187	.04806	.00261	52.177	.00034
Stddev	.00191	.0195	.00046	.00139	.00143	.00010	.964	.00029
%RSD	162.37	.64007	19.486	2.6772	2.9802	3.6445	1.8470	86.323
#1	-.00068	3.0605	.00250	.05336	.04904	.00255	52.373	.00001
#2	.00314	3.0430	.00183	.05062	.04641	.00272	51.130	.00058
#3	.00108	3.0216	.00270	.05162	.04872	.00256	53.027	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05155	.00163	.00615	3.2341	2.3681	.00264	15.355	.83166
Stddev	.00029	.00223	.00059	.0481	.0794	.00380	.178	.01170
%RSD	.56184	136.36	9.6575	1.4861	3.3536	143.97	1.1614	1.4068
#1	.05176	.00341	.00624	3.2584	2.3449	-.00169	15.410	.84099
#2	.05167	.00234	.00669	3.1788	2.4565	.00542	15.156	.81853
#3	.05122	-.00086	.00552	3.2652	2.3028	.00418	15.500	.83544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	6.0920	.02162	-.00809	.00351	.00212	-.00139	5.6304
Stddev	.00023	.0506	.00096	.00241	.00275	.00391	.00054	.0235
%RSD	26.502	.83131	4.4295	29.822	78.325	184.24	38.556	.41692
#1	.00068	6.1333	.02268	-.00867	.00452	-.00008	-.00126	5.6575
#2	.00079	6.0355	.02082	-.00544	.00040	-.00019	-.00198	5.6160
#3	.00112	6.1071	.02136	-.01016	.00562	.00664	-.00093	5.6178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072903 Acquired: 6/24/2016 15:59:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.47657**	**-.00608**	**-.00476**	**-.00070**	**.06207**	**.00194**
Stddev	.00020	.00492	.00552	.00119	.00050	.00066	.00073
%RSD	500.65	1.0315	90.719	25.070	72.152	1.0565	37.457
#1	-.00001	.48049	.00025	-.00490	-.00086	.06272	.00252
#2	-.00026	.47105	-.00862	-.00588	-.00110	.06208	.00113
#3	.00015	.47816	-.00987	-.00350	-.00013	.06141	.00218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8765.4**	**55697.**	**3007.0**
Stddev	29.6	471.	42.7
%RSD	.33730	.84576	1.4194
#1	8742.0	55550.	2962.9
#2	8755.4	55316.	3048.1
#3	8798.6	56224.	3009.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:03:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41289**	**10.450**	**.41348**	**.51043**	**1.0555**	**.05100**	**10.588**	**.05276**
Stddev	.00257	.033	.00046	.00258	.0038	.00013	.036	.00002
%RSD	.62124	.31280	.11216	.50484	.35613	.25797	.33694	.04519
#1	.41200	10.430	.41401	.50751	1.0515	.05085	10.563	.05275
#2	.41089	10.432	.41328	.51239	1.0590	.05106	10.629	.05274
#3	.41578	10.488	.41315	.51139	1.0561	.05109	10.571	.05278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21164**	**.51432**	**.52788**	**4.1964**	**53.258**	**1.0465**	**10.545**	**.52810**
Stddev	.00062	.00111	.00081	.0580	.178	.0014	.008	.00391
%RSD	.29347	.21487	.15291	1.3823	.33451	.13725	.07407	.74105
#1	.21169	.51306	.52786	4.1294	53.061	1.0455	10.542	.52435
#2	.21223	.51514	.52709	4.2295	53.408	1.0459	10.540	.52778
#3	.21099	.51475	.52870	4.2303	53.304	1.0481	10.554	.53216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0563**	**52.905**	**.52985**	**10.441**	**.52745**	**1.2469**	**.41732**	**5.4599**
Stddev	.0050	.293	.00133	.026	.00100	.0023	.00481	.0125
%RSD	.47494	.55369	.25035	.25038	.18928	.18400	1.1515	.22826
#1	1.0597	52.572	.53125	10.452	.52655	1.2494	.41899	5.4724
#2	1.0587	53.123	.52861	10.460	.52727	1.2448	.42108	5.4598
#3	1.0506	53.021	.52970	10.412	.52852	1.2466	.41191	5.4474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:03:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0560**	**1.0590**	**1.0626**	**.52607**	**1.0260**	**1.0604**	**1.0440**
Stddev	.0044	.0030	.0208	.00455	.0043	.0021	.0098
%RSD	.42093	.28690	1.9614	.86396	.41541	.20224	.93608
#1	1.0595	1.0556	1.0394	.53131	1.0214	1.0614	1.0527
#2	1.0574	1.0601	1.0799	.52323	1.0298	1.0619	1.0458
#3	1.0510	1.0613	1.0685	.52368	1.0267	1.0580	1.0334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8488.4**	**53377.**	**2896.8**
Stddev	8.3	364.	12.7
%RSD	.09787	.68148	.43965
#1	8479.0	53754.	2889.4
#2	8491.5	53348.	2889.4
#3	8494.7	53029.	2911.5

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:06:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00237	.00904	-.00013	.00126	.00087	.00009	-.03750	-.00001
Stddev	.00028	.00458	.00263	.00213	.00072	.00007	.02259	.00008
%RSD	11.906	50.683	2037.4	169.22	82.542	80.192	60.228	1296.7
#1	-.00241	.00648	.00161	-.00103	.00165	.00017	-.03103	-.00010
#2	-.00207	.01433	.00116	.00161	.00026	.00004	-.06261	.00006
#3	-.00263	.00631	-.00315	.00320	.00069	.00005	-.01886	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00163	-.00062	-.00620	.11573	-.00304	.01488	-.00078
Stddev	.00019	.00081	.00029	.01930	.05076	.00240	.08011	.00324
%RSD	50.224	49.496	47.487	311.51	43.862	78.989	538.48	412.93
#1	-.00042	.00249	-.00061	-.01546	.17426	-.00529	-.06290	.00186
#2	-.00056	.00088	-.00092	-.01911	.08368	-.00051	.01039	.00018
#3	-.00018	.00152	-.00033	.01599	.08926	-.00333	.09714	-.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00388	.01952	-.00090	.00067	.00140	.00754	.00367	.00739
Stddev	.00023	.03874	.00071	.00300	.00256	.00569	.00313	.00164
%RSD	6.0070	198.45	79.652	449.20	182.69	75.419	85.488	22.213
#1	.00376	.02524	-.00008	-.00038	.00209	.01012	.00682	.00912
#2	.00415	-.02176	-.00124	-.00167	-.00143	.01148	.00055	.00586
#3	.00373	.05509	-.00138	.00405	.00355	.00102	.00364	.00718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:06:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00023	-.00285	.00152	-.00011	.00008	.00116
Stddev	.00056	.00010	.00052	.00103	.00094	.00006	.00015
%RSD	318.85	44.632	18.333	67.447	850.45	74.145	12.905
#1	.00055	.00034	-.00230	.00197	.00080	.00011	.00132
#2	-.00047	.00013	-.00334	.00225	-.00005	.00011	.00114
#3	.00045	.00022	-.00292	.00035	-.00108	.00001	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8999.0	56919.	3062.6
Stddev	9.4	30.	18.0
%RSD	.10413	.05237	.58755
#1	9009.8	56950.	3042.1
#2	8994.5	56918.	3075.7
#3	8992.7	56890.	3070.0

Approved: June 25, 2016

Sample Name: L1606114801 Acquired: 6/24/2016 16:10:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	.79294	.00201	.13513	.08691	.00012	28.737	.00030
Stddev	.00214	.00688	.00416	.00148	.00038	.00006	.282	.00020
%RSD	404.68	.86711	206.32	1.0978	.43964	55.958	.98042	65.656
#1	-.00285	.79770	.00316	.13676	.08683	.00010	28.751	.00014
#2	-.00010	.78505	.00548	.13388	.08658	.00006	28.449	.00052
#3	.00136	.79606	-.00260	.13474	.08733	.00019	29.012	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00303	.00093	.48318	5.0170	.00697	15.013	.02622
Stddev	.00047	.00140	.00169	.02352	.0508	.00319	.317	.00088
%RSD	624.02	46.131	181.65	4.8676	1.0122	45.790	2.1109	3.3547
#1	-.00062	.00464	.00230	.46183	4.9691	.00964	14.955	.02533
#2	.00023	.00225	.00145	.50839	5.0118	.00344	14.729	.02708
#3	.00016	.00220	-.00096	.47933	5.0702	.00783	15.355	.02625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	68.950	.00101	.04783	-.00130	.00580	.00131	4.7242
Stddev	.00040	.584	.00074	.00541	.00251	.00495	.00256	.0383
%RSD	15.214	.84747	72.757	11.317	193.03	85.336	195.73	.81053
#1	.00232	69.030	.00034	.05397	-.00090	.00563	.00084	4.7496
#2	.00249	68.330	.00180	.04371	-.00398	.00094	.00407	4.7429
#3	.00308	69.490	.00090	.04583	.00099	.01083	-.00099	4.6802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114801 Acquired: 6/24/2016 16:10:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.27997**	**.00221**	**-.00090**	**.00318**	**.00551**	**.00289**
Stddev	.00064	.00232	.00318	.00103	.00034	.00004	.00087
%RSD	411.94	.83018	144.19	113.71	10.535	.75135	29.945
#1	.00041	.28044	.00583	.00027	.00296	.00549	.00189
#2	-.00003	.27744	-.00015	-.00131	.00357	.00556	.00344
#3	-.00085	.28201	.00094	-.00166	.00301	.00548	.00335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8599.5**	**54385.**	**2981.3**
Stddev	16.0	89.	24.9
%RSD	.18617	.16380	.83644
#1	8603.2	54438.	2974.6
#2	8613.3	54435.	3008.9
#3	8581.9	54282.	2960.3

Approved: June 25, 2016

Sample Name: L1606114802 Acquired: 6/24/2016 16:14:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00204**	**.04975**	**.00299**	**.13869**	**.15047**	**-.00005**	**55.818**	**.00017**
Stddev	.00109	.01051	.00093	.00193	.00152	.00005	.396	.00020
%RSD	53.121	21.121	30.942	1.3904	1.0132	102.05	.70964	116.40
#1	-.00265	.04009	.00388	.13978	.15223	-.00009	56.185	-.00006
#2	-.00269	.06094	.00203	.13983	.14951	.00001	55.872	.00027
#3	-.00079	.04821	.00306	.13647	.14968	-.00007	55.398	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00481**	**.00009**	**.04662**	**2.9224**	**.00713**	**49.316**	**.00366**
Stddev	.00044	.00030	.00072	.01678	.0836	.00442	.171	.00293
%RSD	1148.5	6.2977	802.56	35.999	2.8609	61.973	.34731	80.138
#1	-.00051	.00471	-.00074	.03351	2.9561	.00300	49.393	.00341
#2	.00002	.00515	.00053	.04082	2.8272	.00660	49.435	.00671
#3	.00037	.00456	.00048	.06554	2.9839	.01179	49.119	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**121.90**	**.00147**	**.02233**	**.00149**	**.00278**	**.01025**	**6.1560**
Stddev	.00035	.74	.00041	.00365	.00184	.00274	.00234	.0472
%RSD	18.786	.61102	27.946	16.368	123.30	98.711	22.816	.76606
#1	.00151	122.69	.00179	.01811	-.00020	.00379	.01254	6.1806
#2	.00191	121.83	.00160	.02439	.00122	-.00033	.01035	6.1857
#3	.00221	121.20	.00101	.02449	.00344	.00487	.00787	6.1016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114802 Acquired: 6/24/2016 16:14:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.39251**	**-.00823**	**-.00167**	**.00748**	**.00735**	**.00172**
Stddev	.00093	.00157	.00304	.00302	.00088	.00035	.00065
%RSD	461.50	.40050	36.982	180.68	11.724	4.7920	38.067
#1	-.00008	.39329	-.00720	-.00346	.00697	.00775	.00121
#2	.00066	.39355	-.00584	-.00336	.00697	.00723	.00149
#3	-.00119	.39070	-.01166	.00181	.00849	.00708	.00246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8495.3**	**54006.**	**2982.2**
Stddev	21.4	124.	30.9
%RSD	.25175	.22933	1.0346
#1	8477.7	53900.	2949.3
#2	8519.1	54142.	3010.5
#3	8489.1	53977.	2986.7

Approved: June 25, 2016

Sample Name: L1606115001 Acquired: 6/24/2016 16:18:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	1.0029	.00299	.14279	.11041	.00016	35.956	.00009
Stddev	.00251	.0141	.00281	.00105	.00192	.00007	.317	.00003
%RSD	627.75	1.4010	94.062	.73688	1.7392	40.398	.88245	32.058
#1	.00224	1.0135	.00421	.14372	.11062	.00023	36.172	.00007
#2	.00142	.98692	.00498	.14165	.10839	.00010	35.592	.00007
#3	-.00246	1.0082	-.00023	.14300	.11222	.00016	36.105	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00317	.00169	.71808	2.8256	.00873	22.732	.05335
Stddev	.00027	.00048	.00070	.01344	.0315	.00112	.258	.00149
%RSD	4893.9	15.268	41.765	1.8711	1.1137	12.865	1.1351	2.7844
#1	.00025	.00269	.00090	.73141	2.8424	.00751	22.933	.05174
#2	.00004	.00315	.00188	.70454	2.7893	.00972	22.441	.05367
#3	-.00028	.00366	.00227	.71827	2.8451	.00896	22.823	.05466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00379	119.94	.00083	.11747	.00336	.00193	-.00362	5.3987
Stddev	.00029	.91	.00054	.00963	.00165	.00170	.00327	.0216
%RSD	7.6691	.75510	65.143	8.1950	48.899	88.260	90.387	.40081
#1	.00400	120.59	.00089	.11089	.00147	.00389	-.00507	5.4237
#2	.00392	118.90	.00135	.11301	.00415	.00109	.00013	5.3854
#3	.00346	120.32	.00027	.12852	.00447	.00081	-.00591	5.3870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115001 Acquired: 6/24/2016 16:18:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.24860**	**.00831**	**.00040**	**.00721**	**.00897**	**.00156**
Stddev	.00102	.00079	.00563	.00208	.00033	.00019	.00032
%RSD	900.41	.31800	67.748	518.71	4.6076	2.0684	20.721
#1	-.00127	.24885	.00936	.00280	.00755	.00907	.00137
#2	.00028	.24771	.00223	-.00097	.00689	.00909	.00139
#3	.00065	.24923	.01334	-.00062	.00718	.00876	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8658.5**	**54840.**	**3032.2**
Stddev	11.5	83.	32.1
%RSD	.13234	.15154	1.0598
#1	8653.8	54773.	3000.1
#2	8671.6	54933.	3064.4
#3	8650.2	54814.	3032.3

Approved: June 25, 2016

Sample Name: L1606115002 Acquired: 6/24/2016 16:22:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00114	.54802	.00239	.07237	.04756	.00011	17.868	-.00002
Stddev	.00116	.00304	.00234	.00183	.00074	.00011	.296	.00023
%RSD	101.69	.55434	98.297	2.5331	1.5569	98.769	1.6590	1035.8
#1	-.00186	.54599	.00388	.07434	.04758	.00024	18.086	-.00007
#2	.00020	.55151	.00360	.07071	.04682	.00003	17.530	-.00022
#3	-.00176	.54656	-.00032	.07205	.04830	.00007	17.987	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00269	.00128	.42445	5.1441	.00730	5.7440	.01494
Stddev	.00045	.00114	.00159	.02138	.0765	.00321	.0131	.00279
%RSD	2112.8	42.310	124.60	5.0376	1.4863	44.008	.22880	18.670
#1	.00037	.00359	.00010	.43132	5.0900	.01003	5.7588	.01523
#2	.00009	.00307	.00065	.40047	5.1108	.00376	5.7337	.01757
#3	-.00052	.00141	.00309	.44154	5.2316	.00811	5.7395	.01202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	41.148	.00106	.06447	-.00062	.00281	.00337	1.7279
Stddev	.00070	.471	.00049	.00342	.00129	.00199	.00517	.0310
%RSD	71.365	1.1451	45.916	5.3017	208.13	70.714	153.38	1.7951
#1	.00087	41.063	.00159	.06818	.00051	.00505	.00033	1.7430
#2	.00034	40.725	.00095	.06144	-.00034	.00212	.00044	1.7484
#3	.00173	41.656	.00063	.06379	-.00203	.00126	.00935	1.6922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115002 Acquired: 6/24/2016 16:22:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.10093**	**.00308**	**-.00183**	**.00519**	**.00618**	**.00126**
Stddev	.00067	.00110	.00218	.00277	.00055	.00020	.00057
%RSD	398.57	1.0927	70.842	151.99	10.532	3.3140	45.733
#1	-.00011	.10080	.00275	.00082	.00488	.00640	.00076
#2	-.00086	.09989	.00108	-.00159	.00582	.00617	.00189
#3	.00047	.10209	.00541	-.00471	.00488	.00599	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8768.3**	**55601.**	**3006.8**
Stddev	44.8	353.	32.6
%RSD	.51146	.63549	1.0826
#1	8739.7	56008.	3020.9
#2	8745.2	55379.	3029.9
#3	8820.0	55415.	2969.6

Approved: June 25, 2016

Sample Name: L1606115102 Acquired: 6/24/2016 16:26:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00157	.16673	-.00164	.11324	.07508	.00006	35.965	.00009
Stddev	.00123	.00968	.00381	.00123	.00110	.00006	.070	.00012
%RSD	78.798	5.8070	231.94	1.0834	1.4713	89.197	.19353	140.18
#1	-.00058	.15593	.00273	.11273	.07407	.00011	35.891	.00006
#2	-.00295	.17462	-.00340	.11236	.07626	.00000	35.974	.00023
#3	-.00117	.16964	-.00425	.11464	.07493	.00008	36.029	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.00268	.00078	.22571	2.4607	.00715	20.455	.06028
Stddev	.00017	.00071	.00110	.01627	.0572	.00329	.118	.00255
%RSD	80.425	26.322	141.38	7.2093	2.3240	45.999	.57620	4.2253
#1	-.00019	.00196	.00195	.23780	2.5245	.01081	20.570	.06072
#2	-.00005	.00272	-.00023	.23211	2.4140	.00618	20.461	.06258
#3	-.00038	.00337	.00061	.20721	2.4435	.00445	20.335	.05755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00276	97.835	-.00067	.04806	-.00242	.00513	.00378	5.3799
Stddev	.00044	.396	.00100	.00252	.00339	.00529	.00744	.2322
%RSD	15.877	.40451	148.20	5.2532	139.98	103.15	196.88	4.3153
#1	.00319	97.412	.00043	.04730	.00016	.00550	.01195	5.2447
#2	.00231	98.197	-.00093	.05087	-.00625	.01022	-.00261	5.2471
#3	.00278	97.896	-.00151	.04600	-.00116	-.00034	.00199	5.6480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115102 Acquired: 6/24/2016 16:26:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00071**	**.23607**	**-.00930**	**.00015**	**.00351**	**.01289**	**.00068**
Stddev	.00028	.00125	.00346	.00259	.00142	.00062	.00031
%RSD	39.765	.53152	37.213	1786.3	40.411	4.8488	45.284
#1	-.00042	.23498	-.00585	.00230	.00418	.01260	.00081
#2	-.00072	.23744	-.00927	.00087	.00188	.01246	.00090
#3	-.00098	.23579	-.01277	-.00273	.00448	.01361	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8582.8**	**55285.**	**3037.3**
Stddev	259.2	168.	27.1
%RSD	3.0201	.30413	.89376
#1	8731.0	55097.	3068.5
#2	8733.8	55422.	3018.9
#3	8283.5	55335.	3024.5

Approved: June 25, 2016

Sample Name: L1606115105 Acquired: 6/24/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00162	.10538	.00245	.14951	.09631	.00009	45.968	.00027
Stddev	.00070	.00798	.00198	.00195	.00083	.00004	.579	.00038
%RSD	42.968	7.5757	80.657	1.3067	.86692	43.233	1.2597	142.70
#1	-.00098	.11396	.00050	.14740	.09536	.00011	46.292	.00068
#2	-.00153	.09816	.00240	.15125	.09664	.00005	45.300	-.00007
#3	-.00237	.10403	.00446	.14988	.09693	.00012	46.313	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00270	-.00048	.17572	2.0276	.00721	26.821	.07924
Stddev	.00018	.00083	.00087	.01470	.0656	.00380	.415	.00616
%RSD	45.378	30.889	179.73	8.3676	3.2368	52.699	1.5460	7.7799
#1	-.00018	.00343	-.00076	.15875	2.0306	.00292	26.890	.08485
#2	-.00050	.00179	-.00118	.18434	2.0917	.01014	26.377	.07264
#3	-.00048	.00289	.00049	.18408	1.9605	.00857	27.198	.08022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	129.55	-.00083	.03925	.00528	.00057	.00250	6.3879
Stddev	.00022	1.74	.00110	.00683	.00391	.00168	.00309	.0293
%RSD	6.5817	1.3407	132.79	17.395	74.018	296.78	123.71	.45807
#1	.00302	130.39	-.00047	.04701	.00428	.00171	.00164	6.4058
#2	.00340	127.55	-.00206	.03419	.00959	-.00136	-.00008	6.4037
#3	.00339	130.71	.00005	.03653	.00197	.00136	.00592	6.3541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115105 Acquired: 6/24/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**.30328**	**-.00537**	**-.00168**	**.00336**	**.00866**	**.00060**
Stddev	.00061	.00418	.00652	.00091	.00046	.00013	.00023
%RSD	83.700	1.3769	121.45	54.113	13.812	1.5061	38.244
#1	-.00141	.30492	-.01282	-.00078	.00283	.00877	.00050
#2	-.00022	.29853	-.00064	-.00260	.00371	.00870	.00044
#3	-.00057	.30639	-.00266	-.00165	.00352	.00851	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8543.0**	**54064.**	**2974.7**
Stddev	21.3	458.	55.5
%RSD	.24931	.84639	1.8656
#1	8566.3	53562.	2939.2
#2	8524.4	54174.	3038.7
#3	8538.3	54457.	2946.3

Approved: June 25, 2016

Sample Name: L1606115401 Acquired: 6/24/2016 16:34:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00112**	**.08710**	**.00114**	**1.7588**	**.02106**	**.00002**	F **475.73**
Stddev	.00180	.00226	.00412	.0043	.00048	.00007	2.70
%RSD	160.71	2.5955	360.37	.24448	2.2952	394.51	.56675
#1	.00049	.08967	-.00088	1.7610	.02071	.00002	477.13
#2	-.00307	.08544	.00589	1.7616	.02085	.00009	472.62
#3	-.00079	.08619	-.00158	1.7539	.02161	-.00005	477.44
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00093**	**.00346**	**.00194**	**.05481**	**4.3815**	**.10949**
Stddev	.00005	.00052	.00138	.00145	.01743	.0383	.00511
%RSD	50.448	56.000	39.846	74.561	31.801	.87412	4.6701
#1	.00014	.00075	.00476	.00027	.04818	4.4220	.10952
#2	.00007	.00053	.00201	.00283	.07458	4.3766	.10437
#3	.00006	.00152	.00360	.00271	.04166	4.3458	.11459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**113.88**	**.27248**	**.02443**	F **962.52**	**-.00144**	**.02893**	**.00007**
Stddev	.66	.00359	.00021	16.50	.00136	.00999	.00237
%RSD	.58361	1.3185	.87734	1.7144	94.283	34.540	3393.1
#1	114.28	.27132	.02429	980.75	-.00065	.03963	-.00254
#2	113.11	.26961	.02467	958.20	-.00301	.02733	.00065
#3	114.24	.27651	.02431	948.60	-.00067	.01983	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606115401 Acquired: 6/24/2016 16:34:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00227**	**.05452**	**5.3738**	**-.00180**	**8.7578**	F **-.06233**	**-.00181**
Stddev	.00372	.01187	.0403	.00058	.0451	.00486	.00179
%RSD	164.10	21.769	.74949	32.077	.51456	7.7978	98.539
#1	.00553	.05924	5.3959	-.00119	8.7791	-.06137	-.00108
#2	-.00178	.06330	5.3982	-.00185	8.7060	-.06760	-.00385
#3	.00305	.04102	5.3273	-.00234	8.7883	-.05802	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01547**	**.00549**	**.00090**
Stddev	.00027	.00005	.00051
%RSD	1.7389	.84148	56.410
#1	.01521	.00546	.00038
#2	.01575	.00554	.00139
#3	.01545	.00546	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7824.9**	**49741.**	**2897.8**
Stddev	25.7	56.	41.7
%RSD	.32891	.11264	1.4378
#1	7852.3	49711.	2855.6
#2	7801.3	49805.	2938.9
#3	7821.1	49706.	2898.8

Approved: June 25, 2016

Sample Name: L1606115402S Acquired: 6/24/2016 16:38:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20827**	**5.3848**	**.22077**	**2.7748**	**.54172**	**.02512**	F **481.48**
Stddev	.00188	.0082	.00532	.0041	.00285	.00016	3.09
%RSD	.90285	.15294	2.4089	.14749	.52604	.62525	.64217
#1	.20610	5.3941	.22023	2.7718	.54377	.02494	484.49
#2	.20928	5.3784	.21574	2.7795	.53847	.02524	478.32
#3	.20943	5.3820	.22633	2.7732	.54294	.02519	481.64
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02719**	**.10282**	**.25237**	**.25450**	**2.0775**	**32.155**	**.65463**
Stddev	.00089	.00263	.00138	.00503	.0009	.192	.00487
%RSD	3.2606	2.5533	.54827	1.9758	.04312	.59849	.74370
#1	.02745	.10267	.25157	.25657	2.0772	32.268	.65849
#2	.02620	.10027	.25158	.24877	2.0768	31.933	.64916
#3	.02792	.10551	.25397	.25816	2.0785	32.264	.65623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**118.98**	**.51147**	**.55840**	F **977.71**	**.24997**	**5.5144**	**.24919**
Stddev	.84	.00370	.01031	13.22	.00452	.1131	.00286
%RSD	.70668	.72420	1.8456	1.3517	1.8092	2.0516	1.1484
#1	119.22	.51132	.56227	988.78	.25125	5.5401	.24784
#2	118.05	.50785	.54671	963.08	.24494	5.3907	.24725
#3	119.67	.51526	.56620	981.27	.25371	5.6125	.25247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606115402S Acquired: 6/24/2016 16:38:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.65290	.26530	8.4198	.51035	F 9.1325	.46797	.23861
Stddev	.01747	.00322	.1773	.00998	.0563	.00190	.00481
%RSD	2.6758	1.2148	2.1060	1.9552	.61631	.40567	2.0152
#1	.65559	.26528	8.4639	.51157	9.1879	.46964	.23992
#2	.63423	.26208	8.2246	.49982	9.0754	.46837	.23329
#3	.66886	.26853	8.5709	.51967	9.1341	.46591	.24263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.52988	.50936	.00371
Stddev	.00272	.00898	.00129
%RSD	.51319	1.7635	34.695
#1	.52752	.51212	.00232
#2	.53285	.49932	.00397
#3	.52929	.51664	.00486
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7884.5	49106.	2856.5
Stddev	105.8	326.	14.3
%RSD	1.3422	.66476	.50060
#1	7820.3	49374.	2840.1
#2	8006.6	48742.	2866.5
#3	7826.4	49201.	2863.0

Approved: June 25, 2016

Sample Name: L1606115403SD Acquired: 6/24/2016 16:41:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21318**	**5.5219**	**.22092**	**2.8411**	**.55147**	**.02575**	F **492.79**
Stddev	.00065	.0112	.00589	.0011	.00218	.00014	1.50
%RSD	.30664	.20191	2.6650	.03940	.39554	.52600	.30476
#1	.21335	5.5119	.22701	2.8414	.55201	.02561	493.55
#2	.21373	5.5198	.21525	2.8420	.55334	.02574	493.76
#3	.21246	5.5339	.22050	2.8398	.54907	.02588	491.06
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02750**	**.10490**	**.25795**	**.25725**	**2.1243**	**32.619**	**.67266**
Stddev	.00021	.00070	.00047	.00265	.0074	.077	.00146
%RSD	.77118	.66790	.18314	1.0291	.34930	.23491	.21692
#1	.02742	.10569	.25827	.25739	2.1327	32.707	.67327
#2	.02774	.10437	.25740	.25983	2.1215	32.578	.67371
#3	.02733	.10462	.25816	.25454	2.1186	32.570	.67099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**121.94**	**.53555**	**.56884**	F **1003.0**	**.25497**	**5.6115**	**.25353**
Stddev	1.03	.00255	.00183	18.6	.00121	.0201	.00219
%RSD	.84627	.47696	.32086	1.8553	.47333	.35743	.86324
#1	122.15	.53804	.57050	985.68	.25562	5.6230	.25369
#2	122.86	.53294	.56914	1022.7	.25358	5.6231	.25563
#3	120.83	.53569	.56689	1000.7	.25572	5.5883	.25126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606115403SD Acquired: 6/24/2016 16:41:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.65696	.26457	8.4131	.52165	F 9.4226	.46735	.23912
Stddev	.00333	.00374	.0316	.00269	.0362	.01011	.00184
%RSD	.50727	1.4118	.37513	.51544	.38375	2.1625	.76932
#1	.65370	.26813	8.4363	.52387	9.4401	.47243	.24121
#2	.65681	.26068	8.4259	.52242	9.4467	.47392	.23839
#3	.66036	.26490	8.3772	.51866	9.3810	.45571	.23775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.54896	.51795	.00121
Stddev	.00138	.00177	.00029
%RSD	.25147	.34088	23.705
#1	.54994	.51962	.00099
#2	.54738	.51811	.00110
#3	.54956	.51610	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7860.1	48589.	2847.4
Stddev	50.1	121.	22.3
%RSD	.63713	.24945	.78175
#1	7818.4	48525.	2848.5
#2	7915.7	48729.	2824.6
#3	7846.2	48513.	2869.0

Approved: June 25, 2016

Sample Name: L1606115404 Acquired: 6/24/2016 16:45:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00122**	**.01860**	**-.00030**	**.01638**	**.00225**	**.00005**	**.28683**	**-.00012**
Stddev	.00163	.00994	.00314	.00092	.00043	.00004	.01104	.00018
%RSD	133.72	53.451	1055.5	5.6210	18.855	79.103	3.8486	155.68
#1	-.00307	.02997	-.00390	.01572	.00263	.00002	.29952	-.00004
#2	-.00060	.01154	.00185	.01743	.00234	.00010	.27937	.00001
#3	.00001	.01428	.00116	.01599	.00179	.00004	.28161	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.01568**	**.00001**	**.06012**	**.09546**	**-.00324**	**.00979**	**.00031**
Stddev	.00056	.00036	.00106	.01420	.11597	.00346	.08319	.00089
%RSD	231.82	2.2719	10907.	23.626	121.49	106.87	849.48	288.55
#1	-.00089	.01585	.00111	.07503	.19093	-.00003	.06904	.00129
#2	.00009	.01527	-.00008	.05858	.12903	-.00690	.04565	.00007
#3	.00007	.01593	-.00101	.04675	-.03359	-.00278	-.08531	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00255**	**.66337**	**.00857**	**-.00604**	**-.00185**	**.00349**	**.00131**	**.15854**
Stddev	.00019	.05593	.00126	.00424	.00110	.00087	.00666	.00230
%RSD	7.5264	8.4316	14.741	70.198	59.693	24.819	509.73	1.4538
#1	.00259	.72482	.00746	-.00130	-.00068	.00343	.00738	.16031
#2	.00235	.64984	.00994	-.00737	-.00288	.00439	.00236	.15939
#3	.00273	.61544	.00829	-.00947	-.00198	.00266	-.00582	.15593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115404 Acquired: 6/24/2016 16:45:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.00192	-.00273	-.00024	-.00105	.00380	-.00006
Stddev	.00043	.00049	.00812	.00123	.00122	.00012	.00020
%RSD	38.035	25.716	297.07	517.69	116.94	3.1680	325.23
#1	.00113	.00170	.00647	.00075	.00015	.00366	.00009
#2	.00071	.00158	-.00889	-.00162	-.00230	.00388	.00001
#3	.00157	.00249	-.00577	.00015	-.00099	.00385	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8580.0	54662.	2910.1
Stddev	27.2	355.	25.0
%RSD	.31663	.64995	.85931
#1	8600.6	54561.	2884.9
#2	8549.2	54369.	2910.5
#3	8590.1	55057.	2934.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:49:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43680	F 11.176	.43789	.54982	F 1.1171	.05445	F 11.119
Stddev	.00172	.018	.00189	.00440	.0014	.00015	.036
%RSD	.39299	.15765	.43249	.80088	.12620	.27540	.32719
#1	.43691	11.183	.43822	.54528	1.1178	.05443	11.142
#2	.43503	11.190	.43585	.55010	1.1155	.05461	11.077
#3	.43846	11.156	.43959	.55407	1.1181	.05432	11.138
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail
Value		10.000			1.0000		10.000
Range		10.000%			10.000%		10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .05633	F .22617	F .55126	F .56533	F 4.4609	F 55.977	F 1.1059
Stddev	.00017	.00064	.00319	.00048	.0397	.128	.0055
%RSD	.29635	.28432	.57821	.08567	.88958	.22829	.49468
#1	.05616	.22640	.55107	.56585	4.4151	56.054	1.1075
#2	.05649	.22544	.55454	.56490	4.4847	56.049	1.0998
#3	.05636	.22667	.54818	.56522	4.4829	55.830	1.1104
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 11.384	F .56189	F 1.1214	F 56.250	F .56448	F 11.114	F .56389
Stddev	.114	.00225	.0062	.207	.00324	.010	.00157
%RSD	1.0047	.39966	.55197	.36872	.57382	.08753	.27797
#1	11.258	.56141	1.1267	56.351	.56745	11.125	.56213
#2	11.411	.55993	1.1229	56.011	.56498	11.108	.56513
#3	11.482	.56434	1.1146	56.388	.56103	11.109	.56440
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:49:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.3274	F .44356	F 5.7903	F 1.1245	F 1.1149	F 1.1307	F .56203
Stddev	.0049	.00768	.0098	.0024	.0021	.0005	.00057
%RSD	.36997	1.7311	.16930	.21252	.19132	.04240	.10129
#1	1.3317	.45066	5.7923	1.1260	1.1167	1.1307	.56147
#2	1.3285	.43541	5.7990	1.1258	1.1126	1.1312	.56261
#3	1.3221	.44459	5.7797	1.1218	1.1155	1.1302	.56203
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0960	F 1.1347	F 1.1407
Stddev	.0015	.0007	.0035
%RSD	.13658	.06108	.30311
#1	1.0952	1.1349	1.1440
#2	1.0977	1.1353	1.1410
#3	1.0950	1.1339	1.1371
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8096.2	51142.	2733.9
Stddev	29.8	63.	5.0
%RSD	.36765	.12288	.18140
#1	8130.4	51179.	2732.9
#2	8076.4	51177.	2739.3
#3	8081.7	51069.	2729.5

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:53:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.01327	.00238	.00643	.00121	.00007	-.00167	-.00005
Stddev	.00141	.01171	.00342	.00125	.00080	.00010	.03044	.00029
%RSD	426.78	88.245	144.15	19.490	66.292	147.81	1819.0	607.59
#1	.00128	.01371	-.00152	.00772	.00190	.00009	.02045	.00023
#2	-.00132	.00135	.00372	.00522	.00033	-.00004	.01093	-.00002
#3	-.00095	.02475	.00492	.00636	.00140	.00016	-.03639	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00240	-.00122	.00892	.06454	-.00208	.01293	-.00217
Stddev	.00023	.00085	.00133	.03053	.04042	.00235	.09468	.00444
%RSD	57.271	35.494	108.62	342.28	62.627	112.51	732.17	204.98
#1	-.00056	.00224	-.00068	.03546	.02108	.00042	-.02621	-.00033
#2	-.00049	.00164	-.00274	-.02444	.10100	-.00423	-.05591	-.00724
#3	-.00014	.00333	-.00025	.01574	.07154	-.00243	.12091	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00412	.05925	-.00060	.00128	-.00151	.00790	.00028	.00721
Stddev	.00047	.02488	.00110	.00409	.00218	.00364	.00257	.00069
%RSD	11.345	41.996	183.24	319.65	144.28	46.033	911.72	9.6357
#1	.00409	.04650	-.00151	.00204	-.00359	.00755	.00027	.00786
#2	.00461	.04332	-.00091	.00493	.00076	.00445	-.00228	.00728
#3	.00367	.08792	.00062	-.00314	-.00171	.01170	.00286	.00648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:53:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.00010**	**-.00054**	**-.00150**	**-.00005**	**-.00017**	**.00104**
Stddev	.00040	.00035	.00043	.00099	.00012	.00015	.00121
%RSD	50.261	334.74	79.697	65.771	246.62	83.311	116.20
#1	-.00103	.00027	-.00013	-.00083	-.00015	-.00024	-.00027
#2	-.00033	-.00030	-.00099	-.00264	-.00008	-.00027	.00129
#3	-.00101	.00034	-.00050	-.00104	.00008	-.00001	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8805.7**	**55774.**	**2937.7**
Stddev	23.4	137.	34.1
%RSD	.26594	.24637	1.1609
#1	8792.6	55618.	2899.6
#2	8791.8	55877.	2948.2
#3	8832.7	55828.	2965.3

Approved: June 25, 2016

Sample Name: L1606115501 Acquired: 6/24/2016 16:57:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00057	.02931	.00224	.28378	.19240	.00016	48.483	.00005
Stddev	.00217	.00495	.00248	.00304	.00180	.00006	.260	.00014
%RSD	383.36	16.898	111.07	1.0699	.93528	36.773	.53700	254.61
#1	-.00028	.02866	.00462	.28285	.19438	.00013	48.783	.00004
#2	-.00287	.03456	.00243	.28717	.19087	.00022	48.333	-.00007
#3	.00145	.02472	-.00034	.28131	.19193	.00012	48.332	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00176	-.00033	.06151	1.8575	.00843	30.251	1.7892
Stddev	.00026	.00067	.00098	.00944	.0885	.00304	.179	.0058
%RSD	228.27	38.060	297.98	15.343	4.7667	36.016	.59249	.32588
#1	-.00041	.00253	.00018	.05715	1.7633	.00492	30.428	1.7956
#2	.00007	.00133	-.00146	.05504	1.9389	.01012	30.255	1.7880
#3	-.00000	.00141	.00029	.07234	1.8704	.01024	30.070	1.7841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00582	81.691	.00244	.01501	-.00223	-.00056	-.00145	7.4745
Stddev	.00028	.416	.00117	.00629	.00029	.00368	.01007	.0211
%RSD	4.7345	.50929	48.012	41.908	13.132	656.69	696.09	.28232
#1	.00551	82.168	.00344	.01672	-.00255	-.00468	.00744	7.4894
#2	.00592	81.495	.00115	.00804	-.00198	.00243	-.01239	7.4839
#3	.00603	81.408	.00271	.02027	-.00215	.00056	.00060	7.4504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115501 Acquired: 6/24/2016 16:57:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.33344	-.00658	-.00209	.00011	.00570	.00257
Stddev	.00106	.00035	.00428	.00263	.00083	.00010	.00078
%RSD	223.38	.10616	65.090	125.54	754.41	1.8064	30.180
#1	-.00065	.33321	-.01123	-.00333	-.00033	.00562	.00170
#2	.00062	.33384	-.00281	-.00388	.00107	.00566	.00320
#3	.00146	.33325	-.00569	.00092	-.00041	.00581	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8634.4	54473.	2945.1
Stddev	22.0	176.	15.6
%RSD	.25462	.32393	.53091
#1	8609.5	54271.	2929.8
#2	8642.5	54551.	2944.5
#3	8651.2	54598.	2961.1

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 17:03:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42367	10.747	.42629	.52762	1.0843	.05276	10.761
Stddev	.00097	.006	.00332	.00473	.0045	.00023	.022
%RSD	.22915	.05727	.77849	.89635	.41439	.43445	.20363
#1	.42292	10.740	.42268	.53147	1.0830	.05302	10.738
#2	.42477	10.748	.42699	.52904	1.0893	.05268	10.782
#3	.42334	10.752	.42920	.52234	1.0807	.05258	10.765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05458	.21800	.53531	.54481	4.3293	54.482	1.0763
Stddev	.00018	.00077	.00463	.00133	.0649	.210	.0028
%RSD	.33409	.35513	.86430	.24390	1.5001	.38571	.26065
#1	.05444	.21711	.54060	.54342	4.3823	54.397	1.0795
#2	.05451	.21849	.53336	.54493	4.2568	54.722	1.0741
#3	.05479	.21841	.53198	.54607	4.3486	54.328	1.0754
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.954	.53768	1.0810	54.597	.54494	10.746	.54224
Stddev	.073	.00516	.0021	.145	.00206	.017	.00691
%RSD	.66315	.95904	.19634	.26611	.37752	.15638	1.2744
#1	10.974	.53636	1.0834	54.523	.54602	10.734	.54106
#2	10.873	.54337	1.0793	54.764	.54257	10.738	.53600
#3	11.014	.53331	1.0802	54.503	.54624	10.765	.54966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 17:03:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2878**	**.42218**	F **5.5868**	**1.0842**	**1.0823**	**1.0915**	**.53968**
Stddev	.0066	.00770	.0181	.0027	.0008	.0080	.00486
%RSD	.51604	1.8246	.32415	.25252	.07373	.73397	.90080
#1	1.2824	.41329	5.5712	1.0822	1.0817	1.0897	.54355
#2	1.2952	.42684	5.5826	1.0830	1.0832	1.1002	.53422
#3	1.2859	.42641	5.6067	1.0873	1.0820	1.0845	.54127
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			5.0000				
Range			10.000%				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0672**	**1.0954**	F **1.1050**
Stddev	.0073	.0020	.0196
%RSD	.68319	.18139	1.7744
#1	1.0743	1.0932	1.1148
#2	1.0677	1.0971	1.1179
#3	1.0597	1.0957	1.0825
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8333.6**	**52219.**	**2792.6**
Stddev	32.6	347.	29.8
%RSD	.39073	.66376	1.0675
#1	8369.0	52505.	2785.6
#2	8326.7	52317.	2766.9
#3	8305.0	51833.	2825.3

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 17:07:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00168**	**.00948**	**.00107**	**.00396**	**.00131**	**.00016**	**.00218**	**.00005**
Stddev	.00109	.00336	.00285	.00104	.00055	.00007	.03388	.00013
%RSD	65.124	35.414	267.10	26.281	42.238	42.512	1551.9	288.80
#1	-.00279	.00607	.00431	.00399	.00120	.00015	.00227	-.00009
#2	-.00060	.01278	-.00104	.00499	.00081	.00009	.03602	.00018
#3	-.00165	.00957	-.00007	.00291	.00190	.00023	-.03174	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**.00204**	**-.00144**	**.00580**	**.12922**	**-.00361**	**-.07098**	**-.00320**
Stddev	.00007	.00108	.00019	.02952	.06584	.00293	.01475	.00096
%RSD	10.271	52.987	13.402	509.07	50.955	81.051	20.781	29.927
#1	-.00071	.00324	-.00131	.01437	.20522	-.00696	-.05840	-.00311
#2	-.00072	.00112	-.00134	.03009	.09285	-.00151	-.06732	-.00419
#3	-.00060	.00177	-.00166	-.02706	.08958	-.00237	-.08722	-.00228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00408**	**.05994**	**-.00013**	**-.00144**	**-.00210**	**.00616**	**.00859**	**.00767**
Stddev	.00025	.02279	.00056	.00665	.00161	.00436	.00553	.00095
%RSD	6.1054	38.019	429.27	461.82	76.927	70.723	64.392	12.387
#1	.00379	.03723	-.00071	-.00577	-.00238	.01090	.01202	.00667
#2	.00424	.05979	.00040	.00621	-.00355	.00232	.00221	.00777
#3	.00421	.08281	-.00008	-.00476	-.00036	.00527	.01155	.00857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 17:07:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00001**	**-.00517**	**-.00304**	**-.00045**	**.00003**	**.00076**
Stddev	.00048	.00019	.00338	.00065	.00042	.00018	.00062
%RSD	261.79	1449.3	65.434	21.349	94.527	672.09	81.583
#1	-.00007	-.00010	-.00269	-.00319	-.00035	-.00018	.00059
#2	-.00071	.00023	-.00379	-.00360	-.00091	.00016	.00024
#3	.00023	-.00009	-.00902	-.00233	-.00008	.00010	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8894.8**	**56498.**	**2997.3**
Stddev	31.9	155.	19.4
%RSD	.35842	.27403	.64771
#1	8872.9	56642.	2988.9
#2	8931.4	56516.	2983.4
#3	8880.1	56335.	3019.5

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:11:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00729	.17062	.00725	.08257	.00939	.00166	.43404	.00082
Stddev	.00150	.00550	.00171	.00143	.00067	.00000	.00453	.00026
%RSD	20.543	3.2221	23.640	1.7280	7.1418	.27584	1.0437	32.305
#1	.00698	.16434	.00552	.08412	.00866	.00166	.43775	.00111
#2	.00892	.17298	.00895	.08230	.00999	.00167	.42899	.00059
#3	.00598	.17455	.00726	.08130	.00952	.00166	.43538	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00316	.00622	.00237	.08729	.82404	.07713	.38089	.00688
Stddev	.00032	.00044	.00096	.00991	.11097	.00284	.04555	.00202
%RSD	10.108	7.0265	40.647	11.357	13.466	3.6833	11.960	29.313
#1	.00327	.00595	.00209	.09021	.69916	.08037	.42142	.00748
#2	.00280	.00598	.00158	.07624	.86164	.07506	.38965	.00853
#3	.00341	.00672	.00344	.09542	.91132	.07596	.33159	.00463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00923	.49030	.01578	.78636	.00525	.08658	.01834	.78477
Stddev	.00007	.03975	.00067	.00747	.00099	.00290	.00535	.00340
%RSD	.74996	8.1063	4.2563	.94991	18.916	3.3503	29.197	.43361
#1	.00926	.45824	.01504	.78721	.00446	.08899	.01320	.78668
#2	.00928	.47789	.01596	.79336	.00636	.08336	.01794	.78678
#3	.00915	.53477	.01635	.77850	.00492	.08740	.02388	.78084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:11:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40023**	**.04088**	**.01998**	**.14896**	**.00689**	**.01796**	**.04648**
Stddev	.00496	.00040	.00962	.00157	.00043	.00056	.00102
%RSD	1.2386	.97028	48.154	1.0558	6.1789	3.1279	2.2003
#1	.40336	.04052	.01081	.14857	.00653	.01791	.04580
#2	.40281	.04082	.02999	.15069	.00680	.01855	.04599
#3	.39451	.04131	.01914	.14762	.00736	.01743	.04766
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8990.7**	**57102.**	**2996.8**
Stddev	6.3	282.	27.6
%RSD	.06972	.49387	.92128
#1	8985.6	56782.	2987.6
#2	8988.8	57212.	2975.0
#3	8997.7	57313.	3027.9

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:15:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01993	.40715	.01910	.19302	.02123	.00379	.98840	.00192
Stddev	.00107	.00875	.00166	.00240	.00062	.00009	.02416	.00014
%RSD	5.3570	2.1496	8.6872	1.2431	2.9288	2.2601	2.4441	7.0566
#1	.01892	.40857	.02077	.19136	.02062	.00370	.96658	.00208
#2	.01983	.41511	.01745	.19577	.02121	.00387	.98425	.00184
#3	.02105	.39778	.01908	.19192	.02186	.00380	1.0144	.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00956	.01134	.01016	.19020	1.9527	.19631	.96503	.01651
Stddev	.00018	.00018	.00095	.01584	.0809	.00356	.08170	.00201
%RSD	1.8827	1.5892	9.3610	8.3286	4.1432	1.8125	8.4664	12.178
#1	.00947	.01153	.01097	.18785	1.9630	.19792	1.0093	.01700
#2	.00944	.01133	.01040	.20708	2.0279	.19878	1.0150	.01822
#3	.00976	.01117	.00911	.17566	1.8671	.19223	.87074	.01429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01930	1.0243	.04009	1.9435	.01831	.21107	.04027	1.9113
Stddev	.00016	.0191	.00077	.0087	.00305	.00083	.00398	.0011
%RSD	.83239	1.8612	1.9166	.44854	16.636	.39124	9.8865	.05610
#1	.01914	1.0212	.03957	1.9465	.02165	.21172	.03698	1.9101
#2	.01929	1.0447	.04097	1.9503	.01761	.21014	.03912	1.9122
#3	.01946	1.0070	.03972	1.9336	.01568	.21134	.04469	1.9117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:15:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98617**	**.09828**	**.05324**	**.36623**	**.01818**	**.04214**	**.10201**
Stddev	.00140	.00119	.00120	.00194	.00049	.00021	.00105
%RSD	.14233	1.2069	2.2499	.53068	2.7064	.48792	1.0280
#1	.98608	.09782	.05188	.36811	.01820	.04207	.10169
#2	.98481	.09963	.05376	.36635	.01768	.04237	.10318
#3	.98762	.09739	.05410	.36423	.01866	.04197	.10116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9036.2**	**57273.**	**3074.0**
Stddev	31.1	288.	33.7
%RSD	.34415	.50309	1.0950
#1	9072.0	57245.	3047.1
#2	9015.3	57573.	3063.1
#3	9021.4	56999.	3111.7

Approved: June 25, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000236	0.051213	0.000000	1.000000
Al 308.215 {109}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000796	0.008044	0.000000	1.000000
As 189.042 {478}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000007	0.025071	0.000000	1.000000
B 249.678 {135}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000040	0.023963	0.000000	1.000000
Ba 455.403 { 74}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.044484	2.168568	0.000000	1.000000
Be 313.107 {108}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000479	0.930119	0.000000	1.000000
Ca 422.673 { 80}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.002874	0.045862	0.000000	1.000000
Cd 228.802 {447}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000038	0.570455	0.000000	1.000000
Co 228.616 {447}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000129	0.339574	0.000000	1.000000
Cr 267.716 {126}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000254	0.058743	0.000000	1.000000
Cu 224.700 {450}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000063	0.129645	0.000000	1.000000
Fe 261.187 {129}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000714	0.024119	0.000000	1.000000
K 766.490 { 44}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.006604	0.061274	0.000000	1.000000
Li 670.784 { 50}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.009415	1.520559	0.000000	1.000000
Mg 279.079 {121}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000260	0.008000	0.000000	1.000000
Mn 257.610 {131}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000470	0.289814	0.000000	1.000000
Mo 202.030 {467}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000054	0.182736	0.000000	1.000000
Na 589.592 { 57}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.047777	0.184477	0.000000	1.000000
Ni 231.604 {446}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000734	0.138990	0.000000	1.000000
P 214.914 {457}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000172	0.014319	0.000000	1.000000
Pb 220.353 {453}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.001186	0.065283	0.000000	1.000000
Sb 206.833 {463}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000368	0.031084	0.000000	1.000000
Se 196.090 {472}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000508	0.017412	0.000000	1.000000
Si 212.412 {459}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.001467	0.039573	0.000000	1.000000
Sn 189.989 {477}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000022	0.066307	0.000000	1.000000
Sr 407.771 { 83}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.001060	3.591964	0.000000	1.000000
Ti 337.280 {100}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.002630	0.122957	0.000000	1.000000
Tl 190.856 {477}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000329	0.028655	0.000000	1.000000
V 292.402 {115}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000071	0.067328	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000142	0.437417	0.000000	1.000000
Zr 339.198 { 99}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.007106	1.219765	0.000000	1.000000

Approved: June 27, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999680	0.000003	0.002344	0.007814	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999950	0.000005	0.010188	0.033959	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999909	0.000001	0.003189	0.010630	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999961	0.000001	0.002963	0.009878	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999951	0.000136	0.001119	0.003729	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999766	0.000007	0.000105	0.000348	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999890	0.000043	0.043792	0.145974	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999970	0.000002	0.000282	0.000940	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999977	0.000003	0.000454	0.001514	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999978	0.000001	0.001307	0.004355	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999889	0.000006	0.001405	0.004682	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999330	0.000022	0.023003	0.076675	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999988	0.000096	0.104199	0.347330	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999977	0.000100	0.004201	0.014002	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999990	0.000003	0.092396	0.307987	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999236	0.000036	0.002652	0.008839	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999956	0.000011	0.000450	0.001500	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999990	0.000264	0.032289	0.107629	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999932	0.000005	0.001180	0.003935	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999990	0.000004	0.007138	0.023792	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999383	0.000007	0.003667	0.012223	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999854	0.000004	0.004516	0.015054	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999238	0.000003	0.006704	0.022346	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999594	0.000036	0.002443	0.008145	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999980	0.000003	0.000986	0.003287	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999952	0.000224	0.000467	0.001557	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999579	0.000023	0.007453	0.024845	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999831	0.000002	0.003284	0.010945	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999969	0.000003	0.001095	0.003650	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999941	0.000030	0.000202	0.000675	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.596446	0.010414	0.001594	0.005312	OK.	1.000000	0.000000	1	0

Approved: June 27, 2016

Sample Name: S0 Acquired: 6/25/2016 12:21:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00024**	**.00080**	**-.00001**	**.00004**	**.04448**	**.00048**	**.00288**
Stddev	.00008	.00004	.00007	.00002	.00170	.00005	.00169
%RSD	35.712	4.5527	977.99	54.959	3.8148	10.198	58.629
#1	-.00024	.00076	-.00006	.00003	.04635	.00042	.00096
#2	-.00015	.00081	.00007	.00006	.04405	.00050	.00353
#3	-.00032	.00083	-.00004	.00003	.04304	.00052	.00414

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00004**	**-.00013**	**.00025**	**-.00006**	**-.00071**	**-.00661**	**-.00941**
Stddev	.00006	.00005	.00003	.00023	.00026	.00355	.00965
%RSD	153.97	36.064	10.924	367.85	35.978	53.724	102.48
#1	-.00002	-.00016	.00028	-.00022	-.00093	-.00948	-.01508
#2	-.00010	-.00015	.00025	.00020	-.00043	-.00769	.00173
#3	.00001	-.00008	.00023	-.00018	-.00078	-.00264	-.01488

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00026**	**.00047**	**.00005**	**-.04778**	**-.00073**	**-.00017**	**-.00119**
Stddev	.00066	.00061	.00004	.00421	.00008	.00002	.00008
%RSD	255.00	128.77	78.942	8.8105	11.011	13.180	6.4052
#1	.00045	-.00015	.00007	-.05263	-.00065	-.00015	-.00110
#2	-.00086	.00049	.00001	-.04509	-.00082	-.00019	-.00123
#3	-.00037	.00107	.00009	-.04563	-.00073	-.00017	-.00123

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00037**	**-.00051**	**.00147**	**.00002**	**.00106**	**-.00263**	**-.00033**
Stddev	.00001	.00007	.00009	.00003	.00137	.00025	.00002
%RSD	3.7153	13.815	6.2921	126.34	130.24	9.4020	7.1687
#1	.00035	-.00043	.00157	.00002	.00203	-.00235	-.00030
#2	.00038	-.00057	.00145	-.00000	.00165	-.00283	-.00033
#3	.00037	-.00052	.00138	.00005	-.00052	-.00270	-.00035

Approved: June 27, 2016

Sample Name: S0 Acquired: 6/25/2016 12:21:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**-.00007**	**.00014**	**-.00710**
Stddev	.00004	.00005	.00324
%RSD	58.279	35.146	45.700
#1	-.00004	.00009	-.00457
#2	-.00005	.00016	-.01076
#3	-.00012	.00018	-.00597
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9736.8**	**58329.**	**2962.8**
Stddev	24.6	275.	12.4
%RSD	.25315	.47180	.41783
#1	9719.4	58177.	2949.0
#2	9725.9	58162.	2966.1
#3	9765.0	58646.	2973.1

Approved: June 27, 2016

Sample Name: S1 Acquired: 6/25/2016 12:25:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00000**	**.00148**	**.06336**	**.00097**	**.00582**	**.00018**	**.00038**
Stddev	.00004	.00005	.00419	.00009	.00234	.00011	.00006
%RSD	838.91	3.6655	6.6080	8.8478	40.284	60.110	16.615
#1	.00001	.00145	.05987	.00105	.00569	.00026	.00043
#2	-.00004	.00145	.06800	.00097	.00822	.00006	.00031
#3	.00004	.00155	.06221	.00088	.00354	.00023	.00041

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00050**	**.00053**	**.00033**	**.01950**	**.00077**	**.00143**	**.02669**
Stddev	.00003	.00011	.00021	.00355	.00009	.00011	.00332
%RSD	5.5692	20.305	62.737	18.223	11.862	7.4791	12.449
#1	.00049	.00060	.00053	.01550	.00083	.00145	.02356
#2	.00048	.00041	.00012	.02070	.00066	.00152	.03018
#3	.00053	.00058	.00034	.02230	.00081	.00131	.02634

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00018**	**.00100**	**-.00086**	**.00059**	**.00297**	**.00055**	**.03302**
Stddev	.00009	.00012	.00030	.00014	.00005	.00006	.00089
%RSD	52.159	12.366	34.406	23.539	1.7045	10.953	2.6942
#1	-.00010	.00113	-.00102	.00051	.00294	.00050	.03225
#2	-.00028	.00098	-.00052	.00075	.00302	.00062	.03399
#3	-.00016	.00088	-.00105	.00050	.00293	.00055	.03280

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00218**	**.00050**	**.00363**	**-.00591**
Stddev	.00071	.00003	.00003	.00134
%RSD	32.781	5.1557	.77751	22.659
#1	-.00139	.00050	.00365	-.00576
#2	-.00277	.00048	.00360	-.00465
#3	-.00237	.00053	.00364	-.00732

Approved: June 27, 2016

Sample Name: S1 Acquired: 6/25/2016 12:25:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9839.2**	**59021.**	**2974.6**
Stddev	35.8	140.	1.9
%RSD	.36397	.23691	.06440
#1	9811.4	58880.	2976.5
#2	9826.5	59023.	2972.7
#3	9879.6	59160.	2974.8

Approved: June 27, 2016

Sample Name: S2 Acquired: 6/25/2016 12:29:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00011**	**.00220**	**.00018**	**.00025**	**.08112**	**.00139**	**.00931**
Stddev	.00003	.00006	.00005	.00002	.00125	.00003	.00047
%RSD	29.658	2.5782	25.201	8.0082	1.5417	1.8740	5.0396
#1	.00012	.00221	.00013	.00026	.08191	.00140	.00905
#2	.00012	.00214	.00022	.00027	.08177	.00136	.00985
#3	.00007	.00225	.00019	.00023	.07968	.00140	.00903

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00041**	**.00102**	**.00072**	**.00104**	**.00148**	**.04190**	**.01415**
Stddev	.00007	.00003	.00001	.00014	.00030	.00236	.00012
%RSD	16.350	3.0292	1.5873	13.319	20.240	5.6312	.86545
#1	.00045	.00101	.00072	.00109	.00137	.04369	.01405
#2	.00033	.00099	.00073	.00088	.00125	.03923	.01429
#3	.00045	.00105	.00071	.00115	.00182	.04279	.01411

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00109**	**.00274**	**.00298**	**.10797**	**.00048**	**.00211**	**-.00045**
Stddev	.00041	.00057	.00005	.00406	.00013	.00008	.00017
%RSD	37.607	20.931	1.7509	3.7561	26.749	3.7519	39.075
#1	.00144	.00213	.00304	.11260	.00057	.00211	-.00064
#2	.00064	.00283	.00295	.10501	.00033	.00203	-.00031
#3	.00120	.00327	.00295	.10631	.00054	.00219	-.00039

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00105**	**-.00034**	**.00448**	**.00108**	**.06082**	**-.00047**	**-.00014**
Stddev	.00006	.00004	.00009	.00004	.00131	.00089	.00005
%RSD	6.0784	12.562	2.0565	3.6593	2.1502	187.41	36.276
#1	.00109	-.00029	.00447	.00110	.05950	-.00104	-.00016
#2	.00107	-.00037	.00458	.00110	.06212	-.00093	-.00008
#3	.00097	-.00035	.00440	.00103	.06083	.00055	-.00017

Approved: June 27, 2016

Sample Name: S2 Acquired: 6/25/2016 12:29:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00105	.00728	-.00437
Stddev	.00006	.00006	.00132
%RSD	5.7588	.85058	30.251
#1	.00102	.00735	-.00588
#2	.00112	.00727	-.00376
#3	.00101	.00722	-.00345
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9827.0	59373.	3004.6
Stddev	11.4	114.	4.0
%RSD	.11574	.19273	.13472
#1	9814.0	59255.	3000.6
#2	9832.7	59484.	3008.7
#3	9834.5	59381.	3004.6

Approved: June 27, 2016

Sample Name: S3 Acquired: 6/25/2016 12:32:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02035**	**.08278**	**.00992**	**.01198**	**2.2359**	**.04820**	**.46599**	**.03126**
Stddev	.00007	.00029	.00007	.00002	.0069	.00016	.00236	.00006
%RSD	.36344	.34990	.73624	.13878	.30693	.33862	.50730	.19965
#1	.02029	.08301	.00987	.01198	2.2433	.04825	.46861	.03126
#2	.02044	.08286	.01000	.01199	2.2346	.04833	.46401	.03132
#3	.02033	.08245	.00988	.01196	2.2297	.04802	.46536	.03119

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06810**	**.02991**	**.06581**	**.09648**	**3.0722**	**1.5250**	**.07962**	**.14725**
Stddev	.00012	.00021	.00002	.00063	.0027	.0048	.00098	.00051
%RSD	.17879	.70022	.03611	.65013	.08880	.31624	1.2353	.34909
#1	.06804	.03009	.06584	.09719	3.0745	1.5268	.07965	.14783
#2	.06801	.02997	.06579	.09600	3.0692	1.5288	.07861	.14685
#3	.06824	.02968	.06581	.09626	3.0730	1.5196	.08058	.14706

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.18510**	**9.1987**	**.06966**	**.14157**	**.03222**	**.03693**	**.00649**	**.20808**
Stddev	.00068	.0276	.00008	.00029	.00023	.00011	.00003	.00004
%RSD	.36712	.29975	.11504	.20555	.70478	.30304	.43769	.01830
#1	.18567	9.2297	.06963	.14170	.03236	.03694	.00648	.20811
#2	.18529	9.1894	.06975	.14177	.03196	.03703	.00652	.20808
#3	.18435	9.1769	.06959	.14123	.03234	.03681	.00647	.20804

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06680**	**3.6291**	**.12115**	**.01313**	**.06767**	**.44396**	**3.5474**
Stddev	.00012	.0161	.00039	.00012	.00004	.00054	.0233
%RSD	.17282	.44347	.32200	.91385	.05243	.12075	.65596
#1	.06677	3.6476	.12157	.01325	.06770	.44451	3.5656
#2	.06671	3.6220	.12107	.01301	.06768	.44393	3.5554
#3	.06693	3.6179	.12080	.01311	.06763	.44344	3.5212

Approved: June 27, 2016

Sample Name: S3 Acquired: 6/25/2016 12:32:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9929.1	59890.	3083.9
Stddev	18.0	90.	16.7
%RSD	.18173	.14986	.54188
#1	9944.3	59787.	3069.2
#2	9933.7	59947.	3080.5
#3	9909.1	59936.	3102.1

Approved: June 27, 2016

Sample Name: S4 Acquired: 6/25/2016 12:36:34 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04037	.16212	.01994	.02391	4.3553	.09476	.91725	.06225
Stddev	.00010	.00009	.00010	.00008	.0282	.00010	.00714	.00008
%RSD	.26004	.05310	.51424	.32854	.64632	.10278	.77855	.12431
#1	.04040	.16220	.02005	.02399	4.3445	.09472	.91430	.06220
#2	.04046	.16203	.01991	.02383	4.3342	.09469	.91205	.06220
#3	.04026	.16211	.01985	.02390	4.3873	.09487	.92539	.06233

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13502	.05877	.12834	.19056	6.1046	3.0186	.15914	.28946
Stddev	.00023	.00007	.00015	.00161	.0456	.0309	.00223	.00202
%RSD	.17276	.12518	.11394	.84544	.74756	1.0253	1.3995	.69732
#1	.13475	.05870	.12846	.19050	6.0869	3.0140	.15736	.28818
#2	.13515	.05878	.12838	.18897	6.0705	2.9902	.15842	.28841
#3	.13517	.05884	.12818	.19219	6.1564	3.0516	.16164	.29179

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.36324	18.368	.13725	.28094	.06365	.07367	.01336	.39092
Stddev	.00176	.146	.00020	.00054	.00019	.00012	.00006	.00048
%RSD	.48547	.79728	.14492	.19364	.30628	.15884	.42128	.12331
#1	.36486	18.303	.13728	.28153	.06355	.07380	.01339	.39147
#2	.36349	18.266	.13744	.28083	.06388	.07365	.01329	.39059
#3	.36136	18.536	.13705	.28046	.06354	.07357	.01339	.39071

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13179	7.1439	.24230	.02560	.13357	.86773	.12255
Stddev	.00029	.0568	.00280	.00005	.00025	.00172	.00222
%RSD	.21785	.79476	1.1551	.20145	.18401	.19856	1.8114
#1	.13210	7.1181	.24103	.02555	.13357	.86947	.12020
#2	.13172	7.1045	.24036	.02563	.13332	.86769	.12285
#3	.13154	7.2090	.24551	.02564	.13382	.86603	.12461

Approved: June 27, 2016

Sample Name: S4 Acquired: 6/25/2016 12:36:34 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9795.6	59125.	3064.9
Stddev	6.6	26.	19.7
%RSD	.06757	.04412	.64222
#1	9799.1	59120.	3071.1
#2	9799.7	59153.	3080.8
#3	9787.9	59102.	3042.9

Approved: June 27, 2016

Sample Name: ICV Acquired: 6/25/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40482	10.096	.40189	.50535	1.0085	.05038	10.096
Stddev	.00169	.009	.00320	.00259	.0096	.00007	.103
%RSD	.41792	.09100	.79651	.51179	.95284	.13225	1.0175
#1	.40318	10.095	.40558	.50259	.99972	.05037	10.065
#2	.40656	10.106	.40020	.50771	1.0070	.05032	10.013
#3	.40473	10.088	.39988	.50575	1.0188	.05045	10.211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05022	.20172	.50610	.50772	4.0459	50.287	1.0069
Stddev	.00031	.00057	.00078	.00110	.0398	.526	.0059
%RSD	.61395	.28458	.15454	.21701	.98466	1.0464	.58082
#1	.05048	.20224	.50644	.50864	4.0020	49.775	1.0012
#2	.05030	.20181	.50521	.50650	4.0559	50.260	1.0067
#3	.04988	.20110	.50666	.50803	4.0798	50.827	1.0128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.117	.50795	1.0200	50.068	.50832	10.053	.50460
Stddev	.152	.00312	.0050	.377	.00054	.029	.00016
%RSD	1.5029	.61369	.49437	.75311	.10596	.28628	.03077
#1	9.9425	.50440	1.0241	49.665	.50829	10.073	.50452
#2	10.219	.50922	1.0214	50.126	.50888	10.066	.50449
#3	10.191	.51024	1.0144	50.412	.50780	10.020	.50477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: ICV Acquired: 6/25/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2132**	**.39981**	**5.2115**	**1.0100**	**1.0094**	**1.0076**	**.50967**
Stddev	.0090	.00367	.0220	.0047	.0093	.0117	.00340
%RSD	.74499	.91900	.42193	.46646	.92212	1.1612	.66719
#1	1.2228	.39652	5.1880	1.0139	.99976	.99418	.50608
#2	1.2117	.40378	5.2316	1.0112	1.0100	1.0128	.51284
#3	1.2049	.39915	5.2149	1.0048	1.0183	1.0157	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0117**	**1.0154**	F **2.9010**
Stddev	.0015	.0015	.0057
%RSD	.14666	.14385	.19619
#1	1.0111	1.0164	2.9026
#2	1.0134	1.0160	2.8946
#3	1.0106	1.0137	2.9057
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9887.2**	**59604.**	**3090.1**
Stddev	2.6	87.	8.3
%RSD	.02633	.14631	.26858
#1	9888.5	59705.	3098.3
#2	9884.2	59557.	3090.3
#3	9888.9	59551.	3081.7

Approved: June 27, 2016

Sample Name: ICB Acquired: 6/25/2016 12:43:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00131	-.00019	.00035	.00523	.00097	.00005	-.00769	-.00024
Stddev	.00204	.00299	.00150	.00175	.00089	.00006	.00734	.00011
%RSD	155.46	1561.3	426.44	33.377	91.849	115.36	95.505	46.996
#1	.00317	-.00362	.00181	.00349	.00060	.00012	-.01556	-.00036
#2	-.00088	.00114	-.00118	.00522	.00198	.00002	-.00104	-.00017
#3	.00165	.00191	.00042	.00699	.00032	.00001	-.00646	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.00019	.00069	.02190	.04427	.00252	.00787	.00050
Stddev	.00033	.00096	.00130	.00895	.02254	.00192	.08048	.00146
%RSD	40694.	494.95	189.51	40.889	50.920	76.061	1022.8	292.29
#1	-.00026	-.00067	-.00034	.02348	.04464	.00424	-.08504	-.00108
#2	-.00012	.00002	.00215	.01226	.06662	.00045	.05249	.00079
#3	.00038	.00123	.00025	.02996	.02154	.00288	.05615	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00437	.07087	.00070	.00285	.00118	.00678	.00870	.00121
Stddev	.00041	.01151	.00054	.00868	.00197	.00381	.00450	.00189
%RSD	9.2912	16.248	77.044	304.78	167.53	56.206	51.723	156.22
#1	.00395	.08310	.00020	-.00283	.00108	.00337	.00854	.00310
#2	.00476	.06927	.00064	-.00147	.00320	.00608	.00428	.00120
#3	.00442	.06023	.00127	.01284	-.00074	.01090	.01328	-.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICB Acquired: 6/25/2016 12:43:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00059**	**.00116**	**.00143**	**.00111**	**.00117**	**.00345**
Stddev	.00049	.00006	.00559	.00387	.00033	.00016	.00039
%RSD	77.601	9.5579	481.47	269.75	29.521	13.916	11.209
#1	.00050	.00059	.00521	.00260	.00135	.00105	.00361
#2	.00117	.00064	.00349	-.00288	.00074	.00111	.00300
#3	.00022	.00053	-.00522	.00459	.00124	.00135	.00372
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9709.0**	**58834.**	**2997.3**
Stddev	13.6	105.	11.0
%RSD	.13963	.17854	.36570
#1	9693.7	58895.	2985.3
#2	9713.8	58895.	3006.9
#3	9719.5	58713.	2999.6

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:47:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00947	.16517	.00750	.08209	.00794	.00166	.41368	.00078
Stddev	.00234	.00914	.00427	.00134	.00096	.00002	.01542	.00015
%RSD	24.742	5.5361	56.913	1.6344	12.112	1.4530	3.7271	18.963
#1	.01038	.17315	.00639	.08214	.00810	.00169	.40911	.00061
#2	.01123	.15519	.01222	.08341	.00690	.00166	.40107	.00083
#3	.00681	.16717	.00390	.08073	.00880	.00164	.43087	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00435	.00476	.00462	.09393	.88733	.08419	.44121	.00701
Stddev	.00017	.00091	.00136	.00523	.14622	.00363	.12107	.00237
%RSD	3.8803	19.165	29.360	5.5689	16.479	4.3143	27.441	33.765
#1	.00455	.00411	.00608	.08852	.75945	.08105	.39471	.00889
#2	.00425	.00438	.00436	.09433	.85580	.08335	.57864	.00779
#3	.00425	.00581	.00341	.09896	1.0467	.08816	.35028	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00866	.44156	.01715	.79893	.00705	.08442	.02038	.79310
Stddev	.00052	.01049	.00062	.00929	.00266	.00215	.00191	.00106
%RSD	5.9984	2.3750	3.6174	1.1626	37.766	2.5524	9.3696	.13338
#1	.00809	.45038	.01661	.80194	.00796	.08678	.01818	.79326
#2	.00879	.42997	.01783	.80634	.00405	.08394	.02136	.79407
#3	.00910	.44434	.01701	.78851	.00913	.08255	.02160	.79197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:47:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41130**	**.04174**	**.02562**	**.15269**	**.00881**	**.01717**	**.13277**
Stddev	.00223	.00064	.00303	.00060	.00064	.00024	.00310
%RSD	.54293	1.5249	11.843	.39147	7.2679	1.3907	2.3338
#1	.41347	.04173	.02710	.15201	.00926	.01741	.13005
#2	.41142	.04111	.02213	.15292	.00808	.01715	.13211
#3	.40901	.04238	.02764	.15314	.00909	.01694	.13614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9760.6**	**59445.**	**3032.4**
Stddev	2.7	49.	16.0
%RSD	.02790	.08308	.52659
#1	9758.1	59502.	3050.3
#2	9763.5	59418.	3027.2
#3	9760.2	59415.	3019.7

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02232**	**.40482**	**.02105**	**.19795**	**.01981**	**.00414**	**.94713**	**.00209**
Stddev	.00322	.01572	.00276	.00137	.00013	.00016	.01328	.00025
%RSD	14.431	3.8838	13.088	.69255	.67950	3.8114	1.4024	12.129
#1	.02018	.38785	.01788	.19912	.01996	.00396	.94307	.00218
#2	.02076	.40770	.02252	.19644	.01971	.00427	.93634	.00229
#3	.02603	.41890	.02277	.19828	.01975	.00419	.96196	.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00992**	**.00950**	**.01082**	**.20111**	**1.9275**	**.20201**	**.97307**	**.01841**
Stddev	.00043	.00028	.00021	.02025	.1498	.00564	.04542	.00186
%RSD	4.3042	2.9103	1.9731	10.069	7.7699	2.7925	4.6682	10.079
#1	.01005	.00935	.01089	.20826	1.8000	.20412	1.0187	.02052
#2	.00945	.00934	.01100	.21682	1.8900	.19562	.97274	.01702
#3	.01028	.00982	.01059	.17825	2.0924	.20630	.92781	.01771
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01972**	**1.0340**	**.04153**	**1.9482**	**.02271**	**.20123**	**.04411**	**1.9392**
Stddev	.00048	.0096	.00031	.0042	.00204	.00295	.00361	.0022
%RSD	2.4591	.93077	.75288	.21380	8.9612	1.4657	8.1900	.11326
#1	.01969	1.0240	.04132	1.9520	.02496	.20436	.04094	1.9404
#2	.01925	1.0432	.04139	1.9437	.02217	.20085	.04804	1.9406
#3	.02022	1.0348	.04189	1.9488	.02100	.19850	.04333	1.9367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0099**	**.10045**	**.06134**	**.37714**	**.02003**	**.04134**	**.29456**
Stddev	.0057	.00069	.00459	.00090	.00046	.00030	.00329
%RSD	.56948	.68667	7.4856	.23976	2.2900	.72946	1.1169
#1	1.0145	.09991	.06229	.37809	.02052	.04128	.29317
#2	1.0117	.10021	.05634	.37629	.01997	.04166	.29219
#3	1.0035	.10123	.06538	.37705	.01961	.04107	.29832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9725.0**	**59145.**	**3053.0**
Stddev	6.0	91.	15.9
%RSD	.06216	.15348	.52133
#1	9731.9	59116.	3042.4
#2	9721.3	59247.	3071.3
#3	9721.7	59072.	3045.2

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 12:55:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**265.97**	**.00161**	**-.00823**	**.00056**	**.00011**	**243.96**	**-.00018**
Stddev	.00121	.27	.00172	.00296	.00012	.00009	1.89	.00042
%RSD	450.36	.10204	106.61	35.970	21.237	81.140	.77435	230.52
#1	-.00046	265.69	.00220	-.01033	.00047	.00017	241.81	-.00048
#2	.00103	265.97	-.00032	-.00484	.00069	.00014	245.35	.00030
#3	-.00137	266.24	.00295	-.00951	.00051	.00001	244.72	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**-.00100**	**-.00098**	**96.848**	**.05329**	**.01035**	**248.71**	**-.00176**
Stddev	.00039	.00071	.00330	.692	.06120	.00255	1.99	.00096
%RSD	39.651	70.751	335.23	.71414	114.86	24.670	.80129	54.809
#1	-.00142	-.00119	.00263	96.056	.12150	.01230	246.41	-.00274
#2	-.00085	-.00160	-.00175	97.332	.03517	.00746	249.90	-.00082
#3	-.00068	-.00022	-.00383	97.155	.00318	.01129	249.83	-.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00066**	**.04038**	**-.00089**	**.02257**	**.00214**	**-.00550**	**-.00224**	**.00879**
Stddev	.00023	.00410	.00050	.00580	.00444	.00318	.00753	.00258
%RSD	34.448	10.162	56.288	25.707	206.94	57.856	337.10	29.379
#1	-.00088	.04493	-.00121	.01613	.00721	-.00186	.00631	.00581
#2	-.00043	.03696	-.00115	.02418	.00024	-.00776	-.00511	.01037
#3	-.00066	.03925	-.00031	.02740	-.00103	-.00688	-.00791	.01019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 12:55:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00100**	**-.00403**	**-.00373**	**-.00305**	**-.00596**	**-.01388**
Stddev	.00149	.00018	.00805	.00252	.00022	.00010	.00081
%RSD	284.28	18.415	199.81	67.478	7.0947	1.6059	5.8325
#1	.00144	.00117	.00514	-.00549	-.00300	-.00603	-.01379
#2	.00134	.00081	-.00728	-.00085	-.00329	-.00601	-.01311
#3	-.00120	.00101	-.00995	-.00485	-.00287	-.00585	-.01473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9184.9**	**55126.**	**2960.9**
Stddev	19.5	129.	17.9
%RSD	.21199	.23455	.60311
#1	9165.3	55274.	2981.6
#2	9185.3	55069.	2950.7
#3	9204.2	55035.	2950.6

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 12:59:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51819**	**267.93**	**.25992**	**-.00749**	**.25012**	**.24499**	**247.43**	**.48653**
Stddev	.00274	.82	.00577	.00323	.00127	.00111	.96	.00069
%RSD	.52949	.30727	2.2185	43.201	.50926	.45301	.38893	.14255
#1	.51744	268.20	.26633	-.00904	.25065	.24547	247.63	.48716
#2	.52123	268.59	.25826	-.00965	.24866	.24578	246.38	.48579
#3	.51590	267.01	.25516	-.00377	.25104	.24372	248.28	.48665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24114**	**.25272**	**.25219**	**96.482**	**5.1931**	**.01181**	**249.25**	**.24440**
Stddev	.00029	.00219	.00111	.527	.0571	.00427	1.99	.00318
%RSD	.11831	.86807	.44033	.54597	1.0995	36.192	.80021	1.3017
#1	.24081	.25379	.25307	96.524	5.1297	.01134	249.32	.24432
#2	.24135	.25418	.25256	95.936	5.2405	.00779	247.22	.24763
#3	.24125	.25020	.25095	96.987	5.2091	.01630	251.20	.24127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**5.3241**	**.48364**	**.08508**	**.49426**	**.50665**	**.24857**	**.00554**
Stddev	.00038	.0216	.00155	.00195	.00579	.00649	.00790	.00251
%RSD	68.178	.40548	.32037	2.2888	1.1716	1.2807	3.1773	45.410
#1	-.00097	5.3151	.48290	.08463	.49996	.50736	.25719	.00434
#2	-.00022	5.3084	.48260	.08721	.48838	.49984	.24167	.00842
#3	-.00048	5.3487	.48542	.08340	.49443	.51276	.24687	.00384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 12:59:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00065**	**-.00404**	**.46188**	**.25332**	**.48100**	**-.01374**
Stddev	.00129	.00010	.00503	.00318	.00107	.00194	.00218
%RSD	732.71	15.906	124.53	.68769	.42266	.40303	15.888
#1	.00146	.00072	-.00979	.45913	.25376	.48104	-.01122
#2	-.00112	.00053	-.00192	.46116	.25410	.48293	-.01498
#3	.00019	.00071	-.00042	.46536	.25210	.47905	-.01502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9278.3**	**55833.**	**2985.5**
Stddev	15.8	186.	18.9
%RSD	.17001	.33320	.63177
#1	9263.8	55869.	2984.2
#2	9295.1	55632.	3004.9
#3	9275.9	55999.	2967.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:03:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39792	10.019	.39868	.49351	.99429	.04982	9.9377
Stddev	.00072	.017	.00144	.00412	.00753	.00017	.0996
%RSD	.18044	.17228	.36151	.83518	.75700	.33966	1.0022
#1	.39861	10.034	.39833	.49827	.98705	.04987	9.8876
#2	.39796	10.022	.40027	.49123	1.0021	.04997	10.052
#3	.39718	10.000	.39745	.49104	.99375	.04964	9.8731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04945	.20002	.50114	.50617	3.9950	49.191	.99914
Stddev	.00013	.00034	.00115	.00138	.0385	.327	.00262
%RSD	.25449	.17079	.22943	.27257	.96478	.66521	.26204
#1	.04957	.20034	.49991	.50465	3.9625	48.889	.99615
#2	.04946	.20007	.50219	.50735	4.0376	49.538	1.0010
#3	.04932	.19966	.50132	.50650	3.9848	49.146	1.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9162	.49766	1.0071	49.316	.50460	9.9534	.50217
Stddev	.1345	.00161	.0027	.281	.00141	.0056	.00090
%RSD	1.3564	.32258	.27182	.56936	.27993	.05661	.17861
#1	9.8004	.49634	1.0102	49.069	.50585	9.9507	.50282
#2	10.064	.49945	1.0061	49.622	.50307	9.9496	.50115
#3	9.8846	.49718	1.0051	49.257	.50488	9.9599	.50255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:03:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1997**	**.40476**	**5.1642**	**1.0026**	**.99432**	**.99050**	**.50900**
Stddev	.0011	.00080	.0031	.0008	.00541	.00261	.00166
%RSD	.09538	.19644	.06047	.08057	.54374	.26324	.32573
#1	1.2008	.40408	5.1631	1.0035	.99081	.99348	.51044
#2	1.1985	.40563	5.1678	1.0020	1.0005	.98942	.50718
#3	1.1997	.40457	5.1618	1.0022	.99161	.98862	.50937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0019**	**1.0053**	F **2.8691**
Stddev	.0036	.0009	.0111
%RSD	.35558	.09150	.38634
#1	.99784	1.0055	2.8628
#2	1.0045	1.0043	2.8819
#3	1.0033	1.0060	2.8625
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9877.8**	**59691.**	**3097.9**
Stddev	6.1	104.	11.8
%RSD	.06196	.17495	.38081
#1	9880.1	59766.	3105.5
#2	9870.8	59572.	3084.3
#3	9882.4	59736.	3103.8

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 13:06:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.00013	.00057	.00151	.00063	.00002	-.01871	-.00022
Stddev	.00151	.00746	.00362	.00174	.00068	.00003	.02739	.00016
%RSD	185.23	5748.5	636.07	114.92	108.39	116.80	146.42	72.359
#1	.00201	.00304	-.00315	-.00049	.00141	.00001	-.04795	-.00036
#2	-.00088	-.00835	.00078	.00262	.00031	.00006	.00637	-.00027
#3	.00132	.00570	.00408	.00241	.00017	.00001	-.01455	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00054	.00076	.03608	.09214	-.00181	-.01859	-.00071
Stddev	.00025	.00025	.00080	.01975	.18930	.00302	.07756	.00052
%RSD	1039.3	46.422	105.73	54.731	205.46	166.60	417.27	72.248
#1	.00013	.00063	.00047	.01630	-.12492	-.00468	-.09449	-.00012
#2	.00011	.00026	.00167	.05580	.17827	.00135	-.02180	-.00101
#3	-.00032	.00073	.00014	.03615	.22306	-.00212	.06053	-.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00274	.04401	-.00040	.00332	.00144	-.00005	.00482	-.00649
Stddev	.00039	.03341	.00024	.00918	.00111	.00350	.00394	.00014
%RSD	14.320	75.897	59.933	276.22	77.091	6590.6	81.757	2.1187
#1	.00273	.08068	-.00054	-.00157	.00018	-.00177	.00919	-.00633
#2	.00236	.03606	-.00012	.01392	.00189	-.00236	.00153	-.00657
#3	.00314	.01530	-.00055	-.00237	.00225	.00397	.00375	-.00656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 13:06:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00039	.00186	-.00089	-.00002	.00003	.00447
Stddev	.00029	.00029	.00050	.00195	.00109	.00004	.00129
%RSD	58.864	74.770	26.876	218.22	5660.3	163.33	28.933
#1	.00018	.00056	.00153	-.00246	.00118	.00003	.00395
#2	.00076	.00054	.00162	-.00151	-.00095	.00007	.00352
#3	.00054	.00005	.00244	.00129	-.00029	-.00002	.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9714.8	59220.	3006.6
Stddev	20.8	167.	18.8
%RSD	.21426	.28151	.62581
#1	9691.7	59319.	2985.4
#2	9732.2	59028.	3021.3
#3	9720.4	59314.	3013.1

Approved: June 27, 2016

Sample Name: PBW MC Acquired: 6/25/2016 13:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00511**	**.00086**	**-.00212**	**.00115**	**.00002**	**-.06747**	**.00005**
Stddev	.00209	.01093	.00117	.00067	.00097	.00011	.03960	.00035
%RSD	552.93	213.69	135.59	31.434	84.150	461.31	58.695	692.60
#1	-.00263	-.00536	-.00048	-.00211	.00011	.00001	-.09775	.00040
#2	.00149	.00426	.00140	-.00146	.00202	-.00008	-.02265	-.00029
#3	.00000	.01644	.00166	-.00279	.00133	.00014	-.08201	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00006**	**.00212**	**.02866**	**-.06431**	**.00509**	**.02259**	**-.00086**
Stddev	.00040	.00091	.00173	.01678	.07316	.00381	.05174	.00149
%RSD	400.23	1393.8	81.515	58.547	113.75	74.903	229.03	173.59
#1	.00052	-.00104	.00296	.02246	-.13473	.00394	-.01043	-.00102
#2	.00004	.00075	.00325	.01586	-.06951	.00199	-.00402	.00071
#3	-.00026	.00010	.00013	.04766	.01130	.00934	.08222	-.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00087**	**-.00687**	**.00001**	**-.00017**	**.00005**	**-.00551**	**.00627**	**.00390**
Stddev	.00030	.03350	.00031	.00833	.00114	.00506	.00234	.00374
%RSD	34.257	487.68	3374.4	4899.3	2181.8	91.834	37.291	95.869
#1	.00091	.01218	.00037	.00506	.00058	-.00133	.00544	.00713
#2	.00056	-.04555	-.00014	-.00978	.00083	-.01113	.00446	-.00020
#3	.00115	.01276	-.00019	.00420	-.00126	-.00406	.00891	.00477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW MC Acquired: 6/25/2016 13:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00022**	**-.00094**	**-.00120**	**.00059**	**.00019**	**.00136**
Stddev	.00090	.00014	.01001	.00401	.00016	.00009	.00212
%RSD	728.27	61.668	1066.1	333.15	27.157	48.058	155.52
#1	-.00022	-.00007	.00771	-.00405	.00041	.00016	-.00108
#2	.00115	-.00034	-.01190	.00338	.00070	.00012	.00241
#3	-.00056	-.00026	.00137	-.00294	.00066	.00029	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9802.9**	**59937.**	**3028.8**
Stddev	9.7	136.	16.1
%RSD	.09849	.22735	.53011
#1	9794.7	59785.	3046.3
#2	9813.5	59979.	3014.8
#3	9800.5	60047.	3025.3

Approved: June 27, 2016

Sample Name: LCSW MC Acquired: 6/25/2016 13:22:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19140**	**4.8040**	**.19266**	**.92897**	**.49049**	**.02396**	**4.9270**	**.02412**
Stddev	.00110	.0096	.00124	.00283	.00119	.00006	.0588	.00019
%RSD	.57611	.19942	.64179	.30493	.24273	.25817	1.1941	.78757
#1	.19253	4.7978	.19184	.92575	.49050	.02398	4.9121	.02430
#2	.19133	4.7992	.19408	.93105	.49168	.02402	4.8771	.02392
#3	.19033	4.8151	.19206	.93012	.48929	.02390	4.9919	.02415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09725**	**.24390**	**.24732**	**1.9838**	**23.909**	**.49943**	**4.9211**	**.24209**
Stddev	.00025	.00056	.00120	.0346	.055	.00048	.0513	.00093
%RSD	.26181	.22973	.48504	1.7424	.23189	.09613	1.0429	.38463
#1	.09749	.24389	.24597	1.9470	23.904	.49915	4.9459	.24237
#2	.09699	.24447	.24774	1.9888	23.968	.49916	4.8621	.24284
#3	.09727	.24335	.24825	2.0156	23.857	.49999	4.9553	.24105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49737**	**24.381**	**.24620**	**4.6982**	**.24508**	**.58185**	**.18662**	**2.4109**
Stddev	.00101	.058	.00194	.0026	.00506	.00206	.00438	.0033
%RSD	.20378	.23960	.78649	.05522	2.0646	.35379	2.3449	.13777
#1	.49803	24.349	.24767	4.6983	.25078	.58403	.18417	2.4135
#2	.49787	24.449	.24692	4.7007	.24112	.57994	.18402	2.4071
#3	.49620	24.346	.24401	4.6956	.24334	.58158	.19167	2.4120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW MC Acquired: 6/25/2016 13:22:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48537**	**.49494**	**.49102**	**.24360**	**.48594**	**.48236**	**.01763**
Stddev	.00248	.00157	.00916	.00175	.00116	.00127	.00304
%RSD	.51037	.31733	1.8663	.71814	.23927	.26228	17.214
#1	.48605	.49357	.49562	.24211	.48702	.48137	.01600
#2	.48744	.49666	.49698	.24315	.48610	.48194	.01576
#3	.48263	.49460	.48047	.24553	.48471	.48379	.02113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9802.2**	**59979.**	**3063.3**
Stddev	16.1	75.	6.7
%RSD	.16429	.12520	.21884
#1	9786.8	59978.	3070.3
#2	9800.7	59904.	3056.9
#3	9818.9	60054.	3062.8

Approved: June 27, 2016

Sample Name: L1606080801 Acquired: 6/25/2016 13:25:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	-.00080	-.00163	.02599	.00717	.00000	50.564	.00016
Stddev	.00152	.00397	.00290	.00206	.00115	.00005	.112	.00037
%RSD	125.91	493.45	178.32	7.9153	16.060	1214.4	.22137	235.03
#1	.00226	.00203	-.00429	.02577	.00588	.00002	50.480	.00003
#2	-.00053	.00090	.00147	.02405	.00757	.00004	50.521	-.00014
#3	.00188	-.00534	-.00207	.02815	.00807	-.00005	50.691	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00083	.00107	.26409	1.2826	.00250	14.201	.11783
Stddev	.00018	.00044	.00061	.01139	.1290	.00132	.067	.00387
%RSD	127.01	53.307	57.172	4.3115	10.056	52.928	.47527	3.2872
#1	.00035	.00131	.00089	.27352	1.4315	.00167	14.162	.12070
#2	.00008	.00073	.00057	.25144	1.2130	.00180	14.162	.11343
#3	.00000	.00044	.00175	.26731	1.2035	.00402	14.279	.11937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	15.281	.00045	.01127	-.00029	-.00250	-.00036	4.8502
Stddev	.00031	.048	.00109	.00496	.00257	.00086	.00870	.0263
%RSD	48.719	.31261	245.14	44.009	886.73	34.260	2404.6	.54311
#1	.00028	15.230	.00169	.00618	-.00269	-.00223	.00526	4.8717
#2	.00080	15.325	-.00034	.01609	.00243	-.00181	.00404	4.8581
#3	.00082	15.288	-.00001	.01154	-.00061	-.00346	-.01039	4.8208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080801 Acquired: 6/25/2016 13:25:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.16531	-.00520	-.00297	.00071	.00304	.00248
Stddev	.00021	.00042	.00147	.00169	.00080	.00019	.00016
%RSD	26.039	.25638	28.334	56.894	114.04	6.1375	6.5372
#1	.00100	.16514	-.00627	-.00112	.00132	.00299	.00242
#2	.00058	.16499	-.00352	-.00336	-.00020	.00288	.00235
#3	.00084	.16579	-.00581	-.00443	.00100	.00324	.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9767.4	60311.	3068.7
Stddev	25.3	182.	4.5
%RSD	.25865	.30239	.14809
#1	9787.8	60238.	3069.0
#2	9775.3	60177.	3064.1
#3	9739.2	60519.	3073.1

Approved: June 27, 2016

Sample Name: L1606080803S Acquired: 6/25/2016 13:29:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19425**	**4.8313**	**.19559**	**.97188**	**.49949**	**.02391**	**55.138**	**.02433**
Stddev	.00175	.0086	.00291	.00386	.00064	.00006	.286	.00001
%RSD	.89899	.17760	1.4870	.39759	.12859	.26078	.51899	.03982
#1	.19471	4.8260	.19892	.97122	.49908	.02384	54.823	.02434
#2	.19571	4.8412	.19357	.96839	.49916	.02394	55.383	.02434
#3	.19231	4.8266	.19428	.97603	.50023	.02395	55.206	.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09623**	**.24025**	**.24291**	**2.2142**	**25.706**	**.49995**	**18.850**	**.36055**
Stddev	.00052	.00032	.00081	.0203	.056	.00310	.060	.00310
%RSD	.54129	.13263	.33315	.91450	.21668	.61973	.31584	.86069
#1	.09635	.23989	.24328	2.2335	25.718	.49651	18.866	.35746
#2	.09668	.24035	.24198	2.2161	25.755	.50082	18.784	.36367
#3	.09566	.24050	.24346	2.1931	25.645	.50252	18.899	.36052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50273**	**39.946**	**.24148**	**4.8211**	**.24377**	**.58841**	**.19283**	**7.2475**
Stddev	.00069	.089	.00226	.0078	.00185	.00329	.00168	.0253
%RSD	.13674	.22372	.93733	.16218	.76094	.55837	.87085	.34834
#1	.50346	39.846	.24394	4.8298	.24591	.59218	.19095	7.2767
#2	.50266	40.018	.24099	4.8187	.24276	.58614	.19336	7.2326
#3	.50209	39.974	.23950	4.8148	.24264	.58690	.19419	7.2333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080803S Acquired: 6/25/2016 13:29:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48600**	**.66572**	**.49120**	**.24058**	**.48625**	**.48121**	**.00549**
Stddev	.00062	.00113	.00488	.00183	.00111	.00310	.00062
%RSD	.12721	.16988	.99375	.75886	.22783	.64511	11.331
#1	.48664	.66443	.49684	.23968	.48515	.48355	.00538
#2	.48596	.66654	.48839	.24268	.48622	.48240	.00493
#3	.48540	.66619	.48838	.23938	.48737	.47769	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9640.1**	**59155.**	**3051.9**
Stddev	28.9	91.	4.4
%RSD	.29949	.15374	.14285
#1	9607.9	59063.	3056.9
#2	9648.6	59158.	3049.0
#3	9663.8	59244.	3049.8

Approved: June 27, 2016

Sample Name: L1606080804SD Acquired: 6/25/2016 13:33:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19367	4.8696	.19395	.97468	.50079	.02428	55.592	.02458
Stddev	.00103	.0189	.00351	.00126	.00119	.00004	.087	.00002
%RSD	.53221	.38806	1.8082	.12977	.23838	.15828	.15705	.06402
#1	.19313	4.8871	.19259	.97422	.49995	.02427	55.687	.02459
#2	.19486	4.8723	.19133	.97371	.50216	.02425	55.574	.02456
#3	.19302	4.8496	.19794	.97611	.50027	.02433	55.515	.02458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09687	.24382	.24330	2.1942	25.602	.50391	18.927	.35670
Stddev	.00034	.00139	.00044	.0216	.187	.00317	.145	.00440
%RSD	.35450	.56820	.18086	.98630	.73073	.62836	.76565	1.2346
#1	.09649	.24542	.24364	2.2182	25.415	.50090	18.778	.36166
#2	.09698	.24295	.24347	2.1881	25.600	.50721	19.067	.35519
#3	.09715	.24309	.24280	2.1762	25.789	.50361	18.935	.35325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50687	40.011	.24239	4.8324	.24609	.59184	.19199	7.3269
Stddev	.00174	.019	.00180	.0039	.00113	.00410	.00494	.0108
%RSD	.34421	.04769	.74422	.07995	.45954	.69206	2.5730	.14791
#1	.50863	40.009	.24329	4.8354	.24728	.59240	.18629	7.3276
#2	.50684	40.031	.24358	4.8338	.24503	.59563	.19457	7.3373
#3	.50514	39.993	.24032	4.8281	.24594	.58749	.19509	7.3157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080804SD Acquired: 6/25/2016 13:33:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48884	.66564	.48806	.24641	.49385	.48167	.00481
Stddev	.00243	.00060	.00210	.00100	.00262	.00319	.00105
%RSD	.49731	.09007	.43005	.40687	.53028	.66320	21.781
#1	.48902	.66631	.48604	.24752	.49576	.48059	.00363
#2	.49118	.66515	.49023	.24612	.49493	.48526	.00518
#3	.48633	.66545	.48792	.24558	.49086	.47916	.00563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9643.8	58961.	3032.4
Stddev	19.6	179.	14.4
%RSD	.20367	.30279	.47352
#1	9664.0	58941.	3022.3
#2	9624.8	58793.	3026.2
#3	9642.5	59149.	3048.8

Approved: June 27, 2016

Sample Name: L1606082203 Acquired: 6/25/2016 13:37:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.03250	.00108	.03413	.76881	.00001	31.323	.00009
Stddev	.00326	.00113	.00298	.00231	.00291	.00007	.069	.00003
%RSD	461.08	3.4738	274.98	6.7818	.37861	986.76	.21967	35.456
#1	-.00056	.03174	-.00033	.03677	.76753	-.00000	31.323	.00006
#2	.00440	.03379	-.00093	.03317	.76676	.00008	31.255	.00011
#3	-.00173	.03195	.00451	.03246	.77215	-.00006	31.393	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00298	.00799	.00175	5.1531	49.440	.10315	14.307	.17132
Stddev	.00036	.00030	.00156	.0220	.158	.00201	.082	.00563
%RSD	12.200	3.7657	89.202	.42624	.31871	1.9519	.57045	3.2873
#1	.00316	.00823	.00355	5.1330	49.302	.10173	14.214	.17528
#2	.00323	.00810	.00078	5.1498	49.405	.10227	14.338	.17381
#3	.00256	.00765	.00092	5.1766	49.612	.10546	14.368	.16487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	90.168	.00369	.00788	-.00122	.00230	.00147	11.287
Stddev	.00023	.210	.00039	.00442	.00289	.00119	.00467	.027
%RSD	50.114	.23246	10.480	56.105	237.50	51.496	317.01	.23968
#1	.00031	90.009	.00403	.01267	.00108	.00337	.00397	11.318
#2	.00033	90.090	.00327	.00394	-.00447	.00102	-.00391	11.275
#3	.00071	90.405	.00377	.00704	-.00027	.00252	.00436	11.268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082203 Acquired: 6/25/2016 13:37:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.79119**	**.00045**	**-.00075**	**.00043**	**.00534**	**-.00006**
Stddev	.00030	.00071	.00315	.00229	.00033	.00006	.00108
%RSD	437.99	.09029	691.72	303.10	75.619	1.1956	1667.5
#1	-.00035	.79036	-.00147	.00135	.00018	.00529	-.00108
#2	-.00009	.79165	-.00125	-.00319	.00032	.00542	.00108
#3	.00024	.79155	.00408	-.00042	.00080	.00532	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.6**	**58766.**	**3005.5**
Stddev	29.5	106.	1.2
%RSD	.30621	.18076	.04053
#1	9617.1	58644.	3006.7
#2	9657.0	58831.	3005.5
#3	9674.8	58825.	3004.3

Approved: June 27, 2016

Sample Name: L1606082202 Acquired: 6/25/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00163**	**.00700**	**-.00255**	**.09063**	**.14584**	**.00010**	**6.2202**	**-.00011**
Stddev	.00068	.00493	.00215	.00172	.00146	.00002	.0817	.00004
%RSD	41.927	70.458	84.324	1.8967	.99792	21.043	1.3126	39.110
#1	.00225	.01016	-.00441	.09032	.14618	.00008	6.1515	-.00007
#2	.00090	.00132	-.00302	.08908	.14425	.00013	6.1986	-.00016
#3	.00175	.00952	-.00020	.09248	.14710	.00010	6.3104	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00096**	**.00077**	**2.0756**	**1.5049**	**.02492**	**4.3992**	**.07622**
Stddev	.00041	.00002	.00085	.0056	.1629	.00329	.1257	.00201
%RSD	1133.0	2.0322	110.52	.26897	10.822	13.197	2.8567	2.6344
#1	-.00024	.00097	.00165	2.0692	1.6925	.02131	4.4123	.07724
#2	.00043	.00097	.00070	2.0781	1.3995	.02572	4.2675	.07752
#3	-.00030	.00094	-.00004	2.0795	1.4227	.02774	4.5178	.07391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**83.246**	**.00061**	**.10079**	**.00421**	**-.00520**	**.00452**	**12.135**
Stddev	.00009	.263	.00086	.00636	.00131	.00271	.00174	.029
%RSD	36.387	.31568	140.09	6.3065	31.208	52.125	38.464	.24257
#1	-.00033	83.275	.00060	.10060	.00298	-.00301	.00254	12.154
#2	-.00015	82.970	.00147	.10724	.00559	-.00823	.00579	12.151
#3	-.00025	83.493	-.00024	.09454	.00404	-.00437	.00523	12.101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202 Acquired: 6/25/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.21054	.00087	-.00133	-.00012	.00182	.00052
Stddev	.00041	.00091	.00263	.00076	.00048	.00007	.00152
%RSD	145.47	.43126	300.38	57.105	397.63	3.7016	294.24
#1	.00007	.21002	.00237	-.00045	.00028	.00184	-.00094
#2	.00003	.21002	.00241	-.00174	.00001	.00175	.00210
#3	.00076	.21159	-.00216	-.00179	-.00065	.00188	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9729.1	59376.	3030.4
Stddev	8.6	260.	19.9
%RSD	.08835	.43738	.65516
#1	9720.3	59079.	3018.5
#2	9729.3	59490.	3053.3
#3	9737.5	59559.	3019.5

Approved: June 27, 2016

Sample Name: L1606082202PS Acquired: 6/25/2016 13:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19375**	**4.8752**	**.19613**	**1.0291**	**.62833**	**.02428**	**10.648**	**.02477**
Stddev	.00051	.0099	.00160	.0019	.00588	.00006	.170	.00011
%RSD	.26273	.20232	.81334	.18131	.93614	.24036	1.5959	.45206
#1	.19417	4.8642	.19702	1.0298	.63084	.02431	10.660	.02468
#2	.19391	4.8782	.19429	1.0305	.63254	.02431	10.812	.02489
#3	.19319	4.8832	.19709	1.0270	.62161	.02421	10.473	.02473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09829**	**.24324**	**.24855**	**3.8486**	**25.821**	**.52335**	**8.7582**	**.31225**
Stddev	.00082	.00053	.00056	.0314	.285	.00671	.0434	.00355
%RSD	.83225	.21842	.22566	.81716	1.1038	1.2812	.49530	1.1380
#1	.09742	.24374	.24849	3.8714	25.861	.52361	8.7634	.31338
#2	.09905	.24330	.24914	3.8618	26.083	.52993	8.7125	.31510
#3	.09841	.24268	.24802	3.8128	25.517	.51653	8.7988	.30827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50486**	**99.997**	**.24562**	**4.8721**	**.24648**	**.59017**	**.19243**	**13.471**
Stddev	.00060	.660	.00153	.0054	.00424	.00393	.00054	.013
%RSD	.11858	.66045	.62190	.11137	1.7208	.66559	.28037	.09301
#1	.50422	100.35	.24553	4.8783	.24168	.58648	.19181	13.458
#2	.50541	100.41	.24414	4.8682	.24971	.59430	.19267	13.471
#3	.50494	99.235	.24719	4.8698	.24807	.58975	.19281	13.483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202PS Acquired: 6/25/2016 13:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48807**	**.68216**	**.50019**	**.24323**	**.49372**	**.48957**	**.00258**
Stddev	.00205	.00533	.01089	.00117	.00097	.00018	.00106
%RSD	.41999	.78112	2.1777	.48173	.19621	.03662	41.003
#1	.49029	.68537	.51266	.24188	.49454	.48951	.00281
#2	.48770	.68509	.49539	.24396	.49265	.48978	.00349
#3	.48624	.67601	.49252	.24385	.49397	.48943	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9652.9**	**58738.**	**3022.5**
Stddev	16.4	44.	32.4
%RSD	.17031	.07498	1.0716
#1	9668.7	58757.	3005.1
#2	9654.1	58688.	3002.5
#3	9635.9	58769.	3059.8

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:48:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**-.00874**	**.00232**	**.01966**	**.02846**	**.00012**	**1.1981**	**-.00020**
Stddev	.00102	.00520	.00129	.00166	.00164	.00003	.0364	.00029
%RSD	249.96	59.552	55.713	8.4558	5.7787	28.080	3.0406	145.60
#1	-.00049	-.00387	.00244	.02114	.03034	.00013	1.2234	-.00054
#2	.00065	-.00812	.00098	.01996	.02778	.00008	1.1564	-.00008
#3	-.00139	-.01423	.00356	.01786	.02727	.00014	1.2146	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00097**	**.00049**	**.42314**	**.31666**	**.00414**	**.84994**	**.01478**
Stddev	.00036	.00092	.00031	.02269	.03395	.00078	.10125	.00159
%RSD	202.36	94.832	64.039	5.3615	10.720	18.849	11.912	10.770
#1	-.00059	-.00007	.00031	.40193	.27970	.00483	.89447	.01388
#2	-.00002	.00128	.00031	.42043	.32384	.00429	.92129	.01385
#3	.00008	.00169	.00086	.44706	.34645	.00330	.73406	.01662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**16.797**	**-.00010**	**.02573**	**.00379**	**-.00654**	**-.00062**	**2.4606**
Stddev	.00016	.116	.00075	.00347	.00211	.00206	.00121	.0014
%RSD	105.18	.68795	766.63	13.470	55.760	31.494	195.90	.05654
#1	-.00025	16.870	-.00048	.02714	.00159	-.00786	-.00167	2.4590
#2	-.00024	16.856	-.00058	.02827	.00580	-.00417	-.00090	2.4616
#3	.00003	16.663	.00077	.02178	.00399	-.00761	.00071	2.4611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:48:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.04233**	**.00225**	**-.00298**	**.00005**	**.00069**	**.00014**
Stddev	.00035	.00076	.00380	.00312	.00068	.00008	.00023
%RSD	102.54	1.7878	169.10	104.78	1298.3	11.967	160.88
#1	-.00033	.04309	.00306	.00056	-.00034	.00074	-.00011
#2	.00000	.04232	.00558	-.00534	-.00035	.00059	.00032
#3	-.00071	.04157	-.00189	-.00415	.00084	.00073	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10112.**	**61959.**	**3102.5**
Stddev	25.	335.	21.2
%RSD	.24804	.54051	.68302
#1	10140.	62322.	3081.9
#2	10091.	61890.	3101.4
#3	10107.	61663.	3124.2

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00201**	**.00162**	**.00506**	**.00674**	**.00009**	**.22194**	**.00006**
Stddev	.00098	.00612	.00099	.00223	.00036	.00007	.03121	.00010
%RSD	701.06	303.84	61.332	44.136	5.3564	71.933	14.062	159.17
#1	-.00091	-.00825	.00149	.00575	.00715	.00008	.25227	.00003
#2	-.00048	-.00177	.00268	.00256	.00663	.00004	.22363	-.00001
#3	.00097	.00398	.00070	.00686	.00645	.00017	.18992	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00003**	**.00093**	**.10294**	**.07211**	**-.00053**	**.11677**	**.00303**
Stddev	.00044	.00176	.00026	.00844	.06933	.00190	.04489	.00266
%RSD	660.12	5191.6	27.598	8.2017	96.144	360.65	38.441	87.562
#1	-.00052	.00076	.00092	.11264	.12436	-.00025	.12873	.00344
#2	.00037	-.00197	.00068	.09726	-.00654	-.00255	.06712	.00020
#3	-.00005	.00131	.00120	.09891	.09851	.00122	.15447	.00546
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**3.4626**	**-.00095**	**.01102**	**.00309**	**-.00448**	**.00254**	**.52285**
Stddev	.00009	.0579	.00053	.00740	.00233	.00663	.00646	.00911
%RSD	18.881	1.6714	55.686	67.190	75.440	147.88	254.92	1.7427
#1	-.00041	3.4180	-.00056	.01783	.00042	-.00172	-.00323	.51493
#2	-.00042	3.4418	-.00074	.01207	.00473	-.01205	.00952	.52082
#3	-.00056	3.5280	-.00155	.00314	.00412	.00032	.00131	.53281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.00876**	**-.00160**	**-.00170**	**.00064**	**.00048**	**.00025**
Stddev	.00024	.00020	.00243	.00072	.00151	.00001	.00052
%RSD	61.212	2.3382	151.62	42.632	234.58	1.6034	205.72
#1	-.00036	.00876	-.00015	-.00219	-.00097	.00048	.00032
#2	-.00064	.00897	-.00025	-.00087	.00088	.00049	-.00030
#3	-.00017	.00856	-.00441	-.00204	.00202	.00048	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10010.**	**61091.**	**3050.7**
Stddev	14.	94.	16.7
%RSD	.14368	.15455	.54708
#1	9999.9	61099.	3067.0
#2	10027.	60993.	3033.7
#3	10004.	61182.	3051.5

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:56:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39703	9.8823	.39208	.48360	.99649	.04877	9.9442
Stddev	.00097	.0185	.00108	.00155	.00485	.00012	.0391
%RSD	.24464	.18766	.27635	.32015	.48698	.23806	.39293
#1	.39651	9.9033	.39094	.48432	.99107	.04885	9.8991
#2	.39815	9.8682	.39222	.48182	1.0004	.04883	9.9670
#3	.39642	9.8754	.39309	.48466	.99796	.04864	9.9665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04952	.19590	.48861	.49872	3.9553	49.086	.99832
Stddev	.00026	.00028	.00039	.00131	.0110	.181	.00236
%RSD	.52554	.14170	.07934	.26171	.27922	.36920	.23624
#1	.04970	.19602	.48888	.50017	3.9554	48.878	.99571
#2	.04922	.19610	.48816	.49764	3.9662	49.210	1.0003
#3	.04964	.19559	.48877	.49836	3.9441	49.170	.99895
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6989	.49966	.99513	49.378	.49577	9.7713	.49937
Stddev	.0286	.00128	.00487	.189	.00112	.0077	.00125
%RSD	.29470	.25687	.48908	.38358	.22653	.07875	.25024
#1	9.6936	.49933	.99926	49.226	.49626	9.7672	.49899
#2	9.6733	.50107	.99636	49.590	.49656	9.7802	.50076
#3	9.7297	.49857	.98976	49.317	.49448	9.7665	.49835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:56:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1744**	**.39516**	**5.0749**	**.97934**	**.99997**	**.99747**	**.49995**
Stddev	.0050	.00337	.0045	.00061	.00261	.00842	.00315
%RSD	.42778	.85272	.08873	.06267	.26098	.84451	.63052
#1	1.1693	.39868	5.0732	.98005	.99777	.99280	.50104
#2	1.1793	.39197	5.0800	.97900	1.0028	1.0072	.49639
#3	1.1748	.39484	5.0715	.97897	.99928	.99242	.50240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.98727**	**.98962**	F **2.8790**
Stddev	.00224	.00122	.0125
%RSD	.22699	.12332	.43408
#1	.98696	.98924	2.8649
#2	.98519	.99098	2.8888
#3	.98965	.98864	2.8834
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9881.8**	**60025.**	**3051.6**
Stddev	7.5	117.	13.0
%RSD	.07613	.19437	.42745
#1	9874.3	60038.	3066.6
#2	9889.3	60134.	3043.0
#3	9881.9	59902.	3045.3

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:00:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.00384	.00171	.00288	.00164	.00016	-.02160	-.00002
Stddev	.00056	.00607	.00179	.00157	.00101	.00008	.03268	.00008
%RSD	153.00	158.06	104.81	54.496	61.686	49.488	151.32	357.31
#1	-.00082	.00133	.00363	.00341	.00099	.00008	-.05876	.00002
#2	-.00054	.01077	.00142	.00412	.00280	.00016	-.00868	-.00011
#3	.00026	-.00057	.00008	.00112	.00111	.00023	.00265	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00089	.00145	.02539	.05830	-.00178	-.00516	-.00289
Stddev	.00025	.00059	.00085	.02878	.16368	.00331	.04118	.00267
%RSD	184.36	65.782	58.421	113.33	280.73	185.62	797.74	92.366
#1	-.00007	.00150	.00078	.04856	-.06991	-.00470	-.03370	-.00034
#2	.00042	.00086	.00240	.03444	.24267	-.00246	.04205	-.00265
#3	.00006	.00033	.00117	-.00682	.00216	.00181	-.02383	-.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	.01750	-.00036	.00463	.00110	.00408	.00171	-.00349
Stddev	.00035	.01788	.00074	.00054	.00119	.00430	.00409	.00216
%RSD	11.208	102.15	207.33	11.581	107.78	105.36	238.51	61.802
#1	.00276	.00856	.00044	.00497	-.00027	-.00057	.00622	-.00129
#2	.00346	.03809	-.00047	.00401	.00175	.00791	-.00177	-.00560
#3	.00314	.00586	-.00104	.00491	.00181	.00489	.00070	-.00357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:00:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00055**	**-.00034**	**-.00341**	**.00088**	**.00013**	**.00321**
Stddev	.00088	.00013	.00661	.00148	.00029	.00021	.00123
%RSD	577.33	24.369	1964.7	43.438	32.521	159.30	38.279
#1	-.00076	.00044	.00453	-.00437	.00106	-.00009	.00194
#2	.00100	.00070	.00232	-.00416	.00055	.00032	.00329
#3	.00022	.00052	-.00786	-.00171	.00104	.00016	.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9674.1**	**59179.**	**2989.6**
Stddev	10.8	80.	18.0
%RSD	.11204	.13474	.60268
#1	9680.4	59116.	2972.7
#2	9661.6	59269.	3008.6
#3	9680.2	59153.	2987.4

Approved: June 27, 2016

Sample Name: L1606082302 Acquired: 6/25/2016 14:03:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01235**	**.00398**	**.02065**	**7.6114**	**.00014**	**242.99**
Stddev	.00016	.00738	.00092	.00248	.0086	.00009	.50
%RSD	156.01	59.723	23.024	12.009	.11234	64.318	.20416
#1	-.00023	.01740	.00411	.01789	7.6202	.00016	242.85
#2	-.00014	.01576	.00483	.02137	7.6109	.00023	243.54
#3	.00007	.00389	.00301	.02270	7.6032	.00004	242.58
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.05380**	**.00122**	**.00261**	**4.4999**	**3.4068**	**.13022**
Stddev	.00043	.00087	.00035	.00011	.0119	.0234	.00431
%RSD	95.240	1.6084	28.402	4.2649	.26410	.68699	3.3105
#1	-.00003	.05465	.00142	.00253	4.4869	3.3837	.13493
#2	.00060	.05384	.00143	.00274	4.5026	3.4062	.12925
#3	.00078	.05292	.00082	.00256	4.5101	3.4305	.12648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**186.55**	**.80417**	**.00043**	F **676.67**	**.01798**	**.04840**	**.00356**
Stddev	.43	.00344	.00029	5.78	.00081	.00767	.00232
%RSD	.22901	.42830	67.402	.85481	4.4962	15.839	65.024
#1	186.94	.80321	.00050	676.18	.01876	.05723	.00107
#2	186.09	.80800	.00067	682.68	.01714	.04349	.00566
#3	186.63	.80131	.00011	671.15	.01803	.04447	.00396
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606082302 Acquired: 6/25/2016 14:03:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00329	-.00499	17.541	.00002	5.8024	F -.03279	-.00373
Stddev	.00417	.00266	.115	.00016	.0077	.00249	.00217
%RSD	126.77	53.331	.65409	771.83	.13255	7.6037	58.233
#1	-.00765	-.00207	17.622	-.00016	5.8086	-.03219	-.00297
#2	-.00289	-.00563	17.591	.00008	5.8048	-.03065	-.00619
#3	.00066	-.00727	17.409	.00014	5.7938	-.03553	-.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00105	.00822	.00588
Stddev	.00081	.00012	.00100
%RSD	77.437	1.5051	16.931
#1	-.00020	.00826	.00695
#2	-.00112	.00832	.00498
#3	-.00182	.00808	.00571
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9001.2	54623.	2943.0
Stddev	12.7	293.	11.3
%RSD	.14121	.53595	.38250
#1	8986.8	54359.	2937.9
#2	9010.8	54574.	2935.3
#3	9006.1	54938.	2955.9

Approved: June 27, 2016

Sample Name: L1606082303 Acquired: 6/25/2016 14:07:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00097**	**.07689**	**.00082**	**.01317**	**4.0611**	**.00008**	**194.35**
Stddev	.00087	.00794	.00214	.00140	.0013	.00002	.19
%RSD	89.857	10.324	259.83	10.655	.03277	29.564	.09947
#1	.00177	.08422	.00140	.01160	4.0625	.00007	194.28
#2	.00005	.07798	.00261	.01363	4.0599	.00006	194.19
#3	.00109	.06846	-.00155	.01429	4.0610	.00010	194.56
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00720**	**.00128**	**.00172**	**.48254**	**1.5553**	**.05921**
Stddev	.00016	.00037	.00008	.00037	.03011	.0518	.00214
%RSD	37.982	5.1555	6.4501	21.255	6.2390	3.3303	3.6194
#1	.00025	.00709	.00125	.00159	.48289	1.5549	.05878
#2	.00056	.00690	.00137	.00144	.45226	1.5037	.05732
#3	.00044	.00762	.00121	.00214	.51247	1.6073	.06154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**110.52**	**2.3053**	**-.00008**	F **614.40**	**.00312**	**.00621**	**.00333**
Stddev	.38	.0070	.00038	4.80	.00050	.00738	.00101
%RSD	.34277	.30352	457.85	.78181	15.943	118.75	30.264
#1	110.96	2.3090	-.00052	609.47	.00307	-.00184	.00218
#2	110.30	2.2972	.00010	614.65	.00363	.01264	.00406
#3	110.30	2.3096	.00018	619.07	.00264	.00783	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606082303 Acquired: 6/25/2016 14:07:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	-.00398	12.572	-.00061	3.7282	-.02186	-.00195
Stddev	.00101	.00138	.069	.00058	.0049	.00737	.00114
%RSD	77.475	34.690	.54565	95.484	.12996	33.713	58.500
#1	-.00178	-.00242	12.599	.00005	3.7247	-.01374	-.00282
#2	-.00014	-.00503	12.623	-.00084	3.7262	-.02372	-.00066
#3	-.00200	-.00451	12.494	-.00105	3.7337	-.02812	-.00237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00017	.00519	.00587
Stddev	.00034	.00017	.00146
%RSD	196.61	3.3392	24.813
#1	.00020	.00538	.00454
#2	-.00026	.00515	.00565
#3	-.00046	.00504	.00743
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9113.2	55170.	2962.5
Stddev	17.2	284.	10.8
%RSD	.18895	.51491	.36572
#1	9120.9	54953.	2952.0
#2	9093.5	55065.	2973.6
#3	9125.3	55492.	2961.9

Approved: June 27, 2016

Sample Name: L1606082304 Acquired: 6/25/2016 14:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00108	.00282	.00375	.01195	1.2873	.00004	44.812	-.00032
Stddev	.00081	.00175	.00233	.00191	.0068	.00003	.140	.00033
%RSD	75.442	62.066	62.147	15.958	.52861	68.482	.31190	102.13
#1	-.00032	.00374	.00333	.01352	1.2889	.00004	44.884	-.00060
#2	-.00194	.00392	.00166	.00983	1.2799	.00001	44.651	.00004
#3	-.00098	.00080	.00626	.01250	1.2932	.00007	44.900	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	-.00235	.00403	80.696	3.0351	.04425	27.190	1.4212
Stddev	.00024	.00090	.00186	.288	.0674	.00194	.251	.0124
%RSD	38.213	38.227	46.192	.35704	2.2197	4.3802	.92249	.86964
#1	.00059	-.00132	.00534	80.883	2.9579	.04406	26.967	1.4224
#2	.00088	-.00276	.00485	80.364	3.0650	.04628	27.141	1.4083
#3	.00040	-.00297	.00190	80.840	3.0823	.04242	27.462	1.4329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00083	136.40	.00117	.05473	.00702	-.00148	-.00406	16.093
Stddev	.00029	.62	.00056	.00919	.00288	.00326	.00473	.052
%RSD	35.125	.45656	47.701	16.792	41.072	220.80	116.61	.32014
#1	-.00064	136.42	.00054	.06475	.00887	-.00465	-.00925	16.145
#2	-.00116	135.77	.00135	.05277	.00848	.00187	.00003	16.091
#3	-.00068	137.01	.00161	.04668	.00370	-.00165	-.00296	16.042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082304 Acquired: 6/25/2016 14:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00141**	**1.0265**	**.02088**	**-.00129**	**-.00025**	**.01157**	**-.01042**
Stddev	.00052	.0054	.00601	.00283	.00173	.00020	.00036
%RSD	36.987	.52659	28.762	219.55	704.92	1.7611	3.4676
#1	.00201	1.0281	.02616	-.00374	-.00225	.01176	-.01080
#2	.00117	1.0205	.01435	.00181	.00074	.01159	-.01039
#3	.00105	1.0309	.02213	-.00193	.00077	.01136	-.01008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9584.5**	**58328.**	**2992.4**
Stddev	11.8	87.	5.0
%RSD	.12317	.14881	.16820
#1	9573.1	58228.	2986.6
#2	9583.6	58387.	2995.2
#3	9596.7	58368.	2995.4

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 14:15:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	.73135	.00385	.12210	.08262	.00020	27.646	.00018
Stddev	.00073	.00428	.00128	.00118	.00156	.00004	.096	.00015
%RSD	27.764	.58467	33.324	.96789	1.8866	19.880	.34678	80.450
#1	.00220	.73627	.00263	.12346	.08403	.00016	27.689	.00009
#2	.00223	.72927	.00372	.12147	.08287	.00024	27.713	.00035
#3	.00348	.72851	.00519	.12136	.08095	.00020	27.536	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.00138	.00319	.50952	4.5430	.00820	13.834	.02681
Stddev	.00058	.00089	.00080	.00314	.0592	.00406	.158	.00190
%RSD	107.78	64.361	25.113	.61565	1.3042	49.473	1.1398	7.0691
#1	-.00010	.00066	.00412	.50590	4.4785	.00685	13.879	.02807
#2	.00067	.00110	.00265	.51133	4.5951	.01276	13.964	.02463
#3	.00103	.00237	.00282	.51133	4.5554	.00499	13.658	.02774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	65.018	.00157	.05465	.00287	-.00148	.00632	4.3760
Stddev	.00020	.232	.00022	.00221	.00233	.00288	.00218	.0207
%RSD	16.215	.35629	13.957	4.0445	81.267	194.34	34.507	.47244
#1	.00141	65.009	.00133	.05367	.00373	-.00288	.00878	4.3946
#2	.00130	65.254	.00176	.05719	.00465	-.00339	.00555	4.3795
#3	.00102	64.791	.00160	.05310	.00023	.00183	.00463	4.3537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 14:15:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.26681**	**.01202**	**-.00269**	**.00480**	**.00516**	**.00567**
Stddev	.00125	.00125	.00081	.00070	.00038	.00011	.00071
%RSD	227.21	.46986	6.7372	25.927	7.9446	2.0641	12.451
#1	-.00072	.26656	.01275	-.00259	.00452	.00521	.00488
#2	.00178	.26818	.01115	-.00205	.00524	.00504	.00622
#3	.00058	.26571	.01216	-.00344	.00465	.00524	.00592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9685.5**	**59237.**	**3013.9**
Stddev	15.3	70.	21.8
%RSD	.15804	.11840	.72168
#1	9667.9	59212.	3004.6
#2	9692.8	59182.	2998.3
#3	9695.8	59316.	3038.7

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 14:19:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.02576	.00392	.13054	.14235	.00004	53.032	.00013
Stddev	.00161	.00264	.00128	.00304	.00093	.00006	.088	.00011
%RSD	186.85	10.249	32.777	2.3320	.65273	165.85	.16643	81.772
#1	-.00048	.02479	.00505	.13055	.14272	-.00002	52.942	.00017
#2	.00053	.02374	.00418	.13357	.14130	.00011	53.037	.00022
#3	-.00263	.02875	.00252	.12748	.14305	.00003	53.119	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00416	.00255	.05069	2.7172	.00979	45.232	.00619
Stddev	.00057	.00090	.00135	.00895	.0969	.00331	.213	.00128
%RSD	70.201	21.666	53.148	17.648	3.5679	33.803	.47142	20.757
#1	.00109	.00488	.00157	.05068	2.6091	.01132	44.992	.00715
#2	.00016	.00315	.00198	.05964	2.7964	.01206	45.307	.00668
#3	.00119	.00444	.00409	.04175	2.7463	.00599	45.398	.00473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	113.30	.00198	.03363	.00397	-.00032	.00108	5.7426
Stddev	.00005	.15	.00097	.00220	.00496	.00242	.00246	.0270
%RSD	9.2544	.13423	48.767	6.5321	124.89	765.53	227.39	.46957
#1	.00062	113.13	.00098	.03204	.00115	-.00095	-.00128	5.7131
#2	.00062	113.39	.00206	.03614	.00107	.00236	.00363	5.7660
#3	.00052	113.39	.00290	.03272	.00971	-.00236	.00090	5.7486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 14:19:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.36906**	**-.00370**	**-.00072**	**.00779**	**.00692**	**.00331**
Stddev	.00028	.00064	.00411	.00265	.00075	.00021	.00138
%RSD	191.03	.17400	110.98	366.07	9.6620	3.0569	41.716
#1	-.00017	.36882	.00101	-.00049	.00853	.00671	.00489
#2	.00034	.36857	-.00557	.00180	.00703	.00713	.00270
#3	.00027	.36978	-.00654	-.00348	.00781	.00694	.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9627.8**	**58951.**	**3062.4**
Stddev	26.1	26.	1.9
%RSD	.27151	.04447	.06237
#1	9657.6	58927.	3060.7
#2	9617.0	58947.	3062.0
#3	9608.7	58979.	3064.5

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 14:23:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	.94860	.00623	.13672	.10593	.00014	35.066	.00002
Stddev	.00163	.01243	.00298	.00233	.00120	.00009	.208	.00013
%RSD	122.05	1.3105	47.819	1.7071	1.1370	65.235	.59262	741.62
#1	-.00020	.96246	.00332	.13853	.10456	.00018	34.826	.00011
#2	.00116	.93843	.00928	.13754	.10682	.00004	35.168	-.00013
#3	.00306	.94490	.00609	.13408	.10640	.00021	35.202	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.00115	.00402	.75423	2.6231	.00517	21.361	.05361
Stddev	.00038	.00077	.00076	.00983	.0329	.00134	.091	.00159
%RSD	39.586	67.102	19.015	1.3028	1.2541	25.927	.42723	2.9705
#1	.00055	.00114	.00333	.74497	2.6490	.00636	21.310	.05382
#2	.00102	.00192	.00389	.75319	2.6342	.00372	21.307	.05192
#3	.00129	.00038	.00484	.76454	2.5861	.00543	21.467	.05508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00320	114.16	.00202	.11444	.00566	-.00032	.00352	5.0408
Stddev	.00062	.45	.00043	.00615	.00453	.00176	.00035	.0084
%RSD	19.542	.39163	21.028	5.3725	80.076	549.83	10.037	.16741
#1	.00290	113.69	.00211	.12072	.00935	.00043	.00314	5.0497
#2	.00278	114.20	.00240	.11417	.00060	.00094	.00356	5.0330
#3	.00392	114.58	.00156	.10843	.00702	-.00233	.00385	5.0397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 14:23:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.24066**	**.01417**	**-.00245**	**.00766**	**.00892**	**.00404**
Stddev	.00021	.00154	.00348	.00225	.00065	.00011	.00127
%RSD	805.05	.63820	24.568	91.853	8.5297	1.1926	31.485
#1	.00024	.23889	.01059	-.00116	.00840	.00901	.00275
#2	.00001	.24171	.01754	-.00114	.00737	.00895	.00530
#3	-.00018	.24137	.01438	-.00504	.00719	.00880	.00407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9688.5**	**58932.**	**3057.0**
Stddev	25.8	93.	13.7
%RSD	.26652	.15746	.44955
#1	9698.0	58835.	3047.2
#2	9708.3	59020.	3072.7
#3	9659.3	58940.	3051.0

Approved: June 27, 2016

Sample Name: L1606115002 Acquired: 6/25/2016 14:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00203	.48878	.00167	.06520	.04585	.00006	17.152	.00001
Stddev	.00268	.01554	.00141	.00090	.00204	.00009	.173	.00009
%RSD	131.70	3.1791	84.852	1.3869	4.4598	167.56	1.0064	934.85
#1	.00187	.50660	.00286	.06544	.04801	.00015	17.256	-.00009
#2	-.00056	.47801	.00204	.06596	.04394	-.00004	16.953	.00007
#3	.00479	.48175	.00010	.06420	.04559	.00005	17.247	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00168	.00243	.39846	4.7446	.00319	5.4375	.01729
Stddev	.00031	.00066	.00184	.00667	.1185	.00289	.0385	.00153
%RSD	100.89	39.152	75.822	1.6749	2.4966	90.823	.70870	8.8325
#1	.00065	.00096	.00122	.39954	4.7392	.00001	5.4553	.01884
#2	.00006	.00183	.00151	.39131	4.6289	.00567	5.3932	.01727
#3	.00020	.00224	.00454	.40452	4.8657	.00387	5.4638	.01578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	38.880	.00010	.07228	.00433	-.00020	.00027	1.5503
Stddev	.00033	.402	.00056	.00820	.00375	.00324	.00590	.0251
%RSD	119.49	1.0347	568.40	11.341	86.648	1601.4	2189.5	1.6195
#1	-.00010	39.210	-.00001	.06867	.00198	.00127	.00262	1.5658
#2	.00053	38.432	.00070	.06650	.00235	-.00392	-.00644	1.5637
#3	.00040	38.999	-.00040	.08166	.00865	.00205	.00464	1.5213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115002 Acquired: 6/25/2016 14:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.09712	.00701	-.00122	.00599	.00508	.00239
Stddev	.00062	.00057	.00249	.00352	.00080	.00018	.00169
%RSD	1544.5	.58817	35.547	288.53	13.353	3.5369	70.760
#1	.00058	.09776	.00445	-.00524	.00624	.00503	.00322
#2	-.00064	.09666	.00715	.00026	.00510	.00528	.00044
#3	.00018	.09693	.00942	.00132	.00664	.00493	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9845.3	59884.	3057.5
Stddev	61.7	141.	28.2
%RSD	.62651	.23463	.92251
#1	9792.5	59732.	3034.3
#2	9830.2	60008.	3088.9
#3	9913.1	59914.	3049.2

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 14:31:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.14924	.00211	.10945	.07344	.00012	35.265	.00011
Stddev	.00084	.00304	.00150	.00214	.00141	.00005	.199	.00019
%RSD	53.011	2.0340	71.147	1.9507	1.9218	40.963	.56552	183.34
#1	.00069	.14626	.00205	.10856	.07211	.00007	35.174	.00027
#2	.00171	.15233	.00364	.10790	.07329	.00017	35.493	-.00011
#3	.00236	.14912	.00064	.11188	.07492	.00013	35.127	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00053	.00363	.24070	2.2004	.00754	18.847	.05800
Stddev	.00037	.00064	.00076	.00439	.0134	.00192	.227	.00368
%RSD	71.691	119.20	20.837	1.8247	.61086	25.451	1.2033	6.3535
#1	.00009	-.00001	.00323	.23564	2.1949	.00870	18.615	.05962
#2	.00071	.00038	.00450	.24286	2.2158	.00532	19.068	.05378
#3	.00075	.00124	.00316	.24359	2.1907	.00860	18.858	.06059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	93.416	.00066	.05411	.00356	-.00299	.00235	4.9794
Stddev	.00025	.232	.00043	.00846	.00271	.00266	.00452	.0235
%RSD	9.2843	.24821	65.257	15.640	76.210	88.939	192.50	.47215
#1	.00239	93.189	.00082	.06384	.00043	-.00008	-.00245	4.9968
#2	.00274	93.652	.00099	.04849	.00522	-.00529	.00653	4.9888
#3	.00288	93.408	.00017	.05000	.00501	-.00360	.00296	4.9527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 14:31:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.22720	-.00049	-.00434	.00477	.01199	.00282
Stddev	.00094	.00191	.00341	.00316	.00052	.00018	.00083
%RSD	624.90	.83946	689.70	72.807	10.840	1.4772	29.345
#1	.00091	.22526	.00103	-.00351	.00496	.01201	.00271
#2	-.00090	.22907	-.00440	-.00783	.00516	.01216	.00370
#3	.00043	.22727	.00189	-.00168	.00418	.01181	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9596.9	58682.	3041.4
Stddev	35.1	192.	10.5
%RSD	.36599	.32727	.34598
#1	9558.5	58834.	3032.3
#2	9605.0	58747.	3039.1
#3	9627.4	58466.	3052.9

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 14:35:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.08611	.00385	.13923	.09101	.00009	44.089	.00002
Stddev	.00149	.00500	.00146	.00310	.00028	.00009	.047	.00004
%RSD	320.61	5.8036	37.928	2.2254	.30236	102.05	.10587	146.93
#1	-.00016	.08678	.00262	.14146	.09069	.00015	44.139	.00006
#2	-.00061	.09074	.00347	.13569	.09114	.00014	44.082	.00002
#3	.00216	.08081	.00547	.14055	.09119	-.00002	44.046	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00077	.00300	.22257	1.9197	.00784	24.665	.07651
Stddev	.00017	.00044	.00144	.01624	.0794	.00414	.178	.00017
%RSD	34.605	57.594	48.079	7.2986	4.1341	52.815	.72144	.22200
#1	.00066	.00116	.00292	.22095	1.8333	.01224	24.592	.07669
#2	.00046	.00029	.00448	.23956	1.9894	.00402	24.534	.07635
#3	.00033	.00086	.00160	.20719	1.9365	.00726	24.867	.07649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00251	121.52	.00039	.04724	.00176	-.00202	.00114	5.9103
Stddev	.00040	.42	.00024	.00471	.00159	.00145	.00478	.0521
%RSD	16.119	.34732	62.165	9.9710	90.693	71.551	420.31	.88218
#1	.00228	121.85	.00064	.05267	.00005	-.00053	.00361	5.8778
#2	.00297	121.67	.00016	.04481	.00202	-.00342	.00418	5.9704
#3	.00227	121.04	.00037	.04425	.00320	-.00211	-.00437	5.8826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 14:35:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.28912	-.00001	-.00113	.00539	.00821	.00159
Stddev	.00104	.00030	.00390	.00110	.00033	.00010	.00078
%RSD	180.18	.10436	27479.	97.280	6.0662	1.2671	48.813
#1	.00169	.28878	.00322	.00014	.00577	.00817	.00171
#2	.00041	.28919	.00108	-.00182	.00517	.00833	.00230
#3	-.00037	.28937	-.00434	-.00172	.00524	.00813	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9591.1	58078.	3001.7
Stddev	50.0	111.	7.0
%RSD	.52084	.19101	.23475
#1	9648.1	57963.	2993.9
#2	9554.9	58185.	3007.6
#3	9570.3	58085.	3003.7

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 14:39:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.06369**	**.00211**	**1.6713**	**.01926**	**.00010**	F **452.03**
Stddev	.00322	.00656	.00351	.0005	.00118	.00010	.89
%RSD	1157.9	10.295	166.24	.02810	6.1016	104.76	.19751
#1	.00114	.06870	-.00193	1.6717	.01795	.00008	451.94
#2	.00198	.05626	.00441	1.6715	.02023	.00000	452.97
#3	-.00396	.06610	.00386	1.6708	.01959	.00021	451.19
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00175**	**.00336**	**.00358**	**.08657**	**4.0470**	**.10636**
Stddev	.00024	.00006	.00098	.00171	.01546	.0608	.00217
%RSD	56.333	3.4162	29.186	47.723	17.854	1.5017	2.0382
#1	.00015	.00180	.00230	.00410	.09591	4.0001	.10764
#2	.00053	.00168	.00424	.00167	.09508	4.1156	.10386
#3	.00059	.00177	.00354	.00498	.06873	4.0251	.10759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**104.45**	**.25861**	**.02316**	F **889.97**	**.00046**	**.03619**	**.00320**
Stddev	.32	.00175	.00063	8.94	.00094	.00407	.00206
%RSD	.30573	.67823	2.7369	1.0045	203.65	11.246	64.428
#1	104.40	.26014	.02389	897.40	-.00019	.03795	.00082
#2	104.79	.25898	.02276	892.47	.00155	.03153	.00442
#3	104.16	.25670	.02283	880.05	.00003	.03907	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 14:39:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.04556**	**5.0652**	**-.00092**	**8.3910**	F **-.05563**	**-.00220**
Stddev	.00340	.00461	.0400	.00030	.0291	.00259	.00257
%RSD	2618.0	10.119	.78890	32.506	.34723	4.6498	116.61
#1	-.00398	.04208	5.1054	-.00114	8.4061	-.05807	-.00507
#2	.00246	.05079	5.0645	-.00058	8.4095	-.05590	-.00010
#3	.00113	.04380	5.0255	-.00104	8.3574	-.05292	-.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01649**	**.00488**	**.00303**
Stddev	.00056	.00014	.00088
%RSD	3.4018	2.9544	29.046
#1	.01604	.00505	.00374
#2	.01712	.00480	.00205
#3	.01632	.00480	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8680.3**	**53198.**	**2985.6**
Stddev	180.6	1315.	22.8
%RSD	2.0805	2.4712	.76305
#1	8472.3	54211.	3004.6
#2	8770.9	53671.	2960.4
#3	8797.6	51712.	2991.9

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 14:43:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41555	10.459	.41251	.50877	1.0374	.05191	10.456
Stddev	.00198	.038	.00049	.00412	.0216	.00011	.214
%RSD	.47730	.36575	.11809	.80911	2.0778	.21811	2.0454
#1	.41688	10.435	.41304	.50472	1.0594	.05178	10.677
#2	.41327	10.438	.41238	.51295	1.0163	.05199	10.250
#3	.41650	10.503	.41210	.50863	1.0364	.05195	10.439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05257	.20726	.51590	.53004	4.1313	50.651	1.0395
Stddev	.00009	.00077	.00185	.00200	.0874	1.016	.0162
%RSD	.16567	.37212	.35803	.37798	2.1147	2.0061	1.5578
#1	.05256	.20724	.51397	.52980	4.1823	51.735	1.0578
#2	.05249	.20650	.51606	.52817	4.0304	49.720	1.0270
#3	.05266	.20804	.51766	.53216	4.1811	50.499	1.0337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.150	.52278	1.0570	51.369	.52494	10.305	.52104
Stddev	.208	.00621	.0043	.990	.00089	.023	.00138
%RSD	2.0459	1.1888	.41022	1.9281	.16882	.22613	.26480
#1	10.382	.52905	1.0620	52.419	.52481	10.311	.51949
#2	10.083	.51662	1.0546	50.452	.52412	10.279	.52151
#3	9.9835	.52267	1.0544	51.234	.52588	10.325	.52213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 14:43:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2435**	**.41340**	**5.3297**	**1.0365**	**1.0404**	**1.0490**	**.52867**
Stddev	.0031	.00239	.0078	.0027	.0194	.0184	.00366
%RSD	.25127	.57838	.14640	.26182	1.8676	1.7498	.69286
#1	1.2461	.41607	5.3340	1.0379	1.0597	1.0678	.52786
#2	1.2400	.41146	5.3207	1.0334	1.0208	1.0311	.53267
#3	1.2443	.41266	5.3345	1.0383	1.0408	1.0483	.52548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0507**	**1.0444**	F **3.0477**
Stddev	.0007	.0005	.0535
%RSD	.06848	.05207	1.7552
#1	1.0503	1.0446	3.1080
#2	1.0502	1.0438	3.0059
#3	1.0515	1.0449	3.0292
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9539.3**	**57751.**	**2940.1**
Stddev	31.6	140.	48.7
%RSD	.33120	.24295	1.6549
#1	9524.0	57816.	2886.9
#2	9575.6	57847.	2982.3
#3	9518.3	57590.	2951.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:46:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00165	.00284	.00176	.00388	.00113	.00012	-.05362	.00014
Stddev	.00125	.01178	.00236	.00154	.00084	.00005	.04538	.00017
%RSD	75.692	415.29	134.23	39.663	74.227	41.354	84.617	118.22
#1	.00309	-.01077	.00340	.00450	.00053	.00007	-.00140	.00006
#2	.00089	.00942	.00281	.00212	.00078	.00011	-.07612	.00034
#3	.00097	.00986	-.00094	.00500	.00209	.00017	-.08336	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00081	-.00057	.03333	.05011	.00030	.06903	-.00046
Stddev	.00028	.00137	.00241	.00857	.04565	.00118	.08939	.00080
%RSD	113.95	168.04	420.16	25.719	91.103	392.02	129.50	172.20
#1	.00053	-.00076	.00045	.02973	.09790	.00058	.12386	.00033
#2	.00023	.00164	-.00333	.02715	.04546	-.00100	-.03412	-.00045
#3	-.00003	.00157	.00116	.04312	.00696	.00132	.11734	-.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00329	.09636	-.00015	.00820	-.00027	.00540	.00512	-.00542
Stddev	.00036	.02670	.00052	.00425	.00262	.00178	.00316	.00074
%RSD	10.874	27.706	348.06	51.818	968.89	32.864	61.650	13.619
#1	.00316	.11195	.00032	.01302	.00232	.00377	.00634	-.00562
#2	.00301	.11159	-.00071	.00662	-.00021	.00729	.00749	-.00604
#3	.00369	.06553	-.00007	.00498	-.00292	.00514	.00154	-.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:46:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**.00084**	**-.00314**	**-.00152**	**.00124**	**-.00002**	**.00422**
Stddev	.00043	.00035	.00315	.00163	.00162	.00008	.00071
%RSD	142.14	41.948	100.51	107.27	131.28	387.02	16.743
#1	.00054	.00124	-.00369	-.00248	.00007	.00002	.00481
#2	.00057	.00059	.00026	.00036	.00055	-.00012	.00343
#3	-.00019	.00069	-.00597	-.00244	.00309	.00004	.00441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9509.0**	**57769.**	**2936.8**
Stddev	19.9	100.	17.6
%RSD	.20940	.17266	.59912
#1	9496.2	57883.	2947.5
#2	9532.0	57728.	2946.4
#3	9498.9	57697.	2916.5

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 14:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20060**	**4.9650**	**.19517**	**2.5768**	**.50183**	**.02406**	F **444.38**
Stddev	.00064	.0130	.00068	.0061	.00191	.00013	.71
%RSD	.32075	.26173	.35003	.23805	.38088	.54060	.15891
#1	.20131	4.9565	.19473	2.5781	.50380	.02409	444.63
#2	.20005	4.9586	.19596	2.5701	.50170	.02392	443.58
#3	.20045	4.9800	.19484	2.5821	.49998	.02418	444.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02442**	**.09295**	**.23551**	**.23263**	**1.9191**	**28.985**	**.61166**
Stddev	.00012	.00006	.00093	.00115	.0123	.093	.00400
%RSD	.49172	.06109	.39479	.49604	.64319	.32038	.65326
#1	.02431	.09291	.23631	.23296	1.9231	29.086	.60738
#2	.02455	.09302	.23573	.23359	1.9290	28.966	.61529
#3	.02440	.09293	.23449	.23135	1.9053	28.904	.61230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**105.95**	**.47454**	**.51043**	F **884.75**	**.22811**	**4.9353**	**.22750**
Stddev	.25	.00567	.00309	9.80	.00122	.0272	.00524
%RSD	.23467	1.1953	.60519	1.1073	.53281	.55168	2.3044
#1	105.68	.47627	.51271	882.43	.22677	4.9309	.23221
#2	106.17	.47914	.51168	876.32	.22915	4.9645	.22843
#3	105.99	.46820	.50692	895.49	.22841	4.9105	.22185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 14:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58292**	**.23516**	**7.5230**	**.45764**	**8.4638**	**.43138**	**.22024**
Stddev	.00661	.00590	.0386	.00329	.0240	.00658	.00196
%RSD	1.1347	2.5090	.51250	.71986	.28403	1.5254	.88967
#1	.58964	.23313	7.5444	.46024	8.4871	.43835	.22044
#2	.58270	.23054	7.5461	.45874	8.4651	.43053	.22209
#3	.57642	.24181	7.4785	.45394	8.4391	.42527	.21819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50974**	**.45745**	**.02017**
Stddev	.00182	.00152	.00279
%RSD	.35750	.33182	13.807
#1	.50798	.45815	.01724
#2	.50964	.45849	.02049
#3	.51162	.45571	.02279
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8784.0**	**53813.**	**2939.5**
Stddev	58.9	564.	26.0
%RSD	.67031	1.0483	.88591
#1	8819.5	54202.	2951.8
#2	8816.5	54070.	2957.2
#3	8716.1	53166.	2909.6

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 14:54:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19884**	**5.0097**	**.20311**	**2.5960**	**.50146**	**.02443**	F **447.43**
Stddev	.00024	.0049	.00234	.0007	.00093	.00023	1.15
%RSD	.12160	.09827	1.1515	.02603	.18621	.94697	.25628
#1	.19893	5.0097	.20547	2.5958	.50254	.02464	447.39
#2	.19857	5.0047	.20308	2.5967	.50101	.02419	446.31
#3	.19903	5.0146	.20079	2.5954	.50084	.02448	448.60
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02483**	**.09451**	**.23821**	**.23915**	**1.9535**	**28.902**	**.60873**
Stddev	.00032	.00036	.00123	.00189	.0137	.108	.00282
%RSD	1.3026	.38369	.51502	.78901	.69899	.37351	.46252
#1	.02509	.09492	.23941	.23914	1.9479	29.020	.60854
#2	.02447	.09421	.23696	.23726	1.9691	28.808	.61163
#3	.02493	.09441	.23826	.24103	1.9435	28.877	.60601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**106.60**	**.48110**	**.52231**	F **881.76**	**.23168**	**5.0586**	**.22685**
Stddev	.66	.00483	.00325	3.70	.00136	.0426	.00410
%RSD	.61507	1.0048	.62269	.41950	.58652	.84170	1.8079
#1	107.35	.47570	.52433	877.70	.23164	5.0964	.23130
#2	106.14	.48502	.51856	884.94	.23034	5.0125	.22604
#3	106.32	.48257	.52404	882.64	.23305	5.0670	.22322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 14:54:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.59871**	**.24615**	**7.5687**	**.46699**	**8.5686**	**.42893**	**.22250**
Stddev	.00609	.00268	.0516	.00318	.0150	.00524	.00079
%RSD	1.0180	1.0870	.68153	.68125	.17550	1.2224	.35602
#1	.60575	.24920	7.6059	.46994	8.5810	.42717	.22334
#2	.59510	.24505	7.5098	.46362	8.5519	.42478	.22177
#3	.59529	.24419	7.5903	.46740	8.5730	.43482	.22237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51554**	**.46791**	**.00590**
Stddev	.00333	.00294	.00185
%RSD	.64552	.62860	31.408
#1	.51938	.47002	.00382
#2	.51356	.46455	.00651
#3	.51367	.46915	.00737
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8900.3**	**52138.**	**2849.7**
Stddev	61.9	226.	11.1
%RSD	.69538	.43440	.38823
#1	8858.0	51879.	2838.3
#2	8971.3	52295.	2860.4
#3	8871.6	52242.	2850.4

Approved: June 27, 2016

Sample Name: L1606115404 Acquired: 6/25/2016 14:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00639	-.00036	.01270	.00241	.00013	.28017	.00009
Stddev	.00146	.00656	.00244	.00114	.00043	.00008	.03044	.00010
%RSD	248.07	102.69	686.61	9.0101	18.005	61.828	10.864	104.11
#1	.00089	-.00046	-.00313	.01156	.00227	.00022	.24651	.00012
#2	.00188	.01261	.00061	.01385	.00206	.00012	.28824	-.00001
#3	-.00100	.00700	.00146	.01270	.00289	.00005	.30576	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.01305	.00240	.07792	.04064	-.00228	.12469	.00253
Stddev	.00039	.00070	.00120	.00694	.09353	.00295	.18212	.00145
%RSD	747.32	5.3526	50.113	8.9064	230.14	129.38	146.06	57.512
#1	.00045	.01376	.00301	.08066	.00523	-.00157	.14106	.00090
#2	-.00033	.01305	.00317	.08306	.14671	-.00552	.29807	.00300
#3	.00004	.01236	.00101	.07002	-.03002	.00025	-.06507	.00369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00228	.75291	.00807	.00690	.00300	-.00255	.00146	.13135
Stddev	.00024	.01638	.00065	.00315	.00148	.00424	.00328	.00151
%RSD	10.641	2.1753	8.1061	45.563	49.471	166.69	225.01	1.1485
#1	.00245	.73694	.00868	.00525	.00160	-.00242	-.00127	.13296
#2	.00238	.75210	.00738	.01053	.00455	-.00685	.00055	.13112
#3	.00200	.76967	.00814	.00493	.00285	.00163	.00509	.12997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115404 Acquired: 6/25/2016 14:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.00282	.00431	-.00324	.00105	.00371	.00033
Stddev	.00036	.00041	.00156	.00193	.00089	.00012	.00066
%RSD	22.302	14.434	36.136	59.618	84.281	3.3596	201.18
#1	.00136	.00295	.00420	-.00210	.00202	.00385	-.00028
#2	.00201	.00236	.00592	-.00547	.00085	.00361	.00023
#3	.00143	.00314	.00281	-.00214	.00028	.00369	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9713.7	59908.	3002.7
Stddev	32.6	164.	34.0
%RSD	.33561	.27353	1.1337
#1	9740.1	60011.	2965.4
#2	9677.2	59995.	3032.2
#3	9723.7	59719.	3010.3

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 15:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00226	.00780	.00401	.26646	.17918	.00000	45.474	-.00004
Stddev	.00287	.00301	.00103	.00133	.00076	.00004	.222	.00008
%RSD	126.68	38.602	25.778	.50014	.42327	919.30	.48843	228.57
#1	.00509	.01128	.00462	.26750	.17974	.00002	45.718	.00006
#2	.00233	.00600	.00459	.26694	.17949	-.00004	45.422	-.00008
#3	-.00064	.00613	.00281	.26496	.17832	.00004	45.283	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00088	.00134	.05774	1.5654	.00884	27.038	1.6699
Stddev	.00027	.00028	.00194	.01943	.1007	.00205	.083	.0027
%RSD	44.880	31.682	144.85	33.650	6.4312	23.214	.30796	.16065
#1	.00083	.00056	-.00088	.03531	1.4495	.00687	26.967	1.6730
#2	.00063	.00109	.00219	.06938	1.6158	.01096	27.130	1.6684
#3	.00031	.00099	.00272	.06852	1.6309	.00869	27.018	1.6684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00414	74.521	.00232	.02280	.00145	-.00333	.00418	6.9589
Stddev	.00012	.362	.00063	.00622	.00648	.00099	.00335	.0172
%RSD	2.8693	.48589	27.089	27.292	447.38	29.598	80.140	.24675
#1	.00419	74.939	.00163	.02521	-.00229	-.00322	.00046	6.9755
#2	.00400	74.314	.00245	.02746	-.00229	-.00437	.00510	6.9601
#3	.00421	74.311	.00286	.01573	.00893	-.00240	.00696	6.9412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 15:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.31080**	**-.00408**	**-.00246**	**.00074**	**.00517**	**.00097**
Stddev	.00101	.00127	.01220	.00176	.00032	.00009	.00026
%RSD	589.50	.40720	299.39	71.557	43.195	1.7947	26.599
#1	.00067	.31223	.00838	-.00158	.00040	.00528	.00122
#2	-.00129	.30982	-.01601	-.00449	.00079	.00510	.00071
#3	.00011	.31036	-.00459	-.00131	.00103	.00514	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9554.2**	**58064.**	**2987.7**
Stddev	24.6	152.	17.9
%RSD	.25722	.26211	.59940
#1	9527.5	57892.	2971.4
#2	9576.0	58182.	2984.9
#3	9559.0	58118.	3006.9

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 15:05:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00077	.00104	.00250	.19417	.33327	.00001	49.969	.00011
Stddev	.00225	.00260	.00021	.00180	.00208	.00007	.144	.00004
%RSD	293.51	250.20	8.2634	.92950	.62356	535.11	.28842	36.458
#1	.00053	-.00100	.00271	.19484	.33088	.00006	50.109	.00015
#2	-.00336	.00396	.00251	.19555	.33470	.00004	49.821	.00012
#3	.00053	.00015	.00229	.19213	.33422	-.00007	49.978	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00039	.00161	4.4932	.30074	.00699	33.094	.46968
Stddev	.00024	.00046	.00055	.0210	.07361	.00374	.139	.00201
%RSD	82.593	118.92	34.456	.46819	24.475	53.562	.42105	.42764
#1	.00002	-.00012	.00218	4.4716	.35097	.00318	33.254	.46985
#2	.00046	.00051	.00108	4.5136	.21625	.00712	33.021	.47160
#3	.00039	.00078	.00156	4.4944	.33501	.01067	33.006	.46759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	56.528	.00048	.02851	.00540	-.00461	.00421	7.9465
Stddev	.00013	.068	.00114	.00462	.00195	.00412	.00583	.0128
%RSD	9.8009	.11946	234.80	16.220	36.120	89.402	138.37	.16106
#1	.00123	56.559	.00179	.03249	.00375	-.00852	-.00246	7.9518
#2	.00130	56.451	-.00006	.02962	.00489	-.00500	.00681	7.9559
#3	.00149	56.575	-.00027	.02344	.00755	-.00031	.00829	7.9320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 15:05:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.41936**	**-.00337**	**-.00247**	**.00035**	**.00337**	**.00091**
Stddev	.00022	.00050	.00295	.00045	.00041	.00006	.00160
%RSD	168.21	.11997	87.675	18.352	119.11	1.8649	175.07
#1	.00016	.41971	-.00131	-.00286	-.00012	.00341	-.00093
#2	.00033	.41958	-.00675	-.00259	.00050	.00330	.00173
#3	-.00010	.41878	-.00204	-.00197	.00066	.00341	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9627.3**	**58565.**	**2988.6**
Stddev	17.2	39.	5.1
%RSD	.17881	.06667	.17070
#1	9625.0	58521.	2993.1
#2	9645.6	58579.	2989.5
#3	9611.4	58596.	2983.0

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 15:09:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.01981	.00070	.15980	.12508	.00001	47.416	.00012
Stddev	.00149	.00690	.00351	.00313	.00043	.00010	.201	.00026
%RSD	112.43	34.815	504.28	1.9589	.34619	838.85	.42403	214.19
#1	.00108	.02777	-.00104	.15681	.12534	.00005	47.373	.00032
#2	-.00003	.01583	-.00161	.16306	.12532	.00009	47.635	.00022
#3	.00292	.01581	.00474	.15953	.12458	-.00010	47.240	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00032	.00351	1.3413	.87483	.00900	17.381	.47700
Stddev	.00046	.00045	.00082	.0140	.08308	.00172	.089	.00081
%RSD	429.81	139.46	23.247	1.0398	9.4971	19.124	.51021	.16934
#1	.00045	.00052	.00286	1.3297	.89461	.00799	17.319	.47725
#2	-.00041	.00065	.00443	1.3568	.78364	.01099	17.483	.47609
#3	.00028	-.00019	.00325	1.3373	.94624	.00803	17.342	.47764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	48.369	.00082	.10919	.00167	-.00062	.00179	5.8799
Stddev	.00025	.203	.00140	.00660	.00170	.00395	.00827	.0280
%RSD	97.415	.41932	171.45	6.0459	101.94	641.48	462.74	.47549
#1	-.00003	48.343	.00233	.10833	.00101	-.00514	.00952	5.8933
#2	-.00053	48.584	.00055	.10306	.00039	.00119	.00277	5.8478
#3	-.00022	48.181	-.00043	.11618	.00360	.00211	-.00693	5.8986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 15:09:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.26600**	**-.00537**	**-.00338**	**.00017**	**.00914**	**.00020**
Stddev	.00067	.00095	.00241	.00310	.00116	.00022	.00114
%RSD	345.33	.35889	44.987	91.459	671.24	2.4286	566.35
#1	-.00057	.26556	-.00315	-.00551	-.00106	.00889	.00099
#2	.00050	.26710	-.00794	.00017	.00033	.00931	-.00111
#3	.00065	.26535	-.00501	-.00481	.00125	.00922	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9587.2**	**58263.**	**2972.1**
Stddev	19.6	279.	4.9
%RSD	.20409	.47925	.16604
#1	9598.2	58004.	2969.9
#2	9598.7	58226.	2968.6
#3	9564.6	58559.	2977.8

Approved: June 27, 2016

Sample Name: L1606117801 Acquired: 6/25/2016 15:13:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	.01562	.00788	.04060	.02600	.00012	2.4592	.00007
Stddev	.00244	.00616	.00118	.00330	.00129	.00005	.0606	.00006
%RSD	197.99	39.461	15.044	8.1358	4.9545	44.901	2.4620	79.703
#1	.00387	.02096	.00725	.04075	.02646	.00010	2.5149	.00002
#2	-.00097	.00887	.00713	.04382	.02700	.00008	2.4680	.00013
#3	.00081	.01703	.00924	.03722	.02455	.00018	2.3948	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00074	.00609	.02685	.43656	.00432	.57708	-.00111
Stddev	.00033	.00144	.00018	.01358	.05030	.00166	.05180	.00137
%RSD	1012.2	194.14	2.9070	50.575	11.522	38.411	8.9754	123.48
#1	-.00025	.00070	.00629	.04250	.40355	.00528	.52291	-.00216
#2	.00039	.00219	.00602	.01809	.49445	.00241	.62611	-.00159
#3	-.00004	-.00068	.00595	.01997	.41167	.00528	.58223	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00299	95.163	-.00070	.01050	.00222	-.00635	.00641	3.4783
Stddev	.00029	.186	.00058	.00517	.00074	.00345	.00307	.0048
%RSD	9.6245	.19542	82.717	49.206	33.276	54.334	47.947	.13892
#1	.00325	95.230	-.00082	.01297	.00142	-.01032	.00356	3.4792
#2	.00268	95.306	-.00121	.00456	.00236	-.00408	.00600	3.4827
#3	.00303	94.953	-.00007	.01396	.00287	-.00464	.00966	3.4731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606117801 Acquired: 6/25/2016 15:13:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.11699	.00044	-.00188	.00105	.00210	.00054
Stddev	.00103	.00010	.00531	.00109	.00009	.00007	.00166
%RSD	275.08	.08958	1212.8	57.943	8.6567	3.2366	310.87
#1	.00154	.11703	-.00019	-.00063	.00114	.00212	-.00081
#2	-.00042	.11707	-.00453	-.00235	.00105	.00215	.00002
#3	-.00000	.11687	.00604	-.00264	.00096	.00202	.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9648.4	58829.	2994.3
Stddev	5.2	37.	6.7
%RSD	.05359	.06360	.22320
#1	9653.7	58809.	2992.7
#2	9643.3	58806.	2988.6
#3	9648.3	58873.	3001.7

Approved: June 27, 2016

Sample Name: L1606122701 Acquired: 6/25/2016 15:17:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00116	.09783	-.00055	.00242	.01519	.00006	7.7326	-.00002
Stddev	.00092	.00377	.00239	.00147	.00198	.00002	.1171	.00010
%RSD	79.355	3.8537	437.80	60.740	13.003	38.615	1.5138	459.39
#1	-.00047	.10163	-.00294	.00351	.01401	.00007	7.7569	.00006
#2	-.00220	.09409	.00184	.00075	.01747	.00007	7.8356	-.00013
#3	-.00081	.09776	-.00054	.00300	.01410	.00003	7.6053	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00227	.00167	.03463	.33602	-.00038	-.01109	-.00127
Stddev	.00016	.00059	.00051	.00142	.06178	.00154	.10836	.00134
%RSD	58.524	25.933	30.520	4.0976	18.384	404.83	977.09	105.32
#1	.00014	.00159	.00133	.03617	.30512	-.00005	-.09610	-.00256
#2	.00023	.00261	.00225	.03337	.29580	-.00206	.11092	-.00136
#3	.00045	.00260	.00142	.03436	.40715	.00097	-.04809	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	2.3350	.00044	.00731	.00430	-.00426	.00383	1.1328
Stddev	.00020	.0307	.00076	.00233	.00100	.00159	.00576	.0032
%RSD	132.69	1.3153	170.74	31.908	23.273	37.398	150.44	.27905
#1	.00005	2.3000	.00116	.00516	.00531	-.00538	.00306	1.1309
#2	-.00036	2.3574	.00052	.00700	.00430	-.00496	-.00151	1.1310
#3	-.00016	2.3476	-.00035	.00979	.00330	-.00244	.00992	1.1364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606122701 Acquired: 6/25/2016 15:17:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.25125	.00414	.00180	.00364	.00056	.00136
Stddev	.00018	.00103	.01324	.00145	.00074	.00007	.00130
%RSD	364.81	.41002	320.05	80.159	20.271	13.218	96.223
#1	.00011	.25131	-.01092	.00207	.00450	.00061	.00115
#2	.00019	.25224	.00936	.00024	.00328	.00047	.00016
#3	-.00016	.25018	.01397	.00310	.00316	.00058	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9969.0	60494.	3048.9
Stddev	15.1	129.	13.3
%RSD	.15159	.21283	.43564
#1	9969.3	60641.	3055.8
#2	9983.9	60438.	3033.6
#3	9953.7	60402.	3057.3

Approved: June 27, 2016

Sample Name: L1606122706 Acquired: 6/25/2016 15:21:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00567**	**.00083**	**.00123**	**.02806**	**.00015**	**13.472**	**-.00038**
Stddev	.00250	.00554	.00101	.00202	.00007	.00007	.038	.00019
%RSD	395.00	97.673	121.57	163.43	.25882	47.682	.28032	49.732
#1	.00247	-.00071	.00042	-.00047	.02810	.00007	13.487	-.00023
#2	.00165	.00924	.00199	.00346	.02810	.00021	13.429	-.00032
#3	-.00222	.00849	.00010	.00072	.02797	.00018	13.501	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.00061**	**.00157**	**.10367**	**.20316**	**.00472**	**8.1185**	**.10636**
Stddev	.00008	.00062	.00064	.01594	.00836	.00156	.1274	.00158
%RSD	8.0012	102.28	40.873	15.374	4.1155	32.981	1.5689	1.4897
#1	.00092	-.00009	.00190	.11049	.21157	.00610	7.9808	.10550
#2	.00107	.00111	.00198	.11507	.19485	.00503	8.2322	.10539
#3	.00104	.00079	.00083	.08546	.20306	.00303	8.1425	.10819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**33.974**	**.00004**	**.00429**	**-.00079**	**-.00333**	**.00187**	**.74797**
Stddev	.00043	.239	.00011	.00671	.00165	.00196	.00470	.01610
%RSD	97.916	.70374	251.40	156.52	208.37	58.883	251.58	2.1527
#1	-.00064	33.727	-.00007	.01191	-.00018	-.00196	-.00208	.73053
#2	-.00073	33.993	.00015	-.00074	.00047	-.00558	.00061	.75112
#3	.00005	34.204	.00006	.00169	-.00266	-.00246	.00707	.76226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606122706 Acquired: 6/25/2016 15:21:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.30857**	**.00233**	**-.00259**	**.00019**	**.00158**	**.00089**
Stddev	.00012	.00270	.00311	.00390	.00060	.00013	.00062
%RSD	87.894	.87470	133.51	150.50	319.58	8.2216	69.559
#1	-.00001	.30602	.00364	-.00319	-.00046	.00143	.00122
#2	-.00015	.30828	-.00122	.00157	.00073	.00163	.00127
#3	-.00026	.31139	.00457	-.00615	.00030	.00167	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9924.8**	**59991.**	**2995.5**
Stddev	18.6	172.	10.6
%RSD	.18782	.28732	.35313
#1	9924.0	59808.	2993.5
#2	9943.8	60150.	3007.0
#3	9906.6	60016.	2986.1

Approved: June 27, 2016

Sample Name: L1606127902 Acquired: 6/25/2016 15:25:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00298**	**.77289**	**.00033**	**.00803**	**.01053**	**.00016**	**9.3649**	**-.00023**
Stddev	.00188	.01227	.00104	.00267	.00091	.00007	.0910	.00007
%RSD	63.015	1.5872	311.80	33.213	8.6722	42.111	.97197	32.230
#1	.00105	.75975	.00114	.01109	.01057	.00009	9.3786	-.00026
#2	.00309	.78404	.00069	.00619	.01142	.00023	9.4483	-.00028
#3	.00480	.77489	-.00084	.00682	.00960	.00016	9.2678	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**.00209**	**.00225**	**1.1046**	**.20587**	**.00183**	**3.8329**	**.12468**
Stddev	.00025	.00124	.00151	.0075	.05413	.00323	.0374	.00185
%RSD	36.537	59.143	66.907	.67811	26.294	176.78	.97568	1.4875
#1	.00057	.00084	.00284	1.1048	.18555	.00515	3.8178	.12286
#2	.00096	.00331	.00337	1.1121	.26722	.00166	3.8755	.12657
#3	.00050	.00212	.00054	1.0971	.16483	-.00131	3.8054	.12461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.91553**	**.00104**	**.04284**	**.00087**	**-.00434**	**.00416**	**1.4218**
Stddev	.00049	.02558	.00097	.00374	.00128	.00145	.00383	.0304
%RSD	448.71	2.7944	92.896	8.7405	147.22	33.355	92.023	2.1368
#1	.00043	.88763	.00204	.04714	.00040	-.00289	.00799	1.3901
#2	-.00054	.92105	.00011	.04033	-.00011	-.00435	.00416	1.4246
#3	-.00022	.93790	.00097	.04105	.00232	-.00579	.00033	1.4507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127902 Acquired: 6/25/2016 15:25:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.04596**	**.00940**	**.00124**	**.00257**	**.00907**	**.00122**
Stddev	.00038	.00038	.00559	.00152	.00046	.00027	.00089
%RSD	147.88	.81748	59.487	122.54	17.946	3.0009	73.195
#1	.00017	.04588	.00305	-.00019	.00219	.00893	.00224
#2	-.00038	.04637	.01155	.00284	.00243	.00890	.00056
#3	-.00056	.04564	.01360	.00108	.00308	.00938	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10039.**	**61079.**	**3063.3**
Stddev	16.	87.	16.8
%RSD	.15707	.14311	.54820
#1	10022.	60979.	3046.2
#2	10041.	61122.	3064.0
#3	10054.	61137.	3079.8

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 15:29:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41474**	**10.480**	**.41122**	**.51129**	**1.0445**	**.05223**	**10.384**
Stddev	.00157	.008	.00187	.00319	.0019	.00016	.024
%RSD	.37799	.07401	.45408	.62455	.18188	.31144	.22798
#1	.41325	10.484	.41182	.51035	1.0465	.05219	10.387
#2	.41461	10.484	.41272	.50866	1.0441	.05241	10.359
#3	.41637	10.471	.40913	.51484	1.0428	.05209	10.407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05244**	**.20643**	**.51777**	**.52807**	**4.1528**	**50.626**	**1.0452**
Stddev	.00019	.00026	.00163	.00025	.0357	.257	.0080
%RSD	.36313	.12673	.31564	.04665	.85968	.50669	.76446
#1	.05244	.20669	.51592	.52825	4.1190	50.704	1.0431
#2	.05226	.20644	.51838	.52817	4.1901	50.835	1.0540
#3	.05264	.20617	.51902	.52779	4.1492	50.340	1.0385
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9629**	**.52245**	**1.0531**	**51.247**	**.52506**	**10.312**	**.52216**
Stddev	.0274	.00433	.0047	.134	.00127	.013	.00461
%RSD	.27495	.82847	.44799	.26095	.24264	.12919	.88203
#1	9.9944	.51946	1.0578	51.179	.52653	10.320	.51773
#2	9.9492	.52742	1.0532	51.401	.52432	10.296	.52692
#3	9.9451	.52049	1.0484	51.161	.52433	10.319	.52182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 15:29:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2356**	**.41239**	**5.3381**	**1.0346**	**1.0460**	**1.0497**	**.53160**
Stddev	.0017	.00642	.0057	.0013	.0038	.0052	.00142
%RSD	.13528	1.5556	.10675	.12483	.36598	.49394	.26637
#1	1.2362	.41861	5.3408	1.0357	1.0443	1.0445	.53322
#2	1.2337	.40580	5.3420	1.0349	1.0504	1.0497	.53096
#3	1.2369	.41277	5.3316	1.0332	1.0433	1.0549	.53062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0558**	**1.0420**	F **3.0350**
Stddev	.0013	.0007	.0090
%RSD	.12612	.06683	.29605
#1	1.0548	1.0423	3.0277
#2	1.0553	1.0412	3.0451
#3	1.0573	1.0426	3.0323
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9586.8**	**58077.**	**2975.5**
Stddev	6.0	176.	6.3
%RSD	.06238	.30386	.21060
#1	9587.3	57874.	2969.1
#2	9592.5	58193.	2975.6
#3	9580.6	58165.	2981.7

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 15:32:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**.00002**	**-.00010**	**.00491**	**.00210**	**.00011**	**.00565**	**-.00003**
Stddev	.00087	.00719	.00078	.00229	.00030	.00005	.00049	.00029
%RSD	26249.	33697.	808.92	46.626	14.233	46.346	8.5911	909.94
#1	.00025	.00801	-.00086	.00753	.00176	.00017	.00542	-.00000
#2	.00073	-.00593	.00069	.00390	.00223	.00007	.00533	-.00034
#3	-.00097	-.00201	-.00012	.00330	.00231	.00010	.00621	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.00011**	**.00064**	**.03500**	**.03424**	**-.00179**	**.02594**	**-.00052**
Stddev	.00009	.00046	.00051	.01471	.03973	.00240	.07741	.00156
%RSD	43.655	413.87	80.028	42.019	116.03	134.20	298.41	302.41
#1	.00012	-.00018	.00036	.01804	-.01111	-.00218	.05944	-.00155
#2	.00020	.00064	.00123	.04417	.05092	-.00397	.08095	.00128
#3	.00029	-.00013	.00033	.04280	.06290	.00078	-.06257	-.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00316**	**.04507**	**.00037**	**.00106**	**.00080**	**.00374**	**.00412**	**.00990**
Stddev	.00041	.02068	.00057	.00881	.00149	.00197	.00171	.00085
%RSD	13.022	45.885	154.95	828.64	185.93	52.502	41.416	8.5529
#1	.00281	.06772	-.00005	.00994	-.00040	.00294	.00217	.01067
#2	.00361	.02718	.00102	.00092	.00033	.00230	.00488	.01002
#3	.00306	.04031	.00014	-.00767	.00246	.00598	.00532	.00899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 15:32:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00057	.00333	-.00225	.00169	-.00006	.00439
Stddev	.00073	.00051	.00753	.00264	.00040	.00020	.00135
%RSD	152.10	89.662	226.48	117.22	23.766	306.69	30.851
#1	.00129	.00079	-.00329	-.00367	.00165	-.00017	.00283
#2	-.00014	-.00001	.01153	-.00387	.00130	-.00018	.00508
#3	.00029	.00092	.00174	.00079	.00210	.00016	.00526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9759.3	59359.	3013.9
Stddev	2.3	121.	1.6
%RSD	.02366	.20394	.05186
#1	9761.6	59292.	3015.4
#2	9759.3	59287.	3013.9
#3	9756.9	59499.	3012.3

Approved: June 27, 2016

Sample Name: L1606127903S Acquired: 6/25/2016 15:36:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01197	1.1036	.01087	.05712	.03304	.00134	9.9729	.00124
Stddev	.00119	.0059	.00187	.00108	.00116	.00008	.0996	.00005
%RSD	9.9297	.53710	17.218	1.8903	3.5218	6.1377	.99838	3.7414
#1	.01115	1.1017	.01246	.05619	.03414	.00126	10.019	.00125
#2	.01142	1.1103	.00881	.05688	.03182	.00135	9.8587	.00119
#3	.01333	1.0989	.01134	.05830	.03317	.00142	10.041	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00560	.01397	.01462	1.0767	1.4208	.02780	4.2261	.14457
Stddev	.00014	.00108	.00214	.0241	.1192	.00407	.0440	.00290
%RSD	2.4102	7.7598	14.602	2.2369	8.3867	14.648	1.0401	2.0070
#1	.00574	.01498	.01254	1.0620	1.3125	.02932	4.2372	.14280
#2	.00559	.01283	.01680	1.0635	1.4014	.02319	4.1777	.14299
#3	.00547	.01411	.01453	1.1045	1.5484	.03090	4.2635	.14792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02152	2.1329	.01322	.29583	.01584	.02588	.00942	1.7458
Stddev	.00098	.0418	.00158	.00727	.00355	.00244	.00136	.0125
%RSD	4.5315	1.9579	11.965	2.4574	22.390	9.4200	14.478	.71438
#1	.02231	2.1343	.01139	.30417	.01767	.02397	.01094	1.7523
#2	.02182	2.0905	.01413	.29245	.01809	.02862	.00829	1.7537
#3	.02043	2.1740	.01413	.29086	.01175	.02503	.00905	1.7314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127903S Acquired: 6/25/2016 15:36:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02137	.07160	.03468	.01383	.02654	.02985	.00242
Stddev	.00036	.00081	.00438	.00291	.00046	.00010	.00158
%RSD	1.6937	1.1317	12.615	21.070	1.7354	.32151	65.388
#1	.02178	.07099	.02963	.01549	.02613	.02986	.00141
#2	.02110	.07130	.03735	.01047	.02704	.02975	.00424
#3	.02123	.07252	.03706	.01554	.02644	.02994	.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9975.1	60274.	3041.7
Stddev	49.0	118.	22.7
%RSD	.49139	.19506	.74582
#1	9940.1	60350.	3061.9
#2	9954.2	60332.	3046.1
#3	10031.	60138.	3017.2

Approved: June 27, 2016

Sample Name: L1606127904SD Acquired: 6/25/2016 15:40:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01103**	**1.1028**	**.01203**	**.05464**	**.03364**	**.00143**	**9.8642**	**.00121**
Stddev	.00186	.0090	.00180	.00231	.00086	.00004	.1305	.00006
%RSD	16.883	.81742	14.963	4.2286	2.5577	2.6326	1.3231	5.3301
#1	.00912	1.0960	.01267	.05217	.03303	.00146	9.7151	.00122
#2	.01113	1.1130	.00999	.05675	.03463	.00143	9.9198	.00114
#3	.01284	1.0994	.01342	.05499	.03327	.00139	9.9577	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00590**	**.01420**	**.01484**	**1.0576**	**1.4598**	**.02493**	**4.2188**	**.14616**
Stddev	.00020	.00048	.00068	.0082	.1286	.00072	.1177	.00241
%RSD	3.3297	3.4140	4.5711	.77893	8.8104	2.9051	2.7895	1.6455
#1	.00602	.01364	.01562	1.0663	1.6059	.02466	4.0843	.14411
#2	.00567	.01444	.01454	1.0499	1.4099	.02439	4.2697	.14557
#3	.00601	.01451	.01437	1.0566	1.3636	.02576	4.3025	.14881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02217**	**2.1040**	**.01418**	**.30006**	**.01556**	**.02408**	**.01453**	**1.7577**
Stddev	.00072	.0376	.00057	.00408	.00448	.00503	.00712	.0151
%RSD	3.2386	1.7891	4.0074	1.3597	28.796	20.896	49.023	.85907
#1	.02294	2.0606	.01353	.29698	.01280	.02854	.02252	1.7414
#2	.02203	2.1275	.01453	.30469	.02073	.02509	.00885	1.7604
#3	.02153	2.1239	.01449	.29851	.01315	.01862	.01221	1.7712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127904SD Acquired: 6/25/2016 15:40:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02276**	**.07116**	**.03577**	**.01268**	**.02759**	**.03003**	**.00230**
Stddev	.00014	.00090	.00737	.00234	.00032	.00029	.00174
%RSD	.61715	1.2587	20.620	18.483	1.1623	.96154	75.576
#1	.02272	.07054	.03703	.01291	.02794	.02969	.00432
#2	.02292	.07076	.02784	.01490	.02752	.03021	.00132
#3	.02264	.07219	.04242	.01023	.02731	.03018	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10006.**	**60810.**	**3063.3**
Stddev	5.	192.	18.4
%RSD	.04992	.31626	.60150
#1	10009.	61010.	3082.6
#2	10009.	60627.	3061.4
#3	10000.	60793.	3045.9

Approved: June 27, 2016

Sample Name: L1606128901 Acquired: 6/25/2016 15:44:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00215	.00687	.00324	.00036	.25940	.00003	8.5369	.00005
Stddev	.00051	.01020	.00141	.00225	.00475	.00006	.1296	.00011
%RSD	23.677	148.57	43.630	628.60	1.8323	170.08	1.5176	227.30
#1	.00216	.01614	.00358	-.00039	.25471	.00001	8.3890	.00017
#2	.00265	.00852	.00169	.00289	.26421	.00010	8.6303	-.00003
#3	.00163	-.00406	.00445	-.00143	.25928	-.00000	8.5913	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00259	.00588	.00175	.08631	.04218	.00151	6.5072	.07542
Stddev	.00040	.00134	.00073	.02244	.04887	.00193	.2142	.00074
%RSD	15.316	22.711	41.571	26.002	115.87	127.81	3.2912	.97595
#1	.00214	.00436	.00096	.06469	.09555	-.00070	6.2873	.07459
#2	.00279	.00683	.00239	.10949	-.00039	.00286	6.5191	.07570
#3	.00285	.00647	.00190	.08474	.03137	.00237	6.7151	.07598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	23.216	.03092	.00614	.00300	-.00111	.00640	.97050
Stddev	.00039	.461	.00078	.00363	.00087	.00404	.00265	.00247
%RSD	280.63	1.9852	2.5231	59.153	29.021	362.80	41.403	.25451
#1	-.00028	22.689	.03110	.00526	.00208	-.00358	.00616	.97332
#2	.00048	23.539	.03160	.01013	.00311	-.00330	.00916	.96949
#3	.00022	23.422	.03007	.00303	.00381	.00355	.00387	.96870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606128901 Acquired: 6/25/2016 15:44:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00051**	**.16522**	**-.00360**	**-.00090**	**.00125**	**.00115**	**.00088**
Stddev	.00057	.00251	.00574	.00300	.00085	.00009	.00100
%RSD	111.15	1.5196	159.60	334.58	68.243	8.1341	114.01
#1	-.00005	.16233	-.01006	-.00433	.00031	.00125	.00060
#2	.00108	.16651	.00089	.00117	.00197	.00107	.00199
#3	.00050	.16682	-.00162	.00047	.00148	.00112	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9940.0**	**60088.**	**3038.6**
Stddev	4.2	150.	44.1
%RSD	.04218	.24912	1.4500
#1	9935.3	60256.	3084.8
#2	9941.7	60040.	2997.0
#3	9943.1	59969.	3034.2

Approved: June 27, 2016

Sample Name: L1606112901 Acquired: 6/25/2016 15:48:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	-.00046	-.00005	-.00065	.00318	.00006	4.1415	-.00016
Stddev	.00197	.00573	.00201	.00160	.00151	.00005	.0124	.00023
%RSD	156.91	1238.2	4274.9	245.00	47.612	81.871	.30015	142.20
#1	.00341	-.00015	-.00215	-.00141	.00362	.00006	4.1534	-.00032
#2	-.00045	.00511	.00185	.00118	.00150	.00012	4.1425	.00010
#3	.00081	-.00635	.00016	-.00173	.00443	.00001	4.1286	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00058	.00066	.05376	.10451	-.00223	.92501	.00486
Stddev	.00022	.00057	.00151	.01103	.06065	.00348	.08081	.00144
%RSD	3258.5	98.481	227.65	20.514	58.030	156.17	8.7365	29.653
#1	-.00025	.00121	.00094	.05934	.12513	.00172	.91232	.00510
#2	.00010	.00039	-.00097	.04105	.03624	-.00357	1.0114	.00331
#3	.00016	.00012	.00201	.06088	.15216	-.00484	.85130	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	3.0376	-.00008	.00578	.00044	-.00230	.00144	.21434
Stddev	.00025	.0744	.00053	.00529	.00227	.00178	.00420	.00577
%RSD	93.741	2.4506	639.89	91.432	509.94	77.275	291.44	2.6916
#1	-.00011	2.9794	.00051	.00238	.00289	-.00166	.00573	.20865
#2	-.00014	3.0119	-.00050	.00310	-.00159	-.00431	-.00267	.21418
#3	-.00056	3.1215	-.00026	.01187	.00003	-.00093	.00126	.22019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112901 Acquired: 6/25/2016 15:48:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.01265**	**.00270**	**.00064**	**.00099**	**.00067**	**.00092**
Stddev	.00055	.00035	.00371	.00238	.00052	.00018	.00051
%RSD	272.21	2.7272	137.50	373.62	52.293	26.328	55.163
#1	-.00083	.01259	.00376	-.00183	.00159	.00059	.00050
#2	.00008	.01234	-.00143	.00082	.00070	.00087	.00077
#3	.00015	.01303	.00576	.00292	.00069	.00054	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9969.3**	**60775.**	**3044.6**
Stddev	21.9	129.	15.2
%RSD	.22015	.21273	.49841
#1	9984.3	60920.	3056.8
#2	9944.1	60732.	3049.4
#3	9979.5	60672.	3027.6

Approved: June 27, 2016

Sample Name: L1606112902 Acquired: 6/25/2016 15:52:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00804	.00035	-.00128	.00288	.00010	2.9594	-.00006
Stddev	.00058	.00641	.00226	.00137	.00187	.00003	.0055	.00010
%RSD	221.07	79.747	653.27	107.46	64.882	33.893	.18419	164.92
#1	.00004	.00818	.00185	.00031	.00398	.00007	2.9654	.00000
#2	.00011	.00156	.00144	-.00200	.00072	.00009	2.9582	-.00001
#3	-.00094	.01439	-.00226	-.00213	.00394	.00014	2.9547	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00045	.00076	.08667	.10793	.00221	.95476	.02200
Stddev	.00021	.00074	.00096	.00189	.05164	.00058	.08086	.00168
%RSD	3252.3	165.35	125.16	2.1842	47.845	26.260	8.4687	7.6363
#1	.00009	.00055	.00166	.08573	.06794	.00282	.86999	.02017
#2	-.00024	-.00034	.00088	.08885	.16623	.00215	.96327	.02346
#3	.00016	.00114	-.00024	.08543	.08961	.00166	1.0310	.02238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	1.4239	.00014	.00542	.00025	-.00059	.00178	.20161
Stddev	.00013	.0489	.00086	.00331	.00120	.00643	.00247	.00182
%RSD	52.086	3.4352	596.95	60.989	470.84	1086.5	138.88	.90303
#1	-.00010	1.4077	-.00013	.00438	-.00113	.00173	.00080	.20089
#2	-.00031	1.4789	-.00055	.00913	.00091	-.00786	-.00005	.20368
#3	-.00033	1.3852	.00110	.00276	.00098	.00435	.00459	.20026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112902 Acquired: 6/25/2016 15:52:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.01066	.00349	-.00281	.00049	.00074	-.00046
Stddev	.00025	.00027	.00348	.00166	.00046	.00011	.00023
%RSD	30.685	2.4916	99.744	59.148	94.747	14.382	50.877
#1	.00087	.01070	.00643	-.00461	.00075	.00069	-.00046
#2	.00056	.01090	.00439	-.00132	-.00005	.00087	-.00023
#3	.00106	.01038	-.00035	-.00252	.00076	.00067	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9989.3	60825.	3066.0
Stddev	18.4	89.	4.0
%RSD	.18402	.14693	.13203
#1	10008.	60870.	3065.9
#2	9971.8	60722.	3062.0
#3	9987.6	60883.	3070.1

Approved: June 27, 2016

Sample Name: L1606112903 Acquired: 6/25/2016 15:56:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**-.00746**	**.00009**	**.00007**	**.00214**	**.00016**	**4.2282**	**-.00031**
Stddev	.00178	.00543	.00185	.00098	.00088	.00001	.1021	.00011
%RSD	518.14	72.757	1962.2	1427.6	41.098	3.6332	2.4147	36.326
#1	-.00212	-.00132	-.00121	.00003	.00116	.00017	4.2310	-.00019
#2	.00143	-.00942	.00221	-.00089	.00287	.00016	4.3288	-.00035
#3	-.00034	-.01164	-.00072	.00107	.00238	.00015	4.1247	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00057**	**-.00029**	**.07902**	**-.03881**	**.00121**	**1.0358**	**.00397**
Stddev	.00063	.00094	.00019	.01076	.01948	.00237	.1206	.00030
%RSD	236.86	166.12	66.025	13.622	50.186	195.96	11.648	7.4974
#1	-.00020	-.00113	-.00052	.06755	-.06059	-.00026	.93657	.00379
#2	.00099	.00052	-.00021	.08890	-.02305	-.00005	1.1701	.00431
#3	.00002	-.00109	-.00016	.08063	-.03281	.00395	1.0007	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**2.1503**	**-.00065**	**.00144**	**.00315**	**-.00171**	**-.00059**	**.27406**
Stddev	.00026	.0349	.00083	.00721	.00266	.00193	.00290	.00085
%RSD	47.062	1.6229	127.58	500.84	84.421	112.70	495.02	.31027
#1	-.00082	2.1700	-.00132	-.00288	.00271	.00020	-.00182	.27322
#2	-.00053	2.1710	.00028	-.00257	.00074	-.00366	.00273	.27492
#3	-.00030	2.1101	-.00091	.00976	.00599	-.00168	-.00267	.27403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112903 Acquired: 6/25/2016 15:56:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.01267	.00761	-.00035	.00044	.00047	.00034
Stddev	.00036	.00010	.00488	.00192	.00076	.00017	.00099
%RSD	75.051	.78508	64.089	556.65	172.53	36.380	290.00
#1	.00045	.01256	.01172	-.00046	-.00009	.00039	-.00046
#2	.00086	.01267	.00891	.00163	.00010	.00066	.00145
#3	.00013	.01276	.00222	-.00221	.00131	.00034	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9986.0	60665.	3026.9
Stddev	20.7	145.	17.8
%RSD	.20708	.23844	.58822
#1	10007.	60770.	3014.6
#2	9984.8	60726.	3018.9
#3	9966.0	60500.	3047.3

Approved: June 27, 2016

Sample Name: L1606112904 Acquired: 6/25/2016 16:00:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00143**	**.00782**	**.00014**	**-.00105**	**.00318**	**.00018**	**2.9065**	**-.00009**
Stddev	.00049	.00478	.00214	.00233	.00102	.00003	.0438	.00019
%RSD	34.335	61.153	1520.7	221.14	32.071	15.659	1.5085	207.21
#1	.00199	.01026	-.00194	.00103	.00202	.00019	2.8571	-.00015
#2	.00122	.00231	.00002	-.00063	.00358	.00019	2.9407	.00012
#3	.00108	.01088	.00233	-.00357	.00394	.00014	2.9218	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.00045**	**.00112**	**.05226**	**.04902**	**.00077**	**.91311**	**.02436**
Stddev	.00068	.00160	.00112	.00414	.07439	.00531	.01971	.00311
%RSD	135.32	357.44	99.972	7.9272	151.77	691.64	2.1590	12.769
#1	.00007	.00219	.00019	.05089	.09310	-.00511	.93142	.02095
#2	.00129	.00012	.00080	.04898	.09083	.00221	.91566	.02510
#3	.00015	-.00096	.00236	.05692	-.03687	.00521	.89224	.02704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**1.3676**	**-.00081**	**.00778**	**.00502**	**-.00289**	**.00478**	**.20680**
Stddev	.00041	.0202	.00063	.00381	.00153	.00221	.00206	.00531
%RSD	176.12	1.4731	77.366	49.002	30.478	76.529	43.075	2.5661
#1	-.00056	1.3492	-.00140	.01136	.00503	-.00266	.00633	.20082
#2	-.00037	1.3644	-.00015	.00819	.00655	-.00520	.00556	.20859
#3	.00023	1.3891	-.00088	.00377	.00348	-.00080	.00244	.21097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112904 Acquired: 6/25/2016 16:00:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.01047	.00111	-.00019	.00078	.00080	-.00006
Stddev	.00022	.00018	.00665	.00270	.00041	.00022	.00073
%RSD	116.67	1.7478	597.28	1390.3	52.913	27.125	1123.9
#1	.00044	.01026	.00785	.00028	.00121	.00056	.00012
#2	.00008	.01056	.00093	.00224	.00075	.00085	.00055
#3	.00005	.01059	-.00544	-.00310	.00038	.00099	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9957.7	60557.	3030.1
Stddev	15.8	177.	8.6
%RSD	.15901	.29213	.28426
#1	9975.9	60586.	3020.4
#2	9949.3	60718.	3033.0
#3	9947.7	60368.	3036.9

Approved: June 27, 2016

Sample Name: L1606127201 Acquired: 6/25/2016 16:04:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00887	-.00183	.00197	.00056	.00010	.95406	-.00003
Stddev	.00091	.01117	.00052	.00188	.00043	.00011	.05017	.00010
%RSD	325.46	125.87	28.528	95.488	77.565	107.58	5.2586	289.02
#1	.00022	-.02176	-.00218	.00027	.00085	.00010	.90480	.00002
#2	.00122	-.00213	-.00123	.00398	.00076	-.00001	.95228	.00003
#3	-.00060	-.00272	-.00207	.00165	.00006	.00021	1.0051	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00128	.00046	.02799	-.07233	.00197	.21481	.00019
Stddev	.00061	.00045	.00022	.01180	.06961	.00022	.12156	.00200
%RSD	1838.2	35.569	48.564	42.171	96.239	11.394	56.590	1042.3
#1	-.00013	-.00080	.00028	.03989	-.13804	.00212	.34118	.00130
#2	-.00048	-.00170	.00071	.01628	.00061	.00171	.09871	-.00212
#3	.00071	-.00133	.00040	.02780	-.07955	.00208	.20454	.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	6.5927	-.00041	.00599	.00226	-.00187	.00139	.23314
Stddev	.00039	.0563	.00074	.00538	.00192	.00575	.00169	.00199
%RSD	58.032	.85407	180.55	89.733	84.902	308.02	122.23	.85400
#1	-.00069	6.5318	-.00010	.00974	.00276	.00008	.00216	.23308
#2	-.00105	6.6428	-.00125	-.00017	.00014	-.00834	-.00056	.23517
#3	-.00027	6.6034	.00012	.00842	.00389	.00266	.00255	.23118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127201 Acquired: 6/25/2016 16:04:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.00331**	**.00248**	**.00096**	**.00107**	**.00085**	**.00133**
Stddev	.00044	.00056	.00254	.00297	.00078	.00012	.00063
%RSD	192.52	16.945	102.26	309.29	73.373	14.693	47.329
#1	.00017	.00395	.00360	.00246	.00196	.00094	.00062
#2	-.00070	.00291	.00428	.00288	.00074	.00089	.00180
#3	-.00016	.00306	-.00042	-.00246	.00050	.00071	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9972.6**	**60217.**	**3037.7**
Stddev	14.0	83.	14.1
%RSD	.14049	.13799	.46569
#1	9988.5	60309.	3026.4
#2	9967.3	60146.	3033.1
#3	9962.1	60196.	3053.5

Approved: June 27, 2016

Sample Name: L1606127202 Acquired: 6/25/2016 16:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.01060**	**.00084**	**.01591**	**.00482**	**.00013**	**4.8874**	**.00012**
Stddev	.00147	.00116	.00295	.00196	.00045	.00002	.0512	.00031
%RSD	570.05	10.898	350.53	12.303	9.3008	12.581	1.0477	272.03
#1	-.00187	.01061	.00261	.01812	.00447	.00014	4.8299	.00013
#2	.00100	.00945	-.00256	.01523	.00533	.00015	4.9279	.00042
#3	.00009	.01176	.00248	.01439	.00467	.00011	4.9046	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00046**	**.00025**	**.03059**	**.03395**	**.00208**	**2.7028**	**-.00061**
Stddev	.00015	.00087	.00083	.01638	.06594	.00230	.1335	.00149
%RSD	81.112	189.49	337.36	53.558	194.25	110.69	4.9393	243.32
#1	.00003	-.00146	.00109	.04846	-.00968	-.00038	2.8372	-.00173
#2	.00034	.00002	-.00057	.01628	.00172	.00418	2.5702	.00108
#3	.00021	.00006	.00022	.02703	.10981	.00243	2.7010	-.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**13.742**	**-.00085**	**.00227**	**.00279**	**-.00269**	**-.00193**	**.47645**
Stddev	.00056	.155	.00030	.00745	.00217	.00177	.00170	.00665
%RSD	217.74	1.1297	35.156	328.49	77.588	65.958	88.159	1.3954
#1	-.00002	13.587	-.00065	-.00435	.00526	-.00088	-.00382	.46927
#2	-.00089	13.898	-.00120	.00082	.00118	-.00276	-.00050	.47768
#3	.00014	13.742	-.00071	.01033	.00194	-.00443	-.00148	.48240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127202 Acquired: 6/25/2016 16:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.05092**	**.00177**	**.00024**	**.00137**	**.00071**	**.00162**
Stddev	.00083	.00100	.00998	.00193	.00052	.00009	.00084
%RSD	474.40	1.9658	565.04	789.52	37.663	12.612	51.686
#1	-.00049	.05003	.00781	-.00019	.00196	.00074	.00252
#2	-.00081	.05200	-.00975	.00235	.00120	.00078	.00148
#3	.00077	.05072	.00724	-.00143	.00097	.00061	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9920.3**	**59957.**	**3053.1**
Stddev	9.3	97.	28.1
%RSD	.09367	.16197	.92019
#1	9910.9	59874.	3056.5
#2	9929.5	60064.	3023.5
#3	9920.6	59932.	3079.4

Approved: June 27, 2016

Sample Name: L1606127901 Acquired: 6/25/2016 16:12:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.23343	-.00035	.00697	.01048	.00010	5.5956	-.00004
Stddev	.00151	.00808	.00093	.00046	.00038	.00003	.0897	.00007
%RSD	191.07	3.4604	268.33	6.6127	3.6255	27.106	1.6038	155.88
#1	-.00012	.24183	.00073	.00738	.01041	.00014	5.5127	-.00007
#2	.00027	.23274	-.00087	.00647	.01090	.00009	5.5834	-.00010
#3	-.00251	.22572	-.00090	.00704	.01015	.00009	5.6909	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00040	.00104	.37949	.02999	.00120	2.2214	.04375
Stddev	.00022	.00063	.00117	.02000	.03448	.00297	.1047	.00042
%RSD	72.888	155.32	112.12	5.2704	114.98	248.44	4.7142	.95613
#1	.00020	.00102	-.00030	.35646	.01685	.00172	2.1668	.04335
#2	.00015	-.00023	.00181	.39248	.06911	.00387	2.1552	.04372
#3	.00056	.00042	.00162	.38953	.00401	-.00200	2.3421	.04419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.40372	.00002	.01800	.00182	-.00229	.00534	.76285
Stddev	.00016	.02832	.00029	.00724	.00294	.00133	.00501	.02556
%RSD	124.97	7.0152	1295.9	40.230	161.43	58.036	93.812	3.3508
#1	-.00031	.38955	.00035	.01067	.00373	-.00090	.01054	.73582
#2	-.00001	.38528	-.00008	.01820	-.00157	-.00355	.00492	.76609
#3	-.00007	.43633	-.00020	.02515	.00330	-.00243	.00055	.78664
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127901 Acquired: 6/25/2016 16:12:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.02802**	**.00639**	**-.00424**	**.00104**	**.00686**	**-.00053**
Stddev	.00059	.00084	.00088	.00033	.00039	.00027	.00162
%RSD	12664.	3.0023	13.821	7.8780	37.381	4.0081	307.76
#1	.00044	.02706	.00703	-.00390	.00138	.00661	.00100
#2	.00022	.02835	.00538	-.00425	.00062	.00681	-.00222
#3	-.00068	.02864	.00675	-.00456	.00114	.00715	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9995.1**	**60569.**	**3072.5**
Stddev	18.8	83.	17.9
%RSD	.18798	.13702	.58354
#1	10017.	60498.	3093.1
#2	9983.0	60660.	3060.2
#3	9985.6	60548.	3064.2

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:16:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41279**	**10.433**	**.40298**	**.50323**	**1.0184**	**.05236**	**10.146**
Stddev	.00062	.023	.00491	.00242	.0037	.00006	.030
%RSD	.14995	.22399	1.2186	.48043	.36729	.12018	.29415
#1	.41231	10.415	.40384	.50055	1.0220	.05229	10.131
#2	.41349	10.459	.39769	.50390	1.0146	.05241	10.126
#3	.41257	10.425	.40740	.50524	1.0186	.05238	10.180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05206**	**.20294**	**.51645**	**.52099**	**4.0952**	**49.051**	**1.0295**
Stddev	.00043	.00065	.00457	.00121	.0025	.142	.0088
%RSD	.83054	.31937	.88415	.23159	.06120	.28862	.85476
#1	.05248	.20360	.51186	.52157	4.0943	49.074	1.0305
#2	.05210	.20291	.52099	.52180	4.0933	48.900	1.0203
#3	.05161	.20230	.51649	.51960	4.0980	49.180	1.0378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7277**	**.51414**	**1.0402**	**49.935**	**.51586**	**10.134**	**.51189**
Stddev	.0462	.00321	.0047	.095	.00165	.031	.00166
%RSD	.47447	.62359	.45388	.19063	.31918	.30495	.32486
#1	9.7465	.51782	1.0451	50.021	.51766	10.168	.51381
#2	9.6751	.51192	1.0398	49.833	.51549	10.123	.51086
#3	9.7615	.51270	1.0357	49.951	.51442	10.109	.51101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:16:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2153**	**.40661**	**5.2188**	**1.0211**	**1.0187**	**1.0271**	**.52415**
Stddev	.0058	.00386	.0120	.0013	.0031	.0069	.00046
%RSD	.47598	.95000	.22957	.12690	.30817	.67428	.08834
#1	1.2162	.40345	5.2255	1.0218	1.0207	1.0286	.52363
#2	1.2206	.41091	5.2258	1.0219	1.0150	1.0195	.52433
#3	1.2091	.40546	5.2049	1.0196	1.0203	1.0331	.52450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0611**	**1.0269**	F **2.9985**
Stddev	.0021	.0010	.0124
%RSD	.19830	.09638	.41405
#1	1.0631	1.0270	3.0047
#2	1.0614	1.0279	2.9842
#3	1.0589	1.0259	3.0065
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9559.6**	**57599.**	**2986.8**
Stddev	4.9	130.	10.5
%RSD	.05148	.22635	.35191
#1	9564.0	57612.	2977.9
#2	9560.6	57462.	2998.4
#3	9554.3	57722.	2984.0

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 16:19:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	.00626	-.00023	.00044	.00278	.00005	-.04464	.00001
Stddev	.00025	.00998	.00075	.00197	.00045	.00006	.01589	.00008
%RSD	13.751	159.28	328.05	451.88	16.156	122.09	35.589	834.92
#1	.00158	.01229	-.00019	.00230	.00236	.00010	-.04122	-.00004
#2	.00190	-.00525	.00050	.00063	.00326	-.00002	-.03074	-.00004
#3	.00208	.01176	-.00099	-.00162	.00274	.00006	-.06195	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00030	.00108	.01891	-.08883	.00028	.04170	-.00007
Stddev	.00014	.00149	.00123	.02463	.04133	.00158	.04172	.00069
%RSD	37.231	490.44	114.38	130.22	46.533	569.52	100.03	937.33
#1	-.00023	.00135	.00225	.04102	-.10527	-.00061	.02819	.00053
#2	-.00043	.00096	-.00021	.02335	-.11941	.00210	.00842	.00008
#3	-.00050	-.00140	.00119	-.00763	-.04180	-.00066	.08850	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00343	.00251	-.00012	.00363	.00401	.00489	.00879	-.00487
Stddev	.00038	.01645	.00050	.00608	.00167	.00193	.00298	.00028
%RSD	11.063	654.49	431.61	167.28	41.713	39.486	33.953	5.7618
#1	.00299	.00408	-.00004	.00277	.00588	.00378	.00970	-.00459
#2	.00370	-.01467	-.00065	-.00196	.00352	.00712	.01122	-.00515
#3	.00359	.01813	.00034	.01010	.00264	.00378	.00546	-.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 16:19:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.00057	.00214	-.00157	.00060	-.00006	.00421
Stddev	.00055	.00026	.00424	.00416	.00034	.00004	.00038
%RSD	193.42	45.468	198.11	264.68	55.851	78.634	9.1291
#1	-.00056	.00032	.00612	.00235	.00061	-.00008	.00456
#2	-.00063	.00083	-.00232	-.00593	.00093	-.00001	.00426
#3	.00035	.00056	.00262	-.00114	.00026	-.00008	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9751.1	59011.	2998.0
Stddev	16.0	92.	16.9
%RSD	.16409	.15669	.56327
#1	9735.8	59057.	2997.7
#2	9767.8	59072.	2981.2
#3	9749.7	58905.	3015.0

Approved: June 27, 2016

Sample Name: L1606127905 Acquired: 6/25/2016 16:23:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.42892	.00254	.00885	.00931	.00014	4.1101	-.00014
Stddev	.00085	.00960	.00110	.00026	.00054	.00008	.0226	.00009
%RSD	76.091	2.2373	43.205	2.9736	5.7541	61.416	.54879	60.631
#1	.00187	.41894	.00336	.00888	.00991	.00015	4.0848	-.00017
#2	.00019	.43809	.00129	.00858	.00890	.00022	4.1178	-.00005
#3	.00131	.42973	.00298	.00910	.00911	.00005	4.1279	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.00072	.00093	.46806	-.04215	.00375	2.3175	.01534
Stddev	.00025	.00122	.00082	.01630	.03381	.00237	.0180	.00171
%RSD	38.393	169.05	88.133	3.4825	80.210	63.236	.77530	11.156
#1	.00092	.00051	.00011	.45372	-.08111	.00533	2.3322	.01684
#2	.00057	-.00038	.00092	.46467	-.02046	.00102	2.2974	.01572
#3	.00044	.00203	.00175	.48579	-.02489	.00491	2.3228	.01348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.79830	.00036	.03423	.00164	-.00327	.00568	1.0453
Stddev	.00055	.00874	.00054	.00334	.00066	.00436	.00399	.0205
%RSD	130.46	1.0949	148.73	9.7489	39.962	133.66	70.190	1.9601
#1	-.00012	.80324	-.00001	.03061	.00234	-.00815	.00802	1.0252
#2	.00040	.78821	.00099	.03719	.00155	-.00191	.00794	1.0445
#3	.00099	.80344	.00012	.03489	.00104	.00026	.00108	1.0662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127905 Acquired: 6/25/2016 16:23:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.01799	.00482	-.00230	.00189	.01109	.00007
Stddev	.00065	.00037	.00226	.00232	.00074	.00029	.00211
%RSD	715.49	2.0334	47.005	100.92	39.126	2.6113	3180.6
#1	-.00003	.01830	.00310	.00003	.00148	.01082	.00082
#2	.00080	.01809	.00396	-.00232	.00274	.01107	-.00231
#3	-.00049	.01759	.00738	-.00462	.00144	.01140	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9972.5	60381.	3064.6
Stddev	33.3	69.	2.8
%RSD	.33435	.11363	.09242
#1	10010.	60351.	3061.5
#2	9961.5	60333.	3067.1
#3	9946.1	60460.	3065.2

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 16:27:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.03462	.00065	.00821	.00587	.00014	1.4096	-.00013
Stddev	.00034	.00628	.00229	.00098	.00178	.00003	.0346	.00033
%RSD	57.407	18.141	351.58	11.960	30.235	19.203	2.4561	248.47
#1	.00054	.03990	-.00071	.00924	.00790	.00011	1.3926	.00011
#2	.00095	.02767	-.00063	.00729	.00463	.00014	1.4495	-.00000
#3	.00028	.03630	.00329	.00809	.00508	.00016	1.3868	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00001	.00030	.04215	.21418	.00024	.69121	.00161
Stddev	.00012	.00038	.00134	.02269	.07335	.00510	.07378	.00189
%RSD	127.75	2953.4	439.05	53.849	34.250	2116.0	10.674	117.34
#1	.00006	.00044	.00117	.03668	.16871	.00256	.67687	-.00053
#2	-.00001	-.00026	.00097	.06707	.29880	.00377	.77111	.00305
#3	.00022	-.00014	-.00123	.02268	.17502	-.00561	.62565	.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	3.4091	-.00039	.01019	-.00019	-.00195	.00226	.25600
Stddev	.00027	.0299	.00017	.00142	.00263	.00116	.00241	.00788
%RSD	8569.8	.87827	42.602	13.923	1405.5	59.228	106.91	3.0774
#1	.00029	3.3757	-.00048	.01168	-.00018	-.00094	.00166	.24819
#2	-.00005	3.4183	-.00020	.01005	.00244	-.00171	.00492	.25587
#3	-.00025	3.4335	-.00049	.00885	-.00282	-.00321	.00020	.26394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 16:27:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.01395**	**.00070**	**-.00087**	**.00132**	**.00137**	**.00142**
Stddev	.00051	.00044	.00486	.00154	.00026	.00005	.00170
%RSD	118.61	3.1779	695.33	177.20	19.933	3.3203	119.70
#1	-.00063	.01431	.00581	-.00155	.00155	.00135	.00002
#2	.00015	.01345	.00013	-.00194	.00103	.00135	.00093
#3	-.00082	.01408	-.00385	.00089	.00136	.00143	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9913.2**	**60132.**	**3023.4**
Stddev	14.6	83.	23.3
%RSD	.14679	.13818	.77035
#1	9929.6	60151.	3030.8
#2	9901.6	60041.	2997.3
#3	9908.5	60204.	3042.1

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 16:31:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	-.00408	.00026	.00633	.00904	.00015	2.7703	-.00011
Stddev	.00108	.00521	.00166	.00204	.00121	.00009	.0227	.00014
%RSD	68.438	127.59	628.67	32.297	13.379	59.313	.82092	123.10
#1	.00072	-.00923	-.00155	.00429	.00969	.00008	2.7476	-.00002
#2	.00123	.00119	.00169	.00631	.00978	.00025	2.7930	-.00027
#3	.00279	-.00421	.00065	.00838	.00764	.00012	2.7703	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00002	.00060	.02383	.06717	.00040	2.3757	.00083
Stddev	.00028	.00081	.00057	.01240	.09428	.00275	.0633	.00197
%RSD	81.635	5221.9	93.832	52.028	140.36	693.38	2.6650	237.49
#1	.00044	-.00078	.00046	.02298	.16159	-.00259	2.3743	.00224
#2	.00003	-.00000	.00012	.01188	-.02697	.00095	2.4397	.00167
#3	.00055	.00084	.00122	.03663	.06688	.00283	2.3131	-.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	6.0259	-.00040	.00438	.00227	-.00140	.00185	.32995
Stddev	.00024	.0927	.00045	.00883	.00074	.00370	.00550	.00769
%RSD	208.31	1.5391	111.52	201.54	32.728	264.56	298.09	2.3316
#1	.00039	5.9438	-.00070	.01456	.00143	-.00567	.00483	.32126
#2	-.00003	6.1265	.00011	-.00011	.00282	.00058	.00521	.33270
#3	-.00002	6.0074	-.00061	-.00130	.00258	.00089	-.00450	.33589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 16:31:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.01996	.00356	-.00001	.00116	.00095	-.00024
Stddev	.00040	.00029	.00718	.00102	.00055	.00026	.00029
%RSD	136.64	1.4402	201.93	7537.5	47.304	27.165	121.82
#1	-.00006	.02008	.00861	-.00117	.00177	.00075	-.00049
#2	.00022	.02016	-.00466	.00037	.00099	.00086	-.00028
#3	.00074	.01963	.00672	.00076	.00071	.00124	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9925.6	60099.	3031.8
Stddev	7.7	64.	18.1
%RSD	.07799	.10696	.59652
#1	9922.2	60109.	3022.9
#2	9920.2	60157.	3019.9
#3	9934.5	60030.	3052.6

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 16:35:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	.05641	.00050	.00663	.00676	.00016	1.7818	.00015
Stddev	.00049	.00787	.00304	.00311	.00055	.00011	.0479	.00031
%RSD	29.631	13.947	601.42	46.927	8.1582	71.613	2.6886	203.48
#1	.00200	.06510	-.00294	.00991	.00739	.00005	1.7526	.00038
#2	.00109	.05435	.00166	.00372	.00635	.00014	1.8371	-.00020
#3	.00188	.04978	.00279	.00626	.00655	.00027	1.7557	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00048	.00100	.04970	.00137	.00112	1.1341	.00143
Stddev	.00049	.00051	.00115	.01548	.09645	.00218	.0897	.00096
%RSD	745.24	106.17	114.47	31.142	7038.5	195.00	7.9106	67.253
#1	-.00002	.00105	.00223	.06756	-.03266	.00315	1.0361	.00043
#2	-.00057	.00034	.00081	.04145	.11022	-.00118	1.2123	.00235
#3	.00040	.00005	-.00004	.04010	-.07346	.00137	1.1537	.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	5.9717	-.00015	.00950	-.00176	-.00302	.00622	.28058
Stddev	.00014	.0718	.00043	.00093	.00081	.00221	.00277	.00537
%RSD	53.804	1.2031	276.46	9.7789	45.909	73.167	44.558	1.9140
#1	-.00010	5.9074	-.00014	.01003	-.00249	-.00320	.00355	.27441
#2	-.00036	6.0493	-.00058	.01005	-.00089	-.00072	.00603	.28316
#3	-.00034	5.9584	.00027	.00843	-.00189	-.00513	.00908	.28418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 16:35:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.01287**	**.00136**	**-.00194**	**.00110**	**.00114**	**.00062**
Stddev	.00058	.00017	.00295	.00426	.00072	.00013	.00087
%RSD	762.02	1.3177	217.51	219.83	65.867	11.722	140.33
#1	.00015	.01301	.00162	-.00450	.00182	.00119	.00034
#2	-.00054	.01292	.00417	-.00429	.00110	.00099	-.00008
#3	.00061	.01268	-.00172	.00298	.00038	.00124	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9919.3**	**60059.**	**3016.8**
Stddev	34.5	56.	13.7
%RSD	.34767	.09285	.45386
#1	9942.2	60062.	3013.8
#2	9936.0	60114.	3004.8
#3	9879.6	60002.	3031.7

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 16:39:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.00214	.00018	.00362	.00526	.00013	1.7820	.00006
Stddev	.00166	.00346	.00084	.00176	.00021	.00005	.0144	.00011
%RSD	158.53	161.68	476.67	48.690	4.0116	41.814	.80931	182.53
#1	.00213	.00451	-.00003	.00223	.00549	.00009	1.7780	.00003
#2	-.00086	-.00183	-.00054	.00560	.00521	.00010	1.7700	-.00003
#3	.00188	.00375	.00110	.00302	.00507	.00019	1.7980	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00030	.00081	.02568	-.04054	.00233	1.0068	.00278
Stddev	.00009	.00056	.00053	.02210	.04687	.00374	.0618	.00296
%RSD	39.196	184.13	65.165	86.089	115.61	160.62	6.1428	106.56
#1	.00032	.00005	.00046	.05079	-.00224	.00526	1.0696	.00587
#2	.00013	-.00008	.00055	.00916	-.02657	.00361	.94591	-.00003
#3	.00026	.00094	.00141	.01708	-.09281	-.00188	1.0048	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	4.8272	.00042	.00764	.00031	-.00602	.00252	.26699
Stddev	.00027	.0498	.00058	.00427	.00107	.00140	.00418	.00420
%RSD	7088.8	1.0326	136.65	55.913	346.71	23.202	166.24	1.5735
#1	-.00018	4.7713	.00031	.01044	.00076	-.00742	-.00226	.26233
#2	-.00015	4.8672	-.00009	.00272	.00108	-.00462	.00551	.26815
#3	.00031	4.8430	.00105	.00974	-.00091	-.00602	.00431	.27049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 16:39:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.01171**	**-.00105**	**-.00167**	**.00048**	**.00111**	**-.00010**
Stddev	.00036	.00032	.00211	.00218	.00034	.00004	.00053
%RSD	98.761	2.7498	200.92	130.51	71.305	3.3481	503.34
#1	-.00064	.01138	-.00295	-.00411	.00028	.00107	-.00046
#2	-.00048	.01174	.00122	-.00099	.00029	.00113	.00050
#3	.00004	.01202	-.00143	.00009	.00088	.00113	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9924.7**	**60209.**	**3035.9**
Stddev	21.0	164.	13.4
%RSD	.21110	.27319	.44278
#1	9945.2	60212.	3050.8
#2	9925.5	60043.	3024.7
#3	9903.3	60372.	3032.1

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 16:43:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	.00219	.00055	.00586	.00711	.00018	2.2105	.00001
Stddev	.00101	.00795	.00092	.00071	.00025	.00010	.0174	.00025
%RSD	47.839	363.29	167.06	12.119	3.4464	53.942	.78551	4197.7
#1	.00096	-.00697	.00162	.00634	.00685	.00013	2.1935	-.00020
#2	.00251	.00621	-.00001	.00619	.00715	.00012	2.2282	.00029
#3	.00286	.00732	.00005	.00504	.00733	.00030	2.2098	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00001	.00002	.02737	.01189	.00109	1.3118	.00125
Stddev	.00029	.00051	.00146	.02301	.05921	.00366	.0639	.00239
%RSD	827.06	7244.7	6104.0	84.080	497.84	335.35	4.8727	191.19
#1	.00035	.00040	.00134	.00788	.02968	-.00236	1.3142	.00227
#2	-.00003	.00015	.00027	.02147	.06017	.00070	1.3745	.00297
#3	-.00022	-.00058	-.00154	.05276	-.05417	.00493	1.2467	-.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	6.1621	.00034	.00603	.00215	-.00121	.00114	.31741
Stddev	.00059	.0852	.00146	.00590	.00148	.00098	.00444	.00674
%RSD	252.32	1.3824	433.95	97.933	68.608	80.696	390.40	2.1227
#1	-.00086	6.0786	-.00133	.00455	.00384	-.00161	.00564	.31056
#2	-.00015	6.2489	.00098	.00101	.00153	-.00010	.00100	.31765
#3	.00031	6.1588	.00136	.01253	.00108	-.00192	-.00323	.32403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 16:43:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.01487**	**-.00053**	**-.00166**	**.00081**	**.00090**	**.00078**
Stddev	.00083	.00056	.00515	.00250	.00073	.00004	.00134
%RSD	533.32	3.7472	973.66	150.50	89.693	4.1812	172.14
#1	-.00110	.01433	.00470	-.00448	.00103	.00087	.00219
#2	.00015	.01545	-.00069	-.00074	.00000	.00094	.00064
#3	.00048	.01482	-.00560	.00025	.00141	.00089	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9886.5**	**59788.**	**3007.6**
Stddev	13.0	185.	33.5
%RSD	.13157	.30931	1.1137
#1	9901.4	60001.	3037.0
#2	9880.8	59677.	2971.1
#3	9877.4	59685.	3014.8

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 16:47:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00056	-.00040	.08474	.00202	.00013	25.077	-.00002
Stddev	.00048	.01146	.00100	.00137	.00093	.00006	.183	.00004
%RSD	125.93	2038.5	249.32	1.6179	46.237	47.434	.73077	179.25
#1	-.00014	.00766	-.00156	.08632	.00308	.00006	25.288	-.00005
#2	.00079	.00669	.00017	.08409	.00131	.00017	24.966	-.00003
#3	.00048	-.01266	.00019	.08382	.00167	.00016	24.976	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00049	.00090	.03824	.13932	.00586	5.7156	.01284
Stddev	.00012	.00049	.00033	.01141	.04539	.00340	.0899	.00260
%RSD	49.754	99.993	36.739	29.841	32.583	57.965	1.5726	20.218
#1	.00011	-.00085	.00123	.04902	.09367	.00206	5.7030	.01056
#2	.00028	-.00069	.00089	.02629	.18446	.00861	5.6327	.01230
#3	.00036	.00007	.00057	.03940	.13984	.00691	5.8112	.01567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	48.626	-.00075	.01117	.00114	-.00491	.00349	.27480
Stddev	.00026	.111	.00066	.00745	.00133	.00248	.00272	.00312
%RSD	52.573	.22800	87.964	66.704	116.26	50.491	77.811	1.1358
#1	.00024	48.499	-.00062	.01513	.00176	-.00250	.00652	.27222
#2	.00075	48.707	-.00147	.01582	.00206	-.00745	.00269	.27392
#3	.00048	48.670	-.00016	.00258	-.00038	-.00478	.00127	.27827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 16:47:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.45176	-.00366	.00143	.00149	.00078	.00089
Stddev	.00028	.00268	.00362	.00047	.00058	.00004	.00106
%RSD	304.19	.59263	98.732	33.094	39.124	5.2122	119.26
#1	.00040	.44867	-.00000	.00088	.00209	.00083	-.00013
#2	-.00012	.45326	-.00375	.00168	.00093	.00076	.00081
#3	-.00001	.45335	-.00723	.00172	.00145	.00075	.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9797.1	59243.	3012.9
Stddev	17.5	107.	17.7
%RSD	.17826	.18036	.58631
#1	9776.9	59361.	2997.1
#2	9806.9	59214.	3009.7
#3	9807.4	59153.	3032.0

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 16:51:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-~~04 WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01309**	**.25824**	**.01110**	**.13590**	**.02825**	**.00141**	**24.615**	**.00126**
Stddev	.00068	.00760	.00152	.00169	.00035	.00008	.204	.00013
%RSD	5.1924	2.9441	13.682	1.2425	1.2428	5.6800	.82995	10.655
#1	.01329	.24951	.01277	.13422	.02816	.00148	24.549	.00132
#2	.01365	.26341	.01072	.13589	.02864	.00133	24.844	.00111
#3	.01234	.26179	.00981	.13760	.02795	.00143	24.452	.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00516**	**.01347**	**.01556**	**.12663**	**1.3534**	**.03179**	**5.7750**	**.02544**
Stddev	.00029	.00054	.00043	.02761	.0228	.00410	.0699	.00285
%RSD	5.6307	4.0382	2.7758	21.808	1.6862	12.889	1.2101	11.189
#1	.00539	.01407	.01514	.12414	1.3303	.03536	5.8428	.02774
#2	.00525	.01301	.01552	.15541	1.3541	.02732	5.7789	.02226
#3	.00483	.01334	.01600	.10034	1.3759	.03267	5.7032	.02633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02479**	**48.072**	**.01332**	**.27819**	**.01575**	**.03066**	**.01661**	**.41681**
Stddev	.00011	.553	.00070	.01153	.00513	.00307	.00921	.00803
%RSD	.43243	1.1513	5.2238	4.1456	32.553	10.027	55.466	1.9271
#1	.02491	47.545	.01404	.27355	.01630	.02789	.02173	.40846
#2	.02475	48.649	.01266	.26969	.02058	.03397	.02212	.41747
#3	.02470	48.023	.01326	.29132	.01037	.03013	.00597	.42449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 16:51:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-04~~ WG573707-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02366**	**.45706**	**.02085**	**.01353**	**.02750**	**.02826**	**.00274**
Stddev	.00062	.00423	.00301	.00109	.00044	.00035	.00077
%RSD	2.6070	.92537	14.446	8.0746	1.5967	1.2498	28.151
#1	.02338	.45248	.01904	.01478	.02755	.02786	.00198
#2	.02436	.46082	.01917	.01306	.02704	.02846	.00352
#3	.02323	.45789	.02432	.01275	.02792	.02848	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9814.2**	**59172.**	**3008.6**
Stddev	14.0	133.	22.5
%RSD	.14277	.22528	.74717
#1	9829.8	59323.	3030.6
#2	9810.3	59073.	2985.6
#3	9802.6	59119.	3009.6

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 16:54:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-05~~ WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01239	.28748	.01145	.14150	.02764	.00148	24.958	.00130
Stddev	.00114	.00888	.00065	.00093	.00147	.00009	.077	.00038
%RSD	9.2124	3.0872	5.6507	.65421	5.3298	6.1781	.30772	29.306
#1	.01125	.28330	.01179	.14053	.02888	.00144	25.006	.00087
#2	.01353	.28146	.01070	.14159	.02802	.00141	24.999	.00161
#3	.01238	.29767	.01185	.14238	.02601	.00158	24.870	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00611	.01431	.01527	.13086	1.3857	.03280	5.7817	.02287
Stddev	.00054	.00136	.00145	.01260	.0370	.00239	.0561	.00299
%RSD	8.8509	9.4861	9.4751	9.6283	2.6697	7.2716	.97114	13.075
#1	.00671	.01585	.01436	.14435	1.3780	.03556	5.7473	.02433
#2	.00566	.01329	.01452	.11939	1.4259	.03138	5.8465	.01943
#3	.00597	.01379	.01694	.12885	1.3532	.03147	5.7513	.02484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02737	48.881	.01504	.29126	.01658	.02795	.01955	.43672
Stddev	.00021	.600	.00152	.00741	.00249	.00243	.00943	.00693
%RSD	.75532	1.2279	10.076	2.5426	15.013	8.6768	48.242	1.5861
#1	.02720	48.195	.01331	.29382	.01763	.03060	.01049	.42891
#2	.02732	49.311	.01567	.29705	.01373	.02742	.02931	.43914
#3	.02760	49.136	.01613	.28292	.01836	.02584	.01885	.44211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 16:54:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-05~~ WG573707-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02590	.47018	.02569	.01379	.02893	.02996	.00113
Stddev	.00080	.00475	.00439	.00029	.00110	.00076	.00027
%RSD	3.0868	1.0106	17.097	2.0910	3.8168	2.5433	23.745
#1	.02499	.46471	.02819	.01349	.02776	.02918	.00138
#2	.02647	.47252	.02061	.01406	.02908	.03000	.00115
#3	.02625	.47331	.02825	.01382	.02996	.03071	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9727.4	58906.	3022.7
Stddev	40.6	23.	25.7
%RSD	.41767	.03969	.84864
#1	9765.9	58911.	3039.9
#2	9731.2	58926.	2993.2
#3	9685.0	58880.	3035.0

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:58:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41361**	**10.445**	**.40516**	**.50612**	**1.0259**	**.05224**	**10.203**
Stddev	.00260	.021	.00144	.00287	.0033	.00020	.046
%RSD	.62922	.20256	.35469	.56757	.31739	.38953	.44884
#1	.41655	10.462	.40524	.50908	1.0271	.05242	10.224
#2	.41159	10.421	.40656	.50592	1.0284	.05202	10.235
#3	.41269	10.451	.40369	.50335	1.0222	.05229	10.150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05215**	**.20471**	**.51698**	**.52477**	**4.0648**	**49.423**	**1.0320**
Stddev	.00013	.00021	.00148	.00103	.0369	.189	.0006
%RSD	.23994	.10391	.28587	.19687	.90838	.38306	.06170
#1	.05201	.20470	.51640	.52461	4.1007	49.428	1.0316
#2	.05218	.20450	.51865	.52588	4.0269	49.610	1.0327
#3	.05226	.20492	.51587	.52383	4.0668	49.231	1.0316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8590**	**.51551**	**1.0404**	**50.331**	**.51945**	**10.229**	**.51430**
Stddev	.0965	.00144	.0039	.173	.00106	.010	.00570
%RSD	.97927	.27876	.37864	.34422	.20472	.09385	1.1081
#1	9.9705	.51433	1.0396	50.428	.51822	10.232	.51032
#2	9.8060	.51711	1.0369	50.435	.52013	10.218	.51175
#3	9.8006	.51508	1.0447	50.131	.51999	10.236	.52083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:58:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2288	.41352	5.2624	1.0315	1.0269	1.0279	.53017
Stddev	.0104	.00168	.0015	.0026	.0016	.0023	.00514
%RSD	.84208	.40618	.02811	.25583	.15527	.22255	.96993
#1	1.2288	.41198	5.2628	1.0285	1.0283	1.0298	.53564
#2	1.2391	.41326	5.2608	1.0336	1.0273	1.0286	.52543
#3	1.2184	.41531	5.2637	1.0323	1.0252	1.0254	.52943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0564	1.0308	F 3.0180
Stddev	.0015	.0001	.0119
%RSD	.14240	.01349	.39369
#1	1.0580	1.0307	3.0121
#2	1.0561	1.0310	3.0317
#3	1.0550	1.0308	3.0102
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9528.1	57486.	2960.8
Stddev	9.3	201.	17.3
%RSD	.09776	.34979	.58425
#1	9517.6	57273.	2962.9
#2	9535.3	57514.	2942.6
#3	9531.5	57672.	2977.0

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:02:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00226**	**.00067**	**.00055**	**.00185**	**.00013**	**-.07167**	**-.00014**
Stddev	.00085	.00279	.00119	.00264	.00042	.00005	.02175	.00033
%RSD	189.88	123.24	177.00	483.17	22.573	35.869	30.346	234.73
#1	.00019	-.00053	.00152	-.00019	.00233	.00018	-.09322	-.00050
#2	-.00141	.00505	-.00069	-.00165	.00153	.00012	-.04973	.00014
#3	-.00012	.00226	.00119	.00348	.00171	.00009	-.07206	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00057**	**.00076**	**.03056**	**-.09613**	**.00228**	**-.13259**	**.00051**
Stddev	.00039	.00056	.00130	.01338	.02053	.00471	.02062	.00136
%RSD	1720.9	98.019	170.60	43.800	21.361	206.77	15.553	268.18
#1	.00020	.00017	-.00074	.01806	-.09726	-.00131	-.14855	-.00092
#2	.00020	.00121	.00148	.02892	-.07505	.00054	-.10931	.00179
#3	-.00047	.00034	.00155	.04468	-.11607	.00761	-.13993	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00325**	**.04047**	**-.00081**	**.00150**	**.00148**	**.00530**	**.00256**	**-.00673**
Stddev	.00022	.01175	.00096	.00183	.00289	.00260	.00237	.00167
%RSD	6.7467	29.033	119.00	121.89	195.62	48.929	92.639	24.783
#1	.00325	.05342	-.00016	.00278	.00470	.00570	.00309	-.00596
#2	.00303	.03049	-.00036	.00231	.00063	.00768	-.00003	-.00558
#3	.00347	.03751	-.00192	-.00059	-.00090	.00253	.00461	-.00864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:02:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00044**	**.00426**	**-.00209**	**.00094**	**.00001**	**.00353**
Stddev	.00052	.00045	.00463	.00321	.00096	.00021	.00070
%RSD	128.76	102.93	108.80	153.83	102.68	1611.6	19.702
#1	.00048	.00069	.00959	-.00418	.00024	-.00012	.00320
#2	.00089	.00071	.00120	.00161	.00204	-.00009	.00306
#3	-.00015	-.00008	.00198	-.00369	.00053	.00025	.00433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9729.2**	**58924.**	**2982.2**
Stddev	14.1	124.	20.8
%RSD	.14444	.21107	.69802
#1	9725.0	58912.	2962.2
#2	9744.9	58806.	3003.8
#3	9717.8	59054.	2980.7

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 17:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.00180**	**.00125**	**.01161**	**.01032**	**.00011**	**2.3136**	**-.00007**
Stddev	.00230	.00043	.00160	.00137	.00099	.00007	.0269	.00019
%RSD	694.54	23.757	128.16	11.776	9.5715	61.393	1.1630	281.96
#1	.00225	.00218	.00194	.01272	.00925	.00003	2.3397	.00009
#2	-.00214	.00134	.00239	.01008	.01120	.00016	2.2860	-.00001
#3	-.00111	.00188	-.00058	.01203	.01051	.00015	2.3151	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00014**	**-.00018**	**.02935**	**.09569**	**-.00047**	**1.4383**	**.08572**
Stddev	.00040	.00048	.00052	.00252	.08702	.00314	.0635	.00277
%RSD	831.42	341.03	289.17	8.5796	90.931	664.03	4.4136	3.2299
#1	.00005	.00069	-.00054	.02667	.18563	.00276	1.4626	.08626
#2	.00029	-.00017	.00042	.03166	.01192	-.00066	1.4861	.08273
#3	-.00048	-.00010	-.00042	.02972	.08953	-.00352	1.3663	.08818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**3.8750**	**.00064**	**.00454**	**.00264**	**-.00168**	**.00429**	**.37174**
Stddev	.00028	.0249	.00026	.00324	.00293	.00204	.00272	.00091
%RSD	124.52	.64140	39.830	71.430	111.04	121.37	63.452	.24386
#1	-.00008	3.8959	.00063	.00081	.00037	-.00400	.00736	.37278
#2	.00028	3.8475	.00040	.00665	.00594	-.00087	.00338	.37129
#3	.00048	3.8816	.00091	.00616	.00160	-.00017	.00214	.37115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 17:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.01613**	**.00436**	**.00049**	**-.00004**	**.00087**	**.00142**
Stddev	.00092	.00051	.00120	.00199	.00066	.00012	.00191
%RSD	2230.2	3.1791	27.456	410.68	1766.6	13.339	134.89
#1	.00087	.01607	.00571	.00178	-.00027	.00083	.00247
#2	-.00002	.01565	.00341	-.00181	.00071	.00100	-.00079
#3	-.00097	.01667	.00397	.00149	-.00055	.00078	.00257
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9938.9**	**60110.**	**3041.6**
Stddev	14.3	99.	8.4
%RSD	.14384	.16440	.27454
#1	9922.4	60057.	3050.1
#2	9946.9	60224.	3033.5
#3	9947.4	60049.	3041.2

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 17:10:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	-.00453	-.00033	.00989	.01794	.00013	2.4889	.00011
Stddev	.00144	.01600	.00099	.00264	.00078	.00009	.0280	.00014
%RSD	216.56	353.18	295.78	26.673	4.3403	71.235	1.1261	129.84
#1	.00231	.00655	-.00001	.00702	.01871	.00024	2.4937	.00027
#2	.00001	-.02287	-.00144	.01220	.01715	.00010	2.5143	-.00000
#3	-.00033	.00273	.00045	.01047	.01798	.00006	2.4588	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00044	.00104	.24605	-.07520	-.00217	1.6643	.02363
Stddev	.00022	.00012	.00019	.01179	.12175	.00286	.0624	.00224
%RSD	272.66	27.286	18.718	4.7938	161.89	131.42	3.7522	9.4751
#1	.00027	-.00041	.00090	.23638	.00559	-.00035	1.5996	.02553
#2	.00015	-.00033	.00126	.24256	-.01597	-.00070	1.6689	.02116
#3	-.00017	-.00057	.00095	.25919	-.21524	-.00546	1.7243	.02420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	2.8989	.00016	.00365	.00260	-.00217	.00870	.42450
Stddev	.00065	.0101	.00120	.00396	.00147	.00150	.00507	.00601
%RSD	314.77	.35003	759.93	108.45	56.477	68.876	58.304	1.4160
#1	-.00082	2.8946	-.00099	.00772	.00422	-.00382	.01102	.41775
#2	-.00027	2.9105	.00140	-.00019	.00221	-.00091	.01219	.42650
#3	.00047	2.8917	.00006	.00342	.00137	-.00178	.00288	.42926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 17:10:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.02139**	**.00454**	**-.00050**	**.00021**	**.00050**	**.00118**
Stddev	.00016	.00022	.00843	.00114	.00027	.00017	.00137
%RSD	41.986	1.0329	185.67	229.51	129.67	34.277	116.06
#1	.00030	.02116	.00016	.00076	.00041	.00055	-.00040
#2	.00027	.02139	.01426	-.00146	.00031	.00031	.00208
#3	.00056	.02161	-.00080	-.00078	-.00010	.00064	.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9945.8**	**60248.**	**3055.3**
Stddev	9.2	94.	11.4
%RSD	.09217	.15541	.37444
#1	9945.9	60314.	3061.2
#2	9954.9	60289.	3042.1
#3	9936.5	60141.	3062.6

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 17:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	-.00135	-.00104	.00757	.00737	.00014	2.3997	-.00010
Stddev	.00192	.00661	.00046	.00116	.00061	.00003	.0309	.00022
%RSD	96.141	489.89	44.488	15.290	8.2167	21.217	1.2897	218.06
#1	.00406	-.00575	-.00051	.00624	.00716	.00012	2.3659	-.00020
#2	.00025	-.00456	-.00131	.00835	.00689	.00017	2.4268	-.00025
#3	.00170	.00625	-.00131	.00813	.00805	.00012	2.4063	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00044	-.00019	.10432	-.04481	.00004	.91519	.02191
Stddev	.00035	.00082	.00101	.01415	.09851	.00279	.09371	.00121
%RSD	3296.1	188.98	541.26	13.565	219.83	6329.0	10.240	5.5295
#1	-.00033	.00027	.00027	.10406	-.13456	.00163	.99135	.02326
#2	-.00007	-.00023	-.00134	.09030	-.06048	.00168	.94369	.02093
#3	.00037	-.00134	.00052	.11860	.06059	-.00317	.81054	.02153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	2.4900	.00017	.00956	.00115	-.00111	.00305	.32330
Stddev	.00005	.0408	.00057	.00296	.00162	.00041	.00349	.00479
%RSD	56.574	1.6398	345.24	30.912	140.85	37.279	114.64	1.4819
#1	-.00011	2.4429	.00078	.00752	.00187	-.00066	-.00055	.31801
#2	-.00013	2.5161	.00008	.00822	-.00070	-.00119	.00642	.32454
#3	-.00003	2.5109	-.00036	.01295	.00229	-.00148	.00327	.32735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 17:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.01387**	**.00305**	**-.00065**	**.00052**	**.00084**	**.00071**
Stddev	.00081	.00016	.00789	.00174	.00073	.00004	.00140
%RSD	953.07	1.1448	258.94	265.86	139.13	5.0666	198.28
#1	-.00013	.01403	.00198	-.00023	.00032	.00082	.00133
#2	-.00088	.01386	-.00426	.00083	-.00008	.00082	.00169
#3	.00075	.01371	.01142	-.00257	.00133	.00089	-.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9910.7**	**60184.**	**3019.4**
Stddev	10.3	175.	9.0
%RSD	.10381	.29035	.29953
#1	9910.7	60334.	3026.1
#2	9921.0	60225.	3023.1
#3	9900.4	59992.	3009.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 17:18:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41531**	**10.447**	**.40916**	**.50533**	**1.0238**	**.05217**	**10.225**
Stddev	.00091	.032	.00132	.00054	.0034	.00011	.030
%RSD	.21998	.31066	.32348	.10618	.32870	.20293	.29201
#1	.41613	10.474	.41061	.50566	1.0229	.05229	10.191
#2	.41432	10.411	.40886	.50561	1.0276	.05213	10.247
#3	.41546	10.455	.40801	.50471	1.0211	.05209	10.235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05225**	**.20370**	**.51712**	**.52549**	**4.0444**	**49.392**	**1.0301**
Stddev	.00031	.00034	.00175	.00197	.0184	.117	.0048
%RSD	.59442	.16603	.33927	.37570	.45604	.23752	.46659
#1	.05229	.20396	.51906	.52418	4.0394	49.465	1.0330
#2	.05254	.20382	.51666	.52776	4.0648	49.455	1.0327
#3	.05192	.20332	.51564	.52452	4.0290	49.257	1.0245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7951**	**.51327**	**1.0423**	**50.236**	**.51912**	**10.208**	**.51997**
Stddev	.0472	.00504	.0084	.169	.00170	.017	.00372
%RSD	.48165	.98200	.80990	.33677	.32826	.16636	.71476
#1	9.7523	.51223	1.0511	50.262	.52046	10.219	.52035
#2	9.7875	.51875	1.0343	50.391	.51968	10.189	.51607
#3	9.8457	.50883	1.0415	50.056	.51720	10.217	.52348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 17:18:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2238**	**.40709**	**5.2468**	**1.0260**	**1.0230**	**1.0304**	**.52875**
Stddev	.0084	.00511	.0098	.0012	.0023	.0127	.00327
%RSD	.68659	1.2545	.18586	.11540	.22459	1.2311	.61859
#1	1.2260	.40344	5.2580	1.0271	1.0231	1.0165	.53252
#2	1.2308	.40491	5.2428	1.0262	1.0252	1.0415	.52673
#3	1.2145	.41292	5.2398	1.0248	1.0206	1.0331	.52699
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0570**	**1.0310**	F **3.0075**
Stddev	.0056	.0001	.0207
%RSD	.53103	.00939	.68856
#1	1.0633	1.0311	3.0004
#2	1.0553	1.0309	3.0308
#3	1.0525	1.0310	2.9913
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9557.2**	**57623.**	**2979.5**
Stddev	9.7	193.	16.3
%RSD	.10109	.33465	.54600
#1	9546.7	57405.	2979.8
#2	9565.7	57771.	2963.0
#3	9559.4	57693.	2995.6

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:21:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00563**	**.00200**	**-.00100**	**.00189**	**.00009**	**-.01127**	**-.00004**
Stddev	.00104	.00334	.00233	.00184	.00120	.00004	.03123	.00010
%RSD	1246.5	59.297	116.54	184.11	63.245	40.940	277.20	226.69
#1	-.00074	-.00335	.00466	-.00138	.00302	.00011	-.03377	.00004
#2	-.00027	-.00407	.00108	-.00263	.00202	.00005	.02439	-.00015
#3	.00126	-.00946	.00027	.00100	.00064	.00010	-.02442	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00048**	**.00089**	**.00955**	**-.03243**	**.00071**	**-.01124**	**-.00013**
Stddev	.00017	.00075	.00043	.01226	.03763	.00268	.07316	.00129
%RSD	103.61	157.05	48.720	128.38	116.03	378.57	650.98	975.30
#1	.00002	.00095	.00059	-.00410	-.06003	-.00175	-.02665	-.00039
#2	.00035	.00087	.00069	.01962	.01043	.00031	-.07547	-.00128
#3	.00012	-.00039	.00138	.01314	-.04771	.00356	.06840	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00323**	**.02898**	**-.00046**	**.00432**	**.00328**	**.00454**	**.00410**	**-.00425**
Stddev	.00029	.02008	.00095	.00359	.00221	.00123	.00133	.00064
%RSD	9.1168	69.292	208.78	82.910	67.490	26.995	32.528	15.135
#1	.00298	.02490	-.00038	.00845	.00352	.00323	.00275	-.00470
#2	.00356	.01126	-.00144	.00261	.00095	.00566	.00541	-.00351
#3	.00316	.05079	.00046	.00192	.00536	.00474	.00413	-.00454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:21:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00021	.00375	-.00110	.00108	-.00009	.00393
Stddev	.00059	.00011	.00446	.00333	.00027	.00003	.00087
%RSD	86.694	51.296	119.05	302.86	25.045	36.058	22.188
#1	.00135	.00012	.00567	.00135	.00136	-.00006	.00491
#2	.00024	.00018	-.00135	.00024	.00107	-.00012	.00363
#3	.00044	.00033	.00692	-.00489	.00082	-.00008	.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9706.7	59138.	3007.6
Stddev	9.6	122.	14.5
%RSD	.09901	.20648	.48341
#1	9697.1	58997.	2992.2
#2	9716.3	59217.	3009.4
#3	9706.6	59200.	3021.1

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 17:25:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00682	.16326	.00787	.08110	.01015	.00172	.37504	.00080
Stddev	.00230	.01176	.00393	.00058	.00060	.00002	.03274	.00014
%RSD	33.789	7.2031	49.909	.72089	5.8834	1.2548	8.7301	17.457
#1	.00456	.16635	.01239	.08173	.01084	.00173	.33805	.00070
#2	.00916	.17317	.00587	.08058	.00985	.00173	.40031	.00075
#3	.00674	.15026	.00534	.08099	.00976	.00169	.38675	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00446	.00390	.00484	.09497	.71355	.08241	.33888	.00741
Stddev	.00036	.00087	.00066	.01610	.00812	.00379	.00870	.00176
%RSD	8.1660	22.291	13.622	16.951	1.1379	4.5949	2.5673	23.707
#1	.00488	.00490	.00494	.08463	.70937	.08497	.33660	.00920
#2	.00426	.00332	.00413	.08675	.70838	.08419	.34850	.00734
#3	.00424	.00348	.00544	.11352	.72291	.07806	.33155	.00569
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00855	.40833	.01678	.78916	.01199	.08269	.02089	.77549
Stddev	.00007	.02661	.00076	.00972	.00016	.00111	.00270	.00482
%RSD	.82014	6.5175	4.5074	1.2317	1.3733	1.3390	12.938	.62171
#1	.00856	.42291	.01686	.80033	.01215	.08397	.01985	.78057
#2	.00847	.42447	.01749	.78261	.01182	.08216	.01886	.77494
#3	.00861	.37762	.01598	.78454	.01200	.08195	.02396	.77097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 17:25:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40481	.04214	.02257	.15413	.00994	.01699	.13476
Stddev	.00262	.00003	.00404	.00144	.00108	.00007	.00396
%RSD	.64734	.07891	17.895	.93373	10.832	.40613	2.9378
#1	.40763	.04217	.02259	.15502	.01117	.01705	.13268
#2	.40435	.04210	.02661	.15491	.00942	.01692	.13226
#3	.40245	.04214	.01853	.15247	.00922	.01700	.13932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9757.6	59331.	3007.6
Stddev	3.7	156.	34.2
%RSD	.03744	.26375	1.1357
#1	9754.3	59400.	3008.1
#2	9757.0	59152.	3041.5
#3	9761.5	59441.	2973.2

Approved: June 27, 2016

Sample Name: PBW Y5 Acquired: 6/25/2016 17:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00185**	**.00116**	**-.00112**	**-.00084**	**.00120**	**.00011**	**-.01961**	**-.00006**
Stddev	.00045	.01041	.00198	.00240	.00080	.00010	.05200	.00016
%RSD	24.231	897.41	176.31	284.10	67.234	89.198	265.17	288.76
#1	.00153	-.00604	-.00020	.00070	.00046	.00020	.01383	-.00024
#2	.00236	-.00358	.00023	-.00360	.00107	.00014	-.07952	.00007
#3	.00166	.01310	-.00339	.00037	.00206	.00000	.00686	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00018**	**.00105**	**.03412**	**-.07407**	**.00236**	**.02694**	**.00162**
Stddev	.00024	.00064	.00070	.02542	.08098	.00211	.02742	.00224
%RSD	248.33	362.92	67.168	74.514	109.32	89.477	101.81	137.94
#1	.00030	-.00083	.00024	.00498	-.16192	.00417	.01237	.00092
#2	.00016	-.00014	.00146	.05181	-.05788	.00285	.00987	.00413
#3	-.00017	.00044	.00145	.04557	-.00242	.00004	.05857	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.01025**	**-.00077**	**.00507**	**.00386**	**-.00192**	**-.00109**	**.00437**
Stddev	.00004	.01479	.00185	.00580	.00053	.00084	.00245	.00068
%RSD	28.058	144.27	239.74	114.27	13.817	43.798	224.68	15.497
#1	-.00010	.02026	-.00256	.00797	.00348	-.00273	.00112	.00408
#2	-.00015	-.00674	.00113	.00885	.00447	-.00198	-.00067	.00389
#3	-.00017	.01724	-.00088	-.00160	.00363	-.00105	-.00372	.00515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW Y5 Acquired: 6/25/2016 17:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00044	.00538	-.00184	.00071	.00062	.00198
Stddev	.00057	.00040	.00350	.00250	.00039	.00016	.00115
%RSD	73.146	89.773	65.128	135.94	54.397	26.345	58.223
#1	.00143	.00035	.00942	-.00427	.00062	.00079	.00279
#2	.00040	.00088	.00331	.00073	.00114	.00048	.00066
#3	.00049	.00010	.00340	-.00198	.00038	.00058	.00249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9880.3	60109.	3027.1
Stddev	31.5	73.	6.6
%RSD	.31885	.12179	.21761
#1	9847.3	60149.	3030.6
#2	9910.1	60154.	3019.5
#3	9883.5	60025.	3031.2

Approved: June 27, 2016

Sample Name: LCSW Y5 Acquired: 6/25/2016 17:33:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18967**	**4.7620**	**.18828**	**.90013**	**.47555**	**.02395**	**4.7950**	**.02373**
Stddev	.00250	.0081	.00104	.00471	.00273	.00006	.0213	.00018
%RSD	1.3192	.17078	.55148	.52284	.57347	.24848	.44480	.74408
#1	.18907	4.7578	.18718	.89893	.47827	.02388	4.7819	.02392
#2	.19242	4.7714	.18841	.90532	.47282	.02399	4.8196	.02370
#3	.18753	4.7569	.18924	.89614	.47557	.02397	4.7835	.02357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09489**	**.23803**	**.24292**	**1.9123**	**22.817**	**.48875**	**4.5669**	**.24181**
Stddev	.00039	.00120	.00156	.0298	.036	.00284	.0465	.00007
%RSD	.41346	.50457	.64104	1.5597	.15629	.58110	1.0173	.02751
#1	.09520	.23794	.24291	1.9317	22.780	.48603	4.5750	.24188
#2	.09501	.23927	.24447	1.8779	22.852	.49170	4.5170	.24174
#3	.09445	.23687	.24136	1.9272	22.818	.48851	4.6088	.24180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49027**	**23.490**	**.24091**	**4.5553**	**.24063**	**.56646**	**.18382**	**2.3525**
Stddev	.00145	.113	.00040	.0084	.00352	.00190	.00239	.0014
%RSD	.29550	.48187	.16805	.18553	1.4632	.33509	1.2995	.06062
#1	.48963	23.608	.24065	4.5528	.24014	.56531	.18109	2.3541
#2	.49193	23.382	.24137	4.5647	.24437	.56542	.18555	2.3519
#3	.48925	23.480	.24069	4.5484	.23738	.56865	.18482	2.3515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW Y5 Acquired: 6/25/2016 17:33:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47085**	**.48454**	**.47923**	**.24546**	**.48968**	**.47202**	**.01198**
Stddev	.00082	.00070	.00116	.00117	.00078	.00042	.00247
%RSD	.17390	.14504	.24256	.47677	.15993	.08855	20.639
#1	.47170	.48509	.47789	.24652	.48877	.47178	.00945
#2	.47079	.48375	.47984	.24421	.49011	.47251	.01208
#3	.47006	.48479	.47995	.24566	.49015	.47178	.01439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9888.6**	**60001.**	**3090.1**
Stddev	19.1	149.	26.5
%RSD	.19299	.24892	.85667
#1	9894.9	60052.	3063.1
#2	9867.1	59834.	3091.3
#3	9903.7	60119.	3116.0

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 17:37:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	-.00148	.00090	.00227	.00163	.00011	-.00468	.00008
Stddev	.00130	.00490	.00188	.00068	.00037	.00003	.02546	.00022
%RSD	78.305	330.55	208.29	29.974	22.968	25.204	544.18	269.24
#1	.00033	-.00239	.00275	.00286	.00197	.00009	-.03398	.00015
#2	.00173	.00381	-.00100	.00243	.00123	.00014	.01206	.00026
#3	.00293	-.00586	.00096	.00153	.00167	.00010	.00788	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00058	.00129	.04476	.01060	-.00161	-.05710	.00063
Stddev	.00029	.00122	.00029	.02153	.02075	.00622	.06303	.00318
%RSD	276.09	211.55	22.793	48.099	195.81	387.03	110.39	502.59
#1	-.00039	.00184	.00121	.03412	-.00619	.00062	-.09553	.00029
#2	.00018	-.00059	.00161	.06953	.03381	.00319	-.09140	.00397
#3	-.00010	.00048	.00104	.03061	.00418	-.00863	.01564	-.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.05677	-.00011	.00316	.00576	-.00381	.00560	-.00010
Stddev	.00040	.03222	.00050	.00162	.00079	.00329	.00231	.00141
%RSD	72.047	56.761	453.37	51.247	13.705	86.399	41.256	1388.8
#1	.00085	.07680	-.00069	.00292	.00611	-.00013	.00434	-.00092
#2	.00073	.01960	.00014	.00168	.00631	-.00483	.00420	-.00091
#3	.00010	.07391	.00021	.00489	.00485	-.00647	.00827	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 17:37:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00021	-.00396	-.00081	.00112	.00164	.00166
Stddev	.00084	.00011	.00377	.00288	.00053	.00013	.00011
%RSD	1212.1	52.839	95.183	357.63	47.087	8.1028	6.9152
#1	-.00082	.00025	-.00813	-.00413	.00144	.00151	.00159
#2	.00085	.00029	-.00300	.00065	.00141	.00165	.00179
#3	.00018	.00008	-.00077	.00106	.00051	.00177	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10015.	61314.	3090.8
Stddev	16.	177.	23.0
%RSD	.15522	.28891	.74279
#1	10012.	61143.	3064.6
#2	10032.	61303.	3107.1
#3	10001.	61497.	3100.8

Approved: June 27, 2016

Sample Name: L1606098602 Acquired: 6/25/2016 17:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	-.00042	-.00040	.09099	.02315	.00010	31.081	-.00006
Stddev	.00141	.00402	.00168	.00026	.00060	.00002	.292	.00002
%RSD	160.55	951.46	416.45	.28845	2.5949	20.817	.93935	37.551
#1	.00197	.00339	-.00222	.09093	.02306	.00008	31.173	-.00006
#2	-.00072	-.00463	.00109	.09127	.02259	.00012	30.754	-.00004
#3	.00139	-.00003	-.00008	.09076	.02379	.00010	31.315	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00059	.00094	.04555	.98402	.01199	5.7014	.03480
Stddev	.00048	.00016	.00041	.01573	.08850	.00357	.0718	.00212
%RSD	197.55	26.299	43.232	34.544	8.9935	29.756	1.2595	6.0810
#1	.00072	.00042	.00054	.02747	.88485	.01459	5.6202	.03718
#2	-.00024	.00064	.00135	.05303	1.0122	.01345	5.7566	.03314
#3	.00026	.00072	.00092	.05614	1.0550	.00792	5.7274	.03406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	119.95	.00080	.00488	.00205	-.00278	-.00166	3.2347
Stddev	.00007	.78	.00132	.00386	.00179	.00227	.00673	.0109
%RSD	4.5853	.65032	165.26	79.044	87.096	81.844	406.14	.33815
#1	.00137	120.20	.00201	.00062	.00137	-.00037	-.00009	3.2461
#2	.00149	119.07	.00100	.00813	.00409	-.00489	.00415	3.2336
#3	.00140	120.57	-.00061	.00590	.00071	-.00307	-.00903	3.2243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098602 Acquired: 6/25/2016 17:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00169	.54147	-.00161	-.00445	.00062	.00187	.00166
Stddev	.00060	.00457	.00418	.00188	.00027	.00011	.00091
%RSD	35.360	.84355	259.35	42.200	43.191	5.8148	54.635
#1	.00106	.54395	-.00040	-.00269	.00035	.00198	.00205
#2	.00225	.53620	.00182	-.00642	.00063	.00186	.00062
#3	.00175	.54425	-.00626	-.00422	.00089	.00176	.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9793.0	59457.	3063.6
Stddev	12.2	310.	25.9
%RSD	.12488	.52191	.84399
#1	9783.4	59142.	3057.4
#2	9788.8	59467.	3092.0
#3	9806.7	59762.	3041.4

Approved: June 27, 2016

Sample Name: L1606098604 Acquired: 6/25/2016 17:45:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**.00192**	**.00240**	**.01933**	**.01606**	**.00017**	**258.27**
Stddev	.00168	.00663	.00025	.00142	.00064	.00002	.74
%RSD	89.608	344.23	10.527	7.3208	4.0034	12.550	.28551
#1	.00265	-.00052	.00267	.01828	.01569	.00019	258.08
#2	.00303	-.00313	.00217	.01877	.01568	.00016	257.65
#3	-.00005	.00943	.00237	.02094	.01680	.00015	259.09
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.00038**	**.00085**	**.01097**	**.02808**	**1.7243**	**.01739**
Stddev	.00023	.00042	.00027	.00107	.01426	.0758	.00077
%RSD	50.915	110.30	31.401	9.7605	50.795	4.3949	4.4280
#1	.00057	.00083	.00065	.01199	.02723	1.7078	.01656
#2	.00019	.00033	.00115	.00986	.01426	1.6581	.01808
#3	.00061	-.00001	.00075	.01107	.04275	1.8069	.01753
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**67.436**	**1.3917**	**.00099**	**14.380**	**.00387**	**.00116**	**.00177**
Stddev	.211	.0043	.00004	.031	.00051	.00485	.00143
%RSD	.31235	.30797	4.3492	.21337	13.178	419.65	80.619
#1	67.195	1.3899	.00099	14.411	.00414	.00253	.00287
#2	67.533	1.3886	.00103	14.350	.00328	-.00423	.00229
#3	67.581	1.3966	.00095	14.377	.00419	.00517	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098604 Acquired: 6/25/2016 17:45:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**.00146**	**3.7576**	**.00044**	**1.2471**	F **-.03982**	**-.00203**
Stddev	.00495	.00434	.0110	.00062	.0034	.00406	.00082
%RSD	381.66	297.39	.29276	142.20	.26857	10.186	40.503
#1	-.00325	.00313	3.7635	.00113	1.2483	-.04298	-.00122
#2	.00433	.00472	3.7644	.00025	1.2433	-.03524	-.00200
#3	-.00498	-.00347	3.7449	-.00007	1.2496	-.04122	-.00286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00050**	**.03051**	**.00151**
Stddev	.00029	.00016	.00074
%RSD	57.554	.53953	48.929
#1	-.00084	.03044	.00164
#2	-.00033	.03070	.00216
#3	-.00034	.03040	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58897.**	**3044.6**
Stddev	3.8	97.	5.6
%RSD	.03917	.16551	.18408
#1	9614.6	58944.	3043.4
#2	9607.2	58961.	3050.7
#3	9609.7	58785.	3039.7

Approved: June 27, 2016

Sample Name: L1606098606 Acquired: 6/25/2016 17:48:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00223	.00972	-.00038	.01373	.06613	.00026	77.440	.00018
Stddev	.00105	.00309	.00132	.00205	.00021	.00009	.075	.00021
%RSD	47.129	31.833	346.72	14.955	.32162	33.087	.09643	116.74
#1	.00235	.00691	-.00086	.01602	.06623	.00027	77.417	.00042
#2	.00112	.00920	-.00139	.01205	.06589	.00034	77.379	.00001
#3	.00321	.01303	.00111	.01311	.06628	.00017	77.523	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00108	.01311	.03469	1.0666	.00528	22.814	.00226
Stddev	.00015	.00032	.00053	.01962	.0266	.00092	.288	.00095
%RSD	37.987	29.419	4.0055	56.546	2.4929	17.478	1.2638	41.753
#1	.00056	.00082	.01330	.03776	1.0701	.00541	22.650	.00309
#2	.00027	.00143	.01252	.05259	1.0384	.00430	22.645	.00123
#3	.00036	.00097	.01352	.01372	1.0912	.00613	23.147	.00247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	16.230	.00086	.01073	.00099	-.00405	.00160	2.3863
Stddev	.00023	.056	.00046	.00069	.00181	.00317	.00143	.0169
%RSD	59.834	.34372	53.276	6.4188	182.38	78.406	89.367	.70593
#1	.00032	16.197	.00073	.01029	.00246	-.00129	-.00004	2.4028
#2	.00063	16.198	.00137	.01153	-.00103	-.00752	.00258	2.3871
#3	.00019	16.294	.00048	.01038	.00155	-.00333	.00227	2.3691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098606 Acquired: 6/25/2016 17:48:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.39726**	**-.00928**	**-.00135**	**-.00044**	**.03812**	**.00202**
Stddev	.00081	.00077	.00327	.00251	.00044	.00033	.00118
%RSD	1967.6	.19375	35.277	185.96	101.24	.85896	58.324
#1	.00088	.39645	-.00551	-.00111	-.00048	.03844	.00108
#2	-.00002	.39799	-.01103	.00103	.00002	.03814	.00334
#3	-.00074	.39735	-.01131	-.00397	-.00086	.03779	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9875.4**	**60112.**	**3085.9**
Stddev	17.7	60.	4.4
%RSD	.17969	.09972	.14239
#1	9863.6	60084.	3084.9
#2	9866.7	60181.	3090.7
#3	9895.8	60072.	3082.1

Approved: June 27, 2016

Sample Name: L1606098608 Acquired: 6/25/2016 17:52:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00115	.00027	.01585	.03262	.00011	84.217	.00013
Stddev	.00235	.00513	.00111	.00136	.00141	.00004	.314	.00017
%RSD	2475.5	446.86	409.02	8.5842	4.3250	37.715	.37277	125.68
#1	-.00262	.00404	-.00099	.01740	.03376	.00010	84.484	.00019
#2	.00142	-.00477	.00110	.01531	.03104	.00016	84.297	.00026
#3	.00149	.00417	.00071	.01485	.03305	.00008	83.871	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00177	.00567	.03434	1.2401	.01415	23.228	.02727
Stddev	.00046	.00068	.00058	.01787	.0425	.00095	.227	.00106
%RSD	299.90	38.444	10.195	52.028	3.4256	6.6956	.97712	3.8827
#1	-.00049	.00241	.00506	.05413	1.2665	.01352	23.122	.02850
#2	.00037	.00184	.00573	.01939	1.1911	.01369	23.489	.02663
#3	-.00034	.00105	.00621	.02950	1.2628	.01524	23.073	.02669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	12.660	.00033	.00413	.00179	-.00334	-.00002	3.4869
Stddev	.00017	.055	.00044	.00392	.00093	.00378	.00639	.0225
%RSD	23.632	.43231	134.67	94.801	51.837	113.14	36088.	.64396
#1	.00093	12.716	.00084	.00852	.00134	-.00400	-.00400	3.4968
#2	.00069	12.657	.00002	.00099	.00117	-.00675	-.00341	3.5027
#3	.00059	12.607	.00013	.00288	.00285	.00073	.00736	3.4612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608 Acquired: 6/25/2016 17:52:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.83876**	**-.00998**	**-.00331**	**.00001**	**.01681**	**.00058**
Stddev	.00022	.00442	.00442	.00242	.00077	.00018	.00259
%RSD	112.09	.52651	44.282	73.168	6824.2	1.0650	446.63
#1	-.00039	.84240	-.01091	-.00183	-.00011	.01673	-.00103
#2	-.00022	.84004	-.00517	-.00610	-.00069	.01701	.00357
#3	.00004	.83385	-.01387	-.00199	.00083	.01668	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9863.7**	**59966.**	**3069.4**
Stddev	33.8	107.	16.4
%RSD	.34299	.17793	.53396
#1	9879.3	59844.	3052.8
#2	9824.9	60042.	3069.7
#3	9886.9	60012.	3085.6

Approved: June 27, 2016

Sample Name: L1606098608PS Acquired: 6/25/2016 17:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574216-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19012	4.7962	.18985	.92761	.50579	.02416	80.589	.02376
Stddev	.00115	.0181	.00324	.00188	.00153	.00010	.509	.00031
%RSD	.60416	.37710	1.7085	.20237	.30247	.42369	.63122	1.3080
#1	.18881	4.7997	.18690	.92863	.50534	.02415	80.494	.02389
#2	.19096	4.8123	.19332	.92876	.50750	.02427	81.138	.02341
#3	.19058	4.7766	.18933	.92544	.50454	.02406	80.134	.02399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09205	.23624	.24131	1.9065	24.291	.50517	25.434	.26103
Stddev	.00018	.00146	.00130	.0143	.039	.00496	.150	.00626
%RSD	.19260	.61641	.53797	.74911	.16017	.98165	.59175	2.3977
#1	.09210	.23659	.24071	1.9177	24.287	.49968	25.563	.26590
#2	.09186	.23464	.24280	1.9113	24.254	.50647	25.268	.26320
#3	.09221	.23749	.24041	1.8904	24.332	.50934	25.470	.25397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49345	34.822	.23345	4.6884	.23609	.56850	.18268	5.5114
Stddev	.00019	.169	.00142	.0142	.00258	.00539	.00604	.0369
%RSD	.03860	.48533	.60979	.30359	1.0940	.94754	3.3047	.66920
#1	.49323	34.790	.23475	4.6782	.23789	.57472	.18356	5.4689
#2	.49357	35.005	.23367	4.6823	.23725	.56528	.18824	5.5341
#3	.49354	34.671	.23193	4.7047	.23313	.56551	.17626	5.5313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608PS Acquired: 6/25/2016 17:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574216-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47094**	**1.2232**	**.47334**	**.23988**	**.49331**	**.47631**	**.00522**
Stddev	.00189	.0075	.00962	.00117	.00125	.00347	.00156
%RSD	.40190	.61543	2.0323	.48785	.25347	.72879	29.825
#1	.47068	1.2227	.46319	.24082	.49476	.47230	.00351
#2	.47295	1.2310	.48233	.23857	.49254	.47818	.00558
#3	.46920	1.2160	.47451	.24025	.49265	.47845	.00657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9831.9**	**59526.**	**3075.8**
Stddev	15.2	194.	19.0
%RSD	.15421	.32611	.61679
#1	9829.8	59604.	3066.0
#2	9817.9	59305.	3063.8
#3	9848.0	59669.	3097.7

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00260**	**-.00514**	**.00187**	**.00508**	**.00868**	**.00012**	**17.605**	**-.00015**
Stddev	.00156	.01146	.00424	.00200	.00063	.00008	.142	.00010
%RSD	60.035	222.87	226.36	39.430	7.2120	66.284	.80739	66.159
#1	.00437	.00780	.00118	.00739	.00923	.00013	17.451	-.00025
#2	.00143	-.00924	.00642	.00396	.00881	.00020	17.731	-.00007
#3	.00199	-.01399	-.00198	.00389	.00800	.00004	17.633	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00006**	**.00193**	**.02399**	**.21059**	**-.00038**	**4.9921**	**.00509**
Stddev	.00017	.00044	.00078	.00583	.02318	.00216	.0797	.00111
%RSD	97.856	772.57	40.443	24.318	11.008	572.98	1.5970	21.792
#1	-.00004	-.00041	.00282	.01859	.23319	.00193	5.0036	.00623
#2	-.00037	.00046	.00138	.03017	.18686	-.00072	4.9072	.00402
#3	-.00011	.00012	.00158	.02319	.21171	-.00234	5.0654	.00500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**2.6677**	**-.00071**	**.00513**	**.00009**	**-.00286**	**-.00058**	**.72991**
Stddev	.00017	.0114	.00035	.00552	.00151	.00279	.00302	.00273
%RSD	51.097	.42653	49.400	107.62	1685.9	97.489	522.92	.37384
#1	.00017	2.6710	-.00044	.00122	.00180	.00001	.00149	.72939
#2	.00033	2.6550	-.00058	.01144	-.00102	-.00304	-.00405	.73285
#3	.00051	2.6770	-.00110	.00273	-.00051	-.00555	.00083	.72747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.17684**	**.00226**	**.00019**	**.00052**	**.00413**	**.00011**
Stddev	.00027	.00102	.00232	.00368	.00057	.00014	.00068
%RSD	464.39	.57572	102.44	1951.0	110.67	3.3962	623.50
#1	-.00013	.17748	.00403	.00128	.00008	.00397	.00059
#2	.00024	.17567	-.00036	.00320	.00031	.00420	.00041
#3	-.00028	.17737	.00312	-.00392	.00117	.00423	-.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9896.0**	**60261.**	**3042.3**
Stddev	25.0	81.	28.3
%RSD	.25242	.13391	.92921
#1	9907.7	60289.	3040.8
#2	9913.0	60324.	3071.3
#3	9867.3	60170.	3014.9

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:04:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00175**	**-.00807**	**-.00063**	**-.00078**	**.00182**	**.00014**	**3.3399**	**-.00019**
Stddev	.00147	.00382	.00127	.00273	.00016	.00003	.0946	.00023
%RSD	83.969	47.279	200.74	348.35	8.5330	23.588	2.8330	121.57
#1	.00097	-.00874	.00010	.00038	.00196	.00018	3.2721	-.00045
#2	.00084	-.00396	.00010	.00117	.00166	.00011	3.4480	-.00012
#3	.00344	-.01151	-.00210	-.00390	.00185	.00014	3.2995	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.00037**	**.00107**	**.01769**	**-.08284**	**.00119**	**.94569**	**.00052**
Stddev	.00047	.00133	.00130	.01702	.09737	.00358	.05932	.00055
%RSD	1445.4	360.33	120.72	96.212	117.53	302.26	6.2728	105.20
#1	.00035	-.00086	.00167	-.00174	-.18470	.00532	.88043	.00057
#2	-.00050	-.00138	-.00041	.02995	-.07314	-.00085	.96028	.00105
#3	.00025	.00113	.00196	.02486	.00931	-.00092	.99635	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.49987**	**-.00021**	**.00755**	**.00303**	**-.00541**	**.00850**	**.13812**
Stddev	.00032	.04592	.00020	.00386	.00188	.00314	.00116	.00966
%RSD	265.16	9.1856	96.762	51.054	62.049	58.070	13.660	6.9939
#1	.00001	.44687	-.00020	.01173	.00086	-.00531	.00838	.12921
#2	-.00049	.52761	-.00041	.00680	.00410	-.00232	.00740	.13676
#3	.00011	.52513	-.00001	.00413	.00413	-.00859	.00972	.14839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:04:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**.03350**	**.00349**	**.00073**	**.00046**	**.00106**	**.00161**
Stddev	.00032	.00105	.00672	.00069	.00093	.00001	.00112
%RSD	80.289	3.1425	192.33	93.894	202.19	.93440	69.701
#1	.00063	.03282	.00553	-.00006	-.00031	.00105	.00058
#2	.00051	.03471	.00896	.00114	.00020	.00107	.00146
#3	.00004	.03296	-.00401	.00113	.00149	.00107	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10400.**	**61068.**	**3085.8**
Stddev	302.	416.	38.3
%RSD	2.9005	.68044	1.2414
#1	10744.	61402.	3085.7
#2	10277.	61200.	3047.5
#3	10180.	60603.	3124.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:08:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40600	10.196	.39897	.49353	1.0097	.05111	10.072
Stddev	.00134	.005	.00384	.00145	.0055	.00016	.108
%RSD	.32964	.04609	.96241	.29468	.54041	.30777	1.0683
#1	.40454	10.197	.40224	.49289	1.0058	.05115	10.014
#2	.40717	10.200	.39474	.49519	1.0073	.05125	10.006
#3	.40630	10.191	.39992	.49250	1.0159	.05094	10.196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05085	.19930	.50343	.51248	4.0210	48.769	1.0170
Stddev	.00016	.00069	.00173	.00042	.0444	.141	.0095
%RSD	.31221	.34558	.34304	.08145	1.1049	.29004	.93218
#1	.05072	.20005	.50491	.51259	3.9923	48.842	1.0084
#2	.05079	.19915	.50386	.51282	3.9985	48.605	1.0154
#3	.05103	.19869	.50153	.51201	4.0722	48.858	1.0271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6470	.50568	1.0217	49.589	.50657	9.9463	.50897
Stddev	.0505	.00379	.0050	.266	.00174	.0145	.00224
%RSD	.52402	.74931	.49273	.53683	.34444	.14541	.44016
#1	9.7040	.50521	1.0275	49.574	.50855	9.9602	.50639
#2	9.6294	.50215	1.0196	49.330	.50589	9.9313	.51042
#3	9.6076	.50969	1.0181	49.862	.50527	9.9474	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:08:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1949**	**.39405**	**5.1402**	**1.0022**	**1.0107**	**.99866**	**.51518**
Stddev	.0031	.00179	.0100	.0005	.0053	.01659	.00058
%RSD	.25554	.45308	.19427	.05270	.52786	1.6608	.11222
#1	1.1981	.39492	5.1482	1.0028	1.0100	1.0024	.51475
#2	1.1944	.39525	5.1290	1.0020	1.0058	.98052	.51584
#3	1.1920	.39200	5.1434	1.0018	1.0164	1.0131	.51497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0309**	**1.0070**	F **2.9451**
Stddev	.0008	.0014	.0223
%RSD	.08066	.13880	.75803
#1	1.0316	1.0084	2.9555
#2	1.0300	1.0069	2.9195
#3	1.0311	1.0056	2.9603
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.2**	**58096.**	**2982.6**
Stddev	5.7	114.	17.5
%RSD	.05915	.19560	.58802
#1	9648.4	58223.	2978.9
#2	9644.0	58003.	3001.7
#3	9655.3	58062.	2967.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:11:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.00113**	**.00060**	**-.00134**	**.00269**	**.00016**	**-.00509**	**-.00011**
Stddev	.00447	.01287	.00139	.00141	.00058	.00006	.00999	.00008
%RSD	723.56	1142.0	234.30	105.23	21.456	39.000	196.19	75.399
#1	-.00262	.00580	.00212	.00028	.00233	.00022	-.01646	-.00020
#2	.00450	-.01343	-.00061	-.00230	.00238	.00017	.00228	-.00009
#3	-.00373	.01101	.00028	-.00199	.00335	.00009	-.00109	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00031**	**.00131**	**.01880**	**-.14052**	**-.00173**	**.03086**	**-.00243**
Stddev	.00043	.00144	.00103	.01556	.08453	.00290	.07623	.00189
%RSD	438.61	470.86	78.889	82.745	60.152	168.14	247.00	77.536
#1	.00038	.00014	.00051	.03667	-.04368	.00153	-.05463	-.00186
#2	-.00045	-.00104	.00248	.01148	-.17839	-.00266	.09175	-.00090
#3	-.00022	.00182	.00094	.00826	-.19949	-.00404	.05546	-.00454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00375**	**-.00702**	**.00000**	**.00544**	**-.00002**	**.00180**	**.00158**	**.03715**
Stddev	.00019	.01848	.00030	.00537	.00129	.00320	.00255	.00232
%RSD	5.0585	263.40	8008.1	98.759	6600.5	177.29	161.59	6.2433
#1	.00382	-.02711	-.00030	.01149	.00142	.00145	-.00134	.03895
#2	.00354	-.00319	.00002	.00357	-.00108	.00516	.00266	.03453
#3	.00390	.00925	.00029	.00125	-.00040	-.00120	.00341	.03795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:11:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00036**	**-.00017**	**-.00186**	**.00075**	**.00012**	**.00425**
Stddev	.00040	.00044	.01020	.00315	.00028	.00007	.00095
%RSD	153.60	122.95	5879.7	169.59	36.989	59.021	22.345
#1	.00000	.00086	.00219	-.00527	.00044	.00006	.00508
#2	.00073	.00017	.00864	-.00126	.00081	.00010	.00321
#3	.00006	.00004	-.01135	.00095	.00098	.00019	.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9372.1**	**56632.**	**2874.9**
Stddev	24.8	50.	14.1
%RSD	.26420	.08878	.48885
#1	9350.8	56589.	2886.0
#2	9366.2	56619.	2859.1
#3	9399.3	56687.	2879.7

Approved: June 27, 2016

Sample Name: L1606098610 Acquired: 6/25/2016 18:15:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	.00613	.00026	.00622	.01341	.00005	115.37	.00029
Stddev	.00132	.00327	.00219	.00120	.00108	.00003	.56	.00010
%RSD	78.702	53.342	840.89	19.355	8.0675	55.551	.48696	35.866
#1	.00017	.00551	-.00222	.00662	.01310	.00009	115.81	.00019
#2	.00222	.00322	.00107	.00487	.01252	.00003	114.73	.00040
#3	.00265	.00967	.00193	.00717	.01462	.00004	115.55	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00098	.00166	.06083	.38326	.00831	27.726	.01242
Stddev	.00045	.00011	.00061	.01132	.08932	.00154	.200	.00158
%RSD	1035.7	11.515	36.634	18.614	23.306	18.467	.72137	12.708
#1	-.00034	.00088	.00210	.06356	.35599	.00912	27.699	.01068
#2	-.00027	.00110	.00191	.04839	.48304	.00927	27.542	.01377
#3	.00048	.00096	.00096	.07054	.31076	.00654	27.939	.01280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	14.397	.00169	.00670	.00176	-.00418	.00480	3.9389
Stddev	.00003	.096	.00045	.00675	.00408	.00345	.00343	.0208
%RSD	3.3704	.66673	26.485	100.67	231.83	82.446	71.530	.52736
#1	.00075	14.373	.00205	.00909	-.00024	-.00395	.00094	3.9592
#2	.00074	14.315	.00119	.01193	.00646	-.00774	.00595	3.9398
#3	.00079	14.503	.00185	-.00091	-.00093	-.00086	.00752	3.9176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098610 Acquired: 6/25/2016 18:15:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.52737**	**-.01662**	**-.00476**	**.00053**	**.01128**	**.00653**
Stddev	.00061	.00238	.00515	.00157	.00069	.00008	.00193
%RSD	181.06	.45087	31.015	32.913	130.43	.73884	29.481
#1	-.00078	.52702	-.01240	-.00297	.00012	.01121	.00451
#2	.00036	.52519	-.01509	-.00547	.00132	.01137	.00674
#3	-.00059	.52991	-.02236	-.00585	.00014	.01126	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9795.7**	**59337.**	**3075.9**
Stddev	21.1	178.	25.1
%RSD	.21493	.29915	.81568
#1	9771.4	59262.	3048.2
#2	9807.4	59210.	3082.7
#3	9808.3	59540.	3097.0

Approved: June 27, 2016

Sample Name: L1606098612 Acquired: 6/25/2016 18:19:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00237	.00267	-.00060	.08716	.06662	.00041	142.66	.00007
Stddev	.00073	.00275	.00337	.00141	.00149	.00002	1.19	.00021
%RSD	30.688	102.87	562.71	1.6192	2.2393	3.9782	.83233	319.26
#1	.00315	.00518	-.00334	.08576	.06575	.00041	141.33	.00027
#2	.00225	-.00027	-.00161	.08858	.06577	.00039	143.01	.00007
#3	.00171	.00310	.00316	.08713	.06835	.00042	143.63	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00135	.04528	.02649	1.6602	.01963	40.720	.03253
Stddev	.00034	.00053	.00134	.03733	.1018	.00353	.262	.00324
%RSD	339.50	39.036	2.9680	140.93	6.1325	17.994	.64244	9.9559
#1	.00034	.00170	.04668	.04343	1.6128	.02218	40.440	.02879
#2	-.00029	.00162	.04400	-.01631	1.5907	.02112	40.763	.03448
#3	.00024	.00075	.04516	.05234	1.7770	.01560	40.958	.03432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	26.540	.00106	.02312	.00172	-.00084	.00204	2.4275
Stddev	.00029	.172	.00094	.00593	.00284	.00147	.00269	.0046
%RSD	25.080	.64693	88.979	25.661	164.80	174.96	131.78	.18880
#1	.00089	26.345	.00153	.02349	.00164	-.00125	.00490	2.4289
#2	.00110	26.607	.00167	.01701	.00461	-.00205	-.00043	2.4311
#3	.00146	26.668	-.00003	.02886	-.00107	.00079	.00165	2.4223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098612 Acquired: 6/25/2016 18:19:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**1.7410**	**-.01626**	**-.00241**	**.00038**	**.05602**	**.00415**
Stddev	.00061	.0138	.00313	.00137	.00051	.00009	.00053
%RSD	273.86	.79166	19.237	56.738	134.14	.16489	12.835
#1	-.00019	1.7255	-.01265	-.00306	.00050	.05591	.00443
#2	.00092	1.7457	-.01795	-.00084	.00081	.05608	.00354
#3	-.00006	1.7519	-.01818	-.00334	-.00018	.05607	.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9747.5**	**58989.**	**3047.5**
Stddev	4.1	78.	13.8
%RSD	.04198	.13200	.45213
#1	9749.1	58936.	3063.4
#2	9750.6	59079.	3039.1
#3	9742.9	58952.	3040.0

Approved: June 27, 2016

Sample Name: L1606098614 Acquired: 6/25/2016 18:23:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00279	.01008	-.00066	.03390	.03124	.00010	196.20	.00021
Stddev	.00112	.00383	.00147	.00206	.00013	.00007	.85	.00008
%RSD	40.043	38.038	221.13	6.0906	.42986	73.782	.43251	39.178
#1	.00183	.00766	.00090	.03506	.03108	.00016	195.71	.00030
#2	.00402	.00807	-.00201	.03513	.03132	.00002	195.70	.00014
#3	.00253	.01449	-.00089	.03152	.03131	.00013	197.18	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00088	.00840	.02428	2.9211	.02334	75.647	.04008
Stddev	.00023	.00045	.00064	.00605	.0291	.00193	.677	.00318
%RSD	446.71	50.770	7.6701	24.929	.99693	8.2676	.89445	7.9254
#1	-.00007	.00063	.00780	.03006	2.8958	.02251	74.950	.04023
#2	.00031	.00062	.00908	.02477	2.9529	.02197	75.691	.03683
#3	-.00009	.00140	.00832	.01799	2.9145	.02555	76.301	.04318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	22.556	.00040	.01184	.00385	-.00016	.00418	3.4833
Stddev	.00033	.097	.00156	.00464	.00193	.00051	.00681	.0215
%RSD	46.348	.43032	390.32	39.236	50.052	315.18	162.82	.61768
#1	.00068	22.526	-.00110	.00655	.00167	-.00006	.01171	3.5066
#2	.00040	22.478	.00029	.01372	.00533	-.00072	-.00154	3.4792
#3	.00106	22.665	.00201	.01524	.00455	.00029	.00237	3.4641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098614 Acquired: 6/25/2016 18:23:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**2.3670**	**-.02425**	**-.00232**	**-.00024**	**.02160**	**.00232**
Stddev	.00092	.0076	.00398	.00117	.00100	.00003	.00161
%RSD	715.81	.32195	16.401	50.456	415.47	.12320	69.325
#1	.00091	2.3659	-.02580	-.00236	.00091	.02157	.00413
#2	-.00082	2.3599	-.02722	-.00113	-.00075	.02159	.00107
#3	-.00048	2.3751	-.01973	-.00348	-.00089	.02163	.00175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9640.5**	**58425.**	**3058.6**
Stddev	20.6	100.	4.7
%RSD	.21337	.17110	.15390
#1	9631.4	58473.	3059.7
#2	9664.1	58492.	3062.6
#3	9626.1	58310.	3053.4

Approved: June 27, 2016

Sample Name: L1606098616 Acquired: 6/25/2016 18:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	.03265	.00256	.11861	.01251	.00029	229.75	.00020
Stddev	.00195	.00899	.00533	.00161	.00061	.00014	.36	.00016
%RSD	169.27	27.532	208.27	1.3580	4.8819	47.504	.15530	78.536
#1	.00069	.04218	-.00197	.11885	.01280	.00014	229.65	.00038
#2	-.00053	.02433	.00844	.12008	.01292	.00030	229.45	.00006
#3	.00329	.03143	.00122	.11689	.01181	.00042	230.15	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00178	.06744	.03108	3.2126	.03682	84.360	.29574
Stddev	.00023	.00069	.00047	.01537	.1307	.00386	.426	.00133
%RSD	37.410	38.666	.69994	49.454	4.0677	10.480	.50488	.44809
#1	.00042	.00192	.06781	.02007	3.0741	.03526	83.896	.29633
#2	.00087	.00239	.06691	.04863	3.2299	.03400	84.450	.29422
#3	.00056	.00104	.06760	.02452	3.3338	.04122	84.734	.29667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	71.143	.00123	.03078	.00375	-.00200	.00018	5.1619
Stddev	.00027	.049	.00055	.00199	.00114	.00238	.00481	.0107
%RSD	37.642	.06818	44.575	6.4658	30.424	119.08	2715.0	.20775
#1	.00061	71.192	.00158	.03108	.00244	-.00009	.00517	5.1511
#2	.00102	71.095	.00060	.02865	.00425	-.00467	-.00442	5.1621
#3	.00051	71.141	.00151	.03260	.00456	-.00125	-.00023	5.1725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098616 Acquired: 6/25/2016 18:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	6.5212	-.02963	-.00177	-.00109	.08946	.00332
Stddev	.00060	.0079	.00654	.00230	.00079	.00019	.00190
%RSD	161.30	.12151	22.085	130.49	72.258	.21177	57.202
#1	.00105	6.5204	-.02657	.00051	-.00123	.08936	.00540
#2	.00018	6.5138	-.02518	-.00171	-.00179	.08968	.00287
#3	-.00011	6.5296	-.03715	-.00409	-.00024	.08933	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9566.8	58078.	3050.1
Stddev	16.9	52.	19.7
%RSD	.17631	.08955	.64584
#1	9563.8	58018.	3068.4
#2	9585.0	58111.	3029.2
#3	9551.7	58106.	3052.7

Approved: June 27, 2016

Sample Name: L1606098618 Acquired: 6/25/2016 18:31:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	-.00096	.00289	.04251	.02915	.00005	62.293	-.00011
Stddev	.00038	.00238	.00029	.00109	.00082	.00008	.092	.00019
%RSD	24.410	246.77	9.9664	2.5737	2.7985	149.80	.14819	166.73
#1	.00113	.00168	.00257	.04189	.03009	-.00003	62.335	-.00017
#2	.00185	-.00164	.00314	.04186	.02874	.00005	62.357	.00010
#3	.00168	-.00294	.00296	.04377	.02862	.00013	62.187	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00031	.00347	.01624	1.9071	.02198	20.259	.01093
Stddev	.00021	.00046	.00016	.00938	.1214	.00171	.067	.00376
%RSD	243.30	146.24	4.6588	57.772	6.3644	7.7782	.33311	34.347
#1	.00028	.00083	.00329	.00573	1.8306	.02394	20.336	.01303
#2	.00011	.00015	.00350	.01922	2.0470	.02118	20.230	.00660
#3	-.00013	-.00004	.00361	.02377	1.8435	.02082	20.211	.01318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	25.999	-.00042	.00444	.00244	-.00359	.00392	3.1846
Stddev	.00023	.100	.00069	.00545	.00095	.00188	.00301	.0187
%RSD	22.864	.38558	161.73	122.87	39.121	52.433	76.809	.58628
#1	.00106	26.085	-.00101	-.00067	.00273	-.00311	.00526	3.2018
#2	.00123	26.024	.00033	.00381	.00321	-.00199	.00047	3.1874
#3	.00077	25.889	-.00059	.01018	.00137	-.00566	.00602	3.1647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098618 Acquired: 6/25/2016 18:31:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	1.4545	-.00154	-.00233	.00037	.00832	.00208
Stddev	.00132	.0032	.00357	.00066	.00141	.00007	.00021
%RSD	228.95	.22347	232.21	28.221	386.86	.88012	10.206
#1	.00206	1.4546	-.00325	-.00241	-.00025	.00825	.00199
#2	-.00043	1.4577	-.00393	-.00294	-.00063	.00831	.00233
#3	.00009	1.4512	.00257	-.00163	.00198	.00839	.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9841.2	59299.	3061.4
Stddev	105.5	272.	4.9
%RSD	1.0718	.45797	.16152
#1	9746.5	58986.	3061.4
#2	9822.2	59458.	3056.4
#3	9954.9	59454.	3066.3

Approved: June 27, 2016

Sample Name: L1606098620 Acquired: 6/25/2016 18:35:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.03312	.00066	.07608	.03474	.00017	4.5650	.00010
Stddev	.00141	.00304	.00168	.00356	.00133	.00010	.0156	.00016
%RSD	3777.7	9.1736	255.45	4.6823	3.8419	59.446	.34129	166.50
#1	-.00004	.03663	-.00075	.08018	.03521	.00029	4.5712	.00011
#2	.00149	.03142	.00252	.07372	.03577	.00014	4.5766	.00025
#3	-.00133	.03132	.00020	.07433	.03323	.00009	4.5473	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.00060	.00299	.05475	.56414	.00988	1.7714	.01450
Stddev	.00021	.00082	.00143	.01752	.07965	.00243	.0462	.00322
%RSD	18.384	137.46	47.864	31.992	14.119	24.596	2.6071	22.223
#1	.00132	.00110	.00244	.06300	.59505	.00894	1.8247	.01687
#2	.00115	.00105	.00462	.03463	.62370	.00806	1.7436	.01579
#3	.00091	-.00035	.00192	.06662	.47367	.01264	1.7459	.01083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	251.01	-.00057	.03777	.00214	-.00589	.00108	2.0603
Stddev	.00029	.75	.00178	.00427	.00057	.00380	.00694	.0083
%RSD	21.156	.29997	313.28	11.296	26.364	64.542	640.75	.40056
#1	.00125	251.39	-.00025	.04217	.00279	-.00381	-.00651	2.0621
#2	.00170	251.50	-.00248	.03365	.00178	-.01028	.00710	2.0676
#3	.00115	250.15	.00103	.03749	.00186	-.00358	.00266	2.0514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098620 Acquired: 6/25/2016 18:35:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.14703**	**.00470**	**-.00231**	**.00100**	**.00923**	**.00423**
Stddev	.00046	.00057	.00299	.00179	.00041	.00019	.00094
%RSD	44.993	.38637	63.686	77.674	41.001	2.0938	22.219
#1	.00049	.14737	.00735	-.00044	.00130	.00917	.00391
#2	.00129	.14734	.00531	-.00246	.00116	.00906	.00349
#3	.00126	.14637	.00145	-.00402	.00053	.00944	.00529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9725.3**	**58367.**	**3028.8**
Stddev	17.5	120.	15.3
%RSD	.18040	.20576	.50451
#1	9742.7	58420.	3020.7
#2	9707.6	58451.	3019.2
#3	9725.6	58230.	3046.4

Approved: June 27, 2016

Sample Name: L1606098622 Acquired: 6/25/2016 18:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	-.00596	.00037	.05747	.02764	.00023	127.72	.00011
Stddev	.00093	.00925	.00122	.00204	.00088	.00005	1.04	.00012
%RSD	79.226	155.22	327.64	3.5486	3.1759	23.660	.81279	108.09
#1	.00125	-.01464	.00026	.05716	.02813	.00022	127.35	.00021
#2	.00205	-.00701	-.00078	.05560	.02662	.00018	126.92	.00013
#3	.00020	.00377	.00164	.05965	.02815	.00028	128.89	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00090	.01009	.02031	2.5853	.01995	32.558	.04793
Stddev	.00056	.00109	.00042	.00894	.0945	.00518	.278	.00190
%RSD	208.67	121.92	4.1494	44.026	3.6562	25.950	.85453	3.9665
#1	.00085	.00146	.01042	.02811	2.6682	.02326	32.522	.05007
#2	.00021	-.00036	.01022	.02229	2.4824	.01399	32.299	.04730
#3	-.00026	.00160	.00962	.01055	2.6053	.02261	32.852	.04643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	46.975	.00038	.00992	.00378	-.00381	.00198	3.5382
Stddev	.00001	.389	.00033	.00514	.00270	.00385	.00283	.0119
%RSD	1.5146	.82774	87.053	51.791	71.542	100.88	142.89	.33659
#1	.00038	46.842	.00000	.00464	.00569	-.00293	.00001	3.5245
#2	.00039	46.670	.00061	.01491	.00068	-.00048	.00522	3.5450
#3	.00039	47.413	.00052	.01022	.00497	-.00802	.00070	3.5451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098622 Acquired: 6/25/2016 18:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	1.7827	-.01653	-.00317	-.00057	.00858	.00262
Stddev	.00056	.0144	.00634	.00502	.00088	.00017	.00024
%RSD	326.45	.80805	38.350	158.35	154.19	1.9458	9.0067
#1	-.00048	1.7747	-.02093	-.00538	-.00155	.00859	.00236
#2	.00051	1.7740	-.00927	.00258	.00014	.00841	.00281
#3	.00049	1.7993	-.01940	-.00671	-.00029	.00875	.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9602.2	57749.	2959.9
Stddev	40.4	252.	26.3
%RSD	.42032	.43708	.88902
#1	9555.9	57561.	2977.4
#2	9630.3	57650.	2972.6
#3	9620.3	58036.	2929.6

Approved: June 27, 2016

Sample Name: L1606098624 Acquired: 6/25/2016 18:42:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.00561**	**.00154**	**.40348**	**.02348**	**.00039**	**237.24**
Stddev	.00142	.00394	.00506	.00070	.00039	.00006	.43
%RSD	386.92	70.246	327.66	.17357	1.6661	16.452	.18001
#1	.00014	.00128	.00004	.40369	.02381	.00037	237.56
#2	-.00093	.00658	-.00259	.40270	.02305	.00046	237.41
#3	.00189	.00898	.00718	.40405	.02358	.00034	236.75
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**-.00007**	**.00152**	**.02649**	**.02448**	**5.9223**	**.01174**
Stddev	.00017	.00052	.00056	.00200	.00699	.0587	.00396
%RSD	362.68	725.31	36.507	7.5377	28.540	.99123	33.722
#1	-.00014	.00052	.00185	.02553	.03123	5.8563	.01398
#2	-.00015	-.00040	.00183	.02879	.02493	5.9416	.00717
#3	.00015	-.00034	.00088	.02516	.01728	5.9689	.01408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**66.698**	**.32515**	**.00019**	**63.762**	**.00021**	**.01502**	**.00144**
Stddev	.426	.00095	.00039	.087	.00030	.00323	.00065
%RSD	.63897	.29073	207.41	.13653	145.82	21.500	44.732
#1	66.222	.32513	-.00023	63.794	-.00012	.01765	.00108
#2	67.045	.32421	.00055	63.829	.00049	.01601	.00219
#3	66.826	.32610	.00024	63.663	.00025	.01142	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098624 Acquired: 6/25/2016 18:42:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00149**	**.00522**	**3.3709**	**-.00072**	**1.6690**	F **-.03355**	**-.00155**
Stddev	.00099	.00177	.0249	.00122	.0015	.00264	.00229
%RSD	66.177	33.876	.73770	169.83	.08806	7.8818	147.53
#1	-.00080	.00419	3.3514	-.00109	1.6686	-.03207	.00107
#2	-.00262	.00726	3.3989	-.00171	1.6706	-.03199	-.00316
#3	-.00106	.00421	3.3624	.00064	1.6678	-.03661	-.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00040**	**.00877**	**.00210**
Stddev	.00049	.00015	.00054
%RSD	123.14	1.7509	25.986
#1	-.00082	.00894	.00208
#2	.00014	.00865	.00156
#3	-.00050	.00870	.00265
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9491.7**	**57630.**	**3009.2**
Stddev	78.4	156.	15.6
%RSD	.82592	.27138	.51996
#1	9550.0	57451.	2991.3
#2	9402.6	57694.	3015.7
#3	9522.6	57743.	3020.5

Approved: June 27, 2016

Sample Name: L1606098626 Acquired: 6/25/2016 18:46:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	.00679	.00038	.03972	.02631	.00014	117.32	.00023
Stddev	.00072	.00538	.00107	.00258	.00068	.00005	.34	.00019
%RSD	22.022	79.326	284.61	6.5079	2.6006	35.377	.28683	83.944
#1	.00409	.00166	-.00067	.03695	.02674	.00014	117.70	.00003
#2	.00295	.01240	.00033	.04014	.02552	.00019	117.19	.00023
#3	.00276	.00630	.00147	.04206	.02666	.00009	117.07	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00126	.00604	.03025	1.5600	.01598	35.418	-.00162
Stddev	.00014	.00104	.00157	.00896	.0430	.00117	.155	.00177
%RSD	71.567	82.474	25.938	29.612	2.7589	7.3145	.43775	108.92
#1	.00004	.00238	.00775	.03493	1.5696	.01501	35.426	-.00126
#2	.00029	.00033	.00573	.01992	1.5974	.01567	35.569	-.00006
#3	.00026	.00107	.00466	.03588	1.5130	.01728	35.259	-.00354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	17.994	-.00024	.00950	.00273	-.00253	.00429	2.8578
Stddev	.00029	.066	.00113	.00146	.00267	.00313	.00183	.0046
%RSD	65.363	.36928	461.23	15.318	98.010	123.57	42.598	.16060
#1	.00011	18.060	.00031	.00854	.00072	.00062	.00280	2.8530
#2	.00057	17.927	.00050	.00879	.00170	-.00564	.00374	2.8621
#3	.00066	17.996	-.00154	.01118	.00576	-.00258	.00633	2.8583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098626 Acquired: 6/25/2016 18:46:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.95352**	**-.01676**	**-.00181**	**.00025**	**.00656**	**.00282**
Stddev	.00004	.00361	.00400	.00055	.00086	.00005	.00124
%RSD	36.480	.37812	23.874	30.252	341.08	.79230	44.156
#1	.00017	.95765	-.01632	-.00120	.00116	.00654	.00348
#2	.00013	.95102	-.02097	-.00198	-.00055	.00661	.00138
#3	.00008	.95189	-.01300	-.00225	.00014	.00651	.00358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9709.6**	**59301.**	**3058.5**
Stddev	45.7	137.	18.4
%RSD	.47038	.23115	.60138
#1	9758.2	59149.	3039.9
#2	9703.1	59336.	3058.7
#3	9667.6	59417.	3076.7

Approved: June 27, 2016

Sample Name: L1606098628 Acquired: 6/25/2016 18:50:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00127**	**.00062**	**.00226**	**.03408**	**.02631**	**.00011**	**202.60**
Stddev	.00142	.00505	.00320	.00146	.00145	.00006	1.09
%RSD	111.97	810.26	141.74	4.2925	5.4989	52.470	.53642
#1	.00192	-.00172	.00570	.03364	.02795	.00015	202.20
#2	.00225	-.00283	-.00063	.03289	.02521	.00012	201.76
#3	-.00036	.00642	.00171	.03571	.02576	.00005	203.83
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00018**	**.00230**	**.00706**	**.02884**	**3.1108**	**.02231**
Stddev	.00015	.00008	.00109	.00066	.02764	.1253	.00468
%RSD	173.92	43.590	47.288	9.3696	95.862	4.0286	20.962
#1	.00015	-.00019	.00355	.00741	.06027	3.2199	.01700
#2	-.00008	-.00010	.00186	.00630	.00830	2.9739	.02412
#3	.00019	-.00026	.00151	.00747	.01794	3.1385	.02581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**77.982**	**.03186**	**.00054**	**22.893**	**.00124**	**.00646**	**.00417**
Stddev	.421	.00093	.00029	.135	.00089	.00201	.00077
%RSD	.53979	2.9039	53.423	.59091	71.804	31.048	18.563
#1	77.763	.03137	.00064	22.869	.00109	.00439	.00500
#2	77.715	.03128	.00078	22.771	.00220	.00660	.00405
#3	78.467	.03292	.00022	23.039	.00044	.00839	.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098628 Acquired: 6/25/2016 18:50:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00202**	**.00107**	**3.6233**	**.00060**	**2.4441**	F **-.03051**	**-.00323**
Stddev	.00386	.00287	.0015	.00175	.0120	.00406	.00089
%RSD	190.96	268.98	.04080	291.82	.49257	13.319	27.545
#1	.00200	.00365	3.6232	-.00046	2.4407	-.03513	-.00322
#2	-.00236	-.00203	3.6248	-.00036	2.4341	-.02890	-.00413
#3	-.00571	.00158	3.6218	.00262	2.4575	-.02750	-.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00057**	**.01373**	**.00279**
Stddev	.00055	.00005	.00121
%RSD	96.088	.39414	43.503
#1	-.00086	.01376	.00139
#2	-.00092	.01376	.00355
#3	.00006	.01367	.00343
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9549.4**	**58061.**	**2994.7**
Stddev	10.8	342.	16.3
%RSD	.11322	.58988	.54589
#1	9556.3	57786.	2984.2
#2	9554.9	57953.	3013.5
#3	9536.9	58445.	2986.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:54:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.36142	9.0966	F .35164	F .43504	F .88841	.04556	F 8.8985
Stddev	.00063	.0241	.00214	.00359	.00668	.00015	.0636
%RSD	.17458	.26527	.60772	.82605	.75211	.32062	.71530
#1	.36081	9.1069	.35253	.43880	.88074	.04567	8.8250
#2	.36138	9.0691	.35318	.43467	.89150	.04539	8.9365
#3	.36207	9.1139	.34920	.43164	.89299	.04562	8.9341
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value			.40000	.50000	1.0000		10.000
Range			-10.000%	-10.000%	-10.000%		-10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04504	F .17683	F .44843	.45584	F 3.5682	F 43.223	.90012
Stddev	.00036	.00059	.00210	.00028	.0180	.402	.00642
%RSD	.79578	.33417	.46848	.06078	.50416	.93081	.71346
#1	.04493	.17615	.45006	.45571	3.5475	42.758	.89283
#2	.04475	.17711	.44916	.45565	3.5796	43.446	.90262
#3	.04544	.17723	.44606	.45616	3.5775	43.464	.90492
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass
Value		.20000	.50000		4.0000	50.000	
Range		-10.000%	-10.000%		-10.000%	-10.000%	

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 8.4568	F .44683	.90610	F 43.837	.45006	F 8.8106	F .44997
Stddev	.1941	.00153	.00307	.290	.00031	.0184	.00285
%RSD	2.2957	.34349	.33891	.66256	.06941	.20845	.63417
#1	8.2816	.44509	.90942	43.504	.44975	8.7897	.44790
#2	8.6655	.44738	.90552	43.973	.45037	8.8181	.44879
#3	8.4231	.44801	.90336	44.035	.45007	8.8241	.45322
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Fail
Value	10.000	.50000		50.000		10.000	.50000
Range	-10.000%	-10.000%		-10.000%		-10.000%	-10.000%

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:54:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.0511	F .35868	4.5430	F .88663	F .88982	F .89732	.46317
Stddev	.0038	.00393	.0064	.00114	.00700	.00126	.00115
%RSD	.35733	1.0963	.14052	.12909	.78679	.14039	.24883
#1	1.0514	.35522	4.5358	.88537	.88186	.89705	.46442
#2	1.0547	.35787	4.5453	.88691	.89256	.89622	.46295
#3	1.0472	.36295	4.5480	.88760	.89503	.89870	.46215
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass
Value	1.2000	.40000		1.0000	1.0000	1.0000	
Range	-10.000%	-10.000%		-10.000%	-10.000%	-10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.92451	F .89326	F 2.6142
Stddev	.00239	.00079	.0303
%RSD	.25806	.08826	1.1591
#1	.92697	.89416	2.5794
#2	.92435	.89291	2.6285
#3	.92221	.89270	2.6347
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		-10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10436.	62603.	3229.6
Stddev	7.	58.	39.3
%RSD	.06851	.09259	1.2179
#1	10435.	62597.	3274.8
#2	10443.	62548.	3203.4
#3	10429.	62663.	3210.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:58:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	-.00634	.00315	-.00143	.00123	.00009	-.03120	-.00001
Stddev	.00036	.00615	.00146	.00223	.00014	.00007	.03757	.00022
%RSD	35.623	96.910	46.271	156.16	11.328	79.889	120.40	3000.5
#1	.00142	-.00623	.00470	-.00112	.00129	.00016	.01024	.00017
#2	.00091	-.01255	.00293	-.00379	.00133	.00004	-.06303	-.00025
#3	.00072	-.00026	.00181	.00063	.00107	.00005	-.04081	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00012	.00040	.00652	.00729	-.00094	.01960	-.00009
Stddev	.00003	.00070	.00057	.00448	.10732	.00258	.12813	.00039
%RSD	340.66	581.54	142.03	68.614	1471.3	275.05	653.72	408.22
#1	-.00000	.00019	-.00025	.00247	.06763	-.00204	-.01079	.00011
#2	.00004	-.00093	.00068	.01133	.07087	.00201	.16019	-.00054
#3	-.00001	.00037	.00077	.00577	-.11662	-.00279	-.09060	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	.01765	-.00021	.00497	.00440	.00279	.00542	.03094
Stddev	.00023	.01443	.00123	.00520	.00590	.00458	.00181	.00198
%RSD	7.4573	81.775	586.87	104.64	134.12	164.15	33.357	6.4039
#1	.00298	.03423	-.00101	.00374	.00273	.00293	.00481	.03016
#2	.00339	.00793	-.00083	.01067	.01095	-.00186	.00399	.03319
#3	.00300	.01078	.00121	.00049	-.00049	.00730	.00745	.02947
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:58:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00057	.00328	-.00363	.00052	.00010	.00222
Stddev	.00020	.00050	.00575	.00205	.00106	.00011	.00064
%RSD	66.832	88.088	175.09	56.396	206.25	116.18	28.891
#1	.00017	.00114	-.00137	-.00544	-.00047	.00019	.00164
#2	.00052	.00028	.00971	-.00141	.00038	-.00003	.00291
#3	.00019	.00027	.00151	-.00405	.00164	.00012	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10029.	60890.	3064.8
Stddev	14.	97.	13.9
%RSD	.13680	.15850	.45397
#1	10045.	60780.	3055.3
#2	10022.	60930.	3080.8
#3	10020.	60960.	3058.3

Approved: June 27, 2016

Sample Name: L1606098630 Acquired: 6/25/2016 19:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00160**	**.04734**	**-.00156**	**.13569**	**.01871**	**.00015**	**238.04**
Stddev	.00181	.00348	.00404	.00135	.00123	.00008	.85
%RSD	113.48	7.3553	258.52	.99665	6.5967	52.824	.35679
#1	.00017	.04905	-.00155	.13421	.01822	.00022	239.01
#2	.00364	.04964	.00247	.13685	.01779	.00007	237.71
#3	.00098	.04333	-.00561	.13603	.02011	.00014	237.41
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00032**	**.00251**	**.01182**	**.03060**	**3.4183**	**.04090**
Stddev	.00010	.00018	.00081	.00072	.01332	.0462	.00200
%RSD	39.577	56.009	32.204	6.0677	43.540	1.3506	4.8796
#1	.00014	.00047	.00287	.01260	.01963	3.3856	.03874
#2	.00034	.00036	.00308	.01119	.04543	3.4711	.04128
#3	.00028	.00012	.00159	.01167	.02674	3.3981	.04268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**90.439**	**.21655**	**.00156**	**78.879**	**.00140**	**.01756**	**.00033**
Stddev	.173	.00121	.00013	.416	.00068	.00677	.00046
%RSD	.19086	.55720	8.0204	.52709	48.349	38.536	138.30
#1	90.626	.21726	.00143	79.353	.00191	.01647	.00076
#2	90.405	.21515	.00168	78.710	.00063	.02480	-.00016
#3	90.286	.21722	.00157	78.574	.00166	.01140	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098630 Acquired: 6/25/2016 19:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00294**	**-.00177**	**5.6111**	**-.00017**	**7.0275**	F **-.03316**	**-.00254**
Stddev	.00229	.00087	.0076	.00038	.0379	.00293	.00099
%RSD	77.743	49.294	.13521	227.38	.53946	8.8247	38.798
#1	-.00354	-.00250	5.6121	-.00026	7.0707	-.03043	-.00171
#2	-.00042	-.00199	5.6030	-.00050	7.0124	-.03625	-.00363
#3	-.00488	-.00081	5.6181	.00025	6.9995	-.03280	-.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00065**	**.02003**	**.00667**
Stddev	.00064	.00007	.00116
%RSD	98.374	.34297	17.407
#1	-.00116	.01996	.00557
#2	-.00088	.02003	.00654
#3	.00007	.02010	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9361.9**	**56594.**	**2990.6**
Stddev	23.4	147.	20.1
%RSD	.24995	.25968	.67365
#1	9379.7	56762.	2967.6
#2	9370.7	56528.	3005.2
#3	9335.4	56491.	2998.9

Approved: June 27, 2016

Sample Name: L1606098632S Acquired: 6/25/2016 19:06:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18902**	**4.8212**	**.19116**	**.97374**	**.50077**	**.02402**	**134.52**	**.02388**
Stddev	.00088	.0081	.00239	.00462	.00118	.00003	.34	.00017
%RSD	.46488	.16867	1.2481	.47438	.23617	.14314	.25228	.70472
#1	.18980	4.8271	.19377	.97198	.50123	.02406	134.68	.02373
#2	.18919	4.8246	.18910	.97898	.49943	.02400	134.13	.02406
#3	.18807	4.8119	.19060	.97026	.50165	.02400	134.75	.02386
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09189**	**.23665**	**.24218**	**1.8859**	**25.617**	**.51395**	**37.596**	**.28166**
Stddev	.00021	.00120	.00028	.0089	.037	.00043	.192	.00203
%RSD	.23170	.50673	.11712	.47202	.14467	.08375	.50984	.71945
#1	.09190	.23534	.24190	1.8828	25.580	.51444	37.585	.28070
#2	.09167	.23691	.24247	1.8960	25.619	.51376	37.792	.28399
#3	.09210	.23769	.24219	1.8790	25.654	.51365	37.409	.28029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49448**	**71.230**	**.23175**	**4.7310**	**.23416**	**.56777**	**.18400**	**6.1097**
Stddev	.00088	.164	.00128	.0060	.00191	.00602	.00319	.0038
%RSD	.17884	.22978	.55101	.12688	.81554	1.0604	1.7354	.06148
#1	.49529	71.252	.23067	4.7327	.23616	.57278	.18033	6.1129
#2	.49354	71.056	.23316	4.7244	.23394	.56944	.18613	6.1108
#3	.49461	71.382	.23142	4.7360	.23236	.56109	.18555	6.1056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098632S Acquired: 6/25/2016 19:06:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.46869	2.2839	.45630	.23531	.49366	.46774	.01477
Stddev	.00224	.0055	.00571	.00163	.00079	.00046	.00310
%RSD	.47718	.23955	1.2515	.69229	.16011	.09871	21.022
#1	.47047	2.2847	.45118	.23550	.49390	.46819	.01151
#2	.46942	2.2781	.45528	.23360	.49431	.46777	.01510
#3	.46618	2.2889	.46246	.23684	.49278	.46726	.01769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9505.1	57443.	2995.1
Stddev	12.6	181.	7.9
%RSD	.13263	.31567	.26290
#1	9490.9	57238.	2989.7
#2	9509.8	57583.	3004.2
#3	9514.8	57507.	2991.6

Approved: June 27, 2016

Sample Name: L1606098634S Acquired: 6/25/2016 19:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19165**	**4.8639**	**.19259**	**.98224**	**.50433**	**.02434**	**136.41**	**.02397**
Stddev	.00283	.0058	.00215	.00673	.00181	.00002	.41	.00039
%RSD	1.4742	.11932	1.1143	.68564	.35885	.08391	.29851	1.6453
#1	.19474	4.8576	.19410	.97512	.50399	.02434	136.06	.02438
#2	.19099	4.8690	.19014	.98851	.50272	.02431	136.30	.02394
#3	.18921	4.8651	.19354	.98310	.50629	.02435	136.86	.02359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09370**	**.23944**	**.24457**	**1.9014**	**25.851**	**.51838**	**38.336**	**.27292**
Stddev	.00027	.00087	.00143	.0128	.044	.00156	.167	.00356
%RSD	.28910	.36336	.58497	.67456	.17178	.30011	.43499	1.3028
#1	.09395	.23880	.24603	1.9045	25.902	.51991	38.172	.27676
#2	.09341	.23909	.24449	1.9124	25.822	.51842	38.330	.27226
#3	.09373	.24043	.24318	1.8873	25.829	.51680	38.505	.26974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49947**	**74.848**	**.23412**	**4.7760**	**.23373**	**.57493**	**.18272**	**6.1711**
Stddev	.00101	.224	.00114	.0149	.00097	.00427	.00635	.0140
%RSD	.20163	.29965	.48754	.31111	.41349	.74220	3.4752	.22725
#1	.50053	74.661	.23450	4.7820	.23289	.57819	.18571	6.1610
#2	.49852	74.786	.23283	4.7591	.23352	.57010	.18702	6.1652
#3	.49936	75.096	.23502	4.7869	.23478	.57650	.17542	6.1871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098634S Acquired: 6/25/2016 19:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47482**	**2.3307**	**.45927**	**.23900**	**.49848**	**.47191**	**.00533**
Stddev	.00086	.0091	.01368	.00122	.00164	.00108	.00076
%RSD	.18068	.39132	2.9792	.51192	.32871	.22881	14.237
#1	.47581	2.3242	.47279	.23871	.49842	.47284	.00492
#2	.47440	2.3268	.44543	.23794	.50015	.47073	.00620
#3	.47425	2.3411	.45961	.24034	.49687	.47217	.00485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9464.2**	**57182.**	**2975.2**
Stddev	11.1	55.	14.2
%RSD	.11755	.09672	.47580
#1	9463.1	57128.	2991.6
#2	9475.9	57180.	2967.1
#3	9453.7	57239.	2967.1

Approved: June 27, 2016

Sample Name: L1606098636SD Acquired: 6/25/2016 19:13:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19162**	**4.8756**	**.19532**	**1.3252**	**.50705**	**.02431**	**243.19**	**.02436**
Stddev	.00178	.0135	.00259	.0039	.00540	.00016	2.22	.00014
%RSD	.92905	.27765	1.3247	.29569	1.0646	.65896	.91281	.56637
#1	.19240	4.8805	.19500	1.3207	.51326	.02435	245.71	.02449
#2	.18958	4.8859	.19805	1.3282	.50441	.02444	242.33	.02421
#3	.19287	4.8603	.19291	1.3265	.50349	.02413	241.52	.02439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09290**	**.23671**	**.29685**	**1.9145**	**29.596**	**.51587**	**71.839**	**.60737**
Stddev	.00022	.00172	.00059	.0369	.191	.00194	.252	.00417
%RSD	.23161	.72762	.19867	1.9280	.64372	.37694	.35080	.68663
#1	.09280	.23499	.29694	1.9564	29.779	.51781	72.039	.61218
#2	.09315	.23843	.29739	1.9005	29.610	.51588	71.921	.60495
#3	.09276	.23672	.29622	1.8867	29.399	.51393	71.556	.60497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49958**	**89.482**	**.23320**	**4.8335**	**.23655**	**.57885**	**.18210**	**6.3388**
Stddev	.00153	.784	.00050	.0076	.00169	.00511	.00473	.0094
%RSD	.30585	.87569	.21296	.15803	.71424	.88252	2.5997	.14817
#1	.49951	90.366	.23335	4.8331	.23580	.57825	.18575	6.3355
#2	.50114	89.209	.23361	4.8414	.23849	.57407	.18379	6.3494
#3	.49809	88.872	.23265	4.8261	.23537	.58424	.17675	6.3314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098636SD Acquired: 6/25/2016 19:13:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47318**	**2.1504**	**.45196**	**.23380**	**.49243**	**.47726**	**.00396**
Stddev	.00235	.0203	.01296	.00229	.00254	.00239	.00140
%RSD	.49768	.94209	2.8683	.97909	.51630	.50171	35.414
#1	.47220	2.1736	.45301	.23117	.49302	.48002	.00408
#2	.47587	2.1417	.46436	.23534	.49462	.47583	.00530
#3	.47148	2.1359	.43850	.23489	.48964	.47592	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9466.5**	**57687.**	**3000.7**
Stddev	28.5	42.	21.4
%RSD	.30105	.07212	.71153
#1	9499.3	57706.	2976.5
#2	9448.1	57639.	3017.0
#3	9452.0	57716.	3008.4

Approved: June 27, 2016

Sample Name: L1606098638SD Acquired: 6/25/2016 19:16:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19635**	**5.0111**	**.19662**	**1.3658**	**.50590**	**.02455**	**238.74**	**.02470**
Stddev	.00189	.0495	.00202	.0129	.00507	.00013	2.44	.00046
%RSD	.96164	.98714	1.0288	.94297	1.0027	.51871	1.0237	1.8632
#1	.19421	4.9540	.19875	1.3513	.50004	.02440	236.05	.02465
#2	.19777	5.0396	.19638	1.3761	.50894	.02464	240.82	.02518
#3	.19706	5.0398	.19472	1.3699	.50872	.02461	239.35	.02426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09456**	**.24315**	**.24888**	**1.9280**	**29.506**	**.51676**	**69.466**	**.60260**
Stddev	.00054	.00286	.00145	.0328	.362	.00473	.757	.00806
%RSD	.56749	1.1744	.58163	1.6990	1.2271	.91552	1.0898	1.3377
#1	.09518	.24020	.24797	1.8914	29.119	.51186	68.628	.59529
#2	.09432	.24590	.25055	1.9547	29.837	.52131	70.101	.61124
#3	.09419	.24336	.24812	1.9378	29.562	.51712	69.668	.60126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50828**	**86.839**	**.23731**	**4.9079**	**.23796**	**.58722**	**.18727**	**6.3571**
Stddev	.00153	.812	.00040	.0105	.00122	.00763	.00717	.0147
%RSD	.30188	.93521	.16702	.21476	.51147	1.2987	3.8265	.23138
#1	.50998	85.938	.23758	4.9185	.23889	.59365	.18466	6.3682
#2	.50784	87.516	.23685	4.9076	.23841	.58922	.19537	6.3627
#3	.50701	87.061	.23748	4.8975	.23659	.57879	.18177	6.3405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098638SD Acquired: 6/25/2016 19:16:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48230**	**2.1413**	**.45206**	**.24148**	**.50819**	**.47197**	**.00465**
Stddev	.00016	.0221	.00841	.00203	.00480	.00162	.00175
%RSD	.03337	1.0323	1.8614	.84256	.94539	.34380	37.692
#1	.48228	2.1164	.44367	.23931	.50264	.47335	.00633
#2	.48215	2.1586	.45201	.24177	.51108	.47237	.00283
#3	.48247	2.1488	.46050	.24334	.51084	.47018	.00481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9367.1**	**56617.**	**3005.4**
Stddev	24.2	279.	8.9
%RSD	.25886	.49353	.29743
#1	9345.0	56900.	3015.6
#2	9363.2	56609.	2998.7
#3	9393.0	56341.	3002.0

Approved: June 27, 2016

Sample Name: L1606098640 Acquired: 6/25/2016 19:20:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	.00014	.00047	.01204	.00394	.00013	2.2418	.00009
Stddev	.00052	.00246	.00354	.00206	.00041	.00015	.0448	.00026
%RSD	75.327	1722.8	753.06	17.114	10.437	111.96	1.9977	298.05
#1	-.00120	.00298	.00434	.01328	.00360	.00001	2.2906	-.00017
#2	-.00073	-.00107	-.00032	.00966	.00384	.00009	2.2025	.00008
#3	-.00016	-.00148	-.00261	.01318	.00440	.00029	2.2324	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00023	.00162	.03197	.19488	-.00199	.70657	-.00157
Stddev	.00020	.00043	.00063	.03003	.05117	.00159	.10487	.00034
%RSD	172.28	188.43	38.822	93.912	26.255	79.698	14.843	21.723
#1	-.00014	.00024	.00129	.06510	.20250	-.00219	.77648	-.00118
#2	.00010	-.00061	.00122	.00654	.14033	-.00346	.58598	-.00170
#3	-.00030	-.00032	.00234	.02429	.24180	-.00031	.75725	-.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	1.3245	-.00000	-.00132	.00155	-.00034	.00103	1.8661
Stddev	.00043	.0047	.00128	.00539	.00283	.00334	.00522	.0030
%RSD	69.622	.35334	42382.	408.47	183.18	979.63	508.03	.16155
#1	.00110	1.3264	-.00135	.00378	-.00057	-.00417	-.00062	1.8696
#2	.00029	1.3279	.00121	-.00695	.00477	.00193	.00687	1.8648
#3	.00045	1.3192	.00013	-.00078	.00045	.00122	-.00317	1.8641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098640 Acquired: 6/25/2016 19:20:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.02890	-.00018	-.00245	.00125	.00316	.00092
Stddev	.00104	.00022	.00313	.00122	.00036	.00008	.00187
%RSD	172.87	.75581	1755.3	49.848	28.928	2.5446	202.44
#1	-.00053	.02865	.00335	-.00105	.00165	.00322	-.00102
#2	.00152	.02900	-.00128	-.00328	.00095	.00320	.00271
#3	.00082	.02905	-.00260	-.00302	.00115	.00307	.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9902.6	60698.	3047.4
Stddev	11.3	88.	21.1
%RSD	.11376	.14441	.69149
#1	9915.6	60659.	3066.8
#2	9895.9	60798.	3025.0
#3	9896.3	60636.	3050.3

Approved: June 27, 2016

Sample Name: L1606098642 Acquired: 6/25/2016 19:24:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	-.00125	.00012	.00714	.00291	.00014	2.2957	-.00008
Stddev	.00151	.00416	.00315	.00149	.00136	.00010	.0287	.00011
%RSD	179.62	331.72	2535.0	20.853	46.790	76.580	1.2503	140.66
#1	.00086	.00295	-.00350	.00543	.00443	.00023	2.2645	-.00020
#2	-.00134	-.00134	.00221	.00806	.00180	.00015	2.3210	.00001
#3	-.00204	-.00537	.00167	.00794	.00250	.00002	2.3016	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00054	.00126	.01879	.13459	.00101	.70251	-.00031
Stddev	.00021	.00073	.00033	.01779	.06299	.00139	.04015	.00188
%RSD	76.216	135.58	26.342	94.669	46.805	137.70	5.7150	613.21
#1	.00043	.00109	.00162	.03687	.13442	.00244	.65916	.00151
#2	.00035	-.00029	.00096	.01820	.19766	.00092	.73842	-.00224
#3	.00004	.00081	.00121	.00130	.07167	-.00034	.70994	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	1.3914	-.00012	.00599	-.00050	-.00197	.00192	1.9147
Stddev	.00031	.0274	.00128	.00446	.00248	.00478	.00405	.0013
%RSD	265.01	1.9704	1039.6	74.477	491.66	243.04	211.10	.06740
#1	-.00017	1.4067	.00078	.00869	.00158	.00334	.00542	1.9141
#2	.00008	1.4078	.00044	.00843	.00015	-.00331	-.00251	1.9137
#3	.00044	1.3598	-.00159	.00084	-.00325	-.00593	.00284	1.9161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098642 Acquired: 6/25/2016 19:24:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.02978**	**.00659**	**-.00224**	**.00021**	**.00288**	**.00046**
Stddev	.00041	.00031	.00898	.00218	.00024	.00011	.00203
%RSD	319.77	1.0309	136.22	97.103	115.48	3.6974	442.65
#1	.00034	.02969	.01094	-.00308	.00030	.00286	-.00018
#2	-.00043	.03012	.01258	.00023	.00040	.00300	.00273
#3	-.00030	.02953	-.00373	-.00388	-.00006	.00279	-.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9910.0**	**60405.**	**3027.1**
Stddev	8.6	109.	25.1
%RSD	.08719	.18086	.83024
#1	9909.0	60400.	3001.0
#2	9919.1	60298.	3029.3
#3	9901.9	60516.	3051.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 19:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38218	9.6308	.37557	.46431	.95962	.04828	9.5695
Stddev	.00218	.0178	.00127	.00116	.00217	.00012	.0717
%RSD	.57165	.18471	.33835	.24921	.22635	.23895	.74942
#1	.37992	9.6388	.37606	.46299	.96032	.04841	9.5557
#2	.38232	9.6104	.37652	.46516	.96137	.04820	9.6471
#3	.38429	9.6432	.37413	.46479	.95719	.04823	9.5057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04801	.18801	.47395	.48473	3.7689	46.355	.97311
Stddev	.00014	.00020	.00045	.00153	.0264	.220	.00378
%RSD	.29427	.10445	.09483	.31643	.70136	.47512	.38849
#1	.04785	.18823	.47438	.48634	3.7952	46.500	.97746
#2	.04812	.18785	.47399	.48328	3.7693	46.464	.97068
#3	.04806	.18795	.47348	.48458	3.7423	46.102	.97118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.0717	.47590	.96524	47.107	.47852	9.3733	.47882
Stddev	.0608	.00396	.00399	.173	.00072	.0111	.00296
%RSD	.67059	.83199	.41378	.36832	.15104	.11884	.61810
#1	9.0038	.47335	.96959	47.188	.47773	9.3765	.47551
#2	9.1213	.48046	.96440	47.226	.47916	9.3609	.48123
#3	9.0900	.47388	.96173	46.908	.47866	9.3825	.47971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 19:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1223**	**.37795**	**4.8400**	**.94463**	**.95969**	**.96684**	**.48966**
Stddev	.0016	.00541	.0100	.00151	.00470	.01176	.00307
%RSD	.14404	1.4313	.20631	.15941	.49016	1.2167	.62598
#1	1.1238	.37410	4.8492	.94636	.96229	.96908	.48613
#2	1.1206	.37562	4.8414	.94360	.96253	.97732	.49169
#3	1.1224	.38414	4.8294	.94394	.95426	.95412	.49116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.97958**	**.95235**	F **2.8246**
Stddev	.00154	.00042	.0035
%RSD	.15724	.04377	.12384
#1	.97882	.95263	2.8278
#2	.97857	.95254	2.8252
#3	.98136	.95187	2.8208
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**61264.**	**3100.4**
Stddev	.	134.	6.9
%RSD	.00202	.21941	.22117
#1	10132.	61202.	3092.6
#2	10132.	61418.	3103.3
#3	10132.	61171.	3105.3

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 19:32:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00034**	**.00165**	**-.00065**	**.00143**	**.00014**	**-.04509**	**-.00015**
Stddev	.00053	.00835	.00116	.00135	.00075	.00012	.04632	.00018
%RSD	198.69	2437.1	70.395	208.11	52.425	84.191	102.74	120.05
#1	.00081	.00499	.00229	-.00108	.00058	.00001	-.09453	-.00022
#2	.00023	-.00997	.00235	-.00174	.00173	.00020	-.03804	.00005
#3	-.00025	.00395	.00031	.00087	.00199	.00023	-.00270	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**-.00017**	**.00065**	**.02423**	**-.06433**	**-.00295**	**-.01903**	**-.00066**
Stddev	.00013	.00077	.00059	.01555	.07126	.00237	.08401	.00260
%RSD	162.10	456.13	90.441	64.178	110.77	80.373	441.41	395.33
#1	-.00022	-.00087	-.00002	.03897	.01654	-.00026	-.10302	.00036
#2	-.00006	.00066	.00091	.02575	-.09166	-.00387	.06499	-.00361
#3	.00004	-.00030	.00106	.00798	-.11789	-.00472	-.01907	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00313**	**.02145**	**.00120**	**.00197**	**.00164**	**.00212**	**.00101**	**.04112**
Stddev	.00013	.00743	.00050	.00366	.00312	.00166	.00069	.00272
%RSD	4.1237	34.660	41.579	185.66	190.04	78.472	68.223	6.6255
#1	.00318	.03002	.00170	.00620	.00310	.00128	.00172	.03946
#2	.00323	.01754	.00070	-.00004	.00377	.00104	.00035	.04426
#3	.00298	.01678	.00121	-.00024	-.00194	.00404	.00097	.03964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 19:32:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**.00051**	**-.00006**	**-.00149**	**-.00026**	**.00006**	**.00316**
Stddev	.00004	.00041	.00466	.00123	.00016	.00032	.00144
%RSD	4.9365	80.523	8195.1	82.501	61.089	521.42	45.405
#1	.00073	.00010	.00498	-.00182	-.00044	-.00016	.00318
#2	.00068	.00091	-.00094	-.00252	-.00020	.00042	.00172
#3	.00075	.00050	-.00421	-.00013	-.00014	-.00008	.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9625.9**	**58446.**	**2947.7**
Stddev	17.4	102.	8.2
%RSD	.18036	.17465	.27941
#1	9605.9	58491.	2954.6
#2	9635.9	58518.	2950.0
#3	9636.0	58329.	2938.6

Approved: June 27, 2016

Sample Name: PBW LH Acquired: 6/25/2016 19:36:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00480	.00297	-.00088	.00071	.00016	-.03609	-.00030
Stddev	.00096	.00538	.00061	.00047	.00081	.00006	.00576	.00022
%RSD	436.54	112.05	20.402	53.250	112.94	41.040	15.975	74.291
#1	-.00063	-.00271	.00258	-.00071	.00057	.00010	-.04014	-.00038
#2	.00002	-.00078	.00267	-.00141	-.00001	.00022	-.03863	-.00005
#3	.00126	-.01092	.00367	-.00052	.00158	.00014	-.02949	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00027	.00021	.03551	.02057	.00058	-.03422	.00199
Stddev	.00019	.00046	.00040	.00062	.11033	.00127	.05831	.00213
%RSD	211.66	173.58	192.44	1.7348	536.36	218.26	170.39	107.33
#1	.00009	.00043	-.00014	.03559	.14793	.00205	.01703	.00051
#2	-.00029	.00063	.00065	.03485	-.04548	-.00019	-.09766	.00101
#3	-.00007	-.00025	.00012	.03607	-.04075	-.00011	-.02203	.00443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.01920	-.00013	.00015	.00308	-.00169	.00218	.00530
Stddev	.00020	.01381	.00043	.00436	.00410	.00157	.00344	.00135
%RSD	72.649	71.919	323.98	2952.6	133.25	92.573	157.59	25.417
#1	-.00050	.00540	-.00047	-.00185	.00268	-.00008	.00514	.00605
#2	-.00014	.01919	.00035	-.00286	.00737	-.00321	.00301	.00374
#3	-.00017	.03301	-.00027	.00515	-.00081	-.00179	-.00160	.00610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW LH Acquired: 6/25/2016 19:36:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00001**	**.00007**	**-.00205**	**.00056**	**-.00012**	**.00138**
Stddev	.00105	.00006	.00526	.00274	.00041	.00008	.00122
%RSD	278.35	503.89	7708.4	133.89	73.183	68.172	88.458
#1	.00057	-.00005	.00045	-.00401	.00011	-.00018	.00093
#2	-.00020	.00002	-.00537	-.00321	.00065	-.00003	.00045
#3	-.00151	.00007	.00513	.00108	.00091	-.00016	.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10355.**	**62690.**	**3143.1**
Stddev	14.	21.	40.1
%RSD	.13810	.03356	1.2743
#1	10371.	62711.	3176.8
#2	10343.	62669.	3098.8
#3	10351.	62689.	3153.6

Approved: June 27, 2016

Sample Name: LCSW LH Acquired: 6/25/2016 19:39:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19366**	**4.9137**	**.19220**	**.93203**	**.49068**	**.02467**	**4.9632**	**.02443**
Stddev	.00070	.0138	.00341	.00396	.00423	.00007	.0538	.00016
%RSD	.36335	.28142	1.7740	.42472	.86189	.28277	1.0835	.64799
#1	.19288	4.8983	.19002	.92766	.48616	.02461	4.9413	.02459
#2	.19385	4.9180	.19044	.93305	.49453	.02465	5.0244	.02441
#3	.19425	4.9249	.19613	.93537	.49136	.02474	4.9238	.02428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09715**	**.24544**	**.24999**	**1.9443**	**23.472**	**.50293**	**4.6813**	**.24132**
Stddev	.00066	.00263	.00041	.0106	.182	.00291	.0938	.00318
%RSD	.68088	1.0726	.16565	.54556	.77586	.57762	2.0038	1.3188
#1	.09680	.24301	.25039	1.9373	23.301	.50365	4.6704	.23802
#2	.09792	.24824	.24956	1.9391	23.664	.50540	4.7800	.24157
#3	.09674	.24506	.25002	1.9565	23.450	.49973	4.5934	.24437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50304**	**24.148**	**.24571**	**4.6828**	**.24554**	**.57884**	**.18202**	**2.4064**
Stddev	.00049	.122	.00061	.0125	.00123	.00461	.00367	.0046
%RSD	.09743	.50324	.24625	.26789	.50266	.79649	2.0171	.19316
#1	.50339	24.028	.24640	4.6758	.24587	.57352	.17868	2.4078
#2	.50325	24.271	.24545	4.6973	.24658	.58167	.18595	2.4102
#3	.50248	24.145	.24528	4.6753	.24418	.58132	.18143	2.4012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW LH Acquired: 6/25/2016 19:39:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48493**	**.49684**	**.48674**	**.24907**	**.50464**	**.48284**	**.01676**
Stddev	.00108	.00397	.00310	.00041	.00236	.00325	.00211
%RSD	.22287	.79928	.63744	.16637	.46686	.67256	12.564
#1	.48462	.49378	.48665	.24947	.50200	.48055	.01435
#2	.48613	.50133	.48369	.24909	.50538	.48656	.01775
#3	.48404	.49542	.48989	.24864	.50653	.48141	.01820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9761.3**	**59171.**	**3026.9**
Stddev	5.3	58.	23.7
%RSD	.05400	.09751	.78195
#1	9766.4	59236.	3050.7
#2	9755.9	59148.	3003.3
#3	9761.7	59127.	3026.7

Approved: June 27, 2016

Sample Name: L1606090723 Acquired: 6/25/2016 19:43:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.01800	.14333	.20159	.04322	.00011	82.135	.00062
Stddev	.00074	.00440	.00262	.00108	.00176	.00009	.153	.00002
%RSD	81.113	24.457	1.8284	.53531	4.0750	85.790	.18660	3.6806
#1	.00039	.02274	.14560	.20094	.04396	.00020	82.043	.00061
#2	.00058	.01723	.14046	.20283	.04121	.00011	82.051	.00064
#3	.00176	.01403	.14393	.20099	.04450	.00001	82.312	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00186	.00181	3.0759	4.3146	.03826	51.383	.03252
Stddev	.00009	.00076	.00070	.0448	.0921	.00398	.083	.00353
%RSD	10.346	41.113	38.683	1.4576	2.1337	10.401	.16137	10.870
#1	.00081	.00098	.00242	3.0253	4.2316	.04144	51.475	.03488
#2	.00094	.00223	.00197	3.0916	4.4136	.03380	51.362	.02845
#3	.00078	.00237	.00105	3.1108	4.2984	.03956	51.313	.03422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00258	133.73	-.00015	.01191	.00179	-.00228	.00665	8.0891
Stddev	.00008	.12	.00113	.00694	.00129	.00283	.00532	.0280
%RSD	3.2153	.09189	747.26	58.268	71.933	124.12	79.994	.34670
#1	.00264	133.81	-.00126	.01916	.00318	-.00553	.01195	8.1130
#2	.00249	133.59	.00099	.00533	.00159	-.00033	.00671	8.0582
#3	.00262	133.80	-.00018	.01123	.00062	-.00099	.00131	8.0960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606090723 Acquired: 6/25/2016 19:43:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**2.6416**	**-.00732**	**-.00182**	**-.00046**	**.00542**	**.00128**
Stddev	.00038	.0023	.00771	.00082	.00062	.00021	.00019
%RSD	7616.2	.08543	105.44	45.025	136.48	3.8805	14.578
#1	.00020	2.6400	-.01112	-.00260	-.00073	.00544	.00120
#2	.00025	2.6406	.00156	-.00189	.00026	.00563	.00115
#3	-.00044	2.6441	-.01239	-.00097	-.00089	.00521	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9566.3**	**57706.**	**3016.3**
Stddev	21.2	40.	8.6
%RSD	.22170	.06981	.28561
#1	9583.7	57737.	3006.9
#2	9572.5	57660.	3023.9
#3	9542.7	57721.	3018.2

Approved: June 27, 2016

Sample Name: L1606098601 Acquired: 6/25/2016 19:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.63226	.00101	.09520	.04126	.00012	31.325	.00014
Stddev	.00183	.00734	.00119	.00196	.00050	.00007	.135	.00021
%RSD	298.65	1.1612	118.08	2.0630	1.2197	57.984	.43030	153.25
#1	.00185	.62395	-.00028	.09744	.04176	.00005	31.451	-.00001
#2	-.00149	.63786	.00207	.09436	.04076	.00018	31.183	.00005
#3	.00148	.63498	.00124	.09379	.04125	.00013	31.342	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.00251	.00378	1.4621	1.2075	.01677	5.9028	.04892
Stddev	.00024	.00020	.00199	.0362	.0294	.00358	.0605	.00066
%RSD	20.175	7.8011	52.767	2.4785	2.4351	21.330	1.0243	1.3538
#1	.00129	.00246	.00338	1.4981	1.1821	.01735	5.9016	.04861
#2	.00090	.00272	.00594	1.4256	1.2008	.02003	5.8430	.04848
#3	.00133	.00234	.00201	1.4624	1.2397	.01294	5.9639	.04969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	122.45	.00122	.03952	.00058	-.00189	.00677	4.0503
Stddev	.00024	.35	.00124	.00581	.00157	.00112	.00463	.0371
%RSD	19.925	.28250	101.52	14.694	270.52	59.209	68.294	.91471
#1	.00135	122.68	.00181	.04077	.00200	-.00256	.00933	4.0789
#2	.00131	122.05	-.00020	.04460	-.00110	-.00252	.00956	4.0634
#3	.00092	122.62	.00206	.03319	.00084	-.00060	.00143	4.0084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098601 Acquired: 6/25/2016 19:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.54428**	**.01566**	**-.00252**	**.00147**	**.03503**	**.00138**
Stddev	.00052	.00100	.00262	.00158	.00115	.00040	.00180
%RSD	330.58	.18426	16.757	62.766	78.497	1.1335	130.15
#1	-.00032	.54517	.01814	-.00107	.00112	.03533	.00331
#2	-.00057	.54319	.01592	-.00228	.00275	.03517	-.00024
#3	.00042	.54448	.01291	-.00422	.00053	.03458	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9674.1**	**58435.**	**3018.4**
Stddev	45.2	129.	18.2
%RSD	.46720	.22152	.60258
#1	9673.0	58340.	2997.4
#2	9719.9	58382.	3028.7
#3	9629.5	58582.	3029.1

Approved: June 27, 2016

Sample Name: L1606098603 Acquired: 6/25/2016 19:51:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00113**	**.08091**	**.00257**	**.02612**	**.02343**	**.00026**	**258.72**
Stddev	.00364	.00403	.00338	.00065	.00023	.00010	.22
%RSD	322.73	4.9793	131.60	2.5002	.99712	37.911	.08495
#1	-.00201	.07953	.00151	.02617	.02317	.00019	258.95
#2	.00512	.08545	-.00015	.02675	.02363	.00037	258.52
#3	.00028	.07776	.00635	.02545	.02348	.00021	258.68
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**.00486**	**.00101**	**.01760**	**1.6277**	**1.7887**	**.01926**
Stddev	.00018	.00049	.00101	.00048	.0214	.0748	.00269
%RSD	32.935	10.099	100.65	2.7241	1.3157	4.1799	13.963
#1	.00053	.00446	.00070	.01814	1.6519	1.7719	.02232
#2	.00040	.00472	.00018	.01725	1.6198	1.8705	.01729
#3	.00076	.00541	.00214	.01740	1.6113	1.7238	.01816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**67.571**	**3.7591**	**.00091**	**16.176**	**.00450**	**.03792**	**.00200**
Stddev	.265	.0091	.00013	.042	.00050	.00459	.00102
%RSD	.39176	.24313	14.640	.25963	11.081	12.099	51.049
#1	67.875	3.7689	.00083	16.148	.00428	.03292	.00317
#2	67.391	3.7508	.00083	16.224	.00415	.03891	.00158
#3	67.448	3.7575	.00106	16.157	.00507	.04193	.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098603 Acquired: 6/25/2016 19:51:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00201**	**-.00717**	**3.9929**	**.00071**	**1.4034**	F **-.03512**	**-.00302**
Stddev	.00033	.00269	.0187	.00006	.0013	.00376	.00159
%RSD	16.650	37.521	.46951	8.6416	.08919	10.706	52.853
#1	-.00201	-.00583	3.9724	.00069	1.4035	-.03701	-.00329
#2	-.00234	-.01026	3.9969	.00078	1.4046	-.03756	-.00130
#3	-.00167	-.00541	4.0093	.00066	1.4021	-.03079	-.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00011**	**.03959**	**.00096**
Stddev	.00028	.00012	.00361
%RSD	248.38	.29182	376.14
#1	.00034	.03947	.00158
#2	-.00020	.03969	.00421
#3	.00020	.03962	-.00292
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9451.5**	**57637.**	**3009.6**
Stddev	22.8	186.	22.0
%RSD	.24088	.32311	.72999
#1	9477.8	57852.	2986.4
#2	9439.3	57520.	3012.4
#3	9437.5	57540.	3030.0

Approved: June 27, 2016

Sample Name: L1606098605 Acquired: 6/25/2016 19:55:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00137	.11904	-.00057	.01716	.07339	.00069	79.533	.00007
Stddev	.00111	.00237	.00183	.00141	.00107	.00010	.468	.00014
%RSD	81.063	1.9908	322.69	8.2448	1.4582	14.460	.58849	215.58
#1	-.00160	.12158	.00130	.01581	.07215	.00080	78.994	-.00002
#2	-.00016	.11865	-.00237	.01703	.07401	.00066	79.770	-.00001
#3	-.00235	.11689	-.00063	.01863	.07401	.00061	79.836	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00197	.03453	.22031	1.0996	.00600	23.636	.02412
Stddev	.00010	.00062	.00164	.01719	.0321	.00378	.124	.00114
%RSD	58.539	31.534	4.7611	7.8016	2.9198	62.984	.52590	4.7055
#1	.00028	.00148	.03642	.22738	1.1284	.00174	23.677	.02484
#2	.00008	.00176	.03343	.23283	1.0650	.00731	23.734	.02281
#3	.00016	.00266	.03374	.20072	1.1054	.00895	23.496	.02471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	16.543	.00139	.02145	.00230	-.00291	.00287	2.5906
Stddev	.00010	.077	.00029	.00514	.00167	.00113	.00378	.0043
%RSD	11.067	.46265	20.622	23.950	72.689	38.933	132.03	.16499
#1	.00094	16.521	.00147	.02583	.00422	-.00367	.00465	2.5950
#2	.00093	16.628	.00163	.02271	.00152	-.00161	-.00148	2.5865
#3	.00076	16.480	.00107	.01580	.00116	-.00345	.00543	2.5902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098605 Acquired: 6/25/2016 19:55:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.41216	-.00457	-.00401	.00095	.08292	.00137
Stddev	.00045	.00253	.00113	.00092	.00095	.00025	.00112
%RSD	198.91	.61368	24.692	22.922	99.932	.30169	82.337
#1	.00020	.40988	-.00328	-.00486	-.00009	.08312	.00008
#2	.00068	.41488	-.00504	-.00303	.00116	.08301	.00218
#3	-.00021	.41173	-.00539	-.00414	.00177	.08264	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9691.4	59019.	3013.1
Stddev	15.7	113.	12.9
%RSD	.16185	.19156	.42939
#1	9673.9	58889.	3028.0
#2	9704.2	59073.	3004.1
#3	9696.2	59095.	3007.4

Approved: June 27, 2016

Sample Name: L1606098607 Acquired: 6/25/2016 19:59:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.03854	.00139	.01595	.03639	.00021	86.351	.00013
Stddev	.00196	.00438	.00171	.00299	.00069	.00005	.183	.00018
%RSD	252.38	11.356	122.54	18.743	1.8946	25.559	.21179	130.52
#1	-.00064	.04027	.00252	.01429	.03564	.00026	86.561	.00033
#2	-.00004	.03356	-.00057	.01941	.03654	.00022	86.226	.00007
#3	.00302	.04179	.00223	.01417	.03700	.00015	86.267	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00096	.00901	.09595	1.3588	.01896	23.947	.13765
Stddev	.00012	.00155	.00054	.00336	.0905	.00285	.152	.00156
%RSD	14.271	161.05	6.0176	3.5057	6.6619	15.032	.63449	1.1314
#1	.00074	.00257	.00840	.09606	1.2544	.01772	23.782	.13585
#2	.00084	-.00052	.00942	.09926	1.4148	.02223	24.081	.13859
#3	.00099	.00083	.00922	.09254	1.4072	.01695	23.978	.13851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	12.868	.00006	.00776	.00294	-.00141	.00160	3.6487
Stddev	.00036	.033	.00069	.00647	.00245	.00292	.00413	.0140
%RSD	74.294	.25857	1239.7	83.320	83.569	207.44	258.10	.38292
#1	.00008	12.905	-.00031	.01172	.00013	.00158	.00626	3.6621
#2	.00078	12.859	.00085	.01126	.00466	-.00154	-.00162	3.6496
#3	.00059	12.840	-.00038	.00030	.00403	-.00426	.00017	3.6342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607 Acquired: 6/25/2016 19:59:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.85925**	**-.01297**	**-.00261**	**.00027**	**.01872**	**-.00023**
Stddev	.00058	.00368	.00482	.00118	.00049	.00005	.00100
%RSD	1135.5	.42821	37.150	45.319	182.28	.27976	440.95
#1	.00028	.86236	-.00802	-.00398	-.00019	.01878	.00007
#2	-.00072	.86019	-.01323	-.00183	.00021	.01871	.00059
#3	.00028	.85519	-.01765	-.00203	.00079	.01868	-.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9667.2**	**58651.**	**3007.8**
Stddev	38.0	90.	17.4
%RSD	.39269	.15372	.57760
#1	9636.2	58610.	2989.6
#2	9655.8	58589.	3009.4
#3	9709.5	58755.	3024.3

Approved: June 27, 2016

Sample Name: L1606098607PS Acquired: 6/25/2016 20:03:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574215-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19549**	**4.9683**	**.19699**	**.95431**	**.52192**	**.02489**	**83.384**	**.02448**
Stddev	.00145	.0012	.00037	.00069	.00335	.00004	.351	.00015
%RSD	.74419	.02324	.18968	.07193	.64144	.17436	.42141	.59448
#1	.19431	4.9671	.19669	.95367	.51889	.02485	83.062	.02455
#2	.19712	4.9693	.19740	.95504	.52551	.02494	83.759	.02458
#3	.19505	4.9687	.19686	.95422	.52137	.02490	83.330	.02431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09612**	**.24445**	**.24901**	**2.0095**	**25.021**	**.52274**	**26.551**	**.36466**
Stddev	.00060	.00204	.00132	.0079	.209	.00262	.211	.00375
%RSD	.62715	.83504	.52860	.39401	.83514	.50106	.79467	1.0287
#1	.09620	.24322	.24870	2.0100	24.845	.52124	26.458	.36188
#2	.09668	.24681	.25046	2.0172	25.252	.52577	26.792	.36317
#3	.09548	.24332	.24788	2.0014	24.965	.52123	26.403	.36893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50539**	**35.868**	**.24056**	**4.8300**	**.24330**	**.58213**	**.19141**	**5.6770**
Stddev	.00256	.121	.00174	.0165	.00225	.00117	.00102	.0113
%RSD	.50685	.33731	.72421	.34266	.92572	.20086	.53487	.19978
#1	.50625	35.730	.24173	4.8368	.24292	.58281	.19254	5.6837
#2	.50742	35.956	.24138	4.8421	.24572	.58078	.19056	5.6833
#3	.50251	35.919	.23856	4.8112	.24127	.58280	.19112	5.6639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607PS Acquired: 6/25/2016 20:03:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574215-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48483**	**1.2623**	**.48068**	**.24615**	**.50488**	**.48944**	**.00427**
Stddev	.00147	.0060	.00508	.00275	.00238	.00115	.00064
%RSD	.30392	.47569	1.0573	1.1154	.47121	.23489	15.068
#1	.48451	1.2555	.47807	.24920	.50216	.48999	.00389
#2	.48644	1.2668	.48654	.24388	.50587	.49021	.00501
#3	.48354	1.2646	.47744	.24537	.50660	.48812	.00390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58019.**	**3004.1**
Stddev	20.4	180.	8.2
%RSD	.21278	.31055	.27313
#1	9607.7	58202.	3005.9
#2	9591.6	58012.	2995.2
#3	9632.2	57842.	3011.3

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.00334	.00170	.00445	.00847	.00009	17.139	.00008
Stddev	.00049	.00730	.00411	.00207	.00008	.00007	.249	.00023
%RSD	88.649	218.69	241.70	46.624	.94243	75.660	1.4519	290.72
#1	.00089	.00593	.00612	.00219	.00843	.00006	17.426	.00034
#2	-.00001	.00899	-.00200	.00488	.00843	.00004	17.001	-.00003
#3	.00078	-.00490	.00098	.00627	.00857	.00017	16.989	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.00037	.00191	.01894	.32539	.00400	4.9234	.02615
Stddev	.00005	.00023	.00083	.00475	.10069	.00194	.1236	.00303
%RSD	9.1063	60.795	43.755	25.087	30.943	48.604	2.5107	11.568
#1	.00062	.00059	.00284	.02402	.21108	.00176	4.9976	.02622
#2	.00053	.00038	.00165	.01821	.40094	.00496	4.9918	.02914
#3	.00053	.00014	.00123	.01460	.36416	.00527	4.7807	.02309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	2.5977	.00028	.00852	.00297	.00160	.00156	.72149
Stddev	.00021	.0380	.00123	.00414	.00293	.00068	.00366	.00246
%RSD	66.333	1.4636	438.92	48.637	98.645	42.261	235.25	.34147
#1	.00008	2.6376	-.00081	.01268	-.00028	.00113	-.00104	.72244
#2	.00048	2.5938	.00004	.00439	.00377	.00130	.00574	.71869
#3	.00037	2.5619	.00161	.00849	.00542	.00238	-.00003	.72333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.17255**	**.00033**	**-.00095**	**.00100**	**.00419**	**.00060**
Stddev	.00072	.00063	.00618	.00123	.00055	.00013	.00060
%RSD	1344.6	.36773	1857.8	129.31	55.083	2.9985	99.890
#1	-.00060	.17322	-.00395	-.00224	.00116	.00417	-.00009
#2	.00076	.17246	-.00247	-.00083	.00039	.00432	.00094
#3	-.00032	.17196	.00742	.00021	.00145	.00407	.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10100.**	**61152.**	**3087.7**
Stddev	17.	221.	3.3
%RSD	.16887	.36180	.10673
#1	10112.	61407.	3088.4
#2	10080.	61005.	3090.6
#3	10107.	61046.	3084.1

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**-.00220**	**-.00032**	**-.00063**	**.00197**	**.00015**	**3.3784**	**-.00009**
Stddev	.00281	.00599	.00141	.00122	.00070	.00004	.0403	.00029
%RSD	1738.4	271.64	438.98	193.96	35.714	23.124	1.1918	310.09
#1	.00289	-.00340	.00101	-.00187	.00220	.00018	3.3321	-.00013
#2	-.00273	.00429	-.00181	-.00058	.00253	.00017	3.3977	-.00037
#3	.00033	-.00751	-.00017	.00056	.00118	.00011	3.4054	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00057**	**.00039**	**.03496**	**.02799**	**.00189**	**.96584**	**.00502**
Stddev	.00041	.00109	.00122	.02559	.02173	.00316	.06365	.00248
%RSD	5673.0	191.57	314.78	73.189	77.636	167.39	6.5899	49.517
#1	.00017	-.00161	.00178	.00957	.03029	.00425	1.0133	.00340
#2	.00028	-.00067	-.00011	.06074	.04847	.00313	.99069	.00377
#3	-.00047	.00057	-.00050	.03458	.00520	-.00171	.89352	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.48659**	**-.00001**	**.00389**	**.00194**	**-.00589**	**.00123**	**.14706**
Stddev	.00019	.02107	.00027	.00257	.00032	.00198	.00158	.00411
%RSD	50.403	4.3293	3257.2	66.021	16.675	33.653	128.28	2.7928
#1	-.00035	.50181	-.00003	.00472	.00177	-.00726	-.00048	.14268
#2	-.00056	.46255	.00027	.00101	.00173	-.00680	.00263	.15082
#3	-.00019	.49542	-.00027	.00595	.00231	-.00362	.00154	.14770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.03404**	**-.00096**	**.00109**	**.00053**	**.00095**	**-.00050**
Stddev	.00021	.00026	.00497	.00270	.00028	.00007	.00147
%RSD	93.819	.76060	519.10	248.53	53.226	6.9237	292.99
#1	-.00042	.03414	.00415	-.00145	.00059	.00088	.00090
#2	-.00001	.03374	-.00578	.00079	.00078	.00097	-.00204
#3	-.00022	.03423	-.00124	.00392	.00022	.00101	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**61150.**	**3069.8**
Stddev	20.	142.	13.8
%RSD	.19324	.23287	.44985
#1	10144.	61269.	3085.6
#2	10109.	61188.	3063.7
#3	10143.	60992.	3060.0

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 20:14:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39742	10.037	.39212	.48448	.99926	.05007	9.9665
Stddev	.00078	.015	.00234	.00170	.00686	.00012	.0639
%RSD	.19741	.14886	.59686	.35046	.68696	.24571	.64080
#1	.39794	10.020	.39189	.48304	1.0007	.05009	10.032
#2	.39780	10.040	.39457	.48635	.99181	.05018	9.9043
#3	.39651	10.049	.38991	.48406	1.0053	.04994	9.9633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04995	.19662	.49719	.50408	3.9345	48.425	1.0056
Stddev	.00017	.00028	.00293	.00085	.0512	.336	.0066
%RSD	.33202	.14096	.58868	.16772	1.3013	.69474	.65876
#1	.05012	.19642	.49505	.50367	3.9195	48.601	1.0066
#2	.04993	.19694	.50053	.50505	3.8924	48.037	.99858
#3	.04979	.19651	.49600	.50351	3.9915	48.637	1.0117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6539	.49874	1.0057	49.161	.50061	9.8144	.49889
Stddev	.1152	.00402	.0014	.263	.00048	.0158	.00214
%RSD	1.1928	.80691	.13850	.53437	.09607	.16108	.42961
#1	9.7007	.49641	1.0053	49.311	.50117	9.7964	.49662
#2	9.5228	.49643	1.0072	48.858	.50038	9.8207	.49919
#3	9.7383	.50339	1.0045	49.316	.50029	9.8261	.50087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 20:14:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1787**	**.38972**	**5.0552**	**.98705**	**.99934**	**.99527**	**.50770**
Stddev	.0014	.00525	.0102	.00133	.00573	.00628	.00313
%RSD	.12146	1.3477	.20130	.13498	.57306	.63102	.61635
#1	1.1790	.38370	5.0434	.98688	1.0013	.99951	.50582
#2	1.1772	.39212	5.0610	.98581	.99288	.98805	.50598
#3	1.1800	.39334	5.0611	.98846	1.0038	.99824	.51132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0147**	**.99253**	F **2.9496**
Stddev	.0017	.00087	.0127
%RSD	.16286	.08813	.43029
#1	1.0131	.99259	2.9390
#2	1.0147	.99336	2.9462
#3	1.0164	.99162	2.9637
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9868.5**	**58806.**	**2964.6**
Stddev	19.7	151.	1.8
%RSD	.19965	.25680	.06126
#1	9885.2	58672.	2966.0
#2	9873.5	58776.	2965.4
#3	9846.8	58969.	2962.6

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 20:18:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	-.00340	-.00049	.00031	.00192	.00008	-.02002	-.00008
Stddev	.00216	.00700	.00114	.00069	.00099	.00015	.01568	.00025
%RSD	163.88	205.77	232.07	221.43	51.768	179.89	78.343	317.94
#1	.00112	.00138	-.00179	.00077	.00240	-.00004	-.03265	.00011
#2	.00357	-.00014	-.00002	.00066	.00258	.00004	-.00247	-.00036
#3	-.00074	-.01144	.00034	-.00049	.00078	.00025	-.02493	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.00038	.00063	.02332	-.07555	-.00123	.02786	-.00147
Stddev	.00036	.00095	.00188	.02448	.09270	.00682	.09570	.00329
%RSD	47.976	247.76	298.28	104.94	122.70	553.52	343.47	223.66
#1	.00080	.00146	-.00061	.04476	-.06611	.00634	-.06528	.00195
#2	.00036	.00002	.00279	-.00335	-.17262	-.00687	.02294	-.00462
#3	.00107	-.00033	-.00029	.02856	.01207	-.00317	.12594	-.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00377	.03770	.00015	.00241	-.00006	.00325	.00675	.03903
Stddev	.00019	.01915	.00084	.00431	.00100	.00269	.00806	.00132
%RSD	5.0202	50.799	576.30	178.78	1573.6	82.788	119.45	3.3700
#1	.00388	.01718	.00046	.00371	.00063	.00040	.01512	.04015
#2	.00389	.04082	.00078	-.00240	-.00121	.00574	.00608	.03936
#3	.00355	.05510	-.00080	.00592	.00039	.00360	-.00096	.03758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 20:18:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00027**	**.00088**	**-.00106**	**.00004**	**-.00003**	**.00449**
Stddev	.00046	.00064	.00516	.00225	.00089	.00028	.00124
%RSD	6827.2	239.61	583.41	212.27	2439.5	892.40	27.555
#1	.00053	-.00043	-.00417	-.00308	-.00098	.00021	.00367
#2	-.00031	.00040	.00068	.00137	.00041	.00004	.00389
#3	-.00023	.00082	.00615	-.00147	.00068	-.00034	.00592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9631.9**	**58363.**	**2969.7**
Stddev	4.5	93.	16.5
%RSD	.04685	.16010	.55454
#1	9627.4	58461.	2965.8
#2	9636.4	58275.	2987.8
#3	9631.8	58353.	2955.6

Approved: June 27, 2016

Sample Name: L1606098609 Acquired: 6/25/2016 20:22:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.68625	.00096	.00637	.02063	.00019	116.68	.00011
Stddev	.00130	.00243	.00203	.00124	.00115	.00006	.34	.00020
%RSD	161.33	.35410	210.74	19.489	5.5807	30.863	.28955	179.93
#1	.00013	.68352	.00323	.00768	.02147	.00021	116.54	.00014
#2	.00231	.68708	-.00070	.00521	.01932	.00023	116.43	-.00010
#3	-.00002	.68816	.00037	.00620	.02109	.00012	117.06	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00251	.00589	.80058	.71511	.00736	28.613	.02306
Stddev	.00014	.00088	.00100	.02799	.18771	.00368	.079	.00071
%RSD	23.262	34.910	17.057	3.4966	26.250	49.956	.27754	3.0949
#1	.00051	.00150	.00680	.80914	.91494	.01159	28.526	.02382
#2	.00075	.00293	.00481	.76931	.68792	.00556	28.632	.02293
#3	.00052	.00310	.00605	.82330	.54247	.00492	28.681	.02241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	14.713	.00303	.03333	.00106	-.00272	.00365	4.8889
Stddev	.00024	.075	.00054	.00378	.00114	.00271	.00111	.0101
%RSD	32.746	.50774	17.920	11.335	108.20	99.808	30.510	.20564
#1	.00047	14.684	.00299	.03128	.00107	-.00577	.00444	4.8999
#2	.00095	14.656	.00359	.03769	-.00009	-.00056	.00238	4.8868
#3	.00081	14.797	.00251	.03102	.00220	-.00183	.00413	4.8801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098609 Acquired: 6/25/2016 20:22:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.51888**	**.00260**	**-.00246**	**.00196**	**.03426**	**.00729**
Stddev	.00032	.00275	.00453	.00099	.00037	.00011	.00028
%RSD	1222.6	.53076	174.15	40.180	18.856	.31556	3.8509
#1	.00009	.51844	-.00256	-.00245	.00220	.03417	.00723
#2	-.00032	.51637	.00591	-.00346	.00153	.03438	.00705
#3	.00031	.52183	.00446	-.00148	.00215	.03423	.00760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9797.7**	**59515.**	**3093.6**
Stddev	11.0	17.	11.2
%RSD	.11267	.02773	.36079
#1	9791.0	59496.	3083.8
#2	9810.4	59520.	3105.7
#3	9791.6	59528.	3091.1

Approved: June 27, 2016

Sample Name: L1606098611 Acquired: 6/25/2016 20:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.67808	-.00318	.08715	.06918	.00114	148.14	.00017
Stddev	.00037	.00569	.00382	.00198	.00070	.00012	.69	.00021
%RSD	151.84	.83972	120.10	2.2728	1.0151	10.946	.46623	125.05
#1	-.00014	.67215	-.00172	.08491	.06933	.00099	148.49	.00006
#2	.00061	.68350	-.00031	.08867	.06980	.00119	147.34	.00003
#3	.00027	.67861	-.00751	.08788	.06842	.00123	148.59	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	.00334	.07531	1.1555	1.9378	.02263	43.443	.16489
Stddev	.00025	.00064	.00057	.0192	.0114	.00045	.331	.00288
%RSD	6.9167	19.099	.75123	1.6613	.58882	1.9873	.76282	1.7487
#1	.00388	.00297	.07511	1.1584	1.9507	.02262	43.610	.16408
#2	.00338	.00297	.07595	1.1731	1.9292	.02219	43.061	.16250
#3	.00362	.00407	.07487	1.1351	1.9335	.02309	43.657	.16809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00248	25.675	.00454	.04285	.00455	-.00035	-.00286	3.7826
Stddev	.00024	.125	.00067	.00695	.00113	.00106	.00555	.0053
%RSD	9.7863	.48812	14.843	16.217	24.766	306.62	194.07	.13999
#1	.00260	25.775	.00423	.04366	.00585	.00053	-.00927	3.7791
#2	.00220	25.535	.00409	.03554	.00387	-.00004	.00020	3.7887
#3	.00264	25.716	.00532	.04936	.00394	-.00153	.00049	3.7799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098611 Acquired: 6/25/2016 20:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	2.0876	-.00638	-.00280	.00142	.06566	.00394
Stddev	.00055	.0096	.00925	.00066	.00022	.00017	.00141
%RSD	713.59	.45905	144.86	23.607	15.199	.25178	35.771
#1	-.00017	2.0923	-.00754	-.00222	.00163	.06585	.00254
#2	-.00031	2.0765	-.01500	-.00266	.00143	.06556	.00536
#3	.00071	2.0939	.00339	-.00351	.00120	.06556	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9695.5	58902.	3054.3
Stddev	10.1	156.	10.7
%RSD	.10398	.26470	.35100
#1	9691.1	59006.	3048.2
#2	9688.3	58978.	3066.6
#3	9707.0	58723.	3048.0

Approved: June 27, 2016

Sample Name: L1606098613 Acquired: 6/25/2016 20:29:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	5.5730	.00432	.03801	.11035	.00130	203.09	-.00001
Stddev	.00149	.0359	.00264	.00141	.00031	.00003	.17	.00016
%RSD	85.559	.64338	61.135	3.7127	.27868	2.0129	.08522	1090.1
#1	.00010	5.6007	.00735	.03819	.11034	.00128	203.27	.00012
#2	.00211	5.5858	.00310	.03932	.11006	.00133	203.05	.00003
#3	.00302	5.5325	.00251	.03651	.11067	.00131	202.93	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00373	.00967	.08024	7.4517	4.1196	.03087	79.593	.34313
Stddev	.00008	.00046	.00072	.0194	.0319	.00148	.239	.00219
%RSD	2.0959	4.7129	.90070	.26051	.77317	4.7986	.30050	.63957
#1	.00364	.00917	.07941	7.4293	4.0890	.03222	79.370	.34059
#2	.00377	.01007	.08072	7.4635	4.1171	.03112	79.565	.34436
#3	.00379	.00978	.08059	7.4624	4.1526	.02929	79.846	.34443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	24.658	.00975	.17618	.00825	.00008	.00248	10.141
Stddev	.00040	.019	.00024	.00598	.00295	.00311	.00271	.073
%RSD	21.744	.07518	2.5015	3.3961	35.754	3886.1	109.35	.72041
#1	.00146	24.670	.00990	.17816	.00502	.00353	.00373	10.058
#2	.00175	24.669	.00947	.16946	.00891	-.00250	.00433	10.169
#3	.00224	24.637	.00989	.18093	.01080	-.00079	-.00063	10.196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098613 Acquired: 6/25/2016 20:29:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	2.4743	.05397	-.00080	.01073	.41856	.00624
Stddev	.00027	.0052	.00665	.00236	.00131	.00229	.00115
%RSD	39.960	.21077	12.313	294.11	12.169	.54671	18.419
#1	.00089	2.4751	.05254	-.00353	.01217	.41596	.00756
#2	.00073	2.4791	.04816	.00063	.00962	.42027	.00548
#3	.00037	2.4687	.06122	.00049	.01040	.41945	.00567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9619.4	58503.	3058.9
Stddev	38.3	135.	15.7
%RSD	.39844	.23102	.51315
#1	9576.0	58658.	3041.4
#2	9633.7	58414.	3071.7
#3	9648.5	58435.	3063.7

Approved: June 27, 2016

Sample Name: L1606098615 Acquired: 6/25/2016 20:33:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00201	.53689	.00109	.12769	.02932	.00091	261.33	.00014
Stddev	.00048	.01300	.00276	.00142	.00104	.00011	1.37	.00008
%RSD	23.740	2.4215	252.93	1.1120	3.5600	12.063	.52322	55.108
#1	.00148	.54532	.00299	.12707	.02978	.00081	261.04	.00021
#2	.00215	.54344	.00237	.12931	.03005	.00088	262.83	.00006
#3	.00240	.52192	-.00208	.12669	.02812	.00103	260.14	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00167	.04808	1.7755	3.9837	.04482	96.121	.35461
Stddev	.00009	.00172	.00105	.0329	.0639	.00305	.330	.00305
%RSD	12.352	103.13	2.1885	1.8532	1.6044	6.8091	.34352	.86008
#1	.00068	.00125	.04714	1.8121	3.9806	.04242	96.172	.35269
#2	.00071	.00356	.04922	1.7483	4.0491	.04379	96.422	.35813
#3	.00085	.00020	.04788	1.7662	3.9214	.04825	95.768	.35302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	71.586	.00152	.06528	.00543	-.00023	-.00042	6.3830
Stddev	.00049	.359	.00083	.00282	.00224	.00292	.00309	.0073
%RSD	60.493	.50193	55.060	4.3183	41.272	1275.7	729.65	.11354
#1	.00036	71.588	.00097	.06827	.00795	-.00316	.00167	6.3913
#2	.00132	71.945	.00248	.06488	.00468	-.00019	.00103	6.3782
#3	.00072	71.227	.00110	.06267	.00366	.00267	-.00398	6.3795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098615 Acquired: 6/25/2016 20:33:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**6.9477**	**-.01868**	**-.00208**	**-.00036**	**.07416**	**.00363**
Stddev	.00094	.0407	.00365	.00070	.00044	.00028	.00062
%RSD	142.12	.58617	19.553	33.577	122.09	.37861	17.066
#1	.00171	6.9428	-.02024	-.00215	-.00034	.07441	.00412
#2	.00039	6.9907	-.01451	-.00134	-.00081	.07386	.00293
#3	-.00011	6.9097	-.02130	-.00273	.00007	.07420	.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9482.1**	**57521.**	**3041.1**
Stddev	15.4	119.	13.0
%RSD	.16231	.20772	.42869
#1	9472.3	57649.	3053.5
#2	9499.8	57500.	3027.5
#3	9474.1	57412.	3042.2

Approved: June 27, 2016

Sample Name: L1606098617 Acquired: 6/25/2016 20:37:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	.20547	.00214	.04863	.05628	.00015	62.798	.00005
Stddev	.00260	.00707	.00399	.00222	.00076	.00003	.506	.00026
%RSD	168.84	3.4433	186.39	4.5608	1.3548	21.842	.80652	579.39
#1	.00162	.19836	-.00117	.04752	.05710	.00015	63.380	-.00016
#2	.00410	.20553	.00657	.05118	.05613	.00018	62.459	.00034
#3	-.00110	.21251	.00102	.04718	.05560	.00012	62.555	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00139	.00754	.49751	2.0420	.02056	20.601	.01571
Stddev	.00024	.00096	.00096	.02565	.1117	.00244	.034	.00089
%RSD	70.093	68.878	12.744	5.1552	5.4689	11.879	.16418	5.6341
#1	.00059	.00246	.00739	.47113	2.0254	.02185	20.628	.01672
#2	.00012	.00112	.00857	.52236	1.9395	.01774	20.613	.01507
#3	.00031	.00060	.00666	.49904	2.1610	.02209	20.563	.01535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	26.598	.00080	.00703	.00246	-.00325	.00131	3.4906
Stddev	.00064	.178	.00058	.00500	.00246	.00605	.00554	.0173
%RSD	70.655	.66988	72.589	71.163	99.983	186.20	421.53	.49585
#1	.00155	26.804	.00039	.00280	.00327	-.00237	-.00267	3.5042
#2	.00088	26.495	.00146	.00574	-.00030	-.00969	.00764	3.4966
#3	.00027	26.495	.00054	.01256	.00441	.00231	-.00103	3.4711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098617 Acquired: 6/25/2016 20:37:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	1.5150	-.00311	-.00236	-.00015	.01447	.00341
Stddev	.00072	.0088	.00641	.00068	.00005	.00011	.00060
%RSD	226.25	.58268	206.23	28.717	34.447	.73139	17.615
#1	.00066	1.5251	-.00263	-.00291	-.00009	.01435	.00287
#2	.00080	1.5088	.00305	-.00160	-.00015	.01454	.00406
#3	-.00051	1.5111	-.00975	-.00256	-.00020	.01452	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9830.7	59822.	3082.9
Stddev	15.5	147.	23.6
%RSD	.15717	.24641	.76693
#1	9813.6	59963.	3057.5
#2	9843.5	59835.	3104.4
#3	9835.1	59669.	3086.7

Approved: June 27, 2016

Sample Name: L1606098619 Acquired: 6/25/2016 20:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.27749	.00069	.06930	.05323	.00039	10.214	.00034
Stddev	.00263	.00318	.00178	.00081	.00134	.00007	.065	.00038
%RSD	232.09	1.1459	258.13	1.1649	2.5186	17.965	.63738	111.28
#1	.00355	.27762	.00105	.06852	.05477	.00042	10.240	.00066
#2	-.00167	.28061	.00227	.06924	.05251	.00044	10.140	.00044
#3	.00153	.27425	-.00125	.07014	.05240	.00031	10.262	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00071	.02585	.24748	1.2811	.01465	4.6162	.00999
Stddev	.00051	.00114	.00067	.00474	.0573	.00378	.0318	.00359
%RSD	46.988	159.40	2.5887	1.9167	4.4759	25.817	.68816	35.904
#1	.00062	.00202	.02645	.25048	1.2371	.01153	4.5886	.01278
#2	.00162	-.00003	.02513	.24201	1.3460	.01356	4.6509	.01123
#3	.00099	.00015	.02599	.24994	1.2604	.01885	4.6090	.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	228.52	.00044	.07963	.00371	-.00207	.00619	2.5103
Stddev	.00028	1.82	.00063	.00808	.00266	.00077	.00393	.0173
%RSD	22.669	.79720	141.35	10.151	71.562	37.379	63.490	.68709
#1	.00153	229.52	.00003	.07034	.00201	-.00126	.00175	2.5018
#2	.00118	226.42	.00013	.08504	.00235	-.00280	.00758	2.4989
#3	.00097	229.62	.00117	.08351	.00677	-.00216	.00924	2.5301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098619 Acquired: 6/25/2016 20:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.22967	.00683	-.00264	.00219	.02256	.00408
Stddev	.00091	.00074	.00628	.00047	.00030	.00021	.00266
%RSD	1371.8	.32350	91.943	17.727	13.766	.92425	65.101
#1	-.00024	.23041	.00516	-.00255	.00222	.02259	.00112
#2	-.00065	.22892	.00155	-.00314	.00188	.02235	.00625
#3	.00109	.22967	.01377	-.00222	.00248	.02276	.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9702.8	58480.	3067.3
Stddev	45.7	28.	15.6
%RSD	.47062	.04775	.50880
#1	9725.9	58510.	3053.5
#2	9732.4	58474.	3084.2
#3	9650.3	58455.	3064.3

Approved: June 27, 2016

Sample Name: L1606098621 Acquired: 6/25/2016 20:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00121	.00179	.05746	.02986	.00029	128.59	-.00000
Stddev	.00056	.00275	.00384	.00358	.00132	.00008	.53	.00025
%RSD	97.573	226.34	214.60	6.2318	4.4201	27.216	.41011	6271.6
#1	.00040	-.00100	.00602	.06157	.03100	.00034	129.12	-.00029
#2	.00120	.00036	-.00148	.05576	.03017	.00020	128.07	.00019
#3	.00012	.00429	.00083	.05504	.02841	.00032	128.57	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00173	.01434	.05981	2.5098	.02550	33.269	.15420
Stddev	.00017	.00097	.00185	.00891	.0950	.00146	.060	.00170
%RSD	92.832	55.806	12.905	14.892	3.7837	5.7272	.18077	1.1012
#1	.00010	.00269	.01260	.05052	2.5555	.02390	33.334	.15465
#2	.00007	.00177	.01629	.06064	2.4007	.02586	33.216	.15563
#3	.00038	.00075	.01412	.06828	2.5733	.02675	33.257	.15232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	47.893	-.00000	.01004	.00162	-.00276	-.00417	3.5790
Stddev	.00060	.257	.00189	.00801	.00056	.00235	.00172	.0047
%RSD	106.13	.53712	269880.	79.763	34.469	85.173	41.117	.13102
#1	.00071	48.149	.00182	.00080	.00218	-.00406	-.00514	3.5827
#2	-.00009	47.634	.00013	.01426	.00163	-.00417	-.00519	3.5737
#3	.00107	47.897	-.00195	.01505	.00106	-.00005	-.00219	3.5806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098621 Acquired: 6/25/2016 20:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**1.8050**	**-.02231**	**-.00291**	**.00001**	**.01004**	**.00207**
Stddev	.00095	.0120	.00564	.00294	.00125	.00002	.00101
%RSD	393.73	.66689	25.288	100.88	21161.	.16952	48.549
#1	.00057	1.8173	-.02371	-.00622	-.00119	.01005	.00218
#2	-.00128	1.7932	-.02711	-.00189	.00130	.01004	.00102
#3	-.00001	1.8046	-.01610	-.00062	-.00009	.01002	.00302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9662.5**	**58180.**	**3042.4**
Stddev	14.0	47.	7.3
%RSD	.14521	.08141	.24078
#1	9658.0	58146.	3035.1
#2	9678.2	58161.	3042.4
#3	9651.2	58234.	3049.8

Approved: June 27, 2016

Sample Name: L1606098623 Acquired: 6/25/2016 20:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	.10705	.00198	.41392	.02623	.00027	243.17	.00017
Stddev	.00218	.00541	.00096	.00428	.00052	.00003	1.41	.00011
%RSD	157.63	5.0515	48.506	1.0332	1.9773	12.148	.58072	65.505
#1	.00177	.11044	.00295	.41225	.02682	.00026	243.56	.00005
#2	.00336	.10081	.00102	.41878	.02603	.00030	244.34	.00020
#3	-.00096	.10989	.00198	.41074	.02584	.00024	241.60	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00125	.02256	.13395	6.1008	.01177	68.965	.45308
Stddev	.00021	.00090	.00053	.00942	.0335	.00473	.254	.00553
%RSD	267.67	72.031	2.3661	7.0298	.54942	40.196	.36871	1.2196
#1	-.00012	.00056	.02318	.12309	6.1028	.01598	68.820	.44996
#2	.00031	.00093	.02221	.13890	6.0663	.00665	69.259	.45946
#3	.00005	.00227	.02231	.13986	6.1333	.01267	68.816	.44983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	66.667	.00075	.01360	.00015	-.00234	.00238	3.6345
Stddev	.00039	.343	.00118	.00476	.00283	.00395	.00376	.0082
%RSD	88.357	.51401	157.96	35.012	1938.3	168.93	158.02	.22548
#1	.00001	66.765	.00108	.01427	-.00296	-.00415	.00669	3.6345
#2	.00056	66.950	-.00056	.00853	.00082	.00219	.00057	3.6426
#3	.00076	66.286	.00172	.01798	.00259	-.00506	-.00014	3.6263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098623 Acquired: 6/25/2016 20:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	1.6999	-.02956	-.00156	.00030	.00857	.00329
Stddev	.00028	.0081	.00507	.00230	.00048	.00011	.00135
%RSD	598.12	.47536	17.163	147.79	160.42	1.3327	41.067
#1	.00005	1.7017	-.03255	.00072	-.00015	.00844	.00173
#2	.00033	1.7069	-.02370	-.00388	.00023	.00859	.00400
#3	-.00023	1.6911	-.03242	-.00151	.00081	.00866	.00415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9416.4	57429.	3035.8
Stddev	48.0	130.	25.1
%RSD	.51009	.22575	.82551
#1	9467.2	57482.	3016.2
#2	9410.3	57282.	3027.1
#3	9371.8	57525.	3064.1

Approved: June 27, 2016

Sample Name: L1606098625 Acquired: 6/25/2016 20:52:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00225	2.3612	.00034	.04147	.11975	.00023	121.59	.00037
Stddev	.00036	.0069	.00441	.00209	.00117	.00012	.33	.00010
%RSD	15.843	.29306	1297.6	5.0487	.97876	50.808	.26806	27.630
#1	.00211	2.3674	.00539	.03961	.11950	.00036	121.76	.00028
#2	.00199	2.3537	-.00273	.04106	.11872	.00014	121.21	.00033
#3	.00266	2.3625	-.00164	.04374	.12102	.00019	121.79	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.00414	.00666	2.3953	2.5999	.01491	37.526	1.0679
Stddev	.00025	.00072	.00102	.0202	.0477	.00333	.332	.0124
%RSD	15.696	17.478	15.382	.84513	1.8346	22.308	.88561	1.1598
#1	.00188	.00385	.00549	2.3789	2.6109	.01808	37.493	1.0637
#2	.00138	.00496	.00714	2.4179	2.5476	.01145	37.212	1.0581
#3	.00156	.00361	.00736	2.3890	2.6411	.01519	37.874	1.0818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	18.226	.00269	.05391	.00651	-.00190	.00505	5.9129
Stddev	.00020	.052	.00077	.00146	.00208	.00291	.00127	.0400
%RSD	30.881	.28797	28.786	2.7065	31.918	152.94	25.077	.67624
#1	.00067	18.245	.00228	.05412	.00658	-.00209	.00366	5.9121
#2	.00082	18.167	.00221	.05526	.00440	.00110	.00533	5.9533
#3	.00043	18.267	.00358	.05236	.00855	-.00472	.00614	5.8733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098625 Acquired: 6/25/2016 20:52:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.99462**	**.03044**	**-.00185**	**.00457**	**.15726**	**.00437**
Stddev	.00053	.00442	.00913	.00019	.00047	.00042	.00072
%RSD	150.91	.44485	29.990	10.187	10.282	.27017	16.565
#1	.00010	.99601	.03923	-.00207	.00503	.15763	.00393
#2	-.00093	.98967	.02100	-.00171	.00410	.15735	.00520
#3	-.00022	.99819	.03111	-.00178	.00457	.15680	.00397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9574.3**	**58285.**	**3022.7**
Stddev	18.0	80.	21.3
%RSD	.18820	.13801	.70548
#1	9553.8	58363.	3008.3
#2	9581.8	58202.	3047.2
#3	9587.4	58291.	3012.6

Approved: June 27, 2016

Sample Name: L1606098627 Acquired: 6/25/2016 20:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00254	4.6384	.00407	.03588	.08487	.00132	200.73	.00005
Stddev	.00192	.0173	.00097	.00149	.00032	.00011	.32	.00023
%RSD	75.499	.37394	23.741	4.1641	.37451	8.4866	.15998	422.09
#1	.00186	4.6215	.00464	.03631	.08521	.00120	200.37	.00006
#2	.00106	4.6377	.00461	.03711	.08483	.00141	200.85	-.00018
#3	.00471	4.6561	.00295	.03422	.08457	.00136	200.98	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00295	.00847	.07661	6.3761	4.0467	.02688	78.393	.28594
Stddev	.00029	.00096	.00098	.0153	.0946	.00177	.290	.00214
%RSD	9.9470	11.337	1.2842	.24023	2.3374	6.5906	.37011	.74836
#1	.00263	.00958	.07761	6.3586	3.9534	.02860	78.140	.28832
#2	.00299	.00791	.07658	6.3825	4.0443	.02506	78.709	.28419
#3	.00322	.00791	.07564	6.3872	4.1425	.02698	78.329	.28530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	25.068	.00713	.15173	.00678	-.00194	.00054	8.9965
Stddev	.00058	.104	.00038	.00131	.00344	.00137	.00531	.0286
%RSD	55.068	.41293	5.2660	.86550	50.818	70.752	976.81	.31838
#1	.00130	24.949	.00680	.15078	.01021	-.00340	-.00348	9.0111
#2	.00040	25.140	.00754	.15323	.00679	-.00068	-.00144	9.0150
#3	.00149	25.114	.00704	.15117	.00333	-.00174	.00656	8.9635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098627 Acquired: 6/25/2016 20:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	2.4772	.04490	-.00127	.00901	.16031	.00422
Stddev	.00154	.0067	.00796	.00182	.00061	.00117	.00055
%RSD	173.10	.26965	17.717	142.95	6.7328	.72957	12.944
#1	.00142	2.4695	.04447	-.00241	.00911	.16067	.00359
#2	.00210	2.4809	.03717	.00082	.00836	.16126	.00459
#3	-.00085	2.4812	.05306	-.00223	.00956	.15900	.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9465.6	57841.	2995.1
Stddev	68.7	160.	17.6
%RSD	.72586	.27642	.58883
#1	9445.1	57701.	3013.7
#2	9409.5	58015.	2978.6
#3	9542.2	57807.	2993.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:00:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40235**	**10.185**	**.39842**	**.49195**	**1.0203**	**.05034**	**10.153**
Stddev	.00325	.028	.00193	.00194	.0055	.00031	.030
%RSD	.80675	.27855	.48505	.39452	.53912	.62290	.29151
#1	.39985	10.214	.39899	.49235	1.0140	.05068	10.126
#2	.40602	10.183	.40000	.49365	1.0227	.05026	10.185
#3	.40118	10.157	.39627	.48984	1.0242	.05007	10.150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05123**	**.19988**	**.50288**	**.51330**	**4.0070**	**49.596**	**1.0284**
Stddev	.00026	.00047	.00335	.00193	.0033	.230	.0041
%RSD	.51360	.23712	.66679	.37527	.08271	.46359	.40302
#1	.05102	.20030	.50672	.51551	4.0072	49.649	1.0258
#2	.05153	.19997	.50051	.51234	4.0102	49.344	1.0261
#3	.05115	.19937	.50141	.51204	4.0036	49.795	1.0332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.5669**	**.50781**	**1.0249**	**50.362**	**.50842**	**9.9814**	**.50557**
Stddev	.0485	.00742	.0065	.234	.00100	.0181	.00207
%RSD	.50657	1.4609	.62973	.46520	.19680	.18135	.40980
#1	9.6226	.50131	1.0311	50.266	.50877	9.9736	.50596
#2	9.5340	.50622	1.0255	50.191	.50920	10.002	.50742
#3	9.5442	.51589	1.0183	50.629	.50729	9.9685	.50333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:00:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2045**	**.39202**	**5.1444**	**1.0010**	**1.0190**	**1.0190**	**.51206**
Stddev	.0033	.00153	.0072	.0031	.0045	.0084	.00251
%RSD	.27464	.38961	.14055	.30711	.44063	.82168	.49020
#1	1.2010	.39059	5.1361	1.0039	1.0167	1.0152	.51490
#2	1.2047	.39363	5.1492	1.0015	1.0162	1.0132	.51015
#3	1.2076	.39184	5.1479	.99778	1.0242	1.0286	.51112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0223**	**1.0141**	F **2.9929**
Stddev	.0031	.0001	.0241
%RSD	.30006	.01208	.80650
#1	1.0229	1.0141	3.0133
#2	1.0190	1.0142	2.9663
#3	1.0251	1.0139	2.9992
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.2**	**58649.**	**2955.6**
Stddev	2.7	54.	16.9
%RSD	.02842	.09258	.57071
#1	9646.1	58667.	2944.4
#2	9650.3	58588.	2975.0
#3	9651.2	58692.	2947.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:04:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00098**	**-.00081**	**.00091**	**.00315**	**.00292**	**.00009**	**-.03474**	**.00002**
Stddev	.00124	.00864	.00092	.00201	.00133	.00005	.02919	.00008
%RSD	125.96	1064.0	100.48	64.019	45.548	52.705	84.022	417.72
#1	.00043	-.00670	.00067	.00330	.00336	.00005	-.02620	.00002
#2	-.00151	.00910	.00014	.00508	.00142	.00009	-.01077	-.00006
#3	-.00188	-.00483	.00193	.00106	.00397	.00014	-.06724	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00125**	**.00083**	**.02088**	**-.14334**	**.00212**	**-.02955**	**.00114**
Stddev	.00066	.00051	.00122	.01391	.04593	.00105	.09306	.00075
%RSD	1530.9	41.168	147.43	66.595	32.046	49.608	314.87	66.235
#1	.00067	.00069	.00144	.03293	-.09030	.00098	-.05631	.00047
#2	-.00016	.00170	-.00058	.02406	-.17011	.00232	-.10630	.00196
#3	-.00064	.00135	.00162	.00566	-.16960	.00305	.07395	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00323**	**.05080**	**-.00020**	**.00483**	**.00058**	**.00191**	**.00111**	**.03921**
Stddev	.00021	.02575	.00089	.00353	.00235	.00387	.00242	.00153
%RSD	6.4882	50.676	441.28	73.104	406.34	202.21	216.78	3.9059
#1	.00300	.07783	.00045	.00259	-.00201	.00626	-.00135	.03746
#2	.00339	.02657	-.00122	.00300	.00257	.00062	.00121	.03991
#3	.00331	.04802	.00016	.00889	.00117	-.00114	.00348	.04027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:04:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00029	-.00007	-.00513	.00041	-.00001	.00470
Stddev	.00027	.00000	.00626	.00369	.00015	.00012	.00055
%RSD	55.343	1.4693	8856.4	71.949	37.134	916.05	11.589
#1	.00081	.00028	.00338	-.00666	.00031	.00010	.00427
#2	.00033	.00029	-.00730	-.00092	.00059	.00000	.00453
#3	.00034	.00028	.00370	-.00780	.00035	-.00014	.00531
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9506.6	58497.	2929.7
Stddev	22.3	113.	12.0
%RSD	.23433	.19372	.40841
#1	9532.3	58628.	2919.5
#2	9494.8	58435.	2926.6
#3	9492.6	58429.	2942.8

Approved: June 27, 2016

Sample Name: L1606098629 Acquired: 6/25/2016 21:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	1.3154	-.00179	.12516	.05800	.00081	247.18	.00018
Stddev	.00097	.0064	.00105	.00195	.00108	.00003	.31	.00008
%RSD	137.44	.48564	58.530	1.5550	1.8687	3.6829	.12350	43.911
#1	.00160	1.3100	-.00292	.12302	.05810	.00083	246.92	.00018
#2	.00082	1.3224	-.00085	.12682	.05904	.00078	247.52	.00010
#3	-.00032	1.3138	-.00160	.12563	.05687	.00083	247.09	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	.00401	.04528	2.4364	3.9714	.04409	89.669	.34274
Stddev	.00048	.00063	.00072	.0178	.1152	.00255	.458	.00095
%RSD	40.012	15.569	1.5917	.73079	2.9014	5.7752	.51098	.27642
#1	.00152	.00449	.04490	2.4275	3.9851	.04702	90.007	.34368
#2	.00141	.00424	.04612	2.4569	4.0792	.04281	89.852	.34276
#3	.00065	.00331	.04484	2.4248	3.8500	.04243	89.147	.34178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	72.159	.00306	.12842	.00472	-.00245	-.00232	7.1068
Stddev	.00019	.103	.00116	.00307	.00202	.00283	.00582	.0122
%RSD	22.591	.14315	38.091	2.3898	42.715	115.64	250.20	.17182
#1	.00062	72.124	.00297	.12975	.00386	-.00541	-.00257	7.1178
#2	.00090	72.275	.00194	.13059	.00327	-.00216	-.00801	7.1089
#3	.00099	72.077	.00426	.12491	.00702	.00023	.00361	7.0937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098629 Acquired: 6/25/2016 21:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**6.8039**	**.00261**	**-.00311**	**.00203**	**.14656**	**.00713**
Stddev	.00109	.0140	.00201	.00153	.00039	.00030	.00139
%RSD	174.70	.20570	77.238	49.135	18.962	.20399	19.505
#1	.00026	6.7979	.00196	-.00298	.00228	.14634	.00715
#2	-.00024	6.8199	.00487	-.00165	.00159	.14690	.00573
#3	.00185	6.7939	.00100	-.00469	.00223	.14643	.00851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9470.9**	**57988.**	**3007.5**
Stddev	19.0	71.	5.1
%RSD	.20079	.12320	.16890
#1	9472.3	57910.	3001.8
#2	9451.2	58005.	3011.5
#3	9489.2	58049.	3009.1

Approved: June 27, 2016

Sample Name: L1606098631S Acquired: 6/25/2016 21:12:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18827**	**4.8059**	**.19457**	**.97775**	**.51082**	**.02368**	**136.28**	**.02401**
Stddev	.00146	.0060	.00214	.00486	.00158	.00008	.55	.00011
%RSD	.77669	.12402	1.0980	.49690	.30853	.31910	.40245	.44044
#1	.18949	4.8104	.19700	.98276	.50954	.02372	135.66	.02402
#2	.18665	4.7991	.19298	.97305	.51258	.02359	136.67	.02389
#3	.18867	4.8083	.19374	.97744	.51033	.02373	136.53	.02410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09298**	**.23341**	**.25035**	**1.9823**	**26.282**	**.52091**	**38.371**	**.48555**
Stddev	.00063	.00083	.00168	.0210	.198	.00132	.105	.00060
%RSD	.67753	.35580	.67127	1.0601	.75241	.25420	.27268	.12393
#1	.09358	.23411	.25193	1.9586	26.065	.52066	38.253	.48489
#2	.09232	.23249	.25054	1.9895	26.453	.52234	38.408	.48570
#3	.09303	.23364	.24858	1.9987	26.329	.51972	38.452	.48607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49539**	**77.049**	**.23394**	**4.7766**	**.23491**	**.57914**	**.18644**	**6.1257**
Stddev	.00233	.345	.00087	.0076	.00312	.00333	.00623	.0072
%RSD	.47123	.44745	.37273	.15954	1.3288	.57493	3.3395	.11822
#1	.49753	76.664	.23461	4.7848	.23800	.57665	.18760	6.1339
#2	.49574	77.327	.23426	4.7754	.23176	.57786	.17971	6.1201
#3	.49290	77.158	.23296	4.7697	.23495	.58292	.19200	6.1230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098631S Acquired: 6/25/2016 21:12:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47308**	**2.3488**	**.46537**	**.23713**	**.48550**	**.47406**	**.01603**
Stddev	.00180	.0057	.00826	.00130	.00209	.00072	.00324
%RSD	.38025	.24432	1.7741	.54866	.42967	.15151	20.234
#1	.47478	2.3426	.46034	.23744	.48500	.47482	.01233
#2	.47325	2.3539	.46086	.23825	.48371	.47397	.01737
#3	.47120	2.3498	.47490	.23571	.48779	.47340	.01839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9509.0**	**58216.**	**3011.6**
Stddev	7.0	203.	15.7
%RSD	.07407	.34863	.52135
#1	9501.0	58067.	3028.6
#2	9511.6	58447.	2997.6
#3	9514.3	58134.	3008.7

Approved: June 27, 2016

Sample Name: L1606098633SD Acquired: 6/25/2016 21:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19322**	**4.9340**	**.19821**	**1.0094**	**.52302**	**.02438**	**139.13**	**.02459**
Stddev	.00378	.0145	.00351	.0014	.00226	.00009	.67	.00034
%RSD	1.9571	.29336	1.7708	.13572	.43296	.36107	.48341	1.3705
#1	.18918	4.9313	.20201	1.0102	.52283	.02442	139.33	.02427
#2	.19667	4.9211	.19752	1.0078	.52537	.02443	139.68	.02494
#3	.19382	4.9497	.19509	1.0102	.52086	.02428	138.38	.02455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09514**	**.23910**	**.25336**	**2.0284**	**26.984**	**.53592**	**39.198**	**.43704**
Stddev	.00042	.00077	.00150	.0114	.096	.00060	.184	.00451
%RSD	.44105	.32091	.59054	.56072	.35526	.11184	.46916	1.0308
#1	.09541	.23859	.25475	2.0343	27.015	.53581	38.996	.43232
#2	.09535	.23873	.25356	2.0357	27.059	.53539	39.242	.44129
#3	.09465	.23999	.25178	2.0153	26.876	.53657	39.356	.43751
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50931**	**78.441**	**.23759**	**4.8949**	**.24046**	**.58794**	**.19015**	**6.2655**
Stddev	.00186	.336	.00142	.0178	.00324	.00596	.00110	.0092
%RSD	.36520	.42898	.59954	.36432	1.3470	1.0133	.57938	.14668
#1	.51115	78.549	.23885	4.9125	.24157	.58732	.19136	6.2719
#2	.50933	78.710	.23604	4.8953	.23682	.59419	.18990	6.2695
#3	.50743	78.063	.23787	4.8768	.24301	.58232	.18920	6.2549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098633SD Acquired: 6/25/2016 21:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48269**	**2.3976**	**.47749**	**.23961**	**.50144**	**.48370**	**.00655**
Stddev	.00278	.0083	.00742	.00256	.00242	.00154	.00139
%RSD	.57608	.34786	1.5549	1.0679	.48318	.31822	21.270
#1	.48505	2.3997	.47422	.24207	.50191	.48531	.00572
#2	.48340	2.4047	.47226	.23981	.49882	.48355	.00816
#3	.47963	2.3884	.48599	.23696	.50360	.48224	.00577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9541.3**	**57975.**	**3017.9**
Stddev	6.7	58.	25.7
%RSD	.06977	.09979	.85022
#1	9537.4	57946.	3002.1
#2	9549.0	58042.	3004.1
#3	9537.6	57938.	3047.5

Approved: June 27, 2016

Sample Name: L1606098635S Acquired: 6/25/2016 21:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19277	4.9885	.19579	1.3512	.50932	.02402	246.59	.02462
Stddev	.00213	.0073	.00137	.0073	.00284	.00001	1.33	.00040
%RSD	1.1047	.14711	.70076	.54069	.55753	.03190	.53842	1.6295
#1	.19260	4.9802	.19687	1.3428	.50650	.02402	245.12	.02488
#2	.19498	4.9915	.19425	1.3565	.50929	.02401	246.97	.02416
#3	.19074	4.9939	.19626	1.3542	.51218	.02403	247.69	.02483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09311	.23510	.26651	1.9710	30.025	.51865	72.396	.67936
Stddev	.00111	.00066	.00283	.0124	.152	.00282	.624	.00361
%RSD	1.1973	.28134	1.0623	.63080	.50639	.54413	.86161	.53080
#1	.09375	.23474	.26754	1.9611	29.892	.51908	71.843	.67568
#2	.09182	.23470	.26331	1.9669	29.993	.51564	72.272	.67951
#3	.09375	.23586	.26869	1.9849	30.191	.52123	73.072	.68289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49951	91.017	.23206	4.8553	.23760	.58301	.18517	6.5213
Stddev	.00475	.491	.00241	.0437	.00246	.00711	.00329	.0728
%RSD	.95179	.53976	1.0367	.89938	1.0354	1.2190	1.7758	1.1160
#1	.50253	90.509	.23402	4.8765	.23815	.58650	.18639	6.5577
#2	.49403	91.051	.22938	4.8051	.23491	.57483	.18144	6.4375
#3	.50197	91.490	.23278	4.8843	.23974	.58769	.18767	6.5687
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098635S Acquired: 6/25/2016 21:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47340**	**2.1822**	**.45682**	**.23569**	**.48957**	**.47212**	**.00440**
Stddev	.00586	.0116	.00441	.00472	.00317	.00386	.00078
%RSD	1.2388	.53009	.96525	2.0030	.64754	.81664	17.679
#1	.47626	2.1692	.45177	.23827	.48595	.47646	.00457
#2	.46666	2.1856	.45986	.23024	.49090	.46909	.00508
#3	.47729	2.1916	.45885	.23856	.49186	.47080	.00355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9474.0**	**57681.**	**2990.6**
Stddev	86.2	193.	10.0
%RSD	.90991	.33483	.33371
#1	9421.7	57902.	3000.6
#2	9573.5	57545.	2990.5
#3	9426.8	57595.	2980.6

Approved: June 27, 2016

Sample Name: L1606098637SD Acquired: 6/25/2016 21:22:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18854**	**4.9112**	**.19745**	**1.3462**	**.50578**	**.02318**	**246.84**	**.02457**
Stddev	.00237	.0122	.00114	.0020	.00229	.00008	1.01	.00037
%RSD	1.2581	.24857	.57516	.14562	.45291	.33396	.40736	1.5133
#1	.18824	4.9085	.19618	1.3456	.50836	.02311	247.86	.02498
#2	.18633	4.9245	.19780	1.3447	.50496	.02326	245.85	.02445
#3	.19105	4.9006	.19837	1.3484	.50401	.02315	246.80	.02427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09368**	**.23124**	**.24645**	**1.9652**	**29.866**	**.51243**	**71.961**	**.67062**
Stddev	.00032	.00174	.00162	.0103	.162	.00260	.245	.00120
%RSD	.34157	.75435	.65887	.52496	.54204	.50740	.33982	.17871
#1	.09405	.23044	.24793	1.9540	30.010	.51110	72.114	.67080
#2	.09349	.23325	.24471	1.9744	29.691	.51543	71.679	.66935
#3	.09350	.23005	.24671	1.9671	29.897	.51077	72.089	.67172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50362**	**90.574**	**.23429**	**4.8998**	**.23803**	**.58838**	**.19013**	**6.6122**
Stddev	.00184	.311	.00137	.0310	.00392	.00166	.00571	.0196
%RSD	.36548	.34377	.58644	.63360	1.6481	.28131	3.0018	.29638
#1	.50535	90.891	.23522	4.9314	.24008	.58995	.18521	6.6237
#2	.50169	90.269	.23272	4.8693	.24051	.58666	.19639	6.5896
#3	.50382	90.562	.23494	4.8987	.23351	.58854	.18878	6.6233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098637SD Acquired: 6/25/2016 21:22:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47518**	**2.1930**	**.45556**	**.23535**	**.47970**	**.47047**	**.00421**
Stddev	.00224	.0050	.00619	.00164	.00083	.00231	.00126
%RSD	.47229	.22774	1.3595	.69822	.17220	.49043	29.868
#1	.47661	2.1987	.46015	.23423	.48048	.47206	.00301
#2	.47259	2.1891	.45801	.23458	.47883	.46782	.00552
#3	.47634	2.1914	.44851	.23723	.47980	.47152	.00409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9517.7**	**58425.**	**3034.0**
Stddev	30.6	371.	4.3
%RSD	.32191	.63434	.14141
#1	9523.8	58332.	3029.9
#2	9544.8	58110.	3038.5
#3	9484.5	58834.	3033.6

Approved: June 27, 2016

Sample Name: L1606098639 Acquired: 6/25/2016 21:26:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00422**	**.00040**	**.00975**	**.00108**	**.00009**	**.14419**	**-.00005**
Stddev	.00042	.00758	.00073	.00126	.00087	.00008	.01744	.00009
%RSD	1118.0	179.89	181.74	12.897	80.476	90.859	12.096	178.96
#1	.00028	.01060	-.00028	.01106	.00209	.00013	.16280	-.00014
#2	.00012	-.00417	.00116	.00964	.00057	-.00000	.14155	-.00004
#3	-.00051	.00622	.00032	.00856	.00059	.00013	.12822	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00035**	**.00305**	**.04079**	**-.00706**	**.00203**	**-.02733**	**-.00024**
Stddev	.00042	.00030	.00090	.02484	.04162	.00092	.03833	.00264
%RSD	93.882	85.053	29.494	60.907	589.18	45.533	140.24	1117.6
#1	.00013	.00037	.00205	.05000	-.05467	.00295	-.00835	-.00277
#2	.00091	.00004	.00332	.05971	.01106	.00204	-.00220	-.00044
#3	.00028	.00063	.00378	.01266	.02242	.00110	-.07145	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.23384**	**.00002**	**.00301**	**.00223**	**-.00336**	**.00424**	**.10834**
Stddev	.00025	.02078	.00057	.00488	.00185	.00118	.00213	.00216
%RSD	54.203	8.8874	3135.0	161.94	83.035	35.176	50.129	1.9925
#1	.00023	.25768	.00001	-.00120	.00258	-.00441	.00208	.11078
#2	.00073	.22428	.00059	.00188	.00389	-.00208	.00633	.10755
#3	.00043	.21955	-.00055	.00835	.00023	-.00360	.00432	.10668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098639 Acquired: 6/25/2016 21:26:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00188	.00201	-.00117	.00072	.00941	.00130
Stddev	.00073	.00051	.00315	.00081	.00019	.00001	.00060
%RSD	203.49	27.359	156.60	69.426	26.854	.12705	46.035
#1	.00061	.00146	.00564	-.00068	.00081	.00940	.00116
#2	.00093	.00173	.00038	-.00211	.00085	.00941	.00078
#3	-.00047	.00245	.00001	-.00072	.00050	.00942	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9979.7	61621.	3102.9
Stddev	10.2	118.	6.8
%RSD	.10173	.19116	.21926
#1	9983.1	61738.	3101.0
#2	9987.7	61621.	3110.5
#3	9968.3	61503.	3097.3

Approved: June 27, 2016

Sample Name: L1606098641 Acquired: 6/25/2016 21:30:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.00228	-.00074	.00681	.00240	.00007	2.3285	.00015
Stddev	.00195	.00437	.00132	.00259	.00010	.00002	.0225	.00014
%RSD	125.93	191.41	178.17	38.016	4.0011	29.007	.96410	94.650
#1	.00016	.00624	-.00146	.00963	.00251	.00005	2.3542	.00003
#2	.00071	.00302	-.00156	.00453	.00235	.00009	2.3184	.00011
#3	.00378	-.00241	.00078	.00628	.00234	.00008	2.3128	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00014	.00163	.03413	.24665	.00092	.81266	-.00079
Stddev	.00068	.00062	.00075	.01156	.02854	.00423	.01745	.00318
%RSD	1106.1	456.64	45.829	33.860	11.573	458.16	2.1475	404.35
#1	-.00033	.00085	.00092	.03095	.24915	.00580	.81529	.00231
#2	.00085	-.00023	.00241	.02450	.27386	-.00166	.79404	-.00404
#3	-.00034	-.00022	.00156	.04694	.21693	-.00138	.82864	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	1.5234	-.00034	.00759	.00193	-.00110	-.00056	1.9225
Stddev	.00028	.0181	.00053	.00504	.00328	.00190	.00524	.0055
%RSD	316.47	1.1895	155.07	66.429	170.02	173.25	938.70	.28386
#1	-.00021	1.5412	-.00096	.00263	.00004	-.00329	-.00638	1.9218
#2	.00035	1.5240	.00002	.00743	.00571	-.00014	.00092	1.9283
#3	.00013	1.5050	-.00009	.01271	.00003	.00014	.00379	1.9175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098641 Acquired: 6/25/2016 21:30:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.02979**	**.00925**	**-.00425**	**.00079**	**.00575**	**.00161**
Stddev	.00070	.00033	.00260	.00161	.00118	.00006	.00128
%RSD	2613.1	1.1094	28.082	37.920	148.25	1.0430	79.495
#1	-.00014	.02957	.00917	-.00541	.00147	.00579	.00219
#2	.00072	.03017	.01188	-.00492	.00148	.00578	.00014
#3	-.00067	.02963	.00669	-.00241	-.00057	.00568	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9984.0**	**61505.**	**3103.5**
Stddev	25.4	97.	8.6
%RSD	.25425	.15693	.27670
#1	10013.	61422.	3093.7
#2	9966.4	61611.	3106.9
#3	9972.6	61483.	3109.8

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:34:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40382	10.228	.39903	.49252	1.0184	.05057	10.132
Stddev	.00317	.045	.00339	.00303	.0029	.00010	.084
%RSD	.78510	.44126	.84879	.61522	.28786	.20129	.82686
#1	.40329	10.193	.40176	.48985	1.0165	.05045	10.103
#2	.40723	10.279	.39524	.49189	1.0170	.05064	10.066
#3	.40095	10.211	.40009	.49581	1.0218	.05061	10.226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05109	.20032	.50425	.51389	3.9993	49.456	1.0271
Stddev	.00034	.00030	.00243	.00134	.0288	.230	.0087
%RSD	.66912	.15054	.48104	.26170	.72080	.46581	.84751
#1	.05096	.20027	.50150	.51248	3.9697	49.237	1.0193
#2	.05148	.20064	.50519	.51515	4.0273	49.435	1.0365
#3	.05084	.20004	.50607	.51404	4.0011	49.697	1.0255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5965	.50354	1.0171	50.205	.50852	9.9839	.50630
Stddev	.0605	.00125	.0104	.188	.00105	.0190	.00443
%RSD	.63000	.24843	1.0188	.37433	.20655	.18977	.87552
#1	9.5498	.50228	1.0149	50.026	.50872	9.9714	.50177
#2	9.5748	.50478	1.0283	50.189	.50945	10.006	.51063
#3	9.6648	.50354	1.0080	50.400	.50738	9.9747	.50650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:34:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2057**	**.39535**	**5.1622**	**1.0068**	**1.0152**	**1.0163**	**.51868**
Stddev	.0009	.00724	.0066	.0035	.0056	.0047	.00189
%RSD	.07645	1.8317	.12822	.34938	.55282	.46463	.36343
#1	1.2067	.40045	5.1563	1.0056	1.0088	1.0109	.51803
#2	1.2055	.39854	5.1610	1.0107	1.0174	1.0194	.51721
#3	1.2048	.38706	5.1694	1.0040	1.0193	1.0187	.52081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0297**	**1.0108**	F **2.9654**
Stddev	.0010	.0013	.0124
%RSD	.09618	.12981	.41944
#1	1.0297	1.0109	2.9530
#2	1.0307	1.0120	2.9654
#3	1.0287	1.0094	2.9779
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9765.3**	**59222.**	**3028.4**
Stddev	12.6	103.	19.9
%RSD	.12950	.17379	.65564
#1	9777.2	59331.	3048.9
#2	9752.0	59127.	3027.1
#3	9766.5	59207.	3009.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:38:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**-.00056**	**.00159**	**.00238**	**.00173**	**.00014**	**-.05704**	**-.00011**
Stddev	.00089	.00372	.00374	.00230	.00036	.00002	.05178	.00017
%RSD	185.89	660.56	234.30	96.559	20.708	14.400	90.783	156.11
#1	-.00133	.00080	.00118	.00024	.00195	.00012	-.11682	-.00027
#2	-.00055	-.00477	-.00192	.00481	.00132	.00016	-.02846	-.00014
#3	.00045	.00228	.00552	.00209	.00192	.00015	-.02584	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.00048**	**.00001**	**.01554**	**-.08094**	**.00031**	**-.00960**	**.00059**
Stddev	.00009	.00037	.00173	.01679	.11260	.00565	.05873	.00171
%RSD	56.610	77.335	20230.	108.07	139.11	1853.2	611.58	288.38
#1	.00024	.00066	.00194	-.00104	.01136	.00158	-.02063	.00007
#2	.00020	.00072	-.00054	.03254	-.20639	-.00588	.05386	.00251
#3	.00006	.00005	-.00138	.01511	-.04780	.00521	-.06203	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00336**	**.02885**	**-.00050**	**.00712**	**.00213**	**.00602**	**-.00054**	**.04214**
Stddev	.00024	.02974	.00074	.00312	.00180	.00158	.00069	.00013
%RSD	7.0582	103.10	148.29	43.907	84.214	26.247	127.12	.29697
#1	.00323	-.00548	.00008	.00759	.00359	.00782	.00008	.04201
#2	.00321	.04496	-.00024	.00998	.00013	.00485	-.00042	.04226
#3	.00363	.04705	-.00133	.00378	.00268	.00540	-.00129	.04215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:38:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**.00065**	**-.00177**	**-.00021**	**.00113**	**.00005**	**.00375**
Stddev	.00100	.00044	.00221	.00418	.00029	.00020	.00087
%RSD	212.41	68.047	125.42	1958.4	25.944	435.57	23.135
#1	.00160	.00080	.00075	-.00080	.00139	-.00005	.00437
#2	-.00031	.00015	-.00341	-.00407	.00081	.00028	.00276
#3	.00012	.00100	-.00264	.00422	.00119	-.00009	.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9540.4**	**58573.**	**2934.4**
Stddev	6.2	75.	17.1
%RSD	.06498	.12729	.58178
#1	9533.2	58646.	2919.8
#2	9543.3	58575.	2953.2
#3	9544.6	58497.	2930.3

Approved: June 27, 2016

Sample Name: PBW 9A Acquired: 6/25/2016 21:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00614**	**.00175**	**.00056**	**.00231**	**.00012**	**-.04646**	**-.00007**
Stddev	.00171	.00204	.00393	.00252	.00071	.00020	.04124	.00026
%RSD	1283.4	33.141	224.26	449.74	30.683	160.24	88.765	365.50
#1	.00182	.00611	.00626	-.00197	.00237	.00018	-.00258	-.00036
#2	-.00137	.00820	-.00088	.00057	.00157	.00029	-.08442	.00014
#3	-.00085	.00413	-.00013	.00307	.00298	-.00010	-.05240	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00010**	**.00080**	**.02407**	**-.12665**	**.00141**	**-.00997**	**-.00231**
Stddev	.00033	.00034	.00081	.01192	.12266	.00378	.02213	.00072
%RSD	90.436	329.64	101.91	49.545	96.850	267.21	222.01	31.042
#1	-.00000	-.00017	-.00014	.03113	-.25310	.00322	.01487	-.00193
#2	-.00045	.00048	.00118	.03078	-.11869	.00395	-.02759	-.00185
#3	-.00065	-.00000	.00135	.01030	-.00816	-.00293	-.01718	-.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.03613**	**.00006**	**.00672**	**.00326**	**-.00431**	**-.00184**	**.00566**
Stddev	.00007	.03275	.00077	.00152	.00253	.00485	.00591	.00059
%RSD	18.235	90.627	1212.2	22.673	77.664	112.59	322.28	10.478
#1	.00035	.07347	.00060	.00612	.00546	-.00044	-.00125	.00618
#2	.00032	.02263	-.00082	.00846	.00049	-.00975	.00376	.00501
#3	.00045	.01230	.00041	.00559	.00385	-.00274	-.00802	.00578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW 9A Acquired: 6/25/2016 21:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.00033	-.00143	-.00317	.00125	.00161	.00218
Stddev	.00053	.00015	.00130	.00329	.00039	.00011	.00081
%RSD	84.270	46.594	90.758	103.97	30.982	7.0758	37.192
#1	.00094	.00050	-.00075	-.00532	.00080	.00148	.00195
#2	.00002	.00020	-.00062	-.00481	.00145	.00171	.00150
#3	.00092	.00028	-.00293	.00062	.00150	.00162	.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9585.8	59115.	2963.7
Stddev	26.3	98.	6.0
%RSD	.27487	.16506	.20388
#1	9574.9	59148.	2962.9
#2	9615.8	59005.	2958.2
#3	9566.6	59192.	2970.2

Approved: June 27, 2016

Sample Name: LCSW 9A Acquired: 6/25/2016 21:45:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19278**	**4.8645**	**.19357**	**.92620**	**.49567**	**.02388**	**4.9744**	**.02438**
Stddev	.00059	.0150	.00172	.00296	.00123	.00001	.0131	.00027
%RSD	.30529	.30879	.88618	.31973	.24905	.05168	.26315	1.0959
#1	.19266	4.8773	.19194	.92961	.49521	.02387	4.9745	.02469
#2	.19342	4.8480	.19536	.92439	.49707	.02389	4.9613	.02424
#3	.19226	4.8682	.19339	.92458	.49473	.02389	4.9875	.02421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09756**	**.24011**	**.24908**	**1.9287**	**23.845**	**.50347**	**4.7458**	**.24452**
Stddev	.00018	.00063	.00057	.0379	.076	.00304	.1100	.00304
%RSD	.18802	.26044	.22811	1.9678	.32025	.60437	2.3184	1.2446
#1	.09771	.24070	.24970	1.9204	23.902	.50653	4.7834	.24200
#2	.09761	.23946	.24858	1.9701	23.875	.50343	4.6218	.24790
#3	.09735	.24018	.24895	1.8956	23.758	.50044	4.8320	.24367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50361**	**24.550**	**.24652**	**4.6792**	**.24585**	**.57643**	**.18945**	**2.4007**
Stddev	.00079	.045	.00091	.0152	.00374	.00321	.00289	.0038
%RSD	.15600	.18503	.37091	.32489	1.5220	.55613	1.5253	.15739
#1	.50355	24.561	.24748	4.6824	.24789	.57981	.19277	2.4049
#2	.50442	24.588	.24565	4.6926	.24153	.57604	.18748	2.3993
#3	.50285	24.500	.24642	4.6627	.24812	.57343	.18811	2.3978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW 9A Acquired: 6/25/2016 21:45:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48346**	**.50078**	**.49876**	**.24644**	**.49280**	**.48316**	**.01652**
Stddev	.00157	.00182	.00430	.00290	.00093	.00040	.00416
%RSD	.32431	.36335	.86149	1.1750	.18883	.08190	25.157
#1	.48465	.50112	.49719	.24479	.49339	.48270	.01275
#2	.48404	.50241	.49547	.24978	.49173	.48334	.01583
#3	.48168	.49882	.50362	.24474	.49328	.48342	.02097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9876.1**	**60275.**	**3070.8**
Stddev	6.3	180.	12.0
%RSD	.06355	.29822	.39033
#1	9874.5	60221.	3071.7
#2	9883.0	60476.	3058.4
#3	9870.8	60129.	3082.3

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 21:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	-.00126	-.00015	.00486	.00128	.00012	-.00459	.00000
Stddev	.00056	.00100	.00110	.00023	.00095	.00001	.02969	.00020
%RSD	100.53	79.131	736.67	4.6731	74.371	6.7718	646.26	7554.0
#1	.00064	-.00237	-.00130	.00509	.00028	.00012	.02032	.00019
#2	.00106	-.00043	-.00004	.00484	.00217	.00011	-.03745	-.00020
#3	-.00004	-.00099	.00090	.00463	.00139	.00012	.00335	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00026	.00088	.03134	-.11502	-.00026	.03535	-.00044
Stddev	.00018	.00121	.00068	.00659	.05233	.00265	.10514	.00096
%RSD	49.613	468.36	76.871	21.019	45.492	1017.6	297.45	218.87
#1	.00058	.00075	.00159	.02374	-.13830	.00130	-.07629	.00060
#2	.00024	.00114	.00082	.03485	-.15168	.00124	.13249	-.00129
#3	.00028	-.00112	.00024	.03543	-.05510	-.00331	.04985	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.07370	.00132	.00313	.00117	-.00091	.00077	-.00309
Stddev	.00026	.00588	.00035	.00217	.00118	.00090	.00482	.00173
%RSD	45.817	7.9801	26.636	69.209	100.20	98.397	629.48	56.034
#1	.00085	.06695	.00170	.00515	.00095	-.00029	-.00041	-.00378
#2	.00042	.07645	.00125	.00084	.00245	-.00194	-.00336	-.00438
#3	.00040	.07770	.00101	.00340	.00013	-.00050	.00606	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 21:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.00302**	**-.00048**	**-.00333**	**.00002**	**.00245**	**.00132**
Stddev	.00077	.00023	.00928	.00236	.00016	.00009	.00057
%RSD	230.12	7.5634	1914.7	70.982	654.43	3.7966	42.974
#1	.00023	.00325	-.01051	-.00146	-.00016	.00251	.00071
#2	.00115	.00279	.00127	-.00253	.00008	.00234	.00183
#3	-.00038	.00303	.00779	-.00598	.00016	.00250	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9948.0**	**61128.**	**3082.2**
Stddev	8.3	35.	19.2
%RSD	.08376	.05747	.62310
#1	9943.7	61136.	3060.8
#2	9942.7	61089.	3097.9
#3	9957.6	61158.	3087.8

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 21:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00106**	**.32067**	**.00199**	**.03822**	**.08666**	**.00012**	**52.298**	**.00025**
Stddev	.00033	.00225	.00178	.00083	.00065	.00013	.384	.00005
%RSD	31.425	.70249	89.821	2.1841	.74667	104.78	.73398	21.021
#1	.00100	.32316	.00023	.03790	.08700	-.00002	52.414	.00024
#2	.00077	.32010	.00380	.03760	.08707	.00018	51.870	.00021
#3	.00143	.31876	.00193	.03917	.08592	.00021	52.611	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00232**	**.00233**	**.31407**	**.84091**	**.00625**	**16.422**	**.01281**
Stddev	.00025	.00123	.00162	.01381	.09733	.00295	.087	.00086
%RSD	177.99	52.851	69.798	4.3981	11.574	47.203	.53048	6.7172
#1	-.00001	.00331	.00164	.32378	.73706	.00531	16.422	.01228
#2	.00000	.00271	.00116	.32018	.93004	.00389	16.510	.01236
#3	.00043	.00095	.00418	.29826	.85562	.00956	16.336	.01381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**3.5331**	**.00030**	**.18004**	**.00409**	**-.00180**	**.00164**	**8.5479**
Stddev	.00032	.0286	.00045	.00328	.00158	.00258	.00446	.0078
%RSD	137.02	.80985	147.61	1.8192	38.579	143.43	271.62	.09172
#1	-.00011	3.5554	-.00012	.17874	.00498	-.00359	.00673	8.5558
#2	.00052	3.5008	.00077	.17762	.00503	-.00297	-.00020	8.5477
#3	.00028	3.5432	.00026	.18377	.00227	.00116	-.00161	8.5401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 21:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.13816	-.00281	-.00107	.00371	.00875	.00154
Stddev	.00042	.00078	.00681	.00141	.00081	.00007	.00044
%RSD	132.89	.56285	242.62	131.61	21.926	.80395	28.630
#1	-.00012	.13842	.00500	-.00130	.00416	.00881	.00162
#2	.00035	.13728	-.00586	-.00235	.00277	.00878	.00193
#3	.00072	.13877	-.00757	.00044	.00421	.00867	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9876.5	60888.	3069.7
Stddev	11.3	192.	3.6
%RSD	.11437	.31559	.11816
#1	9889.0	60702.	3066.7
#2	9866.9	60874.	3073.8
#3	9873.6	61086.	3068.7

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 21:57:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19226**	**5.2769**	**.19700**	**.97637**	**.57407**	**.02377**	**55.412**	**.02464**
Stddev	.00232	.0172	.00210	.00695	.00123	.00006	.275	.00018
%RSD	1.2075	.32678	1.0663	.71175	.21357	.23547	.49636	.71677
#1	.19492	5.2928	.19484	.98432	.57271	.02383	55.376	.02446
#2	.19066	5.2586	.19711	.97142	.57439	.02373	55.156	.02465
#3	.19119	5.2792	.19903	.97337	.57510	.02375	55.703	.02481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09590**	**.23900**	**.24525**	**2.2503**	**24.873**	**.51320**	**20.375**	**.25171**
Stddev	.00047	.00136	.00161	.0156	.173	.01009	.023	.00267
%RSD	.48644	.56990	.65491	.69491	.69517	1.9665	.11329	1.0594
#1	.09633	.24013	.24639	2.2591	25.016	.52369	20.389	.25241
#2	.09595	.23749	.24595	2.2322	24.681	.50356	20.349	.25396
#3	.09541	.23938	.24342	2.2595	24.921	.51234	20.388	.24877
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50427**	**27.841**	**.24087**	**4.9542**	**.24449**	**.58622**	**.18341**	**11.076**
Stddev	.00227	.102	.00131	.0062	.00416	.00262	.00666	.019
%RSD	.45102	.36806	.54487	.12407	1.6996	.44696	3.6299	.17466
#1	.50494	27.874	.24041	4.9608	.24621	.58442	.18291	11.063
#2	.50614	27.726	.24235	4.9486	.23975	.58502	.19031	11.099
#3	.50174	27.923	.23985	4.9531	.24750	.58923	.17702	11.068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 21:57:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48537**	**.63044**	**.49547**	**.24660**	**.49048**	**.48728**	**.00709**
Stddev	.00041	.00808	.00649	.00259	.00192	.00292	.00024
%RSD	.08494	1.2823	1.3100	1.0500	.39154	.59943	3.4352
#1	.48528	.63362	.48907	.24492	.49247	.49009	.00732
#2	.48501	.63645	.50205	.24958	.48864	.48426	.00711
#3	.48582	.62125	.49531	.24529	.49034	.48750	.00684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9767.2**	**59939.**	**3081.9**
Stddev	8.4	151.	2.2
%RSD	.08617	.25130	.07156
#1	9776.8	59826.	3083.9
#2	9761.1	60110.	3082.2
#3	9763.8	59880.	3079.5

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:01:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19422**	**6.5547**	**.19616**	**.97909**	**.58447**	**.02412**	**57.272**	**.02449**
Stddev	.00043	.0174	.00206	.00320	.00356	.00008	.255	.00025
%RSD	.22056	.26500	1.0502	.32643	.60985	.31860	.44461	1.0216
#1	.19468	6.5722	.19401	.98024	.58211	.02413	57.018	.02471
#2	.19383	6.5546	.19811	.97548	.58857	.02404	57.527	.02422
#3	.19415	6.5375	.19636	.98156	.58273	.02419	57.272	.02454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09680**	**.24221**	**.24688**	**3.2519**	**25.085**	**.51256**	**21.272**	**.29044**
Stddev	.00024	.00084	.00160	.0305	.123	.00182	.123	.00255
%RSD	.25204	.34673	.64632	.93681	.48984	.35468	.57596	.87927
#1	.09682	.24178	.24538	3.2175	24.965	.51125	21.131	.28769
#2	.09704	.24318	.24856	3.2756	25.081	.51179	21.342	.29274
#3	.09655	.24168	.24672	3.2624	25.210	.51464	21.344	.29089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50646**	**28.018**	**.24386**	**4.9818**	**.24358**	**.58240**	**.18769**	**13.764**
Stddev	.00076	.167	.00147	.0053	.00228	.00382	.00425	.008
%RSD	.15029	.59670	.60238	.10534	.93711	.65545	2.2629	.06131
#1	.50691	27.825	.24251	4.9763	.24111	.57903	.18298	13.756
#2	.50690	28.112	.24543	4.9823	.24561	.58163	.18886	13.772
#3	.50558	28.117	.24364	4.9868	.24402	.58655	.19123	13.765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:01:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48752**	**.63979**	**.50344**	**.24632**	**.49636**	**.48329**	**.00682**
Stddev	.00123	.00383	.00416	.00077	.00180	.00044	.00097
%RSD	.25232	.59818	.82653	.31336	.36344	.09176	14.263
#1	.48785	.63646	.50591	.24591	.49538	.48373	.00713
#2	.48616	.64397	.49864	.24584	.49525	.48329	.00761
#3	.48856	.63895	.50578	.24721	.49844	.48284	.00573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9745.6**	**59867.**	**3081.8**
Stddev	9.9	91.	26.0
%RSD	.10194	.15198	.84468
#1	9734.5	59851.	3110.8
#2	9753.6	59965.	3060.5
#3	9748.6	59785.	3074.0

Approved: June 27, 2016

Sample Name: L1606078701 Acquired: 6/25/2016 22:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	-.00089	-.00017	.00563	.00151	.00011	.08615	.00015
Stddev	.00234	.00167	.00131	.00160	.00060	.00001	.02054	.00021
%RSD	113.42	187.14	751.31	28.470	39.897	9.3705	23.846	140.35
#1	.00316	-.00269	.00118	.00529	.00196	.00012	.07852	-.00008
#2	-.00062	-.00061	-.00144	.00737	.00083	.00010	.07052	.00033
#3	.00364	.00062	-.00027	.00422	.00173	.00012	.10942	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00093	.00322	.06115	.01246	.00241	.02800	.00003
Stddev	.00003	.00076	.00095	.00519	.08806	.00216	.01589	.00083
%RSD	20.822	82.163	29.586	8.4819	706.92	89.891	56.731	2625.4
#1	.00011	.00029	.00408	.06573	-.03307	.00026	.04634	-.00085
#2	.00017	.00177	.00219	.05552	.11396	.00458	.01831	.00015
#3	.00013	.00071	.00338	.06220	-.04352	.00238	.01936	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.44862	.00009	.00157	.00319	-.00012	.00644	.10535
Stddev	.00015	.01169	.00041	.00200	.00252	.00436	.00247	.00160
%RSD	36.378	2.6064	429.23	127.80	78.785	3632.8	38.299	1.5199
#1	.00041	.45408	.00056	-.00069	.00238	-.00321	.00918	.10450
#2	.00025	.45659	-.00021	.00226	.00118	.00487	.00438	.10720
#3	.00054	.43520	-.00006	.00313	.00602	-.00202	.00577	.10436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701 Acquired: 6/25/2016 22:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.00134	.00464	-.00236	.00126	.00852	.00204
Stddev	.00023	.00031	.01117	.00170	.00022	.00013	.00133
%RSD	19.939	23.344	240.52	72.025	17.171	1.4749	64.993
#1	.00100	.00168	-.00728	-.00407	.00147	.00841	.00183
#2	.00140	.00106	.01487	-.00232	.00127	.00866	.00083
#3	.00102	.00128	.00634	-.00068	.00104	.00851	.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9978.6	61725.	3108.7
Stddev	25.8	52.	12.8
%RSD	.25894	.08436	.41157
#1	9949.5	61751.	3109.2
#2	9998.7	61759.	3121.3
#3	9987.8	61665.	3095.7

Approved: June 27, 2016

Sample Name: L1606078701PS Acquired: 6/25/2016 22:08:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19562**	**4.8670**	**.19417**	**.93274**	**.49617**	**.02396**	**5.0466**	**.02449**
Stddev	.00101	.0014	.00206	.00077	.00126	.00015	.0443	.00024
%RSD	.51610	.02767	1.0615	.08264	.25431	.60837	.87718	.96002
#1	.19561	4.8655	.19531	.93216	.49577	.02379	5.0119	.02471
#2	.19461	4.8672	.19179	.93245	.49515	.02407	5.0964	.02451
#3	.19663	4.8682	.19541	.93362	.49758	.02401	5.0313	.02424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09815**	**.24178**	**.25186**	**1.9475**	**23.902**	**.50912**	**4.6690**	**.24615**
Stddev	.00038	.00032	.00085	.0476	.079	.00280	.1745	.00176
%RSD	.38848	.13325	.33570	2.4417	.33116	.54926	3.7379	.71493
#1	.09847	.24215	.25095	2.0020	23.984	.51180	4.5199	.24606
#2	.09825	.24158	.25263	1.9144	23.825	.50622	4.6262	.24443
#3	.09773	.24160	.25200	1.9261	23.897	.50934	4.8609	.24795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50547**	**24.979**	**.24871**	**4.7191**	**.25003**	**.58513**	**.18331**	**2.5397**
Stddev	.00148	.047	.00145	.0045	.00153	.00133	.00963	.0085
%RSD	.29370	.18695	.58415	.09482	.61173	.22744	5.2541	.33396
#1	.50679	24.962	.24995	4.7237	.24937	.58423	.17385	2.5470
#2	.50576	24.943	.24906	4.7186	.24895	.58665	.18298	2.5417
#3	.50387	25.032	.24711	4.7148	.25178	.58449	.19310	2.5304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701PS Acquired: 6/25/2016 22:08:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48806**	**.50437**	**.49939**	**.24983**	**.48939**	**.48880**	**.00250**
Stddev	.00273	.00349	.00591	.00248	.00296	.00032	.00045
%RSD	.55970	.69122	1.1836	.99157	.60527	.06447	18.096
#1	.48918	.50154	.50066	.25202	.49256	.48872	.00242
#2	.49005	.50331	.49295	.25032	.48893	.48914	.00298
#3	.48494	.50827	.50457	.24714	.48669	.48853	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9876.1**	**60662.**	**3087.6**
Stddev	12.0	38.	4.3
%RSD	.12163	.06253	.13975
#1	9869.1	60619.	3083.6
#2	9869.3	60677.	3092.2
#3	9890.0	60690.	3087.1

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00226**	**-.00962**	**.00257**	**.00372**	**.00008**	**.00010**	**-.05467**	**-.00005**
Stddev	.00390	.01062	.00091	.00131	.00131	.00006	.03854	.00004
%RSD	172.35	110.37	35.549	35.155	1747.1	57.750	70.491	84.699
#1	.00675	-.01272	.00350	.00225	-.00089	.00014	-.04307	-.00000
#2	.00027	-.01835	.00254	.00475	.00157	.00012	-.09767	-.00007
#3	-.00023	.00220	.00167	.00417	-.00046	.00003	-.02326	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00076**	**.00146**	**.02792**	**-.10756**	**-.00176**	**-.01577**	**.00085**
Stddev	.00022	.00111	.00071	.01781	.06853	.00352	.01010	.00145
%RSD	144.06	146.16	48.411	63.806	63.714	199.76	64.076	169.31
#1	.00010	.00182	.00216	.04804	-.06727	-.00153	-.01532	-.00005
#2	-.00026	-.00038	.00146	.01416	-.18668	.00163	-.02609	.00009
#3	-.00029	.00083	.00075	.02156	-.06871	-.00539	-.00589	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.12025**	**-.00037**	**.00742**	**.00388**	**-.00036**	**.00693**	**.02501**
Stddev	.00028	.02622	.00009	.00699	.00334	.00491	.00079	.00132
%RSD	80.313	21.803	23.237	94.157	86.143	1346.9	11.341	5.2920
#1	.00057	.14797	-.00041	.00450	.00651	.00107	.00746	.02626
#2	.00045	.09585	-.00027	.01539	.00501	-.00584	.00603	.02362
#3	.00003	.11693	-.00042	.00237	.00012	.00367	.00731	.02515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00027	.00391	-.00239	.00091	.00198	.00117
Stddev	.00062	.00058	.00259	.00083	.00057	.00021	.00105
%RSD	170.80	217.03	66.210	34.804	62.977	10.839	89.133
#1	.00032	-.00015	.00203	-.00335	.00041	.00217	.00108
#2	-.00024	.00003	.00686	-.00188	.00153	.00175	.00018
#3	.00100	.00093	.00284	-.00194	.00079	.00202	.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10481.	64804.	3221.0
Stddev	25.	98.	4.2
%RSD	.23393	.15113	.13029
#1	10501.	64916.	3225.8
#2	10489.	64737.	3219.2
#3	10454.	64758.	3217.9

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:16:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**-.01671**	**.00066**	**.00174**	**.00117**	**.00007**	**-.03873**	**-.00006**
Stddev	.00055	.00595	.00077	.00373	.00047	.00003	.02526	.00023
%RSD	110.50	35.627	115.52	214.66	39.929	36.665	65.224	418.10
#1	.00087	-.01063	-.00016	.00037	.00065	.00010	-.06018	.00018
#2	-.00014	-.02253	.00136	-.00111	.00156	.00005	-.01089	-.00029
#3	.00077	-.01699	.00080	.00596	.00129	.00006	-.04513	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**-.00027**	**.00015**	**.01537**	**-.08473**	**-.00313**	**-.04452**	**.00037**
Stddev	.00041	.00031	.00072	.00667	.12317	.00148	.02793	.00217
%RSD	208.97	115.52	489.41	43.427	145.37	47.326	62.733	580.66
#1	.00051	-.00025	-.00010	.01465	-.11440	-.00155	-.01300	-.00212
#2	-.00027	-.00059	-.00042	.02238	.05057	-.00335	-.06618	.00176
#3	.00035	.00003	.00096	.00908	-.19035	-.00448	-.05440	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00052**	**.04068**	**-.00002**	**.00630**	**.00223**	**-.00439**	**.00789**	**.00775**
Stddev	.00014	.01560	.00098	.00605	.00105	.00119	.00333	.00034
%RSD	26.596	38.347	4828.5	96.010	47.199	27.128	42.126	4.3419
#1	-.00068	.05533	-.00110	-.00065	.00121	-.00319	.01093	.00736
#2	-.00042	.02428	.00080	.00920	.00218	-.00557	.00434	.00794
#3	-.00046	.04243	.00023	.01036	.00331	-.00443	.00841	.00794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:16:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.00049**	**.00611**	**-.00169**	**-.00019**	**.00076**	**.00104**
Stddev	.00047	.00028	.00364	.00121	.00086	.00008	.00084
%RSD	59.598	55.989	59.553	71.357	443.84	10.636	80.846
#1	-.00025	.00020	.00285	-.00078	-.00105	.00067	.00138
#2	-.00100	.00075	.00545	-.00306	-.00021	.00078	.00165
#3	-.00110	.00052	.01004	-.00123	.00067	.00082	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10473.**	**64343.**	**3185.8**
Stddev	11.	88.	33.4
%RSD	.10369	.13736	1.0486
#1	10479.	64432.	3210.0
#2	10479.	64255.	3199.9
#3	10461.	64342.	3147.7

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:20:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39676**	**10.011**	**.39200**	**.48774**	**1.0072**	**.04931**	**9.9627**
Stddev	.00166	.042	.00060	.00247	.0020	.00016	.0336
%RSD	.41961	.41526	.15324	.50705	.19487	.32345	.33737
#1	.39852	10.036	.39268	.48499	1.0052	.04934	9.9285
#2	.39656	10.035	.39180	.48843	1.0074	.04945	9.9639
#3	.39521	9.9633	.39153	.48979	1.0091	.04914	9.9956
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05046**	**.19748**	**.49159**	**.50549**	**3.9250**	**48.860**	**1.0117**
Stddev	.00033	.00063	.00167	.00263	.0491	.051	.0023
%RSD	.66275	.32062	.34000	.52017	1.2522	.10387	.22425
#1	.05068	.19812	.49231	.50540	3.8948	48.907	1.0140
#2	.05064	.19745	.49279	.50817	3.9817	48.806	1.0118
#3	.05008	.19686	.48968	.50291	3.8986	48.867	1.0095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.4449**	**.49486**	**1.0080**	**49.891**	**.50156**	**9.8436**	**.50078**
Stddev	.0163	.00095	.0079	.070	.00172	.0350	.00128
%RSD	.17297	.19183	.78730	.13958	.34250	.35531	.25500
#1	9.4275	.49541	1.0170	49.848	.50286	9.8791	.50070
#2	9.4600	.49376	1.0019	49.971	.50221	9.8426	.49954
#3	9.4471	.49540	1.0052	49.853	.49961	9.8092	.50209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:20:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1892**	**.38968**	**5.0794**	**.99180**	**1.0052**	**1.0145**	**.50829**
Stddev	.0070	.00637	.0139	.00335	.0009	.0065	.00390
%RSD	.58775	1.6349	.27365	.33789	.09319	.64413	.76634
#1	1.1970	.39094	5.0928	.99452	1.0044	1.0072	.50887
#2	1.1869	.38277	5.0804	.99283	1.0062	1.0197	.51187
#3	1.1836	.39532	5.0651	.98805	1.0048	1.0166	.50414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0022**	**.99700**	F **2.9158**
Stddev	.0042	.00301	.0038
%RSD	.42153	.30191	.13010
#1	1.0066	.99806	2.9128
#2	1.0017	.99934	2.9201
#3	.99824	.99361	2.9145
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9930.6**	**60612.**	**3086.3**
Stddev	10.1	73.	9.8
%RSD	.10207	.12111	.31687
#1	9941.9	60647.	3097.4
#2	9922.1	60528.	3082.4
#3	9927.9	60661.	3079.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:23:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00100**	**-.00695**	**.00023**	**.00246**	**.00203**	**.00014**	**-.01220**	**.00014**
Stddev	.00181	.00287	.00117	.00195	.00133	.00002	.03027	.00029
%RSD	181.13	41.303	500.29	79.096	65.555	16.180	248.16	212.80
#1	-.00109	-.00504	-.00098	.00360	.00305	.00017	-.03745	.00025
#2	.00205	-.00555	.00136	.00021	.00053	.00014	.02136	-.00019
#3	.00203	-.01025	.00032	.00357	.00251	.00013	-.02050	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.00000**	**.00097**	**.02954**	**-.02965**	**-.00129**	**.00088**	**.00163**
Stddev	.00011	.00082	.00136	.00883	.01713	.00234	.03199	.00271
%RSD	74.595	562770.	140.78	29.900	57.784	181.57	3634.1	165.69
#1	.00008	.00083	.00213	.03726	-.04191	-.00397	.03754	.00233
#2	.00008	-.00001	.00130	.01991	-.03697	-.00018	-.01355	.00393
#3	.00027	-.00081	-.00053	.03145	-.01007	.00029	-.02135	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00354**	**.01474**	**-.00023**	**.00359**	**.00237**	**.00219**	**.00418**	**.03627**
Stddev	.00058	.04847	.00031	.00245	.00060	.00526	.00484	.00058
%RSD	16.314	328.86	136.11	68.357	25.126	240.59	115.86	1.6055
#1	.00288	-.00030	-.00040	.00322	.00284	.00365	.00822	.03616
#2	.00384	.06894	.00013	.00134	.00170	.00656	.00551	.03575
#3	.00391	-.02443	-.00042	.00620	.00257	-.00365	-.00119	.03690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:23:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00039**	**.00181**	**-.00370**	**.00020**	**.00004**	**.00435**
Stddev	.00110	.00025	.00867	.00085	.00051	.00012	.00191
%RSD	689.85	64.301	479.78	22.978	253.56	271.57	43.946
#1	-.00106	.00012	.00915	-.00439	-.00031	.00014	.00375
#2	.00108	.00042	.00404	-.00397	.00020	.00008	.00281
#3	.00046	.00061	-.00776	-.00275	.00071	-.00009	.00649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9799.0**	**60424.**	**3020.0**
Stddev	11.5	135.	11.0
%RSD	.11760	.22419	.36496
#1	9789.9	60445.	3025.5
#2	9795.1	60547.	3027.2
#3	9812.0	60279.	3007.3

Approved: June 27, 2016

Sample Name: L1606078710 Acquired: 6/25/2016 22:27:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.22720	.00214	.03806	.08552	.00012	52.208	.00022
Stddev	.00078	.00436	.00063	.00014	.00079	.00005	.232	.00016
%RSD	450.39	1.9170	29.562	.37345	.92041	43.173	.44436	71.173
#1	.00025	.22486	.00206	.03796	.08534	.00008	52.380	.00034
#2	.00030	.22452	.00280	.03822	.08638	.00018	52.301	.00028
#3	-.00108	.23223	.00155	.03799	.08484	.00010	51.944	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00186	.00266	.23670	.85794	.00848	16.196	.00759
Stddev	.00014	.00018	.00107	.03451	.05555	.00209	.053	.00200
%RSD	849.17	9.9559	40.055	14.580	6.4743	24.705	.32764	26.366
#1	-.00011	.00187	.00273	.22408	.80379	.01054	16.251	.00990
#2	.00017	.00167	.00156	.27574	.91479	.00636	16.192	.00643
#3	-.00001	.00204	.00369	.21027	.85526	.00853	16.145	.00644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	3.4758	.00069	.17816	.00790	-.00197	-.00080	8.3609
Stddev	.00043	.0348	.00145	.00114	.00265	.00100	.00335	.0283
%RSD	39.553	1.0002	208.84	.63768	33.519	50.807	416.39	.33868
#1	.00115	3.5101	.00211	.17685	.00777	-.00150	.00187	8.3874
#2	.00149	3.4766	.00076	.17877	.00531	-.00312	.00028	8.3643
#3	.00063	3.4406	-.00079	.17886	.01060	-.00129	-.00456	8.3311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078710 Acquired: 6/25/2016 22:27:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.13692	-.00198	-.00343	.00351	.00457	.00538
Stddev	.00037	.00076	.00399	.00152	.00135	.00005	.00158
%RSD	34.945	.55142	201.79	44.378	38.390	1.0573	29.298
#1	.00117	.13773	-.00276	-.00427	.00288	.00452	.00538
#2	.00136	.13624	.00235	-.00167	.00505	.00462	.00381
#3	.00065	.13680	-.00552	-.00433	.00259	.00458	.00696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9837.0	60854.	3075.5
Stddev	21.0	87.	13.2
%RSD	.21328	.14286	.42972
#1	9813.4	60881.	3070.1
#2	9853.7	60757.	3065.8
#3	9843.8	60924.	3090.5

Approved: June 27, 2016

Sample Name: L1606078718 Acquired: 6/25/2016 22:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	1.2702	.00086	.07193	.15344	.00016	53.535	.00010
Stddev	.00088	.0133	.00129	.00289	.00068	.00006	.315	.00014
%RSD	504.87	1.0437	151.37	4.0242	.44552	39.145	.58814	143.56
#1	.00078	1.2717	-.00017	.07191	.15299	.00023	53.705	-.00002
#2	-.00096	1.2563	.00043	.07484	.15310	.00014	53.172	.00025
#3	-.00034	1.2827	.00231	.06905	.15423	.00011	53.729	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.00320	.00404	1.3343	1.2661	.00990	20.655	.10718
Stddev	.00038	.00017	.00073	.0192	.0597	.00249	.173	.00269
%RSD	40.455	5.3029	17.991	1.4379	4.7192	25.172	.83716	2.5057
#1	.00050	.00331	.00423	1.3126	1.1986	.01278	20.828	.10559
#2	.00122	.00328	.00465	1.3416	1.2875	.00842	20.482	.11029
#3	.00107	.00300	.00324	1.3489	1.3123	.00851	20.655	.10568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00197	9.5571	.00271	.15727	.00713	-.00001	-.00213	9.2004
Stddev	.00025	.0745	.00060	.00312	.00099	.00396	.00180	.0136
%RSD	12.754	.77965	22.028	1.9854	13.840	44119.	84.428	.14793
#1	.00222	9.6099	.00232	.16018	.00745	-.00238	-.00366	9.2098
#2	.00198	9.4719	.00242	.15397	.00602	-.00222	-.00015	9.2066
#3	.00172	9.5895	.00340	.15765	.00792	.00457	-.00260	9.1848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078718 Acquired: 6/25/2016 22:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.21832**	**.00935**	**-.00138**	**.00550**	**.00807**	**.00587**
Stddev	.00077	.00070	.00368	.00189	.00037	.00008	.00139
%RSD	1050.3	.31961	39.319	137.43	6.8010	.96236	23.773
#1	.00067	.21839	.00655	-.00216	.00508	.00811	.00494
#2	-.00003	.21758	.00798	.00078	.00561	.00812	.00519
#3	-.00086	.21897	.01351	-.00275	.00580	.00798	.00747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9846.3**	**60728.**	**3091.9**
Stddev	3.6	208.	32.5
%RSD	.03671	.34247	1.0518
#1	9850.4	60702.	3069.6
#2	9844.9	60535.	3129.2
#3	9843.6	60948.	3076.8

Approved: June 27, 2016

Sample Name: L1606078719 Acquired: 6/25/2016 22:35:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	-.00125	.00081	-.00052	.00163	.00015	.05700	.00032
Stddev	.00275	.01314	.00222	.00254	.00035	.00003	.05177	.00012
%RSD	1222.4	1048.7	273.08	489.15	21.203	21.890	90.827	38.965
#1	-.00200	-.00415	-.00134	.00209	.00158	.00017	.05365	.00040
#2	.00294	.01310	.00068	-.00066	.00200	.00012	.00698	.00018
#3	-.00162	-.01271	.00310	-.00298	.00131	.00018	.11035	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00052	.00450	.02391	-.05991	-.00020	.04697	-.00036
Stddev	.00016	.00162	.00035	.01615	.07304	.00309	.12538	.00213
%RSD	276.80	313.97	7.6965	67.537	121.91	1526.0	266.94	591.72
#1	.00015	.00207	.00475	.04225	-.11673	.00336	-.03849	-.00282
#2	-.00012	.00065	.00464	.01187	-.08546	-.00225	-.01151	.00086
#3	.00015	-.00117	.00410	.01759	.02247	-.00171	.19090	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.25593	-.00012	.00090	.00315	-.00362	.00327	.05573
Stddev	.00023	.02584	.00048	.00460	.00186	.00138	.00112	.00365
%RSD	74.483	10.098	393.31	510.33	59.051	38.233	34.210	6.5471
#1	.00052	.27908	.00017	.00590	.00100	-.00516	.00452	.05848
#2	.00007	.22805	.00014	-.00005	.00421	-.00248	.00234	.05711
#3	.00032	.26066	-.00068	-.00315	.00425	-.00323	.00296	.05159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078719 Acquired: 6/25/2016 22:35:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00207	-.00026	-.00547	.00052	.00525	.00241
Stddev	.00027	.00008	.00293	.00052	.00032	.00008	.00097
%RSD	27.115	4.0421	1136.5	9.5358	61.869	1.5786	40.264
#1	.00096	.00217	-.00025	-.00546	.00057	.00519	.00232
#2	.00073	.00203	-.00319	-.00495	.00081	.00521	.00342
#3	.00126	.00203	.00267	-.00599	.00017	.00534	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9914.0	61492.	3065.3
Stddev	9.7	119.	10.3
%RSD	.09735	.19352	.33672
#1	9905.1	61523.	3061.5
#2	9924.3	61360.	3057.3
#3	9912.7	61592.	3076.9

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 22:39:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.01725	.00020	.00148	.00412	.00007	2.5193	.00009
Stddev	.00160	.00300	.00146	.00122	.00055	.00007	.0273	.00025
%RSD	256.33	17.406	733.70	82.744	13.249	105.70	1.0828	269.34
#1	-.00115	.01430	.00189	.00205	.00368	.00003	2.5430	-.00015
#2	.00106	.02030	-.00065	.00007	.00396	.00002	2.4895	.00008
#3	.00197	.01716	-.00064	.00231	.00474	.00015	2.5253	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00087	.00073	.04349	.03288	.00266	.76988	-.00075
Stddev	.00037	.00063	.00114	.01165	.16835	.00415	.07900	.00106
%RSD	107.35	72.316	156.53	26.779	512.03	155.84	10.261	141.15
#1	.00070	.00029	.00142	.03927	-.06801	.00606	.83027	.00043
#2	-.00004	.00153	.00135	.03454	-.06058	.00390	.79891	-.00163
#3	.00039	.00078	-.00059	.05665	.22723	-.00196	.68048	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.20336	.00039	.01881	.00195	-.00218	-.00099	.41497
Stddev	.00052	.02965	.00044	.00286	.00086	.00256	.00440	.00248
%RSD	323.08	14.579	115.44	15.203	44.305	117.44	445.87	.59653
#1	-.00058	.19785	-.00012	.01994	.00207	-.00390	.00409	.41320
#2	.00043	.23538	.00054	.02093	.00103	-.00339	-.00379	.41391
#3	-.00033	.17686	.00073	.01556	.00275	.00076	-.00326	.41779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 22:39:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00684**	**.01005**	**.00002**	**.00088**	**.00094**	**.00070**
Stddev	.00032	.00012	.00959	.00200	.00079	.00012	.00147
%RSD	375.67	1.7762	95.434	11093.	88.946	12.687	210.40
#1	.00028	.00687	.01212	-.00222	.00129	.00101	.00212
#2	.00025	.00693	-.00041	.00064	.00138	.00101	.00079
#3	-.00028	.00670	.01844	.00163	-.00002	.00080	-.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10438.**	**64428.**	**3210.2**
Stddev	16.	116.	22.5
%RSD	.15594	.18047	.70191
#1	10456.	64522.	3184.5
#2	10433.	64464.	3226.3
#3	10424.	64298.	3219.8

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 22:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00901	.25091	.00908	.04716	.02857	.00129	2.7206	.00112
Stddev	.00226	.00893	.00272	.00090	.00098	.00003	.0190	.00018
%RSD	25.135	3.5576	29.953	1.9149	3.4212	2.0076	.69811	15.952
#1	.00654	.24156	.01090	.04731	.02948	.00128	2.7394	.00096
#2	.00949	.25183	.00595	.04798	.02754	.00132	2.7210	.00131
#3	.01099	.25934	.01039	.04620	.02870	.00128	2.7014	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00484	.01138	.01241	.12881	1.1056	.02562	.95895	.01155
Stddev	.00047	.00095	.00054	.02178	.0733	.00325	.08330	.00186
%RSD	9.6843	8.3365	4.3248	16.912	6.6280	12.671	8.6861	16.074
#1	.00430	.01246	.01288	.12748	1.1086	.02193	.86824	.01328
#2	.00510	.01069	.01253	.10772	1.1774	.02802	1.0320	.00959
#3	.00513	.01099	.01183	.15123	1.0309	.02692	.97661	.01179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02077	1.4247	.01204	.24038	.01720	.02493	.01091	.53474
Stddev	.00067	.0371	.00126	.00484	.00256	.00194	.00301	.00121
%RSD	3.2317	2.6069	10.481	2.0127	14.893	7.7710	27.534	.22565
#1	.02144	1.3934	.01127	.24412	.01465	.02673	.00768	.53472
#2	.02075	1.4149	.01350	.23492	.01719	.02518	.01362	.53595
#3	.02010	1.4657	.01136	.24211	.01977	.02288	.01143	.53354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 22:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02007**	**.03079**	**.02489**	**.01057**	**.02372**	**.02477**	**.00180**
Stddev	.00062	.00022	.00917	.00037	.00088	.00015	.00112
%RSD	3.0692	.70951	36.838	3.4629	3.6971	.59147	62.402
#1	.02076	.03087	.02809	.01029	.02425	.02492	.00062
#2	.01959	.03097	.01455	.01045	.02271	.02462	.00193
#3	.01984	.03055	.03204	.01098	.02420	.02478	.00285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10426.**	**64070.**	**3185.9**
Stddev	11.	72.	10.0
%RSD	.10672	.11272	.31382
#1	10417.	64076.	3184.7
#2	10423.	64138.	3176.5
#3	10439.	63994.	3196.4

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:47:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00985	.31033	.01141	.04692	.02793	.00122	2.7514	.00123
Stddev	.00217	.01120	.00035	.00183	.00030	.00009	.0322	.00017
%RSD	21.999	3.6078	3.0998	3.8902	1.0783	7.5455	1.1711	13.538
#1	.00744	.30133	.01139	.04489	.02771	.00131	2.7147	.00104
#2	.01165	.32286	.01106	.04746	.02780	.00124	2.7644	.00130
#3	.01046	.30678	.01177	.04842	.02827	.00112	2.7751	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00442	.01187	.01326	.16770	1.1233	.02635	1.0271	.01377
Stddev	.00036	.00059	.00082	.01226	.1089	.00034	.0701	.00235
%RSD	8.1823	4.9929	6.1530	7.3088	9.6965	1.2889	6.8269	17.054
#1	.00413	.01121	.01277	.16233	1.0153	.02615	1.0429	.01385
#2	.00482	.01235	.01421	.15905	1.2332	.02617	1.0881	.01607
#3	.00430	.01207	.01281	.18173	1.1215	.02675	.95049	.01138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02146	1.3700	.01235	.24640	.01637	.02615	.01276	.67342
Stddev	.00028	.0367	.00082	.00464	.00030	.00374	.00186	.00470
%RSD	1.2904	2.6782	6.6457	1.8816	1.8039	14.304	14.555	.69838
#1	.02172	1.3476	.01220	.24696	.01603	.02416	.01223	.67004
#2	.02148	1.3500	.01162	.25073	.01656	.02383	.01483	.67143
#3	.02117	1.4123	.01324	.24151	.01651	.03046	.01123	.67879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:47:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02141**	**.03084**	**.02074**	**.01089**	**.02357**	**.02510**	**.00112**
Stddev	.00030	.00031	.00329	.00303	.00061	.00018	.00144
%RSD	1.3990	1.0105	15.854	27.843	2.5684	.72342	128.59
#1	.02165	.03055	.02352	.00739	.02416	.02497	-.00034
#2	.02107	.03117	.01711	.01260	.02359	.02501	.00117
#3	.02151	.03078	.02157	.01268	.02295	.02530	.00254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10421.**	**63887.**	**3174.5**
Stddev	13.	153.	11.8
%RSD	.12017	.23969	.37110
#1	10421.	64063.	3186.8
#2	10434.	63786.	3163.4
#3	10409.	63811.	3173.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:51:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39829	10.014	.39328	.48763	1.0098	.04913	9.9981
Stddev	.00170	.014	.00352	.00156	.0114	.00024	.0222
%RSD	.42599	.13477	.89524	.31896	1.1283	.49183	.22224
#1	.39634	10.025	.39615	.48872	1.0228	.04926	10.024
#2	.39905	9.9992	.38935	.48585	1.0049	.04885	9.9823
#3	.39946	10.019	.39433	.48833	1.0016	.04927	9.9886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05040	.19854	.49076	.50671	3.9457	49.325	1.0128
Stddev	.00023	.00052	.00245	.00059	.0608	.368	.0109
%RSD	.45580	.25959	.49941	.11597	1.5404	.74655	1.0755
#1	.05026	.19800	.48916	.50736	4.0058	49.743	1.0249
#2	.05027	.19858	.48954	.50622	3.9470	49.185	1.0101
#3	.05066	.19903	.49358	.50654	3.8842	49.047	1.0036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.4894	.49712	1.0151	50.056	.50217	9.8694	.50095
Stddev	.2168	.00232	.0035	.479	.00145	.0113	.00387
%RSD	2.2847	.46695	.34803	.95643	.28811	.11418	.77216
#1	9.7395	.49968	1.0186	50.588	.50383	9.8565	.50471
#2	9.3739	.49655	1.0152	49.919	.50140	9.8745	.49698
#3	9.3548	.49515	1.0115	49.660	.50126	9.8772	.50116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:51:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1957**	**.39554**	**5.0959**	**.99417**	**1.0077**	**1.0177**	**.50994**
Stddev	.0055	.00372	.0051	.00169	.0107	.0101	.00264
%RSD	.46066	.94108	.09932	.17029	1.0641	.98980	.51770
#1	1.1919	.39655	5.0908	.99223	1.0196	1.0259	.51299
#2	1.2020	.39866	5.0958	.99500	1.0048	1.0064	.50861
#3	1.1932	.39142	5.1010	.99530	.99871	1.0207	.50824
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99906**	**1.0000**	F **2.9202**
Stddev	.00128	.0004	.0305
%RSD	.12818	.03891	1.0450
#1	1.0005	1.0005	2.9552
#2	.99795	.99972	2.9065
#3	.99877	.99993	2.8990
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9918.3**	**60256.**	**3072.6**
Stddev	6.2	156.	34.9
%RSD	.06223	.25822	1.1374
#1	9919.7	60085.	3032.6
#2	9923.7	60388.	3088.2
#3	9911.6	60295.	3097.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:54:51 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00017**	**.00165**	**.00199**	**.00201**	**.00011**	**-.05290**	**-.00006**
Stddev	.00211	.00653	.00321	.00079	.00009	.00008	.03288	.00016
%RSD	1282.1	3936.0	193.87	39.670	4.4194	70.107	62.164	240.48
#1	-.00117	.00347	.00046	.00135	.00191	.00015	-.05612	-.00004
#2	.00226	-.00735	.00528	.00288	.00202	.00015	-.08405	.00008
#3	-.00158	.00438	-.00078	.00176	.00209	.00002	-.01852	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00100**	**.00120**	**.03069**	**-.03948**	**.00003**	**-.00536**	**.00015**
Stddev	.00013	.00044	.00061	.00550	.07927	.00292	.09167	.00308
%RSD	995.60	43.627	50.884	17.919	200.80	8764.3	1709.0	2010.9
#1	-.00014	.00145	.00060	.03538	.05200	-.00061	-.10767	.00091
#2	.00000	.00096	.00116	.03205	-.08238	-.00251	.06932	.00278
#3	.00011	.00058	.00182	.02464	-.08805	.00322	.02226	-.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00351**	**.02455**	**-.00057**	**.00388**	**.00014**	**.00562**	**.00087**	**.03540**
Stddev	.00076	.01905	.00055	.00530	.00438	.00343	.00632	.00172
%RSD	21.717	77.584	95.045	136.67	3025.0	61.032	726.47	4.8534
#1	.00266	.03539	-.00120	-.00182	.00487	.00872	.00338	.03589
#2	.00374	.03571	-.00017	.00867	-.00067	.00193	.00554	.03683
#3	.00413	.00256	-.00036	.00480	-.00377	.00622	-.00632	.03349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:54:51 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00099**	**.00045**	**.00606**	**-.00120**	**.00030**	**-.00008**	**.00363**
Stddev	.00065	.00027	.00156	.00179	.00040	.00006	.00038
%RSD	65.956	60.056	25.746	148.69	132.31	80.432	10.554
#1	.00115	.00019	.00786	-.00316	.00076	-.00006	.00364
#2	.00155	.00073	.00529	-.00079	.00014	-.00015	.00325
#3	.00027	.00044	.00504	.00034	.00001	-.00003	.00401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9678.8**	**59649.**	**2985.7**
Stddev	6.9	105.	9.5
%RSD	.07084	.17603	.31957
#1	9671.2	59575.	2994.0
#2	9681.0	59769.	2975.3
#3	9684.3	59604.	2987.7

Approved: June 27, 2016

Sample Name: PBW LJ Acquired: 6/25/2016 22:58:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**-.00592**	**.00193**	**-.00086**	**.00070**	**.00018**	**-.07344**	**-.00023**
Stddev	.00178	.00410	.00330	.00167	.00093	.00007	.04096	.00010
%RSD	307.62	69.294	170.45	194.42	133.02	36.643	55.774	43.143
#1	-.00092	-.00625	.00300	-.00003	-.00002	.00015	-.02635	-.00025
#2	-.00217	-.00166	.00456	.00023	.00174	.00026	-.10082	-.00033
#3	.00135	-.00985	-.00176	-.00279	.00036	.00013	-.09313	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00069**	**.00074**	**.03692**	**-.07694**	**.00146**	**.06376**	**.00092**
Stddev	.00002	.00038	.00020	.01230	.06836	.00025	.04368	.00067
%RSD	10.723	54.599	26.935	33.312	88.851	16.877	68.506	72.982
#1	-.00017	.00098	.00051	.02894	-.09438	.00132	.11194	.00086
#2	-.00017	.00026	.00082	.03073	-.13489	.00174	.05264	.00161
#3	-.00014	.00084	.00088	.05108	-.00155	.00131	.02672	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.03492**	**.00034**	**.00729**	**.00159**	**-.00194**	**.00113**	**.00052**
Stddev	.00031	.01196	.00046	.00336	.00147	.00263	.00402	.00268
%RSD	159.07	34.258	134.06	46.125	92.547	135.75	357.58	520.37
#1	.00038	.02883	.00039	.00624	.00208	.00024	-.00125	.00071
#2	.00036	.04870	-.00014	.00458	.00275	-.00120	-.00114	.00309
#3	-.00016	.02722	.00078	.01105	-.00006	-.00487	.00577	-.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW LJ Acquired: 6/25/2016 22:58:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00008**	**.00508**	**-.00273**	**.00114**	**.00044**	**.00066**
Stddev	.00164	.00051	.01008	.00394	.00109	.00015	.00112
%RSD	14590.	648.58	198.46	144.23	96.326	34.462	168.97
#1	.00174	.00051	.01609	.00176	.00157	.00053	.00180
#2	-.00150	-.00033	-.00371	-.00561	-.00011	.00026	-.00044
#3	-.00028	-.00041	.00287	-.00433	.00195	.00052	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10135.**	**62589.**	**3095.8**
Stddev	24.	186.	5.7
%RSD	.23247	.29671	.18319
#1	10143.	62746.	3101.4
#2	10152.	62637.	3095.9
#3	10108.	62384.	3090.1

Approved: June 27, 2016

Sample Name: LCSW LJ Acquired: 6/25/2016 23:02:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19432**	**4.8961**	**.19607**	**.95390**	**.50477**	**.02378**	**5.0869**	**.02467**
Stddev	.00176	.0169	.00036	.00515	.00157	.00015	.0469	.00006
%RSD	.90778	.34589	.18422	.54033	.31152	.61673	.92299	.23915
#1	.19242	4.8827	.19640	.95171	.50641	.02365	5.1361	.02462
#2	.19591	4.9152	.19569	.95978	.50463	.02394	5.0425	.02466
#3	.19461	4.8905	.19612	.95020	.50328	.02375	5.0822	.02474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09889**	**.24063**	**.25385**	**1.9878**	**24.436**	**.51652**	**4.7044**	**.24710**
Stddev	.00023	.00063	.00116	.0095	.067	.00203	.0278	.00275
%RSD	.23212	.26116	.45751	.47691	.27355	.39333	.59179	1.1124
#1	.09867	.24099	.25369	1.9863	24.386	.51588	4.7289	.24429
#2	.09913	.24100	.25509	1.9791	24.512	.51880	4.6741	.24978
#3	.09888	.23991	.25278	1.9979	24.411	.51489	4.7100	.24724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51030**	**25.148**	**.24989**	**4.7689**	**.24945**	**.59139**	**.18766**	**2.4779**
Stddev	.00067	.056	.00070	.0091	.00347	.00400	.01211	.0014
%RSD	.13092	.22440	.27941	.19073	1.3920	.67662	6.4536	.05441
#1	.50970	25.212	.24981	4.7624	.25341	.58680	.17389	2.4770
#2	.51102	25.108	.25063	4.7793	.24803	.59411	.19668	2.4795
#3	.51019	25.124	.24924	4.7649	.24691	.59326	.19239	2.4773
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW LJ Acquired: 6/25/2016 23:02:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49047**	**.51082**	**.50961**	**.24925**	**.49196**	**.48864**	**.01928**
Stddev	.00103	.00205	.00391	.00102	.00174	.00019	.00329
%RSD	.20978	.40119	.76774	.40835	.35306	.03834	17.088
#1	.49156	.51042	.51051	.24964	.49257	.48859	.01592
#2	.49032	.50900	.50533	.25000	.49331	.48848	.01940
#3	.48952	.51304	.51300	.24809	.49000	.48885	.02251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9771.5**	**60209.**	**3050.2**
Stddev	3.0	103.	25.9
%RSD	.03108	.17103	.84982
#1	9769.0	60280.	3044.5
#2	9774.9	60091.	3027.6
#3	9770.6	60258.	3078.5

Approved: June 27, 2016

Sample Name: L1606076404 Acquired: 6/25/2016 23:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.02745	.00034	.00861	.00996	.00009	36.605	.00012
Stddev	.00060	.00628	.00209	.00113	.00041	.00005	.105	.00023
%RSD	119.14	22.865	609.72	13.086	4.1637	53.570	.28645	187.24
#1	.00015	.03394	.00014	.00762	.01044	.00014	36.606	.00007
#2	.00016	.02699	-.00164	.00984	.00971	.00010	36.500	.00038
#3	.00120	.02142	.00253	.00837	.00974	.00004	36.710	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.01147	.00175	.46715	4.7234	.00625	13.388	.09951
Stddev	.00015	.00054	.00191	.01948	.0341	.00248	.058	.00203
%RSD	171.91	4.6728	109.26	4.1703	.72246	39.751	.43505	2.0444
#1	.00001	.01158	-.00043	.45694	4.6849	.00912	13.373	.10058
#2	-.00027	.01194	.00254	.48961	4.7498	.00477	13.339	.09716
#3	-.00001	.01088	.00314	.45489	4.7356	.00486	13.453	.10078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	34.643	.00396	.03562	.00752	.00339	.00429	4.0453
Stddev	.00028	.078	.00076	.00870	.00150	.00394	.00341	.0166
%RSD	23.933	.22458	19.114	24.436	19.891	116.11	79.423	.40956
#1	.00087	34.732	.00311	.02910	.00894	.00791	.00692	4.0642
#2	.00131	34.587	.00454	.03225	.00766	.00162	.00551	4.0386
#3	.00140	34.610	.00424	.04550	.00596	.00065	.00044	4.0331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076404 Acquired: 6/25/2016 23:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.19364	.00117	-.00333	.00101	.00286	.00160
Stddev	.00025	.00044	.00456	.00363	.00019	.00020	.00097
%RSD	28.325	.22814	391.45	108.96	18.806	7.1675	60.613
#1	.00083	.19387	-.00007	-.00660	.00107	.00306	.00048
#2	.00116	.19313	.00622	-.00396	.00116	.00265	.00224
#3	.00066	.19392	-.00265	.00057	.00080	.00286	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9727.8	59976.	3053.1
Stddev	23.9	148.	4.4
%RSD	.24547	.24636	.14325
#1	9700.3	60146.	3049.4
#2	9741.5	59877.	3057.9
#3	9741.8	59905.	3052.0

Approved: June 27, 2016

Sample Name: L1606076405S Acquired: 6/25/2016 23:10:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19582**	**4.9527**	**.19879**	**.95673**	**.51438**	**.02432**	**42.805**	**.02505**
Stddev	.00335	.0137	.00128	.00425	.00065	.00003	.112	.00030
%RSD	1.7110	.27715	.64557	.44412	.12542	.14170	.26049	1.1988
#1	.19856	4.9529	.19764	.95186	.51480	.02435	42.707	.02530
#2	.19683	4.9664	.19856	.95967	.51471	.02433	42.926	.02513
#3	.19208	4.9389	.20017	.95866	.51364	.02429	42.781	.02472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09757**	**.25598**	**.24917**	**2.4354**	**29.536**	**.52338**	**18.805**	**.34995**
Stddev	.00078	.00042	.00127	.0181	.040	.00393	.025	.00506
%RSD	.79936	.16278	.51136	.74393	.13605	.74997	.13071	1.4469
#1	.09813	.25630	.25060	2.4222	29.582	.51885	18.805	.34467
#2	.09790	.25551	.24817	2.4278	29.516	.52547	18.830	.35476
#3	.09668	.25612	.24874	2.4560	29.509	.52582	18.780	.35044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51541**	**61.224**	**.25128**	**4.8968**	**.24942**	**.59855**	**.19087**	**6.6449**
Stddev	.00129	.228	.00073	.0088	.00234	.00299	.00293	.0075
%RSD	.25084	.37164	.28907	.17909	.93699	.50010	1.5365	.11257
#1	.51663	61.311	.25055	4.9006	.24863	.59583	.18976	6.6461
#2	.51554	61.394	.25129	4.9031	.24758	.60176	.19420	6.6517
#3	.51406	60.965	.25200	4.8868	.25205	.59805	.18866	6.6369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076405S Acquired: 6/25/2016 23:10:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49233**	**.70070**	**.50542**	**.24860**	**.50000**	**.48511**	**.00505**
Stddev	.00086	.00402	.00572	.00107	.00163	.00066	.00072
%RSD	.17371	.57387	1.1319	.43103	.32683	.13619	14.263
#1	.49184	.70101	.51171	.24742	.49924	.48572	.00441
#2	.49332	.70456	.50403	.24884	.49889	.48521	.00491
#3	.49184	.69653	.50053	.24953	.50188	.48441	.00583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9652.6**	**59187.**	**3022.5**
Stddev	17.6	118.	14.2
%RSD	.18215	.19875	.46825
#1	9645.4	59224.	3018.6
#2	9639.7	59281.	3010.7
#3	9672.6	59055.	3038.2

Approved: June 27, 2016

Sample Name: L1606076406SD Acquired: 6/25/2016 23:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19161**	**4.9186**	**.19913**	**.95429**	**.51211**	**.02396**	**42.977**	**.02467**
Stddev	.00161	.0125	.00343	.00448	.00436	.00009	.276	.00017
%RSD	.83957	.25322	1.7203	.46971	.85098	.36242	.64279	.68812
#1	.19148	4.9258	.19753	.95898	.51664	.02396	43.237	.02475
#2	.19328	4.9042	.19680	.95004	.51174	.02387	43.008	.02479
#3	.19007	4.9258	.20306	.95385	.50794	.02404	42.687	.02448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09706**	**.25178**	**.24789**	**2.4233**	**29.585**	**.51807**	**18.712**	**.35011**
Stddev	.00057	.00068	.00034	.0356	.112	.00327	.182	.00396
%RSD	.58951	.26961	.13796	1.4688	.37990	.63166	.97051	1.1325
#1	.09772	.25103	.24806	2.4608	29.711	.51534	18.898	.35283
#2	.09684	.25235	.24811	2.4189	29.497	.52170	18.704	.34556
#3	.09664	.25196	.24749	2.3900	29.545	.51719	18.535	.35193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51262**	**61.425**	**.24874**	**4.8787**	**.24757**	**.59558**	**.18865**	**6.6917**
Stddev	.00159	.310	.00133	.0141	.00184	.00348	.00465	.0131
%RSD	.30991	.50524	.53301	.28958	.74220	.58390	2.4654	.19574
#1	.51304	61.773	.24994	4.8746	.24617	.59720	.19309	6.6816
#2	.51396	61.322	.24897	4.8944	.24965	.59795	.18905	6.7065
#3	.51087	61.178	.24732	4.8670	.24689	.59159	.18381	6.6870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076406SD Acquired: 6/25/2016 23:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48585	.69992	.50428	.08491	.49039	.49499	.00464
Stddev	.00076	.00443	.00835	.00108	.00225	.00372	.00157
%RSD	.15628	.63319	1.6562	1.2751	.45854	.75207	33.818
#1	.48649	.70500	.51389	.08368	.49168	.49197	.00317
#2	.48606	.69789	.49873	.08571	.48779	.49386	.00446
#3	.48501	.69687	.50023	.08535	.49169	.49915	.00630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9674.4	59675.	3057.4
Stddev	5.6	128.	11.6
%RSD	.05826	.21445	.38044
#1	9670.2	59575.	3048.3
#2	9680.8	59819.	3053.4
#3	9672.1	59630.	3070.5

Approved: June 27, 2016

Sample Name: L1606099102 Acquired: 6/25/2016 23:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.08527	.00559	.04109	.01538	.00019	.57467	.00159
Stddev	.00233	.00869	.00189	.00114	.00133	.00004	.01094	.00013
%RSD	663.84	10.192	33.720	2.7694	8.6207	22.830	1.9043	7.9131
#1	.00210	.09496	.00628	.04240	.01605	.00016	.56261	.00167
#2	-.00061	.08272	.00346	.04040	.01386	.00017	.57746	.00145
#3	-.00255	.07815	.00704	.04046	.01624	.00024	.58395	.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.05412	.00582	.38755	1.2527	.00289	.47003	.00071
Stddev	.00015	.00024	.00026	.01093	.0635	.00116	.03189	.00162
%RSD	15.476	.43524	4.4250	2.8204	5.0656	40.155	6.7852	226.02
#1	.00113	.05437	.00590	.40001	1.1922	.00164	.49884	-.00098
#2	.00091	.05406	.00602	.38303	1.3188	.00308	.43576	.00089
#3	.00085	.05391	.00553	.37960	1.2473	.00394	.47550	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00360	218.01	.00389	.36041	.01046	-.00372	.00482	1.3728
Stddev	.00017	.12	.00068	.00488	.00162	.00083	.00193	.0038
%RSD	4.7149	.05666	17.447	1.3551	15.457	22.416	40.114	.27490
#1	.00375	218.03	.00311	.35572	.01225	-.00460	.00284	1.3685
#2	.00365	218.13	.00423	.36547	.01003	-.00293	.00492	1.3754
#3	.00341	217.88	.00434	.36004	.00911	-.00364	.00670	1.3745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102 Acquired: 6/25/2016 23:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00632**	**.09765**	**.07700**	**-.00067**	**.01524**	**.07845**	**.01879**
Stddev	.00056	.00044	.00219	.00203	.00068	.00014	.00089
%RSD	8.9139	.45291	2.8381	300.30	4.4598	.18118	4.7496
#1	.00609	.09718	.07562	.00166	.01602	.07833	.01918
#2	.00590	.09770	.07952	-.00172	.01485	.07841	.01777
#3	.00696	.09806	.07586	-.00197	.01484	.07861	.01943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10241.**	**62264.**	**3185.5**
Stddev	15.	196.	4.7
%RSD	.14516	.31405	.14616
#1	10253.	62395.	3189.9
#2	10245.	62357.	3185.8
#3	10224.	62039.	3180.6

Approved: June 27, 2016

Sample Name: L1606099102PS Acquired: 6/25/2016 23:21:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG573952-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20426**	**5.2585**	**.21569**	**1.0545**	**.53374**	**.02552**	**5.8510**	**.02789**
Stddev	.00128	.0258	.00476	.0057	.01070	.00022	.0799	.00005
%RSD	.62816	.49053	2.2048	.54061	2.0041	.85107	1.3656	.17945
#1	.20288	5.2399	.21984	1.0489	.54587	.02533	5.9343	.02786
#2	.20446	5.2478	.21673	1.0543	.52973	.02547	5.7750	.02786
#3	.20543	5.2880	.21050	1.0603	.52563	.02576	5.8438	.02795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10258**	**.30280**	**.26705**	**2.4069**	**27.035**	**.52853**	**5.3059**	**.25725**
Stddev	.00041	.00101	.00181	.0614	.546	.00889	.1709	.00709
%RSD	.40425	.33448	.67841	2.5526	2.0183	1.6821	3.2205	2.7577
#1	.10253	.30184	.26742	2.4708	27.658	.53822	5.4655	.26479
#2	.10301	.30272	.26864	2.4018	26.642	.52076	5.1256	.25071
#3	.10219	.30386	.26508	2.3482	26.805	.52661	5.3266	.25626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52291**	**252.79**	**.26034**	**5.5827**	**.26863**	**.62508**	**.20920**	**4.0596**
Stddev	.00363	5.13	.00069	.0240	.00232	.00165	.00657	.0117
%RSD	.69330	2.0298	.26564	.43012	.86233	.26363	3.1385	.28905
#1	.52662	258.69	.26066	5.6009	.26650	.62318	.21182	4.0655
#2	.52272	250.27	.26082	5.5917	.26829	.62599	.21406	4.0673
#3	.51938	249.40	.25955	5.5555	.27109	.62608	.20173	4.0461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102PS Acquired: 6/25/2016 23:21:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG573952-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51599**	**.62613**	**.61043**	**.25381**	**.52664**	**.60277**	**.02286**
Stddev	.00198	.01306	.01573	.00527	.00286	.00158	.00057
%RSD	.38295	2.0851	2.5770	2.0756	.54391	.26285	2.4777
#1	.51752	.64119	.62824	.25887	.52456	.60412	.02234
#2	.51668	.61903	.59844	.25420	.52545	.60318	.02277
#3	.51376	.61815	.60462	.24835	.52991	.60103	.02347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9624.7**	**58159.**	**2980.0**
Stddev	48.4	89.	45.7
%RSD	.50312	.15320	1.5350
#1	9582.5	58170.	2928.1
#2	9614.0	58242.	2997.3
#3	9677.6	58064.	3014.5

Approved: June 27, 2016

Sample Name: L1606099102SDL Acquired: 6/25/2016 23:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG573952-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.01283	.00236	.01119	.00550	.00018	.08026	.00026
Stddev	.00047	.00301	.00204	.00193	.00071	.00008	.03574	.00006
%RSD	40.405	23.474	86.372	17.221	12.910	46.045	44.534	24.105
#1	.00083	.01247	.00021	.01333	.00520	.00027	.04235	.00026
#2	.00098	.01601	.00261	.01064	.00630	.00011	.11335	.00020
#3	.00172	.01002	.00427	.00960	.00498	.00015	.08510	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.01258	.00098	.10105	.18990	-.00151	.06238	.00028
Stddev	.00006	.00091	.00048	.00767	.08103	.00626	.02555	.00271
%RSD	25.732	7.2135	49.236	7.5891	42.670	413.92	40.953	970.07
#1	.00026	.01275	.00118	.09700	.21903	.00544	.04558	.00279
#2	.00015	.01339	.00043	.10990	.09833	-.00328	.04979	.00064
#3	.00024	.01160	.00132	.09626	.25235	-.00669	.09179	-.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00205	47.703	.00017	.08239	.00525	-.00365	.00219	.31315
Stddev	.00019	.192	.00051	.00485	.00385	.00400	.00870	.00335
%RSD	9.3003	.40144	294.11	5.8889	73.348	109.43	397.40	1.0688
#1	.00183	47.834	.00076	.07694	.00083	-.00754	.00399	.31041
#2	.00217	47.483	-.00009	.08400	.00786	-.00387	-.00727	.31216
#3	.00215	47.792	-.00015	.08624	.00708	.00045	.00985	.31688
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102SDL Acquired: 6/25/2016 23:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG573952-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00128**	**.02176**	**.02063**	**.00132**	**.00408**	**.01800**	**.00415**
Stddev	.00053	.00039	.00638	.00109	.00052	.00037	.00045
%RSD	41.627	1.7773	30.936	82.221	12.786	2.0724	10.786
#1	.00158	.02176	.02171	.00142	.00446	.01762	.00425
#2	.00067	.02138	.02640	.00236	.00348	.01802	.00454
#3	.00160	.02215	.01377	.00019	.00429	.01836	.00366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9804.5**	**59680.**	**2983.6**
Stddev	22.5	103.	15.3
%RSD	.22901	.17203	.51306
#1	9824.1	59682.	2991.0
#2	9809.6	59782.	2993.9
#3	9780.0	59577.	2966.0

Approved: June 27, 2016

Sample Name: L1606099501 Acquired: 6/25/2016 23:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00231	.00190	.02254	.12371	.00015	15.528	-.00008
Stddev	.00014	.00712	.00142	.00137	.00163	.00003	.200	.00022
%RSD	16.093	308.09	74.696	6.0976	1.3212	21.126	1.2862	282.14
#1	.00100	.01032	.00271	.02232	.12196	.00014	15.307	.00002
#2	.00072	-.00013	.00272	.02129	.12520	.00012	15.695	.00008
#3	.00085	-.00326	.00026	.02401	.12396	.00018	15.583	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00027	.00136	.08102	.36083	.08036	1.7207	.01281
Stddev	.00017	.00026	.00081	.01723	.08162	.00488	.0426	.00381
%RSD	55.449	94.239	59.356	21.269	22.620	6.0696	2.4776	29.711
#1	.00018	.00004	.00043	.07010	.45158	.07724	1.7124	.01021
#2	.00026	.00024	.00186	.07209	.29342	.07785	1.6828	.01718
#3	.00051	.00055	.00179	.10089	.33750	.08598	1.7669	.01103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	40.169	.00020	.00739	.00147	-.00261	.00048	.01475
Stddev	.00007	.358	.00037	.00186	.00129	.00197	.00359	.00082
%RSD	116.52	.89035	187.93	25.143	87.719	75.441	741.63	5.5637
#1	.00010	39.803	.00022	.00902	.00206	-.00263	-.00044	.01382
#2	.00008	40.518	.00056	.00537	.00236	-.00063	-.00256	.01539
#3	-.00002	40.186	-.00019	.00779	-.00001	-.00456	.00445	.01503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099501 Acquired: 6/25/2016 23:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	2.0444	.00152	-.00059	-.00017	.00315	.00110
Stddev	.00034	.0207	.00598	.00278	.00059	.00019	.00107
%RSD	58.480	1.0109	393.49	469.74	343.26	6.1207	97.322
#1	.00020	2.0228	.00742	-.00167	.00024	.00305	.00162
#2	.00070	2.0639	.00167	-.00267	-.00085	.00303	-.00013
#3	.00086	2.0465	-.00453	.00256	.00009	.00337	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9773.4	59741.	3000.7
Stddev	10.5	113.	31.9
%RSD	.10719	.18996	1.0628
#1	9785.4	59856.	3037.0
#2	9766.5	59737.	2977.2
#3	9768.1	59629.	2987.9

Approved: June 27, 2016

Sample Name: L1606099502 Acquired: 6/25/2016 23:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00479	-.00049	.02240	.12357	.00014	15.278	-.00007
Stddev	.00142	.00423	.00253	.00505	.00148	.00006	.144	.00014
%RSD	22192.	88.307	518.91	22.533	1.1984	44.965	.94397	206.25
#1	.00014	-.00965	-.00218	.02478	.12272	.00011	15.115	-.00014
#2	.00133	-.00281	-.00170	.02581	.12271	.00021	15.329	.00010
#3	-.00149	-.00191	.00242	.01660	.12528	.00010	15.390	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00065	.00042	.06837	.37746	.07803	1.6184	.01419
Stddev	.00041	.00112	.00027	.00656	.03147	.00401	.0513	.00310
%RSD	83.614	171.25	62.991	9.6001	8.3371	5.1380	3.1674	21.849
#1	.00050	-.00064	.00063	.07323	.35510	.08210	1.6690	.01383
#2	.00090	.00123	.00012	.06091	.36384	.07791	1.6197	.01745
#3	.00007	.00137	.00052	.07098	.41345	.07408	1.5665	.01128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	39.920	-.00037	.00510	.00199	-.00064	.00335	.01167
Stddev	.00036	.366	.00054	.01025	.00130	.00317	.00244	.00126
%RSD	102.18	.91613	144.37	200.85	65.670	494.36	72.931	10.832
#1	-.00077	39.520	-.00039	.00961	.00071	-.00417	.00384	.01302
#2	-.00018	40.239	-.00090	.01233	.00193	.00029	.00550	.01150
#3	-.00011	40.000	.00017	-.00663	.00331	.00196	.00070	.01051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099502 Acquired: 6/25/2016 23:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**2.0217**	**-.00337**	**-.00055**	**.00074**	**.00315**	**.00087**
Stddev	.00116	.0191	.00559	.00170	.00084	.00020	.00103
%RSD	210.74	.94683	165.64	307.06	114.28	6.4714	118.16
#1	-.00142	2.0010	.00194	-.00241	.00129	.00330	.00185
#2	.00077	2.0388	-.00920	-.00018	-.00023	.00292	.00097
#3	-.00100	2.0253	-.00287	.00093	.00117	.00324	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9730.5**	**59619.**	**2989.3**
Stddev	18.2	229.	29.6
%RSD	.18733	.38360	.99126
#1	9750.6	59882.	3021.9
#2	9715.1	59468.	2964.1
#3	9725.8	59506.	2981.9

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:36:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40930**	**10.238**	**.40819**	**.50228**	**1.0459**	**.04973**	**10.404**
Stddev	.00043	.021	.00043	.00341	.0044	.00005	.020
%RSD	.10460	.20815	.10461	.67892	.41689	.09834	.19571
#1	.40883	10.251	.40851	.50622	1.0496	.04974	10.381
#2	.40944	10.250	.40771	.50027	1.0411	.04968	10.418
#3	.40965	10.214	.40835	.50036	1.0470	.04978	10.414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05210**	**.20379**	**.49816**	**.52303**	**4.0622**	**51.067**	**1.0469**
Stddev	.00019	.00042	.00279	.00142	.0372	.160	.0078
%RSD	.35747	.20724	.56062	.27079	.91500	.31299	.74725
#1	.05231	.20342	.50024	.52229	4.1047	51.143	1.0555
#2	.05194	.20371	.49926	.52467	4.0462	50.883	1.0402
#3	.05207	.20425	.49499	.52215	4.0357	51.175	1.0449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7214**	**.51746**	**1.0407**	**52.052**	**.51652**	**10.202**	**.51928**
Stddev	.0660	.00152	.0096	.278	.00085	.015	.00145
%RSD	.67863	.29343	.92144	.53407	.16386	.14443	.27838
#1	9.7320	.51900	1.0479	52.343	.51582	10.200	.51894
#2	9.7814	.51597	1.0444	51.789	.51627	10.218	.52086
#3	9.6508	.51742	1.0298	52.022	.51746	10.189	.51803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:36:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2277**	**.40544**	**5.2555**	**1.0220**	**1.0464**	**1.0514**	**.52265**
Stddev	.0051	.00303	.0032	.0024	.0054	.0078	.00372
%RSD	.41461	.74796	.06070	.23053	.51974	.73901	.71099
#1	1.2332	.40616	5.2590	1.0221	1.0521	1.0443	.52536
#2	1.2232	.40805	5.2526	1.0196	1.0413	1.0597	.52418
#3	1.2265	.40211	5.2550	1.0243	1.0458	1.0502	.51841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0117**	**1.0320**	F **2.9933**
Stddev	.0025	.0009	.0109
%RSD	.24458	.08681	.36389
#1	1.0144	1.0330	3.0053
#2	1.0111	1.0312	2.9841
#3	1.0096	1.0318	2.9905
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9691.0**	**59432.**	**3012.0**
Stddev	5.1	44.	12.8
%RSD	.05245	.07397	.42554
#1	9696.2	59404.	2998.2
#2	9686.1	59410.	3023.6
#3	9690.7	59483.	3014.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:40:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00145**	**-.00660**	**-.00143**	**.00292**	**.00177**	**.00016**	**-.01784**	**.00008**
Stddev	.00180	.00657	.00282	.00130	.00082	.00003	.03649	.00007
%RSD	124.44	99.487	197.72	44.383	46.493	20.281	204.59	79.919
#1	.00061	-.01208	-.00468	.00217	.00185	.00015	-.05680	.00016
#2	-.00276	-.00840	.00028	.00442	.00255	.00019	-.01224	.00005
#3	-.00219	.00068	.00012	.00218	.00091	.00013	.01553	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00038**	**.00052**	**.02154**	**-.09198**	**-.00110**	**-.01322**	**.00018**
Stddev	.00024	.00088	.00138	.01483	.10535	.00141	.06861	.00246
%RSD	523.34	234.01	265.29	68.833	114.54	127.62	519.13	1371.8
#1	-.00015	.00090	-.00012	.01936	.02327	-.00076	.06137	-.00117
#2	-.00022	-.00064	-.00042	.03733	-.18333	-.00265	-.02738	.00302
#3	.00023	.00086	.00210	.00792	-.11589	.00010	-.07365	-.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00348**	**.04821**	**.00016**	**.00585**	**.00443**	**.00314**	**.00156**	**.03553**
Stddev	.00065	.02773	.00095	.00367	.00371	.00275	.00114	.00188
%RSD	18.560	57.517	582.95	62.725	83.852	87.739	73.200	5.2906
#1	.00289	.07448	.00125	.00268	.00440	.00563	.00189	.03713
#2	.00338	.05093	-.00027	.00499	.00073	.00018	.00029	.03346
#3	.00417	.01922	-.00050	.00987	.00816	.00360	.00249	.03599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:40:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00051**	**.00604**	**-.00528**	**.00062**	**.00012**	**.00482**
Stddev	.00070	.00006	.00458	.00163	.00029	.00008	.00094
%RSD	280.85	11.978	75.793	30.927	46.562	68.537	19.510
#1	.00047	.00050	.00150	-.00357	.00036	.00006	.00376
#2	.00081	.00057	.01066	-.00682	.00057	.00008	.00556
#3	-.00053	.00045	.00597	-.00546	.00093	.00021	.00513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9759.5**	**60265.**	**3013.5**
Stddev	10.8	85.	17.4
%RSD	.11040	.14047	.57599
#1	9754.6	60307.	3032.0
#2	9771.9	60320.	2997.5
#3	9752.1	60167.	3011.1

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 23:44:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.00562	263.10	.00178	-.00976	.00140	.00014	248.10
Stddev	.00117	.16	.00383	.00309	.00113	.00004	.61
%RSD	20.823	.06041	215.50	31.614	80.449	26.067	.24782
#1	-.00542	263.25	-.00154	-.01064	.00266	.00012	248.67
#2	-.00456	262.94	.00597	-.00633	.00047	.00013	247.45
#3	-.00688	263.13	.00090	-.01231	.00109	.00019	248.17
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00400						
Low Limit	-.00400						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	-.00060	-.00056	F .01039	95.630	-.04599	.01242
Stddev	.00016	.00022	.00039	.00101	.248	.03226	.00307
%RSD	92.869	36.608	70.420	9.7281	.25928	70.136	24.681
#1	-.00031	-.00080	-.00098	.00928	95.904	-.06101	.01295
#2	-.00020	-.00063	-.00021	.01127	95.420	-.06800	.01519
#3	.00000	-.00037	-.00048	.01062	95.566	-.00896	.00913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	236.10	.00050	-.00055	.08182	-.00122	.03425	.00395
Stddev	.41	.00175	.00028	.01035	.00129	.00383	.00558
%RSD	.17524	347.68	51.671	12.652	105.94	11.172	141.13
#1	236.13	.00226	-.00079	.09323	-.00097	.03151	-.00194
#2	235.67	.00051	-.00062	.07920	-.00262	.03262	.00465
#3	236.50	-.00125	-.00024	.07303	-.00007	.03862	.00916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 23:44:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00072	-.00782	.00827	.00013	.00094	-.00929	-.00404
Stddev	.00319	.00204	.00198	.00005	.00018	.00784	.00342
%RSD	442.40	26.134	23.931	35.338	18.766	84.463	84.650
#1	.00212	-.01015	.01018	.00009	.00088	-.00188	-.00347
#2	-.00417	-.00696	.00842	.00012	.00080	-.01750	-.00771
#3	-.00012	-.00634	.00622	.00018	.00114	-.00848	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00163	-.00560	-.01351
Stddev	.00058	.00018	.00078
%RSD	35.475	3.3032	5.7782
#1	-.00221	-.00565	-.01421
#2	-.00162	-.00574	-.01366
#3	-.00105	-.00539	-.01267
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9256.6	56705.	2976.7
Stddev	13.6	91.	12.8
%RSD	.14727	.16098	.43054
#1	9241.1	56650.	2963.0
#2	9266.9	56811.	2988.4
#3	9261.8	56655.	2978.7

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 23:48:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52011**	**271.09**	**.26014**	**-.01193**	**.26131**	**.24391**	**254.06**	**.49893**
Stddev	.00309	.31	.00108	.00072	.00207	.00022	1.57	.00035
%RSD	.59470	.11617	.41599	6.0451	.79127	.08930	.61634	.06930
#1	.51910	271.29	.26138	-.01172	.26259	.24374	255.54	.49856
#2	.51765	270.73	.25938	-.01274	.26241	.24383	254.23	.49898
#3	.52358	271.26	.25965	-.01134	.25892	.24415	252.42	.49925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24094**	**.25041**	**.26416**	**96.077**	**5.2095**	**.01124**	**238.55**	**.24627**
Stddev	.00056	.00142	.00058	.420	.1352	.00179	1.07	.00329
%RSD	.23299	.56520	.21819	.43687	2.5957	15.928	.44935	1.3378
#1	.24046	.25065	.26387	96.381	5.3478	.01132	239.59	.24346
#2	.24081	.24889	.26378	96.252	5.2032	.00941	238.63	.24545
#3	.24156	.25169	.26482	95.598	5.0776	.01299	237.45	.24990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**5.4959**	**.48742**	**.09841**	**.49766**	**.51195**	**.23776**	**.00256**
Stddev	.00052	.0364	.00161	.00635	.00144	.00162	.00501	.00193
%RSD	128.92	.66237	.33105	6.4479	.28893	.31661	2.1076	75.415
#1	-.00068	5.5313	.48557	.09364	.49656	.51344	.24335	.00339
#2	-.00073	5.4979	.48847	.09597	.49929	.51023	.23366	.00393
#3	.00020	5.4586	.48823	.10561	.49712	.51219	.23626	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 23:48:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00140**	**.00103**	**-.00323**	**.47273**	**.25455**	**.48271**	**-.01305**
Stddev	.00059	.00027	.00250	.00229	.00097	.00045	.00046
%RSD	41.750	26.302	77.431	.48347	.38190	.09250	3.5206
#1	.00144	.00120	-.00356	.47420	.25352	.48220	-.01343
#2	.00197	.00072	-.00058	.47010	.25467	.48293	-.01317
#3	.00080	.00116	-.00555	.47390	.25546	.48302	-.01254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9240.5**	**56174.**	**2955.7**
Stddev	9.6	118.	17.7
%RSD	.10383	.20921	.59797
#1	9251.6	56039.	2946.0
#2	9234.1	56253.	2944.9
#3	9235.9	56229.	2976.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:51:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41108	10.316	.40843	.50327	1.0436	.05024	10.459
Stddev	.00161	.013	.00298	.00077	.0011	.00011	.030
%RSD	.39215	.12124	.73007	.15382	.10203	.22382	.28694
#1	.41119	10.324	.40804	.50264	1.0446	.05015	10.464
#2	.41263	10.302	.40566	.50304	1.0438	.05037	10.487
#3	.40941	10.323	.41158	.50413	1.0425	.05022	10.428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05234	.20485	.50201	.52446	4.0759	51.088	1.0484
Stddev	.00020	.00025	.00165	.00123	.0669	.060	.0059
%RSD	.38699	.12298	.32889	.23505	1.6409	.11683	.55819
#1	.05251	.20498	.50023	.52357	4.1126	51.031	1.0491
#2	.05240	.20456	.50349	.52586	3.9987	51.083	1.0423
#3	.05212	.20501	.50230	.52393	4.1164	51.150	1.0539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8126	.50786	1.0468	51.847	.51713	10.210	.51778
Stddev	.0274	.00264	.0020	.030	.00045	.013	.00098
%RSD	.27960	.52030	.19073	.05848	.08757	.13121	.18906
#1	9.8005	.51090	1.0485	51.876	.51722	10.201	.51858
#2	9.7933	.50648	1.0474	51.816	.51663	10.204	.51807
#3	9.8440	.50619	1.0446	51.848	.51752	10.226	.51669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:51:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2406**	**.41201**	**5.2627**	**1.0255**	**1.0428**	**1.0401**	**.52263**
Stddev	.0022	.00564	.0065	.0018	.0016	.0094	.00276
%RSD	.17501	1.3693	.12412	.17227	.15774	.90409	.52737
#1	1.2431	.41191	5.2553	1.0271	1.0421	1.0459	.52461
#2	1.2392	.40642	5.2651	1.0236	1.0417	1.0292	.52380
#3	1.2396	.41770	5.2677	1.0258	1.0447	1.0451	.51948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0216**	**1.0330**	F **3.0271**
Stddev	.0027	.0013	.0163
%RSD	.26838	.12831	.53748
#1	1.0227	1.0315	3.0446
#2	1.0236	1.0335	3.0125
#3	1.0185	1.0340	3.0242
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9680.4**	**59250.**	**3000.1**
Stddev	28.5	27.	16.9
%RSD	.29390	.04497	.56388
#1	9711.9	59280.	2982.6
#2	9672.8	59242.	3016.3
#3	9656.6	59229.	3001.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:55:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00125**	**.00182**	**.00085**	**.00036**	**.00255**	**.00017**	**-.02838**	**-.00012**
Stddev	.00082	.00761	.00304	.00225	.00150	.00005	.02296	.00019
%RSD	65.454	418.99	358.52	623.67	58.837	28.075	80.890	157.58
#1	.00189	-.00688	.00358	-.00006	.00362	.00012	-.00325	-.00021
#2	.00153	.00513	.00139	-.00165	.00321	.00020	-.04827	-.00024
#3	.00033	.00720	-.00242	.00279	.00083	.00021	-.03363	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00075**	**.00113**	**.02762**	**-.02056**	**.00086**	**-.01380**	**-.00101**
Stddev	.00025	.00070	.00060	.00527	.01321	.00185	.01535	.00114
%RSD	279.31	93.710	52.614	19.071	64.270	216.68	111.21	112.81
#1	-.00016	.00013	.00054	.02156	-.02746	-.00001	-.01846	.00029
#2	.00010	.00151	.00112	.03019	-.02889	-.00040	-.02627	-.00181
#3	.00033	.00061	.00173	.03110	-.00532	.00298	.00334	-.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00326**	**.05197**	**-.00006**	**.00537**	**-.00040**	**.00432**	**.00298**	**.03440**
Stddev	.00030	.03661	.00066	.00611	.00131	.00120	.00482	.00043
%RSD	9.1019	70.433	1169.2	113.80	328.70	27.704	161.98	1.2407
#1	.00299	.03235	.00066	.00591	.00062	.00425	-.00005	.03422
#2	.00322	.09421	-.00018	.01119	-.00187	.00556	.00044	.03489
#3	.00358	.02936	-.00065	-.00099	.00005	.00317	.00854	.03409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:55:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00044**	**.00562**	**-.00278**	**.00100**	**.00010**	**.00427**
Stddev	.00044	.00041	.00677	.00064	.00081	.00020	.00057
%RSD	558.27	93.814	120.49	22.928	80.799	205.25	13.474
#1	.00052	-.00002	.00467	-.00264	.00112	.00024	.00360
#2	.00007	.00078	.01282	-.00348	.00014	-.00013	.00461
#3	-.00036	.00055	-.00063	-.00223	.00174	.00017	.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9746.4**	**60216.**	**3006.7**
Stddev	3.8	76.	7.9
%RSD	.03876	.12554	.26429
#1	9742.9	60301.	3002.9
#2	9746.0	60157.	3001.3
#3	9750.4	60189.	3015.8

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 23:59:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00916	.16469	.00814	.08024	.01010	.00165	.38196	.00067
Stddev	.00085	.00884	.00209	.00058	.00103	.00003	.03578	.00008
%RSD	9.3027	5.3671	25.632	.71975	10.222	1.6058	9.3673	12.378
#1	.00982	.16059	.01037	.08090	.01024	.00166	.39925	.00061
#2	.00944	.15864	.00624	.07981	.01105	.00162	.40581	.00076
#3	.00820	.17483	.00780	.08002	.00900	.00168	.34082	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00411	.00454	.00520	.10552	.68660	.08825	.42307	.00800
Stddev	.00033	.00070	.00174	.01827	.09614	.00099	.09575	.00252
%RSD	7.9024	15.364	33.422	17.313	14.002	1.1218	22.633	31.490
#1	.00383	.00377	.00720	.10444	.59286	.08799	.31358	.00534
#2	.00447	.00514	.00437	.12431	.68197	.08934	.49110	.01035
#3	.00404	.00471	.00403	.08782	.78497	.08741	.46454	.00831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00870	.45736	.01598	.79373	.00972	.08303	.01581	.78238
Stddev	.00060	.01151	.00062	.00779	.00188	.00162	.00507	.00288
%RSD	6.8723	2.5158	3.9084	.98133	19.382	1.9461	32.090	.36823
#1	.00805	.45897	.01600	.80272	.00902	.08401	.02162	.78192
#2	.00924	.44514	.01534	.78909	.01186	.08117	.01226	.78546
#3	.00881	.46798	.01659	.78938	.00829	.08392	.01355	.77975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 23:59:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40813**	**.04261**	**.02883**	**.15405**	**.00896**	**.01738**	**.13453**
Stddev	.00156	.00009	.00723	.00166	.00036	.00005	.00136
%RSD	.38342	.20072	25.085	1.0771	4.0551	.28767	1.0139
#1	.40866	.04260	.02755	.15254	.00855	.01741	.13450
#2	.40935	.04253	.02233	.15583	.00907	.01742	.13318
#3	.40636	.04270	.03662	.15377	.00925	.01733	.13591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9793.5**	**60446.**	**3011.5**
Stddev	14.7	195.	8.9
%RSD	.15029	.32191	.29401
#1	9810.3	60377.	3006.1
#2	9783.4	60295.	3006.7
#3	9786.6	60666.	3021.7

Approved: June 27, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000196	0.047990	0.000000	1.000000
Al 308.215 {109}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000901	0.007651	0.000000	1.000000
As 189.042 {478}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000059	0.022693	0.000000	1.000000
B 249.678 {135}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000011	0.021306	0.000000	1.000000
Ba 455.403 { 74}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.025239	2.033102	0.000000	1.000000
Be 313.107 {108}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000137	0.920722	0.000000	1.000000
Ca 422.673 { 80}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000203	0.043704	0.000000	1.000000
Cd 228.802 {447}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000064	0.534006	0.000000	1.000000
Co 228.616 {447}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000100	0.338487	0.000000	1.000000
Cr 267.716 {126}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000351	0.055455	0.000000	1.000000
Cu 224.700 {450}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000309	0.117342	0.000000	1.000000
Fe 261.187 {129}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000420	0.020311	0.000000	1.000000
K 766.490 { 44}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.012203	0.064990	0.000000	1.000000
Li 670.784 { 50}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.010371	1.550017	0.000000	1.000000
Mg 279.079 {121}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000313	0.008074	0.000000	1.000000
Mn 257.610 {131}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000062	0.258342	0.000000	1.000000
Mo 202.030 {467}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000039	0.171526	0.000000	1.000000
Na 589.592 { 57}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.057864	0.176430	0.000000	1.000000
Ni 231.604 {446}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000833	0.127737	0.000000	1.000000
P 214.914 {457}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000207	0.012452	0.000000	1.000000
Pb 220.353 {453}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000812	0.059494	0.000000	1.000000
Sb 206.833 {463}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000048	0.028410	0.000000	1.000000
Se 196.090 {472}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000299	0.014866	0.000000	1.000000
Si 212.412 {459}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	0.001678	0.037859	0.000000	1.000000
Sn 189.989 {477}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	0.000047	0.065871	0.000000	1.000000
Sr 407.771 { 83}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	0.003016	3.365181	0.000000	1.000000
Ti 337.280 {100}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	-0.003144	0.113188	0.000000	1.000000
Tl 190.856 {477}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	-0.000461	0.027273	0.000000	1.000000
V 292.402 {115}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	-0.000106	0.064790	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	0.000213	0.399755	0.000000	1.000000
Zr 339.198 { 99}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	-0.018311	3.321003	0.000000	1.000000

Approved: June 29, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999904	0.000002	0.002705	0.009018	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999990	0.000002	0.011613	0.038710	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999844	0.000002	0.003811	0.012703	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999248	0.000004	0.003627	0.012092	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999993	0.000049	0.001401	0.004669	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999899	0.000004	0.000119	0.000398	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.998775	0.000137	0.053968	0.179895	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999581	0.000005	0.000328	0.001095	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999972	0.000003	0.000498	0.001659	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999958	0.000002	0.001490	0.004968	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999726	0.000009	0.001692	0.005639	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999702	0.000013	0.036905	0.123018	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999964	0.000176	0.118817	0.396058	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999889	0.000227	0.004949	0.016497	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999747	0.000018	0.104463	0.348210	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999861	0.000014	0.003389	0.011296	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999994	0.000004	0.000521	0.001736	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999966	0.000465	0.040386	0.134618	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999894	0.000006	0.001398	0.004661	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999991	0.000003	0.008925	0.029749	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.998411	0.000011	0.004359	0.014529	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999872	0.000003	0.005409	0.018030	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999294	0.000002	0.008435	0.028117	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999891	0.000018	0.002773	0.009244	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999973	0.000003	0.001075	0.003584	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999996	0.000063	0.000581	0.001938	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999125	0.000030	0.009303	0.031011	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999951	0.000001	0.003749	0.012498	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999987	0.000002	0.001236	0.004120	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999996	0.000007	0.000241	0.000803	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999991	0.000089	0.000706	0.002352	OK.	1.000000	0.000000	1	0

Approved: June 29, 2016

Sample Name: S0 Acquired: 6/29/2016 9:52:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00020**	**.00090**	**-.00006**	**.00001**	**.02524**	**.00014**	**-.00021**
Stddev	.00004	.00001	.00006	.00003	.00310	.00002	.00346
%RSD	22.411	.98399	104.57	240.96	12.265	12.424	1673.7
#1	-.00015	.00091	-.00011	.00003	.02283	.00015	.00154
#2	-.00020	.00091	-.00007	.00002	.02415	.00012	-.00419
#3	-.00024	.00089	.00001	-.00002	.02873	.00014	.00203

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00006**	**-.00010**	**.00035**	**-.00031**	**-.00042**	**-.01221**	**-.01037**
Stddev	.00014	.00018	.00006	.00025	.00031	.00332	.00949
%RSD	221.14	179.29	16.915	81.782	72.829	27.169	91.545
#1	.00008	-.00028	.00039	-.00014	-.00014	-.01249	-.00990
#2	-.00020	-.00009	.00038	-.00060	-.00038	-.01537	-.02008
#3	-.00007	.00007	.00028	-.00019	-.00074	-.00876	-.00112

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00031**	**.00006**	**-.00004**	**-.05787**	**-.00083**	**-.00021**	**-.00081**
Stddev	.00048	.00065	.00007	.00436	.00011	.00003	.00011
%RSD	153.72	1050.1	186.66	7.5353	12.837	16.794	13.738
#1	.00023	.00081	.00004	-.06291	-.00075	-.00022	-.00087
#2	-.00047	-.00032	-.00006	-.05532	-.00080	-.00023	-.00089
#3	-.00069	-.00031	-.00010	-.05539	-.00095	-.00017	-.00068

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00005**	**-.00030**	**.00168**	**.00005**	**.00302**	**-.00314**	**-.00046**
Stddev	.00012	.00011	.00005	.00005	.00223	.00113	.00011
%RSD	247.95	37.856	3.1434	111.20	73.864	36.032	23.262
#1	-.00008	-.00022	.00167	.00006	.00519	-.00401	-.00048
#2	.00016	-.00025	.00173	.00009	.00074	-.00186	-.00056
#3	.00007	-.00043	.00163	-.00001	.00311	-.00356	-.00034

Approved: June 29, 2016

Sample Name: S0 Acquired: 6/29/2016 9:52:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**-.00011**	**.00021**	**-.01831**
Stddev	.00008	.00009	.00440
%RSD	72.585	40.463	24.022
#1	-.00012	.00024	-.01431
#2	-.00002	.00012	-.01760
#3	-.00018	.00028	-.02302
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9115.5**	**54884.**	**2480.1**
Stddev	24.2	210.	22.3
%RSD	.26510	.38244	.90045
#1	9143.2	55110.	2454.9
#2	9099.0	54695.	2497.5
#3	9104.3	54847.	2488.0

Approved: June 29, 2016

Sample Name: S1 Acquired: 6/29/2016 9:55:58 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00003	.00149	.04238	.00061	.00581	.00027	.00038
Stddev	.00014	.00004	.00174	.00001	.00174	.00016	.00008
%RSD	493.35	2.7596	4.1174	2.1805	29.926	60.533	21.804
#1	-.00006	.00145	.04420	.00060	.00395	.00044	.00048
#2	.00012	.00150	.04221	.00062	.00611	.00027	.00032
#3	-.00015	.00154	.04073	.00062	.00739	.00011	.00035

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00054	.00038	-.00008	.01707	.00101	.00131	.01790
Stddev	.00006	.00006	.00059	.00268	.00063	.00008	.00342
%RSD	10.750	15.855	770.56	15.692	61.961	6.4456	19.090
#1	.00058	.00044	.00001	.01723	.00042	.00131	.02178
#2	.00048	.00033	-.00071	.01966	.00096	.00140	.01661
#3	.00057	.00035	.00047	.01431	.00167	.00123	.01532

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00043	.00074	-.00031	.00040	.00286	.00052	.02991
Stddev	.00015	.00014	.00022	.00001	.00006	.00003	.00266
%RSD	34.679	18.970	71.060	2.7952	2.0014	6.7309	8.8928
#1	-.00037	.00078	-.00038	.00039	.00280	.00056	.02685
#2	-.00033	.00086	-.00049	.00040	.00291	.00050	.03167
#3	-.00061	.00059	-.00006	.00041	.00287	.00050	.03120

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00153	.00043	.00328	.00747
Stddev	.00060	.00005	.00017	.00219
%RSD	39.113	10.913	5.1911	29.317
#1	-.00220	.00047	.00332	.00993
#2	-.00136	.00043	.00342	.00678
#3	-.00104	.00038	.00309	.00571

Approved: June 29, 2016

Sample Name: S1 Acquired: 6/29/2016 9:55:58 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9108.0**	**54989.**	**2477.7**
Stddev	25.7	207.	10.2
%RSD	.28175	.37676	.41037
#1	9129.4	55084.	2488.2
#2	9079.6	54752.	2467.9
#3	9115.0	55132.	2477.2

Approved: June 29, 2016

Sample Name: S2 Acquired: 6/29/2016 9:59:53 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00016	.00216	.00012	.00027	.05721	.00091	.00981
Stddev	.00014	.00005	.00001	.00002	.00061	.00004	.00076
%RSD	87.206	2.3473	6.3239	6.2998	1.0584	4.4038	7.7890
#1	.00026	.00210	.00012	.00029	.05687	.00087	.01007
#2	.00000	.00220	.00012	.00026	.05686	.00092	.01041
#3	.00021	.00218	.00011	.00026	.05791	.00095	.00895

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00042	.00093	.00077	.00069	.00085	.03865	.00938
Stddev	.00028	.00003	.00003	.00001	.00045	.00490	.00149
%RSD	66.365	3.0403	3.7171	1.8776	53.045	12.668	15.907
#1	.00059	.00096	.00074	.00069	.00137	.03348	.00933
#2	.00059	.00091	.00077	.00070	.00064	.04321	.01090
#3	.00010	.00092	.00080	.00067	.00054	.03926	.00792

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00058	.00168	.00261	.09115	.00006	.00175	-.00031
Stddev	.00098	.00052	.00014	.00432	.00032	.00013	.00028
%RSD	167.86	31.183	5.3329	4.7388	537.39	7.2792	90.400
#1	.00132	.00108	.00264	.08842	-.00027	.00190	.00000
#2	.00095	.00192	.00273	.09613	.00008	.00165	-.00039
#3	-.00052	.00204	.00246	.08890	.00036	.00170	-.00053

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00056	-.00025	.00443	.00103	.05569	-.00158	-.00025
Stddev	.00015	.00008	.00005	.00004	.00034	.00116	.00005
%RSD	27.350	31.837	1.1615	4.3714	.60840	73.502	21.152
#1	.00073	-.00018	.00438	.00107	.05552	-.00032	-.00020
#2	.00053	-.00034	.00448	.00102	.05547	-.00180	-.00030
#3	.00042	-.00024	.00443	.00099	.05608	-.00261	-.00024

Approved: June 29, 2016

Sample Name: S2 Acquired: 6/29/2016 9:59:53 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00098	.00643	.03194
Stddev	.00008	.00014	.00127
%RSD	8.1381	2.0985	3.9732
#1	.00089	.00650	.03225
#2	.00102	.00652	.03054
#3	.00104	.00628	.03302
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9104.6	54986.	2500.4
Stddev	11.8	96.	11.1
%RSD	.13007	.17414	.44486
#1	9116.7	54945.	2501.3
#2	9093.1	55096.	2488.9
#3	9103.9	54918.	2511.1

Approved: June 29, 2016

Sample Name: S3 Acquired: 6/29/2016 10:03:48 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01869	.07766	.00885	.01052	2.0517	.04687	.42972	.02883
Stddev	.00010	.00016	.00008	.00004	.0032	.00034	.00080	.00010
%RSD	.55151	.20479	.90829	.38019	.15653	.72788	.18609	.33451
#1	.01881	.07784	.00891	.01051	2.0489	.04676	.43025	.02887
#2	.01863	.07754	.00876	.01048	2.0510	.04660	.42880	.02890
#3	.01863	.07761	.00888	.01056	2.0552	.04725	.43010	.02872

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06718	.02796	.05899	.08098	3.2121	1.5387	.08004	.12886
Stddev	.00017	.00020	.00014	.00085	.0066	.0107	.00043	.00031
%RSD	.25123	.72026	.24482	1.0474	.20656	.69238	.54007	.24346
#1	.06716	.02788	.05915	.08049	3.2116	1.5363	.07955	.12919
#2	.06703	.02782	.05893	.08195	3.2056	1.5293	.08018	.12857
#3	.06736	.02819	.05888	.08048	3.2189	1.5503	.08038	.12881

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.17205	8.6822	.06315	.12174	.02914	.03341	.00565	.19356
Stddev	.00031	.0256	.00007	.00018	.00011	.00021	.00007	.00013
%RSD	.18051	.29494	.10895	.14761	.36256	.62587	1.1963	.06718
#1	.17198	8.6568	.06317	.12178	.02917	.03341	.00571	.19347
#2	.17178	8.6819	.06321	.12154	.02922	.03320	.00558	.19350
#3	.17239	8.7080	.06307	.12189	.02902	.03362	.00566	.19371

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06591	3.3569	.10885	.01218	.06423	.39984	3.3046
Stddev	.00009	.0081	.00139	.00005	.00041	.00013	.0223
%RSD	.13520	.24258	1.2796	.40879	.63272	.03282	.67478
#1	.06594	3.3482	.10985	.01212	.06402	.39998	3.2853
#2	.06581	3.3581	.10726	.01221	.06397	.39981	3.2995
#3	.06598	3.3643	.10945	.01220	.06470	.39972	3.3290

Approved: June 29, 2016

Sample Name: S3 Acquired: 6/29/2016 10:03:48 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8936.5**	**53607.**	**2459.5**
Stddev	17.8	172.	16.5
%RSD	.19869	.32046	.67053
#1	8948.3	53558.	2468.9
#2	8916.1	53798.	2469.2
#3	8945.2	53465.	2440.5

Approved: June 29, 2016

Sample Name: S4 Acquired: 6/29/2016 10:07:26 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03809	.15568	.01806	.02127	4.0977	.09410	.87546	.05845
Stddev	.00006	.00018	.00005	.00005	.0047	.00010	.00176	.00012
%RSD	.15008	.11845	.28737	.24709	.11559	.10855	.20067	.20874
#1	.03804	.15555	.01806	.02127	4.0931	.09422	.87715	.05832
#2	.03808	.15589	.01812	.02132	4.0975	.09404	.87365	.05856
#3	.03815	.15560	.01802	.02122	4.1026	.09405	.87559	.05848

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13549	.05605	.11769	.16222	6.5100	3.0957	.16128	.25943
Stddev	.00014	.00010	.00021	.00068	.0186	.0116	.00066	.00120
%RSD	.10476	.18095	.18082	.41633	.28563	.37530	.40965	.46423
#1	.13535	.05603	.11756	.16145	6.4930	3.0828	.16069	.25809
#2	.13564	.05616	.11759	.16267	6.5070	3.0989	.16199	.25977
#3	.13547	.05595	.11794	.16256	6.5298	3.1054	.16114	.26043

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.34251	17.654	.12703	.24567	.05867	.06706	.01164	.38042
Stddev	.00035	.052	.00035	.00016	.00046	.00002	.00006	.00039
%RSD	.10335	.29675	.27610	.06413	.78699	.02879	.52045	.10268
#1	.34211	17.621	.12664	.24575	.05814	.06708	.01160	.38040
#2	.34262	17.626	.12712	.24549	.05886	.06704	.01160	.38083
#3	.34279	17.714	.12732	.24578	.05900	.06708	.01171	.38004

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13155	6.7464	.22309	.02436	.12935	.79951	6.6243
Stddev	.00008	.0203	.00179	.00008	.00009	.00117	.0174
%RSD	.06203	.30098	.80453	.32304	.06859	.14600	.26196
#1	.13147	6.7274	.22250	.02431	.12945	.79836	6.6092
#2	.13163	6.7440	.22165	.02433	.12931	.79947	6.6432
#3	.13155	6.7678	.22510	.02445	.12929	.80069	6.6204

Approved: June 29, 2016

Sample Name: S4 Acquired: 6/29/2016 10:07:26 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8921.2**	**53238.**	**2473.0**
Stddev	18.3	108.	7.0
%RSD	.20479	.20318	.28323
#1	8919.4	53202.	2476.9
#2	8903.9	53152.	2464.9
#3	8940.3	53359.	2477.3

Approved: June 29, 2016

Sample Name: ICV Acquired: 6/29/2016 10:11:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40442	10.286	.41098	.50592	1.0366	.05070	10.092
Stddev	.00330	.017	.00346	.00271	.0026	.00003	.054
%RSD	.81540	.16712	.84291	.53476	.24579	.06427	.53421
#1	.40613	10.305	.41012	.50573	1.0391	.05071	10.144
#2	.40062	10.279	.41479	.50331	1.0340	.05067	10.037
#3	.40651	10.273	.40802	.50871	1.0367	.05073	10.095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05076	.20318	.50598	.50845	4.0917	51.004	1.0197
Stddev	.00051	.00054	.00159	.00095	.0399	.219	.0093
%RSD	1.0116	.26720	.31500	.18732	.97540	.42916	.91103
#1	.05134	.20361	.50423	.50846	4.0711	51.243	1.0299
#2	.05035	.20336	.50734	.50940	4.0664	50.814	1.0175
#3	.05060	.20257	.50638	.50749	4.1377	50.954	1.0117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.296	.51552	.96471	50.940	.50720	9.6966	.51063
Stddev	.141	.00366	.00146	.130	.00148	.0073	.00218
%RSD	1.3690	.71030	.15108	.25486	.29239	.07577	.42637
#1	10.212	.51660	.96636	51.086	.50872	9.6973	.50842
#2	10.216	.51144	.96419	50.892	.50575	9.7036	.51071
#3	10.458	.51852	.96359	50.840	.50712	9.6890	.51277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 29, 2016

Sample Name: ICV Acquired: 6/29/2016 10:11:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2312**	**.40824**	F **4.7353**	**1.0396**	**1.0085**	**1.0166**	**.51532**
Stddev	.0046	.00693	.0040	.0016	.0042	.0078	.00390
%RSD	.37161	1.6986	.08505	.15478	.41422	.76488	.75613
#1	1.2294	.40991	4.7343	1.0415	1.0119	1.0250	.51933
#2	1.2364	.41418	4.7320	1.0387	1.0098	1.0096	.51509
#3	1.2278	.40062	4.7398	1.0387	1.0038	1.0153	.51155
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			5.0000				
Range			-5.0000%				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0066**	**1.0167**	**1.0346**
Stddev	.0019	.0012	.0034
%RSD	.19382	.12004	.33211
#1	1.0066	1.0180	1.0376
#2	1.0085	1.0156	1.0352
#3	1.0046	1.0166	1.0308
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9016.8**	**54198.**	**2484.7**
Stddev	34.4	67.	10.4
%RSD	.38098	.12315	.41934
#1	8978.8	54206.	2472.8
#2	9045.6	54260.	2489.2
#3	9026.1	54128.	2492.2

Approved: June 29, 2016

Sample Name: ICB Acquired: 6/29/2016 10:14:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00201	.01836	-.00141	.00781	.00152	-.00001	.08366
Stddev	.00082	.00200	.00208	.00229	.00035	.00006	.01618
%RSD	40.698	10.891	147.26	29.310	23.077	485.21	19.340
#1	.00256	.01613	-.00355	.01041	.00168	.00003	.10066
#2	.00240	.02000	-.00131	.00608	.00177	.00002	.08186
#3	.00107	.01894	.00061	.00695	.00112	-.00008	.06845
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00008	-.00032	.00181	-.01955	.27921	.00178
Stddev	.00029	.00013	.00086	.00127	.03923	.09246	.00456
%RSD	372.03	169.87	270.02	70.363	200.64	33.116	256.70
#1	.00039	.00006	-.00040	.00064	-.02314	.17263	-.00171
#2	-.00019	-.00020	-.00113	.00162	.02135	.33788	.00694
#3	.00003	-.00008	.00058	.00317	-.05688	.32713	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.06410	.00147	.00078	.10419	.00112	F .01118	.00327
Stddev	.06961	.00309	.00063	.03713	.00057	.00173	.00107
%RSD	108.59	209.72	81.088	35.632	50.549	15.489	32.666
#1	.00071	.00251	.00146	.09352	.00159	.01283	.00317
#2	-.05535	-.00200	.00068	.14549	.00128	.00938	.00226
#3	-.13768	.00391	.00020	.07357	.00049	.01133	.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 29, 2016

Sample Name: ICB Acquired: 6/29/2016 10:14:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	-.00340	-.01473	.00060	.00124	.00125	.00059
Stddev	.00143	.00785	.00191	.00077	.00074	.00777	.00202
%RSD	166.00	230.78	13.002	128.34	59.622	619.73	344.29
#1	-.00250	-.01070	-.01252	.00136	.00133	.00946	.00101
#2	-.00011	.00490	-.01567	.00061	.00193	.00028	.00236
#3	.00003	-.00441	-.01599	-.00017	.00046	-.00599	-.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00253	.00100	.00081
Stddev	.00074	.00035	.00047
%RSD	29.384	34.824	58.912
#1	.00232	.00132	.00069
#2	.00335	.00106	.00040
#3	.00191	.00063	.00133
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9084.4	54980.	2488.4
Stddev	135.8	68.	2.1
%RSD	1.4949	.12377	.08443
#1	8930.5	55059.	2490.1
#2	9135.2	54945.	2489.0
#3	9187.4	54938.	2486.1

Approved: June 29, 2016

Sample Name: LLICV Acquired: 6/29/2016 10:18:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00872	.17063	.00885	.08373	.00860	.00157	.42073	.00073
Stddev	.00123	.00534	.00231	.00067	.00138	.00006	.03113	.00038
%RSD	14.065	3.1304	26.064	.79719	16.041	4.0340	7.3981	51.856
#1	.00819	.17652	.00868	.08307	.00712	.00164	.38707	.00037
#2	.01012	.16609	.00663	.08440	.00885	.00152	.42664	.00113
#3	.00785	.16929	.01123	.08372	.00984	.00155	.44848	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00391	.00455	.00624	.10276	1.0619	.07782	.31322	.00827
Stddev	.00043	.00092	.00112	.03246	.0112	.00430	.09347	.00037
%RSD	10.917	20.252	17.906	31.585	1.0560	5.5298	29.841	4.5346
#1	.00438	.00353	.00531	.07196	1.0586	.07424	.21886	.00787
#2	.00354	.00533	.00748	.09967	1.0743	.07662	.31502	.00831
#3	.00383	.00480	.00594	.13665	1.0526	.08260	.40577	.00862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00805	.42286	.01644	.79611	.01299	.08354	.01434	.72436
Stddev	.00028	.00902	.00098	.00141	.00416	.00232	.01207	.00478
%RSD	3.4369	2.1335	5.9790	.17658	32.054	2.7721	84.200	.65952
#1	.00810	.43087	.01534	.79702	.01757	.08599	.00418	.72986
#2	.00776	.42462	.01724	.79449	.01196	.08325	.01115	.72188
#3	.00831	.41309	.01675	.79681	.00943	.08139	.02769	.72132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLICV Acquired: 6/29/2016 10:18:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40263	.04084	.02518	.15168	.00937	.01675	.04172
Stddev	.00091	.00036	.00443	.00197	.00116	.00020	.00069
%RSD	.22645	.89206	17.576	1.3007	12.341	1.2016	1.6651
#1	.40366	.04125	.02007	.15388	.00804	.01687	.04096
#2	.40231	.04055	.02772	.15110	.01016	.01687	.04233
#3	.40192	.04073	.02775	.15006	.00991	.01652	.04187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9183.9	55097.	2506.7
Stddev	28.5	155.	11.4
%RSD	.31037	.28188	.45399
#1	9209.7	55255.	2496.9
#2	9153.3	55090.	2504.1
#3	9188.9	54945.	2519.2

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 10:22:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**256.78**	**-.00093**	**.01473**	**-.00127**	**-.00007**	**241.44**	**-.00048**
Stddev	.00094	.72	.00227	.00118	.00156	.00011	1.66	.00020
%RSD	111.40	.27959	242.95	8.0158	122.68	145.05	.68673	41.517
#1	-.00043	256.01	-.00202	.01467	-.00302	.00001	241.06	-.00037
#2	-.00191	256.91	.00168	.01595	-.00076	-.00019	243.25	-.00071
#3	-.00018	257.43	-.00246	.01359	-.00003	-.00004	240.00	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00193**	**-.00215**	**-.00098**	**96.233**	**.18223**	**.00799**	**245.73**	**.00118**
Stddev	.00010	.00124	.00101	.819	.15413	.00679	1.81	.00175
%RSD	5.1935	57.417	102.42	.85122	84.579	84.964	.73485	148.16
#1	-.00182	-.00123	-.00147	96.033	.32674	.01197	246.38	.00301
#2	-.00197	-.00168	.00018	97.134	.19995	.01185	247.11	-.00048
#3	-.00201	-.00356	-.00165	95.533	.02001	.00015	243.68	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00086**	**.01054**	**-.00048**	**.04095**	**-.00008**	**-.00728**	**.00425**	**-.01488**
Stddev	.00034	.02123	.00188	.01874	.00416	.00372	.00642	.00348
%RSD	39.777	201.47	393.65	45.749	5111.4	51.146	151.05	23.403
#1	-.00126	.02786	-.00189	.05055	.00446	-.00298	-.00308	-.01456
#2	-.00067	.01688	-.00120	.05295	-.00099	-.00943	.00887	-.01156
#3	-.00065	-.01314	.00166	.01936	-.00371	-.00943	.00697	-.01850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 10:22:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00073**	**.02193**	**-.00014**	**-.00166**	**-.00668**	**.00332**
Stddev	.00061	.00100	.00144	.00351	.00076	.00007	.00048
%RSD	112.55	136.67	6.5637	2422.7	45.900	1.0941	14.413
#1	-.00076	.00033	.02256	-.00301	-.00254	-.00665	.00376
#2	-.00100	-.00001	.02029	-.00120	-.00118	-.00663	.00339
#3	.00015	.00186	.02296	.00377	-.00126	-.00677	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8736.9**	**52049.**	**2498.5**
Stddev	24.9	58.	18.1
%RSD	.28538	.11097	.72548
#1	8711.7	52105.	2503.9
#2	8737.5	52051.	2478.3
#3	8761.6	51990.	2513.3

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 10:26:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50532	257.64	.24041	.01593	.24782	.25031	243.08	.48094
Stddev	.00171	.66	.00247	.00567	.00099	.00074	.60	.00095
%RSD	.33818	.25546	1.0272	35.576	.40061	.29554	.24559	.19763
#1	.50548	258.11	.23817	.01042	.24888	.25076	243.61	.48009
#2	.50694	257.93	.23999	.01562	.24691	.25072	242.43	.48077
#3	.50354	256.89	.24306	.02174	.24768	.24946	243.19	.48196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23496	.24688	.24059	94.984	5.3181	.00767	241.98	.24053
Stddev	.00079	.00037	.00198	.300	.0452	.00698	.24	.00042
%RSD	.33424	.14899	.82504	.31541	.84893	90.971	.09967	.17601
#1	.23490	.24729	.24016	95.186	5.3643	.00114	242.07	.24026
#2	.23577	.24675	.24276	94.640	5.2741	.00684	242.17	.24032
#3	.23421	.24659	.23886	95.126	5.3159	.01502	241.71	.24102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	5.2047	.46980	.03085	.48046	.48169	.25661	-.00890
Stddev	.00021	.0640	.00232	.00572	.00164	.00298	.00285	.00179
%RSD	46.426	1.2289	.49319	18.555	.34062	.61826	1.1093	20.104
#1	-.00036	5.2773	.46718	.02681	.48229	.48409	.25349	-.01095
#2	-.00069	5.1806	.47063	.03740	.47996	.48262	.25727	-.00770
#3	-.00031	5.1564	.47158	.02833	.47913	.47836	.25907	-.00803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 10:26:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.00077	.02203	.45802	.24979	.46986	.00245
Stddev	.00180	.00022	.00309	.00630	.00104	.00013	.00049
%RSD	408.40	28.979	14.011	1.3750	.41683	.02831	19.880
#1	.00248	.00101	.01849	.45999	.24918	.46991	.00235
#2	-.00021	.00058	.02346	.46310	.24919	.46995	.00202
#3	-.00094	.00070	.02414	.45097	.25099	.46970	.00298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8714.2	52027.	2490.8
Stddev	13.4	71.	10.7
%RSD	.15385	.13668	.42866
#1	8720.3	52047.	2479.5
#2	8723.4	51948.	2492.0
#3	8698.8	52086.	2500.8

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 10:29:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38545	9.7565	.37968	.47556	.96130	.04802	9.7563	.04801
Stddev	.00149	.0491	.00049	.00509	.00395	.00037	.1577	.00039
%RSD	.38566	.50355	.12878	1.0695	.41099	.76364	1.6159	.82135
#1	.38586	9.8125	.38024	.47673	.96416	.04784	9.8713	.04814
#2	.38380	9.7209	.37931	.47996	.96295	.04844	9.8211	.04833
#3	.38669	9.7360	.37950	.46999	.95679	.04777	9.5766	.04757
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19120	.47822	.47994	3.9564	48.202	.97060	9.9602	.48155
Stddev	.00043	.00297	.00073	.0398	.102	.01545	.2137	.00456
%RSD	.22626	.62097	.15125	1.0060	.21204	1.5918	2.1455	.94698
#1	.19093	.47906	.48045	4.0011	48.250	.98467	10.152	.47813
#2	.19170	.48067	.47911	3.9248	48.272	.97306	9.9994	.47980
#3	.19096	.47491	.48026	3.9433	48.085	.95407	9.7296	.48673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96357	47.886	.48088	9.5345	.47920	1.1504	.38429	4.8575
Stddev	.00295	.120	.00075	.0224	.00446	.0029	.00064	.0081
%RSD	.30570	.24971	.15493	.23468	.93138	.25485	.16589	.16756
#1	.96520	47.982	.48163	9.5372	.48008	1.1536	.38445	4.8590
#2	.96534	47.923	.48085	9.5554	.47437	1.1497	.38359	4.8649
#3	.96017	47.752	.48014	9.5109	.48317	1.1478	.38483	4.8488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 10:29:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95817	.96154	.97251	.48359	.95998	.95642	.95740
Stddev	.00212	.00517	.00473	.00288	.00538	.00175	.00901
%RSD	.22176	.53814	.48620	.59624	.56006	.18293	.94112
#1	.95810	.96589	.97320	.48316	.96144	.95616	.96570
#2	.96032	.96292	.97685	.48094	.96448	.95481	.95868
#3	.95607	.95582	.96747	.48666	.95403	.95828	.94782
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9329.2	56053.	2575.1
Stddev	2.5	209.	17.9
%RSD	.02702	.37346	.69466
#1	9328.4	55913.	2557.2
#2	9332.1	56294.	2575.2
#3	9327.3	55953.	2592.9

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 10:33:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.04378	.00092	.00232	.00099	.00010	.10123	-.00004
Stddev	.00231	.01305	.00241	.00272	.00047	.00006	.02043	.00004
%RSD	145.46	29.810	262.06	117.36	47.745	62.131	20.182	114.14
#1	.00341	.05304	.00368	.00105	.00154	.00016	.12224	-.00004
#2	-.00101	.04945	-.00075	.00543	.00069	.00004	.08144	-.00008
#3	.00238	.02885	-.00018	.00046	.00075	.00011	.10001	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00062	.00170	-.00155	.25334	.00056	-.00187	.00192
Stddev	.00020	.00064	.00189	.00533	.06368	.00243	.07462	.00456
%RSD	222.29	102.61	111.38	344.66	25.136	433.45	3980.0	237.69
#1	.00014	.00070	.00306	-.00090	.21902	-.00061	-.07603	-.00263
#2	-.00021	.00122	.00250	-.00717	.21418	.00336	-.00280	.00190
#3	-.00020	-.00005	-.00046	.00343	.32682	-.00107	.07321	.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.04437	.00005	.00934	.00350	.00059	.00215	-.01774
Stddev	.00011	.04353	.00107	.00336	.00137	.00309	.00560	.00305
%RSD	17.530	98.104	2366.4	36.014	39.191	524.62	259.85	17.208
#1	.00066	.06944	-.00035	.01067	.00499	.00416	.00846	-.01471
#2	.00053	.06957	.00126	.01184	.00322	-.00108	.00023	-.01769
#3	.00076	-.00589	-.00077	.00552	.00229	-.00131	-.00222	-.02081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 10:33:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00049**	**.00458**	**.00189**	**.00092**	**.00197**	**.00039**
Stddev	.00025	.00045	.00174	.00327	.00053	.00007	.00094
%RSD	77.695	91.451	38.085	173.43	57.187	3.4706	242.63
#1	-.00060	.00046	.00257	.00351	.00093	.00199	.00131
#2	-.00021	.00094	.00553	-.00188	.00039	.00202	.00043
#3	-.00014	.00005	.00564	.00403	.00144	.00189	-.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9485.3**	**57413.**	**2581.2**
Stddev	17.0	57.	12.7
%RSD	.17947	.09957	.49264
#1	9465.7	57380.	2584.4
#2	9493.7	57380.	2592.0
#3	9496.5	57479.	2567.2

Approved: June 29, 2016

Sample Name: PBW FB Acquired: 6/29/2016 10:37:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00760**	**.00035**	**.00218**	**-.00053**	**-.00002**	**.03562**	**-.00013**
Stddev	.00198	.00612	.00271	.00167	.00078	.00003	.04893	.00014
%RSD	364.60	80.490	783.97	76.555	147.09	135.34	137.36	102.88
#1	.00122	.01052	-.00215	.00135	-.00070	-.00003	.06148	-.00018
#2	-.00015	.01171	.00323	.00108	-.00121	-.00005	-.02081	.00002
#3	-.00269	.00057	-.00005	.00409	.00032	.00001	.06620	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00052**	**.00169**	**.01996**	**.05997**	**-.00167**	**-.04418**	**.00199**
Stddev	.00020	.00118	.00100	.00706	.14566	.00254	.04322	.00383
%RSD	82.183	224.92	58.747	35.368	242.89	152.22	97.836	192.33
#1	-.00012	.00029	.00069	.02783	.21959	-.00044	-.07189	.00586
#2	-.00014	.00001	.00171	.01789	-.06574	-.00459	-.06627	.00191
#3	-.00048	-.00188	.00268	.01417	.02605	.00002	.00563	-.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**.05592**	**.00048**	**.00581**	**.00515**	**-.00331**	**.00202**	**-.00473**
Stddev	.00015	.04015	.00103	.00347	.00220	.00443	.00614	.00147
%RSD	47.719	71.802	215.60	59.752	42.733	133.91	303.26	31.020
#1	.00043	.03372	-.00059	.00869	.00763	.00172	.00313	-.00379
#2	.00015	.10227	.00055	.00195	.00437	-.00500	.00753	-.00642
#3	.00034	.03177	.00147	.00678	.00344	-.00663	-.00459	-.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW FB Acquired: 6/29/2016 10:37:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00049	.00691	.00109	.00028	.00077	.00045
Stddev	.00124	.00017	.00278	.00259	.00091	.00020	.00020
%RSD	344.68	34.296	40.227	238.75	329.09	25.996	44.233
#1	-.00012	.00038	.00665	.00014	.00131	.00066	.00068
#2	-.00057	.00041	.00981	-.00090	-.00042	.00066	.00029
#3	.00176	.00069	.00427	.00402	-.00006	.00100	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9661.3	58506.	2641.9
Stddev	8.4	39.	4.1
%RSD	.08722	.06636	.15529
#1	9654.6	58462.	2643.1
#2	9670.8	58536.	2637.3
#3	9658.6	58521.	2645.2

Approved: June 29, 2016

Sample Name: LCSW FB Acquired: 6/29/2016 10:41:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20370**	**5.1376**	**.20101**	**.98179**	**.51698**	**.02494**	**5.2688**	**.02554**
Stddev	.00114	.0040	.00301	.00487	.00277	.00006	.0279	.00009
%RSD	.55949	.07726	1.4964	.49570	.53639	.22903	.52991	.34850
#1	.20502	5.1375	.20328	.97672	.51912	.02487	5.2372	.02563
#2	.20306	5.1337	.19760	.98220	.51797	.02495	5.2792	.02545
#3	.20303	5.1417	.20215	.98643	.51385	.02499	5.2900	.02553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10323**	**.25700**	**.25880**	**2.0709**	**25.781**	**.52295**	**5.1906**	**.26094**
Stddev	.00023	.00047	.00162	.0098	.125	.00625	.1782	.00370
%RSD	.22183	.18355	.62622	.47068	.48649	1.1960	3.4341	1.4198
#1	.10340	.25753	.25784	2.0688	25.869	.52659	5.3964	.26359
#2	.10297	.25685	.26067	2.0815	25.837	.52654	5.0906	.26253
#3	.10331	.25662	.25789	2.0624	25.638	.51573	5.0847	.25671
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52023**	**25.915**	**.25965**	**4.9668**	**.26247**	**.61292**	**.19435**	**2.4853**
Stddev	.00079	.143	.00151	.0220	.00148	.00281	.00301	.0027
%RSD	.15259	.55270	.58218	.44282	.56222	.45892	1.5506	.10988
#1	.51932	26.010	.26100	4.9735	.26381	.61059	.19229	2.4822
#2	.52060	25.985	.25802	4.9422	.26271	.61604	.19295	2.4875
#3	.52078	25.751	.25992	4.9846	.26089	.61213	.19781	2.4862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW FB Acquired: 6/29/2016 10:41:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51760**	**.52472**	**.51670**	**.26018**	**.51344**	**.51480**	**.00106**
Stddev	.00084	.00343	.00531	.00450	.00220	.00032	.00068
%RSD	.16154	.65377	1.0277	1.7311	.42871	.06150	64.585
#1	.51772	.52728	.52254	.25881	.51503	.51503	.00153
#2	.51671	.52607	.51216	.25652	.51437	.51492	.00028
#3	.51837	.52083	.51541	.26521	.51093	.51444	.00137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9014.6**	**54430.**	**2511.5**
Stddev	17.6	205.	22.8
%RSD	.19522	.37586	.90940
#1	9034.7	54306.	2501.7
#2	9006.8	54318.	2495.1
#3	9002.2	54666.	2537.6

Approved: June 29, 2016

Sample Name: L1606117701 Acquired: 6/29/2016 10:45:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.02570	.00379	.09957	.00036	.00012	.06954	.00009
Stddev	.00188	.01108	.00366	.00112	.00044	.00008	.05770	.00023
%RSD	502.08	43.121	96.396	1.1256	123.03	65.043	82.983	264.23
#1	-.00172	.03569	.00193	.10021	.00070	.00019	.08438	.00006
#2	.00093	.02763	.00801	.09827	.00052	.00004	.00586	-.00013
#3	.00192	.01378	.00145	.10022	-.00014	.00013	.11837	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00003	.00182	.03157	.25886	-.00017	-.03062	.00402
Stddev	.00021	.00044	.00154	.02412	.07495	.00077	.10924	.00214
%RSD	234.47	1384.7	84.513	76.424	28.952	444.60	356.80	53.262
#1	-.00009	-.00022	.00346	.03078	.34415	-.00011	-.10112	.00381
#2	.00031	.00047	.00041	.00784	.20352	.00056	-.08595	.00199
#3	.00004	-.00035	.00159	.05607	.22892	-.00098	.09522	.00625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00689	115.28	.00054	.01609	.00211	.00016	.00064	4.1138
Stddev	.00033	.89	.00124	.00512	.00208	.00316	.00335	.0042
%RSD	4.7528	.77547	231.01	31.846	98.898	1988.7	523.66	.10156
#1	.00714	114.59	.00118	.01368	.00303	-.00237	-.00302	4.1168
#2	.00652	116.29	-.00089	.01262	-.00028	.00370	.00140	4.1156
#3	.00702	114.95	.00133	.02198	.00356	-.00085	.00354	4.1090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117701 Acquired: 6/29/2016 10:45:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**-.00027**	**.00449**	**.00390**	**.00174**	**.04403**	**.00026**
Stddev	.00025	.00048	.01014	.00210	.00045	.00018	.00052
%RSD	55.323	177.85	226.06	53.721	25.860	.39798	196.34
#1	-.00048	-.00013	-.00582	.00168	.00123	.04416	.00086
#2	-.00019	-.00080	.01446	.00420	.00208	.04383	.00000
#3	-.00069	.00012	.00483	.00584	.00191	.04409	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9044.4**	**54361.**	**2502.1**
Stddev	23.6	58.	19.2
%RSD	.26040	.10713	.76910
#1	9021.8	54294.	2520.4
#2	9068.8	54392.	2482.1
#3	9042.5	54397.	2503.7

Approved: June 29, 2016

Sample Name: L1606117702S Acquired: 6/29/2016 10:49:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19530**	**4.8939**	**.19914**	**1.0404**	**.49612**	**.02417**	**5.0444**	**.02435**
Stddev	.00251	.0122	.00165	.0028	.00442	.00010	.0185	.00056
%RSD	1.2864	.24990	.82634	.27278	.89114	.40757	.36689	2.3025
#1	.19406	4.8978	.20076	1.0389	.50121	.02422	5.0389	.02499
#2	.19365	4.8802	.19917	1.0387	.49326	.02406	5.0651	.02396
#3	.19819	4.9038	.19747	1.0437	.49389	.02423	5.0294	.02411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09720**	**.24421**	**.24503**	**1.9907**	**24.978**	**.50490**	**4.9655**	**.24535**
Stddev	.00108	.00153	.00339	.0160	.316	.00383	.1207	.00378
%RSD	1.1061	.62627	1.3815	.80251	1.2655	.75893	2.4314	1.5417
#1	.09784	.24393	.24719	1.9872	25.343	.50799	5.0551	.24575
#2	.09779	.24284	.24678	1.9768	24.788	.50061	4.8282	.24891
#3	.09596	.24586	.24113	2.0081	24.803	.50609	5.0131	.24138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49956**	**136.35**	**.24473**	**4.8026**	**.24494**	**.58098**	**.18789**	**6.4038**
Stddev	.00321	1.15	.00190	.0434	.00352	.00719	.00523	.0341
%RSD	.64184	.84473	.77812	.90272	1.4356	1.2369	2.7839	.53200
#1	.50201	137.68	.24501	4.8241	.24136	.58754	.18314	6.4187
#2	.50073	135.72	.24648	4.8309	.24839	.58208	.18703	6.4279
#3	.49593	135.65	.24270	4.7526	.24507	.57330	.19349	6.3648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117702S Acquired: 6/29/2016 10:49:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48929	.50112	.49418	.24358	.48863	.53562	.00050
Stddev	.00591	.00300	.00180	.00026	.00134	.00435	.00021
%RSD	1.2084	.59800	.36509	.10578	.27453	.81172	41.703
#1	.49224	.50455	.49562	.24333	.48964	.53849	.00070
#2	.49314	.49899	.49215	.24357	.48711	.53774	.00054
#3	.48248	.49983	.49475	.24385	.48914	.53061	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9081.9	54484.	2525.1
Stddev	10.5	190.	32.2
%RSD	.11569	.34939	1.2735
#1	9086.1	54548.	2488.8
#2	9070.0	54633.	2536.5
#3	9089.7	54269.	2550.0

Approved: June 29, 2016

Sample Name: L1606117703SD Acquired: 6/29/2016 10:52:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19451**	**4.8952**	**.20314**	**1.0415**	**.49496**	**.02429**	**5.0340**	**.02406**
Stddev	.00108	.0218	.00109	.0053	.00293	.00021	.0434	.00009
%RSD	.55729	.44561	.53676	.50951	.59283	.88227	.86146	.35903
#1	.19551	4.8713	.20438	1.0360	.49820	.02412	4.9842	.02411
#2	.19335	4.9141	.20231	1.0465	.49419	.02454	5.0552	.02412
#3	.19466	4.9001	.20274	1.0421	.49248	.02423	5.0628	.02396
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09901**	**.24380**	**.24679**	**1.9923**	**25.016**	**.50362**	**4.9359**	**.24624**
Stddev	.00059	.00289	.00206	.0277	.040	.00536	.0290	.00314
%RSD	.59286	1.1873	.83568	1.3898	.15802	1.0648	.58693	1.2753
#1	.09948	.24100	.24820	1.9793	24.975	.50095	4.9342	.24285
#2	.09835	.24364	.24442	2.0240	25.054	.50013	4.9657	.24905
#3	.09920	.24678	.24775	1.9734	25.019	.50980	4.9078	.24681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50578**	**135.15**	**.24586**	**4.8228**	**.24334**	**.58373**	**.18718**	**6.3663**
Stddev	.00085	.49	.00076	.0032	.00233	.00442	.00776	.0382
%RSD	.16843	.36540	.31021	.06703	.95674	.75665	4.1467	.59942
#1	.50657	135.27	.24671	4.8249	.24602	.58882	.17991	6.3664
#2	.50589	135.58	.24561	4.8243	.24217	.58089	.19536	6.4044
#3	.50488	134.61	.24525	4.8190	.24183	.58147	.18626	6.3281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117703SD Acquired: 6/29/2016 10:52:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49637**	**.50255**	**.50979**	**.24641**	**.49557**	**.53975**	**.00058**
Stddev	.00126	.00135	.01203	.00206	.00096	.00059	.00047
%RSD	.25315	.26867	2.3607	.83654	.19399	.10848	80.198
#1	.49603	.50372	.49709	.24704	.49511	.54043	.00110
#2	.49776	.50287	.51125	.24808	.49492	.53942	.00044
#3	.49531	.50107	.52102	.24410	.49667	.53941	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9098.0**	**54719.**	**2550.7**
Stddev	23.7	61.	3.5
%RSD	.26096	.11196	.13807
#1	9075.7	54671.	2553.6
#2	9095.4	54699.	2546.8
#3	9123.0	54788.	2551.7

Approved: June 29, 2016

Sample Name: L16060114201 Acquired: 6/29/2016 10:56:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.05384	-.00032	.01684	.07761	-.00004	2.2488	.00021
Stddev	.00119	.00770	.00187	.00396	.00106	.00006	.0225	.00011
%RSD	415.52	14.296	577.94	23.515	1.3614	145.16	.99944	50.495
#1	.00096	.06269	-.00245	.01306	.07883	.00002	2.2683	.00009
#2	-.00140	.04866	.00040	.02096	.07698	-.00004	2.2538	.00025
#3	-.00041	.05019	.00108	.01650	.07701	-.00010	2.2242	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00590	.00097	.00195	4.6344	1.1664	.00930	1.6448	.22938
Stddev	.00022	.00098	.00114	.0386	.0250	.00305	.1018	.00282
%RSD	3.6669	101.51	58.513	.83227	2.1468	32.789	6.1907	1.2305
#1	.00612	.00192	.00228	4.6599	1.1924	.00816	1.7294	.23103
#2	.00587	.00101	.00068	4.5901	1.1645	.00698	1.6731	.23098
#3	.00569	-.00004	.00290	4.6534	1.1425	.01275	1.5318	.22612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	19.811	.00759	.07218	.00239	.00125	-.00008	15.664
Stddev	.00040	.035	.00122	.00329	.00158	.00636	.00432	.082
%RSD	128.61	.17766	16.039	4.5625	66.322	506.95	5476.0	.52147
#1	-.00014	19.840	.00899	.06838	.00176	.00486	-.00406	15.721
#2	.00062	19.822	.00680	.07423	.00121	-.00609	.00451	15.701
#3	.00046	19.772	.00697	.07394	.00419	.00499	-.00069	15.571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114201 Acquired: 6/29/2016 10:56:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.04063	.00787	.00205	.00169	.01008	.00074
Stddev	.00031	.00072	.00259	.00031	.00086	.00030	.00060
%RSD	130.29	1.7665	32.862	14.961	51.026	2.9613	81.471
#1	.00031	.04071	.01082	.00236	.00268	.01018	.00029
#2	-.00010	.04131	.00603	.00205	.00112	.01033	.00142
#3	.00050	.03988	.00675	.00174	.00127	.00975	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9265.1	56620.	2599.8
Stddev	32.3	57.	16.0
%RSD	.34816	.10067	.61596
#1	9300.8	56597.	2581.4
#2	9256.7	56685.	2607.4
#3	9237.9	56579.	2610.6

Approved: June 29, 2016

Sample Name: L16060114203 Acquired: 6/29/2016 11:00:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00198	.26266	-.00256	.01654	.04946	.00008	7.0396	.00052
Stddev	.00042	.01082	.00139	.00188	.00123	.00012	.0573	.00004
%RSD	21.424	4.1184	54.375	11.371	2.4882	142.01	.81409	7.7118
#1	.00178	.27101	-.00401	.01835	.05088	.00020	7.0973	.00051
#2	.00169	.25044	-.00243	.01669	.04881	.00009	7.0386	.00049
#3	.00247	.26653	-.00124	.01459	.04869	-.00004	6.9827	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	-.00005	.00274	3.9448	1.6398	.00224	1.1106	.20239
Stddev	.00010	.00092	.00066	.0326	.1612	.00458	.0425	.00281
%RSD	13.101	1790.3	24.128	.82696	9.8324	204.48	3.8273	1.3861
#1	.00073	.00101	.00240	3.9720	1.8259	-.00214	1.0675	.19923
#2	.00088	-.00060	.00232	3.9087	1.5415	.00186	1.1525	.20459
#3	.00069	-.00056	.00350	3.9539	1.5520	.00700	1.1119	.20335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	4.1156	.00378	.08391	.00282	-.00087	-.00174	5.1219
Stddev	.00015	.0406	.00051	.00804	.00259	.00234	.00831	.0495
%RSD	20.086	.98643	13.451	9.5772	91.737	267.84	478.76	.96697
#1	.00063	4.1179	.00323	.07573	.00011	.00046	.00046	5.1453
#2	.00071	4.1550	.00423	.08423	.00527	.00049	-.01093	5.1553
#3	.00092	4.0739	.00388	.09179	.00309	-.00357	.00526	5.0650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114203 Acquired: 6/29/2016 11:00:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.05567	.01313	.00192	.00335	.00373	.00101
Stddev	.00129	.00058	.00273	.00330	.00039	.00020	.00009
%RSD	430.22	1.0337	20.797	172.02	11.633	5.2474	8.8281
#1	.00027	.05537	.01143	.00545	.00300	.00376	.00109
#2	.00060	.05633	.01628	.00140	.00377	.00352	.00103
#3	-.00177	.05531	.01168	-.00109	.00328	.00390	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9288.4	56422.	2559.6
Stddev	3.9	105.	13.3
%RSD	.04169	.18677	.51831
#1	9290.7	56395.	2551.0
#2	9284.0	56538.	2552.9
#3	9290.6	56332.	2574.9

Approved: June 29, 2016

Sample Name: L16060114205 Acquired: 6/29/2016 11:04:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	.31454	-.00074	.01756	.05047	.00008	6.9218	.00008
Stddev	.00260	.00412	.00201	.00145	.00123	.00006	.0836	.00022
%RSD	97.281	1.3114	271.27	8.2833	2.4347	78.389	1.2080	281.44
#1	.00126	.31884	.00027	.01892	.05118	.00001	6.9917	.00020
#2	.00108	.31061	-.00306	.01772	.05117	.00011	6.9446	-.00018
#3	.00567	.31418	.00056	.01603	.04905	.00012	6.8292	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00084	.00163	3.9780	1.4777	.00255	1.1076	.20275
Stddev	.00016	.00108	.00090	.0271	.0869	.00126	.1639	.00081
%RSD	31.175	128.55	55.227	.67991	5.8832	49.328	14.796	.39818
#1	.00060	.00178	.00084	3.9938	1.4991	.00201	.91841	.20198
#2	.00060	.00108	.00261	3.9935	1.3821	.00399	1.1975	.20269
#3	.00033	-.00034	.00145	3.9468	1.5520	.00166	1.2068	.20359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	3.9762	.00428	.09393	.00314	.00006	-.00349	5.0942
Stddev	.00050	.0505	.00061	.00534	.00346	.00302	.00814	.1419
%RSD	105.07	1.2700	14.343	5.6804	110.23	5362.3	232.89	2.7854
#1	-.00008	4.0322	.00467	.09370	.00372	.00154	-.00756	5.1798
#2	.00089	3.9623	.00458	.08871	-.00058	-.00341	-.00880	5.1725
#3	.00063	3.9341	.00357	.09938	.00627	.00204	.00588	4.9304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114205 Acquired: 6/29/2016 11:04:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.05376	.01657	.00180	.00232	.00388	.00099
Stddev	.00062	.00025	.00776	.00362	.00126	.00017	.00040
%RSD	848.78	.47096	46.800	201.27	54.318	4.2990	39.956
#1	.00015	.05405	.00962	-.00229	.00335	.00404	.00138
#2	-.00077	.05360	.01516	.00309	.00270	.00388	.00059
#3	.00040	.05362	.02493	.00459	.00091	.00371	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9261.4	56467.	2570.5
Stddev	29.2	271.	24.3
%RSD	.31523	.48004	.94686
#1	9257.6	56373.	2553.3
#2	9234.3	56773.	2559.8
#3	9292.3	56255.	2598.3

Approved: June 29, 2016

Sample Name: L16060114205PS Acquired: 6/29/2016 11:08:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574350-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19698**	**5.1836**	**.19690**	**.95704**	**.54220**	**.02421**	**11.138**	**.02453**
Stddev	.00135	.0090	.00208	.00306	.00204	.00007	.014	.00029
%RSD	.68306	.17341	1.0563	.32007	.37665	.29489	.12834	1.1976
#1	.19571	5.1940	.19609	.95996	.54402	.02421	11.124	.02467
#2	.19684	5.1782	.19927	.95385	.54259	.02428	11.138	.02473
#3	.19839	5.1786	.19536	.95732	.53999	.02414	11.153	.02419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09992**	**.24885**	**.24937**	**5.5654**	**26.142**	**.50983**	**5.9583**	**.42668**
Stddev	.00040	.00150	.00134	.0652	.048	.00495	.0267	.00252
%RSD	.39603	.60158	.53809	1.1713	.18369	.97095	.44863	.59093
#1	.09959	.24796	.24783	5.6405	26.194	.51229	5.9767	.42684
#2	.10036	.24801	.25032	5.5232	26.100	.51307	5.9277	.42408
#3	.09980	.25058	.24994	5.5325	26.132	.50413	5.9706	.42912
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50145**	**28.500**	**.25395**	**4.8917**	**.24863**	**.58871**	**.19215**	**6.9581**
Stddev	.00313	.082	.00223	.0255	.00074	.00657	.00526	.0108
%RSD	.62474	.28814	.87906	.52166	.29696	1.1164	2.7355	.15503
#1	.49785	28.540	.25157	4.8626	.24945	.58282	.18674	6.9490
#2	.50361	28.555	.25600	4.9103	.24801	.58751	.19245	6.9700
#3	.50288	28.406	.25429	4.9023	.24844	.59580	.19724	6.9553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114205PS Acquired: 6/29/2016 11:08:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574350-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49659	.55312	.50515	.25176	.49354	.49936	.00053
Stddev	.00055	.00203	.00972	.00430	.00287	.00203	.00043
%RSD	.11132	.36752	1.9241	1.7078	.58090	.40709	81.497
#1	.49601	.55084	.50654	.24787	.49023	.49713	.00005
#2	.49663	.55474	.51410	.25103	.49532	.50111	.00063
#3	.49712	.55377	.49481	.25637	.49506	.49984	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9168.3	55703.	2548.0
Stddev	10.0	145.	9.7
%RSD	.10905	.26037	.37880
#1	9175.4	55714.	2537.0
#2	9156.9	55553.	2551.5
#3	9172.8	55843.	2555.3

Approved: June 29, 2016

Sample Name: L16060114205SDL Acquired: 6/29/2016 11:11:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574350-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00237	.06917	.00008	.00708	.01120	.00005	1.4792	-.00005
Stddev	.00168	.00656	.00232	.00425	.00087	.00009	.0060	.00021
%RSD	70.898	9.4785	2824.2	60.070	7.7802	181.44	.40789	419.89
#1	.00108	.07431	.00214	.01059	.01168	-.00000	1.4731	-.00025
#2	.00177	.06178	-.00244	.00829	.01172	.00015	1.4795	-.00008
#3	.00428	.07140	.00054	.00235	.01019	-.00000	1.4851	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	-.00071	.00091	.83418	.42736	-.00138	.22801	.04289
Stddev	.00018	.00036	.00109	.02527	.03815	.00129	.10671	.00196
%RSD	512.99	51.088	118.89	3.0288	8.9277	93.122	46.801	4.5585
#1	.00017	-.00110	.00134	.83970	.40128	-.00154	.10601	.04084
#2	-.00012	-.00064	.00172	.80661	.47115	-.00259	.30399	.04310
#3	-.00015	-.00039	-.00032	.85623	.40964	-.00002	.27405	.04473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.85799	.00103	.02194	.00462	-.00136	-.00758	1.0687
Stddev	.00004	.00336	.00071	.00142	.00524	.00412	.00289	.0208
%RSD	26.931	.39213	68.406	6.4793	113.23	303.12	38.205	1.9437
#1	.00020	.86186	.00128	.02038	.00673	.00320	-.00885	1.0772
#2	.00014	.85578	.00024	.02229	.00848	-.00246	-.00961	1.0839
#3	.00013	.85633	.00158	.02316	-.00134	-.00482	-.00426	1.0450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114205SDL Acquired: 6/29/2016 11:11:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574350-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.01111**	**.00591**	**.00103**	**.00120**	**.00132**	**.00010**
Stddev	.00009	.00032	.00950	.00060	.00074	.00008	.00021
%RSD	23.226	2.8851	160.92	57.789	61.352	5.8407	213.09
#1	-.00042	.01076	.01610	.00110	.00193	.00124	-.00012
#2	-.00028	.01139	-.00271	.00040	.00122	.00139	.00012
#3	-.00044	.01117	.00433	.00159	.00046	.00132	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9326.3**	**56292.**	**2538.0**
Stddev	30.3	71.	19.8
%RSD	.32487	.12632	.77960
#1	9326.4	56243.	2531.8
#2	9295.9	56374.	2560.1
#3	9356.5	56260.	2522.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 11:15:39 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39775**	**9.8980**	**.39330**	**.49118**	**.99618**	**.04916**	**9.9003**	**.04913**
Stddev	.00028	.0560	.00344	.00440	.01235	.00018	.1516	.00043
%RSD	.07093	.56566	.87509	.89603	1.2396	.37112	1.5313	.87815
#1	.39800	9.8583	.39274	.48610	1.0087	.04918	10.059	.04947
#2	.39782	9.9620	.39698	.49355	.99581	.04933	9.8861	.04928
#3	.39744	9.8736	.39017	.49388	.98402	.04897	9.7563	.04864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19705**	**.49096**	**.49572**	**3.9516**	**49.948**	**.99803**	**9.8895**	**.49836**
Stddev	.00190	.00200	.00583	.0450	.591	.01343	.1159	.00804
%RSD	.96321	.40673	1.1755	1.1386	1.1829	1.3461	1.1717	1.6141
#1	.19783	.49013	.50017	4.0012	50.569	1.0122	9.8805	.50704
#2	.19843	.49324	.49786	3.9403	49.885	.99645	10.010	.49690
#3	.19488	.48952	.48912	3.9133	49.392	.98546	9.7784	.49115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99282**	**49.820**	**.49528**	**9.8340**	**.49480**	**1.1873**	**.39399**	**5.0133**
Stddev	.00974	.654	.00462	.0602	.00114	.0096	.00750	.0260
%RSD	.98116	1.3132	.93375	.61242	.23105	.81129	1.9029	.51928
#1	.99790	50.506	.49591	9.8634	.49609	1.1933	.39907	5.0261
#2	.99897	49.752	.49955	9.8740	.49439	1.1925	.39752	5.0304
#3	.98159	49.202	.49037	9.7648	.49392	1.1762	.38538	4.9833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 11:15:39 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98633	.99784	.99276	.49829	.98981	.98431	.99417
Stddev	.01201	.01332	.00694	.00399	.00642	.00973	.01444
%RSD	1.2180	1.3354	.69883	.80127	.64872	.98812	1.4527
#1	.99356	1.0107	.99799	.49978	.98669	.98877	1.0096
#2	.99298	.99878	.98489	.50132	.99720	.99101	.99184
#3	.97246	.98407	.99539	.49376	.98555	.97315	.98103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9186.3	54900.	2516.8
Stddev	45.8	223.	34.6
%RSD	.49897	.40661	1.3751
#1	9171.0	55098.	2480.3
#2	9150.1	54658.	2520.8
#3	9237.8	54946.	2549.2

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 11:19:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00004**	**.00204**	**.00557**	**-.00049**	**-.00001**	**.02351**
Stddev	.00401	.00403	.00167	.00294	.00175	.00006	.04614
%RSD	755.35	9033.9	81.596	52.893	355.36	1009.0	196.26
#1	-.00253	-.00049	.00303	.00681	-.00252	-.00002	.06775
#2	-.00095	-.00369	.00012	.00768	.00050	.00006	.02710
#3	.00507	.00431	.00298	.00220	.00054	-.00006	-.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**-.00012**	**-.00057**	**.00179**	**.02465**	**.20659**	**.00034**
Stddev	.00019	.00060	.00072	.00137	.02370	.15089	.00074
%RSD	121.13	518.86	127.53	76.416	96.147	73.040	220.06
#1	-.00021	-.00076	-.00051	.00098	.05094	.21592	.00063
#2	.00005	-.00002	.00013	.00337	.00490	.35260	.00089
#3	-.00032	.00043	-.00132	.00102	.01812	.05125	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.05204**	**.00035**	**.00076**	**.01493**	**.00059**	**-.00104**	F **.00757**
Stddev	.09746	.00246	.00010	.03176	.00037	.00811	.00219
%RSD	187.29	699.20	13.005	212.77	62.419	781.27	28.939
#1	.04085	.00315	.00085	.05137	.00088	-.00126	.00749
#2	-.04345	-.00145	.00078	.00022	.00072	.00718	.00542
#3	-.15351	-.00064	.00066	-.00682	.00018	-.00903	.00980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 11:19:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00467	-.00035	-.01690	.00078	-.00014	.00673	.00379
Stddev	.00277	.00516	.00351	.00037	.00010	.00281	.00201
%RSD	59.320	1473.1	20.751	47.408	71.238	41.680	52.985
#1	.00374	-.00628	-.01299	.00070	-.00020	.00667	.00592
#2	.00248	.00305	-.01976	.00118	-.00003	.00957	.00354
#3	.00779	.00218	-.01795	.00045	-.00019	.00396	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00120	.00155	.00079
Stddev	.00106	.00004	.00058
%RSD	88.613	2.8281	73.063
#1	.00020	.00158	.00024
#2	.00231	.00155	.00140
#3	.00108	.00150	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9303.5	56275.	2550.5
Stddev	46.8	137.	4.0
%RSD	.50277	.24398	.15699
#1	9269.0	56271.	2549.9
#2	9356.7	56140.	2546.8
#3	9284.8	56415.	2554.8

Approved: June 29, 2016

Sample Name: L1606090707 Acquired: 6/29/2016 11:23:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.00642	.01308	.00774	.00097	.00006	.04094	-.00017
Stddev	.00308	.00957	.00153	.00083	.00054	.00005	.05492	.00015
%RSD	443.75	149.09	11.694	10.686	55.811	85.531	134.17	91.439
#1	.00317	.01345	.01352	.00718	.00083	.00011	.04123	-.00006
#2	.00167	-.00448	.01138	.00869	.00052	.00000	.09572	-.00034
#3	-.00276	.01027	.01434	.00735	.00157	.00007	-.01413	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00042	.00267	.01617	.10414	.00178	.06017	.00283
Stddev	.00030	.00142	.00121	.01849	.09074	.00164	.06430	.00090
%RSD	175.42	336.02	45.126	114.35	87.136	91.951	106.87	31.946
#1	-.00017	-.00115	.00284	-.00445	.03631	.00287	.00821	.00205
#2	.00039	.00160	.00379	.03127	.06888	.00258	.04022	.00262
#3	.00028	.00082	.00139	.02168	.20722	-.00010	.13208	.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	6.7723	-.00046	.01207	.00641	-.00331	.00104	.04216
Stddev	.00018	.0474	.00104	.00626	.00490	.00324	.00440	.00349
%RSD	173.51	.70044	225.49	51.855	76.397	97.995	422.65	8.2776
#1	-.00011	6.7197	.00016	.01921	.01139	.00043	.00612	.03859
#2	.00023	6.7856	-.00167	.00752	.00626	-.00501	-.00121	.04556
#3	.00019	6.8117	.00012	.00948	.00159	-.00533	-.00178	.04233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090707 Acquired: 6/29/2016 11:23:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00614**	**-.00204**	**-.00136**	**.00101**	**.00038**	**-.00005**
Stddev	.00033	.00021	.00654	.00236	.00067	.00012	.00051
%RSD	57.776	3.4898	320.10	173.56	66.707	30.990	1055.7
#1	-.00075	.00635	.00273	-.00400	.00027	.00051	.00054
#2	-.00078	.00616	-.00950	-.00058	.00158	.00032	-.00032
#3	-.00019	.00592	.00064	.00051	.00118	.00030	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9018.4**	**54413.**	**2480.7**
Stddev	10.7	126.	2.2
%RSD	.11833	.23069	.08723
#1	9030.1	54490.	2480.6
#2	9016.0	54268.	2483.0
#3	9009.2	54481.	2478.6

Approved: June 29, 2016

Sample Name: L1606090710 Acquired: 6/29/2016 11:27:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	-.00080	.01196	.00653	.00077	.00000	.09228	-.00016
Stddev	.00195	.00455	.00605	.00233	.00085	.00006	.02540	.00014
%RSD	321.96	565.38	50.605	35.715	110.15	21021.	27.529	86.232
#1	.00271	-.00596	.01675	.00727	.00121	-.00000	.12116	-.00001
#2	-.00115	.00088	.00516	.00392	-.00021	.00006	.07341	-.00028
#3	.00025	.00266	.01396	.00841	.00130	-.00006	.08226	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	-.00028	.00205	.02121	.05093	-.00416	.07609	.00177
Stddev	.00043	.00042	.00125	.05029	.14808	.00259	.06210	.00182
%RSD	196.49	148.59	61.188	237.14	290.73	62.230	81.617	102.51
#1	-.00060	.00015	.00113	-.01674	.22192	-.00655	.14733	.00387
#2	-.00030	-.00069	.00154	.00211	-.03371	-.00451	.04756	.00070
#3	.00024	-.00031	.00347	.07824	-.03541	-.00141	.03338	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	6.7027	-.00060	.01357	.00560	-.00133	-.00797	.04302
Stddev	.00007	.0621	.00099	.00377	.00298	.00183	.00822	.00114
%RSD	26.393	.92649	164.56	27.775	53.184	137.72	103.16	2.6388
#1	.00019	6.6531	.00054	.01713	.00406	-.00257	-.00080	.04171
#2	.00027	6.6826	-.00123	.00962	.00372	-.00219	-.01695	.04375
#3	.00032	6.7724	-.00112	.01396	.00904	.00077	-.00616	.04360
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090710 Acquired: 6/29/2016 11:27:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00591	.00284	.00190	.00143	.00046	-.00031
Stddev	.00037	.00010	.00142	.00261	.00107	.00012	.00039
%RSD	72.988	1.6223	50.200	137.59	74.960	26.873	123.18
#1	.00063	.00590	.00447	.00250	.00210	.00033	-.00048
#2	.00080	.00582	.00218	-.00096	.00019	.00058	.00013
#3	.00009	.00601	.00186	.00416	.00199	.00048	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8995.4	54163.	2477.2
Stddev	21.3	65.	3.8
%RSD	.23688	.11987	.15296
#1	9016.5	54234.	2477.5
#2	8973.9	54146.	2473.3
#3	8995.9	54108.	2480.9

Approved: June 29, 2016

Sample Name: L1606090712 Acquired: 6/29/2016 11:31:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00088**	**.01896**	**-.00058**	**.00565**	**.00121**	**.00006**	**.01835**
Stddev	.00187	.00807	.00645	.00089	.00110	.00007	.04026
%RSD	214.15	42.553	1103.8	15.709	90.202	133.41	219.45
#1	.00293	.02231	.00055	.00483	.00007	.00014	.04911
#2	-.00073	.00975	-.00753	.00553	.00226	.00000	.03316
#3	.00042	.02480	.00523	.00660	.00132	.00002	-.02722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**-.00021**	**.00200**	**.00076**	F **-.02009**	**.10524**	**-.00315**
Stddev	.00013	.00056	.00100	.00046	.03765	.07386	.00106
%RSD	70.958	263.43	50.245	61.050	187.40	70.178	33.537
#1	.00019	-.00077	.00270	.00104	-.06176	.06677	-.00337
#2	.00029	.00035	.00085	.00101	-.00999	.19040	-.00407
#3	.00004	-.00022	.00244	.00022	.01148	.05857	-.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02634**	**-.00050**	**.00009**	**4.1202**	**-.00044**	**.01785**	**.00118**
Stddev	.02096	.00133	.00029	.0340	.00078	.00425	.00251
%RSD	79.590	264.37	333.72	.82527	175.42	23.835	213.44
#1	-.04939	-.00200	-.00025	4.1500	.00046	.01986	.00360
#2	-.02124	-.00008	.00025	4.0832	-.00086	.01296	.00134
#3	-.00840	.00057	.00027	4.1274	-.00092	.02071	-.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606090712 Acquired: 6/29/2016 11:31:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	-.00679	.01586	-.00087	.00309	-.00100	.00219
Stddev	.00258	.00308	.00057	.00061	.00014	.00496	.00259
%RSD	160.60	45.324	3.5701	69.809	4.4010	495.43	118.52
#1	.00436	-.00954	.01645	-.00065	.00295	-.00520	.00081
#2	.00119	-.00346	.01532	-.00155	.00310	-.00227	.00058
#3	-.00074	-.00736	.01581	-.00040	.00322	.00447	.00518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00163	.00262	-.00052
Stddev	.00061	.00030	.00108
%RSD	37.672	11.355	208.41
#1	.00220	.00249	-.00175
#2	.00171	.00240	-.00002
#3	.00098	.00295	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8859.6	53426.	2419.2
Stddev	22.6	111.	13.9
%RSD	.25560	.20706	.57304
#1	8855.4	53529.	2418.3
#2	8884.1	53439.	2433.4
#3	8839.4	53309.	2405.8

Approved: June 29, 2016

Sample Name: L1606090714 Acquired: 6/29/2016 11:35:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**.00510**	**.00399**	**.00362**	**.00127**	**.00005**	**.58262**	**-.00010**
Stddev	.00173	.00299	.00186	.00149	.00148	.00015	.01830	.00029
%RSD	597.57	58.669	46.546	41.233	116.79	271.31	3.1402	278.65
#1	.00065	.00687	.00608	.00232	-.00037	-.00011	.60314	.00023
#2	.00076	.00165	.00341	.00330	.00166	.00015	.56800	-.00025
#3	-.00228	.00679	.00250	.00525	.00252	.00013	.57673	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**-.00007**	**.00094**	**.00525**	**.06024**	**.00065**	**.06442**	**-.00265**
Stddev	.00047	.00092	.00185	.05553	.17905	.00338	.05158	.00254
%RSD	80.962	1408.9	196.96	1057.4	297.23	520.94	80.076	95.684
#1	-.00004	-.00109	.00199	-.03472	.17108	.00412	.00583	-.00557
#2	-.00077	.00069	-.00119	.06865	-.14633	.00047	.08444	-.00146
#3	-.00091	.00020	.00202	-.01818	.15597	-.00264	.10299	-.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**4.8479**	**-.00053**	**.01156**	**.00233**	**.00108**	**-.00182**	**.08400**
Stddev	.00026	.0811	.00033	.00405	.00279	.00409	.00693	.00108
%RSD	702.98	1.6732	62.836	35.045	119.52	379.17	380.96	1.2822
#1	.00031	4.7775	-.00082	.01496	.00306	-.00207	-.00746	.08288
#2	-.00021	4.8297	-.00061	.01262	.00468	.00570	.00592	.08503
#3	.00000	4.9366	-.00017	.00708	-.00075	-.00039	-.00391	.08409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090714 Acquired: 6/29/2016 11:35:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00775**	**.00275**	**.00198**	**.00091**	**.00057**	**-.00060**
Stddev	.00031	.00043	.00297	.00184	.00113	.00033	.00031
%RSD	206.37	5.5462	108.08	92.892	123.55	57.792	50.999
#1	-.00046	.00726	.00143	.00362	.00222	.00084	-.00039
#2	-.00013	.00797	.00067	.00234	.00036	.00020	-.00095
#3	.00015	.00803	.00615	-.00001	.00017	.00068	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8955.2**	**53721.**	**2433.6**
Stddev	24.8	47.	8.7
%RSD	.27678	.08839	.35709
#1	8929.5	53679.	2443.6
#2	8957.2	53773.	2429.5
#3	8978.9	53711.	2427.7

Approved: June 29, 2016

Sample Name: L1606090717S Acquired: 6/29/2016 11:38:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00409	.07103	.00385	.01209	.00597	.00020	.73321	.00048
Stddev	.00201	.00400	.00261	.00266	.00149	.00003	.02661	.00015
%RSD	49.153	5.6316	67.876	21.985	25.026	13.360	3.6293	30.401
#1	.00600	.07445	.00488	.00937	.00524	.00018	.76390	.00052
#2	.00199	.07201	.00088	.01222	.00768	.00023	.71897	.00061
#3	.00429	.06663	.00579	.01468	.00498	.00020	.71674	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.00285	.00361	.04803	.41005	.00365	.14563	.00566
Stddev	.00020	.00031	.00028	.03389	.12460	.00311	.08051	.00310
%RSD	17.840	10.940	7.6373	70.562	30.386	85.115	55.284	54.744
#1	.00090	.00266	.00332	.07245	.36366	.00669	.22910	.00831
#2	.00129	.00320	.00365	.06230	.31531	.00048	.06844	.00225
#3	.00121	.00267	.00386	.00934	.55119	.00378	.13935	.00643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00546	5.1203	.00301	.06957	.00458	.00313	.00098	.10974
Stddev	.00004	.0766	.00041	.00538	.00059	.00477	.00430	.00403
%RSD	.71454	1.4950	13.793	7.7375	12.967	152.61	437.47	3.6722
#1	.00542	5.0411	.00260	.07294	.00510	.00222	.00045	.10670
#2	.00549	5.1258	.00299	.07241	.00393	-.00113	-.00302	.11431
#3	.00547	5.1939	.00343	.06336	.00470	.00829	.00552	.10821
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090717S Acquired: 6/29/2016 11:38:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00597	.01280	.00744	.00501	.00595	.00686	.00015
Stddev	.00062	.00032	.00844	.00181	.00114	.00010	.00021
%RSD	10.308	2.4761	113.38	36.111	19.232	1.4153	137.53
#1	.00598	.01246	-.00160	.00688	.00570	.00675	.00030
#2	.00657	.01309	.01511	.00327	.00495	.00690	-.00009
#3	.00534	.01283	.00882	.00488	.00719	.00694	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9118.4	54908.	2482.3
Stddev	18.5	107.	24.0
%RSD	.20329	.19521	.96747
#1	9118.0	54839.	2504.8
#2	9100.0	54853.	2485.1
#3	9137.1	55032.	2457.0

Approved: June 29, 2016

Sample Name: L1606090719SD Acquired: 6/29/2016 11:42:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00246	.06591	.00542	.01296	.00584	.00032	.69080	.00026
Stddev	.00143	.00624	.00267	.00164	.00050	.00005	.03527	.00009
%RSD	58.193	9.4623	49.158	12.639	8.5256	15.303	5.1052	34.475
#1	.00097	.07304	.00374	.01474	.00553	.00031	.67080	.00016
#2	.00257	.06322	.00850	.01152	.00641	.00027	.67008	.00034
#3	.00383	.06147	.00404	.01261	.00558	.00037	.73152	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.00245	.00307	.03604	.35441	.00514	.14600	.00348
Stddev	.00021	.00145	.00151	.02124	.06524	.00248	.02243	.00129
%RSD	20.162	59.060	49.275	58.941	18.409	48.372	15.361	36.881
#1	.00117	.00189	.00284	.05986	.28084	.00633	.14299	.00353
#2	.00081	.00137	.00169	.02920	.37718	.00228	.12523	.00218
#3	.00118	.00410	.00469	.01906	.40523	.00680	.16978	.00475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00610	5.0747	.00169	.06420	.00756	.00316	-.00333	.11191
Stddev	.00055	.0846	.00018	.00170	.00069	.00241	.00590	.00158
%RSD	9.0498	1.6668	10.601	2.6545	9.0655	76.054	177.28	1.4102
#1	.00572	4.9771	.00149	.06581	.00678	.00511	-.00488	.11026
#2	.00585	5.1201	.00182	.06242	.00808	.00390	.00319	.11207
#3	.00673	5.1269	.00176	.06437	.00782	.00047	-.00829	.11340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090719SD Acquired: 6/29/2016 11:42:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00511	.01246	.00522	.00524	.00731	.00639	.00004
Stddev	.00014	.00019	.00999	.00107	.00096	.00021	.00043
%RSD	2.7424	1.5379	191.31	20.455	13.197	3.3635	1034.5
#1	.00515	.01267	.01170	.00647	.00839	.00622	.00040
#2	.00496	.01229	.01026	.00450	.00653	.00631	-.00043
#3	.00523	.01242	-.00629	.00476	.00702	.00663	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9084.2	54806.	2516.4
Stddev	17.9	225.	16.0
%RSD	.19752	.40979	.63660
#1	9100.7	54871.	2534.9
#2	9086.8	54990.	2506.1
#3	9065.1	54556.	2508.3

Approved: June 29, 2016

Sample Name: L1606138001 Acquired: 6/29/2016 11:46:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	1.1667	.00020	.00408	.01597	.00013	4.9938	-.00017
Stddev	.00019	.0222	.00398	.00252	.00035	.00005	.1237	.00004
%RSD	24.691	1.9019	1956.1	61.841	2.2144	35.146	2.4774	25.063
#1	-.00094	1.1490	.00460	.00140	.01556	.00016	4.9039	-.00021
#2	-.00057	1.1594	-.00314	.00640	.01615	.00016	4.9426	-.00013
#3	-.00085	1.1916	-.00085	.00443	.01619	.00008	5.1349	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.00133	.00290	1.4752	.28705	-.00033	1.6814	.08145
Stddev	.00016	.00069	.00109	.0428	.05712	.00383	.0556	.00614
%RSD	19.902	51.826	37.557	2.9000	19.900	1174.2	3.3072	7.5336
#1	.00067	.00078	.00275	1.4561	.23781	-.00418	1.7308	.07457
#2	.00098	.00110	.00406	1.4452	.27367	.00348	1.6212	.08341
#3	.00075	.00210	.00190	1.5241	.34968	-.00028	1.6922	.08637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.38691	.00104	.05759	.00309	-.00157	-.00552	1.5832
Stddev	.00033	.05150	.00062	.00607	.00414	.00724	.00334	.0344
%RSD	204.05	13.310	60.083	10.538	133.91	460.69	60.490	2.1733
#1	-.00021	.33554	.00104	.05351	.00668	-.00972	-.00251	1.5443
#2	.00042	.38666	.00041	.05469	-.00144	.00087	-.00494	1.5955
#3	.00026	.43854	.00165	.06456	.00404	.00413	-.00911	1.6097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138001 Acquired: 6/29/2016 11:46:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.01816**	**.01395**	**.00473**	**.00341**	**.03308**	**.00038**
Stddev	.00041	.00010	.01270	.00264	.00070	.00082	.00043
%RSD	66.236	.55650	91.059	55.864	20.624	2.4793	111.37
#1	-.00019	.01825	.00675	.00199	.00284	.03213	.00003
#2	-.00102	.01816	.02862	.00727	.00420	.03351	.00086
#3	-.00066	.01805	.00648	.00493	.00319	.03359	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9144.8**	**55027.**	**2512.8**
Stddev	28.1	259.	16.1
%RSD	.30702	.47067	.63939
#1	9117.7	55113.	2531.3
#2	9143.0	55231.	2504.6
#3	9173.8	54736.	2502.4

Approved: June 29, 2016

Sample Name: L1606138002 Acquired: 6/29/2016 11:50:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00158**	**1.2783**	**.00236**	**.00735**	**.01468**	**.00009**	**4.8914**	**-.00002**
Stddev	.00195	.0110	.00294	.00192	.00057	.00008	.0458	.00032
%RSD	123.26	.86212	124.17	26.126	3.8829	83.161	.93618	1366.6
#1	-.00336	1.2812	.00574	.00897	.01518	.00001	4.8513	-.00023
#2	.00051	1.2875	.00098	.00786	.01480	.00010	4.9413	.00034
#3	-.00190	1.2661	.00037	.00523	.01406	.00016	4.8815	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00144**	**.00285**	**1.6811**	**.39676**	**-.00124**	**1.7322**	**.07966**
Stddev	.00025	.00026	.00072	.0633	.11078	.00243	.1159	.00213
%RSD	60.651	18.048	25.338	3.7640	27.922	196.25	6.6890	2.6737
#1	.00028	.00119	.00312	1.6276	.29955	-.00167	1.6330	.07756
#2	.00026	.00171	.00203	1.6648	.37336	.00138	1.7041	.08182
#3	.00070	.00141	.00339	1.7509	.51738	-.00343	1.8596	.07959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.34155**	**.00192**	**.05378**	**.00662**	**-.00042**	**-.00699**	**1.6268**
Stddev	.00020	.03838	.00088	.00515	.00130	.00140	.00800	.0234
%RSD	44.748	11.237	45.515	9.5799	19.632	329.79	114.44	1.4417
#1	.00032	.37444	.00183	.04800	.00798	-.00150	-.01542	1.6033
#2	.00036	.29938	.00110	.05790	.00539	-.00094	-.00603	1.6271
#3	.00069	.35085	.00285	.05543	.00648	.00116	.00048	1.6502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138002 Acquired: 6/29/2016 11:50:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	**.01800**	**.01045**	**.00374**	**.00287**	**.01012**	**.00034**
Stddev	.00116	.00037	.00673	.00355	.00097	.00034	.00009
%RSD	178.85	2.0304	64.422	94.960	33.958	3.3659	25.301
#1	-.00137	.01838	.01821	.00077	.00358	.00978	.00025
#2	-.00126	.01799	.00686	.00278	.00327	.01013	.00042
#3	.00069	.01764	.00627	.00767	.00176	.01046	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9065.8**	**54756.**	**2463.3**
Stddev	8.9	95.	2.1
%RSD	.09787	.17393	.08672
#1	9058.1	54717.	2464.0
#2	9075.5	54687.	2465.0
#3	9063.7	54865.	2460.9

Approved: June 29, 2016

Sample Name: L1606122707 Acquired: 6/29/2016 11:54:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00440	-.00011	.00328	.04214	.00006	1.9802	-.00005
Stddev	.00164	.00893	.00346	.00245	.00073	.00001	.0281	.00027
%RSD	521.57	202.86	3196.9	74.893	1.7389	15.703	1.4203	591.52
#1	-.00205	.00381	.00012	.00501	.04272	.00007	1.9590	.00005
#2	.00122	.01361	-.00367	.00047	.04238	.00005	2.0121	.00016
#3	-.00011	-.00422	.00323	.00435	.04132	.00006	1.9694	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	-.00170	.00213	3.1213	.16126	.00327	1.3586	.06579
Stddev	.00011	.00044	.00065	.0243	.02784	.00383	.0505	.00051
%RSD	27.317	26.051	30.481	.77969	17.265	117.27	3.7158	.77306
#1	-.00027	-.00128	.00138	3.1145	.18303	-.00100	1.3676	.06616
#2	-.00040	-.00166	.00254	3.1011	.12989	.00440	1.4039	.06521
#3	-.00048	-.00216	.00247	3.1483	.17087	.00641	1.3042	.06600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	5.8464	.00204	.00518	.00310	.00048	-.00259	.72429
Stddev	.00047	.0604	.00061	.00185	.00254	.00200	.00554	.00430
%RSD	93.786	1.0330	29.977	35.701	81.965	416.48	213.52	.59411
#1	.00042	5.7801	.00206	.00460	.00186	.00033	.00336	.71961
#2	.00008	5.8982	.00142	.00725	.00142	.00255	-.00354	.72807
#3	.00101	5.8608	.00264	.00368	.00603	-.00144	-.00760	.72520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606122707 Acquired: 6/29/2016 11:54:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00069**	**.04887**	**.00096**	**-.00153**	**.00119**	**.00082**	**.00021**
Stddev	.00043	.00042	.00368	.00165	.00078	.00003	.00017
%RSD	61.997	.85230	384.33	108.21	65.432	3.1027	80.254
#1	-.00052	.04842	.00226	-.00147	.00052	.00084	.00030
#2	-.00037	.04924	.00380	-.00320	.00205	.00079	.00002
#3	-.00118	.04895	-.00319	.00010	.00101	.00083	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9100.9**	**54688.**	**2494.3**
Stddev	28.1	202.	5.1
%RSD	.30861	.36873	.20433
#1	9090.5	54493.	2494.5
#2	9079.6	54677.	2499.2
#3	9132.7	54896.	2489.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 11:58:33 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39688	9.8512	.39413	.49321	.99016	.04879	9.7997	.04959
Stddev	.00059	.0088	.00450	.00624	.00545	.00031	.0491	.00026
%RSD	.14819	.08921	1.1421	1.2646	.55075	.63457	.50130	.53290
#1	.39706	9.8586	.38893	.48858	.98907	.04866	9.7569	.04929
#2	.39735	9.8535	.39656	.50030	.99608	.04914	9.7889	.04977
#3	.39622	9.8415	.39689	.49075	.98534	.04857	9.8534	.04971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19882	.49248	.49963	3.9490	49.398	.98997	9.9063	.49440
Stddev	.00152	.00367	.00355	.0476	.248	.00145	.0824	.00539
%RSD	.76310	.74448	.71137	1.2049	.50245	.14604	.83135	1.0893
#1	.19707	.48982	.49699	3.9059	49.346	.99147	9.8769	.48866
#2	.19983	.49666	.49824	4.0000	49.668	.98859	9.8427	.49934
#3	.19955	.49095	.50367	3.9411	49.180	.98985	9.9993	.49521
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0011	49.330	.49897	9.9418	.50080	1.1989	.40286	5.0396
Stddev	.0055	.294	.00338	.0547	.00281	.0006	.00365	.0347
%RSD	.55045	.59550	.67763	.54993	.56158	.04604	.90574	.68936
#1	.99477	49.221	.49536	9.8787	.50335	1.1983	.40072	5.0010
#2	1.0037	49.663	.49950	9.9712	.50126	1.1990	.40079	5.0498
#3	1.0048	49.106	.50206	9.9754	.49778	1.1993	.40708	5.0682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 11:58:33 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99492	.98797	.99267	.50603	.99004	.99110	.97683
Stddev	.00681	.00569	.02039	.00492	.00660	.00435	.00879
%RSD	.68434	.57612	2.0539	.97323	.66682	.43920	.89996
#1	.98706	.98517	.97657	.50037	.98733	.98654	.96886
#2	.99882	.99452	1.0156	.50832	.99756	.99154	.97537
#3	.99889	.98422	.98586	.50939	.98522	.99521	.98626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9140.1	54735.	2547.5
Stddev	23.3	354.	7.8
%RSD	.25497	.64585	.30650
#1	9137.6	54500.	2556.1
#2	9118.2	54563.	2540.9
#3	9164.6	55142.	2545.5

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 12:02:11 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00980	.00159	.00301	-.00231	-.00002	.05137	-.00003
Stddev	.00080	.00182	.00313	.00160	.00141	.00005	.01990	.00032
%RSD	505.26	18.548	196.74	53.049	61.050	215.07	38.737	920.88
#1	.00042	.00836	.00201	.00131	-.00237	.00000	.07431	-.00028
#2	.00079	.00921	.00450	.00449	-.00088	.00001	.03866	-.00014
#3	-.00074	.01185	-.00173	.00325	-.00370	-.00008	.04115	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	-.00073	.00126	.00388	.19440	.00155	.00560	.00227
Stddev	.00037	.00155	.00089	.02431	.04073	.00153	.02007	.00307
%RSD	183.17	213.46	70.395	626.79	20.950	98.550	358.11	135.41
#1	.00014	-.00231	.00074	.02353	.18263	.00179	-.00548	.00135
#2	-.00015	-.00066	.00076	.01142	.23971	.00296	.02877	.00569
#3	-.00060	.00079	.00229	-.02331	.16085	-.00008	-.00648	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.01512	.00140	.00444	.00378	.00415	.00061	-.01344
Stddev	.00040	.03252	.00069	.00073	.00574	.00471	.00394	.00053
%RSD	319.62	215.15	49.153	16.405	151.98	113.38	647.74	3.9630
#1	.00019	.01151	.00071	.00432	.00792	-.00090	-.00163	-.01395
#2	.00049	-.01545	.00141	.00377	-.00278	.00842	-.00170	-.01289
#3	-.00030	.04929	.00209	.00521	.00620	.00494	.00516	-.01348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 12:02:11 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**-.00035**	**.00368**	**.00167**	**.00096**	**.00170**	**.00042**
Stddev	.00080	.00025	.00390	.00263	.00105	.00007	.00065
%RSD	95.968	71.594	105.89	157.91	108.47	3.9451	155.39
#1	-.00164	-.00013	-.00072	.00344	.00144	.00164	-.00028
#2	-.00084	-.00063	.00507	-.00136	.00169	.00169	.00099
#3	-.00003	-.00030	.00670	.00292	-.00024	.00178	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9151.3**	**55942.**	**2592.6**
Stddev	7.3	441.	22.9
%RSD	.08030	.78823	.88137
#1	9159.1	56371.	2600.0
#2	9150.4	55964.	2567.0
#3	9144.5	55490.	2610.8

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 12:06:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00060	255.94	-.00165	.01120	.00020	-.00007	243.01	-.00009
Stddev	.00151	.50	.00310	.00093	.00011	.00009	1.98	.00034
%RSD	253.76	.19515	188.20	8.3312	56.041	136.74	.81639	356.18
#1	-.00159	255.93	-.00519	.01174	.00034	-.00017	244.75	.00029
#2	.00114	255.44	-.00038	.01174	.00013	-.00004	243.43	-.00028
#3	-.00134	256.44	.00062	.01012	.00015	.00001	240.85	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00153	-.00160	-.00060	96.491	.02735	.00278	246.20	-.00125
Stddev	.00044	.00072	.00047	.805	.05129	.00162	2.62	.00339
%RSD	28.875	45.065	78.040	.83461	187.56	58.278	1.0622	271.35
#1	-.00170	-.00208	-.00101	97.354	.08389	.00139	248.59	-.00516
#2	-.00103	-.00194	-.00009	96.359	.01433	.00240	246.60	.00054
#3	-.00186	-.00077	-.00071	95.760	-.01618	.00456	243.41	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	.01110	-.00126	.04392	-.00149	-.00898	.00783	-.01528
Stddev	.00059	.02615	.00118	.00571	.00362	.00187	.00432	.00266
%RSD	92.708	235.62	93.325	13.010	243.00	20.819	55.216	17.436
#1	-.00119	.03843	-.00263	.03972	.00235	-.00709	.00686	-.01366
#2	-.00069	.00854	-.00059	.04162	-.00198	-.01083	.01255	-.01836
#3	-.00002	-.01368	-.00058	.05043	-.00484	-.00904	.00407	-.01383
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 12:06:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00023**	**.02224**	**.00386**	**-.00165**	**-.00654**	**.00214**
Stddev	.00041	.00067	.00086	.00086	.00091	.00017	.00039
%RSD	252.56	288.37	3.8484	22.351	55.189	2.6355	18.132
#1	-.00064	.00034	.02237	.00449	-.00126	-.00672	.00207
#2	.00010	.00084	.02132	.00421	-.00269	-.00638	.00256
#3	.00005	-.00048	.02302	.00288	-.00100	-.00653	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8766.0**	**52087.**	**2495.6**
Stddev	15.9	170.	14.3
%RSD	.18130	.32719	.57463
#1	8770.4	51898.	2479.2
#2	8748.4	52230.	2501.8
#3	8779.3	52132.	2505.8

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 12:09:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50734	257.51	.24131	.01272	.24807	.25068	241.07	.48446
Stddev	.00412	.51	.00069	.00050	.00312	.00028	.90	.00013
%RSD	.81232	.19627	.28760	3.9448	1.2596	.11114	.37397	.02689
#1	.50266	256.93	.24196	.01329	.25140	.25037	241.62	.48432
#2	.51041	257.72	.24140	.01255	.24760	.25078	241.56	.48457
#3	.50896	257.88	.24058	.01233	.24520	.25090	240.03	.48449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23503	.24726	.24440	94.269	5.2006	.00821	240.90	.23840
Stddev	.00077	.00242	.00071	.402	.0996	.00307	1.07	.00309
%RSD	.32939	.97772	.29206	.42640	1.9143	37.378	.44384	1.2979
#1	.23436	.24536	.24387	94.628	5.3098	.00478	242.06	.23780
#2	.23487	.24645	.24412	94.344	5.1772	.01070	240.71	.24176
#3	.23588	.24998	.24521	93.834	5.1149	.00916	239.95	.23566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00055	5.2614	.47336	.02875	.48433	.48657	.26422	-.00770
Stddev	.00022	.0150	.00189	.00931	.00753	.00736	.00883	.00451
%RSD	40.746	.28490	.39985	32.374	1.5551	1.5123	3.3416	58.647
#1	-.00080	5.2539	.47134	.03926	.47614	.48324	.27429	-.00256
#2	-.00038	5.2516	.47509	.02157	.48588	.49500	.26057	-.01103
#3	-.00046	5.2786	.47365	.02541	.49096	.48145	.25781	-.00951
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 12:09:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**.00030**	**.02351**	**.45762**	**.24854**	**.47227**	**.00297**
Stddev	.00061	.00056	.01175	.00173	.00079	.00099	.00060
%RSD	127.26	185.36	49.987	.37759	.31592	.20864	20.120
#1	-.00014	.00093	.01146	.45652	.24882	.47114	.00229
#2	-.00011	-.00012	.03494	.45674	.24765	.47274	.00320
#3	-.00118	.00008	.02412	.45961	.24914	.47294	.00341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8731.8**	**52174.**	**2509.6**
Stddev	26.4	65.	18.6
%RSD	.30284	.12375	.74252
#1	8706.6	52246.	2488.6
#2	8759.3	52121.	2516.0
#3	8729.4	52155.	2524.2

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 12:13:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40609	10.157	.40230	.50343	1.0188	.05040	10.091	.05079
Stddev	.00218	.021	.00331	.00384	.0017	.00017	.104	.00019
%RSD	.53746	.20256	.82232	.76263	.16380	.33206	1.0316	.36956
#1	.40725	10.157	.40572	.50548	1.0182	.05059	10.041	.05066
#2	.40744	10.137	.39912	.49900	1.0175	.05033	10.211	.05069
#3	.40357	10.178	.40205	.50581	1.0207	.05028	10.021	.05100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20237	.50550	.50987	4.0350	51.084	1.0203	10.173	.50788
Stddev	.00061	.00069	.00213	.0944	.085	.0107	.095	.00114
%RSD	.30016	.13658	.41783	2.3400	.16629	1.0496	.93296	.22508
#1	.20306	.50497	.51045	4.0483	51.023	1.0301	10.074	.50898
#2	.20209	.50628	.50751	4.1221	51.181	1.0220	10.182	.50796
#3	.20195	.50526	.51165	3.9346	51.047	1.0089	10.263	.50670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0221	50.841	.51050	10.150	.50802	1.2227	.40322	5.1413
Stddev	.0020	.110	.00140	.032	.00139	.0051	.00211	.0071
%RSD	.19823	.21590	.27448	.31495	.27358	.41346	.52414	.13833
#1	1.0244	50.756	.51103	10.186	.50962	1.2261	.40506	5.1426
#2	1.0208	50.802	.51156	10.139	.50738	1.2250	.40091	5.1336
#3	1.0210	50.965	.50891	10.124	.50707	1.2169	.40368	5.1476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 12:13:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0183**	**1.0207**	**1.0265**	**.51107**	**1.0132**	**1.0148**	**1.0193**
Stddev	.0024	.0008	.0082	.00055	.0045	.0019	.0027
%RSD	.23717	.07303	.79675	.10719	.44532	.18624	.26154
#1	1.0210	1.0209	1.0170	.51071	1.0179	1.0169	1.0163
#2	1.0174	1.0199	1.0314	.51170	1.0089	1.0143	1.0202
#3	1.0164	1.0214	1.0309	.51080	1.0127	1.0132	1.0214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9052.4**	**54332.**	**2495.9**
Stddev	5.6	56.	2.1
%RSD	.06235	.10276	.08611
#1	9053.4	54286.	2498.0
#2	9057.4	54394.	2495.9
#3	9046.3	54316.	2493.7

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 12:17:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00938	.00073	.00484	.00056	-.00003	.02976	.00014
Stddev	.00272	.00587	.00360	.00166	.00093	.00003	.02753	.00025
%RSD	3952.1	62.651	491.07	34.255	167.01	104.78	92.512	178.01
#1	-.00116	.00889	.00444	.00607	-.00046	-.00007	.05769	-.00010
#2	-.00182	.00376	.00050	.00296	.00137	-.00000	.02894	.00012
#3	.00318	.01548	-.00274	.00550	.00077	-.00002	.00265	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	-.00026	.00147	-.00293	.12048	-.00272	-.04259	.00250
Stddev	.00021	.00113	.00101	.00343	.05999	.00447	.05629	.00398
%RSD	34.132	429.11	68.864	117.02	49.796	164.55	132.18	159.06
#1	-.00078	-.00017	.00147	-.00611	.14692	-.00687	.00904	.00356
#2	-.00038	.00081	.00249	.00070	.05181	-.00330	-.10260	.00584
#3	-.00069	-.00143	.00046	-.00339	.16272	.00202	-.03421	-.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.05530	.00038	.00467	.00162	-.00085	-.00242	-.01369
Stddev	.00031	.01142	.00006	.00335	.00208	.00309	.01054	.00284
%RSD	52.972	20.647	15.524	71.745	128.71	365.68	436.19	20.744
#1	.00023	.05338	.00031	.00408	.00120	-.00340	-.00437	-.01086
#2	.00082	.04497	.00040	.00166	-.00022	.00259	.00896	-.01368
#3	.00072	.06756	.00042	.00828	.00388	-.00173	-.01183	-.01654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 12:17:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00132**	**-.00047**	**.00392**	**.00026**	**.00123**	**.00140**	**.00038**
Stddev	.00028	.00080	.00476	.00140	.00083	.00017	.00066
%RSD	21.568	168.21	121.48	547.41	67.923	11.972	173.11
#1	-.00117	-.00135	.00198	.00188	.00035	.00122	.00025
#2	-.00165	-.00029	.00043	-.00058	.00201	.00145	.00110
#3	-.00114	.00021	.00934	-.00052	.00133	.00154	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9021.4**	**54197.**	**2477.1**
Stddev	17.7	72.	12.5
%RSD	.19625	.13312	.50281
#1	9012.0	54182.	2480.1
#2	9010.4	54135.	2463.5
#3	9041.8	54276.	2487.8

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/29/2016 12:21:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00930	.18527	.00831	.08680	.00908	.00161	.46292	.00077
Stddev	.00154	.01126	.00208	.00248	.00073	.00005	.03175	.00030
%RSD	16.577	6.0796	25.075	2.8560	8.0173	3.0639	6.8582	38.937
#1	.00816	.18000	.01045	.08705	.00824	.00158	.43180	.00107
#2	.00868	.19820	.00628	.08421	.00939	.00159	.49526	.00074
#3	.01106	.17761	.00820	.08915	.00959	.00167	.46172	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00379	.00286	.00752	.07010	.88858	.08506	.33804	.00800
Stddev	.00040	.00061	.00070	.03490	.07168	.00359	.06707	.00189
%RSD	10.603	21.467	9.3740	49.790	8.0672	4.2234	19.840	23.594
#1	.00350	.00350	.00702	.04132	.97072	.08650	.27131	.01017
#2	.00425	.00280	.00721	.06005	.85638	.08771	.33737	.00668
#3	.00362	.00228	.00832	.10892	.83864	.08097	.40544	.00717
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00788	.43352	.01602	.82021	.01274	.08681	.01319	.74946
Stddev	.00004	.05212	.00057	.00536	.00288	.00276	.00456	.00433
%RSD	.56667	12.022	3.5785	.65372	22.621	3.1751	34.563	.57752
#1	.00787	.49352	.01554	.81561	.01320	.08794	.01438	.75216
#2	.00785	.39951	.01666	.82609	.01537	.08883	.00816	.75175
#3	.00794	.40753	.01587	.81892	.00966	.08367	.01704	.74446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/29/2016 12:21:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41310	.04246	.03184	.15616	.00889	.01771	.04320
Stddev	.00463	.00051	.00473	.00028	.00097	.00035	.00058
%RSD	1.1201	1.2065	14.851	.17819	10.855	1.9758	1.3315
#1	.41617	.04188	.02840	.15646	.00862	.01807	.04384
#2	.41536	.04283	.02988	.15612	.00996	.01768	.04304
#3	.40778	.04268	.03723	.15590	.00809	.01737	.04272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9101.1	54266.	2460.7
Stddev	26.1	395.	5.7
%RSD	.28689	.72780	.23021
#1	9083.8	53891.	2466.7
#2	9088.3	54227.	2460.1
#3	9131.1	54679.	2455.4

Approved: June 29, 2016

Sample Name: PBW 1A Acquired: 6/29/2016 12:25:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572926-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00969	.00038	.00219	.00001	-.00001	.03841	.00000
Stddev	.00208	.00740	.00389	.00299	.00060	.00005	.03188	.00011
%RSD	490.47	76.386	1019.5	136.75	9720.9	1068.5	83.004	4065.3
#1	-.00163	.00771	-.00079	.00162	-.00061	-.00004	.00538	-.00006
#2	.00253	.00348	-.00279	.00542	.00059	-.00003	.06900	.00013
#3	.00037	.01788	.00473	-.00048	.00004	.00006	.04083	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	-.00114	.00101	-.00743	.05403	-.00461	.00807	.00265
Stddev	.00016	.00115	.00139	.03073	.12944	.00184	.04739	.00241
%RSD	80.693	100.57	138.13	413.72	239.57	39.969	587.23	91.000
#1	-.00010	-.00093	-.00008	.02742	.18957	-.00661	-.02026	.00319
#2	-.00039	-.00012	.00257	-.03064	-.06829	-.00298	.06278	.00001
#3	-.00012	-.00239	.00052	-.01906	.04081	-.00425	-.01831	.00474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.01638	-.00012	-.00282	.00313	.00156	-.00004	-.01726
Stddev	.00031	.01737	.00058	.00451	.00088	.00443	.00754	.00313
%RSD	341.98	106.08	491.56	159.75	28.092	284.40	18390.	18.103
#1	-.00041	.02925	.00054	.00166	.00247	-.00307	-.00321	-.02086
#2	.00021	-.00339	-.00033	-.00735	.00279	.00198	-.00548	-.01579
#3	-.00007	.02327	-.00056	-.00277	.00413	.00577	.00856	-.01515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW 1A Acquired: 6/29/2016 12:25:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572926-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	-.00037	.00835	.00044	.00061	.00070	.00098
Stddev	.00035	.00043	.00581	.00403	.00043	.00006	.00029
%RSD	115.51	115.48	69.571	911.33	69.936	8.7596	29.722
#1	.00036	.00009	.00689	.00493	.00095	.00064	.00130
#2	-.00007	-.00075	.01476	-.00074	.00013	.00070	.00090
#3	.00063	-.00045	.00341	-.00287	.00076	.00076	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9077.8	55403.	2547.2
Stddev	29.0	136.	11.6
%RSD	.31944	.24610	.45692
#1	9090.8	55492.	2560.5
#2	9098.0	55246.	2541.9
#3	9044.6	55471.	2539.2

Approved: June 29, 2016

Sample Name: L1606000317 Acquired: 6/29/2016 12:51:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19942	4.9152	.19467	.94685	.49734	.02416	5.0301	.02449
Stddev	.00255	.0117	.00420	.00146	.00228	.00009	.0426	.00032
%RSD	1.2773	.23807	2.1585	.15423	.45856	.39192	.84644	1.2871
#1	.20196	4.9030	.19717	.94606	.49912	.02407	4.9810	.02484
#2	.19686	4.9263	.19702	.94595	.49814	.02414	5.0529	.02441
#3	.19945	4.9164	.18982	.94853	.49477	.02426	5.0564	.02422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09914	.24528	.24831	1.9921	24.590	.50338	4.9364	.24982
Stddev	.00028	.00273	.00169	.0121	.169	.00088	.1699	.00058
%RSD	.28422	1.1127	.68258	.60865	.68881	.17436	3.4428	.23154
#1	.09933	.24822	.24886	1.9942	24.551	.50339	5.0948	.25044
#2	.09928	.24282	.24641	1.9790	24.775	.50249	4.9575	.24929
#3	.09882	.24481	.24966	2.0030	24.443	.50425	4.7568	.24974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49762	24.927	.24842	4.7827	.24600	.58372	.18760	2.3385
Stddev	.00152	.049	.00111	.0046	.00502	.00040	.00394	.0041
%RSD	.30447	.19534	.44745	.09557	2.0396	.06777	2.1019	.17592
#1	.49904	24.918	.24747	4.7873	.24576	.58326	.18318	2.3426
#2	.49603	24.979	.24815	4.7781	.25113	.58396	.19076	2.3344
#3	.49780	24.883	.24964	4.7828	.24110	.58393	.18887	2.3384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606000317 Acquired: 6/29/2016 12:51:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49497	.50184	.49529	.24845	.49224	.49191	.50492
Stddev	.00275	.00140	.00808	.00021	.00139	.00069	.00249
%RSD	.55508	.27961	1.6310	.08451	.28222	.13974	.49288
#1	.49807	.50189	.50355	.24861	.49286	.49225	.50678
#2	.49397	.50322	.49491	.24821	.49321	.49112	.50588
#3	.49285	.50041	.48740	.24852	.49065	.49236	.50209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9106.9	54839.	2510.9
Stddev	31.7	98.	10.0
%RSD	.34778	.17793	.39937
#1	9070.5	54743.	2503.6
#2	9122.5	54837.	2506.9
#3	9127.7	54938.	2522.4

Approved: June 29, 2016

Sample Name: L1606000318 Acquired: 6/29/2016 12:54:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20311**	**5.0093**	**.20024**	**.96622**	**.50492**	**.02463**	**5.1020**	**.02493**
Stddev	.00134	.0069	.00123	.00653	.00175	.00006	.0248	.00009
%RSD	.65845	.13814	.61617	.67574	.34616	.23578	.48634	.37015
#1	.20259	5.0148	.19919	.97000	.50693	.02456	5.1289	.02499
#2	.20463	5.0115	.19994	.95868	.50405	.02465	5.0971	.02482
#3	.20211	5.0015	.20160	.96999	.50378	.02468	5.0800	.02497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10159**	**.25237**	**.25344**	**2.0243**	**25.196**	**.50983**	**4.9947**	**.25208**
Stddev	.00022	.00097	.00010	.0071	.064	.00473	.0322	.00383
%RSD	.21200	.38555	.03998	.34981	.25307	.92753	.64516	1.5175
#1	.10168	.25147	.25337	2.0230	25.166	.51502	5.0116	.25643
#2	.10134	.25340	.25339	2.0319	25.269	.50576	4.9576	.24922
#3	.10175	.25222	.25355	2.0179	25.153	.50870	5.0150	.25061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51133**	**25.314**	**.25403**	**4.8909**	**.25346**	**.59729**	**.19152**	**2.3900**
Stddev	.00025	.101	.00164	.0074	.00202	.00300	.01053	.0036
%RSD	.04800	.39933	.64387	.15059	.79518	.50201	5.4987	.15132
#1	.51138	25.371	.25300	4.8825	.25574	.59947	.18873	2.3859
#2	.51107	25.375	.25316	4.8948	.25274	.59387	.20316	2.3915
#3	.51155	25.198	.25591	4.8955	.25191	.59853	.18266	2.3926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606000318 Acquired: 6/29/2016 12:54:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50607	.51174	.50420	.25663	.50263	.50496	.50908
Stddev	.00055	.00020	.00568	.00381	.00128	.00087	.00229
%RSD	.10798	.03949	1.1259	1.4837	.25367	.17237	.45012
#1	.50554	.51151	.49897	.26069	.50259	.50421	.50995
#2	.50604	.51186	.51023	.25313	.50137	.50476	.51082
#3	.50663	.51185	.50339	.25606	.50392	.50592	.50648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9125.2	55317.	2535.5
Stddev	23.7	132.	16.3
%RSD	.26019	.23790	.64140
#1	9101.1	55178.	2528.3
#2	9125.8	55335.	2524.1
#3	9148.6	55439.	2554.1

Approved: June 29, 2016

Sample Name: L1606000319 Acquired: 6/29/2016 12:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20259	4.9748	.19670	.96312	.50177	.02447	5.1150	.02478
Stddev	.00335	.0120	.00105	.00730	.00329	.00011	.0459	.00019
%RSD	1.6539	.24134	.53322	.75754	.65553	.43752	.89800	.77153
#1	.20645	4.9806	.19550	.96677	.49884	.02441	5.0929	.02465
#2	.20083	4.9827	.19718	.95472	.50533	.02459	5.1678	.02500
#3	.20048	4.9610	.19743	.96787	.50112	.02441	5.0844	.02470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10071	.24983	.25372	1.9968	25.135	.51049	5.0317	.24909
Stddev	.00057	.00136	.00115	.0570	.092	.00078	.1042	.00287
%RSD	.57056	.54283	.45193	2.8535	.36573	.15242	2.0711	1.1532
#1	.10016	.24978	.25491	1.9675	25.037	.51039	5.1497	.24614
#2	.10067	.24850	.25364	2.0625	25.220	.51131	4.9934	.25187
#3	.10131	.25121	.25262	1.9605	25.147	.50977	4.9521	.24926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50759	25.260	.25300	4.8539	.25419	.59776	.19000	2.3625
Stddev	.00112	.047	.00099	.0055	.00338	.00476	.00429	.0019
%RSD	.21968	.18448	.39174	.11346	1.3288	.79571	2.2577	.07826
#1	.50884	25.244	.25400	4.8572	.25062	.59919	.19488	2.3643
#2	.50670	25.313	.25298	4.8570	.25460	.60164	.18834	2.3626
#3	.50723	25.224	.25202	4.8476	.25734	.59245	.18679	2.3606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606000319 Acquired: 6/29/2016 12:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50413**	**.51002**	**.49861**	**.25226**	**.49804**	**.50117**	**.50899**
Stddev	.00077	.00178	.00782	.00363	.00110	.00076	.00148
%RSD	.15230	.34965	1.5686	1.4399	.22145	.15205	.29136
#1	.50501	.50928	.49725	.25039	.49679	.50174	.50957
#2	.50370	.51205	.49156	.25644	.49845	.50146	.50731
#3	.50367	.50873	.50702	.24994	.49888	.50030	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9138.5**	**55370.**	**2535.2**
Stddev	33.9	132.	12.4
%RSD	.37093	.23838	.49071
#1	9127.8	55226.	2523.7
#2	9176.5	55486.	2548.4
#3	9111.3	55399.	2533.4

Approved: June 29, 2016

Sample Name: L1606000320 Acquired: 6/29/2016 13:01:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20245**	**4.9702**	**.19985**	**.96406**	**.50180**	**.02434**	**5.0941**	**.02476**
Stddev	.00212	.0121	.00304	.00165	.00115	.00010	.0121	.00025
%RSD	1.0488	.24344	1.5231	.17079	.22884	.43136	.23714	1.0220
#1	.20099	4.9792	.20327	.96261	.50290	.02434	5.0979	.02471
#2	.20148	4.9750	.19888	.96372	.50061	.02423	5.1038	.02503
#3	.20489	4.9565	.19742	.96585	.50189	.02444	5.0806	.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10089**	**.24943**	**.25316**	**2.0222**	**24.982**	**.50705**	**5.0147**	**.25129**
Stddev	.00012	.00066	.00186	.0200	.034	.00254	.1081	.00517
%RSD	.12332	.26387	.73297	.98746	.13790	.50173	2.1552	2.0577
#1	.10080	.25017	.25499	2.0000	25.004	.50412	4.9990	.24775
#2	.10103	.24921	.25320	2.0276	25.000	.50842	4.9153	.25722
#3	.10083	.24891	.25128	2.0388	24.942	.50862	5.1297	.24889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50686**	**25.213**	**.25335**	**4.8622**	**.25304**	**.59399**	**.19598**	**2.3602**
Stddev	.00079	.047	.00040	.0043	.00210	.00132	.00508	.0044
%RSD	.15635	.18575	.15834	.08895	.83025	.22140	2.5942	.18605
#1	.50769	25.260	.25297	4.8659	.25387	.59512	.19014	2.3653
#2	.50679	25.167	.25330	4.8631	.25460	.59430	.19839	2.3584
#3	.50611	25.211	.25377	4.8575	.25065	.59255	.19942	2.3571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606000320 Acquired: 6/29/2016 13:01:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50362	.51051	.50103	.25257	.50156	.50166	.46823
Stddev	.00072	.00045	.00604	.00391	.00108	.00067	.00088
%RSD	.14335	.08821	1.2065	1.5475	.21506	.13395	.18846
#1	.50381	.51034	.50396	.25632	.50267	.50161	.46861
#2	.50423	.51102	.49408	.25286	.50149	.50235	.46722
#3	.50282	.51017	.50505	.24852	.50052	.50101	.46886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9124.0	55260.	2545.8
Stddev	21.0	111.	3.4
%RSD	.23034	.20049	.13548
#1	9099.7	55218.	2542.6
#2	9137.3	55177.	2549.4
#3	9134.8	55386.	2545.3

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 13:05:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41728	10.443	.40824	.52559	1.0322	.05136	10.162	.05182
Stddev	.00237	.025	.00050	.00501	.0032	.00014	.032	.00015
%RSD	.56738	.23872	.12193	.95267	.30669	.26937	.31037	.28513
#1	.41466	10.419	.40772	.53075	1.0302	.05152	10.197	.05196
#2	.41928	10.441	.40828	.52075	1.0358	.05129	10.136	.05183
#3	.41789	10.469	.40871	.52528	1.0305	.05127	10.154	.05167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20840	.52211	.52309	4.1083	51.248	1.0398	10.307	.51344
Stddev	.00024	.00275	.00166	.0550	.066	.0053	.136	.00123
%RSD	.11505	.52680	.31759	1.3384	.12825	.50870	1.3228	.24045
#1	.20812	.52522	.52492	4.0977	51.292	1.0343	10.153	.51232
#2	.20852	.52000	.52270	4.1679	51.279	1.0449	10.411	.51476
#3	.20855	.52113	.52167	4.0595	51.173	1.0402	10.357	.51322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0440	51.386	.52438	10.412	.52053	1.2552	.42317	5.2692
Stddev	.0008	.067	.00122	.014	.00415	.0027	.01133	.0060
%RSD	.07805	.13026	.23220	.13293	.79813	.21836	2.6770	.11421
#1	1.0446	51.436	.52317	10.397	.52193	1.2543	.43284	5.2639
#2	1.0443	51.412	.52561	10.423	.52381	1.2530	.41071	5.2758
#3	1.0431	51.310	.52436	10.418	.51586	1.2583	.42597	5.2679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 13:05:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0436**	**1.0279**	**1.0340**	**.52273**	**1.0431**	**1.0402**	**1.0378**
Stddev	.0017	.0015	.0024	.00377	.0024	.0010	.0044
%RSD	.16567	.15092	.23240	.72085	.22837	.09675	.42077
#1	1.0418	1.0270	1.0313	.51970	1.0446	1.0399	1.0426
#2	1.0453	1.0297	1.0348	.52153	1.0404	1.0413	1.0368
#3	1.0436	1.0270	1.0359	.52695	1.0444	1.0394	1.0340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8816.9**	**52768.**	**2460.8**
Stddev	25.4	35.	11.8
%RSD	.28757	.06597	.47754
#1	8803.8	52804.	2449.9
#2	8800.7	52734.	2459.2
#3	8846.1	52767.	2473.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 13:09:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.02092	.00499	.00875	.00130	.00004	.04368	-.00006
Stddev	.00139	.00906	.00291	.00167	.00046	.00007	.03569	.00034
%RSD	96.487	43.295	58.180	19.023	35.727	172.04	81.714	579.33
#1	-.00003	.03119	.00427	.00901	.00142	.00008	.07806	.00020
#2	.00161	.01746	.00819	.00698	.00168	.00009	.04617	-.00044
#3	.00273	.01409	.00252	.01028	.00078	-.00004	.00681	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00027	.00060	.01159	.31430	-.00299	-.07103	.00030
Stddev	.00017	.00035	.00102	.02144	.01113	.00849	.06707	.00165
%RSD	89.290	130.31	170.26	185.01	3.5420	284.33	94.418	543.54
#1	-.00016	.00064	-.00052	.03505	.32409	.00279	-.03511	.00134
#2	-.00038	-.00004	.00147	.00668	.30219	.00098	-.02957	-.00160
#3	-.00004	.00020	.00085	-.00697	.31662	-.01273	-.14840	.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.03858	.00079	.00525	-.00017	-.00129	.00458	-.01015
Stddev	.00031	.05294	.00163	.00742	.00058	.00315	.00322	.00163
%RSD	57.139	137.21	205.93	141.12	341.19	244.71	70.209	16.103
#1	.00086	.07534	-.00107	.01276	-.00034	.00051	.00776	-.00828
#2	.00025	.06251	.00198	-.00207	-.00064	.00056	.00468	-.01133
#3	.00050	-.02210	.00147	.00507	.00047	-.00493	.00132	-.01083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 13:09:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00110	.00088	.00633	.00294	.00284	.00275	.00099
Stddev	.00009	.00010	.00393	.00140	.00074	.00017	.00049
%RSD	8.3685	11.846	62.098	47.766	25.940	6.0078	49.647
#1	.00119	.00080	.00973	.00137	.00199	.00268	.00093
#2	.00111	.00083	.00723	.00339	.00331	.00263	.00151
#3	.00100	.00099	.00203	.00407	.00320	.00294	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9069.1	54567.	2459.8
Stddev	34.3	946.	2.7
%RSD	.37865	1.7328	.10952
#1	9101.3	53961.	2456.7
#2	9072.9	54082.	2460.8
#3	9033.0	55656.	2461.9

Approved: June 29, 2016

Sample Name: PBW 9A Acquired: 6/29/2016 13:12:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00156	.01277	-.00057	.00128	.00058	.00012	.02846	-.00015
Stddev	.00243	.01074	.00129	.00102	.00108	.00009	.03509	.00028
%RSD	156.09	84.047	228.10	79.795	185.93	79.077	123.28	187.74
#1	.00307	.02394	-.00144	.00015	.00172	.00006	-.01063	.00011
#2	.00284	.00253	.00091	.00155	-.00043	.00006	.05722	-.00045
#3	-.00125	.01185	-.00117	.00214	.00046	.00022	.03879	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	-.00060	.00271	-.00172	.10278	-.00435	-.05155	.00144
Stddev	.00026	.00014	.00059	.02008	.11040	.00141	.03391	.00194
%RSD	215.36	23.355	21.966	1166.1	107.41	32.304	65.786	134.90
#1	-.00034	-.00045	.00248	-.02335	.22979	-.00298	-.08390	.00338
#2	.00017	-.00062	.00226	.00183	.04875	-.00429	-.01626	-.00050
#3	-.00019	-.00073	.00338	.01635	.02981	-.00578	-.05450	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	-.00949	-.00074	.00015	.00305	.00458	-.00220	-.00408
Stddev	.00019	.05710	.00110	.00555	.00336	.00036	.00500	.00163
%RSD	82.720	601.37	148.14	3741.8	110.48	7.8763	227.58	39.866
#1	-.00003	.00344	.00052	-.00258	.00028	.00434	.00356	-.00318
#2	-.00026	.04002	-.00124	-.00351	.00206	.00500	-.00470	-.00309
#3	-.00041	-.07195	-.00152	.00653	.00679	.00441	-.00544	-.00595
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW 9A Acquired: 6/29/2016 13:12:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00017**	**.00835**	**.00399**	**.00221**	**.00058**	**-.00007**
Stddev	.00032	.00034	.00260	.00541	.00092	.00007	.00034
%RSD	15258.	200.35	31.148	135.71	41.862	12.717	487.57
#1	.00036	-.00025	.00932	.00647	.00302	.00051	-.00045
#2	-.00009	.00021	.01032	-.00222	.00239	.00057	.00015
#3	-.00026	-.00047	.00540	.00771	.00120	.00065	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8979.3**	**53829.**	**2438.6**
Stddev	13.3	47.	17.0
%RSD	.14830	.08639	.69821
#1	8964.6	53864.	2422.5
#2	8982.6	53776.	2436.9
#3	8990.6	53846.	2456.4

Approved: June 29, 2016

Sample Name: LCSW 9A Acquired: 6/29/2016 13:16:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19153**	**4.8242**	**.19643**	**.93765**	**.48784**	**.02348**	**4.9390**	**.02367**
Stddev	.00023	.0092	.00257	.00737	.00434	.00005	.0641	.00018
%RSD	.11813	.19160	1.3078	.78564	.88908	.23086	1.2976	.76226
#1	.19126	4.8142	.19451	.94494	.48814	.02344	4.8736	.02347
#2	.19164	4.8259	.19935	.93779	.48336	.02354	4.9419	.02383
#3	.19167	4.8324	.19543	.93021	.49201	.02347	5.0016	.02369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09709**	**.24274**	**.24500**	**1.9526**	**24.264**	**.49676**	**4.8975**	**.24566**
Stddev	.00023	.00123	.00204	.0603	.156	.00276	.1134	.00298
%RSD	.24128	.50688	.83346	3.0892	.64109	.55474	2.3145	1.2147
#1	.09706	.24399	.24387	2.0191	24.150	.49989	4.8090	.24872
#2	.09733	.24270	.24736	1.9375	24.201	.49568	4.8582	.24275
#3	.09686	.24153	.24377	1.9014	24.441	.49470	5.0252	.24551
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48960**	**24.489**	**.24515**	**4.7214**	**.24653**	**.57645**	**.19208**	**2.2961**
Stddev	.00187	.110	.00154	.0246	.00069	.00338	.00416	.0083
%RSD	.38239	.44956	.62743	.52045	.28063	.58690	2.1678	.36040
#1	.48896	24.569	.24362	4.7202	.24577	.57275	.19660	2.2976
#2	.49171	24.364	.24670	4.7465	.24713	.57938	.18839	2.3035
#3	.48813	24.535	.24515	4.6974	.24668	.57723	.19124	2.2871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW 9A Acquired: 6/29/2016 13:16:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48754	.49440	.49346	.24467	.48567	.48631	.00100
Stddev	.00247	.00085	.00185	.00469	.00086	.00164	.00051
%RSD	.50612	.17214	.37585	1.9151	.17727	.33744	51.175
#1	.48669	.49487	.49132	.24095	.48611	.48510	.00106
#2	.49032	.49342	.49462	.24312	.48621	.48818	.00147
#3	.48562	.49491	.49443	.24993	.48467	.48564	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9069.4	54722.	2517.9
Stddev	20.8	63.	2.3
%RSD	.22881	.11570	.09293
#1	9045.5	54658.	2515.6
#2	9079.4	54722.	2520.2
#3	9083.3	54784.	2518.0

Approved: June 29, 2016

Sample Name: F BLANK Acquired: 6/29/2016 13:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574515-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.01538**	**-.00286**	**.01085**	**.00013**	**.00010**	**.02649**	**.00006**
Stddev	.00233	.01023	.00247	.00313	.00061	.00008	.06500	.00010
%RSD	494.84	66.496	86.406	28.893	457.32	73.499	245.39	174.09
#1	.00221	.02702	-.00051	.01142	-.00013	.00005	-.03588	.00014
#2	-.00166	.00785	-.00264	.01365	-.00029	.00007	.02150	-.00005
#3	-.00197	.01126	-.00544	.00746	.00083	.00019	.09384	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00036**	**.00207**	**.00408**	**.13839**	**-.00066**	**.00872**	**.00046**
Stddev	.00031	.00065	.00059	.02388	.03067	.00271	.00917	.00060
%RSD	184.06	183.11	28.679	586.09	22.159	413.43	105.15	130.31
#1	-.00037	-.00035	.00254	.03155	.16581	.00225	.01333	-.00014
#2	-.00031	.00093	.00225	-.01178	.14409	-.00312	-.00184	.00106
#3	.00019	.00049	.00140	-.00754	.10528	-.00109	.01466	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00054**	**.07025**	**.00090**	**.00198**	**.00563**	**-.00130**	**.00142**	**-.01125**
Stddev	.00037	.02627	.00077	.00663	.00114	.00219	.00085	.00286
%RSD	68.038	37.398	84.813	335.31	20.209	168.94	59.973	25.454
#1	.00097	.07572	.00026	-.00335	.00545	-.00054	.00074	-.00976
#2	.00033	.09337	.00175	.00941	.00684	.00041	.00113	-.00943
#3	.00033	.04168	.00070	-.00013	.00458	-.00377	.00237	-.01455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: F BLANK Acquired: 6/29/2016 13:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574515-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00033	.00749	.00139	.00161	.00366	.00033
Stddev	.00034	.00035	.00360	.00082	.00107	.00016	.00020
%RSD	875.38	106.02	48.045	59.255	66.263	4.2389	61.205
#1	.00037	.00050	.01150	.00203	.00236	.00357	.00056
#2	.00005	-.00007	.00452	.00046	.00039	.00384	.00018
#3	-.00031	.00056	.00646	.00167	.00209	.00357	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9236.9	55682.	2578.1
Stddev	14.9	456.	8.4
%RSD	.16086	.81916	.32679
#1	9251.7	55556.	2569.8
#2	9222.0	55302.	2577.9
#3	9237.0	56188.	2586.6

Approved: June 29, 2016

Sample Name: L1606153901 Acquired: 6/29/2016 13:24:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.04503	.00049	.02211	.17570	-.00002	50.971	.00006
Stddev	.00098	.00339	.00086	.00379	.00296	.00012	.598	.00011
%RSD	129.22	7.5349	175.62	17.128	1.6847	620.32	1.1738	202.33
#1	.00186	.04145	.00146	.02564	.17860	-.00014	51.468	.00019
#2	-.00001	.04542	.00020	.01811	.17268	.00009	50.307	-.00001
#3	.00042	.04821	-.00019	.02258	.17581	-.00001	51.138	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	-.00042	.00313	.01681	.98433	-.00212	4.8021	.00732
Stddev	.00016	.00050	.00067	.04138	.14623	.00172	.0876	.00134
%RSD	114.87	117.94	21.271	246.08	14.855	80.977	1.8235	18.291
#1	.00000	.00015	.00379	.05311	1.1527	-.00347	4.7574	.00857
#2	.00032	-.00074	.00246	-.02824	.88915	-.00271	4.7459	.00591
#3	.00010	-.00067	.00314	.02556	.91113	-.00019	4.9030	.00748
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	31.048	-.00039	-.00056	.00278	-.00117	.00307	4.4799
Stddev	.00023	.353	.00054	.00326	.00085	.00361	.00456	.0307
%RSD	97.571	1.1354	139.05	585.12	30.622	307.41	148.29	.68488
#1	.00008	31.353	-.00087	-.00289	.00268	.00154	.00769	4.4736
#2	.00013	30.662	.00019	.00316	.00368	-.00526	.00295	4.5132
#3	.00049	31.128	-.00049	-.00194	.00199	.00021	-.00142	4.4528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606153901 Acquired: 6/29/2016 13:24:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00049**	**.24437**	**-.00150**	**.00320**	**.00048**	**.00260**	**.00024**
Stddev	.00033	.00337	.00539	.00295	.00098	.00005	.00067
%RSD	66.819	1.3809	358.87	92.105	205.70	2.0652	282.05
#1	-.00061	.24636	-.00695	.00055	.00052	.00263	-.00005
#2	-.00075	.24048	.00382	.00267	.00143	.00263	-.00024
#3	-.00012	.24628	-.00137	.00638	-.00052	.00253	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9084.0**	**54917.**	**2530.0**
Stddev	37.9	437.	39.4
%RSD	.41716	.79561	1.5565
#1	9064.6	54983.	2496.9
#2	9059.8	55317.	2573.5
#3	9127.7	54450.	2519.5

Approved: June 29, 2016

Sample Name: L1606149601 Acquired: 6/29/2016 13:27:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.04490	.00155	.04404	.08099	-.00000	152.38	.00387
Stddev	.00184	.01056	.00185	.00277	.00097	.00005	1.60	.00031
%RSD	2651.7	23.512	119.01	6.2792	1.2002	3186.0	1.0468	8.0000
#1	-.00197	.05188	.00369	.04382	.08022	.00005	151.97	.00400
#2	.00161	.05006	.00038	.04138	.08208	-.00001	154.14	.00352
#3	.00057	.03276	.00059	.04690	.08067	-.00004	151.03	.00410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00078	.08572	.03952	2.3284	.00873	2.1016	.14257
Stddev	.00016	.00011	.00159	.02088	.1056	.00542	.0733	.00470
%RSD	91.389	14.348	1.8525	52.820	4.5346	62.073	3.4891	3.2950
#1	-.00001	.00067	.08649	.06019	2.4297	.00391	2.0986	.14083
#2	-.00033	.00077	.08678	.01844	2.2190	.01460	2.1763	.13899
#3	-.00019	.00090	.08390	.03994	2.3365	.00769	2.0298	.14789
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	3.9437	.00213	.48417	.04082	-.00093	.00085	.68513
Stddev	.00021	.0307	.00050	.01401	.00231	.00060	.00505	.00752
%RSD	196.10	.77890	23.717	2.8944	5.6647	64.335	591.18	1.0973
#1	-.00006	3.9619	.00255	.49011	.03817	-.00116	.00014	.69065
#2	.00004	3.9610	.00226	.49423	.04240	-.00137	.00622	.68818
#3	.00034	3.9082	.00157	.46816	.04190	-.00025	-.00380	.67657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601 Acquired: 6/29/2016 13:27:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.33940	-.01837	.00131	.00158	.15825	.00049
Stddev	.00026	.00192	.00599	.00263	.00030	.00187	.00017
%RSD	327.05	.56694	32.634	201.60	18.811	1.1847	35.786
#1	.00006	.34018	-.02023	.00434	.00192	.15890	.00029
#2	-.00017	.34080	-.01166	-.00037	.00138	.15971	.00056
#3	.00035	.33720	-.02321	-.00006	.00144	.15613	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9083.0	55048.	2572.1
Stddev	12.4	106.	20.0
%RSD	.13696	.19313	.77824
#1	9096.9	54966.	2569.4
#2	9073.0	55010.	2553.6
#3	9079.0	55168.	2593.3

Approved: June 29, 2016

Sample Name: L1606149601S Acquired: 6/29/2016 13:31:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19901	5.0835	.20422	1.0200	.58673	.02474	152.60	.02902
Stddev	.00268	.0032	.00478	.0050	.02151	.00017	5.66	.00010
%RSD	1.3471	.06200	2.3428	.48536	3.6654	.67464	3.7112	.33393
#1	.20137	5.0799	.20951	1.0256	.57631	.02491	149.80	.02906
#2	.19956	5.0853	.20018	1.0181	.57242	.02473	148.88	.02909
#3	.19609	5.0854	.20299	1.0163	.61146	.02458	159.12	.02891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09935	.25120	.32839	2.0167	27.699	.52373	7.0826	.38660
Stddev	.00019	.00042	.00321	.1390	1.135	.02634	.2402	.01337
%RSD	.19025	.16720	.97706	6.8918	4.0974	5.0297	3.3916	3.4593
#1	.09957	.25142	.32884	1.9876	27.155	.50789	7.1811	.37541
#2	.09926	.25071	.33135	1.8945	26.939	.50916	6.8087	.38299
#3	.09923	.25146	.32498	2.1679	29.004	.55414	7.2578	.40141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51367	29.242	.25007	5.5779	.28995	.61217	.19415	3.1202
Stddev	.00224	1.120	.00162	.0326	.00216	.00586	.00396	.0141
%RSD	.43553	3.8309	.64653	.58366	.74661	.95659	2.0391	.45211
#1	.51394	28.687	.25099	5.5840	.28950	.61568	.18974	3.1244
#2	.51576	28.508	.25102	5.6070	.29230	.61543	.19530	3.1318
#3	.51131	30.531	.24820	5.5427	.28804	.60541	.19741	3.1045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601S Acquired: 6/29/2016 13:31:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50841**	**.83006**	**.48317**	**.25181**	**.50876**	**.64056**	**.00125**
Stddev	.00279	.02809	.02264	.00257	.00177	.00306	.00069
%RSD	.54937	3.3838	4.6851	1.0190	.34844	.47814	55.275
#1	.51067	.82564	.48407	.24885	.50672	.64257	.00045
#2	.50927	.80445	.46010	.25339	.50984	.64208	.00164
#3	.50529	.86010	.50535	.25319	.50973	.63703	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8925.7**	**53605.**	**2514.8**
Stddev	32.1	114.	66.8
%RSD	.35995	.21348	2.6578
#1	8904.1	53541.	2533.4
#2	8910.5	53737.	2570.4
#3	8962.6	53536.	2440.7

Approved: June 29, 2016

Sample Name: L1606149601SD Acquired: 6/29/2016 13:35:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-10

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20298**	**5.1471**	**.20841**	**1.0355**	**.59469**	**.02517**	**161.77**	**.02948**
Stddev	.00333	.0076	.00366	.0045	.00331	.00008	.91	.00026
%RSD	1.6408	.14687	1.7558	.43354	.55680	.30956	.56220	.87127
#1	.20648	5.1503	.20791	1.0374	.59848	.02514	162.81	.02959
#2	.19985	5.1525	.21230	1.0303	.59237	.02511	161.35	.02966
#3	.20260	5.1385	.20503	1.0387	.59321	.02526	161.13	.02918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10040**	**.25341**	**.33794**	**2.0523**	**28.211**	**.52968**	**7.2091**	**.39606**
Stddev	.00033	.00261	.00159	.0236	.021	.00241	.0455	.00457
%RSD	.32394	1.0290	.46924	1.1505	.07537	.45466	.63062	1.1537
#1	.10022	.25630	.33827	2.0301	28.213	.53240	7.1616	.40061
#2	.10078	.25270	.33934	2.0771	28.231	.52782	7.2135	.39609
#3	.10021	.25123	.33622	2.0497	28.188	.52882	7.2522	.39147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52134**	**29.781**	**.25290**	**5.6983**	**.29509**	**.61618**	**.20300**	**3.2091**
Stddev	.00203	.140	.00096	.0096	.00142	.00461	.00627	.0089
%RSD	.38917	.46857	.37998	.16896	.48273	.74876	3.0907	.27566
#1	.52173	29.911	.25390	5.6911	.29670	.61861	.20133	3.2129
#2	.52315	29.799	.25283	5.7092	.29460	.61907	.20994	3.2154
#3	.51915	29.633	.25198	5.6946	.29398	.61086	.19773	3.1990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601SD Acquired: 6/29/2016 13:35:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-10

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51305**	**.85393**	**.50073**	**.25713**	**.51551**	**.65641**	**.00038**
Stddev	.00264	.01335	.00656	.00188	.00222	.00100	.00089
%RSD	.51363	1.5635	1.3091	.73265	.43057	.15215	234.39
#1	.51277	.86930	.50785	.25842	.51412	.65597	.00001
#2	.51581	.84733	.49495	.25497	.51434	.65755	.00139
#3	.51056	.84517	.49940	.25800	.51807	.65570	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8935.7**	**53938.**	**2524.0**
Stddev	22.6	87.	20.2
%RSD	.25300	.16207	.79942
#1	8946.9	54038.	2502.6
#2	8909.7	53879.	2527.0
#3	8950.6	53896.	2542.6

Approved: June 29, 2016

Sample Name: L1606149601PS Acquired: 6/29/2016 13:38:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574645-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20054**	**5.1036**	**.20832**	**1.0283**	**.58081**	**.02493**	**145.21**	**.02893**
Stddev	.00093	.0139	.00310	.0064	.00420	.00017	1.06	.00029
%RSD	.46402	.27197	1.4885	.62248	.72276	.66614	.73188	1.0052
#1	.19971	5.0879	.20511	1.0209	.58524	.02475	146.21	.02918
#2	.20155	5.1142	.21130	1.0317	.58029	.02497	145.32	.02899
#3	.20037	5.1087	.20854	1.0323	.57690	.02508	144.09	.02861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10016**	**.25150**	**.32808**	**1.9934**	**27.533**	**.52384**	**6.9324**	**.37604**
Stddev	.00016	.00018	.00185	.0266	.147	.00167	.1202	.00194
%RSD	.16020	.07268	.56512	1.3335	.53434	.31836	1.7343	.51548
#1	.10014	.25167	.32966	2.0240	27.661	.52244	6.9856	.37778
#2	.10001	.25131	.32855	1.9805	27.565	.52569	7.0169	.37639
#3	.10033	.25151	.32604	1.9757	27.372	.52341	6.7948	.37395
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51962**	**29.049**	**.25255**	**5.6296**	**.29024**	**.61643**	**.20214**	**3.1122**
Stddev	.00075	.199	.00072	.0105	.00168	.00611	.01025	.0067
%RSD	.14413	.68651	.28652	.18630	.58005	.99164	5.0693	.21625
#1	.52008	29.270	.25178	5.6175	.29130	.61427	.19110	3.1145
#2	.52003	28.996	.25322	5.6359	.28830	.61169	.20398	3.1176
#3	.51876	28.882	.25264	5.6354	.29113	.62333	.21134	3.1047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601PS Acquired: 6/29/2016 13:38:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574645-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51169**	**.81148**	**.48297**	**.25279**	**.51036**	**.64217**	**.00009**
Stddev	.00096	.01402	.00273	.00253	.00157	.00146	.00054
%RSD	.18795	1.7283	.56579	.99895	.30669	.22793	566.34
#1	.51206	.82676	.48178	.25490	.51034	.64384	-.00036
#2	.51242	.80849	.48104	.24999	.50880	.64158	-.00005
#3	.51060	.79919	.48610	.25347	.51193	.64109	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8974.4**	**53921.**	**2529.2**
Stddev	18.9	362.	17.1
%RSD	.21065	.67063	.67636
#1	8952.7	53771.	2512.0
#2	8987.7	53659.	2529.4
#3	8982.6	54334.	2546.2

Approved: June 29, 2016

Sample Name: L1606149601SDL Acquired: 6/29/2016 13:42:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574645-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	.02265	.00439	.01861	.01991	.00001	34.038	.00076
Stddev	.00237	.00623	.00284	.00283	.00055	.00008	.351	.00013
%RSD	88.809	27.485	64.694	15.181	2.7467	583.76	1.0315	16.599
#1	.00540	.02732	.00767	.02173	.01932	.00010	33.853	.00073
#2	.00109	.02506	.00277	.01786	.02039	-.00004	33.818	.00066
#3	.00153	.01558	.00273	.01623	.02002	-.00002	34.443	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00062	.02070	.01263	.64040	-.00117	.47919	.03072
Stddev	.00027	.00059	.00049	.02795	.07398	.00191	.11296	.00112
%RSD	120.29	95.891	2.3478	221.37	11.553	162.93	23.573	3.6479
#1	-.00024	.00108	.02099	-.01237	.70940	-.00228	.43966	.03057
#2	.00005	.00082	.02097	.04281	.56228	.00103	.60660	.03191
#3	-.00050	-.00005	.02014	.00744	.64953	-.00227	.39131	.02968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.87973	.00039	.11914	.01170	.00038	.00064	.15165
Stddev	.00069	.03146	.00108	.00344	.00381	.00470	.00283	.00126
%RSD	1754.8	3.5762	278.53	2.8862	32.581	1243.0	444.64	.83076
#1	.00075	.89723	-.00063	.11919	.00995	.00542	-.00262	.15021
#2	-.00033	.84341	.00027	.12255	.01607	-.00387	.00211	.15222
#3	-.00054	.89854	.00153	.11567	.00907	-.00041	.00242	.15252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601SDL Acquired: 6/29/2016 13:42:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574645-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.07377	.00394	.00294	.00223	.03691	.00004
Stddev	.00105	.00059	.00619	.00218	.00071	.00013	.00071
%RSD	283.17	.80195	157.13	74.208	31.723	.34011	2011.1
#1	.00026	.07309	.00295	.00509	.00149	.03696	.00081
#2	-.00062	.07407	-.00170	.00073	.00229	.03677	-.00059
#3	.00147	.07415	.01056	.00299	.00290	.03700	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8856.7	53491.	2431.8
Stddev	12.0	145.	16.6
%RSD	.13541	.27109	.68401
#1	8870.2	53328.	2432.6
#2	8852.6	53606.	2448.0
#3	8847.3	53539.	2414.7

Approved: June 29, 2016

Sample Name: L1606149601SDL Acquired: 6/29/2016 13:46:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574645-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.01470**	**.00246**	**.00724**	**.00491**	**.00005**	**6.6349**	**-.00015**
Stddev	.00282	.00852	.00115	.00218	.00150	.00009	.0736	.00025
%RSD	451.73	57.984	46.707	30.143	30.632	193.02	1.1088	164.73
#1	-.00099	.00499	.00287	.00765	.00563	-.00000	6.5913	.00009
#2	-.00324	.01818	.00116	.00918	.00318	.00015	6.5937	-.00014
#3	.00236	.02093	.00335	.00488	.00592	-.00001	6.7199	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.00122**	**.00474**	**.03942**	**.19051**	**-.00406**	**.04822**	**.00545**
Stddev	.00034	.00021	.00192	.01779	.11336	.00307	.07286	.00352
%RSD	1047.4	17.030	40.519	45.138	59.504	75.613	151.09	64.471
#1	-.00030	-.00121	.00678	.05654	.17314	-.00053	.05234	.00330
#2	.00038	-.00143	.00448	.02103	.31155	-.00557	.11894	.00951
#3	.00002	-.00101	.00297	.04068	.08684	-.00608	-.02661	.00354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00077**	**.12457**	**.00002**	**.02721**	**.00302**	**-.00078**	**.00898**	**.02532**
Stddev	.00015	.01454	.00074	.00142	.00426	.00453	.00442	.00181
%RSD	19.478	11.672	3733.6	5.2076	141.20	578.54	49.243	7.1430
#1	.00088	.10778	.00072	.02560	.00160	.00186	.01203	.02733
#2	.00060	.13316	.00009	.02773	-.00035	-.00602	.01100	.02480
#3	.00082	.13275	-.00075	.02828	.00780	.00181	.00391	.02382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601SDL Acquired: 6/29/2016 13:46:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574645-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.01430	.00089	.00259	.00141	.00761	.00062
Stddev	.00074	.00024	.00368	.00450	.00065	.00017	.00019
%RSD	391.61	1.6814	415.80	174.00	46.484	2.1887	30.376
#1	.00037	.01408	-.00013	.00638	.00166	.00743	.00076
#2	.00082	.01455	-.00218	-.00238	.00066	.00767	.00070
#3	-.00062	.01428	.00497	.00376	.00189	.00775	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8865.8	53275.	2415.4
Stddev	4.0	113.	10.8
%RSD	.04531	.21270	.44617
#1	8867.2	53400.	2402.9
#2	8861.3	53179.	2421.7
#3	8869.0	53246.	2421.5

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 13:50:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43655	10.978	.43937	.54785	1.0971	.05438	10.826
Stddev	.00135	.026	.00061	.00327	.0027	.00007	.060
%RSD	.30979	.23937	.13954	.59651	.24424	.12669	.55629
#1	.43586	10.995	.43886	.54528	1.1000	.05445	10.888
#2	.43811	10.991	.44005	.54675	1.0947	.05439	10.823
#3	.43568	10.947	.43920	.55153	1.0965	.05431	10.768
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05470	.21964	.54715	F .55305	4.3512	54.438	1.0930
Stddev	.00008	.00037	.00087	.00183	.0224	.086	.0063
%RSD	.13926	.16924	.15951	.33062	.51567	.15724	.58110
#1	.05476	.21935	.54786	.55269	4.3680	54.532	1.0877
#2	.05473	.21950	.54618	.55503	4.3258	54.363	1.0911
#3	.05462	.22006	.54740	.55143	4.3599	54.420	1.1000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				.50000			
Range				10.000%			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.965	.54340	F 1.1048	54.727	F .55602	F 11.063	.54591
Stddev	.158	.00449	.0014	.079	.00146	.021	.00195
%RSD	1.4388	.82627	.12456	.14502	.26234	.18692	.35775
#1	10.792	.54102	1.1054	54.637	.55599	11.077	.54587
#2	11.001	.54858	1.1032	54.756	.55458	11.040	.54398
#3	11.101	.54060	1.1057	54.787	.55750	11.073	.54788
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass
Value			1.0000		.50000	10.000	
Range			10.000%		10.000%	10.000%	

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 13:50:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.3300	.43998	F 5.5688	F 1.1051	1.0953	1.0953	.54932
Stddev	.0066	.00256	.0043	.0016	.0007	.0085	.00440
%RSD	.49866	.58162	.07732	.14659	.06456	.77643	.80171
#1	1.3301	.44292	5.5647	1.1068	1.0952	1.0927	.55160
#2	1.3233	.43876	5.5685	1.1050	1.0960	1.1048	.54425
#3	1.3366	.43826	5.5733	1.1036	1.0946	1.0884	.55212
Check ?	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value	1.2000		5.0000	1.0000			
Range	10.000%		10.000%	10.000%			

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0920	F 1.1025	F 1.1012
Stddev	.0020	.0007	.0052
%RSD	.18361	.06332	.47550
#1	1.0932	1.1031	1.1050
#2	1.0931	1.1018	1.0952
#3	1.0897	1.1027	1.1034
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8606.2	51334.	2377.1
Stddev	13.1	255.	10.7
%RSD	.15266	.49713	.44883
#1	8591.7	51291.	2365.7
#2	8609.4	51102.	2386.9
#3	8617.4	51607.	2378.8

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 13:53:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	.03388	.00187	.00598	.00209	.00006	.08905
Stddev	.00312	.00279	.00177	.00274	.00071	.00009	.03047
%RSD	252.10	8.2384	94.700	45.781	34.047	152.64	34.214
#1	.00089	.03254	.00070	.00844	.00286	-.00002	.07588
#2	-.00170	.03709	.00391	.00647	.00146	.00004	.06738
#3	.00452	.03202	.00101	.00303	.00195	.00015	.12389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	-.00042	.00159	.00116	.00800	.16229	-.00336
Stddev	.00030	.00021	.00063	.00099	.05432	.13072	.00219
%RSD	163.94	50.275	39.779	85.074	679.20	80.545	65.297
#1	-.00048	-.00038	.00092	.00029	.00967	.31233	-.00486
#2	-.00018	-.00065	.00169	.00223	.06147	.07307	-.00438
#3	.00012	-.00023	.00218	.00096	-.04714	.10147	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01753	.00154	.00064	.09416	-.00033	F .01257	.00484
Stddev	.06865	.00210	.00048	.02475	.00047	.00868	.00535
%RSD	391.63	136.30	73.800	26.283	142.42	69.055	110.46
#1	.07238	-.00008	.00070	.09247	.00021	.01642	.00150
#2	.03967	.00391	.00109	.11972	-.00055	.01865	.00202
#3	-.05946	.00078	.00014	.07031	-.00064	.00263	.01101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 13:53:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	-.00632	-.00767	-.00022	.00107	.00097	-.00047
Stddev	.00830	.00559	.00085	.00084	.00074	.00244	.00305
%RSD	1178.3	88.429	11.038	380.90	69.167	251.33	652.95
#1	-.00453	-.01035	-.00808	-.00056	.00181	.00204	.00282
#2	.01028	-.00867	-.00670	.00073	.00108	-.00182	-.00100
#3	-.00363	.00006	-.00824	-.00083	.00033	.00270	-.00322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00266	.00298	.00156
Stddev	.00122	.00013	.00075
%RSD	45.925	4.4612	48.080
#1	.00394	.00304	.00243
#2	.00150	.00308	.00105
#3	.00253	.00283	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8689.4	52522.	2390.6
Stddev	12.8	95.	7.5
%RSD	.14773	.18164	.31458
#1	8704.2	52437.	2381.9
#2	8683.0	52504.	2394.6
#3	8681.0	52625.	2395.2

Approved: June 29, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW22-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 12:55
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	NI.063016.125503
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00523		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.114		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00110	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00449		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.00227	J	0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00569	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0767		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW22-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:42
Collect Date:	06/21/2016 07:55	**Dilution:**	20	**File ID:**	NI.063016.144253
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.353		0.120	0.0600	0.0300

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C04F-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 12:58
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	NI.063016.125815
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000967	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00355	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C04F-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:46
Collect Date:	06/21/2016 08:55	**Dilution:**	20	**File ID:**	NI.063016.144605
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.311		0.120	0.0600	0.0300
Manganese, Total	7439-96-5	0.287		0.0800	0.0400	0.0200

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C04FFD-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 13:01
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	NI.063016.130126
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000991	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00186	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.247		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C04FFD-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:49
Collect Date:	06/21/2016 08:55	**Dilution:**	20	**File ID:**	NI.063016.144917
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.288		0.120	0.0600	0.0300

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW18-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 13:04
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	NI.063016.130438
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0161		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0130		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0229		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00266	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0270		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000115	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00313		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0175	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW18-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:52
Collect Date:	06/21/2016 10:05	**Dilution:**	100	**File ID:**	NI.063016.145228
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.713		0.600	0.300	0.150
Manganese, Total	7439-96-5	2.81		0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW18-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 13:07
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	NI.063016.130749
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00541		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00126	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00107	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0497		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW18-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:55
Collect Date:	06/21/2016 11:15	**Dilution:**	100	**File ID:**	NI.063016.145540
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	1.01		0.600	0.300	0.150
Manganese, Total	7439-96-5	1.55		0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573868
Analyst: AC
Spike Analyst: AC
Run Date: 06/23/2016 10:15
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/23/2016 10:15

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573868-03	BLANK	1	20 mL	50 mL	183.491 g	183.497 g		
2	WG573868-04	LCS	1	20 mL	50 mL	183.538 g	183.527 g	.25 mL	
3	L16061129-01	SAMP	1	20 mL	50 mL	181.701 g	181.693 g		07/05/16
4	L16061129-02	SAMP	1	20 mL	50 mL	182.443 g	182.444 g		07/05/16
5	L16061129-03	SAMP	1	20 mL	50 mL	183.101 g	183.112 g		07/05/16
6	L16061129-04	SAMP	1	20 mL	50 mL	182.339 g	182.35 g		07/05/16
7	L16061129-05	SAMP	1	20 mL	50 mL	182.59 g	182.593 g		07/05/16
8	L16061130-01	SAMP	1	20 mL	50 mL	184.585 g	184.589 g		07/05/16
9	L16061130-02	SAMP	1	20 mL	50 mL	182.792 g	182.795 g		07/05/16
10	L16061130-03	SAMP	1	20 mL	50 mL	183.111 g	183.091 g		07/05/16
11	L16061130-04	SAMP	1	20 mL	50 mL	181.715 g	181.705 g		07/05/16
12	WG573868-01	REF	1	20 mL	50 mL	183.707 g	183.717 g		
13	L16061130-05	SAMP	1	20 mL	50 mL	183.707 g	183.717 g		07/05/16
14	L16061227-01	SAMP	1	20 mL	50 mL	183.249 g	183.249 g		07/01/16
15	L16061227-03	SAMP	1	20 mL	50 mL	183.479 g	183.48 g		07/01/16
16	L16061227-05	SAMP	1	20 mL	50 mL	182.421 g	182.42 g		07/01/16
17	L16061227-06	SAMP	1	20 mL	50 mL	182.489 g	182.485 g		07/01/16
18	L16061227-07	SAMP	1	20 mL	50 mL	181.61 g	181.617 g		07/01/16
19	WG573868-02	REF	2	20 mL	50 mL	182.633 g	182.61 g		
20	L16061229-03	SAMP	2	20 mL	50 mL	182.633 g	182.61 g		06/27/16
21	L16061238-01	SAMP	1	20 mL	50 mL	184.12 g	184.112 g		06/29/16
22	L16061238-02	SAMP	1	20 mL	50 mL	183.506 g	183.45 g		06/29/16
23	WG573868-05	MS	1	20 mL	50 mL	182.719 g	182.686 g	.25 mL	
24	WG573868-06	MSD	1	20 mL	50 mL	183.296 g	183.257 g	.25 mL	
25	WG573868-07	DUP	1	20 mL	50 mL	182.441 g	182.416 g		

Analyst: [signature]

Reviewer: [signature]

MW_DIG - Modified 09/30/2009
PDF ID: 4821140
Report generated: 06/23/2016 13:27

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.063016.103549	Blank	Blank		1		06/30/16 10:35
2	NI.063016.103900	WG574800-01	Calibration Point		1		06/30/16 10:39
3	NI.063016.104212	WG574800-02	Calibration Point		1		06/30/16 10:42
4	NI.063016.104523	WG574800-03	Calibration Point		1		06/30/16 10:45
5	NI.063016.104835	WG574800-04	Calibration Point		1		06/30/16 10:48
6	NI.063016.105148	WG574800-05	Initial Calibration Verification		1		06/30/16 10:51
7	NI.063016.105501	WG574800-06	Initial Calib Blank		1		06/30/16 10:55
8	NI.063016.105814	WG574800-07	Low Level Initial Calibration V		1		06/30/16 10:58
9	NI.063016.110126	WG574800-08	Interference Check		1		06/30/16 11:01
10	NI.063016.110437	WG574800-09	Interference Check		1		06/30/16 11:04
11	NI.063016.110750	WG574800-10	CCV		1		06/30/16 11:07
12	NI.063016.111102	WG574800-11	CCB		1		06/30/16 11:11
13	NI.063016.111415	WG574201-01	Method/Prep Blank	10/100	1		06/30/16 11:14
14	NI.063016.111727	WG574201-02	Laboratory Control S	10/100	1		06/30/16 11:17
15	NI.063016.112039	WG574201-03	Laboratory Control S	10/100	1		06/30/16 11:20
16	NI.063016.112351	L16061384-01	BFB-16-019	10.031/100	1		06/30/16 11:23
17	NI.063016.112702	L16061384-03	BFB-16-020	10.038/100	1		06/30/16 11:27
18	NI.063016.113014	L16061384-05	BFB-16-021	10.027/100	1		06/30/16 11:30
19	NI.063016.113325	L16061384-07	BFB-16-022	10.009/100	1		06/30/16 11:33
20	NI.063016.113637	L16061384-09	BFB-16-023	10.025/100	1		06/30/16 11:36
21	NI.063016.113948	L16061384-11	BFB-16-024	10.048/100	1		06/30/16 11:39
22	NI.063016.114300	WG574744-01	Post Digestion Spike		1	L16061384-11	06/30/16 11:43
23	NI.063016.114613	WG574800-12	CCV		1		06/30/16 11:46
24	NI.063016.114924	WG574800-13	CCB		1		06/30/16 11:49
25	NI.063016.115237	WG574744-02	Serial Dilution		5	L16061384-11	06/30/16 11:52
26	NI.063016.115550	WG574800-14	CCV		1		06/30/16 11:55
27	NI.063016.115902	WG574800-15	CCB		1		06/30/16 11:59
28	NI.063016.120956	WG573868-03	Method/Prep Blank	20/50	1		06/30/16 12:09
29	NI.063016.121308	WG573868-04	Laboratory Control S	20/50	1		06/30/16 12:13
30	NI.063016.121619	WG573868-01	Reference Sample		1	L16061130-05	06/30/16 12:16
31	NI.063016.121931	WG573868-05	Matrix Spike	20/50	1	L16061130-05	06/30/16 12:19
32	NI.063016.122242	WG573868-06	Matrix Spike Duplica	20/50	1	L16061130-05	06/30/16 12:22
33	NI.063016.122554	L16061238-01	LF003MW0306-007	20/50	1		06/30/16 12:25
34	NI.063016.122905	L16061238-02	LF003MW0307-007	20/50	1		06/30/16 12:29

Page: 1 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.063016.123217	WG574742-01	Post Digestion Spike		1	L16061238-02	06/30/16 12:32
36	NI.063016.123551	WG574742-02	Serial Dilution		5	L16061238-02	06/30/16 12:35
37	NI.063016.123903	WG574742-02	Serial Dilution		25	L16061238-02	06/30/16 12:39
38	NI.063016.124216	WG574800-16	CCV		1		06/30/16 12:42
39	NI.063016.124527	WG574800-17	CCB		1		06/30/16 12:45
40	NI.063016.124840	WG573868-02	Reference Sample		1	L16061229-03	06/30/16 12:48
41	NI.063016.125152	WG573868-07	Duplicate	20/50	1	L16061229-03	06/30/16 12:51
42	NI.063016.125503	L16061227-01	18WW22-062116	20/50	1		06/30/16 12:55
43	NI.063016.125815	L16061227-03	C04F-062116	20/50	1		06/30/16 12:58
44	NI.063016.130126	L16061227-05	C04FFD-062116	20/50	1		06/30/16 13:01
45	NI.063016.130438	L16061227-06	18CPTMW18-062116	20/50	1		06/30/16 13:04
46	NI.063016.130749	L16061227-07	18WW18-062116	20/50	1		06/30/16 13:07
47	NI.063016.131101	L16061129-01	MW-22-002	20/50	1		06/30/16 13:11
48	NI.063016.131412	L16061129-02	MW-22-010	20/50	1		06/30/16 13:14
49	NI.063016.131724	L16061129-03	MW-22-007	20/50	1		06/30/16 13:17
50	NI.063016.132037	WG574800-18	CCV		1		06/30/16 13:20
51	NI.063016.132348	WG574800-19	CCB		1		06/30/16 13:23
52	NI.063016.132701	L16061129-04	FD061716	20/50	1		06/30/16 13:27
53	NI.063016.133013	L16061129-05	EB-WATER A	20/50	1		06/30/16 13:30
54	NI.063016.133324	L16061130-01	MW-23-012	20/50	1		06/30/16 13:33
55	NI.063016.133636	L16061130-02	MW-23-003	20/50	1		06/30/16 13:36
56	NI.063016.133947	L16061130-03	MW-23-013	20/50	1		06/30/16 13:39
57	NI.063016.134259	L16061130-04	MW-23-001	20/50	1		06/30/16 13:42
58	NI.063016.134610	L16061380-01	XU936TW003A	20/50	50		06/30/16 13:46
59	NI.063016.134922	L16061380-02	XU936TW003C	20/50	50		06/30/16 13:49
60	NI.063016.135234	WG574800-20	CCV		1		06/30/16 13:52
61	NI.063016.135546	WG574800-21	CCB		1		06/30/16 13:55
62	NI.063016.135859	WG574800-22	Low Level Continuing Calibra		1		06/30/16 13:58
63	NI.063016.140445	WG574262-01	Method/Prep Blank	.25/100	1		06/30/16 14:04
64	NI.063016.140756	WG574262-02	Laboratory Control S	.25/100	1		06/30/16 14:07
65	NI.063016.141108	WG574262-03	Laboratory Control S	.25/100	1		06/30/16 14:11
66	NI.063016.141419	L16061291-01	V6F0270-01	.251/100	1		06/30/16 14:14
67	NI.063016.141731	WG574807-01	Post Digestion Spike		1	L16061291-01	06/30/16 14:17
68	NI.063016.142042	WG574807-02	Serial Dilution		5	L16061291-01	06/30/16 14:20

Page: 2 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.063016.142354	WG574807-02	Serial Dilution		25	L16061291-01	06/30/16 14:23
70	NI.063016.142707	WG574800-23	CCV		1		06/30/16 14:27
71	NI.063016.143019	WG574800-24	CCB		1		06/30/16 14:30
72	NI.063016.143630	WG573868-02	Reference Sample		1000	L16061229-03	06/30/16 14:36
73	NI.063016.143942	WG573868-07	Duplicate	20/50	1000	L16061229-03	06/30/16 14:39
74	NI.063016.144253	L16061227-01	18WW22-062116	20/50	20		06/30/16 14:42
75	NI.063016.144605	L16061227-03	C04F-062116	20/50	20		06/30/16 14:46
76	NI.063016.144917	L16061227-05	C04FFD-062116	20/50	20		06/30/16 14:49
77	NI.063016.145228	L16061227-06	18CPTMW18-062116	20/50	100		06/30/16 14:52
78	NI.063016.145540	L16061227-07	18WW18-062116	20/50	100		06/30/16 14:55
79	NI.063016.145853	WG574800-25	CCV		1		06/30/16 14:58
80	NI.063016.150204	WG574800-26	CCB		1		06/30/16 15:02
81	NI.063016.150517	WG574800-27	Low Level Continuing Calibra		1		06/30/16 15:05
82	NI.063016.151448	WG573728-03	Method/Prep Blank	20/50	1		06/30/16 15:14
83	NI.063016.151800	WG573728-04	Laboratory Control S	20/50	1		06/30/16 15:18
84	NI.063016.152111	L16060996-01	MW-21-007		1	WG573728-01	06/30/16 15:21
85	NI.063016.152423	L16060996-02	MW-21-007 MS	20/50	1	WG573728-05	06/30/16 15:24
86	NI.063016.152734	L16060996-03	MW-21-007 MSD	20/50	1	WG573728-06	06/30/16 15:27
87	NI.063016.153046	L16061148-01	DP005SW0513-007	20/50	1		06/30/16 15:30
88	NI.063016.153357	L16061148-02	DP005SW0514-007	20/50	1		06/30/16 15:33
89	NI.063016.153709	WG574806-01	Post Digestion Spike		1	L16061148-02	06/30/16 15:37
90	NI.063016.154020	WG574806-02	Serial Dilution		5	L16061148-02	06/30/16 15:40
91	NI.063016.154332	WG574806-02	Serial Dilution		25	L16061148-02	06/30/16 15:43
92	NI.063016.154645	WG574800-28	CCV		1		06/30/16 15:46
93	NI.063016.154956	WG574800-29	CCB		1		06/30/16 15:49
94	NI.063016.155309	L16061150-01	SS007SW0709-007	20/50	1		06/30/16 15:53
95	NI.063016.155621	L16061150-02	SS007SW0710-007	20/50	1		06/30/16 15:56
96	NI.063016.155932	L16060996-04	MW-21-006	20/50	1		06/30/16 15:59
97	NI.063016.160243	L16060996-05	MW-21-002	20/50	1		06/30/16 16:02
98	NI.063016.160555	L16060996-06	FD-061516-21	20/50	1		06/30/16 16:05
99	NI.063016.160906	L16060996-07	MW-21-009	20/50	1		06/30/16 16:09
100	NI.063016.161218	L16060996-08	MW-21-005	20/50	1		06/30/16 16:12
101	NI.063016.161529	L16060996-09	MW-21-004	20/50	1		06/30/16 16:15
102	NI.063016.161840	L16061030-02	SW1A-322-14	20/50	1		06/30/16 16:18

Page: 3 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.063016.162152	L16061030-05	SW1B-322-14	20/50	1		06/30/16 16:21
104	NI.063016.162505	WG574800-30	CCV		1		06/30/16 16:25
105	NI.063016.162816	WG574800-31	CCB		1		06/30/16 16:28
106	NI.063016.163129	L16061030-08	SW2A-322-14	20/50	1		06/30/16 16:31
107	NI.063016.163440	L16061030-13	SW3A-322-14		1	WG573728-02	06/30/16 16:34
108	NI.063016.163752	L16061030-14	SW3A-322-14	20/50	1	WG573728-07	06/30/16 16:37
109	NI.063016.164103	L16061030-15	SW3A-322-14	20/50	1	WG573728-08	06/30/16 16:41
110	NI.063016.164415	L16061030-20	SW4A-322-14	20/50	1		06/30/16 16:44
111	NI.063016.170207	L16061030-23	SW5A-322-14	20/50	1		06/30/16 17:02
112	NI.063016.170519	WG574800-32	CCV		1		06/30/16 17:05
113	NI.063016.170831	WG574800-33	CCB		1		06/30/16 17:08
114	NI.063016.171143	WG573840-02	Method/Prep Blank	20/50	1		06/30/16 17:11
115	NI.063016.171455	WG573840-03	Laboratory Control S	20/50	1		06/30/16 17:14
116	NI.063016.171806	WG573840-01	Reference Sample		1	L16061068-13	06/30/16 17:18
117	NI.063016.172118	WG573840-04	Matrix Spike	20/50	1	L16061068-13	06/30/16 17:21
118	NI.063016.172429	WG573840-05	Matrix Spike Duplica	20/50	1	L16061068-13	06/30/16 17:24
119	NI.063016.172741	L16061228-01	SS007MWOB03-007	20/50	1		06/30/16 17:27
120	NI.063016.173052	L16061228-02	SS007MWN751-007	20/50	1		06/30/16 17:30
121	NI.063016.173403	WG574804-01	Post Digestion Spike		1	L16061228-02	06/30/16 17:34
122	NI.063016.173715	WG574804-02	Serial Dilution		5	L16061228-02	06/30/16 17:37
123	NI.063016.174026	WG574804-02	Serial Dilution		25	L16061228-02	06/30/16 17:40
124	NI.063016.174340	WG574800-34	CCV		1		06/30/16 17:43
125	NI.063016.174651	WG574800-35	CCB		1		06/30/16 17:46
126	NI.063016.175004	L16061065-01	MW-23-007	20/50	1		06/30/16 17:50
127	NI.063016.175316	L16061065-02	MW-23-006	20/50	1		06/30/16 17:53
128	NI.063016.175627	L16061065-03	MW-23-008	20/50	1		06/30/16 17:56
129	NI.063016.175939	L16061065-04	MW-23-009	20/50	1		06/30/16 17:59
130	NI.063016.180250	L16061065-05	MW-23-010	20/50	1		06/30/16 18:02
131	NI.063016.180602	L16061065-06	MW-23-011	20/50	1		06/30/16 18:06
132	NI.063016.180913	L16061068-04	C01-061716	20/50	1		06/30/16 18:09
133	NI.063016.181225	L16061068-05	C01FD-061716	20/50	1		06/30/16 18:12
134	NI.063016.181536	L16061068-11	MW19F-061716	20/50	1		06/30/16 18:15
135	NI.063016.181847	L16061228-03	SS007MWN753-007	20/50	1		06/30/16 18:18
136	NI.063016.182201	WG574800-36	CCV		1		06/30/16 18:22

Page: 4 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.063016.182512	WG574800-37	CCB		1		06/30/16 18:25
138	NI.063016.182825	L16061231-01	FT002MW0205-007	20/50	1		06/30/16 18:28
139	NI.063016.183136	L16061237-01	SS007MWN769-007	20/50	1		06/30/16 18:31
140	NI.063016.183448	L16061237-02	SS007MWN740-007	20/50	1		06/30/16 18:34
141	NI.063016.183759	L16061237-03	SS007MWN740-007 DUP	20/50	1		06/30/16 18:37
142	NI.063016.184111	L16061237-04	SS007MWN738-007	20/50	1		06/30/16 18:41
143	NI.063016.184422	L16061237-05	SS007MWN741-007	20/50	1		06/30/16 18:44
144	NI.063016.184734	L16061237-06	SS007MWNOB09-007	20/50	1		06/30/16 18:47
145	NI.063016.185046	WG574800-38	CCV		1		06/30/16 18:50
146	NI.063016.185358	WG574800-39	CCB		1		06/30/16 18:53
147	NI.063016.185710	WG574593-02	Method/Prep Blank	20/50	1		06/30/16 18:57
148	NI.063016.190021	WG574593-03	Laboratory Control S	20/50	1		06/30/16 19:00
149	NI.063016.190333	WG574519-01	Fluid Blank 2		1		06/30/16 19:03
150	NI.063016.190644	WG574593-01	Reference Sample		1	L16061536-01	06/30/16 19:06
151	NI.063016.190956	WG574593-04	Duplicate	20/50	1	L16061536-01	06/30/16 19:09
152	NI.063016.191307	WG574593-05	Matrix Spike	20/50	1	L16061536-01	06/30/16 19:13
153	NI.063016.191619	WG574593-06	Matrix Spike Duplica	20/50	1	L16061536-01	06/30/16 19:16
154	NI.063016.191930	L16061496-02	60500-SSP0043-SSP0043	20/50	1		06/30/16 19:19
155	NI.063016.192242	WG574849-01	Post Digestion Spike		1	L16061496-02	06/30/16 19:22
156	NI.063016.192553	L16061496-02	60500-SSP0043-SSP0043		5		06/30/16 19:25
157	NI.063016.192906	WG574800-40	CCV		1		06/30/16 19:29
158	NI.063016.193217	WG574800-41	CCB		1		06/30/16 19:32
159	NI.063016.193530	WG574849-02	Serial Dilution		25	L16061496-02	06/30/16 19:35
160	NI.063016.193841	L16061498-01	AG6056	20/50	1		06/30/16 19:38
161	NI.063016.194153	L16061529-01	J6E1295-01	20/50	1		06/30/16 19:41
162	NI.063016.194506	L16061529-02	J6E1295-02	20/50	1		06/30/16 19:45
163	NI.063016.194817	L16061529-03	J6E1295-03	20/50	1		06/30/16 19:48
164	NI.063016.195129	L16061529-04	J6E1295-04	20/50	1		06/30/16 19:51
165	NI.063016.195440	L16061529-05	J6E1295-05	20/50	1		06/30/16 19:54
166	NI.063016.195752	L16061529-06	J6E1295-06	20/50	1		06/30/16 19:57
167	NI.063016.200103	L16061529-07	J6E1295-07	20/50	1		06/30/16 20:01
168	NI.063016.200415	L16061529-08	J6E1295-08	20/50	1		06/30/16 20:04
169	NI.063016.200728	WG574800-42	CCV		1		06/30/16 20:07
170	NI.063016.201039	WG574800-43	CCB		1		06/30/16 20:10

Page: 5 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	NI.063016.201352	L16061529-09	J6E1295-09	20/50	1		06/30/16 20:13
172	NI.063016.201704	L16061529-10	J6E1295-10	20/50	1		06/30/16 20:17
173	NI.063016.202016	L16061529-11	J6E1295-11	20/50	1		06/30/16 20:20
174	NI.063016.202327	L16061529-12	J6E1295-12	20/50	1		06/30/16 20:23
175	NI.063016.202639	L16061529-13	J6E1295-13	20/50	1		06/30/16 20:26
176	NI.063016.202950	L16061532-01	TS935TW011A	20/50	1		06/30/16 20:29
177	NI.063016.203303	WG574800-44	CCV		1		06/30/16 20:33
178	NI.063016.203614	WG574800-45	CCB		1		06/30/16 20:36
179	NI.063016.203927	WG574800-46	Low Level Continuing Calibra		1		06/30/16 20:39
180	NI.063016.204240	L16060362-03	6060227-03		25		06/30/16 20:42
181	NI.063016.204553	WG574800-47	QC Std 6		1		06/30/16 20:45
182	NI.063016.204904	WG574800-48	QC Std 7		1		06/30/16 20:49

Page: 6 Approved: June 30, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 574800
Runlog ID: 76036
Analytical Workgroups: 574744,574571,574742,574807,574804,574806,574849

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1384,1129,1130,1065,996,1532
Level 4	1380,1227,1238,1068,1228,1231
	1237,1148,1150,1496,1498
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
30-JUN-2016

Secondary Reviewer:
01-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-01-2016 12:44:08

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG574742

Login Number: L16061227

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW22-062116	01	06/21/16					06/23/2016	2.1	180		06/30/16	9.3	180	
18WW22-062116	01	06/21/16					06/23/2016	2.1	180		06/30/16	9.2	180	
C04F-062116	03	06/21/16					06/23/2016	2.1	180		06/30/16	9.2	180	
C04F-062116	03	06/21/16					06/23/2016	2.1	180		06/30/16	9.2	180	
C04FFD-062116	05	06/21/16					06/23/2016	2.1	180		06/30/16	9.2	180	
C04FFD-062116	05	06/21/16					06/23/2016	2.1	180		06/30/16	9.2	180	
18CPTMW18-062116	06	06/21/16					06/23/2016	2	180		06/30/16	9.2	180	
18CPTMW18-062116	06	06/21/16					06/23/2016	2	180		06/30/16	9.1	180	
18WW18-062116	07	06/21/16					06/23/2016	2	180		06/30/16	9.2	180	
18WW18-062116	07	06/21/16					06/23/2016	2	180		06/30/16	9.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4833722
Report generated 06/30/2016 15:34

METHOD BLANK SUMMARY

Login Number: L16061227
Blank File ID: NI.063016.120956
Prep Date: 06/23/16 10:15
Analyzed Date: 06/30/16 12:09
Analyst: JYH

Work Group: WG574742
Blank Sample ID: WG573868-03
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573868-04	NI.063016.121308	06/30/16 12:13	01
DUP	WG573868-07	NI.063016.125152	06/30/16 12:51	01
18WW22-062116	L16061227-01	NI.063016.125503	06/30/16 12:55	01
C04F-062116	L16061227-03	NI.063016.125815	06/30/16 12:58	01
C04FFD-062116	L16061227-05	NI.063016.130126	06/30/16 13:01	01
18CPTMW18-062116	L16061227-06	NI.063016.130438	06/30/16 13:04	01
18WW18-062116	L16061227-07	NI.063016.130749	06/30/16 13:07	01
DUP	WG573868-07	NI.063016.143942	06/30/16 14:39	DL01
18WW22-062116	L16061227-01	NI.063016.144253	06/30/16 14:42	DL01
C04F-062116	L16061227-03	NI.063016.144605	06/30/16 14:46	DL01
C04FFD-062116	L16061227-05	NI.063016.144917	06/30/16 14:49	DL01
18CPTMW18-062116	L16061227-06	NI.063016.145228	06/30/16 14:52	DL01
18WW18-062116	L16061227-07	NI.063016.145540	06/30/16 14:55	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4833723
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061227 Prep Date: 06/23/16 10:15 Sample ID: WG573868-03
Instrument ID: ICP-MS2 Run Date: 06/30/16 12:09 Prep Method: 3015
File ID: NI.063016.120956 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574742 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4833724
30-JUN-2016 15:34

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061227 Run Date: 06/30/2016 Sample ID: WG573868-04
Instrument ID: ICP-MS2 Run Time: 12:13 Prep Method: 3015
File ID: NI.063016.121308 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574742 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-30-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.127	101	80 - 120	
Arsenic, Total	0.125	0.128	102	80 - 120	
Barium, Total	0.125	0.126	100	80 - 120	
Cadmium, Total	0.125	0.125	99.8	80 - 120	
Chromium, Total	0.125	0.129	103	80 - 120	
Cobalt, Total	0.125	0.132	105	80 - 120	
Copper, Total	0.125	0.131	105	80 - 120	
Lead, Total	0.125	0.130	104	80 - 120	
Manganese, Total	0.125	0.131	104	80 - 120	
Nickel, Total	0.125	0.130	104	80 - 120	
Silver, Total	0.125	0.129	103	80 - 120	
Thallium, Total	0.125	0.127	102	80 - 120	
Vanadium, Total	0.125	0.127	102	80 - 120	
Zinc, Total	0.125	0.128	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4833725
Report generated: 06/30/2016 15:34

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061227 Cal ID: ICP-MS2- Worknum: WG574742
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG573868-01 File ID: NI.063016.121619 Dil: 1 Matrix: WATER
Sample ID: WG573868-05 MS File ID: NI.063016.121931 Dil: 1 Units: mg/L
Sample ID: WG573868-06 MSD File ID: NI.063016.122242 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	ND	0.125	0.117	93.8	0.125	0.119	95.1	1.39	80 - 120	20	
Arsenic	ND	0.125	0.124	99.3	0.125	0.122	97.4	1.91	80 - 120	20	
Barium	ND	0.125	0.122	97.7	0.125	0.124	99.3	1.58	80 - 120	20	
Cadmium	ND	0.125	0.122	97.7	0.125	0.123	98.3	0.675	80 - 120	20	
Chromium	ND	0.125	0.126	100	0.125	0.125	100	0.362	80 - 120	20	
Cobalt	ND	0.125	0.127	102	0.125	0.126	101	0.848	80 - 120	20	
Copper	0.00163	0.125	0.130	103	0.125	0.130	102	0.639	80 - 120	20	
Lead	ND	0.125	0.126	101	0.125	0.127	101	0.425	80 - 120	20	
Manganese	ND	0.125	0.125	100	0.125	0.125	99.6	0.448	80 - 120	20	
Nickel	ND	0.125	0.125	100	0.125	0.126	101	0.986	80 - 120	20	
Silver	ND	0.125	0.125	100	0.125	0.127	102	1.60	80 - 120	20	
Thallium	0.000112	0.125	0.123	98.7	0.125	0.125	99.5	0.891	80 - 120	20	
Vanadium	ND	0.125	0.124	99.3	0.125	0.124	99.1	0.212	80 - 120	20	
Zinc	ND	0.125	0.127	101	0.125	0.127	101	0.128	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4833726
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061227 **Worknum:** WG574742
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574742-02 **File ID:** NI.063016.123551 **Dil:** 5 **Units:** ug/L
Sample: L16061238-02 **File ID:** NI.063016.122905 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	1.02	F	544.00	
Arsenic	2.91	X	3.02	F	3.50	
Barium	11.1	X	10.7	F	2.93	
Cadmium	ND	U	ND	U		
Chromium	1.91	X	ND	U		
Cobalt	ND	U	ND	U		
Copper	0.667	F	ND	U		
Lead	ND	U	ND	U		
Manganese	0.783	F	ND	U		
Nickel	1.28	F	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	6.62	X	6.82	X	3.00	
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4833720
06/30/2016 15:34

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061227 **Worknum:** WG574742
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574742-01 **File ID:** NI.063016.123217 **Dil:** 1 **Units:** ug/L
Sample ID: L16061238-02 **File ID:** NI.063016.122905 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	46.7		0	U	50	93.4	75 - 125	
ARSENIC	51.7		2.91		50	97.6	75 - 125	
BARIUM	57.6		11.1		50	93.0	75 - 125	
CADMIUM	47.1		0	U	50	94.1	75 - 125	
CHROMIUM	49.0		1.91		50	94.3	75 - 125	
COBALT	47.0		0	U	50	94.0	75 - 125	
COPPER	46.4		0.667	F	50	91.6	75 - 125	
LEAD	48.7		0	U	50	97.4	75 - 125	
MANGANESE	47.7		0.783	F	50	93.9	75 - 125	
NICKEL	46.6		1.28	F	50	90.6	75 - 125	
SILVER	44.7		0	U	50	89.3	75 - 125	
THALLIUM	48.1		0	U	50	96.1	75 - 125	
VANADIUM	55.1		6.62		50	96.9	75 - 125	
ZINC	49.2		0	U	50	98.5	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4833721
Report generated: 06/30/2016 15:34

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061227	Workgroup (AAB#):	WG574742
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG574800	Initial Calibration Date:	30-JUN-2016 10:48

	WG574800-01		WG574800-02		WG574800-03		WG574800-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	70.5	.4	244	50	257000	100	505000	.999999	
ARSENIC	0	-57.0	.4	-7.10	50	66000	100	130000	.999996	
BARIUM	0	88.3	.4	161	50	111000	100	218000	1	
CADMIUM	0	5.70	.4	103	50	117000	100	230000	.999999	
CHROMIUM	0	9640	.4	9940	50	454000	100	879000	.999978	
COBALT	0	279	.4	601	50	400000	100	794000	.999998	
COPPER	0	114	.4	243	50	110000	100	211000	.999876	
LEAD	0	884	.4	1800	50	996000	100	1960000	.999999	
MANGANESE	0	954	.4	1350	50	423000	100	839000	1	
NICKEL	0	359	.4	445	50	112000	100	216000	.999936	
SILVER	0	123	.4	427	50	368000	100	716000	.999987	
THALLIUM	0	39.7	.4	401	50	446000	100	873000	.999999	
VANADIUM	0	1950	.4	2310	50	460000	100	897000	.99998	
ZINC	0	366	.4	523	50	64900	100	126000	.999968	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4833729
Report generated: 30-JUN-2016 15:34

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-06
Instrument ID: ICP-MS2
Run Time: 10:55
Method: 6020A
File ID: NI.063016.105501
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574742
Cal ID: ICP-MS2 - 30-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.2	U
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4833731
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-11
Instrument ID: ICP-MS2
Run Time: 11:11
Method: 6020A
File ID: NI.063016.111102
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4833734
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-15
Instrument ID: ICP-MS2
Run Time: 11:59
Method: 6020A
File ID: NI.063016.115902
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4833734
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-17
Instrument ID: ICP-MS2
Run Time: 12:45
Method: 6020A
File ID: NI.063016.124527
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4833734
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-19
Instrument ID: ICP-MS2
Run Time: 13:23
Method: 6020A
File ID: NI.063016.132348
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4833734
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-24
Instrument ID: ICP-MS2
Run Time: 14:30
Method: 6020A
File ID: NI.063016.143019
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4833734
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-26
Instrument ID: ICP-MS2
Run Time: 15:02
Method: 6020A
File ID: NI.063016.150204
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4833734
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-05
Instrument ID: ICP-MS2
Run Time: 10:51
Method: 6020A
File ID: NI.063016.105148
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.0	98.1	90 - 110	
Arsenic		50	49.6	99.2	90 - 110	
Barium		50	49.4	98.8	90 - 110	
Cadmium		50	49.6	99.2	90 - 110	
Chromium		50	49.3	98.7	90 - 110	
Cobalt		50	50.0	99.9	90 - 110	
Copper		50	49.9	99.9	90 - 110	
Lead		50	50.0	99.9	90 - 110	
Manganese		50	49.5	99.0	90 - 110	
Nickel		50	49.8	99.6	90 - 110	
Silver		50	49.5	98.9	90 - 110	
Thallium		50	50.0	100	90 - 110	
Vanadium		50	49.7	99.4	90 - 110	
Zinc		50	50.5	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4833730
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-10
Instrument ID: ICP-MS2
Run Time: 11:07
Method: 6020A
File ID: NI.063016.110750
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0497	mg/L	99.4	90 - 110		
Arsenic		0.0500	0.0500	mg/L	100	90 - 110		
Barium		0.0500	0.0490	mg/L	98.0	90 - 110		
Cadmium		0.0500	0.0493	mg/L	98.6	90 - 110		
Chromium		0.0500	0.0496	mg/L	99.1	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0502	mg/L	100	90 - 110		
Lead		0.0500	0.0502	mg/L	100	90 - 110		
Manganese		0.0500	0.0497	mg/L	99.4	90 - 110		
Nickel		0.0500	0.0499	mg/L	99.7	90 - 110		
Silver		0.0500	0.0494	mg/L	98.7	90 - 110		
Thallium		0.0500	0.0500	mg/L	100	90 - 110		
Vanadium		0.0500	0.0501	mg/L	100	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4833733
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-14
Instrument ID: ICP-MS2
Run Time: 11:55
Method: 6020A
File ID: NI.063016.115550
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0489	mg/L	97.9	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0491	mg/L	98.2	90 - 110		
Cadmium		0.0500	0.0492	mg/L	98.5	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.7	90 - 110		
Cobalt		0.0500	0.0516	mg/L	103	90 - 110		
Copper		0.0500	0.0511	mg/L	102	90 - 110		
Lead		0.0500	0.0510	mg/L	102	90 - 110		
Manganese		0.0500	0.0498	mg/L	99.6	90 - 110		
Nickel		0.0500	0.0505	mg/L	101	90 - 110		
Silver		0.0500	0.0493	mg/L	98.5	90 - 110		
Thallium		0.0500	0.0504	mg/L	101	90 - 110		
Vanadium		0.0500	0.0505	mg/L	101	90 - 110		
Zinc		0.0500	0.0504	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4833733
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-16
Instrument ID: ICP-MS2
Run Time: 12:42
Method: 6020A
File ID: NI.063016.124216
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0492	mg/L	98.4	90 - 110		
Arsenic		0.0500	0.0497	mg/L	99.4	90 - 110		
Barium		0.0500	0.0483	mg/L	96.7	90 - 110		
Cadmium		0.0500	0.0492	mg/L	98.3	90 - 110		
Chromium		0.0500	0.0498	mg/L	99.6	90 - 110		
Cobalt		0.0500	0.0506	mg/L	101	90 - 110		
Copper		0.0500	0.0505	mg/L	101	90 - 110		
Lead		0.0500	0.0513	mg/L	103	90 - 110		
Manganese		0.0500	0.0494	mg/L	98.7	90 - 110		
Nickel		0.0500	0.0501	mg/L	100	90 - 110		
Silver		0.0500	0.0491	mg/L	98.1	90 - 110		
Thallium		0.0500	0.0503	mg/L	101	90 - 110		
Vanadium		0.0500	0.0498	mg/L	99.5	90 - 110		
Zinc		0.0500	0.0500	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4833733
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-18
Instrument ID: ICP-MS2
Run Time: 13:20
Method: 6020A
File ID: NI.063016.132037
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0482	mg/L	96.5	90 - 110		
Arsenic		0.0500	0.0485	mg/L	97.1	90 - 110		
Barium		0.0500	0.0477	mg/L	95.5	90 - 110		
Cadmium		0.0500	0.0484	mg/L	96.8	90 - 110		
Chromium		0.0500	0.0498	mg/L	99.6	90 - 110		
Cobalt		0.0500	0.0497	mg/L	99.5	90 - 110		
Copper		0.0500	0.0489	mg/L	97.8	90 - 110		
Lead		0.0500	0.0510	mg/L	102	90 - 110		
Manganese		0.0500	0.0488	mg/L	97.6	90 - 110		
Nickel		0.0500	0.0489	mg/L	97.9	90 - 110		
Silver		0.0500	0.0482	mg/L	96.3	90 - 110		
Thallium		0.0500	0.0494	mg/L	98.7	90 - 110		
Vanadium		0.0500	0.0487	mg/L	97.4	90 - 110		
Zinc		0.0500	0.0490	mg/L	98.1	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4833733
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-23
Instrument ID: ICP-MS2
Run Time: 14:27
Method: 6020A
File ID: NI.063016.142707
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0499	mg/L	99.8	90 - 110		
Arsenic		0.0500	0.0511	mg/L	102	90 - 110		
Barium		0.0500	0.0496	mg/L	99.1	90 - 110		
Cadmium		0.0500	0.0503	mg/L	101	90 - 110		
Chromium		0.0500	0.0525	mg/L	105	90 - 110		
Cobalt		0.0500	0.0506	mg/L	101	90 - 110		
Copper		0.0500	0.0522	mg/L	104	90 - 110		
Lead		0.0500	0.0528	mg/L	106	90 - 110		
Manganese		0.0500	0.0521	mg/L	104	90 - 110		
Nickel		0.0500	0.0525	mg/L	105	90 - 110		
Silver		0.0500	0.0494	mg/L	98.9	90 - 110		
Thallium		0.0500	0.0512	mg/L	102	90 - 110		
Vanadium		0.0500	0.0519	mg/L	104	90 - 110		
Zinc		0.0500	0.0518	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4833733
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-25
Instrument ID: ICP-MS2
Run Time: 14:58
Method: 6020A
File ID: NI.063016.145853
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0495	mg/L	98.9	90 - 110		
Arsenic		0.0500	0.0504	mg/L	101	90 - 110		
Barium		0.0500	0.0491	mg/L	98.2	90 - 110		
Cadmium		0.0500	0.0498	mg/L	99.6	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0496	mg/L	99.2	90 - 110		
Copper		0.0500	0.0507	mg/L	101	90 - 110		
Lead		0.0500	0.0521	mg/L	104	90 - 110		
Manganese		0.0500	0.0493	mg/L	98.5	90 - 110		
Nickel		0.0500	0.0508	mg/L	102	90 - 110		
Silver		0.0500	0.0490	mg/L	97.9	90 - 110		
Thallium		0.0500	0.0502	mg/L	100	90 - 110		
Vanadium		0.0500	0.0499	mg/L	99.8	90 - 110		
Zinc		0.0500	0.0507	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4833733
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-07
Instrument ID: ICP-MS2
Run Time: 10:58
Method: 6020A
File ID: NI.063016.105814
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.420	ug/L	105	70 - 130		
Arsenic		0.400	0.398	ug/L	99.5	70 - 130		
Barium		0.750	0.731	ug/L	97.5	70 - 130		
Cadmium		0.240	0.241	ug/L	101	70 - 130		
Chromium		0.800	0.644	ug/L	80.6	70 - 130		
Cobalt		0.400	0.390	ug/L	97.6	70 - 130		
Copper		0.800	0.780	ug/L	97.4	70 - 130		
Lead		0.200	0.204	ug/L	102	70 - 130		
Manganese		0.500	0.454	ug/L	90.8	70 - 130		
Nickel		1.60	1.54	ug/L	96.3	70 - 130		
Silver		0.400	0.401	ug/L	100	70 - 130		
Thallium		0.0800	0.0893	ug/L	112	70 - 130		
Vanadium		0.400	0.355	ug/L	88.7	70 - 130		
Zinc		6.25	5.98	ug/L	95.7	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4834007
Report generated 06/30/2016 15:40

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-22
Instrument ID: ICP-MS2
Run Time: 13:58
Method: 6020A
File ID: NI.063016.135859
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.406	ug/L	101	70 - 130		
Arsenic		0.400	0.408	ug/L	102	70 - 130		
Barium		0.750	0.678	ug/L	90.4	70 - 130		
Cadmium		0.240	0.242	ug/L	101	70 - 130		
Chromium		0.800	0.711	ug/L	88.8	70 - 130		
Cobalt		0.400	0.382	ug/L	95.5	70 - 130		
Copper		0.800	0.787	ug/L	98.3	70 - 130		
Lead		0.200	0.207	ug/L	104	70 - 130		
Manganese		0.500	0.471	ug/L	94.1	70 - 130		
Nickel		1.60	1.52	ug/L	94.8	70 - 130		
Silver		0.400	0.386	ug/L	96.5	70 - 130		
Thallium		0.0800	0.0865	ug/L	108	70 - 130		
Vanadium		0.400	0.336	ug/L	84.0	70 - 130		
Zinc		6.25	6.19	ug/L	99.1	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4834007
Report generated 06/30/2016 15:40

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-27
Instrument ID: ICP-MS2
Run Time: 15:05
Method: 6020A
File ID: NI.063016.150517
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.411	ug/L	103	70 - 130		
Arsenic		0.400	0.411	ug/L	103	70 - 130		
Barium		0.750	0.703	ug/L	93.7	70 - 130		
Cadmium		0.240	0.234	ug/L	97.6	70 - 130		
Chromium		0.800	0.673	ug/L	84.1	70 - 130		
Cobalt		0.400	0.384	ug/L	95.9	70 - 130		
Copper		0.800	0.777	ug/L	97.1	70 - 130		
Lead		0.200	0.209	ug/L	104	70 - 130		
Manganese		0.500	0.449	ug/L	89.8	70 - 130		
Nickel		1.60	1.52	ug/L	95.3	70 - 130		
Silver		0.400	0.382	ug/L	95.4	70 - 130		
Thallium		0.0800	0.0853	ug/L	107	70 - 130		
Vanadium		0.400	0.356	ug/L	89.0	70 - 130		
Zinc		6.25	6.28	ug/L	101	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4834007
Report generated 06/30/2016 15:40

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061227
Instrument ID: ICP-MS2
Sol. A : WG574800-08 **File ID:** NI.063016.110126
Sol. AB : WG574800-09 **File ID:** NI.063016.110437

Workgroup (AAB#): WG574742
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0513	NS	100	96.0	96.0	
Arsenic	NS	0.0233	NS	100	97.5	97.5	
Barium	NS	0.348	NS	100	95.6	95.6	
Cadmium	NS	-0.0809	NS	100	95.8	95.8	
Chromium	NS	0.0229	NS	100	94.9	94.9	
Cobalt	NS	0.0396	NS	100	94.9	94.9	
Copper	NS	0.304	NS	100	95.5	95.5	
Lead	NS	0.0556	NS	100	95.9	95.9	
Manganese	NS	0.116	NS	100	94.4	94.4	
Nickel	NS	0.412	NS	100	94.4	94.4	
Silver	NS	0.0314	NS	100	85.1	85.1	
Thallium	NS	0.0458	NS	100	95.8	95.8	
Vanadium	NS	0.0260	NS	100	96.0	96.0	
Zinc	NS	0.752	NS	100	98.3	98.3	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4833732
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061227 **Analytical Method:** 6020
Analytical Workgroup: WG574742 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 30-JUN-2016 10:39

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061227-01	SAMP	30-JUN-2016 12:55	101.015	98.12	101.781
L16061227-01	SAMP	30-JUN-2016 14:42	97.5	95.157	95.407
L16061227-03	SAMP	30-JUN-2016 12:58	105.245	101.267	104.105
L16061227-03	SAMP	30-JUN-2016 14:46	97.14	92.809	94.364
L16061227-05	SAMP	30-JUN-2016 13:01	106.025	102.883	105.48
L16061227-05	SAMP	30-JUN-2016 14:49	97.991	95.281	95.051
L16061227-06	SAMP	30-JUN-2016 13:04	87.362	90.224	90.497
L16061227-06	SAMP	30-JUN-2016 14:52	96.151	94.165	94.047
L16061227-07	SAMP	30-JUN-2016 13:07	99.844	102.737	101.972
L16061227-07	SAMP	30-JUN-2016 14:55	96.708	93.392	94.534
L16061238-02	SAMP	30-JUN-2016 12:29	94.171	96.354	95.307
WG573868-03	BLANK	30-JUN-2016 12:09	103.004	103.328	103.43
WG573868-04	LCS	30-JUN-2016 12:13	103.552	103.12	104.225
WG574742-01	PSPK	30-JUN-2016 12:32	94.902	98.669	95.916
WG574742-02	SERIAL	30-JUN-2016 12:35	95.76	95.909	94.745
WG574800-05	ICV	30-JUN-2016 10:51	97.371	98.497	97.785
WG574800-06	ICB	30-JUN-2016 10:55	98.231	98.427	97.708
WG574800-07	LLICV	30-JUN-2016 10:58	96.27	95.948	95.14
WG574800-08	ICS	30-JUN-2016 11:01	97.491	98.02	97.584
WG574800-09	ICS	30-JUN-2016 11:04	99.493	99.441	97.601
WG574800-10	CCV	30-JUN-2016 11:07	99.729	98.935	99.965
WG574800-11	CCB	30-JUN-2016 11:11	100.592	99.112	100.515
WG574800-14	CCV	30-JUN-2016 11:55	101.591	102.163	103.177
WG574800-15	CCB	30-JUN-2016 11:59	100.977	101.082	102.951
WG574800-16	CCV	30-JUN-2016 12:42	101.699	101.496	102.347
WG574800-17	CCB	30-JUN-2016 12:45	103.288	101.341	103.248
WG574800-18	CCV	30-JUN-2016 13:20	102.934	102.779	103.615
WG574800-19	CCB	30-JUN-2016 13:23	103.648	100.514	103.714
WG574800-22	LLCCV	30-JUN-2016 13:58	98.475	97.374	97.764
WG574800-23	CCV	30-JUN-2016 14:27	101.156	103.023	103.961
WG574800-24	CCB	30-JUN-2016 14:30	102.646	103.506	105.125
WG574800-25	CCV	30-JUN-2016 14:58	96.703	96.852	97.257
WG574800-26	CCB	30-JUN-2016 15:02	98.306	98.137	98.523
WG574800-27	LLCCV	30-JUN-2016 15:05	98.002	96.511	98.029

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4833728
Report generated: 06/30/2016 15:34

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061227 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4833727
Report generated: 06/30/2016 15:34

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, June 30, 2016 10:16:38

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1328	2024	0.711	
Mg	23.985	23.975	4505	2020	0.704	
Co	58.933	58.925	11694	2022	0.703	
In	114.904	114.925	22865	2028	0.690	
U	238.050	238.075	47462	2043	0.688	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	7.630
5.575	5.349
5.625	5.081
5.675	3.334
5.725	4.033
5.775	2.990
5.825	2.517
5.875	2.463
5.925	2.363
5.975	1.901
6.025	1.768
6.075	2.257
6.125	3.087
6.175	2.374
6.225	3.065
6.275	23.027
6.325	91.287
6.375	104.583
6.425	79.057
6.475	31.882
6.525	13.481
6.575	6.091
6.625	4.743
6.675	2.806
6.725	1.215
6.775	1.960
6.825	1.716

Report Date/Time: Thursday, June 30, 2016 10:19:49
Page 1

Approved: July 01, 2016

6.875	1.994
6.925	0.718
6.975	0.930
7.025	1.375
7.075	2.469
7.125	1.868
7.175	1.445
7.225	1.854
7.275	2.308
7.325	12.753
7.375	83.853
7.425	70.711
7.475	70.711
7.525	93.541
7.575	60.858
7.625	46.481
7.675	70.711
7.725	34.401
7.775	119.523
7.825	50.000
7.875	37.268
7.925	127.476
7.975	34.233
8.025	91.287
8.075	38.030
8.125	35.355
8.175	60.858
8.225	81.223
8.275	81.441
8.325	81.441
8.375	108.327
8.425	136.931
8.475	55.902
22.525	70.711
22.575	39.033
22.625	61.341
22.675	56.983
22.725	46.220
22.775	20.787
22.825	34.401
22.875	19.357
22.925	29.463
22.975	26.998
23.025	25.078
23.075	21.812
23.125	32.010
23.175	13.608

Report Date/Time: Thursday, June 30, 2016 10:19:49
Page 2

Approved: July 01, 2016

23.225	32.341
23.275	38.828
23.325	30.053
23.375	30.859
23.425	25.074
23.475	16.686
23.525	2.987
23.575	2.068
23.625	1.912
23.675	1.479
23.725	1.430
23.775	0.814
23.825	0.812
23.875	0.782
23.925	1.354
23.975	0.967
24.025	1.220
24.075	1.436
24.125	1.501
24.175	1.650
24.225	1.929
24.275	3.295
24.325	8.839
24.375	20.738
24.425	26.143
24.475	8.190
24.525	2.847
24.575	2.081
24.625	0.816
24.675	1.083
24.725	1.324
24.775	1.693
24.825	1.461
24.875	0.765
24.925	0.362
24.975	0.884
25.025	1.720
25.075	1.315
25.125	1.430
25.175	1.294
25.225	3.746
25.275	11.806
25.325	62.251
25.375	39.219
25.425	15.767
25.475	12.071
57.525	1.335

Report Date/Time: Thursday, June 30, 2016 10:19:49
Page 3

Approved: July 01, 2016

57.575	1.767
57.625	2.181
57.675	2.009
57.725	2.029
57.775	2.254
57.825	2.922
57.875	2.887
57.925	1.630
57.975	0.949
58.025	1.557
58.075	1.747
58.125	1.182
58.175	2.238
58.225	3.336
58.275	23.538
58.325	30.609
58.375	13.574
58.425	14.809
58.475	3.919
58.525	2.582
58.575	1.791
58.625	2.908
58.675	2.527
58.725	1.367
58.775	1.571
58.825	1.717
58.875	1.142
58.925	2.124
58.975	0.937
59.025	1.704
59.075	1.389
59.125	1.584
59.175	2.144
59.225	3.699
59.275	31.869
59.325	40.825
59.375	45.799
59.425	31.345
59.475	10.995
59.525	6.778
59.575	1.800
59.625	2.865
59.675	3.974
59.725	4.516
59.775	2.063
59.825	2.491
59.875	2.616

Report Date/Time: Thursday, June 30, 2016 10:19:49
Page 4

Approved: July 01, 2016

59.925	2.954
59.975	2.919
60.025	2.174
60.075	3.080
60.125	2.036
60.175	4.733
60.225	16.194
60.275	23.923
60.325	52.705
60.375	71.261
60.425	42.592
60.475	38.540
113.525	6.475
113.575	2.639
113.625	3.226
113.675	0.931
113.725	0.501
113.775	1.524
113.825	1.495
113.875	2.496
113.925	1.825
113.975	1.532
114.025	1.933
114.075	0.733
114.125	2.194
114.175	1.035
114.225	3.370
114.275	8.850
114.325	18.763
114.375	48.230
114.425	17.246
114.475	8.898
114.525	2.048
114.575	2.379
114.625	1.068
114.675	1.539
114.725	1.194
114.775	2.031
114.825	1.123
114.875	1.770
114.925	1.834
114.975	1.824
115.025	1.759
115.075	1.250
115.125	0.617
115.175	2.122
115.225	1.801

Approved: July 01, 2016

115.275	5.203
115.325	13.734
115.375	42.592
115.425	21.114
115.475	17.678
115.525	14.002
115.575	6.607
115.625	3.973
115.675	2.459
115.725	3.163
115.775	1.631
115.825	3.014
115.875	3.357
115.925	1.866
115.975	3.156
116.025	3.757
116.075	2.834
116.125	2.480
116.175	4.209
116.225	6.098
116.275	20.916
116.325	64.359
116.375	109.139
116.425	32.969
116.475	54.772
236.525	
236.575	32.723
236.625	28.020
236.675	32.394
236.725	27.217
236.775	29.607
236.825	46.481
236.875	38.528
236.925	40.232
236.975	25.495
237.025	28.917
237.075	16.767
237.125	20.306
237.175	41.714
237.225	28.144
237.275	25.377
237.325	14.678
237.375	15.811
237.425	32.785
237.475	27.741
237.525	21.495
237.575	7.610

Report Date/Time: Thursday, June 30, 2016 10:19:49
Page 6

Approved: July 01, 2016

237.625	6.358
237.675	0.613
237.725	2.011
237.775	1.691
237.825	0.412
237.875	0.870
237.925	0.892
237.975	0.832
238.025	0.851
238.075	1.242
238.125	0.975
238.175	0.909
238.225	1.242
238.275	1.635
238.325	2.249
238.375	2.589
238.425	3.619
238.475	2.494
238.525	6.239
238.575	22.114
238.625	31.950
238.675	23.742
238.725	41.271
238.775	13.284
238.825	23.799
238.875	20.490
238.925	20.729
238.975	25.009
239.025	10.012
239.075	10.866
239.125	21.209
239.175	17.275
239.225	8.810
239.275	26.290
239.325	15.160
239.375	31.836
239.425	35.067
239.475	24.022

Approved: July 01, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/30/2016 10:25:18 AM
End Time: 6/30/2016 10:27:30 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 7351.05
        Obtained Intensity (Mg 23.985): 182663.43
        Obtained Intensity (In 114.904): 78892.53
        Obtained Intensity (U 238.05): 164664.04
        Obtained Intensity (Bkgd 220): 0.27
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.021 (=4819.37 / 231640.41)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.012 (=2694.11 / 231640.41)
```

Report Date/Time: Thursday, June 30, 2016 10:27:30
Page 1

Approved: July 01, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/30/2016 10:25:18 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 7351.05
                Obtained Intensity (Mg 23.985): 182663.43
                Obtained Intensity (In 114.904): 78892.53
                Obtained Intensity (U 238.05): 164664.04
                Obtained Intensity (Bkgd 220): 0.27
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.021 (=4819.37 / 231640.41)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.012 (=2694.11 / 231640.41)
[Passed]  Optimum value(s): N/A

End Time: 6/30/2016 10:27:30 AM
```


Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, June 30, 2016 10:35:49
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74916.4	0.4				ug/L		Standard
	Be	9	10.0	50.0				ug/L		Standard
	Al	27	1821.8	4.2				ug/L		Standard
	Sc	45	55220.5	2.3				ug/L		Standard
	Ti	47	34.0	19.3				ug/L		Standard
	V	51	1937.5	2.5				ug/L		Standard
	Cr	52	9521.7	0.5				ug/L		Standard
	Cr	53	395.0	15.6				ug/L		Standard
	Mn	55	902.0	1.6				ug/L		Standard
	Co	59	262.3	7.9				ug/L		Standard
	Ni	60	370.7	8.4				ug/L		Standard
	Cu	65	105.7	3.8				ug/L		Standard
	Zn	66	398.3	3.8				ug/L		Standard
>	Ge	72	535147.0	1.3				ug/L		Standard
	As	75	-43.2	36.5				ug/L		Standard
	Se	82	13.7	13.4				ug/L		Standard
	Se-1	77	65.0	13.8				ug/L		Standard
>	Ga	71	96.7	26.0				mg/L		Standard
	Rb	85	15.0	88.2				ug/L		Standard
	Y	89	465703.7	0.2				ug/L		Standard
>	Rh	103	10.0	50.0				ug/L		Standard
	Mo	98	9.3	22.2				ug/L		Standard
	Ag	107	82.3	22.3				ug/L		Standard
	Cd	111	6.7	31.3				mg/L		Standard
	Cd	114	21.4	79.6				ug/L		Standard
>	In	115	619034.9	0.4				ug/L		Standard
	Sn	118	508.3	11.8				ug/L		Standard
	Sb	123	86.5	9.9				ug/L		Standard
	Ba	135	79.3	8.0				ug/L		Standard
	Ce	140	68.3	51.9				ug/L		Standard
>	Tb	159	986981.5	1.1				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	13.0	73.4				ug/L		Standard
	Tl	205	10.0	50.0				ug/L		Standard
	Pb	206	263.7	6.5				ug/L		Standard
	Pb	207	227.0	4.2				ug/L		Standard
	Pb	208	867.7	4.8				ug/L		Standard
	U	238	8.3	45.4				ug/L		Standard
>	Bi	209	541014.1	1.0				ug/L		Standard

Sample ID: Blank
Report Date/Time: Thursday, June 30, 2016 10:38:06
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	mg/L	Standard
Mg	24	53.3	14.3	mg/L	Standard
K	39	53.3	37.9	mg/L	Standard
Ca	43	28.3	36.7	mg/L	Standard
Fe	54	180.5	24.2	mg/L	Standard
Fe	57	256.7	3.0	mg/L	Standard
> **Sc-1**	45	55220.5	2.3	mg/L	Standard
Cl	35	35503.6	2.5	ug/L	Standard
Kr	83	1.7	69.3	ug/L	Standard
Br	81	2040.1	4.5	ug/L	Standard
P	31	20435.5	5.2	ug/L	Standard
S	34	2430.2	2.4	ug/L	Standard
Sr	88	75.0	24.0	ug/L	Standard
C	12	293.3	19.4	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	6.7	86.6	mg/L	Standard
Dy	164	8.9	104.8	mg/L	Standard
Ho-1	165	10.0	50.0	mg/L	Standard
Er	166	23.3	89.2	mg/L	Standard
I	127	1808.4	6.4	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Blank
Report Date/Time: Thursday, June 30, 2016 10:38:06
Page 2

Approved: July 01, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Thursday, June 30, 2016 10:38:06
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, June 30, 2016 10:39:00
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73168.0	2.3				ug/L	74916	Standard
	Be	9	18.3	41.7				ug/L	10	Standard
	Al	27	1861.8	6.0				ug/L	1822	Standard
	Sc	45	55454.6	1.0				ug/L	55220	Standard
	Ti	47	36.7	1.6				ug/L	34	Standard
	V	51	1952.1	3.2				ug/L	1938	Standard
	Cr	52	9643.4	1.2				ug/L	9522	Standard
	Cr	53	401.7	8.7				ug/L	395	Standard
	Mn	55	953.7	5.3				ug/L	902	Standard
	Co	59	279.0	21.4				ug/L	262	Standard
	Ni	60	359.3	5.8				ug/L	371	Standard
	Cu	65	114.3	1.0				ug/L	106	Standard
	Zn	66	366.0	3.4				ug/L	398	Standard
>	Ge	72	539086.2	1.2				ug/L	535147	Standard
	As	75	-57.0	25.6				ug/L	-43	Standard
	Se	82	17.9	18.3				ug/L	14	Standard
	Se-1	77	61.7	4.7				ug/L	65	Standard
>	Ga	71	95.0	29.3				mg/L	97	Standard
	Rb	85	35.0	24.7				ug/L	15	Standard
	Y	89	475042.0	0.3				ug/L	465704	Standard
>	Rh	103	18.3	15.7				ug/L	10	Standard
	Mo	98	4.2	10.7				ug/L	9	Standard
	Ag	107	122.7	49.1				ug/L	82	Standard
	Cd	111	5.7	113.6				mg/L	7	Standard
	Cd	114	21.7	100.9				ug/L	21	Standard
>	In	115	616759.5	0.1				ug/L	619035	Standard
	Sn	118	495.0	9.3				ug/L	508	Standard
	Sb	123	70.5	74.4				ug/L	86	Standard
	Ba	135	88.3	26.2				ug/L	79	Standard
	Ce	140	181.7	151.8				ug/L	68	Standard
>	Tb	159	989061.2	1.8				ug/L	986982	Standard
	Ho	165	8.3	124.9				ug/L	10	Standard
	Tl	203	39.7	160.1				ug/L	13	Standard
	Tl	205	28.3	142.6				ug/L	10	Standard
	Pb	206	285.3	17.3				ug/L	264	Standard
	Pb	207	226.7	15.6				ug/L	227	Standard
	Pb	208	883.7	9.2				ug/L	868	Standard
	U	238	17.7	134.0				ug/L	8	Standard
>	Bi	209	540861.9	0.7				ug/L	541014	Standard

Sample ID: Standard 1
Report Date/Time: Thursday, June 30, 2016 10:41:17
Page 1

Approved: July 01, 2016

	Na	23	0.0		mg/L	2	Standard
	Mg	24	56.7	41.7	mg/L	53	Standard
	K	39	36.7	41.7	mg/L	53	Standard
	Ca	43	46.7	16.4	mg/L	28	Standard
	Fe	54	178.9	5.0	mg/L	181	Standard
	Fe	57	258.3	9.5	mg/L	257	Standard
>	**Sc-1**	45	55454.6	1.0	mg/L	55220	Standard
	Cl	35	35327.8	0.4	ug/L	35504	Standard
	Kr	83	2.7	57.3	ug/L	2	Standard
	Br	81	2013.5	0.6	ug/L	2040	Standard
	P	31	20338.7	3.7	ug/L	20435	Standard
	S	34	2328.5	3.8	ug/L	2430	Standard
	Sr	88	75.0	33.3	ug/L	75	Standard
	C	12	266.7	24.4	mg/L	293	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	7	Standard
	Dy	164	2.2	285.5	mg/L	9	Standard
	Ho-1	165	8.3	124.9	mg/L	10	Standard
	Er	166	23.3	49.5	mg/L	23	Standard
	I	127	1715.1	9.7	mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 1
Report Date/Time: Thursday, June 30, 2016 10:41:17
Page 2

Approved: July 01, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Thursday, June 30, 2016 10:41:17
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, June 30, 2016 10:42:12
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72707.4	2.7				ug/L	74916	Standard
	Be	9	55.0	24.1				ug/L	10	Standard
	Al	27	8810.9	6.1				ug/L	1822	Standard
	Sc	45	55881.2	1.6				ug/L	55220	Standard
	Ti	47	71.3	25.6				ug/L	34	Standard
	V	51	2314.2	6.8				ug/L	1938	Standard
	Cr	52	9938.6	0.7				ug/L	9522	Standard
	Cr	53	495.0	15.3				ug/L	395	Standard
	Mn	55	1353.1	1.7				ug/L	902	Standard
	Co	59	601.3	1.5				ug/L	262	Standard
	Ni	60	444.7	3.8				ug/L	371	Standard
	Cu	65	243.3	5.3				ug/L	106	Standard
	Zn	66	523.0	8.5				ug/L	398	Standard
>	Ge	72	542852.5	0.7				ug/L	535147	Standard
	As	75	-7.1	315.0				ug/L	-43	Standard
	Se	82	20.2	32.1				ug/L	14	Standard
	Se-1	77	57.7	10.6				ug/L	65	Standard
>	Ga	71	103.3	22.9				mg/L	97	Standard
	Rb	85	45.0	48.4				ug/L	15	Standard
	Y	89	482686.3	1.8				ug/L	465704	Standard
>	Rh	103	15.0	57.7				ug/L	10	Standard
	Mo	98	276.1	8.9				ug/L	9	Standard
	Ag	107	427.3	2.1				ug/L	82	Standard
	Cd	111	102.5	11.8				mg/L	7	Standard
	Cd	114	241.2	14.1				ug/L	21	Standard
>	In	115	624979.9	1.0				ug/L	619035	Standard
	Sn	118	1010.0	34.3				ug/L	508	Standard
	Sb	123	243.8	4.7				ug/L	86	Standard
	Ba	135	160.7	8.2				ug/L	79	Standard
	Ce	140	43.3	35.3				ug/L	68	Standard
>	Tb	159	995051.3	1.5				ug/L	986982	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	401.3	6.5				ug/L	13	Standard
	Tl	205	330.0	13.5				ug/L	10	Standard
	Pb	206	514.0	4.8				ug/L	264	Standard
	Pb	207	440.3	5.0				ug/L	227	Standard
	Pb	208	1803.0	2.1				ug/L	868	Standard
	U	238	318.0	5.0				ug/L	8	Standard
>	Bi	209	540720.8	0.8				ug/L	541014	Standard

Sample ID: Standard 2
Report Date/Time: Thursday, June 30, 2016 10:44:29
Page 1

Approved: July 01, 2016

	Na	23	0.0		mg/L	2	Standard
	Mg	24	36.7	105.9	mg/L	53	Standard
	K	39	48.3	57.0	mg/L	53	Standard
	Ca	43	30.0	33.3	mg/L	28	Standard
	Fe	54	184.1	19.1	mg/L	181	Standard
	Fe	57	255.0	7.1	mg/L	257	Standard
>	**Sc-1**	45	55881.2	1.6	mg/L	55220	Standard
	Cl	35	35839.7	1.1	ug/L	35504	Standard
	Kr	83	1.3	43.3	ug/L	2	Standard
	Br	81	1970.1	12.0	ug/L	2040	Standard
	P	31	19911.4	2.6	ug/L	20435	Standard
	S	34	2461.9	5.7	ug/L	2430	Standard
	Sr	88	85.0	31.1	ug/L	75	Standard
	C	12	176.7	8.6	mg/L	293	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	7	Standard
	Dy	164	149.0	35.5	mg/L	9	Standard
	Ho-1	165	11.7	107.9	mg/L	10	Standard
	Er	166	20.0	0.0	mg/L	23	Standard
	I	127	2015.1	5.0	mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 2
Report Date/Time: Thursday, June 30, 2016 10:44:29
Page 2

Approved: July 01, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, June 30, 2016 10:45:23
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68983.4	2.1				ug/L	74916	Standard
	Be	9	48367.2	4.1	**50.0000**	1.404	2.8	ug/L	10	Standard
	Al	27	7972073.9	2.0	**50.0000**	0.467	0.9	ug/L	1822	Standard
	Sc	45	52755.0	2.1				ug/L	55220	Standard
	Ti	47	40601.0	0.6	**100.0000**	1.612	1.6	ug/L	34	Standard
	V	51	460078.2	1.8	**50.0000**	0.531	1.1	ug/L	1938	Standard
	Cr	52	454436.3	1.4	**50.0000**	0.663	1.3	ug/L	9522	Standard
	Cr	53	55469.7	2.6	**50.0000**	1.635	3.3	ug/L	395	Standard
	Mn	55	423456.2	1.6	**50.0000**	0.702	1.4	ug/L	902	Standard
	Co	59	399872.6	2.0	**50.0000**	0.614	1.2	ug/L	262	Standard
	Ni	60	111808.1	1.4	**50.0000**	0.643	1.3	ug/L	371	Standard
	Cu	65	110333.0	1.1	**50.0000**	0.836	1.7	ug/L	106	Standard
	Zn	66	64857.2	2.2	**50.0000**	1.100	2.2	ug/L	398	Standard
>	**Ge**	72	526457.8	1.2				ug/L	535147	Standard
	As	75	65989.7	1.5	**50.0000**	0.778	1.6	ug/L	-43	Standard
	Se	82	6684.8	2.5	**50.0000**	0.729	1.5	ug/L	14	Standard
	Se-1	77	4547.7	2.0	**50.0000**	0.855	1.7	ug/L	65	Standard
>	**Ga**	71	88.3	42.5				mg/L	97	Standard
	Rb	85	925.0	7.6				ug/L	15	Standard
	Y	89	458987.7	1.5				ug/L	465704	Standard
>	**Rh**	103	40.0	50.0				ug/L	10	Standard
	Mo	98	300517.9	1.7	**100.0000**	1.196	1.2	ug/L	9	Standard
	Ag	107	368336.5	1.3	**50.0000**	0.495	1.0	ug/L	82	Standard
	Cd	111	117284.8	2.5	**50.0000**	0.847	1.7	mg/L	7	Standard
	Cd	114	285421.9	3.9	**50.0000**	1.210	2.4	ug/L	21	Standard
>	**In**	115	601036.1	1.7				ug/L	619035	Standard
	Sn	118	316578.1	2.8	**50.0000**	1.497	3.0	ug/L	508	Standard
	Sb	123	256746.9	1.1	**50.0000**	0.856	1.7	ug/L	86	Standard
	Ba	135	110969.6	1.5	**50.0000**	0.201	0.4	ug/L	79	Standard
	Ce	140	148.3	71.5				ug/L	68	Standard
>	**Tb**	159	962177.6	0.4				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	446239.6	0.2	**50.0000**	0.331	0.7	ug/L	13	Standard
	Tl	205	381081.2	0.4	**50.0000**	0.342	0.7	ug/L	10	Standard
	Pb	206	286636.0	1.6	**50.0000**	1.103	2.2	ug/L	264	Standard
	Pb	207	258526.4	1.8	**50.0000**	1.236	2.5	ug/L	227	Standard
	Pb	208	996447.9	1.4	**50.0000**	0.992	2.0	ug/L	868	Standard
	U	238	363811.3	1.8	**50.0000**	1.240	2.5	ug/L	8	Standard
>	**Bi**	209	528328.4	0.7				ug/L	541014	Standard

Sample ID: Standard 3
Report Date/Time: Thursday, June 30, 2016 10:47:40
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**5.0000**	8.652	173.0	mg/L	2	Standard
Mg	24	4435.6	3.0	**5.0000**	0.174	3.5	mg/L	53	Standard
K	39	2920.3	4.4	**5.0000**	0.139	2.8	mg/L	53	Standard
Ca	43	115.0	17.4	**5.0000**	1.130	22.6	mg/L	28	Standard
Fe	54	7160.1	1.1	**5.0000**	0.062	1.2	mg/L	181	Standard
Fe	57	2058.5	5.3	**5.0000**	0.343	6.9	mg/L	257	Standard
> **Sc-1**	45	52755.0	2.1				mg/L	55220	Standard
Cl	35	36143.1	1.7				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1956.8	4.7				ug/L	2040	Standard
P	31	21276.6	4.0				ug/L	20435	Standard
S	34	2776.9	2.8				ug/L	2430	Standard
Sr	88	73.3	3.9				ug/L	75	Standard
C	12	156.7	9.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	5.4	211.7				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	26.7	21.7				mg/L	23	Standard
I	127	1676.8	9.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Standard 3
Report Date/Time: Thursday, June 30, 2016 10:47:40
Page 2

Approved: July 01, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
Report Date/Time: Thursday, June 30, 2016 10:47:40
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, June 30, 2016 10:48:35
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67369.5	1.7				ug/L	74916	Standard
	Be	9	95332.6	4.2	**100.4528**	2.854	2.8	ug/L	10	Standard
	Al	27	15638994.9	1.2	**100.2191**	0.593	0.6	ug/L	1822	Standard
	Sc	45	52572.7	1.6				ug/L	55220	Standard
	Ti	47	80471.2	2.1	**200.1947**	3.941	2.0	ug/L	34	Standard
	V	51	897077.3	1.5	**99.3635**	0.751	0.8	ug/L	1938	Standard
	Cr	52	878500.8	1.1	**99.3377**	0.531	0.5	ug/L	9522	Standard
	Cr	53	108574.4	1.8	**99.6484**	2.481	2.5	ug/L	395	Standard
	Mn	55	838539.2	2.6	**100.0892**	2.008	2.0	ug/L	902	Standard
	Co	59	794185.3	2.3	**100.1981**	1.503	1.5	ug/L	262	Standard
	Ni	60	215992.5	1.4	**98.8706**	0.739	0.7	ug/L	371	Standard
	Cu	65	211433.7	0.6	**98.4255**	0.669	0.7	ug/L	106	Standard
	Zn	66	125887.2	1.2	**99.2056**	0.438	0.4	ug/L	398	Standard
>	Ge	72	520828.8	0.8				ug/L	535147	Standard
	As	75	129933.5	1.4	**99.7289**	1.641	1.6	ug/L	-43	Standard
	Se	82	13193.5	0.9	**99.9295**	1.041	1.0	ug/L	14	Standard
	Se-1	77	8690.2	2.7	**98.5326**	2.339	2.4	ug/L	65	Standard
>	Ga	71	120.0	7.2				mg/L	97	Standard
	Rb	85	1946.8	5.2				ug/L	15	Standard
	Y	89	455643.2	0.7				ug/L	465704	Standard
>	Rh	103	55.0	27.3				ug/L	10	Standard
	Mo	98	599287.7	1.5	**201.5560**	2.360	1.2	ug/L	9	Standard
	Ag	107	715847.1	1.4	**99.4950**	1.075	1.1	ug/L	82	Standard
	Cd	111	229739.0	1.4	**99.8878**	1.448	1.4	mg/L	7	Standard
	Cd	114	547495.4	2.0	**98.8512**	2.232	2.3	ug/L	21	Standard
>	In	115	589960.6	0.7				ug/L	619035	Standard
	Sn	118	620778.1	1.3	**99.9891**	1.397	1.4	ug/L	508	Standard
	Sb	123	505252.4	1.5	**100.1114**	1.378	1.4	ug/L	86	Standard
	Ba	135	218020.5	1.0	**100.0495**	1.309	1.3	ug/L	79	Standard
	Ce	140	136.7	11.2				ug/L	68	Standard
>	Tb	159	952291.8	0.6				ug/L	986982	Standard
	Ho	165	18.3	31.5				ug/L	10	Standard
	Tl	203	872534.7	0.8	**99.8943**	0.590	0.6	ug/L	13	Standard
	Tl	205	745726.0	1.8	**99.9319**	1.346	1.3	ug/L	10	Standard
	Pb	206	560083.0	1.8	**99.8785**	1.571	1.6	ug/L	264	Standard
	Pb	207	507226.4	1.1	**100.0807**	0.918	0.9	ug/L	227	Standard
	Pb	208	1956705.3	0.7	**100.1279**	0.743	0.7	ug/L	868	Standard
	U	238	732371.6	1.4	**101.3423**	0.755	0.7	ug/L	8	Standard
>	Bi	209	517571.9	0.7				ug/L	541014	Standard

Sample ID: Standard 4
Report Date/Time: Thursday, June 30, 2016 10:50:52
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8717.5	4.3	**9.9469**	0.489	4.9	mg/L	53	Standard
K	39	5526.0	4.4	**9.7799**	0.589	6.0	mg/L	53	Standard
Ca	43	191.7	6.6	**9.7213**	0.568	5.8	mg/L	28	Standard
Fe	54	14164.2	4.7	**10.0228**	0.580	5.8	mg/L	181	Standard
Fe	57	3798.8	6.3	**9.9068**	0.665	6.7	mg/L	257	Standard
> **Sc-1**	45	52572.7	1.6				mg/L	55220	Standard
Cl	35	35283.0	1.9				ug/L	35504	Standard
Kr	83	3.3	69.3				ug/L	2	Standard
Br	81	1953.5	1.5				ug/L	2040	Standard
P	31	22002.6	2.6				ug/L	20435	Standard
S	34	2656.9	6.5				ug/L	2430	Standard
Sr	88	53.3	23.6				ug/L	75	Standard
C	12	190.0	13.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	16.0	70.4				mg/L	9	Standard
Ho-1	165	18.3	31.5				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	1825.1	3.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Standard 4
Report Date/Time: Thursday, June 30, 2016 10:50:52
Page 2

Approved: July 01, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Thursday, June 30, 2016 10:50:52
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 30, 2016 10:51:48
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67351.1	1.6				ug/L	74916	Standard
	Be	9	48467.4	1.1	**51.0988**	0.634	1.2	ug/L	10	Standard
	Al	27	7996341.6	4.4	**51.2380**	1.451	2.8	ug/L	1822	Standard
	Sc	45	52557.8	3.9				ug/L	55220	Standard
	Ti	47	40171.9	1.7	**98.7092**	0.932	0.9	ug/L	34	Standard
	V	51	454957.7	1.1	**49.6959**	0.243	0.5	ug/L	1938	Standard
	Cr	52	446215.6	1.6	**49.3363**	0.396	0.8	ug/L	9522	Standard
	Cr	53	54578.1	1.1	**49.2937**	0.265	0.5	ug/L	395	Standard
	Mn	55	420081.9	2.7	**49.4914**	1.060	2.1	ug/L	902	Standard
	Co	59	400918.1	2.1	**49.9700**	0.795	1.6	ug/L	262	Standard
	Ni	60	110250.7	0.8	**49.7955**	0.072	0.1	ug/L	371	Standard
	Cu	65	108650.5	0.5	**49.9472**	0.257	0.5	ug/L	106	Standard
	Zn	66	65025.6	2.2	**50.4617**	0.801	1.6	ug/L	398	Standard
>	Ge	72	527102.6	0.8				ug/L	535147	Standard
	As	75	65350.8	1.2	**49.5867**	0.180	0.4	ug/L	-43	Standard
	Se	82	6565.5	1.3	**49.0843**	0.359	0.7	ug/L	14	Standard
	Se-1	77	4457.7	1.3	**49.6612**	0.976	2.0	ug/L	65	Standard
>	Ga	71	85.0	25.6				mg/L	97	Standard
	Rb	85	945.0	13.2				ug/L	15	Standard
	Y	89	464922.4	1.0				ug/L	465704	Standard
>	Rh	103	41.7	38.6				ug/L	10	Standard
	Mo	98	296691.4	1.5	**97.2606**	1.381	1.4	ug/L	9	Standard
	Ag	107	365082.9	0.7	**49.4519**	0.182	0.4	ug/L	82	Standard
	Cd	111	117076.7	0.2	**49.6152**	0.191	0.4	mg/L	7	Standard
	Cd	114	282101.6	2.6	**49.6402**	1.043	2.1	ug/L	21	Standard
>	In	115	605322.8	0.5				ug/L	619035	Standard
	Sn	118	311722.6	1.2	**48.8804**	0.420	0.9	ug/L	508	Standard
	Sb	123	253974.8	1.6	**49.0470**	0.652	1.3	ug/L	86	Standard
	Ba	135	110464.9	1.5	**49.3927**	0.528	1.1	ug/L	79	Standard
	Ce	140	80.0	31.3				ug/L	68	Standard
>	Tb	159	956299.2	0.4				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	444248.1	0.5	**49.9754**	0.316	0.6	ug/L	13	Standard
	Tl	205	381176.1	1.8	**50.1891**	0.437	0.9	ug/L	10	Standard
	Pb	206	285348.0	1.6	**49.9780**	0.770	1.5	ug/L	264	Standard
	Pb	207	258242.5	1.6	**50.0467**	0.816	1.6	ug/L	227	Standard
	Pb	208	994320.7	1.0	**49.9713**	0.343	0.7	ug/L	868	Standard
	U	238	366904.6	1.5	**49.8902**	0.853	1.7	ug/L	8	Standard
>	Bi	209	526788.4	0.9				ug/L	541014	Standard

Sample ID: QC Std 1
Report Date/Time: Thursday, June 30, 2016 10:54:05
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4402.3	4.6	**5.0055**	0.082	1.6	mg/L	53	Standard
K	39	2796.9	1.7	**4.9164**	0.229	4.7	mg/L	53	Standard
Ca	43	118.3	31.7	**5.3755**	2.210	41.1	mg/L	28	Standard
Fe	54	7106.9	6.1	**4.9714**	0.301	6.1	mg/L	181	Standard
Fe	57	2026.8	5.0	**4.9813**	0.301	6.0	mg/L	257	Standard
Sc-1	45	52557.8	3.9				mg/L	55220	Standard
Cl	35	34358.3	1.5				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2053.5	3.5				ug/L	2040	Standard
P	31	21905.8	4.8				ug/L	20435	Standard
S	34	2591.9	2.6				ug/L	2430	Standard
Sr	88	80.0	27.2				ug/L	75	Standard
C	12	160.0	38.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.3	86.6				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	26471.4	2.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.198		
Al	27	102.476		
Sc	45			
Ti	47	98.709		
V	51	99.392		
Cr	52	98.673		
Cr	53			
Mn	55	98.983		
Co	59	99.940		
Ni	60	99.591		
Cu	65	99.894		
Zn	66	100.923		
Ge	72		98.497	
As	75	99.173		
Se	82	98.169		
Se-1	77			
Ga	71			

Sample ID: QC Std 1
Report Date/Time: Thursday, June 30, 2016 10:54:05
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	97.261		
Ag	107	98.904		
Cd	111	99.230		
Cd	114			
In	115		97.785	
Sn	118	97.761		
Sb	123	98.094		
Ba	135	98.785		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.951		
Tl	205			
Pb	206	99.956		
Pb	207	100.093		
Pb	208	99.943		
U	238	99.780		
Bi	209		97.371	
Na	23	0.100		
Mg	24	100.110		
K	39	98.328		
Ca	43	107.510		
Fe	54	99.429		
Fe	57	99.625		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
Report Date/Time: Thursday, June 30, 2016 10:54:05
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 30, 2016 10:55:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67078.2	2.4				ug/L	74916	Standard
	Be	9	50.0	69.3	**0.0488**	0.035	71.6	ug/L	10	Standard
	Al	27	6411.8	70.9	**0.0385**	0.028	72.5	ug/L	1822	Standard
	Sc	45	54151.6	2.7				ug/L	55220	Standard
	Ti	47	64.0	40.2	**0.0867**	0.061	70.7	ug/L	34	Standard
	V	51	1644.8	9.3	**-0.0159**	0.016	101.1	ug/L	1938	Standard
	Cr	52	8148.5	4.3	**-0.1190**	0.032	26.5	ug/L	9522	Standard
	Cr	53	370.0	15.6	**-0.0506**	0.049	96.6	ug/L	395	Standard
	Mn	55	1219.4	21.0	**0.0389**	0.029	75.7	ug/L	902	Standard
	Co	59	552.3	35.6	**0.0460**	0.024	52.4	ug/L	262	Standard
	Ni	60	412.0	16.2	**0.0410**	0.028	69.1	ug/L	371	Standard
	Cu	65	206.0	25.8	**0.0359**	0.023	65.3	ug/L	106	Standard
	Zn	66	425.0	8.2	**-0.0140**	0.033	233.6	ug/L	398	Standard
>	**Ge**	72	526727.6	1.9				ug/L	535147	Standard
	As	75	12.2	412.1	**0.0647**	0.038	58.5	ug/L	-43	Standard
	Se	82	20.7	24.7	**0.0587**	0.041	69.9	ug/L	14	Standard
	Se-1	77	56.7	22.1	**0.0564**	0.131	231.2	ug/L	65	Standard
>	**Ga**	71	90.0	25.5				mg/L	97	Standard
	Rb	85	36.7	7.9				ug/L	15	Standard
	Y	89	462493.1	2.2				ug/L	465704	Standard
>	**Rh**	103	10.0	86.6				ug/L	10	Standard
	Mo	98	363.4	28.8	**0.1314**	0.033	25.2	ug/L	9	Standard
	Ag	107	282.0	43.5	**0.0321**	0.016	50.6	ug/L	82	Standard
	Cd	111	62.7	87.0	**0.0343**	0.023	66.4	mg/L	7	Standard
	Cd	114	166.3	71.5	**0.0381**	0.021	54.1	ug/L	21	Standard
>	**In**	115	604846.6	0.9				ug/L	619035	Standard
	Sn	118	1070.0	10.6	**0.0649**	0.019	29.1	ug/L	508	Standard
	Sb	123	524.8	1.2	**0.1058**	0.002	1.7	ug/L	86	Standard
	Ba	135	121.3	57.5	**0.0345**	0.031	88.8	ug/L	79	Standard
	Ce	140	45.0	50.9				ug/L	68	Standard
>	**Tb**	159	962411.6	1.0				ug/L	986982	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	249.3	85.5	**0.0336**	0.023	69.7	ug/L	13	Standard
	Tl	205	243.3	73.6	**0.0393**	0.023	58.5	ug/L	10	Standard
	Pb	206	433.7	30.1	**0.0374**	0.022	58.2	ug/L	264	Standard
	Pb	207	379.0	24.0	**0.0395**	0.017	41.9	ug/L	227	Standard
	Pb	208	1619.7	32.3	**0.0422**	0.025	59.6	ug/L	868	Standard
	U	238	218.3	75.0	**0.0372**	0.022	58.4	ug/L	8	Standard
>	**Bi**	209	531441.7	1.6				ug/L	541014	Standard

Sample ID: QC Std 2
Report Date/Time: Thursday, June 30, 2016 10:57:18
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	43.6	**0.0208**	0.023	110.8	mg/L	53	Standard
K	39	51.7	24.4	**0.0138**	0.024	174.4	mg/L	53	Standard
Ca	43	30.0	33.3	**0.0685**	0.625	913.0	mg/L	28	Standard
Fe	54	162.6	13.7	**-0.0054**	0.018	338.9	mg/L	181	Standard
Fe	57	263.3	25.3	**0.0455**	0.163	357.3	mg/L	257	Standard
> **Sc-1**	45	54151.6	2.7				mg/L	55220	Standard
Cl	35	33892.5	1.8				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1836.8	9.3				ug/L	2040	Standard
P	31	20765.9	1.7				ug/L	20435	Standard
S	34	2595.2	6.8				ug/L	2430	Standard
Sr	88	70.0	49.5				ug/L	75	Standard
C	12	130.0	27.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	586.2	22.6				mg/L	9	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	80.0	45.1				mg/L	23	Standard
I	127	16415.6	0.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 2
Report Date/Time: Thursday, June 30, 2016 10:57:18
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.708
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.231
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, June 30, 2016 10:58:14
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64500.4	2.4				ug/L	74916	Standard
	Be	9	203.3	8.6	**0.2203**	0.020	9.0	ug/L	10	Standard
	Al	27	1753.4	16.3	**0.0094**	0.002	18.5	ug/L	1822	Standard
	Sc	45	50965.6	0.7				ug/L	55220	Standard
	Ti	47	28.7	28.0	**0.0021**	0.020	920.6	ug/L	34	Standard
	V	51	4896.0	2.8	**0.3548**	0.008	2.3	ug/L	1938	Standard
	Cr	52	14526.3	1.1	**0.6444**	0.040	6.2	ug/L	9522	Standard
	Cr	53	1280.1	8.5	**0.8090**	0.103	12.7	ug/L	395	Standard
	Mn	55	4612.7	1.2	**0.4540**	0.004	0.9	ug/L	902	Standard
	Co	59	3227.7	0.8	**0.3904**	0.004	1.1	ug/L	262	Standard
	Ni	60	3626.4	2.5	**1.5413**	0.064	4.1	ug/L	371	Standard
	Cu	65	1774.1	3.8	**0.7795**	0.031	3.9	ug/L	106	Standard
	Zn	66	7890.1	0.7	**5.9833**	0.114	1.9	ug/L	398	Standard
>	**Ge**	72	513465.0	1.3				ug/L	535147	Standard
	As	75	440.5	6.0	**0.3981**	0.023	5.9	ug/L	-43	Standard
	Se	82	66.6	10.6	**0.4154**	0.058	14.0	ug/L	14	Standard
	Se-1	77	87.0	3.0	**0.4255**	0.041	9.7	ug/L	65	Standard
>	**Ga**	71	58.3	17.8				mg/L	97	Standard
	Rb	85	26.7	43.3				ug/L	15	Standard
	Y	89	439375.0	1.0				ug/L	465704	Standard
>	**Rh**	103	10.0	86.6				ug/L	10	Standard
	Mo	98	96.4	30.1	**0.0448**	0.010	21.6	ug/L	9	Standard
	Ag	107	2923.6	0.8	**0.4010**	0.002	0.6	ug/L	82	Standard
	Cd	111	535.9	6.0	**0.2413**	0.014	6.0	mg/L	7	Standard
	Cd	114	1345.3	5.7	**0.2523**	0.016	6.4	ug/L	21	Standard
>	**In**	115	588951.2	1.0				ug/L	619035	Standard
	Sn	118	551.7	21.2	**-0.0144**	0.018	127.8	ug/L	508	Standard
	Sb	123	2094.7	0.9	**0.4201**	0.001	0.2	ug/L	86	Standard
	Ba	135	1633.1	2.2	**0.7313**	0.020	2.7	ug/L	79	Standard
	Ce	140	21.7	53.3				ug/L	68	Standard
>	**Tb**	159	931014.3	1.3				ug/L	986982	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	732.7	7.5	**0.0893**	0.006	6.6	ug/L	13	Standard
	Tl	205	583.3	9.7	**0.0854**	0.008	9.3	ug/L	10	Standard
	Pb	206	1436.4	1.9	**0.2169**	0.006	2.8	ug/L	264	Standard
	Pb	207	1236.7	1.0	**0.2094**	0.002	0.7	ug/L	227	Standard
	Pb	208	4768.0	1.4	**0.2042**	0.003	1.4	ug/L	868	Standard
	U	238	2803.9	2.1	**0.3935**	0.009	2.3	ug/L	8	Standard
>	**Bi**	209	520833.4	0.5				ug/L	541014	Standard

Sample ID: QC Std 3
Report Date/Time: Thursday, June 30, 2016 11:00:31
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.0840**	17.457	173.1	mg/L	2	Standard
Mg	24	35.0	65.5	**0.0068**	0.027	399.5	mg/L	53	Standard
K	39	51.7	29.6	**0.0189**	0.027	145.5	mg/L	53	Standard
Ca	43	41.7	13.9	**0.8836**	0.370	41.8	mg/L	28	Standard
Fe	54	120.1	2.6	**-0.0301**	0.003	9.4	mg/L	181	Standard
Fe	57	306.7	15.8	**0.2172**	0.139	63.9	mg/L	257	Standard
Sc-1	45	50965.6	0.7				mg/L	55220	Standard
Cl	35	32699.9	0.7				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1686.8	5.7				ug/L	2040	Standard
P	31	13986.5	2.7				ug/L	20435	Standard
S	34	2311.8	5.0				ug/L	2430	Standard
Sr	88	78.3	28.8				ug/L	75	Standard
C	12	143.3	10.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	25.4	58.0				mg/L	9	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	26.7	78.1				mg/L	23	Standard
I	127	1528.4	10.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.150		
Al	27	0.939		
Sc	45			
Ti	47			
V	51	88.689		
Cr	52	80.551		
Cr	53			
Mn	55	90.794		
Co	59	97.600		
Ni	60	96.329		
Cu	65	97.433		
Zn	66	95.733		
Ge	72		95.948	
As	75	99.531		
Se	82	103.853		
Se-1	77			
Ga	71			

Sample ID: QC Std 3
Report Date/Time: Thursday, June 30, 2016 11:00:31
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	100.254		
Cd	111	100.534		
Cd	114			
> In	115			95.140
Sn	118			
Sb	123	105.037		
Ba	135	97.502		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	111.679		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.099		
U	238	98.364		
> Bi	209			96.270
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
Report Date/Time: Thursday, June 30, 2016 11:00:31
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, June 30, 2016 11:01:26
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69047.0	1.6				ug/L	74916	Standard
	Be	9	30.0	28.9	**0.0273**	0.009	34.6	ug/L	10	Standard
	Al	27	7980071.2	1.4	**49.8949**	0.509	1.0	ug/L	1822	Standard
	Sc	45	53713.4	1.0				ug/L	55220	Standard
	Ti	47	44903.8	1.5	**110.8893**	1.899	1.7	ug/L	34	Standard
	V	51	2017.2	8.6	**0.0260**	0.020	77.0	ug/L	1938	Standard
	Cr	52	9364.2	1.6	**0.0229**	0.019	84.6	ug/L	9522	Standard
	Cr	53	2848.6	9.1	**2.2177**	0.229	10.3	ug/L	395	Standard
	Mn	55	1866.1	2.8	**0.1163**	0.006	5.5	ug/L	902	Standard
	Co	59	498.3	2.8	**0.0396**	0.002	5.1	ug/L	262	Standard
	Ni	60	1225.4	1.5	**0.4122**	0.009	2.1	ug/L	371	Standard
	Cu	65	783.4	1.7	**0.3035**	0.005	1.6	ug/L	106	Standard
	Zn	66	1398.7	2.4	**0.7516**	0.026	3.4	ug/L	398	Standard
>	**Ge**	72	524552.7	0.4				ug/L	535147	Standard
	As	75	-41.9	71.7	**0.0233**	0.023	98.3	ug/L	-43	Standard
	Se	82	17.8	18.1	**0.0369**	0.024	64.7	ug/L	14	Standard
	Se-1	77	315.0	3.8	**2.9861**	0.140	4.7	ug/L	65	Standard
>	**Ga**	71	231.7	8.7				mg/L	97	Standard
	Rb	85	1228.4	9.5				ug/L	15	Standard
	Y	89	457479.6	1.4				ug/L	465704	Standard
>	**Rh**	103	8.3	34.6				ug/L	10	Standard
	Mo	98	298868.9	1.0	**98.1743**	0.505	0.5	ug/L	9	Standard
	Ag	107	276.3	5.3	**0.0314**	0.002	6.3	ug/L	82	Standard
	Cd	111	-209.1	3.3	**-0.0809**	0.003	4.0	mg/L	7	Standard
	Cd	114	585.9	7.2	**0.1122**	0.007	6.1	ug/L	21	Standard
>	**In**	115	604081.8	0.6				ug/L	619035	Standard
	Sn	118	835.0	7.9	**0.0281**	0.011	39.5	ug/L	508	Standard
	Sb	123	241.9	20.1	**0.0513**	0.010	18.8	ug/L	86	Standard
	Ba	135	819.7	4.2	**0.3477**	0.013	3.8	ug/L	79	Standard
	Ce	140	243.3	11.3				ug/L	68	Standard
>	**Tb**	159	958745.4	0.6				ug/L	986982	Standard
	Ho	165	28.3	50.9				ug/L	10	Standard
	Tl	203	353.7	19.3	**0.0458**	0.008	17.2	ug/L	13	Standard
	Tl	205	340.0	24.1	**0.0525**	0.011	21.0	ug/L	10	Standard
	Pb	206	540.3	0.6	**0.0568**	0.001	1.7	ug/L	264	Standard
	Pb	207	482.3	2.7	**0.0602**	0.003	4.2	ug/L	227	Standard
	Pb	208	1869.4	0.5	**0.0556**	0.000	0.7	ug/L	868	Standard
	U	238	22.7	9.2	**0.0110**	0.000	2.7	ug/L	8	Standard
>	**Bi**	209	527440.0	0.7				ug/L	541014	Standard

Sample ID: QC Std 4
Report Date/Time: Thursday, June 30, 2016 11:03:42
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11219.2	1.9	**12.5374**	0.364	2.9	mg/L	53	Standard
K	39	2653.6	10.5	**4.5535**	0.480	10.5	mg/L	53	Standard
Ca	43	296.7	13.7	**15.6039**	2.413	15.5	mg/L	28	Standard
Fe	54	17937.8	2.3	**12.4450**	0.170	1.4	mg/L	181	Standard
Fe	57	4687.4	2.3	**12.1000**	0.169	1.4	mg/L	257	Standard
Sc-1	45	53713.4	1.0				mg/L	55220	Standard
Cl	35	32003.8	1.7				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1996.8	3.9				ug/L	2040	Standard
P	31	20527.4	12.6				ug/L	20435	Standard
S	34	2190.2	4.6				ug/L	2430	Standard
Sr	88	61.7	9.4				ug/L	75	Standard
C	12	220.0	16.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	40.5				mg/L	7	Standard
Dy	164	12.5	45.0				mg/L	9	Standard
Ho-1	165	28.3	50.9				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	2538.5	6.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.998		
Sc	45			
Ti	47	110.889		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.020	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 4
Report Date/Time: Thursday, June 30, 2016 11:03:42
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.174		
Ag	107			
Cd	111			
Cd	114			
In	115			97.584
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			97.491
Na	23	0.040		
Mg	24	250.748		
K	39	91.069		
Ca	43	104.026		
Fe	54	99.560		
Fe	57	96.800		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

Sample ID: QC Std 4
Report Date/Time: Thursday, June 30, 2016 11:03:42
Page 3

Approved: July 01, 2016

QC Std 4	Mg	24

Sample ID: QC Std 4
Report Date/Time: Thursday, June 30, 2016 11:03:42
Page 4

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, June 30, 2016 11:04:37
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72463.0	3.2				ug/L	74916	Standard
	Be	9	98297.8	0.6	**96.3910**	3.517	3.6	ug/L	10	Standard
	Al	27	8447942.1	1.6	**50.3585**	1.657	3.3	ug/L	1822	Standard
	Sc	45	52367.0	0.4				ug/L	55220	Standard
	Ti	47	44980.0	1.7	**109.4960**	2.514	2.3	ug/L	34	Standard
	V	51	885855.9	1.8	**96.0355**	2.157	2.2	ug/L	1938	Standard
	Cr	52	857497.0	0.9	**94.8597**	1.504	1.6	ug/L	9522	Standard
	Cr	53	107918.0	1.0	**96.9200**	1.348	1.4	ug/L	395	Standard
	Mn	55	808410.1	1.8	**94.4490**	2.273	2.4	ug/L	902	Standard
	Co	59	768641.5	1.6	**94.9270**	2.168	2.3	ug/L	262	Standard
	Ni	60	210790.5	0.8	**94.4332**	0.812	0.9	ug/L	371	Standard
	Cu	65	209564.5	1.5	**95.4828**	2.026	2.1	ug/L	106	Standard
	Zn	66	127430.0	0.9	**98.2863**	1.219	1.2	ug/L	398	Standard
>	Ge	72	532155.6	0.7				ug/L	535147	Standard
	As	75	129733.9	1.2	**97.4561**	1.333	1.4	ug/L	-43	Standard
	Se	82	12863.9	0.1	**95.3546**	0.676	0.7	ug/L	14	Standard
	Se-1	77	9072.4	1.9	**100.6971**	2.031	2.0	ug/L	65	Standard
>	Ga	71	191.7	3.0				mg/L	97	Standard
	Rb	85	1040.0	3.4				ug/L	15	Standard
	Y	89	459617.2	0.7				ug/L	465704	Standard
>	Rh	103	48.3	36.3				ug/L	10	Standard
	Mo	98	300627.9	1.7	**98.7341**	1.433	1.5	ug/L	9	Standard
	Ag	107	626834.5	7.6	**85.0619**	6.265	7.4	ug/L	82	Standard
	Cd	111	225712.2	0.8	**95.8236**	0.304	0.3	mg/L	7	Standard
	Cd	114	546974.4	1.4	**96.4250**	0.861	0.9	ug/L	21	Standard
>	In	115	604185.2	0.5				ug/L	619035	Standard
	Sn	118	951.7	2.0	**0.0464**	0.002	5.3	ug/L	508	Standard
	Sb	123	496035.7	1.5	**95.9684**	1.123	1.2	ug/L	86	Standard
	Ba	135	213321.7	1.3	**95.5818**	0.880	0.9	ug/L	79	Standard
	Ce	140	56.7	10.2				ug/L	68	Standard
>	Tb	159	980693.1	0.1				ug/L	986982	Standard
	Ho	165	15.0	88.2				ug/L	10	Standard
	Tl	203	870360.2	0.9	**95.8131**	0.800	0.8	ug/L	13	Standard
	Tl	205	746193.3	0.5	**96.1523**	0.552	0.6	ug/L	10	Standard
	Pb	206	567035.9	1.4	**97.2301**	1.451	1.5	ug/L	264	Standard
	Pb	207	493132.7	0.8	**93.5550**	0.631	0.7	ug/L	227	Standard
	Pb	208	1948151.9	0.5	**95.8535**	0.504	0.5	ug/L	868	Standard
	U	238	709733.2	0.4	**94.4363**	0.351	0.4	ug/L	8	Standard
>	Bi	209	538272.1	0.1				ug/L	541014	Standard

Sample ID: QC Std 5
Report Date/Time: Thursday, June 30, 2016 11:06:54
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.9241**	17.180	173.1	mg/L	2	Standard
Mg	24	11447.7	3.7	**13.1199**	0.448	3.4	mg/L	53	Standard
K	39	2688.6	4.4	**4.7356**	0.226	4.8	mg/L	53	Standard
Ca	43	285.0	16.7	**15.3503**	2.879	18.8	mg/L	28	Standard
Fe	54	17502.0	3.9	**12.4563**	0.493	4.0	mg/L	181	Standard
Fe	57	4882.5	2.9	**12.9742**	0.403	3.1	mg/L	257	Standard
Sc-1	45	52367.0	0.4				mg/L	55220	Standard
Cl	35	31680.4	0.6				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2006.8	4.1				ug/L	2040	Standard
P	31	17386.6	2.6				ug/L	20435	Standard
S	34	2086.8	9.8				ug/L	2430	Standard
Sr	88	73.3	20.8				ug/L	75	Standard
C	12	173.3	37.5				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	8.9	6.2				mg/L	9	Standard
Ho-1	165	15.0	88.2				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	19968.2	3.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.391		
Al	27	1.007		
Sc	45			
Ti	47	109.496		
V	51	96.035		
Cr	52	94.860		
Cr	53			
Mn	55	94.449		
Co	59	94.927		
Ni	60	94.433		
Cu	65	95.483		
Zn	66	98.286		
Ge	72		99.441	
As	75	97.456		
Se	82	95.355		
Se-1	77			
Ga	71			

Sample ID: QC Std 5
Report Date/Time: Thursday, June 30, 2016 11:06:54
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	98.734		
Ag	107	85.062		
Cd	111	95.824		
Cd	114			
> In	115		97.601	
Sn	118			
Sb	123	95.968		
Ba	135	95.582		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.813		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.853		
U	238	94.436		
> Bi	209		99.493	
Na	23	79.393		
Mg	24	262.398		
K	39	94.712		
Ca	43	102.336		
Fe	54	99.650		
Fe	57	103.794		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
Report Date/Time: Thursday, June 30, 2016 11:06:54
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 11:07:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72536.7	3.7				ug/L	74916	Standard
	Be	9	50693.0	0.3	**49.6607**	1.688	3.4	ug/L	10	Standard
	Al	27	8327113.6	2.9	**49.5669**	0.426	0.9	ug/L	1822	Standard
	Sc	45	53057.7	1.0				ug/L	55220	Standard
	Ti	47	40618.4	1.5	**99.3748**	1.991	2.0	ug/L	34	Standard
	V	51	460379.9	0.4	**50.0683**	0.385	0.8	ug/L	1938	Standard
	Cr	52	450102.7	2.7	**49.5570**	1.580	3.2	ug/L	9522	Standard
	Cr	53	55635.3	1.9	**50.0358**	1.215	2.4	ug/L	395	Standard
	Mn	55	423500.2	1.5	**49.6797**	0.961	1.9	ug/L	902	Standard
	Co	59	409881.4	1.9	**50.8666**	1.204	2.4	ug/L	262	Standard
	Ni	60	110889.0	0.9	**49.8637**	0.615	1.2	ug/L	371	Standard
	Cu	65	109608.1	1.3	**50.1660**	0.894	1.8	ug/L	106	Standard
	Zn	66	64818.0	1.3	**50.0808**	0.895	1.8	ug/L	398	Standard
>	**Ge**	72	529450.1	0.5				ug/L	535147	Standard
	As	75	66239.4	0.3	**50.0394**	0.294	0.6	ug/L	-43	Standard
	Se	82	6726.4	0.5	**50.0674**	0.227	0.5	ug/L	14	Standard
	Se-1	77	4648.4	2.9	**51.5794**	1.744	3.4	ug/L	65	Standard
>	**Ga**	71	66.7	22.9				mg/L	97	Standard
	Rb	85	955.0	7.9				ug/L	15	Standard
	Y	89	458931.7	0.2				ug/L	465704	Standard
>	**Rh**	103	26.7	10.8				ug/L	10	Standard
	Mo	98	304032.3	1.1	**97.4918**	0.468	0.5	ug/L	9	Standard
	Ag	107	372476.9	0.7	**49.3535**	0.113	0.2	ug/L	82	Standard
	Cd	111	118909.2	1.2	**49.2913**	0.303	0.6	mg/L	7	Standard
	Cd	114	290136.7	0.3	**49.9462**	0.493	1.0	ug/L	21	Standard
>	**In**	115	618815.7	0.7				ug/L	619035	Standard
	Sn	118	323168.7	1.1	**49.5729**	0.500	1.0	ug/L	508	Standard
	Sb	123	263073.5	1.0	**49.6963**	0.188	0.4	ug/L	86	Standard
	Ba	135	112084.1	1.1	**49.0241**	0.233	0.5	ug/L	79	Standard
	Ce	140	163.3	15.7				ug/L	68	Standard
>	**Tb**	159	982022.6	0.6				ug/L	986982	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	455658.8	1.2	**50.0475**	0.793	1.6	ug/L	13	Standard
	Tl	205	396748.5	1.8	**51.0037**	0.610	1.2	ug/L	10	Standard
	Pb	206	292830.3	0.4	**50.0750**	0.191	0.4	ug/L	264	Standard
	Pb	207	264806.7	0.5	**50.1043**	0.182	0.4	ug/L	227	Standard
	Pb	208	1023180.7	1.1	**50.2060**	0.575	1.1	ug/L	868	Standard
	U	238	378257.3	1.4	**50.2134**	0.362	0.7	ug/L	8	Standard
>	**Bi**	209	539549.6	0.7				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 11:10:07
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.6749**	16.749	173.1	mg/L	2	Standard
Mg	24	4524.0	6.4	**5.0993**	0.385	7.5	mg/L	53	Standard
K	39	2573.6	1.7	**4.4700**	0.112	2.5	mg/L	53	Standard
Ca	43	131.7	2.2	**6.0879**	0.249	4.1	mg/L	28	Standard
Fe	54	7333.9	2.8	**5.0822**	0.153	3.0	mg/L	181	Standard
Fe	57	2120.1	7.9	**5.1834**	0.493	9.5	mg/L	257	Standard
> **Sc-1**	45	53057.7	1.0				mg/L	55220	Standard
Cl	35	34119.7	1.1				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1983.5	11.5				ug/L	2040	Standard
P	31	20664.1	0.8				ug/L	20435	Standard
S	34	2381.9	5.4				ug/L	2430	Standard
Sr	88	63.3	9.1				ug/L	75	Standard
C	12	150.0	6.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	12.5	122.8				mg/L	9	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	16197.0	2.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.321		
Al	27	99.134		
Sc	45			
Ti	47	99.375		
V	51	100.137		
Cr	52	99.114		
Cr	53			
Mn	55	99.359		
Co	59	101.733		
Ni	60	99.727		
Cu	65	100.332		
Zn	66	100.162		
> Ge	72		98.935	
As	75	100.079		
Se	82	100.135		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 11:10:07
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	97.492		
Ag	107	98.707		
Cd	111	98.583		
Cd	114			
> In	115			99.965
Sn	118	99.146		
Sb	123	99.393		
Ba	135	98.048		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.095		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.412		
U	238	100.427		
> Bi	209			99.729
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 11:10:07
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 11:11:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73134.5	2.3				ug/L	74916	Standard
	Be	9	38.3	7.5	**0.0336**	0.003	7.6	ug/L	10	Standard
	Al	27	3792.2	44.9	**0.0199**	0.009	47.4	ug/L	1822	Standard
	Sc	45	54190.1	0.5				ug/L	55220	Standard
	Ti	47	48.3	19.2	**0.0478**	0.021	44.7	ug/L	34	Standard
	V	51	1584.9	7.6	**-0.0237**	0.012	50.3	ug/L	1938	Standard
	Cr	52	7959.1	2.1	**-0.1465**	0.013	8.8	ug/L	9522	Standard
	Cr	53	491.7	4.1	**0.0574**	0.016	27.6	ug/L	395	Standard
	Mn	55	1049.0	8.7	**0.0179**	0.009	49.9	ug/L	902	Standard
	Co	59	426.3	10.5	**0.0300**	0.005	16.8	ug/L	262	Standard
	Ni	60	348.0	13.6	**0.0110**	0.021	186.8	ug/L	371	Standard
	Cu	65	167.7	18.3	**0.0179**	0.014	75.9	ug/L	106	Standard
	Zn	66	414.7	7.1	**-0.0248**	0.018	72.5	ug/L	398	Standard
>	**Ge**	72	530396.1	2.0				ug/L	535147	Standard
	As	75	-26.7	180.7	**0.0347**	0.037	105.8	ug/L	-43	Standard
	Se	82	16.6	86.9	**0.0271**	0.107	394.5	ug/L	14	Standard
	Se-1	77	63.0	18.0	**0.1234**	0.118	95.9	ug/L	65	Standard
>	**Ga**	71	83.3	33.0				mg/L	97	Standard
	Rb	85	18.3	15.7				ug/L	15	Standard
	Y	89	465262.4	0.7				ug/L	465704	Standard
>	**Rh**	103	18.3	63.0				ug/L	10	Standard
	Mo	98	279.5	14.4	**0.1015**	0.013	12.7	ug/L	9	Standard
	Ag	107	219.7	28.5	**0.0229**	0.008	36.2	ug/L	82	Standard
	Cd	111	34.5	55.0	**0.0221**	0.008	35.5	mg/L	7	Standard
	Cd	114	80.2	45.7	**0.0226**	0.006	27.8	ug/L	21	Standard
>	**In**	115	622224.2	0.3				ug/L	619035	Standard
	Sn	118	925.0	9.2	**0.0380**	0.013	34.2	ug/L	508	Standard
	Sb	123	983.6	25.4	**0.1892**	0.047	24.8	ug/L	86	Standard
	Ba	135	87.3	18.7	**0.0184**	0.007	38.9	ug/L	79	Standard
	Ce	140	26.7	78.1				ug/L	68	Standard
>	**Tb**	159	965445.1	0.7				ug/L	986982	Standard
	Ho	165	21.7	13.3				ug/L	10	Standard
	Tl	203	154.0	63.6	**0.0228**	0.011	46.9	ug/L	13	Standard
	Tl	205	146.7	58.8	**0.0264**	0.011	41.8	ug/L	10	Standard
	Pb	206	392.0	15.8	**0.0287**	0.011	37.2	ug/L	264	Standard
	Pb	207	329.3	12.9	**0.0286**	0.008	28.3	ug/L	227	Standard
	Pb	208	1276.7	12.2	**0.0238**	0.008	32.6	ug/L	868	Standard
	U	238	109.0	69.7	**0.0223**	0.010	45.1	ug/L	8	Standard
>	**Bi**	209	544217.1	0.5				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 11:13:19
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.4960**	16.439	173.1	mg/L	2	Standard
Mg	24	38.3	39.8	**0.0080**	0.017	212.6	mg/L	53	Standard
K	39	48.3	39.2	**0.0075**	0.032	430.4	mg/L	53	Standard
Ca	43	36.7	28.4	**0.4397**	0.593	134.8	mg/L	28	Standard
Fe	54	180.9	15.5	**0.0069**	0.020	289.3	mg/L	181	Standard
Fe	57	275.0	14.2	**0.0792**	0.103	130.6	mg/L	257	Standard
Sc-1	45	54190.1	0.5				mg/L	55220	Standard
Cl	35	34690.3	0.7				ug/L	35504	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1803.4	1.8				ug/L	2040	Standard
P	31	20203.5	2.8				ug/L	20435	Standard
S	34	2368.5	5.0				ug/L	2430	Standard
Sr	88	71.7	21.3				ug/L	75	Standard
C	12	163.3	23.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	541.4	14.2				mg/L	9	Standard
Ho-1	165	21.7	13.3				mg/L	10	Standard
Er	166	110.0	18.2				mg/L	23	Standard
I	127	15639.7	0.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.112	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 11:13:19
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.515
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.592
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 11:13:19
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: PBW M6 WG574201-01
Sample Date/Time: Thursday, June 30, 2016 11:14:15
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66206.1	3.3				ug/L	74916	Standard
	Be	9	25.0	20.0	**0.0233**	0.006	25.2	ug/L	10	Standard
	Al	27	2728.6	2.0	**0.0155**	0.000	2.2	ug/L	1822	Standard
	Sc	45	49101.1	1.0				ug/L	55220	Standard
	Ti	47	33.3	12.5	**0.0177**	0.011	61.7	ug/L	34	Standard
	V	51	1448.5	2.2	**-0.0261**	0.004	15.6	ug/L	1938	Standard
	Cr	52	6056.9	2.1	**-0.3065**	0.017	5.5	ug/L	9522	Standard
	Cr	53	286.7	2.0	**-0.1076**	0.007	6.6	ug/L	395	Standard
	Mn	55	618.3	12.3	**-0.0269**	0.010	35.9	ug/L	902	Standard
	Co	59	318.7	5.7	**0.0198**	0.003	12.7	ug/L	262	Standard
	Ni	60	362.3	3.8	**0.0303**	0.006	18.8	ug/L	371	Standard
	Cu	65	99.7	13.6	**-0.0096**	0.007	69.2	ug/L	106	Standard
	Zn	66	633.3	59.2	**0.1836**	0.314	171.0	ug/L	398	Standard
>	**Ge**	72	491721.1	0.6				ug/L	535147	Standard
	As	75	-19.8	15.7	**0.0391**	0.003	6.6	ug/L	-43	Standard
	Se	82	19.7	30.5	**0.0611**	0.049	79.6	ug/L	14	Standard
	Se-1	77	63.7	13.1	**0.1875**	0.097	51.7	ug/L	65	Standard
>	**Ga**	71	55.0	24.1				mg/L	97	Standard
	Rb	85	18.3	15.7				ug/L	15	Standard
	Y	89	428431.8	1.3				ug/L	465704	Standard
>	**Rh**	103	13.3	57.3				ug/L	10	Standard
	Mo	98	53.7	29.6	**0.0311**	0.006	17.7	ug/L	9	Standard
	Ag	107	174.0	16.4	**0.0191**	0.004	21.5	ug/L	82	Standard
	Cd	111	22.2	17.0	**0.0179**	0.002	9.4	mg/L	7	Standard
	Cd	114	51.3	23.3	**0.0185**	0.002	12.1	ug/L	21	Standard
>	**In**	115	566677.7	0.5				ug/L	619035	Standard
	Sn	118	201.7	12.5	**-0.0696**	0.004	6.0	ug/L	508	Standard
	Sb	123	254.5	16.3	**0.0569**	0.009	15.1	ug/L	86	Standard
	Ba	135	59.7	19.4	**0.0089**	0.006	63.6	ug/L	79	Standard
	Ce	140	6.7	114.6				ug/L	68	Standard
>	**Tb**	159	901324.0	1.3				ug/L	986982	Standard
	Ho	165	0.0					ug/L	10	Standard
	Tl	203	103.0	43.3	**0.0179**	0.005	29.0	ug/L	13	Standard
	Tl	205	81.7	30.8	**0.0187**	0.003	18.3	ug/L	10	Standard
	Pb	206	284.0	15.4	**0.0131**	0.008	60.7	ug/L	264	Standard
	Pb	207	248.0	13.5	**0.0160**	0.007	42.8	ug/L	227	Standard
	Pb	208	1008.0	8.1	**0.0135**	0.004	32.6	ug/L	868	Standard
	U	238	45.7	20.3	**0.0142**	0.001	9.1	ug/L	8	Standard
>	**Bi**	209	515556.1	0.5				ug/L	541014	Standard

Sample ID: PBW M6 WG574201-01
Report Date/Time: Thursday, June 30, 2016 11:16:32
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	30.0	**0.0268**	0.019	70.2	mg/L	53	Standard
K	39	56.7	51.7	**0.0318**	0.055	171.6	mg/L	53	Standard
Ca	43	30.0	44.1	**0.2337**	0.839	359.0	mg/L	28	Standard
Fe	54	72.8	37.4	**-0.0631**	0.020	32.2	mg/L	181	Standard
Fe	57	295.0	9.0	**0.2156**	0.073	33.8	mg/L	257	Standard
Sc-1	45	49101.1	1.0				mg/L	55220	Standard
Cl	35	31979.7	0.9				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1776.8	5.5				ug/L	2040	Standard
P	31	7448.6	24.8				ug/L	20435	Standard
S	34	2298.5	2.2				ug/L	2430	Standard
Sr	88	85.0	31.1				ug/L	75	Standard
C	12	140.0	46.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	-0.3	86.6				mg/L	9	Standard
Ho-1	165	0.0					mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	1355.1	9.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.373	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.885	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW M6 WG574201-01
Report Date/Time: Thursday, June 30, 2016 11:16:32
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.542
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.294
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: LCSW M6 WG574201-02
Sample Date/Time: Thursday, June 30, 2016 11:17:27
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64644.4	3.5				ug/L	74916	Standard
	Be	9	24256.1	3.2	**26.6512**	0.918	3.4	ug/L	10	Standard
	Al	27	4295.6	5.2	**0.0264**	0.001	4.2	ug/L	1822	Standard
	Sc	45	48622.9	0.9				ug/L	55220	Standard
	Ti	47	37.7	9.3	**0.0291**	0.010	32.8	ug/L	34	Standard
	V	51	152090.0	9.7	**17.6711**	1.731	9.8	ug/L	1938	Standard
	Cr	52	215188.7	5.2	**24.9908**	1.463	5.9	ug/L	9522	Standard
	Cr	53	26019.0	4.3	**24.9885**	1.195	4.8	ug/L	395	Standard
	Mn	55	204766.0	5.1	**25.7989**	1.420	5.5	ug/L	902	Standard
	Co	59	189845.6	5.0	**25.3420**	1.375	5.4	ug/L	262	Standard
	Ni	60	54086.9	5.9	**26.1050**	1.650	6.3	ug/L	371	Standard
	Cu	65	53131.2	5.7	**26.1413**	1.611	6.2	ug/L	106	Standard
	Zn	66	36319.6	5.1	**30.0605**	1.673	5.6	ug/L	398	Standard
>	Ge	72	492035.7	0.4				ug/L	535147	Standard
	As	75	33099.6	0.8	**26.9307**	0.104	0.4	ug/L	-43	Standard
	Se	82	3603.6	1.9	**28.8201**	0.426	1.5	ug/L	14	Standard
	Se-1	77	2458.5	4.3	**29.0987**	1.177	4.0	ug/L	65	Standard
>	Ga	71	58.3	17.8				mg/L	97	Standard
	Rb	85	31.7	24.1				ug/L	15	Standard
	Y	89	422389.7	3.5				ug/L	465704	Standard
>	Rh	103	25.0	34.6				ug/L	10	Standard
	Mo	98	48.7	16.4	**0.0291**	0.003	9.1	ug/L	9	Standard
	Ag	107	180030.5	4.8	**25.6238**	1.186	4.6	ug/L	82	Standard
	Cd	111	60091.4	5.4	**26.7643**	1.380	5.2	mg/L	7	Standard
	Cd	114	145971.9	7.3	**26.9991**	1.950	7.2	ug/L	21	Standard
>	In	115	575992.2	0.7				ug/L	619035	Standard
	Sn	118	266.7	15.3	**-0.0594**	0.006	10.8	ug/L	508	Standard
	Sb	123	124962.0	1.4	**25.3655**	0.466	1.8	ug/L	86	Standard
	Ba	135	54723.2	6.3	**25.7054**	1.592	6.2	ug/L	79	Standard
	Ce	140	33.3	31.2				ug/L	68	Standard
>	Tb	159	900033.6	0.8				ug/L	986982	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	216597.6	4.6	**24.8274**	1.034	4.2	ug/L	13	Standard
	Tl	205	186399.3	4.4	**25.0109**	0.997	4.0	ug/L	10	Standard
	Pb	206	132845.1	5.7	**23.6873**	1.326	5.6	ug/L	264	Standard
	Pb	207	115019.5	5.7	**22.6941**	1.280	5.6	ug/L	227	Standard
	Pb	208	460646.0	5.9	**23.5670**	1.321	5.6	ug/L	868	Standard
	U	238	142871.0	4.4	**19.8025**	0.973	4.9	ug/L	8	Standard
>	Bi	209	516996.9	0.9				ug/L	541014	Standard

Sample ID: LCSW M6 WG574201-02
Report Date/Time: Thursday, June 30, 2016 11:19:43
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.5453**	18.256	173.1	mg/L	2	Standard
Mg	24	33.3	34.6	**0.0068**	0.015	214.9	mg/L	53	Standard
K	39	51.7	22.3	**0.0236**	0.022	94.8	mg/L	53	Standard
Ca	43	36.7	43.8	**0.6853**	1.038	151.5	mg/L	28	Standard
Fe	54	45.4	21.0	**-0.0836**	0.007	8.8	mg/L	181	Standard
Fe	57	285.0	16.1	**0.1940**	0.134	69.1	mg/L	257	Standard
Sc-1	45	48622.9	0.9				mg/L	55220	Standard
Cl	35	31751.2	1.3				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2096.8	15.6				ug/L	2040	Standard
P	31	6428.0	0.9				ug/L	20435	Standard
S	34	2303.5	8.7				ug/L	2430	Standard
Sr	88	73.3	37.6				ug/L	75	Standard
C	12	120.0	52.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	2.7	219.6				mg/L	9	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1255.1	14.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		86.289	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.944	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: LCSW M6 WG574201-02
Report Date/Time: Thursday, June 30, 2016 11:19:43
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.047
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.561
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW M6 WG574201-02
Report Date/Time: Thursday, June 30, 2016 11:19:43
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: LCSW DP WG574201-03
Sample Date/Time: Thursday, June 30, 2016 11:20:39
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63201.6	1.5				ug/L	74916	Standard
	Be	9	23903.8	2.4	**26.8556**	0.733	2.7	ug/L	10	Standard
	Al	27	5737.8	6.2	**0.0369**	0.003	8.1	ug/L	1822	Standard
	Sc	45	48599.5	2.0				ug/L	55220	Standard
	Ti	47	46.3	53.8	**0.0520**	0.065	124.8	ug/L	34	Standard
	V	51	154520.0	8.3	**18.0168**	1.629	9.0	ug/L	1938	Standard
	Cr	52	211595.7	4.7	**24.6240**	1.093	4.4	ug/L	9522	Standard
	Cr	53	25357.9	3.6	**24.4081**	0.661	2.7	ug/L	395	Standard
	Mn	55	201667.5	4.7	**25.4735**	1.044	4.1	ug/L	902	Standard
	Co	59	189508.2	5.6	**25.3626**	1.278	5.0	ug/L	262	Standard
	Ni	60	53391.4	5.8	**25.8339**	1.363	5.3	ug/L	371	Standard
	Cu	65	52719.7	4.6	**26.0057**	1.035	4.0	ug/L	106	Standard
	Zn	66	36052.3	5.5	**29.9141**	1.463	4.9	ug/L	398	Standard
>	**Ge**	72	490614.4	0.9				ug/L	535147	Standard
	As	75	32692.3	1.1	**26.6791**	0.430	1.6	ug/L	-43	Standard
	Se	82	3581.2	1.2	**28.7291**	0.612	2.1	ug/L	14	Standard
	Se-1	77	2389.9	4.2	**28.3511**	1.007	3.6	ug/L	65	Standard
>	**Ga**	71	53.3	47.2				mg/L	97	Standard
	Rb	85	35.0	37.8				ug/L	15	Standard
	Y	89	419941.8	0.4				ug/L	465704	Standard
>	**Rh**	103	26.7	28.6				ug/L	10	Standard
	Mo	98	176.7	7.0	**0.0744**	0.004	5.7	ug/L	9	Standard
	Ag	107	179573.6	4.0	**26.0599**	0.863	3.3	ug/L	82	Standard
	Cd	111	59106.0	5.8	**26.8419**	1.431	5.3	mg/L	7	Standard
	Cd	114	142189.6	5.2	**26.8137**	1.236	4.6	ug/L	21	Standard
>	**In**	115	564866.5	1.0				ug/L	619035	Standard
	Sn	118	215.0	6.2	**-0.0672**	0.003	3.9	ug/L	508	Standard
	Sb	123	123122.3	1.2	**25.4843**	0.405	1.6	ug/L	86	Standard
	Ba	135	53570.4	6.3	**25.6553**	1.465	5.7	ug/L	79	Standard
	Ce	140	26.7	10.8				ug/L	68	Standard
>	**Tb**	159	893274.9	1.5				ug/L	986982	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	214845.2	4.9	**24.7144**	1.262	5.1	ug/L	13	Standard
	Tl	205	185089.1	5.4	**24.9242**	1.414	5.7	ug/L	10	Standard
	Pb	206	130951.6	5.5	**23.4302**	1.330	5.7	ug/L	264	Standard
	Pb	207	113903.8	5.8	**22.5513**	1.338	5.9	ug/L	227	Standard
	Pb	208	456214.5	6.4	**23.4221**	1.520	6.5	ug/L	868	Standard
	U	238	142740.1	5.2	**19.8466**	1.002	5.1	ug/L	8	Standard
>	**Bi**	209	515247.5	0.5				ug/L	541014	Standard

Sample ID: LCSW DP WG574201-03
Report Date/Time: Thursday, June 30, 2016 11:22:56
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	36.7	20.8	**0.0109**	0.010	89.9	mg/L	53	Standard
K	39	50.0	69.3	**0.0209**	0.068	326.3	mg/L	53	Standard
Ca	43	36.7	56.8	**0.6973**	1.372	196.8	mg/L	28	Standard
Fe	54	53.5	29.3	**-0.0772**	0.013	16.4	mg/L	181	Standard
Fe	57	311.7	4.0	**0.2758**	0.054	19.4	mg/L	257	Standard
Sc-1	45	48599.5	2.0				mg/L	55220	Standard
Cl	35	31866.1	1.4				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2513.5	3.9				ug/L	2040	Standard
P	31	6396.4	2.4				ug/L	20435	Standard
S	34	2231.8	5.4				ug/L	2430	Standard
Sr	88	76.7	33.5				ug/L	75	Standard
C	12	163.3	31.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.8	2.8				mg/L	9	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	1581.7	3.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.363	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW DP WG574201-03
Report Date/Time: Thursday, June 30, 2016 11:22:56
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.250
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.237
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW DP WG574201-03
Report Date/Time: Thursday, June 30, 2016 11:22:56
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138401
Sample Date/Time: Thursday, June 30, 2016 11:23:51
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63507.9	2.7				ug/L	74916	Standard
	Be	9	45.0	0.0	**0.0467**	0.001	2.9	ug/L	10	Standard
	Al	27	579151.6	9.1	**3.9324**	0.299	7.6	ug/L	1822	Standard
	Sc	45	50261.6	2.0				ug/L	55220	Standard
	Ti	47	4807.4	10.2	**12.3788**	1.356	11.0	ug/L	34	Standard
	V	51	25206.6	26.1	**2.7183**	0.794	29.2	ug/L	1938	Standard
	Cr	52	66822.6	12.8	**6.9055**	1.063	15.4	ug/L	9522	Standard
	Cr	53	7641.9	11.2	**6.9388**	0.872	12.6	ug/L	395	Standard
	Mn	55	107364.1	9.0	**13.2318**	1.102	8.3	ug/L	902	Standard
	Co	59	1594.4	3.9	**0.1865**	0.008	4.5	ug/L	262	Standard
	Ni	60	5128.5	1.3	**2.2995**	0.031	1.3	ug/L	371	Standard
	Cu	65	1796.8	11.4	**0.8122**	0.107	13.2	ug/L	106	Standard
	Zn	66	6372.3	6.5	**4.8961**	0.382	7.8	ug/L	398	Standard
>	**Ge**	72	500812.1	1.0				ug/L	535147	Standard
	As	75	1116.8	10.4	**0.9467**	0.100	10.6	ug/L	-43	Standard
	Se	82	60.3	14.3	**0.3791**	0.073	19.4	ug/L	14	Standard
	Se-1	77	93.3	11.5	**0.5250**	0.117	22.2	ug/L	65	Standard
>	**Ga**	71	813.4	13.8				mg/L	97	Standard
	Rb	85	11027.4	9.6				ug/L	15	Standard
	Y	89	442099.3	1.0				ug/L	465704	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	5434.4	24.6	**1.8757**	0.486	25.9	ug/L	9	Standard
	Ag	107	172.0	1.5	**0.0182**	0.001	4.1	ug/L	82	Standard
	Cd	111	46.3	23.7	**0.0284**	0.005	17.2	mg/L	7	Standard
	Cd	114	171.4	15.4	**0.0404**	0.005	12.9	ug/L	21	Standard
>	**In**	115	580272.2	1.6				ug/L	619035	Standard
	Sn	118	256.7	21.4	**-0.0613**	0.009	14.7	ug/L	508	Standard
	Sb	123	1175.2	1.3	**0.2412**	0.007	2.8	ug/L	86	Standard
	Ba	135	26741.6	14.3	**12.4444**	1.604	12.9	ug/L	79	Standard
	Ce	140	16634.3	18.2				ug/L	68	Standard
>	**Tb**	159	906690.0	0.8				ug/L	986982	Standard
	Ho	165	818.4	17.3				ug/L	10	Standard
	Tl	203	327.3	4.6	**0.0436**	0.002	5.4	ug/L	13	Standard
	Tl	205	313.3	30.7	**0.0497**	0.013	25.8	ug/L	10	Standard
	Pb	206	746.4	9.3	**0.0958**	0.014	15.0	ug/L	264	Standard
	Pb	207	580.3	13.5	**0.0818**	0.017	21.2	ug/L	227	Standard
	Pb	208	2569.8	12.6	**0.0937**	0.019	19.8	ug/L	868	Standard
	U	238	407.7	27.8	**0.0646**	0.017	25.6	ug/L	8	Standard
>	**Bi**	209	516339.8	1.8				ug/L	541014	Standard

Sample ID: L1606138401
Report Date/Time: Thursday, June 30, 2016 11:26:08
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	568.3	5.2	**0.6464**	0.045	7.0	mg/L	53	Standard
K	39	398.3	4.0	**0.6670**	0.037	5.6	mg/L	53	Standard
Ca	43	43.3	24.0	**1.0309**	0.707	68.6	mg/L	28	Standard
Fe	54	401.5	20.0	**0.1821**	0.061	33.6	mg/L	181	Standard
Fe	57	360.0	7.7	**0.3843**	0.068	17.7	mg/L	257	Standard
> **Sc-1**	45	50261.6	2.0				mg/L	55220	Standard
Cl	35	31812.1	3.4				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2060.1	7.3				ug/L	2040	Standard
P	31	9829.9	2.5				ug/L	20435	Standard
S	34	1978.5	8.8				ug/L	2430	Standard
Sr	88	105.0	29.0				ug/L	75	Standard
C	12	246.7	30.4				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	33.3	105.4				mg/L	7	Standard
Dy	164	1002.4	17.9				mg/L	9	Standard
Ho-1	165	818.4	17.3				mg/L	10	Standard
Er	166	786.7	22.3				mg/L	23	Standard
I	127	4182.2	12.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.772	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.584	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138401
Report Date/Time: Thursday, June 30, 2016 11:26:08
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.738
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138403
Sample Date/Time: Thursday, June 30, 2016 11:27:02
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64930.5	1.2				ug/L	74916	Standard
	Be	9	30.0	16.7	**0.0292**	0.006	19.5	ug/L	10	Standard
	Al	27	1828795.5	14.8	**12.1666**	1.899	15.6	ug/L	1822	Standard
	Sc	45	51057.6	1.6				ug/L	55220	Standard
	Ti	47	1084.7	9.7	**2.6861**	0.266	9.9	ug/L	34	Standard
	V	51	32038.5	18.5	**3.4344**	0.672	19.6	ug/L	1938	Standard
	Cr	52	18396.2	5.5	**1.1067**	0.115	10.4	ug/L	9522	Standard
	Cr	53	1613.4	13.1	**1.1304**	0.201	17.7	ug/L	395	Standard
	Mn	55	121230.5	36.9	**14.6904**	5.474	37.3	ug/L	902	Standard
	Co	59	2783.6	25.6	**0.3360**	0.092	27.4	ug/L	262	Standard
	Ni	60	3626.8	8.1	**1.5522**	0.140	9.0	ug/L	371	Standard
	Cu	65	1153.4	7.6	**0.4897**	0.041	8.3	ug/L	106	Standard
	Zn	66	1516.1	18.4	**0.8777**	0.227	25.8	ug/L	398	Standard
>	**Ge**	72	510077.1	0.2				ug/L	535147	Standard
	As	75	1089.9	4.7	**0.9089**	0.038	4.2	ug/L	-43	Standard
	Se	82	41.3	17.6	**0.2229**	0.055	24.9	ug/L	14	Standard
	Se-1	77	73.7	2.1	**0.2766**	0.019	7.0	ug/L	65	Standard
>	**Ga**	71	165.0	19.9				mg/L	97	Standard
	Rb	85	5817.8	8.8				ug/L	15	Standard
	Y	89	441072.2	2.5				ug/L	465704	Standard
>	**Rh**	103	18.3	56.8				ug/L	10	Standard
	Mo	98	6803.9	9.9	**2.3308**	0.237	10.2	ug/L	9	Standard
	Ag	107	181.7	60.0	**0.0194**	0.015	77.8	ug/L	82	Standard
	Cd	111	51.3	53.5	**0.0304**	0.012	39.1	mg/L	7	Standard
	Cd	114	129.3	66.9	**0.0325**	0.016	48.0	ug/L	21	Standard
>	**In**	115	582444.7	1.2				ug/L	619035	Standard
	Sn	118	211.7	14.2	**-0.0689**	0.005	6.6	ug/L	508	Standard
	Sb	123	980.7	9.5	**0.2012**	0.018	8.8	ug/L	86	Standard
	Ba	135	33140.8	28.4	**15.3771**	4.302	28.0	ug/L	79	Standard
	Ce	140	5237.6	5.3				ug/L	68	Standard
>	**Tb**	159	914520.5	1.3				ug/L	986982	Standard
	Ho	165	355.0	24.1				ug/L	10	Standard
	Tl	203	250.0	41.9	**0.0344**	0.012	33.6	ug/L	13	Standard
	Tl	205	195.0	43.1	**0.0337**	0.011	32.6	ug/L	10	Standard
	Pb	206	406.3	9.3	**0.0344**	0.006	16.8	ug/L	264	Standard
	Pb	207	335.7	15.4	**0.0328**	0.009	28.5	ug/L	227	Standard
	Pb	208	1363.7	20.3	**0.0311**	0.013	42.6	ug/L	868	Standard
	U	238	178.3	24.1	**0.0325**	0.006	17.3	ug/L	8	Standard
>	**Bi**	209	519165.0	1.3				ug/L	541014	Standard

Sample ID: L1606138403
Report Date/Time: Thursday, June 30, 2016 11:29:19
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	873.4	10.4	**0.9960**	0.122	12.2	mg/L	53	Standard
K	39	440.0	19.4	**0.7317**	0.159	21.7	mg/L	53	Standard
Ca	43	106.7	42.5	**4.8817**	2.847	58.3	mg/L	28	Standard
Fe	54	130.3	11.2	**-0.0228**	0.010	44.2	mg/L	181	Standard
Fe	57	360.0	10.8	**0.3692**	0.122	33.0	mg/L	257	Standard
> **Sc-1**	45	51057.6	1.6				mg/L	55220	Standard
Cl	35	32742.0	1.8				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2203.5	4.1				ug/L	2040	Standard
P	31	9269.5	5.3				ug/L	20435	Standard
S	34	2001.8	9.6				ug/L	2430	Standard
Sr	88	98.3	5.9				ug/L	75	Standard
C	12	460.0	18.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	14.3				mg/L	7	Standard
Dy	164	417.4	5.7				mg/L	9	Standard
Ho-1	165	355.0	24.1				mg/L	10	Standard
Er	166	403.3	16.5				mg/L	23	Standard
I	127	4218.9	8.1				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		86.671	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.315	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606138403
Report Date/Time: Thursday, June 30, 2016 11:29:19
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.089
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.961
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138405
Sample Date/Time: Thursday, June 30, 2016 11:30:14
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66576.0	3.1				ug/L	74916	Standard
	Be	9	26.7	60.3	**0.0246**	0.017	67.2	ug/L	10	Standard
	Al	27	782618.5	17.0	**5.0937**	1.037	20.4	ug/L	1822	Standard
	Sc	45	52681.5	3.6				ug/L	55220	Standard
	Ti	47	2692.2	14.0	**6.7525**	0.884	13.1	ug/L	34	Standard
	V	51	29525.5	27.9	**3.1409**	0.924	29.4	ug/L	1938	Standard
	Cr	52	36356.6	11.5	**3.1921**	0.449	14.1	ug/L	9522	Standard
	Cr	53	3823.8	11.5	**3.2008**	0.380	11.9	ug/L	395	Standard
	Mn	55	71662.3	35.6	**8.6456**	3.216	37.2	ug/L	902	Standard
	Co	59	1638.1	13.8	**0.1882**	0.032	16.8	ug/L	262	Standard
	Ni	60	4089.9	5.4	**1.7667**	0.129	7.3	ug/L	371	Standard
	Cu	65	1490.4	17.3	**0.6484**	0.119	18.4	ug/L	106	Standard
	Zn	66	3492.4	0.7	**2.4690**	0.059	2.4	ug/L	398	Standard
>	**Ge**	72	510976.4	1.4				ug/L	535147	Standard
	As	75	1205.8	5.9	**0.9977**	0.044	4.4	ug/L	-43	Standard
	Se	82	64.4	6.1	**0.4011**	0.034	8.4	ug/L	14	Standard
	Se-1	77	83.3	19.2	**0.3870**	0.184	47.4	ug/L	65	Standard
>	**Ga**	71	375.0	12.2				mg/L	97	Standard
	Rb	85	5906.2	3.9				ug/L	15	Standard
	Y	89	447665.9	1.1				ug/L	465704	Standard
>	**Rh**	103	23.3	49.5				ug/L	10	Standard
	Mo	98	14254.7	18.6	**4.8045**	0.870	18.1	ug/L	9	Standard
	Ag	107	108.0	4.0	**0.0089**	0.000	4.9	ug/L	82	Standard
	Cd	111	15.8	87.9	**0.0148**	0.006	41.1	mg/L	7	Standard
	Cd	114	128.0	25.5	**0.0321**	0.006	19.1	ug/L	21	Standard
>	**In**	115	589791.5	1.1				ug/L	619035	Standard
	Sn	118	200.0	31.2	**-0.0711**	0.010	14.6	ug/L	508	Standard
	Sb	123	861.9	5.1	**0.1752**	0.007	3.9	ug/L	86	Standard
	Ba	135	24057.3	38.8	**11.0457**	4.375	39.6	ug/L	79	Standard
	Ce	140	12245.0	12.8				ug/L	68	Standard
>	**Tb**	159	925423.5	1.9				ug/L	986982	Standard
	Ho	165	598.3	14.1				ug/L	10	Standard
	Tl	203	114.7	18.8	**0.0189**	0.002	11.7	ug/L	13	Standard
	Tl	205	115.0	19.0	**0.0229**	0.003	12.0	ug/L	10	Standard
	Pb	206	491.7	10.8	**0.0487**	0.009	19.0	ug/L	264	Standard
	Pb	207	396.7	4.3	**0.0440**	0.003	7.1	ug/L	227	Standard
	Pb	208	1699.4	6.7	**0.0474**	0.005	11.4	ug/L	868	Standard
	U	238	237.7	18.5	**0.0403**	0.006	14.7	ug/L	8	Standard
>	**Bi**	209	524816.3	1.6				ug/L	541014	Standard

Sample ID: L1606138405
Report Date/Time: Thursday, June 30, 2016 11:32:31
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	765.0	11.5	**0.8403**	0.110	13.0	mg/L	53	Standard
K	39	351.7	11.5	**0.5493**	0.066	12.0	mg/L	53	Standard
Ca	43	48.3	36.3	**1.1962**	1.066	89.1	mg/L	28	Standard
Fe	54	235.5	17.5	**0.0492**	0.027	54.6	mg/L	181	Standard
Fe	57	333.3	10.6	**0.2631**	0.102	38.9	mg/L	257	Standard
> **Sc-1**	45	52681.5	3.6				mg/L	55220	Standard
Cl	35	32550.9	0.2				ug/L	35504	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1960.1	15.1				ug/L	2040	Standard
P	31	10708.8	2.7				ug/L	20435	Standard
S	34	1863.4	4.2				ug/L	2430	Standard
Sr	88	111.7	20.2				ug/L	75	Standard
C	12	300.0	18.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	160.0	22.5				mg/L	7	Standard
Dy	164	774.6	21.6				mg/L	9	Standard
Ho-1	165	598.3	14.1				mg/L	10	Standard
Er	166	670.0	14.4				mg/L	23	Standard
I	127	3110.3	17.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.867	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.483	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138405
Report Date/Time: Thursday, June 30, 2016 11:32:31
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.276
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.006
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606138405
Report Date/Time: Thursday, June 30, 2016 11:32:31
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138407
Sample Date/Time: Thursday, June 30, 2016 11:33:25
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68944.9	2.8				ug/L	74916	Standard
	Be	9	65.0	46.8	**0.0639**	0.033	51.1	ug/L	10	Standard
	Al	27	579198.2	6.0	**3.6270**	0.255	7.0	ug/L	1822	Standard
	Sc	45	52994.2	2.6				ug/L	55220	Standard
	Ti	47	12552.6	16.4	**31.7432**	5.355	16.9	ug/L	34	Standard
	V	51	48414.4	28.6	**5.2766**	1.580	29.9	ug/L	1938	Standard
	Cr	52	170208.6	13.9	**18.7642**	2.854	15.2	ug/L	9522	Standard
	Cr	53	19978.3	13.2	**18.3538**	2.570	14.0	ug/L	395	Standard
	Mn	55	153875.3	17.2	**18.5999**	3.136	16.9	ug/L	902	Standard
	Co	59	4428.0	10.9	**0.5458**	0.059	10.8	ug/L	262	Standard
	Ni	60	12470.8	1.4	**5.6734**	0.108	1.9	ug/L	371	Standard
	Cu	65	4762.8	15.1	**2.2003**	0.350	15.9	ug/L	106	Standard
	Zn	66	14572.4	10.3	**11.3866**	1.269	11.1	ug/L	398	Standard
>	**Ge**	72	511732.4	0.5				ug/L	535147	Standard
	As	75	1713.1	6.8	**1.3930**	0.098	7.0	ug/L	-43	Standard
	Se	82	63.5	10.7	**0.3930**	0.055	14.0	ug/L	14	Standard
	Se-1	77	85.3	17.1	**0.4098**	0.173	42.3	ug/L	65	Standard
>	**Ga**	71	2083.5	15.4				mg/L	97	Standard
	Rb	85	24605.1	10.7				ug/L	15	Standard
	Y	89	487990.5	2.6				ug/L	465704	Standard
>	**Rh**	103	21.7	26.6				ug/L	10	Standard
	Mo	98	13071.8	23.3	**4.4058**	1.007	22.9	ug/L	9	Standard
	Ag	107	195.3	16.3	**0.0211**	0.005	22.9	ug/L	82	Standard
	Cd	111	83.6	29.8	**0.0443**	0.011	24.6	mg/L	7	Standard
	Cd	114	202.5	11.5	**0.0455**	0.004	9.2	ug/L	21	Standard
>	**In**	115	590114.0	1.7				ug/L	619035	Standard
	Sn	118	465.0	11.6	**-0.0284**	0.009	32.2	ug/L	508	Standard
	Sb	123	1175.4	1.8	**0.2373**	0.008	3.3	ug/L	86	Standard
	Ba	135	25691.2	16.9	**11.7737**	2.016	17.1	ug/L	79	Standard
	Ce	140	43623.8	16.3				ug/L	68	Standard
>	**Tb**	159	927358.9	1.0				ug/L	986982	Standard
	Ho	165	2205.2	13.9				ug/L	10	Standard
	Tl	203	354.7	15.2	**0.0460**	0.006	13.9	ug/L	13	Standard
	Tl	205	273.3	18.4	**0.0438**	0.007	15.7	ug/L	10	Standard
	Pb	206	1450.7	13.7	**0.2170**	0.035	16.0	ug/L	264	Standard
	Pb	207	1153.0	13.5	**0.1909**	0.031	16.0	ug/L	227	Standard
	Pb	208	4825.6	12.1	**0.2049**	0.030	14.8	ug/L	868	Standard
	U	238	954.0	24.1	**0.1379**	0.032	23.0	ug/L	8	Standard
>	**Bi**	209	525755.1	1.0				ug/L	541014	Standard

Sample ID: L1606138407
Report Date/Time: Thursday, June 30, 2016 11:35:42
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	751.7	4.3	**0.8196**	0.047	5.7	mg/L	53	Standard
K	39	433.3	5.7	**0.6912**	0.060	8.6	mg/L	53	Standard
Ca	43	45.0	40.1	**0.9976**	1.122	112.5	mg/L	28	Standard
Fe	54	1005.3	16.4	**0.5974**	0.137	22.9	mg/L	181	Standard
Fe	57	478.3	11.2	**0.6589**	0.161	24.5	mg/L	257	Standard
> **Sc-1**	45	52994.2	2.6				mg/L	55220	Standard
Cl	35	31149.3	0.8				ug/L	35504	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	1960.1	22.3				ug/L	2040	Standard
P	31	11923.0	5.3				ug/L	20435	Standard
S	34	1808.4	9.5				ug/L	2430	Standard
Sr	88	90.0	14.7				ug/L	75	Standard
C	12	273.3	2.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	126.7	43.5				mg/L	7	Standard
Dy	164	2923.5	15.8				mg/L	9	Standard
Ho-1	165	2205.2	13.9				mg/L	10	Standard
Er	166	2160.2	11.2				mg/L	23	Standard
I	127	4143.9	13.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.029	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.625	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138407
Report Date/Time: Thursday, June 30, 2016 11:35:42
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.328
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.180
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138409
Sample Date/Time: Thursday, June 30, 2016 11:36:37
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71031.2	3.3				ug/L	74916	Standard
	Be	9	78.3	85.0	**0.0733**	0.063	85.7	ug/L	10	Standard
	Al	27	507801.3	1.9	**3.0867**	0.135	4.4	ug/L	1822	Standard
	Sc	45	54725.4	2.4				ug/L	55220	Standard
	Ti	47	7734.0	16.1	**19.1317**	3.053	16.0	ug/L	34	Standard
	V	51	40746.1	29.7	**4.3199**	1.365	31.6	ug/L	1938	Standard
	Cr	52	147373.0	14.9	**15.7599**	2.464	15.6	ug/L	9522	Standard
	Cr	53	17555.3	14.4	**15.7489**	2.305	14.6	ug/L	395	Standard
	Mn	55	34382.5	8.3	**3.9955**	0.352	8.8	ug/L	902	Standard
	Co	59	1254.7	3.7	**0.1352**	0.005	3.7	ug/L	262	Standard
	Ni	60	5111.5	10.0	**2.1928**	0.235	10.7	ug/L	371	Standard
	Cu	65	1596.4	19.1	**0.6834**	0.143	20.9	ug/L	106	Standard
	Zn	66	11716.9	11.6	**8.8995**	1.072	12.1	ug/L	398	Standard
>	**Ge**	72	521945.8	1.0				ug/L	535147	Standard
	As	75	1724.1	6.8	**1.3750**	0.090	6.6	ug/L	-43	Standard
	Se	82	46.2	10.0	**0.2522**	0.035	13.8	ug/L	14	Standard
	Se-1	77	78.3	9.2	**0.3101**	0.080	25.8	ug/L	65	Standard
>	**Ga**	71	1711.8	21.6				mg/L	97	Standard
	Rb	85	20609.2	14.7				ug/L	15	Standard
	Y	89	447841.8	2.7				ug/L	465704	Standard
>	**Rh**	103	13.3	108.3				ug/L	10	Standard
	Mo	98	4630.6	25.0	**1.5695**	0.394	25.1	ug/L	9	Standard
	Ag	107	199.3	39.5	**0.0217**	0.011	51.4	ug/L	82	Standard
	Cd	111	48.6	50.9	**0.0291**	0.011	37.5	mg/L	7	Standard
	Cd	114	117.9	23.7	**0.0302**	0.005	17.1	ug/L	21	Standard
>	**In**	115	590335.8	0.6				ug/L	619035	Standard
	Sn	118	451.7	7.4	**-0.0307**	0.005	16.4	ug/L	508	Standard
	Sb	123	1230.5	5.8	**0.2481**	0.015	6.0	ug/L	86	Standard
	Ba	135	6241.3	3.7	**2.8432**	0.109	3.8	ug/L	79	Standard
	Ce	140	17900.9	20.2				ug/L	68	Standard
>	**Tb**	159	927670.3	0.0				ug/L	986982	Standard
	Ho	165	476.7	22.1				ug/L	10	Standard
	Tl	203	214.7	41.9	**0.0301**	0.010	33.0	ug/L	13	Standard
	Tl	205	171.7	25.4	**0.0303**	0.006	18.5	ug/L	10	Standard
	Pb	206	875.7	18.6	**0.1158**	0.028	24.0	ug/L	264	Standard
	Pb	207	701.7	14.4	**0.1030**	0.019	18.5	ug/L	227	Standard
	Pb	208	2799.4	14.3	**0.1025**	0.019	18.9	ug/L	868	Standard
	U	238	455.3	22.3	**0.0698**	0.014	19.4	ug/L	8	Standard
>	**Bi**	209	526233.6	0.6				ug/L	541014	Standard

Sample ID: L1606138409
Report Date/Time: Thursday, June 30, 2016 11:38:54
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.2734**	16.053	173.1	mg/L	2	Standard
Mg	24	760.0	1.1	**0.8014**	0.015	1.8	mg/L	53	Standard
K	39	358.3	21.9	**0.5397**	0.147	27.2	mg/L	53	Standard
Ca	43	60.0	28.9	**1.7401**	0.925	53.2	mg/L	28	Standard
Fe	54	574.4	11.0	**0.2769**	0.051	18.3	mg/L	181	Standard
Fe	57	445.0	7.9	**0.5259**	0.078	14.8	mg/L	257	Standard
> **Sc-1**	45	54725.4	2.4				mg/L	55220	Standard
Cl	35	30822.0	1.4				ug/L	35504	Standard
Kr	83	3.0	88.2				ug/L	2	Standard
Br	81	1956.8	6.5				ug/L	2040	Standard
P	31	12046.5	9.0				ug/L	20435	Standard
S	34	1585.1	5.2				ug/L	2430	Standard
Sr	88	81.7	24.7				ug/L	75	Standard
C	12	240.0	29.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	7	Standard
Dy	164	622.3	8.0				mg/L	9	Standard
Ho-1	165	476.7	22.1				mg/L	10	Standard
Er	166	510.0	10.9				mg/L	23	Standard
I	127	5877.8	8.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.533	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138409
Report Date/Time: Thursday, June 30, 2016 11:38:54
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.364
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.268
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138411
Sample Date/Time: Thursday, June 30, 2016 11:39:48
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68988.4	0.8				ug/L	74916	Standard
	Be	9	63.3	27.7	**0.0617**	0.018	29.8	ug/L	10	Standard
	Al	27	533128.9	2.3	**3.3336**	0.057	1.7	ug/L	1822	Standard
	Sc	45	54469.4	1.5				ug/L	55220	Standard
	Ti	47	12265.4	15.6	**30.2589**	4.795	15.8	ug/L	34	Standard
	V	51	40732.1	26.3	**4.2961**	1.190	27.7	ug/L	1938	Standard
	Cr	52	160641.9	15.5	**17.1981**	2.864	16.7	ug/L	9522	Standard
	Cr	53	19144.0	17.4	**17.1367**	3.079	18.0	ug/L	395	Standard
	Mn	55	58616.6	4.2	**6.8526**	0.278	4.1	ug/L	902	Standard
	Co	59	2370.5	6.4	**0.2744**	0.019	6.8	ug/L	262	Standard
	Ni	60	7541.5	7.2	**3.2892**	0.256	7.8	ug/L	371	Standard
	Cu	65	2431.5	17.8	**1.0666**	0.202	19.0	ug/L	106	Standard
	Zn	66	13971.2	12.7	**10.6309**	1.416	13.3	ug/L	398	Standard
>	**Ge**	72	524288.1	0.2				ug/L	535147	Standard
	As	75	1576.3	4.9	**1.2565**	0.062	4.9	ug/L	-43	Standard
	Se	82	45.1	8.0	**0.2430**	0.026	10.9	ug/L	14	Standard
	Se-1	77	74.0	5.9	**0.2571**	0.049	19.1	ug/L	65	Standard
>	**Ga**	71	2193.5	19.5				mg/L	97	Standard
	Rb	85	24783.9	14.8				ug/L	15	Standard
	Y	89	461274.1	2.5				ug/L	465704	Standard
>	**Rh**	103	10.0	86.6				ug/L	10	Standard
	Mo	98	4756.2	29.4	**1.6006**	0.481	30.1	ug/L	9	Standard
	Ag	107	280.7	5.2	**0.0326**	0.002	6.8	ug/L	82	Standard
	Cd	111	53.5	28.3	**0.0309**	0.006	20.4	mg/L	7	Standard
	Cd	114	152.2	14.8	**0.0362**	0.004	11.9	ug/L	21	Standard
>	**In**	115	595368.5	1.0				ug/L	619035	Standard
	Sn	118	478.3	5.4	**-0.0270**	0.003	12.4	ug/L	508	Standard
	Sb	123	1264.5	1.8	**0.2527**	0.007	2.7	ug/L	86	Standard
	Ba	135	20157.8	10.1	**9.1433**	0.846	9.2	ug/L	79	Standard
	Ce	140	32943.3	19.1				ug/L	68	Standard
>	**Tb**	159	929811.0	1.1				ug/L	986982	Standard
	Ho	165	1143.4	16.9				ug/L	10	Standard
	Tl	203	188.0	9.8	**0.0269**	0.002	7.5	ug/L	13	Standard
	Tl	205	165.0	29.2	**0.0292**	0.006	21.4	ug/L	10	Standard
	Pb	206	1392.7	15.1	**0.2034**	0.036	17.6	ug/L	264	Standard
	Pb	207	1112.4	15.4	**0.1799**	0.032	18.0	ug/L	227	Standard
	Pb	208	4576.3	16.6	**0.1891**	0.037	19.7	ug/L	868	Standard
	U	238	725.4	20.4	**0.1053**	0.020	18.7	ug/L	8	Standard
>	**Bi**	209	533013.4	0.3				ug/L	541014	Standard

Sample ID: L1606138411
Report Date/Time: Thursday, June 30, 2016 11:42:05
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	523.3	4.0	**0.5436**	0.020	3.8	mg/L	53	Standard
K	39	300.0	13.2	**0.4408**	0.075	17.0	mg/L	53	Standard
Ca	43	31.7	39.7	**0.1483**	0.737	497.2	mg/L	28	Standard
Fe	54	892.2	12.2	**0.4978**	0.078	15.8	mg/L	181	Standard
Fe	57	511.7	7.3	**0.7120**	0.117	16.4	mg/L	257	Standard
> **Sc-1**	45	54469.4	1.5				mg/L	55220	Standard
Cl	35	30870.8	3.1				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2210.2	6.3				ug/L	2040	Standard
P	31	11792.9	4.9				ug/L	20435	Standard
S	34	1665.1	3.4				ug/L	2430	Standard
Sr	88	70.0	32.7				ug/L	75	Standard
C	12	196.7	25.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	7	Standard
Dy	164	1450.0	22.0				mg/L	9	Standard
Ho-1	165	1143.4	16.9				mg/L	10	Standard
Er	166	1323.4	16.6				mg/L	23	Standard
I	127	4440.7	16.0				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		92.087	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.971	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606138411
Report Date/Time: Thursday, June 30, 2016 11:42:05
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.177
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.521
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138411PS WG574744-01
Sample Date/Time: Thursday, June 30, 2016 11:43:00
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70420.1	3.3				ug/L	74916	Standard
	Be	9	51515.8	1.6	**51.9868**	2.203	4.2	ug/L	10	Standard
	Al	27	613547.1	3.5	**3.7594**	0.075	2.0	ug/L	1822	Standard
	Sc	45	53633.1	1.0				ug/L	55220	Standard
	Ti	47	14734.5	10.7	**36.8395**	4.069	11.0	ug/L	34	Standard
	V	51	391216.4	6.5	**43.4919**	2.747	6.3	ug/L	1938	Standard
	Cr	52	587022.8	7.6	**66.4671**	5.340	8.0	ug/L	9522	Standard
	Cr	53	71068.6	7.9	**65.5072**	5.411	8.3	ug/L	395	Standard
	Mn	55	474064.1	4.8	**56.8941**	2.524	4.4	ug/L	902	Standard
	Co	59	383376.7	5.2	**48.6588**	2.335	4.8	ug/L	262	Standard
	Ni	60	116221.4	3.7	**53.4665**	1.823	3.4	ug/L	371	Standard
	Cu	65	109294.3	2.9	**51.1653**	1.259	2.5	ug/L	106	Standard
	Zn	66	88905.1	1.2	**70.4032**	0.762	1.1	ug/L	398	Standard
>	Ge	72	517573.1	0.5				ug/L	535147	Standard
	As	75	68907.6	0.8	**53.2464**	0.584	1.1	ug/L	-43	Standard
	Se	82	7342.5	1.8	**55.9224**	1.238	2.2	ug/L	14	Standard
	Se-1	77	4919.1	1.4	**55.8814**	1.046	1.9	ug/L	65	Standard
>	Ga	71	2736.9	9.9				mg/L	97	Standard
	Rb	85	30353.9	10.3				ug/L	15	Standard
	Y	89	452230.9	1.7				ug/L	465704	Standard
>	Rh	103	18.3	31.5				ug/L	10	Standard
	Mo	98	4465.2	8.1	**1.5113**	0.128	8.5	ug/L	9	Standard
	Ag	107	358914.4	3.0	**49.7747**	1.333	2.7	ug/L	82	Standard
	Cd	111	120938.7	5.0	**52.4694**	2.453	4.7	mg/L	7	Standard
	Cd	114	290724.6	3.9	**52.3777**	1.851	3.5	ug/L	21	Standard
>	In	115	591206.5	0.5				ug/L	619035	Standard
	Sn	118	663.3	18.1	**0.0033**	0.019	582.6	ug/L	508	Standard
	Sb	123	203333.4	8.8	**40.2163**	3.682	9.2	ug/L	86	Standard
	Ba	135	130878.8	4.1	**59.9209**	2.362	3.9	ug/L	79	Standard
	Ce	140	36251.9	10.0				ug/L	68	Standard
>	Tb	159	935141.5	0.6				ug/L	986982	Standard
	Ho	165	1171.7	15.8				ug/L	10	Standard
	Tl	203	430773.5	3.8	**48.3242**	2.170	4.5	ug/L	13	Standard
	Tl	205	368331.0	3.9	**48.3645**	2.148	4.4	ug/L	10	Standard
	Pb	206	258429.5	2.9	**45.1283**	1.492	3.3	ug/L	264	Standard
	Pb	207	224906.3	3.0	**43.4532**	1.377	3.2	ug/L	227	Standard
	Pb	208	907951.0	3.5	**45.4984**	1.868	4.1	ug/L	868	Standard
	U	238	238863.4	8.2	**32.3797**	2.553	7.9	ug/L	8	Standard
>	Bi	209	528361.0	0.9				ug/L	541014	Standard

Sample ID: L1606138411PS WG574744-01
Report Date/Time: Thursday, June 30, 2016 11:45:17
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.7609**	16.898	173.1	mg/L	2	Standard
Mg	24	540.0	14.9	**0.5711**	0.087	15.3	mg/L	53	Standard
K	39	353.3	15.1	**0.5413**	0.093	17.1	mg/L	53	Standard
Ca	43	46.7	27.0	**1.0501**	0.758	72.2	mg/L	28	Standard
Fe	54	1043.5	12.3	**0.6128**	0.084	13.6	mg/L	181	Standard
Fe	57	565.0	6.4	**0.8781**	0.100	11.4	mg/L	257	Standard
> **Sc-1**	45	53633.1	1.0				mg/L	55220	Standard
Cl	35	30508.7	0.4				ug/L	35504	Standard
Kr	83	2.7	94.4				ug/L	2	Standard
Br	81	1973.5	7.0				ug/L	2040	Standard
P	31	12516.8	3.2				ug/L	20435	Standard
S	34	1548.4	4.5				ug/L	2430	Standard
Sr	88	85.0	41.2				ug/L	75	Standard
C	12	176.7	29.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	101.3				mg/L	7	Standard
Dy	164	1455.1	24.6				mg/L	9	Standard
Ho-1	165	1171.7	15.8				mg/L	10	Standard
Er	166	1146.7	6.8				mg/L	23	Standard
I	127	4585.7	8.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.998	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.716	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138411PS WG574744-01
Report Date/Time: Thursday, June 30, 2016 11:45:17
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.505
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.661
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 11:46:13
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74928.3	3.4				ug/L	74916	Standard
	Be	9	53902.4	2.4	**51.0924**	0.960	1.9	ug/L	10	Standard
	Al	27	8626351.3	2.3	**49.7131**	0.749	1.5	ug/L	1822	Standard
	Sc	45	55387.8	2.6				ug/L	55220	Standard
	Ti	47	42382.5	2.0	**99.7465**	1.271	1.3	ug/L	34	Standard
	V	51	476315.9	2.5	**49.8302**	0.848	1.7	ug/L	1938	Standard
	Cr	52	470347.2	1.2	**49.8229**	0.501	1.0	ug/L	9522	Standard
	Cr	53	57733.1	1.8	**49.9468**	0.607	1.2	ug/L	395	Standard
	Mn	55	435418.4	0.8	**49.1370**	0.250	0.5	ug/L	902	Standard
	Co	59	421451.6	1.1	**50.3155**	0.452	0.9	ug/L	262	Standard
	Ni	60	115400.2	1.1	**49.9232**	0.424	0.8	ug/L	371	Standard
	Cu	65	114595.1	0.8	**50.4588**	0.504	1.0	ug/L	106	Standard
	Zn	66	67289.4	0.9	**50.0169**	0.513	1.0	ug/L	398	Standard
>	**Ge**	72	550336.8	1.3				ug/L	535147	Standard
	As	75	68538.5	1.1	**49.8127**	0.452	0.9	ug/L	-43	Standard
	Se	82	6897.2	0.4	**49.3931**	0.532	1.1	ug/L	14	Standard
	Se-1	77	4689.7	2.2	**50.0397**	0.834	1.7	ug/L	65	Standard
>	**Ga**	71	76.7	16.4				mg/L	97	Standard
	Rb	85	945.0	0.5				ug/L	15	Standard
	Y	89	476720.2	0.4				ug/L	465704	Standard
>	**Rh**	103	28.3	36.7				ug/L	10	Standard
	Mo	98	312410.4	2.2	**98.2077**	0.907	0.9	ug/L	9	Standard
	Ag	107	383396.7	0.8	**49.8064**	0.368	0.7	ug/L	82	Standard
	Cd	111	122235.8	0.9	**49.6791**	0.213	0.4	mg/L	7	Standard
	Cd	114	295258.0	0.8	**49.8307**	0.249	0.5	ug/L	21	Standard
>	**In**	115	631197.2	1.3				ug/L	619035	Standard
	Sn	118	332451.6	1.5	**49.9960**	0.217	0.4	ug/L	508	Standard
	Sb	123	270852.4	1.8	**50.1613**	0.406	0.8	ug/L	86	Standard
	Ba	135	115106.0	1.9	**49.3590**	0.653	1.3	ug/L	79	Standard
	Ce	140	496.7	33.3				ug/L	68	Standard
>	**Tb**	159	994881.4	0.9				ug/L	986982	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	464133.7	1.0	**50.4278**	0.348	0.7	ug/L	13	Standard
	Tl	205	400913.7	1.2	**50.9890**	0.656	1.3	ug/L	10	Standard
	Pb	206	295146.5	1.0	**49.9276**	0.367	0.7	ug/L	264	Standard
	Pb	207	267176.6	1.9	**50.0076**	0.811	1.6	ug/L	227	Standard
	Pb	208	1048172.1	0.4	**50.8801**	0.254	0.5	ug/L	868	Standard
	U	238	382634.6	1.1	**50.2498**	0.381	0.8	ug/L	8	Standard
>	**Bi**	209	545406.3	0.3				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 11:48:30
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4579.0	2.2	**4.9409**	0.019	0.4	mg/L	53	Standard
K	39	2495.2	2.5	**4.1457**	0.017	0.4	mg/L	53	Standard
Ca	43	118.3	21.3	**4.9969**	1.350	27.0	mg/L	28	Standard
Fe	54	7373.6	3.8	**4.8932**	0.257	5.3	mg/L	181	Standard
Fe	57	2095.1	7.9	**4.8722**	0.455	9.3	mg/L	257	Standard
Sc-1	45	55387.8	2.6				mg/L	55220	Standard
Cl	35	37239.0	1.0				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1966.8	6.4				ug/L	2040	Standard
P	31	20163.4	0.1				ug/L	20435	Standard
S	34	2090.1	11.6				ug/L	2430	Standard
Sr	88	75.0	17.6				ug/L	75	Standard
C	12	90.0	29.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	9.4	109.6				mg/L	9	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	15120.9	2.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.185		
Al	27	99.426		
Sc	45			
Ti	47	99.747		
V	51	99.660		
Cr	52	99.646		
Cr	53			
Mn	55	98.274		
Co	59	100.631		
Ni	60	99.846		
Cu	65	100.918		
Zn	66	100.034		
Ge	72		102.838	
As	75	99.625		
Se	82	98.786		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 11:48:30
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.208		
Ag	107	99.613		
Cd	111	99.358		
Cd	114			
In	115			101.965
Sn	118	99.992		
Sb	123	100.323		
Ba	135	98.718		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.856		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.760		
U	238	100.500		
Bi	209			100.812
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 11:48:30
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 11:49:24
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74094.1	1.5				ug/L	74916	Standard
	Be	9	30.0	44.1	**0.0252**	0.013	50.7	ug/L	10	Standard
	Al	27	3078.6	12.8	**0.0156**	0.002	13.6	ug/L	1822	Standard
	Sc	45	54076.4	3.3				ug/L	55220	Standard
	Ti	47	61.3	20.6	**0.0770**	0.032	41.9	ug/L	34	Standard
	V	51	2046.2	3.0	**0.0221**	0.003	15.1	ug/L	1938	Standard
	Cr	52	9408.9	2.6	**-0.0053**	0.025	474.4	ug/L	9522	Standard
	Cr	53	521.7	3.9	**0.0752**	0.024	31.5	ug/L	395	Standard
	Mn	55	1218.7	3.2	**0.0349**	0.003	8.7	ug/L	902	Standard
	Co	59	397.7	13.6	**0.0254**	0.006	23.9	ug/L	262	Standard
	Ni	60	304.0	4.8	**-0.0116**	0.005	40.4	ug/L	371	Standard
	Cu	65	197.0	8.8	**0.0296**	0.009	29.9	ug/L	106	Standard
	Zn	66	431.7	5.1	**-0.0181**	0.021	114.0	ug/L	398	Standard
>	**Ge**	72	541436.6	1.5				ug/L	535147	Standard
	As	75	-19.0	261.9	**0.0415**	0.036	87.2	ug/L	-43	Standard
	Se	82	25.8	36.4	**0.0920**	0.070	76.5	ug/L	14	Standard
	Se-1	77	59.0	6.1	**0.0658**	0.032	48.9	ug/L	65	Standard
>	**Ga**	71	76.7	10.0				mg/L	97	Standard
	Rb	85	128.3	31.3				ug/L	15	Standard
	Y	89	473142.7	1.0				ug/L	465704	Standard
>	**Rh**	103	11.7	107.9				ug/L	10	Standard
	Mo	98	265.7	17.4	**0.0959**	0.014	14.2	ug/L	9	Standard
	Ag	107	244.3	17.5	**0.0257**	0.005	19.8	ug/L	82	Standard
	Cd	111	26.2	12.3	**0.0186**	0.001	7.8	mg/L	7	Standard
	Cd	114	60.2	29.1	**0.0191**	0.003	15.5	ug/L	21	Standard
>	**In**	115	630319.4	1.4				ug/L	619035	Standard
	Sn	118	863.4	18.4	**0.0271**	0.026	94.2	ug/L	508	Standard
	Sb	123	1310.0	30.1	**0.2480**	0.076	30.7	ug/L	86	Standard
	Ba	135	87.3	7.0	**0.0179**	0.003	17.3	ug/L	79	Standard
	Ce	140	170.0	74.6				ug/L	68	Standard
>	**Tb**	159	978400.2	1.6				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	215.0	15.4	**0.0293**	0.004	12.6	ug/L	13	Standard
	Tl	205	185.0	13.5	**0.0312**	0.003	10.3	ug/L	10	Standard
	Pb	206	438.7	10.6	**0.0363**	0.008	21.0	ug/L	264	Standard
	Pb	207	354.7	1.3	**0.0331**	0.001	3.0	ug/L	227	Standard
	Pb	208	1461.0	8.2	**0.0324**	0.006	17.2	ug/L	868	Standard
	U	238	225.3	16.3	**0.0374**	0.005	13.1	ug/L	8	Standard
>	**Bi**	209	546754.7	0.4				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 11:51:41
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	88.2	**-0.0009**	0.030	3396.7	mg/L	53	Standard
K	39	36.7	47.9	**-0.0119**	0.033	273.8	mg/L	53	Standard
Ca	43	28.3	20.4	**-0.0367**	0.324	884.9	mg/L	28	Standard
Fe	54	202.3	1.2	**0.0221**	0.006	25.7	mg/L	181	Standard
Fe	57	298.3	9.2	**0.1443**	0.072	49.7	mg/L	257	Standard
Sc-1	45	54076.4	3.3				mg/L	55220	Standard
Cl	35	37355.3	1.2				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2116.8	5.4				ug/L	2040	Standard
P	31	19372.4	0.8				ug/L	20435	Standard
S	34	2241.8	5.0				ug/L	2430	Standard
Sr	88	56.7	18.4				ug/L	75	Standard
C	12	126.7	4.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	576.3	20.2				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	76.7	32.8				mg/L	23	Standard
I	127	14990.7	2.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.175	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 11:51:41
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.823
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.061
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 11:51:41
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138411SDL WG574744-02
Sample Date/Time: Thursday, June 30, 2016 11:52:37
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66753.5	3.8				ug/L	74916	Standard
	Be	9	20.0	43.3	**0.0179**	0.010	55.7	ug/L	10	Standard
	Al	27	109583.5	3.6	**0.7064**	0.002	0.3	ug/L	1822	Standard
	Sc	45	49285.0	1.3				ug/L	55220	Standard
	Ti	47	2714.6	18.5	**6.9773**	1.363	19.5	ug/L	34	Standard
	V	51	8460.6	22.2	**0.7823**	0.217	27.8	ug/L	1938	Standard
	Cr	52	42071.6	15.6	**3.9736**	0.814	20.5	ug/L	9522	Standard
	Cr	53	4567.4	19.1	**4.0006**	0.862	21.5	ug/L	395	Standard
	Mn	55	11799.3	6.6	**1.3637**	0.086	6.3	ug/L	902	Standard
	Co	59	683.7	6.0	**0.0671**	0.005	7.4	ug/L	262	Standard
	Ni	60	1724.8	10.4	**0.6788**	0.092	13.6	ug/L	371	Standard
	Cu	65	611.3	19.9	**0.2382**	0.061	25.5	ug/L	106	Standard
	Zn	66	3527.1	6.4	**2.5607**	0.207	8.1	ug/L	398	Standard
>	Ge	72	499847.4	1.0				ug/L	535147	Standard
	As	75	293.4	16.2	**0.2897**	0.037	12.9	ug/L	-43	Standard
	Se	82	20.7	11.8	**0.0664**	0.019	28.0	ug/L	14	Standard
	Se-1	77	57.0	3.0	**0.0961**	0.020	21.2	ug/L	65	Standard
>	Ga	71	548.3	22.0				mg/L	97	Standard
	Rb	85	5541.0	15.0				ug/L	15	Standard
	Y	89	428396.1	1.6				ug/L	465704	Standard
>	Rh	103	13.3	57.3				ug/L	10	Standard
	Mo	98	811.0	25.3	**0.2924**	0.072	24.5	ug/L	9	Standard
	Ag	107	188.7	5.3	**0.0208**	0.001	6.6	ug/L	82	Standard
	Cd	111	19.9	11.6	**0.0168**	0.001	6.4	mg/L	7	Standard
	Cd	114	65.0	38.7	**0.0210**	0.005	22.4	ug/L	21	Standard
>	In	115	574769.4	0.5				ug/L	619035	Standard
	Sn	118	250.0	12.2	**-0.0621**	0.005	7.8	ug/L	508	Standard
	Sb	123	633.4	7.5	**0.1332**	0.009	6.8	ug/L	86	Standard
	Ba	135	3566.4	8.8	**1.6609**	0.154	9.3	ug/L	79	Standard
	Ce	140	6809.9	20.4				ug/L	68	Standard
>	Tb	159	905865.7	1.8				ug/L	986982	Standard
	Ho	165	275.0	21.0				ug/L	10	Standard
	Tl	203	97.0	21.5	**0.0171**	0.002	14.0	ug/L	13	Standard
	Tl	205	83.3	33.0	**0.0188**	0.004	19.6	ug/L	10	Standard
	Pb	206	526.3	11.0	**0.0559**	0.010	18.5	ug/L	264	Standard
	Pb	207	434.7	15.7	**0.0524**	0.014	25.8	ug/L	227	Standard
	Pb	208	1770.7	11.0	**0.0521**	0.010	19.0	ug/L	868	Standard
	U	238	198.0	23.7	**0.0352**	0.006	18.3	ug/L	8	Standard
>	Bi	209	518831.3	0.3				ug/L	541014	Standard

Sample ID: L1606138411SDL WG574744-02
Report Date/Time: Thursday, June 30, 2016 11:54:54
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	151.7	10.1	**0.1508**	0.020	13.4	mg/L	53	Standard
K	39	90.0	16.7	**0.0953**	0.030	31.3	mg/L	53	Standard
Ca	43	26.7	43.3	**0.0229**	0.756	3307.7	mg/L	28	Standard
Fe	54	233.3	5.5	**0.0594**	0.011	18.2	mg/L	181	Standard
Fe	57	301.7	6.7	**0.2328**	0.067	29.0	mg/L	257	Standard
> **Sc-1**	45	49285.0	1.3				mg/L	55220	Standard
Cl	35	32605.7	1.4				ug/L	35504	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1956.8	5.5				ug/L	2040	Standard
P	31	7258.4	2.9				ug/L	20435	Standard
S	34	1698.4	1.5				ug/L	2430	Standard
Sr	88	61.7	28.5				ug/L	75	Standard
C	12	96.7	15.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	339.0	40.1				mg/L	9	Standard
Ho-1	165	275.0	21.0				mg/L	10	Standard
Er	166	230.0	47.8				mg/L	23	Standard
I	127	26713.5	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.104	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.404	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138411SDL WG574744-02
Report Date/Time: Thursday, June 30, 2016 11:54:54
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.849
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.900
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606138411SDL WG574744-02
Report Date/Time: Thursday, June 30, 2016 11:54:54
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 11:55:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73471.1	1.5				ug/L	74916	Standard
	Be	9	53803.7	2.7	**51.9914**	0.927	1.8	ug/L	10	Standard
	Al	27	8617402.5	1.0	**50.6396**	0.854	1.7	ug/L	1822	Standard
	Sc	45	55560.0	1.1				ug/L	55220	Standard
	Ti	47	42477.1	1.5	**100.6323**	0.276	0.3	ug/L	34	Standard
	V	51	479326.5	1.4	**50.4824**	0.031	0.1	ug/L	1938	Standard
	Cr	52	467744.0	1.6	**49.8733**	0.359	0.7	ug/L	9522	Standard
	Cr	53	57450.4	2.8	**50.0258**	0.734	1.5	ug/L	395	Standard
	Mn	55	438319.0	2.2	**49.7885**	0.650	1.3	ug/L	902	Standard
	Co	59	429053.6	1.5	**51.5613**	0.502	1.0	ug/L	262	Standard
	Ni	60	116039.3	0.4	**50.5360**	0.520	1.0	ug/L	371	Standard
	Cu	65	115333.0	0.7	**51.1200**	0.359	0.7	ug/L	106	Standard
	Zn	66	67421.7	1.0	**50.4480**	0.173	0.3	ug/L	398	Standard
>	Ge	72	546720.8	1.3				ug/L	535147	Standard
	As	75	69011.0	1.2	**50.4869**	0.429	0.8	ug/L	-43	Standard
	Se	82	6880.5	0.7	**49.5985**	0.367	0.7	ug/L	14	Standard
	Se-1	77	4803.4	0.4	**51.6156**	0.560	1.1	ug/L	65	Standard
>	Ga	71	91.7	11.4				mg/L	97	Standard
	Rb	85	968.4	7.8				ug/L	15	Standard
	Y	89	476399.1	3.4				ug/L	465704	Standard
>	Rh	103	40.0	21.7				ug/L	10	Standard
	Mo	98	317271.3	0.9	**98.5797**	0.807	0.8	ug/L	9	Standard
	Ag	107	383771.0	1.9	**49.2667**	0.500	1.0	ug/L	82	Standard
	Cd	111	122621.3	2.1	**49.2465**	0.412	0.8	mg/L	7	Standard
	Cd	114	298584.6	2.3	**49.7946**	0.426	0.9	ug/L	21	Standard
>	In	115	638699.7	1.6				ug/L	619035	Standard
	Sn	118	330125.0	1.7	**49.0640**	0.589	1.2	ug/L	508	Standard
	Sb	123	267358.3	1.7	**48.9342**	0.249	0.5	ug/L	86	Standard
	Ba	135	115832.8	1.6	**49.0883**	0.336	0.7	ug/L	79	Standard
	Ce	140	405.0	17.3				ug/L	68	Standard
>	Tb	159	985370.4	0.8				ug/L	986982	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	467550.0	0.1	**50.4119**	0.413	0.8	ug/L	13	Standard
	Tl	205	409083.0	1.4	**51.6282**	0.628	1.2	ug/L	10	Standard
	Pb	206	295016.7	1.2	**49.5226**	0.377	0.8	ug/L	264	Standard
	Pb	207	268860.1	1.3	**49.9385**	0.602	1.2	ug/L	227	Standard
	Pb	208	1058510.8	0.5	**50.9882**	0.179	0.4	ug/L	868	Standard
	U	238	383137.6	0.8	**49.9325**	0.552	1.1	ug/L	8	Standard
>	Bi	209	549624.3	0.8				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 11:58:07
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4540.7	2.6	**4.8831**	0.083	1.7	mg/L	53	Standard
K	39	2480.2	4.4	**4.1088**	0.230	5.6	mg/L	53	Standard
Ca	43	106.7	21.1	**4.3314**	1.274	29.4	mg/L	28	Standard
Fe	54	7391.6	1.2	**4.8870**	0.066	1.4	mg/L	181	Standard
Fe	57	2151.8	3.3	**5.0036**	0.248	5.0	mg/L	257	Standard
> **Sc-1**	45	55560.0	1.1				mg/L	55220	Standard
Cl	35	39075.0	0.9				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2100.1	2.1				ug/L	2040	Standard
P	31	22523.4	5.5				ug/L	20435	Standard
S	34	2553.5	5.9				ug/L	2430	Standard
Sr	88	76.7	39.3				ug/L	75	Standard
C	12	140.0	37.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.2	186.8				mg/L	9	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	15276.0	3.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.983		
Al	27	101.279		
Sc	45			
Ti	47	100.632		
V	51	100.965		
Cr	52	99.747		
Cr	53			
Mn	55	99.577		
Co	59	103.123		
Ni	60	101.072		
Cu	65	102.240		
Zn	66	100.896		
> Ge	72		102.163	
As	75	100.974		
Se	82	99.197		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 11:58:07
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.580		
Ag	107	98.533		
Cd	111	98.493		
Cd	114			
In	115			103.177
Sn	118	98.128		
Sb	123	97.868		
Ba	135	98.177		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.824		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.976		
U	238	99.865		
Bi	209			101.591
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 11:59:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73266.9	3.6				ug/L	74916	Standard
	Be	9	38.3	30.1	**0.0335**	0.011	32.9	ug/L	10	Standard
	Al	27	2666.9	9.7	**0.0134**	0.001	8.7	ug/L	1822	Standard
	Sc	45	54129.9	0.6				ug/L	55220	Standard
	Ti	47	47.7	19.5	**0.0440**	0.021	48.7	ug/L	34	Standard
	V	51	1815.6	3.2	**-0.0022**	0.009	417.7	ug/L	1938	Standard
	Cr	52	8908.6	1.0	**-0.0592**	0.025	41.9	ug/L	9522	Standard
	Cr	53	500.0	6.1	**0.0561**	0.023	41.9	ug/L	395	Standard
	Mn	55	1168.7	1.2	**0.0293**	0.002	8.4	ug/L	902	Standard
	Co	59	347.7	9.3	**0.0194**	0.003	17.6	ug/L	262	Standard
	Ni	60	307.0	17.4	**-0.0098**	0.026	261.6	ug/L	371	Standard
	Cu	65	163.7	7.9	**0.0146**	0.005	33.6	ug/L	106	Standard
	Zn	66	431.7	0.7	**-0.0179**	0.007	39.9	ug/L	398	Standard
>	**Ge**	72	540936.2	1.7				ug/L	535147	Standard
	As	75	-11.2	339.5	**0.0471**	0.028	59.8	ug/L	-43	Standard
	Se	82	27.6	38.1	**0.1053**	0.080	75.7	ug/L	14	Standard
	Se-1	77	58.7	11.3	**0.0634**	0.079	124.5	ug/L	65	Standard
>	**Ga**	71	86.7	33.3				mg/L	97	Standard
	Rb	85	66.7	30.3				ug/L	15	Standard
	Y	89	467928.3	2.4				ug/L	465704	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	236.1	20.7	**0.0858**	0.015	17.2	ug/L	9	Standard
	Ag	107	190.0	14.6	**0.0184**	0.003	18.5	ug/L	82	Standard
	Cd	111	20.6	21.1	**0.0162**	0.002	10.4	mg/L	7	Standard
	Cd	114	68.1	34.7	**0.0203**	0.004	19.3	ug/L	21	Standard
>	**In**	115	637305.2	0.8				ug/L	619035	Standard
	Sn	118	880.0	7.4	**0.0280**	0.010	37.2	ug/L	508	Standard
	Sb	123	794.1	27.5	**0.1502**	0.041	27.2	ug/L	86	Standard
	Ba	135	64.0	4.1	**0.0076**	0.001	17.3	ug/L	79	Standard
	Ce	140	128.3	54.6				ug/L	68	Standard
>	**Tb**	159	982464.6	1.0				ug/L	986982	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	126.7	23.9	**0.0197**	0.003	16.6	ug/L	13	Standard
	Tl	205	91.7	36.3	**0.0193**	0.004	21.6	ug/L	10	Standard
	Pb	206	366.0	3.4	**0.0241**	0.001	6.0	ug/L	264	Standard
	Pb	207	305.7	8.4	**0.0239**	0.004	18.4	ug/L	227	Standard
	Pb	208	1216.7	5.0	**0.0206**	0.002	11.7	ug/L	868	Standard
	U	238	92.0	19.6	**0.0199**	0.002	11.6	ug/L	8	Standard
>	**Bi**	209	546299.6	1.1				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 12:01:19
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	21.7	48.0	**-0.0105**	0.011	109.1	mg/L	53	Standard
K	39	50.0	26.5	**0.0105**	0.023	214.7	mg/L	53	Standard
Ca	43	33.3	22.9	**0.2493**	0.431	172.8	mg/L	28	Standard
Fe	54	190.9	6.0	**0.0139**	0.008	54.2	mg/L	181	Standard
Fe	57	266.7	23.9	**0.0573**	0.169	295.2	mg/L	257	Standard
> **Sc-1**	45	54129.9	0.6				mg/L	55220	Standard
Cl	35	39084.3	0.8				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	2156.8	6.9				ug/L	2040	Standard
P	31	20552.3	1.5				ug/L	20435	Standard
S	34	2501.9	1.6				ug/L	2430	Standard
Sr	88	81.7	17.7				ug/L	75	Standard
C	12	106.7	23.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	608.4	11.8				mg/L	9	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	103.3	24.4				mg/L	23	Standard
I	127	15052.5	1.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.082	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 12:01:19
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.951
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.977
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 12:01:19
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: PBW DM WG573868-03
Sample Date/Time: Thursday, June 30, 2016 12:09:56
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75042.1	2.4				ug/L	74916	Standard
	Be	9	46.7	12.4	**0.0406**	0.006	15.0	ug/L	10	Standard
	Al	27	5130.9	23.4	**0.0272**	0.007	24.3	ug/L	1822	Standard
	Sc	45	55277.3	0.3				ug/L	55220	Standard
	Ti	47	46.0	12.1	**0.0376**	0.012	32.6	ug/L	34	Standard
	V	51	2344.5	6.5	**0.0487**	0.015	30.2	ug/L	1938	Standard
	Cr	52	10404.6	0.1	**0.0803**	0.013	15.7	ug/L	9522	Standard
	Cr	53	568.3	11.8	**0.1058**	0.058	54.8	ug/L	395	Standard
	Mn	55	2002.8	7.0	**0.1203**	0.016	13.2	ug/L	902	Standard
	Co	59	509.3	18.1	**0.0377**	0.011	28.5	ug/L	262	Standard
	Ni	60	393.3	5.9	**0.0243**	0.011	44.9	ug/L	371	Standard
	Cu	65	237.7	6.1	**0.0455**	0.005	11.8	ug/L	106	Standard
	Zn	66	1297.4	2.8	**0.6198**	0.029	4.7	ug/L	398	Standard
>	**Ge**	72	552956.0	1.0				ug/L	535147	Standard
	As	75	-28.9	102.6	**0.0343**	0.022	62.8	ug/L	-43	Standard
	Se	82	25.5	33.7	**0.0856**	0.062	72.0	ug/L	14	Standard
	Se-1	77	56.3	5.4	**0.0240**	0.037	152.5	ug/L	65	Standard
>	**Ga**	71	51.7	11.2				mg/L	97	Standard
	Rb	85	58.3	26.2				ug/L	15	Standard
	Y	89	476604.2	1.4				ug/L	465704	Standard
>	**Rh**	103	16.7	34.6				ug/L	10	Standard
	Mo	98	110.0	34.7	**0.0464**	0.011	24.7	ug/L	9	Standard
	Ag	107	470.0	14.4	**0.0541**	0.008	15.0	ug/L	82	Standard
	Cd	111	86.8	29.8	**0.0426**	0.010	23.4	mg/L	7	Standard
	Cd	114	200.3	71.6	**0.0421**	0.023	55.6	ug/L	21	Standard
>	**In**	115	640268.8	1.4				ug/L	619035	Standard
	Sn	118	798.4	8.9	**0.0152**	0.010	67.0	ug/L	508	Standard
	Sb	123	661.5	7.4	**0.1252**	0.009	7.3	ug/L	86	Standard
	Ba	135	127.0	35.5	**0.0340**	0.018	54.2	ug/L	79	Standard
	Ce	140	86.7	17.6				ug/L	68	Standard
>	**Tb**	159	987703.0	0.6				ug/L	986982	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	278.0	36.9	**0.0355**	0.011	29.9	ug/L	13	Standard
	Tl	205	215.0	34.7	**0.0344**	0.009	26.1	ug/L	10	Standard
	Pb	206	476.7	15.4	**0.0411**	0.012	28.1	ug/L	264	Standard
	Pb	207	439.0	17.9	**0.0472**	0.014	29.4	ug/L	227	Standard
	Pb	208	1642.0	10.9	**0.0397**	0.008	20.0	ug/L	868	Standard
	U	238	87.0	72.6	**0.0190**	0.008	41.9	ug/L	8	Standard
>	**Bi**	209	557268.1	1.1				ug/L	541014	Standard

Sample ID: PBW DM WG573868-03
Report Date/Time: Thursday, June 30, 2016 12:12:13
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.3804**	16.239	173.1	mg/L	2	Standard
Mg	24	45.0	19.2	**0.0144**	0.009	65.7	mg/L	53	Standard
K	39	50.0	34.6	**0.0088**	0.030	334.6	mg/L	53	Standard
Ca	43	25.0	40.0	**-0.2606**	0.566	217.2	mg/L	28	Standard
Fe	54	165.8	13.9	**-0.0058**	0.016	274.6	mg/L	181	Standard
Fe	57	281.7	14.8	**0.0827**	0.112	135.9	mg/L	257	Standard
Sc-1	45	55277.3	0.3				mg/L	55220	Standard
Cl	35	39960.6	0.9				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2270.2	3.8				ug/L	2040	Standard
P	31	20181.8	3.6				ug/L	20435	Standard
S	34	2101.8	5.3				ug/L	2430	Standard
Sr	88	70.0	14.3				ug/L	75	Standard
C	12	103.3	14.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	8.4	6.6				mg/L	9	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	33.3	34.6				mg/L	23	Standard
I	127	14196.7	3.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.168	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.328	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW DM WG573868-03
Report Date/Time: Thursday, June 30, 2016 12:12:13
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.430
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.004
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: LCSW DM WG573868-04
Sample Date/Time: Thursday, June 30, 2016 12:13:08
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75614.9	0.8				ug/L	74916	Standard
	Be	9	56461.7	2.6	**53.0158**	1.254	2.4	ug/L	10	Standard
	Al	27	8238.9	4.9	**0.0447**	0.003	6.0	ug/L	1822	Standard
	Sc	45	54966.2	2.3				ug/L	55220	Standard
	Ti	47	53.7	13.5	**0.0559**	0.016	29.5	ug/L	34	Standard
	V	51	486782.8	1.3	**50.7926**	0.588	1.2	ug/L	1938	Standard
	Cr	52	487122.6	0.7	**51.4915**	0.441	0.9	ug/L	9522	Standard
	Cr	53	59874.8	2.0	**51.6707**	0.958	1.9	ug/L	395	Standard
	Mn	55	464127.5	0.4	**52.2382**	0.073	0.1	ug/L	902	Standard
	Co	59	442230.6	0.3	**52.6518**	0.339	0.6	ug/L	262	Standard
	Ni	60	120110.9	0.7	**51.8238**	0.534	1.0	ug/L	371	Standard
	Cu	65	119462.5	1.3	**52.4568**	0.612	1.2	ug/L	106	Standard
	Zn	66	69006.1	0.8	**51.1577**	0.387	0.8	ug/L	398	Standard
>	**Ge**	72	551846.0	0.4				ug/L	535147	Standard
	As	75	70485.8	0.5	**51.0842**	0.120	0.2	ug/L	-43	Standard
	Se	82	6971.9	1.5	**49.7873**	0.613	1.2	ug/L	14	Standard
	Se-1	77	4835.1	1.1	**51.4687**	0.717	1.4	ug/L	65	Standard
>	**Ga**	71	75.0	11.5				mg/L	97	Standard
	Rb	85	53.3	19.5				ug/L	15	Standard
	Y	89	480514.9	1.4				ug/L	465704	Standard
>	**Rh**	103	46.7	16.4				ug/L	10	Standard
	Mo	98	72.7	13.4	**0.0347**	0.003	8.3	ug/L	9	Standard
	Ag	107	405687.5	0.3	**51.5601**	0.578	1.1	ug/L	82	Standard
	Cd	111	125440.7	0.4	**49.8773**	0.557	1.1	mg/L	7	Standard
	Cd	114	303151.0	0.5	**50.0526**	0.311	0.6	ug/L	21	Standard
>	**In**	115	645186.9	0.8				ug/L	619035	Standard
	Sn	118	700.0	7.4	**-0.0002**	0.007	3014.2	ug/L	508	Standard
	Sb	123	279461.7	1.0	**50.6399**	0.925	1.8	ug/L	86	Standard
	Ba	135	119660.3	0.8	**50.2013**	0.454	0.9	ug/L	79	Standard
	Ce	140	271.7	32.7				ug/L	68	Standard
>	**Tb**	159	996230.2	1.7				ug/L	986982	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	481064.0	0.4	**50.8871**	0.487	1.0	ug/L	13	Standard
	Tl	205	418584.1	1.5	**51.8251**	0.426	0.8	ug/L	10	Standard
	Pb	206	313866.3	0.6	**51.6940**	0.593	1.1	ug/L	264	Standard
	Pb	207	273492.3	0.3	**49.8395**	0.528	1.1	ug/L	227	Standard
	Pb	208	1100367.2	0.4	**52.0040**	0.604	1.2	ug/L	868	Standard
	U	238	390238.6	0.2	**49.8959**	0.511	1.0	ug/L	8	Standard
>	**Bi**	209	560231.5	0.8				ug/L	541014	Standard

Sample ID: LCSW DM WG573868-04
Report Date/Time: Thursday, June 30, 2016 12:15:25
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	29.4	**0.0145**	0.014	94.0	mg/L	53	Standard
K	39	45.0	48.4	**0.0003**	0.036	11085.7	mg/L	53	Standard
Ca	43	20.0	50.0	**-0.5429**	0.546	100.5	mg/L	28	Standard
Fe	54	187.7	16.1	**0.0100**	0.023	229.2	mg/L	181	Standard
Fe	57	243.3	9.3	**-0.0154**	0.058	378.3	mg/L	257	Standard
Sc-1	45	54966.2	2.3				mg/L	55220	Standard
Cl	35	39538.2	1.9				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1870.1	8.4				ug/L	2040	Standard
P	31	20659.1	1.9				ug/L	20435	Standard
S	34	2180.2	6.0				ug/L	2430	Standard
Sr	88	70.0	46.8				ug/L	75	Standard
C	12	96.7	31.6				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	19.5	53.7				mg/L	9	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1283.4	22.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.932	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.120	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW DM WG573868-04
Report Date/Time: Thursday, June 30, 2016 12:15:25
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.225
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.552
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW DM WG573868-04
Report Date/Time: Thursday, June 30, 2016 12:15:25
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113005 WG573868-01
Sample Date/Time: Thursday, June 30, 2016 12:16:19
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74224.7	0.4				ug/L	74916	Standard
	Be	9	33.3	48.2	**0.0282**	0.015	54.1	ug/L	10	Standard
	Al	27	13729.6	1.9	**0.0775**	0.002	2.4	ug/L	1822	Standard
	Sc	45	54909.3	1.4				ug/L	55220	Standard
	Ti	47	52.0	26.9	**0.0519**	0.035	66.5	ug/L	34	Standard
	V	51	2026.8	1.1	**0.0153**	0.002	15.9	ug/L	1938	Standard
	Cr	52	11350.9	1.2	**0.1808**	0.031	17.2	ug/L	9522	Standard
	Cr	53	698.3	8.0	**0.2175**	0.040	18.4	ug/L	395	Standard
	Mn	55	1997.1	1.0	**0.1194**	0.005	4.2	ug/L	902	Standard
	Co	59	345.0	7.0	**0.0182**	0.003	18.0	ug/L	262	Standard
	Ni	60	400.0	6.0	**0.0269**	0.011	41.9	ug/L	371	Standard
	Cu	65	1623.4	1.5	**0.6528**	0.021	3.2	ug/L	106	Standard
	Zn	66	1888.5	2.6	**1.0587**	0.056	5.3	ug/L	398	Standard
>	**Ge**	72	553668.9	1.4				ug/L	535147	Standard
	As	75	-49.2	51.8	**0.0198**	0.018	91.0	ug/L	-43	Standard
	Se	82	21.8	46.3	**0.0578**	0.071	122.1	ug/L	14	Standard
	Se-1	77	61.7	9.5	**0.0798**	0.054	67.4	ug/L	65	Standard
>	**Ga**	71	58.3	9.9				mg/L	97	Standard
	Rb	85	98.3	41.4				ug/L	15	Standard
	Y	89	487175.7	1.2				ug/L	465704	Standard
>	**Rh**	103	6.7	43.3				ug/L	10	Standard
	Mo	98	43.2	20.0	**0.0257**	0.003	10.5	ug/L	9	Standard
	Ag	107	172.0	10.9	**0.0160**	0.003	16.1	ug/L	82	Standard
	Cd	111	16.2	29.1	**0.0144**	0.002	13.5	mg/L	7	Standard
	Cd	114	56.3	71.8	**0.0183**	0.007	37.0	ug/L	21	Standard
>	**In**	115	640857.1	0.9				ug/L	619035	Standard
	Sn	118	2248.5	21.6	**0.2299**	0.069	29.9	ug/L	508	Standard
	Sb	123	230.9	14.3	**0.0465**	0.006	12.2	ug/L	86	Standard
	Ba	135	326.0	5.8	**0.1181**	0.009	7.4	ug/L	79	Standard
	Ce	140	65.0	23.1				ug/L	68	Standard
>	**Tb**	159	1002952.3	1.1				ug/L	986982	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	365.3	26.2	**0.0447**	0.010	22.4	ug/L	13	Standard
	Tl	205	333.3	33.3	**0.0490**	0.014	27.8	ug/L	10	Standard
	Pb	206	323.3	11.2	**0.0156**	0.006	39.8	ug/L	264	Standard
	Pb	207	298.3	7.9	**0.0213**	0.005	21.2	ug/L	227	Standard
	Pb	208	1114.7	7.9	**0.0144**	0.004	30.0	ug/L	868	Standard
	U	238	59.7	41.1	**0.0155**	0.003	20.4	ug/L	8	Standard
>	**Bi**	209	559636.4	0.4				ug/L	541014	Standard

Sample ID: L1606113005 WG573868-01
Report Date/Time: Thursday, June 30, 2016 12:18:36
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.4552**	16.368	173.1	mg/L	2	Standard
Mg	24	115.0	19.0	**0.0914**	0.023	25.7	mg/L	53	Standard
K	39	31.7	48.2	**-0.0217**	0.026	121.6	mg/L	53	Standard
Ca	43	25.0	40.0	**-0.2454**	0.589	240.0	mg/L	28	Standard
Fe	54	195.2	12.5	**0.0152**	0.019	122.1	mg/L	181	Standard
Fe	57	260.0	19.5	**0.0288**	0.127	440.0	mg/L	257	Standard
Sc-1	45	54909.3	1.4				mg/L	55220	Standard
Cl	35	39663.8	0.4				ug/L	35504	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	2350.2	5.6				ug/L	2040	Standard
P	31	21443.5	2.9				ug/L	20435	Standard
S	34	2165.2	3.8				ug/L	2430	Standard
Sr	88	63.3	31.9				ug/L	75	Standard
C	12	160.0	6.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	22.2	26.6				mg/L	9	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	1581.8	15.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.077	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.461	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606113005 WG573868-01
Report Date/Time: Thursday, June 30, 2016 12:18:36
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.525
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.442
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113005S WG573868-05
Sample Date/Time: Thursday, June 30, 2016 12:19:31
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75859.5	1.7				ug/L	74916	Standard
	Be	9	53517.7	0.7	**50.0953**	0.496	1.0	ug/L	10	Standard
	Al	27	14822.3	4.1	**0.0821**	0.005	5.9	ug/L	1822	Standard
	Sc	45	55769.1	1.4				ug/L	55220	Standard
	Ti	47	56.7	12.4	**0.0625**	0.018	28.2	ug/L	34	Standard
	V	51	477963.8	1.8	**49.6645**	1.337	2.7	ug/L	1938	Standard
	Cr	52	477361.7	1.3	**50.2263**	1.123	2.2	ug/L	9522	Standard
	Cr	53	57509.0	1.8	**49.4101**	1.327	2.7	ug/L	395	Standard
	Mn	55	446297.6	2.8	**50.0240**	1.838	3.7	ug/L	902	Standard
	Co	59	429160.2	2.4	**50.8864**	1.638	3.2	ug/L	262	Standard
	Ni	60	116532.1	0.5	**50.0630**	0.586	1.2	ug/L	371	Standard
	Cu	65	119264.3	1.8	**52.1555**	1.404	2.7	ug/L	106	Standard
	Zn	66	68742.9	1.2	**50.7470**	0.887	1.7	ug/L	398	Standard
>	**Ge**	72	554202.5	0.9				ug/L	535147	Standard
	As	75	68808.0	1.4	**49.6622**	0.974	2.0	ug/L	-43	Standard
	Se	82	6870.4	2.1	**48.8573**	1.250	2.6	ug/L	14	Standard
	Se-1	77	4643.4	2.5	**49.1971**	1.525	3.1	ug/L	65	Standard
>	**Ga**	71	91.7	24.6				mg/L	97	Standard
	Rb	85	131.7	35.3				ug/L	15	Standard
	Y	89	486292.9	2.1				ug/L	465704	Standard
>	**Rh**	103	33.3	37.7				ug/L	10	Standard
	Mo	98	56.7	2.0	**0.0297**	0.000	0.2	ug/L	9	Standard
	Ag	107	395086.0	1.7	**50.0359**	0.832	1.7	ug/L	82	Standard
	Cd	111	123225.4	2.1	**48.8369**	1.711	3.5	mg/L	7	Standard
	Cd	114	293682.5	0.4	**48.3309**	1.240	2.6	ug/L	21	Standard
>	**In**	115	647535.4	2.3				ug/L	619035	Standard
	Sn	118	1893.5	3.7	**0.1750**	0.016	9.3	ug/L	508	Standard
	Sb	123	259785.3	2.7	**46.9064**	1.211	2.6	ug/L	86	Standard
	Ba	135	116849.2	1.2	**48.8634**	1.506	3.1	ug/L	79	Standard
	Ce	140	153.3	39.8				ug/L	68	Standard
>	**Tb**	159	1011084.7	1.8				ug/L	986982	Standard
	Ho	165	20.0	66.1				ug/L	10	Standard
	Tl	203	469188.2	1.0	**49.3773**	0.843	1.7	ug/L	13	Standard
	Tl	205	410523.6	2.0	**50.5675**	0.970	1.9	ug/L	10	Standard
	Pb	206	306453.9	0.8	**50.2156**	0.970	1.9	ug/L	264	Standard
	Pb	207	266953.5	1.4	**48.4007**	1.172	2.4	ug/L	227	Standard
	Pb	208	1071921.5	1.1	**50.3960**	0.627	1.2	ug/L	868	Standard
	U	238	385204.2	1.1	**49.0033**	1.122	2.3	ug/L	8	Standard
>	**Bi**	209	563202.7	2.1				ug/L	541014	Standard

Sample ID: L1606113005S WG573868-05
Report Date/Time: Thursday, June 30, 2016 12:21:48
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	121.7	16.6	**0.0969**	0.023	24.0	mg/L	53	Standard
K	39	41.7	36.7	**-0.0062**	0.025	403.7	mg/L	53	Standard
Ca	43	30.0	44.1	**0.0050**	0.728	14524.7	mg/L	28	Standard
Fe	54	196.3	28.3	**0.0135**	0.036	268.0	mg/L	181	Standard
Fe	57	255.0	3.9	**0.0060**	0.028	467.7	mg/L	257	Standard
Sc-1	45	55769.1	1.4				mg/L	55220	Standard
Cl	35	39136.5	1.8				ug/L	35504	Standard
Kr	83	3.7	31.5				ug/L	2	Standard
Br	81	2323.5	7.6				ug/L	2040	Standard
P	31	21603.7	3.7				ug/L	20435	Standard
S	34	2060.1	5.2				ug/L	2430	Standard
Sr	88	75.0	24.0				ug/L	75	Standard
C	12	180.0	0.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.9	187.9				mg/L	9	Standard
Ho-1	165	20.0	66.1				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1540.1	16.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.259	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.561	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606113005S WG573868-05
Report Date/Time: Thursday, June 30, 2016 12:21:48
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.604
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.101
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113005SD WG573868-06
Sample Date/Time: Thursday, June 30, 2016 12:22:42
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74551.4	3.4				ug/L	74916	Standard
	Be	9	53178.2	3.2	**50.6600**	1.356	2.7	ug/L	10	Standard
	Al	27	18813.3	1.8	**0.1067**	0.003	2.5	ug/L	1822	Standard
	Sc	45	55598.5	1.6				ug/L	55220	Standard
	Ti	47	42.7	9.8	**0.0300**	0.010	32.2	ug/L	34	Standard
	V	51	475255.0	2.5	**49.5591**	1.214	2.5	ug/L	1938	Standard
	Cr	52	473969.7	2.1	**50.0448**	1.014	2.0	ug/L	9522	Standard
	Cr	53	57654.5	2.6	**49.7179**	1.462	2.9	ug/L	395	Standard
	Mn	55	442756.2	1.2	**49.8003**	0.298	0.6	ug/L	902	Standard
	Co	59	424024.9	0.7	**50.4565**	0.397	0.8	ug/L	262	Standard
	Ni	60	117258.1	2.1	**50.5593**	0.859	1.7	ug/L	371	Standard
	Cu	65	118084.1	1.1	**51.8235**	0.506	1.0	ug/L	106	Standard
	Zn	66	68404.8	2.2	**50.6819**	1.115	2.2	ug/L	398	Standard
>	**Ge**	72	552141.6	0.7				ug/L	535147	Standard
	As	75	67261.4	1.0	**48.7232**	0.168	0.3	ug/L	-43	Standard
	Se	82	6897.0	1.0	**49.2249**	0.173	0.4	ug/L	14	Standard
	Se-1	77	4659.0	1.2	**49.5452**	0.522	1.1	ug/L	65	Standard
>	**Ga**	71	111.7	11.3				mg/L	97	Standard
	Rb	85	128.3	11.9				ug/L	15	Standard
	Y	89	474313.0	0.2				ug/L	465704	Standard
>	**Rh**	103	28.3	40.8				ug/L	10	Standard
	Mo	98	52.5	25.1	**0.0287**	0.004	14.2	ug/L	9	Standard
	Ag	107	396093.4	0.8	**50.8417**	0.342	0.7	ug/L	82	Standard
	Cd	111	122436.6	0.5	**49.1678**	0.301	0.6	mg/L	7	Standard
	Cd	114	294291.4	1.0	**49.0751**	0.426	0.9	ug/L	21	Standard
>	**In**	115	638789.3	0.1				ug/L	619035	Standard
	Sn	118	1938.5	7.0	**0.1852**	0.020	10.9	ug/L	508	Standard
	Sb	123	259908.8	1.7	**47.5638**	0.768	1.6	ug/L	86	Standard
	Ba	135	117151.2	0.5	**49.6392**	0.187	0.4	ug/L	79	Standard
	Ce	140	143.3	62.0				ug/L	68	Standard
>	**Tb**	159	992320.5	0.6				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	470616.6	0.7	**49.8191**	0.719	1.4	ug/L	13	Standard
	Tl	205	411651.5	1.7	**51.0100**	1.168	2.3	ug/L	10	Standard
	Pb	206	306649.7	1.4	**50.5436**	1.089	2.2	ug/L	264	Standard
	Pb	207	268147.6	1.2	**48.9019**	0.972	2.0	ug/L	227	Standard
	Pb	208	1070133.8	1.2	**50.6106**	0.852	1.7	ug/L	868	Standard
	U	238	382139.7	1.1	**48.8973**	0.909	1.9	ug/L	8	Standard
>	**Bi**	209	559832.8	0.8				ug/L	541014	Standard

Sample ID: L1606113005SD WG573868-06
Report Date/Time: Thursday, June 30, 2016 12:24:59
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	91.7	16.7	**0.0647**	0.017	26.6	mg/L	53	Standard
K	39	50.0	45.8	**0.0087**	0.040	460.5	mg/L	53	Standard
Ca	43	38.3	41.9	**0.4906**	0.931	189.7	mg/L	28	Standard
Fe	54	189.1	25.8	**0.0093**	0.033	357.3	mg/L	181	Standard
Fe	57	263.3	12.9	**0.0307**	0.097	316.1	mg/L	257	Standard
> **Sc-1**	45	55598.5	1.6				mg/L	55220	Standard
Cl	35	37237.1	2.9				ug/L	35504	Standard
Kr	83	4.3	13.3				ug/L	2	Standard
Br	81	2256.8	14.5				ug/L	2040	Standard
P	31	21346.7	0.5				ug/L	20435	Standard
S	34	2086.8	9.4				ug/L	2430	Standard
Sr	88	66.7	31.2				ug/L	75	Standard
C	12	123.3	54.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.7	98.4				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	1585.1	16.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.513	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.176	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606113005SD WG573868-06
Report Date/Time: Thursday, June 30, 2016 12:24:59
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		103.191
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		103.478
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123801
Sample Date/Time: Thursday, June 30, 2016 12:25:54
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74244.9	2.3				ug/L	74916	Standard
	Be	9	36.7	70.0	**0.0311**	0.024	75.7	ug/L	10	Standard
	Al	27	40987674.7	0.3	**238.4014**	4.801	2.0	ug/L	1822	Standard
	Sc	45	55571.8	3.6				ug/L	55220	Standard
	Ti	47	299.3	4.5	**0.6581**	0.032	4.9	ug/L	34	Standard
	V	51	36979.9	0.9	**3.8159**	0.038	1.0	ug/L	1938	Standard
	Cr	52	12709.3	1.3	**0.3801**	0.018	4.8	ug/L	9522	Standard
	Cr	53	5606.0	4.8	**4.6613**	0.240	5.1	ug/L	395	Standard
	Mn	55	421396.0	1.1	**49.1212**	0.583	1.2	ug/L	902	Standard
	Co	59	2301.5	3.1	**0.2611**	0.009	3.5	ug/L	262	Standard
	Ni	60	3910.8	2.1	**1.6070**	0.034	2.1	ug/L	371	Standard
	Cu	65	773.7	4.5	**0.2935**	0.015	5.3	ug/L	106	Standard
	Zn	66	2818.3	1.7	**1.8321**	0.037	2.0	ug/L	398	Standard
>	**Ge**	72	532768.3	0.2				ug/L	535147	Standard
	As	75	1369.2	3.1	**1.0820**	0.033	3.1	ug/L	-43	Standard
	Se	82	398.0	0.6	**2.8528**	0.021	0.7	ug/L	14	Standard
	Se-1	77	449.3	10.0	**4.4287**	0.501	11.3	ug/L	65	Standard
>	**Ga**	71	101.7	22.7				mg/L	97	Standard
	Rb	85	1325.1	2.3				ug/L	15	Standard
	Y	89	455634.3	1.9				ug/L	465704	Standard
>	**Rh**	103	173.3	7.3				ug/L	10	Standard
	Mo	98	459.2	2.9	**0.1632**	0.005	3.1	ug/L	9	Standard
	Ag	107	240.0	1.4	**0.0265**	0.000	1.4	ug/L	82	Standard
	Cd	111	29.9	2.0	**0.0206**	0.000	1.7	mg/L	7	Standard
	Cd	114	75.2	10.3	**0.0222**	0.001	6.1	ug/L	21	Standard
>	**In**	115	604246.1	1.1				ug/L	619035	Standard
	Sn	118	613.3	11.1	**-0.0069**	0.010	141.5	ug/L	508	Standard
	Sb	123	2719.5	28.6	**0.5309**	0.152	28.5	ug/L	86	Standard
	Ba	135	92033.0	0.8	**41.2277**	0.772	1.9	ug/L	79	Standard
	Ce	140	1463.4	3.8				ug/L	68	Standard
>	**Tb**	159	962887.3	0.3				ug/L	986982	Standard
	Ho	165	45.0	11.1				ug/L	10	Standard
	Tl	203	365.3	3.0	**0.0480**	0.002	3.3	ug/L	13	Standard
	Tl	205	323.3	10.3	**0.0512**	0.005	9.3	ug/L	10	Standard
	Pb	206	14023.2	0.8	**2.4745**	0.030	1.2	ug/L	264	Standard
	Pb	207	11750.2	0.5	**2.2958**	0.019	0.8	ug/L	227	Standard
	Pb	208	47567.6	0.7	**2.4069**	0.020	0.8	ug/L	868	Standard
	U	238	42987.9	0.7	**5.9811**	0.044	0.7	ug/L	8	Standard
>	**Bi**	209	515414.9	0.8				ug/L	541014	Standard

Sample ID: L1606123801
Report Date/Time: Thursday, June 30, 2016 12:28:11
Page 1

Approved: July 01, 2016

Na	23	10.0	50.0	**56.5003**	29.382	52.0	mg/L	2	Standard
Mg	24	58837.4	0.7	**63.7321**	2.198	3.4	mg/L	53	Standard
K	39	145.0	6.0	**0.1689**	0.020	12.1	mg/L	53	Standard
Ca	43	801.7	4.7	**43.5056**	3.217	7.4	mg/L	28	Standard
Fe	54	230.3	10.8	**0.0375**	0.020	53.1	mg/L	181	Standard
Fe	57	665.0	0.0	**1.0889**	0.062	5.7	mg/L	257	Standard
> **Sc-1**	45	55571.8	3.6				mg/L	55220	Standard
Cl	35	43493.7	1.2				ug/L	35504	Standard
Kr	83	3.0	100.0				ug/L	2	Standard
Br	81	78305.5	5.1				ug/L	2040	Standard
P	31	26029.0	0.6				ug/L	20435	Standard
S	34	2565.2	4.1				ug/L	2430	Standard
Sr	88	583.3	1.0				ug/L	75	Standard
C	12	400.0	19.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	86.2	51.0				mg/L	9	Standard
Ho-1	165	45.0	11.1				mg/L	10	Standard
Er	166	80.0	21.7				mg/L	23	Standard
I	127	592701.8	6.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.104	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.556	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123801
Report Date/Time: Thursday, June 30, 2016 12:28:11
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.611
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.268
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606123801
Report Date/Time: Thursday, June 30, 2016 12:28:11
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123802
Sample Date/Time: Thursday, June 30, 2016 12:29:05
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85281.0	1.8				ug/L	74916	Standard
	Be	9	31.7	55.5	**0.0229**	0.015	65.8	ug/L	10	Standard
	Al	27	40832774.8	0.8	**206.7413**	3.781	1.8	ug/L	1822	Standard
	Sc	45	54113.1	1.6				ug/L	55220	Standard
	Ti	47	761.0	62.9	**1.8316**	1.167	63.7	ug/L	34	Standard
	V	51	60819.6	2.4	**6.6233**	0.223	3.4	ug/L	1938	Standard
	Cr	52	25517.8	0.5	**1.9058**	0.034	1.8	ug/L	9522	Standard
	Cr	53	20120.0	5.6	**18.3399**	1.146	6.2	ug/L	395	Standard
	Mn	55	7353.8	0.4	**0.7825**	0.010	1.3	ug/L	902	Standard
	Co	59	1110.7	5.5	**0.1187**	0.006	5.1	ug/L	262	Standard
	Ni	60	3088.6	0.9	**1.2848**	0.020	1.6	ug/L	371	Standard
	Cu	65	1541.7	3.9	**0.6667**	0.032	4.7	ug/L	106	Standard
	Zn	66	2653.2	4.4	**1.7721**	0.063	3.6	ug/L	398	Standard
>	**Ge**	72	515636.8	1.5				ug/L	535147	Standard
	As	75	3689.9	1.3	**2.9149**	0.078	2.7	ug/L	-43	Standard
	Se	82	1133.1	0.7	**8.5813**	0.174	2.0	ug/L	14	Standard
	Se-1	77	2001.1	4.2	**22.4732**	0.911	4.1	ug/L	65	Standard
>	**Ga**	71	131.7	22.3				mg/L	97	Standard
	Rb	85	21328.3	1.6				ug/L	15	Standard
	Y	89	452149.0	0.4				ug/L	465704	Standard
>	**Rh**	103	435.0	5.0				ug/L	10	Standard
	Mo	98	14977.2	1.8	**5.0495**	0.111	2.2	ug/L	9	Standard
	Ag	107	143.0	11.3	**0.0138**	0.002	16.7	ug/L	82	Standard
	Cd	111	11.4	2.3	**0.0128**	0.000	0.6	mg/L	7	Standard
	Cd	114	91.8	27.3	**0.0255**	0.005	18.1	ug/L	21	Standard
>	**In**	115	589985.2	0.7				ug/L	619035	Standard
	Sn	118	803.4	29.4	**0.0262**	0.038	147.0	ug/L	508	Standard
	Sb	123	773.1	32.3	**0.1578**	0.050	32.0	ug/L	86	Standard
	Ba	135	24159.6	0.8	**11.0685**	0.049	0.4	ug/L	79	Standard
	Ce	140	1713.4	3.5				ug/L	68	Standard
>	**Tb**	159	962435.5	0.7				ug/L	986982	Standard
	Ho	165	66.7	17.3				ug/L	10	Standard
	Tl	203	153.3	12.4	**0.0238**	0.002	9.0	ug/L	13	Standard
	Tl	205	135.0	13.4	**0.0261**	0.002	9.4	ug/L	10	Standard
	Pb	206	668.3	3.9	**0.0833**	0.005	5.5	ug/L	264	Standard
	Pb	207	559.7	2.3	**0.0790**	0.002	3.1	ug/L	227	Standard
	Pb	208	2297.4	1.6	**0.0811**	0.002	2.6	ug/L	868	Standard
	U	238	87580.4	0.3	**12.3190**	0.088	0.7	ug/L	8	Standard
>	**Bi**	209	509478.2	0.4				ug/L	541014	Standard

Sample ID: L1606123802
Report Date/Time: Thursday, June 30, 2016 12:31:22
Page 1

Approved: July 01, 2016

Na	23	3.3	173.2	**19.0801**	33.039	173.2	mg/L	2	Standard
Mg	24	163394.8	1.7	**181.6976**	3.675	2.0	mg/L	53	Standard
K	39	673.3	8.2	**1.0905**	0.102	9.3	mg/L	53	Standard
Ca	43	636.7	6.7	**35.1510**	3.000	8.5	mg/L	28	Standard
Fe	54	221.2	1.4	**0.0350**	0.001	3.4	mg/L	181	Standard
Fe	57	676.7	6.7	**1.1677**	0.151	12.9	mg/L	257	Standard
> **Sc-1**	45	54113.1	1.6				mg/L	55220	Standard
Cl	35	50047.9	0.7				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	37272.5	1.7				ug/L	2040	Standard
P	31	24598.3	1.7				ug/L	20435	Standard
S	34	2330.2	6.3				ug/L	2430	Standard
Sr	88	1316.7	9.4				ug/L	75	Standard
C	12	223.3	21.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	106.6	56.7				mg/L	9	Standard
Ho-1	165	66.7	17.3				mg/L	10	Standard
Er	166	70.0	28.6				mg/L	23	Standard
I	127	129859.3	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.354	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123802
Report Date/Time: Thursday, June 30, 2016 12:31:22
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.307
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.171
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123802PS WG574742-01
Sample Date/Time: Thursday, June 30, 2016 12:32:17
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90026.7	0.8				ug/L	74916	Standard
	Be	9	55156.9	1.4	**43.5024**	0.777	1.8	ug/L	10	Standard
	Al	27	42431963.2	0.5	**203.4865**	2.596	1.3	ug/L	1822	Standard
	Sc	45	55210.4	0.9				ug/L	55220	Standard
	Ti	47	633.0	44.3	**1.4860**	0.698	47.0	ug/L	34	Standard
	V	51	504685.6	0.5	**55.0548**	0.569	1.0	ug/L	1938	Standard
	Cr	52	444386.3	0.9	**49.0453**	0.582	1.2	ug/L	9522	Standard
	Cr	53	73665.3	1.6	**66.5494**	0.802	1.2	ug/L	395	Standard
	Mn	55	405919.8	1.3	**47.7397**	0.682	1.4	ug/L	902	Standard
	Co	59	377751.7	1.5	**47.0009**	0.675	1.4	ug/L	262	Standard
	Ni	60	103282.8	0.4	**46.5576**	0.059	0.1	ug/L	371	Standard
	Cu	65	101218.0	0.8	**46.4456**	0.553	1.2	ug/L	106	Standard
	Zn	66	63559.7	1.1	**49.2342**	0.736	1.5	ug/L	398	Standard
>	Ge	72	528026.7	0.5				ug/L	535147	Standard
	As	75	68292.3	0.5	**51.7282**	0.517	1.0	ug/L	-43	Standard
	Se	82	7467.2	1.7	**55.7421**	0.954	1.7	ug/L	14	Standard
	Se-1	77	6291.3	1.6	**70.2008**	1.328	1.9	ug/L	65	Standard
>	Ga	71	175.0	14.8				mg/L	97	Standard
	Rb	85	21011.2	0.9				ug/L	15	Standard
	Y	89	457532.3	0.8				ug/L	465704	Standard
>	Rh	103	456.7	13.1				ug/L	10	Standard
	Mo	98	15165.9	1.5	**5.0804**	0.082	1.6	ug/L	9	Standard
	Ag	107	323469.9	0.7	**44.6696**	0.305	0.7	ug/L	82	Standard
	Cd	111	108927.2	1.0	**47.0605**	0.163	0.3	mg/L	7	Standard
	Cd	114	263052.0	1.9	**47.1909**	0.546	1.2	ug/L	21	Standard
>	In	115	593751.2	0.8				ug/L	619035	Standard
	Sn	118	850.0	1.8	**0.0328**	0.003	9.1	ug/L	508	Standard
	Sb	123	237149.8	1.1	**46.6930**	0.618	1.3	ug/L	86	Standard
	Ba	135	126318.4	0.3	**57.5882**	0.301	0.5	ug/L	79	Standard
	Ce	140	1838.4	16.1				ug/L	68	Standard
>	Tb	159	963825.5	0.9				ug/L	986982	Standard
	Ho	165	66.7	11.5				ug/L	10	Standard
	Tl	203	416503.8	1.0	**48.0712**	0.216	0.4	ug/L	13	Standard
	Tl	205	364432.7	1.0	**49.2380**	0.756	1.5	ug/L	10	Standard
	Pb	206	277275.5	0.4	**49.8264**	0.163	0.3	ug/L	264	Standard
	Pb	207	240482.5	0.7	**47.8168**	0.618	1.3	ug/L	227	Standard
	Pb	208	944780.0	0.6	**48.7174**	0.550	1.1	ug/L	868	Standard
	U	238	449702.3	0.7	**62.7382**	0.887	1.4	ug/L	8	Standard
>	Bi	209	513434.3	0.7				ug/L	541014	Standard

Sample ID: L1606123802PS WG574742-01
Report Date/Time: Thursday, June 30, 2016 12:34:34
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	167045.9	1.0	**182.0647**	3.413	1.9	mg/L	53	Standard
K	39	685.0	5.1	**1.0865**	0.051	4.7	mg/L	53	Standard
Ca	43	726.7	3.3	**39.4999**	1.706	4.3	mg/L	28	Standard
Fe	54	191.1	19.7	**0.0113**	0.024	215.3	mg/L	181	Standard
Fe	57	611.7	9.9	**0.9585**	0.173	18.1	mg/L	257	Standard
> **Sc-1**	45	55210.4	0.9				mg/L	55220	Standard
Cl	35	51236.5	0.7				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	36838.1	1.4				ug/L	2040	Standard
P	31	25471.4	2.3				ug/L	20435	Standard
S	34	2350.2	6.0				ug/L	2430	Standard
Sr	88	1250.1	5.2				ug/L	75	Standard
C	12	160.0	43.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	90.3	45.9				mg/L	9	Standard
Ho-1	165	66.7	11.5				mg/L	10	Standard
Er	166	63.3	18.2				mg/L	23	Standard
I	127	224161.3	1.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.169	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.669	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123802PS WG574742-01
Report Date/Time: Thursday, June 30, 2016 12:34:34
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.916
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.902
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123802SDL WG574742-02
Sample Date/Time: Thursday, June 30, 2016 12:35:51
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78422.5	2.5				ug/L	74916	Standard
	Be	9	26.7	54.1	**0.0204**	0.013	62.5	ug/L	10	Standard
	Al	27	7894596.4	0.6	**43.4738**	1.073	2.5	ug/L	1822	Standard
	Sc	45	50880.3	1.7				ug/L	55220	Standard
	Ti	47	93.3	15.0	**0.1657**	0.036	22.0	ug/L	34	Standard
	V	51	13858.3	1.7	**1.3644**	0.019	1.4	ug/L	1938	Standard
	Cr	52	12210.9	1.6	**0.3763**	0.020	5.3	ug/L	9522	Standard
	Cr	53	6824.9	3.0	**5.9924**	0.168	2.8	ug/L	395	Standard
	Mn	55	1982.8	2.7	**0.1353**	0.008	5.6	ug/L	902	Standard
	Co	59	409.3	8.6	**0.0296**	0.005	16.0	ug/L	262	Standard
	Ni	60	855.7	2.2	**0.2525**	0.010	4.1	ug/L	371	Standard
	Cu	65	595.7	3.8	**0.2228**	0.009	4.2	ug/L	106	Standard
	Zn	66	1650.8	2.8	**0.9781**	0.040	4.1	ug/L	398	Standard
>	**Ge**	72	513253.1	0.5				ug/L	535147	Standard
	As	75	704.2	3.4	**0.6034**	0.021	3.5	ug/L	-43	Standard
	Se	82	253.3	1.6	**1.8520**	0.037	2.0	ug/L	14	Standard
	Se-1	77	538.0	7.6	**5.6470**	0.495	8.8	ug/L	65	Standard
>	**Ga**	71	78.3	35.2				mg/L	97	Standard
	Rb	85	4115.6	0.1				ug/L	15	Standard
	Y	89	440141.7	0.8				ug/L	465704	Standard
>	**Rh**	103	96.7	7.9				ug/L	10	Standard
	Mo	98	2789.6	1.1	**0.9561**	0.010	1.1	ug/L	9	Standard
	Ag	107	1217.4	41.0	**0.1640**	0.069	42.2	ug/L	82	Standard
	Cd	111	12.7	36.1	**0.0134**	0.002	14.7	mg/L	7	Standard
	Cd	114	22.3	33.6	**0.0130**	0.001	10.3	ug/L	21	Standard
>	**In**	115	586501.7	0.5				ug/L	619035	Standard
	Sn	118	471.7	13.0	**-0.0269**	0.010	35.8	ug/L	508	Standard
	Sb	123	997.7	34.2	**0.2031**	0.067	33.1	ug/L	86	Standard
	Ba	135	4696.7	0.6	**2.1488**	0.020	0.9	ug/L	79	Standard
	Ce	140	410.0	20.1				ug/L	68	Standard
>	**Tb**	159	933616.4	0.4				ug/L	986982	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	145.3	15.9	**0.0226**	0.003	12.3	ug/L	13	Standard
	Tl	205	143.3	16.5	**0.0269**	0.003	11.1	ug/L	10	Standard
	Pb	206	439.7	6.2	**0.0406**	0.005	13.4	ug/L	264	Standard
	Pb	207	372.7	3.4	**0.0403**	0.002	5.6	ug/L	227	Standard
	Pb	208	1457.4	0.9	**0.0362**	0.001	1.6	ug/L	868	Standard
	U	238	16942.1	0.5	**2.3501**	0.026	1.1	ug/L	8	Standard
>	**Bi**	209	518073.0	1.1				ug/L	541014	Standard

Sample ID: L1606123802SDL WG574742-02
Report Date/Time: Thursday, June 30, 2016 12:38:08
Page 1

Approved: July 01, 2016

Na	23	5.0	0.0	**30.5280**	0.517	1.7	mg/L	2	Standard
Mg	24	31290.6	1.2	**36.9770**	0.268	0.7	mg/L	53	Standard
K	39	196.7	12.8	**0.2861**	0.044	15.2	mg/L	53	Standard
Ca	43	151.7	14.9	**7.6575**	1.462	19.1	mg/L	28	Standard
Fe	54	77.0	4.2	**-0.0618**	0.002	3.0	mg/L	181	Standard
Fe	57	371.7	22.4	**0.4076**	0.254	62.4	mg/L	257	Standard
> **Sc-1**	45	50880.3	1.7				mg/L	55220	Standard
Cl	35	45617.9	1.5				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	8455.7	2.8				ug/L	2040	Standard
P	31	10917.3	3.3				ug/L	20435	Standard
S	34	2505.2	2.7				ug/L	2430	Standard
Sr	88	308.3	21.6				ug/L	75	Standard
C	12	96.7	26.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	47.6	1.0				mg/L	9	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	50.0	20.0				mg/L	23	Standard
I	127	59592.1	3.6				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.680	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.909	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606123802SDL WG574742-02
Report Date/Time: Thursday, June 30, 2016 12:38:08
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.745
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.760
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123802SDL WG574742-02
Sample Date/Time: Thursday, June 30, 2016 12:39:03
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75372.2	4.0				ug/L	74916	Standard
	Be	9	30.0	72.6	**0.0245**	0.020	83.7	ug/L	10	Standard
	Al	27	1600639.2	0.2	**9.1751**	0.352	3.8	ug/L	1822	Standard
	Sc	45	50582.7	2.6				ug/L	55220	Standard
	Ti	47	58.0	22.6	**0.0771**	0.033	42.3	ug/L	34	Standard
	V	51	4717.2	3.0	**0.3382**	0.019	5.5	ug/L	1938	Standard
	Cr	52	9867.5	1.6	**0.1115**	0.021	19.2	ug/L	9522	Standard
	Cr	53	2166.8	4.2	**1.6508**	0.095	5.8	ug/L	395	Standard
	Mn	55	821.4	7.8	**-0.0049**	0.008	164.9	ug/L	902	Standard
	Co	59	285.3	8.5	**0.0140**	0.003	23.1	ug/L	262	Standard
	Ni	60	404.0	1.0	**0.0435**	0.001	2.2	ug/L	371	Standard
	Cu	65	238.7	6.0	**0.0547**	0.007	13.1	ug/L	106	Standard
	Zn	66	1106.4	4.4	**0.5465**	0.041	7.4	ug/L	398	Standard
>	**Ge**	72	510181.7	0.5				ug/L	535147	Standard
	As	75	100.9	42.8	**0.1342**	0.034	25.0	ug/L	-43	Standard
	Se	82	61.7	16.0	**0.3807**	0.077	20.3	ug/L	14	Standard
	Se-1	77	146.7	6.6	**1.1261**	0.104	9.2	ug/L	65	Standard
>	**Ga**	71	45.0	38.5				mg/L	97	Standard
	Rb	85	865.0	3.5				ug/L	15	Standard
	Y	89	433642.8	2.8				ug/L	465704	Standard
>	**Rh**	103	33.3	34.6				ug/L	10	Standard
	Mo	98	535.4	7.6	**0.1938**	0.015	7.6	ug/L	9	Standard
	Ag	107	569.3	32.2	**0.0736**	0.026	34.7	ug/L	82	Standard
	Cd	111	6.7	46.2	**0.0108**	0.001	12.6	mg/L	7	Standard
	Cd	114	18.0	67.5	**0.0122**	0.002	18.1	ug/L	21	Standard
>	**In**	115	585624.8	0.6				ug/L	619035	Standard
	Sn	118	200.0	9.0	**-0.0709**	0.003	4.1	ug/L	508	Standard
	Sb	123	260.8	21.9	**0.0565**	0.011	20.1	ug/L	86	Standard
	Ba	135	967.7	4.5	**0.4279**	0.022	5.2	ug/L	79	Standard
	Ce	140	76.7	26.4				ug/L	68	Standard
>	**Tb**	159	921991.9	1.3				ug/L	986982	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	123.0	10.0	**0.0199**	0.001	6.8	ug/L	13	Standard
	Tl	205	121.7	45.3	**0.0238**	0.007	30.5	ug/L	10	Standard
	Pb	206	323.0	1.2	**0.0190**	0.000	2.6	ug/L	264	Standard
	Pb	207	289.0	4.0	**0.0230**	0.002	10.7	ug/L	227	Standard
	Pb	208	1206.4	16.5	**0.0225**	0.010	44.0	ug/L	868	Standard
	U	238	3304.4	1.2	**0.4586**	0.005	1.0	ug/L	8	Standard
>	**Bi**	209	525074.7	0.4				ug/L	541014	Standard

Sample ID: L1606123802SDL WG574742-02
Report Date/Time: Thursday, June 30, 2016 12:41:20
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**20.3518**	17.635	86.7	mg/L	2	Standard
Mg	24	6017.9	1.4	**7.1295**	0.269	3.8	mg/L	53	Standard
K	39	73.3	37.6	**0.0607**	0.054	88.7	mg/L	53	Standard
Ca	43	56.7	33.4	**1.8502**	1.244	67.2	mg/L	28	Standard
Fe	54	74.1	7.0	**-0.0637**	0.003	4.3	mg/L	181	Standard
Fe	57	323.3	0.9	**0.2726**	0.032	11.8	mg/L	257	Standard
> **Sc-1**	45	50582.7	2.6				mg/L	55220	Standard
Cl	35	46106.0	1.0				ug/L	35504	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	3507.1	3.6				ug/L	2040	Standard
P	31	7600.2	0.1				ug/L	20435	Standard
S	34	2533.5	3.1				ug/L	2430	Standard
Sr	88	113.3	29.4				ug/L	75	Standard
C	12	116.7	26.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	15.4	95.6				mg/L	9	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	23	Standard
I	127	45802.5	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.608	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.335	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123802SDL WG574742-02
Report Date/Time: Thursday, June 30, 2016 12:41:20
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.054
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 12:42:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77730.6	1.0				ug/L	74916	Standard
	Be	9	55872.9	2.6	**51.0301**	0.838	1.6	ug/L	10	Standard
	Al	27	8818314.5	1.2	**48.9746**	0.498	1.0	ug/L	1822	Standard
	Sc	45	53661.6	3.0				ug/L	55220	Standard
	Ti	47	41807.6	2.3	**99.7069**	2.778	2.8	ug/L	34	Standard
	V	51	469384.7	2.2	**49.7616**	1.319	2.7	ug/L	1938	Standard
	Cr	52	463904.9	1.3	**49.7905**	0.855	1.7	ug/L	9522	Standard
	Cr	53	57698.0	1.0	**50.5840**	0.668	1.3	ug/L	395	Standard
	Mn	55	431644.5	2.1	**49.3591**	1.304	2.6	ug/L	902	Standard
	Co	59	418478.5	3.1	**50.6270**	1.835	3.6	ug/L	262	Standard
	Ni	60	114350.9	0.9	**50.1243**	0.603	1.2	ug/L	371	Standard
	Cu	65	113158.0	1.0	**50.4839**	0.666	1.3	ug/L	106	Standard
	Zn	66	66443.1	1.6	**50.0419**	1.022	2.0	ug/L	398	Standard
>	Ge	72	543150.6	0.7				ug/L	535147	Standard
	As	75	67490.4	1.3	**49.7017**	0.938	1.9	ug/L	-43	Standard
	Se	82	6792.4	0.9	**49.2836**	0.563	1.1	ug/L	14	Standard
	Se-1	77	4663.4	3.0	**50.4291**	1.813	3.6	ug/L	65	Standard
>	Ga	71	68.3	40.3				mg/L	97	Standard
	Rb	85	936.7	6.3				ug/L	15	Standard
	Y	89	469758.9	1.6				ug/L	465704	Standard
>	Rh	103	28.3	27.0				ug/L	10	Standard
	Mo	98	307857.4	1.2	**96.4230**	1.296	1.3	ug/L	9	Standard
	Ag	107	379112.3	1.0	**49.0635**	0.518	1.1	ug/L	82	Standard
	Cd	111	121432.1	1.0	**49.1667**	0.548	1.1	mg/L	7	Standard
	Cd	114	297834.1	2.1	**50.0762**	1.086	2.2	ug/L	21	Standard
>	In	115	633565.8	0.1				ug/L	619035	Standard
	Sn	118	328806.4	1.1	**49.2628**	0.581	1.2	ug/L	508	Standard
	Sb	123	266594.0	0.8	**49.1899**	0.443	0.9	ug/L	86	Standard
	Ba	135	113121.8	1.5	**48.3272**	0.793	1.6	ug/L	79	Standard
	Ce	140	240.0	16.5				ug/L	68	Standard
>	Tb	159	981551.7	1.4				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	466879.4	0.1	**50.2861**	0.324	0.6	ug/L	13	Standard
	Tl	205	410945.2	0.6	**51.8097**	0.429	0.8	ug/L	10	Standard
	Pb	206	296756.7	0.8	**49.7637**	0.390	0.8	ug/L	264	Standard
	Pb	207	268967.1	0.7	**49.9087**	0.694	1.4	ug/L	227	Standard
	Pb	208	1065082.8	0.6	**51.2536**	0.698	1.4	ug/L	868	Standard
	U	238	392731.7	0.9	**51.1307**	0.815	1.6	ug/L	8	Standard
>	Bi	209	550204.1	0.8				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 12:44:33
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.9874**	17.290	173.1	mg/L	2	Standard
Mg	24	4752.4	2.6	**5.2959**	0.091	1.7	mg/L	53	Standard
K	39	2363.5	6.0	**4.0498**	0.162	4.0	mg/L	53	Standard
Ca	43	123.3	6.2	**5.5087**	0.243	4.4	mg/L	28	Standard
Fe	54	7245.6	3.9	**4.9629**	0.195	3.9	mg/L	181	Standard
Fe	57	2031.8	2.2	**4.8789**	0.223	4.6	mg/L	257	Standard
Sc-1	45	53661.6	3.0				mg/L	55220	Standard
Cl	35	43630.8	3.7				ug/L	35504	Standard
Kr	83	2.7	86.6				ug/L	2	Standard
Br	81	2263.5	7.1				ug/L	2040	Standard
P	31	23681.8	1.1				ug/L	20435	Standard
S	34	2846.9	4.6				ug/L	2430	Standard
Sr	88	75.0	6.7				ug/L	75	Standard
C	12	113.3	20.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	12.5	41.8				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	16178.7	6.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.060		
Al	27	97.949		
Sc	45			
Ti	47	99.707		
V	51	99.523		
Cr	52	99.581		
Cr	53			
Mn	55	98.718		
Co	59	101.254		
Ni	60	100.249		
Cu	65	100.968		
Zn	66	100.084		
Ge	72		101.496	
As	75	99.403		
Se	82	98.567		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 12:44:33
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	96.423		
Ag	107	98.127		
Cd	111	98.333		
Cd	114			
In	115			102.347
Sn	118	98.526		
Sb	123	98.380		
Ba	135	96.654		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.572		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.507		
U	238	102.261		
Bi	209			101.699
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 12:44:33
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 12:45:27
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77417.4	3.5				ug/L	74916	Standard
	Be	9	31.7	9.1	**0.0255**	0.003	12.9	ug/L	10	Standard
	Al	27	4240.7	47.8	**0.0211**	0.010	48.9	ug/L	1822	Standard
	Sc	45	55407.8	0.6				ug/L	55220	Standard
	Ti	47	36.0	20.0	**0.0157**	0.016	101.7	ug/L	34	Standard
	V	51	1596.0	4.9	**-0.0263**	0.006	23.6	ug/L	1938	Standard
	Cr	52	8222.6	1.2	**-0.1370**	0.021	15.5	ug/L	9522	Standard
	Cr	53	661.7	6.4	**0.1982**	0.039	19.6	ug/L	395	Standard
	Mn	55	1028.0	4.8	**0.0128**	0.005	42.4	ug/L	902	Standard
	Co	59	346.3	6.7	**0.0191**	0.002	11.5	ug/L	262	Standard
	Ni	60	276.0	2.5	**-0.0241**	0.004	15.7	ug/L	371	Standard
	Cu	65	182.7	11.5	**0.0229**	0.009	38.9	ug/L	106	Standard
	Zn	66	445.0	4.2	**-0.0088**	0.009	99.3	ug/L	398	Standard
>	Ge	72	542321.0	1.6				ug/L	535147	Standard
	As	75	-31.6	107.4	**0.0321**	0.025	77.0	ug/L	-43	Standard
	Se	82	18.9	31.9	**0.0405**	0.042	104.1	ug/L	14	Standard
	Se-1	77	62.7	19.2	**0.1064**	0.142	133.5	ug/L	65	Standard
>	Ga	71	90.0	11.1				mg/L	97	Standard
	Rb	85	33.3	8.7				ug/L	15	Standard
	Y	89	470192.8	2.1				ug/L	465704	Standard
>	Rh	103	20.0	25.0				ug/L	10	Standard
	Mo	98	190.1	19.8	**0.0713**	0.011	15.7	ug/L	9	Standard
	Ag	107	372.7	4.1	**0.0418**	0.002	5.4	ug/L	82	Standard
	Cd	111	16.6	60.6	**0.0145**	0.004	27.3	mg/L	7	Standard
	Cd	114	35.0	68.8	**0.0147**	0.004	26.8	ug/L	21	Standard
>	In	115	639140.0	0.9				ug/L	619035	Standard
	Sn	118	995.0	15.0	**0.0448**	0.023	52.0	ug/L	508	Standard
	Sb	123	844.2	29.0	**0.1590**	0.046	28.8	ug/L	86	Standard
	Ba	135	51.7	22.7	**0.0022**	0.005	213.6	ug/L	79	Standard
	Ce	140	45.0	58.8				ug/L	68	Standard
>	Tb	159	987254.5	1.0				ug/L	986982	Standard
	Ho	165	13.3	78.1				ug/L	10	Standard
	Tl	203	117.7	28.5	**0.0185**	0.003	18.9	ug/L	13	Standard
	Tl	205	120.0	18.2	**0.0226**	0.003	11.6	ug/L	10	Standard
	Pb	206	372.3	4.1	**0.0237**	0.002	9.3	ug/L	264	Standard
	Pb	207	300.3	6.7	**0.0217**	0.003	15.9	ug/L	227	Standard
	Pb	208	1211.4	10.7	**0.0191**	0.006	30.6	ug/L	868	Standard
	U	238	72.7	61.6	**0.0172**	0.006	33.0	ug/L	8	Standard
>	Bi	209	558803.9	0.6				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 12:47:44
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.2851**	16.074	173.1	mg/L	2	Standard
Mg	24	46.7	27.0	**0.0161**	0.013	83.2	mg/L	53	Standard
K	39	41.7	36.7	**-0.0055**	0.026	464.8	mg/L	53	Standard
Ca	43	38.3	71.8	**0.4831**	1.537	318.2	mg/L	28	Standard
Fe	54	144.3	15.9	**-0.0207**	0.016	77.5	mg/L	181	Standard
Fe	57	238.3	11.6	**-0.0334**	0.076	227.3	mg/L	257	Standard
Sc-1	45	55407.8	0.6				mg/L	55220	Standard
Cl	35	41950.7	1.1				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2033.5	3.2				ug/L	2040	Standard
P	31	22096.1	1.2				ug/L	20435	Standard
S	34	2886.9	1.7				ug/L	2430	Standard
Sr	88	81.7	24.7				ug/L	75	Standard
C	12	63.3	24.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	573.3	4.2				mg/L	9	Standard
Ho-1	165	13.3	78.1				mg/L	10	Standard
Er	166	70.0	28.6				mg/L	23	Standard
I	127	15613.0	3.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.341	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 12:47:44
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.248
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.288
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122903 WG573868-02
Sample Date/Time: Thursday, June 30, 2016 12:48:40
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	94380.1	4.5				ug/L	74916	Standard
	Be	9	91.7	46.4	**0.0649**	0.030	46.7	ug/L	10	Standard
	Al	27	56152566.3	1.4	**257.2159**	12.825	5.0	ug/L	1822	Standard
	Sc	45	62458.5	1.2				ug/L	55220	Standard
	Ti	47	6162.3	1.2	**15.3008**	0.117	0.8	ug/L	34	Standard
	V	51	-1368040.2	24.0	**-152.4696**	37.213	24.4	ug/L	1938	Standard
	Cr	52	303770668.6	0.3	**34789.2143**	189.541	0.5	ug/L	9522	Standard
	Cr	53	37580913.2	1.3	**34701.2797**	393.777	1.1	ug/L	395	Standard
	Mn	55	935139.8	1.8	**111.8980**	1.925	1.7	ug/L	902	Standard
	Co	59	8549.4	1.5	**1.0587**	0.020	1.9	ug/L	262	Standard
	Ni	60	57727.8	0.7	**26.3802**	0.080	0.3	ug/L	371	Standard
	Cu	65	923440.4	1.1	**431.0563**	3.244	0.8	ug/L	106	Standard
	Zn	66	28421.6	0.6	**22.1821**	0.114	0.5	ug/L	398	Standard
>	Ge	72	519619.4	0.5				ug/L	535147	Standard
	As	75	2730.2	5.0	**2.1547**	0.113	5.2	ug/L	-43	Standard
	Se	82	284.1	19.2	**2.0630**	0.425	20.6	ug/L	14	Standard
	Se-1	77	149.3	6.3	**1.1260**	0.111	9.9	ug/L	65	Standard
>	Ga	71	1333.4	6.8				mg/L	97	Standard
	Rb	85	9376.2	2.7				ug/L	15	Standard
	Y	89	468015.9	2.4				ug/L	465704	Standard
>	Rh	103	323.3	26.4				ug/L	10	Standard
	Mo	98	16962.4	0.8	**5.5363**	0.107	1.9	ug/L	9	Standard
	Ag	107	8753.2	2.7	**1.1721**	0.038	3.2	ug/L	82	Standard
	Cd	111	125.5	27.5	**0.0608**	0.015	24.4	mg/L	7	Standard
	Cd	114	1547.5	12.5	**0.2792**	0.031	11.2	ug/L	21	Standard
>	In	115	609353.2	1.3				ug/L	619035	Standard
	Sn	118	416991.6	1.9	**65.0044**	1.914	2.9	ug/L	508	Standard
	Sb	123	15244.9	1.6	**2.9290**	0.048	1.7	ug/L	86	Standard
	Ba	135	18235.3	1.1	**8.0851**	0.190	2.4	ug/L	79	Standard
	Ce	140	12727.0	2.4				ug/L	68	Standard
>	Tb	159	990288.0	1.8				ug/L	986982	Standard
	Ho	165	530.0	9.6				ug/L	10	Standard
	Tl	203	209.3	34.5	**0.0291**	0.008	26.5	ug/L	13	Standard
	Tl	205	321.7	99.2	**0.0491**	0.041	83.1	ug/L	10	Standard
	Pb	206	50254.9	1.5	**8.6142**	0.134	1.6	ug/L	264	Standard
	Pb	207	41617.8	1.8	**7.8938**	0.131	1.7	ug/L	227	Standard
	Pb	208	169789.1	1.6	**8.3491**	0.099	1.2	ug/L	868	Standard
	U	238	5823.1	6.5	**0.7851**	0.041	5.2	ug/L	8	Standard
>	Bi	209	536398.7	2.1				ug/L	541014	Standard

Sample ID: L1606122903 WG573868-02
Report Date/Time: Thursday, June 30, 2016 12:50:57
Page 1

Approved: July 01, 2016

Na	23	6.7	86.6	**33.3226**	28.857	86.6	mg/L	2	Standard
Mg	24	147252.4	2.8	**141.8564**	4.249	3.0	mg/L	53	Standard
K	39	266.7	7.6	**0.3241**	0.030	9.1	mg/L	53	Standard
Ca	43	1293.4	2.0	**63.1046**	2.005	3.2	mg/L	28	Standard
Fe	54	297.2	172.5	**0.0616**	0.311	504.8	mg/L	181	Standard
Fe	57	1773.4	1.2	**3.4905**	0.068	2.0	mg/L	257	Standard
> **Sc-1**	45	62458.5	1.2				mg/L	55220	Standard
Cl	35	78157.1	1.3				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	33710.8	0.9				ug/L	2040	Standard
P	31	48081.3	5.7				ug/L	20435	Standard
S	34	2281.8	3.8				ug/L	2430	Standard
Sr	88	218.3	16.6				ug/L	75	Standard
C	12	343.3	14.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	28.6				mg/L	7	Standard
Dy	164	582.4	13.8				mg/L	9	Standard
Ho-1	165	530.0	9.6				mg/L	10	Standard
Er	166	506.7	16.8				mg/L	23	Standard
I	127	9578.1	12.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.981	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.098	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122903 WG573868-02
Report Date/Time: Thursday, June 30, 2016 12:50:57
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.436	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.147	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

Sample ID: L1606122903 WG573868-02
Report Date/Time: Thursday, June 30, 2016 12:50:57
Page 3

Approved: July 01, 2016

Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Cu 65 Upper, S, EEE	Cu	65

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122903DP WG573868-07
Sample Date/Time: Thursday, June 30, 2016 12:51:52
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	102134.9	2.7				ug/L	74916	Standard
	Be	9	65.0	7.7	**0.0416**	0.003	6.2	ug/L	10	Standard
	Al	27	63183038.5	1.4	**267.1354**	4.535	1.7	ug/L	1822	Standard
	Sc	45	61847.6	0.8				ug/L	55220	Standard
	Ti	47	6523.1	1.8	**16.3700**	0.289	1.8	ug/L	34	Standard
	V	51	-1546049.9	24.4	**-174.0618**	43.049	24.7	ug/L	1938	Standard
	Cr	52	322112934.4	0.5	**37272.4484**	238.200	0.6	ug/L	9522	Standard
	Cr	53	40248349.1	2.6	**37550.7455**	1017.902	2.7	ug/L	395	Standard
	Mn	55	991053.0	0.6	**119.8276**	0.634	0.5	ug/L	902	Standard
	Co	59	9179.1	1.7	**1.1504**	0.025	2.2	ug/L	262	Standard
	Ni	60	61487.9	1.0	**28.4024**	0.406	1.4	ug/L	371	Standard
	Cu	65	986874.2	0.3	**465.4613**	2.052	0.4	ug/L	106	Standard
	Zn	66	29767.2	0.6	**23.4933**	0.092	0.4	ug/L	398	Standard
>	**Ge**	72	514287.8	0.6				ug/L	535147	Standard
	As	75	2574.5	2.7	**2.0554**	0.064	3.1	ug/L	-43	Standard
	Se	82	170.7	18.5	**1.2147**	0.250	20.5	ug/L	14	Standard
	Se-1	77	129.7	5.8	**0.9161**	0.078	8.5	ug/L	65	Standard
>	**Ga**	71	1410.1	8.2				mg/L	97	Standard
	Rb	85	10441.9	2.4				ug/L	15	Standard
	Y	89	466018.5	0.9				ug/L	465704	Standard
>	**Rh**	103	426.7	22.7				ug/L	10	Standard
	Mo	98	18201.3	0.8	**5.9257**	0.036	0.6	ug/L	9	Standard
	Ag	107	9323.9	0.4	**1.2459**	0.006	0.5	ug/L	82	Standard
	Cd	111	110.5	8.8	**0.0543**	0.004	7.4	mg/L	7	Standard
	Cd	114	1615.9	15.1	**0.2908**	0.043	14.8	ug/L	21	Standard
>	**In**	115	610696.5	0.2				ug/L	619035	Standard
	Sn	118	452746.6	0.6	**70.4160**	0.471	0.7	ug/L	508	Standard
	Sb	123	16308.6	1.8	**3.1260**	0.057	1.8	ug/L	86	Standard
	Ba	135	19306.3	0.3	**8.5405**	0.036	0.4	ug/L	79	Standard
	Ce	140	13217.4	1.5				ug/L	68	Standard
>	**Tb**	159	985335.9	1.7				ug/L	986982	Standard
	Ho	165	581.7	8.6				ug/L	10	Standard
	Tl	203	112.3	1.9	**0.0185**	0.000	0.7	ug/L	13	Standard
	Tl	205	83.3	44.2	**0.0185**	0.005	25.2	ug/L	10	Standard
	Pb	206	55262.3	0.5	**9.5451**	0.116	1.2	ug/L	264	Standard
	Pb	207	45375.2	0.7	**8.6726**	0.152	1.8	ug/L	227	Standard
	Pb	208	184377.7	1.0	**9.1363**	0.157	1.7	ug/L	868	Standard
	U	238	6422.7	5.7	**0.8719**	0.053	6.0	ug/L	8	Standard
>	**Bi**	209	532502.1	1.0				ug/L	541014	Standard

Sample ID: L1606122903DP WG573868-07
Report Date/Time: Thursday, June 30, 2016 12:54:08
Page 1

Approved: July 01, 2016

Na	23	11.7	24.7	**58.6291**	14.787	25.2	mg/L	2	Standard
Mg	24	164201.8	1.9	**159.7280**	1.904	1.2	mg/L	53	Standard
K	39	261.7	31.1	**0.3212**	0.126	39.2	mg/L	53	Standard
Ca	43	1280.1	10.5	**63.0199**	6.216	9.9	mg/L	28	Standard
Fe	54	-649.5	82.1	**-0.5146**	0.327	63.5	mg/L	181	Standard
Fe	57	1908.5	2.3	**3.8509**	0.127	3.3	mg/L	257	Standard
Sc-1	45	61847.6	0.8				mg/L	55220	Standard
Cl	35	81436.9	0.5				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	5651.1	3.4				ug/L	2040	Standard
P	31	51477.3	1.5				ug/L	20435	Standard
S	34	2203.5	4.6				ug/L	2430	Standard
Sr	88	213.3	3.6				ug/L	75	Standard
C	12	343.3	19.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	7	Standard
Dy	164	753.9	5.1				mg/L	9	Standard
Ho-1	165	581.7	8.6				mg/L	10	Standard
Er	166	476.7	7.9				mg/L	23	Standard
I	127	8432.3	4.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.332	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.102	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122903DP WG573868-07
Report Date/Time: Thursday, June 30, 2016 12:54:08
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.653
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.427
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

Sample ID: L1606122903DP WG573868-07
Report Date/Time: Thursday, June 30, 2016 12:54:08
Page 3

Approved: July 01, 2016

Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Cu 65 Upper, S, EEE	Cu	65

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122701
Sample Date/Time: Thursday, June 30, 2016 12:55:03
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	102041.0	2.8				ug/L	74916	Standard
	Be	9	35.0	51.5	**0.0206**	0.012	57.3	ug/L	10	Standard
	Al	27	877585.3	5.4	**3.7089**	0.106	2.9	ug/L	1822	Standard
	Sc	45	57673.0	4.5				ug/L	55220	Standard
	Ti	47	923.7	10.3	**2.2096**	0.231	10.4	ug/L	34	Standard
	V	51	280479.4	0.6	**30.6810**	0.258	0.8	ug/L	1938	Standard
	Cr	52	412149.7	45.4	**45.6590**	21.122	46.3	ug/L	9522	Standard
	Cr	53	51894.5	42.9	**47.0217**	20.264	43.1	ug/L	395	Standard
	Mn	55	8554.1	4.7	**0.9087**	0.046	5.1	ug/L	902	Standard
	Co	59	3701.5	3.9	**0.4405**	0.018	4.1	ug/L	262	Standard
	Ni	60	5324.9	0.7	**2.2758**	0.025	1.1	ug/L	371	Standard
	Cu	65	4018.2	14.3	**1.7976**	0.265	14.7	ug/L	106	Standard
	Zn	66	3367.4	2.2	**2.2947**	0.059	2.6	ug/L	398	Standard
>	**Ge**	72	525083.9	0.3				ug/L	535147	Standard
	As	75	2675.8	0.8	**2.0911**	0.017	0.8	ug/L	-43	Standard
	Se	82	317.4	3.1	**2.2898**	0.080	3.5	ug/L	14	Standard
	Se-1	77	341.7	12.7	**3.2841**	0.491	15.0	ug/L	65	Standard
>	**Ga**	71	5656.1	0.7				mg/L	97	Standard
	Rb	85	72886.6	1.0				ug/L	15	Standard
	Y	89	468551.4	0.6				ug/L	465704	Standard
>	**Rh**	103	1286.7	17.9				ug/L	10	Standard
	Mo	98	5009.6	1.7	**1.5899**	0.024	1.5	ug/L	9	Standard
	Ag	107	213.0	12.1	**0.0217**	0.003	15.6	ug/L	82	Standard
	Cd	111	122.6	10.7	**0.0578**	0.005	9.1	mg/L	7	Standard
	Cd	114	318.0	10.0	**0.0627**	0.005	8.6	ug/L	21	Standard
>	**In**	115	630059.3	0.2				ug/L	619035	Standard
	Sn	118	2871.9	7.6	**0.3302**	0.034	10.2	ug/L	508	Standard
	Sb	123	786.4	8.9	**0.1503**	0.013	8.8	ug/L	86	Standard
	Ba	135	330955.0	1.0	**142.2106**	1.127	0.8	ug/L	79	Standard
	Ce	140	2098.5	1.9				ug/L	68	Standard
>	**Tb**	159	1001039.4	1.3				ug/L	986982	Standard
	Ho	165	38.3	39.8				ug/L	10	Standard
	Tl	203	173.7	17.6	**0.0248**	0.003	12.9	ug/L	13	Standard
	Tl	205	130.0	20.0	**0.0242**	0.003	13.1	ug/L	10	Standard
	Pb	206	1142.7	8.1	**0.1552**	0.014	8.9	ug/L	264	Standard
	Pb	207	990.7	5.6	**0.1520**	0.010	6.4	ug/L	227	Standard
	Pb	208	3988.2	2.6	**0.1550**	0.003	2.2	ug/L	868	Standard
	U	238	1917.5	4.2	**0.2592**	0.011	4.2	ug/L	8	Standard
>	**Bi**	209	546503.3	1.0				ug/L	541014	Standard

Sample ID: L1606122701
Report Date/Time: Thursday, June 30, 2016 12:57:20
Page 1

Approved: July 01, 2016

Na	23	8.3	91.7	**45.9105**	41.804	91.1	mg/L	2	Standard
Mg	24	22995.8	4.3	**23.9915**	1.464	6.1	mg/L	53	Standard
K	39	1361.7	7.2	**2.1440**	0.254	11.8	mg/L	53	Standard
Ca	43	1233.4	0.5	**65.2887**	2.661	4.1	mg/L	28	Standard
Fe	54	200.5	26.1	**0.0125**	0.036	289.4	mg/L	181	Standard
Fe	57	838.4	5.4	**1.4641**	0.099	6.7	mg/L	257	Standard
> **Sc-1**	45	57673.0	4.5				mg/L	55220	Standard
Cl	35	40206.6	2.3				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	36911.7	6.6				ug/L	2040	Standard
P	31	38662.6	2.7				ug/L	20435	Standard
S	34	2288.5	1.5				ug/L	2430	Standard
Sr	88	4789.1	4.8				ug/L	75	Standard
C	12	1030.0	20.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	7	Standard
Dy	164	58.4	35.1				mg/L	9	Standard
Ho-1	165	38.3	39.8				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	81289.4	3.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.206	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.120	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122701
Report Date/Time: Thursday, June 30, 2016 12:57:20
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.781
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.015
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606122701
Report Date/Time: Thursday, June 30, 2016 12:57:20
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122703
Sample Date/Time: Thursday, June 30, 2016 12:58:15
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98106.7	2.3				ug/L	74916	Standard
	Be	9	41.7	18.3	**0.0266**	0.006	21.6	ug/L	10	Standard
	Al	27	5810039.6	1.6	**25.5754**	0.828	3.2	ug/L	1822	Standard
	Sc	45	59551.8	1.0				ug/L	55220	Standard
	Ti	47	617.0	1.7	**1.4056**	0.024	1.7	ug/L	34	Standard
	V	51	2392.4	22.7	**0.0588**	0.058	98.6	ug/L	1938	Standard
	Cr	52	22416.9	23.9	**1.4217**	0.586	41.2	ug/L	9522	Standard
	Cr	53	5614.4	11.2	**4.5831**	0.554	12.1	ug/L	395	Standard
	Mn	55	913432.0	1.5	**104.7943**	1.499	1.4	ug/L	902	Standard
	Co	59	617.7	4.3	**0.0521**	0.003	6.1	ug/L	262	Standard
	Ni	60	965.7	2.7	**0.2799**	0.012	4.3	ug/L	371	Standard
	Cu	65	623.3	6.9	**0.2203**	0.019	8.7	ug/L	106	Standard
	Zn	66	5970.5	1.7	**4.1910**	0.074	1.8	ug/L	398	Standard
>	**Ge**	72	541927.7	0.1				ug/L	535147	Standard
	As	75	449.9	5.6	**0.3869**	0.018	4.8	ug/L	-43	Standard
	Se	82	197.0	3.3	**1.3386**	0.047	3.5	ug/L	14	Standard
	Se-1	77	248.0	4.4	**2.1371**	0.119	5.6	ug/L	65	Standard
>	**Ga**	71	100.0	30.0				mg/L	97	Standard
	Rb	85	7907.1	1.3				ug/L	15	Standard
	Y	89	476065.1	1.9				ug/L	465704	Standard
>	**Rh**	103	83.3	15.1				ug/L	10	Standard
	Mo	98	66.3	20.6	**0.0328**	0.004	12.6	ug/L	9	Standard
	Ag	107	168.7	5.1	**0.0154**	0.001	6.8	ug/L	82	Standard
	Cd	111	68.6	10.2	**0.0352**	0.003	8.0	mg/L	7	Standard
	Cd	114	201.3	8.0	**0.0422**	0.003	6.1	ug/L	21	Standard
>	**In**	115	644446.3	0.4				ug/L	619035	Standard
	Sn	118	1071.7	18.0	**0.0549**	0.029	53.2	ug/L	508	Standard
	Sb	123	213.7	27.5	**0.0432**	0.011	25.0	ug/L	86	Standard
	Ba	135	271145.0	0.5	**113.9061**	0.186	0.2	ug/L	79	Standard
	Ce	140	188.3	15.1				ug/L	68	Standard
>	**Tb**	159	1013875.1	0.8				ug/L	986982	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	102.3	14.0	**0.0167**	0.002	9.1	ug/L	13	Standard
	Tl	205	103.3	26.6	**0.0203**	0.003	16.3	ug/L	10	Standard
	Pb	206	355.0	8.5	**0.0198**	0.005	24.1	ug/L	264	Standard
	Pb	207	281.7	6.3	**0.0173**	0.003	17.1	ug/L	227	Standard
	Pb	208	1217.4	4.7	**0.0183**	0.003	15.0	ug/L	868	Standard
	U	238	30.7	15.1	**0.0117**	0.001	4.8	ug/L	8	Standard
>	**Bi**	209	569392.8	0.7				ug/L	541014	Standard

Sample ID: L1606122703
Report Date/Time: Thursday, June 30, 2016 13:00:31
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11045.7	0.8	**11.1276**	0.030	0.3	mg/L	53	Standard
K	39	341.7	6.1	**0.4615**	0.027	6.0	mg/L	53	Standard
Ca	43	123.3	8.4	**4.7990**	0.478	10.0	mg/L	28	Standard
Fe	54	4422.1	3.5	**2.6747**	0.078	2.9	mg/L	181	Standard
Fe	57	1381.7	8.6	**2.7305**	0.286	10.5	mg/L	257	Standard
> **Sc-1**	45	59551.8	1.0				mg/L	55220	Standard
Cl	35	40835.6	1.8				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	38221.7	8.1				ug/L	2040	Standard
P	31	36084.6	1.8				ug/L	20435	Standard
S	34	2403.5	2.3				ug/L	2430	Standard
Sr	88	328.3	5.8				ug/L	75	Standard
C	12	643.3	16.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.9	44.9				mg/L	9	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	25898.8	2.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.955	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.267	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122703
Report Date/Time: Thursday, June 30, 2016 13:00:31
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.105
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.245
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606122703
Report Date/Time: Thursday, June 30, 2016 13:00:31
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122705
Sample Date/Time: Thursday, June 30, 2016 13:01:26
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96506.5	2.9				ug/L	74916	Standard
	Be	9	36.7	7.9	**0.0234**	0.001	6.3	ug/L	10	Standard
	Al	27	5814534.7	1.0	**26.0187**	0.549	2.1	ug/L	1822	Standard
	Sc	45	59138.6	2.8				ug/L	55220	Standard
	Ti	47	595.3	2.1	**1.3327**	0.069	5.2	ug/L	34	Standard
	V	51	2547.8	6.4	**0.0710**	0.011	15.2	ug/L	1938	Standard
	Cr	52	16464.5	19.5	**0.7433**	0.369	49.6	ug/L	9522	Standard
	Cr	53	4032.2	4.4	**3.1302**	0.228	7.3	ug/L	395	Standard
	Mn	55	875048.2	0.7	**98.8596**	2.763	2.8	ug/L	902	Standard
	Co	59	594.3	2.9	**0.0482**	0.003	6.6	ug/L	262	Standard
	Ni	60	892.4	4.9	**0.2413**	0.014	5.8	ug/L	371	Standard
	Cu	65	427.7	5.9	**0.1296**	0.006	4.5	ug/L	106	Standard
	Zn	66	5518.3	4.4	**3.7857**	0.265	7.0	ug/L	398	Standard
>	**Ge**	72	550577.4	2.9				ug/L	535147	Standard
	As	75	469.6	4.0	**0.3963**	0.019	4.9	ug/L	-43	Standard
	Se	82	206.6	5.7	**1.3866**	0.118	8.5	ug/L	14	Standard
	Se-1	77	232.0	11.2	**1.9274**	0.337	17.5	ug/L	65	Standard
>	**Ga**	71	91.7	32.0				mg/L	97	Standard
	Rb	85	7670.3	2.1				ug/L	15	Standard
	Y	89	479075.3	1.4				ug/L	465704	Standard
>	**Rh**	103	90.0	38.5				ug/L	10	Standard
	Mo	98	31.3	29.0	**0.0219**	0.003	12.6	ug/L	9	Standard
	Ag	107	144.7	4.6	**0.0121**	0.001	6.5	ug/L	82	Standard
	Cd	111	65.9	4.6	**0.0338**	0.001	3.7	mg/L	7	Standard
	Cd	114	199.2	12.6	**0.0414**	0.004	9.7	ug/L	21	Standard
>	**In**	115	652958.1	0.4				ug/L	619035	Standard
	Sn	118	963.4	13.3	**0.0370**	0.019	51.8	ug/L	508	Standard
	Sb	123	203.8	29.6	**0.0409**	0.011	26.5	ug/L	86	Standard
	Ba	135	265341.0	0.7	**110.0166**	1.085	1.0	ug/L	79	Standard
	Ce	140	121.7	4.7				ug/L	68	Standard
>	**Tb**	159	1011433.0	1.5				ug/L	986982	Standard
	Ho	165	21.7	53.3				ug/L	10	Standard
	Tl	203	92.3	7.8	**0.0155**	0.001	4.8	ug/L	13	Standard
	Tl	205	78.3	25.8	**0.0172**	0.003	14.9	ug/L	10	Standard
	Pb	206	346.3	1.6	**0.0180**	0.001	3.8	ug/L	264	Standard
	Pb	207	288.0	8.7	**0.0181**	0.004	22.3	ug/L	227	Standard
	Pb	208	1142.0	2.8	**0.0144**	0.001	5.8	ug/L	868	Standard
	U	238	12.0	30.0	**0.0094**	0.000	4.6	ug/L	8	Standard
>	**Bi**	209	573608.2	1.2				ug/L	541014	Standard

Sample ID: L1606122705
Report Date/Time: Thursday, June 30, 2016 13:03:43
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**26.7481**	26.895	100.6	mg/L	2	Standard
Mg	24	10548.7	1.0	**10.7032**	0.190	1.8	mg/L	53	Standard
K	39	330.0	18.4	**0.4476**	0.100	22.4	mg/L	53	Standard
Ca	43	113.3	22.2	**4.2973**	1.158	26.9	mg/L	28	Standard
Fe	54	4122.2	2.3	**2.5063**	0.133	5.3	mg/L	181	Standard
Fe	57	1295.1	5.7	**2.5384**	0.096	3.8	mg/L	257	Standard
> **Sc-1**	45	59138.6	2.8				mg/L	55220	Standard
Cl	35	40393.1	1.6				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	37803.8	3.7				ug/L	2040	Standard
P	31	37417.9	4.6				ug/L	20435	Standard
S	34	2318.5	3.4				ug/L	2430	Standard
Sr	88	295.0	9.0				ug/L	75	Standard
C	12	586.7	12.6				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	2.4	243.9				mg/L	9	Standard
Ho-1	165	21.7	53.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	24688.5	5.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.819	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.883	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122705
Report Date/Time: Thursday, June 30, 2016 13:03:43
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.480
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.025
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122706
Sample Date/Time: Thursday, June 30, 2016 13:04:38
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	103189.4	6.0				ug/L	74916	Standard
	Be	9	78.3	22.4	**0.0508**	0.014	28.2	ug/L	10	Standard
	Al	27	157081868.9	2.1	**658.2050**	26.291	4.0	ug/L	1822	Standard
	Sc	45	54901.0	0.9				ug/L	55220	Standard
	Ti	47	1394.7	5.0	**3.6738**	0.174	4.7	ug/L	34	Standard
	V	51	12108.3	4.2	**1.2535**	0.069	5.5	ug/L	1938	Standard
	Cr	52	50501.1	3.4	**5.1868**	0.274	5.3	ug/L	9522	Standard
	Cr	53	39827.3	3.4	**39.1856**	0.945	2.4	ug/L	395	Standard
	Mn	55	8765989.5	1.5	**1129.8039**	8.440	0.7	ug/L	902	Standard
	Co	59	67581.4	0.8	**9.1778**	0.069	0.8	ug/L	262	Standard
	Ni	60	22113.8	2.0	**10.7894**	0.112	1.0	ug/L	371	Standard
	Cu	65	2237.8	4.4	**1.0654**	0.040	3.8	ug/L	106	Standard
	Zn	66	8636.1	3.9	**7.0189**	0.198	2.8	ug/L	398	Standard
>	Ge	72	482829.1	1.2				ug/L	535147	Standard
	As	75	7723.0	1.7	**6.4468**	0.173	2.7	ug/L	-43	Standard
	Se	82	2488.9	2.3	**20.2630**	0.714	3.5	ug/L	14	Standard
	Se-1	77	4611.4	5.0	**56.1401**	2.313	4.1	ug/L	65	Standard
>	Ga	71	616.7	10.3				mg/L	97	Standard
	Rb	85	83239.7	1.6				ug/L	15	Standard
	Y	89	441272.2	0.8				ug/L	465704	Standard
>	Rh	103	1876.8	2.2				ug/L	10	Standard
	Mo	98	400.8	3.8	**0.1543**	0.004	2.9	ug/L	9	Standard
	Ag	107	193.3	2.6	**0.0222**	0.001	4.5	ug/L	82	Standard
	Cd	111	149.9	12.0	**0.0766**	0.009	11.3	mg/L	7	Standard
	Cd	114	385.7	11.9	**0.0822**	0.008	10.1	ug/L	21	Standard
>	In	115	560210.1	1.0				ug/L	619035	Standard
	Sn	118	2025.1	7.5	**0.2406**	0.029	12.0	ug/L	508	Standard
	Sb	123	366.2	10.2	**0.0809**	0.009	10.5	ug/L	86	Standard
	Ba	135	599986.5	1.1	**290.0146**	5.707	2.0	ug/L	79	Standard
	Ce	140	48873.7	0.5				ug/L	68	Standard
>	Tb	159	930027.9	1.3				ug/L	986982	Standard
	Ho	165	370.0	19.9				ug/L	10	Standard
	Tl	203	317.7	4.5	**0.0458**	0.002	3.9	ug/L	13	Standard
	Tl	205	268.3	14.5	**0.0471**	0.006	11.8	ug/L	10	Standard
	Pb	206	1015.4	2.5	**0.1606**	0.004	2.5	ug/L	264	Standard
	Pb	207	852.4	2.5	**0.1510**	0.005	3.3	ug/L	227	Standard
	Pb	208	3285.5	3.6	**0.1458**	0.007	4.7	ug/L	868	Standard
	U	238	64724.3	1.1	**9.8156**	0.160	1.6	ug/L	8	Standard
>	Bi	209	472641.5	0.5				ug/L	541014	Standard

Sample ID: L1606122706
Report Date/Time: Thursday, June 30, 2016 13:06:54
Page 1

Approved: July 01, 2016

Na	23	15.0	33.3	**84.9355**	28.778	33.9	mg/L	2	Standard
Mg	24	364289.1	2.5	**399.2375**	6.419	1.6	mg/L	53	Standard
K	39	1398.4	2.4	**2.3110**	0.059	2.5	mg/L	53	Standard
Ca	43	2235.2	4.9	**125.6306**	5.283	4.2	mg/L	28	Standard
Fe	54	1417.5	4.9	**0.8526**	0.043	5.0	mg/L	181	Standard
Fe	57	1791.8	4.1	**4.1118**	0.229	5.6	mg/L	257	Standard
> **Sc-1**	45	54901.0	0.9				mg/L	55220	Standard
Cl	35	43736.4	0.7				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	643090.2	1.8				ug/L	2040	Standard
P	31	32297.7	2.1				ug/L	20435	Standard
S	34	2658.6	4.5				ug/L	2430	Standard
Sr	88	5339.3	3.0				ug/L	75	Standard
C	12	726.7	12.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	540.1	10.6				mg/L	9	Standard
Ho-1	165	370.0	19.9				mg/L	10	Standard
Er	166	346.7	6.0				mg/L	23	Standard
I	127	615711.5	8.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.739	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.224	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122706
Report Date/Time: Thursday, June 30, 2016 13:06:54
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.497
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.362
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606122706
Report Date/Time: Thursday, June 30, 2016 13:06:54
Page 3

Approved: July 01, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122707
Sample Date/Time: Thursday, June 30, 2016 13:07:49
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90026.7	0.8				ug/L	74916	Standard
	Be	9	63.3	46.3	**0.0463**	0.023	49.7	ug/L	10	Standard
	Al	27	22111709.1	2.8	**106.0268**	2.597	2.4	ug/L	1822	Standard
	Sc	45	58884.2	2.2				ug/L	55220	Standard
	Ti	47	569.0	6.3	**1.2718**	0.095	7.5	ug/L	34	Standard
	V	51	3560.4	9.4	**0.1782**	0.038	21.4	ug/L	1938	Standard
	Cr	52	14246.9	22.2	**0.5041**	0.353	70.0	ug/L	9522	Standard
	Cr	53	11462.7	6.7	**9.6195**	0.734	7.6	ug/L	395	Standard
	Mn	55	5192834.3	1.2	**587.7850**	12.002	2.0	ug/L	902	Standard
	Co	59	1334.4	2.6	**0.1367**	0.003	2.0	ug/L	262	Standard
	Ni	60	46100.4	1.9	**19.8780**	0.544	2.7	ug/L	371	Standard
	Cu	65	1099.7	5.6	**0.4266**	0.030	7.1	ug/L	106	Standard
	Zn	66	4252.3	1.5	**2.8393**	0.076	2.7	ug/L	398	Standard
>	**Ge**	72	549794.8	0.8				ug/L	535147	Standard
	As	75	2904.0	2.8	**2.1652**	0.041	1.9	ug/L	-43	Standard
	Se	82	568.7	1.4	**3.9870**	0.030	0.7	ug/L	14	Standard
	Se-1	77	817.0	3.1	**8.2479**	0.326	4.0	ug/L	65	Standard
>	**Ga**	71	196.7	8.9				mg/L	97	Standard
	Rb	85	24827.0	1.2				ug/L	15	Standard
	Y	89	478508.6	0.4				ug/L	465704	Standard
>	**Rh**	103	468.3	13.2				ug/L	10	Standard
	Mo	98	430.7	1.8	**0.1478**	0.005	3.5	ug/L	9	Standard
	Ag	107	156.0	11.2	**0.0142**	0.002	13.2	ug/L	82	Standard
	Cd	111	89.1	5.9	**0.0441**	0.002	3.6	mg/L	7	Standard
	Cd	114	247.5	23.5	**0.0506**	0.009	18.3	ug/L	21	Standard
>	**In**	115	631239.9	2.0				ug/L	619035	Standard
	Sn	118	1025.0	5.8	**0.0511**	0.011	21.1	ug/L	508	Standard
	Sb	123	219.0	11.9	**0.0450**	0.005	12.2	ug/L	86	Standard
	Ba	135	919087.1	0.8	**394.2935**	4.746	1.2	ug/L	79	Standard
	Ce	140	1991.8	1.0				ug/L	68	Standard
>	**Tb**	159	999394.7	1.6				ug/L	986982	Standard
	Ho	165	48.3	29.9				ug/L	10	Standard
	Tl	203	86.7	8.7	**0.0155**	0.001	4.5	ug/L	13	Standard
	Tl	205	88.3	26.1	**0.0190**	0.003	14.9	ug/L	10	Standard
	Pb	206	364.3	2.5	**0.0245**	0.001	5.9	ug/L	264	Standard
	Pb	207	309.7	1.7	**0.0254**	0.002	6.2	ug/L	227	Standard
	Pb	208	1253.4	0.3	**0.0231**	0.001	3.4	ug/L	868	Standard
	U	238	58.7	15.8	**0.0157**	0.001	7.5	ug/L	8	Standard
>	**Bi**	209	540168.7	1.4				ug/L	541014	Standard

Sample ID: L1606122707
Report Date/Time: Thursday, June 30, 2016 13:10:06
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**26.2781**	25.903	98.6	mg/L	2	Standard
Mg	24	53879.0	2.6	**55.0404**	1.546	2.8	mg/L	53	Standard
K	39	575.0	9.2	**0.8404**	0.102	12.1	mg/L	53	Standard
Ca	43	341.7	4.5	**16.4847**	1.095	6.6	mg/L	28	Standard
Fe	54	40703.3	2.2	**25.8984**	0.856	3.3	mg/L	181	Standard
Fe	57	10752.1	1.3	**26.0580**	0.936	3.6	mg/L	257	Standard
Sc-1	45	58884.2	2.2				mg/L	55220	Standard
Cl	35	40587.7	3.8				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	120692.1	0.4				ug/L	2040	Standard
P	31	34541.0	0.8				ug/L	20435	Standard
S	34	2881.9	4.0				ug/L	2430	Standard
Sr	88	800.0	10.7				ug/L	75	Standard
C	12	423.3	20.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	84.0	14.1				mg/L	9	Standard
Ho-1	165	48.3	29.9				mg/L	10	Standard
Er	166	56.7	36.7				mg/L	23	Standard
I	127	191486.3	2.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		120.169	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.737	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606122707
Report Date/Time: Thursday, June 30, 2016 13:10:06
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.972	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.844	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606122707
Report Date/Time: Thursday, June 30, 2016 13:10:06
Page 3

Approved: July 01, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606112901
Sample Date/Time: Thursday, June 30, 2016 13:11:01
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84503.5	2.9				ug/L	74916	Standard
	Be	9	21.7	53.3	**0.0147**	0.010	68.3	ug/L	10	Standard
	Al	27	16220096.8	1.2	**82.9137**	2.826	3.4	ug/L	1822	Standard
	Sc	45	57890.4	2.0				ug/L	55220	Standard
	Ti	47	277.3	7.3	**0.5737**	0.044	7.7	ug/L	34	Standard
	V	51	4780.4	3.2	**0.2988**	0.019	6.5	ug/L	1938	Standard
	Cr	52	21846.1	18.6	**1.2922**	0.456	35.3	ug/L	9522	Standard
	Cr	53	5070.9	10.0	**3.9738**	0.470	11.8	ug/L	395	Standard
	Mn	55	476221.8	2.4	**52.9921**	1.410	2.7	ug/L	902	Standard
	Co	59	1995.8	4.6	**0.2122**	0.011	5.2	ug/L	262	Standard
	Ni	60	3903.8	4.2	**1.5242**	0.069	4.6	ug/L	371	Standard
	Cu	65	2599.9	4.7	**1.0712**	0.055	5.1	ug/L	106	Standard
	Zn	66	4040.2	0.5	**2.6346**	0.043	1.6	ug/L	398	Standard
>	**Ge**	72	558230.7	0.9				ug/L	535147	Standard
	As	75	429.9	0.7	**0.3629**	0.002	0.5	ug/L	-43	Standard
	Se	82	53.3	9.3	**0.2803**	0.036	12.9	ug/L	14	Standard
	Se-1	77	312.3	6.8	**2.7435**	0.245	8.9	ug/L	65	Standard
>	**Ga**	71	161.7	7.1				mg/L	97	Standard
	Rb	85	10201.8	1.2				ug/L	15	Standard
	Y	89	483396.8	0.2				ug/L	465704	Standard
>	**Rh**	103	161.7	17.6				ug/L	10	Standard
	Mo	98	174.3	4.4	**0.0663**	0.003	4.5	ug/L	9	Standard
	Ag	107	141.3	8.2	**0.0120**	0.001	11.0	ug/L	82	Standard
	Cd	111	74.3	11.3	**0.0376**	0.003	8.3	mg/L	7	Standard
	Cd	114	171.0	24.5	**0.0373**	0.007	17.8	ug/L	21	Standard
>	**In**	115	641638.0	1.2				ug/L	619035	Standard
	Sn	118	1328.4	11.2	**0.0934**	0.020	21.3	ug/L	508	Standard
	Sb	123	3845.7	1.8	**0.7050**	0.005	0.7	ug/L	86	Standard
	Ba	135	27836.9	0.8	**11.7294**	0.230	2.0	ug/L	79	Standard
	Ce	140	16030.1	2.6				ug/L	68	Standard
>	**Tb**	159	1018893.0	1.0				ug/L	986982	Standard
	Ho	165	438.3	9.3				ug/L	10	Standard
	Tl	203	96.3	8.6	**0.0163**	0.001	5.7	ug/L	13	Standard
	Tl	205	76.7	18.8	**0.0173**	0.002	10.7	ug/L	10	Standard
	Pb	206	2082.1	3.5	**0.3098**	0.014	4.4	ug/L	264	Standard
	Pb	207	1675.8	3.3	**0.2763**	0.011	3.9	ug/L	227	Standard
	Pb	208	7081.3	3.8	**0.3009**	0.014	4.6	ug/L	868	Standard
	U	238	1271.1	2.6	**0.1725**	0.005	2.8	ug/L	8	Standard
>	**Bi**	209	553112.0	0.5				ug/L	541014	Standard

Sample ID: L1606112901
Report Date/Time: Thursday, June 30, 2016 13:13:18
Page 1

Approved: July 01, 2016

Na	23	6.7	86.6	**36.1091**	31.274	86.6	mg/L	2	Standard
Mg	24	29747.5	1.6	**30.8906**	0.128	0.4	mg/L	53	Standard
K	39	685.0	9.5	**1.0344**	0.125	12.1	mg/L	53	Standard
Ca	43	770.0	9.0	**39.9826**	4.567	11.4	mg/L	28	Standard
Fe	54	700.4	9.7	**0.3361**	0.038	11.2	mg/L	181	Standard
Fe	57	773.4	13.1	**1.2886**	0.222	17.2	mg/L	257	Standard
> **Sc-1**	45	57890.4	2.0				mg/L	55220	Standard
Cl	35	44774.8	2.3				ug/L	35504	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	8082.2	5.4				ug/L	2040	Standard
P	31	26997.4	2.1				ug/L	20435	Standard
S	34	2950.3	2.8				ug/L	2430	Standard
Sr	88	258.3	7.8				ug/L	75	Standard
C	12	320.0	5.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	589.4	11.7				mg/L	9	Standard
Ho-1	165	438.3	9.3				mg/L	10	Standard
Er	166	430.0	16.8				mg/L	23	Standard
I	127	41294.5	1.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.797	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.314	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606112901
Report Date/Time: Thursday, June 30, 2016 13:13:18
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.651
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.236
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606112902
Sample Date/Time: Thursday, June 30, 2016 13:14:12
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85505.7	2.3				ug/L	74916	Standard
	Be	9	33.3	22.9	**0.0242**	0.007	28.1	ug/L	10	Standard
	Al	27	16102936.0	1.9	**81.3052**	0.536	0.7	ug/L	1822	Standard
	Sc	45	57932.2	1.6				ug/L	55220	Standard
	Ti	47	2060.8	3.3	**4.7290**	0.220	4.7	ug/L	34	Standard
	V	51	4721.3	7.2	**0.2934**	0.027	9.1	ug/L	1938	Standard
	Cr	52	35568.7	1.9	**2.7621**	0.066	2.4	ug/L	9522	Standard
	Cr	53	8937.6	4.2	**7.3181**	0.424	5.8	ug/L	395	Standard
	Mn	55	1621057.9	0.9	**181.0990**	2.157	1.2	ug/L	902	Standard
	Co	59	1572.7	3.6	**0.1628**	0.004	2.6	ug/L	262	Standard
	Ni	60	5510.0	0.7	**2.2174**	0.036	1.6	ug/L	371	Standard
	Cu	65	2590.2	3.6	**1.0697**	0.035	3.3	ug/L	106	Standard
	Zn	66	3882.5	2.8	**2.5247**	0.020	0.8	ug/L	398	Standard
>	**Ge**	72	556858.5	2.1				ug/L	535147	Standard
	As	75	211.6	19.7	**0.2074**	0.033	15.7	ug/L	-43	Standard
	Se	82	51.6	4.8	**0.2690**	0.017	6.5	ug/L	14	Standard
	Se-1	77	366.0	5.3	**3.3266**	0.275	8.3	ug/L	65	Standard
>	**Ga**	71	345.0	9.5				mg/L	97	Standard
	Rb	85	15703.1	3.3				ug/L	15	Standard
	Y	89	488405.3	0.2				ug/L	465704	Standard
>	**Rh**	103	76.7	16.4				ug/L	10	Standard
	Mo	98	790.6	4.1	**0.2527**	0.010	4.0	ug/L	9	Standard
	Ag	107	120.7	4.1	**0.0091**	0.001	7.2	ug/L	82	Standard
	Cd	111	117.9	12.2	**0.0543**	0.006	10.8	mg/L	7	Standard
	Cd	114	308.0	18.6	**0.0592**	0.009	15.8	ug/L	21	Standard
>	**In**	115	652556.8	0.6				ug/L	619035	Standard
	Sn	118	1316.7	6.5	**0.0886**	0.014	15.5	ug/L	508	Standard
	Sb	123	21644.9	1.1	**3.8815**	0.026	0.7	ug/L	86	Standard
	Ba	135	14730.5	1.3	**6.0925**	0.048	0.8	ug/L	79	Standard
	Ce	140	14029.8	0.5				ug/L	68	Standard
>	**Tb**	159	1019421.4	0.9				ug/L	986982	Standard
	Ho	165	286.7	1.0				ug/L	10	Standard
	Tl	203	75.0	13.1	**0.0138**	0.001	7.2	ug/L	13	Standard
	Tl	205	75.0	24.0	**0.0168**	0.002	13.3	ug/L	10	Standard
	Pb	206	7804.7	3.4	**1.2275**	0.036	2.9	ug/L	264	Standard
	Pb	207	6506.7	1.9	**1.1340**	0.015	1.3	ug/L	227	Standard
	Pb	208	26754.3	1.1	**1.2065**	0.021	1.7	ug/L	868	Standard
	U	238	142.7	8.3	**0.0258**	0.001	5.4	ug/L	8	Standard
>	**Bi**	209	569462.3	0.6				ug/L	541014	Standard

Sample ID: L1606112902
Report Date/Time: Thursday, June 30, 2016 13:16:29
Page 1

Approved: July 01, 2016

Na	23	6.7	43.3	**35.5921**	14.804	41.6	mg/L	2	Standard
Mg	24	12573.6	3.7	**13.0310**	0.597	4.6	mg/L	53	Standard
K	39	395.0	17.5	**0.5640**	0.121	21.5	mg/L	53	Standard
Ca	43	470.0	8.0	**23.7149**	2.271	9.6	mg/L	28	Standard
Fe	54	715.7	12.6	**0.3456**	0.052	15.2	mg/L	181	Standard
Fe	57	633.3	9.1	**0.9355**	0.130	13.9	mg/L	257	Standard
> **Sc-1**	45	57932.2	1.6				mg/L	55220	Standard
Cl	35	45353.8	0.9				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	7928.7	1.2				ug/L	2040	Standard
P	31	25888.8	1.3				ug/L	20435	Standard
S	34	2683.6	7.3				ug/L	2430	Standard
Sr	88	223.3	12.3				ug/L	75	Standard
C	12	250.0	24.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	477.4	5.5				mg/L	9	Standard
Ho-1	165	286.7	1.0				mg/L	10	Standard
Er	166	263.3	4.4				mg/L	23	Standard
I	127	15045.8	4.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.135	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.057	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606112902
Report Date/Time: Thursday, June 30, 2016 13:16:29
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.415
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.258
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606112903
Sample Date/Time: Thursday, June 30, 2016 13:17:24
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82633.1	1.9				ug/L	74916	Standard
	Be	9	20.0	25.0	**0.0136**	0.005	33.2	ug/L	10	Standard
	Al	27	18202343.0	1.2	**95.1067**	1.298	1.4	ug/L	1822	Standard
	Sc	45	55814.3	0.5				ug/L	55220	Standard
	Ti	47	223.7	14.6	**0.4591**	0.076	16.7	ug/L	34	Standard
	V	51	4195.5	5.9	**0.2465**	0.028	11.6	ug/L	1938	Standard
	Cr	52	27579.5	15.9	**1.9555**	0.460	23.5	ug/L	9522	Standard
	Cr	53	5416.0	8.1	**4.3562**	0.370	8.5	ug/L	395	Standard
	Mn	55	392743.5	2.6	**44.5235**	1.406	3.2	ug/L	902	Standard
	Co	59	1595.1	5.5	**0.1686**	0.011	6.8	ug/L	262	Standard
	Ni	60	3333.0	3.6	**1.3071**	0.044	3.3	ug/L	371	Standard
	Cu	65	1548.7	3.7	**0.6272**	0.027	4.3	ug/L	106	Standard
	Zn	66	2008.1	1.8	**1.1634**	0.033	2.8	ug/L	398	Standard
>	**Ge**	72	547762.6	0.7				ug/L	535147	Standard
	As	75	427.4	24.0	**0.3670**	0.075	20.5	ug/L	-43	Standard
	Se	82	64.6	10.5	**0.3686**	0.052	14.1	ug/L	14	Standard
	Se-1	77	228.0	3.9	**1.8916**	0.108	5.7	ug/L	65	Standard
>	**Ga**	71	103.3	31.5				mg/L	97	Standard
	Rb	85	1483.4	6.2				ug/L	15	Standard
	Y	89	490402.3	1.1				ug/L	465704	Standard
>	**Rh**	103	81.7	14.1				ug/L	10	Standard
	Mo	98	101.9	43.0	**0.0443**	0.014	31.9	ug/L	9	Standard
	Ag	107	130.3	13.8	**0.0108**	0.002	23.0	ug/L	82	Standard
	Cd	111	69.2	11.0	**0.0359**	0.003	8.1	mg/L	7	Standard
	Cd	114	161.1	11.1	**0.0359**	0.003	7.2	ug/L	21	Standard
>	**In**	115	634377.7	1.8				ug/L	619035	Standard
	Sn	118	768.4	11.6	**0.0118**	0.014	115.6	ug/L	508	Standard
	Sb	123	460.4	5.5	**0.0893**	0.006	6.9	ug/L	86	Standard
	Ba	135	20721.8	1.8	**8.8253**	0.041	0.5	ug/L	79	Standard
	Ce	140	2230.2	1.6				ug/L	68	Standard
>	**Tb**	159	984576.1	0.8				ug/L	986982	Standard
	Ho	165	148.3	30.6				ug/L	10	Standard
	Tl	203	120.0	9.5	**0.0191**	0.001	6.1	ug/L	13	Standard
	Tl	205	143.3	31.3	**0.0260**	0.006	21.9	ug/L	10	Standard
	Pb	206	464.0	15.1	**0.0412**	0.012	28.7	ug/L	264	Standard
	Pb	207	399.3	27.5	**0.0420**	0.021	49.1	ug/L	227	Standard
	Pb	208	1631.7	10.6	**0.0414**	0.008	19.8	ug/L	868	Standard
	U	238	1095.4	6.1	**0.1526**	0.009	5.6	ug/L	8	Standard
>	**Bi**	209	542130.4	0.7				ug/L	541014	Standard

Sample ID: L1606112903
Report Date/Time: Thursday, June 30, 2016 13:19:41
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**18.5012**	16.018	86.6	mg/L	2	Standard
Mg	24	20070.0	1.5	**21.6062**	0.429	2.0	mg/L	53	Standard
K	39	331.7	13.6	**0.4809**	0.076	15.8	mg/L	53	Standard
Ca	43	756.7	4.0	**40.7258**	1.691	4.2	mg/L	28	Standard
Fe	54	718.9	5.9	**0.3658**	0.026	7.2	mg/L	181	Standard
Fe	57	738.4	9.3	**1.2715**	0.173	13.6	mg/L	257	Standard
> **Sc-1**	45	55814.3	0.5				mg/L	55220	Standard
Cl	35	48250.7	0.2				ug/L	35504	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	8635.8	2.1				ug/L	2040	Standard
P	31	28111.1	1.2				ug/L	20435	Standard
S	34	3018.6	3.5				ug/L	2430	Standard
Sr	88	258.3	19.9				ug/L	75	Standard
C	12	273.3	27.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	198.8	15.4				mg/L	9	Standard
Ho-1	165	148.3	30.6				mg/L	10	Standard
Er	166	163.3	3.5				mg/L	23	Standard
I	127	31669.8	6.8				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.300	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.357	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606112903
Report Date/Time: Thursday, June 30, 2016 13:19:41
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.479
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.206
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 13:20:37
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79900.1	1.3				ug/L	74916	Standard
	Be	9	57147.7	3.5	**50.7735**	1.148	2.3	ug/L	10	Standard
	Al	27	8732343.3	1.3	**47.1819**	0.598	1.3	ug/L	1822	Standard
	Sc	45	54700.3	2.6				ug/L	55220	Standard
	Ti	47	41369.1	1.0	**97.4428**	1.470	1.5	ug/L	34	Standard
	V	51	465247.6	2.0	**48.7108**	1.117	2.3	ug/L	1938	Standard
	Cr	52	469969.5	3.8	**49.7995**	0.789	1.6	ug/L	9522	Standard
	Cr	53	58365.7	5.2	**50.5062**	1.411	2.8	ug/L	395	Standard
	Mn	55	432273.8	1.1	**48.8242**	1.117	2.3	ug/L	902	Standard
	Co	59	416250.9	0.9	**49.7343**	0.779	1.6	ug/L	262	Standard
	Ni	60	113064.7	1.4	**48.9451**	0.549	1.1	ug/L	371	Standard
	Cu	65	110972.6	1.3	**48.8962**	0.559	1.1	ug/L	106	Standard
	Zn	66	65922.5	1.5	**49.0279**	0.565	1.2	ug/L	398	Standard
>	Ge	72	550016.3	2.5				ug/L	535147	Standard
	As	75	66744.8	1.7	**48.5447**	0.633	1.3	ug/L	-43	Standard
	Se	82	6814.9	1.8	**48.8345**	0.706	1.4	ug/L	14	Standard
	Se-1	77	4558.7	4.2	**48.6414**	0.883	1.8	ug/L	65	Standard
>	Ga	71	101.7	15.0				mg/L	97	Standard
	Rb	85	965.0	6.3				ug/L	15	Standard
	Y	89	475534.6	1.4				ug/L	465704	Standard
>	Rh	103	45.0	57.7				ug/L	10	Standard
	Mo	98	309899.2	0.8	**95.8767**	0.846	0.9	ug/L	9	Standard
	Ag	107	376812.4	1.5	**48.1670**	0.339	0.7	ug/L	82	Standard
	Cd	111	120977.0	0.1	**48.3850**	0.394	0.8	mg/L	7	Standard
	Cd	114	290674.6	2.4	**48.2748**	1.126	2.3	ug/L	21	Standard
>	In	115	641413.4	0.8				ug/L	619035	Standard
	Sn	118	325899.3	0.0	**48.2296**	0.409	0.8	ug/L	508	Standard
	Sb	123	264734.5	1.7	**48.2480**	0.637	1.3	ug/L	86	Standard
	Ba	135	113119.7	1.1	**47.7337**	0.198	0.4	ug/L	79	Standard
	Ce	140	205.0	7.3				ug/L	68	Standard
>	Tb	159	985502.5	1.0				ug/L	986982	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	463987.5	1.7	**49.3714**	0.337	0.7	ug/L	13	Standard
	Tl	205	412712.2	0.6	**51.4082**	0.207	0.4	ug/L	10	Standard
	Pb	206	293514.0	1.2	**48.6270**	0.208	0.4	ug/L	264	Standard
	Pb	207	268313.2	1.4	**49.1873**	0.628	1.3	ug/L	227	Standard
	Pb	208	1073164.4	0.3	**51.0218**	0.412	0.8	ug/L	868	Standard
	U	238	392652.3	0.9	**50.5036**	0.130	0.3	ug/L	8	Standard
>	Bi	209	556886.0	1.0				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 13:22:54
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.2171**	15.956	173.1	mg/L	2	Standard
Mg	24	4832.4	1.8	**5.2834**	0.116	2.2	mg/L	53	Standard
K	39	2306.8	5.1	**3.8800**	0.278	7.2	mg/L	53	Standard
Ca	43	108.3	10.7	**4.5322**	0.800	17.7	mg/L	28	Standard
Fe	54	7100.8	3.3	**4.7668**	0.174	3.6	mg/L	181	Standard
Fe	57	1925.1	9.0	**4.4864**	0.474	10.6	mg/L	257	Standard
Sc-1	45	54700.3	2.6				mg/L	55220	Standard
Cl	35	45320.4	2.2				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2546.9	7.9				ug/L	2040	Standard
P	31	25962.2	1.5				ug/L	20435	Standard
S	34	3140.3	2.5				ug/L	2430	Standard
Sr	88	63.3	19.9				ug/L	75	Standard
C	12	110.0	55.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	22.9	66.2				mg/L	9	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	13801.3	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.547		
Al	27	94.364		
Sc	45			
Ti	47	97.443		
V	51	97.422		
Cr	52	99.599		
Cr	53			
Mn	55	97.648		
Co	59	99.469		
Ni	60	97.890		
Cu	65	97.792		
Zn	66	98.056		
Ge	72		102.779	
As	75	97.089		
Se	82	97.669		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 13:22:54
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	95.877		
Ag	107	96.334		
Cd	111	96.770		
Cd	114			
In	115			103.615
Sn	118	96.459		
Sb	123	96.496		
Ba	135	95.467		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.743		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.044		
U	238	101.007		
Bi	209			102.934
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 13:22:54
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 13:23:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77613.3	1.9				ug/L	74916	Standard
	Be	9	26.7	43.3	**0.0209**	0.011	53.1	ug/L	10	Standard
	Al	27	4013.9	16.5	**0.0200**	0.004	17.8	ug/L	1822	Standard
	Sc	45	53790.4	4.1				ug/L	55220	Standard
	Ti	47	40.3	9.4	**0.0270**	0.008	30.9	ug/L	34	Standard
	V	51	1570.4	7.2	**-0.0277**	0.011	39.7	ug/L	1938	Standard
	Cr	52	9530.3	6.1	**0.0150**	0.066	439.7	ug/L	9522	Standard
	Cr	53	931.7	7.4	**0.4437**	0.060	13.6	ug/L	395	Standard
	Mn	55	1144.7	6.3	**0.0273**	0.008	28.2	ug/L	902	Standard
	Co	59	305.7	2.6	**0.0145**	0.001	6.6	ug/L	262	Standard
	Ni	60	276.0	3.8	**-0.0231**	0.005	19.8	ug/L	371	Standard
	Cu	65	184.3	7.4	**0.0244**	0.006	25.2	ug/L	106	Standard
	Zn	66	412.0	4.9	**-0.0312**	0.015	47.5	ug/L	398	Standard
>	**Ge**	72	537897.6	0.8				ug/L	535147	Standard
	As	75	-29.0	115.0	**0.0336**	0.025	73.8	ug/L	-43	Standard
	Se	82	25.6	45.5	**0.0905**	0.084	93.0	ug/L	14	Standard
	Se-1	77	72.3	17.8	**0.2171**	0.138	63.7	ug/L	65	Standard
>	**Ga**	71	76.7	30.8				mg/L	97	Standard
	Rb	85	48.3	29.9				ug/L	15	Standard
	Y	89	473909.1	0.5				ug/L	465704	Standard
>	**Rh**	103	26.7	39.0				ug/L	10	Standard
	Mo	98	194.3	6.6	**0.0724**	0.004	5.0	ug/L	9	Standard
	Ag	107	137.3	5.8	**0.0115**	0.001	9.8	ug/L	82	Standard
	Cd	111	16.0	28.2	**0.0143**	0.002	12.6	mg/L	7	Standard
	Cd	114	32.7	50.4	**0.0143**	0.003	18.9	ug/L	21	Standard
>	**In**	115	642024.4	0.6				ug/L	619035	Standard
	Sn	118	1080.0	19.1	**0.0567**	0.031	55.0	ug/L	508	Standard
	Sb	123	653.6	26.6	**0.1235**	0.032	26.0	ug/L	86	Standard
	Ba	135	66.0	27.6	**0.0082**	0.008	92.5	ug/L	79	Standard
	Ce	140	51.7	64.4				ug/L	68	Standard
>	**Tb**	159	985804.8	1.4				ug/L	986982	Standard
	Ho	165	10.0					ug/L	10	Standard
	Tl	203	80.7	0.7	**0.0145**	0.000	0.6	ug/L	13	Standard
	Tl	205	80.0	48.8	**0.0176**	0.005	27.3	ug/L	10	Standard
	Pb	206	345.7	6.1	**0.0191**	0.003	17.6	ug/L	264	Standard
	Pb	207	300.0	5.8	**0.0215**	0.003	15.2	ug/L	227	Standard
	Pb	208	1211.7	4.6	**0.0189**	0.002	12.6	ug/L	868	Standard
	U	238	57.7	11.5	**0.0153**	0.001	5.4	ug/L	8	Standard
>	**Bi**	209	560751.9	0.5				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 13:26:05
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.8776**	17.100	173.1	mg/L	2	Standard
Mg	24	55.0	32.8	**0.0275**	0.022	80.3	mg/L	53	Standard
K	39	63.3	22.8	**0.0338**	0.020	59.7	mg/L	53	Standard
Ca	43	26.7	57.3	**-0.1261**	0.902	714.8	mg/L	28	Standard
Fe	54	179.2	2.8	**0.0067**	0.003	42.6	mg/L	181	Standard
Fe	57	313.3	24.0	**0.1951**	0.234	119.7	mg/L	257	Standard
Sc-1	45	53790.4	4.1				mg/L	55220	Standard
Cl	35	43643.5	2.6				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2146.8	4.3				ug/L	2040	Standard
P	31	24579.9	2.6				ug/L	20435	Standard
S	34	3047.0	2.1				ug/L	2430	Standard
Sr	88	68.3	34.6				ug/L	75	Standard
C	12	106.7	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	506.5	5.5				mg/L	9	Standard
Ho-1	165	10.0					mg/L	10	Standard
Er	166	73.3	43.8				mg/L	23	Standard
I	127	13424.3	1.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.514	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 13:26:05
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.714
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.648
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 13:26:05
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606112904
Sample Date/Time: Thursday, June 30, 2016 13:27:01
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77697.1	2.0				ug/L	74916	Standard
	Be	9	33.3	8.7	**0.0269**	0.003	11.5	ug/L	10	Standard
	Al	27	16310108.0	0.1	**90.6465**	1.855	2.0	ug/L	1822	Standard
	Sc	45	54240.3	1.9				ug/L	55220	Standard
	Ti	47	2684.6	9.0	**6.4077**	0.517	8.1	ug/L	34	Standard
	V	51	5386.0	5.4	**0.3834**	0.027	7.0	ug/L	1938	Standard
	Cr	52	59624.2	3.8	**5.5699**	0.256	4.6	ug/L	9522	Standard
	Cr	53	11434.3	7.4	**9.8353**	0.821	8.3	ug/L	395	Standard
	Mn	55	2048984.2	1.0	**237.4175**	0.335	0.1	ug/L	902	Standard
	Co	59	2103.5	0.9	**0.2347**	0.004	1.6	ug/L	262	Standard
	Ni	60	8758.5	1.6	**3.7494**	0.024	0.6	ug/L	371	Standard
	Cu	65	3653.8	1.9	**1.5923**	0.032	2.0	ug/L	106	Standard
	Zn	66	5799.1	0.9	**4.1028**	0.085	2.1	ug/L	398	Standard
>	**Ge**	72	536880.0	1.0				ug/L	535147	Standard
	As	75	231.4	23.5	**0.2276**	0.042	18.4	ug/L	-43	Standard
	Se	82	45.8	24.7	**0.2394**	0.081	33.8	ug/L	14	Standard
	Se-1	77	363.0	9.0	**3.4362**	0.377	11.0	ug/L	65	Standard
>	**Ga**	71	441.7	11.8				mg/L	97	Standard
	Rb	85	19058.6	2.2				ug/L	15	Standard
	Y	89	472702.6	0.9				ug/L	465704	Standard
>	**Rh**	103	60.0	25.0				ug/L	10	Standard
	Mo	98	1134.3	1.4	**0.3728**	0.006	1.7	ug/L	9	Standard
	Ag	107	154.7	13.8	**0.0142**	0.003	19.3	ug/L	82	Standard
	Cd	111	242.3	0.5	**0.1074**	0.000	0.4	mg/L	7	Standard
	Cd	114	593.2	7.6	**0.1101**	0.008	7.4	ug/L	21	Standard
>	**In**	115	624500.1	0.5				ug/L	619035	Standard
	Sn	118	1746.8	10.4	**0.1627**	0.028	17.3	ug/L	508	Standard
	Sb	123	35311.2	0.7	**6.6139**	0.066	1.0	ug/L	86	Standard
	Ba	135	17076.0	0.7	**7.3843**	0.040	0.5	ug/L	79	Standard
	Ce	140	16609.1	2.5				ug/L	68	Standard
>	**Tb**	159	963913.5	0.7				ug/L	986982	Standard
	Ho	165	328.3	17.7				ug/L	10	Standard
	Tl	203	125.0	8.4	**0.0197**	0.001	6.1	ug/L	13	Standard
	Tl	205	111.7	21.2	**0.0220**	0.003	13.4	ug/L	10	Standard
	Pb	206	11629.5	2.3	**1.9498**	0.046	2.4	ug/L	264	Standard
	Pb	207	9793.5	1.8	**1.8187**	0.034	1.9	ug/L	227	Standard
	Pb	208	40243.5	0.8	**1.9354**	0.028	1.5	ug/L	868	Standard
	U	238	155.3	6.0	**0.0285**	0.001	4.4	ug/L	8	Standard
>	**Bi**	209	540255.5	0.7				ug/L	541014	Standard

Sample ID: L1606112904
Report Date/Time: Thursday, June 30, 2016 13:29:18
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	13307.5	0.8	**14.7349**	0.397	2.7	mg/L	53	Standard
K	39	520.0	18.8	**0.8223**	0.165	20.1	mg/L	53	Standard
Ca	43	530.0	5.3	**28.8936**	1.711	5.9	mg/L	28	Standard
Fe	54	887.4	6.5	**0.4967**	0.036	7.2	mg/L	181	Standard
Fe	57	678.3	10.1	**1.1688**	0.216	18.4	mg/L	257	Standard
> **Sc-1**	45	54240.3	1.9				mg/L	55220	Standard
Cl	35	47467.6	0.6				ug/L	35504	Standard
Kr	83	3.7	83.3				ug/L	2	Standard
Br	81	6017.9	4.8				ug/L	2040	Standard
P	31	26616.7	1.5				ug/L	20435	Standard
S	34	2893.6	3.7				ug/L	2430	Standard
Sr	88	215.0	14.0				ug/L	75	Standard
C	12	130.0	15.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	514.2	11.9				mg/L	9	Standard
Ho-1	165	328.3	17.7				mg/L	10	Standard
Er	166	330.0	3.0				mg/L	23	Standard
I	127	12760.4	2.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.712	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606112904
Report Date/Time: Thursday, June 30, 2016 13:29:18
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.883
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.860
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606112905
Sample Date/Time: Thursday, June 30, 2016 13:30:13
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76432.3	1.6				ug/L	74916	Standard
	Be	9	20.0	50.0	**0.0149**	0.009	60.7	ug/L	10	Standard
	Al	27	21059.7	6.5	**0.1166**	0.006	5.1	ug/L	1822	Standard
	Sc	45	55068.2	0.9				ug/L	55220	Standard
	Ti	47	71.3	78.5	**0.1025**	0.137	134.1	ug/L	34	Standard
	V	51	2275.4	3.5	**0.0479**	0.011	22.5	ug/L	1938	Standard
	Cr	52	12553.5	2.2	**0.3476**	0.018	5.2	ug/L	9522	Standard
	Cr	53	1180.0	9.4	**0.6649**	0.110	16.6	ug/L	395	Standard
	Mn	55	2619.6	6.4	**0.1975**	0.017	8.4	ug/L	902	Standard
	Co	59	251.3	8.1	**0.0079**	0.003	32.9	ug/L	262	Standard
	Ni	60	534.3	6.1	**0.0914**	0.016	17.5	ug/L	371	Standard
	Cu	65	1121.4	3.9	**0.4466**	0.026	5.8	ug/L	106	Standard
	Zn	66	2738.6	2.1	**1.7481**	0.056	3.2	ug/L	398	Standard
>	**Ge**	72	538551.7	1.2				ug/L	535147	Standard
	As	75	-45.8	92.9	**0.0214**	0.032	147.1	ug/L	-43	Standard
	Se	82	21.1	26.0	**0.0570**	0.038	67.1	ug/L	14	Standard
	Se-1	77	67.0	15.7	**0.1572**	0.111	70.4	ug/L	65	Standard
>	**Ga**	71	81.7	19.7				mg/L	97	Standard
	Rb	85	188.3	17.7				ug/L	15	Standard
	Y	89	473580.7	1.9				ug/L	465704	Standard
>	**Rh**	103	18.3	41.7				ug/L	10	Standard
	Mo	98	50.8	10.6	**0.0283**	0.002	6.1	ug/L	9	Standard
	Ag	107	104.3	14.0	**0.0074**	0.002	25.2	ug/L	82	Standard
	Cd	111	60.2	6.3	**0.0322**	0.002	4.8	mg/L	7	Standard
	Cd	114	143.9	6.1	**0.0331**	0.001	4.2	ug/L	21	Standard
>	**In**	115	634449.3	0.3				ug/L	619035	Standard
	Sn	118	2651.9	5.9	**0.2942**	0.025	8.3	ug/L	508	Standard
	Sb	123	239.5	12.9	**0.0486**	0.006	12.0	ug/L	86	Standard
	Ba	135	1220.7	4.5	**0.5013**	0.023	4.6	ug/L	79	Standard
	Ce	140	88.3	3.3				ug/L	68	Standard
>	**Tb**	159	971722.3	0.5				ug/L	986982	Standard
	Ho	165	18.3	15.7				ug/L	10	Standard
	Tl	203	37.0	9.7	**0.0100**	0.000	3.9	ug/L	13	Standard
	Tl	205	21.7	53.3	**0.0104**	0.001	14.0	ug/L	10	Standard
	Pb	206	308.7	3.9	**0.0141**	0.002	13.9	ug/L	264	Standard
	Pb	207	282.7	6.0	**0.0193**	0.003	16.1	ug/L	227	Standard
	Pb	208	1180.0	5.4	**0.0185**	0.003	16.1	ug/L	868	Standard
	U	238	13.7	33.0	**0.0097**	0.001	6.0	ug/L	8	Standard
>	**Bi**	209	549756.7	0.3				ug/L	541014	Standard

Sample ID: L1606112905
Report Date/Time: Thursday, June 30, 2016 13:32:30
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	105.0	28.6	**0.0803**	0.033	41.2	mg/L	53	Standard
K	39	48.3	33.3	**0.0064**	0.028	435.5	mg/L	53	Standard
Ca	43	25.0	40.0	**-0.2535**	0.571	225.2	mg/L	28	Standard
Fe	54	191.9	18.9	**0.0123**	0.024	193.0	mg/L	181	Standard
Fe	57	288.3	10.5	**0.1032**	0.082	79.8	mg/L	257	Standard
> **Sc-1**	45	55068.2	0.9				mg/L	55220	Standard
Cl	35	49489.4	0.8				ug/L	35504	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	2563.6	6.4				ug/L	2040	Standard
P	31	25469.7	2.1				ug/L	20435	Standard
S	34	2828.6	6.1				ug/L	2430	Standard
Sr	88	71.7	4.0				ug/L	75	Standard
C	12	150.0	26.7				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	19.2	2.9				mg/L	9	Standard
Ho-1	165	18.3	15.7				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	2351.9	22.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.023	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.636	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606112905
Report Date/Time: Thursday, June 30, 2016 13:32:30
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.490
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.616
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113001
Sample Date/Time: Thursday, June 30, 2016 13:33:24
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76874.5	1.2				ug/L	74916	Standard
	Be	9	26.7	10.8	**0.0210**	0.002	11.3	ug/L	10	Standard
	Al	27	12263160.4	0.1	**68.8716**	0.858	1.2	ug/L	1822	Standard
	Sc	45	57164.3	2.3				ug/L	55220	Standard
	Ti	47	1058.4	44.6	**2.4597**	1.148	46.7	ug/L	34	Standard
	V	51	3268.4	50.6	**0.1520**	0.179	117.7	ug/L	1938	Standard
	Cr	52	382346.8	1.5	**40.8212**	0.179	0.4	ug/L	9522	Standard
	Cr	53	51346.9	1.0	**44.9410**	0.414	0.9	ug/L	395	Standard
	Mn	55	630931.5	0.9	**72.1420**	0.853	1.2	ug/L	902	Standard
	Co	59	4405.0	2.3	**0.5098**	0.007	1.4	ug/L	262	Standard
	Ni	60	48386.1	1.4	**21.1104**	0.303	1.4	ug/L	371	Standard
	Cu	65	3249.3	1.8	**1.3918**	0.043	3.1	ug/L	106	Standard
	Zn	66	4252.3	1.2	**2.8756**	0.019	0.6	ug/L	398	Standard
>	**Ge**	72	543540.1	1.2				ug/L	535147	Standard
	As	75	1132.6	1.7	**0.8878**	0.020	2.2	ug/L	-43	Standard
	Se	82	40.0	4.8	**0.1938**	0.012	6.2	ug/L	14	Standard
	Se-1	77	291.7	2.4	**2.6072**	0.110	4.2	ug/L	65	Standard
>	**Ga**	71	198.3	15.2				mg/L	97	Standard
	Rb	85	8367.3	3.6				ug/L	15	Standard
	Y	89	471596.4	1.6				ug/L	465704	Standard
>	**Rh**	103	86.7	3.3				ug/L	10	Standard
	Mo	98	3531.2	1.4	**1.1178**	0.027	2.4	ug/L	9	Standard
	Ag	107	112.0	10.7	**0.0084**	0.002	20.0	ug/L	82	Standard
	Cd	111	203.8	12.5	**0.0903**	0.009	10.1	mg/L	7	Standard
	Cd	114	530.5	18.4	**0.0979**	0.015	15.1	ug/L	21	Standard
>	**In**	115	633938.3	1.8				ug/L	619035	Standard
	Sn	118	1660.1	48.1	**0.1459**	0.120	82.6	ug/L	508	Standard
	Sb	123	21130.8	0.3	**3.9014**	0.063	1.6	ug/L	86	Standard
	Ba	135	17189.4	1.0	**7.3234**	0.083	1.1	ug/L	79	Standard
	Ce	140	2903.6	0.7				ug/L	68	Standard
>	**Tb**	159	976943.8	0.9				ug/L	986982	Standard
	Ho	165	68.3	23.5				ug/L	10	Standard
	Tl	203	64.0	8.3	**0.0129**	0.001	4.6	ug/L	13	Standard
	Tl	205	63.3	18.2	**0.0157**	0.001	9.3	ug/L	10	Standard
	Pb	206	10722.5	1.0	**1.7726**	0.017	1.0	ug/L	264	Standard
	Pb	207	8993.7	2.1	**1.6468**	0.032	1.9	ug/L	227	Standard
	Pb	208	37818.9	1.6	**1.7939**	0.033	1.8	ug/L	868	Standard
	U	238	31.3	24.4	**0.0120**	0.001	8.3	ug/L	8	Standard
>	**Bi**	209	546875.5	0.4				ug/L	541014	Standard

Sample ID: L1606113001
Report Date/Time: Thursday, June 30, 2016 13:35:41
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**8.8932**	15.395	173.1	mg/L	2	Standard
Mg	24	10813.9	0.6	**11.3543**	0.313	2.8	mg/L	53	Standard
K	39	456.7	9.6	**0.6723**	0.064	9.5	mg/L	53	Standard
Ca	43	280.0	11.7	**13.6756**	2.132	15.6	mg/L	28	Standard
Fe	54	698.7	8.5	**0.3411**	0.036	10.6	mg/L	181	Standard
Fe	57	571.7	2.7	**0.8008**	0.066	8.2	mg/L	257	Standard
Sc-1	45	57164.3	2.3				mg/L	55220	Standard
Cl	35	47684.3	0.4				ug/L	35504	Standard
Kr	83	3.3	34.6				ug/L	2	Standard
Br	81	5371.0	10.5				ug/L	2040	Standard
P	31	29385.2	3.0				ug/L	20435	Standard
S	34	3042.0	6.9				ug/L	2430	Standard
Sr	88	291.7	13.0				ug/L	75	Standard
C	12	226.7	24.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	126.8	13.5				mg/L	9	Standard
Ho-1	165	68.3	23.5				mg/L	10	Standard
Er	166	66.7	31.2				mg/L	23	Standard
I	127	23603.4	6.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.614	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.568	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606113001
Report Date/Time: Thursday, June 30, 2016 13:35:41
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.408
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.083
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113002
Sample Date/Time: Thursday, June 30, 2016 13:36:36
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75750.7	3.6				ug/L	74916	Standard
	Be	9	26.7	10.8	**0.0214**	0.003	12.3	ug/L	10	Standard
	Al	27	11634446.9	1.1	**66.3450**	1.758	2.7	ug/L	1822	Standard
	Sc	45	56353.0	3.1				ug/L	55220	Standard
	Ti	47	431.3	4.2	**0.9744**	0.043	4.4	ug/L	34	Standard
	V	51	3495.9	3.5	**0.1812**	0.014	7.5	ug/L	1938	Standard
	Cr	52	11350.3	2.8	**0.2223**	0.028	12.7	ug/L	9522	Standard
	Cr	53	1553.4	8.7	**1.0047**	0.114	11.3	ug/L	395	Standard
	Mn	55	4216711.0	2.3	**490.1772**	10.857	2.2	ug/L	902	Standard
	Co	59	3782.5	2.5	**0.4416**	0.009	2.1	ug/L	262	Standard
	Ni	60	2748.2	4.1	**1.0802**	0.044	4.1	ug/L	371	Standard
	Cu	65	535.3	3.2	**0.1839**	0.009	4.8	ug/L	106	Standard
	Zn	66	3704.1	0.8	**2.5036**	0.016	0.6	ug/L	398	Standard
>	**Ge**	72	535262.1	0.6				ug/L	535147	Standard
	As	75	2494.4	2.2	**1.9171**	0.042	2.2	ug/L	-43	Standard
	Se	82	35.6	7.5	**0.1655**	0.020	12.1	ug/L	14	Standard
	Se-1	77	139.7	14.2	**0.9686**	0.220	22.7	ug/L	65	Standard
>	**Ga**	71	176.7	9.1				mg/L	97	Standard
	Rb	85	16689.2	1.7				ug/L	15	Standard
	Y	89	462143.9	0.4				ug/L	465704	Standard
>	**Rh**	103	81.7	36.9				ug/L	10	Standard
	Mo	98	207.5	9.5	**0.0780**	0.006	7.8	ug/L	9	Standard
	Ag	107	137.0	4.1	**0.0118**	0.001	6.3	ug/L	82	Standard
	Cd	111	22.6	13.2	**0.0171**	0.001	6.7	mg/L	7	Standard
	Cd	114	39.1	90.4	**0.0155**	0.006	38.5	ug/L	21	Standard
>	**In**	115	627598.6	0.8				ug/L	619035	Standard
	Sn	118	1151.7	9.3	**0.0712**	0.018	24.9	ug/L	508	Standard
	Sb	123	245.7	16.9	**0.0502**	0.008	16.1	ug/L	86	Standard
	Ba	135	33514.4	0.9	**14.4409**	0.208	1.4	ug/L	79	Standard
	Ce	140	2736.9	4.6				ug/L	68	Standard
>	**Tb**	159	967343.4	0.5				ug/L	986982	Standard
	Ho	165	148.3	25.5				ug/L	10	Standard
	Tl	203	52.0	5.8	**0.0118**	0.000	3.3	ug/L	13	Standard
	Tl	205	51.7	39.1	**0.0144**	0.003	17.8	ug/L	10	Standard
	Pb	206	383.3	6.7	**0.0284**	0.004	14.3	ug/L	264	Standard
	Pb	207	326.7	5.6	**0.0292**	0.004	13.2	ug/L	227	Standard
	Pb	208	1332.4	2.3	**0.0277**	0.002	6.0	ug/L	868	Standard
	U	238	25.0	6.9	**0.0112**	0.000	2.3	ug/L	8	Standard
>	**Bi**	209	534662.1	1.0				ug/L	541014	Standard

Sample ID: L1606113002
Report Date/Time: Thursday, June 30, 2016 13:38:52
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	16000.1	0.9	**17.0625**	0.541	3.2	mg/L	53	Standard
K	39	658.3	3.2	**1.0198**	0.059	5.8	mg/L	53	Standard
Ca	43	578.3	5.6	**30.4220**	1.440	4.7	mg/L	28	Standard
Fe	54	23523.9	1.9	**15.5957**	0.506	3.2	mg/L	181	Standard
Fe	57	6413.0	2.7	**15.9835**	0.084	0.5	mg/L	257	Standard
> **Sc-1**	45	56353.0	3.1				mg/L	55220	Standard
Cl	35	44150.9	2.7				ug/L	35504	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	6244.6	1.0				ug/L	2040	Standard
P	31	30246.8	2.0				ug/L	20435	Standard
S	34	3203.7	4.2				ug/L	2430	Standard
Sr	88	215.0	8.1				ug/L	75	Standard
C	12	320.0	13.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	223.4	21.9				mg/L	9	Standard
Ho-1	165	148.3	25.5				mg/L	10	Standard
Er	166	206.7	34.0				mg/L	23	Standard
I	127	27950.8	5.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.114	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.022	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606113002
Report Date/Time: Thursday, June 30, 2016 13:38:52
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.383	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.826	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113003
Sample Date/Time: Thursday, June 30, 2016 13:39:47
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74740.6	1.1				ug/L	74916	Standard
	Be	9	16.7	34.6	**0.0122**	0.005	44.6	ug/L	10	Standard
	Al	27	13368183.3	1.6	**77.2132**	0.803	1.0	ug/L	1822	Standard
	Sc	45	55762.4	1.9				ug/L	55220	Standard
	Ti	47	527.3	8.8	**1.2065**	0.109	9.1	ug/L	34	Standard
	V	51	3916.1	16.0	**0.2266**	0.069	30.3	ug/L	1938	Standard
	Cr	52	268317.4	0.8	**28.7872**	0.180	0.6	ug/L	9522	Standard
	Cr	53	35839.0	3.9	**31.7355**	1.282	4.0	ug/L	395	Standard
	Mn	55	1553349.7	1.3	**180.4784**	2.032	1.1	ug/L	902	Standard
	Co	59	3514.1	2.0	**0.4086**	0.008	1.9	ug/L	262	Standard
	Ni	60	33947.0	1.5	**14.9951**	0.229	1.5	ug/L	371	Standard
	Cu	65	2559.5	1.0	**1.1011**	0.014	1.3	ug/L	106	Standard
	Zn	66	4152.6	2.2	**2.8481**	0.062	2.2	ug/L	398	Standard
>	Ge	72	535340.3	0.2				ug/L	535147	Standard
	As	75	424.2	19.4	**0.3718**	0.061	16.5	ug/L	-43	Standard
	Se	82	47.2	17.3	**0.2512**	0.061	24.1	ug/L	14	Standard
	Se-1	77	298.3	8.0	**2.7294**	0.271	9.9	ug/L	65	Standard
>	Ga	71	196.7	3.9				mg/L	97	Standard
	Rb	85	8317.3	3.6				ug/L	15	Standard
	Y	89	467785.5	1.3				ug/L	465704	Standard
>	Rh	103	95.0	18.2				ug/L	10	Standard
	Mo	98	2007.8	2.4	**0.6473**	0.017	2.5	ug/L	9	Standard
	Ag	107	133.7	2.3	**0.0114**	0.000	3.3	ug/L	82	Standard
	Cd	111	151.4	8.0	**0.0698**	0.005	7.0	mg/L	7	Standard
	Cd	114	336.2	22.3	**0.0660**	0.013	19.1	ug/L	21	Standard
>	In	115	627458.4	0.3				ug/L	619035	Standard
	Sn	118	1385.1	8.9	**0.1066**	0.019	18.0	ug/L	508	Standard
	Sb	123	5747.5	1.5	**1.0752**	0.019	1.8	ug/L	86	Standard
	Ba	135	21568.7	1.5	**9.2884**	0.155	1.7	ug/L	79	Standard
	Ce	140	2366.9	7.4				ug/L	68	Standard
>	Tb	159	959954.6	0.2				ug/L	986982	Standard
	Ho	165	168.3	12.0				ug/L	10	Standard
	Tl	203	81.7	11.9	**0.0150**	0.001	6.6	ug/L	13	Standard
	Tl	205	88.3	36.4	**0.0191**	0.004	22.1	ug/L	10	Standard
	Pb	206	3173.3	0.5	**0.5063**	0.006	1.1	ug/L	264	Standard
	Pb	207	2755.9	3.1	**0.4897**	0.019	4.0	ug/L	227	Standard
	Pb	208	11492.7	0.7	**0.5271**	0.004	0.8	ug/L	868	Standard
	U	238	31.7	14.9	**0.0121**	0.001	5.5	ug/L	8	Standard
>	Bi	209	538551.6	1.2				ug/L	541014	Standard

Sample ID: L1606113003
Report Date/Time: Thursday, June 30, 2016 13:42:04
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	19093.7	2.4	**20.5730**	0.433	2.1	mg/L	53	Standard
K	39	375.0	7.1	**0.5539**	0.037	6.6	mg/L	53	Standard
Ca	43	406.7	8.6	**21.1628**	2.370	11.2	mg/L	28	Standard
Fe	54	1312.8	4.1	**0.7668**	0.019	2.5	mg/L	181	Standard
Fe	57	795.0	14.9	**1.4192**	0.269	18.9	mg/L	257	Standard
> **Sc-1**	45	55762.4	1.9				mg/L	55220	Standard
Cl	35	45442.7	1.1				ug/L	35504	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	6418.0	8.0				ug/L	2040	Standard
P	31	27555.0	2.1				ug/L	20435	Standard
S	34	2735.2	2.3				ug/L	2430	Standard
Sr	88	291.7	1.0				ug/L	75	Standard
C	12	200.0	10.0				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	195.0	15.6				mg/L	9	Standard
Ho-1	165	168.3	12.0				mg/L	10	Standard
Er	166	243.3	16.6				mg/L	23	Standard
I	127	20867.7	4.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.765	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.036	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606113003
Report Date/Time: Thursday, June 30, 2016 13:42:04
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.361
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.545
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113004
Sample Date/Time: Thursday, June 30, 2016 13:42:59
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74399.0	3.1				ug/L	74916	Standard
	Be	9	23.3	44.6	**0.0189**	0.011	56.8	ug/L	10	Standard
	Al	27	10856638.5	1.5	**63.0208**	1.392	2.2	ug/L	1822	Standard
	Sc	45	56719.3	2.1				ug/L	55220	Standard
	Ti	47	289.3	2.4	**0.6229**	0.017	2.7	ug/L	34	Standard
	V	51	2332.0	5.7	**0.0527**	0.013	25.2	ug/L	1938	Standard
	Cr	52	18336.1	70.5	**0.9802**	1.432	146.1	ug/L	9522	Standard
	Cr	53	2213.5	70.4	**1.5784**	1.391	88.2	ug/L	395	Standard
	Mn	55	3385468.4	0.9	**389.2475**	3.227	0.8	ug/L	902	Standard
	Co	59	20336.3	2.5	**2.4471**	0.048	2.0	ug/L	262	Standard
	Ni	60	6018.2	2.5	**2.5095**	0.053	2.1	ug/L	371	Standard
	Cu	65	683.7	4.2	**0.2478**	0.014	5.7	ug/L	106	Standard
	Zn	66	2766.9	0.8	**1.7594**	0.028	1.6	ug/L	398	Standard
>	**Ge**	72	541153.6	0.5				ug/L	535147	Standard
	As	75	4598.6	0.6	**3.4503**	0.025	0.7	ug/L	-43	Standard
	Se	82	72.3	2.2	**0.4309**	0.014	3.2	ug/L	14	Standard
	Se-1	77	125.7	8.0	**0.7981**	0.109	13.6	ug/L	65	Standard
>	**Ga**	71	170.0	5.9				mg/L	97	Standard
	Rb	85	5877.8	6.1				ug/L	15	Standard
	Y	89	480882.2	0.7				ug/L	465704	Standard
>	**Rh**	103	90.0	44.4				ug/L	10	Standard
	Mo	98	176.8	20.1	**0.0686**	0.011	15.6	ug/L	9	Standard
	Ag	107	142.3	33.1	**0.0126**	0.006	47.4	ug/L	82	Standard
	Cd	111	30.0	68.4	**0.0202**	0.008	41.1	mg/L	7	Standard
	Cd	114	64.9	65.0	**0.0200**	0.007	35.5	ug/L	21	Standard
>	**In**	115	623102.8	1.4				ug/L	619035	Standard
	Sn	118	1121.7	18.6	**0.0677**	0.031	45.2	ug/L	508	Standard
	Sb	123	309.3	18.9	**0.0624**	0.011	17.1	ug/L	86	Standard
	Ba	135	39415.9	0.4	**17.1108**	0.208	1.2	ug/L	79	Standard
	Ce	140	28894.2	0.7				ug/L	68	Standard
>	**Tb**	159	964868.0	0.6				ug/L	986982	Standard
	Ho	165	706.7	6.7				ug/L	10	Standard
	Tl	203	147.0	43.1	**0.0222**	0.007	31.4	ug/L	13	Standard
	Tl	205	111.7	18.6	**0.0221**	0.003	12.0	ug/L	10	Standard
	Pb	206	529.0	2.6	**0.0530**	0.002	3.5	ug/L	264	Standard
	Pb	207	469.3	7.6	**0.0559**	0.006	11.5	ug/L	227	Standard
	Pb	208	1889.4	2.0	**0.0547**	0.002	4.3	ug/L	868	Standard
	U	238	168.3	8.3	**0.0303**	0.002	5.9	ug/L	8	Standard
>	**Bi**	209	538123.0	0.8				ug/L	541014	Standard

Sample ID: L1606113004
Report Date/Time: Thursday, June 30, 2016 13:45:16
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	7290.1	2.6	**7.7040**	0.321	4.2	mg/L	53	Standard
K	39	425.0	5.4	**0.6269**	0.052	8.4	mg/L	53	Standard
Ca	43	673.3	11.7	**35.4983**	4.811	13.6	mg/L	28	Standard
Fe	54	38438.3	1.9	**25.3833**	0.501	2.0	mg/L	181	Standard
Fe	57	10161.7	2.0	**25.5443**	0.445	1.7	mg/L	257	Standard
> **Sc-1**	45	56719.3	2.1				mg/L	55220	Standard
Cl	35	42442.1	2.9				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	11864.7	6.7				ug/L	2040	Standard
P	31	30823.0	1.5				ug/L	20435	Standard
S	34	3190.3	5.5				ug/L	2430	Standard
Sr	88	306.7	12.2				ug/L	75	Standard
C	12	283.3	5.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	1112.5	6.7				mg/L	9	Standard
Ho-1	165	706.7	6.7				mg/L	10	Standard
Er	166	783.4	12.8				mg/L	23	Standard
I	127	26803.8	6.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.309	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.122	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606113004
Report Date/Time: Thursday, June 30, 2016 13:45:16
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.657
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.466
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138001
Sample Date/Time: Thursday, June 30, 2016 13:46:10
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66387.0	4.2				ug/L	74916	Standard
	Be	9	23.3	53.9	**0.0211**	0.013	59.7	ug/L	10	Standard
	Al	27	474015.9	0.8	**3.0843**	0.149	4.8	ug/L	1822	Standard
	Sc	45	49494.0	0.4				ug/L	55220	Standard
	Ti	47	793.4	2.4	**1.9681**	0.061	3.1	ug/L	34	Standard
	V	51	4262.8	2.5	**0.2920**	0.015	5.2	ug/L	1938	Standard
	Cr	52	8768.2	4.3	**-0.0054**	0.043	793.3	ug/L	9522	Standard
	Cr	53	776.7	11.5	**0.3512**	0.085	24.3	ug/L	395	Standard
	Mn	55	107808.6	1.7	**13.1935**	0.309	2.3	ug/L	902	Standard
	Co	59	1257.7	3.9	**0.1410**	0.006	4.0	ug/L	262	Standard
	Ni	60	924.7	1.2	**0.2920**	0.007	2.5	ug/L	371	Standard
	Cu	65	658.7	3.7	**0.2580**	0.013	5.0	ug/L	106	Standard
	Zn	66	5538.7	2.4	**4.1749**	0.133	3.2	ug/L	398	Standard
>	**Ge**	72	504580.1	0.6				ug/L	535147	Standard
	As	75	106.1	35.6	**0.1391**	0.029	21.1	ug/L	-43	Standard
	Se	82	23.2	11.2	**0.0848**	0.020	23.6	ug/L	14	Standard
	Se-1	77	60.7	8.3	**0.1327**	0.055	41.4	ug/L	65	Standard
>	**Ga**	71	403.3	13.0				mg/L	97	Standard
	Rb	85	5115.9	3.3				ug/L	15	Standard
	Y	89	435874.1	0.5				ug/L	465704	Standard
>	**Rh**	103	26.7	28.6				ug/L	10	Standard
	Mo	98	145.8	11.1	**0.0616**	0.005	8.8	ug/L	9	Standard
	Ag	107	85.0	3.1	**0.0058**	0.000	4.6	ug/L	82	Standard
	Cd	111	7.4	15.9	**0.0111**	0.000	4.4	mg/L	7	Standard
	Cd	114	25.0	106.1	**0.0135**	0.005	36.4	ug/L	21	Standard
>	**In**	115	587323.3	1.4				ug/L	619035	Standard
	Sn	118	246.7	18.7	**-0.0635**	0.007	11.4	ug/L	508	Standard
	Sb	123	113.1	13.5	**0.0269**	0.003	11.9	ug/L	86	Standard
	Ba	135	5777.8	2.5	**2.6441**	0.052	2.0	ug/L	79	Standard
	Ce	140	18709.9	0.8				ug/L	68	Standard
>	**Tb**	159	897694.4	1.4				ug/L	986982	Standard
	Ho	165	320.0	15.4				ug/L	10	Standard
	Tl	203	53.7	11.4	**0.0121**	0.001	5.5	ug/L	13	Standard
	Tl	205	31.7	59.8	**0.0119**	0.003	21.2	ug/L	10	Standard
	Pb	206	1993.5	2.0	**0.3137**	0.004	1.2	ug/L	264	Standard
	Pb	207	1692.8	5.1	**0.2972**	0.020	6.7	ug/L	227	Standard
	Pb	208	6900.0	0.7	**0.3108**	0.005	1.7	ug/L	868	Standard
	U	238	131.3	1.9	**0.0259**	0.000	0.7	ug/L	8	Standard
>	**Bi**	209	523640.4	1.0				ug/L	541014	Standard

Sample ID: L1606138001
Report Date/Time: Thursday, June 30, 2016 13:48:27
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	76.7	21.0	**0.0587**	0.020	33.9	mg/L	53	Standard
K	39	73.3	23.9	**0.0629**	0.034	53.6	mg/L	53	Standard
Ca	43	31.7	9.1	**0.3261**	0.183	56.0	mg/L	28	Standard
Fe	54	350.6	2.1	**0.1478**	0.007	4.4	mg/L	181	Standard
Fe	57	360.0	23.6	**0.4013**	0.253	63.0	mg/L	257	Standard
> **Sc-1**	45	49494.0	0.4				mg/L	55220	Standard
Cl	35	38474.1	1.0				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1776.8	4.7				ug/L	2040	Standard
P	31	8579.1	1.3				ug/L	20435	Standard
S	34	2888.6	5.6				ug/L	2430	Standard
Sr	88	68.3	25.7				ug/L	75	Standard
C	12	90.0	22.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	509.3	4.1				mg/L	9	Standard
Ho-1	165	320.0	15.4				mg/L	10	Standard
Er	166	293.3	2.0				mg/L	23	Standard
I	127	34252.0	1.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.615	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.288	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138001
Report Date/Time: Thursday, June 30, 2016 13:48:27
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.877
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.789
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138002
Sample Date/Time: Thursday, June 30, 2016 13:49:22
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64661.1	2.8				ug/L	74916	Standard
	Be	9	26.7	10.8	**0.0256**	0.002	9.4	ug/L	10	Standard
	Al	27	495451.4	1.5	**3.3071**	0.100	3.0	ug/L	1822	Standard
	Sc	45	48776.7	0.9				ug/L	55220	Standard
	Ti	47	742.0	0.2	**1.8391**	0.000	0.0	ug/L	34	Standard
	V	51	4463.4	1.4	**0.3158**	0.008	2.5	ug/L	1938	Standard
	Cr	52	8324.3	1.7	**-0.0561**	0.015	27.6	ug/L	9522	Standard
	Cr	53	671.7	3.0	**0.2524**	0.018	7.3	ug/L	395	Standard
	Mn	55	108883.9	0.8	**13.3471**	0.085	0.6	ug/L	902	Standard
	Co	59	1323.4	2.1	**0.1499**	0.003	2.2	ug/L	262	Standard
	Ni	60	977.4	1.6	**0.3176**	0.007	2.3	ug/L	371	Standard
	Cu	65	833.7	3.1	**0.3427**	0.011	3.3	ug/L	106	Standard
	Zn	66	7284.8	2.1	**5.6095**	0.112	2.0	ug/L	398	Standard
>	**Ge**	72	503742.7	0.2				ug/L	535147	Standard
	As	75	106.0	30.1	**0.1393**	0.026	18.3	ug/L	-43	Standard
	Se	82	20.2	50.4	**0.0616**	0.080	130.3	ug/L	14	Standard
	Se-1	77	55.3	13.6	**0.0712**	0.088	123.9	ug/L	65	Standard
>	**Ga**	71	383.3	15.1				mg/L	97	Standard
	Rb	85	5436.0	3.7				ug/L	15	Standard
	Y	89	434664.1	1.5				ug/L	465704	Standard
>	**Rh**	103	23.3	44.6				ug/L	10	Standard
	Mo	98	161.8	10.2	**0.0673**	0.006	8.5	ug/L	9	Standard
	Ag	107	84.7	21.5	**0.0058**	0.003	44.3	ug/L	82	Standard
	Cd	111	7.0	16.1	**0.0110**	0.001	4.6	mg/L	7	Standard
	Cd	114	16.7	21.5	**0.0120**	0.001	5.5	ug/L	21	Standard
>	**In**	115	583990.8	0.3				ug/L	619035	Standard
	Sn	118	248.3	18.7	**-0.0630**	0.007	11.9	ug/L	508	Standard
	Sb	123	91.7	16.4	**0.0228**	0.003	13.0	ug/L	86	Standard
	Ba	135	5793.1	1.4	**2.6664**	0.038	1.4	ug/L	79	Standard
	Ce	140	20100.0	3.3				ug/L	68	Standard
>	**Tb**	159	899230.7	0.5				ug/L	986982	Standard
	Ho	165	273.3	23.9				ug/L	10	Standard
	Tl	203	40.3	14.5	**0.0106**	0.001	6.1	ug/L	13	Standard
	Tl	205	30.0	72.6	**0.0117**	0.003	24.7	ug/L	10	Standard
	Pb	206	2067.1	0.3	**0.3277**	0.002	0.5	ug/L	264	Standard
	Pb	207	1625.1	2.8	**0.2847**	0.008	2.9	ug/L	227	Standard
	Pb	208	7094.0	1.0	**0.3216**	0.006	1.8	ug/L	868	Standard
	U	238	139.3	5.8	**0.0270**	0.001	4.5	ug/L	8	Standard
>	**Bi**	209	522174.4	0.6				ug/L	541014	Standard

Sample ID: L1606138002
Report Date/Time: Thursday, June 30, 2016 13:51:39
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	128.3	9.8	**0.1239**	0.017	13.7	mg/L	53	Standard
K	39	65.0	20.4	**0.0490**	0.026	53.8	mg/L	53	Standard
Ca	43	36.7	20.8	**0.6732**	0.466	69.2	mg/L	28	Standard
Fe	54	429.0	3.1	**0.2121**	0.009	4.3	mg/L	181	Standard
Fe	57	321.7	18.0	**0.3028**	0.182	60.2	mg/L	257	Standard
> **Sc-1**	45	48776.7	0.9				mg/L	55220	Standard
Cl	35	39347.0	2.0				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1716.8	13.9				ug/L	2040	Standard
P	31	8409.0	1.8				ug/L	20435	Standard
S	34	2855.3	5.2				ug/L	2430	Standard
Sr	88	81.7	7.1				ug/L	75	Standard
C	12	90.0	11.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	575.7	17.1				mg/L	9	Standard
Ho-1	165	273.3	23.9				mg/L	10	Standard
Er	166	230.0	22.6				mg/L	23	Standard
I	127	34921.9	3.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.311	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138002
Report Date/Time: Thursday, June 30, 2016 13:51:39
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.339
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.518
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 13:52:34
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70351.3	1.5				ug/L	74916	Standard
	Be	9	53402.3	3.1	**53.8872**	0.854	1.6	ug/L	10	Standard
	Al	27	8536698.5	1.6	**52.3825**	0.048	0.1	ug/L	1822	Standard
	Sc	45	54668.5	1.7				ug/L	55220	Standard
	Ti	47	42118.1	1.1	**99.2640**	0.592	0.6	ug/L	34	Standard
	V	51	468509.2	1.7	**49.0833**	0.889	1.8	ug/L	1938	Standard
	Cr	52	469374.8	1.2	**49.7880**	0.672	1.3	ug/L	9522	Standard
	Cr	53	57157.6	1.3	**49.5191**	0.959	1.9	ug/L	395	Standard
	Mn	55	435423.3	1.0	**49.2040**	0.253	0.5	ug/L	902	Standard
	Co	59	416954.7	1.7	**49.8454**	0.726	1.5	ug/L	262	Standard
	Ni	60	115262.5	1.0	**49.9318**	0.466	0.9	ug/L	371	Standard
	Cu	65	113776.3	0.6	**50.1650**	0.265	0.5	ug/L	106	Standard
	Zn	66	67512.8	0.9	**50.2512**	0.160	0.3	ug/L	398	Standard
>	Ge	72	549568.6	0.6				ug/L	535147	Standard
	As	75	67559.3	2.0	**49.1657**	0.725	1.5	ug/L	-43	Standard
	Se	82	6897.1	2.3	**49.4551**	0.984	2.0	ug/L	14	Standard
	Se-1	77	4799.8	3.4	**51.2947**	1.457	2.8	ug/L	65	Standard
>	Ga	71	81.7	35.3				mg/L	97	Standard
	Rb	85	1100.0	8.1				ug/L	15	Standard
	Y	89	472317.5	0.9				ug/L	465704	Standard
>	Rh	103	28.3	56.7				ug/L	10	Standard
	Mo	98	311318.4	1.2	**96.8405**	0.751	0.8	ug/L	9	Standard
	Ag	107	375352.2	0.6	**48.2459**	0.186	0.4	ug/L	82	Standard
	Cd	111	121680.2	1.5	**48.9299**	0.512	1.0	mg/L	7	Standard
	Cd	114	295402.6	1.0	**49.3283**	0.334	0.7	ug/L	21	Standard
>	In	115	637918.9	0.9				ug/L	619035	Standard
	Sn	118	329220.1	0.8	**48.9878**	0.167	0.3	ug/L	508	Standard
	Sb	123	266012.3	1.4	**48.7461**	0.223	0.5	ug/L	86	Standard
	Ba	135	113369.9	1.1	**48.1056**	0.773	1.6	ug/L	79	Standard
	Ce	140	228.3	8.3				ug/L	68	Standard
>	Tb	159	969024.1	1.7				ug/L	986982	Standard
	Ho	165	15.0	33.3				ug/L	10	Standard
	Tl	203	459036.6	1.0	**50.0510**	0.294	0.6	ug/L	13	Standard
	Tl	205	406627.8	0.8	**51.9013**	0.775	1.5	ug/L	10	Standard
	Pb	206	289135.8	0.6	**49.0844**	0.241	0.5	ug/L	264	Standard
	Pb	207	262963.0	0.7	**49.3945**	0.173	0.4	ug/L	227	Standard
	Pb	208	1066285.7	1.0	**51.9429**	0.371	0.7	ug/L	868	Standard
	U	238	384760.4	0.1	**50.7102**	0.365	0.7	ug/L	8	Standard
>	Bi	209	543486.8	0.8				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 13:54:51
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.5241**	16.488	173.1	mg/L	2	Standard
Mg	24	4477.3	3.3	**4.8941**	0.142	2.9	mg/L	53	Standard
K	39	2273.5	4.9	**3.8219**	0.208	5.4	mg/L	53	Standard
Ca	43	113.3	2.5	**4.8087**	0.120	2.5	mg/L	28	Standard
Fe	54	7203.2	2.1	**4.8406**	0.177	3.7	mg/L	181	Standard
Fe	57	2146.8	2.6	**5.0804**	0.063	1.2	mg/L	257	Standard
Sc-1	45	54668.5	1.7				mg/L	55220	Standard
Cl	35	43784.5	1.4				ug/L	35504	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2276.8	5.5				ug/L	2040	Standard
P	31	25897.1	0.8				ug/L	20435	Standard
S	34	3145.3	2.1				ug/L	2430	Standard
Sr	88	68.3	40.3				ug/L	75	Standard
C	12	126.7	18.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	5.4	118.7				mg/L	9	Standard
Ho-1	165	15.0	33.3				mg/L	10	Standard
Er	166	26.7	86.6				mg/L	23	Standard
I	127	12495.2	4.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.774		
Al	27	104.765		
Sc	45			
Ti	47	99.264		
V	51	98.167		
Cr	52	99.576		
Cr	53			
Mn	55	98.408		
Co	59	99.691		
Ni	60	99.864		
Cu	65	100.330		
Zn	66	100.502		
Ge	72		102.695	
As	75	98.331		
Se	82	98.910		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 13:54:51
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	96.840		
Ag	107	96.492		
Cd	111	97.860		
Cd	114			
> In	115			103.051
Sn	118	97.976		
Sb	123	97.492		
Ba	135	96.211		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.102		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.886		
U	238	101.420		
> Bi	209			100.457
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 13:54:51
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 13:55:46
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68432.6	2.4				ug/L	74916	Standard
	Be	9	28.3	53.9	**0.0256**	0.015	58.8	ug/L	10	Standard
	Al	27	2561.9	32.4	**0.0138**	0.005	34.8	ug/L	1822	Standard
	Sc	45	53586.3	0.9				ug/L	55220	Standard
	Ti	47	42.3	12.1	**0.0323**	0.013	39.8	ug/L	34	Standard
	V	51	1520.6	0.6	**-0.0323**	0.002	6.2	ug/L	1938	Standard
	Cr	52	8093.5	1.4	**-0.1406**	0.009	6.2	ug/L	9522	Standard
	Cr	53	538.3	14.4	**0.0944**	0.066	69.8	ug/L	395	Standard
	Mn	55	1064.7	10.1	**0.0185**	0.012	62.7	ug/L	902	Standard
	Co	59	307.0	14.2	**0.0148**	0.005	34.3	ug/L	262	Standard
	Ni	60	268.3	6.5	**-0.0260**	0.008	31.4	ug/L	371	Standard
	Cu	65	165.0	7.9	**0.0159**	0.005	33.7	ug/L	106	Standard
	Zn	66	438.3	7.7	**-0.0099**	0.023	238.2	ug/L	398	Standard
>	**Ge**	72	535819.1	0.7				ug/L	535147	Standard
	As	75	6.6	376.3	**0.0602**	0.018	30.6	ug/L	-43	Standard
	Se	82	29.3	22.0	**0.1194**	0.049	40.9	ug/L	14	Standard
	Se-1	77	62.3	8.8	**0.1100**	0.066	59.7	ug/L	65	Standard
>	**Ga**	71	78.3	3.7				mg/L	97	Standard
	Rb	85	63.3	4.6				ug/L	15	Standard
	Y	89	473768.5	2.1				ug/L	465704	Standard
>	**Rh**	103	23.3	24.7				ug/L	10	Standard
	Mo	98	199.2	14.8	**0.0746**	0.009	11.9	ug/L	9	Standard
	Ag	107	161.7	32.4	**0.0148**	0.007	44.5	ug/L	82	Standard
	Cd	111	30.9	74.3	**0.0203**	0.009	45.0	mg/L	7	Standard
	Cd	114	72.9	104.0	**0.0211**	0.013	59.7	ug/L	21	Standard
>	**In**	115	634159.9	0.7				ug/L	619035	Standard
	Sn	118	1073.4	13.8	**0.0577**	0.023	40.3	ug/L	508	Standard
	Sb	123	669.6	26.7	**0.1280**	0.034	26.4	ug/L	86	Standard
	Ba	135	70.3	49.0	**0.0103**	0.014	139.7	ug/L	79	Standard
	Ce	140	51.7	14.8				ug/L	68	Standard
>	**Tb**	159	954941.3	1.5				ug/L	986982	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	115.0	46.4	**0.0185**	0.006	31.0	ug/L	13	Standard
	Tl	205	83.3	39.0	**0.0183**	0.004	22.3	ug/L	10	Standard
	Pb	206	359.0	17.2	**0.0229**	0.010	44.1	ug/L	264	Standard
	Pb	207	292.3	15.1	**0.0215**	0.008	37.8	ug/L	227	Standard
	Pb	208	1243.7	10.1	**0.0220**	0.006	26.7	ug/L	868	Standard
	U	238	65.7	33.2	**0.0165**	0.003	17.1	ug/L	8	Standard
>	**Bi**	209	546073.6	0.7				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 13:58:03
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	21.7	**0.0104**	0.010	95.4	mg/L	53	Standard
K	39	33.3	37.7	**-0.0178**	0.022	121.3	mg/L	53	Standard
Ca	43	18.3	31.5	**-0.6058**	0.332	54.7	mg/L	28	Standard
Fe	54	221.0	21.5	**0.0364**	0.033	90.5	mg/L	181	Standard
Fe	57	250.0	10.4	**0.0200**	0.078	387.9	mg/L	257	Standard
Sc-1	45	53586.3	0.9				mg/L	55220	Standard
Cl	35	43438.9	0.9				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1990.1	6.9				ug/L	2040	Standard
P	31	24860.4	1.5				ug/L	20435	Standard
S	34	3005.3	2.2				ug/L	2430	Standard
Sr	88	78.3	30.2				ug/L	75	Standard
C	12	70.0	24.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	486.3	15.6				mg/L	9	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	76.7	7.5				mg/L	23	Standard
I	127	11689.5	2.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.126	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 13:58:03
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.443
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.935
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 13:58:03
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 30, 2016 13:58:59
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66356.7	2.1				ug/L	74916	Standard
	Be	9	215.0	30.2	**0.2261**	0.067	29.5	ug/L	10	Standard
	Al	27	2230.2	26.9	**0.0121**	0.004	30.1	ug/L	1822	Standard
	Sc	45	51398.8	4.2				ug/L	55220	Standard
	Ti	47	25.3	9.1	**-0.0071**	0.006	81.8	ug/L	34	Standard
	V	51	4800.2	0.2	**0.3361**	0.003	1.0	ug/L	1938	Standard
	Cr	52	15323.7	1.7	**0.7106**	0.037	5.2	ug/L	9522	Standard
	Cr	53	1368.4	10.2	**0.8729**	0.133	15.2	ug/L	395	Standard
	Mn	55	4821.4	3.0	**0.4707**	0.018	3.9	ug/L	902	Standard
	Co	59	3207.7	2.8	**0.3818**	0.013	3.3	ug/L	262	Standard
	Ni	60	3628.8	1.0	**1.5172**	0.022	1.5	ug/L	371	Standard
	Cu	65	1815.4	2.8	**0.7865**	0.027	3.5	ug/L	106	Standard
	Zn	66	8275.6	1.0	**6.1944**	0.041	0.7	ug/L	398	Standard
>	**Ge**	72	521093.1	0.5				ug/L	535147	Standard
	As	75	460.0	12.9	**0.4079**	0.046	11.2	ug/L	-43	Standard
	Se	82	70.4	16.5	**0.4369**	0.090	20.5	ug/L	14	Standard
	Se-1	77	95.3	6.1	**0.5056**	0.071	14.1	ug/L	65	Standard
>	**Ga**	71	38.3	15.1				mg/L	97	Standard
	Rb	85	53.3	32.9				ug/L	15	Standard
	Y	89	448899.9	1.0				ug/L	465704	Standard
>	**Rh**	103	10.0	50.0				ug/L	10	Standard
	Mo	98	59.4	30.1	**0.0318**	0.006	18.4	ug/L	9	Standard
	Ag	107	2890.9	2.6	**0.3858**	0.015	3.8	ug/L	82	Standard
	Cd	111	552.2	6.1	**0.2421**	0.017	7.1	mg/L	7	Standard
	Cd	114	1357.9	4.8	**0.2480**	0.014	5.6	ug/L	21	Standard
>	**In**	115	605194.8	1.2				ug/L	619035	Standard
	Sn	118	515.0	7.9	**-0.0225**	0.006	26.7	ug/L	508	Standard
	Sb	123	2078.3	0.9	**0.4059**	0.008	1.9	ug/L	86	Standard
	Ba	135	1558.4	3.6	**0.6779**	0.033	4.9	ug/L	79	Standard
	Ce	140	20.0	50.0				ug/L	68	Standard
>	**Tb**	159	919439.0	1.0				ug/L	986982	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	723.7	5.0	**0.0865**	0.004	4.4	ug/L	13	Standard
	Tl	205	610.0	5.0	**0.0871**	0.004	4.3	ug/L	10	Standard
	Pb	206	1404.1	3.4	**0.2056**	0.009	4.2	ug/L	264	Standard
	Pb	207	1193.0	5.7	**0.1956**	0.014	6.9	ug/L	227	Standard
	Pb	208	4933.3	1.7	**0.2070**	0.004	2.0	ug/L	868	Standard
	U	238	2866.6	0.7	**0.3932**	0.004	0.9	ug/L	8	Standard
>	**Bi**	209	532763.8	0.3				ug/L	541014	Standard

Sample ID: QC Std 8
Report Date/Time: Thursday, June 30, 2016 14:01:16
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	37.1	**0.0158**	0.017	109.9	mg/L	53	Standard
K	39	51.7	20.1	**0.0188**	0.023	119.9	mg/L	53	Standard
Ca	43	20.0	25.0	**-0.4483**	0.353	78.6	mg/L	28	Standard
Fe	54	110.3	26.1	**-0.0377**	0.022	58.6	mg/L	181	Standard
Fe	57	295.0	19.3	**0.1805**	0.189	104.9	mg/L	257	Standard
> **Sc-1**	45	51398.8	4.2				mg/L	55220	Standard
Cl	35	41676.6	0.2				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1763.4	7.5				ug/L	2040	Standard
P	31	16789.3	2.3				ug/L	20435	Standard
S	34	2972.0	1.4				ug/L	2430	Standard
Sr	88	86.7	37.1				ug/L	75	Standard
C	12	83.3	56.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	26.2	77.7				mg/L	9	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1693.4	6.1				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	113.025		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	84.035		
	Cr	52	88.826		
	Cr	53			
	Mn	55	94.146		
	Co	59	95.456		
	Ni	60	94.822		
	Cu	65	98.312		
	Zn	66	99.111		
>	Ge	72		97.374	
	As	75	101.977		
	Se	82	109.236		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 8
Report Date/Time: Thursday, June 30, 2016 14:01:16
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.443		
Cd	111	100.863		
Cd	114			
> In	115			97.764
Sn	118			
Sb	123	101.469		
Ba	135	90.385		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	108.104		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.497		
U	238	98.309		
> Bi	209			98.475
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: PBS H1 WG574262-01
Sample Date/Time: Thursday, June 30, 2016 14:04:45
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	111427.1	4.3				ug/L	74916	Standard
	Be	9	20.0	50.0	**0.0091**	0.006	66.0	ug/L	10	Standard
	Al	27	34110.0	3.0	**0.1301**	0.010	7.5	ug/L	1822	Standard
	Sc	45	55491.4	1.6				ug/L	55220	Standard
	Ti	47	93.7	9.9	**0.1555**	0.021	13.4	ug/L	34	Standard
	V	51	44354.0	10.5	**4.5741**	0.536	11.7	ug/L	1938	Standard
	Cr	52	24972.9	1.3	**1.7243**	0.040	2.3	ug/L	9522	Standard
	Cr	53	206771.4	0.9	**184.1210**	2.288	1.2	ug/L	395	Standard
	Mn	55	2545.9	11.7	**0.1894**	0.034	17.7	ug/L	902	Standard
	Co	59	293.3	5.8	**0.0131**	0.002	18.0	ug/L	262	Standard
	Ni	60	590.0	1.9	**0.1164**	0.005	4.0	ug/L	371	Standard
	Cu	65	308.7	4.1	**0.0805**	0.005	6.0	ug/L	106	Standard
	Zn	66	2132.5	3.9	**1.2865**	0.055	4.3	ug/L	398	Standard
>	Ge	72	537728.3	0.8				ug/L	535147	Standard
	As	75	-342.5	41.1	**-0.1988**	0.103	51.7	ug/L	-43	Standard
	Se	82	13.2	70.1	**0.0001**	0.068	64311.6	ug/L	14	Standard
	Se-1	77	13334.2	2.7	**146.7115**	2.985	2.0	ug/L	65	Standard
>	Ga	71	400.0	17.7				mg/L	97	Standard
	Rb	85	110.0	7.9				ug/L	15	Standard
	Y	89	464081.2	3.2				ug/L	465704	Standard
>	Rh	103	21.7	26.6				ug/L	10	Standard
	Mo	98	72.0	26.8	**0.0362**	0.006	16.8	ug/L	9	Standard
	Ag	107	244.3	35.1	**0.0275**	0.012	44.4	ug/L	82	Standard
	Cd	111	11.2	43.6	**0.0127**	0.002	15.9	mg/L	7	Standard
	Cd	114	31.3	132.5	**0.0144**	0.007	50.8	ug/L	21	Standard
>	In	115	598667.1	1.4				ug/L	619035	Standard
	Sn	118	1255.1	7.6	**0.0959**	0.014	14.1	ug/L	508	Standard
	Sb	123	515.3	19.6	**0.1048**	0.018	17.4	ug/L	86	Standard
	Ba	135	222.0	9.0	**0.0808**	0.010	12.4	ug/L	79	Standard
	Ce	140	90.0	5.6				ug/L	68	Standard
>	Tb	159	1033304.5	1.5				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	164.0	23.2	**0.0228**	0.004	16.5	ug/L	13	Standard
	Tl	205	150.0	32.8	**0.0257**	0.006	22.3	ug/L	10	Standard
	Pb	206	730.0	3.3	**0.0790**	0.004	4.7	ug/L	264	Standard
	Pb	207	653.0	3.6	**0.0824**	0.003	3.7	ug/L	227	Standard
	Pb	208	2412.7	7.2	**0.0724**	0.007	9.6	ug/L	868	Standard
	U	238	18.0	34.7	**0.0101**	0.001	7.7	ug/L	8	Standard
>	Bi	209	576949.5	1.0				ug/L	541014	Standard

Sample ID: PBS H1 WG574262-01
Report Date/Time: Thursday, June 30, 2016 14:07:02
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	173.3	12.0	**0.1533**	0.021	13.6	mg/L	53	Standard
K	39	86.7	14.5	**0.0706**	0.023	32.6	mg/L	53	Standard
Ca	43	38.3	39.8	**0.4775**	0.824	172.5	mg/L	28	Standard
Fe	54	234.1	8.4	**0.0399**	0.011	27.2	mg/L	181	Standard
Fe	57	311.7	11.6	**0.1597**	0.107	67.0	mg/L	257	Standard
> **Sc-1**	45	55491.4	1.6				mg/L	55220	Standard
Cl	35	48185.2	0.8				ug/L	35504	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	3143.7	18.1				ug/L	2040	Standard
P	31	26150.9	3.2				ug/L	20435	Standard
S	34	3633.8	3.2				ug/L	2430	Standard
Sr	88	83.3	38.1				ug/L	75	Standard
C	12	210.0	17.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	18.9	88.9				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	23.3	99.0				mg/L	23	Standard
I	127	4142.2	20.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		148.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.482	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBS H1 WG574262-01
Report Date/Time: Thursday, June 30, 2016 14:07:02
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	96.710	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	106.642	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	

Sample ID: PBS H1 WG574262-01
Report Date/Time: Thursday, June 30, 2016 14:07:02
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: LCSS H1 WG574262-02
Sample Date/Time: Thursday, June 30, 2016 14:07:56
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	118705.1	2.8				ug/L	74916	Standard
	Be	9	30489.0	1.7	**18.2429**	0.579	3.2	ug/L	10	Standard
	Al	27	43652.8	2.8	**0.1565**	0.004	2.8	ug/L	1822	Standard
	Sc	45	57107.4	1.6				ug/L	55220	Standard
	Ti	47	126.0	33.1	**0.2335**	0.102	43.6	ug/L	34	Standard
	V	51	282984.6	2.3	**30.1957**	0.715	2.4	ug/L	1938	Standard
	Cr	52	267745.2	1.3	**28.5638**	0.368	1.3	ug/L	9522	Standard
	Cr	53	268659.4	1.0	**239.1157**	2.898	1.2	ug/L	395	Standard
	Mn	55	234777.4	0.6	**27.0428**	0.266	1.0	ug/L	902	Standard
	Co	59	209564.0	0.3	**25.5696**	0.025	0.1	ug/L	262	Standard
	Ni	60	59639.5	0.6	**26.3110**	0.073	0.3	ug/L	371	Standard
	Cu	65	58354.2	1.2	**26.2421**	0.236	0.9	ug/L	106	Standard
	Zn	66	35510.6	0.8	**26.8274**	0.127	0.5	ug/L	398	Standard
>	**Ge**	72	538233.9	0.4				ug/L	535147	Standard
	As	75	33844.9	1.4	**25.1769**	0.299	1.2	ug/L	-43	Standard
	Se	82	3497.5	1.2	**25.5605**	0.204	0.8	ug/L	14	Standard
	Se-1	77	17979.3	2.3	**197.8649**	5.115	2.6	ug/L	65	Standard
>	**Ga**	71	533.3	3.8				mg/L	97	Standard
	Rb	85	116.7	16.2				ug/L	15	Standard
	Y	89	475379.4	0.9				ug/L	465704	Standard
>	**Rh**	103	73.3	15.7				ug/L	10	Standard
	Mo	98	117.3	1.7	**0.0504**	0.001	2.0	ug/L	9	Standard
	Ag	107	196226.5	0.5	**26.3032**	0.390	1.5	ug/L	82	Standard
	Cd	111	59719.2	0.8	**25.0507**	0.363	1.4	mg/L	7	Standard
	Cd	114	142846.1	1.2	**24.8855**	0.615	2.5	ug/L	21	Standard
>	**In**	115	611695.2	1.3				ug/L	619035	Standard
	Sn	118	1348.4	18.1	**0.1062**	0.037	35.0	ug/L	508	Standard
	Sb	123	130294.2	0.5	**24.9051**	0.309	1.2	ug/L	86	Standard
	Ba	135	59084.0	0.8	**26.1372**	0.352	1.3	ug/L	79	Standard
	Ce	140	145.0	12.4				ug/L	68	Standard
>	**Tb**	159	1051581.5	1.7				ug/L	986982	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	245132.2	1.0	**25.0319**	0.229	0.9	ug/L	13	Standard
	Tl	205	199766.7	0.8	**23.8798**	0.208	0.9	ug/L	10	Standard
	Pb	206	167820.3	0.1	**26.6612**	0.130	0.5	ug/L	264	Standard
	Pb	207	146254.2	0.5	**25.7104**	0.260	1.0	ug/L	227	Standard
	Pb	208	546991.8	0.5	**24.9321**	0.005	0.0	ug/L	868	Standard
	U	238	197816.1	1.2	**24.4178**	0.329	1.3	ug/L	8	Standard
>	**Bi**	209	580382.8	0.5				ug/L	541014	Standard

Sample ID: LCSS H1 WG574262-02
Report Date/Time: Thursday, June 30, 2016 14:10:13
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	166.7	19.1	**0.1411**	0.034	24.0	mg/L	53	Standard
K	39	66.7	37.0	**0.0338**	0.042	125.4	mg/L	53	Standard
Ca	43	25.0	34.6	**-0.3097**	0.453	146.2	mg/L	28	Standard
Fe	54	238.6	14.6	**0.0384**	0.022	57.8	mg/L	181	Standard
Fe	57	386.7	7.1	**0.3279**	0.077	23.5	mg/L	257	Standard
> **Sc-1**	45	57107.4	1.6				mg/L	55220	Standard
Cl	35	50166.9	1.4				ug/L	35504	Standard
Kr	83	4.0	43.3				ug/L	2	Standard
Br	81	2546.9	4.7				ug/L	2040	Standard
P	31	28042.6	1.7				ug/L	20435	Standard
S	34	4057.2	1.9				ug/L	2430	Standard
Sr	88	80.0	43.8				ug/L	75	Standard
C	12	186.7	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	12.9	41.7				mg/L	9	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	2561.9	7.7				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		158.450	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.577	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: LCSS H1 WG574262-02
Report Date/Time: Thursday, June 30, 2016 14:10:13
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.814	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.277	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	

Sample ID: LCSS H1 WG574262-02
Report Date/Time: Thursday, June 30, 2016 14:10:13
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: LCSS DP WG574262-03
Sample Date/Time: Thursday, June 30, 2016 14:11:08
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	114514.6	2.6				ug/L	74916	Standard
	Be	9	30086.5	2.3	**18.6673**	0.911	4.9	ug/L	10	Standard
	Al	27	129250.6	0.9	**0.4851**	0.012	2.4	ug/L	1822	Standard
	Sc	45	57239.6	2.3				ug/L	55220	Standard
	Ti	47	1106.0	4.7	**2.5727**	0.127	4.9	ug/L	34	Standard
	V	51	289939.1	2.5	**30.6971**	0.593	1.9	ug/L	1938	Standard
	Cr	52	264631.1	0.9	**27.9911**	0.161	0.6	ug/L	9522	Standard
	Cr	53	289850.1	4.7	**255.9465**	10.660	4.2	ug/L	395	Standard
	Mn	55	238961.9	1.3	**27.3127**	0.531	1.9	ug/L	902	Standard
	Co	59	201360.2	1.9	**24.3779**	0.587	2.4	ug/L	262	Standard
	Ni	60	58898.3	1.1	**25.7800**	0.411	1.6	ug/L	371	Standard
	Cu	65	56438.9	1.1	**25.1818**	0.356	1.4	ug/L	106	Standard
	Zn	66	35755.5	0.8	**26.8015**	0.156	0.6	ug/L	398	Standard
>	**Ge**	72	542467.4	0.7				ug/L	535147	Standard
	As	75	33447.4	0.4	**24.6888**	0.116	0.5	ug/L	-43	Standard
	Se	82	3346.9	2.1	**24.2654**	0.536	2.2	ug/L	14	Standard
	Se-1	77	17587.9	2.2	**192.0071**	3.086	1.6	ug/L	65	Standard
>	**Ga**	71	565.0	4.9				mg/L	97	Standard
	Rb	85	913.4	4.6				ug/L	15	Standard
	Y	89	475199.5	1.5				ug/L	465704	Standard
>	**Rh**	103	48.3	11.9				ug/L	10	Standard
	Mo	98	76.0	14.5	**0.0371**	0.003	9.2	ug/L	9	Standard
	Ag	107	188124.0	0.2	**25.2909**	0.357	1.4	ug/L	82	Standard
	Cd	111	57273.6	1.5	**24.0990**	0.674	2.8	mg/L	7	Standard
	Cd	114	134913.9	4.3	**23.5802**	1.336	5.7	ug/L	21	Standard
>	**In**	115	609922.1	1.6				ug/L	619035	Standard
	Sn	118	1498.4	2.2	**0.1303**	0.003	2.6	ug/L	508	Standard
	Sb	123	125319.3	0.3	**24.0264**	0.455	1.9	ug/L	86	Standard
	Ba	135	58846.4	1.1	**26.1123**	0.678	2.6	ug/L	79	Standard
	Ce	140	3812.1	2.8				ug/L	68	Standard
>	**Tb**	159	1052434.7	0.3				ug/L	986982	Standard
	Ho	165	50.0	17.3				ug/L	10	Standard
	Tl	203	234636.2	0.2	**24.0570**	0.089	0.4	ug/L	13	Standard
	Tl	205	196194.2	2.2	**23.5474**	0.544	2.3	ug/L	10	Standard
	Pb	206	161998.1	0.3	**25.8385**	0.086	0.3	ug/L	264	Standard
	Pb	207	140338.3	0.2	**24.7681**	0.109	0.4	ug/L	227	Standard
	Pb	208	529789.6	0.6	**24.2446**	0.181	0.7	ug/L	868	Standard
	U	238	192680.1	0.7	**23.8795**	0.155	0.6	ug/L	8	Standard
>	**Bi**	209	578052.1	0.4				ug/L	541014	Standard

Sample ID: LCSS DP WG574262-03
Report Date/Time: Thursday, June 30, 2016 14:13:25
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**18.3214**	15.864	86.6	mg/L	2	Standard
Mg	24	131.7	13.3	**0.1041**	0.020	19.5	mg/L	53	Standard
K	39	91.7	6.3	**0.0743**	0.013	17.0	mg/L	53	Standard
Ca	43	28.3	10.2	**-0.1281**	0.135	105.5	mg/L	28	Standard
Fe	54	380.9	6.7	**0.1319**	0.022	16.6	mg/L	181	Standard
Fe	57	421.7	3.0	**0.4155**	0.056	13.5	mg/L	257	Standard
> **Sc-1**	45	57239.6	2.3				mg/L	55220	Standard
Cl	35	49730.2	1.6				ug/L	35504	Standard
Kr	83	4.3	48.0				ug/L	2	Standard
Br	81	2426.9	6.4				ug/L	2040	Standard
P	31	26623.4	1.6				ug/L	20435	Standard
S	34	3945.5	4.4				ug/L	2430	Standard
Sr	88	90.0	27.8				ug/L	75	Standard
C	12	146.7	35.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	107.4	41.5				mg/L	9	Standard
Ho-1	165	50.0	17.3				mg/L	10	Standard
Er	166	53.3	57.3				mg/L	23	Standard
I	127	2481.9	7.5				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		152.857	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.368	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: LCSS DP WG574262-03
Report Date/Time: Thursday, June 30, 2016 14:13:25
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.528	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	106.846	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	

Sample ID: LCSS DP WG574262-03
Report Date/Time: Thursday, June 30, 2016 14:13:25
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606129101
Sample Date/Time: Thursday, June 30, 2016 14:14:19
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	136791.5	2.0				ug/L	74916	Standard
	Be	9	410.0	7.3	**0.2095**	0.020	9.4	ug/L	10	Standard
	Al	27	3957239.7	0.8	**12.4898**	0.265	2.1	ug/L	1822	Standard
	Sc	45	64274.4	0.7				ug/L	55220	Standard
	Ti	47	37116.7	1.5	**82.1121**	2.399	2.9	ug/L	34	Standard
	V	51	159473.8	6.8	**15.5386**	0.866	5.6	ug/L	1938	Standard
	Cr	52	194818.3	1.3	**18.7600**	0.052	0.3	ug/L	9522	Standard
	Cr	53	485561.2	9.7	**397.1547**	32.903	8.3	ug/L	395	Standard
	Mn	55	4685341.6	1.1	**497.9063**	5.101	1.0	ug/L	902	Standard
	Co	59	14989.7	0.8	**1.6600**	0.023	1.4	ug/L	262	Standard
	Ni	60	22506.0	2.0	**9.0310**	0.065	0.7	ug/L	371	Standard
	Cu	65	1154642.9	0.3	**478.3618**	6.685	1.4	ug/L	106	Standard
	Zn	66	719355.1	0.7	**505.7123**	7.702	1.5	ug/L	398	Standard
>	**Ge**	72	585562.6	1.5				ug/L	535147	Standard
	As	75	27055.7	0.9	**18.5158**	0.109	0.6	ug/L	-43	Standard
	Se	82	499.7	4.6	**3.2713**	0.105	3.2	ug/L	14	Standard
	Se-1	77	28362.9	7.1	**286.9992**	16.378	5.7	ug/L	65	Standard
>	**Ga**	71	48631.3	1.2				mg/L	97	Standard
	Rb	85	34325.5	2.8				ug/L	15	Standard
	Y	89	546871.9	2.0				ug/L	465704	Standard
>	**Rh**	103	260.0	20.4				ug/L	10	Standard
	Mo	98	23134.5	1.9	**7.2534**	0.176	2.4	ug/L	9	Standard
	Ag	107	13335.2	0.3	**1.7191**	0.035	2.0	ug/L	82	Standard
	Cd	111	1545.2	1.1	**0.6331**	0.012	1.9	mg/L	7	Standard
	Cd	114	4005.6	5.5	**0.6822**	0.045	6.6	ug/L	21	Standard
>	**In**	115	634028.9	1.9				ug/L	619035	Standard
	Sn	118	103292.6	1.9	**15.3936**	0.108	0.7	ug/L	508	Standard
	Sb	123	23726.3	0.7	**4.3794**	0.067	1.5	ug/L	86	Standard
	Ba	135	1097968.8	1.1	**468.9492**	5.140	1.1	ug/L	79	Standard
	Ce	140	189814.9	0.4				ug/L	68	Standard
>	**Tb**	159	1115555.5	1.1				ug/L	986982	Standard
	Ho	165	3177.0	3.1				ug/L	10	Standard
	Tl	203	398.0	13.3	**0.0298**	0.003	11.3	ug/L	13	Standard
	Tl	205	275.0	1.8	**0.0269**	0.000	1.3	ug/L	10	Standard
	Pb	206	135768.6	0.4	**12.6181**	0.185	1.5	ug/L	264	Standard
	Pb	207	111855.0	0.8	**11.5025**	0.175	1.5	ug/L	227	Standard
	Pb	208	420883.1	1.5	**11.2180**	0.045	0.4	ug/L	868	Standard
	U	238	83413.0	0.8	**6.0384**	0.067	1.1	ug/L	8	Standard
>	**Bi**	209	990639.1	1.2				ug/L	541014	Standard

Sample ID: L1606129101
Report Date/Time: Thursday, June 30, 2016 14:16:36
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**16.0553**	13.900	86.6	mg/L	2	Standard
Mg	24	1075.0	2.8	**0.9719**	0.023	2.3	mg/L	53	Standard
K	39	608.3	6.4	**0.8109**	0.056	6.9	mg/L	53	Standard
Ca	43	246.7	25.8	**10.3407**	3.184	30.8	mg/L	28	Standard
Fe	54	11770.2	2.4	**6.7715**	0.174	2.6	mg/L	181	Standard
Fe	57	3402.0	3.7	**7.0779**	0.244	3.5	mg/L	257	Standard
> **Sc-1**	45	64274.4	0.7				mg/L	55220	Standard
Cl	35	50261.9	0.4				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	6027.9	5.6				ug/L	2040	Standard
P	31	27798.8	3.8				ug/L	20435	Standard
S	34	3652.1	2.9				ug/L	2430	Standard
Sr	88	426.7	4.9				ug/L	75	Standard
C	12	2326.8	12.0				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	1986.8	9.0				mg/L	7	Standard
Dy	164	5283.4	7.8				mg/L	9	Standard
Ho-1	165	3177.0	3.1				mg/L	10	Standard
Er	166	3080.3	6.2				mg/L	23	Standard
I	127	363370.9	6.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		182.592	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.421	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129101
Report Date/Time: Thursday, June 30, 2016 14:16:36
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.422
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		183.108
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606129101
Report Date/Time: Thursday, June 30, 2016 14:16:36
Page 3

Approved: July 01, 2016

Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	
Se-1 77 Upper, S, EEE	Se-1	77	
Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606129101PS WG574807-01
Sample Date/Time: Thursday, June 30, 2016 14:17:31
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	137356.6	1.7				ug/L	74916	Standard
	Be	9	73022.2	1.5	**37.7466**	0.373	1.0	ug/L	10	Standard
	Al	27	3943616.7	1.3	**12.3930**	0.084	0.7	ug/L	1822	Standard
	Sc	45	65189.9	0.9				ug/L	55220	Standard
	Ti	47	36612.5	0.8	**81.3955**	1.449	1.8	ug/L	34	Standard
	V	51	693082.3	3.3	**68.5607**	1.598	2.3	ug/L	1938	Standard
	Cr	52	704324.1	2.0	**70.9025**	1.024	1.4	ug/L	9522	Standard
	Cr	53	593558.0	2.1	**488.4612**	9.661	2.0	ug/L	395	Standard
	Mn	55	5186923.2	0.6	**554.0487**	8.324	1.5	ug/L	902	Standard
	Co	59	457572.6	0.9	**51.6104**	1.113	2.2	ug/L	262	Standard
	Ni	60	146331.3	1.2	**59.8276**	0.645	1.1	ug/L	371	Standard
	Cu	65	1261675.7	0.8	**525.3316**	5.515	1.0	ug/L	106	Standard
	Zn	66	790446.1	0.9	**558.4915**	2.109	0.4	ug/L	398	Standard
>	Ge	72	582600.4	1.2				ug/L	535147	Standard
	As	75	100050.5	1.0	**68.6729**	1.245	1.8	ug/L	-43	Standard
	Se	82	8037.2	0.3	**54.3795**	0.650	1.2	ug/L	14	Standard
	Se-1	77	34422.7	1.2	**350.4177**	3.188	0.9	ug/L	65	Standard
>	Ga	71	48439.0	1.5				mg/L	97	Standard
	Rb	85	34302.1	0.7				ug/L	15	Standard
	Y	89	560244.3	1.3				ug/L	465704	Standard
>	Rh	103	265.0	6.8				ug/L	10	Standard
	Mo	98	23546.3	1.5	**7.2772**	0.183	2.5	ug/L	9	Standard
	Ag	107	402679.1	0.9	**51.3383**	0.793	1.5	ug/L	82	Standard
	Cd	111	124289.9	0.8	**49.5788**	1.072	2.2	mg/L	7	Standard
	Cd	114	296329.0	2.2	**49.0902**	1.678	3.4	ug/L	21	Standard
>	In	115	643202.9	1.3				ug/L	619035	Standard
	Sn	118	103962.4	3.2	**15.2770**	0.682	4.5	ug/L	508	Standard
	Sb	123	282944.1	1.2	**51.4255**	0.352	0.7	ug/L	86	Standard
	Ba	135	1219389.4	0.7	**513.4112**	10.544	2.1	ug/L	79	Standard
	Ce	140	188144.4	1.0				ug/L	68	Standard
>	Tb	159	1119010.8	0.9				ug/L	986982	Standard
	Ho	165	3330.4	3.1				ug/L	10	Standard
	Tl	203	501006.2	0.8	**29.6691**	0.152	0.5	ug/L	13	Standard
	Tl	205	410582.2	0.7	**28.4622**	0.185	0.7	ug/L	10	Standard
	Pb	206	478829.8	0.2	**44.1422**	0.371	0.8	ug/L	264	Standard
	Pb	207	409096.7	0.2	**41.7280**	0.339	0.8	ug/L	227	Standard
	Pb	208	1506380.0	0.6	**39.8439**	0.360	0.9	ug/L	868	Standard
	U	238	493440.1	1.0	**35.3203**	0.414	1.2	ug/L	8	Standard
>	Bi	209	1000776.7	1.0				ug/L	541014	Standard

Sample ID: L1606129101PS WG574807-01
Report Date/Time: Thursday, June 30, 2016 14:19:48
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**7.9268**	13.721	173.1	mg/L	2	Standard
Mg	24	1058.4	10.0	**0.9421**	0.092	9.7	mg/L	53	Standard
K	39	655.0	4.0	**0.8658**	0.046	5.3	mg/L	53	Standard
Ca	43	301.7	12.7	**12.8093**	1.958	15.3	mg/L	28	Standard
Fe	54	12093.5	1.4	**6.8610**	0.073	1.1	mg/L	181	Standard
Fe	57	3442.1	2.4	**7.0600**	0.173	2.4	mg/L	257	Standard
Sc-1	45	65189.9	0.9				mg/L	55220	Standard
Cl	35	50684.0	1.4				ug/L	35504	Standard
Kr	83	4.7	12.4				ug/L	2	Standard
Br	81	6251.3	6.5				ug/L	2040	Standard
P	31	28184.5	3.4				ug/L	20435	Standard
S	34	3433.7	8.7				ug/L	2430	Standard
Sr	88	411.7	1.4				ug/L	75	Standard
C	12	2223.5	8.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	2036.8	4.9				mg/L	7	Standard
Dy	164	5113.6	4.0				mg/L	9	Standard
Ho-1	165	3330.4	3.1				mg/L	10	Standard
Er	166	3213.7	9.7				mg/L	23	Standard
I	127	366302.3	5.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		183.346	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.867	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129101PS WG574807-01
Report Date/Time: Thursday, June 30, 2016 14:19:48
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.904
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	184.982
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606129101PS WG574807-01
Report Date/Time: Thursday, June 30, 2016 14:19:48
Page 3

Approved: July 01, 2016

Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	
Se-1 77 Upper, S, EEE	Se-1	77	
Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

Sample ID: L1606129101PS WG574807-01
Report Date/Time: Thursday, June 30, 2016 14:19:48
Page 4

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606129101SDL WG574807-02
Sample Date/Time: Thursday, June 30, 2016 14:20:42
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84778.3	2.6				ug/L	74916	Standard
	Be	9	85.0	20.4	**0.0674**	0.013	19.8	ug/L	10	Standard
	Al	27	784608.7	4.3	**3.9933**	0.151	3.8	ug/L	1822	Standard
	Sc	45	56118.8	3.1				ug/L	55220	Standard
	Ti	47	7615.9	4.4	**18.3302**	0.823	4.5	ug/L	34	Standard
	V	51	41825.9	2.6	**4.3105**	0.135	3.1	ug/L	1938	Standard
	Cr	52	46751.4	2.9	**4.1463**	0.146	3.5	ug/L	9522	Standard
	Cr	53	151049.7	3.3	**134.6990**	4.336	3.2	ug/L	395	Standard
	Mn	55	1013716.5	2.5	**117.4885**	2.767	2.4	ug/L	902	Standard
	Co	59	3251.0	2.2	**0.3755**	0.009	2.4	ug/L	262	Standard
	Ni	60	5095.2	1.9	**2.1218**	0.025	1.2	ug/L	371	Standard
	Cu	65	253476.6	2.6	**114.5518**	2.601	2.3	ug/L	106	Standard
	Zn	66	171185.0	2.4	**131.0753**	3.077	2.3	ug/L	398	Standard
>	**Ge**	72	536506.8	0.7				ug/L	535147	Standard
	As	75	5955.2	2.7	**4.4894**	0.086	1.9	ug/L	-43	Standard
	Se	82	125.7	8.1	**0.8282**	0.081	9.7	ug/L	14	Standard
	Se-1	77	6593.1	2.1	**72.4177**	1.202	1.7	ug/L	65	Standard
>	**Ga**	71	10615.4	4.2				mg/L	97	Standard
	Rb	85	7655.3	7.1				ug/L	15	Standard
	Y	89	475904.2	2.9				ug/L	465704	Standard
>	**Rh**	103	76.7	22.9				ug/L	10	Standard
	Mo	98	5094.8	3.1	**1.6733**	0.029	1.8	ug/L	9	Standard
	Ag	107	2964.0	1.4	**0.3933**	0.002	0.5	ug/L	82	Standard
	Cd	111	386.8	5.4	**0.1708**	0.006	3.4	mg/L	7	Standard
	Cd	114	995.4	1.9	**0.1832**	0.006	3.0	ug/L	21	Standard
>	**In**	115	608564.8	1.9				ug/L	619035	Standard
	Sn	118	22663.6	0.3	**3.4400**	0.079	2.3	ug/L	508	Standard
	Sb	123	6417.2	8.6	**1.2360**	0.085	6.9	ug/L	86	Standard
	Ba	135	241358.8	2.2	**107.3691**	0.797	0.7	ug/L	79	Standard
	Ce	140	40357.0	2.8				ug/L	68	Standard
>	**Tb**	159	999005.0	0.9				ug/L	986982	Standard
	Ho	165	710.0	6.7				ug/L	10	Standard
	Tl	203	184.0	3.8	**0.0230**	0.001	4.1	ug/L	13	Standard
	Tl	205	153.3	5.0	**0.0243**	0.001	5.1	ug/L	10	Standard
	Pb	206	28820.1	1.7	**4.1128**	0.036	0.9	ug/L	264	Standard
	Pb	207	23942.6	2.0	**3.7816**	0.020	0.5	ug/L	227	Standard
	Pb	208	95916.8	3.1	**3.9247**	0.050	1.3	ug/L	868	Standard
	U	238	17748.4	3.2	**1.9900**	0.014	0.7	ug/L	8	Standard
>	**Bi**	209	641212.3	2.5				ug/L	541014	Standard

Sample ID: L1606129101SDL WG574807-02
Report Date/Time: Thursday, June 30, 2016 14:22:59
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.0341**	15.639	173.1	mg/L	2	Standard
Mg	24	218.3	8.0	**0.1994**	0.013	6.7	mg/L	53	Standard
K	39	170.0	17.6	**0.2082**	0.051	24.5	mg/L	53	Standard
Ca	43	78.3	9.8	**2.6961**	0.479	17.8	mg/L	28	Standard
Fe	54	2573.4	1.9	**1.6074**	0.052	3.2	mg/L	181	Standard
Fe	57	951.7	4.5	**1.8193**	0.139	7.6	mg/L	257	Standard
> **Sc-1**	45	56118.8	3.1				mg/L	55220	Standard
Cl	35	41388.5	2.2				ug/L	35504	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2593.6	6.0				ug/L	2040	Standard
P	31	11646.1	0.6				ug/L	20435	Standard
S	34	2718.6	6.0				ug/L	2430	Standard
Sr	88	143.3	23.2				ug/L	75	Standard
C	12	423.3	13.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	493.3	9.6				mg/L	7	Standard
Dy	164	1023.2	11.7				mg/L	9	Standard
Ho-1	165	710.0	6.7				mg/L	10	Standard
Er	166	630.0	11.4				mg/L	23	Standard
I	127	124802.9	5.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.164	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.254	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129101SDL WG574807-02
Report Date/Time: Thursday, June 30, 2016 14:22:59
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.309
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	118.520
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

Sample ID: L1606129101SDL WG574807-02
Report Date/Time: Thursday, June 30, 2016 14:22:59
Page 3

Approved: July 01, 2016

Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606129101SDL WG574807-02
Sample Date/Time: Thursday, June 30, 2016 14:23:54
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63330.4	1.3				ug/L	74916	Standard
	Be	9	35.0	28.6	**0.0356**	0.011	31.3	ug/L	10	Standard
	Al	27	99549.4	1.6	**0.6763**	0.005	0.8	ug/L	1822	Standard
	Sc	45	51612.8	1.8				ug/L	55220	Standard
	Ti	47	1006.4	1.1	**2.4929**	0.034	1.4	ug/L	34	Standard
	V	51	8517.7	5.7	**0.7710**	0.055	7.2	ug/L	1938	Standard
	Cr	52	12355.0	0.7	**0.4051**	0.008	2.1	ug/L	9522	Standard
	Cr	53	32528.3	6.5	**30.2729**	1.833	6.1	ug/L	395	Standard
	Mn	55	137959.7	1.8	**16.7647**	0.258	1.5	ug/L	902	Standard
	Co	59	665.0	5.6	**0.0631**	0.004	6.8	ug/L	262	Standard
	Ni	60	946.7	3.1	**0.2985**	0.014	4.6	ug/L	371	Standard
	Cu	65	35169.4	0.7	**16.7056**	0.215	1.3	ug/L	106	Standard
	Zn	66	25495.4	0.9	**20.2867**	0.240	1.2	ug/L	398	Standard
>	**Ge**	72	508951.4	0.6				ug/L	535147	Standard
	As	75	790.5	1.3	**0.6758**	0.007	1.1	ug/L	-43	Standard
	Se	82	35.4	16.1	**0.1781**	0.046	25.8	ug/L	14	Standard
	Se-1	77	1243.1	9.7	**13.9220**	1.318	9.5	ug/L	65	Standard
>	**Ga**	71	1495.1	12.1				mg/L	97	Standard
	Rb	85	1045.0	0.5				ug/L	15	Standard
	Y	89	449338.0	1.4				ug/L	465704	Standard
>	**Rh**	103	15.0	33.3				ug/L	10	Standard
	Mo	98	650.9	6.9	**0.2299**	0.012	5.0	ug/L	9	Standard
	Ag	107	513.3	5.0	**0.0649**	0.003	4.5	ug/L	82	Standard
	Cd	111	59.7	4.3	**0.0337**	0.001	3.8	mg/L	7	Standard
	Cd	114	106.1	28.4	**0.0279**	0.005	18.6	ug/L	21	Standard
>	**In**	115	593483.3	1.6				ug/L	619035	Standard
	Sn	118	2942.0	7.5	**0.3679**	0.029	7.8	ug/L	508	Standard
	Sb	123	1026.7	7.2	**0.2068**	0.018	8.5	ug/L	86	Standard
	Ba	135	32307.1	0.7	**14.7222**	0.195	1.3	ug/L	79	Standard
	Ce	140	5164.2	2.0				ug/L	68	Standard
>	**Tb**	159	921813.6	1.0				ug/L	986982	Standard
	Ho	165	81.7	12.7				ug/L	10	Standard
	Tl	203	97.7	17.9	**0.0168**	0.002	12.0	ug/L	13	Standard
	Tl	205	90.0	48.1	**0.0193**	0.005	28.2	ug/L	10	Standard
	Pb	206	4051.5	1.7	**0.6581**	0.018	2.8	ug/L	264	Standard
	Pb	207	3282.4	3.0	**0.5904**	0.011	1.9	ug/L	227	Standard
	Pb	208	13848.5	1.0	**0.6441**	0.002	0.3	ug/L	868	Standard
	U	238	2342.2	3.0	**0.3198**	0.007	2.1	ug/L	8	Standard
>	**Bi**	209	537647.1	1.3				ug/L	541014	Standard

Sample ID: L1606129101SDL WG574807-02
Report Date/Time: Thursday, June 30, 2016 14:26:11
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.2440**	17.735	173.1	mg/L	2	Standard
Mg	24	55.0	24.1	**0.0296**	0.016	52.8	mg/L	53	Standard
K	39	53.3	35.5	**0.0206**	0.033	161.7	mg/L	53	Standard
Ca	43	36.7	39.4	**0.5519**	0.889	161.1	mg/L	28	Standard
Fe	54	390.8	3.9	**0.1663**	0.015	9.2	mg/L	181	Standard
Fe	57	398.3	18.2	**0.4684**	0.225	48.0	mg/L	257	Standard
> **Sc-1**	45	51612.8	1.8				mg/L	55220	Standard
Cl	35	38530.3	1.2				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1890.1	1.6				ug/L	2040	Standard
P	31	7296.8	0.9				ug/L	20435	Standard
S	34	2378.5	3.4				ug/L	2430	Standard
Sr	88	105.0	20.8				ug/L	75	Standard
C	12	113.3	5.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	12.4				mg/L	7	Standard
Dy	164	131.2	34.9				mg/L	9	Standard
Ho-1	165	81.7	12.7				mg/L	10	Standard
Er	166	113.3	18.4				mg/L	23	Standard
I	127	52358.7	3.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.535	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.105	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129101SDL WG574807-02
Report Date/Time: Thursday, June 30, 2016 14:26:11
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.872
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.378
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 14:27:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68343.8	2.4				ug/L	74916	Standard
	Be	9	56163.9	2.0	**58.3572**	1.048	1.8	ug/L	10	Standard
	Al	27	8830999.9	0.8	**55.7964**	1.064	1.9	ug/L	1822	Standard
	Sc	45	58071.1	2.8				ug/L	55220	Standard
	Ti	47	45017.8	1.7	**105.7692**	1.704	1.6	ug/L	34	Standard
	V	51	497045.5	1.8	**51.9188**	0.868	1.7	ug/L	1938	Standard
	Cr	52	495709.7	1.9	**52.4701**	1.037	2.0	ug/L	9522	Standard
	Cr	53	70055.1	4.3	**60.5778**	2.429	4.0	ug/L	395	Standard
	Mn	55	462411.6	0.5	**52.0973**	0.505	1.0	ug/L	902	Standard
	Co	59	424961.0	1.2	**50.6465**	0.859	1.7	ug/L	262	Standard
	Ni	60	121622.6	1.9	**52.5260**	0.778	1.5	ug/L	371	Standard
	Cu	65	118686.2	2.0	**52.1658**	0.919	1.8	ug/L	106	Standard
	Zn	66	69781.7	0.6	**51.7876**	0.302	0.6	ug/L	398	Standard
>	Ge	72	551326.3	1.2				ug/L	535147	Standard
	As	75	70449.1	0.9	**51.1091**	0.602	1.2	ug/L	-43	Standard
	Se	82	7143.6	1.1	**51.0674**	0.624	1.2	ug/L	14	Standard
	Se-1	77	5368.0	2.2	**57.2636**	1.497	2.6	ug/L	65	Standard
>	Ga	71	118.3	2.4				mg/L	97	Standard
	Rb	85	1088.4	7.6				ug/L	15	Standard
	Y	89	480107.6	2.5				ug/L	465704	Standard
>	Rh	103	30.0	72.6				ug/L	10	Standard
	Mo	98	318527.8	2.0	**98.2098**	1.420	1.4	ug/L	9	Standard
	Ag	107	387998.0	1.7	**49.4315**	0.536	1.1	ug/L	82	Standard
	Cd	111	126141.1	1.3	**50.2785**	0.366	0.7	mg/L	7	Standard
	Cd	114	307281.4	1.2	**50.8610**	0.443	0.9	ug/L	21	Standard
>	In	115	643557.7	0.6				ug/L	619035	Standard
	Sn	118	339017.2	3.5	**50.0007**	1.537	3.1	ug/L	508	Standard
	Sb	123	274626.2	1.2	**49.8837**	0.350	0.7	ug/L	86	Standard
	Ba	135	117839.2	0.8	**49.5604**	0.140	0.3	ug/L	79	Standard
	Ce	140	300.0	6.7				ug/L	68	Standard
>	Tb	159	984962.7	1.4				ug/L	986982	Standard
	Ho	165	13.3	94.4				ug/L	10	Standard
	Tl	203	472528.9	1.5	**51.1647**	0.526	1.0	ug/L	13	Standard
	Tl	205	414817.5	1.4	**52.5782**	0.784	1.5	ug/L	10	Standard
	Pb	206	301319.0	1.2	**50.7986**	0.331	0.7	ug/L	264	Standard
	Pb	207	273907.5	1.1	**51.0948**	0.336	0.7	ug/L	227	Standard
	Pb	208	1090776.5	0.6	**52.7697**	0.252	0.5	ug/L	868	Standard
	U	238	393854.7	0.3	**51.5487**	0.145	0.3	ug/L	8	Standard
>	Bi	209	547266.1	0.6				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 14:29:24
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4749.1	4.8	**4.8851**	0.096	2.0	mg/L	53	Standard
K	39	2540.2	4.0	**4.0230**	0.115	2.8	mg/L	53	Standard
Ca	43	111.7	38.6	**4.3113**	2.199	51.0	mg/L	28	Standard
Fe	54	7412.1	3.0	**4.6841**	0.099	2.1	mg/L	181	Standard
Fe	57	2123.5	3.1	**4.6907**	0.294	6.3	mg/L	257	Standard
> **Sc-1**	45	58071.1	2.8				mg/L	55220	Standard
Cl	35	44907.8	1.0				ug/L	35504	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	2173.5	4.5				ug/L	2040	Standard
P	31	23653.5	2.5				ug/L	20435	Standard
S	34	3143.7	3.9				ug/L	2430	Standard
Sr	88	71.7	31.5				ug/L	75	Standard
C	12	93.3	27.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	12.7	40.1				mg/L	9	Standard
Ho-1	165	13.3	94.4				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	13696.2	3.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	116.714		
Al	27	111.593		
Sc	45			
Ti	47	105.769		
V	51	103.838		
Cr	52	104.940		
Cr	53			
Mn	55	104.195		
Co	59	101.293		
Ni	60	105.052		
Cu	65	104.332		
Zn	66	103.575		
> Ge	72		103.023	
As	75	102.218		
Se	82	102.135		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 14:29:24
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.210		
Ag	107	98.863		
Cd	111	100.557		
Cd	114			
In	115		103.961	
Sn	118	100.001		
Sb	123	99.767		
Ba	135	99.121		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.329		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.539		
U	238	103.097		
Bi	209		101.156	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 14:29:24
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 14:30:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68849.4	1.0				ug/L	74916	Standard
	Be	9	15.0	57.7	**0.0118**	0.009	74.9	ug/L	10	Standard
	Al	27	2420.2	16.4	**0.0129**	0.003	20.5	ug/L	1822	Standard
	Sc	45	57243.0	2.9				ug/L	55220	Standard
	Ti	47	47.3	29.6	**0.0406**	0.033	81.0	ug/L	34	Standard
	V	51	2278.3	14.7	**0.0415**	0.036	86.5	ug/L	1938	Standard
	Cr	52	8862.6	0.5	**-0.0873**	0.009	10.2	ug/L	9522	Standard
	Cr	53	4424.0	2.9	**3.4446**	0.093	2.7	ug/L	395	Standard
	Mn	55	1178.0	6.8	**0.0272**	0.008	31.0	ug/L	902	Standard
	Co	59	321.3	5.0	**0.0153**	0.002	11.4	ug/L	262	Standard
	Ni	60	306.3	4.9	**-0.0136**	0.006	43.3	ug/L	371	Standard
	Cu	65	168.7	6.5	**0.0151**	0.005	30.0	ug/L	106	Standard
	Zn	66	485.3	2.1	**0.0142**	0.006	41.5	ug/L	398	Standard
>	**Ge**	72	553907.6	0.5				ug/L	535147	Standard
	As	75	-16.9	53.1	**0.0430**	0.006	15.1	ug/L	-43	Standard
	Se	82	16.0	5.1	**0.0173**	0.006	36.6	ug/L	14	Standard
	Se-1	77	229.0	12.9	**1.8737**	0.305	16.3	ug/L	65	Standard
>	**Ga**	71	66.7	21.7				mg/L	97	Standard
	Rb	85	46.7	27.0				ug/L	15	Standard
	Y	89	490579.9	1.4				ug/L	465704	Standard
>	**Rh**	103	11.7	65.5				ug/L	10	Standard
	Mo	98	229.1	14.3	**0.0822**	0.010	12.1	ug/L	9	Standard
	Ag	107	158.3	1.6	**0.0139**	0.000	3.0	ug/L	82	Standard
	Cd	111	11.9	34.7	**0.0126**	0.002	12.8	mg/L	7	Standard
	Cd	114	37.6	66.1	**0.0151**	0.004	26.8	ug/L	21	Standard
>	**In**	115	650758.6	0.5				ug/L	619035	Standard
	Sn	118	1208.4	21.8	**0.0732**	0.039	52.8	ug/L	508	Standard
	Sb	123	885.2	32.8	**0.1635**	0.052	32.0	ug/L	86	Standard
	Ba	135	75.0	19.2	**0.0116**	0.006	50.8	ug/L	79	Standard
	Ce	140	85.0	40.8				ug/L	68	Standard
>	**Tb**	159	989894.2	0.6				ug/L	986982	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	140.0	14.3	**0.0209**	0.002	10.4	ug/L	13	Standard
	Tl	205	108.3	13.3	**0.0212**	0.002	8.1	ug/L	10	Standard
	Pb	206	351.7	5.1	**0.0207**	0.003	15.3	ug/L	264	Standard
	Pb	207	323.0	8.8	**0.0262**	0.005	20.8	ug/L	227	Standard
	Pb	208	1309.7	7.2	**0.0242**	0.005	20.1	ug/L	868	Standard
	U	238	69.0	10.9	**0.0168**	0.001	6.1	ug/L	8	Standard
>	**Bi**	209	555329.7	0.6				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 14:32:36
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**8.8680**	15.351	173.1	mg/L	2	Standard
Mg	24	30.0	16.7	**-0.0031**	0.005	148.3	mg/L	53	Standard
K	39	38.3	27.2	**-0.0129**	0.019	148.3	mg/L	53	Standard
Ca	43	31.7	24.1	**0.0538**	0.398	740.6	mg/L	28	Standard
Fe	54	182.6	11.1	**0.0013**	0.013	999.6	mg/L	181	Standard
Fe	57	265.0	1.9	**0.0147**	0.025	169.8	mg/L	257	Standard
Sc-1	45	57243.0	2.9				mg/L	55220	Standard
Cl	35	44938.6	1.8				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1873.4	1.9				ug/L	2040	Standard
P	31	23655.1	0.6				ug/L	20435	Standard
S	34	2910.3	4.5				ug/L	2430	Standard
Sr	88	90.0	28.9				ug/L	75	Standard
C	12	113.3	35.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	508.4	17.1				mg/L	9	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	103.3	39.1				mg/L	23	Standard
I	127	12196.6	4.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.506	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 14:32:36
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.125
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.646
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 14:32:36
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122903 WG573868-02
Sample Date/Time: Thursday, June 30, 2016 14:36:30
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71002.7	1.3				ug/L	74916	Standard
	Be	9	110.0	13.6	**0.1065**	0.016	15.4	ug/L	10	Standard
	Al	27	60587.6	0.3	**0.3661**	0.006	1.7	ug/L	1822	Standard
	Sc	45	57154.3	2.4				ug/L	55220	Standard
	Ti	47	49.7	4.6	**0.0452**	0.006	12.3	ug/L	34	Standard
	V	51	2081.7	41.8	**0.0190**	0.089	470.9	ug/L	1938	Standard
	Cr	52	346396.8	0.8	**35.8869**	0.159	0.4	ug/L	9522	Standard
	Cr	53	45784.1	2.4	**38.9623**	0.821	2.1	ug/L	395	Standard
	Mn	55	59947.8	3.6	**6.5779**	0.223	3.4	ug/L	902	Standard
	Co	59	915.7	3.6	**0.0850**	0.004	5.0	ug/L	262	Standard
	Ni	60	812.7	5.7	**0.2020**	0.021	10.2	ug/L	371	Standard
	Cu	65	1727.4	1.0	**0.6919**	0.010	1.5	ug/L	106	Standard
	Zn	66	13300.5	3.0	**9.4660**	0.258	2.7	ug/L	398	Standard
>	**Ge**	72	558242.0	0.4				ug/L	535147	Standard
	As	75	65.8	23.6	**0.1023**	0.011	11.0	ug/L	-43	Standard
	Se	82	32.9	6.0	**0.1355**	0.014	10.2	ug/L	14	Standard
	Se-1	77	178.0	8.3	**1.3130**	0.161	12.3	ug/L	65	Standard
>	**Ga**	71	481.7	9.6				mg/L	97	Standard
	Rb	85	121.7	24.8				ug/L	15	Standard
	Y	89	491956.7	1.3				ug/L	465704	Standard
>	**Rh**	103	28.3	10.2				ug/L	10	Standard
	Mo	98	708.5	1.9	**0.2258**	0.004	1.8	ug/L	9	Standard
	Ag	107	255.7	1.4	**0.0258**	0.000	1.8	ug/L	82	Standard
	Cd	111	186.7	8.9	**0.0806**	0.007	8.1	mg/L	7	Standard
	Cd	114	502.9	6.7	**0.0902**	0.005	6.0	ug/L	21	Standard
>	**In**	115	658594.5	0.1				ug/L	619035	Standard
	Sn	118	3992.2	4.0	**0.4732**	0.023	4.8	ug/L	508	Standard
	Sb	123	704.6	13.7	**0.1294**	0.017	13.2	ug/L	86	Standard
	Ba	135	280.0	7.2	**0.0955**	0.008	8.8	ug/L	79	Standard
	Ce	140	160.0	17.4				ug/L	68	Standard
>	**Tb**	159	987064.7	0.5				ug/L	986982	Standard
	Ho	165	13.3	114.6				ug/L	10	Standard
	Tl	203	732.7	2.9	**0.0833**	0.003	3.4	ug/L	13	Standard
	Tl	205	638.3	8.7	**0.0866**	0.007	8.2	ug/L	10	Standard
	Pb	206	3147.7	1.8	**0.4799**	0.013	2.6	ug/L	264	Standard
	Pb	207	2938.3	1.9	**0.5014**	0.008	1.6	ug/L	227	Standard
	Pb	208	11735.4	1.5	**0.5154**	0.012	2.3	ug/L	868	Standard
	U	238	27.7	44.9	**0.0114**	0.002	13.9	ug/L	8	Standard
>	**Bi**	209	561516.9	1.0				ug/L	541014	Standard

Sample ID: L1606122903 WG573868-02
Report Date/Time: Thursday, June 30, 2016 14:38:47
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	218.3	14.0	**0.1956**	0.034	17.5	mg/L	53	Standard
K	39	48.3	11.9	**0.0034**	0.011	334.1	mg/L	53	Standard
Ca	43	26.7	28.6	**-0.2176**	0.401	184.1	mg/L	28	Standard
Fe	54	154.6	2.8	**-0.0169**	0.005	31.7	mg/L	181	Standard
Fe	57	288.3	11.3	**0.0751**	0.082	108.7	mg/L	257	Standard
> **Sc-1**	45	57154.3	2.4				mg/L	55220	Standard
Cl	35	44364.2	1.0				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1986.8	12.1				ug/L	2040	Standard
P	31	23139.3	3.0				ug/L	20435	Standard
S	34	2735.2	5.6				ug/L	2430	Standard
Sr	88	70.0	28.6				ug/L	75	Standard
C	12	96.7	33.3				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	16.3	38.7				mg/L	9	Standard
Ho-1	165	13.3	114.6				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	17933.9	2.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.776	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.316	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122903 WG573868-02
Report Date/Time: Thursday, June 30, 2016 14:38:47
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.391
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.790
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122903DP WG573868-07
Sample Date/Time: Thursday, June 30, 2016 14:39:42
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70982.6	0.4				ug/L	74916	Standard
	Be	9	78.3	3.7	**0.0748**	0.003	3.9	ug/L	10	Standard
	Al	27	58663.4	0.8	**0.3545**	0.004	1.2	ug/L	1822	Standard
	Sc	45	54899.3	2.2				ug/L	55220	Standard
	Ti	47	42.0	20.3	**0.0291**	0.021	71.9	ug/L	34	Standard
	V	51	1986.2	67.7	**0.0123**	0.141	1143.9	ug/L	1938	Standard
	Cr	52	368969.5	1.4	**38.9458**	0.615	1.6	ug/L	9522	Standard
	Cr	53	47358.9	1.3	**40.9908**	0.314	0.8	ug/L	395	Standard
	Mn	55	2494.5	1.0	**0.1776**	0.003	2.0	ug/L	902	Standard
	Co	59	853.7	4.1	**0.0794**	0.004	5.4	ug/L	262	Standard
	Ni	60	516.0	2.0	**0.0787**	0.003	3.9	ug/L	371	Standard
	Cu	65	1366.4	1.5	**0.5448**	0.003	0.6	ug/L	106	Standard
	Zn	66	1813.8	2.6	**1.0140**	0.049	4.9	ug/L	398	Standard
>	**Ge**	72	549160.2	1.0				ug/L	535147	Standard
	As	75	46.3	32.0	**0.0889**	0.011	12.0	ug/L	-43	Standard
	Se	82	26.7	16.3	**0.0953**	0.032	33.7	ug/L	14	Standard
	Se-1	77	149.3	11.4	**1.0347**	0.194	18.7	ug/L	65	Standard
>	**Ga**	71	50.0	30.0				mg/L	97	Standard
	Rb	85	33.3	48.2				ug/L	15	Standard
	Y	89	479449.5	0.7				ug/L	465704	Standard
>	**Rh**	103	15.0	57.7				ug/L	10	Standard
	Mo	98	48.2	16.0	**0.0272**	0.002	8.7	ug/L	9	Standard
	Ag	107	307.3	5.2	**0.0331**	0.002	6.4	ug/L	82	Standard
	Cd	111	175.3	12.3	**0.0777**	0.009	11.4	mg/L	7	Standard
	Cd	114	457.7	16.6	**0.0845**	0.012	14.3	ug/L	21	Standard
>	**In**	115	644130.8	0.8				ug/L	619035	Standard
	Sn	118	1141.7	10.3	**0.0651**	0.016	25.2	ug/L	508	Standard
	Sb	123	451.3	16.0	**0.0863**	0.012	14.5	ug/L	86	Standard
	Ba	135	215.0	11.9	**0.0707**	0.010	14.2	ug/L	79	Standard
	Ce	140	68.3	18.4				ug/L	68	Standard
>	**Tb**	159	972427.1	1.7				ug/L	986982	Standard
	Ho	165	20.0	0.0				ug/L	10	Standard
	Tl	203	724.0	1.3	**0.0829**	0.001	1.0	ug/L	13	Standard
	Tl	205	615.0	10.6	**0.0841**	0.007	8.9	ug/L	10	Standard
	Pb	206	746.7	2.4	**0.0858**	0.004	4.4	ug/L	264	Standard
	Pb	207	647.3	1.0	**0.0853**	0.002	2.5	ug/L	227	Standard
	Pb	208	2717.1	0.5	**0.0907**	0.001	1.6	ug/L	868	Standard
	U	238	17.7	21.4	**0.0102**	0.000	4.9	ug/L	8	Standard
>	**Bi**	209	557965.7	0.8				ug/L	541014	Standard

Sample ID: L1606122903DP WG573868-07
Report Date/Time: Thursday, June 30, 2016 14:41:59
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.6831**	16.763	173.1	mg/L	2	Standard
Mg	24	153.3	12.3	**0.1335**	0.020	14.8	mg/L	53	Standard
K	39	50.0	10.0	**0.0093**	0.007	74.0	mg/L	53	Standard
Ca	43	20.0	25.0	**-0.5355**	0.280	52.3	mg/L	28	Standard
Fe	54	168.8	9.1	**-0.0030**	0.011	377.3	mg/L	181	Standard
Fe	57	223.3	12.9	**-0.0670**	0.085	126.8	mg/L	257	Standard
Sc-1	45	54899.3	2.2				mg/L	55220	Standard
Cl	35	43575.9	0.9				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2043.5	8.3				ug/L	2040	Standard
P	31	21959.2	2.7				ug/L	20435	Standard
S	34	2773.6	3.8				ug/L	2430	Standard
Sr	88	75.0	48.1				ug/L	75	Standard
C	12	73.3	43.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	2.4	262.3				mg/L	9	Standard
Ho-1	165	20.0	0.0				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	23	Standard
I	127	17311.6	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.749	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.619	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122903DP WG573868-07
Report Date/Time: Thursday, June 30, 2016 14:41:59
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.054
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.133
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122701
Sample Date/Time: Thursday, June 30, 2016 14:42:53
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64442.1	6.0				ug/L	74916	Standard
	Be	9	23.3	44.6	**0.0225**	0.013	55.8	ug/L	10	Standard
	Al	27	35175.8	1.1	**0.2340**	0.016	6.9	ug/L	1822	Standard
	Sc	45	50300.1	3.5				ug/L	55220	Standard
	Ti	47	56.7	10.6	**0.0742**	0.016	21.5	ug/L	34	Standard
	V	51	14543.2	1.3	**1.4556**	0.051	3.5	ug/L	1938	Standard
	Cr	52	16900.1	1.3	**0.9376**	0.092	9.8	ug/L	9522	Standard
	Cr	53	4118.9	6.8	**3.4933**	0.222	6.4	ug/L	395	Standard
	Mn	55	789.4	1.1	**-0.0086**	0.004	47.1	ug/L	902	Standard
	Co	59	369.0	1.5	**0.0249**	0.002	7.9	ug/L	262	Standard
	Ni	60	498.7	1.5	**0.0883**	0.007	7.9	ug/L	371	Standard
	Cu	65	272.3	6.6	**0.0713**	0.013	17.7	ug/L	106	Standard
	Zn	66	1142.7	4.6	**0.5789**	0.068	11.7	ug/L	398	Standard
>	Ge	72	509231.3	3.4				ug/L	535147	Standard
	As	75	106.3	53.1	**0.1395**	0.046	33.0	ug/L	-43	Standard
	Se	82	31.1	9.4	**0.1446**	0.027	18.8	ug/L	14	Standard
	Se-1	77	158.7	4.8	**1.2722**	0.136	10.7	ug/L	65	Standard
>	Ga	71	300.0	13.3				mg/L	97	Standard
	Rb	85	3572.1	5.2				ug/L	15	Standard
	Y	89	437515.1	1.9				ug/L	465704	Standard
>	Rh	103	71.7	10.7				ug/L	10	Standard
	Mo	98	198.8	4.5	**0.0792**	0.004	5.4	ug/L	9	Standard
	Ag	107	89.3	7.3	**0.0064**	0.001	17.9	ug/L	82	Standard
	Cd	111	8.3	13.6	**0.0115**	0.001	4.7	mg/L	7	Standard
	Cd	114	18.2	68.8	**0.0122**	0.002	18.7	ug/L	21	Standard
>	In	115	590604.5	2.1				ug/L	619035	Standard
	Sn	118	255.0	10.9	**-0.0623**	0.005	8.3	ug/L	508	Standard
	Sb	123	116.1	9.8	**0.0274**	0.003	9.8	ug/L	86	Standard
	Ba	135	15449.5	1.2	**7.0659**	0.187	2.7	ug/L	79	Standard
	Ce	140	106.7	7.2				ug/L	68	Standard
>	Tb	159	903950.3	1.9				ug/L	986982	Standard
	Ho	165	21.7	35.3				ug/L	10	Standard
	Tl	203	50.3	8.0	**0.0117**	0.000	3.4	ug/L	13	Standard
	Tl	205	38.3	45.8	**0.0127**	0.002	18.4	ug/L	10	Standard
	Pb	206	305.7	8.4	**0.0157**	0.004	23.6	ug/L	264	Standard
	Pb	207	250.0	2.2	**0.0152**	0.001	9.4	ug/L	227	Standard
	Pb	208	1046.3	3.9	**0.0142**	0.001	8.1	ug/L	868	Standard
	U	238	78.7	9.6	**0.0186**	0.001	6.5	ug/L	8	Standard
>	Bi	209	527486.6	1.9				ug/L	541014	Standard

Sample ID: L1606122701
Report Date/Time: Thursday, June 30, 2016 14:45:10
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.7038**	18.531	173.1	mg/L	2	Standard
Mg	24	1011.7	4.5	**1.1779**	0.093	7.9	mg/L	53	Standard
K	39	111.7	29.8	**0.1312**	0.056	42.9	mg/L	53	Standard
Ca	43	86.7	26.0	**3.6971**	1.306	35.3	mg/L	28	Standard
Fe	54	57.1	5.7	**-0.0760**	0.003	4.3	mg/L	181	Standard
Fe	57	325.0	12.3	**0.2811**	0.098	34.8	mg/L	257	Standard
Sc-1	45	50300.1	3.5				mg/L	55220	Standard
Cl	35	38597.1	1.2				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3163.7	4.8				ug/L	2040	Standard
P	31	8620.8	3.4				ug/L	20435	Standard
S	34	2843.6	2.8				ug/L	2430	Standard
Sr	88	275.0	7.9				ug/L	75	Standard
C	12	80.0	25.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	15.9	34.8				mg/L	9	Standard
Ho-1	165	21.7	35.3				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	41971.4	3.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.019	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.157	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122701
Report Date/Time: Thursday, June 30, 2016 14:45:10
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.407
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.500
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122703
Sample Date/Time: Thursday, June 30, 2016 14:46:05
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63872.8	3.9				ug/L	74916	Standard
	Be	9	23.3	24.7	**0.0225**	0.007	31.7	ug/L	10	Standard
	Al	27	262731.8	0.7	**1.7750**	0.062	3.5	ug/L	1822	Standard
	Sc	45	50567.6	1.4				ug/L	55220	Standard
	Ti	47	69.3	15.9	**0.1109**	0.030	26.6	ug/L	34	Standard
	V	51	2022.9	3.1	**0.0391**	0.010	24.6	ug/L	1938	Standard
	Cr	52	7400.1	4.1	**-0.1526**	0.044	28.8	ug/L	9522	Standard
	Cr	53	2908.6	10.0	**2.4248**	0.310	12.8	ug/L	395	Standard
	Mn	55	46636.0	2.9	**5.7392**	0.181	3.2	ug/L	902	Standard
	Co	59	313.3	27.7	**0.0187**	0.012	62.9	ug/L	262	Standard
	Ni	60	333.7	4.3	**0.0149**	0.008	57.2	ug/L	371	Standard
	Cu	65	411.3	45.3	**0.1419**	0.091	63.9	ug/L	106	Standard
	Zn	66	1541.7	7.1	**0.9319**	0.091	9.7	ug/L	398	Standard
>	**Ge**	72	496662.3	1.1				ug/L	535147	Standard
	As	75	3.0	487.9	**0.0576**	0.012	20.3	ug/L	-43	Standard
	Se	82	30.5	8.2	**0.1453**	0.022	15.3	ug/L	14	Standard
	Se-1	77	151.7	4.4	**1.2325**	0.068	5.5	ug/L	65	Standard
>	**Ga**	71	56.7	43.5				mg/L	97	Standard
	Rb	85	436.7	11.5				ug/L	15	Standard
	Y	89	430441.7	1.9				ug/L	465704	Standard
>	**Rh**	103	13.3	57.3				ug/L	10	Standard
	Mo	98	41.9	29.5	**0.0266**	0.004	15.8	ug/L	9	Standard
	Ag	107	143.3	22.7	**0.0141**	0.005	33.0	ug/L	82	Standard
	Cd	111	32.9	51.0	**0.0224**	0.007	33.2	mg/L	7	Standard
	Cd	114	121.0	17.4	**0.0310**	0.004	12.5	ug/L	21	Standard
>	**In**	115	584144.8	1.3				ug/L	619035	Standard
	Sn	118	585.0	3.1	**-0.0082**	0.002	22.4	ug/L	508	Standard
	Sb	123	122.5	19.2	**0.0289**	0.005	16.2	ug/L	86	Standard
	Ba	135	13459.0	1.0	**6.2201**	0.123	2.0	ug/L	79	Standard
	Ce	140	33.3	70.9				ug/L	68	Standard
>	**Tb**	159	898212.6	0.3				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	141.3	39.5	**0.0219**	0.006	28.4	ug/L	13	Standard
	Tl	205	166.7	95.7	**0.0296**	0.021	70.6	ug/L	10	Standard
	Pb	206	307.3	15.5	**0.0162**	0.008	50.6	ug/L	264	Standard
	Pb	207	261.7	12.6	**0.0177**	0.006	35.9	ug/L	227	Standard
	Pb	208	1296.0	32.2	**0.0269**	0.021	77.0	ug/L	868	Standard
	U	238	118.7	114.1	**0.0240**	0.018	76.4	ug/L	8	Standard
>	**Bi**	209	525541.8	0.4				ug/L	541014	Standard

Sample ID: L1606122703
Report Date/Time: Thursday, June 30, 2016 14:48:22
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.0978**	17.481	173.1	mg/L	2	Standard
Mg	24	535.0	18.8	**0.6015**	0.115	19.1	mg/L	53	Standard
K	39	66.7	18.9	**0.0477**	0.025	51.7	mg/L	53	Standard
Ca	43	23.3	53.9	**-0.2274**	0.784	344.8	mg/L	28	Standard
Fe	54	255.7	31.1	**0.0710**	0.056	79.3	mg/L	181	Standard
Fe	57	321.7	7.0	**0.2673**	0.059	22.0	mg/L	257	Standard
> **Sc-1**	45	50567.6	1.4				mg/L	55220	Standard
Cl	35	40072.9	1.5				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	3260.4	4.3				ug/L	2040	Standard
P	31	8352.3	6.8				ug/L	20435	Standard
S	34	2655.2	6.2				ug/L	2430	Standard
Sr	88	96.7	7.9				ug/L	75	Standard
C	12	113.3	18.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.0	193.9				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	39451.3	3.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.259	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.809	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122703
Report Date/Time: Thursday, June 30, 2016 14:48:22
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.364
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.140
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122705
Sample Date/Time: Thursday, June 30, 2016 14:49:17
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63382.3	2.1				ug/L	74916	Standard
	Be	9	8.3	34.6	**0.0058**	0.003	58.5	ug/L	10	Standard
	Al	27	247230.8	0.5	**1.6820**	0.028	1.7	ug/L	1822	Standard
	Sc	45	49723.1	1.2				ug/L	55220	Standard
	Ti	47	51.0	13.6	**0.0595**	0.017	28.9	ug/L	34	Standard
	V	51	2118.9	4.8	**0.0438**	0.011	24.7	ug/L	1938	Standard
	Cr	52	7443.8	2.2	**-0.1708**	0.014	8.1	ug/L	9522	Standard
	Cr	53	2696.9	4.2	**2.1505**	0.105	4.9	ug/L	395	Standard
	Mn	55	42329.4	0.7	**5.0615**	0.004	0.1	ug/L	902	Standard
	Co	59	228.7	1.8	**0.0067**	0.000	7.3	ug/L	262	Standard
	Ni	60	308.3	7.9	**-0.0013**	0.011	847.7	ug/L	371	Standard
	Cu	65	124.0	4.3	**0.0002**	0.002	938.4	ug/L	106	Standard
	Zn	66	1239.4	3.7	**0.6545**	0.038	5.8	ug/L	398	Standard
>	**Ge**	72	509892.2	0.6				ug/L	535147	Standard
	As	75	-21.0	156.3	**0.0386**	0.026	66.7	ug/L	-43	Standard
	Se	82	22.8	3.9	**0.0799**	0.006	7.4	ug/L	14	Standard
	Se-1	77	129.3	5.0	**0.9258**	0.084	9.0	ug/L	65	Standard
>	**Ga**	71	36.7	43.8				mg/L	97	Standard
	Rb	85	353.3	8.3				ug/L	15	Standard
	Y	89	434937.9	2.2				ug/L	465704	Standard
>	**Rh**	103	18.3	78.7				ug/L	10	Standard
	Mo	98	13.3	4.9	**0.0169**	0.000	1.3	ug/L	9	Standard
	Ag	107	93.3	9.6	**0.0069**	0.001	17.6	ug/L	82	Standard
	Cd	111	5.6	41.0	**0.0104**	0.001	9.7	mg/L	7	Standard
	Cd	114	19.8	80.0	**0.0125**	0.003	23.0	ug/L	21	Standard
>	**In**	115	588399.0	0.2				ug/L	619035	Standard
	Sn	118	255.0	18.9	**-0.0622**	0.008	12.6	ug/L	508	Standard
	Sb	123	79.2	9.4	**0.0201**	0.002	7.5	ug/L	86	Standard
	Ba	135	12570.5	1.2	**5.7652**	0.070	1.2	ug/L	79	Standard
	Ce	140	25.0	34.6				ug/L	68	Standard
>	**Tb**	159	905028.5	0.8				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	44.3	15.4	**0.0110**	0.001	7.0	ug/L	13	Standard
	Tl	205	45.0	22.2	**0.0136**	0.001	9.7	ug/L	10	Standard
	Pb	206	333.3	5.0	**0.0203**	0.003	14.2	ug/L	264	Standard
	Pb	207	266.3	5.4	**0.0181**	0.003	14.7	ug/L	227	Standard
	Pb	208	1164.0	1.9	**0.0198**	0.001	6.0	ug/L	868	Standard
	U	238	8.7	24.0	**0.0091**	0.000	3.0	ug/L	8	Standard
>	**Bi**	209	530144.0	0.4				ug/L	541014	Standard

Sample ID: L1606122705
Report Date/Time: Thursday, June 30, 2016 14:51:33
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.3550**	17.927	173.1	mg/L	2	Standard
Mg	24	483.3	4.3	**0.5506**	0.030	5.5	mg/L	53	Standard
K	39	80.0	16.5	**0.0747**	0.024	32.2	mg/L	53	Standard
Ca	43	26.7	10.8	**0.0040**	0.203	5081.3	mg/L	28	Standard
Fe	54	226.1	14.7	**0.0524**	0.025	48.2	mg/L	181	Standard
Fe	57	310.0	11.3	**0.2484**	0.095	38.1	mg/L	257	Standard
> **Sc-1**	45	49723.1	1.2				mg/L	55220	Standard
Cl	35	40435.9	0.5				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	3133.7	7.1				ug/L	2040	Standard
P	31	8177.2	1.9				ug/L	20435	Standard
S	34	2473.5	1.8				ug/L	2430	Standard
Sr	88	75.0	52.9				ug/L	75	Standard
C	12	90.0	44.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	2.7	221.0				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	38071.1	2.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.604	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.281	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122705
Report Date/Time: Thursday, June 30, 2016 14:51:33
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.051
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.991
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606122705
Report Date/Time: Thursday, June 30, 2016 14:51:33
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122706
Sample Date/Time: Thursday, June 30, 2016 14:52:28
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63995.1	4.9				ug/L	74916	Standard
	Be	9	25.0	20.0	**0.0243**	0.007	27.2	ug/L	10	Standard
	Al	27	1452158.4	1.3	**9.8063**	0.384	3.9	ug/L	1822	Standard
	Sc	45	49316.8	2.6				ug/L	55220	Standard
	Ti	47	38.0	22.8	**0.0277**	0.023	81.9	ug/L	34	Standard
	V	51	2307.6	6.8	**0.0683**	0.017	24.7	ug/L	1938	Standard
	Cr	52	7271.4	1.4	**-0.1808**	0.007	3.7	ug/L	9522	Standard
	Cr	53	3968.9	5.0	**3.3927**	0.215	6.3	ug/L	395	Standard
	Mn	55	91787.5	1.0	**11.2317**	0.163	1.5	ug/L	902	Standard
	Co	59	876.0	4.6	**0.0915**	0.006	6.4	ug/L	262	Standard
	Ni	60	474.7	3.4	**0.0793**	0.009	11.3	ug/L	371	Standard
	Cu	65	164.7	34.4	**0.0207**	0.028	135.8	ug/L	106	Standard
	Zn	66	988.0	6.5	**0.4611**	0.057	12.4	ug/L	398	Standard
>	**Ge**	72	503918.8	0.8				ug/L	535147	Standard
	As	75	46.2	85.3	**0.0918**	0.031	33.8	ug/L	-43	Standard
	Se	82	41.0	23.8	**0.2246**	0.078	34.8	ug/L	14	Standard
	Se-1	77	170.7	3.4	**1.4303**	0.053	3.7	ug/L	65	Standard
>	**Ga**	71	73.3	25.8				mg/L	97	Standard
	Rb	85	820.0	1.8				ug/L	15	Standard
	Y	89	428133.2	0.9				ug/L	465704	Standard
>	**Rh**	103	33.3	56.8				ug/L	10	Standard
	Mo	98	14.7	37.7	**0.0174**	0.002	10.6	ug/L	9	Standard
	Ag	107	85.0	6.2	**0.0059**	0.001	12.3	ug/L	82	Standard
	Cd	111	6.3	105.4	**0.0107**	0.003	27.8	mg/L	7	Standard
	Cd	114	17.2	88.0	**0.0121**	0.003	23.1	ug/L	21	Standard
>	**In**	115	582185.3	1.1				ug/L	619035	Standard
	Sn	118	228.3	17.7	**-0.0661**	0.006	9.7	ug/L	508	Standard
	Sb	123	73.7	18.3	**0.0192**	0.003	13.8	ug/L	86	Standard
	Ba	135	6171.3	2.4	**2.8508**	0.076	2.7	ug/L	79	Standard
	Ce	140	311.7	26.7				ug/L	68	Standard
>	**Tb**	159	900041.5	0.2				ug/L	986982	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	78.0	18.9	**0.0149**	0.002	11.2	ug/L	13	Standard
	Tl	205	86.7	37.5	**0.0192**	0.004	22.2	ug/L	10	Standard
	Pb	206	268.7	7.4	**0.0099**	0.004	38.8	ug/L	264	Standard
	Pb	207	237.7	0.5	**0.0135**	0.000	1.2	ug/L	227	Standard
	Pb	208	982.0	12.1	**0.0117**	0.006	49.8	ug/L	868	Standard
	U	238	573.7	13.6	**0.0868**	0.010	12.0	ug/L	8	Standard
>	**Bi**	209	520191.7	0.7				ug/L	541014	Standard

Sample ID: L1606122706
Report Date/Time: Thursday, June 30, 2016 14:54:45
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3188.7	3.7	**3.8557**	0.044	1.1	mg/L	53	Standard
K	39	53.3	28.6	**0.0251**	0.027	108.2	mg/L	53	Standard
Ca	43	46.7	27.0	**1.2792**	0.771	60.3	mg/L	28	Standard
Fe	54	69.3	57.6	**-0.0655**	0.032	48.3	mg/L	181	Standard
Fe	57	315.0	11.1	**0.2703**	0.086	31.9	mg/L	257	Standard
Sc-1	45	49316.8	2.6				mg/L	55220	Standard
Cl	35	40068.9	0.3				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	6631.5	4.6				ug/L	2040	Standard
P	31	7241.7	2.9				ug/L	20435	Standard
S	34	2561.9	3.4				ug/L	2430	Standard
Sr	88	133.3	36.4				ug/L	75	Standard
C	12	60.0					mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	19.8	51.6				mg/L	9	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	44420.0	2.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.422	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.165	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122706
Report Date/Time: Thursday, June 30, 2016 14:54:45
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.047
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.151
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122707
Sample Date/Time: Thursday, June 30, 2016 14:55:40
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62577.4	3.3				ug/L	74916	Standard
	Be	9	6.7	86.6	**0.0039**	0.007	166.0	ug/L	10	Standard
	Al	27	198944.4	1.5	**1.3707**	0.026	1.9	ug/L	1822	Standard
	Sc	45	50035.9	2.6				ug/L	55220	Standard
	Ti	47	30.0	20.8	**0.0075**	0.015	197.5	ug/L	34	Standard
	V	51	2013.9	5.4	**0.0366**	0.012	33.1	ug/L	1938	Standard
	Cr	52	7046.6	1.7	**-0.2000**	0.028	13.8	ug/L	9522	Standard
	Cr	53	2293.5	0.8	**1.8158**	0.076	4.2	ug/L	395	Standard
	Mn	55	50488.3	0.7	**6.1844**	0.145	2.3	ug/L	902	Standard
	Co	59	221.0	2.5	**0.0063**	0.001	23.6	ug/L	262	Standard
	Ni	60	712.4	1.1	**0.1948**	0.006	2.9	ug/L	371	Standard
	Cu	65	141.3	12.8	**0.0098**	0.008	84.8	ug/L	106	Standard
	Zn	66	1168.4	4.0	**0.6160**	0.014	2.2	ug/L	398	Standard
>	**Ge**	72	499784.8	2.6				ug/L	535147	Standard
	As	75	-33.5	115.4	**0.0280**	0.031	111.0	ug/L	-43	Standard
	Se	82	22.8	19.0	**0.0842**	0.039	46.9	ug/L	14	Standard
	Se-1	77	125.0	5.8	**0.9050**	0.091	10.1	ug/L	65	Standard
>	**Ga**	71	46.7	50.6				mg/L	97	Standard
	Rb	85	270.0	11.6				ug/L	15	Standard
	Y	89	429135.1	1.7				ug/L	465704	Standard
>	**Rh**	103	16.7	45.8				ug/L	10	Standard
	Mo	98	13.7	25.0	**0.0170**	0.001	6.4	ug/L	9	Standard
	Ag	107	80.0	11.9	**0.0051**	0.001	26.5	ug/L	82	Standard
	Cd	111	5.0	40.2	**0.0101**	0.001	9.0	mg/L	7	Standard
	Cd	114	10.0	53.1	**0.0107**	0.001	8.9	ug/L	21	Standard
>	**In**	115	585198.1	1.8				ug/L	619035	Standard
	Sn	118	186.7	13.5	**-0.0730**	0.005	6.3	ug/L	508	Standard
	Sb	123	75.9	10.6	**0.0196**	0.002	8.4	ug/L	86	Standard
	Ba	135	8760.9	0.3	**4.0349**	0.067	1.7	ug/L	79	Standard
	Ce	140	36.7	7.9				ug/L	68	Standard
>	**Tb**	159	899376.2	1.9				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	44.3	10.7	**0.0110**	0.001	5.1	ug/L	13	Standard
	Tl	205	46.7	24.7	**0.0139**	0.001	10.7	ug/L	10	Standard
	Pb	206	244.3	3.1	**0.0053**	0.002	35.8	ug/L	264	Standard
	Pb	207	230.3	8.7	**0.0118**	0.004	32.8	ug/L	227	Standard
	Pb	208	925.0	2.8	**0.0085**	0.001	11.3	ug/L	868	Standard
	U	238	3.7	56.8	**0.0084**	0.000	3.3	ug/L	8	Standard
>	**Bi**	209	523201.8	1.3				ug/L	541014	Standard

Sample ID: L1606122707
Report Date/Time: Thursday, June 30, 2016 14:57:57
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	508.3	2.8	**0.5773**	0.030	5.2	mg/L	53	Standard
K	39	55.0	18.2	**0.0274**	0.021	77.1	mg/L	53	Standard
Ca	43	28.3	36.7	**0.1031**	0.676	655.6	mg/L	28	Standard
Fe	54	462.6	3.9	**0.2290**	0.007	3.0	mg/L	181	Standard
Fe	57	376.7	12.0	**0.4365**	0.105	24.0	mg/L	257	Standard
> **Sc-1**	45	50035.9	2.6				mg/L	55220	Standard
Cl	35	40185.2	1.9				ug/L	35504	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	2750.3	5.5				ug/L	2040	Standard
P	31	7351.8	4.8				ug/L	20435	Standard
S	34	2616.9	2.6				ug/L	2430	Standard
Sr	88	65.0	15.4				ug/L	75	Standard
C	12	113.3	27.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.5	239.4				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	39342.7	1.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.392	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122707
Report Date/Time: Thursday, June 30, 2016 14:57:57
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.534
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.708
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 14:58:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64391.5	0.8				ug/L	74916	Standard
	Be	9	49959.0	3.9	**55.0785**	1.704	3.1	ug/L	10	Standard
	Al	27	8042298.7	3.0	**53.9109**	1.197	2.2	ug/L	1822	Standard
	Sc	45	52713.3	3.1				ug/L	55220	Standard
	Ti	47	40282.8	2.2	**100.6643**	0.597	0.6	ug/L	34	Standard
	V	51	449362.5	2.0	**49.9229**	0.786	1.6	ug/L	1938	Standard
	Cr	52	448068.9	1.4	**50.4103**	0.341	0.7	ug/L	9522	Standard
	Cr	53	56742.8	3.7	**52.1353**	1.373	2.6	ug/L	395	Standard
	Mn	55	411079.3	2.0	**49.2603**	0.827	1.7	ug/L	902	Standard
	Co	59	391313.5	1.8	**49.6052**	0.544	1.1	ug/L	262	Standard
	Ni	60	110525.4	1.2	**50.7752**	0.447	0.9	ug/L	371	Standard
	Cu	65	108521.4	2.5	**50.7316**	0.511	1.0	ug/L	106	Standard
	Zn	66	64187.3	0.5	**50.6710**	0.790	1.6	ug/L	398	Standard
>	Ge	72	518300.5	1.9				ug/L	535147	Standard
	As	75	65315.7	1.3	**50.4052**	0.285	0.6	ug/L	-43	Standard
	Se	82	6637.9	2.0	**50.4718**	0.221	0.4	ug/L	14	Standard
	Se-1	77	4485.7	1.7	**50.8352**	0.703	1.4	ug/L	65	Standard
>	Ga	71	66.7	30.3				mg/L	97	Standard
	Rb	85	938.4	3.4				ug/L	15	Standard
	Y	89	452750.4	1.1				ug/L	465704	Standard
>	Rh	103	43.3	58.1				ug/L	10	Standard
	Mo	98	290978.1	1.9	**95.9061**	1.779	1.9	ug/L	9	Standard
	Ag	107	359437.5	1.1	**48.9522**	0.523	1.1	ug/L	82	Standard
	Cd	111	116831.1	2.1	**49.7787**	0.939	1.9	mg/L	7	Standard
	Cd	114	283363.8	1.4	**50.1376**	0.775	1.5	ug/L	21	Standard
>	In	115	602055.6	0.7				ug/L	619035	Standard
	Sn	118	319610.8	2.7	**50.3915**	1.220	2.4	ug/L	508	Standard
	Sb	123	254703.1	1.5	**49.4555**	0.671	1.4	ug/L	86	Standard
	Ba	135	109175.3	1.2	**49.0837**	0.702	1.4	ug/L	79	Standard
	Ce	140	180.0	7.3				ug/L	68	Standard
>	Tb	159	909220.9	1.0				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	443311.4	0.8	**50.2200**	0.968	1.9	ug/L	13	Standard
	Tl	205	389649.1	1.6	**51.6702**	1.301	2.5	ug/L	10	Standard
	Pb	206	277554.0	1.2	**48.9549**	1.120	2.3	ug/L	264	Standard
	Pb	207	252521.8	1.1	**49.2813**	1.032	2.1	ug/L	227	Standard
	Pb	208	1029674.4	0.9	**52.1136**	0.991	1.9	ug/L	868	Standard
	U	238	368061.3	1.2	**50.3996**	1.185	2.4	ug/L	8	Standard
>	Bi	209	523176.7	1.1				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 15:01:10
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4247.3	2.1	**4.8159**	0.107	2.2	mg/L	53	Standard
K	39	2163.5	3.7	**3.7700**	0.073	1.9	mg/L	53	Standard
Ca	43	123.3	16.9	**5.6653**	1.407	24.8	mg/L	28	Standard
Fe	54	7090.0	0.4	**4.9449**	0.156	3.2	mg/L	181	Standard
Fe	57	1908.5	4.2	**4.6381**	0.337	7.3	mg/L	257	Standard
Sc-1	45	52713.3	3.1				mg/L	55220	Standard
Cl	35	43291.8	1.4				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1943.5	0.8				ug/L	2040	Standard
P	31	22641.9	1.4				ug/L	20435	Standard
S	34	3180.3	0.4				ug/L	2430	Standard
Sr	88	60.0	33.3				ug/L	75	Standard
C	12	106.7	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.7	46.6				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	10243.5	6.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.157		
Al	27	107.822		
Sc	45			
Ti	47	100.664		
V	51	99.846		
Cr	52	100.821		
Cr	53			
Mn	55	98.521		
Co	59	99.210		
Ni	60	101.550		
Cu	65	101.463		
Zn	66	101.342		
Ge	72		96.852	
As	75	100.810		
Se	82	100.944		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 15:01:10
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	95.906		
Ag	107	97.904		
Cd	111	99.557		
Cd	114			
In	115		97.257	
Sn	118	100.783		
Sb	123	98.911		
Ba	135	98.167		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.440		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.227		
U	238	100.799		
Bi	209		96.703	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 15:01:10
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 15:02:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64908.8	2.4				ug/L	74916	Standard
	Be	9	33.3	70.9	**0.0325**	0.025	76.1	ug/L	10	Standard
	Al	27	5675.1	97.0	**0.0349**	0.035	101.2	ug/L	1822	Standard
	Sc	45	52479.1	1.7				ug/L	55220	Standard
	Ti	47	57.0	36.8	**0.0705**	0.052	73.1	ug/L	34	Standard
	V	51	1708.7	5.1	**-0.0083**	0.009	105.1	ug/L	1938	Standard
	Cr	52	8255.6	3.6	**-0.1041**	0.031	29.6	ug/L	9522	Standard
	Cr	53	1440.1	4.9	**0.9282**	0.060	6.5	ug/L	395	Standard
	Mn	55	1694.5	64.0	**0.0955**	0.128	134.1	ug/L	902	Standard
	Co	59	484.7	54.7	**0.0378**	0.033	87.5	ug/L	262	Standard
	Ni	60	327.0	14.6	**0.0030**	0.021	704.8	ug/L	371	Standard
	Cu	65	269.7	59.2	**0.0657**	0.073	111.8	ug/L	106	Standard
	Zn	66	495.3	20.2	**0.0417**	0.078	186.4	ug/L	398	Standard
>	Ge	72	525176.3	0.7				ug/L	535147	Standard
	As	75	14.9	238.4	**0.0664**	0.027	40.6	ug/L	-43	Standard
	Se	82	26.6	22.2	**0.1030**	0.043	42.0	ug/L	14	Standard
	Se-1	77	111.7	16.6	**0.6809**	0.202	29.7	ug/L	65	Standard
>	Ga	71	71.7	24.5				mg/L	97	Standard
	Rb	85	48.3	15.8				ug/L	15	Standard
	Y	89	456993.2	1.0				ug/L	465704	Standard
>	Rh	103	21.7	58.1				ug/L	10	Standard
	Mo	98	281.0	44.7	**0.1038**	0.041	39.5	ug/L	9	Standard
	Ag	107	192.3	43.4	**0.0198**	0.011	56.9	ug/L	82	Standard
	Cd	111	40.5	99.9	**0.0249**	0.017	68.3	mg/L	7	Standard
	Cd	114	98.3	87.3	**0.0261**	0.015	57.5	ug/L	21	Standard
>	In	115	609890.0	0.3				ug/L	619035	Standard
	Sn	118	1120.0	5.0	**0.0713**	0.008	11.7	ug/L	508	Standard
	Sb	123	687.4	14.9	**0.1361**	0.019	14.3	ug/L	86	Standard
	Ba	135	123.0	77.9	**0.0350**	0.043	121.7	ug/L	79	Standard
	Ce	140	38.3	32.8				ug/L	68	Standard
>	Tb	159	927551.9	2.0				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	179.3	52.1	**0.0260**	0.010	40.3	ug/L	13	Standard
	Tl	205	265.0	97.2	**0.0423**	0.034	79.6	ug/L	10	Standard
	Pb	206	399.3	16.9	**0.0316**	0.012	37.7	ug/L	264	Standard
	Pb	207	341.0	19.1	**0.0323**	0.013	39.3	ug/L	227	Standard
	Pb	208	1776.4	50.1	**0.0502**	0.045	88.7	ug/L	868	Standard
	U	238	255.0	121.7	**0.0423**	0.042	99.0	ug/L	8	Standard
>	Bi	209	531848.0	0.6				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 15:04:21
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	33.3	**0.0150**	0.016	104.4	mg/L	53	Standard
K	39	43.3	40.5	**0.0013**	0.031	2462.6	mg/L	53	Standard
Ca	43	21.7	81.0	**-0.3788**	1.065	281.3	mg/L	28	Standard
Fe	54	192.3	23.9	**0.0189**	0.031	166.4	mg/L	181	Standard
Fe	57	313.3	16.0	**0.2091**	0.125	59.8	mg/L	257	Standard
> **Sc-1**	45	52479.1	1.7				mg/L	55220	Standard
Cl	35	43387.4	1.0				ug/L	35504	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	1960.1	2.6				ug/L	2040	Standard
P	31	23142.7	2.3				ug/L	20435	Standard
S	34	3065.3	5.7				ug/L	2430	Standard
Sr	88	78.3	20.5				ug/L	75	Standard
C	12	70.0	24.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	540.6	19.0				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	56.7	53.9				mg/L	23	Standard
I	127	9673.1	2.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.137	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 15:04:21
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.523
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.306
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 15:04:21
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 30, 2016 15:05:17
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64547.2	0.8				ug/L	74916	Standard
	Be	9	225.0	18.2	**0.2441**	0.046	19.0	ug/L	10	Standard
	Al	27	1113.4	11.1	**0.0051**	0.001	15.2	ug/L	1822	Standard
	Sc	45	51576.0	1.5				ug/L	55220	Standard
	Ti	47	25.3	14.9	**-0.0066**	0.009	139.6	ug/L	34	Standard
	V	51	4935.8	2.7	**0.3561**	0.015	4.2	ug/L	1938	Standard
	Cr	52	14861.3	0.5	**0.6731**	0.027	4.0	ug/L	9522	Standard
	Cr	53	2343.5	4.8	**1.7902**	0.113	6.3	ug/L	395	Standard
	Mn	55	4597.0	1.4	**0.4488**	0.007	1.5	ug/L	902	Standard
	Co	59	3194.0	4.3	**0.3837**	0.017	4.4	ug/L	262	Standard
	Ni	60	3611.4	1.8	**1.5243**	0.046	3.0	ug/L	371	Standard
	Cu	65	1778.8	1.1	**0.7768**	0.003	0.4	ug/L	106	Standard
	Zn	66	8315.3	1.6	**6.2844**	0.025	0.4	ug/L	398	Standard
>	Ge	72	516477.7	1.2				ug/L	535147	Standard
	As	75	460.5	11.9	**0.4113**	0.041	10.0	ug/L	-43	Standard
	Se	82	69.8	4.3	**0.4368**	0.024	5.5	ug/L	14	Standard
	Se-1	77	131.3	8.7	**0.9301**	0.143	15.4	ug/L	65	Standard
>	Ga	71	43.3	58.1				mg/L	97	Standard
	Rb	85	33.3	22.9				ug/L	15	Standard
	Y	89	450395.4	2.4				ug/L	465704	Standard
>	Rh	103	21.7	13.3				ug/L	10	Standard
	Mo	98	72.5	11.1	**0.0360**	0.002	6.1	ug/L	9	Standard
	Ag	107	2867.6	1.4	**0.3815**	0.008	2.2	ug/L	82	Standard
	Cd	111	535.5	0.4	**0.2343**	0.005	2.3	mg/L	7	Standard
	Cd	114	1336.0	8.1	**0.2432**	0.015	6.0	ug/L	21	Standard
>	In	115	606832.4	2.2				ug/L	619035	Standard
	Sn	118	650.0	14.7	**-0.0017**	0.013	760.6	ug/L	508	Standard
	Sb	123	2113.1	2.9	**0.4114**	0.005	1.3	ug/L	86	Standard
	Ba	135	1618.8	1.5	**0.7028**	0.007	1.0	ug/L	79	Standard
	Ce	140	13.3	94.4				ug/L	68	Standard
>	Tb	159	927835.7	0.6				ug/L	986982	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	710.0	3.9	**0.0853**	0.003	3.4	ug/L	13	Standard
	Tl	205	648.3	3.6	**0.0925**	0.003	3.6	ug/L	10	Standard
	Pb	206	1383.7	2.8	**0.2032**	0.006	2.9	ug/L	264	Standard
	Pb	207	1185.7	2.7	**0.1952**	0.005	2.7	ug/L	227	Standard
	Pb	208	4940.3	2.3	**0.2085**	0.005	2.3	ug/L	868	Standard
	U	238	2890.9	1.4	**0.3984**	0.007	1.8	ug/L	8	Standard
>	Bi	209	530205.9	0.5				ug/L	541014	Standard

Sample ID: QC Std 8
Report Date/Time: Thursday, June 30, 2016 15:07:34
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	44.1	**0.0005**	0.016	3421.5	mg/L	53	Standard
K	39	45.0	11.1	**0.0058**	0.010	165.5	mg/L	53	Standard
Ca	43	26.7	57.3	**-0.0502**	0.938	1867.4	mg/L	28	Standard
Fe	54	103.5	36.2	**-0.0433**	0.027	62.6	mg/L	181	Standard
Fe	57	285.0	9.3	**0.1447**	0.062	43.1	mg/L	257	Standard
Sc-1	45	51576.0	1.5				mg/L	55220	Standard
Cl	35	41973.4	2.1				ug/L	35504	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	1820.1	12.4				ug/L	2040	Standard
P	31	16265.4	2.1				ug/L	20435	Standard
S	34	2886.9	1.2				ug/L	2430	Standard
Sr	88	58.3	4.9				ug/L	75	Standard
C	12	63.3	9.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.2	103.5				mg/L	9	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	1938.5	24.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	122.033		
Al	27			
Sc	45			
Ti	47			
V	51	89.021		
Cr	52	84.133		
Cr	53			
Mn	55	89.765		
Co	59	95.918		
Ni	60	95.267		
Cu	65	97.095		
Zn	66	100.550		
Ge	72		96.511	
As	75	102.824		
Se	82	109.192		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
Report Date/Time: Thursday, June 30, 2016 15:07:34
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	95.385		
Cd	111	97.634		
Cd	114			
> In	115			98.029
Sn	118			
Sb	123	102.852		
Ba	135	93.700		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	106.681		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.258		
U	238	99.600		
> Bi	209			98.002
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: PBW A1 WG573728-03
Sample Date/Time: Thursday, June 30, 2016 15:14:48
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63953.1	2.1				ug/L	74916	Standard
	Be	9	18.3	56.8	**0.0169**	0.012	71.1	ug/L	10	Standard
	Al	27	6076.2	2.5	**0.0387**	0.001	3.8	ug/L	1822	Standard
	Sc	45	51092.7	3.3				ug/L	55220	Standard
	Ti	47	34.0	12.8	**0.0177**	0.013	71.0	ug/L	34	Standard
	V	51	1827.5	7.0	**0.0140**	0.018	130.2	ug/L	1938	Standard
	Cr	52	8456.0	0.5	**-0.0382**	0.019	49.8	ug/L	9522	Standard
	Cr	53	1518.4	1.3	**1.0626**	0.043	4.0	ug/L	395	Standard
	Mn	55	964.0	3.9	**0.0142**	0.005	32.9	ug/L	902	Standard
	Co	59	219.3	2.5	**0.0059**	0.001	14.0	ug/L	262	Standard
	Ni	60	319.7	1.5	**0.0062**	0.000	6.3	ug/L	371	Standard
	Cu	65	205.3	3.5	**0.0404**	0.005	12.4	ug/L	106	Standard
	Zn	66	994.0	3.0	**0.4683**	0.037	7.9	ug/L	398	Standard
>	**Ge**	72	502641.9	1.7				ug/L	535147	Standard
	As	75	-49.4	116.2	**0.0160**	0.046	287.1	ug/L	-43	Standard
	Se	82	19.2	30.7	**0.0534**	0.045	84.3	ug/L	14	Standard
	Se-1	77	89.0	25.4	**0.4682**	0.250	53.5	ug/L	65	Standard
>	**Ga**	71	48.3	15.8				mg/L	97	Standard
	Rb	85	38.3	45.8				ug/L	15	Standard
	Y	89	435665.6	1.4				ug/L	465704	Standard
>	**Rh**	103	18.3	56.8				ug/L	10	Standard
	Mo	98	138.2	11.7	**0.0588**	0.005	8.0	ug/L	9	Standard
	Ag	107	81.0	9.9	**0.0052**	0.001	17.5	ug/L	82	Standard
	Cd	111	3.1	49.7	**0.0092**	0.001	7.2	mg/L	7	Standard
	Cd	114	20.0	81.9	**0.0125**	0.003	23.8	ug/L	21	Standard
>	**In**	115	590439.5	1.9				ug/L	619035	Standard
	Sn	118	560.0	26.7	**-0.0135**	0.022	164.8	ug/L	508	Standard
	Sb	123	160.9	21.8	**0.0362**	0.006	17.9	ug/L	86	Standard
	Ba	135	36.3	1.6	**-0.0030**	0.001	18.2	ug/L	79	Standard
	Ce	140	40.0	54.5				ug/L	68	Standard
>	**Tb**	159	901092.5	1.7				ug/L	986982	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	21.7	14.8	**0.0084**	0.000	4.1	ug/L	13	Standard
	Tl	205	16.7	45.8	**0.0099**	0.001	10.0	ug/L	10	Standard
	Pb	206	270.3	3.4	**0.0096**	0.002	19.5	ug/L	264	Standard
	Pb	207	243.7	5.8	**0.0141**	0.003	19.2	ug/L	227	Standard
	Pb	208	961.0	2.2	**0.0100**	0.001	12.7	ug/L	868	Standard
	U	238	8.7	37.1	**0.0091**	0.000	4.9	ug/L	8	Standard
>	**Bi**	209	526478.0	0.7				ug/L	541014	Standard

Sample ID: PBW A1 WG573728-03
Report Date/Time: Thursday, June 30, 2016 15:17:05
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.2562**	17.756	173.1	mg/L	2	Standard
Mg	24	31.7	32.9	**0.0025**	0.011	445.9	mg/L	53	Standard
K	39	40.0		**-0.0026**	0.002	93.9	mg/L	53	Standard
Ca	43	16.7	17.3	**-0.6528**	0.190	29.1	mg/L	28	Standard
Fe	54	89.1	10.9	**-0.0529**	0.009	17.4	mg/L	181	Standard
Fe	57	250.0	2.0	**0.0530**	0.011	20.7	mg/L	257	Standard
Sc-1	45	51092.7	3.3				mg/L	55220	Standard
Cl	35	41081.0	0.6				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2020.1	6.0				ug/L	2040	Standard
P	31	12546.9	2.1				ug/L	20435	Standard
S	34	2720.2	2.7				ug/L	2430	Standard
Sr	88	58.3	34.6				ug/L	75	Standard
C	12	103.3	14.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	16.2	38.3				mg/L	9	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	26366.3	0.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.366	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.926	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW A1 WG573728-03
Report Date/Time: Thursday, June 30, 2016 15:17:05
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.381
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.313
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW A1 WG573728-03
Report Date/Time: Thursday, June 30, 2016 15:17:05
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: LCSW A1 WG573728-04
Sample Date/Time: Thursday, June 30, 2016 15:18:00
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67086.6	1.9				ug/L	74916	Standard
	Be	9	52004.2	3.6	**55.0288**	1.102	2.0	ug/L	10	Standard
	Al	27	19120.2	42.5	**0.1206**	0.052	42.9	ug/L	1822	Standard
	Sc	45	54313.9	2.0				ug/L	55220	Standard
	Ti	47	54.3	36.2	**0.0615**	0.047	76.8	ug/L	34	Standard
	V	51	458407.9	1.0	**49.3763**	0.378	0.8	ug/L	1938	Standard
	Cr	52	472124.0	3.2	**51.5201**	1.504	2.9	ug/L	9522	Standard
	Cr	53	58969.6	3.5	**52.5404**	1.552	3.0	ug/L	395	Standard
	Mn	55	441488.7	1.2	**51.2972**	0.389	0.8	ug/L	902	Standard
	Co	59	406379.7	1.4	**49.9477**	0.441	0.9	ug/L	262	Standard
	Ni	60	114871.8	0.8	**51.1656**	0.153	0.3	ug/L	371	Standard
	Cu	65	114058.0	0.4	**51.7070**	0.416	0.8	ug/L	106	Standard
	Zn	66	67996.2	0.9	**52.0496**	0.635	1.2	ug/L	398	Standard
>	Ge	72	534529.3	0.6				ug/L	535147	Standard
	As	75	67804.4	0.8	**50.7332**	0.210	0.4	ug/L	-43	Standard
	Se	82	6788.7	1.1	**50.0521**	0.627	1.3	ug/L	14	Standard
	Se-1	77	4642.0	1.2	**51.0109**	0.869	1.7	ug/L	65	Standard
>	Ga	71	63.3	18.2				mg/L	97	Standard
	Rb	85	53.3	10.8				ug/L	15	Standard
	Y	89	465214.1	0.4				ug/L	465704	Standard
>	Rh	103	33.3	37.7				ug/L	10	Standard
	Mo	98	49.8	4.8	**0.0281**	0.001	2.5	ug/L	9	Standard
	Ag	107	380273.7	0.6	**49.6011**	0.481	1.0	ug/L	82	Standard
	Cd	111	120281.8	0.6	**49.0834**	0.359	0.7	mg/L	7	Standard
	Cd	114	291528.7	1.2	**49.4009**	0.657	1.3	ug/L	21	Standard
>	In	115	628631.6	0.4				ug/L	619035	Standard
	Sn	118	995.0	12.2	**0.0471**	0.018	38.6	ug/L	508	Standard
	Sb	123	267507.3	0.0	**49.7461**	0.194	0.4	ug/L	86	Standard
	Ba	135	112861.8	0.6	**48.5948**	0.377	0.8	ug/L	79	Standard
	Ce	140	156.7	16.1				ug/L	68	Standard
>	Tb	159	955141.2	1.4				ug/L	986982	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	458925.6	0.3	**50.0906**	0.546	1.1	ug/L	13	Standard
	Tl	205	395986.2	0.4	**50.5921**	0.578	1.1	ug/L	10	Standard
	Pb	206	296512.1	1.1	**50.3892**	0.789	1.6	ug/L	264	Standard
	Pb	207	258480.9	0.5	**48.6004**	0.300	0.6	ug/L	227	Standard
	Pb	208	1067449.1	0.0	**52.0525**	0.416	0.8	ug/L	868	Standard
	U	238	376134.4	0.8	**49.6201**	0.107	0.2	ug/L	8	Standard
>	Bi	209	542955.6	0.8				ug/L	541014	Standard

Sample ID: LCSW A1 WG573728-04
Report Date/Time: Thursday, June 30, 2016 15:20:17
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	48.7	**0.0301**	0.031	103.9	mg/L	53	Standard
K	39	45.0	29.4	**0.0015**	0.022	1442.6	mg/L	53	Standard
Ca	43	13.3	57.3	**-0.9037**	0.451	49.9	mg/L	28	Standard
Fe	54	183.7	5.0	**0.0086**	0.009	100.9	mg/L	181	Standard
Fe	57	281.7	19.8	**0.0947**	0.141	148.5	mg/L	257	Standard
Sc-1	45	54313.9	2.0				mg/L	55220	Standard
Cl	35	43485.7	1.5				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	13933.1	10.0				ug/L	2040	Standard
P	31	22263.0	3.5				ug/L	20435	Standard
S	34	2703.6	1.7				ug/L	2430	Standard
Sr	88	86.7	13.3				ug/L	75	Standard
C	12	143.3	10.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.5	48.3				mg/L	9	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	1948.5	33.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		89.549	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.885	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: LCSW A1 WG573728-04
Report Date/Time: Thursday, June 30, 2016 15:20:17
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.550
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.359
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW A1 WG573728-04
Report Date/Time: Thursday, June 30, 2016 15:20:17
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099601 WG573728-01
Sample Date/Time: Thursday, June 30, 2016 15:21:11
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68291.9	1.3				ug/L	74916	Standard
	Be	9	28.3	66.8	**0.0257**	0.019	74.7	ug/L	10	Standard
	Al	27	18880570.9	2.2	**119.3426**	1.083	0.9	ug/L	1822	Standard
	Sc	45	56550.3	0.6				ug/L	55220	Standard
	Ti	47	199.7	6.4	**0.4065**	0.032	7.9	ug/L	34	Standard
	V	51	3186.4	2.3	**0.1428**	0.006	4.0	ug/L	1938	Standard
	Cr	52	15293.0	2.0	**0.6365**	0.040	6.3	ug/L	9522	Standard
	Cr	53	2076.8	2.7	**1.4480**	0.064	4.4	ug/L	395	Standard
	Mn	55	7278.7	1.9	**0.7290**	0.013	1.8	ug/L	902	Standard
	Co	59	936.0	3.1	**0.0905**	0.004	4.9	ug/L	262	Standard
	Ni	60	2428.9	2.8	**0.9224**	0.033	3.5	ug/L	371	Standard
	Cu	65	491.3	2.0	**0.1607**	0.003	2.0	ug/L	106	Standard
	Zn	66	1815.4	2.9	**1.0305**	0.051	4.9	ug/L	398	Standard
>	**Ge**	72	543038.8	0.8				ug/L	535147	Standard
	As	75	1683.9	5.9	**1.2940**	0.069	5.3	ug/L	-43	Standard
	Se	82	733.4	4.8	**5.2358**	0.250	4.8	ug/L	14	Standard
	Se-1	77	105.7	3.0	**0.5744**	0.026	4.5	ug/L	65	Standard
>	**Ga**	71	63.3	16.4				mg/L	97	Standard
	Rb	85	1220.0	3.5				ug/L	15	Standard
	Y	89	463241.7	0.6				ug/L	465704	Standard
>	**Rh**	103	35.0	14.3				ug/L	10	Standard
	Mo	98	59.8	4.4	**0.0313**	0.001	3.0	ug/L	9	Standard
	Ag	107	163.3	11.0	**0.0153**	0.002	14.7	ug/L	82	Standard
	Cd	111	50.6	15.0	**0.0286**	0.003	10.8	mg/L	7	Standard
	Cd	114	105.0	22.2	**0.0267**	0.004	14.6	ug/L	21	Standard
>	**In**	115	627040.8	1.0				ug/L	619035	Standard
	Sn	118	806.7	5.9	**0.0190**	0.008	42.7	ug/L	508	Standard
	Sb	123	257.7	17.6	**0.0525**	0.009	16.9	ug/L	86	Standard
	Ba	135	7603.2	0.4	**3.2639**	0.042	1.3	ug/L	79	Standard
	Ce	140	580.0	1.7				ug/L	68	Standard
>	**Tb**	159	960608.0	1.5				ug/L	986982	Standard
	Ho	165	45.0	0.0				ug/L	10	Standard
	Tl	203	590.7	38.6	**0.0712**	0.025	35.2	ug/L	13	Standard
	Tl	205	546.7	36.1	**0.0783**	0.025	32.4	ug/L	10	Standard
	Pb	206	366.0	2.4	**0.0252**	0.002	6.1	ug/L	264	Standard
	Pb	207	330.3	12.5	**0.0297**	0.008	26.7	ug/L	227	Standard
	Pb	208	1408.4	7.6	**0.0312**	0.005	17.2	ug/L	868	Standard
	U	238	478.7	3.5	**0.0718**	0.002	3.0	ug/L	8	Standard
>	**Bi**	209	536561.7	0.1				ug/L	541014	Standard

Sample ID: L1606099601 WG573728-01
Report Date/Time: Thursday, June 30, 2016 15:23:28
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1728.4	2.5	**1.8049**	0.054	3.0	mg/L	53	Standard
K	39	103.3	7.4	**0.0953**	0.014	14.4	mg/L	53	Standard
Ca	43	473.3	5.2	**24.5092**	1.516	6.2	mg/L	28	Standard
Fe	54	206.7	15.5	**0.0188**	0.022	114.8	mg/L	181	Standard
Fe	57	471.7	6.2	**0.5573**	0.080	14.4	mg/L	257	Standard
> **Sc-1**	45	56550.3	0.6				mg/L	55220	Standard
Cl	35	49410.4	1.6				ug/L	35504	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	141239.5	4.6				ug/L	2040	Standard
P	31	24261.1	3.2				ug/L	20435	Standard
S	34	2875.3	3.8				ug/L	2430	Standard
Sr	88	131.7	18.7				ug/L	75	Standard
C	12	210.0	20.8				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	57.8	28.3				mg/L	9	Standard
Ho-1	165	45.0	0.0				mg/L	10	Standard
Er	166	46.7	53.9				mg/L	23	Standard
I	127	5429.3	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.157	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.475	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606099601 WG573728-01
Report Date/Time: Thursday, June 30, 2016 15:23:28
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.293	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.177	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606099601 WG573728-01
Report Date/Time: Thursday, June 30, 2016 15:23:28
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099602S WG573728-05
Sample Date/Time: Thursday, June 30, 2016 15:24:23
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69534.2	1.4				ug/L	74916	Standard
	Be	9	52693.2	3.1	**53.7987**	1.123	2.1	ug/L	10	Standard
	Al	27	18046739.9	1.3	**112.0655**	2.753	2.5	ug/L	1822	Standard
	Sc	45	55386.1	1.5				ug/L	55220	Standard
	Ti	47	175.3	7.1	**0.3486**	0.028	8.2	ug/L	34	Standard
	V	51	467682.0	0.4	**49.6221**	0.237	0.5	ug/L	1938	Standard
	Cr	52	466630.2	1.1	**50.1322**	0.425	0.8	ug/L	9522	Standard
	Cr	53	58007.5	2.3	**50.9027**	1.216	2.4	ug/L	395	Standard
	Mn	55	440702.3	1.3	**50.4380**	0.631	1.3	ug/L	902	Standard
	Co	59	400447.4	1.3	**48.4823**	0.666	1.4	ug/L	262	Standard
	Ni	60	114183.3	0.8	**50.0946**	0.387	0.8	ug/L	371	Standard
	Cu	65	109435.5	0.9	**48.8635**	0.353	0.7	ug/L	106	Standard
	Zn	66	67439.4	0.5	**50.8415**	0.459	0.9	ug/L	398	Standard
>	Ge	72	542657.5	0.4				ug/L	535147	Standard
	As	75	68318.6	1.2	**50.3522**	0.481	1.0	ug/L	-43	Standard
	Se	82	6810.7	0.7	**49.4600**	0.454	0.9	ug/L	14	Standard
	Se-1	77	4705.1	1.1	**50.9251**	0.579	1.1	ug/L	65	Standard
>	Ga	71	60.0	28.9				mg/L	97	Standard
	Rb	85	1110.0	1.8				ug/L	15	Standard
	Y	89	469941.9	0.8				ug/L	465704	Standard
>	Rh	103	56.7	39.8				ug/L	10	Standard
	Mo	98	72.7	12.4	**0.0352**	0.003	8.3	ug/L	9	Standard
	Ag	107	368953.1	1.0	**47.8031**	0.661	1.4	ug/L	82	Standard
	Cd	111	120061.4	1.0	**48.6669**	0.625	1.3	mg/L	7	Standard
	Cd	114	288235.3	0.9	**48.5174**	0.631	1.3	ug/L	21	Standard
>	In	115	632863.0	0.4				ug/L	619035	Standard
	Sn	118	848.4	8.8	**0.0241**	0.011	45.0	ug/L	508	Standard
	Sb	123	260105.2	1.3	**48.0476**	0.775	1.6	ug/L	86	Standard
	Ba	135	119215.2	0.6	**50.9874**	0.185	0.4	ug/L	79	Standard
	Ce	140	488.3	8.7				ug/L	68	Standard
>	Tb	159	969085.8	0.9				ug/L	986982	Standard
	Ho	165	61.7	28.5				ug/L	10	Standard
	Tl	203	454990.6	1.0	**49.7114**	0.424	0.9	ug/L	13	Standard
	Tl	205	400819.2	0.5	**51.2626**	0.436	0.9	ug/L	10	Standard
	Pb	206	289476.2	0.7	**49.2439**	0.528	1.1	ug/L	264	Standard
	Pb	207	253387.6	0.7	**47.6936**	0.544	1.1	ug/L	227	Standard
	Pb	208	1047648.0	0.8	**51.1394**	0.430	0.8	ug/L	868	Standard
	U	238	375994.5	0.5	**49.6560**	0.421	0.8	ug/L	8	Standard
>	Bi	209	542372.6	0.4				ug/L	541014	Standard

Sample ID: L1606099602S WG573728-05
Report Date/Time: Thursday, June 30, 2016 15:26:40
Page 1

Approved: July 01, 2016

Na	23	3.3	173.2	**18.8346**	32.614	173.2	mg/L	2	Standard
Mg	24	1690.1	1.5	**1.8023**	0.055	3.0	mg/L	53	Standard
K	39	70.0	31.1	**0.0421**	0.035	82.8	mg/L	53	Standard
Ca	43	493.3	5.8	**26.1715**	1.201	4.6	mg/L	28	Standard
Fe	54	219.2	11.1	**0.0301**	0.016	52.7	mg/L	181	Standard
Fe	57	555.0	8.6	**0.8025**	0.120	15.0	mg/L	257	Standard
> **Sc-1**	45	55386.1	1.5				mg/L	55220	Standard
Cl	35	50690.7	0.6				ug/L	35504	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	10120.1	13.0				ug/L	2040	Standard
P	31	24778.6	2.5				ug/L	20435	Standard
S	34	3147.0	5.5				ug/L	2430	Standard
Sr	88	123.3	6.2				ug/L	75	Standard
C	12	190.0	9.1				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	54.8	71.8				mg/L	9	Standard
Ho-1	165	61.7	28.5				mg/L	10	Standard
Er	166	40.0	66.1				mg/L	23	Standard
I	127	6076.2	4.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.816	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.403	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606099602S WG573728-05
Report Date/Time: Thursday, June 30, 2016 15:26:40
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.234
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606099602S WG573728-05
Report Date/Time: Thursday, June 30, 2016 15:26:40
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099603SD WG573728-05
Sample Date/Time: Thursday, June 30, 2016 15:27:34
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69961.2	1.4				ug/L	74916	Standard
	Be	9	53945.9	1.9	**54.7452**	0.405	0.7	ug/L	10	Standard
	Al	27	18653584.9	0.9	**115.1220**	2.287	2.0	ug/L	1822	Standard
	Sc	45	56466.7	1.1				ug/L	55220	Standard
	Ti	47	199.0	12.0	**0.4023**	0.058	14.3	ug/L	34	Standard
	V	51	472536.7	1.2	**49.8306**	0.700	1.4	ug/L	1938	Standard
	Cr	52	478928.8	1.2	**51.1603**	0.702	1.4	ug/L	9522	Standard
	Cr	53	59648.9	1.2	**52.0306**	0.727	1.4	ug/L	395	Standard
	Mn	55	449264.4	1.6	**51.1046**	0.889	1.7	ug/L	902	Standard
	Co	59	408055.5	1.0	**49.1007**	0.567	1.2	ug/L	262	Standard
	Ni	60	115830.7	0.7	**50.5068**	0.402	0.8	ug/L	371	Standard
	Cu	65	112174.4	0.3	**49.7804**	0.170	0.3	ug/L	106	Standard
	Zn	66	68689.4	0.3	**51.4692**	0.201	0.4	ug/L	398	Standard
>	Ge	72	546008.7	0.2				ug/L	535147	Standard
	As	75	69065.1	0.3	**50.5905**	0.233	0.5	ug/L	-43	Standard
	Se	82	6889.2	0.9	**49.7234**	0.503	1.0	ug/L	14	Standard
	Se-1	77	4739.7	3.6	**50.9864**	1.857	3.6	ug/L	65	Standard
>	Ga	71	73.3	21.9				mg/L	97	Standard
	Rb	85	1075.0	5.7				ug/L	15	Standard
	Y	89	470734.4	2.1				ug/L	465704	Standard
>	Rh	103	43.3	6.7				ug/L	10	Standard
	Mo	98	111.0	13.4	**0.0473**	0.005	10.4	ug/L	9	Standard
	Ag	107	376890.2	1.0	**48.9233**	0.298	0.6	ug/L	82	Standard
	Cd	111	122069.6	1.2	**49.5773**	0.825	1.7	mg/L	7	Standard
	Cd	114	293598.8	0.4	**49.5146**	0.392	0.8	ug/L	21	Standard
>	In	115	631650.0	0.6				ug/L	619035	Standard
	Sn	118	958.4	7.0	**0.0409**	0.010	23.4	ug/L	508	Standard
	Sb	123	259515.9	2.0	**48.0341**	1.271	2.6	ug/L	86	Standard
	Ba	135	121213.3	0.4	**51.9434**	0.429	0.8	ug/L	79	Standard
	Ce	140	640.0	4.3				ug/L	68	Standard
>	Tb	159	965792.9	0.7				ug/L	986982	Standard
	Ho	165	28.3	27.0				ug/L	10	Standard
	Tl	203	464038.3	0.6	**50.7914**	0.508	1.0	ug/L	13	Standard
	Tl	205	403235.4	0.5	**51.6643**	0.627	1.2	ug/L	10	Standard
	Pb	206	296855.0	1.0	**50.5921**	0.885	1.7	ug/L	264	Standard
	Pb	207	258402.6	0.8	**48.7261**	0.763	1.6	ug/L	227	Standard
	Pb	208	1060861.7	0.8	**51.8784**	0.664	1.3	ug/L	868	Standard
	U	238	381780.9	1.2	**50.5117**	0.896	1.8	ug/L	8	Standard
>	Bi	209	541419.0	0.8				ug/L	541014	Standard

Sample ID: L1606099603SD WG573728-05
Report Date/Time: Thursday, June 30, 2016 15:29:51
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.2826**	16.069	173.1	mg/L	2	Standard
Mg	24	1868.4	2.5	**1.9568**	0.048	2.5	mg/L	53	Standard
K	39	120.0	8.3	**0.1233**	0.018	14.8	mg/L	53	Standard
Ca	43	530.0	15.8	**27.6998**	4.765	17.2	mg/L	28	Standard
Fe	54	159.3	27.4	**-0.0125**	0.029	231.7	mg/L	181	Standard
Fe	57	513.3	2.2	**0.6671**	0.042	6.3	mg/L	257	Standard
> **Sc-1**	45	56466.7	1.1				mg/L	55220	Standard
Cl	35	51310.1	1.2				ug/L	35504	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	3180.3	3.0				ug/L	2040	Standard
P	31	26316.3	7.9				ug/L	20435	Standard
S	34	3025.3	7.4				ug/L	2430	Standard
Sr	88	130.0	20.4				ug/L	75	Standard
C	12	173.3	23.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	47.1	21.7				mg/L	9	Standard
Ho-1	165	28.3	27.0				mg/L	10	Standard
Er	166	60.0	16.7				mg/L	23	Standard
I	127	6022.9	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.386	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.030	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606099603SD WG573728-05
Report Date/Time: Thursday, June 30, 2016 15:29:51
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.038
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.075
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606099603SD WG573728-05
Report Date/Time: Thursday, June 30, 2016 15:29:51
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606114801
Sample Date/Time: Thursday, June 30, 2016 15:30:46
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69385.3	2.8				ug/L	74916	Standard
	Be	9	68.3	25.7	**0.0663**	0.017	26.3	ug/L	10	Standard
	Al	27	13382964.5	1.3	**83.3247**	3.301	4.0	ug/L	1822	Standard
	Sc	45	56610.6	1.5				ug/L	55220	Standard
	Ti	47	3988.2	1.6	**9.5598**	0.160	1.7	ug/L	34	Standard
	V	51	27071.1	1.9	**2.7187**	0.051	1.9	ug/L	1938	Standard
	Cr	52	21116.0	3.1	**1.3011**	0.053	4.1	ug/L	9522	Standard
	Cr	53	5205.9	4.1	**4.2645**	0.131	3.1	ug/L	395	Standard
	Mn	55	137023.2	1.4	**15.7833**	0.378	2.4	ug/L	902	Standard
	Co	59	2697.2	4.0	**0.3074**	0.009	2.8	ug/L	262	Standard
	Ni	60	3470.4	4.0	**1.3976**	0.040	2.9	ug/L	371	Standard
	Cu	65	2221.8	3.0	**0.9456**	0.043	4.5	ug/L	106	Standard
	Zn	66	5981.5	2.6	**4.2437**	0.160	3.8	ug/L	398	Standard
>	**Ge**	72	536829.4	1.4				ug/L	535147	Standard
	As	75	2382.3	2.0	**1.8286**	0.053	2.9	ug/L	-43	Standard
	Se	82	261.3	5.1	**1.8253**	0.111	6.1	ug/L	14	Standard
	Se-1	77	229.7	8.8	**1.9613**	0.241	12.3	ug/L	65	Standard
>	**Ga**	71	1473.4	14.4				mg/L	97	Standard
	Rb	85	48947.3	0.9				ug/L	15	Standard
	Y	89	472065.0	1.1				ug/L	465704	Standard
>	**Rh**	103	75.0	35.3				ug/L	10	Standard
	Mo	98	2018.4	1.7	**0.6566**	0.014	2.1	ug/L	9	Standard
	Ag	107	198.3	9.6	**0.0201**	0.003	13.2	ug/L	82	Standard
	Cd	111	74.8	29.3	**0.0387**	0.009	23.4	mg/L	7	Standard
	Cd	114	198.7	19.5	**0.0430**	0.007	15.6	ug/L	21	Standard
>	**In**	115	621679.0	1.3				ug/L	619035	Standard
	Sn	118	916.7	7.9	**0.0369**	0.011	31.0	ug/L	508	Standard
	Sb	123	4696.0	17.7	**0.8869**	0.151	17.1	ug/L	86	Standard
	Ba	135	102992.2	0.2	**44.8453**	0.700	1.6	ug/L	79	Standard
	Ce	140	26710.2	2.2				ug/L	68	Standard
>	**Tb**	159	959294.1	0.8				ug/L	986982	Standard
	Ho	165	378.3	19.8				ug/L	10	Standard
	Tl	203	275.7	1.5	**0.0368**	0.001	1.6	ug/L	13	Standard
	Tl	205	273.3	4.2	**0.0434**	0.001	3.2	ug/L	10	Standard
	Pb	206	2842.9	1.5	**0.4571**	0.006	1.3	ug/L	264	Standard
	Pb	207	2333.5	1.2	**0.4162**	0.007	1.6	ug/L	227	Standard
	Pb	208	9849.9	1.7	**0.4537**	0.010	2.2	ug/L	868	Standard
	U	238	5425.6	1.4	**0.7405**	0.013	1.7	ug/L	8	Standard
>	**Bi**	209	530404.9	0.4				ug/L	541014	Standard

Sample ID: L1606114801
Report Date/Time: Thursday, June 30, 2016 15:33:03
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	32277.7	1.4	**34.2819**	0.620	1.8	mg/L	53	Standard
K	39	1353.4	4.1	**2.1637**	0.058	2.7	mg/L	53	Standard
Ca	43	298.3	4.8	**14.8059**	0.718	4.9	mg/L	28	Standard
Fe	54	711.7	5.2	**0.3546**	0.032	9.0	mg/L	181	Standard
Fe	57	595.0	21.3	**0.8781**	0.354	40.3	mg/L	257	Standard
> **Sc-1**	45	56610.6	1.5				mg/L	55220	Standard
Cl	35	47826.7	3.1				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	45294.3	2.0				ug/L	2040	Standard
P	31	25608.3	2.2				ug/L	20435	Standard
S	34	2995.3	1.7				ug/L	2430	Standard
Sr	88	291.7	4.9				ug/L	75	Standard
C	12	240.0	37.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	508.2	11.9				mg/L	9	Standard
Ho-1	165	378.3	19.8				mg/L	10	Standard
Er	166	316.7	9.6				mg/L	23	Standard
I	127	242809.3	7.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.617	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.314	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606114801
Report Date/Time: Thursday, June 30, 2016 15:33:03
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.427
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.039
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606114802
Sample Date/Time: Thursday, June 30, 2016 15:33:57
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73343.8	2.3				ug/L	74916	Standard
	Be	9	36.7	20.8	**0.0318**	0.007	20.7	ug/L	10	Standard
	Al	27	39865885.0	1.0	**234.7683**	7.638	3.3	ug/L	1822	Standard
	Sc	45	56650.7	0.3				ug/L	55220	Standard
	Ti	47	366.7	8.2	**0.8136**	0.076	9.3	ug/L	34	Standard
	V	51	42007.3	1.9	**4.3184**	0.122	2.8	ug/L	1938	Standard
	Cr	52	29051.8	1.5	**2.1749**	0.071	3.3	ug/L	9522	Standard
	Cr	53	8153.9	4.5	**6.8871**	0.365	5.3	ug/L	395	Standard
	Mn	55	29371.4	1.1	**3.2931**	0.013	0.4	ug/L	902	Standard
	Co	59	2064.1	1.7	**0.2294**	0.002	1.0	ug/L	262	Standard
	Ni	60	4963.1	3.4	**2.0578**	0.090	4.4	ug/L	371	Standard
	Cu	65	2302.8	3.2	**0.9800**	0.040	4.1	ug/L	106	Standard
	Zn	66	8387.7	1.3	**6.0765**	0.138	2.3	ug/L	398	Standard
>	**Ge**	72	537915.2	0.8				ug/L	535147	Standard
	As	75	1882.3	2.7	**1.4535**	0.047	3.3	ug/L	-43	Standard
	Se	82	460.8	5.7	**3.2863**	0.218	6.6	ug/L	14	Standard
	Se-1	77	487.0	5.2	**4.7975**	0.290	6.0	ug/L	65	Standard
>	**Ga**	71	151.7	8.3				mg/L	97	Standard
	Rb	85	15017.4	0.7				ug/L	15	Standard
	Y	89	469088.3	1.3				ug/L	465704	Standard
>	**Rh**	103	120.0	26.0				ug/L	10	Standard
	Mo	98	1940.6	1.7	**0.6336**	0.005	0.8	ug/L	9	Standard
	Ag	107	135.7	14.7	**0.0119**	0.002	20.9	ug/L	82	Standard
	Cd	111	83.6	10.2	**0.0425**	0.004	9.3	mg/L	7	Standard
	Cd	114	232.4	5.3	**0.0488**	0.002	3.2	ug/L	21	Standard
>	**In**	115	619836.2	2.0				ug/L	619035	Standard
	Sn	118	905.0	8.9	**0.0357**	0.015	42.4	ug/L	508	Standard
	Sb	123	1696.7	16.9	**0.3252**	0.060	18.5	ug/L	86	Standard
	Ba	135	155475.6	0.5	**67.9173**	1.375	2.0	ug/L	79	Standard
	Ce	140	1150.0	5.9				ug/L	68	Standard
>	**Tb**	159	966263.7	2.7				ug/L	986982	Standard
	Ho	165	68.3	25.7				ug/L	10	Standard
	Tl	203	177.0	9.9	**0.0261**	0.002	8.3	ug/L	13	Standard
	Tl	205	150.0	6.7	**0.0276**	0.001	4.5	ug/L	10	Standard
	Pb	206	690.3	2.9	**0.0841**	0.003	3.7	ug/L	264	Standard
	Pb	207	561.0	6.9	**0.0764**	0.008	10.1	ug/L	227	Standard
	Pb	208	2261.4	3.2	**0.0763**	0.003	4.4	ug/L	868	Standard
	U	238	14407.5	0.3	**1.9818**	0.012	0.6	ug/L	8	Standard
>	**Bi**	209	522746.9	0.9				ug/L	541014	Standard

Sample ID: L1606114802
Report Date/Time: Thursday, June 30, 2016 15:36:14
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53151.4	1.8	**56.4275**	1.028	1.8	mg/L	53	Standard
K	39	618.3	5.4	**0.9467**	0.052	5.5	mg/L	53	Standard
Ca	43	466.7	9.1	**24.0926**	2.415	10.0	mg/L	28	Standard
Fe	54	229.1	9.2	**0.0334**	0.014	40.5	mg/L	181	Standard
Fe	57	538.3	7.2	**0.7273**	0.104	14.4	mg/L	257	Standard
> **Sc-1**	45	56650.7	0.3				mg/L	55220	Standard
Cl	35	52351.0	1.2				ug/L	35504	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	65016.0	4.2				ug/L	2040	Standard
P	31	25988.9	2.7				ug/L	20435	Standard
S	34	2898.6	3.2				ug/L	2430	Standard
Sr	88	400.0	15.2				ug/L	75	Standard
C	12	300.0	8.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	65.5	28.8				mg/L	9	Standard
Ho-1	165	68.3	25.7				mg/L	10	Standard
Er	166	93.3	34.4				mg/L	23	Standard
I	127	177926.1	3.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.901	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.517	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606114802
Report Date/Time: Thursday, June 30, 2016 15:36:14
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.129	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.624	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606114802PS WG574806-01
Sample Date/Time: Thursday, June 30, 2016 15:37:09
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73739.0	1.9				ug/L	74916	Standard
	Be	9	54417.6	3.5	**52.3946**	1.365	2.6	ug/L	10	Standard
	Al	27	39247361.2	1.1	**229.7986**	2.118	0.9	ug/L	1822	Standard
	Sc	45	56950.2	2.8				ug/L	55220	Standard
	Ti	47	367.7	2.9	**0.8081**	0.024	3.0	ug/L	34	Standard
	V	51	505314.0	0.9	**53.6430**	1.115	2.1	ug/L	1938	Standard
	Cr	52	480659.8	0.9	**51.6795**	0.671	1.3	ug/L	9522	Standard
	Cr	53	64282.8	1.2	**56.4552**	0.246	0.4	ug/L	395	Standard
	Mn	55	460538.3	1.7	**52.7210**	1.043	2.0	ug/L	902	Standard
	Co	59	400762.5	0.8	**48.5257**	0.353	0.7	ug/L	262	Standard
	Ni	60	117749.1	0.6	**51.6704**	0.485	0.9	ug/L	371	Standard
	Cu	65	109931.1	1.2	**49.0902**	0.462	0.9	ug/L	106	Standard
	Zn	66	91227.5	0.7	**68.9095**	1.187	1.7	ug/L	398	Standard
>	Ge	72	542618.3	1.2				ug/L	535147	Standard
	As	75	69426.1	0.8	**51.1768**	0.749	1.5	ug/L	-43	Standard
	Se	82	7178.4	1.6	**52.1429**	0.991	1.9	ug/L	14	Standard
	Se-1	77	4969.5	0.6	**53.8312**	0.990	1.8	ug/L	65	Standard
>	Ga	71	151.7	18.2				mg/L	97	Standard
	Rb	85	15104.2	2.1				ug/L	15	Standard
	Y	89	473952.1	1.9				ug/L	465704	Standard
>	Rh	103	126.7	21.7				ug/L	10	Standard
	Mo	98	1955.0	1.7	**0.6317**	0.011	1.7	ug/L	9	Standard
	Ag	107	341042.7	1.4	**44.6484**	0.717	1.6	ug/L	82	Standard
	Cd	111	119331.3	1.6	**48.8732**	0.434	0.9	mg/L	7	Standard
	Cd	114	283552.8	3.0	**48.2253**	1.320	2.7	ug/L	21	Standard
>	In	115	626330.3	1.1				ug/L	619035	Standard
	Sn	118	1168.4	4.4	**0.0741**	0.009	12.8	ug/L	508	Standard
	Sb	123	255007.1	2.2	**47.6011**	1.260	2.6	ug/L	86	Standard
	Ba	135	266477.6	0.5	**115.1938**	1.488	1.3	ug/L	79	Standard
	Ce	140	2081.8	32.8				ug/L	68	Standard
>	Tb	159	960668.0	1.0				ug/L	986982	Standard
	Ho	165	70.0	18.9				ug/L	10	Standard
	Tl	203	450205.8	0.4	**50.2373**	0.703	1.4	ug/L	13	Standard
	Tl	205	391691.8	0.7	**51.1622**	0.808	1.6	ug/L	10	Standard
	Pb	206	290403.7	0.7	**50.4549**	0.842	1.7	ug/L	264	Standard
	Pb	207	253726.6	1.1	**48.7769**	1.023	2.1	ug/L	227	Standard
	Pb	208	1033949.6	0.4	**51.5458**	0.656	1.3	ug/L	868	Standard
	U	238	392544.5	1.2	**52.9480**	1.174	2.2	ug/L	8	Standard
>	Bi	209	531104.0	1.0				ug/L	541014	Standard

Sample ID: L1606114802PS WG574806-01
Report Date/Time: Thursday, June 30, 2016 15:39:26
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**18.0264**	15.619	86.6	mg/L	2	Standard
Mg	24	51765.0	1.9	**54.7079**	2.408	4.4	mg/L	53	Standard
K	39	630.0	7.6	**0.9625**	0.105	10.9	mg/L	53	Standard
Ca	43	441.7	10.5	**22.6115**	2.886	12.8	mg/L	28	Standard
Fe	54	202.4	2.0	**0.0151**	0.006	41.5	mg/L	181	Standard
Fe	57	538.3	5.7	**0.7218**	0.114	15.8	mg/L	257	Standard
> **Sc-1**	45	56950.2	2.8				mg/L	55220	Standard
Cl	35	53220.7	1.5				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	65718.9	1.0				ug/L	2040	Standard
P	31	25209.3	1.7				ug/L	20435	Standard
S	34	3057.0	2.8				ug/L	2430	Standard
Sr	88	331.7	9.7				ug/L	75	Standard
C	12	233.3	19.8				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	85.8	42.2				mg/L	9	Standard
Ho-1	165	70.0	18.9				mg/L	10	Standard
Er	166	86.7	13.3				mg/L	23	Standard
I	127	181175.5	2.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.396	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606114802PS WG574806-01
Report Date/Time: Thursday, June 30, 2016 15:39:26
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.179	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.168	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606114802PS WG574806-01
Report Date/Time: Thursday, June 30, 2016 15:39:26
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606114802SDL WG574806-02
Sample Date/Time: Thursday, June 30, 2016 15:40:20
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67563.7	2.3				ug/L	74916	Standard
	Be	9	18.3	41.7	**0.0157**	0.008	51.7	ug/L	10	Standard
	Al	27	7469662.9	0.3	**47.7405**	0.938	2.0	ug/L	1822	Standard
	Sc	45	52594.5	1.3				ug/L	55220	Standard
	Ti	47	86.0	9.2	**0.1438**	0.020	13.6	ug/L	34	Standard
	V	51	10002.6	2.6	**0.9133**	0.036	3.9	ug/L	1938	Standard
	Cr	52	13316.9	1.4	**0.4814**	0.031	6.5	ug/L	9522	Standard
	Cr	53	2925.3	1.6	**2.3063**	0.058	2.5	ug/L	395	Standard
	Mn	55	6250.6	3.1	**0.6413**	0.019	3.0	ug/L	902	Standard
	Co	59	635.7	4.6	**0.0574**	0.004	6.9	ug/L	262	Standard
	Ni	60	1430.4	0.6	**0.5098**	0.008	1.5	ug/L	371	Standard
	Cu	65	733.4	1.6	**0.2827**	0.008	2.8	ug/L	106	Standard
	Zn	66	2918.6	3.6	**1.9606**	0.098	5.0	ug/L	398	Standard
>	**Ge**	72	521117.4	0.7				ug/L	535147	Standard
	As	75	354.4	15.0	**0.3267**	0.039	12.0	ug/L	-43	Standard
	Se	82	103.1	2.3	**0.6843**	0.018	2.6	ug/L	14	Standard
	Se-1	77	171.3	10.3	**1.3721**	0.205	14.9	ug/L	65	Standard
>	**Ga**	71	60.0	28.9				mg/L	97	Standard
	Rb	85	2775.3	8.1				ug/L	15	Standard
	Y	89	435237.1	1.6				ug/L	465704	Standard
>	**Rh**	103	20.0	66.1				ug/L	10	Standard
	Mo	98	360.0	5.2	**0.1332**	0.006	4.8	ug/L	9	Standard
	Ag	107	249.7	3.1	**0.0286**	0.001	3.5	ug/L	82	Standard
	Cd	111	33.0	33.9	**0.0222**	0.005	21.8	mg/L	7	Standard
	Cd	114	69.1	29.2	**0.0214**	0.004	17.0	ug/L	21	Standard
>	**In**	115	591194.5	0.2				ug/L	619035	Standard
	Sn	118	343.3	13.1	**-0.0482**	0.007	14.9	ug/L	508	Standard
	Sb	123	1623.4	29.5	**0.3253**	0.094	28.9	ug/L	86	Standard
	Ba	135	29618.9	2.1	**13.5463**	0.286	2.1	ug/L	79	Standard
	Ce	140	233.3	8.1				ug/L	68	Standard
>	**Tb**	159	916411.8	1.4				ug/L	986982	Standard
	Ho	165	16.7	75.5				ug/L	10	Standard
	Tl	203	164.0	7.4	**0.0245**	0.001	5.3	ug/L	13	Standard
	Tl	205	153.3	9.4	**0.0280**	0.002	6.6	ug/L	10	Standard
	Pb	206	452.3	2.8	**0.0418**	0.003	6.2	ug/L	264	Standard
	Pb	207	393.3	7.5	**0.0434**	0.006	13.6	ug/L	227	Standard
	Pb	208	1569.4	6.7	**0.0409**	0.005	12.6	ug/L	868	Standard
	U	238	2803.6	2.3	**0.3904**	0.007	1.8	ug/L	8	Standard
>	**Bi**	209	524925.3	0.4				ug/L	541014	Standard

Sample ID: L1606114802SDL WG574806-02
Report Date/Time: Thursday, June 30, 2016 15:42:37
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	9916.6	3.7	**11.3168**	0.564	5.0	mg/L	53	Standard
K	39	163.3	7.1	**0.2151**	0.021	9.8	mg/L	53	Standard
Ca	43	110.0	25.3	**4.8532**	1.571	32.4	mg/L	28	Standard
Fe	54	113.4	15.9	**-0.0376**	0.013	34.6	mg/L	181	Standard
Fe	57	321.7	3.2	**0.2320**	0.037	16.1	mg/L	257	Standard
> **Sc-1**	45	52594.5	1.3				mg/L	55220	Standard
Cl	35	50654.5	0.8				ug/L	35504	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	13766.3	1.7				ug/L	2040	Standard
P	31	11045.7	1.4				ug/L	20435	Standard
S	34	2928.6	0.6				ug/L	2430	Standard
Sr	88	118.3	33.9				ug/L	75	Standard
C	12	100.0	26.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	32.4	99.3				mg/L	9	Standard
Ho-1	165	16.7	75.5				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	23	Standard
I	127	64641.0	1.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.185	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.378	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606114802SDL WG574806-02
Report Date/Time: Thursday, June 30, 2016 15:42:37
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.503
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.026
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606114802SDL WG574806-02
Report Date/Time: Thursday, June 30, 2016 15:42:37
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606114802SDL WG574806-02
Sample Date/Time: Thursday, June 30, 2016 15:43:32
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64564.1	4.0				ug/L	74916	Standard
	Be	9	21.7	35.3	**0.0201**	0.008	39.4	ug/L	10	Standard
	Al	27	1491927.4	0.5	**9.9834**	0.370	3.7	ug/L	1822	Standard
	Sc	45	49999.1	4.2				ug/L	55220	Standard
	Ti	47	34.7	13.3	**0.0188**	0.013	66.8	ug/L	34	Standard
	V	51	4042.0	5.2	**0.2658**	0.027	10.2	ug/L	1938	Standard
	Cr	52	10343.9	0.9	**0.1779**	0.002	1.3	ug/L	9522	Standard
	Cr	53	1346.7	6.7	**0.8906**	0.086	9.6	ug/L	395	Standard
	Mn	55	1524.7	2.2	**0.0825**	0.003	4.1	ug/L	902	Standard
	Co	59	305.7	7.8	**0.0169**	0.003	16.8	ug/L	262	Standard
	Ni	60	472.0	2.7	**0.0773**	0.004	5.8	ug/L	371	Standard
	Cu	65	262.0	7.5	**0.0669**	0.009	12.9	ug/L	106	Standard
	Zn	66	1226.7	3.6	**0.6524**	0.029	4.5	ug/L	398	Standard
>	**Ge**	72	505648.6	0.7				ug/L	535147	Standard
	As	75	50.9	17.9	**0.0954**	0.007	7.3	ug/L	-43	Standard
	Se	82	36.8	18.2	**0.1905**	0.051	26.6	ug/L	14	Standard
	Se-1	77	105.7	7.7	**0.6606**	0.105	15.9	ug/L	65	Standard
>	**Ga**	71	55.0	41.7				mg/L	97	Standard
	Rb	85	618.3	12.5				ug/L	15	Standard
	Y	89	430100.5	1.9				ug/L	465704	Standard
>	**Rh**	103	18.3	83.3				ug/L	10	Standard
	Mo	98	84.8	5.3	**0.0413**	0.001	3.5	ug/L	9	Standard
	Ag	107	187.3	11.8	**0.0204**	0.003	16.0	ug/L	82	Standard
	Cd	111	14.2	42.3	**0.0142**	0.003	18.6	mg/L	7	Standard
	Cd	114	33.2	60.8	**0.0150**	0.004	24.5	ug/L	21	Standard
>	**In**	115	580789.9	0.7				ug/L	619035	Standard
	Sn	118	190.0	7.0	**-0.0723**	0.002	2.8	ug/L	508	Standard
	Sb	123	368.7	19.1	**0.0787**	0.015	18.6	ug/L	86	Standard
	Ba	135	5896.1	0.9	**2.7294**	0.036	1.3	ug/L	79	Standard
	Ce	140	55.0	18.2				ug/L	68	Standard
>	**Tb**	159	901658.2	1.0				ug/L	986982	Standard
	Ho	165	13.3	78.1				ug/L	10	Standard
	Tl	203	79.0	12.1	**0.0150**	0.001	7.2	ug/L	13	Standard
	Tl	205	78.3	44.8	**0.0181**	0.005	25.8	ug/L	10	Standard
	Pb	206	290.0	6.2	**0.0136**	0.003	23.6	ug/L	264	Standard
	Pb	207	233.3	1.7	**0.0125**	0.001	6.0	ug/L	227	Standard
	Pb	208	1074.7	3.5	**0.0163**	0.002	11.8	ug/L	868	Standard
	U	238	543.0	2.0	**0.0825**	0.001	1.7	ug/L	8	Standard
>	**Bi**	209	521078.1	0.1				ug/L	541014	Standard

Sample ID: L1606114802SDL WG574806-02
Report Date/Time: Thursday, June 30, 2016 15:45:49
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.6993**	18.523	173.1	mg/L	2	Standard
Mg	24	1928.5	1.3	**2.2885**	0.073	3.2	mg/L	53	Standard
K	39	60.0	22.0	**0.0367**	0.026	71.3	mg/L	53	Standard
Ca	43	33.3	8.7	**0.4175**	0.262	62.8	mg/L	28	Standard
Fe	54	77.4	18.8	**-0.0607**	0.008	13.8	mg/L	181	Standard
Fe	57	326.7	3.2	**0.2947**	0.070	23.6	mg/L	257	Standard
> **Sc-1**	45	49999.1	4.2				mg/L	55220	Standard
Cl	35	49910.7	0.4				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	4307.3	7.8				ug/L	2040	Standard
P	31	8710.9	14.5				ug/L	20435	Standard
S	34	2932.0	5.4				ug/L	2430	Standard
Sr	88	100.0	26.0				ug/L	75	Standard
C	12	100.0	62.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.4	107.0				mg/L	9	Standard
Ho-1	165	13.3	78.1				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	40771.5	0.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.181	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.488	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606114802SDL WG574806-02
Report Date/Time: Thursday, June 30, 2016 15:45:49
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		93.822
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		96.315
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 15:46:45
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65648.6	1.2				ug/L	74916	Standard
	Be	9	52089.4	3.2	**56.3287**	1.251	2.2	ug/L	10	Standard
	Al	27	8382474.3	2.0	**55.1221**	0.938	1.7	ug/L	1822	Standard
	Sc	45	53922.5	1.2				ug/L	55220	Standard
	Ti	47	42402.9	1.4	**102.4543**	1.478	1.4	ug/L	34	Standard
	V	51	465387.0	1.0	**49.9862**	0.574	1.1	ug/L	1938	Standard
	Cr	52	469228.1	1.6	**51.0504**	0.895	1.8	ug/L	9522	Standard
	Cr	53	59473.3	3.8	**52.8395**	1.876	3.6	ug/L	395	Standard
	Mn	55	432583.6	0.9	**50.1157**	0.430	0.9	ug/L	902	Standard
	Co	59	410961.4	1.0	**50.3659**	0.420	0.8	ug/L	262	Standard
	Ni	60	114268.4	2.0	**50.7489**	1.027	2.0	ug/L	371	Standard
	Cu	65	112915.6	2.0	**51.0392**	1.019	2.0	ug/L	106	Standard
	Zn	66	66348.0	0.7	**50.6301**	0.393	0.8	ug/L	398	Standard
>	Ge	72	536080.5	0.4				ug/L	535147	Standard
	As	75	67443.3	1.3	**50.3166**	0.509	1.0	ug/L	-43	Standard
	Se	82	6849.4	0.6	**50.3529**	0.349	0.7	ug/L	14	Standard
	Se-1	77	4694.7	0.6	**51.4430**	0.420	0.8	ug/L	65	Standard
>	Ga	71	101.7	15.8				mg/L	97	Standard
	Rb	85	925.0	9.2				ug/L	15	Standard
	Y	89	470576.4	1.1				ug/L	465704	Standard
>	Rh	103	33.3	52.7				ug/L	10	Standard
	Mo	98	305436.2	1.2	**96.4896**	0.744	0.8	ug/L	9	Standard
	Ag	107	373900.7	2.0	**48.8034**	0.544	1.1	ug/L	82	Standard
	Cd	111	120993.1	0.1	**49.4148**	0.539	1.1	mg/L	7	Standard
	Cd	114	298857.5	0.7	**50.6847**	0.681	1.3	ug/L	21	Standard
>	In	115	628148.6	1.0				ug/L	619035	Standard
	Sn	118	330694.9	0.4	**49.9794**	0.746	1.5	ug/L	508	Standard
	Sb	123	266870.7	1.3	**49.6669**	0.635	1.3	ug/L	86	Standard
	Ba	135	114715.0	0.9	**49.4327**	0.539	1.1	ug/L	79	Standard
	Ce	140	148.3	30.2				ug/L	68	Standard
>	Tb	159	952045.6	0.7				ug/L	986982	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	463255.3	1.5	**50.7530**	0.545	1.1	ug/L	13	Standard
	Tl	205	407629.0	0.5	**52.2795**	0.723	1.4	ug/L	10	Standard
	Pb	206	290785.0	1.1	**49.6010**	0.312	0.6	ug/L	264	Standard
	Pb	207	262146.4	0.7	**49.4786**	0.370	0.7	ug/L	227	Standard
	Pb	208	1078322.1	0.7	**52.7887**	1.009	1.9	ug/L	868	Standard
	U	238	388498.2	1.3	**51.4471**	0.537	1.0	ug/L	8	Standard
>	Bi	209	540906.6	1.3				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 15:49:02
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4492.3	1.5	**4.9799**	0.123	2.5	mg/L	53	Standard
K	39	2275.2	1.6	**3.8778**	0.020	0.5	mg/L	53	Standard
Ca	43	88.3	11.8	**3.4537**	0.669	19.4	mg/L	28	Standard
Fe	54	7294.4	2.9	**4.9718**	0.177	3.6	mg/L	181	Standard
Fe	57	2060.1	7.2	**4.9236**	0.362	7.4	mg/L	257	Standard
Sc-1	45	53922.5	1.2				mg/L	55220	Standard
Cl	35	47549.3	4.4				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2193.5	8.6				ug/L	2040	Standard
P	31	25055.7	0.6				ug/L	20435	Standard
S	34	3182.0	0.1				ug/L	2430	Standard
Sr	88	88.3	28.5				ug/L	75	Standard
C	12	110.0	15.7				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	19.8	50.4				mg/L	9	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	6643.1	12.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	112.657		
Al	27	110.244		
Sc	45			
Ti	47	102.454		
V	51	99.972		
Cr	52	102.101		
Cr	53			
Mn	55	100.231		
Co	59	100.732		
Ni	60	101.498		
Cu	65	102.078		
Zn	66	101.260		
Ge	72		100.174	
As	75	100.633		
Se	82	100.706		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 15:49:02
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	96.490		
Ag	107	97.607		
Cd	111	98.830		
Cd	114			
In	115		101.472	
Sn	118	99.959		
Sb	123	99.334		
Ba	135	98.865		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.506		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.577		
U	238	102.894		
Bi	209		99.980	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 15:49:02
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 15:49:56
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66639.6	2.5				ug/L	74916	Standard
	Be	9	33.3	60.6	**0.0321**	0.022	69.6	ug/L	10	Standard
	Al	27	3542.1	35.4	**0.0205**	0.008	36.9	ug/L	1822	Standard
	Sc	45	54986.3	1.0				ug/L	55220	Standard
	Ti	47	40.7	21.5	**0.0270**	0.021	78.9	ug/L	34	Standard
	V	51	1615.0	9.3	**-0.0245**	0.015	60.9	ug/L	1938	Standard
	Cr	52	8524.4	1.1	**-0.1054**	0.015	14.2	ug/L	9522	Standard
	Cr	53	1090.0	5.6	**0.5753**	0.043	7.5	ug/L	395	Standard
	Mn	55	884.7	10.0	**-0.0038**	0.010	252.5	ug/L	902	Standard
	Co	59	311.7	13.4	**0.0149**	0.005	31.0	ug/L	262	Standard
	Ni	60	266.3	3.4	**-0.0285**	0.003	12.2	ug/L	371	Standard
	Cu	65	144.7	13.4	**0.0058**	0.008	135.4	ug/L	106	Standard
	Zn	66	414.3	6.4	**-0.0324**	0.022	66.8	ug/L	398	Standard
>	Ge	72	543124.4	1.3				ug/L	535147	Standard
	As	75	-41.8	54.1	**0.0245**	0.017	68.0	ug/L	-43	Standard
	Se	82	21.7	29.1	**0.0613**	0.047	76.4	ug/L	14	Standard
	Se-1	77	87.7	8.4	**0.3783**	0.093	24.5	ug/L	65	Standard
>	Ga	71	50.0	20.0				mg/L	97	Standard
	Rb	85	35.0	37.8				ug/L	15	Standard
	Y	89	472361.0	1.4				ug/L	465704	Standard
>	Rh	103	10.0	50.0				ug/L	10	Standard
	Mo	98	282.6	18.8	**0.0997**	0.015	15.5	ug/L	9	Standard
	Ag	107	310.0	3.9	**0.0336**	0.001	3.2	ug/L	82	Standard
	Cd	111	18.2	51.7	**0.0151**	0.004	24.3	mg/L	7	Standard
	Cd	114	70.6	60.9	**0.0206**	0.007	34.5	ug/L	21	Standard
>	In	115	641519.0	1.3				ug/L	619035	Standard
	Sn	118	1156.7	11.1	**0.0682**	0.021	30.4	ug/L	508	Standard
	Sb	123	968.5	30.9	**0.1813**	0.056	30.9	ug/L	86	Standard
	Ba	135	64.3	15.1	**0.0075**	0.004	49.9	ug/L	79	Standard
	Ce	140	31.7	48.2				ug/L	68	Standard
>	Tb	159	964944.2	1.7				ug/L	986982	Standard
	Ho	165	6.7	173.2				ug/L	10	Standard
	Tl	203	115.0	23.5	**0.0183**	0.003	15.4	ug/L	13	Standard
	Tl	205	113.3	36.7	**0.0218**	0.005	23.4	ug/L	10	Standard
	Pb	206	340.7	14.1	**0.0188**	0.008	40.8	ug/L	264	Standard
	Pb	207	281.0	12.0	**0.0185**	0.006	32.3	ug/L	227	Standard
	Pb	208	1211.7	16.6	**0.0194**	0.009	47.7	ug/L	868	Standard
	U	238	81.7	46.4	**0.0184**	0.005	26.2	ug/L	8	Standard
>	Bi	209	555377.0	0.5				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 15:52:13
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.3685**	16.218	173.1	mg/L	2	Standard
Mg	24	35.0	24.7	**0.0038**	0.010	255.2	mg/L	53	Standard
K	39	31.7	24.1	**-0.0219**	0.014	61.8	mg/L	53	Standard
Ca	43	16.7	45.8	**-0.7275**	0.430	59.1	mg/L	28	Standard
Fe	54	160.7	15.7	**-0.0086**	0.018	213.4	mg/L	181	Standard
Fe	57	270.0	16.5	**0.0561**	0.126	223.8	mg/L	257	Standard
Sc-1	45	54986.3	1.0				mg/L	55220	Standard
Cl	35	45581.8	1.4				ug/L	35504	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	2123.5	7.6				ug/L	2040	Standard
P	31	24367.9	2.6				ug/L	20435	Standard
S	34	3195.3	1.8				ug/L	2430	Standard
Sr	88	85.0	20.4				ug/L	75	Standard
C	12	100.0	52.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	138.7	12.7				mg/L	9	Standard
Ho-1	165	6.7	173.2				mg/L	10	Standard
Er	166	26.7	21.7				mg/L	23	Standard
I	127	4657.4	11.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.491	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 15:52:13
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.632
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.655
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 15:52:13
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606115001
Sample Date/Time: Thursday, June 30, 2016 15:53:09
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69448.8	1.7				ug/L	74916	Standard
	Be	9	58.3	48.7	**0.0563**	0.030	52.9	ug/L	10	Standard
	Al	27	19098580.6	1.6	**118.7603**	3.782	3.2	ug/L	1822	Standard
	Sc	45	55650.4	2.4				ug/L	55220	Standard
	Ti	47	3432.1	3.3	**8.2642**	0.310	3.7	ug/L	34	Standard
	V	51	42258.5	0.6	**4.3797**	0.011	0.2	ug/L	1938	Standard
	Cr	52	19237.2	0.4	**1.1052**	0.018	1.6	ug/L	9522	Standard
	Cr	53	9361.2	7.9	**8.0257**	0.644	8.0	ug/L	395	Standard
	Mn	55	244442.6	1.2	**28.3961**	0.499	1.8	ug/L	902	Standard
	Co	59	2880.3	1.8	**0.3319**	0.007	2.2	ug/L	262	Standard
	Ni	60	3429.7	1.5	**1.3885**	0.022	1.6	ug/L	371	Standard
	Cu	65	2716.6	2.8	**1.1758**	0.033	2.8	ug/L	106	Standard
	Zn	66	7591.2	0.7	**5.5106**	0.012	0.2	ug/L	398	Standard
>	**Ge**	72	533808.2	0.7				ug/L	535147	Standard
	As	75	2296.3	2.9	**1.7741**	0.060	3.4	ug/L	-43	Standard
	Se	82	359.0	1.7	**2.5586**	0.060	2.3	ug/L	14	Standard
	Se-1	77	426.3	4.8	**4.1634**	0.233	5.6	ug/L	65	Standard
>	**Ga**	71	968.4	6.5				mg/L	97	Standard
	Rb	85	26389.6	1.0				ug/L	15	Standard
	Y	89	472663.4	1.3				ug/L	465704	Standard
>	**Rh**	103	78.3	7.4				ug/L	10	Standard
	Mo	98	5034.9	1.4	**1.6224**	0.008	0.5	ug/L	9	Standard
	Ag	107	266.0	13.8	**0.0291**	0.005	17.4	ug/L	82	Standard
	Cd	111	130.9	11.9	**0.0620**	0.007	10.8	mg/L	7	Standard
	Cd	114	377.1	26.4	**0.0737**	0.017	23.2	ug/L	21	Standard
>	**In**	115	620464.9	1.3				ug/L	619035	Standard
	Sn	118	1413.4	10.5	**0.1135**	0.026	22.6	ug/L	508	Standard
	Sb	123	1646.3	9.2	**0.3148**	0.032	10.3	ug/L	86	Standard
	Ba	135	121578.6	1.5	**53.0407**	0.755	1.4	ug/L	79	Standard
	Ce	140	29600.6	0.9				ug/L	68	Standard
>	**Tb**	159	964507.4	1.4				ug/L	986982	Standard
	Ho	165	411.7	13.4				ug/L	10	Standard
	Tl	203	212.3	34.2	**0.0298**	0.008	27.0	ug/L	13	Standard
	Tl	205	173.3	23.5	**0.0305**	0.005	17.3	ug/L	10	Standard
	Pb	206	6350.7	0.5	**1.0737**	0.007	0.7	ug/L	264	Standard
	Pb	207	5312.6	0.8	**0.9955**	0.008	0.8	ug/L	227	Standard
	Pb	208	22281.1	1.2	**1.0806**	0.011	1.0	ug/L	868	Standard
	U	238	13222.1	0.6	**1.8027**	0.018	1.0	ug/L	8	Standard
>	**Bi**	209	527588.8	0.4				ug/L	541014	Standard

Sample ID: L1606115001
Report Date/Time: Thursday, June 30, 2016 15:55:26
Page 1

Approved: July 01, 2016

Na	23	6.7	43.3	**37.4623**	17.162	45.8	mg/L	2	Standard
Mg	24	54078.0	0.9	**58.4711**	1.764	3.0	mg/L	53	Standard
K	39	603.3	6.7	**0.9395**	0.053	5.6	mg/L	53	Standard
Ca	43	305.0	10.2	**15.4711**	1.773	11.5	mg/L	28	Standard
Fe	54	731.9	3.1	**0.3764**	0.022	6.0	mg/L	181	Standard
Fe	57	566.7	6.0	**0.8265**	0.082	9.9	mg/L	257	Standard
> **Sc-1**	45	55650.4	2.4				mg/L	55220	Standard
Cl	35	49211.1	0.6				ug/L	35504	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	58559.7	2.6				ug/L	2040	Standard
P	31	26145.9	0.7				ug/L	20435	Standard
S	34	2950.3	3.8				ug/L	2430	Standard
Sr	88	243.3	12.4				ug/L	75	Standard
C	12	220.0	29.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	649.1	9.9				mg/L	9	Standard
Ho-1	165	411.7	13.4				mg/L	10	Standard
Er	166	366.7	9.6				mg/L	23	Standard
I	127	437609.2	7.5				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		92.702	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.750	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606115001
Report Date/Time: Thursday, June 30, 2016 15:55:26
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.231	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.518	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606115002
Sample Date/Time: Thursday, June 30, 2016 15:56:21
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71421.3	1.6				ug/L	74916	Standard
	Be	9	38.3	41.9	**0.0343**	0.016	45.2	ug/L	10	Standard
	Al	27	4797413.4	1.7	**28.9985**	0.514	1.8	ug/L	1822	Standard
	Sc	45	57023.8	2.0				ug/L	55220	Standard
	Ti	47	2029.8	1.6	**4.7502**	0.136	2.9	ug/L	34	Standard
	V	51	31492.8	2.0	**3.1383**	0.061	2.0	ug/L	1938	Standard
	Cr	52	16465.9	1.6	**0.7554**	0.015	2.0	ug/L	9522	Standard
	Cr	53	2970.3	6.2	**2.2222**	0.131	5.9	ug/L	395	Standard
	Mn	55	75113.4	1.3	**8.4578**	0.011	0.1	ug/L	902	Standard
	Co	59	1569.1	2.4	**0.1661**	0.002	1.4	ug/L	262	Standard
	Ni	60	1930.8	1.8	**0.6990**	0.023	3.3	ug/L	371	Standard
	Cu	65	1792.1	3.2	**0.7376**	0.024	3.2	ug/L	106	Standard
	Zn	66	6166.3	1.8	**4.3057**	0.077	1.8	ug/L	398	Standard
>	**Ge**	72	545929.0	1.3				ug/L	535147	Standard
	As	75	1087.1	3.4	**0.8507**	0.023	2.7	ug/L	-43	Standard
	Se	82	175.6	2.3	**1.1729**	0.025	2.1	ug/L	14	Standard
	Se-1	77	148.0	13.5	**1.0280**	0.205	19.9	ug/L	65	Standard
>	**Ga**	71	653.3	9.9				mg/L	97	Standard
	Rb	85	46049.9	2.1				ug/L	15	Standard
	Y	89	476995.8	1.0				ug/L	465704	Standard
>	**Rh**	103	53.3	14.3				ug/L	10	Standard
	Mo	98	796.8	2.4	**0.2623**	0.007	2.6	ug/L	9	Standard
	Ag	107	140.3	2.9	**0.0121**	0.000	3.6	ug/L	82	Standard
	Cd	111	49.8	18.3	**0.0281**	0.004	13.4	mg/L	7	Standard
	Cd	114	123.2	30.8	**0.0296**	0.006	21.2	ug/L	21	Standard
>	**In**	115	632511.4	0.5				ug/L	619035	Standard
	Sn	118	1000.0	3.6	**0.0470**	0.006	11.8	ug/L	508	Standard
	Sb	123	4032.4	3.6	**0.7496**	0.028	3.7	ug/L	86	Standard
	Ba	135	50380.0	1.5	**21.5471**	0.216	1.0	ug/L	79	Standard
	Ce	140	16629.1	0.9				ug/L	68	Standard
>	**Tb**	159	968713.2	1.4				ug/L	986982	Standard
	Ho	165	263.3	23.6				ug/L	10	Standard
	Tl	203	95.7	12.0	**0.0164**	0.001	7.7	ug/L	13	Standard
	Tl	205	76.7	19.9	**0.0174**	0.002	11.2	ug/L	10	Standard
	Pb	206	2363.9	1.7	**0.3622**	0.006	1.7	ug/L	264	Standard
	Pb	207	1924.1	2.9	**0.3270**	0.010	3.0	ug/L	227	Standard
	Pb	208	8281.6	1.5	**0.3638**	0.007	1.8	ug/L	868	Standard
	U	238	3906.2	1.8	**0.5205**	0.010	1.9	ug/L	8	Standard
>	**Bi**	209	545694.0	0.2				ug/L	541014	Standard

Sample ID: L1606115002
Report Date/Time: Thursday, June 30, 2016 15:58:37
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	17430.0	1.5	**18.3641**	0.418	2.3	mg/L	53	Standard
K	39	1168.4	9.0	**1.8461**	0.201	10.9	mg/L	53	Standard
Ca	43	183.3	1.6	**8.3818**	0.186	2.2	mg/L	28	Standard
Fe	54	452.3	21.5	**0.1801**	0.067	37.4	mg/L	181	Standard
Fe	57	478.3	10.5	**0.5644**	0.133	23.6	mg/L	257	Standard
> **Sc-1**	45	57023.8	2.0				mg/L	55220	Standard
Cl	35	48759.0	3.0				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	26419.7	2.9				ug/L	2040	Standard
P	31	23984.0	4.7				ug/L	20435	Standard
S	34	2903.6	6.4				ug/L	2430	Standard
Sr	88	143.3	17.2				ug/L	75	Standard
C	12	193.3	38.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	319.1	7.7				mg/L	9	Standard
Ho-1	165	263.3	23.6				mg/L	10	Standard
Er	166	226.7	31.9				mg/L	23	Standard
I	127	274664.0	5.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.335	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.015	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606115002
Report Date/Time: Thursday, June 30, 2016 15:58:37
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.177
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.865
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099604
Sample Date/Time: Thursday, June 30, 2016 15:59:32
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69961.2	0.6				ug/L	74916	Standard
	Be	9	28.3	44.4	**0.0252**	0.013	51.3	ug/L	10	Standard
	Al	27	19425781.4	1.6	**119.8632**	1.268	1.1	ug/L	1822	Standard
	Sc	45	56475.1	2.4				ug/L	55220	Standard
	Ti	47	262.7	6.3	**0.5661**	0.035	6.2	ug/L	34	Standard
	V	51	2779.8	5.1	**0.1041**	0.016	15.8	ug/L	1938	Standard
	Cr	52	12190.2	1.9	**0.3167**	0.027	8.6	ug/L	9522	Standard
	Cr	53	4825.8	5.1	**3.9420**	0.240	6.1	ug/L	395	Standard
	Mn	55	5701701.5	0.7	**663.2941**	6.907	1.0	ug/L	902	Standard
	Co	59	11754.6	1.3	**1.4216**	0.014	1.0	ug/L	262	Standard
	Ni	60	7372.1	1.0	**3.1451**	0.031	1.0	ug/L	371	Standard
	Cu	65	803.4	1.9	**0.3056**	0.005	1.6	ug/L	106	Standard
	Zn	66	2560.2	1.0	**1.6248**	0.030	1.8	ug/L	398	Standard
>	**Ge**	72	534918.8	0.8				ug/L	535147	Standard
	As	75	1357.7	6.6	**1.0696**	0.075	7.0	ug/L	-43	Standard
	Se	82	88.6	10.8	**0.5572**	0.074	13.3	ug/L	14	Standard
	Se-1	77	289.7	7.7	**2.6368**	0.271	10.3	ug/L	65	Standard
>	**Ga**	71	195.0	23.1				mg/L	97	Standard
	Rb	85	6686.5	2.4				ug/L	15	Standard
	Y	89	464786.7	1.0				ug/L	465704	Standard
>	**Rh**	103	205.0	4.2				ug/L	10	Standard
	Mo	98	826.4	4.1	**0.2776**	0.013	4.8	ug/L	9	Standard
	Ag	107	114.7	5.6	**0.0091**	0.001	8.8	ug/L	82	Standard
	Cd	111	186.2	3.7	**0.0851**	0.003	3.5	mg/L	7	Standard
	Cd	114	479.9	16.5	**0.0915**	0.013	14.2	ug/L	21	Standard
>	**In**	115	618323.1	1.1				ug/L	619035	Standard
	Sn	118	810.0	8.9	**0.0212**	0.011	52.1	ug/L	508	Standard
	Sb	123	314.7	22.7	**0.0639**	0.013	20.4	ug/L	86	Standard
	Ba	135	187252.0	0.4	**81.9858**	0.624	0.8	ug/L	79	Standard
	Ce	140	5165.9	2.9				ug/L	68	Standard
>	**Tb**	159	962521.7	0.2				ug/L	986982	Standard
	Ho	165	113.3	10.2				ug/L	10	Standard
	Tl	203	260.0	5.5	**0.0351**	0.001	4.1	ug/L	13	Standard
	Tl	205	283.3	27.4	**0.0449**	0.011	23.6	ug/L	10	Standard
	Pb	206	485.3	3.4	**0.0469**	0.003	7.0	ug/L	264	Standard
	Pb	207	410.0	1.1	**0.0459**	0.001	1.8	ug/L	227	Standard
	Pb	208	1780.4	10.3	**0.0508**	0.010	20.2	ug/L	868	Standard
	U	238	896.7	6.4	**0.1292**	0.009	7.0	ug/L	8	Standard
>	**Bi**	209	529472.6	1.3				ug/L	541014	Standard

Sample ID: L1606099604
Report Date/Time: Thursday, June 30, 2016 16:01:49
Page 1

Approved: July 01, 2016

Na	23	5.0	0.0	**27.5091**	0.643	2.3	mg/L	2	Standard
Mg	24	28273.0	1.0	**30.1001**	0.507	1.7	mg/L	53	Standard
K	39	1395.1	3.9	**2.2385**	0.055	2.5	mg/L	53	Standard
Ca	43	991.7	11.7	**53.1667**	5.071	9.5	mg/L	28	Standard
Fe	54	5117.6	1.9	**3.2912**	0.059	1.8	mg/L	181	Standard
Fe	57	1863.4	1.4	**4.1644**	0.091	2.2	mg/L	257	Standard
Sc-1	45	56475.1	2.4				mg/L	55220	Standard
Cl	35	47688.3	1.9				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	14860.6	1.2				ug/L	2040	Standard
P	31	27715.3	0.8				ug/L	20435	Standard
S	34	3085.3	5.7				ug/L	2430	Standard
Sr	88	611.7	3.7				ug/L	75	Standard
C	12	206.7	17.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	150.4	14.1				mg/L	9	Standard
Ho-1	165	113.3	10.2				mg/L	10	Standard
Er	166	130.0	23.1				mg/L	23	Standard
I	127	154687.6	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.386	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.957	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606099604
Report Date/Time: Thursday, June 30, 2016 16:01:49
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.885
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.867
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099605
Sample Date/Time: Thursday, June 30, 2016 16:02:43
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69855.7	2.4				ug/L	74916	Standard
	Be	9	30.0	16.7	**0.0270**	0.006	21.6	ug/L	10	Standard
	Al	27	25298682.7	0.3	**156.4064**	3.966	2.5	ug/L	1822	Standard
	Sc	45	56075.3	2.8				ug/L	55220	Standard
	Ti	47	338.7	2.0	**0.7516**	0.018	2.5	ug/L	34	Standard
	V	51	3001.7	4.8	**0.1285**	0.018	13.9	ug/L	1938	Standard
	Cr	52	12584.6	0.7	**0.3623**	0.002	0.6	ug/L	9522	Standard
	Cr	53	5834.5	2.3	**4.8522**	0.084	1.7	ug/L	395	Standard
	Mn	55	2623286.7	0.8	**305.5121**	4.757	1.6	ug/L	902	Standard
	Co	59	15465.9	0.6	**1.8800**	0.016	0.8	ug/L	262	Standard
	Ni	60	6197.6	0.3	**2.6243**	0.013	0.5	ug/L	371	Standard
	Cu	65	2478.2	0.8	**1.0666**	0.013	1.3	ug/L	106	Standard
	Zn	66	7697.6	1.2	**5.5884**	0.116	2.1	ug/L	398	Standard
>	**Ge**	72	534251.5	0.8				ug/L	535147	Standard
	As	75	1974.2	4.3	**1.5314**	0.058	3.8	ug/L	-43	Standard
	Se	82	78.5	7.3	**0.4834**	0.046	9.5	ug/L	14	Standard
	Se-1	77	351.3	1.7	**3.3251**	0.044	1.3	ug/L	65	Standard
>	**Ga**	71	205.0	25.5				mg/L	97	Standard
	Rb	85	5237.6	3.5				ug/L	15	Standard
	Y	89	469644.5	0.7				ug/L	465704	Standard
>	**Rh**	103	150.0	26.0				ug/L	10	Standard
	Mo	98	1144.9	1.6	**0.3788**	0.004	1.1	ug/L	9	Standard
	Ag	107	102.0	8.4	**0.0074**	0.001	16.1	ug/L	82	Standard
	Cd	111	1652.0	2.2	**0.6914**	0.017	2.4	mg/L	7	Standard
	Cd	114	4129.0	3.7	**0.7182**	0.022	3.1	ug/L	21	Standard
>	**In**	115	619962.0	0.5				ug/L	619035	Standard
	Sn	118	1053.4	26.1	**0.0583**	0.043	73.2	ug/L	508	Standard
	Sb	123	326.9	12.9	**0.0660**	0.008	11.8	ug/L	86	Standard
	Ba	135	161983.3	0.3	**70.7294**	0.370	0.5	ug/L	79	Standard
	Ce	140	5751.1	4.0				ug/L	68	Standard
>	**Tb**	159	963142.2	0.8				ug/L	986982	Standard
	Ho	165	166.7	9.2				ug/L	10	Standard
	Tl	203	314.3	1.9	**0.0413**	0.001	1.6	ug/L	13	Standard
	Tl	205	290.0	12.1	**0.0458**	0.005	10.1	ug/L	10	Standard
	Pb	206	1740.4	1.2	**0.2666**	0.002	0.7	ug/L	264	Standard
	Pb	207	1409.4	1.4	**0.2395**	0.005	2.2	ug/L	227	Standard
	Pb	208	5876.8	1.0	**0.2566**	0.002	0.7	ug/L	868	Standard
	U	238	1185.0	1.4	**0.1687**	0.003	2.0	ug/L	8	Standard
>	**Bi**	209	527930.9	0.7				ug/L	541014	Standard

Sample ID: L1606099605
Report Date/Time: Thursday, June 30, 2016 16:05:00
Page 1

Approved: July 01, 2016

Na	23	6.7	43.3	**36.6702**	14.812	40.4	mg/L	2	Standard
Mg	24	25957.2	2.0	**27.8323**	0.729	2.6	mg/L	53	Standard
K	39	1290.1	1.7	**2.0816**	0.095	4.6	mg/L	53	Standard
Ca	43	816.7	4.0	**43.9174**	2.717	6.2	mg/L	28	Standard
Fe	54	4281.2	3.8	**2.7565**	0.170	6.2	mg/L	181	Standard
Fe	57	1635.1	10.3	**3.5996**	0.392	10.9	mg/L	257	Standard
> **Sc-1**	45	56075.3	2.8				mg/L	55220	Standard
Cl	35	47329.8	0.8				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	13232.4	3.8				ug/L	2040	Standard
P	31	28035.9	1.3				ug/L	20435	Standard
S	34	3043.6	7.4				ug/L	2430	Standard
Sr	88	438.3	13.2				ug/L	75	Standard
C	12	256.7	31.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	199.3	28.2				mg/L	9	Standard
Ho-1	165	166.7	9.2				mg/L	10	Standard
Er	166	153.3	18.8				mg/L	23	Standard
I	127	169123.3	4.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.245	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.833	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606099605
Report Date/Time: Thursday, June 30, 2016 16:05:00
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.150	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.582	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099606
Sample Date/Time: Thursday, June 30, 2016 16:05:55
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70334.6	1.5				ug/L	74916	Standard
	Be	9	38.3	49.4	**0.0352**	0.020	55.6	ug/L	10	Standard
	Al	27	25573073.5	2.7	**156.9735**	4.152	2.6	ug/L	1822	Standard
	Sc	45	56620.6	1.2				ug/L	55220	Standard
	Ti	47	326.7	6.1	**0.7228**	0.051	7.0	ug/L	34	Standard
	V	51	3018.6	3.6	**0.1304**	0.013	9.7	ug/L	1938	Standard
	Cr	52	12679.3	1.7	**0.3733**	0.027	7.4	ug/L	9522	Standard
	Cr	53	5749.4	2.4	**4.7779**	0.131	2.7	ug/L	395	Standard
	Mn	55	2623375.0	1.1	**305.5981**	3.639	1.2	ug/L	902	Standard
	Co	59	15436.5	1.3	**1.8770**	0.025	1.3	ug/L	262	Standard
	Ni	60	6020.2	2.8	**2.5457**	0.069	2.7	ug/L	371	Standard
	Cu	65	1658.8	4.6	**0.6948**	0.038	5.5	ug/L	106	Standard
	Zn	66	6334.0	1.2	**4.5379**	0.038	0.8	ug/L	398	Standard
>	**Ge**	72	534086.7	0.6				ug/L	535147	Standard
	As	75	1720.4	3.8	**1.3423**	0.053	4.0	ug/L	-43	Standard
	Se	82	76.2	11.8	**0.4665**	0.070	14.9	ug/L	14	Standard
	Se-1	77	341.0	8.1	**3.2125**	0.324	10.1	ug/L	65	Standard
>	**Ga**	71	150.0	6.7				mg/L	97	Standard
	Rb	85	5017.5	2.9				ug/L	15	Standard
	Y	89	460333.3	1.9				ug/L	465704	Standard
>	**Rh**	103	160.0	15.6				ug/L	10	Standard
	Mo	98	1159.9	2.1	**0.3857**	0.007	1.9	ug/L	9	Standard
	Ag	107	207.3	84.7	**0.0215**	0.023	108.6	ug/L	82	Standard
	Cd	111	1273.0	4.1	**0.5376**	0.022	4.2	mg/L	7	Standard
	Cd	114	3184.2	4.3	**0.5591**	0.023	4.1	ug/L	21	Standard
>	**In**	115	616398.5	0.2				ug/L	619035	Standard
	Sn	118	851.7	11.9	**0.0280**	0.016	56.5	ug/L	508	Standard
	Sb	123	420.7	41.3	**0.0842**	0.033	39.2	ug/L	86	Standard
	Ba	135	159545.0	0.6	**70.0658**	0.337	0.5	ug/L	79	Standard
	Ce	140	4699.1	1.6				ug/L	68	Standard
>	**Tb**	159	960648.2	1.0				ug/L	986982	Standard
	Ho	165	116.7	25.1				ug/L	10	Standard
	Tl	203	478.0	50.7	**0.0598**	0.027	45.7	ug/L	13	Standard
	Tl	205	370.0	32.5	**0.0565**	0.016	28.1	ug/L	10	Standard
	Pb	206	1075.7	12.0	**0.1509**	0.023	15.2	ug/L	264	Standard
	Pb	207	893.4	13.8	**0.1402**	0.024	17.1	ug/L	227	Standard
	Pb	208	3590.5	9.6	**0.1424**	0.017	12.3	ug/L	868	Standard
	U	238	1264.4	10.4	**0.1799**	0.018	10.0	ug/L	8	Standard
>	**Bi**	209	526401.5	0.2				ug/L	541014	Standard

Sample ID: L1606099606
Report Date/Time: Thursday, June 30, 2016 16:08:12
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.1445**	15.830	173.1	mg/L	2	Standard
Mg	24	26034.0	1.2	**27.6407**	0.661	2.4	mg/L	53	Standard
K	39	1291.7	4.5	**2.0624**	0.110	5.3	mg/L	53	Standard
Ca	43	728.4	12.3	**38.5487**	4.806	12.5	mg/L	28	Standard
Fe	54	4004.2	3.4	**2.5420**	0.079	3.1	mg/L	181	Standard
Fe	57	1421.7	2.8	**3.0102**	0.115	3.8	mg/L	257	Standard
> **Sc-1**	45	56620.6	1.2				mg/L	55220	Standard
Cl	35	47091.1	1.5				ug/L	35504	Standard
Kr	83	3.3	62.4				ug/L	2	Standard
Br	81	12705.3	3.4				ug/L	2040	Standard
P	31	27217.8	1.2				ug/L	20435	Standard
S	34	3183.7	0.9				ug/L	2430	Standard
Sr	88	466.7	7.3				ug/L	75	Standard
C	12	233.3	22.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	147.1	4.2				mg/L	9	Standard
Ho-1	165	116.7	25.1				mg/L	10	Standard
Er	166	130.0	13.3				mg/L	23	Standard
I	127	166708.5	4.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.884	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.802	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606099606
Report Date/Time: Thursday, June 30, 2016 16:08:12
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.574	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.299	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099607
Sample Date/Time: Thursday, June 30, 2016 16:09:06
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70116.9	1.0				ug/L	74916	Standard
	Be	9	10.0	50.0	**0.0065**	0.005	76.3	ug/L	10	Standard
	Al	27	19484010.1	0.8	**119.9707**	1.788	1.5	ug/L	1822	Standard
	Sc	45	56406.5	2.4				ug/L	55220	Standard
	Ti	47	205.0	2.4	**0.4191**	0.013	3.1	ug/L	34	Standard
	V	51	2940.0	2.1	**0.1165**	0.008	6.7	ug/L	1938	Standard
	Cr	52	15036.8	1.8	**0.6080**	0.037	6.2	ug/L	9522	Standard
	Cr	53	4282.3	0.5	**3.3954**	0.032	0.9	ug/L	395	Standard
	Mn	55	23551.6	2.3	**2.5932**	0.049	1.9	ug/L	902	Standard
	Co	59	903.4	6.4	**0.0865**	0.007	8.0	ug/L	262	Standard
	Ni	60	2782.6	1.3	**1.0776**	0.018	1.7	ug/L	371	Standard
	Cu	65	721.7	3.7	**0.2636**	0.013	5.0	ug/L	106	Standard
	Zn	66	2321.8	1.0	**1.4139**	0.018	1.2	ug/L	398	Standard
>	**Ge**	72	543181.9	0.5				ug/L	535147	Standard
	As	75	-0.1	61796.7	**0.0553**	0.039	70.5	ug/L	-43	Standard
	Se	82	37.3	3.2	**0.1744**	0.007	4.2	ug/L	14	Standard
	Se-1	77	228.0	4.5	**1.9126**	0.123	6.4	ug/L	65	Standard
>	**Ga**	71	105.0	17.2				mg/L	97	Standard
	Rb	85	1916.8	7.9				ug/L	15	Standard
	Y	89	473426.1	0.7				ug/L	465704	Standard
>	**Rh**	103	55.0	18.2				ug/L	10	Standard
	Mo	98	1137.2	3.5	**0.3746**	0.013	3.4	ug/L	9	Standard
	Ag	107	86.0	10.1	**0.0053**	0.001	21.9	ug/L	82	Standard
	Cd	111	110.6	8.1	**0.0534**	0.004	7.0	mg/L	7	Standard
	Cd	114	282.5	7.7	**0.0572**	0.004	6.6	ug/L	21	Standard
>	**In**	115	622869.2	0.1				ug/L	619035	Standard
	Sn	118	778.4	11.1	**0.0154**	0.013	84.2	ug/L	508	Standard
	Sb	123	258.9	21.0	**0.0530**	0.010	19.3	ug/L	86	Standard
	Ba	135	28644.1	0.6	**12.4326**	0.096	0.8	ug/L	79	Standard
	Ce	140	530.0	1.6				ug/L	68	Standard
>	**Tb**	159	966795.0	1.1				ug/L	986982	Standard
	Ho	165	28.3	40.8				ug/L	10	Standard
	Tl	203	79.7	11.9	**0.0148**	0.001	7.4	ug/L	13	Standard
	Tl	205	60.0	33.3	**0.0155**	0.003	16.9	ug/L	10	Standard
	Pb	206	402.3	7.1	**0.0317**	0.005	14.3	ug/L	264	Standard
	Pb	207	358.3	3.9	**0.0353**	0.002	6.5	ug/L	227	Standard
	Pb	208	1516.0	3.6	**0.0368**	0.002	6.3	ug/L	868	Standard
	U	238	1327.4	2.2	**0.1858**	0.004	2.0	ug/L	8	Standard
>	**Bi**	209	534294.5	0.6				ug/L	541014	Standard

Sample ID: L1606099607
Report Date/Time: Thursday, June 30, 2016 16:11:23
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**18.2896**	15.847	86.6	mg/L	2	Standard
Mg	24	16824.3	1.1	**17.9246**	0.605	3.4	mg/L	53	Standard
K	39	213.3	28.2	**0.2790**	0.104	37.2	mg/L	53	Standard
Ca	43	591.7	12.0	**31.1277**	3.829	12.3	mg/L	28	Standard
Fe	54	212.4	20.3	**0.0229**	0.028	124.6	mg/L	181	Standard
Fe	57	545.0	15.4	**0.7481**	0.193	25.8	mg/L	257	Standard
> **Sc-1**	45	56406.5	2.4				mg/L	55220	Standard
Cl	35	50090.0	0.6				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	4580.7	3.0				ug/L	2040	Standard
P	31	26423.0	1.3				ug/L	20435	Standard
S	34	3012.0	4.9				ug/L	2430	Standard
Sr	88	228.3	12.1				ug/L	75	Standard
C	12	143.3	29.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	7	Standard
Dy	164	29.2	60.3				mg/L	9	Standard
Ho-1	165	28.3	40.8				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	18783.4	8.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.593	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606099607
Report Date/Time: Thursday, June 30, 2016 16:11:23
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.619
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.758
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099608
Sample Date/Time: Thursday, June 30, 2016 16:12:18
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70543.9	1.8				ug/L	74916	Standard
	Be	9	15.0	66.7	**0.0116**	0.010	88.6	ug/L	10	Standard
	Al	27	22711632.2	0.7	**139.0134**	2.390	1.7	ug/L	1822	Standard
	Sc	45	57522.4	2.5				ug/L	55220	Standard
	Ti	47	207.0	5.1	**0.4278**	0.029	6.7	ug/L	34	Standard
	V	51	2735.9	11.5	**0.0971**	0.034	35.0	ug/L	1938	Standard
	Cr	52	13832.0	1.0	**0.4877**	0.005	1.1	ug/L	9522	Standard
	Cr	53	2311.8	2.6	**1.6707**	0.052	3.1	ug/L	395	Standard
	Mn	55	6443.0	0.6	**0.6388**	0.001	0.2	ug/L	902	Standard
	Co	59	926.4	2.1	**0.0902**	0.002	2.5	ug/L	262	Standard
	Ni	60	3521.7	0.7	**1.4145**	0.010	0.7	ug/L	371	Standard
	Cu	65	752.7	1.6	**0.2800**	0.006	2.2	ug/L	106	Standard
	Zn	66	2242.5	1.0	**1.3670**	0.024	1.8	ug/L	398	Standard
>	**Ge**	72	538990.2	0.6				ug/L	535147	Standard
	As	75	37.1	21.4	**0.0827**	0.006	7.0	ug/L	-43	Standard
	Se	82	41.4	4.3	**0.2064**	0.015	7.2	ug/L	14	Standard
	Se-1	77	141.3	6.0	**0.9761**	0.087	8.9	ug/L	65	Standard
>	**Ga**	71	86.7	17.6				mg/L	97	Standard
	Rb	85	4118.9	3.5				ug/L	15	Standard
	Y	89	476168.4	0.6				ug/L	465704	Standard
>	**Rh**	103	86.7	8.8				ug/L	10	Standard
	Mo	98	438.6	5.5	**0.1506**	0.008	5.2	ug/L	9	Standard
	Ag	107	104.0	20.1	**0.0075**	0.003	36.9	ug/L	82	Standard
	Cd	111	101.6	17.7	**0.0493**	0.007	14.5	mg/L	7	Standard
	Cd	114	228.0	17.1	**0.0475**	0.007	13.7	ug/L	21	Standard
>	**In**	115	629533.9	0.4				ug/L	619035	Standard
	Sn	118	818.4	4.9	**0.0202**	0.006	31.1	ug/L	508	Standard
	Sb	123	185.0	17.5	**0.0388**	0.006	15.9	ug/L	86	Standard
	Ba	135	43526.4	1.4	**18.7021**	0.263	1.4	ug/L	79	Standard
	Ce	140	235.0	5.6				ug/L	68	Standard
>	**Tb**	159	965281.9	1.5				ug/L	986982	Standard
	Ho	165	25.0	69.3				ug/L	10	Standard
	Tl	203	71.7	14.9	**0.0139**	0.001	8.0	ug/L	13	Standard
	Tl	205	46.7	27.0	**0.0137**	0.002	11.4	ug/L	10	Standard
	Pb	206	309.7	0.5	**0.0155**	0.001	4.7	ug/L	264	Standard
	Pb	207	267.0	9.4	**0.0176**	0.004	25.4	ug/L	227	Standard
	Pb	208	1122.3	2.1	**0.0171**	0.002	9.7	ug/L	868	Standard
	U	238	1061.4	2.9	**0.1496**	0.003	1.8	ug/L	8	Standard
>	**Bi**	209	536286.4	1.0				ug/L	541014	Standard

Sample ID: L1606099608
Report Date/Time: Thursday, June 30, 2016 16:14:35
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**8.7738**	15.188	173.1	mg/L	2	Standard
Mg	24	5964.5	3.7	**6.2055**	0.174	2.8	mg/L	53	Standard
K	39	355.0	11.2	**0.5027**	0.068	13.5	mg/L	53	Standard
Ca	43	778.4	4.5	**40.6775**	2.577	6.3	mg/L	28	Standard
Fe	54	170.4	9.8	**-0.0071**	0.012	174.8	mg/L	181	Standard
Fe	57	601.7	16.8	**0.8634**	0.218	25.3	mg/L	257	Standard
Sc-1	45	57522.4	2.5				mg/L	55220	Standard
Cl	35	50187.0	1.2				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	4597.4	6.9				ug/L	2040	Standard
P	31	26302.9	6.9				ug/L	20435	Standard
S	34	3048.6	5.1				ug/L	2430	Standard
Sr	88	291.7	3.6				ug/L	75	Standard
C	12	176.7	3.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	28.9	33.2				mg/L	9	Standard
Ho-1	165	25.0	69.3				mg/L	10	Standard
Er	166	23.3	107.9				mg/L	23	Standard
I	127	83376.0	6.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		94.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.718	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606099608
Report Date/Time: Thursday, June 30, 2016 16:14:35
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.696	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.126	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606099608
Report Date/Time: Thursday, June 30, 2016 16:14:35
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099609
Sample Date/Time: Thursday, June 30, 2016 16:15:29
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69845.6	0.9				ug/L	74916	Standard
	Be	9	16.7	96.4	**0.0133**	0.016	122.4	ug/L	10	Standard
	Al	27	21005224.6	0.5	**129.8402**	1.843	1.4	ug/L	1822	Standard
	Sc	45	56552.1	2.6				ug/L	55220	Standard
	Ti	47	228.0	3.9	**0.4775**	0.018	3.7	ug/L	34	Standard
	V	51	2703.5	12.7	**0.0933**	0.037	39.7	ug/L	1938	Standard
	Cr	52	13913.4	0.5	**0.4950**	0.006	1.3	ug/L	9522	Standard
	Cr	53	3350.4	0.8	**2.5921**	0.039	1.5	ug/L	395	Standard
	Mn	55	377039.5	0.8	**43.3828**	0.058	0.1	ug/L	902	Standard
	Co	59	1768.4	1.9	**0.1926**	0.003	1.3	ug/L	262	Standard
	Ni	60	3728.1	1.9	**1.5042**	0.035	2.3	ug/L	371	Standard
	Cu	65	882.4	2.6	**0.3379**	0.007	2.2	ug/L	106	Standard
	Zn	66	3312.7	1.9	**2.1819**	0.032	1.4	ug/L	398	Standard
>	**Ge**	72	539583.6	0.8				ug/L	535147	Standard
	As	75	211.7	19.5	**0.2119**	0.030	14.3	ug/L	-43	Standard
	Se	82	44.3	2.0	**0.2271**	0.007	3.0	ug/L	14	Standard
	Se-1	77	164.3	5.5	**1.2281**	0.103	8.4	ug/L	65	Standard
>	**Ga**	71	81.7	24.7				mg/L	97	Standard
	Rb	85	4610.7	3.0				ug/L	15	Standard
	Y	89	467092.7	1.0				ug/L	465704	Standard
>	**Rh**	103	156.7	9.8				ug/L	10	Standard
	Mo	98	4088.4	2.0	**1.3255**	0.024	1.8	ug/L	9	Standard
	Ag	107	151.7	8.6	**0.0141**	0.002	12.4	ug/L	82	Standard
	Cd	111	530.2	3.4	**0.2280**	0.007	3.0	mg/L	7	Standard
	Cd	114	1263.2	4.5	**0.2267**	0.009	4.2	ug/L	21	Standard
>	**In**	115	617728.7	0.2				ug/L	619035	Standard
	Sn	118	1375.1	33.7	**0.1082**	0.071	65.5	ug/L	508	Standard
	Sb	123	301.9	1.0	**0.0615**	0.001	1.0	ug/L	86	Standard
	Ba	135	43249.0	1.1	**18.9381**	0.206	1.1	ug/L	79	Standard
	Ce	140	308.3	12.2				ug/L	68	Standard
>	**Tb**	159	955749.7	1.1				ug/L	986982	Standard
	Ho	165	30.0	28.9				ug/L	10	Standard
	Tl	203	109.7	13.8	**0.0182**	0.002	9.5	ug/L	13	Standard
	Tl	205	103.3	34.0	**0.0212**	0.005	21.6	ug/L	10	Standard
	Pb	206	534.7	2.3	**0.0552**	0.002	3.4	ug/L	264	Standard
	Pb	207	441.3	2.8	**0.0517**	0.003	5.1	ug/L	227	Standard
	Pb	208	1853.7	3.0	**0.0542**	0.003	4.9	ug/L	868	Standard
	U	238	762.0	2.3	**0.1107**	0.003	2.5	ug/L	8	Standard
>	**Bi**	209	530937.1	0.4				ug/L	541014	Standard

Sample ID: L1606099609
Report Date/Time: Thursday, June 30, 2016 16:17:46
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**27.1983**	27.396	100.7	mg/L	2	Standard
Mg	24	7133.3	3.1	**7.5562**	0.118	1.6	mg/L	53	Standard
K	39	415.0	10.3	**0.6114**	0.064	10.5	mg/L	53	Standard
Ca	43	686.7	4.0	**36.3056**	1.365	3.8	mg/L	28	Standard
Fe	54	1208.6	8.4	**0.6860**	0.076	11.1	mg/L	181	Standard
Fe	57	823.4	2.3	**1.4684**	0.104	7.1	mg/L	257	Standard
> **Sc-1**	45	56552.1	2.6				mg/L	55220	Standard
Cl	35	50053.9	2.1				ug/L	35504	Standard
Kr	83	3.7	15.7				ug/L	2	Standard
Br	81	7205.1	9.6				ug/L	2040	Standard
P	31	26600.0	1.7				ug/L	20435	Standard
S	34	2965.3	2.8				ug/L	2430	Standard
Sr	88	376.7	10.1				ug/L	75	Standard
C	12	183.3	16.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	22.5	25.0				mg/L	9	Standard
Ho-1	165	30.0	28.9				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	44396.6	1.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.231	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.829	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606099609
Report Date/Time: Thursday, June 30, 2016 16:17:46
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.789
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606099609
Report Date/Time: Thursday, June 30, 2016 16:17:46
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103002
Sample Date/Time: Thursday, June 30, 2016 16:18:40
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69760.3	2.4				ug/L	74916	Standard
	Be	9	13.3	86.6	**0.0101**	0.012	117.4	ug/L	10	Standard
	Al	27	740653.6	2.0	**4.5836**	0.173	3.8	ug/L	1822	Standard
	Sc	45	56779.5	1.3				ug/L	55220	Standard
	Ti	47	352.0	6.0	**0.7588**	0.067	8.8	ug/L	34	Standard
	V	51	3517.2	3.2	**0.1726**	0.008	4.9	ug/L	1938	Standard
	Cr	52	13903.4	3.0	**0.4622**	0.042	9.0	ug/L	9522	Standard
	Cr	53	2013.5	2.9	**1.3664**	0.059	4.4	ug/L	395	Standard
	Mn	55	55706.2	1.6	**6.1883**	0.152	2.5	ug/L	902	Standard
	Co	59	1079.7	0.9	**0.1060**	0.002	2.2	ug/L	262	Standard
	Ni	60	1229.0	0.4	**0.3871**	0.010	2.6	ug/L	371	Standard
	Cu	65	533.7	9.3	**0.1760**	0.017	9.9	ug/L	106	Standard
	Zn	66	3869.5	1.0	**2.5467**	0.076	3.0	ug/L	398	Standard
>	**Ge**	72	551015.3	2.1				ug/L	535147	Standard
	As	75	98.2	11.1	**0.1264**	0.007	5.5	ug/L	-43	Standard
	Se	82	54.6	6.8	**0.2946**	0.030	10.2	ug/L	14	Standard
	Se-1	77	78.3	5.2	**0.2634**	0.045	17.3	ug/L	65	Standard
>	**Ga**	71	133.3	13.2				mg/L	97	Standard
	Rb	85	4482.3	4.1				ug/L	15	Standard
	Y	89	487384.7	2.5				ug/L	465704	Standard
>	**Rh**	103	13.3	21.7				ug/L	10	Standard
	Mo	98	79.3	5.3	**0.0369**	0.001	3.8	ug/L	9	Standard
	Ag	107	110.3	7.7	**0.0080**	0.001	13.7	ug/L	82	Standard
	Cd	111	13.9	7.2	**0.0134**	0.000	3.0	mg/L	7	Standard
	Cd	114	54.8	20.1	**0.0180**	0.002	10.1	ug/L	21	Standard
>	**In**	115	642536.0	0.9				ug/L	619035	Standard
	Sn	118	813.4	8.4	**0.0170**	0.011	62.4	ug/L	508	Standard
	Sb	123	143.8	24.4	**0.0306**	0.006	21.1	ug/L	86	Standard
	Ba	135	10242.1	2.0	**4.2969**	0.104	2.4	ug/L	79	Standard
	Ce	140	11245.8	1.1				ug/L	68	Standard
>	**Tb**	159	974036.2	1.2				ug/L	986982	Standard
	Ho	165	155.0	23.3				ug/L	10	Standard
	Tl	203	30.0	5.8	**0.0092**	0.000	2.1	ug/L	13	Standard
	Tl	205	23.3	65.5	**0.0106**	0.002	18.2	ug/L	10	Standard
	Pb	206	1023.7	2.5	**0.1315**	0.002	1.9	ug/L	264	Standard
	Pb	207	847.0	4.7	**0.1218**	0.006	4.7	ug/L	227	Standard
	Pb	208	3461.5	0.8	**0.1259**	0.001	0.4	ug/L	868	Standard
	U	238	63.3	7.9	**0.0160**	0.001	3.8	ug/L	8	Standard
>	**Bi**	209	558238.3	1.1				ug/L	541014	Standard

Sample ID: L1606103002
Report Date/Time: Thursday, June 30, 2016 16:20:57
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	700.0	10.4	**0.7068**	0.068	9.6	mg/L	53	Standard
K	39	126.7	12.7	**0.1329**	0.024	18.3	mg/L	53	Standard
Ca	43	31.7	36.5	**0.0684**	0.631	922.5	mg/L	28	Standard
Fe	54	408.8	4.5	**0.1521**	0.009	6.0	mg/L	181	Standard
Fe	57	358.3	8.9	**0.2610**	0.094	35.8	mg/L	257	Standard
> **Sc-1**	45	56779.5	1.3				mg/L	55220	Standard
Cl	35	48396.5	2.0				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	8715.8	6.7				ug/L	2040	Standard
P	31	25454.7	3.1				ug/L	20435	Standard
S	34	2967.0	5.2				ug/L	2430	Standard
Sr	88	95.0	13.9				ug/L	75	Standard
C	12	143.3	26.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	300.0	13.4				mg/L	9	Standard
Ho-1	165	155.0	23.3				mg/L	10	Standard
Er	166	140.0	25.8				mg/L	23	Standard
I	127	23847.1	3.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.117	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.965	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606103002
Report Date/Time: Thursday, June 30, 2016 16:20:57
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.796
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.184
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103005
Sample Date/Time: Thursday, June 30, 2016 16:21:52
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71014.4	1.4				ug/L	74916	Standard
	Be	9	36.7	55.1	**0.0329**	0.020	60.1	ug/L	10	Standard
	Al	27	717718.3	2.7	**4.3622**	0.171	3.9	ug/L	1822	Standard
	Sc	45	58608.3	4.0				ug/L	55220	Standard
	Ti	47	356.7	10.5	**0.7684**	0.093	12.1	ug/L	34	Standard
	V	51	3250.2	2.0	**0.1443**	0.006	4.2	ug/L	1938	Standard
	Cr	52	13800.9	1.1	**0.4496**	0.006	1.2	ug/L	9522	Standard
	Cr	53	1710.1	0.8	**1.1004**	0.000	0.0	ug/L	395	Standard
	Mn	55	53809.4	0.9	**5.9671**	0.056	0.9	ug/L	902	Standard
	Co	59	1072.7	2.4	**0.1050**	0.004	3.7	ug/L	262	Standard
	Ni	60	1245.1	3.8	**0.3933**	0.017	4.2	ug/L	371	Standard
	Cu	65	488.3	4.9	**0.1561**	0.012	7.7	ug/L	106	Standard
	Zn	66	4184.6	0.6	**2.7785**	0.022	0.8	ug/L	398	Standard
>	**Ge**	72	551518.7	0.8				ug/L	535147	Standard
	As	75	30.2	104.8	**0.0772**	0.023	29.8	ug/L	-43	Standard
	Se	82	28.0	24.6	**0.1034**	0.050	48.7	ug/L	14	Standard
	Se-1	77	77.3	8.3	**0.2515**	0.067	26.5	ug/L	65	Standard
>	**Ga**	71	118.3	27.5				mg/L	97	Standard
	Rb	85	4068.9	5.6				ug/L	15	Standard
	Y	89	482786.2	0.5				ug/L	465704	Standard
>	**Rh**	103	13.3	43.3				ug/L	10	Standard
	Mo	98	68.4	19.7	**0.0333**	0.004	12.0	ug/L	9	Standard
	Ag	107	143.7	25.9	**0.0121**	0.005	37.8	ug/L	82	Standard
	Cd	111	28.2	75.9	**0.0190**	0.008	44.0	mg/L	7	Standard
	Cd	114	64.3	75.6	**0.0195**	0.008	40.6	ug/L	21	Standard
>	**In**	115	647732.5	0.7				ug/L	619035	Standard
	Sn	118	833.4	12.9	**0.0190**	0.016	84.0	ug/L	508	Standard
	Sb	123	159.5	29.5	**0.0332**	0.008	25.1	ug/L	86	Standard
	Ba	135	9910.6	2.3	**4.1231**	0.071	1.7	ug/L	79	Standard
	Ce	140	11327.6	1.9				ug/L	68	Standard
>	**Tb**	159	970710.1	0.2				ug/L	986982	Standard
	Ho	165	156.7	7.4				ug/L	10	Standard
	Tl	203	65.3	101.0	**0.0129**	0.007	54.3	ug/L	13	Standard
	Tl	205	46.7	37.6	**0.0135**	0.002	16.3	ug/L	10	Standard
	Pb	206	1011.0	5.5	**0.1282**	0.010	8.1	ug/L	264	Standard
	Pb	207	823.0	5.9	**0.1162**	0.008	6.8	ug/L	227	Standard
	Pb	208	3448.2	2.5	**0.1240**	0.005	4.1	ug/L	868	Standard
	U	238	82.7	18.8	**0.0184**	0.002	11.2	ug/L	8	Standard
>	**Bi**	209	562677.9	0.7				ug/L	541014	Standard

Sample ID: L1606103005
Report Date/Time: Thursday, June 30, 2016 16:24:09
Page 1

Approved: July 01, 2016

Na	23	3.3	173.2	**17.7615**	30.755	173.2	mg/L	2	Standard
Mg	24	670.0	4.2	**0.6549**	0.055	8.5	mg/L	53	Standard
K	39	98.3	10.6	**0.0811**	0.012	14.9	mg/L	53	Standard
Ca	43	48.3	26.0	**0.8897**	0.576	64.7	mg/L	28	Standard
Fe	54	422.0	23.4	**0.1541**	0.074	47.7	mg/L	181	Standard
Fe	57	358.3	7.9	**0.2330**	0.089	38.0	mg/L	257	Standard
> **Sc-1**	45	58608.3	4.0				mg/L	55220	Standard
Cl	35	47519.1	2.1				ug/L	35504	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	3033.6	9.1				ug/L	2040	Standard
P	31	25564.9	4.9				ug/L	20435	Standard
S	34	2915.3	4.9				ug/L	2430	Standard
Sr	88	93.3	35.7				ug/L	75	Standard
C	12	126.7	31.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	250.9	22.7				mg/L	9	Standard
Ho-1	165	156.7	7.4				mg/L	10	Standard
Er	166	120.0	14.4				mg/L	23	Standard
I	127	18065.8	5.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.059	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606103005
Report Date/Time: Thursday, June 30, 2016 16:24:09
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.636
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.004
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 16:25:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68409.2	3.0				ug/L	74916	Standard
	Be	9	52770.2	5.1	**54.7618**	1.986	3.6	ug/L	10	Standard
	Al	27	8495126.3	2.5	**53.6326**	1.834	3.4	ug/L	1822	Standard
	Sc	45	55150.2	3.0				ug/L	55220	Standard
	Ti	47	42922.7	1.8	**102.7322**	1.643	1.6	ug/L	34	Standard
	V	51	470082.4	0.9	**50.0153**	0.422	0.8	ug/L	1938	Standard
	Cr	52	473487.4	0.8	**51.0277**	0.278	0.5	ug/L	9522	Standard
	Cr	53	59402.9	1.8	**52.2791**	0.810	1.5	ug/L	395	Standard
	Mn	55	439411.4	1.3	**50.4278**	0.536	1.1	ug/L	902	Standard
	Co	59	415321.2	1.6	**50.4208**	0.645	1.3	ug/L	262	Standard
	Ni	60	115571.1	0.7	**50.8447**	0.188	0.4	ug/L	371	Standard
	Cu	65	113338.0	1.1	**50.7471**	0.414	0.8	ug/L	106	Standard
	Zn	66	66667.7	0.4	**50.3945**	0.324	0.6	ug/L	398	Standard
>	**Ge**	72	541166.6	0.3				ug/L	535147	Standard
	As	75	67552.5	0.5	**49.9255**	0.120	0.2	ug/L	-43	Standard
	Se	82	6820.0	2.0	**49.6629**	0.906	1.8	ug/L	14	Standard
	Se-1	77	4680.1	1.7	**50.7942**	1.014	2.0	ug/L	65	Standard
>	**Ga**	71	88.3	11.8				mg/L	97	Standard
	Rb	85	988.4	2.8				ug/L	15	Standard
	Y	89	475342.9	0.3				ug/L	465704	Standard
>	**Rh**	103	28.3	20.4				ug/L	10	Standard
	Mo	98	308161.4	1.1	**96.6686**	2.040	2.1	ug/L	9	Standard
	Ag	107	378642.8	1.0	**49.0786**	0.942	1.9	ug/L	82	Standard
	Cd	111	122873.2	0.7	**49.8265**	0.844	1.7	mg/L	7	Standard
	Cd	114	299328.2	0.9	**50.4045**	0.935	1.9	ug/L	21	Standard
>	**In**	115	632664.3	1.1				ug/L	619035	Standard
	Sn	118	332294.9	1.6	**49.8630**	1.097	2.2	ug/L	508	Standard
	Sb	123	268364.2	0.7	**49.5926**	0.839	1.7	ug/L	86	Standard
	Ba	135	114660.2	0.5	**49.0565**	0.431	0.9	ug/L	79	Standard
	Ce	140	131.7	35.9				ug/L	68	Standard
>	**Tb**	159	965300.2	0.9				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	465432.8	0.6	**50.6040**	0.185	0.4	ug/L	13	Standard
	Tl	205	408743.6	0.9	**52.0229**	0.823	1.6	ug/L	10	Standard
	Pb	206	293608.2	0.5	**49.7024**	0.334	0.7	ug/L	264	Standard
	Pb	207	265313.8	0.4	**49.6947**	0.197	0.4	ug/L	227	Standard
	Pb	208	1077488.9	0.3	**52.3406**	0.343	0.7	ug/L	868	Standard
	U	238	391420.8	0.1	**51.4409**	0.405	0.8	ug/L	8	Standard
>	**Bi**	209	545041.9	0.8				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 16:27:22
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4614.0	2.3	**5.0053**	0.264	5.3	mg/L	53	Standard
K	39	2398.5	2.1	**4.0028**	0.184	4.6	mg/L	53	Standard
Ca	43	113.3	12.7	**4.7722**	1.026	21.5	mg/L	28	Standard
Fe	54	7252.1	4.5	**4.8280**	0.125	2.6	mg/L	181	Standard
Fe	57	2030.1	4.0	**4.7230**	0.221	4.7	mg/L	257	Standard
> **Sc-1**	45	55150.2	3.0				mg/L	55220	Standard
Cl	35	45835.2	2.1				ug/L	35504	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1923.5	9.2				ug/L	2040	Standard
P	31	25456.4	2.5				ug/L	20435	Standard
S	34	3473.7	4.0				ug/L	2430	Standard
Sr	88	76.7	13.6				ug/L	75	Standard
C	12	90.0	0.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.0	113.3				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	5842.8	18.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.524		
Al	27	107.265		
Sc	45			
Ti	47	102.732		
V	51	100.031		
Cr	52	102.055		
Cr	53			
Mn	55	100.856		
Co	59	100.842		
Ni	60	101.689		
Cu	65	101.494		
Zn	66	100.789		
> Ge	72		101.125	
As	75	99.851		
Se	82	99.326		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 16:27:22
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	96.669		
Ag	107	98.157		
Cd	111	99.653		
Cd	114			
In	115			102.202
Sn	118	99.726		
Sb	123	99.185		
Ba	135	98.113		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.208		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.681		
U	238	102.882		
Bi	209			100.744
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 16:27:22
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 16:28:16
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67131.8	2.8				ug/L	74916	Standard
	Be	9	28.3	40.8	**0.0262**	0.012	45.2	ug/L	10	Standard
	Al	27	2920.3	34.7	**0.0163**	0.006	36.2	ug/L	1822	Standard
	Sc	45	56267.7	3.6				ug/L	55220	Standard
	Ti	47	38.0	2.6	**0.0210**	0.004	16.8	ug/L	34	Standard
	V	51	1661.2	5.6	**-0.0188**	0.009	47.1	ug/L	1938	Standard
	Cr	52	8418.7	1.4	**-0.1130**	0.019	16.9	ug/L	9522	Standard
	Cr	53	883.4	4.8	**0.3966**	0.043	10.8	ug/L	395	Standard
	Mn	55	915.7	3.3	**0.0002**	0.003	1118.4	ug/L	902	Standard
	Co	59	280.3	8.3	**0.0113**	0.003	23.7	ug/L	262	Standard
	Ni	60	270.3	5.6	**-0.0262**	0.007	28.6	ug/L	371	Standard
	Cu	65	136.3	8.6	**0.0024**	0.006	231.2	ug/L	106	Standard
	Zn	66	465.7	3.7	**0.0080**	0.015	185.4	ug/L	398	Standard
>	**Ge**	72	540817.2	1.3				ug/L	535147	Standard
	As	75	-34.0	85.0	**0.0299**	0.022	73.2	ug/L	-43	Standard
	Se	82	21.5	42.4	**0.0591**	0.065	109.7	ug/L	14	Standard
	Se-1	77	70.3	7.2	**0.1909**	0.046	24.3	ug/L	65	Standard
>	**Ga**	71	63.3	19.9				mg/L	97	Standard
	Rb	85	45.0	29.4				ug/L	15	Standard
	Y	89	468523.8	0.5				ug/L	465704	Standard
>	**Rh**	103	15.0	33.3				ug/L	10	Standard
	Mo	98	291.3	18.3	**0.1025**	0.015	14.9	ug/L	9	Standard
	Ag	107	139.7	15.6	**0.0118**	0.003	21.7	ug/L	82	Standard
	Cd	111	16.4	55.4	**0.0145**	0.004	24.7	mg/L	7	Standard
	Cd	114	48.7	43.6	**0.0170**	0.003	20.4	ug/L	21	Standard
>	**In**	115	639875.7	1.4				ug/L	619035	Standard
	Sn	118	1166.7	8.1	**0.0701**	0.016	22.8	ug/L	508	Standard
	Sb	123	660.1	27.5	**0.1253**	0.035	27.6	ug/L	86	Standard
	Ba	135	57.3	38.1	**0.0045**	0.009	195.0	ug/L	79	Standard
	Ce	140	36.7	20.8				ug/L	68	Standard
>	**Tb**	159	969041.7	1.0				ug/L	986982	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	78.3	14.8	**0.0144**	0.001	8.4	ug/L	13	Standard
	Tl	205	63.3	52.6	**0.0156**	0.004	26.4	ug/L	10	Standard
	Pb	206	295.0	18.9	**0.0113**	0.009	80.3	ug/L	264	Standard
	Pb	207	276.3	20.0	**0.0177**	0.010	56.3	ug/L	227	Standard
	Pb	208	1191.7	6.8	**0.0186**	0.004	19.5	ug/L	868	Standard
	U	238	60.3	49.7	**0.0157**	0.004	24.5	ug/L	8	Standard
>	**Bi**	209	554738.2	0.5				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 16:30:33
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**8.8353**	15.295	173.1	mg/L	2	Standard
Mg	24	35.0	42.9	**0.0026**	0.015	574.6	mg/L	53	Standard
K	39	45.0	29.4	**-0.0007**	0.024	3568.2	mg/L	53	Standard
Ca	43	20.0	25.0	**-0.5678**	0.244	42.9	mg/L	28	Standard
Fe	54	167.8	9.1	**-0.0064**	0.012	182.5	mg/L	181	Standard
Fe	57	263.3	17.1	**0.0197**	0.094	478.7	mg/L	257	Standard
Sc-1	45	56267.7	3.6				mg/L	55220	Standard
Cl	35	46157.5	0.4				ug/L	35504	Standard
Kr	83	3.3	34.6				ug/L	2	Standard
Br	81	2056.8	3.2				ug/L	2040	Standard
P	31	24833.7	3.8				ug/L	20435	Standard
S	34	3113.7	3.7				ug/L	2430	Standard
Sr	88	50.0	26.5				ug/L	75	Standard
C	12	90.0	11.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	168.7	37.2				mg/L	9	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	23	Standard
I	127	4048.9	10.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.060	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 16:30:33
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.367
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.537
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 16:30:33
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103008
Sample Date/Time: Thursday, June 30, 2016 16:31:29
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67414.7	2.6				ug/L	74916	Standard
	Be	9	23.3	24.7	**0.0211**	0.007	31.0	ug/L	10	Standard
	Al	27	697703.1	1.5	**4.4665**	0.053	1.2	ug/L	1822	Standard
	Sc	45	56883.3	3.1				ug/L	55220	Standard
	Ti	47	374.3	11.3	**0.8209**	0.099	12.1	ug/L	34	Standard
	V	51	3031.5	6.1	**0.1256**	0.021	17.0	ug/L	1938	Standard
	Cr	52	13310.2	0.8	**0.4153**	0.020	4.7	ug/L	9522	Standard
	Cr	53	1890.1	4.4	**1.2785**	0.079	6.2	ug/L	395	Standard
	Mn	55	49832.8	1.5	**5.5910**	0.086	1.5	ug/L	902	Standard
	Co	59	881.4	5.0	**0.0836**	0.005	5.8	ug/L	262	Standard
	Ni	60	1075.7	3.9	**0.3261**	0.016	4.9	ug/L	371	Standard
	Cu	65	445.3	2.7	**0.1397**	0.005	3.6	ug/L	106	Standard
	Zn	66	3558.4	0.9	**2.3451**	0.015	0.6	ug/L	398	Standard
>	**Ge**	72	544476.9	0.6				ug/L	535147	Standard
	As	75	37.1	82.1	**0.0823**	0.022	27.1	ug/L	-43	Standard
	Se	82	25.7	9.9	**0.0891**	0.018	19.8	ug/L	14	Standard
	Se-1	77	81.7	9.9	**0.3096**	0.087	28.2	ug/L	65	Standard
>	**Ga**	71	90.0	22.2				mg/L	97	Standard
	Rb	85	3642.1	3.5				ug/L	15	Standard
	Y	89	476384.2	2.4				ug/L	465704	Standard
>	**Rh**	103	21.7	74.2				ug/L	10	Standard
	Mo	98	124.4	15.8	**0.0511**	0.006	12.0	ug/L	9	Standard
	Ag	107	111.3	7.2	**0.0082**	0.001	12.5	ug/L	82	Standard
	Cd	111	22.8	8.9	**0.0171**	0.001	4.8	mg/L	7	Standard
	Cd	114	58.8	19.4	**0.0187**	0.002	10.1	ug/L	21	Standard
>	**In**	115	637810.6	0.1				ug/L	619035	Standard
	Sn	118	851.7	7.3	**0.0236**	0.009	39.2	ug/L	508	Standard
	Sb	123	241.7	16.4	**0.0487**	0.007	15.0	ug/L	86	Standard
	Ba	135	9792.2	0.8	**4.1375**	0.040	1.0	ug/L	79	Standard
	Ce	140	7248.4	1.1				ug/L	68	Standard
>	**Tb**	159	972412.9	0.5				ug/L	986982	Standard
	Ho	165	118.3	14.8				ug/L	10	Standard
	Tl	203	47.0	27.2	**0.0111**	0.001	12.5	ug/L	13	Standard
	Tl	205	40.0	12.5	**0.0127**	0.001	4.9	ug/L	10	Standard
	Pb	206	772.0	3.0	**0.0916**	0.004	4.5	ug/L	264	Standard
	Pb	207	671.7	2.4	**0.0914**	0.003	3.0	ug/L	227	Standard
	Pb	208	2701.1	2.6	**0.0916**	0.004	4.0	ug/L	868	Standard
	U	238	61.7	16.6	**0.0159**	0.001	8.3	ug/L	8	Standard
>	**Bi**	209	550857.6	0.2				ug/L	541014	Standard

Sample ID: L1606103008
Report Date/Time: Thursday, June 30, 2016 16:33:46
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	663.3	5.7	**0.6669**	0.021	3.2	mg/L	53	Standard
K	39	96.7	6.0	**0.0832**	0.007	9.0	mg/L	53	Standard
Ca	43	33.3	8.7	**0.1622**	0.212	130.8	mg/L	28	Standard
Fe	54	363.8	6.2	**0.1221**	0.018	14.7	mg/L	181	Standard
Fe	57	288.3	10.5	**0.0801**	0.094	117.2	mg/L	257	Standard
> **Sc-1**	45	56883.3	3.1				mg/L	55220	Standard
Cl	35	46234.4	1.6				ug/L	35504	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3327.0	3.1				ug/L	2040	Standard
P	31	24850.4	2.2				ug/L	20435	Standard
S	34	2960.3	3.4				ug/L	2430	Standard
Sr	88	66.7	24.1				ug/L	75	Standard
C	12	120.0	44.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	124.3	19.8				mg/L	9	Standard
Ho-1	165	118.3	14.8				mg/L	10	Standard
Er	166	120.0	33.3				mg/L	23	Standard
I	127	13813.0	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.987	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.743	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606103008
Report Date/Time: Thursday, June 30, 2016 16:33:46
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.033
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.819
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103013 WG573728-02
Sample Date/Time: Thursday, June 30, 2016 16:34:40
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67988.9	0.4				ug/L	74916	Standard
	Be	9	13.3	94.4	**0.0104**	0.013	127.2	ug/L	10	Standard
	Al	27	820817.4	1.2	**5.2095**	0.042	0.8	ug/L	1822	Standard
	Sc	45	58102.9	0.4				ug/L	55220	Standard
	Ti	47	348.7	6.4	**0.7490**	0.042	5.6	ug/L	34	Standard
	V	51	3037.8	4.0	**0.1221**	0.014	11.5	ug/L	1938	Standard
	Cr	52	13485.0	2.0	**0.4159**	0.029	6.9	ug/L	9522	Standard
	Cr	53	1880.1	4.5	**1.2495**	0.097	7.7	ug/L	395	Standard
	Mn	55	48555.0	1.2	**5.3761**	0.139	2.6	ug/L	902	Standard
	Co	59	705.7	1.6	**0.0613**	0.002	3.3	ug/L	262	Standard
	Ni	60	823.7	3.3	**0.2110**	0.010	4.6	ug/L	371	Standard
	Cu	65	477.7	3.8	**0.1514**	0.008	5.4	ug/L	106	Standard
	Zn	66	2294.5	2.6	**1.3677**	0.067	4.9	ug/L	398	Standard
>	**Ge**	72	551432.0	1.3				ug/L	535147	Standard
	As	75	61.7	53.3	**0.1002**	0.025	24.5	ug/L	-43	Standard
	Se	82	25.1	14.7	**0.0831**	0.029	34.7	ug/L	14	Standard
	Se-1	77	81.3	5.1	**0.2948**	0.041	13.8	ug/L	65	Standard
>	**Ga**	71	106.7	23.1				mg/L	97	Standard
	Rb	85	3122.0	4.7				ug/L	15	Standard
	Y	89	476977.3	1.4				ug/L	465704	Standard
>	**Rh**	103	23.3	53.9				ug/L	10	Standard
	Mo	98	80.0	20.0	**0.0372**	0.005	13.7	ug/L	9	Standard
	Ag	107	90.0	10.9	**0.0055**	0.001	24.8	ug/L	82	Standard
	Cd	111	8.2	7.2	**0.0112**	0.000	1.8	mg/L	7	Standard
	Cd	114	12.6	96.2	**0.0110**	0.002	18.1	ug/L	21	Standard
>	**In**	115	639996.7	2.1				ug/L	619035	Standard
	Sn	118	836.7	12.0	**0.0208**	0.013	62.4	ug/L	508	Standard
	Sb	123	169.8	31.7	**0.0353**	0.009	26.2	ug/L	86	Standard
	Ba	135	10432.3	1.4	**4.3955**	0.116	2.6	ug/L	79	Standard
	Ce	140	5774.4	3.1				ug/L	68	Standard
>	**Tb**	159	976928.2	1.0				ug/L	986982	Standard
	Ho	165	96.7	23.3				ug/L	10	Standard
	Tl	203	29.7	12.8	**0.0092**	0.000	4.1	ug/L	13	Standard
	Tl	205	30.0	44.1	**0.0115**	0.002	14.7	ug/L	10	Standard
	Pb	206	595.0	6.4	**0.0616**	0.006	9.8	ug/L	264	Standard
	Pb	207	524.7	2.4	**0.0638**	0.001	2.3	ug/L	227	Standard
	Pb	208	2121.1	2.9	**0.0633**	0.002	3.3	ug/L	868	Standard
	U	238	43.3	13.9	**0.0135**	0.001	5.9	ug/L	8	Standard
>	**Bi**	209	552576.0	0.9				ug/L	541014	Standard

Sample ID: L1606103013 WG573728-02
Report Date/Time: Thursday, June 30, 2016 16:36:57
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	903.4	7.9	**0.9013**	0.077	8.5	mg/L	53	Standard
K	39	136.7	7.6	**0.1445**	0.018	12.2	mg/L	53	Standard
Ca	43	45.0	40.1	**0.7451**	0.962	129.2	mg/L	28	Standard
Fe	54	370.4	5.4	**0.1211**	0.012	10.2	mg/L	181	Standard
Fe	57	331.7	15.5	**0.1724**	0.132	76.7	mg/L	257	Standard
> **Sc-1**	45	58102.9	0.4				mg/L	55220	Standard
Cl	35	45958.3	0.9				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	3450.4	5.0				ug/L	2040	Standard
P	31	26236.1	5.3				ug/L	20435	Standard
S	34	2760.3	4.3				ug/L	2430	Standard
Sr	88	101.7	11.4				ug/L	75	Standard
C	12	123.3	30.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	220.1	21.3				mg/L	9	Standard
Ho-1	165	96.7	23.3				mg/L	10	Standard
Er	166	66.7	17.3				mg/L	23	Standard
I	127	17006.2	5.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.753	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.043	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606103013 WG573728-02
Report Date/Time: Thursday, June 30, 2016 16:36:57
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.386
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103014S WG573728-07
Sample Date/Time: Thursday, June 30, 2016 16:37:52
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68017.4	2.0				ug/L	74916	Standard
	Be	9	52571.1	2.8	**54.8746**	0.821	1.5	ug/L	10	Standard
	Al	27	884621.2	0.8	**5.6134**	0.073	1.3	ug/L	1822	Standard
	Sc	45	57954.0	0.7				ug/L	55220	Standard
	Ti	47	382.3	7.1	**0.8317**	0.058	7.0	ug/L	34	Standard
	V	51	465045.2	1.2	**48.7359**	0.671	1.4	ug/L	1938	Standard
	Cr	52	472423.2	0.7	**50.1344**	0.252	0.5	ug/L	9522	Standard
	Cr	53	57743.2	0.8	**50.0432**	0.144	0.3	ug/L	395	Standard
	Mn	55	488346.3	1.0	**55.2189**	0.761	1.4	ug/L	902	Standard
	Co	59	406334.6	1.8	**48.5919**	0.790	1.6	ug/L	262	Standard
	Ni	60	115552.7	1.0	**50.0738**	0.232	0.5	ug/L	371	Standard
	Cu	65	114149.7	0.6	**50.3465**	0.021	0.0	ug/L	106	Standard
	Zn	66	68167.7	1.0	**50.7601**	0.485	1.0	ug/L	398	Standard
>	**Ge**	72	549382.7	0.6				ug/L	535147	Standard
	As	75	67432.6	1.3	**49.0917**	0.378	0.8	ug/L	-43	Standard
	Se	82	6675.7	1.0	**47.8820**	0.199	0.4	ug/L	14	Standard
	Se-1	77	4509.0	1.5	**48.1752**	0.774	1.6	ug/L	65	Standard
>	**Ga**	71	138.3	18.2				mg/L	97	Standard
	Rb	85	3512.1	1.5				ug/L	15	Standard
	Y	89	477860.5	2.0				ug/L	465704	Standard
>	**Rh**	103	38.3	41.9				ug/L	10	Standard
	Mo	98	89.1	17.4	**0.0398**	0.005	11.5	ug/L	9	Standard
	Ag	107	377521.2	0.7	**48.0780**	0.610	1.3	ug/L	82	Standard
	Cd	111	120236.4	0.9	**47.9064**	0.701	1.5	mg/L	7	Standard
	Cd	114	288334.3	2.5	**47.7095**	1.480	3.1	ug/L	21	Standard
>	**In**	115	643866.4	0.7				ug/L	619035	Standard
	Sn	118	865.0	13.7	**0.0243**	0.017	68.5	ug/L	508	Standard
	Sb	123	254042.3	1.7	**46.1289**	1.092	2.4	ug/L	86	Standard
	Ba	135	122514.7	0.7	**51.5064**	0.720	1.4	ug/L	79	Standard
	Ce	140	6418.0	1.5				ug/L	68	Standard
>	**Tb**	159	971839.6	1.4				ug/L	986982	Standard
	Ho	165	113.3	29.4				ug/L	10	Standard
	Tl	203	461326.3	0.5	**49.0175**	0.465	0.9	ug/L	13	Standard
	Tl	205	409190.2	0.5	**50.8922**	0.391	0.8	ug/L	10	Standard
	Pb	206	298682.3	0.5	**49.4115**	0.539	1.1	ug/L	264	Standard
	Pb	207	258990.8	0.6	**47.4056**	0.459	1.0	ug/L	227	Standard
	Pb	208	1072240.4	0.4	**50.8994**	0.435	0.9	ug/L	868	Standard
	U	238	379514.5	1.0	**48.7426**	0.751	1.5	ug/L	8	Standard
>	**Bi**	209	557731.9	0.6				ug/L	541014	Standard

Sample ID: L1606103014S WG573728-07
Report Date/Time: Thursday, June 30, 2016 16:40:09
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	893.4	2.6	**0.8930**	0.020	2.2	mg/L	53	Standard
K	39	115.0	34.8	**0.1103**	0.066	59.8	mg/L	53	Standard
Ca	43	55.0		**1.2933**	0.021	1.6	mg/L	28	Standard
Fe	54	390.4	4.9	**0.1347**	0.011	8.2	mg/L	181	Standard
Fe	57	333.3	10.0	**0.1788**	0.089	49.6	mg/L	257	Standard
> **Sc-1**	45	57954.0	0.7				mg/L	55220	Standard
Cl	35	44711.9	2.2				ug/L	35504	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	9322.9	2.7				ug/L	2040	Standard
P	31	26069.1	1.5				ug/L	20435	Standard
S	34	2676.9	0.7				ug/L	2430	Standard
Sr	88	95.0	19.0				ug/L	75	Standard
C	12	133.3	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	242.2	12.0				mg/L	9	Standard
Ho-1	165	113.3	29.4				mg/L	10	Standard
Er	166	93.3	34.4				mg/L	23	Standard
I	127	30041.6	8.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606103014S WG573728-07
Report Date/Time: Thursday, June 30, 2016 16:40:09
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		104.011
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		103.090
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103015SD WG573728-08
Sample Date/Time: Thursday, June 30, 2016 16:41:03
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67875.1	2.1				ug/L	74916	Standard
	Be	9	54554.7	1.2	**57.0744**	0.504	0.9	ug/L	10	Standard
	Al	27	838737.2	2.0	**5.3339**	0.157	2.9	ug/L	1822	Standard
	Sc	45	58265.2	2.7				ug/L	55220	Standard
	Ti	47	412.3	3.3	**0.9165**	0.047	5.2	ug/L	34	Standard
	V	51	473565.2	1.0	**50.3192**	0.324	0.6	ug/L	1938	Standard
	Cr	52	480110.1	0.9	**51.6869**	0.596	1.2	ug/L	9522	Standard
	Cr	53	59545.1	0.6	**52.3429**	1.066	2.0	ug/L	395	Standard
	Mn	55	496384.2	1.0	**56.9038**	0.381	0.7	ug/L	902	Standard
	Co	59	417941.4	1.2	**50.6714**	0.393	0.8	ug/L	262	Standard
	Ni	60	118225.1	0.4	**51.9492**	0.656	1.3	ug/L	371	Standard
	Cu	65	116537.8	0.5	**52.1164**	0.812	1.6	ug/L	106	Standard
	Zn	66	69765.3	0.6	**52.6823**	0.565	1.1	ug/L	398	Standard
>	**Ge**	72	541933.8	1.6				ug/L	535147	Standard
	As	75	68942.8	1.1	**50.8879**	0.915	1.8	ug/L	-43	Standard
	Se	82	6922.4	1.2	**50.3465**	0.857	1.7	ug/L	14	Standard
	Se-1	77	4676.4	2.8	**50.6984**	2.081	4.1	ug/L	65	Standard
>	**Ga**	71	123.3	11.7				mg/L	97	Standard
	Rb	85	3528.7	4.8				ug/L	15	Standard
	Y	89	475192.3	2.2				ug/L	465704	Standard
>	**Rh**	103	30.0	33.3				ug/L	10	Standard
	Mo	98	122.2	2.5	**0.0500**	0.001	2.7	ug/L	9	Standard
	Ag	107	382714.4	1.3	**48.7537**	1.201	2.5	ug/L	82	Standard
	Cd	111	123349.9	0.8	**49.1552**	0.647	1.3	mg/L	7	Standard
	Cd	114	297106.9	0.9	**49.1645**	0.530	1.1	ug/L	21	Standard
>	**In**	115	643770.2	1.2				ug/L	619035	Standard
	Sn	118	871.7	14.1	**0.0254**	0.018	71.1	ug/L	508	Standard
	Sb	123	262546.4	2.1	**47.6862**	1.532	3.2	ug/L	86	Standard
	Ba	135	127056.2	0.5	**53.4280**	0.875	1.6	ug/L	79	Standard
	Ce	140	6346.3	1.8				ug/L	68	Standard
>	**Tb**	159	973181.1	1.9				ug/L	986982	Standard
	Ho	165	133.3	20.7				ug/L	10	Standard
	Tl	203	470669.9	1.0	**50.3691**	1.346	2.7	ug/L	13	Standard
	Tl	205	417244.6	1.5	**52.2657**	1.466	2.8	ug/L	10	Standard
	Pb	206	303673.3	0.1	**50.5928**	0.859	1.7	ug/L	264	Standard
	Pb	207	264554.7	0.6	**48.7688**	0.992	2.0	ug/L	227	Standard
	Pb	208	1097482.5	0.3	**52.4671**	0.888	1.7	ug/L	868	Standard
	U	238	389241.3	1.7	**50.3480**	1.440	2.9	ug/L	8	Standard
>	**Bi**	209	553900.9	1.6				ug/L	541014	Standard

Sample ID: L1606103015SD WG573728-08
Report Date/Time: Thursday, June 30, 2016 16:43:20
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	865.0	7.4	**0.8583**	0.047	5.4	mg/L	53	Standard
K	39	138.3	19.9	**0.1469**	0.047	31.9	mg/L	53	Standard
Ca	43	51.7	14.8	**1.1028**	0.453	41.0	mg/L	28	Standard
Fe	54	385.4	8.6	**0.1300**	0.019	14.7	mg/L	181	Standard
Fe	57	286.7	1.0	**0.0570**	0.013	21.9	mg/L	257	Standard
> **Sc-1**	45	58265.2	2.7				mg/L	55220	Standard
Cl	35	44248.5	1.6				ug/L	35504	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	16452.3	2.0				ug/L	2040	Standard
P	31	25105.8	2.2				ug/L	20435	Standard
S	34	2581.9	7.2				ug/L	2430	Standard
Sr	88	71.7	28.2				ug/L	75	Standard
C	12	160.0	12.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	221.6	21.3				mg/L	9	Standard
Ho-1	165	133.3	20.7				mg/L	10	Standard
Er	166	106.7	14.3				mg/L	23	Standard
I	127	27847.3	6.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.601	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.268	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606103015SD WG573728-08
Report Date/Time: Thursday, June 30, 2016 16:43:20
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.996
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.382
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103020
Sample Date/Time: Thursday, June 30, 2016 16:44:15
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67717.7	1.6				ug/L	74916	Standard
	Be	9	31.7	55.5	**0.0296**	0.019	62.9	ug/L	10	Standard
	Al	27	18491.3	2.9	**0.1156**	0.005	4.0	ug/L	1822	Standard
	Sc	45	57242.9	0.8				ug/L	55220	Standard
	Ti	47	66.0	12.9	**0.0864**	0.020	23.2	ug/L	34	Standard
	V	51	2032.2	8.1	**0.0187**	0.019	103.0	ug/L	1938	Standard
	Cr	52	12676.3	1.6	**0.3406**	0.022	6.4	ug/L	9522	Standard
	Cr	53	1410.1	13.3	**0.8516**	0.178	20.9	ug/L	395	Standard
	Mn	55	2390.5	1.9	**0.1670**	0.004	2.5	ug/L	902	Standard
	Co	59	400.0	5.6	**0.0253**	0.002	9.8	ug/L	262	Standard
	Ni	60	453.3	1.7	**0.0524**	0.002	2.9	ug/L	371	Standard
	Cu	65	1268.4	3.5	**0.5041**	0.018	3.5	ug/L	106	Standard
	Zn	66	1962.1	0.6	**1.1318**	0.007	0.6	ug/L	398	Standard
>	**Ge**	72	546628.1	1.1				ug/L	535147	Standard
	As	75	-22.1	178.4	**0.0388**	0.029	75.1	ug/L	-43	Standard
	Se	82	22.8	7.2	**0.0680**	0.010	15.1	ug/L	14	Standard
	Se-1	77	71.3	6.3	**0.1942**	0.057	29.2	ug/L	65	Standard
>	**Ga**	71	41.7	36.7				mg/L	97	Standard
	Rb	85	108.3	25.4				ug/L	15	Standard
	Y	89	478150.4	1.6				ug/L	465704	Standard
>	**Rh**	103	8.3	34.6				ug/L	10	Standard
	Mo	98	29.5	24.1	**0.0215**	0.002	9.9	ug/L	9	Standard
	Ag	107	170.0	12.2	**0.0157**	0.003	17.2	ug/L	82	Standard
	Cd	111	31.9	35.5	**0.0207**	0.005	21.9	mg/L	7	Standard
	Cd	114	83.7	51.2	**0.0228**	0.007	30.7	ug/L	21	Standard
>	**In**	115	641678.7	0.9				ug/L	619035	Standard
	Sn	118	920.0	3.8	**0.0329**	0.004	12.7	ug/L	508	Standard
	Sb	123	3097.0	31.5	**0.5680**	0.176	30.9	ug/L	86	Standard
	Ba	135	1108.0	1.5	**0.4480**	0.008	1.8	ug/L	79	Standard
	Ce	140	60.0	25.0				ug/L	68	Standard
>	**Tb**	159	980127.5	0.7				ug/L	986982	Standard
	Ho	165	5.0	0.0				ug/L	10	Standard
	Tl	203	200.0	29.5	**0.0275**	0.006	23.1	ug/L	13	Standard
	Tl	205	186.7	29.5	**0.0312**	0.007	22.3	ug/L	10	Standard
	Pb	206	522.0	6.9	**0.0496**	0.006	12.3	ug/L	264	Standard
	Pb	207	476.3	8.8	**0.0551**	0.008	14.1	ug/L	227	Standard
	Pb	208	1956.0	3.0	**0.0557**	0.003	5.3	ug/L	868	Standard
	U	238	100.3	29.1	**0.0209**	0.004	18.2	ug/L	8	Standard
>	**Bi**	209	551371.4	0.1				ug/L	541014	Standard

Sample ID: L1606103020
Report Date/Time: Thursday, June 30, 2016 16:46:32
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**18.0048**	15.588	86.6	mg/L	2	Standard
Mg	24	676.7	6.7	**0.6767**	0.044	6.4	mg/L	53	Standard
K	39	40.0	33.1	**-0.0106**	0.021	201.8	mg/L	53	Standard
Ca	43	20.0	43.3	**-0.5833**	0.468	80.3	mg/L	28	Standard
Fe	54	171.4	3.1	**-0.0061**	0.003	50.1	mg/L	181	Standard
Fe	57	270.0	8.1	**0.0269**	0.052	193.9	mg/L	257	Standard
Sc-1	45	57242.9	0.8				mg/L	55220	Standard
Cl	35	44467.2	1.4				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2603.6	5.0				ug/L	2040	Standard
P	31	23429.8	1.3				ug/L	20435	Standard
S	34	2785.3	4.1				ug/L	2430	Standard
Sr	88	71.7	8.1				ug/L	75	Standard
C	12	156.7	25.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	19.8	50.4				mg/L	9	Standard
Ho-1	165	5.0	0.0				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	2625.2	29.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		90.391	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.145	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606103020
Report Date/Time: Thursday, June 30, 2016 16:46:32
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.658
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.914
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103023
Sample Date/Time: Thursday, June 30, 2016 17:02:07
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63782.3	1.2				ug/L	74916	Standard
	Be	9	10.0	50.0	**0.0075**	0.006	73.8	ug/L	10	Standard
	Al	27	21553.7	3.8	**0.1436**	0.007	4.9	ug/L	1822	Standard
	Sc	45	53141.4	2.4				ug/L	55220	Standard
	Ti	47	62.3	15.2	**0.0841**	0.024	28.6	ug/L	34	Standard
	V	51	1922.2	10.9	**0.0157**	0.023	148.6	ug/L	1938	Standard
	Cr	52	11950.0	1.2	**0.3174**	0.013	4.0	ug/L	9522	Standard
	Cr	53	1446.7	3.8	**0.9371**	0.045	4.8	ug/L	395	Standard
	Mn	55	1521.4	1.0	**0.0755**	0.003	3.6	ug/L	902	Standard
	Co	59	290.7	3.0	**0.0136**	0.001	9.6	ug/L	262	Standard
	Ni	60	439.0	5.6	**0.0544**	0.012	21.6	ug/L	371	Standard
	Cu	65	1254.4	3.8	**0.5219**	0.022	4.3	ug/L	106	Standard
	Zn	66	2074.8	3.1	**1.2840**	0.054	4.2	ug/L	398	Standard
>	**Ge**	72	524092.0	0.7				ug/L	535147	Standard
	As	75	297.5	25.4	**0.2818**	0.056	19.8	ug/L	-43	Standard
	Se	82	160.0	13.1	**1.1075**	0.150	13.6	ug/L	14	Standard
	Se-1	77	81.3	3.8	**0.3406**	0.037	10.7	ug/L	65	Standard
>	**Ga**	71	43.3	6.7				mg/L	97	Standard
	Rb	85	115.0	19.9				ug/L	15	Standard
	Y	89	459127.5	0.2				ug/L	465704	Standard
>	**Rh**	103	13.3	43.3				ug/L	10	Standard
	Mo	98	28.3	20.3	**0.0216**	0.002	8.1	ug/L	9	Standard
	Ag	107	113.3	10.8	**0.0092**	0.001	15.9	ug/L	82	Standard
	Cd	111	10.6	35.6	**0.0124**	0.002	12.8	mg/L	7	Standard
	Cd	114	7.7	60.4	**0.0103**	0.001	8.1	ug/L	21	Standard
>	**In**	115	609200.4	1.8				ug/L	619035	Standard
	Sn	118	1141.7	8.1	**0.0747**	0.012	15.6	ug/L	508	Standard
	Sb	123	1005.9	32.6	**0.1969**	0.061	30.9	ug/L	86	Standard
	Ba	135	1059.0	1.3	**0.4512**	0.012	2.8	ug/L	79	Standard
	Ce	140	61.7	20.4				ug/L	68	Standard
>	**Tb**	159	932555.9	1.8				ug/L	986982	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	35.7	18.2	**0.0100**	0.001	6.7	ug/L	13	Standard
	Tl	205	33.3	37.7	**0.0121**	0.002	14.2	ug/L	10	Standard
	Pb	206	284.0	7.9	**0.0117**	0.003	27.8	ug/L	264	Standard
	Pb	207	253.0	6.7	**0.0155**	0.003	16.6	ug/L	227	Standard
	Pb	208	1027.7	2.8	**0.0130**	0.001	5.3	ug/L	868	Standard
	U	238	10.3	22.3	**0.0093**	0.000	3.2	ug/L	8	Standard
>	**Bi**	209	529997.9	1.5				ug/L	541014	Standard

Sample ID: L1606103023
Report Date/Time: Thursday, June 30, 2016 17:04:24
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.5487**	16.530	173.1	mg/L	2	Standard
Mg	24	645.0	4.7	**0.6963**	0.042	6.1	mg/L	53	Standard
K	39	45.0	22.2	**0.0036**	0.019	534.5	mg/L	53	Standard
Ca	43	33.3	31.2	**0.2833**	0.596	210.3	mg/L	28	Standard
Fe	54	148.6	19.1	**-0.0131**	0.023	172.7	mg/L	181	Standard
Fe	57	245.0	7.1	**0.0124**	0.064	512.5	mg/L	257	Standard
> **Sc-1**	45	53141.4	2.4				mg/L	55220	Standard
Cl	35	44686.5	0.9				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	29882.8	4.2				ug/L	2040	Standard
P	31	23481.5	1.6				ug/L	20435	Standard
S	34	2808.6	5.2				ug/L	2430	Standard
Sr	88	83.3	6.9				ug/L	75	Standard
C	12	106.7	39.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	26.2	45.7				mg/L	9	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	9686.4	4.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.934	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606103023
Report Date/Time: Thursday, June 30, 2016 17:04:24
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.411	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.964	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 17:05:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63849.3	3.2				ug/L	74916	Standard
	Be	9	49356.9	1.6	**54.9095**	1.251	2.3	ug/L	10	Standard
	Al	27	8088490.1	1.6	**54.7076**	1.005	1.8	ug/L	1822	Standard
	Sc	45	53355.5	2.2				ug/L	55220	Standard
	Ti	47	41943.3	0.2	**100.6143**	0.393	0.4	ug/L	34	Standard
	V	51	462586.4	1.2	**49.3276**	0.830	1.7	ug/L	1938	Standard
	Cr	52	460362.3	0.6	**49.6985**	0.340	0.7	ug/L	9522	Standard
	Cr	53	57448.8	3.1	**50.6666**	1.791	3.5	ug/L	395	Standard
	Mn	55	437257.5	0.7	**50.2932**	0.228	0.5	ug/L	902	Standard
	Co	59	407514.6	0.3	**49.5851**	0.254	0.5	ug/L	262	Standard
	Ni	60	112856.8	0.5	**49.7588**	0.040	0.1	ug/L	371	Standard
	Cu	65	110957.8	0.5	**49.7932**	0.409	0.8	ug/L	106	Standard
	Zn	66	66373.7	0.9	**50.2844**	0.584	1.2	ug/L	398	Standard
>	Ge	72	539959.0	0.4				ug/L	535147	Standard
	As	75	65894.6	0.6	**48.8109**	0.285	0.6	ug/L	-43	Standard
	Se	82	6708.7	1.0	**48.9625**	0.610	1.2	ug/L	14	Standard
	Se-1	77	4564.0	1.3	**49.6319**	0.771	1.6	ug/L	65	Standard
>	Ga	71	60.0	38.2				mg/L	97	Standard
	Rb	85	991.7	7.3				ug/L	15	Standard
	Y	89	461440.3	2.3				ug/L	465704	Standard
>	Rh	103	25.0	34.6				ug/L	10	Standard
	Mo	98	299758.4	0.9	**95.3056**	1.188	1.2	ug/L	9	Standard
	Ag	107	368040.6	0.9	**48.3525**	0.807	1.7	ug/L	82	Standard
	Cd	111	118857.8	1.6	**48.8478**	0.437	0.9	mg/L	7	Standard
	Cd	114	294881.5	2.1	**50.3254**	0.867	1.7	ug/L	21	Standard
>	In	115	624167.7	1.1				ug/L	619035	Standard
	Sn	118	320651.0	1.0	**48.7698**	0.986	2.0	ug/L	508	Standard
	Sb	123	261017.7	0.8	**48.8877**	0.350	0.7	ug/L	86	Standard
	Ba	135	112221.4	0.2	**48.6682**	0.594	1.2	ug/L	79	Standard
	Ce	140	108.3	19.2				ug/L	68	Standard
>	Tb	159	953179.7	0.3				ug/L	986982	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	451684.9	1.1	**49.9622**	0.209	0.4	ug/L	13	Standard
	Tl	205	402076.6	2.1	**52.0628**	1.208	2.3	ug/L	10	Standard
	Pb	206	286059.5	0.5	**49.2676**	0.522	1.1	ug/L	264	Standard
	Pb	207	259413.7	0.9	**49.4369**	0.743	1.5	ug/L	227	Standard
	Pb	208	1045434.4	0.6	**51.6654**	0.223	0.4	ug/L	868	Standard
	U	238	381876.9	0.6	**51.0597**	0.529	1.0	ug/L	8	Standard
>	Bi	209	535721.3	0.7				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 17:07:36
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4462.3	3.0	**4.9989**	0.129	2.6	mg/L	53	Standard
K	39	2393.5	1.6	**4.1281**	0.026	0.6	mg/L	53	Standard
Ca	43	101.7	19.9	**4.2731**	1.076	25.2	mg/L	28	Standard
Fe	54	7194.1	2.2	**4.9576**	0.224	4.5	mg/L	181	Standard
Fe	57	2128.5	5.2	**5.1769**	0.405	7.8	mg/L	257	Standard
> **Sc-1**	45	53355.5	2.2				mg/L	55220	Standard
Cl	35	44134.9	1.1				ug/L	35504	Standard
Kr	83	3.3	34.6				ug/L	2	Standard
Br	81	2123.5	11.5				ug/L	2040	Standard
P	31	25097.4	2.7				ug/L	20435	Standard
S	34	3133.7	1.4				ug/L	2430	Standard
Sr	88	83.3	18.3				ug/L	75	Standard
C	12	53.3	28.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	6.2	87.4				mg/L	9	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	17556.8	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.819		
Al	27	109.415		
Sc	45			
Ti	47	100.614		
V	51	98.655		
Cr	52	99.397		
Cr	53			
Mn	55	100.586		
Co	59	99.170		
Ni	60	99.518		
Cu	65	99.586		
Zn	66	100.569		
> Ge	72		100.899	
As	75	97.622		
Se	82	97.925		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 17:07:36
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	95.306		
Ag	107	96.705		
Cd	111	97.696		
Cd	114			
In	115		100.829	
Sn	118	97.540		
Sb	123	97.775		
Ba	135	97.336		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.924		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.331		
U	238	102.119		
Bi	209		99.022	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 17:08:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64853.5	1.7				ug/L	74916	Standard
	Be	9	11.7	49.5	**0.0092**	0.006	70.0	ug/L	10	Standard
	Al	27	2441.9	26.4	**0.0139**	0.004	28.7	ug/L	1822	Standard
	Sc	45	55307.4	1.7				ug/L	55220	Standard
	Ti	47	39.3	16.9	**0.0231**	0.017	73.0	ug/L	34	Standard
	V	51	1667.1	3.6	**-0.0203**	0.008	40.7	ug/L	1938	Standard
	Cr	52	8265.9	0.8	**-0.1408**	0.008	5.6	ug/L	9522	Standard
	Cr	53	790.0	9.9	**0.3047**	0.061	20.2	ug/L	395	Standard
	Mn	55	874.0	4.5	**-0.0057**	0.006	96.3	ug/L	902	Standard
	Co	59	299.7	6.5	**0.0132**	0.003	20.8	ug/L	262	Standard
	Ni	60	269.0	3.5	**-0.0282**	0.005	18.6	ug/L	371	Standard
	Cu	65	120.0	19.6	**-0.0055**	0.011	201.6	ug/L	106	Standard
	Zn	66	403.7	3.9	**-0.0430**	0.010	24.3	ug/L	398	Standard
>	**Ge**	72	547396.9	1.1				ug/L	535147	Standard
	As	75	-23.1	181.6	**0.0385**	0.031	79.4	ug/L	-43	Standard
	Se	82	20.9	23.9	**0.0541**	0.036	66.4	ug/L	14	Standard
	Se-1	77	81.0	11.8	**0.2976**	0.102	34.1	ug/L	65	Standard
>	**Ga**	71	48.3	33.3				mg/L	97	Standard
	Rb	85	41.7	30.2				ug/L	15	Standard
	Y	89	475064.4	0.3				ug/L	465704	Standard
>	**Rh**	103	13.3	21.7				ug/L	10	Standard
	Mo	98	285.8	27.9	**0.1014**	0.024	24.0	ug/L	9	Standard
	Ag	107	160.3	23.1	**0.0146**	0.005	31.9	ug/L	82	Standard
	Cd	111	19.5	53.6	**0.0157**	0.004	26.4	mg/L	7	Standard
	Cd	114	57.3	51.9	**0.0185**	0.005	26.6	ug/L	21	Standard
>	**In**	115	636477.0	0.5				ug/L	619035	Standard
	Sn	118	1158.4	16.3	**0.0698**	0.029	41.4	ug/L	508	Standard
	Sb	123	730.1	29.4	**0.1386**	0.040	28.9	ug/L	86	Standard
	Ba	135	55.7	46.2	**0.0040**	0.011	269.0	ug/L	79	Standard
	Ce	140	30.0	28.9				ug/L	68	Standard
>	**Tb**	159	957058.2	1.0				ug/L	986982	Standard
	Ho	165	3.3	173.2				ug/L	10	Standard
	Tl	203	95.0	41.0	**0.0162**	0.004	25.7	ug/L	13	Standard
	Tl	205	71.7	33.0	**0.0167**	0.003	17.6	ug/L	10	Standard
	Pb	206	321.7	12.5	**0.0162**	0.007	41.2	ug/L	264	Standard
	Pb	207	271.0	17.9	**0.0171**	0.009	52.3	ug/L	227	Standard
	Pb	208	1145.0	12.1	**0.0168**	0.007	39.7	ug/L	868	Standard
	U	238	62.7	41.3	**0.0160**	0.003	20.9	ug/L	8	Standard
>	**Bi**	209	550463.7	0.4				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 17:10:48
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.3779**	16.234	173.1	mg/L	2	Standard
Mg	24	28.3	27.0	**-0.0037**	0.009	235.7	mg/L	53	Standard
K	39	41.7	61.6	**-0.0052**	0.044	841.2	mg/L	53	Standard
Ca	43	13.3	78.1	**-0.9220**	0.590	63.9	mg/L	28	Standard
Fe	54	174.2	10.0	**-0.0003**	0.010	3275.9	mg/L	181	Standard
Fe	57	268.3	11.2	**0.0460**	0.067	146.1	mg/L	257	Standard
> **Sc-1**	45	55307.4	1.7				mg/L	55220	Standard
Cl	35	45000.1	2.4				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2080.1	6.5				ug/L	2040	Standard
P	31	24610.0	2.1				ug/L	20435	Standard
S	34	3330.4	2.0				ug/L	2430	Standard
Sr	88	71.7	17.6				ug/L	75	Standard
C	12	130.0	30.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	128.6	20.1				mg/L	9	Standard
Ho-1	165	3.3	173.2				mg/L	10	Standard
Er	166	30.0	88.2				mg/L	23	Standard
I	127	6899.9	5.5				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.289	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 17:10:48
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.818
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.747
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 17:10:48
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: PBW 2C WG573840-02
Sample Date/Time: Thursday, June 30, 2016 17:11:43
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60134.2	2.9				ug/L	74916	Standard
	Be	9	26.7	10.8	**0.0279**	0.004	13.9	ug/L	10	Standard
	Al	27	2303.5	2.7	**0.0142**	0.000	1.4	ug/L	1822	Standard
	Sc	45	52908.9	1.9				ug/L	55220	Standard
	Ti	47	32.7	61.9	**0.0123**	0.051	414.4	ug/L	34	Standard
	V	51	1551.2	8.5	**-0.0217**	0.015	69.8	ug/L	1938	Standard
	Cr	52	6813.9	1.4	**-0.2496**	0.013	5.2	ug/L	9522	Standard
	Cr	53	650.0	8.1	**0.2202**	0.049	22.4	ug/L	395	Standard
	Mn	55	521.7	1.8	**-0.0419**	0.001	2.6	ug/L	902	Standard
	Co	59	225.3	10.2	**0.0060**	0.003	47.7	ug/L	262	Standard
	Ni	60	258.3	15.9	**-0.0255**	0.019	74.1	ug/L	371	Standard
	Cu	65	124.3	5.4	**-0.0000**	0.000	210884.2	ug/L	106	Standard
	Zn	66	1158.0	4.1	**0.5824**	0.036	6.3	ug/L	398	Standard
>	**Ge**	72	513337.9	0.2				ug/L	535147	Standard
	As	75	-72.9	25.6	**-0.0015**	0.015	951.7	ug/L	-43	Standard
	Se	82	16.3	51.8	**0.0282**	0.065	229.6	ug/L	14	Standard
	Se-1	77	62.0	9.8	**0.1360**	0.069	50.7	ug/L	65	Standard
>	**Ga**	71	40.0	37.5				mg/L	97	Standard
	Rb	85	28.3	27.0				ug/L	15	Standard
	Y	89	442812.9	2.2				ug/L	465704	Standard
>	**Rh**	103	16.7	45.8				ug/L	10	Standard
	Mo	98	60.6	6.2	**0.0328**	0.001	3.7	ug/L	9	Standard
	Ag	107	98.7	12.8	**0.0077**	0.002	23.6	ug/L	82	Standard
	Cd	111	5.2	10.9	**0.0102**	0.000	2.5	mg/L	7	Standard
	Cd	114	16.2	115.2	**0.0119**	0.003	28.6	ug/L	21	Standard
>	**In**	115	588076.1	0.4				ug/L	619035	Standard
	Sn	118	390.0	24.7	**-0.0403**	0.016	38.6	ug/L	508	Standard
	Sb	123	152.7	23.1	**0.0348**	0.007	20.3	ug/L	86	Standard
	Ba	135	25.3	29.6	**-0.0080**	0.003	42.8	ug/L	79	Standard
	Ce	140	5.0	100.0				ug/L	68	Standard
>	**Tb**	159	902943.7	0.5				ug/L	986982	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	33.3	39.2	**0.0098**	0.001	15.1	ug/L	13	Standard
	Tl	205	41.7	48.5	**0.0132**	0.003	20.2	ug/L	10	Standard
	Pb	206	263.0	1.5	**0.0084**	0.001	8.1	ug/L	264	Standard
	Pb	207	234.0	5.6	**0.0123**	0.003	21.2	ug/L	227	Standard
	Pb	208	980.7	3.9	**0.0111**	0.002	17.9	ug/L	868	Standard
	U	238	12.0	30.0	**0.0095**	0.000	5.2	ug/L	8	Standard
>	**Bi**	209	525698.7	0.1				ug/L	541014	Standard

Sample ID: PBW 2C WG573840-02
Report Date/Time: Thursday, June 30, 2016 17:14:00
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.9894**	17.293	173.1	mg/L	2	Standard
Mg	24	45.0	29.4	**0.0166**	0.015	89.5	mg/L	53	Standard
K	39	58.3	34.6	**0.0269**	0.034	125.5	mg/L	53	Standard
Ca	43	26.7	28.6	**-0.0940**	0.479	509.5	mg/L	28	Standard
Fe	54	89.3	21.9	**-0.0554**	0.013	23.0	mg/L	181	Standard
Fe	57	223.3	17.4	**-0.0467**	0.096	206.3	mg/L	257	Standard
> **Sc-1**	45	52908.9	1.9				mg/L	55220	Standard
Cl	35	41658.5	0.8				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	2276.8	4.6				ug/L	2040	Standard
P	31	11304.2	3.8				ug/L	20435	Standard
S	34	2982.0	1.4				ug/L	2430	Standard
Sr	88	63.3	4.6				ug/L	75	Standard
C	12	60.0	28.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.9	48.5				mg/L	9	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	27787.1	2.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.268	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 2C WG573840-02
Report Date/Time: Thursday, June 30, 2016 17:14:00
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.999
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.169
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 2C WG573840-02
Report Date/Time: Thursday, June 30, 2016 17:14:00
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: LCSW 2C WG573840-03
Sample Date/Time: Thursday, June 30, 2016 17:14:55
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64058.5	2.3				ug/L	74916	Standard
	Be	9	50870.3	3.1	**56.3929**	1.713	3.0	ug/L	10	Standard
	Al	27	13599.5	6.8	**0.0893**	0.006	7.0	ug/L	1822	Standard
	Sc	45	55821.0	2.8				ug/L	55220	Standard
	Ti	47	45.7	17.7	**0.0367**	0.018	49.2	ug/L	34	Standard
	V	51	483182.7	1.2	**50.2459**	0.127	0.3	ug/L	1938	Standard
	Cr	52	488742.8	1.3	**51.4889**	0.346	0.7	ug/L	9522	Standard
	Cr	53	60345.0	1.6	**51.9074**	0.879	1.7	ug/L	395	Standard
	Mn	55	457613.2	1.8	**51.3293**	0.603	1.2	ug/L	902	Standard
	Co	59	422454.4	1.2	**50.1274**	0.388	0.8	ug/L	262	Standard
	Ni	60	120601.1	1.4	**51.8594**	0.313	0.6	ug/L	371	Standard
	Cu	65	118799.3	1.3	**51.9910**	0.427	0.8	ug/L	106	Standard
	Zn	66	70445.7	1.1	**52.0559**	0.152	0.3	ug/L	398	Standard
>	**Ge**	72	553696.9	1.0				ug/L	535147	Standard
	As	75	67356.4	1.3	**48.6560**	0.417	0.9	ug/L	-43	Standard
	Se	82	6884.8	0.9	**49.0024**	0.551	1.1	ug/L	14	Standard
	Se-1	77	4835.4	1.6	**51.2958**	0.557	1.1	ug/L	65	Standard
>	**Ga**	71	53.3	28.6				mg/L	97	Standard
	Rb	85	113.3	21.8				ug/L	15	Standard
	Y	89	469203.9	2.5				ug/L	465704	Standard
>	**Rh**	103	38.3	19.9				ug/L	10	Standard
	Mo	98	79.6	14.3	**0.0370**	0.003	8.5	ug/L	9	Standard
	Ag	107	391921.4	0.8	**50.2702**	0.420	0.8	ug/L	82	Standard
	Cd	111	124239.8	0.9	**49.8552**	0.355	0.7	mg/L	7	Standard
	Cd	114	299345.2	1.9	**49.8798**	0.788	1.6	ug/L	21	Standard
>	**In**	115	639302.5	1.6				ug/L	619035	Standard
	Sn	118	836.7	4.5	**0.0211**	0.007	33.7	ug/L	508	Standard
	Sb	123	262807.0	2.6	**48.0511**	0.600	1.2	ug/L	86	Standard
	Ba	135	118153.6	1.3	**50.0298**	0.818	1.6	ug/L	79	Standard
	Ce	140	73.3	17.2				ug/L	68	Standard
>	**Tb**	159	964089.7	1.6				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	477074.5	0.5	**51.4398**	0.122	0.2	ug/L	13	Standard
	Tl	205	415235.0	1.1	**52.4076**	0.524	1.0	ug/L	10	Standard
	Pb	206	305633.8	1.2	**51.3093**	0.493	1.0	ug/L	264	Standard
	Pb	207	268222.4	0.6	**49.8228**	0.265	0.5	ug/L	227	Standard
	Pb	208	1106889.2	0.5	**53.3229**	0.200	0.4	ug/L	868	Standard
	U	238	390961.0	1.3	**50.9526**	0.530	1.0	ug/L	8	Standard
>	**Bi**	209	549588.4	0.3				ug/L	541014	Standard

Sample ID: LCSW 2C WG573840-03
Report Date/Time: Thursday, June 30, 2016 17:17:12
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	31.7	32.9	**-0.0002**	0.012	6226.9	mg/L	53	Standard
K	39	75.0	33.3	**0.0507**	0.045	88.8	mg/L	53	Standard
Ca	43	25.0	20.0	**-0.2728**	0.293	107.4	mg/L	28	Standard
Fe	54	199.1	3.0	**0.0156**	0.007	47.8	mg/L	181	Standard
Fe	57	235.0	25.5	**-0.0464**	0.163	351.9	mg/L	257	Standard
Sc-1	45	55821.0	2.8				mg/L	55220	Standard
Cl	35	44818.9	2.3				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2590.2	4.5				ug/L	2040	Standard
P	31	24174.3	4.1				ug/L	20435	Standard
S	34	2943.6	1.1				ug/L	2430	Standard
Sr	88	83.3	18.3				ug/L	75	Standard
C	12	100.0	10.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	-0.5	173.2				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	2098.5	24.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.507	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.466	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 2C WG573840-03
Report Date/Time: Thursday, June 30, 2016 17:17:12
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.274
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.585
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 2C WG573840-03
Report Date/Time: Thursday, June 30, 2016 17:17:12
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106813 WG573840-01
Sample Date/Time: Thursday, June 30, 2016 17:18:06
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66825.4	2.4				ug/L	74916	Standard
	Be	9	133.3	4.3	**0.1380**	0.003	2.3	ug/L	10	Standard
	Al	27	4241117.0	1.3	**27.4025**	0.478	1.7	ug/L	1822	Standard
	Sc	45	59376.1	1.4				ug/L	55220	Standard
	Ti	47	6584.8	3.7	**16.1909**	0.531	3.3	ug/L	34	Standard
	V	51	39736.5	3.0	**4.1806**	0.143	3.4	ug/L	1938	Standard
	Cr	52	57987.8	0.9	**5.5358**	0.042	0.8	ug/L	9522	Standard
	Cr	53	28570.3	7.4	**25.7373**	2.017	7.8	ug/L	395	Standard
	Mn	55	1241189.6	1.3	**147.0826**	1.783	1.2	ug/L	902	Standard
	Co	59	29402.2	0.3	**3.6596**	0.010	0.3	ug/L	262	Standard
	Ni	60	55711.6	0.6	**25.2006**	0.129	0.5	ug/L	371	Standard
	Cu	65	3990.9	1.2	**1.7861**	0.030	1.7	ug/L	106	Standard
	Zn	66	25472.7	2.2	**19.6446**	0.438	2.2	ug/L	398	Standard
>	**Ge**	72	524817.3	0.4				ug/L	535147	Standard
	As	75	2992.7	2.8	**2.3334**	0.058	2.5	ug/L	-43	Standard
	Se	82	764.6	1.8	**5.6555**	0.104	1.8	ug/L	14	Standard
	Se-1	77	980.4	8.6	**10.5178**	0.994	9.4	ug/L	65	Standard
>	**Ga**	71	2516.9	4.2				mg/L	97	Standard
	Rb	85	45387.9	1.0				ug/L	15	Standard
	Y	89	471788.9	1.6				ug/L	465704	Standard
>	**Rh**	103	80.0	6.3				ug/L	10	Standard
	Mo	98	2138.6	3.5	**0.7142**	0.028	4.0	ug/L	9	Standard
	Ag	107	157.0	9.4	**0.0152**	0.002	14.0	ug/L	82	Standard
	Cd	111	2099.6	3.0	**0.8986**	0.033	3.6	mg/L	7	Standard
	Cd	114	5226.5	4.6	**0.9297**	0.049	5.2	ug/L	21	Standard
>	**In**	115	604671.8	0.7				ug/L	619035	Standard
	Sn	118	1033.4	9.5	**0.0592**	0.017	28.1	ug/L	508	Standard
	Sb	123	3055.1	27.0	**0.5957**	0.163	27.3	ug/L	86	Standard
	Ba	135	139944.7	1.3	**62.6537**	1.221	1.9	ug/L	79	Standard
	Ce	140	55800.9	2.4				ug/L	68	Standard
>	**Tb**	159	948910.8	2.6				ug/L	986982	Standard
	Ho	165	1046.7	5.9				ug/L	10	Standard
	Tl	203	390.3	7.2	**0.0509**	0.004	7.6	ug/L	13	Standard
	Tl	205	276.7	8.9	**0.0449**	0.003	7.7	ug/L	10	Standard
	Pb	206	5380.3	2.6	**0.9266**	0.031	3.4	ug/L	264	Standard
	Pb	207	4252.6	1.3	**0.8100**	0.016	1.9	ug/L	227	Standard
	Pb	208	18395.1	1.9	**0.9076**	0.011	1.2	ug/L	868	Standard
	U	238	1322.7	2.5	**0.1917**	0.002	1.1	ug/L	8	Standard
>	**Bi**	209	515245.5	1.5				ug/L	541014	Standard

Sample ID: L1606106813 WG573840-01
Report Date/Time: Thursday, June 30, 2016 17:20:23
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	85376.6	1.5	**86.4979**	0.694	0.8	mg/L	53	Standard
K	39	520.0	15.3	**0.7438**	0.115	15.4	mg/L	53	Standard
Ca	43	115.0	27.2	**4.3841**	1.643	37.5	mg/L	28	Standard
Fe	54	6737.0	2.5	**4.1500**	0.071	1.7	mg/L	181	Standard
Fe	57	1958.5	2.2	**4.1618**	0.107	2.6	mg/L	257	Standard
> **Sc-1**	45	59376.1	1.4				mg/L	55220	Standard
Cl	35	44962.0	1.2				ug/L	35504	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	154271.8	2.6				ug/L	2040	Standard
P	31	29709.1	1.2				ug/L	20435	Standard
S	34	2896.9	2.7				ug/L	2430	Standard
Sr	88	188.3	6.7				ug/L	75	Standard
C	12	266.7	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	173.2				mg/L	7	Standard
Dy	164	1604.1	12.5				mg/L	9	Standard
Ho-1	165	1046.7	5.9				mg/L	10	Standard
Er	166	1100.0	8.8				mg/L	23	Standard
I	127	327312.3	8.5				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		89.200	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.070	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606106813 WG573840-01
Report Date/Time: Thursday, June 30, 2016 17:20:23
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.680
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.237
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106815S WG573840-04
Sample Date/Time: Thursday, June 30, 2016 17:21:18
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67680.9	1.9				ug/L	74916	Standard
	Be	9	51052.5	0.1	**53.5693**	0.995	1.9	ug/L	10	Standard
	Al	27	3368816.2	1.1	**21.4929**	0.585	2.7	ug/L	1822	Standard
	Sc	45	58536.3	3.3				ug/L	55220	Standard
	Ti	47	5172.5	1.1	**12.4067**	0.155	1.3	ug/L	34	Standard
	V	51	488672.2	1.1	**52.3707**	0.516	1.0	ug/L	1938	Standard
	Cr	52	519795.4	1.0	**56.5266**	0.672	1.2	ug/L	9522	Standard
	Cr	53	80134.7	1.1	**71.1659**	0.792	1.1	ug/L	395	Standard
	Mn	55	1422478.1	1.3	**164.6477**	2.416	1.5	ug/L	902	Standard
	Co	59	415646.2	0.7	**50.8197**	0.346	0.7	ug/L	262	Standard
	Ni	60	153457.9	0.5	**68.0410**	0.220	0.3	ug/L	371	Standard
	Cu	65	110950.8	0.9	**50.0307**	0.453	0.9	ug/L	106	Standard
	Zn	66	84002.9	0.2	**64.0414**	0.177	0.3	ug/L	398	Standard
>	**Ge**	72	537355.1	0.2				ug/L	535147	Standard
	As	75	70214.5	0.8	**52.2590**	0.480	0.9	ug/L	-43	Standard
	Se	82	7282.6	0.6	**53.4169**	0.409	0.8	ug/L	14	Standard
	Se-1	77	5276.3	1.5	**57.7485**	0.932	1.6	ug/L	65	Standard
>	**Ga**	71	2600.2	1.0				mg/L	97	Standard
	Rb	85	34761.5	1.6				ug/L	15	Standard
	Y	89	471549.9	1.5				ug/L	465704	Standard
>	**Rh**	103	131.7	12.2				ug/L	10	Standard
	Mo	98	1846.2	2.7	**0.6134**	0.022	3.6	ug/L	9	Standard
	Ag	107	345199.2	0.6	**46.4387**	0.773	1.7	ug/L	82	Standard
	Cd	111	118493.6	1.5	**49.8650**	0.385	0.8	mg/L	7	Standard
	Cd	114	289951.9	1.8	**50.6671**	0.404	0.8	ug/L	21	Standard
>	**In**	115	609561.0	1.1				ug/L	619035	Standard
	Sn	118	1016.7	8.9	**0.0553**	0.014	26.2	ug/L	508	Standard
	Sb	123	244619.3	0.4	**46.9151**	0.346	0.7	ug/L	86	Standard
	Ba	135	220516.2	0.7	**97.9426**	1.108	1.1	ug/L	79	Standard
	Ce	140	48158.1	1.0				ug/L	68	Standard
>	**Tb**	159	947264.5	1.2				ug/L	986982	Standard
	Ho	165	921.7	8.3				ug/L	10	Standard
	Tl	203	434639.0	0.4	**49.9317**	0.347	0.7	ug/L	13	Standard
	Tl	205	380633.7	0.9	**51.1887**	0.936	1.8	ug/L	10	Standard
	Pb	206	288741.7	0.6	**51.6468**	0.449	0.9	ug/L	264	Standard
	Pb	207	251536.6	1.1	**49.7801**	0.446	0.9	ug/L	227	Standard
	Pb	208	1036183.7	0.5	**53.1850**	0.617	1.2	ug/L	868	Standard
	U	238	374057.3	1.4	**51.9465**	1.232	2.4	ug/L	8	Standard
>	**Bi**	209	515850.6	1.0				ug/L	541014	Standard

Sample ID: L1606106815S WG573840-04
Report Date/Time: Thursday, June 30, 2016 17:23:35
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.0953**	15.745	173.1	mg/L	2	Standard
Mg	24	66515.7	1.7	**68.3869**	2.109	3.1	mg/L	53	Standard
K	39	388.3	10.0	**0.5473**	0.079	14.4	mg/L	53	Standard
Ca	43	78.3	9.8	**2.5142**	0.451	17.9	mg/L	28	Standard
Fe	54	5869.1	3.9	**3.6575**	0.229	6.3	mg/L	181	Standard
Fe	57	1700.1	7.0	**3.5827**	0.199	5.6	mg/L	257	Standard
> **Sc-1**	45	58536.3	3.3				mg/L	55220	Standard
Cl	35	44802.2	3.0				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	127443.9	1.8				ug/L	2040	Standard
P	31	28511.8	1.0				ug/L	20435	Standard
S	34	2775.3	1.9				ug/L	2430	Standard
Sr	88	178.3	30.9				ug/L	75	Standard
C	12	230.0	19.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	1365.5	5.5				mg/L	9	Standard
Ho-1	165	921.7	8.3				mg/L	10	Standard
Er	166	930.0	6.7				mg/L	23	Standard
I	127	255438.3	5.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.342	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.413	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106815S WG573840-04
Report Date/Time: Thursday, June 30, 2016 17:23:35
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.470
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.349
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106817SD WG573840-05
Sample Date/Time: Thursday, June 30, 2016 17:24:29
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71317.5	0.5				ug/L	74916	Standard
	Be	9	52868.7	0.7	**52.6345**	0.351	0.7	ug/L	10	Standard
	Al	27	4849961.3	0.9	**29.3561**	0.184	0.6	ug/L	1822	Standard
	Sc	45	62463.5	1.2				ug/L	55220	Standard
	Ti	47	15053.8	0.9	**36.7934**	0.200	0.5	ug/L	34	Standard
	V	51	538418.4	0.4	**58.6061**	0.527	0.9	ug/L	1938	Standard
	Cr	52	650223.4	0.7	**72.0695**	0.889	1.2	ug/L	9522	Standard
	Cr	53	98390.1	1.1	**88.8086**	1.445	1.6	ug/L	395	Standard
	Mn	55	1763132.6	1.1	**207.2200**	3.342	1.6	ug/L	902	Standard
	Co	59	428512.3	1.2	**53.1932**	0.793	1.5	ug/L	262	Standard
	Ni	60	172907.0	0.5	**77.8539**	0.550	0.7	ug/L	371	Standard
	Cu	65	113260.4	0.2	**51.8526**	0.333	0.6	ug/L	106	Standard
	Zn	66	93640.5	0.5	**72.5211**	0.161	0.2	ug/L	398	Standard
>	Ge	72	529298.6	0.5				ug/L	535147	Standard
	As	75	70275.1	0.8	**53.0999**	0.493	0.9	ug/L	-43	Standard
	Se	82	7438.1	1.0	**55.3925**	0.719	1.3	ug/L	14	Standard
	Se-1	77	5341.3	1.2	**59.3683**	0.990	1.7	ug/L	65	Standard
>	Ga	71	7857.0	3.6				mg/L	97	Standard
	Rb	85	80878.6	1.0				ug/L	15	Standard
	Y	89	485637.4	2.2				ug/L	465704	Standard
>	Rh	103	135.0	12.8				ug/L	10	Standard
	Mo	98	2900.7	2.5	**0.9572**	0.026	2.7	ug/L	9	Standard
	Ag	107	343502.7	1.0	**46.2351**	0.223	0.5	ug/L	82	Standard
	Cd	111	120117.5	0.6	**50.5847**	0.556	1.1	mg/L	7	Standard
	Cd	114	292092.4	0.7	**51.0777**	0.183	0.4	ug/L	21	Standard
>	In	115	609154.8	0.5				ug/L	619035	Standard
	Sn	118	1316.7	6.3	**0.1022**	0.014	13.4	ug/L	508	Standard
	Sb	123	230647.1	1.3	**44.2618**	0.385	0.9	ug/L	86	Standard
	Ba	135	273668.5	0.7	**121.6298**	0.962	0.8	ug/L	79	Standard
	Ce	140	109752.8	1.4				ug/L	68	Standard
>	Tb	159	952644.8	0.6				ug/L	986982	Standard
	Ho	165	1935.1	9.2				ug/L	10	Standard
	Tl	203	436763.9	0.6	**50.0972**	0.134	0.3	ug/L	13	Standard
	Tl	205	378561.1	0.9	**50.8280**	0.601	1.2	ug/L	10	Standard
	Pb	206	295590.9	0.8	**52.7895**	0.146	0.3	ug/L	264	Standard
	Pb	207	255520.9	0.4	**50.4919**	0.303	0.6	ug/L	227	Standard
	Pb	208	1035519.8	0.6	**53.0684**	0.588	1.1	ug/L	868	Standard
	U	238	372267.1	1.1	**51.6142**	0.831	1.6	ug/L	8	Standard
>	Bi	209	516637.7	0.5				ug/L	541014	Standard

Sample ID: L1606106817SD WG573840-05
Report Date/Time: Thursday, June 30, 2016 17:26:46
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	87984.8	1.4	**84.7490**	2.157	2.5	mg/L	53	Standard
K	39	573.3	13.5	**0.7848**	0.124	15.8	mg/L	53	Standard
Ca	43	141.7	10.2	**5.4143**	0.660	12.2	mg/L	28	Standard
Fe	54	10646.8	1.6	**6.2957**	0.178	2.8	mg/L	181	Standard
Fe	57	2967.0	0.4	**6.2851**	0.079	1.3	mg/L	257	Standard
> **Sc-1**	45	62463.5	1.2				mg/L	55220	Standard
Cl	35	43456.9	3.2				ug/L	35504	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	183975.0	4.4				ug/L	2040	Standard
P	31	35738.8	3.0				ug/L	20435	Standard
S	34	2516.9	2.9				ug/L	2430	Standard
Sr	88	236.7	13.6				ug/L	75	Standard
C	12	223.3	25.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	43.3				mg/L	7	Standard
Dy	164	3296.7	5.8				mg/L	9	Standard
Ho-1	165	1935.1	9.2				mg/L	10	Standard
Er	166	1886.8	7.5				mg/L	23	Standard
I	127	363130.0	8.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.196	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.907	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106817SD WG573840-05
Report Date/Time: Thursday, June 30, 2016 17:26:46
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.404
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.494
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122801
Sample Date/Time: Thursday, June 30, 2016 17:27:41
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70219.0	1.1				ug/L	74916	Standard
	Be	9	55.0	48.1	**0.0522**	0.028	52.7	ug/L	10	Standard
	Al	27	23221144.3	0.6	**142.7741**	1.838	1.3	ug/L	1822	Standard
	Sc	45	57070.6	2.2				ug/L	55220	Standard
	Ti	47	534.7	8.5	**1.2366**	0.117	9.5	ug/L	34	Standard
	V	51	7446.5	8.6	**0.6149**	0.067	10.9	ug/L	1938	Standard
	Cr	52	12430.1	1.9	**0.3548**	0.021	6.0	ug/L	9522	Standard
	Cr	53	7560.2	15.2	**6.4485**	1.018	15.8	ug/L	395	Standard
	Mn	55	2113807.9	0.6	**247.8805**	0.738	0.3	ug/L	902	Standard
	Co	59	1074.4	19.7	**0.1103**	0.026	23.6	ug/L	262	Standard
	Ni	60	2096.5	2.0	**0.7980**	0.018	2.2	ug/L	371	Standard
	Cu	65	989.4	3.5	**0.3937**	0.017	4.4	ug/L	106	Standard
	Zn	66	2275.2	1.6	**1.4198**	0.027	1.9	ug/L	398	Standard
>	**Ge**	72	530492.6	0.4				ug/L	535147	Standard
	As	75	1618.0	1.0	**1.2738**	0.017	1.3	ug/L	-43	Standard
	Se	82	532.9	5.0	**3.8697**	0.199	5.1	ug/L	14	Standard
	Se-1	77	405.0	3.4	**3.9543**	0.170	4.3	ug/L	65	Standard
>	**Ga**	71	131.7	28.5				mg/L	97	Standard
	Rb	85	1008.4	5.5				ug/L	15	Standard
	Y	89	463829.6	1.0				ug/L	465704	Standard
>	**Rh**	103	183.3	15.5				ug/L	10	Standard
	Mo	98	288.7	15.5	**0.1064**	0.014	12.8	ug/L	9	Standard
	Ag	107	262.7	61.3	**0.0292**	0.021	72.9	ug/L	82	Standard
	Cd	111	64.1	52.5	**0.0348**	0.014	39.8	mg/L	7	Standard
	Cd	114	151.5	64.1	**0.0353**	0.017	47.2	ug/L	21	Standard
>	**In**	115	608837.3	1.5				ug/L	619035	Standard
	Sn	118	688.3	15.3	**0.0040**	0.015	381.7	ug/L	508	Standard
	Sb	123	748.4	25.1	**0.1478**	0.034	23.1	ug/L	86	Standard
	Ba	135	323132.0	0.2	**143.7088**	1.894	1.3	ug/L	79	Standard
	Ce	140	1510.1	6.1				ug/L	68	Standard
>	**Tb**	159	942636.2	0.9				ug/L	986982	Standard
	Ho	165	71.7	42.1				ug/L	10	Standard
	Tl	203	221.7	39.3	**0.0318**	0.010	31.8	ug/L	13	Standard
	Tl	205	200.0	49.8	**0.0349**	0.014	38.7	ug/L	10	Standard
	Pb	206	3260.4	7.1	**0.5527**	0.041	7.5	ug/L	264	Standard
	Pb	207	2764.6	8.4	**0.5208**	0.046	8.8	ug/L	227	Standard
	Pb	208	11354.3	4.2	**0.5518**	0.024	4.4	ug/L	868	Standard
	U	238	6271.3	2.3	**0.8889**	0.020	2.2	ug/L	8	Standard
>	**Bi**	209	509768.6	0.1				ug/L	541014	Standard

Sample ID: L1606122801
Report Date/Time: Thursday, June 30, 2016 17:29:58
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**27.4457**	27.277	99.4	mg/L	2	Standard
Mg	24	105167.2	2.0	**110.8934**	3.210	2.9	mg/L	53	Standard
K	39	93.3	34.9	**0.0778**	0.055	70.6	mg/L	53	Standard
Ca	43	381.7	4.2	**19.2352**	0.454	2.4	mg/L	28	Standard
Fe	54	383.9	11.8	**0.1342**	0.028	21.1	mg/L	181	Standard
Fe	57	550.0	11.8	**0.7475**	0.173	23.1	mg/L	257	Standard
> **Sc-1**	45	57070.6	2.2				mg/L	55220	Standard
Cl	35	45817.2	1.5				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	102824.5	2.2				ug/L	2040	Standard
P	31	27136.0	2.5				ug/L	20435	Standard
S	34	2881.9	4.6				ug/L	2430	Standard
Sr	88	315.0	13.0				ug/L	75	Standard
C	12	273.3	15.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	91.2	16.9				mg/L	9	Standard
Ho-1	165	71.7	42.1				mg/L	10	Standard
Er	166	113.3	13.5				mg/L	23	Standard
I	127	577318.3	6.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.730	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.130	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122801
Report Date/Time: Thursday, June 30, 2016 17:29:58
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.353	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.225	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606122801
Report Date/Time: Thursday, June 30, 2016 17:29:58
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122802
Sample Date/Time: Thursday, June 30, 2016 17:30:52
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84553.6	0.8				ug/L	74916	Standard
	Be	9	40.0	54.5	**0.0301**	0.019	61.7	ug/L	10	Standard
	Al	27	72687440.4	0.6	**371.1272**	1.759	0.5	ug/L	1822	Standard
	Sc	45	56028.5	3.6				ug/L	55220	Standard
	Ti	47	1271.7	12.9	**3.1264**	0.427	13.7	ug/L	34	Standard
	V	51	45357.8	2.5	**4.8857**	0.105	2.1	ug/L	1938	Standard
	Cr	52	27926.4	2.4	**2.1818**	0.066	3.0	ug/L	9522	Standard
	Cr	53	41080.8	6.8	**37.8153**	2.480	6.6	ug/L	395	Standard
	Mn	55	18342.1	1.0	**2.1077**	0.024	1.2	ug/L	902	Standard
	Co	59	1867.8	1.8	**0.2152**	0.003	1.5	ug/L	262	Standard
	Ni	60	5585.0	3.9	**2.4394**	0.105	4.3	ug/L	371	Standard
	Cu	65	2253.2	2.2	**1.0007**	0.019	1.9	ug/L	106	Standard
	Zn	66	5947.8	1.6	**4.4020**	0.073	1.7	ug/L	398	Standard
>	**Ge**	72	515884.0	0.5				ug/L	535147	Standard
	As	75	4431.5	3.5	**3.4872**	0.124	3.6	ug/L	-43	Standard
	Se	82	1759.9	1.3	**13.3742**	0.232	1.7	ug/L	14	Standard
	Se-1	77	4138.2	6.7	**47.0651**	3.039	6.5	ug/L	65	Standard
>	**Ga**	71	275.0	12.7				mg/L	97	Standard
	Rb	85	9714.8	2.0				ug/L	15	Standard
	Y	89	451972.4	0.7				ug/L	465704	Standard
>	**Rh**	103	713.4	15.1				ug/L	10	Standard
	Mo	98	14249.3	0.9	**4.8390**	0.048	1.0	ug/L	9	Standard
	Ag	107	130.3	28.3	**0.0122**	0.005	41.7	ug/L	82	Standard
	Cd	111	36.6	50.8	**0.0239**	0.008	33.8	mg/L	7	Standard
	Cd	114	111.4	48.8	**0.0291**	0.010	33.6	ug/L	21	Standard
>	**In**	115	585793.5	1.5				ug/L	619035	Standard
	Sn	118	695.0	14.0	**0.0094**	0.015	159.8	ug/L	508	Standard
	Sb	123	298.3	27.7	**0.0638**	0.016	24.8	ug/L	86	Standard
	Ba	135	17524.8	1.5	**8.0809**	0.009	0.1	ug/L	79	Standard
	Ce	140	4882.5	7.2				ug/L	68	Standard
>	**Tb**	159	939211.6	2.4				ug/L	986982	Standard
	Ho	165	90.0	20.0				ug/L	10	Standard
	Tl	203	117.0	31.8	**0.0200**	0.004	22.4	ug/L	13	Standard
	Tl	205	85.0	11.8	**0.0196**	0.001	7.6	ug/L	10	Standard
	Pb	206	1637.8	1.8	**0.2684**	0.004	1.3	ug/L	264	Standard
	Pb	207	1331.4	4.1	**0.2422**	0.012	4.8	ug/L	227	Standard
	Pb	208	5486.4	2.8	**0.2560**	0.008	3.1	ug/L	868	Standard
	U	238	60169.2	1.1	**8.7341**	0.107	1.2	ug/L	8	Standard
>	**Bi**	209	493823.0	0.7				ug/L	541014	Standard

Sample ID: L1606122802
Report Date/Time: Thursday, June 30, 2016 17:33:09
Page 1

Approved: July 01, 2016

Na	23	6.7	43.3	**36.6454**	14.539	39.7	mg/L	2	Standard
Mg	24	244255.3	2.0	**262.4118**	4.079	1.6	mg/L	53	Standard
K	39	685.0	6.4	**1.0706**	0.082	7.6	mg/L	53	Standard
Ca	43	993.4	8.8	**53.9378**	6.881	12.8	mg/L	28	Standard
Fe	54	260.7	6.9	**0.0567**	0.018	32.0	mg/L	181	Standard
Fe	57	821.7	9.3	**1.4845**	0.220	14.8	mg/L	257	Standard
> **Sc-1**	45	56028.5	3.6				mg/L	55220	Standard
Cl	35	59927.6	0.3				ug/L	35504	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	52735.1	4.5				ug/L	2040	Standard
P	31	28319.8	2.2				ug/L	20435	Standard
S	34	2893.6	4.6				ug/L	2430	Standard
Sr	88	1485.1	3.7				ug/L	75	Standard
C	12	193.3	24.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	129.7	23.0				mg/L	9	Standard
Ho-1	165	90.0	20.0				mg/L	10	Standard
Er	166	76.7	19.9				mg/L	23	Standard
I	127	106629.1	3.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.864	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.400	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122802
Report Date/Time: Thursday, June 30, 2016 17:33:09
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.630
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.277
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606122802
Report Date/Time: Thursday, June 30, 2016 17:33:09
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122802PS WG574804-01
Sample Date/Time: Thursday, June 30, 2016 17:34:03
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	86437.6	1.7				ug/L	74916	Standard
	Be	9	56613.9	1.0	**46.5070**	0.399	0.9	ug/L	10	Standard
	Al	27	75487495.4	1.1	**377.0591**	5.028	1.3	ug/L	1822	Standard
	Sc	45	58174.8	1.4				ug/L	55220	Standard
	Ti	47	1182.0	2.8	**2.8538**	0.084	2.9	ug/L	34	Standard
	V	51	506511.3	0.9	**55.6793**	0.488	0.9	ug/L	1938	Standard
	Cr	52	468582.8	0.8	**52.1771**	0.411	0.8	ug/L	9522	Standard
	Cr	53	98380.1	1.2	**89.6982**	1.261	1.4	ug/L	395	Standard
	Mn	55	437615.2	0.5	**51.8710**	0.153	0.3	ug/L	902	Standard
	Co	59	384345.6	1.3	**48.1889**	0.577	1.2	ug/L	262	Standard
	Ni	60	109797.1	1.5	**49.8850**	0.779	1.6	ug/L	371	Standard
	Cu	65	103193.2	1.1	**47.7166**	0.590	1.2	ug/L	106	Standard
	Zn	66	67753.5	1.0	**52.9106**	0.608	1.1	ug/L	398	Standard
>	Ge	72	523997.6	0.2				ug/L	535147	Standard
	As	75	70632.2	0.6	**53.9078**	0.320	0.6	ug/L	-43	Standard
	Se	82	8300.6	0.5	**62.4519**	0.357	0.6	ug/L	14	Standard
	Se-1	77	8649.5	1.4	**97.4766**	1.453	1.5	ug/L	65	Standard
>	Ga	71	280.0	25.2				mg/L	97	Standard
	Rb	85	9468.0	1.9				ug/L	15	Standard
	Y	89	467656.1	0.8				ug/L	465704	Standard
>	Rh	103	703.3	13.1				ug/L	10	Standard
	Mo	98	14547.0	0.8	**4.8010**	0.023	0.5	ug/L	9	Standard
	Ag	107	298779.8	0.3	**40.6443**	0.013	0.0	ug/L	82	Standard
	Cd	111	110559.1	0.6	**47.0556**	0.428	0.9	mg/L	7	Standard
	Cd	114	270298.7	1.3	**47.7731**	0.754	1.6	ug/L	21	Standard
>	In	115	602726.9	0.3				ug/L	619035	Standard
	Sn	118	4093.9	2.1	**0.5427**	0.016	2.9	ug/L	508	Standard
	Sb	123	242329.1	0.5	**47.0003**	0.122	0.3	ug/L	86	Standard
	Ba	135	123107.1	0.7	**55.2866**	0.431	0.8	ug/L	79	Standard
	Ce	140	5095.9	1.4				ug/L	68	Standard
>	Tb	159	959859.0	1.9				ug/L	986982	Standard
	Ho	165	75.0	30.6				ug/L	10	Standard
	Tl	203	419623.5	0.5	**49.1426**	0.528	1.1	ug/L	13	Standard
	Tl	205	367995.8	1.3	**50.4422**	0.282	0.6	ug/L	10	Standard
	Pb	206	277925.9	0.4	**50.6764**	0.491	1.0	ug/L	264	Standard
	Pb	207	242544.6	0.3	**48.9335**	0.558	1.1	ug/L	227	Standard
	Pb	208	972336.7	0.8	**50.8744**	0.701	1.4	ug/L	868	Standard
	U	238	429336.0	0.6	**60.7713**	0.490	0.8	ug/L	8	Standard
>	Bi	209	506035.4	0.9				ug/L	541014	Standard

Sample ID: L1606122802PS WG574804-01
Report Date/Time: Thursday, June 30, 2016 17:36:20
Page 1

Approved: July 01, 2016

Na	23	16.7	62.4	**88.6640**	54.789	61.8	mg/L	2	Standard
Mg	24	250054.9	0.8	**258.6884**	5.747	2.2	mg/L	53	Standard
K	39	701.7	10.7	**1.0553**	0.133	12.6	mg/L	53	Standard
Ca	43	950.0	7.6	**49.4071**	4.026	8.1	mg/L	28	Standard
Fe	54	280.5	29.8	**0.0629**	0.056	88.2	mg/L	181	Standard
Fe	57	826.7	0.9	**1.4157**	0.014	1.0	mg/L	257	Standard
> **Sc-1**	45	58174.8	1.4				mg/L	55220	Standard
Cl	35	60997.2	1.1				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	53979.4	3.0				ug/L	2040	Standard
P	31	27292.9	1.1				ug/L	20435	Standard
S	34	2830.3	11.9				ug/L	2430	Standard
Sr	88	1463.4	6.1				ug/L	75	Standard
C	12	156.7	9.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	110.9	27.4				mg/L	9	Standard
Ho-1	165	75.0	30.6				mg/L	10	Standard
Er	166	50.0	34.6				mg/L	23	Standard
I	127	137947.1	7.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.379	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.917	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122802PS WG574804-01
Report Date/Time: Thursday, June 30, 2016 17:36:20
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.366
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606122802PS WG574804-01
Report Date/Time: Thursday, June 30, 2016 17:36:20
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122802SDL WG574804-02
Sample Date/Time: Thursday, June 30, 2016 17:37:15
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73360.5	0.4				ug/L	74916	Standard
	Be	9	36.7	28.4	**0.0319**	0.010	31.8	ug/L	10	Standard
	Al	27	14509056.2	0.6	**85.3818**	0.806	0.9	ug/L	1822	Standard
	Sc	45	53337.1	1.3				ug/L	55220	Standard
	Ti	47	286.3	19.2	**0.6411**	0.136	21.2	ug/L	34	Standard
	V	51	11459.1	1.9	**1.0730**	0.021	2.0	ug/L	1938	Standard
	Cr	52	13335.2	2.1	**0.4814**	0.035	7.2	ug/L	9522	Standard
	Cr	53	12733.7	2.1	**11.3211**	0.206	1.8	ug/L	395	Standard
	Mn	55	4720.1	19.9	**0.4581**	0.114	24.9	ug/L	902	Standard
	Co	59	731.4	36.8	**0.0694**	0.034	49.4	ug/L	262	Standard
	Ni	60	1482.7	3.8	**0.5329**	0.028	5.2	ug/L	371	Standard
	Cu	65	730.7	5.4	**0.2810**	0.019	6.8	ug/L	106	Standard
	Zn	66	2863.9	0.8	**1.9140**	0.025	1.3	ug/L	398	Standard
>	**Ge**	72	521806.3	0.3				ug/L	535147	Standard
	As	75	1017.6	2.9	**0.8344**	0.023	2.8	ug/L	-43	Standard
	Se	82	430.4	3.6	**3.1599**	0.109	3.4	ug/L	14	Standard
	Se-1	77	993.7	4.8	**10.7325**	0.584	5.4	ug/L	65	Standard
>	**Ga**	71	96.7	20.9				mg/L	97	Standard
	Rb	85	1926.8	6.7				ug/L	15	Standard
	Y	89	447616.0	1.0				ug/L	465704	Standard
>	**Rh**	103	160.0	13.6				ug/L	10	Standard
	Mo	98	2746.4	1.1	**0.9278**	0.002	0.2	ug/L	9	Standard
	Ag	107	402.0	70.3	**0.0495**	0.039	79.7	ug/L	82	Standard
	Cd	111	119.5	146.0	**0.0597**	0.076	126.8	mg/L	7	Standard
	Cd	114	348.7	133.0	**0.0717**	0.084	116.6	ug/L	21	Standard
>	**In**	115	595231.3	1.1				ug/L	619035	Standard
	Sn	118	358.3	13.7	**-0.0462**	0.007	15.6	ug/L	508	Standard
	Sb	123	1318.5	18.5	**0.2630**	0.045	17.1	ug/L	86	Standard
	Ba	135	3850.8	7.3	**1.7328**	0.140	8.1	ug/L	79	Standard
	Ce	140	1061.7	17.4				ug/L	68	Standard
>	**Tb**	159	941612.4	1.0				ug/L	986982	Standard
	Ho	165	26.7	47.2				ug/L	10	Standard
	Tl	203	404.7	120.4	**0.0518**	0.055	106.0	ug/L	13	Standard
	Tl	205	258.3	86.3	**0.0420**	0.029	69.9	ug/L	10	Standard
	Pb	206	715.7	32.4	**0.0890**	0.040	44.9	ug/L	264	Standard
	Pb	207	616.7	41.1	**0.0876**	0.049	55.4	ug/L	227	Standard
	Pb	208	2314.4	25.3	**0.0794**	0.029	36.2	ug/L	868	Standard
	U	238	12021.4	3.5	**1.6624**	0.041	2.5	ug/L	8	Standard
>	**Bi**	209	520254.4	1.0				ug/L	541014	Standard

Sample ID: L1606122802SDL WG574804-02
Report Date/Time: Thursday, June 30, 2016 17:39:32
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**28.8752**	28.736	99.5	mg/L	2	Standard
Mg	24	47109.8	2.2	**53.1337**	1.841	3.5	mg/L	53	Standard
K	39	183.3	6.9	**0.2463**	0.025	10.1	mg/L	53	Standard
Ca	43	235.0	10.6	**12.1008**	1.406	11.6	mg/L	28	Standard
Fe	54	82.5	6.4	**-0.0605**	0.004	6.3	mg/L	181	Standard
Fe	57	368.3	12.6	**0.3480**	0.137	39.4	mg/L	257	Standard
> **Sc-1**	45	53337.1	1.3				mg/L	55220	Standard
Cl	35	51990.4	1.9				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	12571.9	2.3				ug/L	2040	Standard
P	31	11519.4	2.2				ug/L	20435	Standard
S	34	2808.6	3.0				ug/L	2430	Standard
Sr	88	361.7	8.4				ug/L	75	Standard
C	12	96.7	31.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	34.1	18.0				mg/L	9	Standard
Ho-1	165	26.7	47.2				mg/L	10	Standard
Er	166	53.3	39.0				mg/L	23	Standard
I	127	50790.0	2.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.923	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.507	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122802SDL WG574804-02
Report Date/Time: Thursday, June 30, 2016 17:39:32
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.155
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.163
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122802SDL WG574804-02
Sample Date/Time: Thursday, June 30, 2016 17:40:26
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71461.5	2.2				ug/L	74916	Standard
	Be	9	26.7	47.2	**0.0228**	0.012	52.7	ug/L	10	Standard
	Al	27	2806825.1	1.4	**16.9567**	0.202	1.2	ug/L	1822	Standard
	Sc	45	52559.4	2.1				ug/L	55220	Standard
	Ti	47	72.0	6.4	**0.1108**	0.011	9.9	ug/L	34	Standard
	V	51	4274.9	5.1	**0.2826**	0.022	7.9	ug/L	1938	Standard
	Cr	52	10369.5	1.5	**0.1568**	0.015	9.6	ug/L	9522	Standard
	Cr	53	3978.9	3.6	**3.3142**	0.151	4.6	ug/L	395	Standard
	Mn	55	1206.4	7.1	**0.0403**	0.008	21.0	ug/L	902	Standard
	Co	59	303.7	11.1	**0.0159**	0.004	25.6	ug/L	262	Standard
	Ni	60	502.7	11.1	**0.0869**	0.023	26.1	ug/L	371	Standard
	Cu	65	277.0	15.4	**0.0714**	0.019	26.4	ug/L	106	Standard
	Zn	66	1164.0	1.9	**0.5827**	0.010	1.7	ug/L	398	Standard
>	**Ge**	72	515849.3	1.3				ug/L	535147	Standard
	As	75	184.2	24.2	**0.1976**	0.033	16.5	ug/L	-43	Standard
	Se	82	106.6	2.9	**0.7192**	0.027	3.7	ug/L	14	Standard
	Se-1	77	263.0	1.7	**2.4473**	0.021	0.8	ug/L	65	Standard
>	**Ga**	71	55.0	18.2				mg/L	97	Standard
	Rb	85	421.7	3.8				ug/L	15	Standard
	Y	89	442472.4	1.7				ug/L	465704	Standard
>	**Rh**	103	45.0	19.2				ug/L	10	Standard
	Mo	98	520.7	1.7	**0.1853**	0.004	2.0	ug/L	9	Standard
	Ag	107	154.3	12.7	**0.0151**	0.003	17.8	ug/L	82	Standard
	Cd	111	12.3	92.1	**0.0132**	0.005	36.7	mg/L	7	Standard
	Cd	114	44.3	52.1	**0.0168**	0.004	24.1	ug/L	21	Standard
>	**In**	115	597577.3	0.8				ug/L	619035	Standard
	Sn	118	213.3	23.6	**-0.0694**	0.008	11.7	ug/L	508	Standard
	Sb	123	262.1	15.7	**0.0557**	0.008	14.9	ug/L	86	Standard
	Ba	135	716.7	2.2	**0.3051**	0.005	1.5	ug/L	79	Standard
	Ce	140	191.7	15.7				ug/L	68	Standard
>	**Tb**	159	921013.3	2.2				ug/L	986982	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	102.3	27.2	**0.0174**	0.003	17.1	ug/L	13	Standard
	Tl	205	156.7	95.9	**0.0281**	0.019	68.9	ug/L	10	Standard
	Pb	206	348.0	6.3	**0.0228**	0.003	15.2	ug/L	264	Standard
	Pb	207	266.7	6.0	**0.0182**	0.003	14.2	ug/L	227	Standard
	Pb	208	1386.0	20.7	**0.0309**	0.014	44.1	ug/L	868	Standard
	U	238	2294.8	6.4	**0.3179**	0.016	5.2	ug/L	8	Standard
>	**Bi**	209	529934.8	1.1				ug/L	541014	Standard

Sample ID: L1606122802SDL WG574804-02
Report Date/Time: Thursday, June 30, 2016 17:42:43
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	9147.8	1.6	**10.4409**	0.172	1.6	mg/L	53	Standard
K	39	70.0	28.6	**0.0490**	0.037	75.3	mg/L	53	Standard
Ca	43	71.7	21.3	**2.5839**	0.860	33.3	mg/L	28	Standard
Fe	54	76.1	10.2	**-0.0643**	0.006	8.7	mg/L	181	Standard
Fe	57	308.3	5.7	**0.1952**	0.046	23.6	mg/L	257	Standard
> **Sc-1**	45	52559.4	2.1				mg/L	55220	Standard
Cl	35	50844.5	1.6				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	4347.3	5.7				ug/L	2040	Standard
P	31	8237.2	1.9				ug/L	20435	Standard
S	34	2880.3	4.6				ug/L	2430	Standard
Sr	88	123.3	26.1				ug/L	75	Standard
C	12	56.7	40.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.4	43.3				mg/L	9	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	38066.1	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.388	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.394	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122802SDL WG574804-02
Report Date/Time: Thursday, June 30, 2016 17:42:43
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.534
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.952
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 17:43:40
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72258.6	1.9				ug/L	74916	Standard
	Be	9	57037.2	1.8	**56.0506**	0.953	1.7	ug/L	10	Standard
	Al	27	9091492.0	2.1	**54.3234**	1.304	2.4	ug/L	1822	Standard
	Sc	45	56784.6	2.3				ug/L	55220	Standard
	Ti	47	44286.6	0.4	**103.4553**	1.782	1.7	ug/L	34	Standard
	V	51	485675.3	0.3	**50.4329**	0.546	1.1	ug/L	1938	Standard
	Cr	52	490309.2	1.8	**51.5847**	1.331	2.6	ug/L	9522	Standard
	Cr	53	61139.8	2.4	**52.5078**	0.692	1.3	ug/L	395	Standard
	Mn	55	447615.4	1.9	**50.1306**	0.806	1.6	ug/L	902	Standard
	Co	59	428562.6	1.7	**50.7726**	0.436	0.9	ug/L	262	Standard
	Ni	60	119106.3	1.0	**51.1440**	1.025	2.0	ug/L	371	Standard
	Cu	65	116860.6	1.3	**51.0638**	0.517	1.0	ug/L	106	Standard
	Zn	66	68880.9	0.3	**50.8192**	0.775	1.5	ug/L	398	Standard
>	Ge	72	554559.8	1.3				ug/L	535147	Standard
	As	75	69238.1	0.3	**49.9414**	0.660	1.3	ug/L	-43	Standard
	Se	82	6963.6	0.6	**49.4910**	0.758	1.5	ug/L	14	Standard
	Se-1	77	4796.4	3.0	**50.7976**	1.329	2.6	ug/L	65	Standard
>	Ga	71	75.0	24.0				mg/L	97	Standard
	Rb	85	1118.4	7.6				ug/L	15	Standard
	Y	89	481212.4	0.6				ug/L	465704	Standard
>	Rh	103	43.3	24.0				ug/L	10	Standard
	Mo	98	315125.8	0.5	**97.1128**	1.487	1.5	ug/L	9	Standard
	Ag	107	386205.1	0.9	**49.1797**	0.968	2.0	ug/L	82	Standard
	Cd	111	125400.2	0.7	**49.9571**	0.795	1.6	mg/L	7	Standard
	Cd	114	304281.3	0.4	**50.3344**	0.343	0.7	ug/L	21	Standard
>	In	115	643980.7	1.1				ug/L	619035	Standard
	Sn	118	345428.6	1.3	**50.9205**	0.539	1.1	ug/L	508	Standard
	Sb	123	275057.7	1.1	**49.9373**	1.011	2.0	ug/L	86	Standard
	Ba	135	118011.5	0.9	**49.6017**	0.296	0.6	ug/L	79	Standard
	Ce	140	126.7	32.9				ug/L	68	Standard
>	Tb	159	982270.0	1.2				ug/L	986982	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	481075.9	0.7	**51.0955**	0.420	0.8	ug/L	13	Standard
	Tl	205	420488.3	0.5	**52.2771**	0.384	0.7	ug/L	10	Standard
	Pb	206	300589.6	1.1	**49.7077**	0.665	1.3	ug/L	264	Standard
	Pb	207	271260.3	0.3	**49.6331**	0.176	0.4	ug/L	227	Standard
	Pb	208	1111622.2	0.7	**52.7489**	0.293	0.6	ug/L	868	Standard
	U	238	405342.1	0.3	**52.0374**	0.347	0.7	ug/L	8	Standard
>	Bi	209	557941.2	0.4				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 17:45:57
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4927.5	4.8	**5.1899**	0.290	5.6	mg/L	53	Standard
K	39	2308.5	3.7	**3.7365**	0.212	5.7	mg/L	53	Standard
Ca	43	113.3	16.7	**4.5567**	0.927	20.3	mg/L	28	Standard
Fe	54	7483.3	2.8	**4.8432**	0.248	5.1	mg/L	181	Standard
Fe	57	2221.8	7.9	**5.0628**	0.482	9.5	mg/L	257	Standard
Sc-1	45	56784.6	2.3				mg/L	55220	Standard
Cl	35	48383.9	3.9				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2723.6	12.6				ug/L	2040	Standard
P	31	25431.3	1.5				ug/L	20435	Standard
S	34	3180.3	4.3				ug/L	2430	Standard
Sr	88	90.0	33.3				ug/L	75	Standard
C	12	123.3	20.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	19.4	50.5				mg/L	9	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	18646.5	4.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	112.101		
Al	27	108.647		
Sc	45			
Ti	47	103.455		
V	51	100.866		
Cr	52	103.169		
Cr	53			
Mn	55	100.261		
Co	59	101.545		
Ni	60	102.288		
Cu	65	102.128		
Zn	66	101.638		
Ge	72		103.628	
As	75	99.883		
Se	82	98.982		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 17:45:57
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	97.113		
Ag	107	98.359		
Cd	111	99.914		
Cd	114			
In	115			104.030
Sn	118	101.841		
Sb	123	99.875		
Ba	135	99.203		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.191		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.498		
U	238	104.075		
Bi	209			103.129
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 17:45:57
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 17:46:51
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71546.9	1.6				ug/L	74916	Standard
	Be	9	70.0	65.5	**0.0656**	0.045	68.4	ug/L	10	Standard
	Al	27	20191.3	127.2	**0.1188**	0.154	129.5	ug/L	1822	Standard
	Sc	45	56650.7	0.9				ug/L	55220	Standard
	Ti	47	55.3	41.9	**0.0588**	0.053	89.4	ug/L	34	Standard
	V	51	1898.8	4.3	**0.0014**	0.006	433.4	ug/L	1938	Standard
	Cr	52	8671.5	6.2	**-0.1096**	0.049	45.1	ug/L	9522	Standard
	Cr	53	1248.4	8.8	**0.6919**	0.084	12.2	ug/L	395	Standard
	Mn	55	1063.4	23.8	**0.0140**	0.027	193.5	ug/L	902	Standard
	Co	59	356.0	39.3	**0.0193**	0.016	83.4	ug/L	262	Standard
	Ni	60	347.3	30.1	**0.0036**	0.043	1191.3	ug/L	371	Standard
	Cu	65	223.7	29.9	**0.0389**	0.028	72.4	ug/L	106	Standard
	Zn	66	452.3	14.9	**-0.0111**	0.047	419.6	ug/L	398	Standard
>	**Ge**	72	554751.4	1.2				ug/L	535147	Standard
	As	75	-55.9	25.8	**0.0150**	0.010	68.9	ug/L	-43	Standard
	Se	82	21.4	11.6	**0.0557**	0.019	33.3	ug/L	14	Standard
	Se-1	77	90.0	12.2	**0.3821**	0.113	29.6	ug/L	65	Standard
>	**Ga**	71	58.3	27.6				mg/L	97	Standard
	Rb	85	45.0	19.2				ug/L	15	Standard
	Y	89	482380.1	2.6				ug/L	465704	Standard
>	**Rh**	103	40.0	37.5				ug/L	10	Standard
	Mo	98	322.1	29.1	**0.1093**	0.028	25.5	ug/L	9	Standard
	Ag	107	381.0	21.2	**0.0413**	0.010	23.7	ug/L	82	Standard
	Cd	111	46.7	121.4	**0.0260**	0.022	84.3	mg/L	7	Standard
	Cd	114	87.7	82.5	**0.0231**	0.012	50.3	ug/L	21	Standard
>	**In**	115	658696.5	1.3				ug/L	619035	Standard
	Sn	118	1141.7	4.6	**0.0615**	0.007	12.2	ug/L	508	Standard
	Sb	123	938.2	24.9	**0.1709**	0.041	24.1	ug/L	86	Standard
	Ba	135	89.7	82.5	**0.0172**	0.030	175.6	ug/L	79	Standard
	Ce	140	43.3	43.7				ug/L	68	Standard
>	**Tb**	159	992991.8	0.3				ug/L	986982	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	200.3	77.5	**0.0268**	0.016	60.0	ug/L	13	Standard
	Tl	205	213.3	103.0	**0.0337**	0.027	79.3	ug/L	10	Standard
	Pb	206	385.0	24.3	**0.0247**	0.015	61.1	ug/L	264	Standard
	Pb	207	327.3	27.0	**0.0256**	0.016	61.6	ug/L	227	Standard
	Pb	208	1329.0	23.3	**0.0235**	0.014	60.8	ug/L	868	Standard
	U	238	207.7	109.3	**0.0340**	0.029	83.9	ug/L	8	Standard
>	**Bi**	209	568921.4	0.2				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 17:49:08
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	126.7	81.5	**0.1003**	0.111	110.3	mg/L	53	Standard
K	39	40.0	25.0	**-0.0098**	0.017	170.2	mg/L	53	Standard
Ca	43	23.3	32.7	**-0.3870**	0.423	109.2	mg/L	28	Standard
Fe	54	159.2	11.3	**-0.0131**	0.011	86.4	mg/L	181	Standard
Fe	57	273.3	4.6	**0.0429**	0.033	77.3	mg/L	257	Standard
Sc-1	45	56650.7	0.9				mg/L	55220	Standard
Cl	35	45940.2	1.2				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2093.5	11.0				ug/L	2040	Standard
P	31	24581.6	1.1				ug/L	20435	Standard
S	34	3042.0	8.5				ug/L	2430	Standard
Sr	88	70.0	14.3				ug/L	75	Standard
C	12	76.7	30.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	172.7	9.0				mg/L	9	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	8235.6	8.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.663	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 17:49:08
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.407
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.158
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 17:49:08
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106501
Sample Date/Time: Thursday, June 30, 2016 17:50:04
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73635.2	0.9				ug/L	74916	Standard
	Be	9	30.0	16.7	**0.0253**	0.005	19.6	ug/L	10	Standard
	Al	27	16116931.3	0.8	**94.4932**	1.153	1.2	ug/L	1822	Standard
	Sc	45	57662.9	0.8				ug/L	55220	Standard
	Ti	47	336.7	9.7	**0.7312**	0.081	11.1	ug/L	34	Standard
	V	51	5982.0	43.5	**0.4395**	0.279	63.4	ug/L	1938	Standard
	Cr	52	611766.7	0.6	**65.8027**	0.537	0.8	ug/L	9522	Standard
	Cr	53	86462.7	0.9	**75.7804**	0.701	0.9	ug/L	395	Standard
	Mn	55	887838.0	0.5	**101.3493**	1.401	1.4	ug/L	902	Standard
	Co	59	4582.7	1.6	**0.5302**	0.006	1.1	ug/L	262	Standard
	Ni	60	41104.7	0.5	**17.8736**	0.095	0.5	ug/L	371	Standard
	Cu	65	2756.3	3.3	**1.1692**	0.052	4.4	ug/L	106	Standard
	Zn	66	17435.4	1.2	**12.8391**	0.252	2.0	ug/L	398	Standard
>	**Ge**	72	544681.4	1.0				ug/L	535147	Standard
	As	75	162.3	16.8	**0.1743**	0.020	11.4	ug/L	-43	Standard
	Se	82	40.0	22.7	**0.1928**	0.065	33.7	ug/L	14	Standard
	Se-1	77	588.7	14.2	**5.8405**	0.920	15.7	ug/L	65	Standard
>	**Ga**	71	186.7	6.7				mg/L	97	Standard
	Rb	85	47365.6	1.2				ug/L	15	Standard
	Y	89	471520.5	1.5				ug/L	465704	Standard
>	**Rh**	103	111.7	9.3				ug/L	10	Standard
	Mo	98	9357.1	1.9	**2.9396**	0.067	2.3	ug/L	9	Standard
	Ag	107	194.0	23.5	**0.0190**	0.006	31.8	ug/L	82	Standard
	Cd	111	169.3	4.2	**0.0764**	0.004	4.7	mg/L	7	Standard
	Cd	114	469.8	16.7	**0.0878**	0.013	14.9	ug/L	21	Standard
>	**In**	115	634293.5	1.1				ug/L	619035	Standard
	Sn	118	1250.1	5.7	**0.0841**	0.011	12.7	ug/L	508	Standard
	Sb	123	10516.4	0.9	**1.9427**	0.039	2.0	ug/L	86	Standard
	Ba	135	14835.6	0.8	**6.3138**	0.040	0.6	ug/L	79	Standard
	Ce	140	1355.1	1.3				ug/L	68	Standard
>	**Tb**	159	980205.4	1.5				ug/L	986982	Standard
	Ho	165	105.0	24.7				ug/L	10	Standard
	Tl	203	91.3	17.4	**0.0161**	0.002	11.0	ug/L	13	Standard
	Tl	205	81.7	33.7	**0.0182**	0.003	19.1	ug/L	10	Standard
	Pb	206	2801.3	0.6	**0.4427**	0.006	1.4	ug/L	264	Standard
	Pb	207	2407.5	0.5	**0.4237**	0.002	0.4	ug/L	227	Standard
	Pb	208	10014.6	0.8	**0.4546**	0.008	1.7	ug/L	868	Standard
	U	238	1288.7	2.6	**0.1794**	0.006	3.1	ug/L	8	Standard
>	**Bi**	209	538332.6	0.8				ug/L	541014	Standard

Sample ID: L1606106501
Report Date/Time: Thursday, June 30, 2016 17:52:21
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.0499**	15.666	173.1	mg/L	2	Standard
Mg	24	46080.0	1.0	**48.0607**	0.867	1.8	mg/L	53	Standard
K	39	1136.7	6.1	**1.7713**	0.112	6.3	mg/L	53	Standard
Ca	43	476.7	19.5	**24.1522**	4.825	20.0	mg/L	28	Standard
Fe	54	806.2	1.9	**0.4073**	0.006	1.4	mg/L	181	Standard
Fe	57	648.3	5.1	**0.9822**	0.098	9.9	mg/L	257	Standard
> **Sc-1**	45	57662.9	0.8				mg/L	55220	Standard
Cl	35	49425.8	0.4				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	5294.3	1.6				ug/L	2040	Standard
P	31	27229.5	2.2				ug/L	20435	Standard
S	34	3085.3	3.6				ug/L	2430	Standard
Sr	88	235.0	9.3				ug/L	75	Standard
C	12	146.7	23.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	128.2	58.4				mg/L	9	Standard
Ho-1	165	105.0	24.7				mg/L	10	Standard
Er	166	106.7	19.5				mg/L	23	Standard
I	127	7078.3	4.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.290	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.782	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106501
Report Date/Time: Thursday, June 30, 2016 17:52:21
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.465	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.504	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106502
Sample Date/Time: Thursday, June 30, 2016 17:53:16
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72146.4	2.3				ug/L	74916	Standard
	Be	9	33.3	69.3	**0.0291**	0.022	76.7	ug/L	10	Standard
	Al	27	9143805.5	1.7	**54.7197**	0.658	1.2	ug/L	1822	Standard
	Sc	45	57748.2	1.1				ug/L	55220	Standard
	Ti	47	387.0	7.8	**0.8501**	0.073	8.6	ug/L	34	Standard
	V	51	16858.0	80.2	**1.5917**	1.431	89.9	ug/L	1938	Standard
	Cr	52	4964026.3	0.6	**540.8487**	6.495	1.2	ug/L	9522	Standard
	Cr	53	629499.0	1.4	**553.7238**	13.816	2.5	ug/L	395	Standard
	Mn	55	883241.4	1.3	**100.7267**	1.452	1.4	ug/L	902	Standard
	Co	59	24044.4	1.3	**2.8764**	0.057	2.0	ug/L	262	Standard
	Ni	60	51740.2	1.0	**22.5158**	0.325	1.4	ug/L	371	Standard
	Cu	65	17579.9	1.8	**7.7639**	0.133	1.7	ug/L	106	Standard
	Zn	66	2765.6	0.3	**1.7428**	0.016	0.9	ug/L	398	Standard
>	Ge	72	545188.7	1.1				ug/L	535147	Standard
	As	75	735.7	13.4	**0.5948**	0.076	12.8	ug/L	-43	Standard
	Se	82	41.0	14.1	**0.2003**	0.044	22.2	ug/L	14	Standard
	Se-1	77	481.7	5.4	**4.6670**	0.276	5.9	ug/L	65	Standard
>	Ga	71	550.0	8.8				mg/L	97	Standard
	Rb	85	5659.4	1.5				ug/L	15	Standard
	Y	89	495236.8	0.4				ug/L	465704	Standard
>	Rh	103	58.3	34.6				ug/L	10	Standard
	Mo	98	53760.2	0.9	**16.9630**	0.070	0.4	ug/L	9	Standard
	Ag	107	191.3	10.8	**0.0189**	0.003	14.6	ug/L	82	Standard
	Cd	111	62.5	16.0	**0.0334**	0.004	11.9	mg/L	7	Standard
	Cd	114	293.6	17.4	**0.0586**	0.009	14.9	ug/L	21	Standard
>	In	115	629265.6	0.6				ug/L	619035	Standard
	Sn	118	2848.6	5.3	**0.3272**	0.024	7.4	ug/L	508	Standard
	Sb	123	804.0	3.9	**0.1538**	0.006	3.9	ug/L	86	Standard
	Ba	135	14742.2	1.9	**6.3237**	0.092	1.5	ug/L	79	Standard
	Ce	140	2671.9	4.0				ug/L	68	Standard
>	Tb	159	977403.9	1.3				ug/L	986982	Standard
	Ho	165	1240.1	9.1				ug/L	10	Standard
	Tl	203	196.7	16.2	**0.0277**	0.004	12.6	ug/L	13	Standard
	Tl	205	168.3	6.2	**0.0295**	0.001	4.2	ug/L	10	Standard
	Pb	206	866.4	7.6	**0.1114**	0.011	10.1	ug/L	264	Standard
	Pb	207	763.4	10.1	**0.1122**	0.014	12.8	ug/L	227	Standard
	Pb	208	3091.5	4.1	**0.1144**	0.006	5.3	ug/L	868	Standard
	U	238	383.7	7.3	**0.0591**	0.004	6.2	ug/L	8	Standard
>	Bi	209	536269.8	0.5				ug/L	541014	Standard

Sample ID: L1606106502
Report Date/Time: Thursday, June 30, 2016 17:55:33
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**17.8230**	15.431	86.6	mg/L	2	Standard
Mg	24	50808.4	2.5	**52.9253**	1.876	3.5	mg/L	53	Standard
K	39	263.3	23.9	**0.3507**	0.098	27.9	mg/L	53	Standard
Ca	43	335.0	14.2	**16.4838**	2.751	16.7	mg/L	28	Standard
Fe	54	3770.4	4.9	**2.3376**	0.113	4.8	mg/L	181	Standard
Fe	57	1288.4	9.4	**2.6008**	0.312	12.0	mg/L	257	Standard
Sc-1	45	57748.2	1.1				mg/L	55220	Standard
Cl	35	47216.1	1.9				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	5644.4	5.9				ug/L	2040	Standard
P	31	28563.6	2.2				ug/L	20435	Standard
S	34	3062.0	5.7				ug/L	2430	Standard
Sr	88	153.3	16.4				ug/L	75	Standard
C	12	156.7	14.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	33.3				mg/L	7	Standard
Dy	164	1576.7	5.4				mg/L	9	Standard
Ho-1	165	1240.1	9.1				mg/L	10	Standard
Er	166	1183.4	13.0				mg/L	23	Standard
I	127	11782.9	3.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		96.303	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.876	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606106502
Report Date/Time: Thursday, June 30, 2016 17:55:33
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.653	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.123	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106503
Sample Date/Time: Thursday, June 30, 2016 17:56:27
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72267.1	3.4				ug/L	74916	Standard
	Be	9	25.0	20.0	**0.0211**	0.005	25.9	ug/L	10	Standard
	Al	27	9609222.0	1.3	**57.4380**	1.746	3.0	ug/L	1822	Standard
	Sc	45	56719.3	1.4				ug/L	55220	Standard
	Ti	47	314.0	8.3	**0.6892**	0.070	10.2	ug/L	34	Standard
	V	51	9882.7	51.2	**0.8691**	0.548	63.1	ug/L	1938	Standard
	Cr	52	1188107.4	0.9	**130.8093**	1.119	0.9	ug/L	9522	Standard
	Cr	53	157236.7	1.1	**140.2942**	0.188	0.1	ug/L	395	Standard
	Mn	55	1593129.9	0.6	**184.7936**	1.923	1.0	ug/L	902	Standard
	Co	59	5302.6	0.8	**0.6272**	0.010	1.6	ug/L	262	Standard
	Ni	60	52859.7	0.7	**23.3912**	0.318	1.4	ug/L	371	Standard
	Cu	65	4676.1	1.5	**2.0568**	0.050	2.4	ug/L	106	Standard
	Zn	66	13695.9	1.8	**10.1747**	0.313	3.1	ug/L	398	Standard
>	**Ge**	72	536277.7	1.2				ug/L	535147	Standard
	As	75	582.2	21.2	**0.4890**	0.092	18.9	ug/L	-43	Standard
	Se	82	45.5	5.6	**0.2385**	0.021	8.7	ug/L	14	Standard
	Se-1	77	720.0	2.4	**7.3963**	0.270	3.6	ug/L	65	Standard
>	**Ga**	71	248.3	30.8				mg/L	97	Standard
	Rb	85	4008.9	1.2				ug/L	15	Standard
	Y	89	473754.3	0.1				ug/L	465704	Standard
>	**Rh**	103	110.0	7.9				ug/L	10	Standard
	Mo	98	4459.5	1.0	**1.4370**	0.027	1.9	ug/L	9	Standard
	Ag	107	169.7	20.5	**0.0163**	0.005	28.3	ug/L	82	Standard
	Cd	111	27.4	24.2	**0.0192**	0.003	14.6	mg/L	7	Standard
	Cd	114	98.3	29.5	**0.0258**	0.005	19.6	ug/L	21	Standard
>	**In**	115	621152.9	1.0				ug/L	619035	Standard
	Sn	118	1058.4	7.6	**0.0588**	0.014	23.7	ug/L	508	Standard
	Sb	123	419.5	13.7	**0.0834**	0.011	13.3	ug/L	86	Standard
	Ba	135	41508.4	0.6	**18.0760**	0.194	1.1	ug/L	79	Standard
	Ce	140	6071.2	3.4				ug/L	68	Standard
>	**Tb**	159	964455.2	0.8				ug/L	986982	Standard
	Ho	165	346.7	14.4				ug/L	10	Standard
	Tl	203	247.0	3.9	**0.0337**	0.001	3.3	ug/L	13	Standard
	Tl	205	235.0	9.8	**0.0386**	0.003	8.2	ug/L	10	Standard
	Pb	206	1431.7	0.2	**0.2128**	0.001	0.5	ug/L	264	Standard
	Pb	207	1231.7	1.9	**0.2053**	0.005	2.2	ug/L	227	Standard
	Pb	208	5055.0	0.8	**0.2155**	0.001	0.4	ug/L	868	Standard
	U	238	897.7	3.9	**0.1297**	0.005	3.8	ug/L	8	Standard
>	**Bi**	209	527610.6	0.5				ug/L	541014	Standard

Sample ID: L1606106503
Report Date/Time: Thursday, June 30, 2016 17:58:44
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**27.1787**	27.209	100.1	mg/L	2	Standard
Mg	24	76226.3	1.0	**80.8465**	0.780	1.0	mg/L	53	Standard
K	39	330.0	9.5	**0.4690**	0.047	10.1	mg/L	53	Standard
Ca	43	416.7	13.3	**21.2780**	2.769	13.0	mg/L	28	Standard
Fe	54	2258.1	2.4	**1.3795**	0.049	3.6	mg/L	181	Standard
Fe	57	981.7	1.6	**1.8687**	0.018	1.0	mg/L	257	Standard
> **Sc-1**	45	56719.3	1.4				mg/L	55220	Standard
Cl	35	47083.0	0.3				ug/L	35504	Standard
Kr	83	4.7	53.9				ug/L	2	Standard
Br	81	8569.1	2.3				ug/L	2040	Standard
P	31	27803.8	2.0				ug/L	20435	Standard
S	34	3010.3	4.7				ug/L	2430	Standard
Sr	88	171.7	11.0				ug/L	75	Standard
C	12	170.0	56.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	7	Standard
Dy	164	380.7	13.5				mg/L	9	Standard
Ho-1	165	346.7	14.4				mg/L	10	Standard
Er	166	403.3	12.7				mg/L	23	Standard
I	127	14363.5	3.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.464	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.211	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106503
Report Date/Time: Thursday, June 30, 2016 17:58:44
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.342	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.523	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106504
Sample Date/Time: Thursday, June 30, 2016 17:59:39
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73044.0	0.7				ug/L	74916	Standard
	Be	9	20.0	66.1	**0.0158**	0.013	81.1	ug/L	10	Standard
	Al	27	14890059.6	1.9	**88.0112**	2.233	2.5	ug/L	1822	Standard
	Sc	45	56127.1	2.5				ug/L	55220	Standard
	Ti	47	684.7	0.3	**1.5842**	0.013	0.8	ug/L	34	Standard
	V	51	13946.2	28.3	**1.3048**	0.416	31.8	ug/L	1938	Standard
	Cr	52	1670670.6	1.4	**184.2918**	1.683	0.9	ug/L	9522	Standard
	Cr	53	217611.9	1.9	**194.2485**	3.221	1.7	ug/L	395	Standard
	Mn	55	1043368.4	2.0	**120.9446**	2.516	2.1	ug/L	902	Standard
	Co	59	41859.4	0.7	**5.1062**	0.013	0.3	ug/L	262	Standard
	Ni	60	94446.5	0.6	**41.8919**	0.141	0.3	ug/L	371	Standard
	Cu	65	5341.9	1.9	**2.3570**	0.039	1.7	ug/L	106	Standard
	Zn	66	14047.2	1.9	**10.4384**	0.166	1.6	ug/L	398	Standard
>	Ge	72	536441.4	0.6				ug/L	535147	Standard
	As	75	633.5	11.9	**0.5272**	0.058	11.0	ug/L	-43	Standard
	Se	82	31.7	5.9	**0.1362**	0.013	9.3	ug/L	14	Standard
	Se-1	77	649.7	1.0	**6.6130**	0.043	0.7	ug/L	65	Standard
>	Ga	71	410.0	14.8				mg/L	97	Standard
	Rb	85	132130.3	1.2				ug/L	15	Standard
	Y	89	474946.5	2.3				ug/L	465704	Standard
>	Rh	103	93.3	29.5				ug/L	10	Standard
	Mo	98	5272.3	2.4	**1.7093**	0.050	2.9	ug/L	9	Standard
	Ag	107	231.7	10.6	**0.0248**	0.003	13.3	ug/L	82	Standard
	Cd	111	395.6	5.6	**0.1725**	0.010	5.9	mg/L	7	Standard
	Cd	114	1048.3	2.6	**0.1900**	0.004	2.0	ug/L	21	Standard
>	In	115	616493.3	0.5				ug/L	619035	Standard
	Sn	118	1433.4	5.0	**0.1177**	0.011	9.0	ug/L	508	Standard
	Sb	123	13013.0	1.3	**2.4718**	0.035	1.4	ug/L	86	Standard
	Ba	135	13824.0	1.2	**6.0522**	0.083	1.4	ug/L	79	Standard
	Ce	140	7013.3	4.1				ug/L	68	Standard
>	Tb	159	964332.8	2.1				ug/L	986982	Standard
	Ho	165	1006.7	4.5				ug/L	10	Standard
	Tl	203	208.7	13.6	**0.0294**	0.003	10.0	ug/L	13	Standard
	Tl	205	180.0	43.3	**0.0314**	0.010	33.1	ug/L	10	Standard
	Pb	206	6744.2	1.3	**1.1438**	0.024	2.1	ug/L	264	Standard
	Pb	207	5755.1	0.8	**1.0824**	0.023	2.1	ug/L	227	Standard
	Pb	208	23463.1	0.3	**1.1412**	0.017	1.5	ug/L	868	Standard
	U	238	640.0	6.0	**0.0949**	0.006	6.0	ug/L	8	Standard
>	Bi	209	527082.8	1.3				ug/L	541014	Standard

Sample ID: L1606106504
Report Date/Time: Thursday, June 30, 2016 18:01:55
Page 1

Approved: July 01, 2016

Na	23	8.3	69.3	**46.3620**	32.662	70.5	mg/L	2	Standard
Mg	24	54382.5	2.9	**58.2709**	0.521	0.9	mg/L	53	Standard
K	39	2045.1	8.2	**3.3436**	0.351	10.5	mg/L	53	Standard
Ca	43	306.7	14.2	**15.4474**	2.730	17.7	mg/L	28	Standard
Fe	54	2616.1	3.9	**1.6351**	0.060	3.7	mg/L	181	Standard
Fe	57	1056.7	7.6	**2.0939**	0.256	12.2	mg/L	257	Standard
> **Sc-1**	45	56127.1	2.5				mg/L	55220	Standard
Cl	35	46950.6	1.7				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	5627.7	2.5				ug/L	2040	Standard
P	31	28496.8	5.3				ug/L	20435	Standard
S	34	3097.0	2.4				ug/L	2430	Standard
Sr	88	225.0	25.6				ug/L	75	Standard
C	12	120.0	22.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	7	Standard
Dy	164	1300.3	7.6				mg/L	9	Standard
Ho-1	165	1006.7	4.5				mg/L	10	Standard
Er	166	900.0	5.9				mg/L	23	Standard
I	127	8590.8	4.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.242	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106504
Report Date/Time: Thursday, June 30, 2016 18:01:55
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.589
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.425
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106505
Sample Date/Time: Thursday, June 30, 2016 18:02:50
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74521.2	1.6				ug/L	74916	Standard
	Be	9	11.7	89.2	**0.0075**	0.010	132.8	ug/L	10	Standard
	Al	27	21478597.1	0.8	**124.4554**	2.868	2.3	ug/L	1822	Standard
	Sc	45	57492.2	2.1				ug/L	55220	Standard
	Ti	47	252.3	5.2	**0.5312**	0.026	5.0	ug/L	34	Standard
	V	51	5121.6	17.5	**0.3486**	0.101	28.9	ug/L	1938	Standard
	Cr	52	70044.2	0.4	**6.6263**	0.112	1.7	ug/L	9522	Standard
	Cr	53	18946.8	3.0	**16.3331**	0.630	3.9	ug/L	395	Standard
	Mn	55	443945.6	0.8	**50.7064**	0.748	1.5	ug/L	902	Standard
	Co	59	1061.4	2.8	**0.1055**	0.005	4.7	ug/L	262	Standard
	Ni	60	12700.7	1.0	**5.4312**	0.085	1.6	ug/L	371	Standard
	Cu	65	1736.8	1.8	**0.7160**	0.009	1.3	ug/L	106	Standard
	Zn	66	3357.7	1.7	**2.1967**	0.054	2.5	ug/L	398	Standard
>	**Ge**	72	543813.6	1.1				ug/L	535147	Standard
	As	75	48.4	94.1	**0.0908**	0.034	37.0	ug/L	-43	Standard
	Se	82	48.8	16.1	**0.2573**	0.058	22.6	ug/L	14	Standard
	Se-1	77	599.7	2.9	**5.9687**	0.138	2.3	ug/L	65	Standard
>	**Ga**	71	270.0	25.7				mg/L	97	Standard
	Rb	85	463340.4	1.4				ug/L	15	Standard
	Y	89	469105.6	1.4				ug/L	465704	Standard
>	**Rh**	103	75.0	17.6				ug/L	10	Standard
	Mo	98	1754.4	2.2	**0.5694**	0.017	3.0	ug/L	9	Standard
	Ag	107	196.0	47.6	**0.0197**	0.012	62.6	ug/L	82	Standard
	Cd	111	159.1	1.3	**0.0732**	0.001	1.9	mg/L	7	Standard
	Cd	114	395.1	15.1	**0.0762**	0.010	12.9	ug/L	21	Standard
>	**In**	115	625024.6	0.8				ug/L	619035	Standard
	Sn	118	990.0	15.1	**0.0473**	0.023	48.5	ug/L	508	Standard
	Sb	123	5564.4	1.8	**1.0452**	0.025	2.4	ug/L	86	Standard
	Ba	135	10303.2	1.2	**4.4444**	0.086	1.9	ug/L	79	Standard
	Ce	140	1150.0	11.1				ug/L	68	Standard
>	**Tb**	159	978171.3	1.4				ug/L	986982	Standard
	Ho	165	78.3	13.3				ug/L	10	Standard
	Tl	203	125.3	56.3	**0.0199**	0.008	39.6	ug/L	13	Standard
	Tl	205	88.3	25.5	**0.0191**	0.003	15.4	ug/L	10	Standard
	Pb	206	1646.1	2.8	**0.2461**	0.009	3.7	ug/L	264	Standard
	Pb	207	1373.4	5.0	**0.2288**	0.014	6.2	ug/L	227	Standard
	Pb	208	5691.1	0.6	**0.2433**	0.003	1.2	ug/L	868	Standard
	U	238	70.0	35.1	**0.0173**	0.003	19.3	ug/L	8	Standard
>	**Bi**	209	535475.4	0.5				ug/L	541014	Standard

Sample ID: L1606106505
Report Date/Time: Thursday, June 30, 2016 18:05:07
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	34121.7	1.4	**35.6859**	0.355	1.0	mg/L	53	Standard
K	39	9759.8	0.3	**15.8371**	0.382	2.4	mg/L	53	Standard
Ca	43	246.7	6.2	**11.7374**	0.613	5.2	mg/L	28	Standard
Fe	54	445.3	11.1	**0.1732**	0.039	22.4	mg/L	181	Standard
Fe	57	443.3	5.7	**0.4651**	0.060	13.0	mg/L	257	Standard
> **Sc-1**	45	57492.2	2.1				mg/L	55220	Standard
Cl	35	51043.8	0.6				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	7035.0	6.1				ug/L	2040	Standard
P	31	27479.9	4.1				ug/L	20435	Standard
S	34	2850.3	7.2				ug/L	2430	Standard
Sr	88	156.7	14.4				ug/L	75	Standard
C	12	150.0	33.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	57.0	65.8				mg/L	9	Standard
Ho-1	165	78.3	13.3				mg/L	10	Standard
Er	166	63.3	71.2				mg/L	23	Standard
I	127	8402.3	4.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.472	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.619	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106505
Report Date/Time: Thursday, June 30, 2016 18:05:07
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.968
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.976
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606106505
Report Date/Time: Thursday, June 30, 2016 18:05:07
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106506
Sample Date/Time: Thursday, June 30, 2016 18:06:02
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71069.7	2.2				ug/L	74916	Standard
	Be	9	30.0	33.3	**0.0265**	0.010	39.6	ug/L	10	Standard
	Al	27	11143825.1	2.6	**67.6893**	0.868	1.3	ug/L	1822	Standard
	Sc	45	56048.5	1.5				ug/L	55220	Standard
	Ti	47	477.7	3.5	**1.0979**	0.040	3.7	ug/L	34	Standard
	V	51	4437.6	7.8	**0.2877**	0.039	13.6	ug/L	1938	Standard
	Cr	52	45979.0	2.0	**4.1225**	0.083	2.0	ug/L	9522	Standard
	Cr	53	13444.3	4.2	**11.7831**	0.524	4.4	ug/L	395	Standard
	Mn	55	3575608.0	1.6	**419.7161**	4.801	1.1	ug/L	902	Standard
	Co	59	2220.8	1.8	**0.2526**	0.003	1.3	ug/L	262	Standard
	Ni	60	7995.4	0.2	**3.4561**	0.023	0.7	ug/L	371	Standard
	Cu	65	2743.2	1.7	**1.1967**	0.016	1.3	ug/L	106	Standard
	Zn	66	4451.7	1.5	**3.1126**	0.058	1.9	ug/L	398	Standard
>	**Ge**	72	530048.9	0.6				ug/L	535147	Standard
	As	75	2032.0	2.8	**1.5868**	0.042	2.6	ug/L	-43	Standard
	Se	82	76.9	9.6	**0.4758**	0.054	11.4	ug/L	14	Standard
	Se-1	77	672.7	3.2	**6.9571**	0.208	3.0	ug/L	65	Standard
>	**Ga**	71	185.0	9.7				mg/L	97	Standard
	Rb	85	7120.0	1.7				ug/L	15	Standard
	Y	89	462046.4	1.0				ug/L	465704	Standard
>	**Rh**	103	118.3	34.2				ug/L	10	Standard
	Mo	98	710.5	3.3	**0.2430**	0.007	3.1	ug/L	9	Standard
	Ag	107	224.0	3.1	**0.0240**	0.001	3.7	ug/L	82	Standard
	Cd	111	47.0	19.1	**0.0276**	0.004	13.4	mg/L	7	Standard
	Cd	114	113.0	29.7	**0.0286**	0.006	20.3	ug/L	21	Standard
>	**In**	115	611324.6	0.3				ug/L	619035	Standard
	Sn	118	1256.7	33.6	**0.0923**	0.066	71.8	ug/L	508	Standard
	Sb	123	729.4	5.3	**0.1439**	0.008	5.4	ug/L	86	Standard
	Ba	135	23684.8	0.9	**10.4710**	0.067	0.6	ug/L	79	Standard
	Ce	140	3487.1	5.2				ug/L	68	Standard
>	**Tb**	159	950376.7	0.4				ug/L	986982	Standard
	Ho	165	113.3	16.7				ug/L	10	Standard
	Tl	203	194.3	13.6	**0.0282**	0.003	10.7	ug/L	13	Standard
	Tl	205	166.7	7.5	**0.0300**	0.002	5.4	ug/L	10	Standard
	Pb	206	868.0	3.2	**0.1167**	0.005	4.3	ug/L	264	Standard
	Pb	207	745.7	6.4	**0.1136**	0.009	8.0	ug/L	227	Standard
	Pb	208	2985.1	1.3	**0.1141**	0.002	1.4	ug/L	868	Standard
	U	238	143.0	9.5	**0.0276**	0.002	6.8	ug/L	8	Standard
>	**Bi**	209	518904.1	0.3				ug/L	541014	Standard

Sample ID: L1606106506
Report Date/Time: Thursday, June 30, 2016 18:08:18
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**27.6637**	27.875	100.8	mg/L	2	Standard
Mg	24	64789.9	2.1	**69.5287**	0.838	1.2	mg/L	53	Standard
K	39	358.3	15.4	**0.5231**	0.092	17.6	mg/L	53	Standard
Ca	43	758.4	6.6	**40.6443**	2.815	6.9	mg/L	28	Standard
Fe	54	4937.5	1.5	**3.1958**	0.022	0.7	mg/L	181	Standard
Fe	57	1738.4	3.5	**3.8759**	0.222	5.7	mg/L	257	Standard
> **Sc-1**	45	56048.5	1.5				mg/L	55220	Standard
Cl	35	46920.6	2.0				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	14326.8	1.4				ug/L	2040	Standard
P	31	27583.5	4.6				ug/L	20435	Standard
S	34	3072.0	2.6				ug/L	2430	Standard
Sr	88	263.3	13.3				ug/L	75	Standard
C	12	206.7	12.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	203.6	27.1				mg/L	9	Standard
Ho-1	165	113.3	16.7				mg/L	10	Standard
Er	166	133.3	8.7				mg/L	23	Standard
I	127	19841.3	3.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.865	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.047	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106506
Report Date/Time: Thursday, June 30, 2016 18:08:18
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.754
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.913
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606106506
Report Date/Time: Thursday, June 30, 2016 18:08:18
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106804
Sample Date/Time: Thursday, June 30, 2016 18:09:13
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77459.2	1.8				ug/L	74916	Standard
	Be	9	18.3	68.6	**0.0131**	0.011	86.1	ug/L	10	Standard
	Al	27	41020836.0	0.1	**228.6660**	3.747	1.6	ug/L	1822	Standard
	Sc	45	58899.3	1.4				ug/L	55220	Standard
	Ti	47	683.7	2.2	**1.6300**	0.029	1.8	ug/L	34	Standard
	V	51	10480.9	2.8	**0.9661**	0.034	3.5	ug/L	1938	Standard
	Cr	52	17903.6	1.0	**1.0049**	0.037	3.7	ug/L	9522	Standard
	Cr	53	28528.6	6.8	**25.8846**	1.981	7.7	ug/L	395	Standard
	Mn	55	109383.8	1.1	**12.9559**	0.037	0.3	ug/L	902	Standard
	Co	59	3379.4	2.6	**0.4033**	0.008	2.0	ug/L	262	Standard
	Ni	60	4055.2	0.8	**1.7121**	0.017	1.0	ug/L	371	Standard
	Cu	65	1283.7	4.3	**0.5389**	0.030	5.6	ug/L	106	Standard
	Zn	66	4828.4	1.2	**3.4689**	0.012	0.4	ug/L	398	Standard
>	**Ge**	72	521209.6	0.9				ug/L	535147	Standard
	As	75	2211.0	8.9	**1.7504**	0.158	9.0	ug/L	-43	Standard
	Se	82	893.2	6.4	**6.6723**	0.493	7.4	ug/L	14	Standard
	Se-1	77	1913.1	8.8	**21.2303**	2.028	9.6	ug/L	65	Standard
>	**Ga**	71	136.7	5.6				mg/L	97	Standard
	Rb	85	8235.6	0.7				ug/L	15	Standard
	Y	89	458447.5	0.6				ug/L	465704	Standard
>	**Rh**	103	401.7	9.0				ug/L	10	Standard
	Mo	98	249.5	8.0	**0.0959**	0.007	7.1	ug/L	9	Standard
	Ag	107	181.3	9.8	**0.0190**	0.002	13.0	ug/L	82	Standard
	Cd	111	300.2	7.7	**0.1378**	0.009	6.7	mg/L	7	Standard
	Cd	114	734.2	11.4	**0.1410**	0.016	11.2	ug/L	21	Standard
>	**In**	115	592465.9	1.1				ug/L	619035	Standard
	Sn	118	775.0	11.8	**0.0209**	0.013	64.4	ug/L	508	Standard
	Sb	123	603.9	4.2	**0.1235**	0.004	3.4	ug/L	86	Standard
	Ba	135	545541.8	0.5	**249.3393**	4.016	1.6	ug/L	79	Standard
	Ce	140	2048.5	7.3				ug/L	68	Standard
>	**Tb**	159	949095.6	1.2				ug/L	986982	Standard
	Ho	165	88.3	18.2				ug/L	10	Standard
	Tl	203	97.3	8.7	**0.0173**	0.001	5.4	ug/L	13	Standard
	Tl	205	90.0	16.7	**0.0199**	0.002	10.1	ug/L	10	Standard
	Pb	206	978.0	0.7	**0.1390**	0.001	0.7	ug/L	264	Standard
	Pb	207	802.4	6.7	**0.1273**	0.011	8.8	ug/L	227	Standard
	Pb	208	3285.1	1.3	**0.1321**	0.002	1.4	ug/L	868	Standard
	U	238	1121.4	2.1	**0.1651**	0.002	1.4	ug/L	8	Standard
>	**Bi**	209	510708.2	0.8				ug/L	541014	Standard

Sample ID: L1606106804
Report Date/Time: Thursday, June 30, 2016 18:11:30
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**26.2857**	26.048	99.1	mg/L	2	Standard
Mg	24	118017.9	1.0	**120.5636**	2.169	1.8	mg/L	53	Standard
K	39	473.3	3.2	**0.6774**	0.033	4.9	mg/L	53	Standard
Ca	43	628.3	1.2	**31.6956**	0.741	2.3	mg/L	28	Standard
Fe	54	284.4	4.9	**0.0630**	0.011	17.3	mg/L	181	Standard
Fe	57	583.3	4.1	**0.7864**	0.079	10.0	mg/L	257	Standard
> **Sc-1**	45	58899.3	1.4				mg/L	55220	Standard
Cl	35	47927.0	0.5				ug/L	35504	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	177183.7	2.3				ug/L	2040	Standard
P	31	33166.3	1.4				ug/L	20435	Standard
S	34	3038.6	3.6				ug/L	2430	Standard
Sr	88	1120.0	5.8				ug/L	75	Standard
C	12	333.3	41.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	78.9	41.1				mg/L	9	Standard
Ho-1	165	88.3	18.2				mg/L	10	Standard
Er	166	93.3	16.4				mg/L	23	Standard
I	127	490251.5	7.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.394	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.396	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106804
Report Date/Time: Thursday, June 30, 2016 18:11:30
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.708
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.398
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106805
Sample Date/Time: Thursday, June 30, 2016 18:12:25
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78762.6	2.6				ug/L	74916	Standard
	Be	9	20.0	50.0	**0.0144**	0.009	60.4	ug/L	10	Standard
	Al	27	41204374.5	1.8	**225.9730**	8.404	3.7	ug/L	1822	Standard
	Sc	45	61672.0	2.2				ug/L	55220	Standard
	Ti	47	674.3	4.5	**1.5812**	0.070	4.5	ug/L	34	Standard
	V	51	11529.2	6.0	**1.0631**	0.082	7.7	ug/L	1938	Standard
	Cr	52	18039.7	0.8	**0.9888**	0.007	0.7	ug/L	9522	Standard
	Cr	53	31686.4	2.6	**28.3390**	0.782	2.8	ug/L	395	Standard
	Mn	55	109122.6	0.6	**12.7266**	0.120	0.9	ug/L	902	Standard
	Co	59	3320.0	3.2	**0.3895**	0.012	3.0	ug/L	262	Standard
	Ni	60	4079.5	2.0	**1.6947**	0.030	1.7	ug/L	371	Standard
	Cu	65	1241.4	3.2	**0.5103**	0.020	4.0	ug/L	106	Standard
	Zn	66	4815.1	1.9	**3.4002**	0.053	1.5	ug/L	398	Standard
>	**Ge**	72	529274.8	0.6				ug/L	535147	Standard
	As	75	2209.6	7.3	**1.7236**	0.131	7.6	ug/L	-43	Standard
	Se	82	896.1	1.4	**6.5882**	0.124	1.9	ug/L	14	Standard
	Se-1	77	2079.1	4.3	**22.7577**	1.102	4.8	ug/L	65	Standard
>	**Ga**	71	145.0	12.4				mg/L	97	Standard
	Rb	85	8400.7	1.3				ug/L	15	Standard
	Y	89	462821.0	0.8				ug/L	465704	Standard
>	**Rh**	103	420.0	13.3				ug/L	10	Standard
	Mo	98	221.4	13.0	**0.0855**	0.010	11.2	ug/L	9	Standard
	Ag	107	161.0	24.1	**0.0159**	0.005	33.2	ug/L	82	Standard
	Cd	111	299.9	12.1	**0.1359**	0.015	11.3	mg/L	7	Standard
	Cd	114	712.8	9.3	**0.1352**	0.011	8.5	ug/L	21	Standard
>	**In**	115	600962.3	0.2				ug/L	619035	Standard
	Sn	118	703.3	5.7	**0.0079**	0.006	79.0	ug/L	508	Standard
	Sb	123	530.9	6.4	**0.1077**	0.006	6.0	ug/L	86	Standard
	Ba	135	542029.2	0.7	**244.1998**	1.171	0.5	ug/L	79	Standard
	Ce	140	1825.1	4.0				ug/L	68	Standard
>	**Tb**	159	958625.4	0.8				ug/L	986982	Standard
	Ho	165	46.7	16.4				ug/L	10	Standard
	Tl	203	87.3	19.7	**0.0161**	0.002	12.5	ug/L	13	Standard
	Tl	205	65.0	20.4	**0.0165**	0.002	10.9	ug/L	10	Standard
	Pb	206	1118.4	2.4	**0.1631**	0.005	2.8	ug/L	264	Standard
	Pb	207	947.7	3.3	**0.1551**	0.006	4.1	ug/L	227	Standard
	Pb	208	3928.5	2.1	**0.1641**	0.004	2.3	ug/L	868	Standard
	U	238	1138.7	0.9	**0.1665**	0.002	1.1	ug/L	8	Standard
>	**Bi**	209	514052.9	0.4				ug/L	541014	Standard

Sample ID: L1606106805
Report Date/Time: Thursday, June 30, 2016 18:14:41
Page 1

Approved: July 01, 2016

Na	23	6.7	114.6	**34.1484**	39.564	115.9	mg/L	2	Standard
Mg	24	120082.3	0.4	**117.1865**	3.113	2.7	mg/L	53	Standard
K	39	458.3	18.1	**0.6225**	0.142	22.8	mg/L	53	Standard
Ca	43	670.0	12.3	**32.3531**	4.666	14.4	mg/L	28	Standard
Fe	54	211.5	10.0	**0.0101**	0.010	102.2	mg/L	181	Standard
Fe	57	595.0	16.8	**0.7476**	0.225	30.2	mg/L	257	Standard
> **Sc-1**	45	61672.0	2.2				mg/L	55220	Standard
Cl	35	48429.3	0.5				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	177803.9	0.6				ug/L	2040	Standard
P	31	34178.5	1.4				ug/L	20435	Standard
S	34	3103.7	2.6				ug/L	2430	Standard
Sr	88	1121.7	7.1				ug/L	75	Standard
C	12	310.0	12.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	98.9	29.5				mg/L	9	Standard
Ho-1	165	46.7	16.4				mg/L	10	Standard
Er	166	93.3	12.4				mg/L	23	Standard
I	127	532134.0	7.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.134	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.903	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106805
Report Date/Time: Thursday, June 30, 2016 18:14:41
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.081
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.017
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106811
Sample Date/Time: Thursday, June 30, 2016 18:15:36
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78749.2	2.6				ug/L	74916	Standard
	Be	9	3210.3	2.9	**2.8931**	0.138	4.8	ug/L	10	Standard
	Al	27	8276123.8	2.0	**45.3731**	0.379	0.8	ug/L	1822	Standard
	Sc	45	110165.8	2.1				ug/L	55220	Standard
	Ti	47	71798.4	1.1	**163.8727**	1.830	1.1	ug/L	34	Standard
	V	51	597395.3	2.2	**60.6469**	1.875	3.1	ug/L	1938	Standard
	Cr	52	454287.2	0.3	**46.5886**	0.601	1.3	ug/L	9522	Standard
	Cr	53	59023.1	2.1	**49.5051**	1.218	2.5	ug/L	395	Standard
	Mn	55	4104131.7	1.4	**449.9024**	9.422	2.1	ug/L	902	Standard
	Co	59	94928.8	1.1	**10.9690**	0.039	0.4	ug/L	262	Standard
	Ni	60	95168.6	0.3	**39.8855**	0.353	0.9	ug/L	371	Standard
	Cu	65	119473.9	0.7	**50.9995**	0.248	0.5	ug/L	106	Standard
	Zn	66	542722.9	0.9	**393.4429**	2.381	0.6	ug/L	398	Standard
>	Ge	72	567664.4	0.9				ug/L	535147	Standard
	As	75	7285.2	0.6	**5.1825**	0.021	0.4	ug/L	-43	Standard
	Se	82	272.3	1.4	**1.7973**	0.037	2.1	ug/L	14	Standard
	Se-1	77	303.7	6.5	**2.5954**	0.179	6.9	ug/L	65	Standard
>	Ga	71	56776.2	2.2				mg/L	97	Standard
	Rb	85	477870.7	0.6				ug/L	15	Standard
	Y	89	822359.5	0.5				ug/L	465704	Standard
>	Rh	103	91.7	11.4				ug/L	10	Standard
	Mo	98	1727.7	2.3	**0.5395**	0.015	2.9	ug/L	9	Standard
	Ag	107	1194.0	7.9	**0.1445**	0.011	7.9	ug/L	82	Standard
	Cd	111	5005.8	0.8	**1.9818**	0.018	0.9	mg/L	7	Standard
	Cd	114	12202.2	2.0	**2.0071**	0.047	2.3	ug/L	21	Standard
>	In	115	650434.8	0.8				ug/L	619035	Standard
	Sn	118	1160.0	0.4	**0.0662**	0.001	1.3	ug/L	508	Standard
	Sb	123	470.0	9.1	**0.0889**	0.008	8.8	ug/L	86	Standard
	Ba	135	653420.0	0.4	**272.0161**	3.332	1.2	ug/L	79	Standard
	Ce	140	1323543.4	0.9				ug/L	68	Standard
>	Tb	159	1024977.1	0.6				ug/L	986982	Standard
	Ho	165	25294.4	0.4				ug/L	10	Standard
	Tl	203	3087.0	0.8	**0.3285**	0.001	0.2	ug/L	13	Standard
	Tl	205	2636.9	5.2	**0.3302**	0.020	5.9	ug/L	10	Standard
	Pb	206	174438.4	0.1	**28.3571**	0.235	0.8	ug/L	264	Standard
	Pb	207	142402.4	0.8	**25.6126**	0.261	1.0	ug/L	227	Standard
	Pb	208	605823.5	0.5	**28.2596**	0.349	1.2	ug/L	868	Standard
	U	238	20875.4	0.8	**2.6436**	0.041	1.5	ug/L	8	Standard
>	Bi	209	567257.9	0.9				ug/L	541014	Standard

Sample ID: L1606106811
Report Date/Time: Thursday, June 30, 2016 18:17:53
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	7990.4	1.6	**4.3309**	0.069	1.6	mg/L	53	Standard
K	39	1378.4	4.7	**1.0972**	0.070	6.4	mg/L	53	Standard
Ca	43	161.7	15.3	**2.9254**	0.802	27.4	mg/L	28	Standard
Fe	54	40769.5	0.5	**13.8094**	0.314	2.3	mg/L	181	Standard
Fe	57	10608.7	0.8	**13.4263**	0.334	2.5	mg/L	257	Standard
Sc-1	45	110165.8	2.1				mg/L	55220	Standard
Cl	35	42049.6	2.4				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	8065.5	16.8				ug/L	2040	Standard
P	31	76226.3	1.5				ug/L	20435	Standard
S	34	2406.9	13.6				ug/L	2430	Standard
Sr	88	263.3	4.8				ug/L	75	Standard
C	12	300.0	8.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	330.0	8.0				mg/L	7	Standard
Dy	164	39232.4	1.8				mg/L	9	Standard
Ho-1	165	25294.4	0.4				mg/L	10	Standard
Er	166	23965.6	1.4				mg/L	23	Standard
I	127	64313.6	9.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.116	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.076	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606106811
Report Date/Time: Thursday, June 30, 2016 18:17:53
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.072
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.851
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606106811
Report Date/Time: Thursday, June 30, 2016 18:17:53
Page 3

Approved: July 01, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122803
Sample Date/Time: Thursday, June 30, 2016 18:18:47
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75779.1	1.5				ug/L	74916	Standard
	Be	9	38.3	58.8	**0.0323**	0.021	65.8	ug/L	10	Standard
	Al	27	3674175.9	1.4	**20.9293**	0.040	0.2	ug/L	1822	Standard
	Sc	45	59863.0	1.4				ug/L	55220	Standard
	Ti	47	3033.0	2.3	**6.9943**	0.222	3.2	ug/L	34	Standard
	V	51	34608.1	1.8	**3.3978**	0.044	1.3	ug/L	1938	Standard
	Cr	52	15251.3	1.0	**0.5912**	0.011	1.9	ug/L	9522	Standard
	Cr	53	2611.9	4.9	**1.8640**	0.098	5.3	ug/L	395	Standard
	Mn	55	71329.9	1.8	**7.8706**	0.081	1.0	ug/L	902	Standard
	Co	59	2238.5	2.9	**0.2415**	0.006	2.5	ug/L	262	Standard
	Ni	60	3339.7	0.4	**1.2872**	0.012	1.0	ug/L	371	Standard
	Cu	65	1994.5	2.1	**0.8106**	0.016	2.0	ug/L	106	Standard
	Zn	66	26090.8	0.0	**18.9622**	0.156	0.8	ug/L	398	Standard
>	**Ge**	72	556570.8	0.8				ug/L	535147	Standard
	As	75	428.1	4.3	**0.3626**	0.015	4.1	ug/L	-43	Standard
	Se	82	54.7	2.8	**0.2909**	0.008	2.8	ug/L	14	Standard
	Se-1	77	100.3	12.7	**0.4889**	0.128	26.1	ug/L	65	Standard
>	**Ga**	71	608.3	10.3				mg/L	97	Standard
	Rb	85	60132.4	1.0				ug/L	15	Standard
	Y	89	491612.9	1.6				ug/L	465704	Standard
>	**Rh**	103	56.7	13.5				ug/L	10	Standard
	Mo	98	1351.1	5.5	**0.4221**	0.022	5.3	ug/L	9	Standard
	Ag	107	131.3	13.4	**0.0104**	0.002	21.4	ug/L	82	Standard
	Cd	111	30.5	14.2	**0.0198**	0.002	8.5	mg/L	7	Standard
	Cd	114	65.9	55.0	**0.0196**	0.006	29.6	ug/L	21	Standard
>	**In**	115	654259.7	0.8				ug/L	619035	Standard
	Sn	118	898.4	13.5	**0.0271**	0.017	61.8	ug/L	508	Standard
	Sb	123	278.2	7.9	**0.0541**	0.004	6.7	ug/L	86	Standard
	Ba	135	59563.9	1.2	**24.6321**	0.281	1.1	ug/L	79	Standard
	Ce	140	17551.8	3.2				ug/L	68	Standard
>	**Tb**	159	989788.8	0.3				ug/L	986982	Standard
	Ho	165	365.0	9.6				ug/L	10	Standard
	Tl	203	48.7	12.0	**0.0112**	0.001	6.0	ug/L	13	Standard
	Tl	205	31.7	32.9	**0.0117**	0.001	10.9	ug/L	10	Standard
	Pb	206	2053.5	2.8	**0.3045**	0.009	2.9	ug/L	264	Standard
	Pb	207	1720.8	1.5	**0.2842**	0.004	1.3	ug/L	227	Standard
	Pb	208	7157.7	1.4	**0.3040**	0.006	1.8	ug/L	868	Standard
	U	238	756.0	3.0	**0.1056**	0.002	1.7	ug/L	8	Standard
>	**Bi**	209	553931.3	1.3				ug/L	541014	Standard

Sample ID: L1606122803
Report Date/Time: Thursday, June 30, 2016 18:21:04
Page 1

Approved: July 01, 2016

Na	23	3.3	173.2	**17.5709**	30.425	173.2	mg/L	2	Standard
Mg	24	1763.4	6.2	**1.7389**	0.124	7.2	mg/L	53	Standard
K	39	2405.2	5.0	**3.6880**	0.142	3.8	mg/L	53	Standard
Ca	43	323.3	6.2	**15.2296**	1.297	8.5	mg/L	28	Standard
Fe	54	694.0	3.8	**0.3175**	0.017	5.4	mg/L	181	Standard
Fe	57	510.0	14.8	**0.5849**	0.200	34.1	mg/L	257	Standard
> **Sc-1**	45	59863.0	1.4				mg/L	55220	Standard
Cl	35	43270.4	1.0				ug/L	35504	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	5717.7	4.6				ug/L	2040	Standard
P	31	27109.2	1.6				ug/L	20435	Standard
S	34	2391.9	8.1				ug/L	2430	Standard
Sr	88	230.0	4.3				ug/L	75	Standard
C	12	243.3	15.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	578.5	3.4				mg/L	9	Standard
Ho-1	165	365.0	9.6				mg/L	10	Standard
Er	166	310.0	8.5				mg/L	23	Standard
I	127	16976.2	8.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.151	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.003	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606122803
Report Date/Time: Thursday, June 30, 2016 18:21:04
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.690
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.388
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 18:22:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73578.2	1.0				ug/L	74916	Standard
	Be	9	56436.6	1.3	**54.4597**	0.400	0.7	ug/L	10	Standard
	Al	27	8718982.3	2.0	**51.1525**	0.630	1.2	ug/L	1822	Standard
	Sc	45	57758.2	1.5				ug/L	55220	Standard
	Ti	47	42985.6	0.8	**101.1406**	1.072	1.1	ug/L	34	Standard
	V	51	473388.7	2.1	**49.5193**	1.553	3.1	ug/L	1938	Standard
	Cr	52	474882.2	1.7	**50.3019**	1.317	2.6	ug/L	9522	Standard
	Cr	53	59704.1	2.5	**51.6666**	2.064	4.0	ug/L	395	Standard
	Mn	55	443343.2	1.1	**50.0227**	1.138	2.3	ug/L	902	Standard
	Co	59	419267.7	1.3	**50.0452**	1.250	2.5	ug/L	262	Standard
	Ni	60	115798.5	1.3	**50.0800**	0.779	1.6	ug/L	371	Standard
	Cu	65	112988.1	1.7	**49.7307**	0.715	1.4	ug/L	106	Standard
	Zn	66	67467.2	1.8	**50.1266**	0.166	0.3	ug/L	398	Standard
>	Ge	72	550545.3	1.5				ug/L	535147	Standard
	As	75	67527.8	0.8	**49.0676**	0.992	2.0	ug/L	-43	Standard
	Se	82	6913.0	1.7	**49.4991**	1.588	3.2	ug/L	14	Standard
	Se-1	77	4680.4	2.0	**49.9384**	1.760	3.5	ug/L	65	Standard
>	Ga	71	65.0	13.3				mg/L	97	Standard
	Rb	85	991.7	6.3				ug/L	15	Standard
	Y	89	482982.4	0.6				ug/L	465704	Standard
>	Rh	103	33.3	17.3				ug/L	10	Standard
	Mo	98	313121.3	1.1	**96.7874**	0.451	0.5	ug/L	9	Standard
	Ag	107	378687.7	0.4	**48.3701**	0.519	1.1	ug/L	82	Standard
	Cd	111	123318.4	0.8	**49.2782**	0.374	0.8	mg/L	7	Standard
	Cd	114	303262.6	0.8	**50.3224**	0.349	0.7	ug/L	21	Standard
>	In	115	641990.0	1.5				ug/L	619035	Standard
	Sn	118	335969.9	1.8	**49.6749**	0.360	0.7	ug/L	508	Standard
	Sb	123	267416.7	1.1	**48.6961**	0.330	0.7	ug/L	86	Standard
	Ba	135	114466.8	0.3	**48.2658**	0.663	1.4	ug/L	79	Standard
	Ce	140	326.7	13.7				ug/L	68	Standard
>	Tb	159	988094.4	1.2				ug/L	986982	Standard
	Ho	165	20.0	75.0				ug/L	10	Standard
	Tl	203	462310.9	1.0	**50.1285**	0.295	0.6	ug/L	13	Standard
	Tl	205	410772.5	1.1	**52.1362**	0.458	0.9	ug/L	10	Standard
	Pb	206	293921.2	0.6	**49.6204**	0.144	0.3	ug/L	264	Standard
	Pb	207	267372.5	0.4	**49.9456**	0.275	0.6	ug/L	227	Standard
	Pb	208	1079740.5	0.7	**52.3080**	0.393	0.8	ug/L	868	Standard
	U	238	394495.8	0.5	**51.7037**	0.139	0.3	ug/L	8	Standard
>	Bi	209	546511.9	0.6				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 18:24:17
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4735.7	5.0	**4.8993**	0.220	4.5	mg/L	53	Standard
K	39	2316.8	4.3	**3.6831**	0.157	4.3	mg/L	53	Standard
Ca	43	126.7	26.3	**5.2012**	1.908	36.7	mg/L	28	Standard
Fe	54	7170.8	0.5	**4.5533**	0.090	2.0	mg/L	181	Standard
Fe	57	2145.2	10.2	**4.7726**	0.596	12.5	mg/L	257	Standard
Sc-1	45	57758.2	1.5				mg/L	55220	Standard
Cl	35	43470.3	1.1				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2583.6	3.3				ug/L	2040	Standard
P	31	22620.2	1.5				ug/L	20435	Standard
S	34	2977.0	2.9				ug/L	2430	Standard
Sr	88	95.0	27.3				ug/L	75	Standard
C	12	76.7	15.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	23.3	49.5				mg/L	9	Standard
Ho-1	165	20.0	75.0				mg/L	10	Standard
Er	166	0.0					mg/L	23	Standard
I	127	17932.3	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	108.919		
Al	27	102.305		
Sc	45			
Ti	47	101.141		
V	51	99.039		
Cr	52	100.604		
Cr	53			
Mn	55	100.045		
Co	59	100.090		
Ni	60	100.160		
Cu	65	99.461		
Zn	66	100.253		
Ge	72		102.877	
As	75	98.135		
Se	82	98.998		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 18:24:17
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	96.787		
Ag	107	96.740		
Cd	111	98.556		
Cd	114			
In	115			103.708
Sn	118	99.350		
Sb	123	97.392		
Ba	135	96.532		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.257		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.616		
U	238	103.407		
Bi	209			101.016
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 18:24:17
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 18:25:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72625.4	2.0				ug/L	74916	Standard
	Be	9	35.0	37.8	**0.0306**	0.013	41.6	ug/L	10	Standard
	Al	27	5221.2	75.4	**0.0289**	0.024	83.2	ug/L	1822	Standard
	Sc	45	56361.3	2.2				ug/L	55220	Standard
	Ti	47	43.7	24.3	**0.0330**	0.026	77.4	ug/L	34	Standard
	V	51	1667.3	7.1	**-0.0209**	0.013	60.6	ug/L	1938	Standard
	Cr	52	8464.0	0.3	**-0.1225**	0.003	2.7	ug/L	9522	Standard
	Cr	53	1203.4	5.2	**0.6637**	0.049	7.4	ug/L	395	Standard
	Mn	55	1135.4	33.1	**0.0236**	0.043	182.8	ug/L	902	Standard
	Co	59	286.0	2.4	**0.0114**	0.001	7.5	ug/L	262	Standard
	Ni	60	298.3	5.7	**-0.0159**	0.008	48.2	ug/L	371	Standard
	Cu	65	147.7	21.4	**0.0065**	0.014	218.6	ug/L	106	Standard
	Zn	66	427.7	12.3	**-0.0259**	0.041	158.3	ug/L	398	Standard
>	**Ge**	72	549268.9	0.5				ug/L	535147	Standard
	As	75	-50.0	72.3	**0.0189**	0.026	137.7	ug/L	-43	Standard
	Se	82	24.5	32.5	**0.0791**	0.056	71.3	ug/L	14	Standard
	Se-1	77	77.3	5.8	**0.2550**	0.048	18.7	ug/L	65	Standard
>	**Ga**	71	38.3	52.7				mg/L	97	Standard
	Rb	85	70.0	50.0				ug/L	15	Standard
	Y	89	475993.8	1.4				ug/L	465704	Standard
>	**Rh**	103	10.0	100.0				ug/L	10	Standard
	Mo	98	316.0	18.8	**0.1102**	0.018	16.8	ug/L	9	Standard
	Ag	107	191.0	14.7	**0.0184**	0.004	20.1	ug/L	82	Standard
	Cd	111	15.8	57.1	**0.0142**	0.004	25.5	mg/L	7	Standard
	Cd	114	106.5	47.8	**0.0266**	0.009	32.0	ug/L	21	Standard
>	**In**	115	641247.5	0.4				ug/L	619035	Standard
	Sn	118	1061.7	14.0	**0.0541**	0.022	41.0	ug/L	508	Standard
	Sb	123	624.1	28.9	**0.1182**	0.033	27.9	ug/L	86	Standard
	Ba	135	118.7	74.4	**0.0306**	0.037	122.6	ug/L	79	Standard
	Ce	140	183.3	31.6				ug/L	68	Standard
>	**Tb**	159	974124.5	0.5				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	104.0	35.3	**0.0171**	0.004	23.3	ug/L	13	Standard
	Tl	205	90.0	45.5	**0.0190**	0.005	27.4	ug/L	10	Standard
	Pb	206	345.0	10.3	**0.0196**	0.006	30.4	ug/L	264	Standard
	Pb	207	284.3	1.6	**0.0192**	0.001	5.0	ug/L	227	Standard
	Pb	208	1190.4	5.2	**0.0185**	0.003	17.1	ug/L	868	Standard
	U	238	79.3	52.6	**0.0181**	0.005	29.9	ug/L	8	Standard
>	**Bi**	209	554720.3	0.6				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 18:27:29
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	51.7	31.1	**0.0208**	0.018	88.3	mg/L	53	Standard
K	39	43.3	48.0	**-0.0038**	0.035	936.1	mg/L	53	Standard
Ca	43	30.0	16.7	**-0.0077**	0.294	3799.4	mg/L	28	Standard
Fe	54	184.1	9.6	**0.0040**	0.009	229.0	mg/L	181	Standard
Fe	57	265.0	3.3	**0.0254**	0.037	145.9	mg/L	257	Standard
Sc-1	45	56361.3	2.2				mg/L	55220	Standard
Cl	35	42936.1	1.9				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2356.9	5.5				ug/L	2040	Standard
P	31	21977.6	2.3				ug/L	20435	Standard
S	34	2853.6	3.4				ug/L	2430	Standard
Sr	88	71.7	16.1				ug/L	75	Standard
C	12	63.3	18.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	101.3	25.6				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	43.3	48.0				mg/L	23	Standard
I	127	8230.6	10.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.639	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 18:27:29
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.588
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.533
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 18:27:29
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123101
Sample Date/Time: Thursday, June 30, 2016 18:28:25
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73708.9	1.2				ug/L	74916	Standard
	Be	9	23.3	24.7	**0.0189**	0.006	29.4	ug/L	10	Standard
	Al	27	21182916.8	0.4	**124.0736**	1.102	0.9	ug/L	1822	Standard
	Sc	45	55145.2	2.0				ug/L	55220	Standard
	Ti	47	356.7	5.4	**0.8173**	0.044	5.4	ug/L	34	Standard
	V	51	77183.8	0.8	**8.3694**	0.088	1.1	ug/L	1938	Standard
	Cr	52	15236.3	0.8	**0.7013**	0.022	3.1	ug/L	9522	Standard
	Cr	53	5759.4	6.2	**4.9190**	0.351	7.1	ug/L	395	Standard
	Mn	55	155667.6	0.4	**18.4949**	0.121	0.7	ug/L	902	Standard
	Co	59	787.7	0.8	**0.0766**	0.000	0.6	ug/L	262	Standard
	Ni	60	2258.8	3.8	**0.8898**	0.039	4.4	ug/L	371	Standard
	Cu	65	1302.1	4.1	**0.5477**	0.026	4.7	ug/L	106	Standard
	Zn	66	2771.6	0.7	**1.8449**	0.007	0.4	ug/L	398	Standard
>	**Ge**	72	520875.8	0.5				ug/L	535147	Standard
	As	75	4494.6	3.5	**3.5023**	0.105	3.0	ug/L	-43	Standard
	Se	82	1105.2	3.5	**8.2806**	0.249	3.0	ug/L	14	Standard
	Se-1	77	364.3	11.2	**3.5731**	0.452	12.7	ug/L	65	Standard
>	**Ga**	71	78.3	9.8				mg/L	97	Standard
	Rb	85	3303.7	4.4				ug/L	15	Standard
	Y	89	460451.9	0.5				ug/L	465704	Standard
>	**Rh**	103	130.0	34.2				ug/L	10	Standard
	Mo	98	529.4	5.8	**0.1869**	0.011	6.0	ug/L	9	Standard
	Ag	107	127.3	19.5	**0.0113**	0.003	29.3	ug/L	82	Standard
	Cd	111	29.7	34.4	**0.0205**	0.004	21.3	mg/L	7	Standard
	Cd	114	78.1	54.1	**0.0227**	0.007	32.8	ug/L	21	Standard
>	**In**	115	602147.0	0.8				ug/L	619035	Standard
	Sn	118	753.4	10.9	**0.0155**	0.012	78.4	ug/L	508	Standard
	Sb	123	275.0	25.5	**0.0577**	0.013	22.9	ug/L	86	Standard
	Ba	135	65480.9	0.3	**29.4275**	0.311	1.1	ug/L	79	Standard
	Ce	140	2970.3	9.9				ug/L	68	Standard
>	**Tb**	159	936456.7	0.9				ug/L	986982	Standard
	Ho	165	58.3	50.2				ug/L	10	Standard
	Tl	203	145.7	21.0	**0.0233**	0.004	15.7	ug/L	13	Standard
	Tl	205	150.0	5.8	**0.0285**	0.001	4.1	ug/L	10	Standard
	Pb	206	385.3	9.6	**0.0336**	0.007	21.0	ug/L	264	Standard
	Pb	207	324.3	3.1	**0.0332**	0.002	5.0	ug/L	227	Standard
	Pb	208	1371.0	3.4	**0.0345**	0.002	5.9	ug/L	868	Standard
	U	238	12005.1	0.6	**1.7315**	0.001	0.1	ug/L	8	Standard
>	**Bi**	209	498820.7	0.6				ug/L	541014	Standard

Sample ID: L1606123101
Report Date/Time: Thursday, June 30, 2016 18:30:42
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.3575**	16.199	173.1	mg/L	2	Standard
Mg	24	165723.2	1.4	**180.8485**	3.237	1.8	mg/L	53	Standard
K	39	150.0	26.5	**0.1787**	0.066	36.9	mg/L	53	Standard
Ca	43	341.7	28.9	**17.7757**	6.017	33.8	mg/L	28	Standard
Fe	54	356.7	11.8	**0.1243**	0.024	19.5	mg/L	181	Standard
Fe	57	510.0	18.9	**0.6879**	0.236	34.2	mg/L	257	Standard
Sc-1	45	55145.2	2.0				mg/L	55220	Standard
Cl	35	47507.0	1.1				ug/L	35504	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	197000.1	3.5				ug/L	2040	Standard
P	31	26680.1	1.8				ug/L	20435	Standard
S	34	2485.2	5.2				ug/L	2430	Standard
Sr	88	211.7	3.6				ug/L	75	Standard
C	12	373.3	13.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	69.5	16.6				mg/L	9	Standard
Ho-1	165	58.3	50.2				mg/L	10	Standard
Er	166	80.0	0.0				mg/L	23	Standard
I	127	132259.0	4.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.388	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.333	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606123101
Report Date/Time: Thursday, June 30, 2016 18:30:42
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.272	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	92.201	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123701
Sample Date/Time: Thursday, June 30, 2016 18:31:36
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73556.5	1.2				ug/L	74916	Standard
	Be	9	58.3	32.5	**0.0528**	0.019	35.9	ug/L	10	Standard
	Al	27	4324633.9	1.0	**25.3836**	0.546	2.1	ug/L	1822	Standard
	Sc	45	59757.6	2.1				ug/L	55220	Standard
	Ti	47	3697.1	2.8	**8.5949**	0.280	3.3	ug/L	34	Standard
	V	51	30410.5	0.4	**2.9820**	0.028	0.9	ug/L	1938	Standard
	Cr	52	16342.1	1.7	**0.7189**	0.031	4.3	ug/L	9522	Standard
	Cr	53	2475.2	0.7	**1.7600**	0.025	1.4	ug/L	395	Standard
	Mn	55	379098.1	1.5	**42.5563**	0.890	2.1	ug/L	902	Standard
	Co	59	3754.1	1.8	**0.4234**	0.010	2.3	ug/L	262	Standard
	Ni	60	3304.0	1.2	**1.2808**	0.026	2.0	ug/L	371	Standard
	Cu	65	2883.3	0.8	**1.2059**	0.010	0.8	ug/L	106	Standard
	Zn	66	7248.1	0.7	**5.0510**	0.037	0.7	ug/L	398	Standard
>	**Ge**	72	553085.4	0.6				ug/L	535147	Standard
	As	75	1716.7	1.4	**1.2953**	0.018	1.4	ug/L	-43	Standard
	Se	82	81.3	6.0	**0.4831**	0.033	6.9	ug/L	14	Standard
	Se-1	77	107.0	12.4	**0.5683**	0.148	26.0	ug/L	65	Standard
>	**Ga**	71	810.0	1.9				mg/L	97	Standard
	Rb	85	16889.4	2.8				ug/L	15	Standard
	Y	89	489914.2	2.5				ug/L	465704	Standard
>	**Rh**	103	76.7	22.9				ug/L	10	Standard
	Mo	98	1118.4	2.5	**0.3544**	0.012	3.4	ug/L	9	Standard
	Ag	107	270.0	17.0	**0.0280**	0.005	19.1	ug/L	82	Standard
	Cd	111	122.3	24.0	**0.0562**	0.011	19.7	mg/L	7	Standard
	Cd	114	310.2	20.0	**0.0598**	0.010	16.0	ug/L	21	Standard
>	**In**	115	648962.0	1.2				ug/L	619035	Standard
	Sn	118	985.0	7.7	**0.0409**	0.010	23.4	ug/L	508	Standard
	Sb	123	515.7	10.8	**0.0972**	0.009	9.2	ug/L	86	Standard
	Ba	135	122438.4	1.1	**51.0753**	1.105	2.2	ug/L	79	Standard
	Ce	140	33540.4	1.4				ug/L	68	Standard
>	**Tb**	159	977369.7	0.8				ug/L	986982	Standard
	Ho	165	413.3	5.7				ug/L	10	Standard
	Tl	203	119.7	46.0	**0.0187**	0.006	30.3	ug/L	13	Standard
	Tl	205	90.0	0.0	**0.0189**	0.000	0.7	ug/L	10	Standard
	Pb	206	5921.8	1.6	**0.9478**	0.023	2.4	ug/L	264	Standard
	Pb	207	4892.8	0.9	**0.8677**	0.011	1.2	ug/L	227	Standard
	Pb	208	20732.2	0.4	**0.9517**	0.016	1.7	ug/L	868	Standard
	U	238	400.3	10.4	**0.0596**	0.005	9.1	ug/L	8	Standard
>	**Bi**	209	554872.4	1.2				ug/L	541014	Standard

Sample ID: L1606123701
Report Date/Time: Thursday, June 30, 2016 18:33:53
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**8.8665**	15.349	173.1	mg/L	2	Standard
Mg	24	3070.3	3.5	**3.0576**	0.096	3.2	mg/L	53	Standard
K	39	1061.7	12.7	**1.5864**	0.179	11.3	mg/L	53	Standard
Ca	43	296.7	9.7	**13.8539**	1.502	10.8	mg/L	28	Standard
Fe	54	956.9	9.5	**0.4831**	0.045	9.3	mg/L	181	Standard
Fe	57	635.0	5.2	**0.8916**	0.078	8.7	mg/L	257	Standard
> **Sc-1**	45	59757.6	2.1				mg/L	55220	Standard
Cl	35	44313.4	1.9				ug/L	35504	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	10370.3	12.9				ug/L	2040	Standard
P	31	28954.3	0.4				ug/L	20435	Standard
S	34	2603.6	2.1				ug/L	2430	Standard
Sr	88	181.7	10.4				ug/L	75	Standard
C	12	193.3	35.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	668.5	3.4				mg/L	9	Standard
Ho-1	165	413.3	5.7				mg/L	10	Standard
Er	166	310.0	11.2				mg/L	23	Standard
I	127	85175.8	4.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.185	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.352	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123701
Report Date/Time: Thursday, June 30, 2016 18:33:53
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.834
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.562
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123702
Sample Date/Time: Thursday, June 30, 2016 18:34:48
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73352.1	1.1				ug/L	74916	Standard
	Be	9	26.7	84.5	**0.0223**	0.022	99.0	ug/L	10	Standard
	Al	27	7425346.7	1.3	**43.7005**	0.575	1.3	ug/L	1822	Standard
	Sc	45	57823.5	1.1				ug/L	55220	Standard
	Ti	47	1820.8	1.7	**4.3369**	0.098	2.3	ug/L	34	Standard
	V	51	80652.9	0.8	**8.5090**	0.056	0.7	ug/L	1938	Standard
	Cr	52	12307.0	0.7	**0.3281**	0.011	3.2	ug/L	9522	Standard
	Cr	53	4964.1	4.9	**4.0597**	0.199	4.9	ug/L	395	Standard
	Mn	55	1685034.1	0.2	**195.7157**	0.610	0.3	ug/L	902	Standard
	Co	59	7064.0	1.4	**0.8442**	0.013	1.5	ug/L	262	Standard
	Ni	60	5946.2	2.4	**2.5055**	0.069	2.8	ug/L	371	Standard
	Cu	65	5548.3	1.0	**2.4546**	0.034	1.4	ug/L	106	Standard
	Zn	66	9347.5	1.2	**6.8425**	0.092	1.3	ug/L	398	Standard
>	**Ge**	72	535545.9	0.5				ug/L	535147	Standard
	As	75	3482.5	0.9	**2.6532**	0.030	1.1	ug/L	-43	Standard
	Se	82	238.3	4.8	**1.6603**	0.091	5.5	ug/L	14	Standard
	Se-1	77	234.0	3.7	**2.0146**	0.108	5.3	ug/L	65	Standard
>	**Ga**	71	255.0	7.8				mg/L	97	Standard
	Rb	85	5642.7	7.3				ug/L	15	Standard
	Y	89	471263.7	0.8				ug/L	465704	Standard
>	**Rh**	103	85.0	25.6				ug/L	10	Standard
	Mo	98	13076.1	0.6	**4.1371**	0.046	1.1	ug/L	9	Standard
	Ag	107	263.3	11.3	**0.0283**	0.004	14.8	ug/L	82	Standard
	Cd	111	497.9	3.4	**0.2109**	0.005	2.3	mg/L	7	Standard
	Cd	114	1167.5	7.5	**0.2067**	0.017	8.2	ug/L	21	Standard
>	**In**	115	629037.3	1.1				ug/L	619035	Standard
	Sn	118	780.0	7.1	**0.0146**	0.010	65.8	ug/L	508	Standard
	Sb	123	581.4	7.1	**0.1125**	0.009	7.6	ug/L	86	Standard
	Ba	135	116448.2	1.3	**50.1063**	0.307	0.6	ug/L	79	Standard
	Ce	140	12521.8	1.9				ug/L	68	Standard
>	**Tb**	159	952242.5	1.2				ug/L	986982	Standard
	Ho	165	245.0	12.4				ug/L	10	Standard
	Tl	203	124.0	10.8	**0.0197**	0.001	7.4	ug/L	13	Standard
	Tl	205	106.7	25.8	**0.0215**	0.003	16.3	ug/L	10	Standard
	Pb	206	1649.1	1.4	**0.2467**	0.003	1.2	ug/L	264	Standard
	Pb	207	1450.7	3.9	**0.2437**	0.011	4.5	ug/L	227	Standard
	Pb	208	5966.8	1.9	**0.2570**	0.004	1.6	ug/L	868	Standard
	U	238	7288.1	1.1	**0.9830**	0.017	1.7	ug/L	8	Standard
>	**Bi**	209	535292.5	0.6				ug/L	541014	Standard

Sample ID: L1606123702
Report Date/Time: Thursday, June 30, 2016 18:37:05
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	22827.2	2.1	**23.7220**	0.371	1.6	mg/L	53	Standard
K	39	1010.0	3.9	**1.5614**	0.080	5.1	mg/L	53	Standard
Ca	43	435.0	10.0	**21.8568**	2.379	10.9	mg/L	28	Standard
Fe	54	340.7	1.7	**0.1030**	0.002	2.1	mg/L	181	Standard
Fe	57	453.3	2.5	**0.4839**	0.031	6.4	mg/L	257	Standard
Sc-1	45	57823.5	1.1				mg/L	55220	Standard
Cl	35	45303.6	1.3				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	41754.2	3.5				ug/L	2040	Standard
P	31	25987.3	4.3				ug/L	20435	Standard
S	34	2758.6	5.7				ug/L	2430	Standard
Sr	88	278.3	12.7				ug/L	75	Standard
C	12	160.0	34.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	7	Standard
Dy	164	280.6	10.5				mg/L	9	Standard
Ho-1	165	245.0	12.4				mg/L	10	Standard
Er	166	266.7	5.7				mg/L	23	Standard
I	127	176316.0	8.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		97.912	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.075	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606123702
Report Date/Time: Thursday, June 30, 2016 18:37:05
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.616
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.942
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123703
Sample Date/Time: Thursday, June 30, 2016 18:37:59
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72498.1	1.7				ug/L	74916	Standard
	Be	9	26.7	39.0	**0.0226**	0.011	46.6	ug/L	10	Standard
	Al	27	6795709.4	1.3	**40.4705**	0.708	1.7	ug/L	1822	Standard
	Sc	45	57423.7	3.0				ug/L	55220	Standard
	Ti	47	1820.1	1.8	**4.3278**	0.121	2.8	ug/L	34	Standard
	V	51	78659.2	1.4	**8.2782**	0.041	0.5	ug/L	1938	Standard
	Cr	52	12166.2	1.2	**0.3100**	0.009	2.9	ug/L	9522	Standard
	Cr	53	5002.5	3.4	**4.0874**	0.181	4.4	ug/L	395	Standard
	Mn	55	1702026.4	1.6	**197.3278**	1.748	0.9	ug/L	902	Standard
	Co	59	7405.1	1.8	**0.8844**	0.008	0.9	ug/L	262	Standard
	Ni	60	5681.7	2.6	**2.3836**	0.093	3.9	ug/L	371	Standard
	Cu	65	5142.5	1.2	**2.2667**	0.036	1.6	ug/L	106	Standard
	Zn	66	6961.3	1.2	**4.9979**	0.091	1.8	ug/L	398	Standard
>	**Ge**	72	536520.8	1.2				ug/L	535147	Standard
	As	75	3464.6	2.2	**2.6350**	0.044	1.7	ug/L	-43	Standard
	Se	82	269.5	3.6	**1.8872**	0.094	5.0	ug/L	14	Standard
	Se-1	77	236.7	10.7	**2.0415**	0.311	15.3	ug/L	65	Standard
>	**Ga**	71	298.3	5.4				mg/L	97	Standard
	Rb	85	5194.2	1.7				ug/L	15	Standard
	Y	89	463947.8	0.3				ug/L	465704	Standard
>	**Rh**	103	70.0	14.3				ug/L	10	Standard
	Mo	98	12098.0	1.5	**3.8608**	0.077	2.0	ug/L	9	Standard
	Ag	107	294.0	6.8	**0.0326**	0.003	8.0	ug/L	82	Standard
	Cd	111	385.0	8.6	**0.1662**	0.014	8.5	mg/L	7	Standard
	Cd	114	1056.2	4.6	**0.1893**	0.009	4.9	ug/L	21	Standard
>	**In**	115	623767.0	0.6				ug/L	619035	Standard
	Sn	118	825.0	8.5	**0.0224**	0.010	45.0	ug/L	508	Standard
	Sb	123	491.1	2.7	**0.0964**	0.003	3.1	ug/L	86	Standard
	Ba	135	110200.0	1.0	**47.8191**	0.607	1.3	ug/L	79	Standard
	Ce	140	11742.9	0.5				ug/L	68	Standard
>	**Tb**	159	959960.3	0.5				ug/L	986982	Standard
	Ho	165	215.0	15.2				ug/L	10	Standard
	Tl	203	112.0	12.3	**0.0185**	0.001	8.1	ug/L	13	Standard
	Tl	205	103.3	15.6	**0.0212**	0.002	10.0	ug/L	10	Standard
	Pb	206	1564.7	1.6	**0.2337**	0.004	1.6	ug/L	264	Standard
	Pb	207	1332.7	0.8	**0.2227**	0.002	0.9	ug/L	227	Standard
	Pb	208	5440.7	0.5	**0.2326**	0.001	0.5	ug/L	868	Standard
	U	238	6741.8	1.0	**0.9153**	0.006	0.6	ug/L	8	Standard
>	**Bi**	209	532066.3	0.4				ug/L	541014	Standard

Sample ID: L1606123703
Report Date/Time: Thursday, June 30, 2016 18:40:16
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	21246.6	2.8	**22.2476**	1.022	4.6	mg/L	53	Standard
K	39	896.7	3.2	**1.3874**	0.024	1.7	mg/L	53	Standard
Ca	43	366.7	13.0	**18.3580**	3.195	17.4	mg/L	28	Standard
Fe	54	347.3	8.8	**0.1093**	0.026	24.1	mg/L	181	Standard
Fe	57	465.0	9.9	**0.5199**	0.082	15.8	mg/L	257	Standard
> **Sc-1**	45	57423.7	3.0				mg/L	55220	Standard
Cl	35	45819.2	1.3				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	41774.3	5.0				ug/L	2040	Standard
P	31	25414.6	2.7				ug/L	20435	Standard
S	34	2805.3	1.7				ug/L	2430	Standard
Sr	88	228.3	2.5				ug/L	75	Standard
C	12	220.0	12.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	7	Standard
Dy	164	388.8	30.1				mg/L	9	Standard
Ho-1	165	215.0	15.2				mg/L	10	Standard
Er	166	233.3	21.1				mg/L	23	Standard
I	127	161422.8	6.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.772	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123703
Report Date/Time: Thursday, June 30, 2016 18:40:16
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.764	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.346	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123704
Sample Date/Time: Thursday, June 30, 2016 18:41:11
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74700.4	1.5				ug/L	74916	Standard
	Be	9	25.0	34.6	**0.0202**	0.008	41.6	ug/L	10	Standard
	Al	27	15133453.9	0.8	**87.4746**	1.860	2.1	ug/L	1822	Standard
	Sc	45	57433.7	3.1				ug/L	55220	Standard
	Ti	47	1116.0	5.6	**2.6964**	0.124	4.6	ug/L	34	Standard
	V	51	43724.0	1.3	**4.6399**	0.118	2.6	ug/L	1938	Standard
	Cr	52	15434.2	1.7	**0.7179**	0.043	6.0	ug/L	9522	Standard
	Cr	53	7095.0	3.2	**6.1276**	0.285	4.7	ug/L	395	Standard
	Mn	55	24493.4	0.5	**2.8116**	0.050	1.8	ug/L	902	Standard
	Co	59	1370.4	1.3	**0.1495**	0.002	1.5	ug/L	262	Standard
	Ni	60	4008.2	1.6	**1.6853**	0.020	1.2	ug/L	371	Standard
	Cu	65	1042.4	0.5	**0.4251**	0.007	1.6	ug/L	106	Standard
	Zn	66	3012.6	1.2	**2.0275**	0.051	2.5	ug/L	398	Standard
>	**Ge**	72	522710.1	1.2				ug/L	535147	Standard
	As	75	1352.2	5.0	**1.0884**	0.041	3.7	ug/L	-43	Standard
	Se	82	371.1	3.5	**2.7067**	0.122	4.5	ug/L	14	Standard
	Se-1	77	381.0	2.0	**3.7490**	0.094	2.5	ug/L	65	Standard
>	**Ga**	71	253.3	13.4				mg/L	97	Standard
	Rb	85	4595.7	5.5				ug/L	15	Standard
	Y	89	464468.4	0.3				ug/L	465704	Standard
>	**Rh**	103	88.3	8.6				ug/L	10	Standard
	Mo	98	1006.4	1.0	**0.3415**	0.002	0.7	ug/L	9	Standard
	Ag	107	123.0	6.5	**0.0106**	0.001	10.7	ug/L	82	Standard
	Cd	111	26.8	11.4	**0.0192**	0.001	6.6	mg/L	7	Standard
	Cd	114	58.4	32.7	**0.0192**	0.003	17.6	ug/L	21	Standard
>	**In**	115	606613.6	0.4				ug/L	619035	Standard
	Sn	118	680.0	9.7	**0.0032**	0.011	331.8	ug/L	508	Standard
	Sb	123	230.7	6.4	**0.0489**	0.003	5.9	ug/L	86	Standard
	Ba	135	49480.7	1.3	**22.0679**	0.363	1.6	ug/L	79	Standard
	Ce	140	11719.5	2.2				ug/L	68	Standard
>	**Tb**	159	942397.8	0.6				ug/L	986982	Standard
	Ho	165	170.0	24.1				ug/L	10	Standard
	Tl	203	103.0	13.1	**0.0178**	0.002	8.6	ug/L	13	Standard
	Tl	205	86.7	23.3	**0.0193**	0.003	13.9	ug/L	10	Standard
	Pb	206	883.7	2.1	**0.1195**	0.002	2.1	ug/L	264	Standard
	Pb	207	732.4	2.3	**0.1110**	0.003	2.8	ug/L	227	Standard
	Pb	208	3144.5	0.5	**0.1223**	0.001	1.2	ug/L	868	Standard
	U	238	11938.4	1.8	**1.6560**	0.021	1.3	ug/L	8	Standard
>	**Bi**	209	518732.9	0.6				ug/L	541014	Standard

Sample ID: L1606123704
Report Date/Time: Thursday, June 30, 2016 18:43:27
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**26.5771**	26.100	98.2	mg/L	2	Standard
Mg	24	58492.7	1.9	**61.2716**	0.950	1.6	mg/L	53	Standard
K	39	303.3	9.7	**0.4202**	0.062	14.8	mg/L	53	Standard
Ca	43	820.0	3.2	**42.9785**	0.015	0.0	mg/L	28	Standard
Fe	54	269.9	23.5	**0.0573**	0.035	61.8	mg/L	181	Standard
Fe	57	703.3	12.9	**1.1251**	0.179	15.9	mg/L	257	Standard
> **Sc-1**	45	57433.7	3.1				mg/L	55220	Standard
Cl	35	47952.4	0.9				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	58556.3	2.6				ug/L	2040	Standard
P	31	27825.5	1.9				ug/L	20435	Standard
S	34	2730.2	2.0				ug/L	2430	Standard
Sr	88	346.7	24.6				ug/L	75	Standard
C	12	183.3	38.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	7	Standard
Dy	164	293.3	8.9				mg/L	9	Standard
Ho-1	165	170.0	24.1				mg/L	10	Standard
Er	166	140.0	12.4				mg/L	23	Standard
I	127	160434.3	4.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.712	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.676	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123704
Report Date/Time: Thursday, June 30, 2016 18:43:27
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.993
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.882
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606123704
Report Date/Time: Thursday, June 30, 2016 18:43:27
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123705
Sample Date/Time: Thursday, June 30, 2016 18:44:22
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75807.6	2.4				ug/L	74916	Standard
	Be	9	15.0	57.7	**0.0105**	0.008	78.4	ug/L	10	Standard
	Al	27	16819757.9	1.0	**95.8103**	1.874	2.0	ug/L	1822	Standard
	Sc	45	56911.8	3.1				ug/L	55220	Standard
	Ti	47	333.7	8.3	**0.7492**	0.070	9.3	ug/L	34	Standard
	V	51	26190.8	1.8	**2.6713**	0.044	1.7	ug/L	1938	Standard
	Cr	52	11710.2	0.4	**0.2805**	0.003	1.1	ug/L	9522	Standard
	Cr	53	8892.6	3.9	**7.6943**	0.295	3.8	ug/L	395	Standard
	Mn	55	750738.1	1.3	**88.3994**	1.378	1.6	ug/L	902	Standard
	Co	59	3620.4	4.0	**0.4280**	0.018	4.3	ug/L	262	Standard
	Ni	60	5830.8	1.3	**2.4915**	0.033	1.3	ug/L	371	Standard
	Cu	65	3275.0	2.4	**1.4462**	0.037	2.6	ug/L	106	Standard
	Zn	66	11576.1	3.0	**8.6847**	0.271	3.1	ug/L	398	Standard
>	Ge	72	527929.6	0.2				ug/L	535147	Standard
	As	75	1507.7	7.3	**1.1960**	0.081	6.8	ug/L	-43	Standard
	Se	82	264.0	5.2	**1.8774**	0.098	5.2	ug/L	14	Standard
	Se-1	77	452.3	3.8	**4.5083**	0.185	4.1	ug/L	65	Standard
>	Ga	71	91.7	8.3				mg/L	97	Standard
	Rb	85	1790.1	1.5				ug/L	15	Standard
	Y	89	459787.3	0.7				ug/L	465704	Standard
>	Rh	103	98.3	10.6				ug/L	10	Standard
	Mo	98	7598.5	2.3	**2.4593**	0.046	1.9	ug/L	9	Standard
	Ag	107	107.7	23.2	**0.0083**	0.003	39.7	ug/L	82	Standard
	Cd	111	203.4	9.7	**0.0926**	0.008	9.0	mg/L	7	Standard
	Cd	114	563.4	13.5	**0.1064**	0.014	12.7	ug/L	21	Standard
>	In	115	616088.9	0.4				ug/L	619035	Standard
	Sn	118	741.7	6.4	**0.0111**	0.007	65.9	ug/L	508	Standard
	Sb	123	228.7	4.8	**0.0478**	0.002	4.0	ug/L	86	Standard
	Ba	135	72026.8	1.1	**31.6368**	0.353	1.1	ug/L	79	Standard
	Ce	140	1040.0	1.0				ug/L	68	Standard
>	Tb	159	950323.7	0.5				ug/L	986982	Standard
	Ho	165	100.0	8.7				ug/L	10	Standard
	Tl	203	79.0	12.8	**0.0150**	0.001	7.3	ug/L	13	Standard
	Tl	205	88.3	55.8	**0.0194**	0.007	33.7	ug/L	10	Standard
	Pb	206	683.0	11.0	**0.0831**	0.013	16.0	ug/L	264	Standard
	Pb	207	594.0	10.8	**0.0831**	0.012	14.6	ug/L	227	Standard
	Pb	208	2416.7	6.3	**0.0844**	0.008	9.2	ug/L	868	Standard
	U	238	5401.0	1.5	**0.7494**	0.012	1.6	ug/L	8	Standard
>	Bi	209	521632.3	0.7				ug/L	541014	Standard

Sample ID: L1606123705
Report Date/Time: Thursday, June 30, 2016 18:46:39
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**18.0428**	15.638	86.7	mg/L	2	Standard
Mg	24	60197.7	2.6	**63.6892**	3.459	5.4	mg/L	53	Standard
K	39	146.7	5.2	**0.1657**	0.016	9.6	mg/L	53	Standard
Ca	43	673.3	4.4	**35.3839**	2.707	7.6	mg/L	28	Standard
Fe	54	201.8	23.4	**0.0146**	0.031	210.5	mg/L	181	Standard
Fe	57	551.7	4.6	**0.7557**	0.075	9.9	mg/L	257	Standard
> **Sc-1**	45	56911.8	3.1				mg/L	55220	Standard
Cl	35	51354.2	2.0				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	48855.3	1.4				ug/L	2040	Standard
P	31	27864.0	4.9				ug/L	20435	Standard
S	34	2916.9	4.4				ug/L	2430	Standard
Sr	88	280.0	3.1				ug/L	75	Standard
C	12	166.7	21.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	92.8	23.1				mg/L	9	Standard
Ho-1	165	100.0	8.7				mg/L	10	Standard
Er	166	150.0	23.1				mg/L	23	Standard
I	127	215352.8	3.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.190	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.651	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123705
Report Date/Time: Thursday, June 30, 2016 18:46:39
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.524
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.417
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123706
Sample Date/Time: Thursday, June 30, 2016 18:47:34
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74487.7	1.5				ug/L	74916	Standard
	Be	9	13.3	86.6	**0.0092**	0.011	120.4	ug/L	10	Standard
	Al	27	11820936.1	1.6	**68.5203**	1.611	2.4	ug/L	1822	Standard
	Sc	45	55595.2	2.1				ug/L	55220	Standard
	Ti	47	326.7	7.2	**0.7343**	0.060	8.2	ug/L	34	Standard
	V	51	44071.1	2.3	**4.6430**	0.103	2.2	ug/L	1938	Standard
	Cr	52	11553.4	1.3	**0.2666**	0.021	8.0	ug/L	9522	Standard
	Cr	53	8779.2	2.1	**7.6152**	0.191	2.5	ug/L	395	Standard
	Mn	55	39929.6	1.2	**4.6157**	0.059	1.3	ug/L	902	Standard
	Co	59	1062.0	2.5	**0.1098**	0.004	3.7	ug/L	262	Standard
	Ni	60	1866.1	1.2	**0.7008**	0.009	1.3	ug/L	371	Standard
	Cu	65	1098.0	1.4	**0.4473**	0.010	2.2	ug/L	106	Standard
	Zn	66	3754.1	1.4	**2.5907**	0.036	1.4	ug/L	398	Standard
>	**Ge**	72	526406.1	0.6				ug/L	535147	Standard
	As	75	1178.8	3.3	**0.9500**	0.034	3.6	ug/L	-43	Standard
	Se	82	190.1	10.6	**1.3289**	0.156	11.7	ug/L	14	Standard
	Se-1	77	429.0	5.7	**4.2598**	0.267	6.3	ug/L	65	Standard
>	**Ga**	71	83.3	3.5				mg/L	97	Standard
	Rb	85	1408.4	8.6				ug/L	15	Standard
	Y	89	458293.2	0.9				ug/L	465704	Standard
>	**Rh**	103	70.0	31.1				ug/L	10	Standard
	Mo	98	14819.1	1.5	**4.8262**	0.045	0.9	ug/L	9	Standard
	Ag	107	103.3	12.6	**0.0078**	0.002	21.3	ug/L	82	Standard
	Cd	111	10.4	71.6	**0.0123**	0.003	26.0	mg/L	7	Standard
	Cd	114	89.6	37.9	**0.0245**	0.006	23.5	ug/L	21	Standard
>	**In**	115	610793.1	1.1				ug/L	619035	Standard
	Sn	118	760.0	10.3	**0.0149**	0.011	73.7	ug/L	508	Standard
	Sb	123	308.5	0.3	**0.0634**	0.001	0.8	ug/L	86	Standard
	Ba	135	63587.8	1.8	**28.1686**	0.196	0.7	ug/L	79	Standard
	Ce	140	1448.4	6.8				ug/L	68	Standard
>	**Tb**	159	948916.9	1.3				ug/L	986982	Standard
	Ho	165	36.7	7.9				ug/L	10	Standard
	Tl	203	79.3	4.1	**0.0150**	0.000	2.3	ug/L	13	Standard
	Tl	205	61.7	12.4	**0.0158**	0.001	6.1	ug/L	10	Standard
	Pb	206	411.0	2.8	**0.0344**	0.002	7.0	ug/L	264	Standard
	Pb	207	364.0	2.9	**0.0376**	0.002	5.3	ug/L	227	Standard
	Pb	208	1486.0	1.0	**0.0366**	0.000	1.1	ug/L	868	Standard
	U	238	7610.9	2.4	**1.0452**	0.021	2.0	ug/L	8	Standard
>	**Bi**	209	525407.3	0.6				ug/L	541014	Standard

Sample ID: L1606123706
Report Date/Time: Thursday, June 30, 2016 18:49:50
Page 1

Approved: July 01, 2016

Na	23	5.0	0.0	**27.9422**	0.578	2.1	mg/L	2	Standard
Mg	24	52755.1	2.4	**57.0711**	0.842	1.5	mg/L	53	Standard
K	39	150.0	8.8	**0.1772**	0.027	15.2	mg/L	53	Standard
Ca	43	313.3	20.8	**15.9633**	3.778	23.7	mg/L	28	Standard
Fe	54	212.3	15.3	**0.0252**	0.024	97.0	mg/L	181	Standard
Fe	57	398.3	20.7	**0.3868**	0.230	59.5	mg/L	257	Standard
> **Sc-1**	45	55595.2	2.1				mg/L	55220	Standard
Cl	35	49423.8	1.2				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	35855.7	2.9				ug/L	2040	Standard
P	31	26942.3	1.6				ug/L	20435	Standard
S	34	3012.0	1.5				ug/L	2430	Standard
Sr	88	220.0	11.8				ug/L	75	Standard
C	12	180.0	25.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	40.5	37.0				mg/L	9	Standard
Ho-1	165	36.7	7.9				mg/L	10	Standard
Er	166	60.0	16.7				mg/L	23	Standard
I	127	561335.4	4.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.367	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123706
Report Date/Time: Thursday, June 30, 2016 18:49:50
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.669
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.115
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606123706
Report Date/Time: Thursday, June 30, 2016 18:49:50
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 18:50:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71687.5	1.4				ug/L	74916	Standard
	Be	9	56212.4	2.2	**55.6744**	0.981	1.8	ug/L	10	Standard
	Al	27	8771268.2	2.9	**52.8124**	0.842	1.6	ug/L	1822	Standard
	Sc	45	55598.5	1.4				ug/L	55220	Standard
	Ti	47	42411.0	2.0	**101.9404**	1.750	1.7	ug/L	34	Standard
	V	51	469521.3	1.1	**50.1684**	0.092	0.2	ug/L	1938	Standard
	Cr	52	465815.6	1.0	**50.4026**	0.203	0.4	ug/L	9522	Standard
	Cr	53	56885.0	2.2	**50.2601**	0.777	1.5	ug/L	395	Standard
	Mn	55	437945.4	1.3	**50.4742**	0.337	0.7	ug/L	902	Standard
	Co	59	417548.6	1.4	**50.9095**	0.645	1.3	ug/L	262	Standard
	Ni	60	114353.6	1.4	**50.5212**	0.176	0.3	ug/L	371	Standard
	Cu	65	111446.1	0.9	**50.1133**	0.291	0.6	ug/L	106	Standard
	Zn	66	66488.2	1.0	**50.4769**	0.800	1.6	ug/L	398	Standard
>	Ge	72	538875.7	1.1				ug/L	535147	Standard
	As	75	67522.2	0.5	**50.1175**	0.341	0.7	ug/L	-43	Standard
	Se	82	6846.0	0.7	**50.0674**	0.209	0.4	ug/L	14	Standard
	Se-1	77	4653.4	1.8	**50.7142**	0.391	0.8	ug/L	65	Standard
>	Ga	71	71.7	28.2				mg/L	97	Standard
	Rb	85	916.7	4.0				ug/L	15	Standard
	Y	89	469799.8	1.4				ug/L	465704	Standard
>	Rh	103	31.7	32.9				ug/L	10	Standard
	Mo	98	311161.5	0.9	**97.3135**	1.276	1.3	ug/L	9	Standard
	Ag	107	375662.4	1.9	**48.5477**	1.199	2.5	ug/L	82	Standard
	Cd	111	121621.4	0.4	**49.1707**	0.522	1.1	mg/L	7	Standard
	Cd	114	296179.2	0.5	**49.7223**	0.142	0.3	ug/L	21	Standard
>	In	115	634529.9	0.8				ug/L	619035	Standard
	Sn	118	329929.0	3.1	**49.3536**	1.344	2.7	ug/L	508	Standard
	Sb	123	267054.5	1.3	**49.2021**	0.782	1.6	ug/L	86	Standard
	Ba	135	113140.9	0.4	**48.2634**	0.467	1.0	ug/L	79	Standard
	Ce	140	128.3	20.0				ug/L	68	Standard
>	Tb	159	957418.9	1.2				ug/L	986982	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	464958.9	0.7	**50.5990**	0.829	1.6	ug/L	13	Standard
	Tl	205	415202.1	0.2	**52.8880**	0.585	1.1	ug/L	10	Standard
	Pb	206	294687.8	1.3	**49.9241**	0.223	0.4	ug/L	264	Standard
	Pb	207	268350.0	0.9	**50.3058**	0.452	0.9	ug/L	227	Standard
	Pb	208	1083165.8	0.6	**52.6601**	0.325	0.6	ug/L	868	Standard
	U	238	400940.3	0.4	**52.7360**	0.496	0.9	ug/L	8	Standard
>	Bi	209	544596.2	1.1				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 18:53:03
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4615.7	1.6	**4.9627**	0.144	2.9	mg/L	53	Standard
K	39	2171.8	4.6	**3.5842**	0.149	4.2	mg/L	53	Standard
Ca	43	113.3	19.9	**4.6898**	1.182	25.2	mg/L	28	Standard
Fe	54	7351.4	3.6	**4.8564**	0.179	3.7	mg/L	181	Standard
Fe	57	2108.5	1.8	**4.8855**	0.174	3.6	mg/L	257	Standard
Sc-1	45	55598.5	1.4				mg/L	55220	Standard
Cl	35	45959.6	2.2				ug/L	35504	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	3020.3	12.7				ug/L	2040	Standard
P	31	25206.0	4.0				ug/L	20435	Standard
S	34	3005.3	2.9				ug/L	2430	Standard
Sr	88	63.3	24.1				ug/L	75	Standard
C	12	83.3	48.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.0	105.7				mg/L	9	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	20.0	100.0				mg/L	23	Standard
I	127	27561.4	28.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	111.349		
Al	27	105.625		
Sc	45			
Ti	47	101.940		
V	51	100.337		
Cr	52	100.805		
Cr	53			
Mn	55	100.948		
Co	59	101.819		
Ni	60	101.042		
Cu	65	100.227		
Zn	66	100.954		
Ge	72		100.697	
As	75	100.235		
Se	82	100.135		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 18:53:03
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	97.314		
Ag	107	97.095		
Cd	111	98.341		
Cd	114			
In	115		102.503	
Sn	118	98.707		
Sb	123	98.404		
Ba	135	96.527		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.198		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.320		
U	238	105.472		
Bi	209		100.662	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 18:53:03
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 18:53:58
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70564.0	1.3				ug/L	74916	Standard
	Be	9	15.0	33.3	**0.0115**	0.005	43.9	ug/L	10	Standard
	Al	27	2650.2	30.0	**0.0138**	0.005	33.3	ug/L	1822	Standard
	Sc	45	55267.3	1.7				ug/L	55220	Standard
	Ti	47	37.0	13.5	**0.0193**	0.013	65.6	ug/L	34	Standard
	V	51	1576.6	11.5	**-0.0265**	0.021	77.8	ug/L	1938	Standard
	Cr	52	7930.7	1.2	**-0.1603**	0.016	10.0	ug/L	9522	Standard
	Cr	53	933.4	10.2	**0.4468**	0.083	18.5	ug/L	395	Standard
	Mn	55	838.0	6.3	**-0.0080**	0.007	83.7	ug/L	902	Standard
	Co	59	260.3	20.6	**0.0091**	0.007	74.5	ug/L	262	Standard
	Ni	60	289.7	5.8	**-0.0167**	0.008	49.3	ug/L	371	Standard
	Cu	65	145.0	9.6	**0.0068**	0.007	97.5	ug/L	106	Standard
	Zn	66	383.3	2.1	**-0.0525**	0.008	14.8	ug/L	398	Standard
>	**Ge**	72	536805.7	0.6				ug/L	535147	Standard
	As	75	-7.0	257.8	**0.0500**	0.013	26.7	ug/L	-43	Standard
	Se	82	26.0	21.0	**0.0939**	0.039	41.6	ug/L	14	Standard
	Se-1	77	74.7	11.4	**0.2452**	0.098	39.8	ug/L	65	Standard
>	**Ga**	71	61.7	9.4				mg/L	97	Standard
	Rb	85	28.3	40.8				ug/L	15	Standard
	Y	89	474941.0	0.9				ug/L	465704	Standard
>	**Rh**	103	26.7	43.3				ug/L	10	Standard
	Mo	98	254.5	24.8	**0.0910**	0.019	21.1	ug/L	9	Standard
	Ag	107	150.0	15.4	**0.0131**	0.003	21.8	ug/L	82	Standard
	Cd	111	14.2	26.1	**0.0136**	0.001	10.7	mg/L	7	Standard
	Cd	114	40.6	40.8	**0.0157**	0.003	17.7	ug/L	21	Standard
>	**In**	115	641699.1	0.5				ug/L	619035	Standard
	Sn	118	1158.4	8.6	**0.0683**	0.015	22.5	ug/L	508	Standard
	Sb	123	594.0	22.6	**0.1127**	0.025	22.0	ug/L	86	Standard
	Ba	135	49.7	37.8	**0.0013**	0.008	600.3	ug/L	79	Standard
	Ce	140	31.7	9.1				ug/L	68	Standard
>	**Tb**	159	966472.8	1.2				ug/L	986982	Standard
	Ho	165	6.7	173.2				ug/L	10	Standard
	Tl	203	80.0	13.5	**0.0146**	0.001	8.2	ug/L	13	Standard
	Tl	205	70.0	44.6	**0.0165**	0.004	24.0	ug/L	10	Standard
	Pb	206	303.7	8.6	**0.0128**	0.004	35.1	ug/L	264	Standard
	Pb	207	290.3	16.5	**0.0204**	0.009	44.6	ug/L	227	Standard
	Pb	208	1089.7	9.1	**0.0138**	0.005	35.9	ug/L	868	Standard
	U	238	63.3	36.3	**0.0161**	0.003	18.6	ug/L	8	Standard
>	**Bi**	209	554130.2	0.5				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 18:56:15
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.2510**	16.015	173.1	mg/L	2	Standard
Mg	24	65.0	27.7	**0.0364**	0.020	56.2	mg/L	53	Standard
K	39	26.7	47.2	**-0.0306**	0.022	72.6	mg/L	53	Standard
Ca	43	23.3	53.9	**-0.3468**	0.734	211.7	mg/L	28	Standard
Fe	54	170.8	15.9	**-0.0024**	0.019	821.1	mg/L	181	Standard
Fe	57	275.0	25.8	**0.0671**	0.202	300.2	mg/L	257	Standard
Sc-1	45	55267.3	1.7				mg/L	55220	Standard
Cl	35	45791.8	1.4				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2516.9	9.5				ug/L	2040	Standard
P	31	24761.9	0.5				ug/L	20435	Standard
S	34	3220.3	7.0				ug/L	2430	Standard
Sr	88	55.0	15.7				ug/L	75	Standard
C	12	86.7	24.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	188.9	23.3				mg/L	9	Standard
Ho-1	165	6.7	173.2				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	10310.2	12.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.310	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 18:56:15
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.661
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.424
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 18:56:15
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: PBW V WG574593-02
Sample Date/Time: Thursday, June 30, 2016 18:57:10
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65124.7	1.8				ug/L	74916	Standard
	Be	9	11.7	65.5	**0.0092**	0.009	93.5	ug/L	10	Standard
	Al	27	3680.5	10.6	**0.0221**	0.002	10.9	ug/L	1822	Standard
	Sc	45	50311.7	1.8				ug/L	55220	Standard
	Ti	47	25.7	4.5	**-0.0034**	0.003	74.9	ug/L	34	Standard
	V	51	1415.1	5.7	**-0.0324**	0.008	25.8	ug/L	1938	Standard
	Cr	52	6107.2	3.0	**-0.3108**	0.016	5.2	ug/L	9522	Standard
	Cr	53	671.7	16.0	**0.2590**	0.104	40.1	ug/L	395	Standard
	Mn	55	484.7	5.0	**-0.0447**	0.003	6.4	ug/L	902	Standard
	Co	59	221.0	5.2	**0.0063**	0.001	21.0	ug/L	262	Standard
	Ni	60	295.3	4.9	**-0.0042**	0.006	140.7	ug/L	371	Standard
	Cu	65	138.0	4.5	**0.0084**	0.003	37.2	ug/L	106	Standard
	Zn	66	1155.7	3.5	**0.6080**	0.040	6.5	ug/L	398	Standard
>	**Ge**	72	498696.9	0.9				ug/L	535147	Standard
	As	75	-30.1	128.0	**0.0313**	0.031	98.7	ug/L	-43	Standard
	Se	82	15.4	57.0	**0.0257**	0.071	276.7	ug/L	14	Standard
	Se-1	77	65.3	19.4	**0.1978**	0.158	79.8	ug/L	65	Standard
>	**Ga**	71	40.0	12.5				mg/L	97	Standard
	Rb	85	30.0	60.1				ug/L	15	Standard
	Y	89	430247.5	1.6				ug/L	465704	Standard
>	**Rh**	103	13.3	57.3				ug/L	10	Standard
	Mo	98	65.4	31.6	**0.0347**	0.007	20.3	ug/L	9	Standard
	Ag	107	108.0	15.3	**0.0092**	0.002	24.8	ug/L	82	Standard
	Cd	111	4.6	83.0	**0.0099**	0.002	16.8	mg/L	7	Standard
	Cd	114	17.9	60.7	**0.0122**	0.002	16.5	ug/L	21	Standard
>	**In**	115	580808.3	0.9				ug/L	619035	Standard
	Sn	118	326.7	5.4	**-0.0499**	0.002	4.8	ug/L	508	Standard
	Sb	123	160.5	9.7	**0.0367**	0.003	7.8	ug/L	86	Standard
	Ba	135	36.3	21.4	**-0.0027**	0.003	127.5	ug/L	79	Standard
	Ce	140	20.0	66.1				ug/L	68	Standard
>	**Tb**	159	893130.6	0.7				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	31.0	11.6	**0.0095**	0.000	4.3	ug/L	13	Standard
	Tl	205	31.7	63.8	**0.0119**	0.003	22.4	ug/L	10	Standard
	Pb	206	260.7	7.5	**0.0079**	0.003	43.1	ug/L	264	Standard
	Pb	207	227.0	12.1	**0.0108**	0.005	49.4	ug/L	227	Standard
	Pb	208	965.7	3.1	**0.0102**	0.002	14.8	ug/L	868	Standard
	U	238	17.7	34.1	**0.0103**	0.001	8.0	ug/L	8	Standard
>	**Bi**	209	526979.7	0.1				ug/L	541014	Standard

Sample ID: PBW V WG574593-02
Report Date/Time: Thursday, June 30, 2016 18:59:27
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**20.3871**	17.653	86.6	mg/L	2	Standard
Mg	24	35.0	65.5	**0.0070**	0.027	380.2	mg/L	53	Standard
K	39	43.3	13.3	**0.0049**	0.012	251.2	mg/L	53	Standard
Ca	43	28.3	27.0	**0.0854**	0.465	544.9	mg/L	28	Standard
Fe	54	62.8	35.8	**-0.0719**	0.016	22.9	mg/L	181	Standard
Fe	57	288.3	11.5	**0.1765**	0.108	61.2	mg/L	257	Standard
> **Sc-1**	45	50311.7	1.8				mg/L	55220	Standard
Cl	35	42044.3	0.6				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1890.1	2.3				ug/L	2040	Standard
P	31	9644.7	4.6				ug/L	20435	Standard
S	34	2881.9	2.9				ug/L	2430	Standard
Sr	88	75.0	13.3				ug/L	75	Standard
C	12	90.0	19.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.0	88.0				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	23	Standard
I	127	31466.0	4.3				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		86.930	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.189	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: PBW V WG574593-02
Report Date/Time: Thursday, June 30, 2016 18:59:27
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.825
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.406
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW V WG574593-02
Report Date/Time: Thursday, June 30, 2016 18:59:27
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: LCSW V WG574593-03
Sample Date/Time: Thursday, June 30, 2016 19:00:21
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69562.7	1.6				ug/L	74916	Standard
	Be	9	55881.3	3.5	**57.0358**	1.690	3.0	ug/L	10	Standard
	Al	27	38980.1	2.0	**0.2396**	0.002	0.8	ug/L	1822	Standard
	Sc	45	55707.3	3.2				ug/L	55220	Standard
	Ti	47	72.0	69.8	**0.0984**	0.116	117.8	ug/L	34	Standard
	V	51	471085.8	1.2	**49.2051**	0.573	1.2	ug/L	1938	Standard
	Cr	52	475883.4	0.8	**50.3369**	0.146	0.3	ug/L	9522	Standard
	Cr	53	57898.8	2.5	**50.0104**	1.177	2.4	ug/L	395	Standard
	Mn	55	437440.5	1.3	**49.2849**	0.589	1.2	ug/L	902	Standard
	Co	59	411129.2	1.4	**49.0012**	0.470	1.0	ug/L	262	Standard
	Ni	60	115394.5	1.9	**49.8345**	0.439	0.9	ug/L	371	Standard
	Cu	65	114293.6	1.9	**50.2386**	0.553	1.1	ug/L	106	Standard
	Zn	66	68137.2	1.6	**50.5638**	0.366	0.7	ug/L	398	Standard
>	**Ge**	72	551232.8	1.0				ug/L	535147	Standard
	As	75	67324.2	1.0	**48.8502**	0.240	0.5	ug/L	-43	Standard
	Se	82	6755.6	1.9	**48.2934**	0.688	1.4	ug/L	14	Standard
	Se-1	77	4626.4	0.4	**49.2779**	0.338	0.7	ug/L	65	Standard
>	**Ga**	71	48.3	11.9				mg/L	97	Standard
	Rb	85	60.0	8.3				ug/L	15	Standard
	Y	89	471884.7	1.3				ug/L	465704	Standard
>	**Rh**	103	28.3	44.4				ug/L	10	Standard
	Mo	98	78.0	23.1	**0.0363**	0.006	15.3	ug/L	9	Standard
	Ag	107	382843.9	0.7	**48.5758**	0.339	0.7	ug/L	82	Standard
	Cd	111	121706.1	1.5	**48.3134**	0.813	1.7	mg/L	7	Standard
	Cd	114	293415.4	2.3	**48.3681**	1.191	2.5	ug/L	21	Standard
>	**In**	115	646223.1	0.3				ug/L	619035	Standard
	Sn	118	735.0	7.2	**0.0048**	0.008	161.7	ug/L	508	Standard
	Sb	123	258744.8	2.4	**46.8067**	1.129	2.4	ug/L	86	Standard
	Ba	135	113648.3	0.8	**47.6009**	0.461	1.0	ug/L	79	Standard
	Ce	140	66.7	21.7				ug/L	68	Standard
>	**Tb**	159	978173.5	0.6				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	464890.4	0.6	**49.4533**	0.267	0.5	ug/L	13	Standard
	Tl	205	415961.1	0.9	**51.7944**	0.478	0.9	ug/L	10	Standard
	Pb	206	301601.6	0.3	**49.9520**	0.137	0.3	ug/L	264	Standard
	Pb	207	262116.2	0.6	**48.0334**	0.260	0.5	ug/L	227	Standard
	Pb	208	1097299.1	0.6	**52.1501**	0.236	0.5	ug/L	868	Standard
	U	238	389833.0	0.4	**50.1241**	0.175	0.3	ug/L	8	Standard
>	**Bi**	209	557069.2	0.1				ug/L	541014	Standard

Sample ID: LCSW V WG574593-03
Report Date/Time: Thursday, June 30, 2016 19:02:38
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	13.5	**0.0267**	0.008	31.7	mg/L	53	Standard
K	39	53.3	32.9	**0.0139**	0.031	220.8	mg/L	53	Standard
Ca	43	15.0	66.7	**-0.8437**	0.534	63.2	mg/L	28	Standard
Fe	54	206.4	18.6	**0.0203**	0.023	111.4	mg/L	181	Standard
Fe	57	230.0	7.8	**-0.0594**	0.033	54.8	mg/L	257	Standard
Sc-1	45	55707.3	3.2				mg/L	55220	Standard
Cl	35	46169.6	0.9				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2390.2	11.5				ug/L	2040	Standard
P	31	24085.8	0.8				ug/L	20435	Standard
S	34	3070.3	3.9				ug/L	2430	Standard
Sr	88	66.7	30.3				ug/L	75	Standard
C	12	90.0	44.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	8.6	117.2				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	23	Standard
I	127	17955.6	2.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.854	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.006	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW V WG574593-03
Report Date/Time: Thursday, June 30, 2016 19:02:38
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.392
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.968
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW V WG574593-03
Report Date/Time: Thursday, June 30, 2016 19:02:38
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: F BLANK WG574519-01
Sample Date/Time: Thursday, June 30, 2016 19:03:33
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68901.4	2.7				ug/L	74916	Standard
	Be	9	35.0	0.0	**0.0325**	0.001	3.0	ug/L	10	Standard
	Al	27	13376.7	44.8	**0.0815**	0.037	45.8	ug/L	1822	Standard
	Sc	45	56279.3	1.3				ug/L	55220	Standard
	Ti	47	49.0	26.8	**0.0449**	0.030	66.9	ug/L	34	Standard
	V	51	1904.9	20.7	**0.0032**	0.040	1261.0	ug/L	1938	Standard
	Cr	52	10709.8	1.1	**0.1165**	0.013	11.0	ug/L	9522	Standard
	Cr	53	1201.7	3.2	**0.6585**	0.031	4.7	ug/L	395	Standard
	Mn	55	2313.5	41.6	**0.1557**	0.107	68.9	ug/L	902	Standard
	Co	59	426.0	48.2	**0.0279**	0.024	86.7	ug/L	262	Standard
	Ni	60	451.0	5.0	**0.0498**	0.011	22.6	ug/L	371	Standard
	Cu	65	885.0	3.9	**0.3307**	0.016	4.9	ug/L	106	Standard
	Zn	66	2763.6	4.2	**1.7184**	0.104	6.0	ug/L	398	Standard
>	**Ge**	72	551340.8	0.9				ug/L	535147	Standard
	As	75	68.9	33.8	**0.1051**	0.017	15.8	ug/L	-43	Standard
	Se	82	69.5	11.0	**0.4005**	0.051	12.7	ug/L	14	Standard
	Se-1	77	56.7	8.2	**0.0295**	0.055	187.8	ug/L	65	Standard
>	**Ga**	71	41.7	13.9				mg/L	97	Standard
	Rb	85	55.0	24.1				ug/L	15	Standard
	Y	89	480211.7	1.0				ug/L	465704	Standard
>	**Rh**	103	6.7	114.6				ug/L	10	Standard
	Mo	98	108.4	79.8	**0.0458**	0.027	59.7	ug/L	9	Standard
	Ag	107	229.0	50.7	**0.0230**	0.015	66.8	ug/L	82	Standard
	Cd	111	25.6	32.6	**0.0180**	0.003	17.7	mg/L	7	Standard
	Cd	114	68.1	31.3	**0.0200**	0.003	16.5	ug/L	21	Standard
>	**In**	115	649486.2	1.9				ug/L	619035	Standard
	Sn	118	630.0	14.3	**-0.0111**	0.013	120.8	ug/L	508	Standard
	Sb	123	2763.7	29.7	**0.5029**	0.152	30.2	ug/L	86	Standard
	Ba	135	521.0	3.5	**0.1976**	0.008	4.3	ug/L	79	Standard
	Ce	140	36.7	15.7				ug/L	68	Standard
>	**Tb**	159	966307.5	1.5				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	189.7	17.5	**0.0262**	0.004	13.7	ug/L	13	Standard
	Tl	205	248.3	56.4	**0.0386**	0.017	45.1	ug/L	10	Standard
	Pb	206	868.4	21.3	**0.1061**	0.031	28.8	ug/L	264	Standard
	Pb	207	771.7	25.0	**0.1083**	0.035	32.6	ug/L	227	Standard
	Pb	208	3058.8	10.1	**0.1071**	0.015	13.6	ug/L	868	Standard
	U	238	127.3	60.3	**0.0243**	0.010	40.6	ug/L	8	Standard
>	**Bi**	209	557094.5	0.3				ug/L	541014	Standard

Sample ID: F BLANK WG574519-01
Report Date/Time: Thursday, June 30, 2016 19:05:50
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.1066**	15.764	173.1	mg/L	2	Standard
Mg	24	351.7	14.8	**0.3415**	0.055	16.2	mg/L	53	Standard
K	39	33.3	22.9	**-0.0204**	0.013	64.6	mg/L	53	Standard
Ca	43	13.3	57.3	**-0.9375**	0.417	44.5	mg/L	28	Standard
Fe	54	189.3	9.4	**0.0079**	0.013	163.4	mg/L	181	Standard
Fe	57	275.0	14.2	**0.0511**	0.094	183.1	mg/L	257	Standard
Sc-1	45	56279.3	1.3				mg/L	55220	Standard
Cl	35	45061.6	0.5				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	10497.0	6.0				ug/L	2040	Standard
P	31	23987.3	1.8				ug/L	20435	Standard
S	34	2932.0	0.8				ug/L	2430	Standard
Sr	88	76.7	15.1				ug/L	75	Standard
C	12	106.7	10.8				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	16.0	72.9				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	29338.4	1.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		91.971	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.026	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: F BLANK WG574519-01
Report Date/Time: Thursday, June 30, 2016 19:05:50
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.919
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.972
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606153601 WG574593-01
Sample Date/Time: Thursday, June 30, 2016 19:06:44
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	122673.1	2.2				ug/L	74916	Standard
	Be	9	31.7	55.5	**0.0146**	0.010	66.7	ug/L	10	Standard
	Al	27	18994381.1	0.9	**66.8555**	0.955	1.4	ug/L	1822	Standard
	Sc	45	46431.0	0.5				ug/L	55220	Standard
	Ti	47	683.3	6.3	**1.9112**	0.129	6.8	ug/L	34	Standard
	V	51	30052.2	22.2	**3.6833**	0.821	22.3	ug/L	1938	Standard
	Cr	52	21130.7	1.8	**1.7730**	0.033	1.8	ug/L	9522	Standard
	Cr	53	14517.2	22.9	**15.1703**	3.419	22.5	ug/L	395	Standard
	Mn	55	85596.1	0.7	**11.8105**	0.088	0.7	ug/L	902	Standard
	Co	59	116786.7	0.4	**17.1478**	0.141	0.8	ug/L	262	Standard
	Ni	60	17742.0	0.6	**9.3298**	0.063	0.7	ug/L	371	Standard
	Cu	65	20615.4	1.5	**11.1291**	0.283	2.5	ug/L	106	Standard
	Zn	66	13403.6	4.3	**12.0053**	0.643	5.4	ug/L	398	Standard
>	**Ge**	72	447096.6	1.2				ug/L	535147	Standard
	As	75	6308.4	1.3	**5.6928**	0.101	1.8	ug/L	-43	Standard
	Se	82	571.1	6.9	**4.9502**	0.406	8.2	ug/L	14	Standard
	Se-1	77	1142.4	10.9	**14.5869**	1.497	10.3	ug/L	65	Standard
>	**Ga**	71	756.7	6.7				mg/L	97	Standard
	Rb	85	264851.7	1.4				ug/L	15	Standard
	Y	89	428599.5	1.0				ug/L	465704	Standard
>	**Rh**	103	428.3	16.9				ug/L	10	Standard
	Mo	98	1248169.6	0.3	**472.3040**	4.038	0.9	ug/L	9	Standard
	Ag	107	334.0	12.0	**0.0462**	0.007	14.2	ug/L	82	Standard
	Cd	111	-881.1	2.5	**-0.4230**	0.010	2.3	mg/L	7	Standard
	Cd	114	2092.7	7.3	**0.4339**	0.031	7.1	ug/L	21	Standard
>	**In**	115	524373.9	0.6				ug/L	619035	Standard
	Sn	118	1396.7	7.2	**0.1500**	0.019	12.5	ug/L	508	Standard
	Sb	123	2763.9	2.3	**0.6205**	0.015	2.4	ug/L	86	Standard
	Ba	135	74756.0	0.3	**38.5832**	0.154	0.4	ug/L	79	Standard
	Ce	140	973.4	5.1				ug/L	68	Standard
>	**Tb**	159	853344.7	1.3				ug/L	986982	Standard
	Ho	165	58.3	32.5				ug/L	10	Standard
	Tl	203	937.0	32.6	**0.1350**	0.042	31.4	ug/L	13	Standard
	Tl	205	240.0	27.2	**0.0464**	0.011	23.2	ug/L	10	Standard
	Pb	206	737.0	5.6	**0.1202**	0.009	7.3	ug/L	264	Standard
	Pb	207	643.7	9.2	**0.1195**	0.015	12.3	ug/L	227	Standard
	Pb	208	2580.4	7.6	**0.1204**	0.013	10.9	ug/L	868	Standard
	U	238	2118.5	4.2	**0.3601**	0.017	4.6	ug/L	8	Standard
>	**Bi**	209	430851.9	0.7				ug/L	541014	Standard

Sample ID: L1606153601 WG574593-01
Report Date/Time: Thursday, June 30, 2016 19:09:01
Page 1

Approved: July 01, 2016

Na	23	25.0	69.3	**167.1204**	115.560	69.1	mg/L	2	Standard
Mg	24	1041469.6	1.5	**1349.8898**	27.206	2.0	mg/L	53	Standard
K	39	1346.7	6.5	**2.6416**	0.167	6.3	mg/L	53	Standard
Ca	43	1193.4	7.9	**78.6907**	5.988	7.6	mg/L	28	Standard
Fe	54	146.8	27.2	**0.0001**	0.032	25226.5	mg/L	181	Standard
Fe	57	1303.4	10.9	**3.4417**	0.428	12.4	mg/L	257	Standard
Sc-1	45	46431.0	0.5				mg/L	55220	Standard
Cl	35	221401.2	0.1				ug/L	35504	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	60055.9	7.2				ug/L	2040	Standard
P	31	21758.9	1.5				ug/L	20435	Standard
S	34	2653.6	2.7				ug/L	2430	Standard
Sr	88	396.7	13.9				ug/L	75	Standard
C	12	190.0	18.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	52377.1	40.9				mg/L	7	Standard
Dy	164	11.9	128.4				mg/L	9	Standard
Ho-1	165	58.3	32.5				mg/L	10	Standard
Er	166	30.0	0.0				mg/L	23	Standard
I	127	199806.6	8.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		163.747	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		83.547	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601 WG574593-01
Report Date/Time: Thursday, June 30, 2016 19:09:01
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	84.708	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	79.638	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606153601 WG574593-01
Report Date/Time: Thursday, June 30, 2016 19:09:01
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606153601DP WG574593-04
Sample Date/Time: Thursday, June 30, 2016 19:09:56
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	145131.3	5.2				ug/L	74916	Standard
	Be	9	38.3	78.6	**0.0153**	0.015	95.1	ug/L	10	Standard
	Al	27	20839638.7	6.3	**61.9647**	1.121	1.8	ug/L	1822	Standard
	Sc	45	51571.0	4.0				ug/L	55220	Standard
	Ti	47	849.0	9.4	**2.1919**	0.167	7.6	ug/L	34	Standard
	V	51	36447.2	16.7	**4.1501**	0.825	19.9	ug/L	1938	Standard
	Cr	52	21907.5	2.6	**1.6433**	0.067	4.1	ug/L	9522	Standard
	Cr	53	10825.5	4.5	**10.3076**	0.649	6.3	ug/L	395	Standard
	Mn	55	90738.7	2.8	**11.5133**	0.066	0.6	ug/L	902	Standard
	Co	59	125381.0	4.5	**16.9279**	0.346	2.0	ug/L	262	Standard
	Ni	60	18867.8	4.3	**9.1206**	0.188	2.1	ug/L	371	Standard
	Cu	65	22283.4	4.1	**11.0610**	0.229	2.1	ug/L	106	Standard
	Zn	66	14870.3	6.1	**12.2488**	0.518	4.2	ug/L	398	Standard
>	**Ge**	72	486033.9	2.5				ug/L	535147	Standard
	As	75	6634.4	6.0	**5.5055**	0.197	3.6	ug/L	-43	Standard
	Se	82	622.2	14.5	**4.9508**	0.649	13.1	ug/L	14	Standard
	Se-1	77	954.7	5.1	**11.0985**	0.821	7.4	ug/L	65	Standard
>	**Ga**	71	735.0	6.2				mg/L	97	Standard
	Rb	85	280985.0	3.3				ug/L	15	Standard
	Y	89	467730.0	3.9				ug/L	465704	Standard
>	**Rh**	103	991.7	26.1				ug/L	10	Standard
	Mo	98	1366675.1	3.4	**465.0197**	2.989	0.6	ug/L	9	Standard
	Ag	107	341.7	18.3	**0.0422**	0.010	24.6	ug/L	82	Standard
	Cd	111	-916.3	0.9	**-0.3953**	0.011	2.8	mg/L	7	Standard
	Cd	114	2215.8	6.2	**0.4142**	0.035	8.4	ug/L	21	Standard
>	**In**	115	583122.3	3.2				ug/L	619035	Standard
	Sn	118	1590.1	4.2	**0.1562**	0.015	9.4	ug/L	508	Standard
	Sb	123	2817.7	3.8	**0.5692**	0.005	0.8	ug/L	86	Standard
	Ba	135	79167.7	3.0	**36.7444**	0.151	0.4	ug/L	79	Standard
	Ce	140	1018.4	6.7				ug/L	68	Standard
>	**Tb**	159	945728.6	2.5				ug/L	986982	Standard
	Ho	165	63.3	52.6				ug/L	10	Standard
	Tl	203	1194.7	26.8	**0.1568**	0.046	29.2	ug/L	13	Standard
	Tl	205	235.0	25.1	**0.0424**	0.010	23.6	ug/L	10	Standard
	Pb	206	779.7	7.0	**0.1149**	0.016	13.8	ug/L	264	Standard
	Pb	207	712.7	3.3	**0.1211**	0.010	8.5	ug/L	227	Standard
	Pb	208	2715.1	2.2	**0.1140**	0.006	5.4	ug/L	868	Standard
	U	238	2279.8	3.7	**0.3534**	0.005	1.4	ug/L	8	Standard
>	**Bi**	209	472522.9	3.5				ug/L	541014	Standard

Sample ID: L1606153601DP WG574593-04
Report Date/Time: Thursday, June 30, 2016 19:12:13
Page 1

Approved: July 01, 2016

Na	23	11.7	99.0	**69.7203**	68.154	97.8	mg/L	2	Standard
Mg	24	1137339.3	3.2	**1327.4723**	16.520	1.2	mg/L	53	Standard
K	39	1246.7	8.6	**2.1884**	0.146	6.7	mg/L	53	Standard
Ca	43	1193.4	9.8	**70.6867**	6.151	8.7	mg/L	28	Standard
Fe	54	172.3	23.9	**0.0064**	0.026	410.4	mg/L	181	Standard
Fe	57	1273.4	6.7	**2.9462**	0.106	3.6	mg/L	257	Standard
Sc-1	45	51571.0	4.0				mg/L	55220	Standard
Cl	35	236472.8	3.0				ug/L	35504	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	63175.0	5.0				ug/L	2040	Standard
P	31	23453.2	4.9				ug/L	20435	Standard
S	34	2768.6	5.1				ug/L	2430	Standard
Sr	88	461.7	3.3				ug/L	75	Standard
C	12	266.7	15.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	71212.3	32.9				mg/L	7	Standard
Dy	164	41.9	56.1				mg/L	9	Standard
Ho-1	165	63.3	52.6				mg/L	10	Standard
Er	166	30.0	33.3				mg/L	23	Standard
I	127	118564.9	6.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		193.724	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.823	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601DP WG574593-04
Report Date/Time: Thursday, June 30, 2016 19:12:13
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	94.199	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	87.340	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606153601DP WG574593-04
Report Date/Time: Thursday, June 30, 2016 19:12:13
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606153601S WG574593-05
Sample Date/Time: Thursday, June 30, 2016 19:13:07
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	143015.1	0.4				ug/L	74916	Standard
	Be	9	64930.5	1.9	**32.2330**	0.549	1.7	ug/L	10	Standard
	Al	27	19624790.6	1.8	**59.2354**	0.841	1.4	ug/L	1822	Standard
	Sc	45	46411.0	0.4				ug/L	55220	Standard
	Ti	47	889.0	11.4	**2.4697**	0.264	10.7	ug/L	34	Standard
	V	51	363710.8	13.8	**46.1270**	5.796	12.6	ug/L	1938	Standard
	Cr	52	383056.0	1.4	**49.2423**	0.433	0.9	ug/L	9522	Standard
	Cr	53	54581.5	1.5	**57.3821**	0.914	1.6	ug/L	395	Standard
	Mn	55	429579.9	1.5	**58.8649**	0.091	0.2	ug/L	902	Standard
	Co	59	480081.2	1.5	**69.5797**	0.229	0.3	ug/L	262	Standard
	Ni	60	101825.7	0.5	**53.4866**	0.655	1.2	ug/L	371	Standard
	Cu	65	103347.9	0.3	**55.2467**	0.559	1.0	ug/L	106	Standard
	Zn	66	65133.7	0.7	**58.8316**	0.616	1.0	ug/L	398	Standard
>	Ge	72	453366.3	1.4				ug/L	535147	Standard
	As	75	67998.6	1.4	**59.9775**	0.350	0.6	ug/L	-43	Standard
	Se	82	8004.7	1.5	**69.6196**	0.663	1.0	ug/L	14	Standard
	Se-1	77	5747.1	0.6	**74.7297**	0.858	1.1	ug/L	65	Standard
>	Ga	71	700.0	7.7				mg/L	97	Standard
	Rb	85	262612.4	2.7				ug/L	15	Standard
	Y	89	431755.5	0.9				ug/L	465704	Standard
>	Rh	103	1180.0	12.1				ug/L	10	Standard
	Mo	98	1268678.8	1.5	**462.4618**	7.325	1.6	ug/L	9	Standard
	Ag	107	289362.3	0.2	**43.5874**	0.122	0.3	ug/L	82	Standard
	Cd	111	94792.1	0.8	**44.6737**	0.366	0.8	mg/L	7	Standard
	Cd	114	230907.1	2.6	**45.1893**	1.189	2.6	ug/L	21	Standard
>	In	115	544320.7	0.1				ug/L	619035	Standard
	Sn	118	1760.1	2.7	**0.2042**	0.008	3.9	ug/L	508	Standard
	Sb	123	233383.2	0.4	**50.1222**	0.236	0.5	ug/L	86	Standard
	Ba	135	165124.3	0.9	**82.1221**	0.708	0.9	ug/L	79	Standard
	Ce	140	966.7	8.2				ug/L	68	Standard
>	Tb	159	884416.1	0.7				ug/L	986982	Standard
	Ho	165	73.3	38.8				ug/L	10	Standard
	Tl	203	384991.2	0.4	**50.4813**	0.655	1.3	ug/L	13	Standard
	Tl	205	341869.1	1.1	**52.4681**	0.385	0.7	ug/L	10	Standard
	Pb	206	255668.8	0.9	**52.1981**	0.879	1.7	ug/L	264	Standard
	Pb	207	224089.7	0.5	**50.6200**	0.634	1.3	ug/L	227	Standard
	Pb	208	888698.2	0.6	**52.0591**	0.157	0.3	ug/L	868	Standard
	U	238	358665.5	0.3	**56.8418**	0.316	0.6	ug/L	8	Standard
>	Bi	209	451966.0	0.9				ug/L	541014	Standard

Sample ID: L1606153601S WG574593-05
Report Date/Time: Thursday, June 30, 2016 19:15:24
Page 1

Approved: July 01, 2016

Na	23	16.7	34.6	**111.6222**	38.965	34.9	mg/L	2	Standard
Mg	24	1057684.2	1.3	**1371.3823**	13.464	1.0	mg/L	53	Standard
K	39	1123.4	9.3	**2.1927**	0.220	10.0	mg/L	53	Standard
Ca	43	1163.4	6.7	**76.7147**	5.120	6.7	mg/L	28	Standard
Fe	54	172.0	23.7	**0.0208**	0.033	160.7	mg/L	181	Standard
Fe	57	1135.0	4.0	**2.9145**	0.156	5.4	mg/L	257	Standard
Sc-1	45	46411.0	0.4				mg/L	55220	Standard
Cl	35	218214.2	0.7				ug/L	35504	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	60607.7	2.8				ug/L	2040	Standard
P	31	22690.3	1.8				ug/L	20435	Standard
S	34	2575.2	6.7				ug/L	2430	Standard
Sr	88	481.7	15.9				ug/L	75	Standard
C	12	266.7	14.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103574.1	22.0				mg/L	7	Standard
Dy	164	22.2	113.4				mg/L	9	Standard
Ho-1	165	73.3	38.8				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	121412.0	5.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		190.900	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		84.718	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601S WG574593-05
Report Date/Time: Thursday, June 30, 2016 19:15:24
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	87.931	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	83.541	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606153601S WG574593-05
Report Date/Time: Thursday, June 30, 2016 19:15:24
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606153601SD WG574593-06
Sample Date/Time: Thursday, June 30, 2016 19:16:19
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	144320.8	1.4				ug/L	74916	Standard
	Be	9	67036.4	2.5	**32.9766**	0.573	1.7	ug/L	10	Standard
	Al	27	19028383.5	1.6	**56.9163**	0.252	0.4	ug/L	1822	Standard
	Sc	45	45364.5	1.2				ug/L	55220	Standard
	Ti	47	864.0	14.8	**2.4561**	0.339	13.8	ug/L	34	Standard
	V	51	409554.8	7.4	**53.2416**	3.343	6.3	ug/L	1938	Standard
	Cr	52	373963.3	2.3	**49.2139**	0.515	1.0	ug/L	9522	Standard
	Cr	53	52440.6	1.0	**56.4442**	1.146	2.0	ug/L	395	Standard
	Mn	55	414320.5	2.9	**58.1196**	1.024	1.8	ug/L	902	Standard
	Co	59	481049.2	2.9	**71.3749**	1.274	1.8	ug/L	262	Standard
	Ni	60	100627.5	1.8	**54.1113**	0.263	0.5	ug/L	371	Standard
	Cu	65	101353.6	1.2	**55.4683**	0.248	0.4	ug/L	106	Standard
	Zn	66	63976.8	1.0	**59.1634**	0.288	0.5	ug/L	398	Standard
>	Ge	72	442808.8	1.3				ug/L	535147	Standard
	As	75	65657.0	1.0	**59.2943**	0.212	0.4	ug/L	-43	Standard
	Se	82	7691.2	2.1	**68.4817**	0.661	1.0	ug/L	14	Standard
	Se-1	77	5384.6	1.6	**71.6561**	0.754	1.1	ug/L	65	Standard
>	Ga	71	658.3	9.6				mg/L	97	Standard
	Rb	85	255749.5	2.4				ug/L	15	Standard
	Y	89	419777.3	0.4				ug/L	465704	Standard
>	Rh	103	1070.0	9.0				ug/L	10	Standard
	Mo	98	1236104.0	2.4	**461.4124**	4.988	1.1	ug/L	9	Standard
	Ag	107	281437.4	2.3	**43.4126**	0.448	1.0	ug/L	82	Standard
	Cd	111	91534.3	1.0	**44.1809**	0.328	0.7	mg/L	7	Standard
	Cd	114	225320.4	3.6	**45.1561**	1.335	3.0	ug/L	21	Standard
>	In	115	531495.6	1.3				ug/L	619035	Standard
	Sn	118	1726.8	2.8	**0.2057**	0.012	6.1	ug/L	508	Standard
	Sb	123	227797.6	2.3	**50.0991**	0.600	1.2	ug/L	86	Standard
	Ba	135	161039.8	1.6	**82.0212**	0.257	0.3	ug/L	79	Standard
	Ce	140	906.7	5.3				ug/L	68	Standard
>	Tb	159	880141.6	0.9				ug/L	986982	Standard
	Ho	165	85.0	65.5				ug/L	10	Standard
	Tl	203	378471.8	2.5	**50.0289**	0.587	1.2	ug/L	13	Standard
	Tl	205	343724.7	2.2	**53.1854**	0.518	1.0	ug/L	10	Standard
	Pb	206	251355.3	1.3	**51.7382**	0.295	0.6	ug/L	264	Standard
	Pb	207	219297.8	1.2	**49.9444**	0.068	0.1	ug/L	227	Standard
	Pb	208	870795.0	1.8	**51.4295**	0.358	0.7	ug/L	868	Standard
	U	238	351344.4	2.1	**56.1378**	0.462	0.8	ug/L	8	Standard
>	Bi	209	448252.8	1.3				ug/L	541014	Standard

Sample ID: L1606153601SD WG574593-06
Report Date/Time: Thursday, June 30, 2016 19:18:36
Page 1

Approved: July 01, 2016

Na	23	13.3	43.3	**91.5778**	40.783	44.5	mg/L	2	Standard
Mg	24	1030234.6	3.5	**1366.3947**	31.771	2.3	mg/L	53	Standard
K	39	1185.0	3.3	**2.3727**	0.105	4.4	mg/L	53	Standard
Ca	43	1123.4	8.6	**75.7793**	6.723	8.9	mg/L	28	Standard
Fe	54	146.6	6.0	**0.0029**	0.008	282.1	mg/L	181	Standard
Fe	57	1080.0	9.4	**2.8172**	0.286	10.2	mg/L	257	Standard
> **Sc-1**	45	45364.5	1.2				mg/L	55220	Standard
Cl	35	210550.8	2.6				ug/L	35504	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	57964.0	1.3				ug/L	2040	Standard
P	31	21213.2	2.6				ug/L	20435	Standard
S	34	2423.5	4.0				ug/L	2430	Standard
Sr	88	468.3	4.4				ug/L	75	Standard
C	12	256.7	25.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	116534.2	19.4				mg/L	7	Standard
Dy	164	45.4	89.4				mg/L	9	Standard
Ho-1	165	85.0	65.5				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	23	Standard
I	127	133412.5	5.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		192.642	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		82.745	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601SD WG574593-06
Report Date/Time: Thursday, June 30, 2016 19:18:36
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		85.859
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		82.854
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606153601SD WG574593-06
Report Date/Time: Thursday, June 30, 2016 19:18:36
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606149602
Sample Date/Time: Thursday, June 30, 2016 19:19:30
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	104772.7	1.5				ug/L	74916	Standard
	Be	9	263.3	12.2	**0.1749**	0.022	12.8	ug/L	10	Standard
	Al	27	2327206.5	2.0	**9.5886**	0.259	2.7	ug/L	1822	Standard
	Sc	45	53544.5	2.5				ug/L	55220	Standard
	Ti	47	16761.3	1.7	**42.3552**	0.341	0.8	ug/L	34	Standard
	V	51	72697.7	4.2	**8.0120**	0.394	4.9	ug/L	1938	Standard
	Cr	52	31803.0	2.2	**2.6563**	0.048	1.8	ug/L	9522	Standard
	Cr	53	4635.7	2.8	**3.9573**	0.155	3.9	ug/L	395	Standard
	Mn	55	461938.0	0.8	**56.0400**	0.179	0.3	ug/L	902	Standard
	Co	59	7731.6	1.0	**0.9697**	0.004	0.4	ug/L	262	Standard
	Ni	60	5444.3	1.5	**2.3929**	0.012	0.5	ug/L	371	Standard
	Cu	65	244497.6	1.7	**115.7696**	0.937	0.8	ug/L	106	Standard
	Zn	66	95689.3	2.3	**76.6174**	1.133	1.5	ug/L	398	Standard
>	**Ge**	72	512059.6	1.0				ug/L	535147	Standard
	As	75	8368.8	9.3	**6.5821**	0.557	8.5	ug/L	-43	Standard
	Se	82	699.3	44.3	**5.2835**	2.351	44.5	ug/L	14	Standard
	Se-1	77	162.7	7.3	**1.3050**	0.119	9.1	ug/L	65	Standard
>	**Ga**	71	4504.0	7.0				mg/L	97	Standard
	Rb	85	91165.1	0.7				ug/L	15	Standard
	Y	89	475204.6	1.4				ug/L	465704	Standard
>	**Rh**	103	323.3	28.1				ug/L	10	Standard
	Mo	98	9970.5	0.6	**3.1545**	0.012	0.4	ug/L	9	Standard
	Ag	107	1999.8	4.1	**0.2544**	0.011	4.2	ug/L	82	Standard
	Cd	111	985.7	2.2	**0.4094**	0.008	1.8	mg/L	7	Standard
	Cd	114	2510.2	4.6	**0.4335**	0.018	4.3	ug/L	21	Standard
>	**In**	115	629593.3	0.4				ug/L	619035	Standard
	Sn	118	8885.9	1.2	**1.2391**	0.014	1.1	ug/L	508	Standard
	Sb	123	35324.6	0.9	**6.5627**	0.043	0.7	ug/L	86	Standard
	Ba	135	56638.7	0.7	**24.3393**	0.085	0.3	ug/L	79	Standard
	Ce	140	132589.5	2.3				ug/L	68	Standard
>	**Tb**	159	989187.3	1.2				ug/L	986982	Standard
	Ho	165	2191.8	5.2				ug/L	10	Standard
	Tl	203	653.7	11.2	**0.0726**	0.007	9.8	ug/L	13	Standard
	Tl	205	521.7	4.9	**0.0699**	0.003	3.8	ug/L	10	Standard
	Pb	206	450058.3	0.7	**71.4171**	0.502	0.7	ug/L	264	Standard
	Pb	207	375040.1	0.8	**65.8445**	0.305	0.5	ug/L	227	Standard
	Pb	208	1541570.9	0.9	**70.1911**	0.206	0.3	ug/L	868	Standard
	U	238	768.7	10.1	**0.1025**	0.009	8.9	ug/L	8	Standard
>	**Bi**	209	581585.4	1.2				ug/L	541014	Standard

Sample ID: L1606149602
Report Date/Time: Thursday, June 30, 2016 19:21:47
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.4621**	16.380	173.1	mg/L	2	Standard
Mg	24	17518.5	1.6	**19.6574**	0.180	0.9	mg/L	53	Standard
K	39	1336.7	7.1	**2.2625**	0.136	6.0	mg/L	53	Standard
Ca	43	150.0	29.6	**7.1161**	2.698	37.9	mg/L	28	Standard
Fe	54	2445.9	4.8	**1.6003**	0.084	5.2	mg/L	181	Standard
Fe	57	911.7	10.0	**1.8244**	0.187	10.3	mg/L	257	Standard
> **Sc-1**	45	53544.5	2.5				mg/L	55220	Standard
Cl	35	39591.0	3.0				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	8435.7	4.1				ug/L	2040	Standard
P	31	32474.8	3.9				ug/L	20435	Standard
S	34	1970.1	2.2				ug/L	2430	Standard
Sr	88	191.7	12.9				ug/L	75	Standard
C	12	316.7	11.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6454.7	14.8				mg/L	7	Standard
Dy	164	3364.1	3.4				mg/L	9	Standard
Ho-1	165	2191.8	5.2				mg/L	10	Standard
Er	166	2080.1	5.8				mg/L	23	Standard
I	127	47278.7	1.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.853	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.686	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606149602
Report Date/Time: Thursday, June 30, 2016 19:21:47
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.706
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.499
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606149602PS WG574849-01
Sample Date/Time: Thursday, June 30, 2016 19:22:42
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	103109.8	2.5				ug/L	74916	Standard
	Be	9	77933.4	3.7	**53.6569**	0.981	1.8	ug/L	10	Standard
	Al	27	2281277.1	0.1	**9.5530**	0.236	2.5	ug/L	1822	Standard
	Sc	45	55926.4	2.7				ug/L	55220	Standard
	Ti	47	16573.4	0.4	**41.7070**	0.077	0.2	ug/L	34	Standard
	V	51	525181.9	0.5	**58.8445**	0.516	0.9	ug/L	1938	Standard
	Cr	52	452407.5	2.1	**51.3173**	0.938	1.8	ug/L	9522	Standard
	Cr	53	55755.8	1.8	**51.6383**	0.780	1.5	ug/L	395	Standard
	Mn	55	853926.6	1.8	**103.2487**	1.685	1.6	ug/L	902	Standard
	Co	59	433237.1	1.5	**55.3580**	0.766	1.4	ug/L	262	Standard
	Ni	60	108738.9	1.6	**50.3458**	0.626	1.2	ug/L	371	Standard
	Cu	65	348102.0	1.0	**164.1687**	1.118	0.7	ug/L	106	Standard
	Zn	66	154688.6	0.4	**123.5626**	0.566	0.5	ug/L	398	Standard
>	Ge	72	514197.3	0.4				ug/L	535147	Standard
	As	75	72841.3	0.6	**56.6505**	0.211	0.4	ug/L	-43	Standard
	Se	82	6978.0	1.8	**53.4868**	0.860	1.6	ug/L	14	Standard
	Se-1	77	4469.7	1.0	**51.0555**	0.341	0.7	ug/L	65	Standard
>	Ga	71	4263.9	4.0				mg/L	97	Standard
	Rb	85	89092.9	2.1				ug/L	15	Standard
	Y	89	475816.2	1.0				ug/L	465704	Standard
>	Rh	103	153.3	18.0				ug/L	10	Standard
	Mo	98	8345.8	1.9	**2.6468**	0.068	2.6	ug/L	9	Standard
	Ag	107	375316.3	0.2	**48.9550**	0.354	0.7	ug/L	82	Standard
	Cd	111	119990.1	0.1	**48.9662**	0.427	0.9	mg/L	7	Standard
	Cd	114	291500.4	1.2	**49.4012**	1.030	2.1	ug/L	21	Standard
>	In	115	628633.7	0.9				ug/L	619035	Standard
	Sn	118	9141.1	1.5	**1.2797**	0.012	0.9	ug/L	508	Standard
	Sb	123	292476.1	1.8	**54.3852**	0.550	1.0	ug/L	86	Standard
	Ba	135	165631.8	0.7	**71.3277**	0.810	1.1	ug/L	79	Standard
	Ce	140	132476.6	0.4				ug/L	68	Standard
>	Tb	159	983495.9	0.8				ug/L	986982	Standard
	Ho	165	2075.1	6.5				ug/L	10	Standard
	Tl	203	481149.5	0.7	**49.1296**	0.206	0.4	ug/L	13	Standard
	Tl	205	428530.6	0.3	**51.2204**	0.373	0.7	ug/L	10	Standard
	Pb	206	759727.2	0.9	**120.8333**	0.725	0.6	ug/L	264	Standard
	Pb	207	644523.9	0.7	**113.4180**	0.527	0.5	ug/L	227	Standard
	Pb	208	2619689.3	1.3	**119.5658**	2.190	1.8	ug/L	868	Standard
	U	238	425453.5	0.8	**52.5108**	0.557	1.1	ug/L	8	Standard
>	Bi	209	580355.7	0.8				ug/L	541014	Standard

Sample ID: L1606149602PS WG574849-01
Report Date/Time: Thursday, June 30, 2016 19:24:59
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.5408**	16.516	173.1	mg/L	2	Standard
Mg	24	17336.6	1.6	**18.6304**	0.635	3.4	mg/L	53	Standard
K	39	1470.1	3.9	**2.3880**	0.102	4.3	mg/L	53	Standard
Ca	43	176.7	13.4	**8.1890**	1.121	13.7	mg/L	28	Standard
Fe	54	2425.7	5.9	**1.5136**	0.097	6.4	mg/L	181	Standard
Fe	57	908.4	11.3	**1.7168**	0.315	18.3	mg/L	257	Standard
> **Sc-1**	45	55926.4	2.7				mg/L	55220	Standard
Cl	35	38868.5	1.9				ug/L	35504	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	6991.6	0.9				ug/L	2040	Standard
P	31	33233.1	4.0				ug/L	20435	Standard
S	34	2060.1	7.2				ug/L	2430	Standard
Sr	88	165.0	22.9				ug/L	75	Standard
C	12	266.7	16.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3680.5	18.4				mg/L	7	Standard
Dy	164	3273.9	7.2				mg/L	9	Standard
Ho-1	165	2075.1	6.5				mg/L	10	Standard
Er	166	1943.5	5.4				mg/L	23	Standard
I	127	42986.0	4.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.633	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.085	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606149602PS WG574849-01
Report Date/Time: Thursday, June 30, 2016 19:24:59
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.551
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.272
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

Approved: July 01, 2016

Zn 66 Upper, S, EEE	Zn	66
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606149602SDL WG574849-02
Sample Date/Time: Thursday, June 30, 2016 19:25:53
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93955.5	2.3				ug/L	74916	Standard
	Be	9	91.7	17.5	**0.0655**	0.010	15.9	ug/L	10	Standard
	Al	27	435016.7	0.6	**1.9970**	0.036	1.8	ug/L	1822	Standard
	Sc	45	46536.4	2.0				ug/L	55220	Standard
	Ti	47	3197.0	1.4	**8.6280**	0.173	2.0	ug/L	34	Standard
	V	51	13935.8	2.3	**1.4943**	0.029	1.9	ug/L	1938	Standard
	Cr	52	10481.3	2.0	**0.2696**	0.018	6.9	ug/L	9522	Standard
	Cr	53	1375.1	5.2	**0.9976**	0.076	7.6	ug/L	395	Standard
	Mn	55	87248.2	0.4	**11.2920**	0.055	0.5	ug/L	902	Standard
	Co	59	1639.4	0.1	**0.2034**	0.002	0.8	ug/L	262	Standard
	Ni	60	1658.1	1.3	**0.6854**	0.012	1.8	ug/L	371	Standard
	Cu	65	48737.9	1.7	**24.7594**	0.542	2.2	ug/L	106	Standard
	Zn	66	20637.7	1.3	**17.4959**	0.332	1.9	ug/L	398	Standard
>	**Ge**	72	476439.4	0.6				ug/L	535147	Standard
	As	75	1518.5	3.9	**1.3286**	0.052	3.9	ug/L	-43	Standard
	Se	82	100.8	12.1	**0.7385**	0.104	14.1	ug/L	14	Standard
	Se-1	77	79.3	11.4	**0.4075**	0.109	26.8	ug/L	65	Standard
>	**Ga**	71	933.4	1.6				mg/L	97	Standard
	Rb	85	17089.6	2.7				ug/L	15	Standard
	Y	89	412058.7	1.4				ug/L	465704	Standard
>	**Rh**	103	76.7	16.4				ug/L	10	Standard
	Mo	98	2801.6	5.5	**0.9655**	0.045	4.6	ug/L	9	Standard
	Ag	107	478.7	1.2	**0.0613**	0.001	1.1	ug/L	82	Standard
	Cd	111	212.2	7.2	**0.1012**	0.005	5.3	mg/L	7	Standard
	Cd	114	512.0	11.8	**0.1024**	0.010	10.1	ug/L	21	Standard
>	**In**	115	583106.0	1.4				ug/L	619035	Standard
	Sn	118	1851.8	10.2	**0.1986**	0.029	14.8	ug/L	508	Standard
	Sb	123	7851.0	3.4	**1.5782**	0.048	3.0	ug/L	86	Standard
	Ba	135	10949.6	1.5	**5.0661**	0.131	2.6	ug/L	79	Standard
	Ce	140	25568.2	2.5				ug/L	68	Standard
>	**Tb**	159	919967.3	0.8				ug/L	986982	Standard
	Ho	165	418.3	9.0				ug/L	10	Standard
	Tl	203	262.3	17.9	**0.0346**	0.006	15.9	ug/L	13	Standard
	Tl	205	165.0	10.5	**0.0287**	0.002	7.8	ug/L	10	Standard
	Pb	206	87208.3	0.6	**14.7596**	0.282	1.9	ug/L	264	Standard
	Pb	207	73088.5	0.1	**13.6871**	0.203	1.5	ug/L	227	Standard
	Pb	208	296893.6	0.2	**14.4164**	0.196	1.4	ug/L	868	Standard
	U	238	176.3	3.2	**0.0311**	0.001	3.2	ug/L	8	Standard
>	**Bi**	209	544255.4	1.3				ug/L	541014	Standard

Sample ID: L1606149602SDL WG574849-02
Report Date/Time: Thursday, June 30, 2016 19:28:10
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3300.4	1.0	**4.2345**	0.101	2.4	mg/L	53	Standard
K	39	323.3	12.4	**0.5743**	0.069	12.0	mg/L	53	Standard
Ca	43	48.3	21.5	**1.5801**	0.742	46.9	mg/L	28	Standard
Fe	54	545.8	9.2	**0.3226**	0.042	13.0	mg/L	181	Standard
Fe	57	365.0	2.7	**0.4843**	0.015	3.2	mg/L	257	Standard
> **Sc-1**	45	46536.4	2.0				mg/L	55220	Standard
Cl	35	36777.9	2.4				ug/L	35504	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	2873.6	9.8				ug/L	2040	Standard
P	31	12638.6	1.3				ug/L	20435	Standard
S	34	2045.1	7.4				ug/L	2430	Standard
Sr	88	75.0	6.7				ug/L	75	Standard
C	12	160.0	39.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6728.2	24.0				mg/L	7	Standard
Dy	164	640.1	13.9				mg/L	9	Standard
Ho-1	165	418.3	9.0				mg/L	10	Standard
Er	166	416.7	9.7				mg/L	23	Standard
I	127	34769.9	1.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.414	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.030	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606149602SDL WG574849-02
Report Date/Time: Thursday, June 30, 2016 19:28:10
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.196
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.599
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 19:29:06
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	95961.4	2.2				ug/L	74916	Standard
	Be	9	71707.6	1.6	**53.0606**	0.339	0.6	ug/L	10	Standard
	Al	27	9500292.9	1.0	**42.7499**	0.969	2.3	ug/L	1822	Standard
	Sc	45	50089.4	2.7				ug/L	55220	Standard
	Ti	47	38126.9	2.2	**97.2767**	2.761	2.8	ug/L	34	Standard
	V	51	450805.6	0.8	**51.1303**	0.535	1.0	ug/L	1938	Standard
	Cr	52	420207.7	1.8	**48.2152**	0.947	2.0	ug/L	9522	Standard
	Cr	53	53022.6	1.5	**49.7332**	1.518	3.1	ug/L	395	Standard
	Mn	55	391804.7	0.8	**47.9236**	0.476	1.0	ug/L	902	Standard
	Co	59	416314.6	0.9	**53.8746**	0.457	0.8	ug/L	262	Standard
	Ni	60	103681.5	0.6	**48.6168**	0.702	1.4	ug/L	371	Standard
	Cu	65	103376.1	0.5	**49.3415**	0.927	1.9	ug/L	106	Standard
	Zn	66	61988.9	0.5	**49.9450**	0.714	1.4	ug/L	398	Standard
>	Ge	72	507763.0	1.8				ug/L	535147	Standard
	As	75	63276.7	1.7	**49.8427**	0.076	0.2	ug/L	-43	Standard
	Se	82	6646.2	1.2	**51.5894**	0.295	0.6	ug/L	14	Standard
	Se-1	77	4399.3	1.0	**50.9034**	1.388	2.7	ug/L	65	Standard
>	Ga	71	58.3	13.1				mg/L	97	Standard
	Rb	85	1000.0	0.9				ug/L	15	Standard
	Y	89	450523.8	1.1				ug/L	465704	Standard
>	Rh	103	90.0	11.1				ug/L	10	Standard
	Mo	98	316138.3	1.2	**100.4613**	1.010	1.0	ug/L	9	Standard
	Ag	107	370934.7	1.2	**48.7051**	0.350	0.7	ug/L	82	Standard
	Cd	111	116910.7	0.9	**48.0288**	0.583	1.2	mg/L	7	Standard
	Cd	114	288182.6	1.1	**49.1611**	0.548	1.1	ug/L	21	Standard
>	In	115	624446.9	0.6				ug/L	619035	Standard
	Sn	118	331269.7	1.8	**50.3563**	0.616	1.2	ug/L	508	Standard
	Sb	123	262483.0	1.1	**49.1376**	0.313	0.6	ug/L	86	Standard
	Ba	135	107920.0	0.7	**46.7768**	0.061	0.1	ug/L	79	Standard
	Ce	140	183.3	21.2				ug/L	68	Standard
>	Tb	159	959700.8	0.1				ug/L	986982	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	468303.5	0.6	**50.0474**	0.369	0.7	ug/L	13	Standard
	Tl	205	420837.0	1.6	**52.6432**	0.744	1.4	ug/L	10	Standard
	Pb	206	303018.9	0.9	**50.4205**	0.564	1.1	ug/L	264	Standard
	Pb	207	273947.8	0.7	**50.4360**	0.330	0.7	ug/L	227	Standard
	Pb	208	1103991.7	0.7	**52.7123**	0.440	0.8	ug/L	868	Standard
	U	238	418677.6	1.5	**54.0799**	0.566	1.0	ug/L	8	Standard
>	Bi	209	554524.6	1.2				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 19:31:23
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4905.8	6.0	**5.8628**	0.392	6.7	mg/L	53	Standard
K	39	1735.1	5.2	**3.1692**	0.112	3.5	mg/L	53	Standard
Ca	43	81.7	18.7	**3.4095**	0.825	24.2	mg/L	28	Standard
Fe	54	6899.3	0.6	**5.0657**	0.116	2.3	mg/L	181	Standard
Fe	57	1910.1	3.7	**4.9138**	0.067	1.4	mg/L	257	Standard
Sc-1	45	50089.4	2.7				mg/L	55220	Standard
Cl	35	40319.6	2.9				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2363.5	4.5				ug/L	2040	Standard
P	31	24077.5	2.6				ug/L	20435	Standard
S	34	2363.5	3.5				ug/L	2430	Standard
Sr	88	58.3	13.1				ug/L	75	Standard
C	12	160.0	25.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1323.4	28.0				mg/L	7	Standard
Dy	164	12.5	48.3				mg/L	9	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	14271.7	4.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.121		
Al	27	85.500		
Sc	45			
Ti	47	97.277		
V	51	102.261		
Cr	52	96.430		
Cr	53			
Mn	55	95.847		
Co	59	107.749		
Ni	60	97.234		
Cu	65	98.683		
Zn	66	99.890		
Ge	72		94.883	
As	75	99.685		
Se	82	103.179		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 19:31:23
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.461		
Ag	107	97.410		
Cd	111	96.058		
Cd	114			
In	115			100.874
Sn	118	100.713		
Sb	123	98.275		
Ba	135	93.554		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.095		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.425		
U	238	108.160		
Bi	209			102.497
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 19:31:23
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 19:32:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94958.3	1.5				ug/L	74916	Standard
	Be	9	71.7	82.6	**0.0499**	0.044	88.3	ug/L	10	Standard
	Al	27	9098.7	74.8	**0.0390**	0.031	78.9	ug/L	1822	Standard
	Sc	45	49644.5	1.0				ug/L	55220	Standard
	Ti	47	45.7	39.5	**0.0472**	0.046	97.8	ug/L	34	Standard
	V	51	2791.6	18.3	**0.1237**	0.059	47.6	ug/L	1938	Standard
	Cr	52	7193.7	1.7	**-0.1906**	0.014	7.3	ug/L	9522	Standard
	Cr	53	800.0	4.9	**0.3739**	0.038	10.1	ug/L	395	Standard
	Mn	55	1181.1	42.2	**0.0406**	0.061	151.1	ug/L	902	Standard
	Co	59	509.7	61.6	**0.0436**	0.041	93.5	ug/L	262	Standard
	Ni	60	774.4	5.5	**0.2210**	0.020	8.8	ug/L	371	Standard
	Cu	65	680.7	12.0	**0.2687**	0.039	14.4	ug/L	106	Standard
	Zn	66	686.0	7.0	**0.2136**	0.039	18.3	ug/L	398	Standard
>	**Ge**	72	504271.2	0.2				ug/L	535147	Standard
	As	75	83.8	41.5	**0.1215**	0.027	22.6	ug/L	-43	Standard
	Se	82	62.6	2.3	**0.3930**	0.012	3.2	ug/L	14	Standard
	Se-1	77	70.0	16.5	**0.2432**	0.135	55.5	ug/L	65	Standard
>	**Ga**	71	45.0	50.9				mg/L	97	Standard
	Rb	85	325.0	113.3				ug/L	15	Standard
	Y	89	445052.8	1.6				ug/L	465704	Standard
>	**Rh**	103	61.7	4.7				ug/L	10	Standard
	Mo	98	1074.0	56.8	**0.3517**	0.190	54.0	ug/L	9	Standard
	Ag	107	419.0	95.5	**0.0485**	0.052	106.6	ug/L	82	Standard
	Cd	111	151.8	148.4	**0.0696**	0.091	131.3	mg/L	7	Standard
	Cd	114	348.7	131.1	**0.0678**	0.077	113.4	ug/L	21	Standard
>	**In**	115	626263.5	0.8				ug/L	619035	Standard
	Sn	118	1168.4	25.1	**0.0739**	0.043	58.7	ug/L	508	Standard
	Sb	123	1254.8	36.8	**0.2384**	0.085	35.8	ug/L	86	Standard
	Ba	135	263.3	119.9	**0.0935**	0.135	144.4	ug/L	79	Standard
	Ce	140	171.7	100.3				ug/L	68	Standard
>	**Tb**	159	957711.4	0.6				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	528.0	116.8	**0.0611**	0.064	104.7	ug/L	13	Standard
	Tl	205	238.3	87.9	**0.0368**	0.025	68.8	ug/L	10	Standard
	Pb	206	736.4	72.7	**0.0822**	0.086	104.7	ug/L	264	Standard
	Pb	207	625.4	66.7	**0.0796**	0.074	93.2	ug/L	227	Standard
	Pb	208	2292.7	50.7	**0.0690**	0.053	77.3	ug/L	868	Standard
	U	238	238.0	86.6	**0.0379**	0.026	67.9	ug/L	8	Standard
>	**Bi**	209	564278.1	1.0				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 19:34:34
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	300.0	91.6	**0.3285**	0.332	101.1	mg/L	53	Standard
K	39	25.0	20.0	**-0.0288**	0.009	32.0	mg/L	53	Standard
Ca	43	23.3	65.5	**-0.1997**	0.980	490.8	mg/L	28	Standard
Fe	54	159.1	21.8	**0.0019**	0.027	1411.1	mg/L	181	Standard
Fe	57	241.7	30.5	**0.0479**	0.210	438.9	mg/L	257	Standard
Sc-1	45	49644.5	1.0				mg/L	55220	Standard
Cl	35	39558.9	1.4				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2310.2	6.8				ug/L	2040	Standard
P	31	23586.7	1.9				ug/L	20435	Standard
S	34	2100.1	9.6				ug/L	2430	Standard
Sr	88	58.3	27.6				ug/L	75	Standard
C	12	140.0	21.4				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	1126.7	22.7				mg/L	7	Standard
Dy	164	149.2	23.8				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	6298.0	6.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.230	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 19:34:34
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.168	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	104.300	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sb	123	
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 19:34:34
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606149602SDL WG574849-02
Sample Date/Time: Thursday, June 30, 2016 19:35:30
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86523.1	2.7				ug/L	74916	Standard
	Be	9	51.7	20.1	**0.0388**	0.009	22.1	ug/L	10	Standard
	Al	27	85953.1	1.3	**0.4266**	0.006	1.4	ug/L	1822	Standard
	Sc	45	44204.4	2.0				ug/L	55220	Standard
	Ti	47	638.0	1.7	**1.7181**	0.027	1.6	ug/L	34	Standard
	V	51	3723.6	3.4	**0.2691**	0.016	6.1	ug/L	1938	Standard
	Cr	52	5946.2	3.6	**-0.2743**	0.028	10.1	ug/L	9522	Standard
	Cr	53	650.0	6.7	**0.2870**	0.043	15.0	ug/L	395	Standard
	Mn	55	17352.3	1.1	**2.2302**	0.028	1.3	ug/L	902	Standard
	Co	59	498.7	4.3	**0.0481**	0.003	6.5	ug/L	262	Standard
	Ni	60	834.7	0.4	**0.2854**	0.001	0.5	ug/L	371	Standard
	Cu	65	9780.8	1.7	**5.0724**	0.097	1.9	ug/L	106	Standard
	Zn	66	4901.1	2.1	**4.0187**	0.097	2.4	ug/L	398	Standard
>	**Ge**	72	462436.6	0.3				ug/L	535147	Standard
	As	75	327.6	12.6	**0.3383**	0.036	10.7	ug/L	-43	Standard
	Se	82	51.2	11.5	**0.3404**	0.050	14.5	ug/L	14	Standard
	Se-1	77	60.0	8.7	**0.1895**	0.069	36.3	ug/L	65	Standard
>	**Ga**	71	176.7	1.6				mg/L	97	Standard
	Rb	85	3545.4	4.6				ug/L	15	Standard
	Y	89	406227.1	0.6				ug/L	465704	Standard
>	**Rh**	103	36.7	34.3				ug/L	10	Standard
	Mo	98	2525.0	10.4	**0.8922**	0.089	10.0	ug/L	9	Standard
	Ag	107	182.0	6.8	**0.0201**	0.002	8.7	ug/L	82	Standard
	Cd	111	42.0	26.3	**0.0268**	0.005	18.8	mg/L	7	Standard
	Cd	114	102.8	20.6	**0.0281**	0.004	13.9	ug/L	21	Standard
>	**In**	115	569300.6	0.3				ug/L	619035	Standard
	Sn	118	516.7	3.0	**-0.0171**	0.003	16.4	ug/L	508	Standard
	Sb	123	1444.7	2.0	**0.3011**	0.007	2.3	ug/L	86	Standard
	Ba	135	1949.5	3.3	**0.9076**	0.031	3.4	ug/L	79	Standard
	Ce	140	2333.5	42.9				ug/L	68	Standard
>	**Tb**	159	887901.9	0.9				ug/L	986982	Standard
	Ho	165	38.3	49.4				ug/L	10	Standard
	Tl	203	180.7	33.0	**0.0262**	0.007	25.5	ug/L	13	Standard
	Tl	205	65.0	7.7	**0.0162**	0.001	4.1	ug/L	10	Standard
	Pb	206	12240.0	6.5	**2.0913**	0.139	6.6	ug/L	264	Standard
	Pb	207	10224.5	8.0	**1.9345**	0.157	8.1	ug/L	227	Standard
	Pb	208	42832.7	7.1	**2.0996**	0.152	7.2	ug/L	868	Standard
	U	238	39.0	11.2	**0.0132**	0.001	4.5	ug/L	8	Standard
>	**Bi**	209	530821.4	0.2				ug/L	541014	Standard

Sample ID: L1606149602SDL WG574849-02
Report Date/Time: Thursday, June 30, 2016 19:37:47
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	690.0	6.2	**0.9057**	0.074	8.2	mg/L	53	Standard
K	39	100.0	13.2	**0.1364**	0.033	23.8	mg/L	53	Standard
Ca	43	25.0	40.0	**0.0946**	0.702	741.5	mg/L	28	Standard
Fe	54	134.2	3.6	**-0.0044**	0.006	141.6	mg/L	181	Standard
Fe	57	263.3	10.5	**0.2076**	0.076	36.8	mg/L	257	Standard
> **Sc-1**	45	44204.4	2.0				mg/L	55220	Standard
Cl	35	36845.4	0.7				ug/L	35504	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	2000.1	11.3				ug/L	2040	Standard
P	31	8230.6	2.2				ug/L	20435	Standard
S	34	2098.5	4.7				ug/L	2430	Standard
Sr	88	76.7	26.4				ug/L	75	Standard
C	12	116.7	52.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	7835.6	37.8				mg/L	7	Standard
Dy	164	81.3	50.6				mg/L	9	Standard
Ho-1	165	38.3	49.4				mg/L	10	Standard
Er	166	43.3	48.0				mg/L	23	Standard
I	127	27107.6	5.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.493	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.413	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606149602SDL WG574849-02
Report Date/Time: Thursday, June 30, 2016 19:37:47
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.116
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606149801
Sample Date/Time: Thursday, June 30, 2016 19:38:41
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92592.1	1.4				ug/L	74916	Standard
	Be	9	475.0	12.8	**0.3603**	0.042	11.6	ug/L	10	Standard
	Al	27	2387958.6	1.4	**11.1329**	0.209	1.9	ug/L	1822	Standard
	Sc	45	53171.6	4.4				ug/L	55220	Standard
	Ti	47	1016.4	8.9	**2.5223**	0.237	9.4	ug/L	34	Standard
	V	51	9109.0	1.7	**0.8397**	0.021	2.5	ug/L	1938	Standard
	Cr	52	15164.6	1.4	**0.7361**	0.022	3.0	ug/L	9522	Standard
	Cr	53	2218.5	3.8	**1.7070**	0.078	4.6	ug/L	395	Standard
	Mn	55	3141097.9	0.7	**384.5503**	5.509	1.4	ug/L	902	Standard
	Co	59	3810.1	1.2	**0.4700**	0.010	2.1	ug/L	262	Standard
	Ni	60	3766.5	3.0	**1.6237**	0.049	3.0	ug/L	371	Standard
	Cu	65	12779.1	1.2	**6.0408**	0.064	1.1	ug/L	106	Standard
	Zn	66	24001.7	0.6	**19.1045**	0.183	1.0	ug/L	398	Standard
>	**Ge**	72	508257.5	0.8				ug/L	535147	Standard
	As	75	18152.4	1.0	**14.3247**	0.198	1.4	ug/L	-43	Standard
	Se	82	412.3	6.1	**3.1067**	0.212	6.8	ug/L	14	Standard
	Se-1	77	116.7	10.0	**0.7827**	0.142	18.2	ug/L	65	Standard
>	**Ga**	71	261.7	14.1				mg/L	97	Standard
	Rb	85	55121.8	2.1				ug/L	15	Standard
	Y	89	489107.7	0.8				ug/L	465704	Standard
>	**Rh**	103	106.7	5.4				ug/L	10	Standard
	Mo	98	1661.3	4.5	**0.5375**	0.026	4.9	ug/L	9	Standard
	Ag	107	107.0	20.9	**0.0079**	0.003	37.3	ug/L	82	Standard
	Cd	111	37.4	15.9	**0.0232**	0.002	10.7	mg/L	7	Standard
	Cd	114	92.1	17.7	**0.0245**	0.003	11.0	ug/L	21	Standard
>	**In**	115	627819.2	0.5				ug/L	619035	Standard
	Sn	118	976.7	4.1	**0.0446**	0.007	14.9	ug/L	508	Standard
	Sb	123	512.0	14.1	**0.0998**	0.014	13.9	ug/L	86	Standard
	Ba	135	49828.5	0.8	**21.4712**	0.164	0.8	ug/L	79	Standard
	Ce	140	95005.3	0.3				ug/L	68	Standard
>	**Tb**	159	963158.8	1.0				ug/L	986982	Standard
	Ho	165	2865.3	5.4				ug/L	10	Standard
	Tl	203	114.7	11.1	**0.0182**	0.001	7.6	ug/L	13	Standard
	Tl	205	115.0	19.9	**0.0220**	0.003	12.7	ug/L	10	Standard
	Pb	206	7845.0	1.2	**1.2640**	0.010	0.8	ug/L	264	Standard
	Pb	207	6721.5	1.1	**1.2009**	0.019	1.6	ug/L	227	Standard
	Pb	208	28270.4	0.7	**1.3079**	0.016	1.2	ug/L	868	Standard
	U	238	1735.4	2.9	**0.2313**	0.006	2.6	ug/L	8	Standard
>	**Bi**	209	556405.3	0.5				ug/L	541014	Standard

Sample ID: L1606149801
Report Date/Time: Thursday, June 30, 2016 19:40:58
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	9029.4	2.0	**10.2038**	0.653	6.4	mg/L	53	Standard
K	39	611.7	14.2	**1.0024**	0.150	15.0	mg/L	53	Standard
Ca	43	315.0	3.2	**16.8679**	0.705	4.2	mg/L	28	Standard
Fe	54	5107.8	1.9	**3.5012**	0.205	5.9	mg/L	181	Standard
Fe	57	1653.4	5.6	**3.8905**	0.307	7.9	mg/L	257	Standard
> **Sc-1**	45	53171.6	4.4				mg/L	55220	Standard
Cl	35	41246.7	1.0				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	75966.9	4.8				ug/L	2040	Standard
P	31	30046.4	2.6				ug/L	20435	Standard
S	34	2270.2	2.0				ug/L	2430	Standard
Sr	88	276.7	15.2				ug/L	75	Standard
C	12	276.7	8.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1063.4	31.5				mg/L	7	Standard
Dy	164	3847.0	8.9				mg/L	9	Standard
Ho-1	165	2865.3	5.4				mg/L	10	Standard
Er	166	2716.9	5.5				mg/L	23	Standard
I	127	73848.4	6.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.594	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.975	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606149801
Report Date/Time: Thursday, June 30, 2016 19:40:58
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.419
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.845
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152901
Sample Date/Time: Thursday, June 30, 2016 19:41:53
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91623.0	2.3				ug/L	74916	Standard
	Be	9	86.7	16.7	**0.0635**	0.010	16.5	ug/L	10	Standard
	Al	27	4709098.2	0.6	**22.1945**	0.581	2.6	ug/L	1822	Standard
	Sc	45	51331.9	3.4				ug/L	55220	Standard
	Ti	47	1675.8	1.3	**4.2896**	0.030	0.7	ug/L	34	Standard
	V	51	11556.6	2.3	**1.1447**	0.038	3.4	ug/L	1938	Standard
	Cr	52	17512.1	1.2	**1.0523**	0.009	0.8	ug/L	9522	Standard
	Cr	53	6754.8	3.1	**6.1208**	0.292	4.8	ug/L	395	Standard
	Mn	55	746180.8	1.6	**93.1169**	1.892	2.0	ug/L	902	Standard
	Co	59	8081.8	1.5	**1.0435**	0.010	1.0	ug/L	262	Standard
	Ni	60	4978.8	0.9	**2.2406**	0.017	0.8	ug/L	371	Standard
	Cu	65	6989.9	0.8	**3.3456**	0.078	2.3	ug/L	106	Standard
	Zn	66	20923.8	0.6	**16.9547**	0.359	2.1	ug/L	398	Standard
>	**Ge**	72	498217.9	1.5				ug/L	535147	Standard
	As	75	1319.8	6.1	**1.1135**	0.062	5.6	ug/L	-43	Standard
	Se	82	63.1	11.7	**0.4025**	0.053	13.2	ug/L	14	Standard
	Se-1	77	328.3	1.7	**3.3348**	0.125	3.7	ug/L	65	Standard
>	**Ga**	71	1348.4	1.4				mg/L	97	Standard
	Rb	85	12897.2	1.9				ug/L	15	Standard
	Y	89	461979.9	1.5				ug/L	465704	Standard
>	**Rh**	103	55.0	32.8				ug/L	10	Standard
	Mo	98	459.3	18.5	**0.1621**	0.026	16.2	ug/L	9	Standard
	Ag	107	773.7	5.2	**0.0982**	0.004	4.6	ug/L	82	Standard
	Cd	111	127.2	6.3	**0.0616**	0.004	6.3	mg/L	7	Standard
	Cd	114	327.6	9.9	**0.0663**	0.006	8.9	ug/L	21	Standard
>	**In**	115	608144.3	1.0				ug/L	619035	Standard
	Sn	118	1706.8	6.6	**0.1634**	0.015	9.3	ug/L	508	Standard
	Sb	123	406.4	11.1	**0.0825**	0.008	9.7	ug/L	86	Standard
	Ba	135	76054.7	0.3	**33.8456**	0.317	0.9	ug/L	79	Standard
	Ce	140	91810.7	1.2				ug/L	68	Standard
>	**Tb**	159	945758.0	1.2				ug/L	986982	Standard
	Ho	165	2055.1	5.3				ug/L	10	Standard
	Tl	203	176.0	6.7	**0.0254**	0.001	5.0	ug/L	13	Standard
	Tl	205	150.0	26.7	**0.0271**	0.005	19.0	ug/L	10	Standard
	Pb	206	15554.6	0.9	**2.6358**	0.029	1.1	ug/L	264	Standard
	Pb	207	12984.9	1.6	**2.4360**	0.034	1.4	ug/L	227	Standard
	Pb	208	54505.7	0.9	**2.6500**	0.024	0.9	ug/L	868	Standard
	U	238	2232.5	0.5	**0.3055**	0.001	0.3	ug/L	8	Standard
>	**Bi**	209	537187.0	0.3				ug/L	541014	Standard

Sample ID: L1606152901
Report Date/Time: Thursday, June 30, 2016 19:44:11
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**20.2016**	17.522	86.7	mg/L	2	Standard
Mg	24	27080.8	0.6	**31.7349**	0.931	2.9	mg/L	53	Standard
K	39	478.3	11.6	**0.8002**	0.131	16.3	mg/L	53	Standard
Ca	43	121.7	30.8	**5.7176**	2.206	38.6	mg/L	28	Standard
Fe	54	2158.6	4.4	**1.4639**	0.066	4.5	mg/L	181	Standard
Fe	57	796.7	8.5	**1.6086**	0.202	12.6	mg/L	257	Standard
> **Sc-1**	45	51331.9	3.4				mg/L	55220	Standard
Cl	35	38716.7	1.3				ug/L	35504	Standard
Kr	83	4.3	13.3				ug/L	2	Standard
Br	81	6661.5	7.7				ug/L	2040	Standard
P	31	25903.8	4.0				ug/L	20435	Standard
S	34	2286.8	0.8				ug/L	2430	Standard
Sr	88	106.7	13.5				ug/L	75	Standard
C	12	213.3	11.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1103.4	22.2				mg/L	7	Standard
Dy	164	3539.8	4.8				mg/L	9	Standard
Ho-1	165	2055.1	5.3				mg/L	10	Standard
Er	166	1753.4	7.2				mg/L	23	Standard
I	127	24299.5	0.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.300	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.099	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152901
Report Date/Time: Thursday, June 30, 2016 19:44:11
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.241
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.293
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152902
Sample Date/Time: Thursday, June 30, 2016 19:45:06
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89491.9	2.0				ug/L	74916	Standard
	Be	9	40.0	37.5	**0.0283**	0.012	43.3	ug/L	10	Standard
	Al	27	3621131.6	1.0	**17.4718**	0.464	2.7	ug/L	1822	Standard
	Sc	45	50005.7	0.5				ug/L	55220	Standard
	Ti	47	186.0	5.7	**0.4056**	0.025	6.1	ug/L	34	Standard
	V	51	2851.9	15.6	**0.1288**	0.049	37.7	ug/L	1938	Standard
	Cr	52	10083.7	2.1	**0.1447**	0.018	12.3	ug/L	9522	Standard
	Cr	53	4102.2	8.9	**3.4960**	0.321	9.2	ug/L	395	Standard
	Mn	55	1495187.5	0.6	**183.5547**	1.977	1.1	ug/L	902	Standard
	Co	59	626.3	5.8	**0.0585**	0.005	8.5	ug/L	262	Standard
	Ni	60	2963.0	0.3	**1.2507**	0.009	0.7	ug/L	371	Standard
	Cu	65	1204.4	3.7	**0.5179**	0.024	4.6	ug/L	106	Standard
	Zn	66	3026.3	1.7	**2.1136**	0.057	2.7	ug/L	398	Standard
>	**Ge**	72	506688.0	0.6				ug/L	535147	Standard
	As	75	90.5	44.9	**0.1266**	0.032	25.5	ug/L	-43	Standard
	Se	82	35.5	16.2	**0.1801**	0.046	25.7	ug/L	14	Standard
	Se-1	77	219.0	2.5	**1.9866**	0.080	4.0	ug/L	65	Standard
>	**Ga**	71	131.7	11.0				mg/L	97	Standard
	Rb	85	958.4	12.3				ug/L	15	Standard
	Y	89	439630.2	0.1				ug/L	465704	Standard
>	**Rh**	103	50.0	36.1				ug/L	10	Standard
	Mo	98	275.6	14.7	**0.1016**	0.014	13.4	ug/L	9	Standard
	Ag	107	112.0	14.9	**0.0089**	0.002	26.1	ug/L	82	Standard
	Cd	111	187.9	10.7	**0.0866**	0.009	10.5	mg/L	7	Standard
	Cd	114	408.8	6.5	**0.0799**	0.004	4.8	ug/L	21	Standard
>	**In**	115	612882.5	1.2				ug/L	619035	Standard
	Sn	118	851.7	4.8	**0.0288**	0.008	26.8	ug/L	508	Standard
	Sb	123	226.6	12.9	**0.0477**	0.006	12.5	ug/L	86	Standard
	Ba	135	40616.4	0.3	**17.9264**	0.197	1.1	ug/L	79	Standard
	Ce	140	943.4	9.0				ug/L	68	Standard
>	**Tb**	159	940407.6	1.0				ug/L	986982	Standard
	Ho	165	56.7	28.4				ug/L	10	Standard
	Tl	203	106.3	8.9	**0.0176**	0.001	5.9	ug/L	13	Standard
	Tl	205	98.3	20.5	**0.0203**	0.003	13.0	ug/L	10	Standard
	Pb	206	909.7	3.7	**0.1168**	0.005	4.4	ug/L	264	Standard
	Pb	207	833.4	5.4	**0.1235**	0.008	6.5	ug/L	227	Standard
	Pb	208	3440.5	1.6	**0.1295**	0.003	2.6	ug/L	868	Standard
	U	238	49.0	17.4	**0.0144**	0.001	8.0	ug/L	8	Standard
>	**Bi**	209	543200.5	0.4				ug/L	541014	Standard

Sample ID: L1606152902
Report Date/Time: Thursday, June 30, 2016 19:47:23
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.3002**	17.832	173.1	mg/L	2	Standard
Mg	24	16630.8	0.5	**19.9803**	0.197	1.0	mg/L	53	Standard
K	39	245.0	9.4	**0.3831**	0.042	11.1	mg/L	53	Standard
Ca	43	105.0	39.0	**4.8835**	2.523	51.7	mg/L	28	Standard
Fe	54	242.6	15.8	**0.0637**	0.028	44.2	mg/L	181	Standard
Fe	57	298.3	17.0	**0.2102**	0.151	72.1	mg/L	257	Standard
> **Sc-1**	45	50005.7	0.5				mg/L	55220	Standard
Cl	35	40569.6	2.3				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	3843.8	4.3				ug/L	2040	Standard
P	31	24364.6	0.7				ug/L	20435	Standard
S	34	2188.5	1.6				ug/L	2430	Standard
Sr	88	121.7	10.3				ug/L	75	Standard
C	12	146.7	21.9				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	760.0	11.8				mg/L	7	Standard
Dy	164	64.0	46.2				mg/L	9	Standard
Ho-1	165	56.7	28.4				mg/L	10	Standard
Er	166	56.7	27.0				mg/L	23	Standard
I	127	16871.1	2.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.456	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.682	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152902
Report Date/Time: Thursday, June 30, 2016 19:47:23
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.006
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152903
Sample Date/Time: Thursday, June 30, 2016 19:48:17
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88668.7	1.5				ug/L	74916	Standard
	Be	9	25.0	34.6	**0.0165**	0.007	42.9	ug/L	10	Standard
	Al	27	2429020.7	0.7	**11.8263**	0.241	2.0	ug/L	1822	Standard
	Sc	45	50766.6	1.1				ug/L	55220	Standard
	Ti	47	147.3	12.6	**0.3072**	0.051	16.7	ug/L	34	Standard
	V	51	2755.9	8.9	**0.1183**	0.031	26.5	ug/L	1938	Standard
	Cr	52	10269.1	0.8	**0.1669**	0.008	4.5	ug/L	9522	Standard
	Cr	53	1963.5	3.7	**1.4731**	0.090	6.1	ug/L	395	Standard
	Mn	55	759929.8	0.9	**93.2604**	0.396	0.4	ug/L	902	Standard
	Co	59	556.0	7.1	**0.0494**	0.006	12.2	ug/L	262	Standard
	Ni	60	1145.7	1.5	**0.3945**	0.015	3.8	ug/L	371	Standard
	Cu	65	965.7	2.3	**0.4038**	0.016	4.0	ug/L	106	Standard
	Zn	66	2386.2	0.8	**1.5936**	0.017	1.1	ug/L	398	Standard
>	**Ge**	72	506574.4	1.3				ug/L	535147	Standard
	As	75	89.2	7.4	**0.1255**	0.005	3.7	ug/L	-43	Standard
	Se	82	36.5	5.9	**0.1873**	0.019	9.9	ug/L	14	Standard
	Se-1	77	120.7	5.8	**0.8332**	0.065	7.8	ug/L	65	Standard
>	**Ga**	71	70.0	37.8				mg/L	97	Standard
	Rb	85	908.4	21.5				ug/L	15	Standard
	Y	89	439406.6	1.6				ug/L	465704	Standard
>	**Rh**	103	51.7	20.1				ug/L	10	Standard
	Mo	98	233.6	20.0	**0.0875**	0.014	16.3	ug/L	9	Standard
	Ag	107	88.7	7.9	**0.0057**	0.001	18.5	ug/L	82	Standard
	Cd	111	24.3	42.4	**0.0180**	0.004	24.2	mg/L	7	Standard
	Cd	114	70.1	12.6	**0.0211**	0.002	7.9	ug/L	21	Standard
>	**In**	115	615742.1	1.2				ug/L	619035	Standard
	Sn	118	678.3	9.2	**0.0014**	0.010	728.8	ug/L	508	Standard
	Sb	123	346.9	9.1	**0.0702**	0.006	8.1	ug/L	86	Standard
	Ba	135	55523.6	0.7	**24.3984**	0.182	0.7	ug/L	79	Standard
	Ce	140	605.0	45.8				ug/L	68	Standard
>	**Tb**	159	948538.7	0.6				ug/L	986982	Standard
	Ho	165	45.0	11.1				ug/L	10	Standard
	Tl	203	70.3	11.4	**0.0136**	0.001	6.2	ug/L	13	Standard
	Tl	205	48.3	6.0	**0.0138**	0.000	2.8	ug/L	10	Standard
	Pb	206	1011.0	4.4	**0.1313**	0.008	5.9	ug/L	264	Standard
	Pb	207	869.4	2.6	**0.1276**	0.004	3.4	ug/L	227	Standard
	Pb	208	3745.8	1.5	**0.1414**	0.002	1.5	ug/L	868	Standard
	U	238	63.3	4.0	**0.0161**	0.000	1.9	ug/L	8	Standard
>	**Bi**	209	552170.5	0.3				ug/L	541014	Standard

Sample ID: L1606152903
Report Date/Time: Thursday, June 30, 2016 19:50:34
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.1205**	17.521	173.1	mg/L	2	Standard
Mg	24	3732.1	6.2	**4.3881**	0.232	5.3	mg/L	53	Standard
K	39	163.3	11.6	**0.2258**	0.039	17.1	mg/L	53	Standard
Ca	43	71.7	10.7	**2.7382**	0.440	16.1	mg/L	28	Standard
Fe	54	167.4	12.3	**0.0054**	0.017	305.4	mg/L	181	Standard
Fe	57	313.3	14.5	**0.2407**	0.138	57.5	mg/L	257	Standard
> **Sc-1**	45	50766.6	1.1				mg/L	55220	Standard
Cl	35	41918.6	1.0				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3617.1	7.3				ug/L	2040	Standard
P	31	24186.0	2.2				ug/L	20435	Standard
S	34	2338.5	5.2				ug/L	2430	Standard
Sr	88	80.0	12.5				ug/L	75	Standard
C	12	133.3	15.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	543.3	6.5				mg/L	7	Standard
Dy	164	61.9	49.6				mg/L	9	Standard
Ho-1	165	45.0	11.1				mg/L	10	Standard
Er	166	30.0	33.3				mg/L	23	Standard
I	127	16812.7	1.7				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		118.357	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.661	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606152903
Report Date/Time: Thursday, June 30, 2016 19:50:34
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.468	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.062	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152904
Sample Date/Time: Thursday, June 30, 2016 19:51:29
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88900.1	1.3				ug/L	74916	Standard
	Be	9	21.7	35.3	**0.0138**	0.006	45.8	ug/L	10	Standard
	Al	27	3998039.8	0.6	**19.4159**	0.368	1.9	ug/L	1822	Standard
	Sc	45	49693.0	1.5				ug/L	55220	Standard
	Ti	47	194.3	21.7	**0.4277**	0.108	25.3	ug/L	34	Standard
	V	51	2612.2	1.6	**0.1020**	0.005	5.3	ug/L	1938	Standard
	Cr	52	11628.5	1.2	**0.3279**	0.013	3.9	ug/L	9522	Standard
	Cr	53	2001.8	3.5	**1.5108**	0.071	4.7	ug/L	395	Standard
	Mn	55	10984.6	3.3	**1.2459**	0.048	3.8	ug/L	902	Standard
	Co	59	463.7	6.9	**0.0374**	0.004	11.5	ug/L	262	Standard
	Ni	60	1092.7	5.1	**0.3700**	0.027	7.3	ug/L	371	Standard
	Cu	65	737.0	3.4	**0.2946**	0.013	4.4	ug/L	106	Standard
	Zn	66	2118.5	2.2	**1.3776**	0.043	3.1	ug/L	398	Standard
>	**Ge**	72	506051.1	0.3				ug/L	535147	Standard
	As	75	112.3	24.9	**0.1439**	0.022	15.3	ug/L	-43	Standard
	Se	82	40.3	12.6	**0.2177**	0.039	18.1	ug/L	14	Standard
	Se-1	77	104.3	9.6	**0.6436**	0.121	18.8	ug/L	65	Standard
>	**Ga**	71	90.0	9.6				mg/L	97	Standard
	Rb	85	821.7	18.7				ug/L	15	Standard
	Y	89	444347.1	1.2				ug/L	465704	Standard
>	**Rh**	103	38.3	7.5				ug/L	10	Standard
	Mo	98	243.7	25.7	**0.0907**	0.020	22.2	ug/L	9	Standard
	Ag	107	114.7	8.7	**0.0092**	0.001	13.7	ug/L	82	Standard
	Cd	111	19.3	16.3	**0.0159**	0.001	8.2	mg/L	7	Standard
	Cd	114	30.1	71.3	**0.0141**	0.004	26.1	ug/L	21	Standard
>	**In**	115	617612.1	0.5				ug/L	619035	Standard
	Sn	118	616.7	15.4	**-0.0084**	0.015	178.7	ug/L	508	Standard
	Sb	123	212.8	12.7	**0.0447**	0.005	11.4	ug/L	86	Standard
	Ba	135	14500.9	0.4	**6.3380**	0.042	0.7	ug/L	79	Standard
	Ce	140	393.3	3.9				ug/L	68	Standard
>	**Tb**	159	944897.7	0.4				ug/L	986982	Standard
	Ho	165	25.0	34.6				ug/L	10	Standard
	Tl	203	86.7	13.4	**0.0153**	0.001	7.9	ug/L	13	Standard
	Tl	205	90.0	38.9	**0.0190**	0.004	22.9	ug/L	10	Standard
	Pb	206	664.7	9.3	**0.0737**	0.010	13.8	ug/L	264	Standard
	Pb	207	565.7	6.5	**0.0718**	0.007	9.8	ug/L	227	Standard
	Pb	208	2395.1	4.9	**0.0769**	0.005	6.9	ug/L	868	Standard
	U	238	50.0	29.9	**0.0144**	0.002	13.3	ug/L	8	Standard
>	**Bi**	209	550432.3	0.4				ug/L	541014	Standard

Sample ID: L1606152904
Report Date/Time: Thursday, June 30, 2016 19:53:46
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1671.8	5.6	**1.9912**	0.140	7.0	mg/L	53	Standard
K	39	100.0	10.0	**0.1127**	0.021	18.2	mg/L	53	Standard
Ca	43	96.7	24.4	**4.3968**	1.414	32.2	mg/L	28	Standard
Fe	54	166.7	18.4	**0.0074**	0.022	304.6	mg/L	181	Standard
Fe	57	231.7	12.3	**0.0184**	0.075	407.9	mg/L	257	Standard
> **Sc-1**	45	49693.0	1.5				mg/L	55220	Standard
Cl	35	43809.9	1.0				ug/L	35504	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	4597.4	0.6				ug/L	2040	Standard
P	31	24069.1	1.8				ug/L	20435	Standard
S	34	2253.5	3.8				ug/L	2430	Standard
Sr	88	86.7	17.6				ug/L	75	Standard
C	12	156.7	44.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	386.7	23.5				mg/L	7	Standard
Dy	164	25.2	56.3				mg/L	9	Standard
Ho-1	165	25.0	34.6				mg/L	10	Standard
Er	166	30.0	88.2				mg/L	23	Standard
I	127	5777.8	11.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.666	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.563	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152904
Report Date/Time: Thursday, June 30, 2016 19:53:46
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.770	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.741	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152905
Sample Date/Time: Thursday, June 30, 2016 19:54:40
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88234.5	1.5				ug/L	74916	Standard
	Be	9	30.0	28.9	**0.0206**	0.007	34.9	ug/L	10	Standard
	Al	27	9752429.2	0.2	**47.7217**	0.808	1.7	ug/L	1822	Standard
	Sc	45	51669.7	2.6				ug/L	55220	Standard
	Ti	47	350.0	16.4	**0.8315**	0.150	18.0	ug/L	34	Standard
	V	51	3730.5	9.1	**0.2322**	0.039	17.0	ug/L	1938	Standard
	Cr	52	10952.0	1.4	**0.2556**	0.021	8.3	ug/L	9522	Standard
	Cr	53	5461.0	1.8	**4.8193**	0.089	1.8	ug/L	395	Standard
	Mn	55	47373.3	0.6	**5.7534**	0.020	0.3	ug/L	902	Standard
	Co	59	1253.7	0.7	**0.1409**	0.001	0.6	ug/L	262	Standard
	Ni	60	2141.2	3.2	**0.8702**	0.031	3.6	ug/L	371	Standard
	Cu	65	1030.7	3.9	**0.4381**	0.020	4.7	ug/L	106	Standard
	Zn	66	2315.8	0.5	**1.5487**	0.011	0.7	ug/L	398	Standard
>	**Ge**	72	503246.7	0.2				ug/L	535147	Standard
	As	75	161.2	14.7	**0.1832**	0.019	10.3	ug/L	-43	Standard
	Se	82	43.0	18.6	**0.2408**	0.064	26.4	ug/L	14	Standard
	Se-1	77	266.3	6.2	**2.5624**	0.191	7.4	ug/L	65	Standard
>	**Ga**	71	105.0	26.5				mg/L	97	Standard
	Rb	85	1428.4	7.3				ug/L	15	Standard
	Y	89	446734.5	1.6				ug/L	465704	Standard
>	**Rh**	103	60.0	38.2				ug/L	10	Standard
	Mo	98	183.5	11.0	**0.0713**	0.006	8.8	ug/L	9	Standard
	Ag	107	94.0	23.0	**0.0064**	0.003	46.3	ug/L	82	Standard
	Cd	111	28.0	21.5	**0.0195**	0.002	12.3	mg/L	7	Standard
	Cd	114	70.6	28.1	**0.0211**	0.003	16.2	ug/L	21	Standard
>	**In**	115	617799.5	0.9				ug/L	619035	Standard
	Sn	118	660.0	5.3	**-0.0018**	0.004	243.1	ug/L	508	Standard
	Sb	123	178.8	10.8	**0.0382**	0.003	8.9	ug/L	86	Standard
	Ba	135	61705.1	1.0	**27.0252**	0.152	0.6	ug/L	79	Standard
	Ce	140	2460.2	6.7				ug/L	68	Standard
>	**Tb**	159	954272.1	1.0				ug/L	986982	Standard
	Ho	165	108.3	27.0				ug/L	10	Standard
	Tl	203	105.3	13.3	**0.0175**	0.001	8.4	ug/L	13	Standard
	Tl	205	90.0	20.0	**0.0192**	0.002	12.1	ug/L	10	Standard
	Pb	206	1384.4	2.5	**0.1982**	0.006	2.8	ug/L	264	Standard
	Pb	207	1158.0	4.5	**0.1852**	0.009	4.6	ug/L	227	Standard
	Pb	208	4790.0	0.8	**0.1959**	0.003	1.7	ug/L	868	Standard
	U	238	78.7	1.5	**0.0183**	0.000	0.7	ug/L	8	Standard
>	**Bi**	209	541699.6	0.6				ug/L	541014	Standard

Sample ID: L1606152905
Report Date/Time: Thursday, June 30, 2016 19:56:57
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	14490.3	0.8	**16.8507**	0.519	3.1	mg/L	53	Standard
K	39	288.3	22.6	**0.4455**	0.109	24.4	mg/L	53	Standard
Ca	43	256.7	12.7	**13.9005**	2.373	17.1	mg/L	28	Standard
Fe	54	272.4	10.1	**0.0800**	0.025	31.8	mg/L	181	Standard
Fe	57	385.0	5.7	**0.4270**	0.055	12.8	mg/L	257	Standard
> **Sc-1**	45	51669.7	2.6				mg/L	55220	Standard
Cl	35	43979.7	0.5				ug/L	35504	Standard
Kr	83	3.0	88.2				ug/L	2	Standard
Br	81	5497.7	7.6				ug/L	2040	Standard
P	31	25977.3	3.5				ug/L	20435	Standard
S	34	2546.9	1.9				ug/L	2430	Standard
Sr	88	131.7	36.5				ug/L	75	Standard
C	12	196.7	22.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	430.0	6.2				mg/L	7	Standard
Dy	164	205.8	13.7				mg/L	9	Standard
Ho-1	165	108.3	27.0				mg/L	10	Standard
Er	166	86.7	56.9				mg/L	23	Standard
I	127	28657.1	4.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.777	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152905
Report Date/Time: Thursday, June 30, 2016 19:56:57
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.800	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.127	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152906
Sample Date/Time: Thursday, June 30, 2016 19:57:52
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88056.9	2.0				ug/L	74916	Standard
	Be	9	15.0	57.7	**0.0084**	0.007	81.7	ug/L	10	Standard
	Al	27	7293528.8	3.4	**35.7503**	0.696	1.9	ug/L	1822	Standard
	Sc	45	51325.1	1.9				ug/L	55220	Standard
	Ti	47	171.0	28.9	**0.3652**	0.123	33.6	ug/L	34	Standard
	V	51	2943.0	7.9	**0.1382**	0.027	19.3	ug/L	1938	Standard
	Cr	52	10991.3	1.7	**0.2469**	0.029	11.7	ug/L	9522	Standard
	Cr	53	4732.4	3.5	**4.0787**	0.184	4.5	ug/L	395	Standard
	Mn	55	122498.9	0.8	**14.8876**	0.143	1.0	ug/L	902	Standard
	Co	59	819.7	2.4	**0.0832**	0.003	3.8	ug/L	262	Standard
	Ni	60	2285.5	3.4	**0.9274**	0.030	3.2	ug/L	371	Standard
	Cu	65	1080.4	6.5	**0.4565**	0.030	6.6	ug/L	106	Standard
	Zn	66	2925.3	2.5	**2.0226**	0.047	2.3	ug/L	398	Standard
>	**Ge**	72	508515.8	0.7				ug/L	535147	Standard
	As	75	134.3	28.3	**0.1607**	0.029	18.2	ug/L	-43	Standard
	Se	82	79.0	16.8	**0.5164**	0.106	20.5	ug/L	14	Standard
	Se-1	77	251.3	2.3	**2.3551**	0.087	3.7	ug/L	65	Standard
>	**Ga**	71	68.3	8.4				mg/L	97	Standard
	Rb	85	355.0	7.3				ug/L	15	Standard
	Y	89	444542.1	0.1				ug/L	465704	Standard
>	**Rh**	103	30.0	44.1				ug/L	10	Standard
	Mo	98	287.9	12.2	**0.1049**	0.011	10.7	ug/L	9	Standard
	Ag	107	119.0	11.7	**0.0098**	0.002	19.3	ug/L	82	Standard
	Cd	111	50.9	20.7	**0.0291**	0.004	14.9	mg/L	7	Standard
	Cd	114	87.9	23.8	**0.0241**	0.004	14.8	ug/L	21	Standard
>	**In**	115	616933.2	0.3				ug/L	619035	Standard
	Sn	118	1260.1	2.9	**0.0909**	0.006	6.7	ug/L	508	Standard
	Sb	123	189.4	11.8	**0.0403**	0.004	10.3	ug/L	86	Standard
	Ba	135	52065.6	0.7	**22.8327**	0.232	1.0	ug/L	79	Standard
	Ce	140	241.7	4.3				ug/L	68	Standard
>	**Tb**	159	941735.5	0.8				ug/L	986982	Standard
	Ho	165	46.7	12.4				ug/L	10	Standard
	Tl	203	87.0	11.0	**0.0155**	0.001	7.3	ug/L	13	Standard
	Tl	205	80.0	25.0	**0.0179**	0.003	14.8	ug/L	10	Standard
	Pb	206	587.3	5.7	**0.0619**	0.005	8.7	ug/L	264	Standard
	Pb	207	507.7	1.5	**0.0621**	0.002	3.2	ug/L	227	Standard
	Pb	208	2102.1	1.1	**0.0640**	0.001	1.5	ug/L	868	Standard
	U	238	41.0	12.2	**0.0133**	0.001	5.4	ug/L	8	Standard
>	**Bi**	209	544076.0	1.0				ug/L	541014	Standard

Sample ID: L1606152906
Report Date/Time: Thursday, June 30, 2016 20:00:09
Page 1

Approved: July 01, 2016

Na	23	3.3	173.2	**20.1139**	34.830	173.2	mg/L	2	Standard
Mg	24	12645.3	2.6	**14.7908**	0.138	0.9	mg/L	53	Standard
K	39	298.3	26.8	**0.4670**	0.136	29.1	mg/L	53	Standard
Ca	43	208.3	9.1	**11.0229**	1.168	10.6	mg/L	28	Standard
Fe	54	180.7	11.0	**0.0136**	0.013	92.2	mg/L	181	Standard
Fe	57	301.7	11.8	**0.1964**	0.095	48.2	mg/L	257	Standard
> **Sc-1**	45	51325.1	1.9				mg/L	55220	Standard
Cl	35	45896.7	0.8				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	13415.9	5.3				ug/L	2040	Standard
P	31	24930.5	1.7				ug/L	20435	Standard
S	34	2516.9	2.2				ug/L	2430	Standard
Sr	88	135.0	20.6				ug/L	75	Standard
C	12	196.7	28.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	456.7	20.2				mg/L	7	Standard
Dy	164	40.9	56.4				mg/L	9	Standard
Ho-1	165	46.7	12.4				mg/L	10	Standard
Er	166	50.0	20.0				mg/L	23	Standard
I	127	36985.1	2.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.540	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.024	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152906
Report Date/Time: Thursday, June 30, 2016 20:00:09
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.660
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.566
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152907
Sample Date/Time: Thursday, June 30, 2016 20:01:03
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86590.1	1.5				ug/L	74916	Standard
	Be	9	23.3	32.7	**0.0156**	0.007	41.8	ug/L	10	Standard
	Al	27	7288041.0	1.9	**36.3329**	0.405	1.1	ug/L	1822	Standard
	Sc	45	51350.2	1.2				ug/L	55220	Standard
	Ti	47	157.7	3.1	**0.3305**	0.011	3.3	ug/L	34	Standard
	V	51	3007.3	5.0	**0.1445**	0.016	10.9	ug/L	1938	Standard
	Cr	52	10947.0	1.6	**0.2378**	0.018	7.6	ug/L	9522	Standard
	Cr	53	4819.1	2.2	**4.1468**	0.112	2.7	ug/L	395	Standard
	Mn	55	107294.6	0.9	**12.9884**	0.118	0.9	ug/L	902	Standard
	Co	59	789.7	3.4	**0.0790**	0.004	5.0	ug/L	262	Standard
	Ni	60	2216.5	1.5	**0.8921**	0.015	1.7	ug/L	371	Standard
	Cu	65	856.4	2.4	**0.3486**	0.008	2.2	ug/L	106	Standard
	Zn	66	3147.3	0.8	**2.1952**	0.028	1.3	ug/L	398	Standard
>	**Ge**	72	509995.2	0.5				ug/L	535147	Standard
	As	75	109.6	15.3	**0.1411**	0.013	9.1	ug/L	-43	Standard
	Se	82	74.9	2.1	**0.4827**	0.010	2.1	ug/L	14	Standard
	Se-1	77	253.7	10.3	**2.3725**	0.290	12.2	ug/L	65	Standard
>	**Ga**	71	65.0	13.3				mg/L	97	Standard
	Rb	85	353.3	31.5				ug/L	15	Standard
	Y	89	444447.1	1.6				ug/L	465704	Standard
>	**Rh**	103	51.7	29.6				ug/L	10	Standard
	Mo	98	174.2	8.5	**0.0687**	0.004	6.4	ug/L	9	Standard
	Ag	107	114.7	15.4	**0.0093**	0.002	24.6	ug/L	82	Standard
	Cd	111	47.1	5.2	**0.0276**	0.001	3.6	mg/L	7	Standard
	Cd	114	112.5	18.8	**0.0284**	0.004	12.7	ug/L	21	Standard
>	**In**	115	613045.3	0.7				ug/L	619035	Standard
	Sn	118	715.0	9.8	**0.0075**	0.010	135.8	ug/L	508	Standard
	Sb	123	161.1	10.6	**0.0351**	0.003	8.8	ug/L	86	Standard
	Ba	135	53387.2	0.8	**23.5616**	0.255	1.1	ug/L	79	Standard
	Ce	140	331.7	4.4				ug/L	68	Standard
>	**Tb**	159	944449.4	0.4				ug/L	986982	Standard
	Ho	165	43.3	59.2				ug/L	10	Standard
	Tl	203	92.3	8.8	**0.0161**	0.001	5.4	ug/L	13	Standard
	Tl	205	83.3	12.5	**0.0184**	0.001	7.5	ug/L	10	Standard
	Pb	206	592.3	4.9	**0.0632**	0.005	7.5	ug/L	264	Standard
	Pb	207	542.0	8.1	**0.0691**	0.008	12.0	ug/L	227	Standard
	Pb	208	2230.1	0.4	**0.0708**	0.001	1.1	ug/L	868	Standard
	U	238	38.7	24.4	**0.0130**	0.001	9.5	ug/L	8	Standard
>	**Bi**	209	541519.6	0.4				ug/L	541014	Standard

Sample ID: L1606152907
Report Date/Time: Thursday, June 30, 2016 20:03:20
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	12728.7	2.0	**14.8819**	0.155	1.0	mg/L	53	Standard
K	39	308.3	6.1	**0.4867**	0.034	7.0	mg/L	53	Standard
Ca	43	193.3	38.9	**10.0877**	4.505	44.7	mg/L	28	Standard
Fe	54	165.4	7.7	**0.0025**	0.010	409.5	mg/L	181	Standard
Fe	57	355.0	2.8	**0.3486**	0.041	11.7	mg/L	257	Standard
> **Sc-1**	45	51350.2	1.2				mg/L	55220	Standard
Cl	35	46325.4	1.2				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	11614.5	3.1				ug/L	2040	Standard
P	31	24781.9	0.8				ug/L	20435	Standard
S	34	2535.2	2.6				ug/L	2430	Standard
Sr	88	126.7	18.7				ug/L	75	Standard
C	12	233.3	36.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	473.3	22.2				mg/L	7	Standard
Dy	164	27.4	75.5				mg/L	9	Standard
Ho-1	165	43.3	59.2				mg/L	10	Standard
Er	166	53.3	39.0				mg/L	23	Standard
I	127	36998.5	2.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.582	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.300	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152907
Report Date/Time: Thursday, June 30, 2016 20:03:20
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.032	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.093	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152908
Sample Date/Time: Thursday, June 30, 2016 20:04:15
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87356.1	0.7				ug/L	74916	Standard
	Be	9	16.7	124.9	**0.0100**	0.017	170.0	ug/L	10	Standard
	Al	27	5800884.1	0.6	**28.6654**	0.017	0.1	ug/L	1822	Standard
	Sc	45	51183.0	1.5				ug/L	55220	Standard
	Ti	47	397.3	11.7	**0.9365**	0.122	13.0	ug/L	34	Standard
	V	51	2921.7	9.2	**0.1337**	0.032	23.8	ug/L	1938	Standard
	Cr	52	11373.6	0.2	**0.2830**	0.010	3.5	ug/L	9522	Standard
	Cr	53	3103.7	1.4	**2.5224**	0.030	1.2	ug/L	395	Standard
	Mn	55	14821.9	0.6	**1.6973**	0.005	0.3	ug/L	902	Standard
	Co	59	1000.7	2.1	**0.1057**	0.003	3.1	ug/L	262	Standard
	Ni	60	2624.2	2.0	**1.0787**	0.027	2.5	ug/L	371	Standard
	Cu	65	1039.0	1.7	**0.4338**	0.011	2.4	ug/L	106	Standard
	Zn	66	2372.5	1.6	**1.5627**	0.032	2.0	ug/L	398	Standard
>	**Ge**	72	511783.4	0.6				ug/L	535147	Standard
	As	75	213.0	16.3	**0.2214**	0.026	11.8	ug/L	-43	Standard
	Se	82	74.1	2.2	**0.4750**	0.010	2.1	ug/L	14	Standard
	Se-1	77	150.3	2.8	**1.1637**	0.050	4.3	ug/L	65	Standard
>	**Ga**	71	95.0	13.9				mg/L	97	Standard
	Rb	85	968.4	2.5				ug/L	15	Standard
	Y	89	451673.5	0.3				ug/L	465704	Standard
>	**Rh**	103	30.0	28.9				ug/L	10	Standard
	Mo	98	173.2	5.3	**0.0678**	0.003	4.0	ug/L	9	Standard
	Ag	107	91.7	12.4	**0.0061**	0.001	24.3	ug/L	82	Standard
	Cd	111	17.7	27.9	**0.0152**	0.002	13.4	mg/L	7	Standard
	Cd	114	48.1	60.1	**0.0172**	0.005	29.0	ug/L	21	Standard
>	**In**	115	619434.4	0.4				ug/L	619035	Standard
	Sn	118	753.4	10.6	**0.0123**	0.012	98.4	ug/L	508	Standard
	Sb	123	177.3	16.5	**0.0378**	0.005	14.3	ug/L	86	Standard
	Ba	135	31784.0	0.8	**13.8741**	0.090	0.6	ug/L	79	Standard
	Ce	140	6034.7	39.1				ug/L	68	Standard
>	**Tb**	159	948600.3	1.0				ug/L	986982	Standard
	Ho	165	146.7	17.5				ug/L	10	Standard
	Tl	203	81.0	4.3	**0.0148**	0.000	3.0	ug/L	13	Standard
	Tl	205	66.7	37.7	**0.0162**	0.003	19.4	ug/L	10	Standard
	Pb	206	958.0	0.9	**0.1252**	0.002	1.4	ug/L	264	Standard
	Pb	207	787.0	3.2	**0.1149**	0.003	3.0	ug/L	227	Standard
	Pb	208	3386.1	2.7	**0.1270**	0.005	3.8	ug/L	868	Standard
	U	238	520.7	2.4	**0.0766**	0.002	2.8	ug/L	8	Standard
>	**Bi**	209	542764.0	0.9				ug/L	541014	Standard

Sample ID: L1606152908
Report Date/Time: Thursday, June 30, 2016 20:06:32
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**20.2036**	17.498	86.6	mg/L	2	Standard
Mg	24	10431.9	4.4	**12.2290**	0.439	3.6	mg/L	53	Standard
K	39	275.0	13.7	**0.4279**	0.073	17.1	mg/L	53	Standard
Ca	43	170.0	16.4	**8.6979**	1.544	17.7	mg/L	28	Standard
Fe	54	239.2	0.3	**0.0571**	0.002	3.7	mg/L	181	Standard
Fe	57	291.7	20.7	**0.1691**	0.160	94.5	mg/L	257	Standard
> **Sc-1**	45	51183.0	1.5				mg/L	55220	Standard
Cl	35	47035.6	1.5				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	13913.1	0.7				ug/L	2040	Standard
P	31	24708.5	3.0				ug/L	20435	Standard
S	34	2581.9	2.1				ug/L	2430	Standard
Sr	88	108.3	18.7				ug/L	75	Standard
C	12	163.3	18.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	420.0	10.9				mg/L	7	Standard
Dy	164	173.5	54.2				mg/L	9	Standard
Ho-1	165	146.7	17.5				mg/L	10	Standard
Er	166	136.7	46.5				mg/L	23	Standard
I	127	34858.4	3.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.605	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.634	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152908
Report Date/Time: Thursday, June 30, 2016 20:06:32
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.065
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.323
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 20:07:28
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85472.1	1.7				ug/L	74916	Standard
	Be	9	65108.0	3.0	**54.0823**	1.154	2.1	ug/L	10	Standard
	Al	27	9105473.5	0.5	**45.9972**	0.825	1.8	ug/L	1822	Standard
	Sc	45	49731.5	2.5				ug/L	55220	Standard
	Ti	47	38285.3	0.5	**97.9042**	1.148	1.2	ug/L	34	Standard
	V	51	442931.2	1.2	**50.3540**	0.833	1.7	ug/L	1938	Standard
	Cr	52	426545.4	1.3	**49.0741**	0.566	1.2	ug/L	9522	Standard
	Cr	53	52663.1	2.1	**49.4989**	1.008	2.0	ug/L	395	Standard
	Mn	55	386900.6	0.1	**47.4345**	0.333	0.7	ug/L	902	Standard
	Co	59	401578.1	1.0	**52.0897**	0.499	1.0	ug/L	262	Standard
	Ni	60	104374.0	1.3	**49.0555**	0.650	1.3	ug/L	371	Standard
	Cu	65	102991.9	0.9	**49.2674**	0.136	0.3	ug/L	106	Standard
	Zn	66	61809.5	1.0	**49.9152**	0.561	1.1	ug/L	398	Standard
>	Ge	72	506525.9	0.8				ug/L	535147	Standard
	As	75	62357.5	1.0	**49.2419**	0.735	1.5	ug/L	-43	Standard
	Se	82	6465.3	1.5	**50.3023**	0.653	1.3	ug/L	14	Standard
	Se-1	77	4276.3	1.3	**49.5714**	0.657	1.3	ug/L	65	Standard
>	Ga	71	65.0	40.0				mg/L	97	Standard
	Rb	85	945.0	8.0				ug/L	15	Standard
	Y	89	445522.7	1.3				ug/L	465704	Standard
>	Rh	103	31.7	9.1				ug/L	10	Standard
	Mo	98	306532.4	0.5	**98.3988**	0.768	0.8	ug/L	9	Standard
	Ag	107	364777.1	1.0	**48.3842**	0.587	1.2	ug/L	82	Standard
	Cd	111	115886.4	1.0	**48.0888**	0.315	0.7	mg/L	7	Standard
	Cd	114	282581.5	2.0	**48.6942**	0.954	2.0	ug/L	21	Standard
>	In	115	618174.7	0.4				ug/L	619035	Standard
	Sn	118	319592.1	0.3	**49.0738**	0.056	0.1	ug/L	508	Standard
	Sb	123	258837.8	1.5	**48.9487**	0.795	1.6	ug/L	86	Standard
	Ba	135	107239.8	0.2	**46.9543**	0.164	0.3	ug/L	79	Standard
	Ce	140	115.0	41.9				ug/L	68	Standard
>	Tb	159	940862.5	1.3				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	460304.9	0.5	**50.0911**	0.197	0.4	ug/L	13	Standard
	Tl	205	410842.8	1.2	**52.3373**	1.020	1.9	ug/L	10	Standard
	Pb	206	293474.6	0.0	**49.7248**	0.447	0.9	ug/L	264	Standard
	Pb	207	266458.3	0.3	**49.9548**	0.482	1.0	ug/L	227	Standard
	Pb	208	1078784.7	0.3	**52.4507**	0.478	0.9	ug/L	868	Standard
	U	238	405046.7	0.5	**53.2776**	0.329	0.6	ug/L	8	Standard
>	Bi	209	544562.5	0.9				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 20:09:45
Page 1

Approved: July 01, 2016

Na	23	3.3	86.6	**21.1233**	18.289	86.6	mg/L	2	Standard
Mg	24	4860.8	2.2	**5.8517**	0.266	4.5	mg/L	53	Standard
K	39	1825.1	0.7	**3.3646**	0.096	2.9	mg/L	53	Standard
Ca	43	85.0	15.6	**3.6635**	0.753	20.6	mg/L	28	Standard
Fe	54	6850.5	3.8	**5.0682**	0.296	5.8	mg/L	181	Standard
Fe	57	1940.1	1.6	**5.0449**	0.134	2.7	mg/L	257	Standard
Sc-1	45	49731.5	2.5				mg/L	55220	Standard
Cl	35	43548.5	1.9				ug/L	35504	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	2076.8	5.4				ug/L	2040	Standard
P	31	25009.0	3.0				ug/L	20435	Standard
S	34	2823.6	2.3				ug/L	2430	Standard
Sr	88	101.7	5.7				ug/L	75	Standard
C	12	100.0	50.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	343.3	14.4				mg/L	7	Standard
Dy	164	2.2	267.0				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	12311.7	2.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	108.165		
Al	27	91.994		
Sc	45			
Ti	47	97.904		
V	51	100.708		
Cr	52	98.148		
Cr	53			
Mn	55	94.869		
Co	59	104.179		
Ni	60	98.111		
Cu	65	98.535		
Zn	66	99.830		
Ge	72		94.652	
As	75	98.484		
Se	82	100.605		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 20:09:45
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.399		
Ag	107	96.768		
Cd	111	96.178		
Cd	114			
In	115			99.861
Sn	118	98.148		
Sb	123	97.897		
Ba	135	93.909		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.182		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.901		
U	238	106.555		
Bi	209			100.656
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 20:09:45
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 20:10:39
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84508.4	1.1				ug/L	74916	Standard
	Be	9	33.3	8.7	**0.0244**	0.002	10.1	ug/L	10	Standard
	Al	27	4085.6	35.3	**0.0185**	0.007	39.4	ug/L	1822	Standard
	Sc	45	51201.4	1.2				ug/L	55220	Standard
	Ti	47	49.3	13.5	**0.0547**	0.017	31.7	ug/L	34	Standard
	V	51	1705.1	7.3	**-0.0039**	0.015	396.5	ug/L	1938	Standard
	Cr	52	7223.1	1.3	**-0.2003**	0.017	8.7	ug/L	9522	Standard
	Cr	53	643.3	12.9	**0.2153**	0.078	36.3	ug/L	395	Standard
	Mn	55	817.4	1.3	**-0.0058**	0.002	33.6	ug/L	902	Standard
	Co	59	278.0	3.7	**0.0129**	0.001	11.6	ug/L	262	Standard
	Ni	60	472.0	2.2	**0.0744**	0.006	7.9	ug/L	371	Standard
	Cu	65	242.0	9.3	**0.0559**	0.012	20.6	ug/L	106	Standard
	Zn	66	406.0	4.9	**-0.0203**	0.014	69.6	ug/L	398	Standard
>	**Ge**	72	512276.8	0.7				ug/L	535147	Standard
	As	75	-39.3	24.4	**0.0246**	0.008	30.9	ug/L	-43	Standard
	Se	82	24.7	25.4	**0.0935**	0.047	50.3	ug/L	14	Standard
	Se-1	77	61.7	4.7	**0.1339**	0.036	27.1	ug/L	65	Standard
>	**Ga**	71	40.0	21.7				mg/L	97	Standard
	Rb	85	40.0	33.1				ug/L	15	Standard
	Y	89	451013.8	2.6				ug/L	465704	Standard
>	**Rh**	103	33.3	75.5				ug/L	10	Standard
	Mo	98	337.7	6.2	**0.1193**	0.006	5.0	ug/L	9	Standard
	Ag	107	160.7	20.3	**0.0149**	0.004	27.5	ug/L	82	Standard
	Cd	111	17.1	27.4	**0.0149**	0.002	12.5	mg/L	7	Standard
	Cd	114	56.9	45.7	**0.0186**	0.004	23.4	ug/L	21	Standard
>	**In**	115	626686.9	1.0				ug/L	619035	Standard
	Sn	118	1108.4	17.2	**0.0649**	0.029	45.4	ug/L	508	Standard
	Sb	123	719.1	31.0	**0.1386**	0.041	29.9	ug/L	86	Standard
	Ba	135	66.7	26.7	**0.0091**	0.008	82.3	ug/L	79	Standard
	Ce	140	33.3	52.7				ug/L	68	Standard
>	**Tb**	159	951647.1	1.9				ug/L	986982	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	116.3	23.3	**0.0185**	0.003	15.8	ug/L	13	Standard
	Tl	205	81.7	12.7	**0.0179**	0.001	7.3	ug/L	10	Standard
	Pb	206	355.3	7.9	**0.0215**	0.005	21.8	ug/L	264	Standard
	Pb	207	296.0	5.5	**0.0215**	0.003	14.0	ug/L	227	Standard
	Pb	208	1251.0	8.8	**0.0216**	0.005	24.5	ug/L	868	Standard
	U	238	86.3	22.6	**0.0191**	0.003	13.3	ug/L	8	Standard
>	**Bi**	209	553114.9	0.1				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 20:12:56
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.0447**	17.389	173.1	mg/L	2	Standard
Mg	24	65.0	30.8	**0.0419**	0.023	55.9	mg/L	53	Standard
K	39	46.7	22.3	**0.0095**	0.020	207.6	mg/L	53	Standard
Ca	43	30.0	33.3	**0.1622**	0.633	390.4	mg/L	28	Standard
Fe	54	137.1	20.9	**-0.0179**	0.021	119.5	mg/L	181	Standard
Fe	57	260.0	20.1	**0.0806**	0.154	191.3	mg/L	257	Standard
Sc-1	45	51201.4	1.2				mg/L	55220	Standard
Cl	35	42811.7	0.8				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2026.8	15.5				ug/L	2040	Standard
P	31	24645.0	3.2				ug/L	20435	Standard
S	34	2743.6	4.8				ug/L	2430	Standard
Sr	88	56.7	28.4				ug/L	75	Standard
C	12	133.3	24.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	330.0	15.2				mg/L	7	Standard
Dy	164	142.7	35.5				mg/L	9	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	5080.9	5.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.726	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 20:12:56
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.236
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.237
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 20:12:56
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152909
Sample Date/Time: Thursday, June 30, 2016 20:13:52
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84981.0	1.6				ug/L	74916	Standard
	Be	9	46.7	55.0	**0.0355**	0.022	61.8	ug/L	10	Standard
	Al	27	2649760.5	1.0	**13.4599**	0.154	1.1	ug/L	1822	Standard
	Sc	45	50823.5	2.2				ug/L	55220	Standard
	Ti	47	621.0	35.7	**1.4839**	0.544	36.6	ug/L	34	Standard
	V	51	3519.7	4.6	**0.1968**	0.015	7.5	ug/L	1938	Standard
	Cr	52	11065.7	1.5	**0.2335**	0.024	10.4	ug/L	9522	Standard
	Cr	53	2253.5	7.1	**1.7037**	0.164	9.6	ug/L	395	Standard
	Mn	55	69223.4	0.5	**8.2230**	0.056	0.7	ug/L	902	Standard
	Co	59	1262.7	2.4	**0.1376**	0.003	2.2	ug/L	262	Standard
	Ni	60	1836.1	2.2	**0.7020**	0.028	4.0	ug/L	371	Standard
	Cu	65	1478.1	2.8	**0.6345**	0.023	3.6	ug/L	106	Standard
	Zn	66	2676.9	1.2	**1.7846**	0.014	0.8	ug/L	398	Standard
>	**Ge**	72	517327.5	1.1				ug/L	535147	Standard
	As	75	137.8	11.9	**0.1615**	0.012	7.3	ug/L	-43	Standard
	Se	82	34.2	7.9	**0.1643**	0.022	13.6	ug/L	14	Standard
	Se-1	77	107.3	5.7	**0.6510**	0.064	9.8	ug/L	65	Standard
>	**Ga**	71	211.7	15.4				mg/L	97	Standard
	Rb	85	3202.0	8.6				ug/L	15	Standard
	Y	89	457604.0	1.9				ug/L	465704	Standard
>	**Rh**	103	46.7	43.3				ug/L	10	Standard
	Mo	98	197.3	18.3	**0.0741**	0.012	16.5	ug/L	9	Standard
	Ag	107	138.3	23.5	**0.0118**	0.004	37.8	ug/L	82	Standard
	Cd	111	22.7	32.9	**0.0171**	0.003	18.4	mg/L	7	Standard
	Cd	114	85.9	11.7	**0.0233**	0.002	8.1	ug/L	21	Standard
>	**In**	115	635294.3	1.4				ug/L	619035	Standard
	Sn	118	773.4	8.1	**0.0124**	0.011	85.2	ug/L	508	Standard
	Sb	123	378.6	23.7	**0.0742**	0.017	23.5	ug/L	86	Standard
	Ba	135	24337.9	0.6	**10.3548**	0.129	1.2	ug/L	79	Standard
	Ce	140	2685.2	8.1				ug/L	68	Standard
>	**Tb**	159	947650.0	0.1				ug/L	986982	Standard
	Ho	165	105.0	4.8				ug/L	10	Standard
	Tl	203	119.3	21.9	**0.0188**	0.003	15.5	ug/L	13	Standard
	Tl	205	95.0	24.1	**0.0196**	0.003	14.9	ug/L	10	Standard
	Pb	206	1284.1	2.8	**0.1765**	0.004	2.5	ug/L	264	Standard
	Pb	207	1133.4	4.1	**0.1762**	0.011	6.0	ug/L	227	Standard
	Pb	208	4625.6	1.4	**0.1833**	0.005	2.8	ug/L	868	Standard
	U	238	95.0	19.5	**0.0202**	0.002	12.2	ug/L	8	Standard
>	**Bi**	209	553131.1	1.0				ug/L	541014	Standard

Sample ID: L1606152909
Report Date/Time: Thursday, June 30, 2016 20:16:09
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.1205**	17.521	173.1	mg/L	2	Standard
Mg	24	4830.8	0.8	**5.6868**	0.096	1.7	mg/L	53	Standard
K	39	253.3	8.9	**0.3908**	0.035	8.9	mg/L	53	Standard
Ca	43	75.0	37.1	**2.9439**	1.706	58.0	mg/L	28	Standard
Fe	54	370.2	13.4	**0.1556**	0.039	25.3	mg/L	181	Standard
Fe	57	308.3	7.7	**0.2243**	0.061	27.3	mg/L	257	Standard
> **Sc-1**	45	50823.5	2.2				mg/L	55220	Standard
Cl	35	43236.9	0.7				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	5484.3	4.6				ug/L	2040	Standard
P	31	25227.7	0.7				ug/L	20435	Standard
S	34	2473.5	6.7				ug/L	2430	Standard
Sr	88	61.7	9.4				ug/L	75	Standard
C	12	146.7	28.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	313.3	32.0				mg/L	7	Standard
Dy	164	144.7	24.7				mg/L	9	Standard
Ho-1	165	105.0	4.8				mg/L	10	Standard
Er	166	110.0	18.2				mg/L	23	Standard
I	127	10783.8	0.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.434	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.670	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152909
Report Date/Time: Thursday, June 30, 2016 20:16:09
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.627
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.240
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152910
Sample Date/Time: Thursday, June 30, 2016 20:17:04
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85247.6	3.1				ug/L	74916	Standard
	Be	9	43.3	74.2	**0.0327**	0.027	84.0	ug/L	10	Standard
	Al	27	8510555.6	2.4	**43.1028**	0.408	0.9	ug/L	1822	Standard
	Sc	45	51932.2	1.1				ug/L	55220	Standard
	Ti	47	1029.0	29.8	**2.5664**	0.783	30.5	ug/L	34	Standard
	V	51	4367.2	5.7	**0.3028**	0.026	8.6	ug/L	1938	Standard
	Cr	52	12079.8	6.1	**0.3817**	0.071	18.7	ug/L	9522	Standard
	Cr	53	7580.2	7.2	**6.8071**	0.547	8.0	ug/L	395	Standard
	Mn	55	83482.7	1.3	**10.1707**	0.156	1.5	ug/L	902	Standard
	Co	59	1517.7	1.1	**0.1745**	0.002	1.4	ug/L	262	Standard
	Ni	60	2542.5	1.9	**1.0552**	0.032	3.0	ug/L	371	Standard
	Cu	65	1783.1	4.1	**0.7965**	0.026	3.3	ug/L	106	Standard
	Zn	66	3302.0	2.8	**2.3428**	0.055	2.3	ug/L	398	Standard
>	**Ge**	72	505645.1	1.0				ug/L	535147	Standard
	As	75	610.8	2.8	**0.5379**	0.016	2.9	ug/L	-43	Standard
	Se	82	184.7	4.6	**1.3451**	0.069	5.2	ug/L	14	Standard
	Se-1	77	372.3	2.8	**3.7934**	0.138	3.6	ug/L	65	Standard
>	**Ga**	71	258.3	14.8				mg/L	97	Standard
	Rb	85	3520.4	5.7				ug/L	15	Standard
	Y	89	444968.3	1.2				ug/L	465704	Standard
>	**Rh**	103	56.7	22.2				ug/L	10	Standard
	Mo	98	154.0	19.6	**0.0625**	0.010	15.9	ug/L	9	Standard
	Ag	107	132.7	1.6	**0.0118**	0.000	1.4	ug/L	82	Standard
	Cd	111	45.0	32.2	**0.0268**	0.006	22.7	mg/L	7	Standard
	Cd	114	116.9	9.5	**0.0293**	0.002	7.0	ug/L	21	Standard
>	**In**	115	609907.5	0.7				ug/L	619035	Standard
	Sn	118	613.3	11.5	**-0.0077**	0.012	151.4	ug/L	508	Standard
	Sb	123	344.4	18.6	**0.0705**	0.013	18.0	ug/L	86	Standard
	Ba	135	83944.9	0.2	**37.2499**	0.298	0.8	ug/L	79	Standard
	Ce	140	3115.3	6.4				ug/L	68	Standard
>	**Tb**	159	935811.2	1.5				ug/L	986982	Standard
	Ho	165	168.3	13.4				ug/L	10	Standard
	Tl	203	140.0	23.9	**0.0216**	0.004	16.7	ug/L	13	Standard
	Tl	205	133.3	16.9	**0.0251**	0.003	12.1	ug/L	10	Standard
	Pb	206	1608.8	2.7	**0.2416**	0.006	2.4	ug/L	264	Standard
	Pb	207	1470.7	2.8	**0.2494**	0.006	2.4	ug/L	227	Standard
	Pb	208	5963.5	0.4	**0.2589**	0.002	0.8	ug/L	868	Standard
	U	238	80.7	14.5	**0.0188**	0.001	8.0	ug/L	8	Standard
>	**Bi**	209	531560.9	0.7				ug/L	541014	Standard

Sample ID: L1606152910
Report Date/Time: Thursday, June 30, 2016 20:19:21
Page 1

Approved: July 01, 2016

Na	23	3.3	173.2	**19.8680**	34.404	173.2	mg/L	2	Standard
Mg	24	21381.8	3.6	**24.7466**	1.006	4.1	mg/L	53	Standard
K	39	523.3	2.0	**0.8684**	0.016	1.9	mg/L	53	Standard
Ca	43	270.0	6.4	**14.5888**	1.106	7.6	mg/L	28	Standard
Fe	54	425.4	9.3	**0.1894**	0.028	14.9	mg/L	181	Standard
Fe	57	405.0	10.1	**0.4787**	0.128	26.8	mg/L	257	Standard
> **Sc-1**	45	51932.2	1.1				mg/L	55220	Standard
Cl	35	45101.7	0.8				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	35307.8	3.0				ug/L	2040	Standard
P	31	25357.9	2.1				ug/L	20435	Standard
S	34	2631.9	4.1				ug/L	2430	Standard
Sr	88	215.0	14.5				ug/L	75	Standard
C	12	140.0	25.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	256.7	22.5				mg/L	7	Standard
Dy	164	243.1	25.1				mg/L	9	Standard
Ho-1	165	168.3	13.4				mg/L	10	Standard
Er	166	143.3	8.1				mg/L	23	Standard
I	127	21702.2	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.790	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.487	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152910
Report Date/Time: Thursday, June 30, 2016 20:19:21
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.253
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152911
Sample Date/Time: Thursday, June 30, 2016 20:20:16
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83573.2	1.5				ug/L	74916	Standard
	Be	9	33.3	31.2	**0.0246**	0.008	34.0	ug/L	10	Standard
	Al	27	6861949.3	1.6	**35.4458**	0.495	1.4	ug/L	1822	Standard
	Sc	45	51285.0	2.1				ug/L	55220	Standard
	Ti	47	288.0	39.4	**0.6733**	0.294	43.6	ug/L	34	Standard
	V	51	5266.7	5.9	**0.4099**	0.037	9.1	ug/L	1938	Standard
	Cr	52	11325.9	1.0	**0.3025**	0.009	2.9	ug/L	9522	Standard
	Cr	53	11184.1	2.5	**10.2982**	0.304	3.0	ug/L	395	Standard
	Mn	55	786461.8	1.3	**97.3526**	1.294	1.3	ug/L	902	Standard
	Co	59	906.4	7.2	**0.0958**	0.008	8.5	ug/L	262	Standard
	Ni	60	1758.4	4.4	**0.6903**	0.035	5.1	ug/L	371	Standard
	Cu	65	1982.8	0.9	**0.8990**	0.012	1.3	ug/L	106	Standard
	Zn	66	4952.8	2.7	**3.7149**	0.093	2.5	ug/L	398	Standard
>	**Ge**	72	502233.2	0.4				ug/L	535147	Standard
	As	75	80.3	74.3	**0.1190**	0.047	39.6	ug/L	-43	Standard
	Se	82	58.8	12.4	**0.3655**	0.056	15.3	ug/L	14	Standard
	Se-1	77	491.7	3.9	**5.2344**	0.231	4.4	ug/L	65	Standard
>	**Ga**	71	93.3	34.4				mg/L	97	Standard
	Rb	85	896.7	7.1				ug/L	15	Standard
	Y	89	441710.6	1.7				ug/L	465704	Standard
>	**Rh**	103	41.7	42.1				ug/L	10	Standard
	Mo	98	608.7	10.2	**0.2107**	0.020	9.6	ug/L	9	Standard
	Ag	107	240.0	4.4	**0.0262**	0.001	5.4	ug/L	82	Standard
	Cd	111	212.4	8.7	**0.0973**	0.008	8.0	mg/L	7	Standard
	Cd	114	534.1	15.2	**0.1023**	0.014	13.8	ug/L	21	Standard
>	**In**	115	609038.8	0.0				ug/L	619035	Standard
	Sn	118	1090.0	7.3	**0.0668**	0.012	18.5	ug/L	508	Standard
	Sb	123	607.9	4.4	**0.1211**	0.005	4.2	ug/L	86	Standard
	Ba	135	74342.3	1.0	**33.0325**	0.340	1.0	ug/L	79	Standard
	Ce	140	740.0	10.4				ug/L	68	Standard
>	**Tb**	159	934924.8	1.9				ug/L	986982	Standard
	Ho	165	50.0	36.1				ug/L	10	Standard
	Tl	203	320.3	3.0	**0.0420**	0.001	2.9	ug/L	13	Standard
	Tl	205	230.0	20.7	**0.0379**	0.006	16.2	ug/L	10	Standard
	Pb	206	1171.7	7.8	**0.1672**	0.015	9.1	ug/L	264	Standard
	Pb	207	1041.0	6.0	**0.1683**	0.011	6.6	ug/L	227	Standard
	Pb	208	4335.9	3.1	**0.1793**	0.006	3.4	ug/L	868	Standard
	U	238	130.3	27.9	**0.0256**	0.005	19.0	ug/L	8	Standard
>	**Bi**	209	527772.3	0.4				ug/L	541014	Standard

Sample ID: L1606152911
Report Date/Time: Thursday, June 30, 2016 20:22:33
Page 1

Approved: July 01, 2016

Na	23	5.0	0.0	**30.2905**	0.643	2.1	mg/L	2	Standard
Mg	24	32406.3	1.7	**37.9987**	0.770	2.0	mg/L	53	Standard
K	39	553.3	8.6	**0.9359**	0.099	10.6	mg/L	53	Standard
Ca	43	206.7	9.8	**10.9494**	1.494	13.6	mg/L	28	Standard
Fe	54	231.8	8.1	**0.0516**	0.017	33.5	mg/L	181	Standard
Fe	57	361.7	9.7	**0.3683**	0.092	24.9	mg/L	257	Standard
> **Sc-1**	45	51285.0	2.1				mg/L	55220	Standard
Cl	35	45860.6	1.0				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	8892.6	1.4				ug/L	2040	Standard
P	31	25207.6	2.0				ug/L	20435	Standard
S	34	2685.2	1.5				ug/L	2430	Standard
Sr	88	123.3	8.4				ug/L	75	Standard
C	12	156.7	40.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	290.0	15.0				mg/L	7	Standard
Dy	164	82.7	18.2				mg/L	9	Standard
Ho-1	165	50.0	36.1				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	22520.1	0.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.555	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.850	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152911
Report Date/Time: Thursday, June 30, 2016 20:22:33
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.385
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.552
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606152911
Report Date/Time: Thursday, June 30, 2016 20:22:33
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152912
Sample Date/Time: Thursday, June 30, 2016 20:23:27
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83561.5	0.3				ug/L	74916	Standard
	Be	9	28.3	71.3	**0.0204**	0.017	83.8	ug/L	10	Standard
	Al	27	1142457.6	1.7	**5.8999**	0.089	1.5	ug/L	1822	Standard
	Sc	45	51276.7	3.0				ug/L	55220	Standard
	Ti	47	232.3	25.2	**0.5169**	0.147	28.4	ug/L	34	Standard
	V	51	2883.0	4.8	**0.1286**	0.017	12.9	ug/L	1938	Standard
	Cr	52	11199.8	2.3	**0.2601**	0.034	13.3	ug/L	9522	Standard
	Cr	53	1680.1	8.8	**1.1848**	0.143	12.1	ug/L	395	Standard
	Mn	55	43442.2	2.6	**5.1670**	0.156	3.0	ug/L	902	Standard
	Co	59	648.0	14.5	**0.0603**	0.012	20.5	ug/L	262	Standard
	Ni	60	894.4	4.8	**0.2708**	0.022	8.0	ug/L	371	Standard
	Cu	65	891.7	2.5	**0.3630**	0.011	3.0	ug/L	106	Standard
	Zn	66	2132.8	2.9	**1.3664**	0.058	4.3	ug/L	398	Standard
>	**Ge**	72	512862.3	0.5				ug/L	535147	Standard
	As	75	81.9	16.5	**0.1190**	0.010	8.6	ug/L	-43	Standard
	Se	82	28.4	3.0	**0.1217**	0.006	5.1	ug/L	14	Standard
	Se-1	77	79.0	9.1	**0.3340**	0.087	26.1	ug/L	65	Standard
>	**Ga**	71	108.3	23.7				mg/L	97	Standard
	Rb	85	1580.1	11.7				ug/L	15	Standard
	Y	89	444358.6	0.5				ug/L	465704	Standard
>	**Rh**	103	28.3	27.0				ug/L	10	Standard
	Mo	98	213.2	48.6	**0.0802**	0.032	40.5	ug/L	9	Standard
	Ag	107	93.3	6.1	**0.0062**	0.001	13.2	ug/L	82	Standard
	Cd	111	14.1	53.6	**0.0137**	0.003	22.4	mg/L	7	Standard
	Cd	114	58.8	32.6	**0.0190**	0.003	16.9	ug/L	21	Standard
>	**In**	115	622593.9	0.6				ug/L	619035	Standard
	Sn	118	730.0	4.8	**0.0081**	0.006	69.0	ug/L	508	Standard
	Sb	123	256.5	2.9	**0.0526**	0.002	3.0	ug/L	86	Standard
	Ba	135	10960.0	1.4	**4.7469**	0.041	0.9	ug/L	79	Standard
	Ce	140	2988.7	39.7				ug/L	68	Standard
>	**Tb**	159	943687.8	0.6				ug/L	986982	Standard
	Ho	165	93.3	3.1				ug/L	10	Standard
	Tl	203	49.0	26.8	**0.0113**	0.001	12.1	ug/L	13	Standard
	Tl	205	68.3	69.5	**0.0163**	0.006	36.2	ug/L	10	Standard
	Pb	206	812.7	1.1	**0.0982**	0.002	2.2	ug/L	264	Standard
	Pb	207	747.4	8.3	**0.1051**	0.010	9.4	ug/L	227	Standard
	Pb	208	3105.8	7.7	**0.1107**	0.010	8.9	ug/L	868	Standard
	U	238	95.0	67.5	**0.0202**	0.008	40.4	ug/L	8	Standard
>	**Bi**	209	551731.2	1.1				ug/L	541014	Standard

Sample ID: L1606152912
Report Date/Time: Thursday, June 30, 2016 20:25:44
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.0978**	17.481	173.1	mg/L	2	Standard
Mg	24	1641.8	2.8	**1.8923**	0.008	0.4	mg/L	53	Standard
K	39	116.7	8.9	**0.1376**	0.024	17.2	mg/L	53	Standard
Ca	43	55.0	27.3	**1.6998**	1.016	59.7	mg/L	28	Standard
Fe	54	252.5	19.8	**0.0659**	0.031	47.4	mg/L	181	Standard
Fe	57	290.0	8.6	**0.1634**	0.047	28.6	mg/L	257	Standard
Sc-1	45	51276.7	3.0				mg/L	55220	Standard
Cl	35	45886.1	2.5				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2533.5	8.3				ug/L	2040	Standard
P	31	24920.5	1.8				ug/L	20435	Standard
S	34	2648.6	4.3				ug/L	2430	Standard
Sr	88	91.7	31.5				ug/L	75	Standard
C	12	140.0	56.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	296.7	10.3				mg/L	7	Standard
Dy	164	126.3	16.4				mg/L	9	Standard
Ho-1	165	93.3	3.1				mg/L	10	Standard
Er	166	76.7	19.9				mg/L	23	Standard
I	127	12023.1	1.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		111.540	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.836	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606152912
Report Date/Time: Thursday, June 30, 2016 20:25:44
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.575
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.981
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152913
Sample Date/Time: Thursday, June 30, 2016 20:26:39
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83144.2	1.2				ug/L	74916	Standard
	Be	9	203.3	14.4	**0.1702**	0.026	15.4	ug/L	10	Standard
	Al	27	3075507.5	1.9	**15.9662**	0.187	1.2	ug/L	1822	Standard
	Sc	45	53502.6	0.3				ug/L	55220	Standard
	Ti	47	4717.7	9.5	**11.9495**	1.106	9.3	ug/L	34	Standard
	V	51	34500.2	1.6	**3.7245**	0.081	2.2	ug/L	1938	Standard
	Cr	52	39833.6	0.7	**3.6208**	0.008	0.2	ug/L	9522	Standard
	Cr	53	5310.9	1.3	**4.6226**	0.076	1.6	ug/L	395	Standard
	Mn	55	1581170.6	1.4	**193.3537**	1.958	1.0	ug/L	902	Standard
	Co	59	20948.8	1.4	**2.6842**	0.032	1.2	ug/L	262	Standard
	Ni	60	12333.4	1.4	**5.6440**	0.100	1.8	ug/L	371	Standard
	Cu	65	14731.2	0.9	**6.9673**	0.099	1.4	ug/L	106	Standard
	Zn	66	35391.6	1.1	**28.3108**	0.153	0.5	ug/L	398	Standard
>	Ge	72	508664.2	0.9				ug/L	535147	Standard
	As	75	3470.9	0.5	**2.7815**	0.034	1.2	ug/L	-43	Standard
	Se	82	38.3	17.2	**0.2009**	0.054	26.8	ug/L	14	Standard
	Se-1	77	81.7	12.7	**0.3727**	0.124	33.3	ug/L	65	Standard
>	Ga	71	4624.0	2.2				mg/L	97	Standard
	Rb	85	73009.0	3.5				ug/L	15	Standard
	Y	89	476478.1	0.8				ug/L	465704	Standard
>	Rh	103	26.7	10.8				ug/L	10	Standard
	Mo	98	302.0	8.4	**0.1093**	0.009	8.6	ug/L	9	Standard
	Ag	107	240.0	5.1	**0.0258**	0.002	6.4	ug/L	82	Standard
	Cd	111	64.8	9.4	**0.0348**	0.003	8.2	mg/L	7	Standard
	Cd	114	166.0	9.3	**0.0375**	0.003	7.6	ug/L	21	Standard
>	In	115	618372.2	1.3				ug/L	619035	Standard
	Sn	118	1020.0	3.8	**0.0535**	0.006	10.7	ug/L	508	Standard
	Sb	123	609.5	9.9	**0.1196**	0.012	9.8	ug/L	86	Standard
	Ba	135	96258.1	0.3	**42.1337**	0.419	1.0	ug/L	79	Standard
	Ce	140	67600.5	0.7				ug/L	68	Standard
>	Tb	159	945334.0	0.5				ug/L	986982	Standard
	Ho	165	2460.2	3.8				ug/L	10	Standard
	Tl	203	331.0	2.6	**0.0419**	0.001	1.8	ug/L	13	Standard
	Tl	205	320.0	12.4	**0.0483**	0.005	10.3	ug/L	10	Standard
	Pb	206	22992.8	0.9	**3.8513**	0.058	1.5	ug/L	264	Standard
	Pb	207	19230.5	1.0	**3.5656**	0.061	1.7	ug/L	227	Standard
	Pb	208	81163.7	0.4	**3.9008**	0.028	0.7	ug/L	868	Standard
	U	238	1044.7	1.1	**0.1449**	0.002	1.4	ug/L	8	Standard
>	Bi	209	545921.2	0.7				ug/L	541014	Standard

Sample ID: L1606152913
Report Date/Time: Thursday, June 30, 2016 20:28:56
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1895.1	5.1	**2.0969**	0.103	4.9	mg/L	53	Standard
K	39	446.7	21.3	**0.7061**	0.165	23.3	mg/L	53	Standard
Ca	43	40.0	33.1	**0.6617**	0.767	115.9	mg/L	28	Standard
Fe	54	7059.5	3.4	**4.8453**	0.151	3.1	mg/L	181	Standard
Fe	57	1893.5	2.2	**4.5135**	0.117	2.6	mg/L	257	Standard
> **Sc-1**	45	53502.6	0.3				mg/L	55220	Standard
Cl	35	40968.1	5.2				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	5170.9	1.0				ug/L	2040	Standard
P	31	28127.8	1.6				ug/L	20435	Standard
S	34	2423.5	2.4				ug/L	2430	Standard
Sr	88	96.7	16.6				ug/L	75	Standard
C	12	116.7	9.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	356.7	18.7				mg/L	7	Standard
Dy	164	4073.6	6.6				mg/L	9	Standard
Ho-1	165	2460.2	3.8				mg/L	10	Standard
Er	166	2093.5	6.5				mg/L	23	Standard
I	127	13008.9	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.983	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.051	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152913
Report Date/Time: Thursday, June 30, 2016 20:28:56
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.893
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.907
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606153201
Sample Date/Time: Thursday, June 30, 2016 20:29:50
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89644.5	2.1				ug/L	74916	Standard
	Be	9	1925.1	4.6	**1.5220**	0.084	5.5	ug/L	10	Standard
	Al	27	33731374.7	1.7	**162.4486**	0.616	0.4	ug/L	1822	Standard
	Sc	45	75308.4	0.7				ug/L	55220	Standard
	Ti	47	72764.3	0.8	**185.9893**	1.903	1.0	ug/L	34	Standard
	V	51	344344.8	0.6	**39.0709**	0.350	0.9	ug/L	1938	Standard
	Cr	52	198511.1	1.2	**22.2654**	0.288	1.3	ug/L	9522	Standard
	Cr	53	24231.0	2.1	**22.5510**	0.638	2.8	ug/L	395	Standard
	Mn	55	8234177.7	0.9	**1010.8489**	9.075	0.9	ug/L	902	Standard
	Co	59	97114.6	1.1	**12.5705**	0.202	1.6	ug/L	262	Standard
	Ni	60	61192.7	0.5	**28.6787**	0.338	1.2	ug/L	371	Standard
	Cu	65	39756.1	0.2	**18.9676**	0.120	0.6	ug/L	106	Standard
	Zn	66	80311.0	0.5	**64.9085**	0.202	0.3	ug/L	398	Standard
>	**Ge**	72	506918.0	0.7				ug/L	535147	Standard
	As	75	9147.0	1.2	**7.2641**	0.054	0.7	ug/L	-43	Standard
	Se	82	190.4	12.1	**1.3851**	0.168	12.1	ug/L	14	Standard
	Se-1	77	196.3	6.5	**1.7188**	0.132	7.7	ug/L	65	Standard
>	**Ga**	71	30931.6	3.2				mg/L	97	Standard
	Rb	85	428695.1	2.1				ug/L	15	Standard
	Y	89	798406.2	0.4				ug/L	465704	Standard
>	**Rh**	103	131.7	21.6				ug/L	10	Standard
	Mo	98	12612.1	2.1	**4.1093**	0.084	2.0	ug/L	9	Standard
	Ag	107	391.7	4.3	**0.0465**	0.002	4.6	ug/L	82	Standard
	Cd	111	394.2	3.5	**0.1734**	0.005	3.1	mg/L	7	Standard
	Cd	114	1131.0	10.9	**0.2061**	0.021	10.3	ug/L	21	Standard
>	**In**	115	610796.2	0.3				ug/L	619035	Standard
	Sn	118	1331.7	3.0	**0.1040**	0.007	6.6	ug/L	508	Standard
	Sb	123	931.7	3.6	**0.1827**	0.007	3.6	ug/L	86	Standard
	Ba	135	545599.0	0.7	**241.8530**	1.754	0.7	ug/L	79	Standard
	Ce	140	1545043.5	0.7				ug/L	68	Standard
>	**Tb**	159	969755.6	0.5				ug/L	986982	Standard
	Ho	165	30089.9	1.2				ug/L	10	Standard
	Tl	203	1941.8	1.7	**0.2255**	0.004	1.9	ug/L	13	Standard
	Tl	205	1686.8	1.8	**0.2309**	0.003	1.3	ug/L	10	Standard
	Pb	206	82334.1	0.7	**14.4679**	0.157	1.1	ug/L	264	Standard
	Pb	207	67724.4	0.4	**13.1675**	0.052	0.4	ug/L	227	Standard
	Pb	208	285782.6	1.0	**14.4086**	0.082	0.6	ug/L	868	Standard
	U	238	14378.2	1.4	**1.9726**	0.018	0.9	ug/L	8	Standard
>	**Bi**	209	524096.0	0.5				ug/L	541014	Standard

Sample ID: L1606153201
Report Date/Time: Thursday, June 30, 2016 20:32:07
Page 1

Approved: July 01, 2016

Na	23	5.0	100.0	**20.6926**	20.779	100.4	mg/L	2	Standard
Mg	24	3587.1	4.9	**2.8326**	0.159	5.6	mg/L	53	Standard
K	39	1336.7	2.1	**1.5875**	0.046	2.9	mg/L	53	Standard
Ca	43	956.7	5.7	**38.0674**	2.553	6.7	mg/L	28	Standard
Fe	54	24191.2	1.4	**11.9678**	0.197	1.6	mg/L	181	Standard
Fe	57	6944.9	2.7	**12.8265**	0.406	3.2	mg/L	257	Standard
Sc-1	45	75308.4	0.7				mg/L	55220	Standard
Cl	35	41309.6	1.0				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	13139.1	8.9				ug/L	2040	Standard
P	31	56287.7	1.7				ug/L	20435	Standard
S	34	2321.8	4.4				ug/L	2430	Standard
Sr	88	488.3	4.8				ug/L	75	Standard
C	12	296.7	22.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	476.7	37.7				mg/L	7	Standard
Dy	164	49979.9	0.8				mg/L	9	Standard
Ho-1	165	30089.9	1.2				mg/L	10	Standard
Er	166	27070.8	2.7				mg/L	23	Standard
I	127	56145.8	6.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.659	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.725	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606153201
Report Date/Time: Thursday, June 30, 2016 20:32:07
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.669	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.873	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606153201
Report Date/Time: Thursday, June 30, 2016 20:32:07
Page 3

Approved: July 01, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 20:33:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82411.9	2.0				ug/L	74916	Standard
	Be	9	63501.2	2.9	**54.7156**	1.591	2.9	ug/L	10	Standard
	Al	27	8936275.0	1.1	**46.8272**	1.363	2.9	ug/L	1822	Standard
	Sc	45	50709.8	2.6				ug/L	55220	Standard
	Ti	47	38704.7	1.1	**97.1505**	0.850	0.9	ug/L	34	Standard
	V	51	446648.8	0.9	**49.8380**	0.325	0.7	ug/L	1938	Standard
	Cr	52	432283.2	1.8	**48.8135**	0.759	1.6	ug/L	9522	Standard
	Cr	53	54529.6	1.8	**50.3157**	0.783	1.6	ug/L	395	Standard
	Mn	55	397792.4	1.2	**47.8745**	0.756	1.6	ug/L	902	Standard
	Co	59	408707.4	1.0	**52.0384**	0.389	0.7	ug/L	262	Standard
	Ni	60	106814.3	1.7	**49.2774**	0.643	1.3	ug/L	371	Standard
	Cu	65	105225.1	1.0	**49.4116**	0.576	1.2	ug/L	106	Standard
	Zn	66	62698.8	0.8	**49.7004**	0.463	0.9	ug/L	398	Standard
>	Ge	72	516010.1	0.4				ug/L	535147	Standard
	As	75	64411.7	0.4	**49.9261**	0.328	0.7	ug/L	-43	Standard
	Se	82	6628.1	1.4	**50.6222**	0.759	1.5	ug/L	14	Standard
	Se-1	77	4396.6	2.5	**50.0358**	1.361	2.7	ug/L	65	Standard
>	Ga	71	61.7	28.5				mg/L	97	Standard
	Rb	85	996.7	10.1				ug/L	15	Standard
	Y	89	456681.8	1.9				ug/L	465704	Standard
>	Rh	103	46.7	6.2				ug/L	10	Standard
	Mo	98	310943.7	0.9	**98.7097**	0.997	1.0	ug/L	9	Standard
	Ag	107	368163.3	0.1	**48.2932**	0.364	0.8	ug/L	82	Standard
	Cd	111	118493.3	0.3	**48.6275**	0.278	0.6	mg/L	7	Standard
	Cd	114	292362.7	1.4	**49.8198**	0.391	0.8	ug/L	21	Standard
>	In	115	625098.4	0.7				ug/L	619035	Standard
	Sn	118	328088.5	2.1	**49.8247**	1.168	2.3	ug/L	508	Standard
	Sb	123	260509.7	0.6	**48.7212**	0.650	1.3	ug/L	86	Standard
	Ba	135	109479.1	0.8	**47.4058**	0.586	1.2	ug/L	79	Standard
	Ce	140	758.4	29.4				ug/L	68	Standard
>	Tb	159	940749.3	1.4				ug/L	986982	Standard
	Ho	165	26.7	60.3				ug/L	10	Standard
	Tl	203	458765.3	0.6	**50.6626**	0.208	0.4	ug/L	13	Standard
	Tl	205	413032.5	0.8	**53.3915**	0.514	1.0	ug/L	10	Standard
	Pb	206	292542.6	0.8	**50.2992**	0.212	0.4	ug/L	264	Standard
	Pb	207	262126.4	0.9	**49.8679**	0.237	0.5	ug/L	227	Standard
	Pb	208	1068253.8	1.0	**52.7083**	0.744	1.4	ug/L	868	Standard
	U	238	400138.0	0.8	**53.4122**	0.638	1.2	ug/L	8	Standard
>	Bi	209	536606.7	0.4				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 20:35:20
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**9.9269**	17.185	173.1	mg/L	2	Standard
Mg	24	4815.8	3.0	**5.6803**	0.067	1.2	mg/L	53	Standard
K	39	1883.5	5.5	**3.4038**	0.145	4.3	mg/L	53	Standard
Ca	43	110.0	12.0	**5.1122**	0.842	16.5	mg/L	28	Standard
Fe	54	6834.6	1.8	**4.9544**	0.153	3.1	mg/L	181	Standard
Fe	57	1956.8	6.8	**4.9772**	0.240	4.8	mg/L	257	Standard
Sc-1	45	50709.8	2.6				mg/L	55220	Standard
Cl	35	41202.0	1.9				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2030.1	11.2				ug/L	2040	Standard
P	31	23463.2	2.4				ug/L	20435	Standard
S	34	2733.6	7.5				ug/L	2430	Standard
Sr	88	60.0	22.0				ug/L	75	Standard
C	12	116.7	47.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	220.0	41.7				mg/L	7	Standard
Dy	164	31.9	43.5				mg/L	9	Standard
Ho-1	165	26.7	60.3				mg/L	10	Standard
Er	166	30.0	100.0				mg/L	23	Standard
I	127	12453.5	8.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.431		
Al	27	93.654		
Sc	45			
Ti	47	97.150		
V	51	99.676		
Cr	52	97.627		
Cr	53			
Mn	55	95.749		
Co	59	104.077		
Ni	60	98.555		
Cu	65	98.823		
Zn	66	99.401		
Ge	72		96.424	
As	75	99.852		
Se	82	101.244		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 20:35:20
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	98.710		
Ag	107	96.586		
Cd	111	97.255		
Cd	114			
> In	115		100.980	
Sn	118	99.649		
Sb	123	97.442		
Ba	135	94.812		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.325		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.417		
U	238	106.824		
> Bi	209		99.185	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 20:35:20
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 20:36:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82128.7	1.1				ug/L	74916	Standard
	Be	9	30.0	16.7	**0.0223**	0.004	18.3	ug/L	10	Standard
	Al	27	5192.6	9.2	**0.0250**	0.002	9.1	ug/L	1822	Standard
	Sc	45	51186.4	3.6				ug/L	55220	Standard
	Ti	47	43.3	23.6	**0.0390**	0.025	64.9	ug/L	34	Standard
	V	51	1718.2	4.9	**-0.0032**	0.009	291.6	ug/L	1938	Standard
	Cr	52	7393.1	1.8	**-0.1840**	0.014	7.8	ug/L	9522	Standard
	Cr	53	693.3	17.3	**0.2598**	0.114	43.8	ug/L	395	Standard
	Mn	55	1321.1	4.6	**0.0547**	0.007	13.5	ug/L	902	Standard
	Co	59	293.7	10.4	**0.0147**	0.004	27.4	ug/L	262	Standard
	Ni	60	410.0	7.5	**0.0448**	0.015	32.9	ug/L	371	Standard
	Cu	65	188.3	4.3	**0.0301**	0.004	13.0	ug/L	106	Standard
	Zn	66	383.3	1.0	**-0.0397**	0.004	10.4	ug/L	398	Standard
>	**Ge**	72	514250.8	0.4				ug/L	535147	Standard
	As	75	-54.4	100.9	**0.0129**	0.043	331.1	ug/L	-43	Standard
	Se	82	19.7	51.7	**0.0538**	0.077	143.9	ug/L	14	Standard
	Se-1	77	63.0	5.7	**0.1465**	0.044	30.1	ug/L	65	Standard
>	**Ga**	71	55.0	36.4				mg/L	97	Standard
	Rb	85	68.3	22.4				ug/L	15	Standard
	Y	89	449659.4	1.7				ug/L	465704	Standard
>	**Rh**	103	23.3	24.7				ug/L	10	Standard
	Mo	98	335.6	19.0	**0.1188**	0.020	16.7	ug/L	9	Standard
	Ag	107	154.3	7.0	**0.0142**	0.001	9.5	ug/L	82	Standard
	Cd	111	22.4	30.8	**0.0171**	0.003	16.3	mg/L	7	Standard
	Cd	114	51.4	43.4	**0.0177**	0.004	21.3	ug/L	21	Standard
>	**In**	115	625232.6	0.5				ug/L	619035	Standard
	Sn	118	1065.0	15.1	**0.0587**	0.025	42.6	ug/L	508	Standard
	Sb	123	705.8	28.7	**0.1365**	0.038	28.0	ug/L	86	Standard
	Ba	135	108.3	3.0	**0.0273**	0.001	4.4	ug/L	79	Standard
	Ce	140	348.3	13.3				ug/L	68	Standard
>	**Tb**	159	943281.6	0.4				ug/L	986982	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	113.3	12.2	**0.0182**	0.001	8.2	ug/L	13	Standard
	Tl	205	100.0	30.0	**0.0203**	0.004	18.7	ug/L	10	Standard
	Pb	206	363.3	6.5	**0.0234**	0.004	17.0	ug/L	264	Standard
	Pb	207	296.3	6.8	**0.0220**	0.004	17.0	ug/L	227	Standard
	Pb	208	1320.0	5.6	**0.0254**	0.004	14.1	ug/L	868	Standard
	U	238	99.0	19.9	**0.0208**	0.003	12.3	ug/L	8	Standard
>	**Bi**	209	548536.9	0.0				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 20:38:31
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	75.0	48.1	**0.0541**	0.045	82.5	mg/L	53	Standard
K	39	33.3	31.2	**-0.0153**	0.017	109.6	mg/L	53	Standard
Ca	43	23.3	32.7	**-0.2522**	0.460	182.3	mg/L	28	Standard
Fe	54	165.6	21.1	**0.0031**	0.027	859.8	mg/L	181	Standard
Fe	57	250.0	23.1	**0.0548**	0.181	330.7	mg/L	257	Standard
Sc-1	45	51186.4	3.6				mg/L	55220	Standard
Cl	35	41182.6	1.6				ug/L	35504	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	1913.5	4.1				ug/L	2040	Standard
P	31	22580.1	1.2				ug/L	20435	Standard
S	34	2533.5	8.6				ug/L	2430	Standard
Sr	88	78.3	30.2				ug/L	75	Standard
C	12	96.7	52.1				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	230.0	4.3				mg/L	7	Standard
Dy	164	171.3	13.6				mg/L	9	Standard
Ho-1	165	11.7	107.9				mg/L	10	Standard
Er	166	43.3	58.1				mg/L	23	Standard
I	127	5109.2	12.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.095	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 20:38:31
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.001
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.390
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 20:38:31
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 30, 2016 20:39:27
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80112.9	1.5				ug/L	74916	Standard
	Be	9	261.7	14.3	**0.2284**	0.034	15.1	ug/L	10	Standard
	Al	27	1921.8	14.3	**0.0080**	0.001	16.8	ug/L	1822	Standard
	Sc	45	48402.2	0.5				ug/L	55220	Standard
	Ti	47	27.3	11.8	**0.0013**	0.008	664.7	ug/L	34	Standard
	V	51	4894.0	1.7	**0.3738**	0.012	3.1	ug/L	1938	Standard
	Cr	52	13943.7	1.3	**0.6328**	0.015	2.4	ug/L	9522	Standard
	Cr	53	1380.1	5.0	**0.9470**	0.060	6.3	ug/L	395	Standard
	Mn	55	4302.6	2.0	**0.4346**	0.013	2.9	ug/L	902	Standard
	Co	59	3213.7	1.7	**0.4029**	0.007	1.8	ug/L	262	Standard
	Ni	60	3515.4	1.2	**1.5461**	0.028	1.8	ug/L	371	Standard
	Cu	65	1705.1	1.9	**0.7749**	0.015	2.0	ug/L	106	Standard
	Zn	66	7760.7	0.6	**6.0954**	0.054	0.9	ug/L	398	Standard
>	**Ge**	72	496193.5	0.5				ug/L	535147	Standard
	As	75	427.1	10.4	**0.3992**	0.036	9.1	ug/L	-43	Standard
	Se	82	66.0	22.5	**0.4286**	0.118	27.6	ug/L	14	Standard
	Se-1	77	89.7	9.7	**0.4918**	0.099	20.1	ug/L	65	Standard
>	**Ga**	71	40.0	33.1				mg/L	97	Standard
	Rb	85	45.0	11.1				ug/L	15	Standard
	Y	89	428520.5	0.7				ug/L	465704	Standard
>	**Rh**	103	26.7	47.2				ug/L	10	Standard
	Mo	98	135.3	10.3	**0.0568**	0.005	8.2	ug/L	9	Standard
	Ag	107	2893.9	2.4	**0.3865**	0.009	2.3	ug/L	82	Standard
	Cd	111	514.8	5.0	**0.2263**	0.011	4.7	mg/L	7	Standard
	Cd	114	1337.4	8.6	**0.2445**	0.020	8.1	ug/L	21	Standard
>	**In**	115	604537.0	0.2				ug/L	619035	Standard
	Sn	118	533.3	11.2	**-0.0195**	0.010	49.0	ug/L	508	Standard
	Sb	123	1880.2	1.4	**0.3679**	0.005	1.3	ug/L	86	Standard
	Ba	135	1521.1	0.6	**0.6617**	0.004	0.6	ug/L	79	Standard
	Ce	140	56.7	48.6				ug/L	68	Standard
>	**Tb**	159	922348.4	0.4				ug/L	986982	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	698.7	3.6	**0.0831**	0.002	2.8	ug/L	13	Standard
	Tl	205	633.3	15.8	**0.0896**	0.013	14.7	ug/L	10	Standard
	Pb	206	1409.4	1.3	**0.2047**	0.004	2.1	ug/L	264	Standard
	Pb	207	1194.0	0.4	**0.1941**	0.002	0.9	ug/L	227	Standard
	Pb	208	5007.3	0.9	**0.2089**	0.001	0.3	ug/L	868	Standard
	U	238	2975.6	1.6	**0.4051**	0.008	2.0	ug/L	8	Standard
>	**Bi**	209	536583.7	0.6				ug/L	541014	Standard

Sample ID: QC Std 8
Report Date/Time: Thursday, June 30, 2016 20:41:44
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	52.0	**0.0277**	0.033	118.0	mg/L	53	Standard
K	39	30.0	60.1	**-0.0180**	0.035	192.8	mg/L	53	Standard
Ca	43	25.0	20.0	**-0.0605**	0.317	523.5	mg/L	28	Standard
Fe	54	115.1	13.0	**-0.0293**	0.011	38.4	mg/L	181	Standard
Fe	57	271.7	24.0	**0.1575**	0.193	122.6	mg/L	257	Standard
Sc-1	45	48402.2	0.5				mg/L	55220	Standard
Cl	35	40155.8	1.0				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1830.1	7.5				ug/L	2040	Standard
P	31	15689.8	3.7				ug/L	20435	Standard
S	34	2581.9	4.2				ug/L	2430	Standard
Sr	88	76.7	16.4				ug/L	75	Standard
C	12	103.3	43.6				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	213.3	35.5				mg/L	7	Standard
Dy	164	11.7	90.2				mg/L	9	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	33.3	62.5				mg/L	23	Standard
I	127	1745.1	30.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	114.223		
Al	27			
Sc	45			
Ti	47			
V	51	93.449		
Cr	52	79.097		
Cr	53			
Mn	55	86.911		
Co	59	100.725		
Ni	60	96.630		
Cu	65	96.860		
Zn	66	97.527		
Ge	72		92.721	
As	75	99.789		
Se	82	107.150		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
Report Date/Time: Thursday, June 30, 2016 20:41:44
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.620		
Cd	111	94.287		
Cd	114			
> In	115			97.658
Sn	118			
Sb	123	91.986		
Ba	135	88.222		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.934		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.449		
U	238	101.266		
> Bi	209			99.181
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Thursday, June 30, 2016 20:41:44
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Thursday, June 30, 2016 20:42:40
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76651.8	1.2				ug/L	74916	Standard
	Be	9	28.3	50.9	**0.0227**	0.014	60.0	ug/L	10	Standard
	Al	27	640328.6	1.2	**3.6044**	0.062	1.7	ug/L	1822	Standard
	Sc	45	43241.6	2.8				ug/L	55220	Standard
	Ti	47	248.0	8.7	**0.6477**	0.062	9.5	ug/L	34	Standard
	V	51	2583.8	3.1	**0.1372**	0.011	7.8	ug/L	1938	Standard
	Cr	52	5507.0	1.7	**-0.3077**	0.014	4.4	ug/L	9522	Standard
	Cr	53	3593.8	14.6	**3.4628**	0.558	16.1	ug/L	395	Standard
	Mn	55	5635941.5	0.8	**783.1928**	7.420	0.9	ug/L	902	Standard
	Co	59	6792.5	0.8	**0.9742**	0.006	0.6	ug/L	262	Standard
	Ni	60	2130.5	1.5	**0.9904**	0.019	1.9	ug/L	371	Standard
	Cu	65	2467.9	3.3	**1.2782**	0.046	3.6	ug/L	106	Standard
	Zn	66	6137.2	2.5	**5.2984**	0.146	2.8	ug/L	398	Standard
>	**Ge**	72	447801.7	0.2				ug/L	535147	Standard
	As	75	1508.3	2.0	**1.4009**	0.025	1.8	ug/L	-43	Standard
	Se	82	238.5	5.9	**2.0064**	0.127	6.3	ug/L	14	Standard
	Se-1	77	249.0	8.1	**2.7217**	0.263	9.7	ug/L	65	Standard
>	**Ga**	71	240.0	4.2				mg/L	97	Standard
	Rb	85	63461.0	2.7				ug/L	15	Standard
	Y	89	391275.2	1.5				ug/L	465704	Standard
>	**Rh**	103	106.7	13.5				ug/L	10	Standard
	Mo	98	1073579.5	0.4	**401.7377**	3.626	0.9	ug/L	9	Standard
	Ag	107	87.3	13.7	**0.0074**	0.002	25.3	ug/L	82	Standard
	Cd	111	-818.3	3.2	**-0.3880**	0.016	4.0	mg/L	7	Standard
	Cd	114	1651.3	10.4	**0.3409**	0.038	11.2	ug/L	21	Standard
>	**In**	115	530268.9	1.2				ug/L	619035	Standard
	Sn	118	203.3	18.1	**-0.0670**	0.006	9.2	ug/L	508	Standard
	Sb	123	1149.6	6.1	**0.2577**	0.013	5.0	ug/L	86	Standard
	Ba	135	3359.0	0.8	**1.6958**	0.031	1.8	ug/L	79	Standard
	Ce	140	3432.1	5.6				ug/L	68	Standard
>	**Tb**	159	837304.0	0.6				ug/L	986982	Standard
	Ho	165	81.7	27.6				ug/L	10	Standard
	Tl	203	136.7	19.4	**0.0233**	0.004	15.2	ug/L	13	Standard
	Tl	205	88.3	23.6	**0.0208**	0.003	15.2	ug/L	10	Standard
	Pb	206	550.7	4.5	**0.0708**	0.005	7.7	ug/L	264	Standard
	Pb	207	451.7	9.0	**0.0654**	0.010	14.9	ug/L	227	Standard
	Pb	208	1928.7	2.6	**0.0708**	0.004	5.7	ug/L	868	Standard
	U	238	98.0	36.2	**0.0229**	0.006	24.4	ug/L	8	Standard
>	**Bi**	209	468325.2	1.1				ug/L	541014	Standard

Sample ID: L1606036203
Report Date/Time: Thursday, June 30, 2016 20:44:57
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	119319.7	0.6	**166.1256**	5.606	3.4	mg/L	53	Standard
K	39	5299.3	3.8	**11.4085**	0.316	2.8	mg/L	53	Standard
Ca	43	215.0	20.9	**13.8398**	2.992	21.6	mg/L	28	Standard
Fe	54	637.3	4.6	**0.4356**	0.010	2.3	mg/L	181	Standard
Fe	57	536.7	4.4	**1.1520**	0.042	3.7	mg/L	257	Standard
> **Sc-1**	45	43241.6	2.8				mg/L	55220	Standard
Cl	35	58098.5	1.3				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	34676.3	1.4				ug/L	2040	Standard
P	31	6889.9	4.6				ug/L	20435	Standard
S	34	2093.5	2.2				ug/L	2430	Standard
Sr	88	331.7	15.3				ug/L	75	Standard
C	12	116.7	54.4				mg/L	293	Standard
N	14	6.7	173.2				mg/L	0	Standard
Hg	202	3307.0	25.9				mg/L	7	Standard
Dy	164	130.0	8.2				mg/L	9	Standard
Ho-1	165	81.7	27.6				mg/L	10	Standard
Er	166	70.0	24.7				mg/L	23	Standard
I	127	366229.6	3.2				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.316	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		83.678	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606036203
Report Date/Time: Thursday, June 30, 2016 20:44:57
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	85.661
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	86.564
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606036203
Report Date/Time: Thursday, June 30, 2016 20:44:57
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 20:45:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83990.5	1.6				ug/L	74916	Standard
	Be	9	65171.5	1.4	**55.0945**	0.393	0.7	ug/L	10	Standard
	Al	27	8906533.3	1.1	**45.7799**	0.406	0.9	ug/L	1822	Standard
	Sc	45	48572.8	1.9				ug/L	55220	Standard
	Ti	47	37751.3	1.5	**97.3003**	0.891	0.9	ug/L	34	Standard
	V	51	436290.7	1.3	**49.9895**	0.349	0.7	ug/L	1938	Standard
	Cr	52	422974.4	1.0	**49.0536**	0.698	1.4	ug/L	9522	Standard
	Cr	53	52040.9	1.9	**49.3027**	0.910	1.8	ug/L	395	Standard
	Mn	55	384063.1	1.2	**47.4615**	0.495	1.0	ug/L	902	Standard
	Co	59	398080.6	0.9	**52.0523**	0.925	1.8	ug/L	262	Standard
	Ni	60	103678.2	0.6	**49.1206**	0.741	1.5	ug/L	371	Standard
	Cu	65	102993.3	1.5	**49.6596**	0.307	0.6	ug/L	106	Standard
	Zn	66	61365.7	1.8	**49.9467**	0.087	0.2	ug/L	398	Standard
>	Ge	72	502569.8	2.0				ug/L	535147	Standard
	As	75	61842.1	1.6	**49.2214**	0.636	1.3	ug/L	-43	Standard
	Se	82	6409.0	1.2	**50.2632**	0.606	1.2	ug/L	14	Standard
	Se-1	77	4323.6	1.1	**50.5321**	0.649	1.3	ug/L	65	Standard
>	Ga	71	70.0	43.4				mg/L	97	Standard
	Rb	85	973.4	6.4				ug/L	15	Standard
	Y	89	445280.6	2.4				ug/L	465704	Standard
>	Rh	103	56.7	13.5				ug/L	10	Standard
	Mo	98	305918.8	0.8	**98.0968**	1.357	1.4	ug/L	9	Standard
	Ag	107	361617.9	0.6	**47.9187**	1.063	2.2	ug/L	82	Standard
	Cd	111	115336.2	1.8	**47.8055**	0.563	1.2	mg/L	7	Standard
	Cd	114	283581.1	0.5	**48.8167**	0.800	1.6	ug/L	21	Standard
>	In	115	618947.1	2.1				ug/L	619035	Standard
	Sn	118	321189.0	1.3	**49.2793**	1.581	3.2	ug/L	508	Standard
	Sb	123	254680.3	1.4	**48.1148**	1.181	2.5	ug/L	86	Standard
	Ba	135	105862.2	0.1	**46.3075**	1.051	2.3	ug/L	79	Standard
	Ce	140	278.3	15.3				ug/L	68	Standard
>	Tb	159	931972.9	1.4				ug/L	986982	Standard
	Ho	165	15.0	33.3				ug/L	10	Standard
	Tl	203	450548.5	1.4	**49.5430**	0.196	0.4	ug/L	13	Standard
	Tl	205	402706.3	2.1	**51.8449**	1.535	3.0	ug/L	10	Standard
	Pb	206	286824.8	0.4	**49.1101**	0.587	1.2	ug/L	264	Standard
	Pb	207	262479.7	0.1	**49.7276**	0.566	1.1	ug/L	227	Standard
	Pb	208	1067833.3	1.0	**52.4694**	1.100	2.1	ug/L	868	Standard
	U	238	395668.2	0.7	**52.5954**	0.841	1.6	ug/L	8	Standard
>	Bi	209	538895.0	1.1				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 20:48:10
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**10.4524**	18.095	173.1	mg/L	2	Standard
Mg	24	4662.4	2.7	**5.7440**	0.220	3.8	mg/L	53	Standard
K	39	1790.1	8.6	**3.3791**	0.319	9.4	mg/L	53	Standard
Ca	43	108.3	7.1	**5.2962**	0.370	7.0	mg/L	28	Standard
Fe	54	6691.4	1.9	**5.0646**	0.058	1.1	mg/L	181	Standard
Fe	57	1865.1	3.8	**4.9539**	0.208	4.2	mg/L	257	Standard
Sc-1	45	48572.8	1.9				mg/L	55220	Standard
Cl	35	40060.9	1.3				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2233.5	7.2				ug/L	2040	Standard
P	31	22233.0	3.1				ug/L	20435	Standard
S	34	2528.5	7.9				ug/L	2430	Standard
Sr	88	91.7	8.3				ug/L	75	Standard
C	12	140.0	32.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	850.0	27.5				mg/L	7	Standard
Dy	164	19.4	103.3				mg/L	9	Standard
Ho-1	165	15.0	33.3				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	15705.0	17.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.189		
Al	27	91.560		
Sc	45			
Ti	47	97.300		
V	51	99.979		
Cr	52	98.107		
Cr	53			
Mn	55	94.923		
Co	59	104.105		
Ni	60	98.241		
Cu	65	99.319		
Zn	66	99.893		
Ge	72		93.912	
As	75	98.443		
Se	82	100.526		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 20:48:10
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	98.097		
Ag	107	95.837		
Cd	111	95.611		
Cd	114			
> In	115			99.986
Sn	118	98.559		
Sb	123	96.230		
Ba	135	92.615		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.086		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.939		
U	238	105.191		
> Bi	209			99.608
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 20:48:10
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 20:49:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81895.8	2.0				ug/L	74916	Standard
	Be	9	26.7	39.0	**0.0195**	0.009	45.9	ug/L	10	Standard
	Al	27	3003.6	21.0	**0.0135**	0.003	23.7	ug/L	1822	Standard
	Sc	45	48704.8	1.8				ug/L	55220	Standard
	Ti	47	37.3	15.5	**0.0267**	0.015	54.4	ug/L	34	Standard
	V	51	1722.1	9.7	**0.0031**	0.020	658.5	ug/L	1938	Standard
	Cr	52	6815.5	0.8	**-0.2272**	0.010	4.5	ug/L	9522	Standard
	Cr	53	573.3	10.8	**0.1635**	0.057	35.1	ug/L	395	Standard
	Mn	55	1172.7	8.8	**0.0410**	0.012	29.7	ug/L	902	Standard
	Co	59	290.0	11.9	**0.0153**	0.004	28.6	ug/L	262	Standard
	Ni	60	366.0	6.0	**0.0294**	0.010	34.3	ug/L	371	Standard
	Cu	65	230.7	7.0	**0.0533**	0.008	14.8	ug/L	106	Standard
	Zn	66	407.3	7.7	**-0.0106**	0.027	252.5	ug/L	398	Standard
>	**Ge**	72	499312.8	0.6				ug/L	535147	Standard
	As	75	-29.2	59.1	**0.0319**	0.014	43.1	ug/L	-43	Standard
	Se	82	22.7	5.9	**0.0825**	0.012	14.0	ug/L	14	Standard
	Se-1	77	47.0	27.2	**-0.0227**	0.150	659.5	ug/L	65	Standard
>	**Ga**	71	36.7	28.4				mg/L	97	Standard
	Rb	85	51.7	29.6				ug/L	15	Standard
	Y	89	445183.0	1.4				ug/L	465704	Standard
>	**Rh**	103	50.0	43.6				ug/L	10	Standard
	Mo	98	1174.7	4.2	**0.3885**	0.018	4.5	ug/L	9	Standard
	Ag	107	153.3	11.2	**0.0142**	0.002	15.5	ug/L	82	Standard
	Cd	111	17.6	18.0	**0.0152**	0.001	8.4	mg/L	7	Standard
	Cd	114	83.5	22.5	**0.0233**	0.003	13.5	ug/L	21	Standard
>	**In**	115	619708.4	0.7				ug/L	619035	Standard
	Sn	118	988.4	8.9	**0.0483**	0.013	27.6	ug/L	508	Standard
	Sb	123	746.5	30.0	**0.1454**	0.043	29.6	ug/L	86	Standard
	Ba	135	57.7	13.9	**0.0055**	0.003	60.4	ug/L	79	Standard
	Ce	140	110.0	20.8				ug/L	68	Standard
>	**Tb**	159	926404.8	1.4				ug/L	986982	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	111.0	16.0	**0.0181**	0.002	10.0	ug/L	13	Standard
	Tl	205	75.0	11.5	**0.0173**	0.001	5.8	ug/L	10	Standard
	Pb	206	345.0	8.6	**0.0210**	0.005	24.9	ug/L	264	Standard
	Pb	207	301.0	12.6	**0.0235**	0.007	27.7	ug/L	227	Standard
	Pb	208	1232.7	3.5	**0.0219**	0.002	9.1	ug/L	868	Standard
	U	238	74.3	13.5	**0.0177**	0.001	7.2	ug/L	8	Standard
>	**Bi**	209	541724.9	1.0				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 20:51:21
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	81.7	30.8	**0.0665**	0.032	48.4	mg/L	53	Standard
K	39	30.0	60.1	**-0.0186**	0.034	180.1	mg/L	53	Standard
Ca	43	16.7	34.6	**-0.6009**	0.384	63.8	mg/L	28	Standard
Fe	54	179.0	19.4	**0.0193**	0.025	127.5	mg/L	181	Standard
Fe	57	233.3	32.7	**0.0373**	0.225	603.1	mg/L	257	Standard
Sc-1	45	48704.8	1.8				mg/L	55220	Standard
Cl	35	39728.7	1.2				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1956.8	2.4				ug/L	2040	Standard
P	31	21510.3	0.9				ug/L	20435	Standard
S	34	2288.5	1.5				ug/L	2430	Standard
Sr	88	70.0	32.7				ug/L	75	Standard
C	12	173.3	17.6				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	363.3	43.9				mg/L	7	Standard
Dy	164	148.9	37.7				mg/L	9	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	23.3	89.2				mg/L	23	Standard
I	127	6463.1	9.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.304	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 20:51:21
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.109
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.131
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 20:51:21
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 20:52:16
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74727.2	2.6				ug/L	74916	Standard
	Be	9	25.0	80.0	**0.0199**	0.018	92.2	ug/L	10	Standard
	Al	27	5329.3	24.9	**0.0285**	0.008	27.8	ug/L	1822	Standard
	Sc	45	43377.0	2.4				ug/L	55220	Standard
	Ti	47	95.7	19.0	**0.2005**	0.047	23.3	ug/L	34	Standard
	V	51	4034.0	3.0	**0.3136**	0.012	4.0	ug/L	1938	Standard
	Cr	52	16438.9	5.2	**1.0993**	0.075	6.8	ug/L	9522	Standard
	Cr	53	685.0	9.8	**0.3309**	0.059	17.8	ug/L	395	Standard
	Mn	55	2971.0	23.2	**0.3001**	0.100	33.3	ug/L	902	Standard
	Co	59	289.7	6.6	**0.0189**	0.003	18.3	ug/L	262	Standard
	Ni	60	402.7	3.2	**0.0647**	0.006	10.0	ug/L	371	Standard
	Cu	65	334.0	2.3	**0.1185**	0.004	3.2	ug/L	106	Standard
	Zn	66	962.7	2.9	**0.5205**	0.017	3.3	ug/L	398	Standard
>	**Ge**	72	457222.8	1.7				ug/L	535147	Standard
	As	75	-15.7	124.6	**0.0417**	0.017	40.7	ug/L	-43	Standard
	Se	82	18.9	33.3	**0.0666**	0.057	85.8	ug/L	14	Standard
	Se-1	77	54.0	10.3	**0.1196**	0.060	50.6	ug/L	65	Standard
>	**Ga**	71	70.0	31.1				mg/L	97	Standard
	Rb	85	136.7	13.9				ug/L	15	Standard
	Y	89	396044.5	2.4				ug/L	465704	Standard
>	**Rh**	103	15.0	0.0				ug/L	10	Standard
	Mo	98	6104.3	29.3	**2.1953**	0.662	30.2	ug/L	9	Standard
	Ag	107	146.0	16.1	**0.0155**	0.003	22.0	ug/L	82	Standard
	Cd	111	22.1	12.0	**0.0181**	0.001	7.5	mg/L	7	Standard
	Cd	114	72.7	19.8	**0.0229**	0.003	12.7	ug/L	21	Standard
>	**In**	115	556161.3	1.4				ug/L	619035	Standard
	Sn	118	1453.4	5.0	**0.1451**	0.011	7.5	ug/L	508	Standard
	Sb	123	235.3	31.1	**0.0540**	0.016	29.5	ug/L	86	Standard
	Ba	135	137.3	10.9	**0.0472**	0.007	14.8	ug/L	79	Standard
	Ce	140	118.3	17.6				ug/L	68	Standard
>	**Tb**	159	853667.4	0.8				ug/L	986982	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	839.7	20.5	**0.1050**	0.021	20.1	ug/L	13	Standard
	Tl	205	71.7	33.0	**0.0176**	0.003	18.3	ug/L	10	Standard
	Pb	206	351.7	6.0	**0.0268**	0.004	16.6	ug/L	264	Standard
	Pb	207	304.0	1.1	**0.0285**	0.001	4.5	ug/L	227	Standard
	Pb	208	1256.4	10.7	**0.0278**	0.007	25.6	ug/L	868	Standard
	U	238	77.3	38.0	**0.0189**	0.004	22.5	ug/L	8	Standard
>	**Bi**	209	503236.8	1.0				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 20:54:33
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	275.0	13.7	**0.3470**	0.051	14.8	mg/L	53	Standard
K	39	20.0	25.0	**-0.0326**	0.012	36.3	mg/L	53	Standard
Ca	43	31.7	50.8	**0.6274**	1.227	195.5	mg/L	28	Standard
Fe	54	68.3	18.4	**-0.0594**	0.012	19.5	mg/L	181	Standard
Fe	57	256.7	12.4	**0.2034**	0.114	56.2	mg/L	257	Standard
> **Sc-1**	45	43377.0	2.4				mg/L	55220	Standard
Cl	35	35122.0	1.2				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1736.8	10.5				ug/L	2040	Standard
P	31	8842.6	4.7				ug/L	20435	Standard
S	34	2135.2	4.7				ug/L	2430	Standard
Sr	88	68.3	18.4				ug/L	75	Standard
C	12	3483.7	8.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	57892.0	25.9				mg/L	7	Standard
Dy	164	3.2	186.4				mg/L	9	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	2947.0	35.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.747	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.439	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 20:54:33
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.843
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.017
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 20:54:33
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 20:55:28
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74107.6	3.4				ug/L	74916	Standard
	Be	9	18.3	31.5	**0.0141**	0.006	42.8	ug/L	10	Standard
	Al	27	4844.5	86.9	**0.0263**	0.026	97.1	ug/L	1822	Standard
	Sc	45	44092.4	0.2				ug/L	55220	Standard
	Ti	47	70.3	15.9	**0.1280**	0.034	26.6	ug/L	34	Standard
	V	51	4108.2	2.7	**0.3192**	0.020	6.3	ug/L	1938	Standard
	Cr	52	16358.2	1.0	**1.0734**	0.017	1.6	ug/L	9522	Standard
	Cr	53	638.3	11.9	**0.2775**	0.078	28.3	ug/L	395	Standard
	Mn	55	3246.8	71.9	**0.3361**	0.323	96.1	ug/L	902	Standard
	Co	59	336.3	57.6	**0.0254**	0.028	112.0	ug/L	262	Standard
	Ni	60	401.7	10.9	**0.0628**	0.025	40.4	ug/L	371	Standard
	Cu	65	302.7	3.1	**0.1006**	0.005	4.6	ug/L	106	Standard
	Zn	66	958.0	2.9	**0.5097**	0.017	3.3	ug/L	398	Standard
>	**Ge**	72	460737.3	1.2				ug/L	535147	Standard
	As	75	-51.4	19.2	**0.0107**	0.008	79.3	ug/L	-43	Standard
	Se	82	17.6	15.9	**0.0542**	0.026	47.9	ug/L	14	Standard
	Se-1	77	52.0	10.7	**0.0890**	0.070	78.3	ug/L	65	Standard
>	**Ga**	71	48.3	15.8				mg/L	97	Standard
	Rb	85	86.7	23.3				ug/L	15	Standard
	Y	89	392306.0	1.1				ug/L	465704	Standard
>	**Rh**	103	26.7	75.8				ug/L	10	Standard
	Mo	98	3317.0	55.2	**1.2027**	0.666	55.4	ug/L	9	Standard
	Ag	107	87.3	8.1	**0.0068**	0.001	17.4	ug/L	82	Standard
	Cd	111	7.2	41.2	**0.0112**	0.001	11.8	mg/L	7	Standard
	Cd	114	32.4	63.2	**0.0151**	0.004	26.2	ug/L	21	Standard
>	**In**	115	555514.4	1.5				ug/L	619035	Standard
	Sn	118	1463.4	7.7	**0.1472**	0.019	12.7	ug/L	508	Standard
	Sb	123	120.8	37.8	**0.0299**	0.010	33.0	ug/L	86	Standard
	Ba	135	91.7	10.3	**0.0250**	0.004	16.5	ug/L	79	Standard
	Ce	140	56.7	58.8				ug/L	68	Standard
>	**Tb**	159	847707.0	2.4				ug/L	986982	Standard
	Ho	165	16.7	86.6				ug/L	10	Standard
	Tl	203	394.0	52.5	**0.0527**	0.025	47.6	ug/L	13	Standard
	Tl	205	63.3	139.1	**0.0165**	0.012	74.7	ug/L	10	Standard
	Pb	206	291.3	3.6	**0.0157**	0.003	16.4	ug/L	264	Standard
	Pb	207	294.3	19.3	**0.0266**	0.012	46.6	ug/L	227	Standard
	Pb	208	1276.7	28.9	**0.0290**	0.020	70.5	ug/L	868	Standard
	U	238	51.3	151.3	**0.0153**	0.011	73.4	ug/L	8	Standard
>	**Bi**	209	503355.5	1.6				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 20:57:45
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	240.0	22.0	**0.2930**	0.072	24.6	mg/L	53	Standard
K	39	33.3	17.3	**-0.0052**	0.012	235.9	mg/L	53	Standard
Ca	43	15.0	33.3	**-0.6108**	0.355	58.1	mg/L	28	Standard
Fe	54	49.8	55.4	**-0.0762**	0.024	30.8	mg/L	181	Standard
Fe	57	285.0	10.7	**0.2825**	0.101	35.6	mg/L	257	Standard
Sc-1	45	44092.4	0.2				mg/L	55220	Standard
Cl	35	35796.9	0.4				ug/L	35504	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1746.8	6.3				ug/L	2040	Standard
P	31	8695.8	2.3				ug/L	20435	Standard
S	34	2180.2	3.8				ug/L	2430	Standard
Sr	88	55.0	41.7				ug/L	75	Standard
C	12	3950.5	2.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	28517.7	48.5				mg/L	7	Standard
Dy	164	5.7	108.5				mg/L	9	Standard
Ho-1	165	16.7	86.6				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	1731.8	10.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.920	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.095	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 20:57:45
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.739
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.039
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 20:57:45
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 20:58:40
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72422.8	2.6				ug/L	74916	Standard
	Be	9	18.3	56.8	**0.0142**	0.010	68.2	ug/L	10	Standard
	Al	27	2110.1	8.4	**0.0102**	0.001	9.1	ug/L	1822	Standard
	Sc	45	43602.7	1.2				ug/L	55220	Standard
	Ti	47	62.3	13.8	**0.1046**	0.022	21.3	ug/L	34	Standard
	V	51	4028.3	2.4	**0.3078**	0.013	4.3	ug/L	1938	Standard
	Cr	52	16458.3	3.4	**1.0804**	0.041	3.8	ug/L	9522	Standard
	Cr	53	546.7	4.5	**0.1805**	0.026	14.2	ug/L	395	Standard
	Mn	55	1820.4	5.7	**0.1401**	0.013	9.1	ug/L	902	Standard
	Co	59	213.3	4.3	**0.0075**	0.001	16.9	ug/L	262	Standard
	Ni	60	381.0	3.9	**0.0513**	0.005	10.6	ug/L	371	Standard
	Cu	65	257.7	3.0	**0.0766**	0.006	8.0	ug/L	106	Standard
	Zn	66	935.0	3.8	**0.4873**	0.039	8.0	ug/L	398	Standard
>	**Ge**	72	461930.2	1.5				ug/L	535147	Standard
	As	75	-37.3	19.8	**0.0230**	0.006	26.4	ug/L	-43	Standard
	Se	82	18.4	28.2	**0.0606**	0.045	74.8	ug/L	14	Standard
	Se-1	77	54.7	14.7	**0.1228**	0.114	93.0	ug/L	65	Standard
>	**Ga**	71	36.7	34.3				mg/L	97	Standard
	Rb	85	78.3	20.5				ug/L	15	Standard
	Y	89	395553.6	0.8				ug/L	465704	Standard
>	**Rh**	103	25.0	40.0				ug/L	10	Standard
	Mo	98	1932.5	55.0	**0.7046**	0.386	54.7	ug/L	9	Standard
	Ag	107	81.0	10.1	**0.0059**	0.001	18.7	ug/L	82	Standard
	Cd	111	4.7	45.9	**0.0100**	0.001	10.0	mg/L	7	Standard
	Cd	114	20.4	173.1	**0.0128**	0.007	52.5	ug/L	21	Standard
>	**In**	115	555907.9	1.0				ug/L	619035	Standard
	Sn	118	1288.4	3.8	**0.1170**	0.006	5.4	ug/L	508	Standard
	Sb	123	110.1	37.8	**0.0276**	0.009	32.4	ug/L	86	Standard
	Ba	135	80.7	1.9	**0.0197**	0.001	5.7	ug/L	79	Standard
	Ce	140	45.0	19.2				ug/L	68	Standard
>	**Tb**	159	849258.9	2.2				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	249.3	55.6	**0.0354**	0.017	46.9	ug/L	13	Standard
	Tl	205	13.3	43.3	**0.0095**	0.001	8.6	ug/L	10	Standard
	Pb	206	280.0	3.7	**0.0134**	0.002	17.0	ug/L	264	Standard
	Pb	207	248.0	10.3	**0.0169**	0.005	27.4	ug/L	227	Standard
	Pb	208	1027.7	1.3	**0.0156**	0.001	3.2	ug/L	868	Standard
	U	238	6.7	62.4	**0.0088**	0.001	6.7	ug/L	8	Standard
>	**Bi**	209	504972.6	1.1				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:00:57
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	248.3	7.6	**0.3084**	0.030	9.7	mg/L	53	Standard
K	39	43.3	13.3	**0.0172**	0.013	78.0	mg/L	53	Standard
Ca	43	26.7	10.8	**0.2394**	0.228	95.3	mg/L	28	Standard
Fe	54	66.3	9.6	**-0.0616**	0.006	9.0	mg/L	181	Standard
Fe	57	245.0	13.4	**0.1599**	0.120	74.9	mg/L	257	Standard
> **Sc-1**	45	43602.7	1.2				mg/L	55220	Standard
Cl	35	35767.5	0.9				ug/L	35504	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1663.4	4.1				ug/L	2040	Standard
P	31	8655.8	4.9				ug/L	20435	Standard
S	34	2086.8	3.5				ug/L	2430	Standard
Sr	88	85.0	5.9				ug/L	75	Standard
C	12	3550.4	2.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	17669.1	55.9				mg/L	7	Standard
Dy	164	16.2	33.1				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1548.4	10.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.671	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.318	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:00:57
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.802
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.338
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:00:57
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:01:53
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70967.6	3.2				ug/L	74916	Standard
	Be	9	10.0	50.0	**0.0065**	0.005	81.8	ug/L	10	Standard
	Al	27	1825.1	2.1	**0.0088**	0.001	6.7	ug/L	1822	Standard
	Sc	45	43183.1	1.3				ug/L	55220	Standard
	Ti	47	46.3	10.0	**0.0615**	0.015	24.5	ug/L	34	Standard
	V	51	4031.9	5.4	**0.3136**	0.018	5.7	ug/L	1938	Standard
	Cr	52	16465.3	2.4	**1.1053**	0.012	1.1	ug/L	9522	Standard
	Cr	53	573.3	5.6	**0.2154**	0.045	21.0	ug/L	395	Standard
	Mn	55	1795.8	0.8	**0.1395**	0.003	1.9	ug/L	902	Standard
	Co	59	228.3	2.0	**0.0100**	0.000	2.6	ug/L	262	Standard
	Ni	60	389.7	3.5	**0.0581**	0.009	14.9	ug/L	371	Standard
	Cu	65	286.3	12.8	**0.0934**	0.020	21.5	ug/L	106	Standard
	Zn	66	959.7	10.4	**0.5177**	0.074	14.3	ug/L	398	Standard
>	**Ge**	72	456824.0	1.9				ug/L	535147	Standard
	As	75	-60.5	32.8	**0.0024**	0.017	692.6	ug/L	-43	Standard
	Se	82	14.4	53.7	**0.0273**	0.066	241.8	ug/L	14	Standard
	Se-1	77	56.3	14.3	**0.1501**	0.094	62.3	ug/L	65	Standard
>	**Ga**	71	46.7	22.3				mg/L	97	Standard
	Rb	85	66.7	8.7				ug/L	15	Standard
	Y	89	394406.6	2.8				ug/L	465704	Standard
>	**Rh**	103	28.3	81.5				ug/L	10	Standard
	Mo	98	1379.0	55.6	**0.5084**	0.282	55.5	ug/L	9	Standard
	Ag	107	93.3	14.9	**0.0077**	0.002	24.1	ug/L	82	Standard
	Cd	111	2.7	63.5	**0.0091**	0.001	8.5	mg/L	7	Standard
	Cd	114	13.3	104.0	**0.0114**	0.003	22.5	ug/L	21	Standard
>	**In**	115	555788.7	2.3				ug/L	619035	Standard
	Sn	118	1306.7	4.4	**0.1202**	0.006	5.3	ug/L	508	Standard
	Sb	123	85.1	34.7	**0.0224**	0.007	29.2	ug/L	86	Standard
	Ba	135	84.7	11.8	**0.0216**	0.005	23.1	ug/L	79	Standard
	Ce	140	26.7	43.3				ug/L	68	Standard
>	**Tb**	159	844220.8	1.6				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	157.7	52.2	**0.0247**	0.010	40.0	ug/L	13	Standard
	Tl	205	8.3	69.3	**0.0088**	0.001	8.9	ug/L	10	Standard
	Pb	206	291.7	1.0	**0.0159**	0.001	6.1	ug/L	264	Standard
	Pb	207	254.3	4.8	**0.0186**	0.002	11.0	ug/L	227	Standard
	Pb	208	1047.3	0.4	**0.0170**	0.000	2.4	ug/L	868	Standard
	U	238	3.7	15.7	**0.0084**	0.000	1.0	ug/L	8	Standard
>	**Bi**	209	501630.8	0.9				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:04:10
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	171.7	16.0	**0.2049**	0.040	19.6	mg/L	53	Standard
K	39	36.7	7.9	**0.0036**	0.007	182.4	mg/L	53	Standard
Ca	43	20.0	43.3	**-0.2251**	0.633	281.0	mg/L	28	Standard
Fe	54	62.0	32.2	**-0.0648**	0.017	25.9	mg/L	181	Standard
Fe	57	311.7	15.6	**0.3918**	0.153	39.0	mg/L	257	Standard
> **Sc-1**	45	43183.1	1.3				mg/L	55220	Standard
Cl	35	36534.0	0.8				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1630.1	4.4				ug/L	2040	Standard
P	31	8617.5	1.2				ug/L	20435	Standard
S	34	2181.8	2.4				ug/L	2430	Standard
Sr	88	70.0	7.1				ug/L	75	Standard
C	12	3767.1	7.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	12269.4	57.6				mg/L	7	Standard
Dy	164	9.4	117.2				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	23	Standard
I	127	1266.7	12.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.729	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.364	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:04:10
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.783
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.720
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:04:10
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:05:05
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71520.1	2.1				ug/L	74916	Standard
	Be	9	11.7	65.5	**0.0081**	0.008	97.6	ug/L	10	Standard
	Al	27	1998.5	3.6	**0.0097**	0.001	7.1	ug/L	1822	Standard
	Sc	45	44115.8	2.0				ug/L	55220	Standard
	Ti	47	47.7	12.6	**0.0657**	0.019	28.6	ug/L	34	Standard
	V	51	4000.4	3.0	**0.3117**	0.010	3.2	ug/L	1938	Standard
	Cr	52	16493.6	3.3	**1.1165**	0.023	2.1	ug/L	9522	Standard
	Cr	53	511.7	6.5	**0.1519**	0.031	20.7	ug/L	395	Standard
	Mn	55	1810.4	3.6	**0.1425**	0.010	6.8	ug/L	902	Standard
	Co	59	200.3	4.5	**0.0061**	0.001	16.1	ug/L	262	Standard
	Ni	60	365.0	4.2	**0.0460**	0.012	26.4	ug/L	371	Standard
	Cu	65	258.7	3.1	**0.0791**	0.002	2.4	ug/L	106	Standard
	Zn	66	938.4	6.5	**0.5027**	0.058	11.5	ug/L	398	Standard
>	**Ge**	72	455193.4	2.3				ug/L	535147	Standard
	As	75	-21.6	123.1	**0.0365**	0.023	63.2	ug/L	-43	Standard
	Se	82	21.3	13.5	**0.0879**	0.025	28.1	ug/L	14	Standard
	Se-1	77	54.0	21.0	**0.1214**	0.131	107.7	ug/L	65	Standard
>	**Ga**	71	41.7	36.7				mg/L	97	Standard
	Rb	85	68.3	29.6				ug/L	15	Standard
	Y	89	395254.2	2.3				ug/L	465704	Standard
>	**Rh**	103	31.7	9.1				ug/L	10	Standard
	Mo	98	1044.1	52.0	**0.3862**	0.198	51.3	ug/L	9	Standard
	Ag	107	86.3	9.3	**0.0066**	0.001	15.4	ug/L	82	Standard
	Cd	111	1.5	101.2	**0.0086**	0.001	8.3	mg/L	7	Standard
	Cd	114	22.1	38.8	**0.0131**	0.002	12.5	ug/L	21	Standard
>	**In**	115	556687.6	1.3				ug/L	619035	Standard
	Sn	118	1351.7	12.8	**0.1278**	0.032	25.1	ug/L	508	Standard
	Sb	123	82.0	27.7	**0.0217**	0.005	23.0	ug/L	86	Standard
	Ba	135	86.0	10.1	**0.0222**	0.005	20.9	ug/L	79	Standard
	Ce	140	31.7	59.8				ug/L	68	Standard
>	**Tb**	159	840648.0	0.2				ug/L	986982	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	128.7	56.4	**0.0213**	0.009	41.0	ug/L	13	Standard
	Tl	205	13.3	43.3	**0.0095**	0.001	8.7	ug/L	10	Standard
	Pb	206	282.3	1.0	**0.0143**	0.001	9.6	ug/L	264	Standard
	Pb	207	227.7	8.2	**0.0133**	0.005	34.0	ug/L	227	Standard
	Pb	208	1009.3	4.5	**0.0151**	0.003	19.8	ug/L	868	Standard
	U	238	9.0	29.4	**0.0092**	0.000	4.0	ug/L	8	Standard
>	**Bi**	209	500253.7	1.7				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:07:22
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	211.7	3.6	**0.2541**	0.005	2.0	mg/L	53	Standard
K	39	25.0	40.0	**-0.0231**	0.020	87.4	mg/L	53	Standard
Ca	43	18.3	15.7	**-0.3774**	0.183	48.6	mg/L	28	Standard
Fe	54	62.0	25.1	**-0.0660**	0.012	18.6	mg/L	181	Standard
Fe	57	230.0	10.0	**0.0993**	0.068	68.3	mg/L	257	Standard
Sc-1	45	44115.8	2.0				mg/L	55220	Standard
Cl	35	36965.0	0.6				ug/L	35504	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1676.8	11.7				ug/L	2040	Standard
P	31	8922.6	3.5				ug/L	20435	Standard
S	34	2015.1	2.7				ug/L	2430	Standard
Sr	88	75.0	24.0				ug/L	75	Standard
C	12	3437.1	3.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	8963.2	57.5				mg/L	7	Standard
Dy	164	6.0	93.6				mg/L	9	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1223.4	8.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.467	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.060	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:07:22
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.928
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:07:22
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:08:17
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79091.8	20.9				ug/L	74916	Standard
	Be	9	11.7	89.2	**0.0084**	0.011	129.8	ug/L	10	Standard
	Al	27	2535.3	65.2	**0.0130**	0.012	88.5	ug/L	1822	Standard
	Sc	45	46831.6	14.3				ug/L	55220	Standard
	Ti	47	69.7	56.4	**0.1207**	0.113	93.8	ug/L	34	Standard
	V	51	2046.5	53.7	**0.0549**	0.148	270.3	ug/L	1938	Standard
	Cr	52	8324.7	51.7	**0.0115**	0.602	5252.2	ug/L	9522	Standard
	Cr	53	435.0	32.0	**0.0505**	0.173	343.3	ug/L	395	Standard
	Mn	55	1487.1	61.3	**0.0934**	0.137	146.6	ug/L	902	Standard
	Co	59	228.0	22.1	**0.0085**	0.010	121.0	ug/L	262	Standard
	Ni	60	318.3	14.8	**0.0117**	0.033	284.7	ug/L	371	Standard
	Cu	65	185.0	23.0	**0.0347**	0.028	81.3	ug/L	106	Standard
	Zn	66	569.7	56.9	**0.1528**	0.310	203.0	ug/L	398	Standard
>	**Ge**	72	489383.6	10.3				ug/L	535147	Standard
	As	75	12.9	27.7	**0.0660**	0.004	5.6	ug/L	-43	Standard
	Se	82	28.6	46.2	**0.1408**	0.122	86.4	ug/L	14	Standard
	Se-1	77	40.0	7.5	**-0.0938**	0.040	42.9	ug/L	65	Standard
>	**Ga**	71	38.3	27.2				mg/L	97	Standard
	Rb	85	101.7	56.8				ug/L	15	Standard
	Y	89	433042.0	13.5				ug/L	465704	Standard
>	**Rh**	103	33.3	56.8				ug/L	10	Standard
	Mo	98	897.2	72.7	**0.3249**	0.253	77.9	ug/L	9	Standard
	Ag	107	121.0	8.1	**0.0105**	0.004	35.8	ug/L	82	Standard
	Cd	111	8.3	145.2	**0.0119**	0.006	50.5	mg/L	7	Standard
	Cd	114	50.3	126.0	**0.0188**	0.013	70.7	ug/L	21	Standard
>	**In**	115	612202.9	13.4				ug/L	619035	Standard
	Sn	118	860.0	54.7	**0.0372**	0.087	234.5	ug/L	508	Standard
	Sb	123	103.8	56.3	**0.0253**	0.013	52.6	ug/L	86	Standard
	Ba	135	77.7	64.8	**0.0170**	0.027	158.0	ug/L	79	Standard
	Ce	140	131.7	91.5				ug/L	68	Standard
>	**Tb**	159	976671.3	15.8				ug/L	986982	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	125.3	82.5	**0.0201**	0.013	66.3	ug/L	13	Standard
	Tl	205	36.7	90.8	**0.0126**	0.005	40.2	ug/L	10	Standard
	Pb	206	330.0	2.8	**0.0154**	0.009	56.4	ug/L	264	Standard
	Pb	207	286.0	5.8	**0.0176**	0.007	41.7	ug/L	227	Standard
	Pb	208	1154.7	6.9	**0.0148**	0.007	44.9	ug/L	868	Standard
	U	238	30.3	130.6	**0.0122**	0.006	48.8	ug/L	8	Standard
>	**Bi**	209	583026.9	16.2				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:10:34
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	126.7	59.8	**0.1391**	0.115	82.4	mg/L	53	Standard
K	39	33.3	56.8	**-0.0074**	0.041	553.5	mg/L	53	Standard
Ca	43	25.0	52.9	**0.0888**	1.136	1278.0	mg/L	28	Standard
Fe	54	85.7	21.5	**-0.0476**	0.024	49.4	mg/L	181	Standard
Fe	57	338.3	4.3	**0.4110**	0.186	45.2	mg/L	257	Standard
> **Sc-1**	45	46831.6	14.3				mg/L	55220	Standard
Cl	35	23783.5	26.5				ug/L	35504	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	970.0	32.6				ug/L	2040	Standard
P	31	9866.7	27.4				ug/L	20435	Standard
S	34	1328.4	29.5				ug/L	2430	Standard
Sr	88	88.3	25.5				ug/L	75	Standard
C	12	1143.4	80.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6285.3	85.7				mg/L	7	Standard
Dy	164	19.4	2.9				mg/L	9	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	1403.4	57.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.573	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.448	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:10:34
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.896	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.766	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:10:34
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:11:29
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68032.5	2.4				ug/L	74916	Standard
	Be	9	15.0	33.3	**0.0121**	0.005	44.8	ug/L	10	Standard
	Al	27	1520.1	11.9	**0.0073**	0.001	12.3	ug/L	1822	Standard
	Sc	45	44854.6	1.7				ug/L	55220	Standard
	Ti	47	28.3	13.4	**0.0111**	0.011	99.2	ug/L	34	Standard
	V	51	1373.4	4.7	**-0.0209**	0.006	27.4	ug/L	1938	Standard
	Cr	52	6353.7	0.6	**-0.2036**	0.017	8.4	ug/L	9522	Standard
	Cr	53	455.0	13.2	**0.0946**	0.057	59.7	ug/L	395	Standard
	Mn	55	597.0	2.1	**-0.0230**	0.002	9.0	ug/L	902	Standard
	Co	59	202.7	3.0	**0.0066**	0.001	9.2	ug/L	262	Standard
	Ni	60	304.3	5.9	**0.0151**	0.011	70.9	ug/L	371	Standard
	Cu	65	150.7	0.8	**0.0220**	0.001	3.9	ug/L	106	Standard
	Zn	66	281.0	12.5	**-0.0907**	0.034	37.1	ug/L	398	Standard
>	**Ge**	72	452431.5	1.5				ug/L	535147	Standard
	As	75	-52.0	87.3	**0.0089**	0.041	462.8	ug/L	-43	Standard
	Se	82	17.7	69.0	**0.0566**	0.104	184.5	ug/L	14	Standard
	Se-1	77	45.3	9.9	**0.0146**	0.068	469.5	ug/L	65	Standard
>	**Ga**	71	31.7	9.1				mg/L	97	Standard
	Rb	85	43.3	56.9				ug/L	15	Standard
	Y	89	399241.3	2.0				ug/L	465704	Standard
>	**Rh**	103	28.3	20.4				ug/L	10	Standard
	Mo	98	105.1	18.7	**0.0502**	0.008	15.0	ug/L	9	Standard
	Ag	107	88.0	11.0	**0.0070**	0.001	18.6	ug/L	82	Standard
	Cd	111	2.8	95.0	**0.0092**	0.001	13.5	mg/L	7	Standard
	Cd	114	12.9	40.7	**0.0114**	0.001	8.9	ug/L	21	Standard
>	**In**	115	552377.7	1.3				ug/L	619035	Standard
	Sn	118	451.7	11.2	**-0.0256**	0.010	37.7	ug/L	508	Standard
	Sb	123	75.5	18.8	**0.0204**	0.003	15.3	ug/L	86	Standard
	Ba	135	23.0	26.4	**-0.0084**	0.003	34.2	ug/L	79	Standard
	Ce	140	28.3	27.0				ug/L	68	Standard
>	**Tb**	159	829888.8	1.2				ug/L	986982	Standard
	Ho	165	6.7	173.2				ug/L	10	Standard
	Tl	203	11.3	5.1	**0.0074**	0.000	1.0	ug/L	13	Standard
	Tl	205	6.7	43.3	**0.0086**	0.000	4.8	ug/L	10	Standard
	Pb	206	245.0	4.9	**0.0084**	0.002	26.2	ug/L	264	Standard
	Pb	207	199.0	4.6	**0.0083**	0.002	29.5	ug/L	227	Standard
	Pb	208	835.0	4.7	**0.0068**	0.002	35.3	ug/L	868	Standard
	U	238	6.3	24.1	**0.0088**	0.000	2.4	ug/L	8	Standard
>	**Bi**	209	490010.4	1.3				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:13:46
Page 1

Approved: July 01, 2016

Na	23	3.3	173.2	**23.0691**	39.948	173.2	mg/L	2	Standard
Mg	24	63.3	39.7	**0.0506**	0.034	67.3	mg/L	53	Standard
K	39	40.0	33.1	**0.0078**	0.029	370.2	mg/L	53	Standard
Ca	43	28.3	50.9	**0.2915**	0.970	332.9	mg/L	28	Standard
Fe	54	92.7	32.9	**-0.0409**	0.026	63.3	mg/L	181	Standard
Fe	57	283.3	28.6	**0.2638**	0.276	104.6	mg/L	257	Standard
Sc-1	45	44854.6	1.7				mg/L	55220	Standard
Cl	35	38032.3	1.6				ug/L	35504	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1593.4	9.4				ug/L	2040	Standard
P	31	12683.6	1.9				ug/L	20435	Standard
S	34	2303.5	2.6				ug/L	2430	Standard
Sr	88	75.0	40.6				ug/L	75	Standard
C	12	130.0	23.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	7	Standard
Dy	164	9.5	100.0				mg/L	9	Standard
Ho-1	165	6.7	173.2				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	7281.8	4.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		90.811	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		84.543	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:13:46
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.232
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.573
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:13:46
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:14:41
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68866.2	2.2				ug/L	74916	Standard
	Be	9	16.7	69.3	**0.0137**	0.012	89.8	ug/L	10	Standard
	Al	27	1236.7	3.0	**0.0054**	0.000	5.6	ug/L	1822	Standard
	Sc	45	44744.3	1.5				ug/L	55220	Standard
	Ti	47	30.0	20.3	**0.0150**	0.018	118.2	ug/L	34	Standard
	V	51	1428.1	4.2	**-0.0156**	0.010	66.8	ug/L	1938	Standard
	Cr	52	6350.3	0.8	**-0.2124**	0.008	3.9	ug/L	9522	Standard
	Cr	53	480.0	13.8	**0.1161**	0.062	53.6	ug/L	395	Standard
	Mn	55	557.7	5.1	**-0.0292**	0.003	9.3	ug/L	902	Standard
	Co	59	199.3	4.1	**0.0059**	0.002	26.9	ug/L	262	Standard
	Ni	60	314.0	9.2	**0.0186**	0.016	87.6	ug/L	371	Standard
	Cu	65	165.7	14.8	**0.0292**	0.013	43.5	ug/L	106	Standard
	Zn	66	281.7	4.8	**-0.0928**	0.011	11.9	ug/L	398	Standard
>	**Ge**	72	456950.4	1.7				ug/L	535147	Standard
	As	75	-61.8	37.2	**0.0010**	0.021	1957.9	ug/L	-43	Standard
	Se	82	14.6	27.6	**0.0286**	0.033	115.8	ug/L	14	Standard
	Se-1	77	52.0	10.7	**0.0956**	0.084	88.0	ug/L	65	Standard
>	**Ga**	71	45.0	33.3				mg/L	97	Standard
	Rb	85	35.0	37.8				ug/L	15	Standard
	Y	89	396910.4	1.2				ug/L	465704	Standard
>	**Rh**	103	31.7	32.9				ug/L	10	Standard
	Mo	98	81.1	8.9	**0.0413**	0.003	7.1	ug/L	9	Standard
	Ag	107	76.0	10.8	**0.0051**	0.001	22.4	ug/L	82	Standard
	Cd	111	3.5	58.0	**0.0095**	0.001	10.0	mg/L	7	Standard
	Cd	114	10.4	54.7	**0.0109**	0.001	10.0	ug/L	21	Standard
>	**In**	115	555953.8	1.2				ug/L	619035	Standard
	Sn	118	483.3	6.3	**-0.0208**	0.004	20.6	ug/L	508	Standard
	Sb	123	61.7	27.5	**0.0174**	0.004	21.0	ug/L	86	Standard
	Ba	135	17.7	31.2	**-0.0110**	0.003	25.3	ug/L	79	Standard
	Ce	140	28.3	66.8				ug/L	68	Standard
>	**Tb**	159	835275.0	2.0				ug/L	986982	Standard
	Ho	165	3.3	173.2				ug/L	10	Standard
	Tl	203	9.3	27.0	**0.0071**	0.000	4.1	ug/L	13	Standard
	Tl	205	10.0	50.0	**0.0091**	0.001	7.6	ug/L	10	Standard
	Pb	206	244.3	4.5	**0.0079**	0.002	19.6	ug/L	264	Standard
	Pb	207	203.3	6.9	**0.0089**	0.003	36.3	ug/L	227	Standard
	Pb	208	837.0	0.4	**0.0066**	0.000	5.6	ug/L	868	Standard
	U	238	3.7	41.7	**0.0084**	0.000	2.6	ug/L	8	Standard
>	**Bi**	209	493679.8	1.1				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:16:58
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	39.6	**0.0391**	0.028	71.6	mg/L	53	Standard
K	39	40.0	21.7	**0.0077**	0.018	229.4	mg/L	53	Standard
Ca	43	25.0	52.9	**0.0694**	0.922	1328.8	mg/L	28	Standard
Fe	54	86.2	14.3	**-0.0462**	0.011	23.1	mg/L	181	Standard
Fe	57	240.0	17.8	**0.1228**	0.148	120.6	mg/L	257	Standard
Sc-1	45	44744.3	1.5				mg/L	55220	Standard
Cl	35	38930.6	1.7				ug/L	35504	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	1423.4	8.1				ug/L	2040	Standard
P	31	13542.8	9.7				ug/L	20435	Standard
S	34	2230.2	9.6				ug/L	2430	Standard
Sr	88	63.3	9.1				ug/L	75	Standard
C	12	106.7	30.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.9	203.0				mg/L	9	Standard
Ho-1	165	3.3	173.2				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	6659.8	6.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.924	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.388	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:16:58
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.810
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:17:53
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70512.1	1.9				ug/L	74916	Standard
	Be	9	13.3	43.3	**0.0099**	0.006	60.9	ug/L	10	Standard
	Al	27	1230.1	5.1	**0.0052**	0.000	6.2	ug/L	1822	Standard
	Sc	45	44657.4	2.0				ug/L	55220	Standard
	Ti	47	30.3	8.3	**0.0141**	0.007	48.4	ug/L	34	Standard
	V	51	1454.2	3.5	**-0.0161**	0.007	40.6	ug/L	1938	Standard
	Cr	52	6462.0	1.0	**-0.2150**	0.011	5.0	ug/L	9522	Standard
	Cr	53	418.3	0.7	**0.0430**	0.002	3.9	ug/L	395	Standard
	Mn	55	584.3	4.9	**-0.0272**	0.004	13.4	ug/L	902	Standard
	Co	59	213.0	12.1	**0.0072**	0.004	49.4	ug/L	262	Standard
	Ni	60	312.0	8.6	**0.0141**	0.013	94.7	ug/L	371	Standard
	Cu	65	165.7	5.6	**0.0274**	0.005	16.7	ug/L	106	Standard
	Zn	66	335.7	3.3	**-0.0503**	0.010	20.4	ug/L	398	Standard
>	**Ge**	72	466403.1	0.3				ug/L	535147	Standard
	As	75	-67.3	42.7	**-0.0024**	0.024	1031.7	ug/L	-43	Standard
	Se	82	8.0	106.3	**-0.0291**	0.072	247.4	ug/L	14	Standard
	Se-1	77	52.3	11.7	**0.0854**	0.080	93.8	ug/L	65	Standard
>	**Ga**	71	36.7	15.7				mg/L	97	Standard
	Rb	85	40.0	45.1				ug/L	15	Standard
	Y	89	406679.9	1.7				ug/L	465704	Standard
>	**Rh**	103	23.3	32.7				ug/L	10	Standard
	Mo	98	61.6	19.4	**0.0342**	0.004	12.7	ug/L	9	Standard
	Ag	107	80.7	11.5	**0.0057**	0.002	26.5	ug/L	82	Standard
	Cd	111	1.5	73.6	**0.0086**	0.001	6.0	mg/L	7	Standard
	Cd	114	20.3	46.0	**0.0128**	0.002	14.3	ug/L	21	Standard
>	**In**	115	560994.2	1.3				ug/L	619035	Standard
	Sn	118	548.3	9.6	**-0.0104**	0.009	90.2	ug/L	508	Standard
	Sb	123	47.7	27.8	**0.0144**	0.003	19.7	ug/L	86	Standard
	Ba	135	21.3	18.9	**-0.0093**	0.002	22.4	ug/L	79	Standard
	Ce	140	30.0	28.9				ug/L	68	Standard
>	**Tb**	159	855592.5	2.2				ug/L	986982	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	5.7	97.2	**0.0067**	0.001	9.7	ug/L	13	Standard
	Tl	205	5.0	100.0	**0.0084**	0.001	8.3	ug/L	10	Standard
	Pb	206	239.0	2.2	**0.0064**	0.001	19.4	ug/L	264	Standard
	Pb	207	213.7	6.3	**0.0105**	0.003	29.4	ug/L	227	Standard
	Pb	208	840.3	4.1	**0.0062**	0.002	26.2	ug/L	868	Standard
	U	238	2.0	86.6	**0.0082**	0.000	3.1	ug/L	8	Standard
>	**Bi**	209	499713.5	0.8				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:20:10
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**11.8358**	20.492	173.1	mg/L	2	Standard
Mg	24	53.3	51.6	**0.0373**	0.037	99.4	mg/L	53	Standard
K	39	40.0	45.1	**0.0081**	0.038	469.6	mg/L	53	Standard
Ca	43	18.3	78.7	**-0.3787**	1.044	275.8	mg/L	28	Standard
Fe	54	101.0	12.3	**-0.0336**	0.011	33.4	mg/L	181	Standard
Fe	57	258.3	8.1	**0.1828**	0.058	31.5	mg/L	257	Standard
Sc-1	45	44657.4	2.0				mg/L	55220	Standard
Cl	35	39868.4	0.5				ug/L	35504	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1683.4	14.1				ug/L	2040	Standard
P	31	12468.5	0.6				ug/L	20435	Standard
S	34	2168.5	4.3				ug/L	2430	Standard
Sr	88	93.3	15.5				ug/L	75	Standard
C	12	116.7	60.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	-0.3	86.6				mg/L	9	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	5404.3	1.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		94.121	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		87.154	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:20:10
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.624
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.366
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:20:10
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:21:05
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69532.6	2.0				ug/L	74916	Standard
	Be	9	11.7	107.9	**0.0085**	0.013	155.7	ug/L	10	Standard
	Al	27	1261.7	3.6	**0.0055**	0.000	2.4	ug/L	1822	Standard
	Sc	45	44276.3	1.0				ug/L	55220	Standard
	Ti	47	26.3	4.4	**0.0035**	0.004	105.2	ug/L	34	Standard
	V	51	1388.4	2.7	**-0.0233**	0.006	24.3	ug/L	1938	Standard
	Cr	52	6486.7	0.7	**-0.2072**	0.012	5.7	ug/L	9522	Standard
	Cr	53	405.0	7.7	**0.0316**	0.032	101.9	ug/L	395	Standard
	Mn	55	617.7	1.1	**-0.0223**	0.002	7.0	ug/L	902	Standard
	Co	59	191.7	5.3	**0.0043**	0.001	28.3	ug/L	262	Standard
	Ni	60	323.7	12.1	**0.0210**	0.020	95.1	ug/L	371	Standard
	Cu	65	161.0	6.1	**0.0255**	0.006	22.4	ug/L	106	Standard
	Zn	66	333.3	4.6	**-0.0507**	0.012	23.5	ug/L	398	Standard
>	**Ge**	72	463825.0	0.7				ug/L	535147	Standard
	As	75	-56.2	16.5	**0.0068**	0.008	122.5	ug/L	-43	Standard
	Se	82	14.4	38.9	**0.0256**	0.047	183.0	ug/L	14	Standard
	Se-1	77	48.3	14.7	**0.0375**	0.088	235.9	ug/L	65	Standard
>	**Ga**	71	38.3	15.1				mg/L	97	Standard
	Rb	85	58.3	40.5				ug/L	15	Standard
	Y	89	397444.4	1.5				ug/L	465704	Standard
>	**Rh**	103	26.7	10.8				ug/L	10	Standard
	Mo	98	51.9	31.6	**0.0306**	0.006	18.6	ug/L	9	Standard
	Ag	107	86.0	9.9	**0.0065**	0.001	19.9	ug/L	82	Standard
	Cd	111	4.9	70.0	**0.0101**	0.002	15.3	mg/L	7	Standard
	Cd	114	3.6	328.3	**0.0096**	0.002	23.6	ug/L	21	Standard
>	**In**	115	562767.5	0.4				ug/L	619035	Standard
	Sn	118	671.7	10.1	**0.0101**	0.011	112.0	ug/L	508	Standard
	Sb	123	46.8	27.2	**0.0141**	0.003	18.5	ug/L	86	Standard
	Ba	135	23.7	6.5	**-0.0082**	0.001	9.0	ug/L	79	Standard
	Ce	140	21.7	35.3				ug/L	68	Standard
>	**Tb**	159	855180.1	0.4				ug/L	986982	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	4.3	53.3	**0.0065**	0.000	4.2	ug/L	13	Standard
	Tl	205	5.0	100.0	**0.0084**	0.001	8.3	ug/L	10	Standard
	Pb	206	232.0	5.4	**0.0050**	0.002	45.1	ug/L	264	Standard
	Pb	207	201.0	15.5	**0.0079**	0.006	81.5	ug/L	227	Standard
	Pb	208	859.0	5.1	**0.0072**	0.002	32.4	ug/L	868	Standard
	U	238	1.3	43.3	**0.0081**	0.000	1.0	ug/L	8	Standard
>	**Bi**	209	500150.3	0.1				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:23:22
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	11.1	**0.0266**	0.006	23.2	mg/L	53	Standard
K	39	30.0	16.7	**-0.0125**	0.010	81.0	mg/L	53	Standard
Ca	43	8.3	91.7	**-1.0898**	0.535	49.1	mg/L	28	Standard
Fe	54	107.5	47.5	**-0.0271**	0.044	162.7	mg/L	181	Standard
Fe	57	278.3	8.5	**0.2562**	0.070	27.4	mg/L	257	Standard
> **Sc-1**	45	44276.3	1.0				mg/L	55220	Standard
Cl	35	39463.3	1.3				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1523.4	10.0				ug/L	2040	Standard
P	31	12618.6	4.2				ug/L	20435	Standard
S	34	2155.2	2.4				ug/L	2430	Standard
Sr	88	71.7	16.1				ug/L	75	Standard
C	12	113.3	5.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	9.4	114.5				mg/L	9	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	4117.2	7.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.672	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:23:22
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.910
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.447
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:23:22
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:24:18
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70078.4	0.8				ug/L	74916	Standard
	Be	9	13.3	21.7	**0.0099**	0.003	28.6	ug/L	10	Standard
	Al	27	1280.1	5.4	**0.0056**	0.000	7.4	ug/L	1822	Standard
	Sc	45	43723.0	1.0				ug/L	55220	Standard
	Ti	47	22.0	27.3	**-0.0089**	0.017	187.8	ug/L	34	Standard
	V	51	1515.7	2.4	**-0.0081**	0.005	58.8	ug/L	1938	Standard
	Cr	52	6681.5	1.2	**-0.1853**	0.011	5.9	ug/L	9522	Standard
	Cr	53	398.3	6.2	**0.0232**	0.024	105.4	ug/L	395	Standard
	Mn	55	625.7	3.4	**-0.0215**	0.002	11.4	ug/L	902	Standard
	Co	59	201.3	5.6	**0.0056**	0.002	30.5	ug/L	262	Standard
	Ni	60	326.3	2.3	**0.0218**	0.004	17.5	ug/L	371	Standard
	Cu	65	154.3	1.5	**0.0217**	0.001	6.3	ug/L	106	Standard
	Zn	66	362.7	5.5	**-0.0257**	0.019	73.1	ug/L	398	Standard
>	**Ge**	72	465484.6	0.4				ug/L	535147	Standard
	As	75	-39.2	24.9	**0.0216**	0.008	39.2	ug/L	-43	Standard
	Se	82	20.1	13.2	**0.0734**	0.022	30.6	ug/L	14	Standard
	Se-1	77	53.7	1.1	**0.1036**	0.010	10.0	ug/L	65	Standard
>	**Ga**	71	48.3	43.1				mg/L	97	Standard
	Rb	85	31.7	32.9				ug/L	15	Standard
	Y	89	401219.7	0.7				ug/L	465704	Standard
>	**Rh**	103	23.3	24.7				ug/L	10	Standard
	Mo	98	48.8	19.7	**0.0296**	0.003	11.4	ug/L	9	Standard
	Ag	107	74.7	8.6	**0.0048**	0.001	19.9	ug/L	82	Standard
	Cd	111	0.9	187.5	**0.0083**	0.001	9.4	mg/L	7	Standard
	Cd	114	23.8	79.8	**0.0134**	0.004	26.8	ug/L	21	Standard
>	**In**	115	561226.5	0.2				ug/L	619035	Standard
	Sn	118	665.0	10.1	**0.0093**	0.011	121.3	ug/L	508	Standard
	Sb	123	39.5	34.5	**0.0126**	0.003	22.4	ug/L	86	Standard
	Ba	135	21.0	21.8	**-0.0095**	0.002	23.5	ug/L	79	Standard
	Ce	140	16.7	34.6				ug/L	68	Standard
>	**Tb**	159	856155.5	0.8				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	3.7	15.7	**0.0064**	0.000	1.1	ug/L	13	Standard
	Tl	205	6.7	43.3	**0.0086**	0.000	4.6	ug/L	10	Standard
	Pb	206	233.3	6.1	**0.0051**	0.003	54.7	ug/L	264	Standard
	Pb	207	213.0	0.5	**0.0101**	0.000	2.5	ug/L	227	Standard
	Pb	208	875.7	2.1	**0.0079**	0.001	9.3	ug/L	868	Standard
	U	238	1.7	34.6	**0.0081**	0.000	1.0	ug/L	8	Standard
>	**Bi**	209	502169.3	0.6				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:26:34
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	48.3	21.5	**0.0320**	0.015	46.4	mg/L	53	Standard
K	39	40.0	33.1	**0.0099**	0.029	291.7	mg/L	53	Standard
Ca	43	8.3	69.3	**-1.0765**	0.420	39.0	mg/L	28	Standard
Fe	54	107.5	10.9	**-0.0263**	0.009	35.6	mg/L	181	Standard
Fe	57	255.0	17.0	**0.1894**	0.137	72.3	mg/L	257	Standard
Sc-1	45	43723.0	1.0				mg/L	55220	Standard
Cl	35	39852.4	2.0				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1556.7	12.4				ug/L	2040	Standard
P	31	12406.7	1.2				ug/L	20435	Standard
S	34	2413.5	4.0				ug/L	2430	Standard
Sr	88	101.7	15.8				ug/L	75	Standard
C	12	100.0	55.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	5.7	195.1				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	3485.4	2.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.542	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.983	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:26:34
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.662
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.820
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:26:34
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:27:30
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70600.8	1.5				ug/L	74916	Standard
	Be	9	20.0	50.0	**0.0165**	0.010	61.3	ug/L	10	Standard
	Al	27	1301.7	8.3	**0.0056**	0.001	9.6	ug/L	1822	Standard
	Sc	45	43522.4	1.4				ug/L	55220	Standard
	Ti	47	21.0	16.5	**-0.0110**	0.010	89.8	ug/L	34	Standard
	V	51	1508.1	3.3	**-0.0070**	0.007	95.9	ug/L	1938	Standard
	Cr	52	6601.4	1.0	**-0.1862**	0.010	5.4	ug/L	9522	Standard
	Cr	53	400.0	3.3	**0.0296**	0.015	49.5	ug/L	395	Standard
	Mn	55	637.0	2.8	**-0.0190**	0.002	13.1	ug/L	902	Standard
	Co	59	213.0	3.3	**0.0076**	0.001	13.6	ug/L	262	Standard
	Ni	60	333.3	8.7	**0.0272**	0.015	54.0	ug/L	371	Standard
	Cu	65	145.7	8.0	**0.0180**	0.006	32.9	ug/L	106	Standard
	Zn	66	331.0	7.1	**-0.0506**	0.021	41.5	ug/L	398	Standard
>	**Ge**	72	460390.3	0.2				ug/L	535147	Standard
	As	75	-39.3	50.2	**0.0211**	0.017	80.5	ug/L	-43	Standard
	Se	82	18.5	30.7	**0.0620**	0.049	79.1	ug/L	14	Standard
	Se-1	77	51.3	11.4	**0.0811**	0.077	94.7	ug/L	65	Standard
>	**Ga**	71	43.3	6.7				mg/L	97	Standard
	Rb	85	43.3	35.3				ug/L	15	Standard
	Y	89	401358.3	0.8				ug/L	465704	Standard
>	**Rh**	103	31.7	63.8				ug/L	10	Standard
	Mo	98	50.7	21.3	**0.0304**	0.004	13.2	ug/L	9	Standard
	Ag	107	75.7	9.7	**0.0051**	0.001	19.9	ug/L	82	Standard
	Cd	111	3.3	17.8	**0.0094**	0.000	3.0	mg/L	7	Standard
	Cd	114	20.2	20.8	**0.0128**	0.001	6.2	ug/L	21	Standard
>	**In**	115	557303.8	1.0				ug/L	619035	Standard
	Sn	118	676.7	8.9	**0.0121**	0.010	86.8	ug/L	508	Standard
	Sb	123	37.0	29.8	**0.0122**	0.002	19.2	ug/L	86	Standard
	Ba	135	17.7	17.3	**-0.0110**	0.002	14.1	ug/L	79	Standard
	Ce	140	11.7	107.9				ug/L	68	Standard
>	**Tb**	159	848865.5	0.9				ug/L	986982	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	2.3	49.5	**0.0063**	0.000	2.2	ug/L	13	Standard
	Tl	205	6.7	114.6	**0.0086**	0.001	12.4	ug/L	10	Standard
	Pb	206	256.3	4.3	**0.0096**	0.001	15.5	ug/L	264	Standard
	Pb	207	197.3	10.3	**0.0072**	0.005	64.2	ug/L	227	Standard
	Pb	208	847.7	4.4	**0.0067**	0.002	30.4	ug/L	868	Standard
	U	238	2.0	100.0	**0.0082**	0.000	3.5	ug/L	8	Standard
>	**Bi**	209	499010.5	1.3				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:29:47
Page 1

Approved: July 01, 2016

Na	23	1.7	173.2	**11.7084**	20.271	173.1	mg/L	2	Standard
Mg	24	63.3	19.9	**0.0529**	0.016	30.8	mg/L	53	Standard
K	39	20.0	66.1	**-0.0329**	0.029	87.3	mg/L	53	Standard
Ca	43	28.3	56.7	**0.3528**	1.137	322.2	mg/L	28	Standard
Fe	54	82.7	9.2	**-0.0473**	0.006	11.9	mg/L	181	Standard
Fe	57	270.0	16.7	**0.2433**	0.139	57.0	mg/L	257	Standard
> **Sc-1**	45	43522.4	1.4				mg/L	55220	Standard
Cl	35	39770.1	1.0				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1510.1	10.0				ug/L	2040	Standard
P	31	12520.2	3.3				ug/L	20435	Standard
S	34	2190.2	0.6				ug/L	2430	Standard
Sr	88	75.0	46.7				ug/L	75	Standard
C	12	93.3	44.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.9	202.3				mg/L	9	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	3380.4	5.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.239	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.031	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:29:47
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.028
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.236
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:29:47
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:30:42
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69370.1	1.4				ug/L	74916	Standard
	Be	9	21.7	58.1	**0.0186**	0.013	70.4	ug/L	10	Standard
	Al	27	1571.8	27.3	**0.0074**	0.003	34.1	ug/L	1822	Standard
	Sc	45	44480.2	0.8				ug/L	55220	Standard
	Ti	47	21.7	19.2	**-0.0093**	0.012	124.9	ug/L	34	Standard
	V	51	1499.6	0.8	**-0.0084**	0.002	24.0	ug/L	1938	Standard
	Cr	52	6590.4	1.1	**-0.1892**	0.009	4.5	ug/L	9522	Standard
	Cr	53	373.3	4.7	**0.0010**	0.019	1762.9	ug/L	395	Standard
	Mn	55	653.0	18.5	**-0.0170**	0.016	94.4	ug/L	902	Standard
	Co	59	211.3	7.9	**0.0073**	0.002	31.5	ug/L	262	Standard
	Ni	60	313.3	3.1	**0.0166**	0.005	29.3	ug/L	371	Standard
	Cu	65	154.0	8.0	**0.0222**	0.006	28.1	ug/L	106	Standard
	Zn	66	375.0	3.1	**-0.0118**	0.011	92.9	ug/L	398	Standard
>	**Ge**	72	461224.5	0.2				ug/L	535147	Standard
	As	75	-46.0	23.6	**0.0154**	0.009	60.6	ug/L	-43	Standard
	Se	82	16.5	5.6	**0.0443**	0.008	17.8	ug/L	14	Standard
	Se-1	77	46.7	16.2	**0.0196**	0.097	493.7	ug/L	65	Standard
>	**Ga**	71	41.7	30.2				mg/L	97	Standard
	Rb	85	48.3	93.9				ug/L	15	Standard
	Y	89	394283.2	1.4				ug/L	465704	Standard
>	**Rh**	103	41.7	56.7				ug/L	10	Standard
	Mo	98	53.6	27.3	**0.0317**	0.005	16.9	ug/L	9	Standard
	Ag	107	102.3	32.4	**0.0091**	0.005	54.6	ug/L	82	Standard
	Cd	111	13.2	154.6	**0.0140**	0.009	67.7	mg/L	7	Standard
	Cd	114	40.7	92.9	**0.0168**	0.007	43.7	ug/L	21	Standard
>	**In**	115	552172.5	0.5				ug/L	619035	Standard
	Sn	118	720.0	11.5	**0.0206**	0.014	67.3	ug/L	508	Standard
	Sb	123	47.0	26.3	**0.0144**	0.003	18.5	ug/L	86	Standard
	Ba	135	50.7	104.9	**0.0053**	0.026	496.0	ug/L	79	Standard
	Ce	140	40.0	86.6				ug/L	68	Standard
>	**Tb**	159	844324.6	0.6				ug/L	986982	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	37.7	143.5	**0.0105**	0.006	61.4	ug/L	13	Standard
	Tl	205	6.7	43.3	**0.0086**	0.000	4.7	ug/L	10	Standard
	Pb	206	266.7	10.1	**0.0118**	0.005	42.1	ug/L	264	Standard
	Pb	207	223.7	12.9	**0.0128**	0.006	46.1	ug/L	227	Standard
	Pb	208	861.0	3.8	**0.0076**	0.002	22.5	ug/L	868	Standard
	U	238	6.7	96.4	**0.0089**	0.001	10.5	ug/L	8	Standard
>	**Bi**	209	496597.9	0.1				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:32:59
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	70.0	32.7	**0.0603**	0.032	52.9	mg/L	53	Standard
K	39	43.3	6.7	**0.0153**	0.007	43.0	mg/L	53	Standard
Ca	43	20.0	66.1	**-0.2660**	0.936	352.0	mg/L	28	Standard
Fe	54	87.5	28.3	**-0.0447**	0.021	47.5	mg/L	181	Standard
Fe	57	265.0	11.5	**0.2083**	0.096	45.9	mg/L	257	Standard
> **Sc-1**	45	44480.2	0.8				mg/L	55220	Standard
Cl	35	39214.7	1.5				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1540.1	12.0				ug/L	2040	Standard
P	31	12109.8	3.8				ug/L	20435	Standard
S	34	2268.5	5.2				ug/L	2430	Standard
Sr	88	85.0	17.6				ug/L	75	Standard
C	12	106.7	46.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	8.7	192.2				mg/L	9	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	23	Standard
I	127	3217.0	6.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.597	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.187	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:32:59
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	89.199	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	91.790	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:32:59
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:33:54
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90450.1	20.6				ug/L	74916	Standard
	Be	9	5.0	0.0	**0.0004**	0.001	173.7	ug/L	10	Standard
	Al	27	775.0	31.7	**0.0016**	0.002	112.9	ug/L	1822	Standard
	Sc	45	50978.4	13.8				ug/L	55220	Standard
	Ti	47	26.0	7.7	**-0.0042**	0.020	469.4	ug/L	34	Standard
	V	51	784.9	9.1	**-0.1080**	0.026	24.3	ug/L	1938	Standard
	Cr	52	4060.9	14.4	**-0.5718**	0.120	21.0	ug/L	9522	Standard
	Cr	53	301.7	12.0	**-0.1069**	0.079	74.2	ug/L	395	Standard
	Mn	55	609.3	28.1	**-0.0297**	0.032	107.2	ug/L	902	Standard
	Co	59	219.7	9.5	**0.0048**	0.004	91.0	ug/L	262	Standard
	Ni	60	252.3	20.8	**-0.0270**	0.042	155.2	ug/L	371	Standard
	Cu	65	108.7	4.1	**-0.0076**	0.013	170.5	ug/L	106	Standard
	Zn	66	183.3	13.9	**-0.2033**	0.019	9.2	ug/L	398	Standard
>	**Ge**	72	535510.2	22.8				ug/L	535147	Standard
	As	75	37.6	99.0	**0.0872**	0.030	34.3	ug/L	-43	Standard
	Se	82	42.1	65.8	**0.2494**	0.250	100.3	ug/L	14	Standard
	Se-1	77	40.0	31.9	**-0.1439**	0.061	42.7	ug/L	65	Standard
>	**Ga**	71	35.0	0.0				mg/L	97	Standard
	Rb	85	48.3	33.3				ug/L	15	Standard
	Y	89	411465.1	30.1				ug/L	465704	Standard
>	**Rh**	103	28.3	36.7				ug/L	10	Standard
	Mo	98	125.1	60.3	**0.0647**	0.038	58.9	ug/L	9	Standard
	Ag	107	83.3	17.1	**0.0065**	0.002	37.8	ug/L	82	Standard
	Cd	111	2.1	24.7	**0.0090**	0.001	6.1	mg/L	7	Standard
	Cd	114	-0.7	1078.9	**0.0089**	0.002	18.4	ug/L	21	Standard
>	**In**	115	564958.1	33.0				ug/L	619035	Standard
	Sn	118	335.0	22.6	**-0.0453**	0.011	24.3	ug/L	508	Standard
	Sb	123	18.4	50.3	**0.0089**	0.003	36.4	ug/L	86	Standard
	Ba	135	15.7	9.8	**-0.0117**	0.002	17.4	ug/L	79	Standard
	Ce	140	20.0	25.0				ug/L	68	Standard
>	**Tb**	159	950315.9	31.4				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	8.3	73.3	**0.0070**	0.001	13.0	ug/L	13	Standard
	Tl	205	10.0	100.0	**0.0091**	0.001	14.1	ug/L	10	Standard
	Pb	206	274.0	27.4	**0.0059**	0.002	29.0	ug/L	264	Standard
	Pb	207	238.7	22.5	**0.0093**	0.001	16.0	ug/L	227	Standard
	Pb	208	974.0	15.7	**0.0072**	0.005	71.7	ug/L	868	Standard
	U	238	2.3	49.5	**0.0082**	0.000	1.4	ug/L	8	Standard
>	**Bi**	209	577512.8	26.0				ug/L	541014	Standard

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:36:11
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	18.3	**0.0162**	0.017	104.0	mg/L	53	Standard
K	39	18.3	15.7	**-0.0423**	0.002	4.5	mg/L	53	Standard
Ca	43	20.0	25.0	**-0.4400**	0.295	67.1	mg/L	28	Standard
Fe	54	111.2	48.2	**-0.0326**	0.048	147.4	mg/L	181	Standard
Fe	57	305.0	8.5	**0.2171**	0.057	26.1	mg/L	257	Standard
Sc-1	45	50978.4	13.8				mg/L	55220	Standard
Cl	35	19130.1	4.6				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	666.7	5.7				ug/L	2040	Standard
P	31	12328.9	39.2				ug/L	20435	Standard
S	34	1113.4	14.8				ug/L	2430	Standard
Sr	88	68.3	15.2				ug/L	75	Standard
C	12	93.3	55.0				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	290.0	88.7				mg/L	7	Standard
Dy	164	12.9	45.1				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1068.4	17.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		120.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.068	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:36:11
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	91.264	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	106.746	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 52 Lower	Cr	52	

Sample ID: L
Report Date/Time: Thursday, June 30, 2016 21:36:11
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 21:37:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67431.4	0.9				ug/L	74916	Standard
	Be	9	53817.1	2.2	**56.6770**	1.756	3.1	ug/L	10	Standard
	Al	27	7915196.4	0.8	**50.6766**	0.779	1.5	ug/L	1822	Standard
	Sc	45	47487.7	2.6				ug/L	55220	Standard
	Ti	47	35585.1	0.5	**95.4658**	2.604	2.7	ug/L	34	Standard
	V	51	402119.5	0.8	**47.9478**	1.257	2.6	ug/L	1938	Standard
	Cr	52	400703.0	0.9	**48.3435**	0.787	1.6	ug/L	9522	Standard
	Cr	53	48943.9	1.1	**48.2440**	0.640	1.3	ug/L	395	Standard
	Mn	55	360303.0	0.3	**46.3376**	1.024	2.2	ug/L	902	Standard
	Co	59	357130.9	0.5	**48.6003**	1.378	2.8	ug/L	262	Standard
	Ni	60	97761.7	1.2	**48.1917**	0.589	1.2	ug/L	371	Standard
	Cu	65	97541.7	1.0	**48.9446**	0.765	1.6	ug/L	106	Standard
	Zn	66	58233.7	1.4	**49.3295**	1.243	2.5	ug/L	398	Standard
>	**Ge**	72	482994.3	2.4				ug/L	535147	Standard
	As	75	58332.8	0.8	**48.3177**	0.741	1.5	ug/L	-43	Standard
	Se	82	5861.9	0.6	**47.8385**	0.901	1.9	ug/L	14	Standard
	Se-1	77	3960.9	1.5	**48.1496**	1.207	2.5	ug/L	65	Standard
>	**Ga**	71	76.7	26.4				mg/L	97	Standard
	Rb	85	853.4	5.7				ug/L	15	Standard
	Y	89	414125.8	1.6				ug/L	465704	Standard
>	**Rh**	103	40.0	43.3				ug/L	10	Standard
	Mo	98	272355.1	0.4	**93.5687**	1.700	1.8	ug/L	9	Standard
	Ag	107	332621.4	0.0	**47.2188**	0.947	2.0	ug/L	82	Standard
	Cd	111	107165.6	0.8	**47.5953**	0.983	2.1	mg/L	7	Standard
	Cd	114	257847.8	1.0	**47.5584**	1.267	2.7	ug/L	21	Standard
>	**In**	115	577731.0	1.9				ug/L	619035	Standard
	Sn	118	300594.3	0.7	**49.4050**	1.294	2.6	ug/L	508	Standard
	Sb	123	236808.1	0.3	**47.9277**	0.854	1.8	ug/L	86	Standard
	Ba	135	99562.7	0.8	**46.6609**	1.297	2.8	ug/L	79	Standard
	Ce	140	140.0	35.2				ug/L	68	Standard
>	**Tb**	159	867654.4	1.3				ug/L	986982	Standard
	Ho	165	11.7	89.2				ug/L	10	Standard
	Tl	203	416289.5	1.3	**48.9625**	1.155	2.4	ug/L	13	Standard
	Tl	205	366754.2	0.8	**50.4878**	0.642	1.3	ug/L	10	Standard
	Pb	206	263152.9	0.6	**48.1874**	0.951	2.0	ug/L	264	Standard
	Pb	207	238074.2	0.7	**48.2372**	0.963	2.0	ug/L	227	Standard
	Pb	208	984369.0	1.0	**51.7197**	0.568	1.1	ug/L	868	Standard
	U	238	358515.6	1.0	**50.9636**	0.777	1.5	ug/L	8	Standard
>	**Bi**	209	503932.6	1.4				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 21:39:24
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4042.2	2.5	**5.0922**	0.253	5.0	mg/L	53	Standard
K	39	1623.4	6.5	**3.1316**	0.276	8.8	mg/L	53	Standard
Ca	43	90.0	9.6	**4.2482**	0.483	11.4	mg/L	28	Standard
Fe	54	5975.1	4.2	**4.6170**	0.222	4.8	mg/L	181	Standard
Fe	57	1913.5	4.0	**5.2334**	0.291	5.6	mg/L	257	Standard
> **Sc-1**	45	47487.7	2.6				mg/L	55220	Standard
Cl	35	39379.1	1.8				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1633.4	6.7				ug/L	2040	Standard
P	31	21400.1	1.3				ug/L	20435	Standard
S	34	2506.9	6.2				ug/L	2430	Standard
Sr	88	65.0	23.1				ug/L	75	Standard
C	12	90.0	29.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	7	Standard
Dy	164	13.2	117.5				mg/L	9	Standard
Ho-1	165	11.7	89.2				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	8260.6	4.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	113.354		
Al	27	101.353		
Sc	45			
Ti	47	95.466		
V	51	95.896		
Cr	52	96.687		
Cr	53			
Mn	55	92.675		
Co	59	97.201		
Ni	60	96.383		
Cu	65	97.889		
Zn	66	98.659		
> Ge	72		90.255	
As	75	96.635		
Se	82	95.677		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 21:39:24
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	93.569		
Ag	107	94.438		
Cd	111	95.191		
Cd	114			
In	115		93.328	
Sn	118	98.810		
Sb	123	95.855		
Ba	135	93.322		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.925		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.439		
U	238	101.927		
Bi	209		93.146	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
Report Date/Time: Thursday, June 30, 2016 21:39:24
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 21:40:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71900.2	1.6				ug/L	74916	Standard
	Be	9	21.7	35.3	**0.0178**	0.007	41.7	ug/L	10	Standard
	Al	27	2898.6	45.2	**0.0150**	0.008	50.6	ug/L	1822	Standard
	Sc	45	47536.1	1.4				ug/L	55220	Standard
	Ti	47	35.0	11.4	**0.0223**	0.010	42.7	ug/L	34	Standard
	V	51	1200.3	7.6	**-0.0548**	0.011	19.7	ug/L	1938	Standard
	Cr	52	6500.4	2.4	**-0.2503**	0.022	8.8	ug/L	9522	Standard
	Cr	53	503.3	12.8	**0.1049**	0.058	55.7	ug/L	395	Standard
	Mn	55	738.0	10.0	**-0.0115**	0.009	80.1	ug/L	902	Standard
	Co	59	292.0	26.9	**0.0163**	0.010	63.6	ug/L	262	Standard
	Ni	60	263.0	4.6	**-0.0175**	0.005	26.1	ug/L	371	Standard
	Cu	65	174.0	18.1	**0.0273**	0.015	54.7	ug/L	106	Standard
	Zn	66	341.7	8.5	**-0.0597**	0.023	38.4	ug/L	398	Standard
>	**Ge**	72	490224.0	1.2				ug/L	535147	Standard
	As	75	-42.6	38.6	**0.0204**	0.014	66.6	ug/L	-43	Standard
	Se	82	20.2	27.9	**0.0662**	0.046	69.7	ug/L	14	Standard
	Se-1	77	49.7	18.7	**0.0213**	0.119	560.0	ug/L	65	Standard
>	**Ga**	71	36.7	43.8				mg/L	97	Standard
	Rb	85	28.3	44.4				ug/L	15	Standard
	Y	89	430929.4	1.2				ug/L	465704	Standard
>	**Rh**	103	25.0	80.0				ug/L	10	Standard
	Mo	98	240.0	28.0	**0.0921**	0.022	24.4	ug/L	9	Standard
	Ag	107	163.3	39.5	**0.0164**	0.009	54.4	ug/L	82	Standard
	Cd	111	16.9	26.3	**0.0152**	0.002	12.7	mg/L	7	Standard
	Cd	114	59.4	58.0	**0.0195**	0.006	31.5	ug/L	21	Standard
>	**In**	115	597612.9	0.2				ug/L	619035	Standard
	Sn	118	955.0	17.0	**0.0486**	0.026	53.0	ug/L	508	Standard
	Sb	123	608.2	26.3	**0.1233**	0.031	25.2	ug/L	86	Standard
	Ba	135	47.3	46.9	**0.0018**	0.010	554.4	ug/L	79	Standard
	Ce	140	30.0	28.9				ug/L	68	Standard
>	**Tb**	159	896744.8	0.6				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	106.0	37.4	**0.0180**	0.004	24.3	ug/L	13	Standard
	Tl	205	63.3	40.5	**0.0161**	0.003	20.7	ug/L	10	Standard
	Pb	206	303.7	6.4	**0.0158**	0.003	18.7	ug/L	264	Standard
	Pb	207	270.0	14.7	**0.0195**	0.007	37.4	ug/L	227	Standard
	Pb	208	1117.7	11.7	**0.0182**	0.006	33.3	ug/L	868	Standard
	U	238	78.7	54.5	**0.0186**	0.006	30.9	ug/L	8	Standard
>	**Bi**	209	523387.9	0.9				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 21:42:35
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	76.0	**0.0164**	0.039	240.4	mg/L	53	Standard
K	39	20.0	90.1	**-0.0368**	0.035	96.4	mg/L	53	Standard
Ca	43	15.0	115.5	**-0.6879**	1.140	165.7	mg/L	28	Standard
Fe	54	175.7	28.7	**0.0207**	0.042	202.0	mg/L	181	Standard
Fe	57	243.3	3.1	**0.0857**	0.013	15.5	mg/L	257	Standard
> **Sc-1**	45	47536.1	1.4				mg/L	55220	Standard
Cl	35	37912.7	0.7				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1596.8	8.8				ug/L	2040	Standard
P	31	20108.3	2.8				ug/L	20435	Standard
S	34	2458.5	3.7				ug/L	2430	Standard
Sr	88	83.3	3.5				ug/L	75	Standard
C	12	106.7	10.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	7	Standard
Dy	164	112.2	18.7				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	3290.4	8.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 21:42:35
Page 2

Approved: July 01, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.539
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.742
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 21:42:35
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Friday, July 01, 2016 08:32:04
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	93006.3	1.1				ug/L	74916	Standard
	Be	9	20.0	25.0	**0.0116**	0.004	31.7	ug/L	10	Standard
	Al	27	1552992.1	1.0	**7.2064**	0.052	0.7	ug/L	1822	Standard
	Sc	45	39419.6	2.0				ug/L	55220	Standard
	Ti	47	501.0	4.3	**1.5380**	0.050	3.3	ug/L	34	Standard
	V	51	2620.2	6.3	**0.1790**	0.027	14.9	ug/L	1938	Standard
	Cr	52	5440.0	0.8	**-0.2376**	0.005	2.2	ug/L	9522	Standard
	Cr	53	2233.5	15.4	**2.2669**	0.406	17.9	ug/L	395	Standard
	Mn	55	12884096.7	1.2	**1986.1988**	24.888	1.3	ug/L	902	Standard
	Co	59	14555.7	5.3	**2.3470**	0.122	5.2	ug/L	262	Standard
	Ni	60	4131.6	1.3	**2.2980**	0.028	1.2	ug/L	371	Standard
	Cu	65	3742.1	7.4	**2.1908**	0.182	8.3	ug/L	106	Standard
	Zn	66	6948.6	3.1	**6.7442**	0.282	4.2	ug/L	398	Standard
>	Ge	72	403717.5	1.3				ug/L	535147	Standard
	As	75	3272.2	1.7	**3.2933**	0.019	0.6	ug/L	-43	Standard
	Se	82	468.8	5.1	**4.4884**	0.233	5.2	ug/L	14	Standard
	Se-1	77	300.0	5.5	**3.8347**	0.277	7.2	ug/L	65	Standard
>	Ga	71	398.3	16.6				mg/L	97	Standard
	Rb	85	145071.3	1.5				ug/L	15	Standard
	Y	89	367799.2	1.0				ug/L	465704	Standard
>	Rh	103	268.3	26.2				ug/L	10	Standard
	Mo	98	2447721.3	1.3	**1045.0964**	23.451	2.2	ug/L	9	Standard
	Ag	107	96.3	15.8	**0.0109**	0.002	22.8	ug/L	82	Standard
	Cd	111	-2684.4	2.0	**-1.4735**	0.029	2.0	mg/L	7	Standard
	Cd	114	3116.6	4.8	**0.7235**	0.043	6.0	ug/L	21	Standard
>	In	115	464778.6	1.3				ug/L	619035	Standard
	Sn	118	200.0	24.6	**-0.0626**	0.010	15.4	ug/L	508	Standard
	Sb	123	1153.1	15.2	**0.2941**	0.041	13.9	ug/L	86	Standard
	Ba	135	7861.0	1.3	**4.5603**	0.044	1.0	ug/L	79	Standard
	Ce	140	10441.9	1.0				ug/L	68	Standard
>	Tb	159	822223.0	0.9				ug/L	986982	Standard
	Ho	165	268.3	15.6				ug/L	10	Standard
	Tl	203	82.3	15.6	**0.0175**	0.002	10.1	ug/L	13	Standard
	Tl	205	100.0	25.0	**0.0241**	0.004	17.6	ug/L	10	Standard
	Pb	206	1074.0	1.8	**0.1970**	0.007	3.8	ug/L	264	Standard
	Pb	207	905.4	2.5	**0.1858**	0.006	3.3	ug/L	227	Standard
	Pb	208	3476.2	0.7	**0.1797**	0.005	2.7	ug/L	868	Standard
	U	238	205.3	7.0	**0.0427**	0.002	4.1	ug/L	8	Standard
>	Bi	209	422495.5	2.5				ug/L	541014	Standard

Sample ID: L1606036203
Report Date/Time: Friday, July 01, 2016 08:34:21
Page 1

Approved: July 01, 2016

Na	23	3.3	173.2	**25.7144**	44.530	173.2	mg/L	2	Standard
Mg	24	307341.0	3.0	**469.1675**	11.229	2.4	mg/L	53	Standard
K	39	16730.9	4.5	**39.6882**	1.267	3.2	mg/L	53	Standard
Ca	43	478.3	5.8	**36.2580**	1.470	4.1	mg/L	28	Standard
Fe	54	1582.4	11.9	**1.3903**	0.161	11.6	mg/L	181	Standard
Fe	57	835.0	11.0	**2.4319**	0.278	11.5	mg/L	257	Standard
> **Sc-1**	45	39419.6	2.0				mg/L	55220	Standard
Cl	35	63976.8	1.8				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	84877.1	1.1				ug/L	2040	Standard
P	31	5806.1	1.9				ug/L	20435	Standard
S	34	1706.8	4.3				ug/L	2430	Standard
Sr	88	715.0	4.9				ug/L	75	Standard
C	12	340.0	5.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	63.6				mg/L	7	Standard
Dy	164	347.7	31.7				mg/L	9	Standard
Ho-1	165	268.3	15.6				mg/L	10	Standard
Er	166	186.7	25.3				mg/L	23	Standard
I	127	685083.8	4.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.147	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		75.440	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606036203
Report Date/Time: Friday, July 01, 2016 08:34:21
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	75.081
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	78.093
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606036203
Report Date/Time: Friday, July 01, 2016 08:34:21
Page 3

Approved: July 01, 2016

Cd 111 Lower	Cd	111

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 08:35:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	104652.1	3.1				ug/L	74916	Standard
	Be	9	65190.0	1.7	**44.2562**	1.577	3.6	ug/L	10	Standard
	Al	27	8981432.3	0.8	**37.0663**	0.908	2.4	ug/L	1822	Standard
	Sc	45	43714.6	1.6				ug/L	55220	Standard
	Ti	47	31848.4	0.7	**91.2042**	0.432	0.5	ug/L	34	Standard
	V	51	397692.8	1.5	**50.6325**	0.695	1.4	ug/L	1938	Standard
	Cr	52	364036.8	0.6	**46.8611**	0.164	0.3	ug/L	9522	Standard
	Cr	53	44369.9	2.1	**46.6840**	0.901	1.9	ug/L	395	Standard
	Mn	55	343511.4	1.2	**47.1649**	0.503	1.1	ug/L	902	Standard
	Co	59	365301.7	0.5	**53.0684**	0.242	0.5	ug/L	262	Standard
	Ni	60	88054.5	0.3	**46.3416**	0.215	0.5	ug/L	371	Standard
	Cu	65	88641.2	0.7	**47.4878**	0.316	0.7	ug/L	106	Standard
	Zn	66	53665.6	1.4	**48.5266**	0.608	1.3	ug/L	398	Standard
>	Ge	72	452264.7	0.2				ug/L	535147	Standard
	As	75	54576.0	1.2	**48.2651**	0.498	1.0	ug/L	-43	Standard
	Se	82	5913.9	1.8	**51.5338**	0.825	1.6	ug/L	14	Standard
	Se-1	77	3667.1	0.9	**47.5865**	0.510	1.1	ug/L	65	Standard
>	Ga	71	155.0	28.1				mg/L	97	Standard
	Rb	85	930.0	4.1				ug/L	15	Standard
	Y	89	421703.0	0.5				ug/L	465704	Standard
>	Rh	103	63.3	70.8				ug/L	10	Standard
	Mo	98	269466.6	0.9	**95.0402**	0.819	0.9	ug/L	9	Standard
	Ag	107	324401.6	1.1	**47.2760**	0.478	1.0	ug/L	82	Standard
	Cd	111	100577.6	0.8	**45.8578**	0.287	0.6	mg/L	7	Standard
	Cd	114	250730.0	1.0	**47.4721**	0.488	1.0	ug/L	21	Standard
>	In	115	562623.8	0.4				ug/L	619035	Standard
	Sn	118	281805.1	1.3	**47.5397**	0.439	0.9	ug/L	508	Standard
	Sb	123	224039.7	0.6	**46.5502**	0.156	0.3	ug/L	86	Standard
	Ba	135	98585.4	0.5	**47.4267**	0.184	0.4	ug/L	79	Standard
	Ce	140	163.3	18.5				ug/L	68	Standard
>	Tb	159	931867.2	1.5				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	411636.8	0.3	**47.3597**	0.319	0.7	ug/L	13	Standard
	Tl	205	368917.7	1.2	**49.6846**	0.789	1.6	ug/L	10	Standard
	Pb	206	265065.5	0.3	**47.4786**	0.117	0.2	ug/L	264	Standard
	Pb	207	240273.2	0.7	**47.6208**	0.337	0.7	ug/L	227	Standard
	Pb	208	920376.8	1.1	**47.3047**	0.501	1.1	ug/L	868	Standard
	U	238	372261.0	0.4	**51.7673**	0.178	0.3	ug/L	8	Standard
>	Bi	209	515073.7	0.4				ug/L	541014	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 08:37:33
Page 1

Approved: July 01, 2016

Na	23	3.3	173.2	**23.6206**	40.903	173.2	mg/L	2	Standard
Mg	24	4920.8	2.5	**6.7416**	0.245	3.6	mg/L	53	Standard
K	39	1953.5	3.3	**4.1118**	0.137	3.3	mg/L	53	Standard
Ca	43	80.0	47.2	**4.0631**	2.720	67.0	mg/L	28	Standard
Fe	54	6442.0	0.3	**5.4265**	0.076	1.4	mg/L	181	Standard
Fe	57	1820.1	1.5	**5.4286**	0.169	3.1	mg/L	257	Standard
Sc-1	45	43714.6	1.6				mg/L	55220	Standard
Cl	35	25342.5	0.5				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2553.5	7.8				ug/L	2040	Standard
P	31	17611.9	2.0				ug/L	20435	Standard
S	34	1886.8	9.4				ug/L	2430	Standard
Sr	88	51.7	22.3				ug/L	75	Standard
C	12	216.7	11.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	7	Standard
Dy	164	12.9	41.7				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	9761.8	38.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	88.512		
Al	27	74.133		
Sc	45			
Ti	47	91.204		
V	51	101.265		
Cr	52	93.722		
Cr	53			
Mn	55	94.330		
Co	59	106.137		
Ni	60	92.683		
Cu	65	94.976		
Zn	66	97.053		
Ge	72		84.512	
As	75	96.530		
Se	82	103.068		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 08:37:33
Page 2

Approved: July 01, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	95.040		
Ag	107	94.552		
Cd	111	91.716		
Cd	114			
> In	115			90.887
Sn	118	95.079		
Sb	123	93.100		
Ba	135	94.853		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.719		
Tl	205			
Pb	206			
Pb	207			
Pb	208	94.609		
U	238	103.535		
> Bi	209			95.205
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 08:37:33
Page 3

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 08:38:28
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101832.7	0.1				ug/L	74916	Standard
	Be	9	21.7	13.3	**0.0115**	0.002	17.5	ug/L	10	Standard
	Al	27	3402.1	40.5	**0.0121**	0.006	48.4	ug/L	1822	Standard
	Sc	45	43323.5	1.5				ug/L	55220	Standard
	Ti	47	47.7	4.4	**0.0655**	0.006	9.3	ug/L	34	Standard
	V	51	1261.5	5.2	**-0.0363**	0.008	22.4	ug/L	1938	Standard
	Cr	52	6090.9	1.2	**-0.2438**	0.011	4.7	ug/L	9522	Standard
	Cr	53	543.3	24.4	**0.1852**	0.141	76.1	ug/L	395	Standard
	Mn	55	2328.9	74.2	**0.2134**	0.237	111.1	ug/L	902	Standard
	Co	59	267.0	18.5	**0.0157**	0.007	45.9	ug/L	262	Standard
	Ni	60	619.0	4.8	**0.1789**	0.016	9.1	ug/L	371	Standard
	Cu	65	403.7	9.0	**0.1563**	0.020	12.8	ug/L	106	Standard
	Zn	66	491.7	4.3	**0.0979**	0.020	20.8	ug/L	398	Standard
>	**Ge**	72	455524.9	0.3				ug/L	535147	Standard
	As	75	-12.5	248.3	**0.0443**	0.027	61.6	ug/L	-43	Standard
	Se	82	35.3	18.1	**0.2092**	0.056	26.8	ug/L	14	Standard
	Se-1	77	57.3	1.0	**0.1663**	0.008	4.8	ug/L	65	Standard
>	**Ga**	71	73.3	53.0				mg/L	97	Standard
	Rb	85	48.3	21.5				ug/L	15	Standard
	Y	89	420800.7	2.5				ug/L	465704	Standard
>	**Rh**	103	48.3	41.8				ug/L	10	Standard
	Mo	98	1359.7	4.4	**0.4956**	0.020	4.1	ug/L	9	Standard
	Ag	107	96.0	1.0	**0.0080**	0.000	3.1	ug/L	82	Standard
	Cd	111	11.8	64.2	**0.0133**	0.003	26.1	mg/L	7	Standard
	Cd	114	49.1	54.7	**0.0183**	0.005	27.7	ug/L	21	Standard
>	**In**	115	558184.5	0.7				ug/L	619035	Standard
	Sn	118	840.0	13.6	**0.0398**	0.020	49.3	ug/L	508	Standard
	Sb	123	615.3	27.1	**0.1333**	0.035	26.4	ug/L	86	Standard
	Ba	135	41.3	38.6	**0.0004**	0.008	1923.8	ug/L	79	Standard
	Ce	140	33.3	22.9				ug/L	68	Standard
>	**Tb**	159	919868.1	0.7				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	70.7	36.4	**0.0141**	0.003	20.9	ug/L	13	Standard
	Tl	205	83.3	59.2	**0.0189**	0.007	35.1	ug/L	10	Standard
	Pb	206	296.0	10.7	**0.0150**	0.006	38.5	ug/L	264	Standard
	Pb	207	242.3	9.3	**0.0146**	0.004	30.4	ug/L	227	Standard
	Pb	208	1060.7	19.5	**0.0159**	0.011	66.8	ug/L	868	Standard
	U	238	73.7	80.7	**0.0181**	0.008	45.5	ug/L	8	Standard
>	**Bi**	209	518253.1	0.4				ug/L	541014	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 08:40:45
Page 1

Approved: July 01, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	108.3	23.2	**0.1158**	0.034	29.3	mg/L	53	Standard
K	39	28.3	44.4	**-0.0145**	0.028	192.8	mg/L	53	Standard
Ca	43	16.7	17.3	**-0.4722**	0.203	43.0	mg/L	28	Standard
Fe	54	122.7	13.1	**-0.0120**	0.015	126.5	mg/L	181	Standard
Fe	57	215.0	22.4	**0.0615**	0.153	249.0	mg/L	257	Standard
Sc-1	45	43323.5	1.5				mg/L	55220	Standard
Cl	35	25651.0	2.4				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1796.8	2.2				ug/L	2040	Standard
P	31	17269.8	0.2				ug/L	20435	Standard
S	34	1768.4	7.7				ug/L	2430	Standard
Sr	88	51.7	11.2				ug/L	75	Standard
C	12	190.0	36.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	7	Standard
Dy	164	125.4	30.1				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	26.7	21.7				mg/L	23	Standard
I	127	4757.4	13.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		85.121	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 08:40:45
Page 2

Approved: July 01, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	90.170
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.793
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Mo	98	

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 08:40:45
Page 3

Approved: July 01, 2016

2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW22-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:38
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	M7.062816.163856
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C04F-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:46
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	M7.062816.164630
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C04FFD-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:49
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	M7.062816.164902
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW18-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:51
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	M7.062816.165134
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW18-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:54
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	M7.062816.165406
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

TCLP Non-Volatile

Analyst(s): CPD
Date: 6/22/16
Filter Lot #: 9486030
Microbac SOP: TCLP 01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD 6/22/16		CPD 6/23/16	
Time On	Temp On °C	Time Off	Temp Off °C
1457	23.1	0812	21.7

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-1191-01	9056	1312	SPLP FI-63	S	100	NA	NA	25.57	511	9.82
	-02								25.51	510	10.98
	-03								25.61	512	9.12
	-04								25.95	519	9.83
	-05								25.81	516	10.48
	-06								25.77	515	9.88
	-07								25.76	515	10.66
	-08								25.68	514	10.66
	-09								25.56	511	11.01
67	06-1164-11	ME, SV, Post, Acid	1311	FI-182			7.27	3.78	100.99	2020	5.15
NA	FBIK1	ME, SV, Post, Acid	1311	FI-182	NA	NA	NA	NA	100	100	4.91
NA	SPLP FI	9056	1312	SPLP FI-63	NA	NA	NA	NA	100	100	4.18

CPD 6/22/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: N/A

Peer Review By: Allie Alfred 06/23/2016

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG573859
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/23/2016 09:29
Hotblock Start Temp: 95.5 @ 09:25
Hotblock End Temp: 95.6 @ 11:25
Instrument: HB6

SOP: ME404 Revison 17
Spike Solution: STD76783
Spike Witness: AC
H2SO4 Lot #: COA18359
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
K2S2O8 1:1 Lot #: RGT37046
KMnO4 1:1 Lot #: RGT37128
Mercury Water ICV Lot #: STD76785
HG H2O STDS 10PPM Lot #: STD76791

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG573859-02	BLANK	1	40 mL	40 mL		
2	WG573699-01	FBLK1	17	4 mL	40 mL		
3	WG573859-03	LCS	1	40 mL	40 mL	4 mL	
4	L16061129-01	SAMP	1	40 mL	40 mL		07/05/16
5	L16061129-02	SAMP	1	40 mL	40 mL		07/05/16
6	L16061129-03	SAMP	1	40 mL	40 mL		07/05/16
7	L16061129-04	SAMP	1	40 mL	40 mL		07/05/16
8	L16061129-05	SAMP	1	40 mL	40 mL		07/05/16
9	WG573859-01	REF	17	4 mL	40 mL		
10	L16061164-11	SAMP	17	4 mL	40 mL		06/28/16
11	L16061190-01	SAMP	1	40 mL	40 mL		06/28/16
12	L16061190-02	SAMP	1	40 mL	40 mL		06/28/16
13	L16061227-01	SAMP	1	40 mL	40 mL		07/01/16
14	L16061227-03	SAMP	1	40 mL	40 mL		07/01/16
15	L16061227-05	SAMP	1	40 mL	40 mL		07/01/16
16	L16061227-06	SAMP	1	40 mL	40 mL		07/01/16
17	L16061227-07	SAMP	1	40 mL	40 mL		07/01/16
18	L16061242-01	SAMP	1	40 mL	40 mL		06/29/16
19	L16061242-02	SAMP	1	40 mL	40 mL		06/29/16
20	L16061242-03	SAMP	1	40 mL	40 mL		06/29/16
21	L16061242-04	SAMP	1	40 mL	40 mL		06/29/16
22	L16061242-05	SAMP	1	40 mL	40 mL		06/29/16
23	L16061242-06	SAMP	1	40 mL	40 mL		06/29/16
24	WG573859-04	MS	1	36 mL	40 mL	4 mL	
25	WG573859-05	MSD	1	36 mL	40 mL	4 mL	

Analyst: [signature]

Reviewer: [signature]

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4821018
Report generated: 06/23/2016 12:45

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062816E.CSV
Analyst1: AMA Analyst2: N/A
Method: 7470A/245.1 SOP: ME404 Rev: 17
Maintenance Log ID:

Calibration Std: STD76791 ICV Std: STD76785 Post Spike: STD76791
ICSA: N/A ICSAB: N/A Int. Std:
CCV: LLCCV: Tuning Sol :
Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573905, 574517

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.062816.141939	WG574627-01	Calibration Point		1		06/28/16 14:19
2	M7.062816.142210	WG574627-02	Calibration Point		1		06/28/16 14:22
3	M7.062816.142442	WG574627-03	Calibration Point		1		06/28/16 14:24
4	M7.062816.142715	WG574627-04	Calibration Point		1		06/28/16 14:27
5	M7.062816.142948	WG574627-05	Calibration Point		1		06/28/16 14:29
6	M7.062816.143221	WG574627-06	Calibration Point		1		06/28/16 14:32
7	M7.062816.143456	WG574627-07	Initial Calibration Verification		1		06/28/16 14:34
8	M7.062816.143726	WG574627-08	Initial Calib Blank		1		06/28/16 14:37
9	M7.062816.143959	WG574627-09	CCV		1		06/28/16 14:39
10	M7.062816.144230	WG574627-10	CCB		1		06/28/16 14:42
11	M7.062816.144500	WG573817-03	Method/Prep Blank	40/40	1		06/28/16 14:45
12	M7.062816.144731	WG573817-04	Laboratory Control S	40/40	1		06/28/16 14:47
13	M7.062816.145003	WG573817-01	Reference Sample	40/40	1	L16061193-01	06/28/16 14:50
14	M7.062816.145234	WG573817-05	Duplicate	40/40	1	L16061193-01	06/28/16 14:52
15	M7.062816.145506	L16061193-02	J6F0533-04	40/40	1		06/28/16 14:55
16	M7.062816.145739	L16061193-03	J6F0533-06	40/40	1		06/28/16 14:57
17	M7.062816.150011	L16061204-01	J6F0534-02	40/40	1		06/28/16 15:00
18	M7.062816.150244	L16061204-02	J6F0534-04	40/40	1		06/28/16 15:02
19	M7.062816.150517	WG573817-02	Reference Sample	40/40	1	L16061204-03	06/28/16 15:05
20	M7.062816.150750	WG573817-06	Matrix Spike	36/40	1	L16061204-03	06/28/16 15:07
21	M7.062816.151023	WG574627-11	CCV		1		06/28/16 15:10
22	M7.062816.151254	WG574627-12	CCB		1		06/28/16 15:12
23	M7.062816.151527	WG573817-07	Matrix Spike Duplica	36/40	1	L16061204-03	06/28/16 15:15
24	M7.062816.151801	L16061228-01	SS007MWOB03-007	40/40	1		06/28/16 15:18
25	M7.062816.152031	L16061228-02	SS007MWN751-007	40/40	1		06/28/16 15:20
26	M7.062816.152302	L16061228-03	SS007MWN753-007	40/40	1		06/28/16 15:23
27	M7.062816.152533	L16061231-01	FT002MW0205-007	40/40	1		06/28/16 15:25
28	M7.062816.152804	WG573905-01	Post Digestion Spike		1	L16061231-01	06/28/16 15:28
29	M7.062816.153035	L16061237-01	SS007MWN769-007	40/40	1		06/28/16 15:30
30	M7.062816.153307	L16061237-02	SS007MWN740-007	40/40	1		06/28/16 15:33
31	M7.062816.153539	L16061237-03	SS007MWN740-007 DUP	40/40	1		06/28/16 15:35
32	M7.062816.153811	L16061237-04	SS007MWN738-007	40/40	1		06/28/16 15:38
33	M7.062816.154044	WG574627-13	CCV		1		06/28/16 15:40
34	M7.062816.154315	WG574627-14	CCB		1		06/28/16 15:43

Page: 1 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062816E.CSV
Analyst1: AMA Analyst2: N/A
Method: 7470A/245.1 SOP: ME404 Rev: 17
Maintenance Log ID:

Calibration Std: STD76791 ICV Std: STD76785 Post Spike: STD76791
ICSA: N/A ICSAB: N/A Int. Std:
CCV: LLCCV: Tuning Sol :
Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573905, 574517

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.062816.154547	L16061237-05	SS007MWN741-007	40/40	1		06/28/16 15:45
36	M7.062816.154820	L16061237-06	SS007MWNOB09-007	40/40	1		06/28/16 15:48
37	M7.062816.155053	L16061238-01	LF003MW0306-007	40/40	1		06/28/16 15:50
38	M7.062816.155326	L16061238-02	LF003MW0307-007	40/40	1		06/28/16 15:53
39	M7.062816.155557	WG573859-02	Method/Prep Blank	40/40	1		06/28/16 15:55
40	M7.062816.155827	WG573859-03	Laboratory Control S	40/40	1		06/28/16 15:58
41	M7.062816.160058	WG573699-01	Fluid Blank 1		1		06/28/16 16:00
42	M7.062816.160329	L16061129-01	MW-22-002	40/40	1		06/28/16 16:03
43	M7.062816.160601	WG574517-01	Post Digestion Spike		1	L16061129-01	06/28/16 16:06
44	M7.062816.160833	L16061129-02	MW-22-010	40/40	1		06/28/16 16:08
45	M7.062816.161105	WG574627-15	CCV		1		06/28/16 16:11
46	M7.062816.161336	WG574627-16	CCB		1		06/28/16 16:13
47	M7.062816.161608	L16061129-03	MW-22-007	40/40	1		06/28/16 16:16
48	M7.062816.161840	L16061129-04	FD061716	40/40	1		06/28/16 16:18
49	M7.062816.162112	L16061129-05	EB-WATER A	40/40	1		06/28/16 16:21
50	M7.062816.162345	WG573859-01	Reference Sample	4/40	1	L16061164-11	06/28/16 16:23
51	M7.062816.162619	WG574517-02	Post Digestion Spike		1	L16061164-11	06/28/16 16:26
52	M7.062816.162852	WG573859-04	Matrix Spike	36/40	1	L16061164-11	06/28/16 16:28
53	M7.062816.163123	WG573859-05	Matrix Spike Duplica	36/40	1	L16061164-11	06/28/16 16:31
54	M7.062816.163354	L16061190-01	USDA / 04/07/16	40/40	1		06/28/16 16:33
55	M7.062816.163625	L16061190-02	USDA / 05/06/16	40/40	1		06/28/16 16:36
56	M7.062816.163856	L16061227-01	18WW22-062116	40/40	1		06/28/16 16:38
57	M7.062816.164128	WG574627-17	CCV		1		06/28/16 16:41
58	M7.062816.164359	WG574627-18	CCB		1		06/28/16 16:43
59	M7.062816.164630	L16061227-03	C04F-062116	40/40	1		06/28/16 16:46
60	M7.062816.164902	L16061227-05	C04FFD-062116	40/40	1		06/28/16 16:49
61	M7.062816.165134	L16061227-06	18CPTMW18-062116	40/40	1		06/28/16 16:51
62	M7.062816.165406	L16061227-07	18WW18-062116	40/40	1		06/28/16 16:54
63	M7.062816.165639	L16061242-01	1602232-002B	40/40	1		06/28/16 16:56
64	M7.062816.165912	L16061242-02	1602232-003B	40/40	1		06/28/16 16:59
65	M7.062816.170145	L16061242-03	1602232-004B	40/40	1		06/28/16 17:01
66	M7.062816.170419	L16061242-04	1602232-005B	40/40	1		06/28/16 17:04
67	M7.062816.170650	L16061242-05	1602232-006B	40/40	1		06/28/16 17:06
68	M7.062816.170921	L16061242-06	1602232-007B	40/40	1		06/28/16 17:09

Page: 2 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062816E.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76791 ICV Std: STD76785 Post Spike: STD76791

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573905, 574517

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	M7.062816.171154	WG574627-19	CCV		1		06/28/16 17:11
70	M7.062816.171424	WG574627-20	CCB		1		06/28/16 17:14

Page: 3 Approved: June 30, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 28-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 574627
Runlog ID: 75999
Analytical Workgroups: 573905, 574517

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1129, 1164,1227,1228,1231,1237,1238
Client Forms	X
Level X	
Level 3	1129
Level 4	1227, 1228, 1231, 1237, 1238
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
29-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
30-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-30-2016 13:36:00

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG574517

Login Number: L16061227

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW22-062116	01	06/21/16					06/23/2016	2.1	28		06/28/16	7.4	28	
C04F-062116	03	06/21/16					06/23/2016	2	28		06/28/16	7.3	28	
C04FFD-062116	05	06/21/16					06/23/2016	2	28		06/28/16	7.3	28	
18CPTMW18-062116	06	06/21/16					06/23/2016	2	28		06/28/16	7.3	28	
18WW18-062116	07	06/21/16					06/23/2016	1.9	28		06/28/16	7.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4831072
Report generated 06/29/2016 11:34

METHOD BLANK SUMMARY

Login Number: L16061227
Blank File ID: M7.062816.155557
Prep Date: 06/23/16 09:29
Analyzed Date: 06/28/16 15:55
Analyst: AMA

Work Group: WG574517
Blank Sample ID: WG573859-02
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573859-03	M7.062816.155827	06/28/16 15:58	01
18WW22-062116	L16061227-01	M7.062816.163856	06/28/16 16:38	01
C04F-062116	L16061227-03	M7.062816.164630	06/28/16 16:46	01
C04FFD-062116	L16061227-05	M7.062816.164902	06/28/16 16:49	01
18CPTMW18-062116	L16061227-06	M7.062816.165134	06/28/16 16:51	01
18WW18-062116	L16061227-07	M7.062816.165406	06/28/16 16:54	01

Report Name: BLANK_SUMMARY
PDF File ID: 4831073
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061227 Prep Date: 06/23/16 09:29 Sample ID: WG573859-02
Instrument ID: CVAA1 Run Date: 06/28/16 15:55 Prep Method: 7470A
File ID: M7.062816.155557 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG574517 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-28-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4831074
29-JUN-2016 11:34

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061227 Run Date: 06/28/2016 Sample ID: WG573859-03
Instrument ID: CVAA1 Run Time: 15:58 Prep Method: 7470A
File ID: M7.062816.155827 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG574517 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76783 Cal ID: CVAA1-28-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00406	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4831075
Report generated: 06/29/2016 11:34

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061227 Cal ID: CVAA1 - Worknum: WG574517
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG573859-01 File ID: M7.062816.162345 Dil: 1 Matrix: WATER
Sample ID: WG573859-04 MS File ID: M7.062816.162852 Dil: 1 Units: mg/L
Sample ID: WG573859-05 MSD File ID: M7.062816.163123 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00451	102	0.00444	0.00461	104	2.19	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4831076
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061227 **Worknum:** WG574517
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG574517-01 **File ID:** M7.062816.160601 **Dil:** 1 **Units:** ug/L
Sample ID: L16061129-01 **File ID:** M7.062816.160329 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.01		0	U	1	100.8	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4831071
Report generated: 06/29/2016 11:34

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061227
Analytical Method: 7470A
ICAL Worknum: WG574627

Workgroup (AAB#): WG574517
Instrument ID: CVAA1
Initial Calibration Date: 06/28/2016 14:32

Analyte	WG574627-01		WG574627-02		WG574627-03		WG574627-04		WG574627-05		WG574627-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	32.17	0.200	2983	1.00	13550	2.00	26780	5.00	66440	10.0	124400

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4831077
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061227
Analytical Method: 7470A
ICAL Worknum: WG574627

Workgroup (AAB#): WG574517
Instrument ID: CVAA1
Initial Calibration Date: 06/28/2016 14:32

Analyte	R	Q
Mercury	0.9995	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4831077
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061227
Instrument ID: CVAA1
File ID: M7.062816.143726
Workgroup (AAB#): WG574517
Matrix: WATER

Run Date: 06/28/2016
Run Time: 14:37
Analyst: AMA
Cal ID: CVAA1 - 28-JUN-16

Sample ID: WG574627-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4831079
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-10
Instrument ID: CVAA1
Run Time: 14:42
Method: 7470A
File ID: M7.062816.144230
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4831081
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-14
Instrument ID: CVAA1
Run Time: 15:43
Method: 7470A
File ID: M7.062816.154315
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4831081
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-16
Instrument ID: CVAA1
Run Time: 16:13
Method: 7470A
File ID: M7.062816.161336
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4831081
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-18
Instrument ID: CVAA1
Run Time: 16:43
Method: 7470A
File ID: M7.062816.164359
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4831081
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-20
Instrument ID: CVAA1
Run Time: 17:14
Method: 7470A
File ID: M7.062816.171424
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4831081
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-07
Instrument ID: CVAA1
Run Time: 14:34
Method: 7470A
File ID: M7.062816.143456
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	1.98	99.2	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4831078
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-09
Instrument ID: CVAA1
Run Time: 14:39
Method: 7470A
File ID: M7.062816.143959
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00205	mg/L	103	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4831080
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-13
Instrument ID: CVAA1
Run Time: 15:40
Method: 7470A
File ID: M7.062816.154044
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00203	mg/L	101	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4831080
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-15
Instrument ID: CVAA1
Run Time: 16:11
Method: 7470A
File ID: M7.062816.161105
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00206	mg/L	103	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4831080
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-17
Instrument ID: CVAA1
Run Time: 16:41
Method: 7470A
File ID: M7.062816.164128
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00202	mg/L	101	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4831080
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-19
Instrument ID: CVAA1
Run Time: 17:11
Method: 7470A
File ID: M7.062816.171154
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00203	mg/L	101	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4831080
Report generated 06/29/2016 11:34

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\062816E.wsz
Date Started: 6/28/2016 2:16:54 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/28/16 02:19:39 pm	0.0000	32	62.24		1.00
Replicates	12.7	39.8	19.4	56.8							
Standard #1 (0.2 ug/L)					STD	06/28/16 02:22:10 pm	0.2000	2983	1.00		1.00
Replicates	2956.1	2976.6	2974.0	3025.8							
Standard #2 (1.0 ug/L)					STD	06/28/16 02:24:42 pm	1.0000	13546	0.44		1.00
Replicates	13459.7	13552.0	13584.0	13589.5							
Standard #3 (2.0 ug/L)					STD	06/28/16 02:27:15 pm	2.0000	26777	0.38		1.00
Replicates	26638.6	26768.5	26840.4	26861.9							
Standard #4 (5.0 ug/L)					STD	06/28/16 02:29:48 pm	5.0000	66440	0.32		1.00
Replicates	66143.5	66428.4	66567.7	66619.2							
Standard #5 (10.0 ug/L)					STD	06/28/16 02:32:21 pm	10.0000	124445	0.34		1.00
Replicates	123848.4	124440.3	124724.9	124764.4							

Calibration

Equation: A = 1183.459 + 12479.250C
R2: 0.99891
SEE: 1785.5090
Flags:

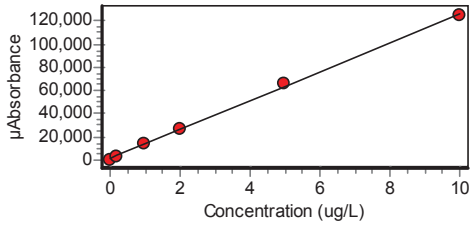

ICV					ICV	06/28/16 02:34:56 pm	1.9840	25941	0.32		1.00
Replicates	25817.7	25960.0	25984.3	26002.7							
% Recovery	99.20										

Approved: June 29, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	06/28/16 02:37:26 pm	-0.0935	16	167.13		1.00
Replicates	-18.1	40.0	7.5	35.3							
CCV					CCV	06/28/16 02:39:59 pm	2.0500	26765	0.43		1.00
Replicates	26605.2	26758.8	26823.3	26872.8							
% Recovery	102.50										
CCB					CCB	06/28/16 02:42:30 pm	-0.0936	16	28.49		1.00
Replicates	13.9	17.9	10.1	20.1							
WG573817-03					MB	06/28/16 02:45:00 pm	-0.0959	-13	143.58		1.00
Replicates	-29.6	-8.0	11.3	-26.2							
WG573817-04					LCS	06/28/16 02:47:31 pm	4.2950	54788	0.15		1.00
Replicates	54783.5	54869.0	54819.2	54679.5							
% Recovery	107.39										
L1606119301					UNK	06/28/16 02:50:03 pm	-0.0909	49	53.23		1.00
Replicates	48.8	59.4	73.4	12.9							
WG573817-05					DUP	06/28/16 02:52:34 pm	-0.0856	115	13.79		1.00
Replicates	115.4	99.5	137.0	109.2							
		RPD 0.00									
L1606119302					UNK	06/28/16 02:55:06 pm	-0.0736	266	3.59		1.00
Replicates	260.1	257.6	265.6	279.0							
L1606119303					UNK	06/28/16 02:57:39 pm	-0.0792	195	6.29		1.00
Replicates	180.8	209.6	198.1	189.9							
L1606120401					UNK	06/28/16 03:00:11 pm	-0.0880	85	6.88		1.00
Replicates	88.6	76.2	88.4	85.9							
L1606120402					UNK	06/28/16 03:02:44 pm	-0.0740	261	6.65		1.00
Replicates	250.8	282.9	243.5	264.9							
L1606120403					UNK	06/28/16 03:05:17 pm	-0.0818	163	8.22		1.00
Replicates	162.0	152.3	155.8	182.3							

Approved: June 29, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
WG573817-06					MSK	06/28/16 03:07:50 pm	4.1300	52719	0.99		1.00
Replicates	52057.2	52582.6	52985.9	53250.4							
% Recovery	105.29										
CCV					CCV	06/28/16 03:10:23 pm	2.0350	26576	0.52		1.00
Replicates	26407.4	26532.0	26635.5	26728.4							
% Recovery	101.74										
CCB					CCB	06/28/16 03:12:54 pm	-0.0930	23	65.71		1.00
Replicates	22.5	31.2	36.6	2.1							
WG573817-07					MSDUP	06/28/16 03:15:27 pm	4.1670	53186	0.15	D	1.00
Replicates	53073.2	53220.6	53257.4	53190.9							
% Recovery	106.22	RPD 209.13									
L1606122801					UNK	06/28/16 03:18:01 pm	-0.0787	201	8.54		1.00
Replicates	222.6	203.3	197.6	181.0							
L1606122802					UNK	06/28/16 03:20:31 pm	-0.0959	-14	72.51		1.00
Replicates	-6.1	-10.7	-27.9	-9.2							
L1606122803					UNK	06/28/16 03:23:02 pm	-0.0905	54	28.97		1.00
Replicates	45.9	72.7	61.8	37.5							
L1606123101					UNK	06/28/16 03:25:33 pm	-0.0937	14	87.11		1.00
Replicates	29.1	-1.3	16.9	12.9							
WG573905-01					SPK	06/28/16 03:28:04 pm	0.9802	13416	0.34		1.00
Replicates	13351.7	13421.7	13427.3	13461.8							
% Recovery	107.39										
L1606123701					UNK	06/28/16 03:30:35 pm	-0.0854	117	15.45		1.00
Replicates	111.5	101.6	143.4	112.6							
L1606123702					UNK	06/28/16 03:33:07 pm	-0.0872	96	13.35		1.00
Replicates	83.3	105.4	107.9	86.0							
L1606123703					UNK	06/28/16 03:35:39 pm	-0.0871	97	18.04		1.00
Replicates	80.1	84.1	110.4	113.9							

Approved: June 29, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606123704					UNK	06/28/16 03:38:11 pm	-0.0865	104	24.52		1.00
Replicates	69.5	127.1	119.3	101.3							
CCV					CCV	06/28/16 03:40:44 pm	2.0280	26491	0.84		1.00
Replicates	26218.4	26428.3	26572.3	26743.8							
% Recovery	101.40										
CCB					CCB	06/28/16 03:43:15 pm	-0.0929	24	8.05		1.00
Replicates	24.0	21.2	25.4	25.2							
L1606123705					UNK	06/28/16 03:45:47 pm	-0.0936	16	119.29		1.00
Replicates	31.7	-8.7	28.3	11.0							
L1606123706					UNK	06/28/16 03:48:20 pm	-0.0953	-5	399.24		1.00
Replicates	14.4	-29.0	11.2	-18.1							
L1606123801					UNK	06/28/16 03:50:53 pm	-0.0948	1	849.32		1.00
Replicates	-10.7	-12.8	4.5	22.7							
L1606123802					UNK	06/28/16 03:53:26 pm	-0.0941	10	119.99		1.00
Replicates	11.7	-6.7	20.8	13.1							
WG573859-02					UNK	06/28/16 03:55:57 pm	-0.0949	-1	175.68		1.00
Replicates	19.5	-3.7	-10.3	-10.3							
WG573859-03					UNK	06/28/16 03:58:27 pm	4.0570	51817	0.25		1.00
Replicates	51633.9	51812.6	51893.3	51927.3							
WG573699-01					UNK	06/28/16 04:00:58 pm	-0.0983	-43	40.48		1.00
Replicates	-24.6	-65.1	-47.6	-35.0							
L160611290					UNK	06/28/16 04:03:29 pm	-0.0740	260	5.66		1.00
Replicates	245.6	263.7	278.3	250.5							
WG574517-01					UNK	06/28/16 04:06:01 pm	1.0080	13765	0.37		1.00
Replicates	13708.7	13734.7	13803.5	13812.7							

Approved: June 29, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606112902					UNK	06/28/16 04:08:33 pm	-0.0952	-4	176.07		1.00
Replicates	-13.8	-0.3	-4.8	2.6							
CCV					CCV	06/28/16 04:11:05 pm	2.0580	26872	0.53		1.00
Replicates	26685.8	26840.7	26949.1	27010.4							
% Recovery	102.92										
CCB					CCB	06/28/16 04:13:36 pm	-0.0928	25	73.75		1.00
Replicates	29.9	46.6	22.5	1.8							
L1606112903					UNK	06/28/16 04:16:08 pm	-0.0946	3	379.85		1.00
Replicates	-5.3	10.9	-9.1	16.4							
L1606112904					UNK	06/28/16 04:18:40 pm	-0.0920	36	21.91		1.00
Replicates	45.6	27.3	32.4	37.6							
L1606112905					UNK	06/28/16 04:21:12 pm	-0.0948	1	176.29		1.00
Replicates	13.9	10.7	-10.3	-9.9							
L1606116411					UNK	06/28/16 04:23:45 pm	-0.0956	-9	118.39		1.00
Replicates	-5.1	-25.2	-3.0	-3.0							
WG574517-02					UNK	06/28/16 04:26:19 pm	1.0010	13675	0.24		1.00
Replicates	13633.8	13664.5	13709.5	13690.3							
WG573859-04					UNK	06/28/16 04:28:52 pm	4.0630	51881	0.47		1.00
Replicates	51555.3	51854.4	52005.3	52110.8							
WG573859-05					UNK	06/28/16 04:31:23 pm	4.1530	53005	0.55		1.00
Replicates	52616.8	52965.7	53158.6	53280.2							
L1606119001					UNK	06/28/16 04:33:54 pm	-0.0895	66	27.09		1.00
Replicates	45.9	57.1	85.3	76.4							
L1606119002					UNK	06/28/16 04:36:25 pm	-0.0945	5	391.70		1.00
Replicates	19.7	21.2	-3.7	-17.8							

Approved: June 29, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606122701					UNK	06/28/16 04:38:56 pm	-0.0918	38	75.22		1.00
Replicates	58.3	57.1	38.8	-2.7							
CCV					CCV	06/28/16 04:41:28 pm	2.0200	26395	0.63		1.00
Replicates	26181.7	26354.5	26485.5	26559.0							
% Recovery	101.01										
CCB					CCB	06/28/16 04:43:59 pm	-0.0948	0	243.10		1.00
Replicates	2.7	25.0	-21.1	-7.1							
L1606122703					UNK	06/28/16 04:46:30 pm	-0.0923	32	45.97		1.00
Replicates	48.7	16.9	22.6	38.1							
L1606122705					UNK	06/28/16 04:49:02 pm	-0.0948	0	466.06		1.00
Replicates	-10.5	6.1	-4.9	9.1							
L1606122706					UNK	06/28/16 04:51:34 pm	-0.0909	49	46.13		1.00
Replicates	20.8	76.1	47.8	51.9							
L1606122707					UNK	06/28/16 04:54:06 pm	-0.0915	41	43.96		1.00
Replicates	15.4	44.5	57.5	47.5							
L1606124201					UNK	06/28/16 04:56:39 pm	-0.0928	25	58.43		1.00
Replicates	19.4	15.9	46.7	17.9							
L1606124202					UNK	06/28/16 04:59:12 pm	-0.0894	68	21.21		1.00
Replicates	87.9	53.0	67.7	64.9							
L1606124203					UNK	06/28/16 05:01:45 pm	-0.0882	82	20.32		1.00
Replicates	86.2	68.9	69.4	104.0							
L1606124204					UNK	06/28/16 05:04:19 pm	-0.0921	35	39.70		1.00
Replicates	17.7	51.3	33.1	36.8							
L1606124205					UNK	06/28/16 05:06:50 pm	-0.0886	77	12.50		1.00
Replicates	63.7	84.1	77.0	84.3							

Approved: June 29, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606124206					UNK	06/28/16 05:09:21 pm	-0.0914	43	23.98		1.00
	Replicates	45.1	28.3	52.5	45.8						
CCV					CCV	06/28/16 05:11:54 pm	2.0260	26463	0.59		1.00
	Replicates	26243.6	26466.8	26559.3	26583.6						
	% Recovery	101.29									
CCB					CCB	06/28/16 05:14:24 pm	-0.0917	38	24.88		1.00
	Replicates	24.1	42.6	43.4	43.7						

Approved: June 29, 2016

Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 12, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - Hanah D. Coe
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 12, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 12, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205	pH:		Program:	
Turn Around Time:	STANDARD				
Project Name/Location:	Longhorn				
Project Number:	60274185.0013BH 1824 MR10			ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18WW22-062116			6/21/16	0755		✓	W	7	✓	✓	✓	✓									
	C04-062116			6/21/16	0855		✓	W	6	✓	✓		✓									
	C04F-062116			6/21/16	0855		✓	W	1			✓										
	C04FD-062116			6/21/16	0855		✓	W	6	✓	✓		✓									
	C04FFD-062116			6/21/16	0855		✓	W	1			✓										
	18GPTMW18-062116			6/21/16	1005		✓	W	7	✓	✓	✓	✓									
	18WW18-062116			6/21/16	1115		✓	W	7	✓	✓	✓	✓									
	18WW17-062116			6/21/16	1140		✓	W	4	✓	✓											
	TRIP BLANK			6/21/16			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 6/21/16	Time 1600	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Rece (Sign			Time	Remarks:

Microbac OVD
Received: 06/22/2016 10:14
By: BRENDA GREGORY 221000087524

Brenda Gregory

*Homogenize all composite samples prior to analysis

ager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061227
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061227-01	764671	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Samplenum	Container ID	Products
L16061227-01	764672	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	PREP	W1	EXT	23-JUN-2016 13:30	CPD	CLS	
3	ANALYZ*	EXT	SEMI	27-JUN-2016 10:41	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	
3	PREP	A1	EXT	30-JUN-2016 16:18	CPD	CLS	
4	DISP	EXT	DISP	01-JUL-2016 08:21	BJO	BJO	
5	ANALYZ*	EXT	SEMI	01-JUL-2016 15:24	SCB	CPD	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061227
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061227-01	764673	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	

Samplenum	Container ID	Products
L16061227-01	764674	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	PREP	W1	DIG	22-JUN-2016 15:02	ERP	CLS	
3	ANALYZ*	DIG	METALS	24-JUN-2016 11:51	JYH	ERP	
4	STORE	DIG	A1	24-JUN-2016 14:18	BRG	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061227-02	764675	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	22-JUN-2016 14:20	CLS		
2	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061227
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061227-02	764676	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	

Samplenum	Container ID	Products
L16061227-03	764677	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	PREP	W1	DIG	22-JUN-2016 15:02	ERP	CLS	
3	ANALYZ*	DIG	METALS	24-JUN-2016 11:51	JYH	ERP	
4	STORE	DIG	A1	24-JUN-2016 14:18	BRG	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061227-04	764678	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061227
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061227-04	764679	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
3	STORE	SEM	A1	30-JUN-2016 15:33	CLS	JWR	

Samplenum	Container ID	Products
L16061227-05	764680	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	PREP	W1	DIG	22-JUN-2016 15:02	ERP	CLS	
3	ANALYZ*	DIG	METALS	24-JUN-2016 11:51	JYH	ERP	
4	STORE	DIG	A1	24-JUN-2016 14:18	BRG	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061227-06	764681	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061227
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061227-06	764682	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	PREP	W1	EXT	23-JUN-2016 13:30	CPD	CLS	
3	ANALYZ*	EXT	SEMI	27-JUN-2016 10:41	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	STORE	W1	A1	24-JUN-2016 09:59	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061227-06	764683	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
3	STORE	SEM	A1	30-JUN-2016 15:33	CLS	JWR	

Samplenum	Container ID	Products
L16061227-06	764684	CO-MS CR-MS CU-MS FE HG K MG MN-MS NA NI-MS PE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	PREP	W1	DIG	22-JUN-2016 15:02	ERP	CLS	
3	ANALYZ*	DIG	METALS	24-JUN-2016 11:51	JYH	ERP	
4	STORE	DIG	A1	24-JUN-2016 14:18	BRG	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061227
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061227-07	764685	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Samplenum	Container ID	Products
L16061227-07	764686	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	PREP	W1	EXT	23-JUN-2016 13:30	CPD	CLS	
3	ANALYZ*	EXT	SEMI	27-JUN-2016 10:41	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	STORE	W1	A1	24-JUN-2016 10:00	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061227-07	764687	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
3	STORE	SEM	A1	30-JUN-2016 15:33	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061227
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061227-07	764688	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	PREP	W1	DIG	22-JUN-2016 15:02	ERP	CLS	
3	ANALYZ*	DIG	METALS	24-JUN-2016 11:51	JYH	ERP	
4	STORE	DIG	A1	24-JUN-2016 14:18	BRG	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061227-08	764689	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Samplenum	Container ID	Products
L16061227-08	764690	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
3	STORE	SEM	A1	30-JUN-2016 15:33	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061227
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061227-09	764691	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac REPORT L16061289
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 2
1.1 Narratives 3
1.2 Certificate of Analysis 40
2.0 Full Sample Data Package 71
2.1 Volatiles Data 72
2.1.1 Volatiles GCMS Data (8260) 73
2.1.1.1 Summary Data 74
2.1.1.2 QC Summary Data 91
2.1.1.3 Sample Data 131
2.1.1.4 Standards Data 159
2.1.1.5 Raw QC Data 280
2.2 Semivolatiles Data 381
2.2.1 Semivolatiles GC/MS Data (Dioxane) 304
2.2.1.1 Summary Data 305
2.2.1.2 QC Summary Data 311
2.2.1.3 Sample Data 336
2.2.1.4 Standards Data 349
2.2.1.5 Raw QC Data 368
2.2 General Chromatography Data 381
2.2.2 6850 LC/MS Data 382
2.2.2.1 Summary Data 383
2.2.2.2 QC Summary Data 387
2.2.2.3 Sample Data 446
2.2.2.4 Standards Data 455
2.2.2.5 Raw QC Data 504
2.3 Metals Data 511
2.3.1 Metals I C P Data 512
2.3.1.1 Summary Data 513
2.3.1.2 QC Summary Data 518
2.3.1.3 Raw Data 583
2.3.2 Metals ICP-MS Data 1175
2.3.2.1 Summary Data 1176
2.3.2.2 QC Summary Data 1181
2.3.2.3 Raw Data 1221
2.3.3 Metals CVAA Data (Mercury) 1682
2.3.3.1 Summary Data 1683
2.3.3.2 QC Summary 1687
2.3.3.3 Raw Data 1711
3.0 Attachments 1716

1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575084, WG575129	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Anthony Canter	Anthony Canter	Analyst I	2016-07-14 20:02:56

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575084, WG575129	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575084, WG575129	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			1
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575084, WG575129	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			3
Was the ICAL curve verified for each analyte?		X			2
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575084, WG575129	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575084, WG575129	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) 1,1-Dichloroethene exceeded the LCL in the LCS analyzed 07/05/16 on HPMS6.

2) Chloromethane exceeded the LCL in the ICV analyzed 06/30/16 on HPMS6.

3). Carbon Tetrachloride, Dichlorodifluoromethane, and Trichlorofluoromethane the UCL in the CCV analyzed 07/05/16 on HPMS6.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-06 14:39:02

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Sample 01 surrogate recovery is above the upper control limit due to obvious sample matrix interference.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-06 18:19:53

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X		X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-12 14:49:14

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 01 required dilution analysis in order to obtain results for calcium, magnesium and sodium within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-12 14:39:07

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 01 required dilution analysis in order to obtain results for barium, manganese and nickel within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-12 14:37:21

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	MW21-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575129	**Analyst:**	TMB	**Run Date:**	07/05/2016 14:58
Collect Date:	06/22/2016 09:45	**Dilution:**	50	**File ID:**	6M140425
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	250	U	500	250	125
Benzene	71-43-2	12.5	U	50.0	12.5	6.25
Bromobenzene	108-86-1	12.5	U	50.0	12.5	6.25
Bromochloromethane	74-97-5	20.0	U	50.0	20.0	10.0
Bromodichloromethane	75-27-4	25.0	U	50.0	25.0	12.5
Bromoform	75-25-2	50.0	U	100	50.0	25.0
Bromomethane	74-83-9	50.0	U	100	50.0	25.0
2-Butanone	78-93-3	250	U	500	250	125
n-Butylbenzene	104-51-8	25.0	U	50.0	25.0	12.5
sec-Butylbenzene	135-98-8	25.0	U	50.0	25.0	12.5
tert-Butylbenzene	98-06-6	25.0	U	50.0	25.0	12.5
Carbon disulfide	75-15-0	50.0	U	100	50.0	25.0
Carbon tetrachloride	56-23-5	25.0	Q	50.0	25.0	12.5
Chlorobenzene	108-90-7	12.5	U	50.0	12.5	6.25
Chlorodibromomethane	124-48-1	25.0	U	50.0	25.0	12.5
Chloroethane	75-00-3	50.0	U	100	50.0	25.0
Chloroform	67-66-3	13.5	J	50.0	12.5	6.25
Chloromethane	74-87-3	50.0	U	100	50.0	25.0
2-Chlorotoluene	95-49-8	12.5	U	50.0	12.5	6.25
4-Chlorotoluene	106-43-4	25.0	U	50.0	25.0	12.5
1,2-Dibromo-3-chloropropane	96-12-8	100	U	250	100	50.0
1,2-Dibromoethane	106-93-4	25.0	U	50.0	25.0	12.5
Dibromomethane	74-95-3	25.0	U	50.0	25.0	12.5
1,2-Dichlorobenzene	95-50-1	12.5	U	50.0	12.5	6.25
1,3-Dichlorobenzene	541-73-1	25.0	U	50.0	25.0	12.5
1,4-Dichlorobenzene	106-46-7	12.5	U	50.0	12.5	6.25
Dichlorodifluoromethane	75-71-8	25.0	Q	50.0	25.0	12.5
1,1-Dichloroethane	75-34-3	12.5	U	50.0	12.5	6.25
1,2-Dichloroethane	107-06-2	35.2	J	50.0	25.0	12.5
1,1-Dichloroethene	75-35-4	50.0	U	100	50.0	25.0
cis-1,2-Dichloroethene	156-59-2	112		50.0	25.0	12.5
trans-1,2-Dichloroethene	156-60-5	25.0	U	50.0	25.0	12.5

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	20.0	U	50.0	20.0	10.0
1,3-Dichloropropane	142-28-9	20.0	U	50.0	20.0	10.0
2,2-Dichloropropane	594-20-7	25.0	U	50.0	25.0	12.5
cis-1,3-Dichloropropene	10061-01-5	25.0	U	50.0	25.0	12.5
trans-1,3-Dichloropropene	10061-02-6	50.0	U	100	50.0	25.0
1,1-Dichloropropene	563-58-6	25.0	U	50.0	25.0	12.5
Ethylbenzene	100-41-4	25.0	U	50.0	25.0	12.5
2-Hexanone	591-78-6	250	U	500	250	125
Hexachlorobutadiene	87-68-3	25.0	U	50.0	25.0	12.5
Isopropylbenzene	98-82-8	25.0	U	50.0	25.0	12.5
p-Isopropyltoluene	99-87-6	25.0	U	50.0	25.0	12.5
4-Methyl-2-pentanone	108-10-1	250	U	500	250	125
Methylene chloride	75-09-2	25.0	U	50.0	25.0	12.5
Naphthalene	91-20-3	20.0	U	50.0	20.0	10.0
n-Propylbenzene	103-65-1	12.5	U	50.0	12.5	6.25
Styrene	100-42-5	12.5	U	50.0	12.5	6.25
1,1,1,2-Tetrachloroethane	630-20-6	25.0	U	50.0	25.0	12.5
1,1,2,2-Tetrachloroethane	79-34-5	20.0	U	50.0	20.0	10.0
Tetrachloroethene	127-18-4	25.0	U	50.0	25.0	12.5
Toluene	108-88-3	25.0	U	50.0	25.0	12.5
1,2,3-Trichlorobenzene	87-61-6	15.0	U	50.0	15.0	7.50
1,2,4-Trichlorobenzene	120-82-1	20.0	U	50.0	20.0	10.0
1,1,1-Trichloroethane	71-55-6	25.0	U	50.0	25.0	12.5
1,1,2-Trichloroethane	79-00-5	25.0	U	50.0	25.0	12.5
Trichloroethene	79-01-6	6080		50.0	25.0	12.5
Trichlorofluoromethane	75-69-4	25.0	Q	50.0	25.0	12.5
1,2,3-Trichloropropane	96-18-4	50.0	U	100	50.0	25.0
1,2,4-Trimethylbenzene	95-63-6	25.0	U	50.0	25.0	12.5
1,3,5-Trimethylbenzene	108-67-8	25.0	U	50.0	25.0	12.5
Vinyl chloride	75-01-4	46.2	J	50.0	25.0	12.5
o-Xylene	95-47-6	25.0	U	50.0	25.0	12.5
m-,p-Xylene	179601-23-1	50.0	U	100	50.0	25.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	99.0	85	120	
4-Bromofluorobenzene	98.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW21-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	06/30/2016 23:44
Collect Date:	06/22/2016 09:45	**Dilution:**	1	**File ID:**	15M18698
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.55	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	795	20	129	*

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW21-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 19:05
Collect Date:	06/22/2016 09:45	**Dilution:**	10000	**File ID:**	1LM.LM35578
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	26100		4000	2000	1000

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW21-062216	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:52
Collect Date:	06/22/2016 09:45	**Dilution:**	1	**File ID:**	T3.062416.145235
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0620	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	1.03		0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.61		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW21-062216	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/25/2016 15:44
Collect Date:	06/22/2016 09:45	**Dilution:**	20	**File ID:**	T3.062516.154432
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	213		10.0	5.00	2.50
Magnesium, Total	7439-95-4	163		20.0	10.0	5.00
Sodium, Total	7440-23-5	580		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW21-062216	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 12:32
Collect Date:	06/22/2016 09:45	**Dilution:**	1	**File ID:**	NI.070116.123211
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00812		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00132		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.195		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0569		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.0261		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00262		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0230	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW21-062216	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 16:05
Collect Date:	06/22/2016 09:45	**Dilution:**	50	**File ID:**	NI.070116.160530
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	5.91		0.300	0.150	0.0750
Manganese, Total	7439-96-5	1.81		0.200	0.100	0.0500
Nickel, Total	7440-02-0	0.760		0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW21-062216	**Prep Method:**	7470A	**Prep Date:**	06/25/2016 11:30
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 10:18
Workgroup #:	WG574691	**Analyst:**	AMA	**Run Date:**	07/01/2016 11:34
Collect Date:	06/22/2016 09:45	**Dilution:**	1	**File ID:**	M7.070116.113445
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	MW9-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575084	**Analyst:**	TMB	**Run Date:**	07/02/2016 22:40
Collect Date:	06/22/2016 11:05	**Dilution:**	10	**File ID:**	6M140384
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	Q	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	3.97	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	5.00	U	10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	10.0	U	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	64.7		10.0	5.00	2.50

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
Trichloroethene	79-01-6	1460		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	99.8	85	120	
4-Bromofluorobenzene	98.9	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW9-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 00:06
Collect Date:	06/22/2016 11:05	**Dilution:**	1	**File ID:**	15M18699
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.77	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	116	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW9-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 19:24
Collect Date:	06/22/2016 11:05	**Dilution:**	100	**File ID:**	1LM.LM35579
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	263		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16061289-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW02-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575084	**Analyst:**	TMB	**Run Date:**	07/02/2016 18:55
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	6M140377
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.31	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW02-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 00:29
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	15M18700
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	53.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW02-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 19:43
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	1LM.LM35580
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW02F-062216	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:56
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	T3.062416.145634
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.12		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	7.09		0.500	0.250	0.125
Iron, Total	7439-89-6	1.61		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.34		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.24		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	14.1		1.00	0.500	0.250

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW02F-062216	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 12:35
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	NI.070116.123523
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000926	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0479		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00315	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00608		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00127	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0851		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00419	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00226		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW02F-062216	**Prep Method:**	7470A	**Prep Date:**	06/25/2016 11:30
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 10:18
Workgroup #:	WG574691	**Analyst:**	AMA	**Run Date:**	07/01/2016 11:37
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	M7.070116.113718
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW10SW-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575084	**Analyst:**	TMB	**Run Date:**	07/02/2016 19:27
Collect Date:	06/22/2016 14:55	**Dilution:**	1	**File ID:**	6M140378
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.3	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW10SW-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 00:51
Collect Date:	06/22/2016 14:55	**Dilution:**	1	**File ID:**	15M18701
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	55.3	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW10SW-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 20:58
Collect Date:	06/22/2016 14:55	**Dilution:**	1	**File ID:**	1LM.LM35584
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575084	**Analyst:**	TMB	**Run Date:**	07/02/2016 16:15
Collect Date:	06/22/2016 00:01	**Dilution:**	1	**File ID:**	6M140372
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	MW21-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575129	**Analyst:**	TMB	**Run Date:**	07/05/2016 14:58
Collect Date:	06/22/2016 09:45	**Dilution:**	50	**File ID:**	6M140425
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	250	U	500	250	125
Benzene	71-43-2	12.5	U	50.0	12.5	6.25
Bromobenzene	108-86-1	12.5	U	50.0	12.5	6.25
Bromochloromethane	74-97-5	20.0	U	50.0	20.0	10.0
Bromodichloromethane	75-27-4	25.0	U	50.0	25.0	12.5
Bromoform	75-25-2	50.0	U	100	50.0	25.0
Bromomethane	74-83-9	50.0	U	100	50.0	25.0
2-Butanone	78-93-3	250	U	500	250	125
n-Butylbenzene	104-51-8	25.0	U	50.0	25.0	12.5
sec-Butylbenzene	135-98-8	25.0	U	50.0	25.0	12.5
tert-Butylbenzene	98-06-6	25.0	U	50.0	25.0	12.5
Carbon disulfide	75-15-0	50.0	U	100	50.0	25.0
Carbon tetrachloride	56-23-5	25.0	Q	50.0	25.0	12.5
Chlorobenzene	108-90-7	12.5	U	50.0	12.5	6.25
Chlorodibromomethane	124-48-1	25.0	U	50.0	25.0	12.5
Chloroethane	75-00-3	50.0	U	100	50.0	25.0
Chloroform	67-66-3	13.5	J	50.0	12.5	6.25
Chloromethane	74-87-3	50.0	U	100	50.0	25.0
2-Chlorotoluene	95-49-8	12.5	U	50.0	12.5	6.25
4-Chlorotoluene	106-43-4	25.0	U	50.0	25.0	12.5
1,2-Dibromo-3-chloropropane	96-12-8	100	U	250	100	50.0
1,2-Dibromoethane	106-93-4	25.0	U	50.0	25.0	12.5
Dibromomethane	74-95-3	25.0	U	50.0	25.0	12.5
1,2-Dichlorobenzene	95-50-1	12.5	U	50.0	12.5	6.25
1,3-Dichlorobenzene	541-73-1	25.0	U	50.0	25.0	12.5
1,4-Dichlorobenzene	106-46-7	12.5	U	50.0	12.5	6.25
Dichlorodifluoromethane	75-71-8	25.0	Q	50.0	25.0	12.5
1,1-Dichloroethane	75-34-3	12.5	U	50.0	12.5	6.25
1,2-Dichloroethane	107-06-2	35.2	J	50.0	25.0	12.5
1,1-Dichloroethene	75-35-4	50.0	U	100	50.0	25.0
cis-1,2-Dichloroethene	156-59-2	112		50.0	25.0	12.5
trans-1,2-Dichloroethene	156-60-5	25.0	U	50.0	25.0	12.5

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	20.0	U	50.0	20.0	10.0
1,3-Dichloropropane	142-28-9	20.0	U	50.0	20.0	10.0
2,2-Dichloropropane	594-20-7	25.0	U	50.0	25.0	12.5
cis-1,3-Dichloropropene	10061-01-5	25.0	U	50.0	25.0	12.5
trans-1,3-Dichloropropene	10061-02-6	50.0	U	100	50.0	25.0
1,1-Dichloropropene	563-58-6	25.0	U	50.0	25.0	12.5
Ethylbenzene	100-41-4	25.0	U	50.0	25.0	12.5
2-Hexanone	591-78-6	250	U	500	250	125
Hexachlorobutadiene	87-68-3	25.0	U	50.0	25.0	12.5
Isopropylbenzene	98-82-8	25.0	U	50.0	25.0	12.5
p-Isopropyltoluene	99-87-6	25.0	U	50.0	25.0	12.5
4-Methyl-2-pentanone	108-10-1	250	U	500	250	125
Methylene chloride	75-09-2	25.0	U	50.0	25.0	12.5
Naphthalene	91-20-3	20.0	U	50.0	20.0	10.0
n-Propylbenzene	103-65-1	12.5	U	50.0	12.5	6.25
Styrene	100-42-5	12.5	U	50.0	12.5	6.25
1,1,1,2-Tetrachloroethane	630-20-6	25.0	U	50.0	25.0	12.5
1,1,2,2-Tetrachloroethane	79-34-5	20.0	U	50.0	20.0	10.0
Tetrachloroethene	127-18-4	25.0	U	50.0	25.0	12.5
Toluene	108-88-3	25.0	U	50.0	25.0	12.5
1,2,3-Trichlorobenzene	87-61-6	15.0	U	50.0	15.0	7.50
1,2,4-Trichlorobenzene	120-82-1	20.0	U	50.0	20.0	10.0
1,1,1-Trichloroethane	71-55-6	25.0	U	50.0	25.0	12.5
1,1,2-Trichloroethane	79-00-5	25.0	U	50.0	25.0	12.5
Trichloroethene	79-01-6	6080		50.0	25.0	12.5
Trichlorofluoromethane	75-69-4	25.0	Q	50.0	25.0	12.5
1,2,3-Trichloropropane	96-18-4	50.0	U	100	50.0	25.0
1,2,4-Trimethylbenzene	95-63-6	25.0	U	50.0	25.0	12.5
1,3,5-Trimethylbenzene	108-67-8	25.0	U	50.0	25.0	12.5
Vinyl chloride	75-01-4	46.2	J	50.0	25.0	12.5
o-Xylene	95-47-6	25.0	U	50.0	25.0	12.5
m-,p-Xylene	179601-23-1	50.0	U	100	50.0	25.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	99.0	85	120	
4-Bromofluorobenzene	98.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	MW9-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575084	**Analyst:**	TMB	**Run Date:**	07/02/2016 22:40
Collect Date:	06/22/2016 11:05	**Dilution:**	10	**File ID:**	6M140384
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	Q	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	3.97	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	5.00	U	10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	10.0	U	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	64.7		10.0	5.00	2.50

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
Trichloroethene	79-01-6	1460		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	99.8	85	120	
4-Bromofluorobenzene	98.9	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW02-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575084	**Analyst:**	TMB	**Run Date:**	07/02/2016 18:55
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	6M140377
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.31	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW10SW-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575084	**Analyst:**	TMB	**Run Date:**	07/02/2016 19:27
Collect Date:	06/22/2016 14:55	**Dilution:**	1	**File ID:**	6M140378
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.3	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575084	**Analyst:**	TMB	**Run Date:**	07/02/2016 16:15
Collect Date:	06/22/2016 00:01	**Dilution:**	1	**File ID:**	6M140372
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 042416
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75498 Surrogate Standard: STD75498
CCV: STD75791 LCS: STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566155

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M138749	RINSE	NA	1	1		04/24/16 16:05
6M138750	WG566155-01 50ng BFB 826-A9	NA	1	1	STD75485	04/24/16 16:33
6M138751	WG566155-02 5ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 16:59
6M138752	WG566155-03 20ug/L STD 826-A	NA	1	1	STD75791	04/24/16 17:31
6M138753	WG566155-04 50ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 18:03
6M138754	WG566155-05 100ug/L STD 826-A	NA	1	1	STD75791	04/24/16 18:36
6M138755	WG566155-06 200ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:08
6M138756	WG566155-07 300ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:40
6M138757	WG566155-08 400ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:12
6M138758	WG566155-09 500ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:44
6M138759	RINSE	NA	1	1		04/24/16 21:16
6M138760	RINSE	NA	1	1		04/24/16 21:49
6M138761	WG566155-10 100ug/L ALT SRC	NA	1	1	STD75801	04/24/16 22:21
6M138762	RINSE	NA	1	1		04/24/16 22:53
6M138763	RINSE	NA	1	1		04/24/16 23:25

Approved: April 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 063016
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53798

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76744 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574723

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140313	WG574723-01 50ng BFB STD 8260	NA	1	1	STD76496	06/30/16 11:36
6M140314	WG574723-02 0.3ug/L STD 8260	NA	1	1	STD76892	06/30/16 12:03
6M140315	WG574723-03 0.4ug/L STD 8260	NA	1	1	STD76892	06/30/16 12:35
6M140316	WG574723-04 1ug/L STD 8260	NA	1	1	STD76892	06/30/16 13:08
6M140317	WG574723-05 2ug/L STD 8260	NA	1	1	STD76892	06/30/16 13:40
6M140318	WG574723-06 5ug/L STD 8260	NA	1	1	STD76892	06/30/16 14:12
6M140319	WG574723-07 20ug/L STD 8260	NA	1	1	STD76892	06/30/16 14:44
6M140320	WG574723-08 50ug/L STD 8260	NA	1	1	STD76892	06/30/16 15:16
6M140321	WG574723-09 100ug/L STD 8260	NA	1	1	STD76892	06/30/16 15:48
6M140322	WG574723-10 200ug/L STD 8260	NA	1	1	STD76892	06/30/16 16:21
6M140323	WG574723-11 300ug/L STD 8260	NA	1	1	STD76892	06/30/16 16:53
6M140324	RINSE	NA	1	1		06/30/16 17:27
6M140325	RINSE	NA	1	1		06/30/16 17:59
6M140326	WG574723-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76744	06/30/16 18:31
6M140327	RINSE	NA	1	1		06/30/16 19:04

Approved: July 07, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 070216
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76870 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG575084

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140362	WG575083-01 50ng BFB STD 8260	NA	1	1	STD76496	07/02/16 11:00
6M140363	WG575083-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/02/16 11:25
6M140364	WG575083-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/02/16 11:57
6M140365	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	07/02/16 12:29
6M140366	WG575084-01 VBLK0702 BLANK STD 826	NA	1	1		07/02/16 13:02
6M140367	WG575084-02 20ug/L LCS STD 8260	NA	1	1	STD76870	07/02/16 13:34
6M140368	WG575084-03 20ug/L LCS2 STD 8260	NA	1	1	STD76870	07/02/16 14:06
6M140369	L16061394-01 B 826-BETX	6	2	1		07/02/16 14:38
6M140370	L16061214-10 A TB 826-SPE	<2	1	1		07/02/16 15:10
6M140371	L16061214-09 A TB 826-SPE	<2	1	1		07/02/16 15:42
6M140372	L16061289-06 A TB 826-LOW	<2	1	1		07/02/16 16:15
6M140373	L16061567-01 B 826-SPE1	7	1	1		07/02/16 16:47
6M140374	L16061570-01 A 826-SPE	7	1	1		07/02/16 17:19
6M140375	L16061569-01 B 826-SPE	7	1	1		07/02/16 17:51
6M140376	L16061214-06 A 826-SPE	<2	1	1		07/02/16 18:23
6M140377	L16061289-03 A 826-LOW	<2	1	1		07/02/16 18:55
6M140378	L16061289-05 A 826-LOW	<2	1	1		07/02/16 19:27
6M140379	L16061214-03 A 826-SPE	<2	1	1		07/02/16 19:59
6M140380	L16061214-08 A 826-SPE	<2	1	1		07/02/16 20:31
6M140381	L16061214-02 A 826-SPE	<2	1	1		07/02/16 21:04
6M140382	L16061214-01 A 2.5X 826-SPE	<2	1	2.5		07/02/16 21:36
6M140383	L16061289-01 A 100X 826-LOW	<2	1	100		07/02/16 22:08
6M140384	L16061289-02 A 10X 826-LOW	<2	1	10		07/02/16 22:40
6M140385	CCV	NA	1	1		07/02/16 23:12
6M140386	RINSE	NA	1	1		07/02/16 23:44
6M140387	RINSE	NA	1	1		07/03/16 00:16

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M140363				
	Ketones were low, DNR.			
4				

Approved: July 06, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 070216
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76870 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG575084

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 6M140365				
	Not needed, DNR.			
22	X	50	Analyzed too dilute	
File ID: 6M140383				

Approved: July 06, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 070516
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53801

Internal Standard: STD75854 Surrogate Standard: STD75854
CCV: STD76892 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG575129

Comments: File 6M140419 was not used. Computer froze and had to reboot.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140415	RINSE	NA	1	1		07/05/16 09:08
6M140416	RINSE	NA	1	1		07/05/16 09:52
6M140417	WG575127-01 50ng BFB STD 8260	NA	1	1	STD76496	07/05/16 10:49
6M140418	WG575127-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/05/16 11:14
6M140420	WG575129-01 VBLK0705 BLANK STD 826	NA	1	1		07/05/16 12:18
6M140421	WG575129-02 20ugL LCS STD 8260	NA	1	1	STD76744	07/05/16 12:50
6M140422	L16061507-03 C 826-SPE2	<2	1	1		07/05/16 13:22
6M140423	L16061284-01 B 826-SPE	<2	1	1		07/05/16 13:55
6M140424	L16061417-09 RB A 826-SPE	<2	1	1		07/05/16 14:27
6M140425	L16061289-01 B 50X 826-LOW 00	<2	1	50		07/05/16 14:58
6M140426	L16061284-05 B 2.5X 826-SPE 00	7	1	2.5		07/05/16 15:31
6M140427	L16061417-06 A MS 826-SPE	<2	1	1	STD76744	07/05/16 16:03
6M140428	L16061417-07 A MSD 826-SPE	<2	1	1	STD76744	07/05/16 16:36
6M140429	L16061362-09 TB A 826-SPE	<2	1	1		07/05/16 17:08
6M140430	L16061405-01 A 826-SPE	<2	1	1		07/05/16 17:40
6M140431	L16061405-02 A 826-SPE	<2	1	1		07/05/16 18:13
6M140432	L16061417-01 A 826-SPE	<2	1	1		07/05/16 18:45
6M140433	L16061417-05 A REF 826-SPE	<2	1	1		07/05/16 19:16
6M140434	L16061417-08 A 826-SPE	<2	1	1		07/05/16 19:48
6M140435	L16061417-02 A 826-SPE	<2	1	1		07/05/16 20:20
6M140436	L16061417-03 A 826-SPE	<2	1	1		07/05/16 20:53
6M140437	L16061417-04 A 826-SPE	<2	1	1		07/05/16 21:25
6M140438	L16061401-01 A 10X 826-SPE	<2	1	10		07/05/16 21:57
6M140439	L16061402-01 A 100X 826-SPE	<2	1	100		07/05/16 22:29
6M140440	CCV	NA	1	1		07/05/16 23:01
6M140441	RINSE	NA	1	1		07/05/16 23:33
6M140442	RINSE	NA	1	1		07/06/16 00:05

Comments

Seq.	Rerun	Dil.	Reason	Analytes
19	X	5	Over Calibration Range	TCE
File ID: 6M140434				

Approved: July 07, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS6	Dataset:	070516		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53801				

Internal Standard: STD75854 Surrogate Standard: STD75854

CCV: STD76892 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG575129

Comments: File 6M140419 was not used. Computer froze and had to reboot.

Comments

Seq.	Rerun	Dil.	Reason	Analytes
23	X	100	Over Calibration Range	TCE
File ID: 6M140438				
24	X	100	Carry-over contamination	
File ID: 6M140439				
	DNR.			

Approved: July 07, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 24-APR-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74754
Analytical Workgroups: WG566155

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-APR-2016
Tiffany Bailey

Secondary Reviewer:
29-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-29-2016 12:29:57

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76082
Analytical Workgroups: WG574723

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-JUL-2016
Tiffany Bailey

Secondary Reviewer:
07-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-07-2016 13:59:59

Microbac Laboratories Inc.

Data Checklist

Date: 02-JUL-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76114
Analytical Workgroups: WG575084

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
05-JUL-2016
Tiffany Bailey

Secondary Reviewer:
06-JUL-2016
Wadei Dg

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-06-2016 11:18:53

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76154
Analytical Workgroups: WG575129

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
07-JUL-2016
Tiffany Bailey

Secondary Reviewer:
07-JUL-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-07-2016 15:37:06

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG575084

Login Number: L16061289

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW9-062216	02	06/22/16					07/02/2016	10.5	14		07/02/16	10.5	14	
18WW02-062216	03	06/22/16					07/02/2016	10.2	14		07/02/16	10.2	14	
18CPTMW10SW-062216	05	06/22/16					07/02/2016	10.2	14		07/02/16	10.2	14	
TRIP BLANK	06	06/22/16					07/02/2016	10.7	14		07/02/16	10.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4839893
Report generated 07/07/2016 11:58

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG575129

Login Number: L16061289

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW21-062216	01	06/22/16					07/05/2016	13.2	14		07/05/16	13.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4839893
Report generated 07/07/2016 11:58

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061289
Instrument Id: HPMS6
Workgroup (AAB#): WG575129

Method: 8260
CAL ID: HPMS6-30-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061289-01	50.0	DL01	103	106	98.0	99.0
WG575129-01	1.00	01	101	104	98.9	101
WG575129-02	1.00	01	102	104	93.5	98.8

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4839899
Report generated: 07/07/2016 11:59

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061289
Instrument Id: HPMS6
Workgroup (AAB#): WG575084

Method: 8260
CAL ID: HPMS6-30-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061289-02	10.0	DL01	103	104	98.9	99.8
L16061289-03	1.00	01	104	102	100	100
L16061289-05	1.00	01	102	103	99.3	101
L16061289-06	1.00	01	101	101	103	101
WG575084-01	1.00	01	101	100	103	100
WG575084-02	1.00	01	100	101	96.4	99.6
WG575084-03	1.00	01	100	100	97.9	99.8

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4839899
Report generated: 07/07/2016 11:59

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061289 Prep Date: 07/02/16 13:02 Sample ID: WG575084-01
Instrument ID: HPMS6 Run Date: 07/02/16 13:02 Prep Method: 5030B/5030C/503
File ID: 6M140366 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575084 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4839894
07-JUL-2016 11:58

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061289 Prep Date: 07/02/16 13:02 Sample ID: WG575084-01
Instrument ID: HPMS6 Run Date: 07/02/16 13:02 Prep Method: 5030B/5030C/503
File ID: 6M140366 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575084 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	100	85 - 115	PASS
1,2-Dichloroethane-d4	101	70 - 120	PASS
Toluene-d8	100	85 - 120	PASS
4-Bromofluorobenzene	103	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4839894
07-JUL-2016 11:58

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061289 Prep Date: 07/05/16 12:18 Sample ID: WG575129-01
Instrument ID: HPMS6 Run Date: 07/05/16 12:18 Prep Method: 5030B/5030C/503
File ID: 6M140420 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575129 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4839894
07-JUL-2016 11:58

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061289 Prep Date: 07/05/16 12:18 Sample ID: WG575129-01
Instrument ID: HPMS6 Run Date: 07/05/16 12:18 Prep Method: 5030B/5030C/503
File ID: 6M140420 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575129 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	85 - 115	PASS
1,2-Dichloroethane-d4	101	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	98.9	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4839894
07-JUL-2016 11:58

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 | Run Date: 07/02/2016 | Sample ID: WG575084-02
Instrument ID: HPMS6 | Run Time: 13:34 | Prep Method: 5030B/5030C/503
File ID: 6M140367 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG575084 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76870 | Cal ID: HPMS6-30-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.5	108	40 - 140	
Benzene	20.0	19.9	99.7	80 - 120	
Bromobenzene	20.0	21.0	105	75 - 125	
Bromochloromethane	20.0	20.3	102	65 - 130	
Bromodichloromethane	20.0	21.8	109	75 - 120	
Bromoform	20.0	20.9	104	70 - 130	
Bromomethane	20.0	15.2	76.2	30 - 145	
2-Butanone	20.0	20.5	103	30 - 150	
n-Butylbenzene	20.0	22.0	110	70 - 135	
sec-Butylbenzene	20.0	22.5	112	70 - 125	
tert-Butylbenzene	20.0	22.8	114	70 - 130	
Carbon disulfide	20.0	17.2	85.9	35 - 160	
Carbon tetrachloride	20.0	21.9	110	65 - 140	
Chlorobenzene	20.0	21.7	109	80 - 120	
Chlorodibromomethane	20.0	22.5	113	60 - 135	
Chloroethane	20.0	20.2	101	60 - 135	
Chloroform	20.0	20.2	101	65 - 135	
Chloromethane	20.0	13.3	66.4	40 - 125	
2-Chlorotoluene	20.0	20.9	105	75 - 125	
4-Chlorotoluene	20.0	22.8	114	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	23.6	118	50 - 130	
1,2-Dibromoethane	20.0	21.3	106	80 - 120	
Dibromomethane	20.0	20.4	102	75 - 125	
1,2-Dichlorobenzene	20.0	22.5	112	70 - 120	
1,3-Dichlorobenzene	20.0	21.7	108	75 - 125	
1,4-Dichlorobenzene	20.0	22.1	111	75 - 125	
Dichlorodifluoromethane	20.0	12.4	61.8	30 - 155	
1,1-Dichloroethane	20.0	18.8	94.2	70 - 135	
1,2-Dichloroethane	20.0	21.2	106	70 - 130	
1,1-Dichloroethene	20.0	17.6	88.0	70 - 130	
cis-1,2-Dichloroethene	20.0	20.1	101	70 - 125	
trans-1,2-Dichloroethene	20.0	18.9	94.4	60 - 140	
1,2-Dichloropropane	20.0	20.9	105	75 - 125	
1,3-Dichloropropane	20.0	22.1	111	75 - 125	
2,2-Dichloropropane	20.0	20.3	102	70 - 135	
cis-1,3-Dichloropropene	20.0	22.8	114	70 - 130	
trans-1,3-Dichloropropene	20.0	21.8	109	55 - 140	
1,1-Dichloropropene	20.0	19.4	96.9	75 - 130	
Ethylbenzene	20.0	21.6	108	75 - 125	
2-Hexanone	20.0	20.4	102	55 - 130	
Hexachlorobutadiene	20.0	22.1	111	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4842635
Report generated: 07/07/2016 11:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 Run Date: 07/02/2016 Sample ID: WG575084-02
Instrument ID: HPMS6 Run Time: 13:34 Prep Method: 5030B/5030C/503
File ID: 6M140367 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575084 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76870 Cal ID: HPMS6-30-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.5	113	75 - 125	
p-Isopropyltoluene	20.0	22.3	112	75 - 130	
4-Methyl-2-pentanone	20.0	20.3	102	60 - 135	
Methylene chloride	20.0	19.0	95.1	55 - 140	
Naphthalene	20.0	19.2	95.9	55 - 140	
n-Propylbenzene	20.0	22.4	112	70 - 130	
Styrene	20.0	22.4	112	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	22.6	113	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	22.5	112	65 - 130	
Tetrachloroethene	20.0	20.4	102	45 - 150	
Toluene	20.0	20.5	103	75 - 120	
1,2,3-Trichlorobenzene	20.0	20.5	103	55 - 140	
1,2,4-Trichlorobenzene	20.0	21.1	106	65 - 135	
1,1,1-Trichloroethane	20.0	20.8	104	65 - 130	
1,1,2-Trichloroethane	20.0	22.1	110	75 - 125	
Trichloroethene	20.0	20.3	102	70 - 125	
Trichlorofluoromethane	20.0	24.2	121	60 - 145	
1,2,3-Trichloropropane	20.0	22.9	114	75 - 125	
1,2,4-Trimethylbenzene	20.0	22.1	110	75 - 130	
1,3,5-Trimethylbenzene	20.0	22.1	110	75 - 130	
Vinyl chloride	20.0	19.4	96.8	50 - 145	
o-Xylene	20.0	22.5	113	80 - 120	
m-,p-Xylene	40.0	44.5	111	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	85 - 115	PASS
1,2-Dichloroethane-d4	100	70 - 120	PASS
Toluene-d8	99.6	85 - 120	PASS
4-Bromofluorobenzene	96.4	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4842635
Report generated: 07/07/2016 11:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 | Run Date: 07/05/2016 | Sample ID: WG575129-02
Instrument ID: HPMS6 | Run Time: 12:50 | Prep Method: 5030B/5030C/503
File ID: 6M140421 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG575129 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76870 | Cal ID: HPMS6-30-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.1	106	40 - 140	
Benzene	20.0	19.4	97.0	80 - 120	
Bromobenzene	20.0	21.2	106	75 - 125	
Bromochloromethane	20.0	19.9	99.7	65 - 130	
Bromodichloromethane	20.0	22.4	112	75 - 120	
Bromoform	20.0	22.3	112	70 - 130	
Bromomethane	20.0	18.1	90.5	30 - 145	
2-Butanone	20.0	20.6	103	30 - 150	
n-Butylbenzene	20.0	22.2	111	70 - 135	
sec-Butylbenzene	20.0	22.3	112	70 - 125	
tert-Butylbenzene	20.0	22.7	113	70 - 130	
Carbon disulfide	20.0	18.4	91.8	35 - 160	
Carbon tetrachloride	20.0	22.0	110	65 - 140	
Chlorobenzene	20.0	21.7	109	80 - 120	
Chlorodibromomethane	20.0	23.3	116	60 - 135	
Chloroethane	20.0	21.3	107	60 - 135	
Chloroform	20.0	20.4	102	65 - 135	
Chloromethane	20.0	15.6	78.0	40 - 125	
2-Chlorotoluene	20.0	20.2	101	75 - 125	
4-Chlorotoluene	20.0	23.1	115	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	23.9	119	50 - 130	
1,2-Dibromoethane	20.0	21.4	107	80 - 120	
Dibromomethane	20.0	21.0	105	75 - 125	
1,2-Dichlorobenzene	20.0	23.2	116	70 - 120	
1,3-Dichlorobenzene	20.0	22.3	111	75 - 125	
1,4-Dichlorobenzene	20.0	22.5	112	75 - 125	
Dichlorodifluoromethane	20.0	12.8	63.9	30 - 155	
1,1-Dichloroethane	20.0	18.2	90.9	70 - 135	
1,2-Dichloroethane	20.0	21.5	107	70 - 130	
1,1-Dichloroethene	20.0	13.9	69.5	70 - 130	*
cis-1,2-Dichloroethene	20.0	19.9	99.3	70 - 125	
trans-1,2-Dichloroethene	20.0	17.5	87.6	60 - 140	
1,2-Dichloropropane	20.0	20.7	104	75 - 125	
1,3-Dichloropropane	20.0	21.7	109	75 - 125	
2,2-Dichloropropane	20.0	19.8	98.9	70 - 135	
cis-1,3-Dichloropropene	20.0	22.9	115	70 - 130	
trans-1,3-Dichloropropene	20.0	21.9	109	55 - 140	
1,1-Dichloropropene	20.0	18.3	91.4	75 - 130	
Ethylbenzene	20.0	21.8	109	75 - 125	
2-Hexanone	20.0	18.5	92.4	55 - 130	
Hexachlorobutadiene	20.0	23.6	118	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4842635
Report generated: 07/07/2016 11:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 | Run Date: 07/05/2016 | Sample ID: WG575129-02
Instrument ID: HPMS6 | Run Time: 12:50 | Prep Method: 5030B/5030C/503
File ID: 6M140421 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG575129 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76870 | Cal ID: HPMS6-30-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.7	114	75 - 125	
p-Isopropyltoluene	20.0	22.4	112	75 - 130	
4-Methyl-2-pentanone	20.0	18.7	93.7	60 - 135	
Methylene chloride	20.0	17.9	89.3	55 - 140	
Naphthalene	20.0	20.4	102	55 - 140	
n-Propylbenzene	20.0	22.1	111	70 - 130	
Styrene	20.0	22.8	114	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	23.2	116	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	22.3	112	65 - 130	
Tetrachloroethene	20.0	20.8	104	45 - 150	
Toluene	20.0	20.2	101	75 - 120	
1,2,3-Trichlorobenzene	20.0	22.2	111	55 - 140	
1,2,4-Trichlorobenzene	20.0	22.2	111	65 - 135	
1,1,1-Trichloroethane	20.0	20.5	103	65 - 130	
1,1,2-Trichloroethane	20.0	21.7	109	75 - 125	
Trichloroethene	20.0	20.5	102	70 - 125	
Trichlorofluoromethane	20.0	21.7	108	60 - 145	
1,2,3-Trichloropropane	20.0	23.3	116	75 - 125	
1,2,4-Trimethylbenzene	20.0	22.2	111	75 - 130	
1,3,5-Trimethylbenzene	20.0	21.8	109	75 - 130	
Vinyl chloride	20.0	20.6	103	50 - 145	
o-Xylene	20.0	22.6	113	80 - 120	
m-,p-Xylene	40.0	44.7	112	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	85 - 115	PASS
1,2-Dichloroethane-d4	102	70 - 120	PASS
Toluene-d8	98.8	85 - 120	PASS
4-Bromofluorobenzene	93.5	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4842635
Report generated: 07/07/2016 11:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575084 Units: ug/L
QC Key: DOD4 Lot #: STD76870

Sample ID: WG575084-02 LCS File ID: 6M140367 Run Date: 07/02/2016 13:34
Sample ID: WG575084-03 LCS2 File ID: 6M140368 Run Date: 07/02/2016 14:06

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	22.6	113	20.0	22.3	111	1.43	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.8	104	20.0	20.7	104	0.127	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	22.5	112	20.0	22.9	115	1.84	65 - 130	30	
1,1,2-Trichloroethane	20.0	22.1	110	20.0	22.0	110	0.355	75 - 125	30	
1,1-Dichloroethane	20.0	18.8	94.2	20.0	18.8	93.8	0.508	70 - 135	30	
1,1-Dichloroethene	20.0	17.6	88.0	20.0	17.2	86.2	2.11	70 - 130	30	
1,1-Dichloropropene	20.0	19.4	96.9	20.0	19.2	96.2	0.748	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	20.5	103	20.0	21.1	106	2.73	55 - 140	30	
1,2,3-Trichloropropane	20.0	22.9	114	20.0	23.2	116	1.54	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	21.1	106	20.0	21.8	109	3.05	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	22.1	110	20.0	22.1	110	0.0301	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	23.6	118	20.0	23.7	119	0.350	50 - 130	30	
1,2-Dibromoethane	20.0	21.3	106	20.0	21.5	108	1.11	80 - 120	30	
1,2-Dichlorobenzene	20.0	22.5	112	20.0	22.4	112	0.253	70 - 120	30	
1,2-Dichloroethane	20.0	21.2	106	20.0	21.2	106	0.251	70 - 130	30	
1,2-Dichloropropane	20.0	20.9	105	20.0	21.0	105	0.256	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	22.1	110	20.0	22.1	111	0.118	75 - 130	30	
1,3-Dichlorobenzene	20.0	21.7	108	20.0	22.1	110	1.74	75 - 125	30	
1,3-Dichloropropane	20.0	22.1	111	20.0	22.1	111	0.0437	75 - 125	30	
1,4-Dichlorobenzene	20.0	22.1	111	20.0	22.3	111	0.848	75 - 125	30	
2,2-Dichloropropane	20.0	20.3	102	20.0	20.8	104	2.31	70 - 135	30	
2-Butanone	20.0	20.5	103	20.0	20.8	104	1.27	30 - 150	30	
2-Chlorotoluene	20.0	20.9	105	20.0	20.4	102	2.37	75 - 125	30	
2-Hexanone	20.0	20.4	102	20.0	20.4	102	0.0305	55 - 130	30	
4-Chlorotoluene	20.0	22.8	114	20.0	23.4	117	2.65	75 - 130	30	
4-Methyl-2-pentanone	20.0	20.3	102	20.0	20.2	101	0.782	60 - 135	30	
Acetone	20.0	21.5	108	20.0	20.7	104	3.77	40 - 140	30	
Benzene	20.0	19.9	99.7	20.0	19.9	99.5	0.209	80 - 120	30	
Bromobenzene	20.0	21.0	105	20.0	20.9	105	0.309	75 - 125	30	
Bromochloromethane	20.0	20.3	102	20.0	20.2	101	0.774	65 - 130	30	
Bromodichloromethane	20.0	21.8	109	20.0	21.5	107	1.29	75 - 120	30	
Bromoform	20.0	20.9	104	20.0	21.2	106	1.56	70 - 130	30	
Bromomethane	20.0	15.2	76.2	20.0	15.4	77.1	1.18	30 - 145	30	
Carbon disulfide	20.0	17.2	85.9	20.0	16.9	84.7	1.35	35 - 160	30	
Carbon tetrachloride	20.0	21.9	110	20.0	21.6	108	1.27	65 - 140	30	
Chlorobenzene	20.0	21.7	109	20.0	21.5	108	0.937	80 - 120	30	
Chloroethane	20.0	20.2	101	20.0	20.3	101	0.470	60 - 135	30	
Chloroform	20.0	20.2	101	20.0	19.9	99.4	1.73	65 - 135	30	
Chloromethane	20.0	13.3	66.4	20.0	13.5	67.3	1.25	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.1	101	20.0	20.0	100	0.604	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4839895
Report generated: 07/05/2016 17:46

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575084 Units: ug/L
QC Key: DOD4 Lot #: STD76870

Sample ID: WG575084-02 LCS File ID: 6M140367 Run Date: 07/02/2016 13:34
Sample ID: WG575084-03 LCS2 File ID: 6M140368 Run Date: 07/02/2016 14:06

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.8	114	20.0	23.0	115	0.647	70 - 130	30	
Chlorodibromomethane	20.0	22.5	113	20.0	22.5	113	0.0600	60 - 135	30	
Dibromomethane	20.0	20.4	102	20.0	20.4	102	0.151	75 - 125	30	
Dichlorodifluoromethane	20.0	12.4	61.8	20.0	12.5	62.3	0.730	30 - 155	30	
Ethylbenzene	20.0	21.6	108	20.0	21.8	109	0.569	75 - 125	30	
Hexachlorobutadiene	20.0	22.1	111	20.0	22.8	114	3.20	50 - 140	30	
Isopropylbenzene	20.0	22.5	113	20.0	22.6	113	0.152	75 - 125	30	
m-,p-Xylene	40.0	44.5	111	40.0	44.1	110	0.980	75 - 130	30	
Methylene chloride	20.0	19.0	95.1	20.0	18.8	94.1	1.10	55 - 140	30	
n-Butylbenzene	20.0	22.0	110	20.0	22.3	111	1.35	70 - 135	30	
n-Propylbenzene	20.0	22.4	112	20.0	22.5	112	0.0532	70 - 130	30	
Naphthalene	20.0	19.2	95.9	20.0	19.8	98.9	2.99	55 - 140	30	
o-Xylene	20.0	22.5	113	20.0	22.6	113	0.208	80 - 120	30	
p-Isopropyltoluene	20.0	22.3	112	20.0	22.4	112	0.533	75 - 130	30	
sec-Butylbenzene	20.0	22.5	112	20.0	22.6	113	0.463	70 - 125	30	
Styrene	20.0	22.4	112	20.0	22.4	112	0.118	65 - 135	30	
tert-Butylbenzene	20.0	22.8	114	20.0	22.6	113	1.14	70 - 130	30	
Tetrachloroethene	20.0	20.4	102	20.0	20.2	101	0.680	45 - 150	30	
Toluene	20.0	20.5	103	20.0	20.6	103	0.205	75 - 120	30	
trans-1,2-Dichloroethene	20.0	18.9	94.4	20.0	18.5	92.5	2.06	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.8	109	20.0	21.8	109	0.0874	55 - 140	30	
Trichloroethene	20.0	20.3	102	20.0	20.2	101	0.499	70 - 125	30	
Trichlorofluoromethane	20.0	24.2	121	20.0	21.8	109	10.3	60 - 145	30	
Vinyl chloride	20.0	19.4	96.8	20.0	19.4	97.1	0.257	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	100	100	70 - 120	PASS
Dibromofluoromethane	101	100	85 - 115	PASS
4-Bromofluorobenzene	96.4	97.9	75 - 120	PASS
Toluene-d8	99.6	99.8	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4839895
Report generated: 07/05/2016 17:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061289
Instrument: HPMS6
Analyst: JDS
Workgroup: WG566155

Tune ID: WG566155-01
Run Date: 04/24/2016
Run Time: 16:33
File ID: 6M138750
Cal ID: HPMS6 - 24-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	10010	PASS
75.0	95.0	30.0	60.0	52.0	23152	PASS
95.0	95.0	100	100	100	44552	PASS
96.0	95.0	5.00	9.00	6.92	3085	PASS
173	174	0	2.00	0.346	113	PASS
174	95.0	50.0	100	73.2	32632	PASS
175	174	5.00	9.00	7.16	2336	PASS
176	174	95.0	101	99.2	32384	PASS
177	176	5.00	9.00	6.95	2251	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566155-02	STD	01	04/24/2016 16:59	
WG566155-03	STD	01	04/24/2016 17:31	
WG566155-04	STD	01	04/24/2016 18:03	
WG566155-05	STD-CCV	01	04/24/2016 18:36	
WG566155-06	STD	01	04/24/2016 19:08	
WG566155-07	STD	01	04/24/2016 19:40	
WG566155-08	STD	01	04/24/2016 20:12	
WG566155-09	STD	01	04/24/2016 20:44	
WG566155-10	SSCV	01	04/24/2016 22:21	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4839897
Report generated 07/07/2016 11:59

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061289
Instrument: HPMS6
Analyst: TMB
Workgroup: WG574723

Tune ID: WG574723-01
Run Date: 06/30/2016
Run Time: 11:36
File ID: 6M140313
Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.0	8707	PASS
75.0	95.0	30.0	60.0	49.7	19699	PASS
95.0	95.0	100	100	100	39664	PASS
96.0	95.0	5.00	9.00	6.69	2652	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.8	29282	PASS
175	174	5.00	9.00	7.28	2131	PASS
176	174	95.0	101	99.6	29157	PASS
177	176	5.00	9.00	6.75	1969	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574723-02	STD	01	06/30/2016 12:03	
WG574723-03	STD	01	06/30/2016 12:35	
WG574723-04	STD	01	06/30/2016 13:08	
WG574723-05	STD	01	06/30/2016 13:40	
WG574723-06	STD	01	06/30/2016 14:12	
WG574723-07	STD	01	06/30/2016 14:44	
WG574723-08	STD-CCV	01	06/30/2016 15:16	
WG574723-09	STD	01	06/30/2016 15:48	
WG574723-10	STD	01	06/30/2016 16:21	
WG574723-11	STD	01	06/30/2016 16:53	
WG574723-12	SSCV	01	06/30/2016 18:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4839897
Report generated 07/07/2016 11:59

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061289
Instrument: HPMS6
Analyst: TMB
Workgroup: WG575083

Tune ID: WG575083-01
Run Date: 07/02/2016
Run Time: 11:00
File ID: 6M140362
Cal ID: HPMS6 - 30-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.7	6172	PASS
75.0	95.0	30.0	60.0	51.9	14114	PASS
95.0	95.0	100	100	100	27178	PASS
96.0	95.0	5.00	9.00	7.33	1992	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.6	19740	PASS
175	174	5.00	9.00	7.08	1398	PASS
176	174	95.0	101	98.9	19516	PASS
177	176	5.00	9.00	7.01	1368	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575083-02	CCV	01	07/02/2016 11:57	
WG575084-01	BLANK	01	07/02/2016 13:02	
WG575084-02	LCS	01	07/02/2016 13:34	
WG575084-03	LCS2	01	07/02/2016 14:06	
L16061289-06	TRIP BLANK	01	07/02/2016 16:15	
L16061289-03	18WW02-062216	01	07/02/2016 18:55	
L16061289-05	18CPTMW10SW-062216	01	07/02/2016 19:27	
L16061289-02	MW9-062216	DL01	07/02/2016 22:40	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4839897
Report generated 07/07/2016 11:59

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061289
Instrument: HPMS6
Analyst: TMB
Workgroup: WG575127

Tune ID: WG575127-01
Run Date: 07/05/2016
Run Time: 10:49
File ID: 6M140417
Cal ID: HPMS6 - 30-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.2	7952	PASS
75.0	95.0	30.0	60.0	52.9	17407	PASS
95.0	95.0	100	100	100	32922	PASS
96.0	95.0	5.00	9.00	6.75	2223	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	75.4	24834	PASS
175	174	5.00	9.00	7.34	1823	PASS
176	174	95.0	101	96.0	23842	PASS
177	176	5.00	9.00	6.73	1605	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575127-02	CCV	01	07/05/2016 11:14	
WG575129-01	BLANK	01	07/05/2016 12:18	
WG575129-02	LCS	01	07/05/2016 12:50	
L16061289-01	MW21-062216	DL01	07/05/2016 14:58	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4839897
Report generated 07/07/2016 11:59

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 042416 - HPMS6
Last Calibration: Wed Apr 27 16:03:33 2016
Curve: WG566155
Calibration Files

	Compound	5 6M138751.D	20 6M138752.D	50 6M138753.D	100 6M138754.D	200 6M138755.D	300 6M138756.D	400 6M138757.D	500 6M138758.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.036	0.037	0.039	0.038	0.038	0.038	0.038	0.036	0.037	2.606
T	3-Chloro-1-propene	0.567	0.621	0.656	0.672	0.635	0.622	0.617	0.603	0.624	5.157
T	2-Chloro-1,3-butadiene	0.415	0.507	0.558	0.590	0.558	0.553	0.556	0.548	0.535	10.001
T	Ethyl Acetate	0.229	0.259	0.279	0.281	0.277	0.272	0.279	0.268	0.268	6.419
T	Methacrylonitrile	0.071	0.089	0.099	0.099	0.097	0.095	0.096	0.093	0.092	9.852
T	Isobutyl Alcohol		0.008	0.008	0.007	0.007	0.008	0.010	0.010	0.009	13.654
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.159	0.200	0.231	0.244	0.244	0.241	0.246	0.236	0.225	13.591
T	2-Nitropropane			0.079	0.082	0.085	0.085	0.088	0.084	0.084	3.643
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.026	0.027	0.032	0.034	0.035	0.033	0.031	12.127

Wed Apr 27 16:05:59 2016

Calibration Table Report
Method: 8260WTR.M
Title: 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Calibration: Fri Jul 01 09:28:30 2016
Curve: WG574723
Calibration Files

	Compound	0.3 6M140314.D	0.4 6M140315.D	1 6M140316.D	2 6M140317.D	5 6M140318.D	20 6M140319.D	50 6M140320.D	100 6M140321.D	200 6M140322.D	300 6M140323.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.401	0.398	0.362	0.449	0.438	0.462	0.444	0.391	0.418	8.327		
P	Chloromethane			0.564	0.519	0.446	0.512	0.463	0.436	0.411	0.381	0.467	13.089		
C	Vinyl Chloride		0.237	0.280	0.277	0.251	0.252	0.260	0.267	0.257	0.225	0.256	6.911		
T	1,3-Butadiene					0.175	0.204	0.154	0.154	0.147	0.132	0.161	15.792	0.991	
T	Bromomethane			0.179	0.184	0.166	0.178	0.161	0.164	0.170	0.160	0.170	5.344		
T	Chloroethane			0.158	0.158	0.155	0.170	0.162	0.163	0.168	0.162	0.162	3.146		
T	Trichlorofluoromethane		0.448	0.383	0.389	0.372	0.394	0.373	0.402	0.383	0.374	0.391	6.074		
T	Diethyl ether			0.240	0.244	0.238	0.231	0.237	0.234		0.190	0.231	7.911		
T	Isoprene					0.332	0.374	0.357	0.358	0.361	0.310	0.349	6.639		
T	Acrolein				0.039	0.038	0.038	0.038	0.039		0.039	0.038	1.589		
T	1,1,2-Trichloro-1,2,2-Trifluoroe			0.245	0.246	0.231	0.246	0.239	0.249	0.248	0.242	0.243	2.486		
T	Acetone					0.086	0.083	0.080	0.078	0.078	0.075	0.080	4.861		
C	1,1-Dichloroethene		0.475	0.488	0.483	0.447	0.475	0.469	0.477	0.473	0.459	0.472	2.614		
T	Tert-Butyl Alcohol			0.023	0.024	0.024	0.024	0.024	0.026		0.028	0.024	7.165		
T	Dimethyl Sulfide					0.197	0.217	0.208	0.206	0.206	0.201	0.206	3.230		
T	Iodomethane			0.076	0.076	0.099	0.149	0.180	0.188	0.180	0.164	0.139	34.268	0.996	
T	Methyl acetate					0.218	0.224	0.214	0.217	0.211	0.216	0.217	2.077		
T	Methylene Chloride			0.310	0.299	0.265	0.271	0.261	0.263	0.254	0.240	0.271	8.561		
T	Carbon Disulfide			0.926	0.900	0.839	0.925	0.868	0.856	0.834	0.768	0.864	6.148		
T	Acrylonitrile			0.090	0.096	0.098	0.098	0.102	0.104		0.108	0.099	5.795		
T	Methyl Tert Butyl Ether			0.716	0.725	0.704	0.737	0.716	0.729	0.714	0.694	0.717	1.916		
T	trans-1,2-Dichloroethene		0.263	0.254	0.262	0.245	0.253	0.250	0.255	0.251	0.241	0.253	2.748		
T	n-Hexane					0.432	0.456	0.424	0.426	0.424	0.412	0.429	3.449		
T	Diisopropyl ether			1.208	1.209	1.172	1.157	1.153	1.123		1.058	1.154	4.538		
T	Vinyl Acetate					0.458	0.448	0.486	0.493	0.523	0.482	0.482	5.502		
P	1,1-Dichloroethane		0.561	0.556	0.569	0.531	0.553	0.540	0.544	0.533	0.509	0.544	3.330		
T	Ethyl-Tert-Butyl ether			0.953	0.955	0.939	0.931	0.928	0.916		0.878	0.929	2.832		
T	2-Butanone					0.118	0.124	0.125	0.127	0.123	0.118	0.123	3.167		
T	Propionitrile			0.032	0.033	0.033	0.033	0.034	0.035		0.032	0.033	3.279		
T	2,2-Dichloropropane		0.396	0.421	0.439	0.414	0.411	0.401	0.411	0.407	0.393	0.410	3.381		
T	cis-1,2-Dichloroethene		0.295	0.285	0.269	0.267	0.280	0.277	0.280	0.274	0.262	0.277	3.558		
C	Chloroform	0.615	0.457	0.478	0.484	0.466	0.487	0.476	0.482	0.474	0.454	0.487	9.510		
T	1-Bromopropane			0.024	0.033	0.038	0.044	0.045	0.044	0.045	0.043	0.039	19.340	1.000	
T	Bromochloromethane		0.141	0.141	0.148	0.149	0.155	0.153	0.155	0.152	0.145	0.149	3.658		
T	Tetrahydrofuran			0.104	0.087	0.084	0.081	0.081	0.083		0.078	0.086	9.999		
S	Dibromofluoromethane				0.254	0.258	0.262	0.257	0.250	0.249	0.245	0.254	2.416		
T	1,1,1-Trichloroethane		0.395	0.436	0.430	0.412	0.430	0.430	0.438	0.432	0.414	0.424	3.334		
T	Cyclohexane			0.589	0.567	0.521	0.577	0.543	0.550	0.543	0.524	0.552	4.390		
T	1,1-Dichloropropene			0.377	0.376	0.356	0.370	0.367	0.375	0.373	0.362	0.370	2.060		
T	Tert-Amyl-Methyl ether			0.710	0.726	0.713	0.703	0.708	0.705		0.671	0.705	2.388		
T	Carbon Tetrachloride		0.271	0.305	0.33	0.33	0.37	0.377	0.39	0.391	0.371	0.3484	11.955		
S	1,2-Dichloroethane-d4				0.33	0.331	0.333	0.318	0.316	0.31	0.304	0.3202	3.5321		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.391	0.394	0.406	0.375	0.399	0.393	0.397	0.39	0.373	0.3907	2.7505		
T	Benzene		1.155	1.094	1.109	1.038	1.052	1.035	1.03	0.983	0.89	1.043	7.3599		
T	Trichloroethene		0.277	0.267	0.265	0.253	0.263	0.256	0.255	0.246	0.234	0.2574	4.9066		
T	Methylcyclohexane					0.396	0.428	0.4	0.409	0.404	0.387	0.404	3.4238		
C	1,2-Dichloropropane		0.311	0.293	0.305	0.293	0.306	0.302	0.305	0.3	0.288	0.3004	2.5217		
T	1,4-Dioxane					0.002	0.002	0.002	0.002		0.002	0.002	6.9968		
T	Bromodichloromethane		0.323	0.353	0.365	0.351	0.371	0.375	0.386	0.378	0.359	0.3624	5.1801		
T	Dibromomethane		0.125	0.137	0.148	0.143	0.153	0.151	0.156	0.151	0.145	0.1453	6.6336		
T	2-Chloroethyl Vinyl Ether				0.138	0.135	0.158	0.161	0.16	0.155	0.146	0.1506	7.0765		
T	4-Methyl-2-Pentanone					0.085	0.094	0.095	0.098	0.096	0.089	0.0927	5.3799		
T	cis-1,3-Dichloropropene		0.415	0.394	0.426	0.409	0.431	0.433	0.443	0.433	0.404	0.4208	3.888		
T	Dimethyl Disulfide					0.199	0.239	0.242	0.246	0.245	0.233	0.2342	7.589		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8				1.304	1.297	1.272	1.226	1.166	1.162	1.19	1.2311	4.9151		
C	Toluene		1.699	1.583	1.601	1.454	1.503	1.467	1.44	1.369	1.294	1.49	8.2924		
T	Ethyl Methacrylate			0.37	0.406	0.396	0.455	0.443	0.443	0.439	0.44	0.4239	6.9571		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.49	0.514	0.506	0.547	0.548	0.551	0.543	0.539	0.5298	4.3368		
T	1,1,2-Trichloroethane		0.262	0.278	0.282	0.27	0.285	0.28	0.281	0.274	0.269	0.2757	2.687		
T	2-Hexanone					0.237	0.266	0.269	0.271	0.267	0.261	0.2618	4.9035		
T	1,3-Dichloropropane		0.55	0.526	0.539	0.51	0.52	0.519	0.517	0.503	0.493	0.5197	3.397		
T	Tetrachloroethene		0.362	0.364	0.373	0.351	0.354	0.353	0.352	0.344	0.343	0.3551	2.7537		
T	Dibromochloromethane		0.278	0.3	0.318	0.322	0.353	0.36	0.37	0.36	0.352	0.3348	9.4942		
T	1,2-Dibromoethane		0.238	0.259	0.265	0.259	0.277	0.274	0.281	0.274	0.268	0.2662	4.8464		
T	1-Chlorohexane		0.507	0.497	0.506	0.475	0.52	0.501	0.495	0.488	0.474	0.4959	3.0436		
P	Chlorobenzene		1.087	1.01	1.026	0.933	0.963	0.947	0.932	0.878	0.824	0.9556	8.2302		
T	1,1,1,2-Tetrachloroethane		0.327	0.335	0.343	0.328	0.352	0.354	0.356	0.342	0.323	0.34	3.6316		
C	Ethylbenzene		0.509	0.503	0.522	0.5	0.517	0.508	0.509	0.481	0.452	0.5002	4.2933		
T	m-,p-Xylene		0.651	0.636	0.652	0.606	0.626	0.612	0.603	0.553	0.501	0.6045	8.1404		
T	o-Xylene			0.61	0.633	0.59	0.625	0.619	0.618	0.585	0.544	0.6029	4.778		
T	Styrene		0.992	0.978	1.025	0.988	1.072	1.065	1.072	1.013	0.924	1.0143	4.9363		
P	Bromoform			0.172	0.184	0.183	0.215	0.22	0.234	0.231	0.222	0.2076	11.743		
T	Isopropylbenzene		1.684	1.642	1.648	1.582	1.619	1.599	1.602	1.477	1.304	1.5731	7.3897		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.542	0.561	0.589	0.589	0.619	0.616	0.651	0.654	0.639	0.6067	6.4625		
S	p-Bromofluorobenzene				1.007	1.02	1.012	0.972	0.933	0.96	0.949	0.9791	3.484		

T	1,2,3-Trichloropropane		0.131	0.176	0.189	0.19	0.187	0.19	0.191	0.185	0.1799	11.385
T	trans-1,4-Dichloro-2-Butene		0.158	0.209	0.218	0.244	0.244	0.253	0.256	0.254	0.2294	14.64
T	n-Propylbenzene	4.147	3.945	3.827	3.612	3.693	3.558	3.522	3.223	2.802	3.5921	11.066
T	Bromobenzene	0.822	0.753	0.776	0.753	0.761	0.736	0.737	0.723	0.695	0.7506	4.7215
T	1,3,5-Trimethylbenzene	2.687	2.633	2.638	2.51	2.587	2.52	2.523	2.394	2.166	2.5177	6.2882
T	2-Chlorotoluene	2.919	2.675	2.482	2.32	2.324	2.405	2.382	2.249	2.107	2.4293	9.9295
T	4-Chlorotoluene	2.561	2.355	2.535	2.399	2.452	2.211	2.223	2.179	1.93	2.316	8.6649
T	a-Methylstyrene				1.171	1.369	1.303	1.3	1.265	1.19	1.2663	5.9075
T	tert-Butylbenzene		0.522	0.53	0.496	0.527	0.502	0.507	0.492	0.47	0.5058	3.9858
T	1,2,4-Trimethylbenzene		2.731	2.759	2.607	2.688	2.607	2.616	2.454	2.207	2.5836	6.9171
T	sec-Butylbenzene		3.3	3.29	3.02	3.128	3.02	3.014	2.818	2.521	3.0139	8.4375
T	p-Isopropyltoluene		2.762	2.734	2.57	2.677	2.59	2.601	2.425	2.188	2.5685	7.2625
T	1,3-Dichlorobenzene	1.666	1.555	1.538	1.459	1.494	1.448	1.455	1.387	1.293	1.4773	7.1422
T	1,4-Dichlorobenzene	1.73	1.6	1.574	1.462	1.495	1.451	1.46	1.383	1.287	1.4936	8.6114
T	n-Butylbenzene		2.725	2.645	2.516	2.61	2.545	2.566	2.387	2.156	2.5188	7.0194
T	1,2-Dichlorobenzene	1.544	1.461	1.436	1.375	1.404	1.371	1.382	1.297	1.212	1.387	6.8449
T	1,2-Dibromo-3-Chloropropane			0.093	0.097	0.122	0.122	0.134	0.134	0.13	0.1188	14.398
T	1,2,4-Trichlorobenzene	1.156	0.963	0.98	0.936	0.999	0.975	0.988	0.944	0.882	0.9804	7.5963
T	Hexachlorobutadiene	0.47	0.405	0.413	0.39	0.407	0.402	0.408	0.395	0.377	0.4076	6.3393
T	Naphthalene	1.978	1.873	1.94	1.955	2.174	2.126	2.159	2.015	1.813	2.0036	6.3217
T	1,2,3-Trichlorobenzene	0.987	0.959	0.905	0.88	0.936	0.904	0.915	0.87	0.813	0.9078	5.6179

Fri Jul 01 14:48:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061289 Run Date: 06/30/2016 Sample ID: WG574723-12
Instrument ID: HPMS6 Run Time: 18:31 Method: 8260B
File ID: 6M140326 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG574723 Cal ID: HPMS6 - 30-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.9	ug/L	0.467	4.30	20	
1,1-Dichloroethene	CCC	50.0	44.2	ug/L	0.417	11.7	20	
1,2-Dichloropropane	CCC	50.0	52.0	ug/L	0.313	4.10	20	
Ethylbenzene	CCC	50.0	51.7	ug/L	0.517	3.40	20	
Toluene	CCC	50.0	50.2	ug/L	1.50	0.400	20	
Vinyl Chloride	CCC	50.0	46.1	ug/L	0.237	7.70	20	
Bromoform	SPCC	50.0	49.4	ug/L	0.205	1.20	20	
Chlorobenzene	SPCC	50.0	51.0	ug/L	0.974	1.90	20	
Chloromethane	SPCC	50.0	39.1	ug/L	0.365	21.7	20	*
1,1-Dichloroethane	SPCC	50.0	46.5	ug/L	0.506	7.10	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.5	ug/L	0.673	11.0	20	
Acetone		50.0	46.9	ug/L	0.0752	6.10	20	
Benzene		50.0	48.8	ug/L	1.02	2.40	20	
Bromobenzene		50.0	50.7	ug/L	0.761	1.40	20	
Bromochloromethane		50.0	48.9	ug/L	0.145	2.20	20	
Bromodichloromethane		50.0	51.3	ug/L	0.372	2.60	20	
Bromomethane		50.0	48.4	ug/L	0.165	3.20	20	
2-Butanone		50.0	50.7	ug/L	0.124	1.50	20	
n-Butylbenzene		50.0	51.3	ug/L	2.59	2.70	20	
sec-Butylbenzene		50.0	52.6	ug/L	3.17	5.10	20	
tert-Butylbenzene		50.0	53.2	ug/L	0.538	6.40	20	
Carbon Disulfide		50.0	43.6	ug/L	0.755	12.7	20	
Carbon Tetrachloride		50.0	51.4	ug/L	0.358	2.90	20	
Dibromochloromethane		50.0	53.8	ug/L	0.360	7.60	20	
Chloroethane		50.0	51.7	ug/L	0.168	3.50	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.57	5.70	20	
4-Chlorotoluene		50.0	50.9	ug/L	2.36	1.80	20	
1,2-Dibromo-3-Chloropropane		50.0	55.7	ug/L	0.132	11.3	20	
1,2-Dibromoethane		50.0	52.4	ug/L	0.279	4.90	20	
Dibromomethane		50.0	49.0	ug/L	0.142	2.00	20	
1,2-Dichlorobenzene		50.0	52.5	ug/L	1.46	4.90	20	
1,3-Dichlorobenzene		50.0	51.3	ug/L	1.52	2.60	20	
1,4-Dichlorobenzene		50.0	51.8	ug/L	1.55	3.60	20	
Dichlorodifluoromethane		50.0	40.7	ug/L	0.340	18.6	20	
1,2-Dichloroethane		50.0	49.4	ug/L	0.386	1.20	20	
cis-1,2-Dichloroethene		50.0	49.8	ug/L	0.275	0.500	20	
trans-1,2-Dichloroethene		50.0	47.1	ug/L	0.238	5.90	20	
1,3-Dichloropropane		50.0	53.2	ug/L	0.553	6.30	20	
2,2-Dichloropropane		50.0	50.7	ug/L	0.416	1.40	20	
cis-1,3-Dichloropropene		50.0	56.3	ug/L	0.474	12.6	20	
trans-1,3-Dichloropropene		50.0	53.4	ug/L	0.565	6.70	20	
1,1-Dichloropropene		50.0	48.1	ug/L	0.356	3.80	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4839896
Report generated 07/07/2016 11:59

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061289 Run Date: 06/30/2016 Sample ID: WG574723-12
Instrument ID: HPMS6 Run Time: 18:31 Method: 8260B
File ID: 6M140326 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG574723 Cal ID: HPMS6 - 30-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	49.7	ug/L	0.260	0.600	20	
Hexachlorobutadiene		50.0	52.6	ug/L	0.429	5.20	20	
Isopropylbenzene		50.0	51.7	ug/L	1.63	3.30	20	
p-Isopropyltoluene		50.0	51.7	ug/L	2.65	3.40	20	
4-Methyl-2-Pentanone		50.0	50.7	ug/L	0.0939	1.40	20	
Methylene Chloride		50.0	46.6	ug/L	0.252	6.80	20	
Naphthalene		50.0	49.3	ug/L	1.98	1.40	20	
n-Propylbenzene		50.0	53.7	ug/L	3.86	7.40	20	
Styrene		50.0	52.9	ug/L	1.07	5.90	20	
1,1,1,2-Tetrachloroethane		50.0	52.6	ug/L	0.358	5.20	20	
Tetrachloroethene		50.0	48.7	ug/L	0.346	2.50	20	
1,2,3-Trichlorobenzene		50.0	51.1	ug/L	0.928	2.20	20	
1,2,4-Trichlorobenzene		50.0	51.4	ug/L	1.01	2.90	20	
1,1,1-Trichloroethane		50.0	49.4	ug/L	0.419	1.20	20	
1,1,2-Trichloroethane		50.0	52.1	ug/L	0.287	4.10	20	
Trichloroethene		50.0	49.0	ug/L	0.252	2.10	20	
Trichlorofluoromethane		50.0	47.1	ug/L	0.368	5.70	20	
1,2,3-Trichloropropane		50.0	54.9	ug/L	0.197	9.80	20	
1,2,4-Trimethylbenzene		50.0	51.6	ug/L	2.66	3.10	20	
1,3,5-Trimethylbenzene		50.0	52.6	ug/L	2.65	5.10	20	
o-Xylene		50.0	53.4	ug/L	0.644	6.80	20	
m-,p-Xylene		100	104	ug/L	0.627	3.70	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4839896
Report generated 07/07/2016 11:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289 Run Date: 07/02/2016 Sample ID: WG575083-02
Instrument ID: HPMS6 Run Time: 11:57 Method: 8260B
File ID: 6M140364 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG575084 Cal ID: HPMS6 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.5	ug/L	0.512	5.02	20	
1,1-Dichloroethene	CCC	50.0	53.6	ug/L	0.506	7.28	20	
1,2-Dichloropropane	CCC	50.0	51.8	ug/L	0.311	3.64	20	
Ethylbenzene	CCC	50.0	52.7	ug/L	0.527	5.32	20	
Toluene	CCC	50.0	50.9	ug/L	1.52	1.89	20	
Vinyl Chloride	CCC	50.0	56.3	ug/L	0.288	12.5	20	
Bromoform	SPCC	50.0	54.8	ug/L	0.228	9.68	20	
Chlorobenzene	SPCC	50.0	50.8	ug/L	0.971	1.61	20	
Chloromethane	SPCC	50.0	50.8	ug/L	0.474	1.64	20	
1,1-Dichloroethane	SPCC	50.0	52.2	ug/L	0.568	4.39	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	53.9	ug/L	0.654	7.84	20	
Xylenes		150	158	ug/L	0.639	5.42	20	
Acetone		50.0	50.8	ug/L	0.0813	1.51	20	
Benzene		50.0	51.5	ug/L	1.07	3.01	20	
Bromobenzene		50.0	51.2	ug/L	0.769	2.46	20	
Bromochloromethane		50.0	54.5	ug/L	0.162	9.09	20	
Bromodichloromethane		50.0	55.3	ug/L	0.401	10.6	20	
Bromomethane		50.0	40.0	ug/L	0.136	19.9	20	
2-Butanone		50.0	51.8	ug/L	0.127	3.59	20	
n-Butylbenzene		50.0	53.1	ug/L	2.68	6.22	20	
sec-Butylbenzene		50.0	52.4	ug/L	3.16	4.81	20	
tert-Butylbenzene		50.0	51.7	ug/L	0.523	3.46	20	
Carbon Disulfide		50.0	51.8	ug/L	0.896	3.65	20	
Carbon Tetrachloride		50.0	60.0	ug/L	0.418	20.0	20	
Dibromochloromethane		50.0	56.3	ug/L	0.377	12.6	20	
Chloroethane		50.0	53.9	ug/L	0.175	7.81	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.51	3.18	20	
4-Chlorotoluene		50.0	50.6	ug/L	2.35	1.26	20	
1,2-Dibromo-3-Chloropropane		50.0	55.3	ug/L	0.131	10.5	20	
1,2-Dibromoethane		50.0	52.8	ug/L	0.281	5.55	20	
Dibromomethane		50.0	54.5	ug/L	0.159	9.10	20	
1,2-Dichlorobenzene		50.0	51.2	ug/L	1.42	2.32	20	
1,3-Dichlorobenzene		50.0	51.6	ug/L	1.52	3.11	20	
1,4-Dichlorobenzene		50.0	51.1	ug/L	1.53	2.12	20	
Dichlorodifluoromethane		50.0	59.3	ug/L	0.496	18.7	20	
1,2-Dichloroethane		50.0	53.9	ug/L	0.421	7.74	20	
cis-1,2-Dichloroethene		50.0	52.4	ug/L	0.290	4.82	20	
trans-1,2-Dichloroethene		50.0	52.3	ug/L	0.264	4.66	20	
1,3-Dichloropropane		50.0	50.4	ug/L	0.524	0.866	20	
2,2-Dichloropropane		50.0	56.9	ug/L	0.467	13.8	20	
cis-1,3-Dichloropropene		50.0	54.2	ug/L	0.456	8.47	20	
trans-1,3-Dichloropropene		50.0	53.9	ug/L	0.572	7.87	20	

CCV - Modified 03/05/2008
PDF File ID: 4839898
Report generated 07/07/2016 11:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289 Run Date: 07/02/2016 Sample ID: WG575083-02
Instrument ID: HPMS6 Run Time: 11:57 Method: 8260B
File ID: 6M140364 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG575084 Cal ID: HPMS6 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.9	ug/L	0.391	5.76	20	
2-Hexanone		50.0	51.4	ug/L	0.269	2.82	20	
Hexachlorobutadiene		50.0	50.2	ug/L	0.410	0.465	20	
Isopropylbenzene		50.0	53.0	ug/L	1.67	5.93	20	
p-Isopropyltoluene		50.0	53.0	ug/L	2.72	6.04	20	
4-Methyl-2-Pentanone		50.0	52.6	ug/L	0.0975	5.19	20	
Methylene Chloride		50.0	50.3	ug/L	0.272	0.588	20	
Naphthalene		50.0	51.4	ug/L	2.06	2.82	20	
n-Propylbenzene		50.0	52.4	ug/L	3.76	4.70	20	
Styrene		50.0	53.7	ug/L	1.09	7.38	20	
1,1,1,2-Tetrachloroethane		50.0	54.3	ug/L	0.369	8.57	20	
Tetrachloroethene		50.0	51.7	ug/L	0.367	3.37	20	
1,2,3-Trichlorobenzene		50.0	49.4	ug/L	0.898	1.11	20	
1,2,4-Trichlorobenzene		50.0	51.0	ug/L	1.00	1.96	20	
1,1,1-Trichloroethane		50.0	55.0	ug/L	0.467	10.1	20	
1,1,2-Trichloroethane		50.0	52.1	ug/L	0.287	4.22	20	
Trichloroethene		50.0	50.8	ug/L	0.262	1.59	20	
Trichlorofluoromethane		50.0	55.0	ug/L	0.430	10.1	20	
1,2,3-Trichloropropane		50.0	53.1	ug/L	0.191	6.13	20	
1,2,4-Trimethylbenzene		50.0	53.3	ug/L	2.75	6.55	20	
1,3,5-Trimethylbenzene		50.0	52.5	ug/L	2.64	4.93	20	
o-Xylene		50.0	53.4	ug/L	0.644	6.85	20	
m-,p-Xylene		100	105	ug/L	0.633	4.71	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4839898
Report generated 07/07/2016 11:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289 Run Date: 07/05/2016 Sample ID: WG575127-02
Instrument ID: HPMS6 Run Time: 11:14 Method: 8260B
File ID: 6M140418 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG575129 Cal ID: HPMS6 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	53.1	ug/L	0.518	6.21	20	
1,1-Dichloroethene	CCC	50.0	54.6	ug/L	0.515	9.21	20	
1,2-Dichloropropane	CCC	50.0	50.7	ug/L	0.305	1.40	20	
Ethylbenzene	CCC	50.0	52.9	ug/L	0.529	5.71	20	
Toluene	CCC	50.0	50.3	ug/L	1.50	0.699	20	
Vinyl Chloride	CCC	50.0	58.1	ug/L	0.298	16.2	20	
Bromoform	SPCC	50.0	51.3	ug/L	0.213	2.58	20	
Chlorobenzene	SPCC	50.0	51.2	ug/L	0.978	2.35	20	
Chloromethane	SPCC	50.0	50.5	ug/L	0.471	1.01	20	
1,1-Dichloroethane	SPCC	50.0	52.6	ug/L	0.572	5.13	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.9	ug/L	0.581	4.27	20	
Xylenes		150	158	ug/L	0.636	5.35	20	
Acetone		50.0	45.7	ug/L	0.0732	8.64	20	
Benzene		50.0	51.9	ug/L	1.08	3.86	20	
Bromobenzene		50.0	50.3	ug/L	0.756	0.696	20	
Bromochloromethane		50.0	54.3	ug/L	0.161	8.63	20	
Bromodichloromethane		50.0	54.8	ug/L	0.397	9.53	20	
Bromomethane		50.0	45.8	ug/L	0.156	8.36	20	
2-Butanone		50.0	44.7	ug/L	0.110	10.6	20	
n-Butylbenzene		50.0	53.9	ug/L	2.72	7.88	20	
sec-Butylbenzene		50.0	52.7	ug/L	3.18	5.38	20	
tert-Butylbenzene		50.0	53.2	ug/L	0.538	6.43	20	
Carbon Disulfide		50.0	53.7	ug/L	0.929	7.45	20	
Carbon Tetrachloride		50.0	63.2	ug/L	0.440	26.4	20	*
Dibromochloromethane		50.0	53.9	ug/L	0.361	7.90	20	
Chloroethane		50.0	54.9	ug/L	0.178	9.78	20	
2-Chlorotoluene		50.0	51.0	ug/L	2.48	1.90	20	
4-Chlorotoluene		50.0	50.0	ug/L	2.32	0.00560	20	
1,2-Dibromo-3-Chloropropane		50.0	48.7	ug/L	0.116	2.69	20	
1,2-Dibromoethane		50.0	48.4	ug/L	0.258	3.24	20	
Dibromomethane		50.0	52.5	ug/L	0.153	5.07	20	
1,2-Dichlorobenzene		50.0	50.8	ug/L	1.41	1.60	20	
1,3-Dichlorobenzene		50.0	51.7	ug/L	1.53	3.33	20	
1,4-Dichlorobenzene		50.0	50.7	ug/L	1.52	1.45	20	
Dichlorodifluoromethane		50.0	61.1	ug/L	0.511	22.2	20	*
1,2-Dichloroethane		50.0	52.4	ug/L	0.409	4.79	20	
cis-1,2-Dichloroethene		50.0	52.9	ug/L	0.293	5.85	20	
trans-1,2-Dichloroethene		50.0	53.2	ug/L	0.269	6.38	20	
1,3-Dichloropropane		50.0	46.6	ug/L	0.485	6.70	20	
2,2-Dichloropropane		50.0	57.3	ug/L	0.471	14.7	20	
cis-1,3-Dichloropropene		50.0	52.6	ug/L	0.443	5.26	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.537	1.37	20	

CCV - Modified 03/05/2008
PDF File ID: 4839898
Report generated 07/07/2016 11:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289 Run Date: 07/05/2016 Sample ID: WG575127-02
Instrument ID: HPMS6 Run Time: 11:14 Method: 8260B
File ID: 6M140418 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG575129 Cal ID: HPMS6 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.4	ug/L	0.395	6.80	20	
2-Hexanone		50.0	43.7	ug/L	0.229	12.5	20	
Hexachlorobutadiene		50.0	53.2	ug/L	0.434	6.48	20	
Isopropylbenzene		50.0	53.2	ug/L	1.67	6.31	20	
p-Isopropyltoluene		50.0	53.6	ug/L	2.75	7.16	20	
4-Methyl-2-Pentanone		50.0	44.5	ug/L	0.0825	10.9	20	
Methylene Chloride		50.0	50.5	ug/L	0.273	0.918	20	
Naphthalene		50.0	48.1	ug/L	1.93	3.75	20	
n-Propylbenzene		50.0	51.8	ug/L	3.72	3.66	20	
Styrene		50.0	53.5	ug/L	1.09	7.07	20	
1,1,1,2-Tetrachloroethane		50.0	54.4	ug/L	0.370	8.86	20	
Tetrachloroethene		50.0	53.0	ug/L	0.376	5.92	20	
1,2,3-Trichlorobenzene		50.0	49.6	ug/L	0.901	0.790	20	
1,2,4-Trichlorobenzene		50.0	50.6	ug/L	0.992	1.14	20	
1,1,1-Trichloroethane		50.0	56.7	ug/L	0.481	13.4	20	
1,1,2-Trichloroethane		50.0	48.8	ug/L	0.269	2.33	20	
Trichloroethene		50.0	51.9	ug/L	0.267	3.73	20	
Trichlorofluoromethane		50.0	60.6	ug/L	0.474	21.2	20	*
1,2,3-Trichloropropane		50.0	46.6	ug/L	0.168	6.83	20	
1,2,4-Trimethylbenzene		50.0	53.2	ug/L	2.75	6.32	20	
1,3,5-Trimethylbenzene		50.0	52.3	ug/L	2.63	4.57	20	
o-Xylene		50.0	52.8	ug/L	0.636	5.54	20	
m-,p-Xylene		100	105	ug/L	0.636	5.25	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4839898
Report generated 07/07/2016 11:59

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140425.D Vial: 9
Acq On : 5 Jul 2016 14:58 Operator: TMB
Sample : L16061289-01 B 50X 826-LOW 00 Inst : HPMS6
Misc : 1,50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 06 08:37:26 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	522181	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	378187	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	196110	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	140052	26.4359 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.76%		
43) 1,2-Dichloroethane-d4	10.31	65	172994	25.8668 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.48%		
58) Toluene-d8	13.04	98	460837	24.7455 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.00%		
80) p-Bromofluorobenzene	17.02	95	188076	24.4878 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.96%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.56	62	4949	0.9247 ug/L	94
9) Diethyl ether	5.79	59	11379	2.3627 ug/L #	11
10) Isoprene	5.76	67	3450	0.4736 ug/L #	10
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	1084075	213.4603 ug/L	97
13) Acetone	5.80	43	15969	9.5453 ug/L #	79
14) 1,1-Dichloroethene	6.11	61	1498	0.1520 ug/L #	43
32) cis-1,2-Dichloroethene	9.04	96	12913	2.2354 ug/L	88
33) Chloroform	9.26	83	2743	0.2695 ug/L #	79
36) Tetrahydrofuran	9.56	42	1826	1.0223 ug/L #	41
45) 1,2-Dichloroethane	10.45	62	5747	0.7042 ug/L #	75
47) Trichloroethene	11.35	130	653420	121.5515 ug/L	85
48) Methylcyclohexane	11.35	83	9315	1.1037 ug/L #	1
49) 1,2-Dichloropropane	11.35	63	2694	0.4294 ug/L #	35
63) 1,1,2-Trichloroethane	13.62	97	991	0.2376 ug/L #	50

(#) = qualifier out of range (m) = manual integration
6M140425.D 8260WTR.M Wed Jul 06 08:37:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140425.D Vial: 9
Acq On : 5 Jul 2016 14:58 Operator: TMB
Sample : L16061289-01 B 50X 826-LOW 00 Inst : HPMS6
Misc : 1,50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 6 8:37 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

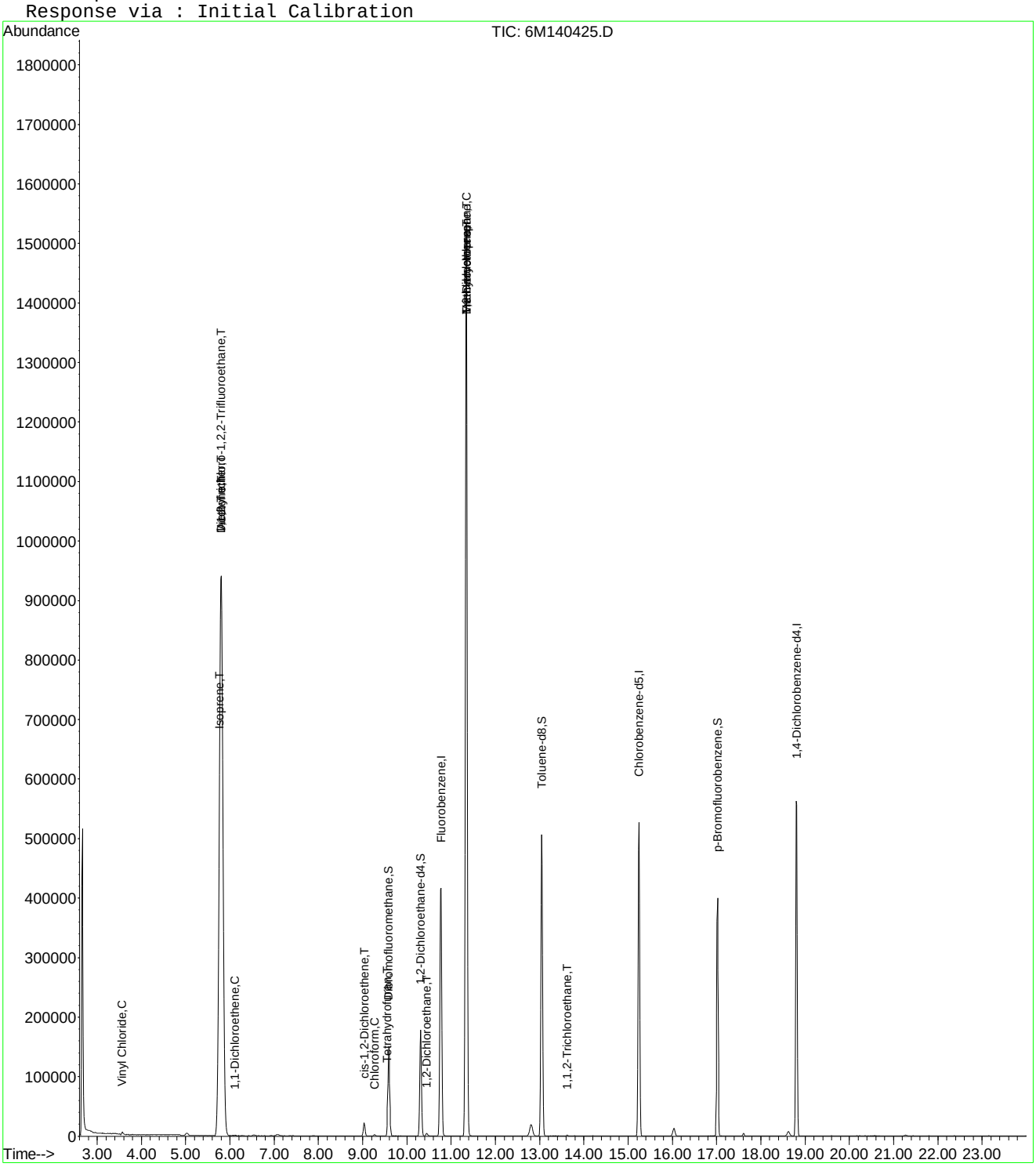

6M140425.D 8260WTR.M Wed Jul 06 08:37:29 2016 Page 2

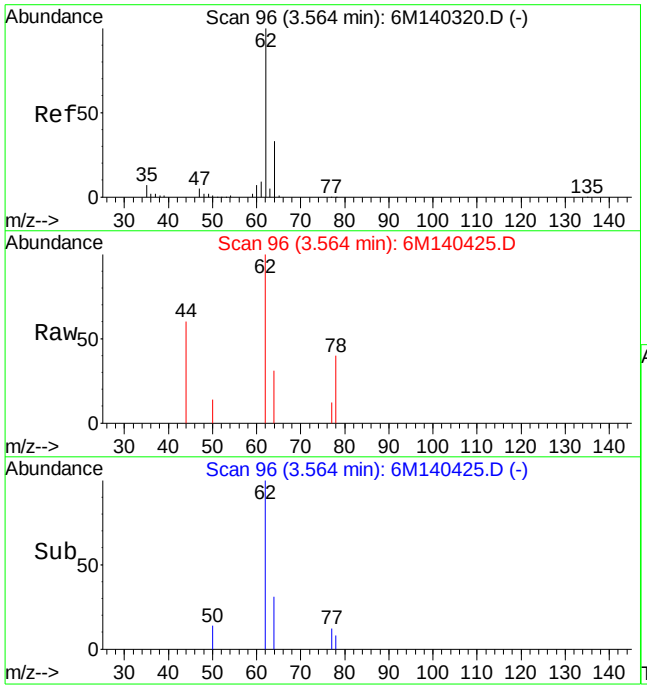

#4
Vinyl Chloride
Concen: 0.92 ug/L
RT: 3.56 min Scan# 96
Delta R.T. 0.01 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 62 Resp: 4949

Ion	Ratio	Lower	Upper
62	100		
64	29.0	19.3	45.1

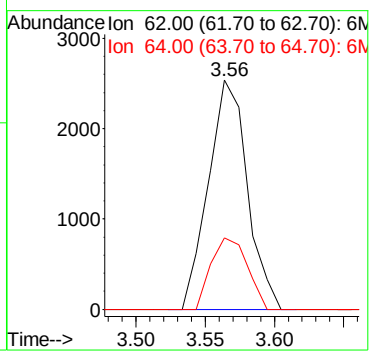

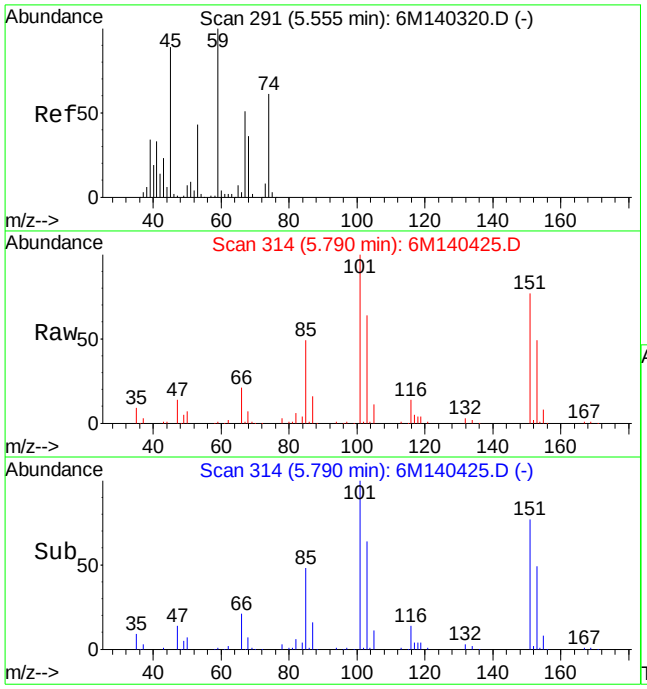

#9
Diethyl ether
Concen: 2.36 ug/L
RT: 5.79 min Scan# 314
Delta R.T. 0.24 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 59 Resp: 11379

Ion	Ratio	Lower	Upper
59	100		
45	0.0	51.5	120.3#
74	0.0	38.5	89.7#

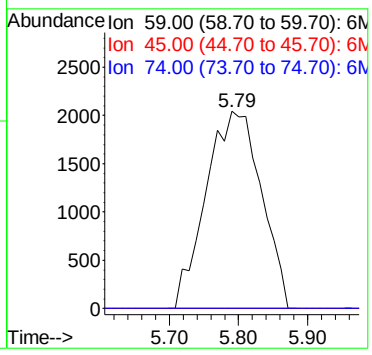

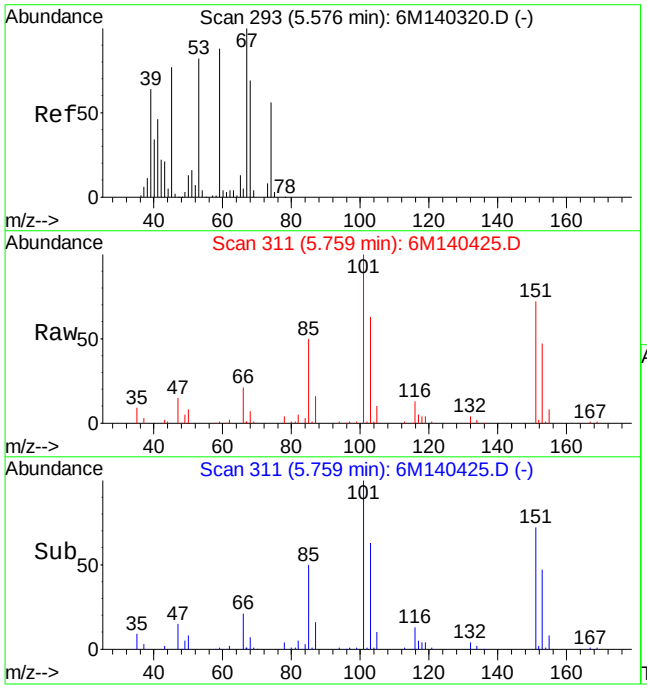

#10
Isoprene
Concen: 0.47 ug/L
RT: 5.76 min Scan# 311
Delta R.T. 0.19 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 67 Resp: 3450

Ion	Ratio	Lower	Upper
67	100		
53	0.0	47.4	110.6#

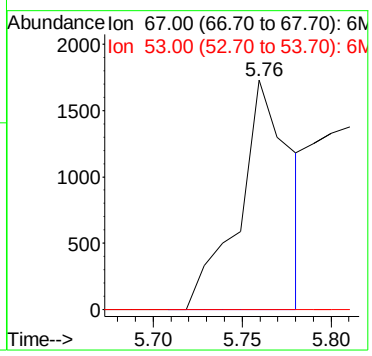

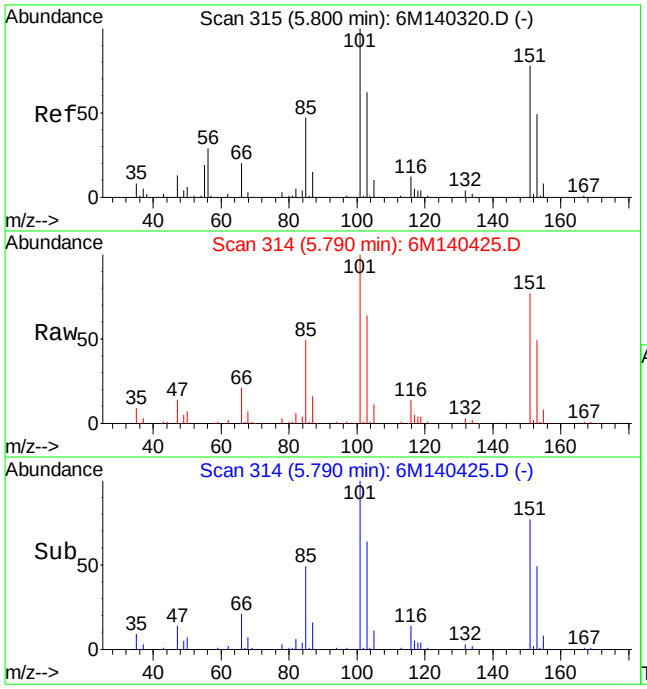

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 213.46 ug/L
RT: 5.79 min Scan# 314
Delta R.T. 0.01 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion:101 Resp: 1084075

Ion	Ratio	Lower	Upper
101	100		
151	77.7	49.4	115.2
103	64.8	38.8	90.4

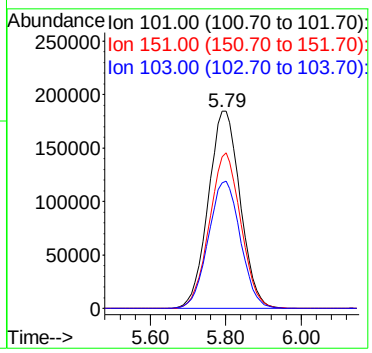

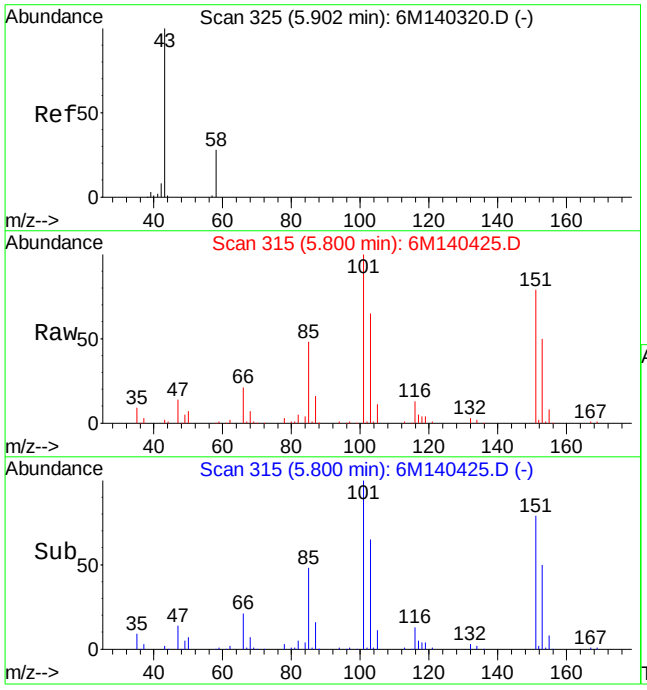

#13
Acetone
Concen: 9.55 ug/L
RT: 5.80 min Scan# 315
Delta R.T. -0.10 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 43 Resp: 15969

Ion	Ratio	Lower	Upper
43	100		
58	16.3	16.4	38.2#

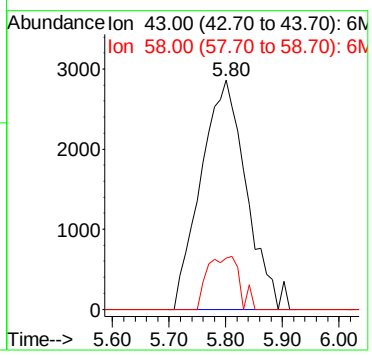

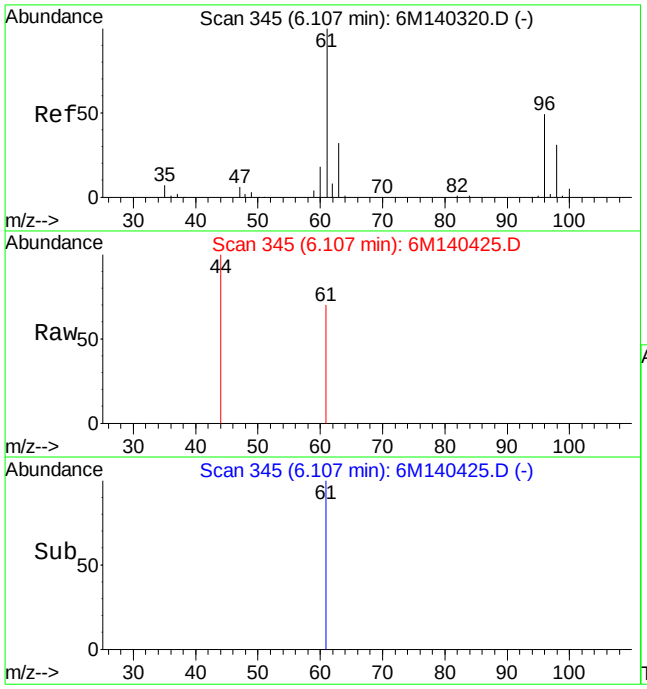

#14
1,1-Dichloroethene
Concen: 0.15 ug/L
RT: 6.11 min Scan# 345
Delta R.T. 0.01 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 61 Resp: 1498

Ion	Ratio	Lower	Upper
61	100		
96	12.6	32.0	74.6#

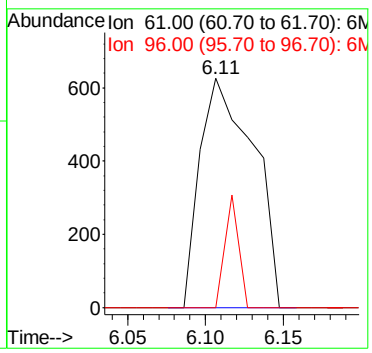

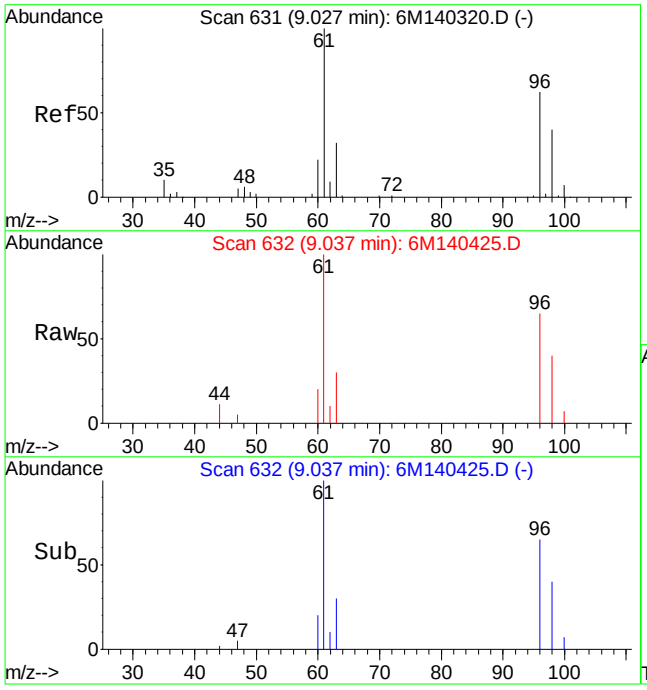

#32
cis-1,2-Dichloroethene
Concen: 2.24 ug/L
RT: 9.04 min Scan# 632
Delta R.T. 0.01 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 96 Resp: 12913

Ion	Ratio	Lower	Upper
96	100		
61	164.4	89.2	208.2

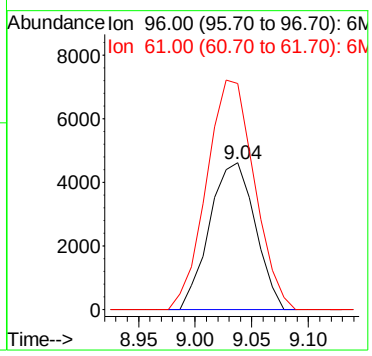

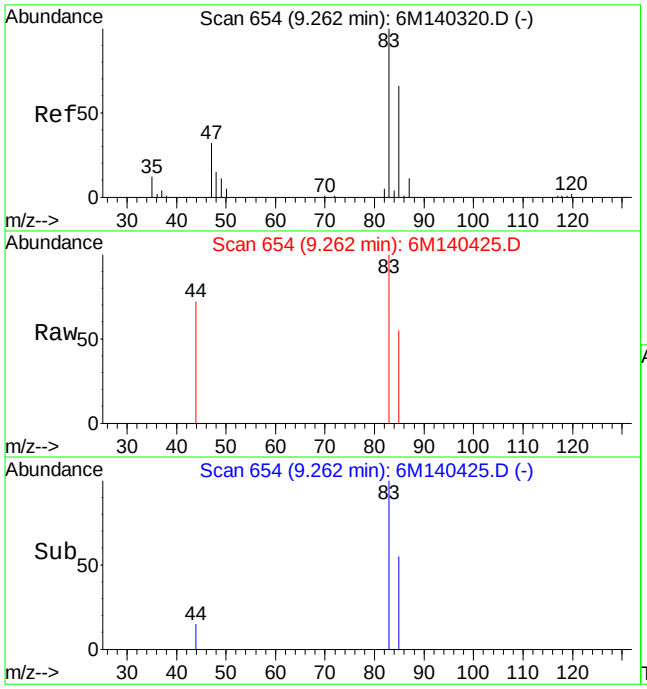

#33
Chloroform
Concen: 0.27 ug/L
RT: 9.26 min Scan# 654
Delta R.T. -0.00 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 83 Resp: 2743

Ion	Ratio	Lower	Upper
83	100		
85	57.1	39.0	91.0
47	6.9	18.5	43.1#

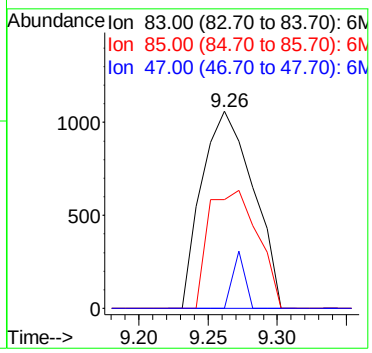

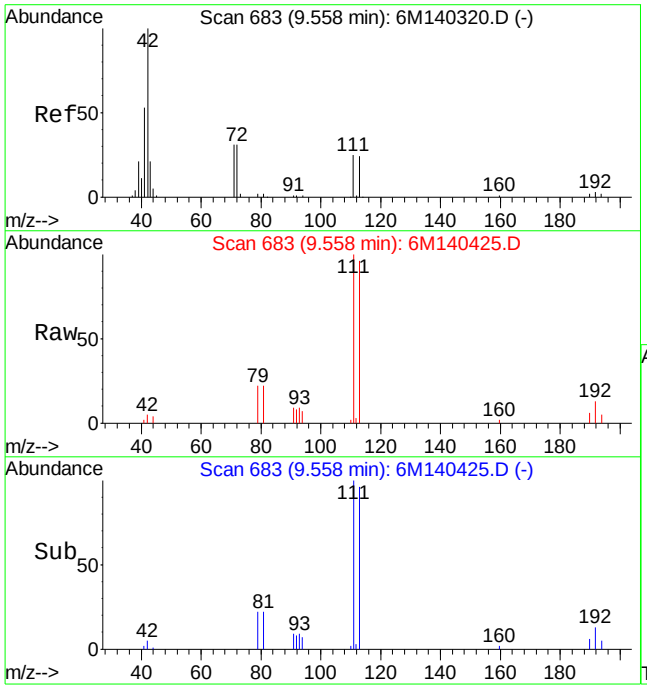

#36
Tetrahydrofuran
Concen: 1.02 ug/L
RT: 9.56 min Scan# 683
Delta R.T. -0.00 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 42 Resp: 1826

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	0.0	19.9	46.5#

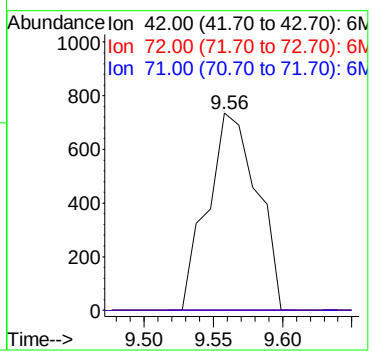

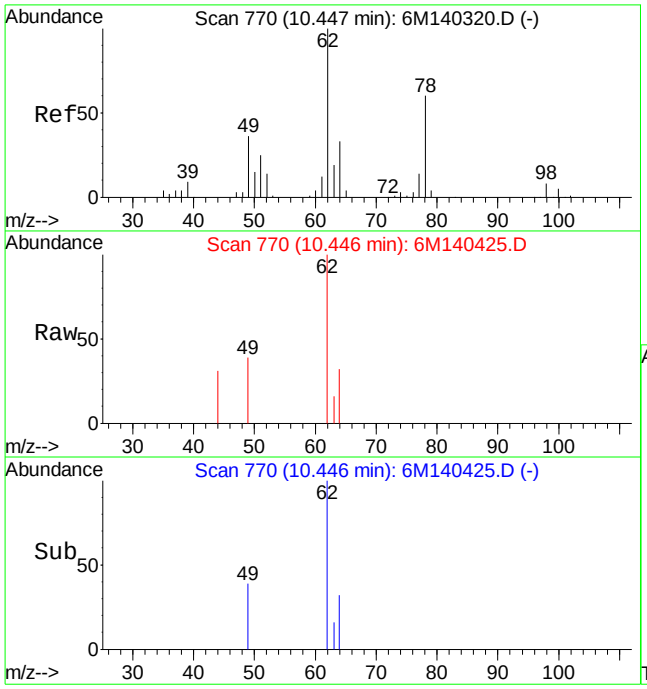

#45
1,2-Dichloroethane
Concen: 0.70 ug/L
RT: 10.45 min Scan# 770
Delta R.T. -0.00 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 62 Resp: 5747

Ion	Ratio	Lower	Upper
62	100		
49	25.8	25.1	58.5
98	0.0	5.2	12.0#

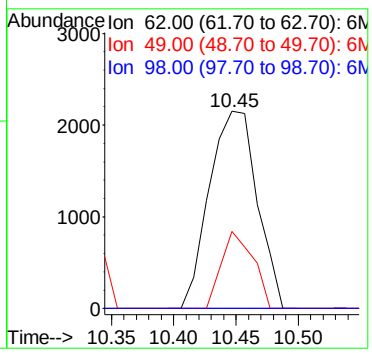

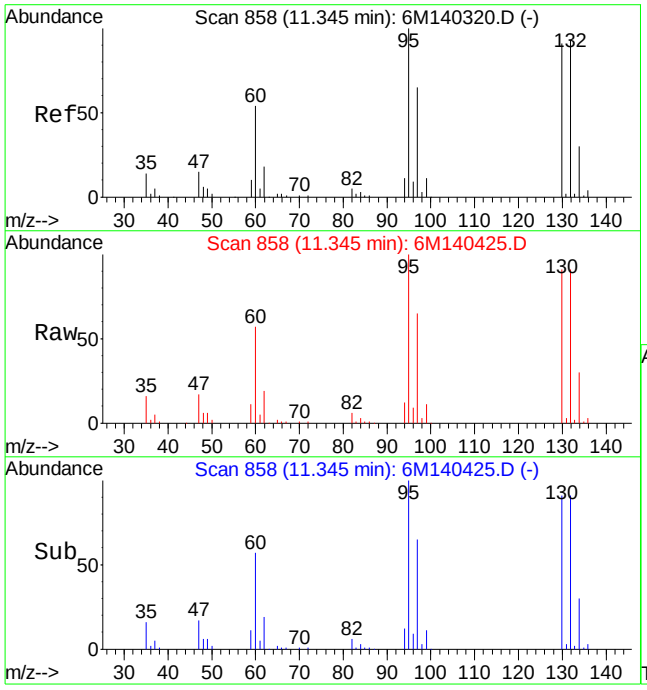

#47
Trichloroethene
Concen: 121.55 ug/L
RT: 11.35 min Scan# 858
Delta R.T. 0.01 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion:130 Resp: 653420

Ion	Ratio	Lower	Upper
130	100		
60	63.8	32.0	74.6

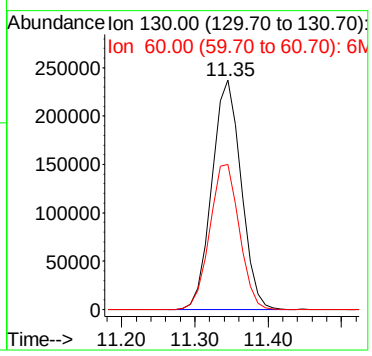

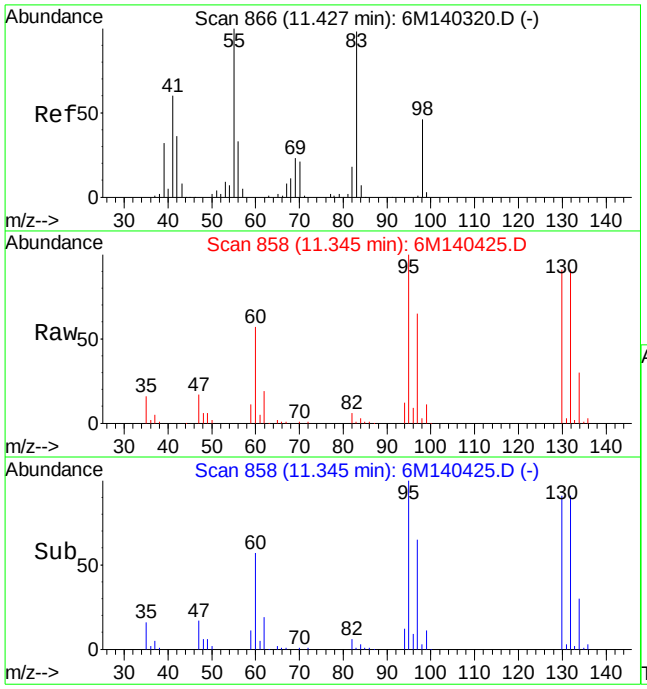

#48
Methylcyclohexane
Concen: 1.10 ug/L
RT: 11.35 min Scan# 858
Delta R.T. -0.08 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 83 Resp: 9315

Ion	Ratio	Lower	Upper
83	100		
55	0.0	56.3	131.3#
98	204.3	28.4	66.4#

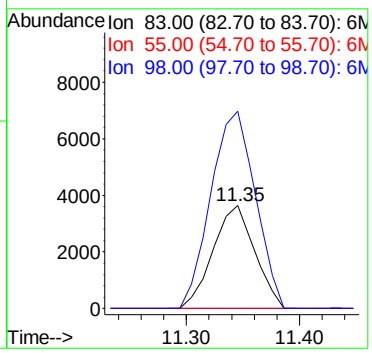

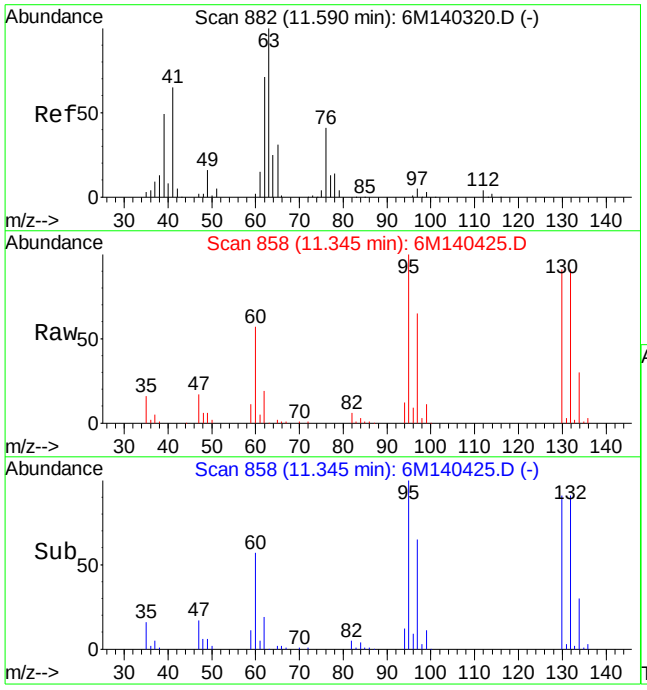

#49
1,2-Dichloropropane
Concen: 0.43 ug/L
RT: 11.35 min Scan# 858
Delta R.T. -0.25 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 63 Resp: 2694

Ion	Ratio	Lower	Upper
63	100		
76	0.0	24.2	56.4#

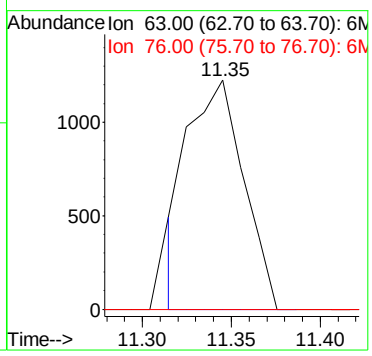

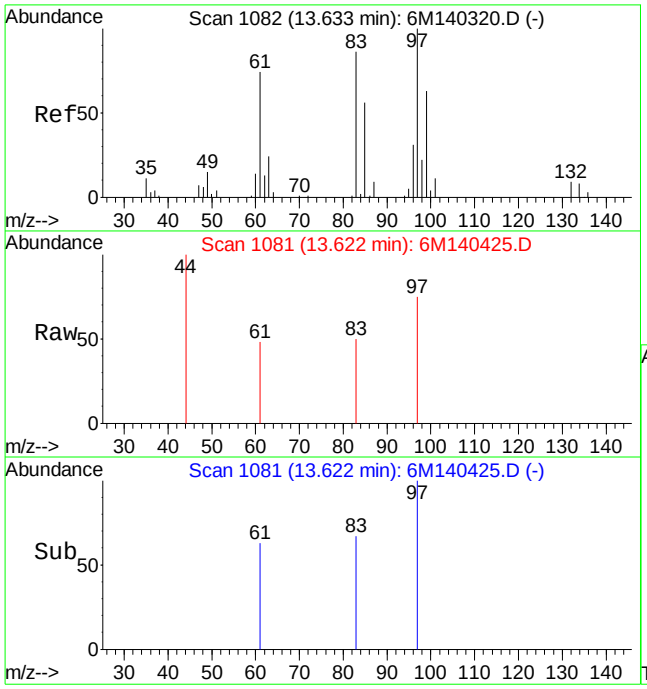

#63
1,1,2-Trichloroethane
Concen: 0.24 ug/L
RT: 13.62 min Scan# 1081
Delta R.T. -0.00 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 97 Resp: 991

Ion	Ratio	Lower	Upper
97	100		
83	44.3	51.4	120.0#
99	18.8	38.1	88.9#

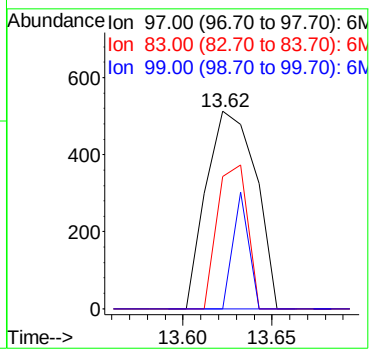

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140384.D Vial: 23
Acq On : 2 Jul 2016 22:40 Operator: TMB
Sample : L16061289-02 A 10X 826-LOW Inst : HPMS6
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 10:11:19 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	490827	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	348544	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	181024	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	129816	26.0691 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.28%		
43) 1,2-Dichloroethane-d4	10.32	65	162495	25.8491 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.40%		
58) Toluene-d8	13.04	98	428155	24.9459 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.80%		
80) p-Bromofluorobenzene	17.01	95	175305	24.7272 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.92%		

Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	23210	4.8621 ug/L	98
13) Acetone	5.90	43	407	0.2588 ug/L #	48
14) 1,1-Dichloroethene	6.11	61	1646	0.1777 ug/L #	45
32) cis-1,2-Dichloroethene	9.03	96	35107	6.4655 ug/L	90
33) Chloroform	9.26	83	3797	0.3969 ug/L	96
36) Tetrahydrofuran	9.55	42	1959	1.1668 ug/L #	41
47) Trichloroethene	11.35	130	739192	146.2910 ug/L	83
48) Methylcyclohexane	11.34	83	11119	1.4017 ug/L #	1
49) 1,2-Dichloropropane	11.34	63	3095	0.5249 ug/L #	35

(#) = qualifier out of range (m) = manual integration
6M140384.D 8260WTR.M Sun Jul 03 10:11:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140384.D Vial: 23
Acq On : 2 Jul 2016 22:40 Operator: TMB
Sample : L16061289-02 A 10X 826-LOW Inst : HPMS6
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 3 10:11 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

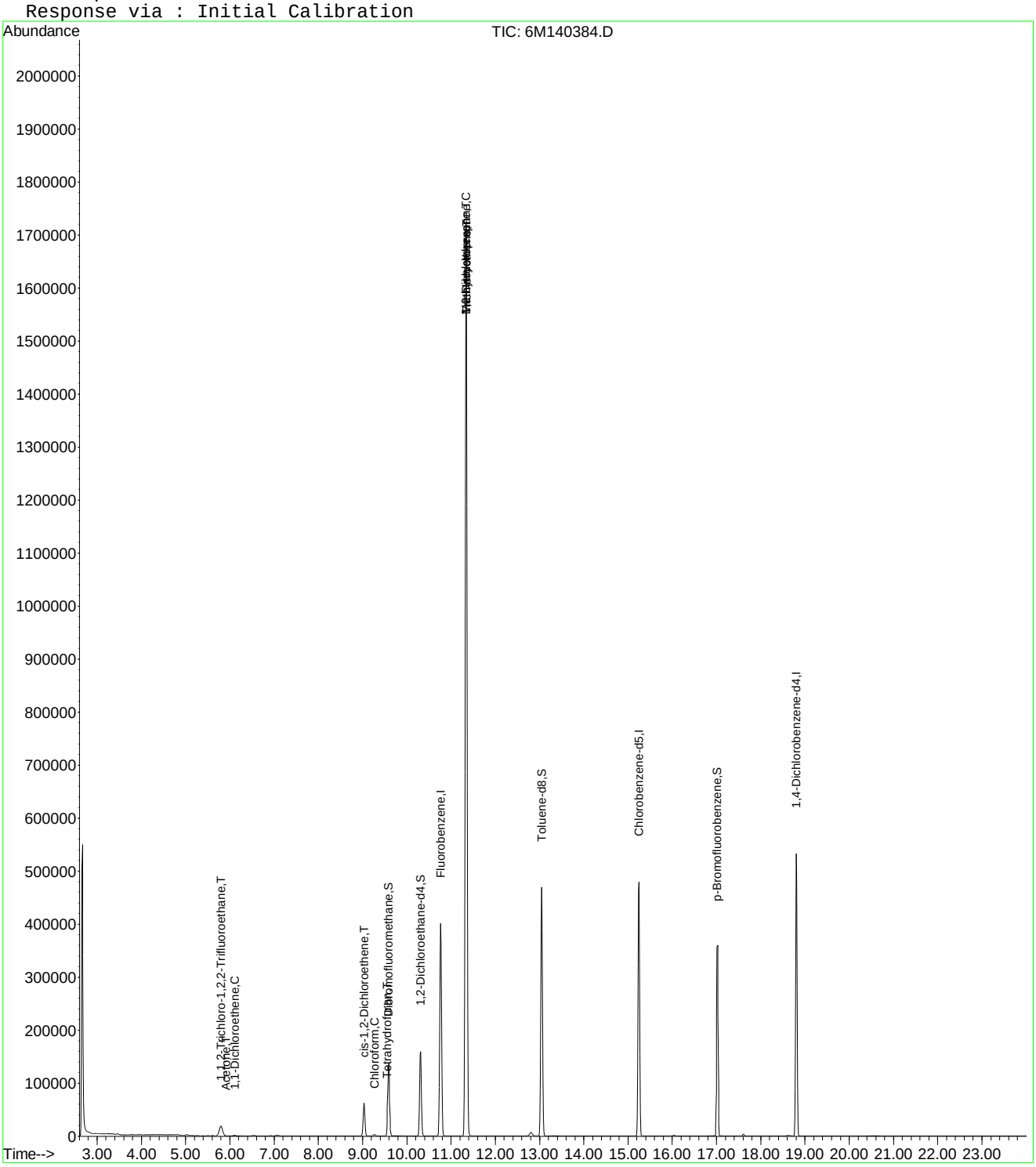

6M140384.D 8260WTR.M Sun Jul 03 10:11:22 2016 Page 2

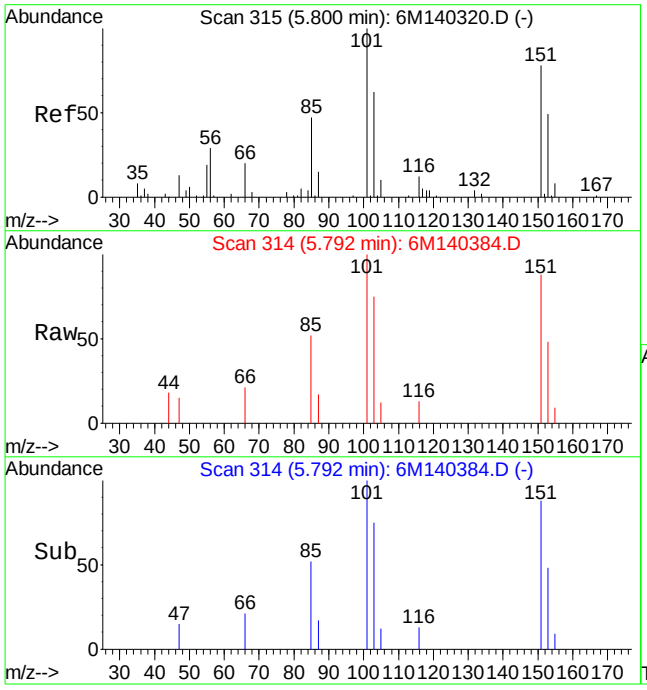

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 4.86 ug/L
RT: 5.79 min Scan# 314
Delta R.T. 0.01 min
Lab File: 6M140384.D
Acq: 2 Jul 2016 22:40

Tgt Ion:101 Resp: 23210

Ion	Ratio	Lower	Upper
101	100		
151	81.0	49.4	115.2
103	67.6	38.8	90.4

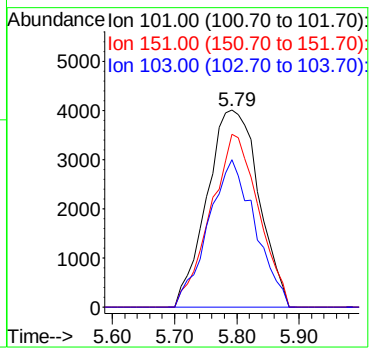

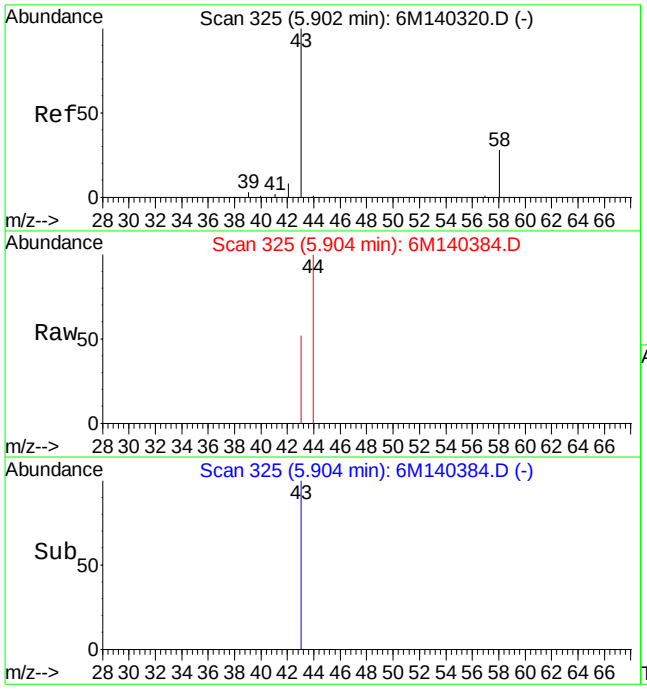

#13
Acetone
Concen: 0.26 ug/L
RT: 5.90 min Scan# 325
Delta R.T. -0.00 min
Lab File: 6M140384.D
Acq: 2 Jul 2016 22:40

Tgt Ion: 43 Resp: 407

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

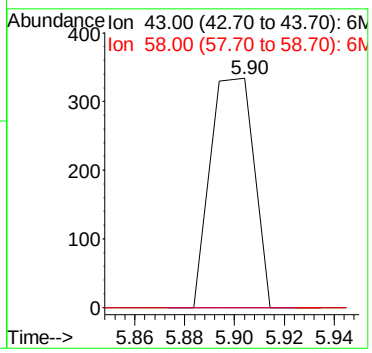

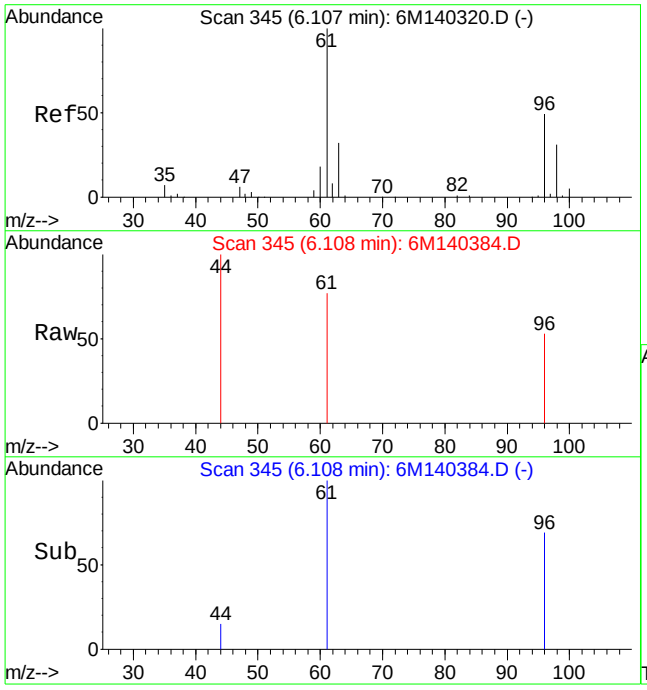

#14
1,1-Dichloroethene
Concen: 0.18 ug/L
RT: 6.11 min Scan# 345
Delta R.T. 0.01 min
Lab File: 6M140384.D
Acq: 2 Jul 2016 22:40

Tgt Ion: 61 Resp: 1646

Ion	Ratio	Lower	Upper
61	100		
96	14.5	32.0	74.6#

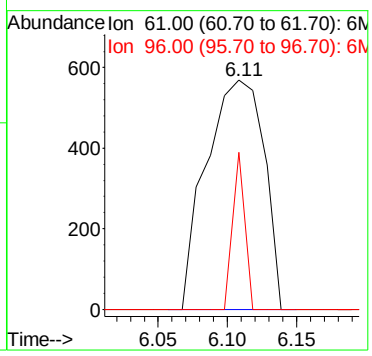

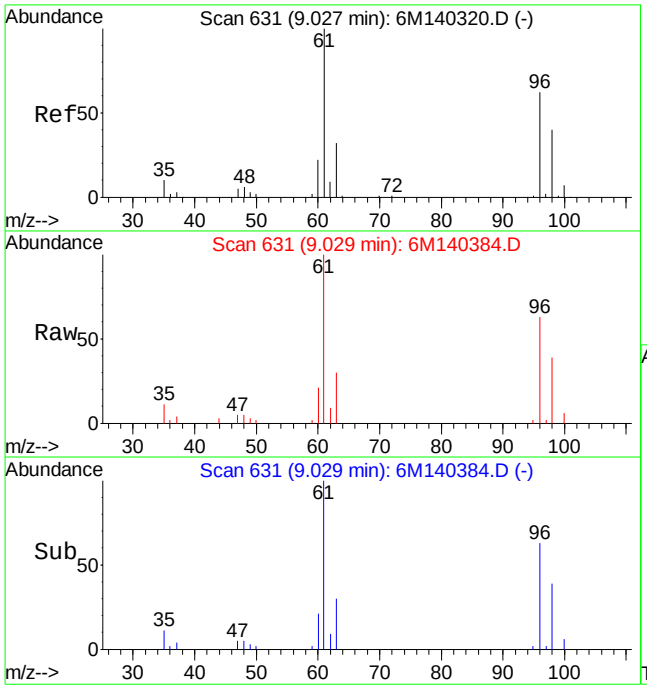

#32
cis-1,2-Dichloroethene
Concen: 6.47 ug/L
RT: 9.03 min Scan# 631
Delta R.T. -0.00 min
Lab File: 6M140384.D
Acq: 2 Jul 2016 22:40

Tgt Ion: 96 Resp: 35107

Ion	Ratio	Lower	Upper
96	100		
61	160.9	89.2	208.2

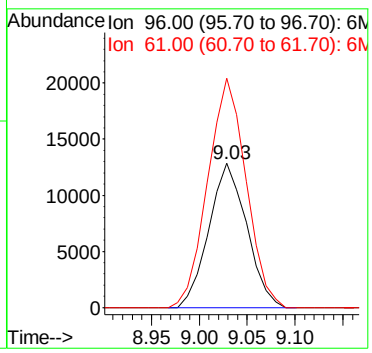

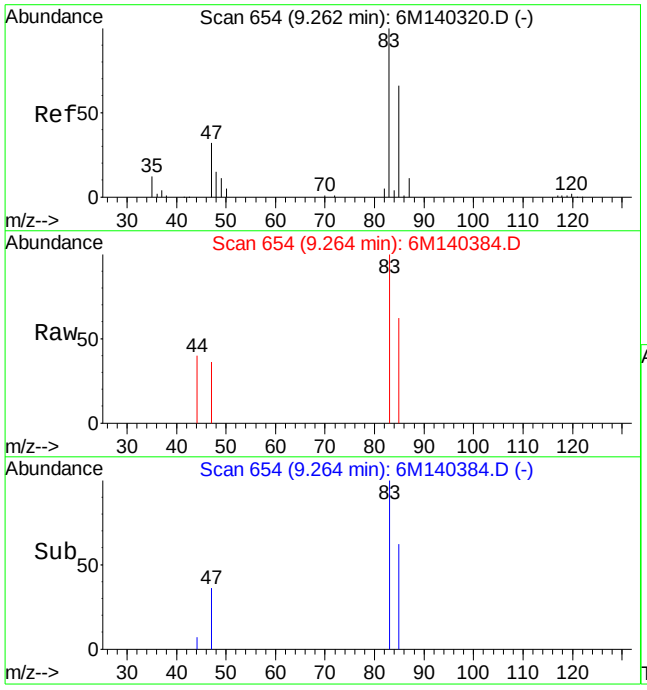

#33
Chloroform
Concen: 0.40 ug/L
RT: 9.26 min Scan# 654
Delta R.T. -0.00 min
Lab File: 6M140384.D
Acq: 2 Jul 2016 22:40

Tgt Ion: 83 Resp: 3797

Ion	Ratio	Lower	Upper
83	100		
85	64.3	39.0	91.0
47	24.8	18.5	43.1

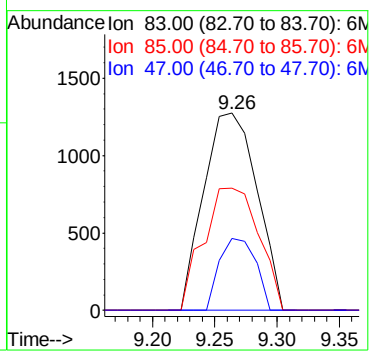

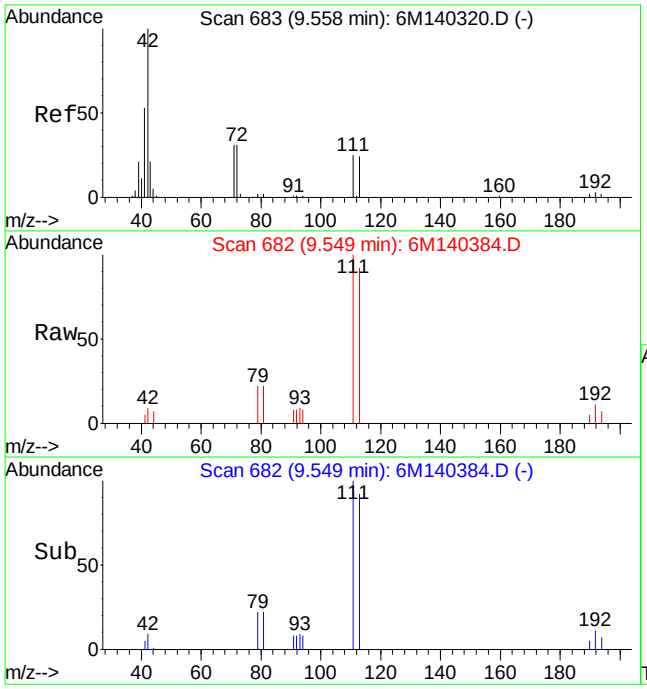

#36
Tetrahydrofuran
Concen: 1.17 ug/L
RT: 9.55 min Scan# 682
Delta R.T. -0.01 min
Lab File: 6M140384.D
Acq: 2 Jul 2016 22:40

Tgt Ion: 42 Resp: 1959

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	0.0	19.9	46.5#

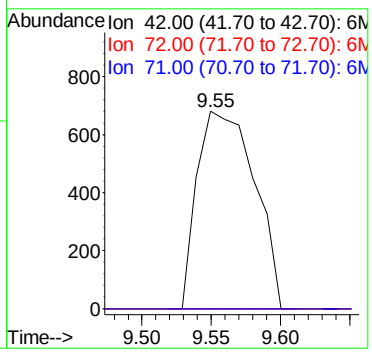

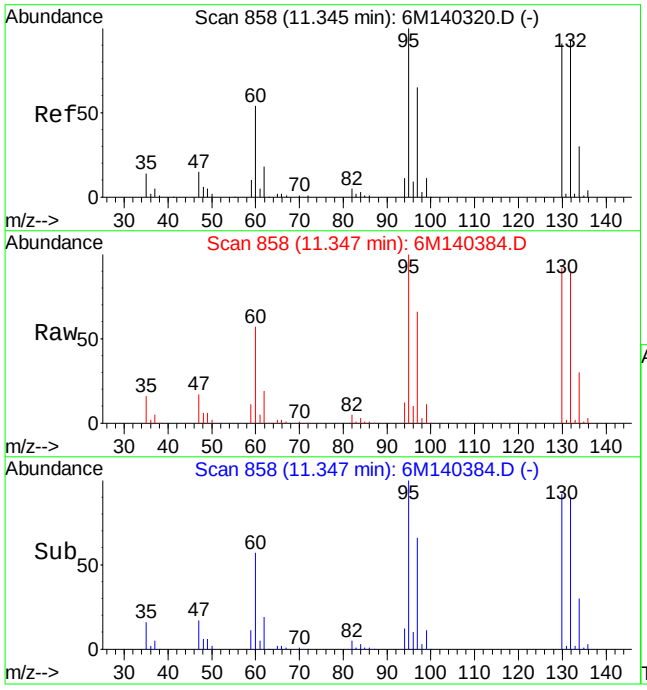

#47
Trichloroethene
Concen: 146.29 ug/L
RT: 11.35 min Scan# 858
Delta R.T. 0.01 min
Lab File: 6M140384.D
Acq: 2 Jul 2016 22:40

Tgt Ion:130 Resp: 739192

Ion	Ratio	Lower	Upper
130	100		
60	65.1	32.0	74.6

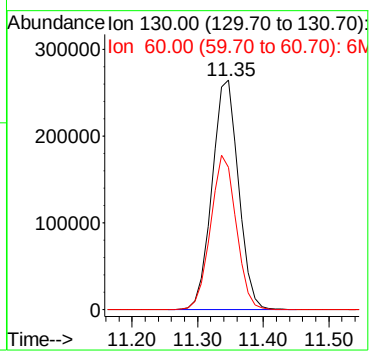

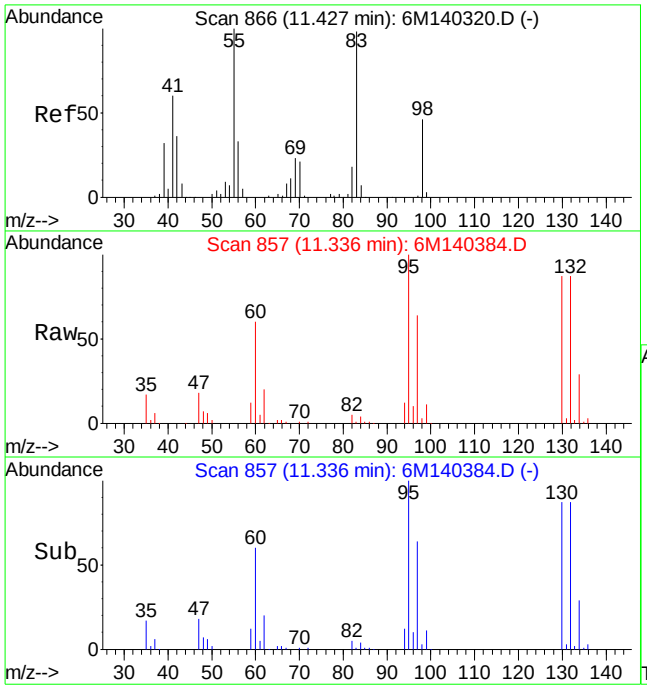

#48
Methylcyclohexane
Concen: 1.40 ug/L
RT: 11.34 min Scan# 857
Delta R.T. -0.09 min
Lab File: 6M140384.D
Acq: 2 Jul 2016 22:40

Tgt Ion: 83 Resp: 11119

Ion	Ratio	Lower	Upper
83	100		
55	0.0	56.3	131.3#
98	197.4	28.4	66.4#

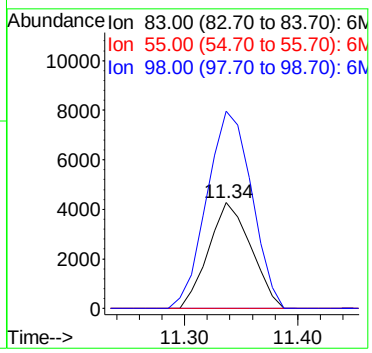

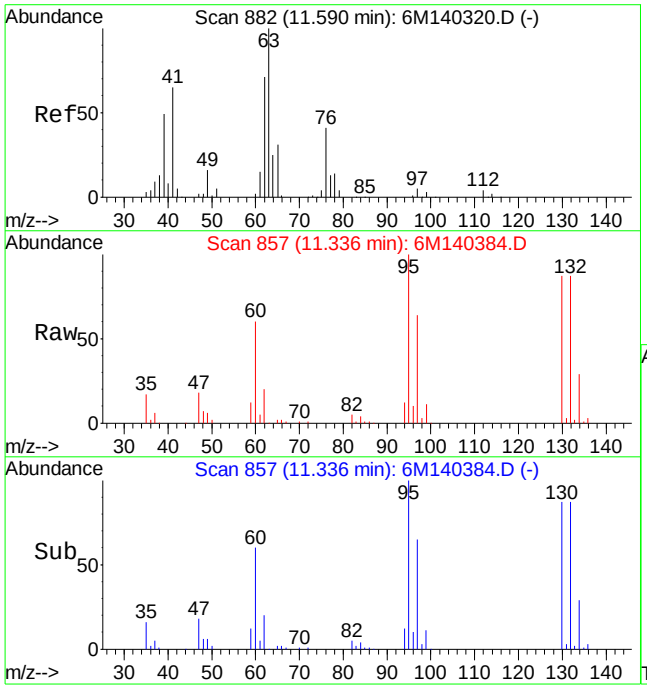

#49
1,2-Dichloropropane
Concen: 0.52 ug/L
RT: 11.34 min Scan# 857
Delta R.T. -0.26 min
Lab File: 6M140384.D
Acq: 2 Jul 2016 22:40

Tgt Ion: 63 Resp: 3095

Ion	Ratio	Lower	Upper
63	100		
76	0.0	24.2	56.4#

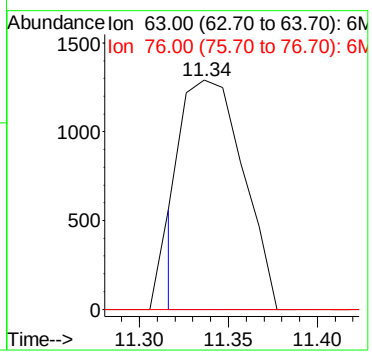

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140377.D Vial: 16
Acq On : 2 Jul 2016 18:55 Operator: TMB
Sample : L16061289-03 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 10:10:35 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	511469	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.24	117	361927	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	187660	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.58	111	132949	25.6207 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.48%		
43) 1,2-Dichloroethane-d4	10.31	65	170075	25.9630 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.84%		
58) Toluene-d8	13.04	98	445821	25.0147 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.04%		
80) p-Bromofluorobenzene	17.02	95	184030	25.0399 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.16%		

Target Compounds					Qvalue
13) Acetone	5.91	43	7055	4.3054 ug/L	89

(#) = qualifier out of range (m) = manual integration
6M140377.D 8260WTR.M Sun Jul 03 10:10:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140377.D Vial: 16
Acq On : 2 Jul 2016 18:55 Operator: TMB
Sample : L16061289-03 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 3 10:10 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

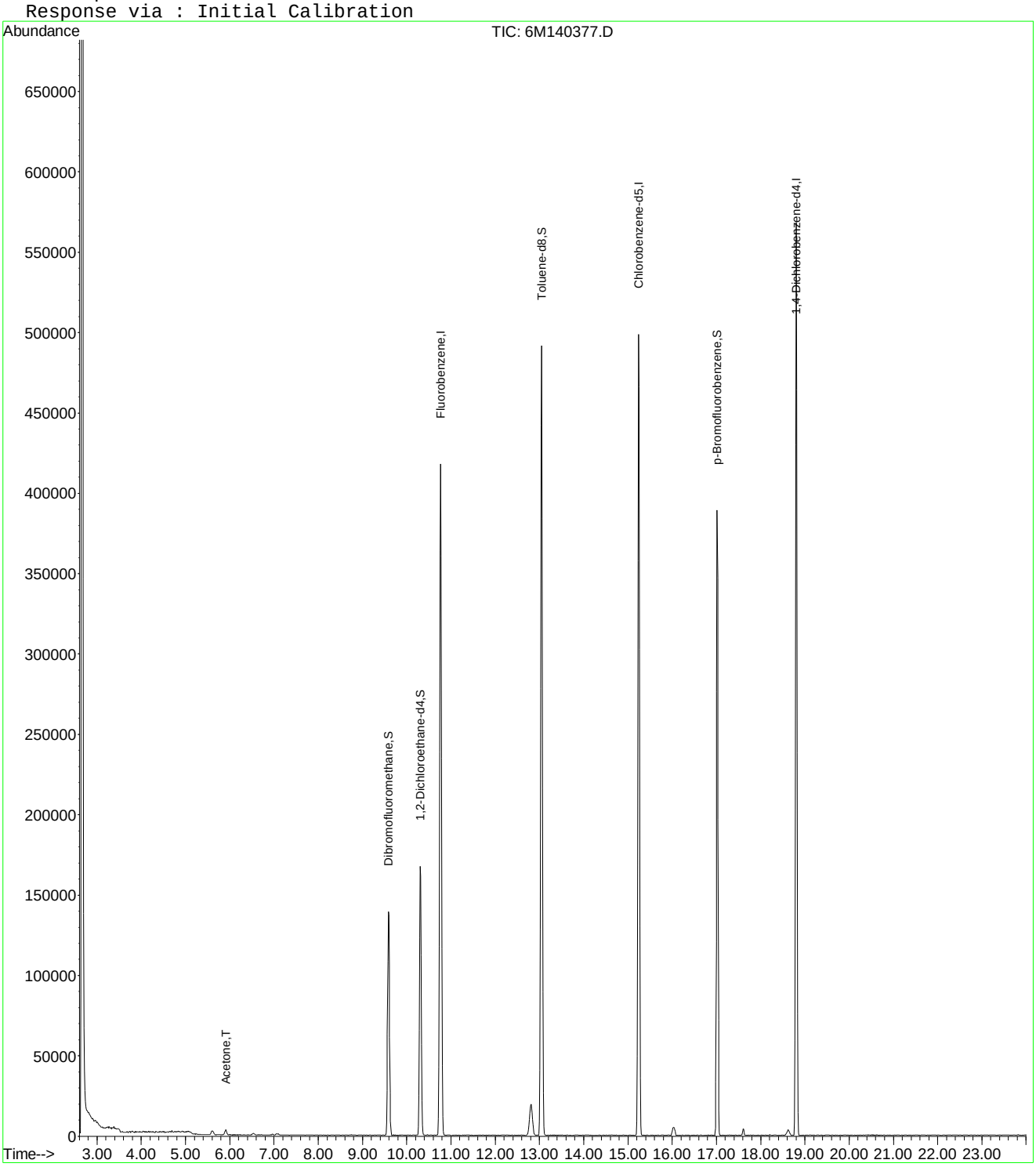

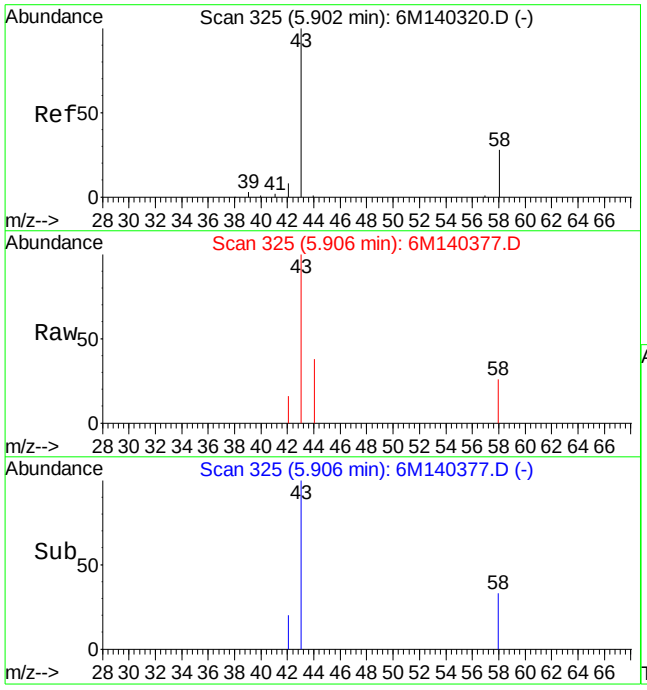

#13
Acetone
Concen: 4.31 ug/L
RT: 5.91 min Scan# 325
Delta R.T. 0.00 min
Lab File: 6M140377.D
Acq: 2 Jul 2016 18:55

Tgt Ion: 43 Resp: 7055

Ion	Ratio	Lower	Upper
43	100		
58	21.3	16.4	38.2

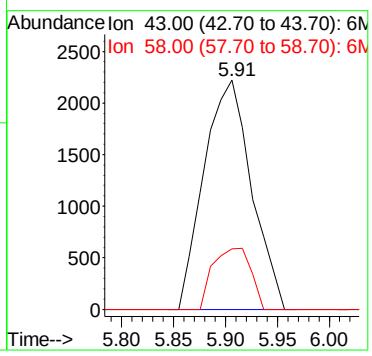

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140378.D Vial: 17
Acq On : 2 Jul 2016 19:27 Operator: TMB
Sample : L16061289-05 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 10:10:40 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	506259	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	359213	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	187454	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	132586	25.8137 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.24%		
43) 1,2-Dichloroethane-d4	10.31	65	165603	25.5405 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.16%		
58) Toluene-d8	13.04	98	445568	25.1894 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.76%		
80) p-Bromofluorobenzene	17.02	95	182298	24.8315 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.32%		

Target Compounds					Qvalue
3) Chloromethane	3.36	50	1294	0.1370 ug/L #	42
13) Acetone	5.90	43	3970	2.4477 ug/L #	78
55) cis-1,3-Dichloropropene	12.79	75	3263	0.3830 ug/L #	46

(#) = qualifier out of range (m) = manual integration
6M140378.D 8260WTR.M Sun Jul 03 10:10:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140378.D Vial: 17
Acq On : 2 Jul 2016 19:27 Operator: TMB
Sample : L16061289-05 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 3 10:10 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

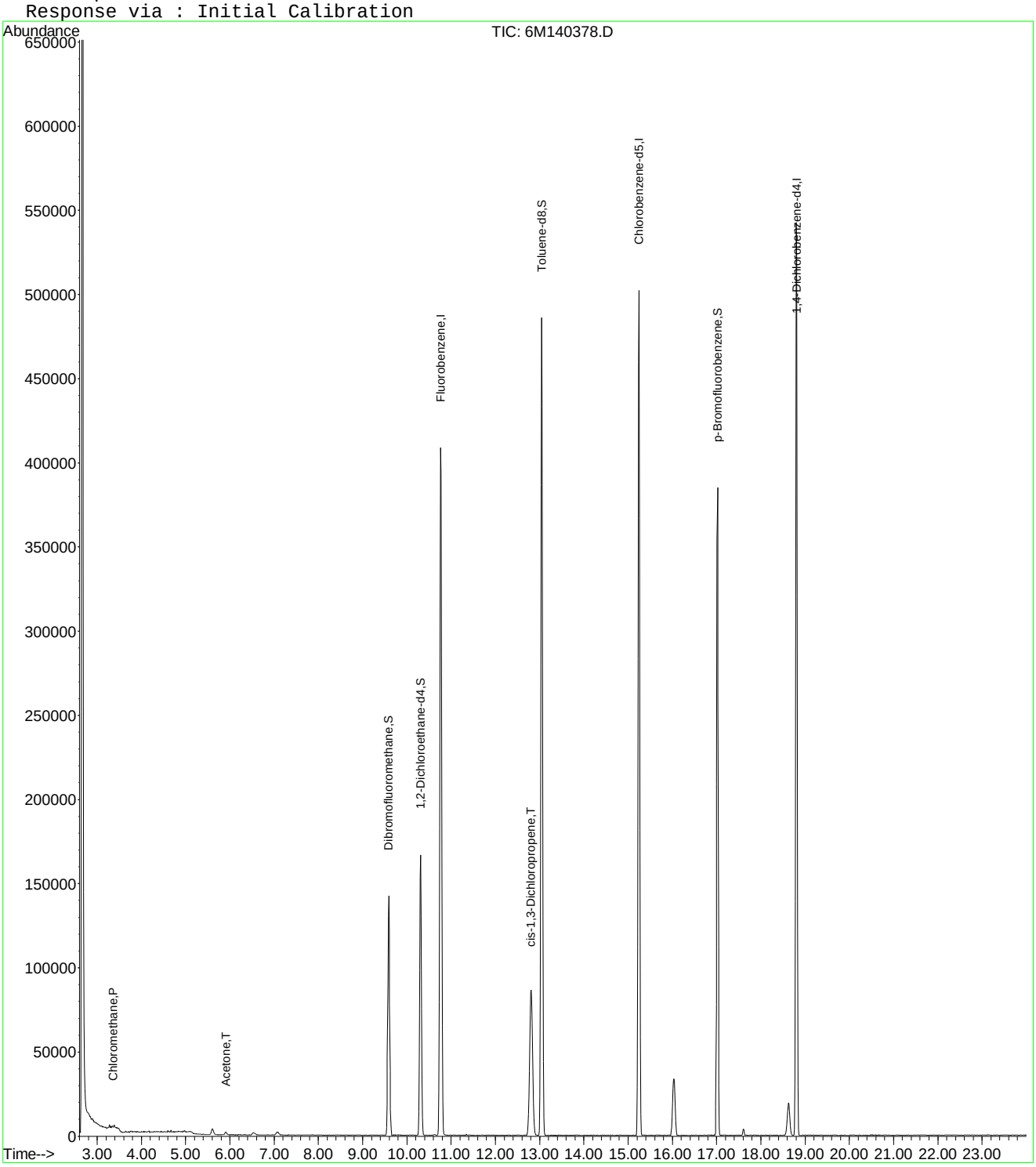

6M140378.D 8260WTR.M Sun Jul 03 10:10:44 2016 Page 2

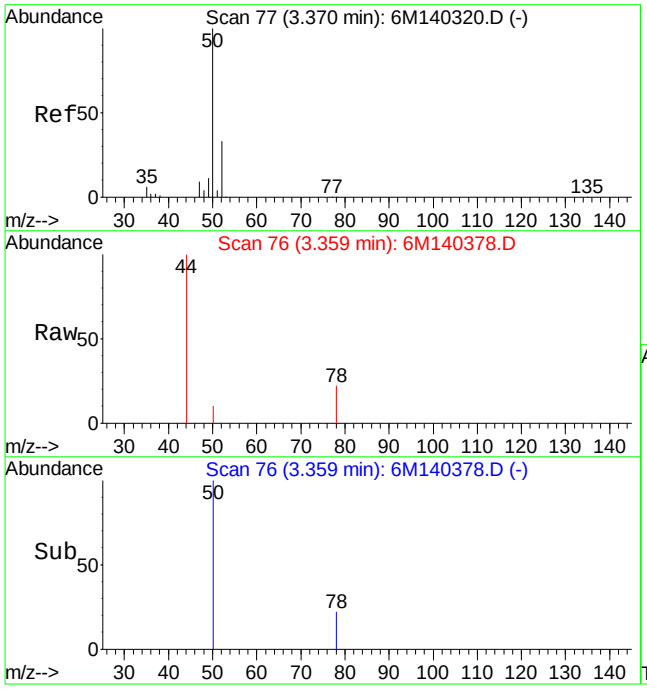

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.36 min Scan# 76
Delta R.T. -0.00 min
Lab File: 6M140378.D
Acq: 2 Jul 2016 19:27

Tgt Ion: 50 Resp: 1294

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.8	46.2#

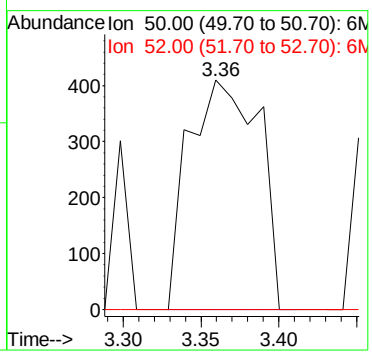

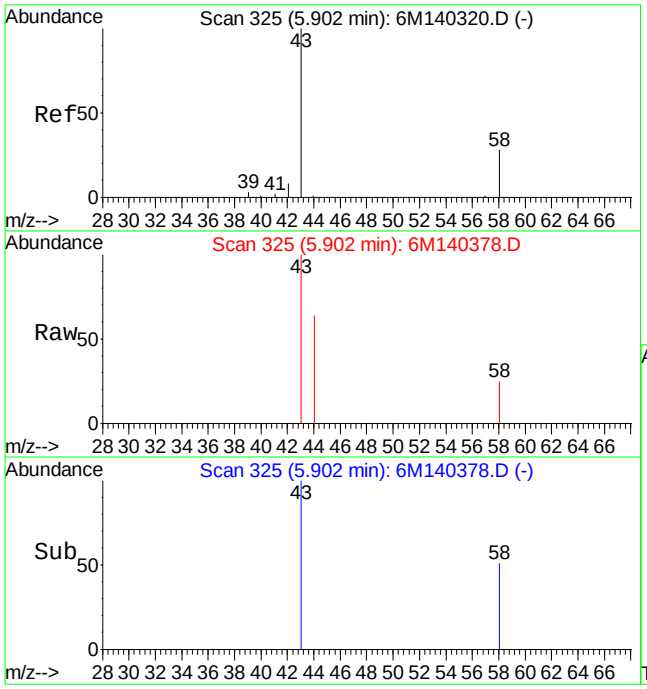

#13
Acetone
Concen: 2.45 ug/L
RT: 5.90 min Scan# 325
Delta R.T. -0.00 min
Lab File: 6M140378.D
Acq: 2 Jul 2016 19:27

Tgt Ion: 43 Resp: 3970

Ion	Ratio	Lower	Upper
43	100		
58	15.7	16.4	38.2#

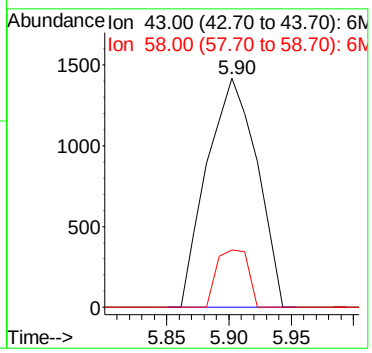

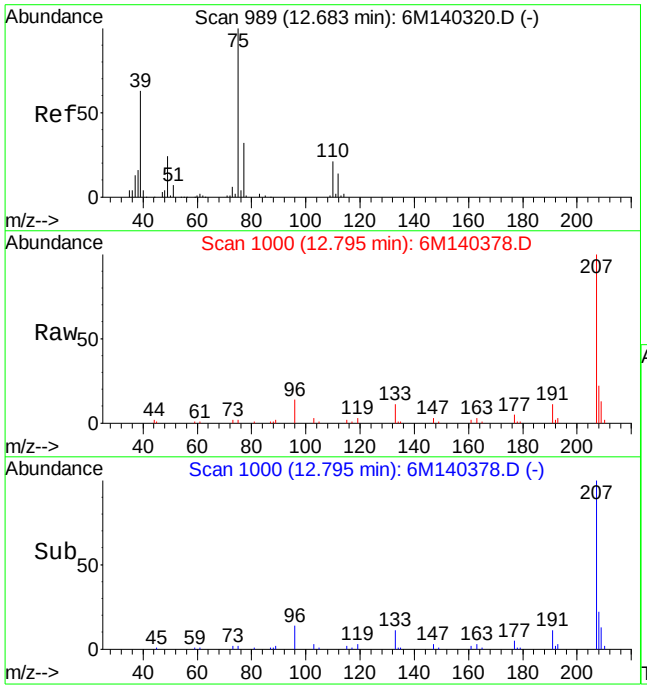

#55
cis-1,3-Dichloropropene
Concen: 0.38 ug/L
RT: 12.79 min Scan# 1000
Delta R.T. 0.11 min
Lab File: 6M140378.D
Acq: 2 Jul 2016 19:27

Tgt Ion: 75 Resp: 3263

Ion	Ratio	Lower	Upper
75	100		
77	0.0	19.5	45.5#
49	0.0	14.1	32.9#

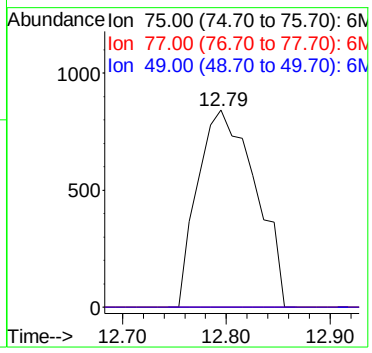

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140372.D Vial: 11
Acq On : 2 Jul 2016 16:15 Operator: TMB
Sample : L16061289-06 A TB 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 10:10:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	542744	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	380150	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	194875	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	138470	25.1470 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.60%		
43) 1,2-Dichloroethane-d4	10.31	65	175575	25.2581 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.04%		
58) Toluene-d8	13.04	98	470453	25.1314 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.52%		
80) p-Bromofluorobenzene	17.02	95	195773	25.6515 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.60%		

Target Compounds

					Qvalue
13) Acetone	5.89	43	1091	0.6274 ug/L #	48
36) Tetrahydrofuran	9.56	42	2674	1.4403 ug/L #	61
55) cis-1,3-Dichloropropene	12.81	75	2622	0.2870 ug/L #	46

(#) = qualifier out of range (m) = manual integration
6M140372.D 8260WTR.M Sun Jul 03 10:10:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140372.D Vial: 11
Acq On : 2 Jul 2016 16:15 Operator: TMB
Sample : L16061289-06 A TB 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 3 10:10 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

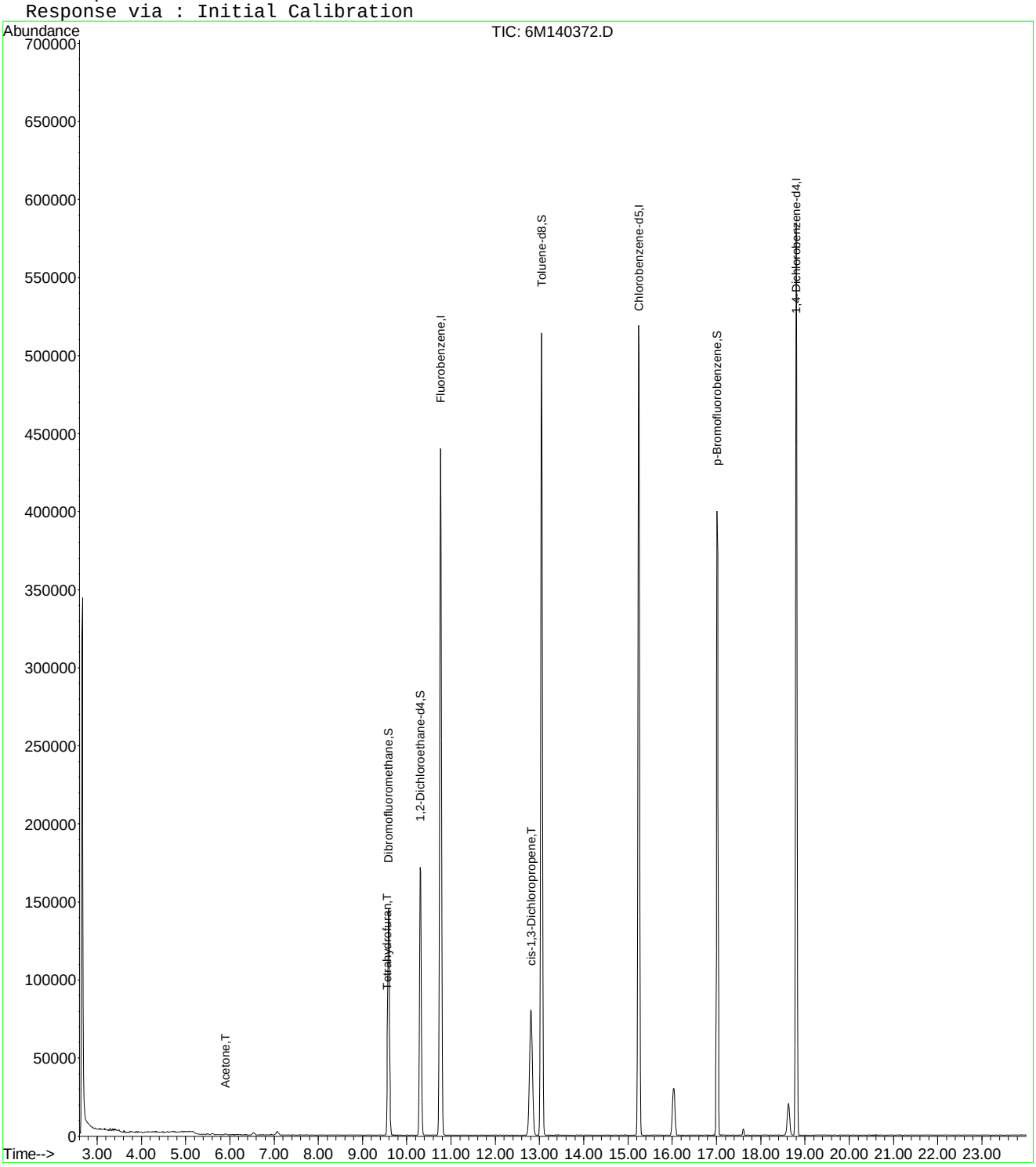

6M140372.D 8260WTR.M Sun Jul 03 10:10:21 2016 Page 2

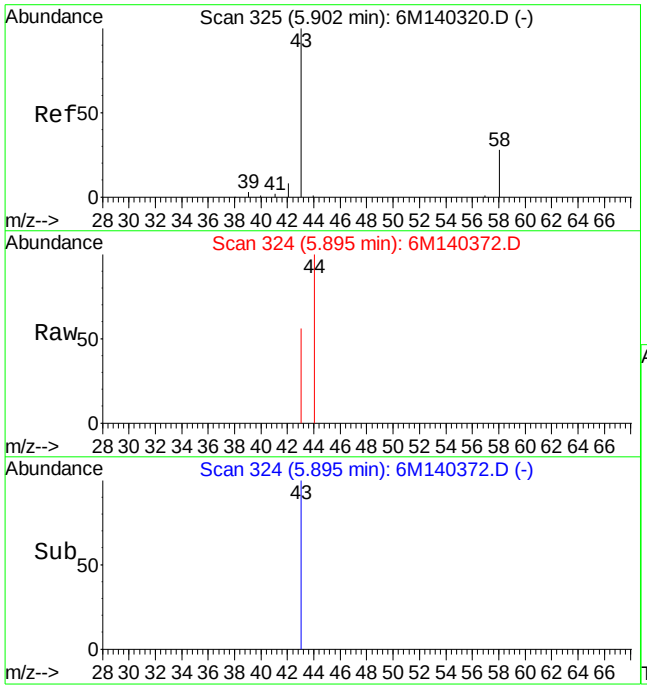

#13
Acetone
Concen: 0.63 ug/L
RT: 5.89 min Scan# 324
Delta R.T. -0.01 min
Lab File: 6M140372.D
Acq: 2 Jul 2016 16:15

Tgt Ion: 43 Resp: 1091

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

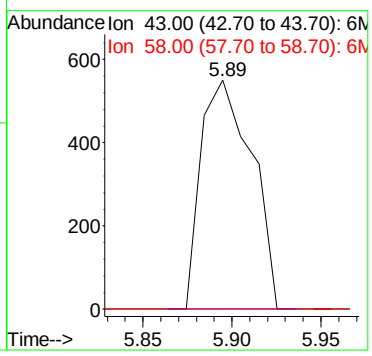

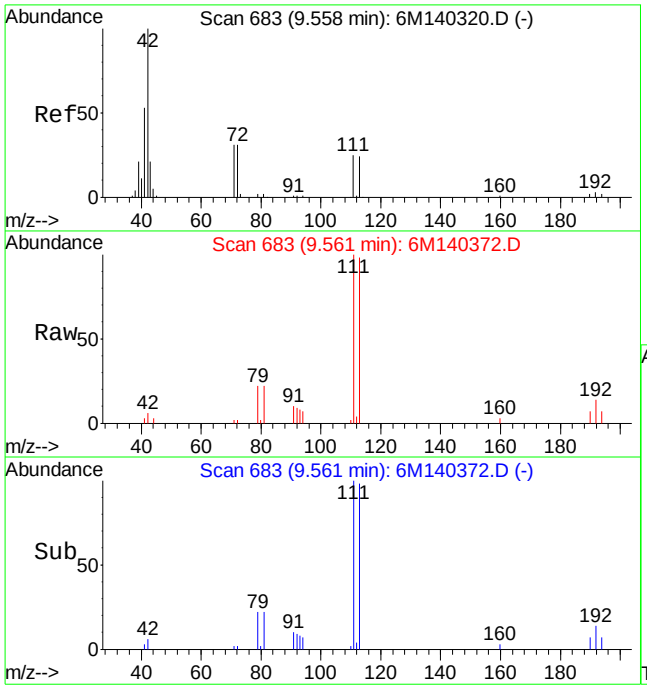

#36
Tetrahydrofuran
Concen: 1.44 ug/L
RT: 9.56 min Scan# 683
Delta R.T. -0.00 min
Lab File: 6M140372.D
Acq: 2 Jul 2016 16:15

Tgt Ion: 42 Resp: 2674

Ion	Ratio	Lower	Upper
42	100		
72	16.2	20.8	48.4#
71	7.4	19.9	46.5#

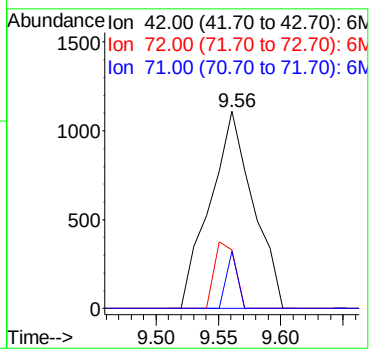

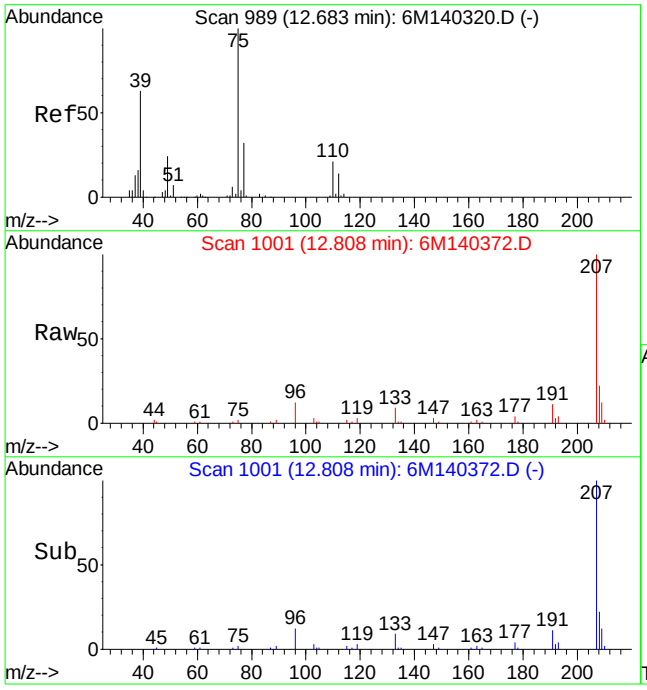

#55
cis-1,3-Dichloropropene
Concen: 0.29 ug/L
RT: 12.81 min Scan# 1001
Delta R.T. 0.12 min
Lab File: 6M140372.D
Acq: 2 Jul 2016 16:15

Tgt Ion: 75 Resp: 2622

Ion	Ratio	Lower	Upper
75	100		
77	0.0	19.5	45.5#
49	0.0	14.1	32.9#

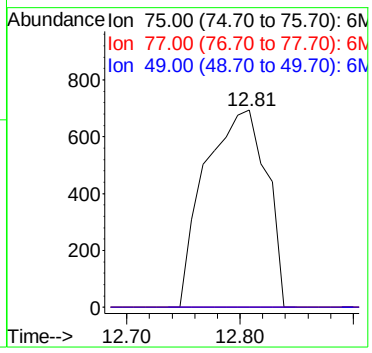

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:46 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	173671	27.7488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.00%		
43) 1,2-Dichloroethane-d4	11.12	65	203570	26.8000 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.20%		
58) Toluene-d8	13.86	98	554047	26.0139 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.04%		
80) p-Bromofluorobenzene	17.85	95	229998	27.1525 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.60%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	1325	0.6992 ug/L #	46
20) Carbon Disulfide	7.54	76	18747	0.9622 ug/L #	39
29) 2-Butanone	9.31	43	1188	0.4247 ug/L #	1
36) Tetrahydrofuran	10.36	42	2769	1.5196 ug/L #	58
60) Ethyl Methacrylate	13.87	69	899	0.1270 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

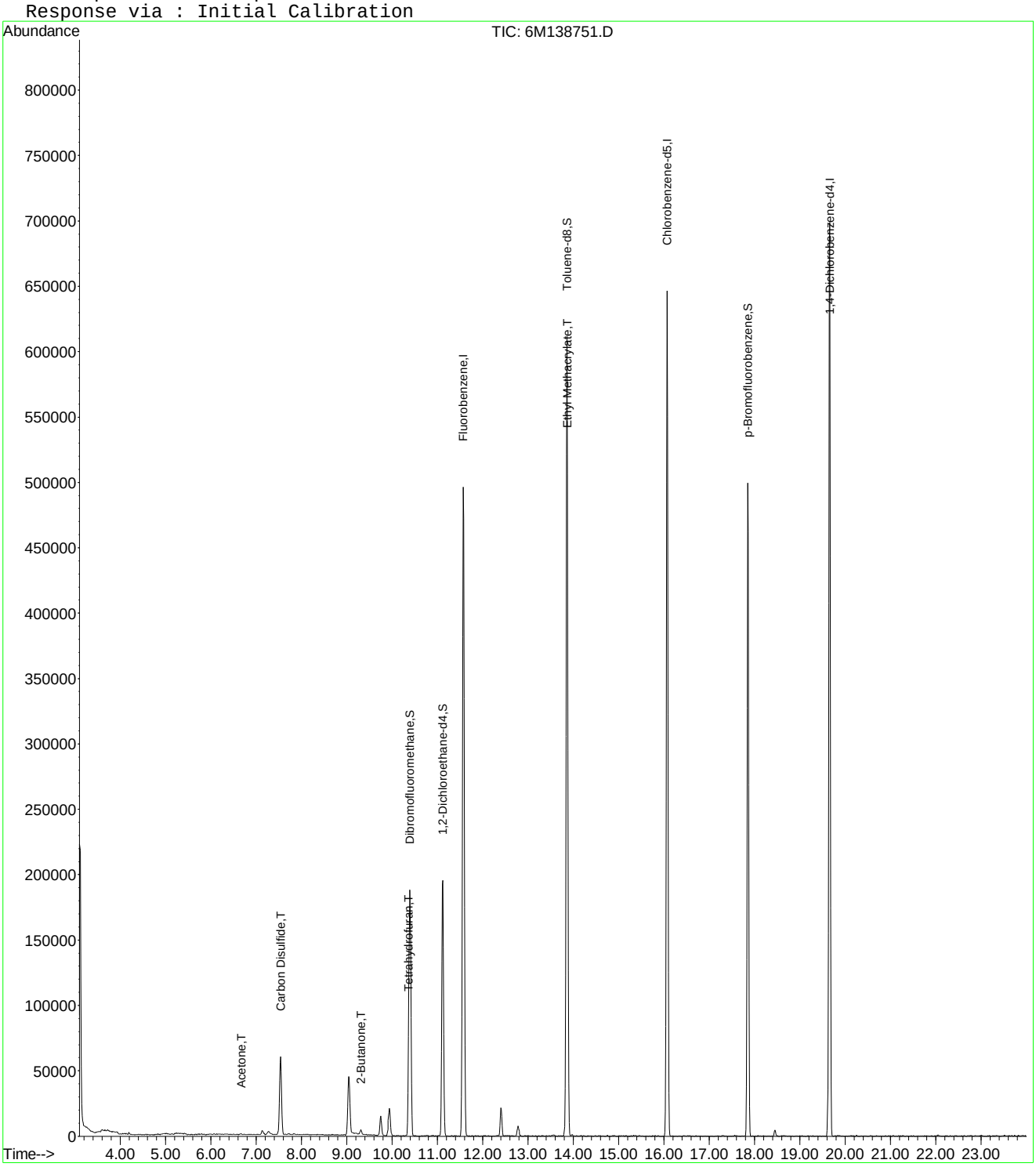

6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:52 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	3.7209 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.2301 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.6002 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.3499 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.5173 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	3.4767 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.0338 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.7392 ug/L	93
13) Cyclohexanone	17.57	55	447	0.5159 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Mon Apr 25 15:45:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

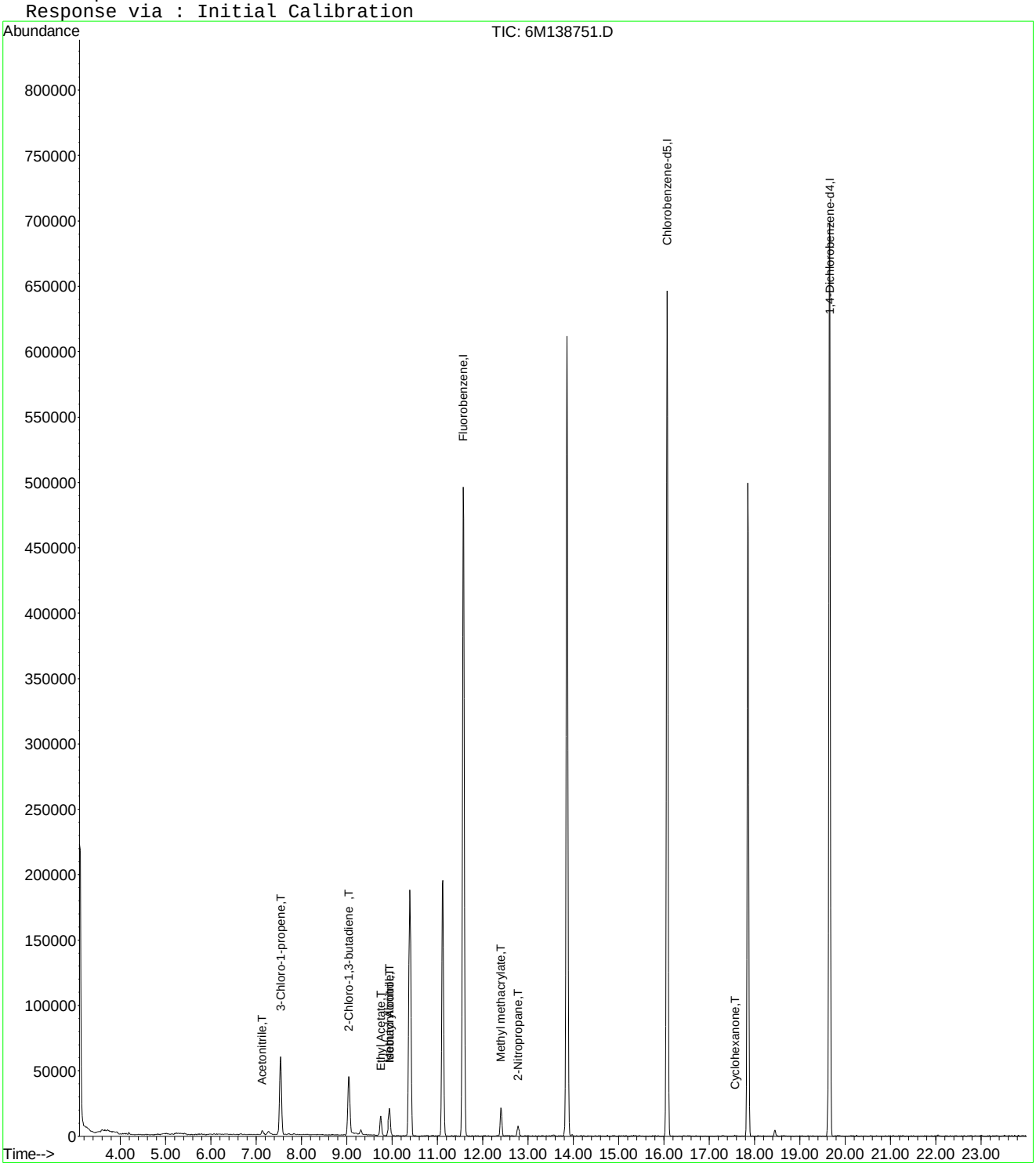

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:56 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	4.7698 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.5408 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.8775 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.2792 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.8601 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	5.9076 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.5356 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.4543 ug/L	93
13) Cyclohexanone	17.57	55	447	1.4133 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Wed Apr 27 16:04:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

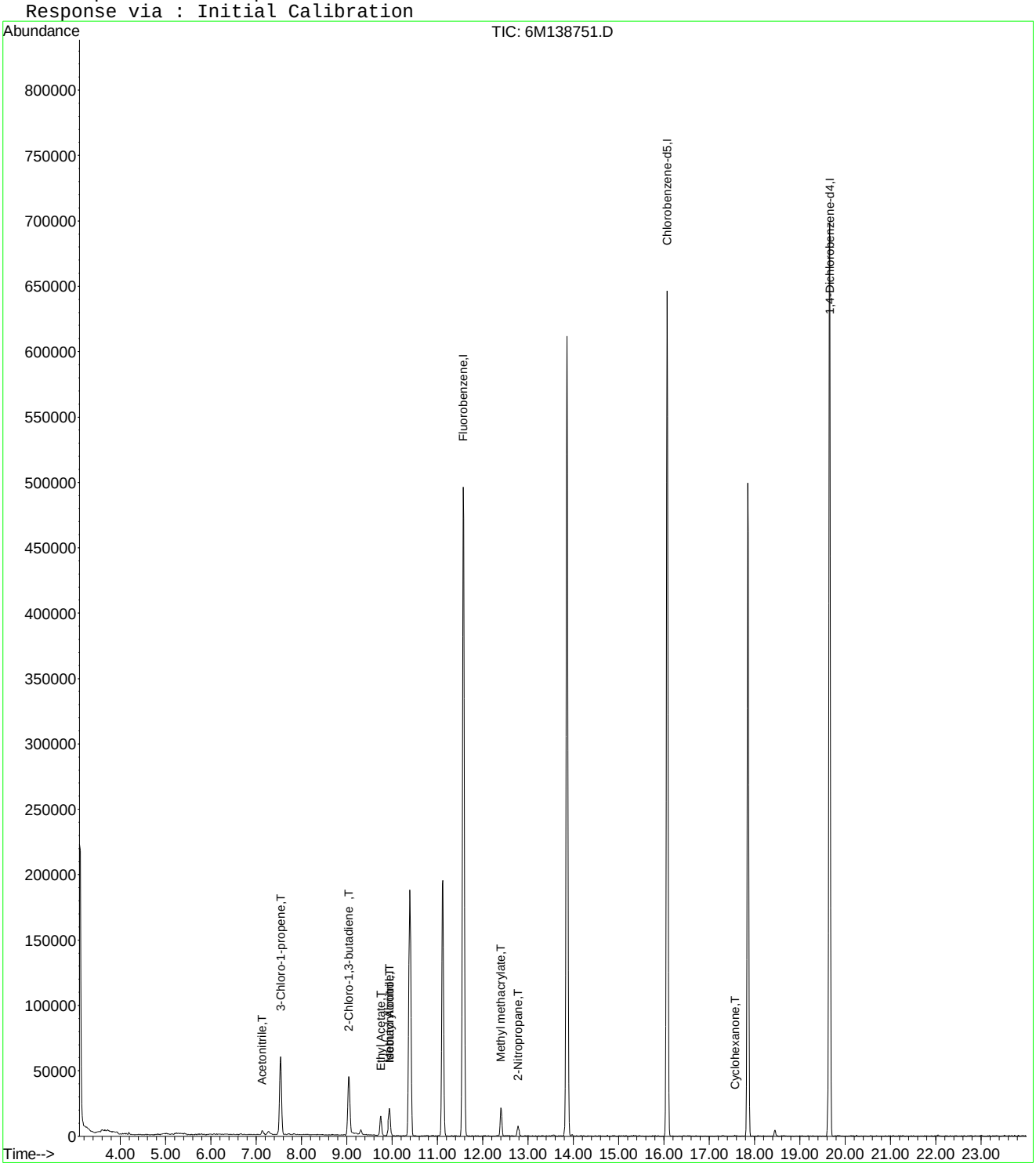

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	4.7698	4.6	100	0.00
3	T	3-Chloro-1-propene	5.0000	4.5408	9.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	3.8775	22.5	100	0.00
5	T	Ethyl Acetate	5.0000	4.2792	14.4	100	0.00
6	T	Methacrylonitrile	5.0000	3.8601	22.8	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.9076	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.99#
9	T	Methyl methacrylate	5.0000	3.5356	29.3	100	0.00
10	T	2-Nitropropane	-1.0000	3.4543	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	1.4133	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138751.D A9FOOWT.M Wed Apr 27 16:04:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	171577	27.9669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.88%		
43) 1,2-Dichloroethane-d4	11.12	65	207390	27.8532 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.40%		
58) Toluene-d8	13.86	98	547786	26.2796 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.12%		
80) p-Bromofluorobenzene	17.85	95	228171	27.5052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.04%		

Target Compounds					Qvalue
13) Acetone	6.67	43	2739	1.4745 ug/L #	59
20) Carbon Disulfide	7.54	76	81493	4.2668 ug/L #	36
27) 1,1-Dichloroethane	9.05	63	3411	0.2688 ug/L #	42
29) 2-Butanone	9.31	43	3879	1.4148 ug/L #	1
36) Tetrahydrofuran	10.37	42	3350	1.8754 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1183	0.1708 ug/L #	27

(#) = qualifier out of range (m) = manual integration
6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

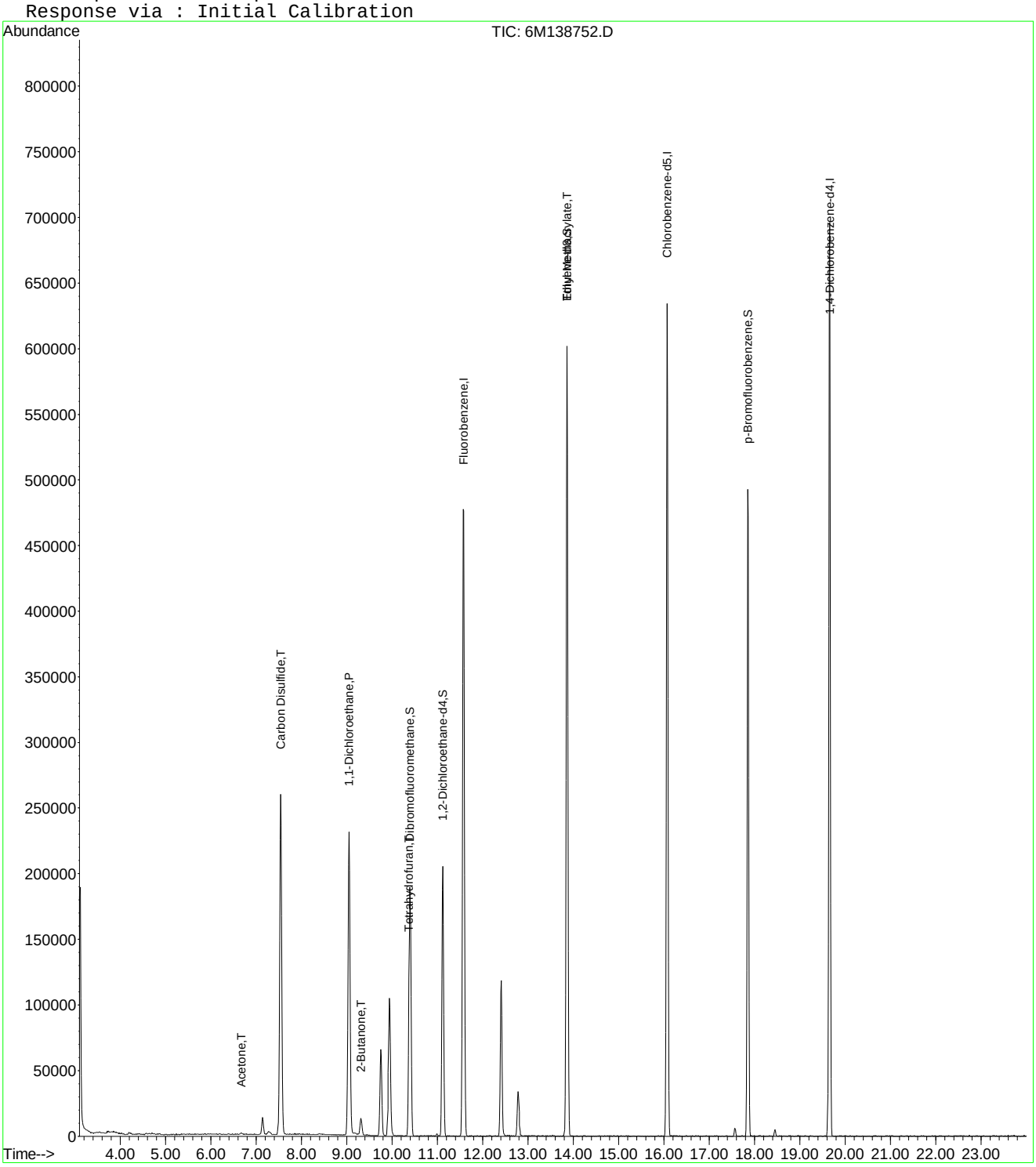

6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:54 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	15.4242 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	18.5457 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	17.5823 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.6403 ug/L	93
6) Methacrylonitrile	9.93	67	42708	17.5719 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	22.9203 ug/L #	85
8) 1-Butanol	10.98	41	982	6.5662 ug/L #	52
9) Methyl methacrylate	12.41	41	95824	15.2291 ug/L	81
10) 2-Nitropropane	12.78	43	34207	18.4403 ug/L	92
13) Cyclohexanone	17.57	55	4053	4.7763 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Mon Apr 25 15:45:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

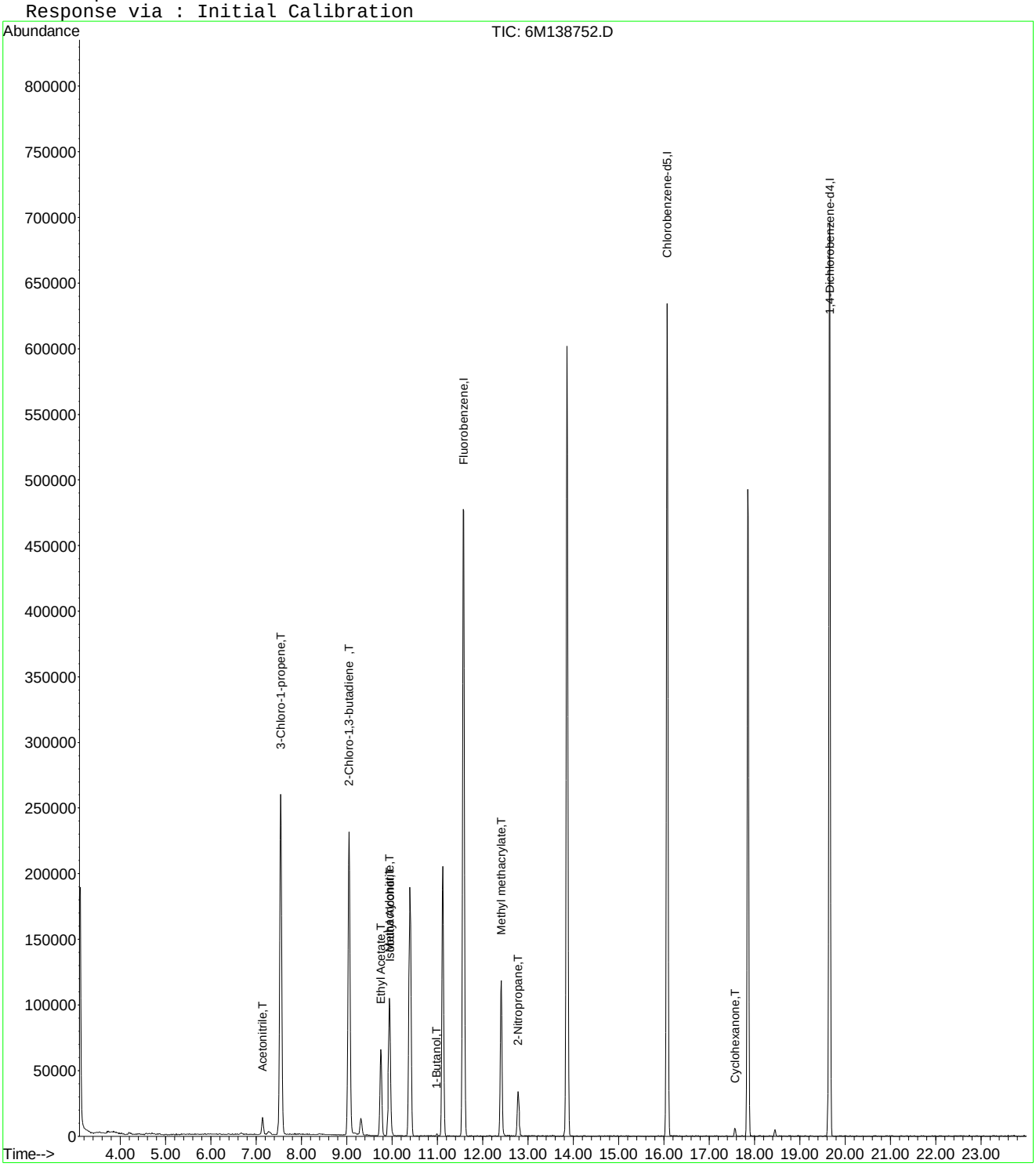

6M138752.D A9FOOWT.M Mon Apr 25 15:45:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	19.7725 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	19.9080 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	18.9362 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.3209 ug/L	93
6) Methacrylonitrile	9.93	67	42708	19.2846 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	38.9462 ug/L #	85
9) Methyl methacrylate	12.41	41	95824	17.7480 ug/L	81
10) 2-Nitropropane	12.78	43	34207	17.0355 ug/L	92
13) Cyclohexanone	17.57	55	4053	13.0852 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

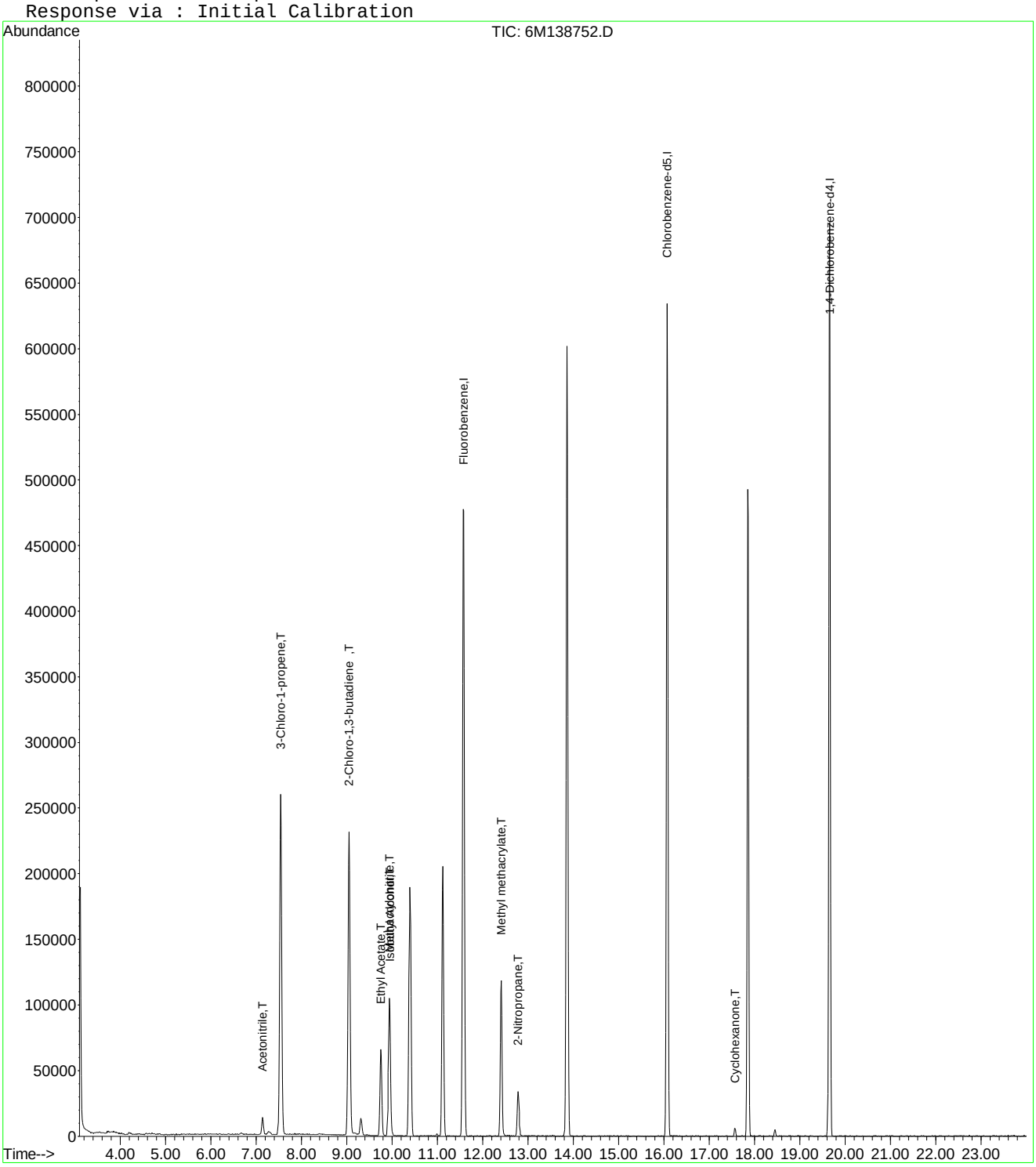

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.7724	1.1	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.9080	0.5	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.9362	5.3	100	0.00
5	T	Ethyl Acetate	20.0000	19.3209	3.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.2846	3.6	100	0.00
7	T	Isobutyl Alcohol	40.0000	38.9462	2.6	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	20.0000	17.7480	11.3	100	0.00
10	T	2-Nitropropane	-1.0000	17.0355	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	13.0852	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138752.D A9FOOWT.M Wed Apr 27 16:04:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172256	27.8132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	208744	27.7711 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.08%		
58) Toluene-d8	13.86	98	553191	26.2235 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	17.85	95	239542	28.1954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.80%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	3732	1.9901 ug/L #	57
20) Carbon Disulfide	7.54	76	220780	11.4508 ug/L #	36
26) Vinyl Acetate	9.04	43	2704	0.2791 ug/L #	8
27) 1,1-Dichloroethane	9.05	63	9803	0.7652 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	152978	7.3579 ug/L #	39
29) 2-Butanone	9.53	43	660	0.2385 ug/L #	52
36) Tetrahydrofuran	10.37	42	3746	2.0774 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1423	0.2030 ug/L #	9

(#) = qualifier out of range (m) = manual integration
6M138753.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

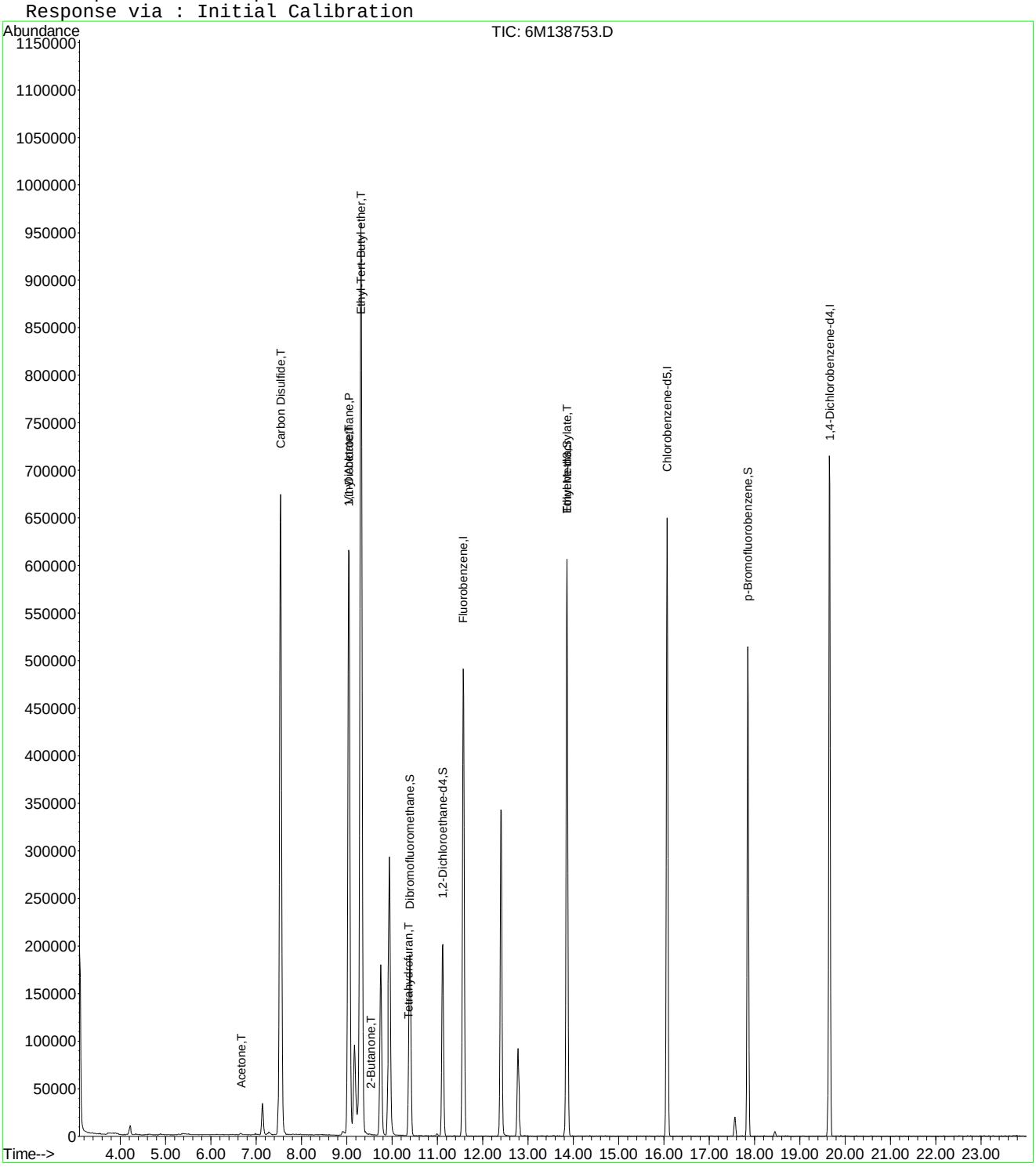

6M138753.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:55 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	40.3072 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	48.9454 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	48.3496 ug/L	83
5) Ethyl Acetate	9.75	43	336975	52.8234 ug/L	93
6) Methacrylonitrile	9.94	67	119267	48.6097 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	57.3741 ug/L #	99
8) 1-Butanol	10.98	41	1474	9.7632 ug/L	77
9) Methyl methacrylate	12.40	41	279157	43.9482 ug/L	81
10) 2-Nitropropane	12.79	43	95327	50.9052 ug/L	94
13) Cyclohexanone	17.56	55	13241	15.2363 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Mon Apr 25 15:45:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

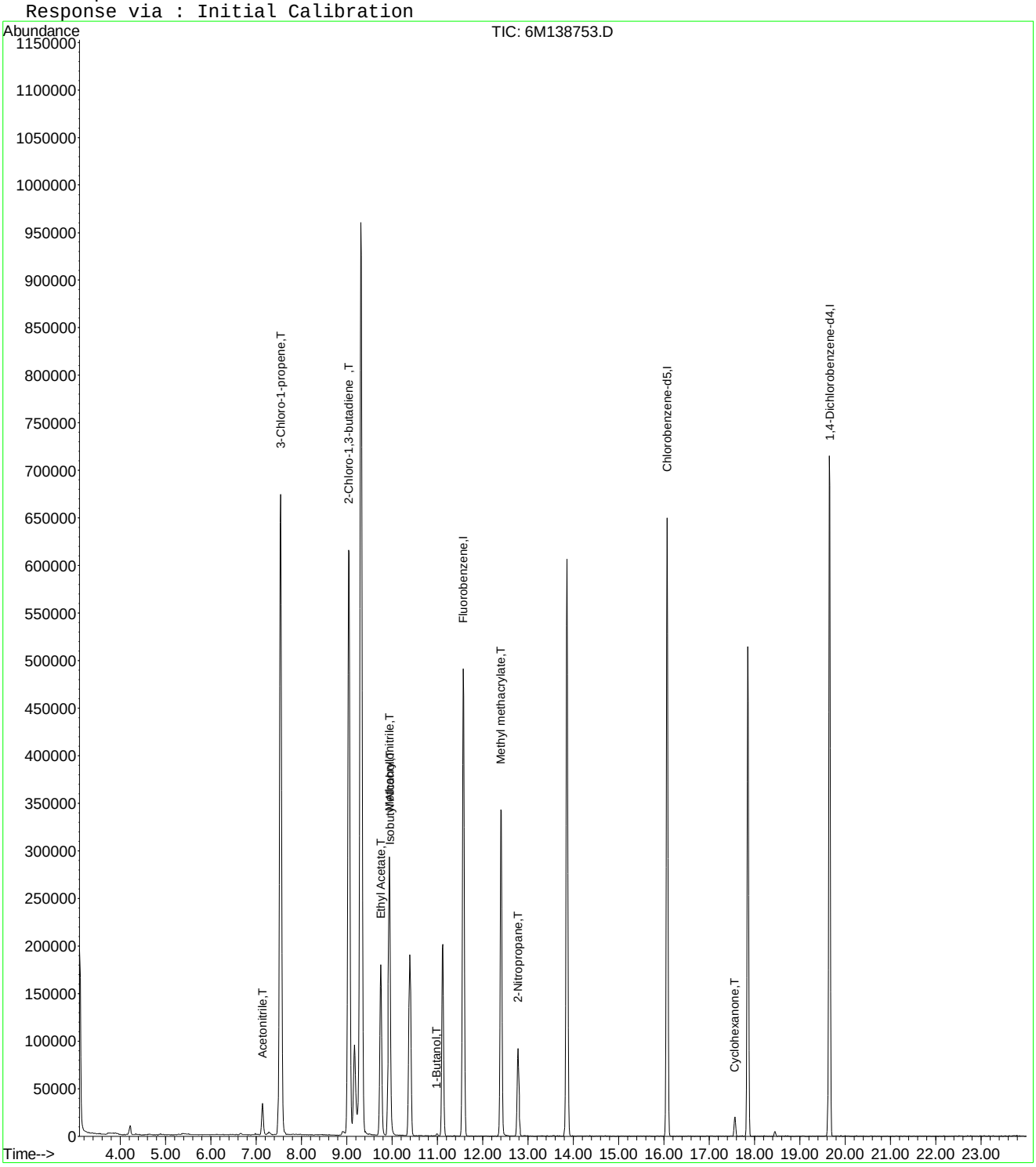

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	51.6701 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	52.5409 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	52.0726 ug/L	83
5) Ethyl Acetate	9.75	43	336975	51.9646 ug/L	93
6) Methacrylonitrile	9.94	67	119267	53.3476 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	97.4900 ug/L #	99
9) Methyl methacrylate	12.40	41	279157	51.2171 ug/L	81
10) 2-Nitropropane	12.79	43	95327	47.0270 ug/L	94
13) Cyclohexanone	17.56	55	13241	41.7415 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

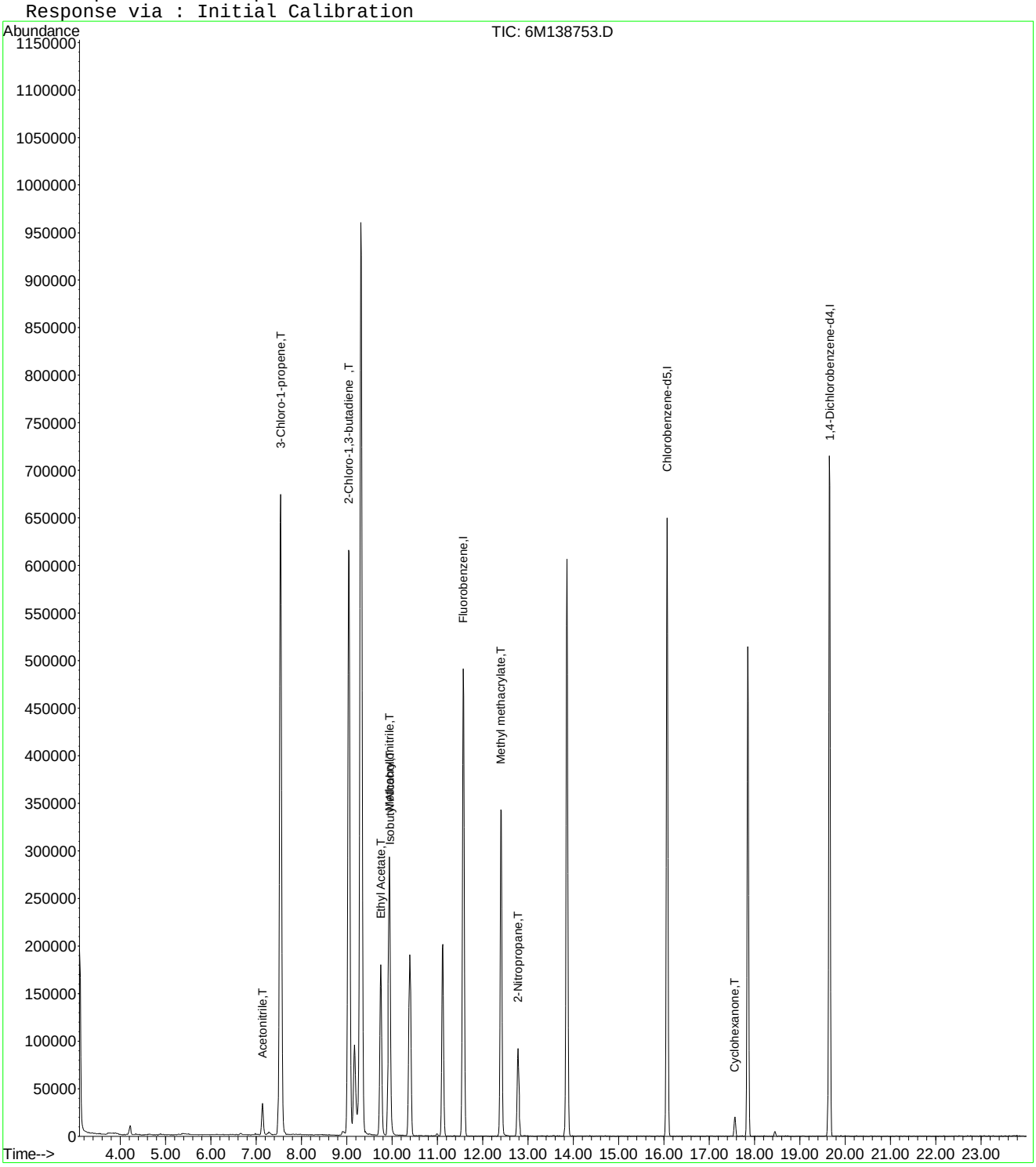

6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.6701	-3.3	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.5409	-5.1	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.0726	-4.1	100	0.00
5	T	Ethyl Acetate	50.0000	51.9646	-3.9	100	0.00
6	T	Methacrylonitrile	50.0000	53.3476	-6.7	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.4900	2.5	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	50.0000	51.2171	-2.4	100	0.00
10	T	2-Nitropropane	50.0000	47.0270	5.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	41.7415	16.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138753.D A9FOOWT.M Wed Apr 27 16:04:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:49 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169577	27.6373 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.56%		
43) 1,2-Dichloroethane-d4	11.12	65	210119	28.2161 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.88%		
58) Toluene-d8	13.86	98	550953	26.1877 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.76%		
80) p-Bromofluorobenzene	17.85	95	239480	28.0420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.16%		

Target Compounds

					Qvalue
13) Acetone	6.66	43	6960	3.7463 ug/L	82
16) Dimethyl Sulfide	7.15	62	732	0.1448 ug/L #	1
18) Methyl acetate	7.53	43	1419	0.2750 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	2141	0.1320 ug/L #	72
27) 1,1-Dichloroethane	9.05	63	20725	1.6328 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	76666	3.7220 ug/L #	39
29) 2-Butanone	9.53	43	1176	0.4289 ug/L #	52
34) 1-Bromopropane	10.00	122	702	0.6817 ug/L #	1
36) Tetrahydrofuran	10.35	42	4425	2.4769 ug/L #	60
48) Methylcyclohexane	12.41	83	1461	0.1681 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1083	0.1549 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1910	0.3066 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138754.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

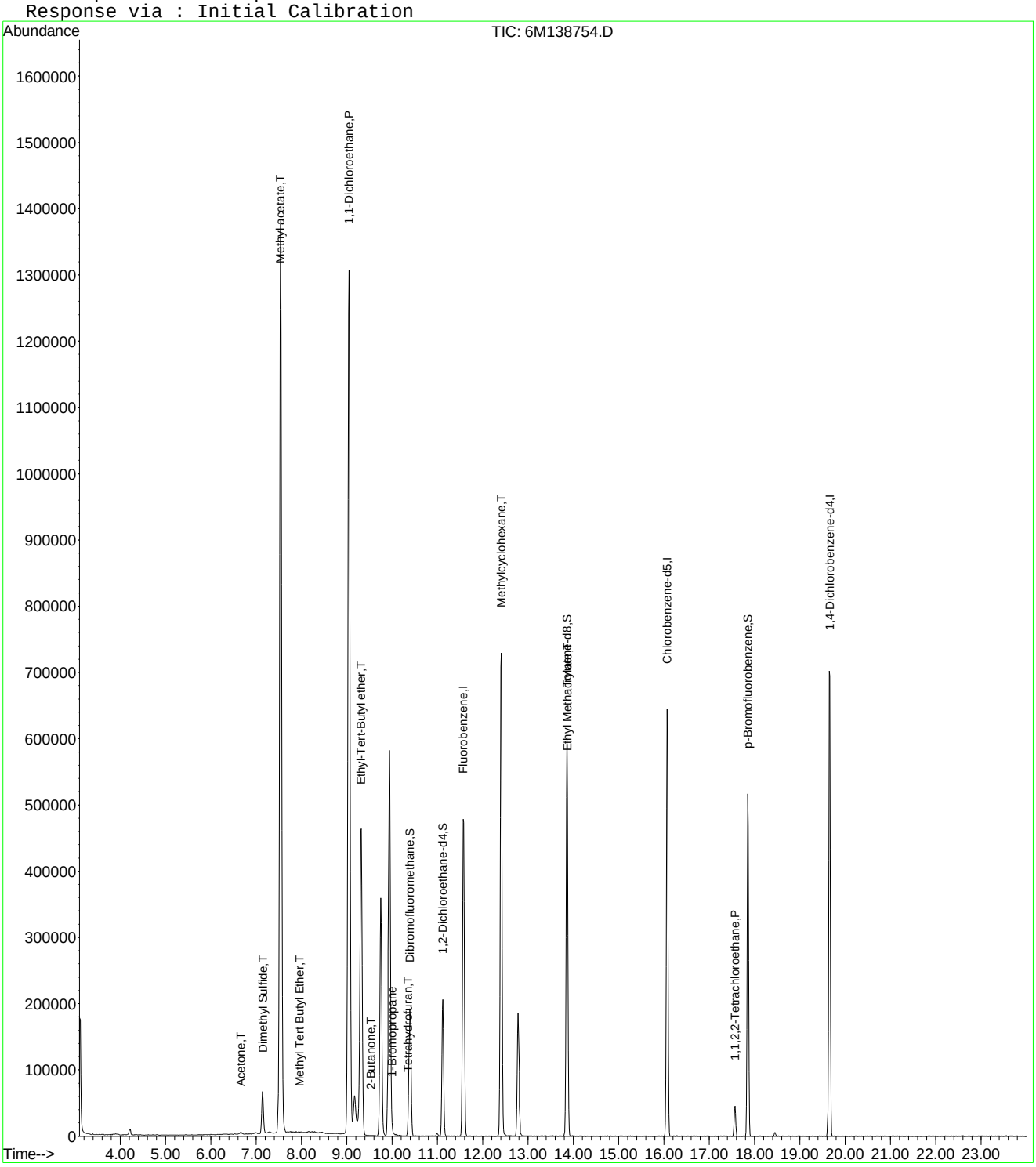

6M138754.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:57 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	79.0019 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	100.3335 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	102.2884 ug/L	83
5) Ethyl Acetate	9.75	43	673221	106.5217 ug/L	93
6) Methacrylonitrile	9.94	67	237219	97.5895 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	97.4937 ug/L #	85
8) 1-Butanol	11.00	41	2978	19.9099 ug/L #	64
9) Methyl methacrylate	12.41	41	585839	93.0942 ug/L	80
10) 2-Nitropropane	12.78	43	197598	106.5074 ug/L	97
13) Cyclohexanone	17.57	55	27547	31.5338 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

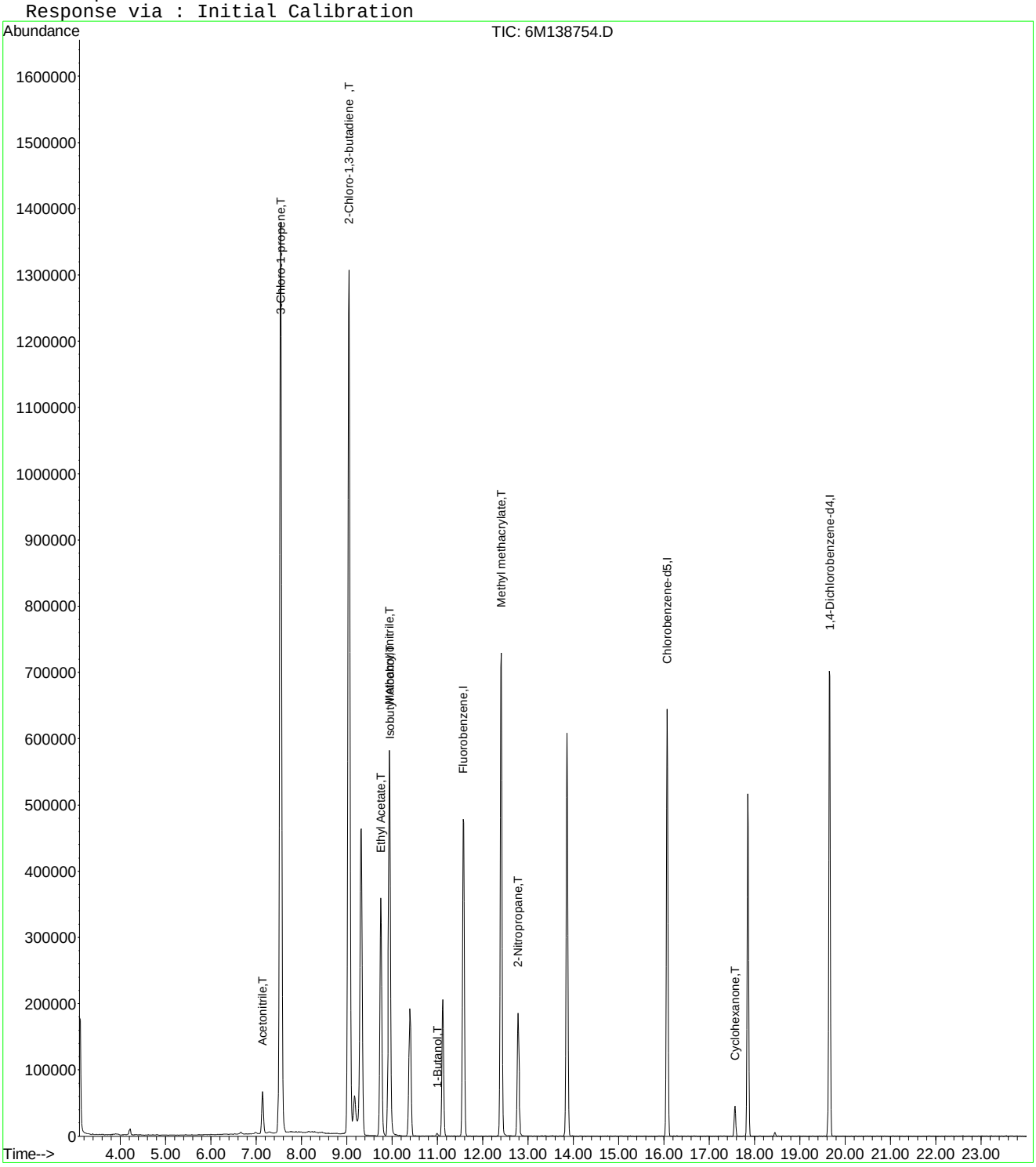

6M138754.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	467316	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	90880	101.2731	ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	107.7041	ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	110.1648	ug/L	83
5) Ethyl Acetate	9.75	43	673221	104.7898	ug/L	93
6) Methacrylonitrile	9.94	67	237219	107.1014	ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	165.6613	ug/L #	85
9) Methyl methacrylate	12.41	41	585839	108.4917	ug/L	80
10) 2-Nitropropane	12.78	43	197598	98.3932	ug/L	97
13) Cyclohexanone	17.57	55	27547	86.3902	ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

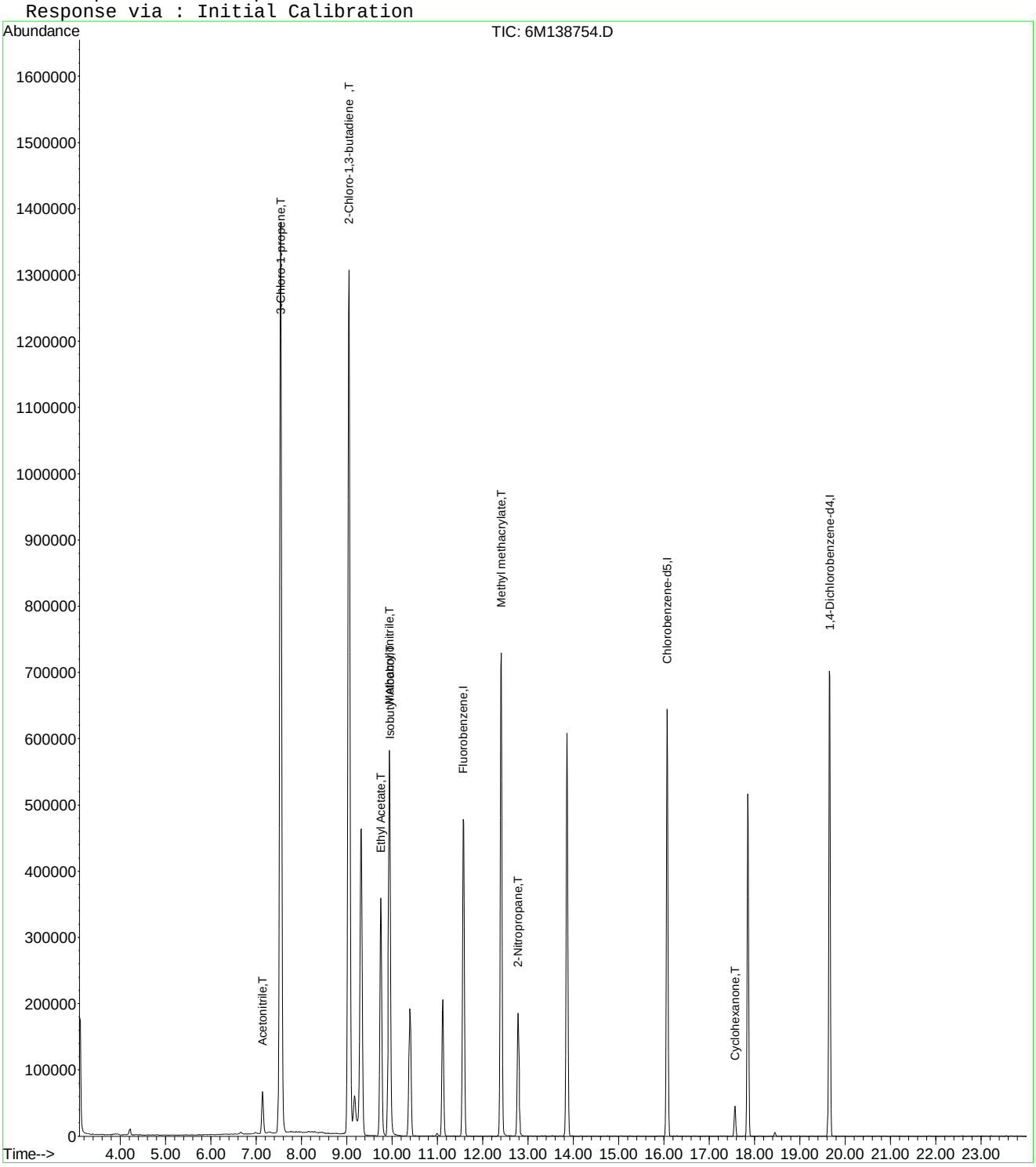

6M138754.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473187	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172341	27.7160 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.88%		
43) 1,2-Dichloroethane-d4	11.12	65	211249	27.9923 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.96%		
58) Toluene-d8	13.86	98	552831	25.9510 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.80%		
80) p-Bromofluorobenzene	17.85	95	247709	28.6419 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 114.56%		

Target Compounds

					Qvalue
9) Diethyl ether	6.31	59	653	0.1225 ug/L #	12
13) Acetone	6.66	43	9406	4.9959 ug/L #	64
15) Tert-Butyl Alcohol	6.98	59	449	0.8301 ug/L #	1
16) Dimethyl Sulfide	7.16	62	680	0.1328 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	3926	0.2388 ug/L	83
24) n-Hexane	8.30	57	1777	0.2040 ug/L	87
27) 1,1-Dichloroethane	9.05	63	41640	3.2372 ug/L #	47
28) Ethyl-Tert-Butyl ether	9.31	59	272648	13.0615 ug/L #	38
29) 2-Butanone	9.51	43	2992	1.0767 ug/L #	67
30) Propionitrile	9.93	54	258	0.3232 ug/L #	57
34) 1-Bromopropane	9.99	122	1417	1.3579 ug/L #	1
36) Tetrahydrofuran	10.37	42	4839	2.6728 ug/L #	62
48) Methylcyclohexane	12.40	83	2976	0.3378 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1202	0.1698 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	5192	0.8231 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138755.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

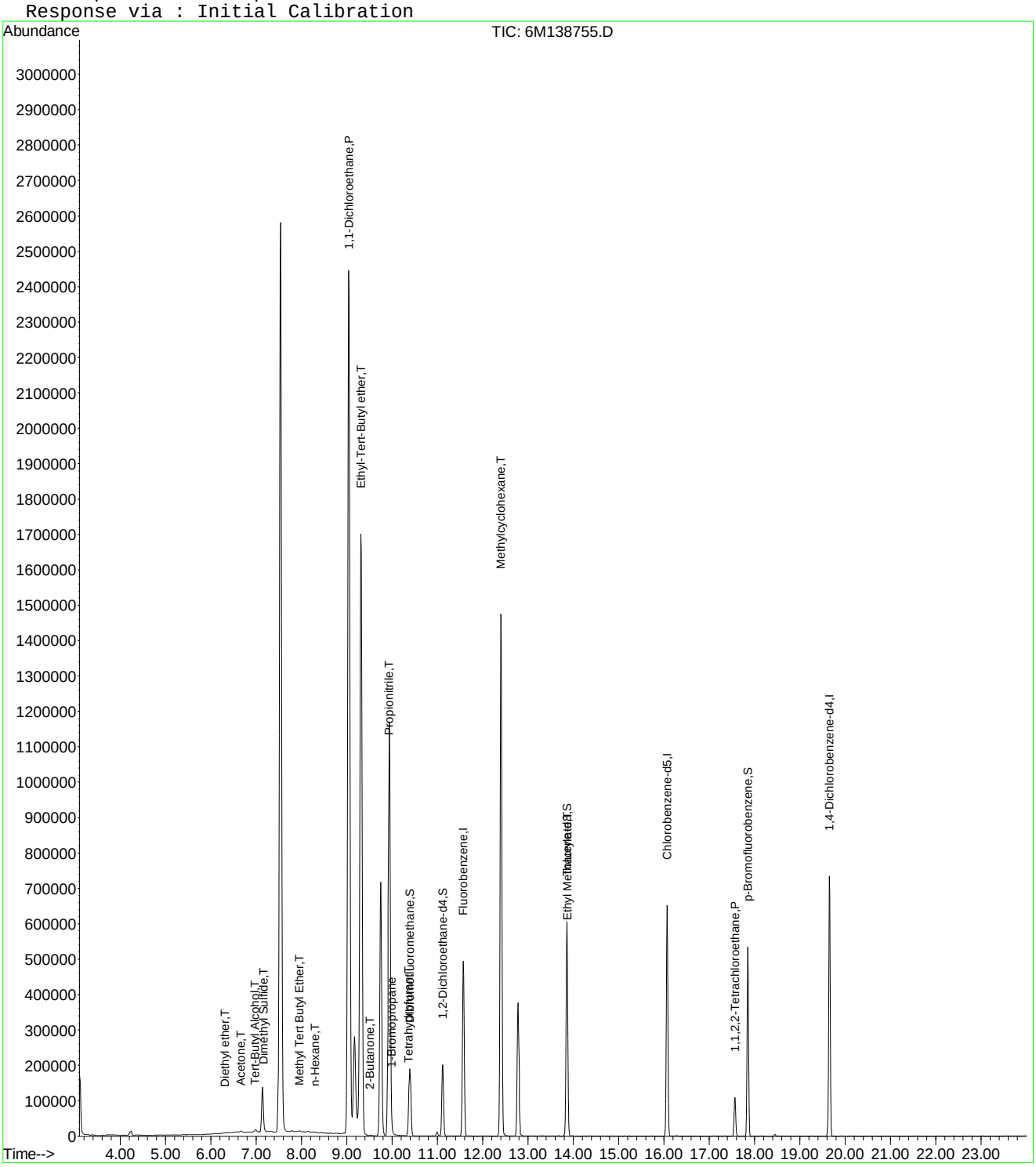

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473187	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	183628	157.5150 ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	189.6828 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	193.4336 ug/L	83
5) Ethyl Acetate	9.75	43	1346541	210.2391 ug/L	94
6) Methacrylonitrile	9.94	67	471538	191.4186 ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	206.4864 ug/L #	92
8) 1-Butanol	10.99	41	8815	58.1542 ug/L #	64
9) Methyl methacrylate	12.40	41	1186381	186.0295 ug/L	80
10) 2-Nitropropane	12.79	43	410702	218.4428 ug/L	99
13) Cyclohexanone	17.57	55	67080	75.8254 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

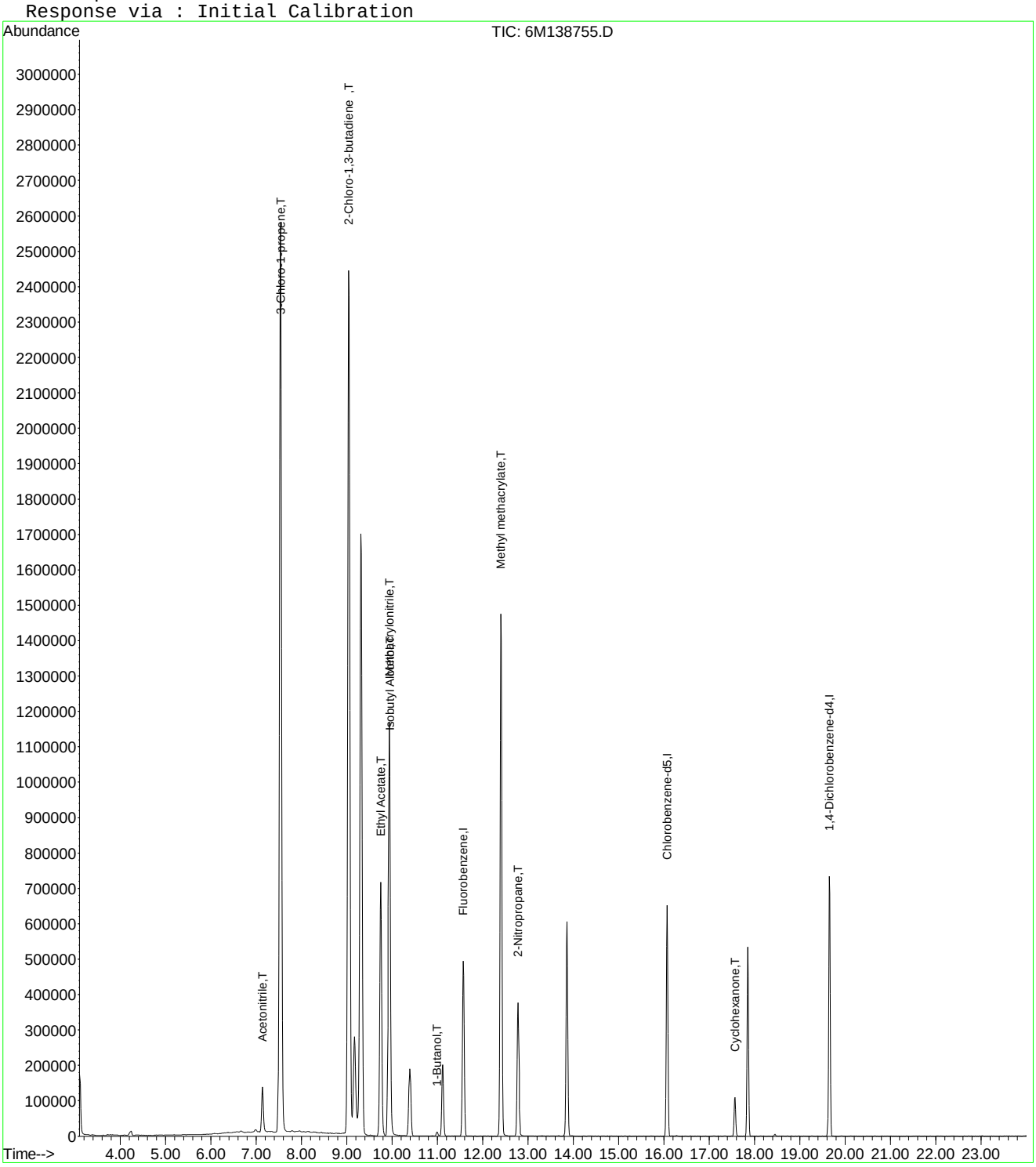

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	201.9195	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	203.6170	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	208.3284	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	206.8209	ug/L	94
6) Methacrylonitrile	9.94	67	471538	210.0757	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	350.8618	ug/L #	92
9) Methyl methacrylate	12.40	41	1186381	216.7982	ug/L	80
10) 2-Nitropropane	12.79	43	410702	201.8008	ug/L	99
13) Cyclohexanone	17.57	55	67080	207.7320	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

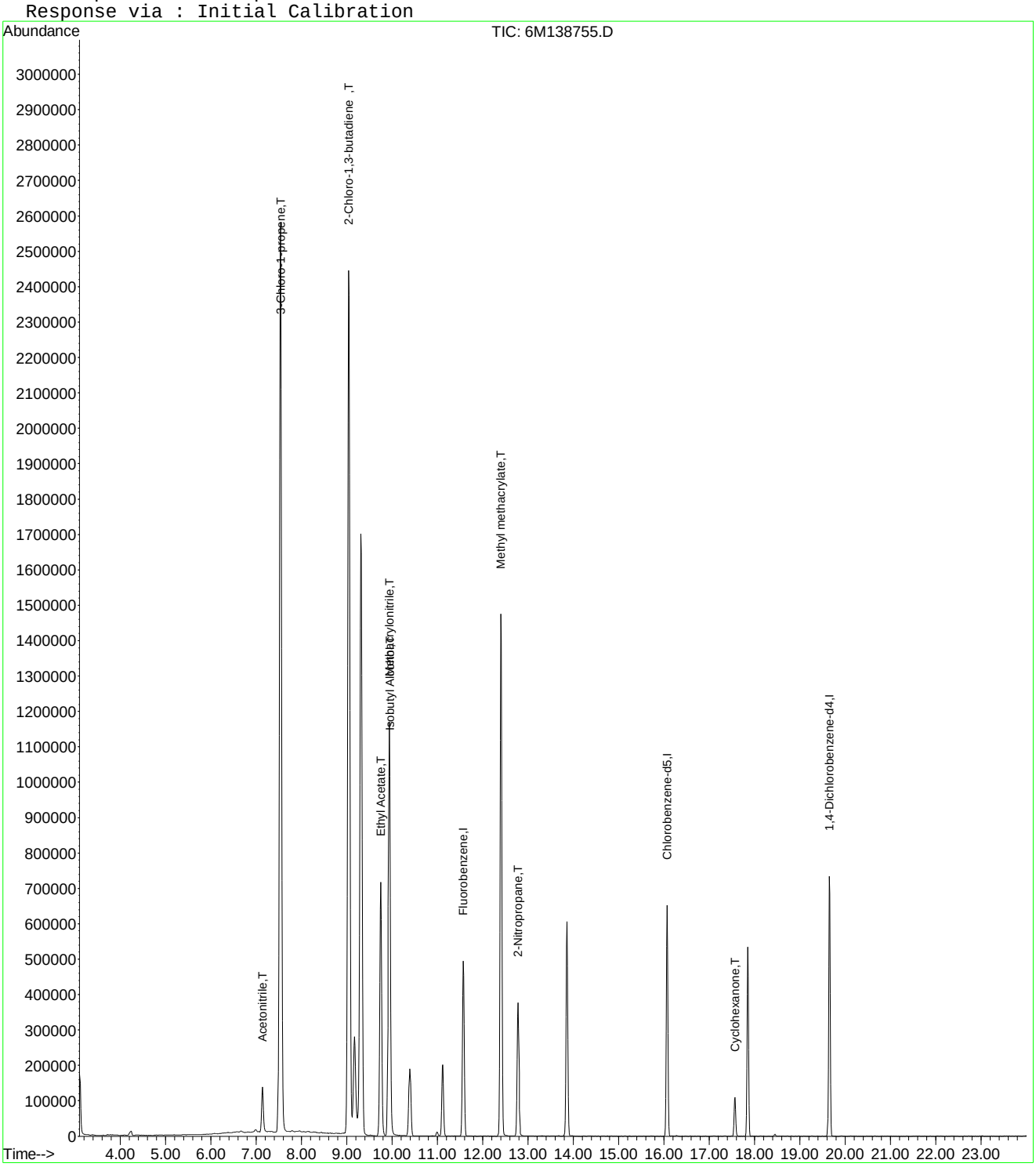

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169983	27.5546 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.20%		
43) 1,2-Dichloroethane-d4	11.12	65	207199	27.6745 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.68%		
58) Toluene-d8	13.86	98	553023	25.9875 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	17.85	95	247939	28.0615 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.24%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	13666	7.3164 ug/L #	77
15) Tert-Butyl Alcohol	7.06	59	467	0.8703 ug/L #	59
16) Dimethyl Sulfide	7.14	62	668	0.1315 ug/L #	1
18) Methyl acetate	7.54	43	3262	0.6289 ug/L #	1
22) Methyl Tert Butyl Ether	7.97	73	10591	0.6492 ug/L #	53
24) n-Hexane	8.28	57	3576	0.4138 ug/L #	56
27) 1,1-Dichloroethane	9.04	63	60743	4.7600 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	155796	7.5231 ug/L #	39
29) 2-Butanone	9.52	43	4002	1.4516 ug/L	97
30) Propionitrile	9.95	54	1113	1.4052 ug/L #	1
34) 1-Bromopropane	9.99	122	1450	1.4006 ug/L #	1
36) Tetrahydrofuran	10.36	42	4902	2.7292 ug/L #	61
48) Methylcyclohexane	12.41	83	4626	0.5293 ug/L #	1
60) Ethyl Methacrylate	13.88	69	1599	0.2261 ug/L #	1
72) Ethylbenzene	16.28	106	1349	0.1427 ug/L	56
73) m-,p-Xylene	16.28	106	1349	0.1203 ug/L	81
79) 1,1,2,2-Tetrachloroethane	17.57	83	8744	1.3569 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

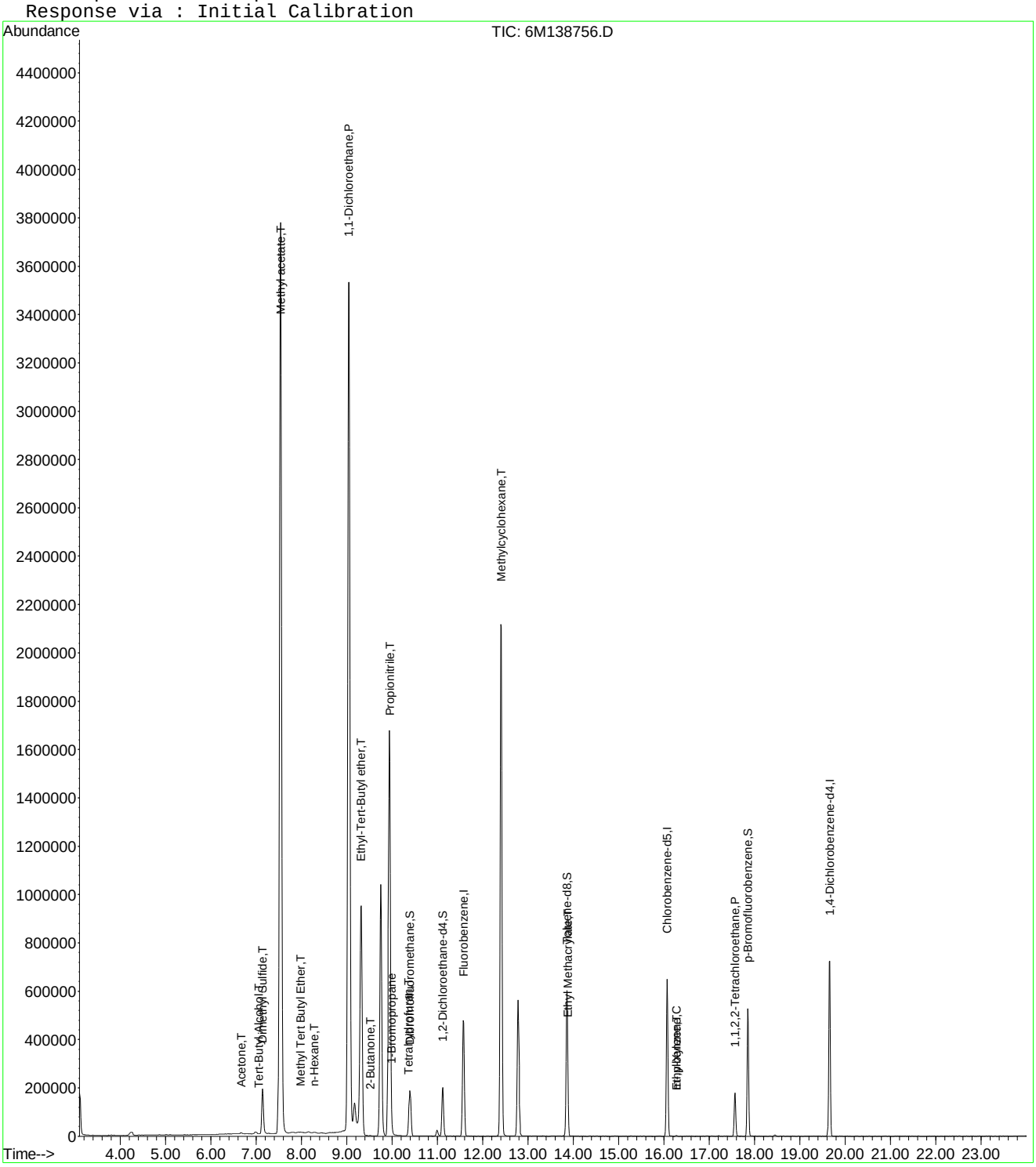

6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00	ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	472685	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	273003	236.0468	ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	278.3729	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	287.5093	ug/L	83
5) Ethyl Acetate	9.75	43	1967613	309.6573	ug/L	94
6) Methacrylonitrile	9.94	67	686612	280.9484	ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	347.5212	ug/L #	90
8) 1-Butanol	10.99	41	18116	120.4672	ug/L	69
9) Methyl methacrylate	12.40	41	1742413	275.3954	ug/L	81
10) 2-Nitropropane	12.78	43	613081	328.6824	ug/L	99
13) Cyclohexanone	17.57	55	106618	117.9661	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

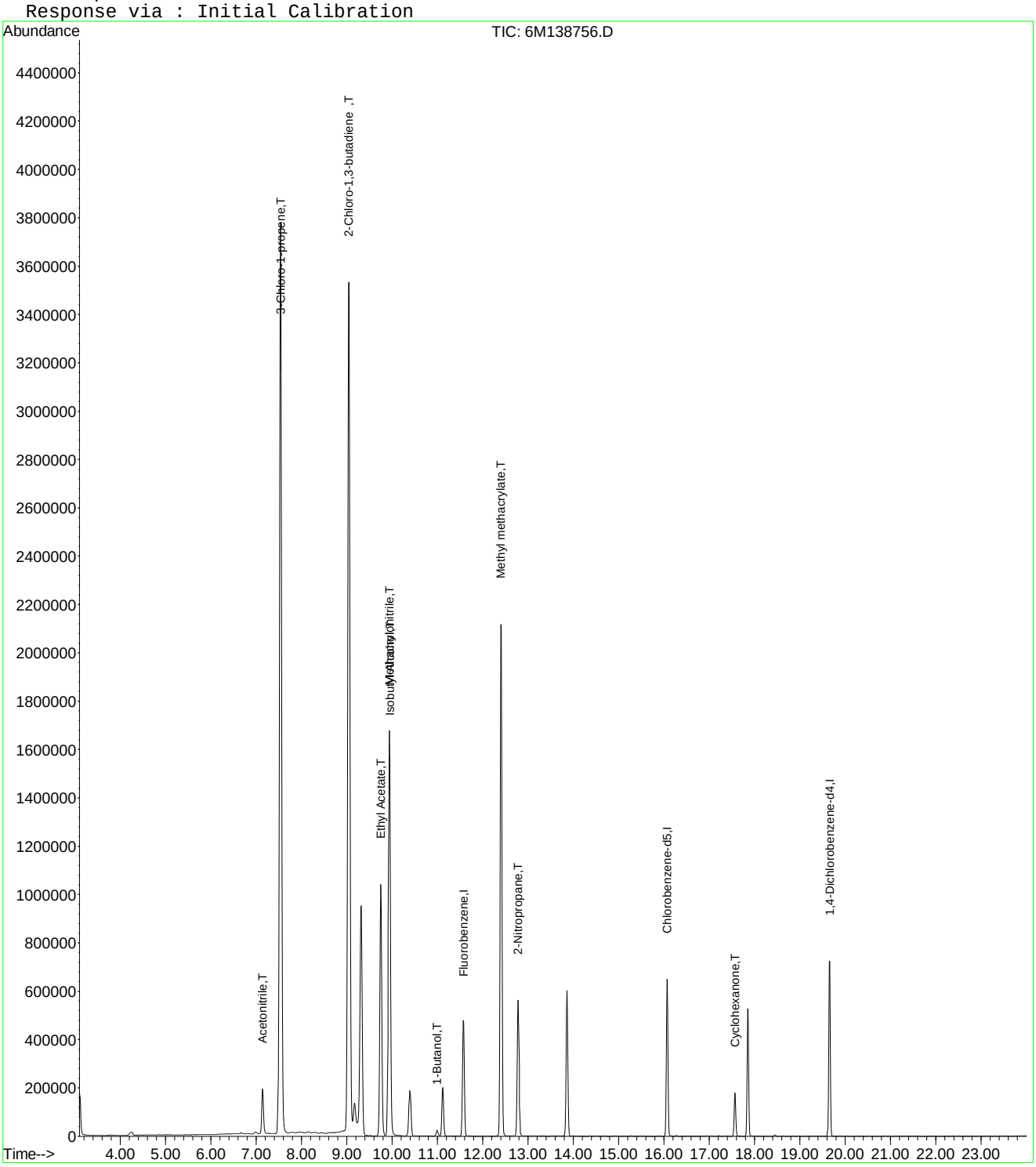

6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	0.01
11) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	273003	302.5900 ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	298.8224 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	309.6481 ug/L	83
5) Ethyl Acetate	9.75	43	1967613	304.6228 ug/L	94
6) Methacrylonitrile	9.94	67	686612	308.3318 ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	590.5081 ug/L #	90
9) Methyl methacrylate	12.40	41	1742413	320.9449 ug/L	81
10) 2-Nitropropane	12.78	43	613081	303.6419 ug/L	99
13) Cyclohexanone	17.57	55	106618	323.1811 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

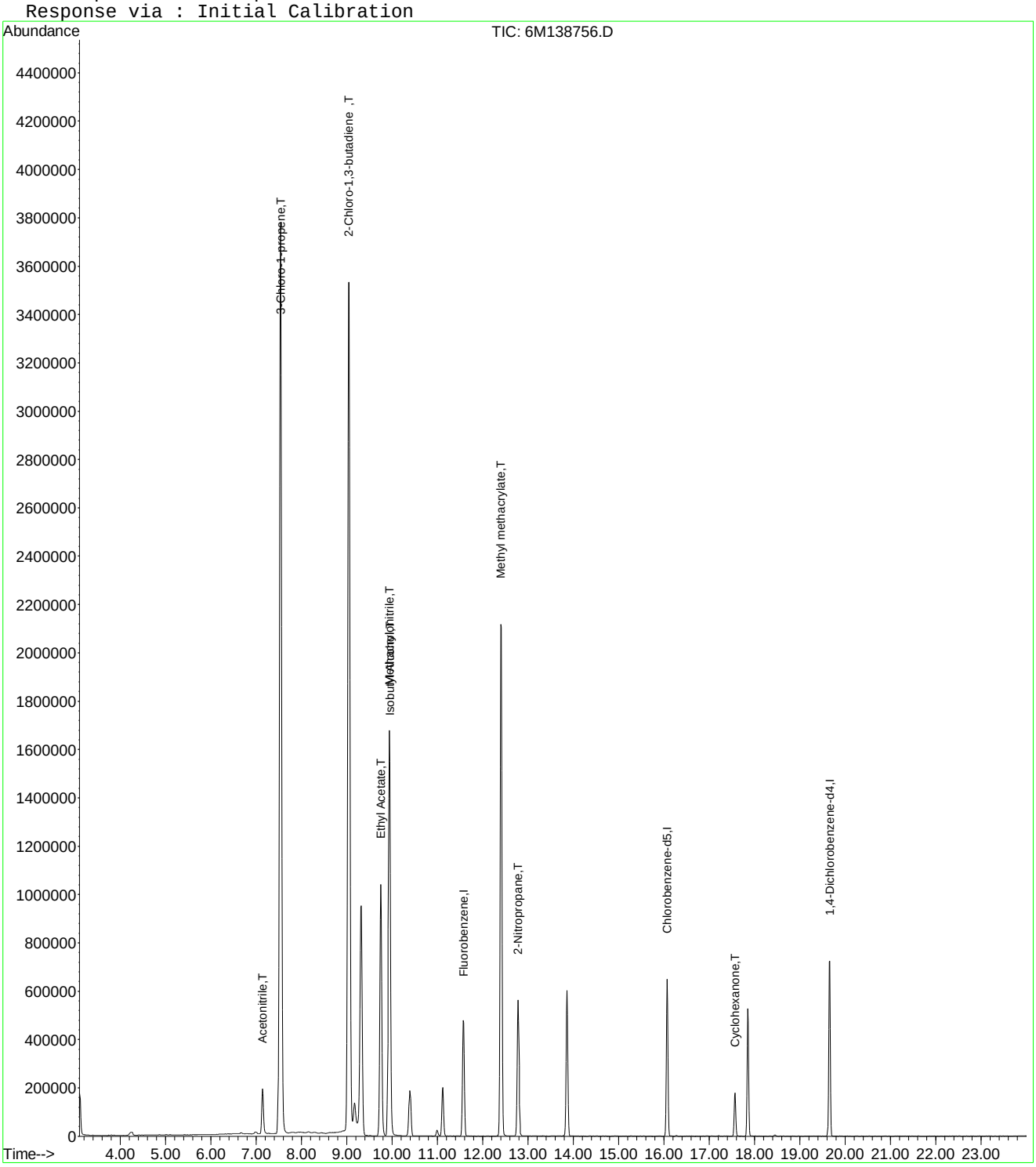

6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:51 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	170708	27.6598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.64%		
43) 1,2-Dichloroethane-d4	11.11	65	208757	27.8702 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.48%		
58) Toluene-d8	13.86	98	554316	25.9150 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	17.85	95	246698	27.9116 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.64%		

Target Compounds					Qvalue
13) Acetone	6.66	43	14063	7.5256 ug/L	99
15) Tert-Butyl Alcohol	7.05	59	807	1.5033 ug/L #	59
16) Dimethyl Sulfide	7.16	62	1034	0.2034 ug/L #	1
18) Methyl acetate	7.48	43	1103	0.2125 ug/L #	60
19) Methylene Chloride	7.73	84	1123	0.1699 ug/L #	40
22) Methyl Tert Butyl Ether	7.97	73	18318	1.1224 ug/L #	53
24) n-Hexane	8.28	57	5609	0.6488 ug/L	75
27) 1,1-Dichloroethane	9.04	63	82912	6.4943 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.32	59	139043	6.7111 ug/L #	38
29) 2-Butanone	9.53	43	4129	1.4970 ug/L	86
30) Propionitrile	9.72	54	202	0.2549 ug/L #	1
34) 1-Bromopropane	9.99	122	1978	1.9098 ug/L #	1
36) Tetrahydrofuran	10.37	42	5444	3.0296 ug/L #	63
48) Methylcyclohexane	12.40	83	6593	0.7540 ug/L #	1
60) Ethyl Methacrylate	13.85	69	1165	0.1639 ug/L #	1
73) m-,p-Xylene	16.28	106	1795	0.1593 ug/L	72
79) 1,1,2,2-Tetrachloroethane	17.57	83	12875	1.9973 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138757.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

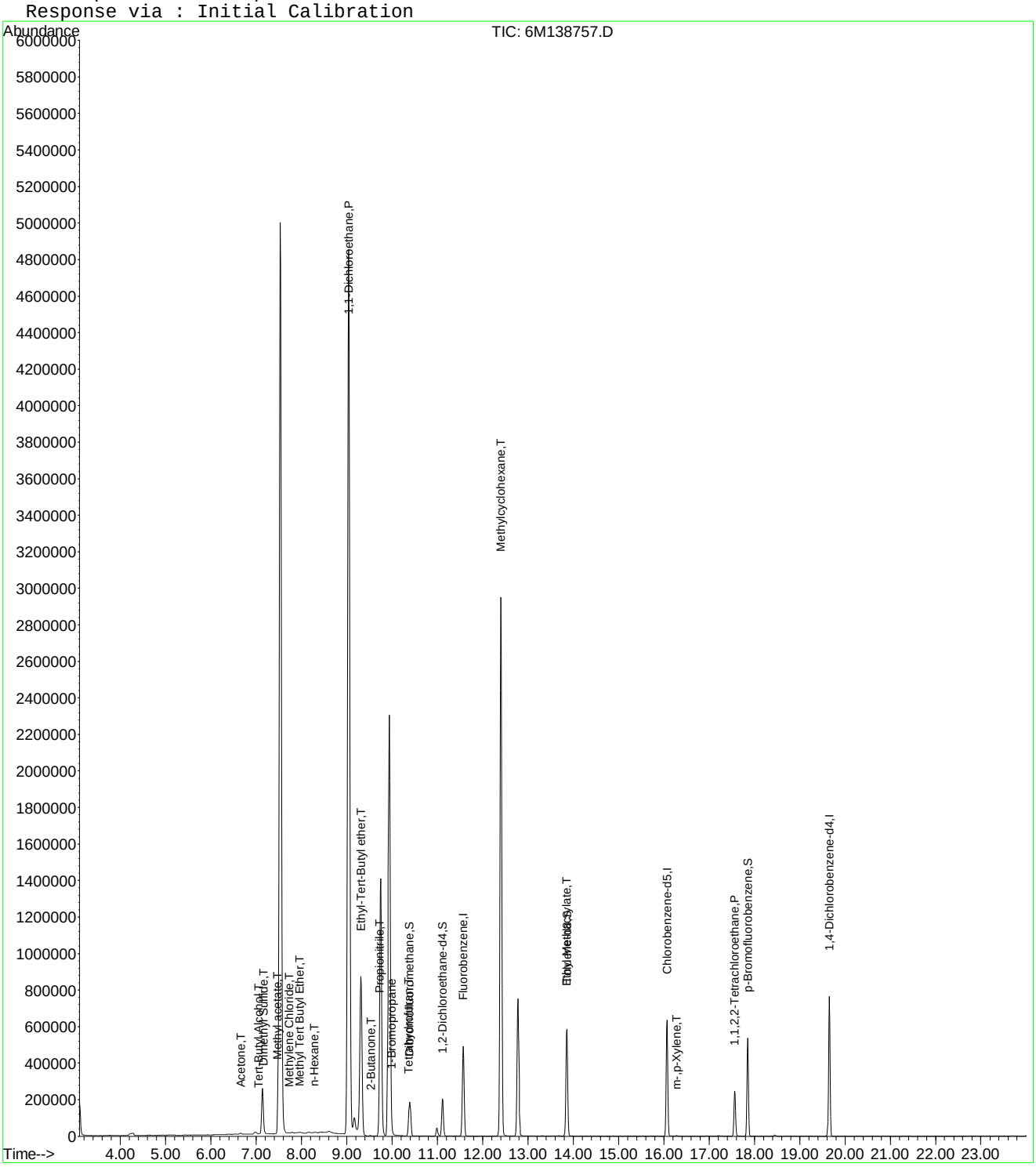

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	318.0524 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	368.4088 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	385.5211 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	423.1975 ug/L	94
6) Methacrylonitrile	9.94	67	929265	380.0675 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	550.6158 ug/L #	89
8) 1-Butanol	10.99	41	29815	198.1744 ug/L	75
9) Methyl methacrylate	12.40	41	2375132	375.2316 ug/L	81
10) 2-Nitropropane	12.79	43	849210	455.0717 ug/L	98
13) Cyclohexanone	17.57	55	149420	165.2683 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Mon Apr 25 15:46:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

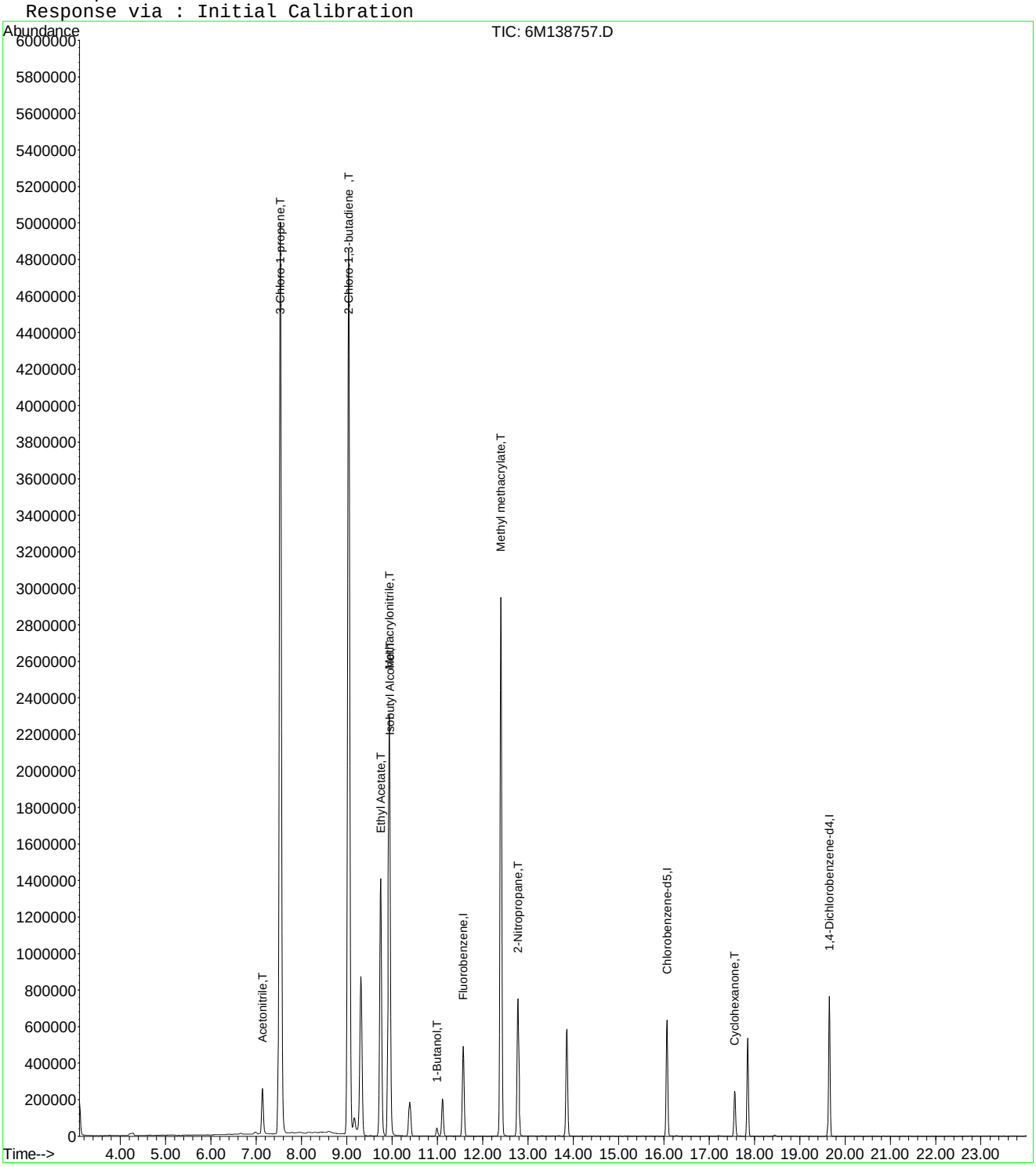

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	407.7137 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	395.4723 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	415.2070 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	416.3170 ug/L	94
6) Methacrylonitrile	9.94	67	929265	417.1119 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	935.6065 ug/L #	89
9) Methyl methacrylate	12.40	41	2375132	437.2937 ug/L	81
10) 2-Nitropropane	12.79	43	849210	420.4022 ug/L	98
13) Cyclohexanone	17.57	55	149420	452.7705 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

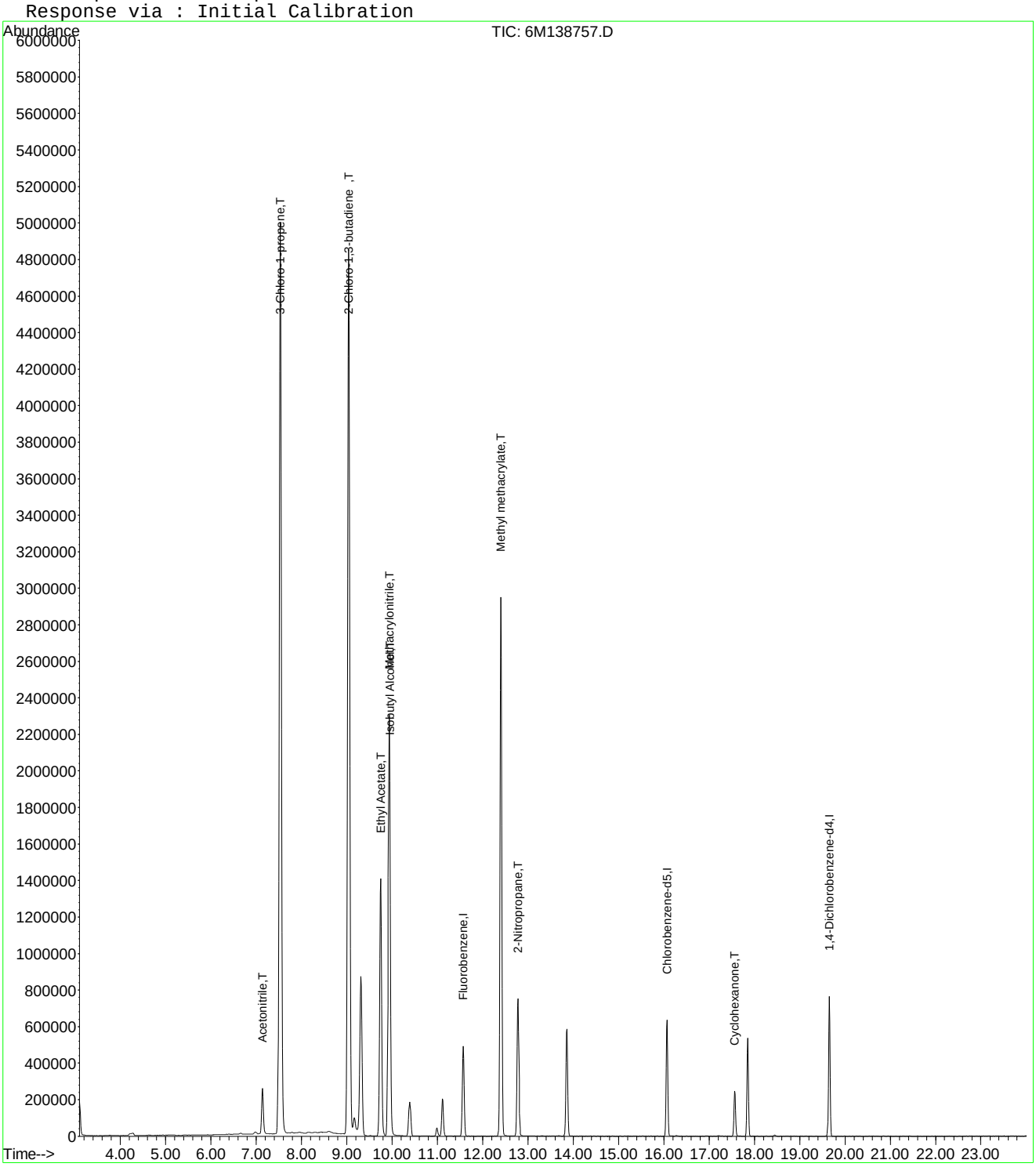

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:52 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	485048	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	175239	27.7556 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.04%		
43) 1,2-Dichloroethane-d4	11.12	65	210644	27.4898 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.96%		
58) Toluene-d8	13.86	98	563297	25.7957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	17.85	95	249406	27.7824 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.12%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	15233	7.9684 ug/L	89
15) Tert-Butyl Alcohol	7.06	59	370	0.6737 ug/L #	59
18) Methyl acetate	7.46	43	1079	0.2032 ug/L #	34
19) Methylene Chloride	7.73	84	1471	0.2176 ug/L	66
20) Carbon Disulfide	7.78	76	2765	0.1407 ug/L #	74
22) Methyl Tert Butyl Ether	7.96	73	25284	1.5144 ug/L #	53
24) n-Hexane	8.28	57	5266	0.5954 ug/L	97
27) 1,1-Dichloroethane	9.05	63	105121	8.0488 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	124099	5.8551 ug/L #	39
29) 2-Butanone	9.52	43	4475	1.5860 ug/L #	72
30) Propionitrile	9.71	54	473	0.5835 ug/L #	1
34) 1-Bromopropane	10.00	122	2117	1.9980 ug/L #	1
36) Tetrahydrofuran	10.36	42	5652	3.0747 ug/L #	54
48) Methylcyclohexane	12.40	83	8011	0.8956 ug/L #	1
59) Toluene	13.98	91	3373	0.1249 ug/L	84
60) Ethyl Methacrylate	13.87	69	1585	0.2184 ug/L #	1
73) m-,p-Xylene	16.28	106	2521	0.2191 ug/L	79
79) 1,1,2,2-Tetrachloroethane	17.57	83	14350	2.1917 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

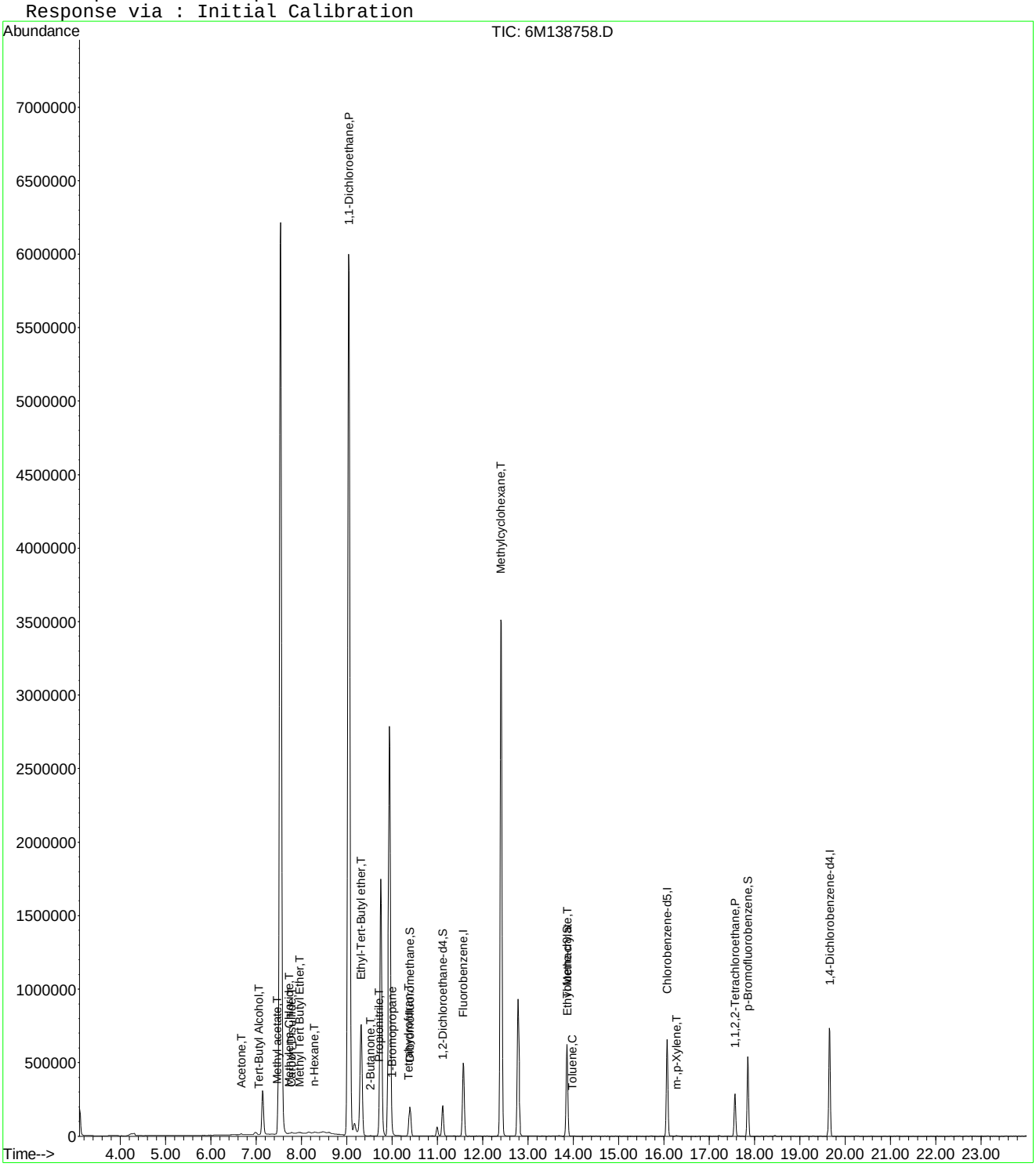

6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	379.8136	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	449.8223	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	474.8265	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	508.5794	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	457.8027	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	701.6799	ug/L #	90
8) 1-Butanol	10.99	41	42236	274.4224	ug/L	75
9) Methyl methacrylate	12.40	41	2914815	450.1389	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	543.0629	ug/L	99
13) Cyclohexanone	17.57	55	176545	192.2558	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

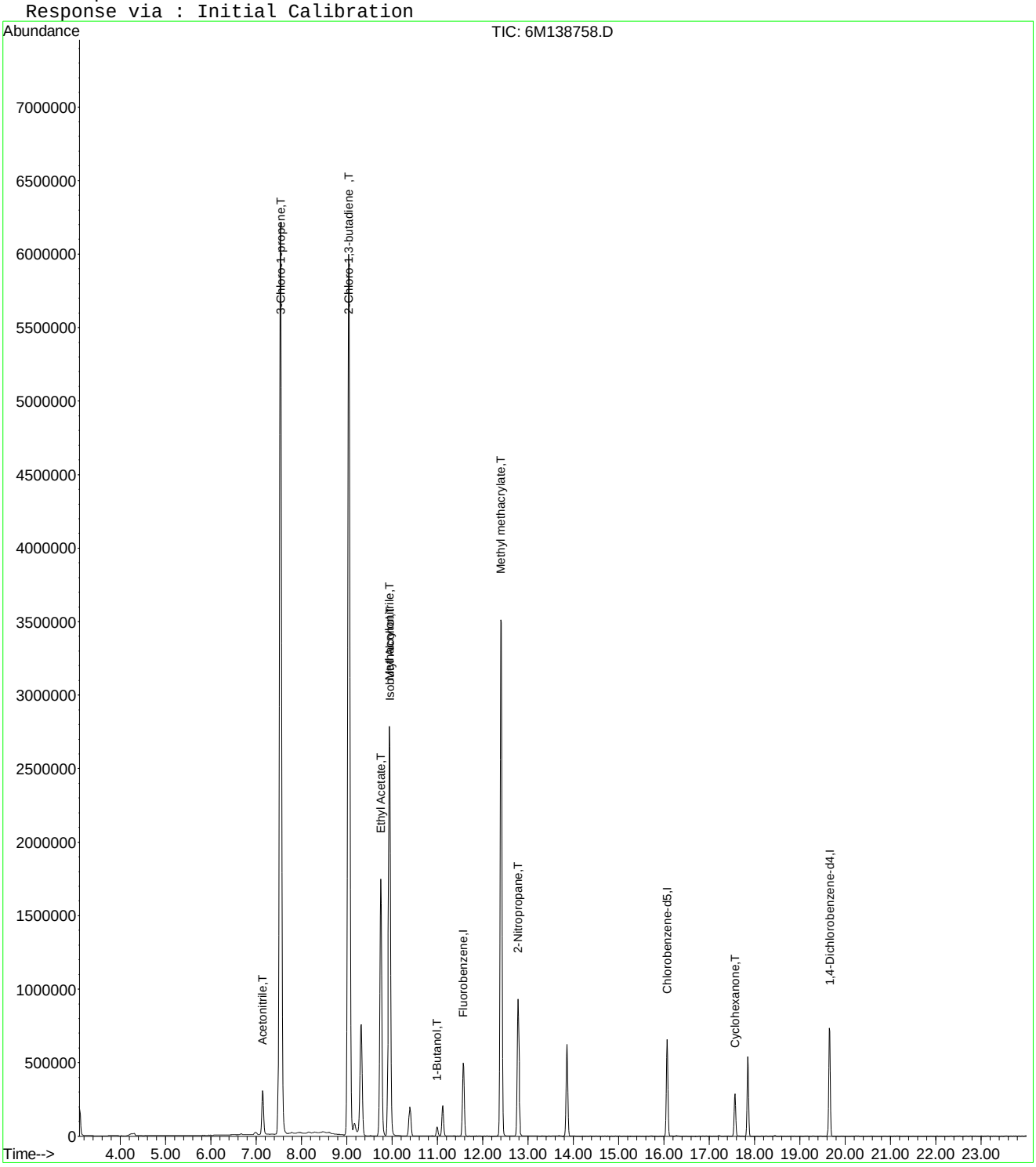

6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	486.8858	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	482.8665	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	511.3891	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	500.3107	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	502.4237	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	1192.2947	ug/L #	90
9) Methyl methacrylate	12.40	41	2914815	524.5904	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	501.6898	ug/L	99
13) Cyclohexanone	17.57	55	176545	526.7057	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

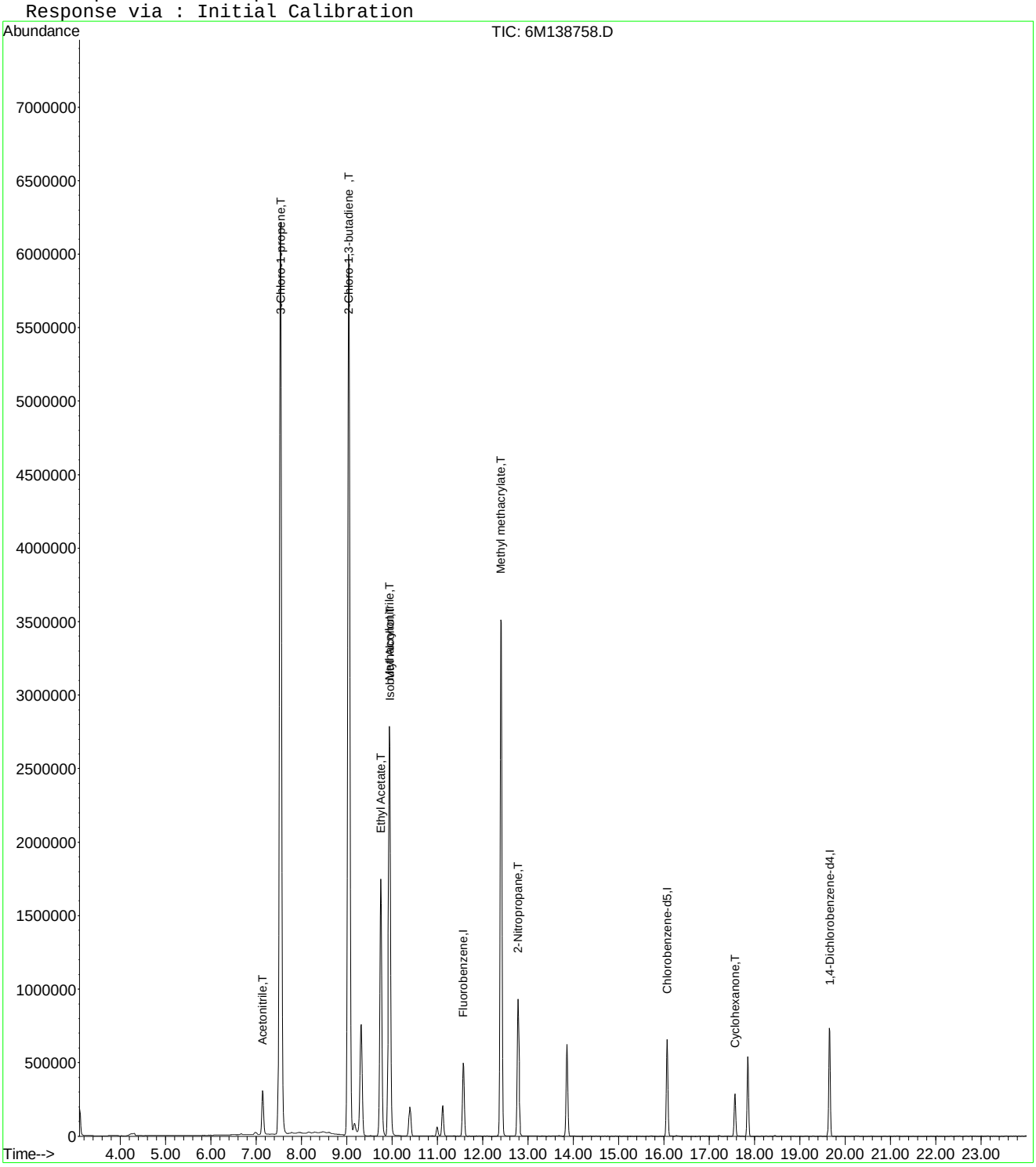

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:54 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.40	111	171708	27.8099 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	210067	28.0330 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.12%		
58) Toluene-d8	13.86	98	553825	26.0829 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.32%		
80) p-Bromofluorobenzene	17.85	95	243088	28.3441 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 113.36%		

Target Compounds					Qvalue
5) 1,3-Butadiene	4.21	54	367749	92.2302 ug/L	88
9) Diethyl ether	6.30	59	700386	132.3612 ug/L	92
13) Acetone	6.67	43	6570	3.5143 ug/L	81
16) Dimethyl Sulfide	7.14	62	2726	0.5361 ug/L #	1
20) Carbon Disulfide	7.54	76	432674	22.5096 ug/L #	36
22) Methyl Tert Butyl Ether	7.97	73	2916	0.1786 ug/L #	53
26) Vinyl Acetate	9.05	43	5230	0.5414 ug/L #	1
27) 1,1-Dichloroethane	9.04	63	22472	1.7594 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.32	59	4063	0.1960 ug/L #	35
29) 2-Butanone	9.52	43	6076	2.2019 ug/L #	66
30) Propionitrile	9.64	54	91341	115.2239 ug/L	96
36) Tetrahydrofuran	10.36	42	4030	2.2418 ug/L #	52
39) Cyclohexane	10.69	56	2387	0.2138 ug/L	79
48) Methylcyclohexane	12.40	83	1353	0.1547 ug/L #	1
50) 1,4-Dioxane	12.73	88	9231	177.0935 ug/L	71
60) Ethyl Methacrylate	13.86	69	1222	0.1732 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1146	0.1832 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

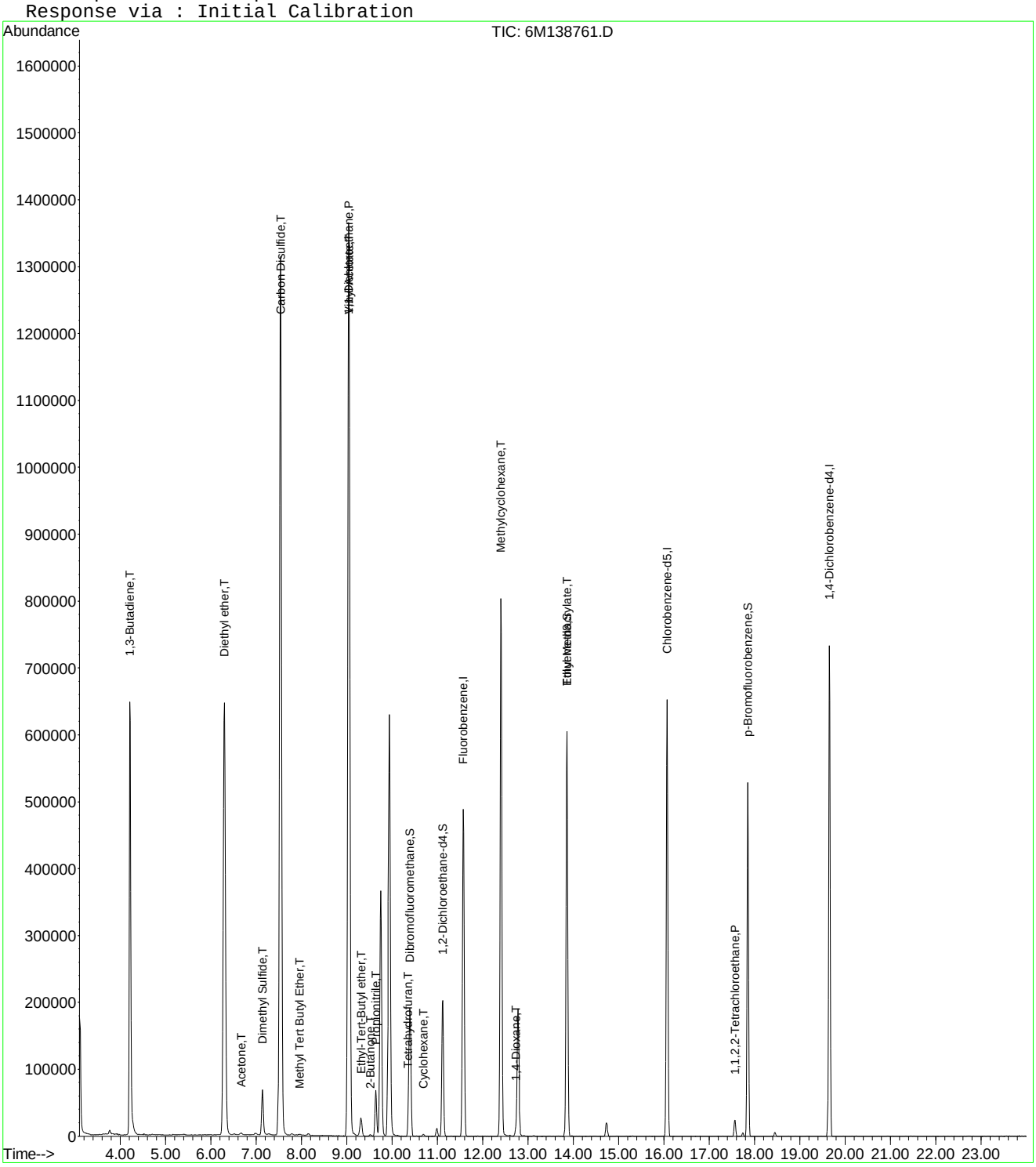

6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	83.4191	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	96.0797	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	108.7756	ug/L	83
5) Ethyl Acetate	9.75	43	691566	108.7414	ug/L	93
6) Methacrylonitrile	9.94	67	252030	103.0355	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	146.2409	ug/L #	93
8) 1-Butanol	10.99	41	7584	50.3877	ug/L	72
9) Methyl methacrylate	12.40	41	635574	100.3670	ug/L	81
10) 2-Nitropropane	12.79	43	211020	113.0321	ug/L	98
13) Cyclohexanone	17.57	55	15491	17.6579	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Mon Apr 25 15:46:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

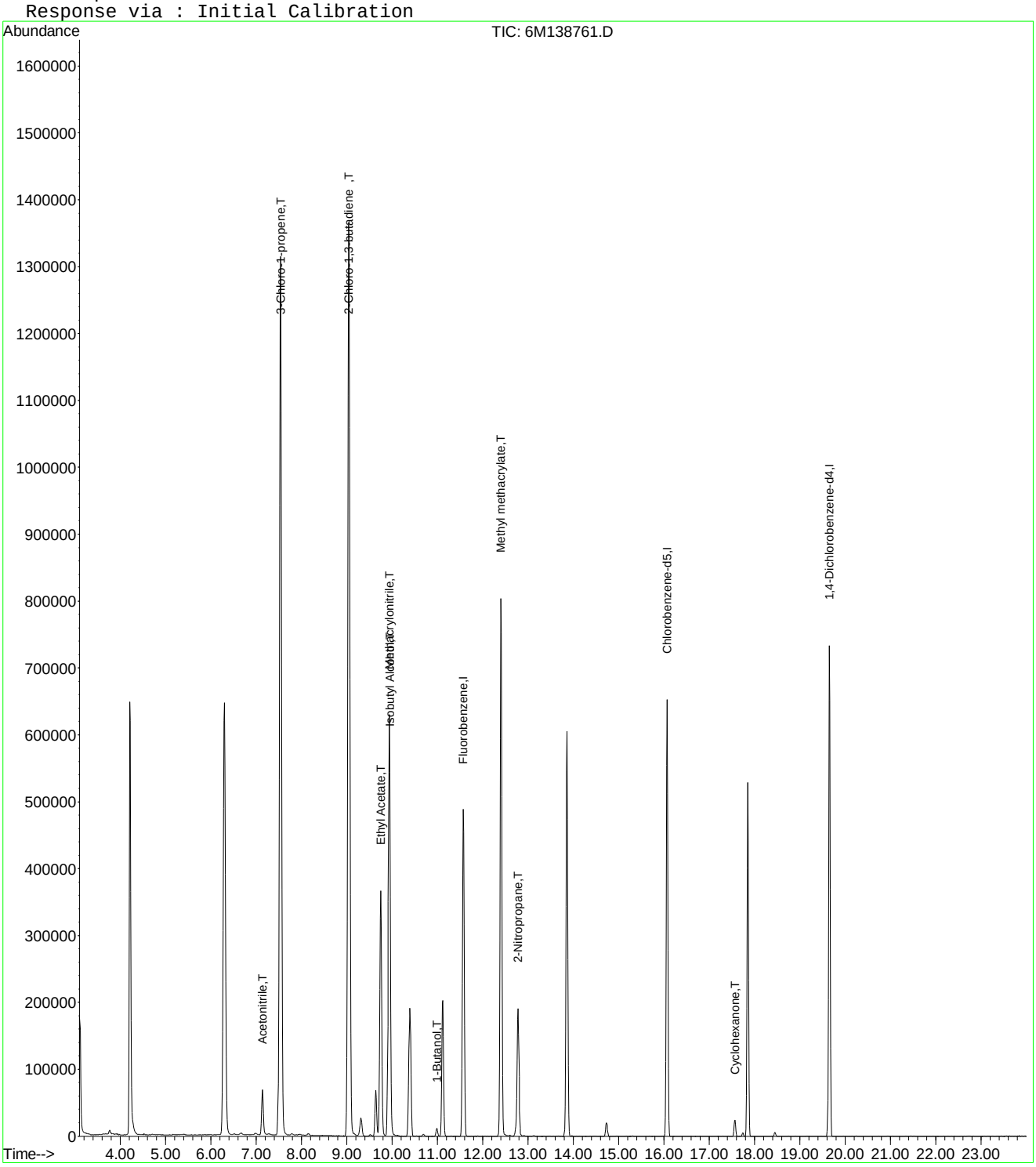

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:02 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	106.9355	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	103.1378	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	117.1516	ug/L	83
5) Ethyl Acetate	9.75	43	691566	106.9734	ug/L	93
6) Methacrylonitrile	9.94	67	252030	113.0781	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	248.4926	ug/L #	93
9) Methyl methacrylate	12.40	41	635574	116.9674	ug/L	81
10) 2-Nitropropane	12.79	43	211020	104.4208	ug/L	98
13) Cyclohexanone	17.57	55	15491	48.3758	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

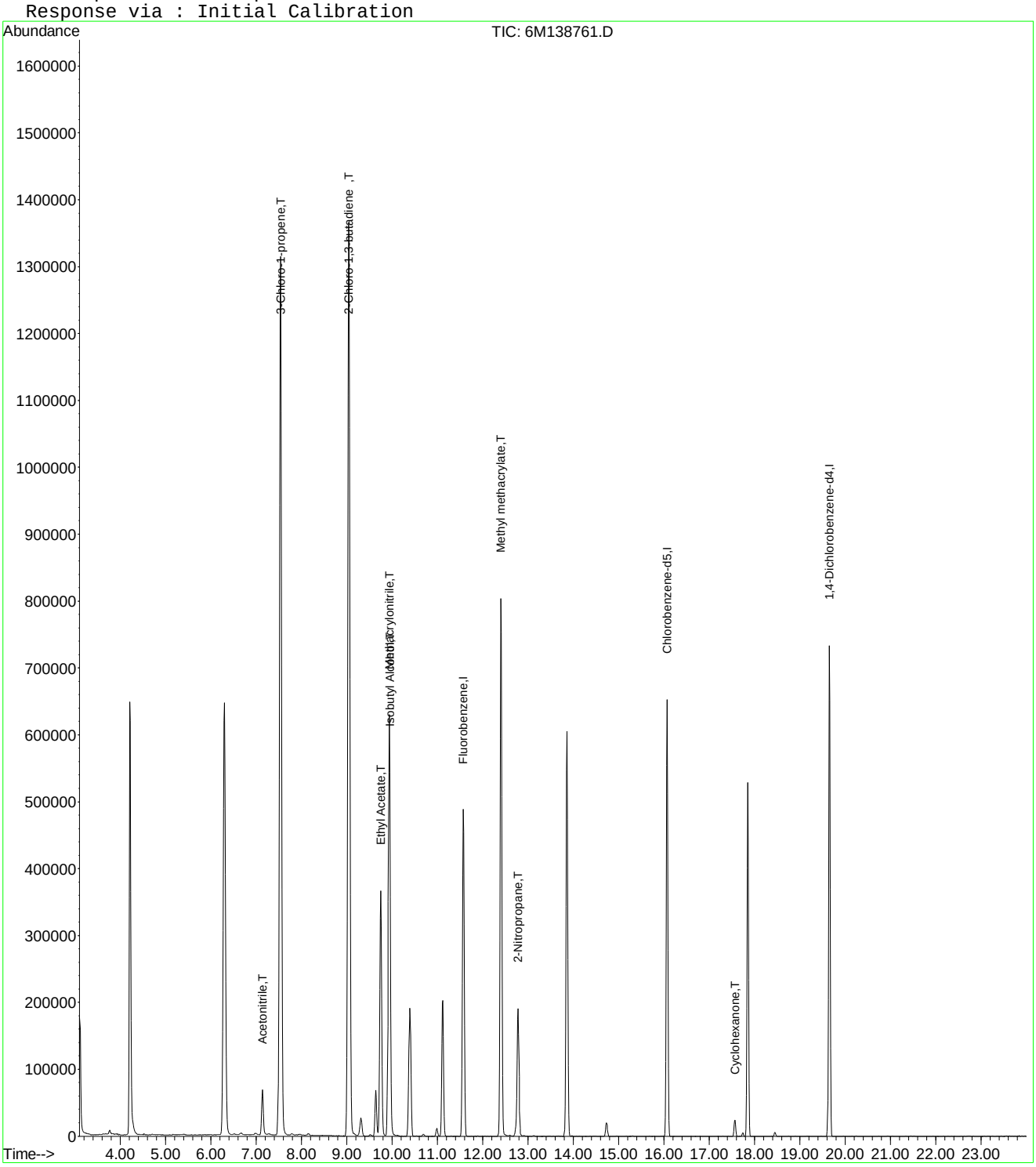

6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	101	0.00
2	T	Acetonitrile	100.0000	106.9355	-6.9	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.1378	-3.1	96	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	117.1516	-17.2	107	0.00
5	T	Ethyl Acetate	100.0000	106.9734	-7.0	103	0.00
6	T	Methacrylonitrile	100.0000	113.0781	-13.1	106	0.00
7	T	Isobutyl Alcohol	200.0000	248.4926	-24.2	151	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	116.9674	-17.0	108	0.00
10	T	2-Nitropropane	100.0000	104.4208	-4.4	107	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	48.3758	51.6	56	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138761.D A9FOOWT.M Wed Apr 27 16:05:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:28 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	782166	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	545154	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	278489	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	4426	0.5577 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.24%#	
43) 1,2-Dichloroethane-d4	10.31	65	6633	0.6621 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.64%#	
58) Toluene-d8	13.04	98	14915	0.5556 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.24%#	
80) p-Bromofluorobenzene	17.02	95	6529	0.5986 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.40%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	7859	0.6011 ug/L #	80
3) Chloromethane	3.36	50	10543	0.7222 ug/L	88
4) Vinyl Chloride	3.57	62	6524	0.8138 ug/L	85
5) 1,3-Butadiene	3.62	54	5236	Below Cal #	53
6) Bromomethane	4.39	94	2681	0.5033 ug/L	75
7) Chloroethane	4.55	64	2218	0.4379 ug/L #	74
8) Trichlorofluoromethane	5.01	101	7455	0.6097 ug/L #	89
10) Isoprene	5.58	67	5099	0.4673 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.81	101	3458	0.4546 ug/L	87
13) Acetone	5.90	43	5483	2.1880 ug/L	88
14) 1,1-Dichloroethene	6.11	61	8367	0.5669 ug/L	89
16) Dimethyl Sulfide	6.39	62	2618	0.4067 ug/L	92
17) Iodomethane	6.65	142	580	1.0028 ug/L #	32
18) Methyl acetate	6.68	43	2212	0.3262 ug/L #	66
19) Methylene Chloride	6.95	84	4491	0.5306 ug/L	87
20) Carbon Disulfide	6.97	76	28617	1.0581 ug/L	97
22) Methyl Tert Butyl Ether	7.17	73	6219	0.2772 ug/L #	56
23) trans-1,2-Dichloroethene	7.42	96	5255	0.6648 ug/L	83
24) n-Hexane	7.50	57	14948	1.1142 ug/L	95
26) Vinyl Acetate	8.09	43	2544	0.1688 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	6467	0.3800 ug/L	91
29) 2-Butanone	8.74	43	738	0.1924 ug/L #	57
31) 2,2-Dichloropropane	8.96	77	4273	0.3328 ug/L	92
32) cis-1,2-Dichloroethene	9.04	96	4541	0.5248 ug/L	70
33) Chloroform	9.26	83	5775	0.3788 ug/L	94
35) Bromochloromethane	9.52	130	2012	0.4327 ug/L	92
36) Tetrahydrofuran	9.55	42	2953	1.1037 ug/L #	55
38) 1,1,1-Trichloroethane	9.86	97	4483	0.3377 ug/L	92
39) Cyclohexane	9.87	56	8253	0.4779 ug/L	90
40) 1,1-Dichloropropene	10.08	75	6696	0.5791 ug/L	91
42) Carbon Tetrachloride	10.23	117	3257	0.2988 ug/L #	92
45) 1,2-Dichloroethane	10.45	62	5310	0.4344 ug/L #	89
46) Benzene	10.48	78	15173	0.4650 ug/L	96
47) Trichloroethene	11.35	130	5387	0.6690 ug/L	99
48) Methylcyclohexane	11.43	83	7364	0.5825 ug/L	88
49) 1,2-Dichloropropane	11.58	63	3158	0.3361 ug/L	79
51) Bromodichloromethane	11.94	83	4017	0.3543 ug/L	95
52) Dibromomethane	12.03	93	2564	0.5639 ug/L	85
53) 2-Chloroethyl Vinyl Ether	12.31	63	1255	0.2664 ug/L #	41
55) cis-1,3-Dichloropropene	12.69	75	6354	0.4827 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M140314.D 8260WTR.M Fri Jul 01 14:20:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:28 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.96	79	2244	0.3062 ug/L #	47
59)	Toluene	13.16	91	16171	0.4977 ug/L	100
60)	Ethyl Methacrylate	13.33	69	2168	0.2345 ug/L	77
62)	trans-1,3-Dichloropropene	13.39	75	6685	0.5786 ug/L	82
63)	1,1,2-Trichloroethane	13.62	97	2098	0.3489 ug/L	91
64)	2-Hexanone	13.58	43	1202	0.2105 ug/L #	54
65)	1,3-Dichloropropane	13.99	76	4378	0.3863 ug/L	85
66)	Tetrachloroethene	14.10	166	4661	0.6020 ug/L	99
67)	Dibromochloromethane	14.41	129	2599	0.3560 ug/L	98
68)	1,2-Dibromoethane	14.71	107	3093	0.5329 ug/L	98
69)	1-Chlorohexane	14.85	91	5951	0.5504 ug/L	88
70)	Chlorobenzene	15.30	112	13354	0.6409 ug/L	99
71)	1,1,1,2-Tetrachloroethane	15.35	131	2310	0.3116 ug/L	94
72)	Ethylbenzene	15.35	106	5305	0.4864 ug/L	85
73)	m-,p-Xylene	15.45	106	13647	1.0353 ug/L	91
74)	o-Xylene	16.11	106	5438	0.4136 ug/L	85
75)	Styrene	16.16	104	10471	0.4734 ug/L	91
76)	Bromoform	16.71	173	1433	0.3165 ug/L #	50
77)	Isopropylbenzene	16.63	105	15560	0.4536 ug/L	92
79)	1,1,2,2-Tetrachloroethane	16.88	83	1987	0.2940 ug/L	77
81)	1,2,3-Trichloropropane	17.10	110	241	0.1203 ug/L #	1
82)	trans-1,4-Dichloro-2-Buten	17.19	53	903	0.3534 ug/L	88
83)	n-Propylbenzene	17.22	91	21456	0.5362 ug/L #	94
84)	Bromobenzene	17.34	156	5484	0.6559 ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	12453	0.4440 ug/L	96
86)	2-Chlorotoluene	17.52	91	13840	0.5114 ug/L	95
87)	4-Chlorotoluene	17.59	91	17422	0.6753 ug/L	95
88)	a-Methylstyrene	17.92	118	6165	0.4370 ug/L	93
89)	tert-Butylbenzene	17.98	134	2101	0.3729 ug/L #	24
90)	1,2,4-Trimethylbenzene	18.05	105	13753	0.4779 ug/L	100
91)	sec-Butylbenzene	18.30	105	18042	0.5374 ug/L	92
92)	p-Isopropyltoluene	18.51	119	14633	0.5114 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	11689	0.7103 ug/L	99
94)	1,4-Dichlorobenzene	18.85	146	12500	0.7513 ug/L	97
95)	n-Butylbenzene	19.12	91	17799	0.6344 ug/L	93
96)	1,2-Dichlorobenzene	19.43	146	9545	0.6178 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	20.62	75	229	0.1730 ug/L #	1
98)	1,2,4-Trichlorobenzene	21.96	180	8749	0.8011 ug/L	91
99)	Hexachlorobutadiene	22.15	225	2944	0.6484 ug/L	95
100)	Naphthalene	22.39	128	14249	0.6384 ug/L	95
101)	1,2,3-Trichlorobenzene	22.76	180	7092	0.7013 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140314.D 8260WTR.M Fri Jul 01 14:20:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:20 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

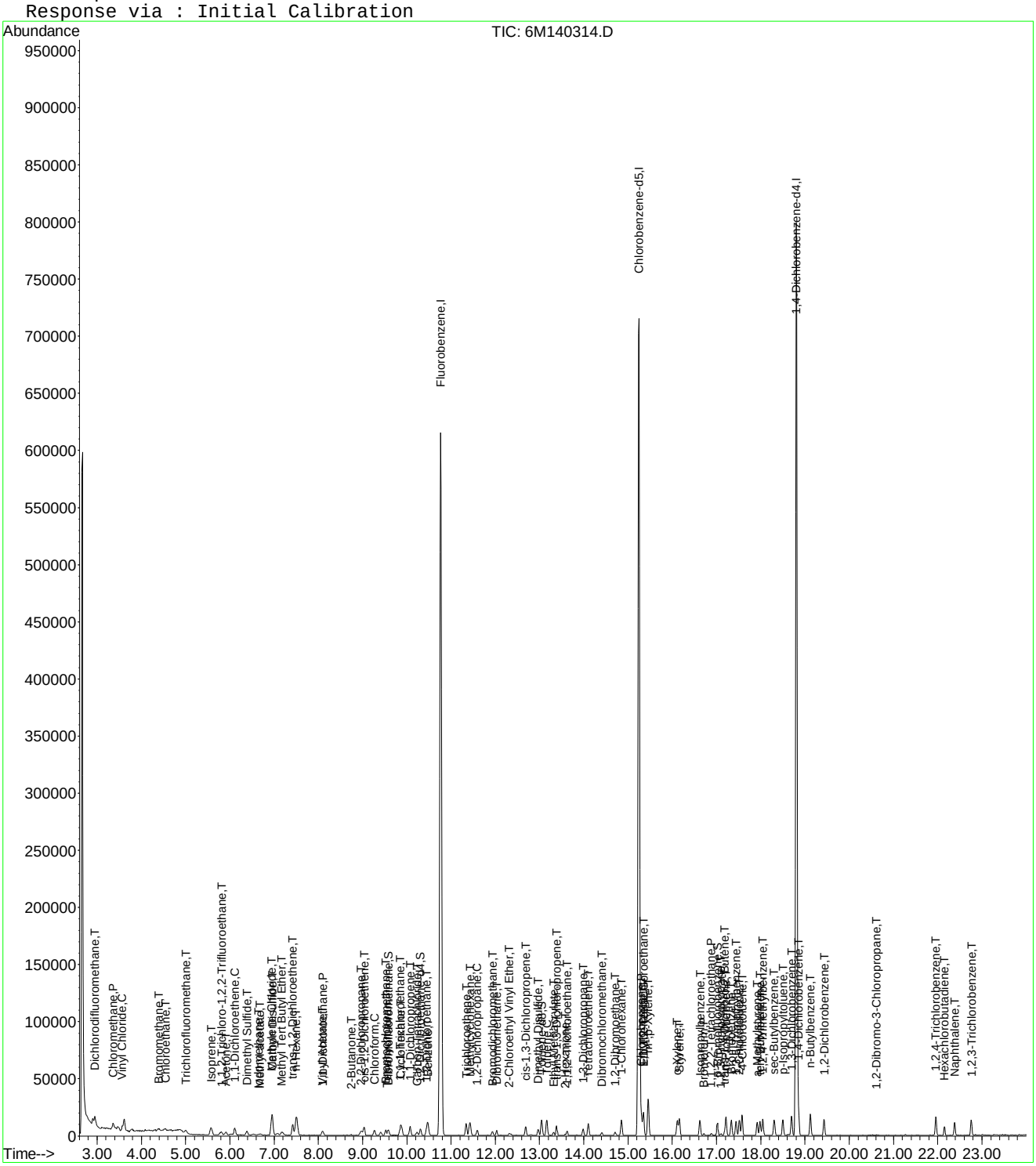

6M140314.D 8260WTR.M Fri Jul 01 14:20:34 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.6011	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.7222	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.8138	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.9896	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.5033	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.4379	0.0	100	0.02
8	T	Trichlorofluoromethane	-1.0000	0.6097	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0280	0.0	100	0.00
10	T	Isoprene	-1.0000	0.4673	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.4546	0.0	100	0.03
13	T	Acetone	-1.0000	2.1880	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5669	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.4067	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.0028	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.3262	0.0	100	-0.01
19	T	Methylene Chloride	-1.0000	0.5306	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	1.0581	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.15#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2772	0.0	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.6648	0.0	100	0.00
24	T	n-Hexane	-1.0000	1.1142	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.90#
26	T	Vinyl Acetate	-1.0000	0.1688	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3800	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.53#
29	T	2-Butanone	-1.0000	0.1924	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.86#
31	T	2,2-Dichloropropane	-1.0000	0.3328	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.5248	0.0	100	0.00
33	C	Chloroform	0.3000	0.3788	-26.3#	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.41#
35	T	Bromochloromethane	-1.0000	0.4327	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.1037	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.5577	0.0	100	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.3377	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.4779	0.0	100	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.5791	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0293	0.0	100	-0.13
42	T	Carbon Tetrachloride	-1.0000	0.2988	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.6621	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	-1.0000	0.4344	0.0	100	0.00
46	T	Benzene	-1.0000	0.4650	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.6690	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.5825	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3361	0.0	100	-0.01
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	-1.0000	0.3543	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.5639	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2664	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0645	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.4827	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.3062	0.0	100	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5556	0.0	100	0.00
59	C	Toluene	-1.0000	0.4977	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2345	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	-1.0000	0.5786	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.3489	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.2105	0.0	100	0.00
65	T	1,3-Dichloropropane	-1.0000	0.3863	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.6020	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.3560	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.5329	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.5504	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.6409	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3116	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.4864	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	1.0353	0.0	100	-0.01
74	T	o-Xylene	-1.0000	0.4136	0.0	100	-0.01
75	T	Styrene	-1.0000	0.4734	0.0	100	0.00
76	P	Bromoform	-1.0000	0.3165	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.4536	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2940	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5986	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1203	0.0	100	-0.01
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.3534	0.0	100	0.00
83	T	n-Propylbenzene	-1.0000	0.5362	0.0	100	0.00
84	T	Bromobenzene	-1.0000	0.6559	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.4440	0.0	100	-0.01
86	T	2-Chlorotoluene	-1.0000	0.5114	0.0	79	-0.01
87	T	4-Chlorotoluene	-1.0000	0.6753	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.4370	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3729	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.4779	0.0	100	-0.01
91	T	sec-Butylbenzene	-1.0000	0.5374	0.0	100	-0.01
92	T	p-Isopropyltoluene	-1.0000	0.5114	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.7103	0.0	100	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.7513	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.6344	0.0	100	0.00
96	T	1,2-Dichlorobenzene	-1.0000	0.6178	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.1730	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	0.8011	0.0	100	-0.01
99	T	Hexachlorobutadiene	-1.0000	0.6484	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.6384	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	0.7013	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
6M140314.D 8260WTR.M Fri Jul 01 14:34:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:36 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	711040	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	496934	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	254758	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	13.04	98	1118	0.0457 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.20%#	
80) p-Bromofluorobenzene	17.01	95	723	0.0725 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	4029	0.3390 ug/L #	64
3) Chloromethane	3.37	50	7908	0.5959 ug/L	82
4) Vinyl Chloride	3.56	62	2700	0.3705 ug/L	78
5) 1,3-Butadiene	3.62	54	3035	Below Cal #	51
6) Bromomethane	4.39	94	1885	0.3892 ug/L	95
7) Chloroethane	4.55	64	1384	0.3006 ug/L #	43
8) Trichlorofluoromethane	5.00	101	5096	0.4585 ug/L #	91
10) Isoprene	5.57	67	4197	0.4231 ug/L	86
12) 1,1,2-Trichloro-1,2,2-Trif	5.82	101	2196	0.3176 ug/L	83
13) Acetone	5.90	43	1650	0.7243 ug/L #	48
14) 1,1-Dichloroethene	6.11	61	5407	0.4030 ug/L	90
16) Dimethyl Sulfide	6.38	62	2288	0.3910 ug/L	87
18) Methyl acetate	6.69	43	1819	0.2951 ug/L #	66
19) Methylene Chloride	6.93	84	3320	0.4315 ug/L	82
20) Carbon Disulfide	6.97	76	11427	0.4648 ug/L	99
22) Methyl Tert Butyl Ether	7.18	73	8255	0.4048 ug/L #	75
23) trans-1,2-Dichloroethene	7.42	96	2988	0.4158 ug/L	82
24) n-Hexane	7.51	57	5670	0.4649 ug/L	92
26) Vinyl Acetate	8.09	43	2906	0.2121 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	6380	0.4124 ug/L	89
29) 2-Butanone	8.74	43	1046	0.3000 ug/L #	57
31) 2,2-Dichloropropane	8.95	77	4509	0.3863 ug/L	96
32) cis-1,2-Dichloroethene	9.03	96	3353	0.4263 ug/L	94
33) Chloroform	9.27	83	5194	0.3747 ug/L	99
35) Bromochloromethane	9.53	130	1601	0.3788 ug/L	83
36) Tetrahydrofuran	9.56	42	3379	1.3892 ug/L #	67
38) 1,1,1-Trichloroethane	9.87	97	4496	0.3726 ug/L	93
39) Cyclohexane	9.89	56	6498	0.4139 ug/L	94
40) 1,1-Dichloropropene	10.08	75	4389	0.4176 ug/L	94
42) Carbon Tetrachloride	10.24	117	3081	0.3110 ug/L #	88
45) 1,2-Dichloroethane	10.45	62	4443	0.3998 ug/L #	81
46) Benzene	10.48	78	13145	0.4431 ug/L	97
47) Trichloroethene	11.34	130	3154	0.4309 ug/L	93
48) Methylcyclohexane	11.42	83	4969	0.4324 ug/L	87
49) 1,2-Dichloropropane	11.59	63	3543	0.4147 ug/L	87
51) Bromodichloromethane	11.93	83	3676	0.3566 ug/L	92
52) Dibromomethane	12.03	93	1420	0.3436 ug/L	100
53) 2-Chloroethyl Vinyl Ether	12.31	63	1186	0.2769 ug/L #	41
54) 4-Methyl-2-Pentanone	12.35	58	422	0.1601 ug/L #	38
55) cis-1,3-Dichloropropene	12.67	75	4716	0.3941 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140315.D 8260WTR.M Fri Jul 01 14:20:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:36 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.97	79	1919	0.2881 ug/L #	68
59)	Toluene	13.16	91	13506	0.4560 ug/L	97
60)	Ethyl Methacrylate	13.32	69	2728	0.3238 ug/L	91
62)	trans-1,3-Dichloropropene	13.39	75	3780	0.3589 ug/L	86
63)	1,1,2-Trichloroethane	13.63	97	2086	0.3806 ug/L	93
64)	2-Hexanone	13.58	43	1538	0.2955 ug/L	72
65)	1,3-Dichloropropane	13.98	76	4376	0.4236 ug/L	95
66)	Tetrachloroethene	14.10	166	2876	0.4075 ug/L	95
67)	Dibromochloromethane	14.41	129	2210	0.3321 ug/L	93
68)	1,2-Dibromoethane	14.72	107	1896	0.3584 ug/L	87
69)	1-Chlorohexane	14.86	91	4030	0.4089 ug/L	91
70)	Chlorobenzene	15.30	112	8640	0.4549 ug/L	96
71)	1,1,1,2-Tetrachloroethane	15.35	131	2601	0.3848 ug/L	92
72)	Ethylbenzene	15.35	106	4049	0.4073 ug/L	76
73)	m-,p-Xylene	15.45	106	10358	0.8620 ug/L	87
74)	o-Xylene	16.10	106	5184	0.4326 ug/L	96
75)	Styrene	16.16	104	7888	0.3912 ug/L	83
76)	Bromoform	16.72	173	1146	0.2777 ug/L #	68
77)	Isopropylbenzene	16.62	105	13388	0.4282 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.88	83	2211	0.3576 ug/L	95
81)	1,2,3-Trichloropropane	17.11	110	427	0.2329 ug/L #	1
83)	n-Propylbenzene	17.22	91	16903	0.4618 ug/L #	94
84)	Bromobenzene	17.34	156	3349	0.4379 ug/L	93
85)	1,3,5-Trimethylbenzene	17.44	105	10954	0.4269 ug/L	99
86)	2-Chlorotoluene	17.51	91	11900	0.4807 ug/L	93
87)	4-Chlorotoluene	17.57	91	10437	0.4422 ug/L	94
88)	a-Methylstyrene	17.92	118	4645	0.3600 ug/L	98
89)	tert-Butylbenzene	17.98	134	2361	0.4580 ug/L	87
90)	1,2,4-Trimethylbenzene	18.04	105	11026	0.4188 ug/L	95
91)	sec-Butylbenzene	18.31	105	13954	0.4543 ug/L	95
92)	p-Isopropyltoluene	18.50	119	11850	0.4527 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	6789	0.4510 ug/L	100
94)	1,4-Dichlorobenzene	18.85	146	7052	0.4633 ug/L	99
95)	n-Butylbenzene	19.12	91	11908	0.4639 ug/L	90
96)	1,2-Dichlorobenzene	19.42	146	6295	0.4454 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	20.62	75	204	0.1685 ug/L #	1
98)	1,2,4-Trichlorobenzene	21.96	180	4710	0.4715 ug/L	93
99)	Hexachlorobutadiene	22.15	225	1916	0.4613 ug/L	98
100)	Naphthalene	22.38	128	8061	0.3948 ug/L	90
101)	1,2,3-Trichlorobenzene	22.75	180	4023	0.4349 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140315.D 8260WTR.M Fri Jul 01 14:20:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:20 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

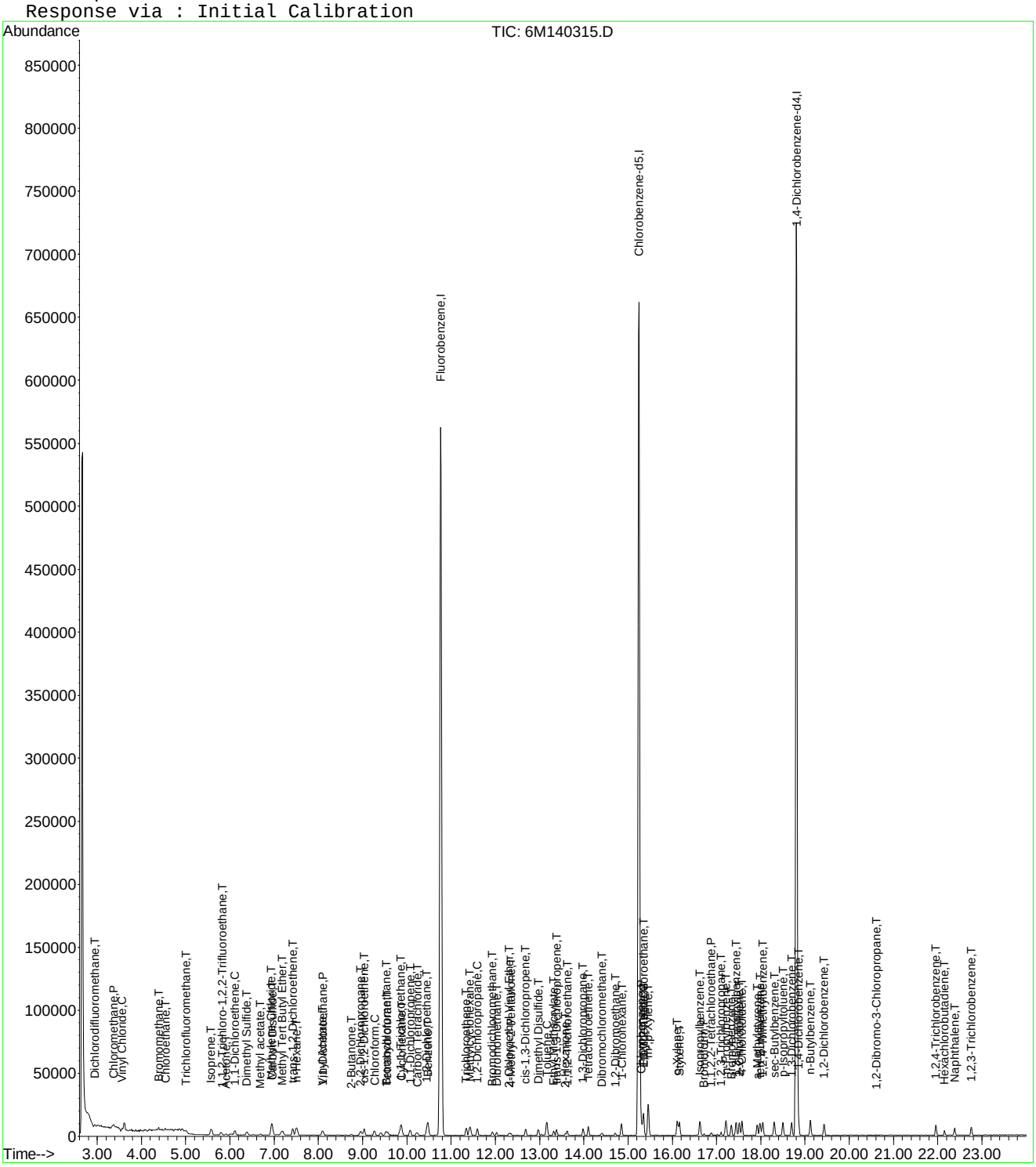

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3390	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5959	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3705	7.4	100	0.00
5	T	1,3-Butadiene	-1.0000	-2.4246	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.3892	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.3006	0.0	100	0.02
8	T	Trichlorofluoromethane	0.4000	0.4585	-14.6	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.55#
10	T	Isoprene	-1.0000	0.4231	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3176	0.0	100	0.04
13	T	Acetone	-1.0000	0.7243	0.0	100	0.00
14	C	1,1-Dichloroethene	0.4000	0.4030	-0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.3910	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.64#
18	T	Methyl acetate	-1.0000	0.2951	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4315	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4648	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.15#
22	T	Methyl Tert Butyl Ether	-1.0000	0.4048	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4158	-4.0	100	0.00
24	T	n-Hexane	-1.0000	0.4649	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.90#
26	T	Vinyl Acetate	-1.0000	0.2121	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.4124	-3.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.53#
29	T	2-Butanone	-1.0000	0.3000	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.86#
31	T	2,2-Dichloropropane	0.4000	0.3863	3.4	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4263	-6.6	100	0.00
33	C	Chloroform	0.4000	0.3747	6.3	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.41#
35	T	Bromochloromethane	0.4000	0.3787	5.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.3892	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.59#
38	T	1,1,1-Trichloroethane	0.4000	0.3726	6.9	100	0.02
39	T	Cyclohexane	-1.0000	0.4139	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4176	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3110	22.3#	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	0.4000	0.3998	0.1	100	0.00
46	T	Benzene	0.4000	0.4431	-10.8	100	0.00
47	T	Trichloroethene	0.4000	0.4309	-7.7	100	0.00
48	T	Methylcyclohexane	-1.0000	0.4324	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4147	-3.7	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	0.4000	0.3566	10.8	100	0.00
52	T	Dibromomethane	0.4000	0.3436	14.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2769	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.1601	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3941	1.5	100	-0.01
56	T	Dimethyl Disulfide	-1.0000	0.2881	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0457	0.0	100	0.00
59	C	Toluene	0.4000	0.4560	-14.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3238	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.16#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3589	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3806	4.9	100	0.00
64	T	2-Hexanone	-1.0000	0.2955	0.0	100	0.00
65	T	1,3-Dichloropropane	0.4000	0.4236	-5.9	100	-0.01
66	T	Tetrachloroethene	0.4000	0.4075	-1.9	100	0.00
67	T	Dibromochloromethane	0.4000	0.3321	17.0	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3584	10.4	100	0.00
69	T	1-Chlorohexane	0.4000	0.4089	-2.2	100	0.00
70	P	Chlorobenzene	0.4000	0.4549	-13.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3848	3.8	100	0.00
72	C	Ethylbenzene	0.4000	0.4073	-1.8	100	0.00
73	T	m-,p-Xylene	0.8000	0.8620	-7.8	100	-0.01
74	T	o-Xylene	-1.0000	0.4326	0.0	100	-0.01
75	T	Styrene	0.4000	0.3912	2.2	100	0.00
76	P	Bromoform	-1.0000	0.2777	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4282	-7.0	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3576	10.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0725	0.0	100	-0.01
81	T	1,2,3-Trichloropropane	-1.0000	0.2329	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1005	0.0	100	0.00
83	T	n-Propylbenzene	0.4000	0.4618	-15.4	100	0.00
84	T	Bromobenzene	0.4000	0.4379	-9.5	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4270	-6.7	100	-0.01
86	T	2-Chlorotoluene	0.4000	0.4807	-20.2#	100	-0.01
87	T	4-Chlorotoluene	0.4000	0.4422	-10.6	100	-0.01
88	T	a-Methylstyrene	-1.0000	0.3600	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.4580	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.4188	0.0	100	-0.01
91	T	sec-Butylbenzene	-1.0000	0.4543	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4527	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4510	-12.7	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4633	-15.8	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4639	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4454	-11.4	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.1685	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	0.4000	0.4714	-17.9	100	-0.01
99	T	Hexachlorobutadiene	0.4000	0.4613	-15.3	100	0.00
100	T	Naphthalene	0.4000	0.3948	1.3	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4349	-8.7	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140315.D 8260WTR.M Fri Jul 01 14:35:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	687429	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	485381	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	251587	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	3444	0.4938 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.96%#	
43) 1,2-Dichloroethane-d4	10.31	65	4418	0.5018 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.00%#	
58) Toluene-d8	13.04	98	12734	0.5328 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.12%#	
80) p-Bromofluorobenzene	17.01	95	5390	0.5470 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.20%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	11016	0.9586 ug/L #	84
3) Chloromethane	3.37	50	15509	1.2088 ug/L	95
4) Vinyl Chloride	3.56	62	7694	1.0920 ug/L	94
5) 1,3-Butadiene	3.62	54	7756	Below Cal #	68
6) Bromomethane	4.39	94	4929	1.0528 ug/L	86
7) Chloroethane	4.53	64	4342	0.9753 ug/L	93
8) Trichlorofluoromethane	5.01	101	10531	0.9800 ug/L	96
9) Diethyl ether	5.55	59	32999	5.2047 ug/L	95
10) Isoprene	5.57	67	9716	1.0131 ug/L	99
11) Acrolein	5.79	56	2538	2.4066 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	6731	1.0068 ug/L	91
13) Acetone	5.90	43	3178	1.4430 ug/L #	76
14) 1,1-Dichloroethene	6.12	61	13411	1.0339 ug/L	87
15) Tert-Butyl Alcohol	6.25	59	6206	9.2151 ug/L #	84
16) Dimethyl Sulfide	6.38	62	5231	0.9246 ug/L	96
17) Iodomethane	6.65	142	2100	1.3352 ug/L	82
18) Methyl acetate	6.69	43	5561	0.9331 ug/L #	66
19) Methylene Chloride	6.94	84	8529	1.1466 ug/L	84
20) Carbon Disulfide	6.97	76	25467	1.0714 ug/L	99
21) Acrylonitrile	7.16	53	6206	2.2695 ug/L	94
22) Methyl Tert Butyl Ether	7.18	73	19700	0.9991 ug/L	95
23) trans-1,2-Dichloroethene	7.42	96	6984	1.0053 ug/L	82
24) n-Hexane	7.51	57	13051	1.1069 ug/L	96
25) Diisopropyl ether	7.90	45	166032	5.2317 ug/L	96
26) Vinyl Acetate	8.09	43	9104	0.6872 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	15277	1.0213 ug/L	96
28) Ethyl-Tert-Butyl ether	8.53	59	131034	5.1323 ug/L	97
29) 2-Butanone	8.73	43	3268	0.9693 ug/L #	57
30) Propionitrile	8.85	54	4333	4.7359 ug/L	96
31) 2,2-Dichloropropane	8.95	77	11579	1.0261 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	7838	1.0307 ug/L	88
33) Chloroform	9.26	83	13154	0.9816 ug/L	99
34) 1-Bromopropane	9.41	122	659	1.0190 ug/L	80
35) Bromochloromethane	9.52	130	3868	0.9465 ug/L	100
36) Tetrahydrofuran	9.55	42	14306	6.0837 ug/L	89
38) 1,1,1-Trichloroethane	9.84	97	11995	1.0282 ug/L	99
39) Cyclohexane	9.89	56	16203	1.0675 ug/L	92
40) 1,1-Dichloropropene	10.08	75	10372	1.0207 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	97548	5.0317 ug/L	97
42) Carbon Tetrachloride	10.22	117	8394	0.8763 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M140316.D 8260WTR.M Fri Jul 01 14:21:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	10834	1.0084 ug/L #	94
46)	Benzene	10.48	78	30089	1.0492 ug/L	98
47)	Trichloroethene	11.35	130	7344	1.0378 ug/L	95
48)	Methylcyclohexane	11.43	83	11566	1.0410 ug/L	92
49)	1,2-Dichloropropane	11.59	63	8057	0.9755 ug/L	94
51)	Bromodichloromethane	11.93	83	9704	0.9738 ug/L	95
52)	Dibromomethane	12.02	93	3754	0.9395 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	3750	0.9056 ug/L	89
54)	4-Methyl-2-Pentanone	12.35	58	1943	0.7624 ug/L #	38
55)	cis-1,3-Dichloropropene	12.68	75	10823	0.9354 ug/L	99
56)	Dimethyl Disulfide	12.97	79	5005	0.7771 ug/L	92
59)	Toluene	13.16	91	30726	1.0622 ug/L	99
60)	Ethyl Methacrylate	13.32	69	7189	0.8735 ug/L	94
62)	trans-1,3-Dichloropropene	13.39	75	9521	0.9256 ug/L	92
63)	1,1,2-Trichloroethane	13.63	97	5389	1.0066 ug/L	99
64)	2-Hexanone	13.58	43	4641	0.9130 ug/L	84
65)	1,3-Dichloropropane	13.99	76	10212	1.0121 ug/L	95
66)	Tetrachloroethene	14.10	166	7069	1.0254 ug/L	90
67)	Dibromochloromethane	14.41	129	5818	0.8951 ug/L	98
68)	1,2-Dibromoethane	14.71	107	5034	0.9742 ug/L	100
69)	1-Chlorohexane	14.85	91	9657	1.0031 ug/L	86
70)	Chlorobenzene	15.30	112	19612	1.0571 ug/L	95
71)	1,1,1,2-Tetrachloroethane	15.35	131	6511	0.9863 ug/L	95
72)	Ethylbenzene	15.35	106	9761	1.0051 ug/L	83
73)	m-,p-Xylene	15.45	106	24695	2.1041 ug/L	92
74)	o-Xylene	16.11	106	11834	1.0110 ug/L	92
75)	Styrene	16.16	104	18993	0.9644 ug/L	88
76)	Bromoform	16.72	173	3330	0.8262 ug/L #	88
77)	Isopropylbenzene	16.61	105	31878	1.0438 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.88	83	5647	0.9248 ug/L	93
81)	1,2,3-Trichloropropane	17.11	110	1314	0.7259 ug/L #	16
82)	trans-1,4-Dichloro-2-Buten	17.18	53	1593	0.6900 ug/L	82
83)	n-Propylbenzene	17.22	91	39699	1.0982 ug/L	95
84)	Bromobenzene	17.34	156	7581	1.0037 ug/L	87
85)	1,3,5-Trimethylbenzene	17.44	105	26502	1.0460 ug/L	94
86)	2-Chlorotoluene	17.51	91	26919	1.1011 ug/L	97
87)	4-Chlorotoluene	17.58	91	23704	1.0170 ug/L	96
88)	a-Methylstyrene	17.92	118	11597	0.9100 ug/L	97
89)	tert-Butylbenzene	17.98	134	5253	1.0319 ug/L	63
90)	1,2,4-Trimethylbenzene	18.04	105	27482	1.0570 ug/L	95
91)	sec-Butylbenzene	18.30	105	33207	1.0949 ug/L	94
92)	p-Isopropyltoluene	18.50	119	27800	1.0755 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	15649	1.0526 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	16097	1.0710 ug/L #	64
95)	n-Butylbenzene	19.12	91	27428	1.0821 ug/L	93
96)	1,2-Dichlorobenzene	19.43	146	14706	1.0536 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	20.62	75	1058	0.8847 ug/L	65
98)	1,2,4-Trichlorobenzene	21.97	180	9695	0.9827 ug/L	98
99)	Hexachlorobutadiene	22.15	225	4079	0.9944 ug/L	93
100)	Naphthalene	22.38	128	18851	0.9349 ug/L	92
101)	1,2,3-Trichlorobenzene	22.75	180	9647	1.0560 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M140316.D 8260WTR.M Fri Jul 01 14:21:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

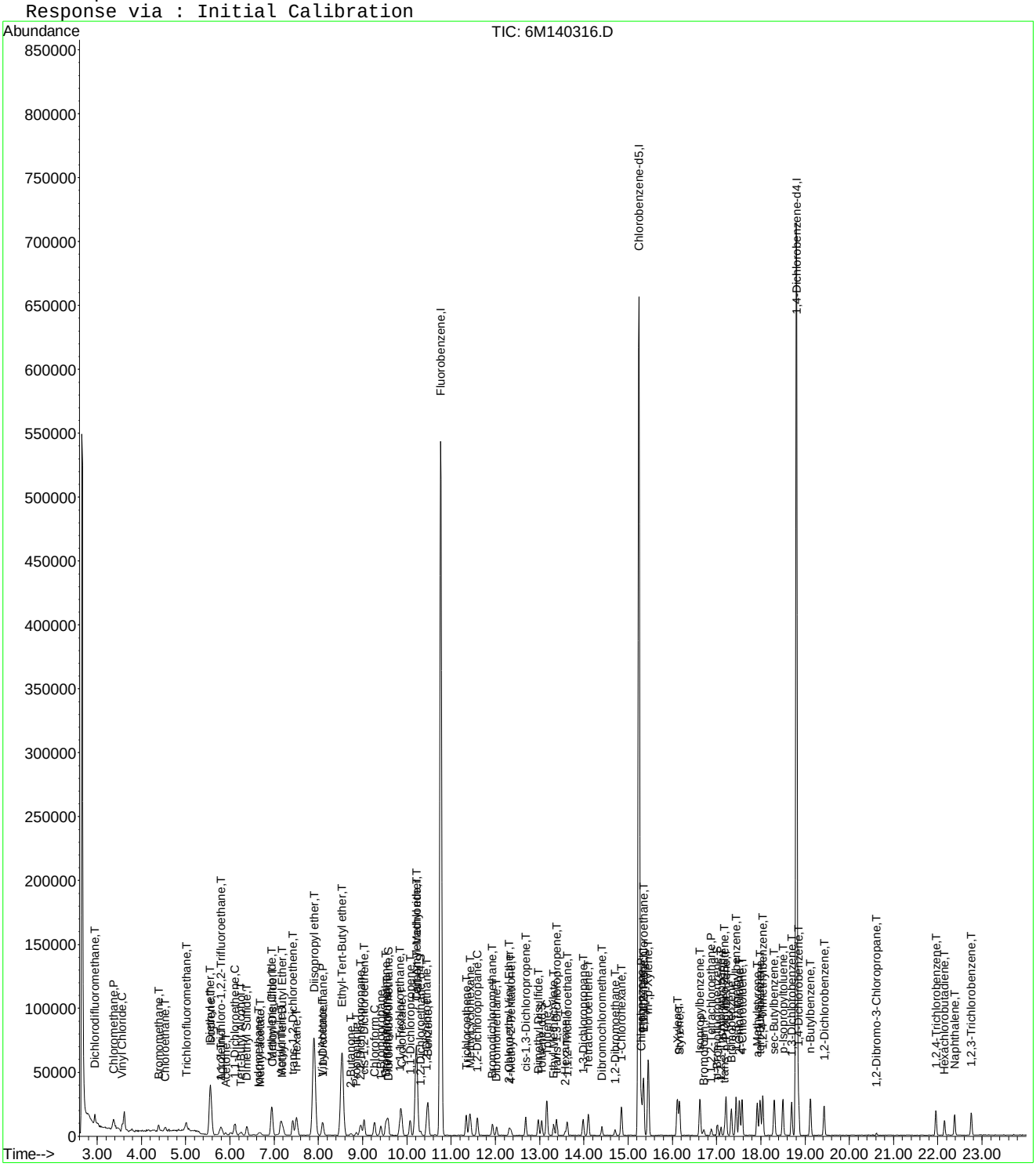

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9586	4.1	100	0.00
3	P	Chloromethane	1.0000	1.2088	-20.9#	100	0.00
4	C	Vinyl Chloride	1.0000	1.0920	-9.2	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.1669	0.0	0	0.03
6	T	Bromomethane	1.0000	1.0528	-5.3	100	0.02
7	T	Chloroethane	1.0000	0.9753	2.5	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9800	2.0	100	0.02
9	T	Diethyl ether	5.0000	5.2047	-4.1	100	0.00
10	T	Isoprene	-1.0000	1.0131	0.0	100	0.00
11	T	Acrolein	-1.0000	2.4066	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0068	-0.7	100	0.00
13	T	Acetone	-1.0000	1.4430	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0338	-3.4	100	0.02
15	T	Tert-Butyl Alcohol	10.0000	9.2151	7.8	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	0.9246	0.0	100	0.00
17	T	Iodomethane	1.0000	1.3352	-33.5#	100	0.00
18	T	Methyl acetate	-1.0000	0.9331	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.1466	-14.7	100	0.00
20	T	Carbon Disulfide	1.0000	1.0714	-7.1	100	0.00
21	T	Acrylonitrile	2.5000	2.2695	9.2	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9991	0.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0053	-0.5	100	0.00
24	T	n-Hexane	-1.0000	1.1069	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.2317	-4.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.6872	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0213	-2.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.1323	-2.6	100	0.00
29	T	2-Butanone	-1.0000	0.9693	0.0	100	0.00
30	T	Propionitrile	5.0000	4.7359	5.3	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0261	-2.6	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0307	-3.1	100	0.00
33	C	Chloroform	1.0000	0.9816	1.8	100	0.00
34		1-Bromopropane	1.0000	1.0190	-1.9	100	0.00
35	T	Bromochloromethane	1.0000	0.9465	5.3	100	0.00
36	T	Tetrahydrofuran	5.0000	6.0837	-21.7#	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.4938	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	1.0282	-2.8	100	0.00
39	T	Cyclohexane	1.0000	1.0675	-6.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0207	-2.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0317	-0.6	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.8763	12.4	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.5018	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	-0.01
45	T	1,2-Dichloroethane	1.0000	1.0084	-0.8	100	0.00
46	T	Benzene	1.0000	1.0492	-4.9	100	0.00
47	T	Trichloroethene	1.0000	1.0378	-3.8	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0410	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9756	2.4	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	1.0000	0.9738	2.6	100	0.00
52	T	Dibromomethane	1.0000	0.9395	6.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.9056	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.7624	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9355	6.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7771	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5328	0.0	100	0.00
59	C	Toluene	1.0000	1.0621	-6.2	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8735	12.7	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	1.0000	0.9256	7.4	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	1.0066	-0.7	100	0.00
64	T	2-Hexanone	-1.0000	0.9130	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	1.0121	-1.2	100	0.00
66	T	Tetrachloroethene	1.0000	1.0254	-2.5	100	0.00
67	T	Dibromochloromethane	1.0000	0.8951	10.5	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9742	2.6	100	0.00
69	T	1-Chlorohexane	1.0000	1.0031	-0.3	100	0.00
70	P	Chlorobenzene	1.0000	1.0571	-5.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9863	1.4	100	0.00
72	C	Ethylbenzene	1.0000	1.0051	-0.5	100	0.00
73	T	m-,p-Xylene	2.0000	2.1041	-5.2	100	-0.01
74	T	o-Xylene	1.0000	1.0110	-1.1	100	0.00
75	T	Styrene	1.0000	0.9645	3.6	100	0.00
76	P	Bromoform	1.0000	0.8262	17.4	100	0.00
77	T	Isopropylbenzene	1.0000	1.0438	-4.4	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9248	7.5	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5470	0.0	100	-0.01
81	T	1,2,3-Trichloropropane	1.0000	0.7259	27.4#	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.6900	31.0#	100	0.00
83	T	n-Propylbenzene	1.0000	1.0982	-9.8	100	0.00
84	T	Bromobenzene	1.0000	1.0037	-0.4	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0460	-4.6	100	-0.01
86	T	2-Chlorotoluene	1.0000	1.1011	-10.1	100	-0.01
87	T	4-Chlorotoluene	1.0000	1.0171	-1.7	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9100	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0319	-3.2	100	-0.01
90	T	1,2,4-Trimethylbenzene	1.0000	1.0570	-5.7	100	-0.01
91	T	sec-Butylbenzene	1.0000	1.0949	-9.5	100	-0.01
92	T	p-Isopropyltoluene	1.0000	1.0755	-7.6	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0526	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0710	-7.1	100	0.00
95	T	n-Butylbenzene	1.0000	1.0821	-8.2	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0536	-5.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.8847	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9827	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9944	0.6	100	0.00
100	T	Naphthalene	1.0000	0.9349	6.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0560	-5.6	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140316.D 8260WTR.M Fri Jul 01 14:35:27 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	681288	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	479716	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	253621	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	6933	1.0030 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.00%#	
43) 1,2-Dichloroethane-d4	10.32	65	9000	1.0314 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.12%#	
58) Toluene-d8	13.04	98	25015	1.0589 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.24%#	
80) p-Bromofluorobenzene	17.02	95	10214	1.0283 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	21693	1.9048 ug/L	92
3) Chloromethane	3.37	50	28294	2.2252 ug/L	99
4) Vinyl Chloride	3.57	62	15095	2.1618 ug/L	90
5) 1,3-Butadiene	3.61	54	14228	0.5548 ug/L	81
6) Bromomethane	4.39	94	10021	2.1597 ug/L	92
7) Chloroethane	4.54	64	8637	1.9576 ug/L	99
8) Trichlorofluoromethane	5.01	101	21198	1.9905 ug/L	99
9) Diethyl ether	5.55	59	166163	26.4440 ug/L	96
10) Isoprene	5.58	67	20113	2.1161 ug/L	98
11) Acrolein	5.79	56	13232	12.6601 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	13403	2.0228 ug/L	98
13) Acetone	5.90	43	5431	2.4882 ug/L	86
14) 1,1-Dichloroethene	6.11	61	26310	2.0465 ug/L	95
15) Tert-Butyl Alcohol	6.25	59	32448	48.6151 ug/L	96
16) Dimethyl Sulfide	6.39	62	10884	1.9412 ug/L	92
17) Iodomethane	6.64	142	4160	1.7736 ug/L	99
18) Methyl acetate	6.68	43	11835	2.0038 ug/L #	83
19) Methylene Chloride	6.94	84	16307	2.2119 ug/L	88
20) Carbon Disulfide	6.96	76	49030	2.0813 ug/L	98
21) Acrylonitrile	7.14	53	32708	12.0688 ug/L	93
22) Methyl Tert Butyl Ether	7.17	73	39510	2.0219 ug/L	98
23) trans-1,2-Dichloroethene	7.43	96	14262	2.0714 ug/L	91
24) n-Hexane	7.51	57	25227	2.1588 ug/L	95
25) Diisopropyl ether	7.90	45	823711	26.1894 ug/L	97
26) Vinyl Acetate	8.09	43	22167	1.6883 ug/L	93
27) 1,1-Dichloroethane	8.10	63	31011	2.0919 ug/L	96
28) Ethyl-Tert-Butyl ether	8.53	59	650758	25.7185 ug/L	98
29) 2-Butanone	8.72	43	6560	1.9633 ug/L #	79
30) Propionitrile	8.86	54	22752	25.0916 ug/L	98
31) 2,2-Dichloropropane	8.95	77	23903	2.1372 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	14680	1.9478 ug/L	78
33) Chloroform	9.27	83	26391	1.9872 ug/L	98
34) 1-Bromopropane	9.42	122	1777	1.9534 ug/L	97
35) Bromochloromethane	9.52	130	8058	1.9896 ug/L	93
36) Tetrahydrofuran	9.55	42	58983	25.3089 ug/L	92
38) 1,1,1-Trichloroethane	9.86	97	23448	2.0280 ug/L	99
39) Cyclohexane	9.88	56	30890	2.0535 ug/L	95
40) 1,1-Dichloropropene	10.08	75	20511	2.0367 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	494429	25.7332 ug/L	97
42) Carbon Tetrachloride	10.23	117	18006	1.8966 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140317.D 8260WTR.M Fri Jul 01 14:21:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	22120	2.0774 ug/L	98
46)	Benzene	10.48	78	60457	2.1271 ug/L	100
47)	Trichloroethene	11.35	130	14433	2.0579 ug/L	92
48)	Methylcyclohexane	11.43	83	23167	2.1040 ug/L	93
49)	1,2-Dichloropropane	11.59	63	16607	2.0289 ug/L	96
50)	1,4-Dioxane	11.94	88	2503	45.1726 ug/L	97
51)	Bromodichloromethane	11.93	83	19917	2.0166 ug/L	98
52)	Dibromomethane	12.02	93	8051	2.0330 ug/L	95
53)	2-Chloroethyl Vinyl Ether	12.31	63	7544	1.8383 ug/L	94
54)	4-Methyl-2-Pentanone	12.35	58	4674	1.8506 ug/L	83
55)	cis-1,3-Dichloropropene	12.69	75	23212	2.0243 ug/L	98
56)	Dimethyl Disulfide	12.97	79	10618	1.6635 ug/L	98
59)	Toluene	13.16	91	61452	2.1494 ug/L	98
60)	Ethyl Methacrylate	13.32	69	15594	1.9171 ug/L	93
62)	trans-1,3-Dichloropropene	13.38	75	19722	1.9399 ug/L	94
63)	1,1,2-Trichloroethane	13.63	97	10814	2.0438 ug/L	96
64)	2-Hexanone	13.59	43	9516	1.8942 ug/L	94
65)	1,3-Dichloropropane	13.98	76	20700	2.0758 ug/L	97
66)	Tetrachloroethene	14.11	166	14321	2.1019 ug/L	97
67)	Dibromochloromethane	14.41	129	12204	1.8998 ug/L	99
68)	1,2-Dibromoethane	14.71	107	10178	1.9929 ug/L	98
69)	1-Chlorohexane	14.85	91	19403	2.0392 ug/L	87
70)	Chlorobenzene	15.30	112	39367	2.1469 ug/L	81
71)	1,1,1,2-Tetrachloroethane	15.35	131	13145	2.0147 ug/L	96
72)	Ethylbenzene	15.35	106	20014	2.0853 ug/L	88
73)	m-,p-Xylene	15.45	106	50059	4.3155 ug/L	94
74)	o-Xylene	16.11	106	24284	2.0991 ug/L	92
75)	Styrene	16.16	104	39349	2.0217 ug/L	93
76)	Bromoform	16.71	173	7051	1.7700 ug/L	91
77)	Isopropylbenzene	16.62	105	63245	2.0952 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.87	83	11943	1.9403 ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	3577	1.9601 ug/L	70
82)	trans-1,4-Dichloro-2-Buten	17.18	53	4235	1.8198 ug/L	92
83)	n-Propylbenzene	17.22	91	77640	2.1306 ug/L	97
84)	Bromobenzene	17.34	156	15737	2.0668 ug/L	90
85)	1,3,5-Trimethylbenzene	17.45	105	53524	2.0955 ug/L	96
86)	2-Chlorotoluene	17.52	91	50361	2.0435 ug/L	96
87)	4-Chlorotoluene	17.58	91	51425	2.1888 ug/L	96
88)	a-Methylstyrene	17.91	118	23705	1.8452 ug/L	90
89)	tert-Butylbenzene	17.99	134	10746	2.0941 ug/L	69
90)	1,2,4-Trimethylbenzene	18.05	105	55973	2.1356 ug/L	97
91)	sec-Butylbenzene	18.30	105	66761	2.1835 ug/L	94
92)	p-Isopropyltoluene	18.50	119	55466	2.1287 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	31212	2.0827 ug/L	98
94)	1,4-Dichlorobenzene	18.85	146	31934	2.1076 ug/L	79
95)	n-Butylbenzene	19.12	91	53671	2.1004 ug/L	95
96)	1,2-Dichlorobenzene	19.44	146	29144	2.0713 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	20.61	75	1880	1.5595 ug/L	96
98)	1,2,4-Trichlorobenzene	21.96	180	19883	1.9991 ug/L	99
99)	Hexachlorobutadiene	22.15	225	8377	2.0258 ug/L	98
100)	Naphthalene	22.38	128	39370	1.9369 ug/L	98
101)	1,2,3-Trichlorobenzene	22.75	180	18357	1.9933 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140317.D 8260WTR.M Fri Jul 01 14:21:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

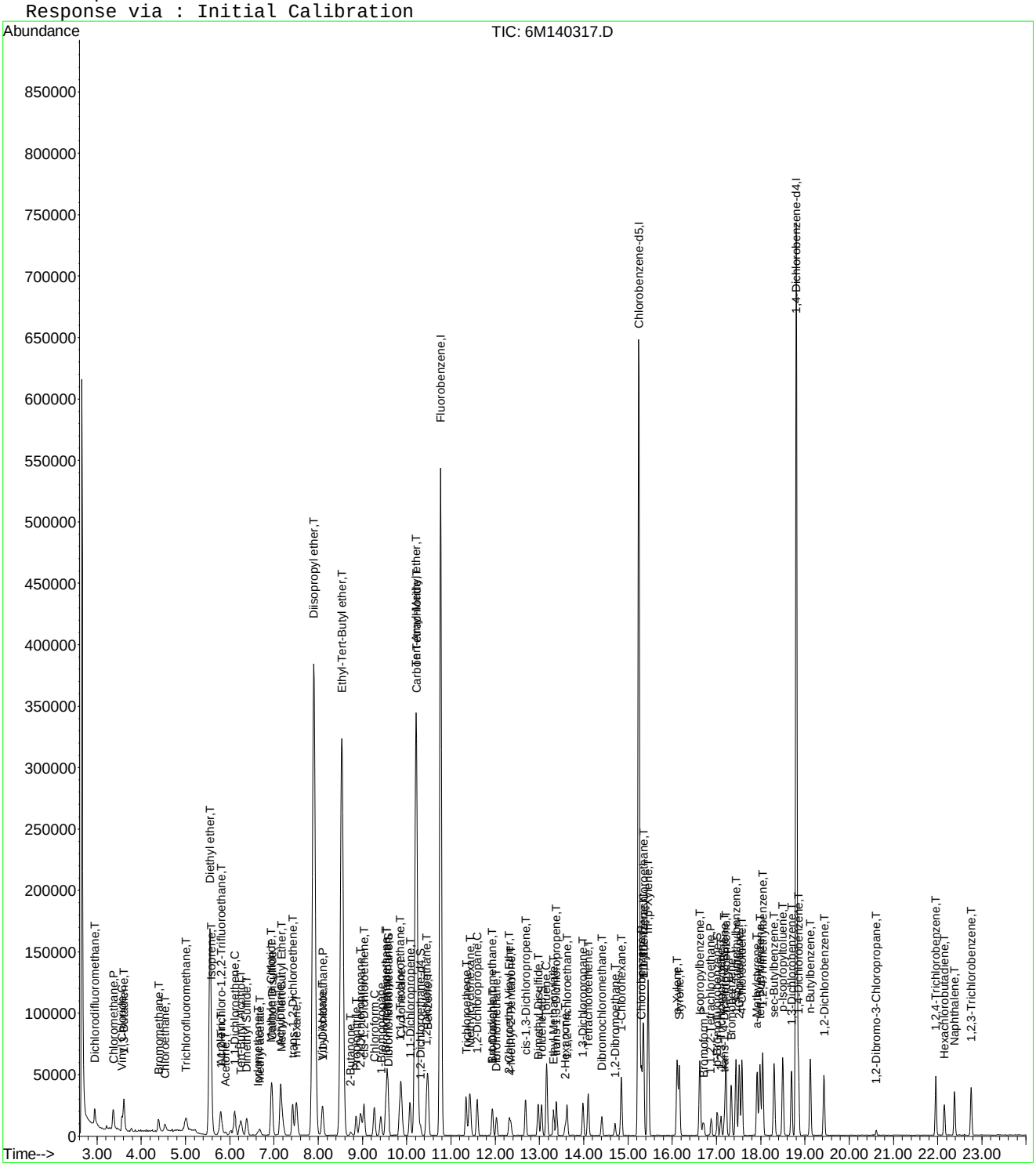

6M140317.D 8260WTR.M Fri Jul 01 14:21:24 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.9048	4.8	100	0.01
3	P	Chloromethane	2.0000	2.2252	-11.3	100	0.01
4	C	Vinyl Chloride	2.0000	2.1618	-8.1	100	0.01
5	T	1,3-Butadiene	-1.0000	0.5548	0.0	0	0.02
6	T	Bromomethane	2.0000	2.1597	-8.0	100	0.02
7	T	Chloroethane	2.0000	1.9576	2.1	100	0.01
8	T	Trichlorofluoromethane	2.0000	1.9905	0.5	100	0.01
9	T	Diethyl ether	25.0000	26.4441	-5.8	100	0.00
10	T	Isoprene	-1.0000	2.1161	0.0	100	0.01
11	T	Acrolein	12.5000	12.6601	-1.3	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.0228	-1.1	100	0.02
13	T	Acetone	-1.0000	2.4882	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0465	-2.3	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	48.6152	2.8	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	1.9412	0.0	100	0.00
17	T	Iodomethane	2.0000	1.7736	11.3	100	0.00
18	T	Methyl acetate	-1.0000	2.0038	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.2119	-10.6	100	0.00
20	T	Carbon Disulfide	2.0000	2.0813	-4.1	100	0.00
21	T	Acrylonitrile	12.5000	12.0688	3.4	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0219	-1.1	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0714	-3.6	100	0.01
24	T	n-Hexane	-1.0000	2.1588	0.0	100	0.01
25	T	Diisopropyl ether	25.0000	26.1894	-4.8	100	0.00
26	T	Vinyl Acetate	-1.0000	1.6883	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0919	-4.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.7185	-2.9	100	0.00
29	T	2-Butanone	-1.0000	1.9633	0.0	100	0.00
30	T	Propionitrile	25.0000	25.0916	-0.4	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1372	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9478	2.6	100	0.00
33	C	Chloroform	2.0000	1.9872	0.6	100	0.00
34		1-Bromopropane	2.0000	1.9534	2.3	100	0.01
35	T	Bromochloromethane	2.0000	1.9896	0.5	100	0.00
36	T	Tetrahydrofuran	25.0000	25.3089	-1.2	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0030	-0.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0280	-1.4	100	0.01
39	T	Cyclohexane	2.0000	2.0535	-2.7	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0367	-1.8	100	0.01
41	T	Tert-Amyl-Methyl ether	25.0000	25.7333	-2.9	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.8966	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0314	-3.1	100	0.01
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	2.0000	2.0774	-3.9	100	0.00
46	T	Benzene	2.0000	2.1271	-6.4	100	0.00
47	T	Trichloroethene	2.0000	2.0579	-2.9	100	0.01
48	T	Methylcyclohexane	-1.0000	2.1040	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0289	-1.4	100	0.00
50	T	1,4-Dioxane	-1.0000	45.1726	0.0	100	0.00
51	T	Bromodichloromethane	2.0000	2.0166	-0.8	100	0.00
52	T	Dibromomethane	2.0000	2.0330	-1.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.8383	8.1	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.8506	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	2.0243	-1.2	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.6635	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0589	-5.9	100	0.00
59	C	Toluene	2.0000	2.1494	-7.5	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9171	4.1	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	2.0000	1.9399	3.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	2.0438	-2.2	100	0.00
64	T	2-Hexanone	-1.0000	1.8942	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0758	-3.8	100	0.00
66	T	Tetrachloroethene	2.0000	2.1019	-5.1	100	0.00
67	T	Dibromochloromethane	2.0000	1.8998	5.0	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9929	0.4	100	0.00
69	T	1-Chlorohexane	2.0000	2.0392	-2.0	100	0.00
70	P	Chlorobenzene	2.0000	2.1469	-7.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	2.0147	-0.7	100	0.00
72	C	Ethylbenzene	2.0000	2.0853	-4.3	100	0.00
73	T	m-,p-Xylene	4.0000	4.3156	-7.9	100	0.00
74	T	o-Xylene	2.0000	2.0991	-5.0	100	0.00
75	T	Styrene	2.0000	2.0217	-1.1	100	0.00
76	P	Bromoform	2.0000	1.7700	11.5	100	0.00
77	T	Isopropylbenzene	2.0000	2.0952	-4.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9403	3.0	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0283	-2.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.9601	2.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.8198	9.0	100	0.00
83	T	n-Propylbenzene	2.0000	2.1306	-6.5	100	0.00
84	T	Bromobenzene	2.0000	2.0668	-3.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0955	-4.8	100	0.00
86	T	2-Chlorotoluene	2.0000	2.0435	-2.2	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1888	-9.4	100	0.00
88	T	a-Methylstyrene	-1.0000	1.8452	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0941	-4.7	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1356	-6.8	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1835	-9.2	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1287	-6.4	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.0827	-4.1	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1076	-5.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1004	-5.0	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0713	-3.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.5595	22.0#	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.9991	0.0	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0258	-1.3	100	0.00
100	T	Naphthalene	2.0000	1.9369	3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9933	0.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140317.D 8260WTR.M Fri Jul 01 14:35:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	665911	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	475530	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	251113	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	17208	2.5471 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.20%#		
43) 1,2-Dichloroethane-d4	10.32	65	22015	2.5813 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.32%#		
58) Toluene-d8	13.04	98	61675	2.6338 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.52%#		
80) p-Bromofluorobenzene	17.01	95	25621	2.6052 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.44%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	48247	4.3342 ug/L	98
3) Chloromethane	3.37	50	59455	4.7839 ug/L	98
4) Vinyl Chloride	3.57	62	33485	4.9063 ug/L	98
5) 1,3-Butadiene	3.60	54	23338	3.0943 ug/L	87
6) Bromomethane	4.39	94	22163	4.8867 ug/L	97
7) Chloroethane	4.54	64	20579	4.7720 ug/L	97
8) Trichlorofluoromethane	5.02	101	49493	4.7547 ug/L	100
9) Diethyl ether	5.55	59	316870	51.5928 ug/L	96
10) Isoprene	5.58	67	44245	4.7626 ug/L	95
11) Acrolein	5.79	56	25354	24.8183 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	30711	4.7419 ug/L	96
13) Acetone	5.90	43	11460	5.3716 ug/L	98
14) 1,1-Dichloroethene	6.11	61	59549	4.7390 ug/L	93
15) Tert-Butyl Alcohol	6.26	59	62697	96.1048 ug/L	99
16) Dimethyl Sulfide	6.39	62	26287	4.7966 ug/L	98
17) Iodomethane	6.65	142	13226	3.7502 ug/L	97
18) Methyl acetate	6.69	43	29044	5.0309 ug/L	94
19) Methylene Chloride	6.95	84	35243	4.8909 ug/L	87
20) Carbon Disulfide	6.97	76	111679	4.8502 ug/L	99
21) Acrylonitrile	7.15	53	65252	24.6331 ug/L	96
22) Methyl Tert Butyl Ether	7.18	73	93809	4.9114 ug/L	100
23) trans-1,2-Dichloroethene	7.43	96	32653	4.8519 ug/L	90
24) n-Hexane	7.51	57	57537	5.0375 ug/L	99
25) Diisopropyl ether	7.91	45	1560840	50.7720 ug/L	98
26) Vinyl Acetate	8.09	43	61001	4.7533 ug/L	96
27) 1,1-Dichloroethane	8.10	63	70715	4.8804 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	1249973	50.5407 ug/L	98
29) 2-Butanone	8.73	43	15743	4.8205 ug/L	90
30) Propionitrile	8.86	54	44610	50.3332 ug/L	100
31) 2,2-Dichloropropane	8.96	77	55177	5.0475 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	35623	4.8356 ug/L	87
33) Chloroform	9.26	83	62050	4.7802 ug/L	99
34) 1-Bromopropane	9.42	122	5012	4.7391 ug/L	100
35) Bromochloromethane	9.52	130	19897	5.0261 ug/L	99
36) Tetrahydrofuran	9.56	42	111306	48.8630 ug/L	94
38) 1,1,1-Trichloroethane	9.86	97	54902	4.8581 ug/L	98
39) Cyclohexane	9.88	56	69439	4.7228 ug/L	96
40) 1,1-Dichloropropene	10.08	75	47385	4.8139 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	949512	50.5598 ug/L	97
42) Carbon Tetrachloride	10.23	117	43932	4.7343 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140318.D 8260WTR.M Fri Jul 01 14:21:29 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	49969	4.8012 ug/L	99
46)	Benzene	10.48	78	138207	4.9748 ug/L	98
47)	Trichloroethene	11.35	130	33708	4.9171 ug/L	90
48)	Methylcyclohexane	11.43	83	52733	4.8997 ug/L	94
49)	1,2-Dichloropropane	11.59	63	39044	4.8802 ug/L	100
50)	1,4-Dioxane	11.94	88	4972	91.8036 ug/L	77
51)	Bromodichloromethane	11.93	83	46783	4.8462 ug/L	100
52)	Dibromomethane	12.02	93	19034	4.9173 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	18004	4.4884 ug/L	97
54)	4-Methyl-2-Pentanone	12.35	58	11300	4.5774 ug/L	94
55)	cis-1,3-Dichloropropene	12.69	75	54408	4.8545 ug/L	99
56)	Dimethyl Disulfide	12.97	79	26532	4.2526 ug/L	100
59)	Toluene	13.15	91	138309	4.8802 ug/L	99
60)	Ethyl Methacrylate	13.32	69	37662	4.6708 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	48146	4.7775 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	25707	4.9014 ug/L	99
64)	2-Hexanone	13.58	43	22497	4.5176 ug/L	99
65)	1,3-Dichloropropane	13.99	76	48531	4.9096 ug/L	95
66)	Tetrachloroethene	14.10	166	33388	4.9436 ug/L	96
67)	Dibromochloromethane	14.41	129	30609	4.8067 ug/L	100
68)	1,2-Dibromoethane	14.71	107	24604	4.8600 ug/L	99
69)	1-Chlorohexane	14.85	91	45159	4.7879 ug/L	91
70)	Chlorobenzene	15.30	112	88763	4.8834 ug/L	87
71)	1,1,1,2-Tetrachloroethane	15.35	131	31237	4.8298 ug/L	97
72)	Ethylbenzene	15.35	106	47581	5.0011 ug/L	93
73)	m-,p-Xylene	15.45	106	115328	10.0299 ug/L	93
74)	o-Xylene	16.11	106	56158	4.8969 ug/L	90
75)	Styrene	16.16	104	93922	4.8681 ug/L	93
76)	Bromoform	16.71	173	17414	4.4099 ug/L	98
77)	Isopropylbenzene	16.62	105	150490	5.0295 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.88	83	29598	4.8565 ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	9483	5.2483 ug/L	91
82)	trans-1,4-Dichloro-2-Buten	17.18	53	10928	4.7426 ug/L	99
83)	n-Propylbenzene	17.22	91	181410	5.0279 ug/L	97
84)	Bromobenzene	17.34	156	37810	5.0153 ug/L	91
85)	1,3,5-Trimethylbenzene	17.44	105	126034	4.9837 ug/L	97
86)	2-Chlorotoluene	17.52	91	116508	4.7747 ug/L	100
87)	4-Chlorotoluene	17.58	91	120486	5.1793 ug/L	93
88)	a-Methylstyrene	17.92	118	58815	4.6239 ug/L	99
89)	tert-Butylbenzene	17.98	134	24935	4.9076 ug/L	64
90)	1,2,4-Trimethylbenzene	18.05	105	130919	5.0449 ug/L	98
91)	sec-Butylbenzene	18.30	105	151691	5.0108 ug/L	98
92)	p-Isopropyltoluene	18.50	119	129076	5.0032 ug/L	96
93)	1,3-Dichlorobenzene	18.70	146	73279	4.9385 ug/L	97
94)	1,4-Dichlorobenzene	18.85	146	73402	4.8928 ug/L	89
95)	n-Butylbenzene	19.12	91	126335	4.9935 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	69034	4.9553 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	4890	4.0969 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	46999	4.7727 ug/L	99
99)	Hexachlorobutadiene	22.15	225	19578	4.7818 ug/L	97
100)	Naphthalene	22.39	128	98169	4.8780 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	44211	4.8487 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

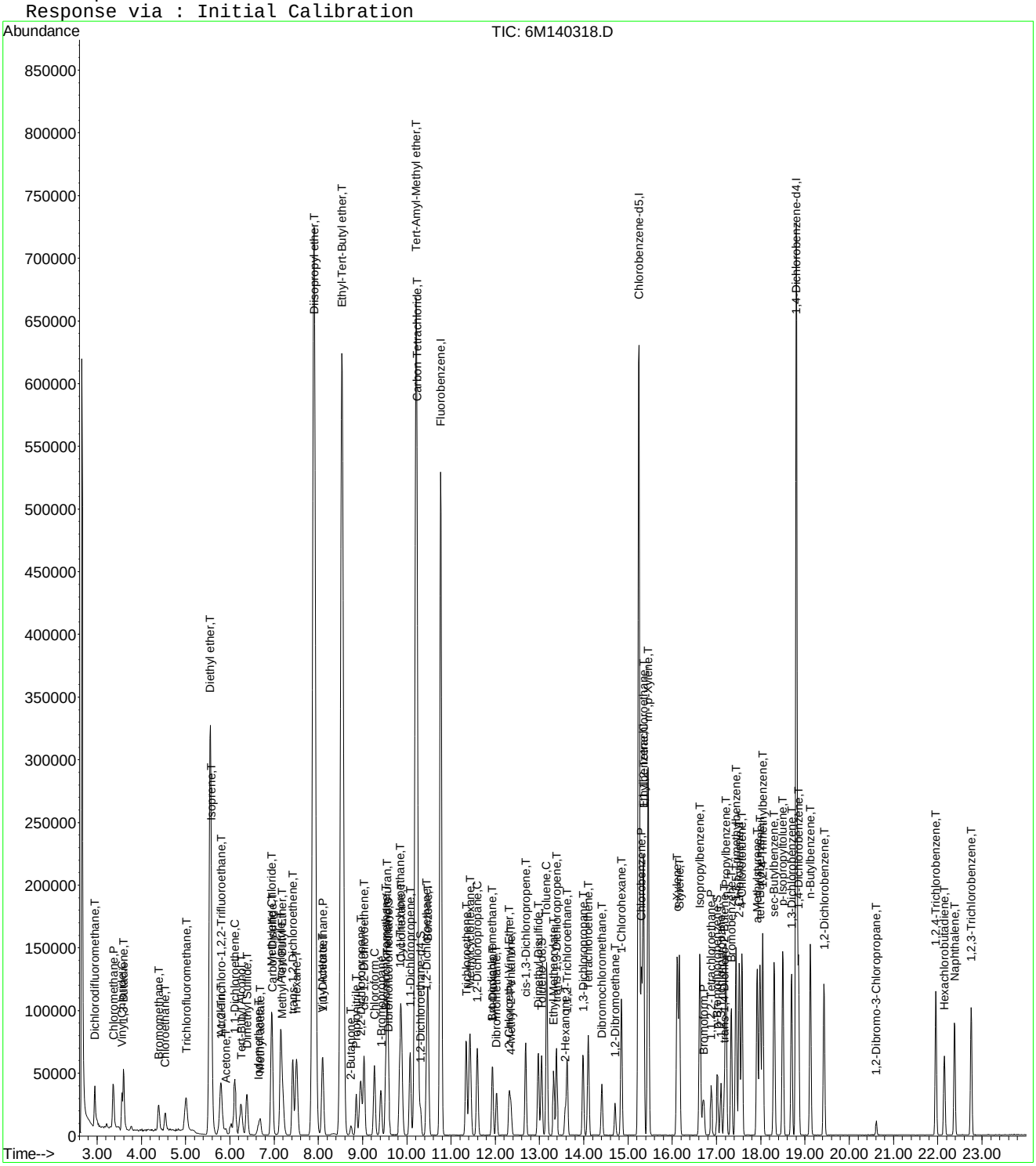

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3342	13.3	100	0.00
3	P	Chloromethane	5.0000	4.7839	4.3	100	0.00
4	C	Vinyl Chloride	5.0000	4.9063	1.9	100	0.00
5	T	1,3-Butadiene	5.0000	3.0943	38.1#	100	0.00
6	T	Bromomethane	5.0000	4.8868	2.3	100	0.02
7	T	Chloroethane	5.0000	4.7720	4.6	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7547	4.9	100	0.02
9	T	Diethyl ether	50.0000	51.5928	-3.2	100	0.00
10	T	Isoprene	5.0000	4.7626	4.7	100	0.00
11	T	Acrolein	25.0000	24.8183	0.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7420	5.2	100	0.02
13	T	Acetone	5.0000	5.3716	-7.4	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7390	5.2	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	96.1048	3.9	100	-0.03
16	T	Dimethyl Sulfide	5.0000	4.7966	4.1	100	0.00
17	T	Iodomethane	5.0000	3.7502	25.0#	100	0.01
18	T	Methyl acetate	5.0000	5.0309	-0.6	100	0.00
19	T	Methylene Chloride	5.0000	4.8909	2.2	100	0.00
20	T	Carbon Disulfide	5.0000	4.8502	3.0	100	0.00
21	T	Acrylonitrile	25.0000	24.6331	1.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.9113	1.8	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.8519	3.0	100	0.00
24	T	n-Hexane	5.0000	5.0375	-0.7	100	0.00
25	T	Diisopropyl ether	50.0000	50.7719	-1.5	100	0.00
26	T	Vinyl Acetate	5.0000	4.7533	4.9	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.8804	2.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	50.5407	-1.1	100	0.00
29	T	2-Butanone	5.0000	4.8205	3.6	100	0.00
30	T	Propionitrile	50.0000	50.3332	-0.7	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.0475	-0.9	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8356	3.3	100	0.00
33	C	Chloroform	5.0000	4.7802	4.4	100	0.00
34		1-Bromopropane	5.0000	4.7391	5.2	100	0.01
35	T	Bromochloromethane	5.0000	5.0261	-0.5	100	0.00
36	T	Tetrahydrofuran	50.0000	48.8630	2.3	100	0.00
37	S	Dibromofluoromethane	2.5000	2.5471	-1.9	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8581	2.8	100	0.00
39	T	Cyclohexane	5.0000	4.7228	5.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.8139	3.7	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	50.5598	-1.1	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.7344	5.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5813	-3.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	5.0000	4.8012	4.0	100	0.00
46	T	Benzene	5.0000	4.9748	0.5	100	0.00
47	T	Trichloroethene	5.0000	4.9171	1.7	100	0.00
48	T	Methylcyclohexane	5.0000	4.8997	2.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.8802	2.4	100	0.00
50	T	1,4-Dioxane	100.0000	91.8036	8.2	100	0.00
51	T	Bromodichloromethane	5.0000	4.8463	3.1	100	0.00
52	T	Dibromomethane	5.0000	4.9173	1.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.4884	10.2	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.5774	8.5	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8545	2.9	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2526	14.9	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6338	-5.4	100	0.00
59	C	Toluene	5.0000	4.8802	2.4	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.6708	6.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	5.0000	4.7775	4.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.9014	2.0	100	0.00
64	T	2-Hexanone	5.0000	4.5176	9.6	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9096	1.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.9436	1.1	100	0.00
67	T	Dibromochloromethane	5.0000	4.8067	3.9	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.8600	2.8	100	0.00
69	T	1-Chlorohexane	5.0000	4.7880	4.2	100	0.00
70	P	Chlorobenzene	5.0000	4.8834	2.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.8298	3.4	100	0.00
72	C	Ethylbenzene	5.0000	5.0011	-0.0	100	0.00
73	T	m-,p-Xylene	10.0000	10.0299	-0.3	100	-0.01
74	T	o-Xylene	5.0000	4.8970	2.1	100	-0.01
75	T	Styrene	5.0000	4.8681	2.6	100	0.00
76	P	Bromoform	5.0000	4.4099	11.8	100	0.00
77	T	Isopropylbenzene	5.0000	5.0295	-0.6	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8565	2.9	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6052	-4.2	100	-0.01
81	T	1,2,3-Trichloropropane	5.0000	5.2483	-5.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.7426	5.1	100	0.00
83	T	n-Propylbenzene	5.0000	5.0279	-0.6	100	0.00
84	T	Bromobenzene	5.0000	5.0153	-0.3	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9837	0.3	100	-0.01
86	T	2-Chlorotoluene	5.0000	4.7747	4.5	100	-0.01
87	T	4-Chlorotoluene	5.0000	5.1794	-3.6	100	-0.01
88	T	a-Methylstyrene	5.0000	4.6239	7.5	100	0.00
89	T	tert-Butylbenzene	5.0000	4.9076	1.8	100	-0.01
90	T	1,2,4-Trimethylbenzene	5.0000	5.0449	-0.9	100	-0.01
91	T	sec-Butylbenzene	5.0000	5.0108	-0.2	100	-0.01
92	T	p-Isopropyltoluene	5.0000	5.0032	-0.1	100	-0.01
93	T	1,3-Dichlorobenzene	5.0000	4.9385	1.2	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8928	2.1	100	0.00
95	T	n-Butylbenzene	5.0000	4.9935	0.1	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.9553	0.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.0969	18.1	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7727	4.5	100	-0.01
99	T	Hexachlorobutadiene	5.0000	4.7818	4.4	100	0.00
100	T	Naphthalene	5.0000	4.8780	2.4	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.8487	3.0	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140318.D 8260WTR.M Fri Jul 01 14:36:23 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:33 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	668919	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	478690	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	258443	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	70098	10.3290 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.32%#		
43) 1,2-Dichloroethane-d4	10.31	65	89020	10.3908 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.56%#		
58) Toluene-d8	13.04	98	243575	10.3332 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.32%#		
80) p-Bromofluorobenzene	17.01	95	104612	10.3355 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	240030	21.4659 ug/L	100
3) Chloromethane	3.37	50	274164	21.9607 ug/L	99
4) Vinyl Chloride	3.56	62	134656	19.6412 ug/L	99
5) 1,3-Butadiene	3.60	54	109113	26.0590 ug/L	94
6) Bromomethane	4.39	94	95323	20.9234 ug/L	99
7) Chloroethane	4.54	64	90881	20.9793 ug/L	97
8) Trichlorofluoromethane	5.00	101	210753	20.1557 ug/L	99
9) Diethyl ether	5.55	59	494080	80.0844 ug/L	96
10) Isoprene	5.58	67	199958	21.4269 ug/L	96
11) Acrolein	5.79	56	40308	39.2789 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	131653	20.2365 ug/L	96
13) Acetone	5.89	43	44542	20.7841 ug/L	99
14) 1,1-Dichloroethene	6.11	61	254255	20.1429 ug/L	95
15) Tert-Butyl Alcohol	6.25	59	101804	155.3480 ug/L	98
16) Dimethyl Sulfide	6.39	62	115970	21.0658 ug/L	96
17) Iodomethane	6.65	142	79774	18.0326 ug/L	94
18) Methyl acetate	6.69	43	119945	20.6831 ug/L	98
19) Methylene Chloride	6.93	84	145226	20.0632 ug/L	90
20) Carbon Disulfide	6.97	76	495098	21.4053 ug/L	100
21) Acrylonitrile	7.15	53	104807	39.3874 ug/L	95
22) Methyl Tert Butyl Ether	7.18	73	394607	20.5667 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	135387	20.0268 ug/L	87
24) n-Hexane	7.51	57	243963	21.2635 ug/L	99
25) Diisopropyl ether	7.89	45	2475744	80.1704 ug/L	98
26) Vinyl Acetate	8.09	43	239974	18.6153 ug/L	97
27) 1,1-Dichloroethane	8.10	63	295851	20.3263 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	1992124	80.1862 ug/L	98
29) 2-Butanone	8.73	43	66102	20.1493 ug/L	96
30) Propionitrile	8.85	54	71515	80.3272 ug/L	99
31) 2,2-Dichloropropane	8.96	77	220142	20.0476 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	149673	20.2260 ug/L	73
33) Chloroform	9.26	83	260745	19.9968 ug/L	99
34) 1-Bromopropane	9.42	122	23773	20.6056 ug/L	99
35) Bromochloromethane	9.52	130	82689	20.7938 ug/L	100
36) Tetrahydrofuran	9.56	42	173501	75.8239 ug/L	94
38) 1,1,1-Trichloroethane	9.86	97	230314	20.2881 ug/L	98
39) Cyclohexane	9.88	56	309021	20.9230 ug/L	96
40) 1,1-Dichloropropene	10.08	75	198240	20.0489 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1504867	79.7712 ug/L	98
42) Carbon Tetrachloride	10.23	117	197807	21.2209 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140319.D 8260WTR.M Fri Jul 01 14:21:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:33 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	213475	20.4192 ug/L	98
46)	Benzene	10.48	78	563224	20.1824 ug/L	97
47)	Trichloroethene	11.35	130	140565	20.4123 ug/L	91
48)	Methylcyclohexane	11.43	83	229029	21.1847 ug/L	95
49)	1,2-Dichloropropane	11.59	63	163803	20.3822 ug/L	99
50)	1,4-Dioxane	11.94	88	8245	151.5521 ug/L	87
51)	Bromodichloromethane	11.94	83	198529	20.4731 ug/L	99
52)	Dibromomethane	12.02	93	81976	21.0826 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.31	63	84440	20.9563 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	50113	20.2084 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	230873	20.5069 ug/L	99
56)	Dimethyl Disulfide	12.97	79	127875	20.4039 ug/L	99
59)	Toluene	13.15	91	575595	20.1756 ug/L	100
60)	Ethyl Methacrylate	13.32	69	174096	21.4487 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	209635	20.6648 ug/L	96
63)	1,1,2-Trichloroethane	13.62	97	109279	20.6980 ug/L	99
64)	2-Hexanone	13.58	43	101714	20.2903 ug/L	96
65)	1,3-Dichloropropane	13.99	76	199227	20.0217 ug/L	94
66)	Tetrachloroethene	14.10	166	135754	19.9678 ug/L	93
67)	Dibromochloromethane	14.41	129	135289	21.1051 ug/L	100
68)	1,2-Dibromoethane	14.71	107	105892	20.7786 ug/L	100
69)	1-Chlorohexane	14.85	91	199253	20.9862 ug/L	90
70)	Chlorobenzene	15.30	112	368915	20.1622 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	134691	20.6882 ug/L	97
72)	Ethylbenzene	15.35	106	198149	20.6895 ug/L	94
73)	m-,p-Xylene	15.45	106	479614	41.4358 ug/L	94
74)	o-Xylene	16.10	106	239170	20.7178 ug/L	94
75)	Styrene	16.16	104	410666	21.1448 ug/L	94
76)	Bromoform	16.71	173	82284	20.7000 ug/L	97
77)	Isopropylbenzene	16.62	105	620142	20.5887 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	128022	20.4105 ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	39329	21.1491 ug/L	80
82)	trans-1,4-Dichloro-2-Buten	17.18	53	50449	21.2733 ug/L	99
83)	n-Propylbenzene	17.22	91	763535	20.5616 ug/L	97
84)	Bromobenzene	17.34	156	157241	20.2655 ug/L	90
85)	1,3,5-Trimethylbenzene	17.44	105	534922	20.5522 ug/L	97
86)	2-Chlorotoluene	17.52	91	480540	19.1348 ug/L	100
87)	4-Chlorotoluene	17.58	91	506904	21.1723 ug/L	93
88)	a-Methylstyrene	17.92	118	283013	21.6190 ug/L	99
89)	tert-Butylbenzene	17.98	134	108977	20.8400 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	555658	20.8047 ug/L	98
91)	sec-Butylbenzene	18.30	105	646673	20.7557 ug/L	97
92)	p-Isopropyltoluene	18.50	119	553560	20.8482 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	308829	20.2225 ug/L	96
94)	1,4-Dichlorobenzene	18.85	146	309174	20.0243 ug/L	95
95)	n-Butylbenzene	19.12	91	539602	20.7232 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	290193	20.2396 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	25172	20.4911 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	206634	20.3883 ug/L	99
99)	Hexachlorobutadiene	22.15	225	84200	19.9820 ug/L	100
100)	Naphthalene	22.38	128	449397	21.6970 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	193555	20.6254 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140319.D 8260WTR.M Fri Jul 01 14:21:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

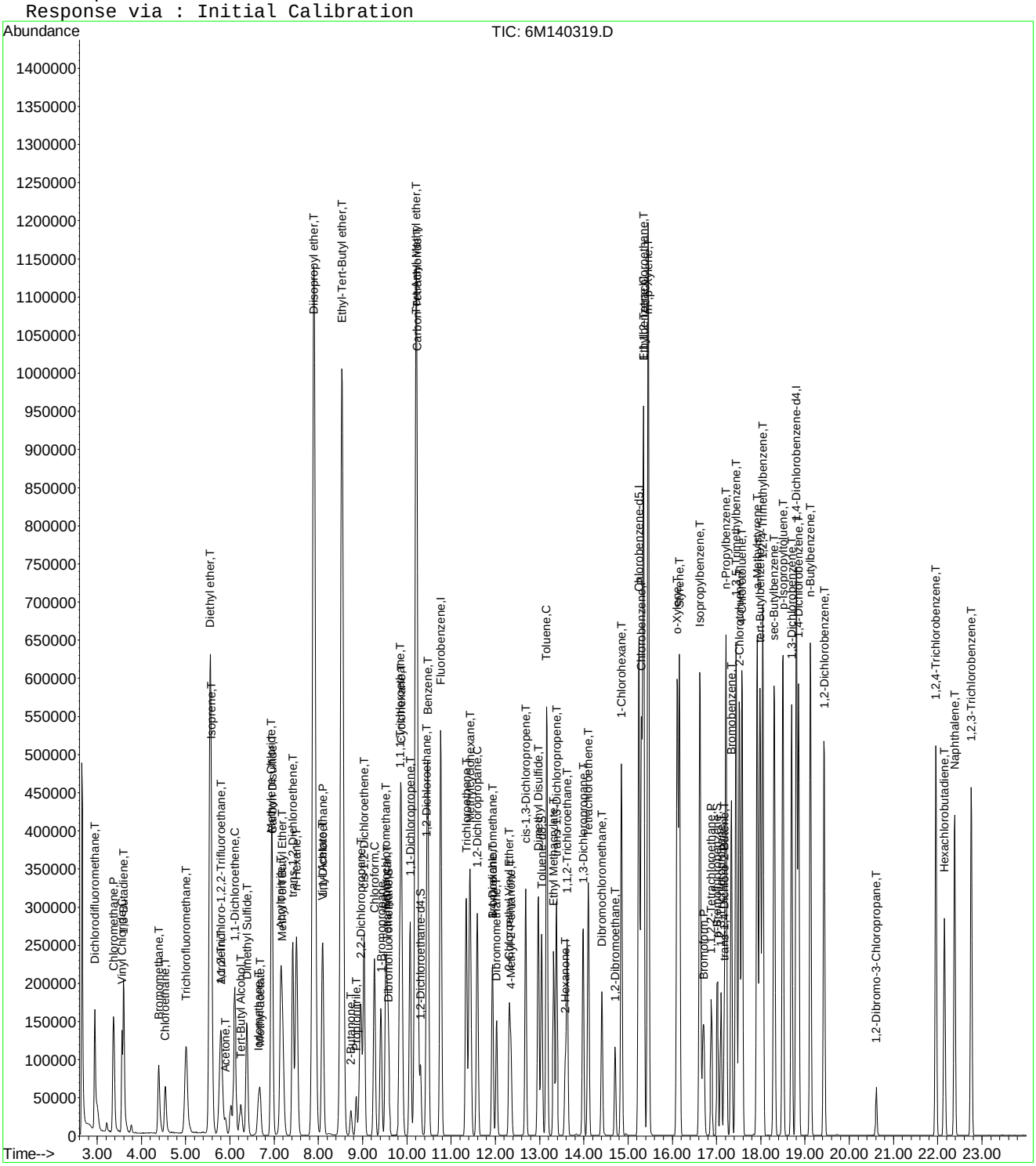

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:42 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	665194	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	476977	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	264882	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	171183	25.3652 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.48%		
43) 1,2-Dichloroethane-d4	10.31	65	211795	24.8600 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.44%		
58) Toluene-d8	13.04	98	584965	24.9051 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.64%		
80) p-Bromofluorobenzene	17.02	95	257496	24.8219 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.28%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	582153	52.3535 ug/L	99
3) Chloromethane	3.37	50	615809	49.6030 ug/L	100
4) Vinyl Chloride	3.56	62	346419	50.8123 ug/L	99
5) 1,3-Butadiene	3.59	54	204917	52.0480 ug/L	96
6) Bromomethane	4.39	94	214126	47.2638 ug/L	99
7) Chloroethane	4.53	64	215766	50.0871 ug/L	96
8) Trichlorofluoromethane	5.00	101	495602	47.6630 ug/L	100
9) Diethyl ether	5.56	59	630517	102.7715 ug/L	96
10) Isoprene	5.58	67	475494	51.2378 ug/L	96
11) Acrolein	5.79	56	50160	49.1531 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	318041	49.1602 ug/L	97
13) Acetone	5.90	43	105863	49.6741 ug/L	100
14) 1,1-Dichloroethene	6.11	61	623813	49.6972 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	129177	198.2217 ug/L	99
16) Dimethyl Sulfide	6.39	62	276319	50.4741 ug/L	95
17) Iodomethane	6.65	142	239373	52.6044 ug/L	93
18) Methyl acetate	6.69	43	285035	49.4262 ug/L	98
19) Methylene Chloride	6.94	84	347634	48.2950 ug/L	88
20) Carbon Disulfide	6.96	76	1155252	50.2265 ug/L	100
21) Acrylonitrile	7.15	53	135608	51.2481 ug/L	98
22) Methyl Tert Butyl Ether	7.18	73	953213	49.9591 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	333111	49.5507 ug/L	89
24) n-Hexane	7.51	57	564061	49.4381 ug/L	98
25) Diisopropyl ether	7.90	45	3068443	99.9198 ug/L	98
26) Vinyl Acetate	8.09	43	646413	50.4243 ug/L	98
27) 1,1-Dichloroethane	8.10	63	718876	49.6666 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2470202	99.9864 ug/L	98
29) 2-Butanone	8.73	43	166904	51.1609 ug/L	95
30) Propionitrile	8.85	54	90037	101.6978 ug/L	100
31) 2,2-Dichloropropane	8.96	77	533000	48.8104 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	368400	50.0623 ug/L	73
33) Chloroform	9.26	83	633467	48.8534 ug/L	99
34) 1-Bromopropane	9.42	122	59330	50.9944 ug/L	99
35) Bromochloromethane	9.52	130	203288	51.4071 ug/L	99
36) Tetrahydrofuran	9.56	42	216772	95.2648 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	572724	50.7331 ug/L	99
39) Cyclohexane	9.87	56	723056	49.2305 ug/L	96
40) 1,1-Dichloropropene	10.08	75	488493	49.6802 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	1883625	100.4078 ug/L	98
42) Carbon Tetrachloride	10.23	117	502186	54.1766 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140320.D 8260WTR.M Fri Jul 01 14:21:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:42 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	522936	50.2998 ug/L	99
46)	Benzene	10.48	78	1376892	49.6154 ug/L	97
47)	Trichloroethene	11.35	130	341168	49.8206 ug/L	91
48)	Methylcyclohexane	11.43	83	532584	49.5388 ug/L	95
49)	1,2-Dichloropropane	11.59	63	402187	50.3249 ug/L	99
50)	1,4-Dioxane	11.94	88	11316	209.1652 ug/L	91
51)	Bromodichloromethane	11.94	83	499306	51.7788 ug/L	99
52)	Dibromomethane	12.03	93	200679	51.8998 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	214371	53.5004 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	126993	51.4974 ug/L	97
55)	cis-1,3-Dichloropropene	12.68	75	576590	51.5014 ug/L	99
56)	Dimethyl Disulfide	12.97	79	322099	51.6823 ug/L	98
59)	Toluene	13.15	91	1399906	49.2452 ug/L	99
60)	Ethyl Methacrylate	13.32	69	422208	52.2030 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	522454	51.6858 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	267159	50.7830 ug/L	98
64)	2-Hexanone	13.58	43	256820	51.4155 ug/L	96
65)	1,3-Dichloropropane	13.99	76	494920	49.9167 ug/L	94
66)	Tetrachloroethene	14.10	166	336402	49.6585 ug/L	94
67)	Dibromochloromethane	14.41	129	343402	53.7632 ug/L	100
68)	1,2-Dibromoethane	14.70	107	261585	51.5137 ug/L	100
69)	1-Chlorohexane	14.85	91	477655	50.4894 ug/L	92
70)	Chlorobenzene	15.30	112	903124	49.5353 ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.35	131	337691	52.0547 ug/L	98
72)	Ethylbenzene	15.35	106	484831	50.8048 ug/L	94
73)	m-,p-Xylene	15.46	106	1167250	101.2056 ug/L	95
74)	o-Xylene	16.11	106	590057	51.2966 ug/L	94
75)	Styrene	16.15	104	1015963	52.4987 ug/L	92
76)	Bromoform	16.72	173	210299	53.0943 ug/L	98
77)	Isopropylbenzene	16.62	105	1525364	50.8239 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	326482	50.7855 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	98816	51.8463 ug/L	83
82)	trans-1,4-Dichloro-2-Buten	17.18	53	129320	53.2061 ug/L	97
83)	n-Propylbenzene	17.22	91	1885010	49.5285 ug/L	98
84)	Bromobenzene	17.34	156	390005	49.0426 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	1335066	50.0475 ug/L	97
86)	2-Chlorotoluene	17.52	91	1274044	49.4983 ug/L	96
87)	4-Chlorotoluene	17.58	91	1171374	47.7365 ug/L	96
88)	a-Methylstyrene	17.92	118	690404	51.4571 ug/L	95
89)	tert-Butylbenzene	17.98	134	265842	49.6018 ug/L	70
90)	1,2,4-Trimethylbenzene	18.04	105	1381292	50.4604 ug/L	98
91)	sec-Butylbenzene	18.31	105	1599719	50.0966 ug/L	98
92)	p-Isopropyltoluene	18.50	119	1372031	50.4173 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	767298	49.0222 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	768779	48.5813 ug/L	95
95)	n-Butylbenzene	19.12	91	1348420	50.5266 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	726470	49.4362 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.62	75	64455	51.1937 ug/L	86
98)	1,2,4-Trichlorobenzene	21.97	180	516677	49.7405 ug/L	99
99)	Hexachlorobutadiene	22.16	225	213166	49.3581 ug/L	100
100)	Naphthalene	22.38	128	1126213	53.0520 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	479054	49.8076 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140320.D 8260WTR.M Fri Jul 01 14:21:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

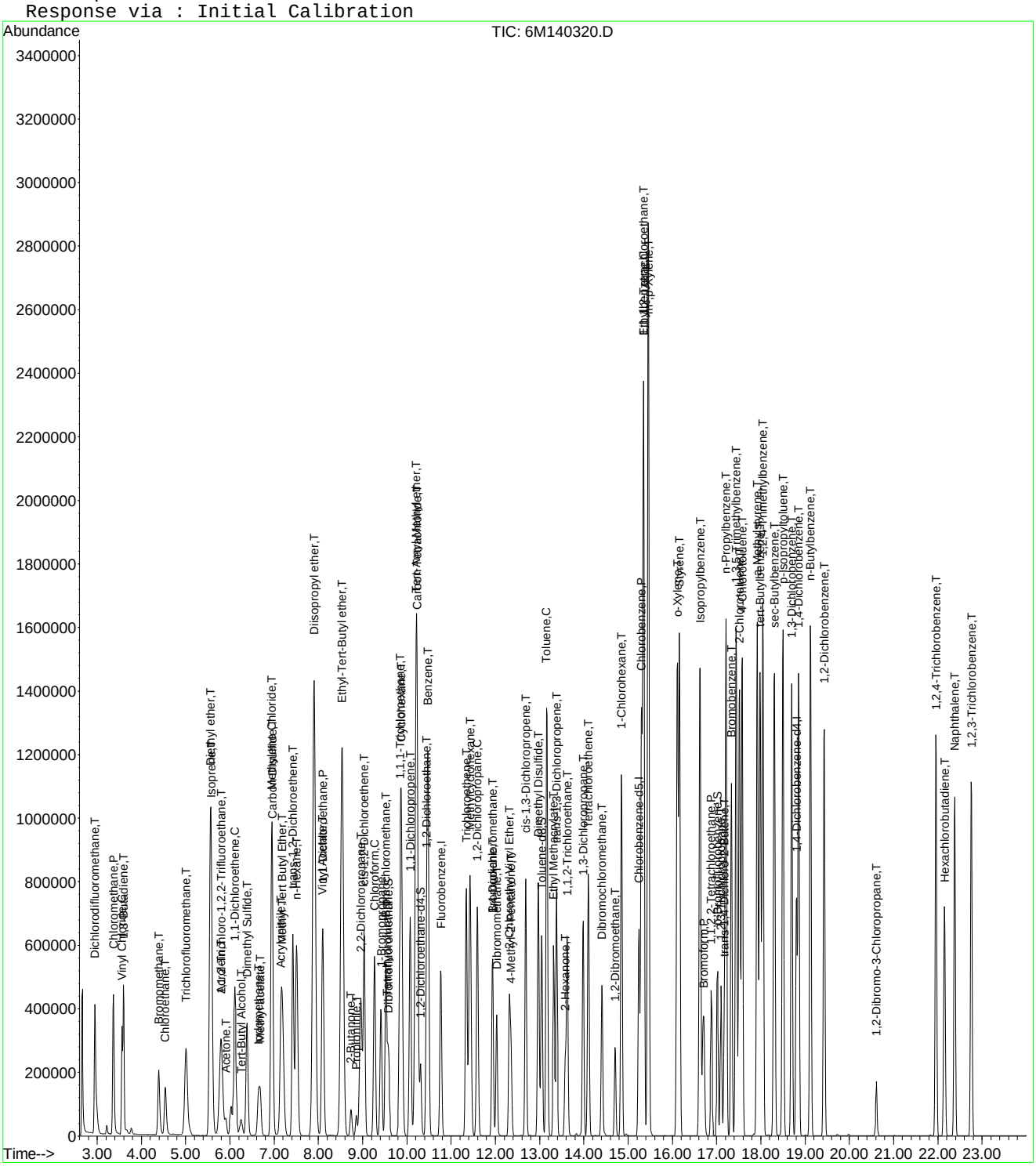

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:51 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	646485	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	471613	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	268377	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	322733	49.2052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 196.84%#		
43) 1,2-Dichloroethane-d4	10.31	65	408267	49.3082 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 197.24%#		
58) Toluene-d8	13.04	98	1099687	47.3521 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 189.40%#		
80) p-Bromofluorobenzene	17.02	95	500608	47.6287 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 190.52%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	1195098	110.5865 ug/L	100
3) Chloromethane	3.37	50	1126306	93.3487 ug/L	100
4) Vinyl Chloride	3.56	62	690730	104.2475 ug/L	100
5) 1,3-Butadiene	3.59	54	397047	106.9364 ug/L	97
6) Bromomethane	4.38	94	423232	96.1231 ug/L	100
7) Chloroethane	4.53	64	421078	100.5763 ug/L	96
8) Trichlorofluoromethane	5.00	101	1039911	102.9045 ug/L	99
9) Diethyl ether	5.56	59	1210825	203.0707 ug/L	96
10) Isoprene	5.57	67	926995	102.7810 ug/L	96
11) Acrolein	5.79	56	100610	101.4435 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	644973	102.5798 ug/L	97
13) Acetone	5.90	43	202374	97.7080 ug/L	98
14) 1,1-Dichloroethene	6.11	61	1233915	101.1469 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	264298	417.3014 ug/L	98
16) Dimethyl Sulfide	6.39	62	533770	100.3234 ug/L	95
17) Iodomethane	6.65	142	485581	108.8245 ug/L	92
18) Methyl acetate	6.69	43	562111	100.2930 ug/L	98
19) Methylene Chloride	6.94	84	680086	97.2151 ug/L	90
20) Carbon Disulfide	6.96	76	2214357	99.0589 ug/L	100
21) Acrylonitrile	7.15	53	269273	104.7069 ug/L	97
22) Methyl Tert Butyl Ether	7.18	73	1885141	101.6619 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	659412	100.9269 ug/L	89
24) n-Hexane	7.51	57	1100352	99.2333 ug/L	97
25) Diisopropyl ether	7.90	45	5806079	194.5388 ug/L	99
26) Vinyl Acetate	8.09	43	1275603	102.3848 ug/L	98
27) 1,1-Dichloroethane	8.10	63	1407131	100.0311 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	4736533	197.2691 ug/L	99
29) 2-Butanone	8.73	43	329619	103.9617 ug/L	96
30) Propionitrile	8.85	54	180672	209.9768 ug/L	99
31) 2,2-Dichloropropane	8.96	77	1063724	100.2315 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	723748	101.1973 ug/L	73
33) Chloroform	9.26	83	1245839	98.8604 ug/L	99
34) 1-Bromopropane	9.42	122	114449	100.7473 ug/L	100
35) Bromochloromethane	9.52	130	399705	104.0018 ug/L	100
36) Tetrahydrofuran	9.56	42	431461	195.1016 ug/L	95
38) 1,1,1-Trichloroethane	9.85	97	1132312	103.2053 ug/L	98
39) Cyclohexane	9.87	56	1422141	99.6310 ug/L	96
40) 1,1-Dichloropropene	10.08	75	970489	101.5559 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	3648605	200.1197 ug/L	98
42) Carbon Tetrachloride	10.23	117	1008047	111.8968 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140321.D 8260WTR.M Fri Jul 01 14:21:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:51 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	1026377	101.5814 ug/L	99
46)	Benzene	10.48	78	2663898	98.7698 ug/L	96
47)	Trichloroethene	11.35	130	659415	99.0807 ug/L	89
48)	Methylcyclohexane	11.43	83	1057163	101.1788 ug/L	95
49)	1,2-Dichloropropane	11.59	63	787420	101.3798 ug/L	97
50)	1,4-Dioxane	11.94	88	22910	435.7239 ug/L	83
51)	Bromodichloromethane	11.94	83	998026	106.4921 ug/L	100
52)	Dibromomethane	12.03	93	402229	107.0352 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	414426	106.4211 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	253505	105.7748 ug/L	99
55)	cis-1,3-Dichloropropene	12.68	75	1145435	105.2719 ug/L	99
56)	Dimethyl Disulfide	12.97	79	637376	105.2297 ug/L	98
59)	Toluene	13.16	91	2716275	96.6387 ug/L	99
60)	Ethyl Methacrylate	13.32	69	835175	104.4378 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	1039244	103.9807 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	530894	102.0629 ug/L	98
64)	2-Hexanone	13.58	43	511940	103.6564 ug/L	98
65)	1,3-Dichloropropane	13.99	76	975019	99.4570 ug/L	94
66)	Tetrachloroethene	14.10	166	663843	99.1087 ug/L	93
67)	Dibromochloromethane	14.41	129	698275	110.5657 ug/L	100
68)	1,2-Dibromoethane	14.70	107	530245	105.6082 ug/L	100
69)	1-Chlorohexane	14.86	91	934249	99.8757 ug/L	91
70)	Chlorobenzene	15.30	112	1757753	97.5073 ug/L	90
71)	1,1,1,2-Tetrachloroethane	15.35	131	672232	104.8024 ug/L	97
72)	Ethylbenzene	15.35	106	960737	101.8195 ug/L	96
73)	m-,p-Xylene	15.46	106	2273350	199.3511 ug/L	96
74)	o-Xylene	16.11	106	1166695	102.5802 ug/L	94
75)	Styrene	16.15	104	2021937	105.6696 ug/L	91
76)	Bromoform	16.72	173	442224	112.9184 ug/L	98
77)	Isopropylbenzene	16.62	105	3022582	101.8554 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	699051	107.3240 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	204344	105.8180 ug/L	81
82)	trans-1,4-Dichloro-2-Buten	17.18	53	271253	110.1481 ug/L	96
83)	n-Propylbenzene	17.22	91	3780776	98.0459 ug/L	98
84)	Bromobenzene	17.34	156	791175	98.1936 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	2708977	100.2286 ug/L	97
86)	2-Chlorotoluene	17.52	91	2557008	98.0494 ug/L	97
87)	4-Chlorotoluene	17.58	91	2386130	95.9746 ug/L	97
88)	a-Methylstyrene	17.92	118	1396050	102.6951 ug/L	95
89)	tert-Butylbenzene	17.99	134	544776	100.3227 ug/L	72
90)	1,2,4-Trimethylbenzene	18.04	105	2808112	101.2481 ug/L	99
91)	sec-Butylbenzene	18.31	105	3235910	100.0157 ug/L	98
92)	p-Isopropyltoluene	18.50	119	2792332	101.2720 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	1561532	98.4661 ug/L	94
94)	1,4-Dichlorobenzene	18.86	146	1567098	97.7396 ug/L	94
95)	n-Butylbenzene	19.12	91	2754111	101.8553 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	1483394	99.6302 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	20.62	75	143837	112.7555 ug/L	86
98)	1,2,4-Trichlorobenzene	21.97	180	1060844	100.7975 ug/L	98
99)	Hexachlorobutadiene	22.15	225	438054	100.1094 ug/L	100
100)	Naphthalene	22.38	128	2317282	107.7376 ug/L	99
101)	1,2,3-Trichlorobenzene	22.76	180	982434	100.8141 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140321.D 8260WTR.M Fri Jul 01 14:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

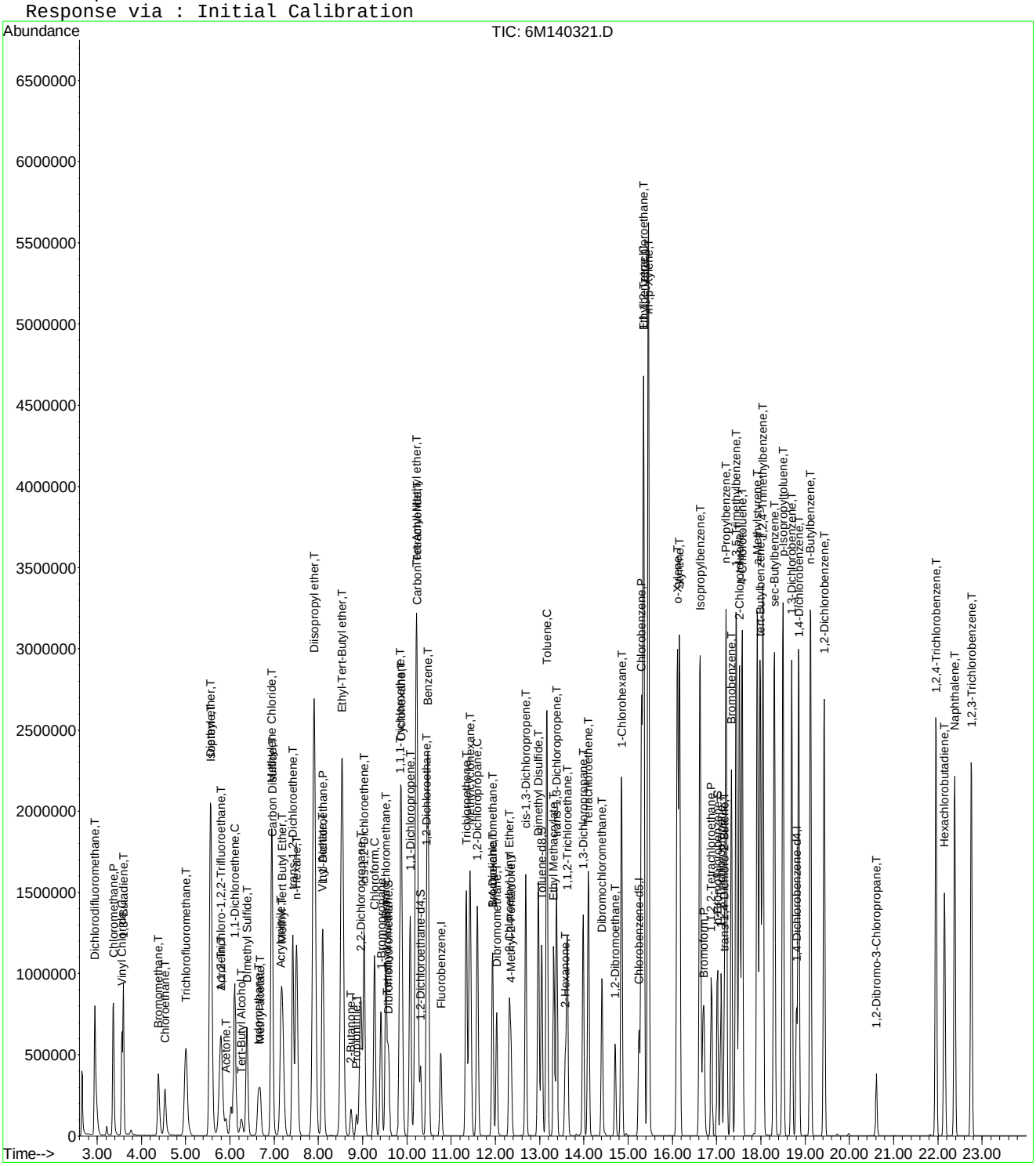

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:59 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	674210	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	486785	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	271900	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	671839	98.2191 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 392.88%#		
43) 1,2-Dichloroethane-d4	10.31	65	835948	96.8094 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 387.24%#		
58) Toluene-d8	13.04	98	2262915	94.4033 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 377.60%#		
80) p-Bromofluorobenzene	17.02	95	1044558	98.0934 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 392.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	2392226	212.2580 ug/L	100
3) Chloromethane	3.37	50	2218722	176.3266 ug/L	100
4) Vinyl Chloride	3.56	62	1383750	200.2527 ug/L	99
5) 1,3-Butadiene	3.59	54	790286	206.9928 ug/L	97
6) Bromomethane	4.38	94	916596	199.6138 ug/L	100
7) Chloroethane	4.53	64	905382	207.3615 ug/L	96
8) Trichlorofluoromethane	5.00	101	2065931	196.0277 ug/L	99
10) Isoprene	5.57	67	1944884	206.7723 ug/L	96
11) Acrolein	5.78	56	1541	1.4899 ug/L	69
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	1336247	203.7841 ug/L	97
13) Acetone	5.90	43	421648	195.2041 ug/L	99
14) 1,1-Dichloroethene	6.11	61	2551648	200.5632 ug/L	94
15) Tert-Butyl Alcohol	6.28	59	3198	4.8417 ug/L #	57
16) Dimethyl Sulfide	6.38	62	1109294	199.9208 ug/L	95
17) Iodomethane	6.65	142	972879	208.2422 ug/L	92
18) Methyl acetate	6.69	43	1135963	194.3462 ug/L	99
19) Methylene Chloride	6.94	84	1372201	188.0837 ug/L	89
20) Carbon Disulfide	6.96	76	4495945	192.8546 ug/L	99
21) Acrylonitrile	7.18	53	44700	16.6668 ug/L #	33
22) Methyl Tert Butyl Ether	7.18	73	3851369	199.1557 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	1353415	198.6299 ug/L	88
24) n-Hexane	7.51	57	2284673	197.5664 ug/L	97
26) Vinyl Acetate	8.09	43	2820141	217.0472 ug/L	98
27) 1,1-Dichloroethane	8.10	63	2873257	195.8566 ug/L	99
28) Ethyl-Tert-Butyl ether	8.56	59	6764	0.2701 ug/L #	47
29) 2-Butanone	8.73	43	664492	200.9620 ug/L	97
30) Propionitrile	8.74	54	1576	1.7563 ug/L #	81
31) 2,2-Dichloropropane	8.96	77	2196313	198.4415 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	1477699	198.1211 ug/L	88
33) Chloroform	9.26	83	2557143	194.5712 ug/L	99
34) 1-Bromopropane	9.41	122	241562	203.4107 ug/L	99
35) Bromochloromethane	9.52	130	819022	204.3432 ug/L	99
36) Tetrahydrofuran	9.56	42	4224	1.8315 ug/L #	75
38) 1,1,1-Trichloroethane	9.85	97	2330454	203.6760 ug/L	98
39) Cyclohexane	9.87	56	2930205	196.8399 ug/L	96
40) 1,1-Dichloropropene	10.08	75	2009314	201.6162 ug/L	98
42) Carbon Tetrachloride	10.23	117	2106944	224.2607 ug/L	99
45) 1,2-Dichloroethane	10.45	62	2101049	199.3915 ug/L	99
46) Benzene	10.48	78	5301493	188.4813 ug/L	94
47) Trichloroethene	11.34	130	1327069	191.1997 ug/L	87

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:59 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methylcyclohexane	11.43	83	2178870	199.9595 ug/L	95
49)	1,2-Dichloropropane	11.59	63	1619228	199.9016 ug/L	98
50)	1,4-Dioxane	11.93	88	2818	51.3914 ug/L #	14
51)	Bromodichloromethane	11.94	83	2039115	208.6317 ug/L	99
52)	Dibromomethane	12.03	93	816650	208.3783 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	836577	205.9918 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	515506	206.2494 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	2333363	205.6305 ug/L	99
56)	Dimethyl Disulfide	12.97	79	1322167	209.3111 ug/L	97
59)	Toluene	13.16	91	5329560	183.7033 ug/L	98
60)	Ethyl Methacrylate	13.32	69	1710374	207.2144 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	2115027	205.0216 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	1065320	198.4215 ug/L	98
64)	2-Hexanone	13.58	43	1038924	203.8025 ug/L	98
65)	1,3-Dichloropropane	13.99	76	1956962	193.3985 ug/L	94
66)	Tetrachloroethene	14.11	166	1338320	193.5775 ug/L	92
67)	Dibromochloromethane	14.41	129	1402954	215.2216 ug/L	99
68)	1,2-Dibromoethane	14.70	107	1067268	205.9412 ug/L	100
69)	1-Chlorohexane	14.86	91	1899241	196.7097 ug/L	91
70)	Chlorobenzene	15.31	112	3420251	183.8172 ug/L	87
71)	1,1,1,2-Tetrachloroethane	15.35	131	1330581	200.9750 ug/L	97
72)	Ethylbenzene	15.35	106	1873240	192.3394 ug/L	99
73)	m-,p-Xylene	15.46	106	4310843	366.2377 ug/L	95
74)	o-Xylene	16.11	106	2276447	193.9154 ug/L	96
75)	Styrene	16.16	104	3942983	199.6439 ug/L	88
76)	Bromoform	16.72	173	900340	222.7294 ug/L	97
77)	Isopropylbenzene	16.62	105	5752842	187.8178 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.88	83	1421698	215.4425 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	415115	212.1790 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	17.19	53	555836	222.7847 ug/L	92
83)	n-Propylbenzene	17.22	91	7011461	179.4705 ug/L	99
84)	Bromobenzene	17.34	156	1573131	192.7133 ug/L	88
85)	1,3,5-Trimethylbenzene	17.45	105	5208297	190.2034 ug/L	98
86)	2-Chlorotoluene	17.52	91	4893039	185.1943 ug/L	96
87)	4-Chlorotoluene	17.58	91	4739568	188.1643 ug/L	97
88)	a-Methylstyrene	17.92	118	2750894	199.7372 ug/L	94
89)	tert-Butylbenzene	17.99	134	1070344	194.5543 ug/L	74
90)	1,2,4-Trimethylbenzene	18.05	105	5338361	189.9838 ug/L	98
91)	sec-Butylbenzene	18.31	105	6128752	186.9735 ug/L	99
92)	p-Isopropyltoluene	18.50	119	5274399	188.8129 ug/L	100
93)	1,3-Dichlorobenzene	18.70	146	3017581	187.8153 ug/L	92
94)	1,4-Dichlorobenzene	18.86	146	3009321	185.2589 ug/L	92
95)	n-Butylbenzene	19.13	91	5193206	189.5718 ug/L	98
96)	1,2-Dichlorobenzene	19.43	146	2821487	187.0461 ug/L	91
97)	1,2-Dibromo-3-Chloropropan	20.62	75	291664	225.6764 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	2052522	192.4961 ug/L	98
99)	Hexachlorobutadiene	22.16	225	860118	194.0178 ug/L	100
100)	Naphthalene	22.38	128	4383238	201.1498 ug/L	99
101)	1,2,3-Trichlorobenzene	22.76	180	1893203	191.7570 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140322.D 8260WTR.M Fri Jul 01 14:22:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

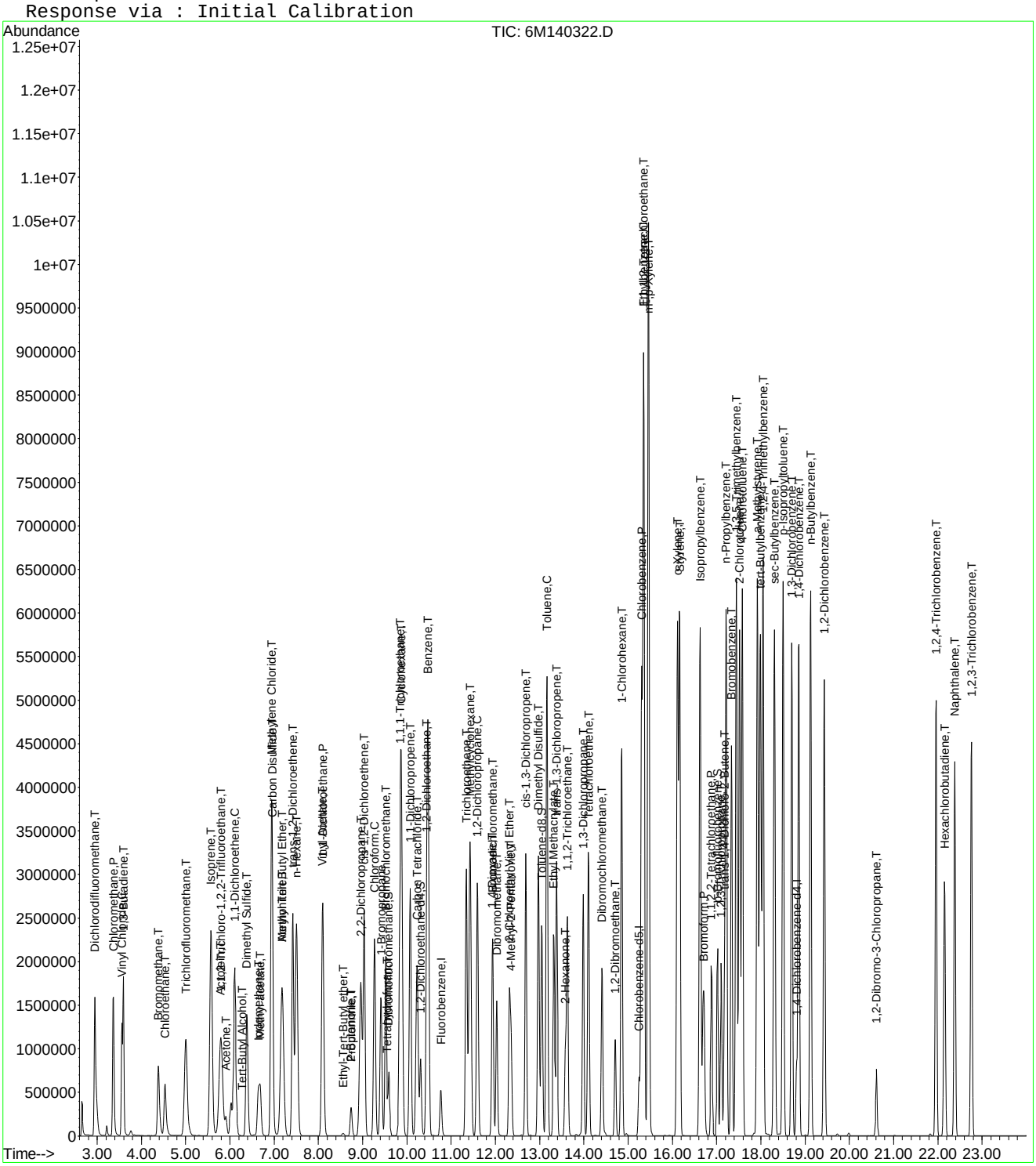

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:07 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	768752	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	513418	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	277427	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	1128188	144.6508 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 578.60%#		
43) 1,2-Dichloroethane-d4	10.31	65	1400537	142.2465 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 569.00%#		
58) Toluene-d8	13.04	98	3666921	145.0395 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 580.16%#		
80) p-Bromofluorobenzene	17.03	95	1580313	145.4490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 581.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.94	85	3603130	280.3824 ug/L	99
3) Chloromethane	3.36	50	3514669	244.9674 ug/L	99
4) Vinyl Chloride	3.56	62	2074164	263.2526 ug/L	98
5) 1,3-Butadiene	3.59	54	1213545	279.8694 ug/L	97
6) Bromomethane	4.37	94	1474577	281.6365 ug/L	100
7) Chloroethane	4.53	64	1490836	299.4574 ug/L	96
8) Trichlorofluoromethane	5.00	101	3451196	287.1972 ug/L	99
9) Diethyl ether	5.55	59	1755505	247.5940 ug/L	97
10) Isoprene	5.57	67	2862617	266.9137 ug/L	94
11) Acrolein	5.79	56	179556	152.2492 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	2228863	298.1095 ug/L	97
13) Acetone	5.91	43	694471	281.9693 ug/L	98
14) 1,1-Dichloroethene	6.10	61	4231203	291.6778 ug/L	94
15) Tert-Butyl Alcohol	6.29	59	515078	683.9134 ug/L	92
16) Dimethyl Sulfide	6.39	62	1850710	292.5220 ug/L	96
17) Iodomethane	6.64	142	1511597	283.4374 ug/L	92
18) Methyl acetate	6.69	43	1992359	298.9430 ug/L	99
19) Methylene Chloride	6.94	84	2215285	266.3004 ug/L	89
20) Carbon Disulfide	6.96	76	7083320	266.4739 ug/L	98
21) Acrylonitrile	7.15	53	497546	162.7001 ug/L	96
22) Methyl Tert Butyl Ether	7.18	73	6401984	290.3361 ug/L	98
23) trans-1,2-Dichloroethene	7.42	96	2224367	286.3050 ug/L	87
24) n-Hexane	7.50	57	3799046	288.1194 ug/L	96
25) Diisopropyl ether	7.90	45	9759184	274.9849 ug/L	99
26) Vinyl Acetate	8.09	43	4448993	300.2991 ug/L	99
27) 1,1-Dichloroethane	8.10	63	4699381	280.9398 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	8098177	283.6338 ug/L	99
29) 2-Butanone	8.73	43	1086721	288.2380 ug/L	98
30) Propionitrile	8.86	54	298217	291.4641 ug/L	98
31) 2,2-Dichloropropane	8.95	77	3622985	287.0872 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	2417494	284.2622 ug/L	71
33) Chloroform	9.26	83	4185224	279.2874 ug/L	99
34) 1-Bromopropane	9.41	122	399109	294.5307 ug/L	100
35) Bromochloromethane	9.52	130	1339573	293.1163 ug/L	99
36) Tetrahydrofuran	9.56	42	723977	275.3063 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3817009	292.5710 ug/L	97
39) Cyclohexane	9.88	56	4836948	284.9676 ug/L	96
40) 1,1-Dichloropropene	10.07	75	3335607	293.5361 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	6187488	285.3971 ug/L	98
42) Carbon Tetrachloride	10.23	117	3426898	319.8971 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140323.D 8260WTR.M Fri Jul 01 14:22:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:07 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	3436626	286.0301 ug/L	99
46)	Benzene	10.48	78	8206846	255.8911 ug/L	92
47)	Trichloroethene	11.34	130	2157856	272.6623 ug/L	85
48)	Methylcyclohexane	11.43	83	3572510	287.5366 ug/L	94
49)	1,2-Dichloropropane	11.59	63	2654885	287.4504 ug/L	98
50)	1,4-Dioxane	11.94	88	37500	599.7769 ug/L	90
51)	Bromodichloromethane	11.93	83	3309122	296.9343 ug/L	99
52)	Dibromomethane	12.02	93	1336996	299.1959 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	1349189	291.3572 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	816641	286.5491 ug/L	98
55)	cis-1,3-Dichloropropene	12.69	75	3726475	288.0131 ug/L	98
56)	Dimethyl Disulfide	12.97	79	2153813	299.0355 ug/L	97
59)	Toluene	13.16	91	7972275	260.5398 ug/L	94
60)	Ethyl Methacrylate	13.32	69	2708040	311.0642 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	3319850	305.1184 ug/L	96
63)	1,1,2-Trichloroethane	13.62	97	1658699	292.9155 ug/L	98
64)	2-Hexanone	13.58	43	1609874	299.4219 ug/L	99
65)	1,3-Dichloropropane	13.99	76	3035134	284.3902 ug/L	93
66)	Tetrachloroethene	14.10	166	2112313	289.6805 ug/L	90
67)	Dibromochloromethane	14.41	129	2168054	315.3397 ug/L	99
68)	1,2-Dibromoethane	14.71	107	1650327	301.9297 ug/L	99
69)	1-Chlorohexane	14.85	91	2920904	286.8330 ug/L	90
70)	Chlorobenzene	15.30	112	5078928	258.8012 ug/L	85
71)	1,1,1,2-Tetrachloroethane	15.35	131	1989897	284.9688 ug/L	97
72)	Ethylbenzene	15.35	106	2784005	271.0260 ug/L	89
73)	m-,p-Xylene	15.46	106	6169523	496.9567 ug/L	82
74)	o-Xylene	16.12	106	3353804	270.8685 ug/L	99
75)	Styrene	16.16	104	5692194	273.2606 ug/L	85
76)	Bromoform	16.71	173	1364903	320.1393 ug/L	96
77)	Isopropylbenzene	16.63	105	8032217	248.6314 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.88	83	2127089	315.9149 ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	617415	309.2940 ug/L	88
82)	trans-1,4-Dichloro-2-Buten	17.18	53	846450	332.5067 ug/L	93
83)	n-Propylbenzene	17.22	91	9328034	234.0103 ug/L	95
84)	Bromobenzene	17.34	156	2312758	277.6754 ug/L	88
85)	1,3,5-Trimethylbenzene	17.45	105	7210752	258.0855 ug/L	99
86)	2-Chlorotoluene	17.53	91	7014220	260.1890 ug/L	97
87)	4-Chlorotoluene	17.59	91	6424073	249.9594 ug/L	98
88)	a-Methylstyrene	17.92	118	3960625	281.8443 ug/L	93
89)	tert-Butylbenzene	18.00	134	1565290	278.8513 ug/L	79
90)	1,2,4-Trimethylbenzene	18.06	105	7348747	256.3200 ug/L	97
91)	sec-Butylbenzene	18.31	105	8392860	250.9449 ug/L	98
92)	p-Isopropyltoluene	18.51	119	7284847	255.5874 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	4306096	262.6735 ug/L	90
94)	1,4-Dichlorobenzene	18.85	146	4284929	258.5323 ug/L	90
95)	n-Butylbenzene	19.12	91	7177388	256.7823 ug/L	99
96)	1,2-Dichlorobenzene	19.44	146	4035185	262.1770 ug/L	90
97)	1,2-Dibromo-3-Chloropropan	20.61	75	433780	328.9526 ug/L	84
98)	1,2,4-Trichlorobenzene	21.97	180	2937231	269.9807 ug/L	97
99)	Hexachlorobutadiene	22.15	225	1256182	277.7132 ug/L	99
100)	Naphthalene	22.39	128	6036194	271.4865 ug/L	97
101)	1,2,3-Trichlorobenzene	22.76	180	2707781	268.7993 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140323.D 8260WTR.M Fri Jul 01 14:22:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

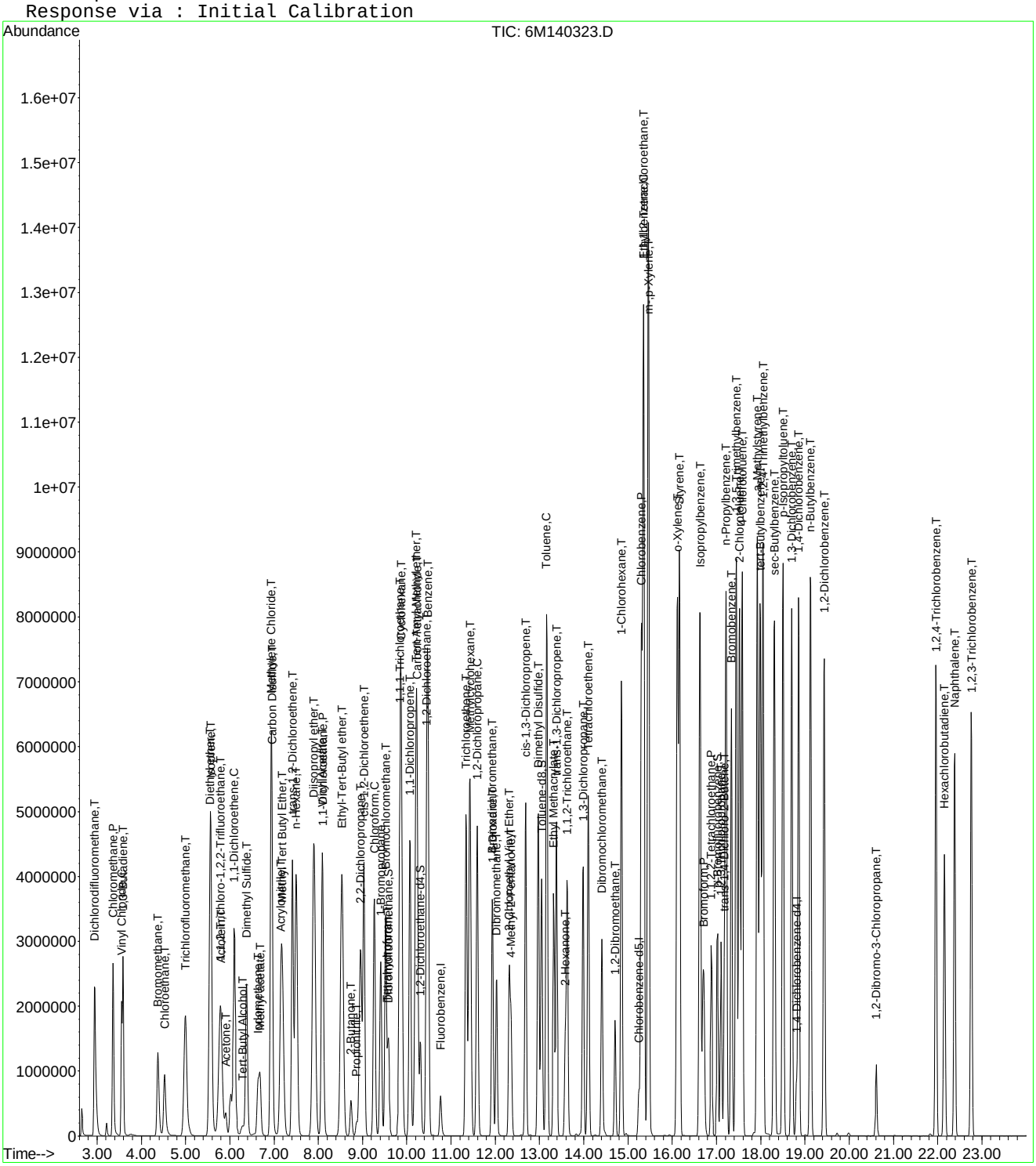

6M140323.D 8260WTR.M Fri Jul 01 14:22:13 2016 Page 3

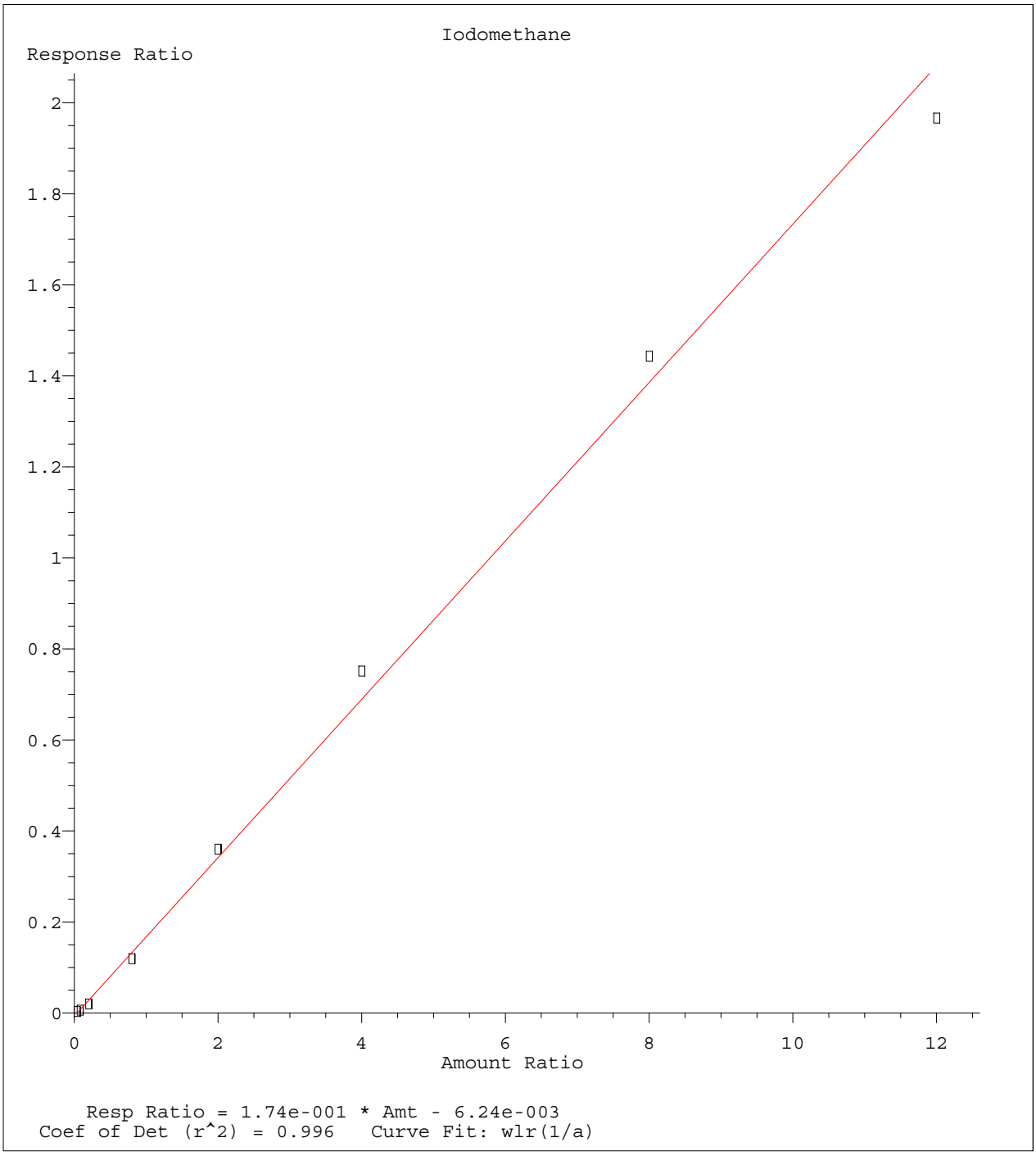

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

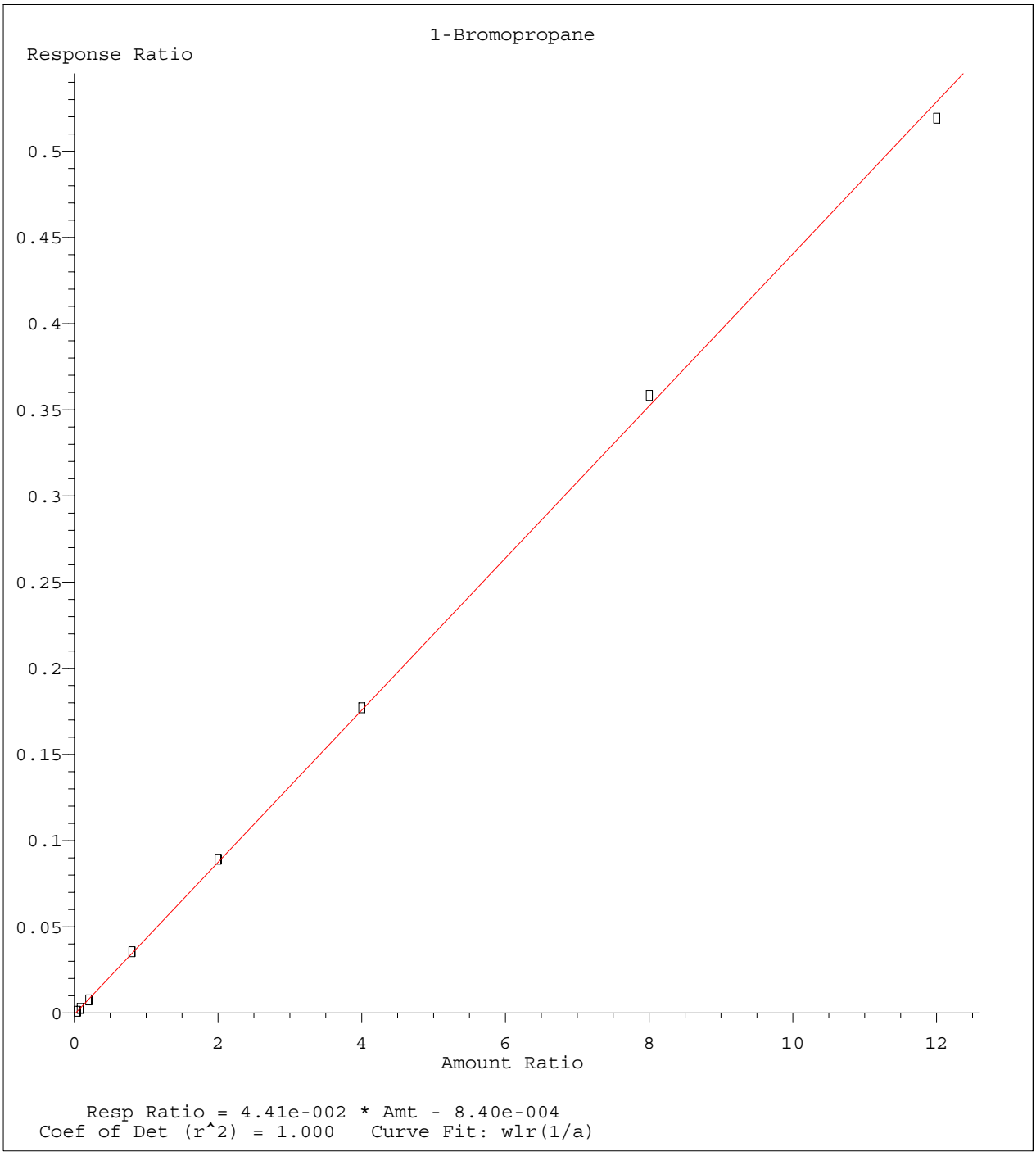

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

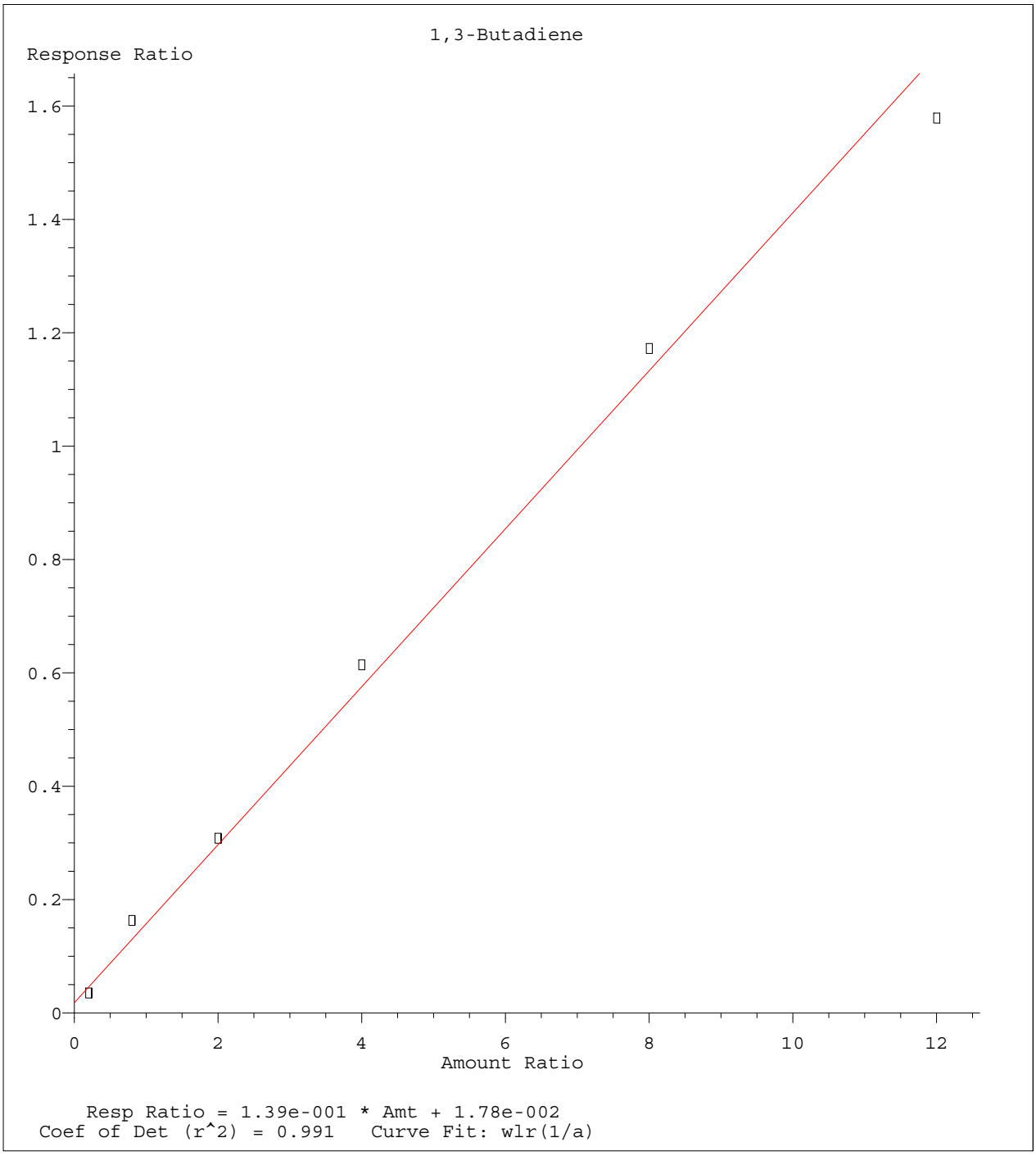

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:31 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	713701	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	500221	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	261664	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	181470	25.0619 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.24%		
43) 1,2-Dichloroethane-d4	10.31	65	220889	24.1652 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.68%		
58) Toluene-d8	13.04	98	608395	24.6990 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.80%		
80) p-Bromofluorobenzene	17.02	95	256905	25.0695 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	485701	40.7108 ug/L	100
3) Chloromethane	3.37	50	521316	39.1377 ug/L	100
4) Vinyl Chloride	3.55	62	337528	46.1434 ug/L	100
5) 1,3-Butadiene	3.60	54	155736	35.9374 ug/L	97
6) Bromomethane	4.37	94	235295	48.4066 ug/L	100
7) Chloroethane	4.52	64	239156	51.7436 ug/L	97
8) Trichlorofluoromethane	4.99	101	525851	47.1350 ug/L	100
9) Diethyl ether	5.56	59	680169	103.3296 ug/L	97
10) Isoprene	5.57	67	555397	55.7803 ug/L	96
11) Acrolein	5.79	56	131596	120.1899 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	356202	51.3167 ug/L	97
13) Acetone	5.91	43	107340	46.9439 ug/L	98
14) 1,1-Dichloroethene	6.11	61	594692	44.1572 ug/L	95
15) Tert-Butyl Alcohol	6.28	59	140341	200.7163 ug/L	98
16) Dimethyl Sulfide	6.38	62	515949	87.8409 ug/L	96
17) Iodomethane	6.64	142	294876	60.2646 ug/L	92
18) Methyl acetate	6.69	43	338698	54.7398 ug/L	99
19) Methylene Chloride	6.93	84	359823	46.5909 ug/L	90
20) Carbon Disulfide	6.95	76	1077126	43.6470 ug/L	100
21) Acrylonitrile	7.15	53	146978	51.7699 ug/L	100
22) Methyl Tert Butyl Ether	7.18	73	1049922	51.2877 ug/L	100
23) trans-1,2-Dichloroethene	7.41	96	339388	47.0532 ug/L	88
24) n-Hexane	7.51	57	547762	44.7466 ug/L	97
25) Diisopropyl ether	7.90	45	3459050	104.9838 ug/L	98
26) Vinyl Acetate	8.09	43	697771	50.7312 ug/L	98
27) 1,1-Dichloroethane	8.10	63	721539	46.4625 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2578321	97.2697 ug/L	98
29) 2-Butanone	8.73	43	177594	50.7378 ug/L	96
30) Propionitrile	8.85	54	95623	100.6665 ug/L	96
31) 2,2-Dichloropropane	8.96	77	593953	50.6955 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	392808	49.7512 ug/L	72
33) Chloroform	9.26	83	665890	47.8636 ug/L	100
34) 1-Bromopropane	9.41	122	83509	66.7495 ug/L	100
35) Bromochloromethane	9.52	130	207412	48.8852 ug/L	100
36) Tetrahydrofuran	9.56	42	224799	92.0780 ug/L	95
38) 1,1,1-Trichloroethane	9.85	97	598191	49.3876 ug/L	99
39) Cyclohexane	9.88	56	748359	47.4902 ug/L	96
40) 1,1-Dichloropropene	10.08	75	507584	48.1132 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	2097011	104.1851 ug/L	98
42) Carbon Tetrachloride	10.23	117	511641	51.4451 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140326.D 8260WTR.M Fri Jul 01 14:22:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:31 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	551012	49.3981 ug/L	98
46)	Benzene	10.48	78	1452601	48.7860 ug/L	97
47)	Trichloroethene	11.35	130	359806	48.9712 ug/L	90
48)	Methylcyclohexane	11.43	83	563704	48.8698 ug/L	95
49)	1,2-Dichloropropane	11.59	63	446228	52.0408 ug/L	99
50)	1,4-Dioxane	11.94	88	11529	198.6187 ug/L	84
51)	Bromodichloromethane	11.94	83	530754	51.2992 ug/L	100
52)	Dibromomethane	12.03	93	203238	48.9892 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	227435	52.9030 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	134103	50.6846 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	676117	56.2867 ug/L	100
56)	Dimethyl Disulfide	12.97	79	359470	53.7585 ug/L	98
59)	Toluene	13.15	91	1496307	50.1905 ug/L	99
60)	Ethyl Methacrylate	13.32	69	454272	53.5575 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	565632	53.3572 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	287265	52.0675 ug/L	98
64)	2-Hexanone	13.58	43	260461	49.7214 ug/L	97
65)	1,3-Dichloropropane	13.99	76	552828	53.1662 ug/L	94
66)	Tetrachloroethene	14.10	166	346278	48.7411 ug/L	93
67)	Dibromochloromethane	14.41	129	360309	53.7889 ug/L	99
68)	1,2-Dibromoethane	14.71	107	279233	52.4339 ug/L	100
69)	1-Chlorohexane	14.85	91	508330	51.2350 ug/L	92
70)	Chlorobenzene	15.30	112	974362	50.9593 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	357715	52.5791 ug/L	98
72)	Ethylbenzene	15.35	106	517345	51.6928 ug/L	93
73)	m-,p-Xylene	15.46	106	1254856	103.7457 ug/L	95
74)	o-Xylene	16.11	106	643998	53.3844 ug/L	94
75)	Styrene	16.16	104	1074202	52.9288 ug/L	92
76)	Bromoform	16.72	173	205149	49.3874 ug/L	98
77)	Isopropylbenzene	16.62	105	1626117	51.6632 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	352344	55.4825 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	103329	54.8809 ug/L	79
82)	trans-1,4-Dichloro-2-Buten	17.18	53	121642	50.6626 ug/L	96
83)	n-Propylbenzene	17.22	91	2019179	53.7062 ug/L	98
84)	Bromobenzene	17.34	156	398353	50.7084 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	1384872	52.5530 ug/L	97
86)	2-Chlorotoluene	17.52	91	1343673	52.8455 ug/L	96
87)	4-Chlorotoluene	17.58	91	1234147	50.9132 ug/L	97
88)	a-Methylstyrene	17.92	118	769488	58.0567 ug/L	95
89)	tert-Butylbenzene	17.98	134	281622	53.1924 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	1394233	51.5596 ug/L	98
91)	sec-Butylbenzene	18.30	105	1658086	52.5630 ug/L	97
92)	p-Isopropyltoluene	18.50	119	1389218	51.6766 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	793356	51.3104 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	809665	51.7942 ug/L	94
95)	n-Butylbenzene	19.12	91	1353617	51.3451 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	761556	52.4611 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.62	75	69221	55.6553 ug/L	83
98)	1,2,4-Trichlorobenzene	21.97	180	527905	51.4464 ug/L	99
99)	Hexachlorobutadiene	22.15	225	224309	52.5770 ug/L	99
100)	Naphthalene	22.38	128	1033625	49.2893 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	485666	51.1160 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140326.D 8260WTR.M Fri Jul 01 14:22:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

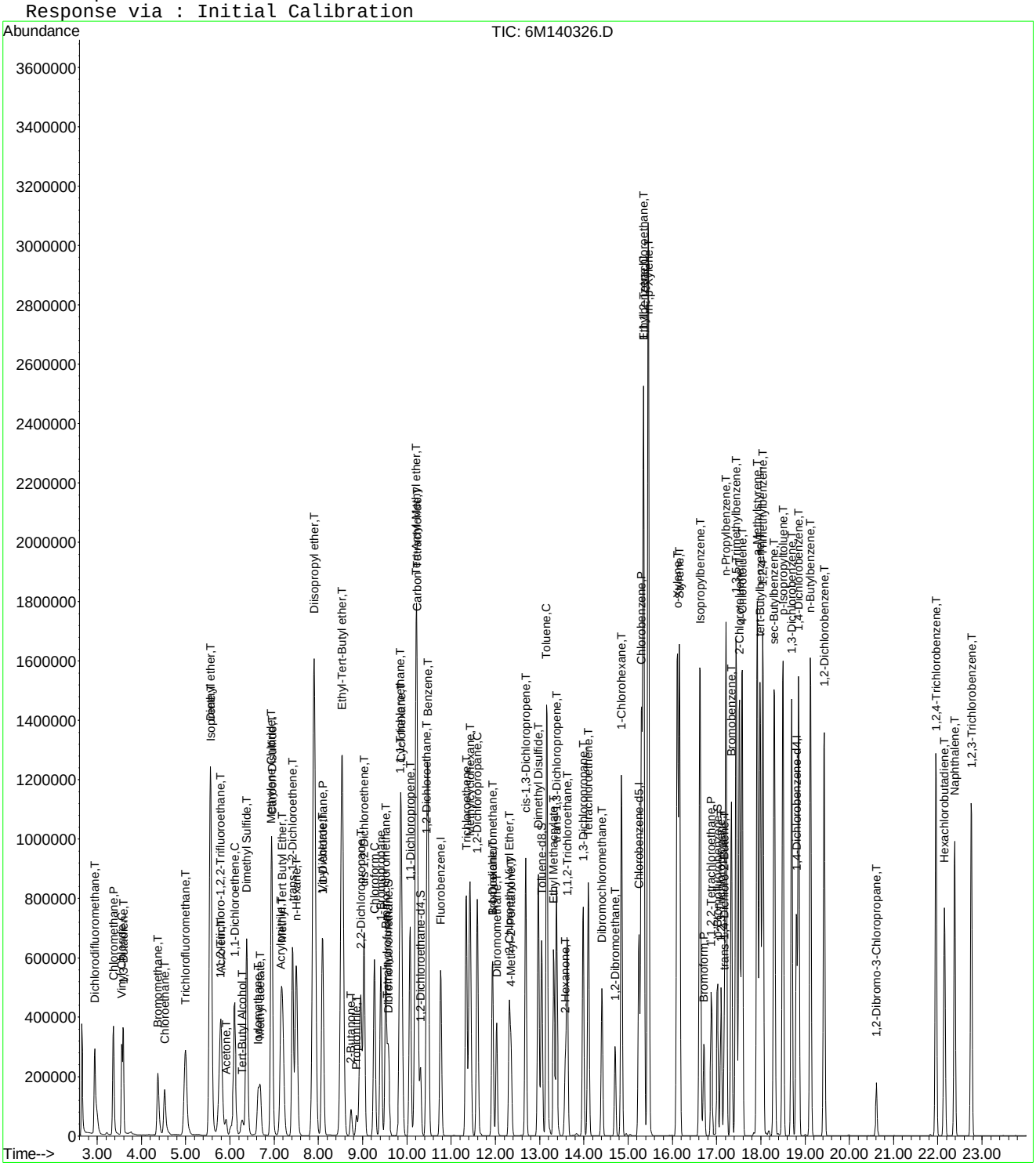

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	40.7108	18.6	83	0.00
3	P	Chloromethane	50.0000	39.1377	21.7#	85	0.00
4	C	Vinyl Chloride	50.0000	46.1434	7.7	97	0.00
5	T	1,3-Butadiene	50.0000	35.9374	28.1#	76	0.00
6	T	Bromomethane	50.0000	48.4066	3.2	110	0.00
7	T	Chloroethane	50.0000	51.7436	-3.5	111	0.00
8	T	Trichlorofluoromethane	50.0000	47.1350	5.7	106	0.00
9	T	Diethyl ether	100.0000	103.3296	-3.3	108	0.00
10	T	Isoprene	50.0000	55.7803	-11.6	117	0.00
11	T	Acrolein	50.0000	120.1899	-140.4#	262	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3167	-2.6	112	0.00
13	T	Acetone	50.0000	46.9439	6.1	101	0.00
14	C	1,1-Dichloroethene	50.0000	44.1572	11.7	95	0.00
15	T	Tert-Butyl Alcohol	200.0000	200.7163	-0.4	109	-0.01
16	T	Dimethyl Sulfide	50.0000	87.8409	-75.7#	187	0.00
17	T	Iodomethane	50.0000	60.2646	-20.5#	123	0.00
18	T	Methyl acetate	50.0000	54.7398	-9.5	119	0.00
19	T	Methylene Chloride	50.0000	46.5909	6.8	104	0.00
20	T	Carbon Disulfide	50.0000	43.6470	12.7	93	0.00
21	T	Acrylonitrile	50.0000	51.7698	-3.5	108	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.2877	-2.6	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	47.0532	5.9	102	0.00
24	T	n-Hexane	50.0000	44.7466	10.5	97	0.00
25	T	Diisopropyl ether	100.0000	104.9838	-5.0	113	0.00
26	T	Vinyl Acetate	50.0000	50.7312	-1.5	108	0.00
27	P	1,1-Dichloroethane	50.0000	46.4625	7.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	97.2697	2.7	104	0.00
29	T	2-Butanone	50.0000	50.7378	-1.5	106	0.00
30	T	Propionitrile	100.0000	100.6665	-0.7	106	0.00
31	T	2,2-Dichloropropane	50.0000	50.6955	-1.4	111	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.7512	0.5	107	0.00
33	C	Chloroform	50.0000	47.8636	4.3	105	0.00
34		1-Bromopropane	50.0000	66.7495	-33.5#	141	0.00
35	T	Bromochloromethane	50.0000	48.8852	2.2	102	0.00
36	T	Tetrahydrofuran	100.0000	92.0780	7.9	104	0.00
37	S	Dibromofluoromethane	25.0000	25.0619	-0.2	106	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.3876	1.2	104	0.00
39	T	Cyclohexane	50.0000	47.4902	5.0	103	0.00
40	T	1,1-Dichloropropene	50.0000	48.1132	3.8	104	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	104.1851	-4.2	111	0.00
42	T	Carbon Tetrachloride	50.0000	51.4451	-2.9	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.1652	3.3	104	0.00
44		Heptane	-1.0000	0.0000	0.0	111	0.00
45	T	1,2-Dichloroethane	50.0000	49.3981	1.2	105	0.00
46	T	Benzene	50.0000	48.7860	2.4	105	0.00
47	T	Trichloroethene	50.0000	48.9712	2.1	105	0.00
48	T	Methylcyclohexane	50.0000	48.8698	2.3	106	0.00
49	C	1,2-Dichloropropane	50.0000	52.0408	-4.1	111	0.00
50	T	1,4-Dioxane	200.0000	198.6187	0.7	102	0.00
51	T	Bromodichloromethane	50.0000	51.2992	-2.6	106	0.00
52	T	Dibromomethane	50.0000	48.9892	2.0	101	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.9030	-5.8	106	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.6846	-1.4	106	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.2867	-12.6	117	0.00
56	T	Dimethyl Disulfide	50.0000	53.7585	-7.5	112	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
58	S	Toluene-d8	25.0000	24.6990	1.2	104	0.00
59	C	Toluene	50.0000	50.1905	-0.4	107	0.00
60	T	Ethyl Methacrylate	50.0000	53.5575	-7.1	108	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	107	0.00
62	T	trans-1,3-Dichloropropene	50.0000	53.3572	-6.7	108	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.0675	-4.1	108	0.00
64	T	2-Hexanone	50.0000	49.7214	0.6	101	0.00
65	T	1,3-Dichloropropane	50.0000	53.1662	-6.3	112	0.00
66	T	Tetrachloroethene	50.0000	48.7411	2.5	103	0.00
67	T	Dibromochloromethane	50.0000	53.7889	-7.6	105	0.00
68	T	1,2-Dibromoethane	50.0000	52.4339	-4.9	107	0.00
69	T	1-Chlorohexane	50.0000	51.2350	-2.5	106	0.00
70	P	Chlorobenzene	50.0000	50.9593	-1.9	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.5791	-5.2	106	0.00
72	C	Ethylbenzene	50.0000	51.6928	-3.4	107	0.00
73	T	m-,p-Xylene	100.0000	103.7457	-3.7	108	0.00
74	T	o-Xylene	50.0000	53.3844	-6.8	109	0.00
75	T	Styrene	50.0000	52.9288	-5.9	106	0.00
76	P	Bromoform	50.0000	49.3873	1.2	98	0.00
77	T	Isopropylbenzene	50.0000	51.6632	-3.3	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	99	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.4825	-11.0	108	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0695	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	50.0000	54.8809	-9.8	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	50.6626	-1.3	94	0.00
83	T	n-Propylbenzene	50.0000	53.7062	-7.4	107	0.00
84	T	Bromobenzene	50.0000	50.7084	-1.4	102	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.5530	-5.1	104	-0.01
86	T	2-Chlorotoluene	50.0000	52.8455	-5.7	105	0.00
87	T	4-Chlorotoluene	50.0000	50.9132	-1.8	105	0.00
88	T	a-Methylstyrene	50.0000	58.0567	-16.1	111	0.00
89	T	tert-Butylbenzene	50.0000	53.1924	-6.4	106	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	51.5596	-3.1	101	-0.01
91	T	sec-Butylbenzene	50.0000	52.5630	-5.1	104	-0.01
92	T	p-Isopropyltoluene	50.0000	51.6766	-3.4	101	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.3104	-2.6	103	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7942	-3.6	105	0.00
95	T	n-Butylbenzene	50.0000	51.3451	-2.7	100	0.00
96	T	1,2-Dichlorobenzene	50.0000	52.4611	-4.9	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	55.6553	-11.3	107	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.4464	-2.9	102	0.00
99	T	Hexachlorobutadiene	50.0000	52.5770	-5.2	105	0.00
100	T	Naphthalene	50.0000	49.2893	1.4	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	51.1160	-2.2	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140364.D Vial: 3
Acq On : 2 Jul 2016 11:57 Operator: TMB
Sample : WG575083-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 13:29:44 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	568476	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	413962	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	229176	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	146606	25.4194 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.68%		
43) 1,2-Dichloroethane-d4	10.31	65	181988	24.9956 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.00%		
58) Toluene-d8	13.04	98	505477	24.7969 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.20%		
80) p-Bromofluorobenzene	17.02	95	218569	24.3521 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.40%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	563991	59.3495 ug/L	100
3) Chloromethane	3.37	50	539203	50.8218 ug/L	99
4) Vinyl Chloride	3.56	62	327793	56.2605 ug/L	99
5) 1,3-Butadiene	3.59	54	205186	61.5308 ug/L	91
6) Bromomethane	4.39	94	154995	40.0326 ug/L	99
7) Chloroethane	4.53	64	198450	53.9052 ug/L	94
8) Trichlorofluoromethane	5.00	101	489092	55.0396 ug/L	99
9) Diethyl ether	5.54	59	533840	101.8177 ug/L	95
10) Isoprene	5.57	67	421113	53.0983 ug/L	95
11) Acrolein	5.79	56	44098	50.5648 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	300935	54.4301 ug/L	97
13) Acetone	5.90	43	92436	50.7532 ug/L	98
14) 1,1-Dichloroethene	6.11	61	575429	53.6420 ug/L	93
15) Tert-Butyl Alcohol	6.25	59	98113	176.1687 ug/L	99
16) Dimethyl Sulfide	6.39	62	226586	48.4314 ug/L	93
17) Iodomethane	6.65	142	213201	54.7863 ug/L	90
18) Methyl acetate	6.69	43	246736	50.0642 ug/L	98
19) Methylene Chloride	6.94	84	309384	50.2938 ug/L	86
20) Carbon Disulfide	6.96	76	1018712	51.8255 ug/L	100
21) Acrylonitrile	7.15	53	115300	50.9868 ug/L	99
22) Methyl Tert Butyl Ether	7.18	73	847352	51.9666 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	300633	52.3279 ug/L	88
24) n-Hexane	7.50	57	522840	53.6217 ug/L	96
25) Diisopropyl ether	7.90	45	2634922	100.4008 ug/L	99
26) Vinyl Acetate	8.09	43	698946	63.7984 ug/L	98
27) 1,1-Dichloroethane	8.10	63	645658	52.1974 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2117500	100.2924 ug/L	98
29) 2-Butanone	8.73	43	144408	51.7963 ug/L	96
30) Propionitrile	8.85	54	74177	98.0384 ug/L	100
31) 2,2-Dichloropropane	8.95	77	530850	56.8844 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	329589	52.4084 ug/L	88
33) Chloroform	9.26	83	581874	52.5092 ug/L	100
34) 1-Bromopropane	9.41	122	51387	51.6753 ug/L	100
35) Bromochloromethane	9.52	130	184335	54.5451 ug/L	100
36) Tetrahydrofuran	9.56	42	179468	92.2896 ug/L	93
38) 1,1,1-Trichloroethane	9.85	97	531048	55.0448 ug/L	98
39) Cyclohexane	9.87	56	639753	50.9695 ug/L	95
40) 1,1-Dichloropropene	10.08	75	444375	52.8823 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1608749	100.3454 ug/L	98
42) Carbon Tetrachloride	10.23	117	475366	60.0083 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140364.D 8260WTR.M Sat Jul 02 13:29:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140364.D Vial: 3
Acq On : 2 Jul 2016 11:57 Operator: TMB
Sample : WG575083-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 13:29:44 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	478637	53.8716 ug/L	98
46)	Benzene	10.48	78	1221523	51.5056 ug/L	96
47)	Trichloroethene	11.34	130	297265	50.7949 ug/L	88
48)	Methylcyclohexane	11.43	83	474700	51.6670 ug/L	95
49)	1,2-Dichloropropane	11.59	63	353907	51.8180 ug/L	96
50)	1,4-Dioxane	11.93	88	8103	175.2582 ug/L	85
51)	Bromodichloromethane	11.94	83	455573	55.2815 ug/L	99
52)	Dibromomethane	12.03	93	180252	54.5481 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	177695	51.8922 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	110845	52.5967 ug/L	96
55)	cis-1,3-Dichloropropene	12.68	75	518926	54.2367 ug/L	98
56)	Dimethyl Disulfide	12.97	79	278064	52.2076 ug/L	98
59)	Toluene	13.16	91	1256833	50.9425 ug/L	100
60)	Ethyl Methacrylate	13.32	69	363777	51.8252 ug/L	93
62)	trans-1,3-Dichloropropene	13.39	75	473158	53.9345 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	237912	52.1077 ug/L	98
64)	2-Hexanone	13.58	43	222861	51.4087 ug/L	97
65)	1,3-Dichloropropane	13.99	76	433977	50.4329 ug/L	92
66)	Tetrachloroethene	14.10	166	303880	51.6861 ug/L	92
67)	Dibromochloromethane	14.41	129	312163	56.3120 ug/L	100
68)	1,2-Dibromoethane	14.70	107	232582	52.7743 ug/L	99
69)	1-Chlorohexane	14.86	91	419410	51.0812 ug/L	89
70)	Chlorobenzene	15.31	112	803889	50.8043 ug/L	91
71)	1,1,1,2-Tetrachloroethane	15.35	131	305643	54.2865 ug/L	97
72)	Ethylbenzene	15.35	106	436127	52.6580 ug/L	93
73)	m-,p-Xylene	15.46	106	1048094	104.7075 ug/L	93
74)	o-Xylene	16.11	106	533357	53.4256 ug/L	94
75)	Styrene	16.15	104	901758	53.6906 ug/L	91
76)	Bromoform	16.72	173	188509	54.8378 ug/L	97
77)	Isopropylbenzene	16.62	105	1379626	52.9654 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	299895	53.9179 ug/L	99
81)	1,2,3-Trichloropropane	17.10	110	87507	53.0660 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	17.18	53	116657	55.4740 ug/L	100
83)	n-Propylbenzene	17.22	91	1723856	52.3511 ug/L	97
84)	Bromobenzene	17.34	156	352485	51.2304 ug/L	90
85)	1,3,5-Trimethylbenzene	17.45	105	1210912	52.4657 ug/L	97
86)	2-Chlorotoluene	17.52	91	1148937	51.5923 ug/L	96
87)	4-Chlorotoluene	17.58	91	1074895	50.6296 ug/L	96
88)	a-Methylstyrene	17.92	118	609579	52.5116 ug/L	100
89)	tert-Butylbenzene	17.98	134	239864	51.7276 ug/L	69
90)	1,2,4-Trimethylbenzene	18.04	105	1261697	53.2726 ug/L	98
91)	sec-Butylbenzene	18.31	105	1447831	52.4042 ug/L	97
92)	p-Isopropyltoluene	18.50	119	1248377	53.0206 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	698176	51.5557 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	699104	51.0614 ug/L	94
95)	n-Butylbenzene	19.12	91	1226253	53.1078 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	650461	51.1602 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	20.62	75	60193	55.2573 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	458164	50.9795 ug/L	98
99)	Hexachlorobutadiene	22.15	225	187698	50.2323 ug/L	99
100)	Naphthalene	22.38	128	944272	51.4117 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	411449	49.4436 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140364.D 8260WTR.M Sat Jul 02 13:29:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140364.D Vial: 3
Acq On : 2 Jul 2016 11:57 Operator: TMB
Sample : WG575083-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 13:29 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

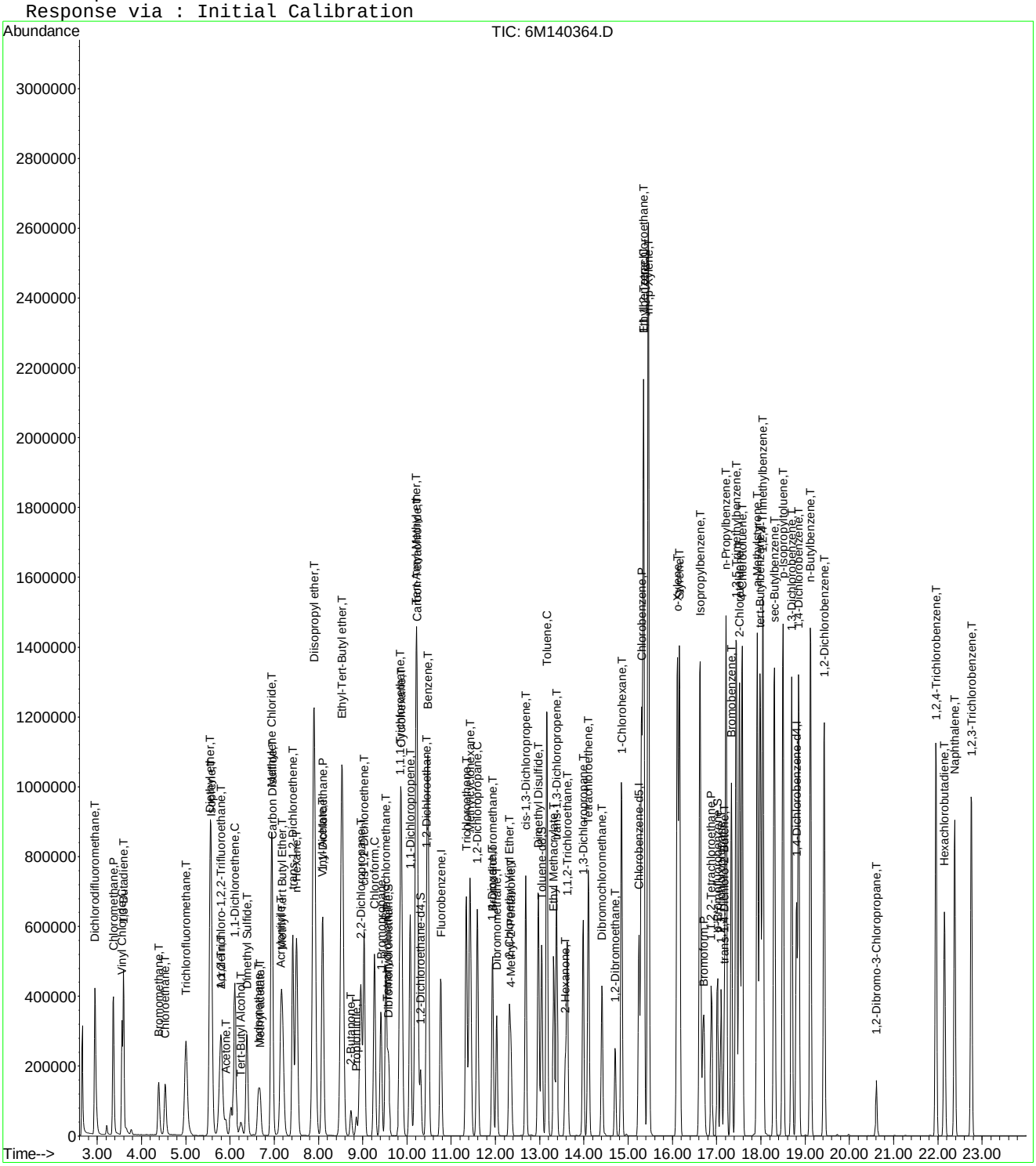

6M140364.D 8260WTR.M Sat Jul 02 13:29:50 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140364.D Vial: 3
Acq On : 2 Jul 2016 11:57 Operator: TMB
Sample : WG575083-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	85	0.00
2	T	Dichlorodifluoromethane	0.4179	0.4961	-18.7	97	0.00
3	P	Chloromethane	0.4666	0.4743	-1.6	88	0.00
4	C	Vinyl Chloride	0.2562	0.2883	-12.5	95	0.00
5	T	1,3-Butadiene	0.1608	0.1805	-12.2	100	0.00
6	T	Bromomethane	0.1703	0.1363	19.9	72	0.02
7	T	Chloroethane	0.1619	0.1746	-7.8	92	0.00
8	T	Trichlorofluoromethane	0.3908	0.4302	-10.1	99	0.00
9	T	Diethyl ether	0.2306	0.2348	-1.8	85	0.00
10	T	Isoprene	0.3488	0.3704	-6.2	89	0.00
11	T	Acrolein	0.0384	0.0388	-1.1	88	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2431	0.2647	-8.9	95	0.00
13	T	Acetone	0.0801	0.0813	-1.5	87	0.00
14	C	1,1-Dichloroethene	0.4718	0.5061	-7.3	92	0.00
15	T	Tert-Butyl Alcohol	0.0245	0.0216	11.9	76	-0.04
16	T	Dimethyl Sulfide	0.2057	0.1993	3.1	82	0.00
17	T	Iodomethane	0.1391	0.1875	-34.8#	89	0.00
18	T	Methyl acetate	0.2167	0.2170	-0.1	87	0.00
19	T	Methylene Chloride	0.2705	0.2721	-0.6	89	0.00
20	T	Carbon Disulfide	0.8644	0.8960	-3.7	88	0.00
21	T	Acrylonitrile	0.0994	0.1014	-2.0	85	0.00
22	T	Methyl Tert Butyl Ether	0.7171	0.7453	-3.9	89	0.00
23	T	trans-1,2-Dichloroethene	0.2527	0.2644	-4.7	90	0.00
24	T	n-Hexane	0.4288	0.4599	-7.2	93	0.00
25	T	Diisopropyl ether	1.1541	1.1588	-0.4	86	0.00
26	T	Vinyl Acetate	0.4818	0.6148	-27.6#	108	0.00
27	P	1,1-Dichloroethane	0.5440	0.5679	-4.4	90	0.00
28	T	Ethyl-Tert-Butyl ether	0.9285	0.9312	-0.3	86	0.00
29	T	2-Butanone	0.1226	0.1270	-3.6	87	0.00
30	T	Propionitrile	0.0333	0.0326	2.0	82	0.00
31	T	2,2-Dichloropropane	0.4104	0.4669	-13.8	100	0.00
32	T	cis-1,2-Dichloroethene	0.2766	0.2899	-4.8	89	0.00
33	C	Chloroform	0.4873	0.5118	-5.0	92	0.00
34		1-Bromopropane	0.0394	0.0452	-14.6	87	0.00
35	T	Bromochloromethane	0.1486	0.1621	-9.1	91	0.00
36	T	Tetrahydrofuran	0.0855	0.0789	7.7	83	0.00
37	S	Dibromofluoromethane	0.2536	0.2579	-1.7	86	0.00
38	T	1,1,1-Trichloroethane	0.4243	0.4671	-10.1	93	0.00
39	T	Cyclohexane	0.5520	0.5627	-1.9	88	0.00
40	T	1,1-Dichloropropene	0.3695	0.3908	-5.8	91	0.00
41	T	Tert-Amyl-Methyl ether	0.7050	0.7075	-0.3	85	0.00
42	T	Carbon Tetrachloride	0.3484	0.4181	-20.0#	95	0.00
43	S	1,2-Dichloroethane-d4	0.3202	0.3201	0.0	86	0.00
44		Heptane	0.0000	0.0000	0.0	87	0.00
45	T	1,2-Dichloroethane	0.3907	0.4210	-7.7	92	0.00
46	T	Benzene	1.0430	1.0744	-3.0	89	0.00
47	T	Trichloroethene	0.2574	0.2615	-1.6	87	0.00
48	T	Methylcyclohexane	0.4041	0.4175	-3.3	89	0.00
49	C	1,2-Dichloropropane	0.3004	0.3113	-3.6	88	0.00
50	T	1,4-Dioxane	0.0020	0.0018	12.3	72	-0.01
51	T	Bromodichloromethane	0.3624	0.4007	-10.6	91	0.00
52	T	Dibromomethane	0.1453	0.1585	-9.1	90	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1506	0.1563	-3.8	83	0.00
54	T	4-Methyl-2-Pentanone	0.0927	0.0975	-5.2	87	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140364.D Vial: 3
Acq On : 2 Jul 2016 11:57 Operator: TMB
Sample : WG575083-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4208	0.4564	-8.5	90	0.00
56	T	Dimethyl Disulfide	0.2342	0.2446	-4.4	86	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	87	0.00
58	S	Toluene-d8	1.2311	1.2211	0.8	86	0.00
59	C	Toluene	1.4900	1.5180	-1.9	90	0.00
60	T	Ethyl Methacrylate	0.4239	0.4394	-3.6	86	0.00
61		Paraldehyde	0.0000	0.0000	0.0	89	0.00
62	T	trans-1,3-Dichloropropene	0.5298	0.5715	-7.9	91	0.00
63	T	1,1,2-Trichloroethane	0.2757	0.2874	-4.2	89	0.00
64	T	2-Hexanone	0.2618	0.2692	-2.8	87	0.00
65	T	1,3-Dichloropropane	0.5197	0.5242	-0.9	88	0.00
66	T	Tetrachloroethene	0.3551	0.3670	-3.4	90	0.00
67	T	Dibromochloromethane	0.3348	0.3770	-12.6	91	0.00
68	T	1,2-Dibromoethane	0.2662	0.2809	-5.5	89	0.00
69	T	1-Chlorohexane	0.4959	0.5066	-2.2	88	0.00
70	P	Chlorobenzene	0.9556	0.9710	-1.6	89	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3400	0.3692	-8.6	91	0.00
72	C	Ethylbenzene	0.5002	0.5268	-5.3	90	0.00
73	T	m-,p-Xylene	0.6045	0.6330	-4.7	90	0.00
74	T	o-Xylene	0.6029	0.6442	-6.9	90	0.00
75	T	Styrene	1.0143	1.0892	-7.4	89	0.00
76	P	Bromoform	0.2076	0.2277	-9.7	90	0.00
77	T	Isopropylbenzene	1.5731	1.6664	-5.9	90	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	87	0.00
79	P	1,1,2,2-Tetrachloroethane	0.6068	0.6543	-7.8	92	0.00
80	S	p-Bromofluorobenzene	0.9791	0.9537	2.6	85	0.00
81	T	1,2,3-Trichloropropane	0.1799	0.1909	-6.1	89	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2294	0.2545	-10.9	90	0.00
83	T	n-Propylbenzene	3.5921	3.7610	-4.7	91	0.00
84	T	Bromobenzene	0.7506	0.7690	-2.5	90	0.00
85	T	1,3,5-Trimethylbenzene	2.5177	2.6419	-4.9	91	0.00
86	T	2-Chlorotoluene	2.4293	2.5067	-3.2	90	0.00
87	T	4-Chlorotoluene	2.3160	2.3451	-1.3	92	0.00
88	T	a-Methylstyrene	1.2663	1.3299	-5.0	88	0.00
89	T	tert-Butylbenzene	0.5058	0.5233	-3.5	90	-0.01
90	T	1,2,4-Trimethylbenzene	2.5836	2.7527	-6.5	91	-0.01
91	T	sec-Butylbenzene	3.0139	3.1588	-4.8	91	0.00
92	T	p-Isopropyltoluene	2.5685	2.7236	-6.0	91	0.00
93	T	1,3-Dichlorobenzene	1.4773	1.5232	-3.1	91	0.00
94	T	1,4-Dichlorobenzene	1.4935	1.5253	-2.1	91	0.00
95	T	n-Butylbenzene	2.5188	2.6753	-6.2	91	0.00
96	T	1,2-Dichlorobenzene	1.3869	1.4191	-2.3	90	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1188	0.1313	-10.5	93	0.00
98	T	1,2,4-Trichlorobenzene	0.9804	0.9996	-2.0	89	0.00
99	T	Hexachlorobutadiene	0.4076	0.4095	-0.5	88	0.00
100	T	Naphthalene	2.0036	2.0602	-2.8	84	0.00
101	T	1,2,3-Trichlorobenzene	0.9078	0.8977	1.1	86	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140364.D 8260WTR.M Sat Jul 02 13:30:38 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140364.D Vial: 3
Acq On : 2 Jul 2016 11:57 Operator: TMB
Sample : WG575083-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	85	0.00
2	T	Dichlorodifluoromethane	50.0000	59.3495	-18.7	97	0.00
3	P	Chloromethane	50.0000	50.8218	-1.6	88	0.00
4	C	Vinyl Chloride	50.0000	56.2605	-12.5	95	0.00
5	T	1,3-Butadiene	50.0000	61.5308	-23.1#	100	0.00
6	T	Bromomethane	50.0000	40.0326	19.9	72	0.02
7	T	Chloroethane	50.0000	53.9052	-7.8	92	0.00
8	T	Trichlorofluoromethane	50.0000	55.0396	-10.1	99	0.00
9	T	Diethyl ether	100.0000	101.8177	-1.8	85	0.00
10	T	Isoprene	50.0000	53.0983	-6.2	89	0.00
11	T	Acrolein	50.0000	50.5648	-1.1	88	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.4301	-8.9	95	0.00
13	T	Acetone	50.0000	50.7532	-1.5	87	0.00
14	C	1,1-Dichloroethene	50.0000	53.6420	-7.3	92	0.00
15	T	Tert-Butyl Alcohol	200.0000	176.1687	11.9	76	-0.04
16	T	Dimethyl Sulfide	50.0000	48.4314	3.1	82	0.00
17	T	Iodomethane	50.0000	54.7863	-9.6	89	0.00
18	T	Methyl acetate	50.0000	50.0642	-0.1	87	0.00
19	T	Methylene Chloride	50.0000	50.2938	-0.6	89	0.00
20	T	Carbon Disulfide	50.0000	51.8255	-3.7	88	0.00
21	T	Acrylonitrile	50.0000	50.9868	-2.0	85	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.9666	-3.9	89	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.3279	-4.7	90	0.00
24	T	n-Hexane	50.0000	53.6217	-7.2	93	0.00
25	T	Diisopropyl ether	100.0000	100.4008	-0.4	86	0.00
26	T	Vinyl Acetate	50.0000	63.7984	-27.6#	108	0.00
27	P	1,1-Dichloroethane	50.0000	52.1975	-4.4	90	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	100.2924	-0.3	86	0.00
29	T	2-Butanone	50.0000	51.7963	-3.6	87	0.00
30	T	Propionitrile	100.0000	98.0384	2.0	82	0.00
31	T	2,2-Dichloropropane	50.0000	56.8844	-13.8	100	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.4083	-4.8	89	0.00
33	C	Chloroform	50.0000	52.5092	-5.0	92	0.00
34		1-Bromopropane	50.0000	51.6753	-3.4	87	0.00
35	T	Bromochloromethane	50.0000	54.5451	-9.1	91	0.00
36	T	Tetrahydrofuran	100.0000	92.2896	7.7	83	0.00
37	S	Dibromofluoromethane	25.0000	25.4194	-1.7	86	0.00
38	T	1,1,1-Trichloroethane	50.0000	55.0448	-10.1	93	0.00
39	T	Cyclohexane	50.0000	50.9695	-1.9	88	0.00
40	T	1,1-Dichloropropene	50.0000	52.8823	-5.8	91	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.3454	-0.3	85	0.00
42	T	Carbon Tetrachloride	50.0000	60.0083	-20.0#	95	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.9956	0.0	86	0.00
44		Heptane	-1.0000	0.0000	0.0	87	0.00
45	T	1,2-Dichloroethane	50.0000	53.8716	-7.7	92	0.00
46	T	Benzene	50.0000	51.5056	-3.0	89	0.00
47	T	Trichloroethene	50.0000	50.7949	-1.6	87	0.00
48	T	Methylcyclohexane	50.0000	51.6670	-3.3	89	0.00
49	C	1,2-Dichloropropane	50.0000	51.8180	-3.6	88	0.00
50	T	1,4-Dioxane	200.0000	175.2582	12.4	72	-0.01
51	T	Bromodichloromethane	50.0000	55.2815	-10.6	91	0.00
52	T	Dibromomethane	50.0000	54.5481	-9.1	90	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.8922	-3.8	83	0.00
54	T	4-Methyl-2-Pentanone	50.0000	52.5966	-5.2	87	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140364.D Vial: 3
Acq On : 2 Jul 2016 11:57 Operator: TMB
Sample : WG575083-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.2368	-8.5	90	0.00
56	T	Dimethyl Disulfide	50.0000	52.2076	-4.4	86	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	87	0.00
58	S	Toluene-d8	25.0000	24.7969	0.8	86	0.00
59	C	Toluene	50.0000	50.9425	-1.9	90	0.00
60	T	Ethyl Methacrylate	50.0000	51.8252	-3.7	86	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	89	0.00
62	T	trans-1,3-Dichloropropene	50.0000	53.9345	-7.9	91	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.1077	-4.2	89	0.00
64	T	2-Hexanone	50.0000	51.4087	-2.8	87	0.00
65	T	1,3-Dichloropropane	50.0000	50.4329	-0.9	88	0.00
66	T	Tetrachloroethene	50.0000	51.6861	-3.4	90	0.00
67	T	Dibromochloromethane	50.0000	56.3120	-12.6	91	0.00
68	T	1,2-Dibromoethane	50.0000	52.7743	-5.5	89	0.00
69	T	1-Chlorohexane	50.0000	51.0812	-2.2	88	0.00
70	P	Chlorobenzene	50.0000	50.8043	-1.6	89	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	54.2865	-8.6	91	0.00
72	C	Ethylbenzene	50.0000	52.6580	-5.3	90	0.00
73	T	m-,p-Xylene	100.0000	104.7075	-4.7	90	0.00
74	T	o-Xylene	50.0000	53.4256	-6.9	90	0.00
75	T	Styrene	50.0000	53.6906	-7.4	89	0.00
76	P	Bromoform	50.0000	54.8378	-9.7	90	0.00
77	T	Isopropylbenzene	50.0000	52.9654	-5.9	90	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	87	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	53.9179	-7.8	92	0.00
80	S	p-Bromofluorobenzene	25.0000	24.3521	2.6	85	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.0660	-6.1	89	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	55.4740	-10.9	90	0.00
83	T	n-Propylbenzene	50.0000	52.3511	-4.7	91	0.00
84	T	Bromobenzene	50.0000	51.2304	-2.5	90	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.4657	-4.9	91	0.00
86	T	2-Chlorotoluene	50.0000	51.5924	-3.2	90	0.00
87	T	4-Chlorotoluene	50.0000	50.6296	-1.3	92	0.00
88	T	a-Methylstyrene	50.0000	52.5116	-5.0	88	0.00
89	T	tert-Butylbenzene	50.0000	51.7276	-3.5	90	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	53.2726	-6.5	91	-0.01
91	T	sec-Butylbenzene	50.0000	52.4042	-4.8	91	0.00
92	T	p-Isopropyltoluene	50.0000	53.0206	-6.0	91	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.5557	-3.1	91	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.0614	-2.1	91	0.00
95	T	n-Butylbenzene	50.0000	53.1078	-6.2	91	0.00
96	T	1,2-Dichlorobenzene	50.0000	51.1602	-2.3	90	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	55.2573	-10.5	93	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.9795	-2.0	89	0.00
99	T	Hexachlorobutadiene	50.0000	50.2323	-0.5	88	0.00
100	T	Naphthalene	50.0000	51.4117	-2.8	84	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	49.4436	1.1	86	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140364.D 8260WTR.M Sat Jul 02 13:31:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140418.D Vial: 2
Acq On : 5 Jul 2016 11:14 Operator: TMB
Sample : WG575127-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 12:19:44 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	563518	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	417834	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	235599	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	147974	25.8823 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.52%		
43) 1,2-Dichloroethane-d4	10.31	65	176318	24.4299 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.72%		
58) Toluene-d8	13.04	98	507034	24.6428 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.56%		
80) p-Bromofluorobenzene	17.02	95	220036	23.8472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.40%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	575530	61.0966 ug/L	100
3) Chloromethane	3.37	50	531184	50.5065 ug/L	99
4) Vinyl Chloride	3.56	62	335485	58.0873 ug/L	99
5) 1,3-Butadiene	3.59	54	242490	73.9704 ug/L	95
6) Bromomethane	4.39	94	175863	45.8220 ug/L	100
7) Chloroethane	4.53	64	200312	54.8897 ug/L	92
8) Trichlorofluoromethane	5.00	101	533668	60.5843 ug/L	100
9) Diethyl ether	5.55	59	511110	98.3402 ug/L	96
10) Isoprene	5.58	67	429374	54.6162 ug/L	93
11) Acrolein	5.79	56	40188	46.4868 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	314666	57.4144 ug/L	98
13) Acetone	5.90	43	82471	45.6801 ug/L	96
14) 1,1-Dichloroethene	6.11	61	580632	54.6033 ug/L	94
15) Tert-Butyl Alcohol	6.25	59	86543	156.7612 ug/L	97
16) Dimethyl Sulfide	6.38	62	227441	49.0419 ug/L	92
17) Iodomethane	6.65	142	223584	57.9080 ug/L	89
18) Methyl acetate	6.69	43	225272	46.1112 ug/L	97
19) Methylene Chloride	6.93	84	307693	50.4590 ug/L	88
20) Carbon Disulfide	6.96	76	1046823	53.7242 ug/L	100
21) Acrylonitrile	7.15	53	106040	47.3045 ug/L	100
22) Methyl Tert Butyl Ether	7.18	73	757456	46.8622 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	302913	53.1886 ug/L	88
24) n-Hexane	7.51	57	540874	55.9593 ug/L	96
25) Diisopropyl ether	7.90	45	2641336	101.5307 ug/L	99
26) Vinyl Acetate	8.09	43	573093	52.7711 ug/L	97
27) 1,1-Dichloroethane	8.10	63	644516	52.5636 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2051797	98.0355 ug/L	98
29) 2-Butanone	8.73	43	123593	44.7204 ug/L	96
30) Propionitrile	8.85	54	66668	88.8891 ug/L	98
31) 2,2-Dichloropropane	8.96	77	530334	57.3291 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	329922	52.9229 ug/L	90
33) Chloroform	9.26	83	583356	53.1061 ug/L	99
34) 1-Bromopropane	9.42	122	52517	53.2616 ug/L	99
35) Bromochloromethane	9.52	130	181959	54.3157 ug/L	99
36) Tetrahydrofuran	9.56	42	155575	80.7067 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	542021	56.6765 ug/L	99
39) Cyclohexane	9.87	56	651087	52.3289 ug/L	95
40) 1,1-Dichloropropene	10.08	75	444809	53.3997 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1517217	95.4688 ug/L	97
42) Carbon Tetrachloride	10.23	117	496212	63.1909 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140418.D 8260WTR.M Tue Jul 05 12:19:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140418.D Vial: 2
Acq On : 5 Jul 2016 11:14 Operator: TMB
Sample : WG575127-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 12:19:44 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	461459	52.3951 ug/L	98
46)	Benzene	10.48	78	1220861	51.9306 ug/L	96
47)	Trichloroethene	11.35	130	300873	51.8638 ug/L	88
48)	Methylcyclohexane	11.43	83	491429	53.9584 ug/L	95
49)	1,2-Dichloropropane	11.59	63	343263	50.7017 ug/L	93
50)	1,4-Dioxane	11.94	88	7632	166.5234 ug/L	87
51)	Bromodichloromethane	11.94	83	447393	54.7665 ug/L	99
52)	Dibromomethane	12.03	93	172082	52.5339 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	157128	46.2898 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	93032	44.5327 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	499182	52.6322 ug/L	99
56)	Dimethyl Disulfide	12.97	79	268193	50.7973 ug/L	99
59)	Toluene	13.16	91	1253818	50.3493 ug/L	100
60)	Ethyl Methacrylate	13.32	69	325709	45.9719 ug/L	93
62)	trans-1,3-Dichloropropene	13.39	75	448803	50.6842 ug/L	95
63)	1,1,2-Trichloroethane	13.63	97	225062	48.8365 ug/L	98
64)	2-Hexanone	13.58	43	191326	43.7253 ug/L	95
65)	1,3-Dichloropropane	13.99	76	405170	46.6489 ug/L	92
66)	Tetrachloroethene	14.10	166	314268	52.9576 ug/L	93
67)	Dibromochloromethane	14.41	129	301854	53.9477 ug/L	99
68)	1,2-Dibromoethane	14.70	107	215203	48.3784 ug/L	100
69)	1-Chlorohexane	14.86	91	426897	51.5113 ug/L	89
70)	Chlorobenzene	15.31	112	817297	51.1731 ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.35	131	309307	54.4282 ug/L	97
72)	Ethylbenzene	15.35	106	441843	52.8538 ug/L	94
73)	m-,p-Xylene	15.46	106	1063341	105.2463 ug/L	93
74)	o-Xylene	16.11	106	531755	52.7715 ug/L	93
75)	Styrene	16.15	104	907515	53.5326 ug/L	92
76)	Bromoform	16.72	173	177968	51.2916 ug/L	98
77)	Isopropylbenzene	16.62	105	1397460	53.1529 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	273693	47.8656 ug/L	99
81)	1,2,3-Trichloropropane	17.10	110	78969	46.5829 ug/L	87
82)	trans-1,4-Dichloro-2-Buten	17.18	53	107120	49.5501 ug/L	99
83)	n-Propylbenzene	17.22	91	1754518	51.8296 ug/L	98
84)	Bromobenzene	17.34	156	356123	50.3480 ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	1240566	52.2851 ug/L	97
86)	2-Chlorotoluene	17.52	91	1166485	50.9523 ug/L	97
87)	4-Chlorotoluene	17.58	91	1091341	50.0028 ug/L	96
88)	a-Methylstyrene	17.92	118	631999	52.9587 ug/L	100
89)	tert-Butylbenzene	17.98	134	253676	53.2148 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	1294338	53.1609 ug/L	98
91)	sec-Butylbenzene	18.31	105	1496581	52.6919 ug/L	98
92)	p-Isopropyltoluene	18.50	119	1296891	53.5794 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	719255	51.6643 ug/L	95
94)	1,4-Dichlorobenzene	18.86	146	713981	50.7263 ug/L	95
95)	n-Butylbenzene	19.13	91	1280392	53.9407 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	664011	50.8021 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.62	75	54489	48.6573 ug/L	86
98)	1,2,4-Trichlorobenzene	21.97	180	467211	50.5688 ug/L	99
99)	Hexachlorobutadiene	22.15	225	204511	53.2397 ug/L	100
100)	Naphthalene	22.38	128	908714	48.1269 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	424361	49.6050 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140418.D 8260WTR.M Tue Jul 05 12:19:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140418.D Vial: 2
Acq On : 5 Jul 2016 11:14 Operator: TMB
Sample : WG575127-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 5 12:19 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

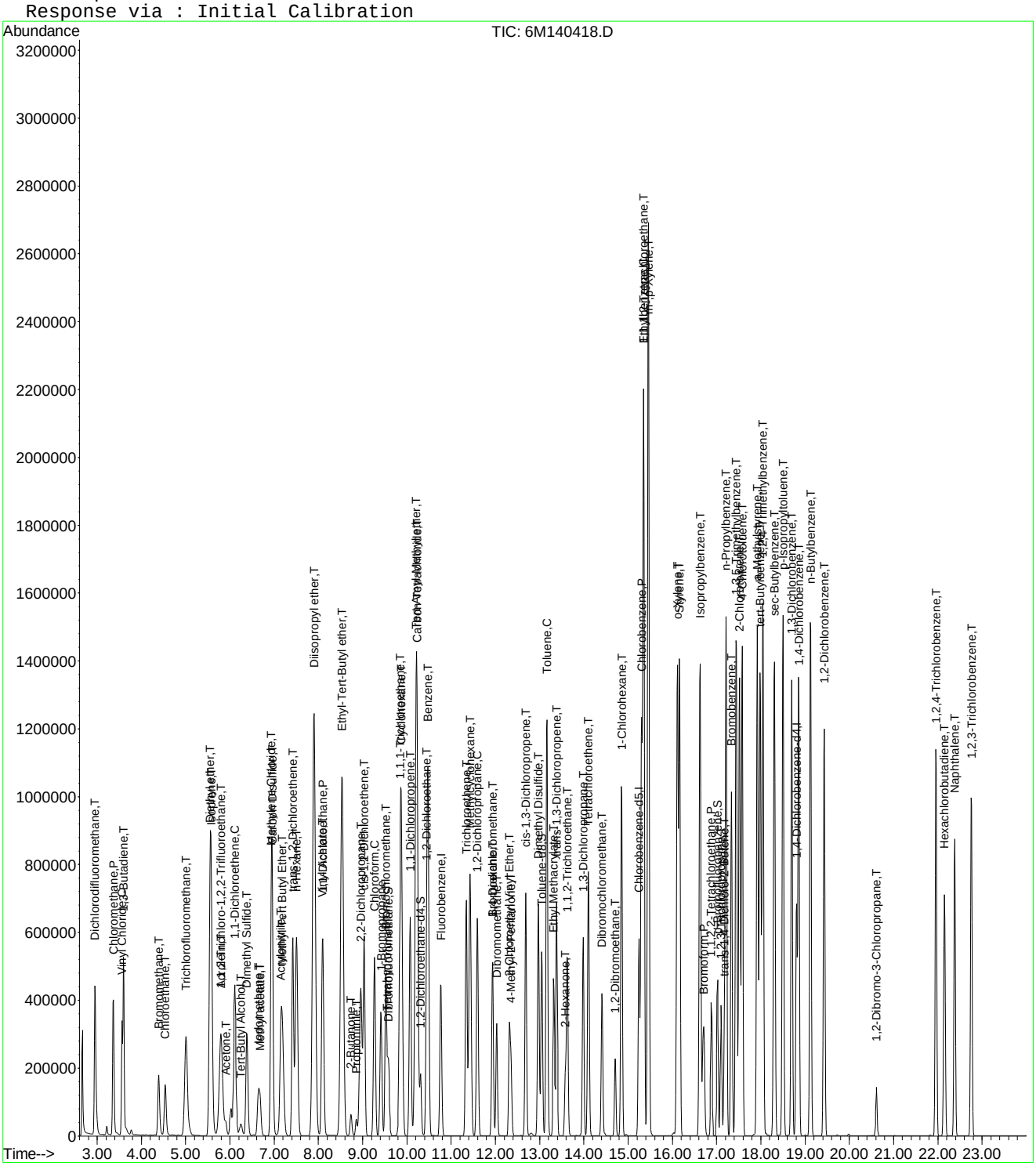

6M140418.D 8260WTR.M Tue Jul 05 12:19:50 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140418.D Vial: 2
Acq On : 5 Jul 2016 11:14 Operator: TMB
Sample : WG575127-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	85	0.00
2	T	Dichlorodifluoromethane	0.4179	0.5107	-22.2#	99	0.00
3	P	Chloromethane	0.4666	0.4713	-1.0	86	0.00
4	C	Vinyl Chloride	0.2562	0.2977	-16.2	97	0.00
5	T	1,3-Butadiene	0.1608	0.2152	-33.8#	118	0.00
6	T	Bromomethane	0.1703	0.1560	8.4	82	0.02
7	T	Chloroethane	0.1619	0.1777	-9.8	93	0.00
8	T	Trichlorofluoromethane	0.3908	0.4735	-21.2#	108	0.00
9	T	Diethyl ether	0.2306	0.2268	1.7	81	0.00
10	T	Isoprene	0.3488	0.3810	-9.2	90	0.00
11	T	Acrolein	0.0384	0.0357	7.0	80	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2431	0.2792	-14.8	99	0.00
13	T	Acetone	0.0801	0.0732	8.6	78	0.00
14	C	1,1-Dichloroethene	0.4718	0.5152	-9.2	93	0.00
15	T	Tert-Butyl Alcohol	0.0245	0.0192	21.6#	67	-0.04
16	T	Dimethyl Sulfide	0.2057	0.2018	1.9	82	0.00
17	T	Iodomethane	0.1391	0.1984	-42.6#	93	0.00
18	T	Methyl acetate	0.2167	0.1999	7.8	79	0.00
19	T	Methylene Chloride	0.2705	0.2730	-0.9	89	0.00
20	T	Carbon Disulfide	0.8644	0.9288	-7.4	91	0.00
21	T	Acrylonitrile	0.0994	0.0941	5.4	78	0.00
22	T	Methyl Tert Butyl Ether	0.7171	0.6721	6.3	79	0.00
23	T	trans-1,2-Dichloroethene	0.2527	0.2688	-6.4	91	0.00
24	T	n-Hexane	0.4288	0.4799	-11.9	96	0.00
25	T	Diisopropyl ether	1.1541	1.1718	-1.5	86	0.00
26	T	Vinyl Acetate	0.4818	0.5085	-5.5	89	0.00
27	P	1,1-Dichloroethane	0.5440	0.5719	-5.1	90	0.00
28	T	Ethyl-Tert-Butyl ether	0.9285	0.9103	2.0	83	0.00
29	T	2-Butanone	0.1226	0.1097	10.6	74	0.00
30	T	Propionitrile	0.0333	0.0296	11.1	74	0.00
31	T	2,2-Dichloropropane	0.4104	0.4706	-14.7	99	0.00
32	T	cis-1,2-Dichloroethene	0.2766	0.2927	-5.8	90	0.00
33	C	Chloroform	0.4873	0.5176	-6.2	92	0.00
34		1-Bromopropane	0.0394	0.0466	-18.2	89	0.00
35	T	Bromochloromethane	0.1486	0.1615	-8.6	90	0.00
36	T	Tetrahydrofuran	0.0855	0.0690	19.3	72	0.00
37	S	Dibromofluoromethane	0.2536	0.2626	-3.5	86	0.00
38	T	1,1,1-Trichloroethane	0.4243	0.4809	-13.4	95	0.00
39	T	Cyclohexane	0.5520	0.5777	-4.7	90	0.00
40	T	1,1-Dichloropropene	0.3695	0.3947	-6.8	91	0.00
41	T	Tert-Amyl-Methyl ether	0.7050	0.6731	4.5	81	0.00
42	T	Carbon Tetrachloride	0.3484	0.4403	-26.4#	99	0.00
43	S	1,2-Dichloroethane-d4	0.3202	0.3129	2.3	83	0.00
44		Heptane	0.0000	0.0000	0.0	82	0.00
45	T	1,2-Dichloroethane	0.3907	0.4094	-4.8	88	0.00
46	T	Benzene	1.0430	1.0833	-3.9	89	0.00
47	T	Trichloroethene	0.2574	0.2670	-3.7	88	0.00
48	T	Methylcyclohexane	0.4041	0.4360	-7.9	92	0.00
49	C	1,2-Dichloropropane	0.3004	0.3046	-1.4	85	0.00
50	T	1,4-Dioxane	0.0020	0.0017	16.7	67	0.00
51	T	Bromodichloromethane	0.3624	0.3970	-9.5	90	0.00
52	T	Dibromomethane	0.1453	0.1527	-5.1	86	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1506	0.1394	7.4	73	0.00
54	T	4-Methyl-2-Pentanone	0.0927	0.0825	10.9	73	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140418.D Vial: 2
Acq On : 5 Jul 2016 11:14 Operator: TMB
Sample : WG575127-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4208	0.4429	-5.3	87	0.00
56	T	Dimethyl Disulfide	0.2342	0.2380	-1.6	83	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	88	0.00
58	S	Toluene-d8	1.2311	1.2135	1.4	87	0.00
59	C	Toluene	1.4900	1.5004	-0.7	90	0.00
60	T	Ethyl Methacrylate	0.4239	0.3898	8.1	77	0.00
61		Paraldehyde	0.0000	0.0000	0.0	90	0.00
62	T	trans-1,3-Dichloropropene	0.5298	0.5371	-1.4	86	0.00
63	T	1,1,2-Trichloroethane	0.2757	0.2693	2.3	84	0.00
64	T	2-Hexanone	0.2618	0.2289	12.5	74	0.00
65	T	1,3-Dichloropropane	0.5197	0.4849	6.7	82	0.00
66	T	Tetrachloroethene	0.3551	0.3761	-5.9	93	0.00
67	T	Dibromochloromethane	0.3348	0.3612	-7.9	88	0.00
68	T	1,2-Dibromoethane	0.2662	0.2575	3.2	82	0.00
69	T	1-Chlorohexane	0.4959	0.5109	-3.0	89	0.00
70	P	Chlorobenzene	0.9556	0.9780	-2.3	90	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3400	0.3701	-8.9	92	0.00
72	C	Ethylbenzene	0.5002	0.5287	-5.7	91	0.00
73	T	m-,p-Xylene	0.6045	0.6362	-5.2	91	0.00
74	T	o-Xylene	0.6029	0.6363	-5.5	90	0.00
75	T	Styrene	1.0143	1.0860	-7.1	89	0.00
76	P	Bromoform	0.2076	0.2130	-2.6	85	0.00
77	T	Isopropylbenzene	1.5731	1.6723	-6.3	92	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	89	0.00
79	P	1,1,2,2-Tetrachloroethane	0.6068	0.5808	4.3	84	0.00
80	S	p-Bromofluorobenzene	0.9791	0.9339	4.6	85	0.00
81	T	1,2,3-Trichloropropane	0.1799	0.1676	6.8	80	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2294	0.2273	0.9	83	0.00
83	T	n-Propylbenzene	3.5921	3.7235	-3.7	93	0.00
84	T	Bromobenzene	0.7506	0.7558	-0.7	91	0.00
85	T	1,3,5-Trimethylbenzene	2.5177	2.6328	-4.6	93	-0.01
86	T	2-Chlorotoluene	2.4293	2.4756	-1.9	92	0.00
87	T	4-Chlorotoluene	2.3160	2.3161	-0.0	93	0.00
88	T	a-Methylstyrene	1.2663	1.3413	-5.9	92	0.00
89	T	tert-Butylbenzene	0.5058	0.5384	-6.4	95	-0.01
90	T	1,2,4-Trimethylbenzene	2.5836	2.7469	-6.3	94	-0.01
91	T	sec-Butylbenzene	3.0139	3.1761	-5.4	94	0.00
92	T	p-Isopropyltoluene	2.5685	2.7523	-7.2	95	0.00
93	T	1,3-Dichlorobenzene	1.4773	1.5264	-3.3	94	0.00
94	T	1,4-Dichlorobenzene	1.4935	1.5153	-1.5	93	0.00
95	T	n-Butylbenzene	2.5188	2.7173	-7.9	95	0.00
96	T	1,2-Dichlorobenzene	1.3869	1.4092	-1.6	91	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1188	0.1156	2.7	85	0.00
98	T	1,2,4-Trichlorobenzene	0.9804	0.9915	-1.1	90	0.00
99	T	Hexachlorobutadiene	0.4076	0.4340	-6.5	96	0.00
100	T	Naphthalene	2.0036	1.9285	3.7	81	0.00
101	T	1,2,3-Trichlorobenzene	0.9078	0.9006	0.8	89	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140418.D 8260WTR.M Tue Jul 05 12:19:58 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140418.D Vial: 2
Acq On : 5 Jul 2016 11:14 Operator: TMB
Sample : WG575127-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	85	0.00
2	T	Dichlorodifluoromethane	50.0000	61.0966	-22.2#	99	0.00
3	P	Chloromethane	50.0000	50.5065	-1.0	86	0.00
4	C	Vinyl Chloride	50.0000	58.0873	-16.2	97	0.00
5	T	1,3-Butadiene	50.0000	73.9703	-47.9#	118	0.00
6	T	Bromomethane	50.0000	45.8220	8.4	82	0.02
7	T	Chloroethane	50.0000	54.8897	-9.8	93	0.00
8	T	Trichlorofluoromethane	50.0000	60.5843	-21.2#	108	0.00
9	T	Diethyl ether	100.0000	98.3402	1.7	81	0.00
10	T	Isoprene	50.0000	54.6163	-9.2	90	0.00
11	T	Acrolein	50.0000	46.4868	7.0	80	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	57.4144	-14.8	99	0.00
13	T	Acetone	50.0000	45.6801	8.6	78	0.00
14	C	1,1-Dichloroethene	50.0000	54.6033	-9.2	93	0.00
15	T	Tert-Butyl Alcohol	200.0000	156.7612	21.6#	67	-0.04
16	T	Dimethyl Sulfide	50.0000	49.0419	1.9	82	0.00
17	T	Iodomethane	50.0000	57.9080	-15.8	93	0.00
18	T	Methyl acetate	50.0000	46.1112	7.8	79	0.00
19	T	Methylene Chloride	50.0000	50.4590	-0.9	89	0.00
20	T	Carbon Disulfide	50.0000	53.7242	-7.4	91	0.00
21	T	Acrylonitrile	50.0000	47.3045	5.4	78	0.00
22	T	Methyl Tert Butyl Ether	50.0000	46.8622	6.3	79	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.1886	-6.4	91	0.00
24	T	n-Hexane	50.0000	55.9593	-11.9	96	0.00
25	T	Diisopropyl ether	100.0000	101.5307	-1.5	86	0.00
26	T	Vinyl Acetate	50.0000	52.7711	-5.5	89	0.00
27	P	1,1-Dichloroethane	50.0000	52.5636	-5.1	90	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.0355	2.0	83	0.00
29	T	2-Butanone	50.0000	44.7204	10.6	74	0.00
30	T	Propionitrile	100.0000	88.8891	11.1	74	0.00
31	T	2,2-Dichloropropane	50.0000	57.3291	-14.7	99	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.9229	-5.8	90	0.00
33	C	Chloroform	50.0000	53.1061	-6.2	92	0.00
34		1-Bromopropane	50.0000	53.2616	-6.5	89	0.00
35	T	Bromochloromethane	50.0000	54.3157	-8.6	90	0.00
36	T	Tetrahydrofuran	100.0000	80.7067	19.3	72	0.00
37	S	Dibromofluoromethane	25.0000	25.8823	-3.5	86	0.00
38	T	1,1,1-Trichloroethane	50.0000	56.6765	-13.4	95	0.00
39	T	Cyclohexane	50.0000	52.3289	-4.7	90	0.00
40	T	1,1-Dichloropropene	50.0000	53.3997	-6.8	91	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	95.4688	4.5	81	0.00
42	T	Carbon Tetrachloride	50.0000	63.1909	-26.4#	99	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.4299	2.3	83	0.00
44		Heptane	-1.0000	0.0000	0.0	82	0.00
45	T	1,2-Dichloroethane	50.0000	52.3951	-4.8	88	0.00
46	T	Benzene	50.0000	51.9306	-3.9	89	0.00
47	T	Trichloroethene	50.0000	51.8638	-3.7	88	0.00
48	T	Methylcyclohexane	50.0000	53.9584	-7.9	92	0.00
49	C	1,2-Dichloropropane	50.0000	50.7017	-1.4	85	0.00
50	T	1,4-Dioxane	200.0000	166.5234	16.7	67	0.00
51	T	Bromodichloromethane	50.0000	54.7665	-9.5	90	0.00
52	T	Dibromomethane	50.0000	52.5339	-5.1	86	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	46.2898	7.4	73	0.00
54	T	4-Methyl-2-Pentanone	50.0000	44.5327	10.9	73	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140418.D Vial: 2
Acq On : 5 Jul 2016 11:14 Operator: TMB
Sample : WG575127-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.6322	-5.3	87	0.00
56	T	Dimethyl Disulfide	50.0000	50.7973	-1.6	83	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	88	0.00
58	S	Toluene-d8	25.0000	24.6427	1.4	87	0.00
59	C	Toluene	50.0000	50.3493	-0.7	90	0.00
60	T	Ethyl Methacrylate	50.0000	45.9719	8.1	77	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	90	0.00
62	T	trans-1,3-Dichloropropene	50.0000	50.6842	-1.4	86	0.00
63	T	1,1,2-Trichloroethane	50.0000	48.8365	2.3	84	0.00
64	T	2-Hexanone	50.0000	43.7253	12.5	74	0.00
65	T	1,3-Dichloropropane	50.0000	46.6489	6.7	82	0.00
66	T	Tetrachloroethene	50.0000	52.9576	-5.9	93	0.00
67	T	Dibromochloromethane	50.0000	53.9477	-7.9	88	0.00
68	T	1,2-Dibromoethane	50.0000	48.3784	3.2	82	0.00
69	T	1-Chlorohexane	50.0000	51.5113	-3.0	89	0.00
70	P	Chlorobenzene	50.0000	51.1731	-2.3	90	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	54.4282	-8.9	92	0.00
72	C	Ethylbenzene	50.0000	52.8538	-5.7	91	0.00
73	T	m-,p-Xylene	100.0000	105.2463	-5.2	91	0.00
74	T	o-Xylene	50.0000	52.7715	-5.5	90	0.00
75	T	Styrene	50.0000	53.5326	-7.1	89	0.00
76	P	Bromoform	50.0000	51.2916	-2.6	85	0.00
77	T	Isopropylbenzene	50.0000	53.1529	-6.3	92	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	89	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.8656	4.3	84	0.00
80	S	p-Bromofluorobenzene	25.0000	23.8472	4.6	85	0.00
81	T	1,2,3-Trichloropropane	50.0000	46.5829	6.8	80	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	49.5502	0.9	83	0.00
83	T	n-Propylbenzene	50.0000	51.8296	-3.7	93	0.00
84	T	Bromobenzene	50.0000	50.3480	-0.7	91	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.2851	-4.6	93	-0.01
86	T	2-Chlorotoluene	50.0000	50.9523	-1.9	92	0.00
87	T	4-Chlorotoluene	50.0000	50.0029	-0.0	93	0.00
88	T	a-Methylstyrene	50.0000	52.9587	-5.9	92	0.00
89	T	tert-Butylbenzene	50.0000	53.2148	-6.4	95	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	53.1609	-6.3	94	-0.01
91	T	sec-Butylbenzene	50.0000	52.6919	-5.4	94	0.00
92	T	p-Isopropyltoluene	50.0000	53.5794	-7.2	95	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.6643	-3.3	94	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.7263	-1.5	93	0.00
95	T	n-Butylbenzene	50.0000	53.9407	-7.9	95	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.8021	-1.6	91	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.6573	2.7	85	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.5688	-1.1	90	0.00
99	T	Hexachlorobutadiene	50.0000	53.2397	-6.5	96	0.00
100	T	Naphthalene	50.0000	48.1269	3.7	81	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	49.6050	0.8	89	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140418.D 8260WTR.M Tue Jul 05 12:20:01 2016 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\1\DATA\042416\6M138750.D Vial: 1
Acq On : 24 Apr 2016 16:33 Operator: JDS
Sample : WG566155-01 50ng BFB 826-A9 Inst : HPMS6
Misc : 1,1 STD75485 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

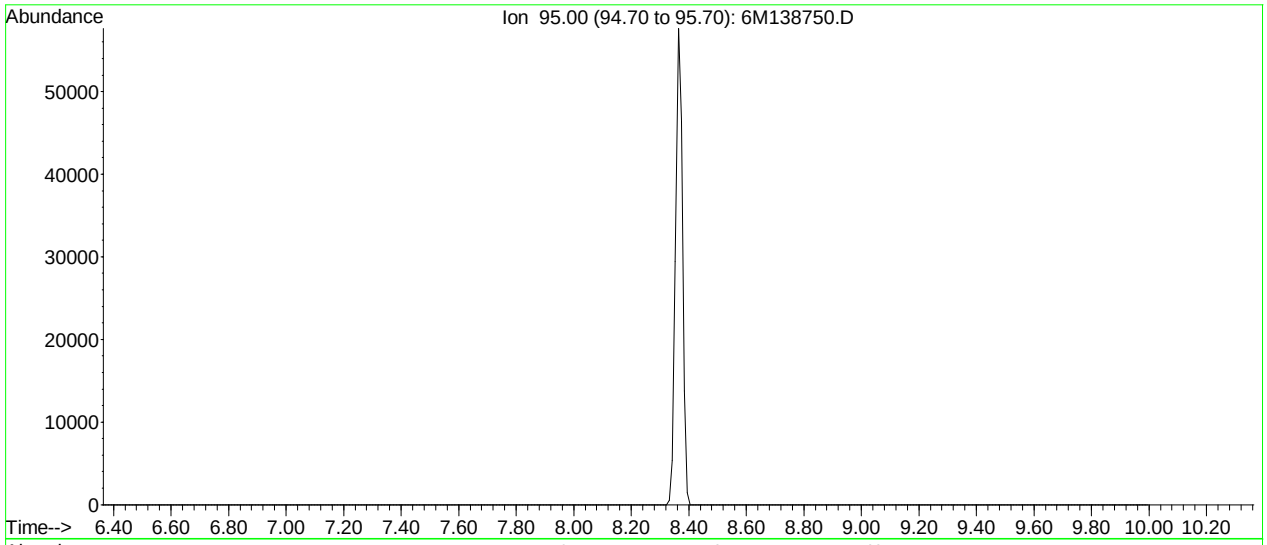

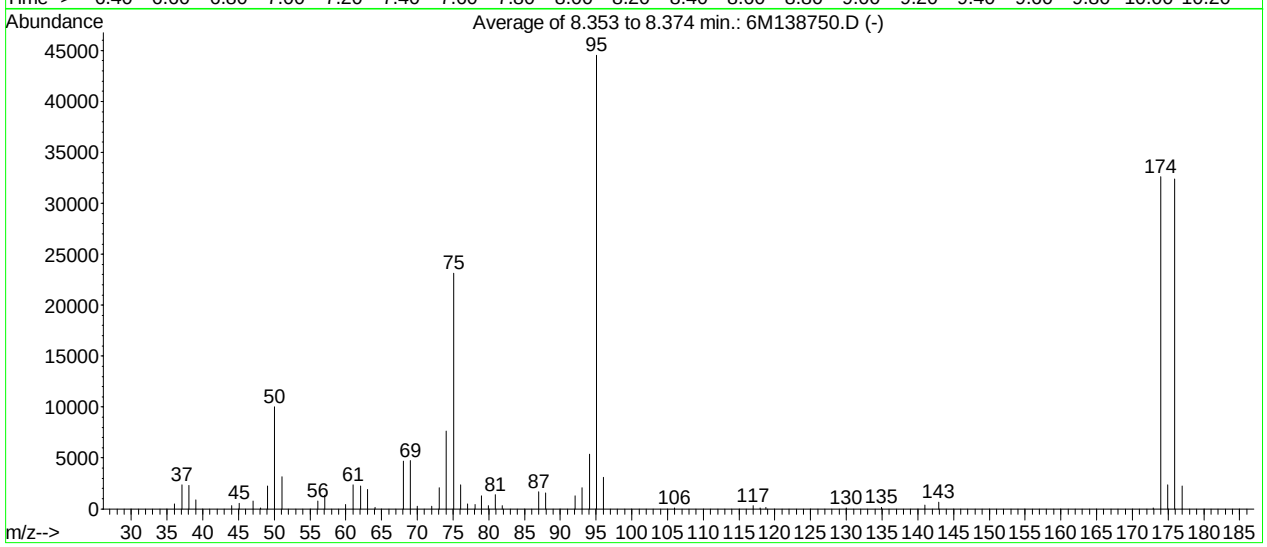

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	10010	PASS
75	95	30	60	52.0	23152	PASS
95	95	100	100	100.0	44552	PASS
96	95	5	9	6.9	3085	PASS
173	174	0.00	2	0.3	113	PASS
174	95	50	100	73.2	32632	PASS
175	174	5	9	7.2	2336	PASS
176	174	95	101	99.2	32384	PASS
177	176	5	9	7.0	2251	PASS

6M138750.D BFB.M Mon Apr 25 09:21:54 2016

BFB

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140313.D Vial: 1
Acq On : 30 Jun 2016 11:36 Operator: TMB
Sample : WG574723-01 50ng BFB STD 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6

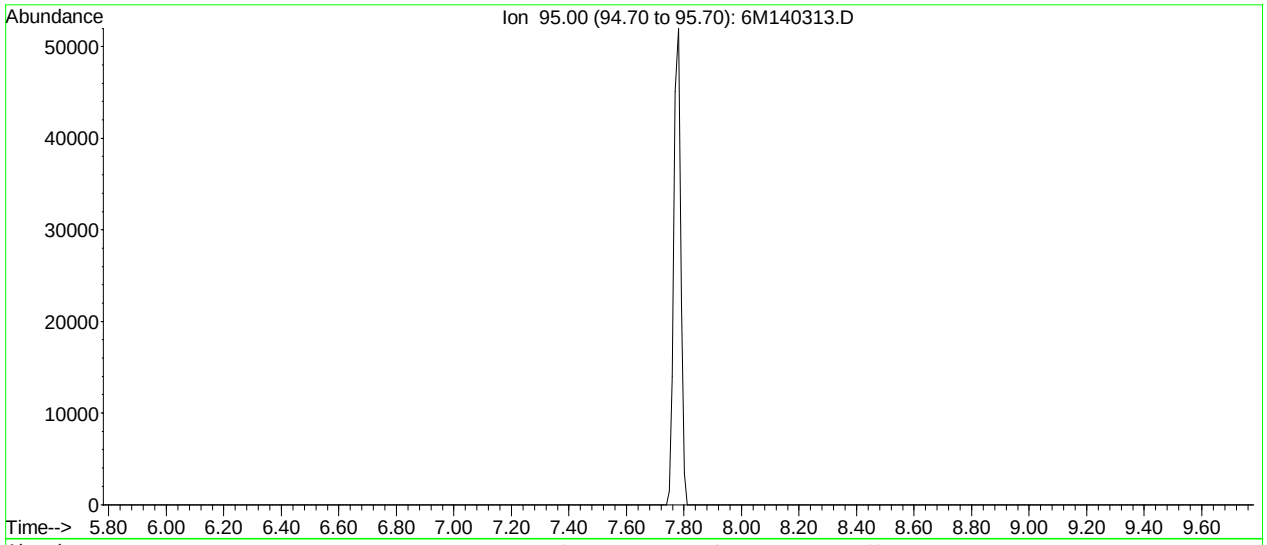

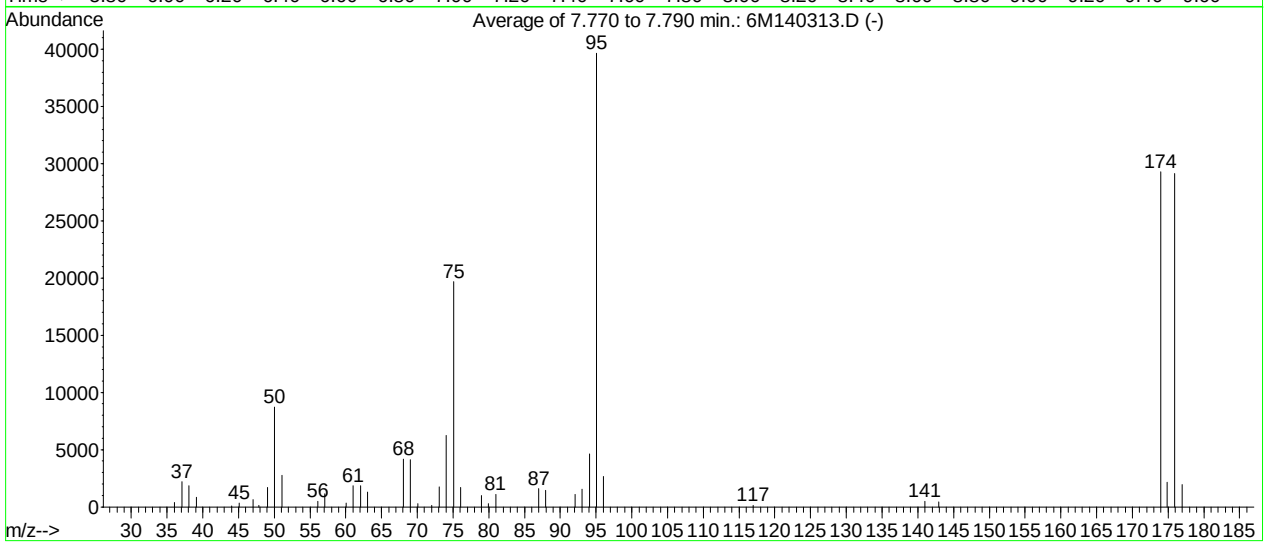

AutoFind: Scans 263, 264, 265; Background Corrected with Scan 258

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.0	8707	PASS
75	95	30	60	49.7	19699	PASS
95	95	100	100	100.0	39664	PASS
96	95	5	9	6.7	2652	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.8	29282	PASS
175	174	5	9	7.3	2131	PASS
176	174	95	101	99.6	29157	PASS
177	176	5	9	6.8	1969	PASS

6M140313.D 8260WTR.M Fri Jul 01 14:33:49 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140362.D Vial: 1
Acq On    :  2 Jul 2016  11:00                        Operator: TMB
Sample    : WG575083-01 50ng BFB STD 8260             Inst    : HPMS6
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:MSV01  06-30-16 - HPMS6
```

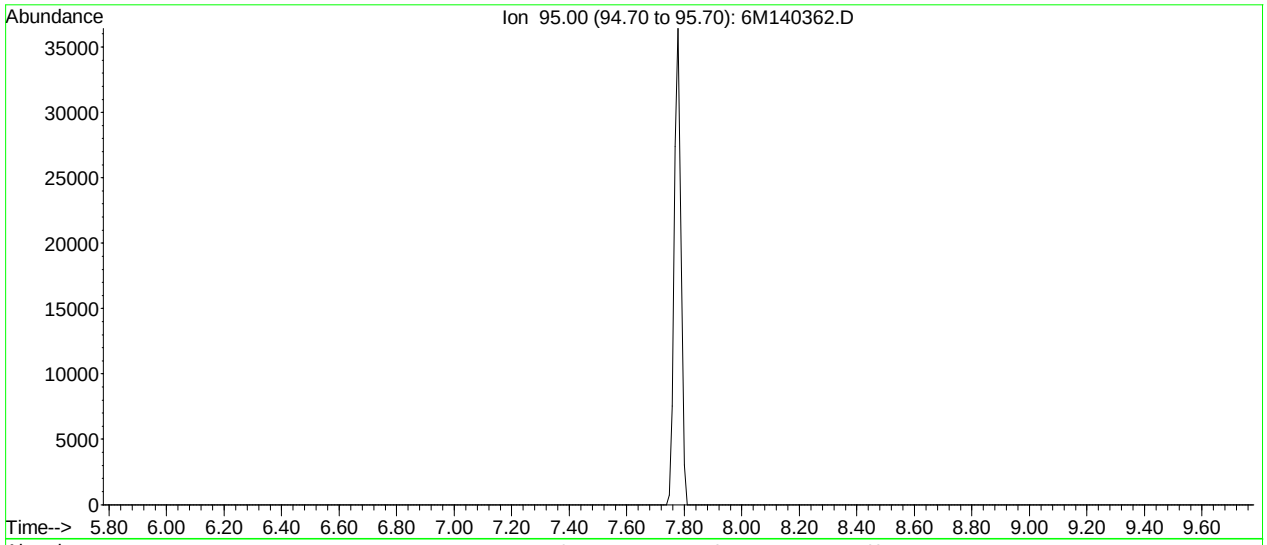

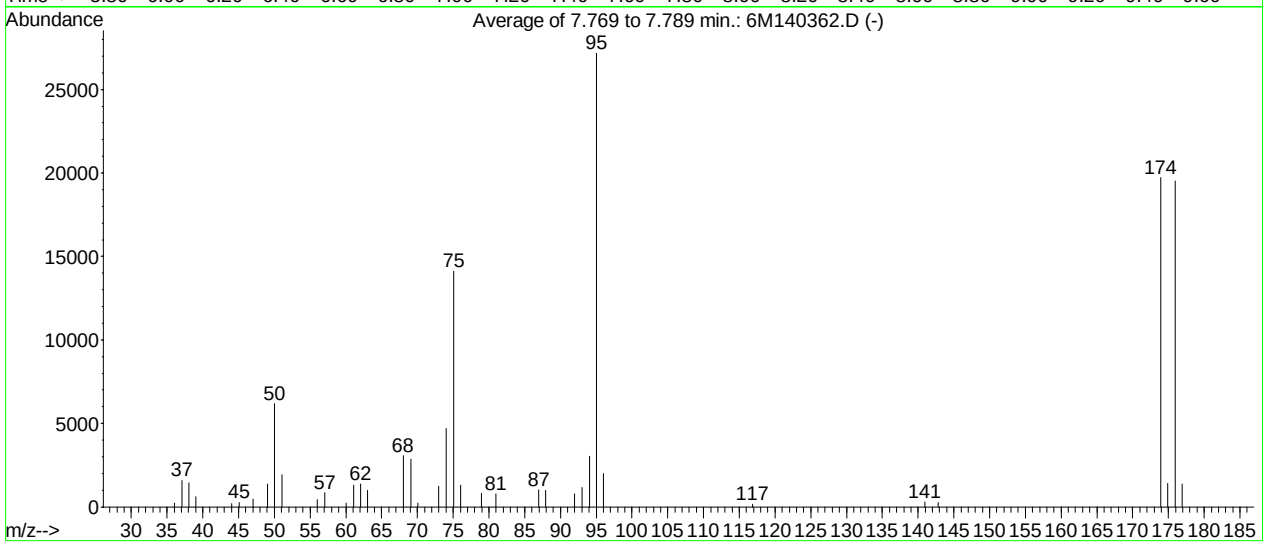

AutoFind: Scans 263, 264, 265; Background Corrected with Scan 258

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.7	6172	PASS
75	95	30	60	51.9	14114	PASS
95	95	100	100	100.0	27178	PASS
96	95	5	9	7.3	1992	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	72.6	19740	PASS
175	174	5	9	7.1	1398	PASS
176	174	95	101	98.9	19516	PASS
177	176	5	9	7.0	1368	PASS

6M140362.D 8260WTR.M Sat Jul 02 13:32:15 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140417.D Vial: 1
Acq On    :  5 Jul 2016  10:49                        Operator: TMB
Sample    : WG575127-01 50ng BFB STD 8260             Inst    : HPMS6
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:MSV01  06-30-16 - HPMS6
```

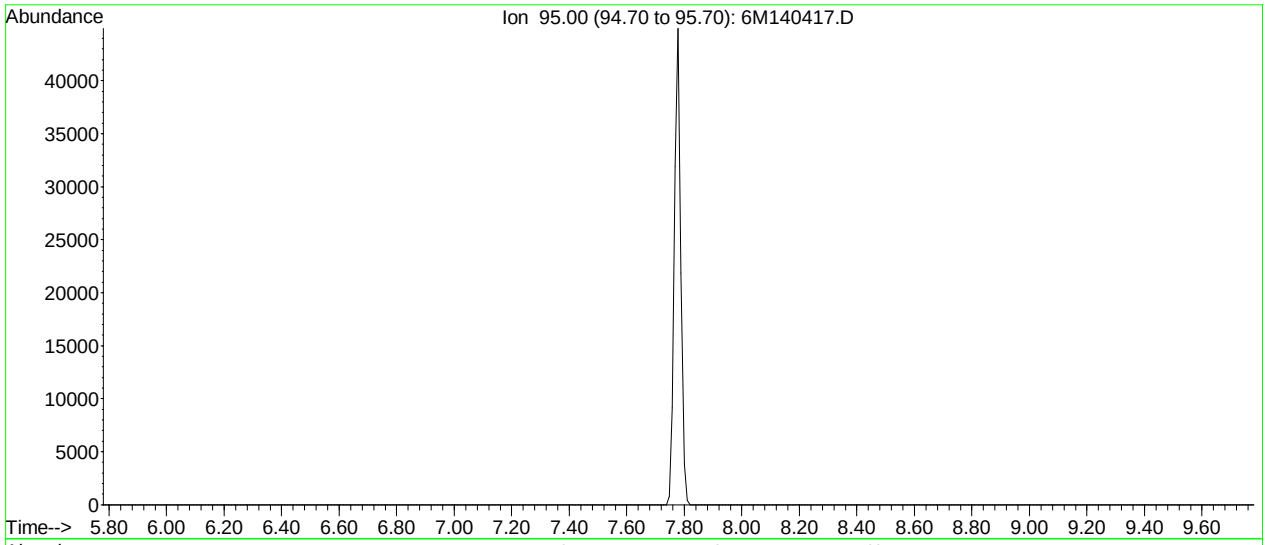

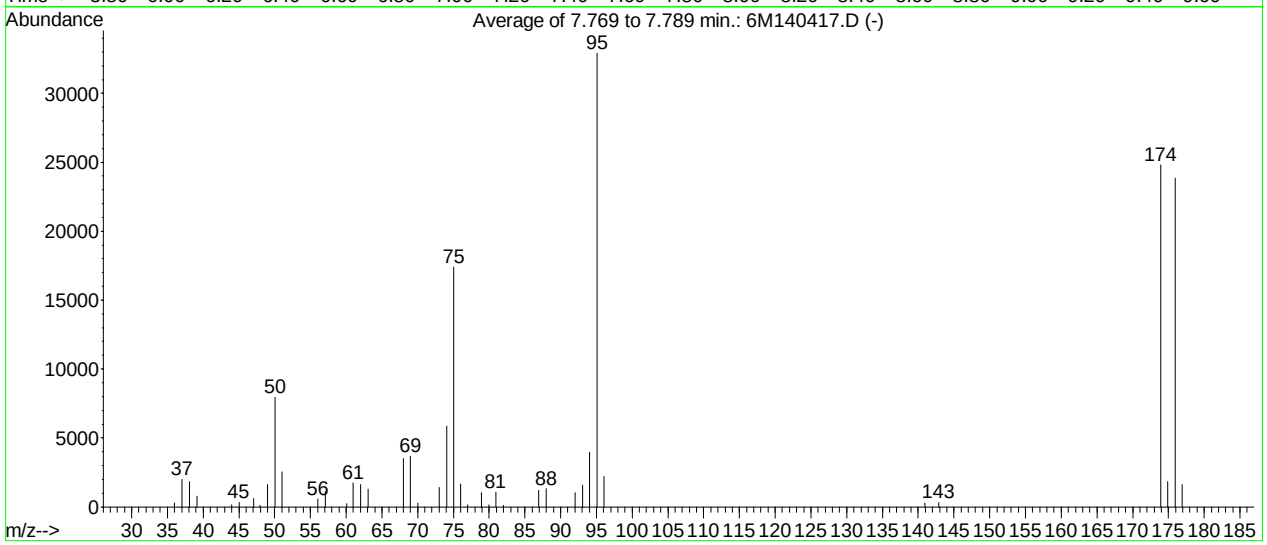

AutoFind: Scans 263, 264, 265; Background Corrected with Scan 258

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.2	7952	PASS
75	95	30	60	52.9	17407	PASS
95	95	100	100	100.0	32922	PASS
96	95	5	9	6.8	2223	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	75.4	24834	PASS
175	174	5	9	7.3	1823	PASS
176	174	95	101	96.0	23842	PASS
177	176	5	9	6.7	1605	PASS

6M140417.D 8260WTR.M Tue Jul 05 12:19:35 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140366.D Vial: 5
Acq On : 2 Jul 2016 13:02 Operator: TMB
Sample : WG575084-01 VBLK0702 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 10:09:50 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	550184	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	386464	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	197730	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	139793	25.0440 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.16%		
43) 1,2-Dichloroethane-d4	10.32	65	178512	25.3334 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.32%		
58) Toluene-d8	13.04	98	475884	25.0062 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.04%		
80) p-Bromofluorobenzene	17.02	95	198784	25.6700 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.68%		

Target Compounds					Qvalue
13) Acetone	5.91	43	214	0.1214 ug/L #	48
36) Tetrahydrofuran	9.56	42	1991	1.0579 ug/L #	41

(#) = qualifier out of range (m) = manual integration
6M140366.D 8260WTR.M Sun Jul 03 10:09:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140366.D Vial: 5
Acq On : 2 Jul 2016 13:02 Operator: TMB
Sample : WG575084-01 VBLK0702 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 3 10:09 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

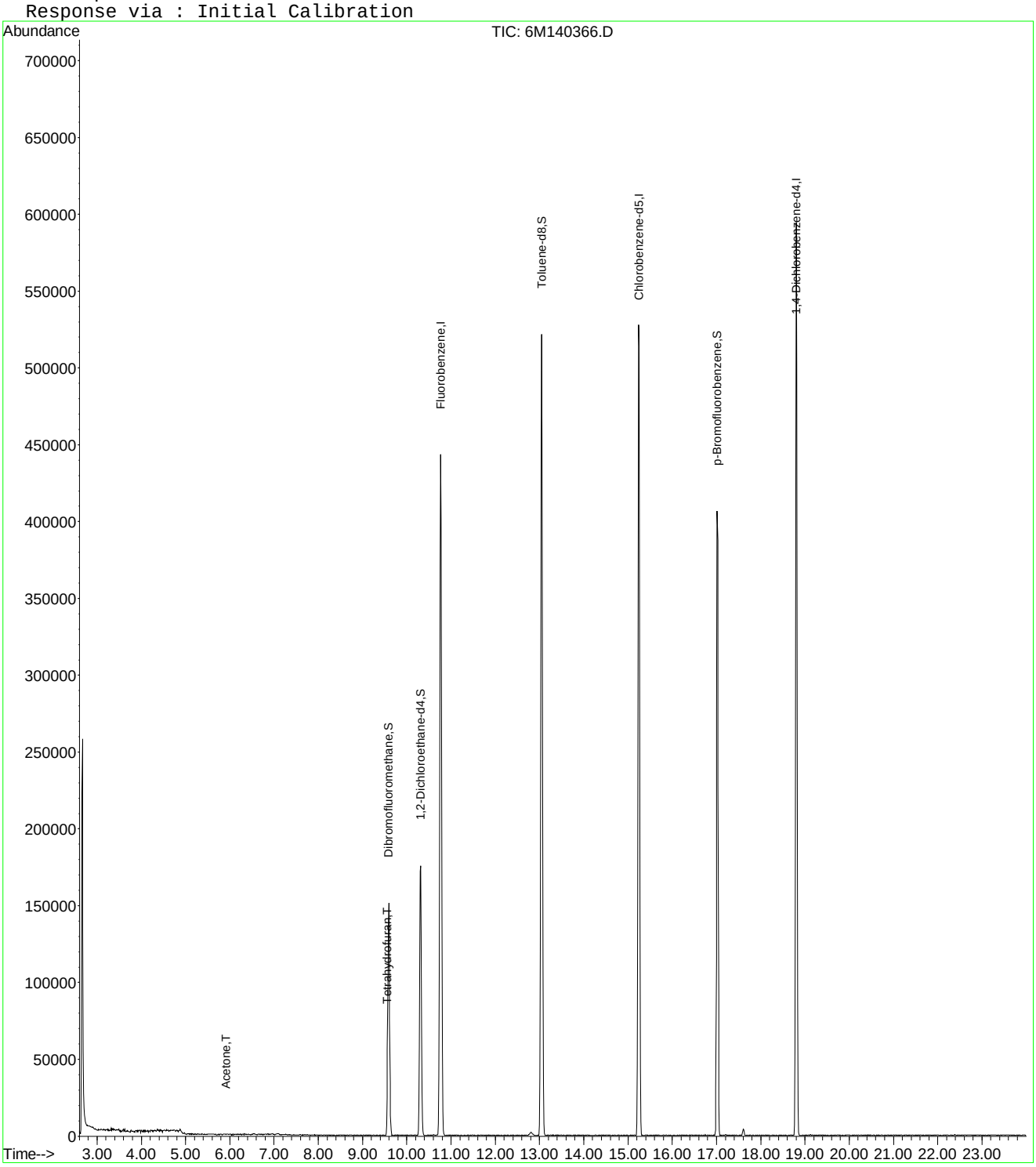

6M140366.D 8260WTR.M Sun Jul 03 10:09:54 2016 Page 2

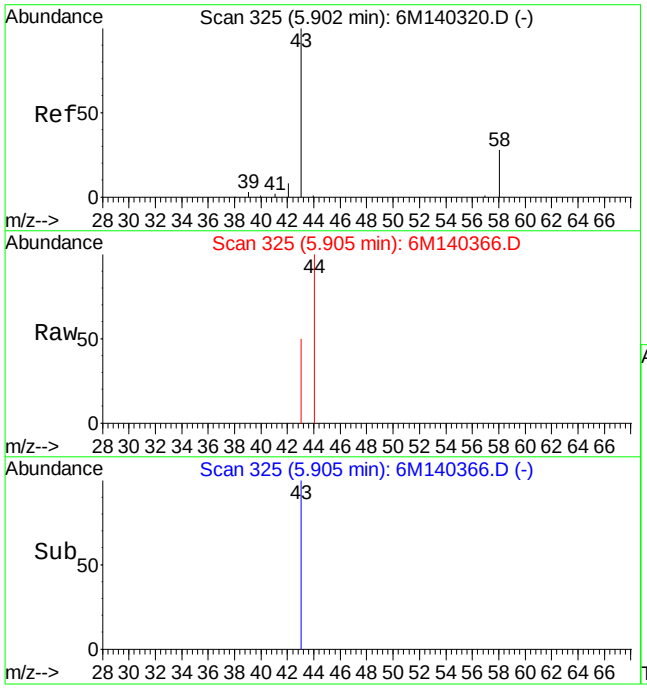

#13
Acetone
Concen: 0.12 ug/L
RT: 5.91 min Scan# 325
Delta R.T. 0.00 min
Lab File: 6M140366.D
Acq: 2 Jul 2016 13:02

Tgt Ion: 43 Resp: 214

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

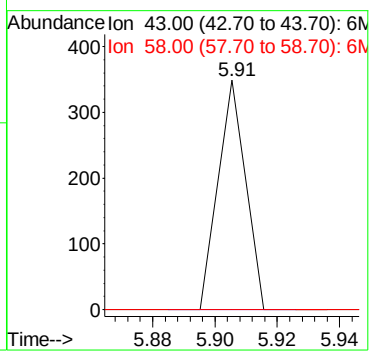

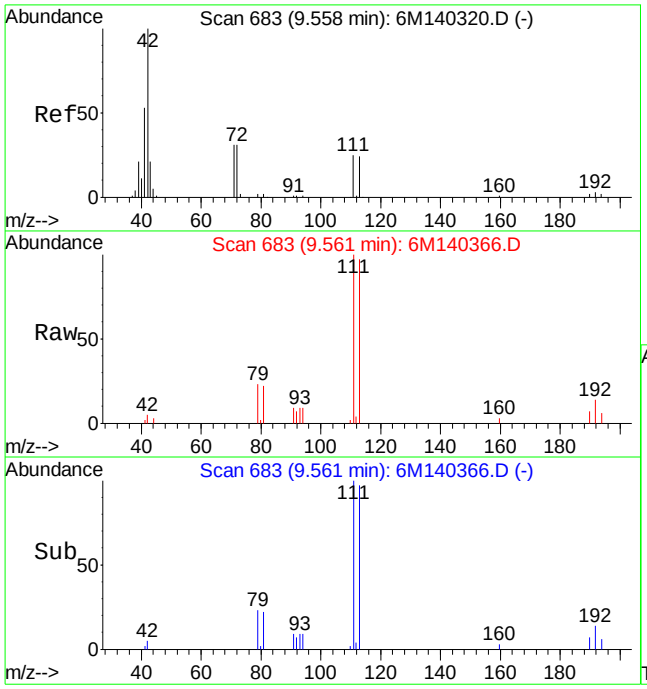

#36
Tetrahydrofuran
Concen: 1.06 ug/L
RT: 9.56 min Scan# 683
Delta R.T. 0.00 min
Lab File: 6M140366.D
Acq: 2 Jul 2016 13:02

Tgt Ion: 42 Resp: 1991

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	0.0	19.9	46.5#

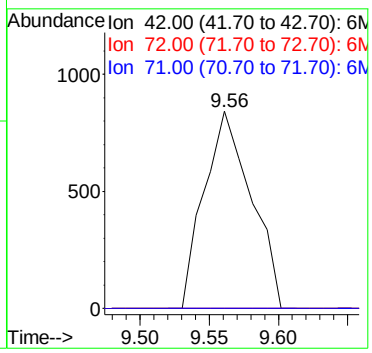

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140420.D Vial: 4
Acq On : 5 Jul 2016 12:18 Operator: TMB
Sample : WG575129-01 VBLK0705 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 06 08:37:01 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	553256	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.24	117	394130	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	203903	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.58	111	145392	25.9024 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.60%		
43) 1,2-Dichloroethane-d4	10.31	65	179127	25.2795 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.12%		
58) Toluene-d8	13.04	98	488671	25.1787 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.72%		
80) p-Bromofluorobenzene	17.02	95	197362	24.7148 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.84%		

Target Compounds

					Qvalue
8) Trichlorofluoromethane	5.24	101	14330	1.6570 ug/L #	1
36) Tetrahydrofuran	9.56	42	1995	1.0541 ug/L #	41
55) cis-1,3-Dichloropropene	12.76	75	8029	0.8623 ug/L #	70
56) Dimethyl Disulfide	12.77	79	1159	0.2236 ug/L #	1
98) 1,2,4-Trichlorobenzene	21.81	180	1188	0.1486 ug/L #	90
99) Hexachlorobutadiene	22.03	225	776	0.2334 ug/L #	53
100) Naphthalene	22.23	128	3277	0.2005 ug/L #	67
101) 1,2,3-Trichlorobenzene	22.64	180	1428	0.1929 ug/L #	66

(#) = qualifier out of range (m) = manual integration
6M140420.D 8260WTR.M Wed Jul 06 08:37:04 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140420.D Vial: 4
Acq On : 5 Jul 2016 12:18 Operator: TMB
Sample : WG575129-01 VBLK0705 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 6 8:37 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

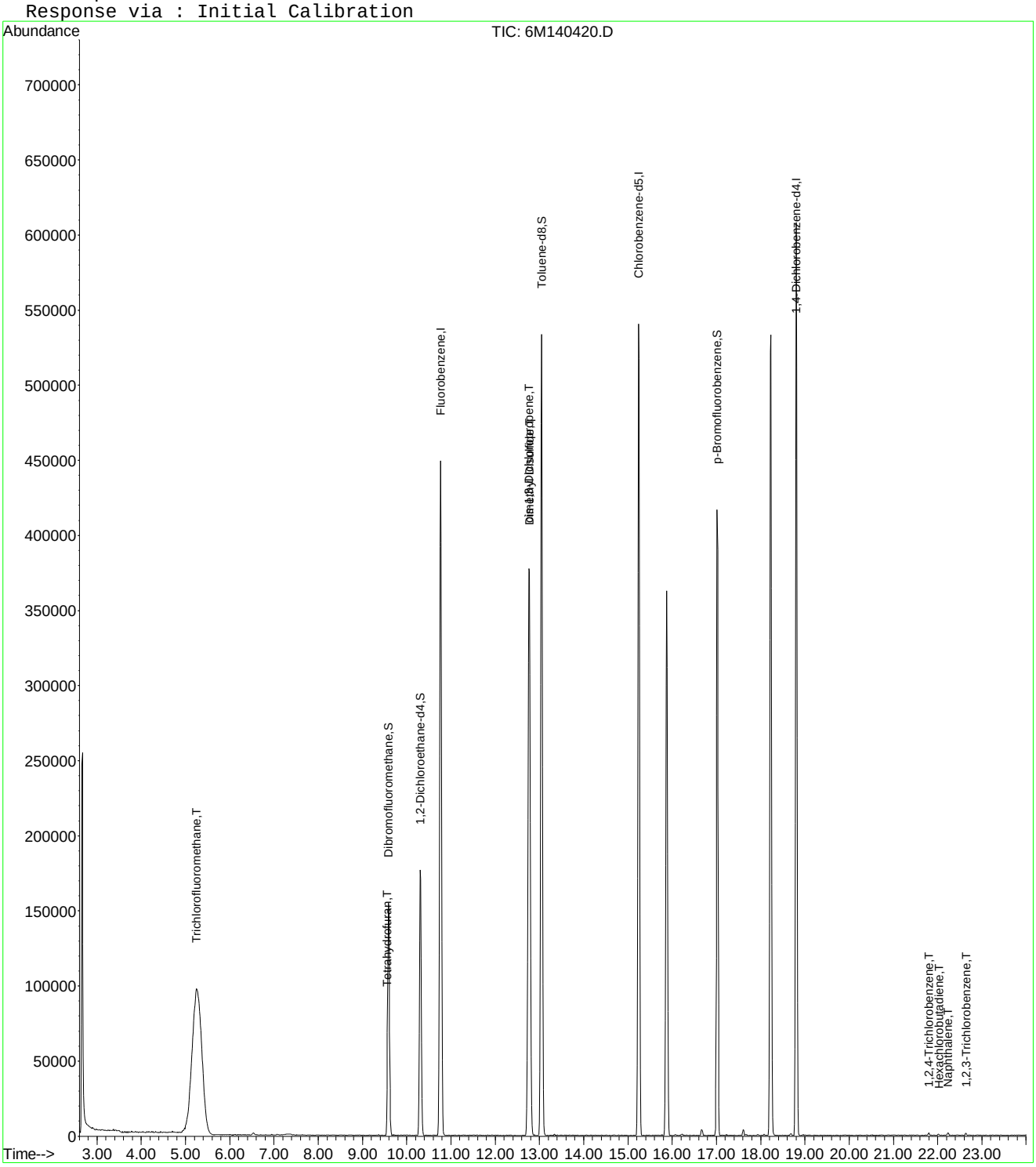

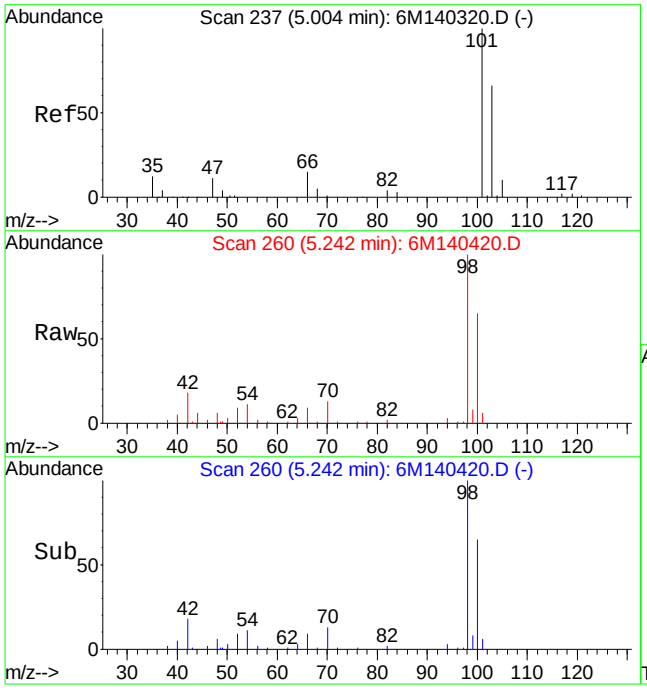

#8
Trichlorofluoromethane
Concen: 1.66 ug/L
RT: 5.24 min Scan# 260
Delta R.T. 0.25 min
Lab File: 6M140420.D
Acq: 5 Jul 2016 12:18

Tgt Ion:101 Resp: 14330

Ion	Ratio	Lower	Upper
101	100		
103	0.0	39.1	91.1#
66	154.5	8.3	19.5#

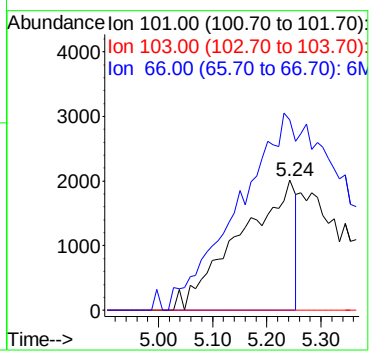

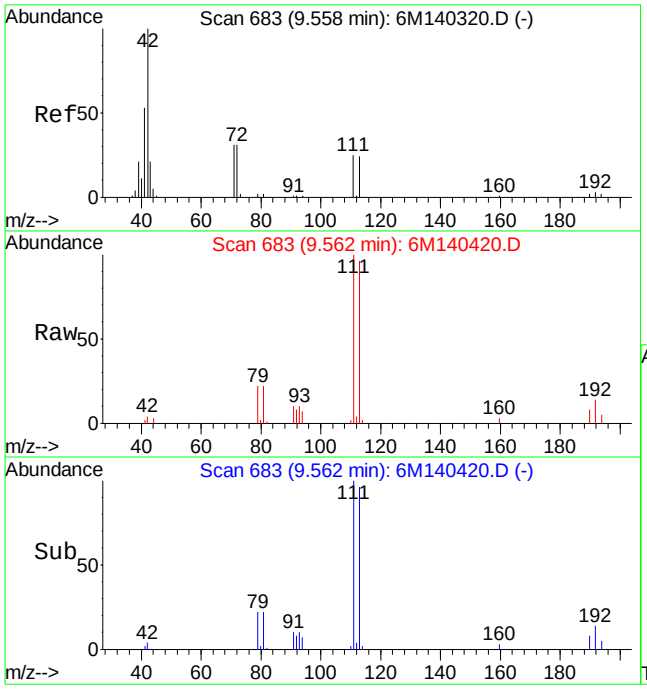

#36
Tetrahydrofuran
Concen: 1.05 ug/L
RT: 9.56 min Scan# 683
Delta R.T. 0.00 min
Lab File: 6M140420.D
Acq: 5 Jul 2016 12:18

Tgt Ion: 42 Resp: 1995

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	0.0	19.9	46.5#

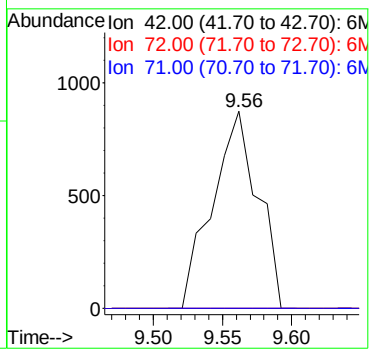

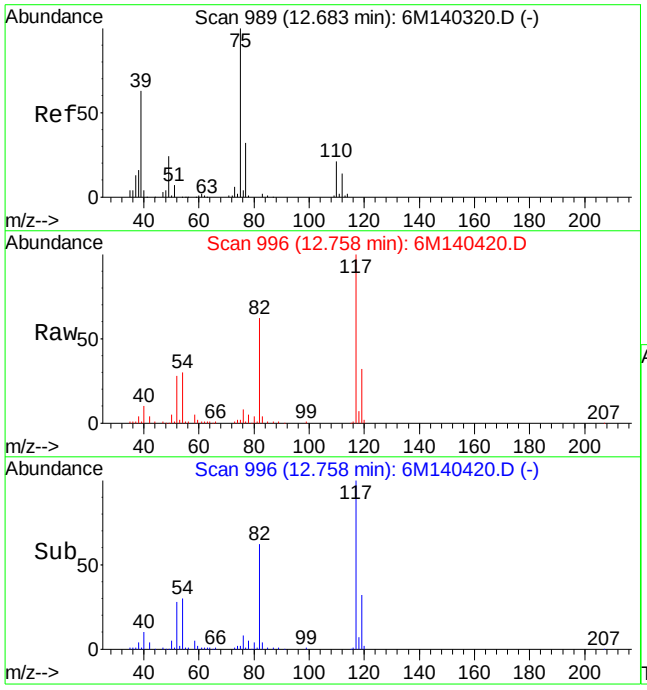

#55
cis-1,3-Dichloropropene
Concen: 0.86 ug/L
RT: 12.76 min Scan# 996
Delta R.T. 0.07 min
Lab File: 6M140420.D
Acq: 5 Jul 2016 12:18

Tgt Ion: 75 Resp: 8029

Ion	Ratio	Lower	Upper
75	100		
77	48.1	19.5	45.5#
49	7.3	14.1	32.9#

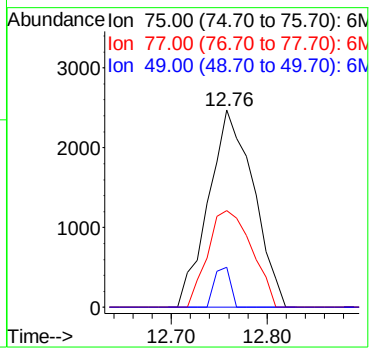

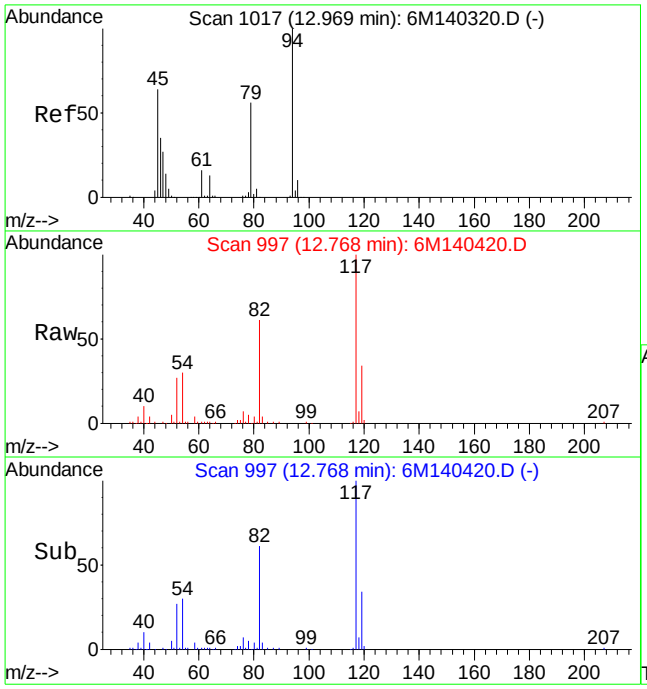

#56
Dimethyl Disulfide
Concen: 0.22 ug/L
RT: 12.77 min Scan# 997
Delta R.T. -0.20 min
Lab File: 6M140420.D
Acq: 5 Jul 2016 12:18

Tgt Ion: 79 Resp: 1159

Ion	Ratio	Lower	Upper
79	100		
61	350.1	16.4	38.4#

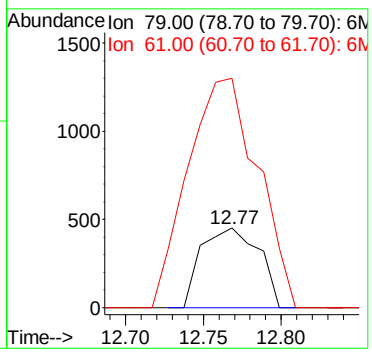

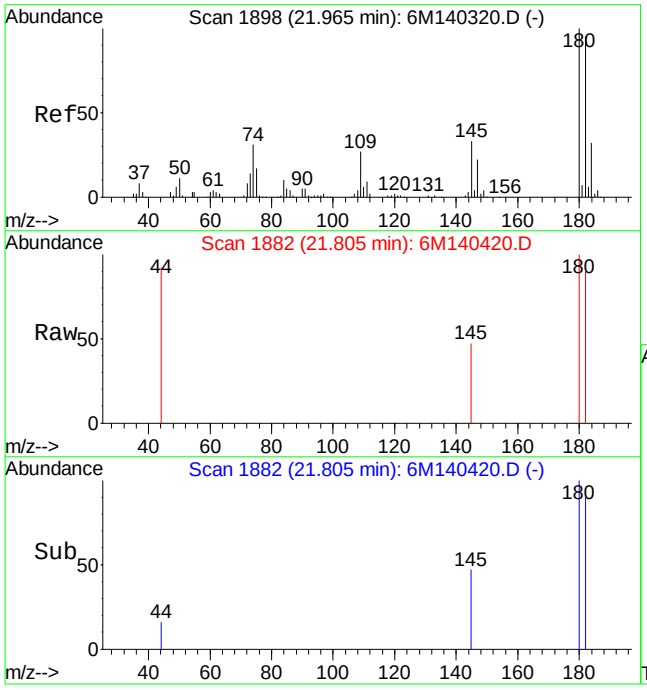

#98
1,2,4-Trichlorobenzene
Concen: 0.15 ug/L
RT: 21.81 min Scan# 1882
Delta R.T. -0.16 min
Lab File: 6M140420.D
Acq: 5 Jul 2016 12:18

Tgt Ion:180 Resp: 1188

Ion	Ratio	Lower	Upper
180	100		
182	100.3	57.7	134.5
145	16.9	19.0	44.4#

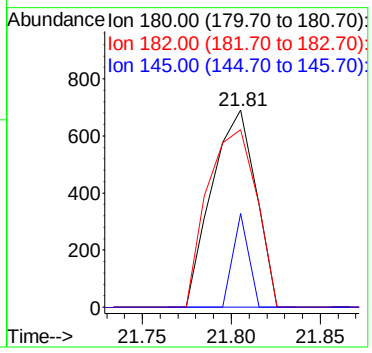

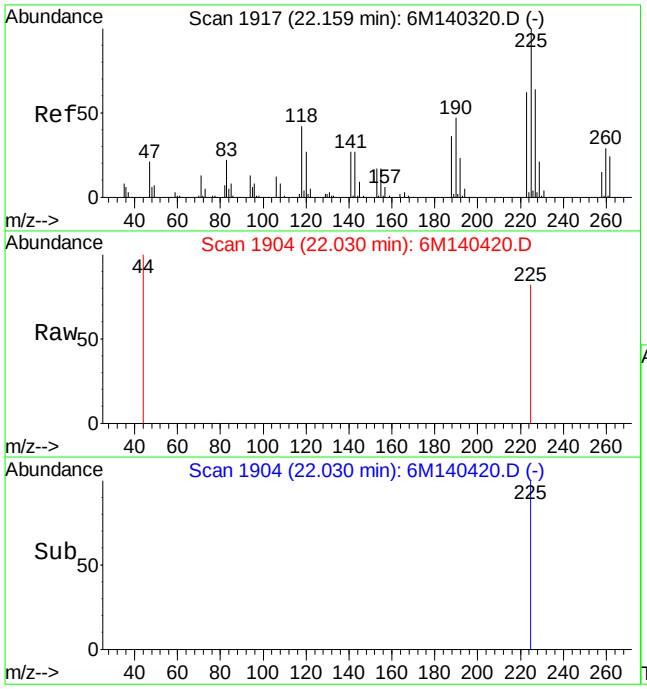

#99
Hexachlorobutadiene
Concen: 0.23 ug/L
RT: 22.03 min Scan# 1904
Delta R.T. -0.12 min
Lab File: 6M140420.D
Acq: 5 Jul 2016 12:18

Tgt Ion:225 Resp: 776

Ion	Ratio	Lower	Upper
225	100		
223	27.2	37.7	88.1#
227	26.2	38.6	90.0#

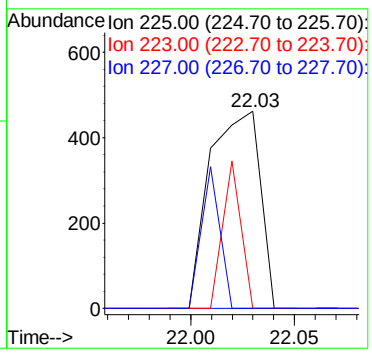

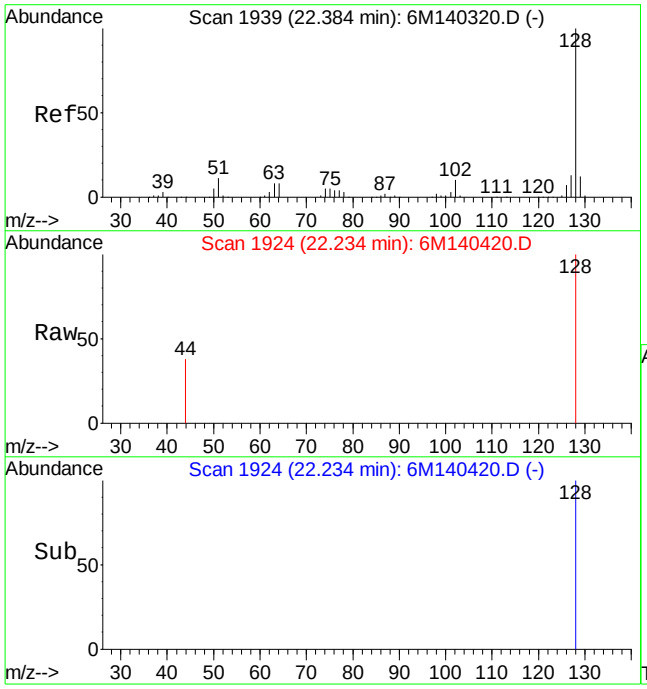

#100
Naphthalene
Concen: 0.20 ug/L
RT: 22.23 min Scan# 1924
Delta R.T. -0.15 min
Lab File: 6M140420.D
Acq: 5 Jul 2016 12:18

Tgt Ion:128 Resp: 3277

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.8	18.2#

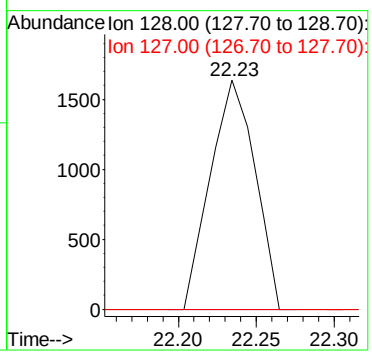

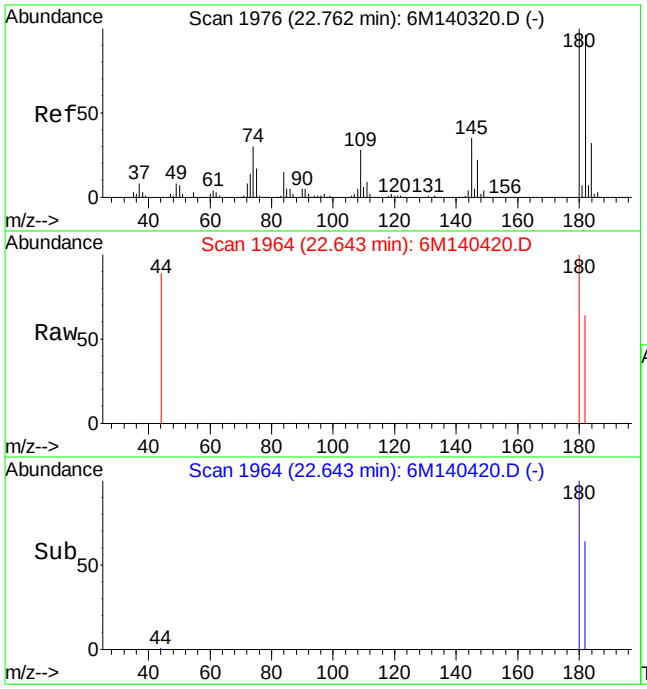

#101
1,2,3-Trichlorobenzene
Concen: 0.19 ug/L
RT: 22.64 min Scan# 1964
Delta R.T. -0.12 min
Lab File: 6M140420.D
Acq: 5 Jul 2016 12:18

Tgt Ion:180 Resp: 1428

Ion	Ratio	Lower	Upper
180	100		
182	72.5	57.8	135.0
145	0.0	20.5	47.7#

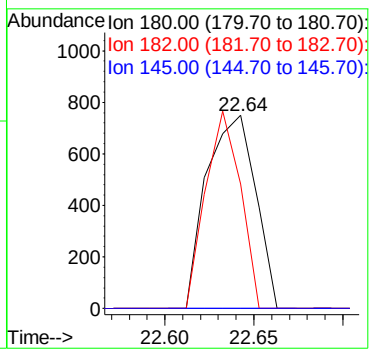

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140367.D Vial: 6
Acq On : 2 Jul 2016 13:34 Operator: TMB
Sample : WG575084-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 09:39:02 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	542920	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.24	117	388681	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	215626	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.58	111	138589	25.1605 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.64%		
43) 1,2-Dichloroethane-d4	10.31	65	174117	25.0403 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.16%		
58) Toluene-d8	13.04	98	476815	24.9122 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.64%		
80) p-Bromofluorobenzene	17.02	95	203456	24.0927 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.36%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	112225	12.3655 ug/L	99
3) Chloromethane	3.36	50	134644	13.2881 ug/L	100
4) Vinyl Chloride	3.56	62	107755	19.3650 ug/L	100
5) 1,3-Butadiene	3.59	54	61287	17.0514 ug/L	96
6) Bromomethane	4.37	94	56317	15.2304 ug/L	98
7) Chloroethane	4.53	64	71007	20.1956 ug/L	93
8) Trichlorofluoromethane	5.00	101	205024	24.1583 ug/L	100
9) Diethyl ether	5.55	59	478402	95.5392 ug/L	95
10) Isoprene	5.57	67	164494	21.7174 ug/L	95
11) Acrolein	5.79	56	90113	108.1915 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	111753	21.1642 ug/L	98
13) Acetone	5.91	43	37461	21.5366 ug/L	95
14) 1,1-Dichloroethene	6.11	61	180295	17.5984 ug/L	93
15) Tert-Butyl Alcohol	6.26	59	95636	179.8043 ug/L	100
16) Dimethyl Sulfide	6.39	62	153988	34.4633 ug/L	93
17) Iodomethane	6.64	142	93793	25.7199 ug/L	89
18) Methyl acetate	6.68	43	105446	22.4027 ug/L	98
19) Methylene Chloride	6.94	84	111768	19.0244 ug/L	88
20) Carbon Disulfide	6.96	76	322353	17.1712 ug/L	100
21) Acrylonitrile	7.15	53	45371	21.0079 ug/L	99
22) Methyl Tert Butyl Ether	7.18	73	328844	21.1167 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	103640	18.8886 ug/L	87
24) n-Hexane	7.50	57	168463	18.0906 ug/L	95
25) Diisopropyl ether	7.90	45	2597238	103.6233 ug/L	98
26) Vinyl Acetate	8.08	43	209248	19.9988 ug/L	97
27) 1,1-Dichloroethane	8.10	63	222655	18.8476 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	1918709	95.1547 ug/L	98
29) 2-Butanone	8.73	43	54677	20.5347 ug/L	94
30) Propionitrile	8.85	54	71565	99.0384 ug/L	97
31) 2,2-Dichloropropane	8.95	77	181360	20.3488 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	121005	20.1469 ug/L	82
33) Chloroform	9.27	83	214062	20.2266 ug/L	100
34) 1-Bromopropane	9.41	122	25037	26.5958 ug/L	99
35) Bromochloromethane	9.52	130	65675	20.3481 ug/L	98
36) Tetrahydrofuran	9.55	42	167052	89.9484 ug/L	93
38) 1,1,1-Trichloroethane	9.85	97	191400	20.7731 ug/L	99
39) Cyclohexane	9.88	56	234678	19.5770 ug/L	95
40) 1,1-Dichloropropene	10.07	75	155520	19.3786 ug/L	96
41) Tert-Amyl-Methyl ether	10.22	73	1567494	102.3744 ug/L	97
42) Carbon Tetrachloride	10.24	117	165737	21.9068 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140367.D 8260WTR.M Sun Jul 03 09:39:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140367.D Vial: 6
Acq On : 2 Jul 2016 13:34 Operator: TMB
Sample : WG575084-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 09:39:02 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	179665	21.1735 ug/L	97
46)	Benzene	10.48	78	451669	19.9411 ug/L	97
47)	Trichloroethene	11.34	130	113571	20.3198 ug/L	88
48)	Methylcyclohexane	11.43	83	177633	20.2439 ug/L	94
49)	1,2-Dichloropropane	11.59	63	136598	20.9417 ug/L	95
50)	1,4-Dioxane	11.94	88	6010	136.1079 ug/L	79
51)	Bromodichloromethane	11.93	83	171312	21.7664 ug/L	99
52)	Dibromomethane	12.02	93	64333	20.3850 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	69555	21.2682 ug/L	98
54)	4-Methyl-2-Pentanone	12.35	58	40953	20.3472 ug/L	97
55)	cis-1,3-Dichloropropene	12.68	75	208566	22.8249 ug/L	99
56)	Dimethyl Disulfide	12.96	79	105580	20.7562 ug/L	98
59)	Toluene	13.16	91	475661	20.5337 ug/L	100
60)	Ethyl Methacrylate	13.32	69	140111	21.2591 ug/L	92
62)	trans-1,3-Dichloropropene	13.38	75	179767	21.8242 ug/L	94
63)	1,1,2-Trichloroethane	13.63	97	94684	22.0866 ug/L	98
64)	2-Hexanone	13.58	43	82915	20.3705 ug/L	94
65)	1,3-Dichloropropane	13.98	76	178617	22.1074 ug/L	92
66)	Tetrachloroethene	14.11	166	112372	20.3562 ug/L	92
67)	Dibromochloromethane	14.41	129	117302	22.5368 ug/L	99
68)	1,2-Dibromoethane	14.71	107	87994	21.2651 ug/L	98
69)	1-Chlorohexane	14.85	91	161538	20.9539 ug/L	88
70)	Chlorobenzene	15.30	112	322825	21.7290 ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.35	131	119424	22.5910 ug/L	97
72)	Ethylbenzene	15.35	106	168216	21.6315 ug/L	91
73)	m-,p-Xylene	15.45	106	418492	44.5279 ug/L	94
74)	o-Xylene	16.11	106	211069	22.5176 ug/L	93
75)	Styrene	16.16	104	353243	22.4000 ug/L	92
76)	Bromoform	16.71	173	67326	20.8592 ug/L	98
77)	Isopropylbenzene	16.62	105	551071	22.5323 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	117683	22.4877 ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	35470	22.8614 ug/L	86
82)	trans-1,4-Dichloro-2-Buten	17.18	53	39009	19.7157 ug/L	96
83)	n-Propylbenzene	17.22	91	695249	22.4405 ug/L	98
84)	Bromobenzene	17.34	156	135907	20.9941 ug/L	90
85)	1,3,5-Trimethylbenzene	17.44	105	479726	22.0914 ug/L	97
86)	2-Chlorotoluene	17.52	91	438463	20.9262 ug/L	96
87)	4-Chlorotoluene	17.58	91	454785	22.7674 ug/L	96
88)	a-Methylstyrene	17.92	118	260179	23.8213 ug/L	95
89)	tert-Butylbenzene	17.99	134	99633	22.8365 ug/L	73
90)	1,2,4-Trimethylbenzene	18.05	105	491937	22.0763 ug/L	97
91)	sec-Butylbenzene	18.30	105	584431	22.4827 ug/L	97
92)	p-Isopropyltoluene	18.50	119	494263	22.3113 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	276274	21.6830 ug/L	94
94)	1,4-Dichlorobenzene	18.85	146	284825	22.1104 ug/L	94
95)	n-Butylbenzene	19.12	91	476922	21.9530 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	268610	22.4544 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	24239	23.6497 ug/L	79
98)	1,2,4-Trichlorobenzene	21.96	180	178537	21.1140 ug/L	99
99)	Hexachlorobutadiene	22.15	225	77763	22.1190 ug/L	99
100)	Naphthalene	22.38	128	331568	19.1869 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	160807	20.5384 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140367.D 8260WTR.M Sun Jul 03 09:39:06 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140367.D Vial: 6
Acq On : 2 Jul 2016 13:34 Operator: TMB
Sample : WG575084-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 3 9:39 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

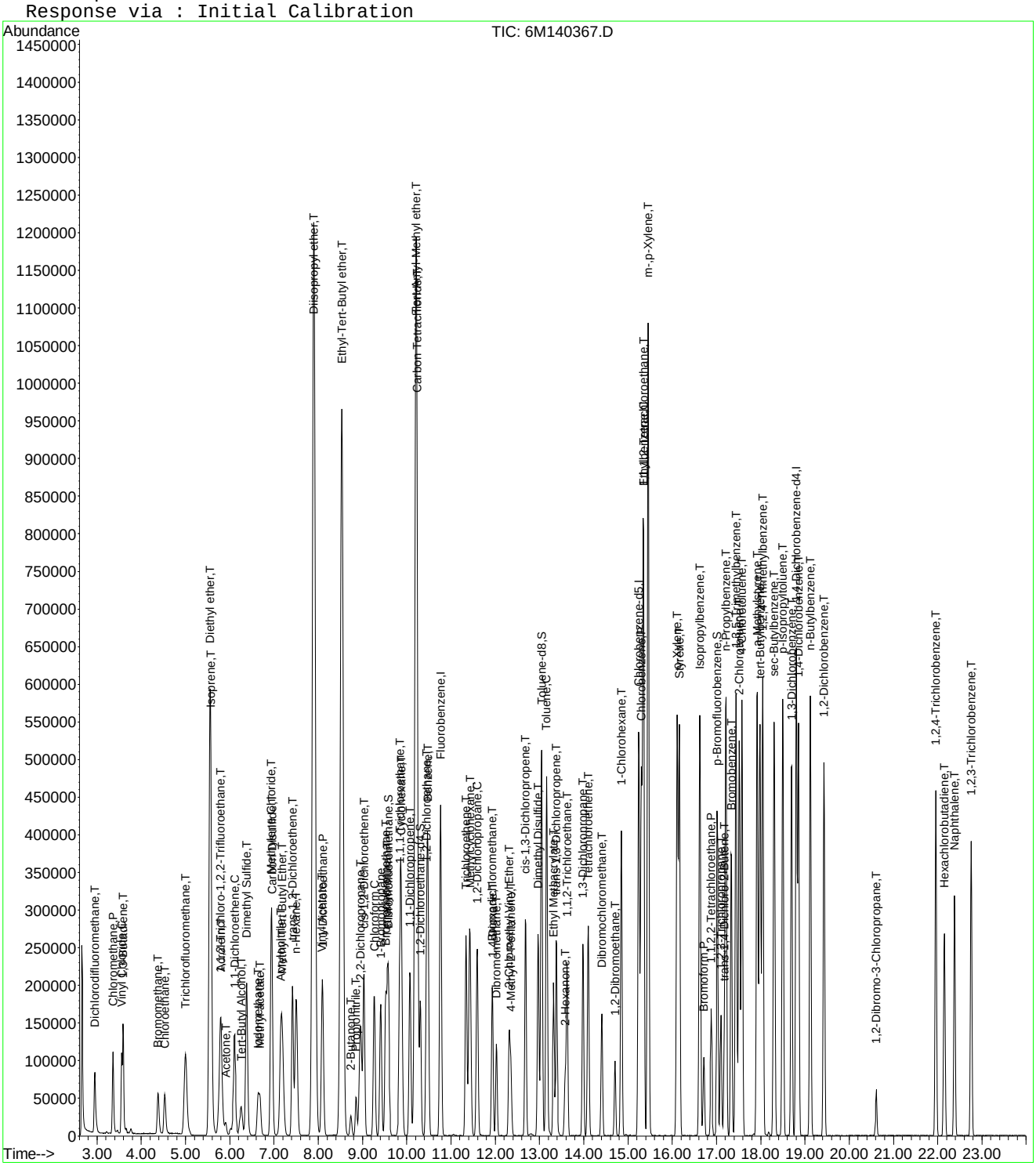

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140421.D Vial: 5
Acq On : 5 Jul 2016 12:50 Operator: TMB
Sample : WG575129-02 20ugL LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 15:16:12 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	531079	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	387865	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	222211	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	140112	26.0041 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.00%		
43) 1,2-Dichloroethane-d4	10.31	65	173630	25.5270 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.12%		
58) Toluene-d8	13.04	98	471992	24.7121 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.84%		
80) p-Bromofluorobenzene	17.02	95	203379	23.3699 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.48%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	113375	12.7707 ug/L	99
3) Chloromethane	3.36	50	154627	15.6004 ug/L	99
4) Vinyl Chloride	3.56	62	112017	20.5798 ug/L	99
5) 1,3-Butadiene	3.59	54	54352	15.1612 ug/L	95
6) Bromomethane	4.38	94	65496	18.1077 ug/L	98
7) Chloroethane	4.53	64	73280	21.3068 ug/L	93
8) Trichlorofluoromethane	5.00	101	179989	21.6812 ug/L	99
9) Diethyl ether	5.55	59	434744	88.7562 ug/L	95
10) Isoprene	5.57	67	168028	22.6786 ug/L	92
11) Acrolein	5.79	56	84663	103.9144 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	108886	21.0810 ug/L	97
13) Acetone	5.90	43	35904	21.1017 ug/L	96
14) 1,1-Dichloroethene	6.11	61	139236	13.8937 ug/L	92
15) Tert-Butyl Alcohol	6.26	59	103785	199.4756 ug/L	97
16) Dimethyl Sulfide	6.38	62	153840	35.1979 ug/L	92
17) Iodomethane	6.64	142	89751	25.1798 ug/L	89
18) Methyl acetate	6.69	43	104365	22.6675 ug/L	98
19) Methylene Chloride	6.93	84	102590	17.8515 ug/L	88
20) Carbon Disulfide	6.95	76	337267	18.3662 ug/L	99
21) Acrylonitrile	7.15	53	43141	20.4208 ug/L	98
22) Methyl Tert Butyl Ether	7.18	73	311902	20.4754 ug/L	100
23) trans-1,2-Dichloroethene	7.41	96	94022	17.5178 ug/L	90
24) n-Hexane	7.51	57	172972	18.9889 ug/L	95
25) Diisopropyl ether	7.89	45	2512067	102.4599 ug/L	98
26) Vinyl Acetate	8.09	43	190721	18.6345 ug/L	96
27) 1,1-Dichloroethane	8.10	63	210183	18.1885 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	1862859	94.4447 ug/L	98
29) 2-Butanone	8.73	43	53673	20.6071 ug/L	96
30) Propionitrile	8.85	54	71277	100.8391 ug/L	97
31) 2,2-Dichloropropane	8.96	77	172471	19.7829 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	116659	19.8563 ug/L	72
33) Chloroform	9.26	83	210794	20.3619 ug/L	99
34) 1-Bromopropane	9.41	122	23437	25.4718 ug/L	100
35) Bromochloromethane	9.52	130	62967	19.9441 ug/L	99
36) Tetrahydrofuran	9.56	42	159616	87.8608 ug/L	93
38) 1,1,1-Trichloroethane	9.85	97	185147	20.5424 ug/L	99
39) Cyclohexane	9.87	56	227379	19.3911 ug/L	95
40) 1,1-Dichloropropene	10.08	75	143493	18.2787 ug/L	95
41) Tert-Amyl-Methyl ether	10.21	73	1513095	101.0249 ug/L	97
42) Carbon Tetrachloride	10.23	117	162442	21.9500 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140421.D 8260WTR.M Tue Jul 05 15:16:16 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140421.D Vial: 5
Acq On : 5 Jul 2016 12:50 Operator: TMB
Sample : WG575129-02 20ugL LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 15:16:12 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	178428	21.4966 ug/L	97
46)	Benzene	10.48	78	429862	19.4015 ug/L	97
47)	Trichloroethene	11.35	130	111832	20.4548 ug/L	86
48)	Methylcyclohexane	11.43	83	173179	20.1763 ug/L	95
49)	1,2-Dichloropropane	11.59	63	132389	20.7490 ug/L	94
50)	1,4-Dioxane	11.94	88	7810	180.8159 ug/L	86
51)	Bromodichloromethane	11.93	83	172382	22.3906 ug/L	99
52)	Dibromomethane	12.02	93	64713	20.9626 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	61797	19.3173 ug/L	97
54)	4-Methyl-2-Pentanone	12.35	58	36881	18.7326 ug/L	100
55)	cis-1,3-Dichloropropene	12.68	75	204876	22.9209 ug/L	98
56)	Dimethyl Disulfide	12.97	79	100045	20.1065 ug/L	100
59)	Toluene	13.15	91	466629	20.1862 ug/L	99
60)	Ethyl Methacrylate	13.32	69	129468	19.6856 ug/L	92
62)	trans-1,3-Dichloropropene	13.39	75	179750	21.8680 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	92913	21.7191 ug/L	98
64)	2-Hexanone	13.58	43	75083	18.4852 ug/L	95
65)	1,3-Dichloropropane	13.99	76	175317	21.7446 ug/L	91
66)	Tetrachloroethene	14.10	166	114807	20.8411 ug/L	94
67)	Dibromochloromethane	14.41	129	120929	23.2825 ug/L	99
68)	1,2-Dibromoethane	14.70	107	88181	21.3551 ug/L	99
69)	1-Chlorohexane	14.85	91	151952	19.7519 ug/L	89
70)	Chlorobenzene	15.30	112	322456	21.7498 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	122355	23.1942 ug/L	97
72)	Ethylbenzene	15.35	106	169550	21.8489 ug/L	94
73)	m-,p-Xylene	15.46	106	419540	44.7333 ug/L	94
74)	o-Xylene	16.11	106	211016	22.5594 ug/L	92
75)	Styrene	16.15	104	358816	22.8013 ug/L	92
76)	Bromoform	16.72	173	71848	22.3071 ug/L	98
77)	Isopropylbenzene	16.62	105	554955	22.7389 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	120331	22.3123 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	37207	23.2703 ug/L	89
82)	trans-1,4-Dichloro-2-Buten	17.18	53	37320	18.3031 ug/L	96
83)	n-Propylbenzene	17.22	91	706128	22.1163 ug/L	97
84)	Bromobenzene	17.34	156	141468	21.2055 ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	486863	21.7557 ug/L	97
86)	2-Chlorotoluene	17.52	91	437115	20.2436 ug/L	99
87)	4-Chlorotoluene	17.57	91	475261	23.0874 ug/L	93
88)	a-Methylstyrene	17.92	118	253809	22.5494 ug/L	96
89)	tert-Butylbenzene	17.98	134	101966	22.6786 ug/L	72
90)	1,2,4-Trimethylbenzene	18.04	105	509742	22.1974 ug/L	98
91)	sec-Butylbenzene	18.31	105	598113	22.3272 ug/L	98
92)	p-Isopropyltoluene	18.50	119	512091	22.4310 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	292172	22.2512 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	298555	22.4894 ug/L	94
95)	n-Butylbenzene	19.12	91	497791	22.2346 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	286053	23.2039 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.62	75	25217	23.8748 ug/L	83
98)	1,2,4-Trichlorobenzene	21.96	180	193849	22.2455 ug/L	99
99)	Hexachlorobutadiene	22.15	225	85492	23.5968 ug/L	98
100)	Naphthalene	22.38	128	363199	20.3945 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	179344	22.2272 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140421.D Vial: 5
Acq On : 5 Jul 2016 12:50 Operator: TMB
Sample : WG575129-02 20ugL LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 5 15:16 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

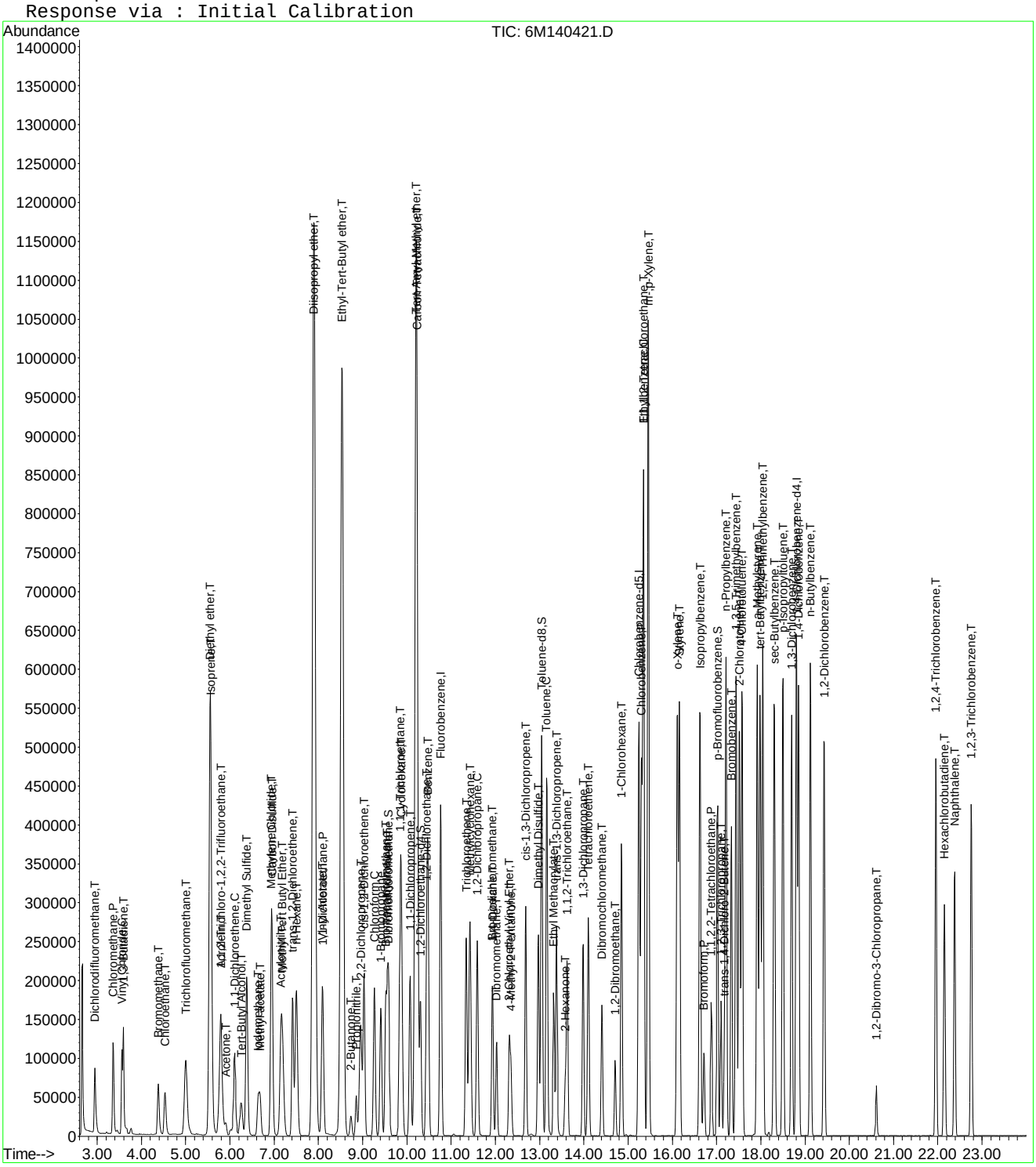

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140368.D Vial: 7
Acq On : 2 Jul 2016 14:06 Operator: TMB
Sample : WG575084-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 09:39:10 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	542107	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	386421	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	213676	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	138109	25.1109 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.44%		
43) 1,2-Dichloroethane-d4	10.31	65	174059	25.0695 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.28%		
58) Toluene-d8	13.04	98	474586	24.9408 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.76%		
80) p-Bromofluorobenzene	17.01	95	204767	24.4693 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	112878	12.4561 ug/L	100
3) Chloromethane	3.36	50	136127	13.4546 ug/L	99
4) Vinyl Chloride	3.55	62	107870	19.4147 ug/L	99
5) 1,3-Butadiene	3.60	54	60426	16.7970 ug/L	96
6) Bromomethane	4.38	94	56899	15.4109 ug/L	97
7) Chloroethane	4.53	64	71235	20.2908 ug/L	93
8) Trichlorofluoromethane	5.00	101	184671	21.7927 ug/L	100
9) Diethyl ether	5.55	59	473571	94.7162 ug/L	95
10) Isoprene	5.57	67	162945	21.5452 ug/L	95
11) Acrolein	5.79	56	90389	108.6856 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	110922	21.0383 ug/L	97
13) Acetone	5.90	43	36020	20.7392 ug/L	94
14) 1,1-Dichloroethene	6.11	61	176271	17.2314 ug/L	92
15) Tert-Butyl Alcohol	6.26	59	101265	190.6728 ug/L	99
16) Dimethyl Sulfide	6.38	62	152760	34.2398 ug/L	92
17) Iodomethane	6.65	142	96705	26.5290 ug/L	89
18) Methyl acetate	6.69	43	105852	22.5227 ug/L	98
19) Methylene Chloride	6.93	84	110377	18.8158 ug/L	87
20) Carbon Disulfide	6.96	76	317544	16.9404 ug/L	100
21) Acrylonitrile	7.15	53	44104	20.4519 ug/L	98
22) Methyl Tert Butyl Ether	7.18	73	323811	20.8247 ug/L	99
23) trans-1,2-Dichloroethene	7.41	96	101370	18.5026 ug/L	86
24) n-Hexane	7.51	57	169786	18.2600 ug/L	96
25) Diisopropyl ether	7.90	45	2560799	102.3227 ug/L	98
26) Vinyl Acetate	8.09	43	218053	20.8716 ug/L	97
27) 1,1-Dichloroethane	8.10	63	221196	18.7522 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	1893583	94.0494 ug/L	98
29) 2-Butanone	8.73	43	55293	20.7972 ug/L	95
30) Propionitrile	8.85	54	73037	101.2271 ug/L	98
31) 2,2-Dichloropropane	8.96	77	185321	20.8244 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	120096	20.0255 ug/L	70
33) Chloroform	9.26	83	210083	19.8804 ug/L	99
34) 1-Bromopropane	9.41	122	24184	25.7438 ug/L	99
35) Bromochloromethane	9.52	130	65071	20.1912 ug/L	99
36) Tetrahydrofuran	9.56	42	168065	90.6296 ug/L	93
38) 1,1,1-Trichloroethane	9.84	97	190870	20.7466 ug/L	98
39) Cyclohexane	9.88	56	228895	19.1232 ug/L	95
40) 1,1-Dichloropropene	10.08	75	154130	19.2342 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1551014	101.4500 ug/L	97
42) Carbon Tetrachloride	10.23	117	163406	21.6311 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140368.D 8260WTR.M Sun Jul 03 09:39:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140368.D Vial: 7
Acq On : 2 Jul 2016 14:06 Operator: TMB
Sample : WG575084-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 09:39:10 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	179847	21.2268	ug/L	97
46)	Benzene	10.48	78	450049	19.8994	ug/L	97
47)	Trichloroethene	11.35	130	112836	20.2186	ug/L	87
48)	Methylcyclohexane	11.43	83	174654	19.9342	ug/L	94
49)	1,2-Dichloropropane	11.59	63	136743	20.9954	ug/L	97
50)	1,4-Dioxane	11.94	88	7676	174.0984	ug/L	84
51)	Bromodichloromethane	11.93	83	168864	21.4875	ug/L	100
52)	Dibromomethane	12.02	93	64334	20.4158	ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	68752	21.0542	ug/L	98
54)	4-Methyl-2-Pentanone	12.35	58	40573	20.1886	ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	209605	22.9730	ug/L	99
56)	Dimethyl Disulfide	12.97	79	103817	20.4402	ug/L	98
59)	Toluene	13.15	91	473864	20.5758	ug/L	100
60)	Ethyl Methacrylate	13.32	69	138747	21.1753	ug/L	94
62)	trans-1,3-Dichloropropene	13.39	75	178878	21.8432	ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	93800	22.0084	ug/L	99
64)	2-Hexanone	13.58	43	82458	20.3767	ug/L	96
65)	1,3-Dichloropropane	13.99	76	177656	22.1170	ug/L	92
66)	Tetrachloroethene	14.10	166	110962	20.2183	ug/L	92
67)	Dibromochloromethane	14.41	129	116550	22.5233	ug/L	99
68)	1,2-Dibromoethane	14.71	107	88462	21.5032	ug/L	99
69)	1-Chlorohexane	14.85	91	159716	20.8387	ug/L	89
70)	Chlorobenzene	15.30	112	317956	21.5264	ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	117049	22.2713	ug/L	97
72)	Ethylbenzene	15.35	106	168193	21.7550	ug/L	93
73)	m-,p-Xylene	15.45	106	412003	44.0938	ug/L	93
74)	o-Xylene	16.10	106	210279	22.5646	ug/L	93
75)	Styrene	16.16	104	351603	22.4264	ug/L	92
76)	Bromoform	16.72	173	67986	21.1869	ug/L	98
77)	Isopropylbenzene	16.62	105	548700	22.5666	ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.88	83	118781	22.9047	ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	35696	23.2170	ug/L	87
82)	trans-1,4-Dichloro-2-Buten	17.18	53	39612	20.2031	ug/L	97
83)	n-Propylbenzene	17.22	91	689328	22.4525	ug/L	97
84)	Bromobenzene	17.34	156	134262	20.9292	ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	475951	22.1176	ug/L	96
86)	2-Chlorotoluene	17.52	91	424327	20.4363	ug/L	99
87)	4-Chlorotoluene	17.58	91	462785	23.3793	ug/L	93
88)	a-Methylstyrene	17.92	118	256834	23.7296	ug/L	99
89)	tert-Butylbenzene	17.98	134	97617	22.5786	ug/L	70
90)	1,2,4-Trimethylbenzene	18.04	105	487635	22.0829	ug/L	98
91)	sec-Butylbenzene	18.30	105	581832	22.5870	ug/L	97
92)	p-Isopropyltoluene	18.50	119	492412	22.4306	ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	278586	22.0640	ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	284654	22.2988	ug/L	94
95)	n-Butylbenzene	19.12	91	479050	22.2522	ug/L	95
96)	1,2-Dichlorobenzene	19.43	146	265509	22.3977	ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.61	75	24104	23.7326	ug/L	81
98)	1,2,4-Trichlorobenzene	21.96	180	182400	21.7677	ug/L	98
99)	Hexachlorobutadiene	22.15	225	79563	22.8375	ug/L	100
100)	Naphthalene	22.38	128	338556	19.7701	ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	163760	21.1065	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140368.D Vial: 7
Acq On : 2 Jul 2016 14:06 Operator: TMB
Sample : WG575084-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 3 9:39 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

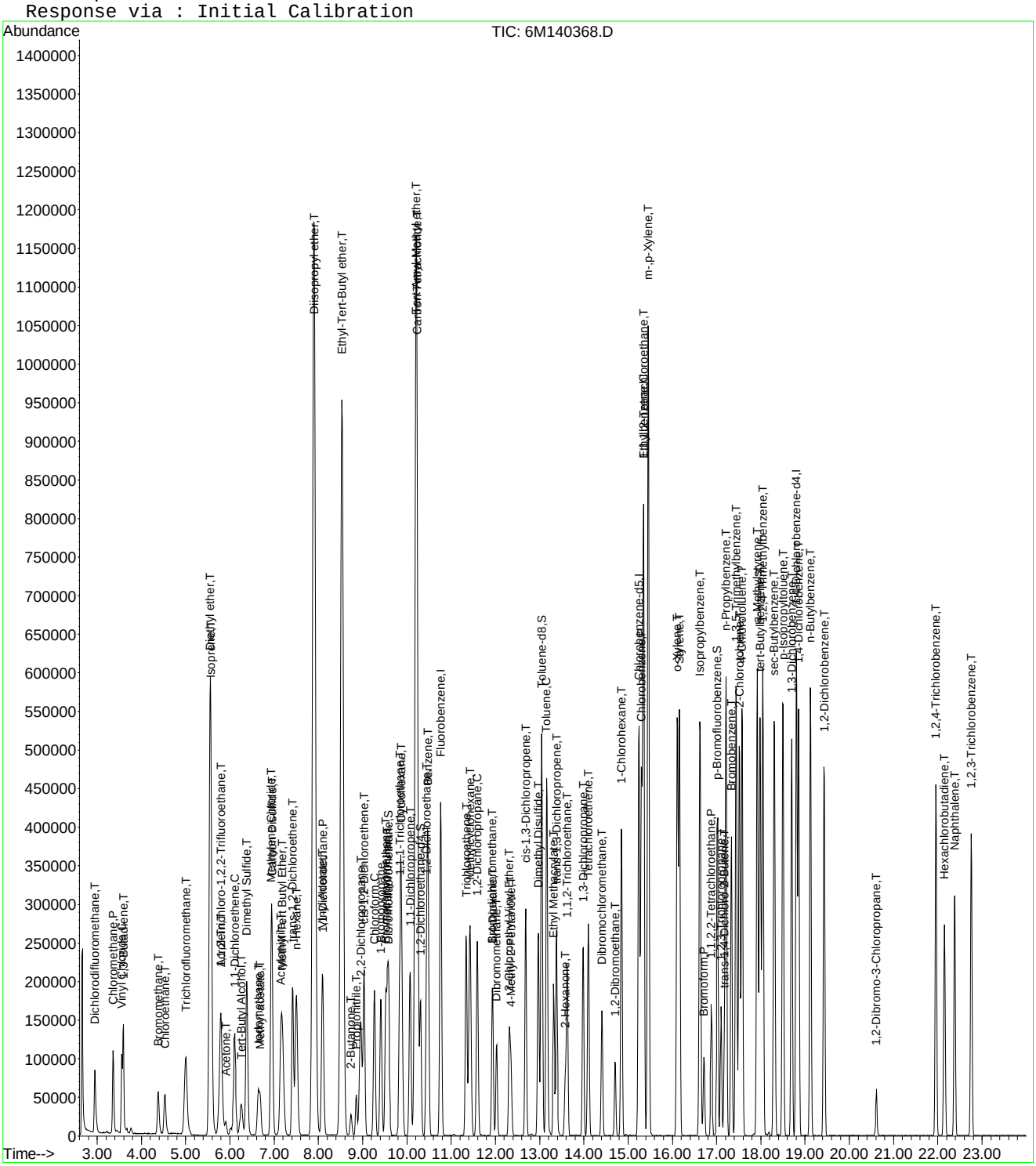

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW21-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	06/30/2016 23:44
Collect Date:	06/22/2016 09:45	**Dilution:**	1	**File ID:**	15M18698
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.55	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	795	20	129	*

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW9-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 00:06
Collect Date:	06/22/2016 11:05	**Dilution:**	1	**File ID:**	15M18699
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.77	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	116	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW02-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 00:29
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	15M18700
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	53.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW10SW-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 00:51
Collect Date:	06/22/2016 14:55	**Dilution:**	1	**File ID:**	15M18701
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	55.3	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG574286
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/27/2016 14:01
SOP: EXB01 Revison 20
Spike Witness: NPH
Surr Solution: STD76628

TIME ON: 17:30 OFF: 11:35 ON: 16:50 OFF: 10:35

CH2CL2 Lot #: COA18982
Sodium Sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16061289-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
2	L16061289-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
3	L16061289-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
4	L16061289-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
5	L16061290-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
6	L16061290-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
7	L16061290-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
8	L16061290-06	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
9	L16061345-04	RS01		827-DIOX	<2>12	810 mL	.05 mL			1 mL	Colored
10	L16061345-05	MS01	L16061345-04	827-DIOX	<2>12	760 mL	.05 mL	.5 mL	STD75268	1 mL	Colored
11	L16061345-06	SD01	L16061345-04	827-DIOX	<2>12	810 mL	.05 mL	.5 mL	STD75268	1 mL	Colored
12	L16061345-08	SAMP		827-DIOX	<2>12	950 mL	.05 mL			1 mL	Transparent
13	L16061413-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
14	L16061450-04	SAMP		827-DIOX	<2>12	840 mL	.05 mL			1 mL	Colored
15	L16061450-05	SAMP		827-DIOX	<2>12	740 mL	.05 mL			1 mL	Transparent
16	L16061452-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
17	L16061452-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
18	L16061452-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
19	L16061453-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
20	L16061453-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
21	L16061453-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
22	WG574286-01	BLANK		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
23	WG574286-02	LCS		827-DIOXANE	<2>12	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
24	WG574286-03	REF	L16061345-04	827-DIOX	<2>12	810 mL	.05 mL			1 mL	Colored
25	WG574286-04	MS	L16061345-04	827-DIOX	<2>12	760 mL	.05 mL	.5 mL	STD75268	1 mL	Colored
26	WG574286-05	MSD	L16061345-04	827-DIOX	<2>12	810 mL	.05 mL	.5 mL	STD75268	1 mL	Colored

Analyst: Chelsea Davis

Reviewer: Chris Hill

EXTRACT - Modified 01/23/2009
PDF ID: 4831963
Report generated: 06/29/2016 18:18

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

Page: 1 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 063016
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG574775

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18666	BAKEOUT	1	1		06/30/16 10:57
2	15M18667	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 11:17
3	15M18668	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 11:34
4	15M18669	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 12:17
5	15M18670	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 12:34
6	15M18671	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 13:23
7	15M18672	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 13:39
8	15M18673	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 14:24
9	15M18674	WG574781-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/30/16 14:42
10	15M18675	WG574543-01 BLANK 6/29	7	1	SOIL	06/30/16 15:04
11	15M18676	WG574543-02 LCS 6/29	7	1	SOIL	06/30/16 15:27
12	15M18677	WG574543-03 LCSDUP 6/29	7	1	SOIL	06/30/16 15:49
13	15M18678	WG574286-01 BLANK 6/27	1	1		06/30/16 16:12
14	15M18679	WG574286-02 LCS 6/27	1	1		06/30/16 16:34
15	15M18680	L16060637-02 RE 827-DIOX	7	1	SOIL	06/30/16 16:57
16	15M18681	L16060756-01 RE 827-DIOX	7	1	SOIL	06/30/16 17:19
17	15M18682	L16060756-02 RE 827-DIOX	7	1	SOIL	06/30/16 17:42
18	15M18683	L16060756-03 RE 827-DIOX	7	1	SOIL	06/30/16 18:05
19	15M18684	L16060809-01 RE 827-DIOX	7	1	SOIL	06/30/16 18:28
20	15M18685	L16060809-02 RE 827-DIOX	7	1	SOIL	06/30/16 18:50
21	15M18686	L16060930-01 RE 827-DIOX	7	1	SOIL	06/30/16 19:13
22	15M18687	L16060930-02 RE 827-DIOX	7	1	SOIL	06/30/16 19:35
23	15M18688	L16061413-01 827-DIOX	1	1		06/30/16 19:58
24	15M18689	L16061213-01 RE 827-DIOX	7	1	SOIL	06/30/16 20:21
25	15M18690	L16061213-02 RE 827-DIOX	7	1	SOIL	06/30/16 20:43
26	15M18691	L16061213-03 RE 827-DIOX	7	1	SOIL	06/30/16 21:06
27	15M18692	L16061213-04 RE 827-DIOX	7	1	SOIL	06/30/16 21:28
28	15M18693	L16061213-05 RE 827-DIOX	7	1	SOIL	06/30/16 21:51
29	15M18694	L16061213-06 RE 827-DIOX	7	1	SOIL	06/30/16 22:13
30	15M18695	L16061450-01 827-DIOX	7	1	SOIL	06/30/16 22:36
31	15M18696	L16061450-02 827-DIOX	7	1	SOIL	06/30/16 22:59
32	15M18697	L16061450-03 827-DIOX	7	1	SOIL	06/30/16 23:22
33	15M18698	L16061289-01 827-DIOX	1	1		06/30/16 23:44

Page: 1 Approved: 06-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 063016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG574775

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18699	L16061289-02 827-DIOX	1	1		07/01/16 00:06
35	15M18700	L16061289-03 827-DIOX	1	1		07/01/16 00:29
36	15M18701	L16061289-05 827-DIOX	1	1		07/01/16 00:51
37	15M18702	L16061290-01 827-DIOX	1	1		07/01/16 01:14
38	15M18703	L16061290-02 827-DIOX	1	1		07/01/16 01:36
39	15M18704	L16061290-05 827-DIOX	1	1		07/01/16 01:59
40	15M18705	BAKEOUT	1	1		07/01/16 02:21
41	15M18706	BAKEOUT	1	1		07/01/16 02:43
42	15M18707	BAKEOUT	1	1		07/01/16 03:06

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	Rerun DFTPP, ion ratio failed.			
3				
	Rerun DFTPP, ion ratio failed. Performed a quicktune.			
4				
	Rerun DFTPP, ion ratio failed. Changed the liner.			
5				
	Rerun DFTPP, ion ratio failed. PCP tailing >2. Changed gold seal and clipped column.			
6				
	Rerun DFTPP, ion ratio failed. Retuned.			
7				
	Rerun DFTPP, ion ratio failed. Retuned.			
31				
	L16061450-02 827-DIOX surrogate recovery is less than 10%. Needs re-extracted.			
33	X	10	Surrogate standard failure	
	L16061289-01 827-DIOX surrogate is high due to SMI.			
38	X	5	Over Calibration Range	
	L16061290-02 827-DIOX			

Page: 2 Approved: 06-JUL-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 76103
Analytical Workgroups: L16060637,0756,0809,0930,1213,1450,1289,1290,1413

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 05-JUL-2016

Secondary Reviewer: 06-JUL-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUL-06-2016 10:46:55

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG574772

Login Number: L16061289

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW21-062216	01	06/22/16					06/27/2016	5.2	7		06/30/16	3.4	40	
MW9-062216	02	06/22/16					06/27/2016	5.1	7		07/01/16	3.4	40	
18WW02-062216	03	06/22/16					06/27/2016	5	7		07/01/16	3.4	40	
18CPTMW10SW-062216	05	06/22/16					06/27/2016	5	7		07/01/16	3.5	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4838775
Report generated 07/06/2016 16:23

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061289
Instrument Id: HPMS15
Workgroup (AAB#): WG574772

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16061289-01	1.00	01	795
L16061289-02	1.00	01	116
L16061289-03	1.00	01	53.4
L16061289-05	1.00	01	55.3
WG574286-01	1.00	01	43.4
WG574286-02	1.00	01	48.9

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4838790
Report generated: 07/06/2016 16:23

METHOD BLANK SUMMARY

Login Number: L16061289
Blank File ID: 15M18678
Prep Date: 06/27/16 14:01
Analyzed Date: 06/30/16 16:12
Analyst: MES

Work Group: WG574772
Blank Sample ID: WG574286-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574286-02	15M18679	06/30/16 16:34	01
MW21-062216	L16061289-01	15M18698	06/30/16 23:44	01
MW9-062216	L16061289-02	15M18699	07/01/16 00:06	01
18WW02-062216	L16061289-03	15M18700	07/01/16 00:29	01
18CPTMW10SW-062216	L16061289-05	15M18701	07/01/16 00:51	01

Report Name: BLANK_SUMMARY
PDF File ID: 4840124
Report generated 07/06/2016 16:23

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061289 Prep Date: 06/27/16 14:01 Sample ID: WG574286-01
Instrument ID: HPMS15 Run Date: 06/30/16 16:12 Prep Method: 3520C
File ID: 15M18678 Analyst: MES Method: 8270D
Workgroup (AAB#): WG574772 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	43.4	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4838776
06-JUL-2016 16:23

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 Run Date: 06/30/2016 Sample ID: WG574286-02
Instrument ID: HPMS15 Run Time: 16:34 Prep Method: 3520C
File ID: 15M18679 Analyst: MES Method: 8270D
Workgroup (AAB#): WG574772 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75256 Cal ID: HPMS15-21-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,4-Dioxane	5.00	2.78	55.6	30 - 104	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	48.9	20 - 129	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4838777
Report generated: 07/06/2016 16:23

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061289
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4838785
Report generated 07/06/2016 16:23

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061289
Instrument: HPMS15
Analyst: MES
Workgroup: WG574781

Tune ID: WG574781-01
Run Date: 06/30/2016
Run Time: 14:24
File ID: 15M18673
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	44.6	24370	PASS
68.0	69.0	0	2.00	1.41	352	PASS
69.0	198	0	100	45.7	24921	PASS
70.0	69.0	0	2.00	0.959	239	PASS
127	198	40.0	60.0	57.0	31104	PASS
197	198	0	1.00	0.291	159	PASS
198	198	100	100	100	54589	PASS
199	198	5.00	9.00	7.03	3838	PASS
275	198	10.0	30.0	24.8	13523	PASS
365	198	1.00	100	2.78	1520	PASS
441	443	0.0100	100	75.2	5686	PASS
442	198	40.0	100	70.8	38669	PASS
443	442	17.0	23.0	19.5	7559	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574781-02	CCV	01	06/30/2016 14:42	
WG574286-01	BLANK	01	06/30/2016 16:12	
WG574286-02	LCS	01	06/30/2016 16:34	
L16061289-01	MW21-062216	01	06/30/2016 23:44	
L16061289-02	MW9-062216	01	07/01/2016 00:06	
L16061289-03	18WW02-062216	01	07/01/2016 00:29	
L16061289-05	18CPTMW10SW-062216	01	07/01/2016 00:51	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4838785
Report generated 07/06/2016 16:23

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061289
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4838778
Report generated 07/06/2016 16:23

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061289

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4838778
Report generated 07/06/2016 16:23

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061289

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4838778
Report generated 07/06/2016 16:23

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061289 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4838783
Report generated 07/06/2016 16:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/30/2016
Sample ID: WG574781-02
Instrument ID: HPMS15
Run Time: 14:42
Method: 8270D
File ID: 15M18674
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG574772
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5210	ug/L	0.319	4.14	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4838786
Report generated 07/06/2016 16:23

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061289
Instrument ID: HPMS15
Workgroup (AAB#): WG574772

ICAL CCV Number: WG573501-02
CAL ID: HPMS15 - 21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16061289-01	1.00	01	27764
L16061289-02	1.00	01	27917
L16061289-03	1.00	01	28600
L16061289-05	1.00	01	27476
WG574286-01	1.00	01	28516
WG574286-02	1.00	01	22815

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4838788
Report generated 07/06/2016 16:23

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061289
Instrument ID: HPMS15
Workgroup (AAB#): WG574772

ICAL CCV Number: WG573501-02
CAL ID: HPMS15 - 21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	6.93
Upper Limit	NA	NA	7.43
Lower Limit	NA	NA	6.43
L16061289-01	1.00	01	6.87
L16061289-02	1.00	01	6.87
L16061289-03	1.00	01	6.87
L16061289-05	1.00	01	6.87
WG574286-01	1.00	01	6.87
WG574286-02	1.00	01	6.87

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4840125
Report generated: 07/06/2016 16:23

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18698.D
Acq On : 30 Jun 2016 23:44
Operator : MES
Sample : L16061289-01 827-DIOX
Misc : 1,1
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jul 05 08:20:00 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	27764	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.686	96	454265	39.7625	ug/L	-0.10
Spiked Amount 5.000			Recovery	= 795.20%		
4) Nitrobenzene-d5	7.377	82	3539	0.1207	ug/L	0.01
Spiked Amount 5.000			Recovery	= 2.40%		
5) 2-Fluorobiphenyl	8.856	172	1148	0.0155	ug/L	0.00
Spiked Amount 5.000			Recovery	= 0.40%		
6) p-Terphenyl-d14	12.074	244	544	0.0076	ug/L	-0.01
Spiked Amount 5.000			Recovery	= 0.20%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.813	58	13153	1.5484	ug/L	74

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18698.D
Acq On : 30 Jun 2016 23:44
Operator : MES
Sample : L16061289-01 827-DIOX
Misc : 1,1
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jul 05 08:20:00 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

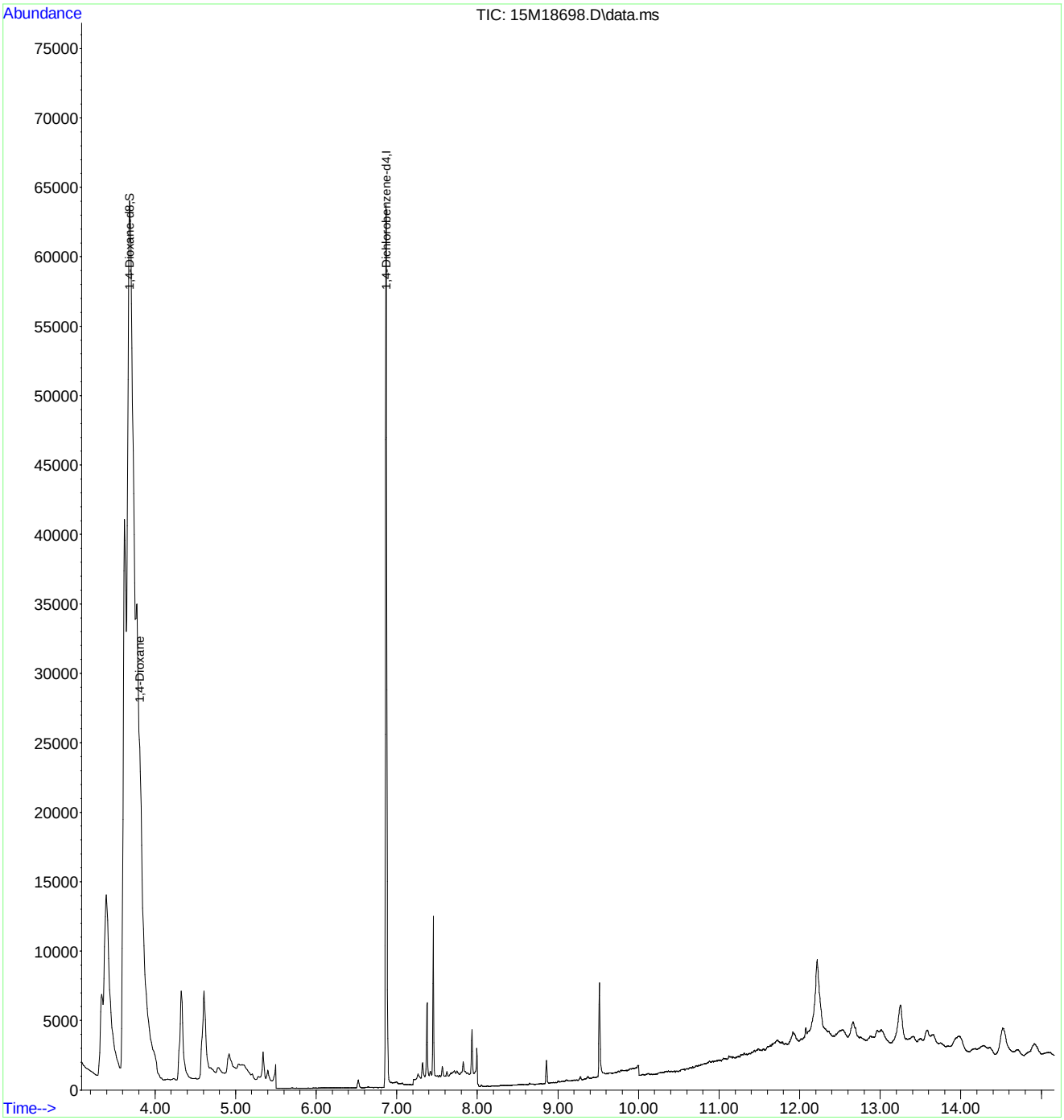

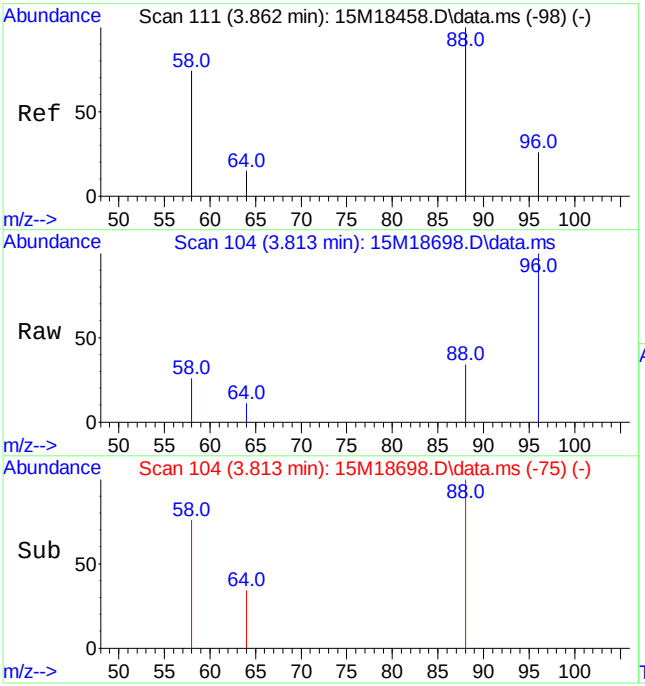

#2
1,4-Dioxane
Concen: 1.55 ug/L
RT: 3.813 min Scan# 104
Delta R.T. -0.007 min
Lab File: 15M18698.D
Acq: 30 Jun 2016 23:44

Tgt Ion: 58 Resp: 13153

Ion	Ratio	Lower	Upper
58	100		
88	135.5	103.1	240.7

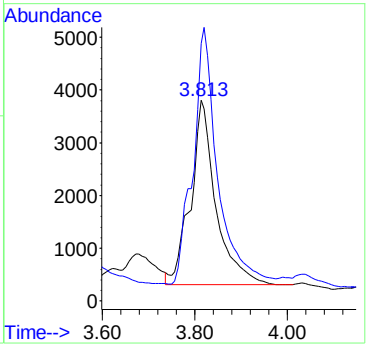

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18699.D
Acq On : 1 Jul 2016 00:06
Operator : MES
Sample : L16061289-02 827-DIOX
Misc : 1,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jul 05 11:12:20 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	27917	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.777	96	66870m	5.8212	ug/L	0.00
Spiked Amount 5.000			Recovery	= 116.40%		
4) Nitrobenzene-d5	7.377	82	4337	0.1471	ug/L	0.01
Spiked Amount 5.000			Recovery	= 3.00%		
5) 2-Fluorobiphenyl	8.860	172	2926	0.0393	ug/L	0.00
Spiked Amount 5.000			Recovery	= 0.80%		
6) p-Terphenyl-d14	12.074	244	762	0.0106	ug/L	-0.01
Spiked Amount 5.000			Recovery	= 0.20%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.813	58	15113	1.7693	ug/L	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18699.D
Acq On : 1 Jul 2016 00:06
Operator : MES
Sample : L16061289-02 827-DIOX
Misc : 1,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jul 05 11:12:20 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

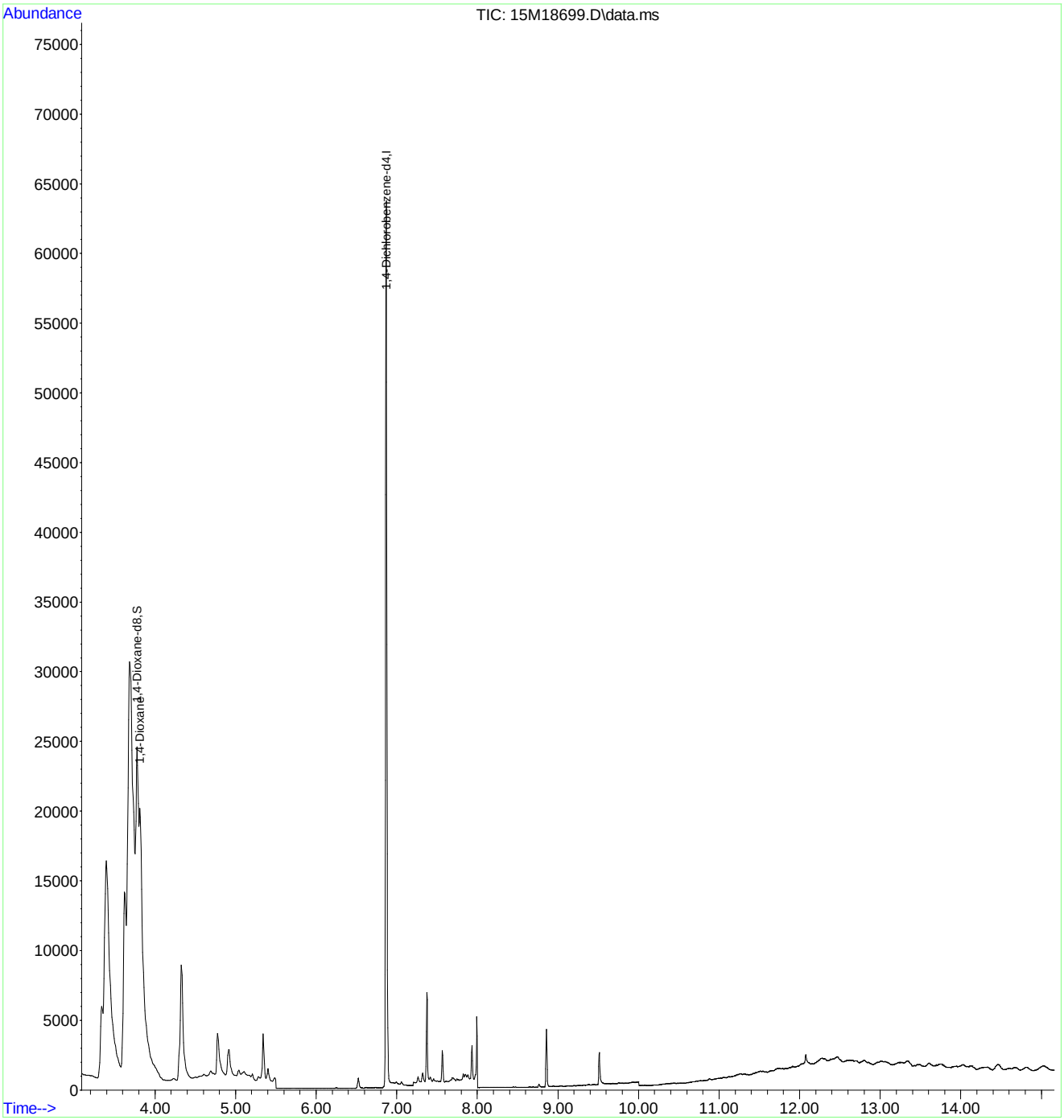

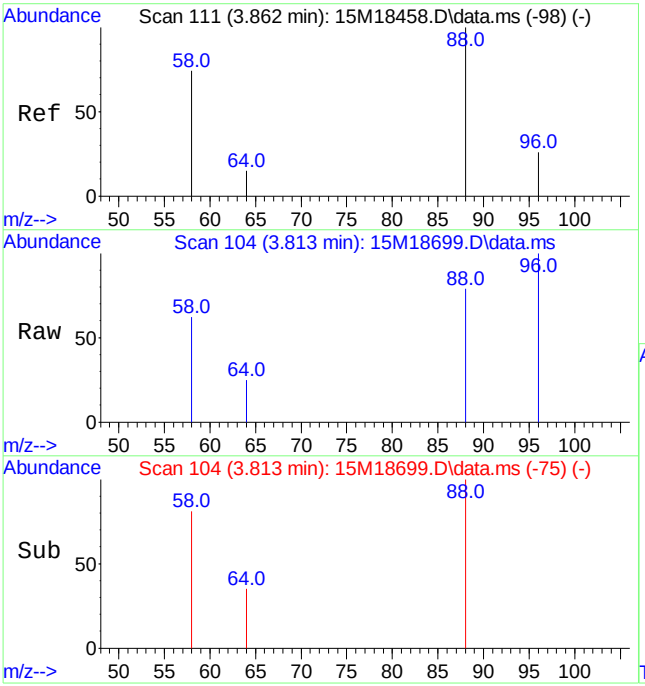

#2
1,4-Dioxane
Concen: 1.77 ug/L
RT: 3.813 min Scan# 104
Delta R.T. -0.007 min
Lab File: 15M18699.D
Acq: 1 Jul 2016 00:06

Tgt Ion: 58 Resp: 15113

Ion	Ratio	Lower	Upper
58	100		
88	143.2	103.1	240.7

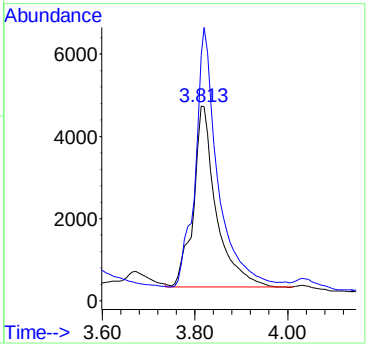

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18699.D
Acq On : 1 Jul 2016 00:06
Operator : MES
Sample : L16061289-02 827-DIOX
Misc : 1,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jul 05 08:20:07 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

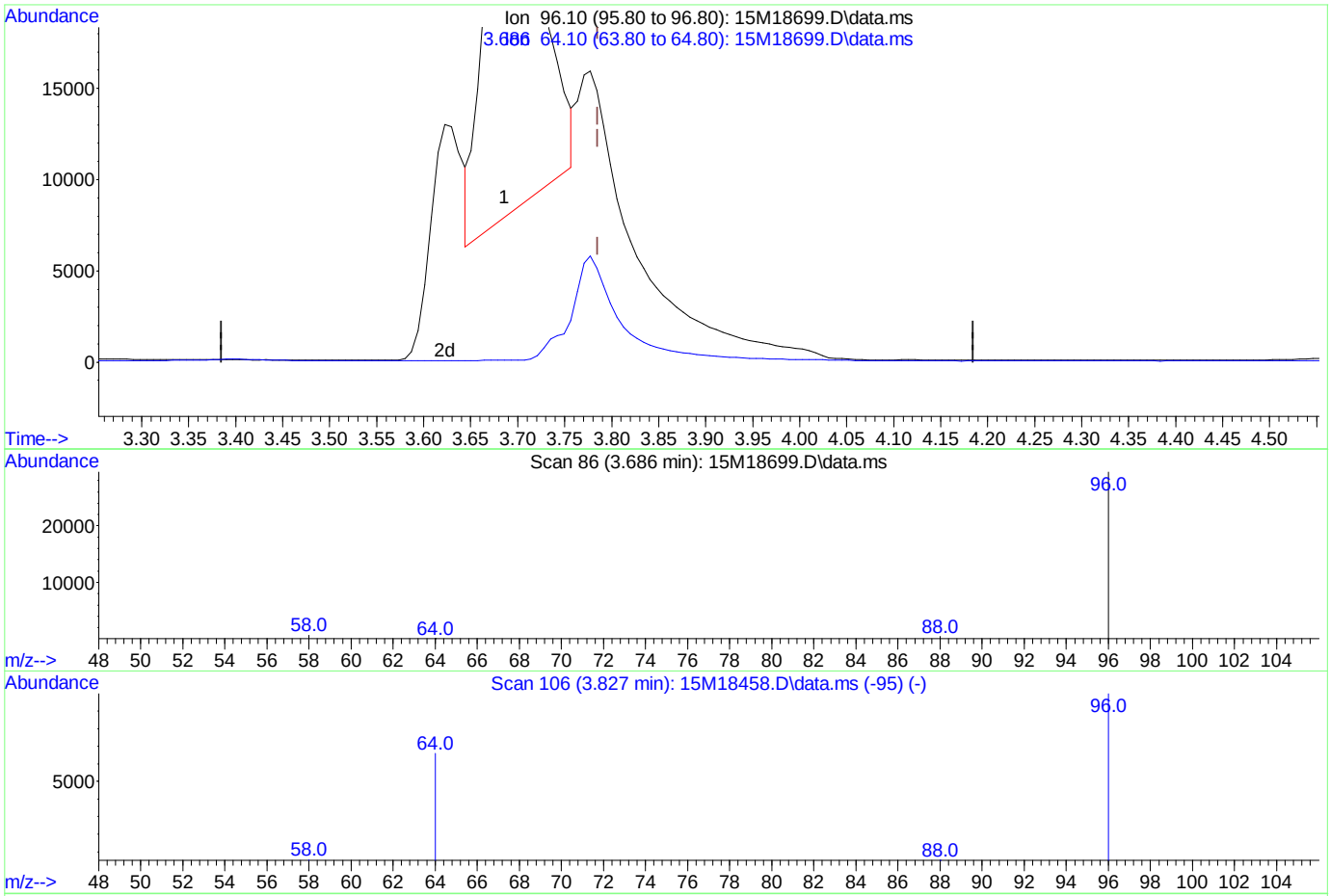

(3) 1,4-Dioxane-d8 (S)

3.686min (-0.099) 7.53 ug/L

response 86467

Ion	Exp%	Act%
96.10	100.00	100.00
64.10	74.80	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18699.D
Acq On : 1 Jul 2016 00:06
Operator : MES
Sample : L16061289-02 827-DIOX
Misc : 1,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jul 05 08:20:07 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

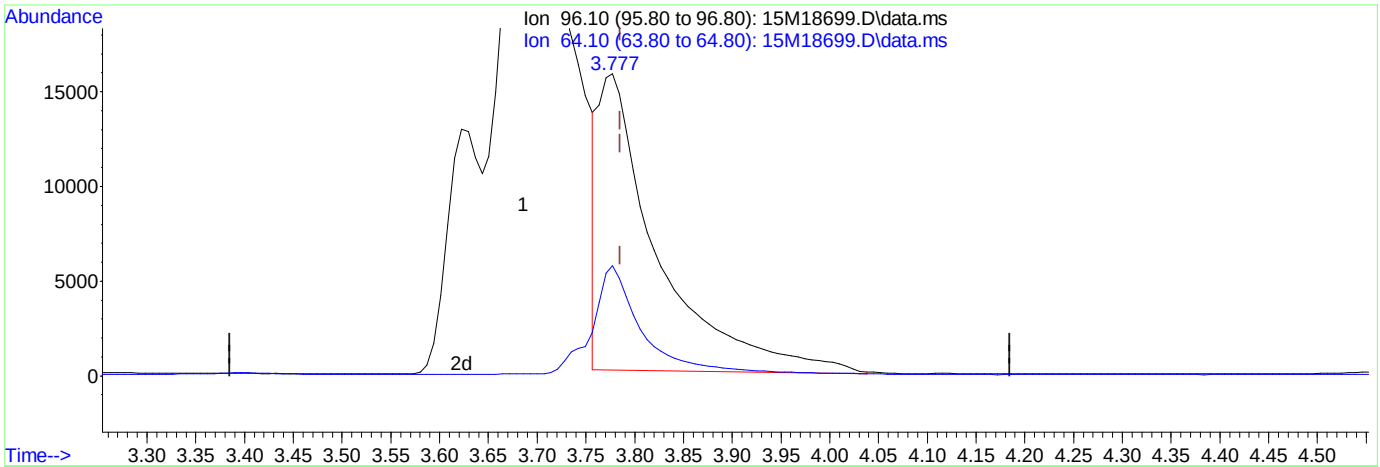

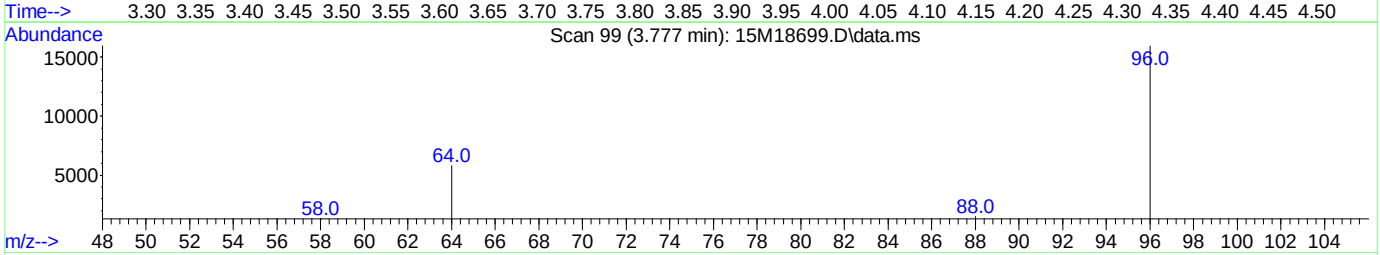

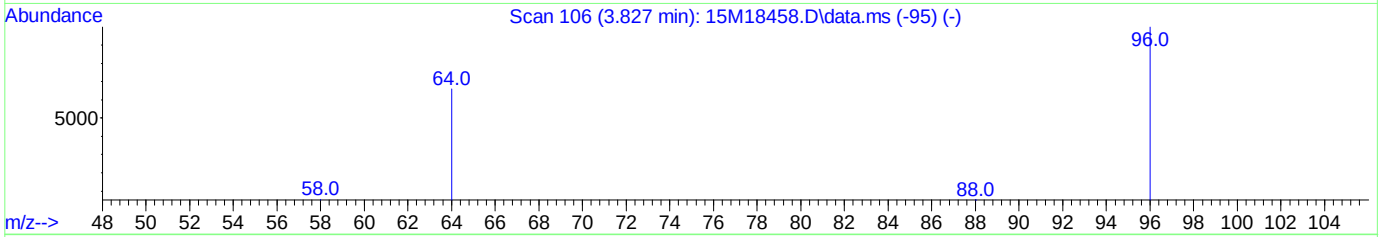

TIC: 15M18699.D\data.ms

(3) 1,4-Dioxane-d8 (S)

3.777min (-0.007) 5.82 ug/L mint

response 66870

Ion	Exp%	Act%
96.10	100.00	100.00
64.10	74.80	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Analyst: 07/05/2016 12:35 Supervisor: 07/06/2016 10:01

#1 - Data system fails to select correct peak

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18700.D
Acq On : 1 Jul 2016 00:29
Operator : MES
Sample : L16061289-03 827-DIOX
Misc : 1,1
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Jul 05 08:20:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	28600	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	31443	2.6718	ug/L	0.00
Spiked Amount 5.000			Recovery	=	53.40%	
4) Nitrobenzene-d5	7.372	82	4120	0.1364	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.80%	
5) 2-Fluorobiphenyl	8.856	172	4381	0.0575	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.20%	
6) p-Terphenyl-d14	12.081	244	618	0.0084	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18700.D
Acq On : 1 Jul 2016 00:29
Operator : MES
Sample : L16061289-03 827-DIOX
Misc : 1,1
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Jul 05 08:20:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

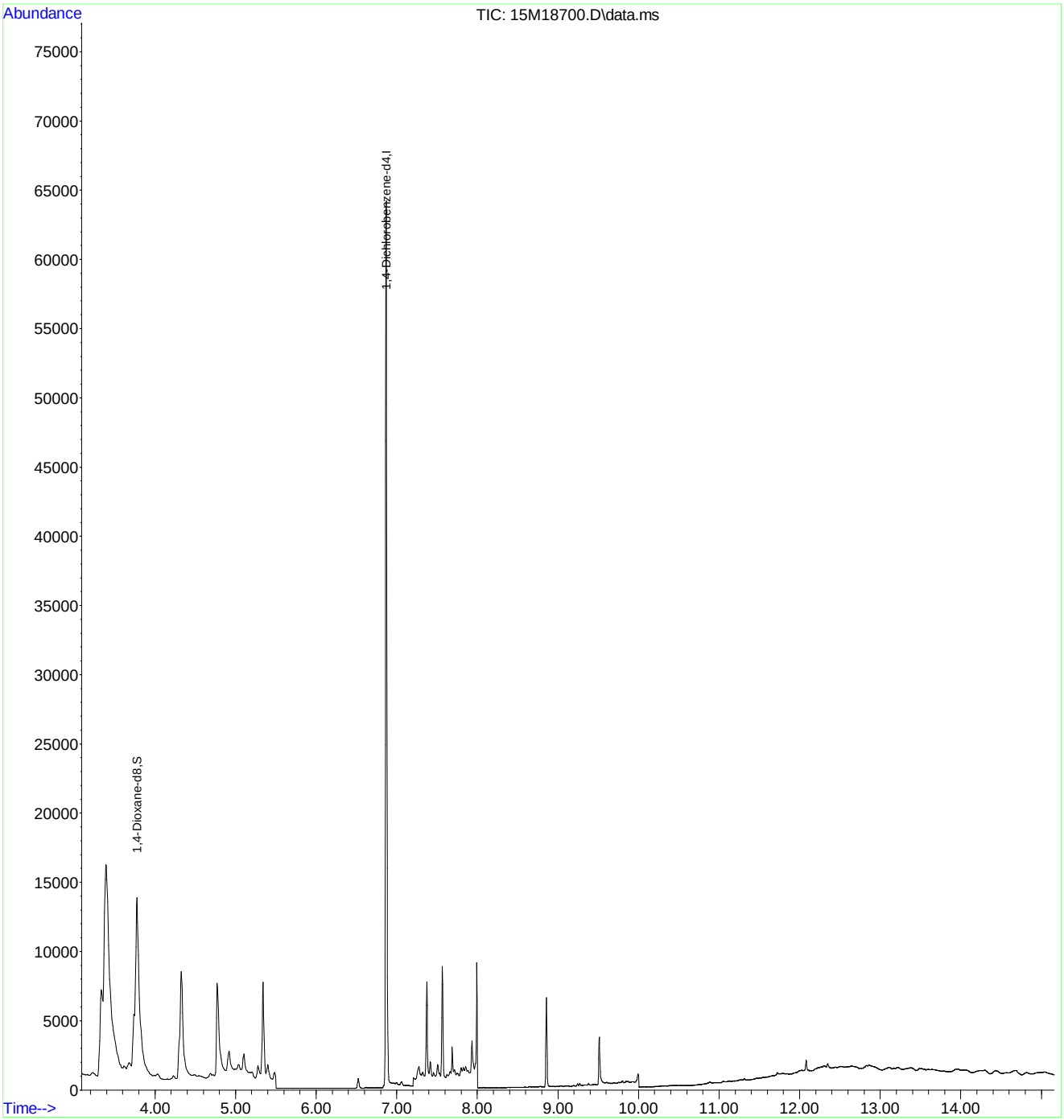

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18701.D
Acq On : 1 Jul 2016 00:51
Operator : MES
Sample : L16061289-05 827-DIOX
Misc : 1,1
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Jul 05 08:20:13 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	27476	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	31242	2.7633	ug/L	0.00
Spiked Amount 5.000			Recovery	=	55.20%	
4) Nitrobenzene-d5	7.377	82	1949	0.0672	ug/L	0.01
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.856	172	188	0.0026	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.078	244	426	0.0060	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18701.D
Acq On : 1 Jul 2016 00:51
Operator : MES
Sample : L16061289-05 827-DIOX
Misc : 1,1
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Jul 05 08:20:13 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

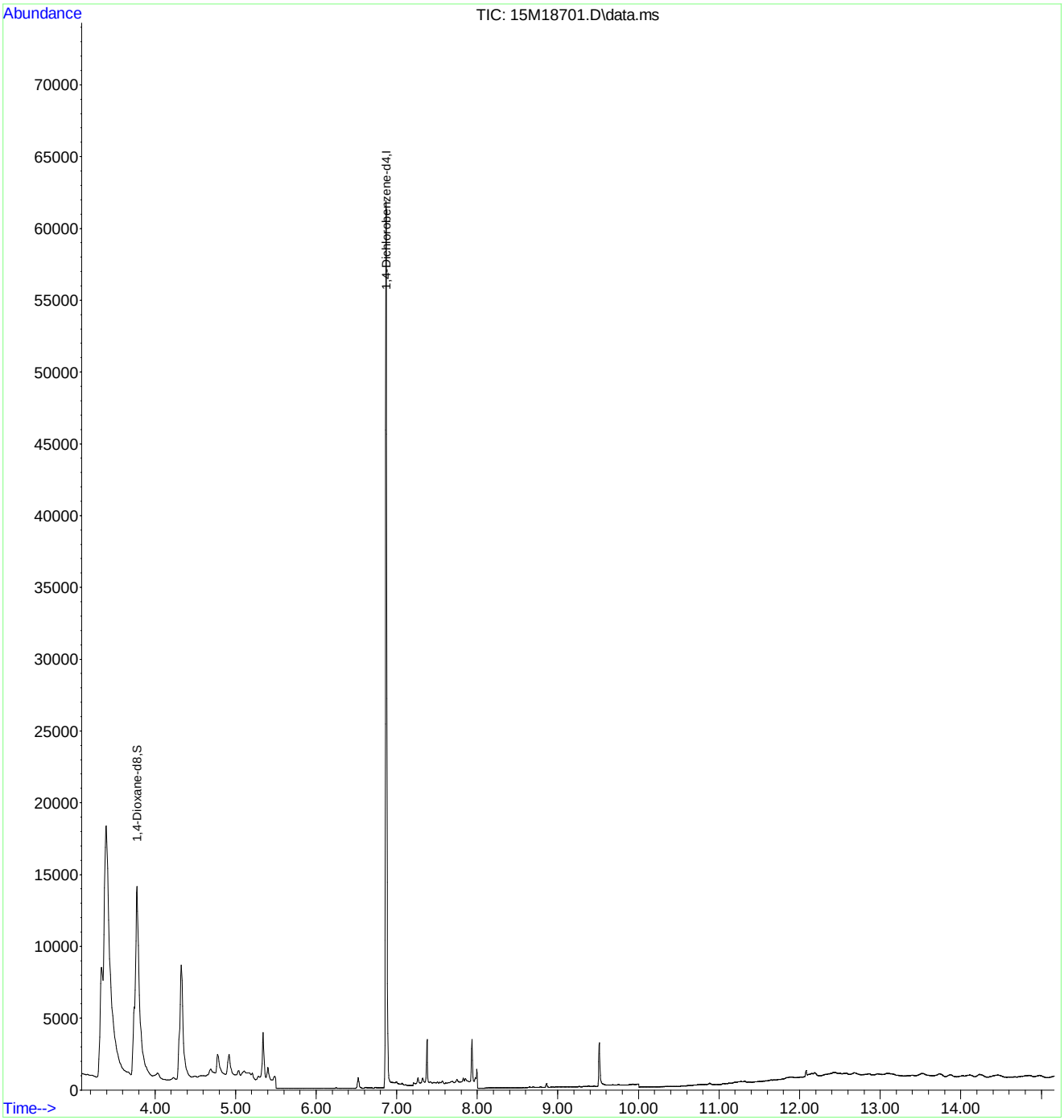

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

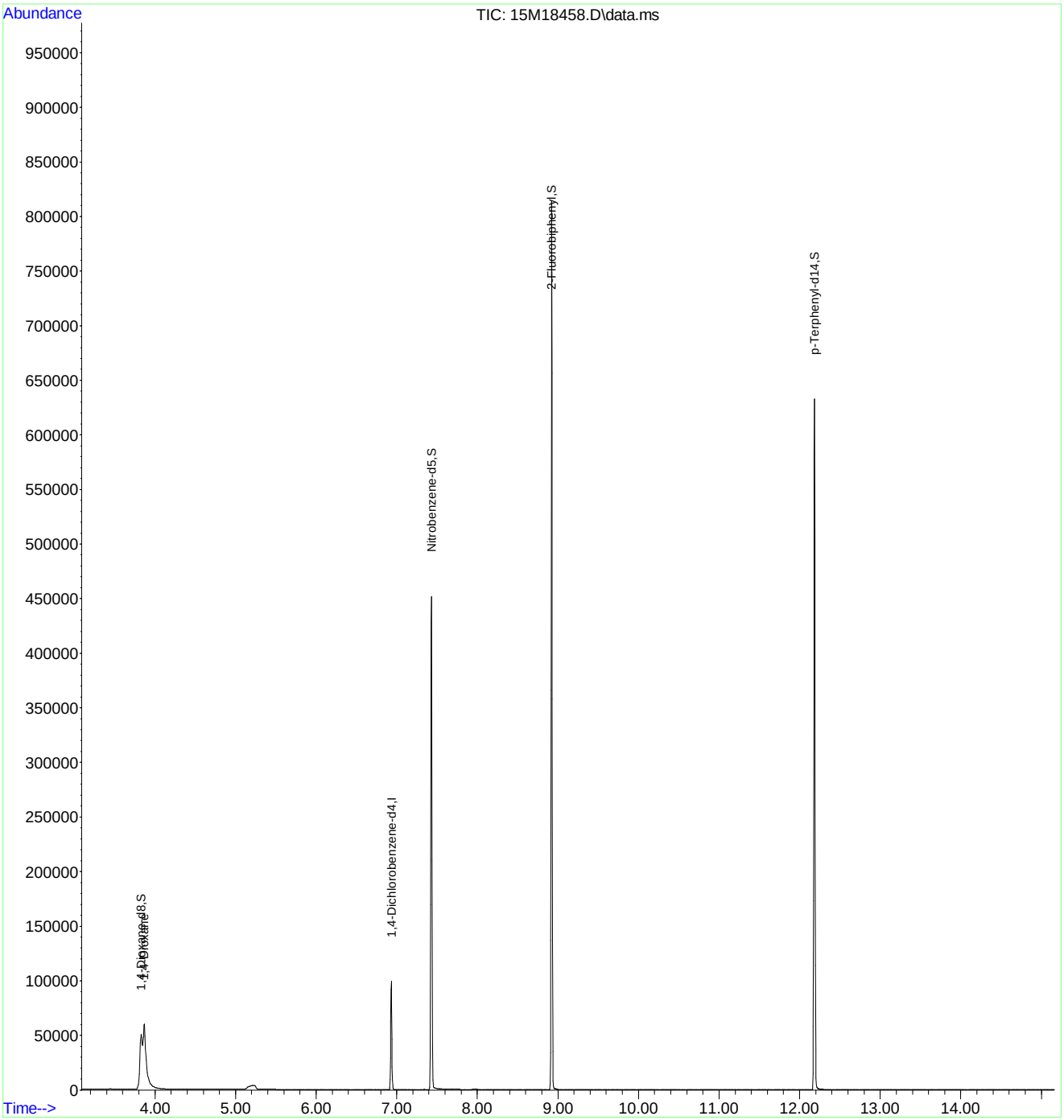

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

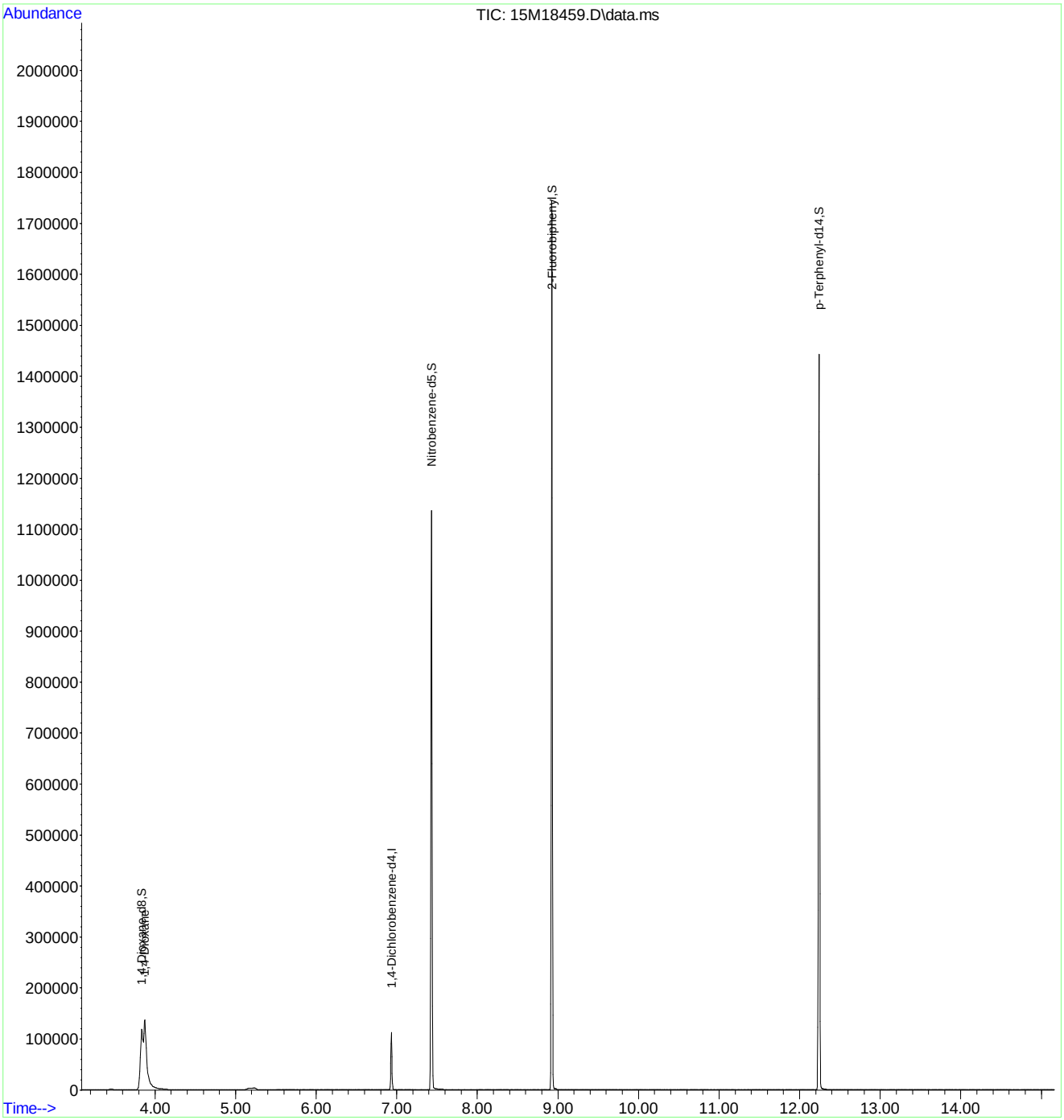

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163	ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%		
4) Nitrobenzene-d5	7.431	82	389810	8.3306	ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%		
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965	ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%		
6) p-Terphenyl-d14	12.203	244	921380	8.0931	ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

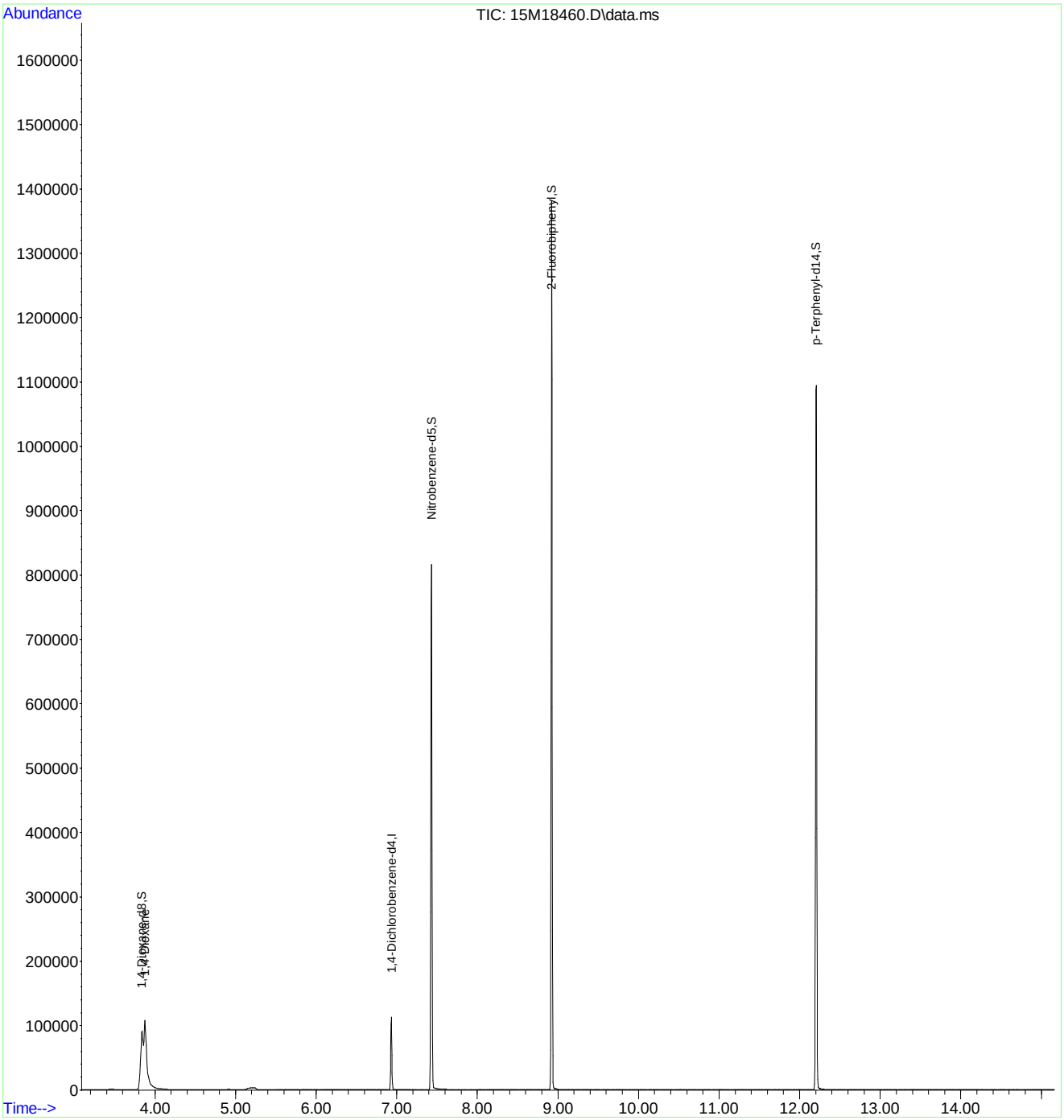

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406 ug/L	0.00
Spiked Amount 5.000			Recovery	= 48.80%	
4) Nitrobenzene-d5	7.431	82	88869	2.3714 ug/L	0.00
Spiked Amount 5.000			Recovery	= 47.40%	
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579 ug/L	0.00
Spiked Amount 5.000			Recovery	= 49.20%	
6) p-Terphenyl-d14	12.199	244	218191	2.3930 ug/L	0.02
Spiked Amount 5.000			Recovery	= 47.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259 ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

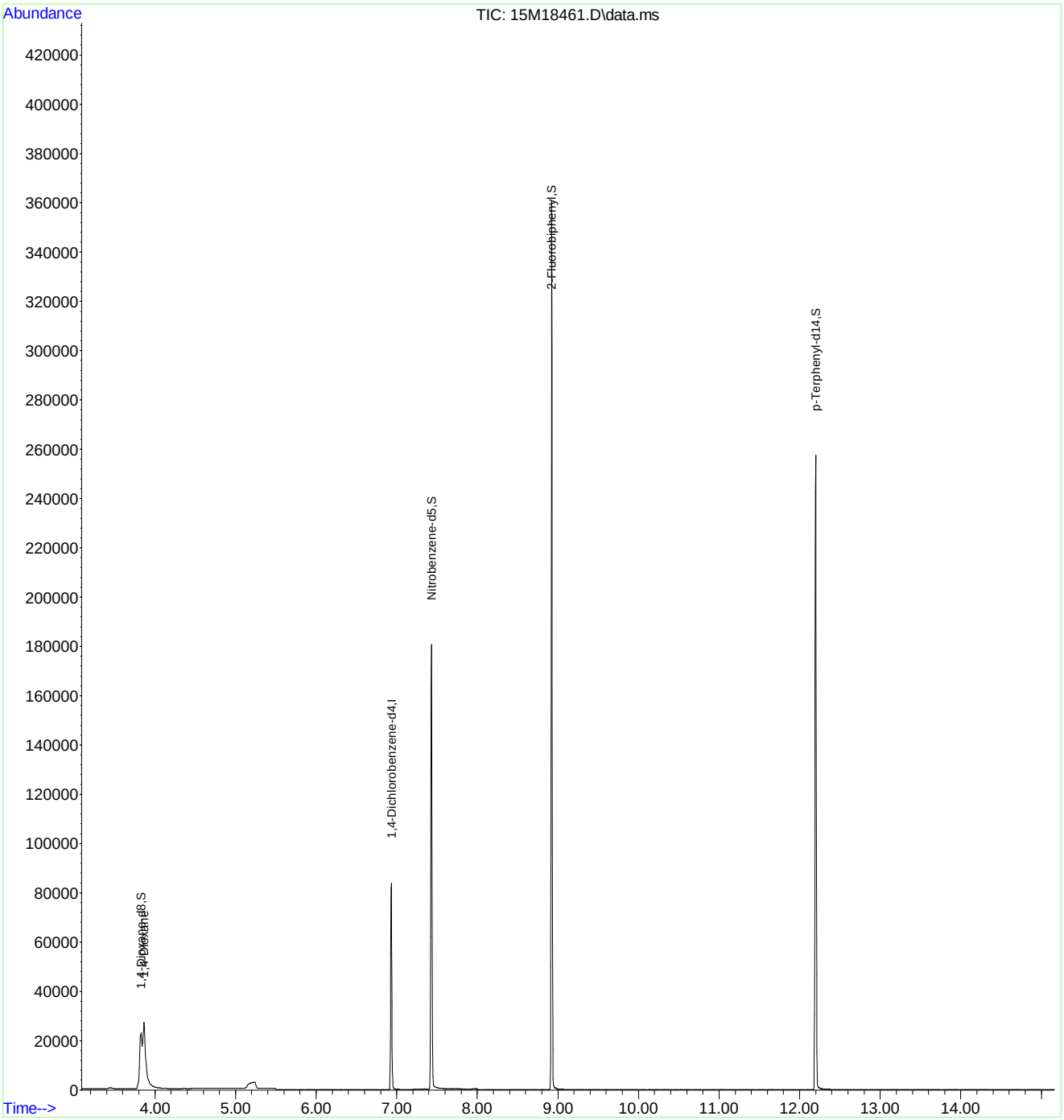

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607 ug/L	0.01
Spiked Amount 5.000			Recovery	= 19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776 ug/L	0.00
Spiked Amount 5.000			Recovery	= 17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612 ug/L	0.00
Spiked Amount 5.000			Recovery	= 19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208 ug/L	0.02
Spiked Amount 5.000			Recovery	= 18.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694 ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

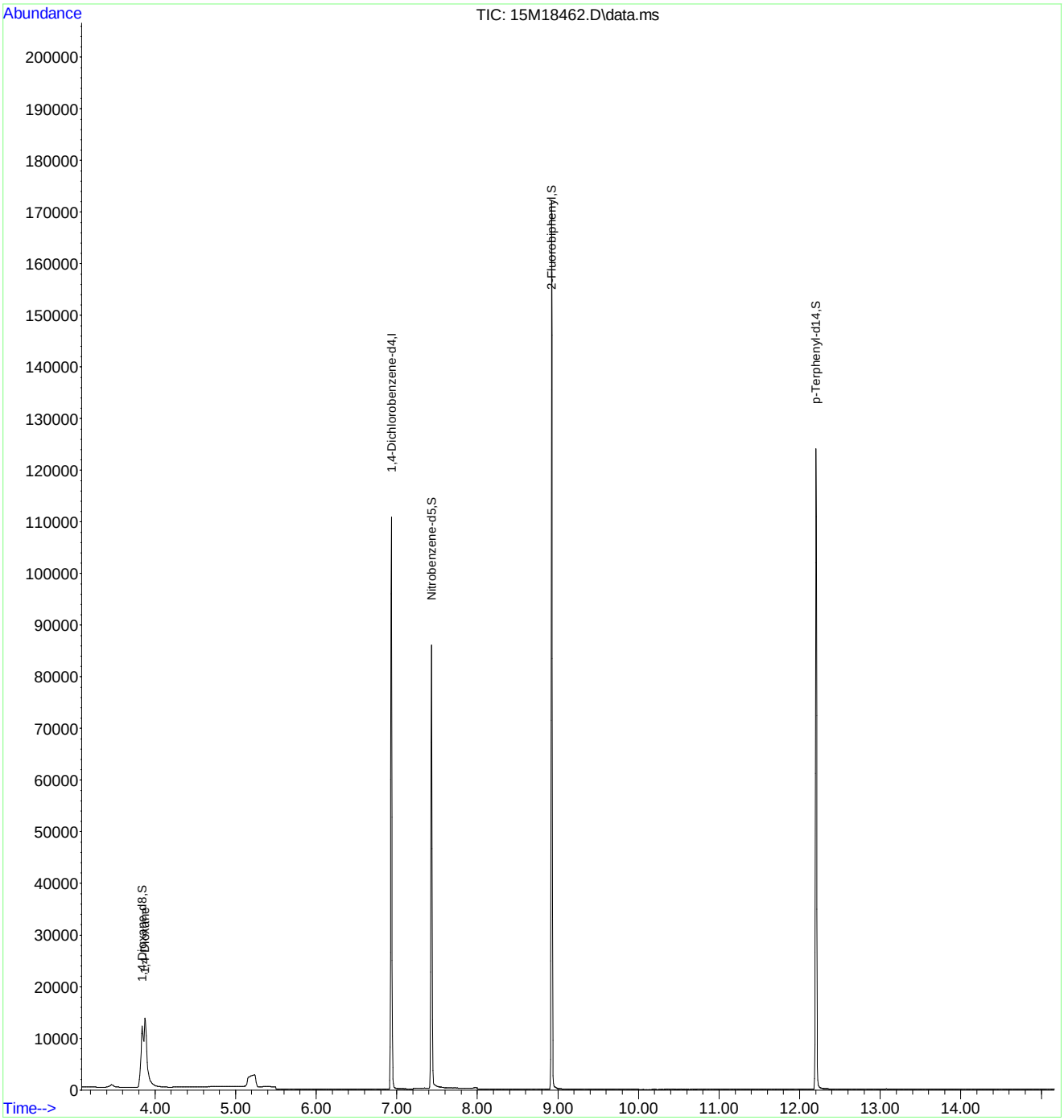

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

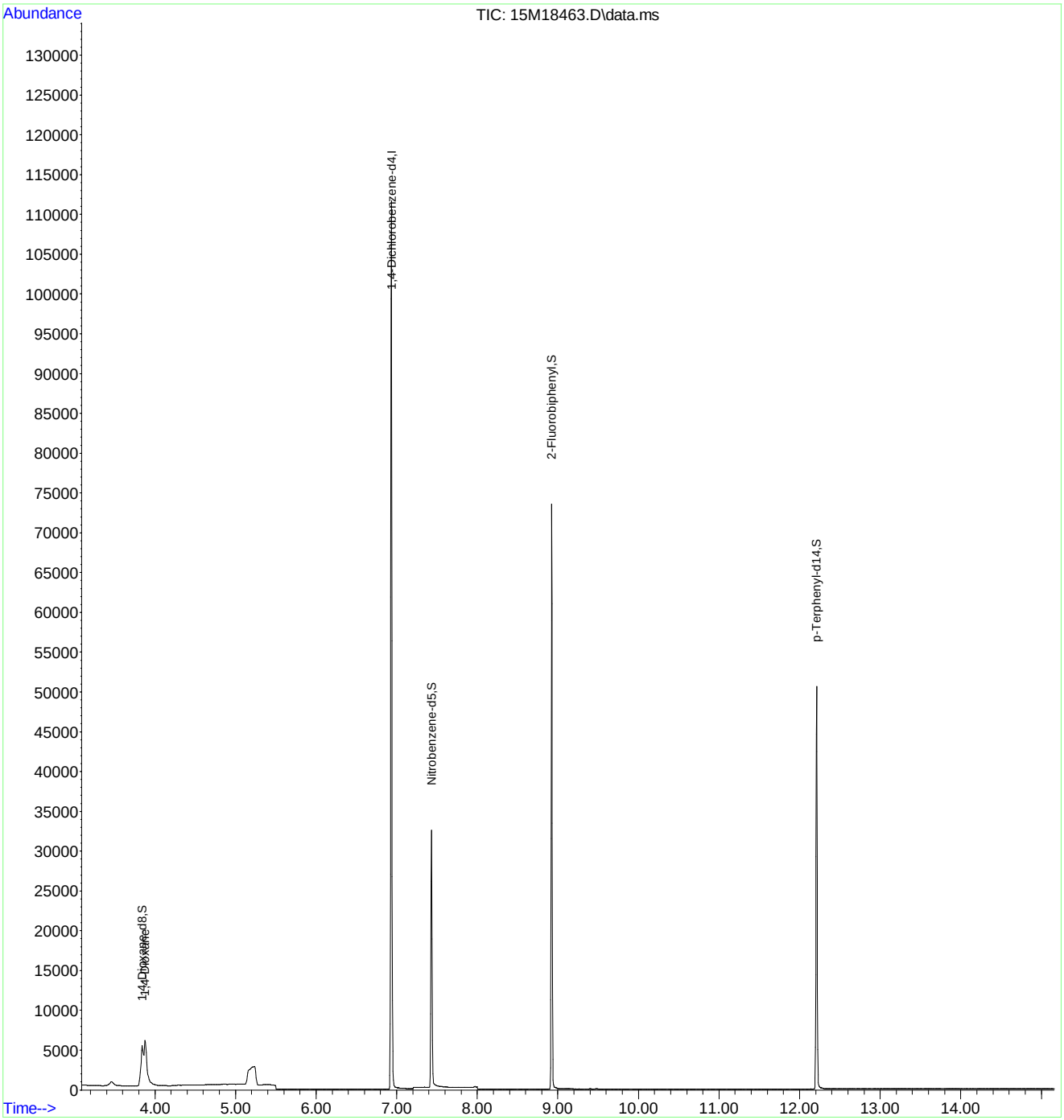

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

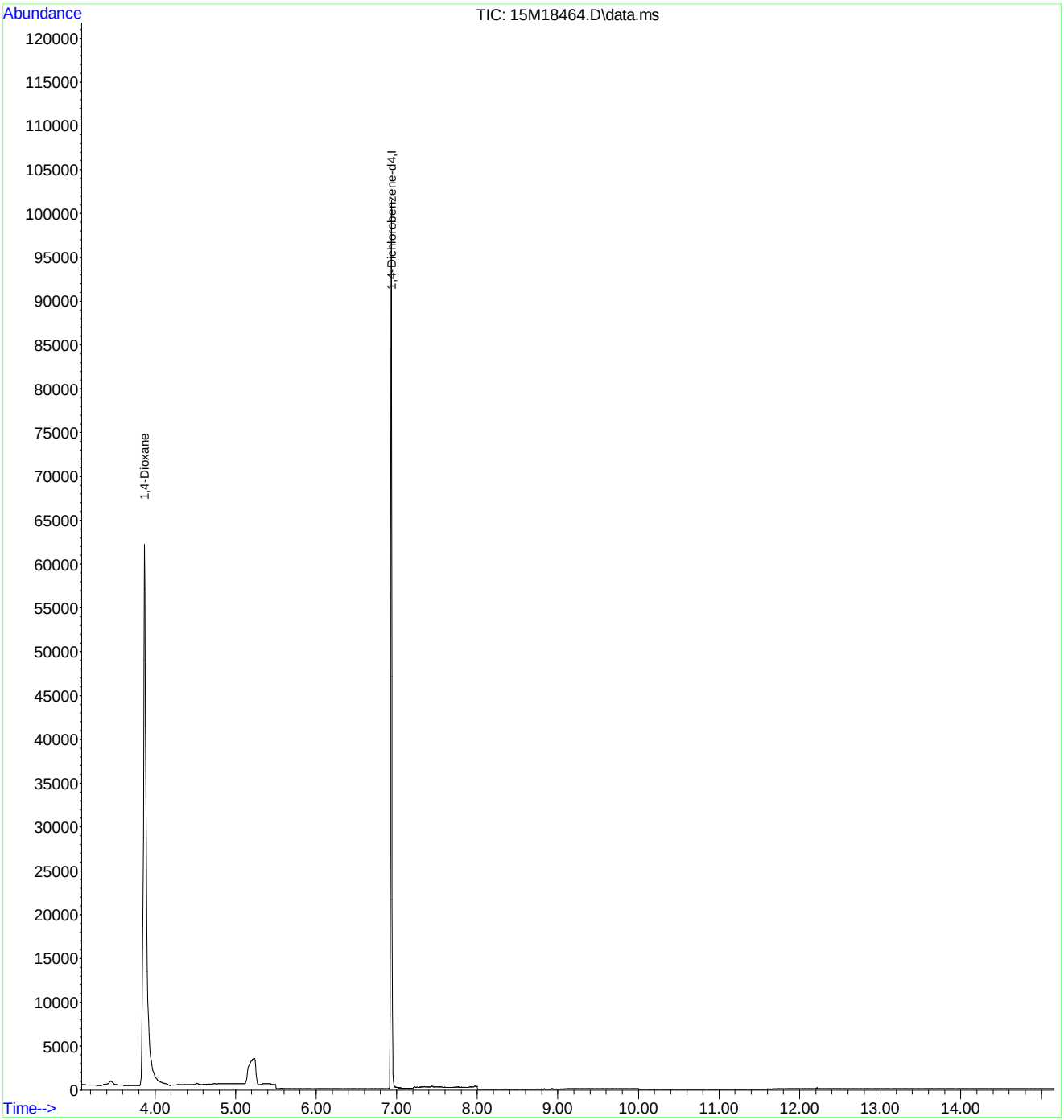

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2		1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3	S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4	S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5	S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6	S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18674.D
Acq On : 30 Jun 2016 14:42
Operator : MES
Sample : WG574781-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 30 14:58:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.870	152	31348	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.777	96	62277	4.8280 ug/L	0.00
Spiked Amount 5.000			Recovery	= 96.60%	
4) Nitrobenzene-d5	7.366	82	199647	6.0293 ug/L	0.00
Spiked Amount 5.000			Recovery	= 120.60%	
5) 2-Fluorobiphenyl	8.856	172	445070	5.3250 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.40%	
6) p-Terphenyl-d14	12.147	244	423287	5.2541 ug/L	0.06
Spiked Amount 5.000			Recovery	= 105.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.813	58	49944	5.2072 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18674.D
Acq On : 30 Jun 2016 14:42
Operator : MES
Sample : WG574781-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 30 14:58:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

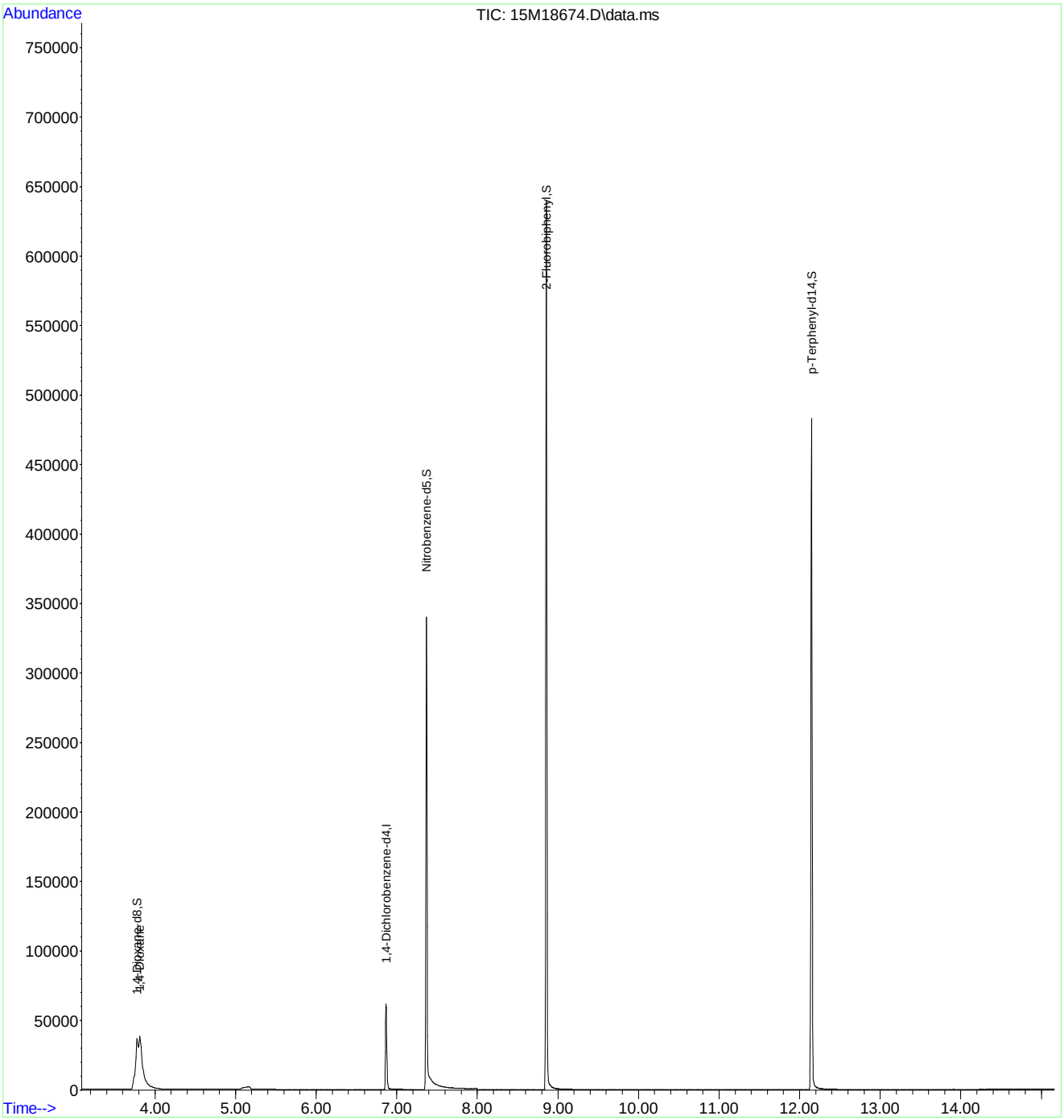

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18674.D
Acq On : 30 Jun 2016 14:42
Operator : MES
Sample : WG574781-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 30 14:58:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	79	0.00
2	1,4-Dioxane	5.000	5.207	-4.1	82	0.00
3 S	1,4-Dioxane-d8	5.000	4.828	3.4	75	0.00
4 S	Nitrobenzene-d5	5.000	6.029	-20.6	89	0.00
5 S	2-Fluorobiphenyl	5.000	5.325	-6.5	83	0.00
6 S	p-Terphenyl-d14	5.000	5.254	-5.1	82	0.06

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

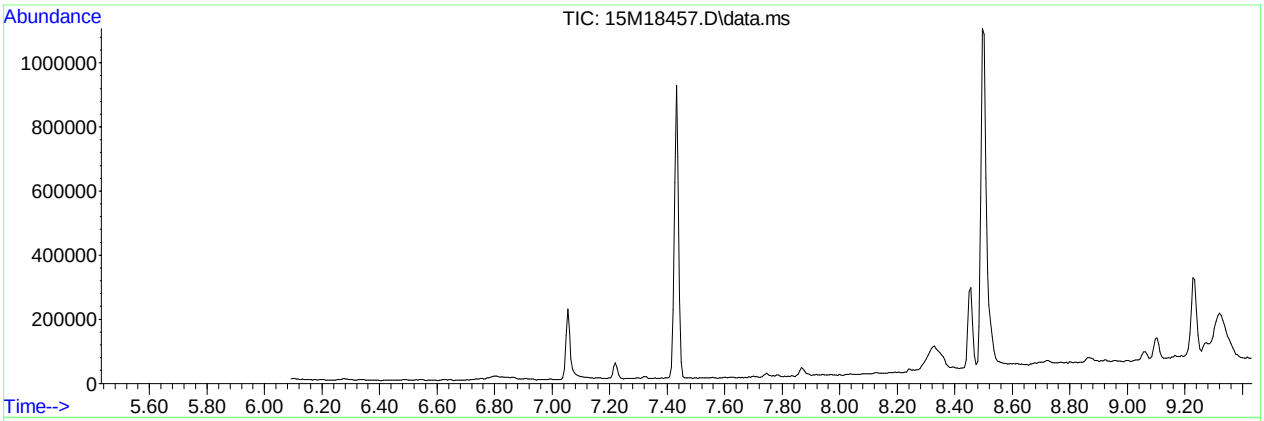

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

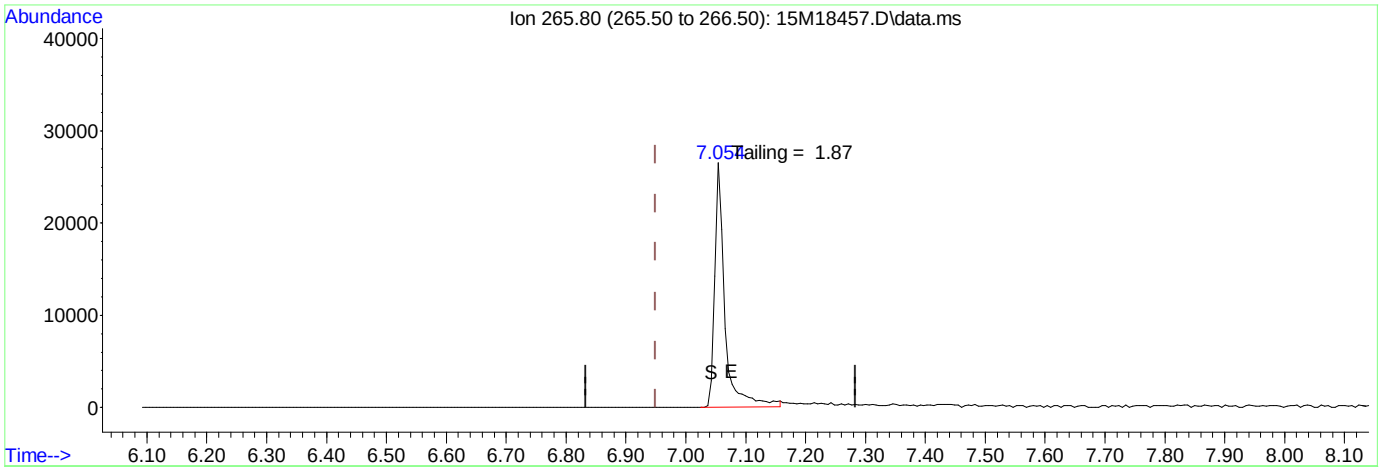

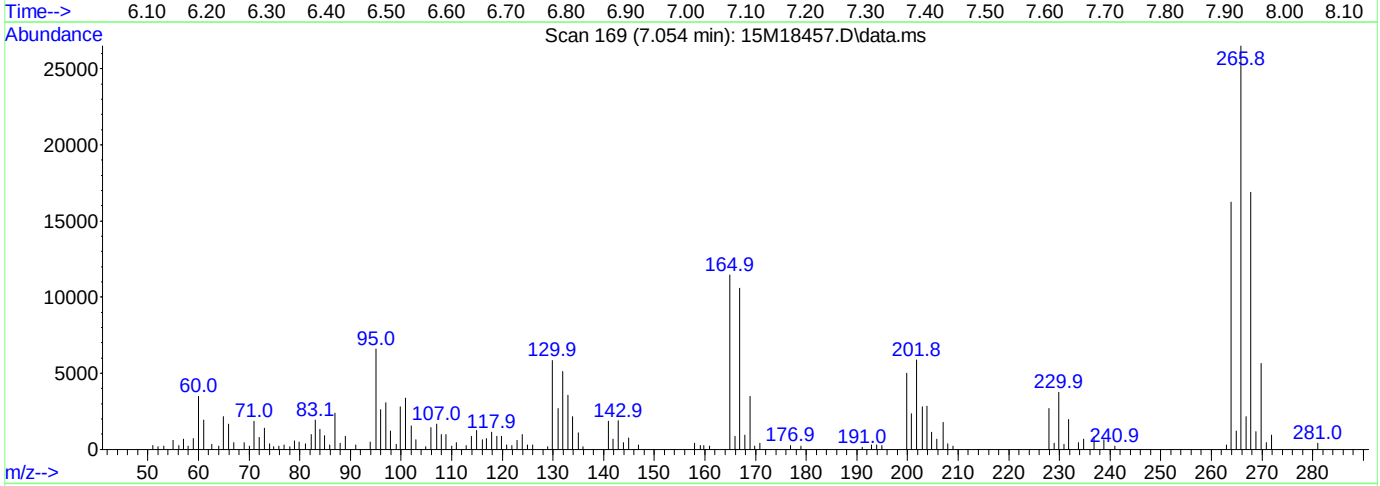

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

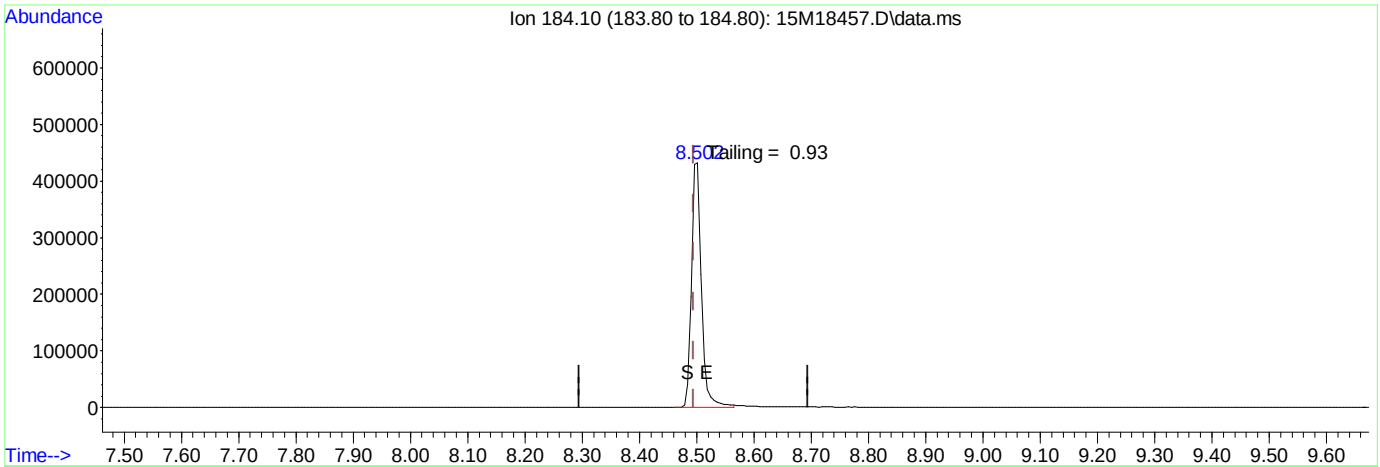

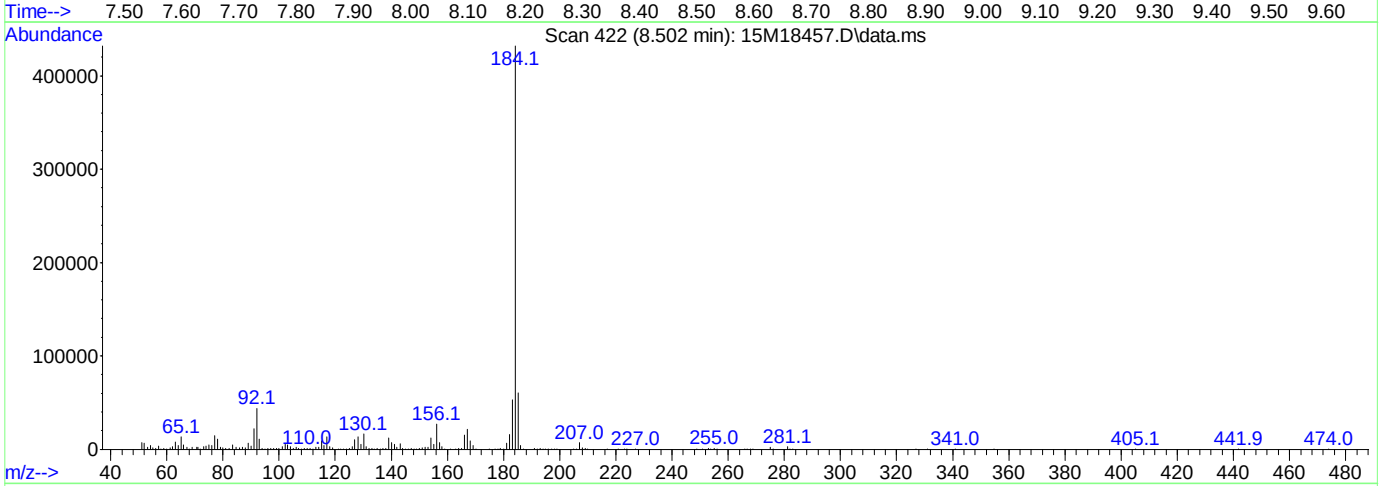

TIC: 15M18457.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

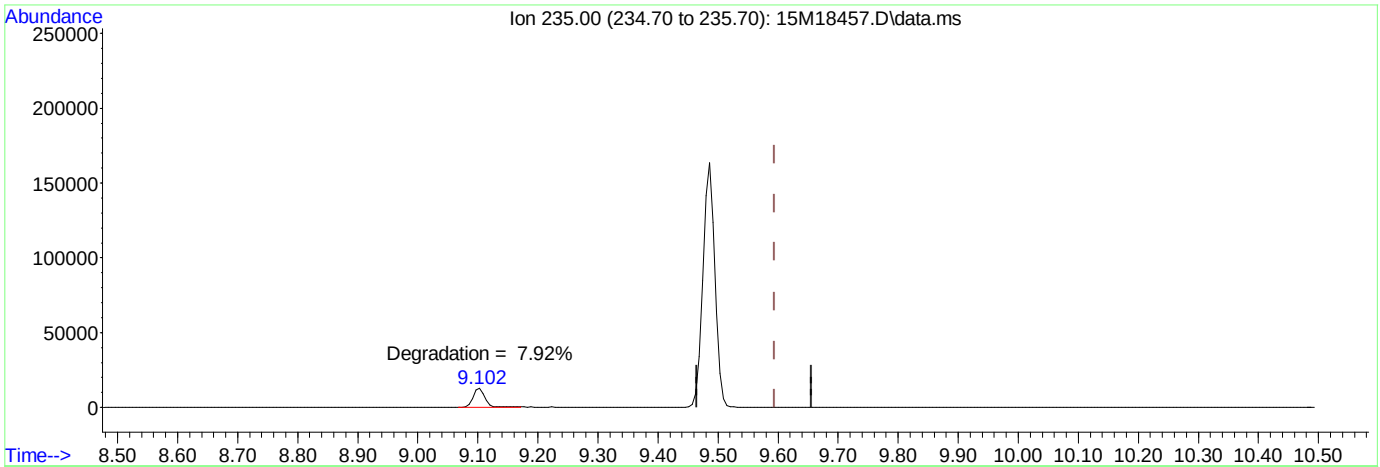

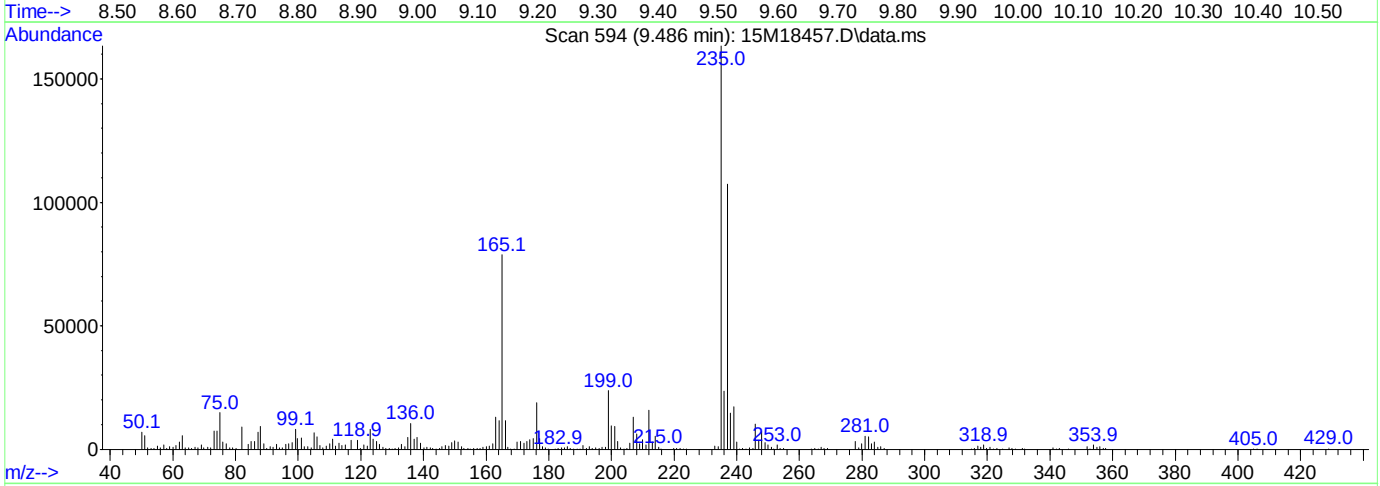

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

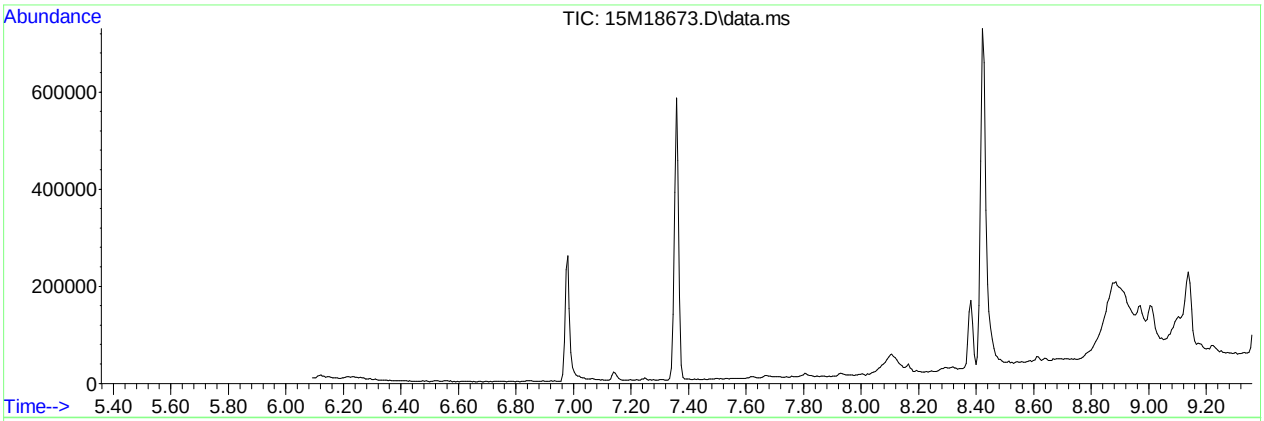

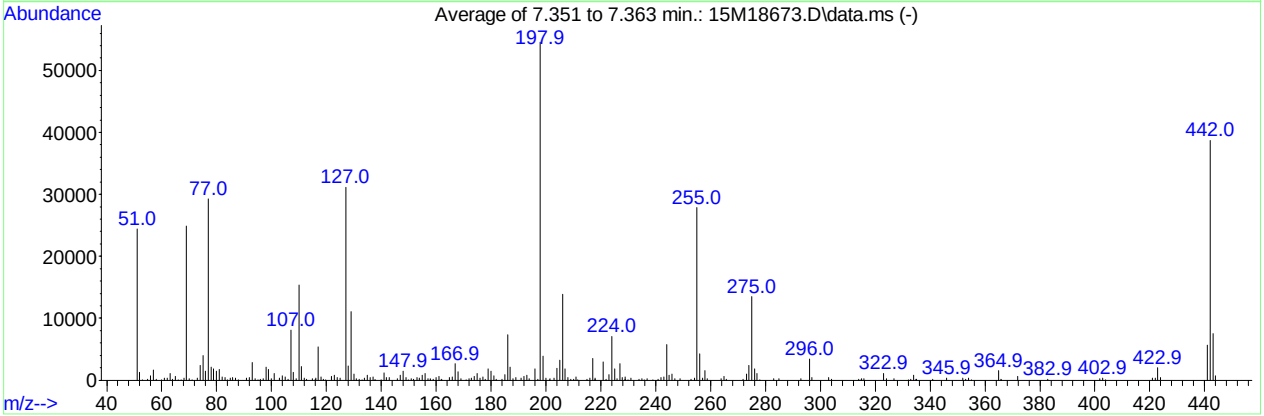

AutoFind: Scans 221, 222, 223; Background Corrected with Scan 215

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	44.6	24370	PASS
68	69	0.00	2	1.4	352	PASS
69	198	0.00	100	45.7	24921	PASS
70	69	0.00	2	1.0	239	PASS
127	198	40	60	57.0	31104	PASS
197	198	0.00	1	0.3	159	PASS
198	198	100	100	100.0	54589	PASS
199	198	5	9	7.0	3838	PASS
275	198	10	30	24.8	13523	PASS
365	198	1	100	2.8	1520	PASS
441	443	0.01	100	75.2	5686	PASS
442	198	40	100	70.8	38669	PASS
443	442	17	23	19.5	7559	PASS

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 30 14:35:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

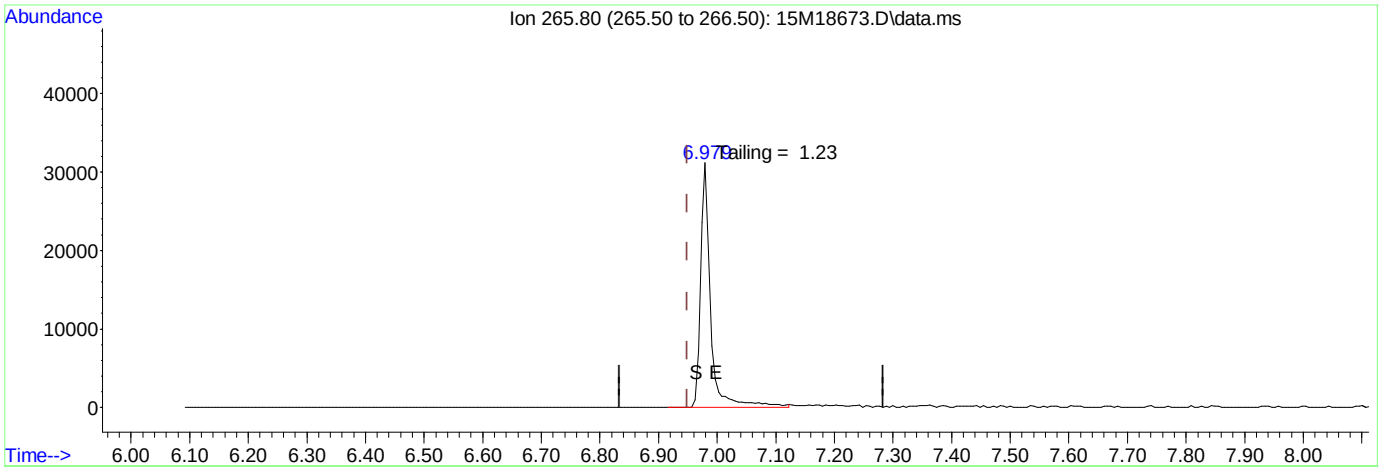

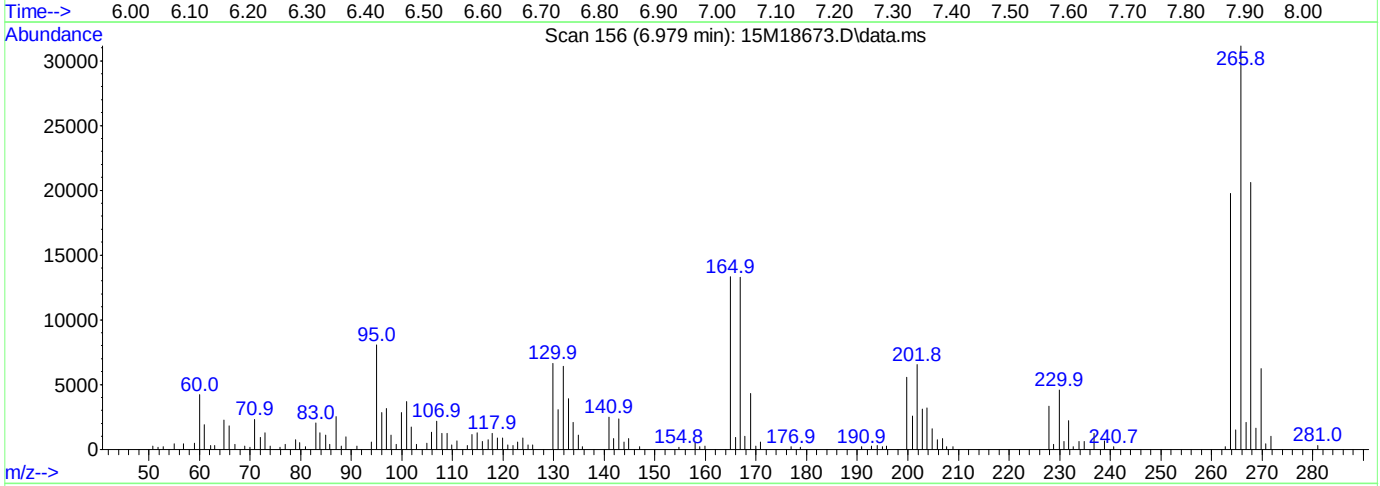

TIC: 15M18673.D\data.ms

(1) Pentachlorophenol

6.979min (+ 0.030) 0.00 ug/ml

response 37511

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 30 14:35:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

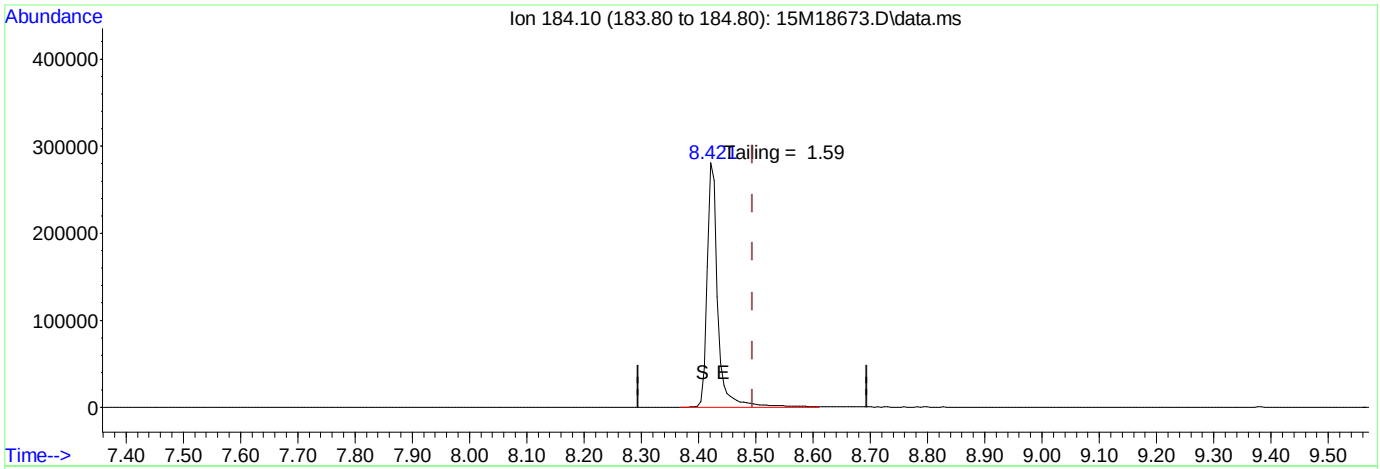

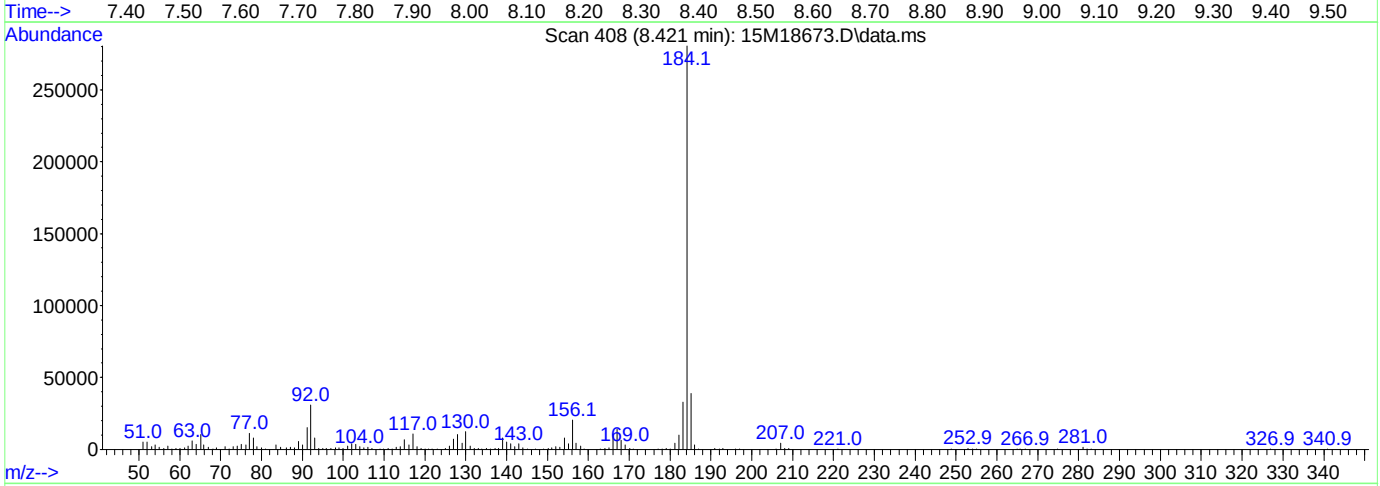

TIC: 15M18673.D\data.ms

(2) Benzidine

8.421min (-0.073) 0.00 ug/ml

response 363129

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 30 14:35:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

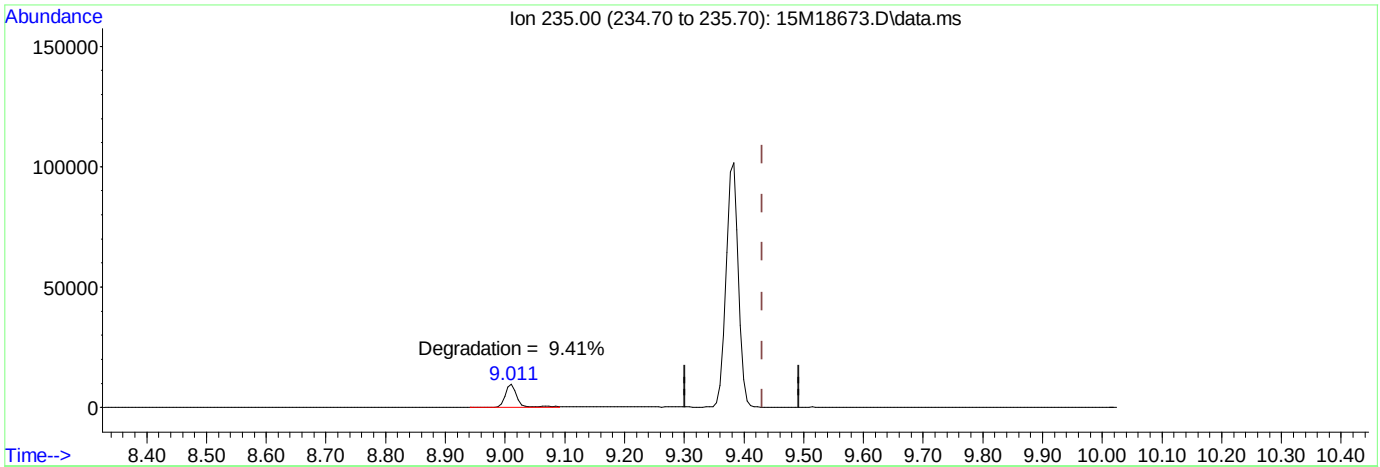

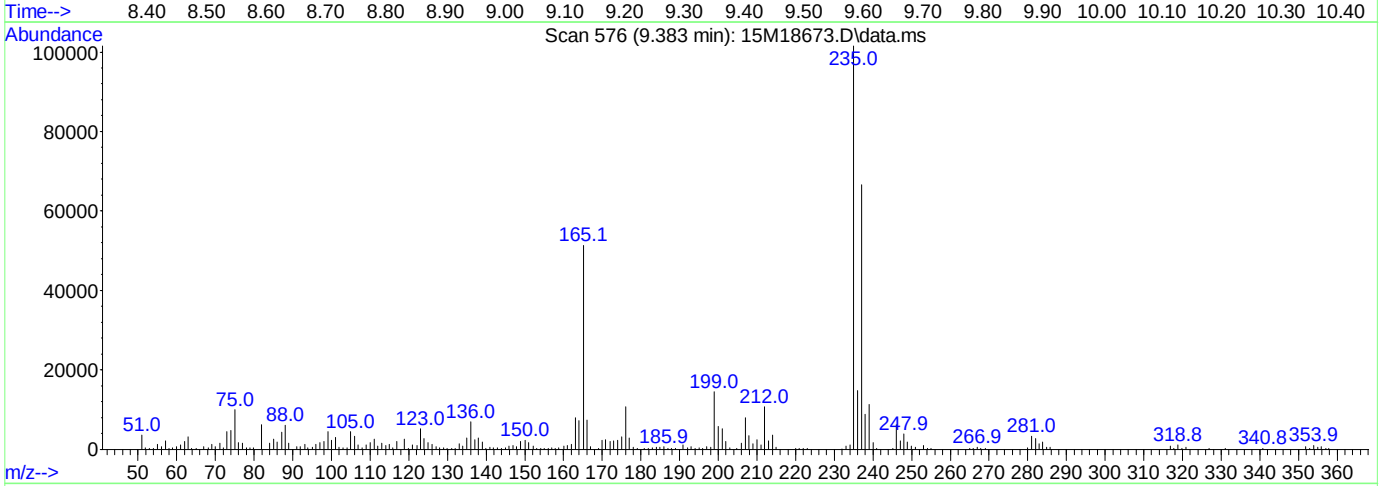

(3) DDT

9.383min (-0.047) 0.00 ug/ml

response 147438

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18678.D
Acq On : 30 Jun 2016 16:12
Operator : MES
Sample : WG574286-01 BLANK 6/27
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 30 16:57:35 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	28516	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	25448	2.1688	ug/L	0.00
Spiked Amount 5.000			Recovery = 43.40%			
4) Nitrobenzene-d5	7.367	82	1047426	34.7736	ug/L	0.00
Spiked Amount 5.000			Recovery = 695.40%			
5) 2-Fluorobiphenyl	8.856	172	1915171	25.1894	ug/L	0.00
Spiked Amount 5.000			Recovery = 503.80%			
6) p-Terphenyl-d14	12.137	244	2891842	39.4601	ug/L	0.05
Spiked Amount 5.000			Recovery = 789.20%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18678.D
Acq On : 30 Jun 2016 16:12
Operator : MES
Sample : WG574286-01 BLANK 6/27
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 30 16:57:35 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

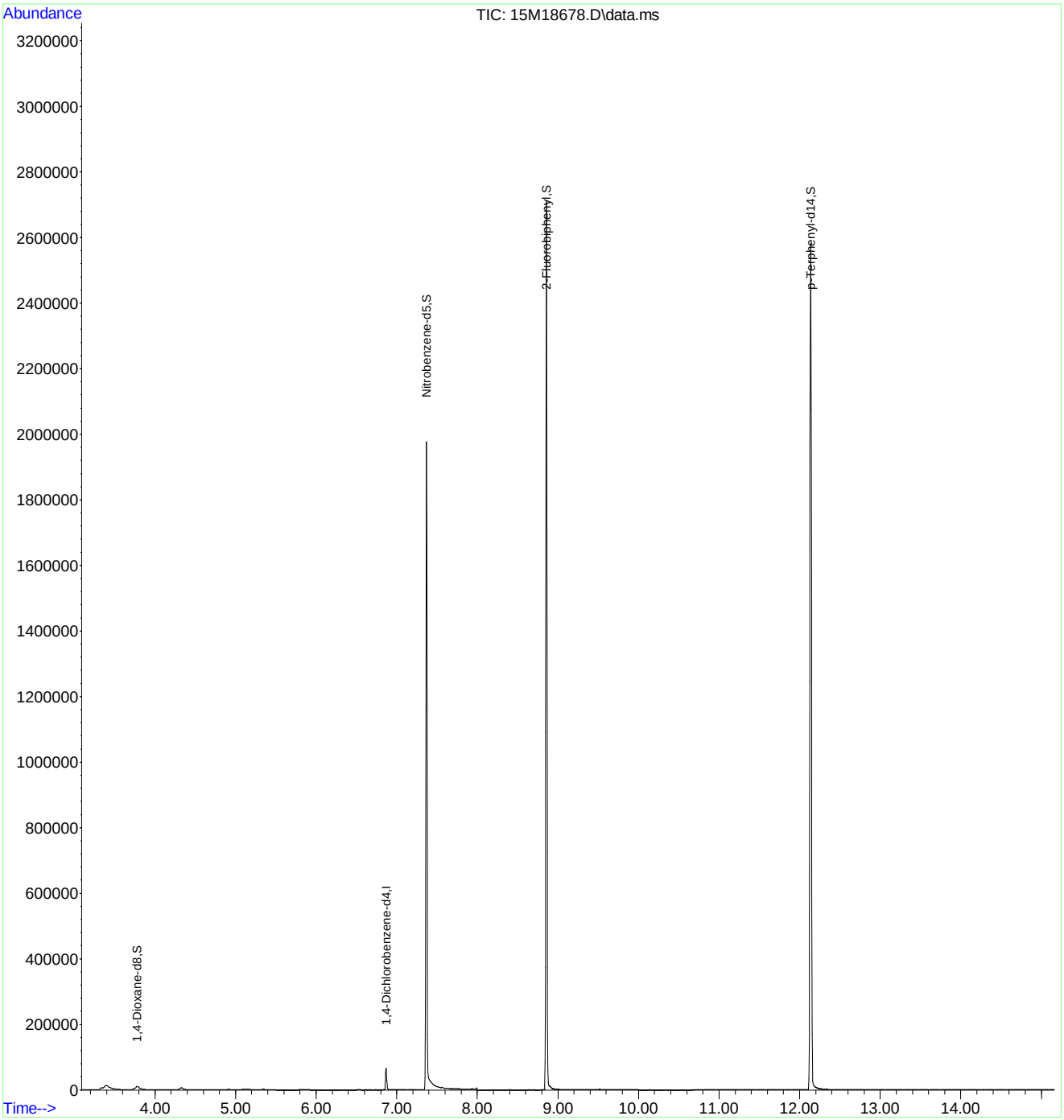

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18679.D
Acq On : 30 Jun 2016 16:34
Operator : MES
Sample : WG574286-02 LCS 6/27
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 30 16:57:20 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	22815	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.770	96	22955	2.4451	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	49.00%	
4) Nitrobenzene-d5	7.372	82	1584	0.0657	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.860	172	964	0.0158	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.107	244	620	0.0106	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	19389	2.7776	ug/L	67

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18679.D
Acq On : 30 Jun 2016 16:34
Operator : MES
Sample : WG574286-02 LCS 6/27
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 30 16:57:20 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

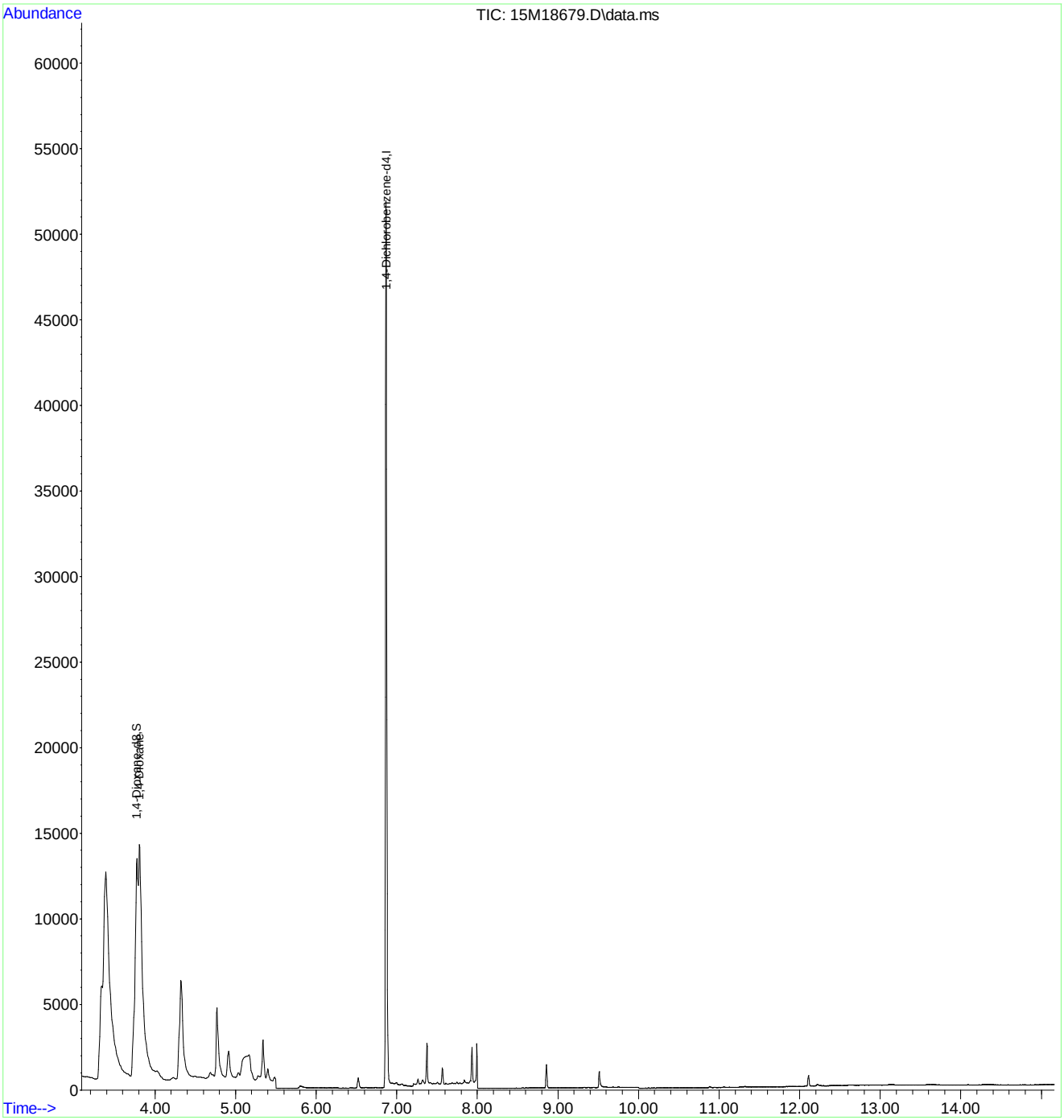

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW21-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 19:05
Collect Date:	06/22/2016 09:45	**Dilution:**	10000	**File ID:**	1LM.LM35578
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	26100		4000	2000	1000

Certificate of Analysis

Sample #:	L16061289-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW9-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 19:24
Collect Date:	06/22/2016 11:05	**Dilution:**	100	**File ID:**	1LM.LM35579
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	263		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16061289-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW02-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 19:43
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	1LM.LM35580
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW10SW-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 20:58
Collect Date:	06/22/2016 14:55	**Dilution:**	1	**File ID:**	1LM.LM35584
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1415 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG575005-01 MCT	10,020.	
-02 Blank	0.31	
-03 LCS	0.44	
-04 LCS2	0.41	
L16070001-01 LOD	0.38	
L16070003-01 LOQ	0.43	
-09 LOQ	0.45	
L16061289-01	6,210.	
-02	147.9	
-03	105.2	
-05	1,381.	
L16061290-01	594.	
-02	1,157.	
-04	219.	
-05	172.8	
-06	826.	
L16061452-01	1,890.	
-03	1,179.	
L16061453-01	2,610.	
-02	1,188.	
-03	1,101.	
L16061559-01	3,040.	
-02	3,140.	
L16061648-01	669.	

Analyst: John Richards

Date/Time: 07/01/16 19:50

DCN#119454

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070116_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575005 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples L16061289(-01,-02), L16061290-05 and L16061452-03 were analyzed at dilutions based on their historical results.
Samples L16061290-04 and L16061453-01 had inconsistent historical results. These samples were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35568	WG575015-01 CCB	1	1		07/01/16 15:55
2	1LM.LM35569	WG575015-02 CCV (1.0ug/L)	1	1	STD75510	07/01/16 16:14
3	1LM.LM35570	WG575005-05 MRL (0.2ug/L)	1	1	STD75510	07/01/16 16:33
4	1LM.LM35571	WG575005-01 MCT (0.2ug/L)	1	1	STD75512	07/01/16 16:52
5	1LM.LM35572	WG575005-02 BLANK	1	1		07/01/16 17:11
6	1LM.LM35573	WG575005-03 LCS (0.2ug/L)	1	1	STD75512	07/01/16 17:30
7	1LM.LM35574	WG575005-04 LCS2 (0.2ug/L)	1	1	STD75512	07/01/16 17:49
8	1LM.LM35575	L16070001-01 LOD (0.1ug/L)	1	1	STD75512	07/01/16 18:08
9	1LM.LM35576	L16070003-01 LOQ (0.2ug/L)	1	1	STD75512	07/01/16 18:27
10	1LM.LM35577	L16070003-09 LOQ (0.2ug/L)	1	1	STD75512	07/01/16 18:46
11	1LM.LM35578	L16061289-01 (10,000x)	1	10000		07/01/16 19:05
12	1LM.LM35579	L16061289-02 (100x)	1	100		07/01/16 19:24
13	1LM.LM35580	L16061289-03	1	1		07/01/16 19:43
14	1LM.LM35581	WG575015-03 CCV (1.0ug/L)	1	1	STD75510	07/01/16 20:02
15	1LM.LM35582	WG575005-06 MRL (0.2ug/L)	1	1	STD75510	07/01/16 20:21
16	1LM.LM35583	WG575015-04 CCB	1	1		07/01/16 20:39
17	1LM.LM35584	L16061289-05	1	1		07/01/16 20:58
18	1LM.LM35585	L16061290-01	1	1		07/01/16 21:17
19	1LM.LM35586	L16061290-02	1	1		07/01/16 21:36
20	1LM.LM35587	L16061290-04 (500x)	1	500		07/01/16 21:55
21	1LM.LM35588	L16061290-05 (10,000x) (NR)	1	10000		07/01/16 22:14
22	1LM.LM35589	L16061290-06	1	1		07/01/16 22:33
23	1LM.LM35590	L16061452-01	1	1		07/01/16 22:52
24	1LM.LM35591	L16061452-03 (10,000x)	1	10000		07/01/16 23:11
25	1LM.LM35592	L16061453-01 (10x)	1	10		07/01/16 23:30
26	1LM.LM35593	L16061453-02	1	1		07/01/16 23:49
27	1LM.LM35594	WG575015-05 CCV (1.0ug/L)	1	1	STD75510	07/02/16 00:08
28	1LM.LM35595	WG575005-07 MRL (0.2ug/L)	1	1	STD75510	07/02/16 00:27
29	1LM.LM35596	WG575015-06 CCB	1	1		07/02/16 00:46
30	1LM.LM35597	L16061453-03	1	1		07/02/16 01:05
31	1LM.LM35598	L16061559-01	1	1		07/02/16 01:23
32	1LM.LM35599	L16061559-02	1	1		07/02/16 01:42

Page: 1 Approved: 06-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070116_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575005 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
33	1LM.LM35600	L16061648-01	1	1		07/02/16 02:01
34	1LM.LM35601	WG575015-07 CCV (1.0ug/L)	1	1	STD75510	07/02/16 02:20
35	1LM.LM35602	WG575005-08 MRL (0.2ug/L)	1	1	STD75510	07/02/16 02:39
36	1LM.LM35603	WG575015-08 CCB	1	1		07/02/16 02:58

Comments

Seq.	Rerun	Dil.	Reason	Analytes
21	X	1000	Analyzed too dilute	
	L16061290-05 (10,000x) (NR) : This sample did not conform to its historical results and was analyzed too dilute at 10,000x dilution. This sample will be ungrouped from this analytical batch and reanalyzed at a 1000x dilution on another day.			

Page: 2 Approved: 06-JUL-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 76123
Analytical Workgroups: L16061289,1290,1452,1453,1559,1648 L16070001(LOD), 0003(LOQ)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 06-JUL-2016 John Richards

Secondary Reviewer: 06-JUL-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-06-2016 14:48:43

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG575005

Login Number: L16061289

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW21-062216	01	06/22/16					07/01/2016	9.2	28		07/01/16	.2	28	
MW9-062216	02	06/22/16					07/01/2016	9.1	28		07/01/16	.2	28	
18WW02-062216	03	06/22/16					07/01/2016	9	28		07/01/16	.3	28	
18CPTMW10SW-062216	05	06/22/16					07/01/2016	8.9	28		07/01/16	.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4841027
Report generated 07/07/2016 08:59

METHOD BLANK SUMMARY

Login Number: L16061289
Blank File ID: 1LM.LM35572
Prep Date: 07/01/16 13:30
Analyzed Date: 07/01/16 17:11
Analyst: JWR

Work Group: WG575005
Blank Sample ID: WG575005-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG575005-05	1LM.LM35570	07/01/16 16:33	01
MCT	WG575005-01	1LM.LM35571	07/01/16 16:52	01
LCS	WG575005-03	1LM.LM35573	07/01/16 17:30	01
LCS2	WG575005-04	1LM.LM35574	07/01/16 17:49	01
MW21-062216	L16061289-01	1LM.LM35578	07/01/16 19:05	DL01
MW9-062216	L16061289-02	1LM.LM35579	07/01/16 19:24	DL01
18WW02-062216	L16061289-03	1LM.LM35580	07/01/16 19:43	01
QCMRL	WG575005-06	1LM.LM35582	07/01/16 20:21	01
18CPTMW10SW-062216	L16061289-05	1LM.LM35584	07/01/16 20:58	01
QCMRL	WG575005-07	1LM.LM35595	07/02/16 00:27	01
QCMRL	WG575005-08	1LM.LM35602	07/02/16 02:39	01

Report Name: BLANK_SUMMARY
PDF File ID: 4841028
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061289 Prep Date: 07/01/16 13:30 Sample ID: WG575005-02
Instrument ID: LCMS1 Run Date: 07/01/16 17:11 Prep Method: 6850
File ID: 1LM.LM35572 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4841029
07-JUL-2016 08:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG575005 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG575005-03 LCS File ID: 1LM.LM35573 Run Date: 07/01/2016 17:30
Sample ID: WG575005-04 LCS2 File ID: 1LM.LM35574 Run Date: 07/01/2016 17:49

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.201	101	0.200	0.211	106	4.85	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4841030
Report generated: 07/07/2016 08:59

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061289
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4841487
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061289

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4841487
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061289

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4841487
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061289

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4841487

Report generated 07/07/2016 08:59

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061289 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4841488
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575015-01
Instrument ID: LCMS1
Run Time: 15:55
Method: 6850
File ID: 1LM.LM35568
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841033
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575015-04
Instrument ID: LCMS1
Run Time: 20:39
Method: 6850
File ID: 1LM.LM35583
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841033
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/02/2016
Sample ID: WG575015-06
Instrument ID: LCMS1
Run Time: 00:46
Method: 6850
File ID: 1LM.LM35596
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841033
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/02/2016
Sample ID: WG575015-08
Instrument ID: LCMS1
Run Time: 02:58
Method: 6850
File ID: 1LM.LM35603
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841033
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575015-02
Instrument ID: LCMS1
Run Time: 16:14
Method: 6850
File ID: 1LM.LM35569
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841032
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289 Run Date: 07/01/2016 Sample ID: WG575015-03
Instrument ID: LCMS1 Run Time: 20:02 Method: 6850
File ID: 1LM.LM35581 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG575005 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841032
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289 Run Date: 07/02/2016 Sample ID: WG575015-05
Instrument ID: LCMS1 Run Time: 00:08 Method: 6850
File ID: 1LM.LM35594 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG575005 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841032
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289 Run Date: 07/02/2016 Sample ID: WG575015-07
Instrument ID: LCMS1 Run Time: 02:20 Method: 6850
File ID: 1LM.LM35601 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG575005 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841032
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061289 Run Date: 07/01/2016 Sample ID: WG575005-05
Instrument ID: LCMS1 Run Time: 16:33 Prep Method: 6850
File ID: 1LM.LM35570 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841031
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061289 Run Date: 07/01/2016 Sample ID: WG575005-06
Instrument ID: LCMS1 Run Time: 20:21 Prep Method: 6850
File ID: 1LM.LM35582 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841031
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061289 Run Date: 07/02/2016 Sample ID: WG575005-07
Instrument ID: LCMS1 Run Time: 00:27 Prep Method: 6850
File ID: 1LM.LM35595 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841031
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061289 Run Date: 07/02/2016 Sample ID: WG575005-08
Instrument ID: LCMS1 Run Time: 02:39 Prep Method: 6850
File ID: 1LM.LM35602 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841031
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061289
Instrument ID: LCMS1
Workgroup (AAB#): WG575005

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061289-01	10000	DL01	449000
L16061289-02	100	DL01	444000
L16061289-03	1.00	01	410000
L16061289-05	1.00	01	358000
WG575005-02	1.00	01	451000
WG575005-03	1.00	01	451000
WG575005-04	1.00	01	450000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4841034
Report generated 07/07/2016 09:00

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	L16061289-01
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35578
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 19:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	395000	130000	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	L16061289-02
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35579
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 19:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	393000	133000	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	L16061289-03
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35580
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 19:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3450	1050	3.29	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	L16061289-05
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35584
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1690	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	WG575005-01
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35571
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30200	9940	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	WG575005-02
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35572
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	WG575005-03
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35573
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:30	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31100	11300	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	WG575005-04
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35574
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32500	11800	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	WG575005-05
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35570
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33000	11700	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	WG575005-06
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35582
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32800	11400	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	WG575005-07
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35595
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35700	12900	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	WG575005-08
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35602
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	12300	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG575015-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35568
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 15:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG575015-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35569
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	163000	56900	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG575015-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35581
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	167000	58000	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG575015-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35583
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG575015-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35594
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	57200	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG575015-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35596
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG575015-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35601
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	58500	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG575015-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35603
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:29 PM

Data File	LM35578.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 7:05:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061289-01 (10,000x)	**Injection Vial**	11.00
Data File	LM35578.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 7:05:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061289-01	**Dilution Factor**	1.00
Sample Comment	1,10000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.950e+05	9.71	N/A	2.61
Perchlorate conf	1.300e+05	9.70	N/A	2.57

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

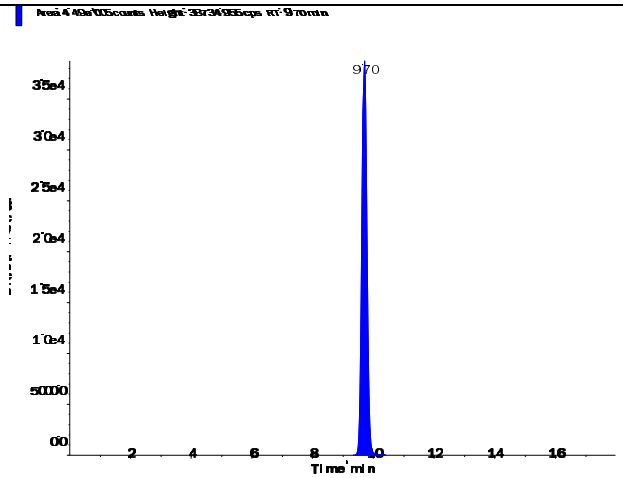

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:29 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.71 (9.84) min
Calculated conc:	2.61 ng/ml
Area Ratio:	0.879
Sample Type:	(Unknown)

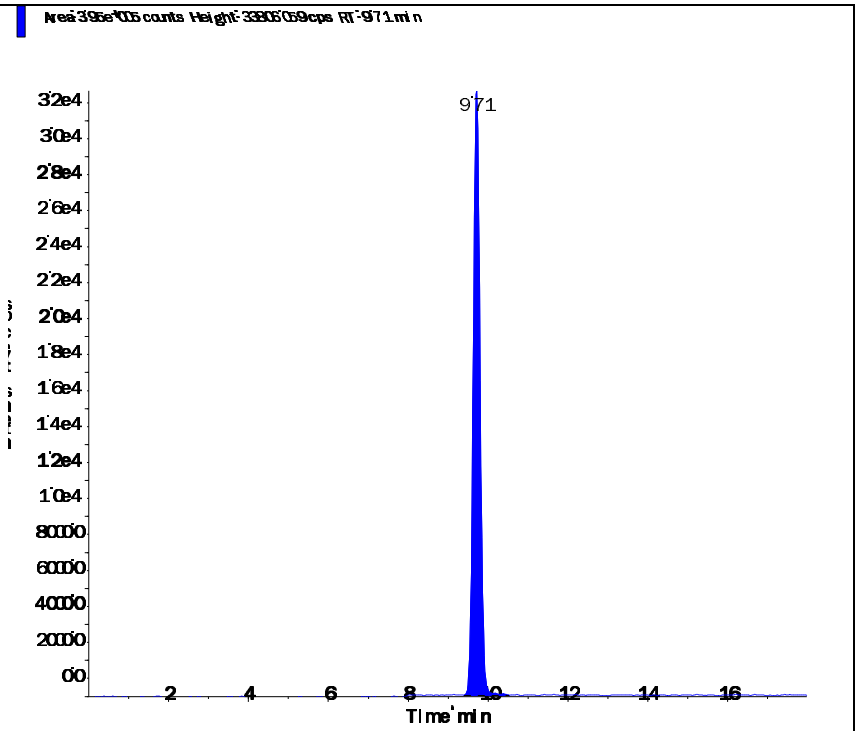

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.70 (9.84) min
Calculated conc:	2.57 ng/ml
Area Ratio:	0.289
Sample Type:	(Unknown)

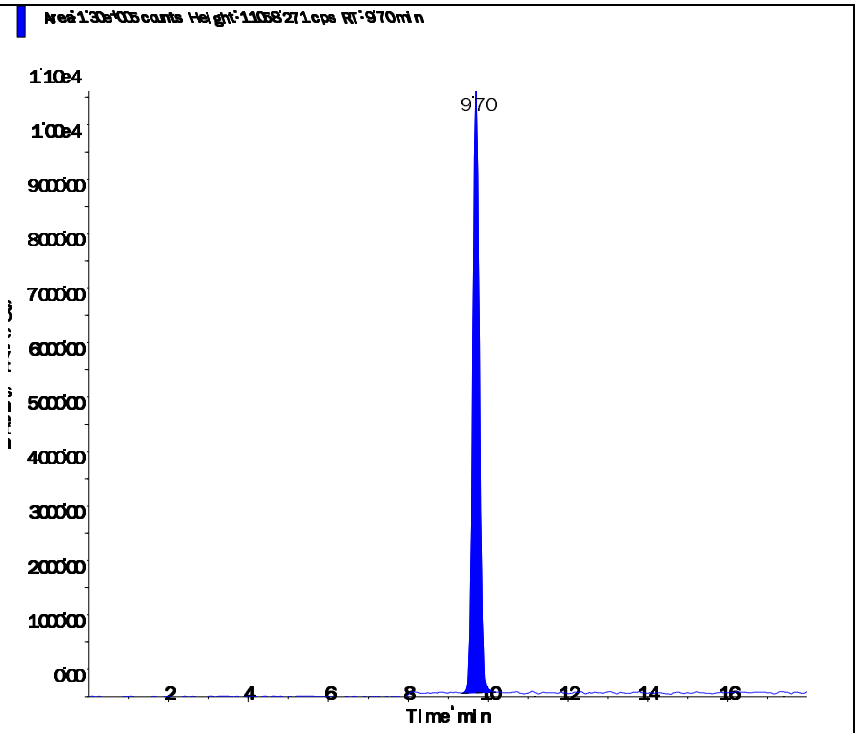

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:29 PM

Data File	LM35579.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 7:24:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061289-02 (100x)	**Injection Vial**	12.00
Data File	LM35579.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 7:24:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061289-02	**Dilution Factor**	1.00
Sample Comment	1,100 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.930e+05	9.71	N/A	2.63
Perchlorate conf	1.330e+05	9.69	N/A	2.66

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

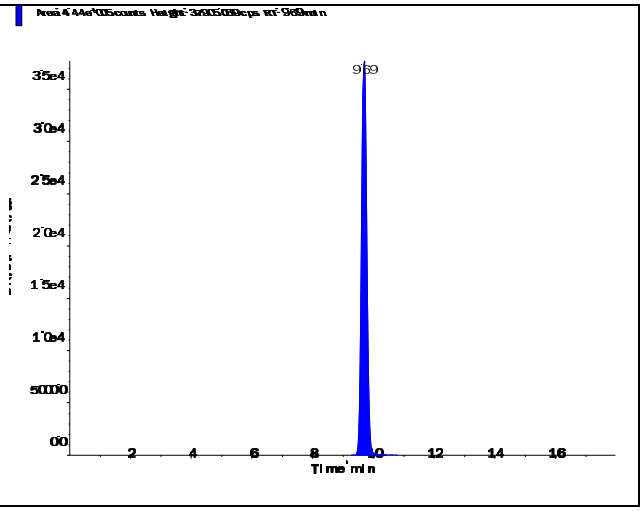

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:29 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.71 (9.84) min Calculated conc: 2.63 ng/ml Area Ratio: 0.885 Sample Type: (Unknown)	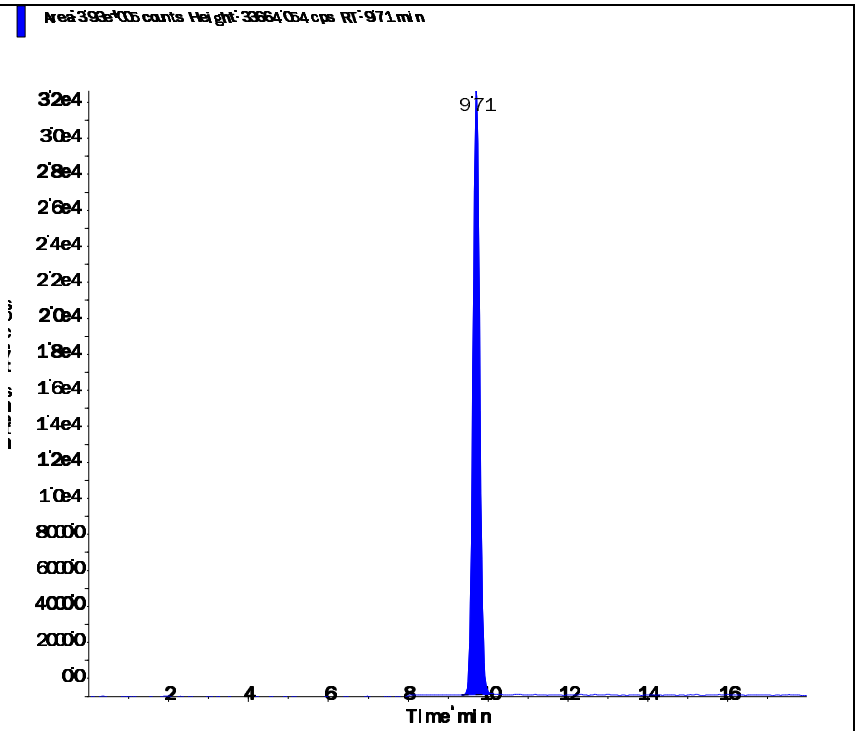
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.69 (9.84) min Calculated conc: 2.66 ng/ml Area Ratio: 0.30 Sample Type: (Unknown)	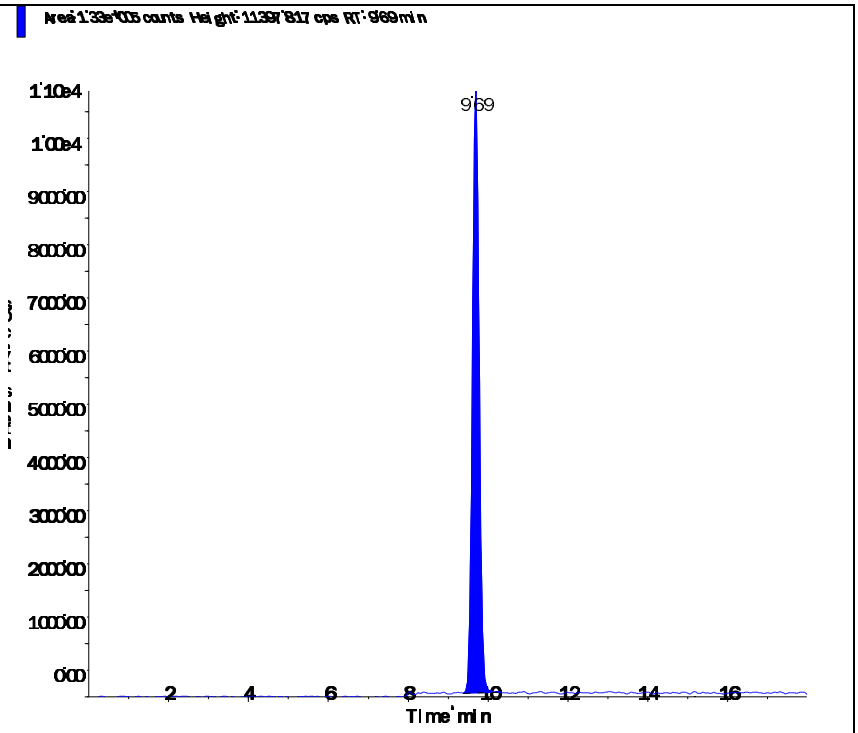

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:30 PM

Data File	LM35580.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 7:43:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061289-03	**Injection Vial**	13.00
Data File	LM35580.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 7:43:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061289-03	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.100e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.450e+03	9.63	N/A	0.0212
Perchlorate conf	1.050e+03	9.62	N/A	0.0026

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

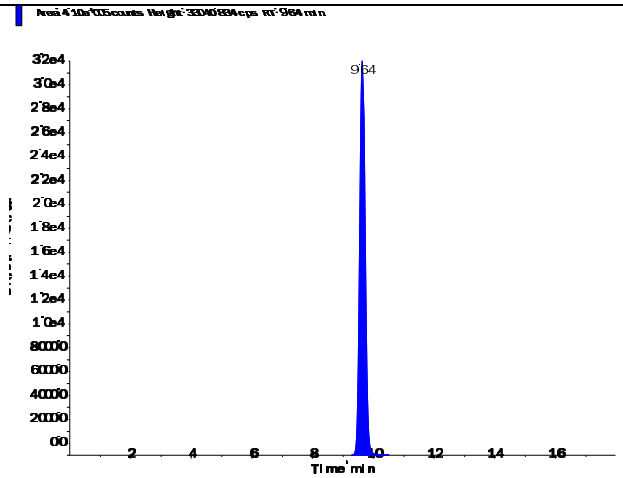

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:30 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.63 (9.84) min Calculated conc: 0.0212 ng/ml Area Ratio: 0.008 Sample Type: (Unknown)	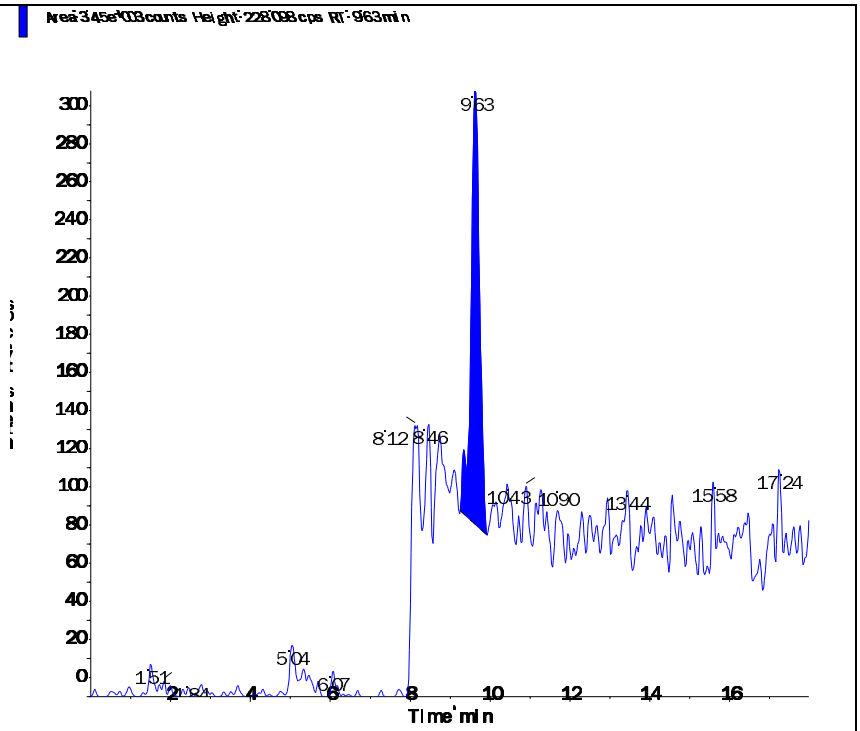
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.62 (9.84) min Calculated conc: 0.0026 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	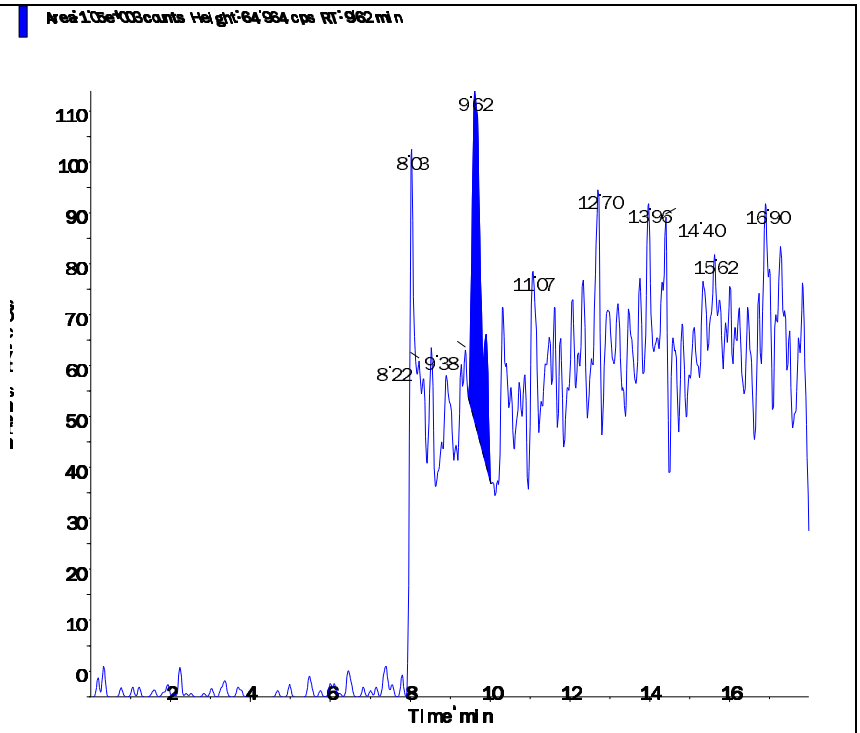

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:31 PM

Data File	LM35584.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:58:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061289-05	**Injection Vial**	14.00
Data File	LM35584.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:58:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061289-05	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.580e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+03	9.42	N/A	0.0102
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

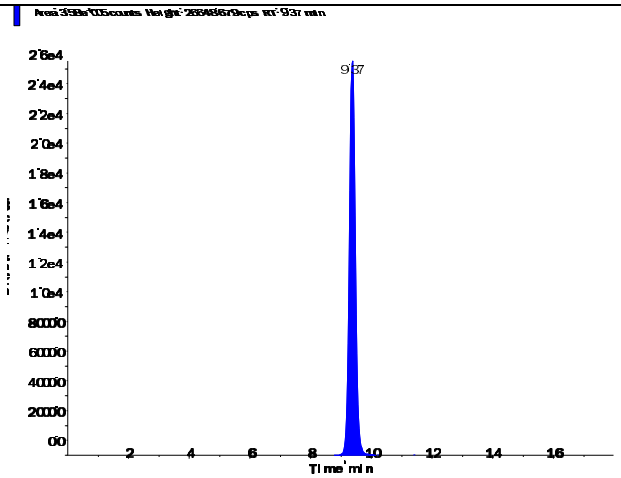

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:31 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	0.0102 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

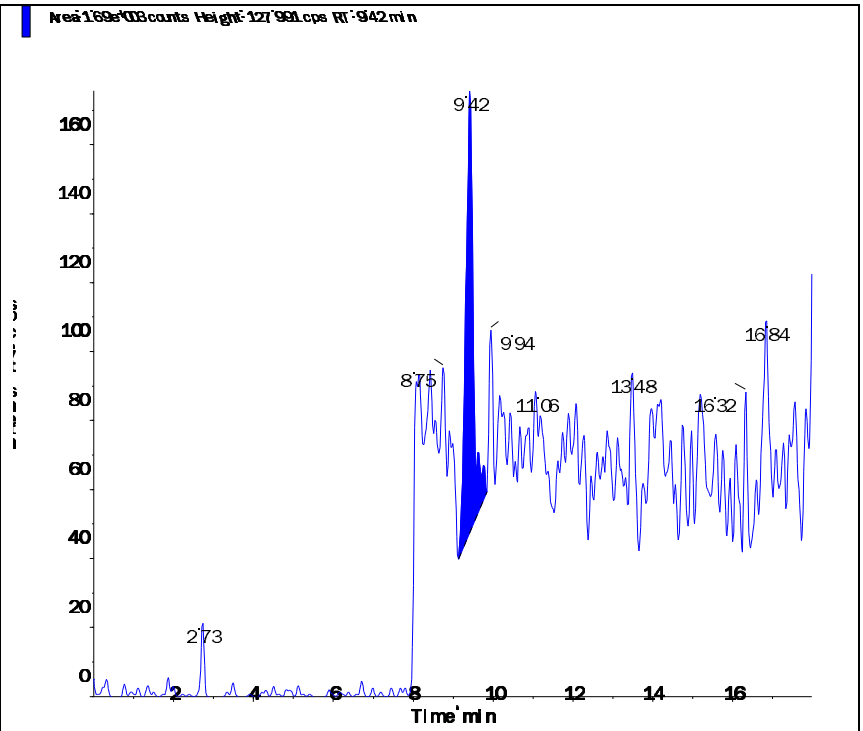

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

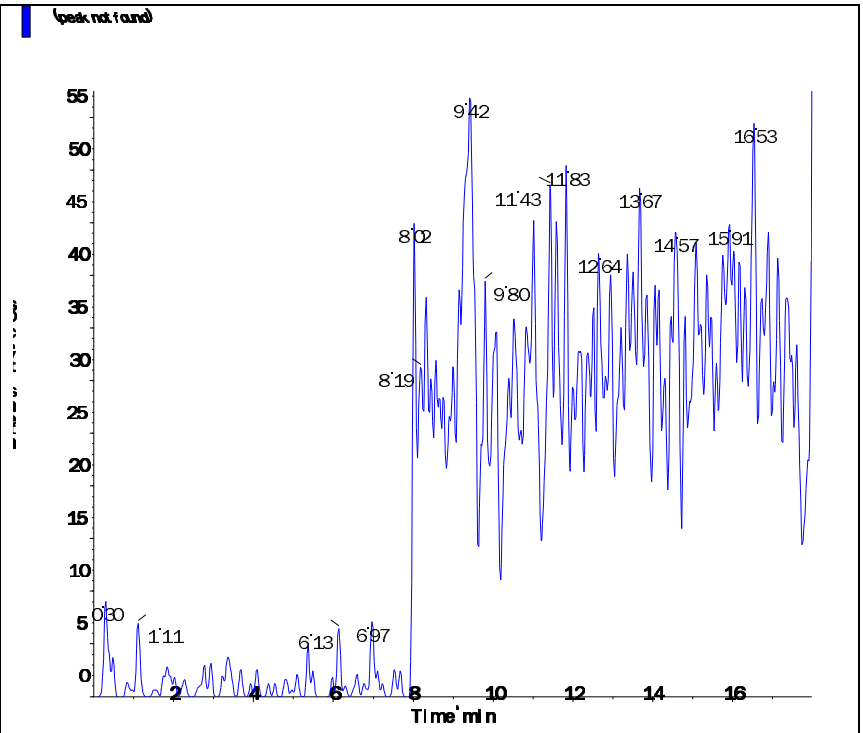

s.dataFile Page 2 of 2

2.2.2.4 Standards Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:53 AM

Data File	LM34686.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

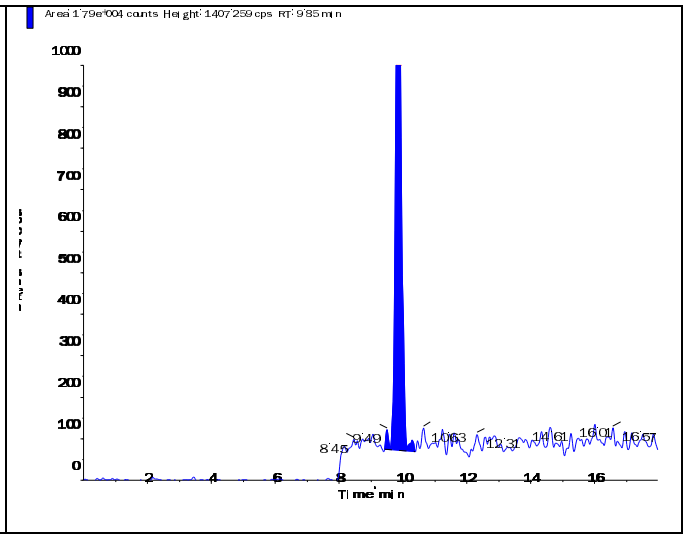

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:53 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

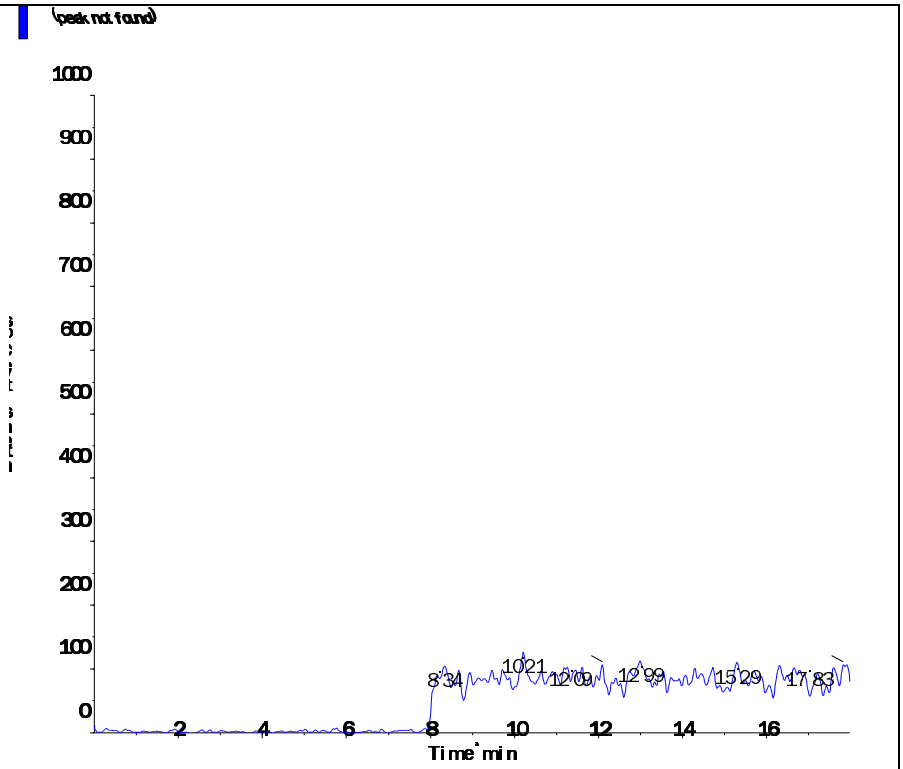

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

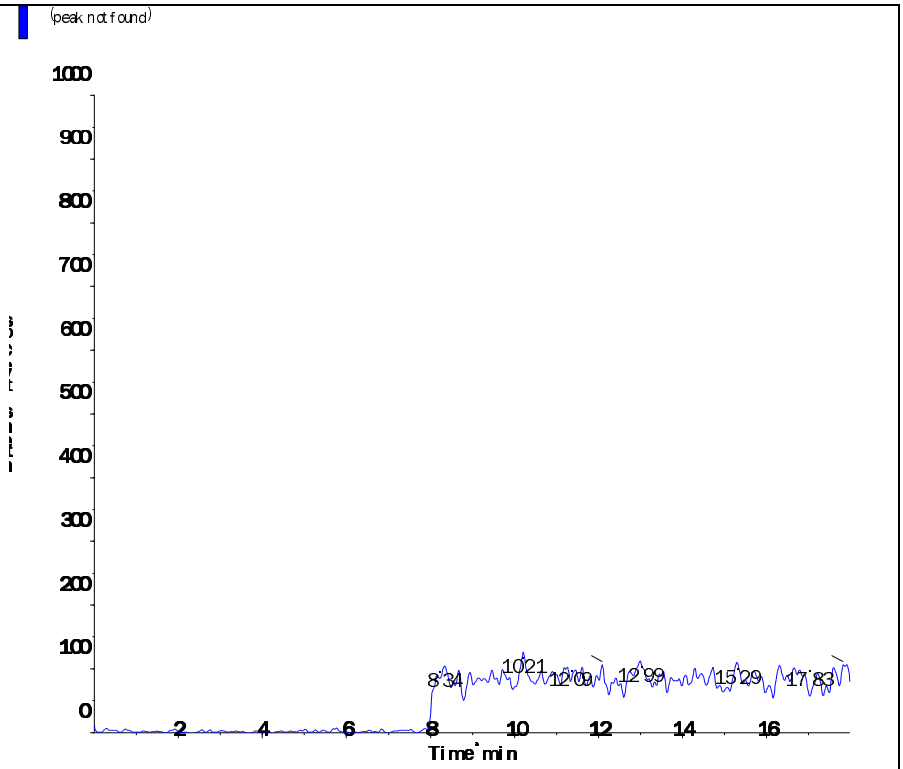

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

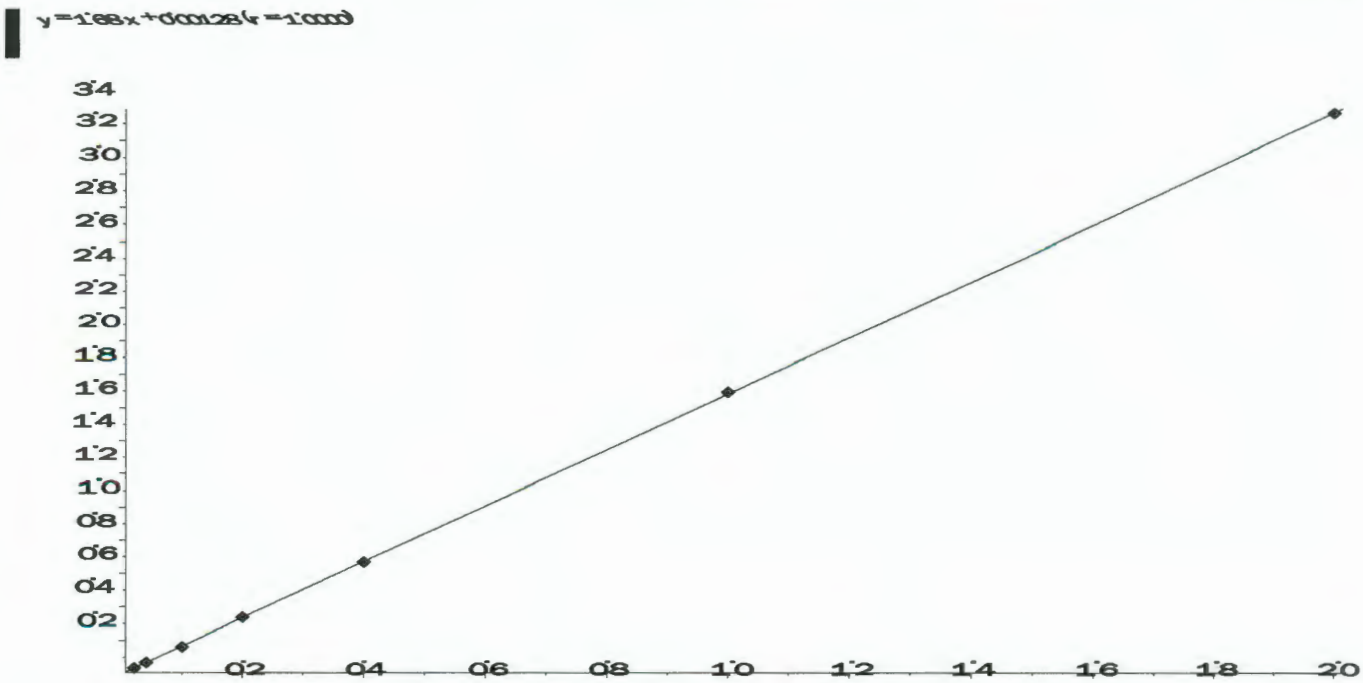

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

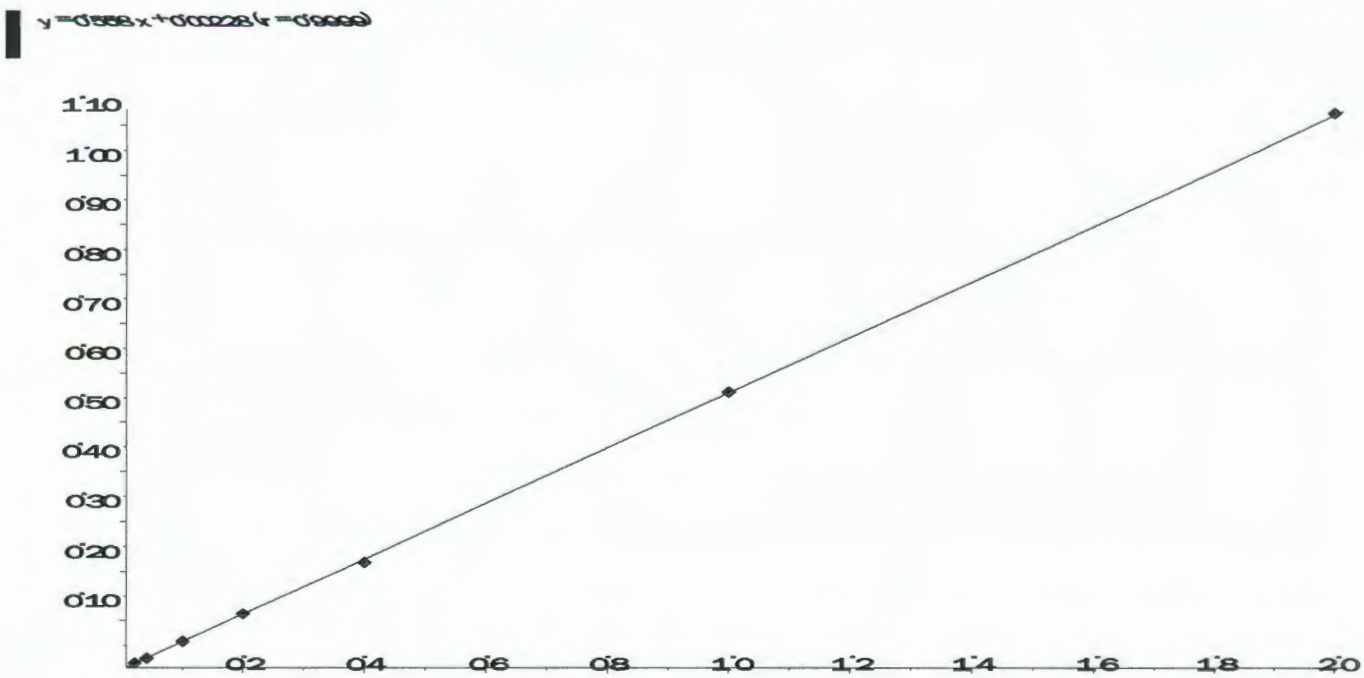

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:54 AM

Data File	LM34687.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

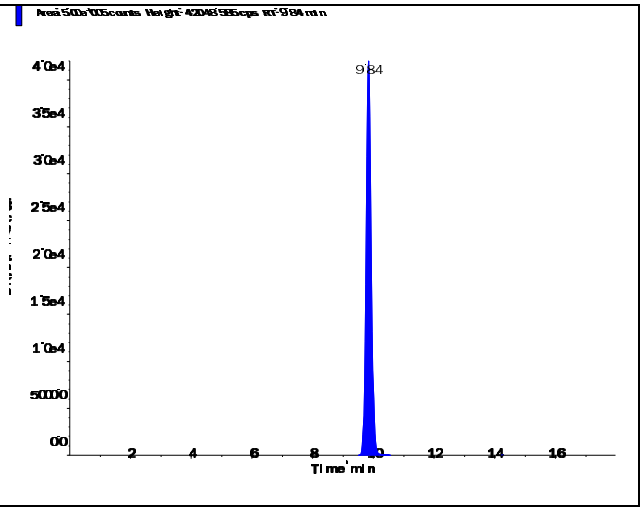

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:54 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

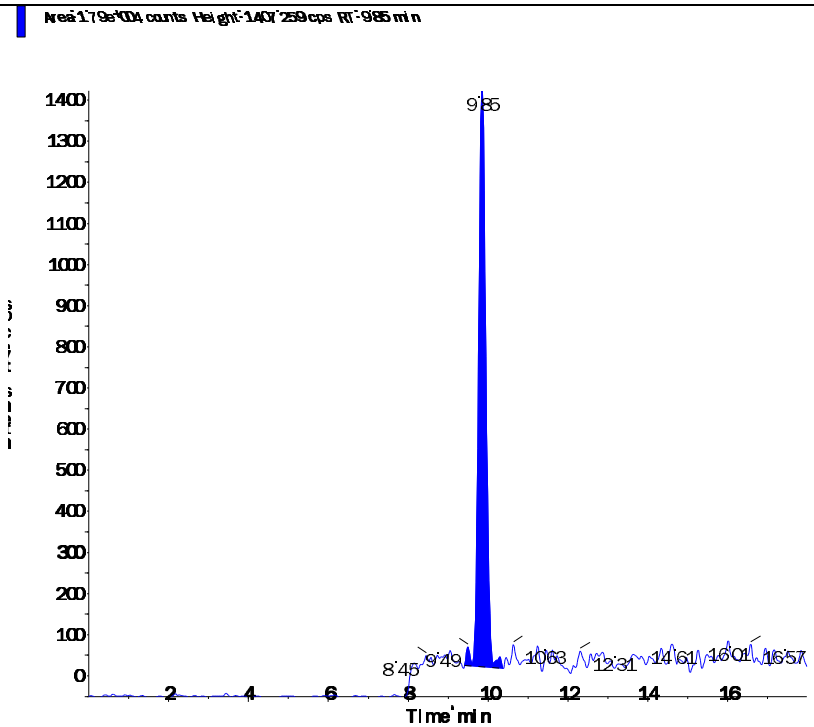

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

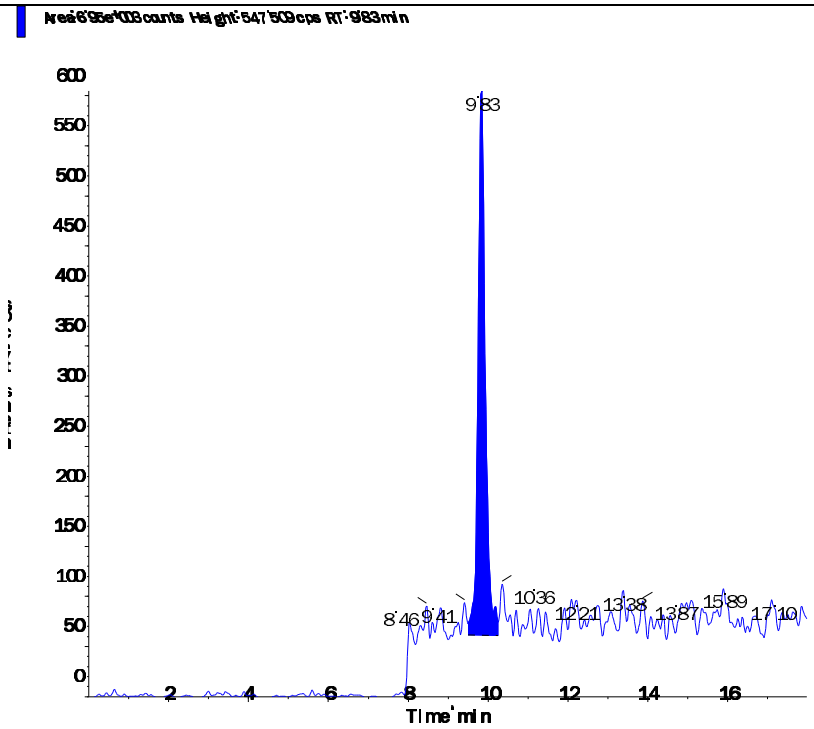

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:54 AM

Data File	LM34688.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

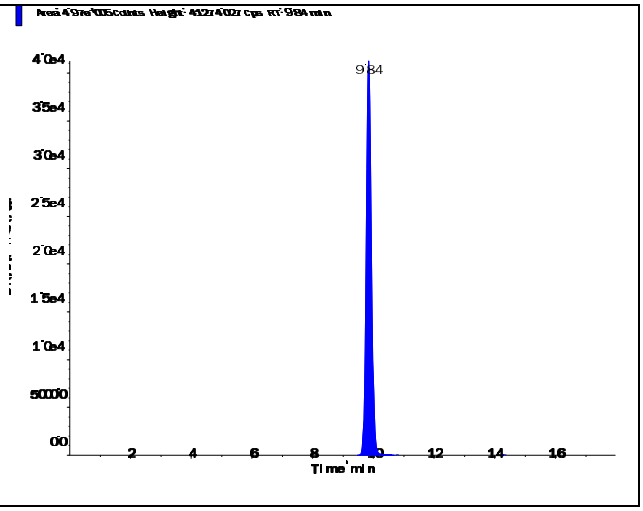

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

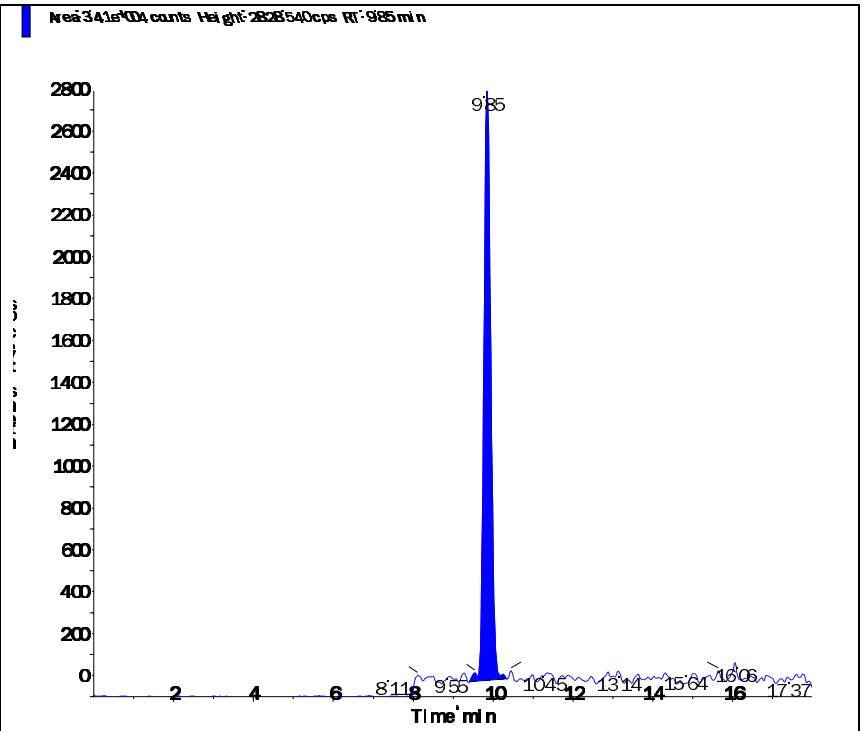

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

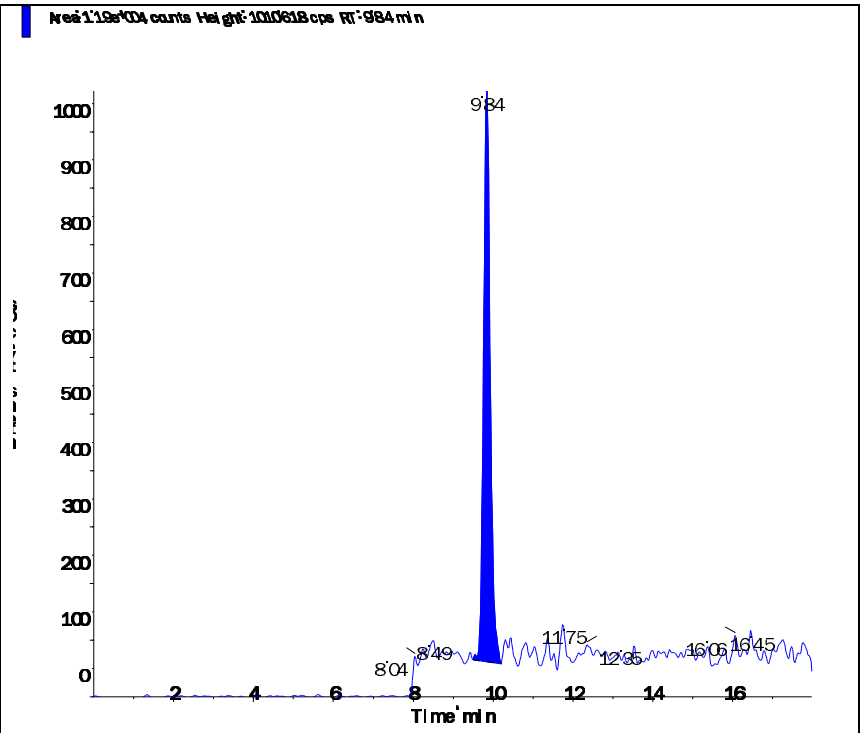

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Data File	LM34689.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

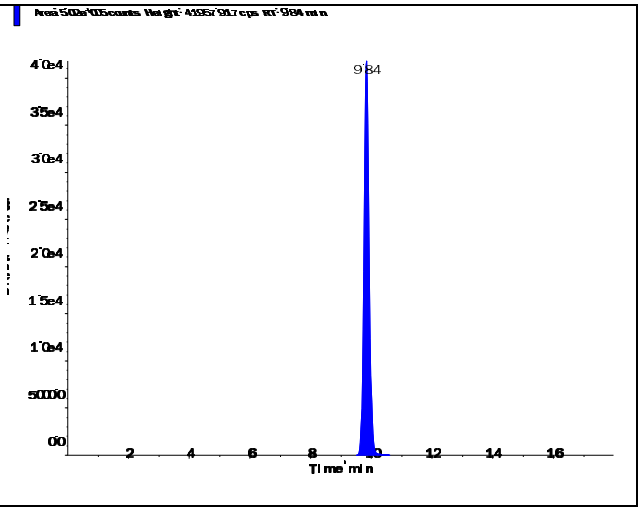

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

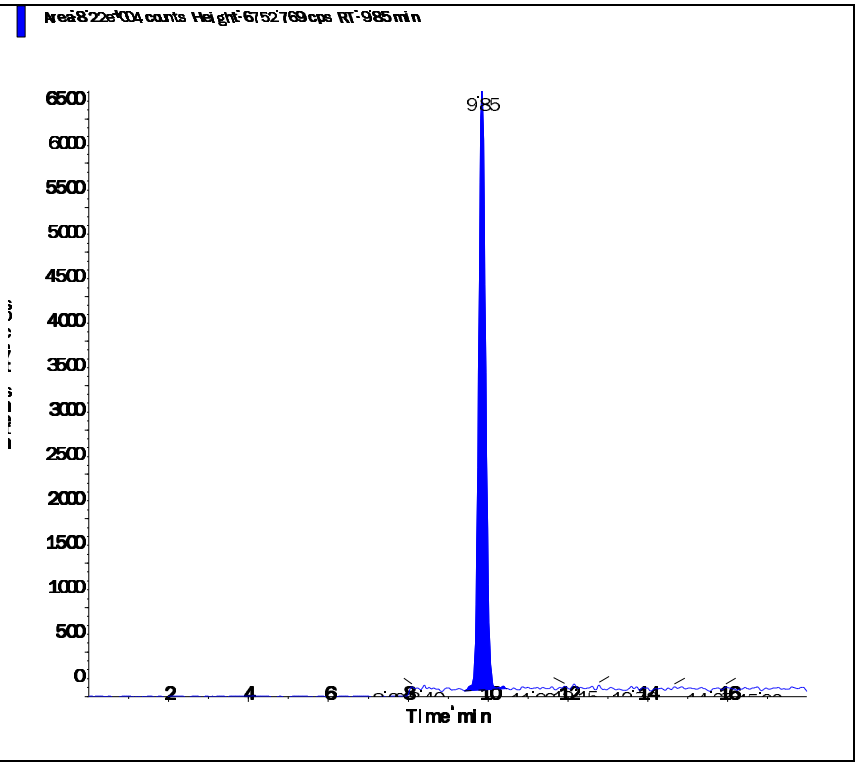

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

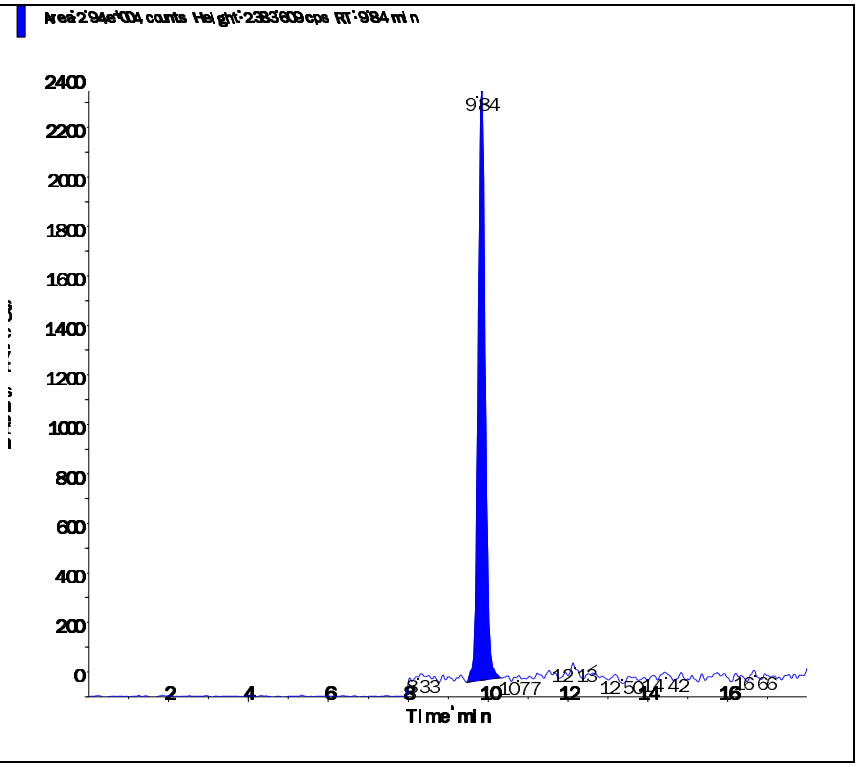

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Data File	LM34690.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

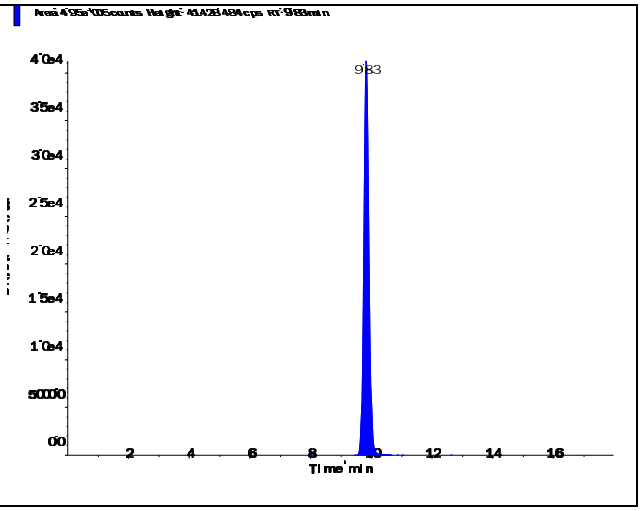

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

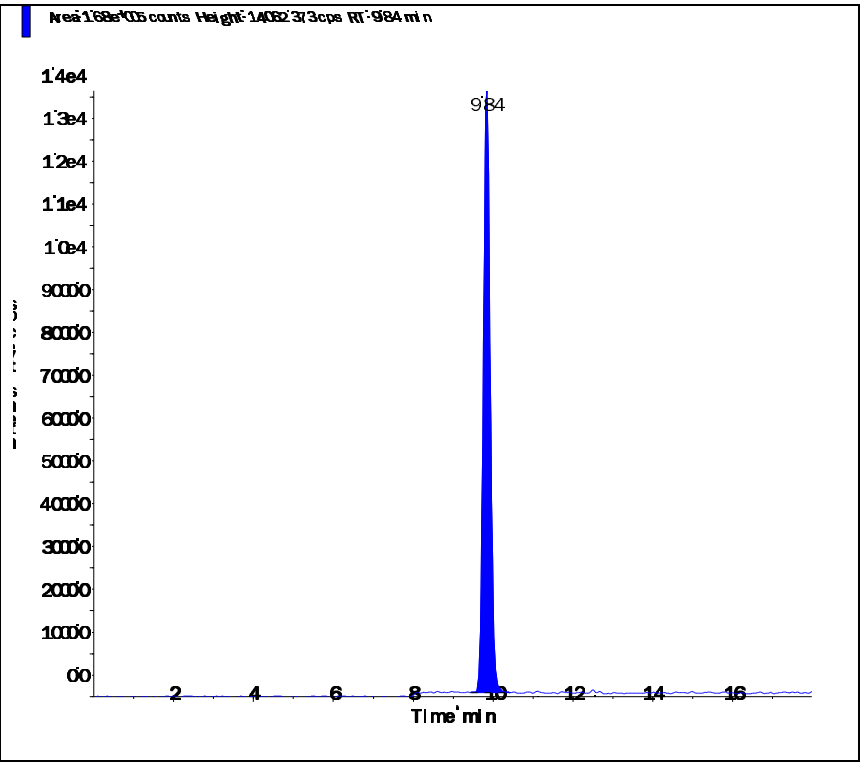

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

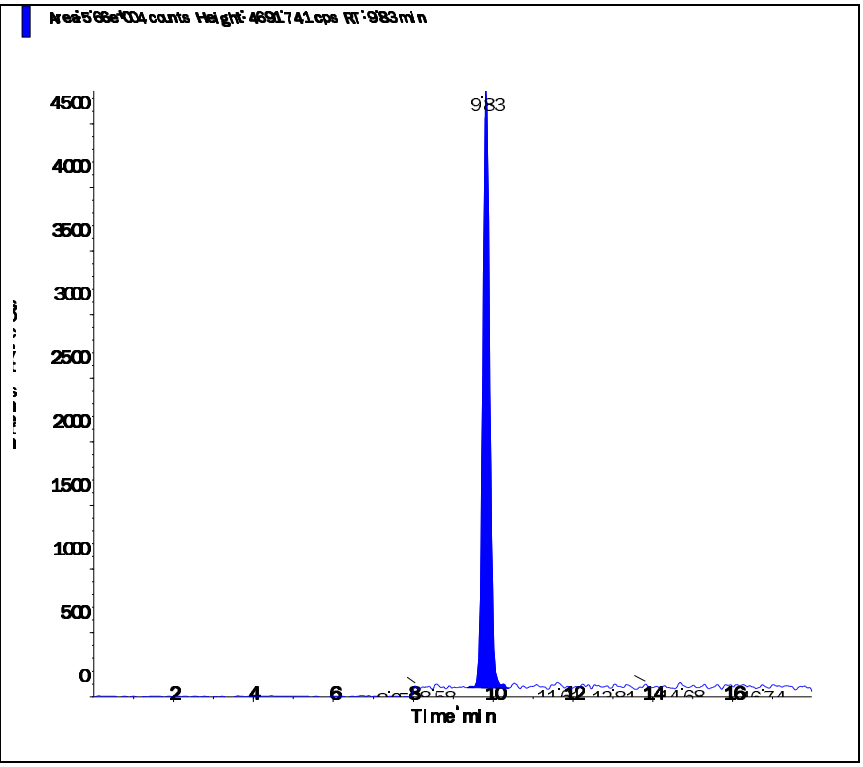

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Data File	LM34691.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

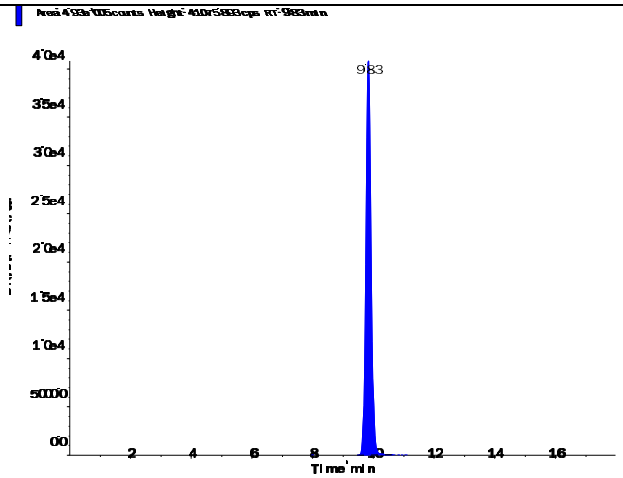

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

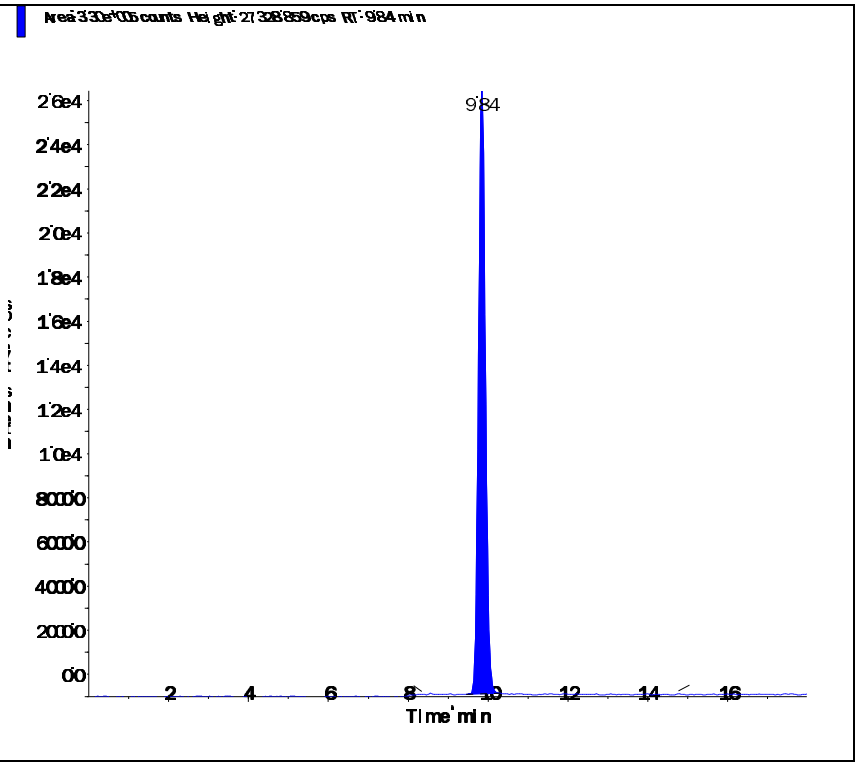

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

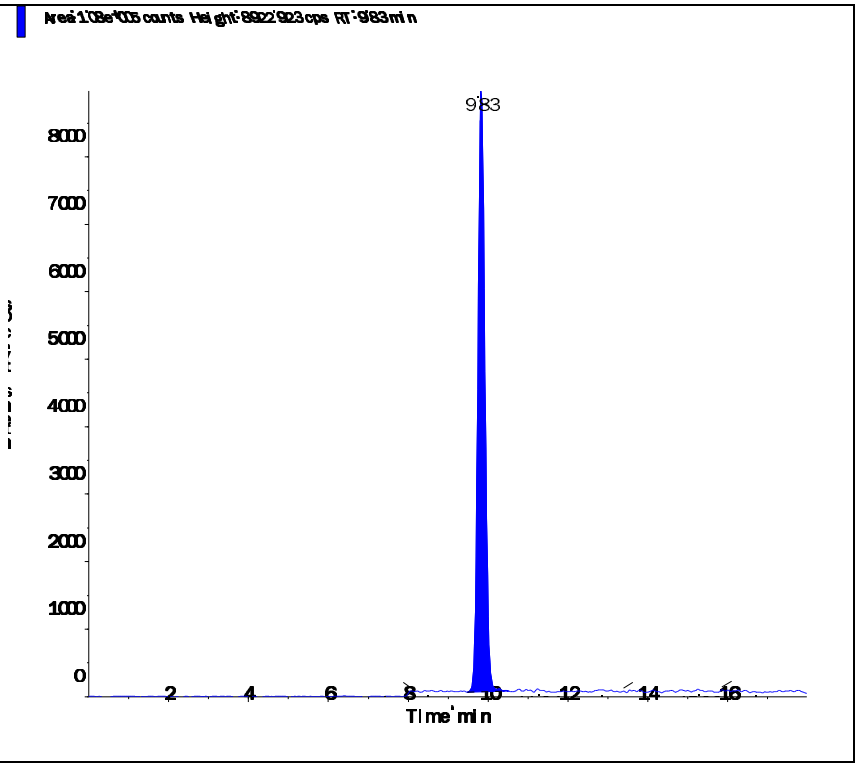

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Data File	LM34692.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

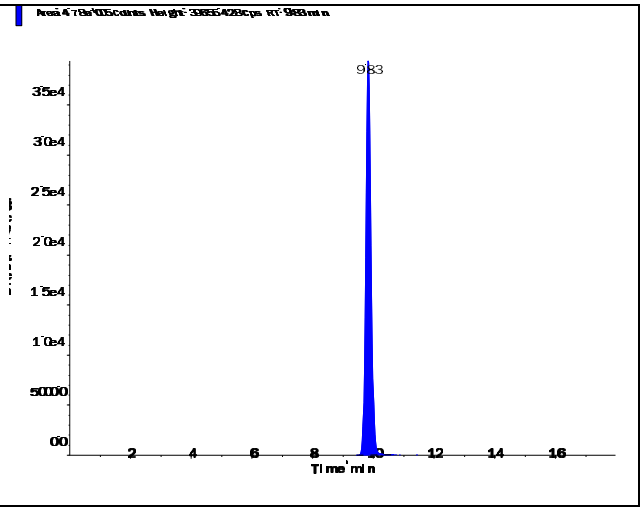

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

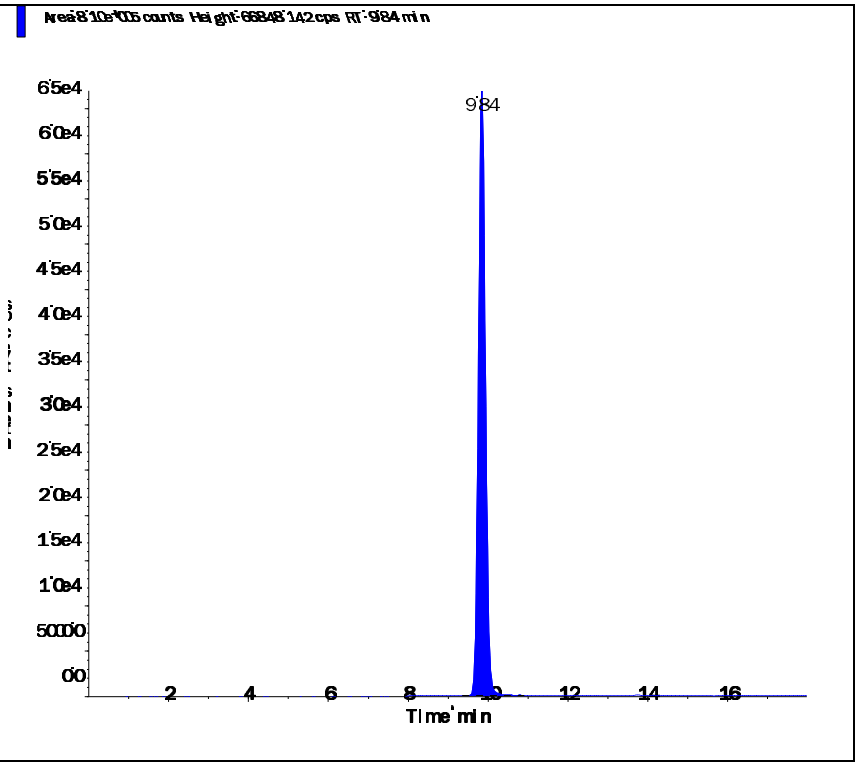

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

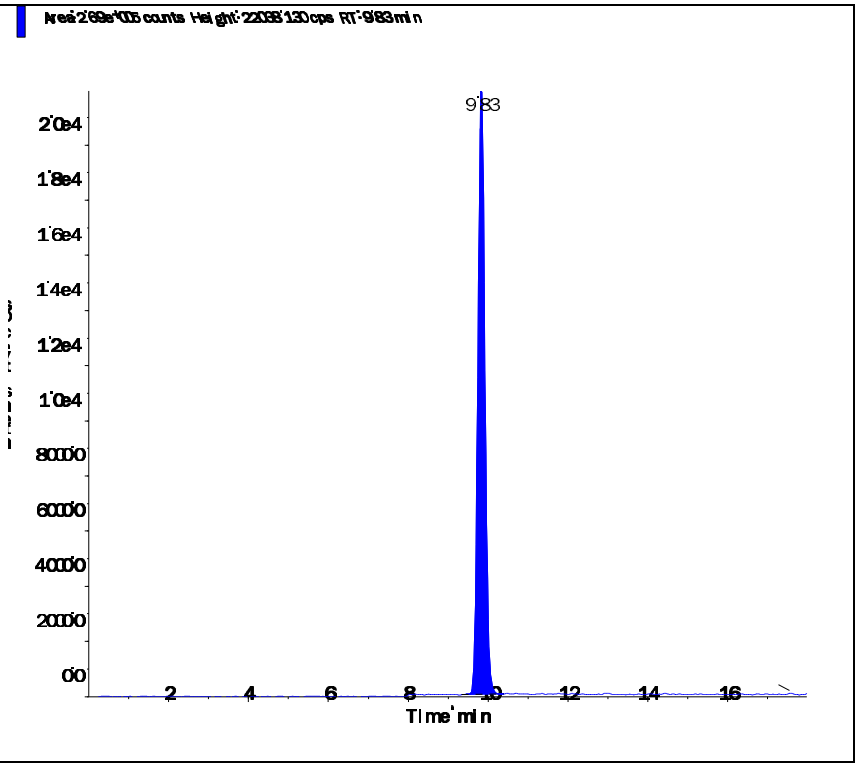

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:56 AM

Data File	LM34693.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

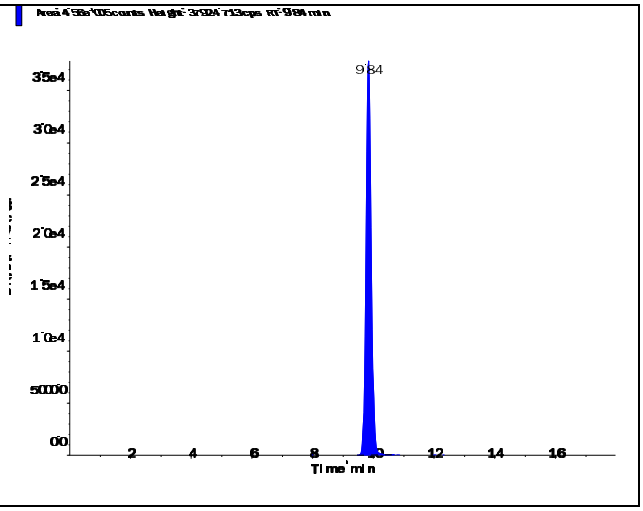

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:56 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

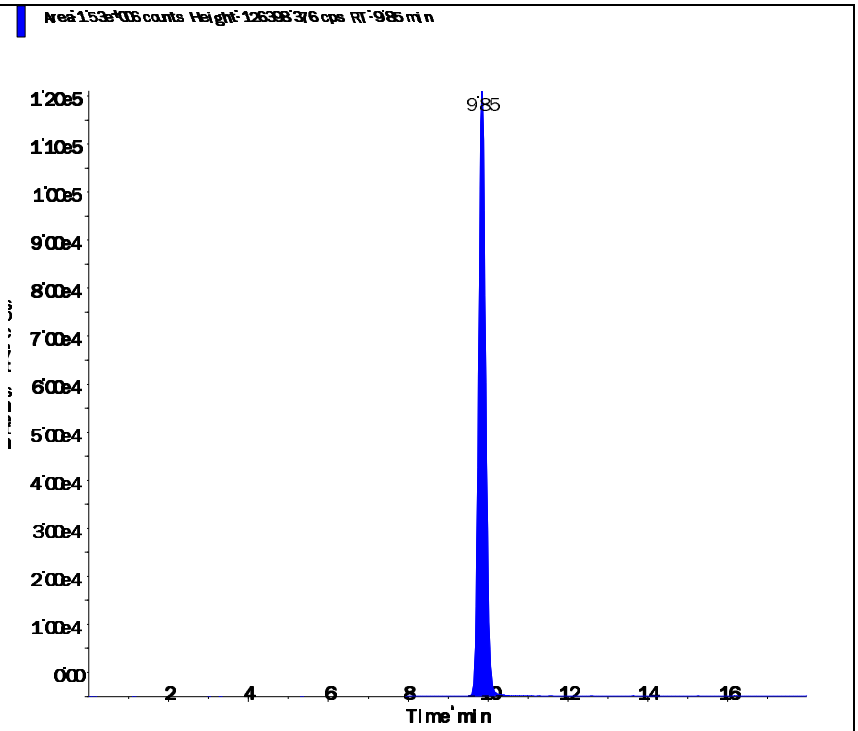

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

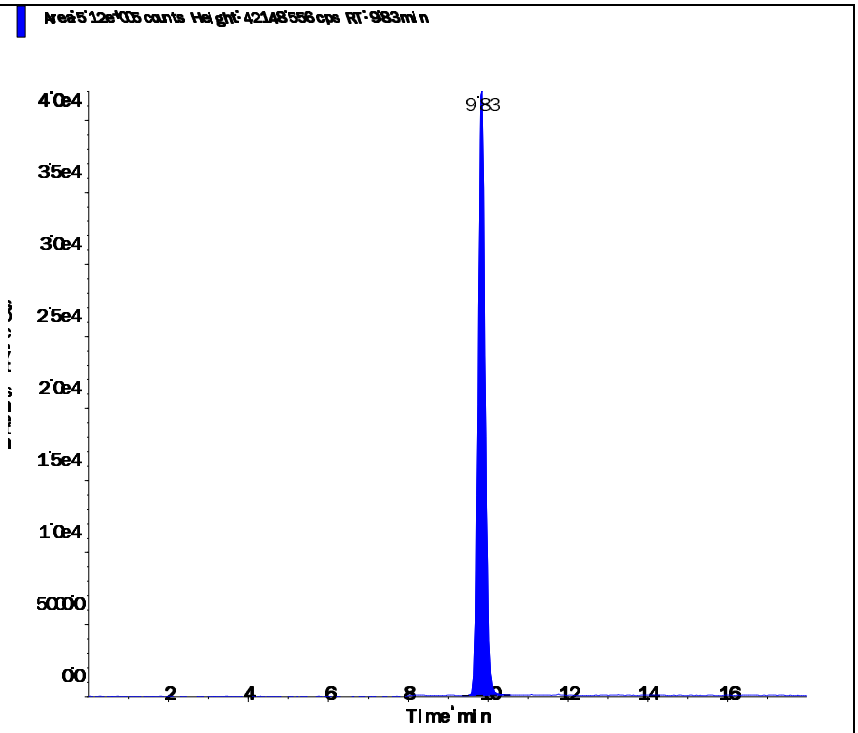

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

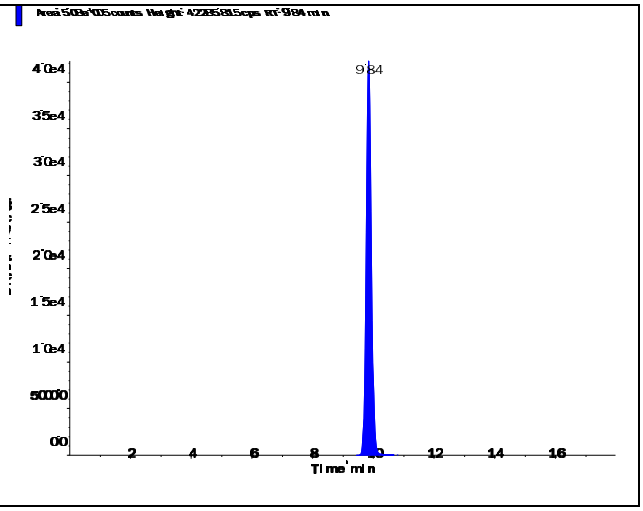

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

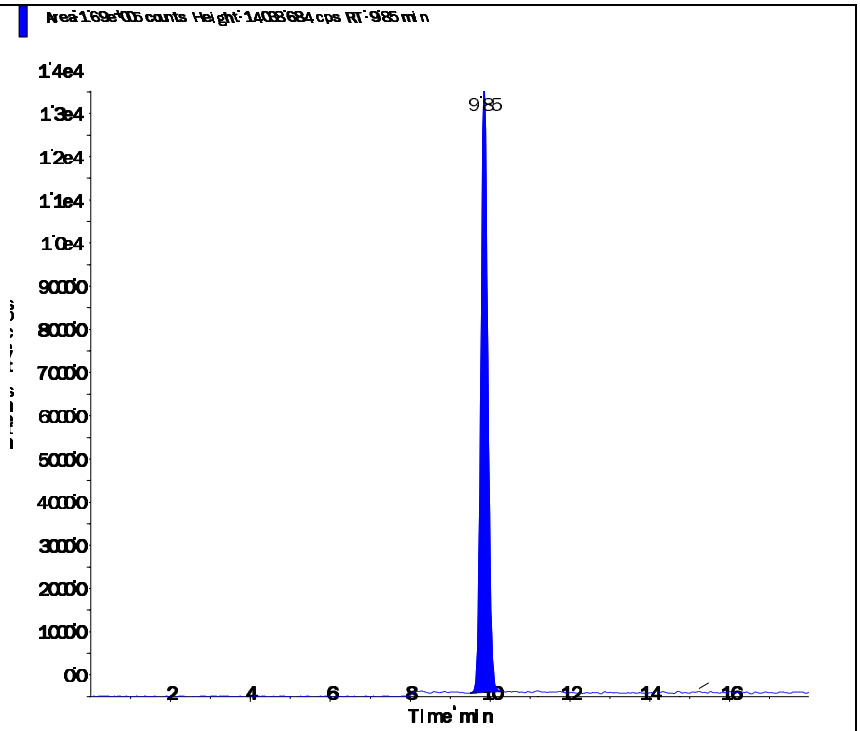

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

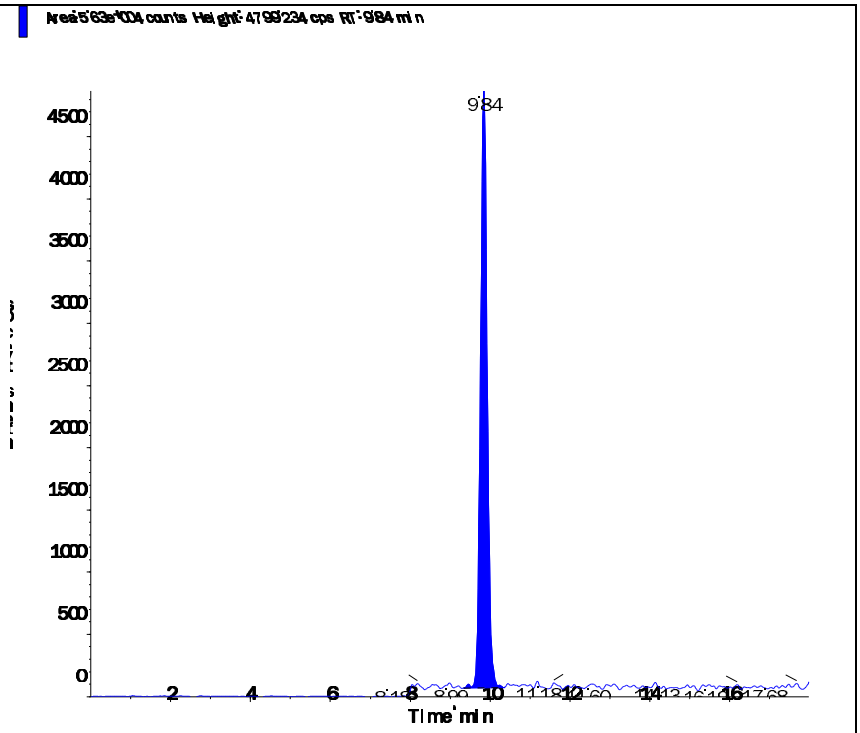

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Data File	LM35569.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35569.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.630e+05	9.40	1.00	1.03
Perchlorate conf	5.690e+04	9.38	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

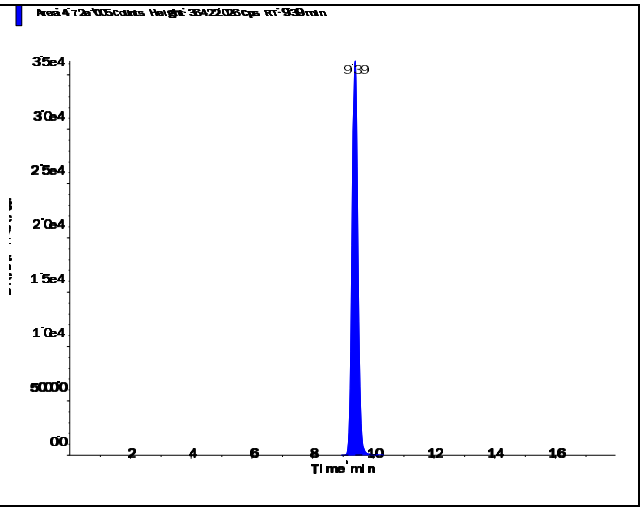

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

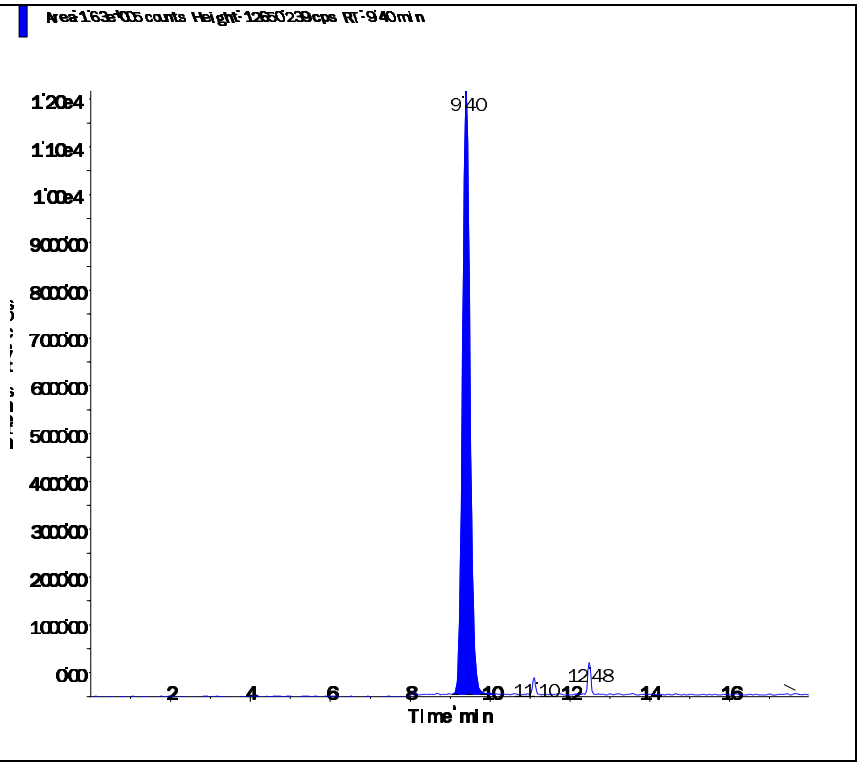

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

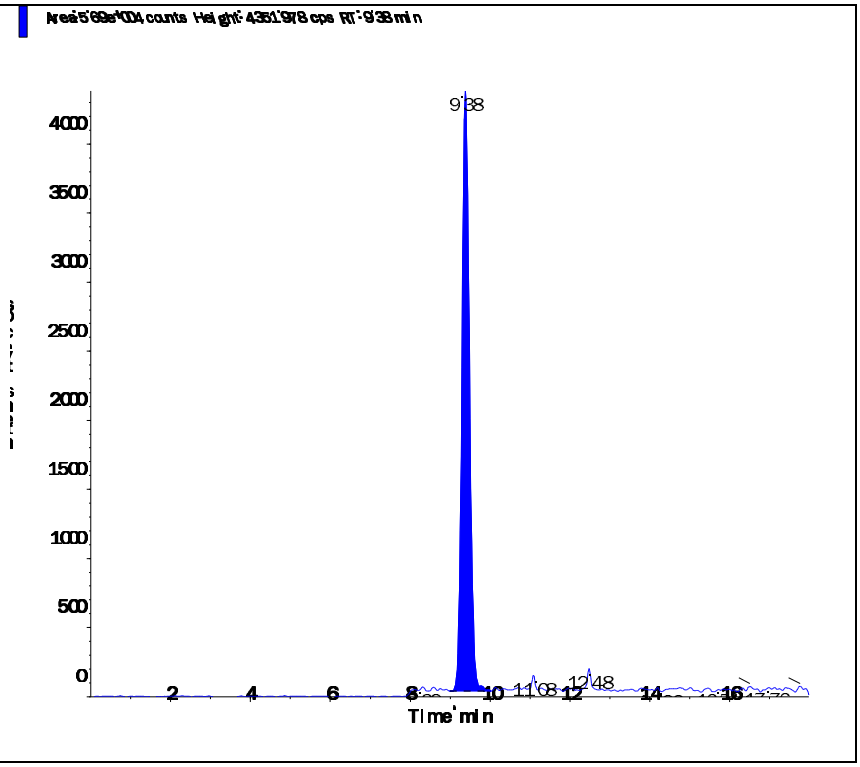

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:30 PM

Data File	LM35581.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:02:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35581.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:02:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.670e+05	9.40	1.00	1.02
Perchlorate conf	5.800e+04	9.39	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

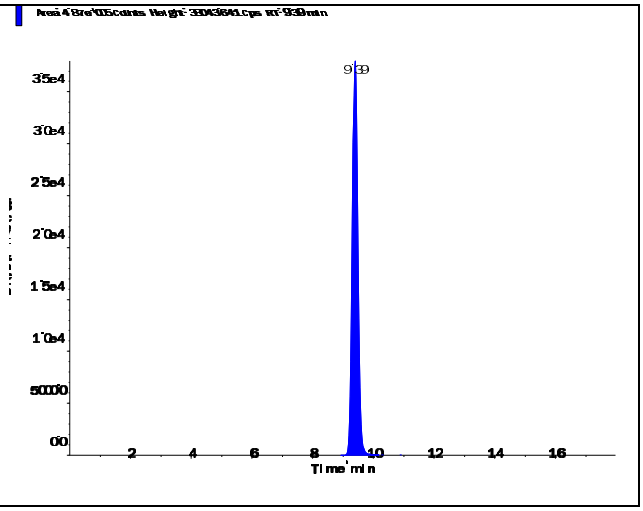

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.343
Sample Type:	(Quality Control)

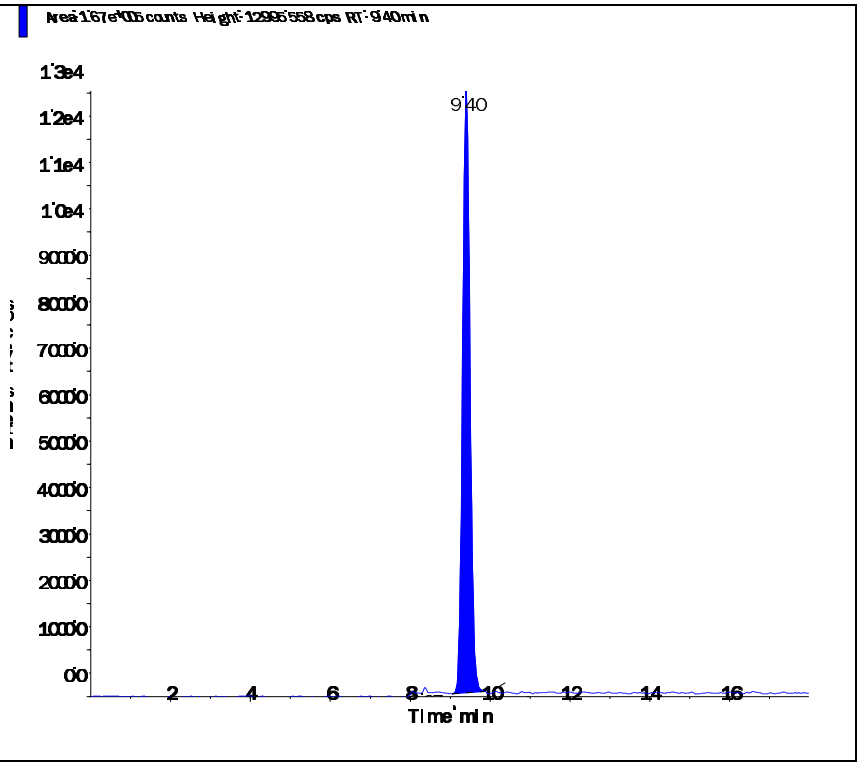

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

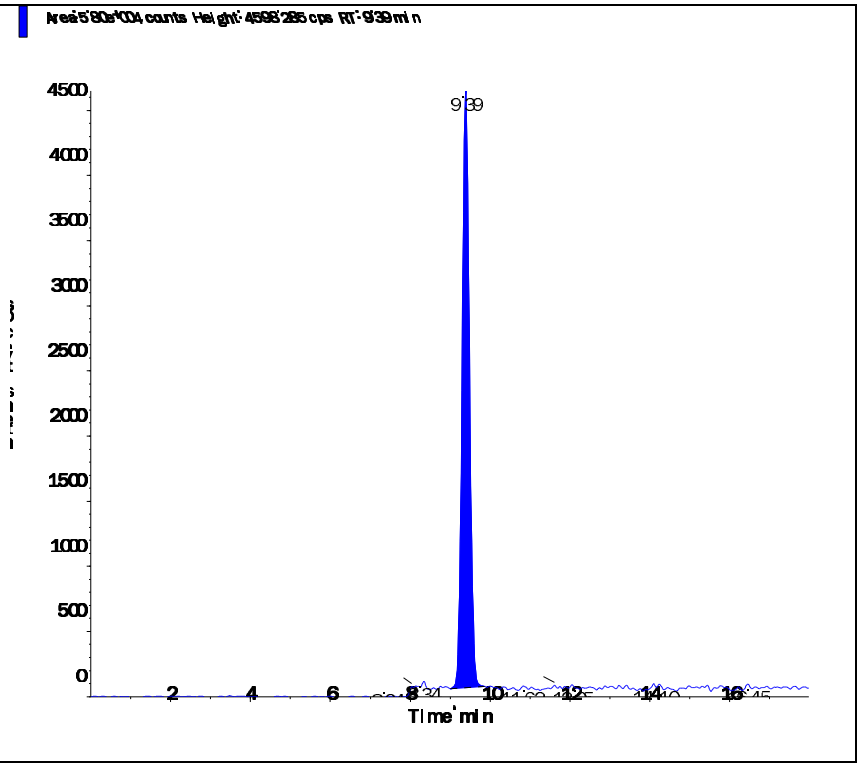

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:34 PM

Data File	LM35594.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:08:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35594.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:08:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.40	1.00	1.03
Perchlorate conf	5.720e+04	9.39	1.00	0.997

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

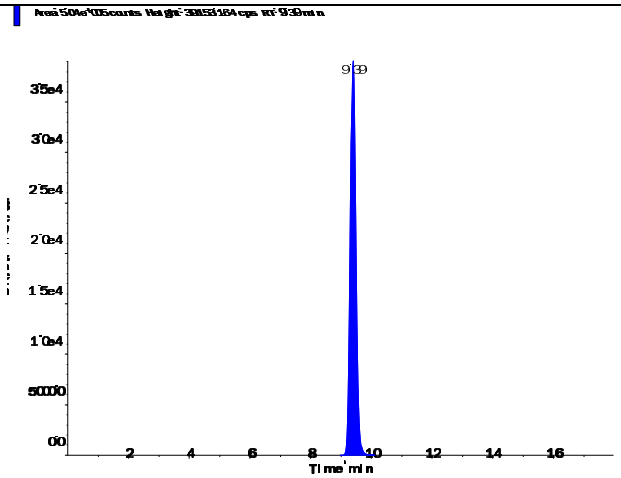

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:34 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

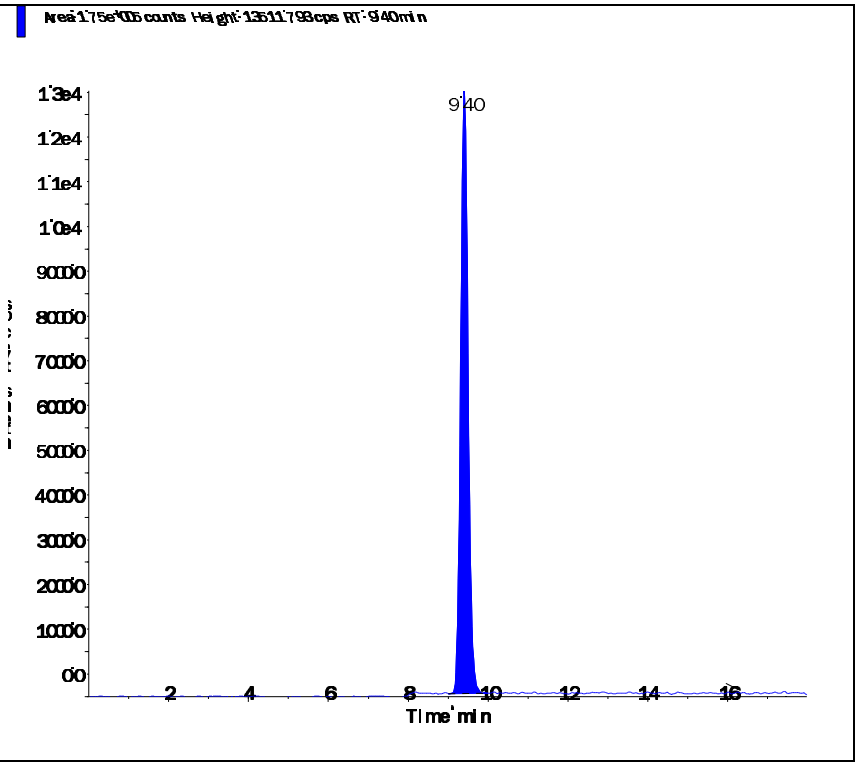

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.997 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

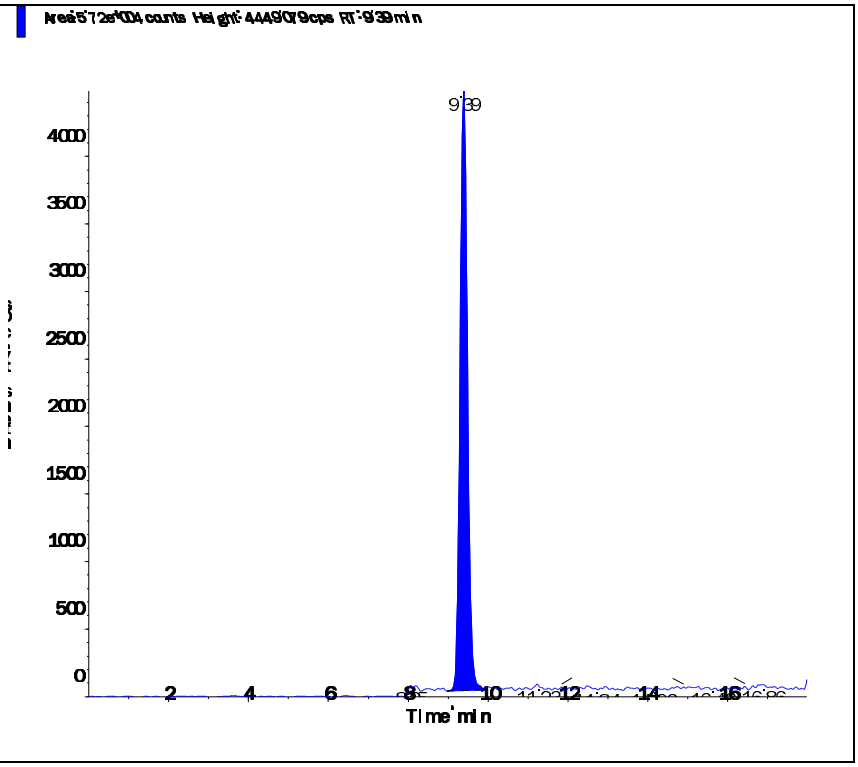

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:36 PM

Data File	LM35601.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:20:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35601.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:20:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.40	1.00	1.01
Perchlorate conf	5.850e+04	9.38	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

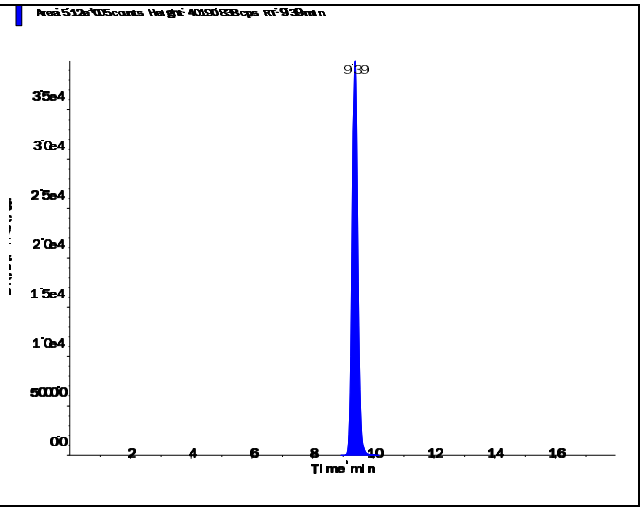

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:36 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

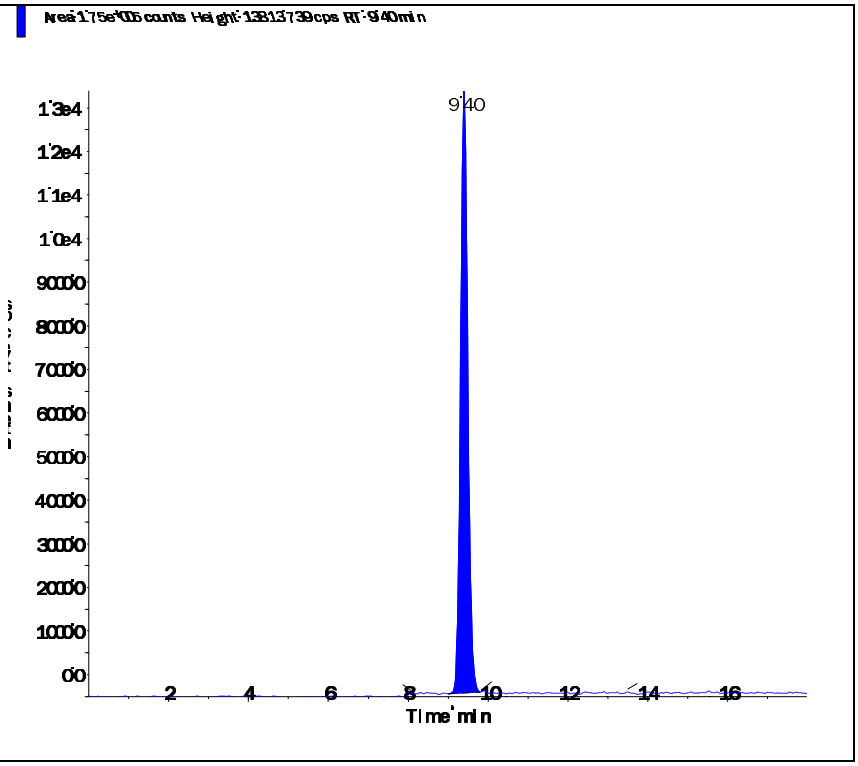

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

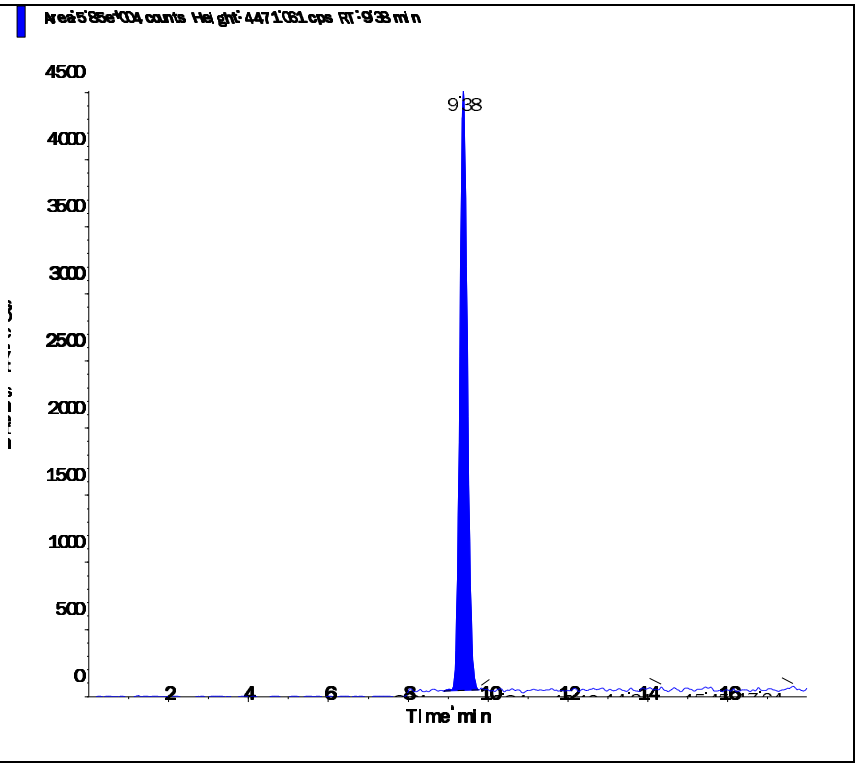

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Data File	LM35570.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:33:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35570.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:33:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+04	9.44	N/A	0.207
Perchlorate conf	1.170e+04	9.44	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

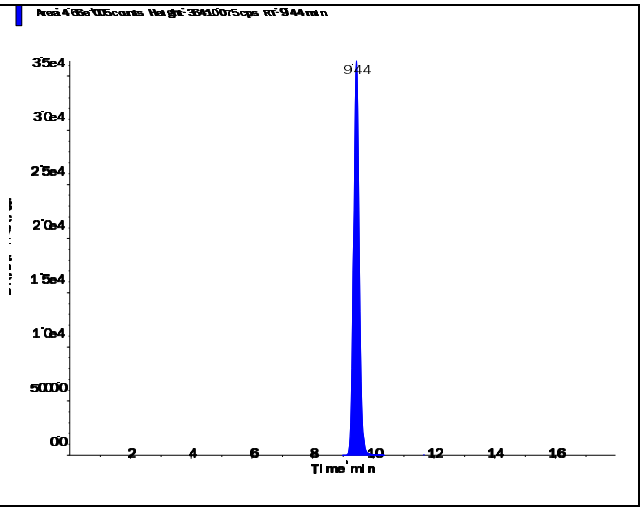

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.44 (9.84) min Calculated conc: 0.207 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	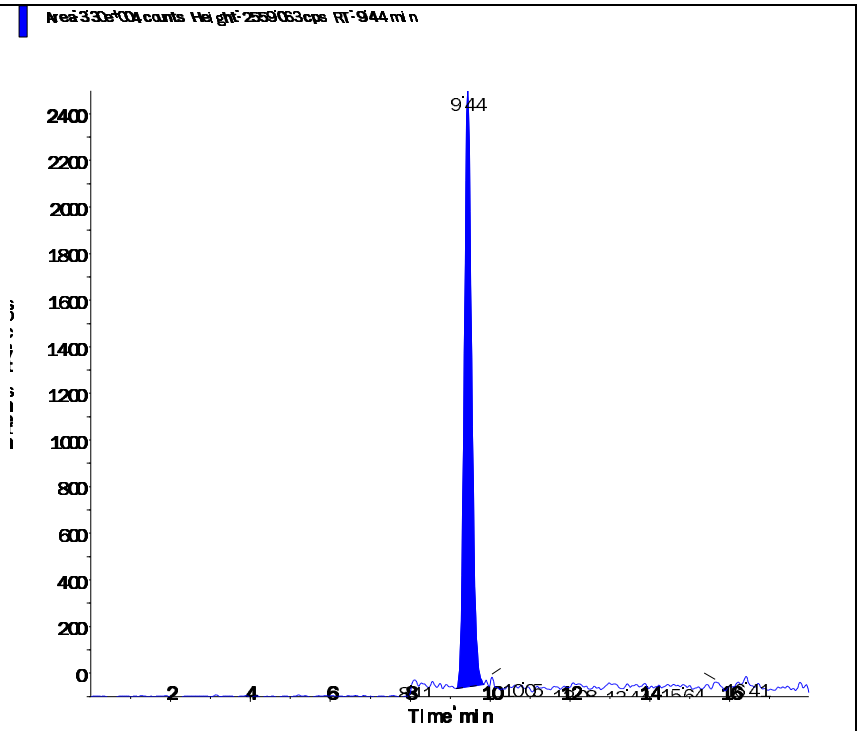
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.44 (9.84) min Calculated conc: 0.204 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	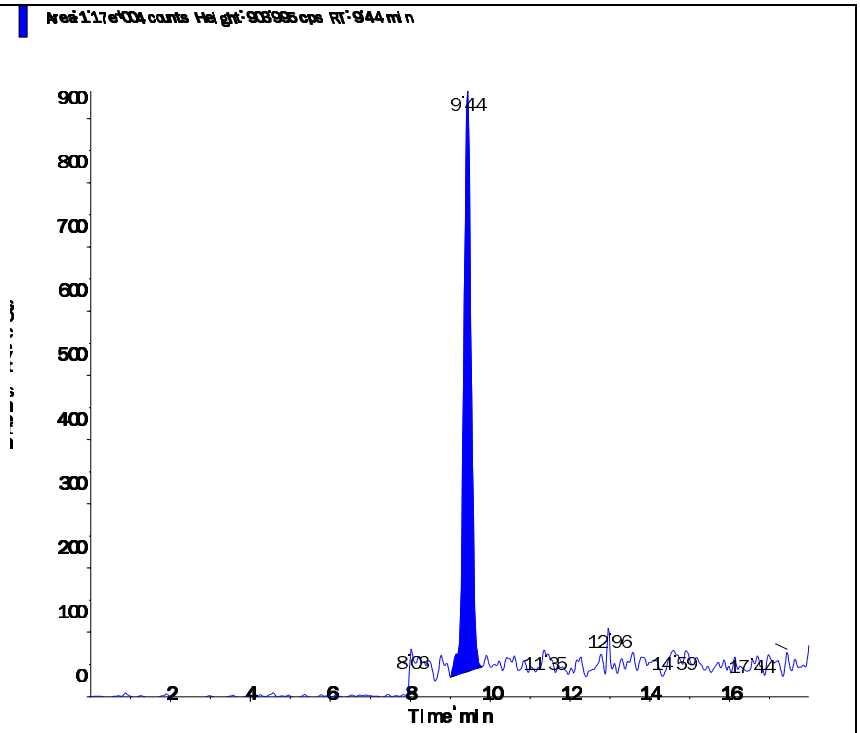

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:30 PM

Data File	LM35582.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:21:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35582.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:21:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.280e+04	9.44	N/A	0.206
Perchlorate conf	1.140e+04	9.43	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

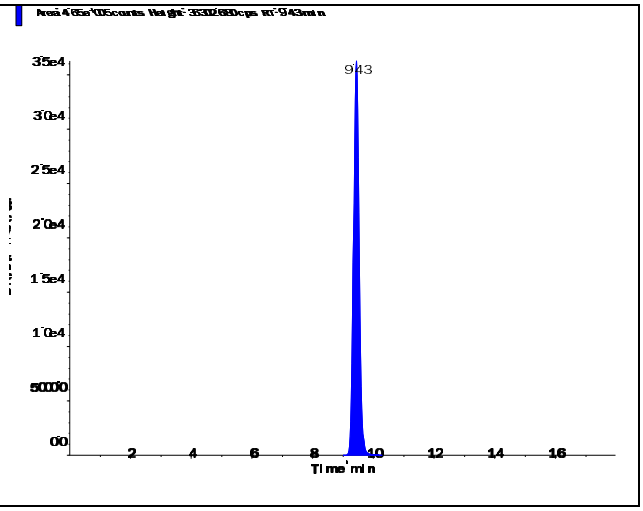

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:30 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

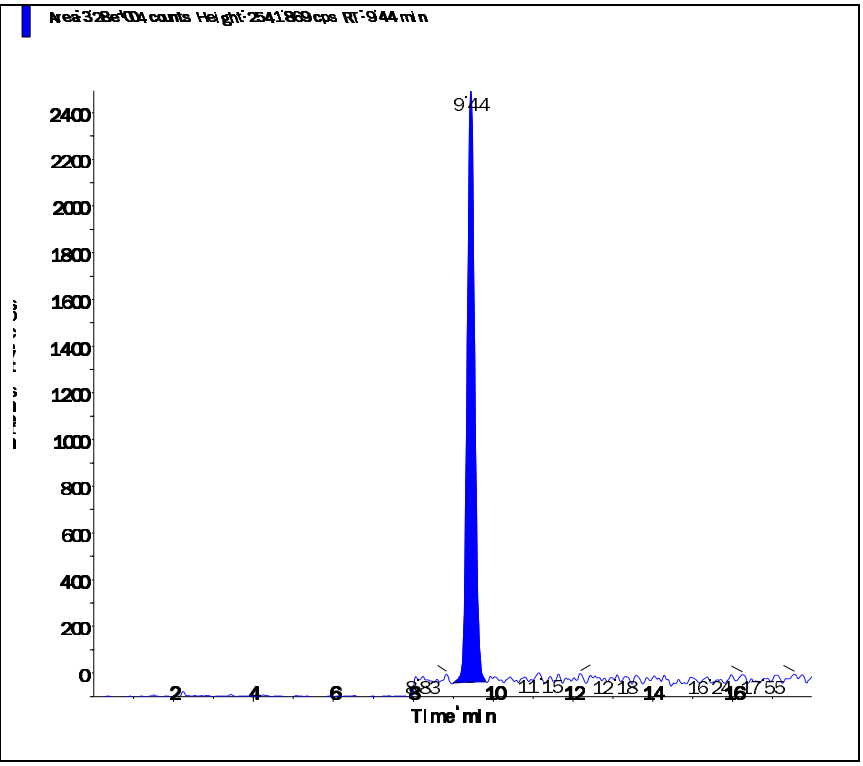

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

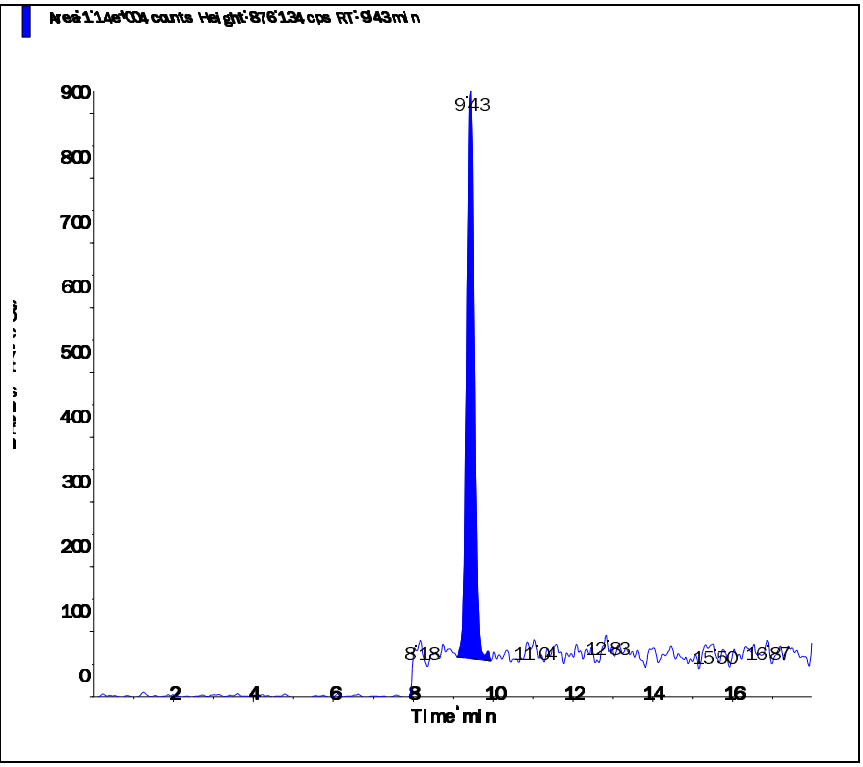

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:34 PM

Data File	LM35595.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:27:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35595.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:27:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.570e+04	9.45	N/A	0.207
Perchlorate conf	1.290e+04	9.44	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

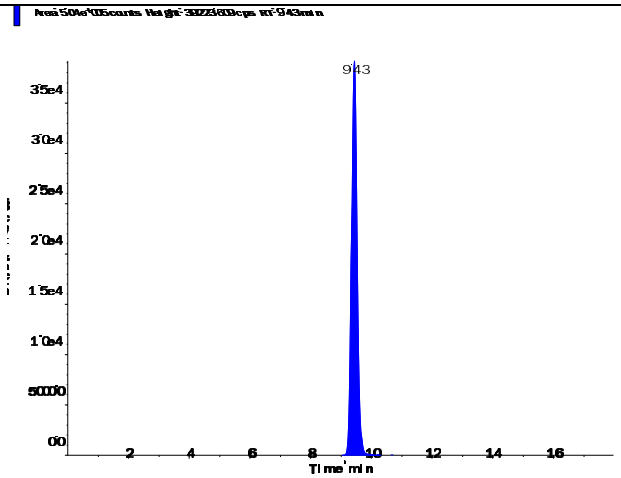

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:34 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

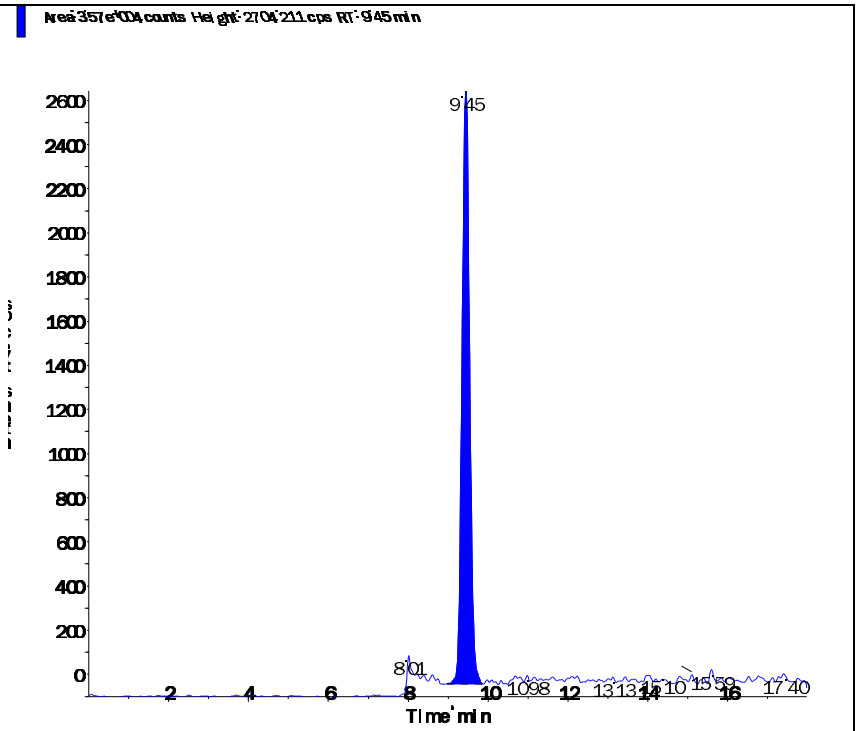

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

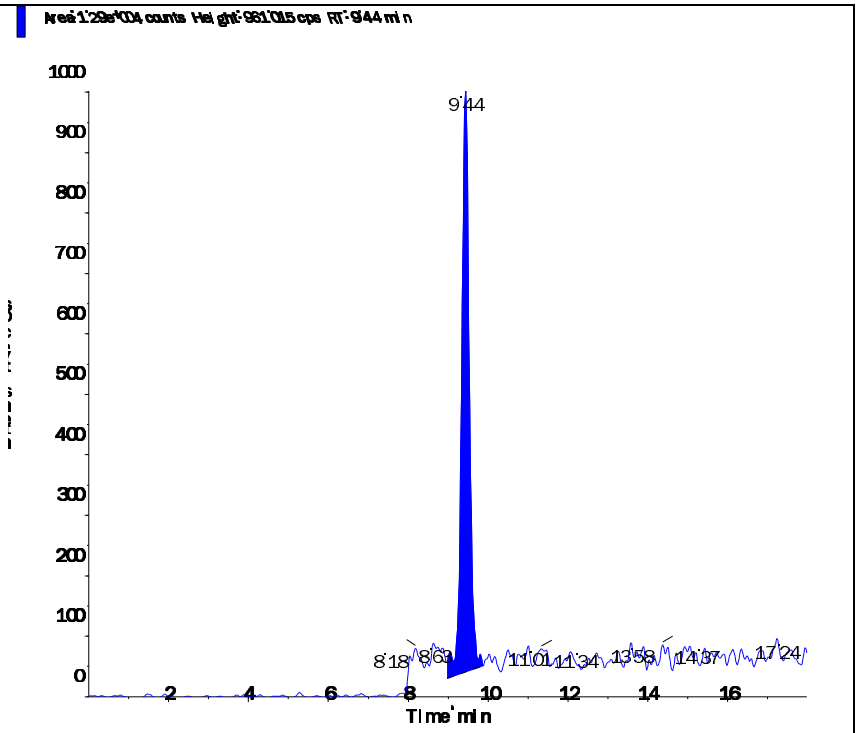

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Data File	LM35602.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:39:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35602.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:39:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.44	N/A	0.209
Perchlorate conf	1.230e+04	9.42	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

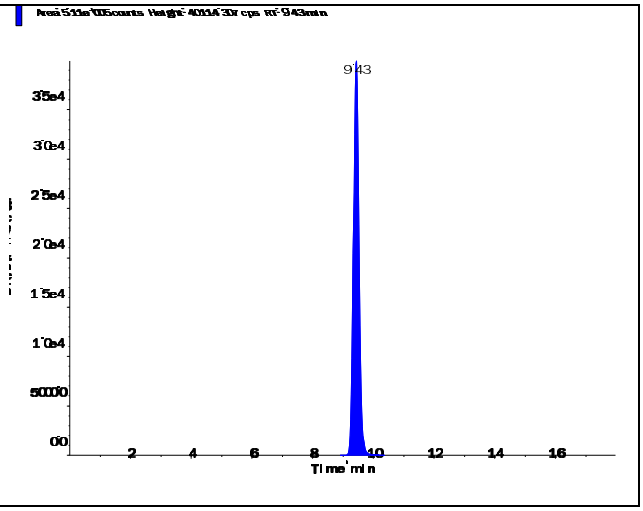

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

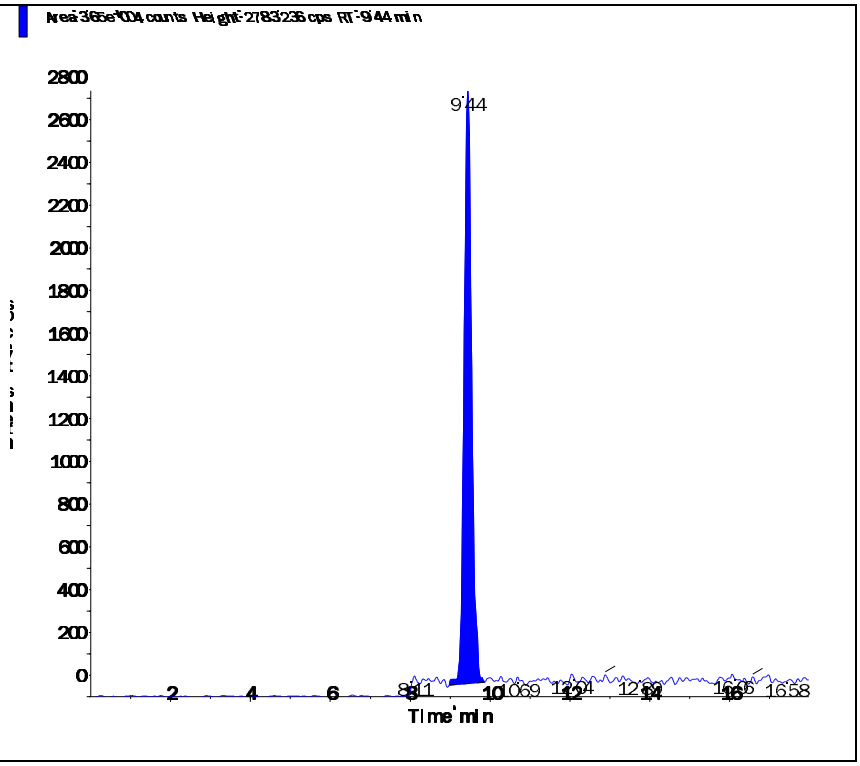

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

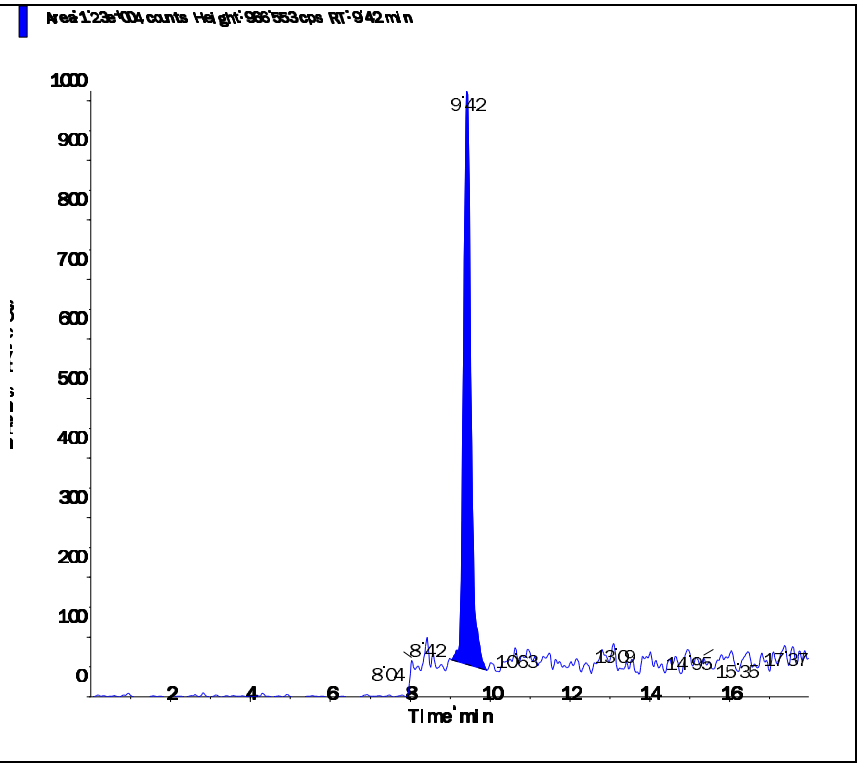

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Data File	LM35568.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 3:55:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-01 CCB	**Injection Vial**	1.00
Data File	LM35568.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 3:55:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.68	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.68(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

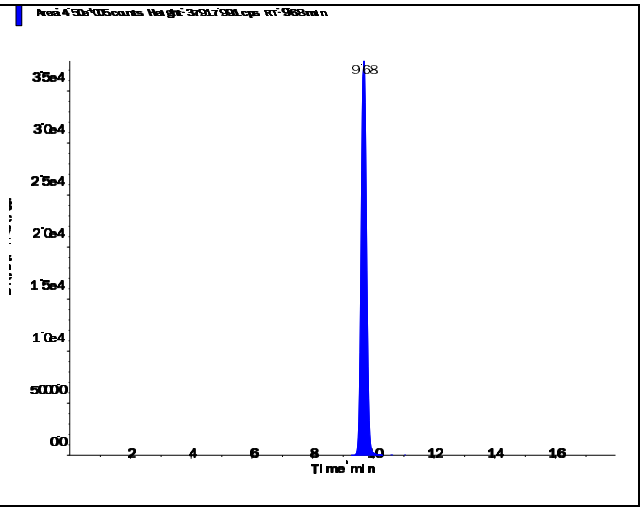

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

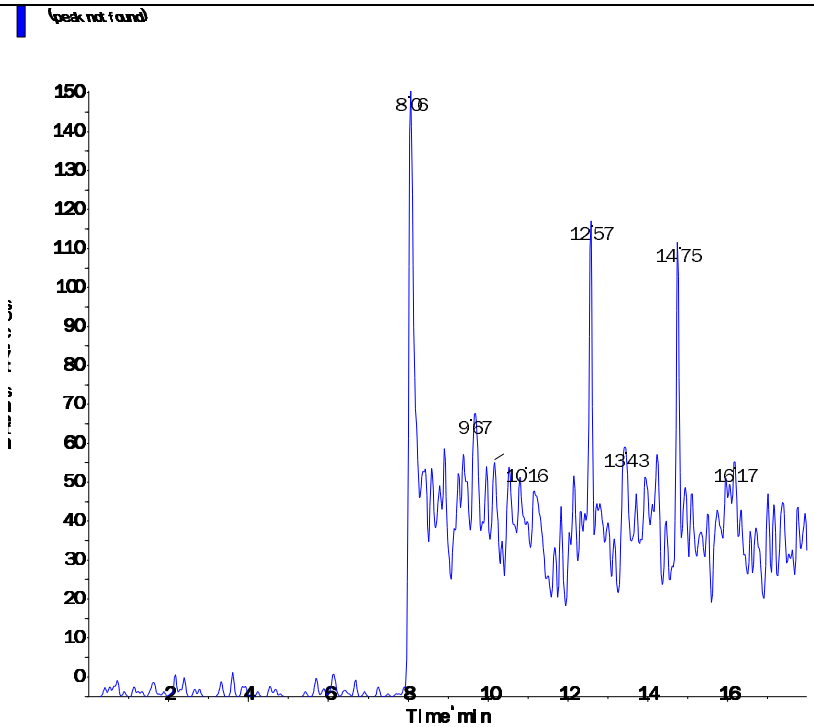

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

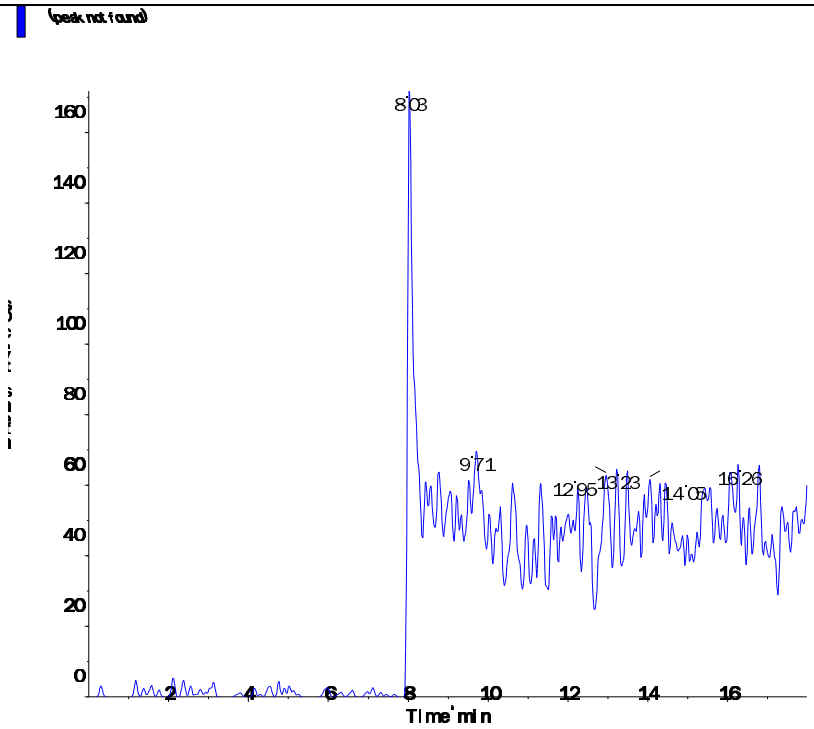

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:31 PM

Data File	LM35583.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:39:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-04 CCB	**Injection Vial**	1.00
Data File	LM35583.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:39:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

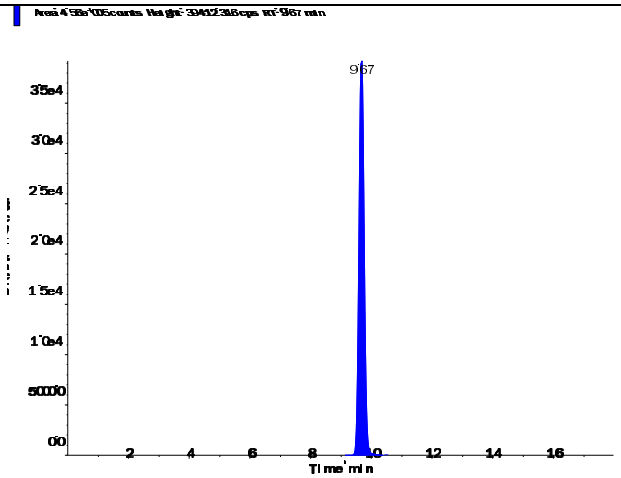

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:31 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

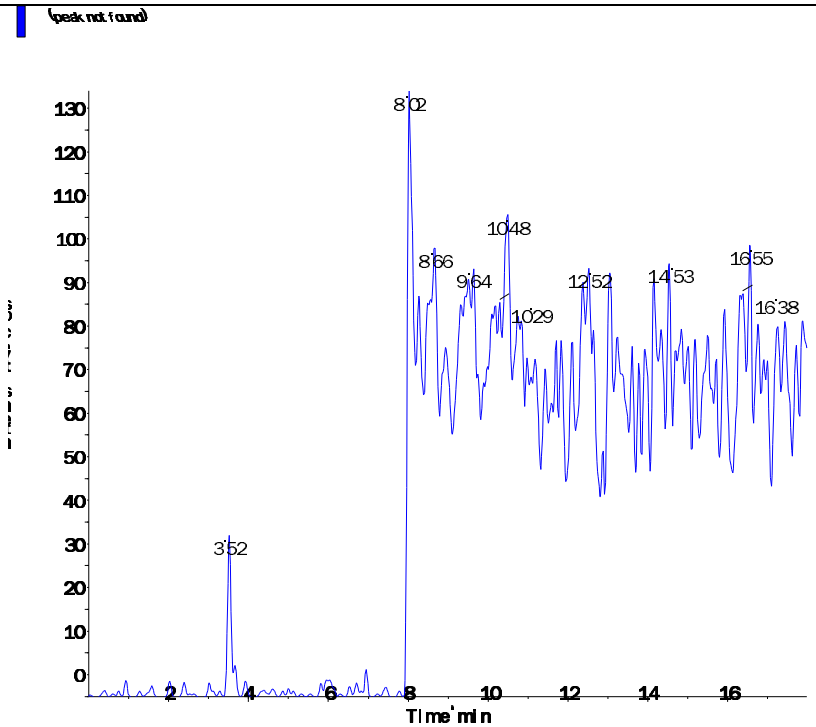

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

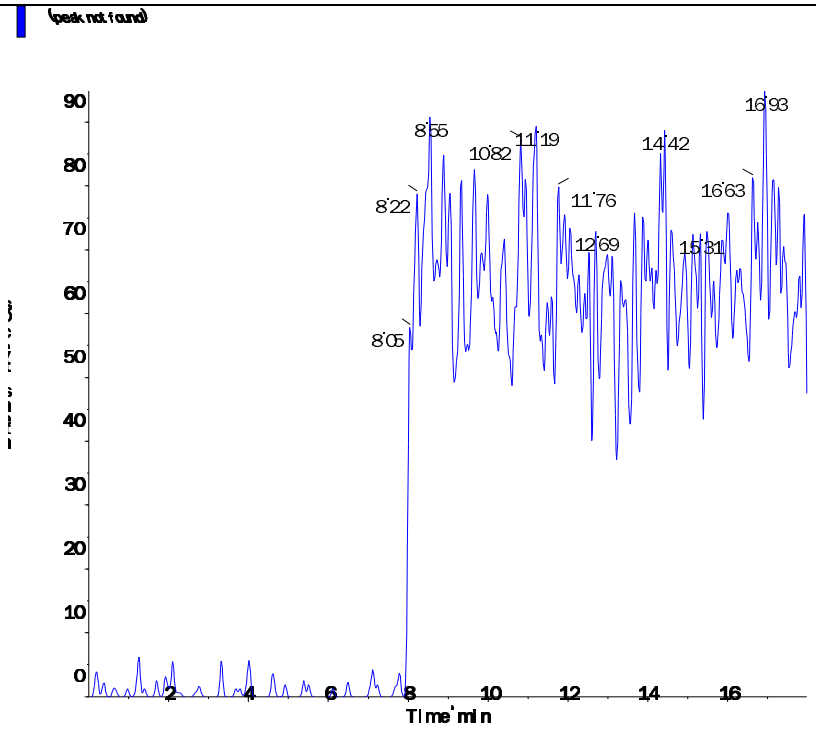

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:35 PM

Data File	LM35596.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:46:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-06 CCB	**Injection Vial**	1.00
Data File	LM35596.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:46:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

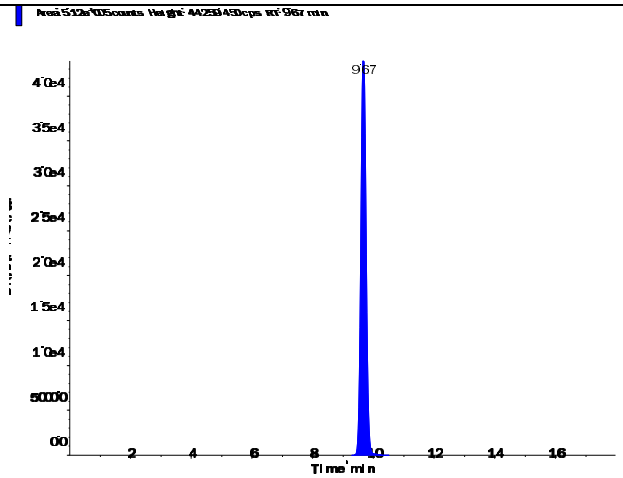

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

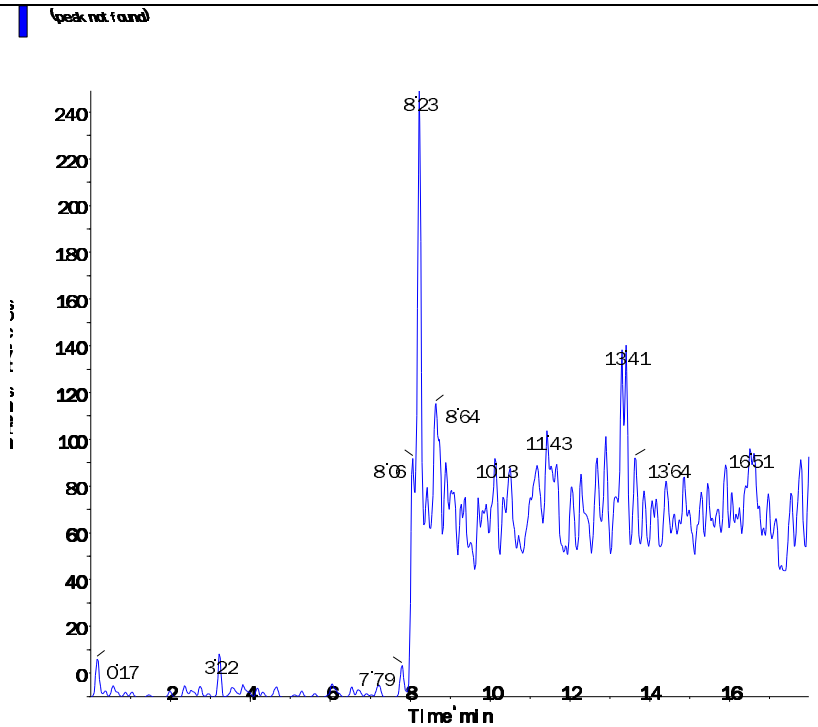

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

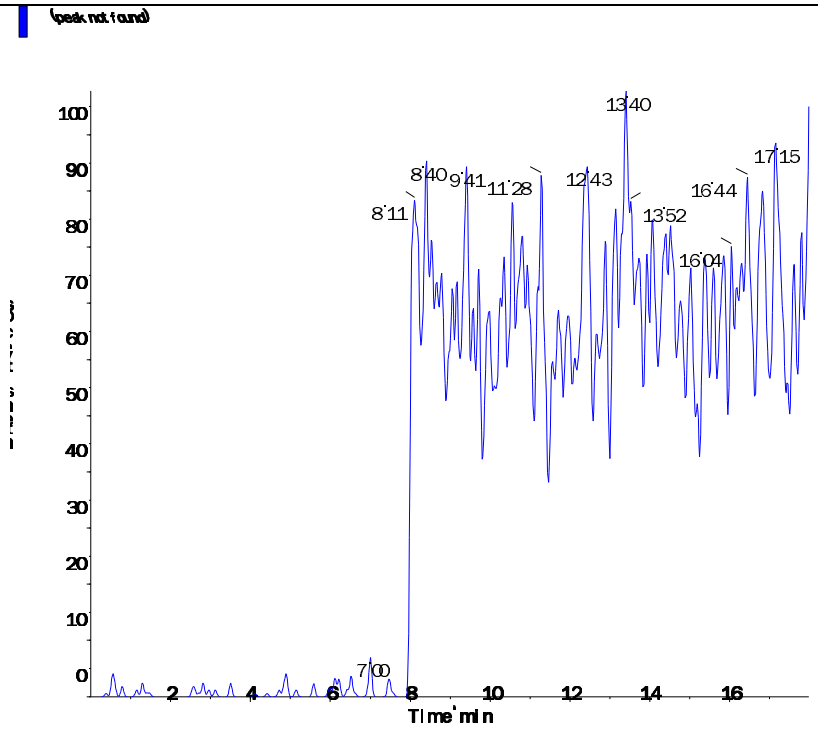

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Data File	LM35603.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:58:39 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-08 CCB	**Injection Vial**	1.00
Data File	LM35603.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:58:39 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.250e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

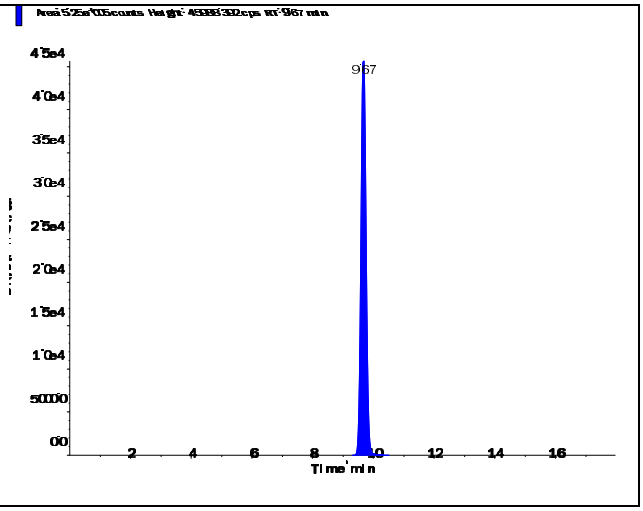

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

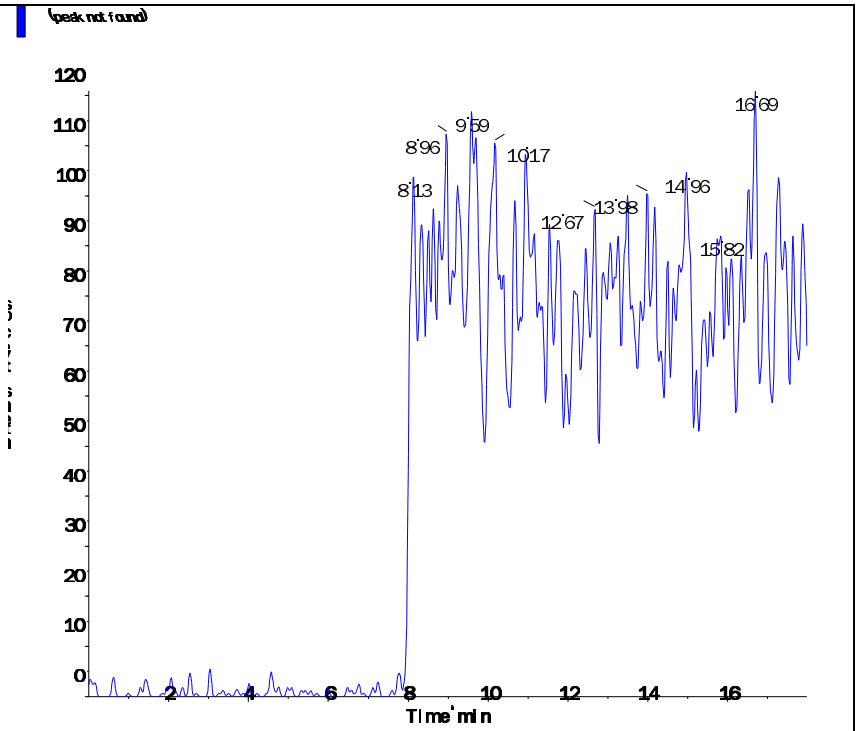

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

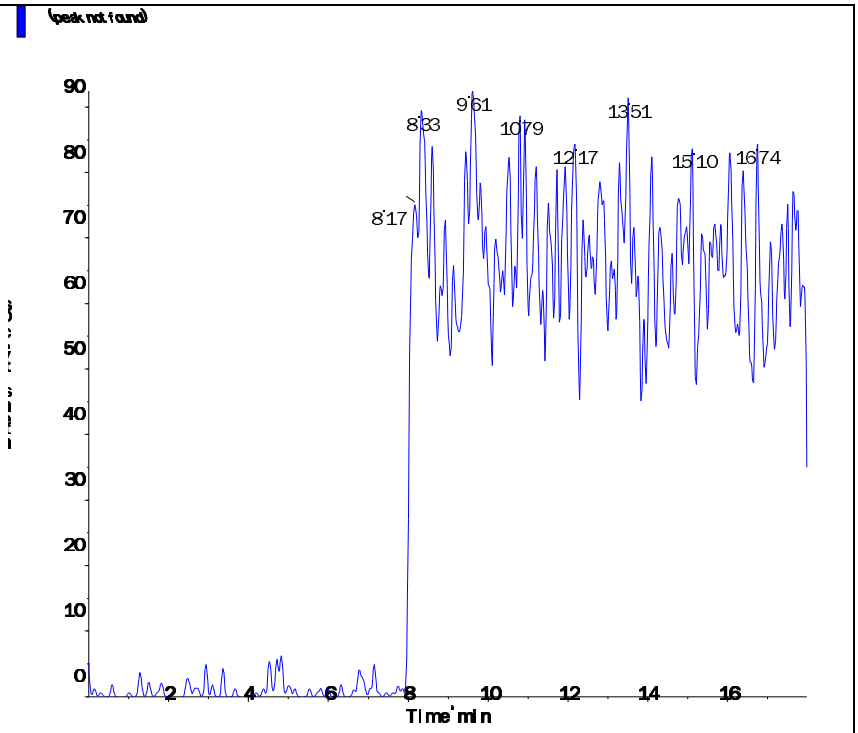

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35571.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:52:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35571.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:52:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.330e+05	9.04	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.020e+04	9.05	N/A	0.204
Perchlorate conf	9.940e+03	9.05	N/A	0.185

O18LP (Internal Standard)

RT (Exp. RT): 9.04(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

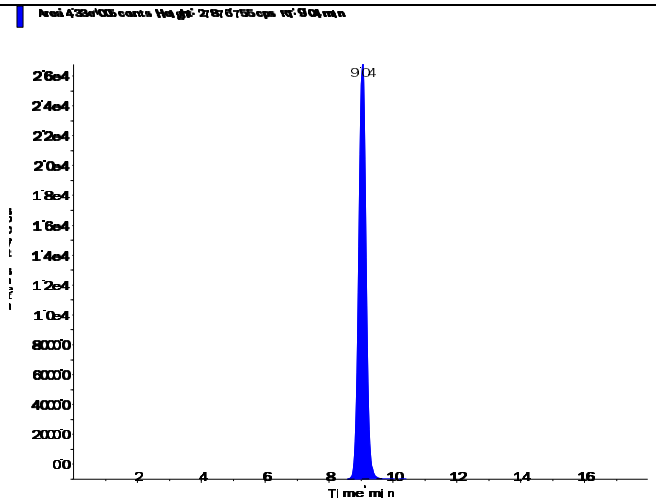

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.05 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

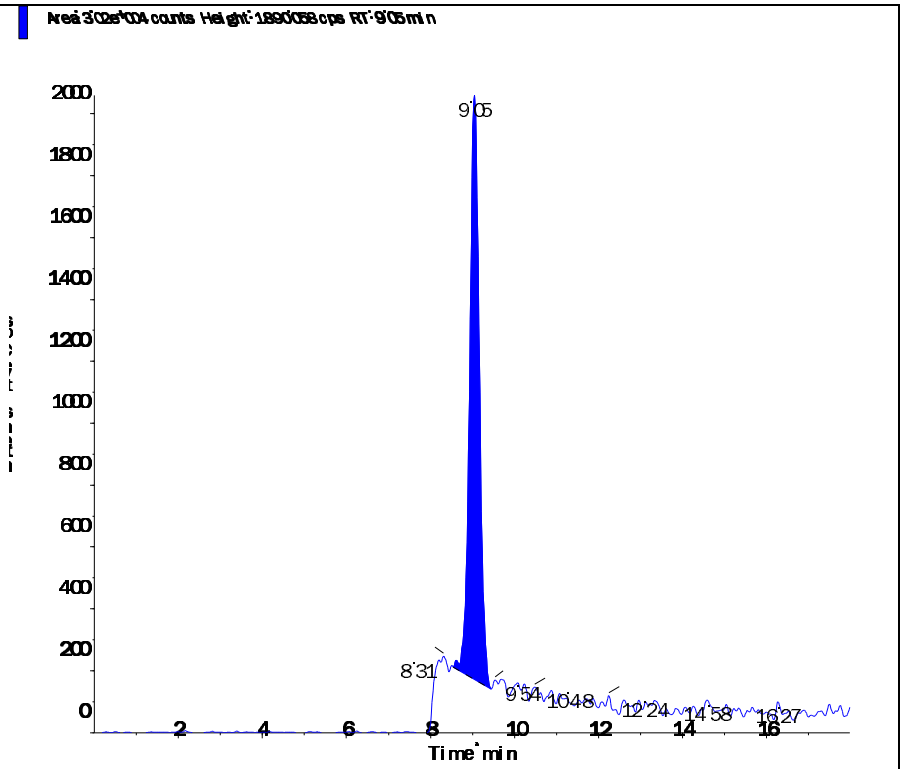

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.05 (9.84) min
Calculated conc:	0.185 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

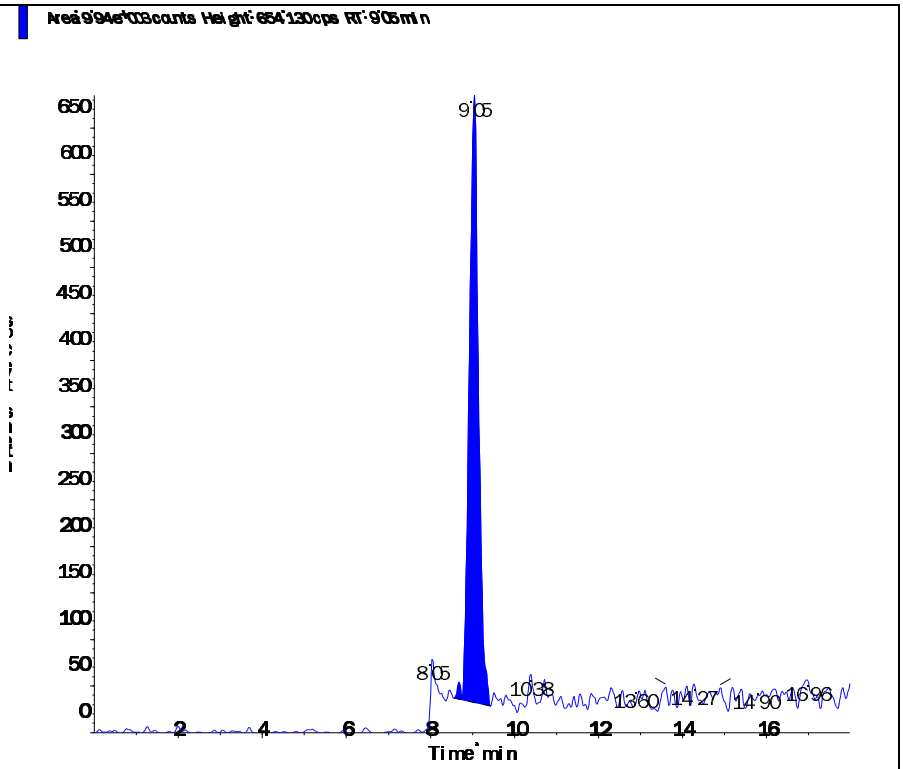

Printing Time: 6:47:51 PM
Printing Date: Friday, July 01, 2016

Sample Name: "WG575005-01 MCT (0.2ug/L)" Sample ID: "WG575005-01" File: "LM35571.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.231 ug/L
Acq. Date:	7/1/2016
Acq. Time:	4:52:43 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.05 min
Area:	3.42e+004 counts
Height:	1959.447 cps
Start Time:	8.566 min
End Time:	9.457 min

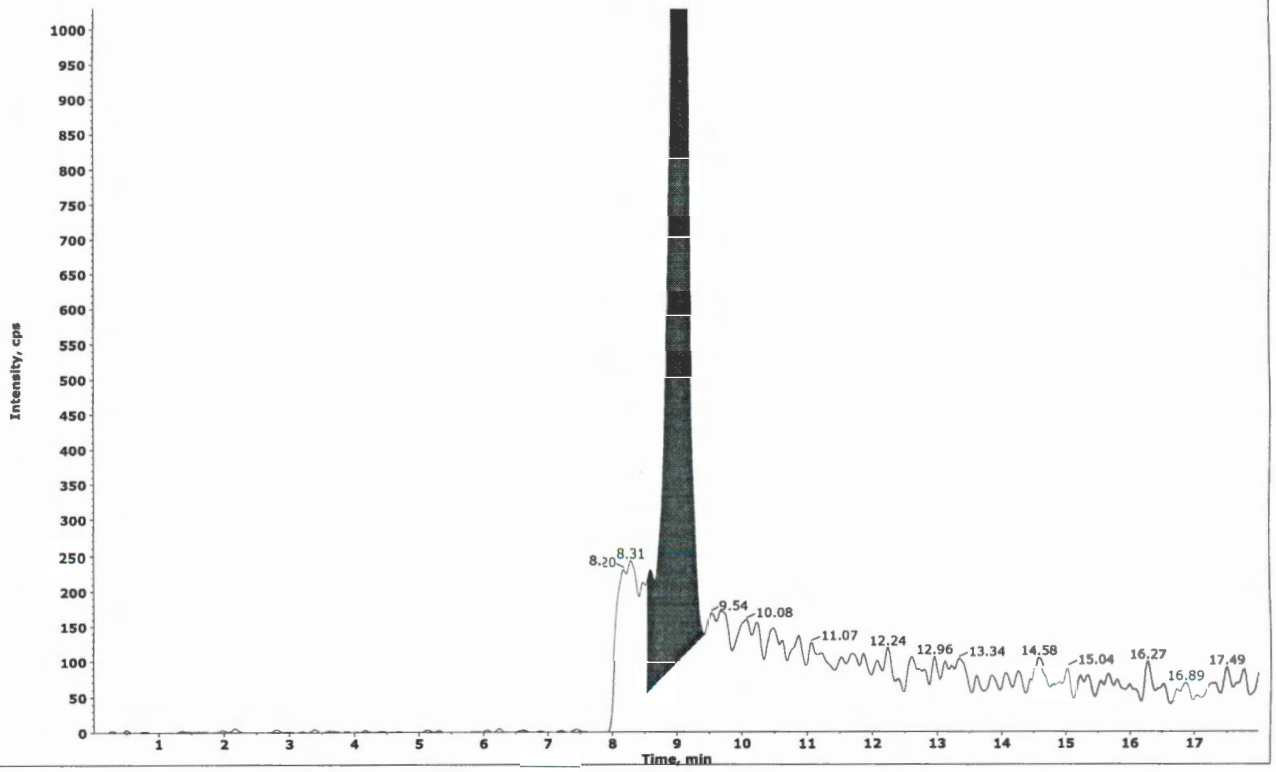

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 6:51:20 PM
Printing Date: Friday, July 01, 2016

Sample Name: "WG575005-01 HCT (0.2ug/L)" Sample ID: "WG575005-01" File: "LM35571.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.204 ug/L
Acq. Date:	7/1/2016
Acq. Time:	4:52:43 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	9.05 min
Area:	3.02e+004 counts
Height:	1890.058 cps
Start Time:	8.546 min
End Time:	9.437 min

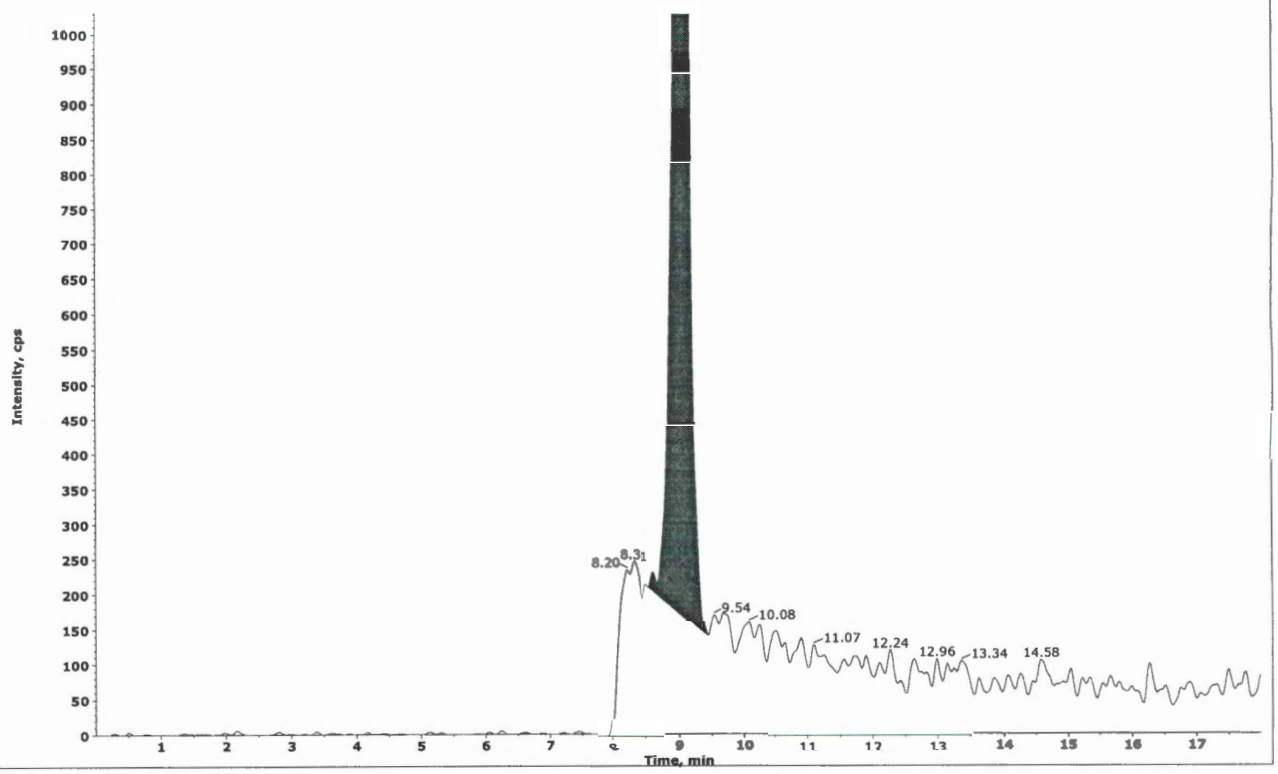

#4
JWR/07/01/16

✓ MED
7-6-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35572.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-02 BLANK	**Injection Vial**	5.00
Data File	LM35572.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

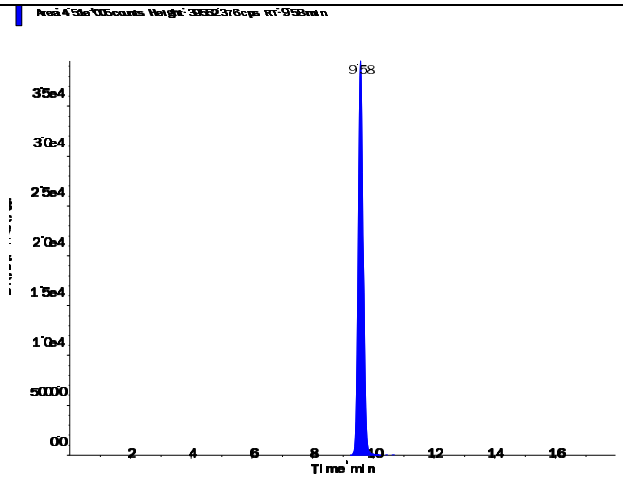

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

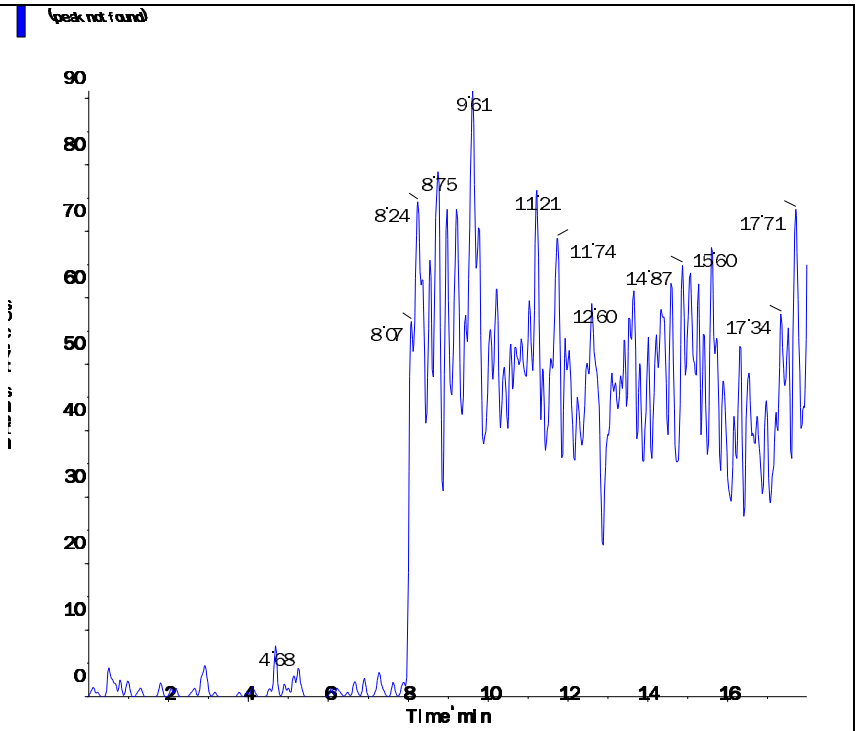

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

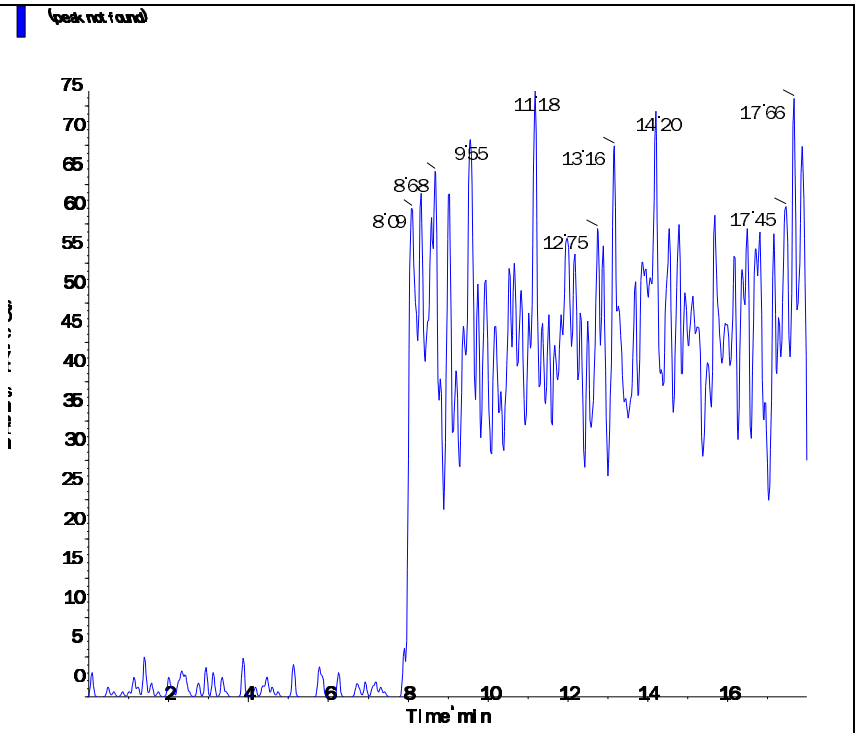

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35573.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:30:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35573.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:30:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.110e+04	9.61	N/A	0.201
Perchlorate conf	1.130e+04	9.60	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

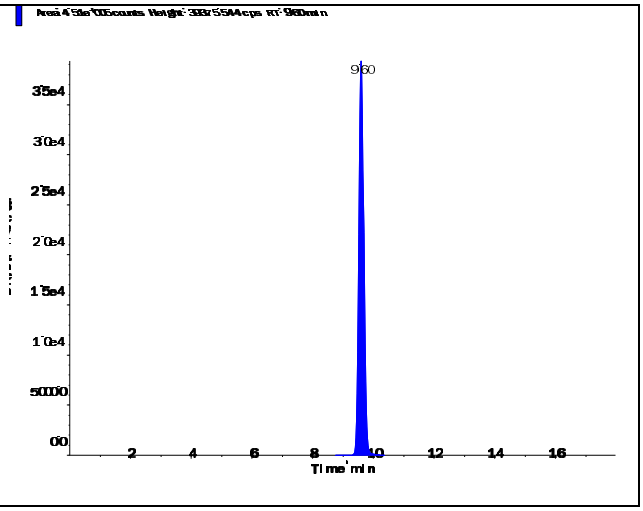

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.61 (9.84) min Calculated conc: 0.201 ng/ml Area Ratio: 0.069 Sample Type: (Unknown)	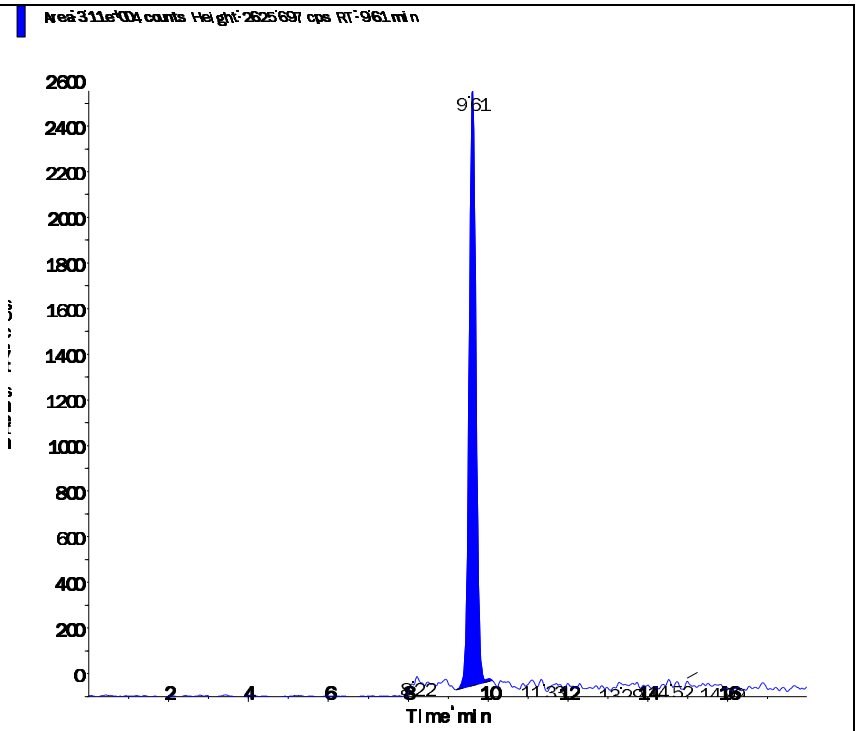
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: 0.204 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	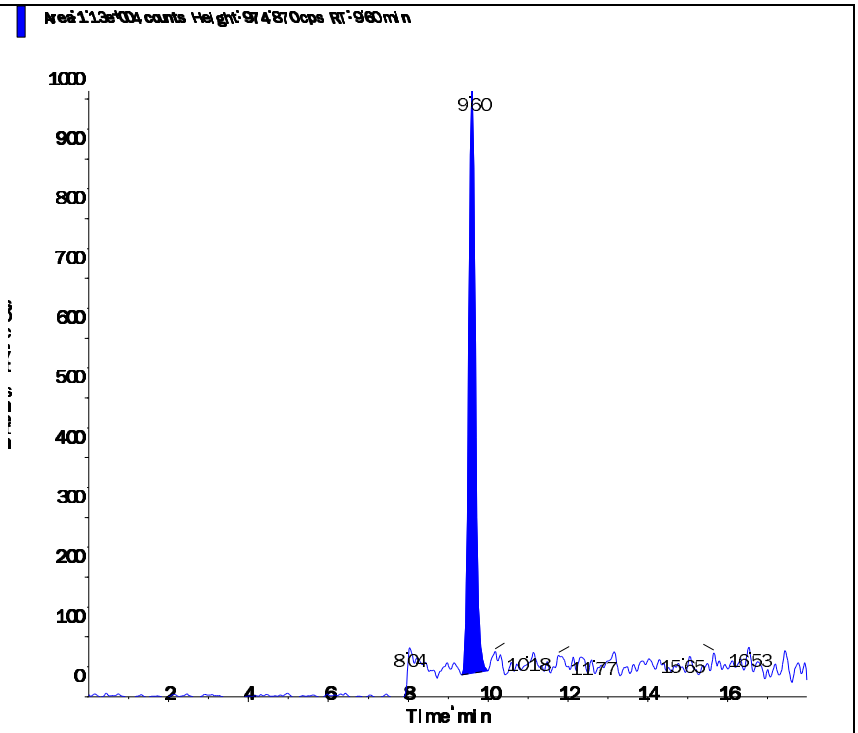

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:28 PM

Data File	LM35574.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:49:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35574.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:49:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.250e+04	9.66	N/A	0.211
Perchlorate conf	1.180e+04	9.65	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

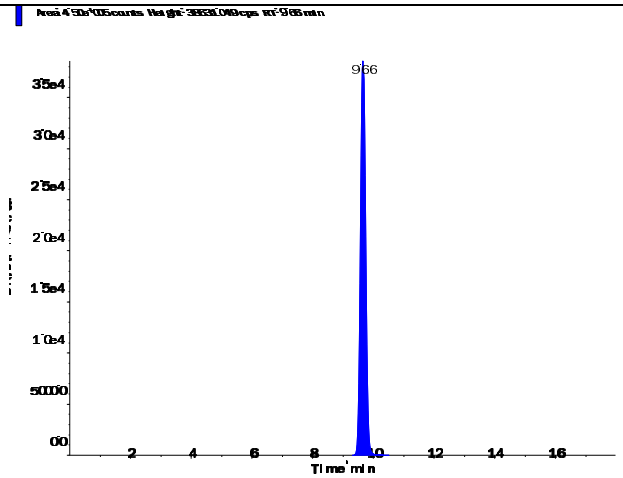

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:28 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.66 (9.84) min Calculated conc: 0.211 ng/ml Area Ratio: 0.072 Sample Type: (Unknown)	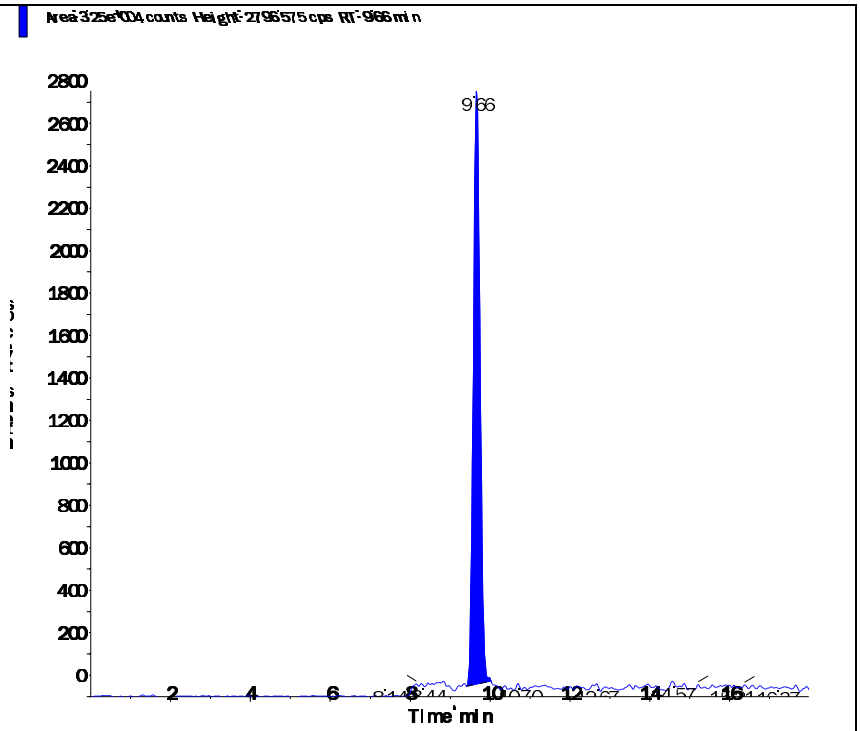
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.65 (9.84) min Calculated conc: 0.214 ng/ml Area Ratio: 0.026 Sample Type: (Unknown)	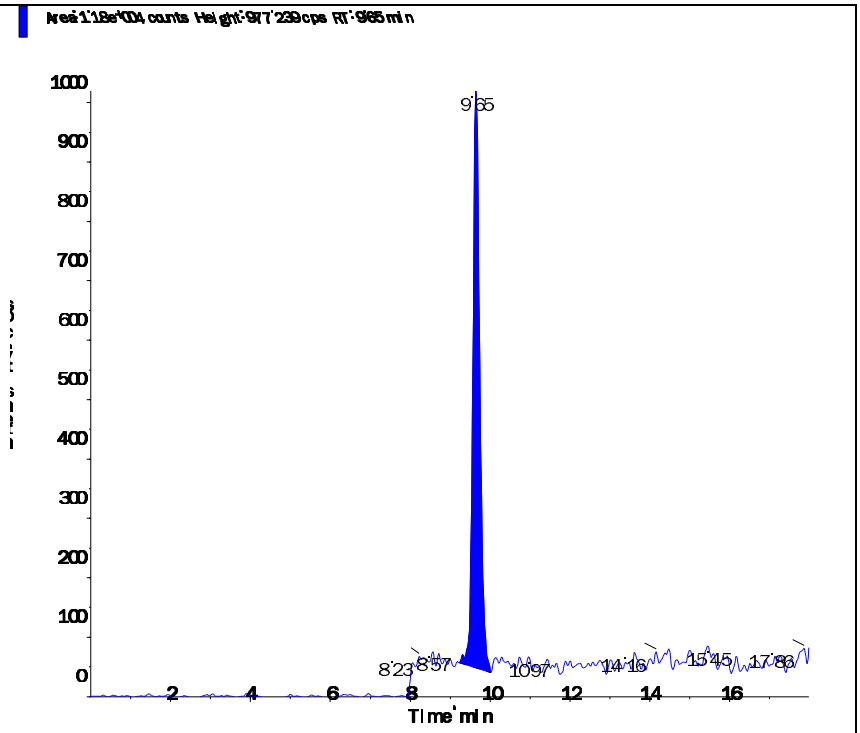

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW21-062216	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:52
Collect Date:	06/22/2016 09:45	**Dilution:**	1	**File ID:**	T3.062416.145235
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0620	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	1.03		0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.61		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW21-062216	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/25/2016 15:44
Collect Date:	06/22/2016 09:45	**Dilution:**	20	**File ID:**	T3.062516.154432
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	213		10.0	5.00	2.50
Magnesium, Total	7439-95-4	163		20.0	10.0	5.00
Sodium, Total	7440-23-5	580		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW02F-062216	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:56
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	T3.062416.145634
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.12		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	7.09		0.500	0.250	0.125
Iron, Total	7439-89-6	1.61		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.34		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.24		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	14.1		1.00	0.500	0.250

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573994
Analyst: ERP
Spike Analyst: ERP
Run Date: 06/24/2016 07:18
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 06/24/2016 07:38

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: VC
HNO3 Lot #: COA18905
HCL Lot #: COA18769
40 & 50 ML. DIGESTION TU COA18987
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573994-02	BLANK	1	40 mL	50 mL	205.799 g	205.793 g		
2	WG573994-03	LCS	1	40 mL	50 mL	211.523 g	211.513 g	5 mL	
3	L16060961-03	SAMP	1	40 mL	50 mL	205.052 g	205.037 g		06/24/16
4	L16061129-01	SAMP	1	40 mL	50 mL	206.124 g	206.112 g		07/05/16
5	L16061129-02	SAMP	1	40 mL	50 mL	206.489 g	206.476 g		07/05/16
6	L16061129-03	SAMP	1	40 mL	50 mL	205.825 g	205.808 g		07/05/16
7	L16061129-04	SAMP	1	40 mL	50 mL	205.354 g	205.348 g		07/05/16
8	L16061129-05	SAMP	1	40 mL	50 mL	205.317 g	205.299 g		07/05/16
9	L16061227-01	SAMP	1	40 mL	50 mL	204.465 g	204.443 g		07/01/16
10	L16061227-03	SAMP	1	40 mL	50 mL	204.813 g	204.793 g		07/01/16
11	L16061227-05	SAMP	1	40 mL	50 mL	206.069 g	206.05 g		07/01/16
12	L16061227-06	SAMP	1	40 mL	50 mL	202.826 g	202.812 g		07/01/16
13	L16061227-07	SAMP	1	40 mL	50 mL	205.408 g	205.392 g		07/01/16
14	L16061272-01	SAMP	1	40 mL	50 mL	206.813 g	206.794 g		06/30/16
15	L16061272-02	SAMP	1	40 mL	50 mL	208.22 g	208.202 g		06/30/16
16	L16061279-01	SAMP	1	40 mL	50 mL	206.107 g	206.09 g		06/28/16
17	WG573994-01	REF	1	40 mL	50 mL	204.432 g	204.415 g		
18	L16061279-02	RS01	1	40 mL	50 mL	204.432 g	204.415 g		06/28/16
19	WG573994-04	MS	1	40 mL	50 mL	213.413 g	213.398 g	5 mL	
20	L16061279-03	MS01	1	40 mL	50 mL	213.413 g	213.398 g	5 mL	06/28/16
21	WG573994-05	MSD	1	40 mL	50 mL	211.644 g	211.636 g	5 mL	
22	L16061279-04	SD01	1	40 mL	50 mL	211.644 g	211.636 g	5 mL	06/28/16
23	L16061279-05	SAMP	1	40 mL	50 mL	206.357 g	206.345 g		06/28/16
24	L16061289-01	SAMP	1	40 mL	50 mL	208.182 g	208.164 g		07/04/16
25	L16061289-04	SAMP	1	40 mL	50 mL	204.262 g	204.255 g		07/04/16
26	L16061290-03	SAMP	1	40 mL	50 mL	208.194 g	208.183 g		07/04/16
27	L16061290-05	SAMP	1	40 mL	50 mL	205.844 g	205.821 g		07/04/16

L16061279-03	filtered digestate
L16061279-04	filtered digestate
L16061279-01	filtered digestate
L16061279-02	filtered digestate
WG573994-01	filtered digestate
WG573994-04	filtered digestate
WG573994-05	filtered digestate
L16061279-05	filtered digestate

MW_DIG - Modified 09/30/2009
PDF ID: 4821836
Report generated: 06/24/2016 08:17

Microbac Laboratories Inc.
Microwave Digestion Log

Analyst: Erin Potter

SOP:
Spike Solution:
Reviewer: Jackie Collins
Spike Witness:

Method:
Balance:
Instrument:
Instrument Start:

MW_DIG - Modified 09/30/2009
PDF ID: 4821836
Report generated: 06/24/2016 08:17

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062416.100206	WG574123-01	Calibration Point		1		06/24/16 10:02
2	T3.062416.100606	WG574123-02	Calibration Point		1		06/24/16 10:06
3	T3.062416.101006	WG574123-03	Calibration Point		1		06/24/16 10:10
4	T3.062416.101405	WG574123-04	Calibration Point		1		06/24/16 10:14
5	T3.062416.101742	WG574123-05	Calibration Point		1		06/24/16 10:17
6	T3.062416.102118	WG574123-06	Initial Calibration Verification		1		06/24/16 10:21
7	T3.062416.102444	WG574123-07	Initial Calib Blank		1		06/24/16 10:24
8	T3.062416.102843	WG574123-08	Low Level Initial Calibration V		1		06/24/16 10:28
9	T3.062416.103239	WG574123-09	Low Level Initial Calibration V		1		06/24/16 10:32
10	T3.062416.103634	WG574123-10	Interference Check		1		06/24/16 10:36
11	T3.062416.104027	WG574123-11	Interference Check		1		06/24/16 10:40
12	T3.062416.104409	WG574123-12	CCV		1		06/24/16 10:44
13	T3.062416.104746	WG574123-13	CCB		1		06/24/16 10:47
14	T3.062416.105146	WG573823-01	Method/Prep Blank	1/50	1		06/24/16 10:51
15	T3.062416.105915	WG573823-02	Laboratory Control S	1/50	1		06/24/16 10:59
16	T3.062416.110255	WG573823-03	Laboratory Control S	1/50	1		06/24/16 11:02
17	T3.062416.110635	L16061143-01	500662-WP-002	1/50	1		06/24/16 11:06
18	T3.062416.111030	L16061143-02	500662-WP-003	1/50	1		06/24/16 11:10
19	T3.062416.111424	L16061143-03	500662-WP-004	1/50	1		06/24/16 11:14
20	T3.062416.111816	WG574050-01	Post Digestion Spike		1	L16061143-03	06/24/16 11:18
21	T3.062416.112154	WG574050-02	Serial Dilution		5	L16061143-03	06/24/16 11:21
22	T3.062416.112553	L16060724-01	ABW_06142016	40/50	1000		06/24/16 11:25
23	T3.062416.112949	L16060787-10	U517TW006C	40/50	10		06/24/16 11:29
24	T3.062416.113347	WG574123-14	CCV		1		06/24/16 11:33
25	T3.062416.113725	WG574123-15	CCB		1		06/24/16 11:37
26	T3.062416.114112	L16060787-18	U517TW008A	40/50	10		06/24/16 11:41
27	T3.062416.114510	WG573707-03	Method/Prep Blank	40/50	1		06/24/16 11:45
28	T3.062416.114908	WG573707-04	Laboratory Control S	40/50	1		06/24/16 11:49
29	T3.062416.115249	WG573594-01	Fluid Blank 1		1		06/24/16 11:52
30	T3.062416.115648	WG573594-02	Fluid Blank 2		1		06/24/16 11:56
31	T3.062416.120048	WG573707-01	Reference Sample		1	L16061151-01	06/24/16 12:00
32	T3.062416.120443	WG573707-05	Matrix Spike	40/50	1	L16061151-01	06/24/16 12:04
33	T3.062416.120811	WG573707-06	Matrix Spike Duplica	40/50	1	L16061151-01	06/24/16 12:08
34	T3.062416.121149	L16061140-01	60500-SSP0042-SSP0042	5/50	1		06/24/16 12:11

Page: 1 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062416.121541	WG574055-02	Serial Dilution		5	L16061140-01	06/24/16 12:15
36	T3.062416.121926	WG574123-16	CCV		1		06/24/16 12:19
37	T3.062416.122304	WG574123-17	CCB		1		06/24/16 12:23
38	T3.062416.122703	WG574055-01	Post Digestion Spike		1	L16061140-01	06/24/16 12:27
39	T3.062416.123043	L16061140-03	60500-SSP0037-SPLP023	5/50	1		06/24/16 12:30
40	T3.062416.123437	WG572980-02	Method/Prep Blank	40/50	1		06/24/16 12:34
41	T3.062416.123836	WG572980-03	Laboratory Control S	40/50	1		06/24/16 12:38
42	T3.062416.124216	L16060732-01	LH18/24-SP650-6371-GRAB	40/50	1		06/24/16 12:42
43	T3.062416.124614	WG572980-01	Reference Sample		1	L16060796-01	06/24/16 12:46
44	T3.062416.125002	WG572980-04	Matrix Spike	5/50	1	L16060796-01	06/24/16 12:50
45	T3.062416.125340	WG572980-05	Matrix Spike Duplica	5/50	1	L16060796-01	06/24/16 12:53
46	T3.062416.125716	L16060732-02	LH18/24-SP650-6371-COMP	40/50	1		06/24/16 12:57
47	T3.062416.130110	L16060794-01	A08-MW06-Y1S2	40/50	10		06/24/16 13:01
48	T3.062416.130507	WG574123-18	CCV		1		06/24/16 13:05
49	T3.062416.130845	WG574123-19	CCB		1		06/24/16 13:08
50	T3.062416.131244	L16060794-04	A09-MW07-Y1S2	40/50	10		06/24/16 13:12
51	T3.062416.131643	L16060796-04	500662-DS-002	5/50	1		06/24/16 13:16
52	T3.062416.132032	WG573149-01	Post Digestion Spike		1	L16060796-04	06/24/16 13:20
53	T3.062416.132408	WG573149-02	Serial Dilution		5	L16060796-04	06/24/16 13:24
54	T3.062416.132801	WG573149-02	Serial Dilution		25	L16060796-04	06/24/16 13:28
55	T3.062416.133159	WG573994-02	Method/Prep Blank	40/50	1		06/24/16 13:31
56	T3.062416.133557	WG573994-03	Laboratory Control S	40/50	1		06/24/16 13:35
57	T3.062416.133937	WG573994-01	Reference Sample		1	L16061279-02	06/24/16 13:39
58	T3.062416.134328	WG573994-04	Matrix Spike	40/50	1	L16061279-02	06/24/16 13:43
59	T3.062416.134705	WG573994-05	Matrix Spike Duplica	40/50	1	L16061279-02	06/24/16 13:47
60	T3.062416.135042	WG574123-20	CCV		1		06/24/16 13:50
61	T3.062416.135419	WG574123-21	CCB		1		06/24/16 13:54
62	T3.062416.135818	L16060961-03	GH58HS_MELZER_03-03-0	40/50	1		06/24/16 13:58
63	T3.062416.140215	WG574076-01	Post Digestion Spike		1	L16060961-03	06/24/16 14:02
64	T3.062416.140555	WG574076-02	Serial Dilution		5	L16060961-03	06/24/16 14:05
65	T3.062416.140952	WG574076-02	Serial Dilution		25	L16060961-03	06/24/16 14:09
66	T3.062416.141350	L16061227-01	18WW22-062116	40/50	1		06/24/16 14:13
67	T3.062416.141746	L16061227-03	C04F-062116	40/50	1		06/24/16 14:17
68	T3.062416.142142	L16061227-05	C04FFD-062116	40/50	1		06/24/16 14:21

Page: 2 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062416.142526	L16061227-06	18CPTMW18-062116	40/50	1		06/24/16 14:25
70	T3.062416.142928	L16061227-01	18WW22-062116		10		06/24/16 14:29
71	T3.062416.143326	WG574123-22	CCV		1		06/24/16 14:33
72	T3.062416.143703	WG574123-23	CCB		1		06/24/16 14:37
73	T3.062416.144104	WG574123-24	Low Level Continuing Calibra		1		06/24/16 14:41
74	T3.062416.144501	WG574123-25	Low Level Continuing Calibra		1		06/24/16 14:45
75	T3.062416.144853	L16061227-07	18WW18-062116	40/50	1		06/24/16 14:48
76	T3.062416.145235	L16061289-01	MW21-062216	40/50	1		06/24/16 14:52
77	T3.062416.145634	L16061289-04	18WW02F-062216	40/50	1		06/24/16 14:56
78	T3.062416.150030	L16061290-03	MW16F-062116	40/50	1		06/24/16 15:00
79	T3.062416.150424	L16061290-05	109-062216	40/50	1		06/24/16 15:04
80	T3.062416.150820	L16061129-01	MW-22-002	40/50	1		06/24/16 15:08
81	T3.062416.151215	L16061129-02	MW-22-010	40/50	1		06/24/16 15:12
82	T3.062416.151609	L16061129-03	MW-22-007	40/50	1		06/24/16 15:16
83	T3.062416.152008	WG574123-26	CCV		1		06/24/16 15:20
84	T3.062416.152346	WG574123-27	CCB		1		06/24/16 15:23
85	T3.062416.152745	L16061129-04	FD061716	40/50	1		06/24/16 15:27
86	T3.062416.153140	L16061129-05	EB-WATER A	40/50	1		06/24/16 15:31
87	T3.062416.153539	L16061272-01	SS007MW0B18-007	40/50	1		06/24/16 15:35
88	T3.062416.153937	L16061272-02	SS007MWN752-007	40/50	1		06/24/16 15:39
89	T3.062416.154332	L16061279-01	XU936TW007A	40/50	1		06/24/16 15:43
90	T3.062416.154725	L16061279-05	XU936TW019A	40/50	1		06/24/16 15:47
91	T3.062416.155118	L16060729-01	A09-MW10-Y1S2	40/50	1		06/24/16 15:51
92	T3.062416.155514	L16060729-02	A09-MW11-Y1S2	40/50	1		06/24/16 15:55
93	T3.062416.155910	L16060729-03	A09-MW12-Y1S2	40/50	1		06/24/16 15:59
94	T3.062416.160303	WG574123-28	CCV		1		06/24/16 16:03
95	T3.062416.160640	WG574123-29	CCB		1		06/24/16 16:06
96	T3.062416.161038	L16061148-01	DP005SW0513-007		1		06/24/16 16:10
97	T3.062416.161432	L16061148-02	DP005SW0514-007		1		06/24/16 16:14
98	T3.062416.161828	L16061150-01	SS007SW0709-007		1		06/24/16 16:18
99	T3.062416.162223	L16061150-02	SS007SW0710-007		1		06/24/16 16:22
100	T3.062416.162617	L16061151-02	LF003SW0311-007 DUP		1		06/24/16 16:26
101	T3.062416.163012	L16061151-05	LF003SW0312-007		1		06/24/16 16:30
102	T3.062416.163406	WG573707-02	Reference Sample		1	L16061154-01	06/24/16 16:34

Page: 3 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062416.163809	WG573707-07	Matrix Spike		1	L16061154-01	06/24/16 16:38
104	T3.062416.164156	WG573707-08	Matrix Spike Duplica		1	L16061154-01	06/24/16 16:41
105	T3.062416.164542	L16061154-04	FQC-RB06201601-CB		1		06/24/16 16:45
106	T3.062416.164941	WG574123-30	CCV		1		06/24/16 16:49
107	T3.062416.165319	WG574123-31	CCB		1		06/24/16 16:53
108	T3.062416.165718	L16061155-01	ST008MW0812-007		1		06/24/16 16:57
109	T3.062416.170338	WG574123-32	CCV		1		06/24/16 17:03
110	T3.062416.170715	WG574123-33	CCB		1		06/24/16 17:07
111	T3.062416.171114	WG574123-34	Low Level Continuing Calibra		1		06/24/16 17:11
112	T3.062416.171510	WG574123-35	Low Level Continuing Calibra		1		06/24/16 17:15

Page: 4 Approved: June 24, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062516.122104	WG574249-01	Calibration Point		1		06/25/16 12:21
2	T3.062516.122502	WG574249-02	Calibration Point		1		06/25/16 12:25
3	T3.062516.122900	WG574249-03	Calibration Point		1		06/25/16 12:29
4	T3.062516.123256	WG574249-04	Calibration Point		1		06/25/16 12:32
5	T3.062516.123634	WG574249-05	Calibration Point		1		06/25/16 12:36
6	T3.062516.124009	WG574249-06	Initial Calibration Verification		1		06/25/16 12:40
7	T3.062516.124348	WG574249-07	Initial Calib Blank		1		06/25/16 12:43
8	T3.062516.124745	WG574249-08	Low Level Initial Calibration V		1		06/25/16 12:47
9	T3.062516.125139	WG574249-09	Low Level Initial Calibration V		1		06/25/16 12:51
10	T3.062516.125529	WG574249-10	Interference Check		1		06/25/16 12:55
11	T3.062516.125921	WG574249-11	Interference Check		1		06/25/16 12:59
12	T3.062516.130304	WG574249-12	CCV		1		06/25/16 13:03
13	T3.062516.130641	WG574249-13	CCB		1		06/25/16 13:06
14	T3.062516.131816	WG573190-03	Method/Prep Blank	40/50	1		06/25/16 13:18
15	T3.062516.132214	WG573190-04	Laboratory Control S	40/50	1		06/25/16 13:22
16	T3.062516.132554	WG573190-02	Reference Sample		1	L16060808-01	06/25/16 13:25
17	T3.062516.132950	WG573190-07	Matrix Spike	40/50	1	L16060808-01	06/25/16 13:29
18	T3.062516.133327	WG573190-08	Matrix Spike Duplica	40/50	1	L16060808-01	06/25/16 13:33
19	T3.062516.133704	L16060822-03	18CPTMW04SW-061416	40/50	1		06/25/16 13:37
20	T3.062516.134058	L16060822-02	18WW03F-061416	40/50	1		06/25/16 13:40
21	T3.062516.134452	WG573973-03	Post Digestion Spike		1	L16060822-02	06/25/16 13:44
22	T3.062516.134830	WG573973-04	Serial Dilution		5	L16060822-02	06/25/16 13:48
23	T3.062516.135227	WG573973-04	Serial Dilution		25	L16060822-02	06/25/16 13:52
24	T3.062516.135622	WG574249-14	CCV		1		06/25/16 13:56
25	T3.062516.140001	WG574249-15	CCB		1		06/25/16 14:00
26	T3.062516.140359	L16060823-02	126F-061416	40/50	1		06/25/16 14:03
27	T3.062516.140759	L16060823-03	C08-061416	40/50	1		06/25/16 14:07
28	T3.062516.141200	L16060823-04	C03-061416	40/50	1		06/25/16 14:12
29	T3.062516.141551	L16061148-01	DP005SW0513-007	40/50	1		06/25/16 14:15
30	T3.062516.141945	L16061148-02	DP005SW0514-007	40/50	1		06/25/16 14:19
31	T3.062516.142340	L16061150-01	SS007SW0709-007	40/50	1		06/25/16 14:23
32	T3.062516.142732	L16061150-02	SS007SW0710-007	40/50	1		06/25/16 14:27
33	T3.062516.143125	L16061151-02	LF003SW0311-007 DUP	40/50	1		06/25/16 14:31
34	T3.062516.143519	L16061151-05	LF003SW0312-007	40/50	1		06/25/16 14:35

Page: 1 Approved: June 27, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062516.143913	WG573707-02	Reference Sample		1	L16061154-01	06/25/16 14:39
36	T3.062516.144313	WG574249-16	CCV		1		06/25/16 14:43
37	T3.062516.144639	WG574249-17	CCB		1		06/25/16 14:46
38	T3.062516.145037	WG573707-07	Matrix Spike	40/50	1	L16061154-01	06/25/16 14:50
39	T3.062516.145424	WG573707-08	Matrix Spike Duplica	40/50	1	L16061154-01	06/25/16 14:54
40	T3.062516.145809	L16061154-04	FQC-RB06201601-CB	40/50	1		06/25/16 14:58
41	T3.062516.150207	L16061155-01	ST008MW0812-007	40/50	1		06/25/16 15:02
42	T3.062516.150559	L16061155-02	ST008MW0809-007	40/50	1		06/25/16 15:05
43	T3.062516.150954	L16061155-03	ST008MW0816-007	40/50	1		06/25/16 15:09
44	T3.062516.151348	L16061178-01	2016PRE-7217NEWENGLAN	40/50	1		06/25/16 15:13
45	T3.062516.151743	L16061227-01	18WW22-062116	40/50	20		06/25/16 15:17
46	T3.062516.152125	L16061227-06	18CPTMW18-062116	40/50	20		06/25/16 15:21
47	T3.062516.152518	WG573994-01	Reference Sample		20	L16061279-02	06/25/16 15:25
48	T3.062516.152911	WG574249-18	CCV		1		06/25/16 15:29
49	T3.062516.153248	WG574249-19	CCB		1		06/25/16 15:32
50	T3.062516.153646	WG573994-04	Matrix Spike	40/50	20	L16061279-02	06/25/16 15:36
51	T3.062516.154039	WG573994-05	Matrix Spike Duplica	40/50	20	L16061279-02	06/25/16 15:40
52	T3.062516.154432	L16061289-01	MW21-062216	40/50	20		06/25/16 15:44
53	T3.062516.154826	L16061129-01	MW-22-002		20		06/25/16 15:48
54	T3.062516.155222	L16061129-02	MW-22-010		20		06/25/16 15:52
55	T3.062516.155620	L16061129-03	MW-22-007		20		06/25/16 15:56
56	T3.062516.160018	L16061129-04	FD061716		20		06/25/16 16:00
57	T3.062516.160415	L16061272-01	SS007MW0B18-007		20		06/25/16 16:04
58	T3.062516.160812	L16061272-02	SS007MWN752-007		20		06/25/16 16:08
59	T3.062516.161208	L16061279-01	XU936TW007A	40/50	20		06/25/16 16:12
60	T3.062516.161603	WG574249-20	CCV		1		06/25/16 16:16
61	T3.062516.161940	WG574249-21	CCB		1		06/25/16 16:19
62	T3.062516.162338	L16061279-05	XU936TW019A	40/50	20		06/25/16 16:23
63	T3.062516.162733	L16061148-01	DP005SW0513-007		20		06/25/16 16:27
64	T3.062516.163130	L16061148-02	DP005SW0514-007		20		06/25/16 16:31
65	T3.062516.163527	L16061150-01	SS007SW0709-007		20		06/25/16 16:35
66	T3.062516.163912	L16061151-02	LF003SW0311-007 DUP		20		06/25/16 16:39
67	T3.062516.164310	L16061151-05	LF003SW0312-007		20		06/25/16 16:43
68	T3.062516.164706	WG573707-02	Reference Sample		20	L16061154-01	06/25/16 16:47

Page: 2 Approved: June 27, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062516.165101	WG573707-07	Matrix Spike	40/50	20	L16061154-01	06/25/16 16:51
70	T3.062516.165454	L16061279-08	XU936TW011MSD	40/50	20	WG573707-08	06/25/16 16:54
71	T3.062516.165848	WG574249-22	CCV		1		06/25/16 16:58
72	T3.062516.170225	WG574249-23	CCB		1		06/25/16 17:02
73	T3.062516.170624	L16061155-01	ST008MW0812-007		20		06/25/16 17:06
74	T3.062516.171010	L16061155-02	ST008MW0809-007		20		06/25/16 17:10
75	T3.062516.171407	L16061155-03	ST008MW0816-007		20		06/25/16 17:14
76	T3.062516.171804	WG574249-24	CCV		1		06/25/16 17:18
77	T3.062516.172142	WG574249-25	CCB		1		06/25/16 17:21
78	T3.062516.172540	WG574249-26	Low Level Continuing Calibra		1		06/25/16 17:25
79	T3.062516.172933	WG573530-03	Method/Prep Blank	40/50	1		06/25/16 17:29
80	T3.062516.173331	WG573530-04	Laboratory Control S	40/50	1		06/25/16 17:33
81	T3.062516.173711	WG573530-05	Filter Blank		1		06/25/16 17:37
82	T3.062516.174110	L16060986-02	MW-07-04	40/50	1		06/25/16 17:41
83	T3.062516.174505	L16060986-04	MW-01-10	40/50	1		06/25/16 17:45
84	T3.062516.174856	L16060986-06	MW-03-12	40/50	1		06/25/16 17:48
85	T3.062516.175251	L16060986-08	MW-01-07	40/50	1		06/25/16 17:52
86	T3.062516.175646	WG574216-01	Post Digestion Spike		1	L16060986-08	06/25/16 17:56
87	T3.062516.180025	WG574216-02	Serial Dilution		5	L16060986-08	06/25/16 18:00
88	T3.062516.180418	WG574216-02	Serial Dilution		25	L16060986-08	06/25/16 18:04
89	T3.062516.180815	WG574249-27	CCV		1		06/25/16 18:08
90	T3.062516.181152	WG574249-28	CCB		1		06/25/16 18:11
91	T3.062516.181548	L16060986-10	MW-03-11		1		06/25/16 18:15
92	T3.062516.181942	L16060986-12	MW-01-01		1		06/25/16 18:19
93	T3.062516.182332	L16060986-14	MW-03-09		1		06/25/16 18:23
94	T3.062516.182724	L16060986-16	MW-01-08		1		06/25/16 18:27
95	T3.062516.183114	L16060986-18	MW-03-06		1		06/25/16 18:31
96	T3.062516.183511	L16060986-20	MW-03-05		1		06/25/16 18:35
97	T3.062516.183905	WG573530-01	Reference Sample		1	L16060986-22	06/25/16 18:39
98	T3.062516.184258	WG573530-02	Reference Sample		1	L16060986-24	06/25/16 18:42
99	T3.062516.184649	L16060986-26	MW-01-02		1		06/25/16 18:46
100	T3.062516.185044	L16060986-28	DUP 1		1		06/25/16 18:50
101	T3.062516.185437	WG574249-29	CCV		1		06/25/16 18:54
102	T3.062516.185815	WG574249-30	CCB		1		06/25/16 18:58

Page: 3 Approved: June 27, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062516.190211	L16060986-30	DUP 2		1		06/25/16 19:02
104	T3.062516.190604	WG573530-06	Matrix Spike		1	L16060986-22	06/25/16 19:06
105	T3.062516.190942	WG573530-07	Matrix Spike Duplica		1	L16060986-22	06/25/16 19:09
106	T3.062516.191321	WG573530-08	Matrix Spike		1	L16060986-24	06/25/16 19:13
107	T3.062516.191658	WG573530-09	Matrix Spike Duplica		1	L16060986-24	06/25/16 19:16
108	T3.062516.192035	L16060986-40	EQUIP BLANK 1		1		06/25/16 19:20
109	T3.062516.192431	L16060986-42	EQUIP BLANK 2		1		06/25/16 19:24
110	T3.062516.192827	WG574249-31	CCV		1		06/25/16 19:28
111	T3.062516.193205	WG574249-32	CCB		1		06/25/16 19:32
112	T3.062516.193603	WG573544-03	Method/Prep Blank	40/50	1		06/25/16 19:36
113	T3.062516.193959	WG573544-04	Laboratory Control S	40/50	1		06/25/16 19:39
114	T3.062516.194338	L16060907-23	MW36-061516	40/50	1		06/25/16 19:43
115	T3.062516.194731	L16060986-01	MW-07-04	40/50	1		06/25/16 19:47
116	T3.062516.195124	L16060986-03	MW-01-10	40/50	1		06/25/16 19:51
117	T3.062516.195515	L16060986-05	MW-03-12	40/50	1		06/25/16 19:55
118	T3.062516.195905	L16060986-07	MW-01-07	40/50	1		06/25/16 19:59
119	T3.062516.200300	WG574215-01	Post Digestion Spike		1	L16060986-07	06/25/16 20:03
120	T3.062516.200637	WG574215-02	Serial Dilution		5	L16060986-07	06/25/16 20:06
121	T3.062516.201030	WG574215-02	Serial Dilution		25	L16060986-07	06/25/16 20:10
122	T3.062516.201426	WG574249-33	CCV		1		06/25/16 20:14
123	T3.062516.201803	WG574249-34	CCB		1		06/25/16 20:18
124	T3.062516.202200	L16060986-09	MW-03-11	40/50	1		06/25/16 20:22
125	T3.062516.202553	L16060986-11	MW-01-01	40/50	1		06/25/16 20:25
126	T3.062516.202942	L16060986-13	MW-03-09	40/50	1		06/25/16 20:29
127	T3.062516.203332	L16060986-15	MW-01-08	40/50	1		06/25/16 20:33
128	T3.062516.203723	L16060986-17	MW-03-06	40/50	1		06/25/16 20:37
129	T3.062516.204116	L16060986-19	MW-03-05	40/50	1		06/25/16 20:41
130	T3.062516.204510	WG573544-01	Reference Sample		1	L16060986-21	06/25/16 20:45
131	T3.062516.204903	WG573544-02	Reference Sample		1	L16060986-23	06/25/16 20:49
132	T3.062516.205255	L16060986-25	MW-01-02	40/50	1		06/25/16 20:52
133	T3.062516.205646	L16060986-27	DUP 1	40/50	1		06/25/16 20:56
134	T3.062516.210036	WG574249-35	CCV		1		06/25/16 21:00
135	T3.062516.210414	WG574249-36	CCB		1		06/25/16 21:04
136	T3.062516.210812	L16060986-29	DUP 2	40/50	1		06/25/16 21:08

Page: 4 Approved: June 27, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.062516.211202	WG573544-05	Matrix Spike	40/50	1	L16060986-21	06/25/16 21:12
138	T3.062516.211541	WG573544-06	Matrix Spike Duplica	40/50	1	L16060986-21	06/25/16 21:15
139	T3.062516.211919	WG573544-07	Matrix Spike	40/50	1	L16060986-23	06/25/16 21:19
140	T3.062516.212256	WG573544-08	Matrix Spike Duplica	40/50	1	L16060986-23	06/25/16 21:22
141	T3.062516.212633	L16060986-39	EQUIP BLANK 1	40/50	1		06/25/16 21:26
142	T3.062516.213031	L16060986-41	EQUIP BLANK 2	40/50	1		06/25/16 21:30
143	T3.062516.213430	WG574249-37	CCV		1		06/25/16 21:34
144	T3.062516.213807	WG574249-38	CCB		1		06/25/16 21:38
145	T3.062516.214203	WG573102-02	Method/Prep Blank	40/50	1		06/25/16 21:42
146	T3.062516.214559	WG573102-03	Laboratory Control S	40/50	1		06/25/16 21:45
147	T3.062516.214937	WG573102-04	Filter Blank		1		06/25/16 21:49
148	T3.062516.215335	WG573102-01	Reference Sample		1	L16060787-09	06/25/16 21:53
149	T3.062516.215728	WG573102-05	Matrix Spike	40/50	1	L16060787-09	06/25/16 21:57
150	T3.062516.220106	WG573102-06	Matrix Spike Duplica	40/50	1	L16060787-09	06/25/16 22:01
151	T3.062516.220444	L16060787-01	EB04	40/50	1		06/25/16 22:04
152	T3.062516.220842	WG573561-03	Post Digestion Spike		1	L16060787-01	06/25/16 22:08
153	T3.062516.221220	WG573561-04	Serial Dilution		5	L16060787-01	06/25/16 22:12
154	T3.062516.221616	WG573561-04	Serial Dilution		25	L16060787-01	06/25/16 22:16
155	T3.062516.222012	WG574249-39	CCV		1		06/25/16 22:20
156	T3.062516.222349	WG574249-40	CCB		1		06/25/16 22:23
157	T3.062516.222746	L16060787-10	U517TW006C	40/50	1		06/25/16 22:27
158	T3.062516.223140	L16060787-18	U517TW008A	40/50	1		06/25/16 22:31
159	T3.062516.223534	L16060787-19	EB05	40/50	1		06/25/16 22:35
160	T3.062516.223931	WG573102-01	Reference Sample		20	L16060787-09	06/25/16 22:39
161	T3.062516.224326	WG573102-05	Matrix Spike	40/50	20	L16060787-09	06/25/16 22:43
162	T3.062516.224719	WG573102-06	Matrix Spike Duplica	40/50	20	L16060787-09	06/25/16 22:47
163	T3.062516.225113	WG574249-41	CCV		1		06/25/16 22:51
164	T3.062516.225451	WG574249-42	CCB		1		06/25/16 22:54
165	T3.062516.225848	WG573484-02	Method/Prep Blank	40/50	1		06/25/16 22:58
166	T3.062516.230246	WG573484-03	Laboratory Control S	40/50	1		06/25/16 23:02
167	T3.062516.230624	WG573484-01	Reference Sample		1	L16060764-04	06/25/16 23:06
168	T3.062516.231017	WG573484-04	Matrix Spike	40/50	1	L16060764-04	06/25/16 23:10
169	T3.062516.231356	WG573484-05	Matrix Spike Duplica	40/50	1	L16060764-04	06/25/16 23:13
170	T3.062516.231733	L16060991-02	MW31-061616	40/50	10		06/25/16 23:17

Page: 5 Approved: June 27, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	T3.062516.232126	WG573952-03	Post Digestion Spike		10	L16060991-02	06/25/16 23:21
172	T3.062516.232503	WG573952-04	Serial Dilution		50	L16060991-02	06/25/16 23:25
173	T3.062516.232900	L16060995-01	UNTREATED	40/50	1000		06/25/16 23:29
174	T3.062516.233253	L16060995-02	AFTER	40/50	1000		06/25/16 23:32
175	T3.062516.233647	WG574249-43	CCV		1		06/25/16 23:36
176	T3.062516.234025	WG574249-44	CCB		1		06/25/16 23:40
177	T3.062516.234420	WG574249-45	Interference Check		1		06/25/16 23:44
178	T3.062516.234809	WG574249-46	Interference Check		1		06/25/16 23:48
179	T3.062516.235152	WG574249-47	CCV		1		06/25/16 23:51
180	T3.062516.235530	WG574249-48	CCB		1		06/25/16 23:55
181	T3.062516.235927	WG574249-49	Low Level Continuing Calibra		1		06/25/16 23:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
69				
Seq. 69-70: wrong WG numbers JYH				

Page: 6 Approved: June 27, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574123
Runlog ID: 75912
Analytical Workgroups: 574050,574055,574076,573560,573149,573561

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1129
Level 4	1140,1143,1151,1227,1272,1279
	1289,1290,729,732,794,787,724
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
26-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-26-2016 10:34:20

Microbac Laboratories Inc.

Data Checklist

Date: 25-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574249
Runlog ID: 75923
Analytical Workgroups: 573973,574055,574076,574216,574215,573952

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1178
Level 4	822,823,1148,1150,1151,1154,1155
	1227,1279,1289,986,787,991,995
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer: 27-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-27-2016 14:55:21

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG574076

Login Number: L16061289

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW21-062216	01	06/22/16					06/24/2016	1.9	180		06/24/16	2.2	180	
MW21-062216	01	06/22/16					06/24/2016	1.9	180		06/25/16	3.2	180	
18WW02F-062216	04	06/22/16					06/24/2016	1.7	180		06/24/16	2.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4824715
Report generated 06/27/2016 11:06

METHOD BLANK SUMMARY

Login Number: L16061289
Blank File ID: T3.062416.133159
Prep Date: 06/24/16 07:18
Analyzed Date: 06/24/16 13:31
Analyst: JYH

Work Group: WG574076
Blank Sample ID: WG573994-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573994-03	T3.062416.133557	06/24/16 13:35	01
MW21-062216	L16061289-01	T3.062416.145235	06/24/16 14:52	01
18WW02F-062216	L16061289-04	T3.062416.145634	06/24/16 14:56	01
MW21-062216	L16061289-01	T3.062516.154432	06/25/16 15:44	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4824716
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061289 Prep Date: 06/24/16 07:18 Sample ID: WG573994-02
Instrument ID: ICP-THERMO3 Run Date: 06/24/16 13:31 Prep Method: 3015
File ID: T3.062416.133159 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574076 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-24-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0719	1	J
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.182	1	J
Iron, Total	0.0500	0.200	0.0950	1	J
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4824717
27-JUN-2016 11:06

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 Run Date: 06/24/2016 Sample ID: WG573994-03
Instrument ID: ICP-THERMO3 Run Time: 13:35 Prep Method: 3015
File ID: T3.062416.133557 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574076 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-24-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.37	102	80 - 120	
Beryllium, Total	0.0313	0.0306	97.8	80 - 120	
Calcium, Total	6.25	6.65	106	80 - 120	
Iron, Total	2.50	2.53	101	80 - 120	
Magnesium, Total	6.25	6.45	103	80 - 120	
Potassium, Total	31.3	32.7	105	80 - 120	
Selenium, Total	0.250	0.251	101	80 - 120	
Sodium, Total	31.3	32.8	105	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4824718
Report generated: 06/27/2016 11:06

Loginnum: L16061289 Cal ID: ICP-THERMO3 - Worknum: WG574076
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573994-01 File ID: T3.062416.133937 Dil: 1 Matrix: WATER
Sample ID: WG573994-04 MS File ID: T3.062416.134328 Dil: 1 Units: mg/L
Sample ID: WG573994-05 MSD File ID: T3.062416.134705 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	19.7	6.25	25.8	97.8	6.25	27.1	119	4.89	80 - 120	20	
Beryllium	ND	0.0313	0.0301	96.4	0.0313	0.0309	98.8	2.42	80 - 120	20	
Calcium	247	6.25	253	94.4	6.25	255	122	0.674	80 - 120	20	*
Iron	28.6	2.50	26.6	-79.2	2.50	26.6	-81.1	0.183	80 - 120	20	*
Magnesium	101	6.25	106	80.8	6.25	106	92.2	0.673	80 - 120	20	
Potassium	7.81	31.3	38.1	96.9	31.3	39.6	102	3.81	80 - 120	20	
Selenium	ND	0.250	0.243	97.1	0.250	0.246	98.5	1.53	80 - 120	20	
Sodium	23.5	31.3	54.5	98.9	31.3	55.6	103	2.15	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4824719
Report generated 06/25/2016 12:39

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061289 **Worknum:** WG574076
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574076-02 **File ID:** T3.062416.140555 **Dil:** 5 **Units:** ug/L
Sample: L16060961-03 **File ID:** T3.062416.135818 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	91.4		87.2		4.65	
Beryllium	ND	U	0.300		3100.00	
Calcium	50100		49300		1.56	
Iron	36.6		77.9		113.00	E
Magnesium	15200		15200		0.54	
Potassium	1350		1740		28.90	E
Selenium	4.57		26.5		480.00	E
Sodium	9650		9940		3.08	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4824713
06/27/2016 11:06

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061289 **Worknum:** WG574076
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574076-01 **File ID:** T3.062416.140215 **Dil:** 1 **Units:** ug/L
Sample ID: L16060961-03 **File ID:** T3.062416.135818 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5160		91.4	F	5000	101.5	75 - 125	
BERYLLIUM	24.6		0	U	25	98.3	75 - 125	
CALCIUM	50300		50100		5000	104.5	75 - 125	
IRON	2080		0	U	2000	103.9	75 - 125	
MAGNESIUM	18800		15200		5000	102.3	75 - 125	
POTASSIUM	27400		1350	F	25000	104.7	75 - 125	
SELENIUM	208		4.57	F	200	102.1	75 - 125	
SODIUM	34900		9650		25000	105.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4824714
Report generated: 06/27/2016 11:06

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061289	Workgroup (AAB#):	WG574076
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574123	Initial Calibration Date:	24-JUN-2016 10:17

	WG574123-01		WG574123-02		WG574123-03		WG574123-04		WG574123-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000920	.1	0.00153	.2	0.00215	10	0.0811	20	0.159	.999969	
BERYLLIUM	0	0.000510	.0005	0.000790	.001	0.00116	.05	0.0467	.1	0.0919	.999879	
CALCIUM	0	0.000820	.1	0.00503	.2	0.00837	10	0.457	20	0.881	.999811	
IRON	0	-0.000100	.04	0.000570	.08	0.00116	4	0.0886	8	0.172	.999867	
MAGNESIUM	0	-0.000440	NA	NA	.2	0.000830	10	0.0815	20	0.157	.999846	
POTASSIUM	0	-0.0108	.5	0.0152	1	0.0397	50	3.07	100	5.95	.999864	
SELENIUM	0	-0.000160	NA	NA	.008	-0.000100	.4	0.00655	.8	0.0133	.999466	
SODIUM	0	-0.0319	.5	0.0316	1	0.0972	50	8.45	100	16.4	.999892	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4824722
Report generated: 27-JUN-2016 11:06

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061289	Workgroup (AAB#):	WG574076
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574249	Initial Calibration Date:	25-JUN-2016 12:36

	WG574249-01		WG574249-02		WG574249-03		WG574249-04		WG574249-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000800	.1	0.00148	.2	0.00220	10	0.0828	20	0.162	.99995	
BERYLLIUM	0	0.000480	.0005	0.000970	.001	0.00139	.05	0.0482	.1	0.0948	.999766	
CALCIUM	0	0.00288	.1	0.00582	.2	0.00931	10	0.466	20	0.917	.99989	
IRON	0	-0.000710	.04	0.000330	.08	0.00148	4	0.0965	8	0.191	.99933	
MAGNESIUM	0	-0.000260	NA	NA	.2	0.00109	10	0.0796	20	0.159	.99999	
POTASSIUM	0	-0.00661	.5	0.0195	1	0.0419	50	3.07	100	6.10	.999988	
SELENIUM	0	-0.000510	NA	NA	.008	-0.000340	.4	0.00649	.8	0.0134	.999238	
SODIUM	0	-0.0478	.5	0.0267	1	0.108	50	9.20	100	18.4	.99999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4824722
Report generated: 27-JUN-2016 11:06

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-07
Instrument ID: ICP-THERMO3
Run Time: 10:24
Method: 6010C
File ID: T3.062416.102444
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-THERI - 24-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.0052	F
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4824724
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-07
Instrument ID: ICP-THERMO3
Run Time: 12:43
Method: 6010C
File ID: T3.062516.124348
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-THERI - 25-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.0087	*
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4824724
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-13
Instrument ID: ICP-THERMO3
Run Time: 10:47
Method: 6010C
File ID: T3.062416.104746
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824727
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-19
Instrument ID: ICP-THERMO3
Run Time: 13:08
Method: 6010C
File ID: T3.062416.130845
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824727
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-21
Instrument ID: ICP-THERMO3
Run Time: 13:54
Method: 6010C
File ID: T3.062416.135419
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824727
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-23
Instrument ID: ICP-THERMO3
Run Time: 14:37
Method: 6010C
File ID: T3.062416.143703
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824727
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-27
Instrument ID: ICP-THERMO3
Run Time: 15:23
Method: 6010C
File ID: T3.062416.152346
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824727
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-13
Instrument ID: ICP-THERMO3
Run Time: 13:06
Method: 6010C
File ID: T3.062516.130641
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00482	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824727
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-19
Instrument ID: ICP-THERMO3
Run Time: 15:32
Method: 6010C
File ID: T3.062516.153248
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00412	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824727
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-21
Instrument ID: ICP-THERMO3
Run Time: 16:19
Method: 6010C
File ID: T3.062516.161940
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00879	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824727
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-44
Instrument ID: ICP-THERMO3
Run Time: 23:40
Method: 6010C
File ID: T3.062516.234025
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824727
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-48
Instrument ID: ICP-THERMO3
Run Time: 23:55
Method: 6010C
File ID: T3.062516.235530
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824727
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061289 Run Date: 06/24/2016 Sample ID: WG574123-06
Instrument ID: ICP-THERMO3 Run Time: 10:21 Method: 6010C
File ID: T3.062416.102118 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG574076 Cal ID: ICP-TH - 24-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0499	99.9	90 - 110	
Calcium		10	9.97	99.7	90 - 110	
Iron		4	4.01	100	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.4	101	90 - 110	
Selenium		.4	0.410	102	90 - 110	
Sodium		50	50.2	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4824723
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061289 Run Date: 06/25/2016 Sample ID: WG574249-06
Instrument ID: ICP-THERMO3 Run Time: 12:40 Method: 6010C
File ID: T3.062516.124009 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG574076 Cal ID: ICP-TH - 25-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0504	101	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.05	101	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.3	101	90 - 110	
Selenium		.4	0.400	100	90 - 110	
Sodium		50	50.1	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4824723
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-12
Instrument ID: ICP-THERMO3
Run Time: 10:44
Method: 6010C
File ID: T3.062416.104409
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0500	mg/L	100	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.08	mg/L	102	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.409	mg/L	102	90 - 110		
Sodium		50.0	50.8	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824726
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-18
Instrument ID: ICP-THERMO3
Run Time: 13:05
Method: 6010C
File ID: T3.062416.130507
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0505	mg/L	101	90 - 110		
Calcium		10.0	10.6	mg/L	106	90 - 110		
Iron		4.00	4.16	mg/L	104	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	53.3	mg/L	107	90 - 110		
Selenium		0.400	0.423	mg/L	106	90 - 110		
Sodium		50.0	52.9	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824726
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-20
Instrument ID: ICP-THERMO3
Run Time: 13:50
Method: 6010C
File ID: T3.062416.135042
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.60	mg/L	96.0	90 - 110		
Beryllium		0.0500	0.0470	mg/L	93.9	90 - 110		
Calcium		10.0	9.67	mg/L	96.7	90 - 110		
Iron		4.00	3.83	mg/L	95.8	90 - 110		
Magnesium		10.0	9.49	mg/L	94.9	90 - 110		
Potassium		50.0	49.1	mg/L	98.2	90 - 110		
Selenium		0.400	0.391	mg/L	97.8	90 - 110		
Sodium		50.0	48.8	mg/L	97.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824726
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-22
Instrument ID: ICP-THERMO3
Run Time: 14:33
Method: 6010C
File ID: T3.062416.143326
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0505	mg/L	101	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	4.19	mg/L	105	90 - 110		
Magnesium		10.0	10.5	mg/L	105	90 - 110		
Potassium		50.0	53.3	mg/L	107	90 - 110		
Selenium		0.400	0.417	mg/L	104	90 - 110		
Sodium		50.0	53.0	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824726
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-26
Instrument ID: ICP-THERMO3
Run Time: 15:20
Method: 6010C
File ID: T3.062416.152008
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0508	mg/L	102	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.13	mg/L	103	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	52.6	mg/L	105	90 - 110		
Selenium		0.400	0.416	mg/L	104	90 - 110		
Sodium		50.0	52.2	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824726
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-12
Instrument ID: ICP-THERMO3
Run Time: 13:03
Method: 6010C
File ID: T3.062516.130304
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0498	mg/L	99.6	90 - 110		
Calcium		10.0	9.94	mg/L	99.4	90 - 110		
Iron		4.00	4.00	mg/L	99.9	90 - 110		
Magnesium		10.0	9.92	mg/L	99.2	90 - 110		
Potassium		50.0	49.2	mg/L	98.4	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	49.3	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824726
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-18
Instrument ID: ICP-THERMO3
Run Time: 15:29
Method: 6010C
File ID: T3.062516.152911
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.5	mg/L	105	90 - 110		
Beryllium		0.0500	0.0522	mg/L	104	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.15	mg/L	104	90 - 110		
Magnesium		10.0	9.96	mg/L	99.6	90 - 110		
Potassium		50.0	50.6	mg/L	101	90 - 110		
Selenium		0.400	0.412	mg/L	103	90 - 110		
Sodium		50.0	51.2	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824726
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-20
Instrument ID: ICP-THERMO3
Run Time: 16:16
Method: 6010C
File ID: T3.062516.161603
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0524	mg/L	105	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.10	mg/L	102	90 - 110		
Magnesium		10.0	9.73	mg/L	97.3	90 - 110		
Potassium		50.0	49.1	mg/L	98.1	90 - 110		
Selenium		0.400	0.407	mg/L	102	90 - 110		
Sodium		50.0	49.9	mg/L	99.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824726
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-43
Instrument ID: ICP-THERMO3
Run Time: 23:36
Method: 6010C
File ID: T3.062516.233647
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0497	mg/L	99.5	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.06	mg/L	102	90 - 110		
Magnesium		10.0	9.72	mg/L	97.2	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	52.1	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824726
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-47
Instrument ID: ICP-THERMO3
Run Time: 23:51
Method: 6010C
File ID: T3.062516.235152
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0502	mg/L	100	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	4.08	mg/L	102	90 - 110		
Magnesium		10.0	9.81	mg/L	98.1	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.412	mg/L	103	90 - 110		
Sodium		50.0	51.8	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824726
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-08
Instrument ID: ICP-THERMO3
Run Time: 10:28
Method: 6010C
File ID: T3.062416.102843
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.175	mg/L	109	70 - 130		
Beryllium		0.00160	0.00162	mg/L	101	70 - 130		
Calcium		0.400	0.420	mg/L	105	70 - 130		
Iron		0.0800	0.0855	mg/L	107	70 - 130		
Magnesium		0.400	0.437	mg/L	109	70 - 130		
Potassium		0.800	0.954	mg/L	119	70 - 130		
Selenium		0.0160	0.0180	mg/L	112	70 - 130		
Sodium		0.400	0.448	mg/L	112	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824728
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-24
Instrument ID: ICP-THERMO3
Run Time: 14:41
Method: 6010C
File ID: T3.062416.144104
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.168	mg/L	105	70 - 130		
Beryllium		0.00160	0.00164	mg/L	103	70 - 130		
Calcium		0.400	0.416	mg/L	104	70 - 130		
Iron		0.0800	0.0993	mg/L	124	70 - 130		
Magnesium		0.400	0.414	mg/L	103	70 - 130		
Potassium		0.800	0.972	mg/L	121	70 - 130		
Selenium		0.0160	0.0132	mg/L	82.7	70 - 130		
Sodium		0.400	0.473	mg/L	118	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824728
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-34
Instrument ID: ICP-THERMO3
Run Time: 17:11
Method: 6010C
File ID: T3.062416.171114
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.171	mg/L	107	70 - 130		
Beryllium		0.00160	0.00166	mg/L	104	70 - 130		
Calcium		0.400	0.434	mg/L	109	70 - 130		
Iron		0.0800	0.0873	mg/L	109	70 - 130		
Magnesium		0.400	0.381	mg/L	95.2	70 - 130		
Potassium		0.800	0.824	mg/L	103	70 - 130		
Selenium		0.0160	0.0183	mg/L	115	70 - 130		
Sodium		0.400	0.490	mg/L	123	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824728
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-08
Instrument ID: ICP-THERMO3
Run Time: 12:47
Method: 6010C
File ID: T3.062516.124745
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.165	mg/L	103	70 - 130		
Beryllium		0.00160	0.00166	mg/L	104	70 - 130		
Calcium		0.400	0.414	mg/L	103	70 - 130		
Iron		0.0800	0.0939	mg/L	117	70 - 130		
Magnesium		0.400	0.441	mg/L	110	70 - 130		
Potassium		0.800	0.887	mg/L	111	70 - 130		
Selenium		0.0160	0.0204	mg/L	127	70 - 130		
Sodium		0.400	0.442	mg/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824728
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-26
Instrument ID: ICP-THERMO3
Run Time: 17:25
Method: 6010C
File ID: T3.062516.172540
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.163	mg/L	102	70 - 130		
Beryllium		0.00160	0.00172	mg/L	108	70 - 130		
Calcium		0.400	0.375	mg/L	93.8	70 - 130		
Iron		0.0800	0.0950	mg/L	119	70 - 130		
Potassium		0.800	0.714	mg/L	89.2	70 - 130		
Selenium		0.0160	0.0209	mg/L	131	70 - 130		*
Sodium		0.400	0.408	mg/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824728
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061289
Instrument ID: ICP-THERMO3
Sol. A : WG574123-10 **File ID:** T3.062416.103634
Sol. AB : WG574123-11 **File ID:** T3.062416.104027

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	272	109	250	274	110	
Beryllium	NS	-0.0000400	NS	0.250	0.246	98.4	
Calcium	250	256	102	250	255	102	
Iron	100	102	102	100	99.9	99.9	
Magnesium	250	260	104	250	256	102	
Potassium	NS	0.0930	NS	5.00	5.48	110	
Selenium	NS	0.00445	NS	0.250	0.267	107	
Sodium	NS	0.0388	NS	5.00	5.59	112	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4824725
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061289
Instrument ID: ICP-THERMO3
Sol. A : WG574249-10 **File ID:** T3.062516.125529
Sol. AB : WG574249-11 **File ID:** T3.062516.125921

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	266	106	250	268	107	
Beryllium	NS	0.000110	NS	0.250	0.245	98.0	
Calcium	250	244	97.6	250	247	98.8	
Iron	100	96.8	96.8	100	96.5	96.5	
Magnesium	250	249	99.6	250	249	99.6	
Potassium	NS	0.0533	NS	5.00	5.19	104	
Selenium	NS	-0.00224	NS	0.250	0.249	99.6	
Sodium	NS	0.0404	NS	5.00	5.32	106	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4824725
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061289
Instrument ID: ICP-THERMO3
Sol. A : WG574249-45 **File ID:** T3.062516.234420
Sol. AB : WG574249-46 **File ID:** T3.062516.234809

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	263	105	250	271	108	
Beryllium	NS	0.000140	NS	0.250	0.244	97.6	
Calcium	250	248	99.2	250	254	102	
Iron	100	95.6	95.6	100	96.1	96.1	
Magnesium	250	236	94.4	250	239	95.6	
Potassium	NS	-0.0460	NS	5.00	5.21	104	
Selenium	NS	-0.00782	NS	0.250	0.238	95.2	
Sodium	NS	0.0818	NS	5.00	5.50	110	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4824725
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061289 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824721
Report generated: 06/27/2016 11:06

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061289 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824721
Report generated: 06/27/2016 11:06

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061289 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824721
Report generated: 06/27/2016 11:06

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061289 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824721
Report generated: 06/27/2016 11:06

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061289 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824721
Report generated: 06/27/2016 11:06

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061289 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824721
Report generated: 06/27/2016 11:06

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061289 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824721
Report generated: 06/27/2016 11:06

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061289 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4824720
Report generated: 06/27/2016 11:06

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000141	0.050748	0.000000	1.000000
Al 308.215 {109}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000916	0.007866	0.000000	1.000000
As 189.042 {478}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000058	0.023675	0.000000	1.000000
B 249.678 {135}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000060	0.022039	0.000000	1.000000
Ba 455.403 { 74}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.014298	2.093262	0.000000	1.000000
Be 313.107 {108}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000510	0.898055	0.000000	1.000000
Ca 422.673 { 80}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000824	0.044581	0.000000	1.000000
Cd 228.802 {447}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000030	0.563251	0.000000	1.000000
Co 228.616 {447}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000034	0.344510	0.000000	1.000000
Cr 267.716 {126}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000180	0.055863	0.000000	1.000000
Cu 224.700 {450}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000060	0.121643	0.000000	1.000000
Fe 261.187 {129}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000103	0.021701	0.000000	1.000000
K 766.490 { 44}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.010819	0.060325	0.000000	1.000000
Li 670.784 { 50}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.007531	1.496173	0.000000	1.000000
Mg 279.079 {121}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000442	0.008016	0.000000	1.000000
Mn 257.610 {131}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000827	0.279912	0.000000	1.000000
Mo 202.030 {467}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000039	0.179523	0.000000	1.000000
Na 589.592 { 57}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.031897	0.166281	0.000000	1.000000
Ni 231.604 {446}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000651	0.129323	0.000000	1.000000
P 214.914 {457}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000172	0.012827	0.000000	1.000000
Pb 220.353 {453}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000520	0.058788	0.000000	1.000000
Sb 206.833 {463}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000001	0.030127	0.000000	1.000000
Se 196.090 {472}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000164	0.016794	0.000000	1.000000
Si 212.412 {459}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000911	0.038950	0.000000	1.000000
Sn 189.989 {477}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000052	0.066907	0.000000	1.000000
Sr 407.771 { 83}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.002037	3.549642	0.000000	1.000000
Ti 337.280 {100}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.001943	0.119996	0.000000	1.000000
Tl 190.856 {477}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000361	0.028102	0.000000	1.000000
V 292.402 {115}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000023	0.065920	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000153	0.391840	0.000000	1.000000
Zr 339.198 { 99}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.012098	2.809224	0.000000	1.000000

Approved: June 25, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999737	0.000003	0.002049	0.006830	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999969	0.000004	0.009025	0.030084	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999986	0.000000	0.003104	0.010346	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999939	0.000001	0.002779	0.009264	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999858	0.000224	0.000982	0.003272	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999879	0.000005	0.000094	0.000312	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999811	0.000055	0.038318	0.127728	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999763	0.000004	0.000260	0.000866	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999919	0.000006	0.000408	0.001359	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999801	0.000004	0.001181	0.003936	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999857	0.000007	0.001355	0.004518	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999867	0.000009	0.021737	0.072458	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999864	0.000316	0.090153	0.300511	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999907	0.000200	0.003625	0.012085	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999846	0.000014	0.078797	0.262658	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999412	0.000030	0.002338	0.007792	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999986	0.000006	0.000418	0.001395	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999892	0.000776	0.030119	0.100396	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999935	0.000005	0.001154	0.003846	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999988	0.000004	0.007248	0.024159	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999843	0.000003	0.003678	0.012262	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999953	0.000002	0.004278	0.014260	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999466	0.000002	0.006279	0.020930	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999584	0.000036	0.002252	0.007507	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999937	0.000005	0.000895	0.002983	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999850	0.000390	0.000401	0.001336	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999443	0.000025	0.006504	0.021681	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999820	0.000002	0.003079	0.010263	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999965	0.000003	0.000964	0.003213	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999941	0.000027	0.000206	0.000686	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999713	0.000427	0.000581	0.001936	OK.	1.000000	0.000000	1	0

Approved: June 25, 2016

Sample Name: S0 Acquired: 6/24/2016 10:02:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00014**	**.00092**	**-.00006**	**.00006**	**.01430**	**.00051**	**.00082**
Stddev	.00007	.00003	.00003	.00005	.00089	.00003	.00150
%RSD	48.462	3.7804	46.676	91.000	6.2407	5.9747	181.89
#1	-.00007	.00091	-.00009	.00011	.01533	.00048	-.00036
#2	-.00014	.00089	-.00003	.00007	.01383	.00054	.00251
#3	-.00021	.00095	-.00005	.00000	.01373	.00052	.00032

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00003**	**.00003**	**.00018**	**-.00006**	**-.00010**	**-.01082**	**-.00753**
Stddev	.00009	.00005	.00004	.00017	.00045	.00335	.00353
%RSD	281.39	147.40	23.426	287.67	438.41	30.962	46.865
#1	.00005	.00004	.00020	-.00025	.00041	-.00724	-.00439
#2	-.00003	-.00002	.00013	-.00002	-.00044	-.01389	-.00686
#3	-.00012	.00008	.00021	.00009	-.00028	-.01133	-.01135

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00044**	**.00083**	**-.00004**	**-.03189**	**-.00065**	**-.00017**	**-.00052**
Stddev	.00045	.00015	.00006	.00093	.00012	.00009	.00017
%RSD	102.79	17.791	163.60	2.9103	19.006	49.513	32.607
#1	-.00010	.00071	.00001	-.03192	-.00069	-.00027	-.00032
#2	-.00096	.00099	-.00002	-.03095	-.00051	-.00010	-.00062
#3	-.00026	.00079	-.00011	-.03280	-.00075	-.00015	-.00062

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00000**	**-.00016**	**.00091**	**.00005**	**.00204**	**-.00194**	**-.00036**
Stddev	.00012	.00004	.00007	.00002	.00021	.00013	.00002
%RSD	19810.	21.583	7.1930	34.140	10.449	6.4605	4.5673
#1	-.00014	-.00013	.00087	.00005	.00206	-.00182	-.00038
#2	.00005	-.00020	.00088	.00007	.00181	-.00194	-.00035
#3	.00009	-.00016	.00099	.00004	.00224	-.00207	-.00035

Approved: June 25, 2016

Sample Name: S0 Acquired: 6/24/2016 10:02:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00002	.00015	-.01209
Stddev	.00007	.00001	.00188
%RSD	312.68	7.9561	15.539
#1	.00011	.00015	-.01411
#2	-.00002	.00014	-.01039
#3	-.00002	.00017	-.01176
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10103.	63387.	3436.7
Stddev	24.	229.	8.8
%RSD	.23353	.36169	.25626
#1	10111.	63214.	3446.2
#2	10121.	63647.	3428.8
#3	10076.	63299.	3435.0

Approved: June 25, 2016

Sample Name: S1 Acquired: 6/24/2016 10:06:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00005**	**.00153**	**.03093**	**.00079**	**.00503**	**.00010**	**.00049**
Stddev	.00003	.00005	.00195	.00002	.00170	.00011	.00005
%RSD	59.232	2.9452	6.3135	3.1378	33.768	117.90	11.244
#1	-.00004	.00157	.02902	.00082	.00307	-.00000	.00053
#2	-.00008	.00153	.03085	.00078	.00607	.00007	.00051
#3	-.00003	.00148	.03292	.00077	.00594	.00022	.00042

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00047**	**.00031**	**.00057**	**.01522**	**.00155**	**.00132**	**.03160**
Stddev	.00005	.00001	.00017	.00200	.00074	.00003	.00575
%RSD	11.209	2.0951	30.554	13.113	47.893	2.1780	18.185
#1	.00046	.00031	.00053	.01296	.00101	.00135	.02748
#2	.00052	.00030	.00076	.01674	.00123	.00133	.02916
#3	.00042	.00031	.00042	.01597	.00239	.00129	.03817

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00014**	**.00081**	**-.00022**	**.00030**	**.00226**	**.00054**	**.03050**
Stddev	.00010	.00005	.00018	.00003	.00007	.00002	.00065
%RSD	73.955	5.5812	79.260	8.9775	2.9020	4.3963	2.1231
#1	-.00011	.00077	-.00030	.00033	.00229	.00052	.03078
#2	-.00005	.00086	-.00002	.00028	.00230	.00056	.02976
#3	-.00025	.00081	-.00035	.00030	.00218	.00052	.03096

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00144**	**.00052**	**.00324**	**.00445**
Stddev	.00042	.00004	.00013	.00179
%RSD	29.218	7.4619	4.0938	40.182
#1	-.00191	.00057	.00337	.00539
#2	-.00110	.00049	.00325	.00556
#3	-.00131	.00051	.00311	.00239

Approved: June 25, 2016

Sample Name: S1 Acquired: 6/24/2016 10:06:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10065.**	**62767.**	**3441.4**
Stddev	30.	97.	22.9
%RSD	.29930	.15510	.66663
#1	10069.	62771.	3417.8
#2	10093.	62861.	3463.7
#3	10033.	62667.	3442.7

Approved: June 25, 2016

Sample Name: S2 Acquired: 6/24/2016 10:10:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00021	.00215	.00010	.00026	.04762	.00116	.00837
Stddev	.00002	.00007	.00007	.00004	.00057	.00005	.00106
%RSD	8.9724	3.4344	65.774	15.619	1.1893	4.2144	12.640
#1	.00023	.00213	.00004	.00025	.04721	.00122	.00897
#2	.00020	.00223	.00018	.00022	.04739	.00114	.00715
#3	.00021	.00209	.00009	.00031	.04827	.00113	.00899

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00040	.00105	.00069	.00083	.00116	.03965	.01598
Stddev	.00005	.00003	.00003	.00008	.00031	.00217	.00181
%RSD	12.890	2.9404	4.0733	9.8734	26.550	5.4632	11.347
#1	.00035	.00103	.00067	.00092	.00083	.03746	.01389
#2	.00040	.00103	.00072	.00079	.00144	.03971	.01716
#3	.00045	.00108	.00068	.00077	.00121	.04179	.01688

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00083	.00238	.00276	.09724	.00041	.00174	-.00009
Stddev	.00012	.00062	.00011	.00164	.00010	.00006	.00030
%RSD	14.311	26.076	3.9026	1.6822	25.278	3.1866	350.41
#1	.00094	.00257	.00281	.09776	.00035	.00177	-.00007
#2	.00070	.00169	.00283	.09541	.00036	.00177	.00021
#3	.00086	.00289	.00264	.09856	.00053	.00168	-.00039

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00052	-.00010	.00385	.00103	.05810	-.00053	-.00015
Stddev	.00006	.00007	.00008	.00003	.00070	.00022	.00003
%RSD	12.430	68.938	2.1687	3.1112	1.2101	41.302	21.567
#1	.00055	-.00017	.00394	.00106	.05859	-.00045	-.00014
#2	.00056	-.00003	.00384	.00103	.05729	-.00036	-.00018
#3	.00045	-.00011	.00378	.00100	.05842	-.00077	-.00012

Approved: June 25, 2016

Sample Name: S2 Acquired: 6/24/2016 10:10:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00100	.00632	.02594
Stddev	.00007	.00019	.00102
%RSD	6.6145	2.9709	3.9200
#1	.00097	.00638	.02711
#2	.00108	.00648	.02521
#3	.00096	.00611	.02551
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10036.	62714.	3425.0
Stddev	5.	277.	24.9
%RSD	.04560	.44190	.72564
#1	10035.	62498.	3405.6
#2	10031.	62619.	3453.0
#3	10040.	63027.	3416.3

Approved: June 25, 2016

Sample Name: S3 Acquired: 6/24/2016 10:14:05 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02012**	**.08112**	**.00937**	**.01100**	**2.1577**	**.04667**	**.45680**	**.03089**
Stddev	.00014	.00067	.00024	.00003	.0127	.00048	.00088	.00088
%RSD	.68506	.82535	2.5122	.26795	.58663	1.0260	.19280	2.8481
#1	.02016	.08148	.00911	.01102	2.1723	.04686	.45715	.02988
#2	.02024	.08154	.00955	.01102	2.1508	.04702	.45579	.03151
#3	.01997	.08035	.00946	.01097	2.1500	.04612	.45745	.03127

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06952**	**.02847**	**.06168**	**.08857**	**3.0711**	**1.5176**	**.08149**	**.14484**
Stddev	.00185	.00019	.00161	.00089	.0148	.0183	.00050	.00149
%RSD	2.6617	.68366	2.6084	1.0060	.48208	1.2061	.60781	1.0306
#1	.06739	.02860	.05982	.08958	3.0854	1.5375	.08112	.14654
#2	.07070	.02858	.06252	.08789	3.0720	1.5016	.08130	.14374
#3	.07047	.02825	.06269	.08824	3.0558	1.5136	.08205	.14425

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.18057**	**8.4539**	**.06503**	**.12666**	**.02949**	**.03516**	**.00655**	**.20419**
Stddev	.00413	.0477	.00183	.00333	.00086	.00099	.00019	.00532
%RSD	2.2896	.56431	2.8080	2.6258	2.9031	2.8239	2.8275	2.6074
#1	.17586	8.5022	.06294	.12282	.02853	.03401	.00634	.19804
#2	.18358	8.4528	.06629	.12868	.02978	.03578	.00666	.20727
#3	.18229	8.4068	.06587	.12849	.03017	.03568	.00667	.20725

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06764**	**3.6392**	**.12025**	**.01285**	**.06639**	**.39780**	**2.8658**
Stddev	.00187	.0221	.00095	.00032	.00069	.00999	.0226
%RSD	2.7649	.60748	.79359	2.4638	1.0447	2.5111	.78950
#1	.06551	3.6628	.12131	.01249	.06673	.38631	2.8817
#2	.06902	3.6359	.11996	.01298	.06685	.40437	2.8758
#3	.06839	3.6189	.11946	.01308	.06559	.40274	2.8399

Approved: June 25, 2016

Sample Name: S3 Acquired: 6/24/2016 10:14:05 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9803.5	60605.	3302.4
Stddev	185.3	628.	25.0
%RSD	1.8907	1.0370	.75704
#1	10017.	60237.	3292.4
#2	9686.1	60248.	3283.9
#3	9707.3	61331.	3330.8

Approved: June 25, 2016

Sample Name: S4 Acquired: 6/24/2016 10:17:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04037	.15882	.01874	.02204	4.1509	.09188	.88125	.06147
Stddev	.00017	.00011	.00011	.00010	.0087	.00023	.00269	.00039
%RSD	.41570	.06765	.58871	.45251	.20975	.25568	.30549	.62850
#1	.04024	.15875	.01878	.02202	4.1571	.09190	.88218	.06177
#2	.04056	.15877	.01882	.02215	4.1547	.09211	.88335	.06161
#3	.04031	.15895	.01861	.02196	4.1410	.09164	.87821	.06104

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13710	.05562	.12100	.17176	5.9519	2.9563	.15745	.27789
Stddev	.00070	.00009	.00059	.00098	.0096	.0021	.00153	.00068
%RSD	.50874	.16610	.48875	.57160	.16058	.07181	.96992	.24355
#1	.13749	.05558	.12123	.17129	5.9624	2.9588	.15599	.27711
#2	.13751	.05557	.12144	.17289	5.9495	2.9553	.15904	.27832
#3	.13629	.05573	.12033	.17109	5.9438	2.9549	.15733	.27824

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.35800	16.431	.12763	.25198	.05815	.07137	.01334	.38448
Stddev	.00153	.049	.00061	.00022	.00023	.00008	.00003	.00032
%RSD	.42830	.29740	.47754	.08776	.39302	.10858	.22101	.08296
#1	.35959	16.449	.12796	.25213	.05792	.07142	.01337	.38462
#2	.35789	16.469	.12801	.25208	.05838	.07141	.01335	.38412
#3	.35653	16.376	.12693	.25172	.05815	.07128	.01331	.38471

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13295	7.0149	.23633	.02503	.13104	.77753	5.5495
Stddev	.00033	.0145	.00010	.00014	.00013	.00089	.0276
%RSD	.24509	.20672	.04320	.55584	.09686	.11476	.49668
#1	.13312	7.0177	.23635	.02504	.13089	.77820	5.5811
#2	.13314	7.0278	.23621	.02517	.13109	.77787	5.5303
#3	.13257	6.9992	.23641	.02489	.13113	.77652	5.5370

Approved: June 25, 2016

Sample Name: S4 Acquired: 6/24/2016 10:17:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9688.2**	**60219.**	**3370.4**
Stddev	7.1	189.	23.3
%RSD	.07324	.31409	.69082
#1	9691.6	60213.	3345.2
#2	9693.0	60033.	3375.0
#3	9680.0	60411.	3391.1

Approved: June 25, 2016

Sample Name: ICV Acquired: 6/24/2016 10:21:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39846**	**10.055**	**.40187**	**.50195**	**1.0043**	**.04994**	**9.9690**	**.05093**
Stddev	.00107	.004	.00071	.00352	.0049	.00015	.0985	.00023
%RSD	.26882	.04093	.17558	.70141	.48280	.30027	.98769	.44509
#1	.39801	10.053	.40263	.49813	1.0045	.04992	9.9634	.05069
#2	.39768	10.052	.40124	.50265	1.0091	.04980	10.070	.05113
#3	.39968	10.059	.40172	.50506	.99939	.05010	9.8735	.05098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20275**	**.50186**	**.50806**	**4.0077**	**50.412**	**.99409**	**10.076**	**.50349**
Stddev	.00040	.00174	.00074	.0287	.156	.00370	.047	.00310
%RSD	.19601	.34705	.14641	.71708	.31025	.37246	.46653	.61637
#1	.20246	.50009	.50763	4.0406	50.449	.99815	10.023	.50004
#2	.20321	.50191	.50892	3.9950	50.546	.99323	10.093	.50606
#3	.20259	.50357	.50763	3.9874	50.240	.99090	10.113	.50436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0161**	**50.208**	**.50900**	**10.102**	**.50737**	**1.1976**	**.40954**	**5.2491**
Stddev	.0035	.189	.00106	.014	.00059	.0046	.00351	.0132
%RSD	.34222	.37709	.20816	.13865	.11567	.38093	.85796	.25182
#1	1.0181	50.185	.50781	10.089	.50756	1.1956	.40737	5.2341
#2	1.0182	50.408	.50932	10.117	.50784	1.2028	.40767	5.2590
#3	1.0121	50.031	.50986	10.099	.50671	1.1944	.41360	5.2542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: ICV Acquired: 6/24/2016 10:21:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0142**	**1.0055**	**1.0016**	**.51308**	**1.0042**	**1.0176**	**1.0099**
Stddev	.0008	.0052	.0045	.00359	.0054	.0023	.0053
%RSD	.07353	.51381	.45332	.69940	.53899	.22236	.52327
#1	1.0146	1.0049	1.0056	.51163	1.0037	1.0169	1.0108
#2	1.0147	1.0110	.99666	.51043	.99912	1.0202	1.0042
#3	1.0134	1.0007	1.0027	.51716	1.0099	1.0158	1.0147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9784.6**	**61155.**	**3360.6**
Stddev	16.4	126.	16.3
%RSD	.16756	.20531	.48534
#1	9800.9	61010.	3348.1
#2	9785.0	61229.	3379.0
#3	9768.1	61226.	3354.6

Approved: June 25, 2016

Sample Name: ICB Acquired: 6/24/2016 10:24:44 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00039	.00064	.00491	.00035	-.00004	.01970	-.00008
Stddev	.00118	.00395	.00185	.00079	.00095	.00004	.02171	.00007
%RSD	1355.8	1016.1	287.94	16.133	270.92	92.692	110.19	83.262
#1	.00054	-.00464	.00266	.00474	.00126	-.00001	.02755	-.00005
#2	-.00125	.00030	-.00097	.00577	-.00064	-.00002	.03640	-.00016
#3	.00097	.00318	.00023	.00421	.00044	-.00008	-.00484	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00131	-.00137	.02320	.06358	-.00066	.03856	-.00312
Stddev	.00017	.00055	.00043	.00941	.08768	.00266	.00747	.00261
%RSD	51.480	41.866	31.575	40.581	137.91	406.13	19.360	83.590
#1	-.00049	.00166	-.00107	.01306	.06334	-.00147	.03003	-.00355
#2	-.00033	.00160	-.00186	.03167	.15137	-.00281	.04179	-.00549
#3	-.00015	.00068	-.00116	.02486	-.02399	.00232	.04387	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00441	.05025	.00065	-.00381	-.00087	.00778	.00520	.00608
Stddev	.00033	.01048	.00078	.00461	.00397	.00208	.00680	.00201
%RSD	7.4861	20.853	119.99	121.10	458.20	26.759	130.76	33.156
#1	.00405	.05291	.00003	-.00874	-.00277	.00736	.00296	.00721
#2	.00448	.03870	.00040	.00039	.00370	.01003	-.00020	.00727
#3	.00470	.05914	.00153	-.00306	-.00353	.00593	.01285	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: ICB Acquired: 6/24/2016 10:24:44 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00012**	**.00094**	**.00181**	**-.00101**	**.00060**	**.00145**
Stddev	.00042	.00009	.00041	.00207	.00005	.00020	.00038
%RSD	513.90	78.925	43.774	114.17	4.9873	33.766	26.340
#1	.00040	.00003	.00072	-.00054	-.00105	.00057	.00107
#2	-.00028	.00022	.00068	.00334	-.00102	.00042	.00183
#3	-.00036	.00011	.00141	.00262	-.00096	.00082	.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9828.6**	**62200.**	**3394.8**
Stddev	28.2	217.	16.2
%RSD	.28655	.34911	.47848
#1	9855.6	62450.	3410.7
#2	9830.8	62058.	3378.2
#3	9799.4	62092.	3395.6

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:28:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00861	.17456	.00875	.08415	.00845	.00162	.42018	.00080
Stddev	.00241	.00320	.00584	.00044	.00062	.00010	.04537	.00016
%RSD	28.028	1.8340	66.707	.52598	7.3619	6.0745	10.799	19.768
#1	.00915	.17680	.01356	.08464	.00808	.00156	.43983	.00091
#2	.00598	.17599	.00226	.08403	.00809	.00173	.36829	.00086
#3	.01071	.17089	.01043	.08378	.00916	.00156	.45241	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00400	.00560	.00345	.08548	.95350	.08105	.43655	.00707
Stddev	.00008	.00034	.00088	.01230	.04581	.00390	.09350	.00382
%RSD	2.0075	6.1076	25.604	14.389	4.8041	4.8127	21.418	54.018
#1	.00403	.00571	.00253	.09530	.99396	.07722	.34739	.00473
#2	.00391	.00522	.00353	.07168	.96278	.08091	.42840	.01148
#3	.00406	.00588	.00429	.08946	.90376	.08502	.53386	.00500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00937	.44836	.01641	.81013	.00755	.08949	.01796	.80576
Stddev	.00033	.00782	.00043	.01533	.00353	.00603	.00226	.00882
%RSD	3.5349	1.7431	2.6293	1.8922	46.785	6.7340	12.603	1.0947
#1	.00911	.45731	.01596	.82200	.00588	.09248	.01611	.81287
#2	.00974	.44487	.01647	.81558	.01161	.09343	.02049	.80853
#3	.00925	.44289	.01682	.79283	.00517	.08255	.01729	.79589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:28:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41092**	**.04172**	**.02043**	**.15548**	**.00810**	**.01698**	**.04605**
Stddev	.00936	.00016	.00448	.00254	.00066	.00050	.00187
%RSD	2.2770	.37475	21.916	1.6360	8.1067	2.9288	4.0649
#1	.41622	.04190	.02523	.15718	.00756	.01728	.04465
#2	.41644	.04163	.01969	.15671	.00791	.01725	.04533
#3	.40012	.04164	.01637	.15256	.00883	.01640	.04818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9545.8**	**59931.**	**3275.5**
Stddev	15.6	83.	34.7
%RSD	.16333	.13820	1.0584
#1	9534.4	59838.	3252.2
#2	9539.4	59961.	3315.3
#3	9563.5	59995.	3258.9

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:32:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02155	.40824	.02077	.20167	.02174	.00400	1.0366	.00202
Stddev	.00054	.00443	.00281	.00124	.00028	.00001	.0243	.00009
%RSD	2.5225	1.0863	13.516	.61328	1.2824	.22063	2.3424	4.3173
#1	.02133	.41154	.02394	.20052	.02183	.00399	1.0194	.00205
#2	.02115	.40999	.01859	.20150	.02142	.00401	1.0644	.00192
#3	.02216	.40320	.01978	.20298	.02196	.00400	1.0260	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00994	.01113	.01102	.16765	2.1953	.20551	1.0506	.01921
Stddev	.00018	.00047	.00052	.00874	.0565	.00363	.0388	.00199
%RSD	1.8457	4.1791	4.7625	5.2113	2.5738	1.7653	3.6929	10.372
#1	.01014	.01147	.01043	.15847	2.1428	.20211	1.0170	.02151
#2	.00990	.01060	.01123	.17586	2.2551	.20509	1.0931	.01818
#3	.00978	.01132	.01141	.16862	2.1879	.20933	1.0419	.01794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02056	1.0699	.04161	2.0283	.02093	.22105	.04598	1.9872
Stddev	.00073	.0134	.00029	.0213	.00141	.00521	.00230	.0146
%RSD	3.5426	1.2493	.69643	1.0505	6.7264	2.3551	5.0056	.73437
#1	.02134	1.0745	.04129	2.0517	.02096	.22638	.04821	1.9992
#2	.02046	1.0548	.04165	2.0232	.01951	.21598	.04361	1.9913
#3	.01989	1.0803	.04187	2.0101	.02232	.22080	.04611	1.9709
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:32:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0190**	**.10349**	**.06088**	**.38102**	**.01945**	**.04193**	**.10461**
Stddev	.0194	.00012	.00319	.00475	.00050	.00058	.00065
%RSD	1.9018	.11797	5.2343	1.2466	2.5499	1.3820	.62471
#1	1.0324	.10361	.06403	.38543	.01945	.04208	.10441
#2	1.0279	.10348	.06095	.38164	.01995	.04242	.10534
#3	.99680	.10337	.05766	.37599	.01896	.04129	.10408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9527.9**	**60013.**	**3283.4**
Stddev	15.1	148.	21.9
%RSD	.15821	.24736	.66596
#1	9513.0	59863.	3269.8
#2	9527.6	60160.	3271.8
#3	9543.1	60017.	3308.6

Approved: June 25, 2016

Sample Name: ICSA Acquired: 6/24/2016 10:36:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	272.29	-.00639	.01187	.00097	-.00004	255.70	-.00011
Stddev	.00186	.14	.00204	.00102	.00103	.00005	.88	.00012
%RSD	388.65	.05142	31.923	8.6029	106.35	111.27	.34460	113.29
#1	-.00160	272.44	-.00702	.01157	.00211	-.00001	256.63	-.00021
#2	.00199	272.24	-.00411	.01301	.00068	-.00002	255.62	.00003
#3	.00104	272.17	-.00804	.01104	.00011	-.00009	254.87	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00172	.00015	-.00116	101.53	.09300	.00567	259.96	-.00382
Stddev	.00042	.00130	.00167	.28	.03409	.00366	.64	.00294
%RSD	24.472	881.01	143.42	.27829	36.657	64.638	.24529	76.986
#1	-.00152	-.00007	-.00240	101.84	.05558	.00951	260.50	-.00473
#2	-.00143	-.00103	.00073	101.29	.10113	.00529	260.13	-.00620
#3	-.00220	.00155	-.00182	101.47	.12229	.00221	259.26	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.03878	-.00045	.04376	.00245	-.00458	.00445	.01844
Stddev	.00046	.04600	.00064	.01101	.00539	.00310	.00348	.00549
%RSD	287.16	118.61	140.72	25.160	220.05	67.775	78.148	29.762
#1	.00025	.00054	.00028	.04277	.00150	-.00104	.00050	.01603
#2	-.00065	.08983	-.00075	.03327	.00825	-.00682	.00580	.01457
#3	-.00008	.02597	-.00089	.05522	-.00240	-.00589	.00705	.02472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: ICSA Acquired: 6/24/2016 10:36:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00019	-.01134	-.00093	-.00397	-.00488	.00384
Stddev	.00032	.00049	.00588	.00258	.00006	.00039	.00038
%RSD	95.122	259.22	51.833	278.90	1.5390	7.9827	9.8011
#1	.00019	.00071	-.01724	.00196	-.00401	-.00532	.00366
#2	.00071	-.00024	-.00549	-.00301	-.00400	-.00461	.00427
#3	.00012	.00009	-.01128	-.00172	-.00390	-.00469	.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8869.1	55471.	3153.2
Stddev	26.5	151.	18.0
%RSD	.29867	.27155	.57209
#1	8897.8	55567.	3139.7
#2	8845.6	55550.	3146.3
#3	8864.0	55298.	3173.7

Approved: June 25, 2016

Sample Name: ICSAB Acquired: 6/24/2016 10:40:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52801	273.86	.25914	.01325	.26102	.24578	255.40	.50739
Stddev	.00250	.16	.00666	.00063	.00070	.00039	.53	.00146
%RSD	.47355	.05748	2.5695	4.7909	.26706	.16053	.20826	.28726
#1	.52830	274.03	.26069	.01398	.26152	.24535	255.50	.50785
#2	.52537	273.71	.26489	.01290	.26131	.24586	254.82	.50857
#3	.53035	273.85	.25184	.01286	.26022	.24613	255.87	.50576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.24727	.25565	.25562	99.861	5.4779	.00519	256.26	.25260
Stddev	.00097	.00095	.00265	.277	.0348	.00184	.86	.00168
%RSD	.39106	.37321	1.0376	.27690	.63446	35.421	.33443	.66352
#1	.24802	.25466	.25814	99.853	5.4700	.00385	255.90	.25222
#2	.24762	.25656	.25586	99.588	5.5160	.00443	255.64	.25443
#3	.24618	.25572	.25285	100.14	5.4478	.00728	257.24	.25115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	5.5858	.49274	.02117	.50583	.50989	.26678	.01309
Stddev	.00050	.0197	.00095	.01408	.00041	.00290	.00610	.00127
%RSD	250.13	.35306	.19217	66.536	.08120	.56902	2.2850	9.6691
#1	.00037	5.6063	.49240	.00688	.50630	.51290	.26722	.01358
#2	-.00039	5.5669	.49381	.02158	.50553	.50963	.27265	.01404
#3	-.00058	5.5841	.49200	.03503	.50566	.50712	.26048	.01165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: ICSAB Acquired: 6/24/2016 10:40:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.00067	-.01040	.47266	.25528	.50449	.00315
Stddev	.00100	.00032	.00325	.00524	.00094	.00232	.00022
%RSD	58.680	47.423	31.248	1.1093	.36860	.45903	6.9061
#1	.00125	.00096	-.01186	.47276	.25634	.50607	.00293
#2	.00102	.00072	-.01267	.47786	.25494	.50556	.00318
#3	.00286	.00033	-.00668	.46737	.25455	.50183	.00336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8976.9	56220.	3187.5
Stddev	14.0	172.	27.3
%RSD	.15560	.30511	.85579
#1	8966.6	56386.	3171.0
#2	8992.8	56232.	3219.0
#3	8971.4	56043.	3172.5

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 10:44:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40510	10.227	.40997	.50470	1.0199	.05000	10.224	.05209
Stddev	.00259	.020	.00313	.00376	.0032	.00018	.050	.00003
%RSD	.63884	.19087	.76260	.74531	.31908	.36523	.48810	.05352
#1	.40303	10.211	.40694	.50216	1.0162	.04979	10.170	.05206
#2	.40800	10.220	.40978	.50293	1.0222	.05008	10.235	.05212
#3	.40426	10.248	.41318	.50902	1.0213	.05013	10.268	.05208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20659	.50266	.51958	4.0815	51.148	1.0118	10.141	.51100
Stddev	.00025	.00146	.00022	.0426	.163	.0071	.045	.00204
%RSD	.12249	.29059	.04172	1.0445	.31821	.70440	.43990	.39976
#1	.20659	.50117	.51956	4.0379	50.961	1.0054	10.140	.50966
#2	.20684	.50409	.51937	4.1230	51.259	1.0106	10.186	.51335
#3	.20634	.50270	.51980	4.0835	51.225	1.0195	10.097	.50999
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0360	50.833	.51458	10.241	.51207	1.2224	.40899	5.3321
Stddev	.0063	.180	.00026	.014	.00288	.0026	.00371	.0135
%RSD	.60708	.35445	.05040	.13553	.56209	.21445	.90595	.25328
#1	1.0403	50.639	.51460	10.242	.51048	1.2194	.41231	5.3186
#2	1.0389	50.864	.51483	10.254	.51034	1.2245	.40499	5.3456
#3	1.0288	50.996	.51431	10.227	.51539	1.2232	.40965	5.3320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 10:44:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0297**	**1.0232**	**1.0245**	**.52009**	**1.0074**	**1.0340**	**1.0135**
Stddev	.0029	.0039	.0041	.00364	.0035	.0016	.0058
%RSD	.27812	.38337	.40197	.69967	.34932	.15074	.57645
#1	1.0298	1.0187	1.0198	.51637	1.0034	1.0332	1.0152
#2	1.0325	1.0257	1.0262	.52364	1.0085	1.0358	1.0070
#3	1.0267	1.0252	1.0274	.52025	1.0102	1.0330	1.0183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9522.9**	**60073.**	**3307.5**
Stddev	11.7	184.	13.2
%RSD	.12286	.30629	.39835
#1	9509.8	60132.	3293.3
#2	9526.4	59867.	3319.3
#3	9532.4	60221.	3310.0

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 10:47:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	-.00231	.00174	.00317	.00089	.00008	.01478	-.00009
Stddev	.00098	.00197	.00138	.00099	.00051	.00008	.01897	.00016
%RSD	1615.6	85.585	79.150	31.308	57.430	97.913	128.33	176.75
#1	.00074	-.00458	.00332	.00208	.00145	.00015	-.00627	-.00026
#2	.00050	-.00127	.00081	.00403	.00044	.00008	.02007	-.00007
#3	-.00106	-.00107	.00109	.00339	.00079	.00000	.03055	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.00201	-.00144	.01198	.09764	.00160	-.01376	-.00139
Stddev	.00007	.00062	.00140	.00633	.05541	.00323	.09391	.00206
%RSD	9.5195	30.966	97.276	52.810	56.748	201.98	682.68	147.81
#1	-.00064	.00243	-.00111	.01172	.03926	.00278	.06859	-.00281
#2	-.00066	.00129	-.00023	.00579	.14949	-.00205	-.11603	-.00233
#3	-.00076	.00231	-.00297	.01844	.10416	.00406	.00617	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	.05554	.00020	-.00275	-.00017	.00433	.00267	.00326
Stddev	.00008	.01502	.00042	.00646	.00019	.00156	.00847	.00120
%RSD	2.3629	27.048	205.82	234.70	111.96	35.900	317.53	36.710
#1	.00322	.04802	.00003	.00456	-.00027	.00254	.00057	.00458
#2	.00336	.07283	-.00010	-.00514	.00005	.00529	.01198	.00225
#3	.00323	.04576	.00069	-.00769	-.00029	.00517	-.00456	.00295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 10:47:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00050**	**-.00470**	**-.00050**	**-.00052**	**.00020**	**.00116**
Stddev	.00046	.00047	.00508	.00198	.00127	.00011	.00086
%RSD	806.59	93.281	108.17	398.14	242.75	53.066	73.939
#1	.00001	.00104	-.00897	.00149	-.00184	.00011	.00135
#2	.00036	.00017	-.00606	-.00052	-.00043	.00032	.00022
#3	-.00055	.00030	.00092	-.00246	.00070	.00017	.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9455.5**	**60247.**	**3262.6**
Stddev	21.9	389.	18.3
%RSD	.23119	.64505	.56229
#1	9449.8	59825.	3242.4
#2	9479.6	60328.	3267.4
#3	9437.0	60589.	3278.1

Approved: June 25, 2016

Sample Name: PBS DH Acquired: 6/24/2016 10:51:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.06424	.00963	.02920	.00211	-.00012	.91755	.00095
Stddev	.00146	.00403	.00255	.00180	.00069	.00002	.02625	.00023
%RSD	154.86	6.2780	26.453	6.1638	32.462	16.135	2.8607	24.438
#1	.00027	.06611	.00687	.03111	.00143	-.00014	.93724	.00119
#2	.00262	.05961	.01011	.02753	.00212	-.00010	.92766	.00096
#3	-.00006	.06700	.01190	.02897	.00280	-.00012	.88775	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.00196	.02606	.05611	.86754	-.00266	2.2157	.00096
Stddev	.00046	.00074	.00067	.01940	.03735	.00126	.0698	.00076
%RSD	132.65	37.622	2.5777	34.579	4.3057	47.393	3.1523	79.295
#1	-.00064	.00148	.02576	.06271	.88691	-.00288	2.1420	.00166
#2	.00018	.00281	.02683	.07136	.89123	-.00379	2.2810	.00015
#3	-.00057	.00159	.02558	.03427	.82448	-.00130	2.2241	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00347	1.2358	.00309	.40462	.00290	.01813	.08932	.52615
Stddev	.00027	.0193	.00147	.02012	.00064	.00254	.00325	.01166
%RSD	7.8234	1.5654	47.492	4.9731	22.045	14.035	3.6331	2.2168
#1	.00357	1.2508	.00188	.42577	.00296	.01803	.09153	.53855
#2	.00367	1.2140	.00472	.40239	.00223	.02071	.09083	.52450
#3	.00316	1.2428	.00266	.38571	.00351	.01563	.08560	.51539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBS DH Acquired: 6/24/2016 10:51:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01154	.00411	.00342	-.03779	-.00138	1.3066	.00905
Stddev	.00028	.00050	.00647	.00170	.00059	.0332	.00154
%RSD	2.4661	12.170	189.43	4.4933	42.724	2.5423	17.055
#1	.01162	.00444	.00927	-.03729	-.00161	1.3427	.00767
#2	.01122	.00436	-.00353	-.03639	-.00071	1.2998	.00877
#3	.01177	.00354	.00451	-.03968	-.00182	1.2773	.01072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9550.6	62753.	3709.8
Stddev	143.7	354.	18.2
%RSD	1.5048	.56355	.49089
#1	9384.7	62418.	3722.3
#2	9637.3	62720.	3688.9
#3	9629.7	63122.	3718.1

Approved: June 25, 2016

Sample Name: LCSS DH Acquired: 6/24/2016 10:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18247	4.5986	.19429	.89801	.50201	.02364	6.0280	.02381
Stddev	.00498	.0862	.00294	.01488	.00719	.00048	.0822	.00026
%RSD	2.7299	1.8745	1.5140	1.6566	1.4323	2.0299	1.3633	1.0767
#1	.18767	4.6908	.19687	.91506	.49496	.02417	5.9363	.02410
#2	.18199	4.5849	.19109	.89128	.50174	.02351	6.0524	.02372
#3	.17774	4.5200	.19490	.88769	.50933	.02323	6.0952	.02362
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09575	.24396	.26604	2.0685	25.217	.49155	7.2727	.24507
Stddev	.00128	.00454	.00424	.0072	.406	.00739	.2108	.00531
%RSD	1.3405	1.8602	1.5932	.34707	1.6111	1.5036	2.8983	2.1657
#1	.09698	.24884	.27087	2.0602	24.814	.48835	7.0584	.24165
#2	.09442	.24317	.26294	2.0726	25.211	.48631	7.2799	.24237
#3	.09586	.23987	.26432	2.0727	25.626	.50001	7.4798	.25118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49901	25.673	.23896	5.1500	.23582	.55555	.23212	3.3580
Stddev	.00666	.317	.00299	.0593	.00138	.00716	.00897	.0420
%RSD	1.3352	1.2341	1.2511	1.1512	.58344	1.2890	3.8646	1.2518
#1	.50607	25.359	.24230	5.2165	.23738	.56336	.24189	3.4044
#2	.49283	25.668	.23655	5.1025	.23531	.54930	.22426	3.3223
#3	.49814	25.992	.23802	5.1310	.23477	.55398	.23021	3.3474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSS DH Acquired: 6/24/2016 10:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47087**	**.50955**	**.50009**	**.22590**	**.48434**	**2.0632**	**.00627**
Stddev	.00683	.00732	.00690	.00326	.01049	.0277	.00044
%RSD	1.4508	1.4356	1.3790	1.4427	2.1662	1.3435	7.0255
#1	.47818	.50245	.49214	.22809	.49569	2.0928	.00585
#2	.46464	.50912	.50437	.22215	.48231	2.0378	.00625
#3	.46981	.51706	.50378	.22746	.47500	2.0590	.00673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9997.3**	**62835.**	**3576.8**
Stddev	90.8	1056.	48.3
%RSD	.90842	1.6801	1.3504
#1	9896.1	61710.	3631.4
#2	10072.	62993.	3559.4
#3	10024.	63803.	3539.7

Approved: June 25, 2016

Sample Name: LCSS DP Acquired: 6/24/2016 11:02:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.17820**	**4.3366**	**.22875**	**.90184**	**.50529**	**.02446**	**5.8810**	**.02577**
Stddev	.00193	.0746	.01418	.01394	.01186	.00029	.1832	.00151
%RSD	1.0838	1.7190	6.1991	1.5457	2.3469	1.1886	3.1144	5.8704
#1	.17769	4.3180	.24506	.90296	.49226	.02426	5.6858	.02746
#2	.17657	4.2731	.22184	.88737	.51544	.02431	6.0491	.02530
#3	.18033	4.4187	.21935	.91519	.50818	.02479	5.9081	.02455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10444**	**.24563**	**.28336**	**1.9956**	**24.666**	**.49175**	**7.0829**	**.24263**
Stddev	.00645	.00190	.01874	.0724	.577	.01385	.2327	.00720
%RSD	6.1730	.77249	6.6147	3.6300	2.3398	2.8160	3.2852	2.9669
#1	.11189	.24455	.30494	1.9215	24.049	.47780	6.8155	.23468
#2	.10090	.24453	.27395	2.0663	25.192	.50549	7.1939	.24871
#3	.10054	.24782	.27118	1.9991	24.758	.49196	7.2394	.24449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55730**	**25.233**	**.26065**	**5.6927**	**.24891**	**.61155**	**.33091**	**3.1863**
Stddev	.03375	.569	.01436	.3577	.01270	.03374	.01816	.1852
%RSD	6.0554	2.2563	5.5090	6.2841	5.1039	5.5171	5.4865	5.8116
#1	.59622	24.626	.27718	6.1055	.26343	.65012	.35188	3.3998
#2	.53962	25.755	.25355	5.4986	.23984	.59708	.32033	3.0888
#3	.53608	25.317	.25122	5.4739	.24345	.58746	.32053	3.0702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSS DP Acquired: 6/24/2016 11:02:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51198**	**.51153**	**.50880**	**.21284**	**.49128**	**2.1277**	**.00181**
Stddev	.03023	.01298	.01459	.01301	.00684	.1239	.00013
%RSD	5.9037	2.5381	2.8677	6.1112	1.3917	5.8220	7.2522
#1	.54684	.49772	.49512	.22747	.49101	2.2706	.00196
#2	.49599	.52349	.52416	.20844	.48458	2.0612	.00173
#3	.49310	.51336	.50711	.20260	.49825	2.0512	.00173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9072.1**	**62124.**	**3651.9**
Stddev	334.9	431.	66.7
%RSD	3.6913	.69305	1.8269
#1	8685.5	62374.	3723.4
#2	9261.7	62371.	3591.3
#3	9269.2	61627.	3640.9

Approved: June 25, 2016

Sample Name: L1606114301 Acquired: 6/24/2016 11:06:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00340	.63384	.00605	.03311	.02504	-.00013	1.8306	.00360
Stddev	.00146	.01591	.00255	.00247	.00039	.00009	.0364	.00013
%RSD	42.981	2.5096	42.114	7.4636	1.5650	72.615	1.9881	3.6185
#1	.00487	.64708	.00405	.03597	.02496	-.00022	1.8648	.00356
#2	.00194	.61620	.00892	.03168	.02547	-.00004	1.8345	.00375
#3	.00340	.63825	.00519	.03170	.02471	-.00013	1.7924	.00350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.05627	.80386	5.1093	1.0547	.00294	1.5234	.06438
Stddev	.00009	.00071	.01373	.0178	.0718	.00145	.0795	.00165
%RSD	5.5825	1.2566	1.7075	.34819	6.8037	49.424	5.2181	2.5676
#1	.00161	.05677	.81424	5.0951	1.0867	.00418	1.5850	.06354
#2	.00168	.05546	.80905	5.1293	1.1049	.00329	1.5515	.06628
#3	.00150	.05659	.78830	5.1035	.97252	.00134	1.4337	.06332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00632	1.2820	.04272	.30849	.10441	.02066	.07677	.84241
Stddev	.00030	.0102	.00117	.00874	.00199	.00387	.00489	.01140
%RSD	4.8199	.79829	2.7325	2.8327	1.9073	18.733	6.3709	1.3529
#1	.00599	1.2908	.04257	.31674	.10484	.02431	.07533	.85254
#2	.00639	1.2708	.04396	.30939	.10616	.02107	.08222	.84461
#3	.00659	1.2845	.04164	.29933	.10225	.01660	.07276	.83007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114301 Acquired: 6/24/2016 11:06:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01737	.00705	.05358	-.03179	.00265	5.9842	.00421
Stddev	.00159	.00017	.00866	.00194	.00017	.0953	.00010
%RSD	9.1419	2.4404	16.162	6.1073	6.4079	1.5932	2.3093
#1	.01793	.00724	.04586	-.03088	.00248	6.0574	.00413
#2	.01859	.00700	.06294	-.03048	.00266	6.0188	.00432
#3	.01557	.00691	.05193	-.03402	.00282	5.8764	.00418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9433.8	62273.	3673.3
Stddev	13.8	108.	33.0
%RSD	.14593	.17345	.89868
#1	9423.3	62153.	3665.0
#2	9449.4	62303.	3645.2
#3	9428.7	62363.	3709.6

Approved: June 25, 2016

Sample Name: L1606114302 Acquired: 6/24/2016 11:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.70974	.00483	.03211	.03431	-.00008	3.7526	.00880
Stddev	.00086	.00429	.00488	.00269	.00095	.00003	.0801	.00018
%RSD	286.06	.60458	101.04	8.3916	2.7576	37.081	2.1342	2.0709
#1	.00079	.71454	.00872	.03444	.03386	-.00010	3.7049	.00896
#2	.00080	.70628	.00640	.03273	.03367	-.00010	3.7078	.00884
#3	-.00069	.70840	-.00064	.02916	.03539	-.00005	3.8450	.00860
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03006	.01986	.07908	1.9614	1.7476	.00189	1.7739	.07217
Stddev	.00057	.00040	.00176	.0337	.0301	.00072	.0437	.00266
%RSD	1.8855	2.0050	2.2306	1.7184	1.7202	38.094	2.4665	3.6877
#1	.02997	.01958	.08079	1.9631	1.7210	.00189	1.7325	.07238
#2	.03067	.01968	.07918	1.9269	1.7417	.00118	1.8197	.06941
#3	.02955	.02032	.07727	1.9943	1.7802	.00262	1.7695	.07472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	3.1867	.29445	.97828	.08164	.18406	.05191	.60601
Stddev	.00039	.0400	.00282	.02017	.00359	.00750	.00201	.00524
%RSD	25.606	1.2539	.95732	2.0615	4.3941	4.0727	3.8629	.86420
#1	.00122	3.1678	.29637	.99318	.08425	.18826	.05038	.60880
#2	.00138	3.1598	.29576	.98632	.08312	.18852	.05418	.60926
#3	.00195	3.2326	.29122	.95533	.07755	.17541	.05116	.59997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114302 Acquired: 6/24/2016 11:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03851	.01220	.05871	-.02123	.00148	.92404	.00252
Stddev	.00125	.00043	.00052	.00163	.00043	.01192	.00035
%RSD	3.2486	3.5183	.88626	7.6964	29.162	1.2895	13.799
#1	.03869	.01230	.05838	-.02100	.00130	.93196	.00257
#2	.03966	.01173	.05843	-.02297	.00197	.92983	.00284
#3	.03718	.01257	.05931	-.01972	.00117	.91034	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9579.3	62698.	3582.6
Stddev	23.6	409.	31.5
%RSD	.24595	.65242	.88053
#1	9558.8	62230.	3582.4
#2	9574.2	62875.	3614.3
#3	9605.1	62989.	3551.2

Approved: June 25, 2016

Sample Name: L1606114303 Acquired: 6/24/2016 11:14:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	4.8207	.00231	.09925	.06384	-.00014	20.352	.03065
Stddev	.00115	.0169	.00244	.00272	.00062	.00004	.361	.00032
%RSD	57.119	.35023	105.60	2.7419	.97505	30.491	1.7725	1.0317
#1	.00068	4.8310	-.00033	.10036	.06456	-.00017	20.604	.03098
#2	.00273	4.8012	.00278	.09615	.06348	-.00009	19.939	.03063
#3	.00261	4.8299	.00448	.10125	.06347	-.00016	20.514	.03035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00385	.02269	.31038	.72640	3.9876	.00384	1.7996	.03505
Stddev	.00028	.00031	.00455	.03117	.1244	.00103	.0301	.00196
%RSD	7.3418	1.3582	1.4671	4.2904	3.1197	26.784	1.6740	5.6019
#1	.00418	.02300	.31423	.75545	4.1176	.00266	1.8228	.03702
#2	.00370	.02267	.31155	.69348	3.8697	.00453	1.7655	.03503
#3	.00368	.02239	.30535	.73028	3.9755	.00433	1.8103	.03309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	69.304	.01792	.75789	.92900	.21972	.06124	1.0845
Stddev	.00052	1.191	.00091	.01147	.01251	.00309	.00193	.0066
%RSD	36.480	1.7182	5.0997	1.5130	1.3471	1.4069	3.1453	.61193
#1	.00085	70.245	.01893	.76639	.93239	.22277	.05909	1.0852
#2	.00156	67.965	.01715	.76244	.93946	.21982	.06281	1.0908
#3	.00187	69.701	.01768	.74485	.91513	.21659	.06183	1.0776
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114303 Acquired: 6/24/2016 11:14:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06697	.02914	.17767	-.02618	.00084	1.1510	.00805
Stddev	.00103	.00029	.00367	.00124	.00100	.0176	.00078
%RSD	1.5441	1.0005	2.0643	4.7450	119.01	1.5335	9.6465
#1	.06805	.02923	.17998	-.02601	.00069	1.1598	.00715
#2	.06687	.02881	.17959	-.02504	.00191	1.1626	.00843
#3	.06599	.02937	.17344	-.02750	-.00008	1.1307	.00856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9381.8	61970.	3689.1
Stddev	33.6	321.	57.3
%RSD	.35761	.51747	1.5540
#1	9391.7	61677.	3628.9
#2	9344.4	62313.	3743.0
#3	9409.2	61920.	3695.5

Approved: June 25, 2016

Sample Name: L1606114303PS Acquired: 6/24/2016 11:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574050-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19282**	**9.1030**	**.21930**	**1.0209**	**.57480**	**.02552**	**23.549**	**.05319**
Stddev	.00378	.1224	.00387	.0139	.00847	.00050	.384	.00014
%RSD	1.9610	1.3448	1.7659	1.3603	1.4741	1.9641	1.6292	.25923
#1	.19718	9.2398	.22265	1.0369	.57451	.02610	23.500	.05313
#2	.19085	9.0654	.22018	1.0119	.58342	.02525	23.955	.05335
#3	.19044	9.0038	.21506	1.0138	.56648	.02522	23.192	.05310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10838**	**.27489**	**.53510**	**2.6325**	**28.426**	**.51916**	**6.4335**	**.28113**
Stddev	.00048	.00487	.00271	.0470	.438	.00652	.0658	.00732
%RSD	.44135	1.7702	.50609	1.7864	1.5402	1.2563	1.0234	2.6026
#1	.10883	.28050	.53765	2.6400	28.393	.51849	6.4132	.27737
#2	.10842	.27183	.53540	2.6753	28.879	.52600	6.5071	.28956
#3	.10788	.27234	.53226	2.5822	28.005	.51300	6.3802	.27645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55563**	**88.072**	**.27127**	**5.7330**	**1.0887**	**.80555**	**.28267**	**3.5801**
Stddev	.00233	1.489	.00140	.0340	.0052	.00245	.00476	.0110
%RSD	.41977	1.6902	.51481	.59236	.48130	.30394	1.6852	.30687
#1	.55781	87.868	.27253	5.7647	1.0876	.80600	.27727	3.5781
#2	.55592	89.652	.27153	5.7371	1.0944	.80774	.28448	3.5920
#3	.55317	86.695	.26977	5.6971	1.0841	.80291	.28627	3.5703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114303PS Acquired: 6/24/2016 11:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574050-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55832**	**.55250**	**.68468**	**.22830**	**.51898**	**1.4956**	**.00754**
Stddev	.00108	.00586	.00982	.00156	.00603	.0050	.00034
%RSD	.19343	1.0607	1.4349	.68445	1.1613	.33628	4.5321
#1	.55934	.55124	.67374	.23005	.52593	1.4982	.00780
#2	.55844	.55889	.69276	.22777	.51583	1.4988	.00765
#3	.55719	.54737	.68753	.22706	.51518	1.4898	.00715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9369.0**	**61127.**	**3634.8**
Stddev	22.7	764.	54.2
%RSD	.24213	1.2496	1.4904
#1	9362.2	60252.	3618.8
#2	9350.5	61471.	3590.4
#3	9394.3	61659.	3695.1

Approved: June 25, 2016

Sample Name: L1606114303SDL Acquired: 6/24/2016 11:21:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574050-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	1.0261	.00297	.02318	.01266	-.00007	4.1845	.00623
Stddev	.00123	.0061	.00330	.00327	.00031	.00005	.0503	.00014
%RSD	365.72	.59880	111.06	14.127	2.4185	73.446	1.2012	2.2131
#1	-.00107	1.0196	.00542	.02404	.01302	-.00002	4.1771	.00614
#2	.00083	1.0267	-.00078	.01956	.01249	-.00012	4.1383	.00639
#3	.00124	1.0319	.00428	.02594	.01249	-.00008	4.2380	.00617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00540	.06226	.15898	.95529	-.00007	.39328	.00447
Stddev	.00025	.00082	.00151	.01807	.04331	.00277	.02612	.00106
%RSD	50.129	15.194	2.4288	11.369	4.5341	3914.2	6.6415	23.792
#1	.00077	.00446	.06382	.13919	.97561	-.00233	.38332	.00500
#2	.00037	.00596	.06216	.17463	.98470	.00302	.42292	.00517
#3	.00033	.00577	.06080	.16312	.90555	-.00090	.37361	.00325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	14.368	.00341	.14113	.19112	.04241	.01311	.21447
Stddev	.00015	.033	.00044	.00572	.00278	.00110	.00399	.00347
%RSD	22.588	.22958	12.788	4.0544	1.4560	2.5835	30.424	1.6176
#1	.00054	14.331	.00376	.14763	.19272	.04265	.01583	.21733
#2	.00066	14.378	.00292	.13686	.19273	.04121	.00853	.21548
#3	.00085	14.394	.00355	.13890	.18791	.04336	.01496	.21061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114303SDL Acquired: 6/24/2016 11:21:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574050-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01266	.00566	.03785	-.00383	-.00075	.23612	.00185
Stddev	.00065	.00028	.00383	.00311	.00045	.00453	.00029
%RSD	5.1470	5.0211	10.115	81.132	60.764	1.9188	15.554
#1	.01193	.00542	.03347	-.00556	-.00022	.23954	.00216
#2	.01290	.00558	.03952	-.00024	-.00102	.23784	.00159
#3	.01316	.00597	.04057	-.00569	-.00099	.23098	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10057.	64667.	3566.1
Stddev	24.	239.	18.3
%RSD	.24189	.36921	.51318
#1	10061.	64539.	3548.5
#2	10080.	64942.	3585.1
#3	10031.	64519.	3564.7

Approved: June 25, 2016

Sample Name: L1606072401 Acquired: 6/24/2016 11:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00315	.00035	.10432	.27002	-.00002	19.485	-.00008
Stddev	.00044	.00317	.00249	.00108	.00200	.00009	.116	.00017
%RSD	1758.5	100.57	717.90	1.0354	.74150	535.21	.59419	213.12
#1	.00051	-.00633	.00240	.10390	.26802	.00008	19.352	-.00022
#2	-.00037	.00001	.00106	.10555	.27202	-.00009	19.546	-.00012
#3	-.00006	-.00313	-.00242	.10352	.27001	-.00003	19.558	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.00046	-.00104	.04832	1.6362	.06448	1.9423	.00728
Stddev	.00032	.00099	.00074	.01250	.0309	.00265	.0169	.00214
%RSD	60.154	216.03	70.782	25.871	1.8896	4.1051	.87020	29.355
#1	-.00026	.00125	-.00020	.06077	1.6689	.06381	1.9502	.00486
#2	-.00046	.00077	-.00159	.04843	1.6074	.06740	1.9228	.00808
#3	-.00090	-.00065	-.00133	.03577	1.6323	.06224	1.9537	.00891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	45.826	-.00085	.00269	-.00068	-.00086	.00607	.02783
Stddev	.00032	.230	.00099	.00141	.00111	.00064	.00697	.00182
%RSD	148.51	.50191	116.77	52.456	163.34	74.836	114.77	6.5364
#1	.00042	45.682	-.00200	.00191	-.00152	-.00014	.00291	.02894
#2	-.00016	46.091	-.00033	.00185	-.00108	-.00138	.01406	.02882
#3	.00039	45.704	-.00023	.00433	.00057	-.00105	.00124	.02573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072401 Acquired: 6/24/2016 11:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	3.7849	-.00208	.00102	-.00025	.00077	.00029
Stddev	.00032	.0200	.00520	.00060	.00104	.00010	.00043
%RSD	74.660	.52945	249.46	58.995	412.82	12.438	148.48
#1	-.00041	3.7649	.00110	.00076	-.00044	.00066	.00051
#2	-.00012	3.8049	.00073	.00059	.00087	.00082	-.00021
#3	-.00077	3.7849	-.00808	.00171	-.00118	.00083	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9875.5	62339.	3387.9
Stddev	19.3	92.	22.4
%RSD	.19558	.14698	.65977
#1	9880.5	62376.	3412.5
#2	9891.8	62234.	3382.5
#3	9854.1	62405.	3368.8

Approved: June 25, 2016

Sample Name: L1606078710 Acquired: 6/24/2016 11:29:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.01245**	**.00093**	**.00672**	**.00888**	**-.00004**	**5.1268**	**-.00003**
Stddev	.00207	.00513	.00062	.00160	.00032	.00006	.0280	.00009
%RSD	1015.8	41.172	67.473	23.880	3.6189	161.49	.54640	338.65
#1	-.00259	.01156	.00060	.00537	.00890	.00003	5.1020	.00003
#2	.00103	.01797	.00053	.00629	.00918	-.00004	5.1212	-.00013
#3	.00095	.00783	.00164	.00850	.00854	-.00010	5.1572	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.00129**	**-.00031**	**.02121**	**.09124**	**.00142**	**1.6609**	**.00016**
Stddev	.00030	.00103	.00028	.02108	.02779	.00443	.0362	.00043
%RSD	83.898	80.266	88.228	99.367	30.455	310.98	2.1784	267.47
#1	-.00002	.00013	-.00000	.02577	.07595	.00096	1.6192	.00066
#2	-.00047	.00163	-.00042	.03964	.12332	.00607	1.6798	-.00009
#3	-.00058	.00211	-.00052	-.00177	.07447	-.00275	1.6837	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.40629**	**-.00019**	**.02344**	**.00142**	**.00036**	**.00428**	**.86102**
Stddev	.00008	.01566	.00070	.00293	.00389	.00131	.00308	.00301
%RSD	282.85	3.8547	375.84	12.494	274.41	367.61	71.795	.35006
#1	-.00005	.39122	-.00061	.02282	-.00202	-.00116	.00142	.85766
#2	.00002	.40516	.00062	.02087	.00564	.00112	.00390	.86349
#3	.00011	.42248	-.00056	.02663	.00064	.00110	.00753	.86190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606078710 Acquired: 6/24/2016 11:29:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.01418	.00262	.00104	-.00029	.00070	.00018
Stddev	.00037	.00086	.00142	.00185	.00024	.00007	.00067
%RSD	43.228	6.0990	54.198	178.45	83.020	9.6277	377.85
#1	-.00122	.01515	.00146	.00231	-.00032	.00062	-.00035
#2	-.00082	.01393	.00221	.00189	-.00003	.00073	.00093
#3	-.00049	.01347	.00421	-.00108	-.00051	.00074	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9908.1	62790.	3396.7
Stddev	24.3	134.	24.8
%RSD	.24489	.21371	.72925
#1	9883.2	62654.	3377.5
#2	9909.3	62793.	3388.0
#3	9931.7	62922.	3424.7

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 11:33:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38810**	**9.7098**	**.39689**	**.47714**	**.99058**	**.04739**	**9.8701**	**.05060**
Stddev	.00283	.0174	.01197	.00133	.00631	.00022	.0513	.00128
%RSD	.72928	.17891	3.0148	.27927	.63726	.46575	.51962	2.5352
#1	.39081	9.7194	.38991	.47646	.98553	.04761	9.8110	.04949
#2	.38516	9.6898	.39005	.47629	.99766	.04716	9.9033	.05031
#3	.38833	9.7203	.41070	.47868	.98855	.04739	9.8959	.05200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20045**	**.47745**	**.50304**	**3.8652**	**49.851**	**.98139**	**9.6090**	**.49428**
Stddev	.00476	.00182	.01308	.0187	.275	.00271	.1197	.00115
%RSD	2.3737	.38128	2.6009	.48458	.55213	.27645	1.2457	.23357
#1	.19707	.47916	.49332	3.8535	49.648	.97918	9.5187	.49428
#2	.19839	.47554	.49789	3.8554	50.165	.98442	9.7448	.49544
#3	.20589	.47766	.51792	3.8868	49.742	.98056	9.5635	.49313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0051**	**49.395**	**.49829**	**9.9011**	**.49766**	**1.1837**	**.40223**	**5.1765**
Stddev	.0221	.266	.01338	.2380	.01263	.0295	.01301	.1331
%RSD	2.2022	.53859	2.6859	2.4036	2.5373	2.4958	3.2354	2.5717
#1	.99057	49.185	.48864	9.7382	.49052	1.1641	.39764	5.0820
#2	.99416	49.694	.49266	9.7909	.49023	1.1694	.39213	5.1189
#3	1.0306	49.307	.51357	10.174	.51224	1.2177	.41691	5.3288
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 11:33:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99780	.99494	.99460	.50316	.95384	.99778	.96366
Stddev	.02505	.00582	.00941	.01064	.00112	.02481	.00332
%RSD	2.5106	.58510	.94620	2.1156	.11735	2.4862	.34462
#1	.98222	.99006	.98399	.49648	.95510	.98037	.96166
#2	.98449	1.0014	.99788	.49756	.95296	.98679	.96750
#3	1.0267	.99339	1.0019	.51543	.95347	1.0262	.96183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9609.5	61484.	3367.3
Stddev	179.1	149.	17.5
%RSD	1.8637	.24184	.51943
#1	9727.0	61424.	3387.4
#2	9698.3	61653.	3355.3
#3	9403.4	61374.	3359.2

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 11:37:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00172**	**-.00134**	**.00309**	**.00209**	**.00125**	**-.00002**	**-.01440**	**-.00007**
Stddev	.00091	.00614	.00420	.00059	.00035	.00008	.00898	.00028
%RSD	52.779	459.15	136.12	28.437	28.440	502.17	62.405	405.50
#1	-.00077	-.00780	.00268	.00192	.00104	-.00008	-.01028	-.00013
#2	-.00183	-.00062	-.00090	.00275	.00104	-.00004	-.00821	-.00031
#3	-.00257	.00441	.00748	.00160	.00165	.00007	-.02470	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00219**	**-.00096**	**.01429**	**.07201**	**-.00051**	**-.01423**	**-.00338**
Stddev	.00025	.00091	.00116	.02391	.02885	.00127	.05533	.00160
%RSD	42.952	41.583	120.36	167.30	40.061	249.18	388.71	47.289
#1	-.00086	.00313	-.00216	.03857	.05729	-.00120	.01249	-.00407
#2	-.00049	.00132	.00015	-.00924	.05349	.00096	-.07785	-.00452
#3	-.00039	.00212	-.00087	.01355	.10524	-.00129	.02266	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00397**	**.05772**	**.00049**	**.00166**	**.00060**	**.00709**	**.00415**	**.00501**
Stddev	.00025	.00897	.00091	.00777	.00062	.00346	.00064	.00058
%RSD	6.2010	15.535	183.67	469.35	103.11	48.715	15.417	11.538
#1	.00371	.06438	.00022	.00269	-.00009	.00377	.00431	.00485
#2	.00402	.04752	-.00024	.00886	.00078	.01067	.00470	.00452
#3	.00419	.06126	.00151	-.00658	.00112	.00684	.00345	.00565
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 11:37:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	-.00004	-.00290	-.00180	-.00095	.00026	.00127
Stddev	.00126	.00040	.00531	.00104	.00030	.00018	.00033
%RSD	720.33	1037.6	182.93	57.739	31.840	69.543	26.201
#1	-.00138	.00030	.00232	-.00292	-.00094	.00041	.00115
#2	-.00028	-.00048	-.00273	-.00162	-.00066	.00030	.00101
#3	.00113	.00007	-.00830	-.00087	-.00126	.00006	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9475.4	60828.	3302.4
Stddev	15.9	240.	28.2
%RSD	.16749	.39397	.85256
#1	9486.2	60837.	3325.2
#2	9482.7	61063.	3270.9
#3	9457.1	60584.	3311.0

Approved: June 25, 2016

Sample Name: L1606078718 Acquired: 6/24/2016 11:41:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.12278**	**-.00107**	**.00913**	**.01523**	**.00001**	**5.3107**	**-.00005**
Stddev	.00135	.00087	.00075	.00238	.00045	.00002	.0439	.00007
%RSD	307.59	.71051	70.678	26.118	2.9624	290.46	.82581	147.98
#1	-.00119	.12179	-.00040	.01179	.01472	.00003	5.2601	-.00013
#2	-.00124	.12310	-.00188	.00842	.01537	.00000	5.3382	.00001
#3	.00112	.12344	-.00091	.00718	.01559	-.00001	5.3338	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00156**	**.00001**	**.12761**	**.28289**	**-.00057**	**2.0930**	**.00966**
Stddev	.00025	.00095	.00078	.01136	.02940	.00292	.1311	.00143
%RSD	123.91	60.819	13550.	8.9048	10.391	511.67	6.2613	14.807
#1	.00004	.00136	.00041	.11857	.31451	-.00375	2.2066	.00912
#2	-.00046	.00072	.00051	.14037	.25639	.00005	1.9496	.00858
#3	-.00018	.00259	-.00090	.12389	.27778	.00199	2.1228	.01128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00091**	**.96070**	**.00021**	**.01639**	**.00142**	**.00012**	**.00174**	**.95670**
Stddev	.00022	.02144	.00152	.00378	.00110	.00353	.00315	.00064
%RSD	24.211	2.2317	705.53	23.047	77.668	2852.2	180.36	.06663
#1	.00066	.96380	-.00103	.01922	.00239	-.00367	.00218	.95743
#2	.00108	.98042	.00190	.01784	.00022	.00073	-.00160	.95644
#3	.00099	.93788	-.00022	.01210	.00165	.00331	.00465	.95624
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606078718 Acquired: 6/24/2016 11:41:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.02113	-.00261	.00155	.00015	.00102	.00007
Stddev	.00039	.00013	.00231	.00262	.00009	.00008	.00015
%RSD	3458.6	.60621	88.436	169.06	60.666	7.5915	217.66
#1	-.00027	.02099	-.00355	.00304	.00004	.00110	-.00006
#2	.00044	.02124	.00002	-.00148	.00020	.00094	.00004
#3	-.00021	.02116	-.00429	.00309	.00019	.00102	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9833.8	62560.	3368.7
Stddev	10.6	179.	20.6
%RSD	.10814	.28665	.61199
#1	9837.0	62447.	3366.4
#2	9821.9	62767.	3349.3
#3	9842.4	62467.	3390.3

Approved: June 25, 2016

Sample Name: PBW 76 Acquired: 6/24/2016 11:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00756**	**-.00027**	**.00227**	**.00060**	**.00001**	**.00703**	**.00010**
Stddev	.00134	.00214	.00202	.00255	.00065	.00005	.01557	.00013
%RSD	7726.0	28.331	745.35	112.37	108.24	426.81	221.55	123.75
#1	.00015	.00960	.00041	.00019	.00119	.00007	-.00446	.00001
#2	.00123	.00774	.00132	.00150	-.00010	-.00002	.02475	.00024
#3	-.00144	.00533	-.00255	.00512	.00071	-.00001	.00079	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00074**	**.00189**	**-.00169**	**.00228**	**.02645**	**-.00293**	**.08622**	**-.00171**
Stddev	.00036	.00154	.00145	.01650	.09764	.00154	.04513	.00322
%RSD	48.622	81.673	85.412	724.65	369.14	52.587	52.347	188.75
#1	-.00110	.00346	-.00193	.01977	.12997	-.00130	.13664	-.00066
#2	-.00076	.00182	-.00301	.00009	-.06399	-.00437	.04959	-.00532
#3	-.00037	.00038	-.00014	-.01302	.01337	-.00312	.07244	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**.03990**	**-.00047**	**-.00713**	**-.00416**	**-.00155**	**-.00282**	**.01609**
Stddev	.00011	.02208	.00015	.00734	.00167	.00446	.00425	.00127
%RSD	17.385	55.332	31.359	102.96	40.213	287.62	150.70	7.8845
#1	.00065	.03197	-.00031	-.00456	-.00533	.00097	.00195	.01464
#2	.00055	.02288	-.00051	-.01540	-.00224	.00108	-.00421	.01696
#3	.00078	.06484	-.00059	-.00142	-.00490	-.00670	-.00621	.01668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBW 76 Acquired: 6/24/2016 11:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**-.00012**	**-.00291**	**.00062**	**-.00065**	**.00076**	**.00063**
Stddev	.00117	.00017	.00323	.00163	.00060	.00007	.00005
%RSD	281.50	146.61	111.08	263.50	92.819	8.5570	7.9907
#1	.00066	.00000	-.00316	-.00124	-.00007	.00071	.00069
#2	-.00166	-.00004	-.00601	.00179	-.00127	.00074	.00060
#3	-.00025	-.00031	.00044	.00131	-.00060	.00084	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9158.3**	**58514.**	**3173.6**
Stddev	21.5	54.	54.1
%RSD	.23481	.09167	1.7045
#1	9170.2	58456.	3116.8
#2	9171.2	58527.	3224.6
#3	9133.5	58561.	3179.5

Approved: June 25, 2016

Sample Name: LCSW 76 Acquired: 6/24/2016 11:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19957**	**5.0577**	**.20359**	**.97778**	**.51970**	**.02459**	**5.2560**	**.02583**
Stddev	.00111	.0209	.00144	.00585	.00573	.00009	.0253	.00026
%RSD	.55649	.41409	.70902	.59861	1.1018	.38272	.48154	.99696
#1	.19952	5.0735	.20526	.97949	.51449	.02469	5.2312	.02570
#2	.19848	5.0657	.20267	.98260	.51879	.02457	5.2550	.02613
#3	.20070	5.0340	.20285	.97127	.52583	.02451	5.2818	.02566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10438**	**.25143**	**.25975**	**2.0526**	**25.715**	**.51843**	**5.1244**	**.25887**
Stddev	.00049	.00212	.00051	.0472	.222	.00558	.0767	.00446
%RSD	.46631	.84222	.19672	2.2997	.86399	1.0771	1.4961	1.7214
#1	.10490	.25326	.25929	2.0703	25.495	.51419	5.0400	.25801
#2	.10428	.25193	.25965	1.9991	25.711	.51635	5.1897	.25491
#3	.10394	.24911	.26030	2.0884	25.939	.52476	5.1436	.26370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53107**	**25.841**	**.25948**	**4.9583**	**.25768**	**.61986**	**.20199**	**2.6208**
Stddev	.00128	.248	.00088	.0110	.00363	.00187	.00566	.0027
%RSD	.24060	.95967	.33951	.22193	1.4073	.30098	2.7997	.10443
#1	.53215	25.579	.25869	4.9612	.25468	.61882	.19650	2.6225
#2	.53139	25.870	.26043	4.9675	.25665	.62201	.20780	2.6222
#3	.52966	26.073	.25932	4.9461	.26171	.61875	.20168	2.6176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSW 76 Acquired: 6/24/2016 11:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51623**	**.53123**	**.52244**	**.25565**	**.49959**	**.51393**	**.00579**
Stddev	.00132	.00381	.00132	.00319	.00144	.00042	.00111
%RSD	.25652	.71784	.25180	1.2488	.28878	.08123	19.246
#1	.51555	.52808	.52357	.25635	.50112	.51432	.00458
#2	.51775	.53013	.52276	.25844	.49939	.51397	.00604
#3	.51538	.53547	.52100	.25217	.49826	.51349	.00677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9055.9**	**57815.**	**3183.8**
Stddev	4.9	347.	20.8
%RSD	.05361	.60036	.65296
#1	9054.8	57514.	3207.6
#2	9061.2	57737.	3174.7
#3	9051.7	58195.	3169.1

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:52:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.01913	.00045	.00564	.00075	.00006	.03446	.00003
Stddev	.00067	.00249	.00285	.00093	.00023	.00008	.05634	.00010
%RSD	248.40	13.009	640.39	16.412	30.810	153.80	163.51	360.07
#1	-.00005	.01749	.00372	.00458	.00101	.00001	.06139	-.00008
#2	-.00018	.01791	-.00146	.00604	.00070	.00015	-.03030	.00007
#3	.00104	.02200	-.00093	.00630	.00056	.00000	.07228	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00253	-.00156	-.00596	.16777	.00070	.01889	-.00191
Stddev	.00044	.00121	.00070	.01626	.08879	.00348	.08939	.00126
%RSD	226.82	47.714	44.960	272.74	52.925	500.27	473.10	66.049
#1	-.00068	.00392	-.00085	-.00089	.18512	.00292	-.08304	-.00336
#2	-.00006	.00176	-.00226	-.02415	.07158	-.00331	.08391	-.00130
#3	.00016	.00191	-.00157	.00716	.24660	.00248	.05581	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	146.88	-.00010	-.00997	-.00192	-.00060	.00086	.01689
Stddev	.00007	2.32	.00022	.01062	.00306	.00058	.00486	.00219
%RSD	5.9044	1.5789	217.75	106.58	159.22	97.608	562.25	12.982
#1	.00123	147.49	-.00010	-.00418	.00110	-.00085	.00099	.01941
#2	.00122	144.32	-.00032	-.02223	-.00503	-.00101	-.00405	.01582
#3	.00135	148.83	.00012	-.00350	-.00184	.00007	.00565	.01544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:52:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00019	.00465	-.00056	-.00077	.00385	.00047
Stddev	.00062	.00009	.00622	.00067	.00006	.00008	.00058
%RSD	351.13	48.859	133.64	119.24	7.9259	2.1598	122.28
#1	-.00018	.00019	.00196	-.00117	-.00080	.00376	.00110
#2	.00090	.00028	.00023	-.00067	-.00082	.00387	.00035
#3	-.00018	.00010	.01176	.00016	-.00070	.00392	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9082.3	57649.	3191.0
Stddev	16.5	168.	36.6
%RSD	.18193	.29213	1.1475
#1	9087.4	57544.	3194.2
#2	9063.8	57561.	3225.9
#3	9095.7	57844.	3152.9

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00681	-.00106	.00396	-.00038	.00008	.00787
Stddev	.00115	.00552	.00081	.00188	.00038	.00004	.02622
%RSD	428.61	81.084	76.687	47.340	102.50	53.257	333.03
#1	.00038	.01319	-.00187	.00403	-.00074	.00010	-.00305
#2	-.00094	.00367	-.00107	.00205	.00003	.00010	-.01112
#3	.00136	.00358	-.00024	.00580	-.00042	.00003	.03779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00070	.00137	-.00027	-.00002	.15945	-.00128
Stddev	.00010	.00002	.00054	.00110	.02466	.06888	.00479
%RSD	101.48	2.8007	39.168	401.57	161320.	43.197	373.14
#1	-.00002	-.00067	.00075	-.00109	-.02191	.10599	.00293
#2	.00017	-.00071	.00165	-.00072	-.00485	.13518	-.00650
#3	.00015	-.00071	.00170	.00098	.02671	.23717	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01684	F -.00418	.00067	.09707	-.00070	-.01284	.00022
Stddev	.07248	.00187	.00051	.02145	.00086	.00271	.00131
%RSD	430.41	44.681	75.988	22.093	121.92	21.113	591.13
#1	-.09127	-.00633	.00026	.09161	-.00137	-.01596	.00169
#2	-.01277	-.00318	.00124	.12072	.00026	-.01112	-.00022
#3	.05352	-.00303	.00051	.07889	-.00100	-.01143	-.00081
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	-.00165	.01154	-.00016	-.00000	.00524	-.00258
Stddev	.00243	.00564	.00134	.00055	.00028	.00100	.00016
%RSD	433.82	342.87	11.581	341.26	38088.	19.138	6.0823
#1	.00049	-.00470	.01307	-.00007	.00005	.00482	-.00263
#2	-.00334	.00486	.01061	.00034	.00025	.00451	-.00270
#3	.00117	-.00510	.01094	-.00075	-.00031	.00638	-.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00082	.00321	.00040
Stddev	.00090	.00006	.00064
%RSD	109.84	1.7754	160.28
#1	-.00106	.00319	-.00006
#2	-.00159	.00327	.00013
#3	.00017	.00316	.00114
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9251.2	59193.	3228.6
Stddev	29.0	219.	50.6
%RSD	.31309	.36916	1.5681
#1	9282.5	58943.	3171.4
#2	9245.5	59348.	3246.5
#3	9225.4	59289.	3267.8

Approved: June 25, 2016

Sample Name: L1606115101 Acquired: 6/24/2016 12:00:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.15830	.00196	.12061	.07888	-.00001	37.815	.00010
Stddev	.00120	.00530	.00056	.00140	.00081	.00003	.248	.00022
%RSD	304.15	3.3498	28.525	1.1602	1.0231	231.96	.65454	212.58
#1	-.00079	.16067	.00184	.12082	.07945	-.00001	38.100	.00001
#2	.00095	.15223	.00257	.12189	.07796	.00002	37.690	-.00006
#3	-.00134	.16201	.00147	.11912	.07925	-.00005	37.655	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.00290	.00097	.21119	2.5400	.00368	20.418	.06424
Stddev	.00015	.00059	.00066	.01074	.0733	.00380	.216	.00165
%RSD	27.920	20.440	67.678	5.0831	2.8878	103.15	1.0559	2.5751
#1	-.00061	.00239	.00022	.21267	2.5710	.00761	20.667	.06262
#2	-.00065	.00277	.00126	.22111	2.4562	.00340	20.289	.06593
#3	-.00037	.00355	.00144	.19979	2.5927	.00003	20.297	.06416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00311	101.77	.00045	.04117	.00135	.00380	.00157	5.3677
Stddev	.00045	.72	.00047	.00987	.00181	.00230	.00252	.0303
%RSD	14.570	.71009	104.97	23.979	133.91	60.522	159.90	.56381
#1	.00300	102.57	.00075	.03748	.00144	.00202	.00106	5.3896
#2	.00272	101.55	.00069	.05236	.00312	.00299	-.00065	5.3804
#3	.00360	101.18	-.00009	.03367	-.00050	.00640	.00431	5.3332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115101 Acquired: 6/24/2016 12:00:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.24842**	**-.00797**	**-.00198**	**.00331**	**.01122**	**.00043**
Stddev	.00079	.00184	.00414	.00305	.00081	.00007	.00023
%RSD	148.48	.74257	51.976	153.47	24.555	.58389	52.792
#1	-.00089	.25043	-.00512	-.00050	.00292	.01123	.00048
#2	.00038	.24800	-.01272	-.00549	.00277	.01128	.00018
#3	-.00108	.24682	-.00607	.00004	.00425	.01115	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9014.8**	**57274.**	**3214.0**
Stddev	3.7	444.	16.2
%RSD	.04144	.77607	.50389
#1	9010.8	56777.	3196.3
#2	9018.1	57410.	3228.0
#3	9015.6	57634.	3217.6

Approved: June 25, 2016

Sample Name: L1606115103S Acquired: 6/24/2016 12:04:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19866**	**5.2333**	**.20489**	**1.0841**	**.58829**	**.02453**	**41.795**	**.02565**
Stddev	.00248	.0391	.00312	.0094	.00934	.00022	.762	.00024
%RSD	1.2478	.74796	1.5219	.86801	1.5872	.88296	1.8223	.94310
#1	.20143	5.2782	.20405	1.0949	.59855	.02478	42.664	.02538
#2	.19665	5.2065	.20834	1.0778	.58603	.02443	41.476	.02586
#3	.19791	5.2153	.20228	1.0795	.58029	.02438	41.245	.02571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10099**	**.24641**	**.25195**	**2.2589**	**28.126**	**.51539**	**24.622**	**.31292**
Stddev	.00052	.00196	.00102	.0296	.653	.00581	.350	.00628
%RSD	.51212	.79406	.40526	1.3088	2.3212	1.1278	1.4196	2.0063
#1	.10114	.24829	.25234	2.2928	28.857	.52178	24.997	.31972
#2	.10142	.24656	.25272	2.2452	27.918	.51397	24.564	.31172
#3	.10041	.24438	.25079	2.2387	27.601	.51042	24.305	.30733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52635**	**123.51**	**.24930**	**5.0586**	**.24835**	**.61205**	**.20210**	**7.9483**
Stddev	.00263	2.21	.00102	.0099	.00401	.00458	.01142	.0147
%RSD	.50034	1.7930	.40840	.19611	1.6157	.74825	5.6519	.18492
#1	.52939	126.01	.25035	5.0677	.24616	.61628	.19120	7.9616
#2	.52472	122.75	.24832	5.0480	.25298	.61267	.20111	7.9508
#3	.52495	121.78	.24922	5.0600	.24590	.60719	.21398	7.9325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115103S Acquired: 6/24/2016 12:04:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50472**	**.74393**	**.51319**	**.24877**	**.50017**	**.50921**	**.00163**
Stddev	.00229	.01406	.00107	.00330	.00462	.00094	.00046
%RSD	.45343	1.8895	.20946	1.3249	.92272	.18364	28.196
#1	.50713	.75976	.51270	.24643	.50544	.51012	.00133
#2	.50447	.73914	.51244	.24733	.49686	.50925	.00215
#3	.50257	.73289	.51442	.25254	.49821	.50826	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8967.8**	**56968.**	**3188.4**
Stddev	14.4	310.	46.6
%RSD	.16024	.54356	1.4614
#1	8982.4	56611.	3137.2
#2	8953.6	57142.	3228.2
#3	8967.3	57152.	3199.9

Approved: June 25, 2016

Sample Name: L1606115104SD Acquired: 6/24/2016 12:08:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20050**	**5.5362**	**.21145**	**1.1171**	**.60094**	**.02473**	**43.628**	**.02602**
Stddev	.00367	.0392	.00196	.0038	.00661	.00023	.422	.00015
%RSD	1.8310	.70851	.92588	.33636	1.0992	.92800	.96702	.56220
#1	.20453	5.5755	.20937	1.1208	.60449	.02497	43.830	.02607
#2	.19734	5.5360	.21326	1.1133	.60501	.02469	43.911	.02586
#3	.19964	5.4970	.21172	1.1174	.59332	.02452	43.143	.02614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10332**	**.25201**	**.25751**	**2.4745**	**28.765**	**.52930**	**25.537**	**.32828**
Stddev	.00022	.00113	.00140	.0515	.250	.00229	.203	.00242
%RSD	.20838	.44890	.54386	2.0800	.86748	.43222	.79310	.73866
#1	.10312	.25327	.25864	2.4622	28.794	.52881	25.355	.33071
#2	.10331	.25107	.25594	2.5310	28.999	.53179	25.755	.32826
#3	.10355	.25171	.25796	2.4303	28.503	.52730	25.502	.32586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53696**	**128.06**	**.25435**	**5.1848**	**.25573**	**.62539**	**.20371**	**8.6826**
Stddev	.00235	1.16	.00112	.0104	.00231	.00094	.00431	.0179
%RSD	.43756	.90349	.43872	.20045	.90135	.15109	2.1170	.20639
#1	.53930	128.62	.25342	5.1916	.25485	.62446	.19905	8.6946
#2	.53698	128.84	.25558	5.1899	.25835	.62536	.20453	8.6911
#3	.53460	126.73	.25403	5.1728	.25400	.62635	.20756	8.6620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115104SD Acquired: 6/24/2016 12:08:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51403**	**.76306**	**.52079**	**.25353**	**.50800**	**.54740**	**.00120**
Stddev	.00207	.00813	.00728	.00246	.00215	.00115	.00023
%RSD	.40270	1.0651	1.3976	.96966	.42297	.21071	19.008
#1	.51525	.76972	.51741	.25073	.51047	.54816	.00120
#2	.51521	.76547	.52914	.25449	.50702	.54797	.00097
#3	.51164	.75401	.51581	.25536	.50652	.54608	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8971.1**	**57029.**	**3176.4**
Stddev	7.5	275.	37.9
%RSD	.08397	.48302	1.1936
#1	8971.7	56728.	3149.0
#2	8963.3	57269.	3160.4
#3	8978.3	57089.	3219.6

Approved: June 25, 2016

Sample Name: L1606114001 Acquired: 6/24/2016 12:11:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.02288	.00406	.04082	.07775	.00002	146.18	.00803
Stddev	.00117	.00176	.00168	.00145	.00148	.00006	1.41	.00013
%RSD	105.07	7.7135	41.352	3.5486	1.9065	431.51	.96792	1.6005
#1	-.00015	.02175	.00435	.04246	.07857	-.00005	147.59	.00799
#2	.00217	.02197	.00557	.04032	.07604	.00008	144.76	.00794
#3	.00133	.02491	.00225	.03970	.07864	.00002	146.20	.00818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00113	.15059	.00257	2.0589	.00836	2.1895	.15039
Stddev	.00020	.00056	.00328	.04967	.1178	.00105	.0405	.00204
%RSD	197.71	50.139	2.1779	1935.6	5.7222	12.511	1.8515	1.3546
#1	-.00033	.00053	.15163	.05781	2.1539	.00743	2.1519	.15272
#2	.00004	.00166	.15323	-.01173	1.9271	.00816	2.2324	.14950
#3	-.00002	.00119	.14692	-.03838	2.0957	.00949	2.1841	.14894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	4.5457	.00499	.37451	.09772	.00116	.00727	.91983
Stddev	.00011	.0157	.00049	.00549	.00291	.00520	.00545	.00530
%RSD	11.074	.34568	9.8108	1.4647	2.9765	448.88	74.937	.57580
#1	.00106	4.5461	.00536	.38066	.10096	.00620	.00098	.92472
#2	.00085	4.5299	.00444	.37010	.09534	-.00419	.01057	.92057
#3	.00099	4.5613	.00518	.37278	.09685	.00146	.01027	.91421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114001 Acquired: 6/24/2016 12:11:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.43857**	**-.02336**	**-.00142**	**-.00154**	**.50322**	**.00005**
Stddev	.00104	.00448	.00196	.00344	.00065	.00330	.00027
%RSD	131.08	1.0215	8.3791	242.90	42.008	.65521	545.16
#1	.00012	.44211	-.02243	-.00473	-.00200	.50529	-.00008
#2	-.00193	.43353	-.02204	-.00165	-.00182	.50495	.00036
#3	-.00058	.44006	-.02561	.00214	-.00080	.49942	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9099.5**	**58355.**	**3254.5**
Stddev	20.8	103.	52.9
%RSD	.22848	.17565	1.6262
#1	9103.9	58241.	3200.3
#2	9076.9	58438.	3306.0
#3	9117.7	58387.	3257.0

Approved: June 25, 2016

Sample Name: L1606114001SDL Acquired: 6/24/2016 12:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574055-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.01331	.00099	.00780	.01560	.00000	29.557	.00158
Stddev	.00087	.00321	.00169	.00203	.00098	.00002	.054	.00027
%RSD	236.49	24.147	171.32	26.026	6.2683	4328.2	.18417	17.124
#1	.00062	.01694	-.00029	.00636	.01450	-.00002	29.529	.00183
#2	-.00104	.01084	.00035	.00692	.01636	.00002	29.620	.00130
#3	-.00069	.01214	.00290	.01013	.01596	.00000	29.522	.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00132	.03151	.00499	.41194	.00149	.47888	.02876
Stddev	.00033	.00049	.00083	.01420	.07529	.00168	.04968	.00203
%RSD	299.16	36.877	2.6222	284.58	18.277	112.60	10.373	7.0541
#1	.00017	.00076	.03108	.02107	.49470	.00200	.52478	.03053
#2	-.00047	.00152	.03098	-.00580	.34749	-.00038	.48574	.02654
#3	-.00003	.00167	.03246	-.00031	.39365	.00285	.42614	.02921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.89244	.00037	.07391	.02034	.00194	-.00119	.19852
Stddev	.00030	.03461	.00035	.00616	.00060	.00167	.00867	.00138
%RSD	58.379	3.8778	96.553	8.3343	2.9674	86.300	729.26	.69508
#1	.00070	.85307	.00064	.08066	.02076	.00316	-.00830	.19746
#2	.00017	.90617	.00049	.07249	.02062	.00003	.00847	.19802
#3	.00070	.91807	-.00003	.06859	.01965	.00263	-.00373	.20008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114001SDL Acquired: 6/24/2016 12:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574055-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.08546**	**-.00162**	**-.00038**	**-.00143**	**.10505**	**.00026**
Stddev	.00052	.00084	.00796	.00370	.00041	.00083	.00026
%RSD	132.53	.98750	491.04	963.99	29.011	.78998	99.384
#1	-.00083	.08458	.00175	-.00262	-.00159	.10430	-.00004
#2	.00018	.08626	.00410	-.00242	-.00096	.10490	.00043
#3	-.00052	.08553	-.01071	.00389	-.00173	.10594	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9347.7**	**59748.**	**3254.8**
Stddev	37.4	288.	18.3
%RSD	.39956	.48239	.56188
#1	9390.7	59990.	3243.3
#2	9323.6	59429.	3245.1
#3	9328.6	59825.	3275.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 12:19:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42650**	**10.713**	**.42746**	**.52823**	**1.0913**	**.05212**	**10.834**
Stddev	.00317	.052	.00096	.00261	.0070	.00012	.031
%RSD	.74327	.48970	.22392	.49473	.63946	.22148	.28418
#1	.43016	10.771	.42726	.53089	1.0867	.05225	10.857
#2	.42452	10.698	.42850	.52814	1.0879	.05204	10.799
#3	.42483	10.670	.42662	.52566	1.0994	.05205	10.846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05499**	**.21760**	**.52572**	**.54475**	**4.2777**	**54.613**	**1.0769**
Stddev	.00032	.00106	.00228	.00053	.0326	.264	.0102
%RSD	.58459	.48849	.43328	.09756	.76212	.48255	.94636
#1	.05491	.21872	.52812	.54439	4.2464	54.561	1.0684
#2	.05534	.21660	.52545	.54450	4.2752	54.379	1.0742
#3	.05472	.21750	.52359	.54536	4.3115	54.899	1.0882
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.527**	**.54567**	**1.0931**	**54.266**	**.54162**	**10.766**	**.54062**
Stddev	.021	.00325	.0051	.187	.00238	.011	.00023
%RSD	.20378	.59558	.46292	.34370	.43925	.10654	.04330
#1	10.503	.54270	1.0987	54.187	.54208	10.764	.54087
#2	10.533	.54517	1.0919	54.131	.53904	10.778	.54059
#3	10.545	.54914	1.0888	54.479	.54373	10.755	.54040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 12:19:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2945**	**.43428**	F **5.6098**	**1.0799**	**1.0949**	F **1.1021**	**.54481**
Stddev	.0041	.00361	.0019	.0026	.0045	.0067	.00469
%RSD	.31714	.83239	.03336	.24374	.40814	.60549	.86133
#1	1.2974	.43838	5.6080	1.0827	1.0928	1.1058	.54545
#2	1.2963	.43289	5.6096	1.0794	1.0919	1.0944	.54914
#3	1.2898	.43156	5.6117	1.0775	1.1000	1.1060	.53983
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value			5.0000			1.0000	
Range			10.000%			10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0454**	**1.0803**	**1.0570**
Stddev	.0034	.0013	.0088
%RSD	.32628	.12126	.82774
#1	1.0490	1.0816	1.0630
#2	1.0452	1.0790	1.0470
#3	1.0422	1.0802	1.0611
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8984.8**	**56710.**	**3113.2**
Stddev	45.5	317.	15.4
%RSD	.50651	.55948	.49324
#1	8944.0	56442.	3100.3
#2	9033.9	56628.	3130.2
#3	8976.6	57060.	3109.1

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 12:23:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00344	.00145	.00294	.00035	-.00004	.02215	-.00021
Stddev	.00041	.00219	.00240	.00079	.00121	.00010	.03194	.00009
%RSD	124.54	63.593	165.80	26.762	344.83	259.48	144.18	42.051
#1	.00029	.00529	.00096	.00384	-.00003	.00006	.00228	-.00030
#2	-.00006	.00400	.00406	.00262	.00171	-.00003	.00518	-.00013
#3	.00075	.00102	-.00067	.00237	-.00062	-.00014	.05900	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.00201	-.00150	-.01822	.10568	.00099	.05713	-.00256
Stddev	.00021	.00106	.00016	.00191	.02617	.00205	.07243	.00079
%RSD	59.613	52.971	10.403	10.463	24.764	207.53	126.79	30.925
#1	-.00051	.00267	-.00144	-.02010	.13480	-.00038	.04350	-.00234
#2	-.00011	.00078	-.00167	-.01829	.08413	-.00000	.13541	-.00189
#3	-.00044	.00258	-.00137	-.01629	.09812	.00334	-.00752	-.00343
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	.06866	.00015	-.00196	-.00068	.00350	-.00029	.00611
Stddev	.00028	.01714	.00016	.00299	.00126	.00201	.00292	.00286
%RSD	7.7510	24.965	113.48	152.53	184.92	57.392	1023.3	46.714
#1	.00336	.04977	.00032	-.00175	-.00073	.00541	.00071	.00898
#2	.00392	.08323	.00011	.00092	.00060	.00371	.00201	.00327
#3	.00361	.07297	-.00000	-.00506	-.00193	.00140	-.00357	.00609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 12:23:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.00010**	**.00153**	**.00025**	**-.00049**	**.00022**	**.00163**
Stddev	.00020	.00030	.00816	.00155	.00055	.00013	.00062
%RSD	35.071	304.81	532.55	618.43	111.20	57.646	37.867
#1	-.00034	-.00011	.00782	-.00052	-.00106	.00017	.00094
#2	-.00065	.00044	.00447	.00204	-.00045	.00013	.00184
#3	-.00071	-.00004	-.00769	-.00077	.00003	.00037	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9479.9**	**60625.**	**3266.1**
Stddev	27.2	250.	24.0
%RSD	.28740	.41169	.73490
#1	9455.0	60338.	3293.8
#2	9475.6	60791.	3252.7
#3	9509.0	60746.	3251.7

Approved: June 25, 2016

Sample Name: L1606114001PS Acquired: 6/24/2016 12:27:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574055-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20275**	**5.1419**	**.21333**	**1.0253**	**.59504**	**.02467**	**139.85**	**.03335**
Stddev	.00382	.0464	.00182	.0020	.00731	.00012	1.53	.00017
%RSD	1.8833	.90229	.85200	.19620	1.2293	.48386	1.0954	.51011
#1	.20665	5.1917	.21522	1.0245	.60106	.02477	141.22	.03328
#2	.20258	5.0999	.21318	1.0237	.58690	.02454	138.19	.03323
#3	.19902	5.1341	.21159	1.0275	.59717	.02471	140.14	.03355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10344**	**.25015**	**.39465**	**2.0433**	**28.277**	**.53767**	**7.1211**	**.39716**
Stddev	.00038	.00249	.00031	.0120	.363	.00734	.1390	.00381
%RSD	.37083	.99698	.07885	.58514	1.2820	1.3649	1.9524	.95928
#1	.10301	.25285	.39486	2.0474	28.575	.54252	7.2778	.40080
#2	.10376	.24793	.39481	2.0298	27.873	.52923	7.0126	.39320
#3	.10354	.24968	.39430	2.0526	28.383	.54126	7.0729	.39748
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53753**	**30.414**	**.25886**	**5.5881**	**.34388**	**.63595**	**.21104**	**3.5188**
Stddev	.00106	.282	.00133	.0038	.00319	.00220	.00441	.0017
%RSD	.19634	.92682	.51475	.06847	.92887	.34549	2.0903	.04959
#1	.53826	30.705	.25820	5.5918	.34514	.63840	.21585	3.5208
#2	.53800	30.142	.26040	5.5842	.34625	.63530	.21010	3.5182
#3	.53632	30.394	.25800	5.5882	.34025	.63416	.20718	3.5175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114001PS Acquired: 6/24/2016 12:27:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574055-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51595**	**.91725**	**.50579**	**.25689**	**.50349**	**.95723**	**.00511**
Stddev	.00180	.01150	.00924	.00144	.00222	.00117	.00123
%RSD	.34968	1.2533	1.8261	.55957	.44179	.12188	24.042
#1	.51532	.92818	.50881	.25546	.50563	.95817	.00409
#2	.51798	.90526	.49543	.25686	.50119	.95761	.00476
#3	.51455	.91830	.51315	.25834	.50365	.95593	.00647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8910.4**	**56997.**	**3158.7**
Stddev	14.9	491.	36.1
%RSD	.16773	.86203	1.1429
#1	8920.8	56440.	3132.1
#2	8917.3	57366.	3199.8
#3	8893.3	57187.	3144.2

Approved: June 25, 2016

Sample Name: L1606114003 Acquired: 6/24/2016 12:30:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.01986	.00301	.09457	.03965	-.00002	99.687	.00252
Stddev	.00131	.00825	.00228	.00100	.00036	.00012	.899	.00019
%RSD	294.41	41.551	75.602	1.0569	.91914	587.37	.90168	7.4764
#1	.00190	.01049	.00563	.09524	.04006	.00003	99.938	.00273
#2	.00009	.02603	.00186	.09504	.03938	.00007	98.690	.00241
#3	-.00065	.02306	.00154	.09342	.03950	-.00016	100.43	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.00208	.10263	.00520	1.9156	.00501	1.6642	.08675
Stddev	.00011	.00029	.00205	.01228	.0169	.00341	.0459	.00101
%RSD	52.022	14.106	2.0016	236.15	.88223	68.128	2.7554	1.1666
#1	-.00011	.00239	.10453	-.00392	1.9128	.00145	1.6708	.08733
#2	-.00033	.00205	.10292	.01917	1.9003	.00533	1.6155	.08558
#3	-.00020	.00181	.10045	.00036	1.9337	.00825	1.7065	.08735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00442	143.17	.00079	-.00261	.00210	.00294	.00376	1.6066
Stddev	.00010	1.44	.00082	.00325	.00305	.00131	.00329	.0083
%RSD	2.2634	1.0055	104.33	124.46	145.56	44.519	87.514	.51571
#1	.00431	143.63	.00159	-.00023	.00390	.00415	.00530	1.6124
#2	.00444	141.56	.00083	-.00129	-.00143	.00311	-.00002	1.6103
#3	.00450	144.33	-.00005	-.00631	.00382	.00155	.00599	1.5971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114003 Acquired: 6/24/2016 12:30:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.24737**	**-.01388**	**-.00120**	**-.00079**	**.01628**	**.00040**
Stddev	.00066	.00187	.00938	.00377	.00043	.00034	.00030
%RSD	1229.4	.75472	67.590	313.73	54.177	2.1058	74.950
#1	-.00005	.24839	-.01059	-.00290	-.00056	.01656	.00005
#2	-.00054	.24522	-.00658	-.00383	-.00128	.01637	.00055
#3	.00076	.24851	-.02446	.00312	-.00053	.01589	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8916.0**	**56782.**	**3182.3**
Stddev	15.2	240.	28.8
%RSD	.17040	.42235	.90629
#1	8911.2	56706.	3188.3
#2	8903.7	56590.	3207.7
#3	8933.0	57051.	3151.0

Approved: June 25, 2016

Sample Name: PBW 61 Acquired: 6/24/2016 12:34:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00076	-.00110	.00309	.00002	-.00001	.04326	.00013
Stddev	.00120	.00826	.00369	.00133	.00052	.00010	.01711	.00011
%RSD	135.53	1088.1	334.09	43.079	2914.6	1198.4	39.552	82.637
#1	.00082	.00363	-.00464	.00435	-.00058	.00006	.02365	.00001
#2	.00212	.00720	-.00139	.00170	.00038	-.00013	.05514	.00017
#3	-.00028	-.00856	.00272	.00323	.00025	.00004	.05100	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.00182	-.00080	-.00810	.10020	-.00237	-.01055	-.00142
Stddev	.00016	.00010	.00134	.00626	.03798	.00342	.06161	.00080
%RSD	28.563	5.2588	167.88	77.374	37.898	144.42	583.87	56.732
#1	-.00040	.00172	-.00029	-.01312	.14090	.00069	-.02862	-.00057
#2	-.00073	.00183	-.00231	-.01009	.09401	-.00173	.05807	-.00217
#3	-.00055	.00191	.00021	-.00108	.06571	-.00606	-.06110	-.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.11467	.00021	-.00772	.00041	.00316	.00139	.00970
Stddev	.00036	.04360	.00087	.00814	.00175	.00439	.00571	.00153
%RSD	54.368	38.021	410.51	105.39	431.56	139.19	411.25	15.736
#1	.00069	.16070	-.00007	-.00034	.00056	.00189	-.00497	.00794
#2	.00029	.10932	.00118	-.00638	-.00141	-.00047	.00607	.01053
#3	.00101	.07400	-.00048	-.01645	.00207	.00804	.00307	.01063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBW 61 Acquired: 6/24/2016 12:34:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00027	-.00192	-.00257	-.00043	.00076	.00010
Stddev	.00031	.00059	.00385	.00044	.00062	.00010	.00031
%RSD	110.25	220.35	200.29	17.018	145.00	13.528	301.29
#1	.00056	.00090	-.00630	-.00275	.00014	.00080	.00026
#2	-.00005	.00016	.00092	-.00207	-.00033	.00065	.00030
#3	.00034	-.00026	-.00038	-.00288	-.00109	.00084	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9302.1	60410.	3281.7
Stddev	66.0	229.	39.4
%RSD	.71003	.37905	1.2004
#1	9378.1	60509.	3291.2
#2	9269.4	60574.	3315.5
#3	9258.7	60149.	3238.5

Approved: June 25, 2016

Sample Name: LCSW 61 Acquired: 6/24/2016 12:38:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20555**	**5.1784**	**.21096**	**1.0013**	**.53967**	**.02506**	**5.4631**	**.02661**
Stddev	.00138	.0089	.00216	.0010	.00107	.00006	.0285	.00023
%RSD	.67151	.17182	1.0226	.10140	.19803	.23645	.52091	.86362
#1	.20492	5.1749	.20961	1.0025	.54073	.02507	5.4711	.02660
#2	.20459	5.1885	.21345	1.0007	.53859	.02511	5.4315	.02684
#3	.20713	5.1718	.20982	1.0007	.53967	.02500	5.4867	.02638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10709**	**.25748**	**.26833**	**2.1158**	**26.774**	**.53895**	**5.2920**	**.26712**
Stddev	.00110	.00150	.00102	.0163	.146	.00177	.0899	.00207
%RSD	1.0293	.58418	.37911	.77089	.54628	.32794	1.6996	.77309
#1	.10822	.25770	.26921	2.1123	26.910	.54072	5.3158	.26847
#2	.10704	.25587	.26857	2.1015	26.620	.53718	5.1925	.26474
#3	.10601	.25886	.26722	2.1335	26.793	.53894	5.3676	.26814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54645**	**26.922**	**.26606**	**5.0982**	**.26690**	**.63372**	**.20697**	**2.6537**
Stddev	.00284	.049	.00199	.0187	.00116	.00467	.00438	.0104
%RSD	.51896	.18215	.74936	.36751	.43630	.73649	2.1177	.39305
#1	.54806	26.978	.26787	5.1053	.26563	.63639	.20777	2.6597
#2	.54811	26.888	.26639	5.1123	.26792	.63643	.21090	2.6598
#3	.54317	26.899	.26392	5.0769	.26714	.62833	.20224	2.6417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSW 61 Acquired: 6/24/2016 12:38:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52855	.54930	.53444	.26386	.50928	.52661	.00239
Stddev	.00351	.00114	.00402	.00245	.00130	.00227	.00045
%RSD	.66494	.20774	.75201	.92725	.25500	.43047	18.960
#1	.53111	.55029	.53018	.26437	.51078	.52813	.00281
#2	.53000	.54956	.53500	.26601	.50848	.52769	.00191
#3	.52455	.54805	.53816	.26120	.50859	.52400	.00243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8971.4	57490.	3144.1
Stddev	22.2	244.	32.0
%RSD	.24747	.42367	1.0188
#1	8950.2	57763.	3107.1
#2	8969.5	57293.	3162.4
#3	8994.5	57415.	3162.7

Approved: June 25, 2016

Sample Name: L1606073201 Acquired: 6/24/2016 12:42:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.02820	.00033	.03332	.25570	.00005	29.348
Stddev	.00081	.00477	.00048	.00258	.00135	.00008	.107
%RSD	1060.6	16.901	146.21	7.7292	.52666	149.81	.36550
#1	-.00060	.02574	.00042	.03159	.25466	.00010	29.343
#2	.00085	.02517	.00076	.03208	.25522	.00010	29.244
#3	-.00048	.03370	-.00019	.03628	.25722	-.00004	29.458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00130	.00737	-.00082	.13349	1.5334	.02731
Stddev	.00012	.00035	.00052	.00188	.00764	.0113	.00141
%RSD	74.130	26.900	7.0457	230.52	5.7259	.73635	5.1517
#1	.00029	.00115	.00727	-.00281	.12571	1.5462	.02848
#2	.00008	.00170	.00692	-.00056	.14099	1.5249	.02772
#3	.00010	.00105	.00794	.00093	.13376	1.5292	.02575
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.404	.04547	.00090	F 358.79	.00311	1.6349	.00068
Stddev	.236	.00197	.00021	5.43	.00059	.0190	.00121
%RSD	.60011	4.3318	23.625	1.5145	19.047	1.1597	178.50
#1	39.143	.04349	.00067	363.98	.00244	1.6526	-.00059
#2	39.604	.04743	.00109	359.24	.00355	1.6374	.00080
#3	39.464	.04549	.00094	353.14	.00335	1.6149	.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606073201 Acquired: 6/24/2016 12:42:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	-.00067	16.076	-.00001	.55040	-.00810	-.00164
Stddev	.00164	.00536	.145	.00052	.00274	.00406	.00137
%RSD	293.19	800.42	.90295	6770.2	.49860	50.069	83.155
#1	.00126	.00045	16.195	.00001	.55128	-.00732	-.00243
#2	-.00103	.00404	16.119	.00051	.54733	-.01249	-.00007
#3	-.00191	-.00650	15.914	-.00054	.55260	-.00449	-.00243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00202	.11146	.00024
Stddev	.00089	.00179	.00037
%RSD	44.331	1.6093	152.52
#1	-.00107	.11286	-.00010
#2	-.00215	.11208	.00019
#3	-.00284	.10944	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8764.9	55502.	3127.7
Stddev	30.2	118.	26.0
%RSD	.34400	.21327	.83247
#1	8763.7	55639.	3097.6
#2	8735.4	55438.	3142.4
#3	8795.6	55430.	3143.0

Approved: June 25, 2016

Sample Name: L1606079601 Acquired: 6/24/2016 12:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	3.2297	-.00034	1.2911	.04906	.00162	186.51	.23531
Stddev	.00208	.0109	.00397	.0030	.00128	.00007	1.50	.00040
%RSD	132.18	.33690	1166.8	.23101	2.6157	4.4542	.80345	.17130
#1	.00186	3.2175	-.00327	1.2892	.05043	.00168	188.24	.23541
#2	-.00064	3.2328	.00418	1.2895	.04885	.00163	185.56	.23565
#3	.00350	3.2386	-.00192	1.2945	.04789	.00154	185.75	.23486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00732	.00840	.45442	1.2197	3.3021	.04141	30.000	3.1182
Stddev	.00026	.00095	.00241	.0142	.0440	.00123	.108	.0244
%RSD	3.6023	11.313	.53119	1.1615	1.3334	2.9646	.35889	.78321
#1	.00761	.00870	.45446	1.2311	3.3071	.04020	30.001	3.1462
#2	.00710	.00734	.45681	1.2038	3.2557	.04266	30.107	3.1009
#3	.00725	.00917	.45198	1.2241	3.3434	.04138	29.892	3.1075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	11.561	.03416	.23588	1.4062	.27976	.00687	32.216
Stddev	.00020	.096	.00128	.00330	.0033	.00623	.00652	.075
%RSD	6.5058	.82760	3.7349	1.4007	.23470	2.2270	94.974	.23255
#1	.00335	11.669	.03517	.23243	1.4095	.28680	.00689	32.264
#2	.00296	11.487	.03459	.23620	1.4062	.27751	.01338	32.254
#3	.00305	11.527	.03273	.23902	1.4029	.27496	.00033	32.130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079601 Acquired: 6/24/2016 12:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00507	.47885	.00429	-.00276	-.00000	9.0027	.00215
Stddev	.00101	.00357	.00463	.00394	.00060	.0349	.00057
%RSD	19.835	.74545	107.79	142.73	15473.	.38752	26.596
#1	.00531	.48291	.00292	-.00082	-.00067	9.0287	.00188
#2	.00397	.47741	.00051	-.00017	.00016	9.0163	.00176
#3	.00594	.47623	.00946	-.00729	.00049	8.9631	.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8969.1	57515.	3201.7
Stddev	26.5	246.	24.8
%RSD	.29529	.42843	.77548
#1	8939.3	57271.	3173.1
#2	8989.8	57764.	3217.4
#3	8978.3	57511.	3214.7

Approved: June 25, 2016

Sample Name: L1606079602S Acquired: 6/24/2016 12:50:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20637**	**8.4667**	**.21215**	**2.3299**	**.55765**	**.02670**	**211.15**
Stddev	.00096	.0253	.00204	.0051	.00324	.00014	1.09
%RSD	.46531	.29867	.96304	.22080	.58025	.52132	.51779
#1	.20600	8.4950	.21018	2.3354	.56090	.02681	212.24
#2	.20746	8.4589	.21426	2.3291	.55443	.02675	210.05
#3	.20566	8.4462	.21202	2.3252	.55761	.02655	211.18
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22906**	**.10963**	**.25719**	**.36273**	**3.8155**	**30.167**	**.57896**
Stddev	.00047	.00050	.00101	.00163	.0076	.190	.00294
%RSD	.20432	.45993	.39435	.45055	.20055	.62859	.50762
#1	.22922	.11004	.25752	.36247	3.8169	30.297	.58056
#2	.22942	.10977	.25800	.36448	3.8224	29.949	.57557
#3	.22853	.10907	.25606	.36125	3.8073	30.255	.58076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**37.556**	**3.7302**	**.53671**	**36.032**	**.27262**	**5.4147**	**1.3723**
Stddev	.123	.0178	.00271	.149	.00159	.0196	.0051
%RSD	.32741	.47715	.50439	.41445	.58430	.36193	.37180
#1	37.642	3.7506	.53723	36.198	.27244	5.4232	1.3668
#2	37.610	3.7181	.53911	35.908	.27429	5.4287	1.3769
#3	37.415	3.7219	.53377	35.990	.27112	5.3923	1.3731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 25, 2016

Sample Name: L1606079602S Acquired: 6/24/2016 12:50:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.83295**	**.19904**	F **39.559**	**.51924**	**1.0206**	**.52855**	**.25056**
Stddev	.00381	.00362	.080	.00060	.0057	.00488	.00264
%RSD	.45758	1.8206	.20246	.11565	.55920	.92319	1.0541
#1	.83134	.19546	39.613	.51864	1.0248	.53056	.24812
#2	.83021	.20271	39.596	.51984	1.0141	.53210	.25336
#3	.83731	.19894	39.467	.51925	1.0230	.52298	.25020
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50387**	**8.9533**	**.00345**
Stddev	.00127	.0255	.00012
%RSD	.25293	.28527	3.4468
#1	.50516	8.9684	.00349
#2	.50262	8.9677	.00353
#3	.50382	8.9238	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8874.4**	**56986.**	**3197.8**
Stddev	22.9	183.	31.1
%RSD	.25749	.32104	.97251
#1	8874.8	56794.	3162.9
#2	8851.3	57004.	3208.1
#3	8897.0	57159.	3222.4

Approved: June 25, 2016

Sample Name: L1606079603SD Acquired: 6/24/2016 12:53:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20348**	**8.3907**	**.20803**	**2.3205**	**.55659**	**.02675**	**210.01**
Stddev	.00067	.0070	.00227	.0041	.00308	.00007	1.03
%RSD	.32994	.08394	1.0916	.17615	.55344	.27317	.49200
#1	.20367	8.3952	.20541	2.3200	.55995	.02674	211.18
#2	.20273	8.3942	.20930	2.3249	.55593	.02682	209.61
#3	.20403	8.3826	.20938	2.3168	.55390	.02668	209.24
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22784**	**.10941**	**.25693**	**.36070**	**3.7620**	**30.137**	**.57482**
Stddev	.00074	.00005	.00145	.00097	.0431	.085	.00367
%RSD	.32525	.04726	.56542	.26971	1.1460	.28231	.63776
#1	.22787	.10946	.25585	.36143	3.8070	30.228	.57882
#2	.22856	.10941	.25858	.36107	3.7577	30.060	.57405
#3	.22708	.10936	.25635	.35959	3.7211	30.123	.57161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**37.283**	**3.7093**	**.53679**	**35.887**	**.27192**	**5.4059**	**1.3646**
Stddev	.065	.0166	.00208	.175	.00166	.0027	.0036
%RSD	.17309	.44772	.38783	.48671	.61140	.04904	.26708
#1	37.346	3.7273	.53879	36.088	.27204	5.4084	1.3687
#2	37.217	3.6945	.53693	35.772	.27352	5.4063	1.3630
#3	37.287	3.7060	.53464	35.802	.27020	5.4031	1.3620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 25, 2016

Sample Name: L1606079603SD Acquired: 6/24/2016 12:53:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.82814**	**.20815**	F **39.014**	**.51935**	**1.0179**	**.52731**	**.25200**
Stddev	.00575	.00609	.081	.00143	.0071	.00449	.00183
%RSD	.69405	2.9239	.20860	.27470	.69999	.85144	.72692
#1	.83047	.20229	39.103	.52035	1.0259	.52320	.25130
#2	.83236	.21444	38.997	.52000	1.0123	.53210	.25063
#3	.82159	.20773	38.943	.51772	1.0154	.52662	.25408
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50350**	**8.8879**	**.00305**
Stddev	.00153	.0209	.00040
%RSD	.30487	.23506	13.114
#1	.50377	8.9078	.00308
#2	.50488	8.8897	.00344
#3	.50184	8.8661	.00264
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8883.7**	**57187.**	**3189.9**
Stddev	10.5	142.	22.6
%RSD	.11868	.24879	.70751
#1	8871.6	57137.	3171.1
#2	8889.1	57077.	3183.6
#3	8890.5	57348.	3214.9

Approved: June 25, 2016

Sample Name: L1606073202 Acquired: 6/24/2016 12:57:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.02813**	**.00029**	**.04299**	**.22283**	**-.00000**	**25.162**
Stddev	.00134	.00280	.00082	.00132	.00277	.00003	.241
%RSD	252.84	9.9565	284.55	3.0648	1.2409	1017.5	.95893
#1	.00086	.02578	-.00044	.04447	.22588	-.00003	25.435
#2	-.00095	.03123	.00118	.04255	.22048	-.00000	24.976
#3	.00168	.02737	.00013	.04195	.22213	.00002	25.076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.00120**	**.00613**	**.00149**	**.12035**	**1.4886**	**.02096**
Stddev	.00024	.00046	.00062	.00013	.01000	.0590	.00309
%RSD	67.894	38.073	10.067	8.8118	8.3106	3.9648	14.734
#1	.00061	.00150	.00611	.00148	.12839	1.5495	.01933
#2	.00031	.00067	.00552	.00163	.10915	1.4316	.01904
#3	.00014	.00141	.00675	.00137	.12352	1.4846	.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**34.325**	**.04040**	**.00125**	F **349.63**	**.00292**	**1.6666**	**-.00030**
Stddev	.171	.00030	.00019	3.15	.00063	.0019	.00596
%RSD	.49775	.74283	15.066	.90066	21.672	.11272	1957.9
#1	34.517	.04074	.00107	353.18	.00219	1.6662	-.00079
#2	34.189	.04026	.00124	347.17	.00327	1.6687	.00588
#3	34.268	.04019	.00144	348.55	.00329	1.6650	-.00601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606073202 Acquired: 6/24/2016 12:57:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	-.00482	14.835	.00019	.47317	-.00604	-.00166
Stddev	.00130	.00284	.080	.00103	.00252	.00346	.00171
%RSD	85.788	58.877	.53712	538.43	.53296	57.319	103.01
#1	.00271	-.00798	14.887	-.00082	.47605	-.00268	-.00297
#2	.00013	-.00397	14.874	.00125	.47138	-.00959	-.00227
#3	.00172	-.00250	14.743	.00015	.47207	-.00585	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00139	.05739	-.00049
Stddev	.00087	.00042	.00019
%RSD	62.489	.72596	39.112
#1	-.00058	.05772	-.00067
#2	-.00129	.05752	-.00029
#3	-.00232	.05692	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8802.2	55900.	3156.1
Stddev	11.1	153.	34.7
%RSD	.12621	.27340	1.0995
#1	8812.1	55724.	3124.8
#2	8804.3	55980.	3193.4
#3	8790.1	55996.	3150.2

Approved: June 25, 2016

Sample Name: L1606079401 Acquired: 6/24/2016 13:01:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.02285	.00059	.01157	.02302	.00000	4.1138	-.00026
Stddev	.00123	.00652	.00275	.00121	.00057	.00006	.0762	.00008
%RSD	894.56	28.519	469.79	10.441	2.4922	18199.	1.8516	31.902
#1	.00152	.03028	.00311	.01119	.02254	.00007	4.0311	-.00021
#2	-.00086	.01808	-.00234	.01292	.02366	-.00004	4.1811	-.00035
#3	-.00024	.02020	.00099	.01059	.02287	-.00003	4.1291	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00282	.00194	-.00143	1.2835	.37695	-.00156	.69132	.35802
Stddev	.00007	.00024	.00107	.0207	.07463	.00067	.08990	.00400
%RSD	2.5452	12.396	74.963	1.6127	19.797	43.171	13.004	1.1172
#1	.00277	.00188	-.00074	1.2630	.41442	-.00084	.58775	.35346
#2	.00278	.00173	-.00266	1.2831	.42541	-.00165	.73706	.35965
#3	.00290	.00220	-.00088	1.3044	.29101	-.00218	.74916	.36094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	1.0149	.00037	.00773	.00315	-.00108	-.00499	.64556
Stddev	.00014	.0157	.00052	.00611	.00167	.00193	.00347	.00397
%RSD	56.327	1.5446	141.49	79.119	52.980	178.21	69.644	.61433
#1	.00011	1.0219	.00010	.00835	.00264	.00009	-.00688	.64105
#2	.00039	.99693	.00097	.00133	.00501	-.00331	-.00098	.64715
#3	.00023	1.0258	.00003	.01351	.00179	-.00003	-.00710	.64849
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079401 Acquired: 6/24/2016 13:01:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00092	.05805	-.00327	-.00056	-.00053	.00096	.00059
Stddev	.00114	.00063	.00604	.00146	.00079	.00036	.00072
%RSD	123.36	1.0876	184.48	261.81	147.56	37.712	123.27
#1	.00038	.05734	-.01006	-.00036	-.00137	.00094	.00093
#2	-.00142	.05854	-.00127	-.00211	-.00042	.00132	.00107
#3	-.00173	.05828	.00151	.00080	.00019	.00060	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9564.9	61114.	3314.5
Stddev	38.3	230.	20.8
%RSD	.40006	.37594	.62656
#1	9609.1	60917.	3337.8
#2	9542.4	61367.	3307.7
#3	9543.2	61059.	3298.0

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:05:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41271	10.424	.41660	.51679	1.0602	.05053	10.566	.05362
Stddev	.00072	.006	.00234	.00241	.0072	.00015	.111	.00017
%RSD	.17421	.06111	.56160	.46715	.67846	.30430	1.0504	.32244
#1	.41217	10.431	.41393	.51409	1.0550	.05068	10.515	.05356
#2	.41352	10.425	.41825	.51875	1.0572	.05054	10.490	.05381
#3	.41242	10.418	.41764	.51753	1.0684	.05038	10.693	.05348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21181	.51018	.52957	4.1573	53.268	1.0472	10.263	.52911
Stddev	.00033	.00144	.00298	.0756	.251	.0098	.140	.00211
%RSD	.15714	.28312	.56359	1.8185	.47129	.93371	1.3615	.39822
#1	.21169	.51128	.52701	4.1046	53.131	1.0438	10.102	.52758
#2	.21219	.51070	.53285	4.1234	53.116	1.0395	10.336	.52824
#3	.21155	.50854	.52885	4.2439	53.558	1.0582	10.352	.53151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0610	52.921	.52624	10.442	.52470	1.2541	.42316	5.4481
Stddev	.0035	.320	.00081	.014	.00136	.0015	.01147	.0021
%RSD	.33117	.60540	.15460	.13298	.25996	.12313	2.7101	.03871
#1	1.0639	52.775	.52615	10.457	.52471	1.2556	.42209	5.4501
#2	1.0620	52.700	.52548	10.441	.52332	1.2541	.43512	5.4484
#3	1.0571	53.289	.52710	10.429	.52605	1.2526	.41226	5.4459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:05:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0484**	**1.0667**	**1.0685**	**.52661**	**1.0185**	**1.0523**	**1.0248**
Stddev	.0029	.0081	.0058	.00076	.0042	.0021	.0004
%RSD	.27896	.76213	.54537	.14465	.41241	.19459	.03894
#1	1.0494	1.0599	1.0694	.52577	1.0227	1.0505	1.0248
#2	1.0508	1.0645	1.0623	.52727	1.0143	1.0545	1.0251
#3	1.0451	1.0757	1.0739	.52677	1.0186	1.0520	1.0243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8882.5**	**56177.**	**3089.4**
Stddev	29.7	314.	12.2
%RSD	.33414	.55818	.39365
#1	8886.9	55855.	3082.5
#2	8850.9	56481.	3103.4
#3	8909.8	56196.	3082.2

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:08:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00717	.00127	.00627	.00069	-.00006	.00287	-.00006
Stddev	.00063	.00318	.00265	.00132	.00023	.00015	.01707	.00010
%RSD	166.42	44.334	208.86	21.039	33.283	255.17	595.44	163.89
#1	-.00060	.00479	-.00178	.00475	.00046	-.00015	.01040	.00004
#2	-.00086	.00594	.00294	.00693	.00092	.00012	-.01667	-.00008
#3	.00033	.01078	.00264	.00712	.00068	-.00014	.01487	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00066	.00118	-.00013	.00795	.06402	.00192	.03240	-.00221
Stddev	.00031	.00059	.00046	.01622	.02889	.00308	.06616	.00161
%RSD	46.769	49.794	363.48	203.93	45.129	160.88	204.20	72.497
#1	-.00075	.00088	-.00022	-.00484	.09445	.00205	.07082	-.00406
#2	-.00091	.00081	-.00053	.00251	.06064	.00493	.07038	-.00147
#3	-.00031	.00186	.00037	.02619	.03696	-.00123	-.04400	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00371	.05101	-.00022	.00146	-.00202	.00697	.00163	.00460
Stddev	.00026	.03364	.00082	.00530	.00080	.00025	.00566	.00230
%RSD	6.8808	65.949	378.04	362.25	39.756	3.5609	347.26	49.896
#1	.00342	.02221	.00011	.00725	-.00248	.00705	-.00479	.00356
#2	.00389	.08799	-.00115	-.00314	-.00109	.00717	.00590	.00724
#3	.00383	.04284	.00039	.00027	-.00249	.00669	.00378	.00301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:08:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00033**	**.00076**	**.00152**	**-.00024**	**.00025**	**.00081**
Stddev	.00122	.00031	.00671	.00233	.00128	.00006	.00064
%RSD	703.43	94.176	886.46	153.63	523.84	22.798	78.759
#1	-.00032	.00041	-.00664	.00398	-.00158	.00031	.00152
#2	.00111	-.00001	.00247	-.00065	-.00011	.00025	.00027
#3	-.00131	.00061	.00645	.00122	.00096	.00019	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9421.6**	**60299.**	**3256.8**
Stddev	40.2	274.	24.0
%RSD	.42621	.45387	.73587
#1	9409.1	60564.	3247.8
#2	9466.5	60316.	3284.0
#3	9389.1	60018.	3238.7

Approved: June 25, 2016

Sample Name: L1606079404 Acquired: 6/24/2016 13:12:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00130	.03039	.00126	.01940	.01369	-.00002	1.1950	-.00001
Stddev	.00260	.00196	.00092	.00094	.00095	.00007	.0239	.00007
%RSD	199.44	6.4564	73.167	4.8262	6.9231	344.58	2.0032	832.28
#1	.00428	.03265	.00020	.01939	.01470	-.00010	1.1970	-.00005
#2	-.00048	.02933	.00188	.02034	.01282	.00002	1.2179	.00007
#3	.00011	.02918	.00170	.01847	.01356	.00002	1.1702	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00476	.00102	-.00131	.16723	.50681	.00113	.89694	.29822
Stddev	.00006	.00143	.00104	.01047	.10066	.00302	.04328	.00708
%RSD	1.2851	139.37	79.584	6.2602	19.860	268.19	4.8253	2.3747
#1	.00479	.00230	-.00080	.16355	.51557	-.00071	.91414	.29874
#2	.00479	.00129	-.00063	.17904	.60281	.00461	.84771	.29089
#3	.00469	-.00052	-.00251	.15910	.40207	-.00053	.92899	.30502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	1.7317	.00193	.00148	-.00119	.00062	-.00351	.47199
Stddev	.00027	.0084	.00075	.00037	.00298	.00284	.00231	.00520
%RSD	36.771	.48737	38.705	24.708	250.89	456.80	65.733	1.1011
#1	.00105	1.7226	.00246	.00187	.00075	-.00174	-.00431	.47009
#2	.00065	1.7392	.00108	.00115	-.00462	-.00018	-.00531	.47787
#3	.00053	1.7334	.00225	.00142	.00031	.00378	-.00091	.46801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079404 Acquired: 6/24/2016 13:12:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.01018**	**-.00222**	**-.00094**	**-.00079**	**.00167**	**-.00018**
Stddev	.00054	.00018	.00543	.00236	.00070	.00023	.00054
%RSD	144.91	1.8060	245.09	251.26	89.393	13.688	304.63
#1	-.00075	.01035	.00066	-.00355	-.00160	.00168	.00043
#2	.00024	.00998	.00118	.00103	-.00040	.00190	-.00060
#3	-.00060	.01019	-.00848	-.00029	-.00036	.00144	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9520.7**	**60796.**	**3261.1**
Stddev	19.0	197.	21.3
%RSD	.19963	.32380	.65193
#1	9542.3	60651.	3283.6
#2	9506.7	61020.	3258.3
#3	9513.1	60717.	3241.3

Approved: June 25, 2016

Sample Name: L1606079604 Acquired: 6/24/2016 13:16:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.21348	.00260	.19976	.03690	-.00001	52.193	.22780
Stddev	.00107	.00411	.00425	.00172	.00071	.00003	.631	.00068
%RSD	113.51	1.9260	163.38	.86255	1.9207	405.78	1.2096	.29779
#1	.00212	.21057	.00526	.20093	.03689	-.00005	52.321	.22786
#2	.00003	.21818	-.00230	.20058	.03620	.00001	51.507	.22845
#3	.00068	.21169	.00486	.19779	.03761	.00001	52.750	.22710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05125	.00479	.36483	1.6560	14.660	.00877	5.5763	1.7147
Stddev	.00059	.00039	.00218	.0283	.159	.00350	.1053	.0147
%RSD	1.1535	8.1173	.59715	1.7093	1.0875	39.833	1.8880	.85941
#1	.05172	.00435	.36580	1.6545	14.708	.00650	5.6506	1.7174
#2	.05144	.00493	.36636	1.6284	14.482	.00702	5.4558	1.6988
#3	.05059	.00509	.36234	1.6850	14.789	.01280	5.6224	1.7279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00313	144.14	.03035	1.0211	.07552	1.1557	.00411	6.5697
Stddev	.00027	1.70	.00122	.0047	.00250	.0045	.00525	.0440
%RSD	8.5563	1.1770	4.0360	.45700	3.3107	.39015	127.81	.67014
#1	.00330	144.93	.02943	1.0218	.07815	1.1592	.00478	6.5572
#2	.00282	142.19	.02987	1.0254	.07523	1.1572	-.00145	6.6186
#3	.00326	145.29	.03174	1.0161	.07318	1.1506	.00899	6.5332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604 Acquired: 6/24/2016 13:16:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.18481	-.00844	-.00188	-.00071	5.6059	.00341
Stddev	.00069	.00240	.00426	.00360	.00127	.0265	.00050
%RSD	794.10	1.2974	50.412	191.50	178.39	.47276	14.789
#1	-.00018	.18518	-.01246	-.00564	-.00052	5.6217	.00292
#2	.00087	.18225	-.00889	.00153	-.00206	5.6207	.00337
#3	-.00043	.18700	-.00398	-.00152	.00045	5.5753	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8988.0	57229.	3212.0
Stddev	23.6	64.	31.1
%RSD	.26299	.11256	.96670
#1	8965.7	57166.	3192.3
#2	9012.7	57227.	3247.8
#3	8985.6	57294.	3196.0

Approved: June 25, 2016

Sample Name: L1606079604PS Acquired: 6/24/2016 13:20:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573149-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20280**	**5.3027**	**.21231**	**1.1801**	**.55540**	**.02495**	**51.809**	**.23407**
Stddev	.00015	.0166	.00321	.0002	.00387	.00010	.375	.00041
%RSD	.07637	.31377	1.5120	.01812	.69757	.40956	.72434	.17452
#1	.20297	5.3201	.20923	1.1802	.55963	.02507	52.222	.23449
#2	.20267	5.2869	.21564	1.1802	.55202	.02492	51.489	.23404
#3	.20275	5.3010	.21207	1.1798	.55456	.02487	51.718	.23367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.15079**	**.25382**	**.59150**	**3.4910**	**39.388**	**.53018**	**9.9531**	**1.8085**
Stddev	.00020	.00094	.00182	.0662	.329	.00406	.0974	.0116
%RSD	.13400	.36852	.30736	1.8955	.83526	.76532	.97892	.64231
#1	.15097	.25482	.59345	3.5674	39.766	.53137	9.9424	1.8174
#2	.15082	.25365	.58986	3.4523	39.170	.52566	10.055	1.7953
#3	.15057	.25298	.59118	3.4533	39.227	.53351	9.8614	1.8127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53968**	**156.98**	**.28383**	**6.1212**	**.32198**	**1.6775**	**.20819**	**8.6076**
Stddev	.00242	1.04	.00051	.0203	.00460	.0049	.00352	.0069
%RSD	.44873	.66195	.17819	.33148	1.4283	.29355	1.6930	.08070
#1	.54031	158.15	.28435	6.1431	.31988	1.6722	.20467	8.6149
#2	.54173	156.18	.28379	6.1177	.32725	1.6786	.21172	8.6066
#3	.53701	156.60	.28334	6.1030	.31880	1.6818	.20817	8.6011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604PS Acquired: 6/24/2016 13:20:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573149-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51592**	**.68475**	**.51913**	**.25074**	**.50296**	**5.5697**	**.00437**
Stddev	.00194	.00530	.00608	.00071	.00238	.0089	.00064
%RSD	.37560	.77350	1.1715	.28316	.47332	.16068	14.638
#1	.51652	.69043	.51759	.25150	.50454	5.5773	.00374
#2	.51749	.67994	.51397	.25009	.50413	5.5720	.00435
#3	.51376	.68387	.52584	.25065	.50022	5.5599	.00502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8909.6**	**56843.**	**3204.4**
Stddev	1.8	290.	30.2
%RSD	.02032	.50970	.94121
#1	8908.8	56575.	3171.8
#2	8911.6	56804.	3210.2
#3	8908.2	57150.	3231.3

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.04368	.00122	.04349	.00806	.00002	10.277	.04768
Stddev	.00134	.00228	.00094	.00292	.00145	.00002	.058	.00062
%RSD	180.24	5.2256	77.601	6.7258	18.013	78.531	.56466	1.2952
#1	.00171	.04149	.00122	.04259	.00639	.00001	10.219	.04698
#2	-.00079	.04604	.00027	.04676	.00878	.00002	10.275	.04788
#3	.00130	.04352	.00216	.04112	.00901	.00005	10.335	.04817
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01026	.00202	.07565	.33169	2.8985	.00465	1.0790	.33882
Stddev	.00047	.00069	.00245	.00173	.0396	.00433	.0895	.00405
%RSD	4.6085	33.927	3.2368	.52127	1.3666	93.002	8.2910	1.1946
#1	.01002	.00234	.07292	.33127	2.9371	.00369	1.1027	.33415
#2	.00994	.00249	.07637	.33358	2.9004	.00938	1.1541	.34103
#3	.01080	.00123	.07766	.33020	2.8580	.00089	.98002	.34129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	28.363	.00700	.21122	.01400	.23816	-.00306	1.3640
Stddev	.00041	.289	.00119	.00332	.00222	.00413	.00166	.0164
%RSD	40.909	1.0206	17.017	1.5709	15.868	1.7347	54.387	1.2062
#1	.00110	28.030	.00564	.20999	.01155	.23760	-.00373	1.3521
#2	.00054	28.554	.00752	.20870	.01588	.24255	-.00116	1.3571
#3	.00133	28.504	.00785	.21498	.01456	.23435	-.00428	1.3828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.03606**	**-.00264**	**.00053**	**-.00029**	**1.2005**	**.00050**
Stddev	.00043	.00042	.00853	.00500	.00064	.0141	.00037
%RSD	124.76	1.1669	322.65	938.33	219.25	1.1743	73.895
#1	-.00085	.03565	.00325	-.00513	-.00080	1.1865	.00067
#2	-.00013	.03603	.00124	.00430	.00042	1.2003	.00008
#3	-.00007	.03649	-.01242	.00243	-.00049	1.2147	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9105.6**	**58170.**	**3212.7**
Stddev	27.3	280.	23.5
%RSD	.30017	.48123	.73253
#1	9103.8	58409.	3225.9
#2	9133.8	57862.	3185.5
#3	9079.2	58239.	3226.6

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:28:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00857	.00134	.01061	.00165	-.00001	1.9132	.00874
Stddev	.00181	.00667	.00234	.00249	.00017	.00001	.0173	.00010
%RSD	455.89	77.825	174.32	23.446	10.373	116.47	.90342	1.1541
#1	-.00243	.00394	-.00136	.01199	.00166	-.00002	1.8935	.00866
#2	.00104	.01621	.00261	.01210	.00181	.00000	1.9199	.00871
#3	.00020	.00555	.00278	.00774	.00147	-.00001	1.9261	.00885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	.00140	.01276	.04419	.61000	-.00198	.19513	.06168
Stddev	.00016	.00155	.00074	.02220	.04844	.00354	.07685	.00239
%RSD	13.116	110.63	5.7727	50.228	7.9412	178.84	39.385	3.8731
#1	.00124	-.00031	.01191	.06977	.66578	-.00239	.22434	.06192
#2	.00103	.00272	.01324	.03282	.57847	.00175	.25310	.06394
#3	.00134	.00179	.01313	.02998	.58575	-.00529	.10796	.05918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	5.4833	.00115	.03698	.00356	.04416	-.00362	.25512
Stddev	.00017	.0430	.00058	.00189	.00182	.00432	.00289	.00216
%RSD	41.091	.78460	50.355	5.1167	51.028	9.7754	79.738	.84721
#1	.00022	5.4343	.00122	.03480	.00150	.04644	-.00041	.25572
#2	.00054	5.5006	.00054	.03817	.00427	.04686	-.00445	.25692
#3	.00047	5.5150	.00169	.03798	.00492	.03918	-.00600	.25272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:28:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.00660**	**-.00393**	**.00088**	**-.00118**	**.21826**	**.00069**
Stddev	.00041	.00021	.00248	.00276	.00061	.00108	.00021
%RSD	65.439	3.1746	63.297	315.82	51.724	.49261	30.159
#1	-.00015	.00666	-.00674	-.00231	-.00182	.21725	.00045
#2	-.00090	.00637	-.00302	.00267	-.00111	.21814	.00079
#3	-.00081	.00678	-.00202	.00226	-.00060	.21939	.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9580.6**	**61020.**	**3283.6**
Stddev	11.6	138.	12.0
%RSD	.12149	.22602	.36655
#1	9581.4	60926.	3271.0
#2	9591.8	60956.	3294.9
#3	9568.6	61178.	3284.8

Approved: June 25, 2016

Sample Name: PBW 96 Acquired: 6/24/2016 13:31:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.05750	-.00115	.00379	.00035	.00004	.14547	-.00001
Stddev	.00114	.00534	.00113	.00242	.00047	.00004	.01120	.00032
%RSD	155.47	9.2868	98.477	63.976	132.21	109.74	7.6992	4547.8
#1	-.00055	.06232	.00006	.00550	.00089	.00008	.15412	.00029
#2	.00165	.05843	-.00133	.00485	.00009	.00004	.13282	-.00034
#3	.00110	.05176	-.00218	.00102	.00008	-.00000	.14948	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00132	-.00117	.07602	.06648	-.00036	.02744	.00190
Stddev	.00018	.00131	.00109	.00738	.09369	.00127	.07199	.00082
%RSD	89.489	99.783	93.607	9.7097	140.92	355.05	262.29	42.953
#1	-.00009	.00101	-.00242	.07287	.07235	-.00017	-.04949	.00102
#2	-.00011	.00276	-.00042	.08445	.15710	.00081	.09317	.00263
#3	-.00041	.00019	-.00066	.07074	-.03000	-.00171	.03866	.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.10510	.00092	-.01236	.00247	-.00114	-.00226	.03159
Stddev	.00026	.02680	.00039	.01242	.00253	.00255	.00507	.00112
%RSD	54.501	25.498	41.922	100.45	102.42	223.14	224.49	3.5471
#1	.00035	.09773	.00136	-.02382	-.00008	-.00396	-.00341	.03261
#2	.00078	.08276	.00067	-.01410	.00250	-.00049	.00329	.03178
#3	.00031	.13482	.00072	.00083	.00497	.00102	-.00665	.03039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBW 96 Acquired: 6/24/2016 13:31:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00097**	**.00038**	**-.00465**	**.00081**	**-.00039**	**.00272**	**.00004**
Stddev	.00085	.00027	.00283	.00149	.00021	.00004	.00053
%RSD	87.746	71.935	60.728	183.22	53.537	1.5511	1208.2
#1	-.00022	.00065	-.00629	.00062	-.00015	.00268	-.00031
#2	-.00189	.00011	-.00139	-.00057	-.00048	.00274	.00065
#3	-.00079	.00036	-.00628	.00240	-.00054	.00276	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9001.9**	**57577.**	**3145.6**
Stddev	5.1	289.	25.4
%RSD	.05668	.50260	.80877
#1	9003.5	57315.	3116.7
#2	8996.2	57888.	3155.1
#3	9006.1	57528.	3164.8

Approved: June 25, 2016

Sample Name: LCSW 96 Acquired: 6/24/2016 13:35:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19950**	**5.0939**	**.20372**	**1.0208**	**.52299**	**.02445**	**5.3163**	**.02590**
Stddev	.00336	.0048	.00192	.0030	.00511	.00010	.0742	.00036
%RSD	1.6828	.09397	.94086	.29468	.97686	.41134	1.3965	1.3919
#1	.20287	5.0993	.20151	1.0195	.52801	.02450	5.4020	.02630
#2	.19946	5.0902	.20478	1.0242	.51780	.02452	5.2747	.02561
#3	.19616	5.0921	.20487	1.0186	.52318	.02434	5.2723	.02578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10423**	**.25027**	**.26092**	**2.0255**	**26.189**	**.52677**	**5.1629**	**.25877**
Stddev	.00040	.00138	.00033	.0200	.298	.00291	.1198	.00454
%RSD	.38380	.55012	.12503	.98782	1.1361	.55208	2.3196	1.7548
#1	.10469	.25146	.26057	2.0378	26.464	.52733	5.0560	.26368
#2	.10408	.24876	.26099	2.0025	25.873	.52362	5.2924	.25792
#3	.10393	.25058	.26122	2.0363	26.231	.52935	5.1404	.25472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53131**	**26.270**	**.25798**	**4.9905**	**.25688**	**.61782**	**.20100**	**2.6938**
Stddev	.00094	.237	.00094	.0107	.00325	.00214	.00148	.0078
%RSD	.17719	.90374	.36573	.21426	1.2655	.34651	.73738	.28974
#1	.53238	26.488	.25831	5.0026	.26007	.61978	.20078	2.7028
#2	.53091	26.017	.25692	4.9867	.25701	.61816	.20257	2.6890
#3	.53063	26.306	.25872	4.9822	.25357	.61554	.19963	2.6897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSW 96 Acquired: 6/24/2016 13:35:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51498	.53518	.52231	.25730	.49620	.51662	.00156
Stddev	.00201	.00522	.00398	.00216	.00213	.00142	.00028
%RSD	.38972	.97497	.76237	.83781	.43000	.27422	18.205
#1	.51604	.54037	.52691	.25811	.49794	.51823	.00133
#2	.51624	.52993	.51991	.25486	.49685	.51608	.00147
#3	.51266	.53524	.52012	.25893	.49382	.51556	.00188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8976.4	57450.	3148.6
Stddev	16.7	311.	9.0
%RSD	.18579	.54143	.28702
#1	8994.0	57165.	3138.5
#2	8960.8	57403.	3156.0
#3	8974.5	57782.	3151.2

Approved: June 25, 2016

Sample Name: L1606127902 Acquired: 6/24/2016 13:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	15.737	.00504	.17704	.19989	.00100	197.77	.00050
Stddev	.00231	.039	.00324	.00132	.00099	.00006	.59	.00022
%RSD	1507.6	.25058	64.174	.74832	.49635	5.6554	.29748	43.504
#1	.00250	15.783	.00357	.17765	.20103	.00098	198.43	.00025
#2	-.00170	15.713	.00280	.17553	.19919	.00095	197.29	.00066
#3	-.00126	15.717	.00875	.17796	.19946	.00106	197.58	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01128	.04276	.02006	22.872	6.2512	.04284	80.521	2.6589
Stddev	.00030	.00028	.00041	.038	.0825	.00592	.183	.0133
%RSD	2.6928	.64348	2.0282	.16663	1.3204	13.819	.22689	.50023
#1	.01147	.04247	.01996	22.869	6.1704	.04629	80.723	2.6697
#2	.01143	.04279	.02051	22.835	6.3354	.03601	80.469	2.6441
#3	.01093	.04302	.01971	22.911	6.2479	.04623	80.369	2.6630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00681	18.837	.02941	.79338	.01403	-.00060	.00131	29.051
Stddev	.00038	.047	.00138	.00484	.00107	.00255	.00127	.105
%RSD	5.5050	.25020	4.6749	.61023	7.5974	423.13	97.049	.36059
#1	.00646	18.890	.03067	.78819	.01333	-.00349	.00219	29.106
#2	.00720	18.818	.02794	.79419	.01526	.00035	-.00015	29.116
#3	.00678	18.801	.02963	.79777	.01350	.00133	.00188	28.930
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127902 Acquired: 6/24/2016 13:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.96724	.15250	.00117	.03346	.15890	.00476
Stddev	.00040	.00326	.00547	.00105	.00024	.00053	.00041
%RSD	34.705	.33744	3.5900	89.594	.72954	.33381	8.5619
#1	.00163	.97101	.14892	.00229	.03370	.15915	.00519
#2	.00097	.96527	.14979	.00101	.03348	.15926	.00472
#3	.00090	.96545	.15881	.00021	.03321	.15829	.00438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8809.1	56197.	3156.2
Stddev	17.1	169.	15.4
%RSD	.19391	.29996	.48903
#1	8823.3	56057.	3138.5
#2	8813.9	56150.	3167.0
#3	8790.1	56384.	3163.0

Approved: June 25, 2016

Sample Name: L1606127903S Acquired: 6/24/2016 13:43:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19326	20.629	.20505	1.1242	.67887	.02411	202.49	.02516
Stddev	.00124	.031	.00568	.0038	.00396	.00002	1.42	.00004
%RSD	.63990	.14876	2.7693	.33476	.58405	.08259	.70154	.15637
#1	.19467	20.662	.20382	1.1250	.68345	.02412	204.10	.02518
#2	.19238	20.624	.21124	1.1275	.67642	.02413	201.40	.02512
#3	.19273	20.601	.20009	1.1201	.67675	.02409	201.97	.02518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10665	.26645	.25704	21.289	30.486	.53447	84.560	2.9029
Stddev	.00029	.00084	.00157	.139	.180	.01012	.672	.0309
%RSD	.27245	.31377	.61183	.65337	.58896	1.8942	.79485	1.0632
#1	.10698	.26680	.25771	21.445	30.561	.54519	85.295	2.9385
#2	.10646	.26550	.25817	21.245	30.281	.52507	83.976	2.8873
#3	.10650	.26706	.25524	21.177	30.616	.53315	84.410	2.8830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50244	43.573	.26189	5.8590	.25372	.55116	.19410	32.382
Stddev	.00157	.327	.00132	.0159	.00269	.00988	.00408	.058
%RSD	.31334	.74940	.50585	.27121	1.0586	1.7922	2.1037	.17891
#1	.50275	43.950	.26334	5.8677	.25501	.56055	.18982	32.390
#2	.50384	43.381	.26161	5.8686	.25064	.54086	.19452	32.435
#3	.50074	43.388	.26073	5.8406	.25553	.55206	.19795	32.320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127903S Acquired: 6/24/2016 13:43:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48639**	**1.4540**	**.59410**	**.23913**	**.50539**	**.70433**	**.01017**
Stddev	.00047	.0117	.00764	.00139	.00117	.00111	.00008
%RSD	.09761	.80721	1.2860	.58290	.23204	.15818	.79769
#1	.48692	1.4674	.59934	.23991	.50616	.70442	.01015
#2	.48623	1.4457	.58533	.23752	.50597	.70539	.01010
#3	.48602	1.4488	.59762	.23995	.50404	.70317	.01026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8732.4**	**55709.**	**3136.3**
Stddev	12.8	133.	9.5
%RSD	.14604	.23913	.30143
#1	8741.8	55582.	3125.8
#2	8737.4	55848.	3138.8
#3	8717.9	55698.	3144.2

Approved: June 25, 2016

Sample Name: L1606127904SD Acquired: 6/24/2016 13:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19840**	**21.664**	**.21549**	**1.1518**	**.68554**	**.02470**	**203.86**
Stddev	.00350	.173	.00239	.0093	.00255	.00012	.48
%RSD	1.7631	.79987	1.1079	.81137	.37163	.47958	.23568
#1	.19923	21.766	.21789	1.1585	.68363	.02482	204.27
#2	.20141	21.762	.21547	1.1557	.68843	.02468	203.97
#3	.19456	21.464	.21311	1.1411	.68456	.02459	203.33
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02560**	**.10985**	**.27087**	**.26369**	**21.250**	**31.671**	**.54653**
Stddev	.00010	.00064	.00286	.00112	.102	.097	.00418
%RSD	.40730	.58209	1.0577	.42589	.48182	.30643	.76563
#1	.02572	.11059	.27368	.26496	21.309	31.764	.54887
#2	.02555	.10947	.27099	.26284	21.310	31.678	.54902
#3	.02554	.10950	.26795	.26328	21.132	31.570	.54170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**85.131**	**2.9406**	**.52074**	**44.518**	**.26846**	**6.1103**	**.26144**
Stddev	.178	.0135	.00200	.085	.00112	.0182	.00268
%RSD	.20906	.45814	.38482	.19000	.41689	.29863	1.0264
#1	84.960	2.9560	.52294	44.584	.26874	6.1155	.26438
#2	85.315	2.9345	.52024	44.548	.26723	6.0900	.26081
#3	85.119	2.9312	.51903	44.423	.26941	6.1253	.25913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 25, 2016

Sample Name: L1606127904SD Acquired: 6/24/2016 13:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.57453**	**.19709**	F **36.344**	**.50382**	**1.4735**	**.64850**	**.24413**
Stddev	.00418	.00789	.056	.00257	.0019	.00602	.00132
%RSD	.72824	4.0016	.15274	.50962	.13256	.92766	.53874
#1	.57287	.19772	36.404	.50677	1.4750	.65107	.24435
#2	.57929	.20464	36.334	.50206	1.4742	.65280	.24272
#3	.57143	.18890	36.295	.50263	1.4713	.64162	.24532
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.52196**	**.56684**	**.01080**
Stddev	.00375	.00342	.00015
%RSD	.71940	.60354	1.3985
#1	.52583	.56511	.01079
#2	.52171	.56462	.01095
#3	.51833	.57078	.01065
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8712.5**	**55773.**	**3120.2**
Stddev	3.2	331.	12.8
%RSD	.03729	.59418	.41169
#1	8713.6	55403.	3119.9
#2	8708.8	55873.	3107.5
#3	8715.0	56043.	3133.2

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:50:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38140**	**9.6036**	**.38549**	**.47990**	**.97583**	**.04697**	**9.6736**	**.04936**
Stddev	.00083	.0155	.00161	.00272	.00700	.00039	.0481	.00043
%RSD	.21651	.16083	.41796	.56755	.71776	.83544	.49724	.87879
#1	.38093	9.6166	.38518	.48096	.97193	.04728	9.6575	.04905
#2	.38235	9.6078	.38723	.48193	.97165	.04709	9.6356	.04986
#3	.38091	9.5866	.38405	.47680	.98392	.04652	9.7277	.04917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19524**	**.47322**	**.49109**	**3.8323**	**49.097**	**.96492**	**9.4888**	**.48870**
Stddev	.00085	.00448	.00144	.0650	.263	.00666	.0433	.00395
%RSD	.43326	.94684	.29398	1.6953	.53510	.68973	.45628	.80862
#1	.19584	.47670	.49055	3.7748	48.999	.96096	9.4388	.48630
#2	.19562	.47480	.49272	3.8193	48.897	.96120	9.5117	.48654
#3	.19427	.46817	.48999	3.9028	49.395	.97260	9.5158	.49326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98079**	**48.817**	**.48770**	**9.6771**	**.48808**	**1.1568**	**.39117**	**5.0500**
Stddev	.00652	.291	.00120	.0180	.00541	.0169	.00115	.0077
%RSD	.66469	.59531	.24539	.18616	1.1087	1.4624	.29359	.15164
#1	.98623	48.688	.48889	9.6790	.49412	1.1640	.39004	5.0445
#2	.98257	48.614	.48771	9.6941	.48368	1.1689	.39234	5.0588
#3	.97357	49.150	.48649	9.6582	.48644	1.1374	.39112	5.0467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:50:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.97107**	**.97794**	**.98195**	**.48922**	**.94029**	**.97547**	**.95262**
Stddev	.00207	.00590	.00292	.00294	.00290	.00075	.01313
%RSD	.21287	.60287	.29764	.60052	.30843	.07725	1.3786
#1	.97343	.97629	.98320	.49172	.94213	.97546	.93766
#2	.96960	.97304	.97861	.48994	.93695	.97623	.95795
#3	.97018	.98448	.98404	.48598	.94180	.97472	.96224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9252.7**	**58629.**	**3212.3**
Stddev	24.3	490.	28.7
%RSD	.26211	.83545	.89213
#1	9236.4	58082.	3245.1
#2	9241.1	58779.	3198.9
#3	9280.5	59026.	3192.7

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:54:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	-.00051	.00183	.00655	.00026	-.00000	.00852	-.00022
Stddev	.00064	.00733	.00105	.00104	.00009	.00005	.04466	.00023
%RSD	179.80	1430.7	57.749	15.843	35.947	4708.9	523.90	106.47
#1	.00048	.00366	.00121	.00743	.00035	-.00005	.04854	-.00006
#2	-.00034	-.00897	.00123	.00681	.00027	-.00001	-.03965	-.00048
#3	.00092	.00378	.00304	.00540	.00016	.00005	.01668	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00227	-.00072	-.01318	.07124	.00049	.08648	-.00199
Stddev	.00023	.00064	.00050	.02673	.03864	.00139	.01953	.00183
%RSD	260.70	28.077	69.839	202.79	54.246	286.14	22.586	92.121
#1	-.00012	.00157	-.00036	-.03888	.08538	-.00076	.08196	-.00332
#2	-.00029	.00242	-.00130	-.01513	.10082	.00022	.10787	-.00274
#3	.00016	.00282	-.00051	.01447	.02752	.00199	.06960	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00342	.05697	-.00032	.00309	.00127	.00324	.00119	.00515
Stddev	.00032	.02946	.00116	.00580	.00261	.00123	.00629	.00054
%RSD	9.4112	51.713	361.47	187.66	205.38	38.030	528.76	10.506
#1	.00378	.04217	.00100	-.00305	.00285	.00465	.00735	.00465
#2	.00317	.09090	-.00078	.00846	.00271	.00268	.00143	.00572
#3	.00331	.03785	-.00118	.00386	-.00175	.00238	-.00522	.00507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:54:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.00036**	**.00418**	**-.00158**	**-.00051**	**.00017**	**.00102**
Stddev	.00053	.00033	.01062	.00055	.00051	.00029	.00036
%RSD	171.93	91.019	254.34	34.602	100.39	177.91	35.103
#1	-.00010	.00004	.00137	-.00145	-.00031	.00038	.00135
#2	-.00091	.00035	.01591	-.00218	-.00013	.00029	.00064
#3	.00009	.00069	-.00476	-.00111	-.00109	-.00017	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9545.2**	**60729.**	**3266.7**
Stddev	24.9	237.	23.8
%RSD	.26058	.39065	.72829
#1	9540.3	60493.	3240.2
#2	9523.2	60727.	3286.2
#3	9572.2	60967.	3273.7

Approved: June 25, 2016

Sample Name: L1606096103 Acquired: 6/24/2016 13:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.09140	.00112	.03611	.03358	-.00001	50.084	.00013
Stddev	.00022	.00238	.00188	.00195	.00041	.00008	.422	.00018
%RSD	185.41	2.6039	167.01	5.3975	1.2258	580.55	.84237	141.64
#1	.00013	.08878	-.00078	.03488	.03351	-.00003	50.499	.00032
#2	-.00026	.09197	.00117	.03835	.03321	.00007	49.656	-.00003
#3	-.00023	.09344	.00297	.03508	.03403	-.00009	50.096	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00184	-.00114	.03656	1.3467	.00581	15.245	.00051
Stddev	.00014	.00073	.00091	.02407	.0686	.00337	.260	.00254
%RSD	61.138	39.585	79.397	65.853	5.0911	58.003	1.7074	500.61
#1	-.00015	.00167	-.00218	.01202	1.2696	.00901	15.489	.00250
#2	-.00015	.00121	-.00074	.03751	1.4008	.00612	14.971	.00138
#3	-.00040	.00264	-.00050	.06014	1.3699	.00229	15.275	-.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00260	9.6468	.00019	-.00521	-.00233	.00331	.00457	4.0826
Stddev	.00028	.0838	.00028	.00366	.00219	.00207	.00459	.0345
%RSD	10.599	.86900	141.53	70.238	94.267	62.612	100.63	.84571
#1	.00231	9.7410	.00004	-.00109	.00018	.00092	.00224	4.1042
#2	.00263	9.6187	.00051	-.00810	-.00328	.00434	.00160	4.1009
#3	.00286	9.5806	.00003	-.00645	-.00389	.00466	.00986	4.0428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606096103 Acquired: 6/24/2016 13:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**.25691**	**-.00637**	**-.00259**	**-.00050**	**.00292**	**.00135**
Stddev	.00049	.00223	.00705	.00153	.00034	.00040	.00049
%RSD	72.565	.86751	110.76	58.917	67.376	13.663	36.114
#1	-.00091	.25924	-.00795	-.00331	-.00034	.00317	.00087
#2	-.00099	.25480	.00134	-.00084	-.00090	.00314	.00133
#3	-.00011	.25669	-.01249	-.00363	-.00028	.00246	.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8942.3**	**57388.**	**3165.4**
Stddev	36.0	169.	10.5
%RSD	.40295	.29363	.33091
#1	8915.6	57232.	3155.7
#2	8928.0	57367.	3176.5
#3	8983.2	57567.	3163.9

Approved: June 25, 2016

Sample Name: L1606096103PS Acquired: 6/24/2016 14:02:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574076-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20212	5.1577	.20995	1.0218	.55067	.02458	50.301	.02595
Stddev	.00257	.0134	.00150	.0020	.00278	.00001	.286	.00016
%RSD	1.2694	.25951	.71236	.19511	.50565	.03510	.56934	.61701
#1	.20209	5.1522	.20849	1.0233	.55372	.02459	50.529	.02608
#2	.19957	5.1479	.20988	1.0196	.54826	.02458	49.980	.02599
#3	.20470	5.1729	.21148	1.0227	.55003	.02457	50.394	.02577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10297	.25008	.25544	2.0785	27.389	.52844	18.834	.25830
Stddev	.00023	.00157	.00241	.0113	.185	.00335	.039	.00347
%RSD	.22302	.62649	.94504	.54163	.67510	.63326	.20820	1.3448
#1	.10320	.25049	.25823	2.0826	27.472	.53144	18.843	.26189
#2	.10274	.25140	.25409	2.0658	27.177	.52483	18.867	.25495
#3	.10299	.24834	.25401	2.0872	27.518	.52905	18.790	.25805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53490	34.932	.25626	5.1271	.25681	.62874	.20828	6.2999
Stddev	.00204	.144	.00031	.0135	.00377	.00039	.00270	.0306
%RSD	.38190	.41152	.12115	.26248	1.4693	.06250	1.2974	.48507
#1	.53528	35.050	.25602	5.1233	.25437	.62829	.20809	6.2859
#2	.53673	34.772	.25661	5.1420	.26116	.62899	.21107	6.2787
#3	.53270	34.975	.25617	5.1159	.25492	.62895	.20567	6.3349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606096103PS Acquired: 6/24/2016 14:02:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574076-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51595	.74881	.52242	.25818	.49972	.51357	.00455
Stddev	.00103	.00313	.00297	.00309	.00213	.00106	.00114
%RSD	.19954	.41852	.56925	1.1985	.42627	.20581	24.932
#1	.51562	.75083	.52020	.25542	.50129	.51430	.00341
#2	.51710	.74520	.52125	.26152	.49729	.51406	.00457
#3	.51512	.75039	.52580	.25759	.50057	.51236	.00568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8833.6	56651.	3119.7
Stddev	9.3	223.	21.6
%RSD	.10547	.39347	.69133
#1	8823.9	56539.	3116.6
#2	8834.3	56908.	3142.7
#3	8842.5	56506.	3099.9

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:05:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.01743	-.00053	.01293	.00637	.00006	9.8603	-.00009
Stddev	.00112	.00543	.00066	.00212	.00093	.00006	.1510	.00026
%RSD	749.50	31.156	123.78	16.425	14.637	106.44	1.5314	273.36
#1	.00120	.01486	-.00015	.01142	.00533	.00013	9.7000	-.00016
#2	-.00103	.01376	-.00130	.01536	.00714	.00001	9.8810	.00019
#3	.00028	.02366	-.00015	.01201	.00663	.00003	9.9999	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.00166	-.00081	.01557	.34726	.00184	3.0327	-.00090
Stddev	.00014	.00107	.00071	.01602	.05466	.00348	.0951	.00076
%RSD	37.681	64.012	87.782	102.86	15.742	189.11	3.1367	84.164
#1	-.00021	.00202	-.00151	.03338	.29666	.00458	2.9721	-.00121
#2	-.00048	.00047	-.00085	.00235	.40524	-.00207	2.9836	-.00147
#3	-.00039	.00251	-.00008	.01099	.33988	.00301	3.1423	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	1.9887	-.00002	.00349	-.00035	.00256	.00530	.86568
Stddev	.00011	.0321	.00087	.00714	.00172	.00490	.00381	.00616
%RSD	11.175	1.6161	4064.9	204.77	495.04	191.24	71.852	.71180
#1	.00095	1.9586	.00085	.00447	-.00202	.00804	.00476	.85861
#2	.00114	1.9850	-.00088	.01010	.00141	-.00140	.00179	.86846
#3	.00094	2.0226	-.00004	-.00409	-.00043	.00105	.00936	.86996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:05:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.05064**	**-.00115**	**-.00120**	**-.00043**	**.00102**	**.00056**
Stddev	.00024	.00069	.00525	.00297	.00106	.00012	.00014
%RSD	123.48	1.3651	458.63	247.68	244.53	11.508	24.672
#1	-.00046	.05019	-.00523	.00208	-.00117	.00096	.00072
#2	.00002	.05028	.00478	-.00371	.00078	.00115	.00045
#3	-.00016	.05143	-.00298	-.00197	-.00092	.00094	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9336.0**	**59375.**	**3208.5**
Stddev	30.5	401.	15.3
%RSD	.32641	.67506	.47725
#1	9354.3	58920.	3216.8
#2	9352.8	59525.	3217.8
#3	9300.8	59678.	3190.8

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:09:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**-.00610**	**.00005**	**.00302**	**.00139**	**.00003**	**1.6849**
Stddev	.00180	.00456	.00220	.00222	.00079	.00007	.0160
%RSD	1577.6	74.679	4707.9	73.380	56.616	247.76	.94725
#1	-.00191	-.00084	.00190	.00055	.00194	-.00002	1.6688
#2	.00156	-.00881	-.00239	.00484	.00049	.00011	1.6853
#3	.00069	-.00865	.00063	.00368	.00173	-.00000	1.7007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00034**	**.00088**	**-.00158**	**-.01440**	**.06844**	**-.00175**
Stddev	.00002	.00023	.00083	.00061	.02220	.06326	.00363
%RSD	17.353	67.549	94.267	38.708	154.12	92.431	206.96
#1	-.00013	-.00058	.00179	-.00208	-.00955	.00265	-.00311
#2	-.00013	-.00034	.00017	-.00175	.00496	.07385	.00236
#3	-.00017	-.00012	.00067	-.00090	-.03863	.12882	-.00450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50957**	F **-.00383**	**.00039**	**.34445**	**-.00062**	**.00381**	**.00016**
Stddev	.01311	.00095	.00039	.03811	.00071	.00070	.00411
%RSD	2.5722	24.725	100.59	11.064	115.35	18.437	2540.0
#1	.51930	-.00358	.00051	.30657	-.00144	.00305	.00427
#2	.49466	-.00488	-.00005	.34400	-.00029	.00397	.00016
#3	.51474	-.00303	.00071	.38278	-.00013	.00443	-.00394
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:09:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00087	-.00357	.15888	-.00031	.00850	-.00426	-.00009
Stddev	.00426	.00083	.00168	.00044	.00026	.00237	.00296
%RSD	491.21	23.304	1.0573	142.12	3.0361	55.651	3369.4
#1	-.00335	-.00426	.16039	-.00013	.00878	-.00423	-.00261
#2	.00077	-.00382	.15707	.00001	.00827	-.00191	-.00083
#3	.00518	-.00265	.15920	-.00080	.00846	-.00665	.00318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00092	.00058	.00040
Stddev	.00059	.00015	.00004
%RSD	63.347	25.599	9.4015
#1	-.00155	.00045	.00043
#2	-.00084	.00056	.00036
#3	-.00039	.00074	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9633.6	61477.	3283.0
Stddev	23.5	199.	25.8
%RSD	.24437	.32309	.78547
#1	9635.1	61706.	3253.9
#2	9656.4	61364.	3291.9
#3	9609.4	61360.	3303.1

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:13:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	2.0538	.00424	.05679	.30137	.00008	160.95	.00040
Stddev	.00099	.0179	.00360	.00161	.00191	.00003	.73	.00020
%RSD	625.72	.87190	84.976	2.8342	.63262	40.857	.45089	48.680
#1	.00035	2.0639	.00523	.05846	.30342	.00005	161.69	.00049
#2	.00047	2.0331	.00724	.05525	.30104	.00011	160.24	.00018
#3	-.00129	2.0644	.00025	.05665	.29964	.00010	160.92	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.05022	.00244	.06600	6.7325	.04174	.86990	-.00077
Stddev	.00001	.00071	.00046	.01751	.0793	.00094	.03086	.00154
%RSD	53.643	1.4082	18.989	26.534	1.1771	2.2575	3.5476	200.44
#1	.00001	.04993	.00251	.08607	6.8151	.04258	.83482	-.00255
#2	.00004	.04971	.00286	.05817	6.6571	.04192	.89287	.00018
#3	.00002	.05103	.00194	.05378	6.7254	.04072	.88200	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	48.508	-.00031	.00741	.00060	.00514	.00422	24.472
Stddev	.00063	.271	.00042	.00441	.00602	.00302	.00618	.118
%RSD	17.442	.55872	138.52	59.544	1003.1	58.729	146.53	.48061
#1	.00434	48.810	.00008	.00233	-.00322	.00761	.00742	24.541
#2	.00342	48.287	-.00076	.00957	-.00252	.00604	.00813	24.539
#3	.00313	48.427	-.00023	.01033	.00753	.00178	-.00291	24.336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:13:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	5.2882	-.02037	.00182	.05925	.00281	.00089
Stddev	.00045	.0260	.00947	.00098	.00078	.00019	.00080
%RSD	393.62	.49150	46.471	53.984	1.3207	6.6303	89.786
#1	.00029	5.3179	-.02819	.00291	.05902	.00280	.00160
#2	-.00060	5.2694	-.00985	.00102	.05861	.00264	.00002
#3	-.00003	5.2773	-.02308	.00151	.06012	.00301	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8732.6	55925.	3130.6
Stddev	32.6	420.	35.3
%RSD	.37294	.75148	1.1265
#1	8752.4	55468.	3120.1
#2	8695.0	56294.	3101.8
#3	8750.3	56014.	3169.9

Approved: June 25, 2016

Sample Name: L1606122703 Acquired: 6/24/2016 14:17:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00125	.01521	-.00287	.00860	.24123	.00006	11.154	.00028
Stddev	.00085	.00707	.00119	.00183	.00246	.00004	.069	.00007
%RSD	68.571	46.481	41.621	21.280	1.0214	57.404	.61514	23.989
#1	-.00147	.01209	-.00178	.00649	.24385	.00010	11.223	.00034
#2	-.00030	.02330	-.00414	.00957	.24090	.00003	11.086	.00021
#3	-.00196	.01024	-.00269	.00975	.23895	.00006	11.152	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00080	.00213	-.00033	6.2073	1.5140	.01688	6.1835	.21929
Stddev	.00038	.00091	.00079	.0143	.0539	.00306	.0220	.00289
%RSD	47.624	42.694	240.58	.23060	3.5610	18.131	.35514	1.3175
#1	-.00036	.00194	-.00091	6.2218	1.4901	.01738	6.2077	.21708
#2	-.00104	.00133	-.00064	6.2069	1.5757	.01967	6.1777	.22256
#3	-.00101	.00312	.00057	6.1932	1.4762	.01361	6.1650	.21823
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	22.350	-.00018	.00938	-.00137	-.00029	-.00050	19.516
Stddev	.00056	.096	.00083	.00138	.00104	.00383	.01117	.085
%RSD	465.42	.43143	468.12	14.678	75.834	1305.1	2216.4	.43604
#1	.00023	22.450	-.00078	.01058	-.00249	.00050	.00759	19.566
#2	-.00049	22.343	.00077	.00788	-.00044	.00308	-.01325	19.564
#3	.00062	22.257	-.00052	.00969	-.00117	-.00445	.00414	19.418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122703 Acquired: 6/24/2016 14:17:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.28084**	**-.00425**	**-.00304**	**-.00105**	**.00790**	**.00058**
Stddev	.00052	.00163	.00869	.00081	.00050	.00008	.00060
%RSD	129.02	.57971	204.61	26.615	47.317	.97873	103.43
#1	.00050	.28163	-.01407	-.00299	-.00104	.00799	-.00005
#2	-.00016	.28192	-.00109	-.00388	-.00056	.00785	.00113
#3	.00088	.27897	.00242	-.00226	-.00155	.00786	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8914.3**	**56961.**	**3130.5**
Stddev	14.2	82.	32.4
%RSD	.15879	.14313	1.0351
#1	8914.6	56997.	3101.6
#2	8928.4	57018.	3165.5
#3	8900.0	56867.	3124.5

Approved: June 25, 2016

Sample Name: L1606122705 Acquired: 6/24/2016 14:21:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.01545	-.00191	.01058	.23750	.00006	11.195	.00012
Stddev	.00118	.00798	.00344	.00158	.00031	.00003	.021	.00013
%RSD	328.15	51.664	180.02	14.936	.13063	48.409	.18618	104.64
#1	-.00055	.02466	-.00569	.01043	.23772	.00010	11.181	.00021
#2	-.00143	.01046	-.00109	.01223	.23762	.00004	11.184	-.00002
#3	.00090	.01124	.00105	.00908	.23714	.00005	11.219	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.00085	.00038	5.7661	1.5123	.01984	5.9756	.21100
Stddev	.00025	.00106	.00080	.0245	.0653	.00200	.0212	.00231
%RSD	56.521	123.64	211.76	.42500	4.3208	10.094	.35441	1.0971
#1	-.00018	.00141	.00088	5.7931	1.5331	.01943	5.9657	.21198
#2	-.00046	-.00036	.00081	5.7454	1.5646	.02202	5.9611	.20836
#3	-.00068	.00152	-.00055	5.7597	1.4390	.01808	5.9999	.21267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	21.980	.00038	.00585	.00105	.00337	.00431	19.270
Stddev	.00021	.073	.00055	.00335	.00503	.00336	.00279	.078
%RSD	47.614	.33289	144.30	57.337	476.55	99.815	64.659	.40393
#1	.00067	22.029	.00075	.00771	.00214	-.00034	.00547	19.312
#2	.00029	21.896	-.00025	.00198	-.00442	.00622	.00113	19.317
#3	.00034	22.015	.00065	.00787	.00545	.00421	.00633	19.180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122705 Acquired: 6/24/2016 14:21:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.27996	-.00062	-.00391	-.00113	.00732	.00022
Stddev	.00053	.00057	.00735	.00180	.00037	.00025	.00038
%RSD	211.26	.20369	1193.3	46.137	32.740	3.4555	174.33
#1	.00056	.27981	-.00799	-.00285	-.00106	.00752	.00033
#2	-.00036	.27948	-.00055	-.00288	-.00079	.00740	.00052
#3	.00056	.28059	.00670	-.00599	-.00152	.00703	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8854.7	56642.	3127.3
Stddev	12.3	243.	13.9
%RSD	.13917	.42956	.44340
#1	8861.1	56590.	3116.3
#2	8840.5	56906.	3122.8
#3	8862.4	56428.	3142.9

Approved: June 25, 2016

Sample Name: L1606122706 Acquired: 6/24/2016 14:25:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.21684**	**.00222**	**.01917**	**.58049**	**.00013**	F **284.46**
Stddev	.00156	.00289	.00054	.00104	.00288	.00003	1.45
%RSD	398.54	1.3347	24.456	5.4065	.49594	21.763	.51127
#1	-.00197	.21619	.00253	.01999	.58052	.00015	284.58
#2	-.00036	.22000	.00160	.01951	.57760	.00015	282.95
#3	.00116	.21433	.00254	.01800	.58336	.00010	285.86
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.01684**	**.00998**	**.00007**	**1.9553**	**6.3020**	**.09974**
Stddev	.00017	.00034	.00117	.00099	.0143	.1315	.00214
%RSD	224.89	2.0370	11.743	1484.4	.73067	2.0859	2.1442
#1	.00026	.01703	.01112	-.00102	1.9407	6.1530	.09856
#2	-.00001	.01704	.01006	.00031	1.9692	6.3513	.10221
#3	-.00004	.01644	.00877	.00091	1.9560	6.4016	.09846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**176.37**	**2.2714**	**.00006**	F **731.74**	**.01123**	**.01665**	**.00357**
Stddev	1.24	.0213	.00040	6.78	.00115	.00399	.00138
%RSD	.70410	.93819	724.13	.92699	10.201	23.948	38.657
#1	175.84	2.2688	.00050	724.41	.01123	.01905	.00394
#2	175.48	2.2515	-.00029	737.80	.01238	.01886	.00473
#3	177.79	2.2938	-.00004	733.01	.01008	.01205	.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606122706 Acquired: 6/24/2016 14:25:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00122**	**.00616**	**15.356**	**.00023**	**6.6069**	F **-.03816**	**-.00311**
Stddev	.00529	.00300	.153	.00037	.0311	.00253	.00229
%RSD	434.20	48.780	.99792	161.00	.47035	6.6290	73.823
#1	.00695	.00959	15.424	.00029	6.6061	-.03560	-.00215
#2	.00016	.00487	15.464	.00056	6.5762	-.04066	-.00573
#3	-.00346	.00401	15.181	-.00017	6.6383	-.03822	-.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00168**	**.01200**	**.00044**
Stddev	.00075	.00025	.00035
%RSD	44.955	2.0469	79.672
#1	-.00143	.01227	.00080
#2	-.00252	.01195	.00041
#3	-.00108	.01179	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8072.3**	**51267.**	**2974.1**
Stddev	26.3	41.	21.1
%RSD	.32607	.08087	.70892
#1	8102.7	51312.	2967.6
#2	8056.8	51231.	2997.7
#3	8057.4	51256.	2957.1

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s -.00023	s -.00927	s .00164	s .00296	F -10.167	s .00041
Stddev	.00419	.07786	.00312	.00485	17.626	.00078
%RSD	1785.1	839.67	190.10	164.03	173.37	190.38
#1	k .00417	k -.06650	s .00369	k .00589	-30.520	k -.00012
#2	-.00072	-.04071	-.00195	-.00264	.0178	.00004
#3	s -.00416	s .07939	s .00318	s .00563	.0011	s .00131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit					45.000	
Low Limit					-.00500	

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.030	sF -.00051	s -.00092	s .00395	sF -.01544	k 24.560
Stddev	69.051	.00101	.00091	.00756	.02567	42.585
%RSD	172.50	198.69	98.282	191.07	166.28	173.39
#1	119.76	s -.00168	s -.00047	k -.00260	s -.04508	73.733
#2	.3162	.00002	-.00033	.00225	-.00024	-.06625
#3	.0107	s .00013	s -.00197	s .01222	s -.00100	k .01283
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit		4.5000			180.00	
Low Limit		-.00050			-.00500	

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	372.11	8.6195	k 47.738	k .33032	s .00028	133.30
Stddev	645.21	14.952	82.949	.57767	.00009	230.76
%RSD	173.39	173.47	173.76	174.88	32.225	173.11
#1	1117.1	25.884	k 143.52	k .99736	s .00023	399.76
#2	-.711	-.02432	-.3221	-.00440	.00022	-.0382
#3	-.088	-.00165	k .0166	k -.00198	s .00038	.1779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00045**	s **-.03655**	s **.00172**	s **-.00108**	s **.00075**	s **.01008**
Stddev	.00179	.02808	.00469	.00283	.00609	.01972
%RSD	400.97	76.830	273.03	261.89	809.17	195.59
#1	s -.00054	s -.06589	s .00446	s -.00311	s .00551	s -.00694
#2	.00139	-.00993	.00440	.00215	.00286	.00550
#3	s -.00220	s -.03383	s -.00370	s -.00228	s -.00611	s .03169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00057**	F **-1.1360**	k **20.365**	s **.00055**	s **-.00167**	s **.00003**
Stddev	.00097	1.9693	35.298	.00527	.00210	.00029
%RSD	171.04	173.35	173.32	963.15	126.00	986.03
#1	s -.00081	-3.4099	k 61.124	s .00555	k -.00082	s -.00019
#2	-.00139	.00126	-.03016	.00104	-.00012	-.00009
#3	s .00050	.00067	k .00214	s -.00495	s -.00406	s .00036
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		9.0000				
Low Limit		-.01000				

Elem	Zr3391
Units	ppm
Avg	k **4.7431**
Stddev	8.2177
%RSD	173.26
#1	14.232
#2	-.00307
#3	k .00025
Check ?	Chk Pass
High Limit	
Low Limit	

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	^ *****	^ *****	**1491.6**
Stddev	-----	-----	1744.8
%RSD	-----	-----	116.98
#1	^ -----	96744.	-.833
#2	11739.	67740.	1065.6
#3	^ -----	^ -----	3409.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 14:33:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41166	10.425	.41797	.51029	1.0577	.05047	10.520	.05316
Stddev	.00099	.032	.00238	.00238	.0098	.00020	.066	.00029
%RSD	.24027	.31060	.57018	.46712	.92494	.40032	.62805	.55014
#1	.41078	10.417	.41616	.50822	1.0524	.05037	10.498	.05343
#2	.41273	10.461	.42067	.50975	1.0690	.05033	10.595	.05285
#3	.41147	10.398	.41708	.51289	1.0516	.05070	10.468	.05319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21206	.51386	.53059	4.1899	53.263	1.0467	10.468	.52856
Stddev	.00073	.00321	.00100	.0374	.462	.0063	.076	.00530
%RSD	.34314	.62500	.18884	.89375	.86682	.60297	.72564	1.0030
#1	.21259	.51287	.52997	4.1684	53.043	1.0454	10.485	.52611
#2	.21236	.51126	.53175	4.2331	53.794	1.0536	10.535	.53465
#3	.21123	.51745	.53006	4.1681	52.952	1.0412	10.385	.52494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0576	52.995	.52777	10.435	.52686	1.2496	.41651	5.4396
Stddev	.0040	.485	.00212	.015	.00639	.0066	.00244	.0073
%RSD	.37921	.91430	.40168	.14821	1.2125	.52987	.58470	.13514
#1	1.0613	52.838	.52972	10.450	.53351	1.2484	.41859	5.4468
#2	1.0581	53.538	.52809	10.437	.52631	1.2567	.41712	5.4400
#3	1.0533	52.608	.52552	10.419	.52077	1.2437	.41383	5.4321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 14:33:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0505**	**1.0599**	**1.0626**	**.52487**	**1.0199**	**1.0599**	**1.0481**
Stddev	.0030	.0080	.0069	.00177	.0063	.0016	.0076
%RSD	.28497	.75748	.64716	.33685	.61433	.14858	.72179
#1	1.0520	1.0581	1.0658	.52283	1.0139	1.0617	1.0532
#2	1.0524	1.0687	1.0673	.52604	1.0264	1.0591	1.0518
#3	1.0471	1.0529	1.0547	.52572	1.0194	1.0589	1.0394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8638.4**	**54702.**	**2962.1**
Stddev	25.7	232.	26.1
%RSD	.29729	.42351	.88130
#1	8638.5	54949.	2963.0
#2	8664.0	54489.	2935.5
#3	8612.6	54670.	2987.7

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 14:37:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00059**	**.00701**	**.00029**	**.00414**	**.00107**	**.00004**	**.00238**	**-.00012**
Stddev	.00084	.00406	.00078	.00126	.00076	.00005	.01029	.00020
%RSD	141.95	57.911	270.00	30.394	71.506	123.23	431.54	160.84
#1	-.00109	.01100	-.00061	.00436	.00031	-.00001	.01410	-.00018
#2	.00038	.00714	.00070	.00527	.00106	.00009	-.00516	-.00029
#3	-.00106	.00289	.00078	.00278	.00183	.00005	-.00179	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.00101**	**-.00109**	**-.00812**	**.09168**	**-.00067**	**.00355**	**-.00145**
Stddev	.00012	.00041	.00020	.01093	.16535	.00286	.05597	.00191
%RSD	587.69	41.101	17.982	134.63	180.37	426.73	1575.4	131.49
#1	-.00012	.00144	-.00126	-.01947	.12855	-.00390	-.02086	.00074
#2	.00007	.00098	-.00088	.00235	.23548	.00155	.06758	-.00233
#3	.00010	.00061	-.00113	-.00724	-.08900	.00034	-.03606	-.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00376**	**.06309**	**-.00078**	**-.00146**	**-.00295**	**.00728**	**.00080**	**.00640**
Stddev	.00004	.00813	.00031	.00130	.00447	.00341	.00273	.00142
%RSD	1.1880	12.887	39.066	89.596	151.30	46.848	341.20	22.217
#1	.00379	.05447	-.00081	-.00002	-.00292	.00343	-.00228	.00491
#2	.00377	.07062	-.00047	-.00257	.00150	.00849	.00178	.00774
#3	.00371	.06419	-.00108	-.00177	-.00745	.00993	.00291	.00656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 14:37:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00030**	**-.00170**	**-.00383**	**-.00049**	**.00017**	**.00063**
Stddev	.00071	.00015	.00190	.00217	.00068	.00011	.00064
%RSD	416.03	50.304	111.76	56.611	138.47	65.323	100.79
#1	-.00090	-.00046	-.00195	-.00355	.00013	.00005	.00048
#2	.00053	-.00016	.00031	-.00613	-.00121	.00020	.00009
#3	-.00015	-.00029	-.00347	-.00182	-.00039	.00026	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8962.4**	**57043.**	**3076.8**
Stddev	9.4	202.	30.1
%RSD	.10495	.35434	.97741
#1	8959.6	57191.	3062.7
#2	8973.0	57124.	3056.5
#3	8954.8	56812.	3111.4

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:41:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00718**	**.16778**	**.00705**	**.07965**	**.00910**	**.00164**	**.41639**	**.00077**
Stddev	.00111	.00850	.00155	.00224	.00038	.00008	.03685	.00016
%RSD	15.437	5.0649	22.016	2.8126	4.2151	4.9707	8.8498	21.171
#1	.00835	.16257	.00591	.07934	.00933	.00163	.41364	.00096
#2	.00706	.17759	.00643	.08204	.00930	.00156	.38099	.00069
#3	.00615	.16318	.00882	.07759	.00865	.00172	.45453	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00372**	**.00553**	**.00388**	**.09928**	**.97152**	**.08315**	**.41379**	**.00739**
Stddev	.00019	.00133	.00032	.02549	.05199	.00523	.08500	.00248
%RSD	5.0726	23.979	8.3772	25.673	5.3513	6.2898	20.543	33.559
#1	.00382	.00499	.00359	.11432	.99435	.08891	.42868	.00950
#2	.00350	.00456	.00423	.06985	1.0082	.08183	.49036	.00801
#3	.00383	.00704	.00382	.11368	.91202	.07870	.32232	.00466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00887**	**.47333**	**.01623**	**.81221**	**.00542**	**.09064**	**.01323**	**.80543**
Stddev	.00034	.01785	.00027	.00285	.00284	.00218	.00846	.00484
%RSD	3.8186	3.7704	1.6489	.35135	52.439	2.4043	63.964	.60120
#1	.00857	.45283	.01639	.81336	.00707	.09020	.00353	.80991
#2	.00924	.48541	.01638	.81431	.00704	.08871	.01911	.80609
#3	.00882	.48176	.01592	.80897	.00214	.09300	.01705	.80029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:41:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40870**	**.04207**	**.01931**	**.15366**	**.00710**	**.01712**	**.04603**
Stddev	.00512	.00019	.00171	.00094	.00077	.00047	.00074
%RSD	1.2534	.44963	8.8459	.61383	10.891	2.7601	1.5991
#1	.41191	.04225	.01832	.15474	.00771	.01740	.04532
#2	.41140	.04187	.02128	.15326	.00736	.01737	.04598
#3	.40280	.04210	.01832	.15299	.00623	.01657	.04679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8982.1**	**57067.**	**3060.2**
Stddev	26.2	300.	11.7
%RSD	.29148	.52636	.38103
#1	8991.8	56753.	3059.1
#2	8952.5	57352.	3072.4
#3	9002.1	57094.	3049.1

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:45:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01869	.41297	.02026	.19746	.02185	.00383	1.0200	.00188
Stddev	.00035	.00586	.00154	.00067	.00147	.00014	.0338	.00015
%RSD	1.8526	1.4186	7.6007	.34025	6.7142	3.6282	3.3179	7.8964
#1	.01874	.40831	.01848	.19818	.02288	.00367	1.0151	.00196
#2	.01900	.41106	.02109	.19686	.02017	.00390	1.0560	.00198
#3	.01832	.41955	.02120	.19732	.02249	.00393	.98885	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00984	.01123	.00919	.18681	2.1247	.20721	.93148	.01619
Stddev	.00014	.00068	.00093	.01106	.0926	.00369	.07781	.00078
%RSD	1.4606	6.0688	10.105	5.9217	4.3598	1.7823	8.3530	4.8206
#1	.01001	.01162	.00904	.19951	2.2112	.20690	.86422	.01547
#2	.00973	.01162	.00834	.18161	2.0269	.21106	.91352	.01702
#3	.00979	.01044	.01018	.17930	2.1360	.20369	1.0167	.01609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02014	1.0870	.04071	1.9977	.02135	.21673	.03821	1.9741
Stddev	.00016	.0210	.00055	.0167	.00069	.00325	.00268	.0082
%RSD	.80007	1.9300	1.3616	.83571	3.2506	1.4993	7.0016	.41651
#1	.02032	1.0994	.04122	2.0148	.02110	.22042	.03544	1.9835
#2	.02003	1.0989	.04080	1.9969	.02082	.21547	.04077	1.9682
#3	.02006	1.0628	.04012	1.9814	.02214	.21430	.03841	1.9708
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:45:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0107**	**.10392**	**.05575**	**.37550**	**.01879**	**.04191**	**.10568**
Stddev	.0090	.00047	.00558	.00228	.00032	.00016	.00084
%RSD	.89117	.44849	9.9995	.60763	1.6789	.38616	.79660
#1	1.0189	.10438	.05893	.37732	.01895	.04186	.10565
#2	1.0122	.10392	.05901	.37624	.01842	.04209	.10485
#3	1.0011	.10345	.04932	.37294	.01899	.04177	.10653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9009.7**	**57472.**	**3066.3**
Stddev	19.1	37.	13.0
%RSD	.21156	.06500	.42365
#1	9017.9	57429.	3056.0
#2	9023.2	57498.	3080.9
#3	8987.9	57490.	3062.1

Approved: June 25, 2016

Sample Name: L1606122707 Acquired: 6/24/2016 14:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.02228	-.00310	.03187	.86009	.00012	39.489	.00003
Stddev	.00018	.00656	.00152	.00057	.00717	.00003	.379	.00032
%RSD	46.468	29.432	49.079	1.8038	.83341	26.472	.96018	1147.1
#1	-.00055	.02985	-.00161	.03125	.86719	.00008	39.879	-.00019
#2	-.00020	.01820	-.00302	.03199	.86023	.00013	39.466	-.00011
#3	-.00040	.01880	-.00465	.03238	.85285	.00015	39.122	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00072	-.00028	.00013	59.587	2.9995	.04414	25.073	1.2878
Stddev	.00057	.00083	.00110	.643	.1016	.00412	.231	.0116
%RSD	79.076	299.88	865.71	1.0796	3.3860	9.3424	.92024	.90415
#1	-.00051	.00068	-.00113	60.213	3.0838	.04323	25.311	1.3011
#2	-.00137	-.00084	.00089	59.621	2.8867	.04865	25.057	1.2792
#3	-.00029	-.00068	.00062	58.928	3.0279	.04055	24.851	1.2831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	115.27	.04203	.01368	.00281	-.00143	.00296	14.747
Stddev	.00037	1.33	.00072	.00307	.00173	.00239	.00365	.039
%RSD	499.83	1.1534	1.7107	22.425	61.439	167.46	123.56	.26370
#1	.00026	116.59	.04143	.01139	.00244	-.00272	.00713	14.784
#2	-.00048	115.27	.04283	.01716	.00130	.00133	.00141	14.750
#3	-.00000	113.93	.04183	.01248	.00470	-.00289	.00033	14.707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122707 Acquired: 6/24/2016 14:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.95862**	**.00605**	**-.00068**	**-.00091**	**.00548**	**.00149**
Stddev	.00073	.01229	.00320	.00267	.00068	.00026	.00022
%RSD	553.72	1.2819	52.980	390.15	74.575	4.7467	14.628
#1	-.00098	.96985	.00245	.00197	-.00106	.00564	.00171
#2	.00022	.96050	.00860	-.00066	-.00151	.00563	.00127
#3	.00036	.94549	.00708	-.00336	-.00017	.00518	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8796.8**	**55980.**	**3081.4**
Stddev	13.6	173.	49.3
%RSD	.15430	.30941	1.6006
#1	8782.9	56135.	3034.1
#2	8810.1	56011.	3077.6
#3	8797.3	55793.	3132.6

Approved: June 25, 2016

Sample Name: L1606128901 Acquired: 6/24/2016 14:52:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.04962**	**.00112**	**.00988**	**5.2736**	**-.00000**	**172.96**
Stddev	.00150	.00386	.00106	.00285	.0237	.00005	.90
%RSD	521.82	7.7690	94.694	28.895	.44889	7806.7	.52141
#1	.00036	.05342	.00225	.00730	5.2908	-.00004	173.59
#2	.00175	.04571	.00014	.00938	5.2466	.00005	171.93
#3	-.00125	.04974	.00097	.01295	5.2835	-.00001	173.36
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00136**	**.04532**	**.13640**	**.02803**	**.82377**	**2.0910**	**.06524**
Stddev	.00008	.00075	.00127	.00169	.01843	.0634	.00121
%RSD	6.1045	1.6593	.93452	6.0401	2.2378	3.0301	1.8477
#1	.00135	.04615	.13543	.02951	.80742	2.1500	.06406
#2	.00144	.04511	.13594	.02618	.82014	2.0990	.06519
#3	.00128	.04469	.13784	.02838	.84375	2.0241	.06647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**132.57**	**1.5484**	**.00399**	F **475.43**	**.60664**	**-.00181**	**.00112**
Stddev	1.22	.0105	.00019	6.67	.00940	.00176	.00123
%RSD	.92353	.67771	4.8057	1.4023	1.5491	97.473	109.90
#1	133.54	1.5549	.00379	480.67	.61634	-.00043	.00090
#2	131.19	1.5363	.00417	477.68	.60602	-.00120	.00245
#3	132.97	1.5541	.00401	467.92	.59758	-.00379	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606128901 Acquired: 6/24/2016 14:52:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.00044**	**20.411**	**-.00001**	**3.3220**	**-.02680**	**-.00165**
Stddev	.00177	.00688	.223	.00059	.0144	.00356	.00200
%RSD	411.04	1578.1	1.0946	9208.5	.43324	13.269	121.77
#1	-.00012	.00683	20.657	.00066	3.3359	-.02623	-.00015
#2	-.00234	.00133	20.356	-.00024	3.3072	-.03061	-.00392
#3	.00117	-.00685	20.220	-.00044	3.3229	-.02356	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00230**	**.01606**	**-.00030**
Stddev	.00111	.00038	.00039
%RSD	48.336	2.3357	128.61
#1	-.00215	.01640	.00003
#2	-.00348	.01614	-.00073
#3	-.00127	.01566	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8386.8**	**53296.**	**3021.6**
Stddev	37.8	223.	29.3
%RSD	.45026	.41852	.97129
#1	8352.5	53490.	2991.9
#2	8427.3	53347.	3050.6
#3	8380.7	53052.	3022.3

Approved: June 25, 2016

Sample Name: L1606128904 Acquired: 6/24/2016 14:56:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.89254**	**-.00069**	**.01964**	**.04255**	**.00011**	**5.6683**	**.00028**
Stddev	.00076	.01581	.00109	.00257	.00109	.00004	.0152	.00014
%RSD	98.022	1.7713	158.41	13.060	2.5725	41.643	.26758	50.825
#1	-.00164	.87537	-.00125	.01833	.04129	.00015	5.6815	.00024
#2	-.00048	.89576	.00057	.01800	.04324	.00007	5.6517	.00016
#3	-.00021	.90650	-.00137	.02260	.04312	.00010	5.6716	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00425**	**.00494**	**1.2848**	**1.7945**	**.00004**	**1.0750**	**.06944**
Stddev	.00027	.00147	.00133	.0357	.1112	.00319	.1047	.00259
%RSD	122.02	34.538	27.001	2.7795	6.1951	7919.7	9.7411	3.7251
#1	-.00019	.00333	.00648	1.3254	1.8687	-.00206	1.1443	.06646
#2	-.00051	.00594	.00405	1.2582	1.8481	.00371	1.1263	.07089
#3	.00003	.00347	.00430	1.2709	1.6666	-.00153	.95457	.07099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00253**	**11.300**	**.00403**	**.05743**	**-.00017**	**-.00179**	**.00195**	**3.8550**
Stddev	.00020	.072	.00110	.00105	.00329	.00658	.00226	.1069
%RSD	7.7182	.63637	27.173	1.8233	1906.1	368.28	115.87	2.7717
#1	.00264	11.368	.00517	.05829	.00210	-.00819	-.00037	3.9182
#2	.00264	11.309	.00299	.05627	-.00395	.00496	.00208	3.9152
#3	.00230	11.225	.00394	.05774	.00133	-.00213	.00413	3.7317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606128904 Acquired: 6/24/2016 14:56:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.05757**	**.02633**	**-.00071**	**.00137**	**.00722**	**.00200**
Stddev	.00035	.00023	.00560	.00355	.00071	.00007	.00033
%RSD	91.722	.39740	21.269	498.75	51.627	.91462	16.350
#1	-.00073	.05778	.02000	-.00383	.00175	.00716	.00162
#2	-.00038	.05732	.02834	-.00145	.00181	.00729	.00222
#3	-.00003	.05760	.03065	.00315	.00055	.00719	.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8865.6**	**56649.**	**3059.6**
Stddev	13.5	96.	21.0
%RSD	.15270	.17031	.68631
#1	8866.0	56591.	3042.3
#2	8878.9	56761.	3053.7
#3	8851.9	56596.	3083.0

Approved: June 25, 2016

Sample Name: L1606129003 Acquired: 6/24/2016 15:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.23085**	**.01034**	**.01559**	**.36719**	**.00005**	**21.705**	**.00048**
Stddev	.00066	.01132	.00405	.00112	.00034	.00003	.125	.00008
%RSD	83.316	4.9053	39.209	7.1670	.09361	52.637	.57576	16.613
#1	-.00053	.21806	.00670	.01651	.36734	.00007	21.802	.00057
#2	-.00154	.23489	.01470	.01592	.36743	.00007	21.749	.00042
#3	-.00030	.23961	.00961	.01435	.36680	.00002	21.564	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00832**	**.00224**	**.00061**	**33.420**	**3.2767**	**.01261**	**13.855**	**.58209**
Stddev	.00025	.00111	.00133	.070	.0433	.00234	.192	.00232
%RSD	3.0553	49.670	217.79	.20879	1.3202	18.546	1.3850	.39779
#1	.00834	.00100	.00061	33.467	3.2844	.00992	14.064	.58474
#2	.00805	.00316	.00195	33.452	3.3155	.01415	13.814	.58108
#3	.00856	.00256	-.00072	33.340	3.2300	.01376	13.686	.58045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**119.40**	**.01660**	**.07210**	**.00341**	**.00143**	**.00513**	**10.118**
Stddev	.00033	.47	.00077	.00340	.00220	.00378	.00738	.080
%RSD	1430.2	.39268	4.6557	4.7101	64.624	264.86	143.85	.79057
#1	.00020	119.78	.01610	.06894	.00133	.00564	-.00235	10.112
#2	-.00035	119.55	.01749	.07569	.00317	-.00168	.00533	10.200
#3	.00022	118.87	.01621	.07166	.00572	.00033	.01240	10.041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606129003 Acquired: 6/24/2016 15:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00825	.48338	.01285	-.00007	-.00099	.02470	.00130
Stddev	.00046	.00133	.00609	.00020	.00008	.00029	.00043
%RSD	5.5459	.27526	47.375	267.50	8.5468	1.1648	33.241
#1	.00847	.48381	.01168	-.00026	-.00091	.02465	.00080
#2	.00855	.48444	.00743	-.00009	-.00108	.02501	.00160
#3	.00772	.48189	.01943	.00013	-.00099	.02444	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8589.3	54682.	3050.6
Stddev	24.0	271.	24.0
%RSD	.27972	.49573	.78517
#1	8590.4	54964.	3023.0
#2	8564.7	54423.	3063.9
#3	8612.7	54659.	3065.0

Approved: June 25, 2016

Sample Name: L1606129005 Acquired: 6/24/2016 15:04:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00093	2.8940	.00006	.01007	.07684	.00018	1.8409	.00000
Stddev	.00144	.0184	.00220	.00073	.00162	.00006	.0138	.00046
%RSD	154.30	.63640	3601.3	7.2287	2.1026	31.323	.75067	9347.2
#1	-.00260	2.9086	-.00247	.00925	.07870	.00012	1.8257	.00046
#2	-.00011	2.9000	.00139	.01032	.07576	.00019	1.8444	.00000
#3	-.00010	2.8733	.00126	.01063	.07607	.00023	1.8526	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.00434	-.00038	3.1829	.55321	.00872	1.5188	.02267
Stddev	.00018	.00090	.00079	.0133	.03931	.00184	.0455	.00119
%RSD	20.184	20.776	205.81	.41668	7.1064	21.146	2.9981	5.2528
#1	.00112	.00469	-.00125	3.1779	.59786	.01068	1.4921	.02373
#2	.00082	.00502	.00029	3.1979	.52378	.00846	1.5714	.02138
#3	.00078	.00332	-.00019	3.1728	.53798	.00702	1.4930	.02289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	27.020	.00272	.08458	.00016	.00433	.00430	18.456
Stddev	.00073	.100	.00065	.00188	.00203	.00206	.00371	.304
%RSD	171.02	.37092	23.861	2.2211	1248.4	47.523	86.151	1.6472
#1	-.00010	27.134	.00249	.08421	.00247	.00531	.00264	18.631
#2	.00012	26.983	.00222	.08662	-.00061	.00572	.00172	18.633
#3	.00126	26.944	.00345	.08292	-.00137	.00197	.00855	18.105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606129005 Acquired: 6/24/2016 15:04:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.03803	.06036	-.00240	.00545	.00944	.00214
Stddev	.00054	.00054	.00300	.00069	.00057	.00004	.00035
%RSD	54.381	1.4172	4.9720	28.734	10.423	.45223	16.538
#1	.00056	.03865	.06382	-.00184	.00519	.00939	.00180
#2	.00160	.03778	.05850	-.00219	.00610	.00947	.00213
#3	.00083	.03766	.05876	-.00318	.00505	.00946	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8715.6	55373.	3004.3
Stddev	28.8	88.	20.9
%RSD	.33098	.15973	.69504
#1	8735.4	55391.	2980.2
#2	8728.9	55276.	3014.4
#3	8682.5	55450.	3018.2

Approved: June 25, 2016

Sample Name: L1606112901 Acquired: 6/24/2016 15:08:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00153	.04742	-.00095	.03453	.02713	.00001	86.360	.00034
Stddev	.00217	.00415	.00049	.00360	.00063	.00009	.224	.00044
%RSD	141.80	8.7609	51.957	10.417	2.3220	657.60	.25919	128.64
#1	-.00346	.04486	-.00039	.03082	.02758	-.00008	86.344	.00072
#2	-.00196	.04519	-.00115	.03800	.02641	.00009	86.145	-.00014
#3	.00082	.05221	-.00131	.03476	.02740	.00002	86.592	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00312	.00177	.94597	3.2694	-.00206	18.533	.11547
Stddev	.00014	.00126	.00037	.01236	.0834	.00303	.037	.00006
%RSD	78.771	40.351	21.042	1.3061	2.5502	147.38	.19767	.05424
#1	-.00029	.00408	.00217	.94560	3.3573	-.00518	18.524	.11541
#2	-.00002	.00169	.00170	.93380	3.1914	.00088	18.501	.11554
#3	-.00020	.00357	.00144	.95851	3.2594	-.00189	18.573	.11545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	63.757	.00088	-.00345	-.00001	.00390	.00201	4.3369
Stddev	.00012	.098	.00080	.00790	.00073	.00356	.00350	.0154
%RSD	20.681	.15440	91.170	229.23	11400.	91.387	174.14	.35496
#1	.00052	63.708	.00165	-.00774	-.00051	.00796	-.00076	4.3485
#2	.00048	63.692	.00005	.00567	-.00034	.00129	.00594	4.3428
#3	.00070	63.870	.00094	-.00827	.00083	.00245	.00085	4.3194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112901 Acquired: 6/24/2016 15:08:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.26173	-.00856	-.00313	-.00118	.00293	.00052
Stddev	.00080	.00134	.00446	.00054	.00143	.00016	.00098
%RSD	51.891	.51077	52.060	17.221	121.68	5.3885	189.16
#1	.00076	.26032	-.01247	-.00264	-.00215	.00304	.00128
#2	.00236	.26190	-.00951	-.00371	.00047	.00300	.00086
#3	.00153	.26298	-.00371	-.00305	-.00185	.00275	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8540.9	54113.	2989.8
Stddev	45.6	156.	19.9
%RSD	.53331	.28793	.66720
#1	8508.8	54182.	2978.9
#2	8520.8	53935.	2977.6
#3	8593.0	54223.	3012.8

Approved: June 25, 2016

Sample Name: L1606112902 Acquired: 6/24/2016 15:12:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.29983	.00210	.00463	.01662	.00001	61.912	.00008
Stddev	.00140	.00599	.00218	.00166	.00062	.00006	.415	.00006
%RSD	851.26	1.9983	103.64	35.749	3.7122	644.92	.67074	85.148
#1	.00063	.30673	.00242	.00653	.01642	-.00001	62.250	.00000
#2	.00065	.29672	.00410	.00344	.01613	.00007	61.449	.00009
#3	-.00178	.29603	-.00022	.00393	.01731	-.00004	62.038	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.01059	.00129	.94804	2.0675	.00069	20.139	.47034
Stddev	.00027	.00122	.00016	.02696	.0775	.00357	.320	.00402
%RSD	2948.5	11.527	12.380	2.8436	3.7492	519.77	1.5901	.85492
#1	-.00008	.00944	.00121	.97580	2.0012	.00465	20.332	.47062
#2	-.00020	.01048	.00148	.92196	2.0486	-.00226	19.770	.46619
#3	.00031	.01187	.00119	.94637	2.1528	-.00033	20.317	.47422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	30.320	.00364	.05395	.00396	.00836	-.00176	4.3013
Stddev	.00027	.212	.00081	.00668	.00208	.00440	.00252	.0395
%RSD	24.472	.70024	22.172	12.380	52.449	52.578	143.06	.91824
#1	.00086	30.527	.00437	.06160	.00615	.01344	-.00322	4.3162
#2	.00138	30.102	.00277	.04930	.00201	.00571	.00115	4.3312
#3	.00102	30.330	.00377	.05095	.00373	.00594	-.00320	4.2566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112902 Acquired: 6/24/2016 15:12:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.22725**	**.00528**	**-.00256**	**-.00043**	**.00529**	**.00068**
Stddev	.00083	.00096	.00459	.00338	.00037	.00010	.00058
%RSD	564.50	.42062	86.815	132.11	87.049	1.8289	84.780
#1	-.00087	.22693	.00443	-.00640	-.00011	.00518	.00078
#2	.00076	.22649	.00118	-.00002	-.00084	.00537	.00006
#3	-.00033	.22832	.01024	-.00126	-.00035	.00532	.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8571.6**	**54279.**	**2969.2**
Stddev	16.1	210.	28.2
%RSD	.18756	.38604	.95029
#1	8572.3	54497.	2938.5
#2	8555.3	54260.	2975.3
#3	8587.4	54079.	2993.9

Approved: June 25, 2016

Sample Name: L1606112903 Acquired: 6/24/2016 15:16:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00206	.02810	.00131	.04316	.02401	.00003	88.103	-.00001
Stddev	.00163	.00424	.00349	.00036	.00097	.00004	.414	.00006
%RSD	79.332	15.095	266.64	.84369	4.0298	138.71	.47027	1013.7
#1	-.00372	.03153	.00085	.04353	.02406	.00000	88.569	-.00003
#2	-.00046	.02336	-.00193	.04281	.02302	.00007	87.962	-.00006
#3	-.00199	.02942	.00501	.04314	.02496	.00001	87.777	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00060	.00253	.00131	.96589	1.3495	.00123	21.585	.10128
Stddev	.00042	.00035	.00067	.03405	.0842	.00325	.244	.00173
%RSD	70.727	13.720	51.685	3.5257	6.2420	263.39	1.1308	1.7072
#1	-.00095	.00223	.00070	.96112	1.2530	.00259	21.821	.10325
#2	-.00013	.00291	.00203	1.0021	1.4081	.00359	21.599	.10062
#3	-.00070	.00244	.00119	.93447	1.3875	-.00247	21.334	.09998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	45.687	-.00078	-.00721	.00004	.00503	.00046	5.7282
Stddev	.00004	.226	.00053	.00474	.00119	.00065	.00200	.0193
%RSD	10.964	.49543	68.227	65.769	3232.3	13.018	432.45	.33624
#1	.00035	45.948	-.00018	-.00213	-.00052	.00542	.00277	5.7412
#2	.00034	45.538	-.00095	-.00799	.00140	.00427	-.00053	5.7373
#3	.00041	45.576	-.00121	-.01151	-.00077	.00539	-.00085	5.7061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112903 Acquired: 6/24/2016 15:16:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.26833**	**-.01816**	**-.00283**	**-.00066**	**.00168**	**-.00020**
Stddev	.00078	.00133	.00789	.00034	.00071	.00025	.00040
%RSD	532.76	.49719	43.454	11.860	108.55	14.856	199.35
#1	-.00105	.26982	-.01296	-.00288	-.00092	.00197	-.00067
#2	.00022	.26790	-.02724	-.00248	.00015	.00158	-.00001
#3	.00038	.26726	-.01427	-.00314	-.00120	.00151	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8598.7**	**54568.**	**2985.2**
Stddev	14.7	155.	28.7
%RSD	.17099	.28360	.96063
#1	8589.5	54461.	2952.2
#2	8615.7	54497.	2998.6
#3	8591.0	54745.	3004.7

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 15:20:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40824	10.420	.41623	.50512	1.0434	.05077	10.410	.05303
Stddev	.00102	.011	.00166	.00159	.0051	.00011	.048	.00003
%RSD	.24985	.10317	.39821	.31537	.48909	.20971	.45682	.05731
#1	.40928	10.415	.41742	.50640	1.0406	.05065	10.460	.05302
#2	.40724	10.413	.41433	.50561	1.0402	.05085	10.366	.05306
#3	.40821	10.433	.41693	.50333	1.0493	.05082	10.403	.05300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21118	.51349	.53049	4.1296	52.613	1.0448	10.282	.52373
Stddev	.00035	.00153	.00198	.0197	.215	.0121	.119	.00095
%RSD	.16775	.29847	.37336	.47674	.40803	1.1621	1.1607	.18074
#1	.21141	.51175	.53242	4.1285	52.846	1.0585	10.343	.52404
#2	.21135	.51410	.53058	4.1499	52.423	1.0356	10.145	.52448
#3	.21077	.51463	.52847	4.1106	52.571	1.0402	10.359	.52266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0543	52.234	.52970	10.421	.53044	1.2449	.41601	5.4104
Stddev	.0058	.138	.00167	.015	.00320	.0077	.00786	.0069
%RSD	.55132	.26343	.31583	.14051	.60281	.61774	1.8884	.12671
#1	1.0591	52.228	.53040	10.408	.52788	1.2425	.41688	5.4032
#2	1.0560	52.100	.53092	10.437	.53402	1.2535	.42340	5.4168
#3	1.0478	52.375	.52780	10.419	.52942	1.2386	.40776	5.4113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 15:20:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0527**	**1.0427**	**1.0445**	**.52624**	**1.0215**	**1.0629**	**1.0377**
Stddev	.0032	.0041	.0034	.00504	.0054	.0007	.0080
%RSD	.30129	.38916	.32629	.95804	.53233	.06397	.77418
#1	1.0545	1.0426	1.0412	.52173	1.0217	1.0629	1.0451
#2	1.0546	1.0387	1.0480	.53168	1.0159	1.0636	1.0389
#3	1.0491	1.0468	1.0444	.52530	1.0268	1.0623	1.0291
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8453.3**	**53500.**	**2924.6**
Stddev	46.2	193.	16.5
%RSD	.54695	.36073	.56251
#1	8402.3	53503.	2906.8
#2	8492.4	53692.	2927.9
#3	8465.1	53306.	2939.2

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 15:23:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	**.00992**	**.00234**	**.00351**	**.00116**	**.00005**	**.02900**	**-.00001**
Stddev	.00127	.00415	.00228	.00015	.00102	.00007	.00886	.00016
%RSD	194.64	41.872	97.529	4.1352	87.524	137.88	30.568	1159.7
#1	-.00112	.01430	-.00008	.00361	.00056	.00012	.03894	-.00002
#2	-.00162	.00942	.00265	.00358	.00234	-.00001	.02614	.00015
#3	.00078	.00604	.00445	.00334	.00060	.00004	.02192	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00116**	**-.00112**	**-.00648**	**.12931**	**-.00349**	**.00279**	**-.00148**
Stddev	.00033	.00174	.00093	.02647	.07085	.00052	.12182	.00041
%RSD	102.16	151.03	83.446	408.59	54.789	15.028	4365.9	27.406
#1	-.00027	.00292	-.00056	-.01439	.08320	-.00296	.07318	-.00103
#2	-.00002	.00111	-.00220	.02304	.09384	-.00350	-.13788	-.00160
#3	-.00068	-.00057	-.00060	-.02808	.21088	-.00401	.07307	-.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00377**	**.03069**	**-.00012**	**-.00362**	**.00099**	**.00980**	**-.00258**	**.00553**
Stddev	.00021	.00731	.00017	.00052	.00072	.00250	.00356	.00133
%RSD	5.5503	23.828	141.85	14.411	72.602	25.470	137.60	24.033
#1	.00400	.03907	-.00021	-.00421	.00089	.01055	-.00604	.00429
#2	.00359	.02561	-.00021	-.00320	.00174	.01183	.00106	.00693
#3	.00372	.02739	.00007	-.00346	.00032	.00701	-.00278	.00538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 15:23:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00006	.00390	-.00184	-.00019	.00017	.00074
Stddev	.00034	.00047	.00298	.00079	.00043	.00010	.00028
%RSD	126.24	847.27	76.444	42.940	222.76	60.338	37.477
#1	.00001	-.00046	.00433	-.00204	-.00069	.00029	.00091
#2	.00066	.00046	.00665	-.00251	.00004	.00014	.00042
#3	.00015	.00017	.00073	-.00097	.00007	.00009	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9150.0	58046.	3103.6
Stddev	34.2	243.	28.5
%RSD	.37419	.41787	.91849
#1	9166.8	58132.	3091.9
#2	9172.6	58235.	3082.8
#3	9110.6	57773.	3136.1

Approved: June 25, 2016

Sample Name: L1606112904 Acquired: 6/24/2016 15:27:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.30610	.00349	.00484	.01680	-.00005	61.162	.00024
Stddev	.00266	.00425	.00225	.00067	.00024	.00004	.150	.00011
%RSD	1354.1	1.3879	64.385	13.909	1.4087	89.396	.24565	45.340
#1	-.00149	.30821	.00608	.00459	.01688	-.00002	61.102	.00011
#2	-.00119	.30889	.00214	.00560	.01653	-.00010	61.332	.00032
#3	.00327	.30121	.00224	.00432	.01699	-.00002	61.050	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.01616	.00247	1.0511	2.1639	.00265	19.710	.53272
Stddev	.00012	.00059	.00049	.0193	.0834	.00241	.173	.00246
%RSD	129.55	3.6203	19.814	1.8330	3.8560	91.029	.87731	.46259
#1	-.00009	.01640	.00191	1.0288	2.1065	.00152	19.534	.52992
#2	.00002	.01659	.00280	1.0622	2.1255	.00541	19.716	.53455
#3	-.00022	.01550	.00269	1.0622	2.2596	.00101	19.880	.53369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00224	29.844	.00743	.06304	.00618	.01638	.00390	4.1954
Stddev	.00008	.159	.00126	.00450	.00021	.00264	.00288	.0213
%RSD	3.3560	.53301	16.998	7.1387	3.3773	16.138	73.999	.50670
#1	.00231	29.838	.00709	.06811	.00642	.01793	.00356	4.2121
#2	.00224	30.006	.00883	.05951	.00606	.01788	.00693	4.2026
#3	.00216	29.688	.00638	.06151	.00605	.01333	.00119	4.1715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112904 Acquired: 6/24/2016 15:27:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.22406	.00181	.00036	-.00058	.00615	.00172
Stddev	.00007	.00022	.00734	.00244	.00087	.00015	.00076
%RSD	17.459	.09649	406.25	670.43	150.42	2.4773	44.222
#1	.00049	.22431	-.00276	.00318	.00042	.00630	.00086
#2	.00040	.22393	-.00209	-.00113	-.00100	.00600	.00231
#3	.00035	.22394	.01028	-.00095	-.00117	.00614	.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8744.7	55412.	3026.9
Stddev	38.5	169.	22.6
%RSD	.44021	.30480	.74756
#1	8749.8	55267.	3016.4
#2	8780.4	55372.	3011.4
#3	8703.9	55597.	3052.8

Approved: June 25, 2016

Sample Name: L1606112905 Acquired: 6/24/2016 15:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.01140	.00022	.00122	.00193	.00011	.07553	.00012
Stddev	.00193	.01011	.00272	.00166	.00083	.00003	.00088	.00020
%RSD	340.70	88.707	1246.3	135.40	43.103	31.594	1.1614	171.20
#1	.00179	.01735	.00330	.00313	.00287	.00010	.07465	-.00009
#2	.00157	.01711	-.00076	.00011	.00161	.00008	.07641	.00013
#3	-.00166	-.00028	-.00188	.00044	.00131	.00014	.07552	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.00179	-.00013	-.00208	.05937	-.00493	.01993	-.00020
Stddev	.00039	.00092	.00162	.01996	.01936	.00171	.04297	.00398
%RSD	69.405	51.134	1287.4	957.73	32.612	34.778	215.57	2030.5
#1	-.00019	.00143	.00175	.00550	.07429	-.00691	-.01080	-.00459
#2	-.00097	.00283	-.00102	-.02473	.03749	-.00396	.06904	.00316
#3	-.00052	.00111	-.00111	.01297	.06632	-.00392	.00157	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.19673	.00066	-.00598	-.00007	.00185	.00246	.04335
Stddev	.00032	.01934	.00099	.00702	.00356	.00034	.00251	.00410
%RSD	52.254	9.8320	149.70	117.31	5122.7	18.375	102.19	9.4602
#1	.00034	.21710	.00051	-.01339	.00401	.00225	.00393	.03880
#2	.00096	.17861	-.00025	-.00514	-.00170	.00164	-.00044	.04677
#3	.00053	.19448	.00171	.00057	-.00252	.00167	.00389	.04446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112905 Acquired: 6/24/2016 15:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00050	.00137	-.00139	-.00093	.00257	-.00038
Stddev	.00056	.00024	.01168	.00187	.00042	.00002	.00017
%RSD	55.495	48.882	850.09	134.64	45.297	.75245	45.272
#1	.00129	.00076	.00019	-.00328	-.00062	.00258	-.00051
#2	.00036	.00028	.01360	.00046	-.00076	.00255	-.00018
#3	.00137	.00046	-.00967	-.00135	-.00142	.00257	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8734.1	55771.	2977.0
Stddev	61.0	169.	16.5
%RSD	.69849	.30321	.55417
#1	8730.3	55638.	2990.1
#2	8797.0	55713.	2958.5
#3	8675.1	55961.	2982.4

Approved: June 25, 2016

Sample Name: L1606127201 Acquired: 6/24/2016 15:35:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.02906	.00201	.10271	.01218	.00003	20.213	.00009
Stddev	.00117	.00902	.00030	.00201	.00114	.00005	.197	.00012
%RSD	4520.9	31.026	14.913	1.9615	9.3835	162.60	.97382	138.86
#1	.00128	.03946	.00223	.10504	.01090	.00001	20.371	.00012
#2	-.00038	.02417	.00215	.10159	.01253	-.00000	19.992	.00020
#3	-.00097	.02355	.00167	.10152	.01310	.00009	20.275	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.00322	.00018	.00370	.50036	.00507	3.7531	-.00235
Stddev	.00050	.00044	.00072	.02394	.09084	.00627	.0578	.00152
%RSD	321.71	13.795	410.19	646.53	18.154	123.69	1.5413	64.541
#1	.00023	.00369	.00101	-.02389	.60518	.00467	3.7411	-.00063
#2	.00003	.00318	-.00019	.01903	.44485	-.00099	3.8160	-.00291
#3	-.00072	.00280	-.00029	.01596	.45103	.01152	3.7022	-.00351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	138.48	-.00049	.00895	.00151	.00220	.00648	4.7916
Stddev	.00020	.68	.00066	.00484	.00341	.00275	.00555	.0247
%RSD	16.240	.49155	133.40	54.067	226.53	125.05	85.629	.51620
#1	.00108	138.86	-.00055	.01077	-.00143	.00260	.01252	4.8079
#2	.00145	137.70	.00019	.01263	.00069	-.00073	.00536	4.8036
#3	.00114	138.89	-.00113	.00347	.00525	.00472	.00158	4.7631
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127201 Acquired: 6/24/2016 15:35:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.06627	-.00304	-.00129	.00718	.00237	.00290
Stddev	.00103	.00053	.00409	.00463	.00068	.00008	.00098
%RSD	265.57	.80562	134.51	357.80	9.5384	3.2543	33.907
#1	.00080	.06650	-.00069	-.00660	.00664	.00231	.00179
#2	-.00096	.06566	-.00067	.00082	.00695	.00246	.00367
#3	-.00101	.06665	-.00777	.00190	.00795	.00235	.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8640.6	54537.	2976.3
Stddev	33.4	414.	2.8
%RSD	.38600	.75997	.09304
#1	8644.3	54100.	2977.4
#2	8672.0	54589.	2978.3
#3	8605.6	54924.	2973.1

Approved: June 25, 2016

Sample Name: L1606127202 Acquired: 6/24/2016 15:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00186	.20642	.00481	.36475	.06011	.00013	99.662
Stddev	.00151	.00493	.00284	.00380	.00039	.00009	.247
%RSD	81.194	2.3881	58.969	1.0428	.65090	70.313	.24793
#1	-.00316	.20852	.00188	.36055	.06036	.00024	99.944
#2	-.00221	.20995	.00754	.36574	.06030	.00009	99.557
#3	-.00020	.20079	.00500	.36796	.05966	.00007	99.485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	-.00019	.00432	.00026	.09326	2.6088	.04279
Stddev	.00015	.00023	.00087	.00198	.00865	.0720	.00422
%RSD	400.35	123.60	20.116	760.87	9.2780	2.7582	9.8647
#1	.00014	-.00025	.00365	-.00200	.10250	2.6023	.04293
#2	-.00013	.00007	.00402	.00170	.09194	2.6838	.03850
#3	.00011	-.00038	.00531	.00108	.08535	2.5403	.04694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	56.637	.00259	.00352	F 291.42	.00153	.00653	.00125
Stddev	.045	.00205	.00017	.68	.00123	.00611	.00197
%RSD	.08009	79.394	4.9276	.23185	80.436	93.561	157.56
#1	56.602	.00444	.00340	292.14	.00132	.01203	-.00086
#2	56.688	.00294	.00372	291.32	.00042	.00760	.00158
#3	56.620	.00038	.00344	290.80	.00286	-.00004	.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606127202 Acquired: 6/24/2016 15:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00336	.01090	9.4240	.00071	1.0342	-.01392	-.00220
Stddev	.00383	.00615	.0240	.00151	.0037	.00663	.00343
%RSD	114.00	56.427	.25425	212.99	.35481	47.596	156.09
#1	.00463	.00381	9.4269	.00142	1.0381	-.00964	-.00233
#2	-.00094	.01477	9.4464	-.00103	1.0335	-.02155	-.00556
#3	.00639	.01413	9.3988	.00174	1.0309	-.01057	.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00964	.00621	.00119
Stddev	.00038	.00006	.00099
%RSD	3.9446	.99408	82.742
#1	.00988	.00626	.00026
#2	.00920	.00614	.00109
#3	.00983	.00622	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8435.9	53530.	2970.9
Stddev	12.7	193.	17.9
%RSD	.15053	.36100	.60288
#1	8449.6	53485.	2950.4
#2	8433.7	53742.	2979.1
#3	8424.5	53363.	2983.2

Approved: June 25, 2016

Sample Name: L1606127901 Acquired: 6/24/2016 15:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00142	4.7663	.00159	.19149	.18987	.00044	117.30	.00019
Stddev	.00097	.0101	.00508	.00228	.00171	.00003	.36	.00019
%RSD	68.564	.21115	319.18	1.1931	.90121	7.9858	.30828	101.16
#1	-.00138	4.7733	-.00262	.19304	.18994	.00044	117.72	.00036
#2	-.00047	4.7548	.00724	.19255	.18812	.00047	117.12	-.00002
#3	-.00241	4.7708	.00015	.18886	.19154	.00040	117.06	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00381	.02665	.00736	7.4592	1.7020	.01711	47.630	.93316
Stddev	.00023	.00138	.00126	.0357	.0635	.00342	.150	.00698
%RSD	6.1636	5.1938	17.091	.47804	3.7303	19.974	.31555	.74834
#1	.00401	.02594	.00596	7.4987	1.7516	.02100	47.481	.93898
#2	.00386	.02577	.00840	7.4496	1.7241	.01458	47.626	.92542
#3	.00355	.02825	.00770	7.4293	1.6305	.01576	47.782	.93509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00556	8.7030	.01355	.23085	.00447	-.00025	.00322	15.121
Stddev	.00008	.0290	.00146	.00413	.00381	.00657	.00291	.053
%RSD	1.3705	.33347	10.784	1.7907	85.136	2585.4	90.596	.35335
#1	.00557	8.7074	.01369	.22722	.00571	.00305	.00109	15.155
#2	.00548	8.6721	.01493	.23000	.00751	.00401	.00202	15.147
#3	.00563	8.7296	.01202	.23535	.00020	-.00782	.00654	15.059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127901 Acquired: 6/24/2016 15:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00095**	**.60203**	**.04472**	**-.00029**	**.01037**	**.12433**	**.00197**
Stddev	.00031	.00068	.00309	.00162	.00044	.00100	.00042
%RSD	32.369	.11312	6.9034	565.97	4.2747	.80201	21.277
#1	.00130	.60249	.04781	-.00207	.01047	.12469	.00218
#2	.00073	.60125	.04470	.00012	.00988	.12510	.00223
#3	.00082	.60235	.04164	.00109	.01075	.12321	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8541.6**	**54387.**	**2958.0**
Stddev	16.9	129.	6.0
%RSD	.19780	.23665	.20194
#1	8551.3	54242.	2952.3
#2	8522.0	54430.	2964.2
#3	8551.3	54488.	2957.4

Approved: June 25, 2016

Sample Name: L1606127905 Acquired: 6/24/2016 15:47:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	8.8519	.00642	.19520	.18168	.00060	88.855	.00021
Stddev	.00244	.0381	.00178	.00225	.00180	.00002	.745	.00017
%RSD	304.73	.43060	27.774	1.1510	.99112	4.1261	.83808	83.018
#1	-.00092	8.8959	.00767	.19423	.18198	.00060	88.810	.00015
#2	.00359	8.8302	.00438	.19361	.18331	.00058	89.621	.00007
#3	-.00027	8.8295	.00720	.19777	.17975	.00063	88.133	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00371	.01642	.00773	9.7705	2.6089	.02290	51.286	.37067
Stddev	.00016	.00003	.00088	.0365	.0601	.00215	.182	.00572
%RSD	4.3765	.17741	11.436	.37305	2.3051	9.3850	.35555	1.5433
#1	.00374	.01645	.00699	9.7786	2.6549	.02048	51.464	.37725
#2	.00353	.01639	.00870	9.8021	2.5408	.02367	51.099	.36781
#3	.00386	.01643	.00749	9.7306	2.6308	.02456	51.296	.36694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00429	17.960	.01399	.58938	.00723	.00345	.01660	21.595
Stddev	.00025	.178	.00089	.00540	.00230	.00161	.00485	.031
%RSD	5.7811	.99221	6.3701	.91546	31.747	46.678	29.224	.14556
#1	.00411	17.965	.01309	.59443	.00477	.00160	.01386	21.612
#2	.00457	18.136	.01402	.58370	.00760	.00453	.01374	21.615
#3	.00418	17.779	.01487	.59001	.00932	.00422	.02220	21.559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127905 Acquired: 6/24/2016 15:47:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00678	.39124	.08635	-.00072	.01938	.20486	.00337
Stddev	.00081	.00258	.00286	.00091	.00084	.00112	.00043
%RSD	12.000	.65984	3.3097	126.77	4.3495	.54646	12.804
#1	.00772	.39217	.08786	-.00156	.01996	.20592	.00287
#2	.00628	.39323	.08814	.00025	.01978	.20498	.00362
#3	.00633	.38833	.08306	-.00084	.01842	.20369	.00361
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8506.2	53713.	2954.1
Stddev	7.0	248.	24.6
%RSD	.08199	.46129	.83302
#1	8500.8	53999.	2935.6
#2	8503.6	53563.	2944.7
#3	8514.1	53577.	2982.0

Approved: June 25, 2016

Sample Name: L1606072901 Acquired: 6/24/2016 15:51:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	1.8041	.00151	.01140	.10342	.00036	3.3368	.00006
Stddev	.00108	.0244	.00306	.00144	.00016	.00001	.0325	.00013
%RSD	427.84	1.3517	203.06	12.597	.15291	1.6360	.97262	213.80
#1	-.00004	1.8139	.00460	.01195	.10325	.00036	3.3478	.00020
#2	.00071	1.7764	.00145	.01248	.10357	.00035	3.3623	.00000
#3	-.00142	1.8221	-.00153	.00977	.10345	.00036	3.3003	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00601	.00511	.00285	8.2259	3.9554	.00145	2.3354	.17823
Stddev	.00015	.00146	.00144	.0492	.0266	.00103	.0397	.00509
%RSD	2.5410	28.552	50.611	.59798	.67201	71.162	1.7012	2.8559
#1	.00590	.00675	.00119	8.2785	3.9276	.00182	2.3174	.17617
#2	.00596	.00394	.00359	8.2184	3.9579	.00029	2.3079	.18402
#3	.00619	.00465	.00379	8.1810	3.9806	.00225	2.3809	.17449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	8.3779	.00603	.06450	.00384	.00090	.00053	7.1161
Stddev	.00020	.1155	.00102	.00385	.00543	.00485	.00847	.0228
%RSD	31.960	1.3781	16.958	5.9688	141.68	539.69	1590.2	.32114
#1	.00082	8.4900	.00592	.06848	.00179	-.00460	.00777	7.1376
#2	.00068	8.3843	.00710	.06080	-.00028	.00272	-.00879	7.1186
#3	.00042	8.2593	.00507	.06423	.01000	.00457	.00261	7.0921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072901 Acquired: 6/24/2016 15:51:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.04015	.03567	-.00369	.00716	.03681	.00098
Stddev	.00043	.00039	.00196	.00299	.00019	.00045	.00038
%RSD	304.20	.97044	5.5017	80.892	2.6476	1.2228	39.254
#1	.00025	.04034	.03670	-.00592	.00694	.03696	.00089
#2	-.00033	.04041	.03689	-.00486	.00725	.03716	.00065
#3	.00052	.03970	.03340	-.00030	.00729	.03630	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8601.0	55071.	2949.1
Stddev	22.1	435.	50.8
%RSD	.25740	.79039	1.7219
#1	8576.7	54573.	2940.0
#2	8620.1	55377.	2903.5
#3	8606.2	55264.	3003.9

Approved: June 25, 2016

Sample Name: L1606072902 Acquired: 6/24/2016 15:55:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00183	.07171	-.00004	.00877	.08968	.00017	3.1101	.00014
Stddev	.00133	.00367	.00088	.00181	.00076	.00008	.0257	.00041
%RSD	72.550	5.1181	2064.2	20.689	.84741	48.064	.82680	296.40
#1	-.00115	.07091	-.00060	.01060	.09049	.00019	3.1398	.00007
#2	-.00335	.06851	.00097	.00697	.08956	.00008	3.0951	.00058
#3	-.00098	.07572	-.00050	.00874	.08898	.00025	3.0953	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	.00242	-.00092	.10471	3.8808	.00116	2.1628	.09158
Stddev	.00017	.00058	.00163	.02662	.0547	.00465	.0847	.00129
%RSD	8.4444	23.790	177.68	25.419	1.4105	401.58	3.9169	1.4137
#1	.00216	.00221	-.00063	.12487	3.9348	.00494	2.1162	.09307
#2	.00216	.00307	-.00267	.07454	3.8824	.00256	2.1116	.09074
#3	.00186	.00198	.00055	.11471	3.8253	-.00403	2.2606	.09093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	8.6660	.00357	-.01372	-.00186	.00337	.00433	5.4192
Stddev	.00050	.0276	.00104	.00287	.00136	.00414	.00201	.0141
%RSD	81.607	.31795	29.178	20.893	72.911	123.08	46.400	.26036
#1	.00102	8.6437	.00292	-.01305	-.00038	.00625	.00365	5.4112
#2	.00005	8.6574	.00477	-.01686	-.00305	-.00138	.00275	5.4355
#3	.00077	8.6968	.00302	-.01125	-.00214	.00523	.00659	5.4109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072902 Acquired: 6/24/2016 15:55:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.04141	.00013	-.00361	-.00026	.00979	-.00013
Stddev	.00063	.00072	.00249	.00115	.00139	.00018	.00021
%RSD	803.32	1.7354	1938.9	31.844	526.60	1.8652	168.23
#1	.00042	.04184	.00137	-.00388	-.00173	.00988	.00006
#2	.00046	.04058	.00175	-.00235	-.00009	.00991	-.00008
#3	-.00065	.04180	-.00274	-.00460	.00103	.00958	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8610.5	55271.	2985.6
Stddev	26.5	458.	16.5
%RSD	.30752	.82920	.55375
#1	8583.1	55190.	2988.7
#2	8612.5	55764.	2967.7
#3	8635.9	54858.	3000.3

Approved: June 25, 2016

Sample Name: L1606072903 Acquired: 6/24/2016 15:59:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00118	3.0417	.00235	.05187	.04806	.00261	52.177	.00034
Stddev	.00191	.0195	.00046	.00139	.00143	.00010	.964	.00029
%RSD	162.37	.64007	19.486	2.6772	2.9802	3.6445	1.8470	86.323
#1	-.00068	3.0605	.00250	.05336	.04904	.00255	52.373	.00001
#2	.00314	3.0430	.00183	.05062	.04641	.00272	51.130	.00058
#3	.00108	3.0216	.00270	.05162	.04872	.00256	53.027	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05155	.00163	.00615	3.2341	2.3681	.00264	15.355	.83166
Stddev	.00029	.00223	.00059	.0481	.0794	.00380	.178	.01170
%RSD	.56184	136.36	9.6575	1.4861	3.3536	143.97	1.1614	1.4068
#1	.05176	.00341	.00624	3.2584	2.3449	-.00169	15.410	.84099
#2	.05167	.00234	.00669	3.1788	2.4565	.00542	15.156	.81853
#3	.05122	-.00086	.00552	3.2652	2.3028	.00418	15.500	.83544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	6.0920	.02162	-.00809	.00351	.00212	-.00139	5.6304
Stddev	.00023	.0506	.00096	.00241	.00275	.00391	.00054	.0235
%RSD	26.502	.83131	4.4295	29.822	78.325	184.24	38.556	.41692
#1	.00068	6.1333	.02268	-.00867	.00452	-.00008	-.00126	5.6575
#2	.00079	6.0355	.02082	-.00544	.00040	-.00019	-.00198	5.6160
#3	.00112	6.1071	.02136	-.01016	.00562	.00664	-.00093	5.6178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072903 Acquired: 6/24/2016 15:59:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.47657**	**-.00608**	**-.00476**	**-.00070**	**.06207**	**.00194**
Stddev	.00020	.00492	.00552	.00119	.00050	.00066	.00073
%RSD	500.65	1.0315	90.719	25.070	72.152	1.0565	37.457
#1	-.00001	.48049	.00025	-.00490	-.00086	.06272	.00252
#2	-.00026	.47105	-.00862	-.00588	-.00110	.06208	.00113
#3	.00015	.47816	-.00987	-.00350	-.00013	.06141	.00218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8765.4**	**55697.**	**3007.0**
Stddev	29.6	471.	42.7
%RSD	.33730	.84576	1.4194
#1	8742.0	55550.	2962.9
#2	8755.4	55316.	3048.1
#3	8798.6	56224.	3009.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:03:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41289	10.450	.41348	.51043	1.0555	.05100	10.588	.05276
Stddev	.00257	.033	.00046	.00258	.0038	.00013	.036	.00002
%RSD	.62124	.31280	.11216	.50484	.35613	.25797	.33694	.04519
#1	.41200	10.430	.41401	.50751	1.0515	.05085	10.563	.05275
#2	.41089	10.432	.41328	.51239	1.0590	.05106	10.629	.05274
#3	.41578	10.488	.41315	.51139	1.0561	.05109	10.571	.05278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21164	.51432	.52788	4.1964	53.258	1.0465	10.545	.52810
Stddev	.00062	.00111	.00081	.0580	.178	.0014	.008	.00391
%RSD	.29347	.21487	.15291	1.3823	.33451	.13725	.07407	.74105
#1	.21169	.51306	.52786	4.1294	53.061	1.0455	10.542	.52435
#2	.21223	.51514	.52709	4.2295	53.408	1.0459	10.540	.52778
#3	.21099	.51475	.52870	4.2303	53.304	1.0481	10.554	.53216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0563	52.905	.52985	10.441	.52745	1.2469	.41732	5.4599
Stddev	.0050	.293	.00133	.026	.00100	.0023	.00481	.0125
%RSD	.47494	.55369	.25035	.25038	.18928	.18400	1.1515	.22826
#1	1.0597	52.572	.53125	10.452	.52655	1.2494	.41899	5.4724
#2	1.0587	53.123	.52861	10.460	.52727	1.2448	.42108	5.4598
#3	1.0506	53.021	.52970	10.412	.52852	1.2466	.41191	5.4474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:03:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0560**	**1.0590**	**1.0626**	**.52607**	**1.0260**	**1.0604**	**1.0440**
Stddev	.0044	.0030	.0208	.00455	.0043	.0021	.0098
%RSD	.42093	.28690	1.9614	.86396	.41541	.20224	.93608
#1	1.0595	1.0556	1.0394	.53131	1.0214	1.0614	1.0527
#2	1.0574	1.0601	1.0799	.52323	1.0298	1.0619	1.0458
#3	1.0510	1.0613	1.0685	.52368	1.0267	1.0580	1.0334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8488.4**	**53377.**	**2896.8**
Stddev	8.3	364.	12.7
%RSD	.09787	.68148	.43965
#1	8479.0	53754.	2889.4
#2	8491.5	53348.	2889.4
#3	8494.7	53029.	2911.5

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:06:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00237	.00904	-.00013	.00126	.00087	.00009	-.03750	-.00001
Stddev	.00028	.00458	.00263	.00213	.00072	.00007	.02259	.00008
%RSD	11.906	50.683	2037.4	169.22	82.542	80.192	60.228	1296.7
#1	-.00241	.00648	.00161	-.00103	.00165	.00017	-.03103	-.00010
#2	-.00207	.01433	.00116	.00161	.00026	.00004	-.06261	.00006
#3	-.00263	.00631	-.00315	.00320	.00069	.00005	-.01886	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00163	-.00062	-.00620	.11573	-.00304	.01488	-.00078
Stddev	.00019	.00081	.00029	.01930	.05076	.00240	.08011	.00324
%RSD	50.224	49.496	47.487	311.51	43.862	78.989	538.48	412.93
#1	-.00042	.00249	-.00061	-.01546	.17426	-.00529	-.06290	.00186
#2	-.00056	.00088	-.00092	-.01911	.08368	-.00051	.01039	.00018
#3	-.00018	.00152	-.00033	.01599	.08926	-.00333	.09714	-.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00388	.01952	-.00090	.00067	.00140	.00754	.00367	.00739
Stddev	.00023	.03874	.00071	.00300	.00256	.00569	.00313	.00164
%RSD	6.0070	198.45	79.652	449.20	182.69	75.419	85.488	22.213
#1	.00376	.02524	-.00008	-.00038	.00209	.01012	.00682	.00912
#2	.00415	-.02176	-.00124	-.00167	-.00143	.01148	.00055	.00586
#3	.00373	.05509	-.00138	.00405	.00355	.00102	.00364	.00718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:06:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00023	-.00285	.00152	-.00011	.00008	.00116
Stddev	.00056	.00010	.00052	.00103	.00094	.00006	.00015
%RSD	318.85	44.632	18.333	67.447	850.45	74.145	12.905
#1	.00055	.00034	-.00230	.00197	.00080	.00011	.00132
#2	-.00047	.00013	-.00334	.00225	-.00005	.00011	.00114
#3	.00045	.00022	-.00292	.00035	-.00108	.00001	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8999.0	56919.	3062.6
Stddev	9.4	30.	18.0
%RSD	.10413	.05237	.58755
#1	9009.8	56950.	3042.1
#2	8994.5	56918.	3075.7
#3	8992.7	56890.	3070.0

Approved: June 25, 2016

Sample Name: L1606114801 Acquired: 6/24/2016 16:10:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	.79294	.00201	.13513	.08691	.00012	28.737	.00030
Stddev	.00214	.00688	.00416	.00148	.00038	.00006	.282	.00020
%RSD	404.68	.86711	206.32	1.0978	.43964	55.958	.98042	65.656
#1	-.00285	.79770	.00316	.13676	.08683	.00010	28.751	.00014
#2	-.00010	.78505	.00548	.13388	.08658	.00006	28.449	.00052
#3	.00136	.79606	-.00260	.13474	.08733	.00019	29.012	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00303	.00093	.48318	5.0170	.00697	15.013	.02622
Stddev	.00047	.00140	.00169	.02352	.0508	.00319	.317	.00088
%RSD	624.02	46.131	181.65	4.8676	1.0122	45.790	2.1109	3.3547
#1	-.00062	.00464	.00230	.46183	4.9691	.00964	14.955	.02533
#2	.00023	.00225	.00145	.50839	5.0118	.00344	14.729	.02708
#3	.00016	.00220	-.00096	.47933	5.0702	.00783	15.355	.02625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	68.950	.00101	.04783	-.00130	.00580	.00131	4.7242
Stddev	.00040	.584	.00074	.00541	.00251	.00495	.00256	.0383
%RSD	15.214	.84747	72.757	11.317	193.03	85.336	195.73	.81053
#1	.00232	69.030	.00034	.05397	-.00090	.00563	.00084	4.7496
#2	.00249	68.330	.00180	.04371	-.00398	.00094	.00407	4.7429
#3	.00308	69.490	.00090	.04583	.00099	.01083	-.00099	4.6802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114801 Acquired: 6/24/2016 16:10:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.27997**	**.00221**	**-.00090**	**.00318**	**.00551**	**.00289**
Stddev	.00064	.00232	.00318	.00103	.00034	.00004	.00087
%RSD	411.94	.83018	144.19	113.71	10.535	.75135	29.945
#1	.00041	.28044	.00583	.00027	.00296	.00549	.00189
#2	-.00003	.27744	-.00015	-.00131	.00357	.00556	.00344
#3	-.00085	.28201	.00094	-.00166	.00301	.00548	.00335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8599.5**	**54385.**	**2981.3**
Stddev	16.0	89.	24.9
%RSD	.18617	.16380	.83644
#1	8603.2	54438.	2974.6
#2	8613.3	54435.	3008.9
#3	8581.9	54282.	2960.3

Approved: June 25, 2016

Sample Name: L1606114802 Acquired: 6/24/2016 16:14:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00204**	**.04975**	**.00299**	**.13869**	**.15047**	**-.00005**	**55.818**	**.00017**
Stddev	.00109	.01051	.00093	.00193	.00152	.00005	.396	.00020
%RSD	53.121	21.121	30.942	1.3904	1.0132	102.05	.70964	116.40
#1	-.00265	.04009	.00388	.13978	.15223	-.00009	56.185	-.00006
#2	-.00269	.06094	.00203	.13983	.14951	.00001	55.872	.00027
#3	-.00079	.04821	.00306	.13647	.14968	-.00007	55.398	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00481**	**.00009**	**.04662**	**2.9224**	**.00713**	**49.316**	**.00366**
Stddev	.00044	.00030	.00072	.01678	.0836	.00442	.171	.00293
%RSD	1148.5	6.2977	802.56	35.999	2.8609	61.973	.34731	80.138
#1	-.00051	.00471	-.00074	.03351	2.9561	.00300	49.393	.00341
#2	.00002	.00515	.00053	.04082	2.8272	.00660	49.435	.00671
#3	.00037	.00456	.00048	.06554	2.9839	.01179	49.119	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**121.90**	**.00147**	**.02233**	**.00149**	**.00278**	**.01025**	**6.1560**
Stddev	.00035	.74	.00041	.00365	.00184	.00274	.00234	.0472
%RSD	18.786	.61102	27.946	16.368	123.30	98.711	22.816	.76606
#1	.00151	122.69	.00179	.01811	-.00020	.00379	.01254	6.1806
#2	.00191	121.83	.00160	.02439	.00122	-.00033	.01035	6.1857
#3	.00221	121.20	.00101	.02449	.00344	.00487	.00787	6.1016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114802 Acquired: 6/24/2016 16:14:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.39251**	**-.00823**	**-.00167**	**.00748**	**.00735**	**.00172**
Stddev	.00093	.00157	.00304	.00302	.00088	.00035	.00065
%RSD	461.50	.40050	36.982	180.68	11.724	4.7920	38.067
#1	-.00008	.39329	-.00720	-.00346	.00697	.00775	.00121
#2	.00066	.39355	-.00584	-.00336	.00697	.00723	.00149
#3	-.00119	.39070	-.01166	.00181	.00849	.00708	.00246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8495.3**	**54006.**	**2982.2**
Stddev	21.4	124.	30.9
%RSD	.25175	.22933	1.0346
#1	8477.7	53900.	2949.3
#2	8519.1	54142.	3010.5
#3	8489.1	53977.	2986.7

Approved: June 25, 2016

Sample Name: L1606115001 Acquired: 6/24/2016 16:18:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	1.0029	.00299	.14279	.11041	.00016	35.956	.00009
Stddev	.00251	.0141	.00281	.00105	.00192	.00007	.317	.00003
%RSD	627.75	1.4010	94.062	.73688	1.7392	40.398	.88245	32.058
#1	.00224	1.0135	.00421	.14372	.11062	.00023	36.172	.00007
#2	.00142	.98692	.00498	.14165	.10839	.00010	35.592	.00007
#3	-.00246	1.0082	-.00023	.14300	.11222	.00016	36.105	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00317	.00169	.71808	2.8256	.00873	22.732	.05335
Stddev	.00027	.00048	.00070	.01344	.0315	.00112	.258	.00149
%RSD	4893.9	15.268	41.765	1.8711	1.1137	12.865	1.1351	2.7844
#1	.00025	.00269	.00090	.73141	2.8424	.00751	22.933	.05174
#2	.00004	.00315	.00188	.70454	2.7893	.00972	22.441	.05367
#3	-.00028	.00366	.00227	.71827	2.8451	.00896	22.823	.05466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00379	119.94	.00083	.11747	.00336	.00193	-.00362	5.3987
Stddev	.00029	.91	.00054	.00963	.00165	.00170	.00327	.0216
%RSD	7.6691	.75510	65.143	8.1950	48.899	88.260	90.387	.40081
#1	.00400	120.59	.00089	.11089	.00147	.00389	-.00507	5.4237
#2	.00392	118.90	.00135	.11301	.00415	.00109	.00013	5.3854
#3	.00346	120.32	.00027	.12852	.00447	.00081	-.00591	5.3870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115001 Acquired: 6/24/2016 16:18:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.24860**	**.00831**	**.00040**	**.00721**	**.00897**	**.00156**
Stddev	.00102	.00079	.00563	.00208	.00033	.00019	.00032
%RSD	900.41	.31800	67.748	518.71	4.6076	2.0684	20.721
#1	-.00127	.24885	.00936	.00280	.00755	.00907	.00137
#2	.00028	.24771	.00223	-.00097	.00689	.00909	.00139
#3	.00065	.24923	.01334	-.00062	.00718	.00876	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8658.5**	**54840.**	**3032.2**
Stddev	11.5	83.	32.1
%RSD	.13234	.15154	1.0598
#1	8653.8	54773.	3000.1
#2	8671.6	54933.	3064.4
#3	8650.2	54814.	3032.3

Approved: June 25, 2016

Sample Name: L1606115002 Acquired: 6/24/2016 16:22:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00114	.54802	.00239	.07237	.04756	.00011	17.868	-.00002
Stddev	.00116	.00304	.00234	.00183	.00074	.00011	.296	.00023
%RSD	101.69	.55434	98.297	2.5331	1.5569	98.769	1.6590	1035.8
#1	-.00186	.54599	.00388	.07434	.04758	.00024	18.086	-.00007
#2	.00020	.55151	.00360	.07071	.04682	.00003	17.530	-.00022
#3	-.00176	.54656	-.00032	.07205	.04830	.00007	17.987	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00269	.00128	.42445	5.1441	.00730	5.7440	.01494
Stddev	.00045	.00114	.00159	.02138	.0765	.00321	.0131	.00279
%RSD	2112.8	42.310	124.60	5.0376	1.4863	44.008	.22880	18.670
#1	.00037	.00359	.00010	.43132	5.0900	.01003	5.7588	.01523
#2	.00009	.00307	.00065	.40047	5.1108	.00376	5.7337	.01757
#3	-.00052	.00141	.00309	.44154	5.2316	.00811	5.7395	.01202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	41.148	.00106	.06447	-.00062	.00281	.00337	1.7279
Stddev	.00070	.471	.00049	.00342	.00129	.00199	.00517	.0310
%RSD	71.365	1.1451	45.916	5.3017	208.13	70.714	153.38	1.7951
#1	.00087	41.063	.00159	.06818	.00051	.00505	.00033	1.7430
#2	.00034	40.725	.00095	.06144	-.00034	.00212	.00044	1.7484
#3	.00173	41.656	.00063	.06379	-.00203	.00126	.00935	1.6922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115002 Acquired: 6/24/2016 16:22:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.10093**	**.00308**	**-.00183**	**.00519**	**.00618**	**.00126**
Stddev	.00067	.00110	.00218	.00277	.00055	.00020	.00057
%RSD	398.57	1.0927	70.842	151.99	10.532	3.3140	45.733
#1	-.00011	.10080	.00275	.00082	.00488	.00640	.00076
#2	-.00086	.09989	.00108	-.00159	.00582	.00617	.00189
#3	.00047	.10209	.00541	-.00471	.00488	.00599	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8768.3**	**55601.**	**3006.8**
Stddev	44.8	353.	32.6
%RSD	.51146	.63549	1.0826
#1	8739.7	56008.	3020.9
#2	8745.2	55379.	3029.9
#3	8820.0	55415.	2969.6

Approved: June 25, 2016

Sample Name: L1606115102 Acquired: 6/24/2016 16:26:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00157	.16673	-.00164	.11324	.07508	.00006	35.965	.00009
Stddev	.00123	.00968	.00381	.00123	.00110	.00006	.070	.00012
%RSD	78.798	5.8070	231.94	1.0834	1.4713	89.197	.19353	140.18
#1	-.00058	.15593	.00273	.11273	.07407	.00011	35.891	.00006
#2	-.00295	.17462	-.00340	.11236	.07626	.00000	35.974	.00023
#3	-.00117	.16964	-.00425	.11464	.07493	.00008	36.029	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.00268	.00078	.22571	2.4607	.00715	20.455	.06028
Stddev	.00017	.00071	.00110	.01627	.0572	.00329	.118	.00255
%RSD	80.425	26.322	141.38	7.2093	2.3240	45.999	.57620	4.2253
#1	-.00019	.00196	.00195	.23780	2.5245	.01081	20.570	.06072
#2	-.00005	.00272	-.00023	.23211	2.4140	.00618	20.461	.06258
#3	-.00038	.00337	.00061	.20721	2.4435	.00445	20.335	.05755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00276	97.835	-.00067	.04806	-.00242	.00513	.00378	5.3799
Stddev	.00044	.396	.00100	.00252	.00339	.00529	.00744	.2322
%RSD	15.877	.40451	148.20	5.2532	139.98	103.15	196.88	4.3153
#1	.00319	97.412	.00043	.04730	.00016	.00550	.01195	5.2447
#2	.00231	98.197	-.00093	.05087	-.00625	.01022	-.00261	5.2471
#3	.00278	97.896	-.00151	.04600	-.00116	-.00034	.00199	5.6480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115102 Acquired: 6/24/2016 16:26:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00071**	**.23607**	**-.00930**	**.00015**	**.00351**	**.01289**	**.00068**
Stddev	.00028	.00125	.00346	.00259	.00142	.00062	.00031
%RSD	39.765	.53152	37.213	1786.3	40.411	4.8488	45.284
#1	-.00042	.23498	-.00585	.00230	.00418	.01260	.00081
#2	-.00072	.23744	-.00927	.00087	.00188	.01246	.00090
#3	-.00098	.23579	-.01277	-.00273	.00448	.01361	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8582.8**	**55285.**	**3037.3**
Stddev	259.2	168.	27.1
%RSD	3.0201	.30413	.89376
#1	8731.0	55097.	3068.5
#2	8733.8	55422.	3018.9
#3	8283.5	55335.	3024.5

Approved: June 25, 2016

Sample Name: L1606115105 Acquired: 6/24/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00162	.10538	.00245	.14951	.09631	.00009	45.968	.00027
Stddev	.00070	.00798	.00198	.00195	.00083	.00004	.579	.00038
%RSD	42.968	7.5757	80.657	1.3067	.86692	43.233	1.2597	142.70
#1	-.00098	.11396	.00050	.14740	.09536	.00011	46.292	.00068
#2	-.00153	.09816	.00240	.15125	.09664	.00005	45.300	-.00007
#3	-.00237	.10403	.00446	.14988	.09693	.00012	46.313	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00270	-.00048	.17572	2.0276	.00721	26.821	.07924
Stddev	.00018	.00083	.00087	.01470	.0656	.00380	.415	.00616
%RSD	45.378	30.889	179.73	8.3676	3.2368	52.699	1.5460	7.7799
#1	-.00018	.00343	-.00076	.15875	2.0306	.00292	26.890	.08485
#2	-.00050	.00179	-.00118	.18434	2.0917	.01014	26.377	.07264
#3	-.00048	.00289	.00049	.18408	1.9605	.00857	27.198	.08022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	129.55	-.00083	.03925	.00528	.00057	.00250	6.3879
Stddev	.00022	1.74	.00110	.00683	.00391	.00168	.00309	.0293
%RSD	6.5817	1.3407	132.79	17.395	74.018	296.78	123.71	.45807
#1	.00302	130.39	-.00047	.04701	.00428	.00171	.00164	6.4058
#2	.00340	127.55	-.00206	.03419	.00959	-.00136	-.00008	6.4037
#3	.00339	130.71	.00005	.03653	.00197	.00136	.00592	6.3541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115105 Acquired: 6/24/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**.30328**	**-.00537**	**-.00168**	**.00336**	**.00866**	**.00060**
Stddev	.00061	.00418	.00652	.00091	.00046	.00013	.00023
%RSD	83.700	1.3769	121.45	54.113	13.812	1.5061	38.244
#1	-.00141	.30492	-.01282	-.00078	.00283	.00877	.00050
#2	-.00022	.29853	-.00064	-.00260	.00371	.00870	.00044
#3	-.00057	.30639	-.00266	-.00165	.00352	.00851	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8543.0**	**54064.**	**2974.7**
Stddev	21.3	458.	55.5
%RSD	.24931	.84639	1.8656
#1	8566.3	53562.	2939.2
#2	8524.4	54174.	3038.7
#3	8538.3	54457.	2946.3

Approved: June 25, 2016

Sample Name: L1606115401 Acquired: 6/24/2016 16:34:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00112**	**.08710**	**.00114**	**1.7588**	**.02106**	**.00002**	F **475.73**
Stddev	.00180	.00226	.00412	.0043	.00048	.00007	2.70
%RSD	160.71	2.5955	360.37	.24448	2.2952	394.51	.56675
#1	.00049	.08967	-.00088	1.7610	.02071	.00002	477.13
#2	-.00307	.08544	.00589	1.7616	.02085	.00009	472.62
#3	-.00079	.08619	-.00158	1.7539	.02161	-.00005	477.44
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00093**	**.00346**	**.00194**	**.05481**	**4.3815**	**.10949**
Stddev	.00005	.00052	.00138	.00145	.01743	.0383	.00511
%RSD	50.448	56.000	39.846	74.561	31.801	.87412	4.6701
#1	.00014	.00075	.00476	.00027	.04818	4.4220	.10952
#2	.00007	.00053	.00201	.00283	.07458	4.3766	.10437
#3	.00006	.00152	.00360	.00271	.04166	4.3458	.11459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**113.88**	**.27248**	**.02443**	F **962.52**	**-.00144**	**.02893**	**.00007**
Stddev	.66	.00359	.00021	16.50	.00136	.00999	.00237
%RSD	.58361	1.3185	.87734	1.7144	94.283	34.540	3393.1
#1	114.28	.27132	.02429	980.75	-.00065	.03963	-.00254
#2	113.11	.26961	.02467	958.20	-.00301	.02733	.00065
#3	114.24	.27651	.02431	948.60	-.00067	.01983	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606115401 Acquired: 6/24/2016 16:34:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00227	.05452	5.3738	-.00180	8.7578	F -.06233	-.00181
Stddev	.00372	.01187	.0403	.00058	.0451	.00486	.00179
%RSD	164.10	21.769	.74949	32.077	.51456	7.7978	98.539
#1	.00553	.05924	5.3959	-.00119	8.7791	-.06137	-.00108
#2	-.00178	.06330	5.3982	-.00185	8.7060	-.06760	-.00385
#3	.00305	.04102	5.3273	-.00234	8.7883	-.05802	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01547	.00549	.00090
Stddev	.00027	.00005	.00051
%RSD	1.7389	.84148	56.410
#1	.01521	.00546	.00038
#2	.01575	.00554	.00139
#3	.01545	.00546	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7824.9	49741.	2897.8
Stddev	25.7	56.	41.7
%RSD	.32891	.11264	1.4378
#1	7852.3	49711.	2855.6
#2	7801.3	49805.	2938.9
#3	7821.1	49706.	2898.8

Approved: June 25, 2016

Sample Name: L1606115402S Acquired: 6/24/2016 16:38:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20827**	**5.3848**	**.22077**	**2.7748**	**.54172**	**.02512**	F **481.48**
Stddev	.00188	.0082	.00532	.0041	.00285	.00016	3.09
%RSD	.90285	.15294	2.4089	.14749	.52604	.62525	.64217
#1	.20610	5.3941	.22023	2.7718	.54377	.02494	484.49
#2	.20928	5.3784	.21574	2.7795	.53847	.02524	478.32
#3	.20943	5.3820	.22633	2.7732	.54294	.02519	481.64
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02719**	**.10282**	**.25237**	**.25450**	**2.0775**	**32.155**	**.65463**
Stddev	.00089	.00263	.00138	.00503	.0009	.192	.00487
%RSD	3.2606	2.5533	.54827	1.9758	.04312	.59849	.74370
#1	.02745	.10267	.25157	.25657	2.0772	32.268	.65849
#2	.02620	.10027	.25158	.24877	2.0768	31.933	.64916
#3	.02792	.10551	.25397	.25816	2.0785	32.264	.65623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**118.98**	**.51147**	**.55840**	F **977.71**	**.24997**	**5.5144**	**.24919**
Stddev	.84	.00370	.01031	13.22	.00452	.1131	.00286
%RSD	.70668	.72420	1.8456	1.3517	1.8092	2.0516	1.1484
#1	119.22	.51132	.56227	988.78	.25125	5.5401	.24784
#2	118.05	.50785	.54671	963.08	.24494	5.3907	.24725
#3	119.67	.51526	.56620	981.27	.25371	5.6125	.25247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606115402S Acquired: 6/24/2016 16:38:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.65290	.26530	8.4198	.51035	F 9.1325	.46797	.23861
Stddev	.01747	.00322	.1773	.00998	.0563	.00190	.00481
%RSD	2.6758	1.2148	2.1060	1.9552	.61631	.40567	2.0152
#1	.65559	.26528	8.4639	.51157	9.1879	.46964	.23992
#2	.63423	.26208	8.2246	.49982	9.0754	.46837	.23329
#3	.66886	.26853	8.5709	.51967	9.1341	.46591	.24263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.52988	.50936	.00371
Stddev	.00272	.00898	.00129
%RSD	.51319	1.7635	34.695
#1	.52752	.51212	.00232
#2	.53285	.49932	.00397
#3	.52929	.51664	.00486
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7884.5	49106.	2856.5
Stddev	105.8	326.	14.3
%RSD	1.3422	.66476	.50060
#1	7820.3	49374.	2840.1
#2	8006.6	48742.	2866.5
#3	7826.4	49201.	2863.0

Approved: June 25, 2016

Sample Name: L1606115403SD Acquired: 6/24/2016 16:41:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21318**	**5.5219**	**.22092**	**2.8411**	**.55147**	**.02575**	F **492.79**
Stddev	.00065	.0112	.00589	.0011	.00218	.00014	1.50
%RSD	.30664	.20191	2.6650	.03940	.39554	.52600	.30476
#1	.21335	5.5119	.22701	2.8414	.55201	.02561	493.55
#2	.21373	5.5198	.21525	2.8420	.55334	.02574	493.76
#3	.21246	5.5339	.22050	2.8398	.54907	.02588	491.06
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02750**	**.10490**	**.25795**	**.25725**	**2.1243**	**32.619**	**.67266**
Stddev	.00021	.00070	.00047	.00265	.0074	.077	.00146
%RSD	.77118	.66790	.18314	1.0291	.34930	.23491	.21692
#1	.02742	.10569	.25827	.25739	2.1327	32.707	.67327
#2	.02774	.10437	.25740	.25983	2.1215	32.578	.67371
#3	.02733	.10462	.25816	.25454	2.1186	32.570	.67099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**121.94**	**.53555**	**.56884**	F **1003.0**	**.25497**	**5.6115**	**.25353**
Stddev	1.03	.00255	.00183	18.6	.00121	.0201	.00219
%RSD	.84627	.47696	.32086	1.8553	.47333	.35743	.86324
#1	122.15	.53804	.57050	985.68	.25562	5.6230	.25369
#2	122.86	.53294	.56914	1022.7	.25358	5.6231	.25563
#3	120.83	.53569	.56689	1000.7	.25572	5.5883	.25126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606115403SD Acquired: 6/24/2016 16:41:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.65696**	**.26457**	**8.4131**	**.52165**	F **9.4226**	**.46735**	**.23912**
Stddev	.00333	.00374	.0316	.00269	.0362	.01011	.00184
%RSD	.50727	1.4118	.37513	.51544	.38375	2.1625	.76932
#1	.65370	.26813	8.4363	.52387	9.4401	.47243	.24121
#2	.65681	.26068	8.4259	.52242	9.4467	.47392	.23839
#3	.66036	.26490	8.3772	.51866	9.3810	.45571	.23775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.54896**	**.51795**	**.00121**
Stddev	.00138	.00177	.00029
%RSD	.25147	.34088	23.705
#1	.54994	.51962	.00099
#2	.54738	.51811	.00110
#3	.54956	.51610	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7860.1**	**48589.**	**2847.4**
Stddev	50.1	121.	22.3
%RSD	.63713	.24945	.78175
#1	7818.4	48525.	2848.5
#2	7915.7	48729.	2824.6
#3	7846.2	48513.	2869.0

Approved: June 25, 2016

Sample Name: L1606115404 Acquired: 6/24/2016 16:45:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00122**	**.01860**	**-.00030**	**.01638**	**.00225**	**.00005**	**.28683**	**-.00012**
Stddev	.00163	.00994	.00314	.00092	.00043	.00004	.01104	.00018
%RSD	133.72	53.451	1055.5	5.6210	18.855	79.103	3.8486	155.68
#1	-.00307	.02997	-.00390	.01572	.00263	.00002	.29952	-.00004
#2	-.00060	.01154	.00185	.01743	.00234	.00010	.27937	.00001
#3	.00001	.01428	.00116	.01599	.00179	.00004	.28161	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.01568**	**.00001**	**.06012**	**.09546**	**-.00324**	**.00979**	**.00031**
Stddev	.00056	.00036	.00106	.01420	.11597	.00346	.08319	.00089
%RSD	231.82	2.2719	10907.	23.626	121.49	106.87	849.48	288.55
#1	-.00089	.01585	.00111	.07503	.19093	-.00003	.06904	.00129
#2	.00009	.01527	-.00008	.05858	.12903	-.00690	.04565	.00007
#3	.00007	.01593	-.00101	.04675	-.03359	-.00278	-.08531	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00255**	**.66337**	**.00857**	**-.00604**	**-.00185**	**.00349**	**.00131**	**.15854**
Stddev	.00019	.05593	.00126	.00424	.00110	.00087	.00666	.00230
%RSD	7.5264	8.4316	14.741	70.198	59.693	24.819	509.73	1.4538
#1	.00259	.72482	.00746	-.00130	-.00068	.00343	.00738	.16031
#2	.00235	.64984	.00994	-.00737	-.00288	.00439	.00236	.15939
#3	.00273	.61544	.00829	-.00947	-.00198	.00266	-.00582	.15593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115404 Acquired: 6/24/2016 16:45:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.00192	-.00273	-.00024	-.00105	.00380	-.00006
Stddev	.00043	.00049	.00812	.00123	.00122	.00012	.00020
%RSD	38.035	25.716	297.07	517.69	116.94	3.1680	325.23
#1	.00113	.00170	.00647	.00075	.00015	.00366	.00009
#2	.00071	.00158	-.00889	-.00162	-.00230	.00388	.00001
#3	.00157	.00249	-.00577	.00015	-.00099	.00385	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8580.0	54662.	2910.1
Stddev	27.2	355.	25.0
%RSD	.31663	.64995	.85931
#1	8600.6	54561.	2884.9
#2	8549.2	54369.	2910.5
#3	8590.1	55057.	2934.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:49:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43680	F 11.176	.43789	.54982	F 1.1171	.05445	F 11.119
Stddev	.00172	.018	.00189	.00440	.0014	.00015	.036
%RSD	.39299	.15765	.43249	.80088	.12620	.27540	.32719
#1	.43691	11.183	.43822	.54528	1.1178	.05443	11.142
#2	.43503	11.190	.43585	.55010	1.1155	.05461	11.077
#3	.43846	11.156	.43959	.55407	1.1181	.05432	11.138
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail
Value		10.000			1.0000		10.000
Range		10.000%			10.000%		10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .05633	F .22617	F .55126	F .56533	F 4.4609	F 55.977	F 1.1059
Stddev	.00017	.00064	.00319	.00048	.0397	.128	.0055
%RSD	.29635	.28432	.57821	.08567	.88958	.22829	.49468
#1	.05616	.22640	.55107	.56585	4.4151	56.054	1.1075
#2	.05649	.22544	.55454	.56490	4.4847	56.049	1.0998
#3	.05636	.22667	.54818	.56522	4.4829	55.830	1.1104
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 11.384	F .56189	F 1.1214	F 56.250	F .56448	F 11.114	F .56389
Stddev	.114	.00225	.0062	.207	.00324	.010	.00157
%RSD	1.0047	.39966	.55197	.36872	.57382	.08753	.27797
#1	11.258	.56141	1.1267	56.351	.56745	11.125	.56213
#2	11.411	.55993	1.1229	56.011	.56498	11.108	.56513
#3	11.482	.56434	1.1146	56.388	.56103	11.109	.56440
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:49:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.3274	F .44356	F 5.7903	F 1.1245	F 1.1149	F 1.1307	F .56203
Stddev	.0049	.00768	.0098	.0024	.0021	.0005	.00057
%RSD	.36997	1.7311	.16930	.21252	.19132	.04240	.10129
#1	1.3317	.45066	5.7923	1.1260	1.1167	1.1307	.56147
#2	1.3285	.43541	5.7990	1.1258	1.1126	1.1312	.56261
#3	1.3221	.44459	5.7797	1.1218	1.1155	1.1302	.56203
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0960	F 1.1347	F 1.1407
Stddev	.0015	.0007	.0035
%RSD	.13658	.06108	.30311
#1	1.0952	1.1349	1.1440
#2	1.0977	1.1353	1.1410
#3	1.0950	1.1339	1.1371
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8096.2	51142.	2733.9
Stddev	29.8	63.	5.0
%RSD	.36765	.12288	.18140
#1	8130.4	51179.	2732.9
#2	8076.4	51177.	2739.3
#3	8081.7	51069.	2729.5

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:53:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.01327	.00238	.00643	.00121	.00007	-.00167	-.00005
Stddev	.00141	.01171	.00342	.00125	.00080	.00010	.03044	.00029
%RSD	426.78	88.245	144.15	19.490	66.292	147.81	1819.0	607.59
#1	.00128	.01371	-.00152	.00772	.00190	.00009	.02045	.00023
#2	-.00132	.00135	.00372	.00522	.00033	-.00004	.01093	-.00002
#3	-.00095	.02475	.00492	.00636	.00140	.00016	-.03639	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00240	-.00122	.00892	.06454	-.00208	.01293	-.00217
Stddev	.00023	.00085	.00133	.03053	.04042	.00235	.09468	.00444
%RSD	57.271	35.494	108.62	342.28	62.627	112.51	732.17	204.98
#1	-.00056	.00224	-.00068	.03546	.02108	.00042	-.02621	-.00033
#2	-.00049	.00164	-.00274	-.02444	.10100	-.00423	-.05591	-.00724
#3	-.00014	.00333	-.00025	.01574	.07154	-.00243	.12091	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00412	.05925	-.00060	.00128	-.00151	.00790	.00028	.00721
Stddev	.00047	.02488	.00110	.00409	.00218	.00364	.00257	.00069
%RSD	11.345	41.996	183.24	319.65	144.28	46.033	911.72	9.6357
#1	.00409	.04650	-.00151	.00204	-.00359	.00755	.00027	.00786
#2	.00461	.04332	-.00091	.00493	.00076	.00445	-.00228	.00728
#3	.00367	.08792	.00062	-.00314	-.00171	.01170	.00286	.00648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:53:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.00010**	**-.00054**	**-.00150**	**-.00005**	**-.00017**	**.00104**
Stddev	.00040	.00035	.00043	.00099	.00012	.00015	.00121
%RSD	50.261	334.74	79.697	65.771	246.62	83.311	116.20
#1	-.00103	.00027	-.00013	-.00083	-.00015	-.00024	-.00027
#2	-.00033	-.00030	-.00099	-.00264	-.00008	-.00027	.00129
#3	-.00101	.00034	-.00050	-.00104	.00008	-.00001	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8805.7**	**55774.**	**2937.7**
Stddev	23.4	137.	34.1
%RSD	.26594	.24637	1.1609
#1	8792.6	55618.	2899.6
#2	8791.8	55877.	2948.2
#3	8832.7	55828.	2965.3

Approved: June 25, 2016

Sample Name: L1606115501 Acquired: 6/24/2016 16:57:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00057	.02931	.00224	.28378	.19240	.00016	48.483	.00005
Stddev	.00217	.00495	.00248	.00304	.00180	.00006	.260	.00014
%RSD	383.36	16.898	111.07	1.0699	.93528	36.773	.53700	254.61
#1	-.00028	.02866	.00462	.28285	.19438	.00013	48.783	.00004
#2	-.00287	.03456	.00243	.28717	.19087	.00022	48.333	-.00007
#3	.00145	.02472	-.00034	.28131	.19193	.00012	48.332	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00176	-.00033	.06151	1.8575	.00843	30.251	1.7892
Stddev	.00026	.00067	.00098	.00944	.0885	.00304	.179	.0058
%RSD	228.27	38.060	297.98	15.343	4.7667	36.016	.59249	.32588
#1	-.00041	.00253	.00018	.05715	1.7633	.00492	30.428	1.7956
#2	.00007	.00133	-.00146	.05504	1.9389	.01012	30.255	1.7880
#3	-.00000	.00141	.00029	.07234	1.8704	.01024	30.070	1.7841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00582	81.691	.00244	.01501	-.00223	-.00056	-.00145	7.4745
Stddev	.00028	.416	.00117	.00629	.00029	.00368	.01007	.0211
%RSD	4.7345	.50929	48.012	41.908	13.132	656.69	696.09	.28232
#1	.00551	82.168	.00344	.01672	-.00255	-.00468	.00744	7.4894
#2	.00592	81.495	.00115	.00804	-.00198	.00243	-.01239	7.4839
#3	.00603	81.408	.00271	.02027	-.00215	.00056	.00060	7.4504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115501 Acquired: 6/24/2016 16:57:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.33344	-.00658	-.00209	.00011	.00570	.00257
Stddev	.00106	.00035	.00428	.00263	.00083	.00010	.00078
%RSD	223.38	.10616	65.090	125.54	754.41	1.8064	30.180
#1	-.00065	.33321	-.01123	-.00333	-.00033	.00562	.00170
#2	.00062	.33384	-.00281	-.00388	.00107	.00566	.00320
#3	.00146	.33325	-.00569	.00092	-.00041	.00581	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8634.4	54473.	2945.1
Stddev	22.0	176.	15.6
%RSD	.25462	.32393	.53091
#1	8609.5	54271.	2929.8
#2	8642.5	54551.	2944.5
#3	8651.2	54598.	2961.1

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 17:03:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42367	10.747	.42629	.52762	1.0843	.05276	10.761
Stddev	.00097	.006	.00332	.00473	.0045	.00023	.022
%RSD	.22915	.05727	.77849	.89635	.41439	.43445	.20363
#1	.42292	10.740	.42268	.53147	1.0830	.05302	10.738
#2	.42477	10.748	.42699	.52904	1.0893	.05268	10.782
#3	.42334	10.752	.42920	.52234	1.0807	.05258	10.765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05458	.21800	.53531	.54481	4.3293	54.482	1.0763
Stddev	.00018	.00077	.00463	.00133	.0649	.210	.0028
%RSD	.33409	.35513	.86430	.24390	1.5001	.38571	.26065
#1	.05444	.21711	.54060	.54342	4.3823	54.397	1.0795
#2	.05451	.21849	.53336	.54493	4.2568	54.722	1.0741
#3	.05479	.21841	.53198	.54607	4.3486	54.328	1.0754
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.954	.53768	1.0810	54.597	.54494	10.746	.54224
Stddev	.073	.00516	.0021	.145	.00206	.017	.00691
%RSD	.66315	.95904	.19634	.26611	.37752	.15638	1.2744
#1	10.974	.53636	1.0834	54.523	.54602	10.734	.54106
#2	10.873	.54337	1.0793	54.764	.54257	10.738	.53600
#3	11.014	.53331	1.0802	54.503	.54624	10.765	.54966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 17:03:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2878**	**.42218**	F **5.5868**	**1.0842**	**1.0823**	**1.0915**	**.53968**
Stddev	.0066	.00770	.0181	.0027	.0008	.0080	.00486
%RSD	.51604	1.8246	.32415	.25252	.07373	.73397	.90080
#1	1.2824	.41329	5.5712	1.0822	1.0817	1.0897	.54355
#2	1.2952	.42684	5.5826	1.0830	1.0832	1.1002	.53422
#3	1.2859	.42641	5.6067	1.0873	1.0820	1.0845	.54127
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			5.0000				
Range			10.000%				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0672**	**1.0954**	F **1.1050**
Stddev	.0073	.0020	.0196
%RSD	.68319	.18139	1.7744
#1	1.0743	1.0932	1.1148
#2	1.0677	1.0971	1.1179
#3	1.0597	1.0957	1.0825
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8333.6**	**52219.**	**2792.6**
Stddev	32.6	347.	29.8
%RSD	.39073	.66376	1.0675
#1	8369.0	52505.	2785.6
#2	8326.7	52317.	2766.9
#3	8305.0	51833.	2825.3

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 17:07:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00168**	**.00948**	**.00107**	**.00396**	**.00131**	**.00016**	**.00218**	**.00005**
Stddev	.00109	.00336	.00285	.00104	.00055	.00007	.03388	.00013
%RSD	65.124	35.414	267.10	26.281	42.238	42.512	1551.9	288.80
#1	-.00279	.00607	.00431	.00399	.00120	.00015	.00227	-.00009
#2	-.00060	.01278	-.00104	.00499	.00081	.00009	.03602	.00018
#3	-.00165	.00957	-.00007	.00291	.00190	.00023	-.03174	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**.00204**	**-.00144**	**.00580**	**.12922**	**-.00361**	**-.07098**	**-.00320**
Stddev	.00007	.00108	.00019	.02952	.06584	.00293	.01475	.00096
%RSD	10.271	52.987	13.402	509.07	50.955	81.051	20.781	29.927
#1	-.00071	.00324	-.00131	.01437	.20522	-.00696	-.05840	-.00311
#2	-.00072	.00112	-.00134	.03009	.09285	-.00151	-.06732	-.00419
#3	-.00060	.00177	-.00166	-.02706	.08958	-.00237	-.08722	-.00228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00408**	**.05994**	**-.00013**	**-.00144**	**-.00210**	**.00616**	**.00859**	**.00767**
Stddev	.00025	.02279	.00056	.00665	.00161	.00436	.00553	.00095
%RSD	6.1054	38.019	429.27	461.82	76.927	70.723	64.392	12.387
#1	.00379	.03723	-.00071	-.00577	-.00238	.01090	.01202	.00667
#2	.00424	.05979	.00040	.00621	-.00355	.00232	.00221	.00777
#3	.00421	.08281	-.00008	-.00476	-.00036	.00527	.01155	.00857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 17:07:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00001**	**-.00517**	**-.00304**	**-.00045**	**.00003**	**.00076**
Stddev	.00048	.00019	.00338	.00065	.00042	.00018	.00062
%RSD	261.79	1449.3	65.434	21.349	94.527	672.09	81.583
#1	-.00007	-.00010	-.00269	-.00319	-.00035	-.00018	.00059
#2	-.00071	.00023	-.00379	-.00360	-.00091	.00016	.00024
#3	.00023	-.00009	-.00902	-.00233	-.00008	.00010	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8894.8**	**56498.**	**2997.3**
Stddev	31.9	155.	19.4
%RSD	.35842	.27403	.64771
#1	8872.9	56642.	2988.9
#2	8931.4	56516.	2983.4
#3	8880.1	56335.	3019.5

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:11:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00729	.17062	.00725	.08257	.00939	.00166	.43404	.00082
Stddev	.00150	.00550	.00171	.00143	.00067	.00000	.00453	.00026
%RSD	20.543	3.2221	23.640	1.7280	7.1418	.27584	1.0437	32.305
#1	.00698	.16434	.00552	.08412	.00866	.00166	.43775	.00111
#2	.00892	.17298	.00895	.08230	.00999	.00167	.42899	.00059
#3	.00598	.17455	.00726	.08130	.00952	.00166	.43538	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00316	.00622	.00237	.08729	.82404	.07713	.38089	.00688
Stddev	.00032	.00044	.00096	.00991	.11097	.00284	.04555	.00202
%RSD	10.108	7.0265	40.647	11.357	13.466	3.6833	11.960	29.313
#1	.00327	.00595	.00209	.09021	.69916	.08037	.42142	.00748
#2	.00280	.00598	.00158	.07624	.86164	.07506	.38965	.00853
#3	.00341	.00672	.00344	.09542	.91132	.07596	.33159	.00463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00923	.49030	.01578	.78636	.00525	.08658	.01834	.78477
Stddev	.00007	.03975	.00067	.00747	.00099	.00290	.00535	.00340
%RSD	.74996	8.1063	4.2563	.94991	18.916	3.3503	29.197	.43361
#1	.00926	.45824	.01504	.78721	.00446	.08899	.01320	.78668
#2	.00928	.47789	.01596	.79336	.00636	.08336	.01794	.78678
#3	.00915	.53477	.01635	.77850	.00492	.08740	.02388	.78084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:11:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40023**	**.04088**	**.01998**	**.14896**	**.00689**	**.01796**	**.04648**
Stddev	.00496	.00040	.00962	.00157	.00043	.00056	.00102
%RSD	1.2386	.97028	48.154	1.0558	6.1789	3.1279	2.2003
#1	.40336	.04052	.01081	.14857	.00653	.01791	.04580
#2	.40281	.04082	.02999	.15069	.00680	.01855	.04599
#3	.39451	.04131	.01914	.14762	.00736	.01743	.04766
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8990.7**	**57102.**	**2996.8**
Stddev	6.3	282.	27.6
%RSD	.06972	.49387	.92128
#1	8985.6	56782.	2987.6
#2	8988.8	57212.	2975.0
#3	8997.7	57313.	3027.9

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:15:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01993	.40715	.01910	.19302	.02123	.00379	.98840	.00192
Stddev	.00107	.00875	.00166	.00240	.00062	.00009	.02416	.00014
%RSD	5.3570	2.1496	8.6872	1.2431	2.9288	2.2601	2.4441	7.0566
#1	.01892	.40857	.02077	.19136	.02062	.00370	.96658	.00208
#2	.01983	.41511	.01745	.19577	.02121	.00387	.98425	.00184
#3	.02105	.39778	.01908	.19192	.02186	.00380	1.0144	.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00956	.01134	.01016	.19020	1.9527	.19631	.96503	.01651
Stddev	.00018	.00018	.00095	.01584	.0809	.00356	.08170	.00201
%RSD	1.8827	1.5892	9.3610	8.3286	4.1432	1.8125	8.4664	12.178
#1	.00947	.01153	.01097	.18785	1.9630	.19792	1.0093	.01700
#2	.00944	.01133	.01040	.20708	2.0279	.19878	1.0150	.01822
#3	.00976	.01117	.00911	.17566	1.8671	.19223	.87074	.01429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01930	1.0243	.04009	1.9435	.01831	.21107	.04027	1.9113
Stddev	.00016	.0191	.00077	.0087	.00305	.00083	.00398	.0011
%RSD	.83239	1.8612	1.9166	.44854	16.636	.39124	9.8865	.05610
#1	.01914	1.0212	.03957	1.9465	.02165	.21172	.03698	1.9101
#2	.01929	1.0447	.04097	1.9503	.01761	.21014	.03912	1.9122
#3	.01946	1.0070	.03972	1.9336	.01568	.21134	.04469	1.9117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:15:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98617**	**.09828**	**.05324**	**.36623**	**.01818**	**.04214**	**.10201**
Stddev	.00140	.00119	.00120	.00194	.00049	.00021	.00105
%RSD	.14233	1.2069	2.2499	.53068	2.7064	.48792	1.0280
#1	.98608	.09782	.05188	.36811	.01820	.04207	.10169
#2	.98481	.09963	.05376	.36635	.01768	.04237	.10318
#3	.98762	.09739	.05410	.36423	.01866	.04197	.10116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9036.2**	**57273.**	**3074.0**
Stddev	31.1	288.	33.7
%RSD	.34415	.50309	1.0950
#1	9072.0	57245.	3047.1
#2	9015.3	57573.	3063.1
#3	9021.4	56999.	3111.7

Approved: June 25, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000236	0.051213	0.000000	1.000000
Al 308.215 {109}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000796	0.008044	0.000000	1.000000
As 189.042 {478}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000007	0.025071	0.000000	1.000000
B 249.678 {135}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000040	0.023963	0.000000	1.000000
Ba 455.403 { 74}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.044484	2.168568	0.000000	1.000000
Be 313.107 {108}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000479	0.930119	0.000000	1.000000
Ca 422.673 { 80}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.002874	0.045862	0.000000	1.000000
Cd 228.802 {447}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000038	0.570455	0.000000	1.000000
Co 228.616 {447}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000129	0.339574	0.000000	1.000000
Cr 267.716 {126}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000254	0.058743	0.000000	1.000000
Cu 224.700 {450}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000063	0.129645	0.000000	1.000000
Fe 261.187 {129}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000714	0.024119	0.000000	1.000000
K 766.490 { 44}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.006604	0.061274	0.000000	1.000000
Li 670.784 { 50}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.009415	1.520559	0.000000	1.000000
Mg 279.079 {121}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000260	0.008000	0.000000	1.000000
Mn 257.610 {131}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000470	0.289814	0.000000	1.000000
Mo 202.030 {467}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000054	0.182736	0.000000	1.000000
Na 589.592 { 57}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.047777	0.184477	0.000000	1.000000
Ni 231.604 {446}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000734	0.138990	0.000000	1.000000
P 214.914 {457}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000172	0.014319	0.000000	1.000000
Pb 220.353 {453}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.001186	0.065283	0.000000	1.000000
Sb 206.833 {463}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000368	0.031084	0.000000	1.000000
Se 196.090 {472}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000508	0.017412	0.000000	1.000000
Si 212.412 {459}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.001467	0.039573	0.000000	1.000000
Sn 189.989 {477}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000022	0.066307	0.000000	1.000000
Sr 407.771 { 83}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.001060	3.591964	0.000000	1.000000
Ti 337.280 {100}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.002630	0.122957	0.000000	1.000000
Tl 190.856 {477}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000329	0.028655	0.000000	1.000000
V 292.402 {115}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000071	0.067328	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000142	0.437417	0.000000	1.000000
Zr 339.198 { 99}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.007106	1.219765	0.000000	1.000000

Approved: June 27, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999680	0.000003	0.002344	0.007814	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999950	0.000005	0.010188	0.033959	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999909	0.000001	0.003189	0.010630	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999961	0.000001	0.002963	0.009878	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999951	0.000136	0.001119	0.003729	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999766	0.000007	0.000105	0.000348	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999890	0.000043	0.043792	0.145974	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999970	0.000002	0.000282	0.000940	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999977	0.000003	0.000454	0.001514	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999978	0.000001	0.001307	0.004355	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999889	0.000006	0.001405	0.004682	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999330	0.000022	0.023003	0.076675	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999988	0.000096	0.104199	0.347330	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999977	0.000100	0.004201	0.014002	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999990	0.000003	0.092396	0.307987	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999236	0.000036	0.002652	0.008839	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999956	0.000011	0.000450	0.001500	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999990	0.000264	0.032289	0.107629	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999932	0.000005	0.001180	0.003935	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999990	0.000004	0.007138	0.023792	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999383	0.000007	0.003667	0.012223	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999854	0.000004	0.004516	0.015054	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999238	0.000003	0.006704	0.022346	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999594	0.000036	0.002443	0.008145	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999980	0.000003	0.000986	0.003287	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999952	0.000224	0.000467	0.001557	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999579	0.000023	0.007453	0.024845	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999831	0.000002	0.003284	0.010945	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999969	0.000003	0.001095	0.003650	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999941	0.000030	0.000202	0.000675	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.596446	0.010414	0.001594	0.005312	OK.	1.000000	0.000000	1	0

Approved: June 27, 2016

Sample Name: S0 Acquired: 6/25/2016 12:21:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00024**	**.00080**	**-.00001**	**.00004**	**.04448**	**.00048**	**.00288**
Stddev	.00008	.00004	.00007	.00002	.00170	.00005	.00169
%RSD	35.712	4.5527	977.99	54.959	3.8148	10.198	58.629
#1	-.00024	.00076	-.00006	.00003	.04635	.00042	.00096
#2	-.00015	.00081	.00007	.00006	.04405	.00050	.00353
#3	-.00032	.00083	-.00004	.00003	.04304	.00052	.00414

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00004**	**-.00013**	**.00025**	**-.00006**	**-.00071**	**-.00661**	**-.00941**
Stddev	.00006	.00005	.00003	.00023	.00026	.00355	.00965
%RSD	153.97	36.064	10.924	367.85	35.978	53.724	102.48
#1	-.00002	-.00016	.00028	-.00022	-.00093	-.00948	-.01508
#2	-.00010	-.00015	.00025	.00020	-.00043	-.00769	.00173
#3	.00001	-.00008	.00023	-.00018	-.00078	-.00264	-.01488

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00026**	**.00047**	**.00005**	**-.04778**	**-.00073**	**-.00017**	**-.00119**
Stddev	.00066	.00061	.00004	.00421	.00008	.00002	.00008
%RSD	255.00	128.77	78.942	8.8105	11.011	13.180	6.4052
#1	.00045	-.00015	.00007	-.05263	-.00065	-.00015	-.00110
#2	-.00086	.00049	.00001	-.04509	-.00082	-.00019	-.00123
#3	-.00037	.00107	.00009	-.04563	-.00073	-.00017	-.00123

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00037**	**-.00051**	**.00147**	**.00002**	**.00106**	**-.00263**	**-.00033**
Stddev	.00001	.00007	.00009	.00003	.00137	.00025	.00002
%RSD	3.7153	13.815	6.2921	126.34	130.24	9.4020	7.1687
#1	.00035	-.00043	.00157	.00002	.00203	-.00235	-.00030
#2	.00038	-.00057	.00145	-.00000	.00165	-.00283	-.00033
#3	.00037	-.00052	.00138	.00005	-.00052	-.00270	-.00035

Approved: June 27, 2016

Sample Name: S0 Acquired: 6/25/2016 12:21:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**-.00007**	**.00014**	**-.00710**
Stddev	.00004	.00005	.00324
%RSD	58.279	35.146	45.700
#1	-.00004	.00009	-.00457
#2	-.00005	.00016	-.01076
#3	-.00012	.00018	-.00597
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9736.8**	**58329.**	**2962.8**
Stddev	24.6	275.	12.4
%RSD	.25315	.47180	.41783
#1	9719.4	58177.	2949.0
#2	9725.9	58162.	2966.1
#3	9765.0	58646.	2973.1

Approved: June 27, 2016

Sample Name: S1 Acquired: 6/25/2016 12:25:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00000**	**.00148**	**.06336**	**.00097**	**.00582**	**.00018**	**.00038**
Stddev	.00004	.00005	.00419	.00009	.00234	.00011	.00006
%RSD	838.91	3.6655	6.6080	8.8478	40.284	60.110	16.615
#1	.00001	.00145	.05987	.00105	.00569	.00026	.00043
#2	-.00004	.00145	.06800	.00097	.00822	.00006	.00031
#3	.00004	.00155	.06221	.00088	.00354	.00023	.00041

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00050**	**.00053**	**.00033**	**.01950**	**.00077**	**.00143**	**.02669**
Stddev	.00003	.00011	.00021	.00355	.00009	.00011	.00332
%RSD	5.5692	20.305	62.737	18.223	11.862	7.4791	12.449
#1	.00049	.00060	.00053	.01550	.00083	.00145	.02356
#2	.00048	.00041	.00012	.02070	.00066	.00152	.03018
#3	.00053	.00058	.00034	.02230	.00081	.00131	.02634

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00018**	**.00100**	**-.00086**	**.00059**	**.00297**	**.00055**	**.03302**
Stddev	.00009	.00012	.00030	.00014	.00005	.00006	.00089
%RSD	52.159	12.366	34.406	23.539	1.7045	10.953	2.6942
#1	-.00010	.00113	-.00102	.00051	.00294	.00050	.03225
#2	-.00028	.00098	-.00052	.00075	.00302	.00062	.03399
#3	-.00016	.00088	-.00105	.00050	.00293	.00055	.03280

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00218**	**.00050**	**.00363**	**-.00591**
Stddev	.00071	.00003	.00003	.00134
%RSD	32.781	5.1557	.77751	22.659
#1	-.00139	.00050	.00365	-.00576
#2	-.00277	.00048	.00360	-.00465
#3	-.00237	.00053	.00364	-.00732

Approved: June 27, 2016

Sample Name: S1 Acquired: 6/25/2016 12:25:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9839.2**	**59021.**	**2974.6**
Stddev	35.8	140.	1.9
%RSD	.36397	.23691	.06440
#1	9811.4	58880.	2976.5
#2	9826.5	59023.	2972.7
#3	9879.6	59160.	2974.8

Approved: June 27, 2016

Sample Name: S2 Acquired: 6/25/2016 12:29:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00011**	**.00220**	**.00018**	**.00025**	**.08112**	**.00139**	**.00931**
Stddev	.00003	.00006	.00005	.00002	.00125	.00003	.00047
%RSD	29.658	2.5782	25.201	8.0082	1.5417	1.8740	5.0396
#1	.00012	.00221	.00013	.00026	.08191	.00140	.00905
#2	.00012	.00214	.00022	.00027	.08177	.00136	.00985
#3	.00007	.00225	.00019	.00023	.07968	.00140	.00903

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00041**	**.00102**	**.00072**	**.00104**	**.00148**	**.04190**	**.01415**
Stddev	.00007	.00003	.00001	.00014	.00030	.00236	.00012
%RSD	16.350	3.0292	1.5873	13.319	20.240	5.6312	.86545
#1	.00045	.00101	.00072	.00109	.00137	.04369	.01405
#2	.00033	.00099	.00073	.00088	.00125	.03923	.01429
#3	.00045	.00105	.00071	.00115	.00182	.04279	.01411

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00109**	**.00274**	**.00298**	**.10797**	**.00048**	**.00211**	**-.00045**
Stddev	.00041	.00057	.00005	.00406	.00013	.00008	.00017
%RSD	37.607	20.931	1.7509	3.7561	26.749	3.7519	39.075
#1	.00144	.00213	.00304	.11260	.00057	.00211	-.00064
#2	.00064	.00283	.00295	.10501	.00033	.00203	-.00031
#3	.00120	.00327	.00295	.10631	.00054	.00219	-.00039

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00105**	**-.00034**	**.00448**	**.00108**	**.06082**	**-.00047**	**-.00014**
Stddev	.00006	.00004	.00009	.00004	.00131	.00089	.00005
%RSD	6.0784	12.562	2.0565	3.6593	2.1502	187.41	36.276
#1	.00109	-.00029	.00447	.00110	.05950	-.00104	-.00016
#2	.00107	-.00037	.00458	.00110	.06212	-.00093	-.00008
#3	.00097	-.00035	.00440	.00103	.06083	.00055	-.00017

Approved: June 27, 2016

Sample Name: S2 Acquired: 6/25/2016 12:29:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00105	.00728	-.00437
Stddev	.00006	.00006	.00132
%RSD	5.7588	.85058	30.251
#1	.00102	.00735	-.00588
#2	.00112	.00727	-.00376
#3	.00101	.00722	-.00345
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9827.0	59373.	3004.6
Stddev	11.4	114.	4.0
%RSD	.11574	.19273	.13472
#1	9814.0	59255.	3000.6
#2	9832.7	59484.	3008.7
#3	9834.5	59381.	3004.6

Approved: June 27, 2016

Sample Name: S3 Acquired: 6/25/2016 12:32:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02035	.08278	.00992	.01198	2.2359	.04820	.46599	.03126
Stddev	.00007	.00029	.00007	.00002	.0069	.00016	.00236	.00006
%RSD	.36344	.34990	.73624	.13878	.30693	.33862	.50730	.19965
#1	.02029	.08301	.00987	.01198	2.2433	.04825	.46861	.03126
#2	.02044	.08286	.01000	.01199	2.2346	.04833	.46401	.03132
#3	.02033	.08245	.00988	.01196	2.2297	.04802	.46536	.03119

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06810	.02991	.06581	.09648	3.0722	1.5250	.07962	.14725
Stddev	.00012	.00021	.00002	.00063	.0027	.0048	.00098	.00051
%RSD	.17879	.70022	.03611	.65013	.08880	.31624	1.2353	.34909
#1	.06804	.03009	.06584	.09719	3.0745	1.5268	.07965	.14783
#2	.06801	.02997	.06579	.09600	3.0692	1.5288	.07861	.14685
#3	.06824	.02968	.06581	.09626	3.0730	1.5196	.08058	.14706

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18510	9.1987	.06966	.14157	.03222	.03693	.00649	.20808
Stddev	.00068	.0276	.00008	.00029	.00023	.00011	.00003	.00004
%RSD	.36712	.29975	.11504	.20555	.70478	.30304	.43769	.01830
#1	.18567	9.2297	.06963	.14170	.03236	.03694	.00648	.20811
#2	.18529	9.1894	.06975	.14177	.03196	.03703	.00652	.20808
#3	.18435	9.1769	.06959	.14123	.03234	.03681	.00647	.20804

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06680	3.6291	.12115	.01313	.06767	.44396	3.5474
Stddev	.00012	.0161	.00039	.00012	.00004	.00054	.0233
%RSD	.17282	.44347	.32200	.91385	.05243	.12075	.65596
#1	.06677	3.6476	.12157	.01325	.06770	.44451	3.5656
#2	.06671	3.6220	.12107	.01301	.06768	.44393	3.5554
#3	.06693	3.6179	.12080	.01311	.06763	.44344	3.5212

Approved: June 27, 2016

Sample Name: S3 Acquired: 6/25/2016 12:32:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9929.1	59890.	3083.9
Stddev	18.0	90.	16.7
%RSD	.18173	.14986	.54188
#1	9944.3	59787.	3069.2
#2	9933.7	59947.	3080.5
#3	9909.1	59936.	3102.1

Approved: June 27, 2016

Sample Name: S4 Acquired: 6/25/2016 12:36:34 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04037	.16212	.01994	.02391	4.3553	.09476	.91725	.06225
Stddev	.00010	.00009	.00010	.00008	.0282	.00010	.00714	.00008
%RSD	.26004	.05310	.51424	.32854	.64632	.10278	.77855	.12431
#1	.04040	.16220	.02005	.02399	4.3445	.09472	.91430	.06220
#2	.04046	.16203	.01991	.02383	4.3342	.09469	.91205	.06220
#3	.04026	.16211	.01985	.02390	4.3873	.09487	.92539	.06233

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13502	.05877	.12834	.19056	6.1046	3.0186	.15914	.28946
Stddev	.00023	.00007	.00015	.00161	.0456	.0309	.00223	.00202
%RSD	.17276	.12518	.11394	.84544	.74756	1.0253	1.3995	.69732
#1	.13475	.05870	.12846	.19050	6.0869	3.0140	.15736	.28818
#2	.13515	.05878	.12838	.18897	6.0705	2.9902	.15842	.28841
#3	.13517	.05884	.12818	.19219	6.1564	3.0516	.16164	.29179

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.36324	18.368	.13725	.28094	.06365	.07367	.01336	.39092
Stddev	.00176	.146	.00020	.00054	.00019	.00012	.00006	.00048
%RSD	.48547	.79728	.14492	.19364	.30628	.15884	.42128	.12331
#1	.36486	18.303	.13728	.28153	.06355	.07380	.01339	.39147
#2	.36349	18.266	.13744	.28083	.06388	.07365	.01329	.39059
#3	.36136	18.536	.13705	.28046	.06354	.07357	.01339	.39071

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13179	7.1439	.24230	.02560	.13357	.86773	.12255
Stddev	.00029	.0568	.00280	.00005	.00025	.00172	.00222
%RSD	.21785	.79476	1.1551	.20145	.18401	.19856	1.8114
#1	.13210	7.1181	.24103	.02555	.13357	.86947	.12020
#2	.13172	7.1045	.24036	.02563	.13332	.86769	.12285
#3	.13154	7.2090	.24551	.02564	.13382	.86603	.12461

Approved: June 27, 2016

Sample Name: S4 Acquired: 6/25/2016 12:36:34 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9795.6**	**59125.**	**3064.9**
Stddev	6.6	26.	19.7
%RSD	.06757	.04412	.64222
#1	9799.1	59120.	3071.1
#2	9799.7	59153.	3080.8
#3	9787.9	59102.	3042.9

Approved: June 27, 2016

Sample Name: ICV Acquired: 6/25/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40482	10.096	.40189	.50535	1.0085	.05038	10.096
Stddev	.00169	.009	.00320	.00259	.0096	.00007	.103
%RSD	.41792	.09100	.79651	.51179	.95284	.13225	1.0175
#1	.40318	10.095	.40558	.50259	.99972	.05037	10.065
#2	.40656	10.106	.40020	.50771	1.0070	.05032	10.013
#3	.40473	10.088	.39988	.50575	1.0188	.05045	10.211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05022	.20172	.50610	.50772	4.0459	50.287	1.0069
Stddev	.00031	.00057	.00078	.00110	.0398	.526	.0059
%RSD	.61395	.28458	.15454	.21701	.98466	1.0464	.58082
#1	.05048	.20224	.50644	.50864	4.0020	49.775	1.0012
#2	.05030	.20181	.50521	.50650	4.0559	50.260	1.0067
#3	.04988	.20110	.50666	.50803	4.0798	50.827	1.0128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.117	.50795	1.0200	50.068	.50832	10.053	.50460
Stddev	.152	.00312	.0050	.377	.00054	.029	.00016
%RSD	1.5029	.61369	.49437	.75311	.10596	.28628	.03077
#1	9.9425	.50440	1.0241	49.665	.50829	10.073	.50452
#2	10.219	.50922	1.0214	50.126	.50888	10.066	.50449
#3	10.191	.51024	1.0144	50.412	.50780	10.020	.50477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: ICV Acquired: 6/25/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2132**	**.39981**	**5.2115**	**1.0100**	**1.0094**	**1.0076**	**.50967**
Stddev	.0090	.00367	.0220	.0047	.0093	.0117	.00340
%RSD	.74499	.91900	.42193	.46646	.92212	1.1612	.66719
#1	1.2228	.39652	5.1880	1.0139	.99976	.99418	.50608
#2	1.2117	.40378	5.2316	1.0112	1.0100	1.0128	.51284
#3	1.2049	.39915	5.2149	1.0048	1.0183	1.0157	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0117**	**1.0154**	F **2.9010**
Stddev	.0015	.0015	.0057
%RSD	.14666	.14385	.19619
#1	1.0111	1.0164	2.9026
#2	1.0134	1.0160	2.8946
#3	1.0106	1.0137	2.9057
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9887.2**	**59604.**	**3090.1**
Stddev	2.6	87.	8.3
%RSD	.02633	.14631	.26858
#1	9888.5	59705.	3098.3
#2	9884.2	59557.	3090.3
#3	9888.9	59551.	3081.7

Approved: June 27, 2016

Sample Name: ICB Acquired: 6/25/2016 12:43:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00131	-.00019	.00035	.00523	.00097	.00005	-.00769	-.00024
Stddev	.00204	.00299	.00150	.00175	.00089	.00006	.00734	.00011
%RSD	155.46	1561.3	426.44	33.377	91.849	115.36	95.505	46.996
#1	.00317	-.00362	.00181	.00349	.00060	.00012	-.01556	-.00036
#2	-.00088	.00114	-.00118	.00522	.00198	.00002	-.00104	-.00017
#3	.00165	.00191	.00042	.00699	.00032	.00001	-.00646	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.00019	.00069	.02190	.04427	.00252	.00787	.00050
Stddev	.00033	.00096	.00130	.00895	.02254	.00192	.08048	.00146
%RSD	40694.	494.95	189.51	40.889	50.920	76.061	1022.8	292.29
#1	-.00026	-.00067	-.00034	.02348	.04464	.00424	-.08504	-.00108
#2	-.00012	.00002	.00215	.01226	.06662	.00045	.05249	.00079
#3	.00038	.00123	.00025	.02996	.02154	.00288	.05615	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00437	.07087	.00070	.00285	.00118	.00678	.00870	.00121
Stddev	.00041	.01151	.00054	.00868	.00197	.00381	.00450	.00189
%RSD	9.2912	16.248	77.044	304.78	167.53	56.206	51.723	156.22
#1	.00395	.08310	.00020	-.00283	.00108	.00337	.00854	.00310
#2	.00476	.06927	.00064	-.00147	.00320	.00608	.00428	.00120
#3	.00442	.06023	.00127	.01284	-.00074	.01090	.01328	-.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICB Acquired: 6/25/2016 12:43:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00059**	**.00116**	**.00143**	**.00111**	**.00117**	**.00345**
Stddev	.00049	.00006	.00559	.00387	.00033	.00016	.00039
%RSD	77.601	9.5579	481.47	269.75	29.521	13.916	11.209
#1	.00050	.00059	.00521	.00260	.00135	.00105	.00361
#2	.00117	.00064	.00349	-.00288	.00074	.00111	.00300
#3	.00022	.00053	-.00522	.00459	.00124	.00135	.00372
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9709.0**	**58834.**	**2997.3**
Stddev	13.6	105.	11.0
%RSD	.13963	.17854	.36570
#1	9693.7	58895.	2985.3
#2	9713.8	58895.	3006.9
#3	9719.5	58713.	2999.6

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:47:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00947	.16517	.00750	.08209	.00794	.00166	.41368	.00078
Stddev	.00234	.00914	.00427	.00134	.00096	.00002	.01542	.00015
%RSD	24.742	5.5361	56.913	1.6344	12.112	1.4530	3.7271	18.963
#1	.01038	.17315	.00639	.08214	.00810	.00169	.40911	.00061
#2	.01123	.15519	.01222	.08341	.00690	.00166	.40107	.00083
#3	.00681	.16717	.00390	.08073	.00880	.00164	.43087	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00435	.00476	.00462	.09393	.88733	.08419	.44121	.00701
Stddev	.00017	.00091	.00136	.00523	.14622	.00363	.12107	.00237
%RSD	3.8803	19.165	29.360	5.5689	16.479	4.3143	27.441	33.765
#1	.00455	.00411	.00608	.08852	.75945	.08105	.39471	.00889
#2	.00425	.00438	.00436	.09433	.85580	.08335	.57864	.00779
#3	.00425	.00581	.00341	.09896	1.0467	.08816	.35028	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00866	.44156	.01715	.79893	.00705	.08442	.02038	.79310
Stddev	.00052	.01049	.00062	.00929	.00266	.00215	.00191	.00106
%RSD	5.9984	2.3750	3.6174	1.1626	37.766	2.5524	9.3696	.13338
#1	.00809	.45038	.01661	.80194	.00796	.08678	.01818	.79326
#2	.00879	.42997	.01783	.80634	.00405	.08394	.02136	.79407
#3	.00910	.44434	.01701	.78851	.00913	.08255	.02160	.79197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:47:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41130	.04174	.02562	.15269	.00881	.01717	.13277
Stddev	.00223	.00064	.00303	.00060	.00064	.00024	.00310
%RSD	.54293	1.5249	11.843	.39147	7.2679	1.3907	2.3338
#1	.41347	.04173	.02710	.15201	.00926	.01741	.13005
#2	.41142	.04111	.02213	.15292	.00808	.01715	.13211
#3	.40901	.04238	.02764	.15314	.00909	.01694	.13614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9760.6	59445.	3032.4
Stddev	2.7	49.	16.0
%RSD	.02790	.08308	.52659
#1	9758.1	59502.	3050.3
#2	9763.5	59418.	3027.2
#3	9760.2	59415.	3019.7

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02232**	**.40482**	**.02105**	**.19795**	**.01981**	**.00414**	**.94713**	**.00209**
Stddev	.00322	.01572	.00276	.00137	.00013	.00016	.01328	.00025
%RSD	14.431	3.8838	13.088	.69255	.67950	3.8114	1.4024	12.129
#1	.02018	.38785	.01788	.19912	.01996	.00396	.94307	.00218
#2	.02076	.40770	.02252	.19644	.01971	.00427	.93634	.00229
#3	.02603	.41890	.02277	.19828	.01975	.00419	.96196	.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00992**	**.00950**	**.01082**	**.20111**	**1.9275**	**.20201**	**.97307**	**.01841**
Stddev	.00043	.00028	.00021	.02025	.1498	.00564	.04542	.00186
%RSD	4.3042	2.9103	1.9731	10.069	7.7699	2.7925	4.6682	10.079
#1	.01005	.00935	.01089	.20826	1.8000	.20412	1.0187	.02052
#2	.00945	.00934	.01100	.21682	1.8900	.19562	.97274	.01702
#3	.01028	.00982	.01059	.17825	2.0924	.20630	.92781	.01771
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01972**	**1.0340**	**.04153**	**1.9482**	**.02271**	**.20123**	**.04411**	**1.9392**
Stddev	.00048	.0096	.00031	.0042	.00204	.00295	.00361	.0022
%RSD	2.4591	.93077	.75288	.21380	8.9612	1.4657	8.1900	.11326
#1	.01969	1.0240	.04132	1.9520	.02496	.20436	.04094	1.9404
#2	.01925	1.0432	.04139	1.9437	.02217	.20085	.04804	1.9406
#3	.02022	1.0348	.04189	1.9488	.02100	.19850	.04333	1.9367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0099**	**.10045**	**.06134**	**.37714**	**.02003**	**.04134**	**.29456**
Stddev	.0057	.00069	.00459	.00090	.00046	.00030	.00329
%RSD	.56948	.68667	7.4856	.23976	2.2900	.72946	1.1169
#1	1.0145	.09991	.06229	.37809	.02052	.04128	.29317
#2	1.0117	.10021	.05634	.37629	.01997	.04166	.29219
#3	1.0035	.10123	.06538	.37705	.01961	.04107	.29832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9725.0**	**59145.**	**3053.0**
Stddev	6.0	91.	15.9
%RSD	.06216	.15348	.52133
#1	9731.9	59116.	3042.4
#2	9721.3	59247.	3071.3
#3	9721.7	59072.	3045.2

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 12:55:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**265.97**	**.00161**	**-.00823**	**.00056**	**.00011**	**243.96**	**-.00018**
Stddev	.00121	.27	.00172	.00296	.00012	.00009	1.89	.00042
%RSD	450.36	.10204	106.61	35.970	21.237	81.140	.77435	230.52
#1	-.00046	265.69	.00220	-.01033	.00047	.00017	241.81	-.00048
#2	.00103	265.97	-.00032	-.00484	.00069	.00014	245.35	.00030
#3	-.00137	266.24	.00295	-.00951	.00051	.00001	244.72	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**-.00100**	**-.00098**	**96.848**	**.05329**	**.01035**	**248.71**	**-.00176**
Stddev	.00039	.00071	.00330	.692	.06120	.00255	1.99	.00096
%RSD	39.651	70.751	335.23	.71414	114.86	24.670	.80129	54.809
#1	-.00142	-.00119	.00263	96.056	.12150	.01230	246.41	-.00274
#2	-.00085	-.00160	-.00175	97.332	.03517	.00746	249.90	-.00082
#3	-.00068	-.00022	-.00383	97.155	.00318	.01129	249.83	-.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00066**	**.04038**	**-.00089**	**.02257**	**.00214**	**-.00550**	**-.00224**	**.00879**
Stddev	.00023	.00410	.00050	.00580	.00444	.00318	.00753	.00258
%RSD	34.448	10.162	56.288	25.707	206.94	57.856	337.10	29.379
#1	-.00088	.04493	-.00121	.01613	.00721	-.00186	.00631	.00581
#2	-.00043	.03696	-.00115	.02418	.00024	-.00776	-.00511	.01037
#3	-.00066	.03925	-.00031	.02740	-.00103	-.00688	-.00791	.01019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 12:55:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00100**	**-.00403**	**-.00373**	**-.00305**	**-.00596**	**-.01388**
Stddev	.00149	.00018	.00805	.00252	.00022	.00010	.00081
%RSD	284.28	18.415	199.81	67.478	7.0947	1.6059	5.8325
#1	.00144	.00117	.00514	-.00549	-.00300	-.00603	-.01379
#2	.00134	.00081	-.00728	-.00085	-.00329	-.00601	-.01311
#3	-.00120	.00101	-.00995	-.00485	-.00287	-.00585	-.01473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9184.9**	**55126.**	**2960.9**
Stddev	19.5	129.	17.9
%RSD	.21199	.23455	.60311
#1	9165.3	55274.	2981.6
#2	9185.3	55069.	2950.7
#3	9204.2	55035.	2950.6

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 12:59:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51819	267.93	.25992	-.00749	.25012	.24499	247.43	.48653
Stddev	.00274	.82	.00577	.00323	.00127	.00111	.96	.00069
%RSD	.52949	.30727	2.2185	43.201	.50926	.45301	.38893	.14255
#1	.51744	268.20	.26633	-.00904	.25065	.24547	247.63	.48716
#2	.52123	268.59	.25826	-.00965	.24866	.24578	246.38	.48579
#3	.51590	267.01	.25516	-.00377	.25104	.24372	248.28	.48665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.24114	.25272	.25219	96.482	5.1931	.01181	249.25	.24440
Stddev	.00029	.00219	.00111	.527	.0571	.00427	1.99	.00318
%RSD	.11831	.86807	.44033	.54597	1.0995	36.192	.80021	1.3017
#1	.24081	.25379	.25307	96.524	5.1297	.01134	249.32	.24432
#2	.24135	.25418	.25256	95.936	5.2405	.00779	247.22	.24763
#3	.24125	.25020	.25095	96.987	5.2091	.01630	251.20	.24127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	5.3241	.48364	.08508	.49426	.50665	.24857	.00554
Stddev	.00038	.0216	.00155	.00195	.00579	.00649	.00790	.00251
%RSD	68.178	.40548	.32037	2.2888	1.1716	1.2807	3.1773	45.410
#1	-.00097	5.3151	.48290	.08463	.49996	.50736	.25719	.00434
#2	-.00022	5.3084	.48260	.08721	.48838	.49984	.24167	.00842
#3	-.00048	5.3487	.48542	.08340	.49443	.51276	.24687	.00384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 12:59:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00065**	**-.00404**	**.46188**	**.25332**	**.48100**	**-.01374**
Stddev	.00129	.00010	.00503	.00318	.00107	.00194	.00218
%RSD	732.71	15.906	124.53	.68769	.42266	.40303	15.888
#1	.00146	.00072	-.00979	.45913	.25376	.48104	-.01122
#2	-.00112	.00053	-.00192	.46116	.25410	.48293	-.01498
#3	.00019	.00071	-.00042	.46536	.25210	.47905	-.01502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9278.3**	**55833.**	**2985.5**
Stddev	15.8	186.	18.9
%RSD	.17001	.33320	.63177
#1	9263.8	55869.	2984.2
#2	9295.1	55632.	3004.9
#3	9275.9	55999.	2967.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:03:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39792	10.019	.39868	.49351	.99429	.04982	9.9377
Stddev	.00072	.017	.00144	.00412	.00753	.00017	.0996
%RSD	.18044	.17228	.36151	.83518	.75700	.33966	1.0022
#1	.39861	10.034	.39833	.49827	.98705	.04987	9.8876
#2	.39796	10.022	.40027	.49123	1.0021	.04997	10.052
#3	.39718	10.000	.39745	.49104	.99375	.04964	9.8731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04945	.20002	.50114	.50617	3.9950	49.191	.99914
Stddev	.00013	.00034	.00115	.00138	.0385	.327	.00262
%RSD	.25449	.17079	.22943	.27257	.96478	.66521	.26204
#1	.04957	.20034	.49991	.50465	3.9625	48.889	.99615
#2	.04946	.20007	.50219	.50735	4.0376	49.538	1.0010
#3	.04932	.19966	.50132	.50650	3.9848	49.146	1.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9162	.49766	1.0071	49.316	.50460	9.9534	.50217
Stddev	.1345	.00161	.0027	.281	.00141	.0056	.00090
%RSD	1.3564	.32258	.27182	.56936	.27993	.05661	.17861
#1	9.8004	.49634	1.0102	49.069	.50585	9.9507	.50282
#2	10.064	.49945	1.0061	49.622	.50307	9.9496	.50115
#3	9.8846	.49718	1.0051	49.257	.50488	9.9599	.50255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:03:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1997**	**.40476**	**5.1642**	**1.0026**	**.99432**	**.99050**	**.50900**
Stddev	.0011	.00080	.0031	.0008	.00541	.00261	.00166
%RSD	.09538	.19644	.06047	.08057	.54374	.26324	.32573
#1	1.2008	.40408	5.1631	1.0035	.99081	.99348	.51044
#2	1.1985	.40563	5.1678	1.0020	1.0005	.98942	.50718
#3	1.1997	.40457	5.1618	1.0022	.99161	.98862	.50937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0019**	**1.0053**	F **2.8691**
Stddev	.0036	.0009	.0111
%RSD	.35558	.09150	.38634
#1	.99784	1.0055	2.8628
#2	1.0045	1.0043	2.8819
#3	1.0033	1.0060	2.8625
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9877.8**	**59691.**	**3097.9**
Stddev	6.1	104.	11.8
%RSD	.06196	.17495	.38081
#1	9880.1	59766.	3105.5
#2	9870.8	59572.	3084.3
#3	9882.4	59736.	3103.8

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 13:06:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.00013	.00057	.00151	.00063	.00002	-.01871	-.00022
Stddev	.00151	.00746	.00362	.00174	.00068	.00003	.02739	.00016
%RSD	185.23	5748.5	636.07	114.92	108.39	116.80	146.42	72.359
#1	.00201	.00304	-.00315	-.00049	.00141	.00001	-.04795	-.00036
#2	-.00088	-.00835	.00078	.00262	.00031	.00006	.00637	-.00027
#3	.00132	.00570	.00408	.00241	.00017	.00001	-.01455	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00054	.00076	.03608	.09214	-.00181	-.01859	-.00071
Stddev	.00025	.00025	.00080	.01975	.18930	.00302	.07756	.00052
%RSD	1039.3	46.422	105.73	54.731	205.46	166.60	417.27	72.248
#1	.00013	.00063	.00047	.01630	-.12492	-.00468	-.09449	-.00012
#2	.00011	.00026	.00167	.05580	.17827	.00135	-.02180	-.00101
#3	-.00032	.00073	.00014	.03615	.22306	-.00212	.06053	-.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00274	.04401	-.00040	.00332	.00144	-.00005	.00482	-.00649
Stddev	.00039	.03341	.00024	.00918	.00111	.00350	.00394	.00014
%RSD	14.320	75.897	59.933	276.22	77.091	6590.6	81.757	2.1187
#1	.00273	.08068	-.00054	-.00157	.00018	-.00177	.00919	-.00633
#2	.00236	.03606	-.00012	.01392	.00189	-.00236	.00153	-.00657
#3	.00314	.01530	-.00055	-.00237	.00225	.00397	.00375	-.00656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 13:06:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00039	.00186	-.00089	-.00002	.00003	.00447
Stddev	.00029	.00029	.00050	.00195	.00109	.00004	.00129
%RSD	58.864	74.770	26.876	218.22	5660.3	163.33	28.933
#1	.00018	.00056	.00153	-.00246	.00118	.00003	.00395
#2	.00076	.00054	.00162	-.00151	-.00095	.00007	.00352
#3	.00054	.00005	.00244	.00129	-.00029	-.00002	.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9714.8	59220.	3006.6
Stddev	20.8	167.	18.8
%RSD	.21426	.28151	.62581
#1	9691.7	59319.	2985.4
#2	9732.2	59028.	3021.3
#3	9720.4	59314.	3013.1

Approved: June 27, 2016

Sample Name: PBW MC Acquired: 6/25/2016 13:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00511**	**.00086**	**-.00212**	**.00115**	**.00002**	**-.06747**	**.00005**
Stddev	.00209	.01093	.00117	.00067	.00097	.00011	.03960	.00035
%RSD	552.93	213.69	135.59	31.434	84.150	461.31	58.695	692.60
#1	-.00263	-.00536	-.00048	-.00211	.00011	.00001	-.09775	.00040
#2	.00149	.00426	.00140	-.00146	.00202	-.00008	-.02265	-.00029
#3	.00000	.01644	.00166	-.00279	.00133	.00014	-.08201	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00006**	**.00212**	**.02866**	**-.06431**	**.00509**	**.02259**	**-.00086**
Stddev	.00040	.00091	.00173	.01678	.07316	.00381	.05174	.00149
%RSD	400.23	1393.8	81.515	58.547	113.75	74.903	229.03	173.59
#1	.00052	-.00104	.00296	.02246	-.13473	.00394	-.01043	-.00102
#2	.00004	.00075	.00325	.01586	-.06951	.00199	-.00402	.00071
#3	-.00026	.00010	.00013	.04766	.01130	.00934	.08222	-.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00087**	**-.00687**	**.00001**	**-.00017**	**.00005**	**-.00551**	**.00627**	**.00390**
Stddev	.00030	.03350	.00031	.00833	.00114	.00506	.00234	.00374
%RSD	34.257	487.68	3374.4	4899.3	2181.8	91.834	37.291	95.869
#1	.00091	.01218	.00037	.00506	.00058	-.00133	.00544	.00713
#2	.00056	-.04555	-.00014	-.00978	.00083	-.01113	.00446	-.00020
#3	.00115	.01276	-.00019	.00420	-.00126	-.00406	.00891	.00477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW MC Acquired: 6/25/2016 13:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00022**	**-.00094**	**-.00120**	**.00059**	**.00019**	**.00136**
Stddev	.00090	.00014	.01001	.00401	.00016	.00009	.00212
%RSD	728.27	61.668	1066.1	333.15	27.157	48.058	155.52
#1	-.00022	-.00007	.00771	-.00405	.00041	.00016	-.00108
#2	.00115	-.00034	-.01190	.00338	.00070	.00012	.00241
#3	-.00056	-.00026	.00137	-.00294	.00066	.00029	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9802.9**	**59937.**	**3028.8**
Stddev	9.7	136.	16.1
%RSD	.09849	.22735	.53011
#1	9794.7	59785.	3046.3
#2	9813.5	59979.	3014.8
#3	9800.5	60047.	3025.3

Approved: June 27, 2016

Sample Name: LCSW MC Acquired: 6/25/2016 13:22:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19140**	**4.8040**	**.19266**	**.92897**	**.49049**	**.02396**	**4.9270**	**.02412**
Stddev	.00110	.0096	.00124	.00283	.00119	.00006	.0588	.00019
%RSD	.57611	.19942	.64179	.30493	.24273	.25817	1.1941	.78757
#1	.19253	4.7978	.19184	.92575	.49050	.02398	4.9121	.02430
#2	.19133	4.7992	.19408	.93105	.49168	.02402	4.8771	.02392
#3	.19033	4.8151	.19206	.93012	.48929	.02390	4.9919	.02415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09725**	**.24390**	**.24732**	**1.9838**	**23.909**	**.49943**	**4.9211**	**.24209**
Stddev	.00025	.00056	.00120	.0346	.055	.00048	.0513	.00093
%RSD	.26181	.22973	.48504	1.7424	.23189	.09613	1.0429	.38463
#1	.09749	.24389	.24597	1.9470	23.904	.49915	4.9459	.24237
#2	.09699	.24447	.24774	1.9888	23.968	.49916	4.8621	.24284
#3	.09727	.24335	.24825	2.0156	23.857	.49999	4.9553	.24105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49737**	**24.381**	**.24620**	**4.6982**	**.24508**	**.58185**	**.18662**	**2.4109**
Stddev	.00101	.058	.00194	.0026	.00506	.00206	.00438	.0033
%RSD	.20378	.23960	.78649	.05522	2.0646	.35379	2.3449	.13777
#1	.49803	24.349	.24767	4.6983	.25078	.58403	.18417	2.4135
#2	.49787	24.449	.24692	4.7007	.24112	.57994	.18402	2.4071
#3	.49620	24.346	.24401	4.6956	.24334	.58158	.19167	2.4120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW MC Acquired: 6/25/2016 13:22:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48537**	**.49494**	**.49102**	**.24360**	**.48594**	**.48236**	**.01763**
Stddev	.00248	.00157	.00916	.00175	.00116	.00127	.00304
%RSD	.51037	.31733	1.8663	.71814	.23927	.26228	17.214
#1	.48605	.49357	.49562	.24211	.48702	.48137	.01600
#2	.48744	.49666	.49698	.24315	.48610	.48194	.01576
#3	.48263	.49460	.48047	.24553	.48471	.48379	.02113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9802.2**	**59979.**	**3063.3**
Stddev	16.1	75.	6.7
%RSD	.16429	.12520	.21884
#1	9786.8	59978.	3070.3
#2	9800.7	59904.	3056.9
#3	9818.9	60054.	3062.8

Approved: June 27, 2016

Sample Name: L1606080801 Acquired: 6/25/2016 13:25:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	-.00080	-.00163	.02599	.00717	.00000	50.564	.00016
Stddev	.00152	.00397	.00290	.00206	.00115	.00005	.112	.00037
%RSD	125.91	493.45	178.32	7.9153	16.060	1214.4	.22137	235.03
#1	.00226	.00203	-.00429	.02577	.00588	.00002	50.480	.00003
#2	-.00053	.00090	.00147	.02405	.00757	.00004	50.521	-.00014
#3	.00188	-.00534	-.00207	.02815	.00807	-.00005	50.691	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00083	.00107	.26409	1.2826	.00250	14.201	.11783
Stddev	.00018	.00044	.00061	.01139	.1290	.00132	.067	.00387
%RSD	127.01	53.307	57.172	4.3115	10.056	52.928	.47527	3.2872
#1	.00035	.00131	.00089	.27352	1.4315	.00167	14.162	.12070
#2	.00008	.00073	.00057	.25144	1.2130	.00180	14.162	.11343
#3	.00000	.00044	.00175	.26731	1.2035	.00402	14.279	.11937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	15.281	.00045	.01127	-.00029	-.00250	-.00036	4.8502
Stddev	.00031	.048	.00109	.00496	.00257	.00086	.00870	.0263
%RSD	48.719	.31261	245.14	44.009	886.73	34.260	2404.6	.54311
#1	.00028	15.230	.00169	.00618	-.00269	-.00223	.00526	4.8717
#2	.00080	15.325	-.00034	.01609	.00243	-.00181	.00404	4.8581
#3	.00082	15.288	-.00001	.01154	-.00061	-.00346	-.01039	4.8208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080801 Acquired: 6/25/2016 13:25:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.16531	-.00520	-.00297	.00071	.00304	.00248
Stddev	.00021	.00042	.00147	.00169	.00080	.00019	.00016
%RSD	26.039	.25638	28.334	56.894	114.04	6.1375	6.5372
#1	.00100	.16514	-.00627	-.00112	.00132	.00299	.00242
#2	.00058	.16499	-.00352	-.00336	-.00020	.00288	.00235
#3	.00084	.16579	-.00581	-.00443	.00100	.00324	.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9767.4	60311.	3068.7
Stddev	25.3	182.	4.5
%RSD	.25865	.30239	.14809
#1	9787.8	60238.	3069.0
#2	9775.3	60177.	3064.1
#3	9739.2	60519.	3073.1

Approved: June 27, 2016

Sample Name: L1606080803S Acquired: 6/25/2016 13:29:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19425**	**4.8313**	**.19559**	**.97188**	**.49949**	**.02391**	**55.138**	**.02433**
Stddev	.00175	.0086	.00291	.00386	.00064	.00006	.286	.00001
%RSD	.89899	.17760	1.4870	.39759	.12859	.26078	.51899	.03982
#1	.19471	4.8260	.19892	.97122	.49908	.02384	54.823	.02434
#2	.19571	4.8412	.19357	.96839	.49916	.02394	55.383	.02434
#3	.19231	4.8266	.19428	.97603	.50023	.02395	55.206	.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09623**	**.24025**	**.24291**	**2.2142**	**25.706**	**.49995**	**18.850**	**.36055**
Stddev	.00052	.00032	.00081	.0203	.056	.00310	.060	.00310
%RSD	.54129	.13263	.33315	.91450	.21668	.61973	.31584	.86069
#1	.09635	.23989	.24328	2.2335	25.718	.49651	18.866	.35746
#2	.09668	.24035	.24198	2.2161	25.755	.50082	18.784	.36367
#3	.09566	.24050	.24346	2.1931	25.645	.50252	18.899	.36052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50273**	**39.946**	**.24148**	**4.8211**	**.24377**	**.58841**	**.19283**	**7.2475**
Stddev	.00069	.089	.00226	.0078	.00185	.00329	.00168	.0253
%RSD	.13674	.22372	.93733	.16218	.76094	.55837	.87085	.34834
#1	.50346	39.846	.24394	4.8298	.24591	.59218	.19095	7.2767
#2	.50266	40.018	.24099	4.8187	.24276	.58614	.19336	7.2326
#3	.50209	39.974	.23950	4.8148	.24264	.58690	.19419	7.2333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080803S Acquired: 6/25/2016 13:29:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48600**	**.66572**	**.49120**	**.24058**	**.48625**	**.48121**	**.00549**
Stddev	.00062	.00113	.00488	.00183	.00111	.00310	.00062
%RSD	.12721	.16988	.99375	.75886	.22783	.64511	11.331
#1	.48664	.66443	.49684	.23968	.48515	.48355	.00538
#2	.48596	.66654	.48839	.24268	.48622	.48240	.00493
#3	.48540	.66619	.48838	.23938	.48737	.47769	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9640.1**	**59155.**	**3051.9**
Stddev	28.9	91.	4.4
%RSD	.29949	.15374	.14285
#1	9607.9	59063.	3056.9
#2	9648.6	59158.	3049.0
#3	9663.8	59244.	3049.8

Approved: June 27, 2016

Sample Name: L1606080804SD Acquired: 6/25/2016 13:33:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19367**	**4.8696**	**.19395**	**.97468**	**.50079**	**.02428**	**55.592**	**.02458**
Stddev	.00103	.0189	.00351	.00126	.00119	.00004	.087	.00002
%RSD	.53221	.38806	1.8082	.12977	.23838	.15828	.15705	.06402
#1	.19313	4.8871	.19259	.97422	.49995	.02427	55.687	.02459
#2	.19486	4.8723	.19133	.97371	.50216	.02425	55.574	.02456
#3	.19302	4.8496	.19794	.97611	.50027	.02433	55.515	.02458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09687**	**.24382**	**.24330**	**2.1942**	**25.602**	**.50391**	**18.927**	**.35670**
Stddev	.00034	.00139	.00044	.0216	.187	.00317	.145	.00440
%RSD	.35450	.56820	.18086	.98630	.73073	.62836	.76565	1.2346
#1	.09649	.24542	.24364	2.2182	25.415	.50090	18.778	.36166
#2	.09698	.24295	.24347	2.1881	25.600	.50721	19.067	.35519
#3	.09715	.24309	.24280	2.1762	25.789	.50361	18.935	.35325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50687**	**40.011**	**.24239**	**4.8324**	**.24609**	**.59184**	**.19199**	**7.3269**
Stddev	.00174	.019	.00180	.0039	.00113	.00410	.00494	.0108
%RSD	.34421	.04769	.74422	.07995	.45954	.69206	2.5730	.14791
#1	.50863	40.009	.24329	4.8354	.24728	.59240	.18629	7.3276
#2	.50684	40.031	.24358	4.8338	.24503	.59563	.19457	7.3373
#3	.50514	39.993	.24032	4.8281	.24594	.58749	.19509	7.3157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080804SD Acquired: 6/25/2016 13:33:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48884	.66564	.48806	.24641	.49385	.48167	.00481
Stddev	.00243	.00060	.00210	.00100	.00262	.00319	.00105
%RSD	.49731	.09007	.43005	.40687	.53028	.66320	21.781
#1	.48902	.66631	.48604	.24752	.49576	.48059	.00363
#2	.49118	.66515	.49023	.24612	.49493	.48526	.00518
#3	.48633	.66545	.48792	.24558	.49086	.47916	.00563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9643.8	58961.	3032.4
Stddev	19.6	179.	14.4
%RSD	.20367	.30279	.47352
#1	9664.0	58941.	3022.3
#2	9624.8	58793.	3026.2
#3	9642.5	59149.	3048.8

Approved: June 27, 2016

Sample Name: L1606082203 Acquired: 6/25/2016 13:37:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.03250	.00108	.03413	.76881	.00001	31.323	.00009
Stddev	.00326	.00113	.00298	.00231	.00291	.00007	.069	.00003
%RSD	461.08	3.4738	274.98	6.7818	.37861	986.76	.21967	35.456
#1	-.00056	.03174	-.00033	.03677	.76753	-.00000	31.323	.00006
#2	.00440	.03379	-.00093	.03317	.76676	.00008	31.255	.00011
#3	-.00173	.03195	.00451	.03246	.77215	-.00006	31.393	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00298	.00799	.00175	5.1531	49.440	.10315	14.307	.17132
Stddev	.00036	.00030	.00156	.0220	.158	.00201	.082	.00563
%RSD	12.200	3.7657	89.202	.42624	.31871	1.9519	.57045	3.2873
#1	.00316	.00823	.00355	5.1330	49.302	.10173	14.214	.17528
#2	.00323	.00810	.00078	5.1498	49.405	.10227	14.338	.17381
#3	.00256	.00765	.00092	5.1766	49.612	.10546	14.368	.16487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	90.168	.00369	.00788	-.00122	.00230	.00147	11.287
Stddev	.00023	.210	.00039	.00442	.00289	.00119	.00467	.027
%RSD	50.114	.23246	10.480	56.105	237.50	51.496	317.01	.23968
#1	.00031	90.009	.00403	.01267	.00108	.00337	.00397	11.318
#2	.00033	90.090	.00327	.00394	-.00447	.00102	-.00391	11.275
#3	.00071	90.405	.00377	.00704	-.00027	.00252	.00436	11.268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082203 Acquired: 6/25/2016 13:37:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.79119**	**.00045**	**-.00075**	**.00043**	**.00534**	**-.00006**
Stddev	.00030	.00071	.00315	.00229	.00033	.00006	.00108
%RSD	437.99	.09029	691.72	303.10	75.619	1.1956	1667.5
#1	-.00035	.79036	-.00147	.00135	.00018	.00529	-.00108
#2	-.00009	.79165	-.00125	-.00319	.00032	.00542	.00108
#3	.00024	.79155	.00408	-.00042	.00080	.00532	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.6**	**58766.**	**3005.5**
Stddev	29.5	106.	1.2
%RSD	.30621	.18076	.04053
#1	9617.1	58644.	3006.7
#2	9657.0	58831.	3005.5
#3	9674.8	58825.	3004.3

Approved: June 27, 2016

Sample Name: L1606082202 Acquired: 6/25/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00163**	**.00700**	**-.00255**	**.09063**	**.14584**	**.00010**	**6.2202**	**-.00011**
Stddev	.00068	.00493	.00215	.00172	.00146	.00002	.0817	.00004
%RSD	41.927	70.458	84.324	1.8967	.99792	21.043	1.3126	39.110
#1	.00225	.01016	-.00441	.09032	.14618	.00008	6.1515	-.00007
#2	.00090	.00132	-.00302	.08908	.14425	.00013	6.1986	-.00016
#3	.00175	.00952	-.00020	.09248	.14710	.00010	6.3104	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00096**	**.00077**	**2.0756**	**1.5049**	**.02492**	**4.3992**	**.07622**
Stddev	.00041	.00002	.00085	.0056	.1629	.00329	.1257	.00201
%RSD	1133.0	2.0322	110.52	.26897	10.822	13.197	2.8567	2.6344
#1	-.00024	.00097	.00165	2.0692	1.6925	.02131	4.4123	.07724
#2	.00043	.00097	.00070	2.0781	1.3995	.02572	4.2675	.07752
#3	-.00030	.00094	-.00004	2.0795	1.4227	.02774	4.5178	.07391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**83.246**	**.00061**	**.10079**	**.00421**	**-.00520**	**.00452**	**12.135**
Stddev	.00009	.263	.00086	.00636	.00131	.00271	.00174	.029
%RSD	36.387	.31568	140.09	6.3065	31.208	52.125	38.464	.24257
#1	-.00033	83.275	.00060	.10060	.00298	-.00301	.00254	12.154
#2	-.00015	82.970	.00147	.10724	.00559	-.00823	.00579	12.151
#3	-.00025	83.493	-.00024	.09454	.00404	-.00437	.00523	12.101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202 Acquired: 6/25/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.21054	.00087	-.00133	-.00012	.00182	.00052
Stddev	.00041	.00091	.00263	.00076	.00048	.00007	.00152
%RSD	145.47	.43126	300.38	57.105	397.63	3.7016	294.24
#1	.00007	.21002	.00237	-.00045	.00028	.00184	-.00094
#2	.00003	.21002	.00241	-.00174	.00001	.00175	.00210
#3	.00076	.21159	-.00216	-.00179	-.00065	.00188	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9729.1	59376.	3030.4
Stddev	8.6	260.	19.9
%RSD	.08835	.43738	.65516
#1	9720.3	59079.	3018.5
#2	9729.3	59490.	3053.3
#3	9737.5	59559.	3019.5

Approved: June 27, 2016

Sample Name: L1606082202PS Acquired: 6/25/2016 13:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19375**	**4.8752**	**.19613**	**1.0291**	**.62833**	**.02428**	**10.648**	**.02477**
Stddev	.00051	.0099	.00160	.0019	.00588	.00006	.170	.00011
%RSD	.26273	.20232	.81334	.18131	.93614	.24036	1.5959	.45206
#1	.19417	4.8642	.19702	1.0298	.63084	.02431	10.660	.02468
#2	.19391	4.8782	.19429	1.0305	.63254	.02431	10.812	.02489
#3	.19319	4.8832	.19709	1.0270	.62161	.02421	10.473	.02473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09829**	**.24324**	**.24855**	**3.8486**	**25.821**	**.52335**	**8.7582**	**.31225**
Stddev	.00082	.00053	.00056	.0314	.285	.00671	.0434	.00355
%RSD	.83225	.21842	.22566	.81716	1.1038	1.2812	.49530	1.1380
#1	.09742	.24374	.24849	3.8714	25.861	.52361	8.7634	.31338
#2	.09905	.24330	.24914	3.8618	26.083	.52993	8.7125	.31510
#3	.09841	.24268	.24802	3.8128	25.517	.51653	8.7988	.30827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50486**	**99.997**	**.24562**	**4.8721**	**.24648**	**.59017**	**.19243**	**13.471**
Stddev	.00060	.660	.00153	.0054	.00424	.00393	.00054	.013
%RSD	.11858	.66045	.62190	.11137	1.7208	.66559	.28037	.09301
#1	.50422	100.35	.24553	4.8783	.24168	.58648	.19181	13.458
#2	.50541	100.41	.24414	4.8682	.24971	.59430	.19267	13.471
#3	.50494	99.235	.24719	4.8698	.24807	.58975	.19281	13.483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202PS Acquired: 6/25/2016 13:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48807**	**.68216**	**.50019**	**.24323**	**.49372**	**.48957**	**.00258**
Stddev	.00205	.00533	.01089	.00117	.00097	.00018	.00106
%RSD	.41999	.78112	2.1777	.48173	.19621	.03662	41.003
#1	.49029	.68537	.51266	.24188	.49454	.48951	.00281
#2	.48770	.68509	.49539	.24396	.49265	.48978	.00349
#3	.48624	.67601	.49252	.24385	.49397	.48943	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9652.9**	**58738.**	**3022.5**
Stddev	16.4	44.	32.4
%RSD	.17031	.07498	1.0716
#1	9668.7	58757.	3005.1
#2	9654.1	58688.	3002.5
#3	9635.9	58769.	3059.8

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:48:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	-.00874	.00232	.01966	.02846	.00012	1.1981	-.00020
Stddev	.00102	.00520	.00129	.00166	.00164	.00003	.0364	.00029
%RSD	249.96	59.552	55.713	8.4558	5.7787	28.080	3.0406	145.60
#1	-.00049	-.00387	.00244	.02114	.03034	.00013	1.2234	-.00054
#2	.00065	-.00812	.00098	.01996	.02778	.00008	1.1564	-.00008
#3	-.00139	-.01423	.00356	.01786	.02727	.00014	1.2146	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00097	.00049	.42314	.31666	.00414	.84994	.01478
Stddev	.00036	.00092	.00031	.02269	.03395	.00078	.10125	.00159
%RSD	202.36	94.832	64.039	5.3615	10.720	18.849	11.912	10.770
#1	-.00059	-.00007	.00031	.40193	.27970	.00483	.89447	.01388
#2	-.00002	.00128	.00031	.42043	.32384	.00429	.92129	.01385
#3	.00008	.00169	.00086	.44706	.34645	.00330	.73406	.01662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	16.797	-.00010	.02573	.00379	-.00654	-.00062	2.4606
Stddev	.00016	.116	.00075	.00347	.00211	.00206	.00121	.0014
%RSD	105.18	.68795	766.63	13.470	55.760	31.494	195.90	.05654
#1	-.00025	16.870	-.00048	.02714	.00159	-.00786	-.00167	2.4590
#2	-.00024	16.856	-.00058	.02827	.00580	-.00417	-.00090	2.4616
#3	.00003	16.663	.00077	.02178	.00399	-.00761	.00071	2.4611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:48:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.04233**	**.00225**	**-.00298**	**.00005**	**.00069**	**.00014**
Stddev	.00035	.00076	.00380	.00312	.00068	.00008	.00023
%RSD	102.54	1.7878	169.10	104.78	1298.3	11.967	160.88
#1	-.00033	.04309	.00306	.00056	-.00034	.00074	-.00011
#2	.00000	.04232	.00558	-.00534	-.00035	.00059	.00032
#3	-.00071	.04157	-.00189	-.00415	.00084	.00073	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10112.**	**61959.**	**3102.5**
Stddev	25.	335.	21.2
%RSD	.24804	.54051	.68302
#1	10140.	62322.	3081.9
#2	10091.	61890.	3101.4
#3	10107.	61663.	3124.2

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00201**	**.00162**	**.00506**	**.00674**	**.00009**	**.22194**	**.00006**
Stddev	.00098	.00612	.00099	.00223	.00036	.00007	.03121	.00010
%RSD	701.06	303.84	61.332	44.136	5.3564	71.933	14.062	159.17
#1	-.00091	-.00825	.00149	.00575	.00715	.00008	.25227	.00003
#2	-.00048	-.00177	.00268	.00256	.00663	.00004	.22363	-.00001
#3	.00097	.00398	.00070	.00686	.00645	.00017	.18992	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00003**	**.00093**	**.10294**	**.07211**	**-.00053**	**.11677**	**.00303**
Stddev	.00044	.00176	.00026	.00844	.06933	.00190	.04489	.00266
%RSD	660.12	5191.6	27.598	8.2017	96.144	360.65	38.441	87.562
#1	-.00052	.00076	.00092	.11264	.12436	-.00025	.12873	.00344
#2	.00037	-.00197	.00068	.09726	-.00654	-.00255	.06712	.00020
#3	-.00005	.00131	.00120	.09891	.09851	.00122	.15447	.00546
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**3.4626**	**-.00095**	**.01102**	**.00309**	**-.00448**	**.00254**	**.52285**
Stddev	.00009	.0579	.00053	.00740	.00233	.00663	.00646	.00911
%RSD	18.881	1.6714	55.686	67.190	75.440	147.88	254.92	1.7427
#1	-.00041	3.4180	-.00056	.01783	.00042	-.00172	-.00323	.51493
#2	-.00042	3.4418	-.00074	.01207	.00473	-.01205	.00952	.52082
#3	-.00056	3.5280	-.00155	.00314	.00412	.00032	.00131	.53281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.00876**	**-.00160**	**-.00170**	**.00064**	**.00048**	**.00025**
Stddev	.00024	.00020	.00243	.00072	.00151	.00001	.00052
%RSD	61.212	2.3382	151.62	42.632	234.58	1.6034	205.72
#1	-.00036	.00876	-.00015	-.00219	-.00097	.00048	.00032
#2	-.00064	.00897	-.00025	-.00087	.00088	.00049	-.00030
#3	-.00017	.00856	-.00441	-.00204	.00202	.00048	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10010.**	**61091.**	**3050.7**
Stddev	14.	94.	16.7
%RSD	.14368	.15455	.54708
#1	9999.9	61099.	3067.0
#2	10027.	60993.	3033.7
#3	10004.	61182.	3051.5

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:56:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39703**	**9.8823**	**.39208**	**.48360**	**.99649**	**.04877**	**9.9442**
Stddev	.00097	.0185	.00108	.00155	.00485	.00012	.0391
%RSD	.24464	.18766	.27635	.32015	.48698	.23806	.39293
#1	.39651	9.9033	.39094	.48432	.99107	.04885	9.8991
#2	.39815	9.8682	.39222	.48182	1.0004	.04883	9.9670
#3	.39642	9.8754	.39309	.48466	.99796	.04864	9.9665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04952**	**.19590**	**.48861**	**.49872**	**3.9553**	**49.086**	**.99832**
Stddev	.00026	.00028	.00039	.00131	.0110	.181	.00236
%RSD	.52554	.14170	.07934	.26171	.27922	.36920	.23624
#1	.04970	.19602	.48888	.50017	3.9554	48.878	.99571
#2	.04922	.19610	.48816	.49764	3.9662	49.210	1.0003
#3	.04964	.19559	.48877	.49836	3.9441	49.170	.99895
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.6989**	**.49966**	**.99513**	**49.378**	**.49577**	**9.7713**	**.49937**
Stddev	.0286	.00128	.00487	.189	.00112	.0077	.00125
%RSD	.29470	.25687	.48908	.38358	.22653	.07875	.25024
#1	9.6936	.49933	.99926	49.226	.49626	9.7672	.49899
#2	9.6733	.50107	.99636	49.590	.49656	9.7802	.50076
#3	9.7297	.49857	.98976	49.317	.49448	9.7665	.49835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:56:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1744	.39516	5.0749	.97934	.99997	.99747	.49995
Stddev	.0050	.00337	.0045	.00061	.00261	.00842	.00315
%RSD	.42778	.85272	.08873	.06267	.26098	.84451	.63052
#1	1.1693	.39868	5.0732	.98005	.99777	.99280	.50104
#2	1.1793	.39197	5.0800	.97900	1.0028	1.0072	.49639
#3	1.1748	.39484	5.0715	.97897	.99928	.99242	.50240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.98727	.98962	F 2.8790
Stddev	.00224	.00122	.0125
%RSD	.22699	.12332	.43408
#1	.98696	.98924	2.8649
#2	.98519	.99098	2.8888
#3	.98965	.98864	2.8834
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9881.8	60025.	3051.6
Stddev	7.5	117.	13.0
%RSD	.07613	.19437	.42745
#1	9874.3	60038.	3066.6
#2	9889.3	60134.	3043.0
#3	9881.9	59902.	3045.3

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:00:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00384**	**.00171**	**.00288**	**.00164**	**.00016**	**-.02160**	**-.00002**
Stddev	.00056	.00607	.00179	.00157	.00101	.00008	.03268	.00008
%RSD	153.00	158.06	104.81	54.496	61.686	49.488	151.32	357.31
#1	-.00082	.00133	.00363	.00341	.00099	.00008	-.05876	.00002
#2	-.00054	.01077	.00142	.00412	.00280	.00016	-.00868	-.00011
#3	.00026	-.00057	.00008	.00112	.00111	.00023	.00265	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00089**	**.00145**	**.02539**	**.05830**	**-.00178**	**-.00516**	**-.00289**
Stddev	.00025	.00059	.00085	.02878	.16368	.00331	.04118	.00267
%RSD	184.36	65.782	58.421	113.33	280.73	185.62	797.74	92.366
#1	-.00007	.00150	.00078	.04856	-.06991	-.00470	-.03370	-.00034
#2	.00042	.00086	.00240	.03444	.24267	-.00246	.04205	-.00265
#3	.00006	.00033	.00117	-.00682	.00216	.00181	-.02383	-.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00312**	**.01750**	**-.00036**	**.00463**	**.00110**	**.00408**	**.00171**	**-.00349**
Stddev	.00035	.01788	.00074	.00054	.00119	.00430	.00409	.00216
%RSD	11.208	102.15	207.33	11.581	107.78	105.36	238.51	61.802
#1	.00276	.00856	.00044	.00497	-.00027	-.00057	.00622	-.00129
#2	.00346	.03809	-.00047	.00401	.00175	.00791	-.00177	-.00560
#3	.00314	.00586	-.00104	.00491	.00181	.00489	.00070	-.00357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:00:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00055	-.00034	-.00341	.00088	.00013	.00321
Stddev	.00088	.00013	.00661	.00148	.00029	.00021	.00123
%RSD	577.33	24.369	1964.7	43.438	32.521	159.30	38.279
#1	-.00076	.00044	.00453	-.00437	.00106	-.00009	.00194
#2	.00100	.00070	.00232	-.00416	.00055	.00032	.00329
#3	.00022	.00052	-.00786	-.00171	.00104	.00016	.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9674.1	59179.	2989.6
Stddev	10.8	80.	18.0
%RSD	.11204	.13474	.60268
#1	9680.4	59116.	2972.7
#2	9661.6	59269.	3008.6
#3	9680.2	59153.	2987.4

Approved: June 27, 2016

Sample Name: L1606082302 Acquired: 6/25/2016 14:03:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01235**	**.00398**	**.02065**	**7.6114**	**.00014**	**242.99**
Stddev	.00016	.00738	.00092	.00248	.0086	.00009	.50
%RSD	156.01	59.723	23.024	12.009	.11234	64.318	.20416
#1	-.00023	.01740	.00411	.01789	7.6202	.00016	242.85
#2	-.00014	.01576	.00483	.02137	7.6109	.00023	243.54
#3	.00007	.00389	.00301	.02270	7.6032	.00004	242.58
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.05380**	**.00122**	**.00261**	**4.4999**	**3.4068**	**.13022**
Stddev	.00043	.00087	.00035	.00011	.0119	.0234	.00431
%RSD	95.240	1.6084	28.402	4.2649	.26410	.68699	3.3105
#1	-.00003	.05465	.00142	.00253	4.4869	3.3837	.13493
#2	.00060	.05384	.00143	.00274	4.5026	3.4062	.12925
#3	.00078	.05292	.00082	.00256	4.5101	3.4305	.12648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**186.55**	**.80417**	**.00043**	F **676.67**	**.01798**	**.04840**	**.00356**
Stddev	.43	.00344	.00029	5.78	.00081	.00767	.00232
%RSD	.22901	.42830	67.402	.85481	4.4962	15.839	65.024
#1	186.94	.80321	.00050	676.18	.01876	.05723	.00107
#2	186.09	.80800	.00067	682.68	.01714	.04349	.00566
#3	186.63	.80131	.00011	671.15	.01803	.04447	.00396
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606082302 Acquired: 6/25/2016 14:03:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00329**	**-.00499**	**17.541**	**.00002**	**5.8024**	F **-.03279**	**-.00373**
Stddev	.00417	.00266	.115	.00016	.0077	.00249	.00217
%RSD	126.77	53.331	.65409	771.83	.13255	7.6037	58.233
#1	-.00765	-.00207	17.622	-.00016	5.8086	-.03219	-.00297
#2	-.00289	-.00563	17.591	.00008	5.8048	-.03065	-.00619
#3	.00066	-.00727	17.409	.00014	5.7938	-.03553	-.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00105**	**.00822**	**.00588**
Stddev	.00081	.00012	.00100
%RSD	77.437	1.5051	16.931
#1	-.00020	.00826	.00695
#2	-.00112	.00832	.00498
#3	-.00182	.00808	.00571
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9001.2**	**54623.**	**2943.0**
Stddev	12.7	293.	11.3
%RSD	.14121	.53595	.38250
#1	8986.8	54359.	2937.9
#2	9010.8	54574.	2935.3
#3	9006.1	54938.	2955.9

Approved: June 27, 2016

Sample Name: L1606082303 Acquired: 6/25/2016 14:07:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00097**	**.07689**	**.00082**	**.01317**	**4.0611**	**.00008**	**194.35**
Stddev	.00087	.00794	.00214	.00140	.0013	.00002	.19
%RSD	89.857	10.324	259.83	10.655	.03277	29.564	.09947
#1	.00177	.08422	.00140	.01160	4.0625	.00007	194.28
#2	.00005	.07798	.00261	.01363	4.0599	.00006	194.19
#3	.00109	.06846	-.00155	.01429	4.0610	.00010	194.56
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00720**	**.00128**	**.00172**	**.48254**	**1.5553**	**.05921**
Stddev	.00016	.00037	.00008	.00037	.03011	.0518	.00214
%RSD	37.982	5.1555	6.4501	21.255	6.2390	3.3303	3.6194
#1	.00025	.00709	.00125	.00159	.48289	1.5549	.05878
#2	.00056	.00690	.00137	.00144	.45226	1.5037	.05732
#3	.00044	.00762	.00121	.00214	.51247	1.6073	.06154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**110.52**	**2.3053**	**-.00008**	F **614.40**	**.00312**	**.00621**	**.00333**
Stddev	.38	.0070	.00038	4.80	.00050	.00738	.00101
%RSD	.34277	.30352	457.85	.78181	15.943	118.75	30.264
#1	110.96	2.3090	-.00052	609.47	.00307	-.00184	.00218
#2	110.30	2.2972	.00010	614.65	.00363	.01264	.00406
#3	110.30	2.3096	.00018	619.07	.00264	.00783	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606082303 Acquired: 6/25/2016 14:07:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	-.00398	12.572	-.00061	3.7282	-.02186	-.00195
Stddev	.00101	.00138	.069	.00058	.0049	.00737	.00114
%RSD	77.475	34.690	.54565	95.484	.12996	33.713	58.500
#1	-.00178	-.00242	12.599	.00005	3.7247	-.01374	-.00282
#2	-.00014	-.00503	12.623	-.00084	3.7262	-.02372	-.00066
#3	-.00200	-.00451	12.494	-.00105	3.7337	-.02812	-.00237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00017	.00519	.00587
Stddev	.00034	.00017	.00146
%RSD	196.61	3.3392	24.813
#1	.00020	.00538	.00454
#2	-.00026	.00515	.00565
#3	-.00046	.00504	.00743
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9113.2	55170.	2962.5
Stddev	17.2	284.	10.8
%RSD	.18895	.51491	.36572
#1	9120.9	54953.	2952.0
#2	9093.5	55065.	2973.6
#3	9125.3	55492.	2961.9

Approved: June 27, 2016

Sample Name: L1606082304 Acquired: 6/25/2016 14:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00108**	**.00282**	**.00375**	**.01195**	**1.2873**	**.00004**	**44.812**	**-.00032**
Stddev	.00081	.00175	.00233	.00191	.0068	.00003	.140	.00033
%RSD	75.442	62.066	62.147	15.958	.52861	68.482	.31190	102.13
#1	-.00032	.00374	.00333	.01352	1.2889	.00004	44.884	-.00060
#2	-.00194	.00392	.00166	.00983	1.2799	.00001	44.651	.00004
#3	-.00098	.00080	.00626	.01250	1.2932	.00007	44.900	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**-.00235**	**.00403**	**80.696**	**3.0351**	**.04425**	**27.190**	**1.4212**
Stddev	.00024	.00090	.00186	.288	.0674	.00194	.251	.0124
%RSD	38.213	38.227	46.192	.35704	2.2197	4.3802	.92249	.86964
#1	.00059	-.00132	.00534	80.883	2.9579	.04406	26.967	1.4224
#2	.00088	-.00276	.00485	80.364	3.0650	.04628	27.141	1.4083
#3	.00040	-.00297	.00190	80.840	3.0823	.04242	27.462	1.4329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**136.40**	**.00117**	**.05473**	**.00702**	**-.00148**	**-.00406**	**16.093**
Stddev	.00029	.62	.00056	.00919	.00288	.00326	.00473	.052
%RSD	35.125	.45656	47.701	16.792	41.072	220.80	116.61	.32014
#1	-.00064	136.42	.00054	.06475	.00887	-.00465	-.00925	16.145
#2	-.00116	135.77	.00135	.05277	.00848	.00187	.00003	16.091
#3	-.00068	137.01	.00161	.04668	.00370	-.00165	-.00296	16.042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082304 Acquired: 6/25/2016 14:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00141**	**1.0265**	**.02088**	**-.00129**	**-.00025**	**.01157**	**-.01042**
Stddev	.00052	.0054	.00601	.00283	.00173	.00020	.00036
%RSD	36.987	.52659	28.762	219.55	704.92	1.7611	3.4676
#1	.00201	1.0281	.02616	-.00374	-.00225	.01176	-.01080
#2	.00117	1.0205	.01435	.00181	.00074	.01159	-.01039
#3	.00105	1.0309	.02213	-.00193	.00077	.01136	-.01008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9584.5**	**58328.**	**2992.4**
Stddev	11.8	87.	5.0
%RSD	.12317	.14881	.16820
#1	9573.1	58228.	2986.6
#2	9583.6	58387.	2995.2
#3	9596.7	58368.	2995.4

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 14:15:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	.73135	.00385	.12210	.08262	.00020	27.646	.00018
Stddev	.00073	.00428	.00128	.00118	.00156	.00004	.096	.00015
%RSD	27.764	.58467	33.324	.96789	1.8866	19.880	.34678	80.450
#1	.00220	.73627	.00263	.12346	.08403	.00016	27.689	.00009
#2	.00223	.72927	.00372	.12147	.08287	.00024	27.713	.00035
#3	.00348	.72851	.00519	.12136	.08095	.00020	27.536	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.00138	.00319	.50952	4.5430	.00820	13.834	.02681
Stddev	.00058	.00089	.00080	.00314	.0592	.00406	.158	.00190
%RSD	107.78	64.361	25.113	.61565	1.3042	49.473	1.1398	7.0691
#1	-.00010	.00066	.00412	.50590	4.4785	.00685	13.879	.02807
#2	.00067	.00110	.00265	.51133	4.5951	.01276	13.964	.02463
#3	.00103	.00237	.00282	.51133	4.5554	.00499	13.658	.02774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	65.018	.00157	.05465	.00287	-.00148	.00632	4.3760
Stddev	.00020	.232	.00022	.00221	.00233	.00288	.00218	.0207
%RSD	16.215	.35629	13.957	4.0445	81.267	194.34	34.507	.47244
#1	.00141	65.009	.00133	.05367	.00373	-.00288	.00878	4.3946
#2	.00130	65.254	.00176	.05719	.00465	-.00339	.00555	4.3795
#3	.00102	64.791	.00160	.05310	.00023	.00183	.00463	4.3537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 14:15:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.26681**	**.01202**	**-.00269**	**.00480**	**.00516**	**.00567**
Stddev	.00125	.00125	.00081	.00070	.00038	.00011	.00071
%RSD	227.21	.46986	6.7372	25.927	7.9446	2.0641	12.451
#1	-.00072	.26656	.01275	-.00259	.00452	.00521	.00488
#2	.00178	.26818	.01115	-.00205	.00524	.00504	.00622
#3	.00058	.26571	.01216	-.00344	.00465	.00524	.00592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9685.5**	**59237.**	**3013.9**
Stddev	15.3	70.	21.8
%RSD	.15804	.11840	.72168
#1	9667.9	59212.	3004.6
#2	9692.8	59182.	2998.3
#3	9695.8	59316.	3038.7

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 14:19:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.02576	.00392	.13054	.14235	.00004	53.032	.00013
Stddev	.00161	.00264	.00128	.00304	.00093	.00006	.088	.00011
%RSD	186.85	10.249	32.777	2.3320	.65273	165.85	.16643	81.772
#1	-.00048	.02479	.00505	.13055	.14272	-.00002	52.942	.00017
#2	.00053	.02374	.00418	.13357	.14130	.00011	53.037	.00022
#3	-.00263	.02875	.00252	.12748	.14305	.00003	53.119	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00416	.00255	.05069	2.7172	.00979	45.232	.00619
Stddev	.00057	.00090	.00135	.00895	.0969	.00331	.213	.00128
%RSD	70.201	21.666	53.148	17.648	3.5679	33.803	.47142	20.757
#1	.00109	.00488	.00157	.05068	2.6091	.01132	44.992	.00715
#2	.00016	.00315	.00198	.05964	2.7964	.01206	45.307	.00668
#3	.00119	.00444	.00409	.04175	2.7463	.00599	45.398	.00473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	113.30	.00198	.03363	.00397	-.00032	.00108	5.7426
Stddev	.00005	.15	.00097	.00220	.00496	.00242	.00246	.0270
%RSD	9.2544	.13423	48.767	6.5321	124.89	765.53	227.39	.46957
#1	.00062	113.13	.00098	.03204	.00115	-.00095	-.00128	5.7131
#2	.00062	113.39	.00206	.03614	.00107	.00236	.00363	5.7660
#3	.00052	113.39	.00290	.03272	.00971	-.00236	.00090	5.7486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 14:19:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.36906**	**-.00370**	**-.00072**	**.00779**	**.00692**	**.00331**
Stddev	.00028	.00064	.00411	.00265	.00075	.00021	.00138
%RSD	191.03	.17400	110.98	366.07	9.6620	3.0569	41.716
#1	-.00017	.36882	.00101	-.00049	.00853	.00671	.00489
#2	.00034	.36857	-.00557	.00180	.00703	.00713	.00270
#3	.00027	.36978	-.00654	-.00348	.00781	.00694	.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9627.8**	**58951.**	**3062.4**
Stddev	26.1	26.	1.9
%RSD	.27151	.04447	.06237
#1	9657.6	58927.	3060.7
#2	9617.0	58947.	3062.0
#3	9608.7	58979.	3064.5

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 14:23:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	.94860	.00623	.13672	.10593	.00014	35.066	.00002
Stddev	.00163	.01243	.00298	.00233	.00120	.00009	.208	.00013
%RSD	122.05	1.3105	47.819	1.7071	1.1370	65.235	.59262	741.62
#1	-.00020	.96246	.00332	.13853	.10456	.00018	34.826	.00011
#2	.00116	.93843	.00928	.13754	.10682	.00004	35.168	-.00013
#3	.00306	.94490	.00609	.13408	.10640	.00021	35.202	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.00115	.00402	.75423	2.6231	.00517	21.361	.05361
Stddev	.00038	.00077	.00076	.00983	.0329	.00134	.091	.00159
%RSD	39.586	67.102	19.015	1.3028	1.2541	25.927	.42723	2.9705
#1	.00055	.00114	.00333	.74497	2.6490	.00636	21.310	.05382
#2	.00102	.00192	.00389	.75319	2.6342	.00372	21.307	.05192
#3	.00129	.00038	.00484	.76454	2.5861	.00543	21.467	.05508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00320	114.16	.00202	.11444	.00566	-.00032	.00352	5.0408
Stddev	.00062	.45	.00043	.00615	.00453	.00176	.00035	.0084
%RSD	19.542	.39163	21.028	5.3725	80.076	549.83	10.037	.16741
#1	.00290	113.69	.00211	.12072	.00935	.00043	.00314	5.0497
#2	.00278	114.20	.00240	.11417	.00060	.00094	.00356	5.0330
#3	.00392	114.58	.00156	.10843	.00702	-.00233	.00385	5.0397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 14:23:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.24066**	**.01417**	**-.00245**	**.00766**	**.00892**	**.00404**
Stddev	.00021	.00154	.00348	.00225	.00065	.00011	.00127
%RSD	805.05	.63820	24.568	91.853	8.5297	1.1926	31.485
#1	.00024	.23889	.01059	-.00116	.00840	.00901	.00275
#2	.00001	.24171	.01754	-.00114	.00737	.00895	.00530
#3	-.00018	.24137	.01438	-.00504	.00719	.00880	.00407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9688.5**	**58932.**	**3057.0**
Stddev	25.8	93.	13.7
%RSD	.26652	.15746	.44955
#1	9698.0	58835.	3047.2
#2	9708.3	59020.	3072.7
#3	9659.3	58940.	3051.0

Approved: June 27, 2016

Sample Name: L1606115002 Acquired: 6/25/2016 14:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00203	.48878	.00167	.06520	.04585	.00006	17.152	.00001
Stddev	.00268	.01554	.00141	.00090	.00204	.00009	.173	.00009
%RSD	131.70	3.1791	84.852	1.3869	4.4598	167.56	1.0064	934.85
#1	.00187	.50660	.00286	.06544	.04801	.00015	17.256	-.00009
#2	-.00056	.47801	.00204	.06596	.04394	-.00004	16.953	.00007
#3	.00479	.48175	.00010	.06420	.04559	.00005	17.247	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00168	.00243	.39846	4.7446	.00319	5.4375	.01729
Stddev	.00031	.00066	.00184	.00667	.1185	.00289	.0385	.00153
%RSD	100.89	39.152	75.822	1.6749	2.4966	90.823	.70870	8.8325
#1	.00065	.00096	.00122	.39954	4.7392	.00001	5.4553	.01884
#2	.00006	.00183	.00151	.39131	4.6289	.00567	5.3932	.01727
#3	.00020	.00224	.00454	.40452	4.8657	.00387	5.4638	.01578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	38.880	.00010	.07228	.00433	-.00020	.00027	1.5503
Stddev	.00033	.402	.00056	.00820	.00375	.00324	.00590	.0251
%RSD	119.49	1.0347	568.40	11.341	86.648	1601.4	2189.5	1.6195
#1	-.00010	39.210	-.00001	.06867	.00198	.00127	.00262	1.5658
#2	.00053	38.432	.00070	.06650	.00235	-.00392	-.00644	1.5637
#3	.00040	38.999	-.00040	.08166	.00865	.00205	.00464	1.5213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115002 Acquired: 6/25/2016 14:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.09712	.00701	-.00122	.00599	.00508	.00239
Stddev	.00062	.00057	.00249	.00352	.00080	.00018	.00169
%RSD	1544.5	.58817	35.547	288.53	13.353	3.5369	70.760
#1	.00058	.09776	.00445	-.00524	.00624	.00503	.00322
#2	-.00064	.09666	.00715	.00026	.00510	.00528	.00044
#3	.00018	.09693	.00942	.00132	.00664	.00493	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9845.3	59884.	3057.5
Stddev	61.7	141.	28.2
%RSD	.62651	.23463	.92251
#1	9792.5	59732.	3034.3
#2	9830.2	60008.	3088.9
#3	9913.1	59914.	3049.2

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 14:31:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.14924	.00211	.10945	.07344	.00012	35.265	.00011
Stddev	.00084	.00304	.00150	.00214	.00141	.00005	.199	.00019
%RSD	53.011	2.0340	71.147	1.9507	1.9218	40.963	.56552	183.34
#1	.00069	.14626	.00205	.10856	.07211	.00007	35.174	.00027
#2	.00171	.15233	.00364	.10790	.07329	.00017	35.493	-.00011
#3	.00236	.14912	.00064	.11188	.07492	.00013	35.127	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00053	.00363	.24070	2.2004	.00754	18.847	.05800
Stddev	.00037	.00064	.00076	.00439	.0134	.00192	.227	.00368
%RSD	71.691	119.20	20.837	1.8247	.61086	25.451	1.2033	6.3535
#1	.00009	-.00001	.00323	.23564	2.1949	.00870	18.615	.05962
#2	.00071	.00038	.00450	.24286	2.2158	.00532	19.068	.05378
#3	.00075	.00124	.00316	.24359	2.1907	.00860	18.858	.06059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	93.416	.00066	.05411	.00356	-.00299	.00235	4.9794
Stddev	.00025	.232	.00043	.00846	.00271	.00266	.00452	.0235
%RSD	9.2843	.24821	65.257	15.640	76.210	88.939	192.50	.47215
#1	.00239	93.189	.00082	.06384	.00043	-.00008	-.00245	4.9968
#2	.00274	93.652	.00099	.04849	.00522	-.00529	.00653	4.9888
#3	.00288	93.408	.00017	.05000	.00501	-.00360	.00296	4.9527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 14:31:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.22720**	**-.00049**	**-.00434**	**.00477**	**.01199**	**.00282**
Stddev	.00094	.00191	.00341	.00316	.00052	.00018	.00083
%RSD	624.90	.83946	689.70	72.807	10.840	1.4772	29.345
#1	.00091	.22526	.00103	-.00351	.00496	.01201	.00271
#2	-.00090	.22907	-.00440	-.00783	.00516	.01216	.00370
#3	.00043	.22727	.00189	-.00168	.00418	.01181	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9596.9**	**58682.**	**3041.4**
Stddev	35.1	192.	10.5
%RSD	.36599	.32727	.34598
#1	9558.5	58834.	3032.3
#2	9605.0	58747.	3039.1
#3	9627.4	58466.	3052.9

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 14:35:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.08611	.00385	.13923	.09101	.00009	44.089	.00002
Stddev	.00149	.00500	.00146	.00310	.00028	.00009	.047	.00004
%RSD	320.61	5.8036	37.928	2.2254	.30236	102.05	.10587	146.93
#1	-.00016	.08678	.00262	.14146	.09069	.00015	44.139	.00006
#2	-.00061	.09074	.00347	.13569	.09114	.00014	44.082	.00002
#3	.00216	.08081	.00547	.14055	.09119	-.00002	44.046	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00077	.00300	.22257	1.9197	.00784	24.665	.07651
Stddev	.00017	.00044	.00144	.01624	.0794	.00414	.178	.00017
%RSD	34.605	57.594	48.079	7.2986	4.1341	52.815	.72144	.22200
#1	.00066	.00116	.00292	.22095	1.8333	.01224	24.592	.07669
#2	.00046	.00029	.00448	.23956	1.9894	.00402	24.534	.07635
#3	.00033	.00086	.00160	.20719	1.9365	.00726	24.867	.07649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00251	121.52	.00039	.04724	.00176	-.00202	.00114	5.9103
Stddev	.00040	.42	.00024	.00471	.00159	.00145	.00478	.0521
%RSD	16.119	.34732	62.165	9.9710	90.693	71.551	420.31	.88218
#1	.00228	121.85	.00064	.05267	.00005	-.00053	.00361	5.8778
#2	.00297	121.67	.00016	.04481	.00202	-.00342	.00418	5.9704
#3	.00227	121.04	.00037	.04425	.00320	-.00211	-.00437	5.8826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 14:35:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.28912	-.00001	-.00113	.00539	.00821	.00159
Stddev	.00104	.00030	.00390	.00110	.00033	.00010	.00078
%RSD	180.18	.10436	27479.	97.280	6.0662	1.2671	48.813
#1	.00169	.28878	.00322	.00014	.00577	.00817	.00171
#2	.00041	.28919	.00108	-.00182	.00517	.00833	.00230
#3	-.00037	.28937	-.00434	-.00172	.00524	.00813	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9591.1	58078.	3001.7
Stddev	50.0	111.	7.0
%RSD	.52084	.19101	.23475
#1	9648.1	57963.	2993.9
#2	9554.9	58185.	3007.6
#3	9570.3	58085.	3003.7

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 14:39:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.06369**	**.00211**	**1.6713**	**.01926**	**.00010**	F **452.03**
Stddev	.00322	.00656	.00351	.0005	.00118	.00010	.89
%RSD	1157.9	10.295	166.24	.02810	6.1016	104.76	.19751
#1	.00114	.06870	-.00193	1.6717	.01795	.00008	451.94
#2	.00198	.05626	.00441	1.6715	.02023	.00000	452.97
#3	-.00396	.06610	.00386	1.6708	.01959	.00021	451.19
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00175**	**.00336**	**.00358**	**.08657**	**4.0470**	**.10636**
Stddev	.00024	.00006	.00098	.00171	.01546	.0608	.00217
%RSD	56.333	3.4162	29.186	47.723	17.854	1.5017	2.0382
#1	.00015	.00180	.00230	.00410	.09591	4.0001	.10764
#2	.00053	.00168	.00424	.00167	.09508	4.1156	.10386
#3	.00059	.00177	.00354	.00498	.06873	4.0251	.10759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**104.45**	**.25861**	**.02316**	F **889.97**	**.00046**	**.03619**	**.00320**
Stddev	.32	.00175	.00063	8.94	.00094	.00407	.00206
%RSD	.30573	.67823	2.7369	1.0045	203.65	11.246	64.428
#1	104.40	.26014	.02389	897.40	-.00019	.03795	.00082
#2	104.79	.25898	.02276	892.47	.00155	.03153	.00442
#3	104.16	.25670	.02283	880.05	.00003	.03907	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 14:39:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.04556**	**5.0652**	**-.00092**	**8.3910**	F **-.05563**	**-.00220**
Stddev	.00340	.00461	.0400	.00030	.0291	.00259	.00257
%RSD	2618.0	10.119	.78890	32.506	.34723	4.6498	116.61
#1	-.00398	.04208	5.1054	-.00114	8.4061	-.05807	-.00507
#2	.00246	.05079	5.0645	-.00058	8.4095	-.05590	-.00010
#3	.00113	.04380	5.0255	-.00104	8.3574	-.05292	-.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01649**	**.00488**	**.00303**
Stddev	.00056	.00014	.00088
%RSD	3.4018	2.9544	29.046
#1	.01604	.00505	.00374
#2	.01712	.00480	.00205
#3	.01632	.00480	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8680.3**	**53198.**	**2985.6**
Stddev	180.6	1315.	22.8
%RSD	2.0805	2.4712	.76305
#1	8472.3	54211.	3004.6
#2	8770.9	53671.	2960.4
#3	8797.6	51712.	2991.9

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 14:43:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41555	10.459	.41251	.50877	1.0374	.05191	10.456
Stddev	.00198	.038	.00049	.00412	.0216	.00011	.214
%RSD	.47730	.36575	.11809	.80911	2.0778	.21811	2.0454
#1	.41688	10.435	.41304	.50472	1.0594	.05178	10.677
#2	.41327	10.438	.41238	.51295	1.0163	.05199	10.250
#3	.41650	10.503	.41210	.50863	1.0364	.05195	10.439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05257	.20726	.51590	.53004	4.1313	50.651	1.0395
Stddev	.00009	.00077	.00185	.00200	.0874	1.016	.0162
%RSD	.16567	.37212	.35803	.37798	2.1147	2.0061	1.5578
#1	.05256	.20724	.51397	.52980	4.1823	51.735	1.0578
#2	.05249	.20650	.51606	.52817	4.0304	49.720	1.0270
#3	.05266	.20804	.51766	.53216	4.1811	50.499	1.0337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.150	.52278	1.0570	51.369	.52494	10.305	.52104
Stddev	.208	.00621	.0043	.990	.00089	.023	.00138
%RSD	2.0459	1.1888	.41022	1.9281	.16882	.22613	.26480
#1	10.382	.52905	1.0620	52.419	.52481	10.311	.51949
#2	10.083	.51662	1.0546	50.452	.52412	10.279	.52151
#3	9.9835	.52267	1.0544	51.234	.52588	10.325	.52213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 14:43:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2435**	**.41340**	**5.3297**	**1.0365**	**1.0404**	**1.0490**	**.52867**
Stddev	.0031	.00239	.0078	.0027	.0194	.0184	.00366
%RSD	.25127	.57838	.14640	.26182	1.8676	1.7498	.69286
#1	1.2461	.41607	5.3340	1.0379	1.0597	1.0678	.52786
#2	1.2400	.41146	5.3207	1.0334	1.0208	1.0311	.53267
#3	1.2443	.41266	5.3345	1.0383	1.0408	1.0483	.52548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0507**	**1.0444**	F **3.0477**
Stddev	.0007	.0005	.0535
%RSD	.06848	.05207	1.7552
#1	1.0503	1.0446	3.1080
#2	1.0502	1.0438	3.0059
#3	1.0515	1.0449	3.0292
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9539.3**	**57751.**	**2940.1**
Stddev	31.6	140.	48.7
%RSD	.33120	.24295	1.6549
#1	9524.0	57816.	2886.9
#2	9575.6	57847.	2982.3
#3	9518.3	57590.	2951.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:46:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00165**	**.00284**	**.00176**	**.00388**	**.00113**	**.00012**	**-.05362**	**.00014**
Stddev	.00125	.01178	.00236	.00154	.00084	.00005	.04538	.00017
%RSD	75.692	415.29	134.23	39.663	74.227	41.354	84.617	118.22
#1	.00309	-.01077	.00340	.00450	.00053	.00007	-.00140	.00006
#2	.00089	.00942	.00281	.00212	.00078	.00011	-.07612	.00034
#3	.00097	.00986	-.00094	.00500	.00209	.00017	-.08336	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00081**	**-.00057**	**.03333**	**.05011**	**.00030**	**.06903**	**-.00046**
Stddev	.00028	.00137	.00241	.00857	.04565	.00118	.08939	.00080
%RSD	113.95	168.04	420.16	25.719	91.103	392.02	129.50	172.20
#1	.00053	-.00076	.00045	.02973	.09790	.00058	.12386	.00033
#2	.00023	.00164	-.00333	.02715	.04546	-.00100	-.03412	-.00045
#3	-.00003	.00157	.00116	.04312	.00696	.00132	.11734	-.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00329**	**.09636**	**-.00015**	**.00820**	**-.00027**	**.00540**	**.00512**	**-.00542**
Stddev	.00036	.02670	.00052	.00425	.00262	.00178	.00316	.00074
%RSD	10.874	27.706	348.06	51.818	968.89	32.864	61.650	13.619
#1	.00316	.11195	.00032	.01302	.00232	.00377	.00634	-.00562
#2	.00301	.11159	-.00071	.00662	-.00021	.00729	.00749	-.00604
#3	.00369	.06553	-.00007	.00498	-.00292	.00514	.00154	-.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:46:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00084	-.00314	-.00152	.00124	-.00002	.00422
Stddev	.00043	.00035	.00315	.00163	.00162	.00008	.00071
%RSD	142.14	41.948	100.51	107.27	131.28	387.02	16.743
#1	.00054	.00124	-.00369	-.00248	.00007	.00002	.00481
#2	.00057	.00059	.00026	.00036	.00055	-.00012	.00343
#3	-.00019	.00069	-.00597	-.00244	.00309	.00004	.00441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9509.0	57769.	2936.8
Stddev	19.9	100.	17.6
%RSD	.20940	.17266	.59912
#1	9496.2	57883.	2947.5
#2	9532.0	57728.	2946.4
#3	9498.9	57697.	2916.5

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 14:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20060**	**4.9650**	**.19517**	**2.5768**	**.50183**	**.02406**	F **444.38**
Stddev	.00064	.0130	.00068	.0061	.00191	.00013	.71
%RSD	.32075	.26173	.35003	.23805	.38088	.54060	.15891
#1	.20131	4.9565	.19473	2.5781	.50380	.02409	444.63
#2	.20005	4.9586	.19596	2.5701	.50170	.02392	443.58
#3	.20045	4.9800	.19484	2.5821	.49998	.02418	444.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02442**	**.09295**	**.23551**	**.23263**	**1.9191**	**28.985**	**.61166**
Stddev	.00012	.00006	.00093	.00115	.0123	.093	.00400
%RSD	.49172	.06109	.39479	.49604	.64319	.32038	.65326
#1	.02431	.09291	.23631	.23296	1.9231	29.086	.60738
#2	.02455	.09302	.23573	.23359	1.9290	28.966	.61529
#3	.02440	.09293	.23449	.23135	1.9053	28.904	.61230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**105.95**	**.47454**	**.51043**	F **884.75**	**.22811**	**4.9353**	**.22750**
Stddev	.25	.00567	.00309	9.80	.00122	.0272	.00524
%RSD	.23467	1.1953	.60519	1.1073	.53281	.55168	2.3044
#1	105.68	.47627	.51271	882.43	.22677	4.9309	.23221
#2	106.17	.47914	.51168	876.32	.22915	4.9645	.22843
#3	105.99	.46820	.50692	895.49	.22841	4.9105	.22185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 14:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58292**	**.23516**	**7.5230**	**.45764**	**8.4638**	**.43138**	**.22024**
Stddev	.00661	.00590	.0386	.00329	.0240	.00658	.00196
%RSD	1.1347	2.5090	.51250	.71986	.28403	1.5254	.88967
#1	.58964	.23313	7.5444	.46024	8.4871	.43835	.22044
#2	.58270	.23054	7.5461	.45874	8.4651	.43053	.22209
#3	.57642	.24181	7.4785	.45394	8.4391	.42527	.21819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50974**	**.45745**	**.02017**
Stddev	.00182	.00152	.00279
%RSD	.35750	.33182	13.807
#1	.50798	.45815	.01724
#2	.50964	.45849	.02049
#3	.51162	.45571	.02279
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8784.0**	**53813.**	**2939.5**
Stddev	58.9	564.	26.0
%RSD	.67031	1.0483	.88591
#1	8819.5	54202.	2951.8
#2	8816.5	54070.	2957.2
#3	8716.1	53166.	2909.6

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 14:54:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19884**	**5.0097**	**.20311**	**2.5960**	**.50146**	**.02443**	F **447.43**
Stddev	.00024	.0049	.00234	.0007	.00093	.00023	1.15
%RSD	.12160	.09827	1.1515	.02603	.18621	.94697	.25628
#1	.19893	5.0097	.20547	2.5958	.50254	.02464	447.39
#2	.19857	5.0047	.20308	2.5967	.50101	.02419	446.31
#3	.19903	5.0146	.20079	2.5954	.50084	.02448	448.60
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02483**	**.09451**	**.23821**	**.23915**	**1.9535**	**28.902**	**.60873**
Stddev	.00032	.00036	.00123	.00189	.0137	.108	.00282
%RSD	1.3026	.38369	.51502	.78901	.69899	.37351	.46252
#1	.02509	.09492	.23941	.23914	1.9479	29.020	.60854
#2	.02447	.09421	.23696	.23726	1.9691	28.808	.61163
#3	.02493	.09441	.23826	.24103	1.9435	28.877	.60601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**106.60**	**.48110**	**.52231**	F **881.76**	**.23168**	**5.0586**	**.22685**
Stddev	.66	.00483	.00325	3.70	.00136	.0426	.00410
%RSD	.61507	1.0048	.62269	.41950	.58652	.84170	1.8079
#1	107.35	.47570	.52433	877.70	.23164	5.0964	.23130
#2	106.14	.48502	.51856	884.94	.23034	5.0125	.22604
#3	106.32	.48257	.52404	882.64	.23305	5.0670	.22322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 14:54:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.59871**	**.24615**	**7.5687**	**.46699**	**8.5686**	**.42893**	**.22250**
Stddev	.00609	.00268	.0516	.00318	.0150	.00524	.00079
%RSD	1.0180	1.0870	.68153	.68125	.17550	1.2224	.35602
#1	.60575	.24920	7.6059	.46994	8.5810	.42717	.22334
#2	.59510	.24505	7.5098	.46362	8.5519	.42478	.22177
#3	.59529	.24419	7.5903	.46740	8.5730	.43482	.22237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51554**	**.46791**	**.00590**
Stddev	.00333	.00294	.00185
%RSD	.64552	.62860	31.408
#1	.51938	.47002	.00382
#2	.51356	.46455	.00651
#3	.51367	.46915	.00737
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8900.3**	**52138.**	**2849.7**
Stddev	61.9	226.	11.1
%RSD	.69538	.43440	.38823
#1	8858.0	51879.	2838.3
#2	8971.3	52295.	2860.4
#3	8871.6	52242.	2850.4

Approved: June 27, 2016

Sample Name: L1606115404 Acquired: 6/25/2016 14:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00639	-.00036	.01270	.00241	.00013	.28017	.00009
Stddev	.00146	.00656	.00244	.00114	.00043	.00008	.03044	.00010
%RSD	248.07	102.69	686.61	9.0101	18.005	61.828	10.864	104.11
#1	.00089	-.00046	-.00313	.01156	.00227	.00022	.24651	.00012
#2	.00188	.01261	.00061	.01385	.00206	.00012	.28824	-.00001
#3	-.00100	.00700	.00146	.01270	.00289	.00005	.30576	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.01305	.00240	.07792	.04064	-.00228	.12469	.00253
Stddev	.00039	.00070	.00120	.00694	.09353	.00295	.18212	.00145
%RSD	747.32	5.3526	50.113	8.9064	230.14	129.38	146.06	57.512
#1	.00045	.01376	.00301	.08066	.00523	-.00157	.14106	.00090
#2	-.00033	.01305	.00317	.08306	.14671	-.00552	.29807	.00300
#3	.00004	.01236	.00101	.07002	-.03002	.00025	-.06507	.00369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00228	.75291	.00807	.00690	.00300	-.00255	.00146	.13135
Stddev	.00024	.01638	.00065	.00315	.00148	.00424	.00328	.00151
%RSD	10.641	2.1753	8.1061	45.563	49.471	166.69	225.01	1.1485
#1	.00245	.73694	.00868	.00525	.00160	-.00242	-.00127	.13296
#2	.00238	.75210	.00738	.01053	.00455	-.00685	.00055	.13112
#3	.00200	.76967	.00814	.00493	.00285	.00163	.00509	.12997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115404 Acquired: 6/25/2016 14:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.00282	.00431	-.00324	.00105	.00371	.00033
Stddev	.00036	.00041	.00156	.00193	.00089	.00012	.00066
%RSD	22.302	14.434	36.136	59.618	84.281	3.3596	201.18
#1	.00136	.00295	.00420	-.00210	.00202	.00385	-.00028
#2	.00201	.00236	.00592	-.00547	.00085	.00361	.00023
#3	.00143	.00314	.00281	-.00214	.00028	.00369	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9713.7	59908.	3002.7
Stddev	32.6	164.	34.0
%RSD	.33561	.27353	1.1337
#1	9740.1	60011.	2965.4
#2	9677.2	59995.	3032.2
#3	9723.7	59719.	3010.3

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 15:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00226	.00780	.00401	.26646	.17918	.00000	45.474	-.00004
Stddev	.00287	.00301	.00103	.00133	.00076	.00004	.222	.00008
%RSD	126.68	38.602	25.778	.50014	.42327	919.30	.48843	228.57
#1	.00509	.01128	.00462	.26750	.17974	.00002	45.718	.00006
#2	.00233	.00600	.00459	.26694	.17949	-.00004	45.422	-.00008
#3	-.00064	.00613	.00281	.26496	.17832	.00004	45.283	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00088	.00134	.05774	1.5654	.00884	27.038	1.6699
Stddev	.00027	.00028	.00194	.01943	.1007	.00205	.083	.0027
%RSD	44.880	31.682	144.85	33.650	6.4312	23.214	.30796	.16065
#1	.00083	.00056	-.00088	.03531	1.4495	.00687	26.967	1.6730
#2	.00063	.00109	.00219	.06938	1.6158	.01096	27.130	1.6684
#3	.00031	.00099	.00272	.06852	1.6309	.00869	27.018	1.6684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00414	74.521	.00232	.02280	.00145	-.00333	.00418	6.9589
Stddev	.00012	.362	.00063	.00622	.00648	.00099	.00335	.0172
%RSD	2.8693	.48589	27.089	27.292	447.38	29.598	80.140	.24675
#1	.00419	74.939	.00163	.02521	-.00229	-.00322	.00046	6.9755
#2	.00400	74.314	.00245	.02746	-.00229	-.00437	.00510	6.9601
#3	.00421	74.311	.00286	.01573	.00893	-.00240	.00696	6.9412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 15:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.31080**	**-.00408**	**-.00246**	**.00074**	**.00517**	**.00097**
Stddev	.00101	.00127	.01220	.00176	.00032	.00009	.00026
%RSD	589.50	.40720	299.39	71.557	43.195	1.7947	26.599
#1	.00067	.31223	.00838	-.00158	.00040	.00528	.00122
#2	-.00129	.30982	-.01601	-.00449	.00079	.00510	.00071
#3	.00011	.31036	-.00459	-.00131	.00103	.00514	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9554.2**	**58064.**	**2987.7**
Stddev	24.6	152.	17.9
%RSD	.25722	.26211	.59940
#1	9527.5	57892.	2971.4
#2	9576.0	58182.	2984.9
#3	9559.0	58118.	3006.9

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 15:05:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00077	.00104	.00250	.19417	.33327	.00001	49.969	.00011
Stddev	.00225	.00260	.00021	.00180	.00208	.00007	.144	.00004
%RSD	293.51	250.20	8.2634	.92950	.62356	535.11	.28842	36.458
#1	.00053	-.00100	.00271	.19484	.33088	.00006	50.109	.00015
#2	-.00336	.00396	.00251	.19555	.33470	.00004	49.821	.00012
#3	.00053	.00015	.00229	.19213	.33422	-.00007	49.978	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00039	.00161	4.4932	.30074	.00699	33.094	.46968
Stddev	.00024	.00046	.00055	.0210	.07361	.00374	.139	.00201
%RSD	82.593	118.92	34.456	.46819	24.475	53.562	.42105	.42764
#1	.00002	-.00012	.00218	4.4716	.35097	.00318	33.254	.46985
#2	.00046	.00051	.00108	4.5136	.21625	.00712	33.021	.47160
#3	.00039	.00078	.00156	4.4944	.33501	.01067	33.006	.46759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	56.528	.00048	.02851	.00540	-.00461	.00421	7.9465
Stddev	.00013	.068	.00114	.00462	.00195	.00412	.00583	.0128
%RSD	9.8009	.11946	234.80	16.220	36.120	89.402	138.37	.16106
#1	.00123	56.559	.00179	.03249	.00375	-.00852	-.00246	7.9518
#2	.00130	56.451	-.00006	.02962	.00489	-.00500	.00681	7.9559
#3	.00149	56.575	-.00027	.02344	.00755	-.00031	.00829	7.9320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 15:05:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.41936**	**-.00337**	**-.00247**	**.00035**	**.00337**	**.00091**
Stddev	.00022	.00050	.00295	.00045	.00041	.00006	.00160
%RSD	168.21	.11997	87.675	18.352	119.11	1.8649	175.07
#1	.00016	.41971	-.00131	-.00286	-.00012	.00341	-.00093
#2	.00033	.41958	-.00675	-.00259	.00050	.00330	.00173
#3	-.00010	.41878	-.00204	-.00197	.00066	.00341	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9627.3**	**58565.**	**2988.6**
Stddev	17.2	39.	5.1
%RSD	.17881	.06667	.17070
#1	9625.0	58521.	2993.1
#2	9645.6	58579.	2989.5
#3	9611.4	58596.	2983.0

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 15:09:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.01981	.00070	.15980	.12508	.00001	47.416	.00012
Stddev	.00149	.00690	.00351	.00313	.00043	.00010	.201	.00026
%RSD	112.43	34.815	504.28	1.9589	.34619	838.85	.42403	214.19
#1	.00108	.02777	-.00104	.15681	.12534	.00005	47.373	.00032
#2	-.00003	.01583	-.00161	.16306	.12532	.00009	47.635	.00022
#3	.00292	.01581	.00474	.15953	.12458	-.00010	47.240	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00032	.00351	1.3413	.87483	.00900	17.381	.47700
Stddev	.00046	.00045	.00082	.0140	.08308	.00172	.089	.00081
%RSD	429.81	139.46	23.247	1.0398	9.4971	19.124	.51021	.16934
#1	.00045	.00052	.00286	1.3297	.89461	.00799	17.319	.47725
#2	-.00041	.00065	.00443	1.3568	.78364	.01099	17.483	.47609
#3	.00028	-.00019	.00325	1.3373	.94624	.00803	17.342	.47764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	48.369	.00082	.10919	.00167	-.00062	.00179	5.8799
Stddev	.00025	.203	.00140	.00660	.00170	.00395	.00827	.0280
%RSD	97.415	.41932	171.45	6.0459	101.94	641.48	462.74	.47549
#1	-.00003	48.343	.00233	.10833	.00101	-.00514	.00952	5.8933
#2	-.00053	48.584	.00055	.10306	.00039	.00119	.00277	5.8478
#3	-.00022	48.181	-.00043	.11618	.00360	.00211	-.00693	5.8986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 15:09:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.26600	-.00537	-.00338	.00017	.00914	.00020
Stddev	.00067	.00095	.00241	.00310	.00116	.00022	.00114
%RSD	345.33	.35889	44.987	91.459	671.24	2.4286	566.35
#1	-.00057	.26556	-.00315	-.00551	-.00106	.00889	.00099
#2	.00050	.26710	-.00794	.00017	.00033	.00931	-.00111
#3	.00065	.26535	-.00501	-.00481	.00125	.00922	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9587.2	58263.	2972.1
Stddev	19.6	279.	4.9
%RSD	.20409	.47925	.16604
#1	9598.2	58004.	2969.9
#2	9598.7	58226.	2968.6
#3	9564.6	58559.	2977.8

Approved: June 27, 2016

Sample Name: L1606117801 Acquired: 6/25/2016 15:13:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	.01562	.00788	.04060	.02600	.00012	2.4592	.00007
Stddev	.00244	.00616	.00118	.00330	.00129	.00005	.0606	.00006
%RSD	197.99	39.461	15.044	8.1358	4.9545	44.901	2.4620	79.703
#1	.00387	.02096	.00725	.04075	.02646	.00010	2.5149	.00002
#2	-.00097	.00887	.00713	.04382	.02700	.00008	2.4680	.00013
#3	.00081	.01703	.00924	.03722	.02455	.00018	2.3948	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00074	.00609	.02685	.43656	.00432	.57708	-.00111
Stddev	.00033	.00144	.00018	.01358	.05030	.00166	.05180	.00137
%RSD	1012.2	194.14	2.9070	50.575	11.522	38.411	8.9754	123.48
#1	-.00025	.00070	.00629	.04250	.40355	.00528	.52291	-.00216
#2	.00039	.00219	.00602	.01809	.49445	.00241	.62611	-.00159
#3	-.00004	-.00068	.00595	.01997	.41167	.00528	.58223	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00299	95.163	-.00070	.01050	.00222	-.00635	.00641	3.4783
Stddev	.00029	.186	.00058	.00517	.00074	.00345	.00307	.0048
%RSD	9.6245	.19542	82.717	49.206	33.276	54.334	47.947	.13892
#1	.00325	95.230	-.00082	.01297	.00142	-.01032	.00356	3.4792
#2	.00268	95.306	-.00121	.00456	.00236	-.00408	.00600	3.4827
#3	.00303	94.953	-.00007	.01396	.00287	-.00464	.00966	3.4731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606117801 Acquired: 6/25/2016 15:13:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.11699	.00044	-.00188	.00105	.00210	.00054
Stddev	.00103	.00010	.00531	.00109	.00009	.00007	.00166
%RSD	275.08	.08958	1212.8	57.943	8.6567	3.2366	310.87
#1	.00154	.11703	-.00019	-.00063	.00114	.00212	-.00081
#2	-.00042	.11707	-.00453	-.00235	.00105	.00215	.00002
#3	-.00000	.11687	.00604	-.00264	.00096	.00202	.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9648.4	58829.	2994.3
Stddev	5.2	37.	6.7
%RSD	.05359	.06360	.22320
#1	9653.7	58809.	2992.7
#2	9643.3	58806.	2988.6
#3	9648.3	58873.	3001.7

Approved: June 27, 2016

Sample Name: L1606122701 Acquired: 6/25/2016 15:17:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00116	.09783	-.00055	.00242	.01519	.00006	7.7326	-.00002
Stddev	.00092	.00377	.00239	.00147	.00198	.00002	.1171	.00010
%RSD	79.355	3.8537	437.80	60.740	13.003	38.615	1.5138	459.39
#1	-.00047	.10163	-.00294	.00351	.01401	.00007	7.7569	.00006
#2	-.00220	.09409	.00184	.00075	.01747	.00007	7.8356	-.00013
#3	-.00081	.09776	-.00054	.00300	.01410	.00003	7.6053	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00227	.00167	.03463	.33602	-.00038	-.01109	-.00127
Stddev	.00016	.00059	.00051	.00142	.06178	.00154	.10836	.00134
%RSD	58.524	25.933	30.520	4.0976	18.384	404.83	977.09	105.32
#1	.00014	.00159	.00133	.03617	.30512	-.00005	-.09610	-.00256
#2	.00023	.00261	.00225	.03337	.29580	-.00206	.11092	-.00136
#3	.00045	.00260	.00142	.03436	.40715	.00097	-.04809	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	2.3350	.00044	.00731	.00430	-.00426	.00383	1.1328
Stddev	.00020	.0307	.00076	.00233	.00100	.00159	.00576	.0032
%RSD	132.69	1.3153	170.74	31.908	23.273	37.398	150.44	.27905
#1	.00005	2.3000	.00116	.00516	.00531	-.00538	.00306	1.1309
#2	-.00036	2.3574	.00052	.00700	.00430	-.00496	-.00151	1.1310
#3	-.00016	2.3476	-.00035	.00979	.00330	-.00244	.00992	1.1364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606122701 Acquired: 6/25/2016 15:17:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.25125	.00414	.00180	.00364	.00056	.00136
Stddev	.00018	.00103	.01324	.00145	.00074	.00007	.00130
%RSD	364.81	.41002	320.05	80.159	20.271	13.218	96.223
#1	.00011	.25131	-.01092	.00207	.00450	.00061	.00115
#2	.00019	.25224	.00936	.00024	.00328	.00047	.00016
#3	-.00016	.25018	.01397	.00310	.00316	.00058	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9969.0	60494.	3048.9
Stddev	15.1	129.	13.3
%RSD	.15159	.21283	.43564
#1	9969.3	60641.	3055.8
#2	9983.9	60438.	3033.6
#3	9953.7	60402.	3057.3

Approved: June 27, 2016

Sample Name: L1606122706 Acquired: 6/25/2016 15:21:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.00567	.00083	.00123	.02806	.00015	13.472	-.00038
Stddev	.00250	.00554	.00101	.00202	.00007	.00007	.038	.00019
%RSD	395.00	97.673	121.57	163.43	.25882	47.682	.28032	49.732
#1	.00247	-.00071	.00042	-.00047	.02810	.00007	13.487	-.00023
#2	.00165	.00924	.00199	.00346	.02810	.00021	13.429	-.00032
#3	-.00222	.00849	.00010	.00072	.02797	.00018	13.501	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00061	.00157	.10367	.20316	.00472	8.1185	.10636
Stddev	.00008	.00062	.00064	.01594	.00836	.00156	.1274	.00158
%RSD	8.0012	102.28	40.873	15.374	4.1155	32.981	1.5689	1.4897
#1	.00092	-.00009	.00190	.11049	.21157	.00610	7.9808	.10550
#2	.00107	.00111	.00198	.11507	.19485	.00503	8.2322	.10539
#3	.00104	.00079	.00083	.08546	.20306	.00303	8.1425	.10819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	33.974	.00004	.00429	-.00079	-.00333	.00187	.74797
Stddev	.00043	.239	.00011	.00671	.00165	.00196	.00470	.01610
%RSD	97.916	.70374	251.40	156.52	208.37	58.883	251.58	2.1527
#1	-.00064	33.727	-.00007	.01191	-.00018	-.00196	-.00208	.73053
#2	-.00073	33.993	.00015	-.00074	.00047	-.00558	.00061	.75112
#3	.00005	34.204	.00006	.00169	-.00266	-.00246	.00707	.76226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606122706 Acquired: 6/25/2016 15:21:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.30857**	**.00233**	**-.00259**	**.00019**	**.00158**	**.00089**
Stddev	.00012	.00270	.00311	.00390	.00060	.00013	.00062
%RSD	87.894	.87470	133.51	150.50	319.58	8.2216	69.559
#1	-.00001	.30602	.00364	-.00319	-.00046	.00143	.00122
#2	-.00015	.30828	-.00122	.00157	.00073	.00163	.00127
#3	-.00026	.31139	.00457	-.00615	.00030	.00167	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9924.8**	**59991.**	**2995.5**
Stddev	18.6	172.	10.6
%RSD	.18782	.28732	.35313
#1	9924.0	59808.	2993.5
#2	9943.8	60150.	3007.0
#3	9906.6	60016.	2986.1

Approved: June 27, 2016

Sample Name: L1606127902 Acquired: 6/25/2016 15:25:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00298**	**.77289**	**.00033**	**.00803**	**.01053**	**.00016**	**9.3649**	**-.00023**
Stddev	.00188	.01227	.00104	.00267	.00091	.00007	.0910	.00007
%RSD	63.015	1.5872	311.80	33.213	8.6722	42.111	.97197	32.230
#1	.00105	.75975	.00114	.01109	.01057	.00009	9.3786	-.00026
#2	.00309	.78404	.00069	.00619	.01142	.00023	9.4483	-.00028
#3	.00480	.77489	-.00084	.00682	.00960	.00016	9.2678	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**.00209**	**.00225**	**1.1046**	**.20587**	**.00183**	**3.8329**	**.12468**
Stddev	.00025	.00124	.00151	.0075	.05413	.00323	.0374	.00185
%RSD	36.537	59.143	66.907	.67811	26.294	176.78	.97568	1.4875
#1	.00057	.00084	.00284	1.1048	.18555	.00515	3.8178	.12286
#2	.00096	.00331	.00337	1.1121	.26722	.00166	3.8755	.12657
#3	.00050	.00212	.00054	1.0971	.16483	-.00131	3.8054	.12461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.91553**	**.00104**	**.04284**	**.00087**	**-.00434**	**.00416**	**1.4218**
Stddev	.00049	.02558	.00097	.00374	.00128	.00145	.00383	.0304
%RSD	448.71	2.7944	92.896	8.7405	147.22	33.355	92.023	2.1368
#1	.00043	.88763	.00204	.04714	.00040	-.00289	.00799	1.3901
#2	-.00054	.92105	.00011	.04033	-.00011	-.00435	.00416	1.4246
#3	-.00022	.93790	.00097	.04105	.00232	-.00579	.00033	1.4507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127902 Acquired: 6/25/2016 15:25:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.04596	.00940	.00124	.00257	.00907	.00122
Stddev	.00038	.00038	.00559	.00152	.00046	.00027	.00089
%RSD	147.88	.81748	59.487	122.54	17.946	3.0009	73.195
#1	.00017	.04588	.00305	-.00019	.00219	.00893	.00224
#2	-.00038	.04637	.01155	.00284	.00243	.00890	.00056
#3	-.00056	.04564	.01360	.00108	.00308	.00938	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10039.	61079.	3063.3
Stddev	16.	87.	16.8
%RSD	.15707	.14311	.54820
#1	10022.	60979.	3046.2
#2	10041.	61122.	3064.0
#3	10054.	61137.	3079.8

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 15:29:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41474	10.480	.41122	.51129	1.0445	.05223	10.384
Stddev	.00157	.008	.00187	.00319	.0019	.00016	.024
%RSD	.37799	.07401	.45408	.62455	.18188	.31144	.22798
#1	.41325	10.484	.41182	.51035	1.0465	.05219	10.387
#2	.41461	10.484	.41272	.50866	1.0441	.05241	10.359
#3	.41637	10.471	.40913	.51484	1.0428	.05209	10.407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05244	.20643	.51777	.52807	4.1528	50.626	1.0452
Stddev	.00019	.00026	.00163	.00025	.0357	.257	.0080
%RSD	.36313	.12673	.31564	.04665	.85968	.50669	.76446
#1	.05244	.20669	.51592	.52825	4.1190	50.704	1.0431
#2	.05226	.20644	.51838	.52817	4.1901	50.835	1.0540
#3	.05264	.20617	.51902	.52779	4.1492	50.340	1.0385
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9629	.52245	1.0531	51.247	.52506	10.312	.52216
Stddev	.0274	.00433	.0047	.134	.00127	.013	.00461
%RSD	.27495	.82847	.44799	.26095	.24264	.12919	.88203
#1	9.9944	.51946	1.0578	51.179	.52653	10.320	.51773
#2	9.9492	.52742	1.0532	51.401	.52432	10.296	.52692
#3	9.9451	.52049	1.0484	51.161	.52433	10.319	.52182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 15:29:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2356**	**.41239**	**5.3381**	**1.0346**	**1.0460**	**1.0497**	**.53160**
Stddev	.0017	.00642	.0057	.0013	.0038	.0052	.00142
%RSD	.13528	1.5556	.10675	.12483	.36598	.49394	.26637
#1	1.2362	.41861	5.3408	1.0357	1.0443	1.0445	.53322
#2	1.2337	.40580	5.3420	1.0349	1.0504	1.0497	.53096
#3	1.2369	.41277	5.3316	1.0332	1.0433	1.0549	.53062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0558**	**1.0420**	F **3.0350**
Stddev	.0013	.0007	.0090
%RSD	.12612	.06683	.29605
#1	1.0548	1.0423	3.0277
#2	1.0553	1.0412	3.0451
#3	1.0573	1.0426	3.0323
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9586.8**	**58077.**	**2975.5**
Stddev	6.0	176.	6.3
%RSD	.06238	.30386	.21060
#1	9587.3	57874.	2969.1
#2	9592.5	58193.	2975.6
#3	9580.6	58165.	2981.7

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 15:32:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00002	-.00010	.00491	.00210	.00011	.00565	-.00003
Stddev	.00087	.00719	.00078	.00229	.00030	.00005	.00049	.00029
%RSD	26249.	33697.	808.92	46.626	14.233	46.346	8.5911	909.94
#1	.00025	.00801	-.00086	.00753	.00176	.00017	.00542	-.00000
#2	.00073	-.00593	.00069	.00390	.00223	.00007	.00533	-.00034
#3	-.00097	-.00201	-.00012	.00330	.00231	.00010	.00621	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00011	.00064	.03500	.03424	-.00179	.02594	-.00052
Stddev	.00009	.00046	.00051	.01471	.03973	.00240	.07741	.00156
%RSD	43.655	413.87	80.028	42.019	116.03	134.20	298.41	302.41
#1	.00012	-.00018	.00036	.01804	-.01111	-.00218	.05944	-.00155
#2	.00020	.00064	.00123	.04417	.05092	-.00397	.08095	.00128
#3	.00029	-.00013	.00033	.04280	.06290	.00078	-.06257	-.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00316	.04507	.00037	.00106	.00080	.00374	.00412	.00990
Stddev	.00041	.02068	.00057	.00881	.00149	.00197	.00171	.00085
%RSD	13.022	45.885	154.95	828.64	185.93	52.502	41.416	8.5529
#1	.00281	.06772	-.00005	.00994	-.00040	.00294	.00217	.01067
#2	.00361	.02718	.00102	.00092	.00033	.00230	.00488	.01002
#3	.00306	.04031	.00014	-.00767	.00246	.00598	.00532	.00899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 15:32:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00057**	**.00333**	**-.00225**	**.00169**	**-.00006**	**.00439**
Stddev	.00073	.00051	.00753	.00264	.00040	.00020	.00135
%RSD	152.10	89.662	226.48	117.22	23.766	306.69	30.851
#1	.00129	.00079	-.00329	-.00367	.00165	-.00017	.00283
#2	-.00014	-.00001	.01153	-.00387	.00130	-.00018	.00508
#3	.00029	.00092	.00174	.00079	.00210	.00016	.00526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9759.3**	**59359.**	**3013.9**
Stddev	2.3	121.	1.6
%RSD	.02366	.20394	.05186
#1	9761.6	59292.	3015.4
#2	9759.3	59287.	3013.9
#3	9756.9	59499.	3012.3

Approved: June 27, 2016

Sample Name: L1606127903S Acquired: 6/25/2016 15:36:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01197	1.1036	.01087	.05712	.03304	.00134	9.9729	.00124
Stddev	.00119	.0059	.00187	.00108	.00116	.00008	.0996	.00005
%RSD	9.9297	.53710	17.218	1.8903	3.5218	6.1377	.99838	3.7414
#1	.01115	1.1017	.01246	.05619	.03414	.00126	10.019	.00125
#2	.01142	1.1103	.00881	.05688	.03182	.00135	9.8587	.00119
#3	.01333	1.0989	.01134	.05830	.03317	.00142	10.041	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00560	.01397	.01462	1.0767	1.4208	.02780	4.2261	.14457
Stddev	.00014	.00108	.00214	.0241	.1192	.00407	.0440	.00290
%RSD	2.4102	7.7598	14.602	2.2369	8.3867	14.648	1.0401	2.0070
#1	.00574	.01498	.01254	1.0620	1.3125	.02932	4.2372	.14280
#2	.00559	.01283	.01680	1.0635	1.4014	.02319	4.1777	.14299
#3	.00547	.01411	.01453	1.1045	1.5484	.03090	4.2635	.14792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02152	2.1329	.01322	.29583	.01584	.02588	.00942	1.7458
Stddev	.00098	.0418	.00158	.00727	.00355	.00244	.00136	.0125
%RSD	4.5315	1.9579	11.965	2.4574	22.390	9.4200	14.478	.71438
#1	.02231	2.1343	.01139	.30417	.01767	.02397	.01094	1.7523
#2	.02182	2.0905	.01413	.29245	.01809	.02862	.00829	1.7537
#3	.02043	2.1740	.01413	.29086	.01175	.02503	.00905	1.7314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127903S Acquired: 6/25/2016 15:36:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02137**	**.07160**	**.03468**	**.01383**	**.02654**	**.02985**	**.00242**
Stddev	.00036	.00081	.00438	.00291	.00046	.00010	.00158
%RSD	1.6937	1.1317	12.615	21.070	1.7354	.32151	65.388
#1	.02178	.07099	.02963	.01549	.02613	.02986	.00141
#2	.02110	.07130	.03735	.01047	.02704	.02975	.00424
#3	.02123	.07252	.03706	.01554	.02644	.02994	.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9975.1**	**60274.**	**3041.7**
Stddev	49.0	118.	22.7
%RSD	.49139	.19506	.74582
#1	9940.1	60350.	3061.9
#2	9954.2	60332.	3046.1
#3	10031.	60138.	3017.2

Approved: June 27, 2016

Sample Name: L1606127904SD Acquired: 6/25/2016 15:40:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01103**	**1.1028**	**.01203**	**.05464**	**.03364**	**.00143**	**9.8642**	**.00121**
Stddev	.00186	.0090	.00180	.00231	.00086	.00004	.1305	.00006
%RSD	16.883	.81742	14.963	4.2286	2.5577	2.6326	1.3231	5.3301
#1	.00912	1.0960	.01267	.05217	.03303	.00146	9.7151	.00122
#2	.01113	1.1130	.00999	.05675	.03463	.00143	9.9198	.00114
#3	.01284	1.0994	.01342	.05499	.03327	.00139	9.9577	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00590**	**.01420**	**.01484**	**1.0576**	**1.4598**	**.02493**	**4.2188**	**.14616**
Stddev	.00020	.00048	.00068	.0082	.1286	.00072	.1177	.00241
%RSD	3.3297	3.4140	4.5711	.77893	8.8104	2.9051	2.7895	1.6455
#1	.00602	.01364	.01562	1.0663	1.6059	.02466	4.0843	.14411
#2	.00567	.01444	.01454	1.0499	1.4099	.02439	4.2697	.14557
#3	.00601	.01451	.01437	1.0566	1.3636	.02576	4.3025	.14881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02217**	**2.1040**	**.01418**	**.30006**	**.01556**	**.02408**	**.01453**	**1.7577**
Stddev	.00072	.0376	.00057	.00408	.00448	.00503	.00712	.0151
%RSD	3.2386	1.7891	4.0074	1.3597	28.796	20.896	49.023	.85907
#1	.02294	2.0606	.01353	.29698	.01280	.02854	.02252	1.7414
#2	.02203	2.1275	.01453	.30469	.02073	.02509	.00885	1.7604
#3	.02153	2.1239	.01449	.29851	.01315	.01862	.01221	1.7712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127904SD Acquired: 6/25/2016 15:40:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02276**	**.07116**	**.03577**	**.01268**	**.02759**	**.03003**	**.00230**
Stddev	.00014	.00090	.00737	.00234	.00032	.00029	.00174
%RSD	.61715	1.2587	20.620	18.483	1.1623	.96154	75.576
#1	.02272	.07054	.03703	.01291	.02794	.02969	.00432
#2	.02292	.07076	.02784	.01490	.02752	.03021	.00132
#3	.02264	.07219	.04242	.01023	.02731	.03018	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10006.**	**60810.**	**3063.3**
Stddev	5.	192.	18.4
%RSD	.04992	.31626	.60150
#1	10009.	61010.	3082.6
#2	10009.	60627.	3061.4
#3	10000.	60793.	3045.9

Approved: June 27, 2016

Sample Name: L1606128901 Acquired: 6/25/2016 15:44:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00215	.00687	.00324	.00036	.25940	.00003	8.5369	.00005
Stddev	.00051	.01020	.00141	.00225	.00475	.00006	.1296	.00011
%RSD	23.677	148.57	43.630	628.60	1.8323	170.08	1.5176	227.30
#1	.00216	.01614	.00358	-.00039	.25471	.00001	8.3890	.00017
#2	.00265	.00852	.00169	.00289	.26421	.00010	8.6303	-.00003
#3	.00163	-.00406	.00445	-.00143	.25928	-.00000	8.5913	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00259	.00588	.00175	.08631	.04218	.00151	6.5072	.07542
Stddev	.00040	.00134	.00073	.02244	.04887	.00193	.2142	.00074
%RSD	15.316	22.711	41.571	26.002	115.87	127.81	3.2912	.97595
#1	.00214	.00436	.00096	.06469	.09555	-.00070	6.2873	.07459
#2	.00279	.00683	.00239	.10949	-.00039	.00286	6.5191	.07570
#3	.00285	.00647	.00190	.08474	.03137	.00237	6.7151	.07598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	23.216	.03092	.00614	.00300	-.00111	.00640	.97050
Stddev	.00039	.461	.00078	.00363	.00087	.00404	.00265	.00247
%RSD	280.63	1.9852	2.5231	59.153	29.021	362.80	41.403	.25451
#1	-.00028	22.689	.03110	.00526	.00208	-.00358	.00616	.97332
#2	.00048	23.539	.03160	.01013	.00311	-.00330	.00916	.96949
#3	.00022	23.422	.03007	.00303	.00381	.00355	.00387	.96870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606128901 Acquired: 6/25/2016 15:44:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.16522	-.00360	-.00090	.00125	.00115	.00088
Stddev	.00057	.00251	.00574	.00300	.00085	.00009	.00100
%RSD	111.15	1.5196	159.60	334.58	68.243	8.1341	114.01
#1	-.00005	.16233	-.01006	-.00433	.00031	.00125	.00060
#2	.00108	.16651	.00089	.00117	.00197	.00107	.00199
#3	.00050	.16682	-.00162	.00047	.00148	.00112	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9940.0	60088.	3038.6
Stddev	4.2	150.	44.1
%RSD	.04218	.24912	1.4500
#1	9935.3	60256.	3084.8
#2	9941.7	60040.	2997.0
#3	9943.1	59969.	3034.2

Approved: June 27, 2016

Sample Name: L1606112901 Acquired: 6/25/2016 15:48:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	-.00046	-.00005	-.00065	.00318	.00006	4.1415	-.00016
Stddev	.00197	.00573	.00201	.00160	.00151	.00005	.0124	.00023
%RSD	156.91	1238.2	4274.9	245.00	47.612	81.871	.30015	142.20
#1	.00341	-.00015	-.00215	-.00141	.00362	.00006	4.1534	-.00032
#2	-.00045	.00511	.00185	.00118	.00150	.00012	4.1425	.00010
#3	.00081	-.00635	.00016	-.00173	.00443	.00001	4.1286	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00058	.00066	.05376	.10451	-.00223	.92501	.00486
Stddev	.00022	.00057	.00151	.01103	.06065	.00348	.08081	.00144
%RSD	3258.5	98.481	227.65	20.514	58.030	156.17	8.7365	29.653
#1	-.00025	.00121	.00094	.05934	.12513	.00172	.91232	.00510
#2	.00010	.00039	-.00097	.04105	.03624	-.00357	1.0114	.00331
#3	.00016	.00012	.00201	.06088	.15216	-.00484	.85130	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	3.0376	-.00008	.00578	.00044	-.00230	.00144	.21434
Stddev	.00025	.0744	.00053	.00529	.00227	.00178	.00420	.00577
%RSD	93.741	2.4506	639.89	91.432	509.94	77.275	291.44	2.6916
#1	-.00011	2.9794	.00051	.00238	.00289	-.00166	.00573	.20865
#2	-.00014	3.0119	-.00050	.00310	-.00159	-.00431	-.00267	.21418
#3	-.00056	3.1215	-.00026	.01187	.00003	-.00093	.00126	.22019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112901 Acquired: 6/25/2016 15:48:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.01265**	**.00270**	**.00064**	**.00099**	**.00067**	**.00092**
Stddev	.00055	.00035	.00371	.00238	.00052	.00018	.00051
%RSD	272.21	2.7272	137.50	373.62	52.293	26.328	55.163
#1	-.00083	.01259	.00376	-.00183	.00159	.00059	.00050
#2	.00008	.01234	-.00143	.00082	.00070	.00087	.00077
#3	.00015	.01303	.00576	.00292	.00069	.00054	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9969.3**	**60775.**	**3044.6**
Stddev	21.9	129.	15.2
%RSD	.22015	.21273	.49841
#1	9984.3	60920.	3056.8
#2	9944.1	60732.	3049.4
#3	9979.5	60672.	3027.6

Approved: June 27, 2016

Sample Name: L1606112902 Acquired: 6/25/2016 15:52:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00804	.00035	-.00128	.00288	.00010	2.9594	-.00006
Stddev	.00058	.00641	.00226	.00137	.00187	.00003	.0055	.00010
%RSD	221.07	79.747	653.27	107.46	64.882	33.893	.18419	164.92
#1	.00004	.00818	.00185	.00031	.00398	.00007	2.9654	.00000
#2	.00011	.00156	.00144	-.00200	.00072	.00009	2.9582	-.00001
#3	-.00094	.01439	-.00226	-.00213	.00394	.00014	2.9547	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00045	.00076	.08667	.10793	.00221	.95476	.02200
Stddev	.00021	.00074	.00096	.00189	.05164	.00058	.08086	.00168
%RSD	3252.3	165.35	125.16	2.1842	47.845	26.260	8.4687	7.6363
#1	.00009	.00055	.00166	.08573	.06794	.00282	.86999	.02017
#2	-.00024	-.00034	.00088	.08885	.16623	.00215	.96327	.02346
#3	.00016	.00114	-.00024	.08543	.08961	.00166	1.0310	.02238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	1.4239	.00014	.00542	.00025	-.00059	.00178	.20161
Stddev	.00013	.0489	.00086	.00331	.00120	.00643	.00247	.00182
%RSD	52.086	3.4352	596.95	60.989	470.84	1086.5	138.88	.90303
#1	-.00010	1.4077	-.00013	.00438	-.00113	.00173	.00080	.20089
#2	-.00031	1.4789	-.00055	.00913	.00091	-.00786	-.00005	.20368
#3	-.00033	1.3852	.00110	.00276	.00098	.00435	.00459	.20026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112902 Acquired: 6/25/2016 15:52:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.01066	.00349	-.00281	.00049	.00074	-.00046
Stddev	.00025	.00027	.00348	.00166	.00046	.00011	.00023
%RSD	30.685	2.4916	99.744	59.148	94.747	14.382	50.877
#1	.00087	.01070	.00643	-.00461	.00075	.00069	-.00046
#2	.00056	.01090	.00439	-.00132	-.00005	.00087	-.00023
#3	.00106	.01038	-.00035	-.00252	.00076	.00067	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9989.3	60825.	3066.0
Stddev	18.4	89.	4.0
%RSD	.18402	.14693	.13203
#1	10008.	60870.	3065.9
#2	9971.8	60722.	3062.0
#3	9987.6	60883.	3070.1

Approved: June 27, 2016

Sample Name: L1606112903 Acquired: 6/25/2016 15:56:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**-.00746**	**.00009**	**.00007**	**.00214**	**.00016**	**4.2282**	**-.00031**
Stddev	.00178	.00543	.00185	.00098	.00088	.00001	.1021	.00011
%RSD	518.14	72.757	1962.2	1427.6	41.098	3.6332	2.4147	36.326
#1	-.00212	-.00132	-.00121	.00003	.00116	.00017	4.2310	-.00019
#2	.00143	-.00942	.00221	-.00089	.00287	.00016	4.3288	-.00035
#3	-.00034	-.01164	-.00072	.00107	.00238	.00015	4.1247	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00057**	**-.00029**	**.07902**	**-.03881**	**.00121**	**1.0358**	**.00397**
Stddev	.00063	.00094	.00019	.01076	.01948	.00237	.1206	.00030
%RSD	236.86	166.12	66.025	13.622	50.186	195.96	11.648	7.4974
#1	-.00020	-.00113	-.00052	.06755	-.06059	-.00026	.93657	.00379
#2	.00099	.00052	-.00021	.08890	-.02305	-.00005	1.1701	.00431
#3	.00002	-.00109	-.00016	.08063	-.03281	.00395	1.0007	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**2.1503**	**-.00065**	**.00144**	**.00315**	**-.00171**	**-.00059**	**.27406**
Stddev	.00026	.0349	.00083	.00721	.00266	.00193	.00290	.00085
%RSD	47.062	1.6229	127.58	500.84	84.421	112.70	495.02	.31027
#1	-.00082	2.1700	-.00132	-.00288	.00271	.00020	-.00182	.27322
#2	-.00053	2.1710	.00028	-.00257	.00074	-.00366	.00273	.27492
#3	-.00030	2.1101	-.00091	.00976	.00599	-.00168	-.00267	.27403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112903 Acquired: 6/25/2016 15:56:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.01267	.00761	-.00035	.00044	.00047	.00034
Stddev	.00036	.00010	.00488	.00192	.00076	.00017	.00099
%RSD	75.051	.78508	64.089	556.65	172.53	36.380	290.00
#1	.00045	.01256	.01172	-.00046	-.00009	.00039	-.00046
#2	.00086	.01267	.00891	.00163	.00010	.00066	.00145
#3	.00013	.01276	.00222	-.00221	.00131	.00034	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9986.0	60665.	3026.9
Stddev	20.7	145.	17.8
%RSD	.20708	.23844	.58822
#1	10007.	60770.	3014.6
#2	9984.8	60726.	3018.9
#3	9966.0	60500.	3047.3

Approved: June 27, 2016

Sample Name: L1606112904 Acquired: 6/25/2016 16:00:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00143**	**.00782**	**.00014**	**-.00105**	**.00318**	**.00018**	**2.9065**	**-.00009**
Stddev	.00049	.00478	.00214	.00233	.00102	.00003	.0438	.00019
%RSD	34.335	61.153	1520.7	221.14	32.071	15.659	1.5085	207.21
#1	.00199	.01026	-.00194	.00103	.00202	.00019	2.8571	-.00015
#2	.00122	.00231	.00002	-.00063	.00358	.00019	2.9407	.00012
#3	.00108	.01088	.00233	-.00357	.00394	.00014	2.9218	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.00045**	**.00112**	**.05226**	**.04902**	**.00077**	**.91311**	**.02436**
Stddev	.00068	.00160	.00112	.00414	.07439	.00531	.01971	.00311
%RSD	135.32	357.44	99.972	7.9272	151.77	691.64	2.1590	12.769
#1	.00007	.00219	.00019	.05089	.09310	-.00511	.93142	.02095
#2	.00129	.00012	.00080	.04898	.09083	.00221	.91566	.02510
#3	.00015	-.00096	.00236	.05692	-.03687	.00521	.89224	.02704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**1.3676**	**-.00081**	**.00778**	**.00502**	**-.00289**	**.00478**	**.20680**
Stddev	.00041	.0202	.00063	.00381	.00153	.00221	.00206	.00531
%RSD	176.12	1.4731	77.366	49.002	30.478	76.529	43.075	2.5661
#1	-.00056	1.3492	-.00140	.01136	.00503	-.00266	.00633	.20082
#2	-.00037	1.3644	-.00015	.00819	.00655	-.00520	.00556	.20859
#3	.00023	1.3891	-.00088	.00377	.00348	-.00080	.00244	.21097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112904 Acquired: 6/25/2016 16:00:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.01047	.00111	-.00019	.00078	.00080	-.00006
Stddev	.00022	.00018	.00665	.00270	.00041	.00022	.00073
%RSD	116.67	1.7478	597.28	1390.3	52.913	27.125	1123.9
#1	.00044	.01026	.00785	.00028	.00121	.00056	.00012
#2	.00008	.01056	.00093	.00224	.00075	.00085	.00055
#3	.00005	.01059	-.00544	-.00310	.00038	.00099	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9957.7	60557.	3030.1
Stddev	15.8	177.	8.6
%RSD	.15901	.29213	.28426
#1	9975.9	60586.	3020.4
#2	9949.3	60718.	3033.0
#3	9947.7	60368.	3036.9

Approved: June 27, 2016

Sample Name: L1606127201 Acquired: 6/25/2016 16:04:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00887	-.00183	.00197	.00056	.00010	.95406	-.00003
Stddev	.00091	.01117	.00052	.00188	.00043	.00011	.05017	.00010
%RSD	325.46	125.87	28.528	95.488	77.565	107.58	5.2586	289.02
#1	.00022	-.02176	-.00218	.00027	.00085	.00010	.90480	.00002
#2	.00122	-.00213	-.00123	.00398	.00076	-.00001	.95228	.00003
#3	-.00060	-.00272	-.00207	.00165	.00006	.00021	1.0051	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00128	.00046	.02799	-.07233	.00197	.21481	.00019
Stddev	.00061	.00045	.00022	.01180	.06961	.00022	.12156	.00200
%RSD	1838.2	35.569	48.564	42.171	96.239	11.394	56.590	1042.3
#1	-.00013	-.00080	.00028	.03989	-.13804	.00212	.34118	.00130
#2	-.00048	-.00170	.00071	.01628	.00061	.00171	.09871	-.00212
#3	.00071	-.00133	.00040	.02780	-.07955	.00208	.20454	.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	6.5927	-.00041	.00599	.00226	-.00187	.00139	.23314
Stddev	.00039	.0563	.00074	.00538	.00192	.00575	.00169	.00199
%RSD	58.032	.85407	180.55	89.733	84.902	308.02	122.23	.85400
#1	-.00069	6.5318	-.00010	.00974	.00276	.00008	.00216	.23308
#2	-.00105	6.6428	-.00125	-.00017	.00014	-.00834	-.00056	.23517
#3	-.00027	6.6034	.00012	.00842	.00389	.00266	.00255	.23118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127201 Acquired: 6/25/2016 16:04:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.00331**	**.00248**	**.00096**	**.00107**	**.00085**	**.00133**
Stddev	.00044	.00056	.00254	.00297	.00078	.00012	.00063
%RSD	192.52	16.945	102.26	309.29	73.373	14.693	47.329
#1	.00017	.00395	.00360	.00246	.00196	.00094	.00062
#2	-.00070	.00291	.00428	.00288	.00074	.00089	.00180
#3	-.00016	.00306	-.00042	-.00246	.00050	.00071	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9972.6**	**60217.**	**3037.7**
Stddev	14.0	83.	14.1
%RSD	.14049	.13799	.46569
#1	9988.5	60309.	3026.4
#2	9967.3	60146.	3033.1
#3	9962.1	60196.	3053.5

Approved: June 27, 2016

Sample Name: L1606127202 Acquired: 6/25/2016 16:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.01060**	**.00084**	**.01591**	**.00482**	**.00013**	**4.8874**	**.00012**
Stddev	.00147	.00116	.00295	.00196	.00045	.00002	.0512	.00031
%RSD	570.05	10.898	350.53	12.303	9.3008	12.581	1.0477	272.03
#1	-.00187	.01061	.00261	.01812	.00447	.00014	4.8299	.00013
#2	.00100	.00945	-.00256	.01523	.00533	.00015	4.9279	.00042
#3	.00009	.01176	.00248	.01439	.00467	.00011	4.9046	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00046**	**.00025**	**.03059**	**.03395**	**.00208**	**2.7028**	**-.00061**
Stddev	.00015	.00087	.00083	.01638	.06594	.00230	.1335	.00149
%RSD	81.112	189.49	337.36	53.558	194.25	110.69	4.9393	243.32
#1	.00003	-.00146	.00109	.04846	-.00968	-.00038	2.8372	-.00173
#2	.00034	.00002	-.00057	.01628	.00172	.00418	2.5702	.00108
#3	.00021	.00006	.00022	.02703	.10981	.00243	2.7010	-.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**13.742**	**-.00085**	**.00227**	**.00279**	**-.00269**	**-.00193**	**.47645**
Stddev	.00056	.155	.00030	.00745	.00217	.00177	.00170	.00665
%RSD	217.74	1.1297	35.156	328.49	77.588	65.958	88.159	1.3954
#1	-.00002	13.587	-.00065	-.00435	.00526	-.00088	-.00382	.46927
#2	-.00089	13.898	-.00120	.00082	.00118	-.00276	-.00050	.47768
#3	.00014	13.742	-.00071	.01033	.00194	-.00443	-.00148	.48240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127202 Acquired: 6/25/2016 16:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.05092**	**.00177**	**.00024**	**.00137**	**.00071**	**.00162**
Stddev	.00083	.00100	.00998	.00193	.00052	.00009	.00084
%RSD	474.40	1.9658	565.04	789.52	37.663	12.612	51.686
#1	-.00049	.05003	.00781	-.00019	.00196	.00074	.00252
#2	-.00081	.05200	-.00975	.00235	.00120	.00078	.00148
#3	.00077	.05072	.00724	-.00143	.00097	.00061	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9920.3**	**59957.**	**3053.1**
Stddev	9.3	97.	28.1
%RSD	.09367	.16197	.92019
#1	9910.9	59874.	3056.5
#2	9929.5	60064.	3023.5
#3	9920.6	59932.	3079.4

Approved: June 27, 2016

Sample Name: L1606127901 Acquired: 6/25/2016 16:12:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.23343	-.00035	.00697	.01048	.00010	5.5956	-.00004
Stddev	.00151	.00808	.00093	.00046	.00038	.00003	.0897	.00007
%RSD	191.07	3.4604	268.33	6.6127	3.6255	27.106	1.6038	155.88
#1	-.00012	.24183	.00073	.00738	.01041	.00014	5.5127	-.00007
#2	.00027	.23274	-.00087	.00647	.01090	.00009	5.5834	-.00010
#3	-.00251	.22572	-.00090	.00704	.01015	.00009	5.6909	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00040	.00104	.37949	.02999	.00120	2.2214	.04375
Stddev	.00022	.00063	.00117	.02000	.03448	.00297	.1047	.00042
%RSD	72.888	155.32	112.12	5.2704	114.98	248.44	4.7142	.95613
#1	.00020	.00102	-.00030	.35646	.01685	.00172	2.1668	.04335
#2	.00015	-.00023	.00181	.39248	.06911	.00387	2.1552	.04372
#3	.00056	.00042	.00162	.38953	.00401	-.00200	2.3421	.04419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.40372	.00002	.01800	.00182	-.00229	.00534	.76285
Stddev	.00016	.02832	.00029	.00724	.00294	.00133	.00501	.02556
%RSD	124.97	7.0152	1295.9	40.230	161.43	58.036	93.812	3.3508
#1	-.00031	.38955	.00035	.01067	.00373	-.00090	.01054	.73582
#2	-.00001	.38528	-.00008	.01820	-.00157	-.00355	.00492	.76609
#3	-.00007	.43633	-.00020	.02515	.00330	-.00243	.00055	.78664
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127901 Acquired: 6/25/2016 16:12:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.02802**	**.00639**	**-.00424**	**.00104**	**.00686**	**-.00053**
Stddev	.00059	.00084	.00088	.00033	.00039	.00027	.00162
%RSD	12664.	3.0023	13.821	7.8780	37.381	4.0081	307.76
#1	.00044	.02706	.00703	-.00390	.00138	.00661	.00100
#2	.00022	.02835	.00538	-.00425	.00062	.00681	-.00222
#3	-.00068	.02864	.00675	-.00456	.00114	.00715	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9995.1**	**60569.**	**3072.5**
Stddev	18.8	83.	17.9
%RSD	.18798	.13702	.58354
#1	10017.	60498.	3093.1
#2	9983.0	60660.	3060.2
#3	9985.6	60548.	3064.2

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:16:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41279**	**10.433**	**.40298**	**.50323**	**1.0184**	**.05236**	**10.146**
Stddev	.00062	.023	.00491	.00242	.0037	.00006	.030
%RSD	.14995	.22399	1.2186	.48043	.36729	.12018	.29415
#1	.41231	10.415	.40384	.50055	1.0220	.05229	10.131
#2	.41349	10.459	.39769	.50390	1.0146	.05241	10.126
#3	.41257	10.425	.40740	.50524	1.0186	.05238	10.180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05206**	**.20294**	**.51645**	**.52099**	**4.0952**	**49.051**	**1.0295**
Stddev	.00043	.00065	.00457	.00121	.0025	.142	.0088
%RSD	.83054	.31937	.88415	.23159	.06120	.28862	.85476
#1	.05248	.20360	.51186	.52157	4.0943	49.074	1.0305
#2	.05210	.20291	.52099	.52180	4.0933	48.900	1.0203
#3	.05161	.20230	.51649	.51960	4.0980	49.180	1.0378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7277**	**.51414**	**1.0402**	**49.935**	**.51586**	**10.134**	**.51189**
Stddev	.0462	.00321	.0047	.095	.00165	.031	.00166
%RSD	.47447	.62359	.45388	.19063	.31918	.30495	.32486
#1	9.7465	.51782	1.0451	50.021	.51766	10.168	.51381
#2	9.6751	.51192	1.0398	49.833	.51549	10.123	.51086
#3	9.7615	.51270	1.0357	49.951	.51442	10.109	.51101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:16:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2153**	**.40661**	**5.2188**	**1.0211**	**1.0187**	**1.0271**	**.52415**
Stddev	.0058	.00386	.0120	.0013	.0031	.0069	.00046
%RSD	.47598	.95000	.22957	.12690	.30817	.67428	.08834
#1	1.2162	.40345	5.2255	1.0218	1.0207	1.0286	.52363
#2	1.2206	.41091	5.2258	1.0219	1.0150	1.0195	.52433
#3	1.2091	.40546	5.2049	1.0196	1.0203	1.0331	.52450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0611**	**1.0269**	F **2.9985**
Stddev	.0021	.0010	.0124
%RSD	.19830	.09638	.41405
#1	1.0631	1.0270	3.0047
#2	1.0614	1.0279	2.9842
#3	1.0589	1.0259	3.0065
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9559.6**	**57599.**	**2986.8**
Stddev	4.9	130.	10.5
%RSD	.05148	.22635	.35191
#1	9564.0	57612.	2977.9
#2	9560.6	57462.	2998.4
#3	9554.3	57722.	2984.0

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 16:19:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	.00626	-.00023	.00044	.00278	.00005	-.04464	.00001
Stddev	.00025	.00998	.00075	.00197	.00045	.00006	.01589	.00008
%RSD	13.751	159.28	328.05	451.88	16.156	122.09	35.589	834.92
#1	.00158	.01229	-.00019	.00230	.00236	.00010	-.04122	-.00004
#2	.00190	-.00525	.00050	.00063	.00326	-.00002	-.03074	-.00004
#3	.00208	.01176	-.00099	-.00162	.00274	.00006	-.06195	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00030	.00108	.01891	-.08883	.00028	.04170	-.00007
Stddev	.00014	.00149	.00123	.02463	.04133	.00158	.04172	.00069
%RSD	37.231	490.44	114.38	130.22	46.533	569.52	100.03	937.33
#1	-.00023	.00135	.00225	.04102	-.10527	-.00061	.02819	.00053
#2	-.00043	.00096	-.00021	.02335	-.11941	.00210	.00842	.00008
#3	-.00050	-.00140	.00119	-.00763	-.04180	-.00066	.08850	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00343	.00251	-.00012	.00363	.00401	.00489	.00879	-.00487
Stddev	.00038	.01645	.00050	.00608	.00167	.00193	.00298	.00028
%RSD	11.063	654.49	431.61	167.28	41.713	39.486	33.953	5.7618
#1	.00299	.00408	-.00004	.00277	.00588	.00378	.00970	-.00459
#2	.00370	-.01467	-.00065	-.00196	.00352	.00712	.01122	-.00515
#3	.00359	.01813	.00034	.01010	.00264	.00378	.00546	-.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 16:19:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00057**	**.00214**	**-.00157**	**.00060**	**-.00006**	**.00421**
Stddev	.00055	.00026	.00424	.00416	.00034	.00004	.00038
%RSD	193.42	45.468	198.11	264.68	55.851	78.634	9.1291
#1	-.00056	.00032	.00612	.00235	.00061	-.00008	.00456
#2	-.00063	.00083	-.00232	-.00593	.00093	-.00001	.00426
#3	.00035	.00056	.00262	-.00114	.00026	-.00008	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9751.1**	**59011.**	**2998.0**
Stddev	16.0	92.	16.9
%RSD	.16409	.15669	.56327
#1	9735.8	59057.	2997.7
#2	9767.8	59072.	2981.2
#3	9749.7	58905.	3015.0

Approved: June 27, 2016

Sample Name: L1606127905 Acquired: 6/25/2016 16:23:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00112**	**.42892**	**.00254**	**.00885**	**.00931**	**.00014**	**4.1101**	**-.00014**
Stddev	.00085	.00960	.00110	.00026	.00054	.00008	.0226	.00009
%RSD	76.091	2.2373	43.205	2.9736	5.7541	61.416	.54879	60.631
#1	.00187	.41894	.00336	.00888	.00991	.00015	4.0848	-.00017
#2	.00019	.43809	.00129	.00858	.00890	.00022	4.1178	-.00005
#3	.00131	.42973	.00298	.00910	.00911	.00005	4.1279	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00064**	**.00072**	**.00093**	**.46806**	**-.04215**	**.00375**	**2.3175**	**.01534**
Stddev	.00025	.00122	.00082	.01630	.03381	.00237	.0180	.00171
%RSD	38.393	169.05	88.133	3.4825	80.210	63.236	.77530	11.156
#1	.00092	.00051	.00011	.45372	-.08111	.00533	2.3322	.01684
#2	.00057	-.00038	.00092	.46467	-.02046	.00102	2.2974	.01572
#3	.00044	.00203	.00175	.48579	-.02489	.00491	2.3228	.01348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.79830**	**.00036**	**.03423**	**.00164**	**-.00327**	**.00568**	**1.0453**
Stddev	.00055	.00874	.00054	.00334	.00066	.00436	.00399	.0205
%RSD	130.46	1.0949	148.73	9.7489	39.962	133.66	70.190	1.9601
#1	-.00012	.80324	-.00001	.03061	.00234	-.00815	.00802	1.0252
#2	.00040	.78821	.00099	.03719	.00155	-.00191	.00794	1.0445
#3	.00099	.80344	.00012	.03489	.00104	.00026	.00108	1.0662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127905 Acquired: 6/25/2016 16:23:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.01799	.00482	-.00230	.00189	.01109	.00007
Stddev	.00065	.00037	.00226	.00232	.00074	.00029	.00211
%RSD	715.49	2.0334	47.005	100.92	39.126	2.6113	3180.6
#1	-.00003	.01830	.00310	.00003	.00148	.01082	.00082
#2	.00080	.01809	.00396	-.00232	.00274	.01107	-.00231
#3	-.00049	.01759	.00738	-.00462	.00144	.01140	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9972.5	60381.	3064.6
Stddev	33.3	69.	2.8
%RSD	.33435	.11363	.09242
#1	10010.	60351.	3061.5
#2	9961.5	60333.	3067.1
#3	9946.1	60460.	3065.2

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 16:27:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.03462	.00065	.00821	.00587	.00014	1.4096	-.00013
Stddev	.00034	.00628	.00229	.00098	.00178	.00003	.0346	.00033
%RSD	57.407	18.141	351.58	11.960	30.235	19.203	2.4561	248.47
#1	.00054	.03990	-.00071	.00924	.00790	.00011	1.3926	.00011
#2	.00095	.02767	-.00063	.00729	.00463	.00014	1.4495	-.00000
#3	.00028	.03630	.00329	.00809	.00508	.00016	1.3868	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00001	.00030	.04215	.21418	.00024	.69121	.00161
Stddev	.00012	.00038	.00134	.02269	.07335	.00510	.07378	.00189
%RSD	127.75	2953.4	439.05	53.849	34.250	2116.0	10.674	117.34
#1	.00006	.00044	.00117	.03668	.16871	.00256	.67687	-.00053
#2	-.00001	-.00026	.00097	.06707	.29880	.00377	.77111	.00305
#3	.00022	-.00014	-.00123	.02268	.17502	-.00561	.62565	.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	3.4091	-.00039	.01019	-.00019	-.00195	.00226	.25600
Stddev	.00027	.0299	.00017	.00142	.00263	.00116	.00241	.00788
%RSD	8569.8	.87827	42.602	13.923	1405.5	59.228	106.91	3.0774
#1	.00029	3.3757	-.00048	.01168	-.00018	-.00094	.00166	.24819
#2	-.00005	3.4183	-.00020	.01005	.00244	-.00171	.00492	.25587
#3	-.00025	3.4335	-.00049	.00885	-.00282	-.00321	.00020	.26394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 16:27:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.01395**	**.00070**	**-.00087**	**.00132**	**.00137**	**.00142**
Stddev	.00051	.00044	.00486	.00154	.00026	.00005	.00170
%RSD	118.61	3.1779	695.33	177.20	19.933	3.3203	119.70
#1	-.00063	.01431	.00581	-.00155	.00155	.00135	.00002
#2	.00015	.01345	.00013	-.00194	.00103	.00135	.00093
#3	-.00082	.01408	-.00385	.00089	.00136	.00143	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9913.2**	**60132.**	**3023.4**
Stddev	14.6	83.	23.3
%RSD	.14679	.13818	.77035
#1	9929.6	60151.	3030.8
#2	9901.6	60041.	2997.3
#3	9908.5	60204.	3042.1

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 16:31:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	-.00408	.00026	.00633	.00904	.00015	2.7703	-.00011
Stddev	.00108	.00521	.00166	.00204	.00121	.00009	.0227	.00014
%RSD	68.438	127.59	628.67	32.297	13.379	59.313	.82092	123.10
#1	.00072	-.00923	-.00155	.00429	.00969	.00008	2.7476	-.00002
#2	.00123	.00119	.00169	.00631	.00978	.00025	2.7930	-.00027
#3	.00279	-.00421	.00065	.00838	.00764	.00012	2.7703	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00002	.00060	.02383	.06717	.00040	2.3757	.00083
Stddev	.00028	.00081	.00057	.01240	.09428	.00275	.0633	.00197
%RSD	81.635	5221.9	93.832	52.028	140.36	693.38	2.6650	237.49
#1	.00044	-.00078	.00046	.02298	.16159	-.00259	2.3743	.00224
#2	.00003	-.00000	.00012	.01188	-.02697	.00095	2.4397	.00167
#3	.00055	.00084	.00122	.03663	.06688	.00283	2.3131	-.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	6.0259	-.00040	.00438	.00227	-.00140	.00185	.32995
Stddev	.00024	.0927	.00045	.00883	.00074	.00370	.00550	.00769
%RSD	208.31	1.5391	111.52	201.54	32.728	264.56	298.09	2.3316
#1	.00039	5.9438	-.00070	.01456	.00143	-.00567	.00483	.32126
#2	-.00003	6.1265	.00011	-.00011	.00282	.00058	.00521	.33270
#3	-.00002	6.0074	-.00061	-.00130	.00258	.00089	-.00450	.33589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 16:31:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.01996	.00356	-.00001	.00116	.00095	-.00024
Stddev	.00040	.00029	.00718	.00102	.00055	.00026	.00029
%RSD	136.64	1.4402	201.93	7537.5	47.304	27.165	121.82
#1	-.00006	.02008	.00861	-.00117	.00177	.00075	-.00049
#2	.00022	.02016	-.00466	.00037	.00099	.00086	-.00028
#3	.00074	.01963	.00672	.00076	.00071	.00124	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9925.6	60099.	3031.8
Stddev	7.7	64.	18.1
%RSD	.07799	.10696	.59652
#1	9922.2	60109.	3022.9
#2	9920.2	60157.	3019.9
#3	9934.5	60030.	3052.6

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 16:35:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	.05641	.00050	.00663	.00676	.00016	1.7818	.00015
Stddev	.00049	.00787	.00304	.00311	.00055	.00011	.0479	.00031
%RSD	29.631	13.947	601.42	46.927	8.1582	71.613	2.6886	203.48
#1	.00200	.06510	-.00294	.00991	.00739	.00005	1.7526	.00038
#2	.00109	.05435	.00166	.00372	.00635	.00014	1.8371	-.00020
#3	.00188	.04978	.00279	.00626	.00655	.00027	1.7557	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00048	.00100	.04970	.00137	.00112	1.1341	.00143
Stddev	.00049	.00051	.00115	.01548	.09645	.00218	.0897	.00096
%RSD	745.24	106.17	114.47	31.142	7038.5	195.00	7.9106	67.253
#1	-.00002	.00105	.00223	.06756	-.03266	.00315	1.0361	.00043
#2	-.00057	.00034	.00081	.04145	.11022	-.00118	1.2123	.00235
#3	.00040	.00005	-.00004	.04010	-.07346	.00137	1.1537	.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	5.9717	-.00015	.00950	-.00176	-.00302	.00622	.28058
Stddev	.00014	.0718	.00043	.00093	.00081	.00221	.00277	.00537
%RSD	53.804	1.2031	276.46	9.7789	45.909	73.167	44.558	1.9140
#1	-.00010	5.9074	-.00014	.01003	-.00249	-.00320	.00355	.27441
#2	-.00036	6.0493	-.00058	.01005	-.00089	-.00072	.00603	.28316
#3	-.00034	5.9584	.00027	.00843	-.00189	-.00513	.00908	.28418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 16:35:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.01287	.00136	-.00194	.00110	.00114	.00062
Stddev	.00058	.00017	.00295	.00426	.00072	.00013	.00087
%RSD	762.02	1.3177	217.51	219.83	65.867	11.722	140.33
#1	.00015	.01301	.00162	-.00450	.00182	.00119	.00034
#2	-.00054	.01292	.00417	-.00429	.00110	.00099	-.00008
#3	.00061	.01268	-.00172	.00298	.00038	.00124	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9919.3	60059.	3016.8
Stddev	34.5	56.	13.7
%RSD	.34767	.09285	.45386
#1	9942.2	60062.	3013.8
#2	9936.0	60114.	3004.8
#3	9879.6	60002.	3031.7

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 16:39:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00105**	**.00214**	**.00018**	**.00362**	**.00526**	**.00013**	**1.7820**	**.00006**
Stddev	.00166	.00346	.00084	.00176	.00021	.00005	.0144	.00011
%RSD	158.53	161.68	476.67	48.690	4.0116	41.814	.80931	182.53
#1	.00213	.00451	-.00003	.00223	.00549	.00009	1.7780	.00003
#2	-.00086	-.00183	-.00054	.00560	.00521	.00010	1.7700	-.00003
#3	.00188	.00375	.00110	.00302	.00507	.00019	1.7980	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00030**	**.00081**	**.02568**	**-.04054**	**.00233**	**1.0068**	**.00278**
Stddev	.00009	.00056	.00053	.02210	.04687	.00374	.0618	.00296
%RSD	39.196	184.13	65.165	86.089	115.61	160.62	6.1428	106.56
#1	.00032	.00005	.00046	.05079	-.00224	.00526	1.0696	.00587
#2	.00013	-.00008	.00055	.00916	-.02657	.00361	.94591	-.00003
#3	.00026	.00094	.00141	.01708	-.09281	-.00188	1.0048	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**4.8272**	**.00042**	**.00764**	**.00031**	**-.00602**	**.00252**	**.26699**
Stddev	.00027	.0498	.00058	.00427	.00107	.00140	.00418	.00420
%RSD	7088.8	1.0326	136.65	55.913	346.71	23.202	166.24	1.5735
#1	-.00018	4.7713	.00031	.01044	.00076	-.00742	-.00226	.26233
#2	-.00015	4.8672	-.00009	.00272	.00108	-.00462	.00551	.26815
#3	.00031	4.8430	.00105	.00974	-.00091	-.00602	.00431	.27049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 16:39:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.01171**	**-.00105**	**-.00167**	**.00048**	**.00111**	**-.00010**
Stddev	.00036	.00032	.00211	.00218	.00034	.00004	.00053
%RSD	98.761	2.7498	200.92	130.51	71.305	3.3481	503.34
#1	-.00064	.01138	-.00295	-.00411	.00028	.00107	-.00046
#2	-.00048	.01174	.00122	-.00099	.00029	.00113	.00050
#3	.00004	.01202	-.00143	.00009	.00088	.00113	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9924.7**	**60209.**	**3035.9**
Stddev	21.0	164.	13.4
%RSD	.21110	.27319	.44278
#1	9945.2	60212.	3050.8
#2	9925.5	60043.	3024.7
#3	9903.3	60372.	3032.1

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 16:43:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00211**	**.00219**	**.00055**	**.00586**	**.00711**	**.00018**	**2.2105**	**.00001**
Stddev	.00101	.00795	.00092	.00071	.00025	.00010	.0174	.00025
%RSD	47.839	363.29	167.06	12.119	3.4464	53.942	.78551	4197.7
#1	.00096	-.00697	.00162	.00634	.00685	.00013	2.1935	-.00020
#2	.00251	.00621	-.00001	.00619	.00715	.00012	2.2282	.00029
#3	.00286	.00732	.00005	.00504	.00733	.00030	2.2098	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.00001**	**.00002**	**.02737**	**.01189**	**.00109**	**1.3118**	**.00125**
Stddev	.00029	.00051	.00146	.02301	.05921	.00366	.0639	.00239
%RSD	827.06	7244.7	6104.0	84.080	497.84	335.35	4.8727	191.19
#1	.00035	.00040	.00134	.00788	.02968	-.00236	1.3142	.00227
#2	-.00003	.00015	.00027	.02147	.06017	.00070	1.3745	.00297
#3	-.00022	-.00058	-.00154	.05276	-.05417	.00493	1.2467	-.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**6.1621**	**.00034**	**.00603**	**.00215**	**-.00121**	**.00114**	**.31741**
Stddev	.00059	.0852	.00146	.00590	.00148	.00098	.00444	.00674
%RSD	252.32	1.3824	433.95	97.933	68.608	80.696	390.40	2.1227
#1	-.00086	6.0786	-.00133	.00455	.00384	-.00161	.00564	.31056
#2	-.00015	6.2489	.00098	.00101	.00153	-.00010	.00100	.31765
#3	.00031	6.1588	.00136	.01253	.00108	-.00192	-.00323	.32403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 16:43:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.01487**	**-.00053**	**-.00166**	**.00081**	**.00090**	**.00078**
Stddev	.00083	.00056	.00515	.00250	.00073	.00004	.00134
%RSD	533.32	3.7472	973.66	150.50	89.693	4.1812	172.14
#1	-.00110	.01433	.00470	-.00448	.00103	.00087	.00219
#2	.00015	.01545	-.00069	-.00074	.00000	.00094	.00064
#3	.00048	.01482	-.00560	.00025	.00141	.00089	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9886.5**	**59788.**	**3007.6**
Stddev	13.0	185.	33.5
%RSD	.13157	.30931	1.1137
#1	9901.4	60001.	3037.0
#2	9880.8	59677.	2971.1
#3	9877.4	59685.	3014.8

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 16:47:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00056	-.00040	.08474	.00202	.00013	25.077	-.00002
Stddev	.00048	.01146	.00100	.00137	.00093	.00006	.183	.00004
%RSD	125.93	2038.5	249.32	1.6179	46.237	47.434	.73077	179.25
#1	-.00014	.00766	-.00156	.08632	.00308	.00006	25.288	-.00005
#2	.00079	.00669	.00017	.08409	.00131	.00017	24.966	-.00003
#3	.00048	-.01266	.00019	.08382	.00167	.00016	24.976	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00049	.00090	.03824	.13932	.00586	5.7156	.01284
Stddev	.00012	.00049	.00033	.01141	.04539	.00340	.0899	.00260
%RSD	49.754	99.993	36.739	29.841	32.583	57.965	1.5726	20.218
#1	.00011	-.00085	.00123	.04902	.09367	.00206	5.7030	.01056
#2	.00028	-.00069	.00089	.02629	.18446	.00861	5.6327	.01230
#3	.00036	.00007	.00057	.03940	.13984	.00691	5.8112	.01567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	48.626	-.00075	.01117	.00114	-.00491	.00349	.27480
Stddev	.00026	.111	.00066	.00745	.00133	.00248	.00272	.00312
%RSD	52.573	.22800	87.964	66.704	116.26	50.491	77.811	1.1358
#1	.00024	48.499	-.00062	.01513	.00176	-.00250	.00652	.27222
#2	.00075	48.707	-.00147	.01582	.00206	-.00745	.00269	.27392
#3	.00048	48.670	-.00016	.00258	-.00038	-.00478	.00127	.27827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 16:47:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.45176	-.00366	.00143	.00149	.00078	.00089
Stddev	.00028	.00268	.00362	.00047	.00058	.00004	.00106
%RSD	304.19	.59263	98.732	33.094	39.124	5.2122	119.26
#1	.00040	.44867	-.00000	.00088	.00209	.00083	-.00013
#2	-.00012	.45326	-.00375	.00168	.00093	.00076	.00081
#3	-.00001	.45335	-.00723	.00172	.00145	.00075	.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9797.1	59243.	3012.9
Stddev	17.5	107.	17.7
%RSD	.17826	.18036	.58631
#1	9776.9	59361.	2997.1
#2	9806.9	59214.	3009.7
#3	9807.4	59153.	3032.0

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 16:51:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-~~04 WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01309**	**.25824**	**.01110**	**.13590**	**.02825**	**.00141**	**24.615**	**.00126**
Stddev	.00068	.00760	.00152	.00169	.00035	.00008	.204	.00013
%RSD	5.1924	2.9441	13.682	1.2425	1.2428	5.6800	.82995	10.655
#1	.01329	.24951	.01277	.13422	.02816	.00148	24.549	.00132
#2	.01365	.26341	.01072	.13589	.02864	.00133	24.844	.00111
#3	.01234	.26179	.00981	.13760	.02795	.00143	24.452	.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00516**	**.01347**	**.01556**	**.12663**	**1.3534**	**.03179**	**5.7750**	**.02544**
Stddev	.00029	.00054	.00043	.02761	.0228	.00410	.0699	.00285
%RSD	5.6307	4.0382	2.7758	21.808	1.6862	12.889	1.2101	11.189
#1	.00539	.01407	.01514	.12414	1.3303	.03536	5.8428	.02774
#2	.00525	.01301	.01552	.15541	1.3541	.02732	5.7789	.02226
#3	.00483	.01334	.01600	.10034	1.3759	.03267	5.7032	.02633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02479**	**48.072**	**.01332**	**.27819**	**.01575**	**.03066**	**.01661**	**.41681**
Stddev	.00011	.553	.00070	.01153	.00513	.00307	.00921	.00803
%RSD	.43243	1.1513	5.2238	4.1456	32.553	10.027	55.466	1.9271
#1	.02491	47.545	.01404	.27355	.01630	.02789	.02173	.40846
#2	.02475	48.649	.01266	.26969	.02058	.03397	.02212	.41747
#3	.02470	48.023	.01326	.29132	.01037	.03013	.00597	.42449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 16:51:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-04~~ WG573707-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02366**	**.45706**	**.02085**	**.01353**	**.02750**	**.02826**	**.00274**
Stddev	.00062	.00423	.00301	.00109	.00044	.00035	.00077
%RSD	2.6070	.92537	14.446	8.0746	1.5967	1.2498	28.151
#1	.02338	.45248	.01904	.01478	.02755	.02786	.00198
#2	.02436	.46082	.01917	.01306	.02704	.02846	.00352
#3	.02323	.45789	.02432	.01275	.02792	.02848	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9814.2**	**59172.**	**3008.6**
Stddev	14.0	133.	22.5
%RSD	.14277	.22528	.74717
#1	9829.8	59323.	3030.6
#2	9810.3	59073.	2985.6
#3	9802.6	59119.	3009.6

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 16:54:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-05~~ WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01239	.28748	.01145	.14150	.02764	.00148	24.958	.00130
Stddev	.00114	.00888	.00065	.00093	.00147	.00009	.077	.00038
%RSD	9.2124	3.0872	5.6507	.65421	5.3298	6.1781	.30772	29.306
#1	.01125	.28330	.01179	.14053	.02888	.00144	25.006	.00087
#2	.01353	.28146	.01070	.14159	.02802	.00141	24.999	.00161
#3	.01238	.29767	.01185	.14238	.02601	.00158	24.870	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00611	.01431	.01527	.13086	1.3857	.03280	5.7817	.02287
Stddev	.00054	.00136	.00145	.01260	.0370	.00239	.0561	.00299
%RSD	8.8509	9.4861	9.4751	9.6283	2.6697	7.2716	.97114	13.075
#1	.00671	.01585	.01436	.14435	1.3780	.03556	5.7473	.02433
#2	.00566	.01329	.01452	.11939	1.4259	.03138	5.8465	.01943
#3	.00597	.01379	.01694	.12885	1.3532	.03147	5.7513	.02484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02737	48.881	.01504	.29126	.01658	.02795	.01955	.43672
Stddev	.00021	.600	.00152	.00741	.00249	.00243	.00943	.00693
%RSD	.75532	1.2279	10.076	2.5426	15.013	8.6768	48.242	1.5861
#1	.02720	48.195	.01331	.29382	.01763	.03060	.01049	.42891
#2	.02732	49.311	.01567	.29705	.01373	.02742	.02931	.43914
#3	.02760	49.136	.01613	.28292	.01836	.02584	.01885	.44211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 16:54:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-05~~ WG573707-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02590**	**.47018**	**.02569**	**.01379**	**.02893**	**.02996**	**.00113**
Stddev	.00080	.00475	.00439	.00029	.00110	.00076	.00027
%RSD	3.0868	1.0106	17.097	2.0910	3.8168	2.5433	23.745
#1	.02499	.46471	.02819	.01349	.02776	.02918	.00138
#2	.02647	.47252	.02061	.01406	.02908	.03000	.00115
#3	.02625	.47331	.02825	.01382	.02996	.03071	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9727.4**	**58906.**	**3022.7**
Stddev	40.6	23.	25.7
%RSD	.41767	.03969	.84864
#1	9765.9	58911.	3039.9
#2	9731.2	58926.	2993.2
#3	9685.0	58880.	3035.0

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:58:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41361	10.445	.40516	.50612	1.0259	.05224	10.203
Stddev	.00260	.021	.00144	.00287	.0033	.00020	.046
%RSD	.62922	.20256	.35469	.56757	.31739	.38953	.44884
#1	.41655	10.462	.40524	.50908	1.0271	.05242	10.224
#2	.41159	10.421	.40656	.50592	1.0284	.05202	10.235
#3	.41269	10.451	.40369	.50335	1.0222	.05229	10.150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05215	.20471	.51698	.52477	4.0648	49.423	1.0320
Stddev	.00013	.00021	.00148	.00103	.0369	.189	.0006
%RSD	.23994	.10391	.28587	.19687	.90838	.38306	.06170
#1	.05201	.20470	.51640	.52461	4.1007	49.428	1.0316
#2	.05218	.20450	.51865	.52588	4.0269	49.610	1.0327
#3	.05226	.20492	.51587	.52383	4.0668	49.231	1.0316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8590	.51551	1.0404	50.331	.51945	10.229	.51430
Stddev	.0965	.00144	.0039	.173	.00106	.010	.00570
%RSD	.97927	.27876	.37864	.34422	.20472	.09385	1.1081
#1	9.9705	.51433	1.0396	50.428	.51822	10.232	.51032
#2	9.8060	.51711	1.0369	50.435	.52013	10.218	.51175
#3	9.8006	.51508	1.0447	50.131	.51999	10.236	.52083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:58:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2288**	**.41352**	**5.2624**	**1.0315**	**1.0269**	**1.0279**	**.53017**
Stddev	.0104	.00168	.0015	.0026	.0016	.0023	.00514
%RSD	.84208	.40618	.02811	.25583	.15527	.22255	.96993
#1	1.2288	.41198	5.2628	1.0285	1.0283	1.0298	.53564
#2	1.2391	.41326	5.2608	1.0336	1.0273	1.0286	.52543
#3	1.2184	.41531	5.2637	1.0323	1.0252	1.0254	.52943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0564**	**1.0308**	F **3.0180**
Stddev	.0015	.0001	.0119
%RSD	.14240	.01349	.39369
#1	1.0580	1.0307	3.0121
#2	1.0561	1.0310	3.0317
#3	1.0550	1.0308	3.0102
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9528.1**	**57486.**	**2960.8**
Stddev	9.3	201.	17.3
%RSD	.09776	.34979	.58425
#1	9517.6	57273.	2962.9
#2	9535.3	57514.	2942.6
#3	9531.5	57672.	2977.0

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:02:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00226**	**.00067**	**.00055**	**.00185**	**.00013**	**-.07167**	**-.00014**
Stddev	.00085	.00279	.00119	.00264	.00042	.00005	.02175	.00033
%RSD	189.88	123.24	177.00	483.17	22.573	35.869	30.346	234.73
#1	.00019	-.00053	.00152	-.00019	.00233	.00018	-.09322	-.00050
#2	-.00141	.00505	-.00069	-.00165	.00153	.00012	-.04973	.00014
#3	-.00012	.00226	.00119	.00348	.00171	.00009	-.07206	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00057**	**.00076**	**.03056**	**-.09613**	**.00228**	**-.13259**	**.00051**
Stddev	.00039	.00056	.00130	.01338	.02053	.00471	.02062	.00136
%RSD	1720.9	98.019	170.60	43.800	21.361	206.77	15.553	268.18
#1	.00020	.00017	-.00074	.01806	-.09726	-.00131	-.14855	-.00092
#2	.00020	.00121	.00148	.02892	-.07505	.00054	-.10931	.00179
#3	-.00047	.00034	.00155	.04468	-.11607	.00761	-.13993	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00325**	**.04047**	**-.00081**	**.00150**	**.00148**	**.00530**	**.00256**	**-.00673**
Stddev	.00022	.01175	.00096	.00183	.00289	.00260	.00237	.00167
%RSD	6.7467	29.033	119.00	121.89	195.62	48.929	92.639	24.783
#1	.00325	.05342	-.00016	.00278	.00470	.00570	.00309	-.00596
#2	.00303	.03049	-.00036	.00231	.00063	.00768	-.00003	-.00558
#3	.00347	.03751	-.00192	-.00059	-.00090	.00253	.00461	-.00864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:02:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00044**	**.00426**	**-.00209**	**.00094**	**.00001**	**.00353**
Stddev	.00052	.00045	.00463	.00321	.00096	.00021	.00070
%RSD	128.76	102.93	108.80	153.83	102.68	1611.6	19.702
#1	.00048	.00069	.00959	-.00418	.00024	-.00012	.00320
#2	.00089	.00071	.00120	.00161	.00204	-.00009	.00306
#3	-.00015	-.00008	.00198	-.00369	.00053	.00025	.00433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9729.2**	**58924.**	**2982.2**
Stddev	14.1	124.	20.8
%RSD	.14444	.21107	.69802
#1	9725.0	58912.	2962.2
#2	9744.9	58806.	3003.8
#3	9717.8	59054.	2980.7

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 17:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.00180	.00125	.01161	.01032	.00011	2.3136	-.00007
Stddev	.00230	.00043	.00160	.00137	.00099	.00007	.0269	.00019
%RSD	694.54	23.757	128.16	11.776	9.5715	61.393	1.1630	281.96
#1	.00225	.00218	.00194	.01272	.00925	.00003	2.3397	.00009
#2	-.00214	.00134	.00239	.01008	.01120	.00016	2.2860	-.00001
#3	-.00111	.00188	-.00058	.01203	.01051	.00015	2.3151	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00014	-.00018	.02935	.09569	-.00047	1.4383	.08572
Stddev	.00040	.00048	.00052	.00252	.08702	.00314	.0635	.00277
%RSD	831.42	341.03	289.17	8.5796	90.931	664.03	4.4136	3.2299
#1	.00005	.00069	-.00054	.02667	.18563	.00276	1.4626	.08626
#2	.00029	-.00017	.00042	.03166	.01192	-.00066	1.4861	.08273
#3	-.00048	-.00010	-.00042	.02972	.08953	-.00352	1.3663	.08818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	3.8750	.00064	.00454	.00264	-.00168	.00429	.37174
Stddev	.00028	.0249	.00026	.00324	.00293	.00204	.00272	.00091
%RSD	124.52	.64140	39.830	71.430	111.04	121.37	63.452	.24386
#1	-.00008	3.8959	.00063	.00081	.00037	-.00400	.00736	.37278
#2	.00028	3.8475	.00040	.00665	.00594	-.00087	.00338	.37129
#3	.00048	3.8816	.00091	.00616	.00160	-.00017	.00214	.37115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 17:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.01613**	**.00436**	**.00049**	**-.00004**	**.00087**	**.00142**
Stddev	.00092	.00051	.00120	.00199	.00066	.00012	.00191
%RSD	2230.2	3.1791	27.456	410.68	1766.6	13.339	134.89
#1	.00087	.01607	.00571	.00178	-.00027	.00083	.00247
#2	-.00002	.01565	.00341	-.00181	.00071	.00100	-.00079
#3	-.00097	.01667	.00397	.00149	-.00055	.00078	.00257
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9938.9**	**60110.**	**3041.6**
Stddev	14.3	99.	8.4
%RSD	.14384	.16440	.27454
#1	9922.4	60057.	3050.1
#2	9946.9	60224.	3033.5
#3	9947.4	60049.	3041.2

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 17:10:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	-.00453	-.00033	.00989	.01794	.00013	2.4889	.00011
Stddev	.00144	.01600	.00099	.00264	.00078	.00009	.0280	.00014
%RSD	216.56	353.18	295.78	26.673	4.3403	71.235	1.1261	129.84
#1	.00231	.00655	-.00001	.00702	.01871	.00024	2.4937	.00027
#2	.00001	-.02287	-.00144	.01220	.01715	.00010	2.5143	-.00000
#3	-.00033	.00273	.00045	.01047	.01798	.00006	2.4588	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00044	.00104	.24605	-.07520	-.00217	1.6643	.02363
Stddev	.00022	.00012	.00019	.01179	.12175	.00286	.0624	.00224
%RSD	272.66	27.286	18.718	4.7938	161.89	131.42	3.7522	9.4751
#1	.00027	-.00041	.00090	.23638	.00559	-.00035	1.5996	.02553
#2	.00015	-.00033	.00126	.24256	-.01597	-.00070	1.6689	.02116
#3	-.00017	-.00057	.00095	.25919	-.21524	-.00546	1.7243	.02420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	2.8989	.00016	.00365	.00260	-.00217	.00870	.42450
Stddev	.00065	.0101	.00120	.00396	.00147	.00150	.00507	.00601
%RSD	314.77	.35003	759.93	108.45	56.477	68.876	58.304	1.4160
#1	-.00082	2.8946	-.00099	.00772	.00422	-.00382	.01102	.41775
#2	-.00027	2.9105	.00140	-.00019	.00221	-.00091	.01219	.42650
#3	.00047	2.8917	.00006	.00342	.00137	-.00178	.00288	.42926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 17:10:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.02139	.00454	-.00050	.00021	.00050	.00118
Stddev	.00016	.00022	.00843	.00114	.00027	.00017	.00137
%RSD	41.986	1.0329	185.67	229.51	129.67	34.277	116.06
#1	.00030	.02116	.00016	.00076	.00041	.00055	-.00040
#2	.00027	.02139	.01426	-.00146	.00031	.00031	.00208
#3	.00056	.02161	-.00080	-.00078	-.00010	.00064	.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9945.8	60248.	3055.3
Stddev	9.2	94.	11.4
%RSD	.09217	.15541	.37444
#1	9945.9	60314.	3061.2
#2	9954.9	60289.	3042.1
#3	9936.5	60141.	3062.6

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 17:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	-.00135	-.00104	.00757	.00737	.00014	2.3997	-.00010
Stddev	.00192	.00661	.00046	.00116	.00061	.00003	.0309	.00022
%RSD	96.141	489.89	44.488	15.290	8.2167	21.217	1.2897	218.06
#1	.00406	-.00575	-.00051	.00624	.00716	.00012	2.3659	-.00020
#2	.00025	-.00456	-.00131	.00835	.00689	.00017	2.4268	-.00025
#3	.00170	.00625	-.00131	.00813	.00805	.00012	2.4063	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00044	-.00019	.10432	-.04481	.00004	.91519	.02191
Stddev	.00035	.00082	.00101	.01415	.09851	.00279	.09371	.00121
%RSD	3296.1	188.98	541.26	13.565	219.83	6329.0	10.240	5.5295
#1	-.00033	.00027	.00027	.10406	-.13456	.00163	.99135	.02326
#2	-.00007	-.00023	-.00134	.09030	-.06048	.00168	.94369	.02093
#3	.00037	-.00134	.00052	.11860	.06059	-.00317	.81054	.02153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	2.4900	.00017	.00956	.00115	-.00111	.00305	.32330
Stddev	.00005	.0408	.00057	.00296	.00162	.00041	.00349	.00479
%RSD	56.574	1.6398	345.24	30.912	140.85	37.279	114.64	1.4819
#1	-.00011	2.4429	.00078	.00752	.00187	-.00066	-.00055	.31801
#2	-.00013	2.5161	.00008	.00822	-.00070	-.00119	.00642	.32454
#3	-.00003	2.5109	-.00036	.01295	.00229	-.00148	.00327	.32735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 17:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.01387**	**.00305**	**-.00065**	**.00052**	**.00084**	**.00071**
Stddev	.00081	.00016	.00789	.00174	.00073	.00004	.00140
%RSD	953.07	1.1448	258.94	265.86	139.13	5.0666	198.28
#1	-.00013	.01403	.00198	-.00023	.00032	.00082	.00133
#2	-.00088	.01386	-.00426	.00083	-.00008	.00082	.00169
#3	.00075	.01371	.01142	-.00257	.00133	.00089	-.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9910.7**	**60184.**	**3019.4**
Stddev	10.3	175.	9.0
%RSD	.10381	.29035	.29953
#1	9910.7	60334.	3026.1
#2	9921.0	60225.	3023.1
#3	9900.4	59992.	3009.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 17:18:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41531**	**10.447**	**.40916**	**.50533**	**1.0238**	**.05217**	**10.225**
Stddev	.00091	.032	.00132	.00054	.0034	.00011	.030
%RSD	.21998	.31066	.32348	.10618	.32870	.20293	.29201
#1	.41613	10.474	.41061	.50566	1.0229	.05229	10.191
#2	.41432	10.411	.40886	.50561	1.0276	.05213	10.247
#3	.41546	10.455	.40801	.50471	1.0211	.05209	10.235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05225**	**.20370**	**.51712**	**.52549**	**4.0444**	**49.392**	**1.0301**
Stddev	.00031	.00034	.00175	.00197	.0184	.117	.0048
%RSD	.59442	.16603	.33927	.37570	.45604	.23752	.46659
#1	.05229	.20396	.51906	.52418	4.0394	49.465	1.0330
#2	.05254	.20382	.51666	.52776	4.0648	49.455	1.0327
#3	.05192	.20332	.51564	.52452	4.0290	49.257	1.0245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7951**	**.51327**	**1.0423**	**50.236**	**.51912**	**10.208**	**.51997**
Stddev	.0472	.00504	.0084	.169	.00170	.017	.00372
%RSD	.48165	.98200	.80990	.33677	.32826	.16636	.71476
#1	9.7523	.51223	1.0511	50.262	.52046	10.219	.52035
#2	9.7875	.51875	1.0343	50.391	.51968	10.189	.51607
#3	9.8457	.50883	1.0415	50.056	.51720	10.217	.52348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 17:18:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2238**	**.40709**	**5.2468**	**1.0260**	**1.0230**	**1.0304**	**.52875**
Stddev	.0084	.00511	.0098	.0012	.0023	.0127	.00327
%RSD	.68659	1.2545	.18586	.11540	.22459	1.2311	.61859
#1	1.2260	.40344	5.2580	1.0271	1.0231	1.0165	.53252
#2	1.2308	.40491	5.2428	1.0262	1.0252	1.0415	.52673
#3	1.2145	.41292	5.2398	1.0248	1.0206	1.0331	.52699
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0570**	**1.0310**	F **3.0075**
Stddev	.0056	.0001	.0207
%RSD	.53103	.00939	.68856
#1	1.0633	1.0311	3.0004
#2	1.0553	1.0309	3.0308
#3	1.0525	1.0310	2.9913
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9557.2**	**57623.**	**2979.5**
Stddev	9.7	193.	16.3
%RSD	.10109	.33465	.54600
#1	9546.7	57405.	2979.8
#2	9565.7	57771.	2963.0
#3	9559.4	57693.	2995.6

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:21:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00563**	**.00200**	**-.00100**	**.00189**	**.00009**	**-.01127**	**-.00004**
Stddev	.00104	.00334	.00233	.00184	.00120	.00004	.03123	.00010
%RSD	1246.5	59.297	116.54	184.11	63.245	40.940	277.20	226.69
#1	-.00074	-.00335	.00466	-.00138	.00302	.00011	-.03377	.00004
#2	-.00027	-.00407	.00108	-.00263	.00202	.00005	.02439	-.00015
#3	.00126	-.00946	.00027	.00100	.00064	.00010	-.02442	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00048**	**.00089**	**.00955**	**-.03243**	**.00071**	**-.01124**	**-.00013**
Stddev	.00017	.00075	.00043	.01226	.03763	.00268	.07316	.00129
%RSD	103.61	157.05	48.720	128.38	116.03	378.57	650.98	975.30
#1	.00002	.00095	.00059	-.00410	-.06003	-.00175	-.02665	-.00039
#2	.00035	.00087	.00069	.01962	.01043	.00031	-.07547	-.00128
#3	.00012	-.00039	.00138	.01314	-.04771	.00356	.06840	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00323**	**.02898**	**-.00046**	**.00432**	**.00328**	**.00454**	**.00410**	**-.00425**
Stddev	.00029	.02008	.00095	.00359	.00221	.00123	.00133	.00064
%RSD	9.1168	69.292	208.78	82.910	67.490	26.995	32.528	15.135
#1	.00298	.02490	-.00038	.00845	.00352	.00323	.00275	-.00470
#2	.00356	.01126	-.00144	.00261	.00095	.00566	.00541	-.00351
#3	.00316	.05079	.00046	.00192	.00536	.00474	.00413	-.00454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:21:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00021	.00375	-.00110	.00108	-.00009	.00393
Stddev	.00059	.00011	.00446	.00333	.00027	.00003	.00087
%RSD	86.694	51.296	119.05	302.86	25.045	36.058	22.188
#1	.00135	.00012	.00567	.00135	.00136	-.00006	.00491
#2	.00024	.00018	-.00135	.00024	.00107	-.00012	.00363
#3	.00044	.00033	.00692	-.00489	.00082	-.00008	.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9706.7	59138.	3007.6
Stddev	9.6	122.	14.5
%RSD	.09901	.20648	.48341
#1	9697.1	58997.	2992.2
#2	9716.3	59217.	3009.4
#3	9706.6	59200.	3021.1

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 17:25:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00682	.16326	.00787	.08110	.01015	.00172	.37504	.00080
Stddev	.00230	.01176	.00393	.00058	.00060	.00002	.03274	.00014
%RSD	33.789	7.2031	49.909	.72089	5.8834	1.2548	8.7301	17.457
#1	.00456	.16635	.01239	.08173	.01084	.00173	.33805	.00070
#2	.00916	.17317	.00587	.08058	.00985	.00173	.40031	.00075
#3	.00674	.15026	.00534	.08099	.00976	.00169	.38675	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00446	.00390	.00484	.09497	.71355	.08241	.33888	.00741
Stddev	.00036	.00087	.00066	.01610	.00812	.00379	.00870	.00176
%RSD	8.1660	22.291	13.622	16.951	1.1379	4.5949	2.5673	23.707
#1	.00488	.00490	.00494	.08463	.70937	.08497	.33660	.00920
#2	.00426	.00332	.00413	.08675	.70838	.08419	.34850	.00734
#3	.00424	.00348	.00544	.11352	.72291	.07806	.33155	.00569
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00855	.40833	.01678	.78916	.01199	.08269	.02089	.77549
Stddev	.00007	.02661	.00076	.00972	.00016	.00111	.00270	.00482
%RSD	.82014	6.5175	4.5074	1.2317	1.3733	1.3390	12.938	.62171
#1	.00856	.42291	.01686	.80033	.01215	.08397	.01985	.78057
#2	.00847	.42447	.01749	.78261	.01182	.08216	.01886	.77494
#3	.00861	.37762	.01598	.78454	.01200	.08195	.02396	.77097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 17:25:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40481	.04214	.02257	.15413	.00994	.01699	.13476
Stddev	.00262	.00003	.00404	.00144	.00108	.00007	.00396
%RSD	.64734	.07891	17.895	.93373	10.832	.40613	2.9378
#1	.40763	.04217	.02259	.15502	.01117	.01705	.13268
#2	.40435	.04210	.02661	.15491	.00942	.01692	.13226
#3	.40245	.04214	.01853	.15247	.00922	.01700	.13932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9757.6	59331.	3007.6
Stddev	3.7	156.	34.2
%RSD	.03744	.26375	1.1357
#1	9754.3	59400.	3008.1
#2	9757.0	59152.	3041.5
#3	9761.5	59441.	2973.2

Approved: June 27, 2016

Sample Name: PBW Y5 Acquired: 6/25/2016 17:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	.00116	-.00112	-.00084	.00120	.00011	-.01961	-.00006
Stddev	.00045	.01041	.00198	.00240	.00080	.00010	.05200	.00016
%RSD	24.231	897.41	176.31	284.10	67.234	89.198	265.17	288.76
#1	.00153	-.00604	-.00020	.00070	.00046	.00020	.01383	-.00024
#2	.00236	-.00358	.00023	-.00360	.00107	.00014	-.07952	.00007
#3	.00166	.01310	-.00339	.00037	.00206	.00000	.00686	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00018	.00105	.03412	-.07407	.00236	.02694	.00162
Stddev	.00024	.00064	.00070	.02542	.08098	.00211	.02742	.00224
%RSD	248.33	362.92	67.168	74.514	109.32	89.477	101.81	137.94
#1	.00030	-.00083	.00024	.00498	-.16192	.00417	.01237	.00092
#2	.00016	-.00014	.00146	.05181	-.05788	.00285	.00987	.00413
#3	-.00017	.00044	.00145	.04557	-.00242	.00004	.05857	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.01025	-.00077	.00507	.00386	-.00192	-.00109	.00437
Stddev	.00004	.01479	.00185	.00580	.00053	.00084	.00245	.00068
%RSD	28.058	144.27	239.74	114.27	13.817	43.798	224.68	15.497
#1	-.00010	.02026	-.00256	.00797	.00348	-.00273	.00112	.00408
#2	-.00015	-.00674	.00113	.00885	.00447	-.00198	-.00067	.00389
#3	-.00017	.01724	-.00088	-.00160	.00363	-.00105	-.00372	.00515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW Y5 Acquired: 6/25/2016 17:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00044	.00538	-.00184	.00071	.00062	.00198
Stddev	.00057	.00040	.00350	.00250	.00039	.00016	.00115
%RSD	73.146	89.773	65.128	135.94	54.397	26.345	58.223
#1	.00143	.00035	.00942	-.00427	.00062	.00079	.00279
#2	.00040	.00088	.00331	.00073	.00114	.00048	.00066
#3	.00049	.00010	.00340	-.00198	.00038	.00058	.00249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9880.3	60109.	3027.1
Stddev	31.5	73.	6.6
%RSD	.31885	.12179	.21761
#1	9847.3	60149.	3030.6
#2	9910.1	60154.	3019.5
#3	9883.5	60025.	3031.2

Approved: June 27, 2016

Sample Name: LCSW Y5 Acquired: 6/25/2016 17:33:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18967**	**4.7620**	**.18828**	**.90013**	**.47555**	**.02395**	**4.7950**	**.02373**
Stddev	.00250	.0081	.00104	.00471	.00273	.00006	.0213	.00018
%RSD	1.3192	.17078	.55148	.52284	.57347	.24848	.44480	.74408
#1	.18907	4.7578	.18718	.89893	.47827	.02388	4.7819	.02392
#2	.19242	4.7714	.18841	.90532	.47282	.02399	4.8196	.02370
#3	.18753	4.7569	.18924	.89614	.47557	.02397	4.7835	.02357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09489**	**.23803**	**.24292**	**1.9123**	**22.817**	**.48875**	**4.5669**	**.24181**
Stddev	.00039	.00120	.00156	.0298	.036	.00284	.0465	.00007
%RSD	.41346	.50457	.64104	1.5597	.15629	.58110	1.0173	.02751
#1	.09520	.23794	.24291	1.9317	22.780	.48603	4.5750	.24188
#2	.09501	.23927	.24447	1.8779	22.852	.49170	4.5170	.24174
#3	.09445	.23687	.24136	1.9272	22.818	.48851	4.6088	.24180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49027**	**23.490**	**.24091**	**4.5553**	**.24063**	**.56646**	**.18382**	**2.3525**
Stddev	.00145	.113	.00040	.0084	.00352	.00190	.00239	.0014
%RSD	.29550	.48187	.16805	.18553	1.4632	.33509	1.2995	.06062
#1	.48963	23.608	.24065	4.5528	.24014	.56531	.18109	2.3541
#2	.49193	23.382	.24137	4.5647	.24437	.56542	.18555	2.3519
#3	.48925	23.480	.24069	4.5484	.23738	.56865	.18482	2.3515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW Y5 Acquired: 6/25/2016 17:33:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47085**	**.48454**	**.47923**	**.24546**	**.48968**	**.47202**	**.01198**
Stddev	.00082	.00070	.00116	.00117	.00078	.00042	.00247
%RSD	.17390	.14504	.24256	.47677	.15993	.08855	20.639
#1	.47170	.48509	.47789	.24652	.48877	.47178	.00945
#2	.47079	.48375	.47984	.24421	.49011	.47251	.01208
#3	.47006	.48479	.47995	.24566	.49015	.47178	.01439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9888.6**	**60001.**	**3090.1**
Stddev	19.1	149.	26.5
%RSD	.19299	.24892	.85667
#1	9894.9	60052.	3063.1
#2	9867.1	59834.	3091.3
#3	9903.7	60119.	3116.0

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 17:37:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	-.00148	.00090	.00227	.00163	.00011	-.00468	.00008
Stddev	.00130	.00490	.00188	.00068	.00037	.00003	.02546	.00022
%RSD	78.305	330.55	208.29	29.974	22.968	25.204	544.18	269.24
#1	.00033	-.00239	.00275	.00286	.00197	.00009	-.03398	.00015
#2	.00173	.00381	-.00100	.00243	.00123	.00014	.01206	.00026
#3	.00293	-.00586	.00096	.00153	.00167	.00010	.00788	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00058	.00129	.04476	.01060	-.00161	-.05710	.00063
Stddev	.00029	.00122	.00029	.02153	.02075	.00622	.06303	.00318
%RSD	276.09	211.55	22.793	48.099	195.81	387.03	110.39	502.59
#1	-.00039	.00184	.00121	.03412	-.00619	.00062	-.09553	.00029
#2	.00018	-.00059	.00161	.06953	.03381	.00319	-.09140	.00397
#3	-.00010	.00048	.00104	.03061	.00418	-.00863	.01564	-.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.05677	-.00011	.00316	.00576	-.00381	.00560	-.00010
Stddev	.00040	.03222	.00050	.00162	.00079	.00329	.00231	.00141
%RSD	72.047	56.761	453.37	51.247	13.705	86.399	41.256	1388.8
#1	.00085	.07680	-.00069	.00292	.00611	-.00013	.00434	-.00092
#2	.00073	.01960	.00014	.00168	.00631	-.00483	.00420	-.00091
#3	.00010	.07391	.00021	.00489	.00485	-.00647	.00827	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 17:37:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00021	-.00396	-.00081	.00112	.00164	.00166
Stddev	.00084	.00011	.00377	.00288	.00053	.00013	.00011
%RSD	1212.1	52.839	95.183	357.63	47.087	8.1028	6.9152
#1	-.00082	.00025	-.00813	-.00413	.00144	.00151	.00159
#2	.00085	.00029	-.00300	.00065	.00141	.00165	.00179
#3	.00018	.00008	-.00077	.00106	.00051	.00177	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10015.	61314.	3090.8
Stddev	16.	177.	23.0
%RSD	.15522	.28891	.74279
#1	10012.	61143.	3064.6
#2	10032.	61303.	3107.1
#3	10001.	61497.	3100.8

Approved: June 27, 2016

Sample Name: L1606098602 Acquired: 6/25/2016 17:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	-.00042	-.00040	.09099	.02315	.00010	31.081	-.00006
Stddev	.00141	.00402	.00168	.00026	.00060	.00002	.292	.00002
%RSD	160.55	951.46	416.45	.28845	2.5949	20.817	.93935	37.551
#1	.00197	.00339	-.00222	.09093	.02306	.00008	31.173	-.00006
#2	-.00072	-.00463	.00109	.09127	.02259	.00012	30.754	-.00004
#3	.00139	-.00003	-.00008	.09076	.02379	.00010	31.315	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00059	.00094	.04555	.98402	.01199	5.7014	.03480
Stddev	.00048	.00016	.00041	.01573	.08850	.00357	.0718	.00212
%RSD	197.55	26.299	43.232	34.544	8.9935	29.756	1.2595	6.0810
#1	.00072	.00042	.00054	.02747	.88485	.01459	5.6202	.03718
#2	-.00024	.00064	.00135	.05303	1.0122	.01345	5.7566	.03314
#3	.00026	.00072	.00092	.05614	1.0550	.00792	5.7274	.03406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	119.95	.00080	.00488	.00205	-.00278	-.00166	3.2347
Stddev	.00007	.78	.00132	.00386	.00179	.00227	.00673	.0109
%RSD	4.5853	.65032	165.26	79.044	87.096	81.844	406.14	.33815
#1	.00137	120.20	.00201	.00062	.00137	-.00037	-.00009	3.2461
#2	.00149	119.07	.00100	.00813	.00409	-.00489	.00415	3.2336
#3	.00140	120.57	-.00061	.00590	.00071	-.00307	-.00903	3.2243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098602 Acquired: 6/25/2016 17:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00169	.54147	-.00161	-.00445	.00062	.00187	.00166
Stddev	.00060	.00457	.00418	.00188	.00027	.00011	.00091
%RSD	35.360	.84355	259.35	42.200	43.191	5.8148	54.635
#1	.00106	.54395	-.00040	-.00269	.00035	.00198	.00205
#2	.00225	.53620	.00182	-.00642	.00063	.00186	.00062
#3	.00175	.54425	-.00626	-.00422	.00089	.00176	.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9793.0	59457.	3063.6
Stddev	12.2	310.	25.9
%RSD	.12488	.52191	.84399
#1	9783.4	59142.	3057.4
#2	9788.8	59467.	3092.0
#3	9806.7	59762.	3041.4

Approved: June 27, 2016

Sample Name: L1606098604 Acquired: 6/25/2016 17:45:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**.00192**	**.00240**	**.01933**	**.01606**	**.00017**	**258.27**
Stddev	.00168	.00663	.00025	.00142	.00064	.00002	.74
%RSD	89.608	344.23	10.527	7.3208	4.0034	12.550	.28551
#1	.00265	-.00052	.00267	.01828	.01569	.00019	258.08
#2	.00303	-.00313	.00217	.01877	.01568	.00016	257.65
#3	-.00005	.00943	.00237	.02094	.01680	.00015	259.09
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.00038**	**.00085**	**.01097**	**.02808**	**1.7243**	**.01739**
Stddev	.00023	.00042	.00027	.00107	.01426	.0758	.00077
%RSD	50.915	110.30	31.401	9.7605	50.795	4.3949	4.4280
#1	.00057	.00083	.00065	.01199	.02723	1.7078	.01656
#2	.00019	.00033	.00115	.00986	.01426	1.6581	.01808
#3	.00061	-.00001	.00075	.01107	.04275	1.8069	.01753
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**67.436**	**1.3917**	**.00099**	**14.380**	**.00387**	**.00116**	**.00177**
Stddev	.211	.0043	.00004	.031	.00051	.00485	.00143
%RSD	.31235	.30797	4.3492	.21337	13.178	419.65	80.619
#1	67.195	1.3899	.00099	14.411	.00414	.00253	.00287
#2	67.533	1.3886	.00103	14.350	.00328	-.00423	.00229
#3	67.581	1.3966	.00095	14.377	.00419	.00517	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098604 Acquired: 6/25/2016 17:45:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**.00146**	**3.7576**	**.00044**	**1.2471**	F **-.03982**	**-.00203**
Stddev	.00495	.00434	.0110	.00062	.0034	.00406	.00082
%RSD	381.66	297.39	.29276	142.20	.26857	10.186	40.503
#1	-.00325	.00313	3.7635	.00113	1.2483	-.04298	-.00122
#2	.00433	.00472	3.7644	.00025	1.2433	-.03524	-.00200
#3	-.00498	-.00347	3.7449	-.00007	1.2496	-.04122	-.00286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00050**	**.03051**	**.00151**
Stddev	.00029	.00016	.00074
%RSD	57.554	.53953	48.929
#1	-.00084	.03044	.00164
#2	-.00033	.03070	.00216
#3	-.00034	.03040	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58897.**	**3044.6**
Stddev	3.8	97.	5.6
%RSD	.03917	.16551	.18408
#1	9614.6	58944.	3043.4
#2	9607.2	58961.	3050.7
#3	9609.7	58785.	3039.7

Approved: June 27, 2016

Sample Name: L1606098606 Acquired: 6/25/2016 17:48:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00223	.00972	-.00038	.01373	.06613	.00026	77.440	.00018
Stddev	.00105	.00309	.00132	.00205	.00021	.00009	.075	.00021
%RSD	47.129	31.833	346.72	14.955	.32162	33.087	.09643	116.74
#1	.00235	.00691	-.00086	.01602	.06623	.00027	77.417	.00042
#2	.00112	.00920	-.00139	.01205	.06589	.00034	77.379	.00001
#3	.00321	.01303	.00111	.01311	.06628	.00017	77.523	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00108	.01311	.03469	1.0666	.00528	22.814	.00226
Stddev	.00015	.00032	.00053	.01962	.0266	.00092	.288	.00095
%RSD	37.987	29.419	4.0055	56.546	2.4929	17.478	1.2638	41.753
#1	.00056	.00082	.01330	.03776	1.0701	.00541	22.650	.00309
#2	.00027	.00143	.01252	.05259	1.0384	.00430	22.645	.00123
#3	.00036	.00097	.01352	.01372	1.0912	.00613	23.147	.00247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	16.230	.00086	.01073	.00099	-.00405	.00160	2.3863
Stddev	.00023	.056	.00046	.00069	.00181	.00317	.00143	.0169
%RSD	59.834	.34372	53.276	6.4188	182.38	78.406	89.367	.70593
#1	.00032	16.197	.00073	.01029	.00246	-.00129	-.00004	2.4028
#2	.00063	16.198	.00137	.01153	-.00103	-.00752	.00258	2.3871
#3	.00019	16.294	.00048	.01038	.00155	-.00333	.00227	2.3691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098606 Acquired: 6/25/2016 17:48:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.39726**	**-.00928**	**-.00135**	**-.00044**	**.03812**	**.00202**
Stddev	.00081	.00077	.00327	.00251	.00044	.00033	.00118
%RSD	1967.6	.19375	35.277	185.96	101.24	.85896	58.324
#1	.00088	.39645	-.00551	-.00111	-.00048	.03844	.00108
#2	-.00002	.39799	-.01103	.00103	.00002	.03814	.00334
#3	-.00074	.39735	-.01131	-.00397	-.00086	.03779	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9875.4**	**60112.**	**3085.9**
Stddev	17.7	60.	4.4
%RSD	.17969	.09972	.14239
#1	9863.6	60084.	3084.9
#2	9866.7	60181.	3090.7
#3	9895.8	60072.	3082.1

Approved: June 27, 2016

Sample Name: L1606098608 Acquired: 6/25/2016 17:52:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00115	.00027	.01585	.03262	.00011	84.217	.00013
Stddev	.00235	.00513	.00111	.00136	.00141	.00004	.314	.00017
%RSD	2475.5	446.86	409.02	8.5842	4.3250	37.715	.37277	125.68
#1	-.00262	.00404	-.00099	.01740	.03376	.00010	84.484	.00019
#2	.00142	-.00477	.00110	.01531	.03104	.00016	84.297	.00026
#3	.00149	.00417	.00071	.01485	.03305	.00008	83.871	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00177	.00567	.03434	1.2401	.01415	23.228	.02727
Stddev	.00046	.00068	.00058	.01787	.0425	.00095	.227	.00106
%RSD	299.90	38.444	10.195	52.028	3.4256	6.6956	.97712	3.8827
#1	-.00049	.00241	.00506	.05413	1.2665	.01352	23.122	.02850
#2	.00037	.00184	.00573	.01939	1.1911	.01369	23.489	.02663
#3	-.00034	.00105	.00621	.02950	1.2628	.01524	23.073	.02669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	12.660	.00033	.00413	.00179	-.00334	-.00002	3.4869
Stddev	.00017	.055	.00044	.00392	.00093	.00378	.00639	.0225
%RSD	23.632	.43231	134.67	94.801	51.837	113.14	36088.	.64396
#1	.00093	12.716	.00084	.00852	.00134	-.00400	-.00400	3.4968
#2	.00069	12.657	.00002	.00099	.00117	-.00675	-.00341	3.5027
#3	.00059	12.607	.00013	.00288	.00285	.00073	.00736	3.4612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608 Acquired: 6/25/2016 17:52:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.83876**	**-.00998**	**-.00331**	**.00001**	**.01681**	**.00058**
Stddev	.00022	.00442	.00442	.00242	.00077	.00018	.00259
%RSD	112.09	.52651	44.282	73.168	6824.2	1.0650	446.63
#1	-.00039	.84240	-.01091	-.00183	-.00011	.01673	-.00103
#2	-.00022	.84004	-.00517	-.00610	-.00069	.01701	.00357
#3	.00004	.83385	-.01387	-.00199	.00083	.01668	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9863.7**	**59966.**	**3069.4**
Stddev	33.8	107.	16.4
%RSD	.34299	.17793	.53396
#1	9879.3	59844.	3052.8
#2	9824.9	60042.	3069.7
#3	9886.9	60012.	3085.6

Approved: June 27, 2016

Sample Name: L1606098608PS Acquired: 6/25/2016 17:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574216-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19012**	**4.7962**	**.18985**	**.92761**	**.50579**	**.02416**	**80.589**	**.02376**
Stddev	.00115	.0181	.00324	.00188	.00153	.00010	.509	.00031
%RSD	.60416	.37710	1.7085	.20237	.30247	.42369	.63122	1.3080
#1	.18881	4.7997	.18690	.92863	.50534	.02415	80.494	.02389
#2	.19096	4.8123	.19332	.92876	.50750	.02427	81.138	.02341
#3	.19058	4.7766	.18933	.92544	.50454	.02406	80.134	.02399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09205**	**.23624**	**.24131**	**1.9065**	**24.291**	**.50517**	**25.434**	**.26103**
Stddev	.00018	.00146	.00130	.0143	.039	.00496	.150	.00626
%RSD	.19260	.61641	.53797	.74911	.16017	.98165	.59175	2.3977
#1	.09210	.23659	.24071	1.9177	24.287	.49968	25.563	.26590
#2	.09186	.23464	.24280	1.9113	24.254	.50647	25.268	.26320
#3	.09221	.23749	.24041	1.8904	24.332	.50934	25.470	.25397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49345**	**34.822**	**.23345**	**4.6884**	**.23609**	**.56850**	**.18268**	**5.5114**
Stddev	.00019	.169	.00142	.0142	.00258	.00539	.00604	.0369
%RSD	.03860	.48533	.60979	.30359	1.0940	.94754	3.3047	.66920
#1	.49323	34.790	.23475	4.6782	.23789	.57472	.18356	5.4689
#2	.49357	35.005	.23367	4.6823	.23725	.56528	.18824	5.5341
#3	.49354	34.671	.23193	4.7047	.23313	.56551	.17626	5.5313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608PS Acquired: 6/25/2016 17:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574216-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47094	1.2232	.47334	.23988	.49331	.47631	.00522
Stddev	.00189	.0075	.00962	.00117	.00125	.00347	.00156
%RSD	.40190	.61543	2.0323	.48785	.25347	.72879	29.825
#1	.47068	1.2227	.46319	.24082	.49476	.47230	.00351
#2	.47295	1.2310	.48233	.23857	.49254	.47818	.00558
#3	.46920	1.2160	.47451	.24025	.49265	.47845	.00657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9831.9	59526.	3075.8
Stddev	15.2	194.	19.0
%RSD	.15421	.32611	.61679
#1	9829.8	59604.	3066.0
#2	9817.9	59305.	3063.8
#3	9848.0	59669.	3097.7

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00260	-.00514	.00187	.00508	.00868	.00012	17.605	-.00015
Stddev	.00156	.01146	.00424	.00200	.00063	.00008	.142	.00010
%RSD	60.035	222.87	226.36	39.430	7.2120	66.284	.80739	66.159
#1	.00437	.00780	.00118	.00739	.00923	.00013	17.451	-.00025
#2	.00143	-.00924	.00642	.00396	.00881	.00020	17.731	-.00007
#3	.00199	-.01399	-.00198	.00389	.00800	.00004	17.633	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00006	.00193	.02399	.21059	-.00038	4.9921	.00509
Stddev	.00017	.00044	.00078	.00583	.02318	.00216	.0797	.00111
%RSD	97.856	772.57	40.443	24.318	11.008	572.98	1.5970	21.792
#1	-.00004	-.00041	.00282	.01859	.23319	.00193	5.0036	.00623
#2	-.00037	.00046	.00138	.03017	.18686	-.00072	4.9072	.00402
#3	-.00011	.00012	.00158	.02319	.21171	-.00234	5.0654	.00500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	2.6677	-.00071	.00513	.00009	-.00286	-.00058	.72991
Stddev	.00017	.0114	.00035	.00552	.00151	.00279	.00302	.00273
%RSD	51.097	.42653	49.400	107.62	1685.9	97.489	522.92	.37384
#1	.00017	2.6710	-.00044	.00122	.00180	.00001	.00149	.72939
#2	.00033	2.6550	-.00058	.01144	-.00102	-.00304	-.00405	.73285
#3	.00051	2.6770	-.00110	.00273	-.00051	-.00555	.00083	.72747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.17684**	**.00226**	**.00019**	**.00052**	**.00413**	**.00011**
Stddev	.00027	.00102	.00232	.00368	.00057	.00014	.00068
%RSD	464.39	.57572	102.44	1951.0	110.67	3.3962	623.50
#1	-.00013	.17748	.00403	.00128	.00008	.00397	.00059
#2	.00024	.17567	-.00036	.00320	.00031	.00420	.00041
#3	-.00028	.17737	.00312	-.00392	.00117	.00423	-.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9896.0**	**60261.**	**3042.3**
Stddev	25.0	81.	28.3
%RSD	.25242	.13391	.92921
#1	9907.7	60289.	3040.8
#2	9913.0	60324.	3071.3
#3	9867.3	60170.	3014.9

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:04:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00175	-.00807	-.00063	-.00078	.00182	.00014	3.3399	-.00019
Stddev	.00147	.00382	.00127	.00273	.00016	.00003	.0946	.00023
%RSD	83.969	47.279	200.74	348.35	8.5330	23.588	2.8330	121.57
#1	.00097	-.00874	.00010	.00038	.00196	.00018	3.2721	-.00045
#2	.00084	-.00396	.00010	.00117	.00166	.00011	3.4480	-.00012
#3	.00344	-.01151	-.00210	-.00390	.00185	.00014	3.2995	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00037	.00107	.01769	-.08284	.00119	.94569	.00052
Stddev	.00047	.00133	.00130	.01702	.09737	.00358	.05932	.00055
%RSD	1445.4	360.33	120.72	96.212	117.53	302.26	6.2728	105.20
#1	.00035	-.00086	.00167	-.00174	-.18470	.00532	.88043	.00057
#2	-.00050	-.00138	-.00041	.02995	-.07314	-.00085	.96028	.00105
#3	.00025	.00113	.00196	.02486	.00931	-.00092	.99635	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.49987	-.00021	.00755	.00303	-.00541	.00850	.13812
Stddev	.00032	.04592	.00020	.00386	.00188	.00314	.00116	.00966
%RSD	265.16	9.1856	96.762	51.054	62.049	58.070	13.660	6.9939
#1	.00001	.44687	-.00020	.01173	.00086	-.00531	.00838	.12921
#2	-.00049	.52761	-.00041	.00680	.00410	-.00232	.00740	.13676
#3	.00011	.52513	-.00001	.00413	.00413	-.00859	.00972	.14839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:04:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**.03350**	**.00349**	**.00073**	**.00046**	**.00106**	**.00161**
Stddev	.00032	.00105	.00672	.00069	.00093	.00001	.00112
%RSD	80.289	3.1425	192.33	93.894	202.19	.93440	69.701
#1	.00063	.03282	.00553	-.00006	-.00031	.00105	.00058
#2	.00051	.03471	.00896	.00114	.00020	.00107	.00146
#3	.00004	.03296	-.00401	.00113	.00149	.00107	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10400.**	**61068.**	**3085.8**
Stddev	302.	416.	38.3
%RSD	2.9005	.68044	1.2414
#1	10744.	61402.	3085.7
#2	10277.	61200.	3047.5
#3	10180.	60603.	3124.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:08:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40600	10.196	.39897	.49353	1.0097	.05111	10.072
Stddev	.00134	.005	.00384	.00145	.0055	.00016	.108
%RSD	.32964	.04609	.96241	.29468	.54041	.30777	1.0683
#1	.40454	10.197	.40224	.49289	1.0058	.05115	10.014
#2	.40717	10.200	.39474	.49519	1.0073	.05125	10.006
#3	.40630	10.191	.39992	.49250	1.0159	.05094	10.196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05085	.19930	.50343	.51248	4.0210	48.769	1.0170
Stddev	.00016	.00069	.00173	.00042	.0444	.141	.0095
%RSD	.31221	.34558	.34304	.08145	1.1049	.29004	.93218
#1	.05072	.20005	.50491	.51259	3.9923	48.842	1.0084
#2	.05079	.19915	.50386	.51282	3.9985	48.605	1.0154
#3	.05103	.19869	.50153	.51201	4.0722	48.858	1.0271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6470	.50568	1.0217	49.589	.50657	9.9463	.50897
Stddev	.0505	.00379	.0050	.266	.00174	.0145	.00224
%RSD	.52402	.74931	.49273	.53683	.34444	.14541	.44016
#1	9.7040	.50521	1.0275	49.574	.50855	9.9602	.50639
#2	9.6294	.50215	1.0196	49.330	.50589	9.9313	.51042
#3	9.6076	.50969	1.0181	49.862	.50527	9.9474	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:08:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1949**	**.39405**	**5.1402**	**1.0022**	**1.0107**	**.99866**	**.51518**
Stddev	.0031	.00179	.0100	.0005	.0053	.01659	.00058
%RSD	.25554	.45308	.19427	.05270	.52786	1.6608	.11222
#1	1.1981	.39492	5.1482	1.0028	1.0100	1.0024	.51475
#2	1.1944	.39525	5.1290	1.0020	1.0058	.98052	.51584
#3	1.1920	.39200	5.1434	1.0018	1.0164	1.0131	.51497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0309**	**1.0070**	F **2.9451**
Stddev	.0008	.0014	.0223
%RSD	.08066	.13880	.75803
#1	1.0316	1.0084	2.9555
#2	1.0300	1.0069	2.9195
#3	1.0311	1.0056	2.9603
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.2**	**58096.**	**2982.6**
Stddev	5.7	114.	17.5
%RSD	.05915	.19560	.58802
#1	9648.4	58223.	2978.9
#2	9644.0	58003.	3001.7
#3	9655.3	58062.	2967.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:11:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.00113**	**.00060**	**-.00134**	**.00269**	**.00016**	**-.00509**	**-.00011**
Stddev	.00447	.01287	.00139	.00141	.00058	.00006	.00999	.00008
%RSD	723.56	1142.0	234.30	105.23	21.456	39.000	196.19	75.399
#1	-.00262	.00580	.00212	.00028	.00233	.00022	-.01646	-.00020
#2	.00450	-.01343	-.00061	-.00230	.00238	.00017	.00228	-.00009
#3	-.00373	.01101	.00028	-.00199	.00335	.00009	-.00109	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00031**	**.00131**	**.01880**	**-.14052**	**-.00173**	**.03086**	**-.00243**
Stddev	.00043	.00144	.00103	.01556	.08453	.00290	.07623	.00189
%RSD	438.61	470.86	78.889	82.745	60.152	168.14	247.00	77.536
#1	.00038	.00014	.00051	.03667	-.04368	.00153	-.05463	-.00186
#2	-.00045	-.00104	.00248	.01148	-.17839	-.00266	.09175	-.00090
#3	-.00022	.00182	.00094	.00826	-.19949	-.00404	.05546	-.00454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00375**	**-.00702**	**.00000**	**.00544**	**-.00002**	**.00180**	**.00158**	**.03715**
Stddev	.00019	.01848	.00030	.00537	.00129	.00320	.00255	.00232
%RSD	5.0585	263.40	8008.1	98.759	6600.5	177.29	161.59	6.2433
#1	.00382	-.02711	-.00030	.01149	.00142	.00145	-.00134	.03895
#2	.00354	-.00319	.00002	.00357	-.00108	.00516	.00266	.03453
#3	.00390	.00925	.00029	.00125	-.00040	-.00120	.00341	.03795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:11:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00036	-.00017	-.00186	.00075	.00012	.00425
Stddev	.00040	.00044	.01020	.00315	.00028	.00007	.00095
%RSD	153.60	122.95	5879.7	169.59	36.989	59.021	22.345
#1	.00000	.00086	.00219	-.00527	.00044	.00006	.00508
#2	.00073	.00017	.00864	-.00126	.00081	.00010	.00321
#3	.00006	.00004	-.01135	.00095	.00098	.00019	.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9372.1	56632.	2874.9
Stddev	24.8	50.	14.1
%RSD	.26420	.08878	.48885
#1	9350.8	56589.	2886.0
#2	9366.2	56619.	2859.1
#3	9399.3	56687.	2879.7

Approved: June 27, 2016

Sample Name: L1606098610 Acquired: 6/25/2016 18:15:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	.00613	.00026	.00622	.01341	.00005	115.37	.00029
Stddev	.00132	.00327	.00219	.00120	.00108	.00003	.56	.00010
%RSD	78.702	53.342	840.89	19.355	8.0675	55.551	.48696	35.866
#1	.00017	.00551	-.00222	.00662	.01310	.00009	115.81	.00019
#2	.00222	.00322	.00107	.00487	.01252	.00003	114.73	.00040
#3	.00265	.00967	.00193	.00717	.01462	.00004	115.55	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00098	.00166	.06083	.38326	.00831	27.726	.01242
Stddev	.00045	.00011	.00061	.01132	.08932	.00154	.200	.00158
%RSD	1035.7	11.515	36.634	18.614	23.306	18.467	.72137	12.708
#1	-.00034	.00088	.00210	.06356	.35599	.00912	27.699	.01068
#2	-.00027	.00110	.00191	.04839	.48304	.00927	27.542	.01377
#3	.00048	.00096	.00096	.07054	.31076	.00654	27.939	.01280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	14.397	.00169	.00670	.00176	-.00418	.00480	3.9389
Stddev	.00003	.096	.00045	.00675	.00408	.00345	.00343	.0208
%RSD	3.3704	.66673	26.485	100.67	231.83	82.446	71.530	.52736
#1	.00075	14.373	.00205	.00909	-.00024	-.00395	.00094	3.9592
#2	.00074	14.315	.00119	.01193	.00646	-.00774	.00595	3.9398
#3	.00079	14.503	.00185	-.00091	-.00093	-.00086	.00752	3.9176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098610 Acquired: 6/25/2016 18:15:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.52737**	**-.01662**	**-.00476**	**.00053**	**.01128**	**.00653**
Stddev	.00061	.00238	.00515	.00157	.00069	.00008	.00193
%RSD	181.06	.45087	31.015	32.913	130.43	.73884	29.481
#1	-.00078	.52702	-.01240	-.00297	.00012	.01121	.00451
#2	.00036	.52519	-.01509	-.00547	.00132	.01137	.00674
#3	-.00059	.52991	-.02236	-.00585	.00014	.01126	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9795.7**	**59337.**	**3075.9**
Stddev	21.1	178.	25.1
%RSD	.21493	.29915	.81568
#1	9771.4	59262.	3048.2
#2	9807.4	59210.	3082.7
#3	9808.3	59540.	3097.0

Approved: June 27, 2016

Sample Name: L1606098612 Acquired: 6/25/2016 18:19:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00237	.00267	-.00060	.08716	.06662	.00041	142.66	.00007
Stddev	.00073	.00275	.00337	.00141	.00149	.00002	1.19	.00021
%RSD	30.688	102.87	562.71	1.6192	2.2393	3.9782	.83233	319.26
#1	.00315	.00518	-.00334	.08576	.06575	.00041	141.33	.00027
#2	.00225	-.00027	-.00161	.08858	.06577	.00039	143.01	.00007
#3	.00171	.00310	.00316	.08713	.06835	.00042	143.63	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00135	.04528	.02649	1.6602	.01963	40.720	.03253
Stddev	.00034	.00053	.00134	.03733	.1018	.00353	.262	.00324
%RSD	339.50	39.036	2.9680	140.93	6.1325	17.994	.64244	9.9559
#1	.00034	.00170	.04668	.04343	1.6128	.02218	40.440	.02879
#2	-.00029	.00162	.04400	-.01631	1.5907	.02112	40.763	.03448
#3	.00024	.00075	.04516	.05234	1.7770	.01560	40.958	.03432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	26.540	.00106	.02312	.00172	-.00084	.00204	2.4275
Stddev	.00029	.172	.00094	.00593	.00284	.00147	.00269	.0046
%RSD	25.080	.64693	88.979	25.661	164.80	174.96	131.78	.18880
#1	.00089	26.345	.00153	.02349	.00164	-.00125	.00490	2.4289
#2	.00110	26.607	.00167	.01701	.00461	-.00205	-.00043	2.4311
#3	.00146	26.668	-.00003	.02886	-.00107	.00079	.00165	2.4223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098612 Acquired: 6/25/2016 18:19:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**1.7410**	**-.01626**	**-.00241**	**.00038**	**.05602**	**.00415**
Stddev	.00061	.0138	.00313	.00137	.00051	.00009	.00053
%RSD	273.86	.79166	19.237	56.738	134.14	.16489	12.835
#1	-.00019	1.7255	-.01265	-.00306	.00050	.05591	.00443
#2	.00092	1.7457	-.01795	-.00084	.00081	.05608	.00354
#3	-.00006	1.7519	-.01818	-.00334	-.00018	.05607	.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9747.5**	**58989.**	**3047.5**
Stddev	4.1	78.	13.8
%RSD	.04198	.13200	.45213
#1	9749.1	58936.	3063.4
#2	9750.6	59079.	3039.1
#3	9742.9	58952.	3040.0

Approved: June 27, 2016

Sample Name: L1606098614 Acquired: 6/25/2016 18:23:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00279	.01008	-.00066	.03390	.03124	.00010	196.20	.00021
Stddev	.00112	.00383	.00147	.00206	.00013	.00007	.85	.00008
%RSD	40.043	38.038	221.13	6.0906	.42986	73.782	.43251	39.178
#1	.00183	.00766	.00090	.03506	.03108	.00016	195.71	.00030
#2	.00402	.00807	-.00201	.03513	.03132	.00002	195.70	.00014
#3	.00253	.01449	-.00089	.03152	.03131	.00013	197.18	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00088	.00840	.02428	2.9211	.02334	75.647	.04008
Stddev	.00023	.00045	.00064	.00605	.0291	.00193	.677	.00318
%RSD	446.71	50.770	7.6701	24.929	.99693	8.2676	.89445	7.9254
#1	-.00007	.00063	.00780	.03006	2.8958	.02251	74.950	.04023
#2	.00031	.00062	.00908	.02477	2.9529	.02197	75.691	.03683
#3	-.00009	.00140	.00832	.01799	2.9145	.02555	76.301	.04318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	22.556	.00040	.01184	.00385	-.00016	.00418	3.4833
Stddev	.00033	.097	.00156	.00464	.00193	.00051	.00681	.0215
%RSD	46.348	.43032	390.32	39.236	50.052	315.18	162.82	.61768
#1	.00068	22.526	-.00110	.00655	.00167	-.00006	.01171	3.5066
#2	.00040	22.478	.00029	.01372	.00533	-.00072	-.00154	3.4792
#3	.00106	22.665	.00201	.01524	.00455	.00029	.00237	3.4641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098614 Acquired: 6/25/2016 18:23:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**2.3670**	**-.02425**	**-.00232**	**-.00024**	**.02160**	**.00232**
Stddev	.00092	.0076	.00398	.00117	.00100	.00003	.00161
%RSD	715.81	.32195	16.401	50.456	415.47	.12320	69.325
#1	.00091	2.3659	-.02580	-.00236	.00091	.02157	.00413
#2	-.00082	2.3599	-.02722	-.00113	-.00075	.02159	.00107
#3	-.00048	2.3751	-.01973	-.00348	-.00089	.02163	.00175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9640.5**	**58425.**	**3058.6**
Stddev	20.6	100.	4.7
%RSD	.21337	.17110	.15390
#1	9631.4	58473.	3059.7
#2	9664.1	58492.	3062.6
#3	9626.1	58310.	3053.4

Approved: June 27, 2016

Sample Name: L1606098616 Acquired: 6/25/2016 18:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	.03265	.00256	.11861	.01251	.00029	229.75	.00020
Stddev	.00195	.00899	.00533	.00161	.00061	.00014	.36	.00016
%RSD	169.27	27.532	208.27	1.3580	4.8819	47.504	.15530	78.536
#1	.00069	.04218	-.00197	.11885	.01280	.00014	229.65	.00038
#2	-.00053	.02433	.00844	.12008	.01292	.00030	229.45	.00006
#3	.00329	.03143	.00122	.11689	.01181	.00042	230.15	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00178	.06744	.03108	3.2126	.03682	84.360	.29574
Stddev	.00023	.00069	.00047	.01537	.1307	.00386	.426	.00133
%RSD	37.410	38.666	.69994	49.454	4.0677	10.480	.50488	.44809
#1	.00042	.00192	.06781	.02007	3.0741	.03526	83.896	.29633
#2	.00087	.00239	.06691	.04863	3.2299	.03400	84.450	.29422
#3	.00056	.00104	.06760	.02452	3.3338	.04122	84.734	.29667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	71.143	.00123	.03078	.00375	-.00200	.00018	5.1619
Stddev	.00027	.049	.00055	.00199	.00114	.00238	.00481	.0107
%RSD	37.642	.06818	44.575	6.4658	30.424	119.08	2715.0	.20775
#1	.00061	71.192	.00158	.03108	.00244	-.00009	.00517	5.1511
#2	.00102	71.095	.00060	.02865	.00425	-.00467	-.00442	5.1621
#3	.00051	71.141	.00151	.03260	.00456	-.00125	-.00023	5.1725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098616 Acquired: 6/25/2016 18:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	6.5212	-.02963	-.00177	-.00109	.08946	.00332
Stddev	.00060	.0079	.00654	.00230	.00079	.00019	.00190
%RSD	161.30	.12151	22.085	130.49	72.258	.21177	57.202
#1	.00105	6.5204	-.02657	.00051	-.00123	.08936	.00540
#2	.00018	6.5138	-.02518	-.00171	-.00179	.08968	.00287
#3	-.00011	6.5296	-.03715	-.00409	-.00024	.08933	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9566.8	58078.	3050.1
Stddev	16.9	52.	19.7
%RSD	.17631	.08955	.64584
#1	9563.8	58018.	3068.4
#2	9585.0	58111.	3029.2
#3	9551.7	58106.	3052.7

Approved: June 27, 2016

Sample Name: L1606098618 Acquired: 6/25/2016 18:31:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	-.00096	.00289	.04251	.02915	.00005	62.293	-.00011
Stddev	.00038	.00238	.00029	.00109	.00082	.00008	.092	.00019
%RSD	24.410	246.77	9.9664	2.5737	2.7985	149.80	.14819	166.73
#1	.00113	.00168	.00257	.04189	.03009	-.00003	62.335	-.00017
#2	.00185	-.00164	.00314	.04186	.02874	.00005	62.357	.00010
#3	.00168	-.00294	.00296	.04377	.02862	.00013	62.187	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00031	.00347	.01624	1.9071	.02198	20.259	.01093
Stddev	.00021	.00046	.00016	.00938	.1214	.00171	.067	.00376
%RSD	243.30	146.24	4.6588	57.772	6.3644	7.7782	.33311	34.347
#1	.00028	.00083	.00329	.00573	1.8306	.02394	20.336	.01303
#2	.00011	.00015	.00350	.01922	2.0470	.02118	20.230	.00660
#3	-.00013	-.00004	.00361	.02377	1.8435	.02082	20.211	.01318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	25.999	-.00042	.00444	.00244	-.00359	.00392	3.1846
Stddev	.00023	.100	.00069	.00545	.00095	.00188	.00301	.0187
%RSD	22.864	.38558	161.73	122.87	39.121	52.433	76.809	.58628
#1	.00106	26.085	-.00101	-.00067	.00273	-.00311	.00526	3.2018
#2	.00123	26.024	.00033	.00381	.00321	-.00199	.00047	3.1874
#3	.00077	25.889	-.00059	.01018	.00137	-.00566	.00602	3.1647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098618 Acquired: 6/25/2016 18:31:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	1.4545	-.00154	-.00233	.00037	.00832	.00208
Stddev	.00132	.0032	.00357	.00066	.00141	.00007	.00021
%RSD	228.95	.22347	232.21	28.221	386.86	.88012	10.206
#1	.00206	1.4546	-.00325	-.00241	-.00025	.00825	.00199
#2	-.00043	1.4577	-.00393	-.00294	-.00063	.00831	.00233
#3	.00009	1.4512	.00257	-.00163	.00198	.00839	.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9841.2	59299.	3061.4
Stddev	105.5	272.	4.9
%RSD	1.0718	.45797	.16152
#1	9746.5	58986.	3061.4
#2	9822.2	59458.	3056.4
#3	9954.9	59454.	3066.3

Approved: June 27, 2016

Sample Name: L1606098620 Acquired: 6/25/2016 18:35:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.03312	.00066	.07608	.03474	.00017	4.5650	.00010
Stddev	.00141	.00304	.00168	.00356	.00133	.00010	.0156	.00016
%RSD	3777.7	9.1736	255.45	4.6823	3.8419	59.446	.34129	166.50
#1	-.00004	.03663	-.00075	.08018	.03521	.00029	4.5712	.00011
#2	.00149	.03142	.00252	.07372	.03577	.00014	4.5766	.00025
#3	-.00133	.03132	.00020	.07433	.03323	.00009	4.5473	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.00060	.00299	.05475	.56414	.00988	1.7714	.01450
Stddev	.00021	.00082	.00143	.01752	.07965	.00243	.0462	.00322
%RSD	18.384	137.46	47.864	31.992	14.119	24.596	2.6071	22.223
#1	.00132	.00110	.00244	.06300	.59505	.00894	1.8247	.01687
#2	.00115	.00105	.00462	.03463	.62370	.00806	1.7436	.01579
#3	.00091	-.00035	.00192	.06662	.47367	.01264	1.7459	.01083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	251.01	-.00057	.03777	.00214	-.00589	.00108	2.0603
Stddev	.00029	.75	.00178	.00427	.00057	.00380	.00694	.0083
%RSD	21.156	.29997	313.28	11.296	26.364	64.542	640.75	.40056
#1	.00125	251.39	-.00025	.04217	.00279	-.00381	-.00651	2.0621
#2	.00170	251.50	-.00248	.03365	.00178	-.01028	.00710	2.0676
#3	.00115	250.15	.00103	.03749	.00186	-.00358	.00266	2.0514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098620 Acquired: 6/25/2016 18:35:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.14703**	**.00470**	**-.00231**	**.00100**	**.00923**	**.00423**
Stddev	.00046	.00057	.00299	.00179	.00041	.00019	.00094
%RSD	44.993	.38637	63.686	77.674	41.001	2.0938	22.219
#1	.00049	.14737	.00735	-.00044	.00130	.00917	.00391
#2	.00129	.14734	.00531	-.00246	.00116	.00906	.00349
#3	.00126	.14637	.00145	-.00402	.00053	.00944	.00529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9725.3**	**58367.**	**3028.8**
Stddev	17.5	120.	15.3
%RSD	.18040	.20576	.50451
#1	9742.7	58420.	3020.7
#2	9707.6	58451.	3019.2
#3	9725.6	58230.	3046.4

Approved: June 27, 2016

Sample Name: L1606098622 Acquired: 6/25/2016 18:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	-.00596	.00037	.05747	.02764	.00023	127.72	.00011
Stddev	.00093	.00925	.00122	.00204	.00088	.00005	1.04	.00012
%RSD	79.226	155.22	327.64	3.5486	3.1759	23.660	.81279	108.09
#1	.00125	-.01464	.00026	.05716	.02813	.00022	127.35	.00021
#2	.00205	-.00701	-.00078	.05560	.02662	.00018	126.92	.00013
#3	.00020	.00377	.00164	.05965	.02815	.00028	128.89	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00090	.01009	.02031	2.5853	.01995	32.558	.04793
Stddev	.00056	.00109	.00042	.00894	.0945	.00518	.278	.00190
%RSD	208.67	121.92	4.1494	44.026	3.6562	25.950	.85453	3.9665
#1	.00085	.00146	.01042	.02811	2.6682	.02326	32.522	.05007
#2	.00021	-.00036	.01022	.02229	2.4824	.01399	32.299	.04730
#3	-.00026	.00160	.00962	.01055	2.6053	.02261	32.852	.04643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	46.975	.00038	.00992	.00378	-.00381	.00198	3.5382
Stddev	.00001	.389	.00033	.00514	.00270	.00385	.00283	.0119
%RSD	1.5146	.82774	87.053	51.791	71.542	100.88	142.89	.33659
#1	.00038	46.842	.00000	.00464	.00569	-.00293	.00001	3.5245
#2	.00039	46.670	.00061	.01491	.00068	-.00048	.00522	3.5450
#3	.00039	47.413	.00052	.01022	.00497	-.00802	.00070	3.5451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098622 Acquired: 6/25/2016 18:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	1.7827	-.01653	-.00317	-.00057	.00858	.00262
Stddev	.00056	.0144	.00634	.00502	.00088	.00017	.00024
%RSD	326.45	.80805	38.350	158.35	154.19	1.9458	9.0067
#1	-.00048	1.7747	-.02093	-.00538	-.00155	.00859	.00236
#2	.00051	1.7740	-.00927	.00258	.00014	.00841	.00281
#3	.00049	1.7993	-.01940	-.00671	-.00029	.00875	.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9602.2	57749.	2959.9
Stddev	40.4	252.	26.3
%RSD	.42032	.43708	.88902
#1	9555.9	57561.	2977.4
#2	9630.3	57650.	2972.6
#3	9620.3	58036.	2929.6

Approved: June 27, 2016

Sample Name: L1606098624 Acquired: 6/25/2016 18:42:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.00561**	**.00154**	**.40348**	**.02348**	**.00039**	**237.24**
Stddev	.00142	.00394	.00506	.00070	.00039	.00006	.43
%RSD	386.92	70.246	327.66	.17357	1.6661	16.452	.18001
#1	.00014	.00128	.00004	.40369	.02381	.00037	237.56
#2	-.00093	.00658	-.00259	.40270	.02305	.00046	237.41
#3	.00189	.00898	.00718	.40405	.02358	.00034	236.75
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**-.00007**	**.00152**	**.02649**	**.02448**	**5.9223**	**.01174**
Stddev	.00017	.00052	.00056	.00200	.00699	.0587	.00396
%RSD	362.68	725.31	36.507	7.5377	28.540	.99123	33.722
#1	-.00014	.00052	.00185	.02553	.03123	5.8563	.01398
#2	-.00015	-.00040	.00183	.02879	.02493	5.9416	.00717
#3	.00015	-.00034	.00088	.02516	.01728	5.9689	.01408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**66.698**	**.32515**	**.00019**	**63.762**	**.00021**	**.01502**	**.00144**
Stddev	.426	.00095	.00039	.087	.00030	.00323	.00065
%RSD	.63897	.29073	207.41	.13653	145.82	21.500	44.732
#1	66.222	.32513	-.00023	63.794	-.00012	.01765	.00108
#2	67.045	.32421	.00055	63.829	.00049	.01601	.00219
#3	66.826	.32610	.00024	63.663	.00025	.01142	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098624 Acquired: 6/25/2016 18:42:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00149**	**.00522**	**3.3709**	**-.00072**	**1.6690**	F **-.03355**	**-.00155**
Stddev	.00099	.00177	.0249	.00122	.0015	.00264	.00229
%RSD	66.177	33.876	.73770	169.83	.08806	7.8818	147.53
#1	-.00080	.00419	3.3514	-.00109	1.6686	-.03207	.00107
#2	-.00262	.00726	3.3989	-.00171	1.6706	-.03199	-.00316
#3	-.00106	.00421	3.3624	.00064	1.6678	-.03661	-.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00040**	**.00877**	**.00210**
Stddev	.00049	.00015	.00054
%RSD	123.14	1.7509	25.986
#1	-.00082	.00894	.00208
#2	.00014	.00865	.00156
#3	-.00050	.00870	.00265
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9491.7**	**57630.**	**3009.2**
Stddev	78.4	156.	15.6
%RSD	.82592	.27138	.51996
#1	9550.0	57451.	2991.3
#2	9402.6	57694.	3015.7
#3	9522.6	57743.	3020.5

Approved: June 27, 2016

Sample Name: L1606098626 Acquired: 6/25/2016 18:46:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	.00679	.00038	.03972	.02631	.00014	117.32	.00023
Stddev	.00072	.00538	.00107	.00258	.00068	.00005	.34	.00019
%RSD	22.022	79.326	284.61	6.5079	2.6006	35.377	.28683	83.944
#1	.00409	.00166	-.00067	.03695	.02674	.00014	117.70	.00003
#2	.00295	.01240	.00033	.04014	.02552	.00019	117.19	.00023
#3	.00276	.00630	.00147	.04206	.02666	.00009	117.07	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00126	.00604	.03025	1.5600	.01598	35.418	-.00162
Stddev	.00014	.00104	.00157	.00896	.0430	.00117	.155	.00177
%RSD	71.567	82.474	25.938	29.612	2.7589	7.3145	.43775	108.92
#1	.00004	.00238	.00775	.03493	1.5696	.01501	35.426	-.00126
#2	.00029	.00033	.00573	.01992	1.5974	.01567	35.569	-.00006
#3	.00026	.00107	.00466	.03588	1.5130	.01728	35.259	-.00354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	17.994	-.00024	.00950	.00273	-.00253	.00429	2.8578
Stddev	.00029	.066	.00113	.00146	.00267	.00313	.00183	.0046
%RSD	65.363	.36928	461.23	15.318	98.010	123.57	42.598	.16060
#1	.00011	18.060	.00031	.00854	.00072	.00062	.00280	2.8530
#2	.00057	17.927	.00050	.00879	.00170	-.00564	.00374	2.8621
#3	.00066	17.996	-.00154	.01118	.00576	-.00258	.00633	2.8583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098626 Acquired: 6/25/2016 18:46:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.95352**	**-.01676**	**-.00181**	**.00025**	**.00656**	**.00282**
Stddev	.00004	.00361	.00400	.00055	.00086	.00005	.00124
%RSD	36.480	.37812	23.874	30.252	341.08	.79230	44.156
#1	.00017	.95765	-.01632	-.00120	.00116	.00654	.00348
#2	.00013	.95102	-.02097	-.00198	-.00055	.00661	.00138
#3	.00008	.95189	-.01300	-.00225	.00014	.00651	.00358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9709.6**	**59301.**	**3058.5**
Stddev	45.7	137.	18.4
%RSD	.47038	.23115	.60138
#1	9758.2	59149.	3039.9
#2	9703.1	59336.	3058.7
#3	9667.6	59417.	3076.7

Approved: June 27, 2016

Sample Name: L1606098628 Acquired: 6/25/2016 18:50:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00127**	**.00062**	**.00226**	**.03408**	**.02631**	**.00011**	**202.60**
Stddev	.00142	.00505	.00320	.00146	.00145	.00006	1.09
%RSD	111.97	810.26	141.74	4.2925	5.4989	52.470	.53642
#1	.00192	-.00172	.00570	.03364	.02795	.00015	202.20
#2	.00225	-.00283	-.00063	.03289	.02521	.00012	201.76
#3	-.00036	.00642	.00171	.03571	.02576	.00005	203.83
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00018**	**.00230**	**.00706**	**.02884**	**3.1108**	**.02231**
Stddev	.00015	.00008	.00109	.00066	.02764	.1253	.00468
%RSD	173.92	43.590	47.288	9.3696	95.862	4.0286	20.962
#1	.00015	-.00019	.00355	.00741	.06027	3.2199	.01700
#2	-.00008	-.00010	.00186	.00630	.00830	2.9739	.02412
#3	.00019	-.00026	.00151	.00747	.01794	3.1385	.02581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**77.982**	**.03186**	**.00054**	**22.893**	**.00124**	**.00646**	**.00417**
Stddev	.421	.00093	.00029	.135	.00089	.00201	.00077
%RSD	.53979	2.9039	53.423	.59091	71.804	31.048	18.563
#1	77.763	.03137	.00064	22.869	.00109	.00439	.00500
#2	77.715	.03128	.00078	22.771	.00220	.00660	.00405
#3	78.467	.03292	.00022	23.039	.00044	.00839	.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098628 Acquired: 6/25/2016 18:50:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00202**	**.00107**	**3.6233**	**.00060**	**2.4441**	F **-.03051**	**-.00323**
Stddev	.00386	.00287	.0015	.00175	.0120	.00406	.00089
%RSD	190.96	268.98	.04080	291.82	.49257	13.319	27.545
#1	.00200	.00365	3.6232	-.00046	2.4407	-.03513	-.00322
#2	-.00236	-.00203	3.6248	-.00036	2.4341	-.02890	-.00413
#3	-.00571	.00158	3.6218	.00262	2.4575	-.02750	-.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00057**	**.01373**	**.00279**
Stddev	.00055	.00005	.00121
%RSD	96.088	.39414	43.503
#1	-.00086	.01376	.00139
#2	-.00092	.01376	.00355
#3	.00006	.01367	.00343
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9549.4**	**58061.**	**2994.7**
Stddev	10.8	342.	16.3
%RSD	.11322	.58988	.54589
#1	9556.3	57786.	2984.2
#2	9554.9	57953.	3013.5
#3	9536.9	58445.	2986.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:54:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.36142	9.0966	F .35164	F .43504	F .88841	.04556	F 8.8985
Stddev	.00063	.0241	.00214	.00359	.00668	.00015	.0636
%RSD	.17458	.26527	.60772	.82605	.75211	.32062	.71530
#1	.36081	9.1069	.35253	.43880	.88074	.04567	8.8250
#2	.36138	9.0691	.35318	.43467	.89150	.04539	8.9365
#3	.36207	9.1139	.34920	.43164	.89299	.04562	8.9341
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value			.40000	.50000	1.0000		10.000
Range			-10.000%	-10.000%	-10.000%		-10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04504	F .17683	F .44843	.45584	F 3.5682	F 43.223	.90012
Stddev	.00036	.00059	.00210	.00028	.0180	.402	.00642
%RSD	.79578	.33417	.46848	.06078	.50416	.93081	.71346
#1	.04493	.17615	.45006	.45571	3.5475	42.758	.89283
#2	.04475	.17711	.44916	.45565	3.5796	43.446	.90262
#3	.04544	.17723	.44606	.45616	3.5775	43.464	.90492
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass
Value		.20000	.50000		4.0000	50.000	
Range		-10.000%	-10.000%		-10.000%	-10.000%	

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 8.4568	F .44683	.90610	F 43.837	.45006	F 8.8106	F .44997
Stddev	.1941	.00153	.00307	.290	.00031	.0184	.00285
%RSD	2.2957	.34349	.33891	.66256	.06941	.20845	.63417
#1	8.2816	.44509	.90942	43.504	.44975	8.7897	.44790
#2	8.6655	.44738	.90552	43.973	.45037	8.8181	.44879
#3	8.4231	.44801	.90336	44.035	.45007	8.8241	.45322
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Fail
Value	10.000	.50000		50.000		10.000	.50000
Range	-10.000%	-10.000%		-10.000%		-10.000%	-10.000%

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:54:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.0511	F .35868	4.5430	F .88663	F .88982	F .89732	.46317
Stddev	.0038	.00393	.0064	.00114	.00700	.00126	.00115
%RSD	.35733	1.0963	.14052	.12909	.78679	.14039	.24883
#1	1.0514	.35522	4.5358	.88537	.88186	.89705	.46442
#2	1.0547	.35787	4.5453	.88691	.89256	.89622	.46295
#3	1.0472	.36295	4.5480	.88760	.89503	.89870	.46215
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass
Value	1.2000	.40000		1.0000	1.0000	1.0000	
Range	-10.000%	-10.000%		-10.000%	-10.000%	-10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.92451	F .89326	F 2.6142
Stddev	.00239	.00079	.0303
%RSD	.25806	.08826	1.1591
#1	.92697	.89416	2.5794
#2	.92435	.89291	2.6285
#3	.92221	.89270	2.6347
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		-10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10436.	62603.	3229.6
Stddev	7.	58.	39.3
%RSD	.06851	.09259	1.2179
#1	10435.	62597.	3274.8
#2	10443.	62548.	3203.4
#3	10429.	62663.	3210.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:58:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	-.00634	.00315	-.00143	.00123	.00009	-.03120	-.00001
Stddev	.00036	.00615	.00146	.00223	.00014	.00007	.03757	.00022
%RSD	35.623	96.910	46.271	156.16	11.328	79.889	120.40	3000.5
#1	.00142	-.00623	.00470	-.00112	.00129	.00016	.01024	.00017
#2	.00091	-.01255	.00293	-.00379	.00133	.00004	-.06303	-.00025
#3	.00072	-.00026	.00181	.00063	.00107	.00005	-.04081	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00012	.00040	.00652	.00729	-.00094	.01960	-.00009
Stddev	.00003	.00070	.00057	.00448	.10732	.00258	.12813	.00039
%RSD	340.66	581.54	142.03	68.614	1471.3	275.05	653.72	408.22
#1	-.00000	.00019	-.00025	.00247	.06763	-.00204	-.01079	.00011
#2	.00004	-.00093	.00068	.01133	.07087	.00201	.16019	-.00054
#3	-.00001	.00037	.00077	.00577	-.11662	-.00279	-.09060	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	.01765	-.00021	.00497	.00440	.00279	.00542	.03094
Stddev	.00023	.01443	.00123	.00520	.00590	.00458	.00181	.00198
%RSD	7.4573	81.775	586.87	104.64	134.12	164.15	33.357	6.4039
#1	.00298	.03423	-.00101	.00374	.00273	.00293	.00481	.03016
#2	.00339	.00793	-.00083	.01067	.01095	-.00186	.00399	.03319
#3	.00300	.01078	.00121	.00049	-.00049	.00730	.00745	.02947
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:58:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.00057**	**.00328**	**-.00363**	**.00052**	**.00010**	**.00222**
Stddev	.00020	.00050	.00575	.00205	.00106	.00011	.00064
%RSD	66.832	88.088	175.09	56.396	206.25	116.18	28.891
#1	.00017	.00114	-.00137	-.00544	-.00047	.00019	.00164
#2	.00052	.00028	.00971	-.00141	.00038	-.00003	.00291
#3	.00019	.00027	.00151	-.00405	.00164	.00012	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10029.**	**60890.**	**3064.8**
Stddev	14.	97.	13.9
%RSD	.13680	.15850	.45397
#1	10045.	60780.	3055.3
#2	10022.	60930.	3080.8
#3	10020.	60960.	3058.3

Approved: June 27, 2016

Sample Name: L1606098630 Acquired: 6/25/2016 19:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.04734	-.00156	.13569	.01871	.00015	238.04
Stddev	.00181	.00348	.00404	.00135	.00123	.00008	.85
%RSD	113.48	7.3553	258.52	.99665	6.5967	52.824	.35679
#1	.00017	.04905	-.00155	.13421	.01822	.00022	239.01
#2	.00364	.04964	.00247	.13685	.01779	.00007	237.71
#3	.00098	.04333	-.00561	.13603	.02011	.00014	237.41
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00032	.00251	.01182	.03060	3.4183	.04090
Stddev	.00010	.00018	.00081	.00072	.01332	.0462	.00200
%RSD	39.577	56.009	32.204	6.0677	43.540	1.3506	4.8796
#1	.00014	.00047	.00287	.01260	.01963	3.3856	.03874
#2	.00034	.00036	.00308	.01119	.04543	3.4711	.04128
#3	.00028	.00012	.00159	.01167	.02674	3.3981	.04268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	90.439	.21655	.00156	78.879	.00140	.01756	.00033
Stddev	.173	.00121	.00013	.416	.00068	.00677	.00046
%RSD	.19086	.55720	8.0204	.52709	48.349	38.536	138.30
#1	90.626	.21726	.00143	79.353	.00191	.01647	.00076
#2	90.405	.21515	.00168	78.710	.00063	.02480	-.00016
#3	90.286	.21722	.00157	78.574	.00166	.01140	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098630 Acquired: 6/25/2016 19:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00294**	**-.00177**	**5.6111**	**-.00017**	**7.0275**	F **-.03316**	**-.00254**
Stddev	.00229	.00087	.0076	.00038	.0379	.00293	.00099
%RSD	77.743	49.294	.13521	227.38	.53946	8.8247	38.798
#1	-.00354	-.00250	5.6121	-.00026	7.0707	-.03043	-.00171
#2	-.00042	-.00199	5.6030	-.00050	7.0124	-.03625	-.00363
#3	-.00488	-.00081	5.6181	.00025	6.9995	-.03280	-.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00065**	**.02003**	**.00667**
Stddev	.00064	.00007	.00116
%RSD	98.374	.34297	17.407
#1	-.00116	.01996	.00557
#2	-.00088	.02003	.00654
#3	.00007	.02010	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9361.9**	**56594.**	**2990.6**
Stddev	23.4	147.	20.1
%RSD	.24995	.25968	.67365
#1	9379.7	56762.	2967.6
#2	9370.7	56528.	3005.2
#3	9335.4	56491.	2998.9

Approved: June 27, 2016

Sample Name: L1606098632S Acquired: 6/25/2016 19:06:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18902**	**4.8212**	**.19116**	**.97374**	**.50077**	**.02402**	**134.52**	**.02388**
Stddev	.00088	.0081	.00239	.00462	.00118	.00003	.34	.00017
%RSD	.46488	.16867	1.2481	.47438	.23617	.14314	.25228	.70472
#1	.18980	4.8271	.19377	.97198	.50123	.02406	134.68	.02373
#2	.18919	4.8246	.18910	.97898	.49943	.02400	134.13	.02406
#3	.18807	4.8119	.19060	.97026	.50165	.02400	134.75	.02386
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09189**	**.23665**	**.24218**	**1.8859**	**25.617**	**.51395**	**37.596**	**.28166**
Stddev	.00021	.00120	.00028	.0089	.037	.00043	.192	.00203
%RSD	.23170	.50673	.11712	.47202	.14467	.08375	.50984	.71945
#1	.09190	.23534	.24190	1.8828	25.580	.51444	37.585	.28070
#2	.09167	.23691	.24247	1.8960	25.619	.51376	37.792	.28399
#3	.09210	.23769	.24219	1.8790	25.654	.51365	37.409	.28029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49448**	**71.230**	**.23175**	**4.7310**	**.23416**	**.56777**	**.18400**	**6.1097**
Stddev	.00088	.164	.00128	.0060	.00191	.00602	.00319	.0038
%RSD	.17884	.22978	.55101	.12688	.81554	1.0604	1.7354	.06148
#1	.49529	71.252	.23067	4.7327	.23616	.57278	.18033	6.1129
#2	.49354	71.056	.23316	4.7244	.23394	.56944	.18613	6.1108
#3	.49461	71.382	.23142	4.7360	.23236	.56109	.18555	6.1056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098632S Acquired: 6/25/2016 19:06:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.46869	2.2839	.45630	.23531	.49366	.46774	.01477
Stddev	.00224	.0055	.00571	.00163	.00079	.00046	.00310
%RSD	.47718	.23955	1.2515	.69229	.16011	.09871	21.022
#1	.47047	2.2847	.45118	.23550	.49390	.46819	.01151
#2	.46942	2.2781	.45528	.23360	.49431	.46777	.01510
#3	.46618	2.2889	.46246	.23684	.49278	.46726	.01769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9505.1	57443.	2995.1
Stddev	12.6	181.	7.9
%RSD	.13263	.31567	.26290
#1	9490.9	57238.	2989.7
#2	9509.8	57583.	3004.2
#3	9514.8	57507.	2991.6

Approved: June 27, 2016

Sample Name: L1606098634S Acquired: 6/25/2016 19:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19165**	**4.8639**	**.19259**	**.98224**	**.50433**	**.02434**	**136.41**	**.02397**
Stddev	.00283	.0058	.00215	.00673	.00181	.00002	.41	.00039
%RSD	1.4742	.11932	1.1143	.68564	.35885	.08391	.29851	1.6453
#1	.19474	4.8576	.19410	.97512	.50399	.02434	136.06	.02438
#2	.19099	4.8690	.19014	.98851	.50272	.02431	136.30	.02394
#3	.18921	4.8651	.19354	.98310	.50629	.02435	136.86	.02359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09370**	**.23944**	**.24457**	**1.9014**	**25.851**	**.51838**	**38.336**	**.27292**
Stddev	.00027	.00087	.00143	.0128	.044	.00156	.167	.00356
%RSD	.28910	.36336	.58497	.67456	.17178	.30011	.43499	1.3028
#1	.09395	.23880	.24603	1.9045	25.902	.51991	38.172	.27676
#2	.09341	.23909	.24449	1.9124	25.822	.51842	38.330	.27226
#3	.09373	.24043	.24318	1.8873	25.829	.51680	38.505	.26974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49947**	**74.848**	**.23412**	**4.7760**	**.23373**	**.57493**	**.18272**	**6.1711**
Stddev	.00101	.224	.00114	.0149	.00097	.00427	.00635	.0140
%RSD	.20163	.29965	.48754	.31111	.41349	.74220	3.4752	.22725
#1	.50053	74.661	.23450	4.7820	.23289	.57819	.18571	6.1610
#2	.49852	74.786	.23283	4.7591	.23352	.57010	.18702	6.1652
#3	.49936	75.096	.23502	4.7869	.23478	.57650	.17542	6.1871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098634S Acquired: 6/25/2016 19:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47482**	**2.3307**	**.45927**	**.23900**	**.49848**	**.47191**	**.00533**
Stddev	.00086	.0091	.01368	.00122	.00164	.00108	.00076
%RSD	.18068	.39132	2.9792	.51192	.32871	.22881	14.237
#1	.47581	2.3242	.47279	.23871	.49842	.47284	.00492
#2	.47440	2.3268	.44543	.23794	.50015	.47073	.00620
#3	.47425	2.3411	.45961	.24034	.49687	.47217	.00485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9464.2**	**57182.**	**2975.2**
Stddev	11.1	55.	14.2
%RSD	.11755	.09672	.47580
#1	9463.1	57128.	2991.6
#2	9475.9	57180.	2967.1
#3	9453.7	57239.	2967.1

Approved: June 27, 2016

Sample Name: L1606098636SD Acquired: 6/25/2016 19:13:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19162	4.8756	.19532	1.3252	.50705	.02431	243.19	.02436
Stddev	.00178	.0135	.00259	.0039	.00540	.00016	2.22	.00014
%RSD	.92905	.27765	1.3247	.29569	1.0646	.65896	.91281	.56637
#1	.19240	4.8805	.19500	1.3207	.51326	.02435	245.71	.02449
#2	.18958	4.8859	.19805	1.3282	.50441	.02444	242.33	.02421
#3	.19287	4.8603	.19291	1.3265	.50349	.02413	241.52	.02439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09290	.23671	.29685	1.9145	29.596	.51587	71.839	.60737
Stddev	.00022	.00172	.00059	.0369	.191	.00194	.252	.00417
%RSD	.23161	.72762	.19867	1.9280	.64372	.37694	.35080	.68663
#1	.09280	.23499	.29694	1.9564	29.779	.51781	72.039	.61218
#2	.09315	.23843	.29739	1.9005	29.610	.51588	71.921	.60495
#3	.09276	.23672	.29622	1.8867	29.399	.51393	71.556	.60497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49958	89.482	.23320	4.8335	.23655	.57885	.18210	6.3388
Stddev	.00153	.784	.00050	.0076	.00169	.00511	.00473	.0094
%RSD	.30585	.87569	.21296	.15803	.71424	.88252	2.5997	.14817
#1	.49951	90.366	.23335	4.8331	.23580	.57825	.18575	6.3355
#2	.50114	89.209	.23361	4.8414	.23849	.57407	.18379	6.3494
#3	.49809	88.872	.23265	4.8261	.23537	.58424	.17675	6.3314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098636SD Acquired: 6/25/2016 19:13:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47318**	**2.1504**	**.45196**	**.23380**	**.49243**	**.47726**	**.00396**
Stddev	.00235	.0203	.01296	.00229	.00254	.00239	.00140
%RSD	.49768	.94209	2.8683	.97909	.51630	.50171	35.414
#1	.47220	2.1736	.45301	.23117	.49302	.48002	.00408
#2	.47587	2.1417	.46436	.23534	.49462	.47583	.00530
#3	.47148	2.1359	.43850	.23489	.48964	.47592	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9466.5**	**57687.**	**3000.7**
Stddev	28.5	42.	21.4
%RSD	.30105	.07212	.71153
#1	9499.3	57706.	2976.5
#2	9448.1	57639.	3017.0
#3	9452.0	57716.	3008.4

Approved: June 27, 2016

Sample Name: L1606098638SD Acquired: 6/25/2016 19:16:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19635**	**5.0111**	**.19662**	**1.3658**	**.50590**	**.02455**	**238.74**	**.02470**
Stddev	.00189	.0495	.00202	.0129	.00507	.00013	2.44	.00046
%RSD	.96164	.98714	1.0288	.94297	1.0027	.51871	1.0237	1.8632
#1	.19421	4.9540	.19875	1.3513	.50004	.02440	236.05	.02465
#2	.19777	5.0396	.19638	1.3761	.50894	.02464	240.82	.02518
#3	.19706	5.0398	.19472	1.3699	.50872	.02461	239.35	.02426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09456**	**.24315**	**.24888**	**1.9280**	**29.506**	**.51676**	**69.466**	**.60260**
Stddev	.00054	.00286	.00145	.0328	.362	.00473	.757	.00806
%RSD	.56749	1.1744	.58163	1.6990	1.2271	.91552	1.0898	1.3377
#1	.09518	.24020	.24797	1.8914	29.119	.51186	68.628	.59529
#2	.09432	.24590	.25055	1.9547	29.837	.52131	70.101	.61124
#3	.09419	.24336	.24812	1.9378	29.562	.51712	69.668	.60126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50828**	**86.839**	**.23731**	**4.9079**	**.23796**	**.58722**	**.18727**	**6.3571**
Stddev	.00153	.812	.00040	.0105	.00122	.00763	.00717	.0147
%RSD	.30188	.93521	.16702	.21476	.51147	1.2987	3.8265	.23138
#1	.50998	85.938	.23758	4.9185	.23889	.59365	.18466	6.3682
#2	.50784	87.516	.23685	4.9076	.23841	.58922	.19537	6.3627
#3	.50701	87.061	.23748	4.8975	.23659	.57879	.18177	6.3405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098638SD Acquired: 6/25/2016 19:16:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48230**	**2.1413**	**.45206**	**.24148**	**.50819**	**.47197**	**.00465**
Stddev	.00016	.0221	.00841	.00203	.00480	.00162	.00175
%RSD	.03337	1.0323	1.8614	.84256	.94539	.34380	37.692
#1	.48228	2.1164	.44367	.23931	.50264	.47335	.00633
#2	.48215	2.1586	.45201	.24177	.51108	.47237	.00283
#3	.48247	2.1488	.46050	.24334	.51084	.47018	.00481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9367.1**	**56617.**	**3005.4**
Stddev	24.2	279.	8.9
%RSD	.25886	.49353	.29743
#1	9345.0	56900.	3015.6
#2	9363.2	56609.	2998.7
#3	9393.0	56341.	3002.0

Approved: June 27, 2016

Sample Name: L1606098640 Acquired: 6/25/2016 19:20:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	.00014	.00047	.01204	.00394	.00013	2.2418	.00009
Stddev	.00052	.00246	.00354	.00206	.00041	.00015	.0448	.00026
%RSD	75.327	1722.8	753.06	17.114	10.437	111.96	1.9977	298.05
#1	-.00120	.00298	.00434	.01328	.00360	.00001	2.2906	-.00017
#2	-.00073	-.00107	-.00032	.00966	.00384	.00009	2.2025	.00008
#3	-.00016	-.00148	-.00261	.01318	.00440	.00029	2.2324	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00023	.00162	.03197	.19488	-.00199	.70657	-.00157
Stddev	.00020	.00043	.00063	.03003	.05117	.00159	.10487	.00034
%RSD	172.28	188.43	38.822	93.912	26.255	79.698	14.843	21.723
#1	-.00014	.00024	.00129	.06510	.20250	-.00219	.77648	-.00118
#2	.00010	-.00061	.00122	.00654	.14033	-.00346	.58598	-.00170
#3	-.00030	-.00032	.00234	.02429	.24180	-.00031	.75725	-.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	1.3245	-.00000	-.00132	.00155	-.00034	.00103	1.8661
Stddev	.00043	.0047	.00128	.00539	.00283	.00334	.00522	.0030
%RSD	69.622	.35334	42382.	408.47	183.18	979.63	508.03	.16155
#1	.00110	1.3264	-.00135	.00378	-.00057	-.00417	-.00062	1.8696
#2	.00029	1.3279	.00121	-.00695	.00477	.00193	.00687	1.8648
#3	.00045	1.3192	.00013	-.00078	.00045	.00122	-.00317	1.8641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098640 Acquired: 6/25/2016 19:20:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.02890	-.00018	-.00245	.00125	.00316	.00092
Stddev	.00104	.00022	.00313	.00122	.00036	.00008	.00187
%RSD	172.87	.75581	1755.3	49.848	28.928	2.5446	202.44
#1	-.00053	.02865	.00335	-.00105	.00165	.00322	-.00102
#2	.00152	.02900	-.00128	-.00328	.00095	.00320	.00271
#3	.00082	.02905	-.00260	-.00302	.00115	.00307	.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9902.6	60698.	3047.4
Stddev	11.3	88.	21.1
%RSD	.11376	.14441	.69149
#1	9915.6	60659.	3066.8
#2	9895.9	60798.	3025.0
#3	9896.3	60636.	3050.3

Approved: June 27, 2016

Sample Name: L1606098642 Acquired: 6/25/2016 19:24:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	-.00125	.00012	.00714	.00291	.00014	2.2957	-.00008
Stddev	.00151	.00416	.00315	.00149	.00136	.00010	.0287	.00011
%RSD	179.62	331.72	2535.0	20.853	46.790	76.580	1.2503	140.66
#1	.00086	.00295	-.00350	.00543	.00443	.00023	2.2645	-.00020
#2	-.00134	-.00134	.00221	.00806	.00180	.00015	2.3210	.00001
#3	-.00204	-.00537	.00167	.00794	.00250	.00002	2.3016	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00054	.00126	.01879	.13459	.00101	.70251	-.00031
Stddev	.00021	.00073	.00033	.01779	.06299	.00139	.04015	.00188
%RSD	76.216	135.58	26.342	94.669	46.805	137.70	5.7150	613.21
#1	.00043	.00109	.00162	.03687	.13442	.00244	.65916	.00151
#2	.00035	-.00029	.00096	.01820	.19766	.00092	.73842	-.00224
#3	.00004	.00081	.00121	.00130	.07167	-.00034	.70994	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	1.3914	-.00012	.00599	-.00050	-.00197	.00192	1.9147
Stddev	.00031	.0274	.00128	.00446	.00248	.00478	.00405	.0013
%RSD	265.01	1.9704	1039.6	74.477	491.66	243.04	211.10	.06740
#1	-.00017	1.4067	.00078	.00869	.00158	.00334	.00542	1.9141
#2	.00008	1.4078	.00044	.00843	.00015	-.00331	-.00251	1.9137
#3	.00044	1.3598	-.00159	.00084	-.00325	-.00593	.00284	1.9161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098642 Acquired: 6/25/2016 19:24:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.02978**	**.00659**	**-.00224**	**.00021**	**.00288**	**.00046**
Stddev	.00041	.00031	.00898	.00218	.00024	.00011	.00203
%RSD	319.77	1.0309	136.22	97.103	115.48	3.6974	442.65
#1	.00034	.02969	.01094	-.00308	.00030	.00286	-.00018
#2	-.00043	.03012	.01258	.00023	.00040	.00300	.00273
#3	-.00030	.02953	-.00373	-.00388	-.00006	.00279	-.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9910.0**	**60405.**	**3027.1**
Stddev	8.6	109.	25.1
%RSD	.08719	.18086	.83024
#1	9909.0	60400.	3001.0
#2	9919.1	60298.	3029.3
#3	9901.9	60516.	3051.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 19:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38218	9.6308	.37557	.46431	.95962	.04828	9.5695
Stddev	.00218	.0178	.00127	.00116	.00217	.00012	.0717
%RSD	.57165	.18471	.33835	.24921	.22635	.23895	.74942
#1	.37992	9.6388	.37606	.46299	.96032	.04841	9.5557
#2	.38232	9.6104	.37652	.46516	.96137	.04820	9.6471
#3	.38429	9.6432	.37413	.46479	.95719	.04823	9.5057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04801	.18801	.47395	.48473	3.7689	46.355	.97311
Stddev	.00014	.00020	.00045	.00153	.0264	.220	.00378
%RSD	.29427	.10445	.09483	.31643	.70136	.47512	.38849
#1	.04785	.18823	.47438	.48634	3.7952	46.500	.97746
#2	.04812	.18785	.47399	.48328	3.7693	46.464	.97068
#3	.04806	.18795	.47348	.48458	3.7423	46.102	.97118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.0717	.47590	.96524	47.107	.47852	9.3733	.47882
Stddev	.0608	.00396	.00399	.173	.00072	.0111	.00296
%RSD	.67059	.83199	.41378	.36832	.15104	.11884	.61810
#1	9.0038	.47335	.96959	47.188	.47773	9.3765	.47551
#2	9.1213	.48046	.96440	47.226	.47916	9.3609	.48123
#3	9.0900	.47388	.96173	46.908	.47866	9.3825	.47971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 19:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1223**	**.37795**	**4.8400**	**.94463**	**.95969**	**.96684**	**.48966**
Stddev	.0016	.00541	.0100	.00151	.00470	.01176	.00307
%RSD	.14404	1.4313	.20631	.15941	.49016	1.2167	.62598
#1	1.1238	.37410	4.8492	.94636	.96229	.96908	.48613
#2	1.1206	.37562	4.8414	.94360	.96253	.97732	.49169
#3	1.1224	.38414	4.8294	.94394	.95426	.95412	.49116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.97958**	**.95235**	F **2.8246**
Stddev	.00154	.00042	.0035
%RSD	.15724	.04377	.12384
#1	.97882	.95263	2.8278
#2	.97857	.95254	2.8252
#3	.98136	.95187	2.8208
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**61264.**	**3100.4**
Stddev	.	134.	6.9
%RSD	.00202	.21941	.22117
#1	10132.	61202.	3092.6
#2	10132.	61418.	3103.3
#3	10132.	61171.	3105.3

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 19:32:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00034**	**.00165**	**-.00065**	**.00143**	**.00014**	**-.04509**	**-.00015**
Stddev	.00053	.00835	.00116	.00135	.00075	.00012	.04632	.00018
%RSD	198.69	2437.1	70.395	208.11	52.425	84.191	102.74	120.05
#1	.00081	.00499	.00229	-.00108	.00058	.00001	-.09453	-.00022
#2	.00023	-.00997	.00235	-.00174	.00173	.00020	-.03804	.00005
#3	-.00025	.00395	.00031	.00087	.00199	.00023	-.00270	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**-.00017**	**.00065**	**.02423**	**-.06433**	**-.00295**	**-.01903**	**-.00066**
Stddev	.00013	.00077	.00059	.01555	.07126	.00237	.08401	.00260
%RSD	162.10	456.13	90.441	64.178	110.77	80.373	441.41	395.33
#1	-.00022	-.00087	-.00002	.03897	.01654	-.00026	-.10302	.00036
#2	-.00006	.00066	.00091	.02575	-.09166	-.00387	.06499	-.00361
#3	.00004	-.00030	.00106	.00798	-.11789	-.00472	-.01907	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00313**	**.02145**	**.00120**	**.00197**	**.00164**	**.00212**	**.00101**	**.04112**
Stddev	.00013	.00743	.00050	.00366	.00312	.00166	.00069	.00272
%RSD	4.1237	34.660	41.579	185.66	190.04	78.472	68.223	6.6255
#1	.00318	.03002	.00170	.00620	.00310	.00128	.00172	.03946
#2	.00323	.01754	.00070	-.00004	.00377	.00104	.00035	.04426
#3	.00298	.01678	.00121	-.00024	-.00194	.00404	.00097	.03964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 19:32:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**.00051**	**-.00006**	**-.00149**	**-.00026**	**.00006**	**.00316**
Stddev	.00004	.00041	.00466	.00123	.00016	.00032	.00144
%RSD	4.9365	80.523	8195.1	82.501	61.089	521.42	45.405
#1	.00073	.00010	.00498	-.00182	-.00044	-.00016	.00318
#2	.00068	.00091	-.00094	-.00252	-.00020	.00042	.00172
#3	.00075	.00050	-.00421	-.00013	-.00014	-.00008	.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9625.9**	**58446.**	**2947.7**
Stddev	17.4	102.	8.2
%RSD	.18036	.17465	.27941
#1	9605.9	58491.	2954.6
#2	9635.9	58518.	2950.0
#3	9636.0	58329.	2938.6

Approved: June 27, 2016

Sample Name: PBW LH Acquired: 6/25/2016 19:36:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00480	.00297	-.00088	.00071	.00016	-.03609	-.00030
Stddev	.00096	.00538	.00061	.00047	.00081	.00006	.00576	.00022
%RSD	436.54	112.05	20.402	53.250	112.94	41.040	15.975	74.291
#1	-.00063	-.00271	.00258	-.00071	.00057	.00010	-.04014	-.00038
#2	.00002	-.00078	.00267	-.00141	-.00001	.00022	-.03863	-.00005
#3	.00126	-.01092	.00367	-.00052	.00158	.00014	-.02949	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00027	.00021	.03551	.02057	.00058	-.03422	.00199
Stddev	.00019	.00046	.00040	.00062	.11033	.00127	.05831	.00213
%RSD	211.66	173.58	192.44	1.7348	536.36	218.26	170.39	107.33
#1	.00009	.00043	-.00014	.03559	.14793	.00205	.01703	.00051
#2	-.00029	.00063	.00065	.03485	-.04548	-.00019	-.09766	.00101
#3	-.00007	-.00025	.00012	.03607	-.04075	-.00011	-.02203	.00443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.01920	-.00013	.00015	.00308	-.00169	.00218	.00530
Stddev	.00020	.01381	.00043	.00436	.00410	.00157	.00344	.00135
%RSD	72.649	71.919	323.98	2952.6	133.25	92.573	157.59	25.417
#1	-.00050	.00540	-.00047	-.00185	.00268	-.00008	.00514	.00605
#2	-.00014	.01919	.00035	-.00286	.00737	-.00321	.00301	.00374
#3	-.00017	.03301	-.00027	.00515	-.00081	-.00179	-.00160	.00610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW LH Acquired: 6/25/2016 19:36:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00001**	**.00007**	**-.00205**	**.00056**	**-.00012**	**.00138**
Stddev	.00105	.00006	.00526	.00274	.00041	.00008	.00122
%RSD	278.35	503.89	7708.4	133.89	73.183	68.172	88.458
#1	.00057	-.00005	.00045	-.00401	.00011	-.00018	.00093
#2	-.00020	.00002	-.00537	-.00321	.00065	-.00003	.00045
#3	-.00151	.00007	.00513	.00108	.00091	-.00016	.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10355.**	**62690.**	**3143.1**
Stddev	14.	21.	40.1
%RSD	.13810	.03356	1.2743
#1	10371.	62711.	3176.8
#2	10343.	62669.	3098.8
#3	10351.	62689.	3153.6

Approved: June 27, 2016

Sample Name: LCSW LH Acquired: 6/25/2016 19:39:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19366**	**4.9137**	**.19220**	**.93203**	**.49068**	**.02467**	**4.9632**	**.02443**
Stddev	.00070	.0138	.00341	.00396	.00423	.00007	.0538	.00016
%RSD	.36335	.28142	1.7740	.42472	.86189	.28277	1.0835	.64799
#1	.19288	4.8983	.19002	.92766	.48616	.02461	4.9413	.02459
#2	.19385	4.9180	.19044	.93305	.49453	.02465	5.0244	.02441
#3	.19425	4.9249	.19613	.93537	.49136	.02474	4.9238	.02428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09715**	**.24544**	**.24999**	**1.9443**	**23.472**	**.50293**	**4.6813**	**.24132**
Stddev	.00066	.00263	.00041	.0106	.182	.00291	.0938	.00318
%RSD	.68088	1.0726	.16565	.54556	.77586	.57762	2.0038	1.3188
#1	.09680	.24301	.25039	1.9373	23.301	.50365	4.6704	.23802
#2	.09792	.24824	.24956	1.9391	23.664	.50540	4.7800	.24157
#3	.09674	.24506	.25002	1.9565	23.450	.49973	4.5934	.24437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50304**	**24.148**	**.24571**	**4.6828**	**.24554**	**.57884**	**.18202**	**2.4064**
Stddev	.00049	.122	.00061	.0125	.00123	.00461	.00367	.0046
%RSD	.09743	.50324	.24625	.26789	.50266	.79649	2.0171	.19316
#1	.50339	24.028	.24640	4.6758	.24587	.57352	.17868	2.4078
#2	.50325	24.271	.24545	4.6973	.24658	.58167	.18595	2.4102
#3	.50248	24.145	.24528	4.6753	.24418	.58132	.18143	2.4012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW LH Acquired: 6/25/2016 19:39:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48493**	**.49684**	**.48674**	**.24907**	**.50464**	**.48284**	**.01676**
Stddev	.00108	.00397	.00310	.00041	.00236	.00325	.00211
%RSD	.22287	.79928	.63744	.16637	.46686	.67256	12.564
#1	.48462	.49378	.48665	.24947	.50200	.48055	.01435
#2	.48613	.50133	.48369	.24909	.50538	.48656	.01775
#3	.48404	.49542	.48989	.24864	.50653	.48141	.01820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9761.3**	**59171.**	**3026.9**
Stddev	5.3	58.	23.7
%RSD	.05400	.09751	.78195
#1	9766.4	59236.	3050.7
#2	9755.9	59148.	3003.3
#3	9761.7	59127.	3026.7

Approved: June 27, 2016

Sample Name: L1606090723 Acquired: 6/25/2016 19:43:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.01800	.14333	.20159	.04322	.00011	82.135	.00062
Stddev	.00074	.00440	.00262	.00108	.00176	.00009	.153	.00002
%RSD	81.113	24.457	1.8284	.53531	4.0750	85.790	.18660	3.6806
#1	.00039	.02274	.14560	.20094	.04396	.00020	82.043	.00061
#2	.00058	.01723	.14046	.20283	.04121	.00011	82.051	.00064
#3	.00176	.01403	.14393	.20099	.04450	.00001	82.312	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00186	.00181	3.0759	4.3146	.03826	51.383	.03252
Stddev	.00009	.00076	.00070	.0448	.0921	.00398	.083	.00353
%RSD	10.346	41.113	38.683	1.4576	2.1337	10.401	.16137	10.870
#1	.00081	.00098	.00242	3.0253	4.2316	.04144	51.475	.03488
#2	.00094	.00223	.00197	3.0916	4.4136	.03380	51.362	.02845
#3	.00078	.00237	.00105	3.1108	4.2984	.03956	51.313	.03422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00258	133.73	-.00015	.01191	.00179	-.00228	.00665	8.0891
Stddev	.00008	.12	.00113	.00694	.00129	.00283	.00532	.0280
%RSD	3.2153	.09189	747.26	58.268	71.933	124.12	79.994	.34670
#1	.00264	133.81	-.00126	.01916	.00318	-.00553	.01195	8.1130
#2	.00249	133.59	.00099	.00533	.00159	-.00033	.00671	8.0582
#3	.00262	133.80	-.00018	.01123	.00062	-.00099	.00131	8.0960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606090723 Acquired: 6/25/2016 19:43:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**2.6416**	**-.00732**	**-.00182**	**-.00046**	**.00542**	**.00128**
Stddev	.00038	.0023	.00771	.00082	.00062	.00021	.00019
%RSD	7616.2	.08543	105.44	45.025	136.48	3.8805	14.578
#1	.00020	2.6400	-.01112	-.00260	-.00073	.00544	.00120
#2	.00025	2.6406	.00156	-.00189	.00026	.00563	.00115
#3	-.00044	2.6441	-.01239	-.00097	-.00089	.00521	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9566.3**	**57706.**	**3016.3**
Stddev	21.2	40.	8.6
%RSD	.22170	.06981	.28561
#1	9583.7	57737.	3006.9
#2	9572.5	57660.	3023.9
#3	9542.7	57721.	3018.2

Approved: June 27, 2016

Sample Name: L1606098601 Acquired: 6/25/2016 19:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.63226	.00101	.09520	.04126	.00012	31.325	.00014
Stddev	.00183	.00734	.00119	.00196	.00050	.00007	.135	.00021
%RSD	298.65	1.1612	118.08	2.0630	1.2197	57.984	.43030	153.25
#1	.00185	.62395	-.00028	.09744	.04176	.00005	31.451	-.00001
#2	-.00149	.63786	.00207	.09436	.04076	.00018	31.183	.00005
#3	.00148	.63498	.00124	.09379	.04125	.00013	31.342	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.00251	.00378	1.4621	1.2075	.01677	5.9028	.04892
Stddev	.00024	.00020	.00199	.0362	.0294	.00358	.0605	.00066
%RSD	20.175	7.8011	52.767	2.4785	2.4351	21.330	1.0243	1.3538
#1	.00129	.00246	.00338	1.4981	1.1821	.01735	5.9016	.04861
#2	.00090	.00272	.00594	1.4256	1.2008	.02003	5.8430	.04848
#3	.00133	.00234	.00201	1.4624	1.2397	.01294	5.9639	.04969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	122.45	.00122	.03952	.00058	-.00189	.00677	4.0503
Stddev	.00024	.35	.00124	.00581	.00157	.00112	.00463	.0371
%RSD	19.925	.28250	101.52	14.694	270.52	59.209	68.294	.91471
#1	.00135	122.68	.00181	.04077	.00200	-.00256	.00933	4.0789
#2	.00131	122.05	-.00020	.04460	-.00110	-.00252	.00956	4.0634
#3	.00092	122.62	.00206	.03319	.00084	-.00060	.00143	4.0084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098601 Acquired: 6/25/2016 19:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.54428**	**.01566**	**-.00252**	**.00147**	**.03503**	**.00138**
Stddev	.00052	.00100	.00262	.00158	.00115	.00040	.00180
%RSD	330.58	.18426	16.757	62.766	78.497	1.1335	130.15
#1	-.00032	.54517	.01814	-.00107	.00112	.03533	.00331
#2	-.00057	.54319	.01592	-.00228	.00275	.03517	-.00024
#3	.00042	.54448	.01291	-.00422	.00053	.03458	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9674.1**	**58435.**	**3018.4**
Stddev	45.2	129.	18.2
%RSD	.46720	.22152	.60258
#1	9673.0	58340.	2997.4
#2	9719.9	58382.	3028.7
#3	9629.5	58582.	3029.1

Approved: June 27, 2016

Sample Name: L1606098603 Acquired: 6/25/2016 19:51:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00113**	**.08091**	**.00257**	**.02612**	**.02343**	**.00026**	**258.72**
Stddev	.00364	.00403	.00338	.00065	.00023	.00010	.22
%RSD	322.73	4.9793	131.60	2.5002	.99712	37.911	.08495
#1	-.00201	.07953	.00151	.02617	.02317	.00019	258.95
#2	.00512	.08545	-.00015	.02675	.02363	.00037	258.52
#3	.00028	.07776	.00635	.02545	.02348	.00021	258.68
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**.00486**	**.00101**	**.01760**	**1.6277**	**1.7887**	**.01926**
Stddev	.00018	.00049	.00101	.00048	.0214	.0748	.00269
%RSD	32.935	10.099	100.65	2.7241	1.3157	4.1799	13.963
#1	.00053	.00446	.00070	.01814	1.6519	1.7719	.02232
#2	.00040	.00472	.00018	.01725	1.6198	1.8705	.01729
#3	.00076	.00541	.00214	.01740	1.6113	1.7238	.01816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**67.571**	**3.7591**	**.00091**	**16.176**	**.00450**	**.03792**	**.00200**
Stddev	.265	.0091	.00013	.042	.00050	.00459	.00102
%RSD	.39176	.24313	14.640	.25963	11.081	12.099	51.049
#1	67.875	3.7689	.00083	16.148	.00428	.03292	.00317
#2	67.391	3.7508	.00083	16.224	.00415	.03891	.00158
#3	67.448	3.7575	.00106	16.157	.00507	.04193	.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098603 Acquired: 6/25/2016 19:51:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00201**	**-.00717**	**3.9929**	**.00071**	**1.4034**	F **-.03512**	**-.00302**
Stddev	.00033	.00269	.0187	.00006	.0013	.00376	.00159
%RSD	16.650	37.521	.46951	8.6416	.08919	10.706	52.853
#1	-.00201	-.00583	3.9724	.00069	1.4035	-.03701	-.00329
#2	-.00234	-.01026	3.9969	.00078	1.4046	-.03756	-.00130
#3	-.00167	-.00541	4.0093	.00066	1.4021	-.03079	-.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00011**	**.03959**	**.00096**
Stddev	.00028	.00012	.00361
%RSD	248.38	.29182	376.14
#1	.00034	.03947	.00158
#2	-.00020	.03969	.00421
#3	.00020	.03962	-.00292
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9451.5**	**57637.**	**3009.6**
Stddev	22.8	186.	22.0
%RSD	.24088	.32311	.72999
#1	9477.8	57852.	2986.4
#2	9439.3	57520.	3012.4
#3	9437.5	57540.	3030.0

Approved: June 27, 2016

Sample Name: L1606098605 Acquired: 6/25/2016 19:55:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00137	.11904	-.00057	.01716	.07339	.00069	79.533	.00007
Stddev	.00111	.00237	.00183	.00141	.00107	.00010	.468	.00014
%RSD	81.063	1.9908	322.69	8.2448	1.4582	14.460	.58849	215.58
#1	-.00160	.12158	.00130	.01581	.07215	.00080	78.994	-.00002
#2	-.00016	.11865	-.00237	.01703	.07401	.00066	79.770	-.00001
#3	-.00235	.11689	-.00063	.01863	.07401	.00061	79.836	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00197	.03453	.22031	1.0996	.00600	23.636	.02412
Stddev	.00010	.00062	.00164	.01719	.0321	.00378	.124	.00114
%RSD	58.539	31.534	4.7611	7.8016	2.9198	62.984	.52590	4.7055
#1	.00028	.00148	.03642	.22738	1.1284	.00174	23.677	.02484
#2	.00008	.00176	.03343	.23283	1.0650	.00731	23.734	.02281
#3	.00016	.00266	.03374	.20072	1.1054	.00895	23.496	.02471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	16.543	.00139	.02145	.00230	-.00291	.00287	2.5906
Stddev	.00010	.077	.00029	.00514	.00167	.00113	.00378	.0043
%RSD	11.067	.46265	20.622	23.950	72.689	38.933	132.03	.16499
#1	.00094	16.521	.00147	.02583	.00422	-.00367	.00465	2.5950
#2	.00093	16.628	.00163	.02271	.00152	-.00161	-.00148	2.5865
#3	.00076	16.480	.00107	.01580	.00116	-.00345	.00543	2.5902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098605 Acquired: 6/25/2016 19:55:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.41216**	**-.00457**	**-.00401**	**.00095**	**.08292**	**.00137**
Stddev	.00045	.00253	.00113	.00092	.00095	.00025	.00112
%RSD	198.91	.61368	24.692	22.922	99.932	.30169	82.337
#1	.00020	.40988	-.00328	-.00486	-.00009	.08312	.00008
#2	.00068	.41488	-.00504	-.00303	.00116	.08301	.00218
#3	-.00021	.41173	-.00539	-.00414	.00177	.08264	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9691.4**	**59019.**	**3013.1**
Stddev	15.7	113.	12.9
%RSD	.16185	.19156	.42939
#1	9673.9	58889.	3028.0
#2	9704.2	59073.	3004.1
#3	9696.2	59095.	3007.4

Approved: June 27, 2016

Sample Name: L1606098607 Acquired: 6/25/2016 19:59:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.03854	.00139	.01595	.03639	.00021	86.351	.00013
Stddev	.00196	.00438	.00171	.00299	.00069	.00005	.183	.00018
%RSD	252.38	11.356	122.54	18.743	1.8946	25.559	.21179	130.52
#1	-.00064	.04027	.00252	.01429	.03564	.00026	86.561	.00033
#2	-.00004	.03356	-.00057	.01941	.03654	.00022	86.226	.00007
#3	.00302	.04179	.00223	.01417	.03700	.00015	86.267	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00096	.00901	.09595	1.3588	.01896	23.947	.13765
Stddev	.00012	.00155	.00054	.00336	.0905	.00285	.152	.00156
%RSD	14.271	161.05	6.0176	3.5057	6.6619	15.032	.63449	1.1314
#1	.00074	.00257	.00840	.09606	1.2544	.01772	23.782	.13585
#2	.00084	-.00052	.00942	.09926	1.4148	.02223	24.081	.13859
#3	.00099	.00083	.00922	.09254	1.4072	.01695	23.978	.13851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	12.868	.00006	.00776	.00294	-.00141	.00160	3.6487
Stddev	.00036	.033	.00069	.00647	.00245	.00292	.00413	.0140
%RSD	74.294	.25857	1239.7	83.320	83.569	207.44	258.10	.38292
#1	.00008	12.905	-.00031	.01172	.00013	.00158	.00626	3.6621
#2	.00078	12.859	.00085	.01126	.00466	-.00154	-.00162	3.6496
#3	.00059	12.840	-.00038	.00030	.00403	-.00426	.00017	3.6342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607 Acquired: 6/25/2016 19:59:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.85925**	**-.01297**	**-.00261**	**.00027**	**.01872**	**-.00023**
Stddev	.00058	.00368	.00482	.00118	.00049	.00005	.00100
%RSD	1135.5	.42821	37.150	45.319	182.28	.27976	440.95
#1	.00028	.86236	-.00802	-.00398	-.00019	.01878	.00007
#2	-.00072	.86019	-.01323	-.00183	.00021	.01871	.00059
#3	.00028	.85519	-.01765	-.00203	.00079	.01868	-.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9667.2**	**58651.**	**3007.8**
Stddev	38.0	90.	17.4
%RSD	.39269	.15372	.57760
#1	9636.2	58610.	2989.6
#2	9655.8	58589.	3009.4
#3	9709.5	58755.	3024.3

Approved: June 27, 2016

Sample Name: L1606098607PS Acquired: 6/25/2016 20:03:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574215-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19549**	**4.9683**	**.19699**	**.95431**	**.52192**	**.02489**	**83.384**	**.02448**
Stddev	.00145	.0012	.00037	.00069	.00335	.00004	.351	.00015
%RSD	.74419	.02324	.18968	.07193	.64144	.17436	.42141	.59448
#1	.19431	4.9671	.19669	.95367	.51889	.02485	83.062	.02455
#2	.19712	4.9693	.19740	.95504	.52551	.02494	83.759	.02458
#3	.19505	4.9687	.19686	.95422	.52137	.02490	83.330	.02431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09612**	**.24445**	**.24901**	**2.0095**	**25.021**	**.52274**	**26.551**	**.36466**
Stddev	.00060	.00204	.00132	.0079	.209	.00262	.211	.00375
%RSD	.62715	.83504	.52860	.39401	.83514	.50106	.79467	1.0287
#1	.09620	.24322	.24870	2.0100	24.845	.52124	26.458	.36188
#2	.09668	.24681	.25046	2.0172	25.252	.52577	26.792	.36317
#3	.09548	.24332	.24788	2.0014	24.965	.52123	26.403	.36893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50539**	**35.868**	**.24056**	**4.8300**	**.24330**	**.58213**	**.19141**	**5.6770**
Stddev	.00256	.121	.00174	.0165	.00225	.00117	.00102	.0113
%RSD	.50685	.33731	.72421	.34266	.92572	.20086	.53487	.19978
#1	.50625	35.730	.24173	4.8368	.24292	.58281	.19254	5.6837
#2	.50742	35.956	.24138	4.8421	.24572	.58078	.19056	5.6833
#3	.50251	35.919	.23856	4.8112	.24127	.58280	.19112	5.6639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607PS Acquired: 6/25/2016 20:03:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574215-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48483**	**1.2623**	**.48068**	**.24615**	**.50488**	**.48944**	**.00427**
Stddev	.00147	.0060	.00508	.00275	.00238	.00115	.00064
%RSD	.30392	.47569	1.0573	1.1154	.47121	.23489	15.068
#1	.48451	1.2555	.47807	.24920	.50216	.48999	.00389
#2	.48644	1.2668	.48654	.24388	.50587	.49021	.00501
#3	.48354	1.2646	.47744	.24537	.50660	.48812	.00390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58019.**	**3004.1**
Stddev	20.4	180.	8.2
%RSD	.21278	.31055	.27313
#1	9607.7	58202.	3005.9
#2	9591.6	58012.	2995.2
#3	9632.2	57842.	3011.3

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.00334	.00170	.00445	.00847	.00009	17.139	.00008
Stddev	.00049	.00730	.00411	.00207	.00008	.00007	.249	.00023
%RSD	88.649	218.69	241.70	46.624	.94243	75.660	1.4519	290.72
#1	.00089	.00593	.00612	.00219	.00843	.00006	17.426	.00034
#2	-.00001	.00899	-.00200	.00488	.00843	.00004	17.001	-.00003
#3	.00078	-.00490	.00098	.00627	.00857	.00017	16.989	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.00037	.00191	.01894	.32539	.00400	4.9234	.02615
Stddev	.00005	.00023	.00083	.00475	.10069	.00194	.1236	.00303
%RSD	9.1063	60.795	43.755	25.087	30.943	48.604	2.5107	11.568
#1	.00062	.00059	.00284	.02402	.21108	.00176	4.9976	.02622
#2	.00053	.00038	.00165	.01821	.40094	.00496	4.9918	.02914
#3	.00053	.00014	.00123	.01460	.36416	.00527	4.7807	.02309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	2.5977	.00028	.00852	.00297	.00160	.00156	.72149
Stddev	.00021	.0380	.00123	.00414	.00293	.00068	.00366	.00246
%RSD	66.333	1.4636	438.92	48.637	98.645	42.261	235.25	.34147
#1	.00008	2.6376	-.00081	.01268	-.00028	.00113	-.00104	.72244
#2	.00048	2.5938	.00004	.00439	.00377	.00130	.00574	.71869
#3	.00037	2.5619	.00161	.00849	.00542	.00238	-.00003	.72333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.17255**	**.00033**	**-.00095**	**.00100**	**.00419**	**.00060**
Stddev	.00072	.00063	.00618	.00123	.00055	.00013	.00060
%RSD	1344.6	.36773	1857.8	129.31	55.083	2.9985	99.890
#1	-.00060	.17322	-.00395	-.00224	.00116	.00417	-.00009
#2	.00076	.17246	-.00247	-.00083	.00039	.00432	.00094
#3	-.00032	.17196	.00742	.00021	.00145	.00407	.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10100.**	**61152.**	**3087.7**
Stddev	17.	221.	3.3
%RSD	.16887	.36180	.10673
#1	10112.	61407.	3088.4
#2	10080.	61005.	3090.6
#3	10107.	61046.	3084.1

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	-.00220	-.00032	-.00063	.00197	.00015	3.3784	-.00009
Stddev	.00281	.00599	.00141	.00122	.00070	.00004	.0403	.00029
%RSD	1738.4	271.64	438.98	193.96	35.714	23.124	1.1918	310.09
#1	.00289	-.00340	.00101	-.00187	.00220	.00018	3.3321	-.00013
#2	-.00273	.00429	-.00181	-.00058	.00253	.00017	3.3977	-.00037
#3	.00033	-.00751	-.00017	.00056	.00118	.00011	3.4054	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00057	.00039	.03496	.02799	.00189	.96584	.00502
Stddev	.00041	.00109	.00122	.02559	.02173	.00316	.06365	.00248
%RSD	5673.0	191.57	314.78	73.189	77.636	167.39	6.5899	49.517
#1	.00017	-.00161	.00178	.00957	.03029	.00425	1.0133	.00340
#2	.00028	-.00067	-.00011	.06074	.04847	.00313	.99069	.00377
#3	-.00047	.00057	-.00050	.03458	.00520	-.00171	.89352	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.48659	-.00001	.00389	.00194	-.00589	.00123	.14706
Stddev	.00019	.02107	.00027	.00257	.00032	.00198	.00158	.00411
%RSD	50.403	4.3293	3257.2	66.021	16.675	33.653	128.28	2.7928
#1	-.00035	.50181	-.00003	.00472	.00177	-.00726	-.00048	.14268
#2	-.00056	.46255	.00027	.00101	.00173	-.00680	.00263	.15082
#3	-.00019	.49542	-.00027	.00595	.00231	-.00362	.00154	.14770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.03404**	**-.00096**	**.00109**	**.00053**	**.00095**	**-.00050**
Stddev	.00021	.00026	.00497	.00270	.00028	.00007	.00147
%RSD	93.819	.76060	519.10	248.53	53.226	6.9237	292.99
#1	-.00042	.03414	.00415	-.00145	.00059	.00088	.00090
#2	-.00001	.03374	-.00578	.00079	.00078	.00097	-.00204
#3	-.00022	.03423	-.00124	.00392	.00022	.00101	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**61150.**	**3069.8**
Stddev	20.	142.	13.8
%RSD	.19324	.23287	.44985
#1	10144.	61269.	3085.6
#2	10109.	61188.	3063.7
#3	10143.	60992.	3060.0

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 20:14:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39742**	**10.037**	**.39212**	**.48448**	**.99926**	**.05007**	**9.9665**
Stddev	.00078	.015	.00234	.00170	.00686	.00012	.0639
%RSD	.19741	.14886	.59686	.35046	.68696	.24571	.64080
#1	.39794	10.020	.39189	.48304	1.0007	.05009	10.032
#2	.39780	10.040	.39457	.48635	.99181	.05018	9.9043
#3	.39651	10.049	.38991	.48406	1.0053	.04994	9.9633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04995**	**.19662**	**.49719**	**.50408**	**3.9345**	**48.425**	**1.0056**
Stddev	.00017	.00028	.00293	.00085	.0512	.336	.0066
%RSD	.33202	.14096	.58868	.16772	1.3013	.69474	.65876
#1	.05012	.19642	.49505	.50367	3.9195	48.601	1.0066
#2	.04993	.19694	.50053	.50505	3.8924	48.037	.99858
#3	.04979	.19651	.49600	.50351	3.9915	48.637	1.0117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.6539**	**.49874**	**1.0057**	**49.161**	**.50061**	**9.8144**	**.49889**
Stddev	.1152	.00402	.0014	.263	.00048	.0158	.00214
%RSD	1.1928	.80691	.13850	.53437	.09607	.16108	.42961
#1	9.7007	.49641	1.0053	49.311	.50117	9.7964	.49662
#2	9.5228	.49643	1.0072	48.858	.50038	9.8207	.49919
#3	9.7383	.50339	1.0045	49.316	.50029	9.8261	.50087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 20:14:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1787**	**.38972**	**5.0552**	**.98705**	**.99934**	**.99527**	**.50770**
Stddev	.0014	.00525	.0102	.00133	.00573	.00628	.00313
%RSD	.12146	1.3477	.20130	.13498	.57306	.63102	.61635
#1	1.1790	.38370	5.0434	.98688	1.0013	.99951	.50582
#2	1.1772	.39212	5.0610	.98581	.99288	.98805	.50598
#3	1.1800	.39334	5.0611	.98846	1.0038	.99824	.51132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0147**	**.99253**	F **2.9496**
Stddev	.0017	.00087	.0127
%RSD	.16286	.08813	.43029
#1	1.0131	.99259	2.9390
#2	1.0147	.99336	2.9462
#3	1.0164	.99162	2.9637
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9868.5**	**58806.**	**2964.6**
Stddev	19.7	151.	1.8
%RSD	.19965	.25680	.06126
#1	9885.2	58672.	2966.0
#2	9873.5	58776.	2965.4
#3	9846.8	58969.	2962.6

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 20:18:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00132**	**-.00340**	**-.00049**	**.00031**	**.00192**	**.00008**	**-.02002**	**-.00008**
Stddev	.00216	.00700	.00114	.00069	.00099	.00015	.01568	.00025
%RSD	163.88	205.77	232.07	221.43	51.768	179.89	78.343	317.94
#1	.00112	.00138	-.00179	.00077	.00240	-.00004	-.03265	.00011
#2	.00357	-.00014	-.00002	.00066	.00258	.00004	-.00247	-.00036
#3	-.00074	-.01144	.00034	-.00049	.00078	.00025	-.02493	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00074**	**.00038**	**.00063**	**.02332**	**-.07555**	**-.00123**	**.02786**	**-.00147**
Stddev	.00036	.00095	.00188	.02448	.09270	.00682	.09570	.00329
%RSD	47.976	247.76	298.28	104.94	122.70	553.52	343.47	223.66
#1	.00080	.00146	-.00061	.04476	-.06611	.00634	-.06528	.00195
#2	.00036	.00002	.00279	-.00335	-.17262	-.00687	.02294	-.00462
#3	.00107	-.00033	-.00029	.02856	.01207	-.00317	.12594	-.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00377**	**.03770**	**.00015**	**.00241**	**-.00006**	**.00325**	**.00675**	**.03903**
Stddev	.00019	.01915	.00084	.00431	.00100	.00269	.00806	.00132
%RSD	5.0202	50.799	576.30	178.78	1573.6	82.788	119.45	3.3700
#1	.00388	.01718	.00046	.00371	.00063	.00040	.01512	.04015
#2	.00389	.04082	.00078	-.00240	-.00121	.00574	.00608	.03936
#3	.00355	.05510	-.00080	.00592	.00039	.00360	-.00096	.03758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 20:18:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00027**	**.00088**	**-.00106**	**.00004**	**-.00003**	**.00449**
Stddev	.00046	.00064	.00516	.00225	.00089	.00028	.00124
%RSD	6827.2	239.61	583.41	212.27	2439.5	892.40	27.555
#1	.00053	-.00043	-.00417	-.00308	-.00098	.00021	.00367
#2	-.00031	.00040	.00068	.00137	.00041	.00004	.00389
#3	-.00023	.00082	.00615	-.00147	.00068	-.00034	.00592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9631.9**	**58363.**	**2969.7**
Stddev	4.5	93.	16.5
%RSD	.04685	.16010	.55454
#1	9627.4	58461.	2965.8
#2	9636.4	58275.	2987.8
#3	9631.8	58353.	2955.6

Approved: June 27, 2016

Sample Name: L1606098609 Acquired: 6/25/2016 20:22:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.68625	.00096	.00637	.02063	.00019	116.68	.00011
Stddev	.00130	.00243	.00203	.00124	.00115	.00006	.34	.00020
%RSD	161.33	.35410	210.74	19.489	5.5807	30.863	.28955	179.93
#1	.00013	.68352	.00323	.00768	.02147	.00021	116.54	.00014
#2	.00231	.68708	-.00070	.00521	.01932	.00023	116.43	-.00010
#3	-.00002	.68816	.00037	.00620	.02109	.00012	117.06	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00251	.00589	.80058	.71511	.00736	28.613	.02306
Stddev	.00014	.00088	.00100	.02799	.18771	.00368	.079	.00071
%RSD	23.262	34.910	17.057	3.4966	26.250	49.956	.27754	3.0949
#1	.00051	.00150	.00680	.80914	.91494	.01159	28.526	.02382
#2	.00075	.00293	.00481	.76931	.68792	.00556	28.632	.02293
#3	.00052	.00310	.00605	.82330	.54247	.00492	28.681	.02241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	14.713	.00303	.03333	.00106	-.00272	.00365	4.8889
Stddev	.00024	.075	.00054	.00378	.00114	.00271	.00111	.0101
%RSD	32.746	.50774	17.920	11.335	108.20	99.808	30.510	.20564
#1	.00047	14.684	.00299	.03128	.00107	-.00577	.00444	4.8999
#2	.00095	14.656	.00359	.03769	-.00009	-.00056	.00238	4.8868
#3	.00081	14.797	.00251	.03102	.00220	-.00183	.00413	4.8801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098609 Acquired: 6/25/2016 20:22:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.51888**	**.00260**	**-.00246**	**.00196**	**.03426**	**.00729**
Stddev	.00032	.00275	.00453	.00099	.00037	.00011	.00028
%RSD	1222.6	.53076	174.15	40.180	18.856	.31556	3.8509
#1	.00009	.51844	-.00256	-.00245	.00220	.03417	.00723
#2	-.00032	.51637	.00591	-.00346	.00153	.03438	.00705
#3	.00031	.52183	.00446	-.00148	.00215	.03423	.00760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9797.7**	**59515.**	**3093.6**
Stddev	11.0	17.	11.2
%RSD	.11267	.02773	.36079
#1	9791.0	59496.	3083.8
#2	9810.4	59520.	3105.7
#3	9791.6	59528.	3091.1

Approved: June 27, 2016

Sample Name: L1606098611 Acquired: 6/25/2016 20:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.67808	-.00318	.08715	.06918	.00114	148.14	.00017
Stddev	.00037	.00569	.00382	.00198	.00070	.00012	.69	.00021
%RSD	151.84	.83972	120.10	2.2728	1.0151	10.946	.46623	125.05
#1	-.00014	.67215	-.00172	.08491	.06933	.00099	148.49	.00006
#2	.00061	.68350	-.00031	.08867	.06980	.00119	147.34	.00003
#3	.00027	.67861	-.00751	.08788	.06842	.00123	148.59	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	.00334	.07531	1.1555	1.9378	.02263	43.443	.16489
Stddev	.00025	.00064	.00057	.0192	.0114	.00045	.331	.00288
%RSD	6.9167	19.099	.75123	1.6613	.58882	1.9873	.76282	1.7487
#1	.00388	.00297	.07511	1.1584	1.9507	.02262	43.610	.16408
#2	.00338	.00297	.07595	1.1731	1.9292	.02219	43.061	.16250
#3	.00362	.00407	.07487	1.1351	1.9335	.02309	43.657	.16809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00248	25.675	.00454	.04285	.00455	-.00035	-.00286	3.7826
Stddev	.00024	.125	.00067	.00695	.00113	.00106	.00555	.0053
%RSD	9.7863	.48812	14.843	16.217	24.766	306.62	194.07	.13999
#1	.00260	25.775	.00423	.04366	.00585	.00053	-.00927	3.7791
#2	.00220	25.535	.00409	.03554	.00387	-.00004	.00020	3.7887
#3	.00264	25.716	.00532	.04936	.00394	-.00153	.00049	3.7799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098611 Acquired: 6/25/2016 20:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	2.0876	-.00638	-.00280	.00142	.06566	.00394
Stddev	.00055	.0096	.00925	.00066	.00022	.00017	.00141
%RSD	713.59	.45905	144.86	23.607	15.199	.25178	35.771
#1	-.00017	2.0923	-.00754	-.00222	.00163	.06585	.00254
#2	-.00031	2.0765	-.01500	-.00266	.00143	.06556	.00536
#3	.00071	2.0939	.00339	-.00351	.00120	.06556	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9695.5	58902.	3054.3
Stddev	10.1	156.	10.7
%RSD	.10398	.26470	.35100
#1	9691.1	59006.	3048.2
#2	9688.3	58978.	3066.6
#3	9707.0	58723.	3048.0

Approved: June 27, 2016

Sample Name: L1606098613 Acquired: 6/25/2016 20:29:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	5.5730	.00432	.03801	.11035	.00130	203.09	-.00001
Stddev	.00149	.0359	.00264	.00141	.00031	.00003	.17	.00016
%RSD	85.559	.64338	61.135	3.7127	.27868	2.0129	.08522	1090.1
#1	.00010	5.6007	.00735	.03819	.11034	.00128	203.27	.00012
#2	.00211	5.5858	.00310	.03932	.11006	.00133	203.05	.00003
#3	.00302	5.5325	.00251	.03651	.11067	.00131	202.93	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00373	.00967	.08024	7.4517	4.1196	.03087	79.593	.34313
Stddev	.00008	.00046	.00072	.0194	.0319	.00148	.239	.00219
%RSD	2.0959	4.7129	.90070	.26051	.77317	4.7986	.30050	.63957
#1	.00364	.00917	.07941	7.4293	4.0890	.03222	79.370	.34059
#2	.00377	.01007	.08072	7.4635	4.1171	.03112	79.565	.34436
#3	.00379	.00978	.08059	7.4624	4.1526	.02929	79.846	.34443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	24.658	.00975	.17618	.00825	.00008	.00248	10.141
Stddev	.00040	.019	.00024	.00598	.00295	.00311	.00271	.073
%RSD	21.744	.07518	2.5015	3.3961	35.754	3886.1	109.35	.72041
#1	.00146	24.670	.00990	.17816	.00502	.00353	.00373	10.058
#2	.00175	24.669	.00947	.16946	.00891	-.00250	.00433	10.169
#3	.00224	24.637	.00989	.18093	.01080	-.00079	-.00063	10.196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098613 Acquired: 6/25/2016 20:29:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	2.4743	.05397	-.00080	.01073	.41856	.00624
Stddev	.00027	.0052	.00665	.00236	.00131	.00229	.00115
%RSD	39.960	.21077	12.313	294.11	12.169	.54671	18.419
#1	.00089	2.4751	.05254	-.00353	.01217	.41596	.00756
#2	.00073	2.4791	.04816	.00063	.00962	.42027	.00548
#3	.00037	2.4687	.06122	.00049	.01040	.41945	.00567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9619.4	58503.	3058.9
Stddev	38.3	135.	15.7
%RSD	.39844	.23102	.51315
#1	9576.0	58658.	3041.4
#2	9633.7	58414.	3071.7
#3	9648.5	58435.	3063.7

Approved: June 27, 2016

Sample Name: L1606098615 Acquired: 6/25/2016 20:33:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00201	.53689	.00109	.12769	.02932	.00091	261.33	.00014
Stddev	.00048	.01300	.00276	.00142	.00104	.00011	1.37	.00008
%RSD	23.740	2.4215	252.93	1.1120	3.5600	12.063	.52322	55.108
#1	.00148	.54532	.00299	.12707	.02978	.00081	261.04	.00021
#2	.00215	.54344	.00237	.12931	.03005	.00088	262.83	.00006
#3	.00240	.52192	-.00208	.12669	.02812	.00103	260.14	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00167	.04808	1.7755	3.9837	.04482	96.121	.35461
Stddev	.00009	.00172	.00105	.0329	.0639	.00305	.330	.00305
%RSD	12.352	103.13	2.1885	1.8532	1.6044	6.8091	.34352	.86008
#1	.00068	.00125	.04714	1.8121	3.9806	.04242	96.172	.35269
#2	.00071	.00356	.04922	1.7483	4.0491	.04379	96.422	.35813
#3	.00085	.00020	.04788	1.7662	3.9214	.04825	95.768	.35302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	71.586	.00152	.06528	.00543	-.00023	-.00042	6.3830
Stddev	.00049	.359	.00083	.00282	.00224	.00292	.00309	.0073
%RSD	60.493	.50193	55.060	4.3183	41.272	1275.7	729.65	.11354
#1	.00036	71.588	.00097	.06827	.00795	-.00316	.00167	6.3913
#2	.00132	71.945	.00248	.06488	.00468	-.00019	.00103	6.3782
#3	.00072	71.227	.00110	.06267	.00366	.00267	-.00398	6.3795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098615 Acquired: 6/25/2016 20:33:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	6.9477	-.01868	-.00208	-.00036	.07416	.00363
Stddev	.00094	.0407	.00365	.00070	.00044	.00028	.00062
%RSD	142.12	.58617	19.553	33.577	122.09	.37861	17.066
#1	.00171	6.9428	-.02024	-.00215	-.00034	.07441	.00412
#2	.00039	6.9907	-.01451	-.00134	-.00081	.07386	.00293
#3	-.00011	6.9097	-.02130	-.00273	.00007	.07420	.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9482.1	57521.	3041.1
Stddev	15.4	119.	13.0
%RSD	.16231	.20772	.42869
#1	9472.3	57649.	3053.5
#2	9499.8	57500.	3027.5
#3	9474.1	57412.	3042.2

Approved: June 27, 2016

Sample Name: L1606098617 Acquired: 6/25/2016 20:37:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	.20547	.00214	.04863	.05628	.00015	62.798	.00005
Stddev	.00260	.00707	.00399	.00222	.00076	.00003	.506	.00026
%RSD	168.84	3.4433	186.39	4.5608	1.3548	21.842	.80652	579.39
#1	.00162	.19836	-.00117	.04752	.05710	.00015	63.380	-.00016
#2	.00410	.20553	.00657	.05118	.05613	.00018	62.459	.00034
#3	-.00110	.21251	.00102	.04718	.05560	.00012	62.555	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00139	.00754	.49751	2.0420	.02056	20.601	.01571
Stddev	.00024	.00096	.00096	.02565	.1117	.00244	.034	.00089
%RSD	70.093	68.878	12.744	5.1552	5.4689	11.879	.16418	5.6341
#1	.00059	.00246	.00739	.47113	2.0254	.02185	20.628	.01672
#2	.00012	.00112	.00857	.52236	1.9395	.01774	20.613	.01507
#3	.00031	.00060	.00666	.49904	2.1610	.02209	20.563	.01535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	26.598	.00080	.00703	.00246	-.00325	.00131	3.4906
Stddev	.00064	.178	.00058	.00500	.00246	.00605	.00554	.0173
%RSD	70.655	.66988	72.589	71.163	99.983	186.20	421.53	.49585
#1	.00155	26.804	.00039	.00280	.00327	-.00237	-.00267	3.5042
#2	.00088	26.495	.00146	.00574	-.00030	-.00969	.00764	3.4966
#3	.00027	26.495	.00054	.01256	.00441	.00231	-.00103	3.4711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098617 Acquired: 6/25/2016 20:37:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	1.5150	-.00311	-.00236	-.00015	.01447	.00341
Stddev	.00072	.0088	.00641	.00068	.00005	.00011	.00060
%RSD	226.25	.58268	206.23	28.717	34.447	.73139	17.615
#1	.00066	1.5251	-.00263	-.00291	-.00009	.01435	.00287
#2	.00080	1.5088	.00305	-.00160	-.00015	.01454	.00406
#3	-.00051	1.5111	-.00975	-.00256	-.00020	.01452	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9830.7	59822.	3082.9
Stddev	15.5	147.	23.6
%RSD	.15717	.24641	.76693
#1	9813.6	59963.	3057.5
#2	9843.5	59835.	3104.4
#3	9835.1	59669.	3086.7

Approved: June 27, 2016

Sample Name: L1606098619 Acquired: 6/25/2016 20:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.27749	.00069	.06930	.05323	.00039	10.214	.00034
Stddev	.00263	.00318	.00178	.00081	.00134	.00007	.065	.00038
%RSD	232.09	1.1459	258.13	1.1649	2.5186	17.965	.63738	111.28
#1	.00355	.27762	.00105	.06852	.05477	.00042	10.240	.00066
#2	-.00167	.28061	.00227	.06924	.05251	.00044	10.140	.00044
#3	.00153	.27425	-.00125	.07014	.05240	.00031	10.262	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00071	.02585	.24748	1.2811	.01465	4.6162	.00999
Stddev	.00051	.00114	.00067	.00474	.0573	.00378	.0318	.00359
%RSD	46.988	159.40	2.5887	1.9167	4.4759	25.817	.68816	35.904
#1	.00062	.00202	.02645	.25048	1.2371	.01153	4.5886	.01278
#2	.00162	-.00003	.02513	.24201	1.3460	.01356	4.6509	.01123
#3	.00099	.00015	.02599	.24994	1.2604	.01885	4.6090	.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	228.52	.00044	.07963	.00371	-.00207	.00619	2.5103
Stddev	.00028	1.82	.00063	.00808	.00266	.00077	.00393	.0173
%RSD	22.669	.79720	141.35	10.151	71.562	37.379	63.490	.68709
#1	.00153	229.52	.00003	.07034	.00201	-.00126	.00175	2.5018
#2	.00118	226.42	.00013	.08504	.00235	-.00280	.00758	2.4989
#3	.00097	229.62	.00117	.08351	.00677	-.00216	.00924	2.5301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098619 Acquired: 6/25/2016 20:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.22967	.00683	-.00264	.00219	.02256	.00408
Stddev	.00091	.00074	.00628	.00047	.00030	.00021	.00266
%RSD	1371.8	.32350	91.943	17.727	13.766	.92425	65.101
#1	-.00024	.23041	.00516	-.00255	.00222	.02259	.00112
#2	-.00065	.22892	.00155	-.00314	.00188	.02235	.00625
#3	.00109	.22967	.01377	-.00222	.00248	.02276	.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9702.8	58480.	3067.3
Stddev	45.7	28.	15.6
%RSD	.47062	.04775	.50880
#1	9725.9	58510.	3053.5
#2	9732.4	58474.	3084.2
#3	9650.3	58455.	3064.3

Approved: June 27, 2016

Sample Name: L1606098621 Acquired: 6/25/2016 20:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00121	.00179	.05746	.02986	.00029	128.59	-.00000
Stddev	.00056	.00275	.00384	.00358	.00132	.00008	.53	.00025
%RSD	97.573	226.34	214.60	6.2318	4.4201	27.216	.41011	6271.6
#1	.00040	-.00100	.00602	.06157	.03100	.00034	129.12	-.00029
#2	.00120	.00036	-.00148	.05576	.03017	.00020	128.07	.00019
#3	.00012	.00429	.00083	.05504	.02841	.00032	128.57	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00173	.01434	.05981	2.5098	.02550	33.269	.15420
Stddev	.00017	.00097	.00185	.00891	.0950	.00146	.060	.00170
%RSD	92.832	55.806	12.905	14.892	3.7837	5.7272	.18077	1.1012
#1	.00010	.00269	.01260	.05052	2.5555	.02390	33.334	.15465
#2	.00007	.00177	.01629	.06064	2.4007	.02586	33.216	.15563
#3	.00038	.00075	.01412	.06828	2.5733	.02675	33.257	.15232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	47.893	-.00000	.01004	.00162	-.00276	-.00417	3.5790
Stddev	.00060	.257	.00189	.00801	.00056	.00235	.00172	.0047
%RSD	106.13	.53712	269880.	79.763	34.469	85.173	41.117	.13102
#1	.00071	48.149	.00182	.00080	.00218	-.00406	-.00514	3.5827
#2	-.00009	47.634	.00013	.01426	.00163	-.00417	-.00519	3.5737
#3	.00107	47.897	-.00195	.01505	.00106	-.00005	-.00219	3.5806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098621 Acquired: 6/25/2016 20:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**1.8050**	**-.02231**	**-.00291**	**.00001**	**.01004**	**.00207**
Stddev	.00095	.0120	.00564	.00294	.00125	.00002	.00101
%RSD	393.73	.66689	25.288	100.88	21161.	.16952	48.549
#1	.00057	1.8173	-.02371	-.00622	-.00119	.01005	.00218
#2	-.00128	1.7932	-.02711	-.00189	.00130	.01004	.00102
#3	-.00001	1.8046	-.01610	-.00062	-.00009	.01002	.00302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9662.5**	**58180.**	**3042.4**
Stddev	14.0	47.	7.3
%RSD	.14521	.08141	.24078
#1	9658.0	58146.	3035.1
#2	9678.2	58161.	3042.4
#3	9651.2	58234.	3049.8

Approved: June 27, 2016

Sample Name: L1606098623 Acquired: 6/25/2016 20:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	.10705	.00198	.41392	.02623	.00027	243.17	.00017
Stddev	.00218	.00541	.00096	.00428	.00052	.00003	1.41	.00011
%RSD	157.63	5.0515	48.506	1.0332	1.9773	12.148	.58072	65.505
#1	.00177	.11044	.00295	.41225	.02682	.00026	243.56	.00005
#2	.00336	.10081	.00102	.41878	.02603	.00030	244.34	.00020
#3	-.00096	.10989	.00198	.41074	.02584	.00024	241.60	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00125	.02256	.13395	6.1008	.01177	68.965	.45308
Stddev	.00021	.00090	.00053	.00942	.0335	.00473	.254	.00553
%RSD	267.67	72.031	2.3661	7.0298	.54942	40.196	.36871	1.2196
#1	-.00012	.00056	.02318	.12309	6.1028	.01598	68.820	.44996
#2	.00031	.00093	.02221	.13890	6.0663	.00665	69.259	.45946
#3	.00005	.00227	.02231	.13986	6.1333	.01267	68.816	.44983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	66.667	.00075	.01360	.00015	-.00234	.00238	3.6345
Stddev	.00039	.343	.00118	.00476	.00283	.00395	.00376	.0082
%RSD	88.357	.51401	157.96	35.012	1938.3	168.93	158.02	.22548
#1	.00001	66.765	.00108	.01427	-.00296	-.00415	.00669	3.6345
#2	.00056	66.950	-.00056	.00853	.00082	.00219	.00057	3.6426
#3	.00076	66.286	.00172	.01798	.00259	-.00506	-.00014	3.6263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098623 Acquired: 6/25/2016 20:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	1.6999	-.02956	-.00156	.00030	.00857	.00329
Stddev	.00028	.0081	.00507	.00230	.00048	.00011	.00135
%RSD	598.12	.47536	17.163	147.79	160.42	1.3327	41.067
#1	.00005	1.7017	-.03255	.00072	-.00015	.00844	.00173
#2	.00033	1.7069	-.02370	-.00388	.00023	.00859	.00400
#3	-.00023	1.6911	-.03242	-.00151	.00081	.00866	.00415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9416.4	57429.	3035.8
Stddev	48.0	130.	25.1
%RSD	.51009	.22575	.82551
#1	9467.2	57482.	3016.2
#2	9410.3	57282.	3027.1
#3	9371.8	57525.	3064.1

Approved: June 27, 2016

Sample Name: L1606098625 Acquired: 6/25/2016 20:52:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00225	2.3612	.00034	.04147	.11975	.00023	121.59	.00037
Stddev	.00036	.0069	.00441	.00209	.00117	.00012	.33	.00010
%RSD	15.843	.29306	1297.6	5.0487	.97876	50.808	.26806	27.630
#1	.00211	2.3674	.00539	.03961	.11950	.00036	121.76	.00028
#2	.00199	2.3537	-.00273	.04106	.11872	.00014	121.21	.00033
#3	.00266	2.3625	-.00164	.04374	.12102	.00019	121.79	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.00414	.00666	2.3953	2.5999	.01491	37.526	1.0679
Stddev	.00025	.00072	.00102	.0202	.0477	.00333	.332	.0124
%RSD	15.696	17.478	15.382	.84513	1.8346	22.308	.88561	1.1598
#1	.00188	.00385	.00549	2.3789	2.6109	.01808	37.493	1.0637
#2	.00138	.00496	.00714	2.4179	2.5476	.01145	37.212	1.0581
#3	.00156	.00361	.00736	2.3890	2.6411	.01519	37.874	1.0818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	18.226	.00269	.05391	.00651	-.00190	.00505	5.9129
Stddev	.00020	.052	.00077	.00146	.00208	.00291	.00127	.0400
%RSD	30.881	.28797	28.786	2.7065	31.918	152.94	25.077	.67624
#1	.00067	18.245	.00228	.05412	.00658	-.00209	.00366	5.9121
#2	.00082	18.167	.00221	.05526	.00440	.00110	.00533	5.9533
#3	.00043	18.267	.00358	.05236	.00855	-.00472	.00614	5.8733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098625 Acquired: 6/25/2016 20:52:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.99462**	**.03044**	**-.00185**	**.00457**	**.15726**	**.00437**
Stddev	.00053	.00442	.00913	.00019	.00047	.00042	.00072
%RSD	150.91	.44485	29.990	10.187	10.282	.27017	16.565
#1	.00010	.99601	.03923	-.00207	.00503	.15763	.00393
#2	-.00093	.98967	.02100	-.00171	.00410	.15735	.00520
#3	-.00022	.99819	.03111	-.00178	.00457	.15680	.00397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9574.3**	**58285.**	**3022.7**
Stddev	18.0	80.	21.3
%RSD	.18820	.13801	.70548
#1	9553.8	58363.	3008.3
#2	9581.8	58202.	3047.2
#3	9587.4	58291.	3012.6

Approved: June 27, 2016

Sample Name: L1606098627 Acquired: 6/25/2016 20:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00254	4.6384	.00407	.03588	.08487	.00132	200.73	.00005
Stddev	.00192	.0173	.00097	.00149	.00032	.00011	.32	.00023
%RSD	75.499	.37394	23.741	4.1641	.37451	8.4866	.15998	422.09
#1	.00186	4.6215	.00464	.03631	.08521	.00120	200.37	.00006
#2	.00106	4.6377	.00461	.03711	.08483	.00141	200.85	-.00018
#3	.00471	4.6561	.00295	.03422	.08457	.00136	200.98	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00295	.00847	.07661	6.3761	4.0467	.02688	78.393	.28594
Stddev	.00029	.00096	.00098	.0153	.0946	.00177	.290	.00214
%RSD	9.9470	11.337	1.2842	.24023	2.3374	6.5906	.37011	.74836
#1	.00263	.00958	.07761	6.3586	3.9534	.02860	78.140	.28832
#2	.00299	.00791	.07658	6.3825	4.0443	.02506	78.709	.28419
#3	.00322	.00791	.07564	6.3872	4.1425	.02698	78.329	.28530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	25.068	.00713	.15173	.00678	-.00194	.00054	8.9965
Stddev	.00058	.104	.00038	.00131	.00344	.00137	.00531	.0286
%RSD	55.068	.41293	5.2660	.86550	50.818	70.752	976.81	.31838
#1	.00130	24.949	.00680	.15078	.01021	-.00340	-.00348	9.0111
#2	.00040	25.140	.00754	.15323	.00679	-.00068	-.00144	9.0150
#3	.00149	25.114	.00704	.15117	.00333	-.00174	.00656	8.9635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098627 Acquired: 6/25/2016 20:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	2.4772	.04490	-.00127	.00901	.16031	.00422
Stddev	.00154	.0067	.00796	.00182	.00061	.00117	.00055
%RSD	173.10	.26965	17.717	142.95	6.7328	.72957	12.944
#1	.00142	2.4695	.04447	-.00241	.00911	.16067	.00359
#2	.00210	2.4809	.03717	.00082	.00836	.16126	.00459
#3	-.00085	2.4812	.05306	-.00223	.00956	.15900	.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9465.6	57841.	2995.1
Stddev	68.7	160.	17.6
%RSD	.72586	.27642	.58883
#1	9445.1	57701.	3013.7
#2	9409.5	58015.	2978.6
#3	9542.2	57807.	2993.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:00:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40235**	**10.185**	**.39842**	**.49195**	**1.0203**	**.05034**	**10.153**
Stddev	.00325	.028	.00193	.00194	.0055	.00031	.030
%RSD	.80675	.27855	.48505	.39452	.53912	.62290	.29151
#1	.39985	10.214	.39899	.49235	1.0140	.05068	10.126
#2	.40602	10.183	.40000	.49365	1.0227	.05026	10.185
#3	.40118	10.157	.39627	.48984	1.0242	.05007	10.150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05123**	**.19988**	**.50288**	**.51330**	**4.0070**	**49.596**	**1.0284**
Stddev	.00026	.00047	.00335	.00193	.0033	.230	.0041
%RSD	.51360	.23712	.66679	.37527	.08271	.46359	.40302
#1	.05102	.20030	.50672	.51551	4.0072	49.649	1.0258
#2	.05153	.19997	.50051	.51234	4.0102	49.344	1.0261
#3	.05115	.19937	.50141	.51204	4.0036	49.795	1.0332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.5669**	**.50781**	**1.0249**	**50.362**	**.50842**	**9.9814**	**.50557**
Stddev	.0485	.00742	.0065	.234	.00100	.0181	.00207
%RSD	.50657	1.4609	.62973	.46520	.19680	.18135	.40980
#1	9.6226	.50131	1.0311	50.266	.50877	9.9736	.50596
#2	9.5340	.50622	1.0255	50.191	.50920	10.002	.50742
#3	9.5442	.51589	1.0183	50.629	.50729	9.9685	.50333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:00:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2045**	**.39202**	**5.1444**	**1.0010**	**1.0190**	**1.0190**	**.51206**
Stddev	.0033	.00153	.0072	.0031	.0045	.0084	.00251
%RSD	.27464	.38961	.14055	.30711	.44063	.82168	.49020
#1	1.2010	.39059	5.1361	1.0039	1.0167	1.0152	.51490
#2	1.2047	.39363	5.1492	1.0015	1.0162	1.0132	.51015
#3	1.2076	.39184	5.1479	.99778	1.0242	1.0286	.51112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0223**	**1.0141**	F **2.9929**
Stddev	.0031	.0001	.0241
%RSD	.30006	.01208	.80650
#1	1.0229	1.0141	3.0133
#2	1.0190	1.0142	2.9663
#3	1.0251	1.0139	2.9992
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.2**	**58649.**	**2955.6**
Stddev	2.7	54.	16.9
%RSD	.02842	.09258	.57071
#1	9646.1	58667.	2944.4
#2	9650.3	58588.	2975.0
#3	9651.2	58692.	2947.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:04:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00098**	**-.00081**	**.00091**	**.00315**	**.00292**	**.00009**	**-.03474**	**.00002**
Stddev	.00124	.00864	.00092	.00201	.00133	.00005	.02919	.00008
%RSD	125.96	1064.0	100.48	64.019	45.548	52.705	84.022	417.72
#1	.00043	-.00670	.00067	.00330	.00336	.00005	-.02620	.00002
#2	-.00151	.00910	.00014	.00508	.00142	.00009	-.01077	-.00006
#3	-.00188	-.00483	.00193	.00106	.00397	.00014	-.06724	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00125**	**.00083**	**.02088**	**-.14334**	**.00212**	**-.02955**	**.00114**
Stddev	.00066	.00051	.00122	.01391	.04593	.00105	.09306	.00075
%RSD	1530.9	41.168	147.43	66.595	32.046	49.608	314.87	66.235
#1	.00067	.00069	.00144	.03293	-.09030	.00098	-.05631	.00047
#2	-.00016	.00170	-.00058	.02406	-.17011	.00232	-.10630	.00196
#3	-.00064	.00135	.00162	.00566	-.16960	.00305	.07395	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00323**	**.05080**	**-.00020**	**.00483**	**.00058**	**.00191**	**.00111**	**.03921**
Stddev	.00021	.02575	.00089	.00353	.00235	.00387	.00242	.00153
%RSD	6.4882	50.676	441.28	73.104	406.34	202.21	216.78	3.9059
#1	.00300	.07783	.00045	.00259	-.00201	.00626	-.00135	.03746
#2	.00339	.02657	-.00122	.00300	.00257	.00062	.00121	.03991
#3	.00331	.04802	.00016	.00889	.00117	-.00114	.00348	.04027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:04:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00029	-.00007	-.00513	.00041	-.00001	.00470
Stddev	.00027	.00000	.00626	.00369	.00015	.00012	.00055
%RSD	55.343	1.4693	8856.4	71.949	37.134	916.05	11.589
#1	.00081	.00028	.00338	-.00666	.00031	.00010	.00427
#2	.00033	.00029	-.00730	-.00092	.00059	.00000	.00453
#3	.00034	.00028	.00370	-.00780	.00035	-.00014	.00531
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9506.6	58497.	2929.7
Stddev	22.3	113.	12.0
%RSD	.23433	.19372	.40841
#1	9532.3	58628.	2919.5
#2	9494.8	58435.	2926.6
#3	9492.6	58429.	2942.8

Approved: June 27, 2016

Sample Name: L1606098629 Acquired: 6/25/2016 21:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	1.3154	-.00179	.12516	.05800	.00081	247.18	.00018
Stddev	.00097	.0064	.00105	.00195	.00108	.00003	.31	.00008
%RSD	137.44	.48564	58.530	1.5550	1.8687	3.6829	.12350	43.911
#1	.00160	1.3100	-.00292	.12302	.05810	.00083	246.92	.00018
#2	.00082	1.3224	-.00085	.12682	.05904	.00078	247.52	.00010
#3	-.00032	1.3138	-.00160	.12563	.05687	.00083	247.09	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	.00401	.04528	2.4364	3.9714	.04409	89.669	.34274
Stddev	.00048	.00063	.00072	.0178	.1152	.00255	.458	.00095
%RSD	40.012	15.569	1.5917	.73079	2.9014	5.7752	.51098	.27642
#1	.00152	.00449	.04490	2.4275	3.9851	.04702	90.007	.34368
#2	.00141	.00424	.04612	2.4569	4.0792	.04281	89.852	.34276
#3	.00065	.00331	.04484	2.4248	3.8500	.04243	89.147	.34178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	72.159	.00306	.12842	.00472	-.00245	-.00232	7.1068
Stddev	.00019	.103	.00116	.00307	.00202	.00283	.00582	.0122
%RSD	22.591	.14315	38.091	2.3898	42.715	115.64	250.20	.17182
#1	.00062	72.124	.00297	.12975	.00386	-.00541	-.00257	7.1178
#2	.00090	72.275	.00194	.13059	.00327	-.00216	-.00801	7.1089
#3	.00099	72.077	.00426	.12491	.00702	.00023	.00361	7.0937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098629 Acquired: 6/25/2016 21:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**6.8039**	**.00261**	**-.00311**	**.00203**	**.14656**	**.00713**
Stddev	.00109	.0140	.00201	.00153	.00039	.00030	.00139
%RSD	174.70	.20570	77.238	49.135	18.962	.20399	19.505
#1	.00026	6.7979	.00196	-.00298	.00228	.14634	.00715
#2	-.00024	6.8199	.00487	-.00165	.00159	.14690	.00573
#3	.00185	6.7939	.00100	-.00469	.00223	.14643	.00851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9470.9**	**57988.**	**3007.5**
Stddev	19.0	71.	5.1
%RSD	.20079	.12320	.16890
#1	9472.3	57910.	3001.8
#2	9451.2	58005.	3011.5
#3	9489.2	58049.	3009.1

Approved: June 27, 2016

Sample Name: L1606098631S Acquired: 6/25/2016 21:12:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18827**	**4.8059**	**.19457**	**.97775**	**.51082**	**.02368**	**136.28**	**.02401**
Stddev	.00146	.0060	.00214	.00486	.00158	.00008	.55	.00011
%RSD	.77669	.12402	1.0980	.49690	.30853	.31910	.40245	.44044
#1	.18949	4.8104	.19700	.98276	.50954	.02372	135.66	.02402
#2	.18665	4.7991	.19298	.97305	.51258	.02359	136.67	.02389
#3	.18867	4.8083	.19374	.97744	.51033	.02373	136.53	.02410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09298**	**.23341**	**.25035**	**1.9823**	**26.282**	**.52091**	**38.371**	**.48555**
Stddev	.00063	.00083	.00168	.0210	.198	.00132	.105	.00060
%RSD	.67753	.35580	.67127	1.0601	.75241	.25420	.27268	.12393
#1	.09358	.23411	.25193	1.9586	26.065	.52066	38.253	.48489
#2	.09232	.23249	.25054	1.9895	26.453	.52234	38.408	.48570
#3	.09303	.23364	.24858	1.9987	26.329	.51972	38.452	.48607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49539**	**77.049**	**.23394**	**4.7766**	**.23491**	**.57914**	**.18644**	**6.1257**
Stddev	.00233	.345	.00087	.0076	.00312	.00333	.00623	.0072
%RSD	.47123	.44745	.37273	.15954	1.3288	.57493	3.3395	.11822
#1	.49753	76.664	.23461	4.7848	.23800	.57665	.18760	6.1339
#2	.49574	77.327	.23426	4.7754	.23176	.57786	.17971	6.1201
#3	.49290	77.158	.23296	4.7697	.23495	.58292	.19200	6.1230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098631S Acquired: 6/25/2016 21:12:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47308**	**2.3488**	**.46537**	**.23713**	**.48550**	**.47406**	**.01603**
Stddev	.00180	.0057	.00826	.00130	.00209	.00072	.00324
%RSD	.38025	.24432	1.7741	.54866	.42967	.15151	20.234
#1	.47478	2.3426	.46034	.23744	.48500	.47482	.01233
#2	.47325	2.3539	.46086	.23825	.48371	.47397	.01737
#3	.47120	2.3498	.47490	.23571	.48779	.47340	.01839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9509.0**	**58216.**	**3011.6**
Stddev	7.0	203.	15.7
%RSD	.07407	.34863	.52135
#1	9501.0	58067.	3028.6
#2	9511.6	58447.	2997.6
#3	9514.3	58134.	3008.7

Approved: June 27, 2016

Sample Name: L1606098633SD Acquired: 6/25/2016 21:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19322	4.9340	.19821	1.0094	.52302	.02438	139.13	.02459
Stddev	.00378	.0145	.00351	.0014	.00226	.00009	.67	.00034
%RSD	1.9571	.29336	1.7708	.13572	.43296	.36107	.48341	1.3705
#1	.18918	4.9313	.20201	1.0102	.52283	.02442	139.33	.02427
#2	.19667	4.9211	.19752	1.0078	.52537	.02443	139.68	.02494
#3	.19382	4.9497	.19509	1.0102	.52086	.02428	138.38	.02455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09514	.23910	.25336	2.0284	26.984	.53592	39.198	.43704
Stddev	.00042	.00077	.00150	.0114	.096	.00060	.184	.00451
%RSD	.44105	.32091	.59054	.56072	.35526	.11184	.46916	1.0308
#1	.09541	.23859	.25475	2.0343	27.015	.53581	38.996	.43232
#2	.09535	.23873	.25356	2.0357	27.059	.53539	39.242	.44129
#3	.09465	.23999	.25178	2.0153	26.876	.53657	39.356	.43751
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50931	78.441	.23759	4.8949	.24046	.58794	.19015	6.2655
Stddev	.00186	.336	.00142	.0178	.00324	.00596	.00110	.0092
%RSD	.36520	.42898	.59954	.36432	1.3470	1.0133	.57938	.14668
#1	.51115	78.549	.23885	4.9125	.24157	.58732	.19136	6.2719
#2	.50933	78.710	.23604	4.8953	.23682	.59419	.18990	6.2695
#3	.50743	78.063	.23787	4.8768	.24301	.58232	.18920	6.2549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098633SD Acquired: 6/25/2016 21:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48269**	**2.3976**	**.47749**	**.23961**	**.50144**	**.48370**	**.00655**
Stddev	.00278	.0083	.00742	.00256	.00242	.00154	.00139
%RSD	.57608	.34786	1.5549	1.0679	.48318	.31822	21.270
#1	.48505	2.3997	.47422	.24207	.50191	.48531	.00572
#2	.48340	2.4047	.47226	.23981	.49882	.48355	.00816
#3	.47963	2.3884	.48599	.23696	.50360	.48224	.00577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9541.3**	**57975.**	**3017.9**
Stddev	6.7	58.	25.7
%RSD	.06977	.09979	.85022
#1	9537.4	57946.	3002.1
#2	9549.0	58042.	3004.1
#3	9537.6	57938.	3047.5

Approved: June 27, 2016

Sample Name: L1606098635S Acquired: 6/25/2016 21:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19277**	**4.9885**	**.19579**	**1.3512**	**.50932**	**.02402**	**246.59**	**.02462**
Stddev	.00213	.0073	.00137	.0073	.00284	.00001	1.33	.00040
%RSD	1.1047	.14711	.70076	.54069	.55753	.03190	.53842	1.6295
#1	.19260	4.9802	.19687	1.3428	.50650	.02402	245.12	.02488
#2	.19498	4.9915	.19425	1.3565	.50929	.02401	246.97	.02416
#3	.19074	4.9939	.19626	1.3542	.51218	.02403	247.69	.02483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09311**	**.23510**	**.26651**	**1.9710**	**30.025**	**.51865**	**72.396**	**.67936**
Stddev	.00111	.00066	.00283	.0124	.152	.00282	.624	.00361
%RSD	1.1973	.28134	1.0623	.63080	.50639	.54413	.86161	.53080
#1	.09375	.23474	.26754	1.9611	29.892	.51908	71.843	.67568
#2	.09182	.23470	.26331	1.9669	29.993	.51564	72.272	.67951
#3	.09375	.23586	.26869	1.9849	30.191	.52123	73.072	.68289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49951**	**91.017**	**.23206**	**4.8553**	**.23760**	**.58301**	**.18517**	**6.5213**
Stddev	.00475	.491	.00241	.0437	.00246	.00711	.00329	.0728
%RSD	.95179	.53976	1.0367	.89938	1.0354	1.2190	1.7758	1.1160
#1	.50253	90.509	.23402	4.8765	.23815	.58650	.18639	6.5577
#2	.49403	91.051	.22938	4.8051	.23491	.57483	.18144	6.4375
#3	.50197	91.490	.23278	4.8843	.23974	.58769	.18767	6.5687
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098635S Acquired: 6/25/2016 21:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47340**	**2.1822**	**.45682**	**.23569**	**.48957**	**.47212**	**.00440**
Stddev	.00586	.0116	.00441	.00472	.00317	.00386	.00078
%RSD	1.2388	.53009	.96525	2.0030	.64754	.81664	17.679
#1	.47626	2.1692	.45177	.23827	.48595	.47646	.00457
#2	.46666	2.1856	.45986	.23024	.49090	.46909	.00508
#3	.47729	2.1916	.45885	.23856	.49186	.47080	.00355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9474.0**	**57681.**	**2990.6**
Stddev	86.2	193.	10.0
%RSD	.90991	.33483	.33371
#1	9421.7	57902.	3000.6
#2	9573.5	57545.	2990.5
#3	9426.8	57595.	2980.6

Approved: June 27, 2016

Sample Name: L1606098637SD Acquired: 6/25/2016 21:22:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18854**	**4.9112**	**.19745**	**1.3462**	**.50578**	**.02318**	**246.84**	**.02457**
Stddev	.00237	.0122	.00114	.0020	.00229	.00008	1.01	.00037
%RSD	1.2581	.24857	.57516	.14562	.45291	.33396	.40736	1.5133
#1	.18824	4.9085	.19618	1.3456	.50836	.02311	247.86	.02498
#2	.18633	4.9245	.19780	1.3447	.50496	.02326	245.85	.02445
#3	.19105	4.9006	.19837	1.3484	.50401	.02315	246.80	.02427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09368**	**.23124**	**.24645**	**1.9652**	**29.866**	**.51243**	**71.961**	**.67062**
Stddev	.00032	.00174	.00162	.0103	.162	.00260	.245	.00120
%RSD	.34157	.75435	.65887	.52496	.54204	.50740	.33982	.17871
#1	.09405	.23044	.24793	1.9540	30.010	.51110	72.114	.67080
#2	.09349	.23325	.24471	1.9744	29.691	.51543	71.679	.66935
#3	.09350	.23005	.24671	1.9671	29.897	.51077	72.089	.67172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50362**	**90.574**	**.23429**	**4.8998**	**.23803**	**.58838**	**.19013**	**6.6122**
Stddev	.00184	.311	.00137	.0310	.00392	.00166	.00571	.0196
%RSD	.36548	.34377	.58644	.63360	1.6481	.28131	3.0018	.29638
#1	.50535	90.891	.23522	4.9314	.24008	.58995	.18521	6.6237
#2	.50169	90.269	.23272	4.8693	.24051	.58666	.19639	6.5896
#3	.50382	90.562	.23494	4.8987	.23351	.58854	.18878	6.6233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098637SD Acquired: 6/25/2016 21:22:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47518**	**2.1930**	**.45556**	**.23535**	**.47970**	**.47047**	**.00421**
Stddev	.00224	.0050	.00619	.00164	.00083	.00231	.00126
%RSD	.47229	.22774	1.3595	.69822	.17220	.49043	29.868
#1	.47661	2.1987	.46015	.23423	.48048	.47206	.00301
#2	.47259	2.1891	.45801	.23458	.47883	.46782	.00552
#3	.47634	2.1914	.44851	.23723	.47980	.47152	.00409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9517.7**	**58425.**	**3034.0**
Stddev	30.6	371.	4.3
%RSD	.32191	.63434	.14141
#1	9523.8	58332.	3029.9
#2	9544.8	58110.	3038.5
#3	9484.5	58834.	3033.6

Approved: June 27, 2016

Sample Name: L1606098639 Acquired: 6/25/2016 21:26:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00422**	**.00040**	**.00975**	**.00108**	**.00009**	**.14419**	**-.00005**
Stddev	.00042	.00758	.00073	.00126	.00087	.00008	.01744	.00009
%RSD	1118.0	179.89	181.74	12.897	80.476	90.859	12.096	178.96
#1	.00028	.01060	-.00028	.01106	.00209	.00013	.16280	-.00014
#2	.00012	-.00417	.00116	.00964	.00057	-.00000	.14155	-.00004
#3	-.00051	.00622	.00032	.00856	.00059	.00013	.12822	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00035**	**.00305**	**.04079**	**-.00706**	**.00203**	**-.02733**	**-.00024**
Stddev	.00042	.00030	.00090	.02484	.04162	.00092	.03833	.00264
%RSD	93.882	85.053	29.494	60.907	589.18	45.533	140.24	1117.6
#1	.00013	.00037	.00205	.05000	-.05467	.00295	-.00835	-.00277
#2	.00091	.00004	.00332	.05971	.01106	.00204	-.00220	-.00044
#3	.00028	.00063	.00378	.01266	.02242	.00110	-.07145	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.23384**	**.00002**	**.00301**	**.00223**	**-.00336**	**.00424**	**.10834**
Stddev	.00025	.02078	.00057	.00488	.00185	.00118	.00213	.00216
%RSD	54.203	8.8874	3135.0	161.94	83.035	35.176	50.129	1.9925
#1	.00023	.25768	.00001	-.00120	.00258	-.00441	.00208	.11078
#2	.00073	.22428	.00059	.00188	.00389	-.00208	.00633	.10755
#3	.00043	.21955	-.00055	.00835	.00023	-.00360	.00432	.10668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098639 Acquired: 6/25/2016 21:26:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00188	.00201	-.00117	.00072	.00941	.00130
Stddev	.00073	.00051	.00315	.00081	.00019	.00001	.00060
%RSD	203.49	27.359	156.60	69.426	26.854	.12705	46.035
#1	.00061	.00146	.00564	-.00068	.00081	.00940	.00116
#2	.00093	.00173	.00038	-.00211	.00085	.00941	.00078
#3	-.00047	.00245	.00001	-.00072	.00050	.00942	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9979.7	61621.	3102.9
Stddev	10.2	118.	6.8
%RSD	.10173	.19116	.21926
#1	9983.1	61738.	3101.0
#2	9987.7	61621.	3110.5
#3	9968.3	61503.	3097.3

Approved: June 27, 2016

Sample Name: L1606098641 Acquired: 6/25/2016 21:30:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.00228	-.00074	.00681	.00240	.00007	2.3285	.00015
Stddev	.00195	.00437	.00132	.00259	.00010	.00002	.0225	.00014
%RSD	125.93	191.41	178.17	38.016	4.0011	29.007	.96410	94.650
#1	.00016	.00624	-.00146	.00963	.00251	.00005	2.3542	.00003
#2	.00071	.00302	-.00156	.00453	.00235	.00009	2.3184	.00011
#3	.00378	-.00241	.00078	.00628	.00234	.00008	2.3128	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00014	.00163	.03413	.24665	.00092	.81266	-.00079
Stddev	.00068	.00062	.00075	.01156	.02854	.00423	.01745	.00318
%RSD	1106.1	456.64	45.829	33.860	11.573	458.16	2.1475	404.35
#1	-.00033	.00085	.00092	.03095	.24915	.00580	.81529	.00231
#2	.00085	-.00023	.00241	.02450	.27386	-.00166	.79404	-.00404
#3	-.00034	-.00022	.00156	.04694	.21693	-.00138	.82864	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	1.5234	-.00034	.00759	.00193	-.00110	-.00056	1.9225
Stddev	.00028	.0181	.00053	.00504	.00328	.00190	.00524	.0055
%RSD	316.47	1.1895	155.07	66.429	170.02	173.25	938.70	.28386
#1	-.00021	1.5412	-.00096	.00263	.00004	-.00329	-.00638	1.9218
#2	.00035	1.5240	.00002	.00743	.00571	-.00014	.00092	1.9283
#3	.00013	1.5050	-.00009	.01271	.00003	.00014	.00379	1.9175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098641 Acquired: 6/25/2016 21:30:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.02979**	**.00925**	**-.00425**	**.00079**	**.00575**	**.00161**
Stddev	.00070	.00033	.00260	.00161	.00118	.00006	.00128
%RSD	2613.1	1.1094	28.082	37.920	148.25	1.0430	79.495
#1	-.00014	.02957	.00917	-.00541	.00147	.00579	.00219
#2	.00072	.03017	.01188	-.00492	.00148	.00578	.00014
#3	-.00067	.02963	.00669	-.00241	-.00057	.00568	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9984.0**	**61505.**	**3103.5**
Stddev	25.4	97.	8.6
%RSD	.25425	.15693	.27670
#1	10013.	61422.	3093.7
#2	9966.4	61611.	3106.9
#3	9972.6	61483.	3109.8

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:34:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40382	10.228	.39903	.49252	1.0184	.05057	10.132
Stddev	.00317	.045	.00339	.00303	.0029	.00010	.084
%RSD	.78510	.44126	.84879	.61522	.28786	.20129	.82686
#1	.40329	10.193	.40176	.48985	1.0165	.05045	10.103
#2	.40723	10.279	.39524	.49189	1.0170	.05064	10.066
#3	.40095	10.211	.40009	.49581	1.0218	.05061	10.226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05109	.20032	.50425	.51389	3.9993	49.456	1.0271
Stddev	.00034	.00030	.00243	.00134	.0288	.230	.0087
%RSD	.66912	.15054	.48104	.26170	.72080	.46581	.84751
#1	.05096	.20027	.50150	.51248	3.9697	49.237	1.0193
#2	.05148	.20064	.50519	.51515	4.0273	49.435	1.0365
#3	.05084	.20004	.50607	.51404	4.0011	49.697	1.0255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5965	.50354	1.0171	50.205	.50852	9.9839	.50630
Stddev	.0605	.00125	.0104	.188	.00105	.0190	.00443
%RSD	.63000	.24843	1.0188	.37433	.20655	.18977	.87552
#1	9.5498	.50228	1.0149	50.026	.50872	9.9714	.50177
#2	9.5748	.50478	1.0283	50.189	.50945	10.006	.51063
#3	9.6648	.50354	1.0080	50.400	.50738	9.9747	.50650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:34:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2057**	**.39535**	**5.1622**	**1.0068**	**1.0152**	**1.0163**	**.51868**
Stddev	.0009	.00724	.0066	.0035	.0056	.0047	.00189
%RSD	.07645	1.8317	.12822	.34938	.55282	.46463	.36343
#1	1.2067	.40045	5.1563	1.0056	1.0088	1.0109	.51803
#2	1.2055	.39854	5.1610	1.0107	1.0174	1.0194	.51721
#3	1.2048	.38706	5.1694	1.0040	1.0193	1.0187	.52081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0297**	**1.0108**	F **2.9654**
Stddev	.0010	.0013	.0124
%RSD	.09618	.12981	.41944
#1	1.0297	1.0109	2.9530
#2	1.0307	1.0120	2.9654
#3	1.0287	1.0094	2.9779
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9765.3**	**59222.**	**3028.4**
Stddev	12.6	103.	19.9
%RSD	.12950	.17379	.65564
#1	9777.2	59331.	3048.9
#2	9752.0	59127.	3027.1
#3	9766.5	59207.	3009.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:38:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00048	-.00056	.00159	.00238	.00173	.00014	-.05704	-.00011
Stddev	.00089	.00372	.00374	.00230	.00036	.00002	.05178	.00017
%RSD	185.89	660.56	234.30	96.559	20.708	14.400	90.783	156.11
#1	-.00133	.00080	.00118	.00024	.00195	.00012	-.11682	-.00027
#2	-.00055	-.00477	-.00192	.00481	.00132	.00016	-.02846	-.00014
#3	.00045	.00228	.00552	.00209	.00192	.00015	-.02584	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00048	.00001	.01554	-.08094	.00031	-.00960	.00059
Stddev	.00009	.00037	.00173	.01679	.11260	.00565	.05873	.00171
%RSD	56.610	77.335	20230.	108.07	139.11	1853.2	611.58	288.38
#1	.00024	.00066	.00194	-.00104	.01136	.00158	-.02063	.00007
#2	.00020	.00072	-.00054	.03254	-.20639	-.00588	.05386	.00251
#3	.00006	.00005	-.00138	.01511	-.04780	.00521	-.06203	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00336	.02885	-.00050	.00712	.00213	.00602	-.00054	.04214
Stddev	.00024	.02974	.00074	.00312	.00180	.00158	.00069	.00013
%RSD	7.0582	103.10	148.29	43.907	84.214	26.247	127.12	.29697
#1	.00323	-.00548	.00008	.00759	.00359	.00782	.00008	.04201
#2	.00321	.04496	-.00024	.00998	.00013	.00485	-.00042	.04226
#3	.00363	.04705	-.00133	.00378	.00268	.00540	-.00129	.04215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:38:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00065	-.00177	-.00021	.00113	.00005	.00375
Stddev	.00100	.00044	.00221	.00418	.00029	.00020	.00087
%RSD	212.41	68.047	125.42	1958.4	25.944	435.57	23.135
#1	.00160	.00080	.00075	-.00080	.00139	-.00005	.00437
#2	-.00031	.00015	-.00341	-.00407	.00081	.00028	.00276
#3	.00012	.00100	-.00264	.00422	.00119	-.00009	.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9540.4	58573.	2934.4
Stddev	6.2	75.	17.1
%RSD	.06498	.12729	.58178
#1	9533.2	58646.	2919.8
#2	9543.3	58575.	2953.2
#3	9544.6	58497.	2930.3

Approved: June 27, 2016

Sample Name: PBW 9A Acquired: 6/25/2016 21:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00614**	**.00175**	**.00056**	**.00231**	**.00012**	**-.04646**	**-.00007**
Stddev	.00171	.00204	.00393	.00252	.00071	.00020	.04124	.00026
%RSD	1283.4	33.141	224.26	449.74	30.683	160.24	88.765	365.50
#1	.00182	.00611	.00626	-.00197	.00237	.00018	-.00258	-.00036
#2	-.00137	.00820	-.00088	.00057	.00157	.00029	-.08442	.00014
#3	-.00085	.00413	-.00013	.00307	.00298	-.00010	-.05240	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00010**	**.00080**	**.02407**	**-.12665**	**.00141**	**-.00997**	**-.00231**
Stddev	.00033	.00034	.00081	.01192	.12266	.00378	.02213	.00072
%RSD	90.436	329.64	101.91	49.545	96.850	267.21	222.01	31.042
#1	-.00000	-.00017	-.00014	.03113	-.25310	.00322	.01487	-.00193
#2	-.00045	.00048	.00118	.03078	-.11869	.00395	-.02759	-.00185
#3	-.00065	-.00000	.00135	.01030	-.00816	-.00293	-.01718	-.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.03613**	**.00006**	**.00672**	**.00326**	**-.00431**	**-.00184**	**.00566**
Stddev	.00007	.03275	.00077	.00152	.00253	.00485	.00591	.00059
%RSD	18.235	90.627	1212.2	22.673	77.664	112.59	322.28	10.478
#1	.00035	.07347	.00060	.00612	.00546	-.00044	-.00125	.00618
#2	.00032	.02263	-.00082	.00846	.00049	-.00975	.00376	.00501
#3	.00045	.01230	.00041	.00559	.00385	-.00274	-.00802	.00578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW 9A Acquired: 6/25/2016 21:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.00033	-.00143	-.00317	.00125	.00161	.00218
Stddev	.00053	.00015	.00130	.00329	.00039	.00011	.00081
%RSD	84.270	46.594	90.758	103.97	30.982	7.0758	37.192
#1	.00094	.00050	-.00075	-.00532	.00080	.00148	.00195
#2	.00002	.00020	-.00062	-.00481	.00145	.00171	.00150
#3	.00092	.00028	-.00293	.00062	.00150	.00162	.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9585.8	59115.	2963.7
Stddev	26.3	98.	6.0
%RSD	.27487	.16506	.20388
#1	9574.9	59148.	2962.9
#2	9615.8	59005.	2958.2
#3	9566.6	59192.	2970.2

Approved: June 27, 2016

Sample Name: LCSW 9A Acquired: 6/25/2016 21:45:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19278**	**4.8645**	**.19357**	**.92620**	**.49567**	**.02388**	**4.9744**	**.02438**
Stddev	.00059	.0150	.00172	.00296	.00123	.00001	.0131	.00027
%RSD	.30529	.30879	.88618	.31973	.24905	.05168	.26315	1.0959
#1	.19266	4.8773	.19194	.92961	.49521	.02387	4.9745	.02469
#2	.19342	4.8480	.19536	.92439	.49707	.02389	4.9613	.02424
#3	.19226	4.8682	.19339	.92458	.49473	.02389	4.9875	.02421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09756**	**.24011**	**.24908**	**1.9287**	**23.845**	**.50347**	**4.7458**	**.24452**
Stddev	.00018	.00063	.00057	.0379	.076	.00304	.1100	.00304
%RSD	.18802	.26044	.22811	1.9678	.32025	.60437	2.3184	1.2446
#1	.09771	.24070	.24970	1.9204	23.902	.50653	4.7834	.24200
#2	.09761	.23946	.24858	1.9701	23.875	.50343	4.6218	.24790
#3	.09735	.24018	.24895	1.8956	23.758	.50044	4.8320	.24367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50361**	**24.550**	**.24652**	**4.6792**	**.24585**	**.57643**	**.18945**	**2.4007**
Stddev	.00079	.045	.00091	.0152	.00374	.00321	.00289	.0038
%RSD	.15600	.18503	.37091	.32489	1.5220	.55613	1.5253	.15739
#1	.50355	24.561	.24748	4.6824	.24789	.57981	.19277	2.4049
#2	.50442	24.588	.24565	4.6926	.24153	.57604	.18748	2.3993
#3	.50285	24.500	.24642	4.6627	.24812	.57343	.18811	2.3978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW 9A Acquired: 6/25/2016 21:45:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48346**	**.50078**	**.49876**	**.24644**	**.49280**	**.48316**	**.01652**
Stddev	.00157	.00182	.00430	.00290	.00093	.00040	.00416
%RSD	.32431	.36335	.86149	1.1750	.18883	.08190	25.157
#1	.48465	.50112	.49719	.24479	.49339	.48270	.01275
#2	.48404	.50241	.49547	.24978	.49173	.48334	.01583
#3	.48168	.49882	.50362	.24474	.49328	.48342	.02097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9876.1**	**60275.**	**3070.8**
Stddev	6.3	180.	12.0
%RSD	.06355	.29822	.39033
#1	9874.5	60221.	3071.7
#2	9883.0	60476.	3058.4
#3	9870.8	60129.	3082.3

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 21:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	-.00126	-.00015	.00486	.00128	.00012	-.00459	.00000
Stddev	.00056	.00100	.00110	.00023	.00095	.00001	.02969	.00020
%RSD	100.53	79.131	736.67	4.6731	74.371	6.7718	646.26	7554.0
#1	.00064	-.00237	-.00130	.00509	.00028	.00012	.02032	.00019
#2	.00106	-.00043	-.00004	.00484	.00217	.00011	-.03745	-.00020
#3	-.00004	-.00099	.00090	.00463	.00139	.00012	.00335	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00026	.00088	.03134	-.11502	-.00026	.03535	-.00044
Stddev	.00018	.00121	.00068	.00659	.05233	.00265	.10514	.00096
%RSD	49.613	468.36	76.871	21.019	45.492	1017.6	297.45	218.87
#1	.00058	.00075	.00159	.02374	-.13830	.00130	-.07629	.00060
#2	.00024	.00114	.00082	.03485	-.15168	.00124	.13249	-.00129
#3	.00028	-.00112	.00024	.03543	-.05510	-.00331	.04985	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.07370	.00132	.00313	.00117	-.00091	.00077	-.00309
Stddev	.00026	.00588	.00035	.00217	.00118	.00090	.00482	.00173
%RSD	45.817	7.9801	26.636	69.209	100.20	98.397	629.48	56.034
#1	.00085	.06695	.00170	.00515	.00095	-.00029	-.00041	-.00378
#2	.00042	.07645	.00125	.00084	.00245	-.00194	-.00336	-.00438
#3	.00040	.07770	.00101	.00340	.00013	-.00050	.00606	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 21:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00302	-.00048	-.00333	.00002	.00245	.00132
Stddev	.00077	.00023	.00928	.00236	.00016	.00009	.00057
%RSD	230.12	7.5634	1914.7	70.982	654.43	3.7966	42.974
#1	.00023	.00325	-.01051	-.00146	-.00016	.00251	.00071
#2	.00115	.00279	.00127	-.00253	.00008	.00234	.00183
#3	-.00038	.00303	.00779	-.00598	.00016	.00250	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9948.0	61128.	3082.2
Stddev	8.3	35.	19.2
%RSD	.08376	.05747	.62310
#1	9943.7	61136.	3060.8
#2	9942.7	61089.	3097.9
#3	9957.6	61158.	3087.8

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 21:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.32067	.00199	.03822	.08666	.00012	52.298	.00025
Stddev	.00033	.00225	.00178	.00083	.00065	.00013	.384	.00005
%RSD	31.425	.70249	89.821	2.1841	.74667	104.78	.73398	21.021
#1	.00100	.32316	.00023	.03790	.08700	-.00002	52.414	.00024
#2	.00077	.32010	.00380	.03760	.08707	.00018	51.870	.00021
#3	.00143	.31876	.00193	.03917	.08592	.00021	52.611	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00232	.00233	.31407	.84091	.00625	16.422	.01281
Stddev	.00025	.00123	.00162	.01381	.09733	.00295	.087	.00086
%RSD	177.99	52.851	69.798	4.3981	11.574	47.203	.53048	6.7172
#1	-.00001	.00331	.00164	.32378	.73706	.00531	16.422	.01228
#2	.00000	.00271	.00116	.32018	.93004	.00389	16.510	.01236
#3	.00043	.00095	.00418	.29826	.85562	.00956	16.336	.01381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	3.5331	.00030	.18004	.00409	-.00180	.00164	8.5479
Stddev	.00032	.0286	.00045	.00328	.00158	.00258	.00446	.0078
%RSD	137.02	.80985	147.61	1.8192	38.579	143.43	271.62	.09172
#1	-.00011	3.5554	-.00012	.17874	.00498	-.00359	.00673	8.5558
#2	.00052	3.5008	.00077	.17762	.00503	-.00297	-.00020	8.5477
#3	.00028	3.5432	.00026	.18377	.00227	.00116	-.00161	8.5401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 21:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.13816	-.00281	-.00107	.00371	.00875	.00154
Stddev	.00042	.00078	.00681	.00141	.00081	.00007	.00044
%RSD	132.89	.56285	242.62	131.61	21.926	.80395	28.630
#1	-.00012	.13842	.00500	-.00130	.00416	.00881	.00162
#2	.00035	.13728	-.00586	-.00235	.00277	.00878	.00193
#3	.00072	.13877	-.00757	.00044	.00421	.00867	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9876.5	60888.	3069.7
Stddev	11.3	192.	3.6
%RSD	.11437	.31559	.11816
#1	9889.0	60702.	3066.7
#2	9866.9	60874.	3073.8
#3	9873.6	61086.	3068.7

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 21:57:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19226**	**5.2769**	**.19700**	**.97637**	**.57407**	**.02377**	**55.412**	**.02464**
Stddev	.00232	.0172	.00210	.00695	.00123	.00006	.275	.00018
%RSD	1.2075	.32678	1.0663	.71175	.21357	.23547	.49636	.71677
#1	.19492	5.2928	.19484	.98432	.57271	.02383	55.376	.02446
#2	.19066	5.2586	.19711	.97142	.57439	.02373	55.156	.02465
#3	.19119	5.2792	.19903	.97337	.57510	.02375	55.703	.02481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09590**	**.23900**	**.24525**	**2.2503**	**24.873**	**.51320**	**20.375**	**.25171**
Stddev	.00047	.00136	.00161	.0156	.173	.01009	.023	.00267
%RSD	.48644	.56990	.65491	.69491	.69517	1.9665	.11329	1.0594
#1	.09633	.24013	.24639	2.2591	25.016	.52369	20.389	.25241
#2	.09595	.23749	.24595	2.2322	24.681	.50356	20.349	.25396
#3	.09541	.23938	.24342	2.2595	24.921	.51234	20.388	.24877
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50427**	**27.841**	**.24087**	**4.9542**	**.24449**	**.58622**	**.18341**	**11.076**
Stddev	.00227	.102	.00131	.0062	.00416	.00262	.00666	.019
%RSD	.45102	.36806	.54487	.12407	1.6996	.44696	3.6299	.17466
#1	.50494	27.874	.24041	4.9608	.24621	.58442	.18291	11.063
#2	.50614	27.726	.24235	4.9486	.23975	.58502	.19031	11.099
#3	.50174	27.923	.23985	4.9531	.24750	.58923	.17702	11.068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 21:57:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48537**	**.63044**	**.49547**	**.24660**	**.49048**	**.48728**	**.00709**
Stddev	.00041	.00808	.00649	.00259	.00192	.00292	.00024
%RSD	.08494	1.2823	1.3100	1.0500	.39154	.59943	3.4352
#1	.48528	.63362	.48907	.24492	.49247	.49009	.00732
#2	.48501	.63645	.50205	.24958	.48864	.48426	.00711
#3	.48582	.62125	.49531	.24529	.49034	.48750	.00684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9767.2**	**59939.**	**3081.9**
Stddev	8.4	151.	2.2
%RSD	.08617	.25130	.07156
#1	9776.8	59826.	3083.9
#2	9761.1	60110.	3082.2
#3	9763.8	59880.	3079.5

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:01:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19422**	**6.5547**	**.19616**	**.97909**	**.58447**	**.02412**	**57.272**	**.02449**
Stddev	.00043	.0174	.00206	.00320	.00356	.00008	.255	.00025
%RSD	.22056	.26500	1.0502	.32643	.60985	.31860	.44461	1.0216
#1	.19468	6.5722	.19401	.98024	.58211	.02413	57.018	.02471
#2	.19383	6.5546	.19811	.97548	.58857	.02404	57.527	.02422
#3	.19415	6.5375	.19636	.98156	.58273	.02419	57.272	.02454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09680**	**.24221**	**.24688**	**3.2519**	**25.085**	**.51256**	**21.272**	**.29044**
Stddev	.00024	.00084	.00160	.0305	.123	.00182	.123	.00255
%RSD	.25204	.34673	.64632	.93681	.48984	.35468	.57596	.87927
#1	.09682	.24178	.24538	3.2175	24.965	.51125	21.131	.28769
#2	.09704	.24318	.24856	3.2756	25.081	.51179	21.342	.29274
#3	.09655	.24168	.24672	3.2624	25.210	.51464	21.344	.29089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50646**	**28.018**	**.24386**	**4.9818**	**.24358**	**.58240**	**.18769**	**13.764**
Stddev	.00076	.167	.00147	.0053	.00228	.00382	.00425	.008
%RSD	.15029	.59670	.60238	.10534	.93711	.65545	2.2629	.06131
#1	.50691	27.825	.24251	4.9763	.24111	.57903	.18298	13.756
#2	.50690	28.112	.24543	4.9823	.24561	.58163	.18886	13.772
#3	.50558	28.117	.24364	4.9868	.24402	.58655	.19123	13.765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:01:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48752**	**.63979**	**.50344**	**.24632**	**.49636**	**.48329**	**.00682**
Stddev	.00123	.00383	.00416	.00077	.00180	.00044	.00097
%RSD	.25232	.59818	.82653	.31336	.36344	.09176	14.263
#1	.48785	.63646	.50591	.24591	.49538	.48373	.00713
#2	.48616	.64397	.49864	.24584	.49525	.48329	.00761
#3	.48856	.63895	.50578	.24721	.49844	.48284	.00573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9745.6**	**59867.**	**3081.8**
Stddev	9.9	91.	26.0
%RSD	.10194	.15198	.84468
#1	9734.5	59851.	3110.8
#2	9753.6	59965.	3060.5
#3	9748.6	59785.	3074.0

Approved: June 27, 2016

Sample Name: L1606078701 Acquired: 6/25/2016 22:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	-.00089	-.00017	.00563	.00151	.00011	.08615	.00015
Stddev	.00234	.00167	.00131	.00160	.00060	.00001	.02054	.00021
%RSD	113.42	187.14	751.31	28.470	39.897	9.3705	23.846	140.35
#1	.00316	-.00269	.00118	.00529	.00196	.00012	.07852	-.00008
#2	-.00062	-.00061	-.00144	.00737	.00083	.00010	.07052	.00033
#3	.00364	.00062	-.00027	.00422	.00173	.00012	.10942	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00093	.00322	.06115	.01246	.00241	.02800	.00003
Stddev	.00003	.00076	.00095	.00519	.08806	.00216	.01589	.00083
%RSD	20.822	82.163	29.586	8.4819	706.92	89.891	56.731	2625.4
#1	.00011	.00029	.00408	.06573	-.03307	.00026	.04634	-.00085
#2	.00017	.00177	.00219	.05552	.11396	.00458	.01831	.00015
#3	.00013	.00071	.00338	.06220	-.04352	.00238	.01936	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.44862	.00009	.00157	.00319	-.00012	.00644	.10535
Stddev	.00015	.01169	.00041	.00200	.00252	.00436	.00247	.00160
%RSD	36.378	2.6064	429.23	127.80	78.785	3632.8	38.299	1.5199
#1	.00041	.45408	.00056	-.00069	.00238	-.00321	.00918	.10450
#2	.00025	.45659	-.00021	.00226	.00118	.00487	.00438	.10720
#3	.00054	.43520	-.00006	.00313	.00602	-.00202	.00577	.10436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701 Acquired: 6/25/2016 22:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.00134	.00464	-.00236	.00126	.00852	.00204
Stddev	.00023	.00031	.01117	.00170	.00022	.00013	.00133
%RSD	19.939	23.344	240.52	72.025	17.171	1.4749	64.993
#1	.00100	.00168	-.00728	-.00407	.00147	.00841	.00183
#2	.00140	.00106	.01487	-.00232	.00127	.00866	.00083
#3	.00102	.00128	.00634	-.00068	.00104	.00851	.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9978.6	61725.	3108.7
Stddev	25.8	52.	12.8
%RSD	.25894	.08436	.41157
#1	9949.5	61751.	3109.2
#2	9998.7	61759.	3121.3
#3	9987.8	61665.	3095.7

Approved: June 27, 2016

Sample Name: L1606078701PS Acquired: 6/25/2016 22:08:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19562**	**4.8670**	**.19417**	**.93274**	**.49617**	**.02396**	**5.0466**	**.02449**
Stddev	.00101	.0014	.00206	.00077	.00126	.00015	.0443	.00024
%RSD	.51610	.02767	1.0615	.08264	.25431	.60837	.87718	.96002
#1	.19561	4.8655	.19531	.93216	.49577	.02379	5.0119	.02471
#2	.19461	4.8672	.19179	.93245	.49515	.02407	5.0964	.02451
#3	.19663	4.8682	.19541	.93362	.49758	.02401	5.0313	.02424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09815**	**.24178**	**.25186**	**1.9475**	**23.902**	**.50912**	**4.6690**	**.24615**
Stddev	.00038	.00032	.00085	.0476	.079	.00280	.1745	.00176
%RSD	.38848	.13325	.33570	2.4417	.33116	.54926	3.7379	.71493
#1	.09847	.24215	.25095	2.0020	23.984	.51180	4.5199	.24606
#2	.09825	.24158	.25263	1.9144	23.825	.50622	4.6262	.24443
#3	.09773	.24160	.25200	1.9261	23.897	.50934	4.8609	.24795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50547**	**24.979**	**.24871**	**4.7191**	**.25003**	**.58513**	**.18331**	**2.5397**
Stddev	.00148	.047	.00145	.0045	.00153	.00133	.00963	.0085
%RSD	.29370	.18695	.58415	.09482	.61173	.22744	5.2541	.33396
#1	.50679	24.962	.24995	4.7237	.24937	.58423	.17385	2.5470
#2	.50576	24.943	.24906	4.7186	.24895	.58665	.18298	2.5417
#3	.50387	25.032	.24711	4.7148	.25178	.58449	.19310	2.5304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701PS Acquired: 6/25/2016 22:08:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48806**	**.50437**	**.49939**	**.24983**	**.48939**	**.48880**	**.00250**
Stddev	.00273	.00349	.00591	.00248	.00296	.00032	.00045
%RSD	.55970	.69122	1.1836	.99157	.60527	.06447	18.096
#1	.48918	.50154	.50066	.25202	.49256	.48872	.00242
#2	.49005	.50331	.49295	.25032	.48893	.48914	.00298
#3	.48494	.50827	.50457	.24714	.48669	.48853	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9876.1**	**60662.**	**3087.6**
Stddev	12.0	38.	4.3
%RSD	.12163	.06253	.13975
#1	9869.1	60619.	3083.6
#2	9869.3	60677.	3092.2
#3	9890.0	60690.	3087.1

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00226**	**-.00962**	**.00257**	**.00372**	**.00008**	**.00010**	**-.05467**	**-.00005**
Stddev	.00390	.01062	.00091	.00131	.00131	.00006	.03854	.00004
%RSD	172.35	110.37	35.549	35.155	1747.1	57.750	70.491	84.699
#1	.00675	-.01272	.00350	.00225	-.00089	.00014	-.04307	-.00000
#2	.00027	-.01835	.00254	.00475	.00157	.00012	-.09767	-.00007
#3	-.00023	.00220	.00167	.00417	-.00046	.00003	-.02326	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00076**	**.00146**	**.02792**	**-.10756**	**-.00176**	**-.01577**	**.00085**
Stddev	.00022	.00111	.00071	.01781	.06853	.00352	.01010	.00145
%RSD	144.06	146.16	48.411	63.806	63.714	199.76	64.076	169.31
#1	.00010	.00182	.00216	.04804	-.06727	-.00153	-.01532	-.00005
#2	-.00026	-.00038	.00146	.01416	-.18668	.00163	-.02609	.00009
#3	-.00029	.00083	.00075	.02156	-.06871	-.00539	-.00589	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.12025**	**-.00037**	**.00742**	**.00388**	**-.00036**	**.00693**	**.02501**
Stddev	.00028	.02622	.00009	.00699	.00334	.00491	.00079	.00132
%RSD	80.313	21.803	23.237	94.157	86.143	1346.9	11.341	5.2920
#1	.00057	.14797	-.00041	.00450	.00651	.00107	.00746	.02626
#2	.00045	.09585	-.00027	.01539	.00501	-.00584	.00603	.02362
#3	.00003	.11693	-.00042	.00237	.00012	.00367	.00731	.02515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00027	.00391	-.00239	.00091	.00198	.00117
Stddev	.00062	.00058	.00259	.00083	.00057	.00021	.00105
%RSD	170.80	217.03	66.210	34.804	62.977	10.839	89.133
#1	.00032	-.00015	.00203	-.00335	.00041	.00217	.00108
#2	-.00024	.00003	.00686	-.00188	.00153	.00175	.00018
#3	.00100	.00093	.00284	-.00194	.00079	.00202	.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10481.	64804.	3221.0
Stddev	25.	98.	4.2
%RSD	.23393	.15113	.13029
#1	10501.	64916.	3225.8
#2	10489.	64737.	3219.2
#3	10454.	64758.	3217.9

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:16:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**-.01671**	**.00066**	**.00174**	**.00117**	**.00007**	**-.03873**	**-.00006**
Stddev	.00055	.00595	.00077	.00373	.00047	.00003	.02526	.00023
%RSD	110.50	35.627	115.52	214.66	39.929	36.665	65.224	418.10
#1	.00087	-.01063	-.00016	.00037	.00065	.00010	-.06018	.00018
#2	-.00014	-.02253	.00136	-.00111	.00156	.00005	-.01089	-.00029
#3	.00077	-.01699	.00080	.00596	.00129	.00006	-.04513	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**-.00027**	**.00015**	**.01537**	**-.08473**	**-.00313**	**-.04452**	**.00037**
Stddev	.00041	.00031	.00072	.00667	.12317	.00148	.02793	.00217
%RSD	208.97	115.52	489.41	43.427	145.37	47.326	62.733	580.66
#1	.00051	-.00025	-.00010	.01465	-.11440	-.00155	-.01300	-.00212
#2	-.00027	-.00059	-.00042	.02238	.05057	-.00335	-.06618	.00176
#3	.00035	.00003	.00096	.00908	-.19035	-.00448	-.05440	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00052**	**.04068**	**-.00002**	**.00630**	**.00223**	**-.00439**	**.00789**	**.00775**
Stddev	.00014	.01560	.00098	.00605	.00105	.00119	.00333	.00034
%RSD	26.596	38.347	4828.5	96.010	47.199	27.128	42.126	4.3419
#1	-.00068	.05533	-.00110	-.00065	.00121	-.00319	.01093	.00736
#2	-.00042	.02428	.00080	.00920	.00218	-.00557	.00434	.00794
#3	-.00046	.04243	.00023	.01036	.00331	-.00443	.00841	.00794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:16:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.00049**	**.00611**	**-.00169**	**-.00019**	**.00076**	**.00104**
Stddev	.00047	.00028	.00364	.00121	.00086	.00008	.00084
%RSD	59.598	55.989	59.553	71.357	443.84	10.636	80.846
#1	-.00025	.00020	.00285	-.00078	-.00105	.00067	.00138
#2	-.00100	.00075	.00545	-.00306	-.00021	.00078	.00165
#3	-.00110	.00052	.01004	-.00123	.00067	.00082	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10473.**	**64343.**	**3185.8**
Stddev	11.	88.	33.4
%RSD	.10369	.13736	1.0486
#1	10479.	64432.	3210.0
#2	10479.	64255.	3199.9
#3	10461.	64342.	3147.7

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:20:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39676**	**10.011**	**.39200**	**.48774**	**1.0072**	**.04931**	**9.9627**
Stddev	.00166	.042	.00060	.00247	.0020	.00016	.0336
%RSD	.41961	.41526	.15324	.50705	.19487	.32345	.33737
#1	.39852	10.036	.39268	.48499	1.0052	.04934	9.9285
#2	.39656	10.035	.39180	.48843	1.0074	.04945	9.9639
#3	.39521	9.9633	.39153	.48979	1.0091	.04914	9.9956
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05046**	**.19748**	**.49159**	**.50549**	**3.9250**	**48.860**	**1.0117**
Stddev	.00033	.00063	.00167	.00263	.0491	.051	.0023
%RSD	.66275	.32062	.34000	.52017	1.2522	.10387	.22425
#1	.05068	.19812	.49231	.50540	3.8948	48.907	1.0140
#2	.05064	.19745	.49279	.50817	3.9817	48.806	1.0118
#3	.05008	.19686	.48968	.50291	3.8986	48.867	1.0095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.4449**	**.49486**	**1.0080**	**49.891**	**.50156**	**9.8436**	**.50078**
Stddev	.0163	.00095	.0079	.070	.00172	.0350	.00128
%RSD	.17297	.19183	.78730	.13958	.34250	.35531	.25500
#1	9.4275	.49541	1.0170	49.848	.50286	9.8791	.50070
#2	9.4600	.49376	1.0019	49.971	.50221	9.8426	.49954
#3	9.4471	.49540	1.0052	49.853	.49961	9.8092	.50209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:20:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1892**	**.38968**	**5.0794**	**.99180**	**1.0052**	**1.0145**	**.50829**
Stddev	.0070	.00637	.0139	.00335	.0009	.0065	.00390
%RSD	.58775	1.6349	.27365	.33789	.09319	.64413	.76634
#1	1.1970	.39094	5.0928	.99452	1.0044	1.0072	.50887
#2	1.1869	.38277	5.0804	.99283	1.0062	1.0197	.51187
#3	1.1836	.39532	5.0651	.98805	1.0048	1.0166	.50414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0022**	**.99700**	F **2.9158**
Stddev	.0042	.00301	.0038
%RSD	.42153	.30191	.13010
#1	1.0066	.99806	2.9128
#2	1.0017	.99934	2.9201
#3	.99824	.99361	2.9145
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9930.6**	**60612.**	**3086.3**
Stddev	10.1	73.	9.8
%RSD	.10207	.12111	.31687
#1	9941.9	60647.	3097.4
#2	9922.1	60528.	3082.4
#3	9927.9	60661.	3079.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:23:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00100**	**-.00695**	**.00023**	**.00246**	**.00203**	**.00014**	**-.01220**	**.00014**
Stddev	.00181	.00287	.00117	.00195	.00133	.00002	.03027	.00029
%RSD	181.13	41.303	500.29	79.096	65.555	16.180	248.16	212.80
#1	-.00109	-.00504	-.00098	.00360	.00305	.00017	-.03745	.00025
#2	.00205	-.00555	.00136	.00021	.00053	.00014	.02136	-.00019
#3	.00203	-.01025	.00032	.00357	.00251	.00013	-.02050	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.00000**	**.00097**	**.02954**	**-.02965**	**-.00129**	**.00088**	**.00163**
Stddev	.00011	.00082	.00136	.00883	.01713	.00234	.03199	.00271
%RSD	74.595	562770.	140.78	29.900	57.784	181.57	3634.1	165.69
#1	.00008	.00083	.00213	.03726	-.04191	-.00397	.03754	.00233
#2	.00008	-.00001	.00130	.01991	-.03697	-.00018	-.01355	.00393
#3	.00027	-.00081	-.00053	.03145	-.01007	.00029	-.02135	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00354**	**.01474**	**-.00023**	**.00359**	**.00237**	**.00219**	**.00418**	**.03627**
Stddev	.00058	.04847	.00031	.00245	.00060	.00526	.00484	.00058
%RSD	16.314	328.86	136.11	68.357	25.126	240.59	115.86	1.6055
#1	.00288	-.00030	-.00040	.00322	.00284	.00365	.00822	.03616
#2	.00384	.06894	.00013	.00134	.00170	.00656	.00551	.03575
#3	.00391	-.02443	-.00042	.00620	.00257	-.00365	-.00119	.03690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:23:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00039**	**.00181**	**-.00370**	**.00020**	**.00004**	**.00435**
Stddev	.00110	.00025	.00867	.00085	.00051	.00012	.00191
%RSD	689.85	64.301	479.78	22.978	253.56	271.57	43.946
#1	-.00106	.00012	.00915	-.00439	-.00031	.00014	.00375
#2	.00108	.00042	.00404	-.00397	.00020	.00008	.00281
#3	.00046	.00061	-.00776	-.00275	.00071	-.00009	.00649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9799.0**	**60424.**	**3020.0**
Stddev	11.5	135.	11.0
%RSD	.11760	.22419	.36496
#1	9789.9	60445.	3025.5
#2	9795.1	60547.	3027.2
#3	9812.0	60279.	3007.3

Approved: June 27, 2016

Sample Name: L1606078710 Acquired: 6/25/2016 22:27:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.22720	.00214	.03806	.08552	.00012	52.208	.00022
Stddev	.00078	.00436	.00063	.00014	.00079	.00005	.232	.00016
%RSD	450.39	1.9170	29.562	.37345	.92041	43.173	.44436	71.173
#1	.00025	.22486	.00206	.03796	.08534	.00008	52.380	.00034
#2	.00030	.22452	.00280	.03822	.08638	.00018	52.301	.00028
#3	-.00108	.23223	.00155	.03799	.08484	.00010	51.944	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00186	.00266	.23670	.85794	.00848	16.196	.00759
Stddev	.00014	.00018	.00107	.03451	.05555	.00209	.053	.00200
%RSD	849.17	9.9559	40.055	14.580	6.4743	24.705	.32764	26.366
#1	-.00011	.00187	.00273	.22408	.80379	.01054	16.251	.00990
#2	.00017	.00167	.00156	.27574	.91479	.00636	16.192	.00643
#3	-.00001	.00204	.00369	.21027	.85526	.00853	16.145	.00644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	3.4758	.00069	.17816	.00790	-.00197	-.00080	8.3609
Stddev	.00043	.0348	.00145	.00114	.00265	.00100	.00335	.0283
%RSD	39.553	1.0002	208.84	.63768	33.519	50.807	416.39	.33868
#1	.00115	3.5101	.00211	.17685	.00777	-.00150	.00187	8.3874
#2	.00149	3.4766	.00076	.17877	.00531	-.00312	.00028	8.3643
#3	.00063	3.4406	-.00079	.17886	.01060	-.00129	-.00456	8.3311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078710 Acquired: 6/25/2016 22:27:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.13692	-.00198	-.00343	.00351	.00457	.00538
Stddev	.00037	.00076	.00399	.00152	.00135	.00005	.00158
%RSD	34.945	.55142	201.79	44.378	38.390	1.0573	29.298
#1	.00117	.13773	-.00276	-.00427	.00288	.00452	.00538
#2	.00136	.13624	.00235	-.00167	.00505	.00462	.00381
#3	.00065	.13680	-.00552	-.00433	.00259	.00458	.00696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9837.0	60854.	3075.5
Stddev	21.0	87.	13.2
%RSD	.21328	.14286	.42972
#1	9813.4	60881.	3070.1
#2	9853.7	60757.	3065.8
#3	9843.8	60924.	3090.5

Approved: June 27, 2016

Sample Name: L1606078718 Acquired: 6/25/2016 22:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	1.2702	.00086	.07193	.15344	.00016	53.535	.00010
Stddev	.00088	.0133	.00129	.00289	.00068	.00006	.315	.00014
%RSD	504.87	1.0437	151.37	4.0242	.44552	39.145	.58814	143.56
#1	.00078	1.2717	-.00017	.07191	.15299	.00023	53.705	-.00002
#2	-.00096	1.2563	.00043	.07484	.15310	.00014	53.172	.00025
#3	-.00034	1.2827	.00231	.06905	.15423	.00011	53.729	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.00320	.00404	1.3343	1.2661	.00990	20.655	.10718
Stddev	.00038	.00017	.00073	.0192	.0597	.00249	.173	.00269
%RSD	40.455	5.3029	17.991	1.4379	4.7192	25.172	.83716	2.5057
#1	.00050	.00331	.00423	1.3126	1.1986	.01278	20.828	.10559
#2	.00122	.00328	.00465	1.3416	1.2875	.00842	20.482	.11029
#3	.00107	.00300	.00324	1.3489	1.3123	.00851	20.655	.10568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00197	9.5571	.00271	.15727	.00713	-.00001	-.00213	9.2004
Stddev	.00025	.0745	.00060	.00312	.00099	.00396	.00180	.0136
%RSD	12.754	.77965	22.028	1.9854	13.840	44119.	84.428	.14793
#1	.00222	9.6099	.00232	.16018	.00745	-.00238	-.00366	9.2098
#2	.00198	9.4719	.00242	.15397	.00602	-.00222	-.00015	9.2066
#3	.00172	9.5895	.00340	.15765	.00792	.00457	-.00260	9.1848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078718 Acquired: 6/25/2016 22:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.21832**	**.00935**	**-.00138**	**.00550**	**.00807**	**.00587**
Stddev	.00077	.00070	.00368	.00189	.00037	.00008	.00139
%RSD	1050.3	.31961	39.319	137.43	6.8010	.96236	23.773
#1	.00067	.21839	.00655	-.00216	.00508	.00811	.00494
#2	-.00003	.21758	.00798	.00078	.00561	.00812	.00519
#3	-.00086	.21897	.01351	-.00275	.00580	.00798	.00747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9846.3**	**60728.**	**3091.9**
Stddev	3.6	208.	32.5
%RSD	.03671	.34247	1.0518
#1	9850.4	60702.	3069.6
#2	9844.9	60535.	3129.2
#3	9843.6	60948.	3076.8

Approved: June 27, 2016

Sample Name: L1606078719 Acquired: 6/25/2016 22:35:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	-.00125	.00081	-.00052	.00163	.00015	.05700	.00032
Stddev	.00275	.01314	.00222	.00254	.00035	.00003	.05177	.00012
%RSD	1222.4	1048.7	273.08	489.15	21.203	21.890	90.827	38.965
#1	-.00200	-.00415	-.00134	.00209	.00158	.00017	.05365	.00040
#2	.00294	.01310	.00068	-.00066	.00200	.00012	.00698	.00018
#3	-.00162	-.01271	.00310	-.00298	.00131	.00018	.11035	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00052	.00450	.02391	-.05991	-.00020	.04697	-.00036
Stddev	.00016	.00162	.00035	.01615	.07304	.00309	.12538	.00213
%RSD	276.80	313.97	7.6965	67.537	121.91	1526.0	266.94	591.72
#1	.00015	.00207	.00475	.04225	-.11673	.00336	-.03849	-.00282
#2	-.00012	.00065	.00464	.01187	-.08546	-.00225	-.01151	.00086
#3	.00015	-.00117	.00410	.01759	.02247	-.00171	.19090	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.25593	-.00012	.00090	.00315	-.00362	.00327	.05573
Stddev	.00023	.02584	.00048	.00460	.00186	.00138	.00112	.00365
%RSD	74.483	10.098	393.31	510.33	59.051	38.233	34.210	6.5471
#1	.00052	.27908	.00017	.00590	.00100	-.00516	.00452	.05848
#2	.00007	.22805	.00014	-.00005	.00421	-.00248	.00234	.05711
#3	.00032	.26066	-.00068	-.00315	.00425	-.00323	.00296	.05159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078719 Acquired: 6/25/2016 22:35:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00098**	**.00207**	**-.00026**	**-.00547**	**.00052**	**.00525**	**.00241**
Stddev	.00027	.00008	.00293	.00052	.00032	.00008	.00097
%RSD	27.115	4.0421	1136.5	9.5358	61.869	1.5786	40.264
#1	.00096	.00217	-.00025	-.00546	.00057	.00519	.00232
#2	.00073	.00203	-.00319	-.00495	.00081	.00521	.00342
#3	.00126	.00203	.00267	-.00599	.00017	.00534	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9914.0**	**61492.**	**3065.3**
Stddev	9.7	119.	10.3
%RSD	.09735	.19352	.33672
#1	9905.1	61523.	3061.5
#2	9924.3	61360.	3057.3
#3	9912.7	61592.	3076.9

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 22:39:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.01725	.00020	.00148	.00412	.00007	2.5193	.00009
Stddev	.00160	.00300	.00146	.00122	.00055	.00007	.0273	.00025
%RSD	256.33	17.406	733.70	82.744	13.249	105.70	1.0828	269.34
#1	-.00115	.01430	.00189	.00205	.00368	.00003	2.5430	-.00015
#2	.00106	.02030	-.00065	.00007	.00396	.00002	2.4895	.00008
#3	.00197	.01716	-.00064	.00231	.00474	.00015	2.5253	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00087	.00073	.04349	.03288	.00266	.76988	-.00075
Stddev	.00037	.00063	.00114	.01165	.16835	.00415	.07900	.00106
%RSD	107.35	72.316	156.53	26.779	512.03	155.84	10.261	141.15
#1	.00070	.00029	.00142	.03927	-.06801	.00606	.83027	.00043
#2	-.00004	.00153	.00135	.03454	-.06058	.00390	.79891	-.00163
#3	.00039	.00078	-.00059	.05665	.22723	-.00196	.68048	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.20336	.00039	.01881	.00195	-.00218	-.00099	.41497
Stddev	.00052	.02965	.00044	.00286	.00086	.00256	.00440	.00248
%RSD	323.08	14.579	115.44	15.203	44.305	117.44	445.87	.59653
#1	-.00058	.19785	-.00012	.01994	.00207	-.00390	.00409	.41320
#2	.00043	.23538	.00054	.02093	.00103	-.00339	-.00379	.41391
#3	-.00033	.17686	.00073	.01556	.00275	.00076	-.00326	.41779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 22:39:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00684**	**.01005**	**.00002**	**.00088**	**.00094**	**.00070**
Stddev	.00032	.00012	.00959	.00200	.00079	.00012	.00147
%RSD	375.67	1.7762	95.434	11093.	88.946	12.687	210.40
#1	.00028	.00687	.01212	-.00222	.00129	.00101	.00212
#2	.00025	.00693	-.00041	.00064	.00138	.00101	.00079
#3	-.00028	.00670	.01844	.00163	-.00002	.00080	-.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10438.**	**64428.**	**3210.2**
Stddev	16.	116.	22.5
%RSD	.15594	.18047	.70191
#1	10456.	64522.	3184.5
#2	10433.	64464.	3226.3
#3	10424.	64298.	3219.8

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 22:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00901	.25091	.00908	.04716	.02857	.00129	2.7206	.00112
Stddev	.00226	.00893	.00272	.00090	.00098	.00003	.0190	.00018
%RSD	25.135	3.5576	29.953	1.9149	3.4212	2.0076	.69811	15.952
#1	.00654	.24156	.01090	.04731	.02948	.00128	2.7394	.00096
#2	.00949	.25183	.00595	.04798	.02754	.00132	2.7210	.00131
#3	.01099	.25934	.01039	.04620	.02870	.00128	2.7014	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00484	.01138	.01241	.12881	1.1056	.02562	.95895	.01155
Stddev	.00047	.00095	.00054	.02178	.0733	.00325	.08330	.00186
%RSD	9.6843	8.3365	4.3248	16.912	6.6280	12.671	8.6861	16.074
#1	.00430	.01246	.01288	.12748	1.1086	.02193	.86824	.01328
#2	.00510	.01069	.01253	.10772	1.1774	.02802	1.0320	.00959
#3	.00513	.01099	.01183	.15123	1.0309	.02692	.97661	.01179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02077	1.4247	.01204	.24038	.01720	.02493	.01091	.53474
Stddev	.00067	.0371	.00126	.00484	.00256	.00194	.00301	.00121
%RSD	3.2317	2.6069	10.481	2.0127	14.893	7.7710	27.534	.22565
#1	.02144	1.3934	.01127	.24412	.01465	.02673	.00768	.53472
#2	.02075	1.4149	.01350	.23492	.01719	.02518	.01362	.53595
#3	.02010	1.4657	.01136	.24211	.01977	.02288	.01143	.53354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 22:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02007**	**.03079**	**.02489**	**.01057**	**.02372**	**.02477**	**.00180**
Stddev	.00062	.00022	.00917	.00037	.00088	.00015	.00112
%RSD	3.0692	.70951	36.838	3.4629	3.6971	.59147	62.402
#1	.02076	.03087	.02809	.01029	.02425	.02492	.00062
#2	.01959	.03097	.01455	.01045	.02271	.02462	.00193
#3	.01984	.03055	.03204	.01098	.02420	.02478	.00285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10426.**	**64070.**	**3185.9**
Stddev	11.	72.	10.0
%RSD	.10672	.11272	.31382
#1	10417.	64076.	3184.7
#2	10423.	64138.	3176.5
#3	10439.	63994.	3196.4

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:47:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00985	.31033	.01141	.04692	.02793	.00122	2.7514	.00123
Stddev	.00217	.01120	.00035	.00183	.00030	.00009	.0322	.00017
%RSD	21.999	3.6078	3.0998	3.8902	1.0783	7.5455	1.1711	13.538
#1	.00744	.30133	.01139	.04489	.02771	.00131	2.7147	.00104
#2	.01165	.32286	.01106	.04746	.02780	.00124	2.7644	.00130
#3	.01046	.30678	.01177	.04842	.02827	.00112	2.7751	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00442	.01187	.01326	.16770	1.1233	.02635	1.0271	.01377
Stddev	.00036	.00059	.00082	.01226	.1089	.00034	.0701	.00235
%RSD	8.1823	4.9929	6.1530	7.3088	9.6965	1.2889	6.8269	17.054
#1	.00413	.01121	.01277	.16233	1.0153	.02615	1.0429	.01385
#2	.00482	.01235	.01421	.15905	1.2332	.02617	1.0881	.01607
#3	.00430	.01207	.01281	.18173	1.1215	.02675	.95049	.01138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02146	1.3700	.01235	.24640	.01637	.02615	.01276	.67342
Stddev	.00028	.0367	.00082	.00464	.00030	.00374	.00186	.00470
%RSD	1.2904	2.6782	6.6457	1.8816	1.8039	14.304	14.555	.69838
#1	.02172	1.3476	.01220	.24696	.01603	.02416	.01223	.67004
#2	.02148	1.3500	.01162	.25073	.01656	.02383	.01483	.67143
#3	.02117	1.4123	.01324	.24151	.01651	.03046	.01123	.67879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:47:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02141**	**.03084**	**.02074**	**.01089**	**.02357**	**.02510**	**.00112**
Stddev	.00030	.00031	.00329	.00303	.00061	.00018	.00144
%RSD	1.3990	1.0105	15.854	27.843	2.5684	.72342	128.59
#1	.02165	.03055	.02352	.00739	.02416	.02497	-.00034
#2	.02107	.03117	.01711	.01260	.02359	.02501	.00117
#3	.02151	.03078	.02157	.01268	.02295	.02530	.00254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10421.**	**63887.**	**3174.5**
Stddev	13.	153.	11.8
%RSD	.12017	.23969	.37110
#1	10421.	64063.	3186.8
#2	10434.	63786.	3163.4
#3	10409.	63811.	3173.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:51:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39829**	**10.014**	**.39328**	**.48763**	**1.0098**	**.04913**	**9.9981**
Stddev	.00170	.014	.00352	.00156	.0114	.00024	.0222
%RSD	.42599	.13477	.89524	.31896	1.1283	.49183	.22224
#1	.39634	10.025	.39615	.48872	1.0228	.04926	10.024
#2	.39905	9.9992	.38935	.48585	1.0049	.04885	9.9823
#3	.39946	10.019	.39433	.48833	1.0016	.04927	9.9886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05040**	**.19854**	**.49076**	**.50671**	**3.9457**	**49.325**	**1.0128**
Stddev	.00023	.00052	.00245	.00059	.0608	.368	.0109
%RSD	.45580	.25959	.49941	.11597	1.5404	.74655	1.0755
#1	.05026	.19800	.48916	.50736	4.0058	49.743	1.0249
#2	.05027	.19858	.48954	.50622	3.9470	49.185	1.0101
#3	.05066	.19903	.49358	.50654	3.8842	49.047	1.0036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.4894**	**.49712**	**1.0151**	**50.056**	**.50217**	**9.8694**	**.50095**
Stddev	.2168	.00232	.0035	.479	.00145	.0113	.00387
%RSD	2.2847	.46695	.34803	.95643	.28811	.11418	.77216
#1	9.7395	.49968	1.0186	50.588	.50383	9.8565	.50471
#2	9.3739	.49655	1.0152	49.919	.50140	9.8745	.49698
#3	9.3548	.49515	1.0115	49.660	.50126	9.8772	.50116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:51:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1957**	**.39554**	**5.0959**	**.99417**	**1.0077**	**1.0177**	**.50994**
Stddev	.0055	.00372	.0051	.00169	.0107	.0101	.00264
%RSD	.46066	.94108	.09932	.17029	1.0641	.98980	.51770
#1	1.1919	.39655	5.0908	.99223	1.0196	1.0259	.51299
#2	1.2020	.39866	5.0958	.99500	1.0048	1.0064	.50861
#3	1.1932	.39142	5.1010	.99530	.99871	1.0207	.50824
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99906**	**1.0000**	F **2.9202**
Stddev	.00128	.0004	.0305
%RSD	.12818	.03891	1.0450
#1	1.0005	1.0005	2.9552
#2	.99795	.99972	2.9065
#3	.99877	.99993	2.8990
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9918.3**	**60256.**	**3072.6**
Stddev	6.2	156.	34.9
%RSD	.06223	.25822	1.1374
#1	9919.7	60085.	3032.6
#2	9923.7	60388.	3088.2
#3	9911.6	60295.	3097.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:54:51 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00017**	**.00165**	**.00199**	**.00201**	**.00011**	**-.05290**	**-.00006**
Stddev	.00211	.00653	.00321	.00079	.00009	.00008	.03288	.00016
%RSD	1282.1	3936.0	193.87	39.670	4.4194	70.107	62.164	240.48
#1	-.00117	.00347	.00046	.00135	.00191	.00015	-.05612	-.00004
#2	.00226	-.00735	.00528	.00288	.00202	.00015	-.08405	.00008
#3	-.00158	.00438	-.00078	.00176	.00209	.00002	-.01852	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00100**	**.00120**	**.03069**	**-.03948**	**.00003**	**-.00536**	**.00015**
Stddev	.00013	.00044	.00061	.00550	.07927	.00292	.09167	.00308
%RSD	995.60	43.627	50.884	17.919	200.80	8764.3	1709.0	2010.9
#1	-.00014	.00145	.00060	.03538	.05200	-.00061	-.10767	.00091
#2	.00000	.00096	.00116	.03205	-.08238	-.00251	.06932	.00278
#3	.00011	.00058	.00182	.02464	-.08805	.00322	.02226	-.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00351**	**.02455**	**-.00057**	**.00388**	**.00014**	**.00562**	**.00087**	**.03540**
Stddev	.00076	.01905	.00055	.00530	.00438	.00343	.00632	.00172
%RSD	21.717	77.584	95.045	136.67	3025.0	61.032	726.47	4.8534
#1	.00266	.03539	-.00120	-.00182	.00487	.00872	.00338	.03589
#2	.00374	.03571	-.00017	.00867	-.00067	.00193	.00554	.03683
#3	.00413	.00256	-.00036	.00480	-.00377	.00622	-.00632	.03349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:54:51 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00099**	**.00045**	**.00606**	**-.00120**	**.00030**	**-.00008**	**.00363**
Stddev	.00065	.00027	.00156	.00179	.00040	.00006	.00038
%RSD	65.956	60.056	25.746	148.69	132.31	80.432	10.554
#1	.00115	.00019	.00786	-.00316	.00076	-.00006	.00364
#2	.00155	.00073	.00529	-.00079	.00014	-.00015	.00325
#3	.00027	.00044	.00504	.00034	.00001	-.00003	.00401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9678.8**	**59649.**	**2985.7**
Stddev	6.9	105.	9.5
%RSD	.07084	.17603	.31957
#1	9671.2	59575.	2994.0
#2	9681.0	59769.	2975.3
#3	9684.3	59604.	2987.7

Approved: June 27, 2016

Sample Name: PBW LJ Acquired: 6/25/2016 22:58:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**-.00592**	**.00193**	**-.00086**	**.00070**	**.00018**	**-.07344**	**-.00023**
Stddev	.00178	.00410	.00330	.00167	.00093	.00007	.04096	.00010
%RSD	307.62	69.294	170.45	194.42	133.02	36.643	55.774	43.143
#1	-.00092	-.00625	.00300	-.00003	-.00002	.00015	-.02635	-.00025
#2	-.00217	-.00166	.00456	.00023	.00174	.00026	-.10082	-.00033
#3	.00135	-.00985	-.00176	-.00279	.00036	.00013	-.09313	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00069**	**.00074**	**.03692**	**-.07694**	**.00146**	**.06376**	**.00092**
Stddev	.00002	.00038	.00020	.01230	.06836	.00025	.04368	.00067
%RSD	10.723	54.599	26.935	33.312	88.851	16.877	68.506	72.982
#1	-.00017	.00098	.00051	.02894	-.09438	.00132	.11194	.00086
#2	-.00017	.00026	.00082	.03073	-.13489	.00174	.05264	.00161
#3	-.00014	.00084	.00088	.05108	-.00155	.00131	.02672	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.03492**	**.00034**	**.00729**	**.00159**	**-.00194**	**.00113**	**.00052**
Stddev	.00031	.01196	.00046	.00336	.00147	.00263	.00402	.00268
%RSD	159.07	34.258	134.06	46.125	92.547	135.75	357.58	520.37
#1	.00038	.02883	.00039	.00624	.00208	.00024	-.00125	.00071
#2	.00036	.04870	-.00014	.00458	.00275	-.00120	-.00114	.00309
#3	-.00016	.02722	.00078	.01105	-.00006	-.00487	.00577	-.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW LJ Acquired: 6/25/2016 22:58:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00008**	**.00508**	**-.00273**	**.00114**	**.00044**	**.00066**
Stddev	.00164	.00051	.01008	.00394	.00109	.00015	.00112
%RSD	14590.	648.58	198.46	144.23	96.326	34.462	168.97
#1	.00174	.00051	.01609	.00176	.00157	.00053	.00180
#2	-.00150	-.00033	-.00371	-.00561	-.00011	.00026	-.00044
#3	-.00028	-.00041	.00287	-.00433	.00195	.00052	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10135.**	**62589.**	**3095.8**
Stddev	24.	186.	5.7
%RSD	.23247	.29671	.18319
#1	10143.	62746.	3101.4
#2	10152.	62637.	3095.9
#3	10108.	62384.	3090.1

Approved: June 27, 2016

Sample Name: LCSW LJ Acquired: 6/25/2016 23:02:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19432**	**4.8961**	**.19607**	**.95390**	**.50477**	**.02378**	**5.0869**	**.02467**
Stddev	.00176	.0169	.00036	.00515	.00157	.00015	.0469	.00006
%RSD	.90778	.34589	.18422	.54033	.31152	.61673	.92299	.23915
#1	.19242	4.8827	.19640	.95171	.50641	.02365	5.1361	.02462
#2	.19591	4.9152	.19569	.95978	.50463	.02394	5.0425	.02466
#3	.19461	4.8905	.19612	.95020	.50328	.02375	5.0822	.02474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09889**	**.24063**	**.25385**	**1.9878**	**24.436**	**.51652**	**4.7044**	**.24710**
Stddev	.00023	.00063	.00116	.0095	.067	.00203	.0278	.00275
%RSD	.23212	.26116	.45751	.47691	.27355	.39333	.59179	1.1124
#1	.09867	.24099	.25369	1.9863	24.386	.51588	4.7289	.24429
#2	.09913	.24100	.25509	1.9791	24.512	.51880	4.6741	.24978
#3	.09888	.23991	.25278	1.9979	24.411	.51489	4.7100	.24724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51030**	**25.148**	**.24989**	**4.7689**	**.24945**	**.59139**	**.18766**	**2.4779**
Stddev	.00067	.056	.00070	.0091	.00347	.00400	.01211	.0014
%RSD	.13092	.22440	.27941	.19073	1.3920	.67662	6.4536	.05441
#1	.50970	25.212	.24981	4.7624	.25341	.58680	.17389	2.4770
#2	.51102	25.108	.25063	4.7793	.24803	.59411	.19668	2.4795
#3	.51019	25.124	.24924	4.7649	.24691	.59326	.19239	2.4773
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW LJ Acquired: 6/25/2016 23:02:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49047**	**.51082**	**.50961**	**.24925**	**.49196**	**.48864**	**.01928**
Stddev	.00103	.00205	.00391	.00102	.00174	.00019	.00329
%RSD	.20978	.40119	.76774	.40835	.35306	.03834	17.088
#1	.49156	.51042	.51051	.24964	.49257	.48859	.01592
#2	.49032	.50900	.50533	.25000	.49331	.48848	.01940
#3	.48952	.51304	.51300	.24809	.49000	.48885	.02251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9771.5**	**60209.**	**3050.2**
Stddev	3.0	103.	25.9
%RSD	.03108	.17103	.84982
#1	9769.0	60280.	3044.5
#2	9774.9	60091.	3027.6
#3	9770.6	60258.	3078.5

Approved: June 27, 2016

Sample Name: L1606076404 Acquired: 6/25/2016 23:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.02745	.00034	.00861	.00996	.00009	36.605	.00012
Stddev	.00060	.00628	.00209	.00113	.00041	.00005	.105	.00023
%RSD	119.14	22.865	609.72	13.086	4.1637	53.570	.28645	187.24
#1	.00015	.03394	.00014	.00762	.01044	.00014	36.606	.00007
#2	.00016	.02699	-.00164	.00984	.00971	.00010	36.500	.00038
#3	.00120	.02142	.00253	.00837	.00974	.00004	36.710	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.01147	.00175	.46715	4.7234	.00625	13.388	.09951
Stddev	.00015	.00054	.00191	.01948	.0341	.00248	.058	.00203
%RSD	171.91	4.6728	109.26	4.1703	.72246	39.751	.43505	2.0444
#1	.00001	.01158	-.00043	.45694	4.6849	.00912	13.373	.10058
#2	-.00027	.01194	.00254	.48961	4.7498	.00477	13.339	.09716
#3	-.00001	.01088	.00314	.45489	4.7356	.00486	13.453	.10078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	34.643	.00396	.03562	.00752	.00339	.00429	4.0453
Stddev	.00028	.078	.00076	.00870	.00150	.00394	.00341	.0166
%RSD	23.933	.22458	19.114	24.436	19.891	116.11	79.423	.40956
#1	.00087	34.732	.00311	.02910	.00894	.00791	.00692	4.0642
#2	.00131	34.587	.00454	.03225	.00766	.00162	.00551	4.0386
#3	.00140	34.610	.00424	.04550	.00596	.00065	.00044	4.0331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076404 Acquired: 6/25/2016 23:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.19364	.00117	-.00333	.00101	.00286	.00160
Stddev	.00025	.00044	.00456	.00363	.00019	.00020	.00097
%RSD	28.325	.22814	391.45	108.96	18.806	7.1675	60.613
#1	.00083	.19387	-.00007	-.00660	.00107	.00306	.00048
#2	.00116	.19313	.00622	-.00396	.00116	.00265	.00224
#3	.00066	.19392	-.00265	.00057	.00080	.00286	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9727.8	59976.	3053.1
Stddev	23.9	148.	4.4
%RSD	.24547	.24636	.14325
#1	9700.3	60146.	3049.4
#2	9741.5	59877.	3057.9
#3	9741.8	59905.	3052.0

Approved: June 27, 2016

Sample Name: L1606076405S Acquired: 6/25/2016 23:10:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19582**	**4.9527**	**.19879**	**.95673**	**.51438**	**.02432**	**42.805**	**.02505**
Stddev	.00335	.0137	.00128	.00425	.00065	.00003	.112	.00030
%RSD	1.7110	.27715	.64557	.44412	.12542	.14170	.26049	1.1988
#1	.19856	4.9529	.19764	.95186	.51480	.02435	42.707	.02530
#2	.19683	4.9664	.19856	.95967	.51471	.02433	42.926	.02513
#3	.19208	4.9389	.20017	.95866	.51364	.02429	42.781	.02472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09757**	**.25598**	**.24917**	**2.4354**	**29.536**	**.52338**	**18.805**	**.34995**
Stddev	.00078	.00042	.00127	.0181	.040	.00393	.025	.00506
%RSD	.79936	.16278	.51136	.74393	.13605	.74997	.13071	1.4469
#1	.09813	.25630	.25060	2.4222	29.582	.51885	18.805	.34467
#2	.09790	.25551	.24817	2.4278	29.516	.52547	18.830	.35476
#3	.09668	.25612	.24874	2.4560	29.509	.52582	18.780	.35044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51541**	**61.224**	**.25128**	**4.8968**	**.24942**	**.59855**	**.19087**	**6.6449**
Stddev	.00129	.228	.00073	.0088	.00234	.00299	.00293	.0075
%RSD	.25084	.37164	.28907	.17909	.93699	.50010	1.5365	.11257
#1	.51663	61.311	.25055	4.9006	.24863	.59583	.18976	6.6461
#2	.51554	61.394	.25129	4.9031	.24758	.60176	.19420	6.6517
#3	.51406	60.965	.25200	4.8868	.25205	.59805	.18866	6.6369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076405S Acquired: 6/25/2016 23:10:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49233**	**.70070**	**.50542**	**.24860**	**.50000**	**.48511**	**.00505**
Stddev	.00086	.00402	.00572	.00107	.00163	.00066	.00072
%RSD	.17371	.57387	1.1319	.43103	.32683	.13619	14.263
#1	.49184	.70101	.51171	.24742	.49924	.48572	.00441
#2	.49332	.70456	.50403	.24884	.49889	.48521	.00491
#3	.49184	.69653	.50053	.24953	.50188	.48441	.00583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9652.6**	**59187.**	**3022.5**
Stddev	17.6	118.	14.2
%RSD	.18215	.19875	.46825
#1	9645.4	59224.	3018.6
#2	9639.7	59281.	3010.7
#3	9672.6	59055.	3038.2

Approved: June 27, 2016

Sample Name: L1606076406SD Acquired: 6/25/2016 23:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19161**	**4.9186**	**.19913**	**.95429**	**.51211**	**.02396**	**42.977**	**.02467**
Stddev	.00161	.0125	.00343	.00448	.00436	.00009	.276	.00017
%RSD	.83957	.25322	1.7203	.46971	.85098	.36242	.64279	.68812
#1	.19148	4.9258	.19753	.95898	.51664	.02396	43.237	.02475
#2	.19328	4.9042	.19680	.95004	.51174	.02387	43.008	.02479
#3	.19007	4.9258	.20306	.95385	.50794	.02404	42.687	.02448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09706**	**.25178**	**.24789**	**2.4233**	**29.585**	**.51807**	**18.712**	**.35011**
Stddev	.00057	.00068	.00034	.0356	.112	.00327	.182	.00396
%RSD	.58951	.26961	.13796	1.4688	.37990	.63166	.97051	1.1325
#1	.09772	.25103	.24806	2.4608	29.711	.51534	18.898	.35283
#2	.09684	.25235	.24811	2.4189	29.497	.52170	18.704	.34556
#3	.09664	.25196	.24749	2.3900	29.545	.51719	18.535	.35193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51262**	**61.425**	**.24874**	**4.8787**	**.24757**	**.59558**	**.18865**	**6.6917**
Stddev	.00159	.310	.00133	.0141	.00184	.00348	.00465	.0131
%RSD	.30991	.50524	.53301	.28958	.74220	.58390	2.4654	.19574
#1	.51304	61.773	.24994	4.8746	.24617	.59720	.19309	6.6816
#2	.51396	61.322	.24897	4.8944	.24965	.59795	.18905	6.7065
#3	.51087	61.178	.24732	4.8670	.24689	.59159	.18381	6.6870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076406SD Acquired: 6/25/2016 23:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48585**	**.69992**	**.50428**	**.08491**	**.49039**	**.49499**	**.00464**
Stddev	.00076	.00443	.00835	.00108	.00225	.00372	.00157
%RSD	.15628	.63319	1.6562	1.2751	.45854	.75207	33.818
#1	.48649	.70500	.51389	.08368	.49168	.49197	.00317
#2	.48606	.69789	.49873	.08571	.48779	.49386	.00446
#3	.48501	.69687	.50023	.08535	.49169	.49915	.00630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9674.4**	**59675.**	**3057.4**
Stddev	5.6	128.	11.6
%RSD	.05826	.21445	.38044
#1	9670.2	59575.	3048.3
#2	9680.8	59819.	3053.4
#3	9672.1	59630.	3070.5

Approved: June 27, 2016

Sample Name: L1606099102 Acquired: 6/25/2016 23:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.08527	.00559	.04109	.01538	.00019	.57467	.00159
Stddev	.00233	.00869	.00189	.00114	.00133	.00004	.01094	.00013
%RSD	663.84	10.192	33.720	2.7694	8.6207	22.830	1.9043	7.9131
#1	.00210	.09496	.00628	.04240	.01605	.00016	.56261	.00167
#2	-.00061	.08272	.00346	.04040	.01386	.00017	.57746	.00145
#3	-.00255	.07815	.00704	.04046	.01624	.00024	.58395	.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.05412	.00582	.38755	1.2527	.00289	.47003	.00071
Stddev	.00015	.00024	.00026	.01093	.0635	.00116	.03189	.00162
%RSD	15.476	.43524	4.4250	2.8204	5.0656	40.155	6.7852	226.02
#1	.00113	.05437	.00590	.40001	1.1922	.00164	.49884	-.00098
#2	.00091	.05406	.00602	.38303	1.3188	.00308	.43576	.00089
#3	.00085	.05391	.00553	.37960	1.2473	.00394	.47550	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00360	218.01	.00389	.36041	.01046	-.00372	.00482	1.3728
Stddev	.00017	.12	.00068	.00488	.00162	.00083	.00193	.0038
%RSD	4.7149	.05666	17.447	1.3551	15.457	22.416	40.114	.27490
#1	.00375	218.03	.00311	.35572	.01225	-.00460	.00284	1.3685
#2	.00365	218.13	.00423	.36547	.01003	-.00293	.00492	1.3754
#3	.00341	217.88	.00434	.36004	.00911	-.00364	.00670	1.3745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102 Acquired: 6/25/2016 23:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00632**	**.09765**	**.07700**	**-.00067**	**.01524**	**.07845**	**.01879**
Stddev	.00056	.00044	.00219	.00203	.00068	.00014	.00089
%RSD	8.9139	.45291	2.8381	300.30	4.4598	.18118	4.7496
#1	.00609	.09718	.07562	.00166	.01602	.07833	.01918
#2	.00590	.09770	.07952	-.00172	.01485	.07841	.01777
#3	.00696	.09806	.07586	-.00197	.01484	.07861	.01943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10241.**	**62264.**	**3185.5**
Stddev	15.	196.	4.7
%RSD	.14516	.31405	.14616
#1	10253.	62395.	3189.9
#2	10245.	62357.	3185.8
#3	10224.	62039.	3180.6

Approved: June 27, 2016

Sample Name: L1606099102PS Acquired: 6/25/2016 23:21:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG573952-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20426**	**5.2585**	**.21569**	**1.0545**	**.53374**	**.02552**	**5.8510**	**.02789**
Stddev	.00128	.0258	.00476	.0057	.01070	.00022	.0799	.00005
%RSD	.62816	.49053	2.2048	.54061	2.0041	.85107	1.3656	.17945
#1	.20288	5.2399	.21984	1.0489	.54587	.02533	5.9343	.02786
#2	.20446	5.2478	.21673	1.0543	.52973	.02547	5.7750	.02786
#3	.20543	5.2880	.21050	1.0603	.52563	.02576	5.8438	.02795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10258**	**.30280**	**.26705**	**2.4069**	**27.035**	**.52853**	**5.3059**	**.25725**
Stddev	.00041	.00101	.00181	.0614	.546	.00889	.1709	.00709
%RSD	.40425	.33448	.67841	2.5526	2.0183	1.6821	3.2205	2.7577
#1	.10253	.30184	.26742	2.4708	27.658	.53822	5.4655	.26479
#2	.10301	.30272	.26864	2.4018	26.642	.52076	5.1256	.25071
#3	.10219	.30386	.26508	2.3482	26.805	.52661	5.3266	.25626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52291**	**252.79**	**.26034**	**5.5827**	**.26863**	**.62508**	**.20920**	**4.0596**
Stddev	.00363	5.13	.00069	.0240	.00232	.00165	.00657	.0117
%RSD	.69330	2.0298	.26564	.43012	.86233	.26363	3.1385	.28905
#1	.52662	258.69	.26066	5.6009	.26650	.62318	.21182	4.0655
#2	.52272	250.27	.26082	5.5917	.26829	.62599	.21406	4.0673
#3	.51938	249.40	.25955	5.5555	.27109	.62608	.20173	4.0461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102PS Acquired: 6/25/2016 23:21:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG573952-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51599**	**.62613**	**.61043**	**.25381**	**.52664**	**.60277**	**.02286**
Stddev	.00198	.01306	.01573	.00527	.00286	.00158	.00057
%RSD	.38295	2.0851	2.5770	2.0756	.54391	.26285	2.4777
#1	.51752	.64119	.62824	.25887	.52456	.60412	.02234
#2	.51668	.61903	.59844	.25420	.52545	.60318	.02277
#3	.51376	.61815	.60462	.24835	.52991	.60103	.02347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9624.7**	**58159.**	**2980.0**
Stddev	48.4	89.	45.7
%RSD	.50312	.15320	1.5350
#1	9582.5	58170.	2928.1
#2	9614.0	58242.	2997.3
#3	9677.6	58064.	3014.5

Approved: June 27, 2016

Sample Name: L1606099102SDL Acquired: 6/25/2016 23:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG573952-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.01283	.00236	.01119	.00550	.00018	.08026	.00026
Stddev	.00047	.00301	.00204	.00193	.00071	.00008	.03574	.00006
%RSD	40.405	23.474	86.372	17.221	12.910	46.045	44.534	24.105
#1	.00083	.01247	.00021	.01333	.00520	.00027	.04235	.00026
#2	.00098	.01601	.00261	.01064	.00630	.00011	.11335	.00020
#3	.00172	.01002	.00427	.00960	.00498	.00015	.08510	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.01258	.00098	.10105	.18990	-.00151	.06238	.00028
Stddev	.00006	.00091	.00048	.00767	.08103	.00626	.02555	.00271
%RSD	25.732	7.2135	49.236	7.5891	42.670	413.92	40.953	970.07
#1	.00026	.01275	.00118	.09700	.21903	.00544	.04558	.00279
#2	.00015	.01339	.00043	.10990	.09833	-.00328	.04979	.00064
#3	.00024	.01160	.00132	.09626	.25235	-.00669	.09179	-.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00205	47.703	.00017	.08239	.00525	-.00365	.00219	.31315
Stddev	.00019	.192	.00051	.00485	.00385	.00400	.00870	.00335
%RSD	9.3003	.40144	294.11	5.8889	73.348	109.43	397.40	1.0688
#1	.00183	47.834	.00076	.07694	.00083	-.00754	.00399	.31041
#2	.00217	47.483	-.00009	.08400	.00786	-.00387	-.00727	.31216
#3	.00215	47.792	-.00015	.08624	.00708	.00045	.00985	.31688
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102SDL Acquired: 6/25/2016 23:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG573952-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00128**	**.02176**	**.02063**	**.00132**	**.00408**	**.01800**	**.00415**
Stddev	.00053	.00039	.00638	.00109	.00052	.00037	.00045
%RSD	41.627	1.7773	30.936	82.221	12.786	2.0724	10.786
#1	.00158	.02176	.02171	.00142	.00446	.01762	.00425
#2	.00067	.02138	.02640	.00236	.00348	.01802	.00454
#3	.00160	.02215	.01377	.00019	.00429	.01836	.00366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9804.5**	**59680.**	**2983.6**
Stddev	22.5	103.	15.3
%RSD	.22901	.17203	.51306
#1	9824.1	59682.	2991.0
#2	9809.6	59782.	2993.9
#3	9780.0	59577.	2966.0

Approved: June 27, 2016

Sample Name: L1606099501 Acquired: 6/25/2016 23:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00231	.00190	.02254	.12371	.00015	15.528	-.00008
Stddev	.00014	.00712	.00142	.00137	.00163	.00003	.200	.00022
%RSD	16.093	308.09	74.696	6.0976	1.3212	21.126	1.2862	282.14
#1	.00100	.01032	.00271	.02232	.12196	.00014	15.307	.00002
#2	.00072	-.00013	.00272	.02129	.12520	.00012	15.695	.00008
#3	.00085	-.00326	.00026	.02401	.12396	.00018	15.583	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00027	.00136	.08102	.36083	.08036	1.7207	.01281
Stddev	.00017	.00026	.00081	.01723	.08162	.00488	.0426	.00381
%RSD	55.449	94.239	59.356	21.269	22.620	6.0696	2.4776	29.711
#1	.00018	.00004	.00043	.07010	.45158	.07724	1.7124	.01021
#2	.00026	.00024	.00186	.07209	.29342	.07785	1.6828	.01718
#3	.00051	.00055	.00179	.10089	.33750	.08598	1.7669	.01103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	40.169	.00020	.00739	.00147	-.00261	.00048	.01475
Stddev	.00007	.358	.00037	.00186	.00129	.00197	.00359	.00082
%RSD	116.52	.89035	187.93	25.143	87.719	75.441	741.63	5.5637
#1	.00010	39.803	.00022	.00902	.00206	-.00263	-.00044	.01382
#2	.00008	40.518	.00056	.00537	.00236	-.00063	-.00256	.01539
#3	-.00002	40.186	-.00019	.00779	-.00001	-.00456	.00445	.01503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099501 Acquired: 6/25/2016 23:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	2.0444	.00152	-.00059	-.00017	.00315	.00110
Stddev	.00034	.0207	.00598	.00278	.00059	.00019	.00107
%RSD	58.480	1.0109	393.49	469.74	343.26	6.1207	97.322
#1	.00020	2.0228	.00742	-.00167	.00024	.00305	.00162
#2	.00070	2.0639	.00167	-.00267	-.00085	.00303	-.00013
#3	.00086	2.0465	-.00453	.00256	.00009	.00337	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9773.4	59741.	3000.7
Stddev	10.5	113.	31.9
%RSD	.10719	.18996	1.0628
#1	9785.4	59856.	3037.0
#2	9766.5	59737.	2977.2
#3	9768.1	59629.	2987.9

Approved: June 27, 2016

Sample Name: L1606099502 Acquired: 6/25/2016 23:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00479	-.00049	.02240	.12357	.00014	15.278	-.00007
Stddev	.00142	.00423	.00253	.00505	.00148	.00006	.144	.00014
%RSD	22192.	88.307	518.91	22.533	1.1984	44.965	.94397	206.25
#1	.00014	-.00965	-.00218	.02478	.12272	.00011	15.115	-.00014
#2	.00133	-.00281	-.00170	.02581	.12271	.00021	15.329	.00010
#3	-.00149	-.00191	.00242	.01660	.12528	.00010	15.390	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00065	.00042	.06837	.37746	.07803	1.6184	.01419
Stddev	.00041	.00112	.00027	.00656	.03147	.00401	.0513	.00310
%RSD	83.614	171.25	62.991	9.6001	8.3371	5.1380	3.1674	21.849
#1	.00050	-.00064	.00063	.07323	.35510	.08210	1.6690	.01383
#2	.00090	.00123	.00012	.06091	.36384	.07791	1.6197	.01745
#3	.00007	.00137	.00052	.07098	.41345	.07408	1.5665	.01128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	39.920	-.00037	.00510	.00199	-.00064	.00335	.01167
Stddev	.00036	.366	.00054	.01025	.00130	.00317	.00244	.00126
%RSD	102.18	.91613	144.37	200.85	65.670	494.36	72.931	10.832
#1	-.00077	39.520	-.00039	.00961	.00071	-.00417	.00384	.01302
#2	-.00018	40.239	-.00090	.01233	.00193	.00029	.00550	.01150
#3	-.00011	40.000	.00017	-.00663	.00331	.00196	.00070	.01051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099502 Acquired: 6/25/2016 23:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**2.0217**	**-.00337**	**-.00055**	**.00074**	**.00315**	**.00087**
Stddev	.00116	.0191	.00559	.00170	.00084	.00020	.00103
%RSD	210.74	.94683	165.64	307.06	114.28	6.4714	118.16
#1	-.00142	2.0010	.00194	-.00241	.00129	.00330	.00185
#2	.00077	2.0388	-.00920	-.00018	-.00023	.00292	.00097
#3	-.00100	2.0253	-.00287	.00093	.00117	.00324	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9730.5**	**59619.**	**2989.3**
Stddev	18.2	229.	29.6
%RSD	.18733	.38360	.99126
#1	9750.6	59882.	3021.9
#2	9715.1	59468.	2964.1
#3	9725.8	59506.	2981.9

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:36:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40930**	**10.238**	**.40819**	**.50228**	**1.0459**	**.04973**	**10.404**
Stddev	.00043	.021	.00043	.00341	.0044	.00005	.020
%RSD	.10460	.20815	.10461	.67892	.41689	.09834	.19571
#1	.40883	10.251	.40851	.50622	1.0496	.04974	10.381
#2	.40944	10.250	.40771	.50027	1.0411	.04968	10.418
#3	.40965	10.214	.40835	.50036	1.0470	.04978	10.414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05210**	**.20379**	**.49816**	**.52303**	**4.0622**	**51.067**	**1.0469**
Stddev	.00019	.00042	.00279	.00142	.0372	.160	.0078
%RSD	.35747	.20724	.56062	.27079	.91500	.31299	.74725
#1	.05231	.20342	.50024	.52229	4.1047	51.143	1.0555
#2	.05194	.20371	.49926	.52467	4.0462	50.883	1.0402
#3	.05207	.20425	.49499	.52215	4.0357	51.175	1.0449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7214**	**.51746**	**1.0407**	**52.052**	**.51652**	**10.202**	**.51928**
Stddev	.0660	.00152	.0096	.278	.00085	.015	.00145
%RSD	.67863	.29343	.92144	.53407	.16386	.14443	.27838
#1	9.7320	.51900	1.0479	52.343	.51582	10.200	.51894
#2	9.7814	.51597	1.0444	51.789	.51627	10.218	.52086
#3	9.6508	.51742	1.0298	52.022	.51746	10.189	.51803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:36:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2277**	**.40544**	**5.2555**	**1.0220**	**1.0464**	**1.0514**	**.52265**
Stddev	.0051	.00303	.0032	.0024	.0054	.0078	.00372
%RSD	.41461	.74796	.06070	.23053	.51974	.73901	.71099
#1	1.2332	.40616	5.2590	1.0221	1.0521	1.0443	.52536
#2	1.2232	.40805	5.2526	1.0196	1.0413	1.0597	.52418
#3	1.2265	.40211	5.2550	1.0243	1.0458	1.0502	.51841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0117**	**1.0320**	F **2.9933**
Stddev	.0025	.0009	.0109
%RSD	.24458	.08681	.36389
#1	1.0144	1.0330	3.0053
#2	1.0111	1.0312	2.9841
#3	1.0096	1.0318	2.9905
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9691.0**	**59432.**	**3012.0**
Stddev	5.1	44.	12.8
%RSD	.05245	.07397	.42554
#1	9696.2	59404.	2998.2
#2	9686.1	59410.	3023.6
#3	9690.7	59483.	3014.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:40:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00145**	**-.00660**	**-.00143**	**.00292**	**.00177**	**.00016**	**-.01784**	**.00008**
Stddev	.00180	.00657	.00282	.00130	.00082	.00003	.03649	.00007
%RSD	124.44	99.487	197.72	44.383	46.493	20.281	204.59	79.919
#1	.00061	-.01208	-.00468	.00217	.00185	.00015	-.05680	.00016
#2	-.00276	-.00840	.00028	.00442	.00255	.00019	-.01224	.00005
#3	-.00219	.00068	.00012	.00218	.00091	.00013	.01553	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00038**	**.00052**	**.02154**	**-.09198**	**-.00110**	**-.01322**	**.00018**
Stddev	.00024	.00088	.00138	.01483	.10535	.00141	.06861	.00246
%RSD	523.34	234.01	265.29	68.833	114.54	127.62	519.13	1371.8
#1	-.00015	.00090	-.00012	.01936	.02327	-.00076	.06137	-.00117
#2	-.00022	-.00064	-.00042	.03733	-.18333	-.00265	-.02738	.00302
#3	.00023	.00086	.00210	.00792	-.11589	.00010	-.07365	-.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00348**	**.04821**	**.00016**	**.00585**	**.00443**	**.00314**	**.00156**	**.03553**
Stddev	.00065	.02773	.00095	.00367	.00371	.00275	.00114	.00188
%RSD	18.560	57.517	582.95	62.725	83.852	87.739	73.200	5.2906
#1	.00289	.07448	.00125	.00268	.00440	.00563	.00189	.03713
#2	.00338	.05093	-.00027	.00499	.00073	.00018	.00029	.03346
#3	.00417	.01922	-.00050	.00987	.00816	.00360	.00249	.03599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:40:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00051**	**.00604**	**-.00528**	**.00062**	**.00012**	**.00482**
Stddev	.00070	.00006	.00458	.00163	.00029	.00008	.00094
%RSD	280.85	11.978	75.793	30.927	46.562	68.537	19.510
#1	.00047	.00050	.00150	-.00357	.00036	.00006	.00376
#2	.00081	.00057	.01066	-.00682	.00057	.00008	.00556
#3	-.00053	.00045	.00597	-.00546	.00093	.00021	.00513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9759.5**	**60265.**	**3013.5**
Stddev	10.8	85.	17.4
%RSD	.11040	.14047	.57599
#1	9754.6	60307.	3032.0
#2	9771.9	60320.	2997.5
#3	9752.1	60167.	3011.1

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 23:44:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.00562	263.10	.00178	-.00976	.00140	.00014	248.10
Stddev	.00117	.16	.00383	.00309	.00113	.00004	.61
%RSD	20.823	.06041	215.50	31.614	80.449	26.067	.24782
#1	-.00542	263.25	-.00154	-.01064	.00266	.00012	248.67
#2	-.00456	262.94	.00597	-.00633	.00047	.00013	247.45
#3	-.00688	263.13	.00090	-.01231	.00109	.00019	248.17
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00400						
Low Limit	-.00400						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	-.00060	-.00056	F .01039	95.630	-.04599	.01242
Stddev	.00016	.00022	.00039	.00101	.248	.03226	.00307
%RSD	92.869	36.608	70.420	9.7281	.25928	70.136	24.681
#1	-.00031	-.00080	-.00098	.00928	95.904	-.06101	.01295
#2	-.00020	-.00063	-.00021	.01127	95.420	-.06800	.01519
#3	.00000	-.00037	-.00048	.01062	95.566	-.00896	.00913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	236.10	.00050	-.00055	.08182	-.00122	.03425	.00395
Stddev	.41	.00175	.00028	.01035	.00129	.00383	.00558
%RSD	.17524	347.68	51.671	12.652	105.94	11.172	141.13
#1	236.13	.00226	-.00079	.09323	-.00097	.03151	-.00194
#2	235.67	.00051	-.00062	.07920	-.00262	.03262	.00465
#3	236.50	-.00125	-.00024	.07303	-.00007	.03862	.00916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 23:44:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00072**	**-.00782**	**.00827**	**.00013**	**.00094**	**-.00929**	**-.00404**
Stddev	.00319	.00204	.00198	.00005	.00018	.00784	.00342
%RSD	442.40	26.134	23.931	35.338	18.766	84.463	84.650
#1	.00212	-.01015	.01018	.00009	.00088	-.00188	-.00347
#2	-.00417	-.00696	.00842	.00012	.00080	-.01750	-.00771
#3	-.00012	-.00634	.00622	.00018	.00114	-.00848	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00163**	**-.00560**	**-.01351**
Stddev	.00058	.00018	.00078
%RSD	35.475	3.3032	5.7782
#1	-.00221	-.00565	-.01421
#2	-.00162	-.00574	-.01366
#3	-.00105	-.00539	-.01267
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9256.6**	**56705.**	**2976.7**
Stddev	13.6	91.	12.8
%RSD	.14727	.16098	.43054
#1	9241.1	56650.	2963.0
#2	9266.9	56811.	2988.4
#3	9261.8	56655.	2978.7

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 23:48:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52011**	**271.09**	**.26014**	**-.01193**	**.26131**	**.24391**	**254.06**	**.49893**
Stddev	.00309	.31	.00108	.00072	.00207	.00022	1.57	.00035
%RSD	.59470	.11617	.41599	6.0451	.79127	.08930	.61634	.06930
#1	.51910	271.29	.26138	-.01172	.26259	.24374	255.54	.49856
#2	.51765	270.73	.25938	-.01274	.26241	.24383	254.23	.49898
#3	.52358	271.26	.25965	-.01134	.25892	.24415	252.42	.49925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24094**	**.25041**	**.26416**	**96.077**	**5.2095**	**.01124**	**238.55**	**.24627**
Stddev	.00056	.00142	.00058	.420	.1352	.00179	1.07	.00329
%RSD	.23299	.56520	.21819	.43687	2.5957	15.928	.44935	1.3378
#1	.24046	.25065	.26387	96.381	5.3478	.01132	239.59	.24346
#2	.24081	.24889	.26378	96.252	5.2032	.00941	238.63	.24545
#3	.24156	.25169	.26482	95.598	5.0776	.01299	237.45	.24990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**5.4959**	**.48742**	**.09841**	**.49766**	**.51195**	**.23776**	**.00256**
Stddev	.00052	.0364	.00161	.00635	.00144	.00162	.00501	.00193
%RSD	128.92	.66237	.33105	6.4479	.28893	.31661	2.1076	75.415
#1	-.00068	5.5313	.48557	.09364	.49656	.51344	.24335	.00339
#2	-.00073	5.4979	.48847	.09597	.49929	.51023	.23366	.00393
#3	.00020	5.4586	.48823	.10561	.49712	.51219	.23626	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 23:48:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00140**	**.00103**	**-.00323**	**.47273**	**.25455**	**.48271**	**-.01305**
Stddev	.00059	.00027	.00250	.00229	.00097	.00045	.00046
%RSD	41.750	26.302	77.431	.48347	.38190	.09250	3.5206
#1	.00144	.00120	-.00356	.47420	.25352	.48220	-.01343
#2	.00197	.00072	-.00058	.47010	.25467	.48293	-.01317
#3	.00080	.00116	-.00555	.47390	.25546	.48302	-.01254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9240.5**	**56174.**	**2955.7**
Stddev	9.6	118.	17.7
%RSD	.10383	.20921	.59797
#1	9251.6	56039.	2946.0
#2	9234.1	56253.	2944.9
#3	9235.9	56229.	2976.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:51:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41108**	**10.316**	**.40843**	**.50327**	**1.0436**	**.05024**	**10.459**
Stddev	.00161	.013	.00298	.00077	.0011	.00011	.030
%RSD	.39215	.12124	.73007	.15382	.10203	.22382	.28694
#1	.41119	10.324	.40804	.50264	1.0446	.05015	10.464
#2	.41263	10.302	.40566	.50304	1.0438	.05037	10.487
#3	.40941	10.323	.41158	.50413	1.0425	.05022	10.428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05234**	**.20485**	**.50201**	**.52446**	**4.0759**	**51.088**	**1.0484**
Stddev	.00020	.00025	.00165	.00123	.0669	.060	.0059
%RSD	.38699	.12298	.32889	.23505	1.6409	.11683	.55819
#1	.05251	.20498	.50023	.52357	4.1126	51.031	1.0491
#2	.05240	.20456	.50349	.52586	3.9987	51.083	1.0423
#3	.05212	.20501	.50230	.52393	4.1164	51.150	1.0539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8126**	**.50786**	**1.0468**	**51.847**	**.51713**	**10.210**	**.51778**
Stddev	.0274	.00264	.0020	.030	.00045	.013	.00098
%RSD	.27960	.52030	.19073	.05848	.08757	.13121	.18906
#1	9.8005	.51090	1.0485	51.876	.51722	10.201	.51858
#2	9.7933	.50648	1.0474	51.816	.51663	10.204	.51807
#3	9.8440	.50619	1.0446	51.848	.51752	10.226	.51669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:51:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2406**	**.41201**	**5.2627**	**1.0255**	**1.0428**	**1.0401**	**.52263**
Stddev	.0022	.00564	.0065	.0018	.0016	.0094	.00276
%RSD	.17501	1.3693	.12412	.17227	.15774	.90409	.52737
#1	1.2431	.41191	5.2553	1.0271	1.0421	1.0459	.52461
#2	1.2392	.40642	5.2651	1.0236	1.0417	1.0292	.52380
#3	1.2396	.41770	5.2677	1.0258	1.0447	1.0451	.51948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0216**	**1.0330**	F **3.0271**
Stddev	.0027	.0013	.0163
%RSD	.26838	.12831	.53748
#1	1.0227	1.0315	3.0446
#2	1.0236	1.0335	3.0125
#3	1.0185	1.0340	3.0242
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9680.4**	**59250.**	**3000.1**
Stddev	28.5	27.	16.9
%RSD	.29390	.04497	.56388
#1	9711.9	59280.	2982.6
#2	9672.8	59242.	3016.3
#3	9656.6	59229.	3001.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:55:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	.00182	.00085	.00036	.00255	.00017	-.02838	-.00012
Stddev	.00082	.00761	.00304	.00225	.00150	.00005	.02296	.00019
%RSD	65.454	418.99	358.52	623.67	58.837	28.075	80.890	157.58
#1	.00189	-.00688	.00358	-.00006	.00362	.00012	-.00325	-.00021
#2	.00153	.00513	.00139	-.00165	.00321	.00020	-.04827	-.00024
#3	.00033	.00720	-.00242	.00279	.00083	.00021	-.03363	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00075	.00113	.02762	-.02056	.00086	-.01380	-.00101
Stddev	.00025	.00070	.00060	.00527	.01321	.00185	.01535	.00114
%RSD	279.31	93.710	52.614	19.071	64.270	216.68	111.21	112.81
#1	-.00016	.00013	.00054	.02156	-.02746	-.00001	-.01846	.00029
#2	.00010	.00151	.00112	.03019	-.02889	-.00040	-.02627	-.00181
#3	.00033	.00061	.00173	.03110	-.00532	.00298	.00334	-.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00326	.05197	-.00006	.00537	-.00040	.00432	.00298	.03440
Stddev	.00030	.03661	.00066	.00611	.00131	.00120	.00482	.00043
%RSD	9.1019	70.433	1169.2	113.80	328.70	27.704	161.98	1.2407
#1	.00299	.03235	.00066	.00591	.00062	.00425	-.00005	.03422
#2	.00322	.09421	-.00018	.01119	-.00187	.00556	.00044	.03489
#3	.00358	.02936	-.00065	-.00099	.00005	.00317	.00854	.03409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:55:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00044**	**.00562**	**-.00278**	**.00100**	**.00010**	**.00427**
Stddev	.00044	.00041	.00677	.00064	.00081	.00020	.00057
%RSD	558.27	93.814	120.49	22.928	80.799	205.25	13.474
#1	.00052	-.00002	.00467	-.00264	.00112	.00024	.00360
#2	.00007	.00078	.01282	-.00348	.00014	-.00013	.00461
#3	-.00036	.00055	-.00063	-.00223	.00174	.00017	.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9746.4**	**60216.**	**3006.7**
Stddev	3.8	76.	7.9
%RSD	.03876	.12554	.26429
#1	9742.9	60301.	3002.9
#2	9746.0	60157.	3001.3
#3	9750.4	60189.	3015.8

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 23:59:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00916	.16469	.00814	.08024	.01010	.00165	.38196	.00067
Stddev	.00085	.00884	.00209	.00058	.00103	.00003	.03578	.00008
%RSD	9.3027	5.3671	25.632	.71975	10.222	1.6058	9.3673	12.378
#1	.00982	.16059	.01037	.08090	.01024	.00166	.39925	.00061
#2	.00944	.15864	.00624	.07981	.01105	.00162	.40581	.00076
#3	.00820	.17483	.00780	.08002	.00900	.00168	.34082	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00411	.00454	.00520	.10552	.68660	.08825	.42307	.00800
Stddev	.00033	.00070	.00174	.01827	.09614	.00099	.09575	.00252
%RSD	7.9024	15.364	33.422	17.313	14.002	1.1218	22.633	31.490
#1	.00383	.00377	.00720	.10444	.59286	.08799	.31358	.00534
#2	.00447	.00514	.00437	.12431	.68197	.08934	.49110	.01035
#3	.00404	.00471	.00403	.08782	.78497	.08741	.46454	.00831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00870	.45736	.01598	.79373	.00972	.08303	.01581	.78238
Stddev	.00060	.01151	.00062	.00779	.00188	.00162	.00507	.00288
%RSD	6.8723	2.5158	3.9084	.98133	19.382	1.9461	32.090	.36823
#1	.00805	.45897	.01600	.80272	.00902	.08401	.02162	.78192
#2	.00924	.44514	.01534	.78909	.01186	.08117	.01226	.78546
#3	.00881	.46798	.01659	.78938	.00829	.08392	.01355	.77975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 23:59:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40813**	**.04261**	**.02883**	**.15405**	**.00896**	**.01738**	**.13453**
Stddev	.00156	.00009	.00723	.00166	.00036	.00005	.00136
%RSD	.38342	.20072	25.085	1.0771	4.0551	.28767	1.0139
#1	.40866	.04260	.02755	.15254	.00855	.01741	.13450
#2	.40935	.04253	.02233	.15583	.00907	.01742	.13318
#3	.40636	.04270	.03662	.15377	.00925	.01733	.13591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9793.5**	**60446.**	**3011.5**
Stddev	14.7	195.	8.9
%RSD	.15029	.32191	.29401
#1	9810.3	60377.	3006.1
#2	9783.4	60295.	3006.7
#3	9786.6	60666.	3021.7

Approved: June 27, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW21-062216	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 12:32
Collect Date:	06/22/2016 09:45	**Dilution:**	1	**File ID:**	NI.070116.123211
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00812		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00132		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.195		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0569		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.0261		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00262		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0230	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW21-062216	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 16:05
Collect Date:	06/22/2016 09:45	**Dilution:**	50	**File ID:**	NI.070116.160530
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	5.91		0.300	0.150	0.0750
Manganese, Total	7439-96-5	1.81		0.200	0.100	0.0500
Nickel, Total	7440-02-0	0.760		0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW02F-062216	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 12:35
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	NI.070116.123523
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000926	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0479		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00315	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00608		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00127	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0851		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00419	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00226		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG574416
Analyst: VC
Spike Analyst: VC
Run Date: 06/28/2016 07:30
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/28/2016 07:36

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18987
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG574416-04	BLANK	1	20 mL	50 mL	180.382 g	180.312 g		
2	WG574416-05	LCS	1	20 mL	50 mL	183.694 g	183.682 g	.25 mL	
3	L16061289-01	SAMP	1	20 mL	50 mL	182.848 g	182.84 g		07/05/16
4	L16061289-04	SAMP	1	20 mL	50 mL	182.912 g	182.885 g		07/05/16
5	L16061290-03	SAMP	1	20 mL	50 mL	184.003 g	183.986 g		07/05/16
6	L16061290-05	SAMP	1	20 mL	50 mL	181.663 g	181.642 g		07/05/16
7	L16061417-01	SAMP	1	20 mL	50 mL	179.943 g	179.922 g		07/01/16
8	L16061417-02	SAMP	1	20 mL	50 mL	179.851 g	179.837 g		07/01/16
9	L16061417-03	SAMP	1	20 mL	50 mL	182.296 g	182.285 g		07/01/16
10	L16061417-04	SAMP	1	20 mL	50 mL	184.788 g	184.773 g		07/01/16
11	WG574416-01	REF	1	20 mL	50 mL	183.479 g	183.463 g		
12	L16061417-05	RS01	1	20 mL	50 mL	183.479 g	183.463 g		07/01/16
13	WG574416-06	MS	1	20 mL	50 mL	181.151 g	181.132 g	.25 mL	
14	L16061417-06	MS01	1	20 mL	50 mL	181.151 g	181.132 g	.25 mL	07/01/16
15	WG574416-07	MSD	1	20 mL	50 mL	182.336 g	182.32 g	.25 mL	
16	L16061417-07	SD01	1	20 mL	50 mL	182.336 g	182.32 g	.25 mL	07/01/16
17	L16061417-08	SAMP	1	20 mL	50 mL	182.44 g	182.422 g		07/01/16
18	L16061417-09	SAMP	1	20 mL	50 mL	182.182 g	182.167 g		07/01/16
19	L16061441-01	SAMP	1	20 mL	50 mL	181.307 g	181.285 g		06/30/16
20	L16061441-02	SAMP	1	20 mL	50 mL	182.852 g	182.839 g		06/30/16
21	WG574416-02	REF	1	20 mL	50 mL	183.787 g	183.766 g		
22	L16061442-01	RS01	1	20 mL	50 mL	183.787 g	183.766 g		06/30/16
23	L16061442-02	SAMP	1	20 mL	50 mL	182.815 g	182.785 g		06/30/16
24	WG574416-08	MS	1	20 mL	50 mL	181.69 g	181.68 g	.25 mL	
25	L16061442-03	MS01	1	20 mL	50 mL	181.69 g	181.68 g	.25 mL	06/30/16
26	WG574416-09	MSD	1	20 mL	50 mL	183.48 g	183.462 g	.25 mL	
27	L16061442-04	SD01	1	20 mL	50 mL	183.48 g	183.462 g	.25 mL	06/30/16
28	L16061446-01	SAMP	2	20 mL	50 mL	182.938 g	182.914 g		06/30/16
29	WG574416-03	REF	2	20 mL	50 mL	183.343 g	183.326 g		
30	L16061447-01	SAMP	2	20 mL	50 mL	183.343 g	183.326 g		06/30/16
31	WG574416-10	DUP	1	20 mL	50 mL	182.848 g	182.825 g		

L16061442-03	FILTERED DIGESTATE
L16061442-04	FILTERED DIGESTATE
L16061441-01	FILTERED DIGESTATE
L16061441-02	FILTERED DIGESTATE
L16061442-01	FILTERED DIGESTATE
WG574416-02	FILTERED DIGESTATE

MW_DIG - Modified 09/30/2009
PDF ID: 4828148
Report generated: 06/28/2016 09:42

Microbac Laboratories Inc.
Microwave Digestion Log

L16061442-02	FILTERED DIGESTATE	SOP:
WG574416-08	FILTERED DIGESTATE	Spike Solution:
WG574416-09	FILTERED DIGESTATE	Spike Witness:

Method:
Balance:
Analyst: Becki Collins
Instrument:
Instrument Start:

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4828148
Report generated: 06/28/2016 09:42

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.070116.102728	Blank	Blank		1		07/01/16 10:27
2	NI.070116.103040	WG575028-01	Calibration Point		1		07/01/16 10:30
3	NI.070116.103351	WG575028-02	Calibration Point		1		07/01/16 10:33
4	NI.070116.103702	WG575028-03	Calibration Point		1		07/01/16 10:37
5	NI.070116.104014	WG575028-04	Calibration Point		1		07/01/16 10:40
6	NI.070116.104327	WG575028-05	Initial Calibration Verification		1		07/01/16 10:43
7	NI.070116.104640	WG575028-06	Initial Calib Blank		1		07/01/16 10:46
8	NI.070116.104953	WG575028-07	Low Level Initial Calibration V		1		07/01/16 10:49
9	NI.070116.105304	WG575028-08	Interference Check		1		07/01/16 10:53
10	NI.070116.105616	WG575028-09	Interference Check		1		07/01/16 10:56
11	NI.070116.105929	WG575028-10	CCV		1		07/01/16 10:59
12	NI.070116.110241	WG575028-11	CCB		1		07/01/16 11:02
13	NI.070116.110553	WG574416-04	Method/Prep Blank	20/50	1		07/01/16 11:05
14	NI.070116.110904	WG574416-05	Laboratory Control S	20/50	1		07/01/16 11:09
15	NI.070116.111216	WG574416-01	Reference Sample		1	L16061417-05	07/01/16 11:12
16	NI.070116.111527	WG574416-06	Matrix Spike	20/50	1	L16061417-05	07/01/16 11:15
17	NI.070116.111839	WG574416-07	Matrix Spike Duplica	20/50	1	L16061417-05	07/01/16 11:18
18	NI.070116.112150	L16061417-01	SS007MW0B04-007	20/50	1		07/01/16 11:21
19	NI.070116.112502	L16061417-02	SS007MW0B06-007	20/50	1		07/01/16 11:25
20	NI.070116.112813	WG574808-01	Post Digestion Spike		1	L16061417-02	07/01/16 11:28
21	NI.070116.113125	WG574808-02	Serial Dilution		5	L16061417-02	07/01/16 11:31
22	NI.070116.113436	WG574808-02	Serial Dilution		25	L16061417-02	07/01/16 11:34
23	NI.070116.113750	WG575028-12	CCV		1		07/01/16 11:37
24	NI.070116.114101	WG575028-13	CCB		1		07/01/16 11:41
25	NI.070116.114414	L16061417-03	SS007MW0B06-007DUP	20/50	1		07/01/16 11:44
26	NI.070116.114726	L16061417-04	SS007MW0B13-007	20/50	1		07/01/16 11:47
27	NI.070116.115037	L16061417-08	SS007MWN748-007	20/50	1		07/01/16 11:50
28	NI.070116.115349	L16061417-09	FQC-RB06221601-CC	20/50	1		07/01/16 11:53
29	NI.070116.115701	L16061441-01	TS935TW002A	20/50	1		07/01/16 11:57
30	NI.070116.120012	L16061441-02	TS935TW005A	20/50	1		07/01/16 12:00
31	NI.070116.120324	WG574416-02	Reference Sample		1	L16061442-01	07/01/16 12:03
32	NI.070116.120635	L16061442-02	TS935TW010C	20/50	1		07/01/16 12:06
33	NI.070116.120947	WG574416-08	Matrix Spike	20/50	1	L16061442-01	07/01/16 12:09
34	NI.070116.121258	WG574416-09	Matrix Spike Duplica	20/50	1	L16061442-01	07/01/16 12:12

Page: 1 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.070116.121611	WG575028-14	CCV		1		07/01/16 12:16
36	NI.070116.121923	WG575028-15	CCB		1		07/01/16 12:19
37	NI.070116.122236	L16061446-01	GH9-HSPRING	20/50	1		07/01/16 12:22
38	NI.070116.122548	WG574416-03	Reference Sample		1	L16061447-01	07/01/16 12:25
39	NI.070116.122859	WG574416-10	Duplicate	20/50	1	L16061447-01	07/01/16 12:28
40	NI.070116.123211	L16061289-01	MW21-062216	20/50	1		07/01/16 12:32
41	NI.070116.123523	L16061289-04	18WW02F-062216	20/50	1		07/01/16 12:35
42	NI.070116.123834	L16061290-03	MW16F-062116	20/50	1		07/01/16 12:38
43	NI.070116.124145	L16061290-05	109-062216	20/50	1		07/01/16 12:41
44	NI.070116.124458	WG575028-16	CCV		1		07/01/16 12:44
45	NI.070116.124810	WG575028-17	CCB		1		07/01/16 12:48
46	NI.070116.125836	WG574419-03	Method/Prep Blank	20/50	1		07/01/16 12:58
47	NI.070116.130334	WG574419-04	Laboratory Control S	20/50	1		07/01/16 13:03
48	NI.070116.130646	WG574419-01	Reference Sample		1	L16061400-06	07/01/16 13:06
49	NI.070116.130957	WG574419-05	Matrix Spike	20/50	1	L16061400-06	07/01/16 13:09
50	NI.070116.131309	WG574419-06	Matrix Spike Duplica	20/50	1	L16061400-06	07/01/16 13:13
51	NI.070116.131620	WG574419-02	Reference Sample		1	L16061427-01	07/01/16 13:16
52	NI.070116.131932	WG574419-07	Duplicate	20/50	1	L16061427-01	07/01/16 13:19
53	NI.070116.132243	L16061468-01	H6F0605-01	20/50	1		07/01/16 13:22
54	NI.070116.132555	WG574824-01	Post Digestion Spike		1	L16061468-01	07/01/16 13:25
55	NI.070116.132906	WG574824-02	Serial Dilution		5	L16061468-01	07/01/16 13:29
56	NI.070116.133218	WG575028-18	CCV		1		07/01/16 13:32
57	NI.070116.133530	WG575028-19	CCB		1		07/01/16 13:35
58	NI.070116.133842	L16061470-01	S6F0639-01	20/50	1		07/01/16 13:38
59	NI.070116.134154	L16061471-01	S6F0244-01	20/50	1		07/01/16 13:41
60	NI.070116.134505	WG574593-01	Reference Sample		2	L16061536-01	07/01/16 13:45
61	NI.070116.134817	WG574593-04	Duplicate	20/50	2	L16061536-01	07/01/16 13:48
62	NI.070116.135128	WG574593-05	Matrix Spike	20/50	2	L16061536-01	07/01/16 13:51
63	NI.070116.135440	WG574593-06	Matrix Spike Duplica	20/50	2	L16061536-01	07/01/16 13:54
64	NI.070116.135751	L16061068-04	C01-061716	20/50	50		07/01/16 13:57
65	NI.070116.140103	L16061068-05	C01FD-061716	20/50	50		07/01/16 14:01
66	NI.070116.140414	L16061068-11	MW19F-061716	20/50	10		07/01/16 14:04
67	NI.070116.140725	WG574840-01	Post Digestion Spike		10	L16061622-02	07/01/16 14:07
68	NI.070116.141039	WG575028-20	CCV		1		07/01/16 14:10

Page: 2 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.070116.141350	WG575028-21	CCB		1		07/01/16 14:13
70	NI.070116.141703	WG574840-04	L1606106815S WG574840-0	20/50	10		07/01/16 14:17
71	NI.070116.142015	WG574840-05	L1606106817SD WG574840	20/50	10		07/01/16 14:20
72	NI.070116.142326	L16061065-02	MW-23-006	20/50	50		07/01/16 14:23
73	NI.070116.142637	L16061065-03	MW-23-008	20/50	50		07/01/16 14:26
74	NI.070116.142949	L16061065-04	MW-23-009	20/50	50		07/01/16 14:29
75	NI.070116.143302	WG575028-22	CCV		1		07/01/16 14:33
76	NI.070116.143613	WG575028-23	CCB		1		07/01/16 14:36
77	NI.070116.143926	WG575028-24	Low Level Continuing Calibra		1		07/01/16 14:39
78	NI.070116.151112	L16061360-01	NP0116-LM1	20/50	1		07/01/16 15:11
79	NI.070116.151423	L16061360-02	EB-062416	20/50	1		07/01/16 15:14
80	NI.070116.151735	L16061400-01	MW-22-008	20/50	1		07/01/16 15:17
81	NI.070116.152046	L16061400-02	MW-22-016	20/50	1		07/01/16 15:20
82	NI.070116.152358	L16061400-03	MW-22-006	20/50	1		07/01/16 15:23
83	NI.070116.152709	L16061400-04	MW-22-005	20/50	1		07/01/16 15:27
84	NI.070116.153021	L16061400-05	MW-22-001	20/50	1		07/01/16 15:30
85	NI.070116.153332	L16061400-09	MW-22-003	20/50	1		07/01/16 15:33
86	NI.070116.153643	L16061400-10	MW-22-004	20/50	1		07/01/16 15:36
87	NI.070116.153955	L16061444-11	EB03	20/50	1		07/01/16 15:39
88	NI.070116.154308	WG575028-25	CCV		1		07/01/16 15:43
89	NI.070116.154619	WG575028-26	CCB		1		07/01/16 15:46
90	NI.070116.154932	L16061452-01	18CPTMW12SW-062416	20/50	1		07/01/16 15:49
91	NI.070116.155244	L16061453-01	MW2-062416	20/50	1		07/01/16 15:52
92	NI.070116.155555	L16061453-03	18CPTMW01SW-062416	20/50	1		07/01/16 15:55
93	NI.070116.155907	WG574419-02	Reference Sample		5	L16061427-01	07/01/16 15:59
94	NI.070116.160218	WG574419-07	Duplicate	20/50	5	L16061427-01	07/01/16 16:02
95	NI.070116.160530	L16061289-01	MW21-062216	20/50	50		07/01/16 16:05
96	NI.070116.160841	L16061290-03	MW16F-062116	20/50	10		07/01/16 16:08
97	NI.070116.161155	WG575028-27	CCV		1		07/01/16 16:11
98	NI.070116.161506	WG575028-28	CCB		1		07/01/16 16:15
99	NI.070116.163708	WG574521-03	Method/Prep Blank	.25/100	1		07/01/16 16:37
100	NI.070116.164019	WG574521-04	Laboratory Control S	.25/100	1		07/01/16 16:40
101	NI.070116.164331	WG574521-01	Reference Sample		1	L16061445-04	07/01/16 16:43
102	NI.070116.164642	WG574521-05	Matrix Spike	.254/100	1	L16061445-04	07/01/16 16:46

Page: 3 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.070116.164954	WG574521-06	Matrix Spike Duplica	.25/100	1	L16061445-04	07/01/16 16:49
104	NI.070116.165305	L16061451-01	GS165SS062016S-ES	.251/100	1		07/01/16 16:53
105	NI.070116.165617	L16061451-02	GS159SS062116G-ES	.25/100	1		07/01/16 16:56
106	NI.070116.165928	WG575057-01	Post Digestion Spike		1	L16061451-02	07/01/16 16:59
107	NI.070116.170240	WG575057-02	Serial Dilution		5	L16061451-02	07/01/16 17:02
108	NI.070116.170552	WG575057-02	Serial Dilution		25	L16061451-02	07/01/16 17:05
109	NI.070116.170905	WG575028-29	CCV		1		07/01/16 17:09
110	NI.070116.171217	WG575028-30	CCB		1		07/01/16 17:12
111	NI.070116.171825	L16061451-03	GS164SS062116S-ES	.251/100	1		07/01/16 17:18
112	NI.070116.172204	L16061451-04	GS164SS062116P-ES	.253/100	1		07/01/16 17:22
113	NI.070116.172516	L16061451-05	GS154SS062316X-ES	.253/100	1		07/01/16 17:25
114	NI.070116.172827	WG574521-02	Reference Sample		1	L16061451-06	07/01/16 17:28
115	NI.070116.173139	L16061451-07	GS153SS0622316X-ES	.253/100	1		07/01/16 17:31
116	NI.070116.173450	L16061451-08	GS153SS062316X-ESD	.256/100	1		07/01/16 17:34
117	NI.070116.173802	WG574521-07	Matrix Spike	.258/100	1	L16061451-06	07/01/16 17:38
118	NI.070116.174113	WG574521-08	Matrix Spike Duplica	.256/100	1	L16061451-06	07/01/16 17:41
119	NI.070116.174425	L16061445-01	TS935DS00700A	.258/100	1		07/01/16 17:44
120	NI.070116.174736	L16061445-02	TS935DS00705A	.256/100	1		07/01/16 17:47
121	NI.070116.175049	WG575028-31	CCV		1		07/01/16 17:50
122	NI.070116.175401	WG575028-32	CCB		1		07/01/16 17:54
123	NI.070116.175714	L16061445-03	TS935DS00800A		1		07/01/16 17:57
124	NI.070116.180025	L16061445-07	TS935DS00900A		1		07/01/16 18:00
125	NI.070116.180337	L16061445-08	TS935DS00905A		1		07/01/16 18:03
126	NI.070116.180648	L16061445-09	TS935DS00905C		1		07/01/16 18:06
127	NI.070116.181000	L16061445-10	TS935DS01000A		1		07/01/16 18:10
128	NI.070116.181311	L16061445-11	TS935DS01005A		1		07/01/16 18:13
129	NI.070116.181623	L16061445-12	TS935DS01205A		1		07/01/16 18:16
130	NI.070116.181934	L16061451-01	GS165SS062016S-ES		10		07/01/16 18:19
131	NI.070116.182246	L16061451-02	GS159SS062116G-ES		10		07/01/16 18:22
132	NI.070116.182557	WG575057-01	Post Digestion Spike		10	L16061451-02	07/01/16 18:25
133	NI.070116.182910	WG575028-33	CCV		1		07/01/16 18:29
134	NI.070116.183222	WG575028-34	CCB		1		07/01/16 18:32
135	NI.070116.183535	WG575057-02	Serial Dilution		50	L16061451-02	07/01/16 18:35
136	NI.070116.183846	L16061451-03	GS164SS062116S-ES		10		07/01/16 18:38

Page: 4 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.070116.184158	L16061451-04	GS164SS062116P-ES		10		07/01/16 18:41
138	NI.070116.184509	L16061451-05	GS154SS062316X-ES		10		07/01/16 18:45
139	NI.070116.184821	WG574521-02	Reference Sample		10	L16061451-06	07/01/16 18:48
140	NI.070116.185132	L16061451-07	GS153SS0622316X-ES		10		07/01/16 18:51
141	NI.070116.185444	L16061451-08	GS153SS062316X-ESD		10		07/01/16 18:54
142	NI.070116.185755	WG574521-07	Matrix Spike		10	L16061451-06	07/01/16 18:57
143	NI.070116.190107	WG574521-08	Matrix Spike Duplica		10	L16061451-06	07/01/16 19:01
144	NI.070116.190419	WG575028-35	CCV		1		07/01/16 19:04
145	NI.070116.190731	WG575028-36	CCB		1		07/01/16 19:07
146	NI.070116.191044	WG575028-37	Low Level Continuing Calibra		1		07/01/16 19:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
67				
Seq. 67, 70-71: wrong WG numbers. JYH				

Page: 5 Approved: July 05, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 575028
Runlog ID: 76079
Analytical Workgroups: 574808,574849,574824,574804,575057

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1441,1442,1360,1400,1444,1445
Level 4	1289,12901417,1452,1453,1068
	1065,1451
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:

Secondary Reviewer:
05-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 15:57:13

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG574808

Login Number: L16061289

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW21-062216	01	06/22/16					06/28/2016	5.9	180		07/01/16	9.3	180	
MW21-062216	01	06/22/16					06/28/2016	5.9	180		07/01/16	9.1	180	
18WW02F-062216	04	06/22/16					06/28/2016	5.7	180		07/01/16	9	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4837087
Report generated 07/02/2016 13:13

METHOD BLANK SUMMARY

Login Number: L16061289
Blank File ID: NI.070116.110553
Prep Date: 06/28/16 07:30
Analyzed Date: 07/01/16 11:05
Analyst: JYH

Work Group: WG574808
Blank Sample ID: WG574416-04
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574416-05	NI.070116.110904	07/01/16 11:09	01
DUP	WG574416-10	NI.070116.122859	07/01/16 12:28	01
MW21-062216	L16061289-01	NI.070116.123211	07/01/16 12:32	01
18WW02F-062216	L16061289-04	NI.070116.123523	07/01/16 12:35	01
MW21-062216	L16061289-01	NI.070116.160530	07/01/16 16:05	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4837088
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061289 Prep Date: 06/28/16 07:30 Sample ID: WG574416-04
Instrument ID: ICP-MS2 Run Date: 07/01/16 11:05 Prep Method: 3015
File ID: NI.070116.110553 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574808 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-01-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000150	1	J
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4837089
02-JUL-2016 13:13

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 Run Date: 07/01/2016 Sample ID: WG574416-05
Instrument ID: ICP-MS2 Run Time: 11:09 Prep Method: 3015
File ID: NI.070116.110904 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574808 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-01-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.120	95.7	80 - 120	
Arsenic, Total	0.125	0.127	102	80 - 120	
Barium, Total	0.125	0.125	99.9	80 - 120	
Cadmium, Total	0.125	0.127	101	80 - 120	
Chromium, Total	0.125	0.126	101	80 - 120	
Cobalt, Total	0.125	0.126	101	80 - 120	
Copper, Total	0.125	0.129	103	80 - 120	
Lead, Total	0.125	0.127	101	80 - 120	
Manganese, Total	0.125	0.128	103	80 - 120	
Nickel, Total	0.125	0.126	101	80 - 120	
Silver, Total	0.125	0.128	103	80 - 120	
Thallium, Total	0.125	0.126	101	80 - 120	
Vanadium, Total	0.125	0.126	101	80 - 120	
Zinc, Total	0.125	0.129	103	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4837090
Report generated: 07/02/2016 13:13

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061289 Cal ID: ICP-MS2- Worknum: WG574808
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG574416-01 File ID: NI.070116.111216 Dil: 1 Matrix: WATER
Sample ID: WG574416-06 MS File ID: NI.070116.111527 Dil: 1 Units: mg/L
Sample ID: WG574416-07 MSD File ID: NI.070116.111839 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.00144	0.125	0.131	104	0.125	0.131	104	0.181	80 - 120	20	
Arsenic	0.00444	0.125	0.136	105	0.125	0.137	106	1.09	80 - 120	20	
Barium	0.0818	0.125	0.203	96.9	0.125	0.203	96.8	0.0521	80 - 120	20	
Cadmium	ND	0.125	0.124	98.9	0.125	0.125	100	1.35	80 - 120	20	
Chromium	0.00255	0.125	0.127	99.6	0.125	0.128	100	0.615	80 - 120	20	
Cobalt	ND	0.125	0.125	100	0.125	0.126	101	0.860	80 - 120	20	
Copper	0.00221	0.125	0.124	97.3	0.125	0.124	97.5	0.251	80 - 120	20	
Lead	ND	0.125	0.126	101	0.125	0.127	102	1.02	80 - 120	20	
Manganese	0.00484	0.125	0.128	98.6	0.125	0.127	97.8	0.814	80 - 120	20	
Nickel	0.00380	0.125	0.124	96.6	0.125	0.127	98.5	1.92	80 - 120	20	
Silver	ND	0.125	0.0941	75.3	0.125	0.0975	78.0	3.59	80 - 120	20	*
Thallium	0.000110	0.125	0.126	101	0.125	0.126	101	0.436	80 - 120	20	
Vanadium	0.0113	0.125	0.140	103	0.125	0.140	103	0.406	80 - 120	20	
Zinc	ND	0.125	0.135	108	0.125	0.133	106	1.61	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4837091
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061289 Cal ID: ICP-MS2- Worknum: WG574808
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG574416-02 File ID: NI.070116.120324 Dil: 1 Matrix: WATER
Sample ID: WG574416-08 MS File ID: NI.070116.120947 Dil: 1 Units: mg/L
Sample ID: WG574416-09 MSD File ID: NI.070116.121258 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	ND	0.125	0.0862	69.0	0.125	0.0829	66.3	3.92	80 - 120	20	*
Arsenic	0.00389	0.125	0.129	100	0.125	0.130	101	0.631	80 - 120	20	
Barium	0.210	0.125	0.338	103	0.125	0.342	106	1.10	80 - 120	20	
Cadmium	ND	0.125	0.122	98.0	0.125	0.123	98.5	0.508	80 - 120	20	
Chromium	0.00565	0.125	0.129	99.0	0.125	0.130	99.8	0.778	80 - 120	20	
Cobalt	0.00360	0.125	0.129	101	0.125	0.130	101	0.830	80 - 120	20	
Copper	0.00453	0.125	0.125	96.4	0.125	0.124	95.9	0.486	80 - 120	20	
Lead	0.00377	0.125	0.128	99.0	0.125	0.129	100	1.39	80 - 120	20	
Manganese	0.159	0.125	0.320	129	0.125	0.319	128	0.176	80 - 120	20	*
Nickel	0.00998	0.125	0.132	97.5	0.125	0.130	96.4	1.09	80 - 120	20	
Silver	ND	0.125	0.117	93.4	0.125	0.119	95.0	1.65	80 - 120	20	
Thallium	ND	0.125	0.123	98.3	0.125	0.125	100	1.70	80 - 120	20	
Vanadium	0.0141	0.125	0.143	103	0.125	0.142	102	0.636	80 - 120	20	
Zinc	0.0428	0.125	0.171	102	0.125	0.159	92.7	7.41	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4837091
Report generated 07/12/2016 10:43

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061289 **Worknum:** WG574808
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574808-02 **File ID:** NI.070116.113125 **Dil:** 5 **Units:** ug/L
Sample: L16061417-02 **File ID:** NI.070116.112502 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	1.64	F	2480.00	
Arsenic	1.32	X	1.35	F	2.60	
Barium	8.30	X	8.28	F	0.33	
Cadmium	ND	U	ND	U		
Chromium	1.74	X	ND	U		
Cobalt	ND	U	ND	U		
Copper	0.623	F	ND	U		
Lead	ND	U	ND	U		
Manganese	0.853	F	ND	U		
Nickel	1.38	F	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	3.65	X	3.68	F	0.78	
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4837085
07/02/2016 13:13

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061289 **Worknum:** WG574808
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574808-01 **File ID:** NI.070116.112813 **Dil:** 1 **Units:** ug/L
Sample ID: L16061417-02 **File ID:** NI.070116.112502 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	50.8		0	U	50	101.7	75 - 125	
ARSENIC	55.6		1.32		50	108.7	75 - 125	
BARIUM	59.2		8.30		50	101.9	75 - 125	
CADMIUM	51.5		0	U	50	103.0	75 - 125	
CHROMIUM	53.7		1.74		50	103.9	75 - 125	
COBALT	52.2		0	U	50	104.4	75 - 125	
COPPER	51.5		0.623	F	50	101.7	75 - 125	
LEAD	52.8		0	U	50	105.6	75 - 125	
MANGANESE	52.6		0.853	F	50	103.6	75 - 125	
NICKEL	51.7		1.38	F	50	100.6	75 - 125	
SILVER	49.5		0	U	50	98.9	75 - 125	
THALLIUM	52.3		0	U	50	104.7	75 - 125	
VANADIUM	57.2		3.65		50	107.1	75 - 125	
ZINC	54.8		0	U	50	109.7	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4837086
Report generated: 07/02/2016 13:13

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061289	Workgroup (AAB#):	WG574808
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG575028	Initial Calibration Date:	01-JUL-2016 10:40

	WG575028-01		WG575028-02		WG575028-03		WG575028-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	259	.4	428	50	250000	100	508000	.999935	
ARSENIC	0	-59.9	.4	5.90	50	61400	100	123000	.999997	
BARIUM	0	20.7	.4	146	50	107000	100	210000	.99998	
CADMIUM	0	2.60	.4	119	50	113000	100	223000	.999998	
CHROMIUM	0	7690	.4	8190	50	412000	100	812000	1	
COBALT	0	201	.4	604	50	385000	100	759000	.999986	
COPPER	0	167	.4	251	50	103000	100	201000	.999949	
LEAD	0	930	.4	2060	50	1040000	100	2040000	.999999	
MANGANESE	0	715	.4	1140	50	380000	100	751000	.999989	
NICKEL	0	335	.4	418	50	105000	100	205000	.999979	
SILVER	0	83.3	.4	447	50	352000	100	698000	1	
THALLIUM	0	7.70	.4	454	50	444000	100	872000	.999994	
VANADIUM	0	1560	.4	2030	50	413000	100	818000	.999998	
ZINC	0	240	.4	280	50	61600	100	122000	.999992	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4837095
Report generated: 02-JUL-2016 13:13

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-06
Instrument ID: ICP-MS2
Run Time: 10:46
Method: 6020A
File ID: NI.070116.104640
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS2 - 01-JUL-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.2	U
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4837097
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-11
Instrument ID: ICP-MS2
Run Time: 11:02
Method: 6020A
File ID: NI.070116.110241
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.276	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837100
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-13
Instrument ID: ICP-MS2
Run Time: 11:41
Method: 6020A
File ID: NI.070116.114101
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837100
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-15
Instrument ID: ICP-MS2
Run Time: 12:19
Method: 6020A
File ID: NI.070116.121923
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837100
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-17
Instrument ID: ICP-MS2
Run Time: 12:48
Method: 6020A
File ID: NI.070116.124810
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837100
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-26
Instrument ID: ICP-MS2
Run Time: 15:46
Method: 6020A
File ID: NI.070116.154619
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837100
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-28
Instrument ID: ICP-MS2
Run Time: 16:15
Method: 6020A
File ID: NI.070116.161506
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837100
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061289 Run Date: 07/01/2016 Sample ID: WG575028-05
Instrument ID: ICP-MS2 Run Time: 10:43 Method: 6020A
File ID: NI.070116.104327 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG574808 Cal ID: ICP-MS - 01-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.5	98.9	90 - 110	
Arsenic		50	50.5	101	90 - 110	
Barium		50	49.1	98.3	90 - 110	
Cadmium		50	49.7	99.4	90 - 110	
Chromium		50	50.3	101	90 - 110	
Cobalt		50	50.9	102	90 - 110	
Copper		50	50.6	101	90 - 110	
Lead		50	50.4	101	90 - 110	
Manganese		50	51.2	102	90 - 110	
Nickel		50	50.3	101	90 - 110	
Silver		50	49.2	98.3	90 - 110	
Thallium		50	49.7	99.3	90 - 110	
Vanadium		50	50.3	101	90 - 110	
Zinc		50	51.2	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4837096
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-10
Instrument ID: ICP-MS2
Run Time: 10:59
Method: 6020A
File ID: NI.070116.105929
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0511	mg/L	102	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0496	mg/L	99.2	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0506	mg/L	101	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0505	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0502	mg/L	100	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0509	mg/L	102	90 - 110		
Zinc		0.0500	0.0502	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837099
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-12
Instrument ID: ICP-MS2
Run Time: 11:37
Method: 6020A
File ID: NI.070116.113750
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0494	mg/L	98.9	90 - 110		
Arsenic		0.0500	0.0503	mg/L	101	90 - 110		
Barium		0.0500	0.0493	mg/L	98.6	90 - 110		
Cadmium		0.0500	0.0498	mg/L	99.6	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0505	mg/L	101	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0500	mg/L	100	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0497	mg/L	99.4	90 - 110		
Thallium		0.0500	0.0497	mg/L	99.5	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0500	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837099
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-14
Instrument ID: ICP-MS2
Run Time: 12:16
Method: 6020A
File ID: NI.070116.121611
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0495	mg/L	98.9	90 - 110		
Arsenic		0.0500	0.0500	mg/L	99.9	90 - 110		
Barium		0.0500	0.0486	mg/L	97.3	90 - 110		
Cadmium		0.0500	0.0496	mg/L	99.2	90 - 110		
Chromium		0.0500	0.0495	mg/L	99.1	90 - 110		
Cobalt		0.0500	0.0518	mg/L	104	90 - 110		
Copper		0.0500	0.0496	mg/L	99.1	90 - 110		
Lead		0.0500	0.0504	mg/L	101	90 - 110		
Manganese		0.0500	0.0499	mg/L	99.9	90 - 110		
Nickel		0.0500	0.0494	mg/L	98.9	90 - 110		
Silver		0.0500	0.0496	mg/L	99.3	90 - 110		
Thallium		0.0500	0.0500	mg/L	100	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0493	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837099
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-16
Instrument ID: ICP-MS2
Run Time: 12:44
Method: 6020A
File ID: NI.070116.124458
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0495	mg/L	99.0	90 - 110		
Arsenic		0.0500	0.0496	mg/L	99.1	90 - 110		
Barium		0.0500	0.0491	mg/L	98.3	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0506	mg/L	101	90 - 110		
Lead		0.0500	0.0509	mg/L	102	90 - 110		
Manganese		0.0500	0.0503	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0498	mg/L	99.5	90 - 110		
Thallium		0.0500	0.0507	mg/L	101	90 - 110		
Vanadium		0.0500	0.0502	mg/L	100	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837099
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-25
Instrument ID: ICP-MS2
Run Time: 15:43
Method: 6020A
File ID: NI.070116.154308
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0499	mg/L	99.9	90 - 110		
Arsenic		0.0500	0.0504	mg/L	101	90 - 110		
Barium		0.0500	0.0490	mg/L	97.9	90 - 110		
Cadmium		0.0500	0.0497	mg/L	99.4	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cobalt		0.0500	0.0515	mg/L	103	90 - 110		
Copper		0.0500	0.0508	mg/L	102	90 - 110		
Lead		0.0500	0.0513	mg/L	103	90 - 110		
Manganese		0.0500	0.0505	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0499	mg/L	99.7	90 - 110		
Thallium		0.0500	0.0502	mg/L	100	90 - 110		
Vanadium		0.0500	0.0509	mg/L	102	90 - 110		
Zinc		0.0500	0.0507	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837099
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-27
Instrument ID: ICP-MS2
Run Time: 16:11
Method: 6020A
File ID: NI.070116.161155
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0489	mg/L	97.7	90 - 110		
Arsenic		0.0500	0.0500	mg/L	100	90 - 110		
Barium		0.0500	0.0487	mg/L	97.3	90 - 110		
Cadmium		0.0500	0.0502	mg/L	100	90 - 110		
Chromium		0.0500	0.0502	mg/L	100	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0503	mg/L	101	90 - 110		
Lead		0.0500	0.0522	mg/L	104	90 - 110		
Manganese		0.0500	0.0497	mg/L	99.4	90 - 110		
Nickel		0.0500	0.0503	mg/L	101	90 - 110		
Silver		0.0500	0.0498	mg/L	99.7	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0500	mg/L	100	90 - 110		
Zinc		0.0500	0.0500	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837099
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-07
Instrument ID: ICP-MS2
Run Time: 10:49
Method: 6020A
File ID: NI.070116.104953
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.364	ug/L	91.0	70 - 130		
Arsenic		0.400	0.390	ug/L	97.6	70 - 130		
Barium		0.750	0.697	ug/L	92.9	70 - 130		
Cadmium		0.240	0.238	ug/L	99.3	70 - 130		
Chromium		0.800	0.709	ug/L	88.6	70 - 130		
Cobalt		0.400	0.371	ug/L	92.7	70 - 130		
Copper		0.800	0.775	ug/L	96.9	70 - 130		
Lead		0.200	0.193	ug/L	96.3	70 - 130		
Manganese		0.500	0.457	ug/L	91.3	70 - 130		
Nickel		1.60	1.52	ug/L	95.0	70 - 130		
Silver		0.400	0.392	ug/L	98.0	70 - 130		
Thallium		0.0800	0.0815	ug/L	102	70 - 130		
Vanadium		0.400	0.339	ug/L	84.7	70 - 130		
Zinc		6.25	6.40	ug/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837101
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-24
Instrument ID: ICP-MS2
Run Time: 14:39
Method: 6020A
File ID: NI.070116.143926
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.364	ug/L	90.9	70 - 130		
Arsenic		0.400	0.415	ug/L	104	70 - 130		
Barium		0.750	0.660	ug/L	88.0	70 - 130		
Cadmium		0.240	0.234	ug/L	97.3	70 - 130		
Chromium		0.800	0.671	ug/L	83.8	70 - 130		
Cobalt		0.400	0.393	ug/L	98.3	70 - 130		
Copper		0.800	0.781	ug/L	97.7	70 - 130		
Lead		0.200	0.199	ug/L	99.6	70 - 130		
Manganese		0.500	0.428	ug/L	85.7	70 - 130		
Nickel		1.60	1.54	ug/L	96.4	70 - 130		
Silver		0.400	0.385	ug/L	96.2	70 - 130		
Thallium		0.0800	0.0813	ug/L	102	70 - 130		
Vanadium		0.400	0.360	ug/L	90.0	70 - 130		
Zinc		6.25	7.08	ug/L	113	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837101
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-37
Instrument ID: ICP-MS2
Run Time: 19:10
Method: 6020A
File ID: NI.070116.191044
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.327	ug/L	81.8	70 - 130		
Arsenic		0.400	0.408	ug/L	102	70 - 130		
Barium		0.750	0.693	ug/L	92.4	70 - 130		
Cadmium		0.240	0.228	ug/L	94.8	70 - 130		
Chromium		0.800	0.796	ug/L	99.5	70 - 130		
Cobalt		0.400	0.378	ug/L	94.5	70 - 130		
Copper		0.800	0.768	ug/L	96.0	70 - 130		
Lead		0.200	0.198	ug/L	98.9	70 - 130		
Manganese		0.500	0.461	ug/L	92.1	70 - 130		
Nickel		1.60	1.51	ug/L	94.1	70 - 130		
Silver		0.400	0.387	ug/L	96.6	70 - 130		
Thallium		0.0800	0.0773	ug/L	96.6	70 - 130		
Vanadium		0.400	0.364	ug/L	91.0	70 - 130		
Zinc		6.25	7.03	ug/L	113	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837101
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061289
Instrument ID: ICP-MS2
Sol. A : WG575028-08 **File ID:** NI.070116.105304
Sol. AB : WG575028-09 **File ID:** NI.070116.105616

Workgroup (AAB#): WG574808
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.118	NS	100	96.8	96.8	
Arsenic	NS	0	NS	100	100	100	
Barium	NS	0.406	NS	100	98.7	98.7	
Cadmium	NS	-0.0920	NS	100	99.5	99.5	
Chromium	NS	0.0974	NS	100	97.8	97.8	
Cobalt	NS	0.0353	NS	100	98.4	98.4	
Copper	NS	0.287	NS	100	98.5	98.5	
Lead	NS	0.0642	NS	100	98.7	98.7	
Manganese	NS	0.0949	NS	100	99.2	99.2	
Nickel	NS	0.398	NS	100	97.1	97.1	
Silver	NS	0.0605	NS	100	87.4	87.4	
Thallium	NS	0.0383	NS	100	98.2	98.2	
Vanadium	NS	0.0180	NS	100	99.7	99.7	
Zinc	NS	1.24	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4837098
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061289 **Analytical Method:** 6020
Analytical Workgroup: WG574808 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 01-JUL-2016 10:30

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061289-01	SAMP	01-JUL-2016 12:32	93.774	103.778	97.748
L16061289-01	SAMP	01-JUL-2016 16:05	97.742	99.04	97.192
L16061289-04	SAMP	01-JUL-2016 12:35	105.526	111.607	108.393
L16061417-02	SAMP	01-JUL-2016 11:25	91.126	95.137	93.308
WG574416-04	BLANK	01-JUL-2016 11:05	100.583	100.822	100.484
WG574416-05	LCS	01-JUL-2016 11:09	100.945	101.711	100.689
WG574808-01	PSPK	01-JUL-2016 11:28	92.143	96.479	93.904
WG574808-02	SERIAL	01-JUL-2016 11:31	92.982	94.302	91.966
WG575028-05	ICV	01-JUL-2016 10:43	99.388	100.45	101.227
WG575028-06	ICB	01-JUL-2016 10:46	99.921	101.195	100.88
WG575028-07	LLICV	01-JUL-2016 10:49	97.843	98.579	96.464
WG575028-08	ICS	01-JUL-2016 10:53	97.097	100.956	98.373
WG575028-09	ICS	01-JUL-2016 10:56	99.537	101.553	98.936
WG575028-10	CCV	01-JUL-2016 10:59	98.413	100.239	99.347
WG575028-11	CCB	01-JUL-2016 11:02	101.078	100.828	100.108
WG575028-12	CCV	01-JUL-2016 11:37	99.995	101.052	100.573
WG575028-13	CCB	01-JUL-2016 11:41	101.368	101.564	100.677
WG575028-14	CCV	01-JUL-2016 12:16	105.497	108.146	107.23
WG575028-15	CCB	01-JUL-2016 12:19	107.619	108.395	108.168
WG575028-16	CCV	01-JUL-2016 12:44	103.303	109.496	107.231
WG575028-17	CCB	01-JUL-2016 12:48	105.044	109.74	107.547
WG575028-24	LLCCV	01-JUL-2016 14:39	100.804	98.706	100.09
WG575028-25	CCV	01-JUL-2016 15:43	100.989	103.315	102.712
WG575028-26	CCB	01-JUL-2016 15:46	101.711	104.453	104.379
WG575028-27	CCV	01-JUL-2016 16:11	100.912	105.898	104.016
WG575028-28	CCB	01-JUL-2016 16:15	103.124	105.323	105.946
WG575028-37	LLCCV	01-JUL-2016 19:10	93.446	100.247	96.576

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4837094
Report generated: 07/02/2016 13:13

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061289 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4837092
Report generated: 07/02/2016 13:13

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Friday, July 01, 2016 10:13:04

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1329	2024	0.709	
Mg	23.985	23.975	4503	2020	0.696	
Co	58.933	58.925	11692	2022	0.691	
In	114.904	114.875	22859	2028	0.686	
U	238.050	238.025	47457	2043	0.687	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	3.598
5.575	4.718
5.625	3.789
5.675	2.527
5.725	1.318
5.775	1.142
5.825	2.913
5.875	3.428
5.925	4.580
5.975	3.116
6.025	1.509
6.075	2.372
6.125	1.519
6.175	1.841
6.225	5.064
6.275	40.937
6.325	69.722
6.375	49.793
6.425	63.949
6.475	46.187
6.525	18.017
6.575	4.888
6.625	1.946
6.675	3.206
6.725	1.995
6.775	2.218
6.825	1.690

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 1

Approved: July 02, 2016

6.875	1.781
6.925	1.186
6.975	1.328
7.025	1.344
7.075	1.081
7.125	0.453
7.175	2.067
7.225	2.391
7.275	2.950
7.325	17.639
7.375	57.735
7.425	72.436
7.475	223.607
7.525	61.237
7.575	61.237
7.625	74.689
7.675	43.853
7.725	81.441
7.775	70.711
7.825	49.793
7.875	81.441
7.925	71.261
7.975	63.888
8.025	108.327
8.075	69.722
8.125	100.000
8.175	69.722
8.225	63.191
8.275	46.481
8.325	59.265
8.375	94.786
8.425	43.853
8.475	35.355
22.525	100.000
22.575	24.845
22.625	11.877
22.675	14.821
22.725	27.507
22.775	16.675
22.825	18.109
22.875	27.152
22.925	12.748
22.975	17.626
23.025	12.284
23.075	17.138
23.125	22.852
23.175	24.755

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 2

Approved: July 02, 2016

23.225	27.794
23.275	13.465
23.325	28.287
23.375	27.216
23.425	29.613
23.475	25.156
23.525	5.738
23.575	3.240
23.625	2.912
23.675	3.295
23.725	2.834
23.775	3.434
23.825	2.694
23.875	2.849
23.925	2.371
23.975	2.335
24.025	3.002
24.075	2.407
24.125	2.590
24.175	2.561
24.225	3.038
24.275	3.732
24.325	13.243
24.375	46.291
24.425	31.044
24.475	3.900
24.525	3.690
24.575	1.518
24.625	2.041
24.675	1.011
24.725	0.948
24.775	1.552
24.825	1.240
24.875	0.999
24.925	2.206
24.975	1.206
25.025	1.519
25.075	1.903
25.125	0.579
25.175	1.714
25.225	2.460
25.275	18.990
25.325	26.352
25.375	57.810
25.425	13.305
25.475	13.731
57.525	8.299

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 3

Approved: July 02, 2016

57.575	3.825
57.625	2.379
57.675	1.810
57.725	1.941
57.775	3.194
57.825	3.753
57.875	1.813
57.925	1.247
57.975	2.156
58.025	1.826
58.075	1.503
58.125	1.715
58.175	3.179
58.225	2.838
58.275	20.250
58.325	47.507
58.375	33.055
58.425	7.046
58.475	7.950
58.525	1.298
58.575	2.456
58.625	0.689
58.675	2.468
58.725	2.353
58.775	0.839
58.825	1.215
58.875	1.050
58.925	1.190
58.975	1.362
59.025	1.477
59.075	1.339
59.125	2.122
59.175	2.562
59.225	3.714
59.275	10.687
59.325	73.193
59.375	43.301
59.425	29.315
59.475	15.449
59.525	9.592
59.575	4.491
59.625	3.077
59.675	2.739
59.725	2.974
59.775	4.607
59.825	3.985
59.875	2.185

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 4

Approved: July 02, 2016

59.925	2.525
59.975	1.104
60.025	3.006
60.075	3.085
60.125	2.240
60.175	5.388
60.225	7.934
60.275	43.006
60.325	15.215
60.375	46.351
60.425	85.267
60.475	44.721
113.525	8.024
113.575	2.930
113.625	3.520
113.675	3.350
113.725	2.512
113.775	1.897
113.825	2.146
113.875	1.417
113.925	2.337
113.975	2.849
114.025	1.596
114.075	1.757
114.125	1.986
114.175	3.937
114.225	7.420
114.275	16.156
114.325	23.697
114.375	19.422
114.425	6.964
114.475	6.194
114.525	3.847
114.575	1.824
114.625	1.449
114.675	1.397
114.725	1.117
114.775	1.853
114.825	0.668
114.875	1.048
114.925	1.062
114.975	0.807
115.025	1.604
115.075	0.617
115.125	0.990
115.175	1.502
115.225	4.478

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 5

Approved: July 02, 2016

115.275	6.474
115.325	39.891
115.375	63.816
115.425	37.630
115.475	30.031
115.525	14.465
115.575	9.978
115.625	2.212
115.675	2.597
115.725	4.004
115.775	4.700
115.825	2.647
115.875	1.521
115.925	0.934
115.975	2.944
116.025	2.211
116.075	6.400
116.125	6.342
116.175	7.120
116.225	10.108
116.275	16.197
116.325	46.481
116.375	69.722
116.425	51.349
116.475	37.029
236.525	
236.575	29.186
236.625	24.495
236.675	29.186
236.725	31.126
236.775	17.430
236.825	21.320
236.875	35.016
236.925	29.487
236.975	22.480
237.025	20.328
237.075	5.167
237.125	26.770
237.175	39.033
237.225	35.209
237.275	32.070
237.325	18.731
237.375	19.628
237.425	26.854
237.475	32.050
237.525	17.891
237.575	10.999

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 6

Approved: July 02, 2016

237.625	4.356
237.675	1.280
237.725	1.988
237.775	1.816
237.825	1.251
237.875	1.667
237.925	1.057
237.975	0.998
238.025	0.960
238.075	1.070
238.125	0.734
238.175	2.008
238.225	0.722
238.275	1.413
238.325	1.849
238.375	2.376
238.425	2.444
238.475	2.524
238.525	19.935
238.575	20.360
238.625	13.507
238.675	21.195
238.725	21.155
238.775	6.804
238.825	10.080
238.875	12.811
238.925	23.344
238.975	11.513
239.025	14.758
239.075	30.366
239.125	18.763
239.175	14.417
239.225	4.027
239.275	13.280
239.325	20.761
239.375	27.288
239.425	21.246
239.475	21.217

Approved: July 02, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 7/1/2016 10:17:38 AM
End Time: 7/1/2016 10:19:50 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 6753.37
        Obtained Intensity (Mg 23.985): 350422.63
        Obtained Intensity (In 114.904): 74054.21
        Obtained Intensity (U 238.05): 161864.28
        Obtained Intensity (Bkgd 220): 0.13
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4067.61 / 207928.14)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2367.92 / 207928.14)
```

Report Date/Time: Friday, July 01, 2016 10:19:50
Page 1

Approved: July 02, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 7/1/2016 10:17:38 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 6753.37
                Obtained Intensity (Mg 23.985): 350422.63
                Obtained Intensity (In 114.904): 74054.21
                Obtained Intensity (U 238.05): 161864.28
                Obtained Intensity (Bkgd 220): 0.13
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4067.61 / 207928.14)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2367.92 / 207928.14)
[Passed]  Optimum value(s): N/A

End Time: 7/1/2016 10:19:50 AM
```


Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Friday, July 01, 2016 10:27:28
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76455.8	1.4				ug/L		Standard
	Be	9	20.0	50.0				ug/L		Standard
	Al	27	1306.7	8.4				ug/L		Standard
	Sc	45	41174.2	1.3				ug/L		Standard
	Ti	47	27.3	20.1				ug/L		Standard
	V	51	1434.3	4.1				ug/L		Standard
	Cr	52	7733.0	1.4				ug/L		Standard
	Cr	53	441.7	6.2				ug/L		Standard
	Mn	55	722.7	2.8				ug/L		Standard
	Co	59	217.3	3.4				ug/L		Standard
	Ni	60	304.3	3.8				ug/L		Standard
	Cu	65	181.0	9.6				ug/L		Standard
	Zn	66	214.7	7.4				ug/L		Standard
>	Ge	72	520809.4	1.3				ug/L		Standard
	As	75	-51.8	28.3				ug/L		Standard
	Se	82	16.9	16.8				ug/L		Standard
	Se-1	77	56.0	13.9				ug/L		Standard
>	Ga	71	25.0	34.6				mg/L		Standard
	Rb	85	28.3	71.3				ug/L		Standard
	Y	89	447394.9	1.2				ug/L		Standard
>	Rh	103	15.0	0.0				ug/L		Standard
	Mo	98	112.7	27.3				ug/L		Standard
	Ag	107	108.0	3.2				ug/L		Standard
	Cd	111	3.1	49.9				mg/L		Standard
	Cd	114	19.8	49.9				ug/L		Standard
>	In	115	625727.9	1.1				ug/L		Standard
	Sn	118	568.3	11.1				ug/L		Standard
	Sb	123	611.9	31.5				ug/L		Standard
	Ba	135	21.0	20.8				ug/L		Standard
	Ce	140	245.0	41.7				ug/L		Standard
>	Tb	159	950397.3	0.8				ug/L		Standard
	Ho	165	6.7	114.6				ug/L		Standard
	Tl	203	15.0	17.6				ug/L		Standard
	Tl	205	13.3	57.3				ug/L		Standard
	Pb	206	263.7	1.3				ug/L		Standard
	Pb	207	221.7	2.3				ug/L		Standard
	Pb	208	958.7	0.3				ug/L		Standard
	U	238	9.3	30.9				ug/L		Standard
>	Bi	209	552820.8	0.2				ug/L		Standard

Sample ID: Blank
Report Date/Time: Friday, July 01, 2016 10:29:45
Page 1

Approved: July 02, 2016

	Na	23	1.7	173.2	mg/L	Standard
	Mg	24	55.0	15.7	mg/L	Standard
	K	39	28.3	27.0	mg/L	Standard
	Ca	43	26.7	47.2	mg/L	Standard
	Fe	54	147.3	8.3	mg/L	Standard
	Fe	57	268.3	12.1	mg/L	Standard
>	**Sc-1**	45	41174.2	1.3	mg/L	Standard
	Cl	35	69550.0	1.7	ug/L	Standard
	Kr	83	0.7	86.6	ug/L	Standard
	Br	81	1950.1	7.9	ug/L	Standard
	P	31	21156.4	1.5	ug/L	Standard
	S	34	3418.7	4.4	ug/L	Standard
	Sr	88	71.7	49.5	ug/L	Standard
	C	12	163.3	19.7	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	16.7	69.3	mg/L	Standard
	Dy	164	16.3	91.8	mg/L	Standard
	Ho-1	165	6.7	114.6	mg/L	Standard
	Er	166	6.7	86.6	mg/L	Standard
	I	127	19499.2	0.9	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Blank
Report Date/Time: Friday, July 01, 2016 10:29:45
Page 2

Approved: July 02, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Friday, July 01, 2016 10:29:45
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Friday, July 01, 2016 10:30:40
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76115.8	2.8				ug/L	76456	Standard
	Be	9	13.3	21.7				ug/L	20	Standard
	Al	27	1265.1	6.9				ug/L	1307	Standard
	Sc	45	40428.9	1.7				ug/L	41174	Standard
	Ti	47	21.7	32.4				ug/L	27	Standard
	V	51	1555.0	2.9				ug/L	1434	Standard
	Cr	52	7686.3	1.0				ug/L	7733	Standard
	Cr	53	466.7	11.8				ug/L	442	Standard
	Mn	55	715.0	5.0				ug/L	723	Standard
	Co	59	200.7	6.9				ug/L	217	Standard
	Ni	60	335.0	2.6				ug/L	304	Standard
	Cu	65	166.7	3.3				ug/L	181	Standard
	Zn	66	240.0	2.6				ug/L	215	Standard
>	**Ge**	72	524095.0	0.6				ug/L	520809	Standard
	As	75	-59.9	59.9				ug/L	-52	Standard
	Se	82	13.2	52.5				ug/L	17	Standard
	Se-1	77	54.7	18.5				ug/L	56	Standard
>	**Ga**	71	33.3	45.8				mg/L	25	Standard
	Rb	85	11.7	89.2				ug/L	28	Standard
	Y	89	451430.1	1.0				ug/L	447395	Standard
>	**Rh**	103	13.3	142.0				ug/L	15	Standard
	Mo	98	59.2	36.8				ug/L	113	Standard
	Ag	107	83.3	15.2				ug/L	108	Standard
	Cd	111	2.6	60.3				mg/L	3	Standard
	Cd	114	6.8	257.6				ug/L	20	Standard
>	**In**	115	626754.1	0.5				ug/L	625728	Standard
	Sn	118	553.3	6.0				ug/L	568	Standard
	Sb	123	259.4	31.5				ug/L	612	Standard
	Ba	135	20.7	14.8				ug/L	21	Standard
	Ce	140	71.7	8.1				ug/L	245	Standard
>	**Tb**	159	970231.2	1.1				ug/L	950397	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	7.7	32.8				ug/L	15	Standard
	Tl	205	6.7	43.3				ug/L	13	Standard
	Pb	206	273.7	9.4				ug/L	264	Standard
	Pb	207	216.3	5.9				ug/L	222	Standard
	Pb	208	930.0	2.3				ug/L	959	Standard
	U	238	2.3	24.7				ug/L	9	Standard
>	**Bi**	209	552479.9	0.9				ug/L	552821	Standard

Sample ID: Standard 1
Report Date/Time: Friday, July 01, 2016 10:32:57
Page 1

Approved: July 02, 2016

	Na	23	0.0		mg/L	2	Standard
	Mg	24	65.0	20.4	mg/L	55	Standard
	K	39	38.3	19.9	mg/L	28	Standard
	Ca	43	28.3	53.9	mg/L	27	Standard
	Fe	54	142.9	16.5	mg/L	147	Standard
	Fe	57	211.7	5.9	mg/L	268	Standard
>	**Sc-1**	45	40428.9	1.7	mg/L	41174	Standard
	Cl	35	69484.3	2.2	ug/L	69550	Standard
	Kr	83	1.0	0.0	ug/L	1	Standard
	Br	81	2066.8	4.1	ug/L	1950	Standard
	P	31	21174.8	5.7	ug/L	21156	Standard
	S	34	3378.7	3.5	ug/L	3419	Standard
	Sr	88	91.7	20.7	ug/L	72	Standard
	C	12	160.0	28.6	mg/L	163	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	16.7	91.7	mg/L	17	Standard
	Dy	164	6.3	93.2	mg/L	16	Standard
	Ho-1	165	3.3	173.2	mg/L	7	Standard
	Er	166	6.7	86.6	mg/L	7	Standard
	I	127	19828.0	1.1	mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 1
Report Date/Time: Friday, July 01, 2016 10:32:57
Page 2

Approved: July 02, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Friday, July 01, 2016 10:32:57
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Friday, July 01, 2016 10:33:51
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74986.8	1.6				ug/L	76456	Standard
	Be	9	76.7	43.4				ug/L	20	Standard
	Al	27	10110.0	3.2				ug/L	1307	Standard
	Sc	45	40704.6	1.5				ug/L	41174	Standard
	Ti	47	59.7	6.8				ug/L	27	Standard
	V	51	2028.1	3.7				ug/L	1434	Standard
	Cr	52	8189.5	1.1				ug/L	7733	Standard
	Cr	53	468.3	4.9				ug/L	442	Standard
	Mn	55	1137.0	2.8				ug/L	723	Standard
	Co	59	604.0	2.0				ug/L	217	Standard
	Ni	60	418.3	1.4				ug/L	304	Standard
	Cu	65	251.3	1.9				ug/L	181	Standard
	Zn	66	280.0	1.2				ug/L	215	Standard
>	**Ge**	72	516908.5	0.1				ug/L	520809	Standard
	As	75	5.9	557.4				ug/L	-52	Standard
	Se	82	22.1	63.4				ug/L	17	Standard
	Se-1	77	62.3	6.5				ug/L	56	Standard
>	**Ga**	71	28.3	62.0				mg/L	25	Standard
	Rb	85	13.3	142.0				ug/L	28	Standard
	Y	89	452397.3	1.6				ug/L	447395	Standard
>	**Rh**	103	8.3	91.7				ug/L	15	Standard
	Mo	98	371.2	3.3				ug/L	113	Standard
	Ag	107	447.0	1.8				ug/L	108	Standard
	Cd	111	119.4	7.1				mg/L	3	Standard
	Cd	114	282.1	4.3				ug/L	20	Standard
>	**In**	115	619630.9	0.5				ug/L	625728	Standard
	Sn	118	855.0	13.6				ug/L	568	Standard
	Sb	123	428.3	12.3				ug/L	612	Standard
	Ba	135	146.3	3.9				ug/L	21	Standard
	Ce	140	45.0	50.9				ug/L	245	Standard
>	**Tb**	159	965634.3	1.4				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	454.3	3.7				ug/L	15	Standard
	Tl	205	475.0	1.1				ug/L	13	Standard
	Pb	206	529.3	1.0				ug/L	264	Standard
	Pb	207	492.7	3.7				ug/L	222	Standard
	Pb	208	2058.4	0.9				ug/L	959	Standard
	U	238	404.0	3.6				ug/L	9	Standard
>	**Bi**	209	551272.3	0.2				ug/L	552821	Standard

Sample ID: Standard 2
Report Date/Time: Friday, July 01, 2016 10:36:08
Page 1

Approved: July 02, 2016

	Na	23	0.0		mg/L	2	Standard
	Mg	24	55.0	39.6	mg/L	55	Standard
	K	39	35.0	51.5	mg/L	28	Standard
	Ca	43	26.7	28.6	mg/L	27	Standard
	Fe	54	131.1	29.5	mg/L	147	Standard
	Fe	57	260.0	13.9	mg/L	268	Standard
>	**Sc-1**	45	40704.6	1.5	mg/L	41174	Standard
	Cl	35	69075.1	1.1	ug/L	69550	Standard
	Kr	83	2.0	50.0	ug/L	1	Standard
	Br	81	2083.5	5.5	ug/L	1950	Standard
	P	31	20977.8	1.6	ug/L	21156	Standard
	S	34	3237.0	8.2	ug/L	3419	Standard
	Sr	88	66.7	30.3	ug/L	72	Standard
	C	12	120.0	16.7	mg/L	163	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	16.7	34.6	mg/L	17	Standard
	Dy	164	19.5	0.0	mg/L	16	Standard
	Ho-1	165	8.3	69.3	mg/L	7	Standard
	Er	166	10.0		mg/L	7	Standard
	I	127	19168.8	3.3	mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 2
Report Date/Time: Friday, July 01, 2016 10:36:08
Page 2

Approved: July 02, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Friday, July 01, 2016 10:37:02
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74971.7	1.7				ug/L	76456	Standard
	Be	9	54860.9	3.6	**50.0000**	1.210	2.4	ug/L	20	Standard
	Al	27	8440082.6	0.7	**50.0000**	0.980	2.0	ug/L	1307	Standard
	Sc	45	40865.0	1.5				ug/L	41174	Standard
	Ti	47	32329.8	0.6	**100.0000**	0.832	0.8	ug/L	27	Standard
	V	51	412896.9	0.3	**50.0000**	0.270	0.5	ug/L	1434	Standard
	Cr	52	411678.8	0.9	**50.0000**	0.611	1.2	ug/L	7733	Standard
	Cr	53	51159.6	0.9	**50.0000**	0.580	1.2	ug/L	442	Standard
	Mn	55	380443.4	1.4	**50.0000**	0.789	1.6	ug/L	723	Standard
	Co	59	384667.7	0.9	**50.0000**	0.374	0.7	ug/L	217	Standard
	Ni	60	104566.9	0.5	**50.0000**	0.292	0.6	ug/L	304	Standard
	Cu	65	103056.3	0.1	**50.0000**	0.150	0.3	ug/L	181	Standard
	Zn	66	61622.7	0.7	**50.0000**	0.151	0.3	ug/L	215	Standard
>	**Ge**	72	520018.0	0.4				ug/L	520809	Standard
	As	75	61417.5	0.3	**50.0000**	0.279	0.6	ug/L	-52	Standard
	Se	82	6337.3	1.0	**50.0000**	0.692	1.4	ug/L	17	Standard
	Se-1	77	4335.3	1.3	**50.0000**	0.572	1.1	ug/L	56	Standard
>	**Ga**	71	61.7	40.0				mg/L	25	Standard
	Rb	85	878.4	2.6				ug/L	28	Standard
	Y	89	444837.1	3.4				ug/L	447395	Standard
>	**Rh**	103	30.0	44.1				ug/L	15	Standard
	Mo	98	294287.0	0.6	**100.0000**	0.409	0.4	ug/L	113	Standard
	Ag	107	351901.5	1.0	**50.0000**	0.404	0.8	ug/L	108	Standard
	Cd	111	112966.0	0.5	**50.0000**	0.196	0.4	mg/L	3	Standard
	Cd	114	280940.2	0.5	**50.0000**	0.110	0.2	ug/L	20	Standard
>	**In**	115	612769.1	0.4				ug/L	625728	Standard
	Sn	118	314258.0	2.0	**50.0000**	1.163	2.3	ug/L	568	Standard
	Sb	123	250330.0	0.3	**50.0000**	0.094	0.2	ug/L	612	Standard
	Ba	135	107237.2	0.5	**50.0000**	0.330	0.7	ug/L	21	Standard
	Ce	140	96.7	19.6				ug/L	245	Standard
>	**Tb**	159	945727.5	1.1				ug/L	950397	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	443860.6	0.2	**50.0000**	0.306	0.6	ug/L	15	Standard
	Tl	205	392135.3	1.5	**50.0000**	0.676	1.4	ug/L	13	Standard
	Pb	206	280519.3	0.4	**50.0000**	0.226	0.5	ug/L	264	Standard
	Pb	207	254589.8	0.6	**50.0000**	0.448	0.9	ug/L	222	Standard
	Pb	208	1037250.6	0.5	**50.0000**	0.611	1.2	ug/L	959	Standard
	U	238	392629.2	0.3	**50.0000**	0.515	1.0	ug/L	9	Standard
>	**Bi**	209	544795.2	0.7				ug/L	552821	Standard

Sample ID: Standard 3
Report Date/Time: Friday, July 01, 2016 10:39:19
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**5.0000**	4.327	86.5	mg/L	2	Standard
Mg	24	4290.6	8.9	**5.0000**	0.514	10.3	mg/L	55	Standard
K	39	1336.7	14.8	**5.0000**	0.680	13.6	mg/L	28	Standard
Ca	43	78.3	9.8	**5.0000**	0.715	14.3	mg/L	27	Standard
Fe	54	6652.7	2.6	**5.0000**	0.189	3.8	mg/L	147	Standard
Fe	57	1848.4	3.7	**5.0000**	0.193	3.9	mg/L	268	Standard
Sc-1	45	40865.0	1.5				mg/L	41174	Standard
Cl	35	67370.1	1.9				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1980.1	7.8				ug/L	1950	Standard
P	31	22366.5	1.7				ug/L	21156	Standard
S	34	3632.1	4.0				ug/L	3419	Standard
Sr	88	68.3	33.8				ug/L	72	Standard
C	12	116.7	13.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	120.2				mg/L	17	Standard
Dy	164	5.7	108.5				mg/L	16	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	24309.5	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 3
Report Date/Time: Friday, July 01, 2016 10:39:19
Page 2

Approved: July 02, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Friday, July 01, 2016 10:40:14
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74573.1	2.4				ug/L	76456	Standard
	Be	9	109282.8	1.9	**100.0980**	2.509	2.5	ug/L	20	Standard
	Al	27	16601431.1	0.9	**99.4425**	1.710	1.7	ug/L	1307	Standard
	Sc	45	41180.9	0.8				ug/L	41174	Standard
	Ti	47	65332.6	0.8	**201.3970**	0.318	0.2	ug/L	27	Standard
	V	51	817909.9	1.4	**99.7804**	1.578	1.6	ug/L	1434	Standard
	Cr	52	812246.8	1.3	**99.9568**	0.856	0.9	ug/L	7733	Standard
	Cr	53	100426.9	3.2	**99.4382**	3.780	3.8	ug/L	442	Standard
	Mn	55	750652.7	0.8	**99.5323**	0.364	0.4	ug/L	723	Standard
	Co	59	758624.4	0.2	**99.4757**	0.655	0.7	ug/L	217	Standard
	Ni	60	205495.5	0.6	**99.3580**	0.343	0.3	ug/L	304	Standard
	Cu	65	201186.2	0.4	**98.9880**	0.686	0.7	ug/L	181	Standard
	Zn	66	121678.0	0.3	**99.6126**	1.153	1.2	ug/L	215	Standard
>	**Ge**	72	518357.9	0.9				ug/L	520809	Standard
	As	75	123132.9	0.9	**100.2583**	0.732	0.7	ug/L	-52	Standard
	Se	82	12560.6	0.3	**99.7710**	0.579	0.6	ug/L	17	Standard
	Se-1	77	8548.4	1.2	**99.7880**	1.005	1.0	ug/L	56	Standard
>	**Ga**	71	40.0	45.1				mg/L	25	Standard
	Rb	85	1701.8	13.2				ug/L	28	Standard
	Y	89	451914.9	2.5				ug/L	447395	Standard
>	**Rh**	103	40.0	25.0				ug/L	15	Standard
	Mo	98	592109.5	0.9	**201.3215**	2.481	1.2	ug/L	113	Standard
	Ag	107	698129.6	0.3	**99.9561**	0.390	0.4	ug/L	108	Standard
	Cd	111	223398.5	0.3	**99.7914**	0.348	0.3	mg/L	3	Standard
	Cd	114	550589.1	2.0	**99.3411**	2.205	2.2	ug/L	20	Standard
>	**In**	115	608447.5	0.3				ug/L	625728	Standard
	Sn	118	629099.1	1.2	**100.4410**	1.420	1.4	ug/L	568	Standard
	Sb	123	508420.5	1.6	**101.1418**	1.887	1.9	ug/L	612	Standard
	Ba	135	210242.6	0.2	**99.3661**	0.116	0.1	ug/L	21	Standard
	Ce	140	141.7	20.7				ug/L	245	Standard
>	**Tb**	159	939885.9	0.8				ug/L	950397	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	872285.6	0.1	**99.6647**	0.211	0.2	ug/L	15	Standard
	Tl	205	778762.6	2.1	**100.1937**	1.912	1.9	ug/L	13	Standard
	Pb	206	549521.0	0.7	**99.5257**	0.453	0.5	ug/L	264	Standard
	Pb	207	499379.9	0.5	**99.5919**	0.286	0.3	ug/L	222	Standard
	Pb	208	2044680.9	0.3	**99.8400**	0.419	0.4	ug/L	959	Standard
	U	238	794936.5	0.3	**101.1523**	0.190	0.2	ug/L	9	Standard
>	**Bi**	209	538915.4	0.3				ug/L	552821	Standard

Sample ID: Standard 4
Report Date/Time: Friday, July 01, 2016 10:42:31
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8624.1	2.7	**10.0117**	0.211	2.1	mg/L	55	Standard
K	39	2628.6	4.6	**9.9475**	0.505	5.1	mg/L	28	Standard
Ca	43	143.3	11.2	**10.5644**	1.388	13.1	mg/L	27	Standard
Fe	54	12475.4	2.0	**9.6818**	0.117	1.2	mg/L	147	Standard
Fe	57	3570.4	3.6	**10.1632**	0.334	3.3	mg/L	268	Standard
Sc-1	45	41180.9	0.8				mg/L	41174	Standard
Cl	35	66505.0	1.1				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1963.5	9.6				ug/L	1950	Standard
P	31	23055.9	3.6				ug/L	21156	Standard
S	34	3625.4	3.4				ug/L	3419	Standard
Sr	88	81.7	21.5				ug/L	72	Standard
C	12	133.3	30.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	17	Standard
Dy	164	12.1	43.5				mg/L	16	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	3062.0	8.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 4
Report Date/Time: Friday, July 01, 2016 10:42:31
Page 2

Approved: July 02, 2016

	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Friday, July 01, 2016 10:42:31
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Friday, July 01, 2016 10:43:27
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73226.6	2.1				ug/L	76456	Standard
	Be	9	55138.5	1.1	51.4232	1.173	2.3	ug/L	20	Standard
	Al	27	8364287.3	0.8	51.0145	0.701	1.4	ug/L	1307	Standard
	Sc	45	42051.6	1.4				ug/L	41174	Standard
	Ti	47	32632.1	1.2	99.6299	0.273	0.3	ug/L	27	Standard
	V	51	416986.8	1.2	50.3040	0.153	0.3	ug/L	1434	Standard
	Cr	52	416377.2	0.8	50.2986	0.675	1.3	ug/L	7733	Standard
	Cr	53	51450.5	1.0	50.2662	0.513	1.0	ug/L	442	Standard
	Mn	55	390114.9	0.6	51.2101	0.808	1.6	ug/L	723	Standard
	Co	59	391917.0	0.9	50.9056	0.274	0.5	ug/L	217	Standard
	Ni	60	105069.4	0.7	50.2680	0.977	1.9	ug/L	304	Standard
	Cu	65	103770.8	0.9	50.5551	0.555	1.1	ug/L	181	Standard
	Zn	66	63280.5	0.6	51.2430	0.408	0.8	ug/L	215	Standard
>	Ge	72	523154.7	1.4				ug/L	520809	Standard
	As	75	62592.0	0.8	50.5289	1.093	2.2	ug/L	-52	Standard
	Se	82	6421.3	0.7	50.4779	0.451	0.9	ug/L	17	Standard
	Se-1	77	4421.6	3.1	50.8264	2.224	4.4	ug/L	56	Standard
>	Ga	71	38.3	30.1				mg/L	25	Standard
	Rb	85	941.7	14.7				ug/L	28	Standard
	Y	89	448213.9	1.5				ug/L	447395	Standard
>	Rh	103	35.0	49.5				ug/L	15	Standard
	Mo	98	294940.7	1.4	96.3152	0.728	0.8	ug/L	113	Standard
	Ag	107	357502.4	1.0	49.1663	0.717	1.5	ug/L	108	Standard
	Cd	111	115768.3	0.2	49.6787	0.607	1.2	mg/L	3	Standard
	Cd	114	281209.7	0.6	48.7423	0.787	1.6	ug/L	20	Standard
>	In	115	633404.9	1.1				ug/L	625728	Standard
	Sn	118	321628.0	0.8	49.2868	0.611	1.2	ug/L	568	Standard
	Sb	123	258956.5	0.4	49.4694	0.480	1.0	ug/L	612	Standard
	Ba	135	108217.8	0.6	49.1275	0.780	1.6	ug/L	21	Standard
	Ce	140	141.7	45.4				ug/L	245	Standard
>	Tb	159	959365.6	0.2				ug/L	950397	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	443048.1	0.6	49.6569	0.744	1.5	ug/L	15	Standard
	Tl	205	398039.0	0.4	50.2306	0.560	1.1	ug/L	13	Standard
	Pb	206	281925.4	0.1	50.0662	0.613	1.2	ug/L	264	Standard
	Pb	207	256662.1	1.0	50.1891	0.845	1.7	ug/L	222	Standard
	Pb	208	1053544.2	0.4	50.4385	0.548	1.1	ug/L	959	Standard
	U	238	395989.8	1.3	49.4226	0.077	0.2	ug/L	9	Standard
>	Bi	209	549436.2	1.2				ug/L	552821	Standard

Sample ID: QC Std 1
Report Date/Time: Friday, July 01, 2016 10:45:44
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.9322**	8.534	173.0	mg/L	2	Standard
Mg	24	4375.6	3.8	**4.9437**	0.134	2.7	mg/L	55	Standard
K	39	1525.1	4.3	**5.5930**	0.165	3.0	mg/L	28	Standard
Ca	43	100.0	13.2	**6.4519**	1.261	19.5	mg/L	27	Standard
Fe	54	6527.6	4.7	**4.9145**	0.265	5.4	mg/L	147	Standard
Fe	57	1855.1	8.5	**4.7782**	0.491	10.3	mg/L	268	Standard
> **Sc-1**	45	42051.6	1.4				mg/L	41174	Standard
Cl	35	67170.6	2.2				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1903.5	10.0				ug/L	1950	Standard
P	31	22763.8	0.6				ug/L	21156	Standard
S	34	3593.8	4.0				ug/L	3419	Standard
Sr	88	85.0	40.8				ug/L	72	Standard
C	12	133.3	15.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	132.3				mg/L	17	Standard
Dy	164	16.5	70.8				mg/L	16	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	23309.6	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.846		
Al	27	102.029		
Sc	45			
Ti	47	99.630		
V	51	100.608		
Cr	52	100.597		
Cr	53			
Mn	55	102.420		
Co	59	101.811		
Ni	60	100.536		
Cu	65	101.110		
Zn	66	102.486		
> Ge	72		100.450	
As	75	101.058		
Se	82	100.956		
Se-1	77			
> Ga	71			

Sample ID: QC Std 1
Report Date/Time: Friday, July 01, 2016 10:45:44
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	96.315		
Ag	107	98.333		
Cd	111	99.357		
Cd	114			
> In	115		101.227	
Sn	118	98.574		
Sb	123	98.939		
Ba	135	98.255		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.314		
Tl	205			
Pb	206	100.132		
Pb	207	100.378		
Pb	208	100.877		
U	238	98.845		
> Bi	209		99.388	
Na	23	98.644		
Mg	24	98.874		
K	39	111.859		
Ca	43	129.039		
Fe	54	98.290		
Fe	57	95.564		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

Sample ID: QC Std 1
Report Date/Time: Friday, July 01, 2016 10:45:44
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Friday, July 01, 2016 10:46:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73082.5	1.7				ug/L	76456	Standard
	Be	9	35.0	65.5	**0.0129**	0.022	168.2	ug/L	20	Standard
	Al	27	2900.3	16.4	**0.0075**	0.003	39.6	ug/L	1307	Standard
	Sc	45	41413.2	2.8				ug/L	41174	Standard
	Ti	47	35.3	18.8	**0.0225**	0.019	85.6	ug/L	27	Standard
	V	51	1420.2	5.2	**-0.0279**	0.008	27.9	ug/L	1434	Standard
	Cr	52	6961.6	2.3	**-0.1197**	0.018	14.9	ug/L	7733	Standard
	Cr	53	446.7	2.3	**0.0198**	0.006	30.4	ug/L	442	Standard
	Mn	55	849.7	3.5	**0.0096**	0.004	44.1	ug/L	723	Standard
	Co	59	304.7	6.6	**0.0099**	0.003	30.2	ug/L	217	Standard
	Ni	60	329.3	2.5	**0.0037**	0.005	136.9	ug/L	304	Standard
	Cu	65	206.0	9.7	**0.0257**	0.010	38.8	ug/L	181	Standard
	Zn	66	265.3	8.1	**0.0337**	0.016	46.4	ug/L	215	Standard
>	**Ge**	72	527031.7	1.0				ug/L	520809	Standard
	As	75	-62.3	20.0	**-0.0048**	0.010	219.6	ug/L	-52	Standard
	Se	82	14.1	36.1	**-0.0165**	0.039	235.1	ug/L	17	Standard
	Se-1	77	48.7	10.1	**-0.1219**	0.059	48.3	ug/L	56	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	26.7	84.5				ug/L	28	Standard
	Y	89	456491.7	1.0				ug/L	447395	Standard
>	**Rh**	103	26.7	57.3				ug/L	15	Standard
	Mo	98	335.9	6.6	**0.0861**	0.007	7.7	ug/L	113	Standard
	Ag	107	180.3	7.4	**0.0120**	0.002	16.2	ug/L	108	Standard
	Cd	111	27.1	26.6	**0.0093**	0.003	33.3	mg/L	3	Standard
	Cd	114	66.3	29.5	**0.0115**	0.003	29.4	ug/L	20	Standard
>	**In**	115	631231.9	0.6				ug/L	625728	Standard
	Sn	118	1070.0	25.4	**0.0807**	0.043	52.8	ug/L	568	Standard
	Sb	123	986.7	28.6	**0.1557**	0.055	35.3	ug/L	612	Standard
	Ba	135	49.3	8.4	**0.0046**	0.002	42.1	ug/L	21	Standard
	Ce	140	21.7	58.1				ug/L	245	Standard
>	**Tb**	159	958993.9	0.7				ug/L	950397	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	132.3	25.5	**0.0140**	0.004	27.2	ug/L	15	Standard
	Tl	205	123.3	29.3	**0.0057**	0.005	80.1	ug/L	13	Standard
	Pb	206	354.7	6.4	**0.0189**	0.004	22.4	ug/L	264	Standard
	Pb	207	298.7	4.5	**0.0120**	0.003	23.0	ug/L	222	Standard
	Pb	208	1215.7	2.5	**0.0096**	0.002	16.0	ug/L	959	Standard
	U	238	110.7	12.5	**0.0135**	0.002	13.1	ug/L	9	Standard
>	**Bi**	209	552384.0	0.3				ug/L	552821	Standard

Sample ID: QC Std 2
Report Date/Time: Friday, July 01, 2016 10:48:57
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.1172**	8.855	173.0	mg/L	2	Standard
Mg	24	61.7	49.5	**0.0114**	0.035	305.2	mg/L	55	Standard
K	39	43.3	29.0	**0.0349**	0.052	149.9	mg/L	28	Standard
Ca	43	15.0	66.7	**-1.1126**	0.876	78.7	mg/L	27	Standard
Fe	54	155.9	11.0	**0.0227**	0.013	57.8	mg/L	147	Standard
Fe	57	246.7	5.1	**-0.0507**	0.023	46.3	mg/L	268	Standard
> **Sc-1**	45	41413.2	2.8				mg/L	41174	Standard
Cl	35	67081.5	1.7				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1926.8	4.5				ug/L	1950	Standard
P	31	22241.3	1.7				ug/L	21156	Standard
S	34	3415.4	3.5				ug/L	3419	Standard
Sr	88	56.7	39.8				ug/L	72	Standard
C	12	120.0	30.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	12.7	43.5				mg/L	16	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	18017.4	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.195	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 2
Report Date/Time: Friday, July 01, 2016 10:48:57
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.880	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.921	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Na	23	
QC Std 2	Ca	43	

Sample ID: QC Std 2
Report Date/Time: Friday, July 01, 2016 10:48:57
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Friday, July 01, 2016 10:49:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71014.5	3.1				ug/L	76456	Standard
	Be	9	276.7	13.7	**0.2467**	0.041	16.7	ug/L	20	Standard
	Al	27	1433.4	19.2	**-0.0012**	0.001	117.3	ug/L	1307	Standard
	Sc	45	40355.3	1.3				ug/L	41174	Standard
	Ti	47	21.0	29.7	**-0.0191**	0.020	103.3	ug/L	27	Standard
	V	51	4354.1	2.4	**0.3388**	0.016	4.6	ug/L	1434	Standard
	Cr	52	13385.9	0.6	**0.7089**	0.010	1.4	ug/L	7733	Standard
	Cr	53	1290.1	5.1	**0.8778**	0.062	7.0	ug/L	442	Standard
	Mn	55	4164.2	0.5	**0.4567**	0.004	0.8	ug/L	723	Standard
	Co	59	3022.0	3.5	**0.3708**	0.015	4.0	ug/L	217	Standard
	Ni	60	3422.7	3.0	**1.5204**	0.058	3.8	ug/L	304	Standard
	Cu	65	1708.4	1.3	**0.7752**	0.014	1.9	ug/L	181	Standard
	Zn	66	7949.4	1.3	**6.4016**	0.063	1.0	ug/L	215	Standard
>	**Ge**	72	513410.3	0.5				ug/L	520809	Standard
	As	75	420.2	2.0	**0.3904**	0.006	1.5	ug/L	-52	Standard
	Se	82	57.4	15.1	**0.3348**	0.072	21.4	ug/L	17	Standard
	Se-1	77	86.3	6.6	**0.3399**	0.069	20.2	ug/L	56	Standard
>	**Ga**	71	38.3	7.5				mg/L	25	Standard
	Rb	85	15.0	115.5				ug/L	28	Standard
	Y	89	441603.6	1.2				ug/L	447395	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	125.5	7.4	**0.0191**	0.003	17.3	ug/L	113	Standard
	Ag	107	2803.6	3.0	**0.3918**	0.011	2.9	ug/L	108	Standard
	Cd	111	534.5	1.7	**0.2383**	0.004	1.8	mg/L	3	Standard
	Cd	114	1340.9	4.1	**0.2439**	0.009	3.8	ug/L	20	Standard
>	**In**	115	603601.4	0.4				ug/L	625728	Standard
	Sn	118	588.3	20.4	**0.0106**	0.020	185.6	ug/L	568	Standard
	Sb	123	1982.0	3.1	**0.3639**	0.013	3.7	ug/L	612	Standard
	Ba	135	1500.1	4.2	**0.6970**	0.033	4.7	ug/L	21	Standard
	Ce	140	13.3	57.3				ug/L	245	Standard
>	**Tb**	159	923552.7	1.3				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	722.4	6.5	**0.0815**	0.005	6.2	ug/L	15	Standard
	Tl	205	658.3	9.8	**0.0746**	0.008	10.9	ug/L	13	Standard
	Pb	206	1350.7	0.3	**0.2001**	0.002	0.8	ug/L	264	Standard
	Pb	207	1167.0	2.9	**0.1859**	0.007	3.6	ug/L	222	Standard
	Pb	208	4949.3	2.3	**0.1926**	0.005	2.7	ug/L	959	Standard
	U	238	3051.6	1.8	**0.3866**	0.007	1.9	ug/L	9	Standard
>	**Bi**	209	540899.0	0.4				ug/L	552821	Standard

Sample ID: QC Std 3
Report Date/Time: Friday, July 01, 2016 10:52:10
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**10.1911**	8.823	86.6	mg/L	2	Standard
Mg	24	73.3	17.2	**0.0273**	0.016	58.3	mg/L	55	Standard
K	39	43.3	17.6	**0.0384**	0.030	78.8	mg/L	28	Standard
Ca	43	21.7	13.3	**-0.4451**	0.256	57.4	mg/L	27	Standard
Fe	54	112.1	10.4	**-0.0092**	0.008	90.3	mg/L	147	Standard
Fe	57	220.0	10.4	**-0.1144**	0.071	61.7	mg/L	268	Standard
Sc-1	45	40355.3	1.3				mg/L	41174	Standard
Cl	35	64985.1	1.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1890.1	8.2				ug/L	1950	Standard
P	31	15399.5	2.8				ug/L	21156	Standard
S	34	3492.1	3.5				ug/L	3419	Standard
Sr	88	78.3	3.7				ug/L	72	Standard
C	12	140.0	14.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	12.9	182.9				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2308.5	15.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	123.368		
Al	27	-0.122		
Sc	45			
Ti	47			
V	51	84.694		
Cr	52	88.608		
Cr	53			
Mn	55	91.340		
Co	59	92.690		
Ni	60	95.026		
Cu	65	96.904		
Zn	66	102.426		
Ge	72		98.579	
As	75	97.610		
Se	82	83.691		
Se-1	77			
Ga	71			

Sample ID: QC Std 3
Report Date/Time: Friday, July 01, 2016 10:52:10
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.953		
Cd	111	99.297		
Cd	114			
> In	115			96.464
Sn	118			
Sb	123	90.972		
Ba	135	92.929		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.839		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.295		
U	238	96.660		
> Bi	209			97.843
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
Report Date/Time: Friday, July 01, 2016 10:52:10
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Friday, July 01, 2016 10:53:04
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72812.9	1.2				ug/L	76456	Standard
	Be	9	36.7	20.8	**0.0145**	0.007	47.6	ug/L	20	Standard
	Al	27	8248243.5	1.3	**50.5822**	0.139	0.3	ug/L	1307	Standard
	Sc	45	42120.1	1.9				ug/L	41174	Standard
	Ti	47	35838.7	1.4	**108.8763**	0.923	0.8	ug/L	27	Standard
	V	51	1796.6	6.7	**0.0180**	0.017	92.8	ug/L	1434	Standard
	Cr	52	8717.2	1.4	**0.0974**	0.005	5.1	ug/L	7733	Standard
	Cr	53	5294.3	3.4	**4.7714**	0.146	3.1	ug/L	442	Standard
	Mn	55	1499.1	2.5	**0.0949**	0.007	6.9	ug/L	723	Standard
	Co	59	500.3	4.2	**0.0353**	0.003	8.8	ug/L	217	Standard
	Ni	60	1153.7	2.9	**0.3978**	0.021	5.4	ug/L	304	Standard
	Cu	65	743.0	1.9	**0.2866**	0.009	3.1	ug/L	181	Standard
	Zn	66	1750.4	2.4	**1.2353**	0.049	3.9	ug/L	215	Standard
>	Ge	72	525789.4	1.1				ug/L	520809	Standard
	As	75	-56.5	78.0	**0.0000**	0.035	94213.4	ug/L	-52	Standard
	Se	82	21.9	13.2	**0.0450**	0.024	52.9	ug/L	17	Standard
	Se-1	77	369.0	3.8	**3.5902**	0.118	3.3	ug/L	56	Standard
>	Ga	71	190.0	4.6				mg/L	25	Standard
	Rb	85	1346.7	12.1				ug/L	28	Standard
	Y	89	446130.3	1.4				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	294809.8	0.7	**99.0666**	0.826	0.8	ug/L	113	Standard
	Ag	107	518.7	43.1	**0.0605**	0.032	52.1	ug/L	108	Standard
	Cd	111	-203.1	6.2	**-0.0920**	0.006	6.1	mg/L	3	Standard
	Cd	114	646.5	2.5	**0.1153**	0.003	2.6	ug/L	20	Standard
>	In	115	615550.0	0.1				ug/L	625728	Standard
	Sn	118	1126.7	15.8	**0.0937**	0.028	29.8	ug/L	568	Standard
	Sb	123	769.4	36.4	**0.1176**	0.055	46.8	ug/L	612	Standard
	Ba	135	907.7	4.8	**0.4062**	0.020	4.9	ug/L	21	Standard
	Ce	140	310.0	5.6				ug/L	245	Standard
>	Tb	159	945278.1	1.3				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	340.3	40.4	**0.0383**	0.016	41.1	ug/L	15	Standard
	Tl	205	238.3	11.6	**0.0211**	0.004	17.6	ug/L	13	Standard
	Pb	206	679.7	9.3	**0.0799**	0.011	14.4	ug/L	264	Standard
	Pb	207	580.3	10.0	**0.0701**	0.011	16.1	ug/L	222	Standard
	Pb	208	2295.1	2.9	**0.0642**	0.002	3.2	ug/L	959	Standard
	U	238	77.3	37.1	**0.0096**	0.004	37.6	ug/L	9	Standard
>	Bi	209	536774.2	1.2				ug/L	552821	Standard

Sample ID: QC Std 4
Report Date/Time: Friday, July 01, 2016 10:55:21
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.7734**	16.919	173.1	mg/L	2	Standard
Mg	24	10777.2	2.6	**12.2531**	0.537	4.4	mg/L	55	Standard
K	39	1383.4	9.9	**5.0519**	0.468	9.3	mg/L	28	Standard
Ca	43	138.3	7.5	**9.8265**	0.682	6.9	mg/L	27	Standard
Fe	54	16161.2	1.3	**12.2930**	0.303	2.5	mg/L	147	Standard
Fe	57	4369.0	2.7	**12.3260**	0.594	4.8	mg/L	268	Standard
> **Sc-1**	45	42120.1	1.9				mg/L	41174	Standard
Cl	35	65421.7	2.5				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1906.8	13.4				ug/L	1950	Standard
P	31	21114.7	2.7				ug/L	21156	Standard
S	34	3085.3	2.7				ug/L	3419	Standard
Sr	88	60.0	33.3				ug/L	72	Standard
C	12	210.0	31.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	54.9				mg/L	17	Standard
Dy	164	19.7	50.8				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	3048.6	5.5				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27	1.012		
	Sc	45			
	Ti	47	108.876		
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.956	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 4
Report Date/Time: Friday, July 01, 2016 10:55:21
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	99.067		
Ag	107			
Cd	111			
Cd	114			
> In	115			98.373
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			97.097
Na	23	78.187		
Mg	24	245.062		
K	39	101.039		
Ca	43	65.510		
Fe	54	98.344		
Fe	57	98.608		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Ba	135	
QC Std 4	Na	23	

Sample ID: QC Std 4
Report Date/Time: Friday, July 01, 2016 10:55:21
Page 3

Approved: July 02, 2016

QC Std 4	Mg	24
QC Std 4	Ca	43

Sample ID: QC Std 4
Report Date/Time: Friday, July 01, 2016 10:55:21
Page 4

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Friday, July 01, 2016 10:56:16
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75903.0	2.2				ug/L	76456	Standard
	Be	9	113931.8	1.0	**102.5442**	3.204	3.1	ug/L	20	Standard
	Al	27	7231990.8	1.8	**42.5454**	0.182	0.4	ug/L	1307	Standard
	Sc	45	42432.7	2.4				ug/L	41174	Standard
	Ti	47	30737.8	1.0	**92.8199**	0.734	0.8	ug/L	27	Standard
	V	51	833696.6	0.9	**99.6740**	0.237	0.2	ug/L	1434	Standard
	Cr	52	810709.3	1.6	**97.7572**	1.161	1.2	ug/L	7733	Standard
	Cr	53	105220.8	1.3	**102.1011**	1.018	1.0	ug/L	442	Standard
	Mn	55	763205.2	1.1	**99.1800**	1.093	1.1	ug/L	723	Standard
	Co	59	765446.7	1.5	**98.3652**	1.221	1.2	ug/L	217	Standard
	Ni	60	204863.4	0.8	**97.0735**	0.398	0.4	ug/L	304	Standard
	Cu	65	204176.2	1.0	**98.4523**	0.417	0.4	ug/L	181	Standard
	Zn	66	128188.4	1.6	**102.8491**	1.339	1.3	ug/L	215	Standard
>	Ge	72	528896.0	0.7				ug/L	520809	Standard
	As	75	125724.6	1.1	**100.3319**	1.466	1.5	ug/L	-52	Standard
	Se	82	12709.7	1.6	**98.9446**	1.879	1.9	ug/L	17	Standard
	Se-1	77	8838.2	1.3	**101.1222**	0.967	1.0	ug/L	56	Standard
>	Ga	71	141.7	2.0				mg/L	25	Standard
	Rb	85	858.4	8.2				ug/L	28	Standard
	Y	89	450945.0	1.6				ug/L	447395	Standard
>	Rh	103	58.3	17.8				ug/L	15	Standard
	Mo	98	252063.2	0.9	**84.2200**	0.957	1.1	ug/L	113	Standard
	Ag	107	620939.1	2.7	**87.3716**	1.954	2.2	ug/L	108	Standard
	Cd	111	226578.4	0.5	**99.4783**	0.760	0.8	mg/L	3	Standard
	Cd	114	558953.6	2.4	**99.1106**	1.789	1.8	ug/L	20	Standard
>	In	115	619069.3	0.8				ug/L	625728	Standard
	Sn	118	1101.7	13.0	**0.0889**	0.024	26.9	ug/L	568	Standard
	Sb	123	495062.3	2.0	**96.7840**	1.258	1.3	ug/L	612	Standard
	Ba	135	212436.2	0.4	**98.6825**	0.524	0.5	ug/L	21	Standard
	Ce	140	106.7	5.4				ug/L	245	Standard
>	Tb	159	965012.6	0.9				ug/L	950397	Standard
	Ho	165	11.7	89.2				ug/L	7	Standard
	Tl	203	877864.5	0.6	**98.2340**	0.597	0.6	ug/L	15	Standard
	Tl	205	786061.6	0.2	**99.0500**	0.141	0.1	ug/L	13	Standard
	Pb	206	570990.7	1.2	**101.2826**	1.116	1.1	ug/L	264	Standard
	Pb	207	499235.8	0.8	**97.5091**	0.551	0.6	ug/L	222	Standard
	Pb	208	2063776.1	0.5	**98.6933**	0.341	0.3	ug/L	959	Standard
	U	238	778595.3	0.8	**97.0297**	0.672	0.7	ug/L	9	Standard
>	Bi	209	550260.8	0.2				ug/L	552821	Standard

Sample ID: QC Std 5
Report Date/Time: Friday, July 01, 2016 10:58:33
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**14.6626**	14.607	99.6	mg/L	2	Standard
Mg	24	9379.6	3.3	**10.5777**	0.497	4.7	mg/L	55	Standard
K	39	1123.4	14.5	**4.0598**	0.702	17.3	mg/L	28	Standard
Ca	43	151.7	14.9	**10.9556**	2.287	20.9	mg/L	27	Standard
Fe	54	13756.2	0.9	**10.3738**	0.327	3.2	mg/L	147	Standard
Fe	57	3798.8	1.3	**10.5253**	0.250	2.4	mg/L	268	Standard
> **Sc-1**	45	42432.7	2.4				mg/L	41174	Standard
Cl	35	63162.8	2.2				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2016.8	12.5				ug/L	1950	Standard
P	31	19924.8	3.7				ug/L	21156	Standard
S	34	3145.3	1.7				ug/L	3419	Standard
Sr	88	73.3	10.4				ug/L	72	Standard
C	12	216.7	17.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	29.4	59.5				mg/L	16	Standard
Ho-1	165	11.7	89.2				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	3137.0	10.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.544		
Al	27	0.851		
Sc	45			
Ti	47	92.820		
V	51	99.674		
Cr	52	97.757		
Cr	53			
Mn	55	99.180		
Co	59	98.365		
Ni	60	97.073		
Cu	65	98.452		
Zn	66	102.849		
> Ge	72		101.553	
As	75	100.332		
Se	82	98.945		
Se-1	77			
> Ga	71			

Sample ID: QC Std 5
Report Date/Time: Friday, July 01, 2016 10:58:33
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	84.220		
Ag	107	87.372		
Cd	111	99.478		
Cd	114			
> In	115		98.936	
Sn	118			
Sb	123	96.784		
Ba	135	98.683		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.234		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.693		
U	238	97.030		
> Bi	209		99.537	
Na	23	117.301		
Mg	24	211.554		
K	39	81.196		
Ca	43	73.037		
Fe	54	82.990		
Fe	57	84.202		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
Report Date/Time: Friday, July 01, 2016 10:58:33
Page 3

Approved: July 02, 2016

QC Std 5	Ca	43

Sample ID: QC Std 5
Report Date/Time: Friday, July 01, 2016 10:58:33
Page 4

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 10:59:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76397.1	0.4				ug/L	76456	Standard
	Be	9	56429.9	0.6	**50.4288**	0.323	0.6	ug/L	20	Standard
	Al	27	8608329.7	1.2	**50.3148**	0.658	1.3	ug/L	1307	Standard
	Sc	45	41418.2	1.5				ug/L	41174	Standard
	Ti	47	32560.9	0.4	**99.6282**	1.278	1.3	ug/L	27	Standard
	V	51	420616.9	0.3	**50.8527**	0.410	0.8	ug/L	1434	Standard
	Cr	52	416237.8	1.3	**50.3856**	0.640	1.3	ug/L	7733	Standard
	Cr	53	51529.2	2.3	**50.4433**	0.671	1.3	ug/L	442	Standard
	Mn	55	384144.6	2.2	**50.5271**	1.192	2.4	ug/L	723	Standard
	Co	59	391365.2	2.6	**50.9408**	1.337	2.6	ug/L	217	Standard
	Ni	60	104660.9	0.3	**50.1718**	0.419	0.8	ug/L	304	Standard
	Cu	65	103744.3	0.5	**50.6474**	0.422	0.8	ug/L	181	Standard
	Zn	66	61920.9	0.7	**50.2420**	0.301	0.6	ug/L	215	Standard
>	Ge	72	522053.0	1.0				ug/L	520809	Standard
	As	75	62496.7	0.9	**50.5498**	0.506	1.0	ug/L	-52	Standard
	Se	82	6394.4	1.6	**50.3673**	0.526	1.0	ug/L	17	Standard
	Se-1	77	4303.6	0.6	**49.5434**	0.744	1.5	ug/L	56	Standard
>	Ga	71	55.0	9.1				mg/L	25	Standard
	Rb	85	888.4	10.1				ug/L	28	Standard
	Y	89	456826.7	1.0				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	297194.2	1.6	**98.9144**	2.943	3.0	ug/L	113	Standard
	Ag	107	358131.2	0.8	**50.1903**	1.051	2.1	ug/L	108	Standard
	Cd	111	114353.1	0.3	**50.0023**	0.782	1.6	mg/L	3	Standard
	Cd	114	281397.0	1.0	**49.6948**	0.508	1.0	ug/L	20	Standard
>	In	115	621643.5	1.3				ug/L	625728	Standard
	Sn	118	312305.8	0.1	**48.7658**	0.722	1.5	ug/L	568	Standard
	Sb	123	262685.9	0.2	**51.1341**	0.568	1.1	ug/L	612	Standard
	Ba	135	107196.2	0.5	**49.5868**	0.878	1.8	ug/L	21	Standard
	Ce	140	91.7	19.2				ug/L	245	Standard
>	Tb	159	949369.3	0.9				ug/L	950397	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	446446.9	0.3	**50.5283**	0.234	0.5	ug/L	15	Standard
	Tl	205	397524.5	2.6	**50.6566**	1.177	2.3	ug/L	13	Standard
	Pb	206	283032.1	0.6	**50.7560**	0.110	0.2	ug/L	264	Standard
	Pb	207	256737.6	0.4	**50.6961**	0.167	0.3	ug/L	222	Standard
	Pb	208	1049117.6	0.6	**50.7200**	0.161	0.3	ug/L	959	Standard
	U	238	395685.5	0.4	**49.8743**	0.152	0.3	ug/L	9	Standard
>	Bi	209	544048.8	0.4				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:01:46
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.9687**	17.258	173.1	mg/L	2	Standard
Mg	24	4517.3	2.2	**5.1854**	0.050	1.0	mg/L	55	Standard
K	39	1296.7	2.0	**4.8131**	0.164	3.4	mg/L	28	Standard
Ca	43	80.0	16.5	**4.7867**	1.292	27.0	mg/L	27	Standard
Fe	54	6442.2	3.1	**4.9235**	0.148	3.0	mg/L	147	Standard
Fe	57	1841.8	2.1	**4.8233**	0.186	3.8	mg/L	268	Standard
Sc-1	45	41418.2	1.5				mg/L	41174	Standard
Cl	35	65714.2	0.5				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1946.8	7.2				ug/L	1950	Standard
P	31	21396.8	2.5				ug/L	21156	Standard
S	34	3327.0	3.8				ug/L	3419	Standard
Sr	88	70.0	18.9				ug/L	72	Standard
C	12	130.0	20.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	17	Standard
Dy	164	9.5	107.6				mg/L	16	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	23620.1	0.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.858		
Al	27	100.630		
Sc	45			
Ti	47	99.628		
V	51	101.705		
Cr	52	100.771		
Cr	53			
Mn	55	101.054		
Co	59	101.882		
Ni	60	100.344		
Cu	65	101.295		
Zn	66	100.484		
Ge	72		100.239	
As	75	101.100		
Se	82	100.735		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:01:46
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	98.914		
Ag	107	100.381		
Cd	111	100.005		
Cd	114			
> In	115			99.347
Sn	118	97.532		
Sb	123	102.268		
Ba	135	99.174		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.057		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.440		
U	238	99.749		
> Bi	209			98.413
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:01:46
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 11:02:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76638.3	0.9				ug/L	76456	Standard
	Be	9	45.0	69.4	**0.0201**	0.027	136.2	ug/L	20	Standard
	Al	27	2771.9	19.2	**0.0059**	0.003	49.8	ug/L	1307	Standard
	Sc	45	41874.5	1.3				ug/L	41174	Standard
	Ti	47	34.3	22.6	**0.0199**	0.023	116.0	ug/L	27	Standard
	V	51	1314.7	3.0	**-0.0400**	0.005	13.2	ug/L	1434	Standard
	Cr	52	7063.3	2.5	**-0.1041**	0.024	23.4	ug/L	7733	Standard
	Cr	53	583.3	6.1	**0.1556**	0.035	22.3	ug/L	442	Standard
	Mn	55	795.7	2.1	**0.0029**	0.003	97.4	ug/L	723	Standard
	Co	59	301.0	14.0	**0.0095**	0.006	58.4	ug/L	217	Standard
	Ni	60	322.3	4.2	**0.0009**	0.006	613.3	ug/L	304	Standard
	Cu	65	188.3	9.4	**0.0175**	0.009	51.5	ug/L	181	Standard
	Zn	66	246.3	14.0	**0.0191**	0.028	144.2	ug/L	215	Standard
>	**Ge**	72	525121.4	0.6				ug/L	520809	Standard
	As	75	-40.2	86.9	**0.0130**	0.028	214.4	ug/L	-52	Standard
	Se	82	15.7	75.3	**-0.0027**	0.093	3488.1	ug/L	17	Standard
	Se-1	77	53.7	18.4	**-0.0615**	0.118	192.4	ug/L	56	Standard
>	**Ga**	71	31.7	18.2				mg/L	25	Standard
	Rb	85	18.3	15.7				ug/L	28	Standard
	Y	89	447115.8	1.8				ug/L	447395	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	330.0	12.1	**0.0850**	0.013	15.3	ug/L	113	Standard
	Ag	107	352.0	8.7	**0.0361**	0.004	11.5	ug/L	108	Standard
	Cd	111	29.4	26.4	**0.0104**	0.003	32.2	mg/L	3	Standard
	Cd	114	71.8	39.3	**0.0126**	0.005	39.2	ug/L	20	Standard
>	**In**	115	626402.7	0.2				ug/L	625728	Standard
	Sn	118	865.0	27.7	**0.0501**	0.037	74.4	ug/L	568	Standard
	Sb	123	1603.3	32.0	**0.2763**	0.100	36.1	ug/L	612	Standard
	Ba	135	44.0	23.9	**0.0023**	0.005	210.3	ug/L	21	Standard
	Ce	140	16.7	34.6				ug/L	245	Standard
>	**Tb**	159	964218.0	1.0				ug/L	950397	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	134.0	19.6	**0.0140**	0.003	21.2	ug/L	15	Standard
	Tl	205	110.0	16.4	**0.0039**	0.002	58.2	ug/L	13	Standard
	Pb	206	338.3	8.4	**0.0154**	0.006	35.8	ug/L	264	Standard
	Pb	207	297.0	6.8	**0.0111**	0.004	39.6	ug/L	222	Standard
	Pb	208	1217.7	7.2	**0.0091**	0.005	50.4	ug/L	959	Standard
	U	238	104.0	26.4	**0.0125**	0.003	27.7	ug/L	9	Standard
>	**Bi**	209	558778.4	1.0				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:04:58
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	45.1	**-0.0142**	0.021	147.6	mg/L	55	Standard
K	39	25.0	72.1	**-0.0375**	0.066	177.3	mg/L	28	Standard
Ca	43	30.0	33.3	**0.2279**	0.902	395.6	mg/L	27	Standard
Fe	54	134.1	12.9	**0.0047**	0.015	308.3	mg/L	147	Standard
Fe	57	221.7	27.3	**-0.1357**	0.173	127.8	mg/L	268	Standard
> **Sc-1**	45	41874.5	1.3				mg/L	41174	Standard
Cl	35	67946.0	1.7				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	1943.5	9.7				ug/L	1950	Standard
P	31	20762.6	2.5				ug/L	21156	Standard
S	34	3392.0	1.6				ug/L	3419	Standard
Sr	88	48.3	36.3				ug/L	72	Standard
C	12	116.7	42.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	15.9	71.9				mg/L	16	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	17685.3	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:04:58
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.108
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.078
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:04:58
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: PBW 78 WG574416-04
Sample Date/Time: Friday, July 01, 2016 11:05:53
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76067.2	2.6				ug/L	76456	Standard
	Be	9	91.7	22.0	**0.0624**	0.018	28.1	ug/L	20	Standard
	Al	27	9900.0	18.4	**0.0479**	0.010	21.7	ug/L	1307	Standard
	Sc	45	42185.3	1.2				ug/L	41174	Standard
	Ti	47	37.3	6.7	**0.0291**	0.007	24.8	ug/L	27	Standard
	V	51	1740.2	8.5	**0.0114**	0.018	156.7	ug/L	1434	Standard
	Cr	52	8205.6	2.3	**0.0360**	0.018	50.7	ug/L	7733	Standard
	Cr	53	613.3	22.1	**0.1846**	0.130	70.5	ug/L	442	Standard
	Mn	55	2289.5	4.2	**0.1986**	0.011	5.7	ug/L	723	Standard
	Co	59	620.0	11.0	**0.0508**	0.009	16.8	ug/L	217	Standard
	Ni	60	519.3	1.9	**0.0951**	0.005	5.1	ug/L	304	Standard
	Cu	65	329.0	6.1	**0.0858**	0.009	10.4	ug/L	181	Standard
	Zn	66	3237.3	0.8	**2.4406**	0.012	0.5	ug/L	215	Standard
>	**Ge**	72	525088.2	0.5				ug/L	520809	Standard
	As	75	30.8	108.7	**0.0699**	0.027	38.5	ug/L	-52	Standard
	Se	82	25.8	16.5	**0.0760**	0.033	43.0	ug/L	17	Standard
	Se-1	77	68.3	8.1	**0.1083**	0.066	60.6	ug/L	56	Standard
>	**Ga**	71	20.0	66.1				mg/L	25	Standard
	Rb	85	38.3	7.5				ug/L	28	Standard
	Y	89	448293.9	2.2				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	197.6	7.0	**0.0411**	0.005	11.2	ug/L	113	Standard
	Ag	107	356.3	27.8	**0.0365**	0.014	37.3	ug/L	108	Standard
	Cd	111	135.0	20.3	**0.0560**	0.012	21.0	mg/L	3	Standard
	Cd	114	292.8	13.1	**0.0511**	0.007	12.9	ug/L	20	Standard
>	**In**	115	628756.6	0.3				ug/L	625728	Standard
	Sn	118	890.0	6.8	**0.0534**	0.009	17.4	ug/L	568	Standard
	Sb	123	903.8	20.1	**0.1404**	0.035	25.1	ug/L	612	Standard
	Ba	135	176.0	12.6	**0.0626**	0.010	15.9	ug/L	21	Standard
	Ce	140	53.3	61.0				ug/L	245	Standard
>	**Tb**	159	955139.7	2.0				ug/L	950397	Standard
	Ho	165	11.7	49.5				ug/L	7	Standard
	Tl	203	548.0	21.5	**0.0598**	0.012	20.5	ug/L	15	Standard
	Tl	205	510.0	24.7	**0.0537**	0.015	27.8	ug/L	13	Standard
	Pb	206	677.0	11.7	**0.0750**	0.013	16.8	ug/L	264	Standard
	Pb	207	544.7	11.6	**0.0591**	0.011	18.5	ug/L	222	Standard
	Pb	208	2290.4	8.0	**0.0601**	0.007	12.3	ug/L	959	Standard
	U	238	102.7	66.1	**0.0123**	0.008	66.3	ug/L	9	Standard
>	**Bi**	209	556043.1	1.2				ug/L	552821	Standard

Sample ID: PBW 78 WG574416-04
Report Date/Time: Friday, July 01, 2016 11:08:10
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	46.1	**0.0100**	0.032	319.9	mg/L	55	Standard
K	39	35.0	57.1	**0.0003**	0.076	23783.0	mg/L	28	Standard
Ca	43	23.3	32.7	**-0.3783**	0.697	184.3	mg/L	27	Standard
Fe	54	175.9	11.5	**0.0357**	0.014	38.5	mg/L	147	Standard
Fe	57	216.7	10.7	**-0.1545**	0.066	42.5	mg/L	268	Standard
> **Sc-1**	45	42185.3	1.2				mg/L	41174	Standard
Cl	35	67744.4	0.4				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2090.1	1.7				ug/L	1950	Standard
P	31	21226.5	2.4				ug/L	21156	Standard
S	34	3468.7	3.7				ug/L	3419	Standard
Sr	88	66.7	18.9				ug/L	72	Standard
C	12	106.7	51.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	6.2	100.1				mg/L	16	Standard
Ho-1	165	11.7	49.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2538.5	15.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.492	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.822	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 78 WG574416-04
Report Date/Time: Friday, July 01, 2016 11:08:10
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.484
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.583
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: LCSW 78 WG574416-05
Sample Date/Time: Friday, July 01, 2016 11:09:04
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76480.9	1.3				ug/L	76456	Standard
	Be	9	57299.8	1.8	**51.1515**	0.782	1.5	ug/L	20	Standard
	Al	27	13893.0	5.9	**0.0710**	0.006	8.3	ug/L	1307	Standard
	Sc	45	41525.2	3.0				ug/L	41174	Standard
	Ti	47	50.0	14.4	**0.0663**	0.021	31.6	ug/L	27	Standard
	V	51	423867.5	0.4	**50.5009**	0.287	0.6	ug/L	1434	Standard
	Cr	52	423554.6	0.4	**50.5309**	0.121	0.2	ug/L	7733	Standard
	Cr	53	51463.9	0.2	**49.6485**	0.215	0.4	ug/L	442	Standard
	Mn	55	395604.7	0.2	**51.2819**	0.431	0.8	ug/L	723	Standard
	Co	59	393078.4	0.7	**50.4221**	0.467	0.9	ug/L	217	Standard
	Ni	60	106911.2	0.9	**50.5097**	0.714	1.4	ug/L	304	Standard
	Cu	65	106870.6	0.8	**51.4201**	0.725	1.4	ug/L	181	Standard
	Zn	66	64695.2	1.1	**51.7405**	0.880	1.7	ug/L	215	Standard
>	Ge	72	529720.7	0.6				ug/L	520809	Standard
	As	75	63865.6	0.7	**50.9077**	0.332	0.7	ug/L	-52	Standard
	Se	82	6442.1	1.2	**50.0074**	0.423	0.8	ug/L	17	Standard
	Se-1	77	4460.3	1.4	**50.6149**	0.735	1.5	ug/L	56	Standard
>	Ga	71	33.3	48.2				mg/L	25	Standard
	Rb	85	51.7	53.3				ug/L	28	Standard
	Y	89	451210.1	0.7				ug/L	447395	Standard
>	Rh	103	28.3	10.2				ug/L	15	Standard
	Mo	98	211.5	58.2	**0.0455**	0.040	88.5	ug/L	113	Standard
	Ag	107	371127.1	0.8	**51.3096**	0.429	0.8	ug/L	108	Standard
	Cd	111	117429.0	0.6	**50.6559**	0.197	0.4	mg/L	3	Standard
	Cd	114	286369.4	2.1	**49.8969**	1.108	2.2	ug/L	20	Standard
>	In	115	630039.4	0.2				ug/L	625728	Standard
	Sn	118	975.0	11.8	**0.0662**	0.017	26.4	ug/L	568	Standard
	Sb	123	249155.3	2.4	**47.8470**	1.151	2.4	ug/L	612	Standard
	Ba	135	109490.5	0.6	**49.9659**	0.356	0.7	ug/L	21	Standard
	Ce	140	110.0	22.7				ug/L	245	Standard
>	Tb	159	961658.5	1.2				ug/L	950397	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	456267.9	0.6	**50.3461**	0.267	0.5	ug/L	15	Standard
	Tl	205	402501.7	1.2	**50.0083**	0.617	1.2	ug/L	13	Standard
	Pb	206	293954.8	0.6	**51.3969**	0.546	1.1	ug/L	264	Standard
	Pb	207	256579.6	0.1	**49.3966**	0.497	1.0	ug/L	222	Standard
	Pb	208	1074330.1	0.6	**50.6396**	0.527	1.0	ug/L	959	Standard
	U	238	394562.7	0.9	**48.4869**	0.395	0.8	ug/L	9	Standard
>	Bi	209	558043.6	1.1				ug/L	552821	Standard

Sample ID: LCSW 78 WG574416-05
Report Date/Time: Friday, July 01, 2016 11:11:21
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	20.4	**0.0111**	0.013	120.9	mg/L	55	Standard
K	39	35.0	37.8	**0.0010**	0.048	4646.6	mg/L	28	Standard
Ca	43	28.3	36.7	**0.0919**	0.886	964.6	mg/L	27	Standard
Fe	54	169.1	21.5	**0.0325**	0.027	81.8	mg/L	147	Standard
Fe	57	220.0	8.2	**-0.1334**	0.058	43.3	mg/L	268	Standard
Sc-1	45	41525.2	3.0				mg/L	41174	Standard
Cl	35	67082.2	2.2				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	2023.5	3.3				ug/L	1950	Standard
P	31	22251.3	1.9				ug/L	21156	Standard
S	34	3218.7	6.1				ug/L	3419	Standard
Sr	88	76.7	10.0				ug/L	72	Standard
C	12	130.0	27.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	12.2	119.1				mg/L	16	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	1945.1	18.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		100.033	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.711	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: LCSW 78 WG574416-05
Report Date/Time: Friday, July 01, 2016 11:11:21
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.689
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.945
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 78 WG574416-05
Report Date/Time: Friday, July 01, 2016 11:11:21
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141705 WG574416-01
Sample Date/Time: Friday, July 01, 2016 11:12:16
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78995.4	1.2				ug/L	76456	Standard
	Be	9	58.3	4.9	**0.0306**	0.003	9.8	ug/L	20	Standard
	Al	27	21381126.3	0.9	**120.8920**	2.463	2.0	ug/L	1307	Standard
	Sc	45	41005.4	0.8				ug/L	41174	Standard
	Ti	47	385.7	14.4	**1.1313**	0.162	14.4	ug/L	27	Standard
	V	51	37880.1	0.4	**4.5394**	0.067	1.5	ug/L	1434	Standard
	Cr	52	15651.7	0.4	**1.0197**	0.032	3.2	ug/L	7733	Standard
	Cr	53	6074.6	20.3	**5.7629**	1.265	22.0	ug/L	442	Standard
	Mn	55	15005.4	0.7	**1.9367**	0.029	1.5	ug/L	723	Standard
	Co	59	1426.7	2.3	**0.1620**	0.002	1.4	ug/L	217	Standard
	Ni	60	3377.0	1.1	**1.5203**	0.032	2.1	ug/L	304	Standard
	Cu	65	1905.1	1.9	**0.8856**	0.009	1.0	ug/L	181	Standard
	Zn	66	4588.7	1.0	**3.6704**	0.063	1.7	ug/L	215	Standard
>	**Ge**	72	506618.0	1.2				ug/L	520809	Standard
	As	75	2080.8	8.4	**1.7774**	0.135	7.6	ug/L	-52	Standard
	Se	82	818.2	2.3	**6.5307**	0.077	1.2	ug/L	17	Standard
	Se-1	77	895.7	3.3	**10.0889**	0.428	4.2	ug/L	56	Standard
>	**Ga**	71	153.3	31.3				mg/L	25	Standard
	Rb	85	3665.4	2.3				ug/L	28	Standard
	Y	89	429409.0	1.3				ug/L	447395	Standard
>	**Rh**	103	178.3	12.6				ug/L	15	Standard
	Mo	98	683.2	5.3	**0.2157**	0.014	6.4	ug/L	113	Standard
	Ag	107	300.3	34.9	**0.0315**	0.016	49.6	ug/L	108	Standard
	Cd	111	82.5	7.8	**0.0356**	0.003	8.6	mg/L	3	Standard
	Cd	114	158.8	23.9	**0.0295**	0.007	23.3	ug/L	20	Standard
>	**In**	115	590046.0	0.5				ug/L	625728	Standard
	Sn	118	975.0	8.9	**0.0764**	0.014	18.3	ug/L	568	Standard
	Sb	123	2972.1	30.5	**0.5762**	0.187	32.4	ug/L	612	Standard
	Ba	135	67195.3	0.7	**32.7370**	0.271	0.8	ug/L	21	Standard
	Ce	140	5165.9	1.6				ug/L	245	Standard
>	**Tb**	159	918152.8	1.4				ug/L	950397	Standard
	Ho	165	105.0	29.7				ug/L	7	Standard
	Tl	203	363.0	14.1	**0.0439**	0.007	15.0	ug/L	15	Standard
	Tl	205	258.3	37.0	**0.0260**	0.013	51.2	ug/L	13	Standard
	Pb	206	917.4	3.4	**0.1351**	0.007	5.1	ug/L	264	Standard
	Pb	207	764.4	2.1	**0.1180**	0.005	4.0	ug/L	222	Standard
	Pb	208	3197.8	4.0	**0.1198**	0.007	5.7	ug/L	959	Standard
	U	238	29042.1	0.6	**3.9760**	0.053	1.3	ug/L	9	Standard
>	**Bi**	209	500900.4	0.8				ug/L	552821	Standard

Sample ID: L1606141705 WG574416-01
Report Date/Time: Friday, July 01, 2016 11:14:33
Page 1

Approved: July 02, 2016

Na	23	6.7	43.3	**19.9855**	8.657	43.3	mg/L	2	Standard
Mg	24	126521.1	1.0	**148.3441**	0.501	0.3	mg/L	55	Standard
K	39	181.7	30.9	**0.5679**	0.214	37.7	mg/L	28	Standard
Ca	43	465.0	16.3	**40.0054**	7.184	18.0	mg/L	27	Standard
Fe	54	240.2	12.6	**0.0904**	0.025	28.1	mg/L	147	Standard
Fe	57	603.3	4.8	**1.0579**	0.102	9.7	mg/L	268	Standard
> **Sc-1**	45	41005.4	0.8				mg/L	41174	Standard
Cl	35	90433.8	0.8				ug/L	69550	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	57739.9	3.1				ug/L	1950	Standard
P	31	24640.0	1.7				ug/L	21156	Standard
S	34	3010.3	1.4				ug/L	3419	Standard
Sr	88	401.7	14.4				ug/L	72	Standard
C	12	506.7	3.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	132.3				mg/L	17	Standard
Dy	164	121.7	25.2				mg/L	16	Standard
Ho-1	165	105.0	29.7				mg/L	7	Standard
Er	166	103.3	29.6				mg/L	7	Standard
I	127	25413.0	5.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.322	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.275	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141705 WG574416-01
Report Date/Time: Friday, July 01, 2016 11:14:33
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.298
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.608
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141705 WG574416-01
Report Date/Time: Friday, July 01, 2016 11:14:33
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141706S WG574416-06
Sample Date/Time: Friday, July 01, 2016 11:15:27
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82487.3	1.1				ug/L	76456	Standard
	Be	9	59434.7	2.0	**49.1890**	0.474	1.0	ug/L	20	Standard
	Al	27	21126866.6	0.7	**114.3857**	1.245	1.1	ug/L	1307	Standard
	Sc	45	42071.7	1.5				ug/L	41174	Standard
	Ti	47	445.7	9.0	**1.3272**	0.106	8.0	ug/L	27	Standard
	V	51	448794.0	1.2	**56.1906**	0.338	0.6	ug/L	1434	Standard
	Cr	52	405302.2	0.8	**50.8030**	0.762	1.5	ug/L	7733	Standard
	Cr	53	55872.8	0.8	**56.6886**	1.157	2.0	ug/L	442	Standard
	Mn	55	376409.4	1.7	**51.2605**	1.187	2.3	ug/L	723	Standard
	Co	59	371466.0	0.9	**50.0608**	1.026	2.0	ug/L	217	Standard
	Ni	60	100340.5	1.4	**49.7984**	1.011	2.0	ug/L	304	Standard
	Cu	65	97977.1	1.5	**49.5201**	1.028	2.1	ug/L	181	Standard
	Zn	66	64249.3	1.5	**53.9822**	0.650	1.2	ug/L	215	Standard
>	Ge	72	504287.9	1.5				ug/L	520809	Standard
	As	75	64736.7	1.2	**54.2084**	0.977	1.8	ug/L	-52	Standard
	Se	82	7105.9	2.4	**57.9770**	1.906	3.3	ug/L	17	Standard
	Se-1	77	5081.5	1.0	**60.7211**	1.522	2.5	ug/L	56	Standard
>	Ga	71	93.3	21.7				mg/L	25	Standard
	Rb	85	3385.4	7.7				ug/L	28	Standard
	Y	89	437587.9	1.2				ug/L	447395	Standard
>	Rh	103	133.3	19.2				ug/L	15	Standard
	Mo	98	712.0	6.4	**0.2258**	0.015	6.5	ug/L	113	Standard
	Ag	107	254706.8	0.6	**37.6267**	0.420	1.1	ug/L	108	Standard
	Cd	111	107324.5	0.5	**49.4721**	0.054	0.1	mg/L	3	Standard
	Cd	114	266264.7	1.6	**49.5778**	1.034	2.1	ug/L	20	Standard
>	In	115	589608.9	0.6				ug/L	625728	Standard
	Sn	118	1198.4	5.9	**0.1134**	0.011	9.9	ug/L	568	Standard
	Sb	123	255276.2	0.1	**52.3884**	0.301	0.6	ug/L	612	Standard
	Ba	135	166458.1	0.3	**81.1840**	0.412	0.5	ug/L	21	Standard
	Ce	140	2188.5	3.6				ug/L	245	Standard
>	Tb	159	935892.6	1.8				ug/L	950397	Standard
	Ho	165	80.0	12.5				ug/L	7	Standard
	Tl	203	416301.7	0.5	**50.3128**	0.740	1.5	ug/L	15	Standard
	Tl	205	372797.3	0.4	**50.7287**	0.513	1.0	ug/L	13	Standard
	Pb	206	269916.3	0.3	**51.6884**	0.658	1.3	ug/L	264	Standard
	Pb	207	235694.4	0.5	**49.6950**	0.399	0.8	ug/L	222	Standard
	Pb	208	976732.6	0.6	**50.4213**	0.371	0.7	ug/L	959	Standard
	U	238	405996.3	0.5	**54.6443**	0.642	1.2	ug/L	9	Standard
>	Bi	209	509531.8	1.0				ug/L	552821	Standard

Sample ID: L1606141706S WG574416-06
Report Date/Time: Friday, July 01, 2016 11:17:44
Page 1

Approved: July 02, 2016

Na	23	6.7	86.6	**19.6383**	17.003	86.6	mg/L	2	Standard
Mg	24	124588.6	1.9	**142.3700**	0.938	0.7	mg/L	55	Standard
K	39	133.3	31.9	**0.3687**	0.159	43.1	mg/L	28	Standard
Ca	43	506.7	5.0	**42.5935**	1.641	3.9	mg/L	27	Standard
Fe	54	191.0	18.5	**0.0477**	0.027	55.6	mg/L	147	Standard
Fe	57	573.3	0.5	**0.9203**	0.025	2.7	mg/L	268	Standard
> **Sc-1**	45	42071.7	1.5				mg/L	41174	Standard
Cl	35	93134.7	1.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	57294.9	3.7				ug/L	1950	Standard
P	31	24481.4	0.9				ug/L	21156	Standard
S	34	3050.3	2.6				ug/L	3419	Standard
Sr	88	351.7	17.1				ug/L	72	Standard
C	12	470.0	15.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	66.5	44.7				mg/L	16	Standard
Ho-1	165	80.0	12.5				mg/L	7	Standard
Er	166	73.3	92.8				mg/L	7	Standard
I	127	27035.8	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.889	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141706S WG574416-06
Report Date/Time: Friday, July 01, 2016 11:17:44
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	94.228	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	92.169	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141706S WG574416-06
Report Date/Time: Friday, July 01, 2016 11:17:44
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141707SD WG574416-07
Sample Date/Time: Friday, July 01, 2016 11:18:39
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83771.0	2.5				ug/L	76456	Standard
	Be	9	60537.4	1.9	**49.3442**	0.599	1.2	ug/L	20	Standard
	Al	27	20909187.8	2.0	**111.4909**	2.320	2.1	ug/L	1307	Standard
	Sc	45	42178.7	2.5				ug/L	41174	Standard
	Ti	47	385.0	17.2	**1.1368**	0.214	18.9	ug/L	27	Standard
	V	51	446877.6	0.6	**55.9631**	0.571	1.0	ug/L	1434	Standard
	Cr	52	407703.5	1.0	**51.1164**	0.567	1.1	ug/L	7733	Standard
	Cr	53	57269.7	0.1	**58.1199**	0.209	0.4	ug/L	442	Standard
	Mn	55	373320.3	1.2	**50.8451**	0.769	1.5	ug/L	723	Standard
	Co	59	374639.0	0.7	**50.4931**	0.593	1.2	ug/L	217	Standard
	Ni	60	102269.7	0.8	**50.7649**	0.500	1.0	ug/L	304	Standard
	Cu	65	98211.9	0.3	**49.6447**	0.334	0.7	ug/L	181	Standard
	Zn	66	63211.9	0.4	**53.1189**	0.394	0.7	ug/L	215	Standard
>	Ge	72	504167.3	0.4				ug/L	520809	Standard
	As	75	65436.1	0.6	**54.8009**	0.553	1.0	ug/L	-52	Standard
	Se	82	7107.1	0.1	**57.9877**	0.247	0.4	ug/L	17	Standard
	Se-1	77	5193.9	0.7	**62.0795**	0.521	0.8	ug/L	56	Standard
>	Ga	71	93.3	56.3				mg/L	25	Standard
	Rb	85	2987.0	1.6				ug/L	28	Standard
	Y	89	428781.1	0.8				ug/L	447395	Standard
>	Rh	103	146.7	3.9				ug/L	15	Standard
	Mo	98	634.9	1.7	**0.2009**	0.001	0.6	ug/L	113	Standard
	Ag	107	261558.3	0.6	**39.0020**	0.323	0.8	ug/L	108	Standard
	Cd	111	107761.1	1.2	**50.1421**	0.734	1.5	mg/L	3	Standard
	Cd	114	265170.0	1.2	**49.8331**	0.062	0.1	ug/L	20	Standard
>	In	115	584141.3	1.3				ug/L	625728	Standard
	Sn	118	778.4	10.9	**0.0453**	0.014	30.6	ug/L	568	Standard
	Sb	123	253357.3	0.7	**52.4833**	0.432	0.8	ug/L	612	Standard
	Ba	135	164823.3	0.7	**81.1417**	0.473	0.6	ug/L	21	Standard
	Ce	140	1715.1	1.1				ug/L	245	Standard
>	Tb	159	919374.0	0.5				ug/L	950397	Standard
	Ho	165	48.3	26.0				ug/L	7	Standard
	Tl	203	415993.7	1.0	**50.5326**	0.446	0.9	ug/L	15	Standard
	Tl	205	377462.4	0.7	**51.6305**	0.656	1.3	ug/L	13	Standard
	Pb	206	269578.4	0.3	**51.8894**	0.298	0.6	ug/L	264	Standard
	Pb	207	236101.7	0.1	**50.0395**	0.358	0.7	ug/L	222	Standard
	Pb	208	981599.1	1.3	**50.9367**	0.779	1.5	ug/L	959	Standard
	U	238	408604.0	0.1	**55.2799**	0.488	0.9	ug/L	9	Standard
>	Bi	209	506896.7	0.8				ug/L	552821	Standard

Sample ID: L1606141707SD WG574416-07
Report Date/Time: Friday, July 01, 2016 11:20:56
Page 1

Approved: July 02, 2016

Na	23	6.7	86.6	**19.7141**	17.069	86.6	mg/L	2	Standard
Mg	24	123424.1	1.3	**140.7631**	4.816	3.4	mg/L	55	Standard
K	39	126.7	21.7	**0.3448**	0.114	32.9	mg/L	28	Standard
Ca	43	478.3	6.3	**39.9606**	1.868	4.7	mg/L	27	Standard
Fe	54	159.8	26.4	**0.0241**	0.035	144.2	mg/L	147	Standard
Fe	57	558.3	4.0	**0.8725**	0.108	12.4	mg/L	268	Standard
Sc-1	45	42178.7	2.5				mg/L	41174	Standard
Cl	35	93263.5	1.5				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	55210.4	0.6				ug/L	1950	Standard
P	31	24391.3	2.2				ug/L	21156	Standard
S	34	2932.0	3.7				ug/L	3419	Standard
Sr	88	386.7	9.1				ug/L	72	Standard
C	12	800.0	2.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	64.1	17.0				mg/L	16	Standard
Ho-1	165	48.3	26.0				mg/L	7	Standard
Er	166	53.3	39.0				mg/L	7	Standard
I	127	27236.1	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.568	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.805	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141707SD WG574416-07
Report Date/Time: Friday, July 01, 2016 11:20:56
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.354
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.693
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141707SD WG574416-07
Report Date/Time: Friday, July 01, 2016 11:20:56
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141701
Sample Date/Time: Friday, July 01, 2016 11:21:50
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83420.7	1.6				ug/L	76456	Standard
	Be	9	53.3	21.7	**0.0237**	0.009	37.8	ug/L	20	Standard
	Al	27	31084082.3	1.3	**166.4192**	1.988	1.2	ug/L	1307	Standard
	Sc	45	42130.2	2.0				ug/L	41174	Standard
	Ti	47	170.3	8.2	**0.4375**	0.044	10.0	ug/L	27	Standard
	V	51	22939.6	1.3	**2.5877**	0.032	1.2	ug/L	1434	Standard
	Cr	52	13097.0	1.3	**0.6468**	0.025	3.9	ug/L	7733	Standard
	Cr	53	1960.1	6.9	**1.5196**	0.135	8.9	ug/L	442	Standard
	Mn	55	3766.5	0.8	**0.3954**	0.005	1.2	ug/L	723	Standard
	Co	59	709.0	6.9	**0.0630**	0.006	10.1	ug/L	217	Standard
	Ni	60	2223.2	1.0	**0.9167**	0.012	1.3	ug/L	304	Standard
	Cu	65	739.0	2.4	**0.2875**	0.008	2.9	ug/L	181	Standard
	Zn	66	2322.5	1.8	**1.7125**	0.036	2.1	ug/L	215	Standard
>	Ge	72	521624.8	0.2				ug/L	520809	Standard
	As	75	515.4	8.1	**0.4620**	0.033	7.2	ug/L	-52	Standard
	Se	82	150.1	4.3	**1.0601**	0.051	4.8	ug/L	17	Standard
	Se-1	77	163.7	3.7	**1.2270**	0.071	5.8	ug/L	56	Standard
>	Ga	71	35.0	42.9				mg/L	25	Standard
	Rb	85	1295.1	7.1				ug/L	28	Standard
	Y	89	450422.8	1.4				ug/L	447395	Standard
>	Rh	103	130.0	23.4				ug/L	15	Standard
	Mo	98	654.1	6.4	**0.1969**	0.014	7.3	ug/L	113	Standard
	Ag	107	196.0	12.7	**0.0150**	0.004	24.0	ug/L	108	Standard
	Cd	111	38.8	25.3	**0.0149**	0.004	28.8	mg/L	3	Standard
	Cd	114	102.9	24.1	**0.0184**	0.004	23.7	ug/L	20	Standard
>	In	115	612771.9	0.4				ug/L	625728	Standard
	Sn	118	700.0	1.2	**0.0268**	0.002	5.6	ug/L	568	Standard
	Sb	123	677.6	31.8	**0.1003**	0.043	43.0	ug/L	612	Standard
	Ba	135	79352.9	0.7	**37.2291**	0.386	1.0	ug/L	21	Standard
	Ce	140	398.3	12.2				ug/L	245	Standard
>	Tb	159	943156.7	0.8				ug/L	950397	Standard
	Ho	165	36.7	20.8				ug/L	7	Standard
	Tl	203	227.0	14.0	**0.0253**	0.004	14.6	ug/L	15	Standard
	Tl	205	246.7	13.8	**0.0221**	0.004	19.4	ug/L	13	Standard
	Pb	206	454.7	7.7	**0.0390**	0.006	16.7	ug/L	264	Standard
	Pb	207	363.0	3.8	**0.0266**	0.003	11.0	ug/L	222	Standard
	Pb	208	1563.4	3.8	**0.0284**	0.003	10.4	ug/L	959	Standard
	U	238	20328.0	1.2	**2.5974**	0.039	1.5	ug/L	9	Standard
>	Bi	209	536649.8	0.3				ug/L	552821	Standard

Sample ID: L1606141701
Report Date/Time: Friday, July 01, 2016 11:24:07
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	14153.3	4.2	**16.0944**	0.416	2.6	mg/L	55	Standard
K	39	73.3	50.3	**0.1418**	0.131	92.5	mg/L	28	Standard
Ca	43	301.7	14.5	**24.2946**	3.319	13.7	mg/L	27	Standard
Fe	54	192.1	16.5	**0.0481**	0.021	43.9	mg/L	147	Standard
Fe	57	448.3	3.9	**0.5433**	0.078	14.4	mg/L	268	Standard
> **Sc-1**	45	42130.2	2.0				mg/L	41174	Standard
Cl	35	78637.6	2.5				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	17710.4	7.6				ug/L	1950	Standard
P	31	24940.5	2.0				ug/L	21156	Standard
S	34	3180.3	5.3				ug/L	3419	Standard
Sr	88	363.3	6.9				ug/L	72	Standard
C	12	386.7	16.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	17	Standard
Dy	164	45.1	46.6				mg/L	16	Standard
Ho-1	165	36.7	20.8				mg/L	7	Standard
Er	166	33.3	17.3				mg/L	7	Standard
I	127	17748.8	7.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.110	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.157	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141701
Report Date/Time: Friday, July 01, 2016 11:24:07
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.929
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.075
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141701
Report Date/Time: Friday, July 01, 2016 11:24:07
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141702
Sample Date/Time: Friday, July 01, 2016 11:25:02
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84178.2	0.8				ug/L	76456	Standard
	Be	9	68.3	33.0	**0.0357**	0.019	52.5	ug/L	20	Standard
	Al	27	21395590.4	1.7	**113.5091**	1.891	1.7	ug/L	1307	Standard
	Sc	45	40557.5	1.2				ug/L	41174	Standard
	Ti	47	235.3	3.5	**0.6749**	0.030	4.5	ug/L	27	Standard
	V	51	30102.8	0.4	**3.6510**	0.042	1.2	ug/L	1434	Standard
	Cr	52	20877.7	0.2	**1.7436**	0.023	1.3	ug/L	7733	Standard
	Cr	53	13953.1	1.5	**14.0948**	0.198	1.4	ug/L	442	Standard
	Mn	55	6869.6	2.0	**0.8525**	0.013	1.6	ug/L	723	Standard
	Co	59	1049.0	2.3	**0.1145**	0.004	3.2	ug/L	217	Standard
	Ni	60	3023.6	1.9	**1.3787**	0.032	2.3	ug/L	304	Standard
	Cu	65	1353.7	2.9	**0.6232**	0.017	2.7	ug/L	181	Standard
	Zn	66	2790.6	0.7	**2.2139**	0.010	0.4	ug/L	215	Standard
>	Ge	72	495483.9	0.7				ug/L	520809	Standard
	As	75	1494.2	7.1	**1.3177**	0.098	7.4	ug/L	-52	Standard
	Se	82	1155.8	1.9	**9.4896**	0.142	1.5	ug/L	17	Standard
	Se-1	77	1366.7	2.9	**16.1232**	0.600	3.7	ug/L	56	Standard
>	Ga	71	65.0	46.8				mg/L	25	Standard
	Rb	85	1118.4	6.5				ug/L	28	Standard
	Y	89	431041.5	1.8				ug/L	447395	Standard
>	Rh	103	106.7	2.7				ug/L	15	Standard
	Mo	98	636.9	5.4	**0.2018**	0.013	6.3	ug/L	113	Standard
	Ag	107	175.7	31.4	**0.0134**	0.008	62.4	ug/L	108	Standard
	Cd	111	69.9	26.7	**0.0302**	0.009	28.8	mg/L	3	Standard
	Cd	114	141.9	41.1	**0.0267**	0.011	41.2	ug/L	20	Standard
>	In	115	583855.1	0.8				ug/L	625728	Standard
	Sn	118	985.0	7.5	**0.0798**	0.012	15.3	ug/L	568	Standard
	Sb	123	469.0	23.7	**0.0635**	0.023	35.9	ug/L	612	Standard
	Ba	135	16891.1	0.4	**8.3035**	0.096	1.2	ug/L	21	Standard
	Ce	140	950.0	9.1				ug/L	245	Standard
>	Tb	159	915987.8	1.1				ug/L	950397	Standard
	Ho	165	58.3	13.1				ug/L	7	Standard
	Tl	203	239.0	33.8	**0.0285**	0.010	35.2	ug/L	15	Standard
	Tl	205	226.7	28.0	**0.0215**	0.009	41.6	ug/L	13	Standard
	Pb	206	491.0	11.7	**0.0515**	0.012	22.7	ug/L	264	Standard
	Pb	207	417.3	7.3	**0.0430**	0.007	16.1	ug/L	222	Standard
	Pb	208	1796.4	4.5	**0.0456**	0.005	10.2	ug/L	959	Standard
	U	238	24911.1	0.1	**3.3908**	0.016	0.5	ug/L	9	Standard
>	Bi	209	503762.9	0.6				ug/L	552821	Standard

Sample ID: L1606141702
Report Date/Time: Friday, July 01, 2016 11:27:19
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**10.0444**	8.695	86.6	mg/L	2	Standard
Mg	24	132735.6	1.2	**157.3747**	3.155	2.0	mg/L	55	Standard
K	39	131.7	11.6	**0.3818**	0.065	17.1	mg/L	28	Standard
Ca	43	436.7	8.3	**37.8132**	2.966	7.8	mg/L	27	Standard
Fe	54	188.4	13.0	**0.0512**	0.020	39.7	mg/L	147	Standard
Fe	57	626.7	13.5	**1.1530**	0.288	25.0	mg/L	268	Standard
> **Sc-1**	45	40557.5	1.2				mg/L	41174	Standard
Cl	35	95111.1	2.9				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	69814.0	4.5				ug/L	1950	Standard
P	31	24122.5	3.6				ug/L	21156	Standard
S	34	3262.0	2.8				ug/L	3419	Standard
Sr	88	431.7	9.9				ug/L	72	Standard
C	12	460.0	22.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	50.5	77.6				mg/L	16	Standard
Ho-1	165	58.3	13.1				mg/L	7	Standard
Er	166	60.0	44.1				mg/L	7	Standard
I	127	37230.7	1.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.101	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.137	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141702
Report Date/Time: Friday, July 01, 2016 11:27:19
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.308
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.126
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141702
Report Date/Time: Friday, July 01, 2016 11:27:19
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141702PS WG574808-01
Sample Date/Time: Friday, July 01, 2016 11:28:13
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84706.2	1.4				ug/L	76456	Standard
	Be	9	61248.6	0.7	**49.3719**	0.771	1.6	ug/L	20	Standard
	Al	27	21521134.5	1.9	**113.4962**	3.763	3.3	ug/L	1307	Standard
	Sc	45	40794.9	2.7				ug/L	41174	Standard
	Ti	47	240.0	10.1	**0.6796**	0.085	12.5	ug/L	27	Standard
	V	51	455261.1	1.0	**57.2107**	0.562	1.0	ug/L	1434	Standard
	Cr	52	426443.6	1.0	**53.6956**	0.415	0.8	ug/L	7733	Standard
	Cr	53	63767.3	2.8	**64.9856**	1.904	2.9	ug/L	442	Standard
	Mn	55	385209.5	0.8	**52.6493**	0.868	1.6	ug/L	723	Standard
	Co	59	385929.7	0.6	**52.1919**	0.293	0.6	ug/L	217	Standard
	Ni	60	103771.2	0.7	**51.6879**	0.282	0.5	ug/L	304	Standard
	Cu	65	101476.7	1.4	**51.4688**	0.149	0.3	ug/L	181	Standard
	Zn	66	65028.6	0.8	**54.8362**	0.235	0.4	ug/L	215	Standard
>	Ge	72	502470.5	1.2				ug/L	520809	Standard
	As	75	66227.4	1.6	**55.6481**	0.524	0.9	ug/L	-52	Standard
	Se	82	7664.8	0.5	**62.7619**	0.423	0.7	ug/L	17	Standard
	Se-1	77	5635.0	2.2	**67.6351**	0.810	1.2	ug/L	56	Standard
>	Ga	71	56.7	41.7				mg/L	25	Standard
	Rb	85	1151.7	5.5				ug/L	28	Standard
	Y	89	435252.0	2.3				ug/L	447395	Standard
>	Rh	103	131.7	9.6				ug/L	15	Standard
	Mo	98	659.3	4.3	**0.2083**	0.012	5.6	ug/L	113	Standard
	Ag	107	333584.9	1.2	**49.4501**	0.303	0.6	ug/L	108	Standard
	Cd	111	111317.0	0.6	**51.4929**	0.677	1.3	mg/L	3	Standard
	Cd	114	272508.8	2.4	**50.9184**	1.531	3.0	ug/L	20	Standard
>	In	115	587582.2	0.8				ug/L	625728	Standard
	Sn	118	1173.4	7.2	**0.1100**	0.015	13.8	ug/L	568	Standard
	Sb	123	246884.2	2.4	**50.8360**	0.942	1.9	ug/L	612	Standard
	Ba	135	121048.6	0.4	**59.2388**	0.725	1.2	ug/L	21	Standard
	Ce	140	995.0	2.7				ug/L	245	Standard
>	Tb	159	924930.3	1.0				ug/L	950397	Standard
	Ho	165	51.7	39.1				ug/L	7	Standard
	Tl	203	432904.6	0.1	**52.3301**	0.247	0.5	ug/L	15	Standard
	Tl	205	391263.3	1.6	**53.2578**	1.128	2.1	ug/L	13	Standard
	Pb	206	282728.2	0.5	**54.1561**	0.449	0.8	ug/L	264	Standard
	Pb	207	246312.6	0.2	**51.9491**	0.256	0.5	ug/L	222	Standard
	Pb	208	1022028.0	0.9	**52.7764**	0.638	1.2	ug/L	959	Standard
	U	238	421958.1	0.7	**56.8072**	0.698	1.2	ug/L	9	Standard
>	Bi	209	509385.6	0.5				ug/L	552821	Standard

Sample ID: L1606141702PS WG574808-01
Report Date/Time: Friday, July 01, 2016 11:30:30
Page 1

Approved: July 02, 2016

Na	23	10.0	50.0	**29.8847**	14.237	47.6	mg/L	2	Standard
Mg	24	133593.1	0.8	**157.5206**	4.134	2.6	mg/L	55	Standard
K	39	128.3	35.1	**0.3678**	0.182	49.5	mg/L	28	Standard
Ca	43	420.0	20.7	**36.0275**	7.706	21.4	mg/L	27	Standard
Fe	54	180.1	10.8	**0.0439**	0.018	40.9	mg/L	147	Standard
Fe	57	538.3	4.2	**0.8651**	0.032	3.7	mg/L	268	Standard
> **Sc-1**	45	40794.9	2.7				mg/L	41174	Standard
Cl	35	96279.6	0.7				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	71609.1	5.3				ug/L	1950	Standard
P	31	24898.8	2.0				ug/L	21156	Standard
S	34	3225.3	2.1				ug/L	3419	Standard
Sr	88	406.7	4.3				ug/L	72	Standard
C	12	440.0	36.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	27.8	36.1				mg/L	16	Standard
Ho-1	165	51.7	39.1				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	7	Standard
I	127	36331.8	0.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.479	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141702PS WG574808-01
Report Date/Time: Friday, July 01, 2016 11:30:30
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	93.904	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	92.143	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141702PS WG574808-01
Report Date/Time: Friday, July 01, 2016 11:30:30
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141702SDL WG574808-02
Sample Date/Time: Friday, July 01, 2016 11:31:25
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79270.2	1.4				ug/L	76456	Standard
	Be	9	48.3	15.8	**0.0218**	0.006	29.8	ug/L	20	Standard
	Al	27	4222516.4	1.3	**23.7801**	0.015	0.1	ug/L	1307	Standard
	Sc	45	38916.6	1.8				ug/L	41174	Standard
	Ti	47	59.3	17.5	**0.1088**	0.035	32.6	ug/L	27	Standard
	V	51	7243.4	2.3	**0.7359**	0.026	3.5	ug/L	1434	Standard
	Cr	52	10348.9	1.0	**0.3868**	0.014	3.5	ug/L	7733	Standard
	Cr	53	3842.2	2.6	**3.6141**	0.077	2.1	ug/L	442	Standard
	Mn	55	1712.4	2.4	**0.1385**	0.004	3.2	ug/L	723	Standard
	Co	59	414.7	3.6	**0.0280**	0.003	9.0	ug/L	217	Standard
	Ni	60	921.4	5.7	**0.3179**	0.030	9.6	ug/L	304	Standard
	Cu	65	476.3	6.6	**0.1735**	0.018	10.2	ug/L	181	Standard
	Zn	66	1250.7	2.0	**0.9024**	0.030	3.3	ug/L	215	Standard
>	Ge	72	491133.0	0.8				ug/L	520809	Standard
	As	75	262.0	15.9	**0.2704**	0.037	13.9	ug/L	-52	Standard
	Se	82	270.1	2.3	**2.1408**	0.063	2.9	ug/L	17	Standard
	Se-1	77	339.3	3.5	**3.5247**	0.142	4.0	ug/L	56	Standard
>	Ga	71	25.0	20.0				mg/L	25	Standard
	Rb	85	250.0	13.1				ug/L	28	Standard
	Y	89	411909.2	0.7				ug/L	447395	Standard
>	Rh	103	60.0	30.0				ug/L	15	Standard
	Mo	98	158.0	15.1	**0.0328**	0.008	25.5	ug/L	113	Standard
	Ag	107	268.7	10.2	**0.0278**	0.004	15.6	ug/L	108	Standard
	Cd	111	28.7	19.4	**0.0112**	0.003	23.8	mg/L	3	Standard
	Cd	114	92.0	14.0	**0.0176**	0.002	14.2	ug/L	20	Standard
>	In	115	575454.3	0.4				ug/L	625728	Standard
	Sn	118	298.3	6.8	**-0.0338**	0.003	9.9	ug/L	568	Standard
	Sb	123	1720.4	31.0	**0.3280**	0.111	33.8	ug/L	612	Standard
	Ba	135	3347.4	3.0	**1.6553**	0.056	3.4	ug/L	21	Standard
	Ce	140	181.7	6.9				ug/L	245	Standard
>	Tb	159	890346.9	0.6				ug/L	950397	Standard
	Ho	165	23.3	32.7				ug/L	7	Standard
	Tl	203	214.3	9.6	**0.0249**	0.002	9.4	ug/L	15	Standard
	Tl	205	275.0	41.2	**0.0273**	0.015	55.9	ug/L	13	Standard
	Pb	206	399.7	2.6	**0.0322**	0.002	4.9	ug/L	264	Standard
	Pb	207	322.7	4.0	**0.0214**	0.002	11.0	ug/L	222	Standard
	Pb	208	1435.0	2.3	**0.0252**	0.002	7.2	ug/L	959	Standard
	U	238	5076.5	3.7	**0.6771**	0.028	4.1	ug/L	9	Standard
>	Bi	209	514021.2	0.5				ug/L	552821	Standard

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:33:42
Page 1

Approved: July 02, 2016

Na	23	6.7	114.6	**21.2259**	24.589	115.8	mg/L	2	Standard
Mg	24	26095.8	2.9	**32.1961**	0.941	2.9	mg/L	55	Standard
K	39	48.3	21.5	**0.0648**	0.042	64.9	mg/L	28	Standard
Ca	43	73.3	25.8	**4.5982**	1.826	39.7	mg/L	27	Standard
Fe	54	79.1	19.4	**-0.0333**	0.012	34.7	mg/L	147	Standard
Fe	57	293.3	4.3	**0.1499**	0.049	32.9	mg/L	268	Standard
Sc-1	45	38916.6	1.8				mg/L	41174	Standard
Cl	35	81436.9	1.0				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	16265.4	2.3				ug/L	1950	Standard
P	31	10428.6	1.9				ug/L	21156	Standard
S	34	3263.7	1.5				ug/L	3419	Standard
Sr	88	118.3	30.0				ug/L	72	Standard
C	12	173.3	3.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	17	Standard
Dy	164	22.2	71.3				mg/L	16	Standard
Ho-1	165	23.3	32.7				mg/L	7	Standard
Er	166	23.3	107.9				mg/L	7	Standard
I	127	34272.1	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.681	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.302	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:33:42
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.982
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:33:42
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141702SDL WG574808-02
Sample Date/Time: Friday, July 01, 2016 11:34:36
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75492.7	3.2				ug/L	76456	Standard
	Be	9	23.3	12.4	**0.0012**	0.002	197.6	ug/L	20	Standard
	Al	27	829607.4	2.3	**4.8996**	0.125	2.6	ug/L	1307	Standard
	Sc	45	37073.7	3.1				ug/L	41174	Standard
	Ti	47	28.0	12.9	**0.0070**	0.012	174.3	ug/L	27	Standard
	V	51	3170.1	5.9	**0.2118**	0.020	9.4	ug/L	1434	Standard
	Cr	52	8461.0	1.1	**0.1435**	0.006	4.5	ug/L	7733	Standard
	Cr	53	1218.4	12.8	**0.8668**	0.167	19.3	ug/L	442	Standard
	Mn	55	694.0	1.2	**-0.0037**	0.001	25.0	ug/L	723	Standard
	Co	59	224.0	8.2	**0.0017**	0.003	168.9	ug/L	217	Standard
	Ni	60	457.0	4.9	**0.0814**	0.014	16.9	ug/L	304	Standard
	Cu	65	221.3	9.3	**0.0415**	0.012	28.9	ug/L	181	Standard
	Zn	66	1093.0	3.6	**0.7694**	0.029	3.8	ug/L	215	Standard
>	**Ge**	72	489217.1	1.1				ug/L	520809	Standard
	As	75	21.5	96.2	**0.0638**	0.018	28.2	ug/L	-52	Standard
	Se	82	69.4	5.3	**0.4582**	0.034	7.4	ug/L	17	Standard
	Se-1	77	109.3	5.9	**0.6765**	0.067	9.8	ug/L	56	Standard
>	**Ga**	71	15.0	33.3				mg/L	25	Standard
	Rb	85	76.7	16.4				ug/L	28	Standard
	Y	89	405198.5	2.3				ug/L	447395	Standard
>	**Rh**	103	26.7	60.3				ug/L	15	Standard
	Mo	98	142.2	38.6	**0.0281**	0.020	72.6	ug/L	113	Standard
	Ag	107	112.7	10.2	**0.0045**	0.002	36.8	ug/L	108	Standard
	Cd	111	8.1	48.9	**0.0015**	0.002	126.2	mg/L	3	Standard
	Cd	114	16.9	33.2	**0.0033**	0.001	33.5	ug/L	20	Standard
>	**In**	115	566627.7	0.7				ug/L	625728	Standard
	Sn	118	178.3	10.6	**-0.0536**	0.003	6.2	ug/L	568	Standard
	Sb	123	679.8	12.9	**0.1116**	0.020	17.6	ug/L	612	Standard
	Ba	135	676.7	1.6	**0.3256**	0.006	1.8	ug/L	21	Standard
	Ce	140	45.0	61.9				ug/L	245	Standard
>	**Tb**	159	881967.0	0.2				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	116.0	4.3	**0.0131**	0.001	4.5	ug/L	15	Standard
	Tl	205	140.0	3.6	**0.0090**	0.001	6.9	ug/L	13	Standard
	Pb	206	294.0	3.6	**0.0118**	0.002	17.2	ug/L	264	Standard
	Pb	207	254.0	8.5	**0.0068**	0.004	64.3	ug/L	222	Standard
	Pb	208	1072.0	4.7	**0.0063**	0.003	41.6	ug/L	959	Standard
	U	238	957.7	4.8	**0.1269**	0.006	4.8	ug/L	9	Standard
>	**Bi**	209	516500.7	0.3				ug/L	552821	Standard

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:36:53
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4970.8	4.5	**6.3914**	0.307	4.8	mg/L	55	Standard
K	39	25.0	0.0	**-0.0247**	0.003	13.3	mg/L	28	Standard
Ca	43	50.0	34.6	**2.6288**	1.919	73.0	mg/L	27	Standard
Fe	54	54.5	0.1	**-0.0513**	0.002	3.0	mg/L	147	Standard
Fe	57	253.3	6.3	**0.0613**	0.067	109.5	mg/L	268	Standard
> **Sc-1**	45	37073.7	3.1				mg/L	41174	Standard
Cl	35	80495.3	1.6				ug/L	69550	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	5040.8	9.7				ug/L	1950	Standard
P	31	7305.1	3.6				ug/L	21156	Standard
S	34	3295.4	6.8				ug/L	3419	Standard
Sr	88	108.3	11.6				ug/L	72	Standard
C	12	146.7	3.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	17	Standard
Dy	164	-1.1	89.2				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	7	Standard
I	127	33724.2	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.740	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.934	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:36:53
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.555
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.430
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 11:37:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79886.8	2.4				ug/L	76456	Standard
	Be	9	60216.2	2.8	**51.4590**	0.417	0.8	ug/L	20	Standard
	Al	27	8658161.3	1.0	**48.4053**	0.695	1.4	ug/L	1307	Standard
	Sc	45	41946.3	1.7				ug/L	41174	Standard
	Ti	47	32783.8	1.1	**99.4934**	0.341	0.3	ug/L	27	Standard
	V	51	421947.6	0.5	**50.6006**	0.209	0.4	ug/L	1434	Standard
	Cr	52	415783.8	0.5	**49.9191**	0.677	1.4	ug/L	7733	Standard
	Cr	53	52323.5	0.7	**50.8163**	0.079	0.2	ug/L	442	Standard
	Mn	55	383488.2	0.5	**50.0327**	0.303	0.6	ug/L	723	Standard
	Co	59	396921.5	0.3	**51.2480**	0.300	0.6	ug/L	217	Standard
	Ni	60	105550.0	0.7	**50.1916**	0.654	1.3	ug/L	304	Standard
	Cu	65	104187.0	0.3	**50.4533**	0.298	0.6	ug/L	181	Standard
	Zn	66	62119.1	0.9	**49.9953**	0.242	0.5	ug/L	215	Standard
>	Ge	72	526287.7	0.8				ug/L	520809	Standard
	As	75	62653.6	0.5	**50.2687**	0.288	0.6	ug/L	-52	Standard
	Se	82	6502.0	0.1	**50.8075**	0.476	0.9	ug/L	17	Standard
	Se-1	77	4394.6	2.3	**50.1962**	1.546	3.1	ug/L	56	Standard
>	Ga	71	41.7	34.6				mg/L	25	Standard
	Rb	85	811.7	7.3				ug/L	28	Standard
	Y	89	449443.8	0.8				ug/L	447395	Standard
>	Rh	103	28.3	20.4				ug/L	15	Standard
	Mo	98	299240.3	0.5	**98.3551**	0.449	0.5	ug/L	113	Standard
	Ag	107	359054.0	0.7	**49.6967**	0.335	0.7	ug/L	108	Standard
	Cd	111	115287.0	0.4	**49.7893**	0.202	0.4	mg/L	3	Standard
	Cd	114	284203.9	0.6	**49.5756**	0.249	0.5	ug/L	20	Standard
>	In	115	629316.2	0.1				ug/L	625728	Standard
	Sn	118	316403.3	1.4	**48.7968**	0.695	1.4	ug/L	568	Standard
	Sb	123	257145.7	0.4	**49.4396**	0.256	0.5	ug/L	612	Standard
	Ba	135	107880.7	0.2	**49.2873**	0.099	0.2	ug/L	21	Standard
	Ce	140	80.0	12.5				ug/L	245	Standard
>	Tb	159	959375.1	0.6				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	446456.6	0.5	**49.7300**	0.195	0.4	ug/L	15	Standard
	Tl	205	404447.0	0.4	**50.7263**	0.364	0.7	ug/L	13	Standard
	Pb	206	281579.7	0.3	**49.6971**	0.317	0.6	ug/L	264	Standard
	Pb	207	257039.7	0.6	**49.9528**	0.358	0.7	ug/L	222	Standard
	Pb	208	1065428.7	1.4	**50.6922**	0.446	0.9	ug/L	959	Standard
	U	238	401590.9	0.5	**49.8178**	0.056	0.1	ug/L	9	Standard
>	Bi	209	552793.0	0.6				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:40:07
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4465.7	1.7	**5.0623**	0.170	3.4	mg/L	55	Standard
K	39	1175.0	4.1	**4.2914**	0.166	3.9	mg/L	28	Standard
Ca	43	80.0	12.5	**4.6810**	0.869	18.6	mg/L	27	Standard
Fe	54	6475.2	2.0	**4.8865**	0.136	2.8	mg/L	147	Standard
Fe	57	1960.1	2.3	**5.1091**	0.183	3.6	mg/L	268	Standard
> **Sc-1**	45	41946.3	1.7				mg/L	41174	Standard
Cl	35	79383.6	3.3				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2656.9	5.2				ug/L	1950	Standard
P	31	23768.6	2.4				ug/L	21156	Standard
S	34	4000.5	6.6				ug/L	3419	Standard
Sr	88	80.0	43.3				ug/L	72	Standard
C	12	120.0	25.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	12.4	100.1				mg/L	16	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	22111.1	1.9				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.918		
	Al	27	96.811		
	Sc	45			
	Ti	47	99.493		
	V	51	101.201		
	Cr	52	99.838		
	Cr	53			
	Mn	55	100.065		
	Co	59	102.496		
	Ni	60	100.383		
	Cu	65	100.907		
	Zn	66	99.991		
>	Ge	72		101.052	
	As	75	100.537		
	Se	82	101.615		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:40:07
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	98.355		
Ag	107	99.393		
Cd	111	99.579		
Cd	114			
> In	115			100.573
Sn	118	97.594		
Sb	123	98.879		
Ba	135	98.575		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.460		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.384		
U	238	99.636		
> Bi	209			99.995
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:40:07
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 11:41:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79854.9	1.2				ug/L	76456	Standard
	Be	9	28.3	44.4	**0.0043**	0.011	247.6	ug/L	20	Standard
	Al	27	4860.8	30.8	**0.0170**	0.009	51.0	ug/L	1307	Standard
	Sc	45	40828.3	2.4				ug/L	41174	Standard
	Ti	47	33.7	26.8	**0.0170**	0.026	153.3	ug/L	27	Standard
	V	51	1448.8	4.8	**-0.0250**	0.010	39.6	ug/L	1434	Standard
	Cr	52	7320.1	2.9	**-0.0792**	0.016	19.8	ug/L	7733	Standard
	Cr	53	573.3	8.4	**0.1415**	0.043	30.2	ug/L	442	Standard
	Mn	55	774.7	1.8	**-0.0006**	0.001	182.2	ug/L	723	Standard
	Co	59	305.0	4.6	**0.0098**	0.001	15.1	ug/L	217	Standard
	Ni	60	339.0	2.3	**0.0078**	0.005	67.4	ug/L	304	Standard
	Cu	65	197.7	11.1	**0.0212**	0.010	48.2	ug/L	181	Standard
	Zn	66	269.3	7.5	**0.0362**	0.017	46.8	ug/L	215	Standard
>	**Ge**	72	528956.5	1.1				ug/L	520809	Standard
	As	75	-45.6	52.3	**0.0087**	0.019	224.1	ug/L	-52	Standard
	Se	82	23.2	12.4	**0.0547**	0.023	42.1	ug/L	17	Standard
	Se-1	77	56.7	21.6	**-0.0309**	0.148	479.3	ug/L	56	Standard
>	**Ga**	71	35.0	62.3				mg/L	25	Standard
	Rb	85	25.0	34.6				ug/L	28	Standard
	Y	89	451349.1	0.6				ug/L	447395	Standard
>	**Rh**	103	21.7	48.0				ug/L	15	Standard
	Mo	98	237.5	8.6	**0.0541**	0.007	13.2	ug/L	113	Standard
	Ag	107	234.7	5.8	**0.0196**	0.002	10.5	ug/L	108	Standard
	Cd	111	27.2	17.4	**0.0094**	0.002	21.1	mg/L	3	Standard
	Cd	114	66.4	34.3	**0.0116**	0.004	34.4	ug/L	20	Standard
>	**In**	115	629965.8	0.8				ug/L	625728	Standard
	Sn	118	940.0	21.0	**0.0607**	0.029	48.4	ug/L	568	Standard
	Sb	123	1092.2	32.6	**0.1759**	0.067	38.2	ug/L	612	Standard
	Ba	135	59.0	17.7	**0.0090**	0.005	54.2	ug/L	21	Standard
	Ce	140	21.7	70.5				ug/L	245	Standard
>	**Tb**	159	955018.0	0.8				ug/L	950397	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	126.3	20.6	**0.0132**	0.003	22.7	ug/L	15	Standard
	Tl	205	113.3	18.4	**0.0043**	0.003	62.2	ug/L	13	Standard
	Pb	206	346.7	4.9	**0.0167**	0.003	20.4	ug/L	264	Standard
	Pb	207	322.3	7.2	**0.0158**	0.005	30.9	ug/L	222	Standard
	Pb	208	1248.7	4.5	**0.0104**	0.003	28.9	ug/L	959	Standard
	U	238	111.7	26.1	**0.0134**	0.004	27.1	ug/L	9	Standard
>	**Bi**	209	560384.3	0.8				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:43:18
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	59.6	**0.0047**	0.039	831.6	mg/L	55	Standard
K	39	35.0	37.8	**0.0039**	0.051	1305.2	mg/L	28	Standard
Ca	43	11.7	24.7	**-1.3816**	0.279	20.2	mg/L	27	Standard
Fe	54	175.9	8.8	**0.0403**	0.012	30.1	mg/L	147	Standard
Fe	57	250.0	2.0	**-0.0293**	0.009	29.6	mg/L	268	Standard
> **Sc-1**	45	40828.3	2.4				mg/L	41174	Standard
Cl	35	77022.6	1.0				ug/L	69550	Standard
Kr	83	3.3	34.6				ug/L	1	Standard
Br	81	2493.5	3.8				ug/L	1950	Standard
P	31	23044.2	2.3				ug/L	21156	Standard
S	34	3880.5	1.7				ug/L	3419	Standard
Sr	88	65.0	33.5				ug/L	72	Standard
C	12	130.0	40.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	17	Standard
Dy	164	9.0	113.3				mg/L	16	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	16675.8	0.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.564	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:43:18
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.677
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.368
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:43:18
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141703
Sample Date/Time: Friday, July 01, 2016 11:44:14
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81889.0	0.6				ug/L	76456	Standard
	Be	9	25.0	91.7	**0.0010**	0.019	1981.7	ug/L	20	Standard
	Al	27	20848394.4	0.7	**113.6982**	1.012	0.9	ug/L	1307	Standard
	Sc	45	42434.3	1.1				ug/L	41174	Standard
	Ti	47	234.7	10.2	**0.6592**	0.078	11.8	ug/L	27	Standard
	V	51	28681.8	1.4	**3.4038**	0.038	1.1	ug/L	1434	Standard
	Cr	52	19756.9	2.1	**1.5522**	0.054	3.5	ug/L	7733	Standard
	Cr	53	14119.9	6.2	**14.0078**	0.905	6.5	ug/L	442	Standard
	Mn	55	3334.7	3.0	**0.3535**	0.012	3.4	ug/L	723	Standard
	Co	59	938.4	1.3	**0.0970**	0.001	0.7	ug/L	217	Standard
	Ni	60	2864.9	3.9	**1.2722**	0.046	3.6	ug/L	304	Standard
	Cu	65	1854.4	2.7	**0.8643**	0.032	3.7	ug/L	181	Standard
	Zn	66	2610.6	1.0	**2.0198**	0.039	1.9	ug/L	215	Standard
>	Ge	72	504450.0	0.8				ug/L	520809	Standard
	As	75	1324.6	1.2	**1.1530**	0.022	1.9	ug/L	-52	Standard
	Se	82	1104.4	0.5	**8.8990**	0.094	1.1	ug/L	17	Standard
	Se-1	77	1261.1	5.7	**14.5449**	0.840	5.8	ug/L	56	Standard
>	Ga	71	50.0	43.6				mg/L	25	Standard
	Rb	85	1121.7	4.1				ug/L	28	Standard
	Y	89	436048.7	1.9				ug/L	447395	Standard
>	Rh	103	121.7	29.7				ug/L	15	Standard
	Mo	98	645.7	3.5	**0.2020**	0.005	2.6	ug/L	113	Standard
	Ag	107	223.7	26.2	**0.0200**	0.008	40.7	ug/L	108	Standard
	Cd	111	51.2	16.5	**0.0212**	0.004	16.8	mg/L	3	Standard
	Cd	114	113.2	6.3	**0.0210**	0.002	7.4	ug/L	20	Standard
>	In	115	591186.7	1.3				ug/L	625728	Standard
	Sn	118	875.0	14.2	**0.0597**	0.021	34.7	ug/L	568	Standard
	Sb	123	602.8	25.4	**0.0895**	0.030	33.5	ug/L	612	Standard
	Ba	135	16459.3	1.1	**7.9899**	0.039	0.5	ug/L	21	Standard
	Ce	140	880.0	5.0				ug/L	245	Standard
>	Tb	159	920155.8	2.2				ug/L	950397	Standard
	Ho	165	50.0	34.6				ug/L	7	Standard
	Tl	203	157.7	7.1	**0.0182**	0.001	6.2	ug/L	15	Standard
	Tl	205	155.0	27.9	**0.0113**	0.006	51.8	ug/L	13	Standard
	Pb	206	453.0	2.5	**0.0428**	0.002	4.5	ug/L	264	Standard
	Pb	207	378.7	4.5	**0.0335**	0.003	9.5	ug/L	222	Standard
	Pb	208	1616.4	3.0	**0.0349**	0.002	5.2	ug/L	959	Standard
	U	238	24675.7	1.0	**3.3100**	0.026	0.8	ug/L	9	Standard
>	Bi	209	511192.5	1.2				ug/L	552821	Standard

Sample ID: L1606141703
Report Date/Time: Friday, July 01, 2016 11:46:31
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**14.4476**	14.513	100.4	mg/L	2	Standard
Mg	24	129302.7	0.5	**146.5117**	1.623	1.1	mg/L	55	Standard
K	39	120.0	31.5	**0.3147**	0.137	43.6	mg/L	28	Standard
Ca	43	443.3	15.8	**36.6451**	6.259	17.1	mg/L	27	Standard
Fe	54	170.0	14.6	**0.0304**	0.017	57.5	mg/L	147	Standard
Fe	57	581.7	5.3	**0.9302**	0.090	9.7	mg/L	268	Standard
> **Sc-1**	45	42434.3	1.1				mg/L	41174	Standard
Cl	35	97340.4	1.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	68893.1	4.4				ug/L	1950	Standard
P	31	25483.1	3.6				ug/L	21156	Standard
S	34	3482.1	6.0				ug/L	3419	Standard
Sr	88	398.3	9.6				ug/L	72	Standard
C	12	456.7	3.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	44.0	27.1				mg/L	16	Standard
Ho-1	165	50.0	34.6				mg/L	7	Standard
Er	166	56.7	53.9				mg/L	7	Standard
I	127	49472.4	4.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.106	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.859	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141703
Report Date/Time: Friday, July 01, 2016 11:46:31
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.480
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141703
Report Date/Time: Friday, July 01, 2016 11:46:31
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141704
Sample Date/Time: Friday, July 01, 2016 11:47:26
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84196.6	0.3				ug/L	76456	Standard
	Be	9	33.3	22.9	**0.0072**	0.006	86.7	ug/L	20	Standard
	Al	27	15514677.9	3.0	**82.2819**	2.194	2.7	ug/L	1307	Standard
	Sc	45	43039.4	2.0				ug/L	41174	Standard
	Ti	47	214.3	5.1	**0.5706**	0.026	4.6	ug/L	27	Standard
	V	51	104787.8	1.3	**12.4991**	0.095	0.8	ug/L	1434	Standard
	Cr	52	15259.3	0.7	**0.9095**	0.033	3.7	ug/L	7733	Standard
	Cr	53	5951.2	3.9	**5.4474**	0.187	3.4	ug/L	442	Standard
	Mn	55	4057.5	2.5	**0.4326**	0.014	3.2	ug/L	723	Standard
	Co	59	713.7	6.2	**0.0633**	0.005	7.8	ug/L	217	Standard
	Ni	60	1861.4	2.8	**0.7406**	0.029	3.9	ug/L	304	Standard
	Cu	65	1343.1	2.6	**0.5817**	0.025	4.2	ug/L	181	Standard
	Zn	66	2743.6	1.9	**2.0501**	0.019	0.9	ug/L	215	Standard
>	Ge	72	522881.1	1.2				ug/L	520809	Standard
	As	75	2151.6	2.6	**1.7810**	0.033	1.9	ug/L	-52	Standard
	Se	82	460.2	1.1	**3.5021**	0.008	0.2	ug/L	17	Standard
	Se-1	77	457.3	2.7	**4.6435**	0.083	1.8	ug/L	56	Standard
>	Ga	71	48.3	41.8				mg/L	25	Standard
	Rb	85	1016.7	4.8				ug/L	28	Standard
	Y	89	448180.4	0.4				ug/L	447395	Standard
>	Rh	103	61.7	28.5				ug/L	15	Standard
	Mo	98	2950.5	2.8	**0.9697**	0.025	2.6	ug/L	113	Standard
	Ag	107	125.3	5.6	**0.0049**	0.001	22.3	ug/L	108	Standard
	Cd	111	47.4	9.4	**0.0186**	0.002	10.0	mg/L	3	Standard
	Cd	114	120.7	5.3	**0.0216**	0.001	5.2	ug/L	20	Standard
>	In	115	614296.5	0.6				ug/L	625728	Standard
	Sn	118	906.7	10.1	**0.0592**	0.014	23.4	ug/L	568	Standard
	Sb	123	614.0	19.1	**0.0872**	0.022	25.7	ug/L	612	Standard
	Ba	135	28748.9	0.6	**13.4426**	0.042	0.3	ug/L	21	Standard
	Ce	140	528.3	5.7				ug/L	245	Standard
>	Tb	159	947954.0	1.2				ug/L	950397	Standard
	Ho	165	23.3	12.4				ug/L	7	Standard
	Tl	203	129.3	12.8	**0.0142**	0.002	13.1	ug/L	15	Standard
	Tl	205	116.7	9.9	**0.0055**	0.002	28.8	ug/L	13	Standard
	Pb	206	445.0	3.2	**0.0379**	0.002	6.0	ug/L	264	Standard
	Pb	207	341.0	4.4	**0.0228**	0.003	12.0	ug/L	222	Standard
	Pb	208	1493.7	0.5	**0.0256**	0.000	1.6	ug/L	959	Standard
	U	238	70565.6	0.2	**9.0963**	0.034	0.4	ug/L	9	Standard
>	Bi	209	531969.0	0.4				ug/L	552821	Standard

Sample ID: L1606141704
Report Date/Time: Friday, July 01, 2016 11:49:43
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	88574.8	1.4	**98.9343**	0.707	0.7	mg/L	55	Standard
K	39	85.0	11.8	**0.1808**	0.038	21.2	mg/L	28	Standard
Ca	43	236.7	3.2	**18.1358**	1.082	6.0	mg/L	27	Standard
Fe	54	139.8	11.5	**0.0060**	0.011	187.7	mg/L	147	Standard
Fe	57	440.0	15.9	**0.4880**	0.189	38.8	mg/L	268	Standard
> **Sc-1**	45	43039.4	2.0				mg/L	41174	Standard
Cl	35	92305.0	1.1				ug/L	69550	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	47838.7	1.5				ug/L	1950	Standard
P	31	25832.0	1.0				ug/L	21156	Standard
S	34	3398.7	3.3				ug/L	3419	Standard
Sr	88	276.7	16.4				ug/L	72	Standard
C	12	396.7	10.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	28.9	100.6				mg/L	16	Standard
Ho-1	165	23.3	12.4				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	7	Standard
I	127	50935.5	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.125	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.398	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141704
Report Date/Time: Friday, July 01, 2016 11:49:43
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.173
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.228
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141708
Sample Date/Time: Friday, July 01, 2016 11:50:37
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89411.4	1.5				ug/L	76456	Standard
	Be	9	40.0	65.0	**0.0106**	0.020	184.8	ug/L	20	Standard
	Al	27	22078727.0	1.3	**110.2973**	2.573	2.3	ug/L	1307	Standard
	Sc	45	45105.4	2.6				ug/L	41174	Standard
	Ti	47	320.0	7.2	**0.8822**	0.060	6.8	ug/L	27	Standard
	V	51	99984.6	2.1	**11.7774**	0.066	0.6	ug/L	1434	Standard
	Cr	52	21104.0	1.8	**1.5998**	0.060	3.7	ug/L	7733	Standard
	Cr	53	17553.5	0.8	**16.6868**	0.266	1.6	ug/L	442	Standard
	Mn	55	6430.0	0.9	**0.7351**	0.014	1.9	ug/L	723	Standard
	Co	59	852.7	2.7	**0.0802**	0.004	4.4	ug/L	217	Standard
	Ni	60	2949.0	1.3	**1.2465**	0.031	2.4	ug/L	304	Standard
	Cu	65	1272.1	1.7	**0.5397**	0.010	1.8	ug/L	181	Standard
	Zn	66	3425.7	3.7	**2.5723**	0.060	2.3	ug/L	215	Standard
>	Ge	72	528948.8	1.6				ug/L	520809	Standard
	As	75	3475.1	1.0	**2.8171**	0.043	1.5	ug/L	-52	Standard
	Se	82	859.6	2.0	**6.5725**	0.024	0.4	ug/L	17	Standard
	Se-1	77	1345.7	4.1	**14.8113**	0.393	2.7	ug/L	56	Standard
>	Ga	71	66.7	11.5				mg/L	25	Standard
	Rb	85	4762.4	2.0				ug/L	28	Standard
	Y	89	458548.0	1.5				ug/L	447395	Standard
>	Rh	103	130.0	17.6				ug/L	15	Standard
	Mo	98	5253.1	0.6	**1.7250**	0.023	1.4	ug/L	113	Standard
	Ag	107	143.3	4.2	**0.0072**	0.001	7.4	ug/L	108	Standard
	Cd	111	26.0	42.6	**0.0090**	0.005	53.4	mg/L	3	Standard
	Cd	114	74.8	31.1	**0.0133**	0.004	31.5	ug/L	20	Standard
>	In	115	621514.7	1.7				ug/L	625728	Standard
	Sn	118	2120.1	10.2	**0.2472**	0.030	12.0	ug/L	568	Standard
	Sb	123	722.8	13.7	**0.1069**	0.018	16.5	ug/L	612	Standard
	Ba	135	16530.7	1.8	**7.6319**	0.034	0.4	ug/L	21	Standard
	Ce	140	651.7	0.4				ug/L	245	Standard
>	Tb	159	970516.7	2.5				ug/L	950397	Standard
	Ho	165	30.0	28.9				ug/L	7	Standard
	Tl	203	115.3	7.9	**0.0125**	0.001	8.0	ug/L	15	Standard
	Tl	205	93.3	21.7	**0.0024**	0.003	115.8	ug/L	13	Standard
	Pb	206	443.0	3.9	**0.0372**	0.003	8.7	ug/L	264	Standard
	Pb	207	377.3	5.1	**0.0298**	0.003	10.5	ug/L	222	Standard
	Pb	208	1645.4	1.3	**0.0327**	0.002	5.5	ug/L	959	Standard
	U	238	38430.4	2.4	**4.9290**	0.066	1.3	ug/L	9	Standard
>	Bi	209	534585.3	1.1				ug/L	552821	Standard

Sample ID: L1606141708
Report Date/Time: Friday, July 01, 2016 11:52:54
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.3062**	16.110	173.1	mg/L	2	Standard
Mg	24	132828.1	1.2	**141.6540**	4.533	3.2	mg/L	55	Standard
K	39	191.7	1.5	**0.5400**	0.021	3.8	mg/L	28	Standard
Ca	43	260.0	27.1	**19.0243**	5.272	27.7	mg/L	27	Standard
Fe	54	173.3	10.7	**0.0254**	0.016	61.2	mg/L	147	Standard
Fe	57	418.3	15.9	**0.3725**	0.215	57.6	mg/L	268	Standard
> **Sc-1**	45	45105.4	2.6				mg/L	41174	Standard
Cl	35	100939.1	0.9				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	47925.8	4.8				ug/L	1950	Standard
P	31	29869.4	2.0				ug/L	21156	Standard
S	34	3397.0	1.1				ug/L	3419	Standard
Sr	88	423.3	25.1				ug/L	72	Standard
C	12	363.3	14.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	21.9	26.4				mg/L	16	Standard
Ho-1	165	30.0	28.9				mg/L	7	Standard
Er	166	30.0	0.0				mg/L	7	Standard
I	127	41419.9	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.945	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.563	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141708
Report Date/Time: Friday, July 01, 2016 11:52:54
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.327
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.701
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141708
Report Date/Time: Friday, July 01, 2016 11:52:54
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141709
Sample Date/Time: Friday, July 01, 2016 11:53:49
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89000.7	1.7				ug/L	76456	Standard
	Be	9	21.7	53.3	**-0.0032**	0.009	283.0	ug/L	20	Standard
	Al	27	81398.6	19.6	**0.3975**	0.073	18.3	ug/L	1307	Standard
	Sc	45	44555.4	0.6				ug/L	41174	Standard
	Ti	47	68.3	11.1	**0.1083**	0.021	19.5	ug/L	27	Standard
	V	51	3436.2	9.0	**0.1857**	0.034	18.2	ug/L	1434	Standard
	Cr	52	29812.6	1.5	**2.4193**	0.055	2.3	ug/L	7733	Standard
	Cr	53	3683.8	3.4	**2.9342**	0.118	4.0	ug/L	442	Standard
	Mn	55	6681.5	2.0	**0.7101**	0.015	2.0	ug/L	723	Standard
	Co	59	555.0	20.9	**0.0372**	0.014	37.4	ug/L	217	Standard
	Ni	60	3463.7	2.0	**1.3816**	0.031	2.2	ug/L	304	Standard
	Cu	65	1056.0	4.0	**0.4017**	0.019	4.6	ug/L	181	Standard
	Zn	66	4593.4	1.7	**3.2666**	0.053	1.6	ug/L	215	Standard
>	**Ge**	72	566488.4	0.2				ug/L	520809	Standard
	As	75	-5.4	928.8	**0.0411**	0.038	91.4	ug/L	-52	Standard
	Se	82	29.8	40.3	**0.0905**	0.087	96.5	ug/L	17	Standard
	Se-1	77	89.0	15.9	**0.2724**	0.151	55.6	ug/L	56	Standard
>	**Ga**	71	38.3	15.1				mg/L	25	Standard
	Rb	85	258.3	31.9				ug/L	28	Standard
	Y	89	491649.6	0.6				ug/L	447395	Standard
>	**Rh**	103	20.0	0.0				ug/L	15	Standard
	Mo	98	1080.6	3.0	**0.3054**	0.011	3.5	ug/L	113	Standard
	Ag	107	233.3	81.3	**0.0171**	0.024	142.6	ug/L	108	Standard
	Cd	111	62.5	42.8	**0.0227**	0.011	47.4	mg/L	3	Standard
	Cd	114	173.3	77.7	**0.0281**	0.022	77.8	ug/L	20	Standard
>	**In**	115	678768.0	0.3				ug/L	625728	Standard
	Sn	118	3542.1	5.1	**0.4232**	0.027	6.3	ug/L	568	Standard
	Sb	123	458.8	15.3	**0.0481**	0.013	26.4	ug/L	612	Standard
	Ba	135	1179.0	5.3	**0.4817**	0.027	5.6	ug/L	21	Standard
	Ce	140	250.0	8.7				ug/L	245	Standard
>	**Tb**	159	1017740.7	0.9				ug/L	950397	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	186.0	120.6	**0.0185**	0.023	124.9	ug/L	15	Standard
	Tl	205	108.3	94.3	**0.0029**	0.012	410.9	ug/L	13	Standard
	Pb	206	582.3	26.2	**0.0521**	0.024	46.8	ug/L	264	Standard
	Pb	207	512.3	24.2	**0.0467**	0.022	46.6	ug/L	222	Standard
	Pb	208	1988.1	15.4	**0.0399**	0.013	32.1	ug/L	959	Standard
	U	238	126.0	91.3	**0.0142**	0.013	92.3	ug/L	9	Standard
>	**Bi**	209	592807.4	1.2				ug/L	552821	Standard

Sample ID: L1606141709
Report Date/Time: Friday, July 01, 2016 11:56:06
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	260.0	26.4	**0.2207**	0.075	34.1	mg/L	55	Standard
K	39	20.0	25.0	**-0.0603**	0.018	29.6	mg/L	28	Standard
Ca	43	25.0	40.0	**-0.3533**	0.844	239.0	mg/L	27	Standard
Fe	54	209.5	1.2	**0.0530**	0.003	4.8	mg/L	147	Standard
Fe	57	231.7	15.2	**-0.1465**	0.097	65.9	mg/L	268	Standard
> **Sc-1**	45	44555.4	0.6				mg/L	41174	Standard
Cl	35	92666.6	2.2				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	3473.7	14.7				ug/L	1950	Standard
P	31	23892.2	1.7				ug/L	21156	Standard
S	34	3687.1	4.5				ug/L	3419	Standard
Sr	88	46.7	37.6				ug/L	72	Standard
C	12	203.3	12.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	32.1	49.0				mg/L	16	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	7	Standard
I	127	2500.2	19.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.408	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.771	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141709
Report Date/Time: Friday, July 01, 2016 11:56:06
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.477
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.233
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144101
Sample Date/Time: Friday, July 01, 2016 11:57:01
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90118.9	1.7				ug/L	76456	Standard
	Be	9	590.0	6.6	**0.4275**	0.033	7.7	ug/L	20	Standard
	Al	27	41637732.7	0.8	**206.3623**	2.003	1.0	ug/L	1307	Standard
	Sc	45	52748.3	1.3				ug/L	41174	Standard
	Ti	47	25849.4	0.9	**75.9425**	0.582	0.8	ug/L	27	Standard
	V	51	119191.4	0.7	**13.6962**	0.128	0.9	ug/L	1434	Standard
	Cr	52	206171.6	0.2	**23.4624**	0.147	0.6	ug/L	7733	Standard
	Cr	53	26030.7	3.1	**24.2644**	0.827	3.4	ug/L	442	Standard
	Mn	55	3362426.1	1.3	**425.5410**	6.574	1.5	ug/L	723	Standard
	Co	59	45394.2	0.9	**5.6490**	0.060	1.1	ug/L	217	Standard
	Ni	60	38170.7	0.8	**17.4748**	0.075	0.4	ug/L	304	Standard
	Cu	65	32375.9	0.9	**15.1289**	0.102	0.7	ug/L	181	Standard
	Zn	66	132720.1	0.4	**103.6234**	0.326	0.3	ug/L	215	Standard
>	Ge	72	543517.2	0.4				ug/L	520809	Standard
	As	75	40511.0	0.4	**31.4895**	0.240	0.8	ug/L	-52	Standard
	Se	82	271.3	7.7	**1.9305**	0.150	7.7	ug/L	17	Standard
	Se-1	77	159.7	0.7	**1.1051**	0.008	0.7	ug/L	56	Standard
>	Ga	71	10717.1	0.7				mg/L	25	Standard
	Rb	85	127736.4	2.6				ug/L	28	Standard
	Y	89	566400.0	1.2				ug/L	447395	Standard
>	Rh	103	230.0	10.0				ug/L	15	Standard
	Mo	98	19958.9	0.3	**6.3798**	0.036	0.6	ug/L	113	Standard
	Ag	107	307.3	4.7	**0.0287**	0.002	7.3	ug/L	108	Standard
	Cd	111	352.1	11.3	**0.1461**	0.017	11.5	mg/L	3	Standard
	Cd	114	941.3	14.8	**0.1602**	0.023	14.2	ug/L	20	Standard
>	In	115	644859.8	0.7				ug/L	625728	Standard
	Sn	118	2065.1	2.2	**0.2271**	0.006	2.7	ug/L	568	Standard
	Sb	123	1536.5	9.5	**0.2547**	0.026	10.2	ug/L	612	Standard
	Ba	135	755795.9	0.3	**337.0929**	2.903	0.9	ug/L	21	Standard
	Ce	140	578983.3	0.3				ug/L	245	Standard
>	Tb	159	997623.6	0.4				ug/L	950397	Standard
	Ho	165	8542.4	1.8				ug/L	7	Standard
	Tl	203	679.7	2.4	**0.0742**	0.002	2.6	ug/L	15	Standard
	Tl	205	551.7	3.8	**0.0587**	0.002	3.1	ug/L	13	Standard
	Pb	206	82465.5	0.5	**14.3726**	0.198	1.4	ug/L	264	Standard
	Pb	207	67377.8	0.6	**12.9242**	0.183	1.4	ug/L	222	Standard
	Pb	208	291536.5	0.2	**13.6926**	0.174	1.3	ug/L	959	Standard
	U	238	4078.5	1.0	**0.5004**	0.006	1.2	ug/L	9	Standard
>	Bi	209	558632.4	1.1				ug/L	552821	Standard

Sample ID: L1606144101
Report Date/Time: Friday, July 01, 2016 11:59:18
Page 1

Approved: July 02, 2016

Na	23	6.7	43.3	**15.4842**	6.494	41.9	mg/L	2	Standard
Mg	24	15246.0	1.4	**13.8434**	0.267	1.9	mg/L	55	Standard
K	39	708.3	3.5	**1.9891**	0.079	4.0	mg/L	28	Standard
Ca	43	650.0	13.5	**43.6069**	5.619	12.9	mg/L	27	Standard
Fe	54	24640.5	1.6	**14.9863**	0.360	2.4	mg/L	147	Standard
Fe	57	6984.9	0.7	**15.9501**	0.213	1.3	mg/L	268	Standard
Sc-1	45	52748.3	1.3				mg/L	41174	Standard
Cl	35	77949.4	2.2				ug/L	69550	Standard
Kr	83	4.0	50.0				ug/L	1	Standard
Br	81	47491.0	0.5				ug/L	1950	Standard
P	31	44155.9	1.6				ug/L	21156	Standard
S	34	4003.9	3.1				ug/L	3419	Standard
Sr	88	953.4	8.4				ug/L	72	Standard
C	12	680.0	10.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	17	Standard
Dy	164	14685.5	3.1				mg/L	16	Standard
Ho-1	165	8542.4	1.8				mg/L	7	Standard
Er	166	7695.3	3.1				mg/L	7	Standard
I	127	857640.2	8.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		117.871	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.360	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606144101
Report Date/Time: Friday, July 01, 2016 11:59:18
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.058
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.051
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606144101
Report Date/Time: Friday, July 01, 2016 11:59:18
Page 3

Approved: July 02, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144102
Sample Date/Time: Friday, July 01, 2016 12:00:12
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98658.5	1.5				ug/L	76456	Standard
	Be	9	2670.2	2.5	**1.8290**	0.053	2.9	ug/L	20	Standard
	Al	27	100018655.9	1.5	**452.7643**	1.271	0.3	ug/L	1307	Standard
	Sc	45	67269.1	3.4				ug/L	41174	Standard
	Ti	47	65558.9	1.5	**191.1007**	3.376	1.8	ug/L	27	Standard
	V	51	394103.6	0.8	**45.3542**	0.603	1.3	ug/L	1434	Standard
	Cr	52	244910.5	0.4	**27.8063**	0.223	0.8	ug/L	7733	Standard
	Cr	53	30011.4	1.8	**27.7958**	0.566	2.0	ug/L	442	Standard
	Mn	55	9446087.0	0.8	**1185.4895**	15.339	1.3	ug/L	723	Standard
	Co	59	127992.0	0.5	**15.8451**	0.159	1.0	ug/L	217	Standard
	Ni	60	80262.0	0.9	**36.5997**	0.485	1.3	ug/L	304	Standard
	Cu	65	41760.1	1.2	**19.3697**	0.328	1.7	ug/L	181	Standard
	Zn	66	117095.1	0.6	**90.6239**	0.738	0.8	ug/L	215	Standard
>	**Ge**	72	548186.8	0.5				ug/L	520809	Standard
	As	75	12213.4	1.0	**9.4446**	0.140	1.5	ug/L	-52	Standard
	Se	82	168.5	1.4	**1.1404**	0.019	1.7	ug/L	17	Standard
	Se-1	77	183.7	6.1	**1.3567**	0.128	9.4	ug/L	56	Standard
>	**Ga**	71	38156.3	0.9				mg/L	25	Standard
	Rb	85	401776.2	1.3				ug/L	28	Standard
	Y	89	977933.0	0.9				ug/L	447395	Standard
>	**Rh**	103	285.0	6.1				ug/L	15	Standard
	Mo	98	2398.4	0.8	**0.7441**	0.003	0.4	ug/L	113	Standard
	Ag	107	404.7	5.9	**0.0417**	0.003	8.1	ug/L	108	Standard
	Cd	111	528.3	1.5	**0.2199**	0.003	1.2	mg/L	3	Standard
	Cd	114	1302.9	4.8	**0.2213**	0.008	3.8	ug/L	20	Standard
>	**In**	115	646109.7	1.1				ug/L	625728	Standard
	Sn	118	1073.4	7.7	**0.0773**	0.012	15.1	ug/L	568	Standard
	Sb	123	1069.4	22.8	**0.1664**	0.044	26.2	ug/L	612	Standard
	Ba	135	1753079.8	0.5	**780.4145**	5.897	0.8	ug/L	21	Standard
	Ce	140	2444826.3	0.9				ug/L	245	Standard
>	**Tb**	159	1048030.7	0.8				ug/L	950397	Standard
	Ho	165	43214.9	0.3				ug/L	7	Standard
	Tl	203	1815.1	1.2	**0.2022**	0.002	1.2	ug/L	15	Standard
	Tl	205	1641.8	6.8	**0.1969**	0.014	6.9	ug/L	13	Standard
	Pb	206	125036.8	0.6	**22.1250**	0.076	0.3	ug/L	264	Standard
	Pb	207	102892.9	0.5	**20.0422**	0.120	0.6	ug/L	222	Standard
	Pb	208	445404.9	0.2	**21.2431**	0.093	0.4	ug/L	959	Standard
	U	238	8589.4	1.3	**1.0692**	0.015	1.4	ug/L	9	Standard
>	**Bi**	209	550757.7	0.3				ug/L	552821	Standard

Sample ID: L1606144102
Report Date/Time: Friday, July 01, 2016 12:02:29
Page 1

Approved: July 02, 2016

Na	23	15.0	33.3	**27.3614**	8.722	31.9	mg/L	2	Standard
Mg	24	11512.7	3.2	**8.1734**	0.184	2.3	mg/L	55	Standard
K	39	1368.4	5.6	**3.0793**	0.098	3.2	mg/L	28	Standard
Ca	43	1295.1	4.3	**69.6682**	4.720	6.8	mg/L	27	Standard
Fe	54	38707.5	2.1	**18.4898**	0.545	2.9	mg/L	147	Standard
Fe	57	11109.1	1.4	**20.0998**	0.536	2.7	mg/L	268	Standard
> **Sc-1**	45	67269.1	3.4				mg/L	41174	Standard
Cl	35	76892.0	1.5				ug/L	69550	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	13365.9	1.5				ug/L	1950	Standard
P	31	63609.9	1.5				ug/L	21156	Standard
S	34	3752.1	6.7				ug/L	3419	Standard
Sr	88	1298.4	6.6				ug/L	72	Standard
C	12	780.0	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	20.4				mg/L	17	Standard
Dy	164	72319.7	1.0				mg/L	16	Standard
Ho-1	165	43214.9	0.3				mg/L	7	Standard
Er	166	38789.6	1.4				mg/L	7	Standard
I	127	200464.2	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.040	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144102
Report Date/Time: Friday, July 01, 2016 12:02:29
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.257	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.627	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	

Sample ID: L1606144102
Report Date/Time: Friday, July 01, 2016 12:02:29
Page 3

Approved: July 02, 2016

Mn 55 Upper, S, EEE	Mn	55
Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144201 WG574416-02
Sample Date/Time: Friday, July 01, 2016 12:03:24
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	91136.7	2.7				ug/L	76456	Standard
	Be	9	201.7	10.3	**0.1314**	0.018	13.5	ug/L	20	Standard
	Al	27	21905405.8	1.2	**107.3706**	1.869	1.7	ug/L	1307	Standard
	Sc	45	50086.0	0.8				ug/L	41174	Standard
	Ti	47	9316.5	1.4	**26.0675**	0.608	2.3	ug/L	27	Standard
	V	51	52523.0	0.3	**5.6447**	0.076	1.3	ug/L	1434	Standard
	Cr	52	28573.6	1.1	**2.2609**	0.041	1.8	ug/L	7733	Standard
	Cr	53	3023.6	5.3	**2.3192**	0.157	6.8	ug/L	442	Standard
	Mn	55	526886.3	1.1	**63.5454**	0.695	1.1	ug/L	723	Standard
	Co	59	12298.0	1.4	**1.4386**	0.020	1.4	ug/L	217	Standard
	Ni	60	9400.9	1.0	**3.9901**	0.052	1.3	ug/L	304	Standard
	Cu	65	4207.6	2.8	**1.8116**	0.065	3.6	ug/L	181	Standard
	Zn	66	23172.4	0.3	**17.1155**	0.171	1.0	ug/L	215	Standard
>	Ge	72	569574.4	1.1				ug/L	520809	Standard
	As	75	2039.6	1.1	**1.5560**	0.025	1.6	ug/L	-52	Standard
	Se	82	85.8	3.3	**0.4942**	0.015	3.0	ug/L	17	Standard
	Se-1	77	88.7	8.5	**0.2643**	0.088	33.1	ug/L	56	Standard
>	Ga	71	3267.0	3.2				mg/L	25	Standard
	Rb	85	51683.0	1.3				ug/L	28	Standard
	Y	89	529527.6	0.3				ug/L	447395	Standard
>	Rh	103	150.0	5.8				ug/L	15	Standard
	Mo	98	1541.7	1.1	**0.4475**	0.001	0.3	ug/L	113	Standard
	Ag	107	153.0	7.4	**0.0069**	0.002	23.0	ug/L	108	Standard
	Cd	111	40.7	6.3	**0.0140**	0.001	8.1	mg/L	3	Standard
	Cd	114	102.3	14.8	**0.0166**	0.003	15.4	ug/L	20	Standard
>	In	115	676532.0	0.8				ug/L	625728	Standard
	Sn	118	971.7	4.9	**0.0555**	0.008	14.3	ug/L	568	Standard
	Sb	123	639.0	14.8	**0.0807**	0.018	21.8	ug/L	612	Standard
	Ba	135	197467.2	0.8	**83.9345**	0.680	0.8	ug/L	21	Standard
	Ce	140	158462.8	1.7				ug/L	245	Standard
>	Tb	159	1025960.2	1.0				ug/L	950397	Standard
	Ho	165	2715.2	3.4				ug/L	7	Standard
	Tl	203	280.3	9.2	**0.0292**	0.003	9.9	ug/L	15	Standard
	Tl	205	271.7	10.1	**0.0229**	0.003	13.4	ug/L	13	Standard
	Pb	206	9533.7	0.7	**1.5691**	0.011	0.7	ug/L	264	Standard
	Pb	207	7883.1	1.1	**1.4223**	0.009	0.6	ug/L	222	Standard
	Pb	208	34084.4	0.9	**1.5063**	0.007	0.5	ug/L	959	Standard
	U	238	20271.2	0.7	**2.4081**	0.030	1.3	ug/L	9	Standard
>	Bi	209	577230.0	0.8				ug/L	552821	Standard

Sample ID: L1606144201 WG574416-02
Report Date/Time: Friday, July 01, 2016 12:05:41
Page 1

Approved: July 02, 2016

Na	23	10.0	86.6	**24.6403**	21.507	87.3	mg/L	2	Standard
Mg	24	4422.3	4.5	**4.1870**	0.202	4.8	mg/L	55	Standard
K	39	186.7	8.6	**0.4573**	0.052	11.3	mg/L	28	Standard
Ca	43	566.7	10.9	**39.8634**	4.346	10.9	mg/L	27	Standard
Fe	54	2666.0	2.2	**1.6199**	0.041	2.5	mg/L	147	Standard
Fe	57	1331.7	5.5	**2.5595**	0.178	6.9	mg/L	268	Standard
> **Sc-1**	45	50086.0	0.8				mg/L	41174	Standard
Cl	35	83929.2	1.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	13155.7	1.8				ug/L	1950	Standard
P	31	31337.4	1.4				ug/L	21156	Standard
S	34	3528.7	1.1				ug/L	3419	Standard
Sr	88	476.7	5.8				ug/L	72	Standard
C	12	400.0	7.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	4673.5	1.6				mg/L	16	Standard
Ho-1	165	2715.2	3.4				mg/L	7	Standard
Er	166	2656.9	8.5				mg/L	7	Standard
I	127	16687.6	14.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.202	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.363	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144201 WG574416-02
Report Date/Time: Friday, July 01, 2016 12:05:41
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.119
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.415
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606144201 WG574416-02
Report Date/Time: Friday, July 01, 2016 12:05:41
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144202
Sample Date/Time: Friday, July 01, 2016 12:06:35
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90507.9	1.9				ug/L	76456	Standard
	Be	9	248.3	5.8	**0.1675**	0.008	4.9	ug/L	20	Standard
	Al	27	22277088.2	0.8	**109.9375**	1.745	1.6	ug/L	1307	Standard
	Sc	45	50101.1	3.7				ug/L	41174	Standard
	Ti	47	12264.6	1.2	**34.7196**	0.584	1.7	ug/L	27	Standard
	V	51	62744.3	1.8	**6.8585**	0.146	2.1	ug/L	1434	Standard
	Cr	52	32463.4	1.9	**2.7415**	0.091	3.3	ug/L	7733	Standard
	Cr	53	3775.5	3.5	**3.0371**	0.138	4.6	ug/L	442	Standard
	Mn	55	731304.2	2.1	**89.2163**	2.199	2.5	ug/L	723	Standard
	Co	59	14984.4	2.2	**1.7791**	0.048	2.7	ug/L	217	Standard
	Ni	60	11028.3	1.8	**4.7605**	0.068	1.4	ug/L	304	Standard
	Cu	65	5131.2	1.5	**2.2507**	0.042	1.9	ug/L	181	Standard
	Zn	66	19672.8	1.3	**14.6652**	0.250	1.7	ug/L	215	Standard
>	Ge	72	563354.5	0.6				ug/L	520809	Standard
	As	75	2285.7	4.9	**1.7571**	0.090	5.1	ug/L	-52	Standard
	Se	82	78.7	24.0	**0.4498**	0.141	31.2	ug/L	17	Standard
	Se-1	77	96.3	4.2	**0.3571**	0.042	11.8	ug/L	56	Standard
>	Ga	71	4088.9	0.8				mg/L	25	Standard
	Rb	85	66167.5	0.6				ug/L	28	Standard
	Y	89	527047.3	1.0				ug/L	447395	Standard
>	Rh	103	133.3	20.7				ug/L	15	Standard
	Mo	98	1560.3	2.2	**0.4569**	0.008	1.8	ug/L	113	Standard
	Ag	107	236.0	37.0	**0.0178**	0.011	63.3	ug/L	108	Standard
	Cd	111	70.9	65.6	**0.0263**	0.019	71.1	mg/L	3	Standard
	Cd	114	182.9	70.7	**0.0299**	0.021	70.2	ug/L	20	Standard
>	In	115	671365.1	1.0				ug/L	625728	Standard
	Sn	118	1011.7	2.2	**0.0623**	0.004	5.8	ug/L	568	Standard
	Sb	123	671.0	17.2	**0.0874**	0.022	24.8	ug/L	612	Standard
	Ba	135	208248.7	0.6	**89.2003**	0.372	0.4	ug/L	21	Standard
	Ce	140	195369.9	1.1				ug/L	245	Standard
>	Tb	159	1017569.8	0.3				ug/L	950397	Standard
	Ho	165	3448.7	3.2				ug/L	7	Standard
	Tl	203	464.3	26.6	**0.0488**	0.013	26.2	ug/L	15	Standard
	Tl	205	373.3	2.0	**0.0351**	0.001	2.1	ug/L	13	Standard
	Pb	206	11404.0	0.3	**1.8871**	0.014	0.7	ug/L	264	Standard
	Pb	207	9244.8	0.8	**1.6776**	0.026	1.6	ug/L	222	Standard
	Pb	208	39660.1	0.9	**1.7621**	0.018	1.0	ug/L	959	Standard
	U	238	20504.2	1.2	**2.4376**	0.012	0.5	ug/L	9	Standard
>	Bi	209	576748.8	0.8				ug/L	552821	Standard

Sample ID: L1606144202
Report Date/Time: Friday, July 01, 2016 12:08:52
Page 1

Approved: July 02, 2016

Na	23	8.3	34.6	**20.5955**	7.569	36.8	mg/L	2	Standard
Mg	24	4662.4	4.9	**4.4148**	0.085	1.9	mg/L	55	Standard
K	39	218.3	22.9	**0.5540**	0.135	24.3	mg/L	28	Standard
Ca	43	601.7	7.9	**42.4925**	3.322	7.8	mg/L	27	Standard
Fe	54	3310.4	1.9	**2.0364**	0.082	4.1	mg/L	147	Standard
Fe	57	1525.1	5.8	**3.0549**	0.352	11.5	mg/L	268	Standard
> **Sc-1**	45	50101.1	3.7				mg/L	41174	Standard
Cl	35	83923.1	0.7				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	11030.7	1.9				ug/L	1950	Standard
P	31	32000.4	1.7				ug/L	21156	Standard
S	34	3522.1	3.8				ug/L	3419	Standard
Sr	88	531.7	5.7				ug/L	72	Standard
C	12	333.3	12.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	5934.4	7.8				mg/L	16	Standard
Ho-1	165	3448.7	3.2				mg/L	7	Standard
Er	166	3343.7	6.8				mg/L	7	Standard
I	127	14929.0	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.379	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.169	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144202
Report Date/Time: Friday, July 01, 2016 12:08:52
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.293
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.328
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144203S WG574416-08
Sample Date/Time: Friday, July 01, 2016 12:09:47
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90030.2	2.8				ug/L	76456	Standard
	Be	9	67451.5	0.8	**51.1736**	1.267	2.5	ug/L	20	Standard
	Al	27	22083553.0	1.2	**109.5762**	1.952	1.8	ug/L	1307	Standard
	Sc	45	48706.5	1.6				ug/L	41174	Standard
	Ti	47	11744.6	3.0	**33.6397**	0.840	2.5	ug/L	27	Standard
	V	51	504596.4	0.3	**57.2364**	0.479	0.8	ug/L	1434	Standard
	Cr	52	455560.7	0.5	**51.7411**	0.108	0.2	ug/L	7733	Standard
	Cr	53	56769.5	0.3	**52.1372**	0.385	0.7	ug/L	442	Standard
	Mn	55	1036346.8	0.7	**127.9850**	0.471	0.4	ug/L	723	Standard
	Co	59	423691.1	0.7	**51.7179**	0.252	0.5	ug/L	217	Standard
	Ni	60	117301.3	0.2	**52.7412**	0.343	0.7	ug/L	304	Standard
	Cu	65	109232.0	1.3	**50.0075**	0.589	1.2	ug/L	181	Standard
	Zn	66	89717.5	1.0	**68.3316**	0.407	0.6	ug/L	215	Standard
>	**Ge**	72	556663.9	0.5				ug/L	520809	Standard
	As	75	68119.8	0.9	**51.6696**	0.438	0.8	ug/L	-52	Standard
	Se	82	6698.0	0.6	**49.4767**	0.038	0.1	ug/L	17	Standard
	Se-1	77	4484.0	0.7	**48.3919**	0.526	1.1	ug/L	56	Standard
>	**Ga**	71	4812.4	3.6				mg/L	25	Standard
	Rb	85	61444.3	0.8				ug/L	28	Standard
	Y	89	517239.3	0.8				ug/L	447395	Standard
>	**Rh**	103	106.7	32.9				ug/L	15	Standard
	Mo	98	1731.4	0.3	**0.5186**	0.008	1.5	ug/L	113	Standard
	Ag	107	354175.3	0.9	**46.7205**	0.584	1.2	ug/L	108	Standard
	Cd	111	119010.3	1.4	**48.9848**	0.748	1.5	mg/L	3	Standard
	Cd	114	293416.8	0.7	**48.7814**	0.554	1.1	ug/L	20	Standard
>	**In**	115	660339.6	1.1				ug/L	625728	Standard
	Sn	118	1475.1	6.5	**0.1329**	0.012	9.2	ug/L	568	Standard
	Sb	123	188284.4	1.5	**34.4893**	0.374	1.1	ug/L	612	Standard
	Ba	135	310505.8	0.4	**135.2331**	0.887	0.7	ug/L	21	Standard
	Ce	140	169550.1	0.7				ug/L	245	Standard
>	**Tb**	159	1009819.6	1.8				ug/L	950397	Standard
	Ho	165	3057.0	3.5				ug/L	7	Standard
	Tl	203	459336.1	0.3	**49.1469**	0.484	1.0	ug/L	15	Standard
	Tl	205	419582.5	1.2	**50.5538**	1.161	2.3	ug/L	13	Standard
	Pb	206	306250.8	0.1	**51.9221**	0.623	1.2	ug/L	264	Standard
	Pb	207	267507.5	0.3	**49.9387**	0.751	1.5	ug/L	222	Standard
	Pb	208	1116297.0	0.4	**51.0219**	0.722	1.4	ug/L	959	Standard
	U	238	433722.1	0.8	**51.6863**	1.022	2.0	ug/L	9	Standard
>	**Bi**	209	575528.3	1.2				ug/L	552821	Standard

Sample ID: L1606144203S WG574416-08
Report Date/Time: Friday, July 01, 2016 12:12:04
Page 1

Approved: July 02, 2016

Na	23	16.7	75.5	**41.7692**	31.215	74.7	mg/L	2	Standard
Mg	24	4830.8	1.7	**4.7112**	0.123	2.6	mg/L	55	Standard
K	39	223.3	5.2	**0.5924**	0.027	4.5	mg/L	28	Standard
Ca	43	666.7	3.0	**48.7692**	1.740	3.6	mg/L	27	Standard
Fe	54	3420.8	4.4	**2.1691**	0.101	4.6	mg/L	147	Standard
Fe	57	1528.4	2.8	**3.1654**	0.056	1.8	mg/L	268	Standard
Sc-1	45	48706.5	1.6				mg/L	41174	Standard
Cl	35	82992.7	2.0				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	7521.9	4.9				ug/L	1950	Standard
P	31	32994.2	3.4				ug/L	21156	Standard
S	34	3745.5	4.1				ug/L	3419	Standard
Sr	88	541.7	13.3				ug/L	72	Standard
C	12	350.0	24.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	17	Standard
Dy	164	4986.9	2.7				mg/L	16	Standard
Ho-1	165	3057.0	3.5				mg/L	7	Standard
Er	166	2656.9	3.8				mg/L	7	Standard
I	127	14203.3	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.755	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.884	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144203S WG574416-08
Report Date/Time: Friday, July 01, 2016 12:12:04
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.531	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	104.108	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144204SD WG574416-09
Sample Date/Time: Friday, July 01, 2016 12:12:58
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90070.3	0.3				ug/L	76456	Standard
	Be	9	67068.2	2.3	**50.8355**	1.023	2.0	ug/L	20	Standard
	Al	27	22820326.8	1.6	**113.1467**	1.840	1.6	ug/L	1307	Standard
	Sc	45	48614.5	1.1				ug/L	41174	Standard
	Ti	47	12429.8	0.9	**35.6977**	0.390	1.1	ug/L	27	Standard
	V	51	500213.8	0.9	**56.8738**	0.256	0.4	ug/L	1434	Standard
	Cr	52	457920.4	0.8	**52.1452**	0.679	1.3	ug/L	7733	Standard
	Cr	53	55433.0	3.5	**51.0119**	1.142	2.2	ug/L	442	Standard
	Mn	55	1032001.7	0.7	**127.7596**	0.851	0.7	ug/L	723	Standard
	Co	59	426181.5	0.6	**52.1492**	0.363	0.7	ug/L	217	Standard
	Ni	60	115745.8	0.4	**52.1679**	0.569	1.1	ug/L	304	Standard
	Cu	65	108435.6	0.5	**49.7650**	0.481	1.0	ug/L	181	Standard
	Zn	66	83122.4	0.9	**63.4509**	0.540	0.9	ug/L	215	Standard
>	Ge	72	555340.6	1.3				ug/L	520809	Standard
	As	75	68386.4	1.0	**51.9966**	0.210	0.4	ug/L	-52	Standard
	Se	82	6617.0	1.4	**48.9951**	0.511	1.0	ug/L	17	Standard
	Se-1	77	4553.0	1.4	**49.2655**	0.470	1.0	ug/L	56	Standard
>	Ga	71	4989.2	4.2				mg/L	25	Standard
	Rb	85	63782.3	0.6				ug/L	28	Standard
	Y	89	508585.3	3.2				ug/L	447395	Standard
>	Rh	103	155.0	16.8				ug/L	15	Standard
	Mo	98	1690.9	2.2	**0.5065**	0.021	4.1	ug/L	113	Standard
	Ag	107	359804.6	1.4	**47.4968**	0.270	0.6	ug/L	108	Standard
	Cd	111	119520.8	0.7	**49.2344**	0.563	1.1	mg/L	3	Standard
	Cd	114	293080.3	1.6	**48.7653**	1.035	2.1	ug/L	20	Standard
>	In	115	659870.1	1.8				ug/L	625728	Standard
	Sn	118	1175.0	5.3	**0.0889**	0.010	10.9	ug/L	568	Standard
	Sb	123	180927.8	2.0	**33.1631**	0.062	0.2	ug/L	612	Standard
	Ba	135	313663.8	0.6	**136.7260**	2.307	1.7	ug/L	21	Standard
	Ce	140	181386.0	0.5				ug/L	245	Standard
>	Tb	159	1008393.6	0.8				ug/L	950397	Standard
	Ho	165	2945.3	1.9				ug/L	7	Standard
	Tl	203	461671.8	0.2	**49.9891**	0.298	0.6	ug/L	15	Standard
	Tl	205	421242.1	0.2	**51.3576**	0.369	0.7	ug/L	13	Standard
	Pb	206	307820.1	0.5	**52.8142**	0.466	0.9	ug/L	264	Standard
	Pb	207	267725.9	1.2	**50.5746**	0.254	0.5	ug/L	222	Standard
	Pb	208	1118569.9	0.5	**51.7383**	0.472	0.9	ug/L	959	Standard
	U	238	435363.6	0.2	**52.5003**	0.385	0.7	ug/L	9	Standard
>	Bi	209	568683.1	0.8				ug/L	552821	Standard

Sample ID: L1606144204SD WG574416-09
Report Date/Time: Friday, July 01, 2016 12:15:15
Page 1

Approved: July 02, 2016

Na	23	10.0	50.0	**25.2590**	12.492	49.5	mg/L	2	Standard
Mg	24	4682.4	0.4	**4.5730**	0.070	1.5	mg/L	55	Standard
K	39	196.7	12.8	**0.5079**	0.086	17.0	mg/L	28	Standard
Ca	43	620.0	2.8	**45.2717**	1.537	3.4	mg/L	27	Standard
Fe	54	3578.4	8.9	**2.2770**	0.195	8.6	mg/L	147	Standard
Fe	57	1561.7	1.9	**3.2607**	0.102	3.1	mg/L	268	Standard
Sc-1	45	48614.5	1.1				mg/L	41174	Standard
Cl	35	83140.8	0.7				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	7508.5	3.6				ug/L	1950	Standard
P	31	33216.4	1.3				ug/L	21156	Standard
S	34	3633.8	2.2				ug/L	3419	Standard
Sr	88	566.7	11.0				ug/L	72	Standard
C	12	476.7	6.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	17	Standard
Dy	164	4984.3	2.5				mg/L	16	Standard
Ho-1	165	2945.3	1.9				mg/L	7	Standard
Er	166	2850.3	2.1				mg/L	7	Standard
I	127	15054.2	4.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.807	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.630	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144204SD WG574416-09
Report Date/Time: Friday, July 01, 2016 12:15:15
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.456
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.869
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144204SD WG574416-09
Report Date/Time: Friday, July 01, 2016 12:15:15
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 12:16:11
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87445.1	3.4				ug/L	76456	Standard
	Be	9	64070.2	0.9	**50.0545**	1.445	2.9	ug/L	20	Standard
	Al	27	9240352.4	0.8	**47.2275**	1.909	4.0	ug/L	1307	Standard
	Sc	45	44832.9	2.4				ug/L	41174	Standard
	Ti	47	34259.7	1.0	**97.1606**	1.714	1.8	ug/L	27	Standard
	V	51	451230.5	0.6	**50.5628**	0.294	0.6	ug/L	1434	Standard
	Cr	52	441549.7	0.7	**49.5261**	0.488	1.0	ug/L	7733	Standard
	Cr	53	54047.9	0.8	**49.0333**	0.166	0.3	ug/L	442	Standard
	Mn	55	409600.5	0.8	**49.9366**	0.757	1.5	ug/L	723	Standard
	Co	59	429332.5	1.0	**51.7968**	0.540	1.0	ug/L	217	Standard
	Ni	60	111250.6	0.3	**49.4298**	0.556	1.1	ug/L	304	Standard
	Cu	65	109537.2	0.3	**49.5637**	0.351	0.7	ug/L	181	Standard
	Zn	66	65566.2	0.7	**49.3061**	0.180	0.4	ug/L	215	Standard
>	**Ge**	72	563235.2	0.9				ug/L	520809	Standard
	As	75	66627.6	0.4	**49.9511**	0.273	0.5	ug/L	-52	Standard
	Se	82	6922.5	0.6	**50.5422**	0.157	0.3	ug/L	17	Standard
	Se-1	77	4596.0	1.5	**49.0283**	0.390	0.8	ug/L	56	Standard
>	**Ga**	71	40.0	21.7				mg/L	25	Standard
	Rb	85	993.4	8.3				ug/L	28	Standard
	Y	89	482225.9	1.1				ug/L	447395	Standard
>	**Rh**	103	20.0	66.1				ug/L	15	Standard
	Mo	98	318941.8	1.3	**98.3261**	1.568	1.6	ug/L	113	Standard
	Ag	107	382282.6	0.5	**49.6279**	0.362	0.7	ug/L	108	Standard
	Cd	111	122482.8	0.3	**49.6133**	0.042	0.1	mg/L	3	Standard
	Cd	114	296548.6	0.8	**48.5180**	0.351	0.7	ug/L	20	Standard
>	**In**	115	670966.5	0.3				ug/L	625728	Standard
	Sn	118	338852.8	1.5	**49.0149**	0.673	1.4	ug/L	568	Standard
	Sb	123	274306.5	0.2	**49.4654**	0.232	0.5	ug/L	612	Standard
	Ba	135	113482.1	0.5	**48.6277**	0.189	0.4	ug/L	21	Standard
	Ce	140	308.3	9.8				ug/L	245	Standard
>	**Tb**	159	1016008.3	2.4				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	473547.1	1.1	**49.9959**	0.041	0.1	ug/L	15	Standard
	Tl	205	428096.0	1.4	**50.8923**	0.684	1.3	ug/L	13	Standard
	Pb	206	298789.4	0.8	**49.9841**	0.126	0.3	ug/L	264	Standard
	Pb	207	271570.2	0.6	**50.0267**	0.582	1.2	ug/L	222	Standard
	Pb	208	1117926.1	0.2	**50.4203**	0.478	0.9	ug/L	959	Standard
	U	238	428309.5	0.4	**50.3630**	0.285	0.6	ug/L	9	Standard
>	**Bi**	209	583209.8	1.0				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:18:28
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4910.8	1.7	**5.2115**	0.207	4.0	mg/L	55	Standard
K	39	1366.7	7.2	**4.6780**	0.226	4.8	mg/L	28	Standard
Ca	43	96.7	13.0	**5.6017**	0.863	15.4	mg/L	27	Standard
Fe	54	7079.3	0.6	**5.0021**	0.155	3.1	mg/L	147	Standard
Fe	57	2068.5	8.1	**5.0303**	0.399	7.9	mg/L	268	Standard
> **Sc-1**	45	44832.9	2.4				mg/L	41174	Standard
Cl	35	82615.3	1.2				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2370.2	6.2				ug/L	1950	Standard
P	31	24917.1	2.0				ug/L	21156	Standard
S	34	4207.3	4.1				ug/L	3419	Standard
Sr	88	65.0	33.5				ug/L	72	Standard
C	12	150.0	30.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	25.7	41.7				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	20977.9	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.109		
Al	27	94.455		
Sc	45			
Ti	47	97.161		
V	51	101.126		
Cr	52	99.052		
Cr	53			
Mn	55	99.873		
Co	59	103.594		
Ni	60	98.860		
Cu	65	99.127		
Zn	66	98.612		
> Ge	72		108.146	
As	75	99.902		
Se	82	101.084		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:18:28
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.326		
Ag	107	99.256		
Cd	111	99.227		
Cd	114			
In	115			107.230
Sn	118	98.030		
Sb	123	98.931		
Ba	135	97.255		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.992		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.841		
U	238	100.726		
Bi	209			105.497
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:18:28
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 12:19:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86888.4	1.2				ug/L	76456	Standard
	Be	9	43.3	6.7	**0.0142**	0.002	14.4	ug/L	20	Standard
	Al	27	10504.4	54.9	**0.0440**	0.030	68.3	ug/L	1307	Standard
	Sc	45	44657.4	2.0				ug/L	41174	Standard
	Ti	47	39.3	11.5	**0.0270**	0.014	53.3	ug/L	27	Standard
	V	51	1529.0	2.6	**-0.0269**	0.007	25.9	ug/L	1434	Standard
	Cr	52	7711.0	1.1	**-0.0906**	0.015	16.9	ug/L	7733	Standard
	Cr	53	511.7	5.7	**0.0505**	0.033	65.1	ug/L	442	Standard
	Mn	55	1157.7	24.7	**0.0401**	0.037	91.8	ug/L	723	Standard
	Co	59	342.7	7.9	**0.0119**	0.004	32.6	ug/L	217	Standard
	Ni	60	345.0	7.1	**0.0004**	0.013	3536.3	ug/L	304	Standard
	Cu	65	196.7	14.8	**0.0150**	0.014	96.7	ug/L	181	Standard
	Zn	66	265.3	6.8	**0.0197**	0.016	82.6	ug/L	215	Standard
>	**Ge**	72	564532.3	1.4				ug/L	520809	Standard
	As	75	-63.0	4.9	**-0.0020**	0.003	148.8	ug/L	-52	Standard
	Se	82	13.5	49.1	**-0.0274**	0.049	178.6	ug/L	17	Standard
	Se-1	77	66.7	9.6	**0.0356**	0.080	224.7	ug/L	56	Standard
>	**Ga**	71	36.7	34.3				mg/L	25	Standard
	Rb	85	50.0	17.3				ug/L	28	Standard
	Y	89	485264.3	1.4				ug/L	447395	Standard
>	**Rh**	103	23.3	65.5				ug/L	15	Standard
	Mo	98	248.2	9.5	**0.0519**	0.007	13.4	ug/L	113	Standard
	Ag	107	217.7	28.5	**0.0151**	0.008	51.7	ug/L	108	Standard
	Cd	111	38.2	50.7	**0.0130**	0.008	59.2	mg/L	3	Standard
	Cd	114	103.6	56.8	**0.0168**	0.009	56.1	ug/L	20	Standard
>	**In**	115	676839.2	0.6				ug/L	625728	Standard
	Sn	118	985.0	18.1	**0.0572**	0.025	43.7	ug/L	568	Standard
	Sb	123	1289.0	34.6	**0.1967**	0.079	40.2	ug/L	612	Standard
	Ba	135	163.7	48.0	**0.0515**	0.033	64.0	ug/L	21	Standard
	Ce	140	190.0	43.5				ug/L	245	Standard
>	**Tb**	159	1027800.2	0.9				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	185.7	43.6	**0.0185**	0.008	45.3	ug/L	15	Standard
	Tl	205	140.0	34.4	**0.0066**	0.006	85.8	ug/L	13	Standard
	Pb	206	391.7	5.7	**0.0205**	0.004	17.4	ug/L	264	Standard
	Pb	207	348.0	8.5	**0.0168**	0.005	31.6	ug/L	222	Standard
	Pb	208	1428.4	8.6	**0.0149**	0.005	36.0	ug/L	959	Standard
	U	238	152.0	24.6	**0.0173**	0.004	24.9	ug/L	9	Standard
>	**Bi**	209	594942.4	0.2				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:21:40
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.6930**	8.120	173.0	mg/L	2	Standard
Mg	24	61.7	4.7	**0.0063**	0.004	70.3	mg/L	55	Standard
K	39	21.7	58.1	**-0.0541**	0.046	85.2	mg/L	28	Standard
Ca	43	16.7	45.8	**-1.0495**	0.670	63.8	mg/L	27	Standard
Fe	54	185.9	12.3	**0.0354**	0.014	39.9	mg/L	147	Standard
Fe	57	231.7	7.6	**-0.1482**	0.038	25.4	mg/L	268	Standard
> **Sc-1**	45	44657.4	2.0				mg/L	41174	Standard
Cl	35	83476.7	1.5				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	2133.5	9.1				ug/L	1950	Standard
P	31	25304.5	3.5				ug/L	21156	Standard
S	34	4207.3	4.6				ug/L	3419	Standard
Sr	88	80.0	16.5				ug/L	72	Standard
C	12	116.7	44.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	15.7	39.4				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	16377.2	4.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.395	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:21:40
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.168
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.619
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:21:40
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144601
Sample Date/Time: Friday, July 01, 2016 12:22:36
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85066.5	1.2				ug/L	76456	Standard
	Be	9	16.7	45.8	**-0.0065**	0.006	94.4	ug/L	20	Standard
	Al	27	9710029.6	1.9	**50.9822**	1.574	3.1	ug/L	1307	Standard
	Sc	45	45336.1	0.8				ug/L	41174	Standard
	Ti	47	130.7	11.5	**0.2865**	0.040	13.8	ug/L	27	Standard
	V	51	2965.5	17.4	**0.1358**	0.062	45.7	ug/L	1434	Standard
	Cr	52	10925.6	1.4	**0.2804**	0.032	11.4	ug/L	7733	Standard
	Cr	53	6674.8	19.2	**5.7008**	1.204	21.1	ug/L	442	Standard
	Mn	55	17608.9	0.7	**2.0519**	0.031	1.5	ug/L	723	Standard
	Co	59	843.4	6.2	**0.0725**	0.007	9.6	ug/L	217	Standard
	Ni	60	3752.8	1.2	**1.5211**	0.029	1.9	ug/L	304	Standard
	Cu	65	735.7	3.5	**0.2597**	0.015	5.9	ug/L	181	Standard
	Zn	66	4713.1	0.8	**3.3806**	0.039	1.2	ug/L	215	Standard
>	Ge	72	562685.3	1.1				ug/L	520809	Standard
	As	75	331.7	14.1	**0.2942**	0.038	12.9	ug/L	-52	Standard
	Se	82	169.7	3.4	**1.1168**	0.055	5.0	ug/L	17	Standard
	Se-1	77	298.3	16.2	**2.5437**	0.506	19.9	ug/L	56	Standard
>	Ga	71	43.3	17.6				mg/L	25	Standard
	Rb	85	1375.1	8.1				ug/L	28	Standard
	Y	89	479863.0	1.4				ug/L	447395	Standard
>	Rh	103	75.0	23.1				ug/L	15	Standard
	Mo	98	184.0	20.7	**0.0331**	0.012	35.3	ug/L	113	Standard
	Ag	107	187.7	22.7	**0.0116**	0.006	47.6	ug/L	108	Standard
	Cd	111	61.4	13.6	**0.0226**	0.003	14.9	mg/L	3	Standard
	Cd	114	163.1	19.9	**0.0268**	0.005	19.9	ug/L	20	Standard
>	In	115	667538.0	0.2				ug/L	625728	Standard
	Sn	118	1128.4	13.7	**0.0801**	0.022	27.7	ug/L	568	Standard
	Sb	123	642.2	32.3	**0.0827**	0.037	45.2	ug/L	612	Standard
	Ba	135	124733.7	0.4	**53.7257**	0.253	0.5	ug/L	21	Standard
	Ce	140	376.7	16.7				ug/L	245	Standard
>	Tb	159	1007994.8	2.0				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	197.3	10.9	**0.0203**	0.002	12.2	ug/L	15	Standard
	Tl	205	216.7	21.8	**0.0163**	0.006	35.8	ug/L	13	Standard
	Pb	206	891.0	6.5	**0.1071**	0.008	7.9	ug/L	264	Standard
	Pb	207	795.4	2.4	**0.1022**	0.003	2.6	ug/L	222	Standard
	Pb	208	3278.5	4.0	**0.1014**	0.007	7.1	ug/L	959	Standard
	U	238	85.3	43.4	**0.0099**	0.004	45.2	ug/L	9	Standard
>	Bi	209	576617.3	0.8				ug/L	552821	Standard

Sample ID: L1606144601
Report Date/Time: Friday, July 01, 2016 12:24:53
Page 1

Approved: July 02, 2016

Na	23	5.0	0.0	**13.5582**	0.108	0.8	mg/L	2	Standard
Mg	24	5319.3	4.2	**5.5837**	0.252	4.5	mg/L	55	Standard
K	39	98.3	41.1	**0.2120**	0.143	67.6	mg/L	28	Standard
Ca	43	363.3	7.8	**27.5274**	2.210	8.0	mg/L	27	Standard
Fe	54	179.0	5.5	**0.0286**	0.006	20.9	mg/L	147	Standard
Fe	57	463.3	13.0	**0.4888**	0.165	33.8	mg/L	268	Standard
> **Sc-1**	45	45336.1	0.8				mg/L	41174	Standard
Cl	35	89142.8	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	30834.8	6.1				ug/L	1950	Standard
P	31	26140.9	1.9				ug/L	21156	Standard
S	34	4027.2	2.4				ug/L	3419	Standard
Sr	88	260.0	15.3				ug/L	72	Standard
C	12	170.0	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	38.6	3.3				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	7	Standard
I	127	3538.7	10.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.262	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.041	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144601
Report Date/Time: Friday, July 01, 2016 12:24:53
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.682
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.305
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144701 WG574416-03
Sample Date/Time: Friday, July 01, 2016 12:25:48
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88482.7	2.3				ug/L	76456	Standard
	Be	9	38.3	39.8	**0.0099**	0.012	125.1	ug/L	20	Standard
	Al	27	11359959.6	1.4	**57.3517**	1.667	2.9	ug/L	1307	Standard
	Sc	45	45563.4	2.6				ug/L	41174	Standard
	Ti	47	479.3	13.4	**1.2787**	0.172	13.4	ug/L	27	Standard
	V	51	3530.4	7.8	**0.1998**	0.034	17.3	ug/L	1434	Standard
	Cr	52	12134.2	0.3	**0.4209**	0.011	2.6	ug/L	7733	Standard
	Cr	53	7648.6	5.0	**6.6019**	0.407	6.2	ug/L	442	Standard
	Mn	55	16091.5	2.0	**1.8699**	0.055	2.9	ug/L	723	Standard
	Co	59	1173.0	4.1	**0.1126**	0.006	5.8	ug/L	217	Standard
	Ni	60	3889.5	2.3	**1.5848**	0.031	1.9	ug/L	304	Standard
	Cu	65	1317.7	0.5	**0.5246**	0.003	0.5	ug/L	181	Standard
	Zn	66	3687.1	0.9	**2.6100**	0.006	0.2	ug/L	215	Standard
>	Ge	72	561722.8	0.8				ug/L	520809	Standard
	As	75	1392.1	5.5	**1.0905**	0.054	4.9	ug/L	-52	Standard
	Se	82	606.7	3.3	**4.3252**	0.116	2.7	ug/L	17	Standard
	Se-1	77	418.0	2.5	**3.8492**	0.119	3.1	ug/L	56	Standard
>	Ga	71	115.0	8.7				mg/L	25	Standard
	Rb	85	5234.2	9.4				ug/L	28	Standard
	Y	89	487944.7	1.1				ug/L	447395	Standard
>	Rh	103	568.3	20.1				ug/L	15	Standard
	Mo	98	1044.2	2.3	**0.3054**	0.008	2.6	ug/L	113	Standard
	Ag	107	187.3	42.9	**0.0121**	0.011	91.2	ug/L	108	Standard
	Cd	111	55.0	27.2	**0.0204**	0.006	30.3	mg/L	3	Standard
	Cd	114	135.5	6.2	**0.0227**	0.001	5.1	ug/L	20	Standard
>	In	115	656101.2	1.3				ug/L	625728	Standard
	Sn	118	1038.4	15.8	**0.0699**	0.026	37.7	ug/L	568	Standard
	Sb	123	573.4	30.4	**0.0724**	0.034	46.6	ug/L	612	Standard
	Ba	135	501979.0	0.4	**220.0552**	2.127	1.0	ug/L	21	Standard
	Ce	140	2408.5	3.7				ug/L	245	Standard
>	Tb	159	999721.2	1.2				ug/L	950397	Standard
	Ho	165	475.0	13.8				ug/L	7	Standard
	Tl	203	180.7	18.9	**0.0191**	0.004	19.9	ug/L	15	Standard
	Tl	205	181.7	18.3	**0.0127**	0.004	33.1	ug/L	13	Standard
	Pb	206	1433.1	5.5	**0.2055**	0.013	6.5	ug/L	264	Standard
	Pb	207	1269.4	7.4	**0.1971**	0.019	9.6	ug/L	222	Standard
	Pb	208	5249.0	0.8	**0.1978**	0.003	1.5	ug/L	959	Standard
	U	238	833.4	3.5	**0.1015**	0.003	3.3	ug/L	9	Standard
>	Bi	209	561437.9	0.5				ug/L	552821	Standard

Sample ID: L1606144701 WG574416-03
Report Date/Time: Friday, July 01, 2016 12:28:05
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.1266**	7.900	86.6	mg/L	2	Standard
Mg	24	22316.4	4.6	**23.4898**	0.474	2.0	mg/L	55	Standard
K	39	291.7	17.2	**0.8820**	0.191	21.6	mg/L	28	Standard
Ca	43	361.7	17.8	**27.2179**	4.974	18.3	mg/L	27	Standard
Fe	54	219.1	19.9	**0.0560**	0.027	47.8	mg/L	147	Standard
Fe	57	508.3	13.1	**0.6052**	0.153	25.3	mg/L	268	Standard
> **Sc-1**	45	45563.4	2.6				mg/L	41174	Standard
Cl	35	95139.1	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	117746.0	3.1				ug/L	1950	Standard
P	31	26077.4	3.3				ug/L	21156	Standard
S	34	3920.5	3.9				ug/L	3419	Standard
Sr	88	1768.4	4.8				ug/L	72	Standard
C	12	193.3	38.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	700.0	19.1				mg/L	16	Standard
Ho-1	165	475.0	13.8				mg/L	7	Standard
Er	166	486.7	19.4				mg/L	7	Standard
I	127	22775.4	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.731	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.856	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144701 WG574416-03
Report Date/Time: Friday, July 01, 2016 12:28:05
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.854
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.559
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144701 WG574416-03
Report Date/Time: Friday, July 01, 2016 12:28:05
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144701DP WG574416-10
Sample Date/Time: Friday, July 01, 2016 12:28:59
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88142.4	1.7				ug/L	76456	Standard
	Be	9	40.0	37.5	**0.0111**	0.011	101.8	ug/L	20	Standard
	Al	27	11494838.5	2.0	**58.2408**	1.266	2.2	ug/L	1307	Standard
	Sc	45	46242.2	2.8				ug/L	41174	Standard
	Ti	47	491.0	28.0	**1.3133**	0.392	29.8	ug/L	27	Standard
	V	51	4065.2	7.6	**0.2601**	0.033	12.8	ug/L	1434	Standard
	Cr	52	12264.0	1.3	**0.4365**	0.008	1.9	ug/L	7733	Standard
	Cr	53	8637.5	5.6	**7.5132**	0.490	6.5	ug/L	442	Standard
	Mn	55	16026.8	1.0	**1.8627**	0.011	0.6	ug/L	723	Standard
	Co	59	1127.4	3.0	**0.1071**	0.004	3.8	ug/L	217	Standard
	Ni	60	3889.8	1.2	**1.5861**	0.030	1.9	ug/L	304	Standard
	Cu	65	1351.4	4.3	**0.5403**	0.027	5.0	ug/L	181	Standard
	Zn	66	3072.3	1.9	**2.1459**	0.033	1.5	ug/L	215	Standard
>	Ge	72	561430.2	0.7				ug/L	520809	Standard
	As	75	1450.6	6.2	**1.1355**	0.075	6.6	ug/L	-52	Standard
	Se	82	626.4	4.3	**4.4737**	0.217	4.8	ug/L	17	Standard
	Se-1	77	446.7	4.4	**4.1629**	0.222	5.3	ug/L	56	Standard
>	Ga	71	118.3	21.3				mg/L	25	Standard
	Rb	85	5335.9	4.4				ug/L	28	Standard
	Y	89	485232.7	0.7				ug/L	447395	Standard
>	Rh	103	503.3	5.6				ug/L	15	Standard
	Mo	98	890.3	4.1	**0.2555**	0.010	3.8	ug/L	113	Standard
	Ag	107	130.0	4.8	**0.0043**	0.001	19.6	ug/L	108	Standard
	Cd	111	38.1	10.0	**0.0134**	0.002	12.3	mg/L	3	Standard
	Cd	114	93.0	28.3	**0.0155**	0.004	28.0	ug/L	20	Standard
>	In	115	659077.6	0.9				ug/L	625728	Standard
	Sn	118	881.7	14.6	**0.0459**	0.019	42.5	ug/L	568	Standard
	Sb	123	507.6	19.6	**0.0596**	0.019	31.6	ug/L	612	Standard
	Ba	135	515199.9	0.5	**224.8243**	2.217	1.0	ug/L	21	Standard
	Ce	140	2820.3	8.4				ug/L	245	Standard
>	Tb	159	1000855.8	0.8				ug/L	950397	Standard
	Ho	165	511.7	6.7				ug/L	7	Standard
	Tl	203	145.0	5.2	**0.0151**	0.001	5.3	ug/L	15	Standard
	Tl	205	140.0	29.2	**0.0075**	0.005	66.5	ug/L	13	Standard
	Pb	206	896.0	1.8	**0.1117**	0.003	2.6	ug/L	264	Standard
	Pb	207	768.4	3.7	**0.1007**	0.005	5.0	ug/L	222	Standard
	Pb	208	3189.1	0.1	**0.1009**	0.001	0.5	ug/L	959	Standard
	U	238	824.4	5.0	**0.1002**	0.005	5.0	ug/L	9	Standard
>	Bi	209	562695.6	0.4				ug/L	552821	Standard

Sample ID: L1606144701DP WG574416-10
Report Date/Time: Friday, July 01, 2016 12:31:16
Page 1

Approved: July 02, 2016

Na	23	8.3	34.6	**22.1713**	7.744	34.9	mg/L	2	Standard
Mg	24	23199.4	1.6	**24.0879**	0.996	4.1	mg/L	55	Standard
K	39	276.7	2.8	**0.8134**	0.006	0.8	mg/L	28	Standard
Ca	43	471.7	6.8	**35.7746**	3.568	10.0	mg/L	27	Standard
Fe	54	212.8	23.2	**0.0499**	0.035	69.4	mg/L	147	Standard
Fe	57	470.0	11.3	**0.4850**	0.177	36.5	mg/L	268	Standard
> **Sc-1**	45	46242.2	2.8				mg/L	41174	Standard
Cl	35	96975.4	1.3				ug/L	69550	Standard
Kr	83	2.3	137.8				ug/L	1	Standard
Br	81	120957.8	2.8				ug/L	1950	Standard
P	31	25446.4	2.8				ug/L	21156	Standard
S	34	3975.5	1.0				ug/L	3419	Standard
Sr	88	1878.4	2.6				ug/L	72	Standard
C	12	223.3	38.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	17	Standard
Dy	164	658.1	9.2				mg/L	16	Standard
Ho-1	165	511.7	6.7				mg/L	7	Standard
Er	166	526.7	11.0				mg/L	7	Standard
I	127	23127.6	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.285	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.800	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144701DP WG574416-10
Report Date/Time: Friday, July 01, 2016 12:31:16
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.330
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.786
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606128901
Sample Date/Time: Friday, July 01, 2016 12:32:11
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	100202.1	2.7				ug/L	76456	Standard
	Be	9	85.0	61.4	**0.0383**	0.036	94.9	ug/L	20	Standard
	Al	27	121494771.0	1.8	**541.6309**	8.514	1.6	ug/L	1307	Standard
	Sc	45	48803.5	2.8				ug/L	41174	Standard
	Ti	47	545.3	5.0	**1.5278**	0.038	2.5	ug/L	27	Standard
	V	51	10661.2	18.0	**1.0481**	0.197	18.8	ug/L	1434	Standard
	Cr	52	662482.0	2.6	**77.9794**	0.550	0.7	ug/L	7733	Standard
	Cr	53	138513.8	2.3	**131.6729**	2.729	2.1	ug/L	442	Standard
	Mn	55	5966787.8	1.9	**759.5704**	10.887	1.4	ug/L	723	Standard
	Co	59	181210.6	0.8	**22.7724**	0.421	1.8	ug/L	217	Standard
	Ni	60	645750.8	2.4	**299.7645**	3.348	1.1	ug/L	304	Standard
	Cu	65	22297.4	3.7	**10.4538**	0.196	1.9	ug/L	181	Standard
	Zn	66	11919.4	2.6	**9.1948**	0.114	1.2	ug/L	215	Standard
>	Ge	72	540486.8	2.6				ug/L	520809	Standard
	As	75	4102.0	1.8	**3.2473**	0.027	0.8	ug/L	-52	Standard
	Se	82	1886.5	4.1	**14.2618**	0.413	2.9	ug/L	17	Standard
	Se-1	77	4801.8	0.7	**53.4605**	1.123	2.1	ug/L	56	Standard
>	Ga	71	275.0	24.6				mg/L	25	Standard
	Rb	85	16008.5	1.9				ug/L	28	Standard
	Y	89	482574.6	0.5				ug/L	447395	Standard
>	Rh	103	891.7	13.1				ug/L	15	Standard
	Mo	98	6427.1	1.7	**2.1501**	0.036	1.7	ug/L	113	Standard
	Ag	107	215.3	42.5	**0.0178**	0.013	73.5	ug/L	108	Standard
	Cd	111	1192.8	4.2	**0.5277**	0.023	4.3	mg/L	3	Standard
	Cd	114	2955.5	4.3	**0.5305**	0.024	4.6	ug/L	20	Standard
>	In	115	611635.6	0.3				ug/L	625728	Standard
	Sn	118	1171.7	1.6	**0.1020**	0.003	2.8	ug/L	568	Standard
	Sb	123	952.5	13.3	**0.1549**	0.025	16.4	ug/L	612	Standard
	Ba	135	5659971.5	1.5	**2661.5360**	36.316	1.4	ug/L	21	Standard
	Ce	140	34602.8	2.7				ug/L	245	Standard
>	Tb	159	987729.2	0.4				ug/L	950397	Standard
	Ho	165	555.0	3.6				ug/L	7	Standard
	Tl	203	271.3	38.8	**0.0315**	0.013	40.1	ug/L	15	Standard
	Tl	205	228.3	29.2	**0.0208**	0.009	43.4	ug/L	13	Standard
	Pb	206	682.3	7.9	**0.0848**	0.010	12.2	ug/L	264	Standard
	Pb	207	562.7	4.7	**0.0706**	0.006	7.9	ug/L	222	Standard
	Pb	208	2400.7	5.1	**0.0736**	0.007	9.1	ug/L	959	Standard
	U	238	485.7	17.4	**0.0640**	0.011	17.8	ug/L	9	Standard
>	Bi	209	518402.7	0.8				ug/L	552821	Standard

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 12:34:28
Page 1

Approved: July 02, 2016

Na	23	6.7	43.3	**16.7312**	6.981	41.7	mg/L	2	Standard
Mg	24	234951.0	0.3	**231.6239**	7.038	3.0	mg/L	55	Standard
K	39	286.7	15.7	**0.7989**	0.169	21.2	mg/L	28	Standard
Ca	43	935.0	7.2	**69.1820**	3.528	5.1	mg/L	27	Standard
Fe	54	758.4	8.2	**0.4032**	0.043	10.6	mg/L	147	Standard
Fe	57	1138.4	6.9	**2.1447**	0.127	5.9	mg/L	268	Standard
> **Sc-1**	45	48803.5	2.8				mg/L	41174	Standard
Cl	35	88877.9	0.3				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	391239.0	2.6				ug/L	1950	Standard
P	31	37070.3	1.2				ug/L	21156	Standard
S	34	4178.9	3.9				ug/L	3419	Standard
Sr	88	2831.9	1.5				ug/L	72	Standard
C	12	466.7	21.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	17	Standard
Dy	164	667.5	12.4				mg/L	16	Standard
Ho-1	165	555.0	3.6				mg/L	7	Standard
Er	166	540.0	8.5				mg/L	7	Standard
I	127	188266.3	8.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.059	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 12:34:28
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.748
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.774
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 53 Upper, S, EEE	Cr	53	

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 12:34:28
Page 3

Approved: July 02, 2016

Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606128904
Sample Date/Time: Friday, July 01, 2016 12:35:23
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80174.9	0.5				ug/L	76456	Standard
	Be	9	53.3	27.1	**0.0255**	0.012	47.2	ug/L	20	Standard
	Al	27	1032791.8	1.6	**5.7430**	0.086	1.5	ug/L	1307	Standard
	Sc	45	47549.6	3.6				ug/L	41174	Standard
	Ti	47	1435.7	2.3	**3.8643**	0.058	1.5	ug/L	27	Standard
	V	51	10110.4	0.9	**0.9038**	0.025	2.8	ug/L	1434	Standard
	Cr	52	20122.7	4.1	**1.2588**	0.042	3.3	ug/L	7733	Standard
	Cr	53	3665.5	16.0	**2.8260**	0.446	15.8	ug/L	442	Standard
	Mn	55	288289.9	2.5	**34.0207**	0.139	0.4	ug/L	723	Standard
	Co	59	1477.7	1.3	**0.1434**	0.004	2.6	ug/L	217	Standard
	Ni	60	4239.3	2.2	**1.6775**	0.005	0.3	ug/L	304	Standard
	Cu	65	5707.4	2.9	**2.4318**	0.022	0.9	ug/L	181	Standard
	Zn	66	6174.6	2.5	**4.3354**	0.036	0.8	ug/L	215	Standard
>	Ge	72	581260.9	2.3				ug/L	520809	Standard
	As	75	447.8	4.7	**0.3704**	0.019	5.1	ug/L	-52	Standard
	Se	82	65.6	5.7	**0.3388**	0.024	6.9	ug/L	17	Standard
	Se-1	77	141.0	9.5	**0.7917**	0.108	13.6	ug/L	56	Standard
>	Ga	71	390.0	12.2				mg/L	25	Standard
	Rb	85	14513.6	3.3				ug/L	28	Standard
	Y	89	508182.1	0.9				ug/L	447395	Standard
>	Rh	103	35.0	14.3				ug/L	15	Standard
	Mo	98	3302.1	0.9	**0.9834**	0.006	0.6	ug/L	113	Standard
	Ag	107	192.0	6.8	**0.0118**	0.002	15.7	ug/L	108	Standard
	Cd	111	79.5	7.9	**0.0295**	0.002	7.8	mg/L	3	Standard
	Cd	114	220.0	7.1	**0.0356**	0.003	7.0	ug/L	20	Standard
>	In	115	678248.4	0.8				ug/L	625728	Standard
	Sn	118	933.4	10.8	**0.0496**	0.015	30.5	ug/L	568	Standard
	Sb	123	584.6	1.8	**0.0706**	0.002	3.0	ug/L	612	Standard
	Ba	135	45177.6	1.6	**19.1408**	0.317	1.7	ug/L	21	Standard
	Ce	140	30016.4	0.4				ug/L	245	Standard
>	Tb	159	1007751.2	0.8				ug/L	950397	Standard
	Ho	165	761.7	12.8				ug/L	7	Standard
	Tl	203	113.3	7.1	**0.0112**	0.001	7.0	ug/L	15	Standard
	Tl	205	111.7	14.4	**0.0035**	0.002	52.8	ug/L	13	Standard
	Pb	206	3404.0	3.3	**0.5260**	0.017	3.3	ug/L	264	Standard
	Pb	207	2818.6	2.1	**0.4734**	0.010	2.1	ug/L	222	Standard
	Pb	208	12328.3	2.3	**0.5080**	0.010	2.0	ug/L	959	Standard
	U	238	374.0	2.0	**0.0437**	0.001	1.8	ug/L	9	Standard
>	Bi	209	583367.9	0.5				ug/L	552821	Standard

Sample ID: L1606128904
Report Date/Time: Friday, July 01, 2016 12:37:39
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.1425**	7.166	173.0	mg/L	2	Standard
Mg	24	5377.6	1.9	**5.3817**	0.098	1.8	mg/L	55	Standard
K	39	255.0	12.2	**0.7172**	0.121	16.8	mg/L	28	Standard
Ca	43	56.7	51.7	**1.9556**	2.109	107.9	mg/L	27	Standard
Fe	54	965.3	12.0	**0.5554**	0.055	10.0	mg/L	147	Standard
Fe	57	456.7	2.8	**0.4120**	0.054	13.1	mg/L	268	Standard
> **Sc-1**	45	47549.6	3.6				mg/L	41174	Standard
Cl	35	89186.5	3.0				ug/L	69550	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	9616.5	21.7				ug/L	1950	Standard
P	31	24750.2	1.9				ug/L	21156	Standard
S	34	3972.2	3.0				ug/L	3419	Standard
Sr	88	126.7	22.8				ug/L	72	Standard
C	12	306.7	35.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	1037.0	4.9				mg/L	16	Standard
Ho-1	165	761.7	12.8				mg/L	7	Standard
Er	166	690.0	14.7				mg/L	7	Standard
I	127	33632.4	5.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.864	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.607	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606128904
Report Date/Time: Friday, July 01, 2016 12:37:39
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.393
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.526
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606129003
Sample Date/Time: Friday, July 01, 2016 12:38:34
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84017.4	2.6				ug/L	76456	Standard
	Be	9	56.7	41.7	**0.0265**	0.020	76.1	ug/L	20	Standard
	Al	27	11410287.5	2.4	**60.6815**	2.547	4.2	ug/L	1307	Standard
	Sc	45	47460.9	2.7				ug/L	41174	Standard
	Ti	47	632.0	2.0	**1.7083**	0.053	3.1	ug/L	27	Standard
	V	51	4979.6	9.0	**0.3608**	0.043	11.9	ug/L	1434	Standard
	Cr	52	16733.9	1.7	**0.9422**	0.057	6.1	ug/L	7733	Standard
	Cr	53	16242.1	5.6	**14.4384**	0.968	6.7	ug/L	442	Standard
	Mn	55	2106790.2	0.3	**257.0785**	2.759	1.1	ug/L	723	Standard
	Co	59	32596.4	0.7	**3.9025**	0.026	0.7	ug/L	217	Standard
	Ni	60	16570.4	1.9	**7.2264**	0.135	1.9	ug/L	304	Standard
	Cu	65	821.7	5.9	**0.2979**	0.020	6.6	ug/L	181	Standard
	Zn	66	15799.9	1.0	**11.7367**	0.172	1.5	ug/L	215	Standard
>	**Ge**	72	563660.3	1.3				ug/L	520809	Standard
	As	75	8280.0	0.5	**6.2429**	0.078	1.2	ug/L	-52	Standard
	Se	82	523.6	3.6	**3.7022**	0.090	2.4	ug/L	17	Standard
	Se-1	77	661.3	8.7	**6.4700**	0.719	11.1	ug/L	56	Standard
>	**Ga**	71	153.3	26.4				mg/L	25	Standard
	Rb	85	22955.7	2.8				ug/L	28	Standard
	Y	89	481907.4	0.8				ug/L	447395	Standard
>	**Rh**	103	116.7	21.1				ug/L	15	Standard
	Mo	98	609.0	1.0	**0.1691**	0.001	0.8	ug/L	113	Standard
	Ag	107	122.3	6.1	**0.0035**	0.001	30.0	ug/L	108	Standard
	Cd	111	546.6	6.3	**0.2253**	0.014	6.3	mg/L	3	Standard
	Cd	114	1227.9	3.1	**0.2066**	0.006	2.8	ug/L	20	Standard
>	**In**	115	652572.6	0.4				ug/L	625728	Standard
	Sn	118	2255.2	0.8	**0.2518**	0.004	1.5	ug/L	568	Standard
	Sb	123	396.5	22.6	**0.0398**	0.016	41.0	ug/L	612	Standard
	Ba	135	362353.4	0.4	**159.6881**	0.037	0.0	ug/L	21	Standard
	Ce	140	11014.0	2.2				ug/L	245	Standard
>	**Tb**	159	996583.7	1.1				ug/L	950397	Standard
	Ho	165	233.3	12.4				ug/L	7	Standard
	Tl	203	149.3	13.7	**0.0157**	0.002	13.7	ug/L	15	Standard
	Tl	205	146.7	18.8	**0.0085**	0.003	39.2	ug/L	13	Standard
	Pb	206	578.7	5.4	**0.0575**	0.005	8.6	ug/L	264	Standard
	Pb	207	484.0	0.4	**0.0472**	0.000	0.8	ug/L	222	Standard
	Pb	208	2033.4	0.6	**0.0477**	0.001	2.3	ug/L	959	Standard
	U	238	110.3	15.4	**0.0133**	0.002	15.3	ug/L	9	Standard
>	**Bi**	209	557686.0	0.7				ug/L	552821	Standard

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 12:40:51
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.4332**	7.670	173.0	mg/L	2	Standard
Mg	24	51897.1	1.5	**52.5721**	2.174	4.1	mg/L	55	Standard
K	39	418.3	15.8	**1.2584**	0.193	15.3	mg/L	28	Standard
Ca	43	125.0	28.0	**7.4017**	2.760	37.3	mg/L	27	Standard
Fe	54	21570.7	2.6	**14.5894**	0.772	5.3	mg/L	147	Standard
Fe	57	5684.4	0.4	**14.3563**	0.459	3.2	mg/L	268	Standard
Sc-1	45	47460.9	2.7				mg/L	41174	Standard
Cl	35	86591.4	1.7				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	106345.6	3.6				ug/L	1950	Standard
P	31	31901.9	1.3				ug/L	21156	Standard
S	34	4255.6	0.8				ug/L	3419	Standard
Sr	88	460.0	1.1				ug/L	72	Standard
C	12	313.3	22.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	343.4	18.1				mg/L	16	Standard
Ho-1	165	233.3	12.4				mg/L	7	Standard
Er	166	276.7	12.7				mg/L	7	Standard
I	127	558531.1	6.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.890	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.228	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 12:40:51
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.290
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.880
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 12:40:51
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606129005
Sample Date/Time: Friday, July 01, 2016 12:41:45
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85192.2	0.8				ug/L	76456	Standard
	Be	9	115.0	19.0	**0.0724**	0.018	24.9	ug/L	20	Standard
	Al	27	1289763.0	0.8	**6.7519**	0.110	1.6	ug/L	1307	Standard
	Sc	45	49773.3	2.8				ug/L	41174	Standard
	Ti	47	6020.5	2.3	**16.8263**	0.429	2.6	ug/L	27	Standard
	V	51	26156.2	0.5	**2.7133**	0.015	0.6	ug/L	1434	Standard
	Cr	52	22253.3	0.9	**1.5480**	0.025	1.6	ug/L	7733	Standard
	Cr	53	3922.2	9.7	**3.1342**	0.341	10.9	ug/L	442	Standard
	Mn	55	93436.0	2.3	**11.1943**	0.294	2.6	ug/L	723	Standard
	Co	59	5246.2	1.4	**0.5973**	0.011	1.8	ug/L	217	Standard
	Ni	60	3873.2	3.3	**1.5552**	0.062	4.0	ug/L	304	Standard
	Cu	65	2052.1	1.1	**0.8462**	0.011	1.3	ug/L	181	Standard
	Zn	66	6978.9	2.8	**5.0326**	0.156	3.1	ug/L	215	Standard
>	**Ge**	72	569140.4	0.4				ug/L	520809	Standard
	As	75	675.9	4.5	**0.5462**	0.024	4.5	ug/L	-52	Standard
	Se	82	122.4	11.2	**0.7599**	0.101	13.3	ug/L	17	Standard
	Se-1	77	130.3	23.7	**0.7102**	0.329	46.3	ug/L	56	Standard
>	**Ga**	71	1996.8	2.2				mg/L	25	Standard
	Rb	85	22308.1	1.4				ug/L	28	Standard
	Y	89	509803.9	1.2				ug/L	447395	Standard
>	**Rh**	103	36.7	31.5				ug/L	15	Standard
	Mo	98	326.9	4.2	**0.0762**	0.004	5.1	ug/L	113	Standard
	Ag	107	126.0	4.2	**0.0034**	0.001	17.4	ug/L	108	Standard
	Cd	111	98.1	1.5	**0.0371**	0.001	1.9	mg/L	3	Standard
	Cd	114	296.0	9.7	**0.0481**	0.005	9.6	ug/L	20	Standard
>	**In**	115	675122.4	0.6				ug/L	625728	Standard
	Sn	118	1330.1	3.9	**0.1073**	0.007	6.6	ug/L	568	Standard
	Sb	123	517.6	11.1	**0.0591**	0.010	16.6	ug/L	612	Standard
	Ba	135	76309.4	0.8	**32.4918**	0.196	0.6	ug/L	21	Standard
	Ce	140	95146.2	1.3				ug/L	245	Standard
>	**Tb**	159	1016001.4	1.3				ug/L	950397	Standard
	Ho	165	1441.7	4.0				ug/L	7	Standard
	Tl	203	251.7	11.3	**0.0262**	0.003	11.5	ug/L	15	Standard
	Tl	205	263.3	19.1	**0.0220**	0.006	26.3	ug/L	13	Standard
	Pb	206	4604.0	0.8	**0.7379**	0.007	1.0	ug/L	264	Standard
	Pb	207	3793.5	2.8	**0.6632**	0.027	4.1	ug/L	222	Standard
	Pb	208	16401.2	0.5	**0.7024**	0.005	0.7	ug/L	959	Standard
	U	238	755.4	2.7	**0.0898**	0.002	2.3	ug/L	9	Standard
>	**Bi**	209	575207.2	1.1				ug/L	552821	Standard

Sample ID: L1606129005
Report Date/Time: Friday, July 01, 2016 12:44:02
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11827.9	2.0	**11.3730**	0.250	2.2	mg/L	55	Standard
K	39	63.3	12.1	**0.0696**	0.022	31.4	mg/L	28	Standard
Ca	43	26.7	39.0	**-0.4604**	0.739	160.5	mg/L	27	Standard
Fe	54	2263.3	3.3	**1.3710**	0.089	6.5	mg/L	147	Standard
Fe	57	798.4	7.3	**1.2235**	0.092	7.5	mg/L	268	Standard
> **Sc-1**	45	49773.3	2.8				mg/L	41174	Standard
Cl	35	80793.5	1.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	20093.3	2.4				ug/L	1950	Standard
P	31	35491.5	0.9				ug/L	21156	Standard
S	34	3435.4	2.3				ug/L	3419	Standard
Sr	88	86.7	16.7				ug/L	72	Standard
C	12	120.0	16.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	17	Standard
Dy	164	2283.5	2.5				mg/L	16	Standard
Ho-1	165	1441.7	4.0				mg/L	7	Standard
Er	166	1253.4	17.9				mg/L	7	Standard
I	127	29910.2	19.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.280	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129005
Report Date/Time: Friday, July 01, 2016 12:44:02
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.894
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.049
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 12:44:58
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83031.9	1.8				ug/L	76456	Standard
	Be	9	62607.4	1.8	**51.4790**	0.092	0.2	ug/L	20	Standard
	Al	27	9205440.0	1.0	**49.5101**	0.482	1.0	ug/L	1307	Standard
	Sc	45	45279.2	0.9				ug/L	41174	Standard
	Ti	47	35616.8	0.8	**99.7569**	0.384	0.4	ug/L	27	Standard
	V	51	453381.0	1.3	**50.1773**	0.834	1.7	ug/L	1434	Standard
	Cr	52	454717.9	0.4	**50.3900**	0.329	0.7	ug/L	7733	Standard
	Cr	53	56792.9	2.0	**50.9006**	0.670	1.3	ug/L	442	Standard
	Mn	55	417865.9	1.4	**50.3140**	0.768	1.5	ug/L	723	Standard
	Co	59	427490.0	0.8	**50.9392**	0.677	1.3	ug/L	217	Standard
	Ni	60	114502.7	0.7	**50.2468**	0.055	0.1	ug/L	304	Standard
	Cu	65	113283.0	1.3	**50.6253**	0.452	0.9	ug/L	181	Standard
	Zn	66	67088.2	1.2	**49.8311**	0.666	1.3	ug/L	215	Standard
>	Ge	72	570265.5	0.7				ug/L	520809	Standard
	As	75	66940.7	0.7	**49.5659**	0.028	0.1	ug/L	-52	Standard
	Se	82	6904.8	0.9	**49.7902**	0.542	1.1	ug/L	17	Standard
	Se-1	77	4848.4	1.0	**51.1131**	0.306	0.6	ug/L	56	Standard
>	Ga	71	33.3	34.6				mg/L	25	Standard
	Rb	85	945.0	6.5				ug/L	28	Standard
	Y	89	486567.9	0.8				ug/L	447395	Standard
>	Rh	103	36.7	43.8				ug/L	15	Standard
	Mo	98	321546.8	0.2	**99.1357**	1.367	1.4	ug/L	113	Standard
	Ag	107	383263.2	0.3	**49.7591**	0.678	1.4	ug/L	108	Standard
	Cd	111	123447.9	0.3	**50.0091**	0.713	1.4	mg/L	3	Standard
	Cd	114	300381.5	2.0	**49.1538**	1.432	2.9	ug/L	20	Standard
>	In	115	670977.0	1.2				ug/L	625728	Standard
	Sn	118	339655.3	1.3	**49.1307**	0.150	0.3	ug/L	568	Standard
	Sb	123	274538.6	0.7	**49.5136**	0.951	1.9	ug/L	612	Standard
	Ba	135	114656.9	0.7	**49.1372**	0.870	1.8	ug/L	21	Standard
	Ce	140	131.7	33.2				ug/L	245	Standard
>	Tb	159	1007430.4	0.6				ug/L	950397	Standard
	Ho	165	15.0	88.2				ug/L	7	Standard
	Tl	203	470169.7	1.1	**50.6935**	0.361	0.7	ug/L	15	Standard
	Tl	205	427547.4	1.3	**51.9072**	0.778	1.5	ug/L	13	Standard
	Pb	206	295170.9	0.9	**50.4289**	0.577	1.1	ug/L	264	Standard
	Pb	207	268434.7	0.6	**50.4969**	0.171	0.3	ug/L	222	Standard
	Pb	208	1104478.8	0.4	**50.8716**	0.540	1.1	ug/L	959	Standard
	U	238	418715.2	0.4	**50.2797**	0.305	0.6	ug/L	9	Standard
>	Bi	209	571081.7	0.7				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:47:15
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4769.1	1.8	**5.0062**	0.108	2.1	mg/L	55	Standard
K	39	1336.7	4.6	**4.5306**	0.241	5.3	mg/L	28	Standard
Ca	43	75.0	17.6	**3.7457**	1.100	29.4	mg/L	27	Standard
Fe	54	7200.7	4.3	**5.0367**	0.239	4.8	mg/L	147	Standard
Fe	57	2128.5	4.4	**5.1427**	0.247	4.8	mg/L	268	Standard
> **Sc-1**	45	45279.2	0.9				mg/L	41174	Standard
Cl	35	81839.8	0.8				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	3040.3	8.6				ug/L	1950	Standard
P	31	24877.1	2.1				ug/L	21156	Standard
S	34	3887.2	7.0				ug/L	3419	Standard
Sr	88	81.7	7.1				ug/L	72	Standard
C	12	123.3	12.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	17	Standard
Dy	164	9.4	3.0				mg/L	16	Standard
Ho-1	165	15.0	88.2				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	21875.8	2.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.958		
Al	27	99.020		
Sc	45			
Ti	47	99.757		
V	51	100.355		
Cr	52	100.780		
Cr	53			
Mn	55	100.628		
Co	59	101.878		
Ni	60	100.494		
Cu	65	101.251		
Zn	66	99.662		
> Ge	72		109.496	
As	75	99.132		
Se	82	99.580		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:47:15
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	99.136		
Ag	107	99.518		
Cd	111	100.018		
Cd	114			
In	115			107.231
Sn	118	98.261		
Sb	123	99.027		
Ba	135	98.274		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.387		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.743		
U	238	100.559		
Bi	209			103.303
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:47:15
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 12:48:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79667.3	2.3				ug/L	76456	Standard
	Be	9	48.3	39.2	**0.0215**	0.016	74.4	ug/L	20	Standard
	Al	27	13667.3	103.9	**0.0663**	0.079	119.0	ug/L	1307	Standard
	Sc	45	44725.9	0.8				ug/L	41174	Standard
	Ti	47	40.3	36.1	**0.0282**	0.040	143.2	ug/L	27	Standard
	V	51	1800.6	20.7	**0.0010**	0.041	3971.4	ug/L	1434	Standard
	Cr	52	8069.5	1.6	**-0.0611**	0.005	7.9	ug/L	7733	Standard
	Cr	53	805.0	12.6	**0.3085**	0.086	27.9	ug/L	442	Standard
	Mn	55	1891.2	86.3	**0.1261**	0.196	155.3	ug/L	723	Standard
	Co	59	402.0	57.1	**0.0183**	0.027	148.1	ug/L	217	Standard
	Ni	60	380.0	16.0	**0.0137**	0.026	190.1	ug/L	304	Standard
	Cu	65	200.3	16.4	**0.0153**	0.014	94.0	ug/L	181	Standard
	Zn	66	277.3	5.9	**0.0260**	0.012	46.5	ug/L	215	Standard
>	**Ge**	72	571534.4	1.1				ug/L	520809	Standard
	As	75	-32.7	47.9	**0.0211**	0.011	53.6	ug/L	-52	Standard
	Se	82	21.0	34.3	**0.0252**	0.052	206.6	ug/L	17	Standard
	Se-1	77	64.3	8.6	**0.0008**	0.051	6596.2	ug/L	56	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	26.7	75.8				ug/L	28	Standard
	Y	89	488434.0	1.5				ug/L	447395	Standard
>	**Rh**	103	18.3	56.8				ug/L	15	Standard
	Mo	98	360.1	51.7	**0.0867**	0.057	65.8	ug/L	113	Standard
	Ag	107	301.7	75.6	**0.0262**	0.029	112.6	ug/L	108	Standard
	Cd	111	35.8	64.4	**0.0121**	0.009	76.9	mg/L	3	Standard
	Cd	114	93.7	41.3	**0.0153**	0.006	41.1	ug/L	20	Standard
>	**In**	115	672952.0	0.6				ug/L	625728	Standard
	Sn	118	2098.5	22.4	**0.2192**	0.070	31.8	ug/L	568	Standard
	Sb	123	1021.0	31.2	**0.1501**	0.058	38.5	ug/L	612	Standard
	Ba	135	296.3	92.5	**0.1088**	0.117	107.6	ug/L	21	Standard
	Ce	140	101.7	62.5				ug/L	245	Standard
>	**Tb**	159	1018483.3	2.2				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	228.7	95.2	**0.0235**	0.023	98.1	ug/L	15	Standard
	Tl	205	170.0	71.4	**0.0105**	0.014	137.1	ug/L	13	Standard
	Pb	206	473.7	49.2	**0.0358**	0.039	109.0	ug/L	264	Standard
	Pb	207	396.7	45.3	**0.0273**	0.033	121.3	ug/L	222	Standard
	Pb	208	1490.7	28.8	**0.0193**	0.019	100.6	ug/L	959	Standard
	U	238	168.7	71.3	**0.0196**	0.014	72.1	ug/L	9	Standard
>	**Bi**	209	580702.6	1.0				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:50:27
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	85.0	38.6	**0.0310**	0.035	111.2	mg/L	55	Standard
K	39	35.0	37.8	**-0.0077**	0.046	604.4	mg/L	28	Standard
Ca	43	16.7	105.4	**-1.0542**	1.482	140.5	mg/L	27	Standard
Fe	54	153.9	28.2	**0.0123**	0.031	255.3	mg/L	147	Standard
Fe	57	300.0	3.3	**0.0447**	0.032	71.4	mg/L	268	Standard
Sc-1	45	44725.9	0.8				mg/L	41174	Standard
Cl	35	82881.4	0.4				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2540.2	1.8				ug/L	1950	Standard
P	31	24578.3	4.0				ug/L	21156	Standard
S	34	4135.6	7.4				ug/L	3419	Standard
Sr	88	55.0	27.3				ug/L	72	Standard
C	12	116.7	21.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	16.5	36.7				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	16210.3	1.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.740	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:50:27
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.547
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.044
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:50:27
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: PBW 07 WG574419-03
Sample Date/Time: Friday, July 01, 2016 12:58:36
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81259.0	1.7				ug/L	76456	Standard
	Be	9	25.0	52.9	**0.0011**	0.011	980.8	ug/L	20	Standard
	Al	27	43520.8	2.0	**0.2290**	0.003	1.2	ug/L	1307	Standard
	Sc	45	45160.6	1.8				ug/L	41174	Standard
	Ti	47	37.3	12.7	**0.0196**	0.013	67.8	ug/L	27	Standard
	V	51	1890.1	0.3	**0.0103**	0.002	20.9	ug/L	1434	Standard
	Cr	52	10254.5	1.2	**0.1819**	0.016	8.6	ug/L	7733	Standard
	Cr	53	800.0	8.4	**0.3021**	0.055	18.2	ug/L	442	Standard
	Mn	55	1844.4	0.9	**0.1201**	0.001	0.9	ug/L	723	Standard
	Co	59	227.3	7.0	**-0.0025**	0.002	69.8	ug/L	217	Standard
	Ni	60	435.3	6.3	**0.0376**	0.014	36.1	ug/L	304	Standard
	Cu	65	169.0	18.5	**0.0011**	0.014	1207.4	ug/L	181	Standard
	Zn	66	2605.6	4.5	**1.7518**	0.074	4.2	ug/L	215	Standard
>	**Ge**	72	573164.6	0.8				ug/L	520809	Standard
	As	75	-74.5	34.0	**-0.0097**	0.019	192.2	ug/L	-52	Standard
	Se	82	11.5	10.8	**-0.0437**	0.008	19.0	ug/L	17	Standard
	Se-1	77	70.7	5.9	**0.0666**	0.045	68.1	ug/L	56	Standard
>	**Ga**	71	35.0	65.5				mg/L	25	Standard
	Rb	85	83.3	9.2				ug/L	28	Standard
	Y	89	497110.0	0.3				ug/L	447395	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	63.4	20.9	**-0.0047**	0.004	88.1	ug/L	113	Standard
	Ag	107	104.7	2.9	**0.0005**	0.001	97.2	ug/L	108	Standard
	Cd	111	8.9	29.5	**0.0012**	0.001	90.2	mg/L	3	Standard
	Cd	114	20.2	129.3	**0.0033**	0.004	129.2	ug/L	20	Standard
>	**In**	115	681820.3	1.0				ug/L	625728	Standard
	Sn	118	1671.8	12.8	**0.1542**	0.031	19.9	ug/L	568	Standard
	Sb	123	510.3	25.3	**0.0569**	0.023	40.1	ug/L	612	Standard
	Ba	135	135.7	5.5	**0.0393**	0.003	7.0	ug/L	21	Standard
	Ce	140	68.3	33.0				ug/L	245	Standard
>	**Tb**	159	1025294.3	0.6				ug/L	950397	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	44.0	21.7	**0.0039**	0.001	25.6	ug/L	15	Standard
	Tl	205	40.0	25.0	**-0.0050**	0.001	25.0	ug/L	13	Standard
	Pb	206	314.3	3.7	**0.0090**	0.002	26.0	ug/L	264	Standard
	Pb	207	276.7	9.5	**0.0051**	0.005	106.7	ug/L	222	Standard
	Pb	208	1132.0	1.7	**0.0030**	0.001	48.7	ug/L	959	Standard
	U	238	26.0	17.6	**0.0028**	0.001	20.4	ug/L	9	Standard
>	**Bi**	209	581506.6	1.1				ug/L	552821	Standard

Sample ID: PBW 07 WG574419-03
Report Date/Time: Friday, July 01, 2016 13:00:53
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.6090**	7.974	173.0	mg/L	2	Standard
Mg	24	81.7	9.4	**0.0269**	0.009	33.7	mg/L	55	Standard
K	39	40.0	21.7	**0.0086**	0.030	348.4	mg/L	28	Standard
Ca	43	30.0	33.3	**0.0262**	0.793	3031.4	mg/L	27	Standard
Fe	54	180.2	26.2	**0.0304**	0.036	118.2	mg/L	147	Standard
Fe	57	258.3	6.2	**-0.0804**	0.042	52.2	mg/L	268	Standard
> **Sc-1**	45	45160.6	1.8				mg/L	41174	Standard
Cl	35	85551.6	2.1				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	2493.5	7.2				ug/L	1950	Standard
P	31	25546.6	9.0				ug/L	21156	Standard
S	34	4053.9	0.5				ug/L	3419	Standard
Sr	88	75.0	13.3				ug/L	72	Standard
C	12	136.7	53.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	19.4	51.7				mg/L	16	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	10762.2	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.282	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.053	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 07 WG574419-03
Report Date/Time: Friday, July 01, 2016 13:00:53
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.964
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.189
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: LCSW 07 WG574419-04
Sample Date/Time: Friday, July 01, 2016 13:03:34
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80883.7	2.2				ug/L	76456	Standard
	Be	9	63273.5	1.3	**53.4233**	1.134	2.1	ug/L	20	Standard
	Al	27	15556.3	4.2	**0.0758**	0.006	7.3	ug/L	1307	Standard
	Sc	45	46230.4	2.2				ug/L	41174	Standard
	Ti	47	48.3	18.7	**0.0475**	0.025	52.8	ug/L	27	Standard
	V	51	465592.0	1.2	**50.1984**	0.441	0.9	ug/L	1434	Standard
	Cr	52	471783.2	1.2	**50.9433**	0.486	1.0	ug/L	7733	Standard
	Cr	53	57119.2	2.3	**49.8721**	1.291	2.6	ug/L	442	Standard
	Mn	55	436781.1	0.8	**51.2372**	0.113	0.2	ug/L	723	Standard
	Co	59	434567.5	1.2	**50.4450**	0.373	0.7	ug/L	217	Standard
	Ni	60	118551.0	1.3	**50.6835**	0.443	0.9	ug/L	304	Standard
	Cu	65	119119.1	1.3	**51.8651**	0.602	1.2	ug/L	181	Standard
	Zn	66	71172.1	1.7	**51.5055**	0.595	1.2	ug/L	215	Standard
>	**Ge**	72	585340.9	0.6				ug/L	520809	Standard
	As	75	69945.5	1.2	**50.4563**	0.545	1.1	ug/L	-52	Standard
	Se	82	7094.3	1.4	**49.8362**	0.433	0.9	ug/L	17	Standard
	Se-1	77	4867.8	0.7	**49.9806**	0.170	0.3	ug/L	56	Standard
>	**Ga**	71	31.7	24.1				mg/L	25	Standard
	Rb	85	36.7	41.7				ug/L	28	Standard
	Y	89	498458.5	0.8				ug/L	447395	Standard
>	**Rh**	103	18.3	41.7				ug/L	15	Standard
	Mo	98	78.0	18.4	**-0.0003**	0.004	1563.8	ug/L	113	Standard
	Ag	107	402127.6	1.2	**51.3787**	0.778	1.5	ug/L	108	Standard
	Cd	111	126507.9	1.2	**50.4309**	0.392	0.8	mg/L	3	Standard
	Cd	114	308784.3	0.8	**49.7196**	0.327	0.7	ug/L	20	Standard
>	**In**	115	681801.9	1.3				ug/L	625728	Standard
	Sn	118	1796.8	16.1	**0.1722**	0.043	25.0	ug/L	568	Standard
	Sb	123	288724.4	0.5	**51.2448**	0.727	1.4	ug/L	612	Standard
	Ba	135	116686.9	0.7	**49.2097**	0.376	0.8	ug/L	21	Standard
	Ce	140	85.0	38.6				ug/L	245	Standard
>	**Tb**	159	1014866.4	0.7				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	482185.7	0.8	**50.5384**	0.275	0.5	ug/L	15	Standard
	Tl	205	444917.2	1.5	**52.5153**	1.373	2.6	ug/L	13	Standard
	Pb	206	312986.7	0.5	**51.9814**	0.469	0.9	ug/L	264	Standard
	Pb	207	271686.9	0.6	**49.6820**	0.381	0.8	ug/L	222	Standard
	Pb	208	1142411.3	0.4	**51.1494**	0.415	0.8	ug/L	959	Standard
	U	238	421119.4	1.0	**49.1551**	0.103	0.2	ug/L	9	Standard
>	**Bi**	209	587494.5	1.1				ug/L	552821	Standard

Sample ID: LCSW 07 WG574419-04
Report Date/Time: Friday, July 01, 2016 13:05:51
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**8.7572**	7.580	86.6	mg/L	2	Standard
Mg	24	76.7	21.0	**0.0195**	0.016	83.2	mg/L	55	Standard
K	39	21.7	26.6	**-0.0575**	0.018	32.0	mg/L	28	Standard
Ca	43	18.3	83.3	**-0.9528**	1.279	134.3	mg/L	27	Standard
Fe	54	147.9	28.9	**0.0041**	0.028	686.0	mg/L	147	Standard
Fe	57	245.0	10.8	**-0.1326**	0.084	63.2	mg/L	268	Standard
> **Sc-1**	45	46230.4	2.2				mg/L	41174	Standard
Cl	35	86090.6	2.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2420.2	0.7				ug/L	1950	Standard
P	31	25546.5	4.4				ug/L	21156	Standard
S	34	3980.5	6.3				ug/L	3419	Standard
Sr	88	56.7	20.4				ug/L	72	Standard
C	12	156.7	16.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	17	Standard
Dy	164	19.7	89.4				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	4735.7	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.391	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 07 WG574419-04
Report Date/Time: Friday, July 01, 2016 13:05:51
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.961
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.272
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 07 WG574419-04
Report Date/Time: Friday, July 01, 2016 13:05:51
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140006 WG574419-01
Sample Date/Time: Friday, July 01, 2016 13:06:46
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80758.0	0.8				ug/L	76456	Standard
	Be	9	41.7	6.9	**0.0154**	0.002	16.2	ug/L	20	Standard
	Al	27	11868534.0	1.1	**65.6266**	0.514	0.8	ug/L	1307	Standard
	Sc	45	45759.0	1.2				ug/L	41174	Standard
	Ti	47	2320.2	10.4	**6.5166**	0.703	10.8	ug/L	27	Standard
	V	51	6253.1	3.7	**0.5063**	0.022	4.3	ug/L	1434	Standard
	Cr	52	20690.1	0.7	**1.4009**	0.007	0.5	ug/L	7733	Standard
	Cr	53	7241.7	4.8	**6.2224**	0.278	4.5	ug/L	442	Standard
	Mn	55	361893.7	0.6	**44.2063**	0.556	1.3	ug/L	723	Standard
	Co	59	1899.1	4.5	**0.2003**	0.011	5.6	ug/L	217	Standard
	Ni	60	3188.7	2.0	**1.2710**	0.022	1.8	ug/L	304	Standard
	Cu	65	3204.0	1.0	**1.3811**	0.024	1.8	ug/L	181	Standard
	Zn	66	3650.1	1.8	**2.5809**	0.057	2.2	ug/L	215	Standard
>	**Ge**	72	561976.5	0.7				ug/L	520809	Standard
	As	75	349.0	10.2	**0.3073**	0.028	9.1	ug/L	-52	Standard
	Se	82	95.4	7.6	**0.5731**	0.052	9.1	ug/L	17	Standard
	Se-1	77	310.3	6.8	**2.6788**	0.206	7.7	ug/L	56	Standard
>	**Ga**	71	306.7	3.4				mg/L	25	Standard
	Rb	85	9304.5	4.6				ug/L	28	Standard
	Y	89	479158.2	2.5				ug/L	447395	Standard
>	**Rh**	103	63.3	19.9				ug/L	15	Standard
	Mo	98	462.6	2.2	**0.1212**	0.004	3.1	ug/L	113	Standard
	Ag	107	229.3	10.2	**0.0174**	0.003	18.1	ug/L	108	Standard
	Cd	111	314.9	4.8	**0.1274**	0.007	5.3	mg/L	3	Standard
	Cd	114	778.8	0.7	**0.1296**	0.002	1.2	ug/L	20	Standard
>	**In**	115	659596.7	0.4				ug/L	625728	Standard
	Sn	118	3462.1	8.7	**0.4262**	0.046	10.8	ug/L	568	Standard
	Sb	123	25160.0	1.7	**4.5846**	0.068	1.5	ug/L	612	Standard
	Ba	135	24755.2	1.0	**10.7771**	0.149	1.4	ug/L	21	Standard
	Ce	140	10733.8	0.6				ug/L	245	Standard
>	**Tb**	159	997525.3	0.9				ug/L	950397	Standard
	Ho	165	248.3	11.4				ug/L	7	Standard
	Tl	203	323.7	9.0	**0.0349**	0.003	8.9	ug/L	15	Standard
	Tl	205	295.0	13.5	**0.0268**	0.005	17.8	ug/L	13	Standard
	Pb	206	13733.6	1.1	**2.3523**	0.014	0.6	ug/L	264	Standard
	Pb	207	11541.7	1.2	**2.1713**	0.021	1.0	ug/L	222	Standard
	Pb	208	49582.7	0.8	**2.2840**	0.012	0.5	ug/L	959	Standard
	U	238	794.4	5.3	**0.0971**	0.005	5.3	ug/L	9	Standard
>	**Bi**	209	559684.2	0.5				ug/L	552821	Standard

Sample ID: L1606140006 WG574419-01
Report Date/Time: Friday, July 01, 2016 13:09:03
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**13.3851**	13.441	100.4	mg/L	2	Standard
Mg	24	23146.0	2.0	**24.2692**	0.405	1.7	mg/L	55	Standard
K	39	161.7	7.1	**0.4263**	0.034	7.9	mg/L	28	Standard
Ca	43	226.7	16.0	**16.1036**	3.136	19.5	mg/L	27	Standard
Fe	54	423.4	7.8	**0.1999**	0.022	10.8	mg/L	147	Standard
Fe	57	503.3	8.4	**0.5885**	0.131	22.2	mg/L	268	Standard
> **Sc-1**	45	45759.0	1.2				mg/L	41174	Standard
Cl	35	89790.6	1.3				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	17466.7	4.8				ug/L	1950	Standard
P	31	27324.6	2.0				ug/L	21156	Standard
S	34	4078.9	2.0				ug/L	3419	Standard
Sr	88	211.7	20.1				ug/L	72	Standard
C	12	163.3	9.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	17	Standard
Dy	164	363.3	15.2				mg/L	16	Standard
Ho-1	165	248.3	11.4				mg/L	7	Standard
Er	166	280.0	3.6				mg/L	7	Standard
I	127	49912.2	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.627	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140006 WG574419-01
Report Date/Time: Friday, July 01, 2016 13:09:03
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.413
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.242
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140007S WG574419-05
Sample Date/Time: Friday, July 01, 2016 13:09:57
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80711.1	0.9				ug/L	76456	Standard
	Be	9	64078.6	1.3	**54.2065**	0.745	1.4	ug/L	20	Standard
	Al	27	12211012.4	1.5	**67.5580**	0.517	0.8	ug/L	1307	Standard
	Sc	45	44934.9	0.8				ug/L	41174	Standard
	Ti	47	2064.8	6.8	**5.8866**	0.415	7.1	ug/L	27	Standard
	V	51	459064.1	0.1	**52.4156**	0.397	0.8	ug/L	1434	Standard
	Cr	52	459452.2	0.5	**52.5615**	0.550	1.0	ug/L	7733	Standard
	Cr	53	62920.4	1.2	**58.2380**	1.104	1.9	ug/L	442	Standard
	Mn	55	774817.1	0.6	**96.3273**	0.870	0.9	ug/L	723	Standard
	Co	59	418465.0	0.9	**51.4354**	0.672	1.3	ug/L	217	Standard
	Ni	60	114181.6	0.7	**51.6930**	0.726	1.4	ug/L	304	Standard
	Cu	65	110934.3	0.7	**51.1428**	0.660	1.3	ug/L	181	Standard
	Zn	66	70146.7	0.6	**53.7582**	0.090	0.2	ug/L	215	Standard
>	Ge	72	552840.2	0.7				ug/L	520809	Standard
	As	75	68517.6	0.7	**52.3310**	0.386	0.7	ug/L	-52	Standard
	Se	82	6918.4	0.6	**51.4649**	0.420	0.8	ug/L	17	Standard
	Se-1	77	5005.2	0.2	**54.4756**	0.506	0.9	ug/L	56	Standard
>	Ga	71	246.7	21.7				mg/L	25	Standard
	Rb	85	8369.0	3.4				ug/L	28	Standard
	Y	89	475828.1	0.8				ug/L	447395	Standard
>	Rh	103	60.0	8.3				ug/L	15	Standard
	Mo	98	444.1	3.8	**0.1178**	0.005	4.5	ug/L	113	Standard
	Ag	107	373105.8	0.7	**50.1488**	0.527	1.1	ug/L	108	Standard
	Cd	111	121300.2	0.5	**50.8704**	0.210	0.4	mg/L	3	Standard
	Cd	114	296777.5	0.3	**50.2713**	0.199	0.4	ug/L	20	Standard
>	In	115	648070.4	0.4				ug/L	625728	Standard
	Sn	118	3198.7	11.7	**0.3955**	0.054	13.6	ug/L	568	Standard
	Sb	123	305348.9	0.8	**57.0152**	0.685	1.2	ug/L	612	Standard
	Ba	135	127151.7	1.1	**56.4152**	0.853	1.5	ug/L	21	Standard
	Ce	140	10170.1	11.9				ug/L	245	Standard
>	Tb	159	984910.5	1.3				ug/L	950397	Standard
	Ho	165	243.3	11.3				ug/L	7	Standard
	Tl	203	460227.9	0.5	**50.9164**	0.584	1.1	ug/L	15	Standard
	Tl	205	419164.2	0.8	**52.2197**	1.079	2.1	ug/L	13	Standard
	Pb	206	308797.4	0.7	**54.1380**	1.001	1.8	ug/L	264	Standard
	Pb	207	269438.3	0.3	**52.0122**	0.916	1.8	ug/L	222	Standard
	Pb	208	1139591.7	0.5	**53.8600**	0.817	1.5	ug/L	959	Standard
	U	238	412122.6	0.9	**50.7770**	0.583	1.1	ug/L	9	Standard
>	Bi	209	556623.0	1.5				ug/L	552821	Standard

Sample ID: L1606140007S WG574419-05
Report Date/Time: Friday, July 01, 2016 13:12:14
Page 1

Approved: July 02, 2016

Na	23	5.0	0.0	**13.6792**	0.103	0.8	mg/L	2	Standard
Mg	24	24264.4	1.3	**25.9117**	0.145	0.6	mg/L	55	Standard
K	39	138.3	27.1	**0.3549**	0.133	37.4	mg/L	28	Standard
Ca	43	288.3	17.1	**21.5709**	4.241	19.7	mg/L	27	Standard
Fe	54	394.0	6.5	**0.1843**	0.018	9.9	mg/L	147	Standard
Fe	57	461.7	10.0	**0.4961**	0.134	27.1	mg/L	268	Standard
> **Sc-1**	45	44934.9	0.8				mg/L	41174	Standard
Cl	35	90855.7	2.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	11284.2	7.1				ug/L	1950	Standard
P	31	27506.6	4.3				ug/L	21156	Standard
S	34	4052.2	3.2				ug/L	3419	Standard
Sr	88	215.0	8.1				ug/L	72	Standard
C	12	163.3	9.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	17	Standard
Dy	164	319.9	13.5				mg/L	16	Standard
Ho-1	165	243.3	11.3				mg/L	7	Standard
Er	166	280.0	25.8				mg/L	7	Standard
I	127	66618.3	7.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.566	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.150	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140007S WG574419-05
Report Date/Time: Friday, July 01, 2016 13:12:14
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.571
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140008SD WG574419-06
Sample Date/Time: Friday, July 01, 2016 13:13:09
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79700.7	0.7				ug/L	76456	Standard
	Be	9	61700.4	1.6	**52.8560**	0.961	1.8	ug/L	20	Standard
	Al	27	12099353.2	1.1	**67.7900**	0.341	0.5	ug/L	1307	Standard
	Sc	45	46046.6	2.1				ug/L	41174	Standard
	Ti	47	1942.8	6.7	**5.5490**	0.345	6.2	ug/L	27	Standard
	V	51	439192.0	0.4	**50.2950**	0.725	1.4	ug/L	1434	Standard
	Cr	52	444362.9	0.8	**50.9606**	0.244	0.5	ug/L	7733	Standard
	Cr	53	61436.0	0.3	**57.0274**	0.463	0.8	ug/L	442	Standard
	Mn	55	751669.2	0.7	**93.7402**	1.592	1.7	ug/L	723	Standard
	Co	59	399707.3	0.9	**49.2832**	0.963	2.0	ug/L	217	Standard
	Ni	60	109770.2	0.4	**49.8430**	0.612	1.2	ug/L	304	Standard
	Cu	65	108323.5	0.5	**50.0917**	0.642	1.3	ug/L	181	Standard
	Zn	66	68554.1	0.3	**52.6985**	0.620	1.2	ug/L	215	Standard
>	Ge	72	551156.5	1.1				ug/L	520809	Standard
	As	75	66401.2	0.7	**50.8743**	0.706	1.4	ug/L	-52	Standard
	Se	82	6730.1	0.5	**50.2159**	0.522	1.0	ug/L	17	Standard
	Se-1	77	4856.1	2.0	**53.0004**	1.342	2.5	ug/L	56	Standard
>	Ga	71	258.3	16.5				mg/L	25	Standard
	Rb	85	8118.8	3.8				ug/L	28	Standard
	Y	89	478755.4	1.4				ug/L	447395	Standard
>	Rh	103	76.7	3.8				ug/L	15	Standard
	Mo	98	512.6	9.1	**0.1403**	0.015	10.9	ug/L	113	Standard
	Ag	107	359474.2	1.7	**48.4964**	0.550	1.1	ug/L	108	Standard
	Cd	111	117797.3	1.3	**49.5872**	0.214	0.4	mg/L	3	Standard
	Cd	114	286908.0	1.1	**48.7832**	0.247	0.5	ug/L	20	Standard
>	In	115	645632.6	1.1				ug/L	625728	Standard
	Sn	118	3095.3	10.7	**0.3822**	0.054	14.0	ug/L	568	Standard
	Sb	123	295379.5	0.9	**55.3607**	0.341	0.6	ug/L	612	Standard
	Ba	135	123159.2	0.4	**54.8524**	0.674	1.2	ug/L	21	Standard
	Ce	140	9327.9	2.1				ug/L	245	Standard
>	Tb	159	983378.7	0.8				ug/L	950397	Standard
	Ho	165	230.0	2.2				ug/L	7	Standard
	Tl	203	446759.8	0.8	**49.4389**	0.212	0.4	ug/L	15	Standard
	Tl	205	408461.1	0.9	**50.8970**	0.668	1.3	ug/L	13	Standard
	Pb	206	301254.5	0.8	**52.8246**	0.290	0.5	ug/L	264	Standard
	Pb	207	261947.7	0.8	**50.5743**	0.209	0.4	ug/L	222	Standard
	Pb	208	1104059.4	0.6	**52.1919**	0.419	0.8	ug/L	959	Standard
	U	238	402584.9	0.8	**49.6175**	0.619	1.2	ug/L	9	Standard
>	Bi	209	556417.0	0.4				ug/L	552821	Standard

Sample ID: L1606140008SD WG574419-06
Report Date/Time: Friday, July 01, 2016 13:15:26
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**13.3094**	13.444	101.0	mg/L	2	Standard
Mg	24	23635.1	1.3	**24.6326**	0.412	1.7	mg/L	55	Standard
K	39	136.7	2.1	**0.3374**	0.002	0.7	mg/L	28	Standard
Ca	43	218.3	2.6	**15.2980**	0.780	5.1	mg/L	27	Standard
Fe	54	402.8	5.8	**0.1835**	0.012	6.4	mg/L	147	Standard
Fe	57	453.3	11.2	**0.4438**	0.163	36.7	mg/L	268	Standard
> **Sc-1**	45	46046.6	2.1				mg/L	41174	Standard
Cl	35	91583.3	0.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	12164.9	6.2				ug/L	1950	Standard
P	31	27852.3	5.0				ug/L	21156	Standard
S	34	4047.2	6.0				ug/L	3419	Standard
Sr	88	165.0	13.2				ug/L	72	Standard
C	12	173.3	28.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	17	Standard
Dy	164	272.5	13.7				mg/L	16	Standard
Ho-1	165	230.0	2.2				mg/L	7	Standard
Er	166	296.7	5.1				mg/L	7	Standard
I	127	59372.8	2.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.244	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140008SD WG574419-06
Report Date/Time: Friday, July 01, 2016 13:15:26
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.181
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.651
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606142701 WG574419-02
Sample Date/Time: Friday, July 01, 2016 13:16:20
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	94406.8	3.4				ug/L	76456	Standard
	Be	9	85.0	35.3	**0.0412**	0.020	47.7	ug/L	20	Standard
	Al	27	56617238.2	4.0	**267.8022**	1.372	0.5	ug/L	1307	Standard
	Sc	45	46416.0	2.3				ug/L	41174	Standard
	Ti	47	884.0	4.8	**2.5428**	0.066	2.6	ug/L	27	Standard
	V	51	553940.5	2.9	**65.0728**	0.307	0.5	ug/L	1434	Standard
	Cr	52	299233.7	2.3	**34.8806**	0.725	2.1	ug/L	7733	Standard
	Cr	53	52044.3	2.2	**49.4662**	0.542	1.1	ug/L	442	Standard
	Mn	55	240351.0	1.7	**30.6595**	0.508	1.7	ug/L	723	Standard
	Co	59	198012.4	2.6	**25.0083**	0.182	0.7	ug/L	217	Standard
	Ni	60	153480.0	2.1	**71.5090**	1.345	1.9	ug/L	304	Standard
	Cu	65	58814.7	2.8	**27.8441**	0.424	1.5	ug/L	181	Standard
	Zn	66	154855.3	2.4	**122.2558**	1.271	1.0	ug/L	215	Standard
>	Ge	72	537771.5	3.3				ug/L	520809	Standard
	As	75	14927.7	4.1	**11.7537**	0.103	0.9	ug/L	-52	Standard
	Se	82	5918.7	4.3	**45.2355**	0.439	1.0	ug/L	17	Standard
	Se-1	77	1154.4	4.7	**12.3907**	0.295	2.4	ug/L	56	Standard
>	Ga	71	381.7	7.4				mg/L	25	Standard
	Rb	85	99551.2	2.9				ug/L	28	Standard
	Y	89	473605.3	2.9				ug/L	447395	Standard
>	Rh	103	343.3	14.9				ug/L	15	Standard
	Mo	98	2403599.9	3.3	**789.6820**	1.502	0.2	ug/L	113	Standard
	Ag	107	348.7	11.5	**0.0353**	0.004	11.4	ug/L	108	Standard
	Cd	111	-1248.7	2.3	**-0.5414**	0.006	1.1	mg/L	3	Standard
	Cd	114	4967.3	3.8	**0.8659**	0.009	1.0	ug/L	20	Standard
>	In	115	629706.1	3.1				ug/L	625728	Standard
	Sn	118	2805.3	14.7	**0.3479**	0.050	14.4	ug/L	568	Standard
	Sb	123	2974.2	8.0	**0.5376**	0.028	5.2	ug/L	612	Standard
	Ba	135	206845.8	2.1	**94.4794**	0.976	1.0	ug/L	21	Standard
	Ce	140	2191.8	6.3				ug/L	245	Standard
>	Tb	159	977368.8	3.8				ug/L	950397	Standard
	Ho	165	160.0	22.5				ug/L	7	Standard
	Tl	203	430.0	2.3	**0.0496**	0.002	4.9	ug/L	15	Standard
	Tl	205	390.0	8.0	**0.0417**	0.005	11.7	ug/L	13	Standard
	Pb	206	8083.8	1.9	**1.4566**	0.015	1.0	ug/L	264	Standard
	Pb	207	6744.5	3.2	**1.3320**	0.010	0.7	ug/L	222	Standard
	Pb	208	28675.7	2.4	**1.3865**	0.012	0.8	ug/L	959	Standard
	U	238	878.7	4.2	**0.1143**	0.007	5.7	ug/L	9	Standard
>	Bi	209	526224.9	2.9				ug/L	552821	Standard

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 13:18:37
Page 1

Approved: July 02, 2016

Na	23	10.0	100.0	**26.3285**	25.935	98.5	mg/L	2	Standard
Mg	24	138231.5	3.2	**143.1647**	1.819	1.3	mg/L	55	Standard
K	39	2051.8	3.6	**6.8480**	0.212	3.1	mg/L	28	Standard
Ca	43	1005.0	4.6	**78.6144**	4.822	6.1	mg/L	27	Standard
Fe	54	1298.8	6.4	**0.8054**	0.072	8.9	mg/L	147	Standard
Fe	57	1345.1	6.6	**2.8597**	0.164	5.7	mg/L	268	Standard
> **Sc-1**	45	46416.0	2.3				mg/L	41174	Standard
Cl	35	167690.5	2.1				ug/L	69550	Standard
Kr	83	3.0	66.7				ug/L	1	Standard
Br	81	1167966.9	3.9				ug/L	1950	Standard
P	31	32757.0	0.7				ug/L	21156	Standard
S	34	3867.2	4.1				ug/L	3419	Standard
Sr	88	1343.4	2.4				ug/L	72	Standard
C	12	240.0	12.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1276.7	2.5				mg/L	17	Standard
Dy	164	1123.0	11.7				mg/L	16	Standard
Ho-1	165	160.0	22.5				mg/L	7	Standard
Er	166	146.7	14.2				mg/L	7	Standard
I	127	116304.4	6.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.479	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 13:18:37
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.636	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.189	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 13:18:37
Page 3

Approved: July 02, 2016

Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606142701DP WG574419-07
Sample Date/Time: Friday, July 01, 2016 13:19:32
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	104046.1	2.0				ug/L	76456	Standard
	Be	9	46.7	34.4	**0.0108**	0.011	98.8	ug/L	20	Standard
	Al	27	58682132.6	0.8	**251.9338**	4.223	1.7	ug/L	1307	Standard
	Sc	45	49029.2	0.9				ug/L	41174	Standard
	Ti	47	887.4	3.2	**2.4062**	0.089	3.7	ug/L	27	Standard
	V	51	572508.3	0.6	**63.4877**	0.191	0.3	ug/L	1434	Standard
	Cr	52	308728.3	0.4	**33.9428**	0.266	0.8	ug/L	7733	Standard
	Cr	53	52407.2	1.8	**46.9988**	0.886	1.9	ug/L	442	Standard
	Mn	55	248854.2	1.2	**29.9599**	0.484	1.6	ug/L	723	Standard
	Co	59	205279.2	0.1	**24.4744**	0.076	0.3	ug/L	217	Standard
	Ni	60	157071.7	0.8	**69.0682**	0.457	0.7	ug/L	304	Standard
	Cu	65	60395.8	1.4	**26.9893**	0.358	1.3	ug/L	181	Standard
	Zn	66	157884.7	1.0	**117.6566**	1.110	0.9	ug/L	215	Standard
>	Ge	72	569569.1	0.4				ug/L	520809	Standard
	As	75	17073.6	1.5	**12.6909**	0.145	1.1	ug/L	-52	Standard
	Se	82	6774.5	1.0	**48.9062**	0.303	0.6	ug/L	17	Standard
	Se-1	77	1068.4	1.0	**10.7433**	0.123	1.1	ug/L	56	Standard
>	Ga	71	446.7	9.5				mg/L	25	Standard
	Rb	85	100812.6	1.2				ug/L	28	Standard
	Y	89	506159.4	0.9				ug/L	447395	Standard
>	Rh	103	378.3	6.5				ug/L	15	Standard
	Mo	98	2476607.9	0.6	**769.3094**	6.421	0.8	ug/L	113	Standard
	Ag	107	277.0	7.6	**0.0234**	0.003	11.5	ug/L	108	Standard
	Cd	111	-1309.7	3.6	**-0.5367**	0.015	2.9	mg/L	3	Standard
	Cd	114	4986.9	3.4	**0.8220**	0.028	3.4	ug/L	20	Standard
>	In	115	666048.1	0.7				ug/L	625728	Standard
	Sn	118	2695.2	8.4	**0.3091**	0.031	9.9	ug/L	568	Standard
	Sb	123	2859.3	3.8	**0.4860**	0.016	3.4	ug/L	612	Standard
	Ba	135	211685.9	0.6	**91.3948**	0.192	0.2	ug/L	21	Standard
	Ce	140	2868.6	2.4				ug/L	245	Standard
>	Tb	159	1029121.0	0.5				ug/L	950397	Standard
	Ho	165	185.0	14.3				ug/L	7	Standard
	Tl	203	334.0	8.3	**0.0363**	0.003	8.5	ug/L	15	Standard
	Tl	205	321.7	4.7	**0.0304**	0.002	6.7	ug/L	13	Standard
	Pb	206	8239.2	0.3	**1.4051**	0.008	0.6	ug/L	264	Standard
	Pb	207	6707.8	0.3	**1.2527**	0.005	0.4	ug/L	222	Standard
	Pb	208	28813.8	0.3	**1.3177**	0.005	0.4	ug/L	959	Standard
	U	238	815.7	5.7	**0.1005**	0.006	5.9	ug/L	9	Standard
>	Bi	209	555326.9	0.6				ug/L	552821	Standard

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 13:21:49
Page 1

Approved: July 02, 2016

Na	23	11.7	89.2	**29.1295**	26.033	89.4	mg/L	2	Standard
Mg	24	145830.2	1.6	**142.9963**	1.122	0.8	mg/L	55	Standard
K	39	1910.1	4.3	**6.0209**	0.304	5.1	mg/L	28	Standard
Ca	43	1011.7	3.6	**74.7713**	3.380	4.5	mg/L	27	Standard
Fe	54	1358.4	2.2	**0.7959**	0.027	3.4	mg/L	147	Standard
Fe	57	1346.7	4.5	**2.6702**	0.125	4.7	mg/L	268	Standard
> **Sc-1**	45	49029.2	0.9				mg/L	41174	Standard
Cl	35	174677.8	0.8				ug/L	69550	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1284910.2	3.2				ug/L	1950	Standard
P	31	34656.3	1.1				ug/L	21156	Standard
S	34	3823.8	7.2				ug/L	3419	Standard
Sr	88	1511.7	7.3				ug/L	72	Standard
C	12	326.7	14.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1320.1	5.5				mg/L	17	Standard
Dy	164	1289.7	16.2				mg/L	16	Standard
Ho-1	165	185.0	14.3				mg/L	7	Standard
Er	166	146.7	50.3				mg/L	7	Standard
I	127	128302.1	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.087	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.362	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 13:21:49
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.444
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.453
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 13:21:49
Page 3

Approved: July 02, 2016

Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606146801
Sample Date/Time: Friday, July 01, 2016 13:22:43
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	95246.8	1.7				ug/L	76456	Standard
	Be	9	60.0	36.3	**0.0230**	0.015	65.8	ug/L	20	Standard
	Al	27	35472226.0	0.8	**166.3429**	2.244	1.3	ug/L	1307	Standard
	Sc	45	46670.1	1.2				ug/L	41174	Standard
	Ti	47	140.0	21.5	**0.3094**	0.088	28.6	ug/L	27	Standard
	V	51	4190.3	5.3	**0.2681**	0.025	9.2	ug/L	1434	Standard
	Cr	52	13346.9	2.4	**0.5405**	0.016	3.1	ug/L	7733	Standard
	Cr	53	6873.2	1.9	**5.8101**	0.177	3.1	ug/L	442	Standard
	Mn	55	19772.6	3.3	**2.2894**	0.049	2.1	ug/L	723	Standard
	Co	59	1288.4	10.2	**0.1244**	0.014	11.2	ug/L	217	Standard
	Ni	60	3544.7	6.0	**1.4102**	0.074	5.2	ug/L	304	Standard
	Cu	65	6205.3	5.0	**2.7088**	0.103	3.8	ug/L	181	Standard
	Zn	66	22108.8	2.9	**16.3375**	0.265	1.6	ug/L	215	Standard
>	Ge	72	568906.9	1.3				ug/L	520809	Standard
	As	75	543.4	5.2	**0.4480**	0.017	3.7	ug/L	-52	Standard
	Se	82	262.1	5.1	**1.7720**	0.073	4.1	ug/L	17	Standard
	Se-1	77	440.0	5.3	**4.0275**	0.247	6.1	ug/L	56	Standard
>	Ga	71	158.3	3.6				mg/L	25	Standard
	Rb	85	31255.6	3.8				ug/L	28	Standard
	Y	89	486688.8	1.2				ug/L	447395	Standard
>	Rh	103	48.3	15.8				ug/L	15	Standard
	Mo	98	2311.5	33.1	**0.6846**	0.225	32.9	ug/L	113	Standard
	Ag	107	184.3	31.5	**0.0110**	0.007	66.0	ug/L	108	Standard
	Cd	111	67.6	38.4	**0.0249**	0.010	40.7	mg/L	3	Standard
	Cd	114	137.0	32.2	**0.0223**	0.007	31.3	ug/L	20	Standard
>	In	115	673094.9	1.4				ug/L	625728	Standard
	Sn	118	1788.4	15.0	**0.1745**	0.042	24.3	ug/L	568	Standard
	Sb	123	351.8	14.1	**0.0296**	0.010	32.6	ug/L	612	Standard
	Ba	135	56024.1	0.9	**23.9231**	0.201	0.8	ug/L	21	Standard
	Ce	140	3798.8	2.1				ug/L	245	Standard
>	Tb	159	1033945.4	1.1				ug/L	950397	Standard
	Ho	165	101.7	7.5				ug/L	7	Standard
	Tl	203	1144.4	9.6	**0.1229**	0.010	8.3	ug/L	15	Standard
	Tl	205	953.4	4.2	**0.1063**	0.005	4.8	ug/L	13	Standard
	Pb	206	1672.1	2.6	**0.2429**	0.007	2.7	ug/L	264	Standard
	Pb	207	1423.7	2.4	**0.2227**	0.003	1.2	ug/L	222	Standard
	Pb	208	6035.8	3.4	**0.2307**	0.005	2.3	ug/L	959	Standard
	U	238	4452.3	3.5	**0.5357**	0.011	2.0	ug/L	9	Standard
>	Bi	209	569516.4	1.6				ug/L	552821	Standard

Sample ID: L1606146801
Report Date/Time: Friday, July 01, 2016 13:25:00
Page 1

Approved: July 02, 2016

Na	23	8.3	34.6	**21.9971**	7.770	35.3	mg/L	2	Standard
Mg	24	21678.8	1.3	**22.2848**	0.435	2.0	mg/L	55	Standard
K	39	2645.2	6.0	**8.8196**	0.578	6.6	mg/L	28	Standard
Ca	43	443.3	15.1	**33.0787**	5.254	15.9	mg/L	27	Standard
Fe	54	243.9	19.5	**0.0697**	0.031	44.8	mg/L	147	Standard
Fe	57	548.3	7.8	**0.6829**	0.122	17.9	mg/L	268	Standard
> **Sc-1**	45	46670.1	1.2				mg/L	41174	Standard
Cl	35	103993.1	1.8				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	45849.6	8.7				ug/L	1950	Standard
P	31	27049.2	4.2				ug/L	21156	Standard
S	34	3738.8	3.2				ug/L	3419	Standard
Sr	88	155.0	11.6				ug/L	72	Standard
C	12	323.3	23.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	17	Standard
Dy	164	114.1	9.2				mg/L	16	Standard
Ho-1	165	101.7	7.5				mg/L	7	Standard
Er	166	123.3	9.4				mg/L	7	Standard
I	127	41777.5	0.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.578	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.235	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606146801
Report Date/Time: Friday, July 01, 2016 13:25:00
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.570
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.020
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606146801PS WG574824-01
Sample Date/Time: Friday, July 01, 2016 13:25:55
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90108.8	0.5				ug/L	76456	Standard
	Be	9	70249.2	1.7	**53.2245**	0.671	1.3	ug/L	20	Standard
	Al	27	34044331.9	1.0	**168.7325**	2.084	1.2	ug/L	1307	Standard
	Sc	45	45399.6	0.8				ug/L	41174	Standard
	Ti	47	138.7	17.3	**0.3148**	0.070	22.1	ug/L	27	Standard
	V	51	476317.0	1.0	**54.1491**	0.294	0.5	ug/L	1434	Standard
	Cr	52	466031.0	0.5	**53.0857**	0.077	0.1	ug/L	7733	Standard
	Cr	53	63049.2	0.3	**58.0938**	0.175	0.3	ug/L	442	Standard
	Mn	55	440401.5	1.9	**54.4612**	0.687	1.3	ug/L	723	Standard
	Co	59	434977.5	1.9	**53.2245**	0.684	1.3	ug/L	217	Standard
	Ni	60	116940.2	0.8	**52.7068**	0.130	0.2	ug/L	304	Standard
	Cu	65	117328.2	0.6	**53.8548**	0.631	1.2	ug/L	181	Standard
	Zn	66	90120.9	0.2	**68.8123**	0.512	0.7	ug/L	215	Standard
>	Ge	72	555295.5	0.6				ug/L	520809	Standard
	As	75	70805.4	0.6	**53.8379**	0.372	0.7	ug/L	-52	Standard
	Se	82	7397.3	0.8	**54.7911**	0.368	0.7	ug/L	17	Standard
	Se-1	77	5164.9	2.2	**55.9837**	1.347	2.4	ug/L	56	Standard
>	Ga	71	125.0	14.4				mg/L	25	Standard
	Rb	85	30505.7	1.7				ug/L	28	Standard
	Y	89	478605.6	2.2				ug/L	447395	Standard
>	Rh	103	46.7	43.3				ug/L	15	Standard
	Mo	98	839.0	9.3	**0.2402**	0.025	10.4	ug/L	113	Standard
	Ag	107	377133.6	0.1	**49.9818**	0.291	0.6	ug/L	108	Standard
	Cd	111	125097.0	1.5	**51.7283**	0.533	1.0	mg/L	3	Standard
	Cd	114	305450.5	0.6	**51.0188**	0.497	1.0	ug/L	20	Standard
>	In	115	657251.3	0.6				ug/L	625728	Standard
	Sn	118	2133.5	27.9	**0.2313**	0.087	37.7	ug/L	568	Standard
	Sb	123	274150.2	2.6	**50.4698**	1.311	2.6	ug/L	612	Standard
	Ba	135	169708.2	1.1	**74.2483**	0.737	1.0	ug/L	21	Standard
	Ce	140	3655.4	2.8				ug/L	245	Standard
>	Tb	159	997893.3	1.3				ug/L	950397	Standard
	Ho	165	96.7	3.0				ug/L	7	Standard
	Tl	203	479768.6	1.3	**52.5300**	0.668	1.3	ug/L	15	Standard
	Tl	205	441867.2	0.2	**54.4752**	0.081	0.1	ug/L	13	Standard
	Pb	206	307910.6	0.5	**53.4209**	0.305	0.6	ug/L	264	Standard
	Pb	207	270893.2	0.6	**51.7493**	0.347	0.7	ug/L	222	Standard
	Pb	208	1132008.2	0.1	**52.9464**	0.115	0.2	ug/L	959	Standard
	U	238	437881.5	0.7	**53.3944**	0.388	0.7	ug/L	9	Standard
>	Bi	209	562372.5	0.1				ug/L	552821	Standard

Sample ID: L1606146801PS WG574824-01
Report Date/Time: Friday, July 01, 2016 13:28:12
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.0238**	15.621	173.1	mg/L	2	Standard
Mg	24	21021.2	2.0	**22.2136**	0.609	2.7	mg/L	55	Standard
K	39	2403.5	9.2	**8.2292**	0.795	9.7	mg/L	28	Standard
Ca	43	463.3	6.3	**35.7330**	2.393	6.7	mg/L	27	Standard
Fe	54	243.1	16.8	**0.0741**	0.029	39.0	mg/L	147	Standard
Fe	57	501.7	6.6	**0.5936**	0.084	14.1	mg/L	268	Standard
> **Sc-1**	45	45399.6	0.8				mg/L	41174	Standard
Cl	35	103755.4	0.3				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	34723.1	4.1				ug/L	1950	Standard
P	31	26186.0	3.6				ug/L	21156	Standard
S	34	3878.8	0.5				ug/L	3419	Standard
Sr	88	156.7	22.4				ug/L	72	Standard
C	12	250.0	6.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	17	Standard
Dy	164	122.0	12.6				mg/L	16	Standard
Ho-1	165	96.7	3.0				mg/L	7	Standard
Er	166	96.7	21.5				mg/L	7	Standard
I	127	39521.5	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.622	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606146801PS WG574824-01
Report Date/Time: Friday, July 01, 2016 13:28:12
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.038
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.728
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606146801PS WG574824-01
Report Date/Time: Friday, July 01, 2016 13:28:12
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606146801SDL WG574824-02
Sample Date/Time: Friday, July 01, 2016 13:29:06
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81934.4	2.4				ug/L	76456	Standard
	Be	9	23.3	12.4	**-0.0004**	0.002	528.6	ug/L	20	Standard
	Al	27	6372058.3	0.6	**34.7368**	0.867	2.5	ug/L	1307	Standard
	Sc	45	41202.6	2.0				ug/L	41174	Standard
	Ti	47	41.3	2.8	**0.0406**	0.003	7.7	ug/L	27	Standard
	V	51	2837.9	5.4	**0.1420**	0.017	12.0	ug/L	1434	Standard
	Cr	52	10022.3	0.9	**0.2524**	0.016	6.4	ug/L	7733	Standard
	Cr	53	2263.5	3.6	**1.7926**	0.079	4.4	ug/L	442	Standard
	Mn	55	3961.5	5.6	**0.4150**	0.030	7.3	ug/L	723	Standard
	Co	59	455.7	11.3	**0.0293**	0.007	23.1	ug/L	217	Standard
	Ni	60	945.7	5.5	**0.2966**	0.026	8.9	ug/L	304	Standard
	Cu	65	1313.7	2.7	**0.5610**	0.018	3.2	ug/L	181	Standard
	Zn	66	5244.2	0.6	**4.0427**	0.043	1.1	ug/L	215	Standard
>	**Ge**	72	527921.1	0.4				ug/L	520809	Standard
	As	75	85.0	19.3	**0.1131**	0.013	11.5	ug/L	-52	Standard
	Se	82	67.2	5.5	**0.3985**	0.027	6.7	ug/L	17	Standard
	Se-1	77	133.3	10.0	**0.8545**	0.159	18.6	ug/L	56	Standard
>	**Ga**	71	51.7	34.0				mg/L	25	Standard
	Rb	85	5692.7	3.6				ug/L	28	Standard
	Y	89	450949.6	1.2				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	345.8	14.9	**0.0912**	0.015	16.7	ug/L	113	Standard
	Ag	107	237.3	15.4	**0.0205**	0.005	24.9	ug/L	108	Standard
	Cd	111	35.8	40.8	**0.0133**	0.006	46.9	mg/L	3	Standard
	Cd	114	93.4	10.0	**0.0165**	0.001	8.4	ug/L	20	Standard
>	**In**	115	620231.7	1.6				ug/L	625728	Standard
	Sn	118	866.7	12.4	**0.0518**	0.019	35.8	ug/L	568	Standard
	Sb	123	1735.5	30.3	**0.3061**	0.107	34.9	ug/L	612	Standard
	Ba	135	10779.2	0.9	**4.9812**	0.056	1.1	ug/L	21	Standard
	Ce	140	791.7	4.9				ug/L	245	Standard
>	**Tb**	159	942729.5	1.8				ug/L	950397	Standard
	Ho	165	28.3	36.7				ug/L	7	Standard
	Tl	203	339.3	13.7	**0.0372**	0.005	12.3	ug/L	15	Standard
	Tl	205	293.3	14.5	**0.0272**	0.005	18.3	ug/L	13	Standard
	Pb	206	612.0	8.4	**0.0647**	0.008	11.7	ug/L	264	Standard
	Pb	207	519.7	9.7	**0.0553**	0.008	14.9	ug/L	222	Standard
	Pb	208	2221.7	7.6	**0.0579**	0.007	11.9	ug/L	959	Standard
	U	238	900.0	3.6	**0.1118**	0.003	3.1	ug/L	9	Standard
>	**Bi**	209	550585.9	1.6				ug/L	552821	Standard

Sample ID: L1606146801SDL WG574824-02
Report Date/Time: Friday, July 01, 2016 13:31:23
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.0521**	8.742	173.0	mg/L	2	Standard
Mg	24	4062.2	4.3	**4.6808**	0.132	2.8	mg/L	55	Standard
K	39	498.3	11.6	**1.7809**	0.252	14.1	mg/L	28	Standard
Ca	43	101.7	7.5	**6.7726**	0.507	7.5	mg/L	27	Standard
Fe	54	107.3	30.2	**-0.0145**	0.026	180.3	mg/L	147	Standard
Fe	57	291.7	13.3	**0.0919**	0.123	133.6	mg/L	268	Standard
> **Sc-1**	45	41202.6	2.0				mg/L	41174	Standard
Cl	35	96829.8	0.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	10183.4	2.4				ug/L	1950	Standard
P	31	11094.1	2.9				ug/L	21156	Standard
S	34	3683.8	0.7				ug/L	3419	Standard
Sr	88	95.0	24.1				ug/L	72	Standard
C	12	163.3	7.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	17	Standard
Dy	164	29.5	32.3				mg/L	16	Standard
Ho-1	165	28.3	36.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	35264.3	1.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.166	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.366	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606146801SDL WG574824-02
Report Date/Time: Friday, July 01, 2016 13:31:23
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.122
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.596
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 13:32:18
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83467.6	1.4				ug/L	76456	Standard
	Be	9	63718.7	0.7	**52.1231**	0.475	0.9	ug/L	20	Standard
	Al	27	9062605.1	0.9	**48.4842**	0.275	0.6	ug/L	1307	Standard
	Sc	45	44059.0	1.3				ug/L	41174	Standard
	Ti	47	34404.0	1.1	**99.0094**	0.671	0.7	ug/L	27	Standard
	V	51	443244.1	0.4	**50.4051**	0.454	0.9	ug/L	1434	Standard
	Cr	52	434951.0	1.6	**49.5050**	0.344	0.7	ug/L	7733	Standard
	Cr	53	55258.9	0.5	**50.8922**	0.303	0.6	ug/L	442	Standard
	Mn	55	403371.8	0.9	**49.9032**	0.315	0.6	ug/L	723	Standard
	Co	59	418724.4	1.0	**51.2643**	0.239	0.5	ug/L	217	Standard
	Ni	60	110119.8	2.0	**49.6473**	0.559	1.1	ug/L	304	Standard
	Cu	65	108317.9	1.6	**49.7353**	0.387	0.8	ug/L	181	Standard
	Zn	66	65643.9	0.2	**50.1012**	0.420	0.8	ug/L	215	Standard
>	Ge	72	555003.0	0.9				ug/L	520809	Standard
	As	75	65592.7	0.9	**49.9040**	0.350	0.7	ug/L	-52	Standard
	Se	82	6752.9	1.3	**50.0327**	0.319	0.6	ug/L	17	Standard
	Se-1	77	4634.4	1.8	**50.1857**	0.510	1.0	ug/L	56	Standard
>	Ga	71	43.3	43.7				mg/L	25	Standard
	Rb	85	895.0	1.7				ug/L	28	Standard
	Y	89	470300.0	1.3				ug/L	447395	Standard
>	Rh	103	21.7	53.3				ug/L	15	Standard
	Mo	98	316268.1	0.4	**99.0881**	0.889	0.9	ug/L	113	Standard
	Ag	107	376354.5	0.2	**49.6535**	0.293	0.6	ug/L	108	Standard
	Cd	111	120441.8	1.1	**49.5792**	0.292	0.6	mg/L	3	Standard
	Cd	114	295637.4	1.1	**49.1550**	0.340	0.7	ug/L	20	Standard
>	In	115	660227.7	0.5				ug/L	625728	Standard
	Sn	118	331178.7	0.6	**48.6841**	0.135	0.3	ug/L	568	Standard
	Sb	123	273404.4	0.5	**50.1048**	0.039	0.1	ug/L	612	Standard
	Ba	135	110185.5	0.7	**47.9831**	0.253	0.5	ug/L	21	Standard
	Ce	140	71.7	8.1				ug/L	245	Standard
>	Tb	159	984792.3	0.6				ug/L	950397	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	462531.1	0.4	**50.2621**	0.297	0.6	ug/L	15	Standard
	Tl	205	421818.4	1.3	**51.6134**	0.810	1.6	ug/L	13	Standard
	Pb	206	290494.8	0.7	**50.0181**	0.451	0.9	ug/L	264	Standard
	Pb	207	263168.3	0.9	**49.8939**	0.483	1.0	ug/L	222	Standard
	Pb	208	1101207.6	0.2	**51.1172**	0.228	0.4	ug/L	959	Standard
	U	238	418119.7	0.4	**50.6018**	0.328	0.6	ug/L	9	Standard
>	Bi	209	566634.4	0.3				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 13:34:35
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4939.1	6.4	**5.3310**	0.320	6.0	mg/L	55	Standard
K	39	1245.1	5.8	**4.3288**	0.211	4.9	mg/L	28	Standard
Ca	43	85.0	25.6	**4.7651**	1.854	38.9	mg/L	27	Standard
Fe	54	6867.9	1.6	**4.9353**	0.136	2.8	mg/L	147	Standard
Fe	57	2071.8	2.6	**5.1454**	0.157	3.1	mg/L	268	Standard
> **Sc-1**	45	44059.0	1.3				mg/L	41174	Standard
Cl	35	90383.1	4.1				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	4354.0	6.6				ug/L	1950	Standard
P	31	26625.0	1.6				ug/L	21156	Standard
S	34	4595.7	0.9				ug/L	3419	Standard
Sr	88	73.3	21.9				ug/L	72	Standard
C	12	80.0	25.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	9.7	105.8				mg/L	16	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	17566.9	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.246		
Al	27	96.968		
Sc	45			
Ti	47	99.009		
V	51	100.810		
Cr	52	99.010		
Cr	53			
Mn	55	99.806		
Co	59	102.529		
Ni	60	99.295		
Cu	65	99.471		
Zn	66	100.202		
> Ge	72		106.565	
As	75	99.808		
Se	82	100.065		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 13:34:35
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	99.088		
Ag	107	99.307		
Cd	111	99.158		
Cd	114			
In	115			105.514
Sn	118	97.368		
Sb	123	100.210		
Ba	135	95.966		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.524		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.234		
U	238	101.204		
Bi	209			102.499
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 13:34:35
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 13:35:30
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81907.5	2.0				ug/L	76456	Standard
	Be	9	33.3	37.7	**0.0081**	0.011	136.7	ug/L	20	Standard
	Al	27	3658.8	6.2	**0.0097**	0.001	9.1	ug/L	1307	Standard
	Sc	45	43395.4	0.6				ug/L	41174	Standard
	Ti	47	24.0	4.2	**-0.0151**	0.003	16.8	ug/L	27	Standard
	V	51	1486.9	6.2	**-0.0280**	0.012	41.3	ug/L	1434	Standard
	Cr	52	7626.6	0.2	**-0.0811**	0.008	9.6	ug/L	7733	Standard
	Cr	53	623.3	4.9	**0.1647**	0.029	17.3	ug/L	442	Standard
	Mn	55	758.4	6.6	**-0.0069**	0.006	85.9	ug/L	723	Standard
	Co	59	258.3	7.6	**0.0024**	0.003	111.1	ug/L	217	Standard
	Ni	60	313.7	6.6	**-0.0106**	0.010	91.1	ug/L	304	Standard
	Cu	65	185.7	9.2	**0.0117**	0.008	71.7	ug/L	181	Standard
	Zn	66	252.7	5.5	**0.0142**	0.012	81.1	ug/L	215	Standard
>	**Ge**	72	552319.3	0.7				ug/L	520809	Standard
	As	75	-27.0	147.4	**0.0246**	0.030	123.9	ug/L	-52	Standard
	Se	82	28.2	27.0	**0.0839**	0.058	69.1	ug/L	17	Standard
	Se-1	77	72.0	11.0	**0.1099**	0.092	83.3	ug/L	56	Standard
>	**Ga**	71	16.7	62.4				mg/L	25	Standard
	Rb	85	41.7	61.6				ug/L	28	Standard
	Y	89	471686.6	0.8				ug/L	447395	Standard
>	**Rh**	103	6.7	114.6				ug/L	15	Standard
	Mo	98	354.1	7.5	**0.0877**	0.008	9.3	ug/L	113	Standard
	Ag	107	160.0	3.9	**0.0084**	0.001	9.7	ug/L	108	Standard
	Cd	111	21.1	31.9	**0.0064**	0.003	43.8	mg/L	3	Standard
	Cd	114	42.3	49.2	**0.0071**	0.003	48.8	ug/L	20	Standard
>	**In**	115	656112.9	0.3				ug/L	625728	Standard
	Sn	118	1841.8	22.7	**0.1887**	0.062	32.7	ug/L	568	Standard
	Sb	123	1164.1	37.2	**0.1810**	0.080	44.0	ug/L	612	Standard
	Ba	135	49.7	23.3	**0.0039**	0.005	131.8	ug/L	21	Standard
	Ce	140	23.3	81.1				ug/L	245	Standard
>	**Tb**	159	980631.2	1.7				ug/L	950397	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	97.0	22.3	**0.0098**	0.002	24.1	ug/L	15	Standard
	Tl	205	98.3	10.6	**0.0022**	0.001	58.4	ug/L	13	Standard
	Pb	206	329.0	7.5	**0.0127**	0.004	31.8	ug/L	264	Standard
	Pb	207	298.7	13.9	**0.0104**	0.008	73.2	ug/L	222	Standard
	Pb	208	1210.7	3.3	**0.0078**	0.002	20.2	ug/L	959	Standard
	U	238	84.3	9.6	**0.0099**	0.001	9.3	ug/L	9	Standard
>	**Bi**	209	568472.1	0.5				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 13:37:47
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	32.8	**-0.0177**	0.014	79.8	mg/L	55	Standard
K	39	20.0	43.3	**-0.0585**	0.031	53.1	mg/L	28	Standard
Ca	43	10.0	50.0	**-1.5919**	0.429	27.0	mg/L	27	Standard
Fe	54	159.5	25.8	**0.0198**	0.030	153.3	mg/L	147	Standard
Fe	57	218.3	15.2	**-0.1678**	0.094	56.0	mg/L	268	Standard
Sc-1	45	43395.4	0.6				mg/L	41174	Standard
Cl	35	88102.1	0.5				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	3323.7	4.5				ug/L	1950	Standard
P	31	24955.5	2.9				ug/L	21156	Standard
S	34	4405.6	3.7				ug/L	3419	Standard
Sr	88	81.7	3.5				ug/L	72	Standard
C	12	120.0	8.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	-1.1	49.5				mg/L	16	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	7	Standard
I	127	13129.0	1.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.050	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 13:37:47
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.856
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.831
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 13:37:47
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606147001
Sample Date/Time: Friday, July 01, 2016 13:38:42
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81631.0	0.4				ug/L	76456	Standard
	Be	9	53.3	51.6	**0.0248**	0.023	93.4	ug/L	20	Standard
	Al	27	1267924.9	0.3	**6.9269**	0.012	0.2	ug/L	1307	Standard
	Sc	45	44398.3	2.2				ug/L	41174	Standard
	Ti	47	2584.6	3.5	**7.4850**	0.306	4.1	ug/L	27	Standard
	V	51	6589.9	3.8	**0.5661**	0.025	4.4	ug/L	1434	Standard
	Cr	52	17924.3	2.1	**1.1443**	0.040	3.5	ug/L	7733	Standard
	Cr	53	3320.4	0.9	**2.7174**	0.024	0.9	ug/L	442	Standard
	Mn	55	64462.5	1.4	**8.0226**	0.071	0.9	ug/L	723	Standard
	Co	59	2066.5	2.4	**0.2279**	0.005	2.1	ug/L	217	Standard
	Ni	60	3389.4	1.0	**1.4053**	0.013	0.9	ug/L	304	Standard
	Cu	65	36919.6	0.8	**17.1868**	0.112	0.7	ug/L	181	Standard
	Zn	66	100190.5	0.7	**77.8387**	0.507	0.7	ug/L	215	Standard
>	**Ge**	72	545904.9	0.6				ug/L	520809	Standard
	As	75	297.3	18.2	**0.2747**	0.041	14.8	ug/L	-52	Standard
	Se	82	57.3	13.9	**0.3062**	0.059	19.1	ug/L	17	Standard
	Se-1	77	123.0	8.6	**0.6885**	0.126	18.3	ug/L	56	Standard
>	**Ga**	71	431.7	8.5				mg/L	25	Standard
	Rb	85	29366.8	1.1				ug/L	28	Standard
	Y	89	475138.4	0.5				ug/L	447395	Standard
>	**Rh**	103	50.0	45.8				ug/L	15	Standard
	Mo	98	2283.8	2.0	**0.7046**	0.016	2.2	ug/L	113	Standard
	Ag	107	471.3	8.2	**0.0505**	0.006	10.9	ug/L	108	Standard
	Cd	111	442.4	4.4	**0.1831**	0.009	4.8	mg/L	3	Standard
	Cd	114	1113.8	8.0	**0.1885**	0.014	7.5	ug/L	20	Standard
>	**In**	115	648548.7	0.6				ug/L	625728	Standard
	Sn	118	6074.6	8.1	**0.8267**	0.078	9.5	ug/L	568	Standard
	Sb	123	3585.4	3.4	**0.6357**	0.026	4.1	ug/L	612	Standard
	Ba	135	28482.1	1.1	**12.6131**	0.063	0.5	ug/L	21	Standard
	Ce	140	9227.8	4.3				ug/L	245	Standard
>	**Tb**	159	980514.4	0.6				ug/L	950397	Standard
	Ho	165	175.0	22.7				ug/L	7	Standard
	Tl	203	154.0	7.9	**0.0159**	0.001	7.9	ug/L	15	Standard
	Tl	205	146.7	61.1	**0.0082**	0.011	135.5	ug/L	13	Standard
	Pb	206	300241.0	0.6	**51.5086**	0.588	1.1	ug/L	264	Standard
	Pb	207	251797.0	0.4	**47.5618**	0.476	1.0	ug/L	222	Standard
	Pb	208	1082895.4	0.4	**50.0819**	0.392	0.8	ug/L	959	Standard
	U	238	477.3	8.6	**0.0573**	0.005	9.4	ug/L	9	Standard
>	**Bi**	209	568731.4	0.7				ug/L	552821	Standard

Sample ID: L1606147001
Report Date/Time: Friday, July 01, 2016 13:40:59
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4449.0	1.5	**4.7618**	0.165	3.5	mg/L	55	Standard
K	39	216.7	12.7	**0.6389**	0.091	14.3	mg/L	28	Standard
Ca	43	100.0	13.2	**5.9773**	1.125	18.8	mg/L	27	Standard
Fe	54	785.4	6.3	**0.4720**	0.024	5.1	mg/L	147	Standard
Fe	57	430.0	12.3	**0.4211**	0.144	34.2	mg/L	268	Standard
> **Sc-1**	45	44398.3	2.2				mg/L	41174	Standard
Cl	35	84373.7	2.1				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	8569.1	5.7				ug/L	1950	Standard
P	31	27454.9	2.2				ug/L	21156	Standard
S	34	3758.8	6.0				ug/L	3419	Standard
Sr	88	151.7	5.0				ug/L	72	Standard
C	12	163.3	44.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	436.7	46.5				mg/L	17	Standard
Dy	164	239.6	2.7				mg/L	16	Standard
Ho-1	165	175.0	22.7				mg/L	7	Standard
Er	166	146.7	15.7				mg/L	7	Standard
I	127	165778.6	7.4				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.769	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.819	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606147001
Report Date/Time: Friday, July 01, 2016 13:40:59
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.647
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.878
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606147101
Sample Date/Time: Friday, July 01, 2016 13:41:54
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82165.6	1.5				ug/L	76456	Standard
	Be	9	25.0	60.0	**0.0010**	0.013	1235.0	ug/L	20	Standard
	Al	27	7420176.1	1.8	**40.3263**	0.745	1.8	ug/L	1307	Standard
	Sc	45	43403.8	1.8				ug/L	41174	Standard
	Ti	47	118.3	2.1	**0.2622**	0.007	2.8	ug/L	27	Standard
	V	51	2485.8	8.9	**0.0901**	0.026	28.6	ug/L	1434	Standard
	Cr	52	11852.6	4.6	**0.4290**	0.067	15.6	ug/L	7733	Standard
	Cr	53	3065.3	10.5	**2.4783**	0.300	12.1	ug/L	442	Standard
	Mn	55	13532.4	4.2	**1.6054**	0.074	4.6	ug/L	723	Standard
	Co	59	973.4	27.9	**0.0919**	0.034	37.1	ug/L	217	Standard
	Ni	60	2788.9	4.3	**1.1302**	0.057	5.1	ug/L	304	Standard
	Cu	65	167698.1	1.5	**78.3834**	1.378	1.8	ug/L	181	Standard
	Zn	66	18490.9	1.1	**14.2285**	0.192	1.3	ug/L	215	Standard
>	Ge	72	545541.7	0.2				ug/L	520809	Standard
	As	75	56.9	102.5	**0.0892**	0.045	50.6	ug/L	-52	Standard
	Se	82	46.0	7.1	**0.2215**	0.025	11.4	ug/L	17	Standard
	Se-1	77	165.0	10.0	**1.1579**	0.182	15.8	ug/L	56	Standard
>	Ga	71	40.0	45.1				mg/L	25	Standard
	Rb	85	1635.1	4.7				ug/L	28	Standard
	Y	89	467449.1	1.6				ug/L	447395	Standard
>	Rh	103	46.7	27.0				ug/L	15	Standard
	Mo	98	638.2	33.3	**0.1798**	0.068	38.0	ug/L	113	Standard
	Ag	107	803.4	8.9	**0.0950**	0.010	10.3	ug/L	108	Standard
	Cd	111	142.8	28.8	**0.0575**	0.017	29.9	mg/L	3	Standard
	Cd	114	382.8	34.4	**0.0647**	0.022	33.9	ug/L	20	Standard
>	In	115	648871.9	1.3				ug/L	625728	Standard
	Sn	118	1820.1	16.8	**0.1889**	0.050	26.3	ug/L	568	Standard
	Sb	123	517.0	31.6	**0.0630**	0.032	50.1	ug/L	612	Standard
	Ba	135	105021.4	1.0	**46.5367**	0.469	1.0	ug/L	21	Standard
	Ce	140	176.7	12.8				ug/L	245	Standard
>	Tb	159	974106.7	1.7				ug/L	950397	Standard
	Ho	165	20.0	43.3				ug/L	7	Standard
	Tl	203	182.7	61.2	**0.0196**	0.013	64.0	ug/L	15	Standard
	Tl	205	260.0	110.0	**0.0228**	0.036	157.4	ug/L	13	Standard
	Pb	206	1477.4	2.4	**0.2162**	0.008	3.6	ug/L	264	Standard
	Pb	207	1248.7	8.1	**0.1959**	0.021	10.5	ug/L	222	Standard
	Pb	208	5698.4	18.4	**0.2221**	0.051	22.9	ug/L	959	Standard
	U	238	669.4	46.7	**0.0825**	0.039	47.3	ug/L	9	Standard
>	Bi	209	555056.3	0.6				ug/L	552821	Standard

Sample ID: L1606147101
Report Date/Time: Friday, July 01, 2016 13:44:11
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8267.3	1.5	**9.1027**	0.178	2.0	mg/L	55	Standard
K	39	178.3	20.3	**0.5189**	0.142	27.4	mg/L	28	Standard
Ca	43	265.0	15.0	**20.3615**	3.046	15.0	mg/L	27	Standard
Fe	54	255.7	20.5	**0.0914**	0.039	42.6	mg/L	147	Standard
Fe	57	411.7	6.1	**0.3970**	0.095	23.9	mg/L	268	Standard
> **Sc-1**	45	43403.8	1.8				mg/L	41174	Standard
Cl	35	91879.7	0.6				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	5647.7	9.0				ug/L	1950	Standard
P	31	26070.8	4.0				ug/L	21156	Standard
S	34	4028.9	4.5				ug/L	3419	Standard
Sr	88	183.3	6.3				ug/L	72	Standard
C	12	180.0	24.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	57.3				mg/L	17	Standard
Dy	164	38.6	26.6				mg/L	16	Standard
Ho-1	165	20.0	43.3				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	7	Standard
I	127	15740.0	17.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.468	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.749	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606147101
Report Date/Time: Friday, July 01, 2016 13:44:11
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.699
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606153601 WG574593-01
Sample Date/Time: Friday, July 01, 2016 13:45:05
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	105632.1	2.8				ug/L	76456	Standard
	Be	9	31.7	39.7	**0.0005**	0.008	1597.2	ug/L	20	Standard
	Al	27	9212844.4	2.9	**38.9423**	0.330	0.8	ug/L	1307	Standard
	Sc	45	37845.6	1.8				ug/L	41174	Standard
	Ti	47	303.7	8.6	**0.9123**	0.111	12.1	ug/L	27	Standard
	V	51	24245.6	11.6	**2.9541**	0.410	13.9	ug/L	1434	Standard
	Cr	52	16917.1	2.1	**1.2643**	0.091	7.2	ug/L	7733	Standard
	Cr	53	9354.6	13.4	**9.4775**	1.472	15.5	ug/L	442	Standard
	Mn	55	60166.6	2.3	**8.3838**	0.064	0.8	ug/L	723	Standard
	Co	59	59968.5	3.2	**8.3264**	0.059	0.7	ug/L	217	Standard
	Ni	60	11329.9	3.4	**5.6751**	0.056	1.0	ug/L	304	Standard
	Cu	65	10538.7	5.5	**5.4379**	0.239	4.4	ug/L	181	Standard
	Zn	66	77341.6	1.9	**67.2161**	0.503	0.7	ug/L	215	Standard
>	Ge	72	487884.6	2.6				ug/L	520809	Standard
	As	75	3262.4	6.3	**2.8666**	0.175	6.1	ug/L	-52	Standard
	Se	82	371.0	19.1	**3.0068**	0.587	19.5	ug/L	17	Standard
	Se-1	77	623.3	8.4	**7.1096**	0.803	11.3	ug/L	56	Standard
>	Ga	71	1885.1	4.1				mg/L	25	Standard
	Rb	85	131658.3	3.5				ug/L	28	Standard
	Y	89	431897.9	2.3				ug/L	447395	Standard
>	Rh	103	143.3	38.9				ug/L	15	Standard
	Mo	98	627591.1	3.5	**227.1784**	5.050	2.2	ug/L	113	Standard
	Ag	107	276.3	2.5	**0.0293**	0.001	4.0	ug/L	108	Standard
	Cd	111	-404.3	7.2	**-0.1947**	0.015	7.6	mg/L	3	Standard
	Cd	114	1007.4	4.4	**0.1935**	0.003	1.7	ug/L	20	Standard
>	In	115	571506.3	2.8				ug/L	625728	Standard
	Sn	118	2893.6	2.8	**0.4084**	0.024	5.8	ug/L	568	Standard
	Sb	123	6941.9	4.4	**1.4365**	0.025	1.7	ug/L	612	Standard
	Ba	135	39683.6	1.8	**19.9579**	0.305	1.5	ug/L	21	Standard
	Ce	140	421.7	17.2				ug/L	245	Standard
>	Tb	159	912620.2	2.1				ug/L	950397	Standard
	Ho	165	31.7	24.1				ug/L	7	Standard
	Tl	203	8399.3	2.5	**1.0755**	0.030	2.8	ug/L	15	Standard
	Tl	205	7106.7	3.1	**1.0155**	0.022	2.2	ug/L	13	Standard
	Pb	206	2580.9	3.9	**0.4804**	0.009	1.9	ug/L	264	Standard
	Pb	207	2297.2	1.5	**0.4679**	0.011	2.3	ug/L	222	Standard
	Pb	208	9454.2	3.4	**0.4694**	0.008	1.7	ug/L	959	Standard
	U	238	1115.7	2.4	**0.1590**	0.005	3.3	ug/L	9	Standard
>	Bi	209	480711.3	2.7				ug/L	552821	Standard

Sample ID: L1606153601 WG574593-01
Report Date/Time: Friday, July 01, 2016 13:47:22
Page 1

Approved: July 02, 2016

Na	23	8.3	34.6	**27.1734**	9.738	35.8	mg/L	2	Standard
Mg	24	507921.7	2.6	**645.4329**	9.385	1.5	mg/L	55	Standard
K	39	415.0	4.8	**1.6014**	0.114	7.1	mg/L	28	Standard
Ca	43	481.7	12.6	**45.2243**	6.627	14.7	mg/L	27	Standard
Fe	54	127.9	17.8	**0.0101**	0.018	174.2	mg/L	147	Standard
Fe	57	770.0	11.3	**1.7671**	0.242	13.7	mg/L	268	Standard
Sc-1	45	37845.6	1.8				mg/L	41174	Standard
Cl	35	383189.3	2.3				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	30317.0	3.7				ug/L	1950	Standard
P	31	15528.0	3.6				ug/L	21156	Standard
S	34	3745.5	2.5				ug/L	3419	Standard
Sr	88	250.0	23.1				ug/L	72	Standard
C	12	176.7	14.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26862.7	37.9				mg/L	17	Standard
Dy	164	21.9	26.7				mg/L	16	Standard
Ho-1	165	31.7	24.1				mg/L	7	Standard
Er	166	30.0	66.7				mg/L	7	Standard
I	127	123380.9	8.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.161	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601 WG574593-01
Report Date/Time: Friday, July 01, 2016 13:47:22
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.335
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.956
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606153601 WG574593-01
Report Date/Time: Friday, July 01, 2016 13:47:22
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606153601DP WG574593-04
Sample Date/Time: Friday, July 01, 2016 13:48:17
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	113476.7	0.3				ug/L	76456	Standard
	Be	9	31.7	39.7	**-0.0008**	0.008	933.9	ug/L	20	Standard
	Al	27	9155815.3	1.0	**36.0246**	0.289	0.8	ug/L	1307	Standard
	Sc	45	38106.2	3.0				ug/L	41174	Standard
	Ti	47	317.7	11.6	**0.9598**	0.126	13.2	ug/L	27	Standard
	V	51	23799.7	13.5	**2.9030**	0.438	15.1	ug/L	1434	Standard
	Cr	52	15774.9	0.6	**1.1182**	0.010	0.9	ug/L	7733	Standard
	Cr	53	7253.4	7.9	**7.2700**	0.659	9.1	ug/L	442	Standard
	Mn	55	54277.4	0.5	**7.5755**	0.086	1.1	ug/L	723	Standard
	Co	59	56802.6	1.1	**7.9092**	0.067	0.8	ug/L	217	Standard
	Ni	60	10522.3	1.7	**5.2767**	0.120	2.3	ug/L	304	Standard
	Cu	65	10358.5	2.3	**5.3602**	0.097	1.8	ug/L	181	Standard
	Zn	66	63839.2	1.1	**55.6043**	0.258	0.5	ug/L	215	Standard
>	Ge	72	486471.3	0.9				ug/L	520809	Standard
	As	75	3361.1	6.7	**2.9591**	0.174	5.9	ug/L	-52	Standard
	Se	82	440.0	19.1	**3.5994**	0.683	19.0	ug/L	17	Standard
	Se-1	77	548.0	6.3	**6.1810**	0.486	7.9	ug/L	56	Standard
>	Ga	71	1580.1	9.0				mg/L	25	Standard
	Rb	85	128497.6	0.7				ug/L	28	Standard
	Y	89	437852.1	1.2				ug/L	447395	Standard
>	Rh	103	195.0	13.3				ug/L	15	Standard
	Mo	98	610817.8	0.2	**219.3028**	1.490	0.7	ug/L	113	Standard
	Ag	107	270.0	5.4	**0.0280**	0.002	7.9	ug/L	108	Standard
	Cd	111	-435.5	5.5	**-0.2078**	0.012	5.8	mg/L	3	Standard
	Cd	114	1008.9	7.4	**0.1923**	0.015	7.6	ug/L	20	Standard
>	In	115	576209.6	0.5				ug/L	625728	Standard
	Sn	118	2962.0	1.1	**0.4156**	0.007	1.7	ug/L	568	Standard
	Sb	123	5993.6	0.1	**1.2257**	0.006	0.5	ug/L	612	Standard
	Ba	135	37997.3	1.1	**18.9491**	0.250	1.3	ug/L	21	Standard
	Ce	140	438.3	13.3				ug/L	245	Standard
>	Tb	159	912922.8	0.6				ug/L	950397	Standard
	Ho	165	23.3	44.6				ug/L	7	Standard
	Tl	203	7035.6	2.0	**0.8846**	0.019	2.1	ug/L	15	Standard
	Tl	205	6231.3	4.9	**0.8732**	0.041	4.7	ug/L	13	Standard
	Pb	206	2197.2	4.0	**0.3947**	0.019	4.9	ug/L	264	Standard
	Pb	207	1945.1	0.8	**0.3813**	0.005	1.2	ug/L	222	Standard
	Pb	208	7974.8	0.5	**0.3808**	0.004	1.1	ug/L	959	Standard
	U	238	1110.0	6.5	**0.1553**	0.010	6.5	ug/L	9	Standard
>	Bi	209	489368.4	0.9				ug/L	552821	Standard

Sample ID: L1606153601DP WG574593-04
Report Date/Time: Friday, July 01, 2016 13:50:34
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.3506**	9.259	173.0	mg/L	2	Standard
Mg	24	497934.2	1.5	**628.6633**	12.777	2.0	mg/L	55	Standard
K	39	386.7	13.3	**1.4712**	0.210	14.3	mg/L	28	Standard
Ca	43	468.3	8.9	**43.5651**	4.343	10.0	mg/L	27	Standard
Fe	54	108.4	32.3	**-0.0071**	0.029	411.5	mg/L	147	Standard
Fe	57	688.3	12.0	**1.4795**	0.238	16.1	mg/L	268	Standard
> **Sc-1**	45	38106.2	3.0				mg/L	41174	Standard
Cl	35	369584.8	0.9				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	29598.9	3.8				ug/L	1950	Standard
P	31	15125.9	2.3				ug/L	21156	Standard
S	34	3780.5	5.9				ug/L	3419	Standard
Sr	88	230.0	13.6				ug/L	72	Standard
C	12	213.3	38.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30656.1	29.8				mg/L	17	Standard
Dy	164	16.0	70.4				mg/L	16	Standard
Ho-1	165	23.3	44.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	76869.6	2.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		148.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.407	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601DP WG574593-04
Report Date/Time: Friday, July 01, 2016 13:50:34
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	92.086	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	88.522	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606153601DP WG574593-04
Report Date/Time: Friday, July 01, 2016 13:50:34
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606153601S WG574593-05
Sample Date/Time: Friday, July 01, 2016 13:51:28
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	114783.5	3.4				ug/L	76456	Standard
	Be	9	31472.7	2.0	**18.7219**	0.754	4.0	ug/L	20	Standard
	Al	27	8967809.3	2.2	**34.8925**	0.413	1.2	ug/L	1307	Standard
	Sc	45	36838.1	2.1				ug/L	41174	Standard
	Ti	47	293.0	5.4	**0.9041**	0.043	4.8	ug/L	27	Standard
	V	51	144707.0	17.5	**19.1390**	3.192	16.7	ug/L	1434	Standard
	Cr	52	181657.1	2.0	**23.7324**	0.270	1.1	ug/L	7733	Standard
	Cr	53	26979.0	1.6	**28.9363**	0.245	0.8	ug/L	442	Standard
	Mn	55	196630.4	2.3	**28.4601**	0.390	1.4	ug/L	723	Standard
	Co	59	229358.7	1.0	**32.8948**	0.071	0.2	ug/L	217	Standard
	Ni	60	50822.4	1.0	**26.7818**	0.048	0.2	ug/L	304	Standard
	Cu	65	50564.2	0.8	**27.1746**	0.164	0.6	ug/L	181	Standard
	Zn	66	34538.3	0.8	**30.8215**	0.391	1.3	ug/L	215	Standard
>	Ge	72	473620.3	1.0				ug/L	520809	Standard
	As	75	32972.2	0.9	**29.4152**	0.246	0.8	ug/L	-52	Standard
	Se	82	3843.3	1.0	**33.3303**	0.606	1.8	ug/L	17	Standard
	Se-1	77	2661.6	3.4	**33.5483**	0.893	2.7	ug/L	56	Standard
>	Ga	71	381.7	15.1				mg/L	25	Standard
	Rb	85	125348.3	2.7				ug/L	28	Standard
	Y	89	429677.9	2.4				ug/L	447395	Standard
>	Rh	103	226.7	13.3				ug/L	15	Standard
	Mo	98	605966.7	1.3	**219.9601**	1.216	0.6	ug/L	113	Standard
	Ag	107	143805.9	1.0	**21.9725**	0.186	0.8	ug/L	108	Standard
	Cd	111	47375.9	2.4	**22.5887**	0.138	0.6	mg/L	3	Standard
	Cd	114	117916.6	2.4	**22.7105**	0.229	1.0	ug/L	20	Standard
>	In	115	569946.5	1.8				ug/L	625728	Standard
	Sn	118	2151.8	16.9	**0.2836**	0.068	23.8	ug/L	568	Standard
	Sb	123	117947.9	1.3	**25.0246**	0.247	1.0	ug/L	612	Standard
	Ba	135	80315.6	0.5	**40.5194**	0.565	1.4	ug/L	21	Standard
	Ce	140	525.0	16.6				ug/L	245	Standard
>	Tb	159	909446.5	2.1				ug/L	950397	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	188663.7	0.8	**24.0492**	0.050	0.2	ug/L	15	Standard
	Tl	205	172066.6	1.3	**24.6917**	0.238	1.0	ug/L	13	Standard
	Pb	206	123402.9	1.1	**24.9025**	0.136	0.5	ug/L	264	Standard
	Pb	207	107579.3	1.1	**23.9013**	0.073	0.3	ug/L	222	Standard
	Pb	208	446533.6	1.0	**24.2893**	0.091	0.4	ug/L	959	Standard
	U	238	179675.3	1.7	**25.5069**	0.325	1.3	ug/L	9	Standard
>	Bi	209	483038.3	0.9				ug/L	552821	Standard

Sample ID: L1606153601S WG574593-05
Report Date/Time: Friday, July 01, 2016 13:53:45
Page 1

Approved: July 02, 2016

Na	23	13.3	21.7	**44.4001**	9.083	20.5	mg/L	2	Standard
Mg	24	482486.9	1.9	**629.9240**	1.410	0.2	mg/L	55	Standard
K	39	456.7	2.3	**1.8260**	0.024	1.3	mg/L	28	Standard
Ca	43	443.3	6.2	**42.6201**	3.595	8.4	mg/L	27	Standard
Fe	54	107.2	30.6	**-0.0052**	0.027	515.1	mg/L	147	Standard
Fe	57	646.7	6.6	**1.4187**	0.179	12.6	mg/L	268	Standard
> **Sc-1**	45	36838.1	2.1				mg/L	41174	Standard
Cl	35	363789.4	1.4				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	29438.6	3.1				ug/L	1950	Standard
P	31	15032.5	1.4				ug/L	21156	Standard
S	34	3710.5	3.9				ug/L	3419	Standard
Sr	88	215.0	4.7				ug/L	72	Standard
C	12	186.7	18.8				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	44900.2	29.0				mg/L	17	Standard
Dy	164	12.5	117.7				mg/L	16	Standard
Ho-1	165	18.3	56.8				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	7	Standard
I	127	80914.0	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.131	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.939	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601S WG574593-05
Report Date/Time: Friday, July 01, 2016 13:53:45
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.085
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.377
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606153601S WG574593-05
Report Date/Time: Friday, July 01, 2016 13:53:45
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606153601SD WG574593-06
Sample Date/Time: Friday, July 01, 2016 13:54:40
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112397.1	1.9				ug/L	76456	Standard
	Be	9	31070.2	1.4	**18.8667**	0.550	2.9	ug/L	20	Standard
	Al	27	8839135.1	2.6	**35.1153**	0.794	2.3	ug/L	1307	Standard
	Sc	45	36505.6	0.6				ug/L	41174	Standard
	Ti	47	313.3	8.2	**0.9879**	0.083	8.4	ug/L	27	Standard
	V	51	166809.7	7.9	**22.4386**	1.861	8.3	ug/L	1434	Standard
	Cr	52	176635.7	0.7	**23.3939**	0.040	0.2	ug/L	7733	Standard
	Cr	53	26448.1	1.1	**28.7705**	0.310	1.1	ug/L	442	Standard
	Mn	55	190612.1	1.7	**27.9819**	0.319	1.1	ug/L	723	Standard
	Co	59	229904.6	2.0	**33.4420**	0.439	1.3	ug/L	217	Standard
	Ni	60	50248.2	1.0	**26.8570**	0.085	0.3	ug/L	304	Standard
	Cu	65	50373.6	1.7	**27.4578**	0.363	1.3	ug/L	181	Standard
	Zn	66	32810.8	2.5	**29.6880**	0.646	2.2	ug/L	215	Standard
>	**Ge**	72	466958.0	0.7				ug/L	520809	Standard
	As	75	31818.9	1.7	**28.7902**	0.285	1.0	ug/L	-52	Standard
	Se	82	3739.0	3.2	**32.8806**	0.943	2.9	ug/L	17	Standard
	Se-1	77	2572.6	1.3	**32.8825**	0.665	2.0	ug/L	56	Standard
>	**Ga**	71	335.0	0.0				mg/L	25	Standard
	Rb	85	123842.4	1.0				ug/L	28	Standard
	Y	89	424204.0	1.6				ug/L	447395	Standard
>	**Rh**	103	250.0	19.1				ug/L	15	Standard
	Mo	98	596887.3	1.2	**220.8114**	1.891	0.9	ug/L	113	Standard
	Ag	107	140477.5	2.4	**21.8716**	0.278	1.3	ug/L	108	Standard
	Cd	111	46478.5	0.9	**22.5882**	0.134	0.6	mg/L	3	Standard
	Cd	114	114740.4	2.4	**22.5229**	0.416	1.8	ug/L	20	Standard
>	**In**	115	559219.9	1.1				ug/L	625728	Standard
	Sn	118	2036.8	20.6	**0.2701**	0.075	27.8	ug/L	568	Standard
	Sb	123	115612.8	1.8	**24.9963**	0.192	0.8	ug/L	612	Standard
	Ba	135	78486.8	0.7	**40.3510**	0.202	0.5	ug/L	21	Standard
	Ce	140	446.7	6.2				ug/L	245	Standard
>	**Tb**	159	894070.3	0.6				ug/L	950397	Standard
	Ho	165	23.3	24.7				ug/L	7	Standard
	Tl	203	185499.3	0.6	**23.8373**	0.171	0.7	ug/L	15	Standard
	Tl	205	169836.9	2.3	**24.5659**	0.283	1.2	ug/L	13	Standard
	Pb	206	121903.1	0.8	**24.7990**	0.171	0.7	ug/L	264	Standard
	Pb	207	105852.8	0.4	**23.7090**	0.262	1.1	ug/L	222	Standard
	Pb	208	438929.8	1.6	**24.0671**	0.200	0.8	ug/L	959	Standard
	U	238	177358.8	1.6	**25.3810**	0.202	0.8	ug/L	9	Standard
>	**Bi**	209	479179.3	1.2				ug/L	552821	Standard

Sample ID: L1606153601SD WG574593-06
Report Date/Time: Friday, July 01, 2016 13:56:57
Page 1

Approved: July 02, 2016

Na	23	6.7	86.6	**22.4621**	19.450	86.6	mg/L	2	Standard
Mg	24	471196.6	0.7	**620.7791**	4.974	0.8	mg/L	55	Standard
K	39	408.3	16.7	**1.6356**	0.302	18.5	mg/L	28	Standard
Ca	43	436.7	18.5	**42.2777**	8.047	19.0	mg/L	27	Standard
Fe	54	118.9	19.0	**0.0063**	0.019	307.7	mg/L	147	Standard
Fe	57	681.7	4.2	**1.5588**	0.115	7.4	mg/L	268	Standard
> **Sc-1**	45	36505.6	0.6				mg/L	41174	Standard
Cl	35	356982.4	1.5				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	28717.2	3.6				ug/L	1950	Standard
P	31	15301.1	0.8				ug/L	21156	Standard
S	34	3565.4	1.6				ug/L	3419	Standard
Sr	88	228.3	25.6				ug/L	72	Standard
C	12	156.7	38.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50532.6	17.8				mg/L	17	Standard
Dy	164	15.4	96.7				mg/L	16	Standard
Ho-1	165	23.3	24.7				mg/L	7	Standard
Er	166	26.7	78.1				mg/L	7	Standard
I	127	86335.9	6.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.009	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601SD WG574593-06
Report Date/Time: Friday, July 01, 2016 13:56:57
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.371
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.679
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606153601SD WG574593-06
Report Date/Time: Friday, July 01, 2016 13:56:57
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106804
Sample Date/Time: Friday, July 01, 2016 13:57:51
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92136.1	2.7				ug/L	76456	Standard
	Be	9	31.7	32.9	**0.0036**	0.008	216.5	ug/L	20	Standard
	Al	27	859023.9	1.9	**4.1545**	0.040	1.0	ug/L	1307	Standard
	Sc	45	36834.7	2.5				ug/L	41174	Standard
	Ti	47	40.0	19.5	**0.0448**	0.025	54.9	ug/L	27	Standard
	V	51	5203.8	19.0	**0.4694**	0.132	28.1	ug/L	1434	Standard
	Cr	52	6735.2	1.8	**-0.0924**	0.015	16.5	ug/L	7733	Standard
	Cr	53	918.4	10.2	**0.5415**	0.104	19.3	ug/L	442	Standard
	Mn	55	2241.8	1.6	**0.2108**	0.003	1.6	ug/L	723	Standard
	Co	59	300.7	9.6	**0.0119**	0.004	33.8	ug/L	217	Standard
	Ni	60	672.3	1.0	**0.1885**	0.006	3.2	ug/L	304	Standard
	Cu	65	1685.8	29.1	**0.7955**	0.246	31.0	ug/L	181	Standard
	Zn	66	3230.4	18.8	**2.5967**	0.499	19.2	ug/L	215	Standard
>	**Ge**	72	494044.1	0.8				ug/L	520809	Standard
	As	75	465.2	37.5	**0.4417**	0.146	33.1	ug/L	-52	Standard
	Se	82	234.7	30.5	**1.8293**	0.582	31.8	ug/L	17	Standard
	Se-1	77	90.3	10.8	**0.4300**	0.128	29.8	ug/L	56	Standard
>	**Ga**	71	38.3	39.8				mg/L	25	Standard
	Rb	85	223.3	18.1				ug/L	28	Standard
	Y	89	421894.0	1.5				ug/L	447395	Standard
>	**Rh**	103	131.7	22.3				ug/L	15	Standard
	Mo	98	5006.3	9.4	**1.7140**	0.193	11.2	ug/L	113	Standard
	Ag	107	126.3	16.6	**0.0056**	0.003	50.1	ug/L	108	Standard
	Cd	111	16.1	25.5	**0.0049**	0.002	35.5	mg/L	3	Standard
	Cd	114	61.4	11.1	**0.0113**	0.001	10.9	ug/L	20	Standard
>	**In**	115	596688.0	1.6				ug/L	625728	Standard
	Sn	118	568.3	15.2	**0.0085**	0.015	181.1	ug/L	568	Standard
	Sb	123	246.2	18.9	**0.0163**	0.010	61.8	ug/L	612	Standard
	Ba	135	7350.5	3.5	**3.5247**	0.082	2.3	ug/L	21	Standard
	Ce	140	23.3	32.7				ug/L	245	Standard
>	**Tb**	159	916453.6	1.2				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	304.7	24.9	**0.0334**	0.008	23.6	ug/L	15	Standard
	Tl	205	111.7	6.8	**0.0044**	0.001	16.4	ug/L	13	Standard
	Pb	206	327.7	8.6	**0.0145**	0.004	27.3	ug/L	264	Standard
	Pb	207	301.0	9.8	**0.0128**	0.005	36.7	ug/L	222	Standard
	Pb	208	1200.4	8.2	**0.0093**	0.004	42.0	ug/L	959	Standard
	U	238	75.7	24.1	**0.0092**	0.002	23.9	ug/L	9	Standard
>	**Bi**	209	548664.2	1.8				ug/L	552821	Standard

Sample ID: L1606106804
Report Date/Time: Friday, July 01, 2016 14:00:08
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2398.5	7.1	**3.0753**	0.279	9.1	mg/L	55	Standard
K	39	18.3	56.8	**-0.0529**	0.044	83.5	mg/L	28	Standard
Ca	43	20.0	43.3	**-0.4071**	0.939	230.7	mg/L	27	Standard
Fe	54	72.6	4.6	**-0.0352**	0.002	4.7	mg/L	147	Standard
Fe	57	226.7	6.4	**-0.0245**	0.066	267.2	mg/L	268	Standard
> **Sc-1**	45	36834.7	2.5				mg/L	41174	Standard
Cl	35	83689.9	2.1				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	5874.5	1.4				ug/L	1950	Standard
P	31	8095.5	4.0				ug/L	21156	Standard
S	34	3318.7	0.5				ug/L	3419	Standard
Sr	88	98.3	10.6				ug/L	72	Standard
C	12	110.0	9.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	12785.7	29.7				mg/L	17	Standard
Dy	164	19.7	89.4				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	43990.5	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.509	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.861	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106804
Report Date/Time: Friday, July 01, 2016 14:00:08
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.359
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.248
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106805
Sample Date/Time: Friday, July 01, 2016 14:01:03
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88670.5	2.3				ug/L	76456	Standard
	Be	9	28.3	53.9	**0.0021**	0.012	582.5	ug/L	20	Standard
	Al	27	846462.5	1.2	**4.2550**	0.126	3.0	ug/L	1307	Standard
	Sc	45	36754.5	1.7				ug/L	41174	Standard
	Ti	47	37.0	14.0	**0.0369**	0.018	47.7	ug/L	27	Standard
	V	51	2755.7	12.5	**0.1599**	0.048	29.8	ug/L	1434	Standard
	Cr	52	6950.6	2.2	**-0.0520**	0.020	37.7	ug/L	7733	Standard
	Cr	53	901.7	5.0	**0.5360**	0.035	6.6	ug/L	442	Standard
	Mn	55	2061.5	1.0	**0.1896**	0.005	2.5	ug/L	723	Standard
	Co	59	262.3	1.3	**0.0071**	0.000	6.4	ug/L	217	Standard
	Ni	60	603.3	3.0	**0.1577**	0.014	9.0	ug/L	304	Standard
	Cu	65	649.0	15.6	**0.2657**	0.052	19.6	ug/L	181	Standard
	Zn	66	1686.8	6.3	**1.2909**	0.094	7.3	ug/L	215	Standard
>	Ge	72	487470.5	1.6				ug/L	520809	Standard
	As	75	91.9	24.0	**0.1249**	0.020	16.4	ug/L	-52	Standard
	Se	82	68.6	9.5	**0.4538**	0.061	13.4	ug/L	17	Standard
	Se-1	77	88.7	15.6	**0.4255**	0.192	45.1	ug/L	56	Standard
>	Ga	71	20.0	25.0				mg/L	25	Standard
	Rb	85	151.7	6.9				ug/L	28	Standard
	Y	89	408691.1	1.5				ug/L	447395	Standard
>	Rh	103	55.0	47.2				ug/L	15	Standard
	Mo	98	2038.3	34.8	**0.7007**	0.261	37.3	ug/L	113	Standard
	Ag	107	89.7	17.4	**0.0005**	0.003	460.6	ug/L	108	Standard
	Cd	111	8.9	44.4	**0.0018**	0.002	101.9	mg/L	3	Standard
	Cd	114	22.8	93.4	**0.0043**	0.004	93.2	ug/L	20	Standard
>	In	115	583988.4	1.5				ug/L	625728	Standard
	Sn	118	641.7	21.4	**0.0228**	0.025	107.3	ug/L	568	Standard
	Sb	123	149.4	23.6	**-0.0027**	0.008	291.8	ug/L	612	Standard
	Ba	135	7693.6	5.0	**3.7701**	0.138	3.7	ug/L	21	Standard
	Ce	140	23.3	32.7				ug/L	245	Standard
>	Tb	159	893255.5	0.4				ug/L	950397	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	160.7	5.8	**0.0177**	0.001	6.5	ug/L	15	Standard
	Tl	205	106.7	47.9	**0.0040**	0.007	165.6	ug/L	13	Standard
	Pb	206	280.3	10.7	**0.0072**	0.005	74.5	ug/L	264	Standard
	Pb	207	240.3	4.9	**0.0020**	0.003	130.9	ug/L	222	Standard
	Pb	208	1064.0	7.7	**0.0038**	0.004	108.8	ug/L	959	Standard
	U	238	55.7	89.2	**0.0069**	0.006	93.0	ug/L	9	Standard
>	Bi	209	537449.2	0.6				ug/L	552821	Standard

Sample ID: L1606106805
Report Date/Time: Friday, July 01, 2016 14:03:20
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2241.8	5.9	**2.8723**	0.129	4.5	mg/L	55	Standard
K	39	31.7	48.2	**0.0047**	0.065	1378.1	mg/L	28	Standard
Ca	43	28.3	53.9	**0.4489**	1.610	358.7	mg/L	27	Standard
Fe	54	77.8	24.1	**-0.0306**	0.015	50.4	mg/L	147	Standard
Fe	57	243.3	20.8	**0.0319**	0.163	509.9	mg/L	268	Standard
Sc-1	45	36754.5	1.7				mg/L	41174	Standard
Cl	35	86917.3	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	5100.9	3.4				ug/L	1950	Standard
P	31	8162.2	1.3				ug/L	21156	Standard
S	34	3385.4	1.8				ug/L	3419	Standard
Sr	88	96.7	14.9				ug/L	72	Standard
C	12	130.0	13.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	4313.9	5.0				mg/L	17	Standard
Dy	164	12.7	43.5				mg/L	16	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	41831.0	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.599	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106805
Report Date/Time: Friday, July 01, 2016 14:03:20
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.329
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.219
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106811
Sample Date/Time: Friday, July 01, 2016 14:04:14
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87384.7	2.1				ug/L	76456	Standard
	Be	9	386.7	6.4	**0.2826**	0.024	8.6	ug/L	20	Standard
	Al	27	801461.1	1.1	**4.0865**	0.037	0.9	ug/L	1307	Standard
	Sc	45	38134.6	2.7				ug/L	41174	Standard
	Ti	47	4667.1	1.1	**15.1502**	0.207	1.4	ug/L	27	Standard
	V	51	48516.8	1.5	**6.0786**	0.102	1.7	ug/L	1434	Standard
	Cr	52	40220.3	0.9	**4.3195**	0.059	1.4	ug/L	7733	Standard
	Cr	53	4720.7	0.9	**4.5507**	0.057	1.3	ug/L	442	Standard
	Mn	55	311842.6	1.0	**43.7090**	0.370	0.8	ug/L	723	Standard
	Co	59	8423.7	2.0	**1.1400**	0.022	1.9	ug/L	217	Standard
	Ni	60	8146.2	0.4	**4.0222**	0.012	0.3	ug/L	304	Standard
	Cu	65	10805.5	1.3	**5.5573**	0.061	1.1	ug/L	181	Standard
	Zn	66	50531.5	0.7	**43.6829**	0.260	0.6	ug/L	215	Standard
>	Ge	72	489720.8	0.2				ug/L	520809	Standard
	As	75	655.4	1.6	**0.6098**	0.008	1.3	ug/L	-52	Standard
	Se	82	60.2	5.5	**0.3806**	0.029	7.6	ug/L	17	Standard
	Se-1	77	67.3	4.5	**0.1530**	0.036	23.8	ug/L	56	Standard
>	Ga	71	4829.1	0.8				mg/L	25	Standard
	Rb	85	40306.9	0.9				ug/L	28	Standard
	Y	89	441421.4	0.7				ug/L	447395	Standard
>	Rh	103	40.0	54.5				ug/L	15	Standard
	Mo	98	794.4	11.9	**0.2560**	0.030	11.9	ug/L	113	Standard
	Ag	107	205.0	13.7	**0.0176**	0.004	24.9	ug/L	108	Standard
	Cd	111	469.4	3.6	**0.2151**	0.008	3.7	mg/L	3	Standard
	Cd	114	1178.5	4.6	**0.2206**	0.012	5.5	ug/L	20	Standard
>	In	115	586618.1	1.1				ug/L	625728	Standard
	Sn	118	1050.0	35.8	**0.0894**	0.061	68.0	ug/L	568	Standard
	Sb	123	166.1	12.7	**0.0005**	0.004	734.3	ug/L	612	Standard
	Ba	135	56741.7	0.9	**27.8031**	0.108	0.4	ug/L	21	Standard
	Ce	140	116496.1	0.3				ug/L	245	Standard
>	Tb	159	902035.2	0.5				ug/L	950397	Standard
	Ho	165	2190.2	5.6				ug/L	7	Standard
	Tl	203	356.0	5.6	**0.0396**	0.002	5.7	ug/L	15	Standard
	Tl	205	270.0	10.3	**0.0247**	0.004	14.6	ug/L	13	Standard
	Pb	206	16366.5	1.5	**2.8988**	0.049	1.7	ug/L	264	Standard
	Pb	207	13229.8	1.5	**2.5731**	0.042	1.6	ug/L	222	Standard
	Pb	208	57216.2	0.2	**2.7252**	0.006	0.2	ug/L	959	Standard
	U	238	2067.8	1.8	**0.2608**	0.005	1.9	ug/L	9	Standard
>	Bi	209	543128.9	0.1				ug/L	552821	Standard

Sample ID: L1606106811
Report Date/Time: Friday, July 01, 2016 14:06:31
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	836.7	5.2	**0.9955**	0.059	5.9	mg/L	55	Standard
K	39	96.7	23.3	**0.2695**	0.095	35.1	mg/L	28	Standard
Ca	43	25.0	52.9	**-0.0121**	1.244	10273.4	mg/L	27	Standard
Fe	54	3385.4	5.7	**2.7677**	0.147	5.3	mg/L	147	Standard
Fe	57	1086.7	6.1	**2.8007**	0.187	6.7	mg/L	268	Standard
> **Sc-1**	45	38134.6	2.7				mg/L	41174	Standard
Cl	35	72343.0	2.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2266.8	11.8				ug/L	1950	Standard
P	31	15112.5	3.0				ug/L	21156	Standard
S	34	3132.0	3.9				ug/L	3419	Standard
Sr	88	90.0	11.1				ug/L	72	Standard
C	12	160.0	39.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1193.4	7.9				mg/L	17	Standard
Dy	164	3446.2	2.4				mg/L	16	Standard
Ho-1	165	2190.2	5.6				mg/L	7	Standard
Er	166	2036.8	6.1				mg/L	7	Standard
I	127	34445.8	1.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.294	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.031	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106811
Report Date/Time: Friday, July 01, 2016 14:06:31
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.750
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.247
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106813 ~~WG574840-01~~ WG573840-01
Sample Date/Time: Friday, July 01, 2016 14:07:25
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85735.2	1.3				ug/L	76456	Standard
	Be	9	26.7	28.6	**0.0014**	0.006	443.3	ug/L	20	Standard
	Al	27	449795.7	0.8	**2.3331**	0.023	1.0	ug/L	1307	Standard
	Sc	45	35930.9	1.1				ug/L	41174	Standard
	Ti	47	472.3	1.7	**1.4707**	0.057	3.8	ug/L	27	Standard
	V	51	4534.5	3.6	**0.3927**	0.010	2.6	ug/L	1434	Standard
	Cr	52	9314.9	0.9	**0.2650**	0.027	10.0	ug/L	7733	Standard
	Cr	53	2433.5	4.4	**2.1645**	0.092	4.2	ug/L	442	Standard
	Mn	55	102294.5	0.4	**14.3920**	0.341	2.4	ug/L	723	Standard
	Co	59	3018.3	3.5	**0.3929**	0.007	1.8	ug/L	217	Standard
	Ni	60	5415.6	1.7	**2.6457**	0.041	1.6	ug/L	304	Standard
	Cu	65	743.0	9.7	**0.3169**	0.044	14.0	ug/L	181	Standard
	Zn	66	3480.1	1.7	**2.8660**	0.076	2.6	ug/L	215	Standard
>	Ge	72	485745.7	2.0				ug/L	520809	Standard
	As	75	242.8	9.7	**0.2563**	0.025	9.6	ug/L	-52	Standard
	Se	82	97.2	2.1	**0.6986**	0.030	4.2	ug/L	17	Standard
	Se-1	77	117.0	14.6	**0.7818**	0.201	25.7	ug/L	56	Standard
>	Ga	71	268.3	10.3				mg/L	25	Standard
	Rb	85	4108.9	5.5				ug/L	28	Standard
	Y	89	416309.3	1.5				ug/L	447395	Standard
>	Rh	103	45.0	50.9				ug/L	15	Standard
	Mo	98	680.6	19.4	**0.2163**	0.043	19.7	ug/L	113	Standard
	Ag	107	83.7	9.0	**-0.0004**	0.001	316.0	ug/L	108	Standard
	Cd	111	203.5	6.4	**0.0922**	0.005	5.5	mg/L	3	Standard
	Cd	114	545.9	14.8	**0.1025**	0.015	14.8	ug/L	20	Standard
>	In	115	585054.4	1.7				ug/L	625728	Standard
	Sn	118	836.7	33.0	**0.0543**	0.043	80.0	ug/L	568	Standard
	Sb	123	125.9	11.8	**-0.0077**	0.003	35.5	ug/L	612	Standard
	Ba	135	12781.1	0.9	**6.2667**	0.128	2.0	ug/L	21	Standard
	Ce	140	5152.5	0.8				ug/L	245	Standard
>	Tb	159	900548.7	1.5				ug/L	950397	Standard
	Ho	165	100.0	10.0				ug/L	7	Standard
	Tl	203	107.7	11.0	**0.0117**	0.001	10.8	ug/L	15	Standard
	Tl	205	76.7	10.0	**0.0002**	0.001	348.4	ug/L	13	Standard
	Pb	206	778.4	4.5	**0.0993**	0.008	7.9	ug/L	264	Standard
	Pb	207	661.0	3.8	**0.0876**	0.005	5.2	ug/L	222	Standard
	Pb	208	2799.8	2.1	**0.0904**	0.002	2.4	ug/L	959	Standard
	U	238	156.0	3.6	**0.0199**	0.000	2.4	ug/L	9	Standard
>	Bi	209	531551.0	1.5				ug/L	552821	Standard

Sample ID: L1606106813 ~~WG574840-01~~
Report Date/Time: Friday, July 01, 2016 14:09:42
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8015.5	3.4	**10.6709**	0.401	3.8	mg/L	55	Standard
K	39	28.3	50.9	**-0.0070**	0.062	882.4	mg/L	28	Standard
Ca	43	31.7	36.5	**0.8382**	1.170	139.6	mg/L	27	Standard
Fe	54	628.6	3.1	**0.4660**	0.014	3.0	mg/L	147	Standard
Fe	57	371.7	8.1	**0.5046**	0.104	20.5	mg/L	268	Standard
> **Sc-1**	45	35930.9	1.1				mg/L	41174	Standard
Cl	35	72947.2	1.3				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	16705.9	1.9				ug/L	1950	Standard
P	31	9869.9	4.0				ug/L	21156	Standard
S	34	3002.0	2.0				ug/L	3419	Standard
Sr	88	73.3	38.8				ug/L	72	Standard
C	12	123.3	24.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	670.0	12.2				mg/L	17	Standard
Dy	164	162.7	37.8				mg/L	16	Standard
Ho-1	165	100.0	10.0				mg/L	7	Standard
Er	166	83.3	25.0				mg/L	7	Standard
I	127	64636.1	5.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.267	
As	75			
Se	82			
Se-1	77			
> Ga	71			

WG573840-01

Sample ID: L1606106813 ~~WG574840-01~~
Report Date/Time: Friday, July 01, 2016 14:09:42
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.500
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.152
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

WG573840-01

Sample ID: L1606106813 ~~WG574840-01~~
Report Date/Time: Friday, July 01, 2016 14:09:42
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 14:10:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88849.8	2.1				ug/L	76456	Standard
	Be	9	66753.5	2.5	**51.2959**	0.926	1.8	ug/L	20	Standard
	Al	27	8854426.6	1.6	**44.5025**	0.510	1.1	ug/L	1307	Standard
	Sc	45	39063.7	3.7				ug/L	41174	Standard
	Ti	47	30764.2	0.5	**94.6692**	0.333	0.4	ug/L	27	Standard
	V	51	413476.1	0.1	**50.2774**	0.192	0.4	ug/L	1434	Standard
	Cr	52	400969.6	0.9	**48.7893**	0.334	0.7	ug/L	7733	Standard
	Cr	53	49330.2	1.0	**48.5611**	0.384	0.8	ug/L	442	Standard
	Mn	55	368164.8	0.7	**48.7020**	0.201	0.4	ug/L	723	Standard
	Co	59	403506.1	0.3	**52.8271**	0.036	0.1	ug/L	217	Standard
	Ni	60	101394.2	1.2	**48.8833**	0.523	1.1	ug/L	304	Standard
	Cu	65	100114.0	0.9	**49.1563**	0.410	0.8	ug/L	181	Standard
	Zn	66	60654.2	0.4	**49.4979**	0.106	0.2	ug/L	215	Standard
>	Ge	72	519017.5	0.3				ug/L	520809	Standard
	As	75	61466.0	0.5	**50.0055**	0.153	0.3	ug/L	-52	Standard
	Se	82	6464.5	2.4	**51.2180**	1.098	2.1	ug/L	17	Standard
	Se-1	77	4373.3	1.3	**50.6496**	0.533	1.1	ug/L	56	Standard
>	Ga	71	66.7	18.9				mg/L	25	Standard
	Rb	85	861.7	5.9				ug/L	28	Standard
	Y	89	449328.6	2.0				ug/L	447395	Standard
>	Rh	103	36.7	31.5				ug/L	15	Standard
	Mo	98	305460.5	0.7	**100.5610**	1.227	1.2	ug/L	113	Standard
	Ag	107	357889.2	0.5	**49.6167**	0.755	1.5	ug/L	108	Standard
	Cd	111	115251.7	0.3	**49.8541**	0.558	1.1	mg/L	3	Standard
	Cd	114	285891.9	1.9	**49.9459**	0.709	1.4	ug/L	20	Standard
>	In	115	628352.9	1.0				ug/L	625728	Standard
	Sn	118	322603.7	1.4	**49.8300**	0.182	0.4	ug/L	568	Standard
	Sb	123	256839.4	0.5	**49.4582**	0.316	0.6	ug/L	612	Standard
	Ba	135	105057.6	0.5	**48.0726**	0.299	0.6	ug/L	21	Standard
	Ce	140	361.7	34.4				ug/L	245	Standard
>	Tb	159	960077.3	1.9				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	452676.3	0.7	**49.9830**	0.213	0.4	ug/L	15	Standard
	Tl	205	410938.2	0.4	**51.0915**	0.351	0.7	ug/L	13	Standard
	Pb	206	286259.6	0.4	**50.0826**	0.130	0.3	ug/L	264	Standard
	Pb	207	259240.1	0.9	**49.9407**	0.356	0.7	ug/L	222	Standard
	Pb	208	1080903.3	0.1	**50.9831**	0.221	0.4	ug/L	959	Standard
	U	238	414937.8	0.7	**51.0249**	0.218	0.4	ug/L	9	Standard
>	Bi	209	557647.7	0.3				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:12:56
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4484.0	1.2	**5.4671**	0.257	4.7	mg/L	55	Standard
K	39	1023.4	3.3	**4.0066**	0.130	3.2	mg/L	28	Standard
Ca	43	43.3	53.3	**1.7517**	2.400	137.0	mg/L	27	Standard
Fe	54	6523.2	1.6	**5.2995**	0.275	5.2	mg/L	147	Standard
Fe	57	1890.1	7.4	**5.3143**	0.301	5.7	mg/L	268	Standard
> **Sc-1**	45	39063.7	3.7				mg/L	41174	Standard
Cl	35	79213.9	1.2				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2563.6	1.5				ug/L	1950	Standard
P	31	24057.4	1.2				ug/L	21156	Standard
S	34	3523.7	3.2				ug/L	3419	Standard
Sr	88	65.0	7.7				ug/L	72	Standard
C	12	140.0	57.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	940.0	34.1				mg/L	17	Standard
Dy	164	25.2	57.6				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	7	Standard
I	127	15756.5	3.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.592		
Al	27	89.005		
Sc	45			
Ti	47	94.669		
V	51	100.555		
Cr	52	97.579		
Cr	53			
Mn	55	97.404		
Co	59	105.654		
Ni	60	97.767		
Cu	65	98.313		
Zn	66	98.996		
> Ge	72		99.656	
As	75	100.011		
Se	82	102.436		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:12:56
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	100.561		
Ag	107	99.233		
Cd	111	99.708		
Cd	114			
> In	115			100.420
Sn	118	99.660		
Sb	123	98.916		
Ba	135	96.145		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.966		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.966		
U	238	102.050		
> Bi	209			100.873
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:12:56
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 14:13:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88888.4	2.2				ug/L	76456	Standard
	Be	9	38.3	52.7	**0.0094**	0.015	161.5	ug/L	20	Standard
	Al	27	2825.3	17.3	**0.0040**	0.002	53.4	ug/L	1307	Standard
	Sc	45	39005.1	1.5				ug/L	41174	Standard
	Ti	47	28.0	19.9	**0.0028**	0.016	582.3	ug/L	27	Standard
	V	51	2415.4	18.1	**0.1010**	0.058	57.8	ug/L	1434	Standard
	Cr	52	6917.2	0.7	**-0.0998**	0.014	13.7	ug/L	7733	Standard
	Cr	53	555.0	5.9	**0.1417**	0.025	17.3	ug/L	442	Standard
	Mn	55	752.7	2.2	**-0.0001**	0.003	2090.7	ug/L	723	Standard
	Co	59	252.7	11.5	**0.0041**	0.003	85.1	ug/L	217	Standard
	Ni	60	429.7	6.2	**0.0575**	0.011	18.3	ug/L	304	Standard
	Cu	65	263.0	14.8	**0.0569**	0.017	30.5	ug/L	181	Standard
	Zn	66	279.3	0.5	**0.0518**	0.003	5.0	ug/L	215	Standard
>	Ge	72	511815.0	1.6				ug/L	520809	Standard
	As	75	-18.1	92.8	**0.0301**	0.014	46.4	ug/L	-52	Standard
	Se	82	24.7	15.0	**0.0723**	0.029	39.9	ug/L	17	Standard
	Se-1	77	58.0	10.8	**0.0062**	0.079	1288.4	ug/L	56	Standard
>	Ga	71	13.3	78.1				mg/L	25	Standard
	Rb	85	38.3	7.5				ug/L	28	Standard
	Y	89	444682.5	1.8				ug/L	447395	Standard
>	Rh	103	18.3	15.7				ug/L	15	Standard
	Mo	98	598.8	12.4	**0.1734**	0.026	14.8	ug/L	113	Standard
	Ag	107	140.0	4.0	**0.0066**	0.001	12.4	ug/L	108	Standard
	Cd	111	12.3	61.1	**0.0030**	0.003	109.1	mg/L	3	Standard
	Cd	114	49.0	43.7	**0.0086**	0.004	42.9	ug/L	20	Standard
>	In	115	628245.6	0.7				ug/L	625728	Standard
	Sn	118	1961.8	30.2	**0.2198**	0.093	42.5	ug/L	568	Standard
	Sb	123	904.2	34.2	**0.1408**	0.061	43.0	ug/L	612	Standard
	Ba	135	57.3	10.7	**0.0083**	0.003	31.6	ug/L	21	Standard
	Ce	140	128.3	30.3				ug/L	245	Standard
>	Tb	159	944365.6	0.9				ug/L	950397	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	108.0	13.0	**0.0111**	0.001	13.5	ug/L	15	Standard
	Tl	205	96.7	15.8	**0.0022**	0.002	85.6	ug/L	13	Standard
	Pb	206	339.7	1.4	**0.0152**	0.001	5.3	ug/L	264	Standard
	Pb	207	305.3	7.3	**0.0122**	0.004	33.7	ug/L	222	Standard
	Pb	208	1308.0	3.7	**0.0129**	0.002	16.1	ug/L	959	Standard
	U	238	87.3	40.5	**0.0104**	0.004	41.2	ug/L	9	Standard
>	Bi	209	562720.5	0.3				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:16:07
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	75.0	23.1	**0.0324**	0.022	69.0	mg/L	55	Standard
K	39	33.3	45.8	**0.0031**	0.060	1894.0	mg/L	28	Standard
Ca	43	15.0	33.3	**-1.0175**	0.462	45.4	mg/L	27	Standard
Fe	54	165.7	9.2	**0.0385**	0.014	37.1	mg/L	147	Standard
Fe	57	250.0	12.0	**0.0061**	0.086	1418.1	mg/L	268	Standard
> **Sc-1**	45	39005.1	1.5				mg/L	41174	Standard
Cl	35	79585.8	1.1				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	2136.8	1.9				ug/L	1950	Standard
P	31	23918.9	4.5				ug/L	21156	Standard
S	34	3433.7	5.0				ug/L	3419	Standard
Sr	88	81.7	12.7				ug/L	72	Standard
C	12	130.0	20.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	723.4	38.9				mg/L	17	Standard
Dy	164	12.1	100.4				mg/L	16	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	11843.0	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.273	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:16:07
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.402
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.791
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:16:07
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

WG573840-04

Sample ID: L1606106815S ~~WG574840-04~~
Sample Date/Time: Friday, July 01, 2016 14:17:03
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83265.1	4.4				ug/L	76456	Standard
	Be	9	6339.7	3.7	5.1828	0.150	2.9	ug/L	20	Standard
	Al	27	349898.6	2.2	1.8682	0.063	3.4	ug/L	1307	Standard
	Sc	45	36113.0	0.7				ug/L	41174	Standard
	Ti	47	374.0	5.7	1.1636	0.064	5.5	ug/L	27	Standard
	V	51	40708.6	1.1	5.1868	0.031	0.6	ug/L	1434	Standard
	Cr	52	46718.3	0.7	5.3127	0.067	1.3	ug/L	7733	Standard
	Cr	53	6618.1	2.8	6.7048	0.239	3.6	ug/L	442	Standard
	Mn	55	114395.6	0.5	16.3321	0.067	0.4	ug/L	723	Standard
	Co	59	38195.1	1.8	5.3924	0.078	1.4	ug/L	217	Standard
	Ni	60	13663.5	1.3	7.0078	0.080	1.1	ug/L	304	Standard
	Cu	65	9944.3	1.7	5.2251	0.077	1.5	ug/L	181	Standard
	Zn	66	9492.0	1.6	8.2445	0.108	1.3	ug/L	215	Standard
>	Ge	72	478934.2	0.5				ug/L	520809	Standard
	As	75	6298.1	2.1	5.5931	0.137	2.4	ug/L	-52	Standard
	Se	82	745.3	1.6	6.2890	0.131	2.1	ug/L	17	Standard
	Se-1	77	565.0	3.4	6.5031	0.256	3.9	ug/L	56	Standard
>	Ga	71	210.0	14.9				mg/L	25	Standard
	Rb	85	3015.3	2.7				ug/L	28	Standard
	Y	89	406713.6	1.2				ug/L	447395	Standard
>	Rh	103	30.0	44.1				ug/L	15	Standard
	Mo	98	643.2	26.9	0.2086	0.062	29.9	ug/L	113	Standard
	Ag	107	33003.9	0.1	5.0128	0.031	0.6	ug/L	108	Standard
	Cd	111	11239.0	0.3	5.3366	0.046	0.9	mg/L	3	Standard
	Cd	114	27301.6	1.5	5.2380	0.071	1.4	ug/L	20	Standard
>	In	115	572178.3	0.7				ug/L	625728	Standard
	Sn	118	856.7	28.9	0.0614	0.042	68.6	ug/L	568	Standard
	Sb	123	23676.7	0.6	4.9767	0.063	1.3	ug/L	612	Standard
	Ba	135	19520.2	0.7	9.7948	0.108	1.1	ug/L	21	Standard
	Ce	140	4247.3	5.7				ug/L	245	Standard
>	Tb	159	879458.6	1.4				ug/L	950397	Standard
	Ho	165	76.7	30.1				ug/L	7	Standard
	Tl	203	41384.8	1.8	4.8673	0.052	1.1	ug/L	15	Standard
	Tl	205	37817.2	2.3	4.9998	0.080	1.6	ug/L	13	Standard
	Pb	206	27923.4	1.8	5.1651	0.060	1.2	ug/L	264	Standard
	Pb	207	24211.0	1.2	4.9273	0.030	0.6	ug/L	222	Standard
	Pb	208	101923.3	0.8	5.0783	0.055	1.1	ug/L	959	Standard
	U	238	37622.7	0.8	4.9287	0.050	1.0	ug/L	9	Standard
>	Bi	209	523442.8	0.7				ug/L	552821	Standard

Sample ID: L1606106815S ~~WG574840-04~~
Report Date/Time: Friday, July 01, 2016 14:19:20
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.6795**	9.828	173.1	mg/L	2	Standard
Mg	24	6323.0	5.1	**8.3634**	0.482	5.8	mg/L	55	Standard
K	39	55.0	24.1	**0.1095**	0.059	54.3	mg/L	28	Standard
Ca	43	28.3	83.4	**0.4924**	2.471	501.8	mg/L	27	Standard
Fe	54	574.3	6.7	**0.4148**	0.038	9.1	mg/L	147	Standard
Fe	57	356.7	11.3	**0.4458**	0.147	32.9	mg/L	268	Standard
> **Sc-1**	45	36113.0	0.7				mg/L	41174	Standard
Cl	35	72434.1	0.7				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	13466.0	3.1				ug/L	1950	Standard
P	31	9684.8	1.1				ug/L	21156	Standard
S	34	3162.0	7.4				ug/L	3419	Standard
Sr	88	88.3	6.5				ug/L	72	Standard
C	12	126.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	493.3	11.2				mg/L	17	Standard
Dy	164	135.8	20.6				mg/L	16	Standard
Ho-1	165	76.7	30.1				mg/L	7	Standard
Er	166	86.7	40.5				mg/L	7	Standard
I	127	53586.4	4.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.906	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.960	
As	75			
Se	82			
Se-1	77			
> Ga	71			

WG573840-04

Sample ID: L1606106815S ~~WG574840-04~~
Report Date/Time: Friday, July 01, 2016 14:19:20
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.442
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

WG573840-04

Approved: July 02, 2016

Method 6020 - Summary Report

WG573840-05

Sample ID: L1606106817SD ~~WG574840-05~~
Sample Date/Time: Friday, July 01, 2016 14:20:15
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81106.5	1.7				ug/L	76456	Standard
	Be	9	6459.7	2.4	**5.4224**	0.225	4.2	ug/L	20	Standard
	Al	27	501960.4	2.3	**2.7550**	0.103	3.7	ug/L	1307	Standard
	Sc	45	36201.5	0.9				ug/L	41174	Standard
	Ti	47	1052.0	1.1	**3.4327**	0.017	0.5	ug/L	27	Standard
	V	51	46082.9	1.9	**5.9078**	0.087	1.5	ug/L	1434	Standard
	Cr	52	58550.9	1.6	**6.9166**	0.078	1.1	ug/L	7733	Standard
	Cr	53	8594.1	3.3	**8.8449**	0.268	3.0	ug/L	442	Standard
	Mn	55	145669.8	2.3	**20.8582**	0.361	1.7	ug/L	723	Standard
	Co	59	40340.0	2.3	**5.7063**	0.097	1.7	ug/L	217	Standard
	Ni	60	15750.9	2.0	**8.1157**	0.154	1.9	ug/L	304	Standard
	Cu	65	10601.7	1.3	**5.5848**	0.040	0.7	ug/L	181	Standard
	Zn	66	10298.5	1.1	**8.9757**	0.069	0.8	ug/L	215	Standard
>	Ge	72	478135.2	0.6				ug/L	520809	Standard
	As	75	6490.3	1.3	**5.7717**	0.072	1.2	ug/L	-52	Standard
	Se	82	783.8	3.6	**6.6313**	0.232	3.5	ug/L	17	Standard
	Se-1	77	575.7	8.4	**6.6484**	0.573	8.6	ug/L	56	Standard
>	Ga	71	653.3	4.4				mg/L	25	Standard
	Rb	85	7186.7	2.7				ug/L	28	Standard
	Y	89	409741.2	2.1				ug/L	447395	Standard
>	Rh	103	31.7	18.2				ug/L	15	Standard
	Mo	98	998.2	56.5	**0.3366**	0.205	60.9	ug/L	113	Standard
	Ag	107	33931.3	1.3	**5.1521**	0.034	0.7	ug/L	108	Standard
	Cd	111	11629.2	3.5	**5.5186**	0.109	2.0	mg/L	3	Standard
	Cd	114	28711.5	1.0	**5.5071**	0.084	1.5	ug/L	20	Standard
>	In	115	572419.1	1.9				ug/L	625728	Standard
	Sn	118	771.7	35.0	**0.0463**	0.043	93.9	ug/L	568	Standard
	Sb	123	22618.6	1.5	**4.7509**	0.051	1.1	ug/L	612	Standard
	Ba	135	24808.3	0.6	**12.4494**	0.172	1.4	ug/L	21	Standard
	Ce	140	9864.9	1.2				ug/L	245	Standard
>	Tb	159	882133.3	1.2				ug/L	950397	Standard
	Ho	165	175.0	13.1				ug/L	7	Standard
	Tl	203	43094.9	1.3	**5.0490**	0.012	0.2	ug/L	15	Standard
	Tl	205	38782.9	1.4	**5.1088**	0.109	2.1	ug/L	13	Standard
	Pb	206	28842.8	0.9	**5.3164**	0.076	1.4	ug/L	264	Standard
	Pb	207	24928.5	1.0	**5.0552**	0.065	1.3	ug/L	222	Standard
	Pb	208	104803.4	1.3	**5.2025**	0.040	0.8	ug/L	959	Standard
	U	238	38305.0	0.8	**4.9987**	0.028	0.6	ug/L	9	Standard
>	Bi	209	525482.1	1.1				ug/L	552821	Standard

Sample ID: L1606106817SD ~~WG574840-05~~
Report Date/Time: Friday, July 01, 2016 14:22:32
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**11.2046**	19.398	173.1	mg/L	2	Standard
Mg	24	8434.0	5.4	**11.1454**	0.594	5.3	mg/L	55	Standard
K	39	58.3	13.1	**0.1234**	0.036	28.8	mg/L	28	Standard
Ca	43	20.0	75.0	**-0.3837**	1.563	407.4	mg/L	27	Standard
Fe	54	968.4	3.8	**0.7651**	0.040	5.3	mg/L	147	Standard
Fe	57	503.3	13.7	**0.9549**	0.241	25.2	mg/L	268	Standard
> **Sc-1**	45	36201.5	0.9				mg/L	41174	Standard
Cl	35	71982.6	1.3				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18638.1	5.1				ug/L	1950	Standard
P	31	10710.5	1.0				ug/L	21156	Standard
S	34	3345.4	0.8				ug/L	3419	Standard
Sr	88	73.3	27.6				ug/L	72	Standard
C	12	120.0	57.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	436.7	13.4				mg/L	17	Standard
Dy	164	280.4	13.3				mg/L	16	Standard
Ho-1	165	175.0	13.1				mg/L	7	Standard
Er	166	200.0	13.2				mg/L	7	Standard
I	127	66018.7	4.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.083	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.806	
As	75			
Se	82			
Se-1	77			
> Ga	71	WG573840-05		

Sample ID: L1606106817SD ~~WG574840-05~~
Report Date/Time: Friday, July 01, 2016 14:22:32
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.481
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.055
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

WG573840-05

Sample ID: L1606106817SD ~~**WG574840-05**~~
Report Date/Time: Friday, July 01, 2016 14:22:32
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106502
Sample Date/Time: Friday, July 01, 2016 14:23:26
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80066.0	1.1				ug/L	76456	Standard
	Be	9	30.0	115.5	**0.0056**	0.029	520.4	ug/L	20	Standard
	Al	27	180778.3	4.1	**0.9982**	0.041	4.1	ug/L	1307	Standard
	Sc	45	36360.3	2.0				ug/L	41174	Standard
	Ti	47	27.3	18.4	**0.0052**	0.016	312.3	ug/L	27	Standard
	V	51	1588.1	11.5	**0.0081**	0.023	286.5	ug/L	1434	Standard
	Cr	52	81053.1	3.8	**9.7557**	0.368	3.8	ug/L	7733	Standard
	Cr	53	9971.6	2.0	**10.1419**	0.234	2.3	ug/L	442	Standard
	Mn	55	13954.4	0.7	**1.8714**	0.017	0.9	ug/L	723	Standard
	Co	59	649.0	8.3	**0.0612**	0.008	12.7	ug/L	217	Standard
	Ni	60	1447.4	0.9	**0.5934**	0.004	0.6	ug/L	304	Standard
	Cu	65	486.7	11.5	**0.1810**	0.028	15.4	ug/L	181	Standard
	Zn	66	1353.4	2.5	**1.0020**	0.034	3.4	ug/L	215	Standard
>	Ge	72	486676.1	0.5				ug/L	520809	Standard
	As	75	-22.0	245.7	**0.0260**	0.047	179.9	ug/L	-52	Standard
	Se	82	18.1	72.4	**0.0263**	0.110	418.7	ug/L	17	Standard
	Se-1	77	60.7	2.5	**0.0749**	0.022	28.9	ug/L	56	Standard
>	Ga	71	25.0	20.0				mg/L	25	Standard
	Rb	85	138.3	26.6				ug/L	28	Standard
	Y	89	406376.2	1.0				ug/L	447395	Standard
>	Rh	103	16.7	69.3				ug/L	15	Standard
	Mo	98	1770.7	17.5	**0.6016**	0.111	18.5	ug/L	113	Standard
	Ag	107	129.0	37.0	**0.0063**	0.007	112.2	ug/L	108	Standard
	Cd	111	16.9	116.6	**0.0055**	0.009	166.8	mg/L	3	Standard
	Cd	114	59.1	100.8	**0.0111**	0.011	100.7	ug/L	20	Standard
>	In	115	585828.3	0.2				ug/L	625728	Standard
	Sn	118	591.7	24.5	**0.0140**	0.024	173.1	ug/L	568	Standard
	Sb	123	173.5	26.1	**0.0021**	0.009	438.7	ug/L	612	Standard
	Ba	135	254.0	14.4	**0.1068**	0.018	16.8	ug/L	21	Standard
	Ce	140	36.7	55.1				ug/L	245	Standard
>	Tb	159	883738.0	0.6				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	137.0	50.5	**0.0151**	0.008	51.9	ug/L	15	Standard
	Tl	205	130.0	90.1	**0.0071**	0.015	211.0	ug/L	13	Standard
	Pb	206	304.3	19.3	**0.0122**	0.010	84.1	ug/L	264	Standard
	Pb	207	261.0	10.0	**0.0068**	0.005	70.4	ug/L	222	Standard
	Pb	208	1149.7	15.1	**0.0087**	0.008	92.0	ug/L	959	Standard
	U	238	112.0	113.8	**0.0141**	0.016	115.0	ug/L	9	Standard
>	Bi	209	530616.0	1.0				ug/L	552821	Standard

Sample ID: L1606106502
Report Date/Time: Friday, July 01, 2016 14:25:43
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1146.7	22.2	**1.4533**	0.307	21.1	mg/L	55	Standard
K	39	28.3	44.4	**-0.0074**	0.057	769.4	mg/L	28	Standard
Ca	43	26.7	54.1	**0.3104**	1.522	490.2	mg/L	27	Standard
Fe	54	101.6	8.0	**-0.0086**	0.008	94.5	mg/L	147	Standard
Fe	57	255.0	17.0	**0.0854**	0.166	194.4	mg/L	268	Standard
> **Sc-1**	45	36360.3	2.0				mg/L	41174	Standard
Cl	35	73712.2	1.2				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2090.1	10.3				ug/L	1950	Standard
P	31	7825.4	0.6				ug/L	21156	Standard
S	34	3022.0	4.6				ug/L	3419	Standard
Sr	88	71.7	8.1				ug/L	72	Standard
C	12	96.7	23.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1313.4	4.6				mg/L	17	Standard
Dy	164	22.1	25.6				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	7	Standard
I	127	28513.5	2.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.722	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.446	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106502
Report Date/Time: Friday, July 01, 2016 14:25:43
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.623
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.983
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106503
Sample Date/Time: Friday, July 01, 2016 14:26:37
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79132.8	1.3				ug/L	76456	Standard
	Be	9	20.0	90.1	-0.0027	0.015	566.6	ug/L	20	Standard
	Al	27	183681.8	1.0	1.0266	0.021	2.0	ug/L	1307	Standard
	Sc	45	35984.4	2.9				ug/L	41174	Standard
	Ti	47	20.7	12.2	-0.0167	0.009	53.6	ug/L	27	Standard
	V	51	1554.3	4.0	0.0034	0.007	204.4	ug/L	1434	Standard
	Cr	52	22825.5	4.8	2.0452	0.152	7.4	ug/L	7733	Standard
	Cr	53	2823.6	3.2	2.5679	0.111	4.3	ug/L	442	Standard
	Mn	55	25588.9	0.9	3.5097	0.037	1.1	ug/L	723	Standard
	Co	59	286.3	4.8	0.0105	0.002	16.3	ug/L	217	Standard
	Ni	60	1267.4	3.9	0.4993	0.024	4.9	ug/L	304	Standard
	Cu	65	240.7	4.8	0.0519	0.005	9.1	ug/L	181	Standard
	Zn	66	1398.4	2.4	1.0389	0.016	1.6	ug/L	215	Standard
>	Ge	72	487565.1	1.1				ug/L	520809	Standard
	As	75	-30.6	81.1	0.0187	0.022	115.7	ug/L	-52	Standard
	Se	82	20.5	30.4	0.0466	0.051	110.3	ug/L	17	Standard
	Se-1	77	71.3	18.1	0.2061	0.156	75.5	ug/L	56	Standard
>	Ga	71	30.0	33.3				mg/L	25	Standard
	Rb	85	90.0	53.6				ug/L	28	Standard
	Y	89	411794.3	0.5				ug/L	447395	Standard
>	Rh	103	21.7	13.3				ug/L	15	Standard
	Mo	98	702.5	37.7	0.2235	0.093	41.6	ug/L	113	Standard
	Ag	107	100.7	6.4	0.0021	0.001	44.2	ug/L	108	Standard
	Cd	111	3.1	64.7	-0.0009	0.001	98.3	mg/L	3	Standard
	Cd	114	10.2	126.7	0.0019	0.002	125.3	ug/L	20	Standard
>	In	115	587395.6	0.4				ug/L	625728	Standard
	Sn	118	551.7	28.8	0.0071	0.026	370.3	ug/L	568	Standard
	Sb	123	119.5	11.5	-0.0091	0.003	31.3	ug/L	612	Standard
	Ba	135	603.3	5.0	0.2775	0.015	5.3	ug/L	21	Standard
	Ce	140	43.3	40.5				ug/L	245	Standard
>	Tb	159	891615.0	1.6				ug/L	950397	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	80.7	10.3	0.0085	0.001	11.1	ug/L	15	Standard
	Tl	205	53.3	57.3	-0.0028	0.004	140.3	ug/L	13	Standard
	Pb	206	274.3	3.4	0.0064	0.002	26.4	ug/L	264	Standard
	Pb	207	227.0	9.3	-0.0004	0.004	980.7	ug/L	222	Standard
	Pb	208	977.7	5.7	-0.0001	0.003	2332.0	ug/L	959	Standard
	U	238	23.7	16.0	0.0028	0.000	17.0	ug/L	9	Standard
>	Bi	209	534397.5	0.8				ug/L	552821	Standard

Sample ID: L1606106503
Report Date/Time: Friday, July 01, 2016 14:28:54
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1421.7	2.1	**1.8418**	0.090	4.9	mg/L	55	Standard
K	39	28.3	40.8	**-0.0067**	0.051	756.8	mg/L	28	Standard
Ca	43	21.7	35.3	**-0.2051**	0.778	379.2	mg/L	27	Standard
Fe	54	96.5	16.4	**-0.0124**	0.012	96.4	mg/L	147	Standard
Fe	57	246.7	7.7	**0.0625**	0.044	71.0	mg/L	268	Standard
> **Sc-1**	45	35984.4	2.9				mg/L	41174	Standard
Cl	35	75787.1	1.4				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	1940.1	11.4				ug/L	1950	Standard
P	31	7708.6	3.3				ug/L	21156	Standard
S	34	3283.7	7.0				ug/L	3419	Standard
Sr	88	81.7	3.5				ug/L	72	Standard
C	12	93.3	6.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	810.0	7.7				mg/L	17	Standard
Dy	164	19.4	51.7				mg/L	16	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	28069.3	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.617	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106503
Report Date/Time: Friday, July 01, 2016 14:28:54
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.874
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.667
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106504
Sample Date/Time: Friday, July 01, 2016 14:29:49
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79397.5	1.7				ug/L	76456	Standard
	Be	9	16.7	45.8	**-0.0055**	0.007	119.4	ug/L	20	Standard
	Al	27	291025.7	1.9	**1.6271**	0.036	2.2	ug/L	1307	Standard
	Sc	45	36009.4	0.8				ug/L	41174	Standard
	Ti	47	26.7	15.2	**0.0019**	0.013	690.9	ug/L	27	Standard
	V	51	1704.2	12.5	**0.0204**	0.028	139.1	ug/L	1434	Standard
	Cr	52	30766.6	4.8	**3.0469**	0.189	6.2	ug/L	7733	Standard
	Cr	53	3653.8	5.4	**3.4005**	0.215	6.3	ug/L	442	Standard
	Mn	55	17036.6	2.3	**2.2748**	0.050	2.2	ug/L	723	Standard
	Co	59	958.7	6.2	**0.1027**	0.008	8.2	ug/L	217	Standard
	Ni	60	2008.1	1.5	**0.8687**	0.014	1.6	ug/L	304	Standard
	Cu	65	251.7	3.4	**0.0561**	0.005	9.3	ug/L	181	Standard
	Zn	66	1482.7	0.2	**1.0976**	0.010	0.9	ug/L	215	Standard
>	Ge	72	493269.0	0.6				ug/L	520809	Standard
	As	75	-44.8	49.5	**0.0068**	0.019	282.1	ug/L	-52	Standard
	Se	82	18.7	10.9	**0.0294**	0.017	58.4	ug/L	17	Standard
	Se-1	77	64.3	6.3	**0.1099**	0.049	45.0	ug/L	56	Standard
>	Ga	71	26.7	43.3				mg/L	25	Standard
	Rb	85	2356.8	1.6				ug/L	28	Standard
	Y	89	413880.0	0.1				ug/L	447395	Standard
>	Rh	103	25.0	0.0				ug/L	15	Standard
	Mo	98	624.4	36.8	**0.1955**	0.081	41.4	ug/L	113	Standard
	Ag	107	92.7	17.9	**0.0009**	0.003	292.7	ug/L	108	Standard
	Cd	111	11.5	37.2	**0.0030**	0.002	67.8	mg/L	3	Standard
	Cd	114	45.1	23.2	**0.0084**	0.002	22.0	ug/L	20	Standard
>	In	115	588539.3	1.1				ug/L	625728	Standard
	Sn	118	616.7	20.1	**0.0176**	0.020	114.5	ug/L	568	Standard
	Sb	123	351.6	3.8	**0.0386**	0.003	9.0	ug/L	612	Standard
	Ba	135	231.7	10.0	**0.0953**	0.011	11.7	ug/L	21	Standard
	Ce	140	43.3	88.1				ug/L	245	Standard
>	Tb	159	885756.3	0.8				ug/L	950397	Standard
	Ho	165	16.7	34.6				ug/L	7	Standard
	Tl	203	73.3	2.8	**0.0077**	0.000	3.3	ug/L	15	Standard
	Tl	205	65.0	13.3	**-0.0013**	0.001	87.3	ug/L	13	Standard
	Pb	206	322.7	5.3	**0.0151**	0.003	19.7	ug/L	264	Standard
	Pb	207	256.3	3.1	**0.0054**	0.001	26.7	ug/L	222	Standard
	Pb	208	1164.0	5.3	**0.0090**	0.003	33.0	ug/L	959	Standard
	U	238	19.0	34.5	**0.0022**	0.001	38.3	ug/L	9	Standard
>	Bi	209	534942.7	0.4				ug/L	552821	Standard

Sample ID: L1606106504
Report Date/Time: Friday, July 01, 2016 14:32:06
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**11.3879**	9.859	86.6	mg/L	2	Standard
Mg	24	1060.0	6.8	**1.3559**	0.099	7.3	mg/L	55	Standard
K	39	55.0	32.8	**0.1095**	0.077	70.3	mg/L	28	Standard
Ca	43	21.7	48.0	**-0.2024**	1.077	531.9	mg/L	27	Standard
Fe	54	98.8	37.3	**-0.0103**	0.032	312.2	mg/L	147	Standard
Fe	57	268.3	7.1	**0.1387**	0.065	46.8	mg/L	268	Standard
> **Sc-1**	45	36009.4	0.8				mg/L	41174	Standard
Cl	35	77523.2	0.3				ug/L	69550	Standard
Kr	83	2.7	114.6				ug/L	1	Standard
Br	81	2113.5	9.3				ug/L	1950	Standard
P	31	7710.3	3.6				ug/L	21156	Standard
S	34	3393.7	3.0				ug/L	3419	Standard
Sr	88	65.0	23.1				ug/L	72	Standard
C	12	106.7	28.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	623.3	9.8				mg/L	17	Standard
Dy	164	15.7	70.9				mg/L	16	Standard
Ho-1	165	16.7	34.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	28194.6	4.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.848	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.712	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106504
Report Date/Time: Friday, July 01, 2016 14:32:06
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.057
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.766
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 14:33:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84479.9	0.6				ug/L	76456	Standard
	Be	9	65431.0	1.7	**52.8839**	1.234	2.3	ug/L	20	Standard
	Al	27	9107293.6	1.3	**48.1391**	0.761	1.6	ug/L	1307	Standard
	Sc	45	41221.0	1.1				ug/L	41174	Standard
	Ti	47	32532.9	2.1	**96.4064**	2.590	2.7	ug/L	27	Standard
	V	51	430170.6	0.9	**50.3648**	0.150	0.3	ug/L	1434	Standard
	Cr	52	419842.9	0.7	**49.1999**	0.629	1.3	ug/L	7733	Standard
	Cr	53	51666.3	1.8	**48.9792**	1.063	2.2	ug/L	442	Standard
	Mn	55	386049.1	1.6	**49.1731**	0.734	1.5	ug/L	723	Standard
	Co	59	420011.6	1.0	**52.9472**	0.520	1.0	ug/L	217	Standard
	Ni	60	107142.5	0.5	**49.7412**	0.431	0.9	ug/L	304	Standard
	Cu	65	106376.5	0.2	**50.2954**	0.371	0.7	ug/L	181	Standard
	Zn	66	63768.9	0.5	**50.1114**	0.441	0.9	ug/L	215	Standard
>	**Ge**	72	539029.9	0.6				ug/L	520809	Standard
	As	75	63720.4	0.2	**49.9158**	0.187	0.4	ug/L	-52	Standard
	Se	82	6616.1	1.4	**50.4720**	0.409	0.8	ug/L	17	Standard
	Se-1	77	4538.7	1.1	**50.6161**	0.744	1.5	ug/L	56	Standard
>	**Ga**	71	41.7	36.7				mg/L	25	Standard
	Rb	85	886.7	6.2				ug/L	28	Standard
	Y	89	466133.9	1.1				ug/L	447395	Standard
>	**Rh**	103	45.0	48.4				ug/L	15	Standard
	Mo	98	316079.0	1.2	**100.9623**	1.590	1.6	ug/L	113	Standard
	Ag	107	372581.7	1.1	**50.1169**	0.847	1.7	ug/L	108	Standard
	Cd	111	118352.7	0.1	**49.6717**	0.324	0.7	mg/L	3	Standard
	Cd	114	294028.3	2.4	**49.8404**	1.066	2.1	ug/L	20	Standard
>	**In**	115	647595.9	0.6				ug/L	625728	Standard
	Sn	118	333519.2	0.4	**49.9888**	0.512	1.0	ug/L	568	Standard
	Sb	123	262566.9	2.8	**49.0609**	1.554	3.2	ug/L	612	Standard
	Ba	135	108230.2	0.7	**48.0518**	0.424	0.9	ug/L	21	Standard
	Ce	140	185.0	15.0				ug/L	245	Standard
>	**Tb**	159	963986.1	0.6				ug/L	950397	Standard
	Ho	165	15.0	115.5				ug/L	7	Standard
	Tl	203	457975.8	1.0	**50.2126**	0.379	0.8	ug/L	15	Standard
	Tl	205	420042.8	0.3	**51.8564**	0.350	0.7	ug/L	13	Standard
	Pb	206	291174.6	0.8	**50.5849**	0.394	0.8	ug/L	264	Standard
	Pb	207	263877.7	0.4	**50.4775**	0.161	0.3	ug/L	222	Standard
	Pb	208	1113044.3	0.4	**52.1318**	0.466	0.9	ug/L	959	Standard
	U	238	419550.2	0.5	**51.2295**	0.115	0.2	ug/L	9	Standard
>	**Bi**	209	561599.8	0.5				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:35:18
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4695.7	3.2	**5.4185**	0.141	2.6	mg/L	55	Standard
K	39	1080.0	1.9	**4.0059**	0.102	2.5	mg/L	28	Standard
Ca	43	58.3	9.9	**2.8430**	0.540	19.0	mg/L	27	Standard
Fe	54	6681.6	1.6	**5.1353**	0.107	2.1	mg/L	147	Standard
Fe	57	1935.1	3.8	**5.1339**	0.159	3.1	mg/L	268	Standard
> **Sc-1**	45	41221.0	1.1				mg/L	41174	Standard
Cl	35	86136.9	2.1				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2180.2	1.6				ug/L	1950	Standard
P	31	25733.5	2.6				ug/L	21156	Standard
S	34	4153.9	3.6				ug/L	3419	Standard
Sr	88	75.0	13.3				ug/L	72	Standard
C	12	106.7	28.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	720.0	29.7				mg/L	17	Standard
Dy	164	22.7	24.3				mg/L	16	Standard
Ho-1	165	15.0	115.5				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	15117.5	1.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.768		
Al	27	96.278		
Sc	45			
Ti	47	96.406		
V	51	100.730		
Cr	52	98.400		
Cr	53			
Mn	55	98.346		
Co	59	105.894		
Ni	60	99.482		
Cu	65	100.591		
Zn	66	100.223		
> Ge	72		103.499	
As	75	99.832		
Se	82	100.944		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:35:18
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	100.962		
Ag	107	100.234		
Cd	111	99.343		
Cd	114			
> In	115			103.495
Sn	118	99.978		
Sb	123	98.122		
Ba	135	96.104		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.425		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.264		
U	238	102.459		
> Bi	209			101.588
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:35:18
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 14:36:13
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84748.1	2.2				ug/L	76456	Standard
	Be	9	28.3	27.0	**0.0029**	0.006	204.3	ug/L	20	Standard
	Al	27	2800.3	34.3	**0.0045**	0.005	111.4	ug/L	1307	Standard
	Sc	45	41077.3	1.7				ug/L	41174	Standard
	Ti	47	26.0	26.6	**-0.0072**	0.021	288.8	ug/L	27	Standard
	V	51	1826.7	11.6	**0.0166**	0.026	154.1	ug/L	1434	Standard
	Cr	52	7089.7	2.6	**-0.1215**	0.019	15.7	ug/L	7733	Standard
	Cr	53	518.3	19.4	**0.0795**	0.095	119.0	ug/L	442	Standard
	Mn	55	744.0	2.7	**-0.0062**	0.002	40.3	ug/L	723	Standard
	Co	59	250.7	12.3	**0.0022**	0.004	175.9	ug/L	217	Standard
	Ni	60	366.0	4.1	**0.0177**	0.007	39.1	ug/L	304	Standard
	Cu	65	215.0	5.8	**0.0279**	0.006	21.4	ug/L	181	Standard
	Zn	66	258.3	5.8	**0.0239**	0.012	50.5	ug/L	215	Standard
>	**Ge**	72	537853.0	0.3				ug/L	520809	Standard
	As	75	-50.7	30.0	**0.0054**	0.012	222.4	ug/L	-52	Standard
	Se	82	23.4	28.3	**0.0526**	0.050	95.5	ug/L	17	Standard
	Se-1	77	56.3	13.3	**-0.0464**	0.086	185.9	ug/L	56	Standard
>	**Ga**	71	38.3	66.9				mg/L	25	Standard
	Rb	85	33.3	67.6				ug/L	28	Standard
	Y	89	471394.3	0.7				ug/L	447395	Standard
>	**Rh**	103	18.3	63.0				ug/L	15	Standard
	Mo	98	398.2	17.4	**0.1019**	0.023	22.4	ug/L	113	Standard
	Ag	107	141.3	16.6	**0.0060**	0.003	53.5	ug/L	108	Standard
	Cd	111	18.0	20.7	**0.0051**	0.002	31.3	mg/L	3	Standard
	Cd	114	51.0	12.7	**0.0086**	0.001	12.0	ug/L	20	Standard
>	**In**	115	655049.2	0.7				ug/L	625728	Standard
	Sn	118	1826.8	33.6	**0.1873**	0.093	49.6	ug/L	568	Standard
	Sb	123	1005.7	35.1	**0.1525**	0.066	43.6	ug/L	612	Standard
	Ba	135	50.7	11.6	**0.0043**	0.003	59.6	ug/L	21	Standard
	Ce	140	55.0	18.2				ug/L	245	Standard
>	**Tb**	159	963692.0	2.2				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	91.3	32.5	**0.0091**	0.003	36.2	ug/L	15	Standard
	Tl	205	100.0	20.0	**0.0024**	0.003	107.2	ug/L	13	Standard
	Pb	206	358.7	4.9	**0.0174**	0.003	18.6	ug/L	264	Standard
	Pb	207	299.3	9.7	**0.0101**	0.006	57.2	ug/L	222	Standard
	Pb	208	1241.0	6.1	**0.0088**	0.004	42.7	ug/L	959	Standard
	U	238	67.3	26.7	**0.0078**	0.002	28.5	ug/L	9	Standard
>	**Bi**	209	572676.0	1.1				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:38:30
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	27.6	**0.0080**	0.018	227.2	mg/L	55	Standard
K	39	31.7	24.1	**-0.0097**	0.028	287.6	mg/L	28	Standard
Ca	43	30.0	60.1	**0.2757**	1.623	588.8	mg/L	27	Standard
Fe	54	132.3	15.7	**0.0051**	0.015	299.1	mg/L	147	Standard
Fe	57	226.7	3.4	**-0.1060**	0.019	17.5	mg/L	268	Standard
Sc-1	45	41077.3	1.7				mg/L	41174	Standard
Cl	35	85337.0	1.5				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	2146.8	7.1				ug/L	1950	Standard
P	31	24845.4	3.5				ug/L	21156	Standard
S	34	4015.5	0.7				ug/L	3419	Standard
Sr	88	58.3	27.6				ug/L	72	Standard
C	12	116.7	9.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	523.3	24.3				mg/L	17	Standard
Dy	164	6.0	187.1				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	11185.8	0.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.273	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:38:30
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.686
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.592
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:38:30
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, July 01, 2016 14:39:26
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82750.5	2.9				ug/L	76456	Standard
	Be	9	285.0	17.8	**0.2151**	0.039	18.0	ug/L	20	Standard
	Al	27	1818.4	16.8	**-0.0004**	0.002	418.1	ug/L	1307	Standard
	Sc	45	39031.9	2.5				ug/L	41174	Standard
	Ti	47	23.0	28.5	**-0.0130**	0.020	154.9	ug/L	27	Standard
	V	51	4531.3	0.6	**0.3599**	0.004	1.1	ug/L	1434	Standard
	Cr	52	13097.3	0.4	**0.6705**	0.008	1.2	ug/L	7733	Standard
	Cr	53	1321.7	4.4	**0.9081**	0.059	6.5	ug/L	442	Standard
	Mn	55	3958.5	1.2	**0.4284**	0.005	1.2	ug/L	723	Standard
	Co	59	3194.7	3.0	**0.3931**	0.014	3.5	ug/L	217	Standard
	Ni	60	3472.1	3.0	**1.5421**	0.046	3.0	ug/L	304	Standard
	Cu	65	1723.1	3.0	**0.7813**	0.023	3.0	ug/L	181	Standard
	Zn	66	8776.2	0.9	**7.0769**	0.052	0.7	ug/L	215	Standard
>	**Ge**	72	514072.5	0.3				ug/L	520809	Standard
	As	75	450.1	8.8	**0.4145**	0.032	7.7	ug/L	-52	Standard
	Se	82	70.4	7.3	**0.4383**	0.043	9.7	ug/L	17	Standard
	Se-1	77	94.3	4.8	**0.4334**	0.056	12.9	ug/L	56	Standard
>	**Ga**	71	21.7	35.3				mg/L	25	Standard
	Rb	85	21.7	53.3				ug/L	28	Standard
	Y	89	438183.2	1.3				ug/L	447395	Standard
>	**Rh**	103	16.7	105.4				ug/L	15	Standard
	Mo	98	167.4	18.5	**0.0314**	0.011	34.8	ug/L	113	Standard
	Ag	107	2856.9	3.2	**0.3846**	0.011	2.9	ug/L	108	Standard
	Cd	111	543.4	2.2	**0.2335**	0.007	3.2	mg/L	3	Standard
	Cd	114	1301.0	2.4	**0.2280**	0.003	1.3	ug/L	20	Standard
>	**In**	115	626288.8	1.2				ug/L	625728	Standard
	Sn	118	1146.7	25.4	**0.0941**	0.047	50.1	ug/L	568	Standard
	Sb	123	2055.0	1.9	**0.3637**	0.012	3.3	ug/L	612	Standard
	Ba	135	1475.7	2.5	**0.6597**	0.010	1.5	ug/L	21	Standard
	Ce	140	10.0	50.0				ug/L	245	Standard
>	**Tb**	159	937003.8	0.8				ug/L	950397	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	742.4	3.9	**0.0813**	0.003	3.9	ug/L	15	Standard
	Tl	205	635.0	7.6	**0.0693**	0.006	9.0	ug/L	13	Standard
	Pb	206	1423.4	1.3	**0.2057**	0.004	1.8	ug/L	264	Standard
	Pb	207	1222.7	2.7	**0.1898**	0.007	3.5	ug/L	222	Standard
	Pb	208	5238.4	1.7	**0.1992**	0.005	2.7	ug/L	959	Standard
	U	238	3209.7	2.1	**0.3947**	0.010	2.6	ug/L	9	Standard
>	**Bi**	209	557268.2	0.5				ug/L	552821	Standard

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 14:41:43
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.3145**	9.196	173.0	mg/L	2	Standard
Mg	24	45.0	11.1	**-0.0048**	0.005	106.0	mg/L	55	Standard
K	39	16.7	45.8	**-0.0643**	0.029	45.1	mg/L	28	Standard
Ca	43	28.3	40.8	**0.2822**	1.159	410.5	mg/L	27	Standard
Fe	54	125.5	27.9	**0.0049**	0.029	586.2	mg/L	147	Standard
Fe	57	236.7	18.2	**-0.0367**	0.142	386.3	mg/L	268	Standard
> **Sc-1**	45	39031.9	2.5				mg/L	41174	Standard
Cl	35	80966.5	1.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2093.5	4.3				ug/L	1950	Standard
P	31	17104.7	1.6				ug/L	21156	Standard
S	34	3810.5	3.5				ug/L	3419	Standard
Sr	88	53.3	51.6				ug/L	72	Standard
C	12	146.7	52.1				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	223.3	40.6				mg/L	17	Standard
Dy	164	5.7	102.5				mg/L	16	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	1610.1	16.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	107.542		
Al	27			
Sc	45			
Ti	47			
V	51	89.972		
Cr	52	83.818		
Cr	53			
Mn	55	85.687		
Co	59	98.272		
Ni	60	96.381		
Cu	65	97.667		
Zn	66	113.230		
> Ge	72		98.706	
As	75	103.620		
Se	82	109.583		
Se-1	77			
> Ga	71			

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 14:41:43
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.144		
Cd	111	97.300		
Cd	114			
> In	115			100.090
Sn	118			
Sb	123	90.914		
Ba	135	87.967		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.600		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.596		
U	238	98.687		
> Bi	209			100.804
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 14:41:43
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606136001
Sample Date/Time: Friday, July 01, 2016 15:11:12
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	102032.6	2.7				ug/L	76456	Standard
	Be	9	25.0	34.6	-0.0031	0.006	188.0	ug/L	20	Standard
	Al	27	55269386.4	1.6	242.0065	6.248	2.6	ug/L	1307	Standard
	Sc	45	42982.6	3.7				ug/L	41174	Standard
	Ti	47	671.0	5.7	1.9148	0.128	6.7	ug/L	27	Standard
	V	51	4267.5	6.4	0.3052	0.033	10.8	ug/L	1434	Standard
	Cr	52	10596.7	1.5	0.3014	0.025	8.3	ug/L	7733	Standard
	Cr	53	1925.1	6.6	1.4310	0.107	7.5	ug/L	442	Standard
	Mn	55	5430678.9	1.0	696.1378	12.327	1.8	ug/L	723	Standard
	Co	59	2218.2	2.4	0.2516	0.009	3.5	ug/L	217	Standard
	Ni	60	4312.3	3.2	1.8641	0.080	4.3	ug/L	304	Standard
	Cu	65	798.0	4.6	0.3054	0.016	5.3	ug/L	181	Standard
	Zn	66	2494.5	0.6	1.7957	0.026	1.4	ug/L	215	Standard
>	Ge	72	536693.6	0.8				ug/L	520809	Standard
	As	75	4266.7	1.8	3.3992	0.072	2.1	ug/L	-52	Standard
	Se	82	495.3	5.2	3.6793	0.225	6.1	ug/L	17	Standard
	Se-1	77	148.7	2.7	1.0032	0.054	5.4	ug/L	56	Standard
>	Ga	71	150.0	23.3				mg/L	25	Standard
	Rb	85	52107.8	0.6				ug/L	28	Standard
	Y	89	450964.8	1.0				ug/L	447395	Standard
>	Rh	103	411.7	6.2				ug/L	15	Standard
	Mo	98	1387.0	5.2	0.4385	0.030	6.9	ug/L	113	Standard
	Ag	107	200.3	32.4	0.0153	0.009	61.2	ug/L	108	Standard
	Cd	111	14.4	26.9	0.0039	0.002	40.7	mg/L	3	Standard
	Cd	114	17.5	189.3	0.0031	0.006	189.4	ug/L	20	Standard
>	In	115	620931.3	1.4				ug/L	625728	Standard
	Sn	118	1585.1	13.6	0.1643	0.037	22.3	ug/L	568	Standard
	Sb	123	1484.9	28.1	0.2566	0.085	33.0	ug/L	612	Standard
	Ba	135	185434.9	0.7	85.8822	0.643	0.7	ug/L	21	Standard
	Ce	140	220.0	14.2				ug/L	245	Standard
>	Tb	159	948217.7	1.1				ug/L	950397	Standard
	Ho	165	31.7	9.1				ug/L	7	Standard
	Tl	203	125.3	17.6	0.0138	0.003	19.7	ug/L	15	Standard
	Tl	205	88.3	14.2	0.0018	0.002	100.1	ug/L	13	Standard
	Pb	206	400.7	10.7	0.0298	0.009	29.3	ug/L	264	Standard
	Pb	207	353.0	2.8	0.0252	0.002	8.1	ug/L	222	Standard
	Pb	208	1381.0	1.8	0.0200	0.002	10.5	ug/L	959	Standard
	U	238	1004.0	3.9	0.1291	0.007	5.4	ug/L	9	Standard
>	Bi	209	532629.6	1.5				ug/L	552821	Standard

Sample ID: L1606136001
Report Date/Time: Friday, July 01, 2016 15:13:29
Page 1

Approved: July 02, 2016

Na	23	15.0	33.3	**42.5757**	12.711	29.9	mg/L	2	Standard
Mg	24	49159.6	0.3	**55.0024**	2.117	3.8	mg/L	55	Standard
K	39	1461.7	10.0	**5.2295**	0.334	6.4	mg/L	28	Standard
Ca	43	601.7	4.7	**50.0156**	4.072	8.1	mg/L	27	Standard
Fe	54	4574.4	1.8	**3.3398**	0.110	3.3	mg/L	147	Standard
Fe	57	1803.4	3.2	**4.5113**	0.320	7.1	mg/L	268	Standard
Sc-1	45	42982.6	3.7				mg/L	41174	Standard
Cl	35	94962.0	0.7				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	95694.6	1.2				ug/L	1950	Standard
P	31	33902.9	0.5				ug/L	21156	Standard
S	34	4128.9	1.2				ug/L	3419	Standard
Sr	88	1591.8	1.7				ug/L	72	Standard
C	12	436.7	25.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	510.0	42.5				mg/L	17	Standard
Dy	164	37.8	54.9				mg/L	16	Standard
Ho-1	165	31.7	9.1				mg/L	7	Standard
Er	166	46.7	32.7				mg/L	7	Standard
I	127	121671837.9	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.453	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.050	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606136001
Report Date/Time: Friday, July 01, 2016 15:13:29
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.233	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.348	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606136001
Report Date/Time: Friday, July 01, 2016 15:13:29
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606136002
Sample Date/Time: Friday, July 01, 2016 15:14:23
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85581.0	1.5				ug/L	76456	Standard
	Be	9	25.0	60.0	**0.0002**	0.012	7141.4	ug/L	20	Standard
	Al	27	55900.2	24.1	**0.2811**	0.067	23.9	ug/L	1307	Standard
	Sc	45	42536.3	1.1				ug/L	41174	Standard
	Ti	47	133.7	20.6	**0.3028**	0.078	25.8	ug/L	27	Standard
	V	51	2309.2	3.2	**0.0668**	0.010	14.4	ug/L	1434	Standard
	Cr	52	10748.5	0.6	**0.2852**	0.003	0.9	ug/L	7733	Standard
	Cr	53	1006.7	5.2	**0.5242**	0.053	10.1	ug/L	442	Standard
	Mn	55	5954.9	24.0	**0.6413**	0.175	27.3	ug/L	723	Standard
	Co	59	262.0	8.2	**0.0029**	0.003	90.0	ug/L	217	Standard
	Ni	60	497.3	9.2	**0.0733**	0.022	29.6	ug/L	304	Standard
	Cu	65	2911.9	5.2	**1.2738**	0.065	5.1	ug/L	181	Standard
	Zn	66	1381.4	5.9	**0.8847**	0.058	6.6	ug/L	215	Standard
>	**Ge**	72	551341.1	0.5				ug/L	520809	Standard
	As	75	-21.8	42.5	**0.0285**	0.007	24.8	ug/L	-52	Standard
	Se	82	22.1	22.3	**0.0391**	0.037	95.8	ug/L	17	Standard
	Se-1	77	66.7	24.4	**0.0515**	0.176	341.9	ug/L	56	Standard
>	**Ga**	71	61.7	33.8				mg/L	25	Standard
	Rb	85	408.3	7.2				ug/L	28	Standard
	Y	89	470361.2	0.7				ug/L	447395	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	156.0	25.9	**0.0252**	0.013	53.1	ug/L	113	Standard
	Ag	107	109.0	5.1	**0.0016**	0.001	52.8	ug/L	108	Standard
	Cd	111	14.4	21.7	**0.0036**	0.001	37.8	mg/L	3	Standard
	Cd	114	35.6	84.3	**0.0060**	0.005	83.9	ug/L	20	Standard
>	**In**	115	658802.4	1.3				ug/L	625728	Standard
	Sn	118	3085.3	1.9	**0.3711**	0.008	2.1	ug/L	568	Standard
	Sb	123	348.5	35.2	**0.0306**	0.023	76.5	ug/L	612	Standard
	Ba	135	1852.8	5.0	**0.7908**	0.032	4.1	ug/L	21	Standard
	Ce	140	210.0	16.5				ug/L	245	Standard
>	**Tb**	159	984012.0	1.0				ug/L	950397	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	41.3	6.1	**0.0037**	0.000	7.2	ug/L	15	Standard
	Tl	205	46.7	68.9	**-0.0041**	0.004	94.4	ug/L	13	Standard
	Pb	206	460.7	0.7	**0.0345**	0.001	2.0	ug/L	264	Standard
	Pb	207	404.0	4.8	**0.0295**	0.003	11.6	ug/L	222	Standard
	Pb	208	1690.4	3.1	**0.0292**	0.002	7.9	ug/L	959	Standard
	U	238	26.3	7.9	**0.0029**	0.000	8.7	ug/L	9	Standard
>	**Bi**	209	574438.2	0.4				ug/L	552821	Standard

Sample ID: L1606136002
Report Date/Time: Friday, July 01, 2016 15:16:40
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	250.0	12.5	**0.2227**	0.038	16.8	mg/L	55	Standard
K	39	21.7	48.0	**-0.0507**	0.039	76.8	mg/L	28	Standard
Ca	43	33.3	45.8	**0.4827**	1.350	279.7	mg/L	27	Standard
Fe	54	174.0	19.0	**0.0332**	0.024	72.4	mg/L	147	Standard
Fe	57	240.0	20.1	**-0.0912**	0.137	149.9	mg/L	268	Standard
> **Sc-1**	45	42536.3	1.1				mg/L	41174	Standard
Cl	35	95107.6	2.0				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2680.2	5.4				ug/L	1950	Standard
P	31	27181.0	2.6				ug/L	21156	Standard
S	34	4080.5	2.6				ug/L	3419	Standard
Sr	88	60.0	8.3				ug/L	72	Standard
C	12	186.7	8.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	346.7	61.6				mg/L	17	Standard
Dy	164	25.7	79.6				mg/L	16	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	835274.3	37.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.935	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.862	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606136002
Report Date/Time: Friday, July 01, 2016 15:16:40
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.286
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.910
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140001
Sample Date/Time: Friday, July 01, 2016 15:17:35
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83445.8	0.6				ug/L	76456	Standard
	Be	9	45.0	29.4	**0.0170**	0.011	63.9	ug/L	20	Standard
	Al	27	7040110.3	1.1	**37.6724**	0.642	1.7	ug/L	1307	Standard
	Sc	45	41625.4	2.0				ug/L	41174	Standard
	Ti	47	4285.9	4.9	**12.7764**	0.570	4.5	ug/L	27	Standard
	V	51	7078.2	1.9	**0.6435**	0.022	3.4	ug/L	1434	Standard
	Cr	52	21057.0	0.1	**1.5759**	0.026	1.6	ug/L	7733	Standard
	Cr	53	3443.7	1.2	**2.9149**	0.056	1.9	ug/L	442	Standard
	Mn	55	883702.1	0.7	**114.0510**	1.835	1.6	ug/L	723	Standard
	Co	59	2499.5	0.8	**0.2896**	0.004	1.4	ug/L	217	Standard
	Ni	60	4161.2	2.0	**1.8082**	0.061	3.4	ug/L	304	Standard
	Cu	65	3327.7	0.9	**1.5204**	0.005	0.4	ug/L	181	Standard
	Zn	66	4188.9	1.5	**3.1626**	0.022	0.7	ug/L	215	Standard
>	Ge	72	532673.4	1.1				ug/L	520809	Standard
	As	75	1321.1	0.2	**1.0915**	0.014	1.3	ug/L	-52	Standard
	Se	82	41.1	15.2	**0.1918**	0.049	25.5	ug/L	17	Standard
	Se-1	77	114.0	7.6	**0.6197**	0.107	17.2	ug/L	56	Standard
>	Ga	71	1218.4	5.9				mg/L	25	Standard
	Rb	85	38403.6	2.5				ug/L	28	Standard
	Y	89	469727.3	1.0				ug/L	447395	Standard
>	Rh	103	41.7	25.0				ug/L	15	Standard
	Mo	98	855.3	9.6	**0.2517**	0.030	12.0	ug/L	113	Standard
	Ag	107	118.0	3.1	**0.0031**	0.000	8.0	ug/L	108	Standard
	Cd	111	168.9	5.8	**0.0690**	0.003	4.5	mg/L	3	Standard
	Cd	114	422.3	16.9	**0.0721**	0.011	15.8	ug/L	20	Standard
>	In	115	642729.5	1.7				ug/L	625728	Standard
	Sn	118	2336.8	13.7	**0.2695**	0.050	18.6	ug/L	568	Standard
	Sb	123	10092.5	4.2	**1.8672**	0.060	3.2	ug/L	612	Standard
	Ba	135	14880.6	0.5	**6.6421**	0.083	1.2	ug/L	21	Standard
	Ce	140	38117.9	1.2				ug/L	245	Standard
>	Tb	159	971949.7	2.4				ug/L	950397	Standard
	Ho	165	766.7	0.8				ug/L	7	Standard
	Tl	203	84.7	11.9	**0.0086**	0.001	13.1	ug/L	15	Standard
	Tl	205	65.0	26.6	**-0.0017**	0.002	121.5	ug/L	13	Standard
	Pb	206	5500.7	2.1	**0.9180**	0.006	0.6	ug/L	264	Standard
	Pb	207	4505.0	2.1	**0.8213**	0.015	1.9	ug/L	222	Standard
	Pb	208	19667.7	0.6	**0.8791**	0.020	2.3	ug/L	959	Standard
	U	238	150.0	6.0	**0.0182**	0.001	7.7	ug/L	9	Standard
>	Bi	209	558473.2	1.6				ug/L	552821	Standard

Sample ID: L1606140001
Report Date/Time: Friday, July 01, 2016 15:19:52
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.9489**	8.563	173.0	mg/L	2	Standard
Mg	24	2895.3	5.1	**3.2866**	0.193	5.9	mg/L	55	Standard
K	39	586.7	6.5	**2.0948**	0.159	7.6	mg/L	28	Standard
Ca	43	126.7	13.9	**8.9443**	1.703	19.0	mg/L	27	Standard
Fe	54	1267.9	7.9	**0.8860**	0.097	10.9	mg/L	147	Standard
Fe	57	600.0	6.3	**1.0204**	0.129	12.6	mg/L	268	Standard
> **Sc-1**	45	41625.4	2.0				mg/L	41174	Standard
Cl	35	87177.5	2.1				ug/L	69550	Standard
Kr	83	2.0	173.2				ug/L	1	Standard
Br	81	7248.4	5.5				ug/L	1950	Standard
P	31	28932.6	1.2				ug/L	21156	Standard
S	34	4053.9	3.3				ug/L	3419	Standard
Sr	88	248.3	11.1				ug/L	72	Standard
C	12	190.0	13.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	326.7	32.7				mg/L	17	Standard
Dy	164	1103.7	6.9				mg/L	16	Standard
Ho-1	165	766.7	0.8				mg/L	7	Standard
Er	166	690.0	9.5				mg/L	7	Standard
I	127	358932.7	7.2				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.143	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.278	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606140001
Report Date/Time: Friday, July 01, 2016 15:19:52
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.717
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.022
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140002
Sample Date/Time: Friday, July 01, 2016 15:20:46
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83243.1	1.8				ug/L	76456	Standard
	Be	9	40.0	66.1	**0.0127**	0.021	164.7	ug/L	20	Standard
	Al	27	20806325.7	1.5	**111.6281**	1.089	1.0	ug/L	1307	Standard
	Sc	45	42705.1	1.7				ug/L	41174	Standard
	Ti	47	521.0	4.2	**1.4841**	0.067	4.5	ug/L	27	Standard
	V	51	3344.5	4.3	**0.2005**	0.017	8.4	ug/L	1434	Standard
	Cr	52	11575.8	0.5	**0.4337**	0.008	1.8	ug/L	7733	Standard
	Cr	53	3380.4	6.9	**2.8639**	0.226	7.9	ug/L	442	Standard
	Mn	55	948881.0	1.2	**122.8502**	1.452	1.2	ug/L	723	Standard
	Co	59	2088.1	1.4	**0.2379**	0.004	1.7	ug/L	217	Standard
	Ni	60	3829.2	1.0	**1.6570**	0.016	1.0	ug/L	304	Standard
	Cu	65	1020.7	3.6	**0.4165**	0.018	4.3	ug/L	181	Standard
	Zn	66	1711.1	3.0	**1.1897**	0.044	3.7	ug/L	215	Standard
>	Ge	72	530967.7	0.1				ug/L	520809	Standard
	As	75	120.6	26.2	**0.1410**	0.025	17.8	ug/L	-52	Standard
	Se	82	48.6	18.0	**0.2506**	0.068	27.3	ug/L	17	Standard
	Se-1	77	180.0	11.7	**1.3805**	0.238	17.3	ug/L	56	Standard
>	Ga	71	128.3	39.0				mg/L	25	Standard
	Rb	85	2536.9	2.3				ug/L	28	Standard
	Y	89	459396.3	1.3				ug/L	447395	Standard
>	Rh	103	68.3	16.9				ug/L	15	Standard
	Mo	98	164.7	11.0	**0.0301**	0.006	21.2	ug/L	113	Standard
	Ag	107	87.7	14.4	**-0.0008**	0.002	218.3	ug/L	108	Standard
	Cd	111	68.1	9.8	**0.0269**	0.003	10.0	mg/L	3	Standard
	Cd	114	155.0	26.9	**0.0270**	0.007	27.3	ug/L	20	Standard
>	In	115	631529.9	1.1				ug/L	625728	Standard
	Sn	118	1490.1	25.7	**0.1455**	0.061	42.2	ug/L	568	Standard
	Sb	123	888.6	10.6	**0.1367**	0.019	13.9	ug/L	612	Standard
	Ba	135	26458.7	0.5	**12.0331**	0.137	1.1	ug/L	21	Standard
	Ce	140	9911.6	1.3				ug/L	245	Standard
>	Tb	159	958775.7	0.7				ug/L	950397	Standard
	Ho	165	208.3	2.8				ug/L	7	Standard
	Tl	203	123.7	9.6	**0.0132**	0.001	9.6	ug/L	15	Standard
	Tl	205	103.3	42.3	**0.0034**	0.005	161.1	ug/L	13	Standard
	Pb	206	646.3	4.8	**0.0721**	0.004	5.3	ug/L	264	Standard
	Pb	207	521.7	7.3	**0.0568**	0.007	11.5	ug/L	222	Standard
	Pb	208	2324.1	2.2	**0.0641**	0.003	5.2	ug/L	959	Standard
	U	238	1352.7	2.4	**0.1701**	0.003	1.9	ug/L	9	Standard
>	Bi	209	544667.8	1.5				ug/L	552821	Standard

Sample ID: L1606140002
Report Date/Time: Friday, July 01, 2016 15:23:03
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.5374**	16.511	173.1	mg/L	2	Standard
Mg	24	12897.2	1.9	**14.4668**	0.241	1.7	mg/L	55	Standard
K	39	143.3	40.4	**0.3966**	0.206	52.0	mg/L	28	Standard
Ca	43	550.0	11.0	**45.7421**	5.294	11.6	mg/L	27	Standard
Fe	54	409.1	1.1	**0.2106**	0.008	3.9	mg/L	147	Standard
Fe	57	643.3	9.1	**1.1039**	0.202	18.3	mg/L	268	Standard
Sc-1	45	42705.1	1.7				mg/L	41174	Standard
Cl	35	94915.1	1.1				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	7108.3	0.6				ug/L	1950	Standard
P	31	28478.4	1.9				ug/L	21156	Standard
S	34	4015.5	4.7				ug/L	3419	Standard
Sr	88	310.0	10.1				ug/L	72	Standard
C	12	300.0	17.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	246.7	10.2				mg/L	17	Standard
Dy	164	399.0	15.6				mg/L	16	Standard
Ho-1	165	208.3	2.8				mg/L	7	Standard
Er	166	230.0	11.5				mg/L	7	Standard
I	127	149991.1	7.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		108.877	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.950	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606140002
Report Date/Time: Friday, July 01, 2016 15:23:03
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.927	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.525	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140003
Sample Date/Time: Friday, July 01, 2016 15:23:58
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82504.1	1.6				ug/L	76456	Standard
	Be	9	21.7	48.0	**-0.0018**	0.009	480.2	ug/L	20	Standard
	Al	27	13452706.7	0.5	**72.8294**	1.526	2.1	ug/L	1307	Standard
	Sc	45	41709.0	1.4				ug/L	41174	Standard
	Ti	47	2378.5	5.3	**7.0809**	0.376	5.3	ug/L	27	Standard
	V	51	7214.8	5.3	**0.6629**	0.045	6.8	ug/L	1434	Standard
	Cr	52	13978.1	0.6	**0.7263**	0.017	2.4	ug/L	7733	Standard
	Cr	53	7091.7	6.1	**6.4687**	0.376	5.8	ug/L	442	Standard
	Mn	55	62406.3	0.1	**7.9906**	0.075	0.9	ug/L	723	Standard
	Co	59	1446.4	2.2	**0.1559**	0.006	3.6	ug/L	217	Standard
	Ni	60	2083.8	4.2	**0.8328**	0.047	5.6	ug/L	304	Standard
	Cu	65	965.4	1.3	**0.3903**	0.010	2.5	ug/L	181	Standard
	Zn	66	2028.5	1.9	**1.4450**	0.043	3.0	ug/L	215	Standard
>	**Ge**	72	530627.2	0.9				ug/L	520809	Standard
	As	75	140.1	24.4	**0.1567**	0.028	17.9	ug/L	-52	Standard
	Se	82	39.3	18.1	**0.1786**	0.052	29.4	ug/L	17	Standard
	Se-1	77	316.3	5.9	**2.9476**	0.217	7.4	ug/L	56	Standard
>	**Ga**	71	366.7	8.0				mg/L	25	Standard
	Rb	85	8984.3	2.4				ug/L	28	Standard
	Y	89	458813.5	0.8				ug/L	447395	Standard
>	**Rh**	103	51.7	39.1				ug/L	15	Standard
	Mo	98	313.7	15.4	**0.0798**	0.016	20.1	ug/L	113	Standard
	Ag	107	93.7	11.2	**0.0002**	0.001	781.2	ug/L	108	Standard
	Cd	111	28.1	20.3	**0.0099**	0.002	24.9	mg/L	3	Standard
	Cd	114	65.8	57.7	**0.0116**	0.007	57.4	ug/L	20	Standard
>	**In**	115	625934.2	0.5				ug/L	625728	Standard
	Sn	118	1398.4	16.4	**0.1329**	0.035	26.4	ug/L	568	Standard
	Sb	123	422.7	21.1	**0.0480**	0.017	35.9	ug/L	612	Standard
	Ba	135	6793.5	0.6	**3.1038**	0.028	0.9	ug/L	21	Standard
	Ce	140	15908.3	1.9				ug/L	245	Standard
>	**Tb**	159	944178.7	1.1				ug/L	950397	Standard
	Ho	165	355.0	16.2				ug/L	7	Standard
	Tl	203	120.3	15.9	**0.0130**	0.002	16.8	ug/L	15	Standard
	Tl	205	111.7	23.0	**0.0046**	0.003	71.8	ug/L	13	Standard
	Pb	206	1028.4	3.3	**0.1425**	0.006	4.1	ug/L	264	Standard
	Pb	207	909.0	1.6	**0.1352**	0.003	2.4	ug/L	222	Standard
	Pb	208	3805.2	1.1	**0.1376**	0.002	1.8	ug/L	959	Standard
	U	238	790.4	10.0	**0.1003**	0.010	10.2	ug/L	9	Standard
>	**Bi**	209	538993.4	0.2				ug/L	552821	Standard

Sample ID: L1606140003
Report Date/Time: Friday, July 01, 2016 15:26:15
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.8709**	8.546	86.6	mg/L	2	Standard
Mg	24	22061.0	0.3	**25.3844**	0.436	1.7	mg/L	55	Standard
K	39	113.3	9.2	**0.2976**	0.036	12.0	mg/L	28	Standard
Ca	43	235.0	16.1	**18.6613**	3.690	19.8	mg/L	27	Standard
Fe	54	444.8	12.4	**0.2457**	0.044	17.8	mg/L	147	Standard
Fe	57	475.0	1.1	**0.6368**	0.010	1.6	mg/L	268	Standard
Sc-1	45	41709.0	1.4				mg/L	41174	Standard
Cl	35	94012.8	1.3				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	5417.6	1.0				ug/L	1950	Standard
P	31	27702.0	0.2				ug/L	21156	Standard
S	34	3952.2	4.7				ug/L	3419	Standard
Sr	88	203.3	6.2				ug/L	72	Standard
C	12	180.0	5.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	206.7	46.0				mg/L	17	Standard
Dy	164	524.4	5.0				mg/L	16	Standard
Ho-1	165	355.0	16.2				mg/L	7	Standard
Er	166	326.7	23.8				mg/L	7	Standard
I	127	92501.9	4.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.885	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140003
Report Date/Time: Friday, July 01, 2016 15:26:15
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.033
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.499
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140004
Sample Date/Time: Friday, July 01, 2016 15:27:09
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81751.7	2.2				ug/L	76456	Standard
	Be	9	135.0	7.4	**0.0930**	0.010	10.5	ug/L	20	Standard
	Al	27	16409591.9	0.7	**89.6714**	2.399	2.7	ug/L	1307	Standard
	Sc	45	43657.8	2.3				ug/L	41174	Standard
	Ti	47	15858.0	1.7	**48.2292**	0.843	1.7	ug/L	27	Standard
	V	51	24903.7	1.5	**2.8088**	0.058	2.1	ug/L	1434	Standard
	Cr	52	24554.9	2.0	**2.0436**	0.044	2.1	ug/L	7733	Standard
	Cr	53	8734.2	4.6	**8.1598**	0.352	4.3	ug/L	442	Standard
	Mn	55	321581.9	1.2	**42.0644**	0.335	0.8	ug/L	723	Standard
	Co	59	9091.1	1.5	**1.1485**	0.011	1.0	ug/L	217	Standard
	Ni	60	4968.8	2.8	**2.2237**	0.057	2.6	ug/L	304	Standard
	Cu	65	4956.5	2.1	**2.3370**	0.063	2.7	ug/L	181	Standard
	Zn	66	24116.8	0.6	**19.3591**	0.218	1.1	ug/L	215	Standard
>	Ge	72	524703.9	0.5				ug/L	520809	Standard
	As	75	614.6	10.2	**0.5395**	0.053	9.9	ug/L	-52	Standard
	Se	82	60.0	7.2	**0.3447**	0.037	10.6	ug/L	17	Standard
	Se-1	77	320.0	6.3	**3.0305**	0.221	7.3	ug/L	56	Standard
>	Ga	71	2358.5	3.8				mg/L	25	Standard
	Rb	85	29106.3	0.5				ug/L	28	Standard
	Y	89	488820.8	1.3				ug/L	447395	Standard
>	Rh	103	41.7	36.7				ug/L	15	Standard
	Mo	98	207.5	20.0	**0.0449**	0.014	31.5	ug/L	113	Standard
	Ag	107	157.7	11.6	**0.0091**	0.002	27.1	ug/L	108	Standard
	Cd	111	394.0	4.6	**0.1692**	0.008	4.7	mg/L	3	Standard
	Cd	114	994.3	3.1	**0.1748**	0.005	2.7	ug/L	20	Standard
>	In	115	624414.0	0.6				ug/L	625728	Standard
	Sn	118	1828.4	12.1	**0.2006**	0.036	17.9	ug/L	568	Standard
	Sb	123	719.7	13.7	**0.1059**	0.020	18.8	ug/L	612	Standard
	Ba	135	28855.8	0.8	**13.2740**	0.137	1.0	ug/L	21	Standard
	Ce	140	181035.3	1.7				ug/L	245	Standard
>	Tb	159	950705.2	0.6				ug/L	950397	Standard
	Ho	165	3198.7	2.4				ug/L	7	Standard
	Tl	203	267.3	11.5	**0.0298**	0.004	11.9	ug/L	15	Standard
	Tl	205	255.0	10.9	**0.0230**	0.004	15.5	ug/L	13	Standard
	Pb	206	5712.7	1.8	**0.9909**	0.019	1.9	ug/L	264	Standard
	Pb	207	4766.7	1.5	**0.9045**	0.014	1.5	ug/L	222	Standard
	Pb	208	20771.3	1.3	**0.9660**	0.013	1.3	ug/L	959	Standard
	U	238	597.3	5.0	**0.0757**	0.004	5.0	ug/L	9	Standard
>	Bi	209	539160.5	0.0				ug/L	552821	Standard

Sample ID: L1606140004
Report Date/Time: Friday, July 01, 2016 15:29:26
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.3434**	8.093	86.6	mg/L	2	Standard
Mg	24	23045.8	1.2	**25.3403**	0.746	2.9	mg/L	55	Standard
K	39	200.0	16.4	**0.5941**	0.134	22.5	mg/L	28	Standard
Ca	43	263.3	19.5	**20.1662**	4.729	23.5	mg/L	27	Standard
Fe	54	2633.0	5.5	**1.8499**	0.135	7.3	mg/L	147	Standard
Fe	57	1085.0	6.4	**2.3396**	0.175	7.5	mg/L	268	Standard
Sc-1	45	43657.8	2.3				mg/L	41174	Standard
Cl	35	89531.9	3.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	8986.0	7.5				ug/L	1950	Standard
P	31	30121.6	2.2				ug/L	21156	Standard
S	34	4117.2	5.6				ug/L	3419	Standard
Sr	88	208.3	27.6				ug/L	72	Standard
C	12	203.3	12.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	336.7	30.9				mg/L	17	Standard
Dy	164	4587.9	2.0				mg/L	16	Standard
Ho-1	165	3198.7	2.4				mg/L	7	Standard
Er	166	3260.4	5.8				mg/L	7	Standard
I	127	86340.3	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.927	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.748	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140004
Report Date/Time: Friday, July 01, 2016 15:29:26
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.790
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.529
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140005
Sample Date/Time: Friday, July 01, 2016 15:30:21
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81575.7	1.3				ug/L	76456	Standard
	Be	9	31.7	45.6	**0.0067**	0.012	182.8	ug/L	20	Standard
	Al	27	11361131.6	0.7	**62.2005**	1.160	1.9	ug/L	1307	Standard
	Sc	45	41289.5	1.9				ug/L	41174	Standard
	Ti	47	446.7	4.2	**1.2710**	0.064	5.1	ug/L	27	Standard
	V	51	6339.2	1.7	**0.5637**	0.005	0.9	ug/L	1434	Standard
	Cr	52	14053.8	0.9	**0.7478**	0.031	4.1	ug/L	7733	Standard
	Cr	53	3397.0	0.8	**2.9061**	0.060	2.1	ug/L	442	Standard
	Mn	55	91180.2	0.3	**11.8062**	0.126	1.1	ug/L	723	Standard
	Co	59	1636.1	3.3	**0.1817**	0.006	3.3	ug/L	217	Standard
	Ni	60	2420.2	3.0	**0.9998**	0.030	3.0	ug/L	304	Standard
	Cu	65	1115.7	0.8	**0.4664**	0.010	2.1	ug/L	181	Standard
	Zn	66	4102.9	4.8	**3.1313**	0.189	6.0	ug/L	215	Standard
>	**Ge**	72	526864.0	1.0				ug/L	520809	Standard
	As	75	209.1	23.9	**0.2126**	0.040	18.9	ug/L	-52	Standard
	Se	82	44.2	19.7	**0.2192**	0.067	30.8	ug/L	17	Standard
	Se-1	77	143.0	9.9	**0.9701**	0.178	18.4	ug/L	56	Standard
>	**Ga**	71	123.3	14.2				mg/L	25	Standard
	Rb	85	2268.5	7.3				ug/L	28	Standard
	Y	89	460843.6	0.6				ug/L	447395	Standard
>	**Rh**	103	38.3	7.5				ug/L	15	Standard
	Mo	98	138.6	17.2	**0.0223**	0.008	37.4	ug/L	113	Standard
	Ag	107	89.7	12.2	**-0.0003**	0.002	618.7	ug/L	108	Standard
	Cd	111	119.1	4.0	**0.0498**	0.002	3.9	mg/L	3	Standard
	Cd	114	332.6	23.3	**0.0590**	0.014	24.0	ug/L	20	Standard
>	**In**	115	620430.9	1.0				ug/L	625728	Standard
	Sn	118	1270.1	10.3	**0.1149**	0.022	19.3	ug/L	568	Standard
	Sb	123	506.5	10.9	**0.0652**	0.012	17.9	ug/L	612	Standard
	Ba	135	12723.7	1.4	**5.8806**	0.073	1.2	ug/L	21	Standard
	Ce	140	16098.5	0.3				ug/L	245	Standard
>	**Tb**	159	949690.5	1.0				ug/L	950397	Standard
	Ho	165	733.4	8.1				ug/L	7	Standard
	Tl	203	89.0	5.8	**0.0094**	0.001	6.1	ug/L	15	Standard
	Tl	205	71.7	4.0	**-0.0005**	0.000	65.6	ug/L	13	Standard
	Pb	206	791.4	4.4	**0.0994**	0.006	5.9	ug/L	264	Standard
	Pb	207	690.7	3.6	**0.0915**	0.005	5.0	ug/L	222	Standard
	Pb	208	2860.4	1.4	**0.0912**	0.002	1.7	ug/L	959	Standard
	U	238	438.0	6.5	**0.0554**	0.003	6.2	ug/L	9	Standard
>	**Bi**	209	539820.6	0.5				ug/L	552821	Standard

Sample ID: L1606140005
Report Date/Time: Friday, July 01, 2016 15:32:38
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.8050**	16.974	173.1	mg/L	2	Standard
Mg	24	7792.0	1.0	**9.0186**	0.177	2.0	mg/L	55	Standard
K	39	263.3	14.7	**0.8766**	0.155	17.6	mg/L	28	Standard
Ca	43	330.0	19.8	**27.4186**	5.627	20.5	mg/L	27	Standard
Fe	54	735.5	15.2	**0.4767**	0.090	18.9	mg/L	147	Standard
Fe	57	581.7	10.7	**0.9796**	0.205	21.0	mg/L	268	Standard
> **Sc-1**	45	41289.5	1.9				mg/L	41174	Standard
Cl	35	92233.2	0.5				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	7218.4	8.8				ug/L	1950	Standard
P	31	25119.1	2.5				ug/L	21156	Standard
S	34	4015.5	4.2				ug/L	3419	Standard
Sr	88	198.3	12.9				ug/L	72	Standard
C	12	296.7	7.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	29.4				mg/L	17	Standard
Dy	164	946.6	5.7				mg/L	16	Standard
Ho-1	165	733.4	8.1				mg/L	7	Standard
Er	166	766.7	15.2				mg/L	7	Standard
I	127	70972.5	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.697	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.163	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140005
Report Date/Time: Friday, July 01, 2016 15:32:38
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.648
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140009
Sample Date/Time: Friday, July 01, 2016 15:33:32
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81176.9	1.8				ug/L	76456	Standard
	Be	9	121.7	33.5	**0.0827**	0.035	42.4	ug/L	20	Standard
	Al	27	9588194.5	0.1	**52.7539**	0.999	1.9	ug/L	1307	Standard
	Sc	45	43500.7	0.9				ug/L	41174	Standard
	Ti	47	16231.4	1.0	**49.4700**	1.142	2.3	ug/L	27	Standard
	V	51	27177.8	1.2	**3.0895**	0.018	0.6	ug/L	1434	Standard
	Cr	52	30590.2	0.3	**2.7921**	0.043	1.5	ug/L	7733	Standard
	Cr	53	15214.3	3.9	**14.5584**	0.723	5.0	ug/L	442	Standard
	Mn	55	419736.2	0.6	**55.0489**	1.027	1.9	ug/L	723	Standard
	Co	59	9146.8	1.6	**1.1580**	0.019	1.6	ug/L	217	Standard
	Ni	60	5875.8	2.7	**2.6630**	0.065	2.4	ug/L	304	Standard
	Cu	65	6513.4	1.0	**3.1007**	0.066	2.1	ug/L	181	Standard
	Zn	66	26692.5	0.5	**21.4893**	0.375	1.7	ug/L	215	Standard
>	Ge	72	523713.8	1.4				ug/L	520809	Standard
	As	75	573.5	19.4	**0.5079**	0.095	18.7	ug/L	-52	Standard
	Se	82	88.9	5.9	**0.5739**	0.045	7.8	ug/L	17	Standard
	Se-1	77	673.7	3.9	**7.1522**	0.285	4.0	ug/L	56	Standard
>	Ga	71	2611.9	4.8				mg/L	25	Standard
	Rb	85	28024.2	1.3				ug/L	28	Standard
	Y	89	508019.1	1.4				ug/L	447395	Standard
>	Rh	103	75.0	11.5				ug/L	15	Standard
	Mo	98	440.1	11.3	**0.1259**	0.017	13.3	ug/L	113	Standard
	Ag	107	293.3	3.4	**0.0292**	0.001	4.2	ug/L	108	Standard
	Cd	111	123.6	12.9	**0.0529**	0.007	13.0	mg/L	3	Standard
	Cd	114	259.6	1.9	**0.0469**	0.001	2.3	ug/L	20	Standard
>	In	115	607695.5	0.5				ug/L	625728	Standard
	Sn	118	1815.1	15.8	**0.2060**	0.044	21.6	ug/L	568	Standard
	Sb	123	1181.5	5.3	**0.2017**	0.012	6.1	ug/L	612	Standard
	Ba	135	44851.3	1.2	**21.2102**	0.264	1.2	ug/L	21	Standard
	Ce	140	233746.2	1.6				ug/L	245	Standard
>	Tb	159	940005.0	0.9				ug/L	950397	Standard
	Ho	165	4862.4	3.3				ug/L	7	Standard
	Tl	203	294.3	3.6	**0.0336**	0.001	3.3	ug/L	15	Standard
	Tl	205	293.3	8.4	**0.0288**	0.003	10.7	ug/L	13	Standard
	Pb	206	14978.4	0.2	**2.7295**	0.019	0.7	ug/L	264	Standard
	Pb	207	12667.6	1.3	**2.5366**	0.044	1.7	ug/L	222	Standard
	Pb	208	54283.9	0.6	**2.6615**	0.029	1.1	ug/L	959	Standard
	U	238	853.7	3.9	**0.1108**	0.005	4.3	ug/L	9	Standard
>	Bi	209	527415.0	0.5				ug/L	552821	Standard

Sample ID: L1606140009
Report Date/Time: Friday, July 01, 2016 15:35:49
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58944.5	2.4	**65.1233**	1.989	3.1	mg/L	55	Standard
K	39	308.3	15.9	**0.9880**	0.180	18.2	mg/L	28	Standard
Ca	43	298.3	31.7	**23.1691**	7.979	34.4	mg/L	27	Standard
Fe	54	3472.7	3.0	**2.4787**	0.071	2.9	mg/L	147	Standard
Fe	57	1280.1	3.7	**2.9195**	0.164	5.6	mg/L	268	Standard
Sc-1	45	43500.7	0.9				mg/L	41174	Standard
Cl	35	88358.4	3.5				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	13829.7	7.0				ug/L	1950	Standard
P	31	28925.9	0.9				ug/L	21156	Standard
S	34	3962.2	5.0				ug/L	3419	Standard
Sr	88	261.7	17.1				ug/L	72	Standard
C	12	160.0	39.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	233.3	49.3				mg/L	17	Standard
Dy	164	7255.6	1.4				mg/L	16	Standard
Ho-1	165	4862.4	3.3				mg/L	7	Standard
Er	166	4654.0	5.4				mg/L	7	Standard
I	127	97026.7	3.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.175	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.558	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606140009
Report Date/Time: Friday, July 01, 2016 15:35:49
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.118
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140010
Sample Date/Time: Friday, July 01, 2016 15:36:43
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81063.0	2.2				ug/L	76456	Standard
	Be	9	45.0	40.1	**0.0179**	0.015	82.9	ug/L	20	Standard
	Al	27	11177331.1	2.6	**61.5680**	0.262	0.4	ug/L	1307	Standard
	Sc	45	42046.6	2.8				ug/L	41174	Standard
	Ti	47	3513.4	4.8	**10.6195**	0.508	4.8	ug/L	27	Standard
	V	51	6549.3	3.1	**0.5923**	0.026	4.4	ug/L	1434	Standard
	Cr	52	28159.1	0.6	**2.4863**	0.028	1.1	ug/L	7733	Standard
	Cr	53	13474.3	4.4	**12.8172**	0.601	4.7	ug/L	442	Standard
	Mn	55	64803.6	1.2	**8.3962**	0.117	1.4	ug/L	723	Standard
	Co	59	2906.3	2.0	**0.3471**	0.007	2.1	ug/L	217	Standard
	Ni	60	4725.7	1.8	**2.1076**	0.036	1.7	ug/L	304	Standard
	Cu	65	5144.9	0.4	**2.4285**	0.010	0.4	ug/L	181	Standard
	Zn	66	4108.2	1.9	**3.1482**	0.066	2.1	ug/L	215	Standard
>	Ge	72	524692.7	0.2				ug/L	520809	Standard
	As	75	145.9	6.5	**0.1625**	0.008	4.8	ug/L	-52	Standard
	Se	82	112.8	12.6	**0.7595**	0.112	14.8	ug/L	17	Standard
	Se-1	77	626.7	4.9	**6.5924**	0.373	5.7	ug/L	56	Standard
>	Ga	71	708.3	9.6				mg/L	25	Standard
	Rb	85	114385.2	1.8				ug/L	28	Standard
	Y	89	451161.9	0.3				ug/L	447395	Standard
>	Rh	103	126.7	19.5				ug/L	15	Standard
	Mo	98	337.8	3.9	**0.0889**	0.005	5.8	ug/L	113	Standard
	Ag	107	99.0	14.6	**0.0011**	0.002	190.6	ug/L	108	Standard
	Cd	111	210.4	3.4	**0.0899**	0.004	4.2	mg/L	3	Standard
	Cd	114	526.0	13.1	**0.0932**	0.013	13.7	ug/L	20	Standard
>	In	115	619724.1	0.7				ug/L	625728	Standard
	Sn	118	3008.6	5.9	**0.3878**	0.029	7.5	ug/L	568	Standard
	Sb	123	32833.7	1.0	**6.3811**	0.045	0.7	ug/L	612	Standard
	Ba	135	22694.3	1.2	**10.5145**	0.070	0.7	ug/L	21	Standard
	Ce	140	24100.8	3.3				ug/L	245	Standard
>	Tb	159	942819.0	1.4				ug/L	950397	Standard
	Ho	165	435.0	17.4				ug/L	7	Standard
	Tl	203	173.7	3.3	**0.0194**	0.001	3.9	ug/L	15	Standard
	Tl	205	150.0	13.3	**0.0098**	0.003	26.2	ug/L	13	Standard
	Pb	206	11753.6	0.5	**2.1162**	0.005	0.2	ug/L	264	Standard
	Pb	207	9878.9	1.2	**1.9529**	0.015	0.8	ug/L	222	Standard
	Pb	208	42950.0	0.3	**2.0797**	0.006	0.3	ug/L	959	Standard
	U	238	632.3	2.5	**0.0814**	0.002	2.7	ug/L	9	Standard
>	Bi	209	531366.5	0.5				ug/L	552821	Standard

Sample ID: L1606140010
Report Date/Time: Friday, July 01, 2016 15:39:00
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**10.0447**	17.389	173.1	mg/L	2	Standard
Mg	24	54402.5	1.7	**62.2231**	2.757	4.4	mg/L	55	Standard
K	39	598.3	6.5	**2.1139**	0.085	4.0	mg/L	28	Standard
Ca	43	330.0	10.9	**26.8723**	2.438	9.1	mg/L	27	Standard
Fe	54	560.8	9.0	**0.3316**	0.032	9.6	mg/L	147	Standard
Fe	57	588.3	6.5	**0.9662**	0.103	10.6	mg/L	268	Standard
> **Sc-1**	45	42046.6	2.8				mg/L	41174	Standard
Cl	35	90806.6	0.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18608.1	1.3				ug/L	1950	Standard
P	31	26292.8	1.7				ug/L	21156	Standard
S	34	4085.6	2.8				ug/L	3419	Standard
Sr	88	385.0	14.8				ug/L	72	Standard
C	12	186.7	30.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	136.7	27.7				mg/L	17	Standard
Dy	164	734.0	6.8				mg/L	16	Standard
Ho-1	165	435.0	17.4				mg/L	7	Standard
Er	166	403.3	10.0				mg/L	7	Standard
I	127	125158.4	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.026	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140010
Report Date/Time: Friday, July 01, 2016 15:39:00
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.041
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.119
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144411
Sample Date/Time: Friday, July 01, 2016 15:39:55
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81448.4	1.6				ug/L	76456	Standard
	Be	9	11.7	65.5	**-0.0101**	0.006	63.9	ug/L	20	Standard
	Al	27	21525.3	7.9	**0.1077**	0.007	6.9	ug/L	1307	Standard
	Sc	45	43096.2	1.6				ug/L	41174	Standard
	Ti	47	91.7	3.5	**0.1831**	0.008	4.3	ug/L	27	Standard
	V	51	5715.4	7.0	**0.4625**	0.039	8.5	ug/L	1434	Standard
	Cr	52	72666.9	1.2	**7.5774**	0.036	0.5	ug/L	7733	Standard
	Cr	53	9179.5	6.4	**8.2203**	0.500	6.1	ug/L	442	Standard
	Mn	55	17987.3	2.4	**2.1587**	0.042	2.0	ug/L	723	Standard
	Co	59	1272.7	1.0	**0.1286**	0.001	0.4	ug/L	217	Standard
	Ni	60	1771.4	2.8	**0.6589**	0.022	3.3	ug/L	304	Standard
	Cu	65	890.7	4.0	**0.3410**	0.015	4.4	ug/L	181	Standard
	Zn	66	2169.2	1.7	**1.5037**	0.020	1.3	ug/L	215	Standard
>	**Ge**	72	547560.2	1.1				ug/L	520809	Standard
	As	75	-25.7	84.9	**0.0255**	0.017	64.8	ug/L	-52	Standard
	Se	82	30.2	19.3	**0.1012**	0.046	45.5	ug/L	17	Standard
	Se-1	77	82.7	3.0	**0.2352**	0.029	12.5	ug/L	56	Standard
>	**Ga**	71	61.7	16.9				mg/L	25	Standard
	Rb	85	225.0	18.2				ug/L	28	Standard
	Y	89	463078.5	0.6				ug/L	447395	Standard
>	**Rh**	103	16.7	34.6				ug/L	15	Standard
	Mo	98	9345.0	1.0	**2.9323**	0.025	0.9	ug/L	113	Standard
	Ag	107	88.3	4.7	**-0.0011**	0.001	50.3	ug/L	108	Standard
	Cd	111	4.7	106.3	**-0.0004**	0.002	489.8	mg/L	3	Standard
	Cd	114	53.3	48.8	**0.0090**	0.004	49.5	ug/L	20	Standard
>	**In**	115	654026.5	1.0				ug/L	625728	Standard
	Sn	118	6959.9	4.7	**0.9503**	0.045	4.8	ug/L	568	Standard
	Sb	123	309.2	21.8	**0.0236**	0.013	55.3	ug/L	612	Standard
	Ba	135	560.7	1.9	**0.2287**	0.006	2.5	ug/L	21	Standard
	Ce	140	275.0	28.4				ug/L	245	Standard
>	**Tb**	159	972057.0	0.8				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	71.3	7.7	**0.0070**	0.001	9.6	ug/L	15	Standard
	Tl	205	56.7	27.0	**-0.0028**	0.002	64.9	ug/L	13	Standard
	Pb	206	408.7	2.4	**0.0268**	0.002	8.8	ug/L	264	Standard
	Pb	207	323.7	7.4	**0.0155**	0.005	32.9	ug/L	222	Standard
	Pb	208	1481.0	2.8	**0.0207**	0.002	11.3	ug/L	959	Standard
	U	238	26.3	21.6	**0.0029**	0.001	22.8	ug/L	9	Standard
>	**Bi**	209	565291.9	1.0				ug/L	552821	Standard

Sample ID: L1606144411
Report Date/Time: Friday, July 01, 2016 15:42:12
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	118.3	31.7	**0.0714**	0.040	55.7	mg/L	55	Standard
K	39	33.3	8.7	**-0.0090**	0.012	135.9	mg/L	28	Standard
Ca	43	25.0	20.0	**-0.2843**	0.417	146.5	mg/L	27	Standard
Fe	54	653.3	3.0	**0.3905**	0.007	1.8	mg/L	147	Standard
Fe	57	318.3	7.9	**0.1302**	0.066	51.0	mg/L	268	Standard
> **Sc-1**	45	43096.2	1.6				mg/L	41174	Standard
Cl	35	93637.8	1.2				ug/L	69550	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	4000.5	7.9				ug/L	1950	Standard
P	31	25331.2	1.4				ug/L	21156	Standard
S	34	4190.6	5.7				ug/L	3419	Standard
Sr	88	63.3	25.4				ug/L	72	Standard
C	12	126.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	170.0	56.1				mg/L	17	Standard
Dy	164	16.0	67.7				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	17883.9	8.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.136	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144411
Report Date/Time: Friday, July 01, 2016 15:42:12
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.523
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.256
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 15:43:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79848.2	1.4				ug/L	76456	Standard
	Be	9	61340.6	1.3	**52.4607**	1.344	2.6	ug/L	20	Standard
	Al	27	8840196.9	1.7	**49.4449**	1.243	2.5	ug/L	1307	Standard
	Sc	45	42292.3	2.5				ug/L	41174	Standard
	Ti	47	33237.8	0.4	**98.6642**	0.509	0.5	ug/L	27	Standard
	V	51	434298.1	1.3	**50.9427**	0.727	1.4	ug/L	1434	Standard
	Cr	52	424946.0	0.9	**49.8972**	0.200	0.4	ug/L	7733	Standard
	Cr	53	51918.8	0.3	**49.3069**	0.192	0.4	ug/L	442	Standard
	Mn	55	396032.4	2.3	**50.5349**	0.943	1.9	ug/L	723	Standard
	Co	59	408091.6	1.9	**51.5332**	0.754	1.5	ug/L	217	Standard
	Ni	60	107986.8	0.7	**50.2226**	0.157	0.3	ug/L	304	Standard
	Cu	65	107294.9	0.3	**50.8210**	0.440	0.9	ug/L	181	Standard
	Zn	66	64441.1	1.0	**50.7299**	0.295	0.6	ug/L	215	Standard
>	**Ge**	72	538072.4	0.6				ug/L	520809	Standard
	As	75	64224.3	0.8	**50.3990**	0.228	0.5	ug/L	-52	Standard
	Se	82	6653.0	0.9	**50.8468**	0.498	1.0	ug/L	17	Standard
	Se-1	77	4539.7	1.5	**50.7170**	0.744	1.5	ug/L	56	Standard
>	**Ga**	71	38.3	19.9				mg/L	25	Standard
	Rb	85	878.4	4.8				ug/L	28	Standard
	Y	89	464875.9	0.9				ug/L	447395	Standard
>	**Rh**	103	28.3	56.7				ug/L	15	Standard
	Mo	98	306641.4	1.5	**98.6937**	1.489	1.5	ug/L	113	Standard
	Ag	107	367901.9	1.4	**49.8620**	0.492	1.0	ug/L	108	Standard
	Cd	111	117489.0	1.1	**49.6867**	0.641	1.3	mg/L	3	Standard
	Cd	114	291631.0	1.7	**49.8103**	0.297	0.6	ug/L	20	Standard
>	**In**	115	642695.4	1.1				ug/L	625728	Standard
	Sn	118	325840.7	2.1	**49.2102**	1.100	2.2	ug/L	568	Standard
	Sb	123	265299.9	1.4	**49.9473**	0.644	1.3	ug/L	612	Standard
	Ba	135	109451.6	0.3	**48.9670**	0.439	0.9	ug/L	21	Standard
	Ce	140	91.7	17.5				ug/L	245	Standard
>	**Tb**	159	960139.4	0.5				ug/L	950397	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	455308.6	0.4	**50.2176**	0.333	0.7	ug/L	15	Standard
	Tl	205	418174.0	0.6	**51.9308**	0.055	0.1	ug/L	13	Standard
	Pb	206	287949.4	0.0	**50.3217**	0.263	0.5	ug/L	264	Standard
	Pb	207	261570.9	0.7	**50.3350**	0.638	1.3	ug/L	222	Standard
	Pb	208	1088813.8	0.8	**51.2998**	0.701	1.4	ug/L	959	Standard
	U	238	413789.6	1.0	**50.8288**	0.805	1.6	ug/L	9	Standard
>	**Bi**	209	558286.7	0.5				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 15:45:25
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4697.4	5.9	**5.2790**	0.180	3.4	mg/L	55	Standard
K	39	1176.7	4.0	**4.2662**	0.289	6.8	mg/L	28	Standard
Ca	43	75.0	40.6	**4.2243**	2.811	66.5	mg/L	27	Standard
Fe	54	6836.4	1.2	**5.1227**	0.153	3.0	mg/L	147	Standard
Fe	57	1986.8	1.5	**5.1413**	0.153	3.0	mg/L	268	Standard
Sc-1	45	42292.3	2.5				mg/L	41174	Standard
Cl	35	87844.6	1.1				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2156.8	5.6				ug/L	1950	Standard
P	31	26853.8	2.9				ug/L	21156	Standard
S	34	4549.0	3.6				ug/L	3419	Standard
Sr	88	63.3	24.1				ug/L	72	Standard
C	12	106.7	10.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	173.3	43.3				mg/L	17	Standard
Dy	164	9.0	191.8				mg/L	16	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	21254.9	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.921		
Al	27	98.890		
Sc	45			
Ti	47	98.664		
V	51	101.885		
Cr	52	99.794		
Cr	53			
Mn	55	101.070		
Co	59	103.066		
Ni	60	100.445		
Cu	65	101.642		
Zn	66	101.460		
Ge	72		103.315	
As	75	100.798		
Se	82	101.694		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 15:45:25
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.694		
Ag	107	99.724		
Cd	111	99.373		
Cd	114			
In	115			102.712
Sn	118	98.420		
Sb	123	99.895		
Ba	135	97.934		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.435		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.600		
U	238	101.658		
Bi	209			100.989
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 15:45:25
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 15:46:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79389.1	1.5				ug/L	76456	Standard
	Be	9	21.7	58.1	**-0.0012**	0.011	924.7	ug/L	20	Standard
	Al	27	2653.6	26.5	**0.0047**	0.004	80.6	ug/L	1307	Standard
	Sc	45	42380.9	4.0				ug/L	41174	Standard
	Ti	47	29.7	33.8	**0.0025**	0.028	1148.4	ug/L	27	Standard
	V	51	1542.6	6.8	**-0.0189**	0.014	72.9	ug/L	1434	Standard
	Cr	52	7249.7	1.4	**-0.1121**	0.006	5.1	ug/L	7733	Standard
	Cr	53	556.7	17.0	**0.1098**	0.084	76.1	ug/L	442	Standard
	Mn	55	781.0	5.8	**-0.0026**	0.005	178.6	ug/L	723	Standard
	Co	59	230.7	5.2	**-0.0006**	0.001	192.9	ug/L	217	Standard
	Ni	60	287.0	3.3	**-0.0207**	0.003	16.9	ug/L	304	Standard
	Cu	65	178.0	9.4	**0.0094**	0.008	88.1	ug/L	181	Standard
	Zn	66	241.3	7.8	**0.0083**	0.014	168.4	ug/L	215	Standard
>	**Ge**	72	544000.0	1.1				ug/L	520809	Standard
	As	75	-38.4	128.5	**0.0152**	0.039	254.8	ug/L	-52	Standard
	Se	82	20.0	53.3	**0.0245**	0.079	323.1	ug/L	17	Standard
	Se-1	77	71.7	19.7	**0.1170**	0.150	127.9	ug/L	56	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	31.7	9.1				ug/L	28	Standard
	Y	89	461634.5	1.4				ug/L	447395	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	249.2	9.7	**0.0550**	0.007	12.4	ug/L	113	Standard
	Ag	107	132.3	12.7	**0.0048**	0.002	45.5	ug/L	108	Standard
	Cd	111	16.9	42.6	**0.0047**	0.003	63.4	mg/L	3	Standard
	Cd	114	56.7	84.7	**0.0095**	0.008	83.3	ug/L	20	Standard
>	**In**	115	653131.6	1.3				ug/L	625728	Standard
	Sn	118	1488.4	26.0	**0.1378**	0.060	43.6	ug/L	568	Standard
	Sb	123	795.3	31.1	**0.1141**	0.047	41.5	ug/L	612	Standard
	Ba	135	49.7	33.1	**0.0039**	0.007	180.6	ug/L	21	Standard
	Ce	140	41.7	13.9				ug/L	245	Standard
>	**Tb**	159	951623.8	1.5				ug/L	950397	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	77.3	16.4	**0.0077**	0.001	17.6	ug/L	15	Standard
	Tl	205	83.3	27.7	**0.0005**	0.003	538.8	ug/L	13	Standard
	Pb	206	329.3	15.7	**0.0134**	0.008	63.3	ug/L	264	Standard
	Pb	207	295.3	8.1	**0.0104**	0.004	40.0	ug/L	222	Standard
	Pb	208	1227.0	6.3	**0.0091**	0.003	35.4	ug/L	959	Standard
	U	238	66.0	40.1	**0.0078**	0.003	40.9	ug/L	9	Standard
>	**Bi**	209	562277.6	0.8				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 15:48:36
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	16.9	**0.0099**	0.013	128.3	mg/L	55	Standard
K	39	20.0	25.0	**-0.0563**	0.020	35.8	mg/L	28	Standard
Ca	43	20.0	25.0	**-0.6925**	0.397	57.4	mg/L	27	Standard
Fe	54	164.3	3.0	**0.0265**	0.005	17.4	mg/L	147	Standard
Fe	57	226.7	11.3	**-0.1282**	0.057	44.8	mg/L	268	Standard
> **Sc-1**	45	42380.9	4.0				mg/L	41174	Standard
Cl	35	88109.5	1.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2156.8	5.0				ug/L	1950	Standard
P	31	25852.0	1.3				ug/L	21156	Standard
S	34	4487.3	2.3				ug/L	3419	Standard
Sr	88	56.7	5.1				ug/L	72	Standard
C	12	96.7	39.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	113.3	10.2				mg/L	17	Standard
Dy	164	6.2	100.1				mg/L	16	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	15996.8	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.453	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 15:48:36
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.379
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.711
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 15:48:36
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145201
Sample Date/Time: Friday, July 01, 2016 15:49:32
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	94816.0	3.6				ug/L	76456	Standard
	Be	9	25.0	40.0	**-0.0020**	0.007	332.6	ug/L	20	Standard
	Al	27	21072085.0	1.8	**99.2963**	2.302	2.3	ug/L	1307	Standard
	Sc	45	43716.3	1.4				ug/L	41174	Standard
	Ti	47	397.0	3.2	**1.1396**	0.053	4.7	ug/L	27	Standard
	V	51	4169.6	18.7	**0.3116**	0.101	32.4	ug/L	1434	Standard
	Cr	52	31233.8	0.8	**2.9091**	0.081	2.8	ug/L	7733	Standard
	Cr	53	20687.6	10.5	**20.1582**	2.403	11.9	ug/L	442	Standard
	Mn	55	2658788.2	0.4	**352.6307**	4.074	1.2	ug/L	723	Standard
	Co	59	29637.6	0.8	**3.8558**	0.023	0.6	ug/L	217	Standard
	Ni	60	6462.7	2.0	**2.9745**	0.037	1.3	ug/L	304	Standard
	Cu	65	861.0	3.9	**0.3497**	0.019	5.5	ug/L	181	Standard
	Zn	66	6645.5	1.6	**5.2668**	0.080	1.5	ug/L	215	Standard
>	Ge	72	518645.6	1.3				ug/L	520809	Standard
	As	75	3126.8	4.4	**2.5897**	0.143	5.5	ug/L	-52	Standard
	Se	82	664.6	4.5	**5.1588**	0.301	5.8	ug/L	17	Standard
	Se-1	77	930.7	11.1	**10.2587**	1.337	13.0	ug/L	56	Standard
>	Ga	71	203.3	20.9				mg/L	25	Standard
	Rb	85	1041748.9	1.1				ug/L	28	Standard
	Y	89	448254.4	0.8				ug/L	447395	Standard
>	Rh	103	201.7	17.6				ug/L	15	Standard
	Mo	98	637.0	2.3	**0.1927**	0.005	2.4	ug/L	113	Standard
	Ag	107	163.3	33.8	**0.0105**	0.008	72.2	ug/L	108	Standard
	Cd	111	106.6	9.0	**0.0453**	0.005	10.1	mg/L	3	Standard
	Cd	114	259.2	18.0	**0.0469**	0.009	19.3	ug/L	20	Standard
>	In	115	608292.3	1.4				ug/L	625728	Standard
	Sn	118	1770.1	23.1	**0.1984**	0.063	31.6	ug/L	568	Standard
	Sb	123	609.0	15.5	**0.0875**	0.018	20.6	ug/L	612	Standard
	Ba	135	570406.1	1.3	**269.6937**	1.874	0.7	ug/L	21	Standard
	Ce	140	4143.9	0.7				ug/L	245	Standard
>	Tb	159	943834.4	0.3				ug/L	950397	Standard
	Ho	165	73.3	37.6				ug/L	7	Standard
	Tl	203	318.3	4.1	**0.0368**	0.002	4.3	ug/L	15	Standard
	Tl	205	295.0	13.5	**0.0294**	0.005	17.1	ug/L	13	Standard
	Pb	206	463.0	0.4	**0.0429**	0.001	1.6	ug/L	264	Standard
	Pb	207	397.7	5.2	**0.0359**	0.005	12.9	ug/L	222	Standard
	Pb	208	1684.0	4.4	**0.0367**	0.004	11.5	ug/L	959	Standard
	U	238	1098.4	2.7	**0.1441**	0.005	3.4	ug/L	9	Standard
>	Bi	209	521779.5	0.6				ug/L	552821	Standard

Sample ID: L1606145201
Report Date/Time: Friday, July 01, 2016 15:51:49
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.7590**	8.234	173.0	mg/L	2	Standard
Mg	24	80860.2	1.3	**88.9060**	0.128	0.1	mg/L	55	Standard
K	39	8253.9	2.9	**29.6886**	1.293	4.4	mg/L	28	Standard
Ca	43	198.3	3.9	**14.5226**	0.636	4.4	mg/L	27	Standard
Fe	54	1838.9	5.0	**1.2589**	0.053	4.2	mg/L	147	Standard
Fe	57	841.7	4.0	**1.6326**	0.120	7.3	mg/L	268	Standard
> **Sc-1**	45	43716.3	1.4				mg/L	41174	Standard
Cl	35	88622.4	0.4				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	138083.1	1.2				ug/L	1950	Standard
P	31	31377.5	0.7				ug/L	21156	Standard
S	34	4085.6	4.2				ug/L	3419	Standard
Sr	88	866.7	4.6				ug/L	72	Standard
C	12	386.7	12.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	63.6				mg/L	17	Standard
Dy	164	120.3	12.9				mg/L	16	Standard
Ho-1	165	73.3	37.6				mg/L	7	Standard
Er	166	63.3	9.1				mg/L	7	Standard
I	127	189740.0	7.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.014	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.585	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145201
Report Date/Time: Friday, July 01, 2016 15:51:49
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.214
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.385
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145201
Report Date/Time: Friday, July 01, 2016 15:51:49
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145301
Sample Date/Time: Friday, July 01, 2016 15:52:44
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89907.9	3.9				ug/L	76456	Standard
	Be	9	211.7	15.2	**0.1412**	0.026	18.7	ug/L	20	Standard
	Al	27	42254036.6	2.1	**209.9919**	4.107	2.0	ug/L	1307	Standard
	Sc	45	48114.6	1.7				ug/L	41174	Standard
	Ti	47	742.0	6.1	**2.0824**	0.104	5.0	ug/L	27	Standard
	V	51	8101.4	4.4	**0.7396**	0.044	5.9	ug/L	1434	Standard
	Cr	52	57499.6	0.2	**5.7989**	0.111	1.9	ug/L	7733	Standard
	Cr	53	37860.6	3.1	**35.2327**	0.609	1.7	ug/L	442	Standard
	Mn	55	6394718.4	1.0	**803.9667**	4.505	0.6	ug/L	723	Standard
	Co	59	184000.3	2.5	**22.8310**	0.339	1.5	ug/L	217	Standard
	Ni	60	37990.6	1.7	**17.2738**	0.133	0.8	ug/L	304	Standard
	Cu	65	1519.1	2.8	**0.6345**	0.018	2.9	ug/L	181	Standard
	Zn	66	65750.7	0.3	**50.9054**	0.635	1.2	ug/L	215	Standard
>	Ge	72	547197.2	1.5				ug/L	520809	Standard
	As	75	6205.1	1.8	**4.8294**	0.085	1.7	ug/L	-52	Standard
	Se	82	411.3	4.6	**2.9717**	0.112	3.8	ug/L	17	Standard
	Se-1	77	1750.8	0.4	**18.8117**	0.357	1.9	ug/L	56	Standard
>	Ga	71	151.7	19.9				mg/L	25	Standard
	Rb	85	17248.1	1.6				ug/L	28	Standard
	Y	89	479799.4	2.3				ug/L	447395	Standard
>	Rh	103	326.7	3.2				ug/L	15	Standard
	Mo	98	555.5	3.1	**0.1551**	0.002	1.1	ug/L	113	Standard
	Ag	107	126.3	11.0	**0.0043**	0.002	53.3	ug/L	108	Standard
	Cd	111	138.7	16.3	**0.0566**	0.011	19.3	mg/L	3	Standard
	Cd	114	356.3	13.9	**0.0611**	0.010	15.7	ug/L	20	Standard
>	In	115	641727.3	2.7				ug/L	625728	Standard
	Sn	118	1815.1	14.3	**0.1914**	0.045	23.5	ug/L	568	Standard
	Sb	123	789.7	10.3	**0.1155**	0.018	15.5	ug/L	612	Standard
	Ba	135	2472744.3	1.1	**1108.6111**	20.421	1.8	ug/L	21	Standard
	Ce	140	34706.4	3.0				ug/L	245	Standard
>	Tb	159	985263.1	3.4				ug/L	950397	Standard
	Ho	165	401.7	6.3				ug/L	7	Standard
	Tl	203	117.7	8.7	**0.0126**	0.001	10.2	ug/L	15	Standard
	Tl	205	90.0	11.1	**0.0018**	0.001	56.0	ug/L	13	Standard
	Pb	206	577.0	6.7	**0.0602**	0.005	9.1	ug/L	264	Standard
	Pb	207	486.3	6.2	**0.0505**	0.006	11.6	ug/L	222	Standard
	Pb	208	2130.1	2.6	**0.0553**	0.003	5.9	ug/L	959	Standard
	U	238	158.7	10.2	**0.0198**	0.002	9.7	ug/L	9	Standard
>	Bi	209	541702.7	2.6				ug/L	552821	Standard

Sample ID: L1606145301
Report Date/Time: Friday, July 01, 2016 15:55:01
Page 1

Approved: July 02, 2016

Na	23	6.7	114.6	**17.2516**	19.854	115.1	mg/L	2	Standard
Mg	24	87429.9	0.9	**87.3596**	1.878	2.1	mg/L	55	Standard
K	39	405.0	18.3	**1.2003**	0.260	21.7	mg/L	28	Standard
Ca	43	375.0	6.7	**26.7244**	2.231	8.3	mg/L	27	Standard
Fe	54	4204.7	3.3	**2.7242**	0.135	5.0	mg/L	147	Standard
Fe	57	1598.4	2.6	**3.4000**	0.148	4.3	mg/L	268	Standard
> **Sc-1**	45	48114.6	1.7				mg/L	41174	Standard
Cl	35	91040.7	1.1				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	68651.9	2.9				ug/L	1950	Standard
P	31	44045.6	3.3				ug/L	21156	Standard
S	34	4263.9	3.9				ug/L	3419	Standard
Sr	88	1216.7	5.1				ug/L	72	Standard
C	12	740.0	12.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	150.0	40.6				mg/L	17	Standard
Dy	164	420.2	5.3				mg/L	16	Standard
Ho-1	165	401.7	6.3				mg/L	7	Standard
Er	166	413.3	49.7				mg/L	7	Standard
I	127	1073738.4	7.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.595	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.067	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145301
Report Date/Time: Friday, July 01, 2016 15:55:01
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.557	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.989	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145301
Report Date/Time: Friday, July 01, 2016 15:55:01
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145303
Sample Date/Time: Friday, July 01, 2016 15:55:55
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86373.8	1.1				ug/L	76456	Standard
	Be	9	46.7	12.4	**0.0170**	0.005	27.0	ug/L	20	Standard
	Al	27	14145040.2	0.8	**73.1395**	1.317	1.8	ug/L	1307	Standard
	Sc	45	47950.8	2.8				ug/L	41174	Standard
	Ti	47	645.7	4.6	**1.7427**	0.078	4.5	ug/L	27	Standard
	V	51	5119.6	16.2	**0.3758**	0.094	25.1	ug/L	1434	Standard
	Cr	52	15660.8	1.2	**0.8154**	0.028	3.4	ug/L	7733	Standard
	Cr	53	17461.7	5.9	**15.5162**	0.994	6.4	ug/L	442	Standard
	Mn	55	1851750.9	0.7	**225.4523**	0.893	0.4	ug/L	723	Standard
	Co	59	6079.9	0.1	**0.7024**	0.002	0.3	ug/L	217	Standard
	Ni	60	3414.1	2.2	**1.3640**	0.029	2.1	ug/L	304	Standard
	Cu	65	716.4	2.9	**0.2496**	0.010	3.9	ug/L	181	Standard
	Zn	66	5607.0	0.9	**4.0396**	0.027	0.7	ug/L	215	Standard
>	**Ge**	72	564834.0	0.3				ug/L	520809	Standard
	As	75	9187.6	1.4	**6.9075**	0.115	1.7	ug/L	-52	Standard
	Se	82	374.5	2.3	**2.6072**	0.072	2.8	ug/L	17	Standard
	Se-1	77	677.0	5.1	**6.6170**	0.347	5.3	ug/L	56	Standard
>	**Ga**	71	156.7	12.9				mg/L	25	Standard
	Rb	85	67336.0	0.8				ug/L	28	Standard
	Y	89	479624.4	2.5				ug/L	447395	Standard
>	**Rh**	103	165.0	24.1				ug/L	15	Standard
	Mo	98	376.6	7.3	**0.0951**	0.009	9.5	ug/L	113	Standard
	Ag	107	95.7	7.7	**-0.0001**	0.001	907.0	ug/L	108	Standard
	Cd	111	85.6	10.8	**0.0332**	0.004	11.6	mg/L	3	Standard
	Cd	114	251.0	20.4	**0.0421**	0.008	19.8	ug/L	20	Standard
>	**In**	115	654613.0	0.6				ug/L	625728	Standard
	Sn	118	2261.8	11.1	**0.2519**	0.039	15.5	ug/L	568	Standard
	Sb	123	469.5	25.9	**0.0532**	0.023	43.1	ug/L	612	Standard
	Ba	135	790046.7	0.9	**347.1125**	3.141	0.9	ug/L	21	Standard
	Ce	140	7066.6	1.9				ug/L	245	Standard
>	**Tb**	159	995476.8	2.0				ug/L	950397	Standard
	Ho	165	136.7	9.2				ug/L	7	Standard
	Tl	203	120.3	3.1	**0.0125**	0.000	3.4	ug/L	15	Standard
	Tl	205	115.0	19.9	**0.0045**	0.003	61.6	ug/L	13	Standard
	Pb	206	675.0	1.7	**0.0742**	0.002	2.8	ug/L	264	Standard
	Pb	207	573.0	0.8	**0.0642**	0.001	1.0	ug/L	222	Standard
	Pb	208	2423.1	1.0	**0.0659**	0.001	2.1	ug/L	959	Standard
	U	238	289.7	4.3	**0.0353**	0.002	5.0	ug/L	9	Standard
>	**Bi**	209	558695.9	0.8				ug/L	552821	Standard

Sample ID: L1606145303
Report Date/Time: Friday, July 01, 2016 15:58:12
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**12.9192**	12.771	98.9	mg/L	2	Standard
Mg	24	36766.2	0.7	**36.8431**	1.290	3.5	mg/L	55	Standard
K	39	516.7	3.4	**1.5703**	0.055	3.5	mg/L	28	Standard
Ca	43	131.7	25.3	**7.7852**	2.329	29.9	mg/L	27	Standard
Fe	54	27742.4	0.7	**18.5905**	0.497	2.7	mg/L	147	Standard
Fe	57	7620.3	4.0	**19.3167**	1.147	5.9	mg/L	268	Standard
Sc-1	45	47950.8	2.8				mg/L	41174	Standard
Cl	35	87125.8	1.5				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	74331.9	2.0				ug/L	1950	Standard
P	31	38512.2	1.7				ug/L	21156	Standard
S	34	4447.3	3.4				ug/L	3419	Standard
Sr	88	553.3	7.8				ug/L	72	Standard
C	12	426.7	14.3				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	150.0	48.1				mg/L	17	Standard
Dy	164	179.8	21.5				mg/L	16	Standard
Ho-1	165	136.7	9.2				mg/L	7	Standard
Er	166	143.3	22.4				mg/L	7	Standard
I	127	215985.2	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.972	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.453	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145303
Report Date/Time: Friday, July 01, 2016 15:58:12
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.616
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.063
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145303
Report Date/Time: Friday, July 01, 2016 15:58:12
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606142701 WG574419-02
Sample Date/Time: Friday, July 01, 2016 15:59:07
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79441.0	0.3				ug/L	76456	Standard
	Be	9	21.7	96.1	**-0.0013**	0.018	1415.0	ug/L	20	Standard
	Al	27	10303389.4	2.0	**57.9147**	1.116	1.9	ug/L	1307	Standard
	Sc	45	40113.1	2.6				ug/L	41174	Standard
	Ti	47	184.0	9.4	**0.4748**	0.053	11.1	ug/L	27	Standard
	V	51	103393.4	0.6	**12.2581**	0.142	1.2	ug/L	1434	Standard
	Cr	52	60643.8	2.1	**6.4579**	0.232	3.6	ug/L	7733	Standard
	Cr	53	11869.6	1.2	**11.2148**	0.255	2.3	ug/L	442	Standard
	Mn	55	46538.0	1.1	**5.9867**	0.050	0.8	ug/L	723	Standard
	Co	59	37235.0	0.6	**4.7844**	0.072	1.5	ug/L	217	Standard
	Ni	60	30036.7	0.7	**14.1841**	0.259	1.8	ug/L	304	Standard
	Cu	65	12213.6	1.3	**5.8539**	0.146	2.5	ug/L	181	Standard
	Zn	66	33617.6	0.9	**26.9954**	0.533	2.0	ug/L	215	Standard
>	**Ge**	72	525941.0	1.1				ug/L	520809	Standard
	As	75	2649.6	1.8	**2.1706**	0.042	1.9	ug/L	-52	Standard
	Se	82	1059.1	1.9	**8.1767**	0.235	2.9	ug/L	17	Standard
	Se-1	77	280.3	4.4	**2.5625**	0.130	5.1	ug/L	56	Standard
>	**Ga**	71	101.7	18.6				mg/L	25	Standard
	Rb	85	18985.2	1.5				ug/L	28	Standard
	Y	89	446075.2	1.3				ug/L	447395	Standard
>	**Rh**	103	71.7	26.4				ug/L	15	Standard
	Mo	98	435588.8	0.8	**147.3741**	1.220	0.8	ug/L	113	Standard
	Ag	107	124.3	1.7	**0.0049**	0.000	10.0	ug/L	108	Standard
	Cd	111	-216.2	12.9	**-0.0985**	0.013	12.8	mg/L	3	Standard
	Cd	114	902.1	8.1	**0.1619**	0.011	7.0	ug/L	20	Standard
>	**In**	115	611441.0	1.1				ug/L	625728	Standard
	Sn	118	915.0	18.3	**0.0613**	0.027	44.2	ug/L	568	Standard
	Sb	123	652.5	5.8	**0.0955**	0.006	6.7	ug/L	612	Standard
	Ba	135	39982.7	1.2	**18.7899**	0.104	0.6	ug/L	21	Standard
	Ce	140	376.7	4.3				ug/L	245	Standard
>	**Tb**	159	929616.4	0.5				ug/L	950397	Standard
	Ho	165	33.3	48.2				ug/L	7	Standard
	Tl	203	136.7	9.3	**0.0150**	0.001	9.9	ug/L	15	Standard
	Tl	205	106.7	11.8	**0.0041**	0.002	39.6	ug/L	13	Standard
	Pb	206	1749.8	1.5	**0.2761**	0.005	1.9	ug/L	264	Standard
	Pb	207	1478.4	2.6	**0.2515**	0.008	3.1	ug/L	222	Standard
	Pb	208	6375.9	0.9	**0.2660**	0.002	0.9	ug/L	959	Standard
	U	238	161.7	12.3	**0.0205**	0.003	12.5	ug/L	9	Standard
>	**Bi**	209	534118.6	0.2				ug/L	552821	Standard

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 16:01:24
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**10.0941**	8.741	86.6	mg/L	2	Standard
Mg	24	25695.1	1.2	**30.7602**	0.665	2.2	mg/L	55	Standard
K	39	365.0	11.7	**1.3075**	0.193	14.8	mg/L	28	Standard
Ca	43	230.0	14.3	**18.9742**	2.668	14.1	mg/L	27	Standard
Fe	54	302.2	7.9	**0.1442**	0.013	8.8	mg/L	147	Standard
Fe	57	455.0	18.2	**0.6271**	0.222	35.4	mg/L	268	Standard
> **Sc-1**	45	40113.1	2.6				mg/L	41174	Standard
Cl	35	98380.0	3.9				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	216720.0	3.3				ug/L	1950	Standard
P	31	13189.1	3.4				ug/L	21156	Standard
S	34	3895.5	7.2				ug/L	3419	Standard
Sr	88	283.3	22.8				ug/L	72	Standard
C	12	173.3	27.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	316.7	12.8				mg/L	17	Standard
Dy	164	233.8	13.8				mg/L	16	Standard
Ho-1	165	33.3	48.2				mg/L	7	Standard
Er	166	60.0	33.3				mg/L	7	Standard
I	127	62818.3	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.985	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 16:01:24
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.717	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.617	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 16:01:24
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606142701DP WG574419-07
Sample Date/Time: Friday, July 01, 2016 16:02:18
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77749.0	1.6				ug/L	76456	Standard
	Be	9	6.7	43.3	**-0.0140**	0.002	17.3	ug/L	20	Standard
	Al	27	9817097.2	1.8	**56.3855**	0.837	1.5	ug/L	1307	Standard
	Sc	45	39810.6	1.5				ug/L	41174	Standard
	Ti	47	174.0	5.5	**0.4563**	0.027	5.9	ug/L	27	Standard
	V	51	99457.7	1.9	**12.0558**	0.214	1.8	ug/L	1434	Standard
	Cr	52	58802.6	0.7	**6.3951**	0.090	1.4	ug/L	7733	Standard
	Cr	53	11255.8	2.7	**10.8641**	0.366	3.4	ug/L	442	Standard
	Mn	55	43355.3	1.9	**5.6990**	0.079	1.4	ug/L	723	Standard
	Co	59	35792.9	1.2	**4.7027**	0.031	0.7	ug/L	217	Standard
	Ni	60	28593.6	0.6	**13.8042**	0.061	0.4	ug/L	304	Standard
	Cu	65	11425.0	1.5	**5.5962**	0.062	1.1	ug/L	181	Standard
	Zn	66	32386.6	1.1	**26.5937**	0.385	1.4	ug/L	215	Standard
>	Ge	72	514230.5	0.6				ug/L	520809	Standard
	As	75	2594.3	1.9	**2.1736**	0.050	2.3	ug/L	-52	Standard
	Se	82	1064.6	1.8	**8.4087**	0.182	2.2	ug/L	17	Standard
	Se-1	77	269.0	6.0	**2.5031**	0.207	8.3	ug/L	56	Standard
>	Ga	71	116.7	27.9				mg/L	25	Standard
	Rb	85	18095.8	1.8				ug/L	28	Standard
	Y	89	436440.0	0.3				ug/L	447395	Standard
>	Rh	103	98.3	34.6				ug/L	15	Standard
	Mo	98	417319.1	1.0	**143.2353**	2.296	1.6	ug/L	113	Standard
	Ag	107	105.3	7.0	**0.0024**	0.001	42.1	ug/L	108	Standard
	Cd	111	-221.7	8.5	**-0.1024**	0.009	8.7	mg/L	3	Standard
	Cd	114	915.2	5.7	**0.1667**	0.008	5.0	ug/L	20	Standard
>	In	115	602737.8	0.7				ug/L	625728	Standard
	Sn	118	925.0	27.3	**0.0648**	0.040	61.0	ug/L	568	Standard
	Sb	123	629.8	5.8	**0.0928**	0.007	7.1	ug/L	612	Standard
	Ba	135	37742.0	0.9	**17.9925**	0.177	1.0	ug/L	21	Standard
	Ce	140	530.0	15.0				ug/L	245	Standard
>	Tb	159	918022.5	0.6				ug/L	950397	Standard
	Ho	165	26.7	47.2				ug/L	7	Standard
	Tl	203	122.7	8.6	**0.0136**	0.001	8.7	ug/L	15	Standard
	Tl	205	120.0	23.2	**0.0061**	0.004	61.9	ug/L	13	Standard
	Pb	206	1673.8	3.7	**0.2676**	0.008	2.9	ug/L	264	Standard
	Pb	207	1385.7	3.3	**0.2377**	0.006	2.4	ug/L	222	Standard
	Pb	208	6038.1	1.4	**0.2546**	0.001	0.3	ug/L	959	Standard
	U	238	134.0	4.7	**0.0173**	0.001	3.8	ug/L	9	Standard
>	Bi	209	524841.4	1.3				ug/L	552821	Standard

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 16:04:35
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**10.3333**	8.947	86.6	mg/L	2	Standard
Mg	24	24359.6	1.9	**29.3745**	0.694	2.4	mg/L	55	Standard
K	39	391.7	23.4	**1.4257**	0.389	27.3	mg/L	28	Standard
Ca	43	220.0	19.4	**18.2274**	4.000	21.9	mg/L	27	Standard
Fe	54	293.3	15.9	**0.1391**	0.037	26.9	mg/L	147	Standard
Fe	57	398.3	15.7	**0.4602**	0.182	39.6	mg/L	268	Standard
> **Sc-1**	45	39810.6	1.5				mg/L	41174	Standard
Cl	35	101579.4	0.9				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	218312.6	3.3				ug/L	1950	Standard
P	31	12735.4	2.4				ug/L	21156	Standard
S	34	3657.1	4.9				ug/L	3419	Standard
Sr	88	253.3	24.1				ug/L	72	Standard
C	12	143.3	20.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	270.0	11.1				mg/L	17	Standard
Dy	164	258.1	16.7				mg/L	16	Standard
Ho-1	165	26.7	47.2				mg/L	7	Standard
Er	166	40.0	25.0				mg/L	7	Standard
I	127	57368.4	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.691	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.737	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 16:04:35
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.326
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.939
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 16:04:35
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606128901
Sample Date/Time: Friday, July 01, 2016 16:05:30
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76109.2	3.3				ug/L	76456	Standard
	Be	9	26.7	10.8	**0.0041**	0.003	75.2	ug/L	20	Standard
	Al	27	2157263.5	1.2	**12.6549**	0.272	2.1	ug/L	1307	Standard
	Sc	45	39362.7	1.0				ug/L	41174	Standard
	Ti	47	31.0	25.6	**0.0115**	0.025	213.1	ug/L	27	Standard
	V	51	2160.8	9.2	**0.0669**	0.026	39.1	ug/L	1434	Standard
	Cr	52	18224.3	3.5	**1.3053**	0.079	6.0	ug/L	7733	Standard
	Cr	53	3937.2	3.2	**3.5166**	0.125	3.6	ug/L	442	Standard
	Mn	55	109531.5	1.1	**14.5084**	0.090	0.6	ug/L	723	Standard
	Co	59	3522.7	2.0	**0.4349**	0.006	1.3	ug/L	217	Standard
	Ni	60	12809.7	0.5	**6.0810**	0.080	1.3	ug/L	304	Standard
	Cu	65	624.3	3.1	**0.2348**	0.009	4.0	ug/L	181	Standard
	Zn	66	2829.3	0.5	**2.1516**	0.027	1.3	ug/L	215	Standard
>	**Ge**	72	515809.2	1.0				ug/L	520809	Standard
	As	75	48.3	6.2	**0.0847**	0.002	2.4	ug/L	-52	Standard
	Se	82	67.8	11.0	**0.4157**	0.062	15.0	ug/L	17	Standard
	Se-1	77	139.0	6.9	**0.9565**	0.097	10.1	ug/L	56	Standard
>	**Ga**	71	33.3	31.2				mg/L	25	Standard
	Rb	85	320.0	16.9				ug/L	28	Standard
	Y	89	425911.6	0.3				ug/L	447395	Standard
>	**Rh**	103	23.3	61.9				ug/L	15	Standard
	Mo	98	1200.8	19.7	**0.3848**	0.082	21.3	ug/L	113	Standard
	Ag	107	75.3	7.8	**-0.0021**	0.001	36.3	ug/L	108	Standard
	Cd	111	25.6	20.9	**0.0091**	0.002	26.3	mg/L	3	Standard
	Cd	114	59.2	25.8	**0.0107**	0.003	26.4	ug/L	20	Standard
>	**In**	115	608157.1	1.0				ug/L	625728	Standard
	Sn	118	525.0	20.9	**-0.0004**	0.017	4881.3	ug/L	568	Standard
	Sb	123	165.4	19.3	**-0.0007**	0.007	874.9	ug/L	612	Standard
	Ba	135	100056.7	1.7	**47.3091**	1.176	2.5	ug/L	21	Standard
	Ce	140	223.3	64.9				ug/L	245	Standard
>	**Tb**	159	910863.8	0.3				ug/L	950397	Standard
	Ho	165	15.0	57.7				ug/L	7	Standard
	Tl	203	83.0	10.7	**0.0087**	0.001	10.8	ug/L	15	Standard
	Tl	205	80.0	31.3	**0.0005**	0.003	626.9	ug/L	13	Standard
	Pb	206	270.7	3.7	**0.0052**	0.002	42.5	ug/L	264	Standard
	Pb	207	242.0	6.8	**0.0021**	0.003	162.6	ug/L	222	Standard
	Pb	208	1024.7	1.6	**0.0016**	0.001	40.9	ug/L	959	Standard
	U	238	10.0	43.6	**0.0010**	0.001	55.3	ug/L	9	Standard
>	**Bi**	209	540336.1	0.9				ug/L	552821	Standard

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 16:07:47
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4055.5	6.4	**4.8960**	0.330	6.7	mg/L	55	Standard
K	39	15.0	66.7	**-0.0710**	0.040	57.0	mg/L	28	Standard
Ca	43	48.3	26.0	**2.1421**	1.207	56.4	mg/L	27	Standard
Fe	54	63.5	15.9	**-0.0467**	0.009	18.5	mg/L	147	Standard
Fe	57	253.3	5.0	**0.0103**	0.042	410.2	mg/L	268	Standard
> **Sc-1**	45	39362.7	1.0				mg/L	41174	Standard
Cl	35	90744.3	1.5				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	11220.8	7.7				ug/L	1950	Standard
P	31	8672.5	2.6				ug/L	21156	Standard
S	34	4007.2	6.6				ug/L	3419	Standard
Sr	88	146.7	20.0				ug/L	72	Standard
C	12	96.7	36.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	436.7	13.4				mg/L	17	Standard
Dy	164	6.5	179.6				mg/L	16	Standard
Ho-1	165	15.0	57.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	40273.5	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.547	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.040	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 16:07:47
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.192
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.742
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606129003
Sample Date/Time: Friday, July 01, 2016 16:08:41
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74300.1	2.3				ug/L	76456	Standard
	Be	9	33.3	70.9	**0.0108**	0.022	200.3	ug/L	20	Standard
	Al	27	1109788.9	1.6	**6.6634**	0.204	3.1	ug/L	1307	Standard
	Sc	45	38913.3	2.4				ug/L	41174	Standard
	Ti	47	72.3	13.4	**0.1384**	0.027	19.6	ug/L	27	Standard
	V	51	1833.5	12.2	**0.0257**	0.030	115.0	ug/L	1434	Standard
	Cr	52	6791.5	6.8	**-0.1263**	0.061	48.5	ug/L	7733	Standard
	Cr	53	2288.5	7.5	**1.8597**	0.192	10.3	ug/L	442	Standard
	Mn	55	199243.2	0.7	**26.3506**	0.434	1.6	ug/L	723	Standard
	Co	59	3319.7	2.1	**0.4061**	0.014	3.4	ug/L	217	Standard
	Ni	60	1865.1	2.1	**0.7502**	0.017	2.3	ug/L	304	Standard
	Cu	65	304.7	2.9	**0.0760**	0.006	7.4	ug/L	181	Standard
	Zn	66	5878.8	1.2	**4.6424**	0.117	2.5	ug/L	215	Standard
>	Ge	72	518291.1	1.3				ug/L	520809	Standard
	As	75	792.5	2.6	**0.6902**	0.010	1.5	ug/L	-52	Standard
	Se	82	76.5	13.2	**0.4817**	0.073	15.2	ug/L	17	Standard
	Se-1	77	129.3	15.3	**0.8357**	0.233	27.9	ug/L	56	Standard
>	Ga	71	50.0	26.5				mg/L	25	Standard
	Rb	85	2285.2	6.7				ug/L	28	Standard
	Y	89	427107.4	1.7				ug/L	447395	Standard
>	Rh	103	36.7	56.8				ug/L	15	Standard
	Mo	98	394.1	11.3	**0.1099**	0.015	13.4	ug/L	113	Standard
	Ag	107	108.3	28.6	**0.0026**	0.004	163.3	ug/L	108	Standard
	Cd	111	66.5	18.4	**0.0273**	0.005	18.9	mg/L	3	Standard
	Cd	114	176.4	7.1	**0.0318**	0.002	6.8	ug/L	20	Standard
>	In	115	609166.7	1.0				ug/L	625728	Standard
	Sn	118	880.0	21.8	**0.0564**	0.032	56.6	ug/L	568	Standard
	Sb	123	119.8	10.9	**-0.0099**	0.003	28.1	ug/L	612	Standard
	Ba	135	34816.0	1.5	**16.4201**	0.118	0.7	ug/L	21	Standard
	Ce	140	1188.4	1.5				ug/L	245	Standard
>	Tb	159	905742.5	1.6				ug/L	950397	Standard
	Ho	165	23.3	32.7				ug/L	7	Standard
	Tl	203	105.7	16.3	**0.0112**	0.002	15.9	ug/L	15	Standard
	Tl	205	100.0	22.9	**0.0030**	0.003	94.5	ug/L	13	Standard
	Pb	206	323.0	3.6	**0.0143**	0.002	17.0	ug/L	264	Standard
	Pb	207	282.3	3.6	**0.0098**	0.001	12.1	ug/L	222	Standard
	Pb	208	1225.0	3.7	**0.0111**	0.002	20.3	ug/L	959	Standard
	U	238	27.3	27.5	**0.0032**	0.001	29.6	ug/L	9	Standard
>	Bi	209	543356.0	1.6				ug/L	552821	Standard

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 16:10:58
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4887.5	0.8	**5.9826**	0.111	1.8	mg/L	55	Standard
K	39	70.0	31.1	**0.1543**	0.094	61.0	mg/L	28	Standard
Ca	43	26.7	78.1	**0.1318**	2.068	1569.3	mg/L	27	Standard
Fe	54	2091.2	5.6	**1.6384**	0.138	8.4	mg/L	147	Standard
Fe	57	790.0	3.5	**1.7657**	0.122	6.9	mg/L	268	Standard
Sc-1	45	38913.3	2.4				mg/L	41174	Standard
Cl	35	85357.9	2.8				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	12818.8	1.9				ug/L	1950	Standard
P	31	10578.7	2.6				ug/L	21156	Standard
S	34	4063.9	1.6				ug/L	3419	Standard
Sr	88	108.3	11.6				ug/L	72	Standard
C	12	110.0	32.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	17	Standard
Dy	164	55.7	26.3				mg/L	16	Standard
Ho-1	165	23.3	32.7				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	7	Standard
I	127	94261.3	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.181	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.516	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 16:10:58
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.353
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.288
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 16:11:55
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78995.5	2.2				ug/L	76456	Standard
	Be	9	60502.3	2.1	**52.2922**	0.491	0.9	ug/L	20	Standard
	Al	27	8989002.2	0.8	**50.8245**	0.985	1.9	ug/L	1307	Standard
	Sc	45	42305.6	0.7				ug/L	41174	Standard
	Ti	47	34061.9	1.0	**98.6488**	1.546	1.6	ug/L	27	Standard
	V	51	436960.5	1.1	**50.0001**	0.513	1.0	ug/L	1434	Standard
	Cr	52	437865.8	0.9	**50.1688**	0.753	1.5	ug/L	7733	Standard
	Cr	53	53937.5	1.4	**49.9817**	0.858	1.7	ug/L	442	Standard
	Mn	55	399271.1	0.3	**49.7080**	0.463	0.9	ug/L	723	Standard
	Co	59	415402.7	0.9	**51.1776**	0.121	0.2	ug/L	217	Standard
	Ni	60	110781.9	0.5	**50.2680**	0.560	1.1	ug/L	304	Standard
	Cu	65	108848.6	0.7	**50.2966**	0.042	0.1	ug/L	181	Standard
	Zn	66	65152.1	0.8	**50.0366**	0.239	0.5	ug/L	215	Standard
>	**Ge**	72	551526.5	0.7				ug/L	520809	Standard
	As	75	65288.4	0.5	**49.9868**	0.536	1.1	ug/L	-52	Standard
	Se	82	6767.7	1.1	**50.4635**	0.866	1.7	ug/L	17	Standard
	Se-1	77	4643.0	1.4	**50.6038**	0.550	1.1	ug/L	56	Standard
>	**Ga**	71	51.7	27.9				mg/L	25	Standard
	Rb	85	896.7	7.7				ug/L	28	Standard
	Y	89	469245.9	0.9				ug/L	447395	Standard
>	**Rh**	103	30.0	50.0				ug/L	15	Standard
	Mo	98	315176.0	0.7	**100.1655**	0.835	0.8	ug/L	113	Standard
	Ag	107	372454.9	1.5	**49.8448**	0.674	1.4	ug/L	108	Standard
	Cd	111	120309.5	0.5	**50.2390**	0.275	0.5	mg/L	3	Standard
	Cd	114	296771.3	0.4	**50.0551**	0.319	0.6	ug/L	20	Standard
>	**In**	115	650857.3	0.3				ug/L	625728	Standard
	Sn	118	332008.2	0.6	**49.5103**	0.318	0.6	ug/L	568	Standard
	Sb	123	262896.6	1.7	**48.8713**	0.775	1.6	ug/L	612	Standard
	Ba	135	110171.1	0.5	**48.6680**	0.323	0.7	ug/L	21	Standard
	Ce	140	123.3	16.9				ug/L	245	Standard
>	**Tb**	159	962981.5	0.4				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	457474.5	0.7	**50.4943**	0.334	0.7	ug/L	15	Standard
	Tl	205	418439.6	0.8	**52.0062**	0.714	1.4	ug/L	13	Standard
	Pb	206	289168.5	1.0	**50.5726**	0.399	0.8	ug/L	264	Standard
	Pb	207	263060.3	0.2	**50.6591**	0.254	0.5	ug/L	222	Standard
	Pb	208	1106275.9	0.6	**52.1627**	0.606	1.2	ug/L	959	Standard
	U	238	414349.5	1.0	**50.9359**	0.727	1.4	ug/L	9	Standard
>	**Bi**	209	557861.1	0.5				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 16:14:12
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.8874**	8.457	173.0	mg/L	2	Standard
Mg	24	4582.4	2.1	**5.1503**	0.148	2.9	mg/L	55	Standard
K	39	1161.7	7.3	**4.2028**	0.289	6.9	mg/L	28	Standard
Ca	43	63.3	9.1	**3.1474**	0.494	15.7	mg/L	27	Standard
Fe	54	6769.4	2.9	**5.0672**	0.121	2.4	mg/L	147	Standard
Fe	57	2078.5	6.0	**5.4119**	0.382	7.1	mg/L	268	Standard
> **Sc-1**	45	42305.6	0.7				mg/L	41174	Standard
Cl	35	87401.4	1.9				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	3040.3	9.5				ug/L	1950	Standard
P	31	27000.7	1.2				ug/L	21156	Standard
S	34	4354.0	2.5				ug/L	3419	Standard
Sr	88	48.3	31.6				ug/L	72	Standard
C	12	120.0	22.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	296.7	25.3				mg/L	17	Standard
Dy	164	9.4	107.0				mg/L	16	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	16158.6	6.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.584		
Al	27	101.649		
Sc	45			
Ti	47	98.649		
V	51	100.000		
Cr	52	100.338		
Cr	53			
Mn	55	99.416		
Co	59	102.355		
Ni	60	100.536		
Cu	65	100.593		
Zn	66	100.073		
> Ge	72		105.898	
As	75	99.974		
Se	82	100.927		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 16:14:12
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.165		
Ag	107	99.690		
Cd	111	100.478		
Cd	114			
In	115			104.016
Sn	118	99.021		
Sb	123	97.743		
Ba	135	97.336		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.989		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.325		
U	238	101.872		
Bi	209			100.912
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 16:14:12
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 16:15:06
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79089.3	2.9				ug/L	76456	Standard
	Be	9	15.0	57.7	**-0.0068**	0.008	113.4	ug/L	20	Standard
	Al	27	2235.2	13.9	**0.0024**	0.001	57.8	ug/L	1307	Standard
	Sc	45	43469.0	3.3				ug/L	41174	Standard
	Ti	47	28.3	17.4	**-0.0019**	0.015	796.4	ug/L	27	Standard
	V	51	1493.4	3.9	**-0.0261**	0.008	30.6	ug/L	1434	Standard
	Cr	52	7368.5	3.1	**-0.1054**	0.021	19.8	ug/L	7733	Standard
	Cr	53	613.3	6.6	**0.1595**	0.042	26.4	ug/L	442	Standard
	Mn	55	787.0	3.1	**-0.0026**	0.002	90.1	ug/L	723	Standard
	Co	59	245.7	12.9	**0.0010**	0.004	377.8	ug/L	217	Standard
	Ni	60	277.3	6.7	**-0.0262**	0.009	35.5	ug/L	304	Standard
	Cu	65	184.0	15.4	**0.0115**	0.013	111.3	ug/L	181	Standard
	Zn	66	259.7	4.8	**0.0209**	0.009	40.6	ug/L	215	Standard
>	Ge	72	548531.1	0.8				ug/L	520809	Standard
	As	75	-66.9	12.4	**-0.0063**	0.007	105.6	ug/L	-52	Standard
	Se	82	22.1	15.5	**0.0395**	0.025	62.6	ug/L	17	Standard
	Se-1	77	54.7	22.1	**-0.0780**	0.131	167.8	ug/L	56	Standard
>	Ga	71	23.3	75.3				mg/L	25	Standard
	Rb	85	18.3	56.8				ug/L	28	Standard
	Y	89	474502.6	0.9				ug/L	447395	Standard
>	Rh	103	10.0					ug/L	15	Standard
	Mo	98	353.6	10.5	**0.0864**	0.011	12.8	ug/L	113	Standard
	Ag	107	117.0	12.6	**0.0025**	0.002	78.3	ug/L	108	Standard
	Cd	111	11.4	37.7	**0.0023**	0.002	74.6	mg/L	3	Standard
	Cd	114	48.0	51.5	**0.0079**	0.004	50.7	ug/L	20	Standard
>	In	115	662932.4	0.6				ug/L	625728	Standard
	Sn	118	1505.1	27.3	**0.1367**	0.061	44.7	ug/L	568	Standard
	Sb	123	848.9	30.9	**0.1215**	0.049	40.0	ug/L	612	Standard
	Ba	135	79.0	17.7	**0.0163**	0.006	35.9	ug/L	21	Standard
	Ce	140	31.7	24.1				ug/L	245	Standard
>	Tb	159	977903.3	1.9				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	71.7	6.3	**0.0070**	0.000	7.1	ug/L	15	Standard
	Tl	205	66.7	28.4	**-0.0016**	0.002	147.5	ug/L	13	Standard
	Pb	206	325.0	5.7	**0.0119**	0.003	21.2	ug/L	264	Standard
	Pb	207	293.0	9.6	**0.0091**	0.005	50.3	ug/L	222	Standard
	Pb	208	1180.4	1.4	**0.0062**	0.001	14.3	ug/L	959	Standard
	U	238	63.3	11.6	**0.0074**	0.001	11.2	ug/L	9	Standard
>	Bi	209	570093.4	1.3				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 16:17:23
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	13.3	**-0.0123**	0.005	38.9	mg/L	55	Standard
K	39	35.0	14.3	**-0.0036**	0.022	615.4	mg/L	28	Standard
Ca	43	20.0	25.0	**-0.7333**	0.424	57.9	mg/L	27	Standard
Fe	54	187.6	24.1	**0.0414**	0.038	91.6	mg/L	147	Standard
Fe	57	236.7	10.0	**-0.1153**	0.063	54.7	mg/L	268	Standard
Sc-1	45	43469.0	3.3				mg/L	41174	Standard
Cl	35	86433.8	0.2				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	2503.5	3.8				ug/L	1950	Standard
P	31	25746.9	1.4				ug/L	21156	Standard
S	34	4332.3	3.9				ug/L	3419	Standard
Sr	88	76.7	27.2				ug/L	72	Standard
C	12	100.0	65.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	49.3				mg/L	17	Standard
Dy	164	6.3	86.6				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	12004.8	4.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.323	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 16:17:23
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.946
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.124
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 16:17:23
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: PBS H2 WG574521-03
Sample Date/Time: Friday, July 01, 2016 16:37:08
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79271.8	0.3				ug/L	76456	Standard
	Be	9	20.0	66.1	**-0.0027**	0.011	426.9	ug/L	20	Standard
	Al	27	18129.4	51.1	**0.0920**	0.053	57.1	ug/L	1307	Standard
	Sc	45	43671.2	1.7				ug/L	41174	Standard
	Ti	47	42.0	27.0	**0.0356**	0.031	88.1	ug/L	27	Standard
	V	51	1815.5	7.2	**0.0075**	0.013	168.1	ug/L	1434	Standard
	Cr	52	9893.9	1.4	**0.1721**	0.017	10.1	ug/L	7733	Standard
	Cr	53	775.0	10.2	**0.2997**	0.080	26.8	ug/L	442	Standard
	Mn	55	2337.2	54.3	**0.1861**	0.154	82.5	ug/L	723	Standard
	Co	59	338.7	60.7	**0.0117**	0.025	210.3	ug/L	217	Standard
	Ni	60	460.3	4.6	**0.0540**	0.007	13.4	ug/L	304	Standard
	Cu	65	246.0	5.3	**0.0385**	0.005	13.8	ug/L	181	Standard
	Zn	66	1190.0	1.7	**0.7267**	0.005	0.6	ug/L	215	Standard
>	**Ge**	72	557757.5	1.2				ug/L	520809	Standard
	As	75	-45.2	46.1	**0.0109**	0.016	146.4	ug/L	-52	Standard
	Se	82	21.5	16.2	**0.0326**	0.024	74.5	ug/L	17	Standard
	Se-1	77	60.7	14.0	**-0.0215**	0.097	452.0	ug/L	56	Standard
>	**Ga**	71	30.0	33.3				mg/L	25	Standard
	Rb	85	78.3	35.2				ug/L	28	Standard
	Y	89	482555.7	1.9				ug/L	447395	Standard
>	**Rh**	103	8.3	91.7				ug/L	15	Standard
	Mo	98	332.0	91.4	**0.0799**	0.095	118.5	ug/L	113	Standard
	Ag	107	123.7	31.0	**0.0035**	0.005	145.5	ug/L	108	Standard
	Cd	111	20.3	82.0	**0.0060**	0.007	114.1	mg/L	3	Standard
	Cd	114	52.4	144.8	**0.0087**	0.013	144.6	ug/L	20	Standard
>	**In**	115	660410.5	0.4				ug/L	625728	Standard
	Sn	118	1340.1	28.5	**0.1130**	0.056	49.2	ug/L	568	Standard
	Sb	123	501.3	30.5	**0.0581**	0.028	47.8	ug/L	612	Standard
	Ba	135	141.0	74.3	**0.0434**	0.045	104.7	ug/L	21	Standard
	Ce	140	65.0	13.3				ug/L	245	Standard
>	**Tb**	159	984326.5	0.5				ug/L	950397	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	36.3	87.4	**0.0032**	0.003	108.0	ug/L	15	Standard
	Tl	205	81.7	141.4	**0.0002**	0.014	6303.1	ug/L	13	Standard
	Pb	206	357.0	4.6	**0.0175**	0.003	15.4	ug/L	264	Standard
	Pb	207	301.0	13.7	**0.0108**	0.008	73.3	ug/L	222	Standard
	Pb	208	1410.0	25.6	**0.0170**	0.017	98.8	ug/L	959	Standard
	U	238	79.0	155.7	**0.0093**	0.015	160.0	ug/L	9	Standard
>	**Bi**	209	568547.7	0.3				ug/L	552821	Standard

Sample ID: PBS H2 WG574521-03
Report Date/Time: Friday, July 01, 2016 16:39:25
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	83.3	70.3	**0.0311**	0.063	203.4	mg/L	55	Standard
K	39	26.7	47.2	**-0.0352**	0.044	125.3	mg/L	28	Standard
Ca	43	13.3	43.3	**-1.3140**	0.480	36.5	mg/L	27	Standard
Fe	54	179.3	22.8	**0.0338**	0.030	89.2	mg/L	147	Standard
Fe	57	248.3	6.5	**-0.0850**	0.036	42.0	mg/L	268	Standard
> **Sc-1**	45	43671.2	1.7				mg/L	41174	Standard
Cl	35	94694.4	1.8				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2446.9	5.5				ug/L	1950	Standard
P	31	26514.9	2.3				ug/L	21156	Standard
S	34	4310.6	3.2				ug/L	3419	Standard
Sr	88	95.0	13.9				ug/L	72	Standard
C	12	123.3	28.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	223.3	40.1				mg/L	17	Standard
Dy	164	6.2	193.4				mg/L	16	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	20320.3	3.3				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.683	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		107.094	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: PBS H2 WG574521-03
Report Date/Time: Friday, July 01, 2016 16:39:25
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.543
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.845
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: LCSS H2 WG574521-04
Sample Date/Time: Friday, July 01, 2016 16:40:19
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78206.3	1.2				ug/L	76456	Standard
	Be	9	30357.1	1.3	**26.4935**	0.412	1.6	ug/L	20	Standard
	Al	27	14527.0	3.3	**0.0727**	0.002	2.4	ug/L	1307	Standard
	Sc	45	43500.7	0.4				ug/L	41174	Standard
	Ti	47	50.0	23.1	**0.0598**	0.033	54.4	ug/L	27	Standard
	V	51	219978.8	0.3	**24.9959**	0.252	1.0	ug/L	1434	Standard
	Cr	52	227773.4	1.1	**25.5491**	0.376	1.5	ug/L	7733	Standard
	Cr	53	27710.3	2.0	**25.3978**	0.708	2.8	ug/L	442	Standard
	Mn	55	209603.4	1.5	**25.9644**	0.258	1.0	ug/L	723	Standard
	Co	59	210851.5	1.3	**25.8831**	0.352	1.4	ug/L	217	Standard
	Ni	60	56751.8	1.2	**25.5968**	0.369	1.4	ug/L	304	Standard
	Cu	65	56217.4	1.4	**25.8605**	0.261	1.0	ug/L	181	Standard
	Zn	66	34071.3	0.3	**26.0003**	0.170	0.7	ug/L	215	Standard
>	Ge	72	553234.9	0.8				ug/L	520809	Standard
	As	75	33169.4	0.5	**25.3389**	0.170	0.7	ug/L	-52	Standard
	Se	82	3351.8	0.3	**24.8507**	0.232	0.9	ug/L	17	Standard
	Se-1	77	2368.9	3.2	**25.4071**	1.040	4.1	ug/L	56	Standard
>	Ga	71	33.3	31.2				mg/L	25	Standard
	Rb	85	63.3	32.9				ug/L	28	Standard
	Y	89	471256.9	0.9				ug/L	447395	Standard
>	Rh	103	23.3	75.3				ug/L	15	Standard
	Mo	98	151.2	23.7	**0.0237**	0.012	48.5	ug/L	113	Standard
	Ag	107	190870.7	0.3	**25.3271**	0.087	0.3	ug/L	108	Standard
	Cd	111	60282.1	0.5	**24.9635**	0.019	0.1	mg/L	3	Standard
	Cd	114	147909.0	1.0	**24.7417**	0.334	1.4	ug/L	20	Standard
>	In	115	656276.3	0.4				ug/L	625728	Standard
	Sn	118	1236.7	17.5	**0.0991**	0.033	33.0	ug/L	568	Standard
	Sb	123	139998.4	0.5	**25.7951**	0.218	0.8	ug/L	612	Standard
	Ba	135	55761.4	0.2	**24.4204**	0.141	0.6	ug/L	21	Standard
	Ce	140	101.7	7.5				ug/L	245	Standard
>	Tb	159	982894.1	0.9				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	233767.2	0.4	**25.3362**	0.353	1.4	ug/L	15	Standard
	Tl	205	211866.2	1.4	**25.8487**	0.316	1.2	ug/L	13	Standard
	Pb	206	151902.3	0.4	**26.0680**	0.572	2.2	ug/L	264	Standard
	Pb	207	132458.5	0.8	**25.0234**	0.298	1.2	ug/L	222	Standard
	Pb	208	562733.9	0.2	**26.0307**	0.442	1.7	ug/L	959	Standard
	U	238	206496.7	1.0	**24.9238**	0.246	1.0	ug/L	9	Standard
>	Bi	209	568206.0	1.8				ug/L	552821	Standard

Sample ID: LCSS H2 WG574521-04
Report Date/Time: Friday, July 01, 2016 16:42:36
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	26.2	**0.0044**	0.017	394.1	mg/L	55	Standard
K	39	25.0	20.0	**-0.0405**	0.018	44.5	mg/L	28	Standard
Ca	43	28.3	10.2	**-0.0167**	0.239	1431.0	mg/L	27	Standard
Fe	54	163.4	6.9	**0.0225**	0.008	36.3	mg/L	147	Standard
Fe	57	255.0	14.8	**-0.0621**	0.113	181.2	mg/L	268	Standard
Sc-1	45	43500.7	0.4				mg/L	41174	Standard
Cl	35	91778.5	1.5				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	5150.9	3.9				ug/L	1950	Standard
P	31	26144.2	2.1				ug/L	21156	Standard
S	34	4105.6	2.0				ug/L	3419	Standard
Sr	88	88.3	25.5				ug/L	72	Standard
C	12	90.0	19.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	216.7	38.7				mg/L	17	Standard
Dy	164	12.1	119.9				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	7	Standard
I	127	5989.5	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.290	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.226	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSS H2 WG574521-04
Report Date/Time: Friday, July 01, 2016 16:42:36
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.882
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.783
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS H2 WG574521-04
Report Date/Time: Friday, July 01, 2016 16:42:36
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144504 WG574521-01
Sample Date/Time: Friday, July 01, 2016 16:43:31
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82711.9	1.7				ug/L	76456	Standard
	Be	9	1393.4	1.7	**1.1308**	0.019	1.7	ug/L	20	Standard
	Al	27	12446064.6	0.4	**67.2063**	1.063	1.6	ug/L	1307	Standard
	Sc	45	49798.4	0.9				ug/L	41174	Standard
	Ti	47	3275.7	2.4	**9.3815**	0.258	2.8	ug/L	27	Standard
	V	51	187113.3	0.3	**21.2321**	0.189	0.9	ug/L	1434	Standard
	Cr	52	137212.2	0.9	**15.0050**	0.153	1.0	ug/L	7733	Standard
	Cr	53	16570.7	1.1	**15.0184**	0.113	0.8	ug/L	442	Standard
	Mn	55	3185070.4	0.3	**396.0143**	1.958	0.5	ug/L	723	Standard
	Co	59	91536.7	1.1	**11.2200**	0.101	0.9	ug/L	217	Standard
	Ni	60	45707.8	1.2	**20.5854**	0.156	0.8	ug/L	304	Standard
	Cu	65	23258.8	1.9	**10.6559**	0.153	1.4	ug/L	181	Standard
	Zn	66	46036.5	0.5	**35.1961**	0.406	1.2	ug/L	215	Standard
>	**Ge**	72	553218.9	0.6				ug/L	520809	Standard
	As	75	5739.6	2.8	**4.4216**	0.100	2.3	ug/L	-52	Standard
	Se	82	54.0	18.0	**0.2758**	0.072	26.2	ug/L	17	Standard
	Se-1	77	126.7	3.9	**0.7105**	0.061	8.6	ug/L	56	Standard
>	**Ga**	71	21134.7	1.1				mg/L	25	Standard
	Rb	85	212914.0	1.2				ug/L	28	Standard
	Y	89	733052.8	0.4				ug/L	447395	Standard
>	**Rh**	103	31.7	50.8				ug/L	15	Standard
	Mo	98	356.5	15.7	**0.0888**	0.017	19.2	ug/L	113	Standard
	Ag	107	670.0	12.8	**0.0764**	0.011	14.4	ug/L	108	Standard
	Cd	111	132.6	4.8	**0.0528**	0.002	4.3	mg/L	3	Standard
	Cd	114	355.4	28.0	**0.0597**	0.017	27.7	ug/L	20	Standard
>	**In**	115	653864.1	0.7				ug/L	625728	Standard
	Sn	118	1290.1	26.4	**0.1075**	0.050	46.3	ug/L	568	Standard
	Sb	123	594.8	48.0	**0.0762**	0.052	68.5	ug/L	612	Standard
	Ba	135	574692.3	0.9	**252.7729**	0.765	0.3	ug/L	21	Standard
	Ce	140	1393840.8	0.9				ug/L	245	Standard
>	**Tb**	159	1000230.3	1.3				ug/L	950397	Standard
	Ho	165	21410.1	1.0				ug/L	7	Standard
	Tl	203	1416.4	11.1	**0.1555**	0.018	11.5	ug/L	15	Standard
	Tl	205	1253.4	9.7	**0.1459**	0.016	10.8	ug/L	13	Standard
	Pb	206	71530.8	0.4	**12.4648**	0.067	0.5	ug/L	264	Standard
	Pb	207	58749.0	0.7	**11.2666**	0.094	0.8	ug/L	222	Standard
	Pb	208	258108.7	0.1	**12.1209**	0.070	0.6	ug/L	959	Standard
	U	238	3402.4	1.9	**0.4176**	0.009	2.1	ug/L	9	Standard
>	**Bi**	209	558413.2	0.5				ug/L	552821	Standard

Sample ID: L1606144504 WG574521-01
Report Date/Time: Friday, July 01, 2016 16:45:48
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.0919**	7.079	173.0	mg/L	2	Standard
Mg	24	115.0	19.0	**0.0509**	0.021	40.8	mg/L	55	Standard
K	39	340.0	8.9	**0.9470**	0.101	10.7	mg/L	28	Standard
Ca	43	83.3	24.2	**3.8084**	1.512	39.7	mg/L	27	Standard
Fe	54	19898.8	3.5	**12.8021**	0.403	3.1	mg/L	147	Standard
Fe	57	5240.9	4.1	**12.5122**	0.602	4.8	mg/L	268	Standard
> **Sc-1**	45	49798.4	0.9				mg/L	41174	Standard
Cl	35	83679.2	2.8				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	3150.3	10.3				ug/L	1950	Standard
P	31	25890.4	3.1				ug/L	21156	Standard
S	34	4145.6	3.5				ug/L	3419	Standard
Sr	88	115.0	15.1				ug/L	72	Standard
C	12	180.0	25.5				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	210.0	42.3				mg/L	17	Standard
Dy	164	35643.1	1.6				mg/L	16	Standard
Ho-1	165	21410.1	1.0				mg/L	7	Standard
Er	166	18878.4	2.2				mg/L	7	Standard
I	127	27002.4	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.183	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.223	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144504 WG574521-01
Report Date/Time: Friday, July 01, 2016 16:45:48
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.497
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.012
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144504 WG574521-01
Report Date/Time: Friday, July 01, 2016 16:45:48
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144505S WG574521-05
Sample Date/Time: Friday, July 01, 2016 16:46:42
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81052.9	2.1				ug/L	76456	Standard
	Be	9	30676.0	2.4	**25.8290**	0.259	1.0	ug/L	20	Standard
	Al	27	13294166.7	2.5	**73.2465**	1.294	1.8	ug/L	1307	Standard
	Sc	45	48179.8	2.6				ug/L	41174	Standard
	Ti	47	6953.9	1.9	**20.0934**	0.295	1.5	ug/L	27	Standard
	V	51	398485.1	1.1	**45.6308**	0.280	0.6	ug/L	1434	Standard
	Cr	52	346453.3	0.7	**39.5366**	0.280	0.7	ug/L	7733	Standard
	Cr	53	41902.9	1.3	**38.7788**	0.379	1.0	ug/L	442	Standard
	Mn	55	3061942.5	1.0	**382.3072**	4.386	1.1	ug/L	723	Standard
	Co	59	255934.9	0.7	**31.5572**	0.332	1.1	ug/L	217	Standard
	Ni	60	90655.7	0.5	**41.1541**	0.349	0.8	ug/L	304	Standard
	Cu	65	74619.0	0.4	**34.4964**	0.137	0.4	ug/L	181	Standard
	Zn	66	75694.3	0.6	**58.2286**	0.173	0.3	ug/L	215	Standard
>	Ge	72	550897.8	0.5				ug/L	520809	Standard
	As	75	34828.9	0.1	**26.7169**	0.137	0.5	ug/L	-52	Standard
	Se	82	2635.3	1.9	**19.5943**	0.381	1.9	ug/L	17	Standard
	Se-1	77	1869.4	1.0	**19.9893**	0.095	0.5	ug/L	56	Standard
>	Ga	71	20570.6	1.4				mg/L	25	Standard
	Rb	85	177643.7	0.9				ug/L	28	Standard
	Y	89	691746.1	1.0				ug/L	447395	Standard
>	Rh	103	35.0	37.8				ug/L	15	Standard
	Mo	98	1110.7	3.0	**0.3333**	0.010	3.0	ug/L	113	Standard
	Ag	107	178239.6	0.1	**24.1330**	0.242	1.0	ug/L	108	Standard
	Cd	111	58613.6	0.8	**24.7671**	0.188	0.8	mg/L	3	Standard
	Cd	114	143184.7	2.0	**24.4376**	0.381	1.6	ug/L	20	Standard
>	In	115	643190.5	1.0				ug/L	625728	Standard
	Sn	118	1398.4	22.6	**0.1275**	0.050	39.0	ug/L	568	Standard
	Sb	123	4282.3	1.0	**0.7725**	0.016	2.0	ug/L	612	Standard
	Ba	135	345608.0	0.5	**154.5433**	2.126	1.4	ug/L	21	Standard
	Ce	140	1299122.5	1.1				ug/L	245	Standard
>	Tb	159	990488.4	0.8				ug/L	950397	Standard
	Ho	165	18067.4	1.7				ug/L	7	Standard
	Tl	203	217125.4	0.9	**24.1291**	0.277	1.1	ug/L	15	Standard
	Tl	205	198577.9	0.6	**24.8432**	0.213	0.9	ug/L	13	Standard
	Pb	206	259935.7	1.5	**45.7680**	0.825	1.8	ug/L	264	Standard
	Pb	207	221787.2	1.0	**42.9961**	0.567	1.3	ug/L	222	Standard
	Pb	208	955436.3	0.5	**45.3507**	0.360	0.8	ug/L	959	Standard
	U	238	203540.4	0.9	**25.1914**	0.306	1.2	ug/L	9	Standard
>	Bi	209	554076.2	0.3				ug/L	552821	Standard

Sample ID: L1606144505S WG574521-05
Report Date/Time: Friday, July 01, 2016 16:48:59
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**8.7132**	15.083	173.1	mg/L	2	Standard
Mg	24	123.3	10.2	**0.0629**	0.011	18.2	mg/L	55	Standard
K	39	401.7	6.9	**1.1840**	0.057	4.8	mg/L	28	Standard
Ca	43	85.0	17.6	**4.1392**	1.063	25.7	mg/L	27	Standard
Fe	54	19135.8	0.4	**12.7297**	0.274	2.2	mg/L	147	Standard
Fe	57	5282.6	2.0	**13.0758**	0.572	4.4	mg/L	268	Standard
Sc-1	45	48179.8	2.6				mg/L	41174	Standard
Cl	35	81193.7	1.4				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3463.7	11.3				ug/L	1950	Standard
P	31	25893.8	3.3				ug/L	21156	Standard
S	34	3793.8	6.6				ug/L	3419	Standard
Sr	88	98.3	7.8				ug/L	72	Standard
C	12	150.0	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	31.6				mg/L	17	Standard
Dy	164	30043.9	1.0				mg/L	16	Standard
Ho-1	165	18067.4	1.7				mg/L	7	Standard
Er	166	16368.8	2.5				mg/L	7	Standard
I	127	31820.1	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.013	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.777	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144505S WG574521-05
Report Date/Time: Friday, July 01, 2016 16:48:59
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.791
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.227
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144505S WG574521-05
Report Date/Time: Friday, July 01, 2016 16:48:59
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144506SD WG574521-06
Sample Date/Time: Friday, July 01, 2016 16:49:54
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80097.9	2.8				ug/L	76456	Standard
	Be	9	30038.1	2.5	25.6081	1.007	3.9	ug/L	20	Standard
	Al	27	25838350.2	1.3	144.1079	2.593	1.8	ug/L	1307	Standard
	Sc	45	47559.6	2.9				ug/L	41174	Standard
	Ti	47	6556.4	1.8	19.3875	0.685	3.5	ug/L	27	Standard
	V	51	371950.4	0.9	43.5770	0.897	2.1	ug/L	1434	Standard
	Cr	52	331664.7	2.0	38.7230	1.629	4.2	ug/L	7733	Standard
	Cr	53	41130.8	1.7	38.9560	1.095	2.8	ug/L	442	Standard
	Mn	55	3596932.1	1.0	459.6785	15.165	3.3	ug/L	723	Standard
	Co	59	263231.1	1.3	33.2200	1.092	3.3	ug/L	217	Standard
	Ni	60	95938.5	1.6	44.5917	1.721	3.9	ug/L	304	Standard
	Cu	65	74284.7	1.9	35.1502	1.281	3.6	ug/L	181	Standard
	Zn	66	76677.6	1.5	60.3810	2.186	3.6	ug/L	215	Standard
>	Ge	72	538522.8	2.5				ug/L	520809	Standard
	As	75	31096.8	1.3	24.4196	0.873	3.6	ug/L	-52	Standard
	Se	82	2411.7	1.1	18.3435	0.519	2.8	ug/L	17	Standard
	Se-1	77	1751.1	3.2	19.1315	0.710	3.7	ug/L	56	Standard
>	Ga	71	19424.1	1.9				mg/L	25	Standard
	Rb	85	183661.6	1.6				ug/L	28	Standard
	Y	89	704841.2	2.1				ug/L	447395	Standard
>	Rh	103	36.7	20.8				ug/L	15	Standard
	Mo	98	611.4	5.3	0.1763	0.010	5.6	ug/L	113	Standard
	Ag	107	174143.9	1.6	24.0046	0.280	1.2	ug/L	108	Standard
	Cd	111	57620.6	0.9	24.7920	0.490	2.0	mg/L	3	Standard
	Cd	114	139765.7	1.6	24.2901	0.536	2.2	ug/L	20	Standard
>	In	115	631733.1	1.1				ug/L	625728	Standard
	Sn	118	1106.7	20.2	0.0862	0.035	40.7	ug/L	568	Standard
	Sb	123	5971.0	2.3	1.1106	0.013	1.2	ug/L	612	Standard
	Ba	135	389506.4	0.2	177.3323	1.766	1.0	ug/L	21	Standard
	Ce	140	1279386.9	0.6				ug/L	245	Standard
>	Tb	159	976334.8	1.3				ug/L	950397	Standard
	Ho	165	21239.9	2.3				ug/L	7	Standard
	Tl	203	212476.8	0.4	24.3917	0.306	1.3	ug/L	15	Standard
	Tl	205	190802.6	2.3	24.6603	0.758	3.1	ug/L	13	Standard
	Pb	206	194049.7	0.6	35.2833	0.374	1.1	ug/L	264	Standard
	Pb	207	165998.7	0.6	33.2303	0.156	0.5	ug/L	222	Standard
	Pb	208	711047.9	1.1	34.8555	0.746	2.1	ug/L	959	Standard
	U	238	196776.4	1.6	25.1602	0.659	2.6	ug/L	9	Standard
>	Bi	209	536411.2	1.1				ug/L	552821	Standard

Sample ID: L1606144506SD WG574521-06
Report Date/Time: Friday, July 01, 2016 16:52:11
Page 1

Approved: July 02, 2016

Na	23	5.0	0.0	**12.9314**	0.378	2.9	mg/L	2	Standard
Mg	24	121.7	21.1	**0.0630**	0.027	42.3	mg/L	55	Standard
K	39	396.7	12.8	**1.1837**	0.137	11.6	mg/L	28	Standard
Ca	43	198.3	9.5	**13.1529**	1.459	11.1	mg/L	27	Standard
Fe	54	17265.4	3.0	**11.6302**	0.519	4.5	mg/L	147	Standard
Fe	57	5002.5	1.8	**12.5110**	0.483	3.9	mg/L	268	Standard
> **Sc-1**	45	47559.6	2.9				mg/L	41174	Standard
Cl	35	82047.6	0.3				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2713.6	16.2				ug/L	1950	Standard
P	31	26575.0	0.8				ug/L	21156	Standard
S	34	4360.6	2.1				ug/L	3419	Standard
Sr	88	131.7	17.9				ug/L	72	Standard
C	12	140.0	31.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	120.0	25.0				mg/L	17	Standard
Dy	164	35523.7	1.8				mg/L	16	Standard
Ho-1	165	21239.9	2.3				mg/L	7	Standard
Er	166	19068.7	0.7				mg/L	7	Standard
I	127	21363.4	3.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.764	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.401	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144506SD WG574521-06
Report Date/Time: Friday, July 01, 2016 16:52:11
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.960
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.032
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144506SD WG574521-06
Report Date/Time: Friday, July 01, 2016 16:52:11
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Friday, July 01, 2016 16:53:05
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77083.9	1.4				ug/L	76456	Standard
	Be	9	475.0	1.1	**0.4010**	0.005	1.3	ug/L	20	Standard
	Al	27	2237415.9	0.9	**12.9552**	0.241	1.9	ug/L	1307	Standard
	Sc	45	46143.5	0.6				ug/L	41174	Standard
	Ti	47	14229.3	1.3	**40.3569**	0.503	1.2	ug/L	27	Standard
	V	51	81926.5	1.2	**9.0305**	0.138	1.5	ug/L	1434	Standard
	Cr	52	71884.8	0.5	**7.2617**	0.092	1.3	ug/L	7733	Standard
	Cr	53	8222.2	3.8	**7.1184**	0.362	5.1	ug/L	442	Standard
	Mn	55	1326114.2	0.7	**162.1111**	1.014	0.6	ug/L	723	Standard
	Co	59	18265.0	0.3	**2.1786**	0.035	1.6	ug/L	217	Standard
	Ni	60	14421.9	1.4	**6.2826**	0.026	0.4	ug/L	304	Standard
	Cu	65	20275.6	1.0	**9.1261**	0.043	0.5	ug/L	181	Standard
	Zn	66	84084.7	0.5	**63.3707**	0.506	0.8	ug/L	215	Standard
>	Ge	72	562486.4	1.3				ug/L	520809	Standard
	As	75	12273.7	0.0	**9.2515**	0.118	1.3	ug/L	-52	Standard
	Se	82	80.8	6.1	**0.4662**	0.041	8.7	ug/L	17	Standard
	Se-1	77	117.0	7.4	**0.5834**	0.109	18.6	ug/L	56	Standard
>	Ga	71	7775.3	1.7				mg/L	25	Standard
	Rb	85	53367.2	1.6				ug/L	28	Standard
	Y	89	546880.1	0.9				ug/L	447395	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	1997.9	3.1	**0.5987**	0.021	3.5	ug/L	113	Standard
	Ag	107	409.7	7.2	**0.0409**	0.004	9.7	ug/L	108	Standard
	Cd	111	850.8	2.0	**0.3460**	0.009	2.5	mg/L	3	Standard
	Cd	114	2106.8	7.8	**0.3483**	0.025	7.1	ug/L	20	Standard
>	In	115	663939.9	0.6				ug/L	625728	Standard
	Sn	118	2050.1	14.8	**0.2160**	0.045	20.8	ug/L	568	Standard
	Sb	123	671.1	9.1	**0.0887**	0.011	12.6	ug/L	612	Standard
	Ba	135	107917.7	1.0	**46.7326**	0.441	0.9	ug/L	21	Standard
	Ce	140	627825.8	0.9				ug/L	245	Standard
>	Tb	159	987128.9	0.6				ug/L	950397	Standard
	Ho	165	5104.2	2.7				ug/L	7	Standard
	Tl	203	689.0	1.9	**0.0742**	0.001	1.8	ug/L	15	Standard
	Tl	205	618.3	5.7	**0.0660**	0.005	7.0	ug/L	13	Standard
	Pb	206	276291.1	0.7	**47.6167**	0.411	0.9	ug/L	264	Standard
	Pb	207	230628.0	0.7	**43.7624**	0.472	1.1	ug/L	222	Standard
	Pb	208	1006911.8	0.1	**46.7816**	0.251	0.5	ug/L	959	Standard
	U	238	4725.7	2.3	**0.5722**	0.012	2.1	ug/L	9	Standard
>	Bi	209	566085.1	0.4				ug/L	552821	Standard

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 16:55:22
Page 1

Approved: July 02, 2016

Na	23	8.3	124.9	**22.1583**	27.707	125.0	mg/L	2	Standard
Mg	24	85.0	11.8	**0.0284**	0.010	35.7	mg/L	55	Standard
K	39	100.0	15.0	**0.2109**	0.050	23.9	mg/L	28	Standard
Ca	43	75.0	6.7	**3.6275**	0.385	10.6	mg/L	27	Standard
Fe	54	8171.7	3.6	**5.6200**	0.239	4.3	mg/L	147	Standard
Fe	57	2388.5	3.0	**5.7441**	0.167	2.9	mg/L	268	Standard
> **Sc-1**	45	46143.5	0.6				mg/L	41174	Standard
Cl	35	81155.5	2.1				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	3463.7	7.7				ug/L	1950	Standard
P	31	25539.9	4.4				ug/L	21156	Standard
S	34	3917.2	3.0				ug/L	3419	Standard
Sr	88	76.7	18.8				ug/L	72	Standard
C	12	486.7	15.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	256.7	4.5				mg/L	17	Standard
Dy	164	8760.5	4.1				mg/L	16	Standard
Ho-1	165	5104.2	2.7				mg/L	7	Standard
Er	166	4777.4	5.8				mg/L	7	Standard
I	127	36602.6	6.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.822	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.002	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 16:55:22
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.107
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.399
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 16:55:22
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Friday, July 01, 2016 16:56:17
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78477.8	2.4				ug/L	76456	Standard
	Be	9	601.7	8.2	**0.5033**	0.031	6.2	ug/L	20	Standard
	Al	27	4781763.5	1.4	**27.2109**	0.622	2.3	ug/L	1307	Standard
	Sc	45	48186.5	2.1				ug/L	41174	Standard
	Ti	47	26915.6	1.4	**75.8086**	1.495	2.0	ug/L	27	Standard
	V	51	170171.2	0.3	**18.8187**	0.180	1.0	ug/L	1434	Standard
	Cr	52	138418.5	1.4	**14.7553**	0.301	2.0	ug/L	7733	Standard
	Cr	53	16907.8	0.5	**14.9504**	0.076	0.5	ug/L	442	Standard
	Mn	55	4385050.3	0.1	**532.0225**	4.124	0.8	ug/L	723	Standard
	Co	59	55284.7	0.4	**6.6001**	0.055	0.8	ug/L	217	Standard
	Ni	60	30764.2	0.1	**13.4670**	0.097	0.7	ug/L	304	Standard
	Cu	65	65698.5	1.0	**29.5008**	0.365	1.2	ug/L	181	Standard
	Zn	66	217089.2	0.9	**162.5825**	0.761	0.5	ug/L	215	Standard
>	Ge	72	566980.9	0.7				ug/L	520809	Standard
	As	75	11103.7	0.8	**8.3069**	0.047	0.6	ug/L	-52	Standard
	Se	82	132.6	4.8	**0.8380**	0.046	5.5	ug/L	17	Standard
	Se-1	77	150.3	12.7	**0.9313**	0.212	22.8	ug/L	56	Standard
>	Ga	71	15192.6	2.9				mg/L	25	Standard
	Rb	85	155948.5	0.6				ug/L	28	Standard
	Y	89	601495.0	1.4				ug/L	447395	Standard
>	Rh	103	23.3	32.7				ug/L	15	Standard
	Mo	98	5496.7	0.9	**1.6857**	0.006	0.4	ug/L	113	Standard
	Ag	107	775.4	2.6	**0.0887**	0.002	2.3	ug/L	108	Standard
	Cd	111	1034.2	3.3	**0.4202**	0.011	2.7	mg/L	3	Standard
	Cd	114	2656.7	6.0	**0.4384**	0.024	5.5	ug/L	20	Standard
>	In	115	665198.2	0.6				ug/L	625728	Standard
	Sn	118	1311.7	13.8	**0.1076**	0.028	25.7	ug/L	568	Standard
	Sb	123	507.6	23.3	**0.0588**	0.022	37.4	ug/L	612	Standard
	Ba	135	246404.5	0.4	**106.5243**	0.535	0.5	ug/L	21	Standard
	Ce	140	708985.8	1.9				ug/L	245	Standard
>	Tb	159	1000873.3	0.7				ug/L	950397	Standard
	Ho	165	8867.6	1.0				ug/L	7	Standard
	Tl	203	1805.8	2.5	**0.1960**	0.004	2.0	ug/L	15	Standard
	Tl	205	1731.8	4.2	**0.2027**	0.009	4.2	ug/L	13	Standard
	Pb	206	179680.5	0.2	**31.0013**	0.201	0.6	ug/L	264	Standard
	Pb	207	147967.3	0.2	**28.1058**	0.174	0.6	ug/L	222	Standard
	Pb	208	649286.1	0.4	**30.1982**	0.309	1.0	ug/L	959	Standard
	U	238	11590.8	1.2	**1.4062**	0.023	1.6	ug/L	9	Standard
>	Bi	209	565178.3	0.6				ug/L	552821	Standard

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 16:58:34
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**8.3775**	14.502	173.1	mg/L	2	Standard
Mg	24	161.7	21.7	**0.1008**	0.032	31.7	mg/L	55	Standard
K	39	290.0	13.0	**0.8193**	0.124	15.2	mg/L	28	Standard
Ca	43	116.7	13.8	**6.5999**	1.152	17.5	mg/L	27	Standard
Fe	54	19162.0	2.8	**12.7406**	0.220	1.7	mg/L	147	Standard
Fe	57	5199.2	1.1	**12.8525**	0.447	3.5	mg/L	268	Standard
> **Sc-1**	45	48186.5	2.1				mg/L	41174	Standard
Cl	35	81627.3	0.9				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	4627.4	6.5				ug/L	1950	Standard
P	31	26000.6	1.2				ug/L	21156	Standard
S	34	3977.2	4.8				ug/L	3419	Standard
Sr	88	111.7	18.6				ug/L	72	Standard
C	12	856.7	2.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	230.0	17.4				mg/L	17	Standard
Dy	164	14613.4	2.0				mg/L	16	Standard
Ho-1	165	8867.6	1.0				mg/L	7	Standard
Er	166	8085.5	6.9				mg/L	7	Standard
I	127	50293.4	2.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.645	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.865	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 16:58:34
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.308
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.235
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 16:58:34
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102PS WG575057-01
Sample Date/Time: Friday, July 01, 2016 16:59:28
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79385.8	1.3				ug/L	76456	Standard
	Be	9	66132.4	2.2	**56.8900**	1.804	3.2	ug/L	20	Standard
	Al	27	4677646.6	0.6	**26.3080**	0.258	1.0	ug/L	1307	Standard
	Sc	45	48036.1	2.2				ug/L	41174	Standard
	Ti	47	26404.3	1.4	**75.0881**	1.235	1.6	ug/L	27	Standard
	V	51	638356.3	0.3	**71.8329**	0.463	0.6	ug/L	1434	Standard
	Cr	52	595924.0	0.5	**67.3875**	0.498	0.7	ug/L	7733	Standard
	Cr	53	74037.1	1.4	**67.5313**	1.159	1.7	ug/L	442	Standard
	Mn	55	4772659.1	0.6	**584.6747**	1.033	0.2	ug/L	723	Standard
	Co	59	500476.8	0.3	**60.5691**	0.409	0.7	ug/L	217	Standard
	Ni	60	148905.8	0.4	**66.4112**	0.102	0.2	ug/L	304	Standard
	Cu	65	183049.8	0.4	**83.1281**	0.455	0.5	ug/L	181	Standard
	Zn	66	287669.1	1.1	**217.6035**	2.596	1.2	ug/L	215	Standard
>	Ge	72	561514.3	0.4				ug/L	520809	Standard
	As	75	82895.8	0.4	**62.3258**	0.436	0.7	ug/L	-52	Standard
	Se	82	7441.1	0.8	**54.5039**	0.359	0.7	ug/L	17	Standard
	Se-1	77	5169.2	1.0	**55.4015**	0.590	1.1	ug/L	56	Standard
>	Ga	71	15267.7	1.1				mg/L	25	Standard
	Rb	85	154189.3	2.6				ug/L	28	Standard
	Y	89	603447.9	0.9				ug/L	447395	Standard
>	Rh	103	43.3	24.0				ug/L	15	Standard
	Mo	98	5476.6	2.0	**1.7012**	0.041	2.4	ug/L	113	Standard
	Ag	107	391731.6	0.9	**51.9492**	0.634	1.2	ug/L	108	Standard
	Cd	111	129263.1	1.2	**53.4846**	0.463	0.9	mg/L	3	Standard
	Cd	114	313124.4	0.6	**52.3315**	0.333	0.6	ug/L	20	Standard
>	In	115	656847.0	0.4				ug/L	625728	Standard
	Sn	118	1576.8	23.5	**0.1493**	0.056	37.2	ug/L	568	Standard
	Sb	123	282627.6	1.8	**52.0619**	0.839	1.6	ug/L	612	Standard
	Ba	135	360531.0	1.0	**157.8560**	2.191	1.4	ug/L	21	Standard
	Ce	140	708239.5	1.1				ug/L	245	Standard
>	Tb	159	993751.4	0.6				ug/L	950397	Standard
	Ho	165	9054.4	1.6				ug/L	7	Standard
	Tl	203	489986.8	0.9	**53.0644**	0.590	1.1	ug/L	15	Standard
	Tl	205	443077.3	1.1	**54.0276**	0.463	0.9	ug/L	13	Standard
	Pb	206	490668.3	0.8	**84.2254**	0.742	0.9	ug/L	264	Standard
	Pb	207	417558.3	0.6	**78.9219**	0.638	0.8	ug/L	222	Standard
	Pb	208	1796810.4	0.6	**83.1513**	0.452	0.5	ug/L	959	Standard
	U	238	437485.4	0.2	**52.7644**	0.211	0.4	ug/L	9	Standard
>	Bi	209	568575.4	0.3				ug/L	552821	Standard

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 17:01:45
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.3123**	7.460	173.0	mg/L	2	Standard
Mg	24	195.0	13.6	**0.1353**	0.029	21.4	mg/L	55	Standard
K	39	278.3	18.2	**0.7825**	0.157	20.1	mg/L	28	Standard
Ca	43	116.7	21.1	**6.6089**	1.697	25.7	mg/L	27	Standard
Fe	54	18988.9	2.1	**12.6650**	0.048	0.4	mg/L	147	Standard
Fe	57	5222.6	2.2	**12.9542**	0.402	3.1	mg/L	268	Standard
Sc-1	45	48036.1	2.2				mg/L	41174	Standard
Cl	35	79157.6	0.9				ug/L	69550	Standard
Kr	83	3.0	88.2				ug/L	1	Standard
Br	81	4567.4	7.8				ug/L	1950	Standard
P	31	25140.8	1.9				ug/L	21156	Standard
S	34	3993.9	5.1				ug/L	3419	Standard
Sr	88	141.7	14.7				ug/L	72	Standard
C	12	916.7	5.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	220.0	20.8				mg/L	17	Standard
Dy	164	14636.5	2.9				mg/L	16	Standard
Ho-1	165	9054.4	1.6				mg/L	7	Standard
Er	166	8719.2	6.2				mg/L	7	Standard
I	127	60985.9	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.832	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.816	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 17:01:45
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.973
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.850
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 17:01:45
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 17:02:40
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72896.8	3.6				ug/L	76456	Standard
	Be	9	151.7	28.0	**0.1215**	0.035	28.7	ug/L	20	Standard
	Al	27	886084.1	1.1	**5.4244**	0.245	4.5	ug/L	1307	Standard
	Sc	45	40265.1	1.1				ug/L	41174	Standard
	Ti	47	4872.5	1.7	**14.8447**	0.431	2.9	ug/L	27	Standard
	V	51	31678.7	1.1	**3.6484**	0.093	2.5	ug/L	1434	Standard
	Cr	52	29443.9	1.3	**2.6645**	0.094	3.5	ug/L	7733	Standard
	Cr	53	3295.4	2.1	**2.8380**	0.099	3.5	ug/L	442	Standard
	Mn	55	811630.5	1.3	**106.9281**	2.799	2.6	ug/L	723	Standard
	Co	59	10016.3	0.5	**1.2757**	0.020	1.5	ug/L	217	Standard
	Ni	60	6049.9	1.8	**2.7576**	0.087	3.1	ug/L	304	Standard
	Cu	65	12638.9	1.7	**6.1089**	0.185	3.0	ug/L	181	Standard
	Zn	66	44343.1	2.3	**35.9528**	1.298	3.6	ug/L	215	Standard
>	Ge	72	521851.4	1.3				ug/L	520809	Standard
	As	75	2135.0	1.6	**1.7715**	0.050	2.8	ug/L	-52	Standard
	Se	82	32.7	15.9	**0.1321**	0.044	33.6	ug/L	17	Standard
	Se-1	77	80.0	15.4	**0.2505**	0.153	61.0	ug/L	56	Standard
>	Ga	71	2831.9	8.0				mg/L	25	Standard
	Rb	85	29441.9	2.0				ug/L	28	Standard
	Y	89	460347.3	0.7				ug/L	447395	Standard
>	Rh	103	23.3	44.6				ug/L	15	Standard
	Mo	98	1036.0	4.3	**0.3306**	0.018	5.5	ug/L	113	Standard
	Ag	107	240.3	7.9	**0.0218**	0.002	11.3	ug/L	108	Standard
	Cd	111	192.5	10.6	**0.0842**	0.009	10.8	mg/L	3	Standard
	Cd	114	501.8	24.8	**0.0913**	0.024	25.9	ug/L	20	Standard
>	In	115	604796.3	1.1				ug/L	625728	Standard
	Sn	118	678.3	14.5	**0.0250**	0.017	67.9	ug/L	568	Standard
	Sb	123	1577.0	34.7	**0.2828**	0.113	39.9	ug/L	612	Standard
	Ba	135	46358.8	0.3	**22.0307**	0.285	1.3	ug/L	21	Standard
	Ce	140	135977.5	1.1				ug/L	245	Standard
>	Tb	159	909731.4	0.9				ug/L	950397	Standard
	Ho	165	1651.8	7.4				ug/L	7	Standard
	Tl	203	404.7	3.9	**0.0462**	0.002	3.6	ug/L	15	Standard
	Tl	205	413.3	12.1	**0.0442**	0.006	14.3	ug/L	13	Standard
	Pb	206	34246.7	0.6	**6.2517**	0.027	0.4	ug/L	264	Standard
	Pb	207	28334.8	0.4	**5.6896**	0.033	0.6	ug/L	222	Standard
	Pb	208	122940.1	1.3	**6.0452**	0.111	1.8	ug/L	959	Standard
	U	238	2224.5	2.8	**0.2869**	0.007	2.3	ug/L	9	Standard
>	Bi	209	531198.7	0.5				ug/L	552821	Standard

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:04:57
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.1506**	8.913	173.0	mg/L	2	Standard
Mg	24	81.7	18.7	**0.0373**	0.018	48.0	mg/L	55	Standard
K	39	76.7	26.4	**0.1697**	0.081	47.8	mg/L	28	Standard
Ca	43	40.0	25.0	**1.2573**	0.889	70.7	mg/L	27	Standard
Fe	54	3471.8	1.5	**2.6857**	0.073	2.7	mg/L	147	Standard
Fe	57	1143.4	4.3	**2.7898**	0.194	6.9	mg/L	268	Standard
Sc-1	45	40265.1	1.1				mg/L	41174	Standard
Cl	35	70995.3	1.2				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2253.5	3.8				ug/L	1950	Standard
P	31	10969.0	0.7				ug/L	21156	Standard
S	34	3750.5	0.4				ug/L	3419	Standard
Sr	88	80.0	12.5				ug/L	72	Standard
C	12	226.7	9.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	17	Standard
Dy	164	2685.5	6.0				mg/L	16	Standard
Ho-1	165	1651.8	7.4				mg/L	7	Standard
Er	166	1560.1	5.1				mg/L	7	Standard
I	127	40504.1	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		95.345	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.200	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:04:57
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.655
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.089
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:04:57
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 17:05:52
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70195.6	2.2				ug/L	76456	Standard
	Be	9	78.3	41.0	**0.0567**	0.033	57.8	ug/L	20	Standard
	Al	27	176403.2	5.8	**1.1130**	0.082	7.4	ug/L	1307	Standard
	Sc	45	38834.7	0.9				ug/L	41174	Standard
	Ti	47	931.7	5.0	**2.8080**	0.157	5.6	ug/L	27	Standard
	V	51	7219.8	2.6	**0.6896**	0.020	2.9	ug/L	1434	Standard
	Cr	52	9795.8	4.3	**0.2546**	0.049	19.3	ug/L	7733	Standard
	Cr	53	816.7	8.0	**0.4003**	0.064	16.0	ug/L	442	Standard
	Mn	55	156110.5	2.6	**20.7536**	0.477	2.3	ug/L	723	Standard
	Co	59	2209.5	13.5	**0.2622**	0.038	14.6	ug/L	217	Standard
	Ni	60	1399.1	2.2	**0.5287**	0.012	2.4	ug/L	304	Standard
	Cu	65	2640.2	2.1	**1.2343**	0.024	2.0	ug/L	181	Standard
	Zn	66	9656.7	1.3	**7.7908**	0.073	0.9	ug/L	215	Standard
>	**Ge**	72	514985.8	0.4				ug/L	520809	Standard
	As	75	413.0	1.8	**0.3835**	0.006	1.4	ug/L	-52	Standard
	Se	82	23.7	20.7	**0.0632**	0.039	61.2	ug/L	17	Standard
	Se-1	77	57.0	6.1	**-0.0104**	0.039	372.4	ug/L	56	Standard
>	**Ga**	71	518.3	3.7				mg/L	25	Standard
	Rb	85	5472.7	4.6				ug/L	28	Standard
	Y	89	432045.4	1.1				ug/L	447395	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	406.8	30.7	**0.1173**	0.043	37.1	ug/L	113	Standard
	Ag	107	155.3	56.4	**0.0098**	0.013	129.9	ug/L	108	Standard
	Cd	111	62.6	64.4	**0.0262**	0.018	70.2	mg/L	3	Standard
	Cd	114	167.6	61.4	**0.0309**	0.019	61.4	ug/L	20	Standard
>	**In**	115	596116.9	0.1				ug/L	625728	Standard
	Sn	118	588.3	26.0	**0.0117**	0.025	212.4	ug/L	568	Standard
	Sb	123	388.4	28.3	**0.0452**	0.022	49.6	ug/L	612	Standard
	Ba	135	8995.0	2.1	**4.3221**	0.097	2.2	ug/L	21	Standard
	Ce	140	24040.7	2.3				ug/L	245	Standard
>	**Tb**	159	895791.4	0.8				ug/L	950397	Standard
	Ho	165	243.3	11.3				ug/L	7	Standard
	Tl	203	146.7	64.0	**0.0163**	0.011	66.9	ug/L	15	Standard
	Tl	205	206.7	97.8	**0.0173**	0.026	152.8	ug/L	13	Standard
	Pb	206	6377.7	1.6	**1.1327**	0.021	1.9	ug/L	264	Standard
	Pb	207	5284.9	1.3	**1.0274**	0.015	1.5	ug/L	222	Standard
	Pb	208	23160.0	2.5	**1.1036**	0.032	2.9	ug/L	959	Standard
	U	238	525.7	30.5	**0.0678**	0.021	30.5	ug/L	9	Standard
>	**Bi**	209	529365.9	0.5				ug/L	552821	Standard

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:08:09
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	68.3	23.5	**0.0243**	0.019	79.3	mg/L	55	Standard
K	39	26.7	78.1	**-0.0227**	0.085	373.8	mg/L	28	Standard
Ca	43	28.3	36.7	**0.2726**	0.981	359.8	mg/L	27	Standard
Fe	54	762.6	6.6	**0.5352**	0.041	7.7	mg/L	147	Standard
Fe	57	421.7	1.8	**0.5696**	0.019	3.3	mg/L	268	Standard
> **Sc-1**	45	38834.7	0.9				mg/L	41174	Standard
Cl	35	69123.3	0.3				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	1883.5	2.0				ug/L	1950	Standard
P	31	7872.0	1.6				ug/L	21156	Standard
S	34	3360.4	5.9				ug/L	3419	Standard
Sr	88	80.0	32.5				ug/L	72	Standard
C	12	90.0	22.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	38.2				mg/L	17	Standard
Dy	164	420.7	27.3				mg/L	16	Standard
Ho-1	165	243.3	11.3				mg/L	7	Standard
Er	166	263.3	34.5				mg/L	7	Standard
I	127	37972.5	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.812	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.882	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:08:09
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.268
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.757
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 17:09:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74588.1	0.3				ug/L	76456	Standard
	Be	9	57897.1	2.0	**52.9977**	1.204	2.3	ug/L	20	Standard
	Al	27	8733198.2	1.7	**52.2835**	0.984	1.9	ug/L	1307	Standard
	Sc	45	42748.6	2.7				ug/L	41174	Standard
	Ti	47	34213.3	0.6	**98.3209**	0.421	0.4	ug/L	27	Standard
	V	51	442681.7	1.0	**50.2684**	0.638	1.3	ug/L	1434	Standard
	Cr	52	439186.0	0.4	**49.9273**	0.312	0.6	ug/L	7733	Standard
	Cr	53	53859.0	4.5	**49.5163**	2.076	4.2	ug/L	442	Standard
	Mn	55	408283.6	1.1	**50.4406**	0.633	1.3	ug/L	723	Standard
	Co	59	418347.3	1.1	**51.1465**	0.625	1.2	ug/L	217	Standard
	Ni	60	111527.3	0.5	**50.2172**	0.479	1.0	ug/L	304	Standard
	Cu	65	110380.0	1.0	**50.6153**	0.665	1.3	ug/L	181	Standard
	Zn	66	65800.9	0.7	**50.1493**	0.538	1.1	ug/L	215	Standard
>	Ge	72	555788.6	0.5				ug/L	520809	Standard
	As	75	65659.0	0.5	**49.8836**	0.337	0.7	ug/L	-52	Standard
	Se	82	6718.9	0.9	**49.7097**	0.395	0.8	ug/L	17	Standard
	Se-1	77	4636.4	0.7	**50.1376**	0.106	0.2	ug/L	56	Standard
>	Ga	71	43.3	35.3				mg/L	25	Standard
	Rb	85	1065.0	6.1				ug/L	28	Standard
	Y	89	468359.1	2.1				ug/L	447395	Standard
>	Rh	103	20.0	25.0				ug/L	15	Standard
	Mo	98	314455.9	1.0	**100.8766**	0.307	0.3	ug/L	113	Standard
	Ag	107	371694.7	0.4	**50.2132**	0.146	0.3	ug/L	108	Standard
	Cd	111	119048.0	0.9	**50.1804**	0.274	0.5	mg/L	3	Standard
	Cd	114	295369.7	1.4	**50.2861**	0.415	0.8	ug/L	20	Standard
>	In	115	644781.5	0.7				ug/L	625728	Standard
	Sn	118	326587.3	0.5	**49.1617**	0.446	0.9	ug/L	568	Standard
	Sb	123	269765.0	0.9	**50.6219**	0.112	0.2	ug/L	612	Standard
	Ba	135	109973.0	0.0	**49.0395**	0.330	0.7	ug/L	21	Standard
	Ce	140	1043.4	21.6				ug/L	245	Standard
>	Tb	159	966885.6	0.6				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	449950.1	0.5	**50.5682**	0.198	0.4	ug/L	15	Standard
	Tl	205	409109.7	0.2	**51.7709**	0.214	0.4	ug/L	13	Standard
	Pb	206	284448.3	0.6	**50.6536**	0.284	0.6	ug/L	264	Standard
	Pb	207	258444.3	0.7	**50.6761**	0.292	0.6	ug/L	222	Standard
	Pb	208	1085344.7	0.3	**52.1064**	0.244	0.5	ug/L	959	Standard
	U	238	403930.8	0.4	**50.5574**	0.115	0.2	ug/L	9	Standard
>	Bi	209	547878.4	0.3				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:11:22
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.4428**	8.174	86.6	mg/L	2	Standard
Mg	24	4510.7	2.8	**5.0184**	0.235	4.7	mg/L	55	Standard
K	39	1208.4	6.0	**4.3343**	0.305	7.0	mg/L	28	Standard
Ca	43	88.3	31.2	**5.2894**	2.418	45.7	mg/L	27	Standard
Fe	54	6821.5	2.8	**5.0554**	0.184	3.6	mg/L	147	Standard
Fe	57	2156.8	8.4	**5.5723**	0.370	6.6	mg/L	268	Standard
> **Sc-1**	45	42748.6	2.7				mg/L	41174	Standard
Cl	35	80981.2	1.3				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	2280.2	6.1				ug/L	1950	Standard
P	31	25067.4	1.4				ug/L	21156	Standard
S	34	4143.9	4.2				ug/L	3419	Standard
Sr	88	66.7	51.1				ug/L	72	Standard
C	12	116.7	24.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	173.3	61.7				mg/L	17	Standard
Dy	164	15.5	97.9				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	7	Standard
I	127	10653.7	0.8				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	105.995		
	Al	27	104.567		
	Sc	45			
	Ti	47	98.321		
	V	51	100.537		
	Cr	52	99.855		
	Cr	53			
	Mn	55	100.881		
	Co	59	102.293		
	Ni	60	100.434		
	Cu	65	101.231		
	Zn	66	100.299		
>	Ge	72		106.716	
	As	75	99.767		
	Se	82	99.419		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:11:22
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.877		
Ag	107	100.426		
Cd	111	100.361		
Cd	114			
In	115			103.045
Sn	118	98.323		
Sb	123	101.244		
Ba	135	98.079		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.136		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.213		
U	238	101.115		
Bi	209			99.106
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:11:22
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 17:12:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73740.8	2.8				ug/L	76456	Standard
	Be	9	30.0	16.7	**0.0079**	0.005	57.8	ug/L	20	Standard
	Al	27	2383.5	29.7	**0.0042**	0.004	92.9	ug/L	1307	Standard
	Sc	45	42364.1	1.1				ug/L	41174	Standard
	Ti	47	28.3	8.2	**-0.0020**	0.008	409.9	ug/L	27	Standard
	V	51	1463.8	6.3	**-0.0298**	0.010	33.6	ug/L	1434	Standard
	Cr	52	7082.7	1.2	**-0.1402**	0.009	6.6	ug/L	7733	Standard
	Cr	53	485.0	17.5	**0.0388**	0.087	223.5	ug/L	442	Standard
	Mn	55	856.7	6.3	**0.0059**	0.006	103.8	ug/L	723	Standard
	Co	59	239.7	17.2	**0.0002**	0.005	2435.9	ug/L	217	Standard
	Ni	60	264.7	3.4	**-0.0322**	0.006	18.2	ug/L	304	Standard
	Cu	65	171.0	2.0	**0.0054**	0.002	46.6	ug/L	181	Standard
	Zn	66	243.3	6.7	**0.0079**	0.011	133.5	ug/L	215	Standard
>	**Ge**	72	549483.2	1.7				ug/L	520809	Standard
	As	75	-74.2	16.4	**-0.0117**	0.009	74.0	ug/L	-52	Standard
	Se	82	18.9	27.4	**0.0161**	0.041	258.0	ug/L	17	Standard
	Se-1	77	51.3	15.1	**-0.1160**	0.081	69.5	ug/L	56	Standard
>	**Ga**	71	21.7	53.3				mg/L	25	Standard
	Rb	85	48.3	33.3				ug/L	28	Standard
	Y	89	469146.0	2.8				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	269.5	12.3	**0.0621**	0.010	15.8	ug/L	113	Standard
	Ag	107	131.3	8.8	**0.0048**	0.002	32.6	ug/L	108	Standard
	Cd	111	13.9	69.3	**0.0035**	0.004	115.1	mg/L	3	Standard
	Cd	114	67.3	28.0	**0.0114**	0.003	28.7	ug/L	20	Standard
>	**In**	115	647674.1	1.6				ug/L	625728	Standard
	Sn	118	1591.8	26.5	**0.1547**	0.062	40.2	ug/L	568	Standard
	Sb	123	1048.5	31.2	**0.1625**	0.061	37.8	ug/L	612	Standard
	Ba	135	62.3	27.9	**0.0097**	0.008	77.5	ug/L	21	Standard
	Ce	140	363.3	30.0				ug/L	245	Standard
>	**Tb**	159	949797.9	2.5				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	92.0	24.5	**0.0095**	0.002	24.5	ug/L	15	Standard
	Tl	205	60.0	22.0	**-0.0022**	0.002	85.3	ug/L	13	Standard
	Pb	206	340.0	6.2	**0.0166**	0.004	25.1	ug/L	264	Standard
	Pb	207	288.7	4.1	**0.0103**	0.002	15.3	ug/L	222	Standard
	Pb	208	1226.7	6.9	**0.0104**	0.004	37.3	ug/L	959	Standard
	U	238	77.0	45.5	**0.0093**	0.004	45.3	ug/L	9	Standard
>	**Bi**	209	550276.1	2.1				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:14:34
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	24.7	**-0.0073**	0.013	171.5	mg/L	55	Standard
K	39	21.7	48.0	**-0.0502**	0.039	78.2	mg/L	28	Standard
Ca	43	33.3	17.3	**0.4877**	0.477	97.9	mg/L	27	Standard
Fe	54	195.9	17.0	**0.0503**	0.024	47.6	mg/L	147	Standard
Fe	57	191.7	26.4	**-0.2314**	0.152	65.8	mg/L	268	Standard
> **Sc-1**	45	42364.1	1.1				mg/L	41174	Standard
Cl	35	80980.6	1.9				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2003.5	11.5				ug/L	1950	Standard
P	31	23999.0	2.6				ug/L	21156	Standard
S	34	4252.3	5.6				ug/L	3419	Standard
Sr	88	71.7	21.3				ug/L	72	Standard
C	12	100.0	34.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	36.4				mg/L	17	Standard
Dy	164	16.5	70.8				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	7548.5	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.506	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:14:34
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.507
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.540
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:14:34
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Friday, July 01, 2016 17:18:25
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77464.3	3.3				ug/L	76456	Standard
	Be	9	561.7	8.9	**0.4749**	0.032	6.7	ug/L	20	Standard
	Al	27	1784965.6	1.0	**10.2905**	0.435	4.2	ug/L	1307	Standard
	Sc	45	46648.4	2.7				ug/L	41174	Standard
	Ti	47	18184.2	0.6	**50.8412**	0.521	1.0	ug/L	27	Standard
	V	51	103032.2	1.3	**11.2383**	0.206	1.8	ug/L	1434	Standard
	Cr	52	92595.8	0.6	**9.4776**	0.042	0.4	ug/L	7733	Standard
	Cr	53	11107.4	3.1	**9.6118**	0.373	3.9	ug/L	442	Standard
	Mn	55	2019437.5	1.0	**243.2931**	1.293	0.5	ug/L	723	Standard
	Co	59	22651.9	1.2	**2.6686**	0.043	1.6	ug/L	217	Standard
	Ni	60	16329.8	0.7	**7.0275**	0.020	0.3	ug/L	304	Standard
	Cu	65	24727.8	0.3	**10.9821**	0.036	0.3	ug/L	181	Standard
	Zn	66	127705.3	0.5	**94.9239**	0.754	0.8	ug/L	215	Standard
>	Ge	72	570830.0	0.6				ug/L	520809	Standard
	As	75	6011.6	0.9	**4.4881**	0.053	1.2	ug/L	-52	Standard
	Se	82	95.5	2.7	**0.5629**	0.016	2.8	ug/L	17	Standard
	Se-1	77	101.0	4.3	**0.3932**	0.042	10.6	ug/L	56	Standard
>	Ga	71	9259.5	1.6				mg/L	25	Standard
	Rb	85	72246.9	1.1				ug/L	28	Standard
	Y	89	547009.7	0.9				ug/L	447395	Standard
>	Rh	103	31.7	24.1				ug/L	15	Standard
	Mo	98	3914.2	0.5	**1.1794**	0.014	1.2	ug/L	113	Standard
	Ag	107	483.7	3.9	**0.0498**	0.002	4.8	ug/L	108	Standard
	Cd	111	987.4	2.0	**0.3964**	0.008	2.0	mg/L	3	Standard
	Cd	114	2496.5	1.3	**0.4073**	0.007	1.6	ug/L	20	Standard
>	In	115	673007.1	0.7				ug/L	625728	Standard
	Sn	118	1876.8	14.9	**0.1869**	0.040	21.4	ug/L	568	Standard
	Sb	123	1273.6	19.1	**0.1953**	0.043	22.1	ug/L	612	Standard
	Ba	135	110926.6	0.4	**47.3888**	0.135	0.3	ug/L	21	Standard
	Ce	140	529177.4	0.3				ug/L	245	Standard
>	Tb	159	1007132.0	0.8				ug/L	950397	Standard
	Ho	165	4118.9	3.9				ug/L	7	Standard
	Tl	203	1019.0	7.4	**0.1098**	0.008	7.6	ug/L	15	Standard
	Tl	205	931.7	3.7	**0.1041**	0.004	4.2	ug/L	13	Standard
	Pb	206	349755.5	0.5	**60.1201**	0.233	0.4	ug/L	264	Standard
	Pb	207	290008.2	0.8	**54.8870**	0.434	0.8	ug/L	222	Standard
	Pb	208	1256548.1	0.6	**58.2295**	0.582	1.0	ug/L	959	Standard
	U	238	5395.3	1.0	**0.6515**	0.003	0.5	ug/L	9	Standard
>	Bi	209	567672.3	0.6				ug/L	552821	Standard

Sample ID: L1606145103
Report Date/Time: Friday, July 01, 2016 17:20:42
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	26.4	**0.0141**	0.021	150.8	mg/L	55	Standard
K	39	116.7	6.5	**0.2640**	0.032	12.1	mg/L	28	Standard
Ca	43	40.0	33.1	**0.7666**	1.123	146.5	mg/L	27	Standard
Fe	54	10538.1	0.8	**7.1995**	0.244	3.4	mg/L	147	Standard
Fe	57	2908.6	5.3	**7.0806**	0.202	2.9	mg/L	268	Standard
> **Sc-1**	45	46648.4	2.7				mg/L	41174	Standard
Cl	35	80143.5	2.5				ug/L	69550	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	3830.5	4.5				ug/L	1950	Standard
P	31	23700.2	1.3				ug/L	21156	Standard
S	34	3720.5	5.4				ug/L	3419	Standard
Sr	88	83.3	28.4				ug/L	72	Standard
C	12	560.0	12.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	286.7	34.2				mg/L	17	Standard
Dy	164	6970.4	6.6				mg/L	16	Standard
Ho-1	165	4118.9	3.9				mg/L	7	Standard
Er	166	3853.8	3.6				mg/L	7	Standard
I	127	33669.0	1.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.319	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.604	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145103
Report Date/Time: Friday, July 01, 2016 17:20:42
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.556
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606145103
Report Date/Time: Friday, July 01, 2016 17:20:42
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Friday, July 01, 2016 17:22:04
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75591.5	2.3				ug/L	76456	Standard
	Be	9	436.7	14.5	0.3755	0.064	17.2	ug/L	20	Standard
	Al	27	7695752.7	1.5	45.4726	1.098	2.4	ug/L	1307	Standard
	Sc	45	44985.0	2.4				ug/L	41174	Standard
	Ti	47	18604.1	2.8	52.8354	1.232	2.3	ug/L	27	Standard
	V	51	86248.0	1.1	9.5259	0.091	1.0	ug/L	1434	Standard
	Cr	52	84116.5	1.2	8.6708	0.090	1.0	ug/L	7733	Standard
	Cr	53	9486.3	1.6	8.2820	0.108	1.3	ug/L	442	Standard
	Mn	55	1964825.3	2.7	240.4380	5.305	2.2	ug/L	723	Standard
	Co	59	30224.8	2.1	3.6271	0.056	1.5	ug/L	217	Standard
	Ni	60	18384.5	0.8	8.0589	0.068	0.8	ug/L	304	Standard
	Cu	65	28824.7	1.7	13.0170	0.152	1.2	ug/L	181	Standard
	Zn	66	125736.6	1.1	94.9340	0.526	0.6	ug/L	215	Standard
>	Ge	72	561947.7	0.6				ug/L	520809	Standard
	As	75	5595.8	2.2	4.2465	0.119	2.8	ug/L	-52	Standard
	Se	82	88.4	10.6	0.5221	0.073	13.9	ug/L	17	Standard
	Se-1	77	109.0	11.9	0.4966	0.134	27.0	ug/L	56	Standard
>	Ga	71	7550.2	3.3				mg/L	25	Standard
	Rb	85	65005.8	0.9				ug/L	28	Standard
	Y	89	541545.4	1.1				ug/L	447395	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	5215.9	1.9	1.6229	0.033	2.0	ug/L	113	Standard
	Ag	107	406.7	7.0	0.0412	0.004	9.1	ug/L	108	Standard
	Cd	111	829.8	3.4	0.3418	0.009	2.5	mg/L	3	Standard
	Cd	114	1989.6	6.7	0.3333	0.022	6.7	ug/L	20	Standard
>	In	115	655315.6	1.0				ug/L	625728	Standard
	Sn	118	1885.1	5.0	0.1955	0.016	8.1	ug/L	568	Standard
	Sb	123	963.7	16.2	0.1445	0.030	21.0	ug/L	612	Standard
	Ba	135	109632.3	1.8	48.0987	0.601	1.2	ug/L	21	Standard
	Ce	140	540393.1	1.7				ug/L	245	Standard
>	Tb	159	980324.3	0.6				ug/L	950397	Standard
	Ho	165	4750.7	4.0				ug/L	7	Standard
	Tl	203	1323.7	5.2	0.1446	0.008	5.6	ug/L	15	Standard
	Tl	205	1150.0	7.8	0.1324	0.010	7.6	ug/L	13	Standard
	Pb	206	276145.9	0.9	48.0493	0.456	0.9	ug/L	264	Standard
	Pb	207	230196.6	0.9	44.1005	0.476	1.1	ug/L	222	Standard
	Pb	208	1005008.2	0.4	47.1436	0.504	1.1	ug/L	959	Standard
	U	238	6299.6	1.7	0.7703	0.019	2.4	ug/L	9	Standard
>	Bi	209	560704.1	0.8				ug/L	552821	Standard

Sample ID: L1606145104
Report Date/Time: Friday, July 01, 2016 17:24:21
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	86.7	31.8	**0.0328**	0.031	93.1	mg/L	55	Standard
K	39	151.7	23.2	**0.4031**	0.135	33.6	mg/L	28	Standard
Ca	43	201.7	16.5	**14.3695**	3.198	22.3	mg/L	27	Standard
Fe	54	9525.1	4.7	**6.7386**	0.306	4.5	mg/L	147	Standard
Fe	57	2743.6	3.6	**6.9108**	0.154	2.2	mg/L	268	Standard
> **Sc-1**	45	44985.0	2.4				mg/L	41174	Standard
Cl	35	83879.0	2.3				ug/L	69550	Standard
Kr	83	3.7	68.6				ug/L	1	Standard
Br	81	3460.4	7.8				ug/L	1950	Standard
P	31	24561.6	1.4				ug/L	21156	Standard
S	34	4369.0	1.4				ug/L	3419	Standard
Sr	88	116.7	25.8				ug/L	72	Standard
C	12	810.0	9.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	280.0	22.3				mg/L	17	Standard
Dy	164	8460.7	2.9				mg/L	16	Standard
Ho-1	165	4750.7	4.0				mg/L	7	Standard
Er	166	4977.5	6.3				mg/L	7	Standard
I	127	28665.4	1.4				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		98.870	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		107.899	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606145104
Report Date/Time: Friday, July 01, 2016 17:24:21
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.729
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.426
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Friday, July 01, 2016 17:25:16
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76445.7	1.5				ug/L	76456	Standard
	Be	9	1478.4	3.1	**1.3014**	0.055	4.2	ug/L	20	Standard
	Al	27	1064223.2	1.9	**6.2082**	0.151	2.4	ug/L	1307	Standard
	Sc	45	47139.9	1.1				ug/L	41174	Standard
	Ti	47	53065.8	1.2	**150.6405**	1.848	1.2	ug/L	27	Standard
	V	51	112245.2	0.3	**12.4388**	0.221	1.8	ug/L	1434	Standard
	Cr	52	137183.3	1.2	**14.7291**	0.173	1.2	ug/L	7733	Standard
	Cr	53	16672.5	1.8	**14.8516**	0.459	3.1	ug/L	442	Standard
	Mn	55	332066.2	0.6	**40.4939**	0.573	1.4	ug/L	723	Standard
	Co	59	15191.9	1.6	**1.8061**	0.055	3.0	ug/L	217	Standard
	Ni	60	16308.4	0.5	**7.1212**	0.143	2.0	ug/L	304	Standard
	Cu	65	21255.2	1.0	**9.5654**	0.170	1.8	ug/L	181	Standard
	Zn	66	82188.0	0.4	**61.9044**	1.216	2.0	ug/L	215	Standard
>	Ge	72	562856.9	1.5				ug/L	520809	Standard
	As	75	14736.1	1.0	**11.0928**	0.282	2.5	ug/L	-52	Standard
	Se	82	116.4	6.1	**0.7268**	0.063	8.7	ug/L	17	Standard
	Se-1	77	132.3	7.3	**0.7485**	0.116	15.5	ug/L	56	Standard
>	Ga	71	12084.8	1.2				mg/L	25	Standard
	Rb	85	57895.4	0.4				ug/L	28	Standard
	Y	89	579341.1	3.7				ug/L	447395	Standard
>	Rh	103	25.0	52.9				ug/L	15	Standard
	Mo	98	3018.2	2.6	**0.9183**	0.011	1.2	ug/L	113	Standard
	Ag	107	450.3	2.5	**0.0464**	0.001	1.9	ug/L	108	Standard
	Cd	111	1161.6	1.5	**0.4742**	0.011	2.3	mg/L	3	Standard
	Cd	114	2894.3	3.4	**0.4797**	0.022	4.7	ug/L	20	Standard
>	In	115	662690.4	1.5				ug/L	625728	Standard
	Sn	118	2460.2	11.3	**0.2766**	0.040	14.4	ug/L	568	Standard
	Sb	123	1480.8	9.6	**0.2369**	0.027	11.6	ug/L	612	Standard
	Ba	135	103973.2	0.1	**45.1144**	0.613	1.4	ug/L	21	Standard
	Ce	140	278912.2	1.0				ug/L	245	Standard
>	Tb	159	988921.6	2.1				ug/L	950397	Standard
	Ho	165	6249.6	2.1				ug/L	7	Standard
	Tl	203	4793.4	0.3	**0.5229**	0.004	0.8	ug/L	15	Standard
	Tl	205	4507.3	1.9	**0.5447**	0.012	2.1	ug/L	13	Standard
	Pb	206	156846.0	1.0	**27.1285**	0.554	2.0	ug/L	264	Standard
	Pb	207	129940.5	0.3	**24.7412**	0.348	1.4	ug/L	222	Standard
	Pb	208	563558.5	1.1	**26.2711**	0.203	0.8	ug/L	959	Standard
	U	238	4562.4	2.7	**0.5547**	0.010	1.7	ug/L	9	Standard
>	Bi	209	563740.5	1.2				ug/L	552821	Standard

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 17:27:33
Page 1

Approved: July 02, 2016

Na	23	5.0	0.0	**13.0402**	0.148	1.1	mg/L	2	Standard
Mg	24	245.0	9.4	**0.1897**	0.021	11.0	mg/L	55	Standard
K	39	223.3	12.3	**0.6174**	0.098	15.9	mg/L	28	Standard
Ca	43	61.7	26.1	**2.4323**	1.213	49.9	mg/L	27	Standard
Fe	54	13777.8	1.0	**9.3394**	0.181	1.9	mg/L	147	Standard
Fe	57	3655.4	2.7	**9.0074**	0.309	3.4	mg/L	268	Standard
Sc-1	45	47139.9	1.1				mg/L	41174	Standard
Cl	35	79351.4	2.7				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3307.0	6.7				ug/L	1950	Standard
P	31	25337.8	0.8				ug/L	21156	Standard
S	34	3845.5	8.8				ug/L	3419	Standard
Sr	88	98.3	15.5				ug/L	72	Standard
C	12	523.3	19.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	236.7	19.1				mg/L	17	Standard
Dy	164	9446.5	2.6				mg/L	16	Standard
Ho-1	165	6249.6	2.1				mg/L	7	Standard
Er	166	6261.3	4.0				mg/L	7	Standard
I	127	33405.2	4.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.987	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.073	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 17:27:33
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 17:27:33
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145106 WG574521-02
Sample Date/Time: Friday, July 01, 2016 17:28:27
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77424.0	1.4				ug/L	76456	Standard
	Be	9	1420.1	5.3	**1.2334**	0.078	6.4	ug/L	20	Standard
	Al	27	3898597.3	2.1	**22.4779**	0.265	1.2	ug/L	1307	Standard
	Sc	45	51348.6	3.6				ug/L	41174	Standard
	Ti	47	30144.6	2.1	**85.8695**	0.856	1.0	ug/L	27	Standard
	V	51	531061.4	1.0	**59.8240**	0.037	0.1	ug/L	1434	Standard
	Cr	52	163422.1	1.8	**17.8054**	0.173	1.0	ug/L	7733	Standard
	Cr	53	19674.4	1.7	**17.6680**	0.130	0.7	ug/L	442	Standard
	Mn	55	2218244.0	2.3	**272.1177**	3.374	1.2	ug/L	723	Standard
	Co	59	32222.6	2.7	**3.8780**	0.063	1.6	ug/L	217	Standard
	Ni	60	47836.8	2.1	**21.2646**	0.223	1.0	ug/L	304	Standard
	Cu	65	112081.4	1.4	**50.9532**	0.215	0.4	ug/L	181	Standard
	Zn	66	110645.9	1.3	**83.7216**	0.252	0.3	ug/L	215	Standard
>	Ge	72	560589.7	1.1				ug/L	520809	Standard
	As	75	18364.3	1.7	**13.8646**	0.106	0.8	ug/L	-52	Standard
	Se	82	562.0	1.7	**4.0067**	0.091	2.3	ug/L	17	Standard
	Se-1	77	479.0	3.5	**4.5225**	0.226	5.0	ug/L	56	Standard
>	Ga	71	14325.1	2.5				mg/L	25	Standard
	Rb	85	53934.2	0.6				ug/L	28	Standard
	Y	89	962525.9	0.6				ug/L	447395	Standard
>	Rh	103	61.7	4.7				ug/L	15	Standard
	Mo	98	10152.0	1.8	**3.1844**	0.030	1.0	ug/L	113	Standard
	Ag	107	989.4	6.5	**0.1188**	0.009	7.5	ug/L	108	Standard
	Cd	111	5112.5	1.5	**2.1203**	0.021	1.0	mg/L	3	Standard
	Cd	114	12820.7	1.5	**2.1502**	0.050	2.3	ug/L	20	Standard
>	In	115	654652.2	1.1				ug/L	625728	Standard
	Sn	118	1108.4	23.7	**0.0806**	0.040	50.1	ug/L	568	Standard
	Sb	123	662.0	36.0	**0.0890**	0.045	50.9	ug/L	612	Standard
	Ba	135	290178.7	0.4	**127.4785**	1.030	0.8	ug/L	21	Standard
	Ce	140	1471841.9	0.9				ug/L	245	Standard
>	Tb	159	1014801.8	1.4				ug/L	950397	Standard
	Ho	165	35576.7	1.0				ug/L	7	Standard
	Tl	203	2282.2	3.2	**0.2479**	0.009	3.5	ug/L	15	Standard
	Tl	205	2125.1	5.8	**0.2510**	0.016	6.2	ug/L	13	Standard
	Pb	206	184986.8	1.0	**31.9104**	0.323	1.0	ug/L	264	Standard
	Pb	207	153794.0	1.0	**29.2069**	0.234	0.8	ug/L	222	Standard
	Pb	208	672139.8	1.3	**31.2540**	0.308	1.0	ug/L	959	Standard
	U	238	23718.9	1.7	**2.8769**	0.043	1.5	ug/L	9	Standard
>	Bi	209	565303.0	0.3				ug/L	552821	Standard

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 17:30:44
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**12.1905**	12.475	102.3	mg/L	2	Standard
Mg	24	515.0	7.3	**0.4218**	0.020	4.8	mg/L	55	Standard
K	39	145.0	15.8	**0.3133**	0.055	17.6	mg/L	28	Standard
Ca	43	251.7	14.6	**15.9361**	3.051	19.1	mg/L	27	Standard
Fe	54	21541.2	1.4	**13.4547**	0.377	2.8	mg/L	147	Standard
Fe	57	6066.2	2.9	**14.1508**	0.552	3.9	mg/L	268	Standard
Sc-1	45	51348.6	3.6				mg/L	41174	Standard
Cl	35	83904.4	2.5				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	7455.2	1.0				ug/L	1950	Standard
P	31	24167.7	6.9				ug/L	21156	Standard
S	34	4078.9	4.5				ug/L	3419	Standard
Sr	88	178.3	24.5				ug/L	72	Standard
C	12	1733.4	9.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	446.7	14.4				mg/L	17	Standard
Dy	164	52369.2	4.0				mg/L	16	Standard
Ho-1	165	35576.7	1.0				mg/L	7	Standard
Er	166	35010.4	0.8				mg/L	7	Standard
I	127	69199.4	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.266	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.638	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 17:30:44
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.623
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.258
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 17:30:44
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Friday, July 01, 2016 17:31:39
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77976.9	3.0				ug/L	76456	Standard
	Be	9	4238.9	1.2	**3.6947**	0.093	2.5	ug/L	20	Standard
	Al	27	6498898.5	1.0	**37.2377**	1.289	3.5	ug/L	1307	Standard
	Sc	45	49464.0	2.1				ug/L	41174	Standard
	Ti	47	128073.0	0.5	**363.1539**	6.490	1.8	ug/L	27	Standard
	V	51	349457.1	2.0	**39.0869**	1.161	3.0	ug/L	1434	Standard
	Cr	52	339178.2	1.4	**37.7839**	0.334	0.9	ug/L	7733	Standard
	Cr	53	41896.2	0.9	**37.8898**	0.902	2.4	ug/L	442	Standard
	Mn	55	1606512.7	1.3	**195.9725**	1.717	0.9	ug/L	723	Standard
	Co	59	54787.2	1.9	**6.5778**	0.027	0.4	ug/L	217	Standard
	Ni	60	49280.4	1.6	**21.7906**	0.290	1.3	ug/L	304	Standard
	Cu	65	58505.7	1.0	**26.4179**	0.486	1.8	ug/L	181	Standard
	Zn	66	199363.7	0.4	**150.1818**	2.763	1.8	ug/L	215	Standard
>	Ge	72	563783.0	2.2				ug/L	520809	Standard
	As	75	72841.2	1.2	**54.5595**	0.676	1.2	ug/L	-52	Standard
	Se	82	260.0	4.3	**1.7742**	0.048	2.7	ug/L	17	Standard
	Se-1	77	240.0	3.1	**1.9101**	0.113	5.9	ug/L	56	Standard
>	Ga	71	27433.2	2.3				mg/L	25	Standard
	Rb	85	214873.2	1.9				ug/L	28	Standard
	Y	89	688224.7	2.2				ug/L	447395	Standard
>	Rh	103	50.0	34.6				ug/L	15	Standard
	Mo	98	15750.9	1.3	**5.0545**	0.122	2.4	ug/L	113	Standard
	Ag	107	1137.7	4.6	**0.1417**	0.010	7.3	ug/L	108	Standard
	Cd	111	4595.8	1.9	**1.9447**	0.072	3.7	mg/L	3	Standard
	Cd	114	11753.0	1.4	**2.0112**	0.076	3.8	ug/L	20	Standard
>	In	115	641892.6	2.4				ug/L	625728	Standard
	Sn	118	2545.2	5.6	**0.3012**	0.016	5.3	ug/L	568	Standard
	Sb	123	1737.1	5.6	**0.2941**	0.021	7.1	ug/L	612	Standard
	Ba	135	236984.3	0.4	**106.2043**	2.197	2.1	ug/L	21	Standard
	Ce	140	773385.4	0.4				ug/L	245	Standard
>	Tb	159	984938.0	3.6				ug/L	950397	Standard
	Ho	165	16265.4	1.5				ug/L	7	Standard
	Tl	203	22667.3	0.8	**2.5566**	0.057	2.2	ug/L	15	Standard
	Tl	205	20584.0	2.7	**2.6047**	0.030	1.2	ug/L	13	Standard
	Pb	206	321586.0	1.4	**57.4914**	1.247	2.2	ug/L	264	Standard
	Pb	207	267373.6	0.8	**52.6407**	1.680	3.2	ug/L	222	Standard
	Pb	208	1175990.0	0.9	**56.6808**	1.299	2.3	ug/L	959	Standard
	U	238	16091.9	1.2	**2.0215**	0.038	1.9	ug/L	9	Standard
>	Bi	209	546013.7	3.1				ug/L	552821	Standard

Sample ID: L1606145107
Report Date/Time: Friday, July 01, 2016 17:33:56
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**8.3896**	14.523	173.1	mg/L	2	Standard
Mg	24	313.3	12.2	**0.2450**	0.042	17.2	mg/L	55	Standard
K	39	578.3	4.1	**1.7142**	0.039	2.3	mg/L	28	Standard
Ca	43	190.0	22.5	**11.8882**	2.994	25.2	mg/L	27	Standard
Fe	54	47361.4	0.7	**30.8245**	0.629	2.0	mg/L	147	Standard
Fe	57	12388.4	2.6	**30.8824**	0.658	2.1	mg/L	268	Standard
> **Sc-1**	45	49464.0	2.1				mg/L	41174	Standard
Cl	35	79796.9	1.5				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	3437.1	6.8				ug/L	1950	Standard
P	31	26398.0	3.4				ug/L	21156	Standard
S	34	4072.2	2.6				ug/L	3419	Standard
Sr	88	165.0	6.1				ug/L	72	Standard
C	12	630.0	4.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	340.0	26.1				mg/L	17	Standard
Dy	164	25210.3	0.7				mg/L	16	Standard
Ho-1	165	16265.4	1.5				mg/L	7	Standard
Er	166	15487.9	0.9				mg/L	7	Standard
I	127	25923.8	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.990	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.251	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145107
Report Date/Time: Friday, July 01, 2016 17:33:56
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.583
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.769
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Approved: July 02, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Friday, July 01, 2016 17:34:50
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78296.8	0.6				ug/L	76456	Standard
	Be	9	5035.8	1.1	**4.3730**	0.045	1.0	ug/L	20	Standard
	Al	27	8296103.3	2.9	**47.3081**	1.104	2.3	ug/L	1307	Standard
	Sc	45	51448.9	3.1				ug/L	41174	Standard
	Ti	47	143723.1	0.7	**413.9468**	6.279	1.5	ug/L	27	Standard
	V	51	366509.9	0.1	**41.6481**	0.419	1.0	ug/L	1434	Standard
	Cr	52	544163.4	1.5	**62.1923**	1.314	2.1	ug/L	7733	Standard
	Cr	53	66433.7	1.1	**61.2720**	0.593	1.0	ug/L	442	Standard
	Mn	55	1841665.0	0.6	**228.2274**	2.393	1.0	ug/L	723	Standard
	Co	59	60732.8	1.2	**7.4113**	0.113	1.5	ug/L	217	Standard
	Ni	60	55300.1	1.5	**24.8624**	0.580	2.3	ug/L	304	Standard
	Cu	65	53837.8	1.0	**24.6886**	0.479	1.9	ug/L	181	Standard
	Zn	66	206840.0	0.6	**158.2701**	2.252	1.4	ug/L	215	Standard
>	Ge	72	554963.2	0.9				ug/L	520809	Standard
	As	75	66893.4	0.9	**50.8958**	0.201	0.4	ug/L	-52	Standard
	Se	82	248.2	6.5	**1.7168**	0.104	6.0	ug/L	17	Standard
	Se-1	77	241.0	3.2	**1.9609**	0.071	3.6	ug/L	56	Standard
>	Ga	71	28399.9	2.1				mg/L	25	Standard
	Rb	85	238607.6	1.1				ug/L	28	Standard
	Y	89	727081.9	1.3				ug/L	447395	Standard
>	Rh	103	48.3	48.9				ug/L	15	Standard
	Mo	98	16138.3	0.6	**5.1475**	0.088	1.7	ug/L	113	Standard
	Ag	107	1178.0	3.1	**0.1461**	0.006	4.0	ug/L	108	Standard
	Cd	111	4690.3	1.4	**1.9722**	0.048	2.4	mg/L	3	Standard
	Cd	114	11637.8	1.7	**1.9789**	0.055	2.8	ug/L	20	Standard
>	In	115	645732.9	1.1				ug/L	625728	Standard
	Sn	118	2240.2	14.5	**0.2530**	0.048	19.0	ug/L	568	Standard
	Sb	123	1441.2	4.7	**0.2365**	0.011	4.5	ug/L	612	Standard
	Ba	135	274841.1	0.7	**122.4109**	1.640	1.3	ug/L	21	Standard
	Ce	140	887134.9	0.7				ug/L	245	Standard
>	Tb	159	985869.5	0.8				ug/L	950397	Standard
	Ho	165	18397.8	1.0				ug/L	7	Standard
	Tl	203	22726.7	1.1	**2.5470**	0.017	0.7	ug/L	15	Standard
	Tl	205	20669.1	0.8	**2.5996**	0.009	0.3	ug/L	13	Standard
	Pb	206	304509.2	0.5	**54.0918**	0.193	0.4	ug/L	264	Standard
	Pb	207	255448.0	0.1	**49.9624**	0.361	0.7	ug/L	222	Standard
	Pb	208	1107233.4	0.4	**53.0246**	0.467	0.9	ug/L	959	Standard
	U	238	17326.6	1.5	**2.1631**	0.047	2.2	ug/L	9	Standard
>	Bi	209	549274.6	0.7				ug/L	552821	Standard

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 17:37:07
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**8.1301**	14.073	173.1	mg/L	2	Standard
Mg	24	360.0	2.4	**0.2767**	0.016	5.7	mg/L	55	Standard
K	39	590.0	10.2	**1.6839**	0.234	13.9	mg/L	28	Standard
Ca	43	221.7	16.9	**13.7026**	2.998	21.9	mg/L	27	Standard
Fe	54	51880.7	2.5	**32.4850**	1.445	4.4	mg/L	147	Standard
Fe	57	13546.1	1.6	**32.5153**	0.491	1.5	mg/L	268	Standard
> **Sc-1**	45	51448.9	3.1				mg/L	41174	Standard
Cl	35	79311.7	1.5				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	2893.6	2.1				ug/L	1950	Standard
P	31	26569.9	1.7				ug/L	21156	Standard
S	34	4178.9	3.2				ug/L	3419	Standard
Sr	88	200.0	24.6				ug/L	72	Standard
C	12	570.0	12.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	283.3	10.2				mg/L	17	Standard
Dy	164	28615.4	0.7				mg/L	16	Standard
Ho-1	165	18397.8	1.0				mg/L	7	Standard
Er	166	17950.6	1.5				mg/L	7	Standard
I	127	24543.2	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.408	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 17:37:07
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.197	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.359	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 17:37:07
Page 3

Approved: July 02, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145109S WG574521-07
Sample Date/Time: Friday, July 01, 2016 17:38:02
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77300.2	4.1				ug/L	76456	Standard
	Be	9	31013.4	0.9	**27.4058**	0.869	3.2	ug/L	20	Standard
	Al	27	4089154.1	3.2	**23.6238**	0.470	2.0	ug/L	1307	Standard
	Sc	45	51686.4	2.6				ug/L	41174	Standard
	Ti	47	34757.2	1.7	**100.2574**	1.039	1.0	ug/L	27	Standard
	V	51	798652.3	3.3	**91.1648**	1.278	1.4	ug/L	1434	Standard
	Cr	52	383358.6	3.0	**43.6124**	0.316	0.7	ug/L	7733	Standard
	Cr	53	46656.8	2.4	**42.9982**	0.311	0.7	ug/L	442	Standard
	Mn	55	2313030.1	2.9	**287.2366**	2.286	0.8	ug/L	723	Standard
	Co	59	229099.5	3.1	**28.0933**	0.227	0.8	ug/L	217	Standard
	Ni	60	103411.0	3.4	**46.7113**	0.544	1.2	ug/L	304	Standard
	Cu	65	167787.3	3.4	**77.2413**	0.870	1.1	ug/L	181	Standard
	Zn	66	148653.6	2.3	**113.9303**	0.817	0.7	ug/L	215	Standard
>	**Ge**	72	553789.9	2.3				ug/L	520809	Standard
	As	75	50674.7	3.7	**38.6402**	0.614	1.6	ug/L	-52	Standard
	Se	82	4006.1	3.7	**29.6916**	0.620	2.1	ug/L	17	Standard
	Se-1	77	2822.3	6.3	**30.3505**	1.406	4.6	ug/L	56	Standard
>	**Ga**	71	15926.7	1.8				mg/L	25	Standard
	Rb	85	61213.5	2.5				ug/L	28	Standard
	Y	89	995780.9	3.8				ug/L	447395	Standard
>	**Rh**	103	80.0	39.0				ug/L	15	Standard
	Mo	98	11202.2	1.3	**3.5351**	0.100	2.8	ug/L	113	Standard
	Ag	107	172476.6	3.4	**23.0491**	0.075	0.3	ug/L	108	Standard
	Cd	111	62525.5	2.9	**26.0819**	0.217	0.8	mg/L	3	Standard
	Cd	114	155090.1	3.1	**26.1298**	0.108	0.4	ug/L	20	Standard
>	**In**	115	651612.6	3.5				ug/L	625728	Standard
	Sn	118	1198.4	14.3	**0.0953**	0.032	33.2	ug/L	568	Standard
	Sb	123	13746.3	2.5	**2.5212**	0.035	1.4	ug/L	612	Standard
	Ba	135	355128.0	2.7	**156.7604**	1.139	0.7	ug/L	21	Standard
	Ce	140	1618154.9	2.5				ug/L	245	Standard
>	**Tb**	159	1001149.2	2.4				ug/L	950397	Standard
	Ho	165	38079.5	2.2				ug/L	7	Standard
	Tl	203	217506.4	3.1	**24.1924**	0.167	0.7	ug/L	15	Standard
	Tl	205	199413.9	1.5	**24.9766**	0.301	1.2	ug/L	13	Standard
	Pb	206	340199.5	1.6	**59.9805**	0.583	1.0	ug/L	264	Standard
	Pb	207	287102.8	2.6	**55.7262**	0.520	0.9	ug/L	222	Standard
	Pb	208	1239148.8	1.7	**58.8977**	0.622	1.1	ug/L	959	Standard
	U	238	215333.8	2.0	**26.6800**	0.294	1.1	ug/L	9	Standard
>	**Bi**	209	553529.4	2.5				ug/L	552821	Standard

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 17:40:19
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**8.0461**	6.964	86.6	mg/L	2	Standard
Mg	24	420.0	23.2	**0.3305**	0.090	27.3	mg/L	55	Standard
K	39	140.0	12.9	**0.2971**	0.061	20.5	mg/L	28	Standard
Ca	43	243.3	22.2	**15.1089**	3.441	22.8	mg/L	27	Standard
Fe	54	22645.6	2.0	**14.0499**	0.221	1.6	mg/L	147	Standard
Fe	57	6007.9	4.3	**13.9009**	0.509	3.7	mg/L	268	Standard
Sc-1	45	51686.4	2.6				mg/L	41174	Standard
Cl	35	80429.2	4.3				ug/L	69550	Standard
Kr	83	2.7	86.6				ug/L	1	Standard
Br	81	13772.9	3.0				ug/L	1950	Standard
P	31	24882.1	4.1				ug/L	21156	Standard
S	34	3928.8	5.2				ug/L	3419	Standard
Sr	88	231.7	13.2				ug/L	72	Standard
C	12	2016.8	5.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	526.7	13.7				mg/L	17	Standard
Dy	164	57272.5	3.0				mg/L	16	Standard
Ho-1	165	38079.5	2.2				mg/L	7	Standard
Er	166	36791.3	0.3				mg/L	7	Standard
I	127	68461.0	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.105	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.333	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 17:40:19
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.128
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 17:40:19
Page 3

Approved: July 02, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145110SD WG574521-08
Sample Date/Time: Friday, July 01, 2016 17:41:13
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75000.2	2.3				ug/L	76456	Standard
	Be	9	30976.6	1.7	**28.1959**	0.613	2.2	ug/L	20	Standard
	Al	27	3439220.2	1.5	**20.4763**	0.514	2.5	ug/L	1307	Standard
	Sc	45	50167.9	0.3				ug/L	41174	Standard
	Ti	47	20331.3	1.6	**60.1182**	0.386	0.6	ug/L	27	Standard
	V	51	735011.2	1.2	**86.0697**	0.811	0.9	ug/L	1434	Standard
	Cr	52	348065.1	1.5	**40.5590**	0.525	1.3	ug/L	7733	Standard
	Cr	53	41963.1	3.7	**39.6270**	0.656	1.7	ug/L	442	Standard
	Mn	55	2126490.8	1.0	**270.9327**	3.985	1.5	ug/L	723	Standard
	Co	59	224148.6	1.1	**28.2013**	0.328	1.2	ug/L	217	Standard
	Ni	60	97510.5	1.6	**45.1854**	0.391	0.9	ug/L	304	Standard
	Cu	65	159657.8	0.8	**75.4140**	0.961	1.3	ug/L	181	Standard
	Zn	66	122702.2	1.2	**96.4430**	0.853	0.9	ug/L	215	Standard
>	Ge	72	539893.8	2.0				ug/L	520809	Standard
	As	75	43731.6	1.5	**34.2188**	0.207	0.6	ug/L	-52	Standard
	Se	82	3851.1	1.9	**29.2807**	0.182	0.6	ug/L	17	Standard
	Se-1	77	2693.2	3.6	**29.7006**	0.473	1.6	ug/L	56	Standard
>	Ga	71	10877.2	4.3				mg/L	25	Standard
	Rb	85	26646.7	1.9				ug/L	28	Standard
	Y	89	984741.5	1.3				ug/L	447395	Standard
>	Rh	103	75.0	23.1				ug/L	15	Standard
	Mo	98	12396.0	1.1	**4.0096**	0.009	0.2	ug/L	113	Standard
	Ag	107	167394.8	1.6	**22.9251**	0.326	1.4	ug/L	108	Standard
	Cd	111	61689.6	0.9	**26.3685**	0.182	0.7	mg/L	3	Standard
	Cd	114	150249.5	3.1	**25.9377**	0.589	2.3	ug/L	20	Standard
>	In	115	635843.6	1.2				ug/L	625728	Standard
	Sn	118	1905.1	12.7	**0.2074**	0.041	19.5	ug/L	568	Standard
	Sb	123	35922.0	1.1	**6.8066**	0.045	0.7	ug/L	612	Standard
	Ba	135	328480.5	1.3	**148.5677**	0.342	0.2	ug/L	21	Standard
	Ce	140	1483643.4	1.0				ug/L	245	Standard
>	Tb	159	980223.1	1.4				ug/L	950397	Standard
	Ho	165	36555.7	1.5				ug/L	7	Standard
	Tl	203	214476.5	1.2	**24.1754**	0.120	0.5	ug/L	15	Standard
	Tl	205	195033.9	0.4	**24.7497**	0.108	0.4	ug/L	13	Standard
	Pb	206	331178.4	0.7	**59.1601**	0.433	0.7	ug/L	264	Standard
	Pb	207	281134.0	0.6	**55.2947**	0.155	0.3	ug/L	222	Standard
	Pb	208	1213063.3	0.7	**58.4179**	0.082	0.1	ug/L	959	Standard
	U	238	215012.5	0.4	**26.9929**	0.177	0.7	ug/L	9	Standard
>	Bi	209	546245.7	0.8				ug/L	552821	Standard

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 17:43:30
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	401.7	8.7	**0.3249**	0.034	10.5	mg/L	55	Standard
K	39	65.0	53.8	**0.0732**	0.110	149.7	mg/L	28	Standard
Ca	43	258.3	8.9	**16.8169**	1.773	10.5	mg/L	27	Standard
Fe	54	18860.0	1.9	**12.0398**	0.263	2.2	mg/L	147	Standard
Fe	57	5239.2	5.1	**12.4090**	0.703	5.7	mg/L	268	Standard
Sc-1	45	50167.9	0.3				mg/L	41174	Standard
Cl	35	77473.7	3.0				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	7528.5	1.9				ug/L	1950	Standard
P	31	23025.8	3.4				ug/L	21156	Standard
S	34	3772.1	4.4				ug/L	3419	Standard
Sr	88	236.7	6.8				ug/L	72	Standard
C	12	2743.6	3.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	510.0	3.4				mg/L	17	Standard
Dy	164	54236.1	2.2				mg/L	16	Standard
Ho-1	165	36555.7	1.5				mg/L	7	Standard
Er	166	36333.5	1.9				mg/L	7	Standard
I	127	50945.5	2.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.664	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 17:43:30
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.617	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.811	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 17:43:30
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144501
Sample Date/Time: Friday, July 01, 2016 17:44:25
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75614.9	1.3				ug/L	76456	Standard
	Be	9	616.7	9.4	**0.5370**	0.050	9.3	ug/L	20	Standard
	Al	27	13167988.3	1.5	**77.7749**	1.539	2.0	ug/L	1307	Standard
	Sc	45	44936.5	0.9				ug/L	41174	Standard
	Ti	47	2539.2	1.9	**7.5419**	0.159	2.1	ug/L	27	Standard
	V	51	86547.1	1.5	**10.1041**	0.180	1.8	ug/L	1434	Standard
	Cr	52	60907.8	0.8	**6.4000**	0.028	0.4	ug/L	7733	Standard
	Cr	53	7250.1	1.9	**6.6027**	0.158	2.4	ug/L	442	Standard
	Mn	55	1905061.9	1.8	**246.1332**	2.751	1.1	ug/L	723	Standard
	Co	59	36801.3	0.6	**4.6715**	0.060	1.3	ug/L	217	Standard
	Ni	60	21869.8	1.0	**10.1605**	0.108	1.1	ug/L	304	Standard
	Cu	65	17811.5	0.6	**8.4670**	0.104	1.2	ug/L	181	Standard
	Zn	66	27607.8	0.3	**21.8690**	0.071	0.3	ug/L	215	Standard
>	Ge	72	532269.5	0.7				ug/L	520809	Standard
	As	75	3673.7	1.1	**2.9570**	0.036	1.2	ug/L	-52	Standard
	Se	82	41.1	14.0	**0.1921**	0.043	22.6	ug/L	17	Standard
	Se-1	77	92.7	12.4	**0.3761**	0.133	35.3	ug/L	56	Standard
>	Ga	71	8445.7	4.3				mg/L	25	Standard
	Rb	85	79397.5	0.6				ug/L	28	Standard
	Y	89	617711.9	0.3				ug/L	447395	Standard
>	Rh	103	20.0	50.0				ug/L	15	Standard
	Mo	98	513.2	4.5	**0.1463**	0.008	5.2	ug/L	113	Standard
	Ag	107	411.0	5.4	**0.0445**	0.003	7.0	ug/L	108	Standard
	Cd	111	224.8	17.0	**0.0956**	0.017	17.3	mg/L	3	Standard
	Cd	114	528.5	15.3	**0.0930**	0.014	15.2	ug/L	20	Standard
>	In	115	623854.0	0.2				ug/L	625728	Standard
	Sn	118	1113.4	15.3	**0.0893**	0.027	30.1	ug/L	568	Standard
	Sb	123	402.5	19.7	**0.0444**	0.016	34.9	ug/L	612	Standard
	Ba	135	200643.8	0.9	**92.4876**	1.043	1.1	ug/L	21	Standard
	Ce	140	742147.0	0.8				ug/L	245	Standard
>	Tb	159	959744.7	0.8				ug/L	950397	Standard
	Ho	165	13928.1	1.6				ug/L	7	Standard
	Tl	203	447.0	8.8	**0.0505**	0.005	9.0	ug/L	15	Standard
	Tl	205	406.7	11.9	**0.0427**	0.006	14.6	ug/L	13	Standard
	Pb	206	40310.6	0.6	**7.2786**	0.040	0.5	ug/L	264	Standard
	Pb	207	33326.3	0.4	**6.6200**	0.027	0.4	ug/L	222	Standard
	Pb	208	145576.7	0.6	**7.0813**	0.040	0.6	ug/L	959	Standard
	U	238	2828.3	0.6	**0.3605**	0.002	0.6	ug/L	9	Standard
>	Bi	209	537569.5	0.1				ug/L	552821	Standard

Sample ID: L1606144501
Report Date/Time: Friday, July 01, 2016 17:46:42
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.1104**	7.886	86.6	mg/L	2	Standard
Mg	24	76.7	7.5	**0.0219**	0.006	26.1	mg/L	55	Standard
K	39	218.3	9.5	**0.6363**	0.080	12.5	mg/L	28	Standard
Ca	43	151.7	22.0	**10.1772**	2.793	27.4	mg/L	27	Standard
Fe	54	7340.4	3.8	**5.1756**	0.204	3.9	mg/L	147	Standard
Fe	57	2196.8	7.0	**5.3817**	0.451	8.4	mg/L	268	Standard
Sc-1	45	44936.5	0.9				mg/L	41174	Standard
Cl	35	75625.0	1.8				ug/L	69550	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	2456.9	6.6				ug/L	1950	Standard
P	31	22234.7	4.3				ug/L	21156	Standard
S	34	3950.5	4.3				ug/L	3419	Standard
Sr	88	111.7	18.1				ug/L	72	Standard
C	12	203.3	42.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	36.6				mg/L	17	Standard
Dy	164	23311.5	2.8				mg/L	16	Standard
Ho-1	165	13928.1	1.6				mg/L	7	Standard
Er	166	12401.8	5.5				mg/L	7	Standard
I	127	16120.2	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.900	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.200	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606144501
Report Date/Time: Friday, July 01, 2016 17:46:42
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.701
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.241
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606144501
Report Date/Time: Friday, July 01, 2016 17:46:42
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144502
Sample Date/Time: Friday, July 01, 2016 17:47:36
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80582.1	0.6				ug/L	76456	Standard
	Be	9	1050.0	6.5	**0.8699**	0.053	6.1	ug/L	20	Standard
	Al	27	10543226.3	2.9	**58.4275**	1.839	3.1	ug/L	1307	Standard
	Sc	45	50111.1	1.7				ug/L	41174	Standard
	Ti	47	7592.6	3.2	**21.5864**	0.745	3.5	ug/L	27	Standard
	V	51	232882.8	0.5	**26.1453**	0.088	0.3	ug/L	1434	Standard
	Cr	52	180590.6	0.7	**19.7971**	0.199	1.0	ug/L	7733	Standard
	Cr	53	21970.9	2.4	**19.7976**	0.515	2.6	ug/L	442	Standard
	Mn	55	4529682.0	0.5	**556.3104**	4.224	0.8	ug/L	723	Standard
	Co	59	72279.7	0.5	**8.7442**	0.060	0.7	ug/L	217	Standard
	Ni	60	42964.2	0.1	**19.1012**	0.022	0.1	ug/L	304	Standard
	Cu	65	47497.7	0.8	**21.5696**	0.226	1.0	ug/L	181	Standard
	Zn	66	105865.9	1.3	**80.1698**	1.221	1.5	ug/L	215	Standard
>	Ge	72	560104.1	0.3				ug/L	520809	Standard
	As	75	7808.3	0.8	**5.9264**	0.056	0.9	ug/L	-52	Standard
	Se	82	138.7	8.9	**0.8941**	0.089	9.9	ug/L	17	Standard
	Se-1	77	161.0	3.3	**1.0667**	0.061	5.7	ug/L	56	Standard
>	Ga	71	24149.2	0.8				mg/L	25	Standard
	Rb	85	233795.1	1.1				ug/L	28	Standard
	Y	89	725001.6	1.1				ug/L	447395	Standard
>	Rh	103	41.7	18.3				ug/L	15	Standard
	Mo	98	1317.7	5.6	**0.3993**	0.019	4.9	ug/L	113	Standard
	Ag	107	864.0	1.1	**0.1041**	0.002	2.4	ug/L	108	Standard
	Cd	111	1117.0	0.9	**0.4692**	0.009	1.8	mg/L	3	Standard
	Cd	114	2788.0	2.8	**0.4754**	0.015	3.1	ug/L	20	Standard
>	In	115	643922.1	1.0				ug/L	625728	Standard
	Sn	118	2010.1	12.1	**0.2191**	0.034	15.5	ug/L	568	Standard
	Sb	123	437.2	13.5	**0.0484**	0.010	21.4	ug/L	612	Standard
	Ba	135	1679042.7	0.5	**749.9950**	6.832	0.9	ug/L	21	Standard
	Ce	140	1471540.7	0.8				ug/L	245	Standard
>	Tb	159	984687.8	0.7				ug/L	950397	Standard
	Ho	165	20360.3	1.4				ug/L	7	Standard
	Tl	203	1212.7	2.5	**0.1370**	0.004	2.6	ug/L	15	Standard
	Tl	205	1158.4	9.0	**0.1384**	0.013	9.2	ug/L	13	Standard
	Pb	206	419173.3	0.5	**75.4515**	0.814	1.1	ug/L	264	Standard
	Pb	207	344138.4	0.6	**68.2056**	0.866	1.3	ug/L	222	Standard
	Pb	208	1506247.3	0.9	**73.0918**	0.807	1.1	ug/L	959	Standard
	U	238	5748.4	0.4	**0.7268**	0.007	1.0	ug/L	9	Standard
>	Bi	209	542199.4	0.6				ug/L	552821	Standard

Sample ID: L1606144502
Report Date/Time: Friday, July 01, 2016 17:49:53
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	146.7	3.9	**0.0806**	0.004	4.7	mg/L	55	Standard
K	39	706.7	5.1	**2.0968**	0.148	7.0	mg/L	28	Standard
Ca	43	91.7	22.0	**4.4031**	1.569	35.6	mg/L	27	Standard
Fe	54	24940.6	4.4	**15.9770**	0.842	5.3	mg/L	147	Standard
Fe	57	6641.5	3.9	**15.9699**	0.826	5.2	mg/L	268	Standard
> **Sc-1**	45	50111.1	1.7				mg/L	41174	Standard
Cl	35	76057.1	1.3				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	3847.2	5.3				ug/L	1950	Standard
P	31	23633.4	0.7				ug/L	21156	Standard
S	34	3662.1	4.5				ug/L	3419	Standard
Sr	88	171.7	11.8				ug/L	72	Standard
C	12	470.0	20.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	233.3	19.3				mg/L	17	Standard
Dy	164	34433.8	0.7				mg/L	16	Standard
Ho-1	165	20360.3	1.4				mg/L	7	Standard
Er	166	19082.0	1.0				mg/L	7	Standard
I	127	32727.0	1.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.397	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.545	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144502
Report Date/Time: Friday, July 01, 2016 17:49:53
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.908
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144502
Report Date/Time: Friday, July 01, 2016 17:49:53
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 17:50:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75660.1	1.1				ug/L	76456	Standard
	Be	9	60406.9	2.0	**54.5087**	0.731	1.3	ug/L	20	Standard
	Al	27	8901183.3	0.4	**52.5361**	0.439	0.8	ug/L	1307	Standard
	Sc	45	43571.0	4.5				ug/L	41174	Standard
	Ti	47	34622.5	2.0	**98.8044**	2.139	2.2	ug/L	27	Standard
	V	51	445398.2	1.1	**50.2213**	0.481	1.0	ug/L	1434	Standard
	Cr	52	446008.3	0.3	**50.3583**	0.638	1.3	ug/L	7733	Standard
	Cr	53	54342.3	1.8	**49.6105**	0.179	0.4	ug/L	442	Standard
	Mn	55	412872.1	1.4	**50.6530**	0.943	1.9	ug/L	723	Standard
	Co	59	423920.9	1.9	**51.4674**	1.144	2.2	ug/L	217	Standard
	Ni	60	112641.5	1.2	**50.3629**	0.567	1.1	ug/L	304	Standard
	Cu	65	112208.4	1.7	**51.0893**	0.402	0.8	ug/L	181	Standard
	Zn	66	66744.0	0.4	**50.5145**	0.608	1.2	ug/L	215	Standard
>	Ge	72	559742.9	1.5				ug/L	520809	Standard
	As	75	66794.1	0.6	**50.3914**	0.530	1.1	ug/L	-52	Standard
	Se	82	6873.9	1.4	**50.5047**	0.860	1.7	ug/L	17	Standard
	Se-1	77	4690.7	2.0	**50.3684**	0.411	0.8	ug/L	56	Standard
>	Ga	71	70.0	37.1				mg/L	25	Standard
	Rb	85	931.7	8.4				ug/L	28	Standard
	Y	89	472026.6	0.3				ug/L	447395	Standard
>	Rh	103	31.7	32.9				ug/L	15	Standard
	Mo	98	318819.4	0.9	**100.5497**	0.545	0.5	ug/L	113	Standard
	Ag	107	375898.4	1.4	**49.9218**	0.531	1.1	ug/L	108	Standard
	Cd	111	121191.8	0.6	**50.2220**	0.334	0.7	mg/L	3	Standard
	Cd	114	302196.5	1.8	**50.5816**	0.945	1.9	ug/L	20	Standard
>	In	115	655853.7	0.4				ug/L	625728	Standard
	Sn	118	335213.1	1.5	**49.6075**	0.708	1.4	ug/L	568	Standard
	Sb	123	270386.5	1.1	**49.8811**	0.362	0.7	ug/L	612	Standard
	Ba	135	111336.6	0.9	**48.8080**	0.417	0.9	ug/L	21	Standard
	Ce	140	1411.7	25.7				ug/L	245	Standard
>	Tb	159	970990.0	1.2				ug/L	950397	Standard
	Ho	165	26.7	71.0				ug/L	7	Standard
	Tl	203	450496.8	1.2	**50.6789**	0.648	1.3	ug/L	15	Standard
	Tl	205	413746.4	0.4	**52.4089**	0.448	0.9	ug/L	13	Standard
	Pb	206	283628.8	0.6	**50.5558**	0.102	0.2	ug/L	264	Standard
	Pb	207	257451.9	0.7	**50.5301**	0.341	0.7	ug/L	222	Standard
	Pb	208	1074344.6	0.3	**51.6273**	0.180	0.3	ug/L	959	Standard
	U	238	402853.9	0.7	**50.4710**	0.276	0.5	ug/L	9	Standard
>	Bi	209	547356.6	0.6				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:53:06
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4665.7	4.0	**5.1012**	0.401	7.9	mg/L	55	Standard
K	39	1318.4	2.8	**4.6563**	0.350	7.5	mg/L	28	Standard
Ca	43	68.3	16.9	**3.4315**	1.098	32.0	mg/L	27	Standard
Fe	54	7100.4	2.7	**5.1707**	0.292	5.6	mg/L	147	Standard
Fe	57	2145.2	7.2	**5.4299**	0.465	8.6	mg/L	268	Standard
> **Sc-1**	45	43571.0	4.5				mg/L	41174	Standard
Cl	35	80089.1	0.5				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2080.1	5.8				ug/L	1950	Standard
P	31	24411.3	2.1				ug/L	21156	Standard
S	34	4227.3	2.4				ug/L	3419	Standard
Sr	88	76.7	45.8				ug/L	72	Standard
C	12	110.0	45.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	56.7				mg/L	17	Standard
Dy	164	54.4	29.0				mg/L	16	Standard
Ho-1	165	26.7	71.0				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	7	Standard
I	127	7775.3	3.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.017		
Al	27	105.072		
Sc	45			
Ti	47	98.804		
V	51	100.443		
Cr	52	100.717		
Cr	53			
Mn	55	101.306		
Co	59	102.935		
Ni	60	100.726		
Cu	65	102.179		
Zn	66	101.029		
> Ge	72		107.476	
As	75	100.783		
Se	82	101.009		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:53:06
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	100.550		
Ag	107	99.844		
Cd	111	100.444		
Cd	114			
> In	115			104.815
Sn	118	99.215		
Sb	123	99.762		
Ba	135	97.616		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.358		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.255		
U	238	100.942		
> Bi	209			99.012
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:53:06
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 17:54:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76125.8	1.7				ug/L	76456	Standard
	Be	9	28.3	40.8	**0.0054**	0.010	184.7	ug/L	20	Standard
	Al	27	3772.2	25.1	**0.0119**	0.005	45.3	ug/L	1307	Standard
	Sc	45	44115.8	1.5				ug/L	41174	Standard
	Ti	47	36.0	36.4	**0.0190**	0.038	200.0	ug/L	27	Standard
	V	51	1432.6	3.3	**-0.0355**	0.004	12.4	ug/L	1434	Standard
	Cr	52	7275.4	1.9	**-0.1286**	0.011	8.9	ug/L	7733	Standard
	Cr	53	543.3	3.8	**0.0861**	0.017	20.2	ug/L	442	Standard
	Mn	55	1260.1	9.4	**0.0544**	0.014	25.4	ug/L	723	Standard
	Co	59	264.3	9.7	**0.0028**	0.003	106.4	ug/L	217	Standard
	Ni	60	263.3	2.3	**-0.0344**	0.002	7.2	ug/L	304	Standard
	Cu	65	186.3	1.1	**0.0113**	0.000	4.4	ug/L	181	Standard
	Zn	66	283.0	3.7	**0.0359**	0.009	24.2	ug/L	215	Standard
>	**Ge**	72	556594.5	0.6				ug/L	520809	Standard
	As	75	-80.7	20.9	**-0.0160**	0.013	82.1	ug/L	-52	Standard
	Se	82	15.4	35.3	**-0.0124**	0.040	323.4	ug/L	17	Standard
	Se-1	77	60.3	15.0	**-0.0241**	0.101	419.2	ug/L	56	Standard
>	**Ga**	71	31.7	63.8				mg/L	25	Standard
	Rb	85	60.0					ug/L	28	Standard
	Y	89	477190.1	1.0				ug/L	447395	Standard
>	**Rh**	103	8.3	124.9				ug/L	15	Standard
	Mo	98	226.0	18.3	**0.0476**	0.013	27.7	ug/L	113	Standard
	Ag	107	150.7	15.9	**0.0072**	0.003	44.5	ug/L	108	Standard
	Cd	111	16.6	57.3	**0.0046**	0.004	86.9	mg/L	3	Standard
	Cd	114	59.8	49.5	**0.0101**	0.005	49.3	ug/L	20	Standard
>	**In**	115	653461.3	0.4				ug/L	625728	Standard
	Sn	118	1496.7	19.9	**0.1384**	0.044	31.8	ug/L	568	Standard
	Sb	123	746.4	28.2	**0.1046**	0.039	37.1	ug/L	612	Standard
	Ba	135	171.7	17.2	**0.0577**	0.013	22.8	ug/L	21	Standard
	Ce	140	668.3	13.8				ug/L	245	Standard
>	**Tb**	159	971042.5	0.5				ug/L	950397	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	88.3	25.2	**0.0090**	0.002	27.2	ug/L	15	Standard
	Tl	205	80.0	16.5	**0.0002**	0.002	912.8	ug/L	13	Standard
	Pb	206	378.0	7.1	**0.0223**	0.005	20.2	ug/L	264	Standard
	Pb	207	334.0	19.5	**0.0182**	0.012	68.6	ug/L	222	Standard
	Pb	208	1457.7	7.9	**0.0204**	0.005	25.7	ug/L	959	Standard
	U	238	80.3	16.8	**0.0096**	0.002	17.0	ug/L	9	Standard
>	**Bi**	209	558602.1	0.7				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:56:18
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	25.0	**0.0053**	0.017	313.2	mg/L	55	Standard
K	39	28.3	44.4	**-0.0302**	0.044	144.5	mg/L	28	Standard
Ca	43	16.7	75.5	**-1.0452**	1.061	101.5	mg/L	27	Standard
Fe	54	162.7	23.0	**0.0200**	0.026	130.3	mg/L	147	Standard
Fe	57	228.3	8.3	**-0.1492**	0.054	36.5	mg/L	268	Standard
> **Sc-1**	45	44115.8	1.5				mg/L	41174	Standard
Cl	35	79992.6	1.1				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2276.8	13.7				ug/L	1950	Standard
P	31	23509.9	2.2				ug/L	21156	Standard
S	34	4122.2	2.6				ug/L	3419	Standard
Sr	88	61.7	24.8				ug/L	72	Standard
C	12	93.3	16.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	60.0	16.7				mg/L	17	Standard
Dy	164	41.6	40.0				mg/L	16	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	36.7	83.3				mg/L	7	Standard
I	127	5142.5	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.871	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:56:18
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.432
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.046
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:56:18
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144503
Sample Date/Time: Friday, July 01, 2016 17:57:14
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81064.6	1.5				ug/L	76456	Standard
	Be	9	923.4	4.6	**0.7579**	0.026	3.5	ug/L	20	Standard
	Al	27	9265006.3	1.5	**51.0345**	0.228	0.4	ug/L	1307	Standard
	Sc	45	49278.4	2.1				ug/L	41174	Standard
	Ti	47	6532.7	0.9	**18.1480**	0.376	2.1	ug/L	27	Standard
	V	51	196838.4	1.2	**21.5756**	0.486	2.3	ug/L	1434	Standard
	Cr	52	144221.5	0.4	**15.2461**	0.132	0.9	ug/L	7733	Standard
	Cr	53	17702.0	4.1	**15.5134**	0.839	5.4	ug/L	442	Standard
	Mn	55	4322666.6	0.8	**519.0669**	3.003	0.6	ug/L	723	Standard
	Co	59	73004.8	0.8	**8.6351**	0.046	0.5	ug/L	217	Standard
	Ni	60	37595.6	1.2	**16.3200**	0.066	0.4	ug/L	304	Standard
	Cu	65	29226.2	0.6	**12.9475**	0.087	0.7	ug/L	181	Standard
	Zn	66	73620.1	0.4	**54.4550**	0.675	1.2	ug/L	215	Standard
>	Ge	72	572863.4	1.2				ug/L	520809	Standard
	As	75	5889.9	1.0	**4.3827**	0.015	0.3	ug/L	-52	Standard
	Se	82	131.9	5.2	**0.8223**	0.038	4.7	ug/L	17	Standard
	Se-1	77	184.3	3.7	**1.2757**	0.064	5.0	ug/L	56	Standard
>	Ga	71	19340.7	1.8				mg/L	25	Standard
	Rb	85	221404.3	0.5				ug/L	28	Standard
	Y	89	706877.6	0.9				ug/L	447395	Standard
>	Rh	103	30.0	72.6				ug/L	15	Standard
	Mo	98	2018.2	3.9	**0.6082**	0.025	4.1	ug/L	113	Standard
	Ag	107	770.7	2.0	**0.0888**	0.002	2.2	ug/L	108	Standard
	Cd	111	2871.4	1.3	**1.1792**	0.015	1.3	mg/L	3	Standard
	Cd	114	6981.1	2.4	**1.1603**	0.029	2.5	ug/L	20	Standard
>	In	115	660500.6	0.1				ug/L	625728	Standard
	Sn	118	1633.4	19.7	**0.1562**	0.047	30.4	ug/L	568	Standard
	Sb	123	766.2	17.6	**0.1067**	0.025	23.2	ug/L	612	Standard
	Ba	135	509530.1	0.7	**221.8605**	1.691	0.8	ug/L	21	Standard
	Ce	140	1234713.5	0.5				ug/L	245	Standard
>	Tb	159	1007837.3	0.4				ug/L	950397	Standard
	Ho	165	17965.6	2.4				ug/L	7	Standard
	Tl	203	1067.0	3.3	**0.1181**	0.003	2.2	ug/L	15	Standard
	Tl	205	1001.7	2.4	**0.1159**	0.004	3.7	ug/L	13	Standard
	Pb	206	195840.9	0.6	**34.5471**	0.280	0.8	ug/L	264	Standard
	Pb	207	161774.1	0.6	**31.4180**	0.202	0.6	ug/L	222	Standard
	Pb	208	705256.5	0.4	**33.5368**	0.236	0.7	ug/L	959	Standard
	U	238	5486.7	0.6	**0.6803**	0.004	0.5	ug/L	9	Standard
>	Bi	209	552878.3	1.1				ug/L	552821	Standard

Sample ID: L1606144503
Report Date/Time: Friday, July 01, 2016 17:59:31
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	775.0	0.6	**0.6965**	0.018	2.6	mg/L	55	Standard
K	39	456.7	20.3	**1.3315**	0.288	21.7	mg/L	28	Standard
Ca	43	66.7	11.5	**2.6050**	0.520	20.0	mg/L	27	Standard
Fe	54	19066.0	1.2	**12.3984**	0.367	3.0	mg/L	147	Standard
Fe	57	5245.9	1.7	**12.6645**	0.072	0.6	mg/L	268	Standard
> **Sc-1**	45	49278.4	2.1				mg/L	41174	Standard
Cl	35	75533.8	1.8				ug/L	69550	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	12581.9	2.8				ug/L	1950	Standard
P	31	23234.5	1.4				ug/L	21156	Standard
S	34	3415.4	8.9				ug/L	3419	Standard
Sr	88	155.0	8.5				ug/L	72	Standard
C	12	606.7	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	183.3	45.4				mg/L	17	Standard
Dy	164	30531.0	0.8				mg/L	16	Standard
Ho-1	165	17965.6	2.4				mg/L	7	Standard
Er	166	16101.9	2.4				mg/L	7	Standard
I	127	47399.3	7.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.028	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.995	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144503
Report Date/Time: Friday, July 01, 2016 17:59:31
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.557
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.010
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144503
Report Date/Time: Friday, July 01, 2016 17:59:31
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144507
Sample Date/Time: Friday, July 01, 2016 18:00:25
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81719.8	0.5				ug/L	76456	Standard
	Be	9	1150.0	3.4	**0.9414**	0.038	4.0	ug/L	20	Standard
	Al	27	19122972.5	1.5	**104.5075**	1.996	1.9	ug/L	1307	Standard
	Sc	45	50161.3	3.1				ug/L	41174	Standard
	Ti	47	4290.6	1.9	**12.0513**	0.158	1.3	ug/L	27	Standard
	V	51	176002.8	1.5	**19.5347**	0.381	2.0	ug/L	1434	Standard
	Cr	52	202519.5	0.7	**22.1111**	0.164	0.7	ug/L	7733	Standard
	Cr	53	24688.4	0.5	**22.0962**	0.312	1.4	ug/L	442	Standard
	Mn	55	3882576.5	0.7	**472.5626**	1.691	0.4	ug/L	723	Standard
	Co	59	74015.0	0.7	**8.8755**	0.153	1.7	ug/L	217	Standard
	Ni	60	49898.7	0.5	**22.0097**	0.116	0.5	ug/L	304	Standard
	Cu	65	49732.2	0.6	**22.3872**	0.351	1.6	ug/L	181	Standard
	Zn	66	114291.8	0.2	**85.7937**	1.009	1.2	ug/L	215	Standard
>	Ge	72	565157.3	1.0				ug/L	520809	Standard
	As	75	14435.4	1.1	**10.8205**	0.032	0.3	ug/L	-52	Standard
	Se	82	92.4	6.7	**0.5475**	0.040	7.3	ug/L	17	Standard
	Se-1	77	153.7	16.6	**0.9738**	0.293	30.1	ug/L	56	Standard
>	Ga	71	20582.3	3.6				mg/L	25	Standard
	Rb	85	203311.7	0.8				ug/L	28	Standard
	Y	89	751032.3	1.4				ug/L	447395	Standard
>	Rh	103	46.7	44.6				ug/L	15	Standard
	Mo	98	590.9	4.0	**0.1610**	0.008	5.2	ug/L	113	Standard
	Ag	107	615.7	5.5	**0.0683**	0.004	5.9	ug/L	108	Standard
	Cd	111	2075.5	3.1	**0.8510**	0.024	2.8	mg/L	3	Standard
	Cd	114	5077.8	10.1	**0.8428**	0.077	9.1	ug/L	20	Standard
>	In	115	661094.1	1.5				ug/L	625728	Standard
	Sn	118	1358.4	19.5	**0.1160**	0.042	36.3	ug/L	568	Standard
	Sb	123	1552.9	6.2	**0.2509**	0.021	8.4	ug/L	612	Standard
	Ba	135	403285.7	0.6	**175.4541**	1.609	0.9	ug/L	21	Standard
	Ce	140	1308604.3	1.2				ug/L	245	Standard
>	Tb	159	1004791.8	1.1				ug/L	950397	Standard
	Ho	165	21420.1	0.2				ug/L	7	Standard
	Tl	203	1393.7	1.3	**0.1546**	0.002	1.2	ug/L	15	Standard
	Tl	205	1293.4	6.5	**0.1525**	0.010	6.7	ug/L	13	Standard
	Pb	206	576456.5	0.6	**101.8203**	0.799	0.8	ug/L	264	Standard
	Pb	207	487118.2	0.8	**94.7368**	0.502	0.5	ug/L	222	Standard
	Pb	208	2107804.8	0.1	**100.3728**	0.432	0.4	ug/L	959	Standard
	U	238	4448.0	2.0	**0.5517**	0.009	1.6	ug/L	9	Standard
>	Bi	209	552606.6	0.3				ug/L	552821	Standard

Sample ID: L1606144507
Report Date/Time: Friday, July 01, 2016 18:02:42
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**3.9605**	6.851	173.0	mg/L	2	Standard
Mg	24	146.7	22.7	**0.0801**	0.030	37.5	mg/L	55	Standard
K	39	540.0	0.9	**1.5696**	0.061	3.9	mg/L	28	Standard
Ca	43	96.7	3.0	**4.7655**	0.419	8.8	mg/L	27	Standard
Fe	54	17314.9	1.0	**11.0515**	0.258	2.3	mg/L	147	Standard
Fe	57	4700.7	3.1	**11.0529**	0.214	1.9	mg/L	268	Standard
> **Sc-1**	45	50161.3	3.1				mg/L	41174	Standard
Cl	35	76662.1	1.5				ug/L	69550	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	3767.1	7.9				ug/L	1950	Standard
P	31	23611.7	2.9				ug/L	21156	Standard
S	34	3682.1	3.0				ug/L	3419	Standard
Sr	88	63.3	31.9				ug/L	72	Standard
C	12	343.3	8.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	210.0	26.5				mg/L	17	Standard
Dy	164	35453.0	4.2				mg/L	16	Standard
Ho-1	165	21420.1	0.2				mg/L	7	Standard
Er	166	19218.8	0.6				mg/L	7	Standard
I	127	28176.2	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.515	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144507
Report Date/Time: Friday, July 01, 2016 18:02:42
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.652	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.961	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Pb 206 Upper, S, EEE	Pb	206
Pb 208 Upper, S, EEE	Pb	208

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144508
Sample Date/Time: Friday, July 01, 2016 18:03:37
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80067.7	0.8				ug/L	76456	Standard
	Be	9	1216.7	3.5	**1.0182**	0.042	4.1	ug/L	20	Standard
	Al	27	26828418.5	2.0	**149.6306**	1.983	1.3	ug/L	1307	Standard
	Sc	45	50947.2	1.6				ug/L	41174	Standard
	Ti	47	5410.0	2.3	**15.2604**	0.406	2.7	ug/L	27	Standard
	V	51	186134.5	1.5	**20.7252**	0.259	1.2	ug/L	1434	Standard
	Cr	52	142957.3	0.4	**15.3665**	0.097	0.6	ug/L	7733	Standard
	Cr	53	17178.1	1.5	**15.2891**	0.249	1.6	ug/L	442	Standard
	Mn	55	4606939.6	1.4	**562.2720**	9.197	1.6	ug/L	723	Standard
	Co	59	80106.5	0.8	**9.6337**	0.111	1.2	ug/L	217	Standard
	Ni	60	49331.5	0.8	**21.8172**	0.266	1.2	ug/L	304	Standard
	Cu	65	27262.5	1.2	**12.2715**	0.190	1.6	ug/L	181	Standard
	Zn	66	50487.3	0.6	**37.8990**	0.363	1.0	ug/L	215	Standard
>	Ge	72	563626.3	0.4				ug/L	520809	Standard
	As	75	5127.9	0.4	**3.8833**	0.025	0.7	ug/L	-52	Standard
	Se	82	63.4	13.7	**0.3372**	0.065	19.3	ug/L	17	Standard
	Se-1	77	127.0	8.8	**0.6885**	0.125	18.2	ug/L	56	Standard
>	Ga	71	20874.4	1.1				mg/L	25	Standard
	Rb	85	200244.6	0.8				ug/L	28	Standard
	Y	89	753887.4	1.4				ug/L	447395	Standard
>	Rh	103	23.3	24.7				ug/L	15	Standard
	Mo	98	546.6	7.3	**0.1509**	0.014	9.6	ug/L	113	Standard
	Ag	107	629.3	8.8	**0.0718**	0.007	9.6	ug/L	108	Standard
	Cd	111	214.4	9.4	**0.0877**	0.009	10.1	mg/L	3	Standard
	Cd	114	474.4	3.2	**0.0805**	0.003	3.5	ug/L	20	Standard
>	In	115	647228.9	1.0				ug/L	625728	Standard
	Sn	118	1141.7	25.6	**0.0873**	0.044	50.2	ug/L	568	Standard
	Sb	123	347.3	21.7	**0.0313**	0.014	45.5	ug/L	612	Standard
	Ba	135	428959.8	0.0	**190.6168**	1.771	0.9	ug/L	21	Standard
	Ce	140	1454827.7	0.7				ug/L	245	Standard
>	Tb	159	993072.0	0.4				ug/L	950397	Standard
	Ho	165	23219.4	1.9				ug/L	7	Standard
	Tl	203	1106.7	1.7	**0.1248**	0.002	1.9	ug/L	15	Standard
	Tl	205	985.0	10.2	**0.1162**	0.014	11.7	ug/L	13	Standard
	Pb	206	63645.1	1.2	**11.4085**	0.083	0.7	ug/L	264	Standard
	Pb	207	52266.7	0.7	**10.3105**	0.095	0.9	ug/L	222	Standard
	Pb	208	232091.9	0.7	**11.2123**	0.155	1.4	ug/L	959	Standard
	U	238	4568.7	1.3	**0.5771**	0.011	1.9	ug/L	9	Standard
>	Bi	209	542669.3	0.8				ug/L	552821	Standard

Sample ID: L1606144508
Report Date/Time: Friday, July 01, 2016 18:05:54
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.0478**	7.002	173.0	mg/L	2	Standard
Mg	24	115.0	7.5	**0.0484**	0.008	16.3	mg/L	55	Standard
K	39	411.7	8.1	**1.1441**	0.093	8.1	mg/L	28	Standard
Ca	43	256.7	13.7	**16.4263**	2.858	17.4	mg/L	27	Standard
Fe	54	19822.2	2.5	**12.4655**	0.367	2.9	mg/L	147	Standard
Fe	57	5277.6	3.2	**12.3025**	0.438	3.6	mg/L	268	Standard
Sc-1	45	50947.2	1.6				mg/L	41174	Standard
Cl	35	80549.5	0.6				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	2766.9	10.3				ug/L	1950	Standard
P	31	24564.9	2.5				ug/L	21156	Standard
S	34	4093.9	1.0				ug/L	3419	Standard
Sr	88	131.7	11.6				ug/L	72	Standard
C	12	213.3	21.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	17	Standard
Dy	164	39354.5	1.1				mg/L	16	Standard
Ho-1	165	23219.4	1.9				mg/L	7	Standard
Er	166	20997.9	3.9				mg/L	7	Standard
I	127	17520.1	0.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		104.724	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.221	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606144508
Report Date/Time: Friday, July 01, 2016 18:05:54
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.436	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.164	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144508
Report Date/Time: Friday, July 01, 2016 18:05:54
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144509
Sample Date/Time: Friday, July 01, 2016 18:06:48
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79442.8	2.3				ug/L	76456	Standard
	Be	9	943.4	17.8	**0.7923**	0.154	19.4	ug/L	20	Standard
	Al	27	24668673.1	1.9	**138.6963**	2.466	1.8	ug/L	1307	Standard
	Sc	45	50062.6	1.9				ug/L	41174	Standard
	Ti	47	4807.4	4.3	**13.5672**	0.456	3.4	ug/L	27	Standard
	V	51	136414.7	0.2	**15.1594**	0.132	0.9	ug/L	1434	Standard
	Cr	52	121344.3	1.1	**12.9168**	0.132	1.0	ug/L	7733	Standard
	Cr	53	14567.0	3.2	**12.9202**	0.381	2.9	ug/L	442	Standard
	Mn	55	3584400.6	1.7	**438.0976**	8.663	2.0	ug/L	723	Standard
	Co	59	62786.5	0.8	**7.5554**	0.042	0.6	ug/L	217	Standard
	Ni	60	42141.2	1.3	**18.6419**	0.218	1.2	ug/L	304	Standard
	Cu	65	21722.6	0.6	**9.7770**	0.072	0.7	ug/L	181	Standard
	Zn	66	42178.0	0.8	**31.6788**	0.359	1.1	ug/L	215	Standard
>	Ge	72	562814.6	1.1				ug/L	520809	Standard
	As	75	3148.0	1.0	**2.4049**	0.028	1.2	ug/L	-52	Standard
	Se	82	55.8	21.4	**0.2824**	0.087	30.8	ug/L	17	Standard
	Se-1	77	111.3	15.0	**0.5195**	0.168	32.3	ug/L	56	Standard
>	Ga	71	17067.9	0.7				mg/L	25	Standard
	Rb	85	155458.5	0.3				ug/L	28	Standard
	Y	89	728811.9	0.2				ug/L	447395	Standard
>	Rh	103	40.0	21.7				ug/L	15	Standard
	Mo	98	532.8	6.7	**0.1442**	0.009	6.6	ug/L	113	Standard
	Ag	107	508.0	7.7	**0.0547**	0.005	9.0	ug/L	108	Standard
	Cd	111	168.7	12.8	**0.0676**	0.009	13.2	mg/L	3	Standard
	Cd	114	363.5	9.1	**0.0610**	0.006	10.1	ug/L	20	Standard
>	In	115	655174.8	1.1				ug/L	625728	Standard
	Sn	118	1111.7	18.9	**0.0808**	0.031	38.4	ug/L	568	Standard
	Sb	123	305.1	22.1	**0.0226**	0.012	54.1	ug/L	612	Standard
	Ba	135	334401.7	0.7	**146.7912**	1.362	0.9	ug/L	21	Standard
	Ce	140	1157016.3	1.7				ug/L	245	Standard
>	Tb	159	995793.1	2.4				ug/L	950397	Standard
	Ho	165	19706.1	2.6				ug/L	7	Standard
	Tl	203	788.7	4.8	**0.0883**	0.005	5.9	ug/L	15	Standard
	Tl	205	705.0	5.8	**0.0799**	0.004	5.3	ug/L	13	Standard
	Pb	206	52940.3	0.9	**9.4349**	0.070	0.7	ug/L	264	Standard
	Pb	207	43455.2	0.3	**8.5217**	0.073	0.9	ug/L	222	Standard
	Pb	208	192505.6	0.3	**9.2450**	0.110	1.2	ug/L	959	Standard
	U	238	3706.1	1.6	**0.4657**	0.006	1.4	ug/L	9	Standard
>	Bi	209	545400.8	1.1				ug/L	552821	Standard

Sample ID: L1606144509
Report Date/Time: Friday, July 01, 2016 18:09:05
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	125.0	18.3	**0.0601**	0.024	39.7	mg/L	55	Standard
K	39	280.0	4.7	**0.7524**	0.056	7.4	mg/L	28	Standard
Ca	43	271.7	13.1	**17.8657**	2.769	15.5	mg/L	27	Standard
Fe	54	13853.2	3.1	**8.8410**	0.431	4.9	mg/L	147	Standard
Fe	57	3842.2	1.2	**8.9061**	0.079	0.9	mg/L	268	Standard
> **Sc-1**	45	50062.6	1.9				mg/L	41174	Standard
Cl	35	80728.5	0.4				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	3187.0	4.9				ug/L	1950	Standard
P	31	24401.3	1.1				ug/L	21156	Standard
S	34	4165.6	2.7				ug/L	3419	Standard
Sr	88	115.0	7.5				ug/L	72	Standard
C	12	200.0	13.2				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	93.3	32.7				mg/L	17	Standard
Dy	164	33342.9	1.0				mg/L	16	Standard
Ho-1	165	19706.1	2.6				mg/L	7	Standard
Er	166	17443.4	2.1				mg/L	7	Standard
I	127	18624.8	0.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.907	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.065	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144509
Report Date/Time: Friday, July 01, 2016 18:09:05
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.706	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.658	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144510
Sample Date/Time: Friday, July 01, 2016 18:10:00
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79271.9	1.9				ug/L	76456	Standard
	Be	9	960.0	8.0	**0.8081**	0.079	9.8	ug/L	20	Standard
	Al	27	12161180.8	1.6	**68.5142**	1.144	1.7	ug/L	1307	Standard
	Sc	45	48484.1	1.3				ug/L	41174	Standard
	Ti	47	2552.9	3.2	**7.1191**	0.297	4.2	ug/L	27	Standard
	V	51	134266.7	0.5	**14.8155**	0.217	1.5	ug/L	1434	Standard
	Cr	52	132714.7	0.2	**14.1160**	0.211	1.5	ug/L	7733	Standard
	Cr	53	15915.0	2.5	**14.0541**	0.174	1.2	ug/L	442	Standard
	Mn	55	2692161.6	0.9	**326.7761**	3.297	1.0	ug/L	723	Standard
	Co	59	60946.7	0.7	**7.2843**	0.165	2.3	ug/L	217	Standard
	Ni	60	37036.2	0.7	**16.2553**	0.354	2.2	ug/L	304	Standard
	Cu	65	25813.0	0.6	**11.5528**	0.129	1.1	ug/L	181	Standard
	Zn	66	59196.1	0.9	**44.2314**	0.719	1.6	ug/L	215	Standard
>	Ge	72	566689.9	1.6				ug/L	520809	Standard
	As	75	6333.8	0.9	**4.7613**	0.105	2.2	ug/L	-52	Standard
	Se	82	64.1	11.3	**0.3404**	0.060	17.7	ug/L	17	Standard
	Se-1	77	129.7	6.6	**0.7103**	0.107	15.1	ug/L	56	Standard
>	Ga	71	16113.6	0.3				mg/L	25	Standard
	Rb	85	159279.6	1.1				ug/L	28	Standard
	Y	89	713422.0	1.5				ug/L	447395	Standard
>	Rh	103	25.0	60.0				ug/L	15	Standard
	Mo	98	950.0	4.7	**0.2755**	0.014	5.2	ug/L	113	Standard
	Ag	107	562.7	10.8	**0.0618**	0.008	12.5	ug/L	108	Standard
	Cd	111	481.0	9.3	**0.1967**	0.017	8.8	mg/L	3	Standard
	Cd	114	1249.3	10.0	**0.2089**	0.020	9.7	ug/L	20	Standard
>	In	115	656399.0	0.7				ug/L	625728	Standard
	Sn	118	1210.0	13.0	**0.0951**	0.024	25.2	ug/L	568	Standard
	Sb	123	969.1	5.8	**0.1450**	0.010	7.1	ug/L	612	Standard
	Ba	135	317720.7	1.4	**139.1962**	1.098	0.8	ug/L	21	Standard
	Ce	140	1155794.9	1.0				ug/L	245	Standard
>	Tb	159	984841.2	0.9				ug/L	950397	Standard
	Ho	165	19197.2	4.8				ug/L	7	Standard
	Tl	203	845.0	15.2	**0.0944**	0.014	15.2	ug/L	15	Standard
	Tl	205	828.4	29.5	**0.0953**	0.031	32.1	ug/L	13	Standard
	Pb	206	243494.3	0.6	**43.4500**	0.261	0.6	ug/L	264	Standard
	Pb	207	203498.1	0.4	**39.9806**	0.200	0.5	ug/L	222	Standard
	Pb	208	891072.1	0.5	**42.8651**	0.261	0.6	ug/L	959	Standard
	U	238	4045.9	6.6	**0.5073**	0.034	6.6	ug/L	9	Standard
>	Bi	209	546682.6	0.7				ug/L	552821	Standard

Sample ID: L1606144510
Report Date/Time: Friday, July 01, 2016 18:12:17
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	171.7	38.0	**0.1098**	0.063	57.3	mg/L	55	Standard
K	39	336.7	16.4	**0.9661**	0.187	19.4	mg/L	28	Standard
Ca	43	73.3	23.9	**3.2010**	1.330	41.6	mg/L	27	Standard
Fe	54	13407.2	1.8	**8.8316**	0.255	2.9	mg/L	147	Standard
Fe	57	3832.2	1.2	**9.1972**	0.235	2.6	mg/L	268	Standard
Sc-1	45	48484.1	1.3				mg/L	41174	Standard
Cl	35	75838.8	2.7				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	3700.5	4.5				ug/L	1950	Standard
P	31	23035.9	5.5				ug/L	21156	Standard
S	34	3642.1	4.8				ug/L	3419	Standard
Sr	88	118.3	23.3				ug/L	72	Standard
C	12	246.7	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	39.6				mg/L	17	Standard
Dy	164	31661.9	4.0				mg/L	16	Standard
Ho-1	165	19197.2	4.8				mg/L	7	Standard
Er	166	17109.7	2.4				mg/L	7	Standard
I	127	24686.8	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.683	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.809	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144510
Report Date/Time: Friday, July 01, 2016 18:12:17
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.902	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.890	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144510
Report Date/Time: Friday, July 01, 2016 18:12:17
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144511
Sample Date/Time: Friday, July 01, 2016 18:13:11
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81056.3	1.5				ug/L	76456	Standard
	Be	9	1300.1	7.1	**1.0750**	0.063	5.9	ug/L	20	Standard
	Al	27	14087735.3	1.0	**77.6176**	0.555	0.7	ug/L	1307	Standard
	Sc	45	51079.3	2.3				ug/L	41174	Standard
	Ti	47	4050.2	1.8	**11.4166**	0.113	1.0	ug/L	27	Standard
	V	51	160903.7	0.9	**17.9135**	0.308	1.7	ug/L	1434	Standard
	Cr	52	157358.9	0.5	**17.0353**	0.148	0.9	ug/L	7733	Standard
	Cr	53	18739.9	2.5	**16.7418**	0.591	3.5	ug/L	442	Standard
	Mn	55	3983343.0	1.3	**486.7711**	7.837	1.6	ug/L	723	Standard
	Co	59	83282.3	0.9	**10.0291**	0.055	0.6	ug/L	217	Standard
	Ni	60	47596.6	1.1	**21.0730**	0.432	2.1	ug/L	304	Standard
	Cu	65	29877.1	1.6	**13.4740**	0.341	2.5	ug/L	181	Standard
	Zn	66	86877.7	1.2	**65.4276**	0.744	1.1	ug/L	215	Standard
>	Ge	72	562928.2	1.0				ug/L	520809	Standard
	As	75	5744.5	1.7	**4.3502**	0.061	1.4	ug/L	-52	Standard
	Se	82	56.4	20.2	**0.2867**	0.086	29.8	ug/L	17	Standard
	Se-1	77	130.3	3.1	**0.7263**	0.056	7.7	ug/L	56	Standard
>	Ga	71	21874.1	2.3				mg/L	25	Standard
	Rb	85	221462.0	1.4				ug/L	28	Standard
	Y	89	734796.1	0.6				ug/L	447395	Standard
>	Rh	103	31.7	24.1				ug/L	15	Standard
	Mo	98	474.5	3.0	**0.1270**	0.006	4.5	ug/L	113	Standard
	Ag	107	695.0	1.5	**0.0803**	0.002	2.7	ug/L	108	Standard
	Cd	111	1334.9	2.9	**0.5556**	0.015	2.7	mg/L	3	Standard
	Cd	114	3103.4	3.0	**0.5239**	0.011	2.1	ug/L	20	Standard
>	In	115	650267.1	1.0				ug/L	625728	Standard
	Sn	118	1253.4	12.9	**0.1031**	0.024	22.9	ug/L	568	Standard
	Sb	123	352.0	10.4	**0.0318**	0.006	20.1	ug/L	612	Standard
	Ba	135	635709.1	1.1	**281.1732**	3.369	1.2	ug/L	21	Standard
	Ce	140	1385894.9	1.0				ug/L	245	Standard
>	Tb	159	992786.2	1.1				ug/L	950397	Standard
	Ho	165	21371.7	1.6				ug/L	7	Standard
	Tl	203	1170.7	2.5	**0.1317**	0.002	1.8	ug/L	15	Standard
	Tl	205	1111.7	6.4	**0.1319**	0.009	7.1	ug/L	13	Standard
	Pb	206	547145.1	0.5	**98.1007**	0.480	0.5	ug/L	264	Standard
	Pb	207	460226.0	0.7	**90.8567**	0.149	0.2	ug/L	222	Standard
	Pb	208	1990544.8	1.0	**96.2154**	0.264	0.3	ug/L	959	Standard
	U	238	4825.8	2.0	**0.6077**	0.015	2.5	ug/L	9	Standard
>	Bi	209	544394.6	0.9				ug/L	552821	Standard

Sample ID: L1606144511
Report Date/Time: Friday, July 01, 2016 18:15:28
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**11.9370**	12.019	100.7	mg/L	2	Standard
Mg	24	136.7	11.2	**0.0686**	0.016	23.2	mg/L	55	Standard
K	39	338.3	18.4	**0.9175**	0.216	23.5	mg/L	28	Standard
Ca	43	100.0	10.0	**4.8632**	0.562	11.6	mg/L	27	Standard
Fe	54	19768.1	3.7	**12.3944**	0.190	1.5	mg/L	147	Standard
Fe	57	5529.3	1.5	**12.8981**	0.490	3.8	mg/L	268	Standard
Sc-1	45	51079.3	2.3				mg/L	41174	Standard
Cl	35	74695.0	1.8				ug/L	69550	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	3833.8	5.0				ug/L	1950	Standard
P	31	23369.7	3.5				ug/L	21156	Standard
S	34	3573.8	8.7				ug/L	3419	Standard
Sr	88	135.0	7.4				ug/L	72	Standard
C	12	190.0	24.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	156.7	38.5				mg/L	17	Standard
Dy	164	36620.1	2.1				mg/L	16	Standard
Ho-1	165	21371.7	1.6				mg/L	7	Standard
Er	166	19966.5	1.7				mg/L	7	Standard
I	127	25928.9	6.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.017	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.087	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606144511
Report Date/Time: Friday, July 01, 2016 18:15:28
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.922	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.476	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144511
Report Date/Time: Friday, July 01, 2016 18:15:28
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144512
Sample Date/Time: Friday, July 01, 2016 18:16:23
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80562.0	2.1				ug/L	76456	Standard
	Be	9	1056.7	6.8	**0.8755**	0.044	5.0	ug/L	20	Standard
	Al	27	20325479.9	1.3	**112.6812**	0.924	0.8	ug/L	1307	Standard
	Sc	45	51024.2	3.8				ug/L	41174	Standard
	Ti	47	4124.6	2.4	**11.6241**	0.214	1.8	ug/L	27	Standard
	V	51	179971.8	1.0	**20.0519**	0.111	0.6	ug/L	1434	Standard
	Cr	52	122094.3	0.7	**12.9955**	0.054	0.4	ug/L	7733	Standard
	Cr	53	14728.8	1.7	**13.0624**	0.219	1.7	ug/L	442	Standard
	Mn	55	2566086.0	1.4	**313.4230**	2.590	0.8	ug/L	723	Standard
	Co	59	71959.5	1.0	**8.6588**	0.038	0.4	ug/L	217	Standard
	Ni	60	44539.0	0.4	**19.7019**	0.201	1.0	ug/L	304	Standard
	Cu	65	25837.7	1.3	**11.6371**	0.150	1.3	ug/L	181	Standard
	Zn	66	46860.0	0.7	**35.1959**	0.095	0.3	ug/L	215	Standard
>	Ge	72	563090.4	0.6				ug/L	520809	Standard
	As	75	4748.6	0.5	**3.6029**	0.030	0.8	ug/L	-52	Standard
	Se	82	50.2	5.5	**0.2414**	0.021	8.8	ug/L	17	Standard
	Se-1	77	123.7	5.2	**0.6532**	0.062	9.5	ug/L	56	Standard
>	Ga	71	18362.8	1.6				mg/L	25	Standard
	Rb	85	168707.6	2.0				ug/L	28	Standard
	Y	89	736703.2	2.4				ug/L	447395	Standard
>	Rh	103	25.0	52.9				ug/L	15	Standard
	Mo	98	488.2	3.8	**0.1323**	0.005	4.0	ug/L	113	Standard
	Ag	107	511.0	3.1	**0.0560**	0.002	3.4	ug/L	108	Standard
	Cd	111	253.2	7.3	**0.1041**	0.008	7.3	mg/L	3	Standard
	Cd	114	604.4	7.2	**0.1026**	0.007	6.9	ug/L	20	Standard
>	In	115	646543.9	0.3				ug/L	625728	Standard
	Sn	118	893.4	21.7	**0.0501**	0.029	58.0	ug/L	568	Standard
	Sb	123	312.5	6.0	**0.0248**	0.004	14.8	ug/L	612	Standard
	Ba	135	248072.4	0.5	**110.3400**	0.769	0.7	ug/L	21	Standard
	Ce	140	1301357.0	1.2				ug/L	245	Standard
>	Tb	159	989062.4	0.6				ug/L	950397	Standard
	Ho	165	20744.2	1.0				ug/L	7	Standard
	Tl	203	836.4	5.3	**0.0943**	0.005	5.4	ug/L	15	Standard
	Tl	205	765.0	4.3	**0.0882**	0.004	4.8	ug/L	13	Standard
	Pb	206	112087.8	1.3	**20.1669**	0.259	1.3	ug/L	264	Standard
	Pb	207	94165.7	0.9	**18.6506**	0.174	0.9	ug/L	222	Standard
	Pb	208	412221.0	0.6	**19.9915**	0.120	0.6	ug/L	959	Standard
	U	238	4509.7	0.8	**0.5708**	0.005	0.8	ug/L	9	Standard
>	Bi	209	541556.4	0.0				ug/L	552821	Standard

Sample ID: L1606144512
Report Date/Time: Friday, July 01, 2016 18:18:40
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	148.3	8.5	**0.0799**	0.015	18.6	mg/L	55	Standard
K	39	408.3	5.1	**1.1318**	0.019	1.7	mg/L	28	Standard
Ca	43	105.0	12.6	**5.2550**	1.011	19.2	mg/L	27	Standard
Fe	54	15896.3	3.5	**9.9615**	0.123	1.2	mg/L	147	Standard
Fe	57	4270.6	7.1	**9.8107**	1.132	11.5	mg/L	268	Standard
> **Sc-1**	45	51024.2	3.8				mg/L	41174	Standard
Cl	35	77017.9	0.8				ug/L	69550	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	2873.6	4.9				ug/L	1950	Standard
P	31	23741.9	3.7				ug/L	21156	Standard
S	34	3792.1	2.1				ug/L	3419	Standard
Sr	88	118.3	26.8				ug/L	72	Standard
C	12	150.0	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	31.2				mg/L	17	Standard
Dy	164	35215.7	0.8				mg/L	16	Standard
Ho-1	165	20744.2	1.0				mg/L	7	Standard
Er	166	18591.4	0.2				mg/L	7	Standard
I	127	15219.3	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144512
Report Date/Time: Friday, July 01, 2016 18:18:40
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.327	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.962	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144512
Report Date/Time: Friday, July 01, 2016 18:18:40
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Friday, July 01, 2016 18:19:34
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70388.2	2.1				ug/L	76456	Standard
	Be	9	61.7	23.4	**0.0400**	0.014	34.9	ug/L	20	Standard
	Al	27	209415.6	0.4	**1.3190**	0.033	2.5	ug/L	1307	Standard
	Sc	45	39780.5	3.1				ug/L	41174	Standard
	Ti	47	1335.7	4.5	**4.0093**	0.186	4.6	ug/L	27	Standard
	V	51	9011.5	1.4	**0.8961**	0.016	1.8	ug/L	1434	Standard
	Cr	52	11942.0	0.5	**0.5043**	0.017	3.5	ug/L	7733	Standard
	Cr	53	965.0	9.9	**0.5365**	0.094	17.4	ug/L	442	Standard
	Mn	55	122738.2	0.8	**16.0893**	0.228	1.4	ug/L	723	Standard
	Co	59	1833.1	0.9	**0.2095**	0.004	1.9	ug/L	217	Standard
	Ni	60	1543.4	2.6	**0.5897**	0.025	4.3	ug/L	304	Standard
	Cu	65	2084.5	3.4	**0.9460**	0.041	4.4	ug/L	181	Standard
	Zn	66	9962.3	1.5	**7.9386**	0.062	0.8	ug/L	215	Standard
>	**Ge**	72	521595.8	0.8				ug/L	520809	Standard
	As	75	1195.1	0.9	**1.0118**	0.011	1.1	ug/L	-52	Standard
	Se	82	24.1	17.0	**0.0642**	0.032	49.3	ug/L	17	Standard
	Se-1	77	62.0	12.6	**0.0393**	0.087	222.5	ug/L	56	Standard
>	**Ga**	71	756.7	9.6				mg/L	25	Standard
	Rb	85	4860.8	2.7				ug/L	28	Standard
	Y	89	439023.6	1.3				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	289.5	25.4	**0.0755**	0.025	33.7	ug/L	113	Standard
	Ag	107	108.0	4.2	**0.0028**	0.001	24.8	ug/L	108	Standard
	Cd	111	86.5	15.6	**0.0367**	0.006	16.4	mg/L	3	Standard
	Cd	114	262.8	23.2	**0.0479**	0.011	23.5	ug/L	20	Standard
>	**In**	115	602493.1	0.2				ug/L	625728	Standard
	Sn	118	640.0	28.2	**0.0191**	0.029	153.5	ug/L	568	Standard
	Sb	123	159.0	14.4	**-0.0017**	0.005	267.5	ug/L	612	Standard
	Ba	135	10231.8	1.1	**4.8666**	0.057	1.2	ug/L	21	Standard
	Ce	140	59325.9	0.4				ug/L	245	Standard
>	**Tb**	159	901387.3	1.6				ug/L	950397	Standard
	Ho	165	468.3	19.0				ug/L	7	Standard
	Tl	203	67.3	15.2	**0.0072**	0.001	16.6	ug/L	15	Standard
	Tl	205	53.3	56.5	**-0.0027**	0.004	151.9	ug/L	13	Standard
	Pb	206	25545.5	0.9	**4.7304**	0.064	1.3	ug/L	264	Standard
	Pb	207	21325.3	0.3	**4.3424**	0.022	0.5	ug/L	222	Standard
	Pb	208	92265.3	0.3	**4.6006**	0.019	0.4	ug/L	959	Standard
	U	238	418.3	2.9	**0.0547**	0.002	3.4	ug/L	9	Standard
>	**Bi**	209	522518.3	0.5				ug/L	552821	Standard

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 18:21:51
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	0.0	**-0.0057**	0.002	29.9	mg/L	55	Standard
K	39	30.0	28.9	**-0.0116**	0.036	313.3	mg/L	28	Standard
Ca	43	28.3	50.9	**0.2419**	1.466	606.3	mg/L	27	Standard
Fe	54	830.6	5.4	**0.5751**	0.021	3.7	mg/L	147	Standard
Fe	57	475.0	3.8	**0.7085**	0.100	14.1	mg/L	268	Standard
Sc-1	45	39780.5	3.1				mg/L	41174	Standard
Cl	35	69290.7	0.6				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2023.5	4.8				ug/L	1950	Standard
P	31	8517.4	4.8				ug/L	21156	Standard
S	34	3302.0	4.3				ug/L	3419	Standard
Sr	88	81.7	7.1				ug/L	72	Standard
C	12	106.7	19.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	43.3				mg/L	17	Standard
Dy	164	723.4	6.0				mg/L	16	Standard
Ho-1	165	468.3	19.0				mg/L	7	Standard
Er	166	416.7	9.7				mg/L	7	Standard
I	127	33121.2	4.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.064	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.151	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 18:21:51
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.287
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.519
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Friday, July 01, 2016 18:22:46
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69181.0	2.1				ug/L	76456	Standard
	Be	9	58.3	32.5	**0.0378**	0.019	50.7	ug/L	20	Standard
	Al	27	441238.9	1.7	**2.8389**	0.059	2.1	ug/L	1307	Standard
	Sc	45	40783.2	1.8				ug/L	41174	Standard
	Ti	47	2459.5	1.5	**7.4205**	0.178	2.4	ug/L	27	Standard
	V	51	16925.1	1.2	**1.8483**	0.038	2.1	ug/L	1434	Standard
	Cr	52	18122.2	1.5	**1.2572**	0.011	0.8	ug/L	7733	Standard
	Cr	53	1788.4	11.0	**1.3411**	0.181	13.5	ug/L	442	Standard
	Mn	55	409161.8	0.6	**53.6291**	0.654	1.2	ug/L	723	Standard
	Co	59	5121.9	2.3	**0.6351**	0.012	1.9	ug/L	217	Standard
	Ni	60	3165.0	1.3	**1.3633**	0.033	2.4	ug/L	304	Standard
	Cu	65	6880.2	2.6	**3.2772**	0.073	2.2	ug/L	181	Standard
	Zn	66	23732.9	1.1	**19.0745**	0.015	0.1	ug/L	215	Standard
>	Ge	72	523960.3	1.1				ug/L	520809	Standard
	As	75	1016.3	2.7	**0.8637**	0.031	3.5	ug/L	-52	Standard
	Se	82	21.9	9.7	**0.0461**	0.018	39.0	ug/L	17	Standard
	Se-1	77	60.7	6.2	**0.0211**	0.052	244.3	ug/L	56	Standard
>	Ga	71	1423.4	6.3				mg/L	25	Standard
	Rb	85	14632.1	2.4				ug/L	28	Standard
	Y	89	450617.7	0.3				ug/L	447395	Standard
>	Rh	103	8.3	69.3				ug/L	15	Standard
	Mo	98	554.2	6.5	**0.1661**	0.012	7.3	ug/L	113	Standard
	Ag	107	138.0	6.6	**0.0071**	0.001	19.2	ug/L	108	Standard
	Cd	111	114.3	13.8	**0.0491**	0.007	14.2	mg/L	3	Standard
	Cd	114	241.5	19.5	**0.0440**	0.009	19.7	ug/L	20	Standard
>	In	115	603273.3	0.3				ug/L	625728	Standard
	Sn	118	566.7	21.3	**0.0071**	0.019	272.0	ug/L	568	Standard
	Sb	123	143.4	25.7	**-0.0049**	0.007	148.6	ug/L	612	Standard
	Ba	135	23042.5	1.3	**10.9682**	0.165	1.5	ug/L	21	Standard
	Ce	140	67983.9	1.1				ug/L	245	Standard
>	Tb	159	906786.3	1.4				ug/L	950397	Standard
	Ho	165	761.7	6.0				ug/L	7	Standard
	Tl	203	182.7	10.3	**0.0207**	0.002	11.4	ug/L	15	Standard
	Tl	205	140.0	10.7	**0.0088**	0.002	22.7	ug/L	13	Standard
	Pb	206	16671.2	1.2	**3.0640**	0.050	1.6	ug/L	264	Standard
	Pb	207	13875.7	1.0	**2.8020**	0.007	0.2	ug/L	222	Standard
	Pb	208	60739.5	0.7	**3.0044**	0.029	1.0	ug/L	959	Standard
	U	238	1048.7	0.5	**0.1370**	0.000	0.3	ug/L	9	Standard
>	Bi	209	523858.2	0.8				ug/L	552821	Standard

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 18:25:03
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0		**0.0047**	0.001	24.2	mg/L	55	Standard
K	39	31.7	48.2	**-0.0079**	0.061	772.0	mg/L	28	Standard
Ca	43	26.7	92.5	**0.0138**	2.317	16826.1	mg/L	27	Standard
Fe	54	1768.8	1.5	**1.3016**	0.007	0.5	mg/L	147	Standard
Fe	57	735.0	6.2	**1.4753**	0.115	7.8	mg/L	268	Standard
> **Sc-1**	45	40783.2	1.8				mg/L	41174	Standard
Cl	35	69789.0	1.4				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1950.1	1.4				ug/L	1950	Standard
P	31	8389.0	2.9				ug/L	21156	Standard
S	34	3198.7	3.3				ug/L	3419	Standard
Sr	88	73.3	17.2				ug/L	72	Standard
C	12	130.0	27.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	17	Standard
Dy	164	1484.1	12.1				mg/L	16	Standard
Ho-1	165	761.7	6.0				mg/L	7	Standard
Er	166	820.0	8.5				mg/L	7	Standard
I	127	32808.8	1.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.485	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 18:25:03
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.411
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.761
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102PS WG575057-01
Sample Date/Time: Friday, July 01, 2016 18:25:57
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68702.1	2.1				ug/L	76456	Standard
	Be	9	54558.1	0.5	**54.2325**	1.076	2.0	ug/L	20	Standard
	Al	27	435359.5	0.4	**2.8209**	0.068	2.4	ug/L	1307	Standard
	Sc	45	39865.7	0.5				ug/L	41174	Standard
	Ti	47	2435.2	3.0	**7.3862**	0.145	2.0	ug/L	27	Standard
	V	51	420388.1	0.9	**50.9256**	0.275	0.5	ug/L	1434	Standard
	Cr	52	419034.6	1.2	**50.8325**	0.081	0.2	ug/L	7733	Standard
	Cr	53	51908.8	1.8	**50.9245**	0.712	1.4	ug/L	442	Standard
	Mn	55	776755.3	1.1	**102.4737**	0.893	0.9	ug/L	723	Standard
	Co	59	378685.6	0.4	**49.3890**	0.417	0.8	ug/L	217	Standard
	Ni	60	108298.4	0.9	**52.0251**	0.585	1.1	ug/L	304	Standard
	Cu	65	113206.4	0.7	**55.3835**	0.277	0.5	ug/L	181	Standard
	Zn	66	96400.4	0.9	**78.4751**	0.327	0.4	ug/L	215	Standard
>	Ge	72	521011.3	1.1				ug/L	520809	Standard
	As	75	67285.7	0.6	**54.5295**	0.414	0.8	ug/L	-52	Standard
	Se	82	7236.2	0.6	**57.1362**	0.906	1.6	ug/L	17	Standard
	Se-1	77	4996.5	1.7	**57.7421**	0.807	1.4	ug/L	56	Standard
>	Ga	71	1458.4	7.9				mg/L	25	Standard
	Rb	85	14268.4	1.9				ug/L	28	Standard
	Y	89	451572.6	1.0				ug/L	447395	Standard
>	Rh	103	11.7	65.5				ug/L	15	Standard
	Mo	98	552.6	6.3	**0.1658**	0.011	6.4	ug/L	113	Standard
	Ag	107	351874.8	0.5	**50.8757**	0.454	0.9	ug/L	108	Standard
	Cd	111	117424.6	1.2	**52.9718**	0.394	0.7	mg/L	3	Standard
	Cd	114	288020.9	0.5	**52.4815**	0.298	0.6	ug/L	20	Standard
>	In	115	602467.1	0.7				ug/L	625728	Standard
	Sn	118	795.0	18.9	**0.0440**	0.023	53.3	ug/L	568	Standard
	Sb	123	215335.2	6.0	**43.2556**	2.906	6.7	ug/L	612	Standard
	Ba	135	125031.8	0.4	**59.6735**	0.233	0.4	ug/L	21	Standard
	Ce	140	66756.7	0.9				ug/L	245	Standard
>	Tb	159	900882.6	0.1				ug/L	950397	Standard
	Ho	165	808.4	8.4				ug/L	7	Standard
	Tl	203	420669.9	0.3	**49.6255**	0.118	0.2	ug/L	15	Standard
	Tl	205	380791.1	1.2	**50.5823**	0.852	1.7	ug/L	13	Standard
	Pb	206	285006.3	0.5	**53.2753**	0.097	0.2	ug/L	264	Standard
	Pb	207	249618.4	0.3	**51.3775**	0.277	0.5	ug/L	222	Standard
	Pb	208	1065809.7	0.5	**53.7118**	0.481	0.9	ug/L	959	Standard
	U	238	362717.7	0.5	**47.6544**	0.373	0.8	ug/L	9	Standard
>	Bi	209	521960.5	0.5				ug/L	552821	Standard

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 18:28:14
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**10.3171**	17.861	173.1	mg/L	2	Standard
Mg	24	45.0	11.1	**-0.0059**	0.006	106.3	mg/L	55	Standard
K	39	41.7	36.7	**0.0338**	0.061	179.3	mg/L	28	Standard
Ca	43	31.7	39.7	**0.5190**	1.184	228.2	mg/L	27	Standard
Fe	54	1881.8	1.4	**1.4253**	0.028	2.0	mg/L	147	Standard
Fe	57	691.7	14.6	**1.3919**	0.331	23.7	mg/L	268	Standard
> **Sc-1**	45	39865.7	0.5				mg/L	41174	Standard
Cl	35	69700.6	0.3				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	2040.1	6.7				ug/L	1950	Standard
P	31	8364.0	2.5				ug/L	21156	Standard
S	34	3095.3	6.1				ug/L	3419	Standard
Sr	88	78.3	13.3				ug/L	72	Standard
C	12	143.3	45.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	76.7	27.2				mg/L	17	Standard
Dy	164	1201.3	2.6				mg/L	16	Standard
Ho-1	165	808.4	8.4				mg/L	7	Standard
Er	166	740.0	7.2				mg/L	7	Standard
I	127	33642.3	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.859	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 18:28:14
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.283
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.418
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 18:28:14
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 18:29:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58021.1	45.4				ug/L	76456	Standard
	Be	9	6020.3	96.8	**8.3334**	6.673	80.1	ug/L	20	Standard
	Al	27	1011614.4	93.0	**9.3377**	7.369	78.9	ug/L	1307	Standard
	Sc	45	36951.3	31.6				ug/L	41174	Standard
	Ti	47	4070.2	92.8	**14.0397**	11.313	80.6	ug/L	27	Standard
	V	51	57472.3	77.9	**8.2250**	6.608	80.3	ug/L	1434	Standard
	Cr	52	54950.0	85.4	**6.7134**	5.707	85.0	ug/L	7733	Standard
	Cr	53	6442.1	89.3	**6.7802**	5.559	82.0	ug/L	442	Standard
	Mn	55	56604.6	81.4	**8.6926**	6.701	77.1	ug/L	723	Standard
	Co	59	53000.8	82.9	**8.1234**	6.317	77.8	ug/L	217	Standard
	Ni	60	12997.1	88.3	**6.9634**	5.472	78.6	ug/L	304	Standard
	Cu	65	12947.1	88.8	**7.1426**	5.586	78.2	ug/L	181	Standard
	Zn	66	7783.4	89.0	**6.9746**	5.495	78.8	ug/L	215	Standard
>	Ge	72	483616.6	27.5				ug/L	520809	Standard
	As	75	8453.5	94.9	**7.7122**	6.230	80.8	ug/L	-52	Standard
	Se	82	939.4	85.8	**8.3049**	6.310	76.0	ug/L	17	Standard
	Se-1	77	622.0	88.3	**7.4670**	6.184	82.8	ug/L	56	Standard
>	Ga	71	31.7	18.2				mg/L	25	Standard
	Rb	85	225.0	67.8				ug/L	28	Standard
	Y	89	466261.8	17.1				ug/L	447395	Standard
>	Rh	103	20.0	25.0				ug/L	15	Standard
	Mo	98	38601.8	81.6	**16.0710**	14.394	89.6	ug/L	113	Standard
	Ag	107	46584.8	78.1	**8.1335**	7.118	87.5	ug/L	108	Standard
	Cd	111	17137.6	87.9	**9.4386**	9.351	99.1	mg/L	3	Standard
	Cd	114	41205.7	85.8	**9.1450**	8.904	97.4	ug/L	20	Standard
>	In	115	568605.0	21.6				ug/L	625728	Standard
	Sn	118	45202.2	81.7	**8.7560**	8.318	95.0	ug/L	568	Standard
	Sb	123	37304.6	74.8	**8.9935**	7.626	84.8	ug/L	612	Standard
	Ba	135	15451.6	84.3	**8.9549**	8.599	96.0	ug/L	21	Standard
	Ce	140	933.4	35.7				ug/L	245	Standard
>	Tb	159	834241.1	25.5				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	59816.1	84.3	**8.9067**	8.400	94.3	ug/L	15	Standard
	Tl	205	54932.9	85.7	**9.2244**	8.777	95.1	ug/L	13	Standard
	Pb	206	36885.4	75.9	**8.5933**	7.372	85.8	ug/L	264	Standard
	Pb	207	34161.2	77.5	**8.7804**	7.649	87.1	ug/L	222	Standard
	Pb	208	153924.2	83.6	**9.7508**	9.146	93.8	ug/L	959	Standard
	U	238	54480.0	85.8	**9.0581**	8.618	95.1	ug/L	9	Standard
>	Bi	209	483651.3	25.0				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 18:31:27
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	588.3	82.1	**0.7880**	0.634	80.5	mg/L	55	Standard
K	39	178.3	67.8	**0.7306**	0.604	82.7	mg/L	28	Standard
Ca	43	45.0	40.1	**2.8887**	3.750	129.8	mg/L	27	Standard
Fe	54	989.8	78.7	**0.8883**	0.763	85.9	mg/L	147	Standard
Fe	57	551.7	36.3	**1.2806**	1.046	81.6	mg/L	268	Standard
> **Sc-1**	45	36951.3	31.6				mg/L	41174	Standard
Cl	35	32002.2	14.3				ug/L	69550	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	793.4	7.2				ug/L	1950	Standard
P	31	12486.0	48.7				ug/L	21156	Standard
S	34	1356.7	20.0				ug/L	3419	Standard
Sr	88	81.7	21.5				ug/L	72	Standard
C	12	106.7	35.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	246.7	83.3				mg/L	17	Standard
Dy	164	12.1	44.0				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	7	Standard
I	127	4540.7	35.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	16.667		
Al	27	18.675		
Sc	45			
Ti	47	14.040		
V	51	16.450		
Cr	52	13.427		
Cr	53			
Mn	55	17.385		
Co	59	16.247		
Ni	60	13.927		
Cu	65	14.285		
Zn	66	13.949		
> Ge	72		92.859	
As	75	15.424		
Se	82	16.610		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 18:31:27
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	16.071		
Ag	107	16.267		
Cd	111	18.877		
Cd	114			
> In	115			90.871
Sn	118	17.512		
Sb	123	17.987		
Ba	135	17.910		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	17.813		
Tl	205			
Pb	206			
Pb	207			
Pb	208	19.502		
U	238	18.116		
> Bi	209			87.488
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Ti	47	

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 18:31:27
Page 3

Approved: July 02, 2016

QC Std 6	V	51
QC Std 6	Cr	52
QC Std 6	Mn	55
QC Std 6	Co	59
QC Std 6	Ni	60
QC Std 6	Cu	65
QC Std 6	Zn	66
QC Std 6	As	75
QC Std 6	Se	82
QC Std 6	Mo	98
QC Std 6	Ag	107
QC Std 6	Cd	111
QC Std 6	Sb	123
QC Std 6	Ba	135
QC Std 6	Tl	203
QC Std 6	Pb	208
QC Std 6	U	238

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 18:32:22
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73071.2	5.8				ug/L	76456	Standard
	Be	9	8.3	34.6	**-0.0120**	0.003	24.3	ug/L	20	Standard
	Al	27	2066.8	22.2	**0.0025**	0.003	126.6	ug/L	1307	Standard
	Sc	45	38902.0	12.0				ug/L	41174	Standard
	Ti	47	28.7	14.1	**0.0029**	0.006	212.7	ug/L	27	Standard
	V	51	892.2	10.9	**-0.0904**	0.007	8.2	ug/L	1434	Standard
	Cr	52	3594.8	10.0	**-0.5264**	0.046	8.8	ug/L	7733	Standard
	Cr	53	233.3	24.1	**-0.1899**	0.023	11.9	ug/L	442	Standard
	Mn	55	789.0	24.3	**0.0021**	0.023	1087.1	ug/L	723	Standard
	Co	59	303.0	15.4	**0.0101**	0.007	68.9	ug/L	217	Standard
	Ni	60	205.0	9.3	**-0.0541**	0.015	27.0	ug/L	304	Standard
	Cu	65	106.0	5.3	**-0.0215**	0.011	50.6	ug/L	181	Standard
	Zn	66	184.7	6.5	**-0.0287**	0.024	81.9	ug/L	215	Standard
>	Ge	72	527063.8	18.3				ug/L	520809	Standard
	As	75	45.7	91.0	**0.0818**	0.037	44.8	ug/L	-52	Standard
	Se	82	44.8	44.7	**0.2236**	0.160	71.7	ug/L	17	Standard
	Se-1	77	43.0	11.6	**-0.1831**	0.048	26.1	ug/L	56	Standard
>	Ga	71	36.7	7.9				mg/L	25	Standard
	Rb	85	58.3	40.5				ug/L	28	Standard
	Y	89	504597.8	24.2				ug/L	447395	Standard
>	Rh	103	18.3	83.3				ug/L	15	Standard
	Mo	98	262.6	10.7	**0.0552**	0.011	19.4	ug/L	113	Standard
	Ag	107	185.3	19.2	**0.0107**	0.005	48.4	ug/L	108	Standard
	Cd	111	28.5	36.7	**0.0089**	0.004	43.7	mg/L	3	Standard
	Cd	114	81.6	56.2	**0.0129**	0.006	47.4	ug/L	20	Standard
>	In	115	700695.8	22.4				ug/L	625728	Standard
	Sn	118	6341.5	38.7	**0.7820**	0.237	30.3	ug/L	568	Standard
	Sb	123	763.9	43.6	**0.0944**	0.040	42.0	ug/L	612	Standard
	Ba	135	62.7	16.0	**0.0082**	0.003	42.5	ug/L	21	Standard
	Ce	140	145.0	79.5				ug/L	245	Standard
>	Tb	159	1042763.2	15.4				ug/L	950397	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	182.0	22.0	**0.0180**	0.002	11.1	ug/L	15	Standard
	Tl	205	148.3	9.7	**0.0076**	0.002	25.0	ug/L	13	Standard
	Pb	206	414.0	16.3	**0.0241**	0.004	18.3	ug/L	264	Standard
	Pb	207	348.0	9.0	**0.0172**	0.006	37.6	ug/L	222	Standard
	Pb	208	1430.4	10.4	**0.0153**	0.006	41.0	ug/L	959	Standard
	U	238	124.7	10.8	**0.0142**	0.002	12.8	ug/L	9	Standard
>	Bi	209	596038.7	14.4				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 18:34:39
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	26.7	65.8	**-0.0280**	0.021	73.8	mg/L	55	Standard
K	39	30.0	60.1	**-0.0132**	0.067	507.4	mg/L	28	Standard
Ca	43	28.3	10.2	**0.2774**	0.122	44.0	mg/L	27	Standard
Fe	54	104.6	43.7	**-0.0136**	0.033	242.5	mg/L	147	Standard
Fe	57	286.7	7.0	**0.1321**	0.048	36.6	mg/L	268	Standard
Sc-1	45	38902.0	12.0				mg/L	41174	Standard
Cl	35	29524.2	6.8				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	630.0	34.9				ug/L	1950	Standard
P	31	11456.4	38.3				ug/L	21156	Standard
S	34	1375.1	3.3				ug/L	3419	Standard
Sr	88	53.3	37.9				ug/L	72	Standard
C	12	66.7	48.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	77.5				mg/L	17	Standard
Dy	164	13.0	179.6				mg/L	16	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	2638.6	27.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.201	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 18:34:39
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	111.981	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.818	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sn	118	

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 18:34:39
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 18:35:35
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62174.0	2.2				ug/L	76456	Standard
	Be	9	20.0	25.0	**0.0022**	0.006	269.5	ug/L	20	Standard
	Al	27	84546.9	0.4	**0.5973**	0.011	1.9	ug/L	1307	Standard
	Sc	45	38149.7	3.1				ug/L	41174	Standard
	Ti	47	483.3	4.9	**1.4725**	0.081	5.5	ug/L	27	Standard
	V	51	4248.5	1.3	**0.3438**	0.006	1.8	ug/L	1434	Standard
	Cr	52	8109.2	1.0	**0.0820**	0.013	16.2	ug/L	7733	Standard
	Cr	53	496.7	23.7	**0.0992**	0.125	126.0	ug/L	442	Standard
	Mn	55	78567.9	0.9	**10.7900**	0.016	0.2	ug/L	723	Standard
	Co	59	1117.0	0.8	**0.1236**	0.000	0.1	ug/L	217	Standard
	Ni	60	775.4	3.9	**0.2391**	0.018	7.4	ug/L	304	Standard
	Cu	65	1369.4	4.4	**0.6302**	0.035	5.5	ug/L	181	Standard
	Zn	66	5157.9	1.7	**4.2377**	0.083	2.0	ug/L	215	Standard
>	Ge	72	496310.3	0.7				ug/L	520809	Standard
	As	75	145.9	13.8	**0.1691**	0.016	9.6	ug/L	-52	Standard
	Se	82	21.4	35.8	**0.0511**	0.064	125.1	ug/L	17	Standard
	Se-1	77	46.7	8.7	**-0.1116**	0.053	47.6	ug/L	56	Standard
>	Ga	71	255.0	16.8				mg/L	25	Standard
	Rb	85	2703.6	4.1				ug/L	28	Standard
	Y	89	417509.6	1.1				ug/L	447395	Standard
>	Rh	103	16.7	69.3				ug/L	15	Standard
	Mo	98	345.0	36.3	**0.1002**	0.045	45.1	ug/L	113	Standard
	Ag	107	125.3	22.2	**0.0061**	0.004	68.7	ug/L	108	Standard
	Cd	111	34.3	46.4	**0.0139**	0.008	54.2	mg/L	3	Standard
	Cd	114	42.7	17.1	**0.0082**	0.001	17.1	ug/L	20	Standard
>	In	115	575196.5	0.1				ug/L	625728	Standard
	Sn	118	706.7	42.9	**0.0352**	0.051	145.6	ug/L	568	Standard
	Sb	123	527.1	13.9	**0.0772**	0.015	20.0	ug/L	612	Standard
	Ba	135	4163.9	5.4	**2.0642**	0.113	5.5	ug/L	21	Standard
	Ce	140	7787.1	30.7				ug/L	245	Standard
>	Tb	159	864381.3	0.7				ug/L	950397	Standard
	Ho	165	85.0	63.6				ug/L	7	Standard
	Tl	203	83.3	41.3	**0.0096**	0.004	45.0	ug/L	15	Standard
	Tl	205	73.3	55.1	**0.0005**	0.006	1188.2	ug/L	13	Standard
	Pb	206	2545.5	9.1	**0.4551**	0.047	10.4	ug/L	264	Standard
	Pb	207	2088.8	9.3	**0.4046**	0.043	10.7	ug/L	222	Standard
	Pb	208	9232.8	9.4	**0.4395**	0.047	10.7	ug/L	959	Standard
	U	238	222.7	20.7	**0.0304**	0.006	21.2	ug/L	9	Standard
>	Bi	209	498353.7	0.7				ug/L	552821	Standard

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 18:37:52
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.2196**	9.032	173.0	mg/L	2	Standard
Mg	24	50.0	30.0	**0.0033**	0.021	637.4	mg/L	55	Standard
K	39	31.7	32.9	**-0.0007**	0.041	5467.5	mg/L	28	Standard
Ca	43	28.3	50.9	**0.3254**	1.410	433.3	mg/L	27	Standard
Fe	54	321.0	6.6	**0.1731**	0.021	12.0	mg/L	147	Standard
Fe	57	343.3	20.8	**0.3318**	0.218	65.6	mg/L	268	Standard
> **Sc-1**	45	38149.7	3.1				mg/L	41174	Standard
Cl	35	66614.8	2.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1683.4	14.0				ug/L	1950	Standard
P	31	6868.2	3.4				ug/L	21156	Standard
S	34	2993.6	2.7				ug/L	3419	Standard
Sr	88	78.3	16.1				ug/L	72	Standard
C	12	60.0					mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	190.0	34.5				mg/L	17	Standard
Dy	164	136.6	41.3				mg/L	16	Standard
Ho-1	165	85.0	63.6				mg/L	7	Standard
Er	166	140.0	70.3				mg/L	7	Standard
I	127	27162.7	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.320	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.296	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 18:37:52
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.924
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.147
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Friday, July 01, 2016 18:38:46
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63245.1	2.3				ug/L	76456	Standard
	Be	9	45.0	29.4	**0.0289**	0.015	52.5	ug/L	20	Standard
	Al	27	154217.6	1.4	**1.0792**	0.028	2.6	ug/L	1307	Standard
	Sc	45	38011.0	1.7				ug/L	41174	Standard
	Ti	47	1647.1	2.7	**5.2249**	0.166	3.2	ug/L	27	Standard
	V	51	10217.6	1.1	**1.1067**	0.009	0.8	ug/L	1434	Standard
	Cr	52	13566.7	1.7	**0.7914**	0.021	2.7	ug/L	7733	Standard
	Cr	53	1203.4	4.0	**0.8334**	0.047	5.6	ug/L	442	Standard
	Mn	55	179485.2	0.5	**24.7976**	0.092	0.4	ug/L	723	Standard
	Co	59	2042.5	2.9	**0.2506**	0.009	3.7	ug/L	217	Standard
	Ni	60	1701.1	1.2	**0.7078**	0.006	0.9	ug/L	304	Standard
	Cu	65	2602.9	0.6	**1.2654**	0.012	0.9	ug/L	181	Standard
	Zn	66	13566.1	2.3	**11.4481**	0.299	2.6	ug/L	215	Standard
>	Ge	72	495954.1	0.5				ug/L	520809	Standard
	As	75	526.1	8.4	**0.4926**	0.036	7.4	ug/L	-52	Standard
	Se	82	19.2	20.2	**0.0327**	0.031	96.0	ug/L	17	Standard
	Se-1	77	60.7	19.3	**0.0602**	0.141	233.6	ug/L	56	Standard
>	Ga	71	858.4	5.0				mg/L	25	Standard
	Rb	85	6271.3	6.6				ug/L	28	Standard
	Y	89	419752.0	1.1				ug/L	447395	Standard
>	Rh	103	16.7	45.8				ug/L	15	Standard
	Mo	98	384.6	7.0	**0.1144**	0.010	8.4	ug/L	113	Standard
	Ag	107	109.3	5.4	**0.0037**	0.001	23.4	ug/L	108	Standard
	Cd	111	94.6	7.9	**0.0424**	0.003	8.2	mg/L	3	Standard
	Cd	114	251.8	5.8	**0.0481**	0.003	5.6	ug/L	20	Standard
>	In	115	575203.1	0.2				ug/L	625728	Standard
	Sn	118	680.0	22.3	**0.0307**	0.025	82.8	ug/L	568	Standard
	Sb	123	333.6	22.9	**0.0365**	0.016	43.9	ug/L	612	Standard
	Ba	135	10023.6	1.9	**4.9942**	0.091	1.8	ug/L	21	Standard
	Ce	140	48280.1	1.0				ug/L	245	Standard
>	Tb	159	860542.4	0.9				ug/L	950397	Standard
	Ho	165	373.3	17.4				ug/L	7	Standard
	Tl	203	98.7	6.5	**0.0114**	0.001	7.5	ug/L	15	Standard
	Tl	205	111.7	22.1	**0.0057**	0.003	56.6	ug/L	13	Standard
	Pb	206	31345.7	1.0	**6.0875**	0.078	1.3	ug/L	264	Standard
	Pb	207	25979.9	0.2	**5.5497**	0.058	1.0	ug/L	222	Standard
	Pb	208	113055.9	0.8	**5.9143**	0.107	1.8	ug/L	959	Standard
	U	238	480.3	2.8	**0.0657**	0.001	2.2	ug/L	9	Standard
>	Bi	209	499251.2	1.0				ug/L	552821	Standard

Sample ID: L1606145103
Report Date/Time: Friday, July 01, 2016 18:41:03
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	6.2	**-0.0011**	0.005	417.9	mg/L	55	Standard
K	39	40.0	50.0	**0.0355**	0.084	236.7	mg/L	28	Standard
Ca	43	20.0	43.3	**-0.4832**	0.857	177.3	mg/L	27	Standard
Fe	54	979.0	3.0	**0.7328**	0.021	2.8	mg/L	147	Standard
Fe	57	456.7	4.4	**0.7168**	0.091	12.6	mg/L	268	Standard
Sc-1	45	38011.0	1.7				mg/L	41174	Standard
Cl	35	67610.5	0.8				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1716.8	12.9				ug/L	1950	Standard
P	31	8008.8	5.2				ug/L	21156	Standard
S	34	2928.6	6.6				ug/L	3419	Standard
Sr	88	71.7	26.4				ug/L	72	Standard
C	12	106.7	54.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	68.6				mg/L	17	Standard
Dy	164	644.2	14.1				mg/L	16	Standard
Ho-1	165	373.3	17.4				mg/L	7	Standard
Er	166	400.0	22.2				mg/L	7	Standard
I	127	30482.3	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.721	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.228	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145103
Report Date/Time: Friday, July 01, 2016 18:41:03
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.925
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.310
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Friday, July 01, 2016 18:41:58
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63385.7	2.2				ug/L	76456	Standard
	Be	9	50.0	26.5	**0.0338**	0.013	38.3	ug/L	20	Standard
	Al	27	725235.3	1.5	**5.1021**	0.166	3.3	ug/L	1307	Standard
	Sc	45	39148.9	2.8				ug/L	41174	Standard
	Ti	47	1767.4	1.7	**5.5568**	0.163	2.9	ug/L	27	Standard
	V	51	9435.8	2.3	**0.9951**	0.038	3.8	ug/L	1434	Standard
	Cr	52	13141.4	0.9	**0.7193**	0.019	2.6	ug/L	7733	Standard
	Cr	53	1133.4	1.8	**0.7491**	0.025	3.3	ug/L	442	Standard
	Mn	55	184948.0	0.3	**25.3023**	0.378	1.5	ug/L	723	Standard
	Co	59	2891.6	3.9	**0.3629**	0.009	2.4	ug/L	217	Standard
	Ni	60	1981.8	1.1	**0.8399**	0.007	0.8	ug/L	304	Standard
	Cu	65	2972.3	0.4	**1.4404**	0.025	1.7	ug/L	181	Standard
	Zn	66	14124.9	1.1	**11.8061**	0.091	0.8	ug/L	215	Standard
>	Ge	72	500981.4	1.8				ug/L	520809	Standard
	As	75	525.3	4.0	**0.4878**	0.024	5.0	ug/L	-52	Standard
	Se	82	27.2	11.1	**0.0974**	0.029	29.5	ug/L	17	Standard
	Se-1	77	60.0	10.4	**0.0461**	0.088	191.5	ug/L	56	Standard
>	Ga	71	815.0	2.8				mg/L	25	Standard
	Rb	85	6224.6	2.3				ug/L	28	Standard
	Y	89	425374.4	1.5				ug/L	447395	Standard
>	Rh	103	25.0	40.0				ug/L	15	Standard
	Mo	98	520.6	8.2	**0.1605**	0.013	8.3	ug/L	113	Standard
	Ag	107	111.7	7.6	**0.0038**	0.001	37.5	ug/L	108	Standard
	Cd	111	92.7	8.2	**0.0408**	0.003	7.6	mg/L	3	Standard
	Cd	114	200.3	11.6	**0.0377**	0.005	12.6	ug/L	20	Standard
>	In	115	583569.6	1.1				ug/L	625728	Standard
	Sn	118	673.3	18.0	**0.0279**	0.019	69.1	ug/L	568	Standard
	Sb	123	316.8	22.4	**0.0319**	0.014	44.3	ug/L	612	Standard
	Ba	135	10430.3	1.6	**5.1226**	0.027	0.5	ug/L	21	Standard
	Ce	140	51980.7	2.3				ug/L	245	Standard
>	Tb	159	866344.8	1.0				ug/L	950397	Standard
	Ho	165	438.3	11.9				ug/L	7	Standard
	Tl	203	128.0	6.4	**0.0149**	0.001	5.7	ug/L	15	Standard
	Tl	205	108.3	13.3	**0.0051**	0.002	35.3	ug/L	13	Standard
	Pb	206	26433.4	1.2	**5.0710**	0.132	2.6	ug/L	264	Standard
	Pb	207	22121.5	0.6	**4.6673**	0.113	2.4	ug/L	222	Standard
	Pb	208	95760.1	0.8	**4.9468**	0.074	1.5	ug/L	959	Standard
	U	238	579.3	5.3	**0.0785**	0.005	6.6	ug/L	9	Standard
>	Bi	209	504799.5	1.9				ug/L	552821	Standard

Sample ID: L1606145104
Report Date/Time: Friday, July 01, 2016 18:44:14
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.2809**	9.138	173.0	mg/L	2	Standard
Mg	24	46.7	27.0	**-0.0030**	0.014	461.6	mg/L	55	Standard
K	39	46.7	6.2	**0.0571**	0.014	24.3	mg/L	28	Standard
Ca	43	46.7	16.4	**2.0216**	0.845	41.8	mg/L	27	Standard
Fe	54	948.7	5.1	**0.6833**	0.021	3.0	mg/L	147	Standard
Fe	57	496.7	2.9	**0.8012**	0.035	4.4	mg/L	268	Standard
> **Sc-1**	45	39148.9	2.8				mg/L	41174	Standard
Cl	35	69866.8	2.4				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1733.4	3.8				ug/L	1950	Standard
P	31	8088.8	1.5				ug/L	21156	Standard
S	34	3277.0	4.5				ug/L	3419	Standard
Sr	88	95.0	27.9				ug/L	72	Standard
C	12	93.3	49.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	709.7	12.9				mg/L	16	Standard
Ho-1	165	438.3	11.9				mg/L	7	Standard
Er	166	493.3	16.5				mg/L	7	Standard
I	127	31300.6	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.193	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145104
Report Date/Time: Friday, July 01, 2016 18:44:14
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.263
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.313
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Friday, July 01, 2016 18:45:09
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64614.2	2.4				ug/L	76456	Standard
	Be	9	185.0	11.8	**0.1761**	0.027	15.5	ug/L	20	Standard
	Al	27	102955.3	1.3	**0.7016**	0.016	2.3	ug/L	1307	Standard
	Sc	45	38894.9	1.6				ug/L	41174	Standard
	Ti	47	5095.2	2.9	**16.0563**	0.595	3.7	ug/L	27	Standard
	V	51	12093.5	2.4	**1.3198**	0.050	3.8	ug/L	1434	Standard
	Cr	52	18515.6	1.7	**1.3928**	0.062	4.4	ug/L	7733	Standard
	Cr	53	1865.1	14.6	**1.4862**	0.264	17.8	ug/L	442	Standard
	Mn	55	32921.4	0.8	**4.3867**	0.071	1.6	ug/L	723	Standard
	Co	59	1608.8	2.8	**0.1873**	0.008	4.3	ug/L	217	Standard
	Ni	60	1860.4	4.4	**0.7722**	0.043	5.6	ug/L	304	Standard
	Cu	65	2193.8	2.2	**1.0354**	0.028	2.7	ug/L	181	Standard
	Zn	66	9716.8	1.5	**8.0047**	0.192	2.4	ug/L	215	Standard
>	**Ge**	72	504722.0	1.0				ug/L	520809	Standard
	As	75	1470.5	3.8	**1.2746**	0.057	4.4	ug/L	-52	Standard
	Se	82	28.8	14.7	**0.1088**	0.036	32.9	ug/L	17	Standard
	Se-1	77	55.7	13.5	**-0.0132**	0.085	641.5	ug/L	56	Standard
>	**Ga**	71	1173.4	4.0				mg/L	25	Standard
	Rb	85	5657.7	5.6				ug/L	28	Standard
	Y	89	430091.6	2.7				ug/L	447395	Standard
>	**Rh**	103	10.0	100.0				ug/L	15	Standard
	Mo	98	330.9	6.7	**0.0921**	0.006	6.8	ug/L	113	Standard
	Ag	107	127.3	16.8	**0.0060**	0.003	57.0	ug/L	108	Standard
	Cd	111	132.1	1.6	**0.0585**	0.002	2.8	mg/L	3	Standard
	Cd	114	337.6	10.3	**0.0629**	0.007	11.3	ug/L	20	Standard
>	**In**	115	589920.6	1.4				ug/L	625728	Standard
	Sn	118	773.4	25.8	**0.0430**	0.031	72.7	ug/L	568	Standard
	Sb	123	374.2	12.0	**0.0430**	0.008	19.0	ug/L	612	Standard
	Ba	135	10208.8	2.5	**4.9590**	0.061	1.2	ug/L	21	Standard
	Ce	140	28101.1	3.0				ug/L	245	Standard
>	**Tb**	159	866375.5	1.2				ug/L	950397	Standard
	Ho	165	575.0	13.6				ug/L	7	Standard
	Tl	203	486.0	6.3	**0.0582**	0.003	5.7	ug/L	15	Standard
	Tl	205	386.7	8.6	**0.0431**	0.004	8.7	ug/L	13	Standard
	Pb	206	15320.4	2.2	**2.9057**	0.025	0.9	ug/L	264	Standard
	Pb	207	12702.3	2.1	**2.6467**	0.028	1.1	ug/L	222	Standard
	Pb	208	55482.0	1.8	**2.8316**	0.013	0.4	ug/L	959	Standard
	U	238	430.7	1.5	**0.0580**	0.000	0.2	ug/L	9	Standard
>	**Bi**	209	507193.8	1.5				ug/L	552821	Standard

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 18:47:26
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.2063**	9.009	173.0	mg/L	2	Standard
Mg	24	56.7	27.0	**0.0097**	0.018	185.7	mg/L	55	Standard
K	39	65.0	33.5	**0.1320**	0.085	64.4	mg/L	28	Standard
Ca	43	21.7	13.3	**-0.3705**	0.255	68.8	mg/L	27	Standard
Fe	54	1363.7	6.4	**1.0335**	0.073	7.1	mg/L	147	Standard
Fe	57	556.7	6.9	**1.0056**	0.095	9.5	mg/L	268	Standard
Sc-1	45	38894.9	1.6				mg/L	41174	Standard
Cl	35	69609.5	0.8				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	1780.1	1.7				ug/L	1950	Standard
P	31	8205.6	2.3				ug/L	21156	Standard
S	34	3335.4	2.7				ug/L	3419	Standard
Sr	88	61.7	20.4				ug/L	72	Standard
C	12	93.3	6.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	17	Standard
Dy	164	880.2	8.3				mg/L	16	Standard
Ho-1	165	575.0	13.6				mg/L	7	Standard
Er	166	553.3	3.8				mg/L	7	Standard
I	127	31464.3	3.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		84.512	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.911	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 18:47:26
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.277
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.747
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145106 WG574521-02
Sample Date/Time: Friday, July 01, 2016 18:48:21
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64025.1	3.2				ug/L	76456	Standard
	Be	9	150.0	10.0	**0.1401**	0.015	10.9	ug/L	20	Standard
	Al	27	373954.4	3.8	**2.6005**	0.138	5.3	ug/L	1307	Standard
	Sc	45	39992.7	0.8				ug/L	41174	Standard
	Ti	47	2911.6	0.9	**9.0743**	0.125	1.4	ug/L	27	Standard
	V	51	51458.1	1.3	**6.2169**	0.098	1.6	ug/L	1434	Standard
	Cr	52	21030.6	1.9	**1.6951**	0.060	3.5	ug/L	7733	Standard
	Cr	53	2078.5	6.6	**1.6910**	0.147	8.7	ug/L	442	Standard
	Mn	55	214722.6	3.4	**28.9695**	1.071	3.7	ug/L	723	Standard
	Co	59	3170.7	6.3	**0.3948**	0.028	7.2	ug/L	217	Standard
	Ni	60	4965.8	2.8	**2.2998**	0.080	3.5	ug/L	304	Standard
	Cu	65	11632.1	2.0	**5.7677**	0.126	2.2	ug/L	181	Standard
	Zn	66	12643.6	1.6	**10.3959**	0.197	1.9	ug/L	215	Standard
>	**Ge**	72	508214.5	0.5				ug/L	520809	Standard
	As	75	1760.7	0.9	**1.5067**	0.007	0.5	ug/L	-52	Standard
	Se	82	70.2	4.5	**0.4430**	0.026	5.8	ug/L	17	Standard
	Se-1	77	108.3	3.0	**0.6142**	0.044	7.2	ug/L	56	Standard
>	**Ga**	71	1403.4	6.8				mg/L	25	Standard
	Rb	85	5152.5	5.6				ug/L	28	Standard
	Y	89	465204.1	0.9				ug/L	447395	Standard
>	**Rh**	103	8.3	34.6				ug/L	15	Standard
	Mo	98	986.2	8.1	**0.3241**	0.024	7.4	ug/L	113	Standard
	Ag	107	197.7	29.4	**0.0165**	0.008	50.2	ug/L	108	Standard
	Cd	111	516.3	5.7	**0.2371**	0.011	4.7	mg/L	3	Standard
	Cd	114	1344.3	1.8	**0.2519**	0.006	2.5	ug/L	20	Standard
>	**In**	115	585874.6	1.3				ug/L	625728	Standard
	Sn	118	588.3	39.7	**0.0131**	0.038	286.1	ug/L	568	Standard
	Sb	123	350.0	28.7	**0.0385**	0.020	51.5	ug/L	612	Standard
	Ba	135	28617.3	1.6	**14.0306**	0.052	0.4	ug/L	21	Standard
	Ce	140	147578.6	1.0				ug/L	245	Standard
>	**Tb**	159	879044.3	0.3				ug/L	950397	Standard
	Ho	165	3460.4	5.6				ug/L	7	Standard
	Tl	203	284.7	28.0	**0.0338**	0.010	29.0	ug/L	15	Standard
	Tl	205	251.7	41.0	**0.0246**	0.014	57.8	ug/L	13	Standard
	Pb	206	17853.2	2.3	**3.3893**	0.091	2.7	ug/L	264	Standard
	Pb	207	14882.6	2.2	**3.1053**	0.081	2.6	ug/L	222	Standard
	Pb	208	65337.9	2.2	**3.3392**	0.088	2.6	ug/L	959	Standard
	U	238	2254.5	5.6	**0.3042**	0.018	6.0	ug/L	9	Standard
>	**Bi**	209	507833.7	0.4				ug/L	552821	Standard

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 18:50:37
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.0936**	8.814	173.0	mg/L	2	Standard
Mg	24	113.3	21.8	**0.0760**	0.029	37.9	mg/L	55	Standard
K	39	38.3	27.2	**0.0199**	0.040	200.6	mg/L	28	Standard
Ca	43	53.3	27.1	**2.5349**	1.339	52.8	mg/L	27	Standard
Fe	54	2059.6	7.3	**1.5638**	0.117	7.5	mg/L	147	Standard
Fe	57	870.0	4.0	**1.9479**	0.099	5.1	mg/L	268	Standard
> **Sc-1**	45	39992.7	0.8				mg/L	41174	Standard
Cl	35	70901.6	2.0				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2260.2	4.2				ug/L	1950	Standard
P	31	8212.2	3.0				ug/L	21156	Standard
S	34	3600.4	1.9				ug/L	3419	Standard
Sr	88	90.0	9.6				ug/L	72	Standard
C	12	176.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	40.0				mg/L	17	Standard
Dy	164	5100.9	5.6				mg/L	16	Standard
Ho-1	165	3460.4	5.6				mg/L	7	Standard
Er	166	3200.3	6.8				mg/L	7	Standard
I	127	34541.0	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.741	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.582	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 18:50:37
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.631
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.862
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Friday, July 01, 2016 18:51:32
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64661.0	1.8				ug/L	76456	Standard
	Be	9	435.0	25.2	**0.4383**	0.108	24.7	ug/L	20	Standard
	Al	27	688124.2	2.3	**4.7442**	0.162	3.4	ug/L	1307	Standard
	Sc	45	39658.5	2.4				ug/L	41174	Standard
	Ti	47	13864.7	2.7	**43.2019**	1.047	2.4	ug/L	27	Standard
	V	51	37809.2	1.4	**4.4801**	0.052	1.2	ug/L	1434	Standard
	Cr	52	41323.6	2.8	**4.2278**	0.133	3.1	ug/L	7733	Standard
	Cr	53	4789.1	2.3	**4.4030**	0.102	2.3	ug/L	442	Standard
	Mn	55	173827.6	1.4	**23.2563**	0.280	1.2	ug/L	723	Standard
	Co	59	5908.8	1.9	**0.7552**	0.015	2.0	ug/L	217	Standard
	Ni	60	5550.3	1.2	**2.5679**	0.031	1.2	ug/L	304	Standard
	Cu	65	7217.7	3.4	**3.5237**	0.120	3.4	ug/L	181	Standard
	Zn	66	24798.3	1.6	**20.4085**	0.308	1.5	ug/L	215	Standard
>	Ge	72	512004.2	0.3				ug/L	520809	Standard
	As	75	8113.7	1.3	**6.7304**	0.082	1.2	ug/L	-52	Standard
	Se	82	47.8	17.9	**0.2581**	0.069	26.7	ug/L	17	Standard
	Se-1	77	78.3	7.5	**0.2474**	0.068	27.6	ug/L	56	Standard
>	Ga	71	2850.3	1.2				mg/L	25	Standard
	Rb	85	22646.9	3.8				ug/L	28	Standard
	Y	89	456860.0	1.6				ug/L	447395	Standard
>	Rh	103	15.0	57.7				ug/L	15	Standard
	Mo	98	1709.2	2.3	**0.5713**	0.010	1.8	ug/L	113	Standard
	Ag	107	176.7	8.5	**0.0131**	0.002	17.8	ug/L	108	Standard
	Cd	111	527.4	1.5	**0.2390**	0.005	2.0	mg/L	3	Standard
	Cd	114	1273.9	8.3	**0.2354**	0.018	7.7	ug/L	20	Standard
>	In	115	594063.6	0.5				ug/L	625728	Standard
	Sn	118	725.0	18.7	**0.0344**	0.022	63.4	ug/L	568	Standard
	Sb	123	399.2	21.2	**0.0476**	0.017	35.7	ug/L	612	Standard
	Ba	135	25921.5	1.4	**12.5319**	0.140	1.1	ug/L	21	Standard
	Ce	140	84609.0	2.8				ug/L	245	Standard
>	Tb	159	884122.7	1.5				ug/L	950397	Standard
	Ho	165	1811.8	3.2				ug/L	7	Standard
	Tl	203	2382.2	2.0	**0.2851**	0.004	1.5	ug/L	15	Standard
	Tl	205	2155.2	0.8	**0.2815**	0.002	0.8	ug/L	13	Standard
	Pb	206	34780.5	0.5	**6.5761**	0.037	0.6	ug/L	264	Standard
	Pb	207	29105.6	0.4	**6.0542**	0.048	0.8	ug/L	222	Standard
	Pb	208	126449.0	1.6	**6.4404**	0.086	1.3	ug/L	959	Standard
	U	238	1711.1	3.8	**0.2285**	0.010	4.3	ug/L	9	Standard
>	Bi	209	513045.7	0.5				ug/L	552821	Standard

Sample ID: L1606145107
Report Date/Time: Friday, July 01, 2016 18:53:49
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	66.7	21.7	**0.0208**	0.018	87.5	mg/L	55	Standard
K	39	66.7	33.8	**0.1333**	0.086	64.5	mg/L	28	Standard
Ca	43	33.3	8.7	**0.6944**	0.305	44.0	mg/L	27	Standard
Fe	54	5014.4	0.7	**3.9857**	0.129	3.2	mg/L	147	Standard
Fe	57	1586.7	5.6	**4.2576**	0.247	5.8	mg/L	268	Standard
> **Sc-1**	45	39658.5	2.4				mg/L	41174	Standard
Cl	35	72080.4	1.0				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	1970.1	9.5				ug/L	1950	Standard
P	31	8810.9	5.8				ug/L	21156	Standard
S	34	3717.1	6.6				ug/L	3419	Standard
Sr	88	71.7	22.4				ug/L	72	Standard
C	12	120.0	16.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	13.3				mg/L	17	Standard
Dy	164	2375.7	6.5				mg/L	16	Standard
Ho-1	165	1811.8	3.2				mg/L	7	Standard
Er	166	1693.4	3.3				mg/L	7	Standard
I	127	32022.1	0.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.573	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.309	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145107
Report Date/Time: Friday, July 01, 2016 18:53:49
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.940
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.805
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Friday, July 01, 2016 18:54:44
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65516.4	2.1				ug/L	76456	Standard
	Be	9	508.3	16.0	**0.5110**	0.092	17.9	ug/L	20	Standard
	Al	27	800380.4	1.8	**5.4489**	0.215	3.9	ug/L	1307	Standard
	Sc	45	41087.3	0.8				ug/L	41174	Standard
	Ti	47	14067.5	1.7	**43.1737**	0.244	0.6	ug/L	27	Standard
	V	51	35953.7	1.5	**4.1835**	0.016	0.4	ug/L	1434	Standard
	Cr	52	58594.1	1.0	**6.2897**	0.017	0.3	ug/L	7733	Standard
	Cr	53	6973.3	2.0	**6.4961**	0.144	2.2	ug/L	442	Standard
	Mn	55	180922.6	1.7	**23.8431**	0.175	0.7	ug/L	723	Standard
	Co	59	6047.5	0.4	**0.7616**	0.011	1.5	ug/L	217	Standard
	Ni	60	5785.8	2.5	**2.6404**	0.042	1.6	ug/L	304	Standard
	Cu	65	5630.4	0.4	**2.6905**	0.031	1.2	ug/L	181	Standard
	Zn	66	23391.7	1.5	**18.9480**	0.094	0.5	ug/L	215	Standard
>	Ge	72	519833.8	1.1				ug/L	520809	Standard
	As	75	6871.0	0.9	**5.6213**	0.013	0.2	ug/L	-52	Standard
	Se	82	36.9	12.8	**0.1662**	0.040	24.4	ug/L	17	Standard
	Se-1	77	75.7	12.8	**0.2017**	0.109	53.9	ug/L	56	Standard
>	Ga	71	2690.2	10.4				mg/L	25	Standard
	Rb	85	22987.4	0.8				ug/L	28	Standard
	Y	89	454979.6	1.6				ug/L	447395	Standard
>	Rh	103	13.3	78.1				ug/L	15	Standard
	Mo	98	1493.9	2.8	**0.4956**	0.012	2.5	ug/L	113	Standard
	Ag	107	175.0	7.7	**0.0128**	0.002	15.5	ug/L	108	Standard
	Cd	111	498.3	4.3	**0.2253**	0.011	4.8	mg/L	3	Standard
	Cd	114	1246.2	5.5	**0.2300**	0.012	5.2	ug/L	20	Standard
>	In	115	594885.0	1.0				ug/L	625728	Standard
	Sn	118	763.4	27.5	**0.0404**	0.033	82.5	ug/L	568	Standard
	Sb	123	358.6	20.7	**0.0392**	0.014	36.9	ug/L	612	Standard
	Ba	135	27274.9	0.9	**13.1693**	0.072	0.5	ug/L	21	Standard
	Ce	140	89319.2	2.1				ug/L	245	Standard
>	Tb	159	880456.6	1.2				ug/L	950397	Standard
	Ho	165	2008.5	5.9				ug/L	7	Standard
	Tl	203	2224.8	1.1	**0.2667**	0.002	0.9	ug/L	15	Standard
	Tl	205	2000.1	8.4	**0.2612**	0.026	9.8	ug/L	13	Standard
	Pb	206	30072.5	0.9	**5.6895**	0.126	2.2	ug/L	264	Standard
	Pb	207	25200.3	0.2	**5.2438**	0.069	1.3	ug/L	222	Standard
	Pb	208	108593.2	0.7	**5.5329**	0.068	1.2	ug/L	959	Standard
	U	238	1657.1	2.7	**0.2215**	0.003	1.4	ug/L	9	Standard
>	Bi	209	512295.4	1.3				ug/L	552821	Standard

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 18:57:00
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	51.4	**0.0236**	0.043	182.4	mg/L	55	Standard
K	39	88.3	14.2	**0.2082**	0.048	23.2	mg/L	28	Standard
Ca	43	35.0	42.9	**0.7276**	1.340	184.1	mg/L	27	Standard
Fe	54	5032.2	2.8	**3.8559**	0.118	3.1	mg/L	147	Standard
Fe	57	1495.1	12.3	**3.7984**	0.557	14.7	mg/L	268	Standard
> **Sc-1**	45	41087.3	0.8				mg/L	41174	Standard
Cl	35	70479.6	1.8				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1836.8	12.0				ug/L	1950	Standard
P	31	8665.8	3.6				ug/L	21156	Standard
S	34	3460.4	4.7				ug/L	3419	Standard
Sr	88	80.0	18.8				ug/L	72	Standard
C	12	90.0	22.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	17	Standard
Dy	164	2628.5	8.2				mg/L	16	Standard
Ho-1	165	2008.5	5.9				mg/L	7	Standard
Er	166	1706.8	7.3				mg/L	7	Standard
I	127	30609.2	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.692	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.813	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 18:57:00
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.071
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145109S WG574521-07
Sample Date/Time: Friday, July 01, 2016 18:57:55
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66169.2	2.4				ug/L	76456	Standard
	Be	9	2845.3	1.4	**2.9179**	0.070	2.4	ug/L	20	Standard
	Al	27	402052.1	1.7	**2.7039**	0.037	1.4	ug/L	1307	Standard
	Sc	45	40838.3	0.3				ug/L	41174	Standard
	Ti	47	3598.8	1.2	**10.9719**	0.146	1.3	ug/L	27	Standard
	V	51	79956.8	0.6	**9.5376**	0.034	0.4	ug/L	1434	Standard
	Cr	52	43849.7	0.5	**4.4576**	0.028	0.6	ug/L	7733	Standard
	Cr	53	4982.5	0.8	**4.5178**	0.059	1.3	ug/L	442	Standard
	Mn	55	232874.6	0.3	**30.6911**	0.183	0.6	ug/L	723	Standard
	Co	59	22573.1	0.9	**2.9200**	0.017	0.6	ug/L	217	Standard
	Ni	60	11202.5	1.2	**5.2509**	0.054	1.0	ug/L	304	Standard
	Cu	65	17763.4	0.2	**8.6391**	0.027	0.3	ug/L	181	Standard
	Zn	66	17798.8	0.5	**14.3610**	0.032	0.2	ug/L	215	Standard
>	**Ge**	72	520328.1	0.5				ug/L	520809	Standard
	As	75	5212.0	2.2	**4.2712**	0.111	2.6	ug/L	-52	Standard
	Se	82	460.7	3.7	**3.5240**	0.138	3.9	ug/L	17	Standard
	Se-1	77	349.3	2.1	**3.4060**	0.106	3.1	ug/L	56	Standard
>	**Ga**	71	1643.4	2.5				mg/L	25	Standard
	Rb	85	6298.0	3.7				ug/L	28	Standard
	Y	89	489232.3	1.4				ug/L	447395	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	1075.7	0.6	**0.3442**	0.006	1.8	ug/L	113	Standard
	Ag	107	17796.8	1.4	**2.5517**	0.014	0.5	ug/L	108	Standard
	Cd	111	6560.4	0.7	**2.9469**	0.016	0.6	mg/L	3	Standard
	Cd	114	16108.1	2.8	**2.9255**	0.113	3.9	ug/L	20	Standard
>	**In**	115	604614.2	1.1				ug/L	625728	Standard
	Sn	118	576.7	20.9	**0.0084**	0.019	221.8	ug/L	568	Standard
	Sb	123	1529.4	1.9	**0.2726**	0.009	3.4	ug/L	612	Standard
	Ba	135	36016.4	1.8	**17.1151**	0.222	1.3	ug/L	21	Standard
	Ce	140	166971.8	1.4				ug/L	245	Standard
>	**Tb**	159	893545.7	0.7				ug/L	950397	Standard
	Ho	165	3838.8	4.6				ug/L	7	Standard
	Tl	203	21813.4	0.5	**2.5793**	0.005	0.2	ug/L	15	Standard
	Tl	205	20096.7	2.1	**2.6671**	0.046	1.7	ug/L	13	Standard
	Pb	206	33592.2	0.8	**6.2573**	0.064	1.0	ug/L	264	Standard
	Pb	207	28855.8	0.9	**5.9141**	0.073	1.2	ug/L	222	Standard
	Pb	208	125010.5	0.5	**6.2737**	0.013	0.2	ug/L	959	Standard
	U	238	20841.0	0.6	**2.7450**	0.006	0.2	ug/L	9	Standard
>	**Bi**	209	520594.3	0.4				ug/L	552821	Standard

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 19:00:12
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	78.3	32.1	**0.0321**	0.030	93.3	mg/L	55	Standard
K	39	38.3	30.1	**0.0170**	0.045	263.0	mg/L	28	Standard
Ca	43	36.7	7.9	**0.9069**	0.276	30.5	mg/L	27	Standard
Fe	54	2344.4	2.1	**1.7548**	0.045	2.6	mg/L	147	Standard
Fe	57	823.4	10.1	**1.7471**	0.264	15.1	mg/L	268	Standard
Sc-1	45	40838.3	0.3				mg/L	41174	Standard
Cl	35	72934.5	2.0				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	2890.3	3.7				ug/L	1950	Standard
P	31	8855.9	3.2				ug/L	21156	Standard
S	34	3612.1	4.5				ug/L	3419	Standard
Sr	88	103.3	32.9				ug/L	72	Standard
C	12	236.7	17.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	17	Standard
Dy	164	5672.6	5.0				mg/L	16	Standard
Ho-1	165	3838.8	4.6				mg/L	7	Standard
Er	166	3727.1	2.9				mg/L	7	Standard
I	127	35476.5	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.546	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.908	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 19:00:12
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.626
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.171
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145110SD WG574521-08
Sample Date/Time: Friday, July 01, 2016 19:01:07
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67019.7	4.1				ug/L	76456	Standard
	Be	9	2773.6	7.8	**2.8076**	0.211	7.5	ug/L	20	Standard
	Al	27	343053.6	0.5	**2.2782**	0.082	3.6	ug/L	1307	Standard
	Sc	45	40390.5	2.4				ug/L	41174	Standard
	Ti	47	2125.1	3.6	**6.3589**	0.289	4.5	ug/L	27	Standard
	V	51	73913.9	1.7	**8.6823**	0.187	2.2	ug/L	1434	Standard
	Cr	52	39647.8	1.1	**3.8723**	0.091	2.4	ug/L	7733	Standard
	Cr	53	4390.6	6.6	**3.8749**	0.313	8.1	ug/L	442	Standard
	Mn	55	211704.6	1.1	**27.5205**	0.540	2.0	ug/L	723	Standard
	Co	59	22138.2	1.1	**2.8248**	0.052	1.9	ug/L	217	Standard
	Ni	60	10229.1	2.4	**4.7164**	0.156	3.3	ug/L	304	Standard
	Cu	65	16797.3	0.8	**8.0558**	0.132	1.6	ug/L	181	Standard
	Zn	66	14601.7	0.9	**11.5899**	0.103	0.9	ug/L	215	Standard
>	Ge	72	527370.0	0.8				ug/L	520809	Standard
	As	75	4454.0	0.3	**3.6083**	0.041	1.1	ug/L	-52	Standard
	Se	82	433.6	3.6	**3.2627**	0.107	3.3	ug/L	17	Standard
	Se-1	77	342.3	4.4	**3.2706**	0.183	5.6	ug/L	56	Standard
>	Ga	71	1086.7	7.6				mg/L	25	Standard
	Rb	85	2715.2	5.0				ug/L	28	Standard
	Y	89	495479.9	0.9				ug/L	447395	Standard
>	Rh	103	16.7	45.8				ug/L	15	Standard
	Mo	98	1199.6	3.2	**0.3822**	0.017	4.5	ug/L	113	Standard
	Ag	107	16994.5	0.8	**2.4097**	0.040	1.7	ug/L	108	Standard
	Cd	111	6581.3	0.3	**2.9241**	0.026	0.9	mg/L	3	Standard
	Cd	114	16115.1	1.4	**2.8941**	0.037	1.3	ug/L	20	Standard
>	In	115	611286.5	1.2				ug/L	625728	Standard
	Sn	118	688.3	30.3	**0.0255**	0.034	134.7	ug/L	568	Standard
	Sb	123	3492.9	2.6	**0.6580**	0.010	1.5	ug/L	612	Standard
	Ba	135	33066.0	1.8	**15.5404**	0.233	1.5	ug/L	21	Standard
	Ce	140	153693.9	0.5				ug/L	245	Standard
>	Tb	159	899836.2	0.9				ug/L	950397	Standard
	Ho	165	3548.7	3.5				ug/L	7	Standard
	Tl	203	21026.9	1.7	**2.4700**	0.040	1.6	ug/L	15	Standard
	Tl	205	19092.0	1.1	**2.5170**	0.051	2.0	ug/L	13	Standard
	Pb	206	32793.8	0.3	**6.0676**	0.075	1.2	ug/L	264	Standard
	Pb	207	27703.0	0.3	**5.6387**	0.064	1.1	ug/L	222	Standard
	Pb	208	120754.5	1.4	**6.0193**	0.142	2.4	ug/L	959	Standard
	U	238	20391.4	0.6	**2.6683**	0.017	0.6	ug/L	9	Standard
>	Bi	209	524030.2	1.0				ug/L	552821	Standard

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 19:03:24
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	73.3	17.2	**0.0271**	0.015	54.1	mg/L	55	Standard
K	39	33.3	22.9	**-0.0010**	0.029	2803.3	mg/L	28	Standard
Ca	43	38.3	52.7	**1.0972**	1.891	172.3	mg/L	27	Standard
Fe	54	1833.3	6.8	**1.3677**	0.115	8.4	mg/L	147	Standard
Fe	57	725.0	5.5	**1.4696**	0.176	12.0	mg/L	268	Standard
Sc-1	45	40390.5	2.4				mg/L	41174	Standard
Cl	35	74325.2	0.8				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2540.2	14.3				ug/L	1950	Standard
P	31	8757.5	2.9				ug/L	21156	Standard
S	34	3718.8	1.1				ug/L	3419	Standard
Sr	88	85.0					ug/L	72	Standard
C	12	270.0	14.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	32.9				mg/L	17	Standard
Dy	164	5206.1	3.7				mg/L	16	Standard
Ho-1	165	3548.7	3.5				mg/L	7	Standard
Er	166	3510.4	5.0				mg/L	7	Standard
I	127	34255.4	2.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.658	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.260	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 19:03:24
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.692
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.792
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 19:03:24
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 19:04:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73296.1	8.8				ug/L	76456	Standard
	Be	9	3.3	86.6	-0.0168	0.003	15.9	ug/L	20	Standard
	Al	27	943.4	25.1	-0.0045	0.001	28.6	ug/L	1307	Standard
	Sc	45	42173.6	2.9				ug/L	41174	Standard
	Ti	47	21.7	46.5	-0.0224	0.026	115.7	ug/L	27	Standard
	V	51	784.0	11.8	-0.1085	0.008	7.8	ug/L	1434	Standard
	Cr	52	3455.1	8.0	-0.5654	0.042	7.4	ug/L	7733	Standard
	Cr	53	226.7	14.2	-0.2044	0.032	15.6	ug/L	442	Standard
	Mn	55	689.7	25.5	-0.0155	0.019	124.5	ug/L	723	Standard
	Co	59	203.0	2.5	-0.0043	0.002	53.5	ug/L	217	Standard
	Ni	60	207.7	13.9	-0.0589	0.005	8.9	ug/L	304	Standard
	Cu	65	99.0	11.2	-0.0283	0.002	6.7	ug/L	181	Standard
	Zn	66	182.3	13.6	-0.0400	0.008	19.1	ug/L	215	Standard
>	Ge	72	551871.4	10.1				ug/L	520809	Standard
	As	75	90.2	75.8	0.1123	0.046	40.9	ug/L	-52	Standard
	Se	82	68.2	54.7	0.3731	0.233	62.5	ug/L	17	Standard
	Se-1	77	38.3	14.4	-0.2548	0.102	40.0	ug/L	56	Standard
>	Ga	71	36.7	7.9				mg/L	25	Standard
	Rb	85	36.7	39.4				ug/L	28	Standard
	Y	89	441182.6	6.0				ug/L	447395	Standard
>	Rh	103	10.0	50.0				ug/L	15	Standard
	Mo	98	46.2	9.0	-0.0083	0.001	14.8	ug/L	113	Standard
	Ag	107	129.7	15.8	0.0056	0.002	35.3	ug/L	108	Standard
	Cd	111	10.6	19.3	0.0023	0.001	28.9	mg/L	3	Standard
	Cd	114	32.4	13.3	0.0058	0.001	9.2	ug/L	20	Standard
>	In	115	611252.6	5.3				ug/L	625728	Standard
	Sn	118	5131.0	39.9	0.7226	0.283	39.2	ug/L	568	Standard
	Sb	123	96.0	32.5	-0.0149	0.005	34.0	ug/L	612	Standard
	Ba	135	116.3	18.2	0.0366	0.007	20.0	ug/L	21	Standard
	Ce	140	506.7	18.4				ug/L	245	Standard
>	Tb	159	937034.7	2.8				ug/L	950397	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	55.7	37.9	0.0055	0.002	44.3	ug/L	15	Standard
	Tl	205	48.3	15.8	-0.0037	0.001	24.8	ug/L	13	Standard
	Pb	206	388.7	9.1	0.0251	0.008	30.5	ug/L	264	Standard
	Pb	207	329.7	11.1	0.0183	0.008	44.7	ug/L	222	Standard
	Pb	208	1314.7	9.8	0.0144	0.005	32.0	ug/L	959	Standard
	U	238	44.3	33.9	0.0053	0.002	35.7	ug/L	9	Standard
>	Bi	209	551718.3	2.9				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 19:06:36
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.9772**	8.612	173.0	mg/L	2	Standard
Mg	24	23.3	12.4	**-0.0336**	0.003	9.5	mg/L	55	Standard
K	39	23.3	12.4	**-0.0439**	0.009	21.3	mg/L	28	Standard
Ca	43	31.7	24.1	**0.3653**	0.722	197.6	mg/L	27	Standard
Fe	54	110.7	37.7	**-0.0145**	0.030	207.1	mg/L	147	Standard
Fe	57	338.3	3.4	**0.2110**	0.026	12.2	mg/L	268	Standard
Sc-1	45	42173.6	2.9				mg/L	41174	Standard
Cl	35	30776.6	3.7				ug/L	69550	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	663.3	12.3				ug/L	1950	Standard
P	31	11284.4	27.3				ug/L	21156	Standard
S	34	1555.1	2.6				ug/L	3419	Standard
Sr	88	83.3	25.0				ug/L	72	Standard
C	12	73.3	15.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	44.4				mg/L	17	Standard
Dy	164	28.9	93.2				mg/L	16	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	2166.8	15.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	-0.034		
Al	27	-0.009		
Sc	45			
Ti	47	-0.022		
V	51	-0.217		
Cr	52	-1.131		
Cr	53			
Mn	55	-0.031		
Co	59	-0.009		
Ni	60	-0.118		
Cu	65	-0.057		
Zn	66	-0.080		
Ge	72		105.964	
As	75	0.225		
Se	82	0.746		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 19:06:36
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	-0.008		
Ag	107	0.011		
Cd	111	0.005		
Cd	114			
> In	115		97.687	
Sn	118	1.445		
Sb	123	-0.030		
Ba	135	0.073		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	0.011		
Tl	205			
Pb	206			
Pb	207			
Pb	208	0.029		
U	238	0.011		
> Bi	209		99.801	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Ti	47	

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 19:06:36
Page 3

Approved: July 02, 2016

QC Std 6	V	51
QC Std 6	Cr	52
QC Std 6	Mn	55
QC Std 6	Co	59
QC Std 6	Ni	60
QC Std 6	Cu	65
QC Std 6	Zn	66
QC Std 6	As	75
QC Std 6	Se	82
QC Std 6	Mo	98
QC Std 6	Ag	107
QC Std 6	Cd	111
QC Std 6	Sb	123
QC Std 6	Ba	135
QC Std 6	Tl	203
QC Std 6	Pb	208
QC Std 6	U	238

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 19:07:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63162.0	21.4				ug/L	76456	Standard
	Be	9	3.3	86.6	**-0.0166**	0.003	17.1	ug/L	20	Standard
	Al	27	735.0	20.4	**-0.0048**	0.002	36.2	ug/L	1307	Standard
	Sc	45	35650.7	12.8				ug/L	41174	Standard
	Ti	47	25.7	17.6	**-0.0049**	0.017	351.0	ug/L	27	Standard
	V	51	759.8	6.3	**-0.1049**	0.017	16.4	ug/L	1434	Standard
	Cr	52	3500.7	6.1	**-0.5352**	0.034	6.4	ug/L	7733	Standard
	Cr	53	196.7	21.6	**-0.2204**	0.047	21.1	ug/L	442	Standard
	Mn	55	654.0	15.9	**-0.0132**	0.024	180.8	ug/L	723	Standard
	Co	59	209.0	9.3	**-0.0019**	0.004	213.5	ug/L	217	Standard
	Ni	60	214.3	6.6	**-0.0494**	0.006	12.6	ug/L	304	Standard
	Cu	65	67.0	1.5	**-0.0410**	0.004	9.4	ug/L	181	Standard
	Zn	66	162.0	9.0	**-0.0461**	0.027	57.9	ug/L	215	Standard
>	**Ge**	72	520650.3	11.0				ug/L	520809	Standard
	As	75	34.9	127.0	**0.0765**	0.042	54.6	ug/L	-52	Standard
	Se	82	46.9	39.0	**0.2593**	0.198	76.5	ug/L	17	Standard
	Se-1	77	47.0	7.4	**-0.1317**	0.051	38.8	ug/L	56	Standard
>	**Ga**	71	33.3	37.7				mg/L	25	Standard
	Rb	85	20.0	0.0				ug/L	28	Standard
	Y	89	481329.7	5.0				ug/L	447395	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	40.1	16.4	**-0.0110**	0.002	22.0	ug/L	113	Standard
	Ag	107	85.7	14.5	**-0.0013**	0.001	114.3	ug/L	108	Standard
	Cd	111	7.3	15.9	**0.0008**	0.001	101.5	mg/L	3	Standard
	Cd	114	33.4	55.5	**0.0060**	0.004	67.7	ug/L	20	Standard
>	**In**	115	646206.1	11.6				ug/L	625728	Standard
	Sn	118	4905.8	30.1	**0.6479**	0.164	25.3	ug/L	568	Standard
	Sb	123	55.7	59.6	**-0.0232**	0.006	25.1	ug/L	612	Standard
	Ba	135	35.0	22.9	**-0.0022**	0.004	171.6	ug/L	21	Standard
	Ce	140	271.7	45.9				ug/L	245	Standard
>	**Tb**	159	974497.4	20.4				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	26.0	40.2	**0.0024**	0.002	88.7	ug/L	15	Standard
	Tl	205	23.3	32.7	**-0.0066**	0.002	26.3	ug/L	13	Standard
	Pb	206	286.0	20.6	**0.0054**	0.003	50.2	ug/L	264	Standard
	Pb	207	250.0	14.9	**0.0018**	0.006	349.2	ug/L	222	Standard
	Pb	208	1018.7	14.9	**-0.0005**	0.007	1419.7	ug/L	959	Standard
	U	238	28.0	71.2	**0.0037**	0.004	102.7	ug/L	9	Standard
>	**Bi**	209	573676.7	25.6				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 19:09:48
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	31.2	**-0.0144**	0.017	121.3	mg/L	55	Standard
K	39	30.0	44.1	**-0.0003**	0.051	19938.3	mg/L	28	Standard
Ca	43	26.7	47.2	**0.2749**	0.978	355.7	mg/L	27	Standard
Fe	54	97.7	28.6	**-0.0085**	0.033	388.9	mg/L	147	Standard
Fe	57	278.3	18.1	**0.2066**	0.281	136.1	mg/L	268	Standard
Sc-1	45	35650.7	12.8				mg/L	41174	Standard
Cl	35	30318.5	8.6				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	573.3	9.6				ug/L	1950	Standard
P	31	10907.3	13.1				ug/L	21156	Standard
S	34	1410.1	10.3				ug/L	3419	Standard
Sr	88	83.3	36.7				ug/L	72	Standard
C	12	66.7	60.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	38.5				mg/L	17	Standard
Dy	164	2.1	274.3				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	7	Standard
I	127	2056.8	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.969	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 19:09:48
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.273	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	103.773	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sn	118	

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 19:09:48
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, July 01, 2016 19:10:44
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61946.4	1.9				ug/L	76456	Standard
	Be	9	210.0	10.4	**0.2115**	0.020	9.6	ug/L	20	Standard
	Al	27	790.0	4.9	**-0.0045**	0.000	4.1	ug/L	1307	Standard
	Sc	45	40494.0	1.1				ug/L	41174	Standard
	Ti	47	28.3	17.8	**0.0022**	0.015	682.7	ug/L	27	Standard
	V	51	4636.0	0.9	**0.3641**	0.011	3.1	ug/L	1434	Standard
	Cr	52	14316.1	1.4	**0.7957**	0.001	0.1	ug/L	7733	Standard
	Cr	53	1240.1	3.8	**0.8075**	0.059	7.3	ug/L	442	Standard
	Mn	55	4264.3	2.5	**0.4605**	0.007	1.5	ug/L	723	Standard
	Co	59	3130.7	5.2	**0.3781**	0.017	4.5	ug/L	217	Standard
	Ni	60	3450.1	1.6	**1.5055**	0.006	0.4	ug/L	304	Standard
	Cu	65	1721.8	1.7	**0.7678**	0.026	3.4	ug/L	181	Standard
	Zn	66	8860.9	0.9	**7.0348**	0.045	0.6	ug/L	215	Standard
>	**Ge**	72	522095.7	1.4				ug/L	520809	Standard
	As	75	448.5	11.8	**0.4078**	0.044	10.9	ug/L	-52	Standard
	Se	82	67.9	14.5	**0.4100**	0.082	20.0	ug/L	17	Standard
	Se-1	77	86.0	19.1	**0.3190**	0.193	60.5	ug/L	56	Standard
>	**Ga**	71	40.0	37.5				mg/L	25	Standard
	Rb	85	30.0	28.9				ug/L	28	Standard
	Y	89	446341.0	1.0				ug/L	447395	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	31.0	24.0	**-0.0133**	0.003	19.1	ug/L	113	Standard
	Ag	107	2769.6	1.6	**0.3865**	0.006	1.6	ug/L	108	Standard
	Cd	111	511.0	7.5	**0.2275**	0.017	7.5	mg/L	3	Standard
	Cd	114	1362.0	6.3	**0.2474**	0.016	6.3	ug/L	20	Standard
>	**In**	115	604305.4	0.0				ug/L	625728	Standard
	Sn	118	1045.0	27.9	**0.0839**	0.047	56.0	ug/L	568	Standard
	Sb	123	1800.2	6.2	**0.3270**	0.022	6.8	ug/L	612	Standard
	Ba	135	1494.4	2.1	**0.6933**	0.015	2.2	ug/L	21	Standard
	Ce	140	240.0	28.9				ug/L	245	Standard
>	**Tb**	159	892072.4	1.2				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	655.0	0.9	**0.0773**	0.001	1.2	ug/L	15	Standard
	Tl	205	608.3	6.1	**0.0719**	0.005	7.4	ug/L	13	Standard
	Pb	206	1282.4	3.9	**0.1986**	0.006	3.2	ug/L	264	Standard
	Pb	207	1103.0	2.6	**0.1835**	0.003	1.7	ug/L	222	Standard
	Pb	208	4828.3	0.4	**0.1978**	0.004	2.3	ug/L	959	Standard
	U	238	2919.9	3.2	**0.3875**	0.018	4.7	ug/L	9	Standard
>	**Bi**	209	516591.6	1.5				ug/L	552821	Standard

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 19:13:01
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.0546**	8.746	173.0	mg/L	2	Standard
Mg	24	45.0	50.9	**-0.0067**	0.027	406.4	mg/L	55	Standard
K	39	28.3	71.3	**-0.0210**	0.078	373.7	mg/L	28	Standard
Ca	43	15.0	33.3	**-1.0703**	0.448	41.8	mg/L	27	Standard
Fe	54	120.9	25.4	**-0.0025**	0.024	952.7	mg/L	147	Standard
Fe	57	251.7	19.1	**-0.0185**	0.145	784.6	mg/L	268	Standard
Sc-1	45	40494.0	1.1				mg/L	41174	Standard
Cl	35	72851.4	0.8				ug/L	69550	Standard
Kr	83	2.3	99.0				ug/L	1	Standard
Br	81	1900.1	5.1				ug/L	1950	Standard
P	31	14266.7	2.8				ug/L	21156	Standard
S	34	3213.7	2.6				ug/L	3419	Standard
Sr	88	90.0	16.7				ug/L	72	Standard
C	12	96.7	57.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	17	Standard
Dy	164	16.2	35.8				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	1820.1	14.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	105.733		
Al	27			
Sc	45			
Ti	47			
V	51	91.026		
Cr	52	99.459		
Cr	53			
Mn	55	92.107		
Co	59	94.532		
Ni	60	94.095		
Cu	65	95.977		
Zn	66	112.556		
Ge	72		100.247	
As	75	101.941		
Se	82	102.498		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 19:13:01
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.613		
Cd	111	94.773		
Cd	114			
> In	115			96.576
Sn	118			
Sb	123	81.741		
Ba	135	92.447		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.671		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.904		
U	238	96.884		
> Bi	209			93.446
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 19:13:01
Page 3

Approved: July 02, 2016

2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW21-062216	**Prep Method:**	7470A	**Prep Date:**	06/25/2016 11:30
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 10:18
Workgroup #:	WG574691	**Analyst:**	AMA	**Run Date:**	07/01/2016 11:34
Collect Date:	06/22/2016 09:45	**Dilution:**	1	**File ID:**	M7.070116.113445
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW02F-062216	**Prep Method:**	7470A	**Prep Date:**	06/25/2016 11:30
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 10:18
Workgroup #:	WG574691	**Analyst:**	AMA	**Run Date:**	07/01/2016 11:37
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	M7.070116.113718
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG574194
Analyst: ERP
Spike Analyst: ERP
Method: 7470A
Run Date: 06/25/2016 11:30
Hotblock Start Temp: 95.2 @ 06:35
Hotblock End Temp: 95.7 @ 08:35
Instrument: HB6

SOP: ME404 Revison 17
Spike Solution: STD76824
Spike Witness: VC
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
KMnO4 1:1 Lot #: RGT37128
H2SO4 Lot #: COA18359
K2S2O8 1:1 Lot #: RGT37142
Mercury Water ICV Lot #: STD76826
HG H2O STDS 10PPM Lot #: STD76832

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG574194-02	BLANK	1	40 mL	40 mL		
2	WG574194-03	LCS	1	40 mL	40 mL	4 mL	
3	L16061130-01	SAMP	1	40 mL	40 mL		07/05/16
4	L16061130-02	SAMP	1	40 mL	40 mL		07/05/16
5	L16061130-03	SAMP	1	40 mL	40 mL		07/05/16
6	L16061130-04	SAMP	1	40 mL	40 mL		07/05/16
7	L16061130-05	SAMP	1	40 mL	40 mL		07/05/16
8	L16061244-01	SAMP	17	4 mL	40 mL		06/29/16
9	L16061244-02	SAMP	17	4 mL	40 mL		06/29/16
10	WG574194-01	REF	1	40 mL	40 mL		
11	L16061265-01	RS01	1	40 mL	40 mL		06/30/16
12	WG574194-04	MS	1	36 mL	40 mL	4 mL	
13	L16061265-02	MS01	1	36 mL	40 mL	4 mL	06/30/16
14	WG574194-05	MSD	1	36 mL	40 mL	4 mL	
15	L16061265-03	SD01	1	36 mL	40 mL	4 mL	06/30/16
16	L16061265-04	SAMP	1	40 mL	40 mL		06/30/16
17	L16061265-05	SAMP	1	40 mL	40 mL		06/30/16
18	L16061265-06	SAMP	1	40 mL	40 mL		06/30/16
19	L16061266-01	SAMP	1	40 mL	40 mL		06/30/16
20	L16061269-01	SAMP	1	40 mL	40 mL		06/30/16
21	L16061272-01	SAMP	1	40 mL	40 mL		06/30/16
22	L16061272-02	SAMP	1	40 mL	40 mL		06/30/16
23	L16061289-01	SAMP	1	40 mL	40 mL		07/05/16
24	L16061289-04	SAMP	1	40 mL	40 mL		07/05/16
25	L16061290-03	SAMP	1	40 mL	40 mL		07/05/16
26	L16061290-05	SAMP	1	40 mL	40 mL		07/05/16
27	L16061402-01	SAMP	1	40 mL	40 mL		07/01/16

Analyst: Erin Potter

Reviewer: Vicki Collins

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4824617
Report generated: 06/25/2016 11:30

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 070116A.CSV
Analyst1: AMA Analyst2: N/A
Method: 7470A/245.1 SOP: ME404 Rev: 17
Maintenance Log ID:

Calibration Std: STD76832 ICV Std: STD76826 Post Spike: STD76832
ICSA: N/A ICSAB: N/A Int. Std:
CCV: LLCCV: Tuning Sol :
Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 574691

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.070116.100604	WG575044-01	Calibration Point		1		07/01/16 10:06
2	M7.070116.100835	WG575044-02	Calibration Point		1		07/01/16 10:08
3	M7.070116.101107	WG575044-03	Calibration Point		1		07/01/16 10:11
4	M7.070116.101340	WG575044-04	Calibration Point		1		07/01/16 10:13
5	M7.070116.101613	WG575044-05	Calibration Point		1		07/01/16 10:16
6	M7.070116.101846	WG575044-06	Calibration Point		1		07/01/16 10:18
7	M7.070116.102121	WG575044-07	Initial Calibration Verification		1		07/01/16 10:21
8	M7.070116.102351	WG575044-08	Initial Calib Blank		1		07/01/16 10:23
9	M7.070116.102624	WG575044-09	CCV		1		07/01/16 10:26
10	M7.070116.102855	WG575044-10	CCB		1		07/01/16 10:28
11	M7.070116.103126	WG574194-02	Method/Prep Blank	40/40	1		07/01/16 10:31
12	M7.070116.103357	WG574194-03	Laboratory Control S	40/40	1		07/01/16 10:33
13	M7.070116.103628	L16061130-01	MW-23-012	40/40	1		07/01/16 10:36
14	M7.070116.103900	WG574691-01	Post Digestion Spike		1	L16061130-01	07/01/16 10:39
15	M7.070116.104132	L16061130-02	MW-23-003	40/40	1		07/01/16 10:41
16	M7.070116.104404	L16061130-03	MW-23-013	40/40	1		07/01/16 10:44
17	M7.070116.104636	L16061130-04	MW-23-001	40/40	1		07/01/16 10:46
18	M7.070116.104909	L16061130-05	EB (1) WATER A	40/40	1		07/01/16 10:49
19	M7.070116.105142	L16061244-01	K6F0679-01	4/40	1		07/01/16 10:51
20	M7.070116.105416	WG574691-02	Post Digestion Spike		1	L16061244-01	07/01/16 10:54
21	M7.070116.105648	WG575044-11	CCV		1		07/01/16 10:56
22	M7.070116.105919	WG575044-12	CCB		1		07/01/16 10:59
23	M7.070116.110152	L16061244-02	K6F0679-02	4/40	1		07/01/16 11:01
24	M7.070116.110426	WG574194-01	Reference Sample	40/40	1	L16061265-01	07/01/16 11:04
25	M7.070116.110657	L16061265-02	SS007MWN750-007 MS	36/40	1	WG574194-04	07/01/16 11:06
26	M7.070116.110927	L16061265-03	SS007MWN750-007 MSD	36/40	1	WG574194-05	07/01/16 11:09
27	M7.070116.111158	L16061265-04	SS007MWOB16-007	40/40	1		07/01/16 11:11
28	M7.070116.111429	L16061265-05	SS007MWOB21-007	40/40	1		07/01/16 11:14
29	M7.070116.111701	L16061265-06	FQC-RB06211601-CC	40/40	1		07/01/16 11:17
30	M7.070116.111932	L16061266-01	ST008MW0805-007	40/40	1		07/01/16 11:19
31	M7.070116.112204	L16061269-01	FT002MW0204-007	40/40	1		07/01/16 11:22
32	M7.070116.112437	L16061272-01	SS007MW0B18-007	40/40	1		07/01/16 11:24
33	M7.070116.112709	WG575044-13	CCV		1		07/01/16 11:27
34	M7.070116.112940	WG575044-14	CCB		1		07/01/16 11:29

Page: 1 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 070116A.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76832 ICV Std: STD76826 Post Spike: STD76832

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 574691

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.070116.113212	L16061272-02	SS007MWN752-007	40/40	1		07/01/16 11:32
36	M7.070116.113445	L16061289-01	MW21-062216	40/40	1		07/01/16 11:34
37	M7.070116.113718	L16061289-04	18WW02F-062216	40/40	1		07/01/16 11:37
38	M7.070116.113952	L16061290-03	MW16F-062116	40/40	1		07/01/16 11:39
39	M7.070116.114222	L16061290-05	109-062216	40/40	1		07/01/16 11:42
40	M7.070116.114453	L16061402-01	SS007MW0715-007	40/40	1		07/01/16 11:44
41	M7.070116.114725	WG575044-15	CCV		1		07/01/16 11:47
42	M7.070116.114956	WG575044-16	CCB		1		07/01/16 11:49

Page: 2 Approved: July 05, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 575044
Runlog ID: 76085
Analytical Workgroups: 574691

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1130,1265,1266,1269,
Case Narrative	1272,1289,1290,1402
Client Forms	X
Level X	
Level 3	1130
Level 4	1265,1266,1269,1272
Level 4	1289,1290,1402
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	BKT
Comments	

Primary Reviewer: 01-JUL-2016 Alexandra M. Alfred

Secondary Reviewer: 05-JUL-2016 Brian Zimm

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 12:35:40

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG574691

Login Number: L16061289

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW21-062216	01	06/22/16					06/25/2016	3.1	28		07/01/16	9.1	28	
18WW02F-062216	04	06/22/16					06/25/2016	2.9	28		07/01/16	8.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4834831
Report generated 07/01/2016 15:49

METHOD BLANK SUMMARY

Login Number: L16061289
Blank File ID: M7.070116.103126
Prep Date: 06/25/16 11:30
Analyzed Date: 07/01/16 10:31
Analyst: AMA

Work Group: WG574691
Blank Sample ID: WG574194-02
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574194-03	M7.070116.103357	07/01/16 10:33	01
MW21-062216	L16061289-01	M7.070116.113445	07/01/16 11:34	01
18WW02F-062216	L16061289-04	M7.070116.113718	07/01/16 11:37	01

Report Name: BLANK_SUMMARY
PDF File ID: 4834832
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061289 Prep Date: 06/25/16 11:30 Sample ID: WG574194-02
Instrument ID: CVAA1 Run Date: 07/01/16 10:31 Prep Method: 7470A
File ID: M7.070116.103126 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG574691 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-01-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4834833
01-JUL-2016 15:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 Run Date: 07/01/2016 Sample ID: WG574194-03
Instrument ID: CVAA1 Run Time: 10:33 Prep Method: 7470A
File ID: M7.070116.103357 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG574691 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76824 Cal ID: CVAA1-01-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00401	100	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4834834
Report generated: 07/01/2016 15:49

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061289 Cal ID: CVAA1 - Worknum: WG574691
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG574194-01 File ID: M7.070116.110426 Dil: 1 Matrix: WATER
Sample ID: WG574194-04 MS File ID: M7.070116.110657 Dil: 1 Units: mg/L
Sample ID: WG574194-05 MSD File ID: M7.070116.110927 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00450	101	0.00444	0.00445	100	1.07	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4834835
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061289 **Worknum:** WG574691
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG574691-01 **File ID:** M7.070116.103900 **Dil:** 1 **Units:** ug/L
Sample ID: L16061130-01 **File ID:** M7.070116.103628 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.00		0	U	1	100.0	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4834830
Report generated: 07/01/2016 15:49

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061289
Analytical Method: 7470A
ICAL Worknum: WG575044

Workgroup (AAB#): WG574691
Instrument ID: CVAA1
Initial Calibration Date: 07/01/2016 10:18

Analyte	WG575044-01		WG575044-02		WG575044-03		WG575044-04		WG575044-05		WG575044-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	32.06	0.200	2295	1.00	10710	2.00	21560	5.00	53500	10.0	104800

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4834836
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061289
Analytical Method: 7470A
ICAL Worknum: WG575044

Workgroup (AAB#): WG574691
Instrument ID: CVAA1
Initial Calibration Date: 07/01/2016 10:18

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4834836
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061289
Instrument ID: CVAA1
File ID: M7.070116.102351
Workgroup (AAB#): WG574691
Matrix: WATER

Run Date: 07/01/2016
Run Time: 10:23
Analyst: AMA
Cal ID: CVAA1 - 01-JUL-16

Sample ID: WG575044-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4834838
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575044-10
Instrument ID: CVAA1
Run Time: 10:28
Method: 7470A
File ID: M7.070116.102855
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834840
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575044-12
Instrument ID: CVAA1
Run Time: 10:59
Method: 7470A
File ID: M7.070116.105919
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834840
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575044-14
Instrument ID: CVAA1
Run Time: 11:29
Method: 7470A
File ID: M7.070116.112940
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834840
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575044-16
Instrument ID: CVAA1
Run Time: 11:49
Method: 7470A
File ID: M7.070116.114956
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834840
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575044-07
Instrument ID: CVAA1
Run Time: 10:21
Method: 7470A
File ID: M7.070116.102121
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.10	105	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4834837
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575044-09
Instrument ID: CVAA1
Run Time: 10:26
Method: 7470A
File ID: M7.070116.102624
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00207	mg/L	103	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834839
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575044-11
Instrument ID: CVAA1
Run Time: 10:56
Method: 7470A
File ID: M7.070116.105648
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00216	mg/L	108	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834839
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575044-13
Instrument ID: CVAA1
Run Time: 11:27
Method: 7470A
File ID: M7.070116.112709
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00220	mg/L	110	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834839
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575044-15
Instrument ID: CVAA1
Run Time: 11:47
Method: 7470A
File ID: M7.070116.114725
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00224	mg/L	112	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834839
Report generated 07/01/2016 15:49

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\070116A.wsz
Date Started: 7/1/2016 9:38:14 AM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	07/01/16 10:06:04 am	0.0000	32	51.53		1.00
Replicates	33.9	9.2	48.5	36.7							
Standard #1 (0.2 ug/L)					STD	07/01/16 10:08:35 am	0.2000	2295	0.39		1.00
Replicates	2283.8	2292.8	2302.1	2302.8							
Standard #2 (1.0 ug/L)					STD	07/01/16 10:11:07 am	1.0000	10713	0.20		1.00
Replicates	10683.7	10720.4	10713.1	10735.4							
Standard #3 (2.0 ug/L)					STD	07/01/16 10:13:40 am	2.0000	21562	0.38		1.00
Replicates	21463.6	21528.1	21609.0	21649.1							
Standard #4 (5.0 ug/L)					STD	07/01/16 10:16:13 am	5.0000	53499	0.23		1.00
Replicates	53337.3	53478.0	53550.0	53628.8							
Standard #5 (10.0 ug/L)					STD	07/01/16 10:18:46 am	10.0000	104841	0.45		1.00
Replicates	104298.3	104651.5	105011.5	105402.7							

Calibration

Equation: A = 339.906 + 10489.180C
R2: 0.99990
SEE: 460.6227
Flags:

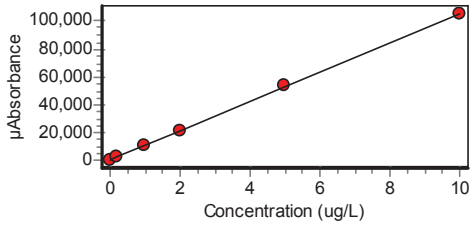

ICV					ICV	07/01/16 10:21:21 am	2.0960	22321	0.23		1.00
Replicates	22263.7	22304.4	22327.0	22388.5							
% Recovery	104.78										

Approved: July 01, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	07/01/16 10:23:51 am	-0.0320	5	241.36		1.00
Replicates	21.4	0.6	-0.6	-2.8							
CCV					CCV	07/01/16 10:26:24 am	2.0690	22040	0.78		1.00
Replicates	21832.9	21978.2	22121.4	22228.2							
% Recovery	103.44										
CCB					CCB	07/01/16 10:28:55 am	-0.0304	21	102.47		1.00
Replicates	31.7	46.9	5.0	1.4							
WG574194-02					MB	07/01/16 10:31:26 am	-0.0310	15	206.72		1.00
Replicates	11.9	54.7	15.1	-21.4							
WG574194-03					LCS	07/01/16 10:33:57 am	4.0120	42423	0.07		1.00
Replicates	42391.4	42417.5	42418.6	42464.5							
% Recovery	100.30										
L1606113001					UNK	07/01/16 10:36:28 am	-0.0328	-4	248.94		1.00
Replicates	-5.3	-15.2	-6.7	10.2							
WG574691-01					SPK	07/01/16 10:39:00 am	1.0000	10832	0.07		1.00
Replicates	10831.4	10821.7	10839.2	10836.2							
% Recovery	103.31										
L1606113002					UNK	07/01/16 10:41:32 am	-0.0290	35	27.30		1.00
Replicates	21.8	43.2	41.1	35.2							
L1606113003					UNK	07/01/16 10:44:04 am	-0.0301	24	48.09		1.00
Replicates	39.8	14.8	15.9	25.9							
L1606113004					UNK	07/01/16 10:46:36 am	-0.0259	69	17.22		1.00
Replicates	69.2	78.1	51.8	75.3							
L1606113005					UNK	07/01/16 10:49:09 am	-0.0288	38	73.36		1.00
Replicates	2.3	62.5	29.7	58.0							
L1606124401					UNK	07/01/16 10:51:42 am	-0.0319	5	147.97		1.00
Replicates	16.8	-2.4	2.9	4.6							

Approved: July 01, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
WG574691-02					SPK	07/01/16 10:54:16 am	0.9821	10641	0.47		1.00
Replicates	10703.5	10646.3	10632.5	10582.2							
% Recovery	101.40										
CCV					CCV	07/01/16 10:56:48 am	2.1580	22970	0.40		1.00
Replicates	22846.6	22954.2	23027.7	23053.0							
% Recovery	107.88										
CCB					CCB	07/01/16 10:59:19 am	-0.0323	1	266.19		1.00
Replicates	13.4	-2.1	-22.0	16.2							
L1606124402					UNK	07/01/16 11:01:52 am	-0.0296	29	53.06		1.00
Replicates	28.3	10.8	29.3	48.8							
L1606126501					UNK	07/01/16 11:04:26 am	-0.0300	25	44.66		1.00
Replicates	39.4	11.6	25.9	24.9							
WG574194-04					UNK	07/01/16 11:06:57 am	4.0520	42840	0.26		1.00
Replicates	42715.4	42805.0	42864.0	42976.5							
WG574194-05					UNK	07/01/16 11:09:27 am	4.0090	42388	0.05		1.00
Replicates	42388.5	42402.2	42406.7	42355.4							
L1606126504					UNK	07/01/16 11:11:58 am	-0.0336	-12	175.35		1.00
Replicates	-17.4	-39.9	-0.4	8.8							
L1606126505					UNK	07/01/16 11:14:29 am	-0.0296	29	54.43		1.00
Replicates	29.8	49.7	11.6	25.1							
L1606126506					UNK	07/01/16 11:17:01 am	-0.0334	-11	155.89		1.00
Replicates	-19.7	-0.3	6.5	-28.8							
L1606126601					UNK	07/01/16 11:19:32 am	-0.0029	310	3.21		1.00
Replicates	312.8	299.6	322.1	304.1							
L1606126901					UNK	07/01/16 11:22:04 am	-0.0296	30	92.97		1.00
Replicates	-11.7	44.4	42.9	43.0							

Approved: July 01, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606127201					UNK	07/01/16 11:24:37 am	-0.0307	18	64.86		1.00
Replicates	9.0	12.6	34.5	14.5							
CCV					CCV	07/01/16 11:27:09 am	2.1950	23367	0.59		1.00
Replicates	23176.4	23356.5	23444.0	23490.0							
% Recovery	109.76										
CCB					CCB	07/01/16 11:29:40 am	-0.0286	40	27.79		1.00
Replicates	38.5	31.4	56.3	34.3							
L1606127202					UNK	07/01/16 11:32:12 am	-0.0315	10	178.11		1.00
Replicates	23.2	25.6	-7.1	-3.2							
L1606128901					UNK	07/01/16 11:34:45 am	-0.0302	23	90.38		1.00
Replicates	52.6	15.7	6.4	15.7							
L1606128904					UNK	07/01/16 11:37:18 am	-0.0247	81	20.61		1.00
Replicates	93.7	94.1	75.4	59.4							
L1606129003					UNK	07/01/16 11:39:52 am	-0.0269	58	24.23		1.00
Replicates	77.1	56.4	53.5	43.9							
L1606129005					UNK	07/01/16 11:42:22 am	-0.0181	150	5.19		1.00
Replicates	152.2	159.2	141.7	145.2							
L1606140201					UNK	07/01/16 11:44:53 am	-0.0291	35	65.85		1.00
Replicates	2.6	54.3	34.9	48.3							
CCV					CCV	07/01/16 11:47:25 am	2.2370	23803	0.28		1.00
Replicates	23718.6	23781.3	23841.0	23871.3							
% Recovery	111.84										
CCB					CCB	07/01/16 11:49:56 am	-0.0306	19	30.24		1.00
Replicates	12.2	24.2	22.5	15.7							

Approved: July 01, 2016
Alexandra M. Alpred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 14, 2016

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - Hanah D. Coe
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RNP - RICK N. PETTY
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 14, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 14, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD		
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

pH:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	MW21-062216			6/22/16	0945		✓	W	7	✓	✓	✓	✓					
	MW9-062216			6/22/16	1105		✓	W	6	✓	✓		✓					
	18WW02-062216			6/22/16	1340		✓	W	6	✓	✓		✓					
	18WW02F-062216			6/22/16	1340		✓	W	1			✓						
	18CPTMW10SW-062216			6/22/16	1455		✓	W	6	✓	✓		✓					
	TRIP BLANK			6/22/16			✓	W	2	✓								

Comments: **STANDARD TAT**

	Date	Time			Date	Time	
Relinquished by (Signature): Scott Beesinger	6/22/16	1545	Received by: (Signature)	Received by: (Signature)			Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Rece (Sign			Time	Remarks:

Microbac OVD
Received: 06/23/2016 09:54
By: BRENDA GREGORY
221000087581
Brenda Gregory

*Homogenize all composite samples prior to analysis

...ager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061289
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061289-01	765235	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Samplenum	Container ID	Products
L16061289-01	765236	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061289
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061289-01	765237	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:23	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

Samplenum	Container ID	Products
L16061289-01	765238	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	PREP	W1	DIG	23-JUN-2016 15:10	ERP	BRG	
3	ANALYZ*	DIG	METALS	24-JUN-2016 11:51	JYH	ERP	
4	STORE	DIG	A1	28-JUN-2016 13:55	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061289-02	765239	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	23-JUN-2016 13:41	CLS		
2	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:44	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061289
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061289-02	765240	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061289-02	765241	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:23	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

Samplenum	Container ID	Products
L16061289-03	765242	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	23-JUN-2016 13:41	CLS		
2	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061289
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061289-03	765243	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061289-03	765244	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:23	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

Samplenum	Container ID	Products
L16061289-04	765245	HG K MG MN-MS NA NI-MS PB-MS SB-MS SE-AX TL-MS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	PREP	W1	DIG	23-JUN-2016 15:10	ERP	BRG	
3	ANALYZ*	DIG	METALS	24-JUN-2016 11:51	JYH	ERP	
4	STORE	DIG	A1	28-JUN-2016 13:56	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061289
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061289-05	765246	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Samplenum	Container ID	Products
L16061289-05	765247	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	STORE	W1	A1	24-JUN-2016 10:00	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061289
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061289-05	765248	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:23	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

Samplenum	Container ID	Products
L16061289-06	765249	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16061290

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 18 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113589	I	4.0		J2317164886	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW16-062116	L16061290-01	06/21/2016 13:20	06/23/2016 09:57
MW16-062116	L16061290-02	06/21/2016 14:40	06/23/2016 09:57
MW16F-062116	L16061290-03	06/21/2016 14:40	06/23/2016 09:57
125-062216	L16061290-04	06/22/2016 06:55	06/23/2016 09:57
109-062216	L16061290-05	06/22/2016 07:20	06/23/2016 09:57
18CPTMW07-062216	L16061290-06	06/22/2016 08:30	06/23/2016 09:57
TRIP BLANK	L16061290-07	06/22/2016 00:01	06/23/2016 09:57

Microbac REPORT L16061290
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 43
2.0 Full Sample Data Package 73
2.1 Volatiles Data 74
2.1.1 Volatiles GCMS Data (8260) 75
2.1.1.1 Summary Data 76
2.1.1.2 QC Summary Data 94
2.1.1.3 Sample Data 155
2.1.1.4 Standards Data 194
2.1.1.5 Raw QC Data 377
2.2 Semivolatiles Data 505
2.2.1 Semivolatiles GC/MS Data (Dioxane) 414
2.2.1.1 Summary Data 415
2.2.1.2 QC Summary Data 420
2.2.1.3 Sample Data 451
2.2.1.4 Standards Data 462
2.2.1.5 Raw QC Data 488
2.2 General Chromatography Data 505
2.2.2 6850 LC/MS Data 506
2.2.2.1 Summary Data 507
2.2.2.2 QC Summary Data 511
2.2.2.3 Sample Data 608
2.2.2.4 Standards Data 619
2.2.2.5 Raw QC Data 690
2.3 Metals Data 701
2.3.1 Metals I C P Data 702
2.3.1.1 Summary Data 703
2.3.1.2 QC Summary Data 708
2.3.1.3 Raw Data 766
2.3.2 Metals ICP-MS Data 1103
2.3.2.1 Summary Data 1104
2.3.2.2 QC Summary Data 1109
2.3.2.3 Raw Data 1149
2.3.3 Metals CVAA Data (Mercury) 1610
2.3.3.1 Summary Data 1611
2.3.3.2 QC Summary 1615
2.3.3.3 Raw Data 1639
3.0 Attachments 1644

1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575086, WG575199, WG575092	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-13 12:36:35

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575086, WG575199, WG575092	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575086, WG575199, WG575092	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			2
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575086, WG575199, WG575092	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575086, WG575199, WG575092	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575086, WG575199, WG575092	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Acetone, 2-Butanone, 1,2-Dichloroethane and 2-Hexanone were below the lower control limit in the CCV WG575085-02 analyzed 07/02/2016 on HPMS11. Acetone and 2-Butanone were below the lower control limit in the CCV WG575198-02 analyzed 07/05/2016 on HPMS11. Chloromethane was below the lower control limit in the Alternate Source standard WG574723-12 analyzed 06/30/2016 on HPMS11.

2. 1,1-Dichloroethene, Chloromethane, Dichlorodifluoromethane were below the lower control limit in the LCS WG575199-02 and the LCSD WG575199-03 analyzed 07/05/2016 on HPMS11. Vinyl chloride was below the lower control limit in the LCSD WG575199-03 analyzed 07/05/2016 on HPMS11. 2,2-Dichloropropane was below the lower control limit in the LCS WG575086-02 and the LCSD WG575086-03 analyzed 07/03/2016 on HPMS11.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-07-12 12:33:07

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005, WG575171	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-06 18:23:21

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005, WG575171	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005, WG575171	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005, WG575171	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005, WG575171	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005, WG575171	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-12 15:09:26

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 03 required dilution analysis in order to obtain results for calcium, iron and sodium within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-12 15:05:14

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 03 required dilution analysis in order to obtain results for barium and manganese within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-12 15:04:05

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW16-062116	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 01:14
Collect Date:	06/21/2016 13:20	**Dilution:**	1	**File ID:**	15M18702
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	54.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW16-062116	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 21:17
Collect Date:	06/21/2016 13:20	**Dilution:**	1	**File ID:**	1LM.LM35585
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW16-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575086	**Analyst:**	TMB	**Run Date:**	07/02/2016 23:41
Collect Date:	06/21/2016 14:40	**Dilution:**	2.5	**File ID:**	11M13060
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	Q	25.0	12.5	6.25
Benzene	71-43-2	0.352	J	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	Q	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	0.626	U	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	Q	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	1.73	J	2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	58.0	Q	2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	9.00		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	31.2		2.50	1.25	0.625

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.747	J	2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	Q	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	0.786	J	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	0.299	U	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	88.6	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	93.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	MW16-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575092	**Analyst:**	TMB	**Run Date:**	07/03/2016 12:37
Collect Date:	06/21/2016 14:40	**Dilution:**	20	**File ID:**	6M140393
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	922		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	99.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW16-062116	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/05/2016 17:29
Collect Date:	06/21/2016 14:40	**Dilution:**	5	**File ID:**	15M18724
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	18.0		10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	73.0	20	129	

Certificate of Analysis

Sample #:	L16061290-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW16-062116	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 21:36
Collect Date:	06/21/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM35586
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.615		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW16F-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 15:00
Collect Date:	06/21/2016 14:40	**Dilution:**	1	**File ID:**	T3.062416.150030
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.289		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Magnesium, Total	7439-95-4	17.3		1.00	0.500	0.250
Potassium, Total	7440-09-7	4.10		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00641	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW16F-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/27/2016 13:19
Collect Date:	06/21/2016 14:40	**Dilution:**	20	**File ID:**	T3.062716.131923
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	23.7		10.0	5.00	2.50
Iron, Total	7439-89-6	38.8		4.00	2.00	1.00
Sodium, Total	7440-23-5	142		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW16F-062116	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 12:38
Collect Date:	06/21/2016 14:40	**Dilution:**	1	**File ID:**	NI.070116.123834
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0156		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000563	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00236	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00976		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0181		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.000902	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0293	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW16F-062116	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 16:08
Collect Date:	06/21/2016 14:40	**Dilution:**	10	**File ID:**	NI.070116.160841
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.411		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.659		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW16F-062116	**Prep Method:**	7470A	**Prep Date:**	06/25/2016 11:30
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 10:18
Workgroup #:	WG574691	**Analyst:**	AMA	**Run Date:**	07/01/2016 11:39
Collect Date:	06/21/2016 14:40	**Dilution:**	1	**File ID:**	M7.070116.113952
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	125-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575199	**Analyst:**	JDS	**Run Date:**	07/06/2016 00:34
Collect Date:	06/22/2016 06:55	**Dilution:**	1	**File ID:**	11M13090
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.844	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	89.4	70	120	
Toluene-d8	98.4	85	120	
4-Bromofluorobenzene	92.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	125-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 21:55
Collect Date:	06/22/2016 06:55	**Dilution:**	500	**File ID:**	1LM.LM35587
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	935		200	100	50.0

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	109-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575086	**Analyst:**	TMB	**Run Date:**	07/02/2016 23:09
Collect Date:	06/22/2016 07:20	**Dilution:**	5	**File ID:**	11M13059
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	25.0	Q	50.0	25.0	12.5
Benzene	71-43-2	1.25	U	5.00	1.25	0.625
Bromobenzene	108-86-1	1.25	U	5.00	1.25	0.625
Bromochloromethane	74-97-5	2.00	U	5.00	2.00	1.00
Bromodichloromethane	75-27-4	2.50	U	5.00	2.50	1.25
Bromoform	75-25-2	5.00	U	10.0	5.00	2.50
Bromomethane	74-83-9	5.00	U	10.0	5.00	2.50
2-Butanone	78-93-3	25.0	Q	50.0	25.0	12.5
n-Butylbenzene	104-51-8	2.50	U	5.00	2.50	1.25
sec-Butylbenzene	135-98-8	2.50	U	5.00	2.50	1.25
tert-Butylbenzene	98-06-6	2.50	U	5.00	2.50	1.25
Carbon disulfide	75-15-0	5.00	U	10.0	5.00	2.50
Carbon tetrachloride	56-23-5	2.50	U	5.00	2.50	1.25
Chlorobenzene	108-90-7	1.25	U	5.00	1.25	0.625
Chlorodibromomethane	124-48-1	2.50	U	5.00	2.50	1.25
Chloroethane	75-00-3	5.00	U	10.0	5.00	2.50
Chloroform	67-66-3	1.61	J	5.00	1.25	0.625
Chloromethane	74-87-3	5.00	U	10.0	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	5.00	1.25	0.625
4-Chlorotoluene	106-43-4	2.50	U	5.00	2.50	1.25

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	10.0	Q	25.0	10.0	5.00
1,2-Dibromoethane	106-93-4	2.50	U	5.00	2.50	1.25
Dibromomethane	74-95-3	2.50	U	5.00	2.50	1.25
1,2-Dichlorobenzene	95-50-1	1.25	U	5.00	1.25	0.625
1,3-Dichlorobenzene	541-73-1	2.50	U	5.00	2.50	1.25
1,4-Dichlorobenzene	106-46-7	1.25	U	5.00	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	5.00	2.50	1.25
1,1-Dichloroethane	75-34-3	0.884	J	5.00	1.25	0.625
1,2-Dichloroethane	107-06-2	2.50	Q	5.00	2.50	1.25
1,1-Dichloroethene	75-35-4	5.00	U	10.0	5.00	2.50
cis-1,2-Dichloroethene	156-59-2	149		5.00	2.50	1.25
trans-1,2-Dichloroethene	156-60-5	1.69	J	5.00	2.50	1.25
1,2-Dichloropropane	78-87-5	2.00	U	5.00	2.00	1.00
1,3-Dichloropropane	142-28-9	2.00	U	5.00	2.00	1.00
2,2-Dichloropropane	594-20-7	2.50	U	5.00	2.50	1.25
cis-1,3-Dichloropropene	10061-01-5	2.50	U	5.00	2.50	1.25
trans-1,3-Dichloropropene	10061-02-6	5.00	U	10.0	5.00	2.50
1,1-Dichloropropene	563-58-6	2.50	U	5.00	2.50	1.25
Ethylbenzene	100-41-4	2.50	U	5.00	2.50	1.25
2-Hexanone	591-78-6	25.0	Q	50.0	25.0	12.5
Hexachlorobutadiene	87-68-3	2.50	U	5.00	2.50	1.25
Isopropylbenzene	98-82-8	2.50	U	5.00	2.50	1.25
p-Isopropyltoluene	99-87-6	2.50	U	5.00	2.50	1.25
4-Methyl-2-pentanone	108-10-1	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	2.50	U	5.00	2.50	1.25
Naphthalene	91-20-3	2.00	U	5.00	2.00	1.00
n-Propylbenzene	103-65-1	1.25	U	5.00	1.25	0.625
Styrene	100-42-5	1.25	U	5.00	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	2.50	U	5.00	2.50	1.25
1,1,2,2-Tetrachloroethane	79-34-5	2.00	U	5.00	2.00	1.00
Tetrachloroethene	127-18-4	2.50	U	5.00	2.50	1.25
Toluene	108-88-3	2.50	U	5.00	2.50	1.25
1,2,3-Trichlorobenzene	87-61-6	1.50	U	5.00	1.50	0.750
1,2,4-Trichlorobenzene	120-82-1	2.00	U	5.00	2.00	1.00
1,1,1-Trichloroethane	71-55-6	2.50	U	5.00	2.50	1.25
1,1,2-Trichloroethane	79-00-5	2.50	U	5.00	2.50	1.25
Trichloroethene	79-01-6	670		5.00	2.50	1.25
Trichlorofluoromethane	75-69-4	2.50	U	5.00	2.50	1.25
1,2,3-Trichloropropane	96-18-4	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	2.50	U	5.00	2.50	1.25
1,3,5-Trimethylbenzene	108-67-8	2.50	U	5.00	2.50	1.25
Vinyl chloride	75-01-4	2.50	U	5.00	2.50	1.25
o-Xylene	95-47-6	2.50	U	5.00	2.50	1.25
m-,p-Xylene	179601-23-1	5.00	U	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.1	85	115	
1,2-Dichloroethane-d4	86.4	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	94.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	109-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 01:59
Collect Date:	06/22/2016 07:20	**Dilution:**	1	**File ID:**	15M18704
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	85.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	109-062216	**Prep Method:**	6850	**Prep Date:**	07/05/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575171	**Analyst:**	JWR	**Run Date:**	07/05/2016 17:06
Collect Date:	06/22/2016 07:20	**Dilution:**	1000	**File ID:**	1LM.LM35610
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1810		400	200	100

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	109-062216	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 15:04
Collect Date:	06/22/2016 07:20	**Dilution:**	1	**File ID:**	T3.062416.150424
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	3.62		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	2.30		0.500	0.250	0.125
Iron, Total	7439-89-6	3.98		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.90		1.00	0.500	0.250
Potassium, Total	7440-09-7	0.692	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00538	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	33.8		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	109-062216	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 12:41
Collect Date:	06/22/2016 07:20	**Dilution:**	1	**File ID:**	NI.070116.124145
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00137	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0812		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00387	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00149	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00212	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00176	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0280		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00389	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00678		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0126	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	109-062216	**Prep Method:**	7470A	**Prep Date:**	06/25/2016 11:30
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 10:18
Workgroup #:	WG574691	**Analyst:**	AMA	**Run Date:**	07/01/2016 11:42
Collect Date:	06/22/2016 07:20	**Dilution:**	1	**File ID:**	M7.070116.114222
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18CPTMW07-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575086	**Analyst:**	TMB	**Run Date:**	07/02/2016 18:22
Collect Date:	06/22/2016 08:30	**Dilution:**	1	**File ID:**	11M13050
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.340	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	85.9	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	91.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW07-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/05/2016 18:37
Collect Date:	06/22/2016 08:30	**Dilution:**	1	**File ID:**	15M18727
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	49.9	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW07-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 22:33
Collect Date:	06/22/2016 08:30	**Dilution:**	1	**File ID:**	1LM.LM35589
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.634		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061290-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575086	**Analyst:**	TMB	**Run Date:**	07/02/2016 16:15
Collect Date:	06/22/2016 00:01	**Dilution:**	1	**File ID:**	11M13046
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.7	85	115	
1,2-Dichloroethane-d4	80.0	70	120	
Toluene-d8	99.6	85	120	
4-Bromofluorobenzene	93.1	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW16-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575086	**Analyst:**	TMB	**Run Date:**	07/02/2016 23:41
Collect Date:	06/21/2016 14:40	**Dilution:**	2.5	**File ID:**	11M13060
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	Q	25.0	12.5	6.25
Benzene	71-43-2	0.352	J	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	Q	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	0.626	U	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	Q	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	1.73	J	2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	58.0	Q	2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	9.00		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	31.2		2.50	1.25	0.625
trans-1,2-Dichloroethene	156-60-5	0.747	J	2.50	1.25	0.625

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	Q	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	0.786	J	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	0.299	U	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	88.6	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	93.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	MW16-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575092	**Analyst:**	TMB	**Run Date:**	07/03/2016 12:37
Collect Date:	06/21/2016 14:40	**Dilution:**	20	**File ID:**	6M140393
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	922		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	99.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	125-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575199	**Analyst:**	JDS	**Run Date:**	07/06/2016 00:34
Collect Date:	06/22/2016 06:55	**Dilution:**	1	**File ID:**	11M13090
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.844	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	89.4	70	120	
Toluene-d8	98.4	85	120	
4-Bromofluorobenzene	92.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	109-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575086	**Analyst:**	TMB	**Run Date:**	07/02/2016 23:09
Collect Date:	06/22/2016 07:20	**Dilution:**	5	**File ID:**	11M13059
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	25.0	Q	50.0	25.0	12.5
Benzene	71-43-2	1.25	U	5.00	1.25	0.625
Bromobenzene	108-86-1	1.25	U	5.00	1.25	0.625
Bromochloromethane	74-97-5	2.00	U	5.00	2.00	1.00
Bromodichloromethane	75-27-4	2.50	U	5.00	2.50	1.25
Bromoform	75-25-2	5.00	U	10.0	5.00	2.50
Bromomethane	74-83-9	5.00	U	10.0	5.00	2.50
2-Butanone	78-93-3	25.0	Q	50.0	25.0	12.5
n-Butylbenzene	104-51-8	2.50	U	5.00	2.50	1.25
sec-Butylbenzene	135-98-8	2.50	U	5.00	2.50	1.25
tert-Butylbenzene	98-06-6	2.50	U	5.00	2.50	1.25
Carbon disulfide	75-15-0	5.00	U	10.0	5.00	2.50
Carbon tetrachloride	56-23-5	2.50	U	5.00	2.50	1.25
Chlorobenzene	108-90-7	1.25	U	5.00	1.25	0.625
Chlorodibromomethane	124-48-1	2.50	U	5.00	2.50	1.25
Chloroethane	75-00-3	5.00	U	10.0	5.00	2.50
Chloroform	67-66-3	1.61	J	5.00	1.25	0.625
Chloromethane	74-87-3	5.00	U	10.0	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	5.00	1.25	0.625
4-Chlorotoluene	106-43-4	2.50	U	5.00	2.50	1.25
1,2-Dibromo-3-chloropropane	96-12-8	10.0	Q	25.0	10.0	5.00
1,2-Dibromoethane	106-93-4	2.50	U	5.00	2.50	1.25
Dibromomethane	74-95-3	2.50	U	5.00	2.50	1.25
1,2-Dichlorobenzene	95-50-1	1.25	U	5.00	1.25	0.625
1,3-Dichlorobenzene	541-73-1	2.50	U	5.00	2.50	1.25
1,4-Dichlorobenzene	106-46-7	1.25	U	5.00	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	5.00	2.50	1.25
1,1-Dichloroethane	75-34-3	0.884	J	5.00	1.25	0.625
1,2-Dichloroethane	107-06-2	2.50	Q	5.00	2.50	1.25
1,1-Dichloroethene	75-35-4	5.00	U	10.0	5.00	2.50
cis-1,2-Dichloroethene	156-59-2	149		5.00	2.50	1.25

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.69	J	5.00	2.50	1.25
1,2-Dichloropropane	78-87-5	2.00	U	5.00	2.00	1.00
1,3-Dichloropropane	142-28-9	2.00	U	5.00	2.00	1.00
2,2-Dichloropropane	594-20-7	2.50	U	5.00	2.50	1.25
cis-1,3-Dichloropropene	10061-01-5	2.50	U	5.00	2.50	1.25
trans-1,3-Dichloropropene	10061-02-6	5.00	U	10.0	5.00	2.50
1,1-Dichloropropene	563-58-6	2.50	U	5.00	2.50	1.25
Ethylbenzene	100-41-4	2.50	U	5.00	2.50	1.25
2-Hexanone	591-78-6	25.0	Q	50.0	25.0	12.5
Hexachlorobutadiene	87-68-3	2.50	U	5.00	2.50	1.25
Isopropylbenzene	98-82-8	2.50	U	5.00	2.50	1.25
p-Isopropyltoluene	99-87-6	2.50	U	5.00	2.50	1.25
4-Methyl-2-pentanone	108-10-1	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	2.50	U	5.00	2.50	1.25
Naphthalene	91-20-3	2.00	U	5.00	2.00	1.00
n-Propylbenzene	103-65-1	1.25	U	5.00	1.25	0.625
Styrene	100-42-5	1.25	U	5.00	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	2.50	U	5.00	2.50	1.25
1,1,2,2-Tetrachloroethane	79-34-5	2.00	U	5.00	2.00	1.00
Tetrachloroethene	127-18-4	2.50	U	5.00	2.50	1.25
Toluene	108-88-3	2.50	U	5.00	2.50	1.25
1,2,3-Trichlorobenzene	87-61-6	1.50	U	5.00	1.50	0.750
1,2,4-Trichlorobenzene	120-82-1	2.00	U	5.00	2.00	1.00
1,1,1-Trichloroethane	71-55-6	2.50	U	5.00	2.50	1.25
1,1,2-Trichloroethane	79-00-5	2.50	U	5.00	2.50	1.25
Trichloroethene	79-01-6	670		5.00	2.50	1.25
Trichlorofluoromethane	75-69-4	2.50	U	5.00	2.50	1.25
1,2,3-Trichloropropane	96-18-4	5.00	U	10.0	5.00	2.50
1,2,4-Trimethylbenzene	95-63-6	2.50	U	5.00	2.50	1.25
1,3,5-Trimethylbenzene	108-67-8	2.50	U	5.00	2.50	1.25
Vinyl chloride	75-01-4	2.50	U	5.00	2.50	1.25
o-Xylene	95-47-6	2.50	U	5.00	2.50	1.25
m-,p-Xylene	179601-23-1	5.00	U	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.1	85	115	
1,2-Dichloroethane-d4	86.4	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	94.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18CPTMW07-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575086	**Analyst:**	TMB	**Run Date:**	07/02/2016 18:22
Collect Date:	06/22/2016 08:30	**Dilution:**	1	**File ID:**	11M13050
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.340	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	85.9	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	91.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575086	**Analyst:**	TMB	**Run Date:**	07/02/2016 16:15
Collect Date:	06/22/2016 00:01	**Dilution:**	1	**File ID:**	11M13046
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.7	85	115	
1,2-Dichloroethane-d4	80.0	70	120	
Toluene-d8	99.6	85	120	
4-Bromofluorobenzene	93.1	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 042416
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75498 Surrogate Standard: STD75498
CCV: STD75791 LCS: STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566155

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M138749	RINSE	NA	1	1		04/24/16 16:05
6M138750	WG566155-01 50ng BFB 826-A9	NA	1	1	STD75485	04/24/16 16:33
6M138751	WG566155-02 5ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 16:59
6M138752	WG566155-03 20ug/L STD 826-A	NA	1	1	STD75791	04/24/16 17:31
6M138753	WG566155-04 50ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 18:03
6M138754	WG566155-05 100ug/L STD 826-A	NA	1	1	STD75791	04/24/16 18:36
6M138755	WG566155-06 200ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:08
6M138756	WG566155-07 300ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:40
6M138757	WG566155-08 400ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:12
6M138758	WG566155-09 500ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:44
6M138759	RINSE	NA	1	1		04/24/16 21:16
6M138760	RINSE	NA	1	1		04/24/16 21:49
6M138761	WG566155-10 100ug/L ALT SRC	NA	1	1	STD75801	04/24/16 22:21
6M138762	RINSE	NA	1	1		04/24/16 22:53
6M138763	RINSE	NA	1	1		04/24/16 23:25

Approved: April 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 051316

Analyst1: JDS Analyst2: NA

Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 23 / 0

Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 18 / 0

Method: 624 SOP: MSV10 Rev: 14

Maintenance Log ID:

Internal Standard: STD76110 Surrogate Standard: STD75929

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568769

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M11835	RINSE	NA	1	1		05/13/16 11:59
11M11836	WG568769-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 14:15
11M11837	WG568769-02 0.3ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 14:40
11M11838	WG568769-03 0.4ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:12
11M11839	WG568769-04 1.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:43
11M11840	WG568769-05 2.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:15
11M11841	WG568769-06 5.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:47
11M11842	WG568769-07 20ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:19
11M11843	WG568769-08 50ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:51
11M11844	WG568769-09 100ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:22
11M11845	WG568769-10 200ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:54
11M11846	WG568769-11 300ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 19:26
11M11847	RINSE	NA	1	1		05/13/16 19:58
11M11848	WG568769-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 20:30
11M11849	RINSE	NA	1	1		05/13/16 21:02
11M11850	RINSE	NA	1	1		05/13/16 21:34

Approved: May 23, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 063016
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53798

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76744 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574723

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140313	WG574723-01 50ng BFB STD 8260	NA	1	1	STD76496	06/30/16 11:36
6M140314	WG574723-02 0.3ug/L STD 8260	NA	1	1	STD76892	06/30/16 12:03
6M140315	WG574723-03 0.4ug/L STD 8260	NA	1	1	STD76892	06/30/16 12:35
6M140316	WG574723-04 1ug/L STD 8260	NA	1	1	STD76892	06/30/16 13:08
6M140317	WG574723-05 2ug/L STD 8260	NA	1	1	STD76892	06/30/16 13:40
6M140318	WG574723-06 5ug/L STD 8260	NA	1	1	STD76892	06/30/16 14:12
6M140319	WG574723-07 20ug/L STD 8260	NA	1	1	STD76892	06/30/16 14:44
6M140320	WG574723-08 50ug/L STD 8260	NA	1	1	STD76892	06/30/16 15:16
6M140321	WG574723-09 100ug/L STD 8260	NA	1	1	STD76892	06/30/16 15:48
6M140322	WG574723-10 200ug/L STD 8260	NA	1	1	STD76892	06/30/16 16:21
6M140323	WG574723-11 300ug/L STD 8260	NA	1	1	STD76892	06/30/16 16:53
6M140324	RINSE	NA	1	1		06/30/16 17:27
6M140325	RINSE	NA	1	1		06/30/16 17:59
6M140326	WG574723-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76744	06/30/16 18:31
6M140327	RINSE	NA	1	1		06/30/16 19:04

Approved: July 07, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 070216
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76881 Surrogate Standard: STD76782
CCV: STD76892 LCS: STD76972 MS/MSD: STD76972

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG757086

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M13038	RINSE	NA	1	1		07/02/16 11:36
11M13039	WG575085-01 50ng BFB STD 8260	NA	1	1	STD76496	07/02/16 13:02
11M13040	WG575085-01 50ng BFB STD 8260	NA	1	1	STD76496	07/02/16 13:14
11M13041	WG575085-01 50ng BFB STD 8260	NA	1	1	STD76496	07/02/16 13:39
11M13042	WG575085-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/02/16 14:04
11M13043	WG575085-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/02/16 14:39
11M13044	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	07/02/16 15:11
11M13045	WG575086-01 VBLK0702 BLANK STD 826	NA	1	1		07/02/16 15:43
11M13046	L16061290-07 A TB 826-LOW	<2	1	1		07/02/16 16:15
11M13047	L16061416-03 A TB 826-SPE	<2	1	1		07/02/16 16:47
11M13048	L16061418-02 A TB 826-SPE	<2	1	1		07/02/16 17:18
11M13049	L16061406-05 A TB 826-SPE	<2	1	1		07/02/16 17:50
11M13050	L16061290-06 A 826-LOW	<2	1	1		07/02/16 18:22
11M13051	L16061416-01 A 826-SPE	<2	1	1		07/02/16 18:54
11M13052	L16061418-01 A 826-SPE	<2	1	1		07/02/16 19:26
11M13053	L16061418-03 A 826-SPE	<2	1	1		07/02/16 19:58
11M13054	L16061406-01 A 826-SPE	<2	1	1		07/02/16 20:30
11M13055	L16061406-03 A 826-SPE	<2	1	1		07/02/16 21:01
11M13056	L16061416-02 A 826-SPE	<2	1	1		07/02/16 21:33
11M13057	L16061406-02 A 826-SPE	<2	1	1		07/02/16 22:05
11M13058	L16061406-04 A 5X 826-SPE	<2	1	5		07/02/16 22:37
11M13059	L16061290-05 A 5X 826-LOW	<2	1	5		07/02/16 23:09
11M13060	L16061290-02 A 2.5X 826-LOW	<2	1	2.5		07/02/16 23:41
11M13061	L16061290-04 A 826-LOW	<2	1	1		07/03/16 00:13
11M13062	WG575086-02 20ug/L LCS STD 8260	NA	1	1	STD76870	07/03/16 00:45
11M13063	WG575086-03 20ug/L LCS2 STD 8260	NA	1	1	STD76870	07/03/16 01:16
11M13064	RINSE	NA	1	1		07/03/16 01:48
11M13065	WG575086-04 VBLK0702 BLANK STD 624	NA	2	1		07/03/16 02:20
11M13066	L16070054-02 A 624-SPE	<2	2	1		07/03/16 02:52
11M13067	CCV	NA	1	1		07/03/16 03:24
11M13068	RINSE	NA	1	1		07/03/16 03:56
11M13069	RINSE	NA	1	1		07/03/16 04:27

Approved: July 11, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 070216
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76881 Surrogate Standard: STD76782
CCV: STD76892 LCS: STD76972 MS/MSD: STD76972

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG757086

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
20	X	25	Over Calibration Range	TCE
File ID: 11M13057				
	L16061406-02			
21	X	2.5	Analyzed too dilute	
File ID: 11M13058				
	L16061406-04 DNR			
23	X	20	Over Calibration Range	
File ID: 11M13060				
	L16061290-02			

Approved: July 11, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 070316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG575092

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140388	WG575091-01 50ng BFB STD 8260	NA	1	1	STD76496	07/03/16 10:03
6M140389	WG575091-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/03/16 10:28
6M140390	WG575091-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/03/16 11:01
6M140391	WG575092-01 VBLK0703 BLANK STD 826	NA	1	1		07/03/16 11:33
6M140392	WG575092-02 20ug/L LCS STD 8260	NA	1	1	STD76744	07/03/16 12:05
6M140393	L16061290-02 B 20X 826-LOW D1	<2	1	20		07/03/16 12:37
6M140394	L16061406-02 B 25X 826-SPE D1	<2	1	25		07/03/16 13:08
6M140395	L16061284-13 TB A 826-SPE	<2	1	1		07/03/16 13:41
6M140396	L16061345-08 EB A 826-SPE	<2	1	1		07/03/16 14:13
6M140397	L16061284-02 A 826-SPE	<2	1	1		07/03/16 14:45
6M140398	L16061284-03 A 826-SPE	<2	1	1		07/03/16 15:17
6M140399	L16061284-12 A 826-SPE	<2	1	1		07/03/16 15:49
6M140400	L16061284-08 A 826-SPE	<2	1	1		07/03/16 16:21
6M140401	L16061284-09 A 826-SPE	<2	1	1		07/03/16 16:53
6M140402	L16061284-10 A 826-SPE	<2	1	1		07/03/16 17:26
6M140403	L16061284-11 A 826-SPE	<2	1	1		07/03/16 17:57
6M140404	L16061284-01 A 2.5X 826-SPE	<2	1	2.5		07/03/16 18:29
6M140405	L16061284-04 A 2.5X 826-SPE	<2	1	2.5		07/03/16 19:02
6M140406	L16061284-05 A 5X 826-SPE	7	1	5		07/03/16 19:34
6M140407	L16061284-06 A 5X 826-SPE	7	1	5		07/03/16 20:06
6M140408	L16061345-04 B 2X 826-SPE	7	1	2		07/03/16 20:38
6M140409	L16061345-05 A\&B 2X 826-SPE	7	1	2	STD76744	07/03/16 21:10
6M140410	L16061345-06 A\&B 2X 826-SPE	7	1	2	STD76744	07/03/16 21:42
6M140411	CCV	NA	1	1		07/03/16 22:14
6M140412	RINSE	NA	1	1		07/03/16 22:46
6M140413	ANTIFOAM BLANK	NA	1	1		07/03/16 23:18
6M140414	RINSE	NA	1	1		07/03/16 23:50

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M140389				
VA was low, DNR.				

Approved: July 11, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 070316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG575092

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X	1	Analyzed too dilute	
File ID: 6M140404				
19	X	2.5	Analyzed too dilute	
File ID: 6M140406				
20				
File ID: 6M140407				
	L16061284-06		Analyzed out of hold time due to preservation.	
28				
File ID: 6M140408				
	L16061345-04		Analyzed out of hold time due to preservation.	
29				
File ID: 6M140409				
	L16061345-05		Analyzed out of hold time due to preservation.	
30				
File ID: 6M140410				
	L16061345-06		Analyzed out of hold time due to preservation.	

Approved: July 11, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 070516
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76881 Surrogate Standard: STD76782
CCV: STD76892 LCS: STD76870 MS/MSD: NA

Column 1 ID: Column 2 ID: NA
Workgroups: WG575199

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M13072	WG575198-01 50ng BFB STD 8260	NA	1	1	STD76496	07/05/16 14:37
11M13073	WG575198-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/05/16 15:03
11M13074	WG575198-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/05/16 15:40
11M13076	WG575198-01 50ng BFB STD 8260	NA	1	1	STD76496	07/05/16 17:13
11M13077	WG575198-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/05/16 17:37
11M13078	WG575198-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/05/16 18:11
11M13079	WGXXXXXX-01 50ug/L A9-CCV STD 8260	NA	1	1	STDXXXXX	07/05/16 18:43
11M13080	WG575199-01 BLANK STD 8260	NA	1	1		07/05/16 19:15
11M13081	WG575199-02 20ug/L LCS STD 8260	NA	1	1	STD76870	07/05/16 19:47
11M13082	WG575199-03 20ug/L LCS2 STD 8260	NA	1	1	STD76870	07/05/16 20:19
11M13083	L16061509-02 B D1 100X 826-BETX	<2	1	100		07/05/16 20:51
11M13084	L16061509-03 B D1 100X 826-BETX	<2	1	100		07/05/16 21:23
11M13085	L16061509-06 B D1 10X 826-BETX	<2	1	10		07/05/16 21:54
11M13086	L16061509-10 B D1 5X 826-BETX	<2	1	5		07/05/16 22:26
11M13087	L16061507-01 B D1 100X 826-SPE2	<2	1	100		07/05/16 22:59
11M13088	L16061507-02 B D1 5X 826-SPE2	<2	1	5		07/05/16 23:30
11M13089	L16061406-04 B 00 2.5X 826-SPE	<2	1	2.5		07/06/16 00:02
11M13090	L16061290-04 B A1 826-SPE	<2	1	1		07/06/16 00:34
11M13091	L16061452-04 A TB 826-LOW	<2	1	1		07/06/16 01:06
11M13092	L16061453-04 A TB 826-LOW	<2	1	1		07/06/16 01:38
11M13093	L16061452-01 A 826-LOW	<2	1	1		07/06/16 02:10
11M13094	L16061453-02 A 826-LOW	<2	1	1		07/06/16 02:42
11M13095	L16061561-01 10X AF 826-TC	<2	17	10		07/06/16 03:14
11M13096	L16061452-03 10X A 826-LOW	<2	1	10		07/06/16 03:46
11M13097	L16061453-01 500X A 826-LOW	<2	1	500		07/06/16 04:18
11M13098	L16061453-03 25X A 826-LOW	<2	1	25		07/06/16 04:50
11M13099	L16061410-01 5X A 826-LOW	<2	1	5		07/06/16 05:21
11M13100	CCV	NA	1	1		07/06/16 05:53
11M13101	RINSE	NA	1	1		07/06/16 06:25
11M13102	RINSE	NA	1	1		07/06/16 06:57

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: July 13, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 070516
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76881 Surrogate Standard: STD76782
CCV: STD76892 LCS: STD76870 MS/MSD: NA

Column 1 ID: Column 2 ID: NA
Workgroups: WG575199

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3	X			
File ID:	11M13074			
	WG575198-02 CCV aborted due to analyst error			
6			Check Standard Failure	
File ID:	11M13078			
	failed low for ace., meth. ace., 2-but.			
25	X	250	Analyzed too dilute	
File ID:	11M13097			
	L16061453-01			
26	X	10	Analyzed too dilute	
File ID:	11M13098			
	L16061453-03			
27	X	1	Analyzed too dilute	
File ID:	11M13099			
	L16061410-01			

Approved: July 13, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 24-APR-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74754
Analytical Workgroups: WG566155

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-APR-2016
Tiffany Bailey

Secondary Reviewer:
29-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-29-2016 12:29:57

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75133
Analytical Workgroups: WG568769

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-MAY-2016

Secondary Reviewer:
23-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-23-2016 15:39:32

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76082
Analytical Workgroups: WG574723

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-JUL-2016
Tiffany Bailey

Secondary Reviewer:
07-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-07-2016 13:59:59

Microbac Laboratories Inc.

Data Checklist

Date: 02-JUL-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 76202
Analytical Workgroups: WG575086

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 09-JUL-2016

Secondary Reviewer: 11-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-11-2016 12:07:02

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 76231
Analytical Workgroups: WG575199

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	JDS
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
11-JUL-2016

Secondary Reviewer:
13-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-13-2016 08:01:44

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG575086

Login Number: L16061290

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW16-062116	02	06/21/16					07/02/2016	11.4	14		07/02/16	11.4	14	
109-062216	05	06/22/16					07/02/2016	10.7	14		07/02/16	10.7	14	
18CPTMW07-062216	06	06/22/16					07/02/2016	10.4	14		07/02/16	10.4	14	
TRIP BLANK	07	06/22/16					07/02/2016	10.7	14		07/02/16	10.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4845927
Report generated 07/13/2016 08:35

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG575092

Login Number: L16061290

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW16-062116	02	06/21/16					07/03/2016	11.9	14		07/03/16	11.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4845927
Report generated 07/13/2016 08:35

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG575199

Login Number: L16061290

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
125-062216	04	06/22/16					07/06/2016	13.7	14		07/06/16	13.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4845927
Report generated 07/13/2016 08:35

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061290
Instrument Id: HPMS11
Workgroup (AAB#): WG575086

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061290-02	2.50	DL01	88.6	102	93.5	102
L16061290-05	5.00	DL01	86.4	99.1	94.0	101
L16061290-06	1.00	01	85.9	100	91.7	100
L16061290-07	1.00	01	80.0	96.7	93.1	99.6
WG575086-01	1.00	01	80.6	97.1	95.4	101
WG575086-02	1.00	01	88.6	101	90.7	99.5
WG575086-03	1.00	01	86.9	99.4	91.6	101
WG575086-04	1.00	01	88.3	99.8	92.6	100

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4845935
Report generated: 07/13/2016 08:36

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061290
Instrument Id: HPMS11
Workgroup (AAB#): WG575199

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061290-04	1.00	01	89.4	101	92.4	98.4
WG575199-01	1.00	01	87.7	99.4	91.6	98.6
WG575199-02	1.00	01	86.3	100	91.2	99.2
WG575199-03	1.00	01	85.3	98.0	89.1	97.4

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4845935
Report generated: 07/13/2016 08:36

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061290
Instrument Id: HPMS6
Workgroup (AAB#): WG575092

Method: 8260
CAL ID: HPMS6-30-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061290-02	20.0	DL02	103	102	99.0	100
WG575092-01	1.00	01	102	102	100	99.0
WG575092-02	1.00	01	103	103	96.4	100

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4845935
Report generated: 07/13/2016 08:36

METHOD BLANK SUMMARY

Login Number: L16061290
Blank File ID: 11M13045
Prep Date: 07/02/16 15:43
Analyzed Date: 07/02/16 15:43
Analyst: TMB

Work Group: WG575086
Blank Sample ID: WG575086-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
TRIP BLANK	L16061290-07	11M13046	07/02/16 16:15	01
18CPTMW07-062216	L16061290-06	11M13050	07/02/16 18:22	01
109-062216	L16061290-05	11M13059	07/02/16 23:09	DL01
MW16-062116	L16061290-02	11M13060	07/02/16 23:41	DL01
LCS	WG575086-02	11M13062	07/03/16 00:45	01
LCS2	WG575086-03	11M13063	07/03/16 01:16	01

Report Name: BLANK_SUMMARY
PDF File ID: 4845928
Report generated 07/13/2016 08:35

METHOD BLANK SUMMARY

Login Number: L16061290
Blank File ID: 11M13080
Prep Date: 07/05/16 19:15
Analyzed Date: 07/05/16 19:15
Analyst: JDS

Work Group: WG575199
Blank Sample ID: WG575199-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG575199-02	11M13081	07/05/16 19:47	01
LCS2	WG575199-03	11M13082	07/05/16 20:19	01
125-062216	L16061290-04	11M13090	07/06/16 00:34	01

Report Name: BLANK_SUMMARY
PDF File ID: 4845928
Report generated 07/13/2016 08:35

METHOD BLANK SUMMARY

Login Number: L16061290
Blank File ID: 6M140391
Prep Date: 07/03/16 11:33
Analyzed Date: 07/03/16 11:33
Analyst: TMB

Work Group: WG575092
Blank Sample ID: WG575092-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG575092-02	6M140392	07/03/16 12:05	01
MW16-062116	L16061290-02	6M140393	07/03/16 12:37	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4845928
Report generated 07/13/2016 08:35

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 07/02/16 15:43 Sample ID: WG575086-01
Instrument ID: HPMS11 Run Date: 07/02/16 15:43 Prep Method: 5030B/5030C/503
File ID: 11M13045 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575086 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4845929
13-JUL-2016 08:35

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 07/02/16 15:43 Sample ID: WG575086-01
Instrument ID: HPMS11 Run Date: 07/02/16 15:43 Prep Method: 5030B/5030C/503
File ID: 11M13045 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575086 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.1	85 - 115	PASS
1,2-Dichloroethane-d4	80.6	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	95.4	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4845929
13-JUL-2016 08:35

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 07/05/16 19:15 Sample ID: WG575199-01
Instrument ID: HPMS11 Run Date: 07/05/16 19:15 Prep Method: 5030B/5030C/503
File ID: 11M13080 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG575199 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4845929
13-JUL-2016 08:35

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 07/05/16 19:15 Sample ID: WG575199-01
Instrument ID: HPMS11 Run Date: 07/05/16 19:15 Prep Method: 5030B/5030C/503
File ID: 11M13080 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG575199 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11 - 13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	99.4	85 - 115	PASS
1,2-Dichloroethane-d4	87.7	70 - 120	PASS
Toluene-d8	98.6	85 - 120	PASS
4-Bromofluorobenzene	91.6	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4845929
13-JUL-2016 08:35

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 07/03/16 11:33 Sample ID: WG575092-01
Instrument ID: HPMS6 Run Date: 07/03/16 11:33 Prep Method: 5030B/5030C/503
File ID: 6M140391 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575092 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Trichloroethene	0.250	1.00	0.250	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	85 - 115	PASS
1,2-Dichloroethane-d4	102	70 - 120	PASS
Toluene-d8	99.0	85 - 120	PASS
4-Bromofluorobenzene	100	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4845929
13-JUL-2016 08:35

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Run Date: 07/03/2016 Sample ID: WG575092-02
Instrument ID: HPMS6 Run Time: 12:05 Prep Method: 5030B/5030C/503
File ID: 6M140392 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575092 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76744 Cal ID: HPMS6-30-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Trichloroethene	20.0	20.5	103	70 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	103	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	100	85 - 120	PASS
4-Bromofluorobenzene	96.4	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4846257
Report generated: 07/13/2016 08:36

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575199 Units: ug/L
QC Key: DOD4 Lot #: STD76870

Sample ID: WG575199-02 LCS File ID: 11M13081 Run Date: 07/05/2016 19:47
Sample ID: WG575199-03 LCS2 File ID: 11M13082 Run Date: 07/05/2016 20:19

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.4	107	20.0	20.9	104	2.29	80 - 130	30	
1,1,1-Trichloroethane	20.0	17.1	85.4	20.0	16.9	84.4	1.27	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	19.1	95.3	20.0	17.9	89.5	6.36	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.5	102	20.0	19.7	98.7	3.61	75 - 125	30	
1,1-Dichloroethane	20.0	15.9	79.5	20.0	15.8	78.9	0.648	70 - 135	30	
1,1-Dichloroethene	20.0	11.0	54.9	20.0	10.9	54.7	0.448	70 - 130	30	*
1,1-Dichloropropene	20.0	16.7	83.4	20.0	16.4	81.8	1.87	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.9	99.6	20.0	19.9	99.5	0.0479	55 - 140	30	
1,2,3-Trichloropropane	20.0	20.4	102	20.0	19.3	96.4	5.43	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	20.4	102	20.0	20.3	101	0.902	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.8	104	20.0	20.6	103	0.852	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	17.9	89.5	20.0	16.5	82.7	7.89	50 - 130	30	
1,2-Dibromoethane	20.0	20.4	102	20.0	19.0	95.2	6.71	80 - 120	30	
1,2-Dichlorobenzene	20.0	21.4	107	20.0	21.2	106	1.22	70 - 120	30	
1,2-Dichloroethane	20.0	17.7	88.4	20.0	17.3	86.6	2.12	70 - 130	30	
1,2-Dichloropropane	20.0	19.0	94.9	20.0	18.3	91.4	3.80	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.7	104	20.0	20.6	103	0.666	75 - 130	30	
1,3-Dichlorobenzene	20.0	21.2	106	20.0	20.9	105	1.55	75 - 125	30	
1,3-Dichloropropane	20.0	20.6	103	20.0	20.5	103	0.100	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.3	107	20.0	21.1	106	1.05	75 - 125	30	
2,2-Dichloropropane	20.0	16.7	83.7	20.0	16.0	80.0	4.60	70 - 135	30	
2-Butanone	20.0	17.3	86.6	20.0	16.1	80.4	7.46	30 - 150	30	
2-Chlorotoluene	20.0	20.8	104	20.0	20.5	102	1.87	75 - 125	30	
2-Hexanone	20.0	16.2	80.8	20.0	15.0	74.8	7.69	55 - 130	30	
4-Chlorotoluene	20.0	20.5	103	20.0	20.2	101	1.53	75 - 130	30	
4-Methyl-2-pentanone	20.0	18.2	91.2	20.0	17.2	85.8	6.08	60 - 135	30	
Acetone	20.0	16.3	81.7	20.0	15.8	79.0	3.31	40 - 140	30	
Benzene	20.0	17.5	87.7	20.0	17.2	85.9	2.07	80 - 120	30	
Bromobenzene	20.0	20.9	105	20.0	20.5	103	1.96	75 - 125	30	
Bromochloromethane	20.0	20.0	100	20.0	19.6	97.8	2.31	65 - 130	30	
Bromodichloromethane	20.0	19.5	97.5	20.0	19.0	94.8	2.85	75 - 120	30	
Bromoform	20.0	20.4	102	20.0	19.4	97.0	5.15	70 - 130	30	
Bromomethane	20.0	14.4	71.9	20.0	13.3	66.5	7.77	30 - 145	30	
Carbon disulfide	20.0	12.5	62.6	20.0	12.2	61.1	2.44	35 - 160	30	
Carbon tetrachloride	20.0	17.4	86.8	20.0	16.9	84.5	2.67	65 - 140	30	
Chlorobenzene	20.0	21.1	106	20.0	20.6	103	2.39	80 - 120	30	
Chloroethane	20.0	14.7	73.5	20.0	14.5	72.4	1.54	60 - 135	30	
Chloroform	20.0	17.8	89.0	20.0	17.4	87.2	2.00	65 - 135	30	
Chloromethane	20.0	6.21	31.1	20.0	6.18	30.9	0.505	40 - 125	30	*
cis-1,2-Dichloroethene	20.0	18.9	94.5	20.0	17.9	89.5	5.43	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4845930
Report generated: 07/13/2016 08:36

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575199 Units: ug/L
QC Key: DOD4 Lot #: STD76870

Sample ID: WG575199-02 LCS File ID: 11M13081 Run Date: 07/05/2016 19:47
Sample ID: WG575199-03 LCS2 File ID: 11M13082 Run Date: 07/05/2016 20:19

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.1	105	20.0	20.6	103	2.50	70 - 130	30	
Chlorodibromomethane	20.0	21.3	107	20.0	20.4	102	4.47	60 - 135	30	
Dibromomethane	20.0	18.0	90.0	20.0	17.9	89.3	0.808	75 - 125	30	
Dichlorodifluoromethane	20.0	2.14	10.7	20.0	2.10	10.5	2.02	30 - 155	30	*
Ethylbenzene	20.0	19.9	99.6	20.0	20.1	100	0.735	75 - 125	30	
Hexachlorobutadiene	20.0	18.7	93.5	20.0	19.3	96.4	3.14	50 - 140	30	
Isopropylbenzene	20.0	21.1	106	20.0	20.7	103	2.03	75 - 125	30	
m-,p-Xylene	40.0	41.3	103	40.0	40.4	101	2.27	75 - 130	30	
Methylene chloride	20.0	16.2	80.9	20.0	15.9	79.7	1.45	55 - 140	30	
n-Butylbenzene	20.0	19.7	98.5	20.0	19.3	96.3	2.26	70 - 135	30	
n-Propylbenzene	20.0	21.0	105	20.0	20.7	104	1.18	70 - 130	30	
Naphthalene	20.0	18.1	90.6	20.0	17.7	88.6	2.24	55 - 140	30	
o-Xylene	20.0	21.1	106	20.0	20.7	103	2.20	80 - 120	30	
p-Isopropyltoluene	20.0	21.0	105	20.0	20.7	103	1.41	75 - 130	30	
sec-Butylbenzene	20.0	21.1	105	20.0	20.6	103	2.25	70 - 125	30	
Styrene	20.0	21.5	108	20.0	20.9	105	2.76	65 - 135	30	
tert-Butylbenzene	20.0	22.8	114	20.0	21.4	107	6.21	70 - 130	30	
Tetrachloroethene	20.0	19.6	98.2	20.0	19.5	97.5	0.741	45 - 150	30	
Toluene	20.0	19.6	97.8	20.0	19.0	95.1	2.82	75 - 120	30	
trans-1,2-Dichloroethene	20.0	15.6	78.2	20.0	15.4	77.0	1.50	60 - 140	30	
trans-1,3-Dichloropropene	20.0	19.1	95.7	20.0	18.4	92.0	3.94	55 - 140	30	
Trichloroethene	20.0	20.6	103	20.0	20.7	104	0.456	70 - 125	30	
Trichlorofluoromethane	20.0	14.3	71.6	20.0	13.8	68.9	3.84	60 - 145	30	
Vinyl chloride	20.0	10.4	51.9	20.0	9.79	49.0	5.91	50 - 145	30	*

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	86.3	85.3	70 - 120	PASS
Dibromofluoromethane	100	98.0	85 - 115	PASS
4-Bromofluorobenzene	91.2	89.1	75 - 120	PASS
Toluene-d8	99.2	97.4	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4845930
Report generated: 07/13/2016 08:36

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575086 Units: ug/L
QC Key: DOD4 Lot #: STD76870

Sample ID: WG575086-02 LCS File ID: 11M13062 Run Date: 07/03/2016 00:45
Sample ID: WG575086-03 LCS2 File ID: 11M13063 Run Date: 07/03/2016 01:16

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.9	104	20.0	21.4	107	2.42	80 - 130	30	
1,1,1-Trichloroethane	20.0	18.5	92.7	20.0	18.7	93.3	0.590	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	16.5	82.4	20.0	17.5	87.6	6.09	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.2	101	20.0	20.3	102	0.558	75 - 125	30	
1,1-Dichloroethane	20.0	16.9	84.5	20.0	17.2	86.1	1.91	70 - 135	30	
1,1-Dichloroethene	20.0	14.7	73.7	20.0	15.1	75.5	2.48	70 - 130	30	
1,1-Dichloropropene	20.0	17.7	88.5	20.0	17.7	88.6	0.147	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.3	96.3	20.0	20.2	101	4.71	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.7	98.6	20.0	20.6	103	4.17	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.6	98.1	20.0	20.0	100	1.92	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.9	105	20.0	21.1	105	0.781	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	16.9	84.3	20.0	17.9	89.7	6.24	50 - 130	30	
1,2-Dibromoethane	20.0	20.2	101	20.0	21.0	105	3.45	80 - 120	30	
1,2-Dichlorobenzene	20.0	21.4	107	20.0	21.9	110	2.15	70 - 120	30	
1,2-Dichloroethane	20.0	18.1	90.5	20.0	18.2	91.0	0.529	70 - 130	30	
1,2-Dichloropropane	20.0	19.2	95.9	20.0	19.1	95.4	0.567	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.6	103	20.0	21.1	106	2.86	75 - 130	30	
1,3-Dichlorobenzene	20.0	21.1	106	20.0	21.5	108	1.81	75 - 125	30	
1,3-Dichloropropane	20.0	20.6	103	20.0	21.1	106	2.34	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.0	105	20.0	21.4	107	2.09	75 - 125	30	
2,2-Dichloropropane	20.0	13.4	67.2	20.0	13.8	68.8	2.32	70 - 135	30	*
2-Butanone	20.0	16.7	83.3	20.0	16.6	82.8	0.606	30 - 150	30	
2-Chlorotoluene	20.0	21.7	108	20.0	21.9	110	1.13	75 - 125	30	
2-Hexanone	20.0	15.3	76.6	20.0	15.8	79.1	3.20	55 - 130	30	
4-Chlorotoluene	20.0	19.3	96.3	20.0	19.7	98.5	2.29	75 - 130	30	
4-Methyl-2-pentanone	20.0	17.3	86.3	20.0	17.5	87.5	1.40	60 - 135	30	
Acetone	20.0	17.2	86.0	20.0	18.0	90.1	4.67	40 - 140	30	
Benzene	20.0	18.6	93.1	20.0	18.6	92.9	0.128	80 - 120	30	
Bromobenzene	20.0	20.5	103	20.0	21.0	105	2.40	75 - 125	30	
Bromochloromethane	20.0	20.8	104	20.0	21.1	106	1.55	65 - 130	30	
Bromodichloromethane	20.0	19.4	97.2	20.0	19.6	97.9	0.802	75 - 120	30	
Bromoform	20.0	19.9	99.4	20.0	20.4	102	2.58	70 - 130	30	
Bromomethane	20.0	13.3	66.5	20.0	13.9	69.7	4.67	30 - 145	30	
Carbon disulfide	20.0	15.7	78.4	20.0	15.6	78.1	0.465	35 - 160	30	
Carbon tetrachloride	20.0	18.8	94.0	20.0	18.7	93.6	0.417	65 - 140	30	
Chlorobenzene	20.0	21.1	105	20.0	21.6	108	2.43	80 - 120	30	
Chloroethane	20.0	18.4	92.0	20.0	19.0	95.1	3.29	60 - 135	30	
Chloroform	20.0	18.3	91.3	20.0	18.4	92.2	0.999	65 - 135	30	
Chloromethane	20.0	12.0	60.1	20.0	12.6	63.0	4.69	40 - 125	30	
cis-1,2-Dichloroethene	20.0	19.3	96.5	20.0	19.4	97.2	0.806	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4845930
Report generated: 07/13/2016 08:36

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575086 Units: ug/L
QC Key: DOD4 Lot #: STD76870

Sample ID: WG575086-02 LCS File ID: 11M13062 Run Date: 07/03/2016 00:45
Sample ID: WG575086-03 LCS2 File ID: 11M13063 Run Date: 07/03/2016 01:16

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	20.3	101	20.0	20.6	103	1.79	70 - 130	30	
Chlorodibromomethane	20.0	20.9	105	20.0	21.3	107	1.96	60 - 135	30	
Dibromomethane	20.0	19.0	95.1	20.0	18.5	92.4	2.87	75 - 125	30	
Dichlorodifluoromethane	20.0	10.2	51.2	20.0	10.3	51.5	0.607	30 - 155	30	
Ethylbenzene	20.0	20.0	100	20.0	20.9	104	4.09	75 - 125	30	
Hexachlorobutadiene	20.0	17.5	87.4	20.0	18.3	91.5	4.67	50 - 140	30	
Isopropylbenzene	20.0	20.9	104	20.0	21.3	107	2.25	75 - 125	30	
m-,p-Xylene	40.0	41.0	102	40.0	42.3	106	3.07	75 - 130	30	
Methylene chloride	20.0	18.3	91.4	20.0	18.4	92.1	0.771	55 - 140	30	
n-Butylbenzene	20.0	18.8	94.1	20.0	19.2	96.0	2.00	70 - 135	30	
n-Propylbenzene	20.0	21.0	105	20.0	21.4	107	1.94	70 - 130	30	
Naphthalene	20.0	17.5	87.7	20.0	18.2	91.1	3.78	55 - 140	30	
o-Xylene	20.0	20.6	103	20.0	21.4	107	3.56	80 - 120	30	
p-Isopropyltoluene	20.0	20.6	103	20.0	21.2	106	2.93	75 - 130	30	
sec-Butylbenzene	20.0	20.7	104	20.0	21.1	105	1.66	70 - 125	30	
Styrene	20.0	21.3	107	20.0	21.8	109	1.90	65 - 135	30	
tert-Butylbenzene	20.0	21.8	109	20.0	22.1	110	1.03	70 - 130	30	
Tetrachloroethene	20.0	19.7	98.5	20.0	20.7	104	5.00	45 - 150	30	
Toluene	20.0	19.9	99.3	20.0	20.4	102	2.64	75 - 120	30	
trans-1,2-Dichloroethene	20.0	17.7	88.3	20.0	18.0	90.0	1.89	60 - 140	30	
trans-1,3-Dichloropropene	20.0	18.3	91.3	20.0	18.6	93.1	1.94	55 - 140	30	
Trichloroethene	20.0	23.3	117	20.0	23.2	116	0.555	70 - 125	30	
Trichlorofluoromethane	20.0	17.5	87.4	20.0	16.8	83.8	4.30	60 - 145	30	
Vinyl chloride	20.0	17.1	85.4	20.0	17.0	84.9	0.534	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	88.6	86.9	70 - 120	PASS
Dibromofluoromethane	101	99.4	85 - 115	PASS
4-Bromofluorobenzene	90.7	91.6	75 - 120	PASS
Toluene-d8	99.5	101	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4845930
Report generated: 07/13/2016 08:36

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061290
Instrument: HPMS11
Analyst: JDS
Workgroup: WG568769

Tune ID: WG568769-01
Run Date: 05/13/2016
Run Time: 14:15
File ID: 11M11836
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.2	11638	PASS
75.0	95.0	30.0	60.0	50.2	24088	PASS
95.0	95.0	100	100	100	48016	PASS
96.0	95.0	5.00	9.00	6.26	3008	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.2	41402	PASS
175	174	5.00	9.00	8.26	3421	PASS
176	174	95.0	101	97.3	40288	PASS
177	176	5.00	9.00	6.92	2789	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568769-02	STD	01	05/13/2016 14:40	
WG568769-03	STD	01	05/13/2016 15:12	
WG568769-04	STD	01	05/13/2016 15:43	
WG568769-05	STD	01	05/13/2016 16:15	
WG568769-06	STD	01	05/13/2016 16:47	
WG568769-07	STD	01	05/13/2016 17:19	
WG568769-08	STD-CCV	01	05/13/2016 17:51	
WG568769-09	STD	01	05/13/2016 18:22	
WG568769-10	STD	01	05/13/2016 18:54	
WG568769-11	STD	01	05/13/2016 19:26	
WG568769-12	SSCV	01	05/13/2016 20:30	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4845932
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061290
Instrument: HPMS11
Analyst: TMB
Workgroup: WG575085

Tune ID: WG575085-01
Run Date: 07/02/2016
Run Time: 13:39
File ID: 11M13041
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.2	6217	PASS
75.0	95.0	30.0	60.0	45.6	14733	PASS
95.0	95.0	100	100	100	32333	PASS
96.0	95.0	5.00	9.00	6.77	2189	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	92.7	29965	PASS
175	174	5.00	9.00	7.79	2333	PASS
176	174	95.0	101	97.7	29286	PASS
177	176	5.00	9.00	5.93	1736	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575085-02	CCV	01	07/02/2016 14:39	
WG575086-01	BLANK	01	07/02/2016 15:43	
L16061290-07	TRIP BLANK	01	07/02/2016 16:15	
L16061290-06	18CPTMW07-062216	01	07/02/2016 18:22	
L16061290-05	109-062216	DL01	07/02/2016 23:09	
L16061290-02	MW16-062116	DL01	07/02/2016 23:41	
WG575086-02	LCS	01	07/03/2016 00:45	
WG575086-03	LCS2	01	07/03/2016 01:16	
WG575086-04	BLANK2	01	07/03/2016 02:20	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4845932
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061290
Instrument: HPMS11
Analyst: JDS
Workgroup: WG575198

Tune ID: WG575198-01
Run Date: 07/05/2016
Run Time: 17:13
File ID: 11M13076
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.4	8258	PASS
75.0	95.0	30.0	60.0	46.8	19945	PASS
95.0	95.0	100	100	100	42653	PASS
96.0	95.0	5.00	9.00	6.71	2862	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	94.0	40085	PASS
175	174	5.00	9.00	7.72	3095	PASS
176	174	95.0	101	96.5	38688	PASS
177	176	5.00	9.00	7.06	2730	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575198-02	CCV	01	07/05/2016 18:11	
WG575199-01	BLANK	01	07/05/2016 19:15	
WG575199-02	LCS	01	07/05/2016 19:47	
WG575199-03	LCS2	01	07/05/2016 20:19	
L16061290-04	125-062216	01	07/06/2016 00:34	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4845932
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061290
Instrument: HPMS6
Analyst: JDS
Workgroup: WG566155

Tune ID: WG566155-01
Run Date: 04/24/2016
Run Time: 16:33
File ID: 6M138750
Cal ID: HPMS6 - 24-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	10010	PASS
75.0	95.0	30.0	60.0	52.0	23152	PASS
95.0	95.0	100	100	100	44552	PASS
96.0	95.0	5.00	9.00	6.92	3085	PASS
173	174	0	2.00	0.346	113	PASS
174	95.0	50.0	100	73.2	32632	PASS
175	174	5.00	9.00	7.16	2336	PASS
176	174	95.0	101	99.2	32384	PASS
177	176	5.00	9.00	6.95	2251	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566155-02	STD	01	04/24/2016 16:59	
WG566155-03	STD	01	04/24/2016 17:31	
WG566155-04	STD	01	04/24/2016 18:03	
WG566155-05	STD-CCV	01	04/24/2016 18:36	
WG566155-06	STD	01	04/24/2016 19:08	
WG566155-07	STD	01	04/24/2016 19:40	
WG566155-08	STD	01	04/24/2016 20:12	
WG566155-09	STD	01	04/24/2016 20:44	
WG566155-10	SSCV	01	04/24/2016 22:21	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4845932
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061290
Instrument: HPMS6
Analyst: TMB
Workgroup: WG574723

Tune ID: WG574723-01
Run Date: 06/30/2016
Run Time: 11:36
File ID: 6M140313
Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.0	8707	PASS
75.0	95.0	30.0	60.0	49.7	19699	PASS
95.0	95.0	100	100	100	39664	PASS
96.0	95.0	5.00	9.00	6.69	2652	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.8	29282	PASS
175	174	5.00	9.00	7.28	2131	PASS
176	174	95.0	101	99.6	29157	PASS
177	176	5.00	9.00	6.75	1969	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574723-02	STD	01	06/30/2016 12:03	
WG574723-03	STD	01	06/30/2016 12:35	
WG574723-04	STD	01	06/30/2016 13:08	
WG574723-05	STD	01	06/30/2016 13:40	
WG574723-06	STD	01	06/30/2016 14:12	
WG574723-07	STD	01	06/30/2016 14:44	
WG574723-08	STD-CCV	01	06/30/2016 15:16	
WG574723-09	STD	01	06/30/2016 15:48	
WG574723-10	STD	01	06/30/2016 16:21	
WG574723-11	STD	01	06/30/2016 16:53	
WG574723-12	SSCV	01	06/30/2016 18:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4845932
Report generated 07/13/2016 08:36

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Calibration: Sat May 14 18:45:57 2016
Curve: WG568769
Calibration Files

	Compound	0.3 11M11837.D	0.4 11M11838.D	1 11M11839.D	2 11M11840.D	5 11M11841.D	20 11M11842.D	50 11M11843.D	100 11M11844.D	200 11M11845.D	300 11M11846.D	Avg	%RSD	Linear	Quadratic
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.345	0.368	0.326	0.431	0.400	0.424	0.417	0.424	0.392	10.308		
P	Chloromethane			0.348	0.363	0.289	0.310	0.276	0.296	0.305	0.324	0.314	9.474		
C	Vinyl Chloride		0.275	0.241	0.249	0.244	0.268	0.250	0.271	0.271	0.276	0.261	5.458		
T	1,3-Butadiene					0.242	0.284	0.269	0.264	0.256	0.240	0.259	6.530		
T	Bromomethane			0.167	0.174	0.164	0.180	0.165	0.182	0.194	0.206	0.179	8.292		
T	Chloroethane			0.164	0.165	0.151	0.174	0.161	0.171	0.173	0.181	0.167	5.524		
T	Trichlorofluoromethane		0.514	0.523	0.537	0.496	0.552	0.498	0.524	0.514	0.514	0.519	3.376		
T	Diethyl ether			0.189	0.191	0.195	0.196	0.188	0.193		0.192	0.192	1.552		
T	Isoprene					0.299	0.331	0.317	0.323	0.325	0.325	0.320	3.522		
T	Acrolein			0.013	0.022	0.024	0.024	0.024	0.025		0.027	0.023	19.436	0.999	
T	1,1,2-Trichloro-1,2,2-Trifluor			0.261	0.245	0.234	0.268	0.245	0.252	0.254	0.257	0.252	4.225		
T	Acetone					0.063	0.067	0.058	0.057	0.057	0.054	0.059	7.931		
C	1,1-Dichloroethene		0.459	0.452	0.460	0.429	0.492	0.441	0.464	0.461	0.461	0.458	3.810		
T	Tert-Butyl Alcohol			0.014	0.015	0.017	0.018	0.017	0.017		0.017	0.016	9.673		
T	Dimethyl Sulfide					0.169	0.185	0.186	0.185	0.188	0.184	0.183	3.765		
T	Iodomethane				0.043	0.072	0.164	0.206	0.217	0.219	0.208	0.162	45.603		0.999
T	Methyl acetate				0.182	0.317	0.215	0.178	0.176	0.169	0.168	0.201	26.745		1.000
T	Methylene Chloride			0.239	0.256	0.230	0.243	0.224	0.232	0.234	0.238	0.237	4.076		
T	Carbon Disulfide			0.737	0.762	0.714	0.798	0.783	0.783	0.782	0.770	0.766	3.624		
T	Acrylonitrile			0.072	0.069	0.075	0.085	0.081	0.085		0.090	0.080	9.576		
T	Methyl Tert Butyl Ether			0.568	0.546	0.564	0.650	0.585	0.606	0.612	0.595	0.591	5.543		
T	trans-1,2-Dichloroethene		0.288	0.230	0.264	0.229	0.263	0.242	0.251	0.254	0.260	0.253	7.263		
T	n-Hexane				0.424	0.377	0.450	0.431	0.426	0.424	0.422	0.422	5.186		
T	Diisopropyl ether			1.034	1.075	1.083	1.055	1.046	1.062		1.015	1.053	2.218		
T	Vinyl Acetate					0.235	0.391	0.393	0.395	0.430	0.431	0.379	19.260	0.999	
P	1,1-Dichloroethane		0.463	0.517	0.527	0.505	0.535	0.495	0.513	0.511	0.508	0.508	4.023		
T	Ethyl-Tert-Butyl ether			0.815	0.854	0.881	0.876	0.855	0.873		0.844	0.857	2.667		
T	2-Butanone					0.079	0.097	0.087	0.092	0.092	0.091	0.090	6.720		
T	Propionitrile			0.023	0.025	0.026	0.029	0.027	0.027		0.027	0.026	7.381		
T	2,2-Dichloropropane		0.325	0.372	0.435	0.395	0.406	0.386	0.422	0.418	0.419	0.398	8.479		
T	cis-1,2-Dichloroethene		0.276	0.266	0.289	0.269	0.294	0.271	0.280	0.284	0.285	0.279	3.456		
C	Chloroform	0.587	0.483	0.491	0.514	0.480	0.509	0.470	0.486	0.489	0.482	0.499	6.767		
T	1-Bromopropane			0.014	0.041	0.045	0.047	0.048	0.049	0.050	0.050	0.043	28.190	1.000	
T	Bromochloromethane		0.115	0.140	0.169	0.167	0.188	0.172	0.179	0.180	0.181	0.166	14.065		
T	Tetrahydrofuran			0.074	0.061	0.058	0.067	0.061	0.062		0.059	0.063	8.769		
S	Dibromofluoromethane				0.251	0.266	0.284	0.268	0.284	0.285	0.278	0.274	4.605		
T	1,1,1-Trichloroethane		0.475	0.478	0.508	0.471	0.515	0.477	0.502	0.499	0.495	0.491	3.293		
T	Cyclohexane		0.477	0.485	0.547	0.509	0.574	0.551	0.560	0.558	0.556	0.535	6.606		
T	1,1-Dichloropropene		0.342	0.350	0.346	0.332	0.370	0.339	0.358	0.359	0.362	0.351	3.562		
T	Carbon Tetrachloride		0.409	0.457	0.522	0.465	0.518	0.473	0.496	0.492	0.486	0.480	7.177		
T	Tert-Amyl-Methyl ether			0.565	0.596	0.603	0.611	0.588	0.605		0.6	0.59537	2.5818		
S	1,2-Dichloroethane-d4			0.315	0.304	0.32	0.326	0.303	0.319	0.31	0.298	0.31197	3.15125		
T	1,2-Dichloroethane		0.388	0.391	0.419	0.395	0.441	0.402	0.413	0.409	0.391	0.40536	4.2274		
T	Benzene		1.058	0.952	1.016	0.923	0.996	0.908	0.943	0.931	0.914	0.96002	5.38884		
T	Trichloroethene		0.308	0.317	0.329	0.306	0.322	0.294	0.313	0.309	0.311	0.31204	3.21019		
T	Methylcyclohexane		0.332	0.37	0.389	0.35	0.411	0.401	0.4	0.405	0.407	0.3851	7.28708		
C	1,2-Dichloropropane		0.259	0.262	0.273	0.254	0.276	0.257	0.268	0.27	0.273	0.26575	2.95636		
T	1,4-Dioxane				0.001	0.001	0.002	0.001	0.002		0.002	0.0014	19.4617	0.999	
T	Bromodichloromethane		0.346	0.346	0.373	0.362	0.4	0.369	0.387	0.389	0.385	0.37307	5.09783		
T	Dibromomethane		0.118	0.136	0.135	0.137	0.149	0.137	0.146	0.145	0.144	0.13848	6.69192		
T	2-Chloroethyl Vinyl Ether					0.112	0.138	0.128	0.136	0.138	0.135	0.13098	7.7176		
T	4-Methyl-2-Pentanone					0.06	0.08	0.073	0.076	0.077	0.077	0.07387	9.67651		
T	cis-1,3-Dichloropropene		0.326	0.338	0.358	0.357	0.406	0.379	0.395	0.401	0.399	0.37315	7.91395		
T	Dimethyl Disulfide					0.185	0.229	0.227	0.233	0.238	0.235	0.22454	8.74309		

I	Chlorobenzene-d5	ISTD												
S	Toluene-d8				1.101	1.093	1.115	1.056	1.103	1.092	1.044	1.08625	2.42896	
C	Toluene		1.309	1.253	1.287	1.269	1.347	1.249	1.287	1.241	1.149	1.2656	4.33323	
T	Ethyl Methacrylate			0.234	0.233	0.25	0.299	0.285	0.289	0.291	0.281	0.27024	9.93745	
T	trans-1,3-Dichloropropene			0.335	0.388	0.387	0.448	0.418	0.432	0.43	0.412	0.40623	8.82781	
T	1,1,2-Trichloroethane		0.222	0.201	0.243	0.21	0.246	0.221	0.228	0.227	0.221	0.22442	6.30977	
T	2-Hexanone					0.137	0.179	0.165	0.172	0.172	0.165	0.16482	8.91224	
T	1,3-Dichloropropane		0.337	0.338	0.351	0.355	0.396	0.361	0.374	0.373	0.358	0.36039	5.16222	
T	Tetrachloroethene		0.274	0.287	0.317	0.286	0.306	0.286	0.3	0.299	0.294	0.29431	4.41886	
T	Dibromochloromethane		0.283	0.297	0.336	0.33	0.378	0.354	0.372	0.372	0.359	0.3423	9.88235	
T	1,2-Dibromoethane		0.232	0.182	0.228	0.214	0.243	0.224	0.233	0.235	0.232	0.22485	7.92714	
T	1-Chlorohexane		0.37	0.399	0.414	0.391	0.442	0.429	0.44	0.438	0.432	0.41726	6.09034	
P	Chlorobenzene		0.927	0.917	0.998	0.932	0.976	0.909	0.93	0.902	0.853	0.92715	4.48215	
T	1,1,1,2-Tetrachloroethane		0.341	0.361	0.405	0.366	0.388	0.371	0.384	0.385	0.376	0.37515	4.87731	
C	Ethylbenzene		0.453	0.457	0.512	0.463	0.495	0.466	0.482	0.479	0.472	0.47542	3.94078	
T	m-,p-Xylene		0.619	0.583	0.605	0.564	0.604	0.568	0.579	0.559	0.522	0.57798	5.08853	
T	o-Xylene		0.539	0.549	0.574	0.539	0.6	0.561	0.574	0.57	0.557	0.56249	3.43829	
T	Styrene		0.865	0.848	0.897	0.918	1.018	0.955	0.985	0.959	0.917	0.92933	5.96246	
P	Bromoform			0.172	0.189	0.185	0.226	0.21	0.225	0.226	0.228	0.20747	10.9157	
T	Isopropylbenzene		1.515	1.456	1.567	1.46	1.592	1.493	1.534	1.449	1.323	1.48754	5.34769	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.288	0.357	0.369	0.371	0.441	0.396	0.412	0.428	0.442	0.38931	12.6902	
S	p-Bromofluorobenzene				0.772	0.784	0.794	0.716	0.767	0.789	0.773	0.77065	3.38935	
T	1,2,3-Trichloropropane			0.087	0.129	0.138	0.151	0.137	0.142	0.148	0.148	0.13515	15.3522	0.999
T	trans-1,4-Dichloro-2-Butene			0.105	0.117	0.124	0.177	0.178	0.184	0.192	0.193	0.15883	23.0996	0.999
T	n-Propylbenzene		2.87	2.8	3.077	2.949	3.134	2.886	2.979	2.836	2.526	2.89527	6.10377	
T	Bromobenzene	0.663	0.778	0.81	0.798	0.765	0.784	0.718	0.752	0.769	0.76	0.75973	5.57443	
T	1,3,5-Trimethylbenzene		2.338	2.056	2.263	2.172	2.357	2.166	2.252	2.223	2.059	2.20939	4.86261	
T	2-Chlorotoluene		2.158	2.096	2.122	2.033	2.128	1.936	2.002	1.954	1.82	2.0279	5.4704	
T	4-Chlorotoluene		1.782	1.755	1.937	1.808	1.916	1.763	1.832	1.838	1.717	1.8165	4.03452	
T	a-Methylstyrene			1	1.066	1.101	1.241	1.231	1.235	1.242	1.208	1.16555	8.18507	
T	tert-Butylbenzene		0.378	0.44	0.48	0.489	0.498	0.458	0.483	0.49	0.497	0.46809	8.31778	
T	1,2,4-Trimethylbenzene		2.159	2.195	2.274	2.295	2.472	2.234	2.309	2.244	2.067	2.24981	4.97706	
T	sec-Butylbenzene			2.593	2.734	2.647	2.87	2.634	2.723	2.617	2.404	2.65291	5.05975	
T	p-Isopropyltoluene			2.247	2.592	2.45	2.641	2.43	2.506	2.404	2.226	2.43674	6.05243	
T	1,3-Dichlorobenzene		1.487	1.488	1.538	1.46	1.53	1.398	1.451	1.446	1.406	1.46732	3.33475	
T	1,4-Dichlorobenzene	1.482	1.601	1.511	1.569	1.484	1.538	1.404	1.456	1.434	1.395	1.4873	4.59741	
T	n-Butylbenzene		2.048	2.099	2.295	2.049	2.32	2.134	2.224	2.136	2.021	2.14721	5.09289	
T	1,2-Dichlorobenzene	1.33	1.26	1.333	1.432	1.33	1.406	1.296	1.343	1.326	1.31	1.33665	3.71841	
T	1,2-Dibromo-3-Chloropropane				0.057	0.079	0.096	0.081	0.086	0.087	0.091	0.08248	15.3444	0.999
T	1,2,4-Trichlorobenzene		0.927	0.903	0.957	0.956	1.042	0.972	0.998	1.002	1.047	0.97808	4.96993	
T	Hexachlorobutadiene		0.393	0.381	0.451	0.418	0.447	0.415	0.441	0.442	0.49	0.43089	7.64497	
T	Naphthalene		1.885	1.633	1.765	1.712	2.026	1.824	1.878	1.821	1.794	1.81543	6.15168	
T	1,2,3-Trichlorobenzene	0.854	0.957	0.865	0.918	0.834	0.946	0.86	0.889	0.912	0.943	0.89764	4.8559	

Tue May 17 13:57:02 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 042416 - HPMS6
Last Calibration: Wed Apr 27 16:03:33 2016
Curve: WG566155
Calibration Files

	Compound	5 6M138751.D	20 6M138752.D	50 6M138753.D	100 6M138754.D	200 6M138755.D	300 6M138756.D	400 6M138757.D	500 6M138758.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.036	0.037	0.039	0.038	0.038	0.038	0.038	0.036	0.037	2.606
T	3-Chloro-1-propene	0.567	0.621	0.656	0.672	0.635	0.622	0.617	0.603	0.624	5.157
T	2-Chloro-1,3-butadiene	0.415	0.507	0.558	0.590	0.558	0.553	0.556	0.548	0.535	10.001
T	Ethyl Acetate	0.229	0.259	0.279	0.281	0.277	0.272	0.279	0.268	0.268	6.419
T	Methacrylonitrile	0.071	0.089	0.099	0.099	0.097	0.095	0.096	0.093	0.092	9.852
T	Isobutyl Alcohol		0.008	0.008	0.007	0.007	0.008	0.010	0.010	0.009	13.654
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.159	0.200	0.231	0.244	0.244	0.241	0.246	0.236	0.225	13.591
T	2-Nitropropane			0.079	0.082	0.085	0.085	0.088	0.084	0.084	3.643
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.026	0.027	0.032	0.034	0.035	0.033	0.031	12.127

Wed Apr 27 16:05:59 2016

Calibration Table Report
Method: 8260WTR.M
Title: 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Calibration: Fri Jul 01 09:28:30 2016
Curve: WG574723
Calibration Files

	Compound	0.3 6M140314.D	0.4 6M140315.D	1 6M140316.D	2 6M140317.D	5 6M140318.D	20 6M140319.D	50 6M140320.D	100 6M140321.D	200 6M140322.D	300 6M140323.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.401	0.398	0.362	0.449	0.438	0.462	0.444	0.391	0.418	8.327		
P	Chloromethane			0.564	0.519	0.446	0.512	0.463	0.436	0.411	0.381	0.467	13.089		
C	Vinyl Chloride		0.237	0.280	0.277	0.251	0.252	0.260	0.267	0.257	0.225	0.256	6.911		
T	1,3-Butadiene					0.175	0.204	0.154	0.154	0.147	0.132	0.161	15.792	0.991	
T	Bromomethane			0.179	0.184	0.166	0.178	0.161	0.164	0.170	0.160	0.170	5.344		
T	Chloroethane			0.158	0.158	0.155	0.170	0.162	0.163	0.168	0.162	0.162	3.146		
T	Trichlorofluoromethane		0.448	0.383	0.389	0.372	0.394	0.373	0.402	0.383	0.374	0.391	6.074		
T	Diethyl ether			0.240	0.244	0.238	0.231	0.237	0.234		0.190	0.231	7.911		
T	Isoprene					0.332	0.374	0.357	0.358	0.361	0.310	0.349	6.639		
T	Acrolein				0.039	0.038	0.038	0.038	0.039		0.039	0.038	1.589		
T	1,1,2-Trichloro-1,2,2-Trifluoroet			0.245	0.246	0.231	0.246	0.239	0.249	0.248	0.242	0.243	2.486		
T	Acetone					0.086	0.083	0.080	0.078	0.078	0.075	0.080	4.861		
C	1,1-Dichloroethene		0.475	0.488	0.483	0.447	0.475	0.469	0.477	0.473	0.459	0.472	2.614		
T	Tert-Butyl Alcohol			0.023	0.024	0.024	0.024	0.024	0.026		0.028	0.024	7.165		
T	Dimethyl Sulfide					0.197	0.217	0.208	0.206	0.206	0.201	0.206	3.230		
T	Iodomethane			0.076	0.076	0.099	0.149	0.180	0.188	0.180	0.164	0.139	34.268	0.996	
T	Methyl acetate					0.218	0.224	0.214	0.217	0.211	0.216	0.217	2.077		
T	Methylene Chloride			0.310	0.299	0.265	0.271	0.261	0.263	0.254	0.240	0.271	8.561		
T	Carbon Disulfide			0.926	0.900	0.839	0.925	0.868	0.856	0.834	0.768	0.864	6.148		
T	Acrylonitrile			0.090	0.096	0.098	0.098	0.102	0.104		0.108	0.099	5.795		
T	Methyl Tert Butyl Ether			0.716	0.725	0.704	0.737	0.716	0.729	0.714	0.694	0.717	1.916		
T	trans-1,2-Dichloroethene		0.263	0.254	0.262	0.245	0.253	0.250	0.255	0.251	0.241	0.253	2.748		
T	n-Hexane					0.432	0.456	0.424	0.426	0.424	0.412	0.429	3.449		
T	Diisopropyl ether			1.208	1.209	1.172	1.157	1.153	1.123		1.058	1.154	4.538		
T	Vinyl Acetate					0.458	0.448	0.486	0.493	0.523	0.482	0.482	5.502		
P	1,1-Dichloroethane		0.561	0.556	0.569	0.531	0.553	0.540	0.544	0.533	0.509	0.544	3.330		
T	Ethyl-Tert-Butyl ether			0.953	0.955	0.939	0.931	0.928	0.916		0.878	0.929	2.832		
T	2-Butanone					0.118	0.124	0.125	0.127	0.123	0.118	0.123	3.167		
T	Propionitrile			0.032	0.033	0.033	0.033	0.034	0.035		0.032	0.033	3.279		
T	2,2-Dichloropropane		0.396	0.421	0.439	0.414	0.411	0.401	0.411	0.407	0.393	0.410	3.381		
T	cis-1,2-Dichloroethene		0.295	0.285	0.269	0.267	0.280	0.277	0.280	0.274	0.262	0.277	3.558		
C	Chloroform	0.615	0.457	0.478	0.484	0.466	0.487	0.476	0.482	0.474	0.454	0.487	9.510		
T	1-Bromopropane			0.024	0.033	0.038	0.044	0.045	0.044	0.045	0.043	0.039	19.340	1.000	
T	Bromochloromethane		0.141	0.141	0.148	0.149	0.155	0.153	0.155	0.152	0.145	0.149	3.658		
T	Tetrahydrofuran			0.104	0.087	0.084	0.081	0.081	0.083		0.078	0.086	9.999		
S	Dibromofluoromethane				0.254	0.258	0.262	0.257	0.250	0.249	0.245	0.254	2.416		
T	1,1,1-Trichloroethane		0.395	0.436	0.430	0.412	0.430	0.430	0.438	0.432	0.414	0.424	3.334		
T	Cyclohexane			0.589	0.567	0.521	0.577	0.543	0.550	0.543	0.524	0.552	4.390		
T	1,1-Dichloropropene			0.377	0.376	0.356	0.370	0.367	0.375	0.373	0.362	0.370	2.060		
T	Tert-Amyl-Methyl ether			0.710	0.726	0.713	0.703	0.708	0.705		0.671	0.705	2.388		
T	Carbon Tetrachloride		0.271	0.305	0.33	0.33	0.37	0.377	0.39	0.391	0.371	0.3484	11.955		
S	1,2-Dichloroethane-d4				0.33	0.331	0.333	0.318	0.316	0.31	0.304	0.3202	3.5321		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.391	0.394	0.406	0.375	0.399	0.393	0.397	0.39	0.373	0.3907	2.7505		
T	Benzene		1.155	1.094	1.109	1.038	1.052	1.035	1.03	0.983	0.89	1.043	7.3599		
T	Trichloroethene		0.277	0.267	0.265	0.253	0.263	0.256	0.255	0.246	0.234	0.2574	4.9066		
T	Methylcyclohexane					0.396	0.428	0.4	0.409	0.404	0.387	0.404	3.4238		
C	1,2-Dichloropropane		0.311	0.293	0.305	0.293	0.306	0.302	0.305	0.3	0.288	0.3004	2.5217		
T	1,4-Dioxane					0.002	0.002	0.002	0.002		0.002	0.002	6.9968		
T	Bromodichloromethane		0.323	0.353	0.365	0.351	0.371	0.375	0.386	0.378	0.359	0.3624	5.1801		
T	Dibromomethane		0.125	0.137	0.148	0.143	0.153	0.151	0.156	0.151	0.145	0.1453	6.6336		
T	2-Chloroethyl Vinyl Ether				0.138	0.135	0.158	0.161	0.16	0.155	0.146	0.1506	7.0765		
T	4-Methyl-2-Pentanone					0.085	0.094	0.095	0.098	0.096	0.089	0.0927	5.3799		
T	cis-1,3-Dichloropropene		0.415	0.394	0.426	0.409	0.431	0.433	0.443	0.433	0.404	0.4208	3.888		
T	Dimethyl Disulfide					0.199	0.239	0.242	0.246	0.245	0.233	0.2342	7.589		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8				1.304	1.297	1.272	1.226	1.166	1.162	1.19	1.2311	4.9151		
C	Toluene		1.699	1.583	1.601	1.454	1.503	1.467	1.44	1.369	1.294	1.49	8.2924		
T	Ethyl Methacrylate			0.37	0.406	0.396	0.455	0.443	0.443	0.439	0.44	0.4239	6.9571		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.49	0.514	0.506	0.547	0.548	0.551	0.543	0.539	0.5298	4.3368		
T	1,1,2-Trichloroethane		0.262	0.278	0.282	0.27	0.285	0.28	0.281	0.274	0.269	0.2757	2.687		
T	2-Hexanone					0.237	0.266	0.269	0.271	0.267	0.261	0.2618	4.9035		
T	1,3-Dichloropropane		0.55	0.526	0.539	0.51	0.52	0.519	0.517	0.503	0.493	0.5197	3.397		
T	Tetrachloroethene		0.362	0.364	0.373	0.351	0.354	0.353	0.352	0.344	0.343	0.3551	2.7537		
T	Dibromochloromethane		0.278	0.3	0.318	0.322	0.353	0.36	0.37	0.36	0.352	0.3348	9.4942		
T	1,2-Dibromoethane		0.238	0.259	0.265	0.259	0.277	0.274	0.281	0.274	0.268	0.2662	4.8464		
T	1-Chlorohexane		0.507	0.497	0.506	0.475	0.52	0.501	0.495	0.488	0.474	0.4959	3.0436		
P	Chlorobenzene		1.087	1.01	1.026	0.933	0.963	0.947	0.932	0.878	0.824	0.9556	8.2302		
T	1,1,1,2-Tetrachloroethane		0.327	0.335	0.343	0.328	0.352	0.354	0.356	0.342	0.323	0.34	3.6316		
C	Ethylbenzene		0.509	0.503	0.522	0.5	0.517	0.508	0.509	0.481	0.452	0.5002	4.2933		
T	m-,p-Xylene		0.651	0.636	0.652	0.606	0.626	0.612	0.603	0.553	0.501	0.6045	8.1404		
T	o-Xylene			0.61	0.633	0.59	0.625	0.619	0.618	0.585	0.544	0.6029	4.778		
T	Styrene		0.992	0.978	1.025	0.988	1.072	1.065	1.072	1.013	0.924	1.0143	4.9363		
P	Bromoform			0.172	0.184	0.183	0.215	0.22	0.234	0.231	0.222	0.2076	11.743		
T	Isopropylbenzene		1.684	1.642	1.648	1.582	1.619	1.599	1.602	1.477	1.304	1.5731	7.3897		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.542	0.561	0.589	0.589	0.619	0.616	0.651	0.654	0.639	0.6067	6.4625		
S	p-Bromofluorobenzene				1.007	1.02	1.012	0.972	0.933	0.96	0.949	0.9791	3.484		

T	1,2,3-Trichloropropane		0.131	0.176	0.189	0.19	0.187	0.19	0.191	0.185	0.1799	11.385
T	trans-1,4-Dichloro-2-Butene		0.158	0.209	0.218	0.244	0.244	0.253	0.256	0.254	0.2294	14.64
T	n-Propylbenzene	4.147	3.945	3.827	3.612	3.693	3.558	3.522	3.223	2.802	3.5921	11.066
T	Bromobenzene	0.822	0.753	0.776	0.753	0.761	0.736	0.737	0.723	0.695	0.7506	4.7215
T	1,3,5-Trimethylbenzene	2.687	2.633	2.638	2.51	2.587	2.52	2.523	2.394	2.166	2.5177	6.2882
T	2-Chlorotoluene	2.919	2.675	2.482	2.32	2.324	2.405	2.382	2.249	2.107	2.4293	9.9295
T	4-Chlorotoluene	2.561	2.355	2.535	2.399	2.452	2.211	2.223	2.179	1.93	2.316	8.6649
T	a-Methylstyrene				1.171	1.369	1.303	1.3	1.265	1.19	1.2663	5.9075
T	tert-Butylbenzene		0.522	0.53	0.496	0.527	0.502	0.507	0.492	0.47	0.5058	3.9858
T	1,2,4-Trimethylbenzene		2.731	2.759	2.607	2.688	2.607	2.616	2.454	2.207	2.5836	6.9171
T	sec-Butylbenzene		3.3	3.29	3.02	3.128	3.02	3.014	2.818	2.521	3.0139	8.4375
T	p-Isopropyltoluene		2.762	2.734	2.57	2.677	2.59	2.601	2.425	2.188	2.5685	7.2625
T	1,3-Dichlorobenzene	1.666	1.555	1.538	1.459	1.494	1.448	1.455	1.387	1.293	1.4773	7.1422
T	1,4-Dichlorobenzene	1.73	1.6	1.574	1.462	1.495	1.451	1.46	1.383	1.287	1.4936	8.6114
T	n-Butylbenzene		2.725	2.645	2.516	2.61	2.545	2.566	2.387	2.156	2.5188	7.0194
T	1,2-Dichlorobenzene	1.544	1.461	1.436	1.375	1.404	1.371	1.382	1.297	1.212	1.387	6.8449
T	1,2-Dibromo-3-Chloropropane			0.093	0.097	0.122	0.122	0.134	0.134	0.13	0.1188	14.398
T	1,2,4-Trichlorobenzene	1.156	0.963	0.98	0.936	0.999	0.975	0.988	0.944	0.882	0.9804	7.5963
T	Hexachlorobutadiene	0.47	0.405	0.413	0.39	0.407	0.402	0.408	0.395	0.377	0.4076	6.3393
T	Naphthalene	1.978	1.873	1.94	1.955	2.174	2.126	2.159	2.015	1.813	2.0036	6.3217
T	1,2,3-Trichlorobenzene	0.987	0.959	0.905	0.88	0.936	0.904	0.915	0.87	0.813	0.9078	5.6179

Fri Jul 01 14:48:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061290 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.6	ug/L	0.475	4.80	20	
1,1-Dichloroethene	CCC	50.0	47.5	ug/L	0.435	4.90	20	
1,2-Dichloropropane	CCC	50.0	52.8	ug/L	0.281	5.60	20	
Ethylbenzene	CCC	50.0	52.4	ug/L	0.498	4.80	20	
Toluene	CCC	50.0	53.8	ug/L	1.36	7.50	20	
Vinyl Chloride	CCC	50.0	56.1	ug/L	0.292	12.2	20	
Bromoform	SPCC	50.0	49.8	ug/L	0.207	0.300	20	
Chlorobenzene	SPCC	50.0	53.3	ug/L	0.988	6.60	20	
Chloromethane	SPCC	50.0	55.1	ug/L	0.346	10.2	20	
1,1-Dichloroethane	SPCC	50.0	48.5	ug/L	0.493	3.00	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	54.9	ug/L	0.428	9.90	20	
Acetone		50.0	49.7	ug/L	0.0590	0.700	20	
Benzene		50.0	51.2	ug/L	0.983	2.40	20	
Bromobenzene		50.0	51.6	ug/L	0.785	3.30	20	
Bromochloromethane		50.0	53.9	ug/L	0.179	7.80	20	
Bromodichloromethane		50.0	49.5	ug/L	0.370	0.900	20	
Bromomethane		50.0	50.5	ug/L	0.181	1.00	20	
2-Butanone		50.0	50.3	ug/L	0.0904	0.700	20	
n-Butylbenzene		50.0	53.9	ug/L	2.31	7.80	20	
sec-Butylbenzene		50.0	55.9	ug/L	2.97	11.8	20	
tert-Butylbenzene		50.0	56.5	ug/L	0.529	13.1	20	
Carbon Disulfide		50.0	44.7	ug/L	0.685	10.6	20	
Carbon Tetrachloride		50.0	47.3	ug/L	0.454	5.30	20	
Dibromochloromethane		50.0	52.5	ug/L	0.360	5.10	20	
Chloroethane		50.0	58.9	ug/L	0.197	17.7	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.14	5.50	20	
4-Chlorotoluene		50.0	55.4	ug/L	2.01	10.8	20	
1,2-Dibromo-3-Chloropropane		50.0	48.1	ug/L	0.0844	3.80	20	
1,2-Dibromoethane		50.0	52.6	ug/L	0.237	5.30	20	
Dibromomethane		50.0	48.0	ug/L	0.133	3.90	20	
1,2-Dichlorobenzene		50.0	53.6	ug/L	1.43	7.20	20	
1,3-Dichlorobenzene		50.0	52.7	ug/L	1.55	5.40	20	
1,4-Dichlorobenzene		50.0	53.0	ug/L	1.58	6.10	20	
Dichlorodifluoromethane		50.0	56.6	ug/L	0.443	13.2	20	
1,2-Dichloroethane		50.0	47.9	ug/L	0.388	4.20	20	
cis-1,2-Dichloroethene		50.0	53.2	ug/L	0.297	6.30	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.264	4.30	20	
1,3-Dichloropropane		50.0	56.3	ug/L	0.406	12.6	20	
2,2-Dichloropropane		50.0	45.6	ug/L	0.362	8.90	20	
cis-1,3-Dichloropropene		50.0	57.6	ug/L	0.430	15.2	20	
trans-1,3-Dichloropropene		50.0	52.1	ug/L	0.423	4.20	20	
1,1-Dichloropropene		50.0	50.1	ug/L	0.352	0.200	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4845931
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061290 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.2	ug/L	0.172	4.40	20	
Hexachlorobutadiene		50.0	55.9	ug/L	0.482	11.8	20	
Isopropylbenzene		50.0	54.2	ug/L	1.61	8.50	20	
p-Isopropyltoluene		50.0	54.7	ug/L	2.67	9.40	20	
4-Methyl-2-Pentanone		50.0	52.6	ug/L	0.0777	5.10	20	
Methylene Chloride		50.0	52.0	ug/L	0.246	4.00	20	
Naphthalene		50.0	51.1	ug/L	1.86	2.30	20	
n-Propylbenzene		50.0	56.6	ug/L	3.28	13.2	20	
Styrene		50.0	55.0	ug/L	1.02	9.90	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/L	0.383	2.10	20	
Tetrachloroethene		50.0	52.2	ug/L	0.307	4.40	20	
1,2,3-Trichlorobenzene		50.0	54.1	ug/L	0.971	8.10	20	
1,2,4-Trichlorobenzene		50.0	55.4	ug/L	1.08	10.9	20	
1,1,1-Trichloroethane		50.0	48.1	ug/L	0.472	3.90	20	
1,1,2-Trichloroethane		50.0	52.8	ug/L	0.237	5.50	20	
Trichloroethene		50.0	52.3	ug/L	0.327	4.60	20	
Trichlorofluoromethane		50.0	47.5	ug/L	0.494	4.90	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.147	0.300	20	
1,2,4-Trimethylbenzene		50.0	53.8	ug/L	2.42	7.70	20	
1,3,5-Trimethylbenzene		50.0	55.1	ug/L	2.44	10.3	20	
o-Xylene		50.0	54.7	ug/L	0.615	9.40	20	
m-,p-Xylene		100	107	ug/L	0.620	7.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4845931
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061290 Run Date: 06/30/2016 Sample ID: WG574723-12
Instrument ID: HPMS6 Run Time: 18:31 Method: 8260B
File ID: 6M140326 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG574723 Cal ID: HPMS6 - 30-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.9	ug/L	0.467	4.30	20	
1,1-Dichloroethene	CCC	50.0	44.2	ug/L	0.417	11.7	20	
1,2-Dichloropropane	CCC	50.0	52.0	ug/L	0.313	4.10	20	
Ethylbenzene	CCC	50.0	51.7	ug/L	0.517	3.40	20	
Toluene	CCC	50.0	50.2	ug/L	1.50	0.400	20	
Vinyl Chloride	CCC	50.0	46.1	ug/L	0.237	7.70	20	
Bromoform	SPCC	50.0	49.4	ug/L	0.205	1.20	20	
Chlorobenzene	SPCC	50.0	51.0	ug/L	0.974	1.90	20	
Chloromethane	SPCC	50.0	39.1	ug/L	0.365	21.7	20	*
1,1-Dichloroethane	SPCC	50.0	46.5	ug/L	0.506	7.10	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.5	ug/L	0.673	11.0	20	
Acetone		50.0	46.9	ug/L	0.0752	6.10	20	
Benzene		50.0	48.8	ug/L	1.02	2.40	20	
Bromobenzene		50.0	50.7	ug/L	0.761	1.40	20	
Bromochloromethane		50.0	48.9	ug/L	0.145	2.20	20	
Bromodichloromethane		50.0	51.3	ug/L	0.372	2.60	20	
Bromomethane		50.0	48.4	ug/L	0.165	3.20	20	
2-Butanone		50.0	50.7	ug/L	0.124	1.50	20	
n-Butylbenzene		50.0	51.3	ug/L	2.59	2.70	20	
sec-Butylbenzene		50.0	52.6	ug/L	3.17	5.10	20	
tert-Butylbenzene		50.0	53.2	ug/L	0.538	6.40	20	
Carbon Disulfide		50.0	43.6	ug/L	0.755	12.7	20	
Carbon Tetrachloride		50.0	51.4	ug/L	0.358	2.90	20	
Dibromochloromethane		50.0	53.8	ug/L	0.360	7.60	20	
Chloroethane		50.0	51.7	ug/L	0.168	3.50	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.57	5.70	20	
4-Chlorotoluene		50.0	50.9	ug/L	2.36	1.80	20	
1,2-Dibromo-3-Chloropropane		50.0	55.7	ug/L	0.132	11.3	20	
1,2-Dibromoethane		50.0	52.4	ug/L	0.279	4.90	20	
Dibromomethane		50.0	49.0	ug/L	0.142	2.00	20	
1,2-Dichlorobenzene		50.0	52.5	ug/L	1.46	4.90	20	
1,3-Dichlorobenzene		50.0	51.3	ug/L	1.52	2.60	20	
1,4-Dichlorobenzene		50.0	51.8	ug/L	1.55	3.60	20	
Dichlorodifluoromethane		50.0	40.7	ug/L	0.340	18.6	20	
1,2-Dichloroethane		50.0	49.4	ug/L	0.386	1.20	20	
cis-1,2-Dichloroethene		50.0	49.8	ug/L	0.275	0.500	20	
trans-1,2-Dichloroethene		50.0	47.1	ug/L	0.238	5.90	20	
1,3-Dichloropropane		50.0	53.2	ug/L	0.553	6.30	20	
2,2-Dichloropropane		50.0	50.7	ug/L	0.416	1.40	20	
cis-1,3-Dichloropropene		50.0	56.3	ug/L	0.474	12.6	20	
trans-1,3-Dichloropropene		50.0	53.4	ug/L	0.565	6.70	20	
1,1-Dichloropropene		50.0	48.1	ug/L	0.356	3.80	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4845931
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061290 Run Date: 06/30/2016 Sample ID: WG574723-12
Instrument ID: HPMS6 Run Time: 18:31 Method: 8260B
File ID: 6M140326 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG574723 Cal ID: HPMS6 - 30-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	49.7	ug/L	0.260	0.600	20	
Hexachlorobutadiene		50.0	52.6	ug/L	0.429	5.20	20	
Isopropylbenzene		50.0	51.7	ug/L	1.63	3.30	20	
p-Isopropyltoluene		50.0	51.7	ug/L	2.65	3.40	20	
4-Methyl-2-Pentanone		50.0	50.7	ug/L	0.0939	1.40	20	
Methylene Chloride		50.0	46.6	ug/L	0.252	6.80	20	
Naphthalene		50.0	49.3	ug/L	1.98	1.40	20	
n-Propylbenzene		50.0	53.7	ug/L	3.86	7.40	20	
Styrene		50.0	52.9	ug/L	1.07	5.90	20	
1,1,1,2-Tetrachloroethane		50.0	52.6	ug/L	0.358	5.20	20	
Tetrachloroethene		50.0	48.7	ug/L	0.346	2.50	20	
1,2,3-Trichlorobenzene		50.0	51.1	ug/L	0.928	2.20	20	
1,2,4-Trichlorobenzene		50.0	51.4	ug/L	1.01	2.90	20	
1,1,1-Trichloroethane		50.0	49.4	ug/L	0.419	1.20	20	
1,1,2-Trichloroethane		50.0	52.1	ug/L	0.287	4.10	20	
Trichloroethene		50.0	49.0	ug/L	0.252	2.10	20	
Trichlorofluoromethane		50.0	47.1	ug/L	0.368	5.70	20	
1,2,3-Trichloropropane		50.0	54.9	ug/L	0.197	9.80	20	
1,2,4-Trimethylbenzene		50.0	51.6	ug/L	2.66	3.10	20	
1,3,5-Trimethylbenzene		50.0	52.6	ug/L	2.65	5.10	20	
o-Xylene		50.0	53.4	ug/L	0.644	6.80	20	
m-,p-Xylene		100	104	ug/L	0.627	3.70	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4845931
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290 Run Date: 07/02/2016 Sample ID: WG575085-02
Instrument ID: HPMS11 Run Time: 14:39 Method: 8260B
File ID: 11M13043 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG575086 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	44.4	ug/L	0.444	11.1	20	
1,1-Dichloroethene	CCC	50.0	43.1	ug/L	0.394	13.8	20	
1,2-Dichloropropane	CCC	50.0	45.0	ug/L	0.239	10.0	20	
Ethylbenzene	CCC	50.0	50.7	ug/L	0.482	1.38	20	
Toluene	CCC	50.0	50.9	ug/L	1.29	1.73	20	
Vinyl Chloride	CCC	50.0	47.5	ug/L	0.247	5.03	20	
Bromoform	SPCC	50.0	49.0	ug/L	0.203	2.04	20	
Chlorobenzene	SPCC	50.0	50.6	ug/L	0.938	1.16	20	
Chloromethane	SPCC	50.0	43.8	ug/L	0.275	12.5	20	
1,1-Dichloroethane	SPCC	50.0	45.0	ug/L	0.458	9.92	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.6	ug/L	0.363	6.77	20	
Xylenes		150	151	ug/L	0.574	0.796	20	
Acetone		50.0	33.3	ug/L	0.0395	33.5	20	*
Benzene		50.0	47.7	ug/L	0.916	4.60	20	
Bromobenzene		50.0	50.3	ug/L	0.765	0.700	20	
Bromochloromethane		50.0	52.8	ug/L	0.175	5.52	20	
Bromodichloromethane		50.0	45.0	ug/L	0.336	9.90	20	
Bromomethane		50.0	45.0	ug/L	0.161	10.0	20	
2-Butanone		50.0	35.7	ug/L	0.0640	28.7	20	*
n-Butylbenzene		50.0	48.2	ug/L	2.07	3.64	20	
sec-Butylbenzene		50.0	50.4	ug/L	2.68	0.839	20	
tert-Butylbenzene		50.0	52.6	ug/L	0.493	5.28	20	
Carbon Disulfide		50.0	50.0	ug/L	0.767	0.0370	20	
Carbon Tetrachloride		50.0	45.4	ug/L	0.435	9.24	20	
Dibromochloromethane		50.0	49.0	ug/L	0.335	2.06	20	
Chloroethane		50.0	48.9	ug/L	0.164	2.29	20	
2-Chlorotoluene		50.0	50.0	ug/L	2.03	0.0172	20	
4-Chlorotoluene		50.0	47.0	ug/L	1.71	6.02	20	
1,2-Dibromo-3-Chloropropane		50.0	37.3	ug/L	0.0651	25.5	20	*
1,2-Dibromoethane		50.0	47.4	ug/L	0.213	5.23	20	
Dibromomethane		50.0	45.8	ug/L	0.127	8.39	20	
1,2-Dichlorobenzene		50.0	49.5	ug/L	1.32	0.913	20	
1,3-Dichlorobenzene		50.0	50.3	ug/L	1.48	0.558	20	
1,4-Dichlorobenzene		50.0	49.4	ug/L	1.47	1.15	20	
Dichlorodifluoromethane		50.0	48.7	ug/L	0.381	2.69	20	
1,2-Dichloroethane		50.0	39.4	ug/L	0.319	21.2	20	*
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.273	2.14	20	
trans-1,2-Dichloroethene		50.0	49.0	ug/L	0.248	2.05	20	
1,3-Dichloropropane		50.0	46.4	ug/L	0.335	7.18	20	
2,2-Dichloropropane		50.0	48.3	ug/L	0.384	3.38	20	
cis-1,3-Dichloropropene		50.0	47.6	ug/L	0.355	4.75	20	
trans-1,3-Dichloropropene		50.0	46.6	ug/L	0.379	6.76	20	

CCV - Modified 03/05/2008
PDF File ID: 4845933
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290 Run Date: 07/02/2016 Sample ID: WG575085-02
Instrument ID: HPMS11 Run Time: 14:39 Method: 8260B
File ID: 11M13043 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG575086 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	46.8	ug/L	0.328	6.48	20	
2-Hexanone		50.0	35.9	ug/L	0.118	28.3	20	*
Hexachlorobutadiene		50.0	45.0	ug/L	0.388	10.0	20	
Isopropylbenzene		50.0	50.3	ug/L	1.50	0.665	20	
p-Isopropyltoluene		50.0	50.8	ug/L	2.48	1.62	20	
4-Methyl-2-Pentanone		50.0	41.1	ug/L	0.0607	17.8	20	
Methylene Chloride		50.0	47.5	ug/L	0.225	5.09	20	
Naphthalene		50.0	46.2	ug/L	1.68	7.51	20	
n-Propylbenzene		50.0	50.4	ug/L	2.92	0.740	20	
Styrene		50.0	52.1	ug/L	0.969	4.23	20	
1,1,1,2-Tetrachloroethane		50.0	49.1	ug/L	0.368	1.80	20	
Tetrachloroethene		50.0	52.7	ug/L	0.310	5.34	20	
1,2,3-Trichlorobenzene		50.0	47.3	ug/L	0.850	5.34	20	
1,2,4-Trichlorobenzene		50.0	49.1	ug/L	0.960	1.86	20	
1,1,1-Trichloroethane		50.0	44.5	ug/L	0.437	11.1	20	
1,1,2-Trichloroethane		50.0	47.4	ug/L	0.213	5.14	20	
Trichloroethene		50.0	49.4	ug/L	0.308	1.16	20	
Trichlorofluoromethane		50.0	44.3	ug/L	0.460	11.5	20	
1,2,3-Trichloropropane		50.0	43.2	ug/L	0.126	13.7	20	
1,2,4-Trimethylbenzene		50.0	50.5	ug/L	2.27	0.982	20	
1,3,5-Trimethylbenzene		50.0	50.0	ug/L	2.21	0.0442	20	
o-Xylene		50.0	50.0	ug/L	0.562	0.0132	20	
m-,p-Xylene		100	101	ug/L	0.585	1.20	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4845933
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290 Run Date: 07/03/2016 Sample ID: WG575091-02
Instrument ID: HPMS6 Run Time: 11:01 Method: 8260B
File ID: 6M140390 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG575092 Cal ID: HPMS6 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.8	ug/L	0.505	3.61	20	
1,1-Dichloroethene	CCC	50.0	52.9	ug/L	0.499	5.75	20	
1,2-Dichloropropane	CCC	50.0	50.6	ug/L	0.304	1.24	20	
Ethylbenzene	CCC	50.0	52.2	ug/L	0.522	4.31	20	
Toluene	CCC	50.0	50.4	ug/L	1.50	0.798	20	
Vinyl Chloride	CCC	50.0	56.7	ug/L	0.291	13.5	20	
Bromoform	SPCC	50.0	54.4	ug/L	0.226	8.82	20	
Chlorobenzene	SPCC	50.0	50.6	ug/L	0.968	1.24	20	
Chloromethane	SPCC	50.0	45.8	ug/L	0.427	8.40	20	
1,1-Dichloroethane	SPCC	50.0	51.3	ug/L	0.559	2.69	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.9	ug/L	0.642	5.82	20	
Trichloroethene		50.0	50.0	ug/L	0.257	0.0854	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4845933
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290 Run Date: 07/05/2016 Sample ID: WG575198-02
Instrument ID: HPMS11 Run Time: 18:11 Method: 8260B
File ID: 11M13078 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG575199 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.7	ug/L	0.487	2.51	20	
1,1-Dichloroethene	CCC	50.0	48.6	ug/L	0.445	2.78	20	
1,2-Dichloropropane	CCC	50.0	49.1	ug/L	0.261	1.71	20	
Ethylbenzene	CCC	50.0	52.2	ug/L	0.497	4.47	20	
Toluene	CCC	50.0	52.3	ug/L	1.32	4.62	20	
Vinyl Chloride	CCC	50.0	53.3	ug/L	0.278	6.68	20	
Bromoform	SPCC	50.0	54.5	ug/L	0.226	9.02	20	
Chlorobenzene	SPCC	50.0	52.8	ug/L	0.979	5.54	20	
Chloromethane	SPCC	50.0	50.3	ug/L	0.316	0.684	20	
1,1-Dichloroethane	SPCC	50.0	49.8	ug/L	0.507	0.335	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.3	ug/L	0.384	1.32	20	
Xylenes		150	158	ug/L	0.598	5.12	20	
Acetone		50.0	39.4	ug/L	0.0468	21.2	20	*
Benzene		50.0	50.4	ug/L	0.969	0.895	20	
Bromobenzene		50.0	51.4	ug/L	0.781	2.78	20	
Bromochloromethane		50.0	57.2	ug/L	0.190	14.4	20	
Bromodichloromethane		50.0	50.7	ug/L	0.379	1.45	20	
Bromomethane		50.0	52.8	ug/L	0.189	5.69	20	
2-Butanone		50.0	39.7	ug/L	0.0712	20.6	20	*
n-Butylbenzene		50.0	49.5	ug/L	2.12	1.05	20	
sec-Butylbenzene		50.0	51.3	ug/L	2.72	2.51	20	
tert-Butylbenzene		50.0	53.4	ug/L	0.500	6.73	20	
Carbon Disulfide		50.0	49.7	ug/L	0.762	0.603	20	
Carbon Tetrachloride		50.0	52.3	ug/L	0.502	4.58	20	
Dibromochloromethane		50.0	53.9	ug/L	0.369	7.74	20	
Chloroethane		50.0	51.0	ug/L	0.171	1.95	20	
2-Chlorotoluene		50.0	49.1	ug/L	1.99	1.90	20	
4-Chlorotoluene		50.0	49.5	ug/L	1.80	1.10	20	
1,2-Dibromo-3-Chloropropane		50.0	42.8	ug/L	0.0749	14.4	20	
1,2-Dibromoethane		50.0	51.2	ug/L	0.230	2.36	20	
Dibromomethane		50.0	51.4	ug/L	0.143	2.89	20	
1,2-Dichlorobenzene		50.0	50.7	ug/L	1.36	1.46	20	
1,3-Dichlorobenzene		50.0	51.0	ug/L	1.50	2.00	20	
1,4-Dichlorobenzene		50.0	50.2	ug/L	1.49	0.313	20	
Dichlorodifluoromethane		50.0	55.7	ug/L	0.437	11.4	20	
1,2-Dichloroethane		50.0	46.6	ug/L	0.378	6.72	20	
cis-1,2-Dichloroethene		50.0	52.2	ug/L	0.292	4.46	20	
trans-1,2-Dichloroethene		50.0	52.5	ug/L	0.266	5.09	20	
1,3-Dichloropropane		50.0	50.0	ug/L	0.360	0.00380	20	
2,2-Dichloropropane		50.0	55.4	ug/L	0.441	10.8	20	
cis-1,3-Dichloropropene		50.0	52.5	ug/L	0.392	5.02	20	
trans-1,3-Dichloropropene		50.0	50.9	ug/L	0.414	1.89	20	

CCV - Modified 03/05/2008
PDF File ID: 4845933
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290 Run Date: 07/05/2016 Sample ID: WG575198-02
Instrument ID: HPMS11 Run Time: 18:11 Method: 8260B
File ID: 11M13078 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG575199 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.4	ug/L	0.361	2.85	20	
2-Hexanone		50.0	40.1	ug/L	0.132	19.7	20	
Hexachlorobutadiene		50.0	47.1	ug/L	0.406	5.83	20	
Isopropylbenzene		50.0	52.9	ug/L	1.57	5.74	20	
p-Isopropyltoluene		50.0	52.0	ug/L	2.53	4.01	20	
4-Methyl-2-Pentanone		50.0	45.5	ug/L	0.0673	8.96	20	
Methylene Chloride		50.0	50.4	ug/L	0.239	0.865	20	
Naphthalene		50.0	47.8	ug/L	1.74	4.41	20	
n-Propylbenzene		50.0	51.5	ug/L	2.98	3.05	20	
Styrene		50.0	54.3	ug/L	1.01	8.66	20	
1,1,1,2-Tetrachloroethane		50.0	52.8	ug/L	0.396	5.62	20	
Tetrachloroethene		50.0	54.7	ug/L	0.322	9.38	20	
1,2,3-Trichlorobenzene		50.0	48.2	ug/L	0.866	3.55	20	
1,2,4-Trichlorobenzene		50.0	49.7	ug/L	0.972	0.637	20	
1,1,1-Trichloroethane		50.0	50.7	ug/L	0.498	1.45	20	
1,1,2-Trichloroethane		50.0	50.3	ug/L	0.226	0.659	20	
Trichloroethene		50.0	53.3	ug/L	0.333	6.67	20	
Trichlorofluoromethane		50.0	50.7	ug/L	0.527	1.50	20	
1,2,3-Trichloropropane		50.0	46.7	ug/L	0.137	6.53	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/L	2.32	3.04	20	
1,3,5-Trimethylbenzene		50.0	50.8	ug/L	2.25	1.69	20	
o-Xylene		50.0	52.2	ug/L	0.587	4.30	20	
m-,p-Xylene		100	106	ug/L	0.610	5.52	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4845933
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061290
Instrument ID: HPMS11
Workgroup (AAB#): WG575086

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16061290-02	2.50	DL01	223419	390737	466879
L16061290-05	5.00	DL01	222415	391246	467670
L16061290-06	1.00	01	253832	436961	517116
L16061290-07	1.00	01	253845	451077	536895
WG575086-01	1.00	01	247728	437666	526215
WG575086-02	1.00	01	250295	423028	489868
WG575086-03	1.00	01	246042	412869	486638

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4845934
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061290
Instrument ID: HPMS6
Workgroup (AAB#): WG575092

ICAL CCV Number: WG574723-08
CAL ID: HPMS6-30-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG574723-08	NA	NA	264882	476977	665194
Upper Limit	NA	NA	529764	953954	1330388
Lower Limit	NA	NA	132441	238489	332597
L16061290-02	20.0	DL02	210487	407559	572284
WG575092-01	1.00	01	214148	419172	592251
WG575092-02	1.00	01	233201	407645	566229

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4845934
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061290
Instrument ID: HPMS11
Workgroup (AAB#): WG575199

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16061290-04	1.00	01	232685	406573	468953
WG575199-01	1.00	01	236090	408648	472304
WG575199-02	1.00	01	250949	420960	485527
WG575199-03	1.00	01	257746	435197	499574

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4845934
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061290
Instrument ID: HPMS11
Workgroup (AAB#): WG575086

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16061290-02	2.50	DL01	17.06	14.25	10.61
L16061290-05	5.00	DL01	17.06	14.25	10.61
L16061290-06	1.00	01	17.06	14.25	10.61
L16061290-07	1.00	01	17.06	14.25	10.61
WG575086-01	1.00	01	17.06	14.25	10.61
WG575086-02	1.00	01	17.06	14.25	10.61
WG575086-03	1.00	01	17.06	14.24	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4845936
Report generated: 07/13/2016 08:36

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061290
Instrument ID: HPMS11
Workgroup (AAB#): WG575199

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16061290-04	1.00	01	17.06	14.25	10.61
WG575199-01	1.00	01	17.06	14.25	10.61
WG575199-02	1.00	01	17.06	14.25	10.61
WG575199-03	1.00	01	17.06	14.25	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4845936
Report generated: 07/13/2016 08:36

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061290
Instrument ID: HPMS6
Workgroup (AAB#): WG575092

ICAL CCV Number: WG574723-08
CAL ID: HPMS6 - 30-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG574723-08	NA	NA	18.81	15.25	10.77
Upper Limit	NA	NA	19.31	15.75	11.27
Lower Limit	NA	NA	18.31	14.75	10.27
L16061290-02	20.0	DL02	18.8	15.25	10.77
WG575092-01	1.00	01	18.8	15.25	10.76
WG575092-02	1.00	01	18.81	15.25	10.76

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4845936
Report generated: 07/13/2016 08:36

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13060.D Vial: 20
Acq On : 2 Jul 2016 23:41 Operator: TMB
Sample : L16061290-02 A 2.5X 826-LOW Inst : hpms11
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 07 12:05:37 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	466879	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	390737	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	223419	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	130833	25.6053 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.44%		
43) 1,2-Dichloroethane-d4	10.23	65	129106	22.1600 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.64%		
57) Toluene-d8	12.47	98	433091	25.5097 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.04%		
78) p-Bromofluorobenzene	15.64	95	160919	23.3652 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.48%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.96	62	1453	0.2986 ug/L #	44
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	27314	5.8047 ug/L	99
13) Acetone	6.34	43	649	0.5854 ug/L #	49
14) 1,1-Dichloroethene	6.56	61	30770	3.6001 ug/L	96
16) Dimethyl Sulfide	6.81	62	464	0.1359 ug/L #	1
23) trans-1,2-Dichloroethene	7.75	96	1414	0.2989 ug/L	92
27) 1,1-Dichloroethane	8.34	63	6550	0.6901 ug/L #	87
32) cis-1,2-Dichloroethene	9.15	96	65167	12.4945 ug/L	75
36) Tetrahydrofuran	9.60	42	200	0.1690 ug/L #	47
44) 1,2-Dichloroethane	10.34	62	175623	23.1991 ug/L	91
45) Benzene	10.38	78	2523	0.1407 ug/L #	70
46) Trichloroethene	11.08	130	2170360	372.4373 ug/L	98
47) Methylcyclohexane	11.08	83	22390	3.1133 ug/L #	1
64) Tetrachloroethene	13.34	164	1447	0.3146 ug/L	86

(#) = qualifier out of range (m) = manual integration
11M13060.D 8260WT.M Thu Jul 07 12:05:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13060.D Vial: 20
Acq On : 2 Jul 2016 23:41 Operator: TMB
Sample : L16061290-02 A 2.5X 826-LOW Inst : hpms11
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 7 12:05 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

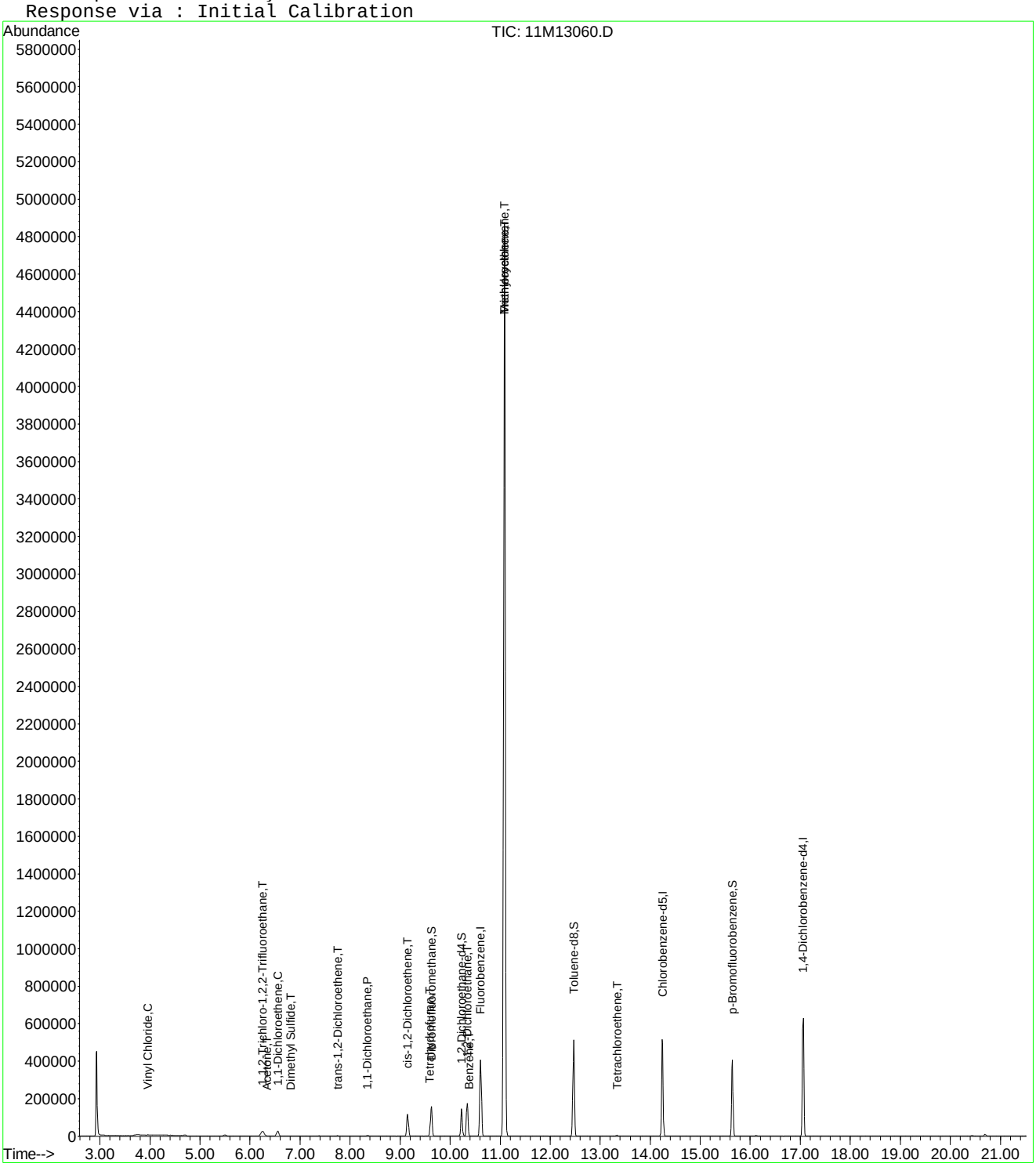

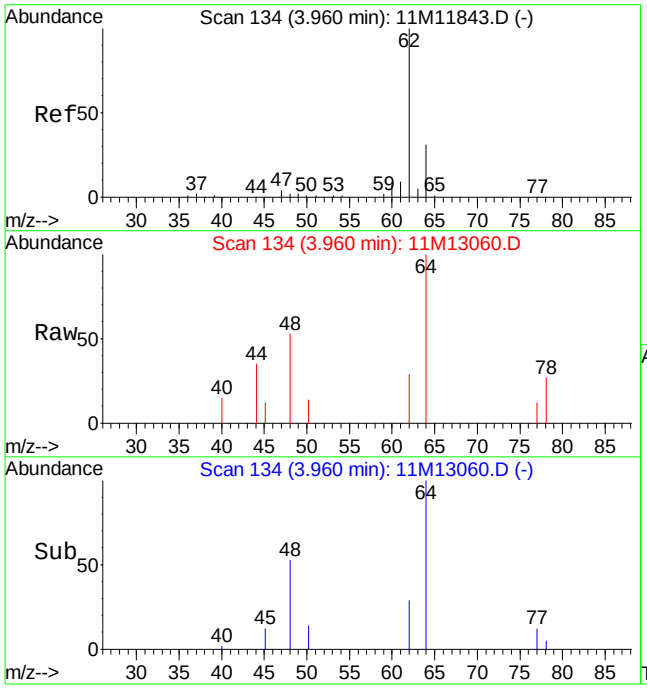

#4
Vinyl Chloride
Concen: 0.30 ug/L
RT: 3.96 min Scan# 134
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 62 Resp: 1453

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.4	43.0#

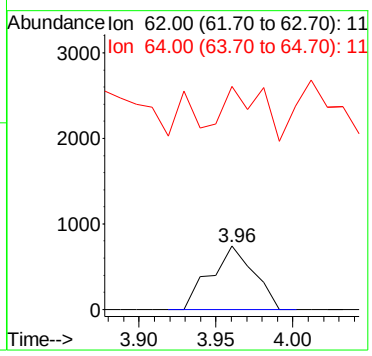

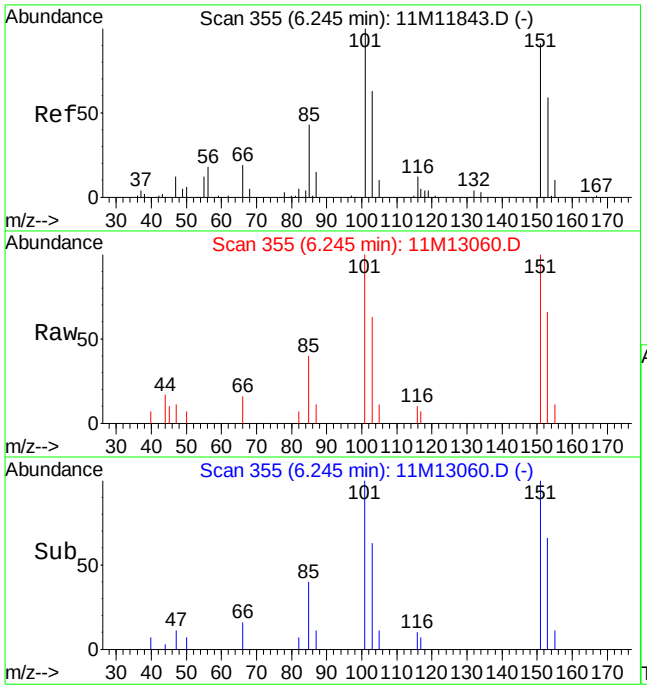

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 5.80 ug/L
RT: 6.25 min Scan# 355
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion:101 Resp: 27314

Ion	Ratio	Lower	Upper
101	100		
151	90.0	50.7	130.7

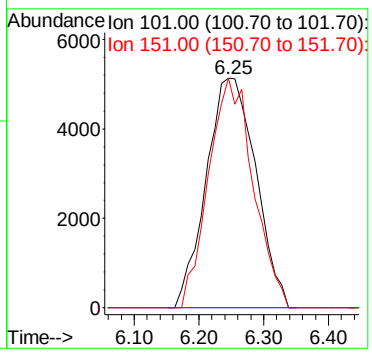

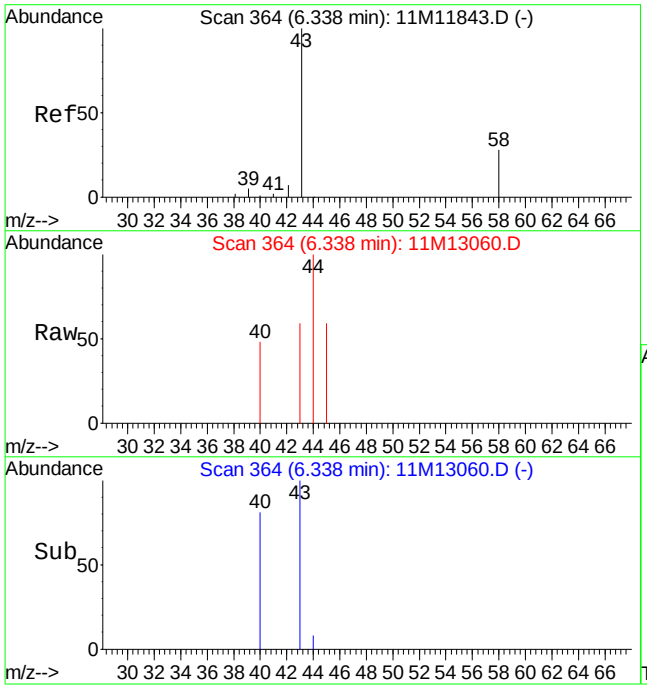

#13
Acetone
Concen: 0.59 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 43 Resp: 649

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

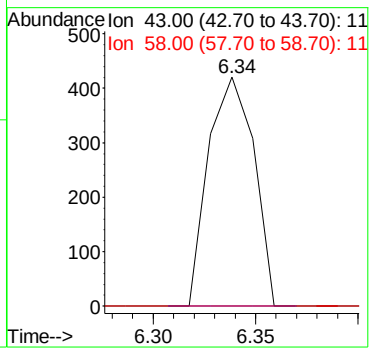

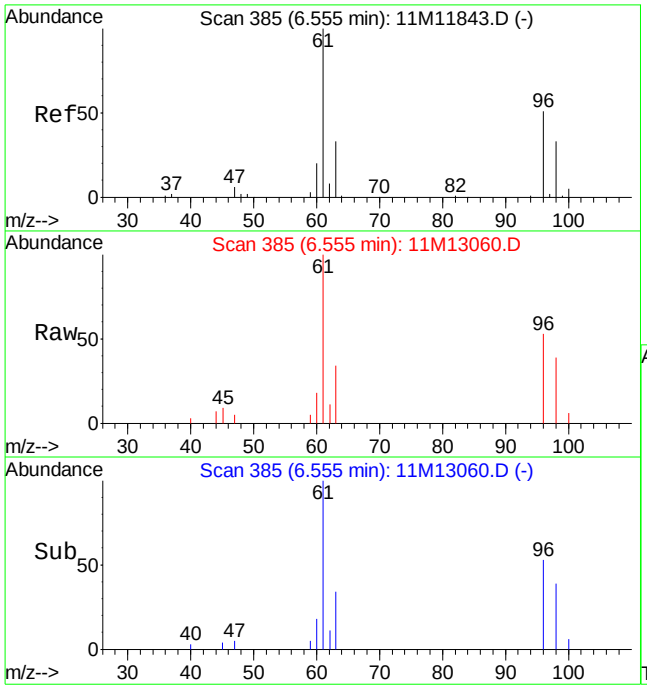

#14
1,1-Dichloroethene
Concen: 3.60 ug/L
RT: 6.56 min Scan# 385
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 61 Resp: 30770

Ion	Ratio	Lower	Upper
61	100		
96	52.8	30.1	70.3

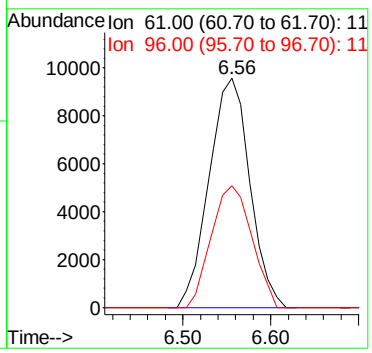

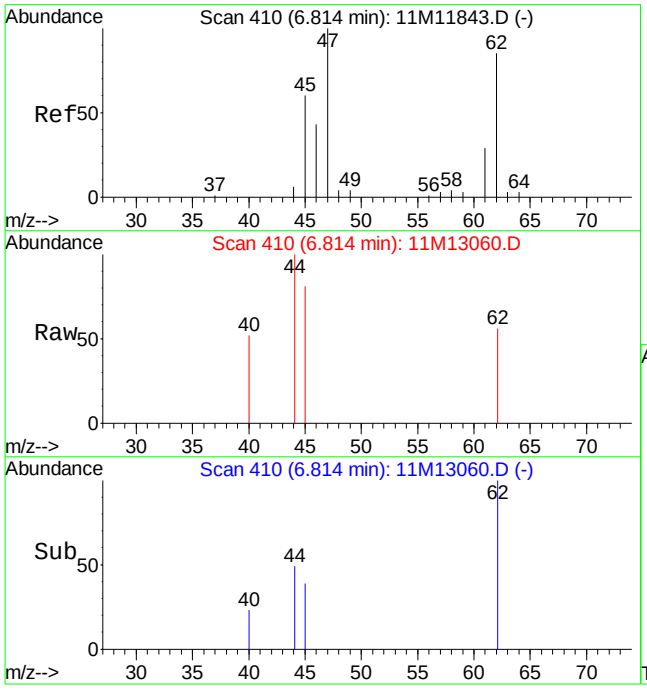

#16
Dimethyl Sulfide
Concen: 0.14 ug/L
RT: 6.81 min Scan# 410
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 62 Resp: 464

Ion	Ratio	Lower	Upper
62	100		
47	0.0	73.4	171.2#

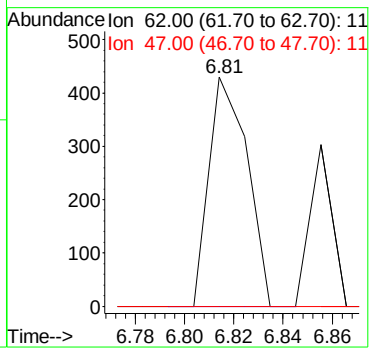

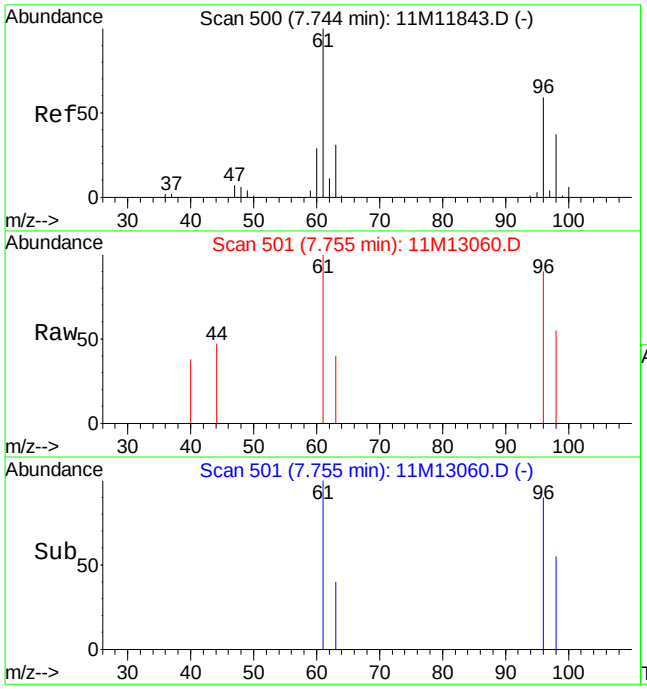

#23
trans-1,2-Dichloroethene
Concen: 0.30 ug/L
RT: 7.75 min Scan# 501
Delta R.T. 0.01 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 96 Resp: 1414

Ion	Ratio	Lower	Upper
96	100		
61	178.3	100.6	234.6

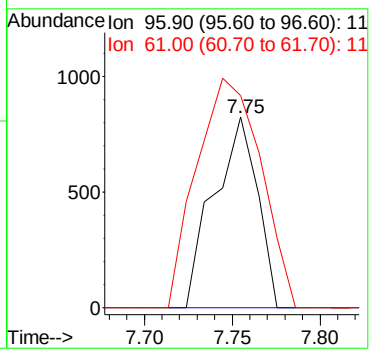

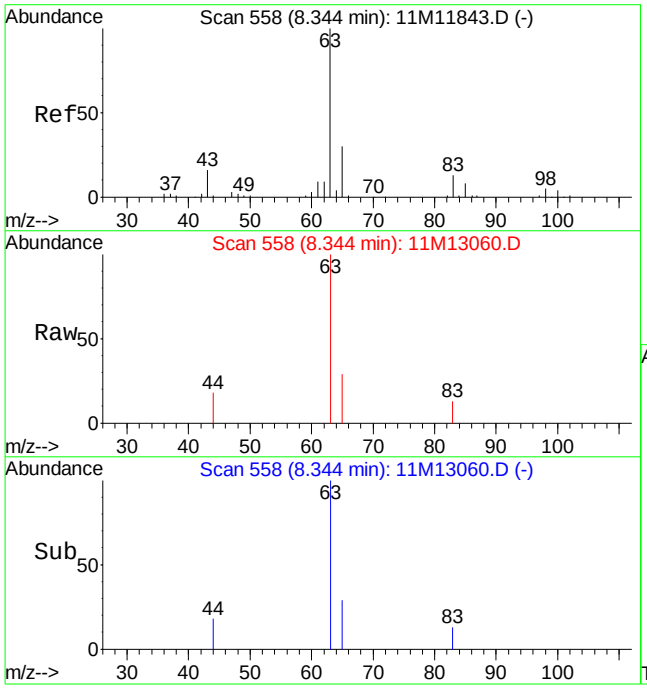

#27
1,1-Dichloroethane
Concen: 0.69 ug/L
RT: 8.34 min Scan# 558
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 63 Resp: 6550

Ion	Ratio	Lower	Upper
63	100		
65	24.9	17.8	41.6
83	2.9	7.4	17.4#

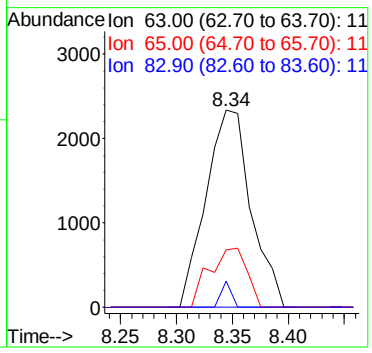

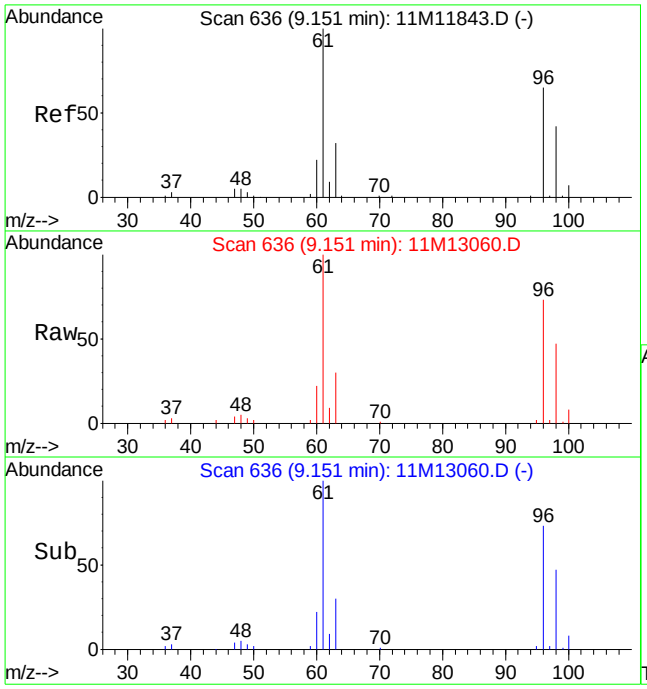

#32
cis-1,2-Dichloroethene
Concen: 12.49 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 96 Resp: 65167

Ion	Ratio	Lower	Upper
96	100		
61	140.1	105.2	245.6

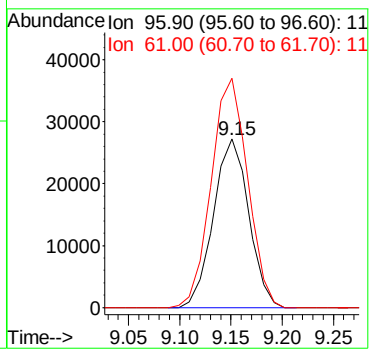

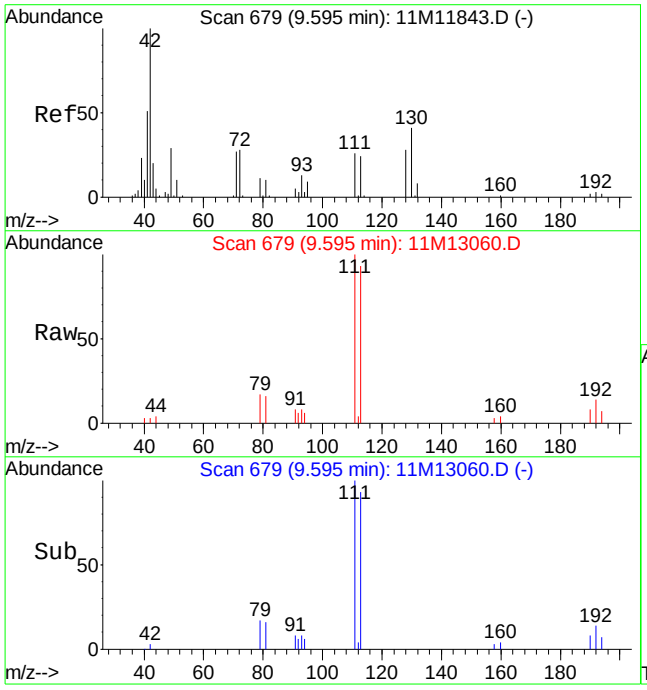

#36
Tetrahydrofuran
Concen: 0.17 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 42 Resp: 200

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

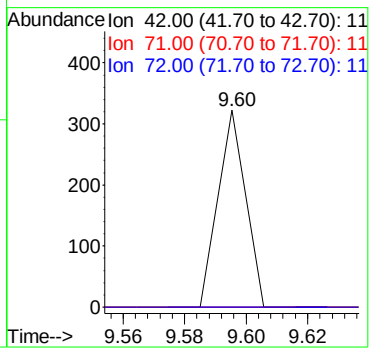

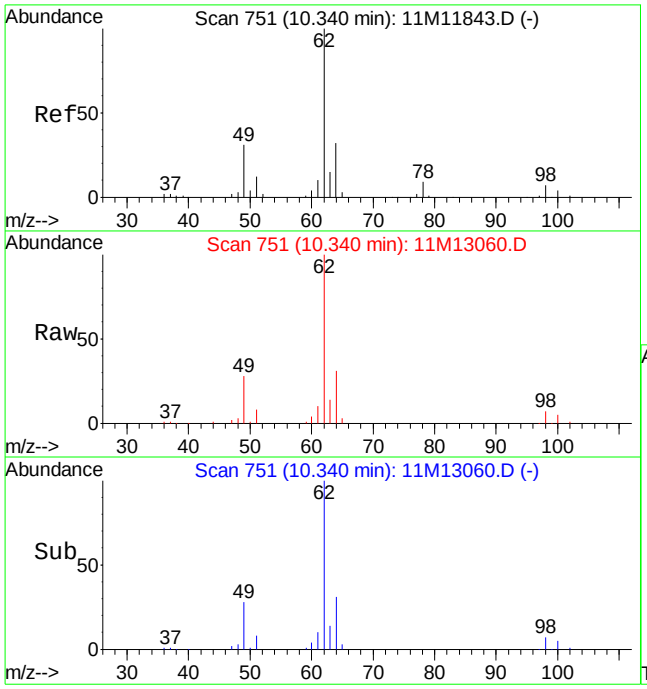

#44
1,2-Dichloroethane
Concen: 23.20 ug/L
RT: 10.34 min Scan# 751
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 62 Resp: 175623

Ion	Ratio	Lower	Upper
62	100		
64	31.6	18.7	43.7
49	27.8	22.3	52.1

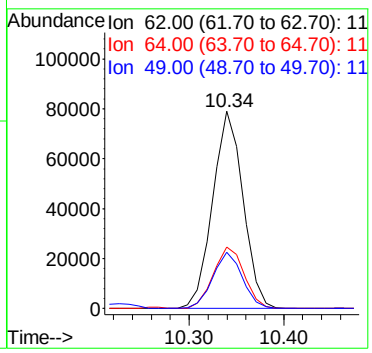

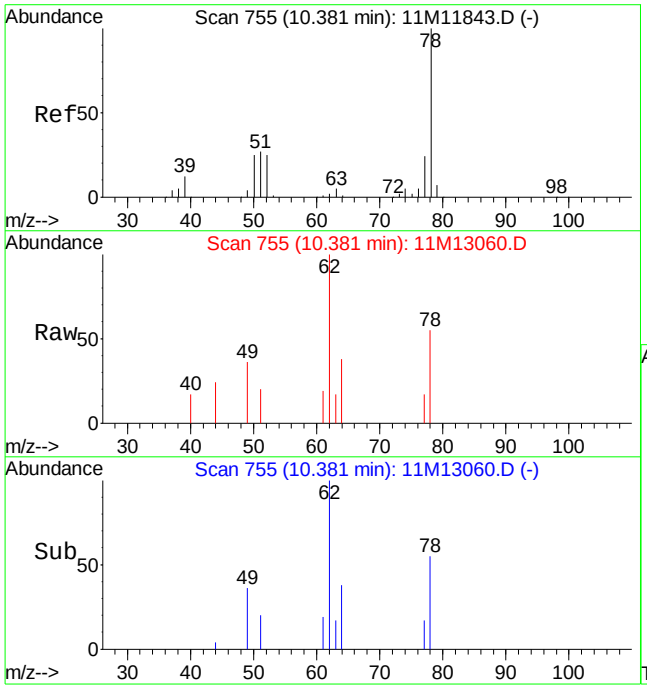

#45
Benzene
Concen: 0.14 ug/L
RT: 10.38 min Scan# 755
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 78 Resp: 2523

Ion	Ratio	Lower	Upper
78	100		
77	9.0	14.3	33.5#

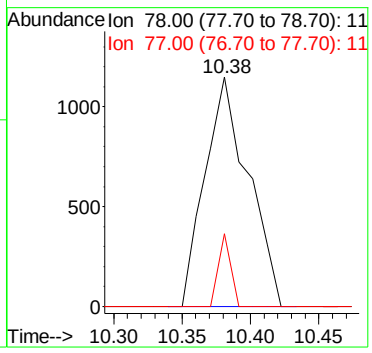

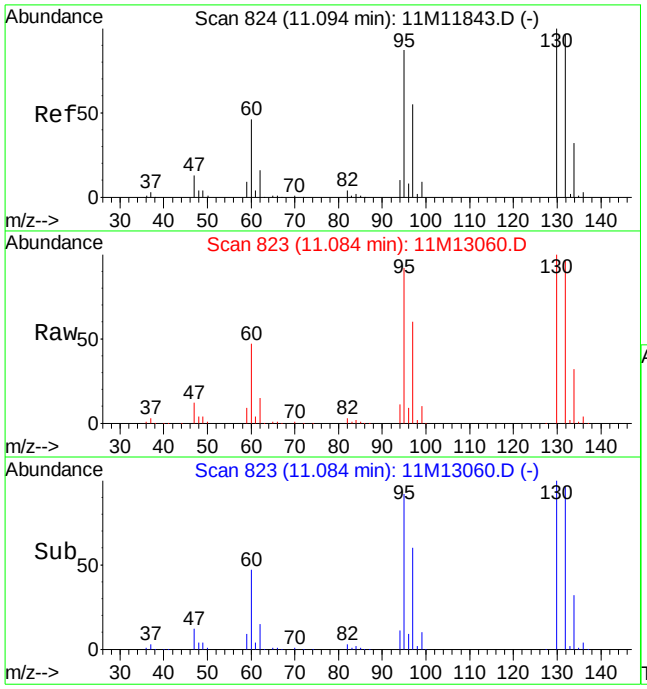

#46
Trichloroethene
Concen: 372.44 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.01 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion:130 Resp: 2170360

Ion	Ratio	Lower	Upper
130	100		
132	97.0	58.3	136.1
95	89.5	55.6	129.8

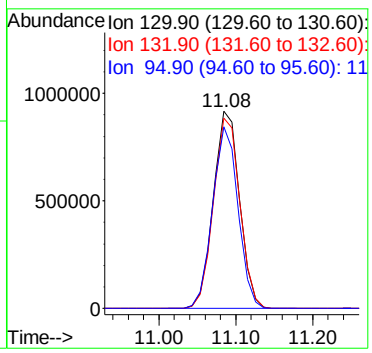

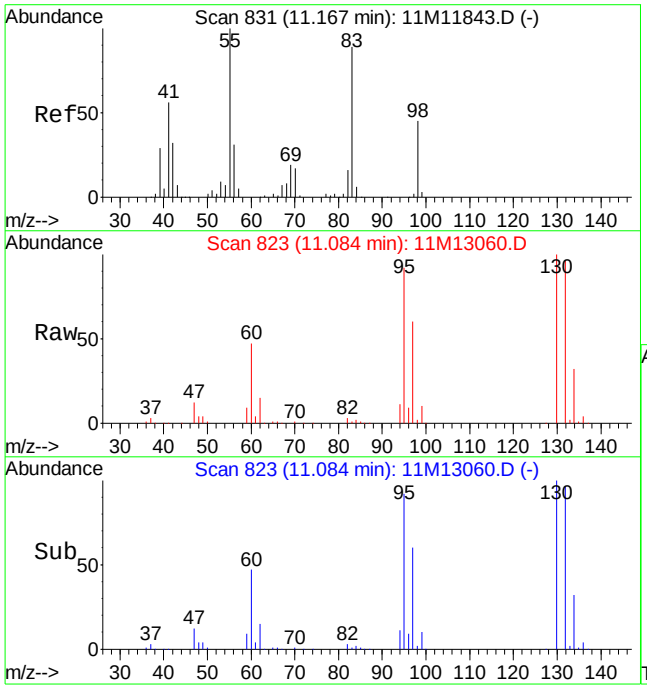

#47
Methylcyclohexane
Concen: 3.11 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.08 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 83 Resp: 22390

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	235.4	29.9	69.7#

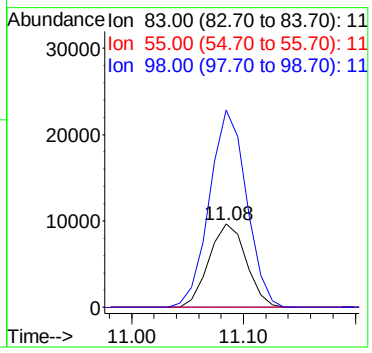

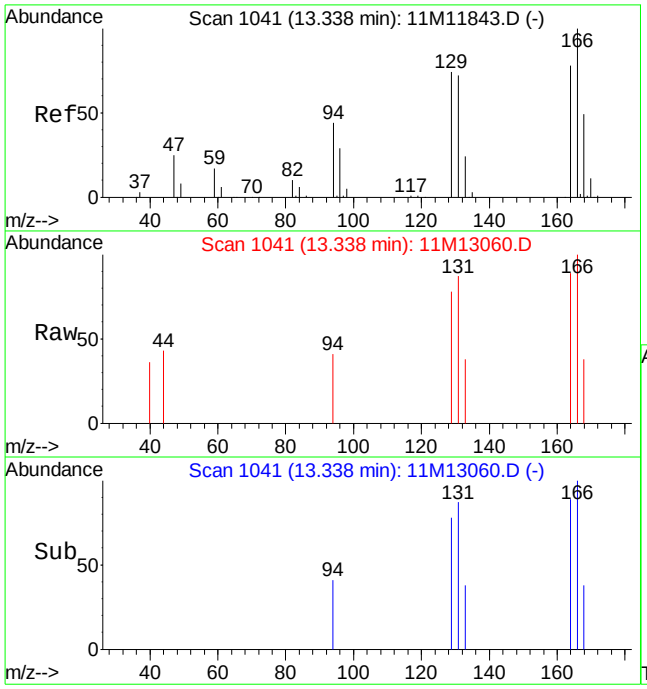

#64
Tetrachloroethene
Concen: 0.31 ug/L
RT: 13.34 min Scan# 1041
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion:164 Resp: 1447

Ion	Ratio	Lower	Upper
164	100		
129	83.2	57.9	135.1

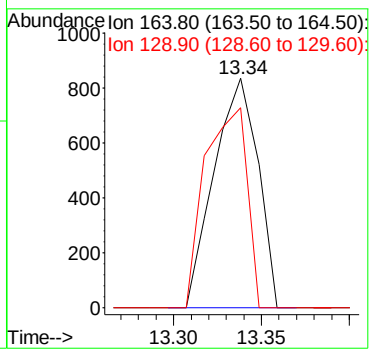

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140393.D Vial: 6
Acq On : 3 Jul 2016 12:37 Operator: TMB
Sample : L16061290-02 B 20X 826-LOW D1 Inst : HPMS6
Misc : 1,20 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 08:34:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	572284	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	407559	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	210487	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.58	111	148463	25.5701 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.28%		
43) 1,2-Dichloroethane-d4	10.32	65	188858	25.7666 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.08%		
58) Toluene-d8	13.04	98	503364	25.0812 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.32%		
80) p-Bromofluorobenzene	17.02	95	204033	24.7509 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.00%		

Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	4104	0.7374 ug/L	91
13) Acetone	5.91	43	1457	0.7947 ug/L #	48
14) 1,1-Dichloroethene	6.10	61	6332	0.5863 ug/L	82
15) Tert-Butyl Alcohol	6.25	59	13318	23.7543 ug/L #	95
30) Propionitrile	8.86	54	1077	1.4140 ug/L #	56
32) cis-1,2-Dichloroethene	9.03	96	10347	1.6343 ug/L	83
36) Tetrahydrofuran	9.56	42	3628	1.8532 ug/L #	58
45) 1,2-Dichloroethane	10.45	62	32223	3.6026 ug/L	87
47) Trichloroethene	11.34	130	271648	46.1088 ug/L	86
48) Methylcyclohexane	11.34	83	3689	0.3988 ug/L #	1
50) 1,4-Dioxane	11.94	88	2931	62.9722 ug/L	88
100) Naphthalene	22.39	128	2100	0.1245 ug/L #	67
101) 1,2,3-Trichlorobenzene	22.75	180	1026	0.1342 ug/L #	73

(#) = qualifier out of range (m) = manual integration
6M140393.D 8260WTR.M Tue Jul 05 08:34:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140393.D Vial: 6
Acq On : 3 Jul 2016 12:37 Operator: TMB
Sample : L16061290-02 B 20X 826-LOW D1 Inst : HPMS6
Misc : 1,20 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 5 8:34 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

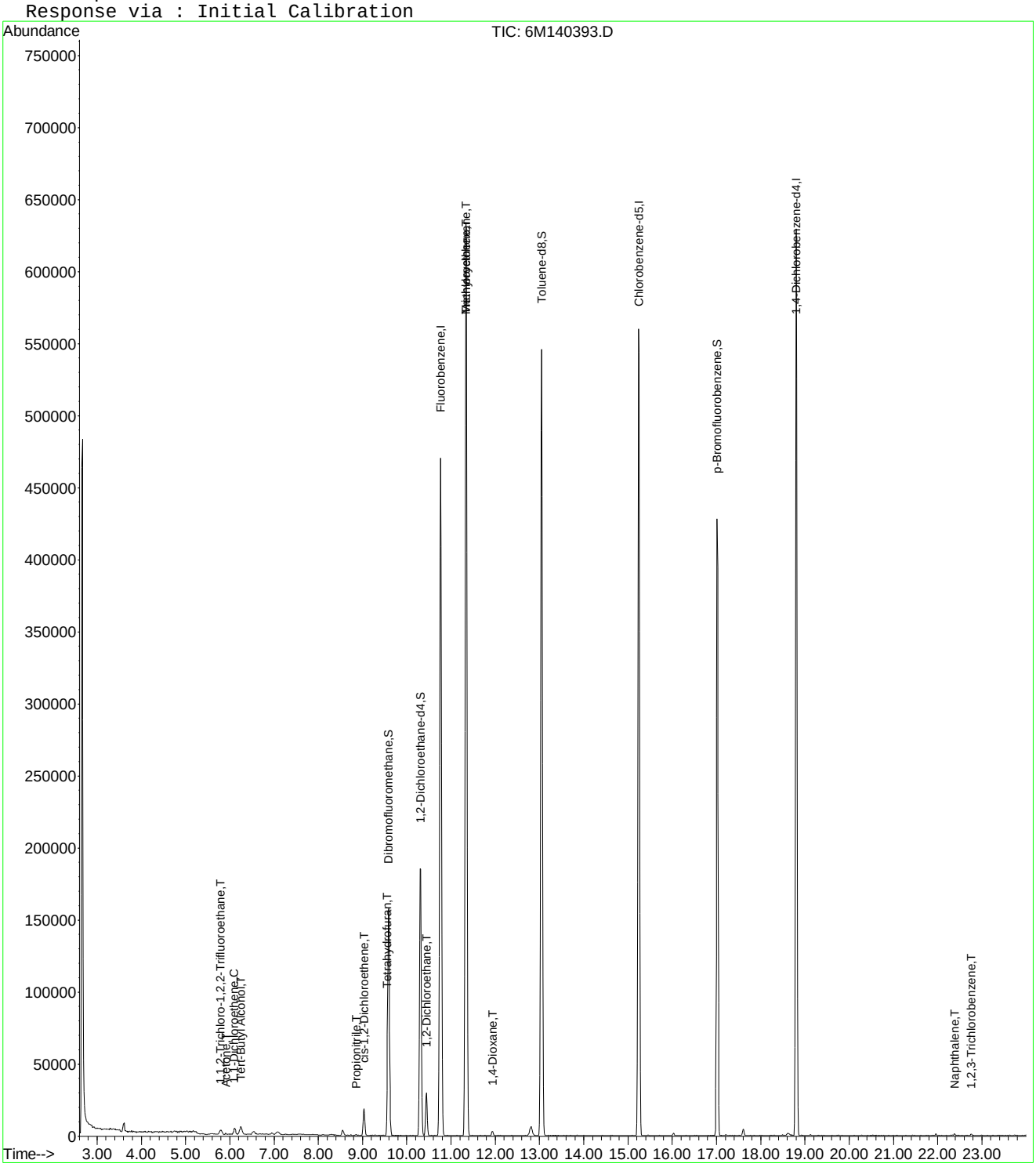

6M140393.D 8260WTR.M Tue Jul 05 08:34:28 2016 Page 2

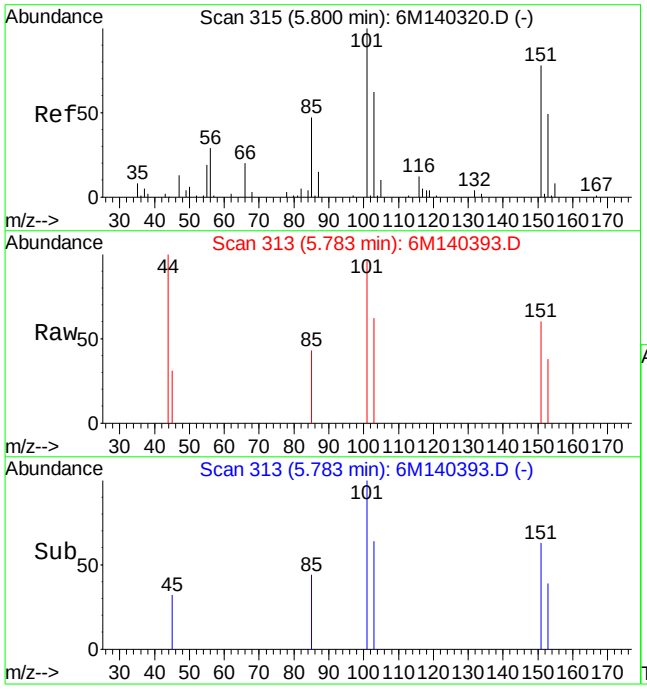

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.74 ug/L
RT: 5.78 min Scan# 313
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion:101 Resp: 4104

Ion	Ratio	Lower	Upper
101	100		
151	70.2	49.4	115.2
103	61.5	38.8	90.4

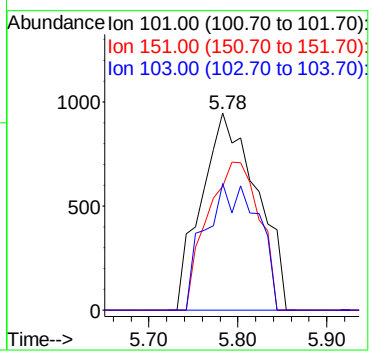

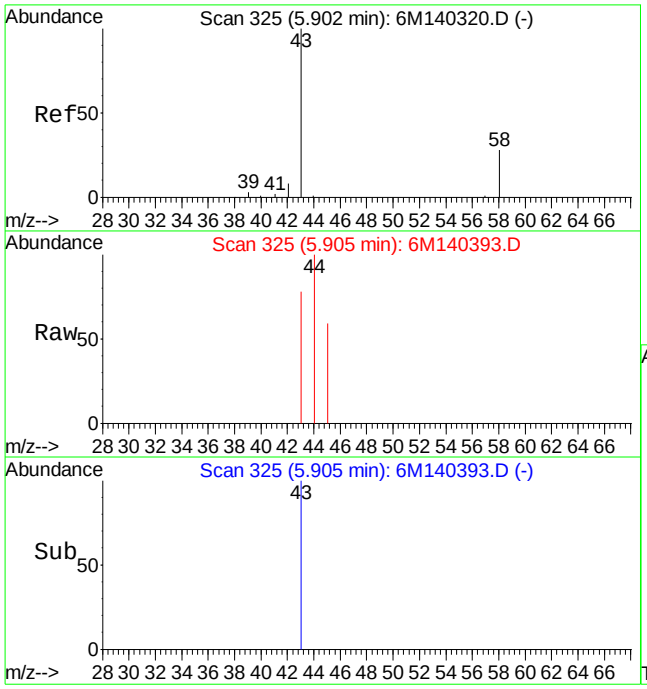

#13
Acetone
Concen: 0.79 ug/L
RT: 5.91 min Scan# 325
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion: 43 Resp: 1457

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

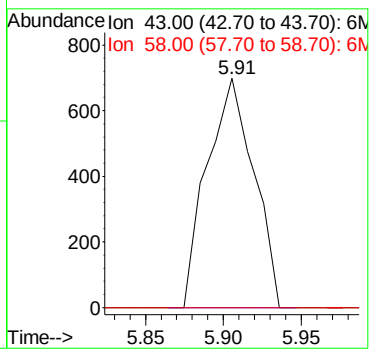

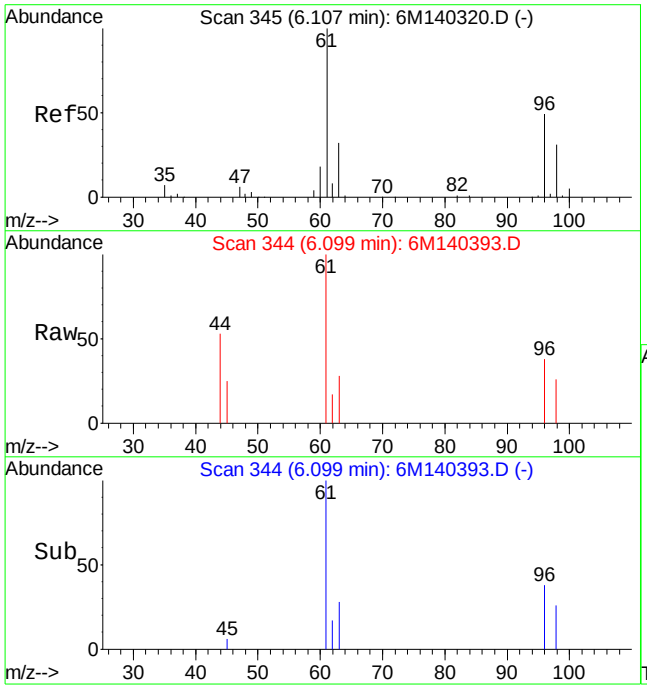

#14
1,1-Dichloroethene
Concen: 0.59 ug/L
RT: 6.10 min Scan# 344
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion: 61 Resp: 6332

Ion	Ratio	Lower	Upper
61	100		
96	40.7	32.0	74.6

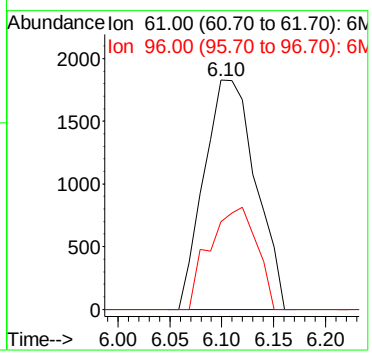

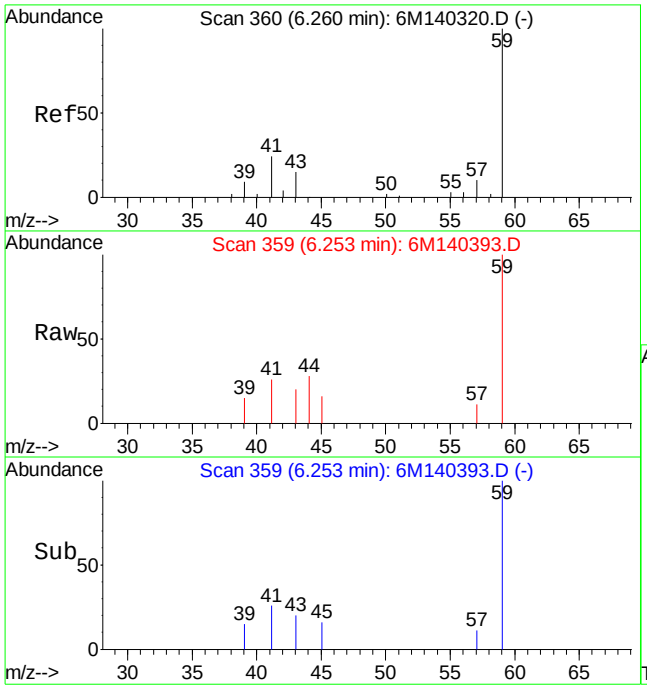

#15
Tert-Butyl Alcohol
Concen: 23.75 ug/L
RT: 6.25 min Scan# 359
Delta R.T. -0.04 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion: 59 Resp: 13318

Ion	Ratio	Lower	Upper
59	100		
41	23.8	14.6	34.0
57	5.3	6.4	14.8#

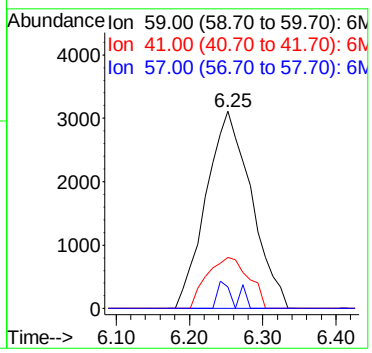

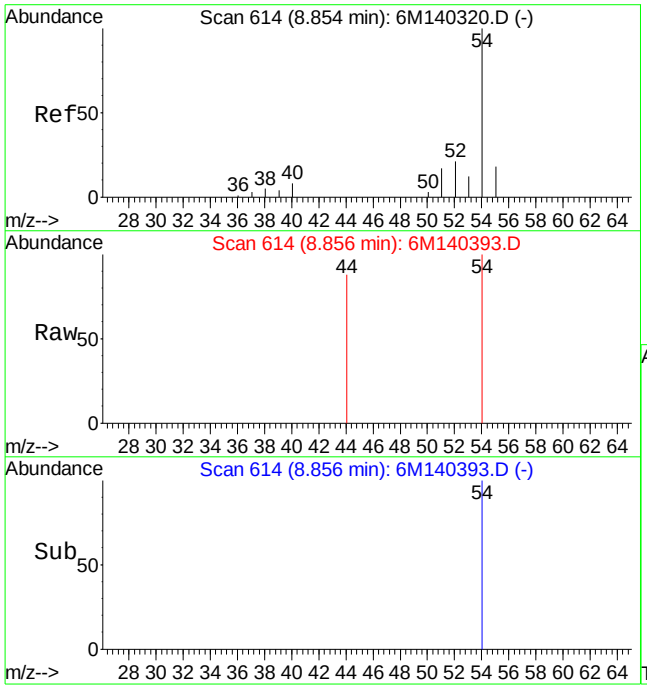

#30
Propionitrile
Concen: 1.41 ug/L
RT: 8.86 min Scan# 614
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion: 54 Resp: 1077

Ion	Ratio	Lower	Upper
54	100		
52	0.0	12.0	28.0#

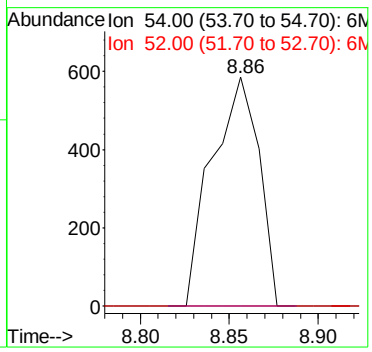

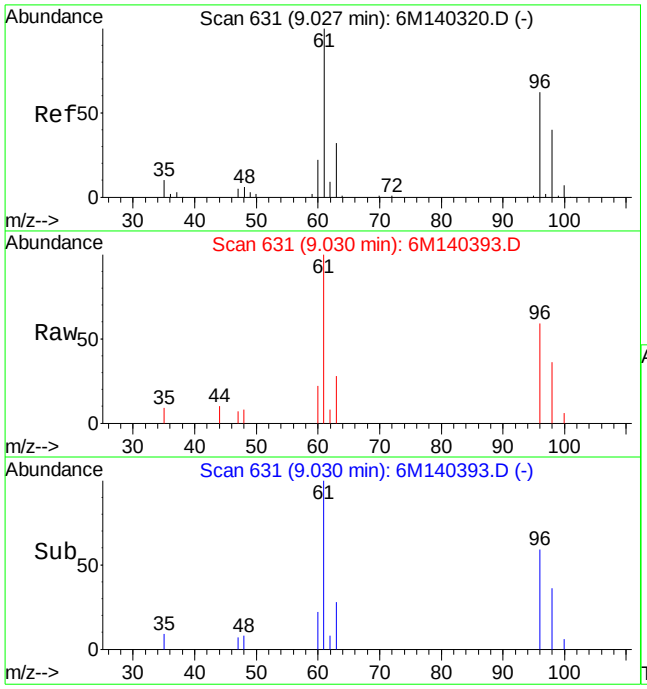

#32
cis-1,2-Dichloroethene
Concen: 1.63 ug/L
RT: 9.03 min Scan# 631
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion: 96 Resp: 10347

Ion	Ratio	Lower	Upper
96	100		
61	170.8	89.2	208.2

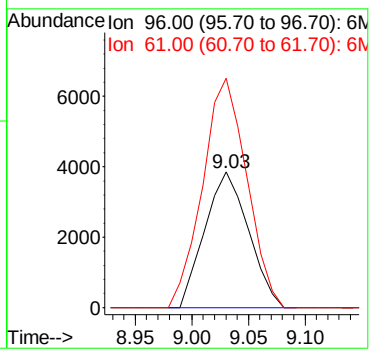

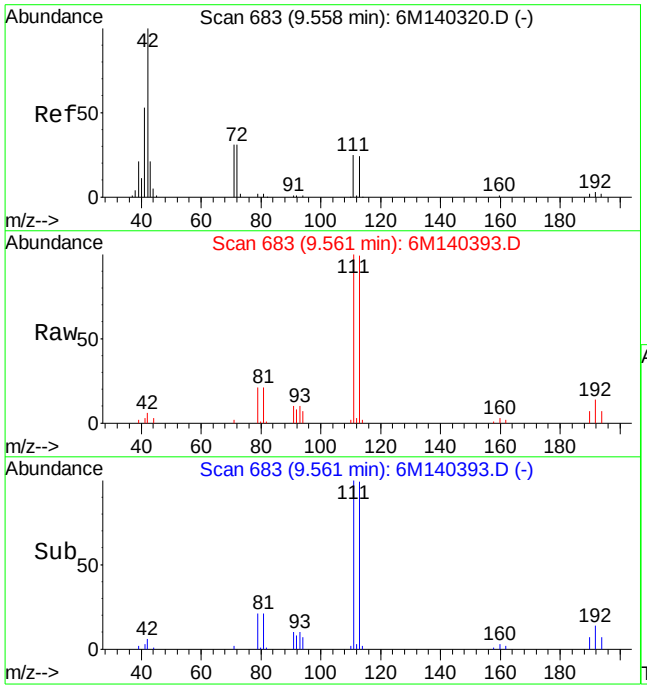

#36
Tetrahydrofuran
Concen: 1.85 ug/L
RT: 9.56 min Scan# 683
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion: 42 Resp: 3628

Ion	Ratio	Lower	Upper
42	100		
72	13.1	20.8	48.4#
71	6.4	19.9	46.5#

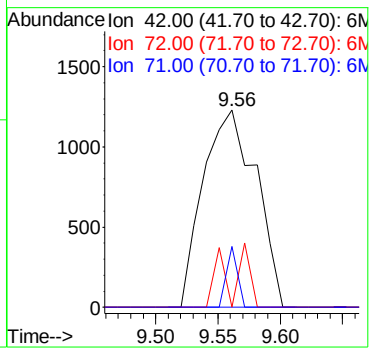

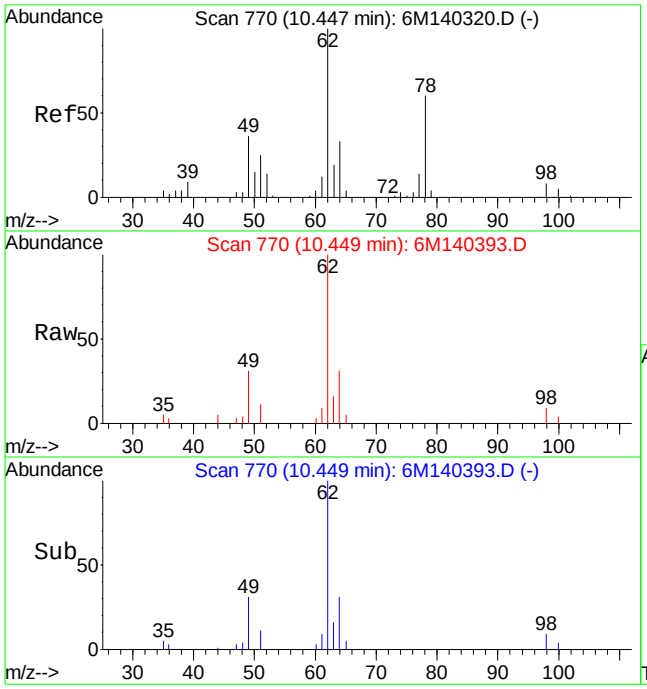

#45
1,2-Dichloroethane
Concen: 3.60 ug/L
RT: 10.45 min Scan# 770
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion: 62 Resp: 32223

Ion	Ratio	Lower	Upper
62	100		
49	32.5	25.1	58.5
98	6.5	5.2	12.0

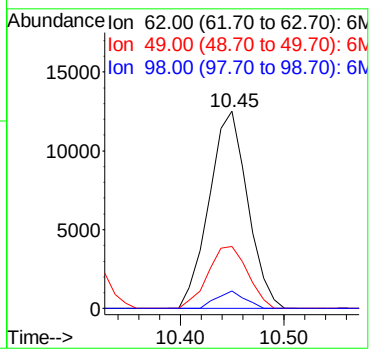

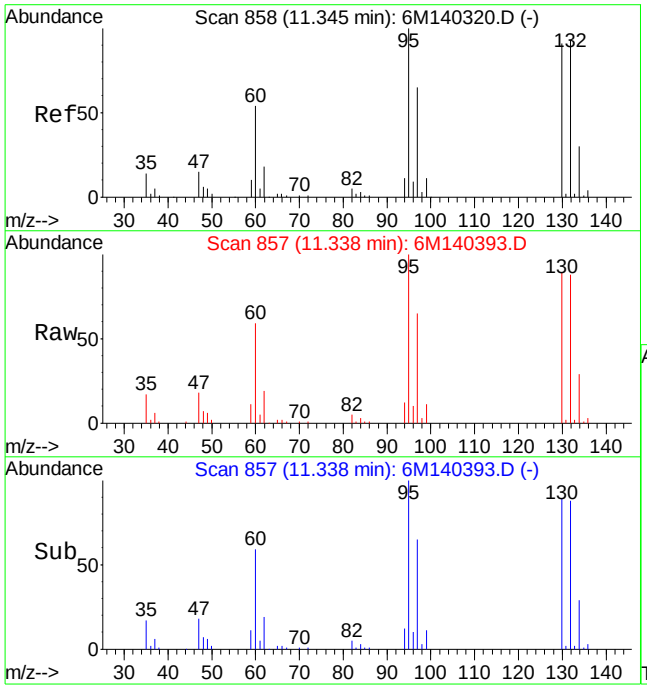

#47
Trichloroethene
Concen: 46.11 ug/L
RT: 11.34 min Scan# 857
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion:130 Resp: 271648

Ion	Ratio	Lower	Upper
130	100		
60	63.5	32.0	74.6

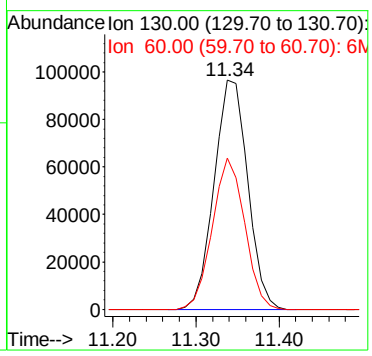

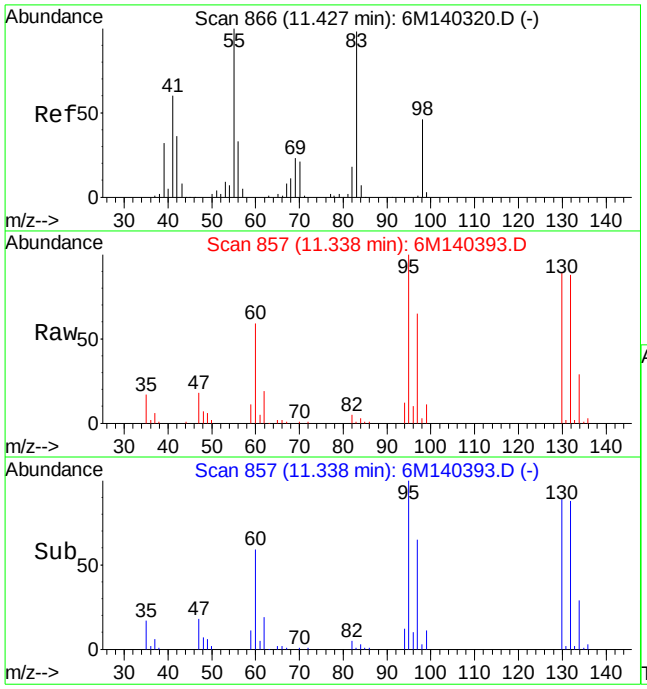

#48
Methylcyclohexane
Concen: 0.40 ug/L
RT: 11.34 min Scan# 857
Delta R.T. -0.09 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion: 83 Resp: 3689

Ion	Ratio	Lower	Upper
83	100		
55	0.0	56.3	131.3#
98	207.3	28.4	66.4#

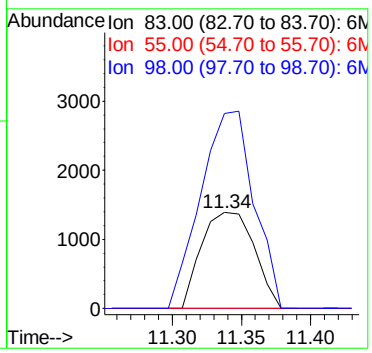

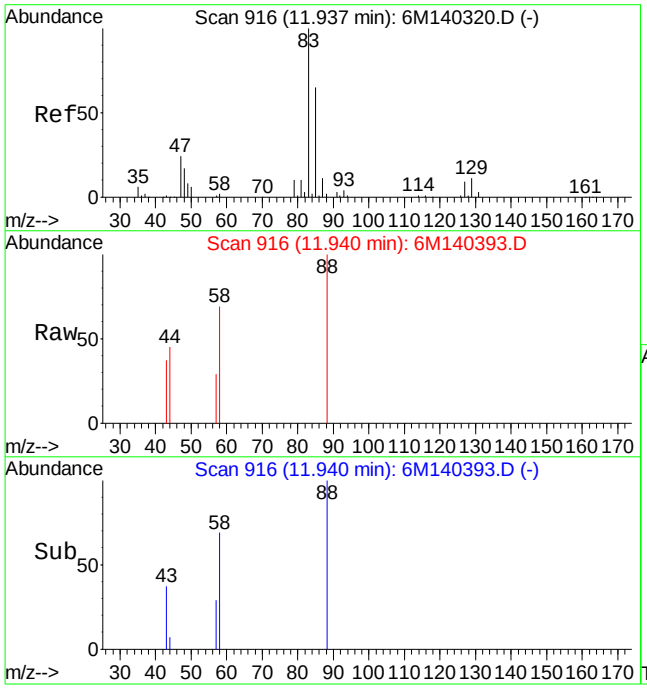

#50
1,4-Dioxane
Concen: 62.97 ug/L
RT: 11.94 min Scan# 916
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion: 88 Resp: 2931

Ion	Ratio	Lower	Upper
88	100		
58	80.8	42.6	99.4

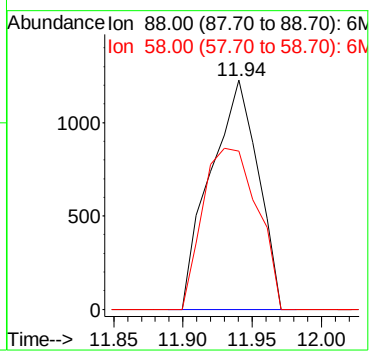

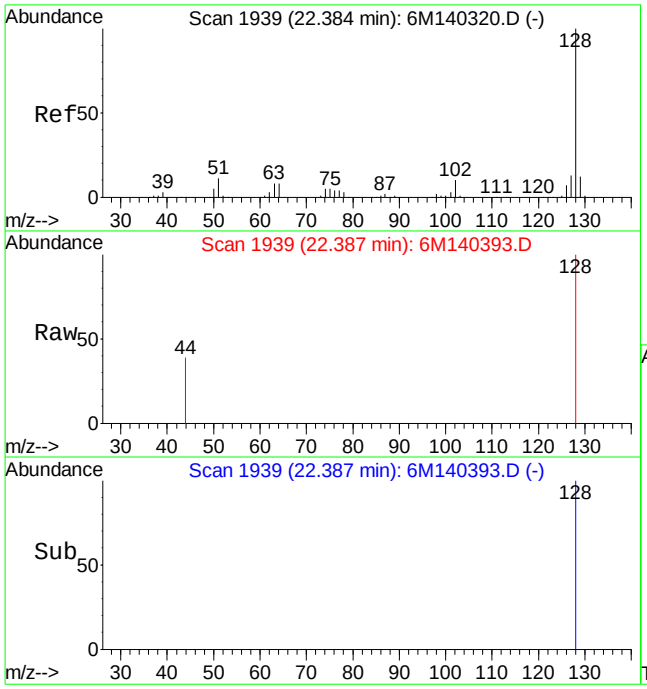

#100
Naphthalene
Concen: 0.12 ug/L
RT: 22.39 min Scan# 1939
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion:128 Resp: 2100

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.8	18.2#

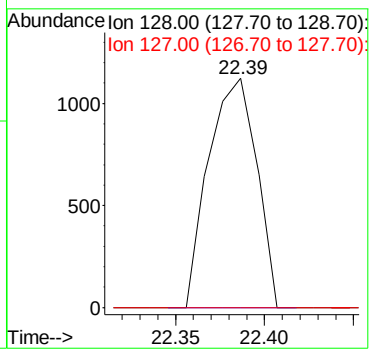

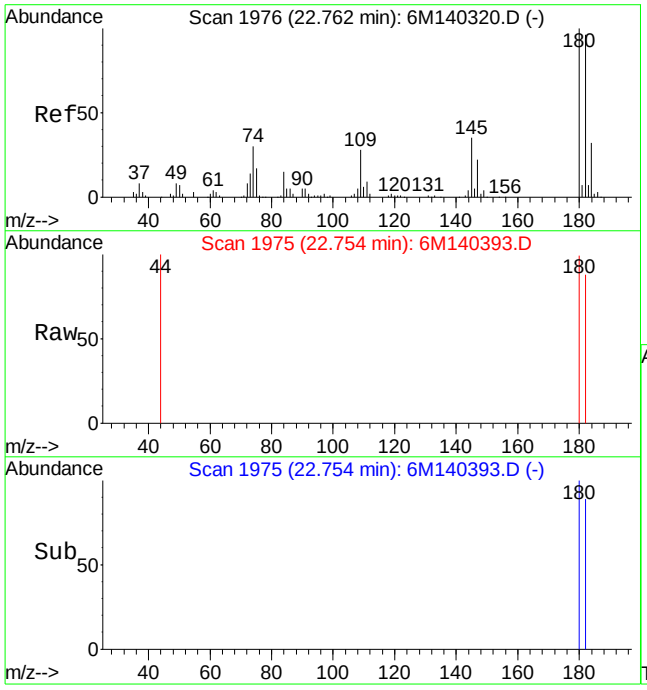

#101
1,2,3-Trichlorobenzene
Concen: 0.13 ug/L
RT: 22.75 min Scan# 1975
Delta R.T. -0.01 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion:180 Resp: 1026

Ion	Ratio	Lower	Upper
180	100		
182	81.1	57.8	135.0
145	0.0	20.5	47.7#

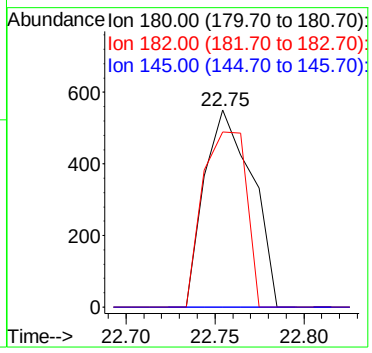

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13090.D Vial: 15
Acq On : 6 Jul 2016 00:34 Operator: JDS
Sample : L16061290-04 B A1 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 06 09:19:43 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	468953	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	406573	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	232685	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	129915	25.3132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.24%		
43) 1,2-Dichloroethane-d4	10.24	65	130814	22.3538 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.40%		
57) Toluene-d8	12.47	98	434426	24.5916 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.36%		
78) p-Bromofluorobenzene	15.64	95	165610	23.0888 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.36%		

Target Compounds

					Qvalue
11) Acrolein	6.23	56	221	1.9592 ug/L #	13
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	14910945	3154.8135 ug/L	96
13) Acetone	6.25	43	163495	146.8228 ug/L	93
32) cis-1,2-Dichloroethene	9.15	96	1175	0.2243 ug/L	95
46) Trichloroethene	11.08	130	4938	0.8436 ug/L	96

(#) = qualifier out of range (m) = manual integration
11M13090.D 8260WT.M Wed Jul 06 09:19:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13090.D Vial: 15
Acq On : 6 Jul 2016 00:34 Operator: JDS
Sample : L16061290-04 B A1 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 6 9:19 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

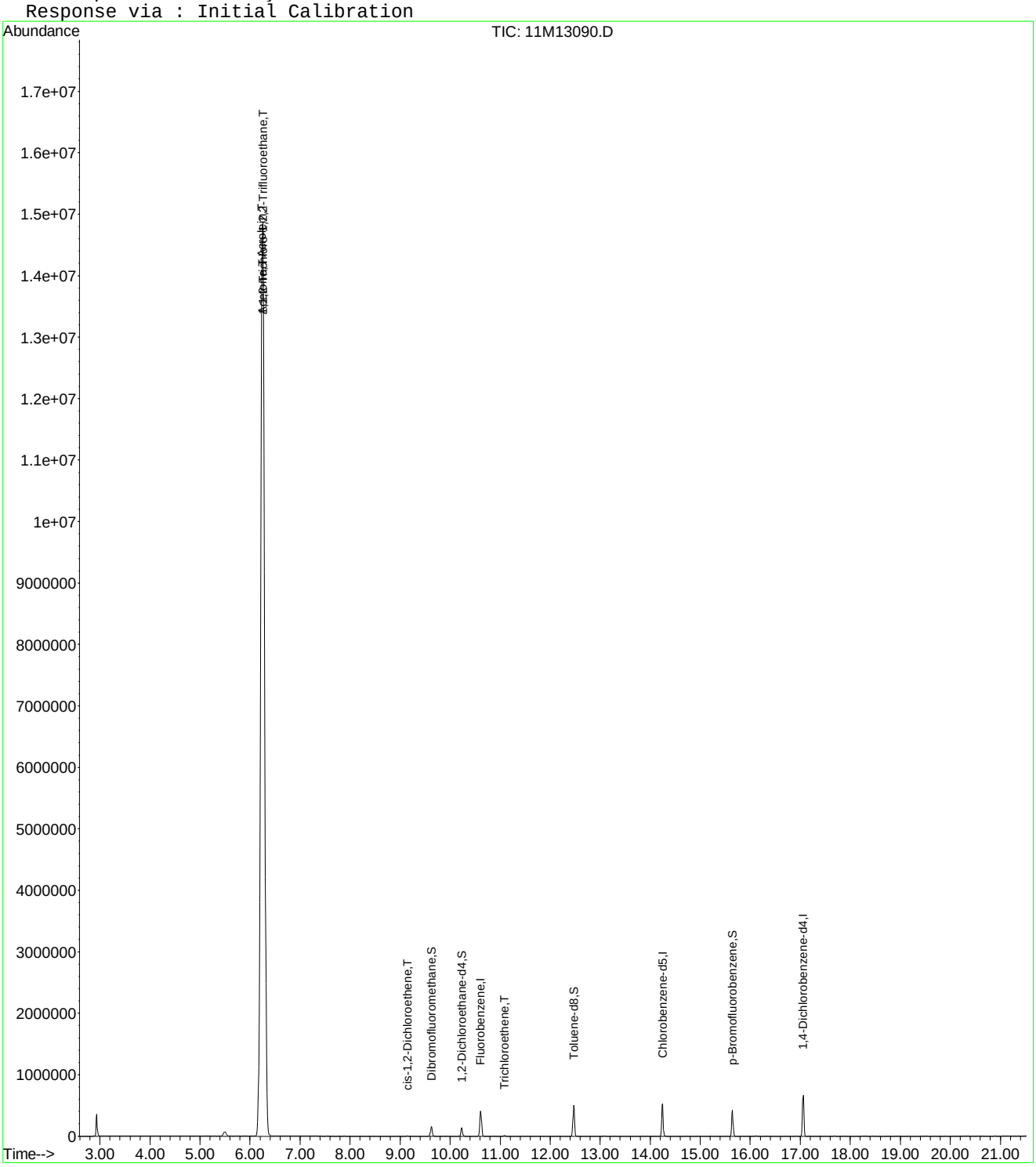

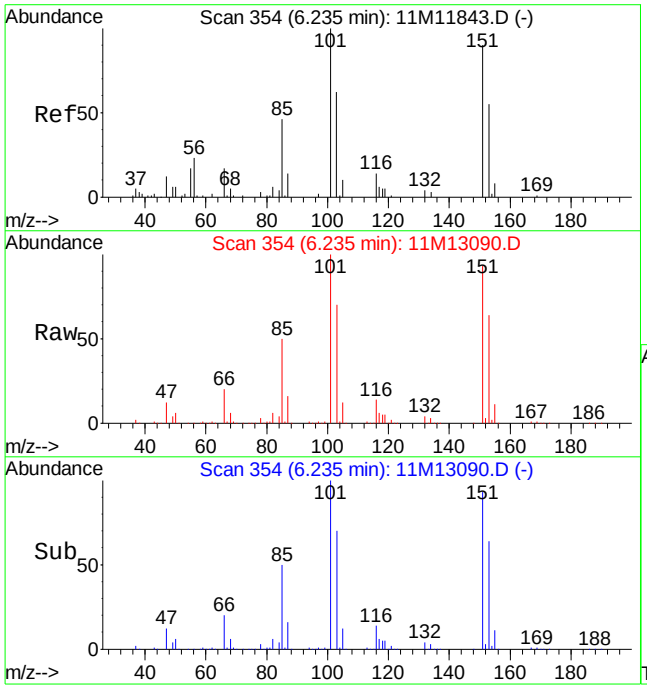

#11
Acrolein
Concen: 1.96 ug/L
RT: 6.23 min Scan# 354
Delta R.T. 0.00 min
Lab File: 11M13090.D
Acq: 6 Jul 2016 00:34

Tgt Ion: 56 Resp: 221

Ion	Ratio	Lower	Upper
56	100		
55	0.0	43.8	102.2#

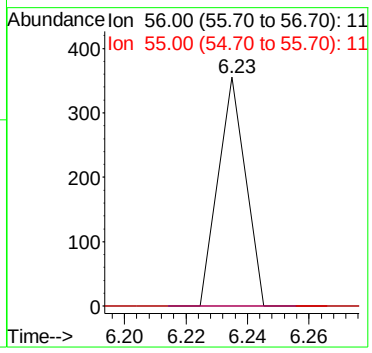

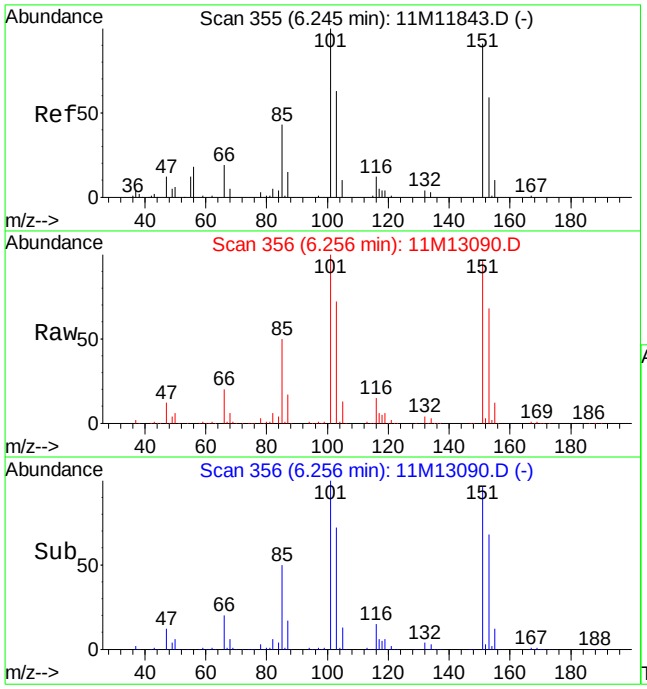

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 3154.81 ug/L
RT: 6.26 min Scan# 356
Delta R.T. 0.01 min
Lab File: 11M13090.D
Acq: 6 Jul 2016 00:34

Tgt Ion:101 Resp:14910945

Ion	Ratio	Lower	Upper
101	100		
151	94.8	50.7	130.7

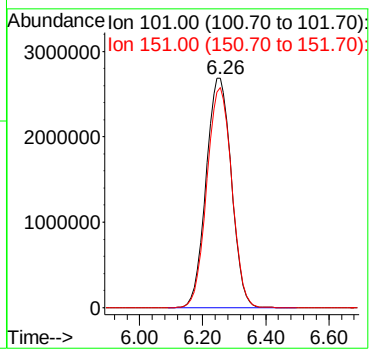

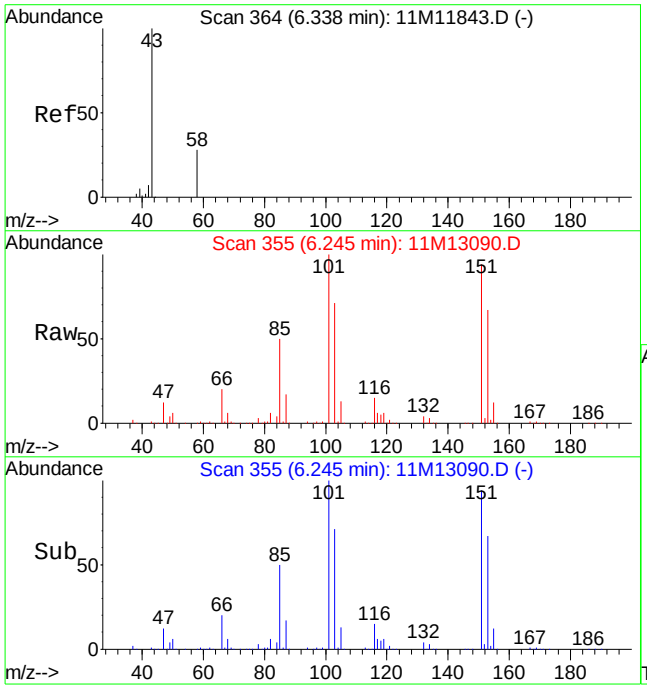

#13
Acetone
Concen: 146.82 ug/L
RT: 6.25 min Scan# 355
Delta R.T. -0.09 min
Lab File: 11M13090.D
Acq: 6 Jul 2016 00:34

Tgt Ion: 43 Resp: 163495

Ion	Ratio	Lower	Upper
43	100		
58	22.6	15.8	36.8

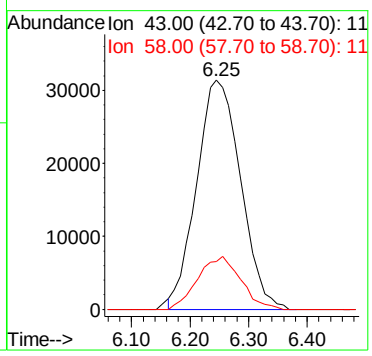

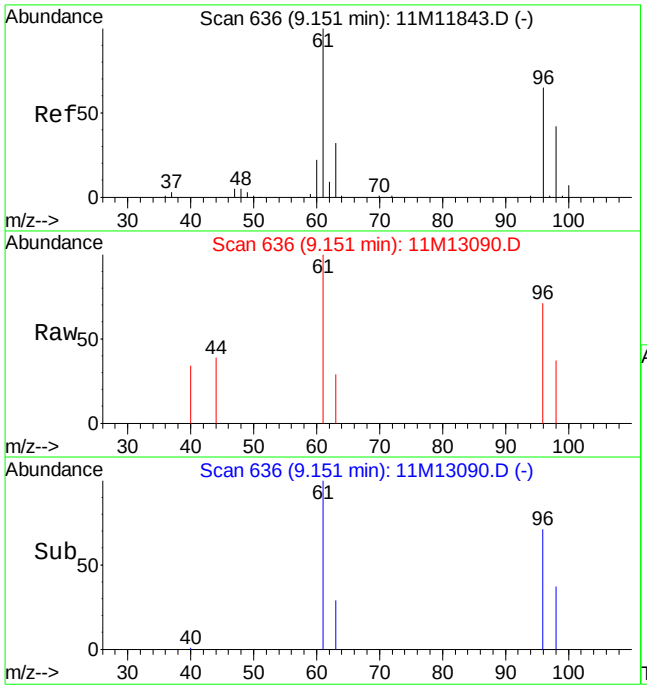

#32
cis-1,2-Dichloroethene
Concen: 0.22 ug/L
RT: 9.15 min Scan# 636
Delta R.T. -0.00 min
Lab File: 11M13090.D
Acq: 6 Jul 2016 00:34

Tgt Ion: 96 Resp: 1175

Ion	Ratio	Lower	Upper
96	100		
61	182.1	105.2	245.6

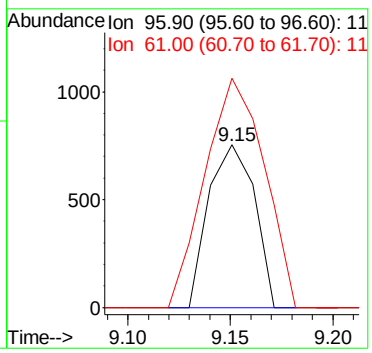

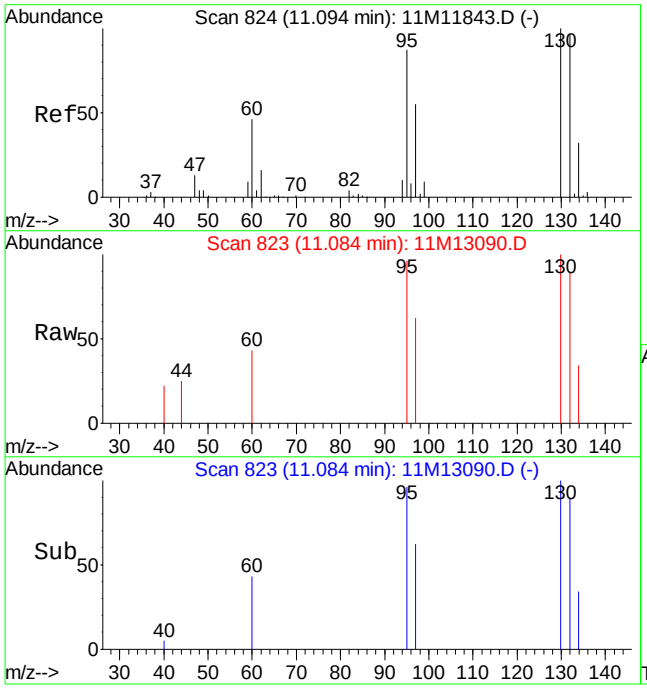

#46
Trichloroethene
Concen: 0.84 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.01 min
Lab File: 11M13090.D
Acq: 6 Jul 2016 00:34

Tgt Ion:130 Resp: 4938

Ion	Ratio	Lower	Upper
130	100		
132	90.8	58.3	136.1
95	90.8	55.6	129.8

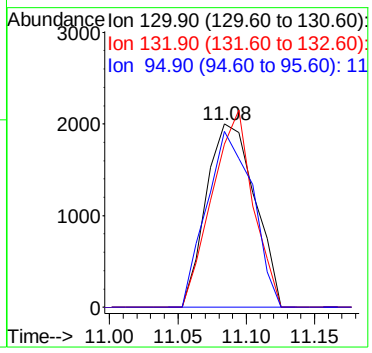

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13059.D Vial: 19
Acq On : 2 Jul 2016 23:09 Operator: TMB
Sample : L16061290-05 A 5X 826-LOW Inst : hpms11
Misc : 1,5 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 07 12:05:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	467670	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	391246	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	222415	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	126795	24.7731 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.08%		
43) 1,2-Dichloroethane-d4	10.23	65	126062	21.6009 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.40%		
57) Toluene-d8	12.47	98	429210	25.2482 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.00%		
78) p-Bromofluorobenzene	15.64	95	161143	23.5034 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.00%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.95	62	810	0.1662 ug/L #	44
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	70324	14.9198 ug/L	94
14) 1,1-Dichloroethene	6.56	61	3933	0.4594 ug/L	87
16) Dimethyl Sulfide	6.88	62	413	0.1208 ug/L #	1
23) trans-1,2-Dichloroethene	7.74	96	1604	0.3385 ug/L	90
26) Vinyl Acetate	8.31	43	759	2.5271 ug/L #	79
27) 1,1-Dichloroethane	8.33	63	1681	0.1768 ug/L #	67
32) cis-1,2-Dichloroethene	9.15	96	155835	29.8277 ug/L	76
33) Chloroform	9.35	83	3011	0.3225 ug/L	94
36) Tetrahydrofuran	9.60	42	678	0.5719 ug/L #	47
46) Trichloroethene	11.08	130	781650	133.9055 ug/L	97
47) Methylcyclohexane	11.08	83	7477	1.0379 ug/L #	1

(#) = qualifier out of range (m) = manual integration
11M13059.D 8260WT.M Thu Jul 07 12:05:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13059.D Vial: 19
Acq On : 2 Jul 2016 23:09 Operator: TMB
Sample : L16061290-05 A 5X 826-LOW Inst : hpms11
Misc : 1,5 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 7 12:05 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

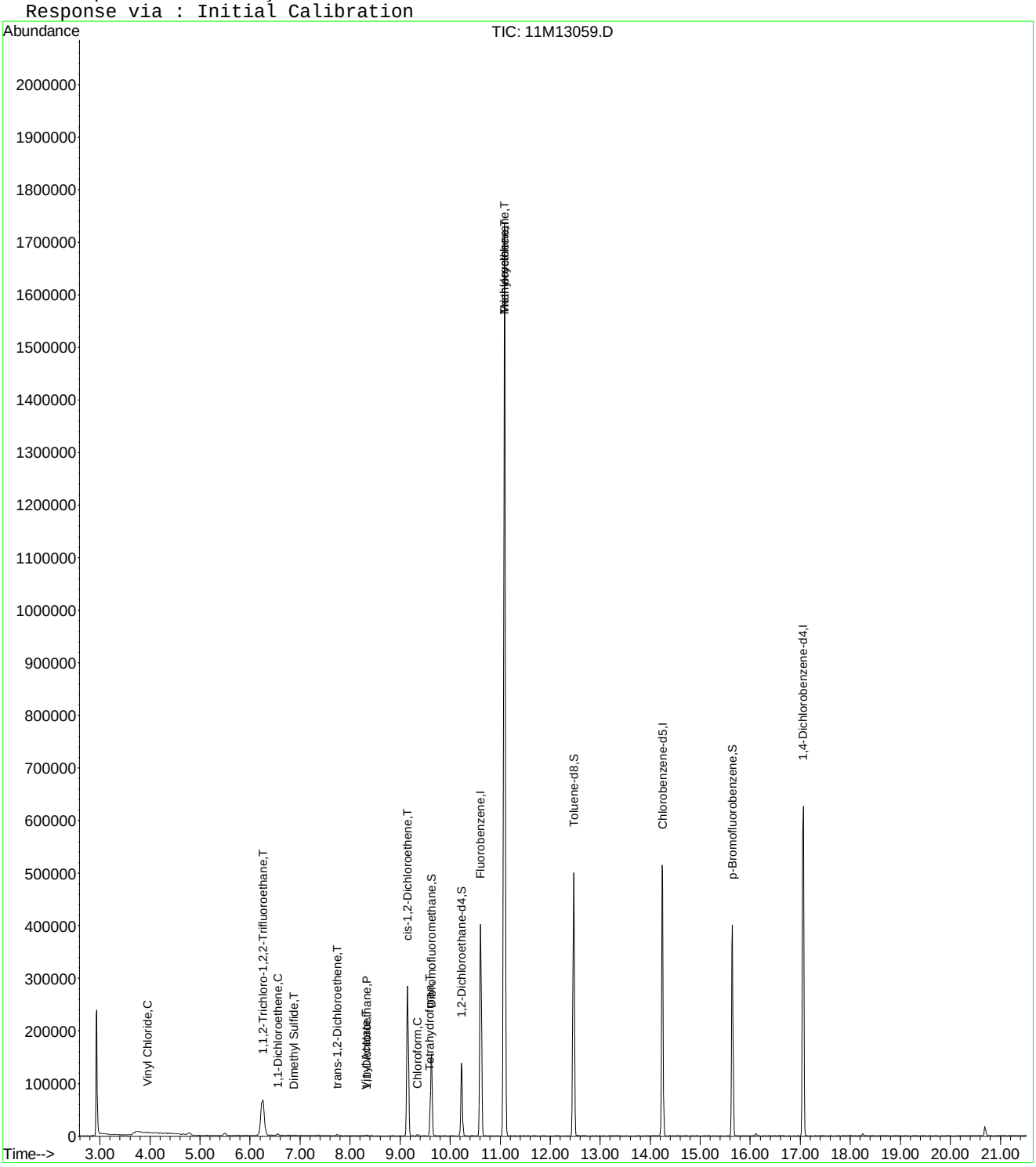

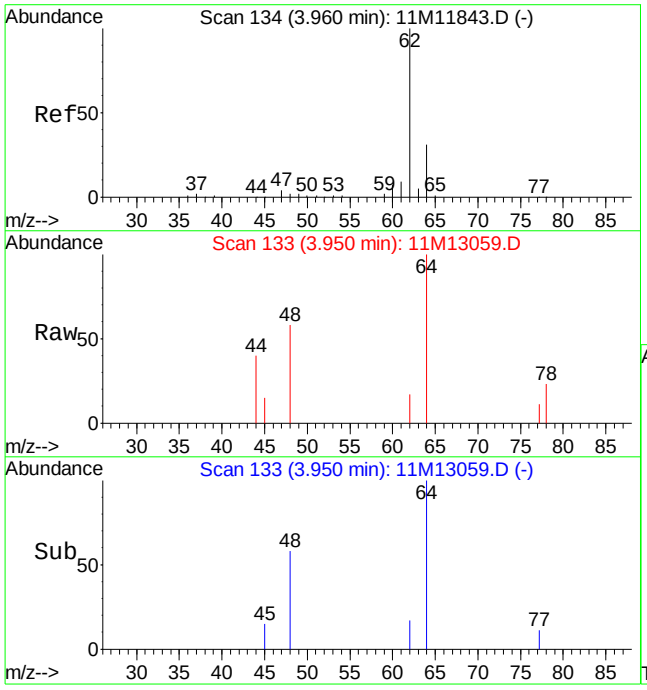

#4
Vinyl Chloride
Concen: 0.17 ug/L
RT: 3.95 min Scan# 133
Delta R.T. -0.01 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 62 Resp: 810

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.4	43.0#

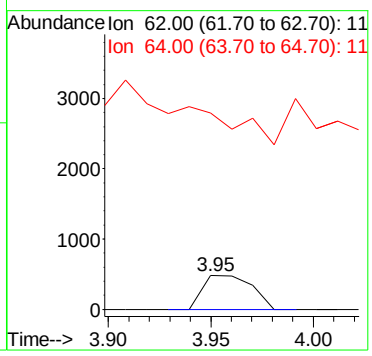

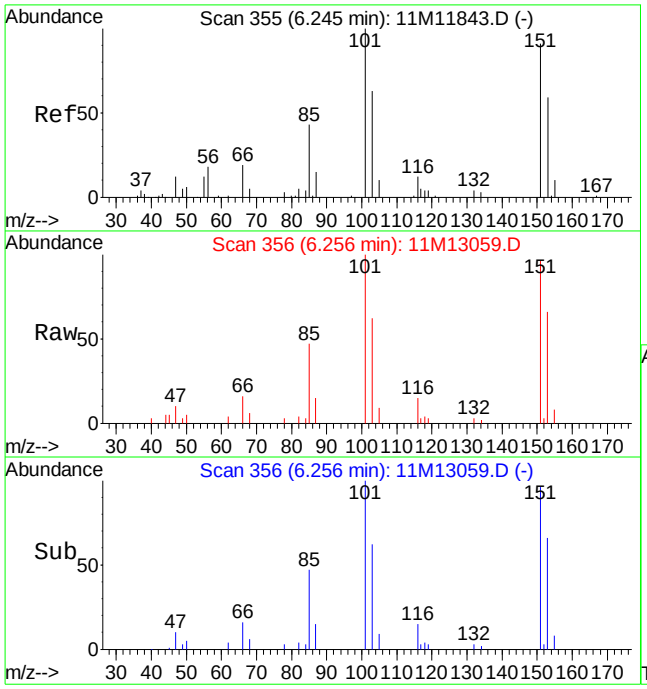

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 14.92 ug/L
RT: 6.26 min Scan# 356
Delta R.T. 0.01 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion:101 Resp: 70324

Ion	Ratio	Lower	Upper
101	100		
151	96.2	50.7	130.7

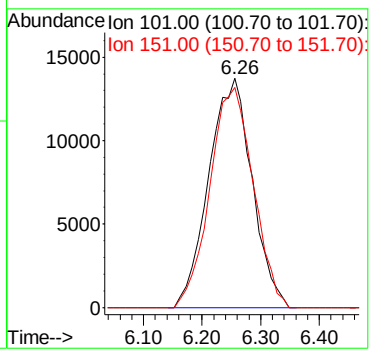

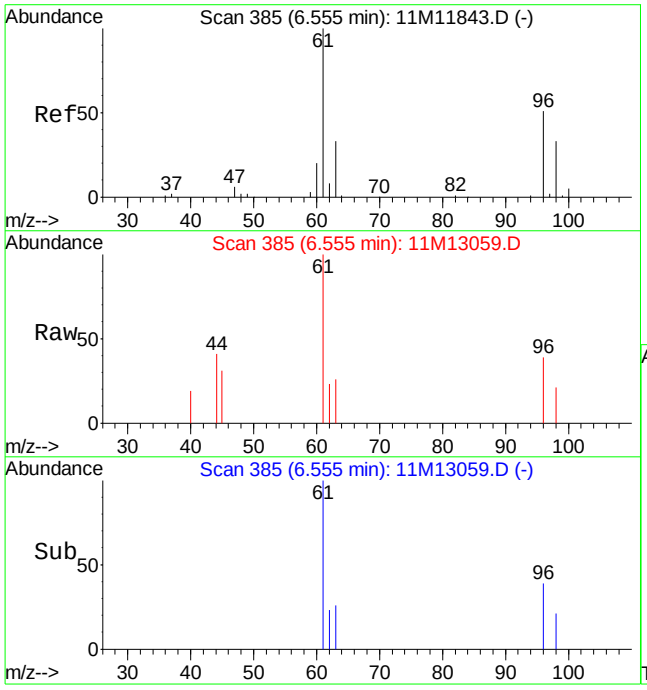

#14
1,1-Dichloroethene
Concen: 0.46 ug/L
RT: 6.56 min Scan# 385
Delta R.T. 0.00 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 61 Resp: 3933

Ion	Ratio	Lower	Upper
61	100		
96	40.9	30.1	70.3

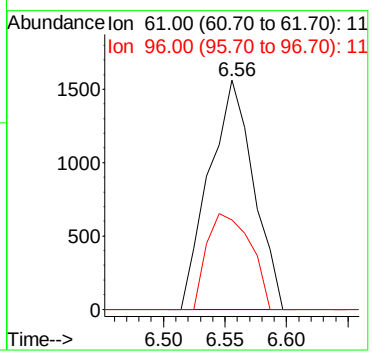

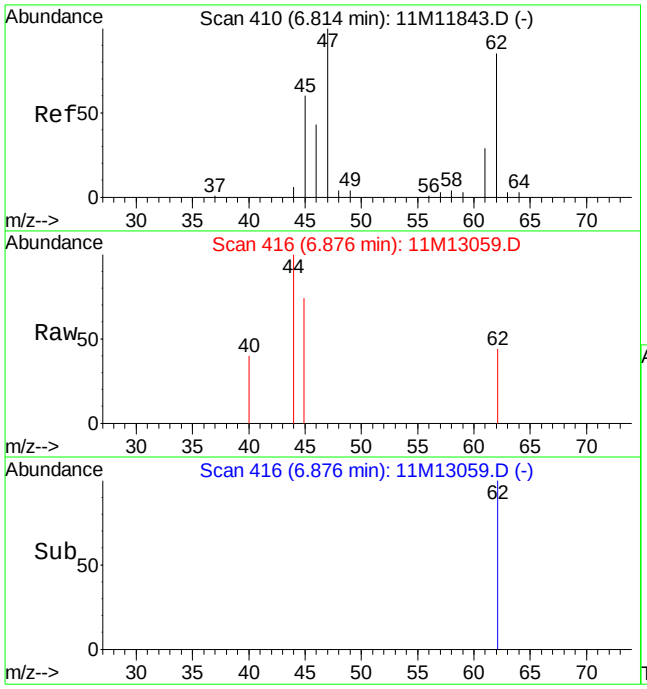

#16
Dimethyl Sulfide
Concen: 0.12 ug/L
RT: 6.88 min Scan# 416
Delta R.T. 0.06 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 62 Resp: 413

Ion	Ratio	Lower	Upper
62	100		
47	0.0	73.4	171.2#

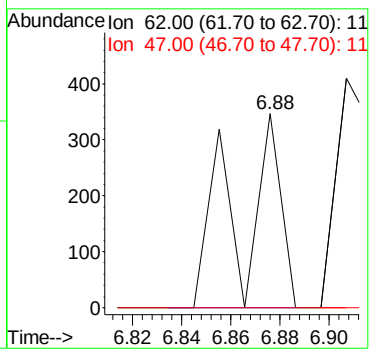

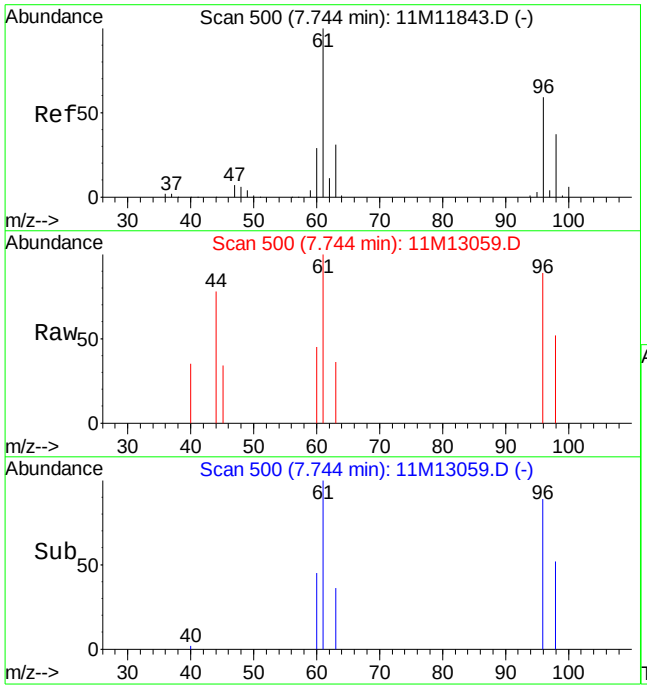

#23
trans-1,2-Dichloroethene
Concen: 0.34 ug/L
RT: 7.74 min Scan# 500
Delta R.T. 0.00 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 96 Resp: 1604

Ion	Ratio	Lower	Upper
96	100		
61	154.2	100.6	234.6

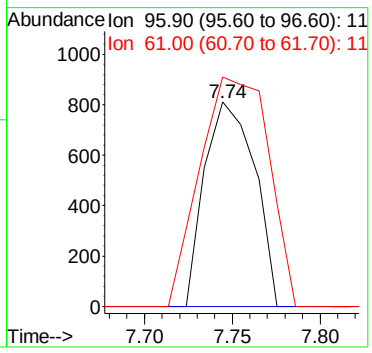

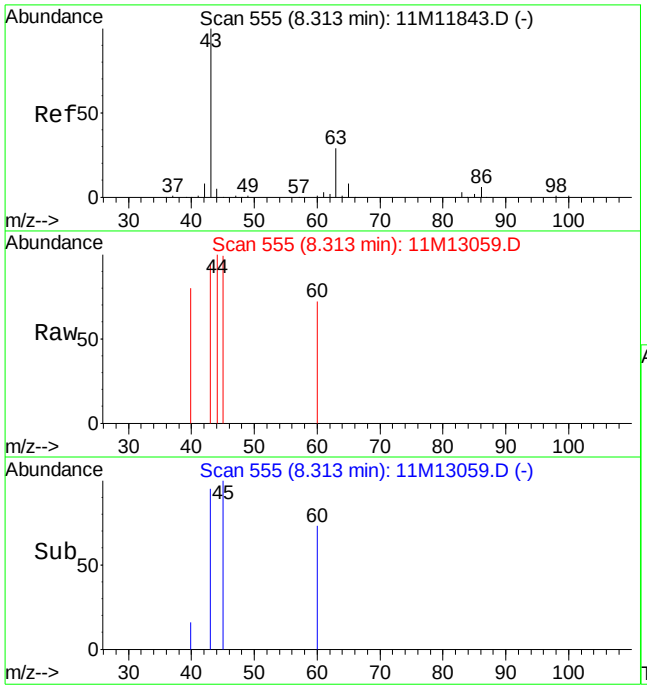

#26
Vinyl Acetate
Concen: 2.53 ug/L
RT: 8.31 min Scan# 555
Delta R.T. 0.00 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 43 Resp: 759

Ion	Ratio	Lower	Upper
43	100		
42	0.0	5.0	11.6#
86	0.0	3.8	9.0#

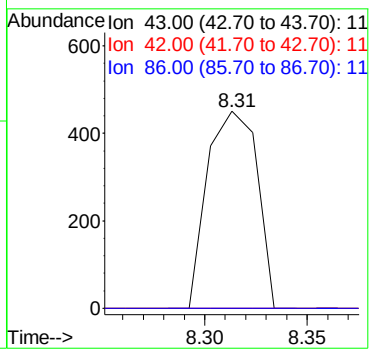

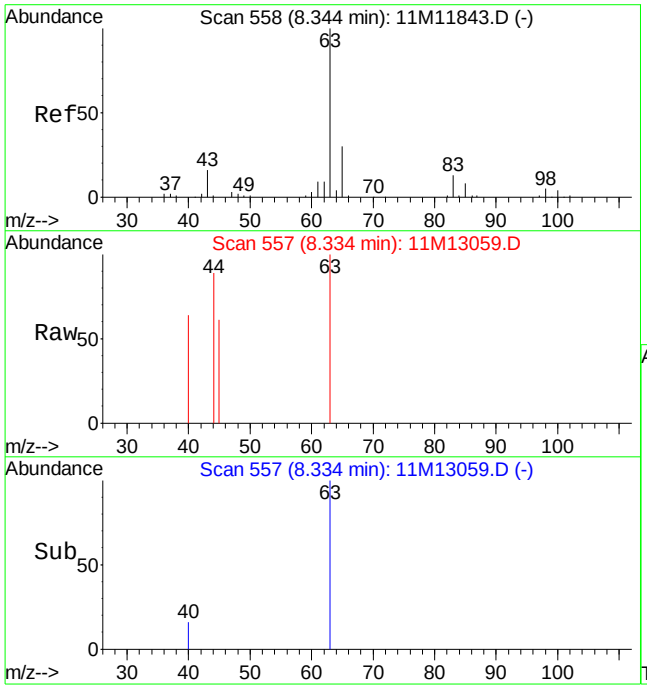

#27
1,1-Dichloroethane
Concen: 0.18 ug/L
RT: 8.33 min Scan# 557
Delta R.T. -0.01 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 63 Resp: 1681

Ion	Ratio	Lower	Upper
63	100		
65	11.4	17.8	41.6#
83	0.0	7.4	17.4#

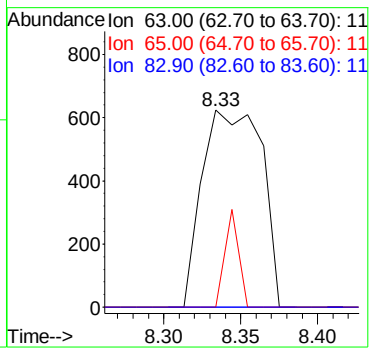

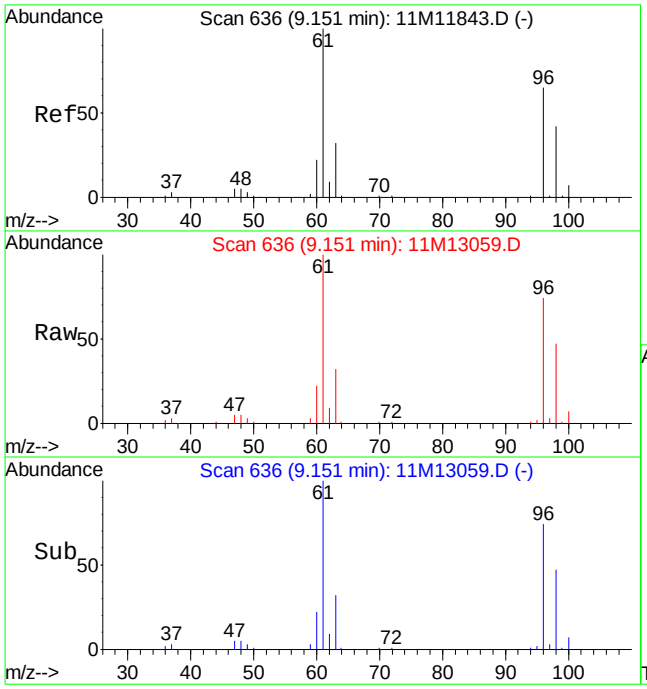

#32
cis-1,2-Dichloroethene
Concen: 29.83 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 96 Resp: 155835

Ion	Ratio	Lower	Upper
96	100		
61	141.8	105.2	245.6

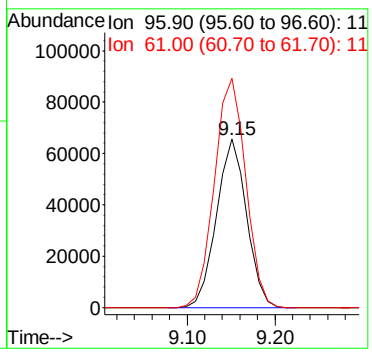

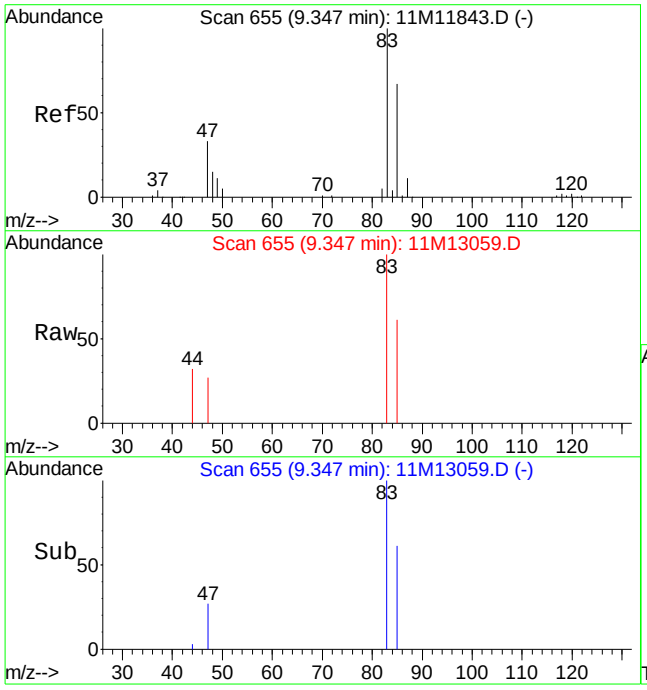

#33
Chloroform
Concen: 0.32 ug/L
RT: 9.35 min Scan# 655
Delta R.T. 0.00 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 83 Resp: 3011

Ion	Ratio	Lower	Upper
83	100		
85	70.1	39.2	91.4

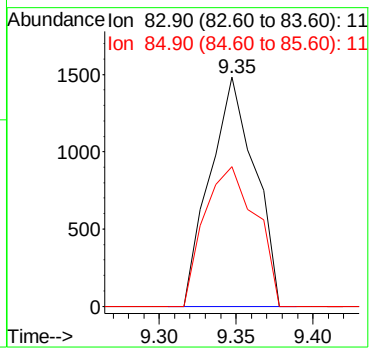

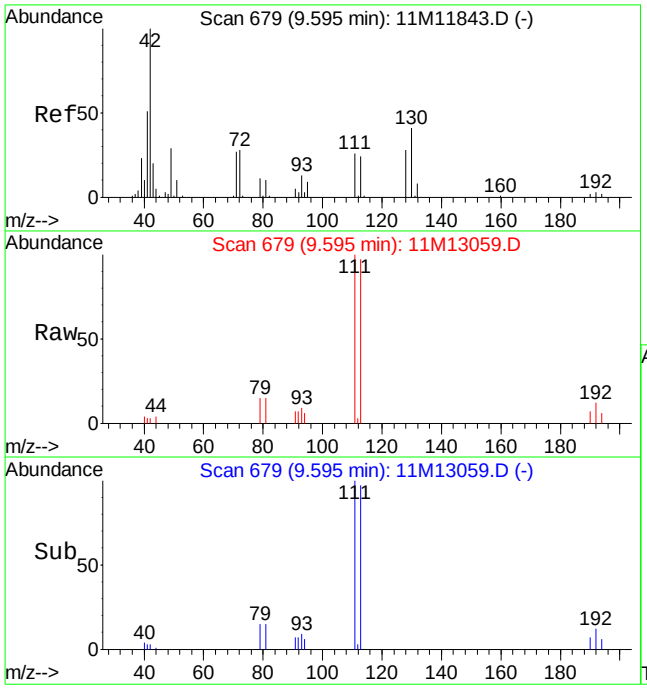

#36
Tetrahydrofuran
Concen: 0.57 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 42 Resp: 678

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

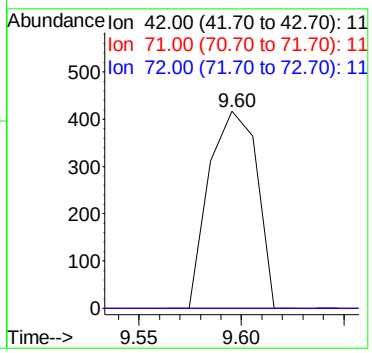

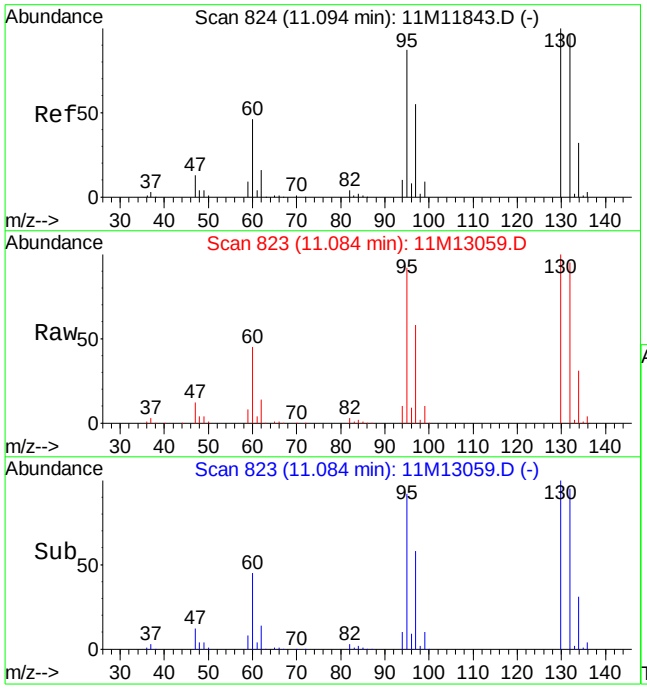

#46
Trichloroethene
Concen: 133.91 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.01 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion:130 Resp: 781650

Ion	Ratio	Lower	Upper
130	100		
132	96.3	58.3	136.1
95	88.5	55.6	129.8

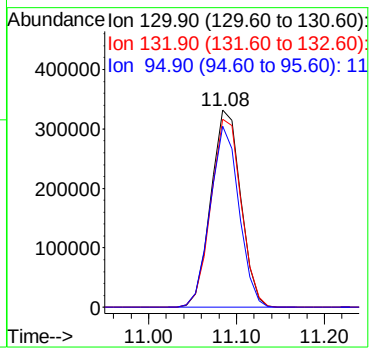

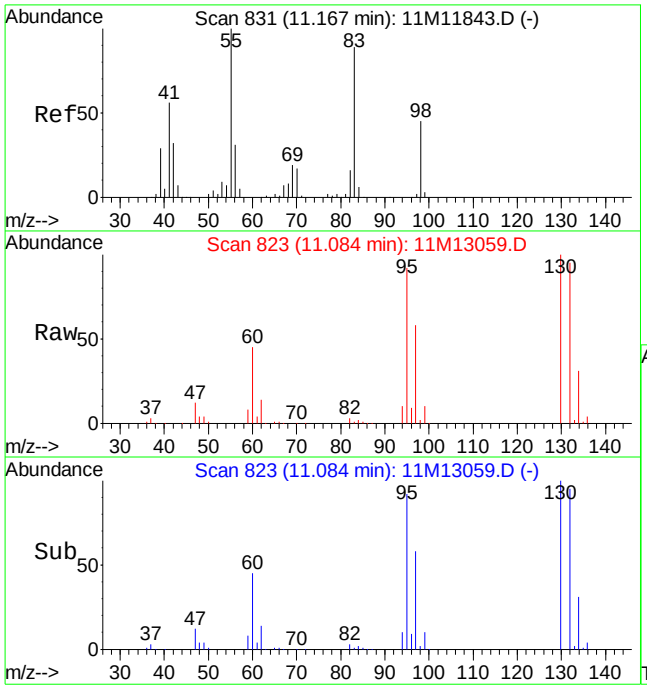

#47
Methylcyclohexane
Concen: 1.04 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.08 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 83 Resp: 7477

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	243.3	29.9	69.7#

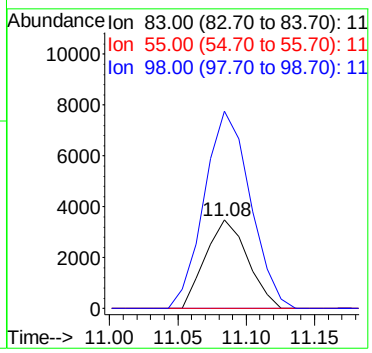

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13050.D Vial: 10
Acq On : 2 Jul 2016 18:22 Operator: TMB
Sample : L16061290-06 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 07 12:05:08 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	517116	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	436961	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	253832	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	142164	25.1200 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.48%		
43) 1,2-Dichloroethane-d4	10.23	65	138635	21.4839 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.92%		
57) Toluene-d8	12.47	98	475013	25.0192 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.08%		
78) p-Bromofluorobenzene	15.64	95	179369	22.9236 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.68%		

Target Compounds

					Qvalue
13) Acetone	6.34	43	1166	0.9496 ug/L #	49
16) Dimethyl Sulfide	6.77	62	575	0.1521 ug/L #	1
46) Trichloroethene	11.08	130	2194	0.3399 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M13050.D 8260WT.M Thu Jul 07 12:05:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13050.D Vial: 10
Acq On : 2 Jul 2016 18:22 Operator: TMB
Sample : L16061290-06 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 7 12:05 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

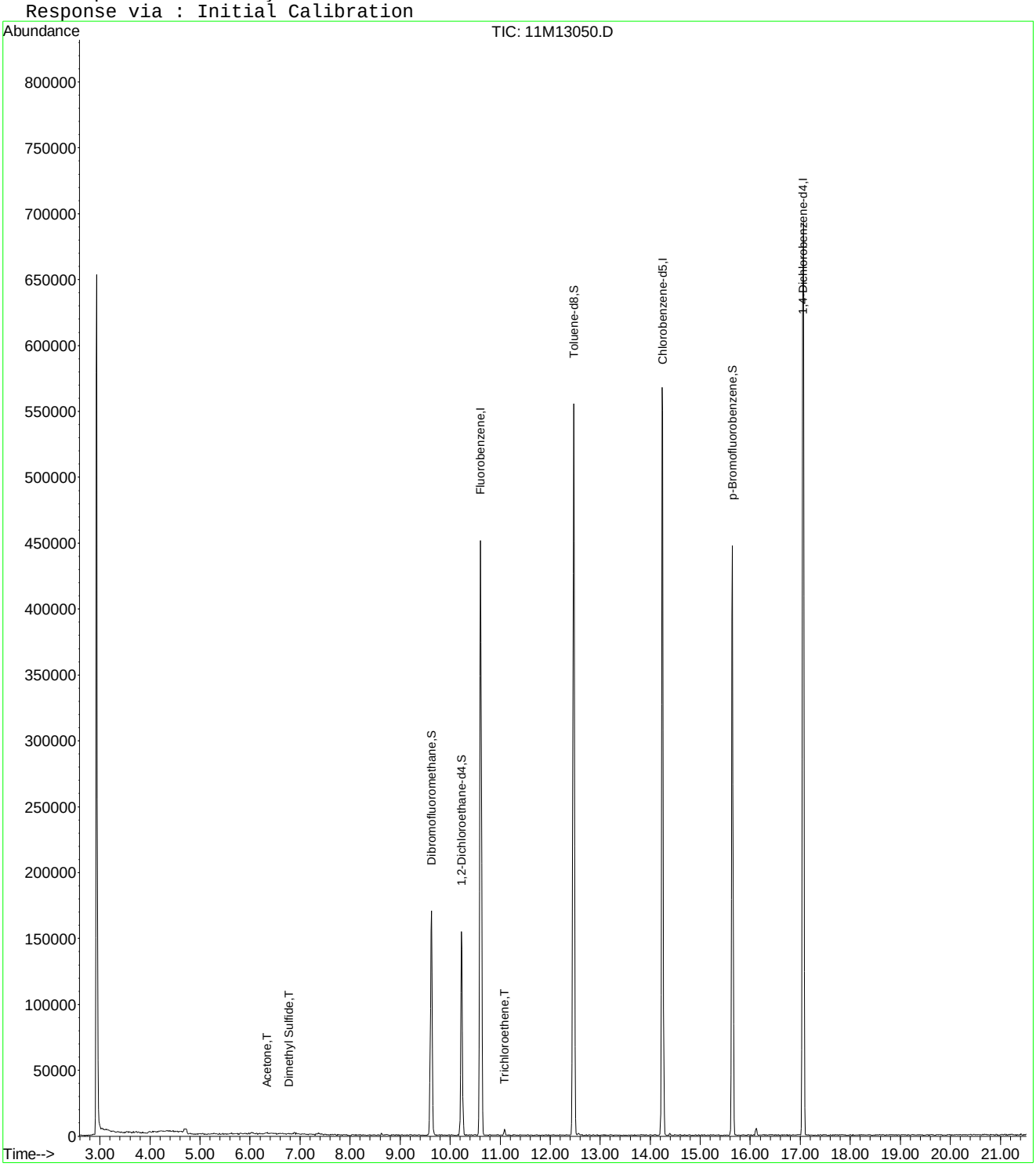

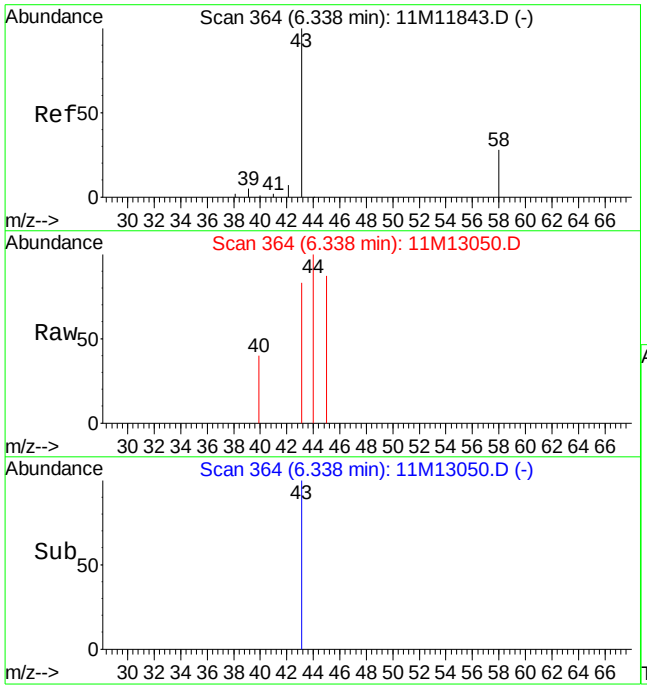

#13
Acetone
Concen: 0.95 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M13050.D
Acq: 2 Jul 2016 18:22

Tgt Ion: 43 Resp: 1166

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

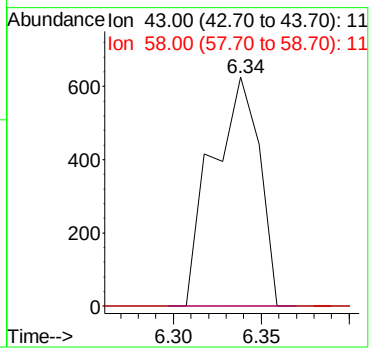

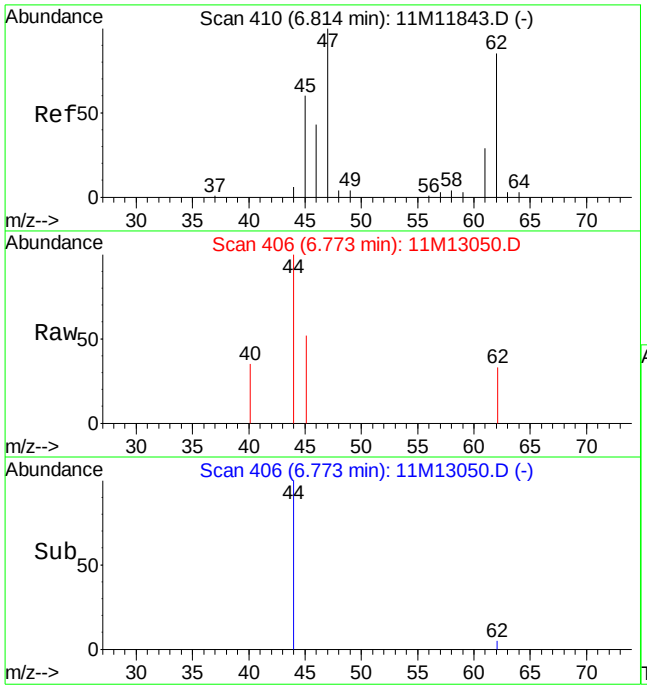

#16
Dimethyl Sulfide
Concen: 0.15 ug/L
RT: 6.77 min Scan# 406
Delta R.T. -0.04 min
Lab File: 11M13050.D
Acq: 2 Jul 2016 18:22

Tgt Ion: 62 Resp: 575

Ion	Ratio	Lower	Upper
62	100		
47	0.0	73.4	171.2#

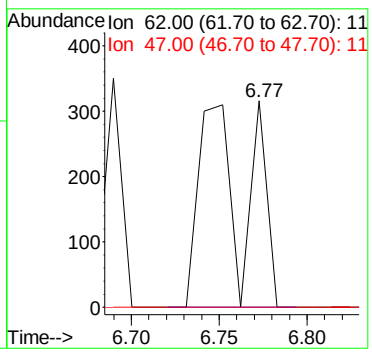

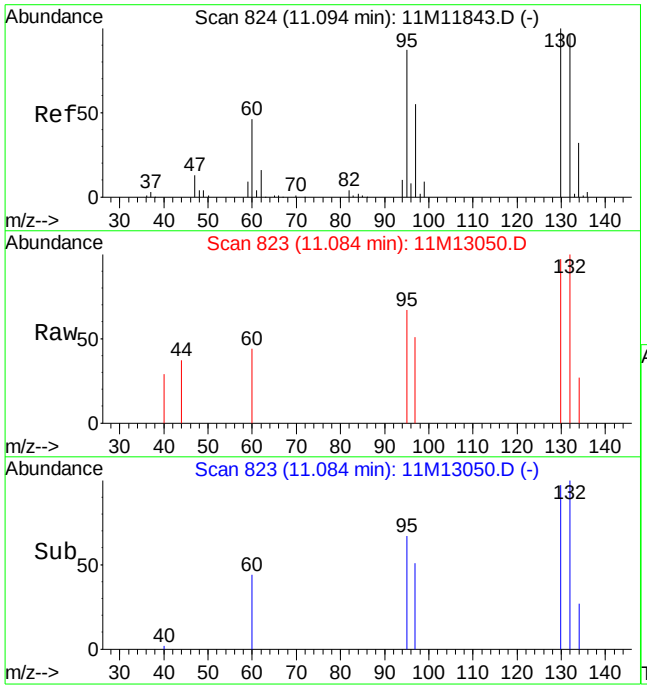

#46
Trichloroethene
Concen: 0.34 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.01 min
Lab File: 11M13050.D
Acq: 2 Jul 2016 18:22

Tgt Ion:130 Resp: 2194

Ion	Ratio	Lower	Upper
130	100		
132	101.0	58.3	136.1
95	72.2	55.6	129.8

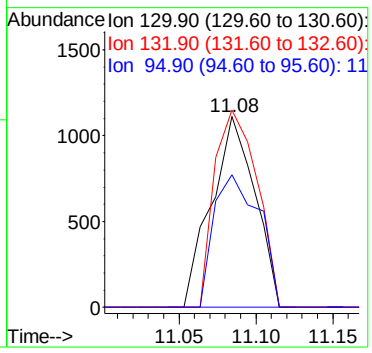

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13046.D Vial: 6
Acq On : 2 Jul 2016 16:15 Operator: TMB
Sample : L16061290-07 A TB 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 07 12:05:00 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	536895	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	451077	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	253845	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	142067	24.1780 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.72%		
43) 1,2-Dichloroethane-d4	10.23	65	134040	20.0066 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 80.04%		
57) Toluene-d8	12.47	98	488247	24.9115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.64%		
78) p-Bromofluorobenzene	15.64	95	182157	23.2788 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.12%		

Target Compounds					Qvalue
13) Acetone	6.35	43	436	0.3420 ug/L #	49
36) Tetrahydrofuran	9.58	42	1080	0.7935 ug/L #	47

(#) = qualifier out of range (m) = manual integration
11M13046.D 8260WT.M Thu Jul 07 12:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13046.D Vial: 6
Acq On : 2 Jul 2016 16:15 Operator: TMB
Sample : L16061290-07 A TB 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 7 12:05 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

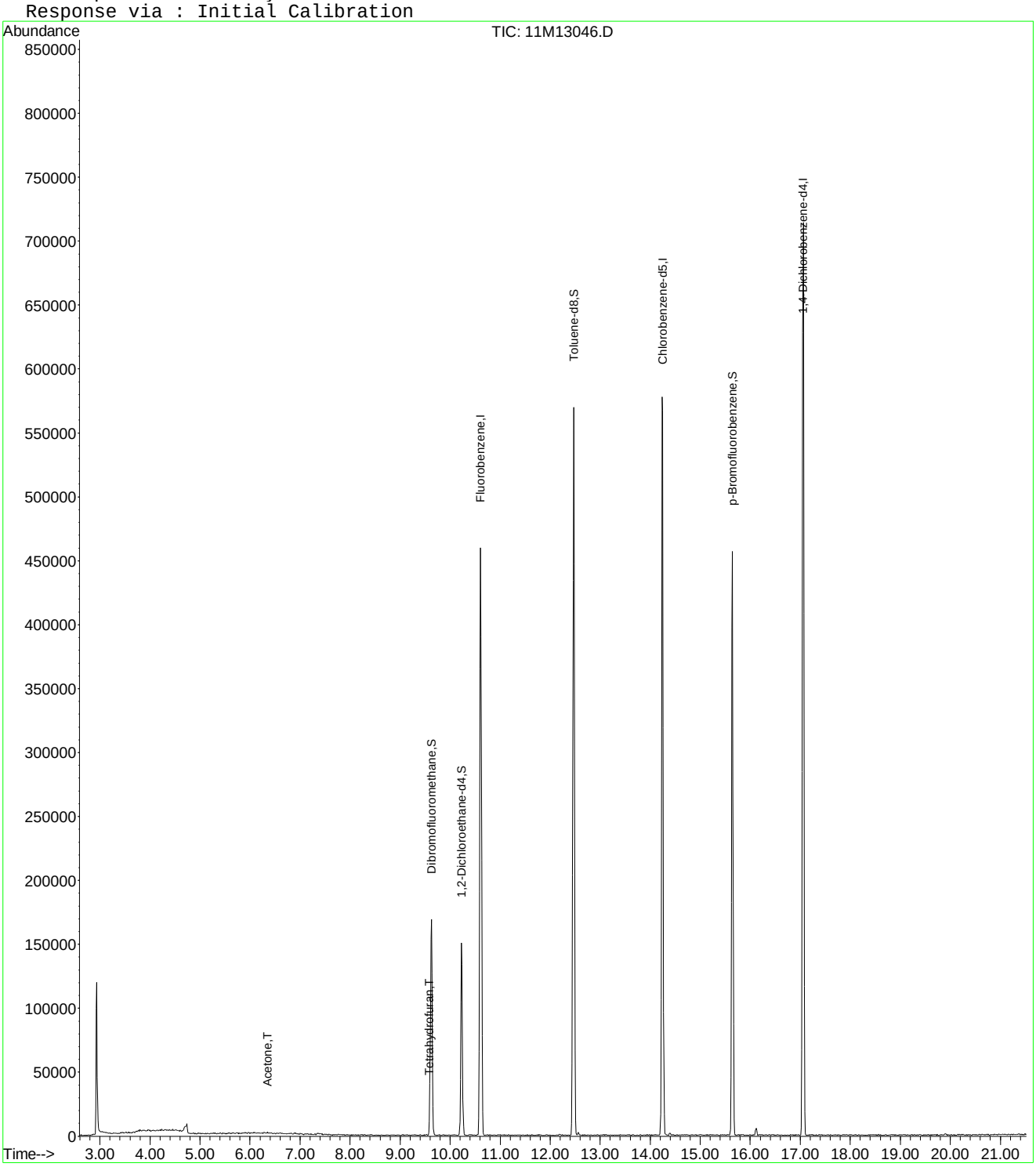

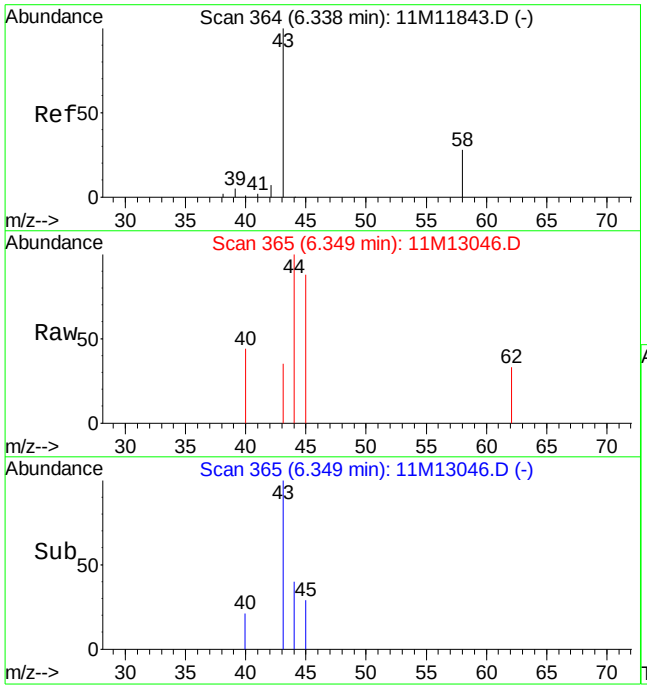

#13
Acetone
Concen: 0.34 ug/L
RT: 6.35 min Scan# 365
Delta R.T. 0.01 min
Lab File: 11M13046.D
Acq: 2 Jul 2016 16:15

Tgt Ion: 43 Resp: 436

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

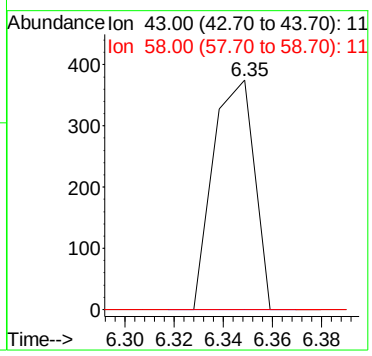

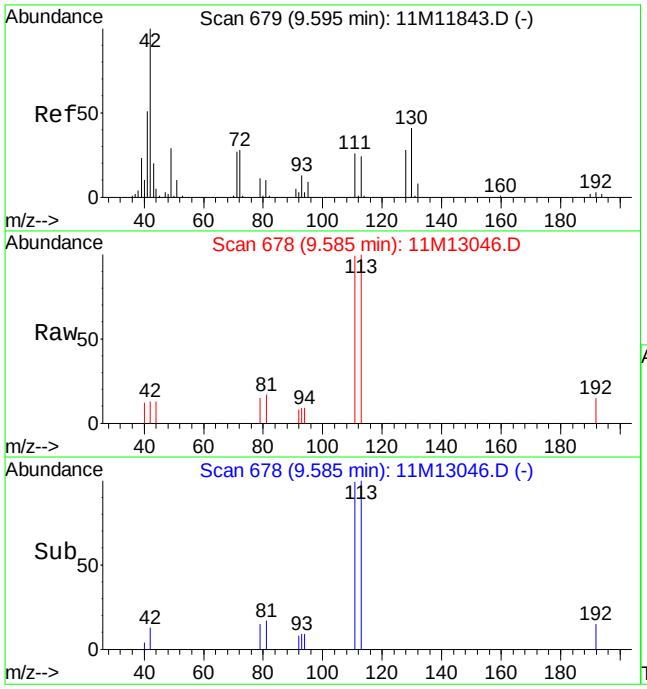

#36
Tetrahydrofuran
Concen: 0.79 ug/L
RT: 9.58 min Scan# 678
Delta R.T. -0.01 min
Lab File: 11M13046.D
Acq: 2 Jul 2016 16:15

Tgt Ion: 42 Resp: 1080

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

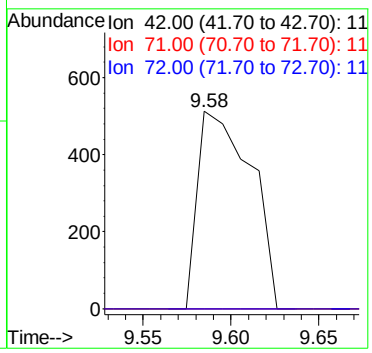

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	538041	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	450050	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	251600	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	12.47	98	210	0.0099 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#	
78) p-Bromofluorobenzene	15.64	95	566	0.0689 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2475	0.3135 ug/L #	66
3) Chloromethane	3.72	50	4639	0.6471 ug/L	91
4) Vinyl Chloride	3.96	62	1882	0.3288 ug/L #	44
5) 1,3-Butadiene	4.01	54	1564	0.2900 ug/L #	19
6) Bromomethane	4.84	94	1717	0.4723 ug/L	83
7) Chloroethane	5.00	64	616	0.1589 ug/L #	45
8) Trichlorofluoromethane	5.49	101	3531	0.3330 ug/L	97
10) Isoprene	6.04	67	1746	0.2381 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	1344	0.2515 ug/L	96
13) Acetone	6.34	43	2389	1.4850 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3780	0.3817 ug/L	78
16) Dimethyl Sulfide	6.80	62	762	0.1697 ug/L	78
18) Methyl acetate	7.02	43	24685	4.4975 ug/L #	70
19) Methylene Chloride	7.31	84	1766	0.3184 ug/L	74
20) Carbon Disulfide	7.36	76	5848	0.3373 ug/L	92
22) Methyl Tert Butyl Ether	7.54	73	3068	0.2131 ug/L #	48
23) trans-1,2-Dichloroethene	7.75	96	1449	0.2556 ug/L	91
24) n-Hexane	7.82	57	3745	0.4031 ug/L #	73
26) Vinyl Acetate	8.30	43	2410	0.6995 ug/L #	78
27) 1,1-Dichloroethane	8.35	63	3312	0.2969 ug/L #	76
31) 2,2-Dichloropropane	9.10	77	2449	0.3040 ug/L #	42
32) cis-1,2-Dichloroethene	9.15	96	1729	0.2748 ug/L	96
33) Chloroform	9.35	83	3792	0.3639 ug/L	92
35) Bromochloromethane	9.56	130	948	0.2355 ug/L #	68
38) 1,1,1-Trichloroethane	9.85	97	3449	0.3423 ug/L #	79
39) Cyclohexane	9.88	56	3639	0.2986 ug/L #	84
40) 1,1-Dichloropropene	10.04	75	2365	0.3106 ug/L #	53
41) Carbon Tetrachloride	10.17	117	2613	0.2748 ug/L	87
44) 1,2-Dichloroethane	10.35	62	2493	0.2788 ug/L #	73
45) Benzene	10.38	78	7133	0.3275 ug/L	99
46) Trichloroethene	11.09	130	1973	0.2780 ug/L	93
47) Methylcyclohexane	11.17	83	2570	0.2986 ug/L	84
48) 1,2-Dichloropropane	11.29	63	1665	0.2692 ug/L	87
50) Bromodichloromethane	11.57	83	2418	0.2950 ug/L #	82
51) Dibromomethane	11.65	93	756	0.2331 ug/L	88
54) cis-1,3-Dichloropropene	12.17	75	1869	0.2166 ug/L #	82
55) Dimethyl Disulfide	12.42	79	1028	0.1910 ug/L	95
58) Toluene	12.57	91	7355	0.3156 ug/L	91
59) Ethyl Methacrylate	12.64	69	1041	0.1887 ug/L	88
60) trans-1,3-Dichloropropene	12.72	75	1951	0.2556 ug/L #	51

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
61) 1,1,2-Trichloroethane	12.92	97	1087	0.2492 ug/L	87
62) 2-Hexanone	12.86	43	687	0.1910 ug/L #	29
63) 1,3-Dichloropropane	13.21	76	1673	0.2309 ug/L	94
64) Tetrachloroethene	13.34	164	1703	0.3238 ug/L	94
65) Dibromochloromethane	13.59	129	1515	0.2406 ug/L	92
66) 1,2-Dibromoethane	13.82	107	966	0.2181 ug/L	98
67) 1-Chlorohexane	13.89	91	2128	0.2784 ug/L	97
68) Chlorobenzene	14.29	112	5248	0.3062 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	2025	0.3082 ug/L	98
70) Ethylbenzene	14.31	106	2602	0.2992 ug/L	88
71) m-,p-Xylene	14.40	106	6296	0.6083 ug/L	82
72) o-Xylene	14.92	106	3032	0.2937 ug/L	95
73) Styrene	14.95	104	4953	0.2828 ug/L	95
75) Isopropylbenzene	15.31	105	7848	0.3006 ug/L	93
77) 1,1,2,2-Tetrachloroethane	15.52	83	1145	0.2759 ug/L	68
81) n-Propylbenzene	15.79	91	9421	0.3332 ug/L	94
82) Bromobenzene	15.92	156	2002	0.2551 ug/L	66
83) 1,3,5-Trimethylbenzene	15.95	105	6742	0.3138 ug/L	91
84) 2-Chlorotoluene	16.05	91	6735	0.3228 ug/L	96
85) 4-Chlorotoluene	16.09	91	6023	0.3518 ug/L	99
86) a-Methylstyrene	16.34	118	2850	0.2387 ug/L	95
87) tert-Butylbenzene	16.39	134	1197	0.2539 ug/L	64
88) 1,2,4-Trimethylbenzene	16.44	105	6992	0.3180 ug/L	88
89) sec-Butylbenzene	16.65	105	8335	0.3278 ug/L	97
90) p-Isopropyltoluene	16.79	119	7094	0.3065 ug/L	96
91) 1,3-Dichlorobenzene	16.98	146	4505	0.3090 ug/L	96
92) 1,4-Dichlorobenzene	17.10	146	4475	0.3006 ug/L #	1
93) n-Butylbenzene	17.28	91	7076	0.3396 ug/L #	93
94) 1,2-Dichlorobenzene	17.56	146	4016	0.2922 ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	2964	0.2902 ug/L	99
97) Hexachlorobutadiene	19.69	225	1160	0.2796 ug/L #	71
98) Naphthalene	19.90	128	4679	0.2394 ug/L #	93
99) 1,2,3-Trichlorobenzene	20.19	180	2578	0.2696 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M11837.D 8260WT.M Fri May 13 17:04:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

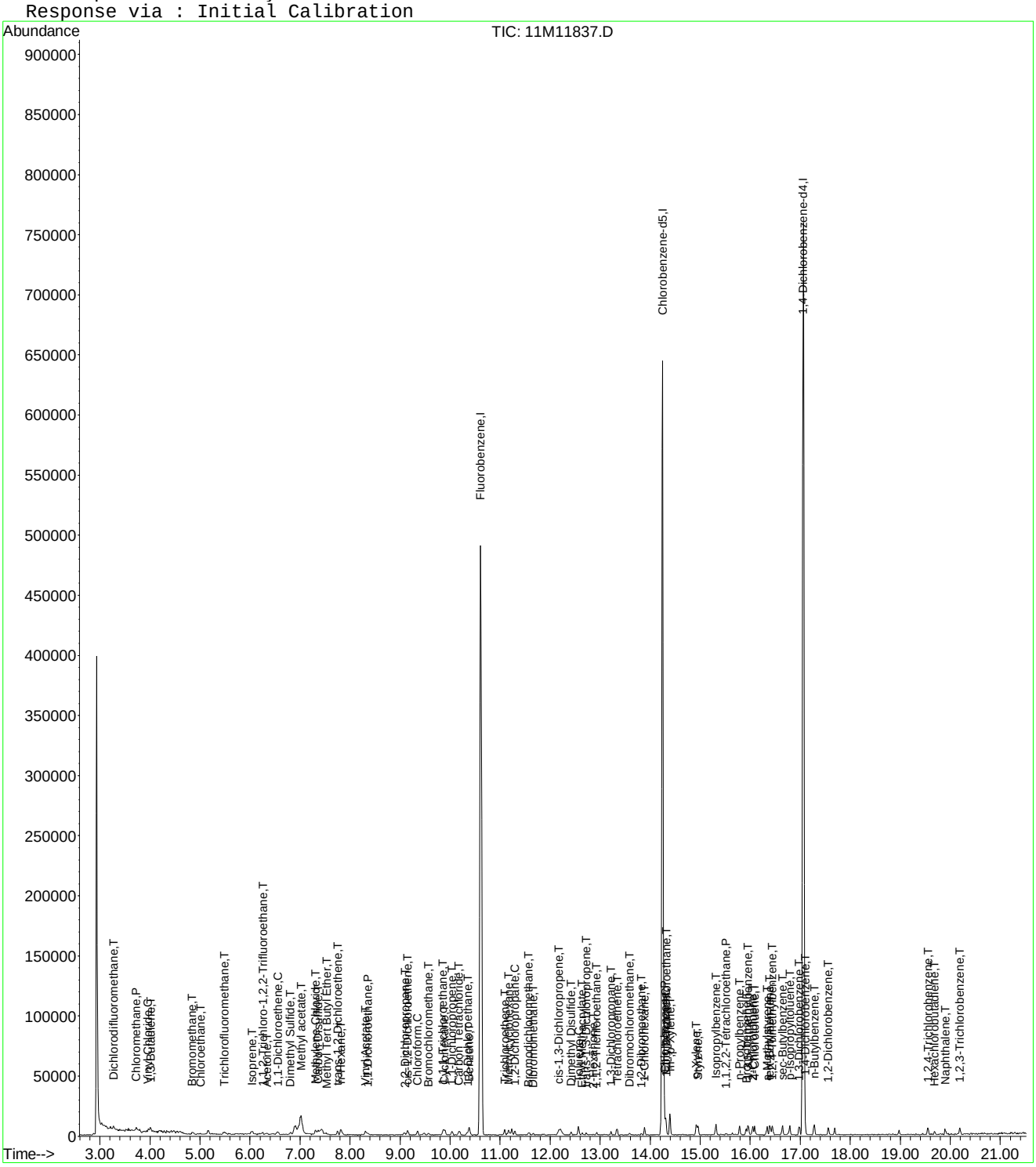

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2936	0.0	0	0.00
3	P	Chloromethane	-1.0000	0.6871	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.3357	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.2805	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.4454	0.0	0	-0.01
7	T	Chloroethane	-1.0000	0.1710	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.3160	0.0	0	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.01#
10	T	Isoprene	-1.0000	0.2535	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.23#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2478	0.0	0	0.01
13	T	Acetone	-1.0000	1.8699	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3838	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.66#
16	T	Dimethyl Sulfide	-1.0000	0.1937	0.0	0	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.06#
18	T	Methyl acetate	-1.0000	5.1442	0.0	0	-0.04
19	T	Methylene Chloride	-1.0000	0.3464	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.3546	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.49#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2413	0.0	0	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2658	0.0	0	0.01
24	T	n-Hexane	-1.0000	0.4125	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0083	0.0	0	0.08
26	T	Vinyl Acetate	-1.0000	2.6933	0.0	0	-0.01
27	P	1,1-Dichloroethane	-1.0000	0.3028	0.0	0	0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.70#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.87#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.97#
31	T	2,2-Dichloropropane	-1.0000	0.2862	0.0	0	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.2877	0.0	0	0.00
33	C	Chloroform	0.3000	0.3530	-17.7	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.48#
35	T	Bromochloromethane	-1.0000	0.2656	0.0	0	-0.01
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-9.60#
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.63#
38	T	1,1,1-Trichloroethane	-1.0000	0.3263	0.0	0	0.00
39	T	Cyclohexane	-1.0000	0.3159	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3134	0.0	0	0.00
41	T	Carbon Tetrachloride	-1.0000	0.2532	0.0	0	-0.01
42	T	Tert-Amyl-Methyl ether	-1.0000	0.0152	0.0	0	-0.09
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.23#
44	T	1,2-Dichloroethane	-1.0000	0.2858	0.0	0	0.01
45	T	Benzene	-1.0000	0.3452	0.0	0	0.00
46	T	Trichloroethene	-1.0000	0.2938	0.0	0	0.00
47	T	Methylcyclohexane	-1.0000	0.3101	0.0	0	0.00
48	C	1,2-Dichloropropane	-1.0000	0.2911	0.0	0	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.55#
50	T	Bromodichloromethane	-1.0000	0.3012	0.0	0	0.00
51	T	Dibromomethane	-1.0000	0.2537	0.0	0	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-11.84#
53	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-11.87#
54	T	cis-1,3-Dichloropropene	-1.0000	0.2327	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.2127	0.0	0	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0107	0.0	0	0.00
58	C	Toluene	-1.0000	0.3228	0.0	0	0.01
59	T	Ethyl Methacrylate	-1.0000	0.2140	0.0	0	-0.01
60	T	trans-1,3-Dichloropropene	-1.0000	0.2668	0.0	0	-0.01
61	T	1,1,2-Trichloroethane	-1.0000	0.2691	0.0	0	-0.01
62	T	2-Hexanone	-1.0000	0.2315	0.0	0	0.00
63	T	1,3-Dichloropropane	-1.0000	0.2579	0.0	0	0.00
64	T	Tetrachloroethene	-1.0000	0.3214	0.0	0	0.00
65	T	Dibromochloromethane	-1.0000	0.2459	0.0	0	0.00
66	T	1,2-Dibromoethane	-1.0000	0.2387	0.0	0	0.00
67	T	1-Chlorohexane	-1.0000	0.2833	0.0	0	0.00
68	P	Chlorobenzene	-1.0000	0.3144	0.0	0	0.00
69	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2998	0.0	0	0.00
70	C	Ethylbenzene	-1.0000	0.3040	0.0	0	0.00
71	T	m-,p-Xylene	-1.0000	0.6051	0.0	0	0.01
72	T	o-Xylene	-1.0000	0.2994	0.0	0	0.00
73	T	Styrene	-1.0000	0.2961	0.0	0	0.00
74	P	Bromoform	-1.0000	0.0798	0.0	0	-0.01
75	T	Isopropylbenzene	-1.0000	0.2931	0.0	0	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2922	0.0	0	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.0730	0.0	0	0.00
79	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-15.70#
80	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-15.74#
81	T	n-Propylbenzene	-1.0000	0.3233	0.0	0	0.00
82	T	Bromobenzene	0.3000	0.2618	12.7	100	0.00
83	T	1,3,5-Trimethylbenzene	-1.0000	0.3032	0.0	0	-0.01
84	T	2-Chlorotoluene	-1.0000	0.3300	0.0	0	0.00
85	T	4-Chlorotoluene	-1.0000	0.3295	0.0	0	0.00
86	T	a-Methylstyrene	-1.0000	0.2430	0.0	0	0.00
87	T	tert-Butylbenzene	-1.0000	0.2541	0.0	0	-0.01
88	T	1,2,4-Trimethylbenzene	-1.0000	0.3088	0.0	0	0.00
89	T	sec-Butylbenzene	-1.0000	0.3122	0.0	0	0.00
90	T	p-Isopropyltoluene	-1.0000	0.2893	0.0	0	0.00
91	T	1,3-Dichlorobenzene	-1.0000	0.3051	0.0	0	0.00
92	T	1,4-Dichlorobenzene	0.3000	0.2990	0.3	100	0.00
93	T	n-Butylbenzene	-1.0000	0.3274	0.0	0	0.00
94	T	1,2-Dichlorobenzene	0.3000	0.2985	0.5	100	-0.01
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-18.49#
96	T	1,2,4-Trichlorobenzene	-1.0000	0.3011	0.0	0	0.00
97	T	Hexachlorobutadiene	-1.0000	0.2675	0.0	0	0.00
98	T	Naphthalene	-1.0000	0.2561	0.0	0	0.00
99	T	1,2,3-Trichlorobenzene	0.3000	0.2854	4.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11837.D 8260WT.M Sat May 14 18:41:07 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	515473	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	435266	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244818	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
78) p-Bromofluorobenzene	15.64	95	236	0.0295 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2765	0.3656 ug/L #	66
3) Chloromethane	3.72	50	4021	0.5854 ug/L #	77
4) Vinyl Chloride	3.96	62	2267	0.4134 ug/L #	64
5) 1,3-Butadiene	4.01	54	2044	0.3956 ug/L #	18
6) Bromomethane	4.85	94	1571	0.4511 ug/L	89
7) Chloroethane	5.01	64	1496	0.4029 ug/L #	45
8) Trichlorofluoromethane	5.49	101	4241	0.4175 ug/L	96
10) Isoprene	6.03	67	2394	0.3408 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1439	0.2811 ug/L #	23
13) Acetone	6.33	43	1125	0.7299 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3786	0.3990 ug/L	77
16) Dimethyl Sulfide	6.80	62	1622	0.3769 ug/L	59
18) Methyl acetate	7.01	43	21364	4.0629 ug/L #	70
19) Methylene Chloride	7.32	84	2266	0.4265 ug/L	97
20) Carbon Disulfide	7.35	76	6628	0.3991 ug/L #	82
22) Methyl Tert Butyl Ether	7.52	73	4808	0.3486 ug/L #	74
23) trans-1,2-Dichloroethene	7.74	96	2372	0.4368 ug/L	93
24) n-Hexane	7.83	57	4212	0.4732 ug/L #	73
26) Vinyl Acetate	8.34	43	434	0.1315 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	3822	0.3576 ug/L #	89
29) 2-Butanone	8.88	43	484	0.2099 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	2680	0.3472 ug/L #	55
32) cis-1,2-Dichloroethene	9.15	96	2277	0.3777 ug/L	91
33) Chloroform	9.35	83	3981	0.3988 ug/L	89
35) Bromochloromethane	9.57	130	952	0.2468 ug/L	57
36) Tetrahydrofuran	9.59	42	212	0.1340 ug/L #	46
38) 1,1,1-Trichloroethane	9.85	97	3917	0.4058 ug/L #	84
39) Cyclohexane	9.88	56	3935	0.3371 ug/L #	80
40) 1,1-Dichloropropene	10.04	75	2817	0.3862 ug/L	82
41) Carbon Tetrachloride	10.18	117	3373	0.3702 ug/L #	88
44) 1,2-Dichloroethane	10.35	62	3201	0.3737 ug/L #	78
45) Benzene	10.39	78	8729	0.4184 ug/L	90
46) Trichloroethene	11.08	130	2537	0.3731 ug/L	93
47) Methylcyclohexane	11.17	83	2742	0.3325 ug/L	90
48) 1,2-Dichloropropane	11.29	63	2133	0.3600 ug/L	84
50) Bromodichloromethane	11.58	83	2857	0.3638 ug/L #	84
51) Dibromomethane	11.65	93	972	0.3128 ug/L	81
52) 2-Chloroethyl Vinyl Ether	11.85	63	791	0.2560 ug/L #	50
54) cis-1,3-Dichloropropene	12.17	75	2689	0.3253 ug/L	99
55) Dimethyl Disulfide	12.42	79	1113	0.2158 ug/L	74

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
58)	Toluene	12.56	91	9113	0.4043 ug/L		99
59)	Ethyl Methacrylate	12.65	69	1556	0.2916 ug/L		96
60)	trans-1,3-Dichloropropene	12.73	75	2303	0.3119 ug/L		86
61)	1,1,2-Trichloroethane	12.94	97	1549	0.3672 ug/L		85
62)	2-Hexanone	12.86	43	840	0.2415 ug/L	#	11
63)	1,3-Dichloropropane	13.21	76	2345	0.3346 ug/L		82
64)	Tetrachloroethene	13.34	164	1905	0.3745 ug/L		88
65)	Dibromochloromethane	13.59	129	1972	0.3238 ug/L		89
66)	1,2-Dibromoethane	13.82	107	1617	0.3776 ug/L		69
67)	1-Chlorohexane	13.89	91	2578	0.3487 ug/L		77
68)	Chlorobenzene	14.29	112	6458	0.3896 ug/L		93
69)	1,1,1,2-Tetrachloroethane	14.31	131	2374	0.3736 ug/L		98
70)	Ethylbenzene	14.31	106	3158	0.3754 ug/L		79
71)	m-,p-Xylene	14.39	106	8621	0.8613 ug/L		93
72)	o-Xylene	14.93	106	3752	0.3758 ug/L		96
73)	Styrene	14.95	104	6027	0.3558 ug/L		90
74)	Bromoform	15.44	173	931	0.2454 ug/L		87
75)	Isopropylbenzene	15.31	105	10551	0.4179 ug/L		95
77)	1,1,2,2-Tetrachloroethane	15.52	83	1129	0.2796 ug/L		84
79)	1,2,3-Trichloropropane	15.71	110	200	0.1341 ug/L	#	28
81)	n-Propylbenzene	15.79	91	11244	0.4087 ug/L		98
82)	Bromobenzene	15.91	156	3048	0.3991 ug/L		95
83)	1,3,5-Trimethylbenzene	15.96	105	9158	0.4381 ug/L		92
84)	2-Chlorotoluene	16.05	91	8455	0.4164 ug/L		96
85)	4-Chlorotoluene	16.09	91	6979	0.4189 ug/L		92
86)	a-Methylstyrene	16.34	118	4052	0.3488 ug/L		74
87)	tert-Butylbenzene	16.40	134	1479	0.3224 ug/L		63
88)	1,2,4-Trimethylbenzene	16.45	105	8457	0.3953 ug/L		95
89)	sec-Butylbenzene	16.65	105	10479	0.4236 ug/L		93
90)	p-Isopropyltoluene	16.79	119	9613	0.4269 ug/L		93
91)	1,3-Dichlorobenzene	16.98	146	5826	0.4107 ug/L		93
92)	1,4-Dichlorobenzene	17.10	146	6273	0.4331 ug/L	#	74
93)	n-Butylbenzene	17.28	91	8021	0.3956 ug/L	#	91
94)	1,2-Dichlorobenzene	17.57	146	4937	0.3691 ug/L		97
96)	1,2,4-Trichlorobenzene	19.55	180	3632	0.3655 ug/L		95
97)	Hexachlorobutadiene	19.69	225	1539	0.3812 ug/L		96
98)	Naphthalene	19.90	128	7383	0.3882 ug/L		97
99)	1,2,3-Trichlorobenzene	20.19	180	3748	0.4028 ug/L		84

(#) = qualifier out of range (m) = manual integration
11M11838.D 8260WT.M Fri May 13 17:04:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

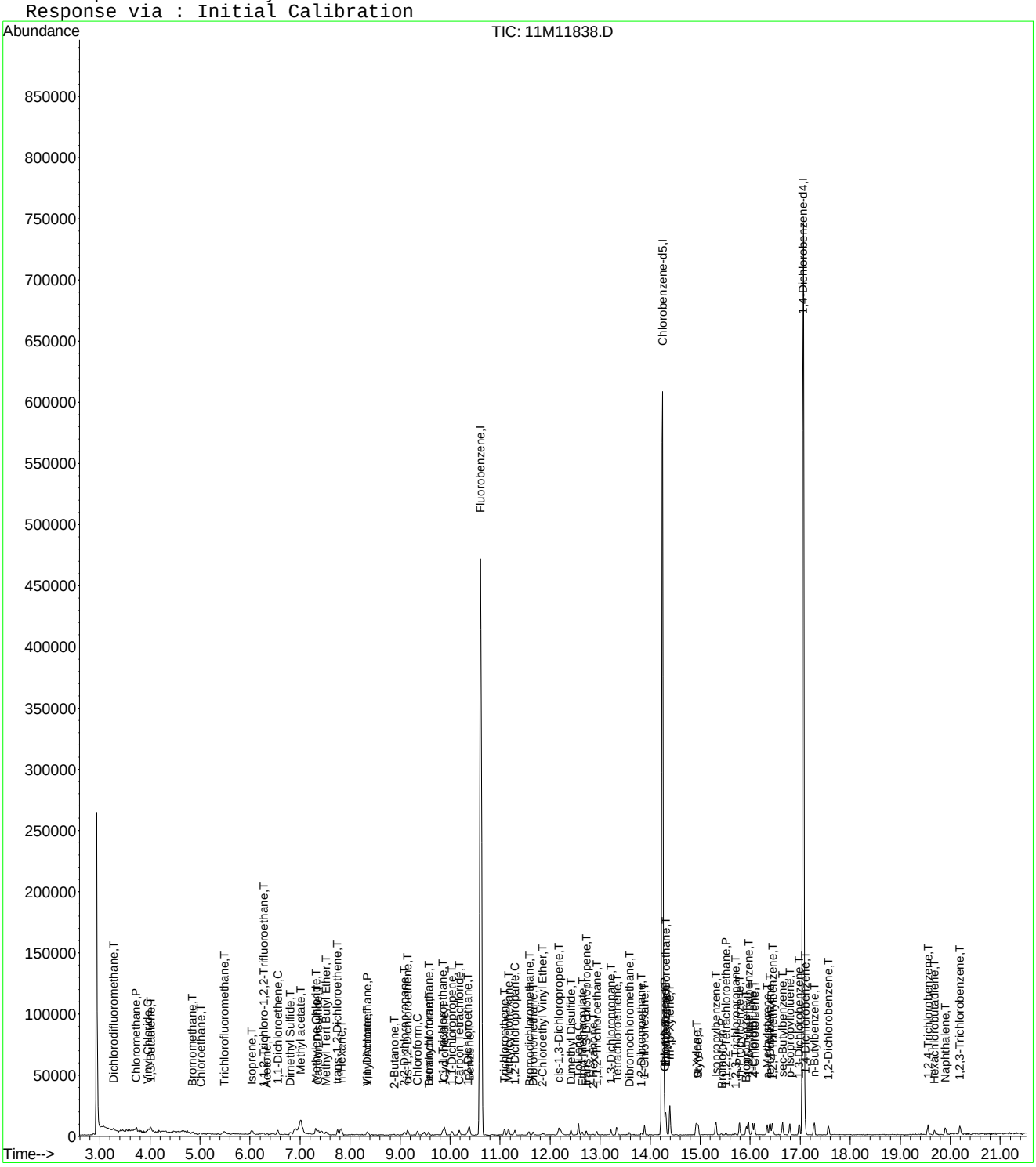

11M11838.D 8260WT.M Fri May 13 17:04:24 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	523425	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	440574	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	249989	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	1729	0.2910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.16%#	
43) 1,2-Dichloroethane-d4	10.23	65	3301	0.4585 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.84%#	
57) Toluene-d8	12.47	98	9307	0.4494 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.80%#	
78) p-Bromofluorobenzene	15.64	95	4047	0.4956 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	7215	0.9394 ug/L	98
3) Chloromethane	3.72	50	7292	1.0455 ug/L	80
4) Vinyl Chloride	3.96	62	5040	0.9051 ug/L	92
5) 1,3-Butadiene	4.02	54	5876	1.1198 ug/L #	76
6) Bromomethane	4.85	94	3488	0.9862 ug/L	94
7) Chloroethane	4.99	64	3425	0.9083 ug/L #	57
8) Trichlorofluoromethane	5.49	101	10960	1.0625 ug/L	95
9) Diethyl ether	6.01	59	19830	4.2253 ug/L	90
10) Isoprene	6.04	67	6121	0.8582 ug/L	94
11) Acrolein	6.25	56	697	1.2730 ug/L	65
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	5456	1.0497 ug/L	90
13) Acetone	6.34	43	1782	1.1386 ug/L #	45
14) 1,1-Dichloroethene	6.55	61	9456	0.9814 ug/L	91
15) Tert-Butyl Alcohol	6.67	59	2848	6.8484 ug/L #	67
16) Dimethyl Sulfide	6.80	62	3631	0.8310 ug/L	93
18) Methyl acetate	7.01	43	20953	3.9242 ug/L #	70
19) Methylene Chloride	7.31	84	5001	0.9270 ug/L	97
20) Carbon Disulfide	7.36	76	15438	0.9154 ug/L	99
21) Acrylonitrile	7.50	53	3780	1.8795 ug/L	89
22) Methyl Tert Butyl Ether	7.53	73	11891	0.8490 ug/L	90
23) trans-1,2-Dichloroethene	7.75	96	4815	0.8732 ug/L	95
24) n-Hexane	7.82	57	9213	1.0194 ug/L #	81
25) Diisopropyl ether	8.15	45	108233	4.5267 ug/L	99
26) Vinyl Acetate	8.31	43	1723	0.5141 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	10818	0.9968 ug/L	95
28) Ethyl-Tert-Butyl ether	8.70	59	85288	4.3548 ug/L	99
29) 2-Butanone	8.88	43	1368	0.5844 ug/L #	60
30) Propionitrile	8.99	54	2406	3.5185 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	7787	0.9935 ug/L	90
32) cis-1,2-Dichloroethene	9.15	96	5567	0.9095 ug/L	94
33) Chloroform	9.35	83	10278	1.0139 ug/L	96
34) 1-Bromopropane	9.48	122	295	0.2934 ug/L	49
35) Bromochloromethane	9.57	130	2941	0.7509 ug/L	88
36) Tetrahydrofuran	9.60	42	7790	4.8493 ug/L	92
38) 1,1,1-Trichloroethane	9.85	97	10000	1.0202 ug/L #	90
39) Cyclohexane	9.88	56	10164	0.8574 ug/L	98
40) 1,1-Dichloropropene	10.04	75	7321	0.9884 ug/L	92
41) Carbon Tetrachloride	10.18	117	9558	1.0331 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	59107	4.2417 ug/L	97
44) 1,2-Dichloroethane	10.34	62	8181	0.9406 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	Benzene	10.38	78	19924	0.9404 ug/L		95
46)	Trichloroethene	11.08	130	6636	0.9611 ug/L		92
47)	Methylcyclohexane	11.18	83	7740	0.9243 ug/L		94
48)	1,2-Dichloropropane	11.29	63	5477	0.9103 ug/L		99
49)	1,4-Dioxane	11.55	88	187	5.1264 ug/L	#	10
50)	Bromodichloromethane	11.57	83	7238	0.9076 ug/L		94
51)	Dibromomethane	11.65	93	2839	0.8997 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	1934	0.6164 ug/L	#	72
53)	4-Methyl-2-Pentanone	11.87	58	1016	0.5282 ug/L	#	42
54)	cis-1,3-Dichloropropene	12.17	75	7078	0.8432 ug/L		99
55)	Dimethyl Disulfide	12.42	79	3514	0.6710 ug/L		93
58)	Toluene	12.56	91	22074	0.9676 ug/L		96
59)	Ethyl Methacrylate	12.64	69	4130	0.7646 ug/L		88
60)	trans-1,3-Dichloropropene	12.73	75	5897	0.7891 ug/L		90
61)	1,1,2-Trichloroethane	12.94	97	3547	0.8307 ug/L		96
62)	2-Hexanone	12.87	43	2461	0.6990 ug/L	#	63
63)	1,3-Dichloropropane	13.21	76	5965	0.8410 ug/L		87
64)	Tetrachloroethene	13.34	164	5050	0.9809 ug/L		94
65)	Dibromochloromethane	13.59	129	5237	0.8497 ug/L		90
66)	1,2-Dibromoethane	13.82	107	3214	0.7414 ug/L		91
67)	1-Chlorohexane	13.89	91	7025	0.9387 ug/L		91
68)	Chlorobenzene	14.29	112	16160	0.9630 ug/L		95
69)	1,1,1,2-Tetrachloroethane	14.32	131	6361	0.9889 ug/L		97
70)	Ethylbenzene	14.31	106	8050	0.9455 ug/L		93
71)	m-,p-Xylene	14.39	106	20545	2.0278 ug/L		95
72)	o-Xylene	14.92	106	9683	0.9581 ug/L		96
73)	Styrene	14.96	104	14946	0.8716 ug/L		98
74)	Bromoform	15.43	173	3024	0.7876 ug/L		97
75)	Isopropylbenzene	15.31	105	25656	1.0039 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	3569	0.8655 ug/L		89
79)	1,2,3-Trichloropropane	15.71	110	872	0.5724 ug/L		84
80)	trans-1,4-Dichloro-2-Buten	15.74	53	1048	0.6163 ug/L	#	44
81)	n-Propylbenzene	15.79	91	27998	0.9967 ug/L		98
82)	Bromobenzene	15.92	156	8101	1.0388 ug/L		89
83)	1,3,5-Trimethylbenzene	15.96	105	20563	0.9633 ug/L		98
84)	2-Chlorotoluene	16.05	91	20962	1.0111 ug/L		96
85)	4-Chlorotoluene	16.09	91	17553	1.0318 ug/L		100
86)	a-Methylstyrene	16.34	118	10002	0.8431 ug/L		97
87)	tert-Butylbenzene	16.40	134	4396	0.9384 ug/L		84
88)	1,2,4-Trimethylbenzene	16.44	105	21945	1.0045 ug/L		96
89)	sec-Butylbenzene	16.65	105	25927	1.0263 ug/L		100
90)	p-Isopropyltoluene	16.79	119	22467	0.9771 ug/L		96
91)	1,3-Dichlorobenzene	16.98	146	14883	1.0274 ug/L		96
92)	1,4-Dichlorobenzene	17.10	146	15106	1.0213 ug/L	#	67
93)	n-Butylbenzene	17.28	91	20991	1.0139 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	13331	0.9762 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	493	0.5750 ug/L		75
96)	1,2,4-Trichlorobenzene	19.55	180	9030	0.8899 ug/L		96
97)	Hexachlorobutadiene	19.69	225	3810	0.9242 ug/L		95
98)	Naphthalene	19.90	128	16333	0.8410 ug/L		99
99)	1,2,3-Trichlorobenzene	20.19	180	8645	0.9098 ug/L		88

(#) = qualifier out of range (m) = manual integration
11M11839.D 8260WT.M Fri May 13 17:04:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

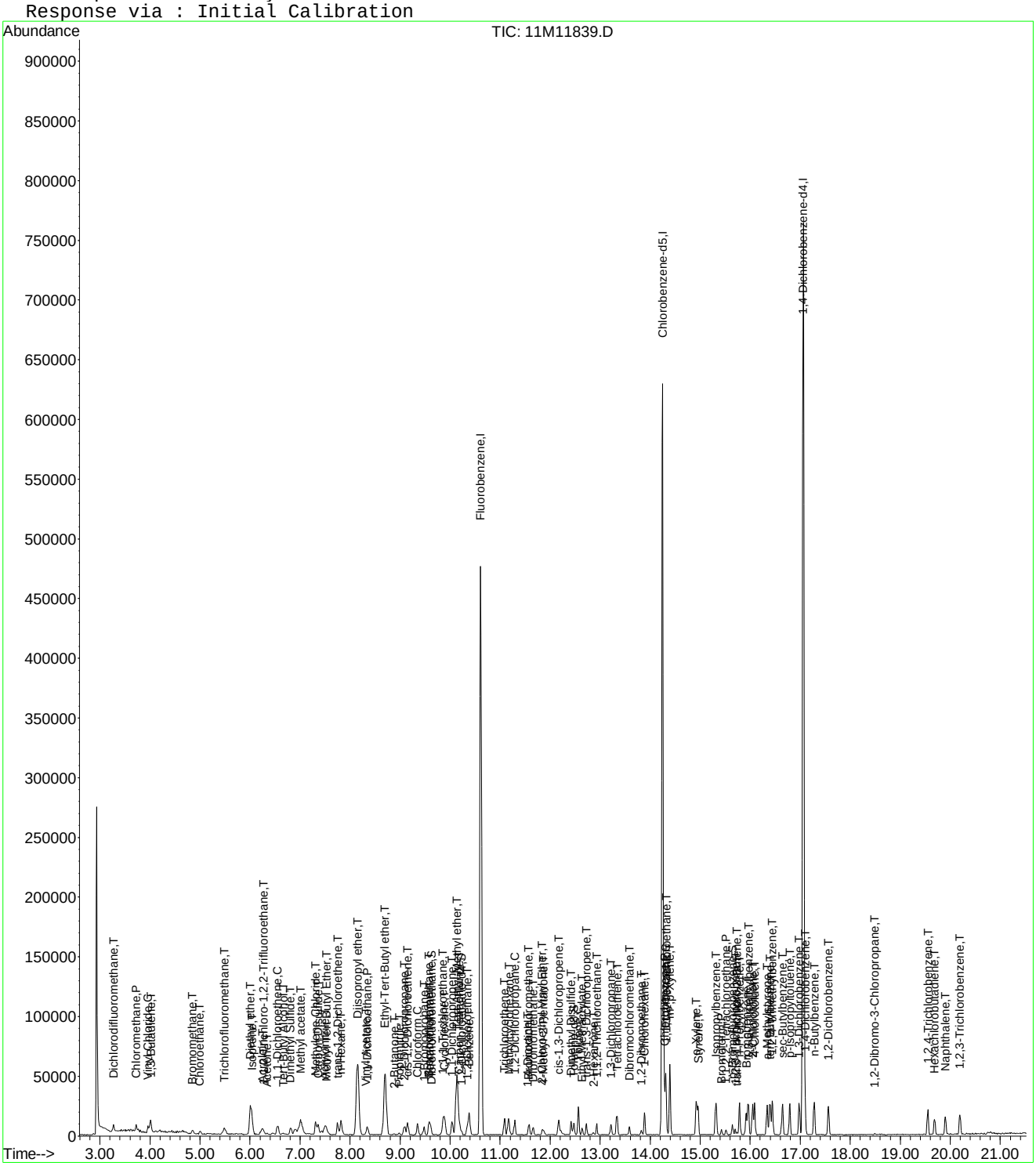

11M11839.D 8260WT.M Fri May 13 17:04:26 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.8798	12.0	100	0.00
3	P	Chloromethane	1.0000	1.1102	-11.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.9240	7.6	100	0.00
5	T	1,3-Butadiene	-1.0000	1.0834	0.0	100	0.02
6	T	Bromomethane	1.0000	0.9301	7.0	100	0.00
7	T	Chloroethane	1.0000	0.9773	2.3	100	-0.01
8	T	Trichlorofluoromethane	1.0000	1.0081	-0.8	100	0.01
9	T	Diethyl ether	5.0000	4.9318	1.4	100	0.00
10	T	Isoprene	-1.0000	0.9134	0.0	100	0.00
11	T	Acrolein	2.5000	2.7854	-11.4	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0342	-3.4	100	0.02
13	T	Acetone	-1.0000	1.4337	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9868	1.3	100	-0.01
15	T	Tert-Butyl Alcohol	10.0000	8.2841	17.2	100	0.01
16	T	Dimethyl Sulfide	-1.0000	0.9488	0.0	100	-0.01
17	T	Iodomethane	-1.0000	2.2962	0.0	0	0.01
18	T	Methyl acetate	-1.0000	4.2835	0.0	0	-0.05
19	T	Methylene Chloride	1.0000	1.0084	-0.8	100	0.00
20	T	Carbon Disulfide	1.0000	0.9624	3.8	100	0.00
21	T	Acrylonitrile	2.5000	2.2683	9.3	100	0.01
22	T	Methyl Tert Butyl Ether	1.0000	0.9614	3.9	100	0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9079	9.2	100	0.01
24	T	n-Hexane	-1.0000	1.0430	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.9106	1.8	100	0.00
26	T	Vinyl Acetate	-1.0000	2.6242	0.0	0	0.00
27	P	1,1-Dichloroethane	1.0000	1.0166	-1.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.7543	4.9	100	0.00
29	T	2-Butanone	-1.0000	0.7280	0.0	0	0.01
30	T	Propionitrile	5.0000	4.3718	12.6	100	0.01
31	T	2,2-Dichloropropane	1.0000	0.9353	6.5	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9520	4.8	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	1.0000	0.9106	8.9	100	0.00
35	T	Bromochloromethane	1.0000	0.8469	15.3	100	0.00
36	T	Tetrahydrofuran	5.0000	5.8710	-17.4	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.3018	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9725	2.8	100	0.00
39	T	Cyclohexane	1.0000	0.9069	9.3	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9971	0.3	100	0.00
41	T	Carbon Tetrachloride	1.0000	0.9518	4.8	100	0.00
42	T	Tert-Amyl-Methyl ether	5.0000	4.7417	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.5054	-1.1	100	0.00
44	T	1,2-Dichloroethane	1.0000	0.9639	3.6	100	0.00
45	T	Benzene	1.0000	0.9912	0.9	100	0.00
46	T	Trichloroethene	1.0000	1.0157	-1.6	100	-0.01
47	T	Methylcyclohexane	1.0000	0.9600	4.0	100	0.01
48	C	1,2-Dichloropropane	1.0000	0.9844	1.6	100	0.00
49	T	1,4-Dioxane	-1.0000	28.5532	0.0	0	0.00
50	T	Bromodichloromethane	1.0000	0.9266	7.3	100	0.00
51	T	Dibromomethane	1.0000	0.9792	2.1	100	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7053	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	0.6569	0.0	0	0.00
54	T	cis-1,3-Dichloropropene	1.0000	0.9060	9.4	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.7475	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.4862	0.0	100	0.00
58	C	Toluene	1.0000	0.9897	1.0	100	0.00
59	T	Ethyl Methacrylate	1.0000	0.8672	13.3	100	-0.01
60	T	trans-1,3-Dichloropropene	1.0000	0.8237	17.6	100	0.00
61	T	1,1,2-Trichloroethane	1.0000	0.8969	10.3	100	0.00
62	T	2-Hexanone	-1.0000	0.8473	0.0	100	0.01
63	T	1,3-Dichloropropane	1.0000	0.9392	6.1	100	0.00
64	T	Tetrachloroethene	1.0000	0.9737	2.6	100	0.00
65	T	Dibromochloromethane	1.0000	0.8681	13.2	100	0.00
66	T	1,2-Dibromoethane	1.0000	0.8111	18.9	100	0.00
67	T	1-Chlorohexane	1.0000	0.9554	4.5	100	0.00
68	P	Chlorobenzene	1.0000	0.9890	1.1	100	0.00
69	T	1,1,1,2-Tetrachloroethane	1.0000	0.9621	3.8	100	0.00
70	C	Ethylbenzene	1.0000	0.9608	3.9	100	0.00
71	T	m-,p-Xylene	2.0000	2.0170	-0.9	100	0.00
72	T	o-Xylene	1.0000	0.9768	2.3	100	0.00
73	T	Styrene	1.0000	0.9126	8.7	100	0.01
74	P	Bromoform	1.0000	0.8271	17.3	100	0.00
75	T	Isopropylbenzene	1.0000	0.9787	2.1	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	1.0000	0.9168	8.3	100	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.5252	0.0	100	0.00
79	T	1,2,3-Trichloropropane	1.0000	0.9573	4.3	100	0.01
80	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2934	-29.3#	100	0.00
81	T	n-Propylbenzene	1.0000	0.9671	3.3	100	0.00
82	T	Bromobenzene	1.0000	1.0663	-6.6	100	0.00
83	T	1,3,5-Trimethylbenzene	1.0000	0.9307	6.9	100	0.00
84	T	2-Chlorotoluene	1.0000	1.0337	-3.4	100	0.00
85	T	4-Chlorotoluene	1.0000	0.9664	3.4	100	0.00
86	T	a-Methylstyrene	1.0000	0.8582	14.2	100	0.00
87	T	tert-Butylbenzene	1.0000	0.9392	6.1	100	0.00
88	T	1,2,4-Trimethylbenzene	1.0000	0.9755	2.5	100	0.00
89	T	sec-Butylbenzene	1.0000	0.9774	2.3	100	0.00
90	T	p-Isopropyltoluene	1.0000	0.9221	7.8	100	0.00
91	T	1,3-Dichlorobenzene	1.0000	1.0144	-1.4	100	0.00
92	T	1,4-Dichlorobenzene	1.0000	1.0157	-1.6	100	0.00
93	T	n-Butylbenzene	1.0000	0.9776	2.2	100	0.00
94	T	1,2-Dichlorobenzene	1.0000	0.9974	0.3	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1961	0.0	100	0.00
96	T	1,2,4-Trichlorobenzene	1.0000	0.9233	7.7	100	0.00
97	T	Hexachlorobutadiene	1.0000	0.8843	11.6	100	0.00
98	T	Naphthalene	1.0000	0.8997	10.0	100	0.00
99	T	1,2,3-Trichlorobenzene	1.0000	0.9631	3.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11839.D 8260WT.M Sat May 14 18:41:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	504626	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	418265	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	241104	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	5067	0.8846 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.52%#	
43) 1,2-Dichloroethane-d4	10.23	65	6143	0.8851 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.56%#	
57) Toluene-d8	12.47	98	18425	0.9371 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.76%#	
78) p-Bromofluorobenzene	15.64	95	7442	0.9449 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.76%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	14866	2.0077 ug/L	98
3) Chloromethane	3.72	50	14641	2.1775 ug/L	94
4) Vinyl Chloride	3.96	62	10045	1.8711 ug/L	99
5) 1,3-Butadiene	4.01	54	10590	2.0934 ug/L	82
6) Bromomethane	4.85	94	7024	2.0600 ug/L	94
7) Chloroethane	4.99	64	6661	1.8324 ug/L	97
8) Trichlorofluoromethane	5.49	101	21690	2.1811 ug/L	99
9) Diethyl ether	6.01	59	96350	21.2945 ug/L	97
10) Isoprene	6.04	67	12682	1.8443 ug/L	94
11) Acrolein	6.23	56	5531	10.4784 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	9909	1.9774 ug/L	96
13) Acetone	6.35	43	3346	2.2176 ug/L #	68
14) 1,1-Dichloroethene	6.56	61	18584	2.0007 ug/L	98
15) Tert-Butyl Alcohol	6.66	59	15203	37.9194 ug/L #	93
16) Dimethyl Sulfide	6.81	62	7308	1.7348 ug/L	98
17) Iodomethane	7.06	142	1747	0.4335 ug/L #	49
18) Methyl acetate	7.01	43	17794	3.4567 ug/L #	75
19) Methylene Chloride	7.31	84	10330	1.9861 ug/L	99
20) Carbon Disulfide	7.36	76	30745	1.8910 ug/L	99
21) Acrylonitrile	7.49	53	17499	9.0252 ug/L	91
22) Methyl Tert Butyl Ether	7.52	73	22031	1.6315 ug/L	97
23) trans-1,2-Dichloroethene	7.74	96	10660	2.0051 ug/L	95
24) n-Hexane	7.82	57	17125	1.9654 ug/L #	94
25) Diisopropyl ether	8.15	45	542272	23.5246 ug/L	99
26) Vinyl Acetate	8.31	43	6813	2.1084 ug/L #	84
27) 1,1-Dichloroethane	8.34	63	21278	2.0336 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	431080	22.8311 ug/L	100
29) 2-Butanone	8.87	43	3175	1.4068 ug/L #	60
30) Propionitrile	8.99	54	12529	19.0049 ug/L	98
31) 2,2-Dichloropropane	9.09	77	17576	2.3259 ug/L	94
32) cis-1,2-Dichloroethene	9.15	96	11652	1.9746 ug/L	96
33) Chloroform	9.35	83	20769	2.1252 ug/L	96
34) 1-Bromopropane	9.48	122	1648	1.7003 ug/L	70
35) Bromochloromethane	9.57	130	6812	1.8040 ug/L	100
36) Tetrahydrofuran	9.60	42	30834	19.9093 ug/L	96
38) 1,1,1-Trichloroethane	9.84	97	20518	2.1713 ug/L #	94
39) Cyclohexane	9.88	56	22087	1.9325 ug/L	98
40) 1,1-Dichloropropene	10.04	75	13954	1.9542 ug/L	98
41) Carbon Tetrachloride	10.18	117	21054	2.3604 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	300593	22.3753 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11840.D 8260WT.M Fri May 13 17:04:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	16928	2.0188 ug/L		98
45)	Benzene	10.38	78	41004	2.0075 ug/L		97
46)	Trichloroethene	11.08	130	13283	1.9954 ug/L		96
47)	Methylcyclohexane	11.17	83	15711	1.9461 ug/L		95
48)	1,2-Dichloropropane	11.29	63	11010	1.8980 ug/L		91
49)	1,4-Dioxane	11.55	88	898	25.5347 ug/L		88
50)	Bromodichloromethane	11.57	83	15058	1.9584 ug/L		100
51)	Dibromomethane	11.66	93	5461	1.7952 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	4894	1.6180 ug/L		83
53)	4-Methyl-2-Pentanone	11.87	58	2173	1.1717 ug/L	#	65
54)	cis-1,3-Dichloropropene	12.17	75	14440	1.7842 ug/L		91
55)	Dimethyl Disulfide	12.42	79	7378	1.4613 ug/L		97
58)	Toluene	12.56	91	43051	1.9877 ug/L		98
59)	Ethyl Methacrylate	12.64	69	7792	1.5195 ug/L		95
60)	trans-1,3-Dichloropropene	12.73	75	12991	1.8310 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	8138	2.0075 ug/L		91
62)	2-Hexanone	12.86	43	4715	1.4106 ug/L	#	61
63)	1,3-Dichloropropane	13.21	76	11740	1.7434 ug/L		95
64)	Tetrachloroethene	13.34	164	10610	2.1708 ug/L		90
65)	Dibromochloromethane	13.59	129	11236	1.9202 ug/L		96
66)	1,2-Dibromoethane	13.82	107	7613	1.8499 ug/L		99
67)	1-Chlorohexane	13.89	91	13853	1.9499 ug/L		96
68)	Chlorobenzene	14.29	112	33381	2.0954 ug/L		99
69)	1,1,1,2-Tetrachloroethane	14.32	131	13541	2.2175 ug/L		97
70)	Ethylbenzene	14.31	106	17116	2.1175 ug/L		98
71)	m-,p-Xylene	14.39	106	40469	4.2073 ug/L		95
72)	o-Xylene	14.92	106	19196	2.0006 ug/L		99
73)	Styrene	14.96	104	30019	1.8440 ug/L		92
74)	Bromoform	15.43	173	6309	1.7308 ug/L		96
75)	Isopropylbenzene	15.31	105	52419	2.1605 ug/L		98
77)	1,1,2,2-Tetrachloroethane	15.51	83	7118	1.7898 ug/L		100
79)	1,2,3-Trichloropropane	15.70	110	2487	1.6927 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	2265	1.3810 ug/L		68
81)	n-Propylbenzene	15.79	91	59353	2.1908 ug/L		100
82)	Bromobenzene	15.91	156	15393	2.0465 ug/L		97
83)	1,3,5-Trimethylbenzene	15.95	105	43641	2.1197 ug/L		98
84)	2-Chlorotoluene	16.05	91	40923	2.0467 ug/L		96
85)	4-Chlorotoluene	16.09	91	37360	2.2771 ug/L		97
86)	a-Methylstyrene	16.34	118	20567	1.7976 ug/L		92
87)	tert-Butylbenzene	16.40	134	9253	2.0481 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	43857	2.0815 ug/L		99
89)	sec-Butylbenzene	16.65	105	52733	2.1643 ug/L		99
90)	p-Isopropyltoluene	16.79	119	49990	2.2541 ug/L		98
91)	1,3-Dichlorobenzene	16.98	146	29674	2.1240 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	30258	2.1211 ug/L		87
93)	n-Butylbenzene	17.28	91	44260	2.2167 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	27619	2.0969 ug/L		95
95)	1,2-Dibromo-3-Chloropropan	18.49	75	1094	1.3229 ug/L		60
96)	1,2,4-Trichlorobenzene	19.55	180	18455	1.8857 ug/L		98
97)	Hexachlorobutadiene	19.69	225	8691	2.1858 ug/L		89
98)	Naphthalene	19.90	128	34041	1.8174 ug/L	#	95
99)	1,2,3-Trichlorobenzene	20.19	180	17703	1.9318 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

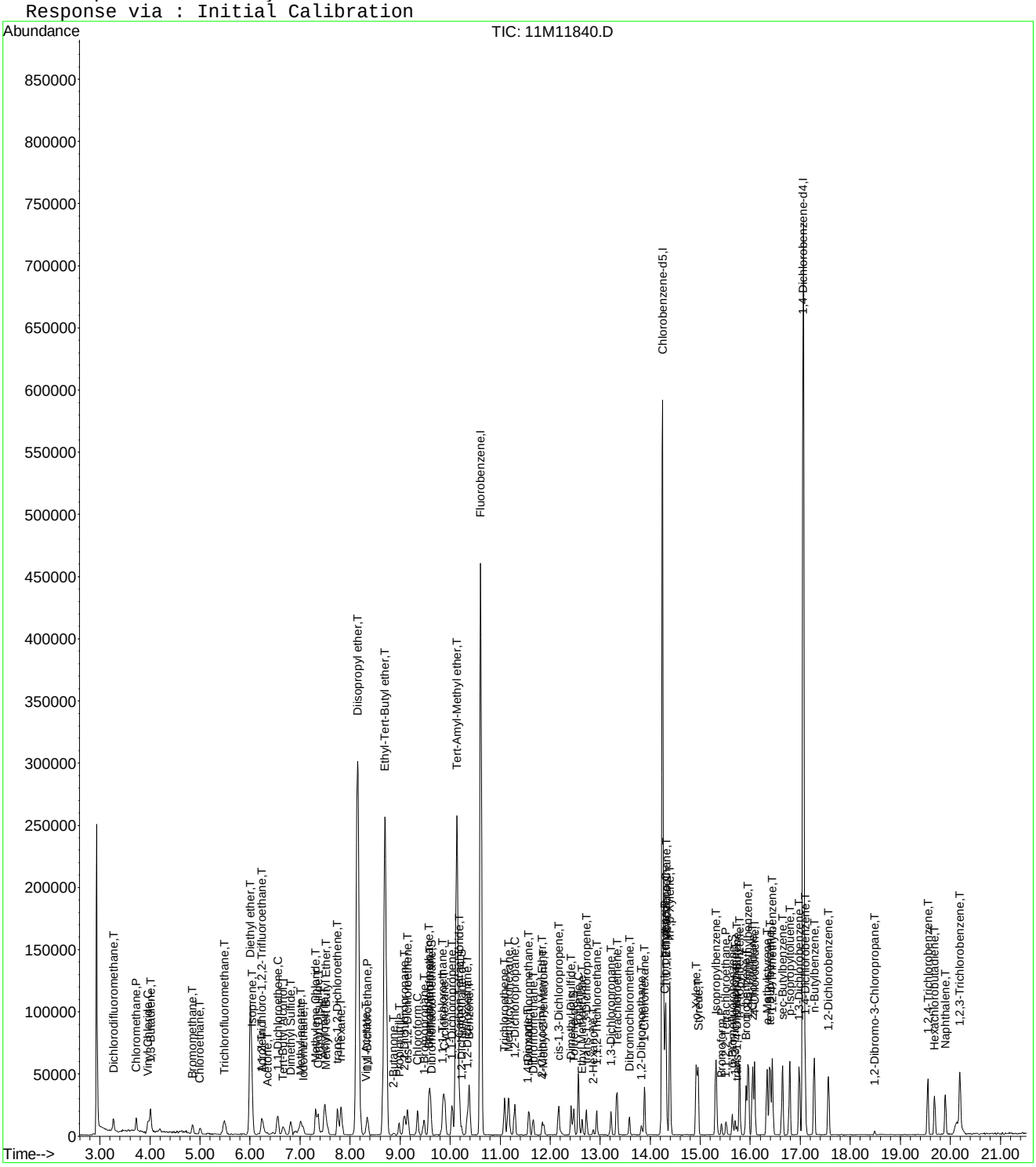

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8802	6.0	100	0.00
3	P	Chloromethane	2.0000	2.3121	-15.6	100	0.00
4	C	Vinyl Chloride	2.0000	1.9102	4.5	100	0.00
5	T	1,3-Butadiene	-1.0000	2.0253	0.0	100	0.01
6	T	Bromomethane	2.0000	1.9427	2.9	100	0.00
7	T	Chloroethane	2.0000	1.9714	1.4	100	-0.01
8	T	Trichlorofluoromethane	2.0000	2.0694	-3.5	100	0.01
9	T	Diethyl ether	25.0000	24.8555	0.6	100	0.00
10	T	Isoprene	-1.0000	1.9630	0.0	100	0.00
11	T	Acrolein	12.5000	12.0322	3.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9483	2.6	100	-0.01
13	T	Acetone	-1.0000	2.7924	0.0	100	0.01
14	C	1,1-Dichloroethene	2.0000	2.0117	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	45.8688	8.3	100	0.00
16	T	Dimethyl Sulfide	-1.0000	1.9809	0.0	100	0.00
17	T	Iodomethane	2.0000	2.6580	-32.9#	100	0.00
18	T	Methyl acetate	2.0000	0.8555	57.2#	100	0.00
19	T	Methylene Chloride	2.0000	2.1606	-8.0	100	0.00
20	T	Carbon Disulfide	2.0000	1.9879	0.6	100	0.00
21	T	Acrylonitrile	12.5000	10.8919	12.9	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8475	7.6	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0850	-4.2	100	0.00
24	T	n-Hexane	2.0000	2.0110	-0.6	100	0.00
25	T	Diisopropyl ether	25.0000	25.5200	-2.1	100	0.00
26	T	Vinyl Acetate	-1.0000	3.2184	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0741	-3.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.9254	0.3	100	0.00
29	T	2-Butanone	-1.0000	1.7527	0.0	0	0.00
30	T	Propionitrile	25.0000	23.6140	5.5	100	0.01
31	T	2,2-Dichloropropane	2.0000	2.1897	-9.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0669	-3.3	100	0.00
33	C	Chloroform	2.0000	2.0616	-3.1	100	0.00
34	T	1-Bromopropane	2.0000	2.2551	-12.8	100	0.00
35	T	Bromochloromethane	2.0000	2.0347	-1.7	100	0.00
36	T	Tetrahydrofuran	25.0000	24.1040	3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9175	8.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0696	-3.5	100	-0.01
39	T	Cyclohexane	2.0000	2.0442	-2.2	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9713	1.4	100	0.00
41	T	Carbon Tetrachloride	2.0000	2.1748	-8.7	100	0.00
42	T	Tert-Amyl-Methyl ether	25.0000	25.0128	-0.1	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	0.9755	2.4	100	0.00
44	T	1,2-Dichloroethane	2.0000	2.0689	-3.4	100	0.00
45	T	Benzene	2.0000	2.1160	-5.8	100	0.00
46	T	Trichloroethene	2.0000	2.1089	-5.4	100	-0.01
47	T	Methylcyclohexane	2.0000	2.0212	-1.1	100	0.00
48	C	1,2-Dichloropropane	2.0000	2.0525	-2.6	100	0.00
49	T	1,4-Dioxane	50.0000	49.5313	0.9	100	0.00
50	T	Bromodichloromethane	2.0000	1.9996	0.0	100	0.00
51	T	Dibromomethane	2.0000	1.9537	2.3	100	0.01
52	T	2-Chloroethyl Vinyl Ether	-1.0000	1.8512	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	1.4573	0.0	100	0.00
54	T	cis-1,3-Dichloropropene	2.0000	1.9172	4.1	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	1.6278	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	1.0000	1.0138	-1.4	100	0.00
58	C	Toluene	2.0000	2.0332	-1.7	100	0.00
59	T	Ethyl Methacrylate	2.0000	1.7234	13.8	100	-0.01
60	T	trans-1,3-Dichloropropene	2.0000	1.9114	4.4	100	0.00
61	T	1,1,2-Trichloroethane	2.0000	2.1674	-8.4	100	0.00
62	T	2-Hexanone	-1.0000	1.7098	0.0	100	0.00
63	T	1,3-Dichloropropane	2.0000	1.9471	2.6	100	0.00
64	T	Tetrachloroethene	2.0000	2.1547	-7.7	100	0.00
65	T	Dibromochloromethane	2.0000	1.9620	1.9	100	0.00
66	T	1,2-Dibromoethane	2.0000	2.0238	-1.2	100	0.00
67	T	1-Chlorohexane	2.0000	1.9844	0.8	100	0.00
68	P	Chlorobenzene	2.0000	2.1520	-7.6	100	0.00
69	T	1,1,1,2-Tetrachloroethane	2.0000	2.1574	-7.9	100	0.00
70	C	Ethylbenzene	2.0000	2.1518	-7.6	100	0.00
71	T	m-,p-Xylene	4.0000	4.1851	-4.6	100	0.00
72	T	o-Xylene	2.0000	2.0398	-2.0	100	0.00
73	T	Styrene	2.0000	1.9307	3.5	100	0.01
74	P	Bromoform	2.0000	1.8176	9.1	100	0.00
75	T	Isopropylbenzene	2.0000	2.1063	-5.3	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	2.0000	1.8958	5.2	100	-0.01
78	S	p-Bromofluorobenzene	1.0000	1.0013	-0.1	100	0.00
79	T	1,2,3-Trichloropropane	2.0000	2.1172	-5.9	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	2.0000	1.9762	1.2	100	0.00
81	T	n-Propylbenzene	2.0000	2.1256	-6.3	100	0.00
82	T	Bromobenzene	2.0000	2.1009	-5.0	100	-0.01
83	T	1,3,5-Trimethylbenzene	2.0000	2.0481	-2.4	100	-0.01
84	T	2-Chlorotoluene	2.0000	2.0925	-4.6	100	0.00
85	T	4-Chlorotoluene	2.0000	2.1326	-6.6	100	0.00
86	T	a-Methylstyrene	2.0000	1.8297	8.5	100	0.00
87	T	tert-Butylbenzene	2.0000	2.0497	-2.5	100	0.00
88	T	1,2,4-Trimethylbenzene	2.0000	2.0213	-1.1	100	0.00
89	T	sec-Butylbenzene	2.0000	2.0611	-3.1	100	0.00
90	T	p-Isopropyltoluene	2.0000	2.1272	-6.4	100	0.00
91	T	1,3-Dichlorobenzene	2.0000	2.0970	-4.8	100	0.00
92	T	1,4-Dichlorobenzene	2.0000	2.1095	-5.5	100	0.00
93	T	n-Butylbenzene	2.0000	2.1373	-6.9	100	0.00
94	T	1,2-Dichlorobenzene	2.0000	2.1425	-7.1	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	2.0000	1.9175	4.1	100	0.00
96	T	1,2,4-Trichlorobenzene	2.0000	1.9565	2.2	100	0.00
97	T	Hexachlorobutadiene	2.0000	2.0914	-4.6	100	0.00
98	T	Naphthalene	2.0000	1.9443	2.8	100	0.00
99	T	1,2,3-Trichlorobenzene	2.0000	2.0449	-2.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

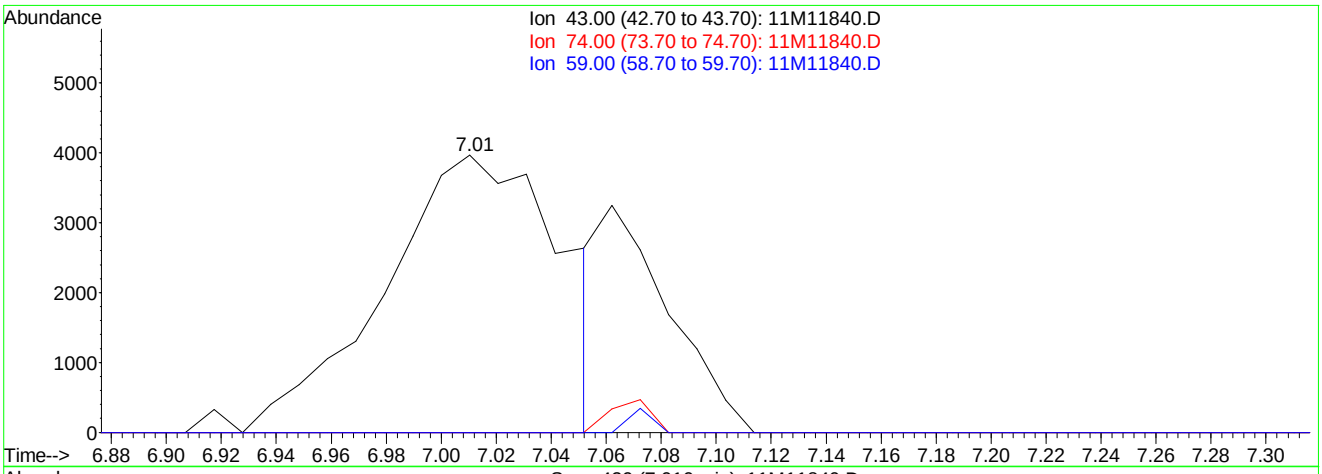

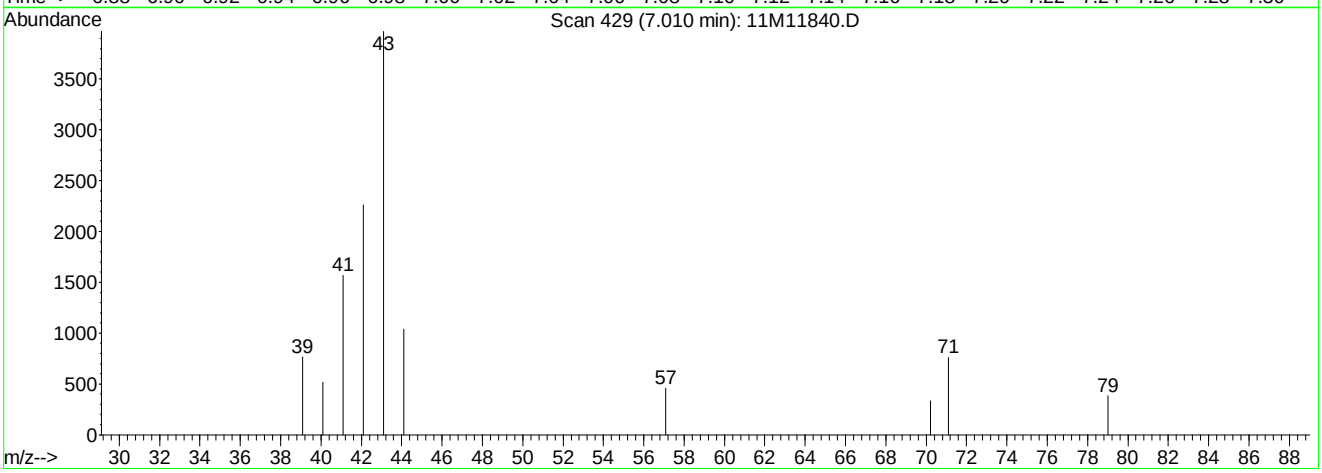

TIC: 11M11840.D

(18) Methyl acetate (T)

7.01min 3.69ug/L

response 17794

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	2.82#
59.00	6.50	1.21#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:34 2016

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

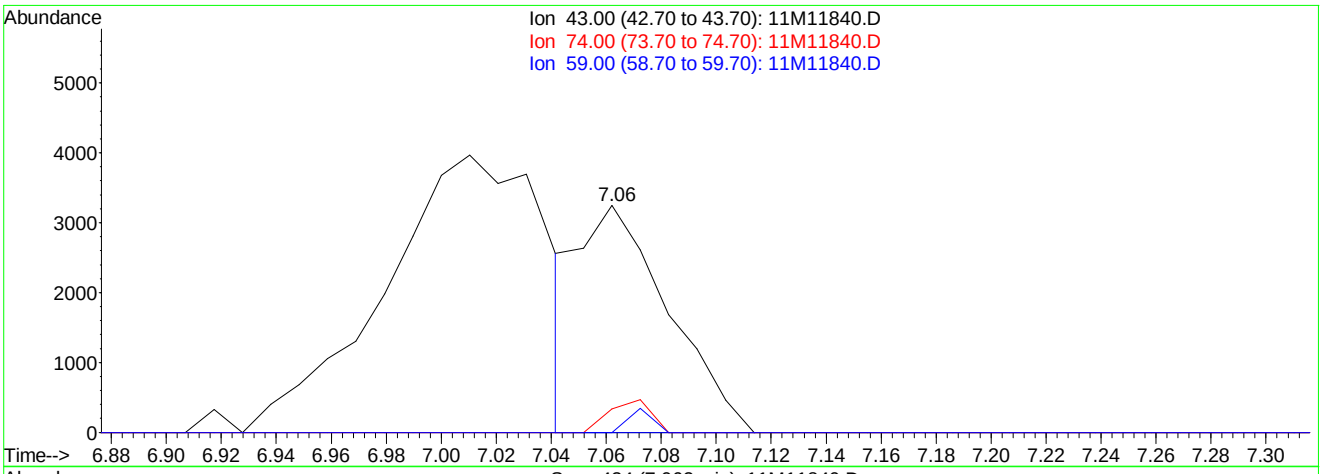

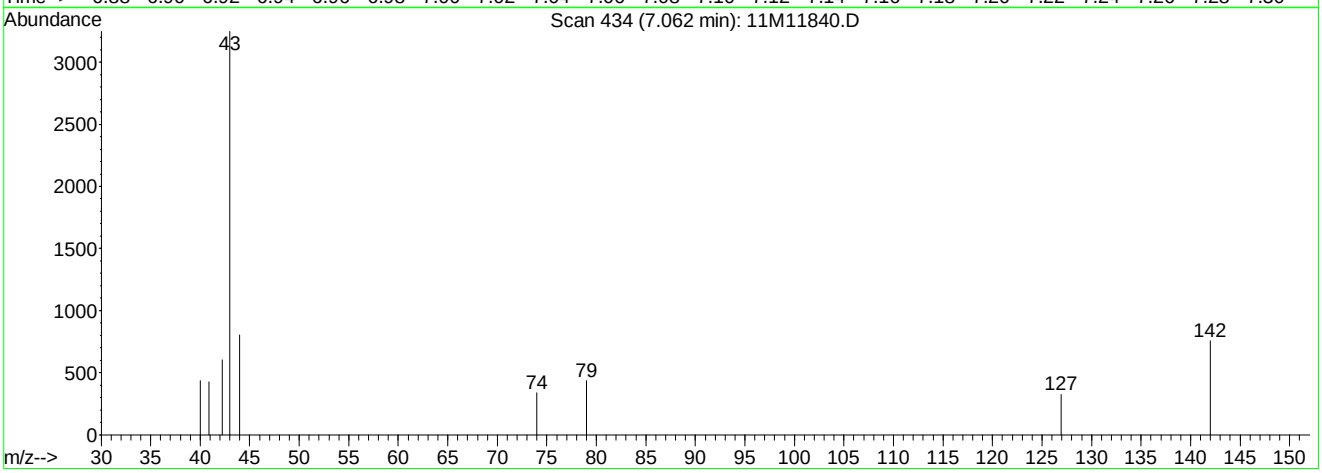

TIC: 11M11840.D

(18) Methyl acetate (T)

7.06min 0.86ug/L mint

response 7344

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	6.84#
59.00	6.50	2.93#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:39 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	510485	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	424113	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244127	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	13577	2.3093 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.24%#	
43) 1,2-Dichloroethane-d4	10.23	65	16340	2.3640 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.44%#	
57) Toluene-d8	12.47	98	46369	2.3570 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.44%#	
78) p-Bromofluorobenzene	15.64	95	19139	2.4218 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.68%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	33260	4.2909 ug/L	97
3) Chloromethane	3.72	50	29484	4.2588 ug/L	100
4) Vinyl Chloride	3.96	62	24947	4.6446 ug/L	98
5) 1,3-Butadiene	4.00	54	24704	4.8274 ug/L	87
6) Bromomethane	4.85	94	16794	4.7876 ug/L	96
7) Chloroethane	5.00	64	15417	4.1982 ug/L	96
8) Trichlorofluoromethane	5.48	101	50663	4.8750 ug/L	98
9) Diethyl ether	6.01	59	199353	45.0064 ug/L	100
10) Isoprene	6.04	67	30513	4.3864 ug/L	99
11) Acrolein	6.25	56	12345	23.3877 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	23865	4.5585 ug/L	97
13) Acetone	6.35	43	6439	4.2186 ug/L	86
14) 1,1-Dichloroethene	6.56	61	43769	4.6158 ug/L	96
15) Tert-Butyl Alcohol	6.66	59	34212	87.4805 ug/L	100
16) Dimethyl Sulfide	6.81	62	17251	4.0482 ug/L	99
17) Iodomethane	7.06	142	7385	2.0684 ug/L	94
18) Methyl acetate	7.06	43	32363	5.4250 ug/L #	83
19) Methylene Chloride	7.31	84	23476	4.4707 ug/L	98
20) Carbon Disulfide	7.36	76	72931	4.4715 ug/L	98
21) Acrylonitrile	7.49	53	38039	20.0847 ug/L	96
22) Methyl Tert Butyl Ether	7.52	73	57597	4.3071 ug/L	98
23) trans-1,2-Dichloroethene	7.74	96	23369	4.3390 ug/L	99
24) n-Hexane	7.82	57	38507	4.3615 ug/L	99
25) Diisopropyl ether	8.15	45	1105208	48.2180 ug/L	99
26) Vinyl Acetate	8.31	43	24007	7.3442 ug/L	97
27) 1,1-Dichloroethane	8.34	63	51535	4.8316 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	899266	48.1312 ug/L	99
29) 2-Butanone	8.88	43	8098	3.5469 ug/L	98
30) Propionitrile	8.98	54	26204	41.2561 ug/L	97
31) 2,2-Dichloropropane	9.09	77	40285	5.2526 ug/L	97
32) cis-1,2-Dichloroethene	9.15	96	27456	4.6081 ug/L	91
33) Chloroform	9.35	83	48958	4.7306 ug/L	97
34) 1-Bromopropane	9.47	122	4632	4.9482 ug/L	88
35) Bromochloromethane	9.57	130	17073	4.6807 ug/L	99
36) Tetrahydrofuran	9.60	42	59638	39.6839 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	48123	4.8983 ug/L	100
39) Cyclohexane	9.88	56	51945	4.5931 ug/L	98
40) 1,1-Dichloropropene	10.04	75	33867	4.6344 ug/L	99
41) Carbon Tetrachloride	10.17	117	47434	5.0851 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	615710	46.3601 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	40281	4.6727 ug/L	99
45) Benzene	10.38	78	94223	4.6151 ug/L	99
46) Trichloroethene	11.08	130	31195	4.7740 ug/L	96
47) Methylcyclohexane	11.17	83	35731	4.4100 ug/L	96
48) 1,2-Dichloropropane	11.29	63	25973	4.4921 ug/L	93
49) 1,4-Dioxane	11.56	88	2747	80.2363 ug/L	93
50) Bromodichloromethane	11.57	83	36997	4.7467 ug/L	99
51) Dibromomethane	11.65	93	13963	4.5774 ug/L	97
52) 2-Chloroethyl Vinyl Ether	11.84	63	11417	3.7313 ug/L	95
53) 4-Methyl-2-Pentanone	11.87	58	6133	3.2690 ug/L	90
54) cis-1,3-Dichloropropene	12.17	75	36461	4.5343 ug/L	100
55) Dimethyl Disulfide	12.42	79	18914	3.7032 ug/L	99
58) Toluene	12.56	91	107617	4.9467 ug/L	100
59) Ethyl Methacrylate	12.65	69	21187	4.1021 ug/L	99
60) trans-1,3-Dichloropropene	12.73	75	32824	4.5778 ug/L	99
61) 1,1,2-Trichloroethane	12.94	97	17791	4.3060 ug/L	98
62) 2-Hexanone	12.86	43	11606	3.4244 ug/L	99
63) 1,3-Dichloropropane	13.21	76	30121	4.5460 ug/L	97
64) Tetrachloroethene	13.33	164	24241	4.8819 ug/L	95
65) Dibromochloromethane	13.59	129	27989	4.7024 ug/L	95
66) 1,2-Dibromoethane	13.82	107	18147	4.4382 ug/L	96
67) 1-Chlorohexane	13.89	91	33195	4.6591 ug/L	97
68) Chlorobenzene	14.29	112	79059	4.9583 ug/L	98
69) 1,1,1,2-Tetrachloroethane	14.32	131	31047	4.8956 ug/L	97
70) Ethylbenzene	14.31	106	39304	4.8168 ug/L	95
71) m-,p-Xylene	14.39	106	95751	9.7273 ug/L	95
72) o-Xylene	14.92	106	45759	4.7228 ug/L	96
73) Styrene	14.95	104	77900	4.8227 ug/L	98
74) Bromoform	15.43	173	15663	4.1856 ug/L	97
75) Isopropylbenzene	15.31	105	123883	4.9827 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.51	83	18105	4.4049 ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	6717	4.7266 ug/L	85
80) trans-1,4-Dichloro-2-Buten	15.74	53	6067	3.6507 ug/L	69
81) n-Propylbenzene	15.79	91	143972	5.2435 ug/L	99
82) Bromobenzene	15.92	156	37345	4.9800 ug/L	93
83) 1,3,5-Trimethylbenzene	15.95	105	106030	5.0309 ug/L	100
84) 2-Chlorotoluene	16.05	91	99279	4.9734 ug/L	100
85) 4-Chlorotoluene	16.09	91	88275	5.1992 ug/L	98
86) a-Methylstyrene	16.34	118	53766	4.7153 ug/L	98
87) tert-Butylbenzene	16.39	134	23868	5.2956 ug/L	97
88) 1,2,4-Trimethylbenzene	16.44	105	112072	5.2401 ug/L	99
89) sec-Butylbenzene	16.65	105	129249	5.1810 ug/L	99
90) p-Isopropyltoluene	16.79	119	119605	5.2524 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	71265	5.0271 ug/L	99
92) 1,4-Dichlorobenzene	17.10	146	72437	5.0122 ug/L	96
93) n-Butylbenzene	17.28	91	100062	4.9277 ug/L	99
94) 1,2-Dichlorobenzene	17.57	146	64925	4.9520 ug/L	98
95) 1,2-Dibromo-3-Chloropropan	18.49	75	3875	4.6567 ug/L	87
96) 1,2,4-Trichlorobenzene	19.55	180	46664	4.8629 ug/L	97
97) Hexachlorobutadiene	19.69	225	20419	5.1319 ug/L	96
98) Naphthalene	19.90	128	83612	4.4869 ug/L	99
99) 1,2,3-Trichlorobenzene	20.19	180	40714	4.5323 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration

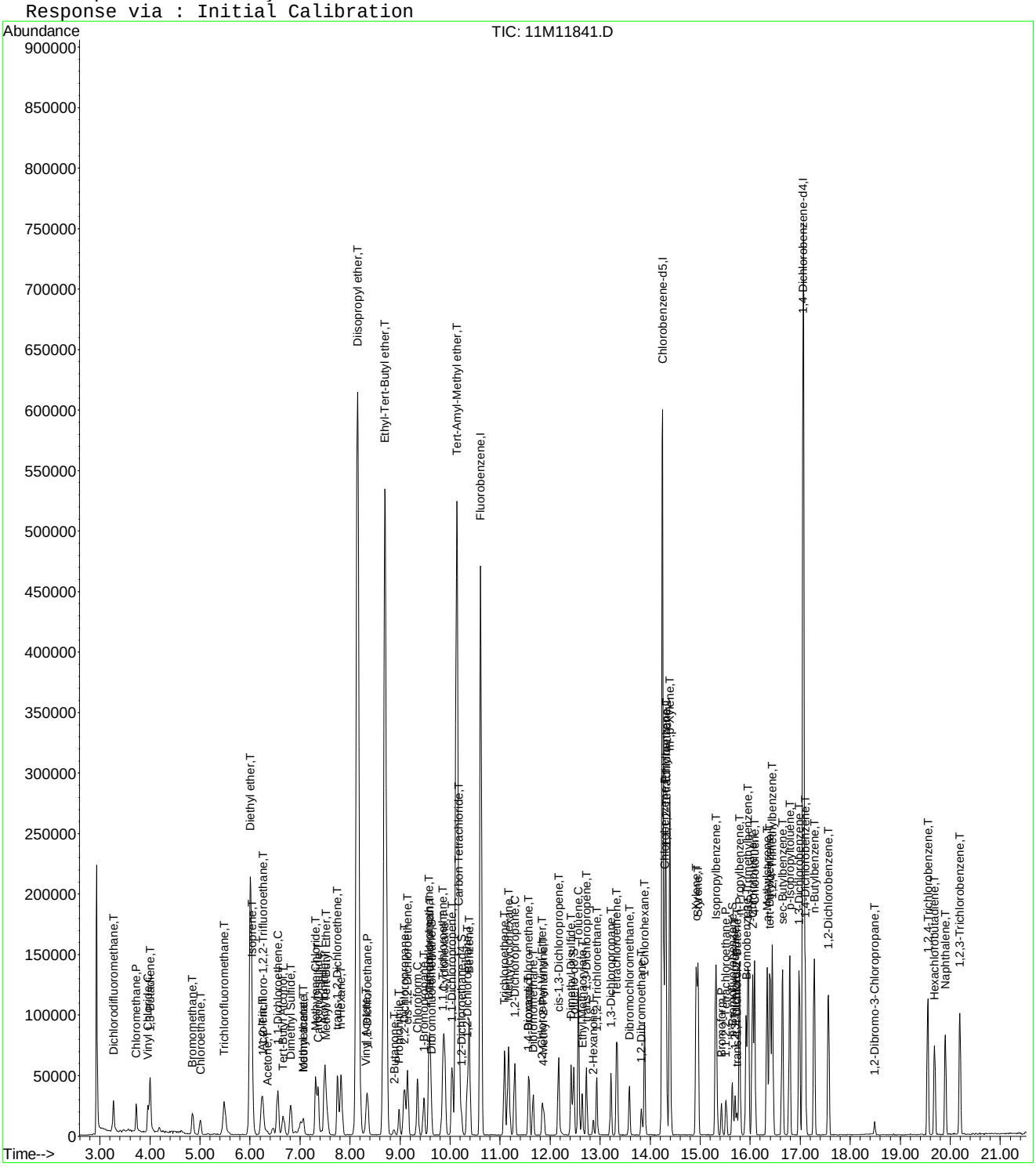

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.1584	16.8	100	0.00
3	P	Chloromethane	5.0000	4.6027	7.9	100	0.00
4	C	Vinyl Chloride	5.0000	4.6895	6.2	100	0.00
5	T	1,3-Butadiene	5.0000	4.6702	6.6	100	0.00
6	T	Bromomethane	5.0000	4.5915	8.2	100	0.00
7	T	Chloroethane	5.0000	4.5105	9.8	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7781	4.4	100	0.00
9	T	Diethyl ether	50.0000	50.8371	-1.7	100	0.00
10	T	Isoprene	5.0000	4.6688	6.6	100	0.00
11	T	Acrolein	25.0000	24.7297	1.1	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6385	7.2	100	0.01
13	T	Acetone	5.0000	5.3120	-6.2	100	0.01
14	C	1,1-Dichloroethene	5.0000	4.6835	6.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	102.0360	-2.0	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6223	7.6	100	0.00
17	T	Iodomethane	5.0000	3.9124	21.8	100	0.00
18	T	Methyl acetate	5.0000	7.5474	-50.9#	100	0.00
19	T	Methylene Chloride	5.0000	4.8539	2.9	100	0.00
20	T	Carbon Disulfide	5.0000	4.6615	6.8	100	0.00
21	T	Acrylonitrile	25.0000	23.4049	6.4	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.7747	4.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.5182	9.6	100	0.00
24	T	n-Hexane	5.0000	4.4700	10.6	100	0.00
25	T	Diisopropyl ether	50.0000	51.4154	-2.8	100	0.00
26	T	Vinyl Acetate	5.0000	5.1698	-3.4	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9658	0.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.3996	-2.8	100	0.00
29	T	2-Butanone	5.0000	4.4190	11.6	100	0.01
30	T	Propionitrile	50.0000	48.8210	2.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9614	0.8	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8145	3.7	100	0.00
33	C	Chloroform	5.0000	4.8039	3.9	100	0.00
34	T	1-Bromopropane	5.0000	5.1449	-2.9	100	0.00
35	T	Bromochloromethane	5.0000	5.0410	-0.8	100	0.00
36	T	Tetrahydrofuran	50.0000	46.0861	7.8	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4302	2.8	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7984	4.0	100	0.00
39	T	Cyclohexane	5.0000	4.7526	4.9	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.7295	5.4	100	0.00
41	T	Carbon Tetrachloride	5.0000	4.8435	3.1	100	-0.01
42	T	Tert-Amyl-Methyl ether	50.0000	50.6462	-1.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5650	-2.6	100	0.00
44	T	1,2-Dichloroethane	5.0000	4.8665	2.7	100	0.00
45	T	Benzene	5.0000	4.8065	3.9	100	0.00
46	T	Trichloroethene	5.0000	4.8959	2.1	100	-0.01
47	T	Methylcyclohexane	5.0000	4.5439	9.1	100	0.00
48	C	1,2-Dichloropropane	5.0000	4.7864	4.3	100	0.00
49	T	1,4-Dioxane	100.0000	102.6541	-2.7	100	0.01
50	T	Bromodichloromethane	5.0000	4.8566	2.9	100	0.00
51	T	Dibromomethane	5.0000	4.9379	1.2	100	0.00
52	T	2-Chloroethyl Vinyl Ether	5.0000	4.2689	14.6	100	0.00
53	T	4-Methyl-2-Pentanone	5.0000	4.0658	18.7	100	0.00
54	T	cis-1,3-Dichloropropene	5.0000	4.7853	4.3	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	5.0000	4.1252	17.5	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	2.5000	2.5163	-0.7	100	0.00
58	C	Toluene	5.0000	5.0124	-0.2	100	0.00
59	T	Ethyl Methacrylate	5.0000	4.6214	7.6	100	0.00
60	T	trans-1,3-Dichloropropene	5.0000	4.7629	4.7	100	0.00
61	T	1,1,2-Trichloroethane	5.0000	4.6730	6.5	100	0.00
62	T	2-Hexanone	5.0000	4.1507	17.0	100	0.00
63	T	1,3-Dichloropropane	5.0000	4.9267	1.5	100	0.00
64	T	Tetrachloroethene	5.0000	4.8551	2.9	100	-0.01
65	T	Dibromochloromethane	5.0000	4.8199	3.6	100	0.00
66	T	1,2-Dibromoethane	5.0000	4.7575	4.8	100	0.00
67	T	1-Chlorohexane	5.0000	4.6895	6.2	100	0.00
68	P	Chlorobenzene	5.0000	5.0264	-0.5	100	0.00
69	T	1,1,1,2-Tetrachloroethane	5.0000	4.8783	2.4	100	0.00
70	C	Ethylbenzene	5.0000	4.8732	2.5	100	0.00
71	T	m-,p-Xylene	10.0000	9.7654	2.3	100	0.00
72	T	o-Xylene	5.0000	4.7954	4.1	100	0.00
73	T	Styrene	5.0000	4.9411	1.2	100	0.00
74	P	Bromoform	5.0000	4.4503	11.0	100	0.00
75	T	Isopropylbenzene	5.0000	4.9091	1.8	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	5.0000	4.7624	4.8	100	-0.01
78	S	p-Bromofluorobenzene	2.5000	2.5432	-1.7	100	0.00
79	T	1,2,3-Trichloropropane	5.0000	5.0393	-0.8	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0050	19.9	100	0.00
81	T	n-Propylbenzene	5.0000	5.0923	-1.8	100	0.00
82	T	Bromobenzene	5.0000	5.0338	-0.7	100	0.00
83	T	1,3,5-Trimethylbenzene	5.0000	4.9145	1.7	100	-0.01
84	T	2-Chlorotoluene	5.0000	5.0134	-0.3	100	0.00
85	T	4-Chlorotoluene	5.0000	4.9765	0.5	100	0.00
86	T	a-Methylstyrene	5.0000	4.7239	5.5	100	0.00
87	T	tert-Butylbenzene	5.0000	5.2217	-4.4	100	-0.01
88	T	1,2,4-Trimethylbenzene	5.0000	5.1012	-2.0	100	0.00
89	T	sec-Butylbenzene	5.0000	4.9892	0.2	100	0.00
90	T	p-Isopropyltoluene	5.0000	5.0265	-0.5	100	0.00
91	T	1,3-Dichlorobenzene	5.0000	4.9737	0.5	100	0.00
92	T	1,4-Dichlorobenzene	5.0000	4.9875	0.2	100	0.00
93	T	n-Butylbenzene	5.0000	4.7722	4.6	100	0.00
94	T	1,2-Dichlorobenzene	5.0000	4.9741	0.5	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1051	-2.1	100	0.00
96	T	1,2,4-Trichlorobenzene	5.0000	4.8858	2.3	100	0.00
97	T	Hexachlorobutadiene	5.0000	4.8528	2.9	100	0.00
98	T	Naphthalene	5.0000	4.7164	5.7	100	0.00
99	T	1,2,3-Trichlorobenzene	5.0000	4.6448	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11841.D 8260WT.M Sat May 14 18:48:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	512017	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	433937	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	255524	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	58089	10.3664 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.48%#		
43) 1,2-Dichloroethane-d4	10.23	65	66804	10.4555 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.84%#		
57) Toluene-d8	12.47	98	193532	10.2645 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.04%#		
78) p-Bromofluorobenzene	15.64	95	81186	10.3070 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	176636	22.0179 ug/L	99
3) Chloromethane	3.72	50	126901	19.7510 ug/L	98
4) Vinyl Chloride	3.96	62	109592	20.5394 ug/L	98
5) 1,3-Butadiene	4.00	54	116317	21.9237 ug/L	96
6) Bromomethane	4.85	94	73878	20.1380 ug/L	93
7) Chloroethane	5.00	64	71103	20.7401 ug/L	100
8) Trichlorofluoromethane	5.49	101	225913	21.2425 ug/L	99
9) Diethyl ether	6.01	59	321203	81.6650 ug/L	99
10) Isoprene	6.04	67	135641	20.6925 ug/L	98
11) Acrolein	6.24	56	19366	37.8284 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	109792	21.2757 ug/L	99
13) Acetone	6.34	43	27399	22.5356 ug/L	96
14) 1,1-Dichloroethene	6.56	61	201658	21.5139 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	60081	178.6532 ug/L	99
16) Dimethyl Sulfide	6.81	62	75759	20.2383 ug/L	97
17) Iodomethane	7.06	142	67280	17.2594 ug/L	97
18) Methyl acetate	7.07	43	87945	22.4983 ug/L	96
19) Methylene Chloride	7.31	84	99453	20.5013 ug/L	100
20) Carbon Disulfide	7.36	76	327043	20.8410 ug/L	100
21) Acrylonitrile	7.49	53	69618	42.7070 ug/L	95
22) Methyl Tert Butyl Ether	7.52	73	266288	22.0086 ug/L	99
23) trans-1,2-Dichloroethene	7.75	96	107858	20.7912 ug/L	99
24) n-Hexane	7.82	57	184135	21.3111 ug/L	99
25) Diisopropyl ether	8.15	45	1729257	80.2062 ug/L	99
26) Vinyl Acetate	8.31	43	160029	20.6235 ug/L	99
27) 1,1-Dichloroethane	8.34	63	218994	21.0387 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1435318	81.7933 ug/L	100
29) 2-Butanone	8.87	43	39878	21.6958 ug/L	99
30) Propionitrile	8.97	54	47221	87.7149 ug/L	99
31) 2,2-Dichloropropane	9.09	77	166427	20.4352 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	120620	21.0877 ug/L	99
33) Chloroform	9.35	83	208615	20.4085 ug/L	99
34) 1-Bromopropane	9.48	122	19153	19.2424 ug/L	96
35) Bromochloromethane	9.57	130	77189	22.7226 ug/L	99
36) Tetrahydrofuran	9.60	42	109362	84.2581 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	210871	20.9631 ug/L	98
39) Cyclohexane	9.88	56	235071	21.4428 ug/L	99
40) 1,1-Dichloropropene	10.04	75	151682	21.1188 ug/L	99
41) Carbon Tetrachloride	10.17	117	212111	21.5941 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1001790	82.1572 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	180438	21.7339	ug/L	99
45)	Benzene	10.38	78	407777	20.7394	ug/L	100
46)	Trichloroethene	11.08	130	132094	20.6692	ug/L	99
47)	Methylcyclohexane	11.17	83	168355	21.3455	ug/L	98
48)	1,2-Dichloropropane	11.29	63	112875	20.7388	ug/L	99
49)	1,4-Dioxane	11.56	88	4948	165.8209	ug/L	99
50)	Bromodichloromethane	11.57	83	163762	21.4329	ug/L	98
51)	Dibromomethane	11.65	93	61028	21.5174	ug/L	98
52)	2-Chloroethyl Vinyl Ether	11.84	63	56664	21.1238	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	32621	21.5609	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	166399	21.7735	ug/L	100
55)	Dimethyl Disulfide	12.42	79	93808	20.3984	ug/L	99
58)	Toluene	12.56	91	467769	21.2936	ug/L	99
59)	Ethyl Methacrylate	12.64	69	103892	22.1484	ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	155661	22.0759	ug/L	100
61)	1,1,2-Trichloroethane	12.94	97	85297	21.8971	ug/L	100
62)	2-Hexanone	12.86	43	62113	21.7109	ug/L	99
63)	1,3-Dichloropropane	13.21	76	137448	21.9726	ug/L	98
64)	Tetrachloroethene	13.34	164	106368	20.8217	ug/L	99
65)	Dibromochloromethane	13.59	129	131143	22.0723	ug/L	99
66)	1,2-Dibromoethane	13.82	107	84381	21.6209	ug/L	99
67)	1-Chlorohexane	13.89	91	153420	21.1830	ug/L	100
68)	Chlorobenzene	14.29	112	338669	21.0446	ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	134571	20.6660	ug/L	98
70)	Ethylbenzene	14.31	106	171752	20.8130	ug/L	97
71)	m-,p-Xylene	14.39	106	419228	41.7882	ug/L	99
72)	o-Xylene	14.92	106	208125	21.3170	ug/L	99
73)	Styrene	14.95	104	353452	21.9116	ug/L	98
74)	Bromoform	15.43	173	78592	21.8247	ug/L	100
75)	Isopropylbenzene	15.31	105	552747	21.4078	ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	90122	22.6486	ug/L	98
79)	1,2,3-Trichloropropane	15.70	110	30969	20.9562	ug/L	97
80)	trans-1,4-Dichloro-2-Buten	15.74	53	36190	19.3325	ug/L	86
81)	n-Propylbenzene	15.79	91	640711	21.6512	ug/L	100
82)	Bromobenzene	15.92	156	160227	20.6340	ug/L	100
83)	1,3,5-Trimethylbenzene	15.95	105	481759	21.3337	ug/L	100
84)	2-Chlorotoluene	16.05	91	435100	20.9919	ug/L	99
85)	4-Chlorotoluene	16.09	91	391759	21.1004	ug/L	100
86)	a-Methylstyrene	16.34	118	253642	21.2911	ug/L	99
87)	tert-Butylbenzene	16.39	134	101859	21.2903	ug/L	99
88)	1,2,4-Trimethylbenzene	16.44	105	505239	21.9714	ug/L	98
89)	sec-Butylbenzene	16.65	105	586770	21.6398	ug/L	100
90)	p-Isopropyltoluene	16.79	119	539795	21.6735	ug/L	100
91)	1,3-Dichlorobenzene	16.98	146	312832	20.8591	ug/L	99
92)	1,4-Dichlorobenzene	17.10	146	314339	20.6779	ug/L	99
93)	n-Butylbenzene	17.28	91	474312	21.6121	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	287316	21.0305	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	19607	22.2193	ug/L	89
96)	1,2,4-Trichlorobenzene	19.55	180	212916	21.2982	ug/L	100
97)	Hexachlorobutadiene	19.69	225	91388	20.7507	ug/L	99
98)	Naphthalene	19.90	128	414073	22.3154	ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	193437	21.0836	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

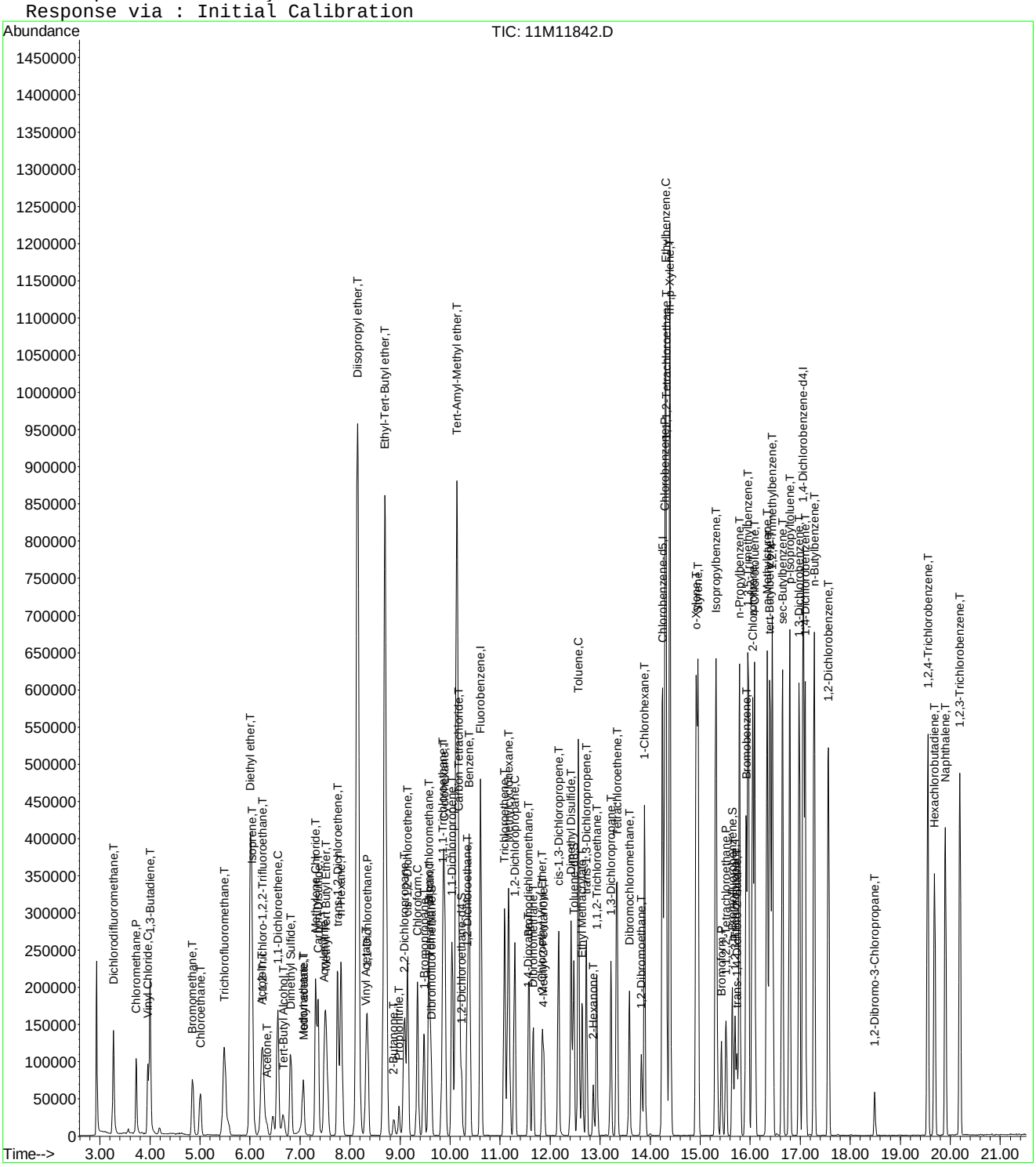

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	521583	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	438582	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	263885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	139784	24.4879 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.23	65	158200	24.3058 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.24%		
57) Toluene-d8	12.47	98	462969	24.2947 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.16%		
78) p-Bromofluorobenzene	15.64	95	188875	23.2189 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	416971	51.0228 ug/L	100
3) Chloromethane	3.72	50	287508	43.9273 ug/L	100
4) Vinyl Chloride	3.96	62	261024	48.0232 ug/L	100
5) 1,3-Butadiene	4.00	54	280913	51.9760 ug/L	100
6) Bromomethane	4.85	94	172294	46.1032 ug/L	100
7) Chloroethane	5.00	64	167978	48.0991 ug/L	100
8) Trichlorofluoromethane	5.48	101	519806	47.9806 ug/L	100
9) Diethyl ether	6.01	59	391891	97.8098 ug/L	100
10) Isoprene	6.04	67	331169	49.5943 ug/L	100
11) Acrolein	6.23	56	25228	47.9550 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	255341	48.5730 ug/L	100
13) Acetone	6.34	43	57896	46.7459 ug/L	98
14) 1,1-Dichloroethene	6.56	61	459793	48.1534 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	69395	202.5643 ug/L	100
16) Dimethyl Sulfide	6.81	62	193959	50.8640 ug/L	100
17) Iodomethane	7.06	142	214554	49.3519 ug/L	100
18) Methyl acetate	7.06	43	185465	48.1983 ug/L	100
19) Methylene Chloride	7.31	84	233601	47.2715 ug/L	100
20) Carbon Disulfide	7.36	76	816514	51.0786 ug/L	100
21) Acrylonitrile	7.49	53	84821	51.0789 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	610666	49.5457 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	252405	47.7624 ug/L	100
24) n-Hexane	7.82	57	449694	51.0913 ug/L	100
25) Diisopropyl ether	8.15	45	2181723	99.3365 ug/L	100
26) Vinyl Acetate	8.31	43	410275	48.2141 ug/L	100
27) 1,1-Dichloroethane	8.34	63	516691	48.7281 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	1783350	99.7625 ug/L	100
29) 2-Butanone	8.87	43	91238	48.7281 ug/L	100
30) Propionitrile	8.97	54	56538	103.0954 ug/L	100
31) 2,2-Dichloropropane	9.09	77	402511	48.5170 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	282222	48.4353 ug/L	100
33) Chloroform	9.35	83	489993	47.0562 ug/L	100
34) 1-Bromopropane	9.48	122	50180	48.4991 ug/L	100
35) Bromochloromethane	9.57	130	179921	51.9932 ug/L	100
36) Tetrahydrofuran	9.60	42	127999	96.8083 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	497667	48.5667 ug/L	100
39) Cyclohexane	9.88	56	575045	51.4928 ug/L	100
40) 1,1-Dichloropropene	10.04	75	353148	48.2674 ug/L	100
41) Carbon Tetrachloride	10.18	117	493225	49.2921 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1227500	98.8215 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	419000	49.5434	ug/L	100
45)	Benzene	10.38	78	947514	47.3064	ug/L	100
46)	Trichloroethene	11.09	130	307211	47.1888	ug/L	100
47)	Methylcyclohexane	11.17	83	418631	52.1043	ug/L	100
48)	1,2-Dichloropropane	11.29	63	268423	48.4136	ug/L	100
49)	1,4-Dioxane	11.55	88	5866	189.1665	ug/L	100
50)	Bromodichloromethane	11.57	83	385292	49.5015	ug/L	100
51)	Dibromomethane	11.65	93	142910	49.4635	ug/L	100
52)	2-Chloroethyl Vinyl Ether	11.84	63	133225	48.7541	ug/L	100
53)	4-Methyl-2-Pentanone	11.87	58	75720	49.1295	ug/L	100
54)	cis-1,3-Dichloropropene	12.17	75	394857	50.7199	ug/L	100
55)	Dimethyl Disulfide	12.42	79	236984	50.5867	ug/L	100
58)	Toluene	12.56	91	1095397	49.3360	ug/L	100
59)	Ethyl Methacrylate	12.65	69	249821	52.6944	ug/L	100
60)	trans-1,3-Dichloropropene	12.73	75	366443	51.4187	ug/L	100
61)	1,1,2-Trichloroethane	12.93	97	194150	49.3135	ug/L	100
62)	2-Hexanone	12.86	43	144364	49.9264	ug/L	100
63)	1,3-Dichloropropane	13.21	76	316783	50.1049	ug/L	100
64)	Tetrachloroethene	13.34	164	251037	48.6205	ug/L	100
65)	Dibromochloromethane	13.59	129	310662	51.7330	ug/L	100
66)	1,2-Dibromoethane	13.82	107	196704	49.8676	ug/L	100
67)	1-Chlorohexane	13.89	91	376690	51.4596	ug/L	100
68)	Chlorobenzene	14.29	112	797442	49.0276	ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	325801	49.5033	ug/L	100
70)	Ethylbenzene	14.31	106	408749	49.0078	ug/L	100
71)	m-,p-Xylene	14.39	106	996141	98.2427	ug/L	100
72)	o-Xylene	14.92	106	492043	49.8632	ug/L	100
73)	Styrene	14.95	104	838125	51.4077	ug/L	100
74)	Bromoform	15.43	173	184100	50.5823	ug/L	100
75)	Isopropylbenzene	15.31	105	1309383	50.1751	ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.52	83	208930	50.8426	ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	72411	46.9859	ug/L	100
80)	trans-1,4-Dichloro-2-Buten	15.74	53	94075	47.5347	ug/L	100
81)	n-Propylbenzene	15.79	91	1522917	49.8325	ug/L	100
82)	Bromobenzene	15.92	156	379178	47.2834	ug/L	100
83)	1,3,5-Trimethylbenzene	15.96	105	1143246	49.0221	ug/L	100
84)	2-Chlorotoluene	16.05	91	1021921	47.7415	ug/L	100
85)	4-Chlorotoluene	16.09	91	930690	48.5394	ug/L	100
86)	a-Methylstyrene	16.34	118	649847	52.8208	ug/L	100
87)	tert-Butylbenzene	16.40	134	241955	48.9705	ug/L	100
88)	1,2,4-Trimethylbenzene	16.44	105	1178963	49.6454	ug/L	100
89)	sec-Butylbenzene	16.65	105	1390388	49.6522	ug/L	100
90)	p-Isopropyltoluene	16.79	119	1282252	49.8529	ug/L	100
91)	1,3-Dichlorobenzene	16.98	146	737967	47.6473	ug/L	100
92)	1,4-Dichlorobenzene	17.10	146	740977	47.1987	ug/L	100
93)	n-Butylbenzene	17.28	91	1126170	49.6883	ug/L	100
94)	1,2-Dichlorobenzene	17.57	146	684016	48.4812	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	42848	46.3023	ug/L	100
96)	1,2,4-Trichlorobenzene	19.55	180	512927	49.6830	ug/L	100
97)	Hexachlorobutadiene	19.69	225	219129	48.1793	ug/L	100
98)	Naphthalene	19.90	128	962852	50.2463	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	453828	47.8975	ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

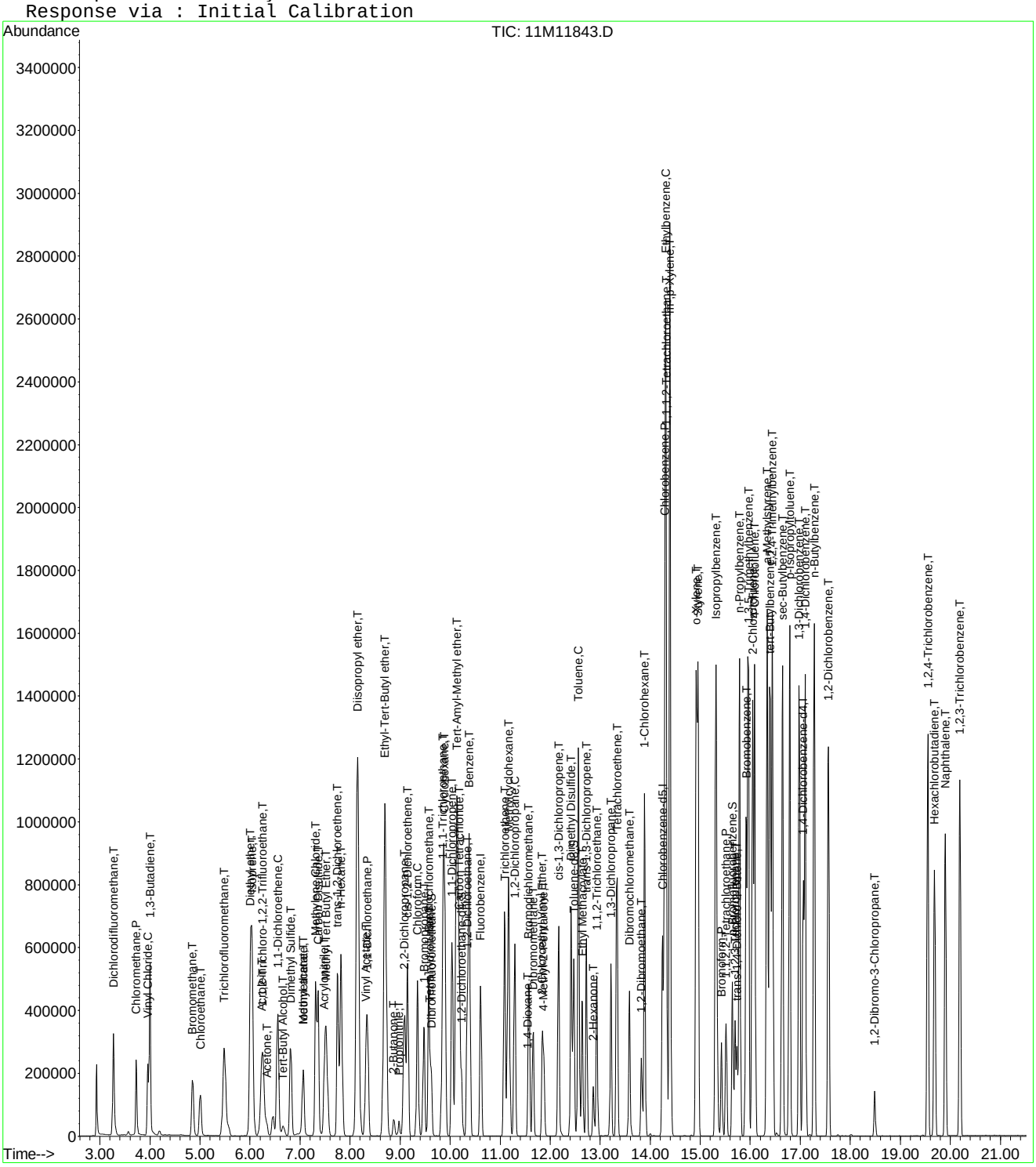

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	541540	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	458522	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	275719	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	307700	51.9175 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 207.68%#		
43) 1,2-Dichloroethane-d4	10.23	65	345779	51.1676 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 204.68%#		
57) Toluene-d8	12.47	98	1011334	50.7627 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 203.04%#		
78) p-Bromofluorobenzene	15.64	95	423157	49.7872 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 199.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	918088	108.2020 ug/L	100
3) Chloromethane	3.72	50	641242	94.3625 ug/L	99
4) Vinyl Chloride	3.95	62	586615	103.9481 ug/L	100
5) 1,3-Butadiene	3.99	54	571156	101.7838 ug/L	99
6) Bromomethane	4.85	94	394826	101.7560 ug/L	99
7) Chloroethane	5.00	64	370541	102.1913 ug/L	99
8) Trichlorofluoromethane	5.48	101	1135647	100.9627 ug/L	98
9) Diethyl ether	6.01	59	836495	201.0821 ug/L	99
10) Isoprene	6.04	67	699724	100.9257 ug/L	100
11) Acrolein	6.24	56	55228	99.4421 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	545013	99.8560 ug/L	100
13) Acetone	6.34	43	123799	96.2731 ug/L	95
14) 1,1-Dichloroethene	6.56	61	1004294	101.3022 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	148134	416.4687 ug/L	98
16) Dimethyl Sulfide	6.81	62	401237	101.3432 ug/L	100
17) Iodomethane	7.06	142	471112	102.3553 ug/L	100
18) Methyl acetate	7.07	43	381031	98.0957 ug/L	99
19) Methylene Chloride	7.31	84	501609	97.7649 ug/L	99
20) Carbon Disulfide	7.36	76	1695322	102.1458 ug/L	100
21) Acrylonitrile	7.49	53	184461	106.9881 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	1312901	102.5951 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	542907	98.9478 ug/L	98
24) n-Hexane	7.82	57	921942	100.8849 ug/L	99
25) Diisopropyl ether	8.15	45	4599625	201.7086 ug/L	99
26) Vinyl Acetate	8.31	43	855488	94.3763 ug/L	99
27) 1,1-Dichloroethane	8.34	63	1111115	100.9254 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	3780769	203.7060 ug/L	100
29) 2-Butanone	8.87	43	198511	102.1130 ug/L	100
30) Propionitrile	8.98	54	118699	208.4678 ug/L	97
31) 2,2-Dichloropropane	9.09	77	914695	106.1904 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	606774	100.2977 ug/L	99
33) Chloroform	9.35	83	1053766	97.4685 ug/L	100
34) 1-Bromopropane	9.48	122	106914	98.8615 ug/L	100
35) Bromochloromethane	9.57	130	387239	107.7795 ug/L	100
36) Tetrahydrofuran	9.60	42	270148	196.7890 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	1088263	102.2884 ug/L	99
39) Cyclohexane	9.88	56	1213186	104.6320 ug/L	100
40) 1,1-Dichloropropene	10.04	75	775674	102.1101 ug/L	98
41) Carbon Tetrachloride	10.18	117	1074698	103.4456 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	2619501	203.1147 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	895394	101.9714 ug/L	100
45)	Benzene	10.38	78	2041856	98.1867 ug/L	100
46)	Trichloroethene	11.08	130	677193	100.1861 ug/L	99
47)	Methylcyclohexane	11.17	83	867487	103.9915 ug/L	100
48)	1,2-Dichloropropane	11.29	63	580562	100.8530 ug/L	98
49)	1,4-Dioxane	11.56	88	13651	395.0901 ug/L	100
50)	Bromodichloromethane	11.57	83	837797	103.6717 ug/L	99
51)	Dibromomethane	11.65	93	315786	105.2707 ug/L	99
52)	2-Chloroethyl Vinyl Ether	11.84	63	293822	103.5626 ug/L	100
53)	4-Methyl-2-Pentanone	11.87	58	164890	103.0430 ug/L	98
54)	cis-1,3-Dichloropropene	12.17	75	854611	105.7305 ug/L	99
55)	Dimethyl Disulfide	12.42	79	505463	103.9202 ug/L	99
58)	Toluene	12.56	91	2361378	101.7300 ug/L	100
59)	Ethyl Methacrylate	12.65	69	529740	106.8782 ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	793063	106.4420 ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	418327	101.6330 ug/L	99
62)	2-Hexanone	12.86	43	314588	104.0648 ug/L	99
63)	1,3-Dichloropropane	13.21	76	685844	103.7610 ug/L	100
64)	Tetrachloroethene	13.34	164	550335	101.9528 ug/L	99
65)	Dibromochloromethane	13.59	129	681591	108.5659 ug/L	100
66)	1,2-Dibromoethane	13.82	107	427945	103.7729 ug/L	99
67)	1-Chlorohexane	13.89	91	807177	105.4730 ug/L	98
68)	Chlorobenzene	14.29	112	1705646	100.3046 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	704959	102.4557 ug/L	100
70)	Ethylbenzene	14.31	106	883839	101.3614 ug/L	99
71)	m-,p-Xylene	14.39	106	2123651	200.3333 ug/L	98
72)	o-Xylene	14.92	106	1053682	102.1356 ug/L	100
73)	Styrene	14.95	104	1807222	106.0282 ug/L	99
74)	Bromoform	15.43	173	412378	108.3755 ug/L	100
75)	Isopropylbenzene	15.31	105	2813193	103.1127 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	454052	105.7501 ug/L	99
79)	1,2,3-Trichloropropane	15.70	110	156532	96.8210 ug/L	100
80)	trans-1,4-Dichloro-2-Buten	15.74	53	203327	97.5343 ug/L	96
81)	n-Propylbenzene	15.79	91	3285915	102.9061 ug/L	99
82)	Bromobenzene	15.92	156	828973	98.9359 ug/L	99
83)	1,3,5-Trimethylbenzene	15.96	105	2483230	101.9102 ug/L	100
84)	2-Chlorotoluene	16.05	91	2208423	98.7437 ug/L	100
85)	4-Chlorotoluene	16.09	91	2020827	100.8710 ug/L	100
86)	a-Methylstyrene	16.34	118	1361545	105.9190 ug/L	99
87)	tert-Butylbenzene	16.40	134	532522	103.1540 ug/L	98
88)	1,2,4-Trimethylbenzene	16.44	105	2546912	102.6457 ug/L	100
89)	sec-Butylbenzene	16.65	105	3003570	102.6569 ug/L	99
90)	p-Isopropyltoluene	16.79	119	2763313	102.8241 ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	1600684	98.9134 ug/L	100
92)	1,4-Dichlorobenzene	17.10	146	1605475	97.8762 ug/L	100
93)	n-Butylbenzene	17.28	91	2452438	103.5609 ug/L	100
94)	1,2-Dichlorobenzene	17.57	146	1481276	100.4827 ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	95062	97.5959 ug/L	99
96)	1,2,4-Trichlorobenzene	19.55	180	1100416	102.0133 ug/L	100
97)	Hexachlorobutadiene	19.69	225	486893	102.4572 ug/L	100
98)	Naphthalene	19.90	128	2071229	103.4477 ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	980181	99.0092 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11844.D 8260WT.M Sat May 14 18:50:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

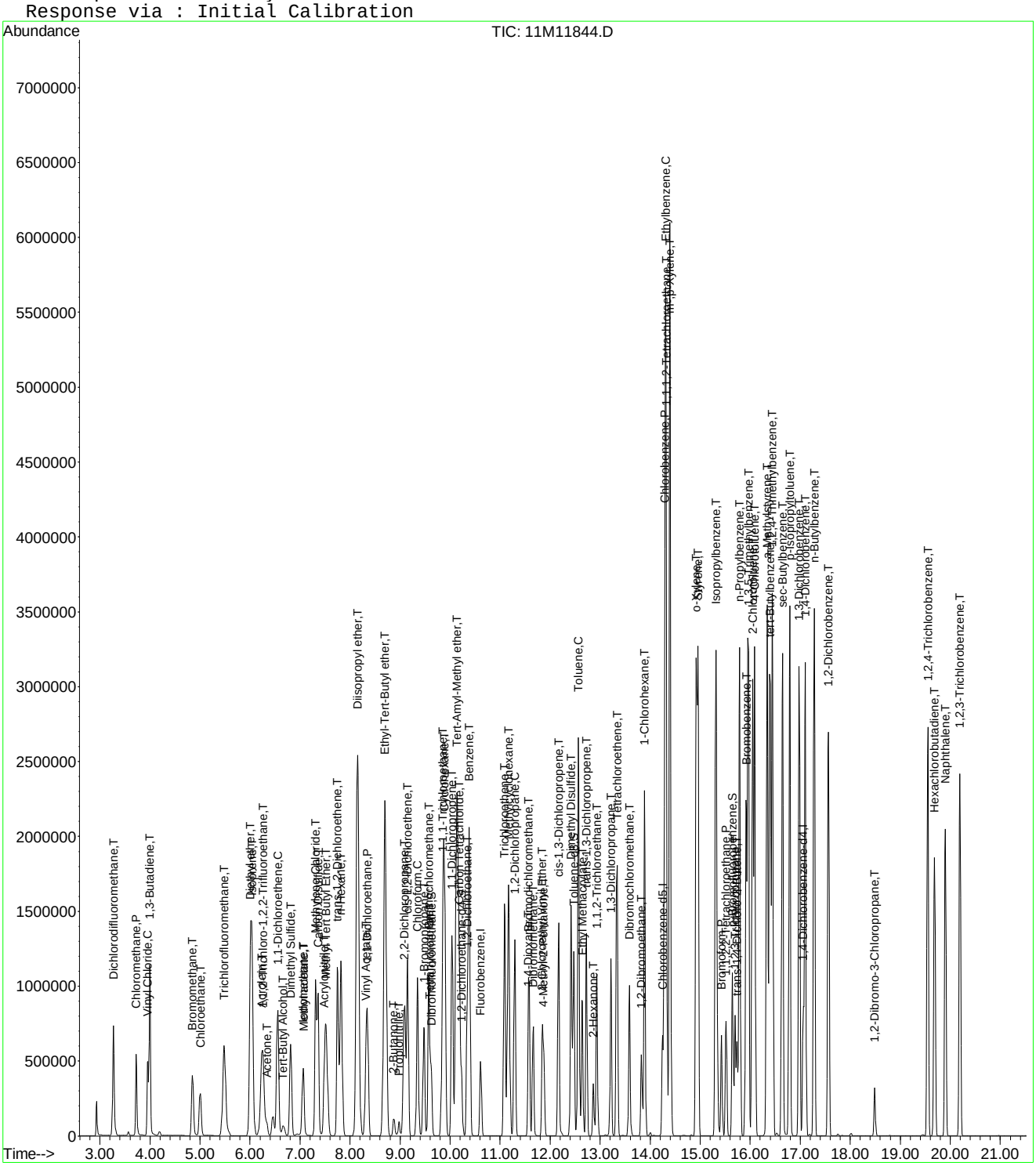

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	552905	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	473364	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	274188	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	629894	104.0960 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 416.40%#		
43) 1,2-Dichloroethane-d4	10.23	65	684792	99.2511 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 397.00%#		
57) Toluene-d8	12.47	98	2068111	100.5516 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 402.20%#		
78) p-Bromofluorobenzene	15.64	95	864999	102.3411 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 409.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	1843265	212.7741 ug/L	99
3) Chloromethane	3.72	50	1346993	194.1434 ug/L	100
4) Vinyl Chloride	3.95	62	1199147	208.1209 ug/L	100
5) 1,3-Butadiene	3.99	54	1131910	197.5677 ug/L	97
6) Bromomethane	4.85	94	859963	217.0771 ug/L	100
7) Chloroethane	5.00	64	764060	206.3883 ug/L	100
8) Trichlorofluoromethane	5.48	101	2275404	198.1327 ug/L	100
9) Diethyl ether	6.03	59	2592	0.6103 ug/L #	21
10) Isoprene	6.04	67	1435794	202.8369 ug/L	97
11) Acrolein	6.25	56	3061	6.8231 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1123889	201.6837 ug/L	99
13) Acetone	6.34	43	254053	193.5049 ug/L	96
14) 1,1-Dichloroethene	6.56	61	2040432	201.5858 ug/L	99
15) Tert-Butyl Alcohol	6.67	59	7729	21.2829 ug/L #	82
16) Dimethyl Sulfide	6.81	62	830179	205.3739 ug/L	99
17) Iodomethane	7.06	142	969857	206.1133 ug/L	99
18) Methyl acetate	7.07	43	749575	196.5068 ug/L	97
19) Methylene Chloride	7.31	84	1035656	197.7029 ug/L	97
20) Carbon Disulfide	7.36	76	3459748	204.1704 ug/L	99
21) Acrylonitrile	7.52	53	35662	20.2589 ug/L #	39
22) Methyl Tert Butyl Ether	7.52	73	2706665	207.1616 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1121963	200.2808 ug/L	99
24) n-Hexane	7.82	57	1873652	200.8128 ug/L	99
25) Diisopropyl ether	8.16	45	16567	0.7116 ug/L #	87
26) Vinyl Acetate	8.31	43	1904053	202.8645 ug/L	100
27) 1,1-Dichloroethane	8.34	63	2261904	201.2314 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	9063	0.4783 ug/L	90
29) 2-Butanone	8.87	43	407543	205.3288 ug/L	99
30) Propionitrile	8.97	54	4182	7.1938 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	1850091	210.3692 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	1257477	203.5843 ug/L	100
33) Chloroform	9.35	83	2160999	195.7739 ug/L	100
34) 1-Bromopropane	9.48	122	222798	201.1267 ug/L	98
35) Bromochloromethane	9.57	130	798076	217.5612 ug/L	99
36) Tetrahydrofuran	9.60	42	9110	6.4998 ug/L	97
38) 1,1,1-Trichloroethane	9.85	97	2208198	203.2875 ug/L	99
39) Cyclohexane	9.88	56	2467804	208.4625 ug/L	100
40) 1,1-Dichloropropene	10.04	75	1587009	204.6205 ug/L	99
41) Carbon Tetrachloride	10.18	117	2174730	205.0269 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	6538	0.4965 ug/L #	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	1808450	201.7209 ug/L		99
45)	Benzene	10.38	78	4119227	194.0096 ug/L		99
46)	Trichloroethene	11.09	130	1367103	198.0963 ug/L		100
47)	Methylcyclohexane	11.17	83	1789256	210.0812 ug/L		99
48)	1,2-Dichloropropane	11.29	63	1196100	203.5109 ug/L		99
49)	1,4-Dioxane	11.57	88	2656	94.1370 ug/L	#	31
50)	Bromodichloromethane	11.58	83	1721733	208.6734 ug/L		99
51)	Dibromomethane	11.66	93	641583	209.4825 ug/L		100
52)	2-Chloroethyl Vinyl Ether	11.84	63	608231	209.9748 ug/L		99
53)	4-Methyl-2-Pentanone	11.87	58	342251	209.4831 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	1772737	214.8108 ug/L		100
55)	Dimethyl Disulfide	12.42	79	1052498	211.9395 ug/L		98
58)	Toluene	12.56	91	4699240	196.0993 ug/L		98
59)	Ethyl Methacrylate	12.65	69	1101451	215.2567 ug/L		97
60)	trans-1,3-Dichloropropene	12.73	75	1627488	211.5866 ug/L		99
61)	1,1,2-Trichloroethane	12.93	97	860113	202.4133 ug/L		99
62)	2-Hexanone	12.86	43	651287	208.6888 ug/L		99
63)	1,3-Dichloropropane	13.21	76	1412360	206.9756 ug/L		99
64)	Tetrachloroethene	13.34	164	1133410	203.3874 ug/L		99
65)	Dibromochloromethane	13.59	129	1409248	217.4313 ug/L		99
66)	1,2-Dibromoethane	13.82	107	889951	209.0389 ug/L		99
67)	1-Chlorohexane	13.89	91	1659272	210.0173 ug/L		97
68)	Chlorobenzene	14.29	112	3416597	194.6214 ug/L		98
69)	1,1,1,2-Tetrachloroethane	14.32	131	1457008	205.1158 ug/L		100
70)	Ethylbenzene	14.31	106	1814385	201.5551 ug/L		91
71)	m-,p-Xylene	14.39	106	4230307	386.5510 ug/L		85
72)	o-Xylene	14.92	106	2156790	202.5071 ug/L		96
73)	Styrene	14.96	104	3630570	206.3240 ug/L		98
74)	Bromoform	15.43	173	854308	217.4778 ug/L		100
75)	Isopropylbenzene	15.31	105	5485636	194.7621 ug/L		97
77)	1,1,2,2-Tetrachloroethane	15.52	83	939708	220.0830 ug/L		98
79)	1,2,3-Trichloropropane	15.70	110	325518	202.0716 ug/L		99
80)	trans-1,4-Dichloro-2-Buten	15.74	53	421012	202.2796 ug/L		97
81)	n-Propylbenzene	15.79	91	6220435	195.8952 ug/L		95
82)	Bromobenzene	15.92	156	1685980	202.3412 ug/L		99
83)	1,3,5-Trimethylbenzene	15.96	105	4875063	201.1866 ug/L		97
84)	2-Chlorotoluene	16.05	91	4287026	192.7532 ug/L		98
85)	4-Chlorotoluene	16.09	91	4030756	202.3214 ug/L		98
86)	a-Methylstyrene	16.34	118	2724122	213.1015 ug/L		98
87)	tert-Butylbenzene	16.40	134	1075661	209.5280 ug/L		96
88)	1,2,4-Trimethylbenzene	16.44	105	4921395	199.4496 ug/L		97
89)	sec-Butylbenzene	16.65	105	5740919	197.3104 ug/L		97
90)	p-Isopropyltoluene	16.79	119	5274037	197.3451 ug/L		95
91)	1,3-Dichlorobenzene	16.98	146	3171808	197.0945 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	3145357	192.8244 ug/L		99
93)	n-Butylbenzene	17.28	91	4684496	198.9203 ug/L		97
94)	1,2-Dichlorobenzene	17.57	146	2909224	198.4498 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	191088	196.6217 ug/L		99
96)	1,2,4-Trichlorobenzene	19.55	180	2198003	204.9021 ug/L		99
97)	Hexachlorobutadiene	19.69	225	969160	205.0797 ug/L		99
98)	Naphthalene	19.90	128	3994903	200.6399 ug/L		98
99)	1,2,3-Trichlorobenzene	20.19	180	1999949	203.1452 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M11845.D 8260WT.M Sat May 14 18:51:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

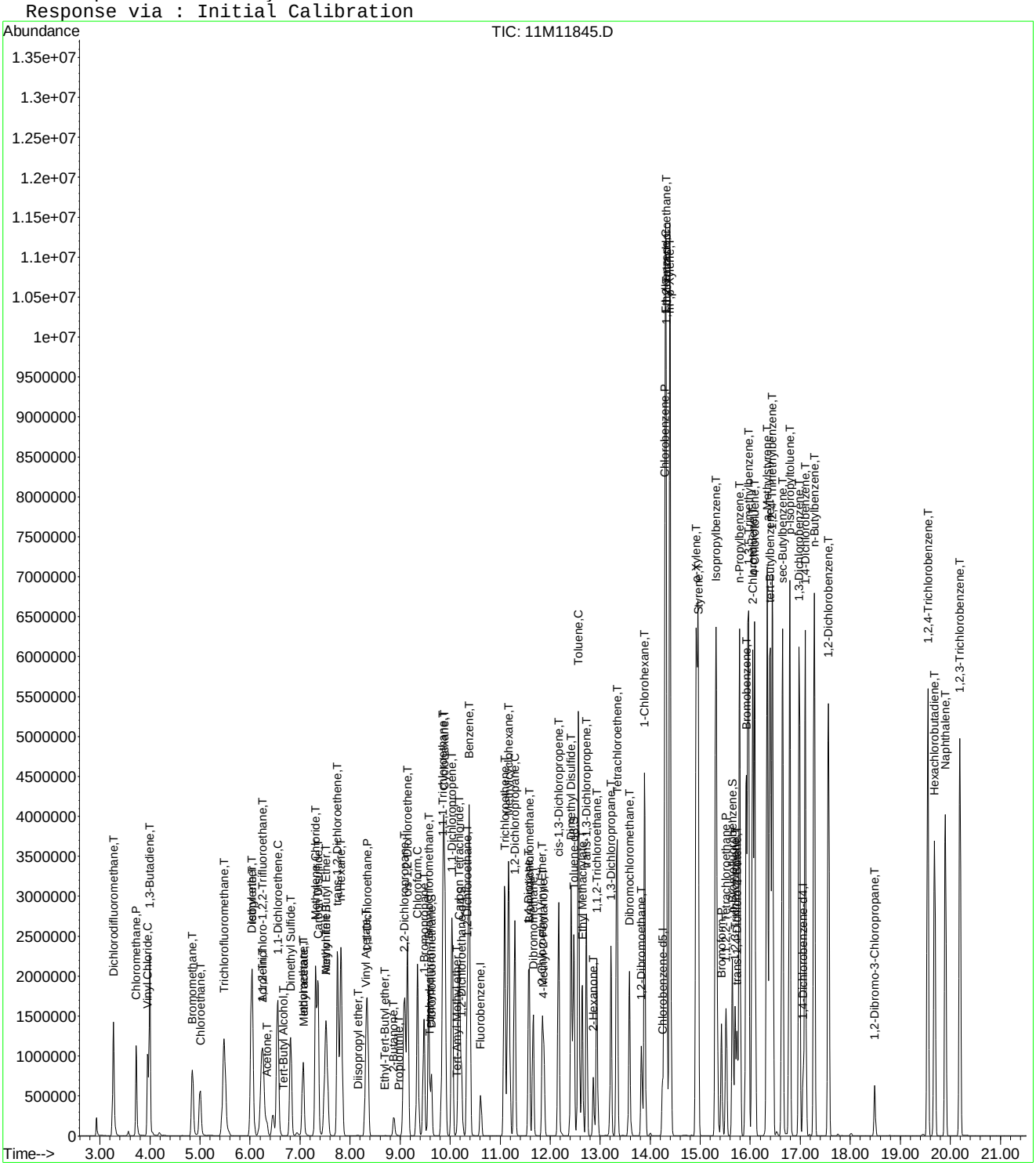

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	543599	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	479542	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	277309	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	905755	152.2472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 609.00%#		
43) 1,2-Dichloroethane-d4	10.23	65	970758	143.1066 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 572.44%#		
57) Toluene-d8	12.47	98	3002456	144.0987 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 576.40%#		
78) p-Bromofluorobenzene	15.64	95	1285822	150.4179 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 601.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2762707	324.3678 ug/L	99
3) Chloromethane	3.72	50	2113477	309.8323 ug/L	100
4) Vinyl Chloride	3.95	62	1802126	318.1269 ug/L	100
5) 1,3-Butadiene	3.99	54	1562377	277.3715 ug/L	98
6) Bromomethane	4.85	94	1341865	344.5204 ug/L	100
7) Chloroethane	5.00	64	1181546	324.6236 ug/L	100
8) Trichlorofluoromethane	5.48	101	3351045	296.7904 ug/L	99
9) Diethyl ether	6.01	59	1250668	299.5049 ug/L	97
10) Isoprene	6.04	67	2121830	304.8859 ug/L	97
11) Acrolein	6.23	56	87016	155.2272 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1679276	306.5076 ug/L	99
13) Acetone	6.34	43	352141	272.8074 ug/L	95
14) 1,1-Dichloroethene	6.56	61	3009080	302.3733 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	227782	637.9680 ug/L	97
16) Dimethyl Sulfide	6.81	62	1199487	301.8151 ug/L	96
17) Iodomethane	7.06	142	1359092	295.3515 ug/L	96
18) Methyl acetate	7.07	43	1093862	303.3719 ug/L	97
19) Methylene Chloride	7.31	84	1550974	301.1438 ug/L	91
20) Carbon Disulfide	7.36	76	5025219	301.6304 ug/L	99
21) Acrylonitrile	7.49	53	292311	168.8994 ug/L	94
22) Methyl Tert Butyl Ether	7.52	73	3880019	302.0512 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1693308	307.4459 ug/L	98
24) n-Hexane	7.82	57	2752540	300.0599 ug/L	99
25) Diisopropyl ether	8.15	45	6621718	289.2841 ug/L	99
26) Vinyl Acetate	8.31	43	2814279	303.7518 ug/L	99
27) 1,1-Dichloroethane	8.34	63	3313473	299.8312 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	5508427	295.6672 ug/L	99
29) 2-Butanone	8.87	43	590742	302.7235 ug/L	97
30) Propionitrile	8.99	54	177454	310.4771 ug/L	98
31) 2,2-Dichloropropane	9.09	77	2735421	316.3626 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	1856543	305.7181 ug/L	98
33) Chloroform	9.35	83	3144758	289.7739 ug/L	100
34) 1-Bromopropane	9.48	122	329211	301.9597 ug/L	98
35) Bromochloromethane	9.57	130	1179409	327.0194 ug/L	97
36) Tetrahydrofuran	9.60	42	386389	280.3985 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3227247	302.1877 ug/L	99
39) Cyclohexane	9.88	56	3625895	311.5332 ug/L	99
40) 1,1-Dichloropropene	10.04	75	2360605	309.5743 ug/L	100
41) Carbon Tetrachloride	10.18	117	3172921	304.2542 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	3912691	302.2388 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	2551762	289.5052 ug/L		98
45)	Benzene	10.38	78	5961793	285.5987 ug/L		97
46)	Trichloroethene	11.09	130	2025948	298.5901 ug/L		99
47)	Methylcyclohexane	11.17	83	2657028	317.3092 ug/L		98
48)	1,2-Dichloropropane	11.29	63	1781372	308.2809 ug/L		96
49)	1,4-Dioxane	11.56	88	21540	607.7372 ug/L		100
50)	Bromodichloromethane	11.57	83	2511276	309.5762 ug/L		100
51)	Dibromomethane	11.65	93	939605	312.0413 ug/L		99
52)	2-Chloroethyl Vinyl Ether	11.84	63	879534	308.8327 ug/L		100
53)	4-Methyl-2-Pentanone	11.87	58	505191	314.5081 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	2604960	321.0589 ug/L		99
55)	Dimethyl Disulfide	12.42	79	1529785	313.3234 ug/L		99
58)	Toluene	12.56	91	6613670	272.4329 ug/L		95
59)	Ethyl Methacrylate	12.65	69	1618015	312.1351 ug/L		94
60)	trans-1,3-Dichloropropene	12.73	75	2369133	304.0383 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	1271039	295.2644 ug/L		98
62)	2-Hexanone	12.86	43	950079	300.5074 ug/L		97
63)	1,3-Dichloropropane	13.21	76	2062188	298.3119 ug/L		97
64)	Tetrachloroethene	13.34	164	1691190	299.5697 ug/L		98
65)	Dibromochloromethane	13.59	129	2065480	314.5750 ug/L		100
66)	1,2-Dibromoethane	13.82	107	1334668	309.4588 ug/L		99
67)	1-Chlorohexane	13.89	91	2483371	310.2757 ug/L		95
68)	Chlorobenzene	14.29	112	4911463	276.1698 ug/L		96
69)	1,1,1,2-Tetrachloroethane	14.32	131	2161701	300.4009 ug/L		100
70)	Ethylbenzene	14.31	106	2715675	297.7904 ug/L		79
71)	m-,p-Xylene	14.39	106	6004062	541.5626 ug/L		73
72)	o-Xylene	14.92	106	3202500	296.8179 ug/L		90
73)	Styrene	14.96	104	5278134	296.0902 ug/L		96
74)	Bromoform	15.43	173	1313245	330.0007 ug/L		100
75)	Isopropylbenzene	15.31	105	7610374	266.7178 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	1470787	340.5868 ug/L		97
79)	1,2,3-Trichloropropane	15.70	110	494041	303.0514 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	640812	304.0444 ug/L		94
81)	n-Propylbenzene	15.79	91	8405785	261.7374 ug/L		88
82)	Bromobenzene	15.92	156	2530711	300.3025 ug/L		98
83)	1,3,5-Trimethylbenzene	15.96	105	6851753	279.5793 ug/L		93
84)	2-Chlorotoluene	16.05	91	6055423	269.1996 ug/L		95
85)	4-Chlorotoluene	16.09	91	5712933	283.5299 ug/L		94
86)	a-Methylstyrene	16.34	118	4020347	310.9625 ug/L		96
87)	tert-Butylbenzene	16.40	134	1654009	318.5583 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	6879061	275.6504 ug/L		91
89)	sec-Butylbenzene	16.65	105	7999374	271.8373 ug/L		92
90)	p-Isopropyltoluene	16.79	119	7406083	274.0036 ug/L		90
91)	1,3-Dichlorobenzene	16.98	146	4679194	287.4903 ug/L		97
92)	1,4-Dichlorobenzene	17.10	146	4642399	281.3967 ug/L		96
93)	n-Butylbenzene	17.28	91	6723928	282.3084 ug/L		93
94)	1,2-Dichlorobenzene	17.57	146	4360022	294.0672 ug/L		96
95)	1,2-Dibromo-3-Chloropropan	18.49	75	302346	307.2381 ug/L		100
96)	1,2,4-Trichlorobenzene	19.55	180	3482946	321.0328 ug/L		97
97)	Hexachlorobutadiene	19.69	225	1629665	340.9652 ug/L		98
98)	Naphthalene	19.90	128	5970381	296.4815 ug/L	#	96
99)	1,2,3-Trichlorobenzene	20.19	180	3137470	315.1025 ug/L		98

(#) = qualifier out of range (m) = manual integration
11M11846.D 8260WT.M Sat May 14 18:51:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

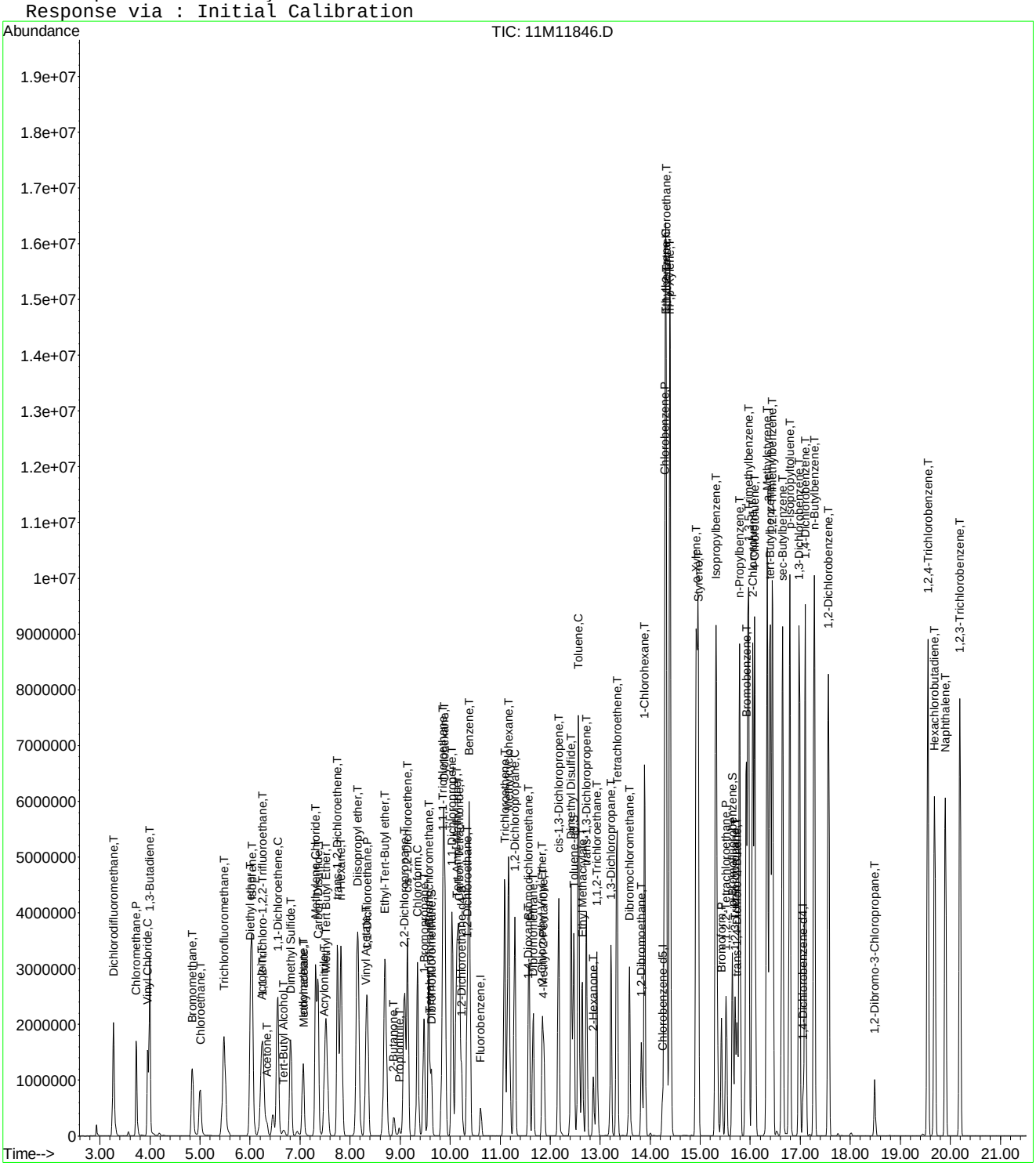

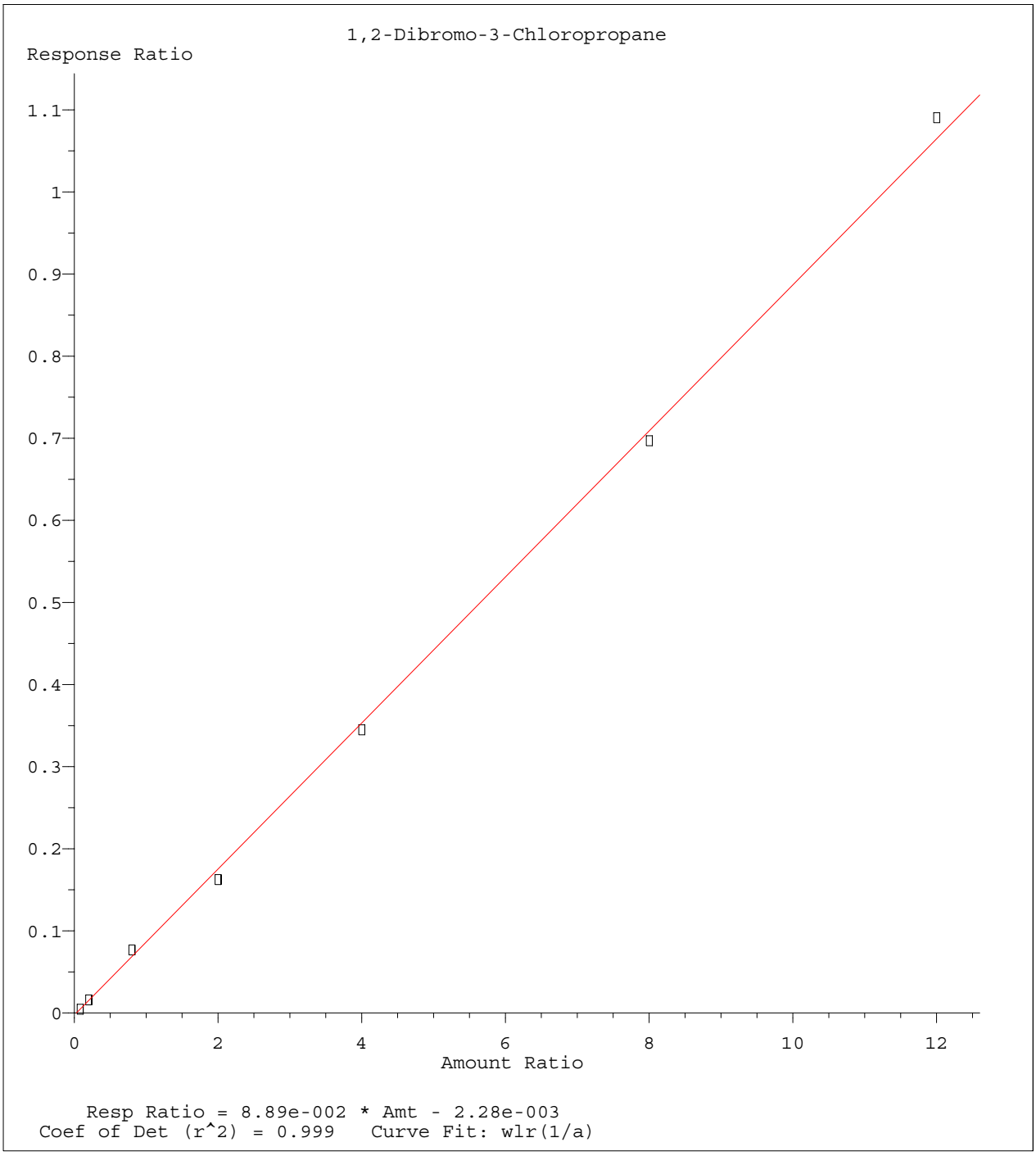

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

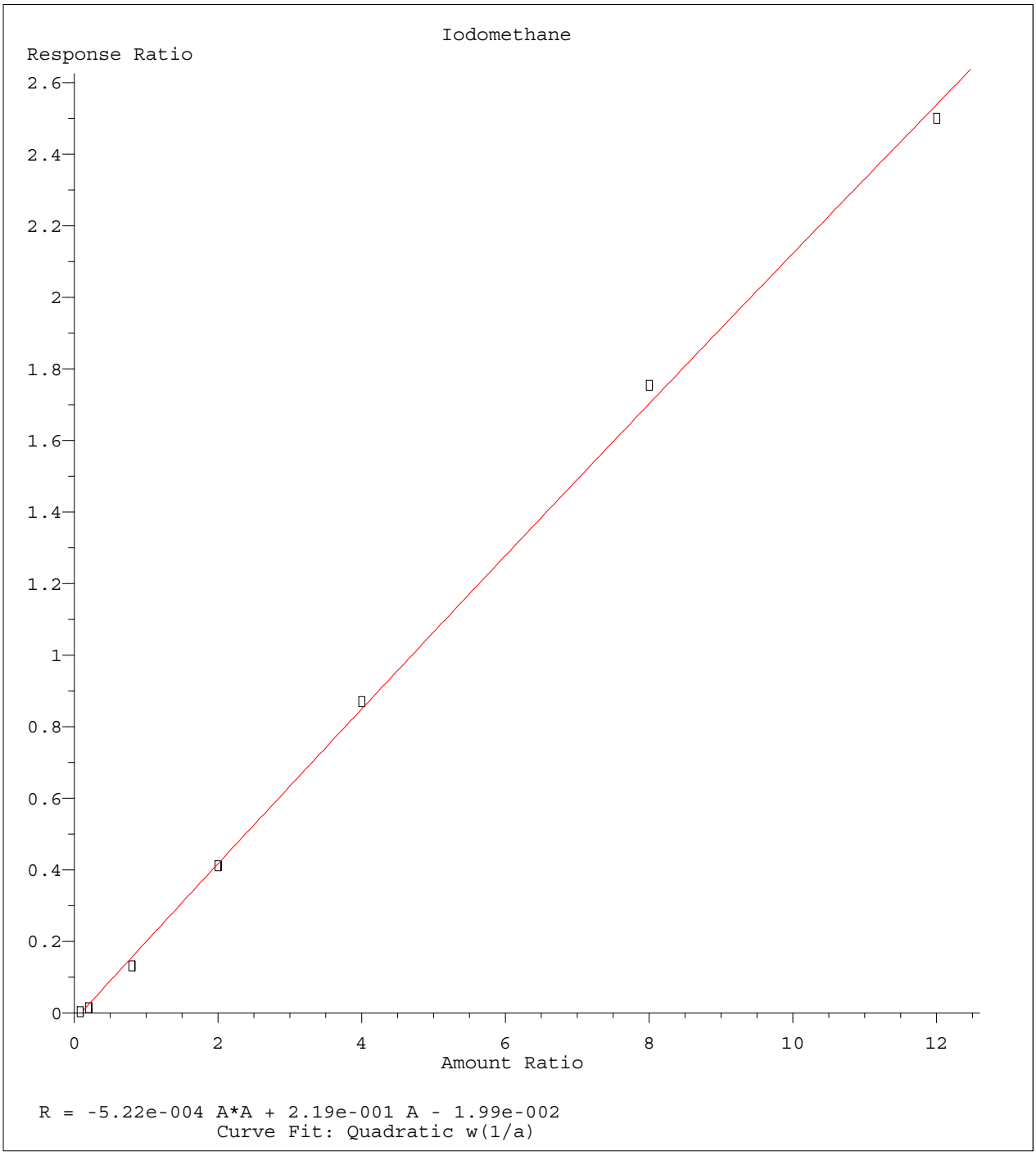

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

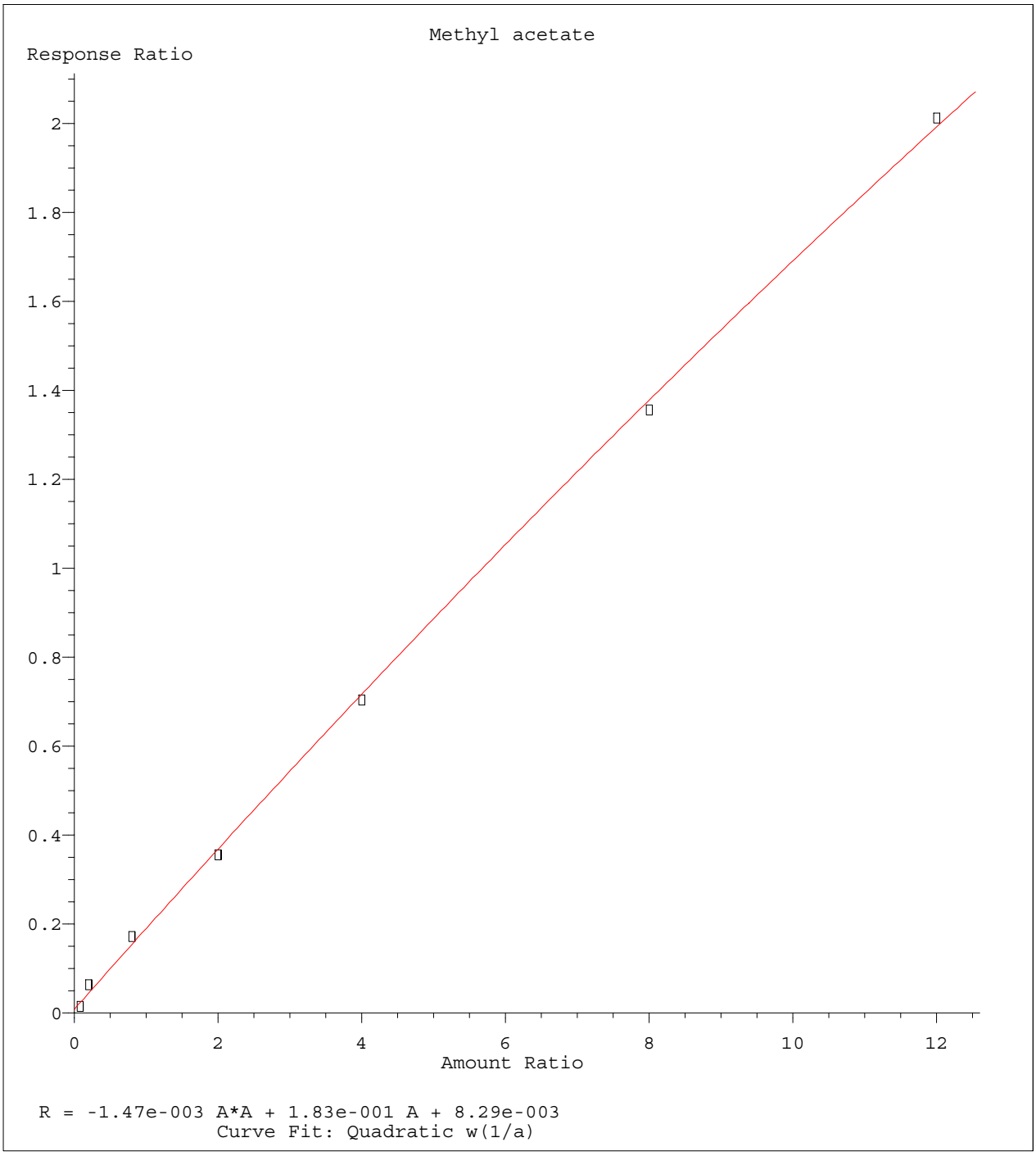

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

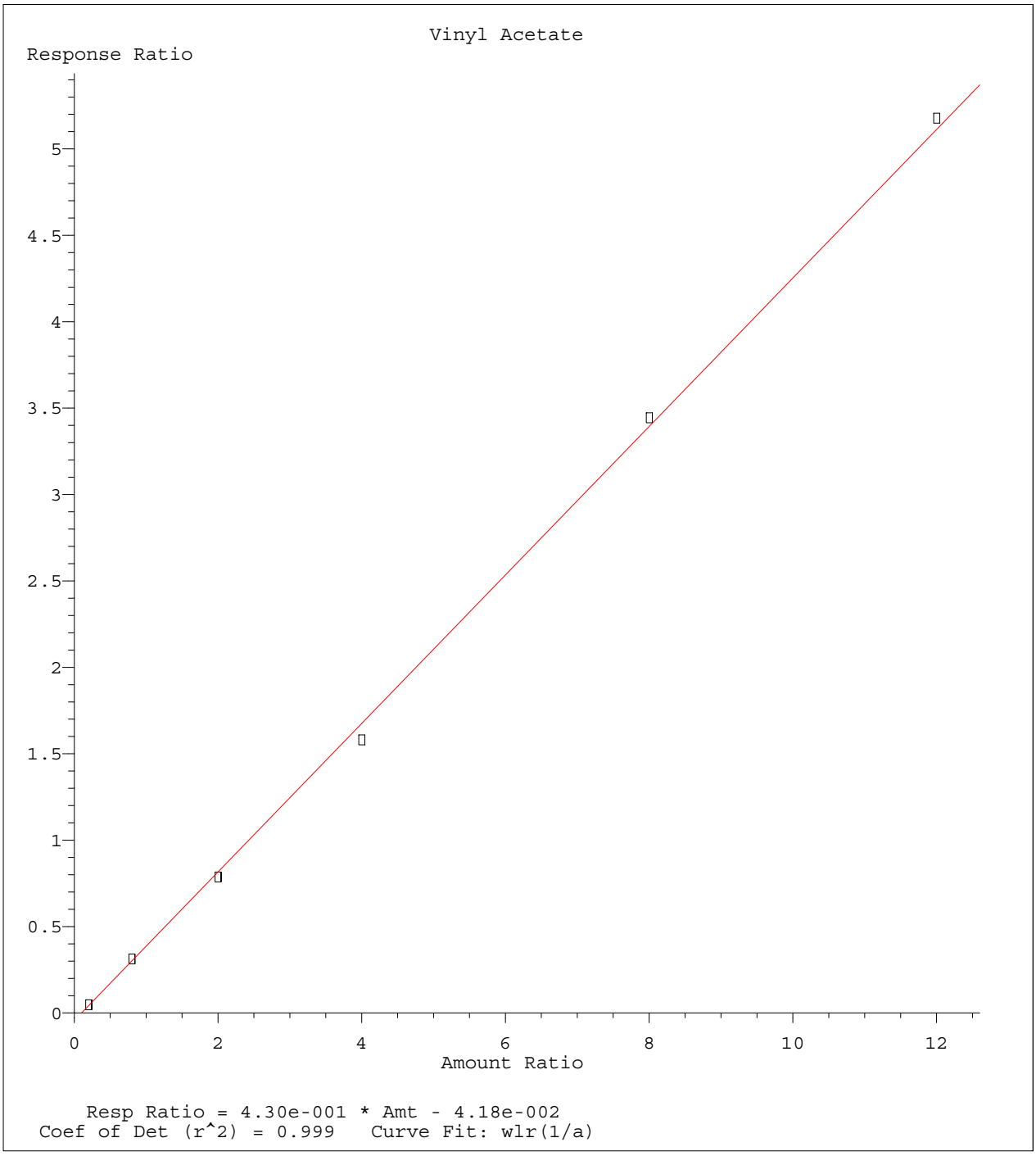

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

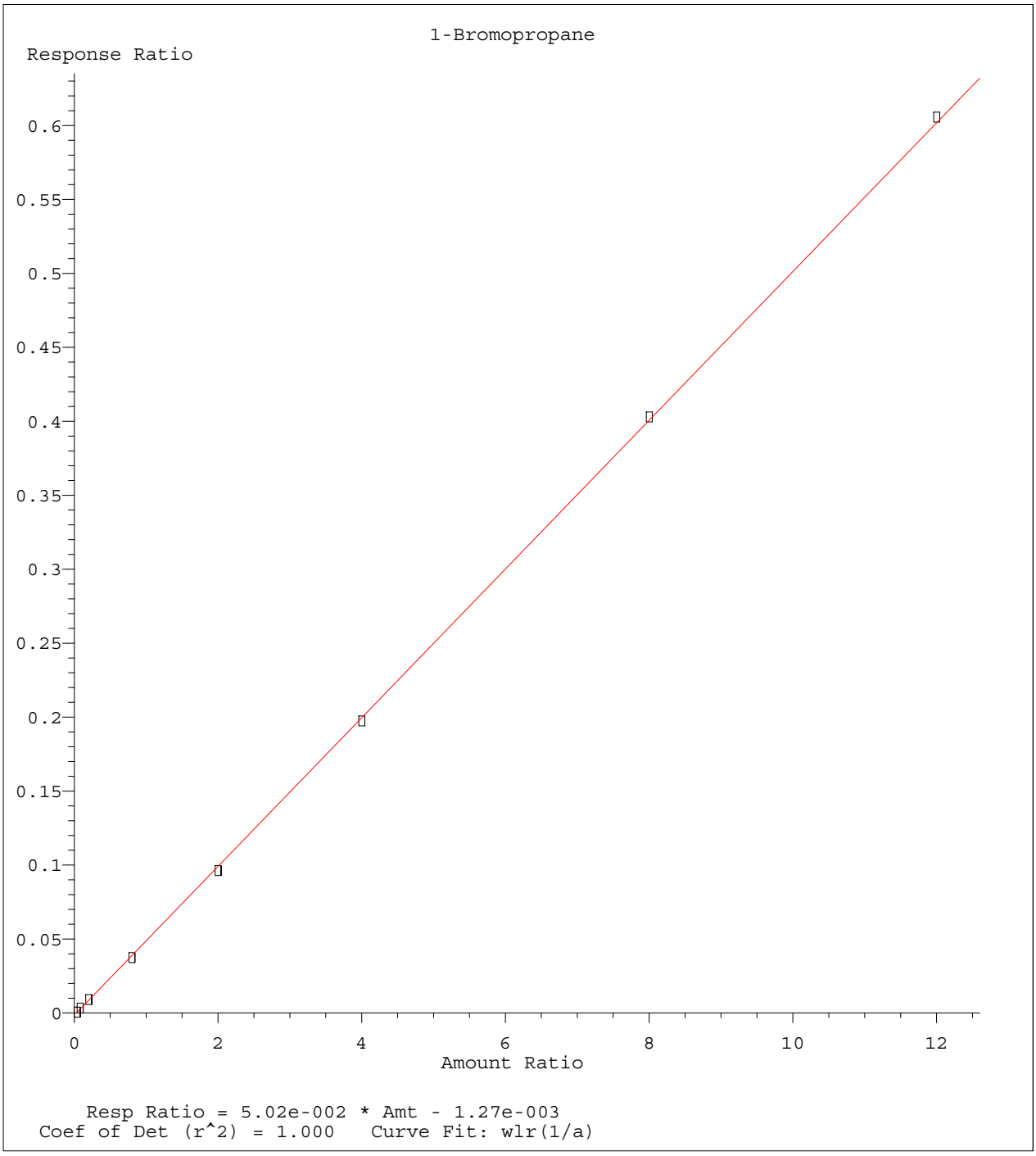

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

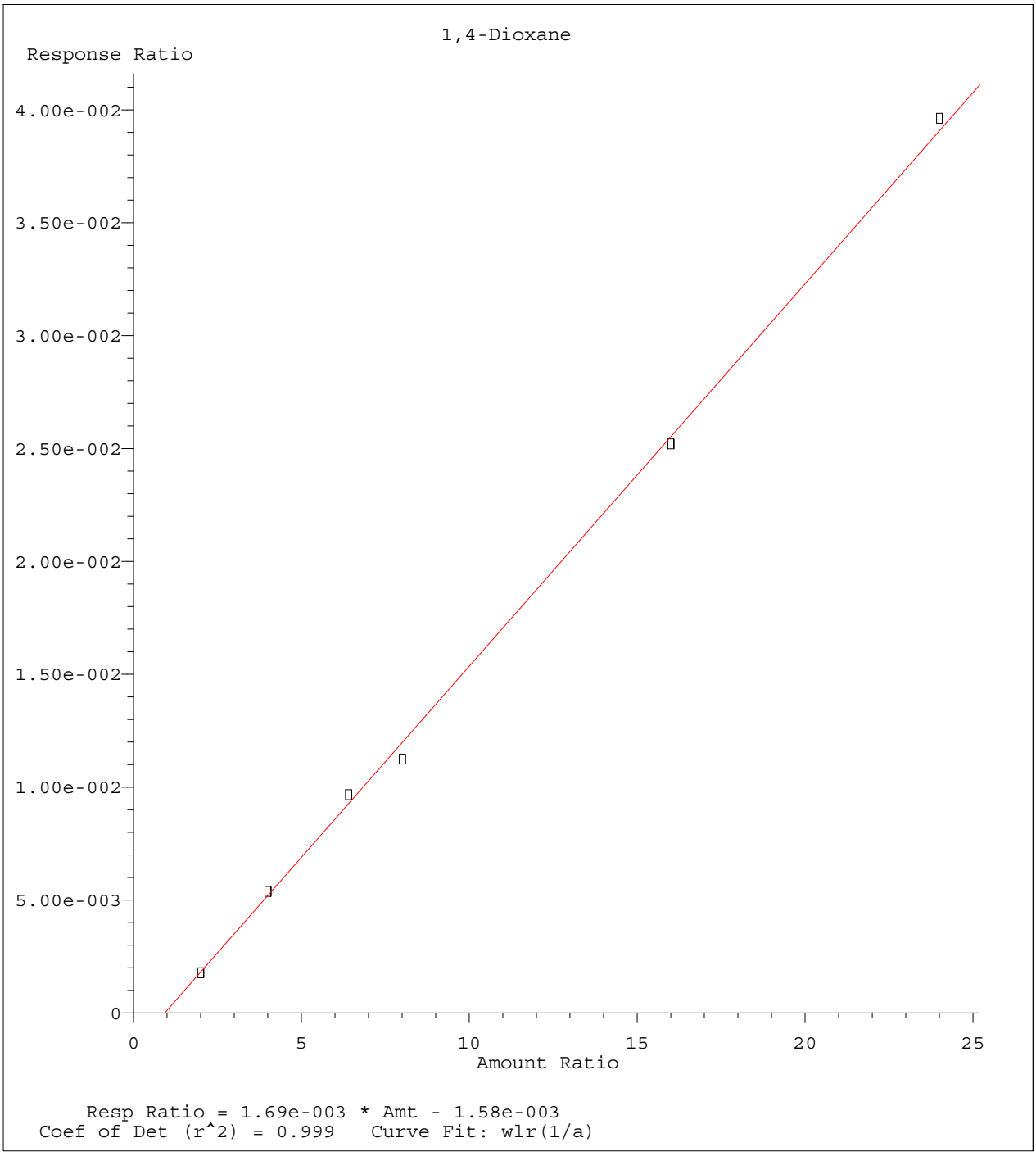

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

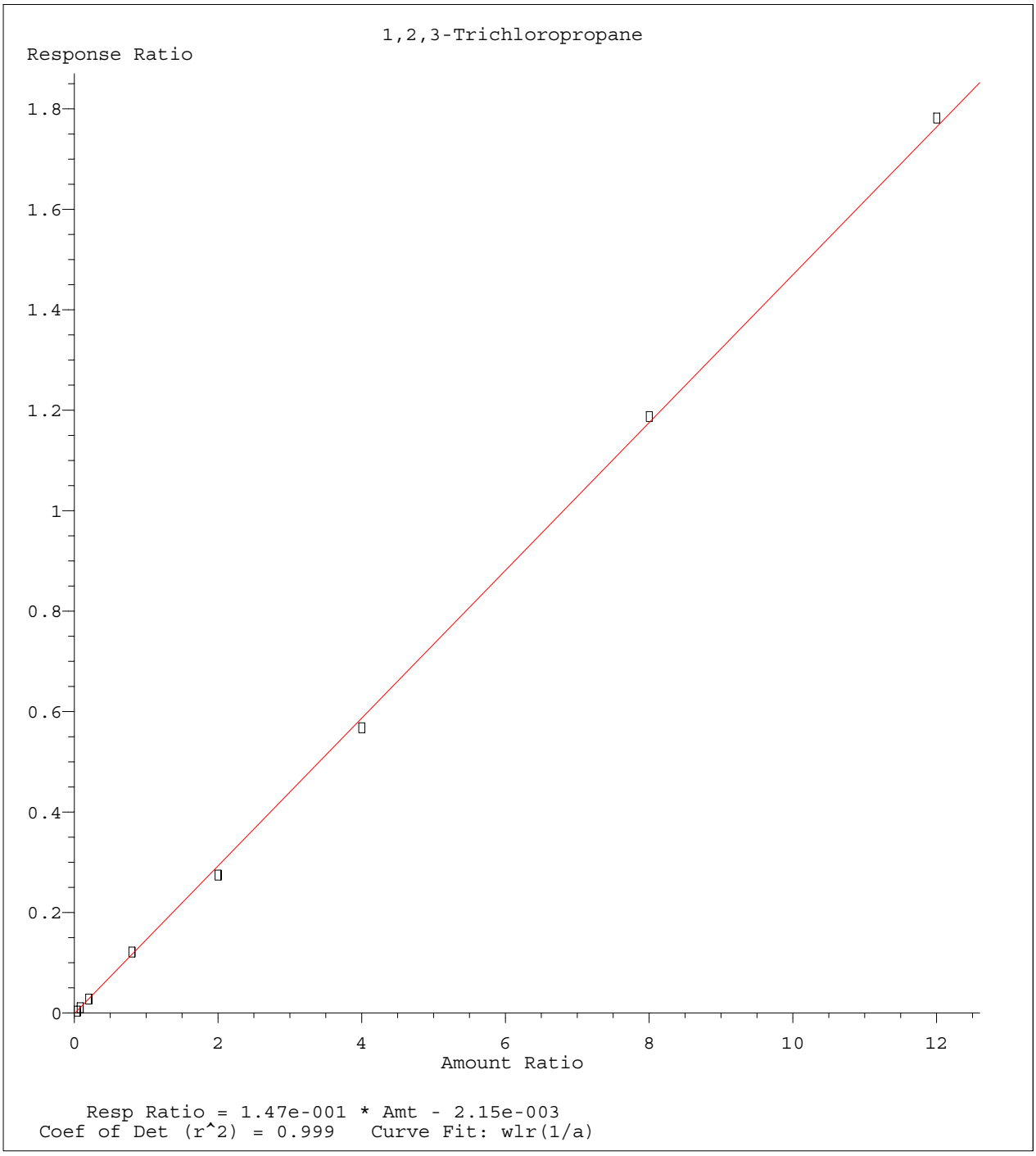

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

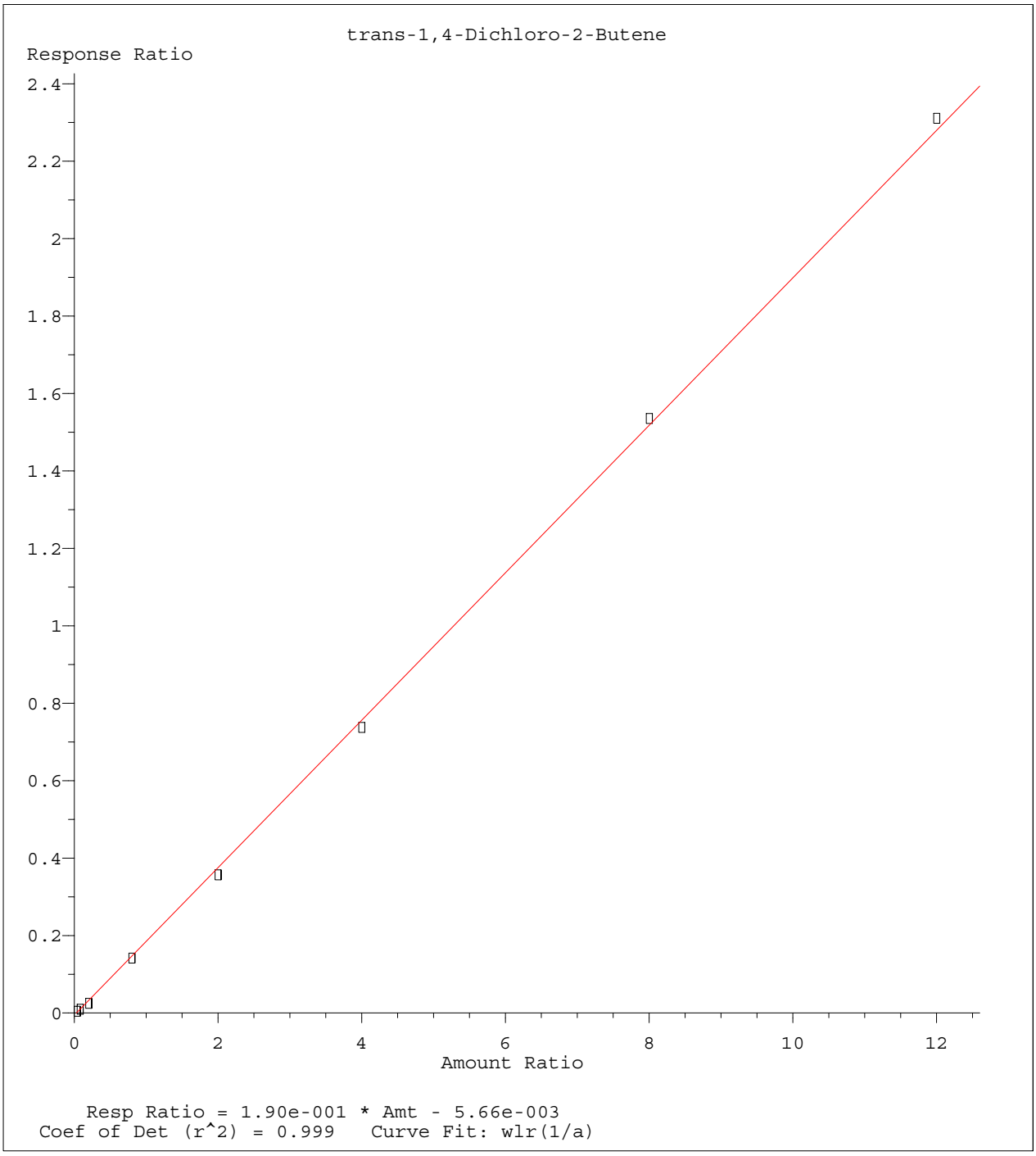

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

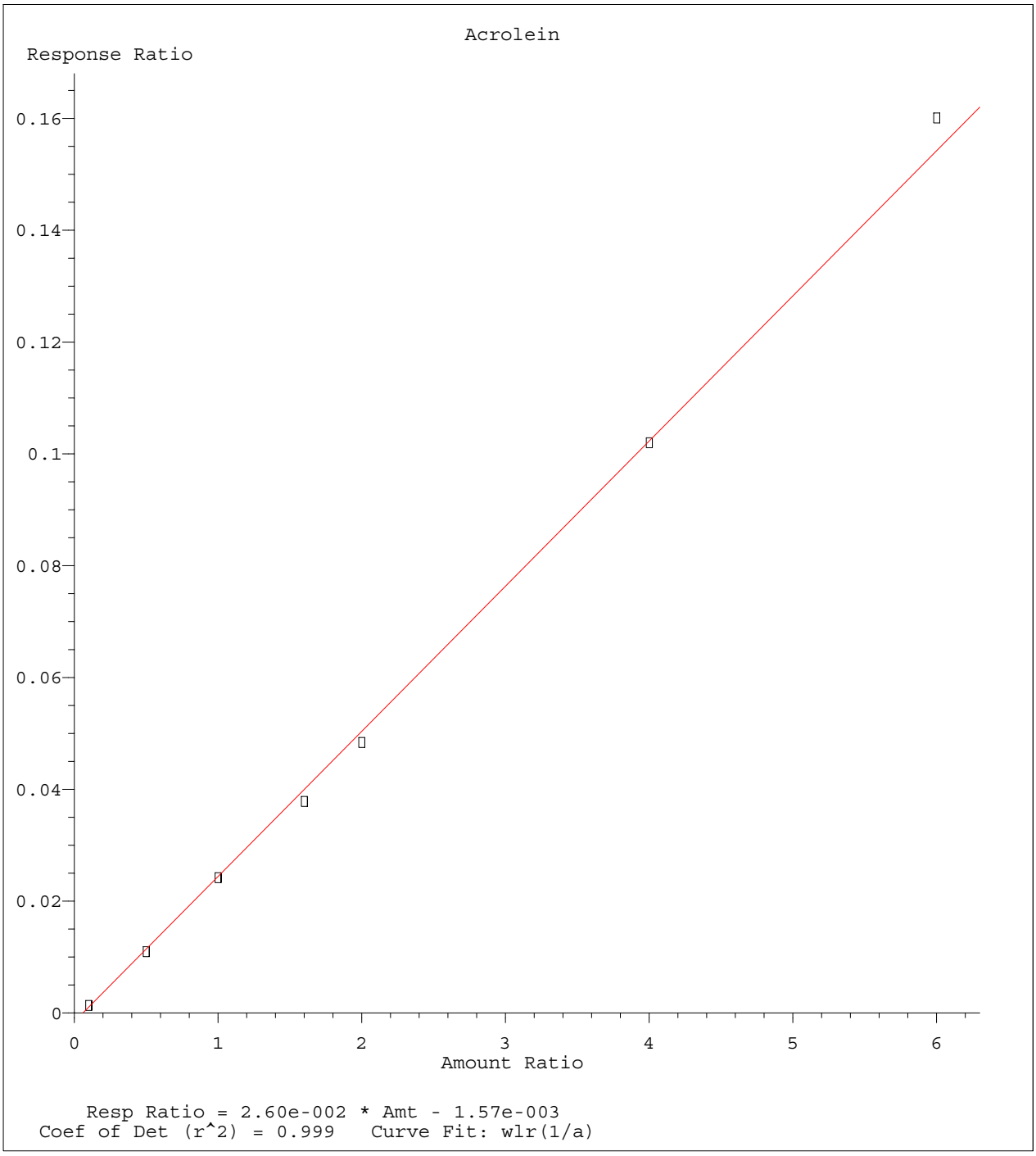

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	559172	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	461765	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	267551	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	155853	25.4675 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.88%		
43) 1,2-Dichloroethane-d4	10.23	65	160000	22.9299 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.72%		
57) Toluene-d8	12.47	98	531547	26.4930 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.96%		
78) p-Bromofluorobenzene	15.64	95	203747	24.7040 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	495777	56.5878 ug/L	98
3) Chloromethane	3.72	50	386673	55.1069 ug/L	100
4) Vinyl Chloride	3.95	62	326996	56.1165 ug/L	100
5) 1,3-Butadiene	3.99	54	212443	36.6650 ug/L	98
6) Bromomethane	4.84	94	202280	50.4885 ug/L	99
7) Chloroethane	5.00	64	220373	58.8601 ug/L	99
8) Trichlorofluoromethane	5.48	101	552017	47.5286 ug/L	99
9) Diethyl ether	6.01	59	453011	105.4639 ug/L	97
10) Isoprene	6.04	67	388108	54.2141 ug/L	93
11) Acrolein	6.23	56	56029	97.7296 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	292836	51.9609 ug/L	99
13) Acetone	6.35	43	65954	49.6723 ug/L	97
14) 1,1-Dichloroethene	6.55	61	486567	47.5319 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	79387	216.1534 ug/L	96
16) Dimethyl Sulfide	6.81	62	290204	70.9875 ug/L	94
17) Iodomethane	7.06	142	176766	38.4128 ug/L	92
18) Methyl acetate	7.07	43	200985	48.7416 ug/L	98
19) Methylene Chloride	7.31	84	275442	51.9916 ug/L	91
20) Carbon Disulfide	7.35	76	765803	44.6859 ug/L	99
21) Acrylonitrile	7.49	53	93674	52.6181 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	687029	51.9942 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	295337	52.1295 ug/L	97
24) n-Hexane	7.82	57	420811	44.5959 ug/L	99
25) Diisopropyl ether	8.15	45	2449232	104.0201 ug/L	98
26) Vinyl Acetate	8.31	43	395913	43.6417 ug/L	99
27) 1,1-Dichloroethane	8.34	63	551372	48.5033 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1884917	98.3560 ug/L	99
29) 2-Butanone	8.87	43	101045	50.3380 ug/L	98
30) Propionitrile	8.99	54	62190	105.7785 ug/L	98
31) 2,2-Dichloropropane	9.09	77	405332	45.5727 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	332086	53.1618 ug/L	94
33) Chloroform	9.35	83	531122	47.5773 ug/L	100
34) 1-Bromopropane	9.48	122	76460	68.6656 ug/L	96
35) Bromochloromethane	9.57	130	199933	53.8923 ug/L	96
36) Tetrahydrofuran	9.60	42	131835	93.0068 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	527857	48.0501 ug/L	99
39) Cyclohexane	9.88	56	601180	50.2142 ug/L	99
40) 1,1-Dichloropropene	10.04	75	393057	50.1107 ug/L	100
41) Carbon Tetrachloride	10.18	117	507914	47.3479 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1406419	105.6143 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M11848.D 8260WT.M Sat May 14 18:47:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	434117	47.8802	ug/L	99
45)	Benzene	10.38	78	1098993	51.1808	ug/L	100
46)	Trichloroethene	11.08	130	365193	52.3242	ug/L	99
47)	Methylcyclohexane	11.17	83	450581	52.3110	ug/L	97
48)	1,2-Dichloropropane	11.29	63	313901	52.8102	ug/L	94
49)	1,4-Dioxane	11.56	88	6366	191.2043	ug/L	95
50)	Bromodichloromethane	11.57	83	413329	49.5339	ug/L	99
51)	Dibromomethane	11.65	93	148822	48.0471	ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	152083	51.9140	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	86849	52.5623	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	480729	57.5993	ug/L	99
55)	Dimethyl Disulfide	12.42	79	261188	52.0055	ug/L	96
58)	Toluene	12.56	91	1256481	53.7500	ug/L	100
59)	Ethyl Methacrylate	12.65	69	284944	57.0854	ug/L	90
60)	trans-1,3-Dichloropropene	12.73	75	391013	52.1118	ug/L	97
61)	1,1,2-Trichloroethane	12.93	97	218717	52.7643	ug/L	99
62)	2-Hexanone	12.86	43	158873	52.1857	ug/L	98
63)	1,3-Dichloropropane	13.21	76	374611	56.2767	ug/L	95
64)	Tetrachloroethene	13.34	164	283714	52.1906	ug/L	97
65)	Dibromochloromethane	13.59	129	332092	52.5252	ug/L	99
66)	1,2-Dibromoethane	13.82	107	218604	52.6373	ug/L	99
67)	1-Chlorohexane	13.89	91	420217	54.5237	ug/L	92
68)	Chlorobenzene	14.29	112	912650	53.2936	ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	353663	51.0389	ug/L	98
70)	Ethylbenzene	14.31	106	460093	52.3943	ug/L	99
71)	m-,p-Xylene	14.39	106	1144896	107.2445	ug/L	98
72)	o-Xylene	14.92	106	568307	54.7003	ug/L	100
73)	Styrene	14.95	104	943635	54.9735	ug/L	98
74)	Bromoform	15.43	173	190959	49.8328	ug/L	99
75)	Isopropylbenzene	15.31	105	1490416	54.2449	ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.52	83	228913	54.9422	ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	78385	50.1407	ug/L	92
80)	trans-1,4-Dichloro-2-Buten	15.74	53	73730	36.9129	ug/L	62
81)	n-Propylbenzene	15.79	91	1753049	56.5769	ug/L	99
82)	Bromobenzene	15.92	156	419932	51.6479	ug/L	99
83)	1,3,5-Trimethylbenzene	15.95	105	1303495	55.1277	ug/L	99
84)	2-Chlorotoluene	16.05	91	1145029	52.7599	ug/L	99
85)	4-Chlorotoluene	16.09	91	1077116	55.4064	ug/L	99
86)	a-Methylstyrene	16.34	118	741671	59.4584	ug/L	99
87)	tert-Butylbenzene	16.40	134	283244	56.5417	ug/L	95
88)	1,2,4-Trimethylbenzene	16.44	105	1296091	53.8297	ug/L	99
89)	sec-Butylbenzene	16.65	105	1586978	55.8961	ug/L	100
90)	p-Isopropyltoluene	16.79	119	1426648	54.7069	ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	827515	52.6969	ug/L	98
92)	1,4-Dichlorobenzene	17.10	146	844174	53.0354	ug/L	98
93)	n-Butylbenzene	17.28	91	1238500	53.8957	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	766416	53.5772	ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	45158	48.1046	ug/L	97
96)	1,2,4-Trichlorobenzene	19.55	180	580278	55.4365	ug/L	99
97)	Hexachlorobutadiene	19.69	225	257859	55.9180	ug/L	98
98)	Naphthalene	19.90	128	993390	51.1296	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	519374	54.0642	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

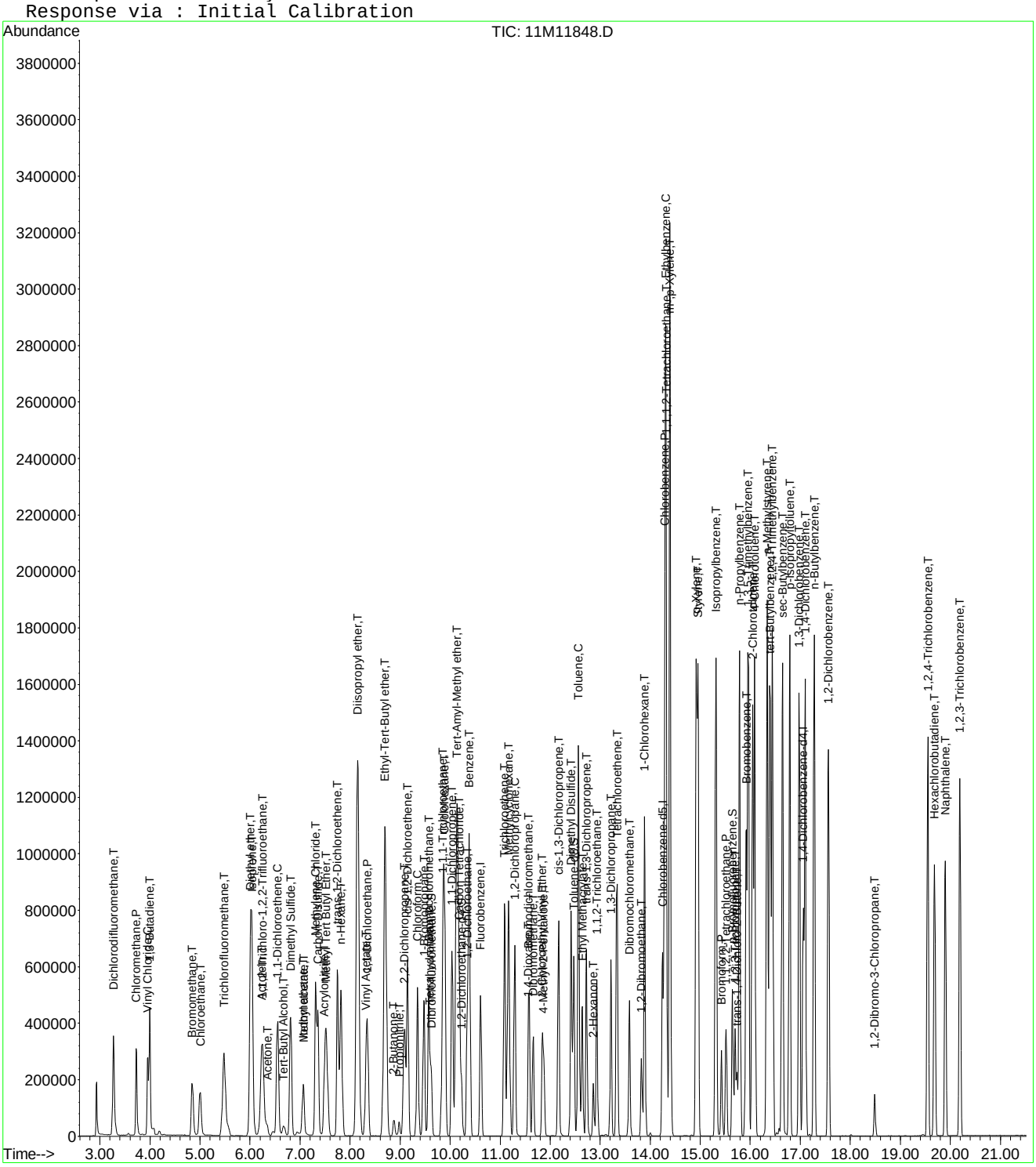

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	56.5878	-13.2	119	0.00
3	P	Chloromethane	50.0000	55.1069	-10.2	134	0.00
4	C	Vinyl Chloride	50.0000	56.1165	-12.2	125	-0.01
5	T	1,3-Butadiene	50.0000	36.6650	26.7#	76	-0.01
6	T	Bromomethane	50.0000	50.4885	-1.0	117	-0.01
7	T	Chloroethane	50.0000	58.8601	-17.7	131	0.00
8	T	Trichlorofluoromethane	50.0000	47.5286	4.9	106	0.00
9	T	Diethyl ether	100.0000	105.4639	-5.5	116	0.00
10	T	Isoprene	50.0000	54.2141	-8.4	117	0.00
11	T	Acrolein	50.0000	97.7296	-95.5#	222	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.9609	-3.9	115	0.00
13	T	Acetone	50.0000	49.6723	0.7	110	0.01
14	C	1,1-Dichloroethene	50.0000	47.5320	4.9	106	-0.01
15	T	Tert-Butyl Alcohol	200.0000	216.1534	-8.1	114	0.01
16	T	Dimethyl Sulfide	50.0000	70.9875	-42.0#	150	0.00
17	T	Iodomethane	50.0000	38.4128	23.2	82	0.00
18	T	Methyl acetate	50.0000	48.7416	2.5	108	0.01
19	T	Methylene Chloride	50.0000	51.9916	-4.0	118	0.00
20	T	Carbon Disulfide	50.0000	44.6859	10.6	94	-0.01
21	T	Acrylonitrile	50.0000	52.6181	-5.2	110	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.9942	-4.0	113	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.1295	-4.3	117	0.00
24	T	n-Hexane	50.0000	44.5959	10.8	94	0.00
25	T	Diisopropyl ether	100.0000	104.0201	-4.0	112	0.00
26	T	Vinyl Acetate	50.0000	43.6417	12.7	96	0.00
27	P	1,1-Dichloroethane	50.0000	48.5033	3.0	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.3560	1.6	106	0.00
29	T	2-Butanone	50.0000	50.3381	-0.7	111	0.00
30	T	Propionitrile	100.0000	105.7786	-5.8	110	0.01
31	T	2,2-Dichloropropane	50.0000	45.5727	8.9	101	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.1618	-6.3	118	0.00
33	C	Chloroform	50.0000	47.5773	4.8	108	0.00
34	T	1-Bromopropane	50.0000	68.6656	-37.3#	152	0.00
35	T	Bromochloromethane	50.0000	53.8923	-7.8	111	0.00
36	T	Tetrahydrofuran	100.0000	93.0068	7.0	103	0.00
37	S	Dibromofluoromethane	25.0000	25.4675	-1.9	111	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.0501	3.9	106	0.00
39	T	Cyclohexane	50.0000	50.2142	-0.4	105	0.00
40	T	1,1-Dichloropropene	50.0000	50.1107	-0.2	111	0.00
41	T	Carbon Tetrachloride	50.0000	47.3479	5.3	103	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	105.6143	-5.6	115	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.9299	8.3	101	0.00
44	T	1,2-Dichloroethane	50.0000	47.8802	4.2	104	0.00
45	T	Benzene	50.0000	51.1809	-2.4	116	0.00
46	T	Trichloroethene	50.0000	52.3242	-4.6	119	-0.01
47	T	Methylcyclohexane	50.0000	52.3110	-4.6	108	0.00
48	C	1,2-Dichloropropane	50.0000	52.8102	-5.6	117	0.00
49	T	1,4-Dioxane	200.0000	191.2043	4.4	109	0.01
50	T	Bromodichloromethane	50.0000	49.5339	0.9	107	0.00
51	T	Dibromomethane	50.0000	48.0471	3.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	51.9140	-3.8	114	0.00
53	T	4-Methyl-2-Pentanone	50.0000	52.5623	-5.1	115	0.00
54	T	cis-1,3-Dichloropropene	50.0000	57.5993	-15.2	122	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	52.0055	-4.0	110	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
57	S	Toluene-d8	25.0000	26.4930	-6.0	115	0.00
58	C	Toluene	50.0000	53.7500	-7.5	115	0.00
59	T	Ethyl Methacrylate	50.0000	57.0854	-14.2	114	0.00
60	T	trans-1,3-Dichloropropene	50.0000	52.1118	-4.2	107	0.00
61	T	1,1,2-Trichloroethane	50.0000	52.7643	-5.5	113	0.00
62	T	2-Hexanone	50.0000	52.1857	-4.4	110	0.00
63	T	1,3-Dichloropropane	50.0000	56.2767	-12.6	118	0.00
64	T	Tetrachloroethene	50.0000	52.1906	-4.4	113	0.00
65	T	Dibromochloromethane	50.0000	52.5251	-5.1	107	0.00
66	T	1,2-Dibromoethane	50.0000	52.6373	-5.3	111	0.00
67	T	1-Chlorohexane	50.0000	54.5237	-9.0	112	0.00
68	P	Chlorobenzene	50.0000	53.2936	-6.6	114	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	51.0388	-2.1	109	0.00
70	C	Ethylbenzene	50.0000	52.3943	-4.8	113	0.00
71	T	m-,p-Xylene	100.0000	107.2445	-7.2	115	0.00
72	T	o-Xylene	50.0000	54.7003	-9.4	115	0.00
73	T	Styrene	50.0000	54.9735	-9.9	113	0.00
74	P	Bromoform	50.0000	49.8327	0.3	104	0.00
75	T	Isopropylbenzene	50.0000	54.2449	-8.5	114	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	54.9422	-9.9	110	0.00
78	S	p-Bromofluorobenzene	25.0000	24.7040	1.2	108	0.00
79	T	1,2,3-Trichloropropane	50.0000	50.1407	-0.3	108	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	36.9129	26.2#	78	0.00
81	T	n-Propylbenzene	50.0000	56.5769	-13.2	115	0.00
82	T	Bromobenzene	50.0000	51.6479	-3.3	111	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	55.1277	-10.3	114	-0.01
84	T	2-Chlorotoluene	50.0000	52.7599	-5.5	112	0.00
85	T	4-Chlorotoluene	50.0000	55.4064	-10.8	116	0.00
86	T	a-Methylstyrene	50.0000	59.4584	-18.9	114	0.00
87	T	tert-Butylbenzene	50.0000	56.5417	-13.1	117	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	53.8297	-7.7	110	0.00
89	T	sec-Butylbenzene	50.0000	55.8961	-11.8	114	0.00
90	T	p-Isopropyltoluene	50.0000	54.7069	-9.4	111	0.00
91	T	1,3-Dichlorobenzene	50.0000	52.6969	-5.4	112	0.00
92	T	1,4-Dichlorobenzene	50.0000	53.0354	-6.1	114	0.00
93	T	n-Butylbenzene	50.0000	53.8957	-7.8	110	0.00
94	T	1,2-Dichlorobenzene	50.0000	53.5772	-7.2	112	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	48.1046	3.8	105	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	55.4365	-10.9	113	0.00
97	T	Hexachlorobutadiene	50.0000	55.9180	-11.8	118	0.00
98	T	Naphthalene	50.0000	51.1296	-2.3	103	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	54.0642	-8.1	114	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11848.D 8260WT.M Sat May 14 18:47:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:46 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	173671	27.7488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.00%		
43) 1,2-Dichloroethane-d4	11.12	65	203570	26.8000 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.20%		
58) Toluene-d8	13.86	98	554047	26.0139 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.04%		
80) p-Bromofluorobenzene	17.85	95	229998	27.1525 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.60%		

Target Compounds					Qvalue
13) Acetone	6.67	43	1325	0.6992 ug/L #	46
20) Carbon Disulfide	7.54	76	18747	0.9622 ug/L #	39
29) 2-Butanone	9.31	43	1188	0.4247 ug/L #	1
36) Tetrahydrofuran	10.36	42	2769	1.5196 ug/L #	58
60) Ethyl Methacrylate	13.87	69	899	0.1270 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

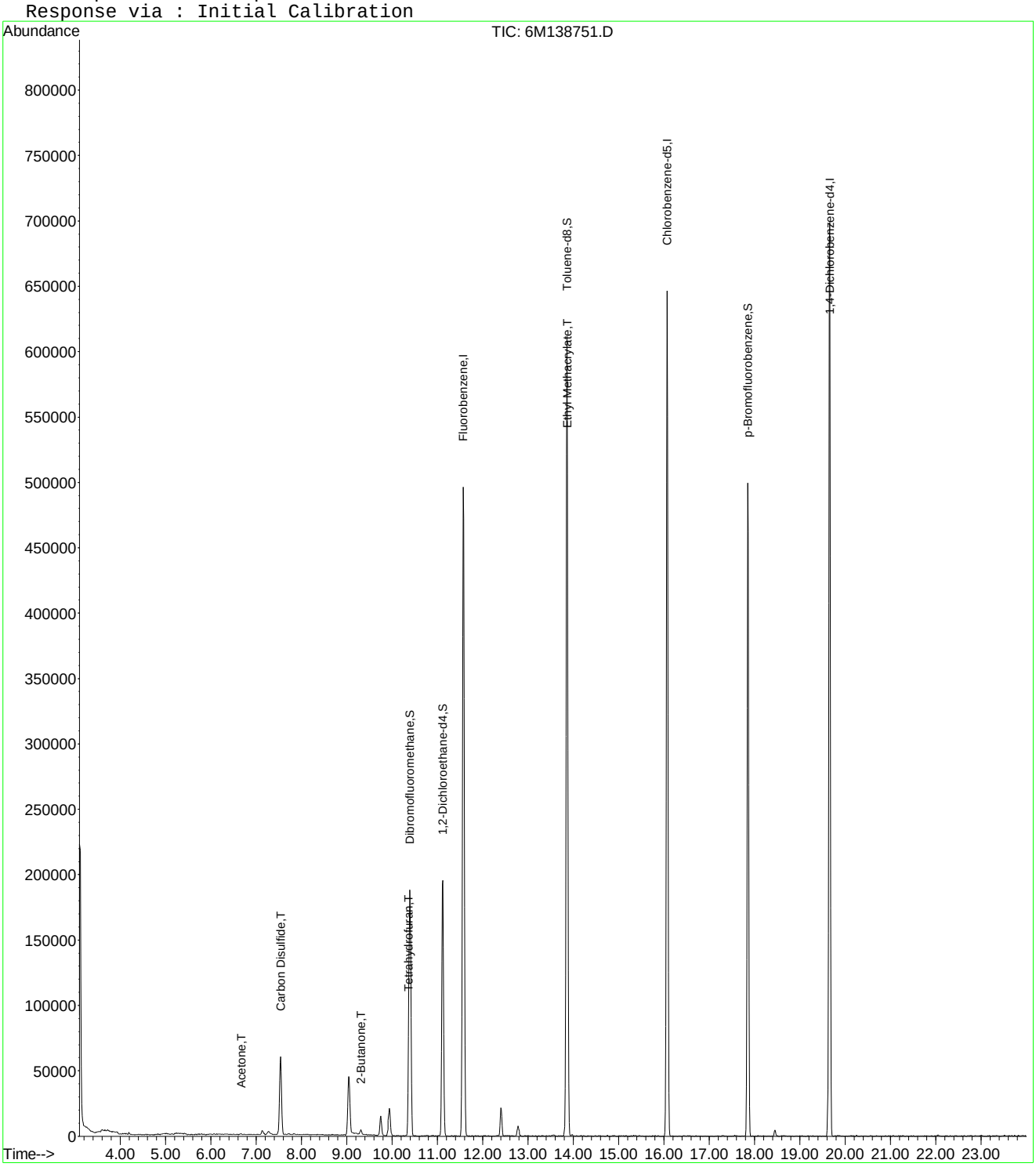

6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:52 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	3.7209 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.2301 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.6002 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.3499 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.5173 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	3.4767 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.0338 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.7392 ug/L	93
13) Cyclohexanone	17.57	55	447	0.5159 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Mon Apr 25 15:45:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

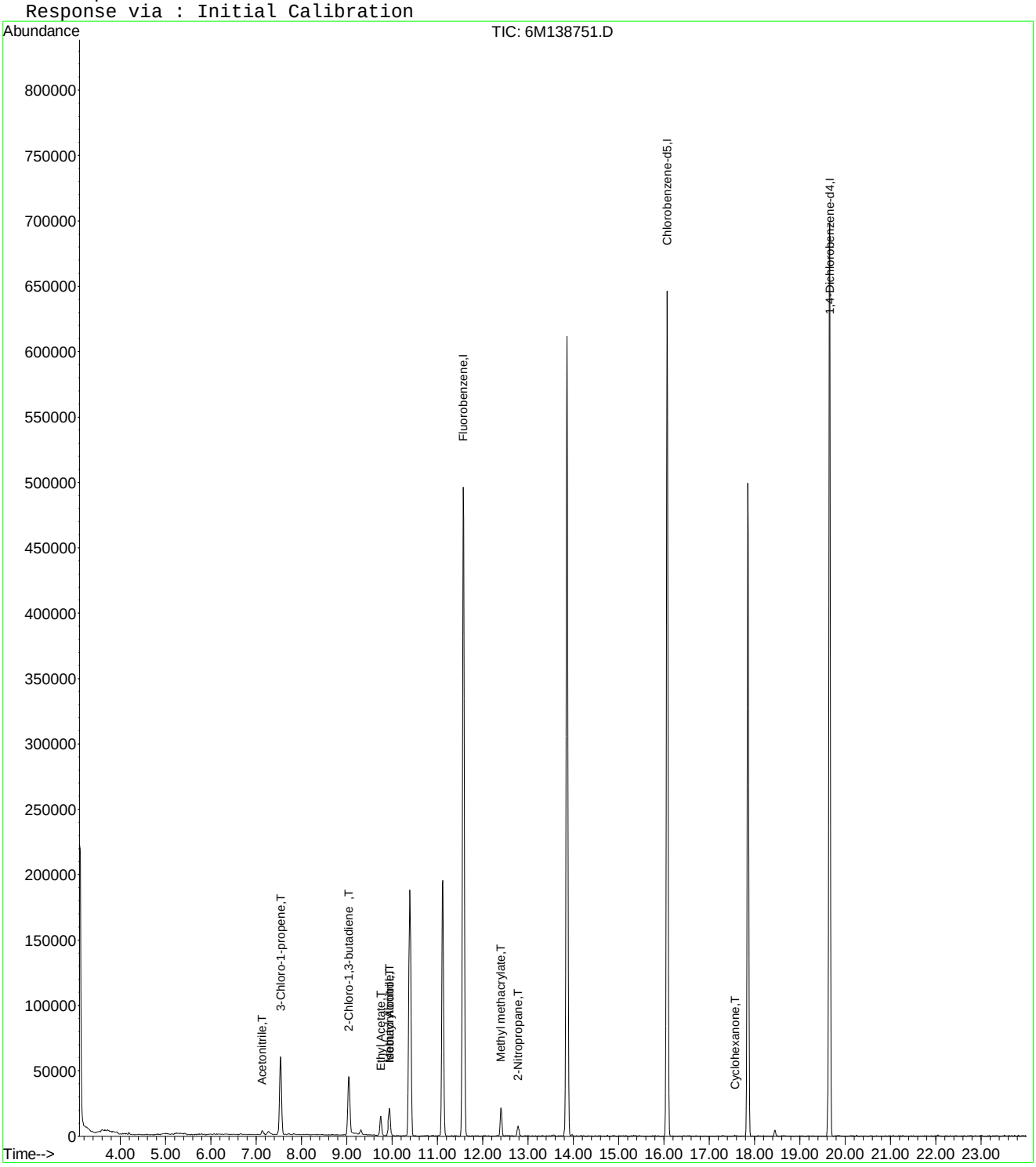

6M138751.D A9FOOWT.M Mon Apr 25 15:45:53 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:56 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	4.7698 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.5408 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.8775 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.2792 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.8601 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	5.9076 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.5356 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.4543 ug/L	93
13) Cyclohexanone	17.57	55	447	1.4133 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Wed Apr 27 16:04:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

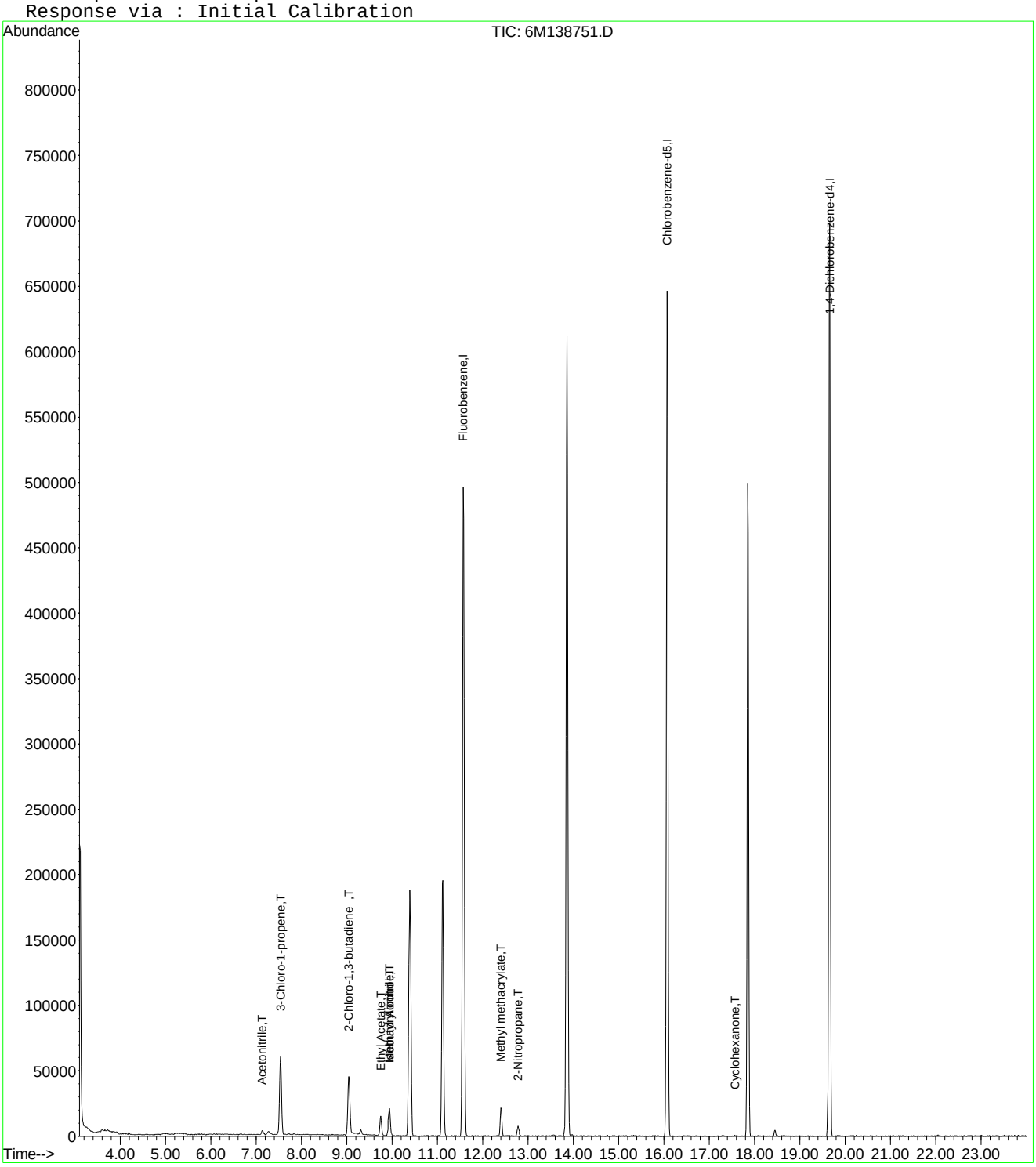

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	4.7698	4.6	100	0.00
3	T	3-Chloro-1-propene	5.0000	4.5408	9.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	3.8775	22.5	100	0.00
5	T	Ethyl Acetate	5.0000	4.2792	14.4	100	0.00
6	T	Methacrylonitrile	5.0000	3.8601	22.8	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.9076	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.99#
9	T	Methyl methacrylate	5.0000	3.5356	29.3	100	0.00
10	T	2-Nitropropane	-1.0000	3.4543	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	1.4133	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138751.D A9FOOWT.M Wed Apr 27 16:04:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	171577	27.9669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.88%		
43) 1,2-Dichloroethane-d4	11.12	65	207390	27.8532 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.40%		
58) Toluene-d8	13.86	98	547786	26.2796 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.12%		
80) p-Bromofluorobenzene	17.85	95	228171	27.5052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.04%		

Target Compounds					Qvalue
13) Acetone	6.67	43	2739	1.4745 ug/L #	59
20) Carbon Disulfide	7.54	76	81493	4.2668 ug/L #	36
27) 1,1-Dichloroethane	9.05	63	3411	0.2688 ug/L #	42
29) 2-Butanone	9.31	43	3879	1.4148 ug/L #	1
36) Tetrahydrofuran	10.37	42	3350	1.8754 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1183	0.1708 ug/L #	27

(#) = qualifier out of range (m) = manual integration
6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

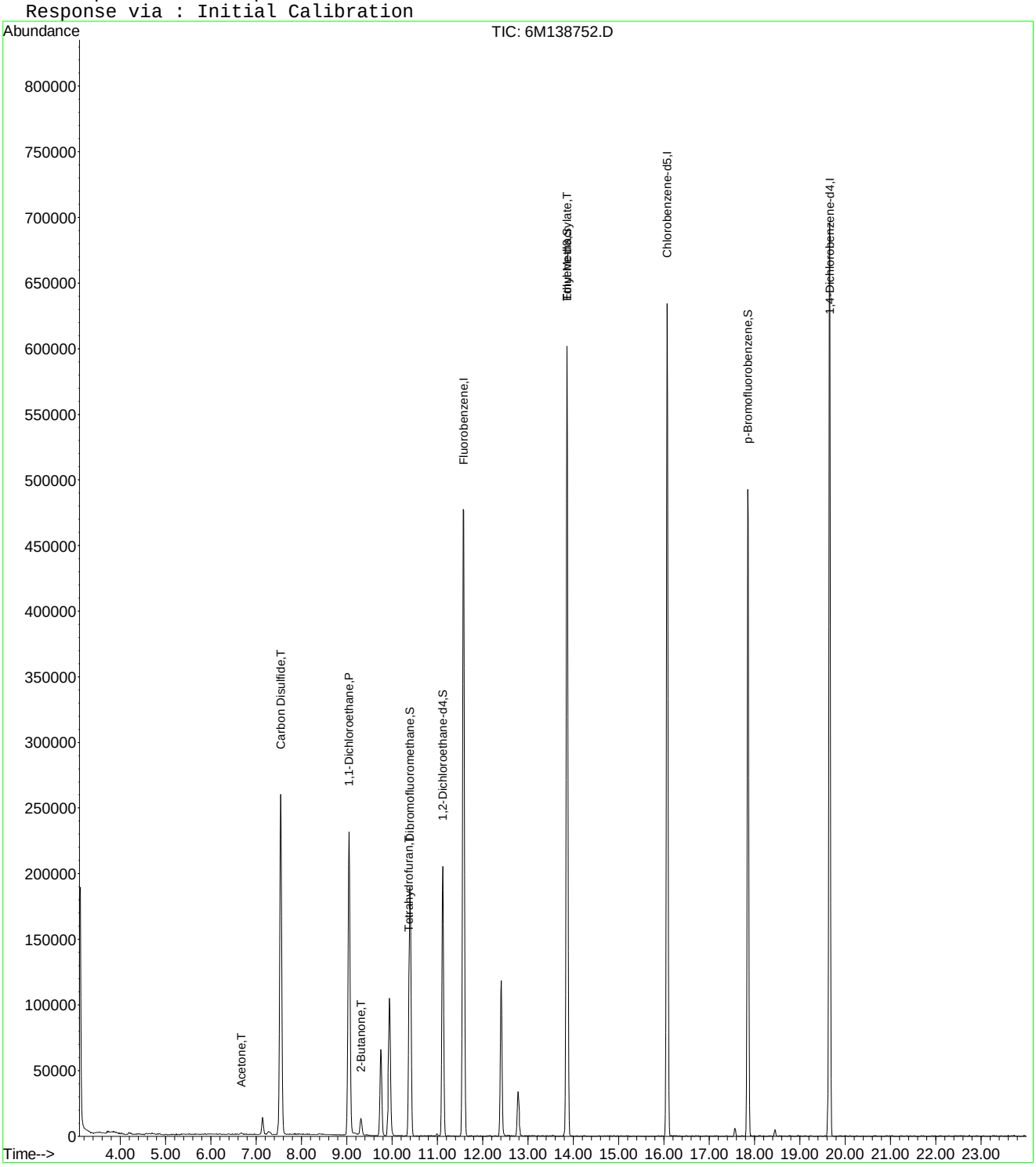

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:54 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	15.4242 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	18.5457 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	17.5823 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.6403 ug/L	93
6) Methacrylonitrile	9.93	67	42708	17.5719 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	22.9203 ug/L #	85
8) 1-Butanol	10.98	41	982	6.5662 ug/L #	52
9) Methyl methacrylate	12.41	41	95824	15.2291 ug/L	81
10) 2-Nitropropane	12.78	43	34207	18.4403 ug/L	92
13) Cyclohexanone	17.57	55	4053	4.7763 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Mon Apr 25 15:45:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

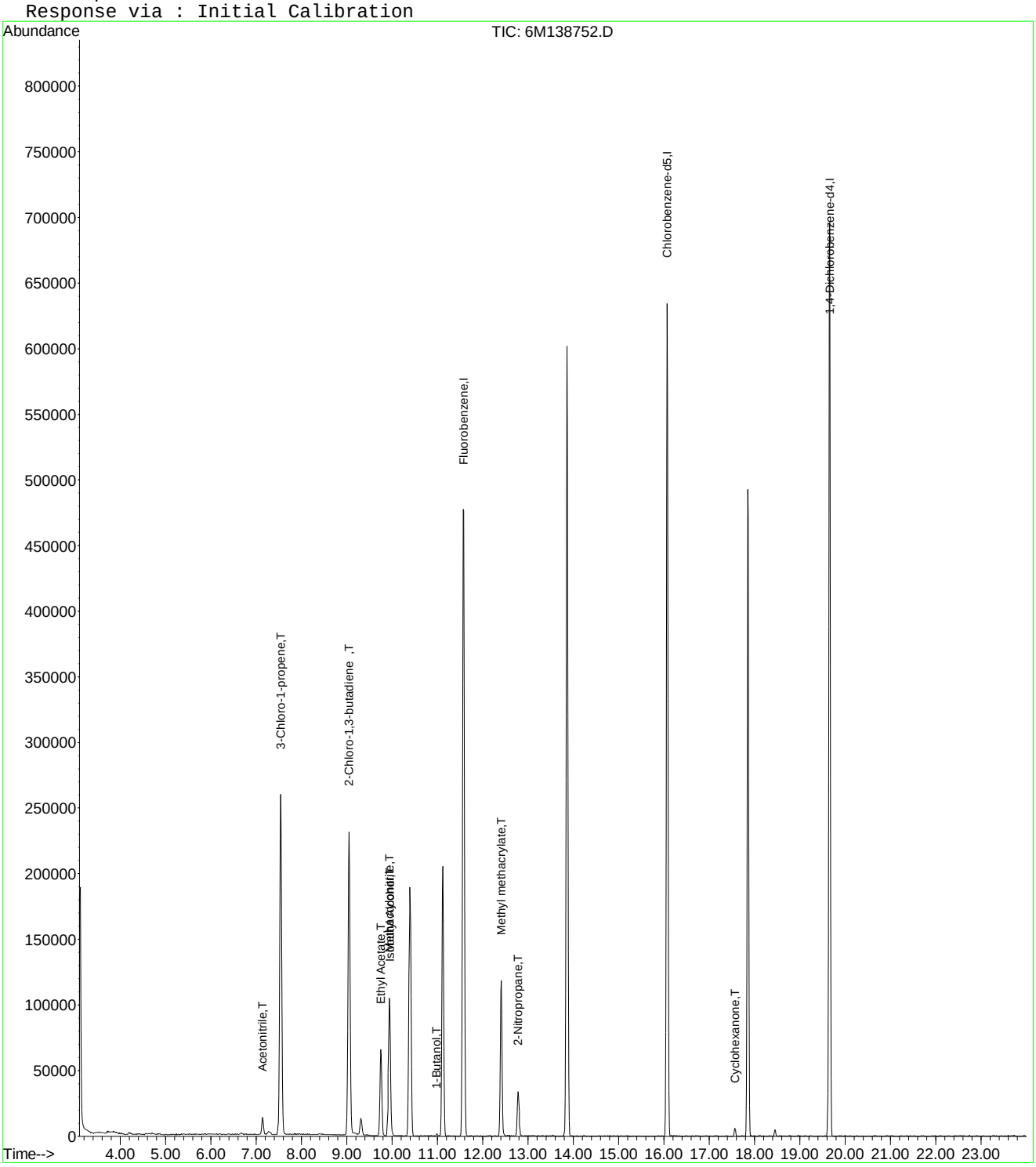

6M138752.D A9FOOWT.M Mon Apr 25 15:45:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	19.7725 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	19.9080 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	18.9362 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.3209 ug/L	93
6) Methacrylonitrile	9.93	67	42708	19.2846 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	38.9462 ug/L #	85
9) Methyl methacrylate	12.41	41	95824	17.7480 ug/L	81
10) 2-Nitropropane	12.78	43	34207	17.0355 ug/L	92
13) Cyclohexanone	17.57	55	4053	13.0852 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

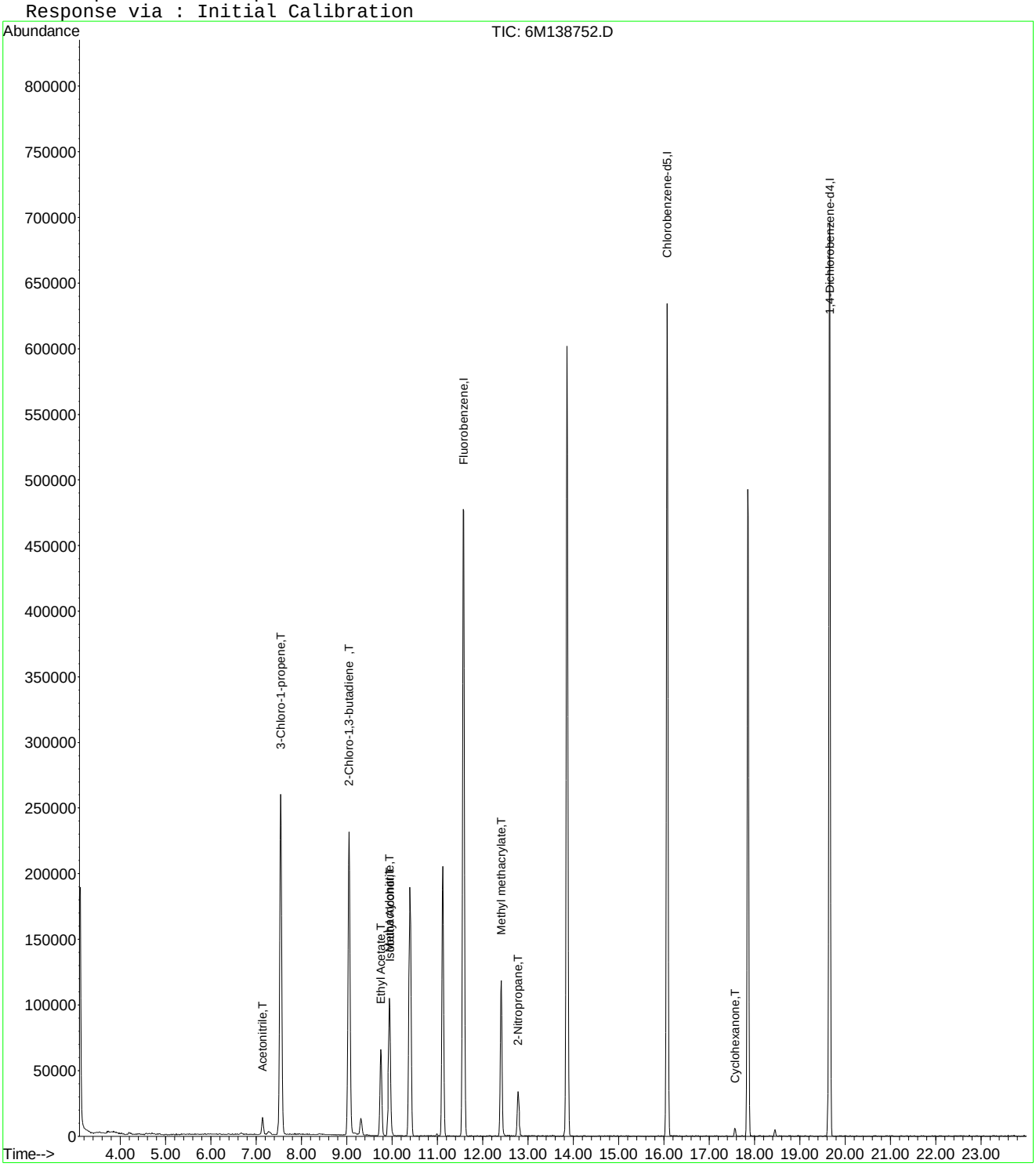

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.7724	1.1	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.9080	0.5	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.9362	5.3	100	0.00
5	T	Ethyl Acetate	20.0000	19.3209	3.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.2846	3.6	100	0.00
7	T	Isobutyl Alcohol	40.0000	38.9462	2.6	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	20.0000	17.7480	11.3	100	0.00
10	T	2-Nitropropane	-1.0000	17.0355	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	13.0852	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138752.D A9FOOWT.M Wed Apr 27 16:04:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172256	27.8132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	208744	27.7711 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.08%		
58) Toluene-d8	13.86	98	553191	26.2235 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	17.85	95	239542	28.1954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.80%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	3732	1.9901 ug/L #	57
20) Carbon Disulfide	7.54	76	220780	11.4508 ug/L #	36
26) Vinyl Acetate	9.04	43	2704	0.2791 ug/L #	8
27) 1,1-Dichloroethane	9.05	63	9803	0.7652 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	152978	7.3579 ug/L #	39
29) 2-Butanone	9.53	43	660	0.2385 ug/L #	52
36) Tetrahydrofuran	10.37	42	3746	2.0774 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1423	0.2030 ug/L #	9

(#) = qualifier out of range (m) = manual integration
6M138753.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

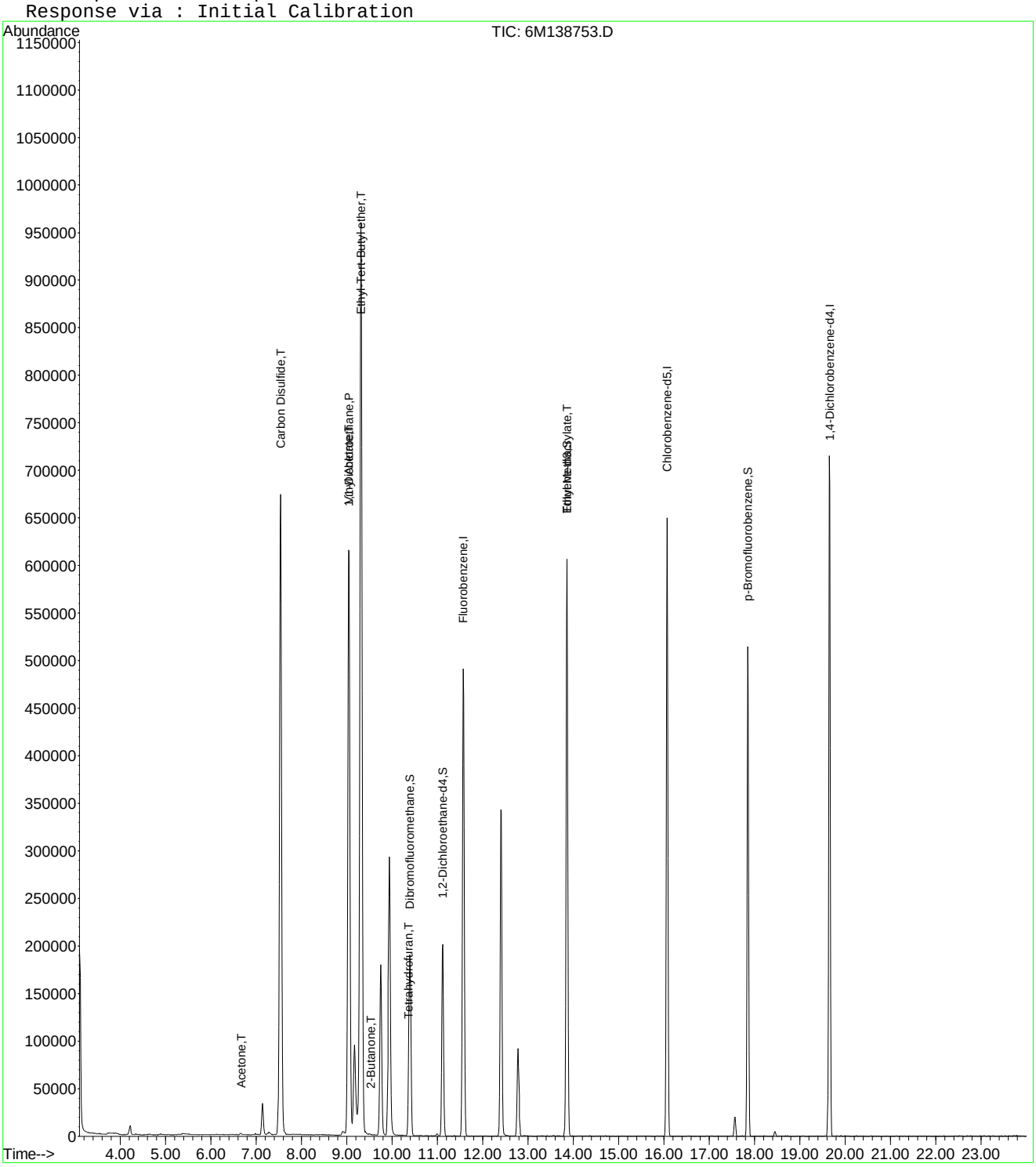

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:55 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	40.3072 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	48.9454 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	48.3496 ug/L	83
5) Ethyl Acetate	9.75	43	336975	52.8234 ug/L	93
6) Methacrylonitrile	9.94	67	119267	48.6097 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	57.3741 ug/L #	99
8) 1-Butanol	10.98	41	1474	9.7632 ug/L	77
9) Methyl methacrylate	12.40	41	279157	43.9482 ug/L	81
10) 2-Nitropropane	12.79	43	95327	50.9052 ug/L	94
13) Cyclohexanone	17.56	55	13241	15.2363 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Mon Apr 25 15:45:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

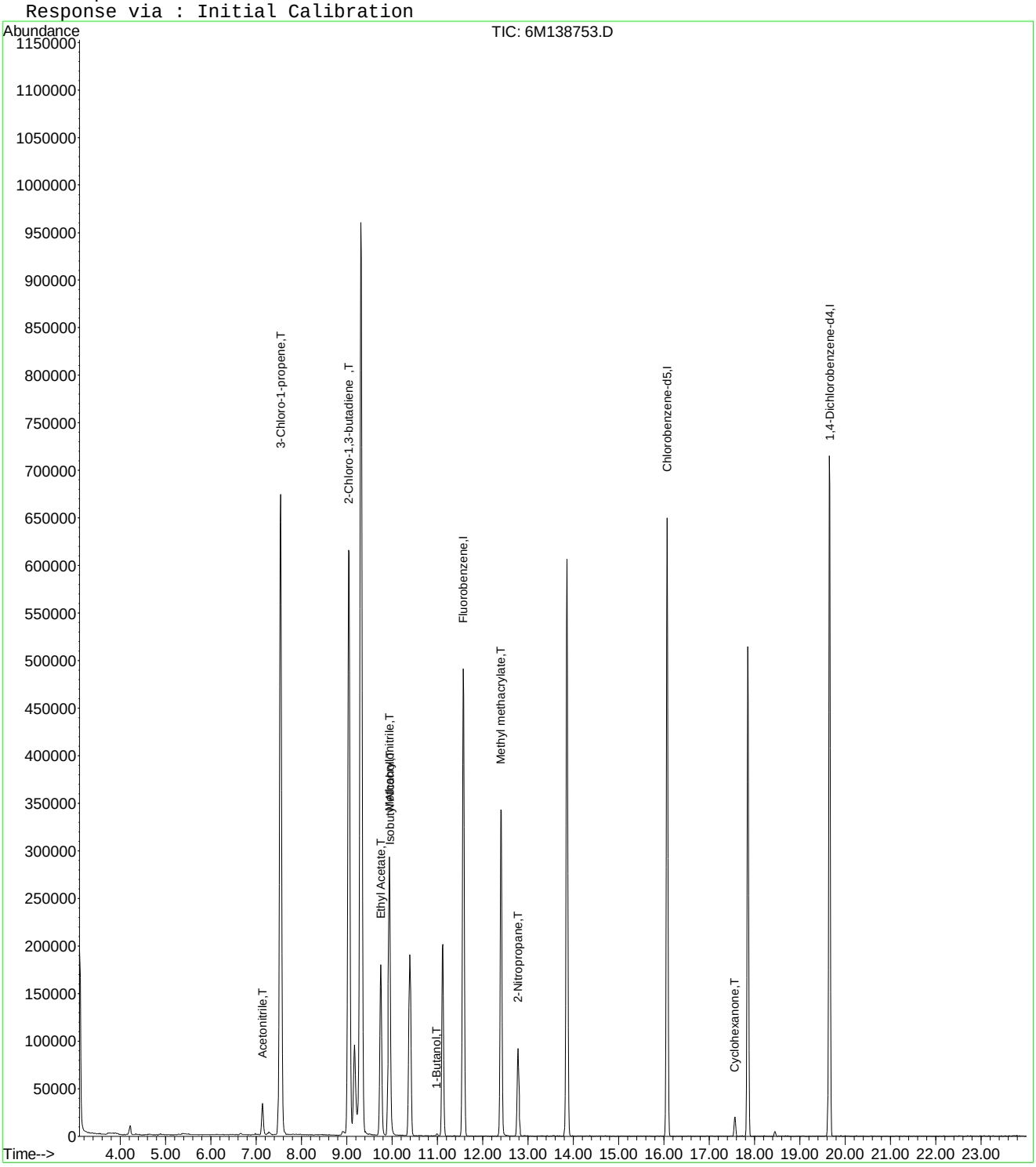

6M138753.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	51.6701 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	52.5409 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	52.0726 ug/L	83
5) Ethyl Acetate	9.75	43	336975	51.9646 ug/L	93
6) Methacrylonitrile	9.94	67	119267	53.3476 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	97.4900 ug/L #	99
9) Methyl methacrylate	12.40	41	279157	51.2171 ug/L	81
10) 2-Nitropropane	12.79	43	95327	47.0270 ug/L	94
13) Cyclohexanone	17.56	55	13241	41.7415 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

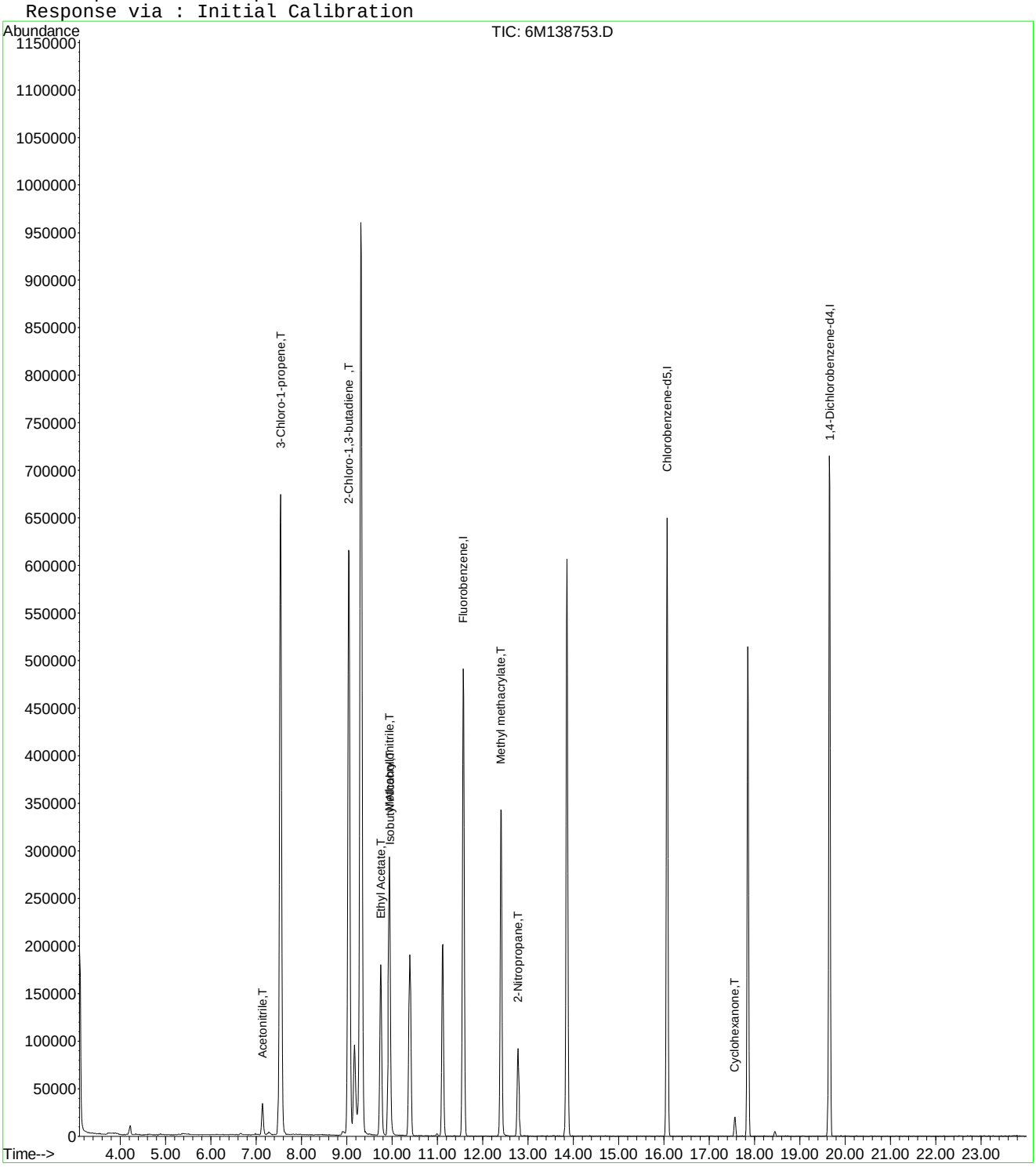

6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.6701	-3.3	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.5409	-5.1	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.0726	-4.1	100	0.00
5	T	Ethyl Acetate	50.0000	51.9646	-3.9	100	0.00
6	T	Methacrylonitrile	50.0000	53.3476	-6.7	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.4900	2.5	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	50.0000	51.2171	-2.4	100	0.00
10	T	2-Nitropropane	50.0000	47.0270	5.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	41.7415	16.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138753.D A9FOOWT.M Wed Apr 27 16:04:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:49 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169577	27.6373 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.56%		
43) 1,2-Dichloroethane-d4	11.12	65	210119	28.2161 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.88%		
58) Toluene-d8	13.86	98	550953	26.1877 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.76%		
80) p-Bromofluorobenzene	17.85	95	239480	28.0420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.16%		

Target Compounds					Qvalue
13) Acetone	6.66	43	6960	3.7463 ug/L	82
16) Dimethyl Sulfide	7.15	62	732	0.1448 ug/L #	1
18) Methyl acetate	7.53	43	1419	0.2750 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	2141	0.1320 ug/L #	72
27) 1,1-Dichloroethane	9.05	63	20725	1.6328 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	76666	3.7220 ug/L #	39
29) 2-Butanone	9.53	43	1176	0.4289 ug/L #	52
34) 1-Bromopropane	10.00	122	702	0.6817 ug/L #	1
36) Tetrahydrofuran	10.35	42	4425	2.4769 ug/L #	60
48) Methylcyclohexane	12.41	83	1461	0.1681 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1083	0.1549 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1910	0.3066 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138754.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

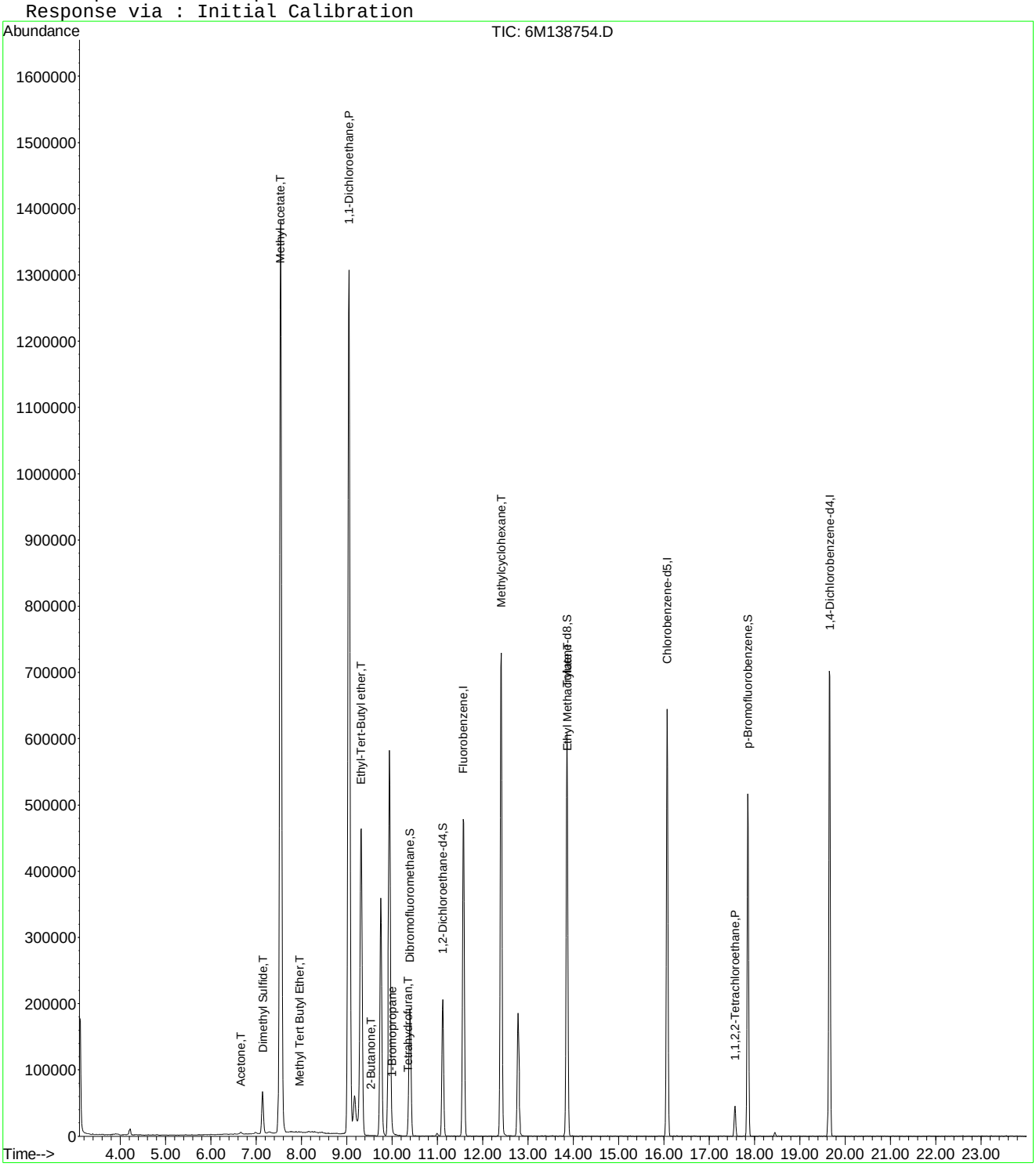

6M138754.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:57 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	79.0019 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	100.3335 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	102.2884 ug/L	83
5) Ethyl Acetate	9.75	43	673221	106.5217 ug/L	93
6) Methacrylonitrile	9.94	67	237219	97.5895 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	97.4937 ug/L #	85
8) 1-Butanol	11.00	41	2978	19.9099 ug/L #	64
9) Methyl methacrylate	12.41	41	585839	93.0942 ug/L	80
10) 2-Nitropropane	12.78	43	197598	106.5074 ug/L	97
13) Cyclohexanone	17.57	55	27547	31.5338 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

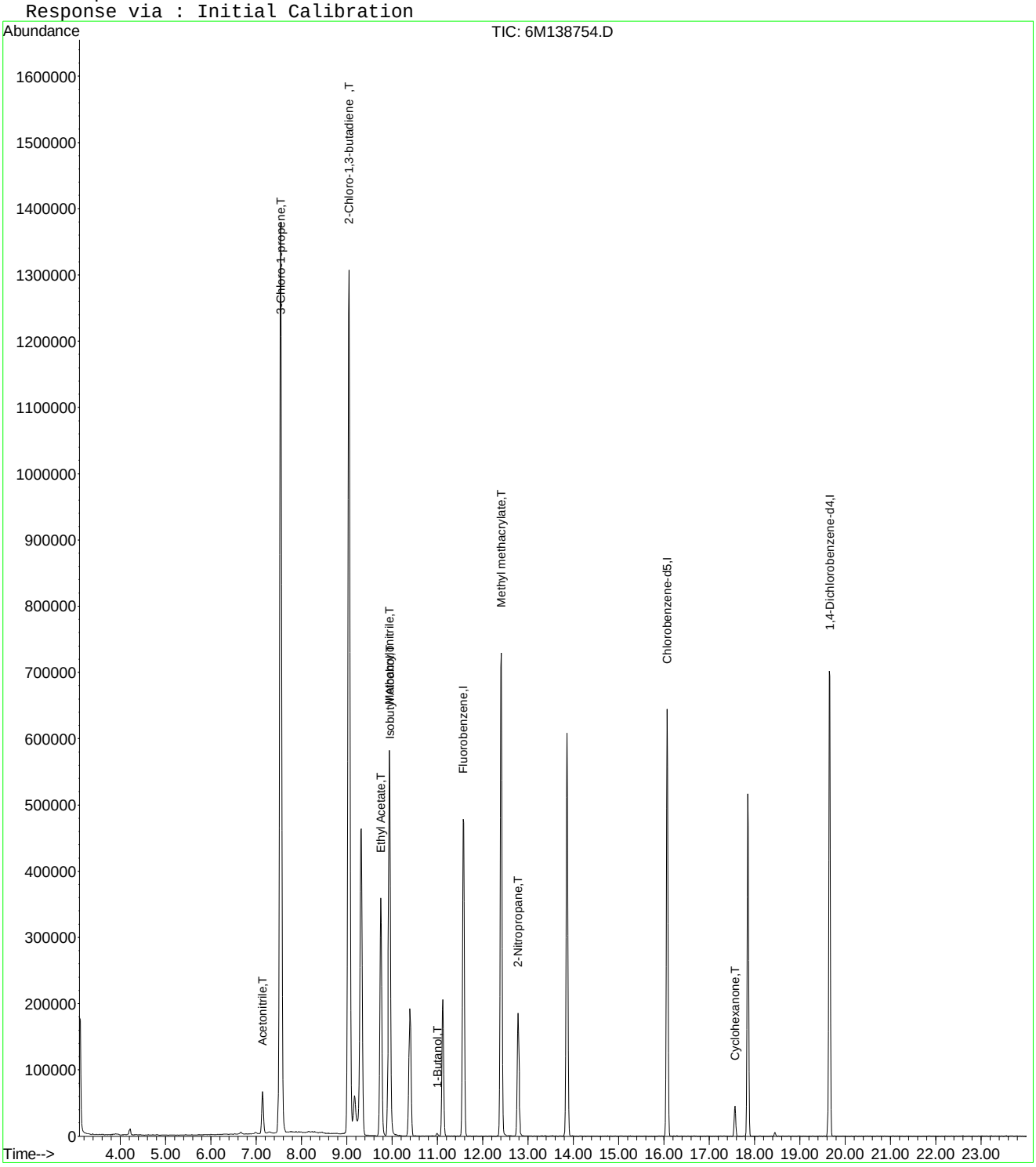

6M138754.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	101.2731 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	107.7041 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	110.1648 ug/L	83
5) Ethyl Acetate	9.75	43	673221	104.7898 ug/L	93
6) Methacrylonitrile	9.94	67	237219	107.1014 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	165.6613 ug/L #	85
9) Methyl methacrylate	12.41	41	585839	108.4917 ug/L	80
10) 2-Nitropropane	12.78	43	197598	98.3932 ug/L	97
13) Cyclohexanone	17.57	55	27547	86.3902 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

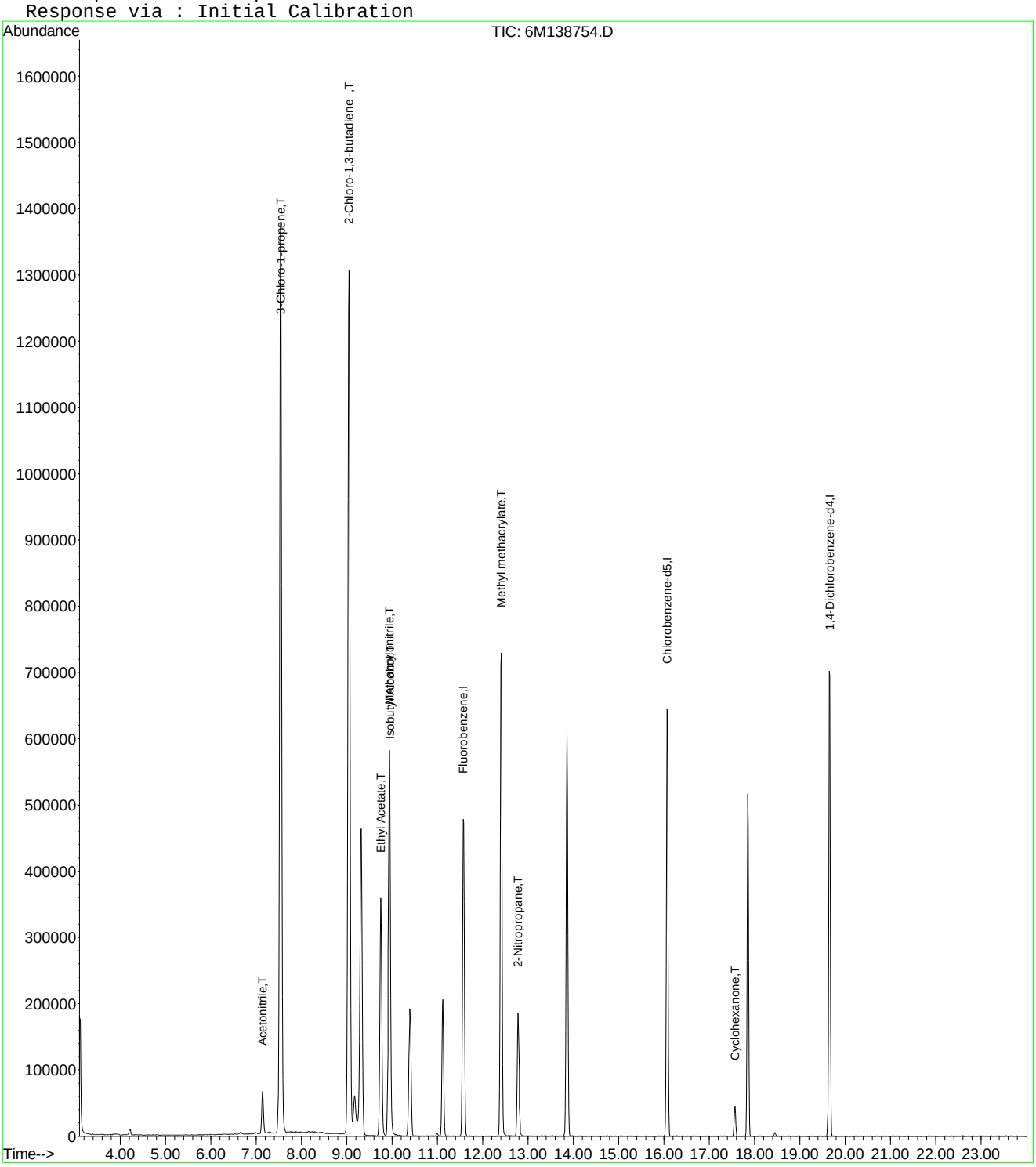

6M138754.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473187	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172341	27.7160 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.88%		
43) 1,2-Dichloroethane-d4	11.12	65	211249	27.9923 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.96%		
58) Toluene-d8	13.86	98	552831	25.9510 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.80%		
80) p-Bromofluorobenzene	17.85	95	247709	28.6419 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 114.56%		

Target Compounds

					Qvalue
9) Diethyl ether	6.31	59	653	0.1225 ug/L #	12
13) Acetone	6.66	43	9406	4.9959 ug/L #	64
15) Tert-Butyl Alcohol	6.98	59	449	0.8301 ug/L #	1
16) Dimethyl Sulfide	7.16	62	680	0.1328 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	3926	0.2388 ug/L	83
24) n-Hexane	8.30	57	1777	0.2040 ug/L	87
27) 1,1-Dichloroethane	9.05	63	41640	3.2372 ug/L #	47
28) Ethyl-Tert-Butyl ether	9.31	59	272648	13.0615 ug/L #	38
29) 2-Butanone	9.51	43	2992	1.0767 ug/L #	67
30) Propionitrile	9.93	54	258	0.3232 ug/L #	57
34) 1-Bromopropane	9.99	122	1417	1.3579 ug/L #	1
36) Tetrahydrofuran	10.37	42	4839	2.6728 ug/L #	62
48) Methylcyclohexane	12.40	83	2976	0.3378 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1202	0.1698 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	5192	0.8231 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138755.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

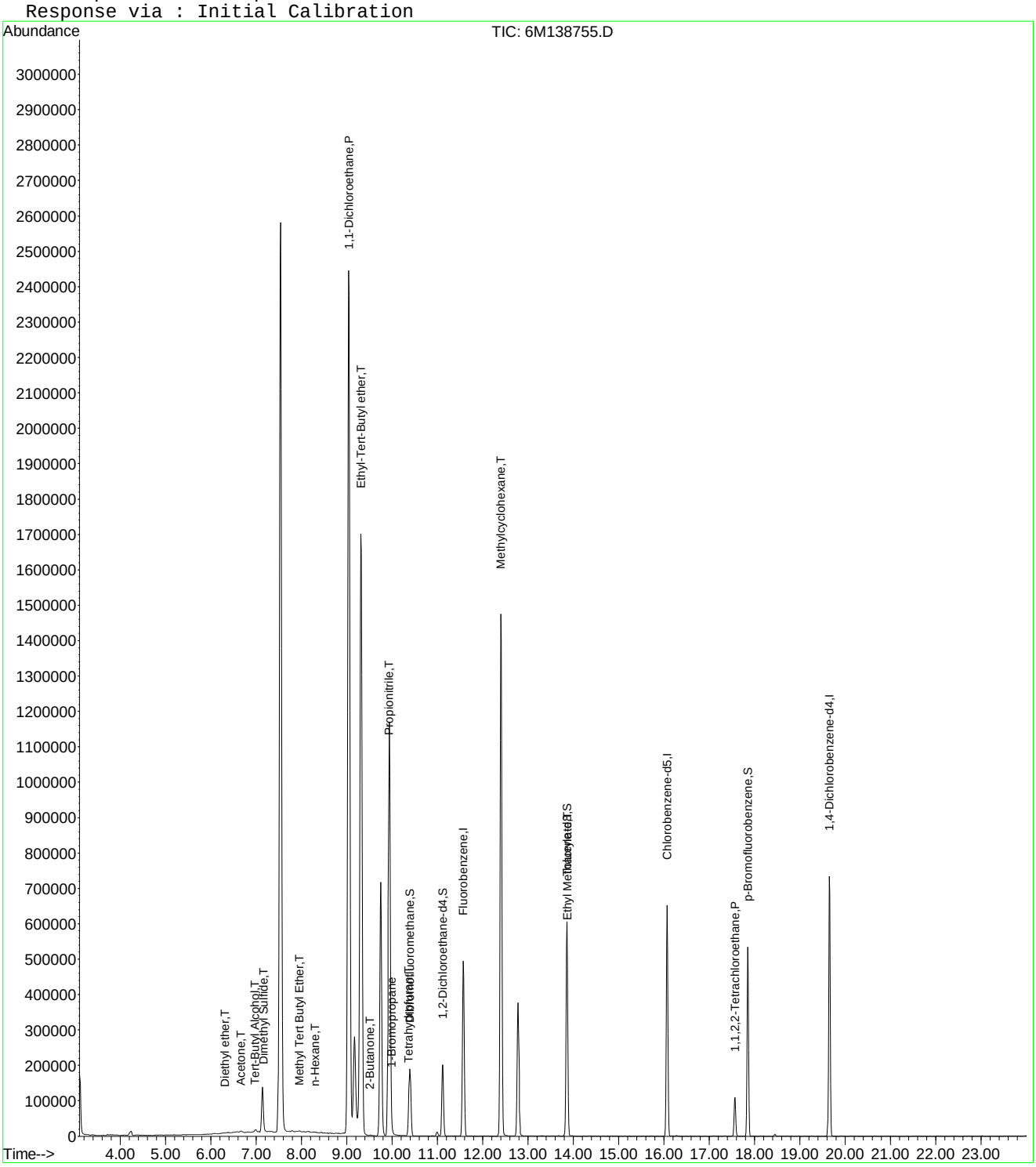

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	157.5150	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	189.6828	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	193.4336	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	210.2391	ug/L	94
6) Methacrylonitrile	9.94	67	471538	191.4186	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	206.4864	ug/L #	92
8) 1-Butanol	10.99	41	8815	58.1542	ug/L #	64
9) Methyl methacrylate	12.40	41	1186381	186.0295	ug/L	80
10) 2-Nitropropane	12.79	43	410702	218.4428	ug/L	99
13) Cyclohexanone	17.57	55	67080	75.8254	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

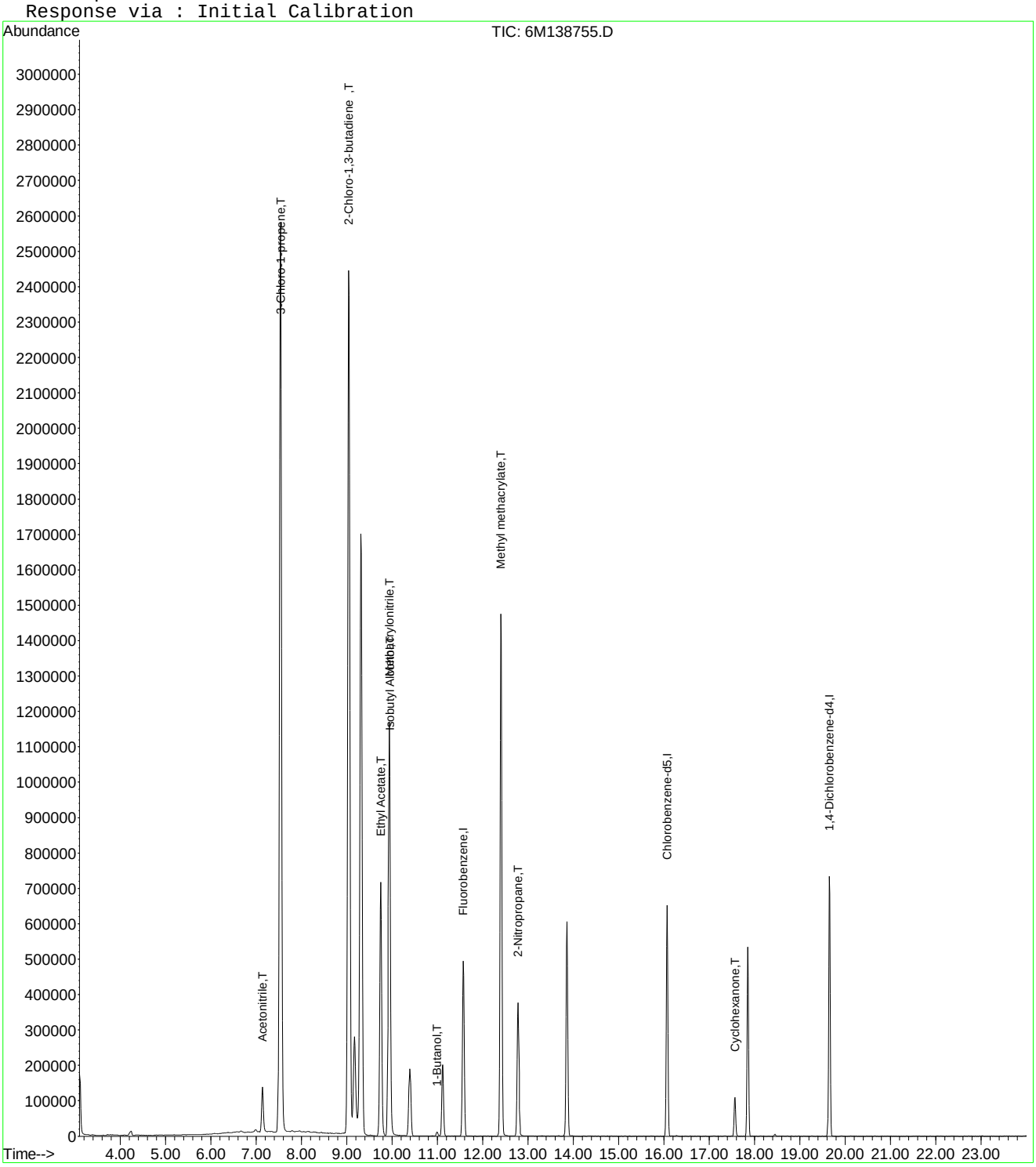

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	201.9195	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	203.6170	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	208.3284	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	206.8209	ug/L	94
6) Methacrylonitrile	9.94	67	471538	210.0757	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	350.8618	ug/L #	92
9) Methyl methacrylate	12.40	41	1186381	216.7982	ug/L	80
10) 2-Nitropropane	12.79	43	410702	201.8008	ug/L	99
13) Cyclohexanone	17.57	55	67080	207.7320	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

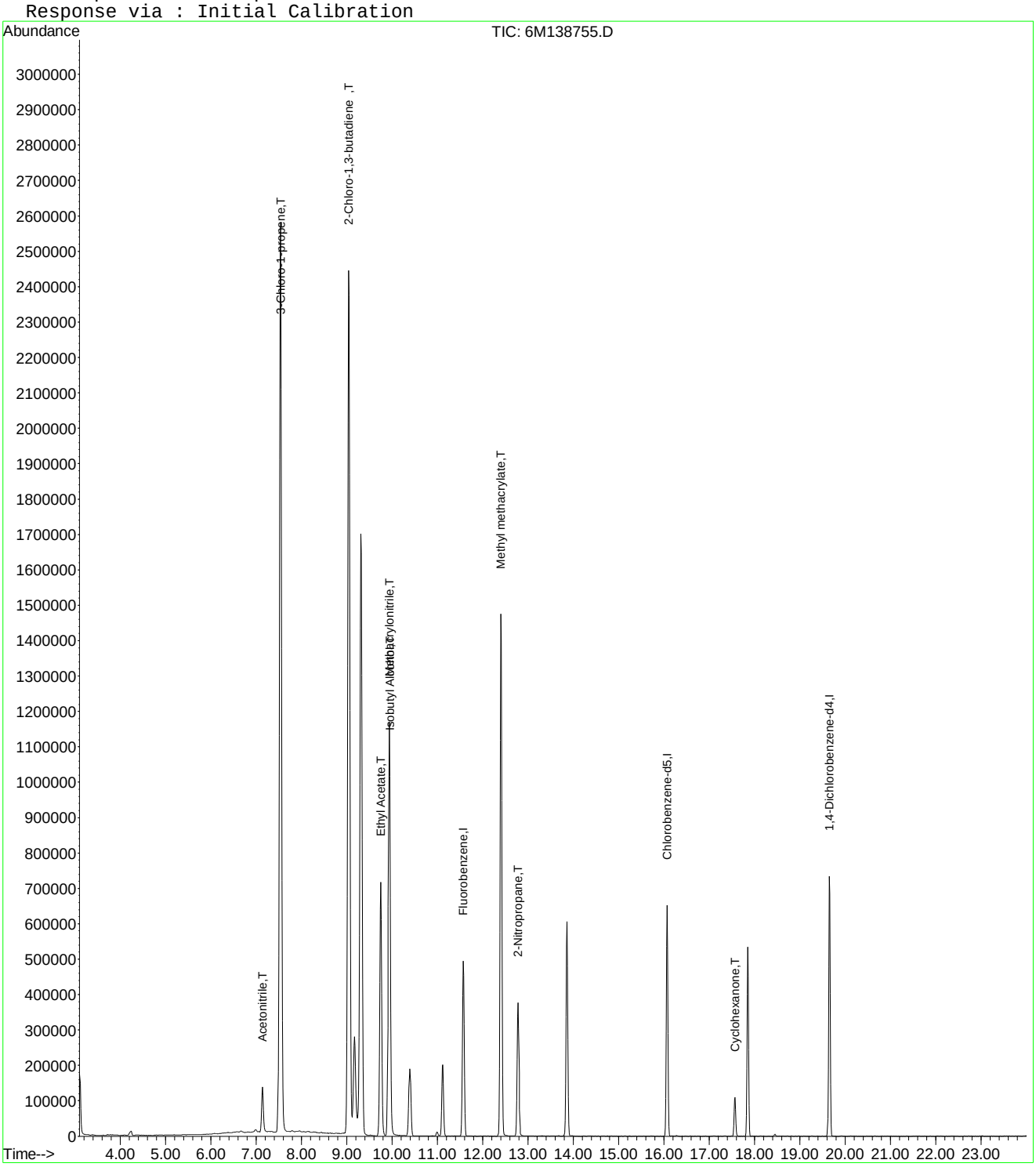

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169983	27.5546 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.20%		
43) 1,2-Dichloroethane-d4	11.12	65	207199	27.6745 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.68%		
58) Toluene-d8	13.86	98	553023	25.9875 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	17.85	95	247939	28.0615 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.24%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	13666	7.3164 ug/L #	77
15) Tert-Butyl Alcohol	7.06	59	467	0.8703 ug/L #	59
16) Dimethyl Sulfide	7.14	62	668	0.1315 ug/L #	1
18) Methyl acetate	7.54	43	3262	0.6289 ug/L #	1
22) Methyl Tert Butyl Ether	7.97	73	10591	0.6492 ug/L #	53
24) n-Hexane	8.28	57	3576	0.4138 ug/L #	56
27) 1,1-Dichloroethane	9.04	63	60743	4.7600 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	155796	7.5231 ug/L #	39
29) 2-Butanone	9.52	43	4002	1.4516 ug/L	97
30) Propionitrile	9.95	54	1113	1.4052 ug/L #	1
34) 1-Bromopropane	9.99	122	1450	1.4006 ug/L #	1
36) Tetrahydrofuran	10.36	42	4902	2.7292 ug/L #	61
48) Methylcyclohexane	12.41	83	4626	0.5293 ug/L #	1
60) Ethyl Methacrylate	13.88	69	1599	0.2261 ug/L #	1
72) Ethylbenzene	16.28	106	1349	0.1427 ug/L	56
73) m-,p-Xylene	16.28	106	1349	0.1203 ug/L	81
79) 1,1,2,2-Tetrachloroethane	17.57	83	8744	1.3569 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

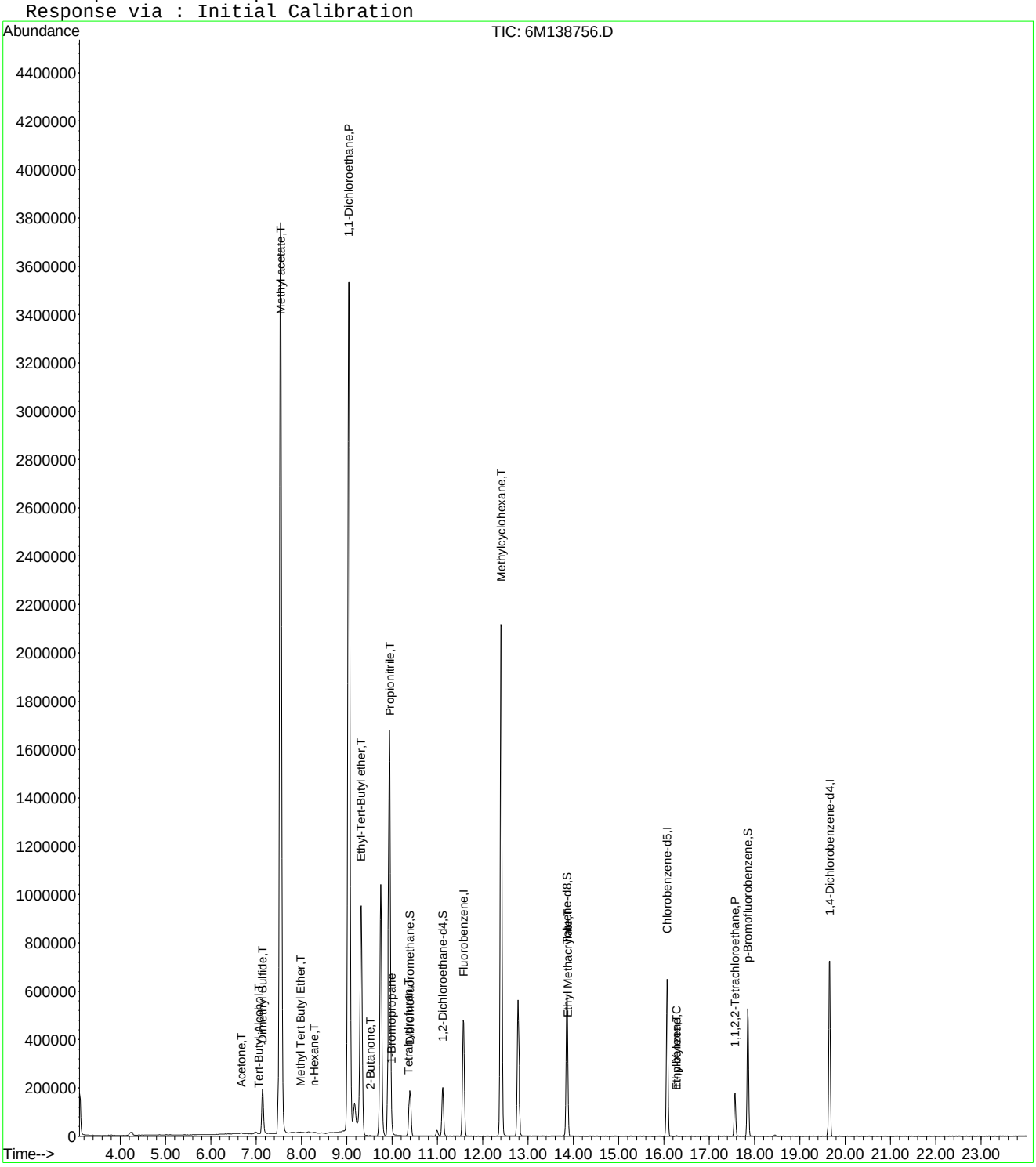

6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	273003	236.0468 ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	278.3729 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	287.5093 ug/L	83
5) Ethyl Acetate	9.75	43	1967613	309.6573 ug/L	94
6) Methacrylonitrile	9.94	67	686612	280.9484 ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	347.5212 ug/L #	90
8) 1-Butanol	10.99	41	18116	120.4672 ug/L	69
9) Methyl methacrylate	12.40	41	1742413	275.3954 ug/L	81
10) 2-Nitropropane	12.78	43	613081	328.6824 ug/L	99
13) Cyclohexanone	17.57	55	106618	117.9661 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

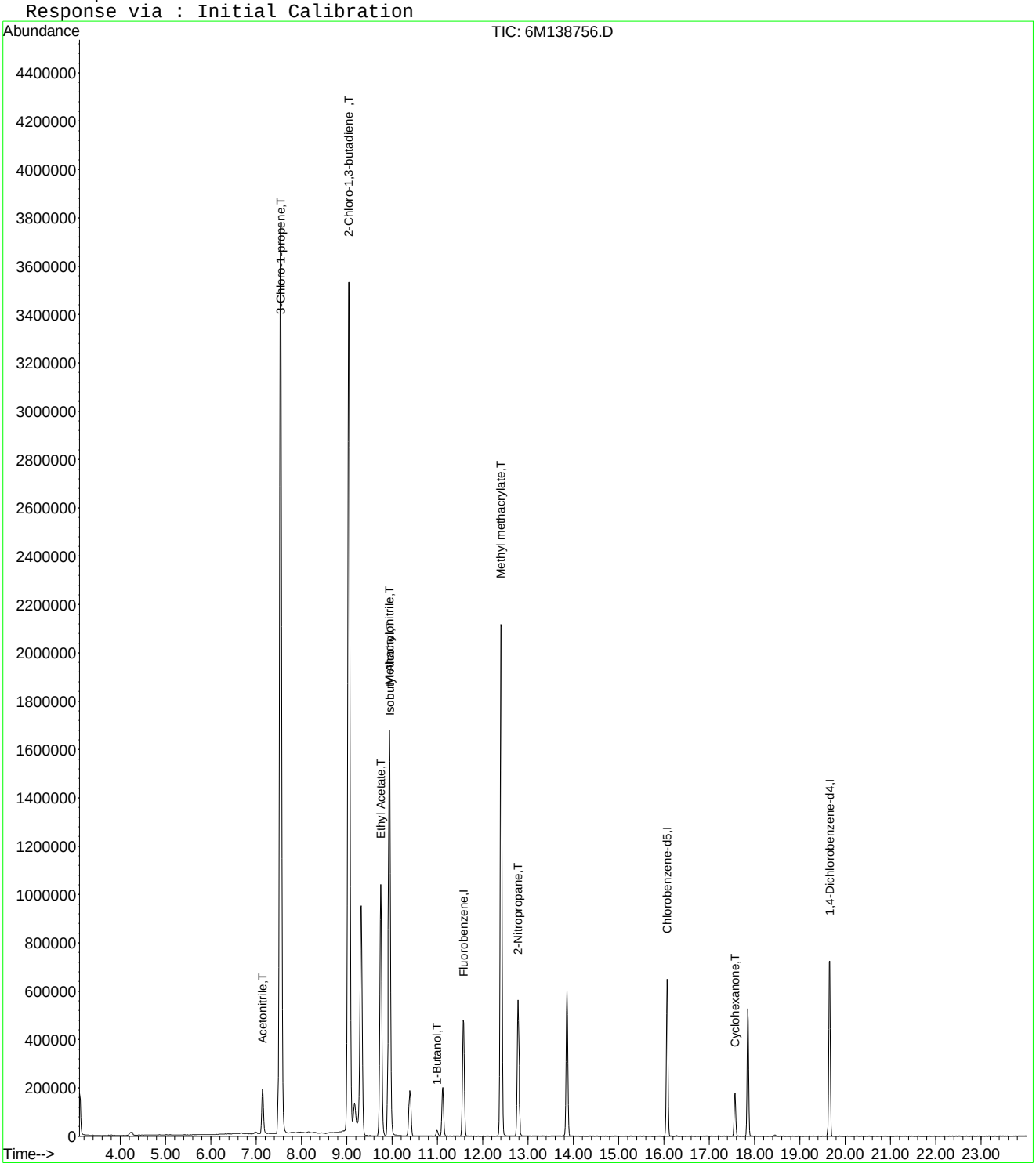

6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00	ug/L	0.01
11) Chlorobenzene-d5	16.07	117	472685	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	273003	302.5900	ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	298.8224	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	309.6481	ug/L	83
5) Ethyl Acetate	9.75	43	1967613	304.6228	ug/L	94
6) Methacrylonitrile	9.94	67	686612	308.3318	ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	590.5081	ug/L #	90
9) Methyl methacrylate	12.40	41	1742413	320.9449	ug/L	81
10) 2-Nitropropane	12.78	43	613081	303.6419	ug/L	99
13) Cyclohexanone	17.57	55	106618	323.1811	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

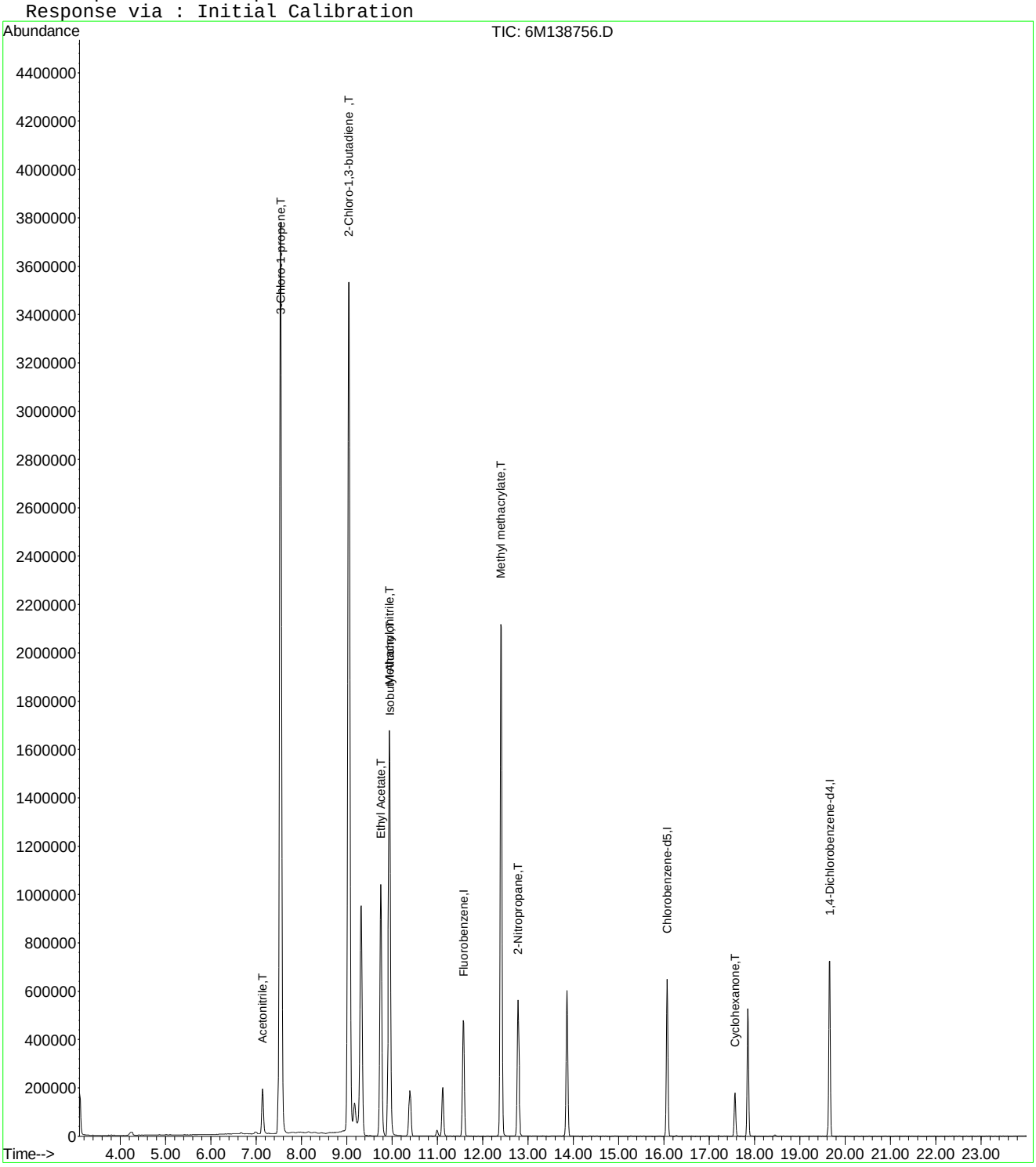

6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:51 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	170708	27.6598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.64%		
43) 1,2-Dichloroethane-d4	11.11	65	208757	27.8702 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.48%		
58) Toluene-d8	13.86	98	554316	25.9150 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	17.85	95	246698	27.9116 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.64%		

Target Compounds					Qvalue
13) Acetone	6.66	43	14063	7.5256 ug/L	99
15) Tert-Butyl Alcohol	7.05	59	807	1.5033 ug/L #	59
16) Dimethyl Sulfide	7.16	62	1034	0.2034 ug/L #	1
18) Methyl acetate	7.48	43	1103	0.2125 ug/L #	60
19) Methylene Chloride	7.73	84	1123	0.1699 ug/L #	40
22) Methyl Tert Butyl Ether	7.97	73	18318	1.1224 ug/L #	53
24) n-Hexane	8.28	57	5609	0.6488 ug/L	75
27) 1,1-Dichloroethane	9.04	63	82912	6.4943 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.32	59	139043	6.7111 ug/L #	38
29) 2-Butanone	9.53	43	4129	1.4970 ug/L	86
30) Propionitrile	9.72	54	202	0.2549 ug/L #	1
34) 1-Bromopropane	9.99	122	1978	1.9098 ug/L #	1
36) Tetrahydrofuran	10.37	42	5444	3.0296 ug/L #	63
48) Methylcyclohexane	12.40	83	6593	0.7540 ug/L #	1
60) Ethyl Methacrylate	13.85	69	1165	0.1639 ug/L #	1
73) m-,p-Xylene	16.28	106	1795	0.1593 ug/L	72
79) 1,1,2,2-Tetrachloroethane	17.57	83	12875	1.9973 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138757.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

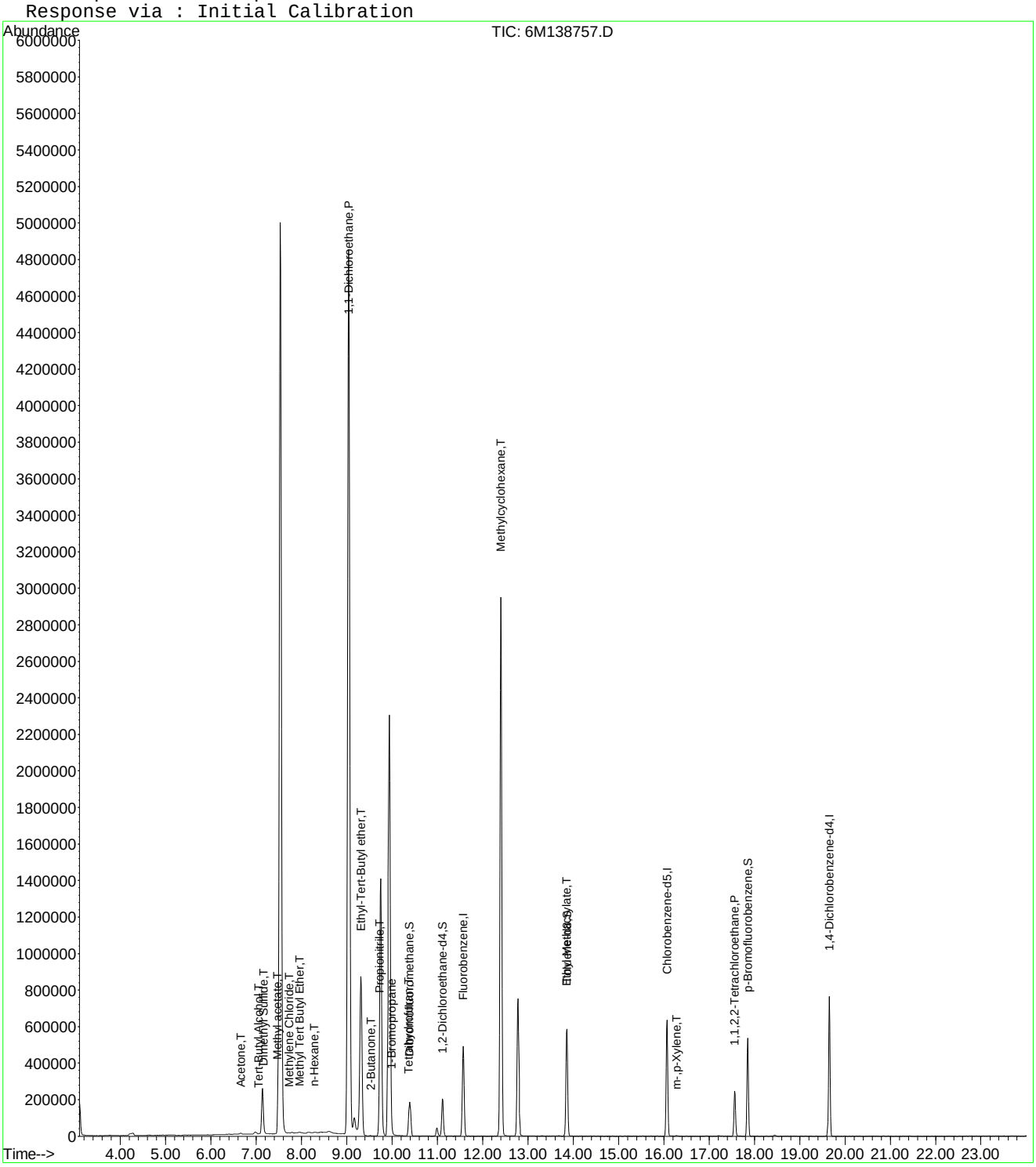

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.08	117	475117	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	368012	318.0524	ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	368.4088	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	385.5211	ug/L	83
5) Ethyl Acetate	9.76	43	2690267	423.1975	ug/L	94
6) Methacrylonitrile	9.94	67	929265	380.0675	ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	550.6158	ug/L #	89
8) 1-Butanol	10.99	41	29815	198.1744	ug/L	75
9) Methyl methacrylate	12.40	41	2375132	375.2316	ug/L	81
10) 2-Nitropropane	12.79	43	849210	455.0717	ug/L	98
13) Cyclohexanone	17.57	55	149420	165.2683	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Mon Apr 25 15:46:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

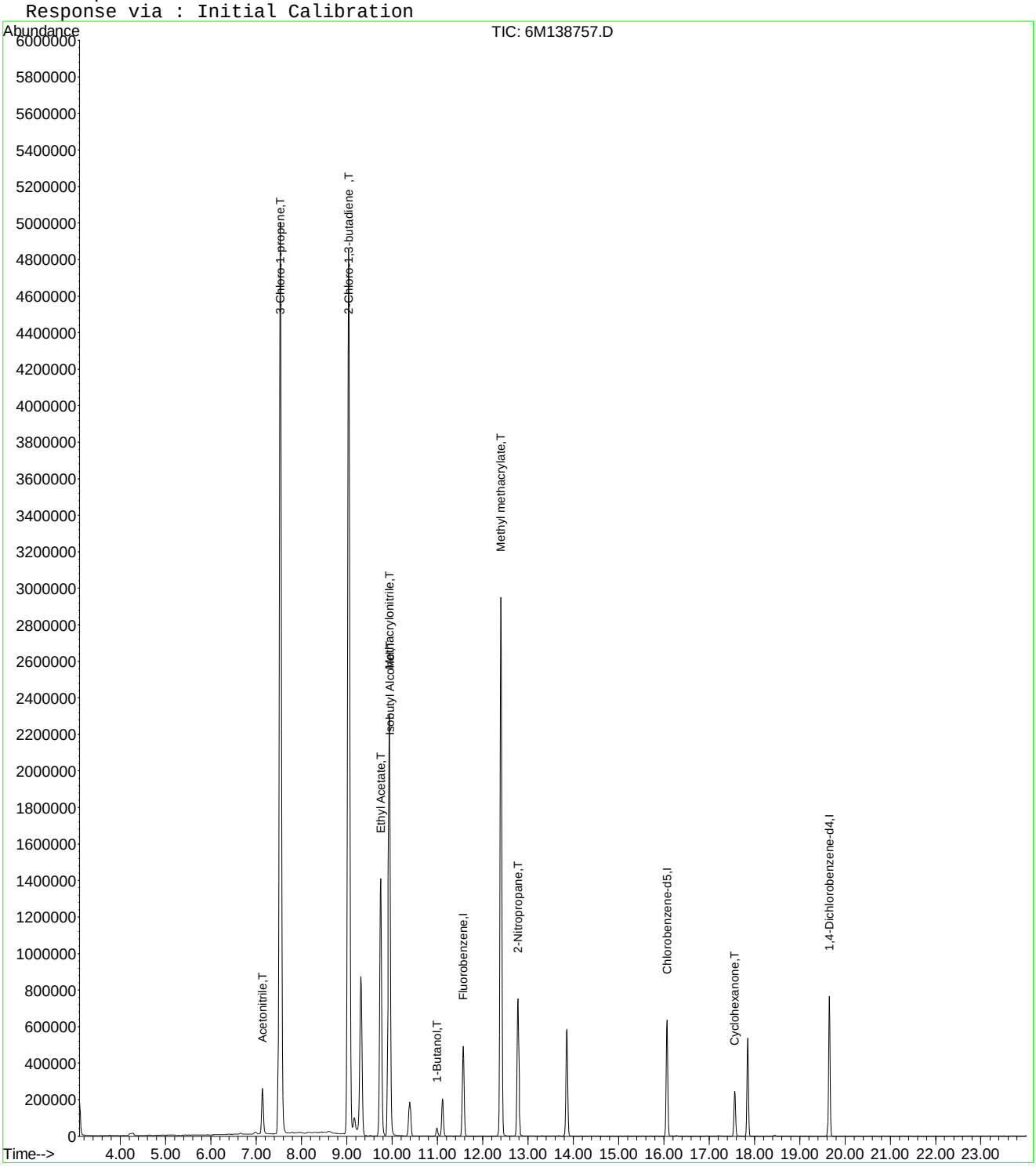

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	407.7137 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	395.4723 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	415.2070 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	416.3170 ug/L	94
6) Methacrylonitrile	9.94	67	929265	417.1119 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	935.6065 ug/L #	89
9) Methyl methacrylate	12.40	41	2375132	437.2937 ug/L	81
10) 2-Nitropropane	12.79	43	849210	420.4022 ug/L	98
13) Cyclohexanone	17.57	55	149420	452.7705 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

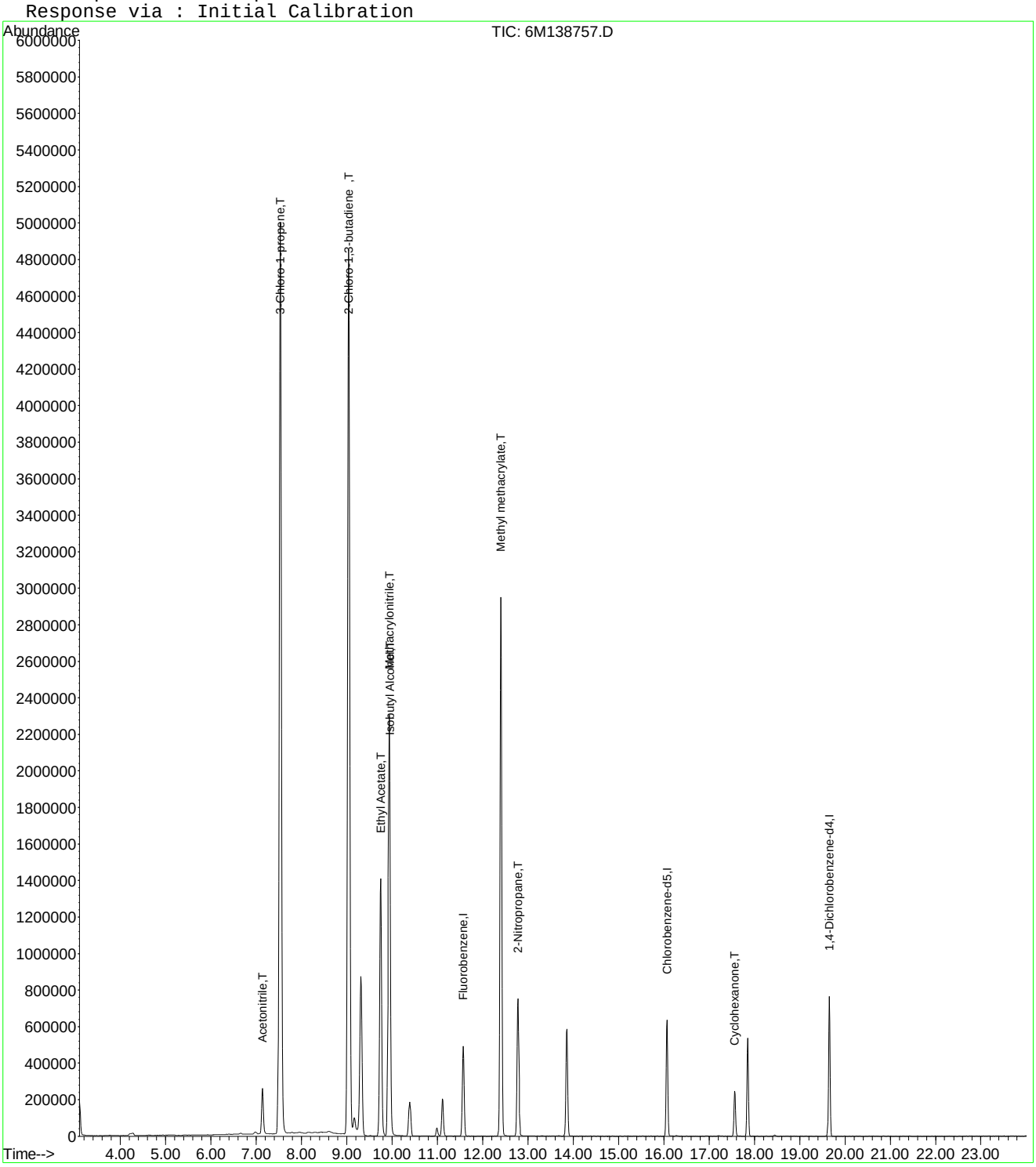

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:52 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	485048	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	175239	27.7556 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.04%		
43) 1,2-Dichloroethane-d4	11.12	65	210644	27.4898 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.96%		
58) Toluene-d8	13.86	98	563297	25.7957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	17.85	95	249406	27.7824 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.12%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	15233	7.9684 ug/L	89
15) Tert-Butyl Alcohol	7.06	59	370	0.6737 ug/L #	59
18) Methyl acetate	7.46	43	1079	0.2032 ug/L #	34
19) Methylene Chloride	7.73	84	1471	0.2176 ug/L	66
20) Carbon Disulfide	7.78	76	2765	0.1407 ug/L #	74
22) Methyl Tert Butyl Ether	7.96	73	25284	1.5144 ug/L #	53
24) n-Hexane	8.28	57	5266	0.5954 ug/L	97
27) 1,1-Dichloroethane	9.05	63	105121	8.0488 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	124099	5.8551 ug/L #	39
29) 2-Butanone	9.52	43	4475	1.5860 ug/L #	72
30) Propionitrile	9.71	54	473	0.5835 ug/L #	1
34) 1-Bromopropane	10.00	122	2117	1.9980 ug/L #	1
36) Tetrahydrofuran	10.36	42	5652	3.0747 ug/L #	54
48) Methylcyclohexane	12.40	83	8011	0.8956 ug/L #	1
59) Toluene	13.98	91	3373	0.1249 ug/L	84
60) Ethyl Methacrylate	13.87	69	1585	0.2184 ug/L #	1
73) m-,p-Xylene	16.28	106	2521	0.2191 ug/L	79
79) 1,1,2,2-Tetrachloroethane	17.57	83	14350	2.1917 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

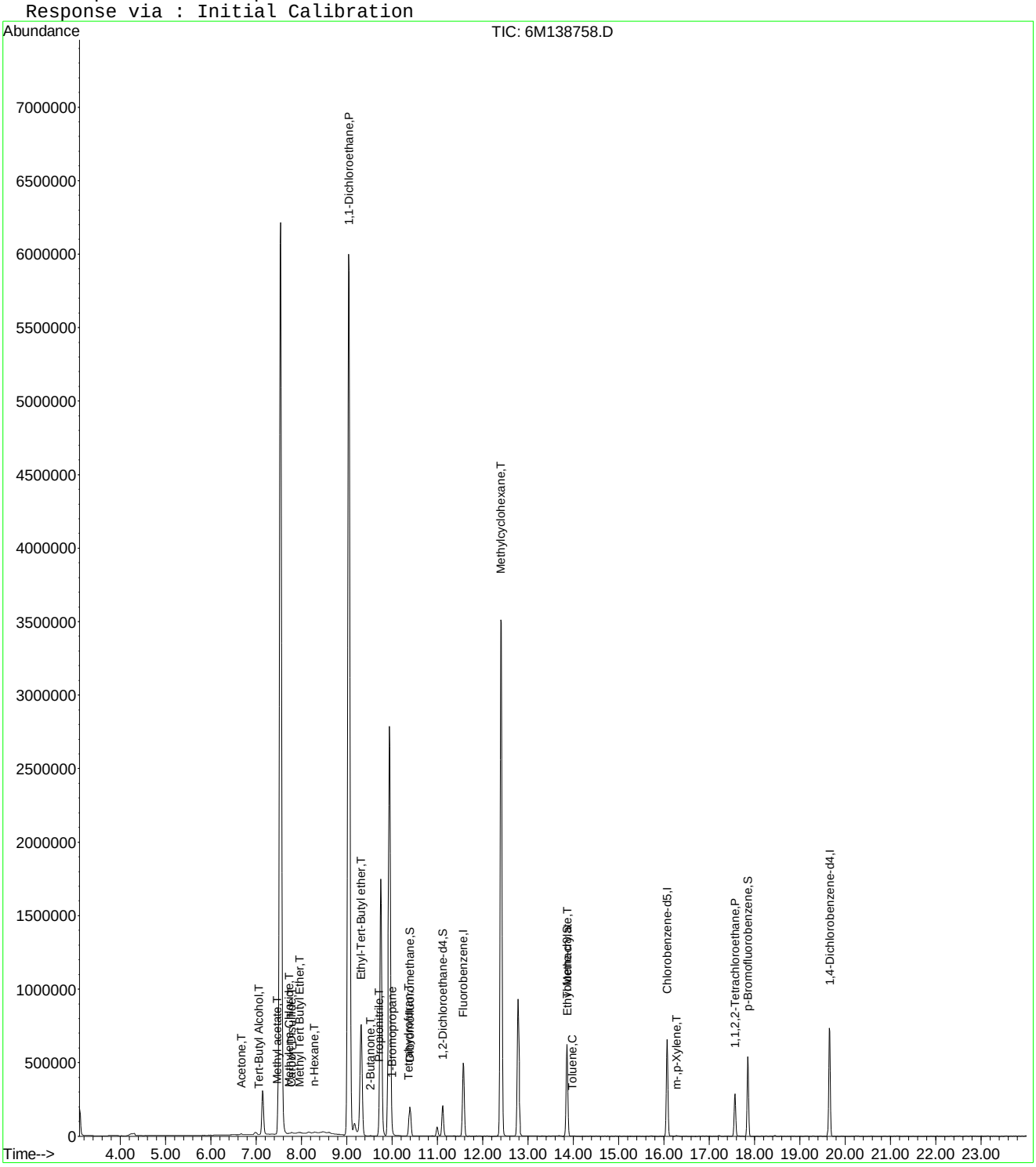

6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	379.8136	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	449.8223	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	474.8265	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	508.5794	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	457.8027	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	701.6799	ug/L #	90
8) 1-Butanol	10.99	41	42236	274.4224	ug/L	75
9) Methyl methacrylate	12.40	41	2914815	450.1389	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	543.0629	ug/L	99
13) Cyclohexanone	17.57	55	176545	192.2558	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

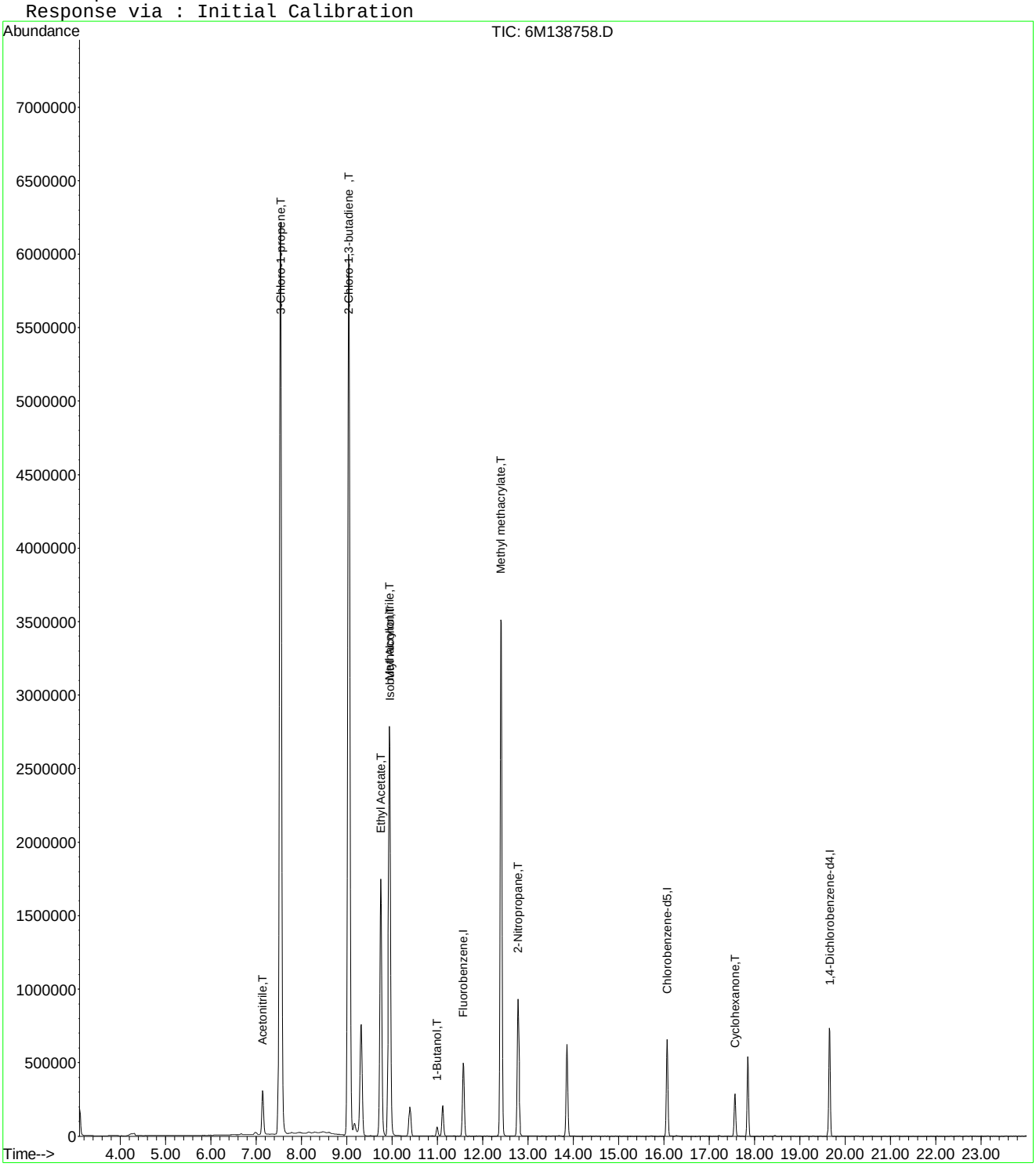

6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	486.8858	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	482.8665	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	511.3891	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	500.3107	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	502.4237	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	1192.2947	ug/L #	90
9) Methyl methacrylate	12.40	41	2914815	524.5904	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	501.6898	ug/L	99
13) Cyclohexanone	17.57	55	176545	526.7057	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

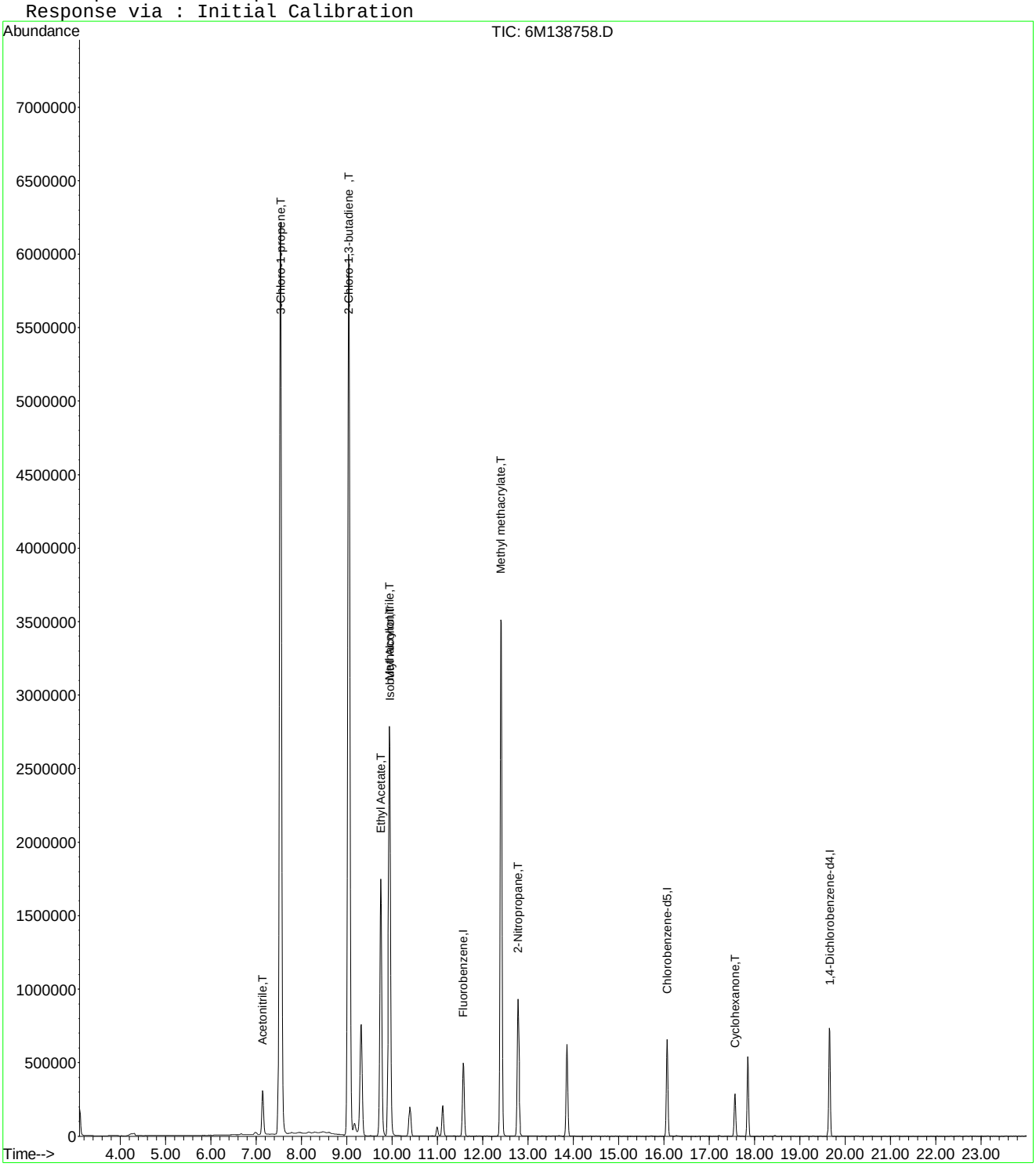

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:54 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.40	111	171708	27.8099 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	210067	28.0330 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.12%		
58) Toluene-d8	13.86	98	553825	26.0829 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.32%		
80) p-Bromofluorobenzene	17.85	95	243088	28.3441 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 113.36%		

Target Compounds					Qvalue
5) 1,3-Butadiene	4.21	54	367749	92.2302 ug/L	88
9) Diethyl ether	6.30	59	700386	132.3612 ug/L	92
13) Acetone	6.67	43	6570	3.5143 ug/L	81
16) Dimethyl Sulfide	7.14	62	2726	0.5361 ug/L #	1
20) Carbon Disulfide	7.54	76	432674	22.5096 ug/L #	36
22) Methyl Tert Butyl Ether	7.97	73	2916	0.1786 ug/L #	53
26) Vinyl Acetate	9.05	43	5230	0.5414 ug/L #	1
27) 1,1-Dichloroethane	9.04	63	22472	1.7594 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.32	59	4063	0.1960 ug/L #	35
29) 2-Butanone	9.52	43	6076	2.2019 ug/L #	66
30) Propionitrile	9.64	54	91341	115.2239 ug/L	96
36) Tetrahydrofuran	10.36	42	4030	2.2418 ug/L #	52
39) Cyclohexane	10.69	56	2387	0.2138 ug/L	79
48) Methylcyclohexane	12.40	83	1353	0.1547 ug/L #	1
50) 1,4-Dioxane	12.73	88	9231	177.0935 ug/L	71
60) Ethyl Methacrylate	13.86	69	1222	0.1732 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1146	0.1832 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

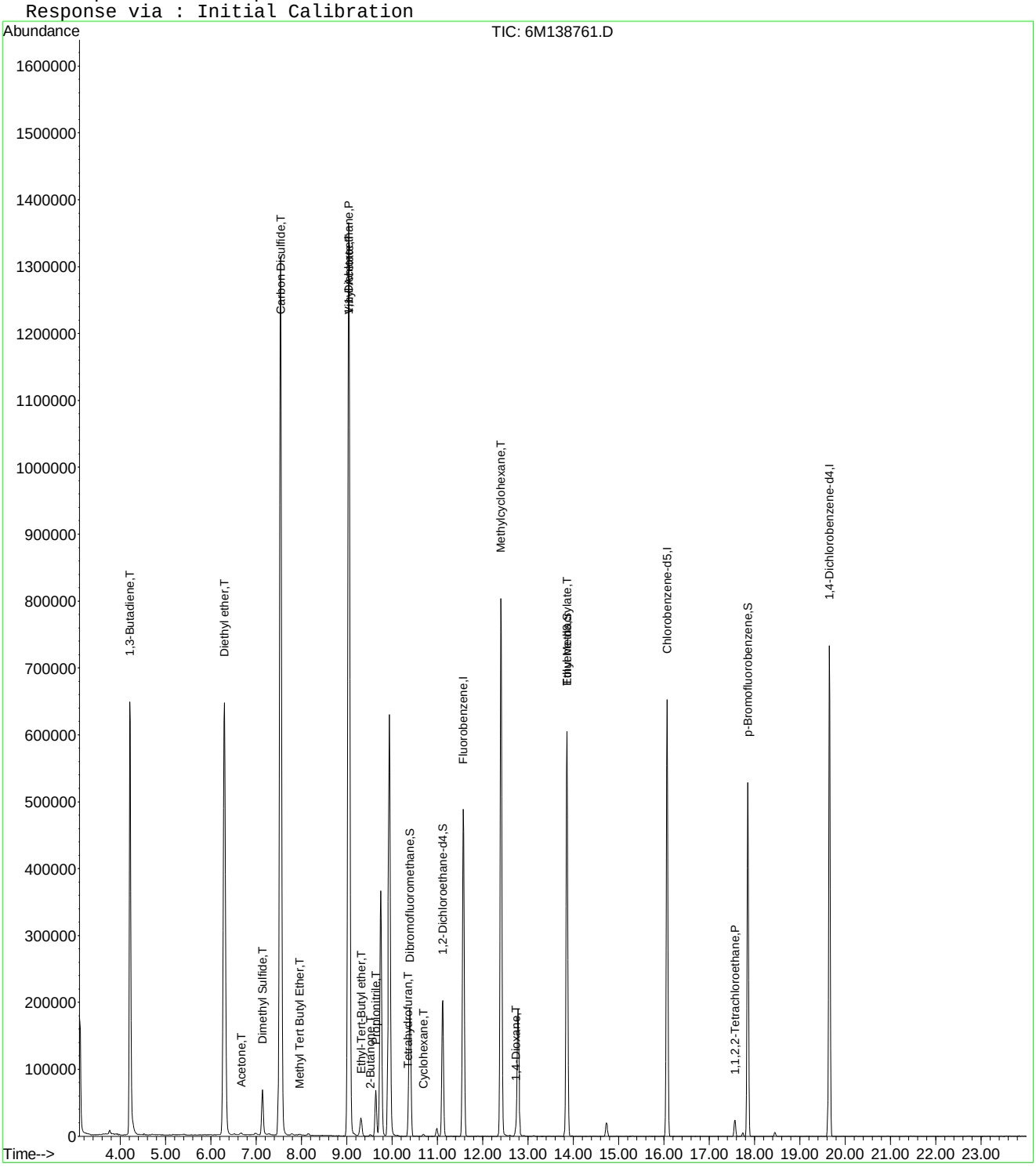

6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	83.4191	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	96.0797	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	108.7756	ug/L	83
5) Ethyl Acetate	9.75	43	691566	108.7414	ug/L	93
6) Methacrylonitrile	9.94	67	252030	103.0355	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	146.2409	ug/L #	93
8) 1-Butanol	10.99	41	7584	50.3877	ug/L	72
9) Methyl methacrylate	12.40	41	635574	100.3670	ug/L	81
10) 2-Nitropropane	12.79	43	211020	113.0321	ug/L	98
13) Cyclohexanone	17.57	55	15491	17.6579	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Mon Apr 25 15:46:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

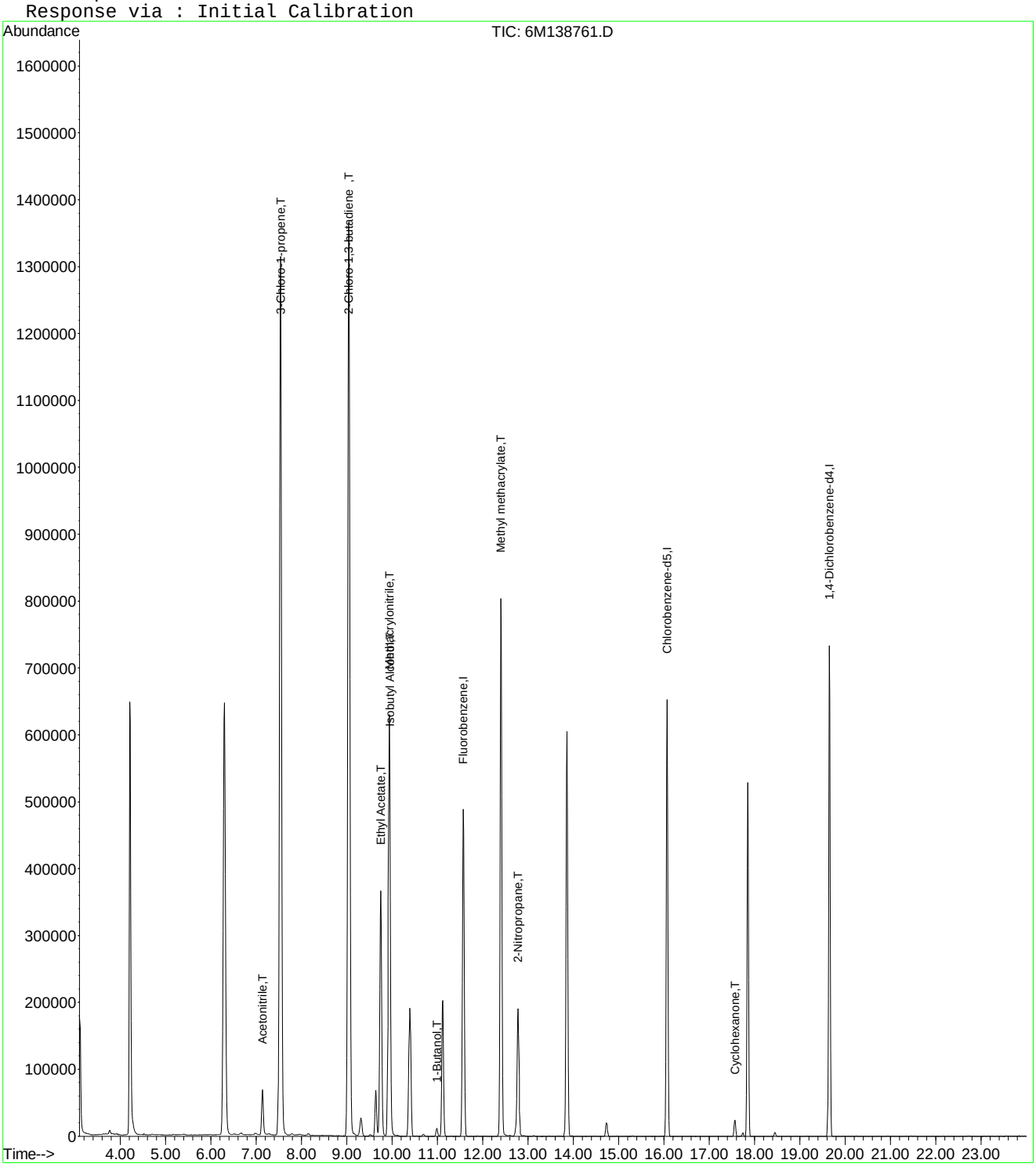

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:02 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	106.9355	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	103.1378	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	117.1516	ug/L	83
5) Ethyl Acetate	9.75	43	691566	106.9734	ug/L	93
6) Methacrylonitrile	9.94	67	252030	113.0781	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	248.4926	ug/L #	93
9) Methyl methacrylate	12.40	41	635574	116.9674	ug/L	81
10) 2-Nitropropane	12.79	43	211020	104.4208	ug/L	98
13) Cyclohexanone	17.57	55	15491	48.3758	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

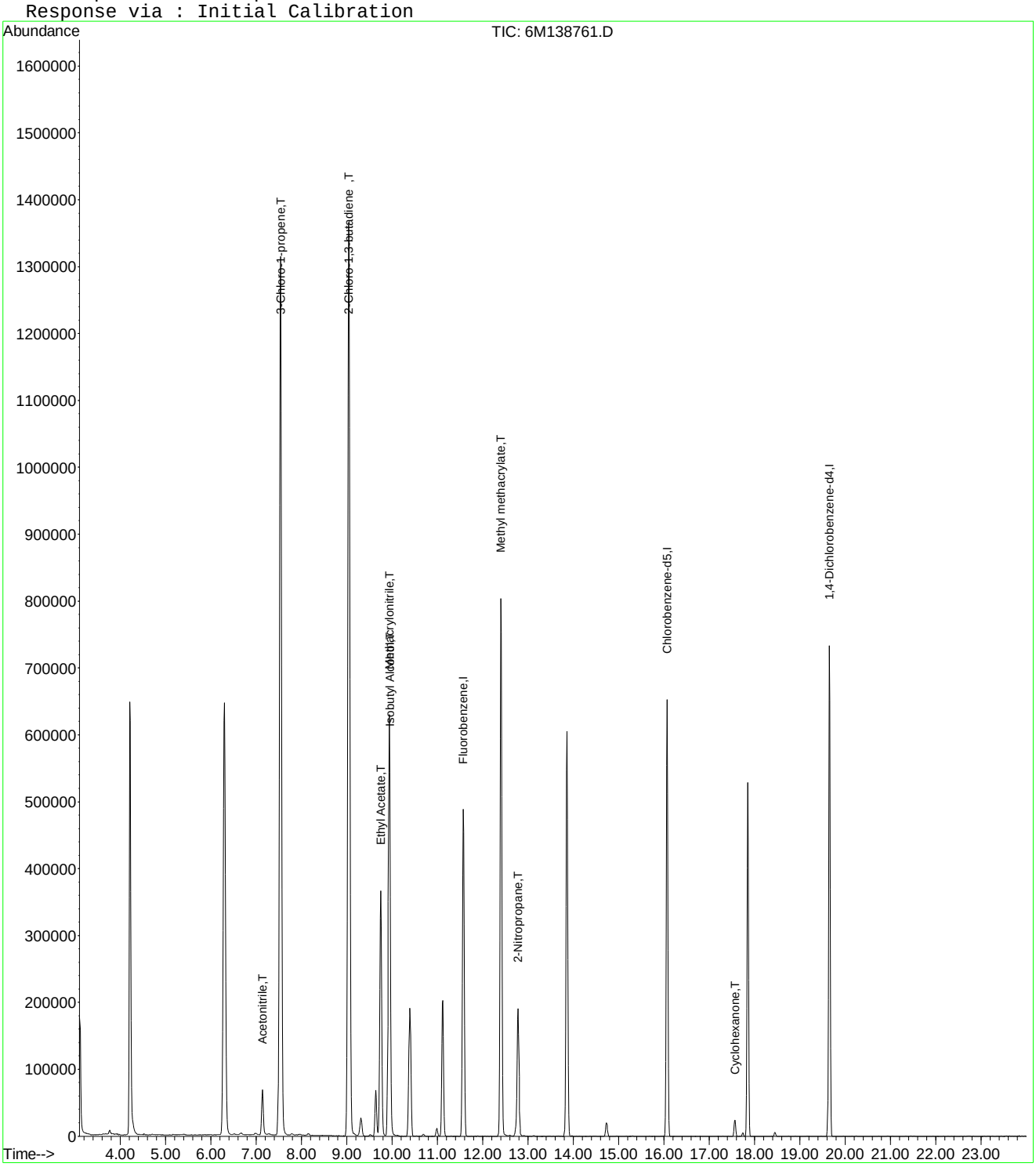

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	101	0.00
2	T	Acetonitrile	100.0000	106.9355	-6.9	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.1378	-3.1	96	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	117.1516	-17.2	107	0.00
5	T	Ethyl Acetate	100.0000	106.9734	-7.0	103	0.00
6	T	Methacrylonitrile	100.0000	113.0781	-13.1	106	0.00
7	T	Isobutyl Alcohol	200.0000	248.4926	-24.2	151	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	116.9674	-17.0	108	0.00
10	T	2-Nitropropane	100.0000	104.4208	-4.4	107	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	48.3758	51.6	56	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138761.D A9FOOWT.M Wed Apr 27 16:05:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:28 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	782166	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	545154	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	278489	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	4426	0.5577 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.24%#	
43) 1,2-Dichloroethane-d4	10.31	65	6633	0.6621 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.64%#	
58) Toluene-d8	13.04	98	14915	0.5556 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.24%#	
80) p-Bromofluorobenzene	17.02	95	6529	0.5986 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.40%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	7859	0.6011 ug/L #	80
3) Chloromethane	3.36	50	10543	0.7222 ug/L	88
4) Vinyl Chloride	3.57	62	6524	0.8138 ug/L	85
5) 1,3-Butadiene	3.62	54	5236	Below Cal #	53
6) Bromomethane	4.39	94	2681	0.5033 ug/L	75
7) Chloroethane	4.55	64	2218	0.4379 ug/L #	74
8) Trichlorofluoromethane	5.01	101	7455	0.6097 ug/L #	89
10) Isoprene	5.58	67	5099	0.4673 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.81	101	3458	0.4546 ug/L	87
13) Acetone	5.90	43	5483	2.1880 ug/L	88
14) 1,1-Dichloroethene	6.11	61	8367	0.5669 ug/L	89
16) Dimethyl Sulfide	6.39	62	2618	0.4067 ug/L	92
17) Iodomethane	6.65	142	580	1.0028 ug/L #	32
18) Methyl acetate	6.68	43	2212	0.3262 ug/L #	66
19) Methylene Chloride	6.95	84	4491	0.5306 ug/L	87
20) Carbon Disulfide	6.97	76	28617	1.0581 ug/L	97
22) Methyl Tert Butyl Ether	7.17	73	6219	0.2772 ug/L #	56
23) trans-1,2-Dichloroethene	7.42	96	5255	0.6648 ug/L	83
24) n-Hexane	7.50	57	14948	1.1142 ug/L	95
26) Vinyl Acetate	8.09	43	2544	0.1688 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	6467	0.3800 ug/L	91
29) 2-Butanone	8.74	43	738	0.1924 ug/L #	57
31) 2,2-Dichloropropane	8.96	77	4273	0.3328 ug/L	92
32) cis-1,2-Dichloroethene	9.04	96	4541	0.5248 ug/L	70
33) Chloroform	9.26	83	5775	0.3788 ug/L	94
35) Bromochloromethane	9.52	130	2012	0.4327 ug/L	92
36) Tetrahydrofuran	9.55	42	2953	1.1037 ug/L #	55
38) 1,1,1-Trichloroethane	9.86	97	4483	0.3377 ug/L	92
39) Cyclohexane	9.87	56	8253	0.4779 ug/L	90
40) 1,1-Dichloropropene	10.08	75	6696	0.5791 ug/L	91
42) Carbon Tetrachloride	10.23	117	3257	0.2988 ug/L #	92
45) 1,2-Dichloroethane	10.45	62	5310	0.4344 ug/L #	89
46) Benzene	10.48	78	15173	0.4650 ug/L	96
47) Trichloroethene	11.35	130	5387	0.6690 ug/L	99
48) Methylcyclohexane	11.43	83	7364	0.5825 ug/L	88
49) 1,2-Dichloropropane	11.58	63	3158	0.3361 ug/L	79
51) Bromodichloromethane	11.94	83	4017	0.3543 ug/L	95
52) Dibromomethane	12.03	93	2564	0.5639 ug/L	85
53) 2-Chloroethyl Vinyl Ether	12.31	63	1255	0.2664 ug/L #	41
55) cis-1,3-Dichloropropene	12.69	75	6354	0.4827 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M140314.D 8260WTR.M Fri Jul 01 14:20:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:28 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.96	79	2244	0.3062 ug/L #	47
59)	Toluene	13.16	91	16171	0.4977 ug/L	100
60)	Ethyl Methacrylate	13.33	69	2168	0.2345 ug/L	77
62)	trans-1,3-Dichloropropene	13.39	75	6685	0.5786 ug/L	82
63)	1,1,2-Trichloroethane	13.62	97	2098	0.3489 ug/L	91
64)	2-Hexanone	13.58	43	1202	0.2105 ug/L #	54
65)	1,3-Dichloropropane	13.99	76	4378	0.3863 ug/L	85
66)	Tetrachloroethene	14.10	166	4661	0.6020 ug/L	99
67)	Dibromochloromethane	14.41	129	2599	0.3560 ug/L	98
68)	1,2-Dibromoethane	14.71	107	3093	0.5329 ug/L	98
69)	1-Chlorohexane	14.85	91	5951	0.5504 ug/L	88
70)	Chlorobenzene	15.30	112	13354	0.6409 ug/L	99
71)	1,1,1,2-Tetrachloroethane	15.35	131	2310	0.3116 ug/L	94
72)	Ethylbenzene	15.35	106	5305	0.4864 ug/L	85
73)	m-,p-Xylene	15.45	106	13647	1.0353 ug/L	91
74)	o-Xylene	16.11	106	5438	0.4136 ug/L	85
75)	Styrene	16.16	104	10471	0.4734 ug/L	91
76)	Bromoform	16.71	173	1433	0.3165 ug/L #	50
77)	Isopropylbenzene	16.63	105	15560	0.4536 ug/L	92
79)	1,1,2,2-Tetrachloroethane	16.88	83	1987	0.2940 ug/L	77
81)	1,2,3-Trichloropropane	17.10	110	241	0.1203 ug/L #	1
82)	trans-1,4-Dichloro-2-Buten	17.19	53	903	0.3534 ug/L	88
83)	n-Propylbenzene	17.22	91	21456	0.5362 ug/L #	94
84)	Bromobenzene	17.34	156	5484	0.6559 ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	12453	0.4440 ug/L	96
86)	2-Chlorotoluene	17.52	91	13840	0.5114 ug/L	95
87)	4-Chlorotoluene	17.59	91	17422	0.6753 ug/L	95
88)	a-Methylstyrene	17.92	118	6165	0.4370 ug/L	93
89)	tert-Butylbenzene	17.98	134	2101	0.3729 ug/L #	24
90)	1,2,4-Trimethylbenzene	18.05	105	13753	0.4779 ug/L	100
91)	sec-Butylbenzene	18.30	105	18042	0.5374 ug/L	92
92)	p-Isopropyltoluene	18.51	119	14633	0.5114 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	11689	0.7103 ug/L	99
94)	1,4-Dichlorobenzene	18.85	146	12500	0.7513 ug/L	97
95)	n-Butylbenzene	19.12	91	17799	0.6344 ug/L	93
96)	1,2-Dichlorobenzene	19.43	146	9545	0.6178 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	20.62	75	229	0.1730 ug/L #	1
98)	1,2,4-Trichlorobenzene	21.96	180	8749	0.8011 ug/L	91
99)	Hexachlorobutadiene	22.15	225	2944	0.6484 ug/L	95
100)	Naphthalene	22.39	128	14249	0.6384 ug/L	95
101)	1,2,3-Trichlorobenzene	22.76	180	7092	0.7013 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140314.D 8260WTR.M Fri Jul 01 14:20:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:20 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

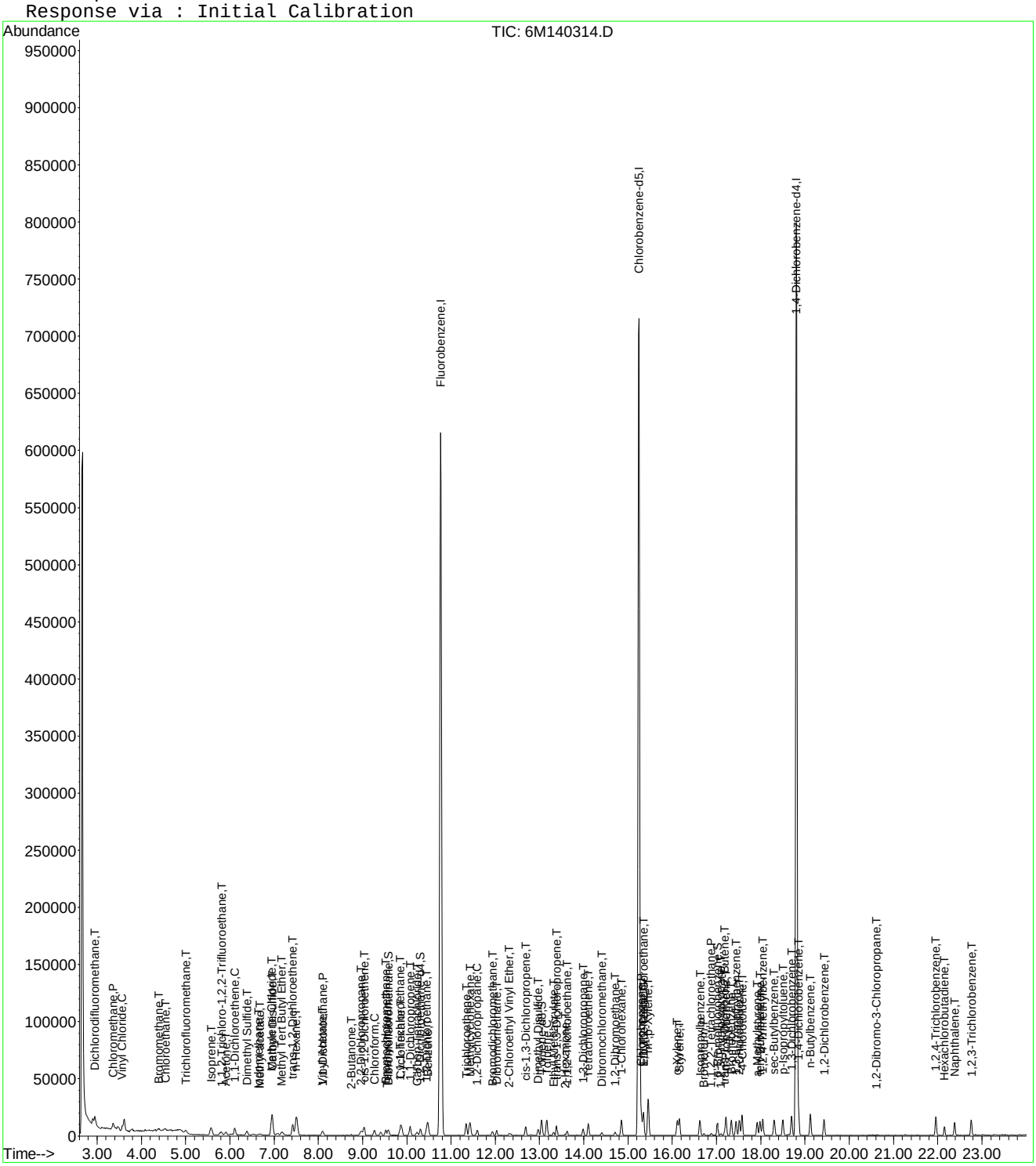

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.6011	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.7222	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.8138	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.9896	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.5033	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.4379	0.0	100	0.02
8	T	Trichlorofluoromethane	-1.0000	0.6097	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0280	0.0	100	0.00
10	T	Isoprene	-1.0000	0.4673	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.4546	0.0	100	0.03
13	T	Acetone	-1.0000	2.1880	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5669	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.4067	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.0028	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.3262	0.0	100	-0.01
19	T	Methylene Chloride	-1.0000	0.5306	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	1.0581	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.15#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2772	0.0	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.6648	0.0	100	0.00
24	T	n-Hexane	-1.0000	1.1142	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.90#
26	T	Vinyl Acetate	-1.0000	0.1688	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3800	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.53#
29	T	2-Butanone	-1.0000	0.1924	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.86#
31	T	2,2-Dichloropropane	-1.0000	0.3328	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.5248	0.0	100	0.00
33	C	Chloroform	0.3000	0.3788	-26.3#	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.41#
35	T	Bromochloromethane	-1.0000	0.4327	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.1037	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.5577	0.0	100	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.3377	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.4779	0.0	100	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.5791	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0293	0.0	100	-0.13
42	T	Carbon Tetrachloride	-1.0000	0.2988	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.6621	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	-1.0000	0.4344	0.0	100	0.00
46	T	Benzene	-1.0000	0.4650	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.6690	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.5825	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3361	0.0	100	-0.01
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	-1.0000	0.3543	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.5639	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2664	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0645	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.4827	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.3062	0.0	100	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5556	0.0	100	0.00
59	C	Toluene	-1.0000	0.4977	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2345	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	-1.0000	0.5786	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.3489	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.2105	0.0	100	0.00
65	T	1,3-Dichloropropane	-1.0000	0.3863	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.6020	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.3560	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.5329	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.5504	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.6409	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3116	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.4864	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	1.0353	0.0	100	-0.01
74	T	o-Xylene	-1.0000	0.4136	0.0	100	-0.01
75	T	Styrene	-1.0000	0.4734	0.0	100	0.00
76	P	Bromoform	-1.0000	0.3165	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.4536	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2940	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5986	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1203	0.0	100	-0.01
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.3534	0.0	100	0.00
83	T	n-Propylbenzene	-1.0000	0.5362	0.0	100	0.00
84	T	Bromobenzene	-1.0000	0.6559	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.4440	0.0	100	-0.01
86	T	2-Chlorotoluene	-1.0000	0.5114	0.0	79	-0.01
87	T	4-Chlorotoluene	-1.0000	0.6753	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.4370	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3729	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.4779	0.0	100	-0.01
91	T	sec-Butylbenzene	-1.0000	0.5374	0.0	100	-0.01
92	T	p-Isopropyltoluene	-1.0000	0.5114	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.7103	0.0	100	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.7513	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.6344	0.0	100	0.00
96	T	1,2-Dichlorobenzene	-1.0000	0.6178	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.1730	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	0.8011	0.0	100	-0.01
99	T	Hexachlorobutadiene	-1.0000	0.6484	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.6384	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	0.7013	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
6M140314.D 8260WTR.M Fri Jul 01 14:34:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:36 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	711040	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	496934	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	254758	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	13.04	98	1118	0.0457 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.20%#	
80) p-Bromofluorobenzene	17.01	95	723	0.0725 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	4029	0.3390 ug/L #	64
3) Chloromethane	3.37	50	7908	0.5959 ug/L	82
4) Vinyl Chloride	3.56	62	2700	0.3705 ug/L	78
5) 1,3-Butadiene	3.62	54	3035	Below Cal #	51
6) Bromomethane	4.39	94	1885	0.3892 ug/L	95
7) Chloroethane	4.55	64	1384	0.3006 ug/L #	43
8) Trichlorofluoromethane	5.00	101	5096	0.4585 ug/L #	91
10) Isoprene	5.57	67	4197	0.4231 ug/L	86
12) 1,1,2-Trichloro-1,2,2-Trif	5.82	101	2196	0.3176 ug/L	83
13) Acetone	5.90	43	1650	0.7243 ug/L #	48
14) 1,1-Dichloroethene	6.11	61	5407	0.4030 ug/L	90
16) Dimethyl Sulfide	6.38	62	2288	0.3910 ug/L	87
18) Methyl acetate	6.69	43	1819	0.2951 ug/L #	66
19) Methylene Chloride	6.93	84	3320	0.4315 ug/L	82
20) Carbon Disulfide	6.97	76	11427	0.4648 ug/L	99
22) Methyl Tert Butyl Ether	7.18	73	8255	0.4048 ug/L #	75
23) trans-1,2-Dichloroethene	7.42	96	2988	0.4158 ug/L	82
24) n-Hexane	7.51	57	5670	0.4649 ug/L	92
26) Vinyl Acetate	8.09	43	2906	0.2121 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	6380	0.4124 ug/L	89
29) 2-Butanone	8.74	43	1046	0.3000 ug/L #	57
31) 2,2-Dichloropropane	8.95	77	4509	0.3863 ug/L	96
32) cis-1,2-Dichloroethene	9.03	96	3353	0.4263 ug/L	94
33) Chloroform	9.27	83	5194	0.3747 ug/L	99
35) Bromochloromethane	9.53	130	1601	0.3788 ug/L	83
36) Tetrahydrofuran	9.56	42	3379	1.3892 ug/L #	67
38) 1,1,1-Trichloroethane	9.87	97	4496	0.3726 ug/L	93
39) Cyclohexane	9.89	56	6498	0.4139 ug/L	94
40) 1,1-Dichloropropene	10.08	75	4389	0.4176 ug/L	94
42) Carbon Tetrachloride	10.24	117	3081	0.3110 ug/L #	88
45) 1,2-Dichloroethane	10.45	62	4443	0.3998 ug/L #	81
46) Benzene	10.48	78	13145	0.4431 ug/L	97
47) Trichloroethene	11.34	130	3154	0.4309 ug/L	93
48) Methylcyclohexane	11.42	83	4969	0.4324 ug/L	87
49) 1,2-Dichloropropane	11.59	63	3543	0.4147 ug/L	87
51) Bromodichloromethane	11.93	83	3676	0.3566 ug/L	92
52) Dibromomethane	12.03	93	1420	0.3436 ug/L	100
53) 2-Chloroethyl Vinyl Ether	12.31	63	1186	0.2769 ug/L #	41
54) 4-Methyl-2-Pentanone	12.35	58	422	0.1601 ug/L #	38
55) cis-1,3-Dichloropropene	12.67	75	4716	0.3941 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140315.D 8260WTR.M Fri Jul 01 14:20:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:36 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.97	79	1919	0.2881 ug/L #	68
59)	Toluene	13.16	91	13506	0.4560 ug/L	97
60)	Ethyl Methacrylate	13.32	69	2728	0.3238 ug/L	91
62)	trans-1,3-Dichloropropene	13.39	75	3780	0.3589 ug/L	86
63)	1,1,2-Trichloroethane	13.63	97	2086	0.3806 ug/L	93
64)	2-Hexanone	13.58	43	1538	0.2955 ug/L	72
65)	1,3-Dichloropropane	13.98	76	4376	0.4236 ug/L	95
66)	Tetrachloroethene	14.10	166	2876	0.4075 ug/L	95
67)	Dibromochloromethane	14.41	129	2210	0.3321 ug/L	93
68)	1,2-Dibromoethane	14.72	107	1896	0.3584 ug/L	87
69)	1-Chlorohexane	14.86	91	4030	0.4089 ug/L	91
70)	Chlorobenzene	15.30	112	8640	0.4549 ug/L	96
71)	1,1,1,2-Tetrachloroethane	15.35	131	2601	0.3848 ug/L	92
72)	Ethylbenzene	15.35	106	4049	0.4073 ug/L	76
73)	m-,p-Xylene	15.45	106	10358	0.8620 ug/L	87
74)	o-Xylene	16.10	106	5184	0.4326 ug/L	96
75)	Styrene	16.16	104	7888	0.3912 ug/L	83
76)	Bromoform	16.72	173	1146	0.2777 ug/L #	68
77)	Isopropylbenzene	16.62	105	13388	0.4282 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.88	83	2211	0.3576 ug/L	95
81)	1,2,3-Trichloropropane	17.11	110	427	0.2329 ug/L #	1
83)	n-Propylbenzene	17.22	91	16903	0.4618 ug/L #	94
84)	Bromobenzene	17.34	156	3349	0.4379 ug/L	93
85)	1,3,5-Trimethylbenzene	17.44	105	10954	0.4269 ug/L	99
86)	2-Chlorotoluene	17.51	91	11900	0.4807 ug/L	93
87)	4-Chlorotoluene	17.57	91	10437	0.4422 ug/L	94
88)	a-Methylstyrene	17.92	118	4645	0.3600 ug/L	98
89)	tert-Butylbenzene	17.98	134	2361	0.4580 ug/L	87
90)	1,2,4-Trimethylbenzene	18.04	105	11026	0.4188 ug/L	95
91)	sec-Butylbenzene	18.31	105	13954	0.4543 ug/L	95
92)	p-Isopropyltoluene	18.50	119	11850	0.4527 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	6789	0.4510 ug/L	100
94)	1,4-Dichlorobenzene	18.85	146	7052	0.4633 ug/L	99
95)	n-Butylbenzene	19.12	91	11908	0.4639 ug/L	90
96)	1,2-Dichlorobenzene	19.42	146	6295	0.4454 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	20.62	75	204	0.1685 ug/L #	1
98)	1,2,4-Trichlorobenzene	21.96	180	4710	0.4715 ug/L	93
99)	Hexachlorobutadiene	22.15	225	1916	0.4613 ug/L	98
100)	Naphthalene	22.38	128	8061	0.3948 ug/L	90
101)	1,2,3-Trichlorobenzene	22.75	180	4023	0.4349 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140315.D 8260WTR.M Fri Jul 01 14:20:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:20 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

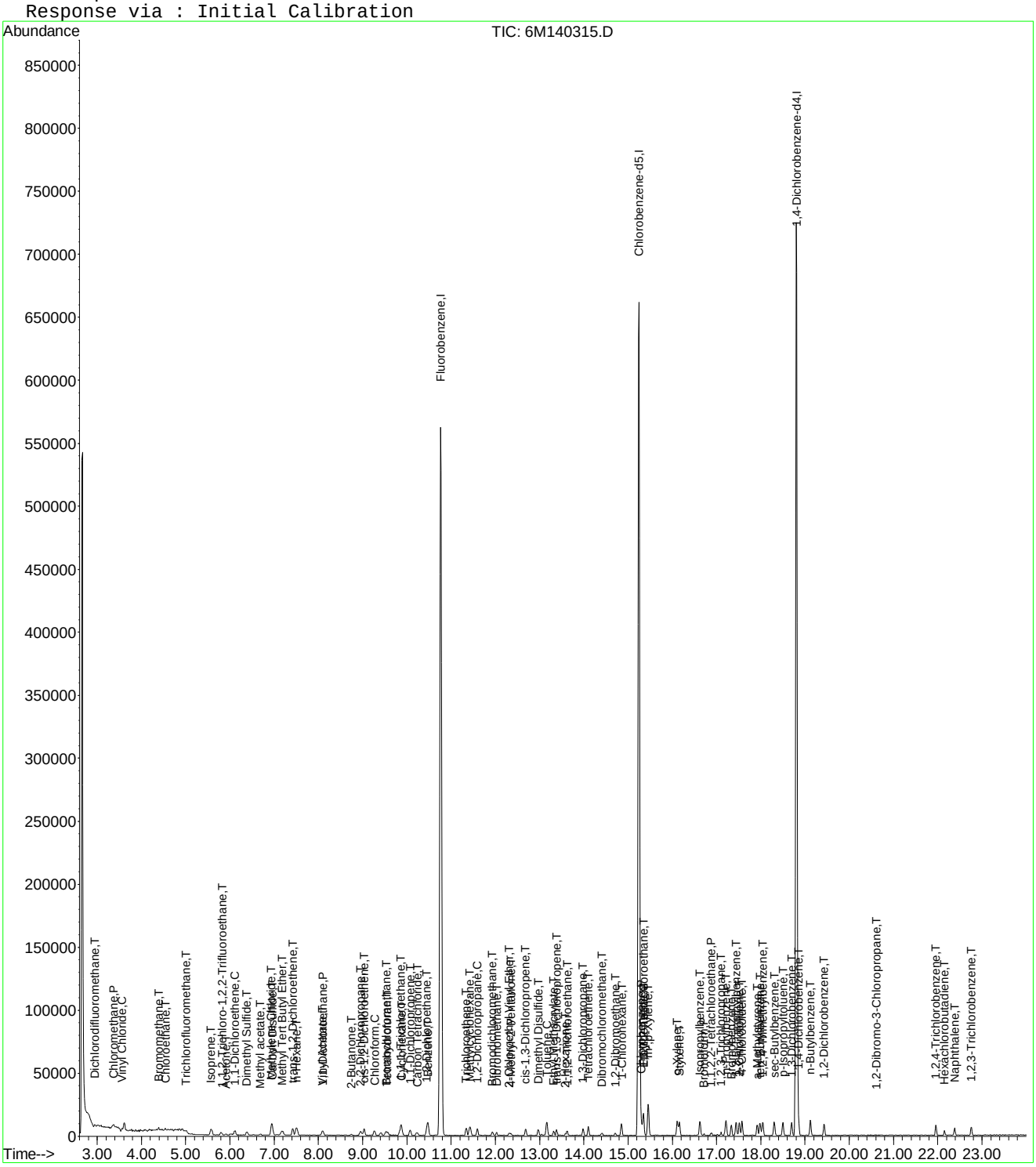

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3390	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5959	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3705	7.4	100	0.00
5	T	1,3-Butadiene	-1.0000	-2.4246	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.3892	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.3006	0.0	100	0.02
8	T	Trichlorofluoromethane	0.4000	0.4585	-14.6	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.55#
10	T	Isoprene	-1.0000	0.4231	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3176	0.0	100	0.04
13	T	Acetone	-1.0000	0.7243	0.0	100	0.00
14	C	1,1-Dichloroethene	0.4000	0.4030	-0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.3910	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.64#
18	T	Methyl acetate	-1.0000	0.2951	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4315	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4648	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.15#
22	T	Methyl Tert Butyl Ether	-1.0000	0.4048	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4158	-4.0	100	0.00
24	T	n-Hexane	-1.0000	0.4649	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.90#
26	T	Vinyl Acetate	-1.0000	0.2121	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.4124	-3.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.53#
29	T	2-Butanone	-1.0000	0.3000	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.86#
31	T	2,2-Dichloropropane	0.4000	0.3863	3.4	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4263	-6.6	100	0.00
33	C	Chloroform	0.4000	0.3747	6.3	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.41#
35	T	Bromochloromethane	0.4000	0.3787	5.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.3892	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.59#
38	T	1,1,1-Trichloroethane	0.4000	0.3726	6.9	100	0.02
39	T	Cyclohexane	-1.0000	0.4139	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4176	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3110	22.3#	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	0.4000	0.3998	0.1	100	0.00
46	T	Benzene	0.4000	0.4431	-10.8	100	0.00
47	T	Trichloroethene	0.4000	0.4309	-7.7	100	0.00
48	T	Methylcyclohexane	-1.0000	0.4324	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4147	-3.7	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	0.4000	0.3566	10.8	100	0.00
52	T	Dibromomethane	0.4000	0.3436	14.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2769	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.1601	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3941	1.5	100	-0.01
56	T	Dimethyl Disulfide	-1.0000	0.2881	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0457	0.0	100	0.00
59	C	Toluene	0.4000	0.4560	-14.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3238	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.16#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3589	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3806	4.9	100	0.00
64	T	2-Hexanone	-1.0000	0.2955	0.0	100	0.00
65	T	1,3-Dichloropropane	0.4000	0.4236	-5.9	100	-0.01
66	T	Tetrachloroethene	0.4000	0.4075	-1.9	100	0.00
67	T	Dibromochloromethane	0.4000	0.3321	17.0	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3584	10.4	100	0.00
69	T	1-Chlorohexane	0.4000	0.4089	-2.2	100	0.00
70	P	Chlorobenzene	0.4000	0.4549	-13.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3848	3.8	100	0.00
72	C	Ethylbenzene	0.4000	0.4073	-1.8	100	0.00
73	T	m-,p-Xylene	0.8000	0.8620	-7.8	100	-0.01
74	T	o-Xylene	-1.0000	0.4326	0.0	100	-0.01
75	T	Styrene	0.4000	0.3912	2.2	100	0.00
76	P	Bromoform	-1.0000	0.2777	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4282	-7.0	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3576	10.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0725	0.0	100	-0.01
81	T	1,2,3-Trichloropropane	-1.0000	0.2329	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1005	0.0	100	0.00
83	T	n-Propylbenzene	0.4000	0.4618	-15.4	100	0.00
84	T	Bromobenzene	0.4000	0.4379	-9.5	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4270	-6.7	100	-0.01
86	T	2-Chlorotoluene	0.4000	0.4807	-20.2#	100	-0.01
87	T	4-Chlorotoluene	0.4000	0.4422	-10.6	100	-0.01
88	T	a-Methylstyrene	-1.0000	0.3600	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.4580	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.4188	0.0	100	-0.01
91	T	sec-Butylbenzene	-1.0000	0.4543	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4527	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4510	-12.7	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4633	-15.8	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4639	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4454	-11.4	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.1685	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	0.4000	0.4714	-17.9	100	-0.01
99	T	Hexachlorobutadiene	0.4000	0.4613	-15.3	100	0.00
100	T	Naphthalene	0.4000	0.3948	1.3	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4349	-8.7	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140315.D 8260WTR.M Fri Jul 01 14:35:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	687429	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	485381	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	251587	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	3444	0.4938 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.96%#	
43) 1,2-Dichloroethane-d4	10.31	65	4418	0.5018 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.00%#	
58) Toluene-d8	13.04	98	12734	0.5328 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.12%#	
80) p-Bromofluorobenzene	17.01	95	5390	0.5470 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.20%#	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	11016	0.9586 ug/L #	84
3) Chloromethane	3.37	50	15509	1.2088 ug/L	95
4) Vinyl Chloride	3.56	62	7694	1.0920 ug/L	94
5) 1,3-Butadiene	3.62	54	7756	Below Cal #	68
6) Bromomethane	4.39	94	4929	1.0528 ug/L	86
7) Chloroethane	4.53	64	4342	0.9753 ug/L	93
8) Trichlorofluoromethane	5.01	101	10531	0.9800 ug/L	96
9) Diethyl ether	5.55	59	32999	5.2047 ug/L	95
10) Isoprene	5.57	67	9716	1.0131 ug/L	99
11) Acrolein	5.79	56	2538	2.4066 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	6731	1.0068 ug/L	91
13) Acetone	5.90	43	3178	1.4430 ug/L #	76
14) 1,1-Dichloroethene	6.12	61	13411	1.0339 ug/L	87
15) Tert-Butyl Alcohol	6.25	59	6206	9.2151 ug/L #	84
16) Dimethyl Sulfide	6.38	62	5231	0.9246 ug/L	96
17) Iodomethane	6.65	142	2100	1.3352 ug/L	82
18) Methyl acetate	6.69	43	5561	0.9331 ug/L #	66
19) Methylene Chloride	6.94	84	8529	1.1466 ug/L	84
20) Carbon Disulfide	6.97	76	25467	1.0714 ug/L	99
21) Acrylonitrile	7.16	53	6206	2.2695 ug/L	94
22) Methyl Tert Butyl Ether	7.18	73	19700	0.9991 ug/L	95
23) trans-1,2-Dichloroethene	7.42	96	6984	1.0053 ug/L	82
24) n-Hexane	7.51	57	13051	1.1069 ug/L	96
25) Diisopropyl ether	7.90	45	166032	5.2317 ug/L	96
26) Vinyl Acetate	8.09	43	9104	0.6872 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	15277	1.0213 ug/L	96
28) Ethyl-Tert-Butyl ether	8.53	59	131034	5.1323 ug/L	97
29) 2-Butanone	8.73	43	3268	0.9693 ug/L #	57
30) Propionitrile	8.85	54	4333	4.7359 ug/L	96
31) 2,2-Dichloropropane	8.95	77	11579	1.0261 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	7838	1.0307 ug/L	88
33) Chloroform	9.26	83	13154	0.9816 ug/L	99
34) 1-Bromopropane	9.41	122	659	1.0190 ug/L	80
35) Bromochloromethane	9.52	130	3868	0.9465 ug/L	100
36) Tetrahydrofuran	9.55	42	14306	6.0837 ug/L	89
38) 1,1,1-Trichloroethane	9.84	97	11995	1.0282 ug/L	99
39) Cyclohexane	9.89	56	16203	1.0675 ug/L	92
40) 1,1-Dichloropropene	10.08	75	10372	1.0207 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	97548	5.0317 ug/L	97
42) Carbon Tetrachloride	10.22	117	8394	0.8763 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M140316.D 8260WTR.M Fri Jul 01 14:21:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	10834	1.0084 ug/L #	94
46)	Benzene	10.48	78	30089	1.0492 ug/L	98
47)	Trichloroethene	11.35	130	7344	1.0378 ug/L	95
48)	Methylcyclohexane	11.43	83	11566	1.0410 ug/L	92
49)	1,2-Dichloropropane	11.59	63	8057	0.9755 ug/L	94
51)	Bromodichloromethane	11.93	83	9704	0.9738 ug/L	95
52)	Dibromomethane	12.02	93	3754	0.9395 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	3750	0.9056 ug/L	89
54)	4-Methyl-2-Pentanone	12.35	58	1943	0.7624 ug/L #	38
55)	cis-1,3-Dichloropropene	12.68	75	10823	0.9354 ug/L	99
56)	Dimethyl Disulfide	12.97	79	5005	0.7771 ug/L	92
59)	Toluene	13.16	91	30726	1.0622 ug/L	99
60)	Ethyl Methacrylate	13.32	69	7189	0.8735 ug/L	94
62)	trans-1,3-Dichloropropene	13.39	75	9521	0.9256 ug/L	92
63)	1,1,2-Trichloroethane	13.63	97	5389	1.0066 ug/L	99
64)	2-Hexanone	13.58	43	4641	0.9130 ug/L	84
65)	1,3-Dichloropropane	13.99	76	10212	1.0121 ug/L	95
66)	Tetrachloroethene	14.10	166	7069	1.0254 ug/L	90
67)	Dibromochloromethane	14.41	129	5818	0.8951 ug/L	98
68)	1,2-Dibromoethane	14.71	107	5034	0.9742 ug/L	100
69)	1-Chlorohexane	14.85	91	9657	1.0031 ug/L	86
70)	Chlorobenzene	15.30	112	19612	1.0571 ug/L	95
71)	1,1,1,2-Tetrachloroethane	15.35	131	6511	0.9863 ug/L	95
72)	Ethylbenzene	15.35	106	9761	1.0051 ug/L	83
73)	m-,p-Xylene	15.45	106	24695	2.1041 ug/L	92
74)	o-Xylene	16.11	106	11834	1.0110 ug/L	92
75)	Styrene	16.16	104	18993	0.9644 ug/L	88
76)	Bromoform	16.72	173	3330	0.8262 ug/L #	88
77)	Isopropylbenzene	16.61	105	31878	1.0438 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.88	83	5647	0.9248 ug/L	93
81)	1,2,3-Trichloropropane	17.11	110	1314	0.7259 ug/L #	16
82)	trans-1,4-Dichloro-2-Buten	17.18	53	1593	0.6900 ug/L	82
83)	n-Propylbenzene	17.22	91	39699	1.0982 ug/L	95
84)	Bromobenzene	17.34	156	7581	1.0037 ug/L	87
85)	1,3,5-Trimethylbenzene	17.44	105	26502	1.0460 ug/L	94
86)	2-Chlorotoluene	17.51	91	26919	1.1011 ug/L	97
87)	4-Chlorotoluene	17.58	91	23704	1.0170 ug/L	96
88)	a-Methylstyrene	17.92	118	11597	0.9100 ug/L	97
89)	tert-Butylbenzene	17.98	134	5253	1.0319 ug/L	63
90)	1,2,4-Trimethylbenzene	18.04	105	27482	1.0570 ug/L	95
91)	sec-Butylbenzene	18.30	105	33207	1.0949 ug/L	94
92)	p-Isopropyltoluene	18.50	119	27800	1.0755 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	15649	1.0526 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	16097	1.0710 ug/L #	64
95)	n-Butylbenzene	19.12	91	27428	1.0821 ug/L	93
96)	1,2-Dichlorobenzene	19.43	146	14706	1.0536 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	20.62	75	1058	0.8847 ug/L	65
98)	1,2,4-Trichlorobenzene	21.97	180	9695	0.9827 ug/L	98
99)	Hexachlorobutadiene	22.15	225	4079	0.9944 ug/L	93
100)	Naphthalene	22.38	128	18851	0.9349 ug/L	92
101)	1,2,3-Trichlorobenzene	22.75	180	9647	1.0560 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M140316.D 8260WTR.M Fri Jul 01 14:21:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

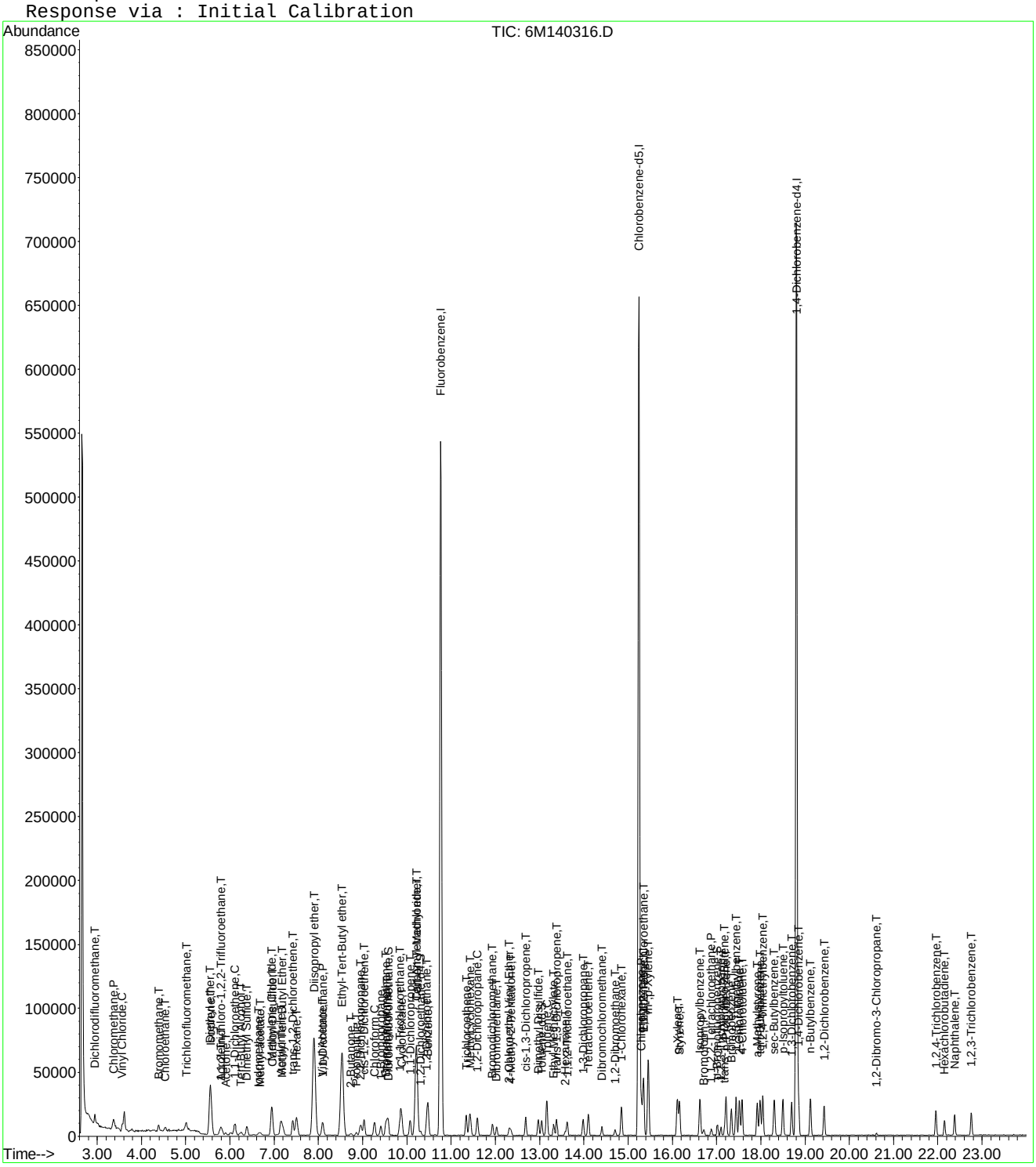

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9586	4.1	100	0.00
3	P	Chloromethane	1.0000	1.2088	-20.9#	100	0.00
4	C	Vinyl Chloride	1.0000	1.0920	-9.2	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.1669	0.0	0	0.03
6	T	Bromomethane	1.0000	1.0528	-5.3	100	0.02
7	T	Chloroethane	1.0000	0.9753	2.5	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9800	2.0	100	0.02
9	T	Diethyl ether	5.0000	5.2047	-4.1	100	0.00
10	T	Isoprene	-1.0000	1.0131	0.0	100	0.00
11	T	Acrolein	-1.0000	2.4066	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0068	-0.7	100	0.00
13	T	Acetone	-1.0000	1.4430	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0338	-3.4	100	0.02
15	T	Tert-Butyl Alcohol	10.0000	9.2151	7.8	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	0.9246	0.0	100	0.00
17	T	Iodomethane	1.0000	1.3352	-33.5#	100	0.00
18	T	Methyl acetate	-1.0000	0.9331	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.1466	-14.7	100	0.00
20	T	Carbon Disulfide	1.0000	1.0714	-7.1	100	0.00
21	T	Acrylonitrile	2.5000	2.2695	9.2	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9991	0.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0053	-0.5	100	0.00
24	T	n-Hexane	-1.0000	1.1069	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.2317	-4.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.6872	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0213	-2.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.1323	-2.6	100	0.00
29	T	2-Butanone	-1.0000	0.9693	0.0	100	0.00
30	T	Propionitrile	5.0000	4.7359	5.3	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0261	-2.6	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0307	-3.1	100	0.00
33	C	Chloroform	1.0000	0.9816	1.8	100	0.00
34		1-Bromopropane	1.0000	1.0190	-1.9	100	0.00
35	T	Bromochloromethane	1.0000	0.9465	5.3	100	0.00
36	T	Tetrahydrofuran	5.0000	6.0837	-21.7#	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.4938	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	1.0282	-2.8	100	0.00
39	T	Cyclohexane	1.0000	1.0675	-6.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0207	-2.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0317	-0.6	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.8763	12.4	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.5018	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	-0.01
45	T	1,2-Dichloroethane	1.0000	1.0084	-0.8	100	0.00
46	T	Benzene	1.0000	1.0492	-4.9	100	0.00
47	T	Trichloroethene	1.0000	1.0378	-3.8	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0410	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9756	2.4	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	1.0000	0.9738	2.6	100	0.00
52	T	Dibromomethane	1.0000	0.9395	6.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.9056	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.7624	0.0	100	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9355	6.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7771	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5328	0.0	100	0.00
59	C	Toluene	1.0000	1.0621	-6.2	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8735	12.7	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	1.0000	0.9256	7.4	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	1.0066	-0.7	100	0.00
64	T	2-Hexanone	-1.0000	0.9130	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	1.0121	-1.2	100	0.00
66	T	Tetrachloroethene	1.0000	1.0254	-2.5	100	0.00
67	T	Dibromochloromethane	1.0000	0.8951	10.5	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9742	2.6	100	0.00
69	T	1-Chlorohexane	1.0000	1.0031	-0.3	100	0.00
70	P	Chlorobenzene	1.0000	1.0571	-5.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9863	1.4	100	0.00
72	C	Ethylbenzene	1.0000	1.0051	-0.5	100	0.00
73	T	m-,p-Xylene	2.0000	2.1041	-5.2	100	-0.01
74	T	o-Xylene	1.0000	1.0110	-1.1	100	0.00
75	T	Styrene	1.0000	0.9645	3.6	100	0.00
76	P	Bromoform	1.0000	0.8262	17.4	100	0.00
77	T	Isopropylbenzene	1.0000	1.0438	-4.4	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9248	7.5	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5470	0.0	100	-0.01
81	T	1,2,3-Trichloropropane	1.0000	0.7259	27.4#	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.6900	31.0#	100	0.00
83	T	n-Propylbenzene	1.0000	1.0982	-9.8	100	0.00
84	T	Bromobenzene	1.0000	1.0037	-0.4	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0460	-4.6	100	-0.01
86	T	2-Chlorotoluene	1.0000	1.1011	-10.1	100	-0.01
87	T	4-Chlorotoluene	1.0000	1.0171	-1.7	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9100	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0319	-3.2	100	-0.01
90	T	1,2,4-Trimethylbenzene	1.0000	1.0570	-5.7	100	-0.01
91	T	sec-Butylbenzene	1.0000	1.0949	-9.5	100	-0.01
92	T	p-Isopropyltoluene	1.0000	1.0755	-7.6	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0526	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0710	-7.1	100	0.00
95	T	n-Butylbenzene	1.0000	1.0821	-8.2	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0536	-5.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.8847	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9827	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9944	0.6	100	0.00
100	T	Naphthalene	1.0000	0.9349	6.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0560	-5.6	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140316.D 8260WTR.M Fri Jul 01 14:35:27 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	681288	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	479716	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	253621	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	6933	1.0030 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.00%#	
43) 1,2-Dichloroethane-d4	10.32	65	9000	1.0314 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.12%#	
58) Toluene-d8	13.04	98	25015	1.0589 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.24%#	
80) p-Bromofluorobenzene	17.02	95	10214	1.0283 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	21693	1.9048 ug/L	92
3) Chloromethane	3.37	50	28294	2.2252 ug/L	99
4) Vinyl Chloride	3.57	62	15095	2.1618 ug/L	90
5) 1,3-Butadiene	3.61	54	14228	0.5548 ug/L	81
6) Bromomethane	4.39	94	10021	2.1597 ug/L	92
7) Chloroethane	4.54	64	8637	1.9576 ug/L	99
8) Trichlorofluoromethane	5.01	101	21198	1.9905 ug/L	99
9) Diethyl ether	5.55	59	166163	26.4440 ug/L	96
10) Isoprene	5.58	67	20113	2.1161 ug/L	98
11) Acrolein	5.79	56	13232	12.6601 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	13403	2.0228 ug/L	98
13) Acetone	5.90	43	5431	2.4882 ug/L	86
14) 1,1-Dichloroethene	6.11	61	26310	2.0465 ug/L	95
15) Tert-Butyl Alcohol	6.25	59	32448	48.6151 ug/L	96
16) Dimethyl Sulfide	6.39	62	10884	1.9412 ug/L	92
17) Iodomethane	6.64	142	4160	1.7736 ug/L	99
18) Methyl acetate	6.68	43	11835	2.0038 ug/L #	83
19) Methylene Chloride	6.94	84	16307	2.2119 ug/L	88
20) Carbon Disulfide	6.96	76	49030	2.0813 ug/L	98
21) Acrylonitrile	7.14	53	32708	12.0688 ug/L	93
22) Methyl Tert Butyl Ether	7.17	73	39510	2.0219 ug/L	98
23) trans-1,2-Dichloroethene	7.43	96	14262	2.0714 ug/L	91
24) n-Hexane	7.51	57	25227	2.1588 ug/L	95
25) Diisopropyl ether	7.90	45	823711	26.1894 ug/L	97
26) Vinyl Acetate	8.09	43	22167	1.6883 ug/L	93
27) 1,1-Dichloroethane	8.10	63	31011	2.0919 ug/L	96
28) Ethyl-Tert-Butyl ether	8.53	59	650758	25.7185 ug/L	98
29) 2-Butanone	8.72	43	6560	1.9633 ug/L #	79
30) Propionitrile	8.86	54	22752	25.0916 ug/L	98
31) 2,2-Dichloropropane	8.95	77	23903	2.1372 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	14680	1.9478 ug/L	78
33) Chloroform	9.27	83	26391	1.9872 ug/L	98
34) 1-Bromopropane	9.42	122	1777	1.9534 ug/L	97
35) Bromochloromethane	9.52	130	8058	1.9896 ug/L	93
36) Tetrahydrofuran	9.55	42	58983	25.3089 ug/L	92
38) 1,1,1-Trichloroethane	9.86	97	23448	2.0280 ug/L	99
39) Cyclohexane	9.88	56	30890	2.0535 ug/L	95
40) 1,1-Dichloropropene	10.08	75	20511	2.0367 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	494429	25.7332 ug/L	97
42) Carbon Tetrachloride	10.23	117	18006	1.8966 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140317.D 8260WTR.M Fri Jul 01 14:21:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	22120	2.0774 ug/L	98
46)	Benzene	10.48	78	60457	2.1271 ug/L	100
47)	Trichloroethene	11.35	130	14433	2.0579 ug/L	92
48)	Methylcyclohexane	11.43	83	23167	2.1040 ug/L	93
49)	1,2-Dichloropropane	11.59	63	16607	2.0289 ug/L	96
50)	1,4-Dioxane	11.94	88	2503	45.1726 ug/L	97
51)	Bromodichloromethane	11.93	83	19917	2.0166 ug/L	98
52)	Dibromomethane	12.02	93	8051	2.0330 ug/L	95
53)	2-Chloroethyl Vinyl Ether	12.31	63	7544	1.8383 ug/L	94
54)	4-Methyl-2-Pentanone	12.35	58	4674	1.8506 ug/L	83
55)	cis-1,3-Dichloropropene	12.69	75	23212	2.0243 ug/L	98
56)	Dimethyl Disulfide	12.97	79	10618	1.6635 ug/L	98
59)	Toluene	13.16	91	61452	2.1494 ug/L	98
60)	Ethyl Methacrylate	13.32	69	15594	1.9171 ug/L	93
62)	trans-1,3-Dichloropropene	13.38	75	19722	1.9399 ug/L	94
63)	1,1,2-Trichloroethane	13.63	97	10814	2.0438 ug/L	96
64)	2-Hexanone	13.59	43	9516	1.8942 ug/L	94
65)	1,3-Dichloropropane	13.98	76	20700	2.0758 ug/L	97
66)	Tetrachloroethene	14.11	166	14321	2.1019 ug/L	97
67)	Dibromochloromethane	14.41	129	12204	1.8998 ug/L	99
68)	1,2-Dibromoethane	14.71	107	10178	1.9929 ug/L	98
69)	1-Chlorohexane	14.85	91	19403	2.0392 ug/L	87
70)	Chlorobenzene	15.30	112	39367	2.1469 ug/L	81
71)	1,1,1,2-Tetrachloroethane	15.35	131	13145	2.0147 ug/L	96
72)	Ethylbenzene	15.35	106	20014	2.0853 ug/L	88
73)	m-,p-Xylene	15.45	106	50059	4.3155 ug/L	94
74)	o-Xylene	16.11	106	24284	2.0991 ug/L	92
75)	Styrene	16.16	104	39349	2.0217 ug/L	93
76)	Bromoform	16.71	173	7051	1.7700 ug/L	91
77)	Isopropylbenzene	16.62	105	63245	2.0952 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.87	83	11943	1.9403 ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	3577	1.9601 ug/L	70
82)	trans-1,4-Dichloro-2-Buten	17.18	53	4235	1.8198 ug/L	92
83)	n-Propylbenzene	17.22	91	77640	2.1306 ug/L	97
84)	Bromobenzene	17.34	156	15737	2.0668 ug/L	90
85)	1,3,5-Trimethylbenzene	17.45	105	53524	2.0955 ug/L	96
86)	2-Chlorotoluene	17.52	91	50361	2.0435 ug/L	96
87)	4-Chlorotoluene	17.58	91	51425	2.1888 ug/L	96
88)	a-Methylstyrene	17.91	118	23705	1.8452 ug/L	90
89)	tert-Butylbenzene	17.99	134	10746	2.0941 ug/L	69
90)	1,2,4-Trimethylbenzene	18.05	105	55973	2.1356 ug/L	97
91)	sec-Butylbenzene	18.30	105	66761	2.1835 ug/L	94
92)	p-Isopropyltoluene	18.50	119	55466	2.1287 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	31212	2.0827 ug/L	98
94)	1,4-Dichlorobenzene	18.85	146	31934	2.1076 ug/L	79
95)	n-Butylbenzene	19.12	91	53671	2.1004 ug/L	95
96)	1,2-Dichlorobenzene	19.44	146	29144	2.0713 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	20.61	75	1880	1.5595 ug/L	96
98)	1,2,4-Trichlorobenzene	21.96	180	19883	1.9991 ug/L	99
99)	Hexachlorobutadiene	22.15	225	8377	2.0258 ug/L	98
100)	Naphthalene	22.38	128	39370	1.9369 ug/L	98
101)	1,2,3-Trichlorobenzene	22.75	180	18357	1.9933 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140317.D 8260WTR.M Fri Jul 01 14:21:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

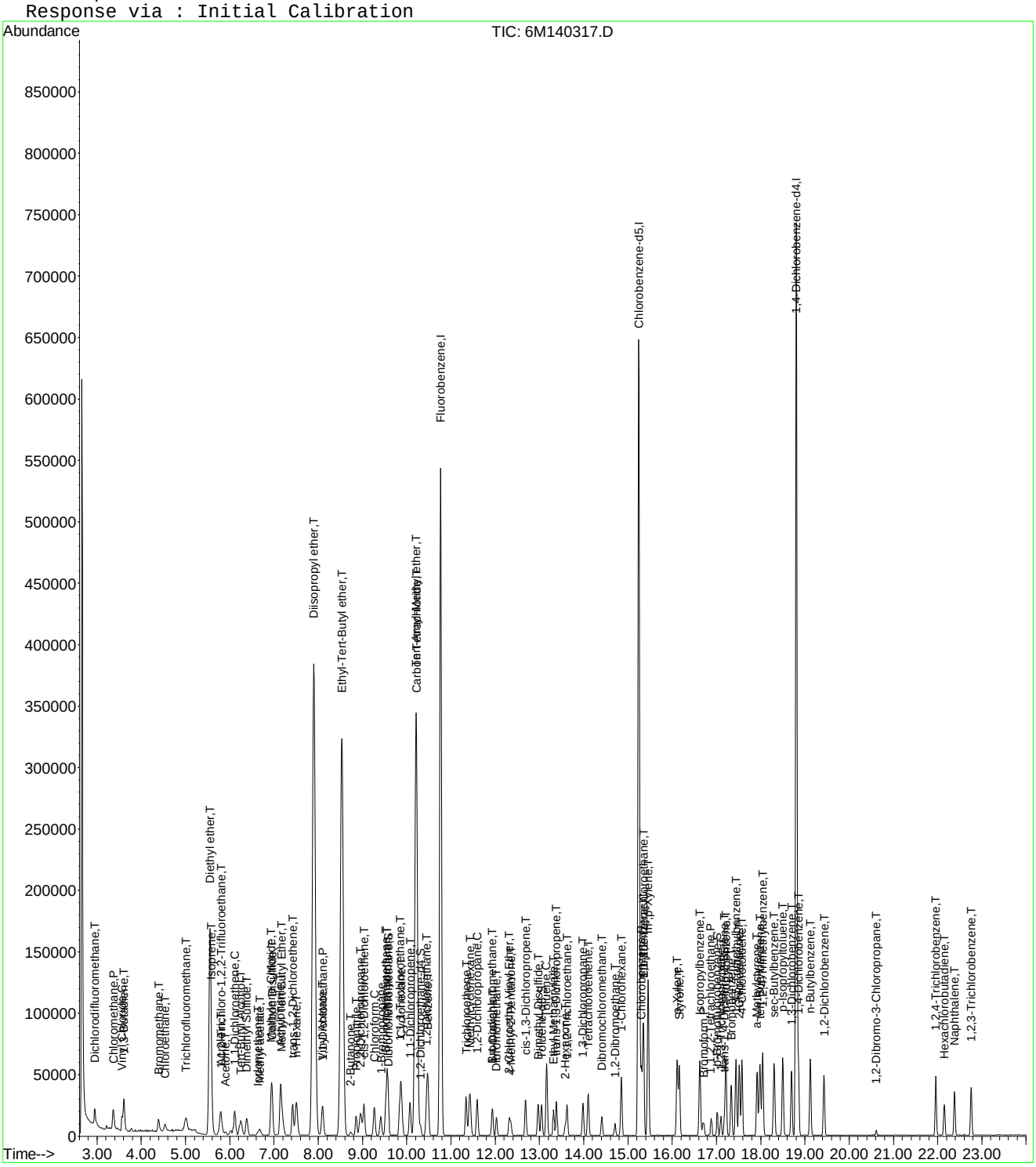

6M140317.D 8260WTR.M Fri Jul 01 14:21:24 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.9048	4.8	100	0.01
3	P	Chloromethane	2.0000	2.2252	-11.3	100	0.01
4	C	Vinyl Chloride	2.0000	2.1618	-8.1	100	0.01
5	T	1,3-Butadiene	-1.0000	0.5548	0.0	0	0.02
6	T	Bromomethane	2.0000	2.1597	-8.0	100	0.02
7	T	Chloroethane	2.0000	1.9576	2.1	100	0.01
8	T	Trichlorofluoromethane	2.0000	1.9905	0.5	100	0.01
9	T	Diethyl ether	25.0000	26.4441	-5.8	100	0.00
10	T	Isoprene	-1.0000	2.1161	0.0	100	0.01
11	T	Acrolein	12.5000	12.6601	-1.3	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.0228	-1.1	100	0.02
13	T	Acetone	-1.0000	2.4882	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0465	-2.3	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	48.6152	2.8	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	1.9412	0.0	100	0.00
17	T	Iodomethane	2.0000	1.7736	11.3	100	0.00
18	T	Methyl acetate	-1.0000	2.0038	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.2119	-10.6	100	0.00
20	T	Carbon Disulfide	2.0000	2.0813	-4.1	100	0.00
21	T	Acrylonitrile	12.5000	12.0688	3.4	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0219	-1.1	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0714	-3.6	100	0.01
24	T	n-Hexane	-1.0000	2.1588	0.0	100	0.01
25	T	Diisopropyl ether	25.0000	26.1894	-4.8	100	0.00
26	T	Vinyl Acetate	-1.0000	1.6883	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0919	-4.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.7185	-2.9	100	0.00
29	T	2-Butanone	-1.0000	1.9633	0.0	100	0.00
30	T	Propionitrile	25.0000	25.0916	-0.4	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1372	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9478	2.6	100	0.00
33	C	Chloroform	2.0000	1.9872	0.6	100	0.00
34		1-Bromopropane	2.0000	1.9534	2.3	100	0.01
35	T	Bromochloromethane	2.0000	1.9896	0.5	100	0.00
36	T	Tetrahydrofuran	25.0000	25.3089	-1.2	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0030	-0.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0280	-1.4	100	0.01
39	T	Cyclohexane	2.0000	2.0535	-2.7	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0367	-1.8	100	0.01
41	T	Tert-Amyl-Methyl ether	25.0000	25.7333	-2.9	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.8966	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0314	-3.1	100	0.01
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	2.0000	2.0774	-3.9	100	0.00
46	T	Benzene	2.0000	2.1271	-6.4	100	0.00
47	T	Trichloroethene	2.0000	2.0579	-2.9	100	0.01
48	T	Methylcyclohexane	-1.0000	2.1040	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0289	-1.4	100	0.00
50	T	1,4-Dioxane	-1.0000	45.1726	0.0	100	0.00
51	T	Bromodichloromethane	2.0000	2.0166	-0.8	100	0.00
52	T	Dibromomethane	2.0000	2.0330	-1.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.8383	8.1	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.8506	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	2.0243	-1.2	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.6635	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0589	-5.9	100	0.00
59	C	Toluene	2.0000	2.1494	-7.5	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9171	4.1	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	2.0000	1.9399	3.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	2.0438	-2.2	100	0.00
64	T	2-Hexanone	-1.0000	1.8942	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0758	-3.8	100	0.00
66	T	Tetrachloroethene	2.0000	2.1019	-5.1	100	0.00
67	T	Dibromochloromethane	2.0000	1.8998	5.0	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9929	0.4	100	0.00
69	T	1-Chlorohexane	2.0000	2.0392	-2.0	100	0.00
70	P	Chlorobenzene	2.0000	2.1469	-7.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	2.0147	-0.7	100	0.00
72	C	Ethylbenzene	2.0000	2.0853	-4.3	100	0.00
73	T	m-,p-Xylene	4.0000	4.3156	-7.9	100	0.00
74	T	o-Xylene	2.0000	2.0991	-5.0	100	0.00
75	T	Styrene	2.0000	2.0217	-1.1	100	0.00
76	P	Bromoform	2.0000	1.7700	11.5	100	0.00
77	T	Isopropylbenzene	2.0000	2.0952	-4.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9403	3.0	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0283	-2.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.9601	2.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.8198	9.0	100	0.00
83	T	n-Propylbenzene	2.0000	2.1306	-6.5	100	0.00
84	T	Bromobenzene	2.0000	2.0668	-3.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0955	-4.8	100	0.00
86	T	2-Chlorotoluene	2.0000	2.0435	-2.2	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1888	-9.4	100	0.00
88	T	a-Methylstyrene	-1.0000	1.8452	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0941	-4.7	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1356	-6.8	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1835	-9.2	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1287	-6.4	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.0827	-4.1	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1076	-5.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1004	-5.0	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0713	-3.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.5595	22.0#	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.9991	0.0	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0258	-1.3	100	0.00
100	T	Naphthalene	2.0000	1.9369	3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9933	0.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140317.D 8260WTR.M Fri Jul 01 14:35:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	665911	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	475530	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	251113	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	17208	2.5471 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.20%#		
43) 1,2-Dichloroethane-d4	10.32	65	22015	2.5813 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.32%#		
58) Toluene-d8	13.04	98	61675	2.6338 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.52%#		
80) p-Bromofluorobenzene	17.01	95	25621	2.6052 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.44%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	48247	4.3342 ug/L	98
3) Chloromethane	3.37	50	59455	4.7839 ug/L	98
4) Vinyl Chloride	3.57	62	33485	4.9063 ug/L	98
5) 1,3-Butadiene	3.60	54	23338	3.0943 ug/L	87
6) Bromomethane	4.39	94	22163	4.8867 ug/L	97
7) Chloroethane	4.54	64	20579	4.7720 ug/L	97
8) Trichlorofluoromethane	5.02	101	49493	4.7547 ug/L	100
9) Diethyl ether	5.55	59	316870	51.5928 ug/L	96
10) Isoprene	5.58	67	44245	4.7626 ug/L	95
11) Acrolein	5.79	56	25354	24.8183 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	30711	4.7419 ug/L	96
13) Acetone	5.90	43	11460	5.3716 ug/L	98
14) 1,1-Dichloroethene	6.11	61	59549	4.7390 ug/L	93
15) Tert-Butyl Alcohol	6.26	59	62697	96.1048 ug/L	99
16) Dimethyl Sulfide	6.39	62	26287	4.7966 ug/L	98
17) Iodomethane	6.65	142	13226	3.7502 ug/L	97
18) Methyl acetate	6.69	43	29044	5.0309 ug/L	94
19) Methylene Chloride	6.95	84	35243	4.8909 ug/L	87
20) Carbon Disulfide	6.97	76	111679	4.8502 ug/L	99
21) Acrylonitrile	7.15	53	65252	24.6331 ug/L	96
22) Methyl Tert Butyl Ether	7.18	73	93809	4.9114 ug/L	100
23) trans-1,2-Dichloroethene	7.43	96	32653	4.8519 ug/L	90
24) n-Hexane	7.51	57	57537	5.0375 ug/L	99
25) Diisopropyl ether	7.91	45	1560840	50.7720 ug/L	98
26) Vinyl Acetate	8.09	43	61001	4.7533 ug/L	96
27) 1,1-Dichloroethane	8.10	63	70715	4.8804 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	1249973	50.5407 ug/L	98
29) 2-Butanone	8.73	43	15743	4.8205 ug/L	90
30) Propionitrile	8.86	54	44610	50.3332 ug/L	100
31) 2,2-Dichloropropane	8.96	77	55177	5.0475 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	35623	4.8356 ug/L	87
33) Chloroform	9.26	83	62050	4.7802 ug/L	99
34) 1-Bromopropane	9.42	122	5012	4.7391 ug/L	100
35) Bromochloromethane	9.52	130	19897	5.0261 ug/L	99
36) Tetrahydrofuran	9.56	42	111306	48.8630 ug/L	94
38) 1,1,1-Trichloroethane	9.86	97	54902	4.8581 ug/L	98
39) Cyclohexane	9.88	56	69439	4.7228 ug/L	96
40) 1,1-Dichloropropene	10.08	75	47385	4.8139 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	949512	50.5598 ug/L	97
42) Carbon Tetrachloride	10.23	117	43932	4.7343 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140318.D 8260WTR.M Fri Jul 01 14:21:29 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	49969	4.8012 ug/L	99
46)	Benzene	10.48	78	138207	4.9748 ug/L	98
47)	Trichloroethene	11.35	130	33708	4.9171 ug/L	90
48)	Methylcyclohexane	11.43	83	52733	4.8997 ug/L	94
49)	1,2-Dichloropropane	11.59	63	39044	4.8802 ug/L	100
50)	1,4-Dioxane	11.94	88	4972	91.8036 ug/L	77
51)	Bromodichloromethane	11.93	83	46783	4.8462 ug/L	100
52)	Dibromomethane	12.02	93	19034	4.9173 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	18004	4.4884 ug/L	97
54)	4-Methyl-2-Pentanone	12.35	58	11300	4.5774 ug/L	94
55)	cis-1,3-Dichloropropene	12.69	75	54408	4.8545 ug/L	99
56)	Dimethyl Disulfide	12.97	79	26532	4.2526 ug/L	100
59)	Toluene	13.15	91	138309	4.8802 ug/L	99
60)	Ethyl Methacrylate	13.32	69	37662	4.6708 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	48146	4.7775 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	25707	4.9014 ug/L	99
64)	2-Hexanone	13.58	43	22497	4.5176 ug/L	99
65)	1,3-Dichloropropane	13.99	76	48531	4.9096 ug/L	95
66)	Tetrachloroethene	14.10	166	33388	4.9436 ug/L	96
67)	Dibromochloromethane	14.41	129	30609	4.8067 ug/L	100
68)	1,2-Dibromoethane	14.71	107	24604	4.8600 ug/L	99
69)	1-Chlorohexane	14.85	91	45159	4.7879 ug/L	91
70)	Chlorobenzene	15.30	112	88763	4.8834 ug/L	87
71)	1,1,1,2-Tetrachloroethane	15.35	131	31237	4.8298 ug/L	97
72)	Ethylbenzene	15.35	106	47581	5.0011 ug/L	93
73)	m-,p-Xylene	15.45	106	115328	10.0299 ug/L	93
74)	o-Xylene	16.11	106	56158	4.8969 ug/L	90
75)	Styrene	16.16	104	93922	4.8681 ug/L	93
76)	Bromoform	16.71	173	17414	4.4099 ug/L	98
77)	Isopropylbenzene	16.62	105	150490	5.0295 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.88	83	29598	4.8565 ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	9483	5.2483 ug/L	91
82)	trans-1,4-Dichloro-2-Buten	17.18	53	10928	4.7426 ug/L	99
83)	n-Propylbenzene	17.22	91	181410	5.0279 ug/L	97
84)	Bromobenzene	17.34	156	37810	5.0153 ug/L	91
85)	1,3,5-Trimethylbenzene	17.44	105	126034	4.9837 ug/L	97
86)	2-Chlorotoluene	17.52	91	116508	4.7747 ug/L	100
87)	4-Chlorotoluene	17.58	91	120486	5.1793 ug/L	93
88)	a-Methylstyrene	17.92	118	58815	4.6239 ug/L	99
89)	tert-Butylbenzene	17.98	134	24935	4.9076 ug/L	64
90)	1,2,4-Trimethylbenzene	18.05	105	130919	5.0449 ug/L	98
91)	sec-Butylbenzene	18.30	105	151691	5.0108 ug/L	98
92)	p-Isopropyltoluene	18.50	119	129076	5.0032 ug/L	96
93)	1,3-Dichlorobenzene	18.70	146	73279	4.9385 ug/L	97
94)	1,4-Dichlorobenzene	18.85	146	73402	4.8928 ug/L	89
95)	n-Butylbenzene	19.12	91	126335	4.9935 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	69034	4.9553 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	4890	4.0969 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	46999	4.7727 ug/L	99
99)	Hexachlorobutadiene	22.15	225	19578	4.7818 ug/L	97
100)	Naphthalene	22.39	128	98169	4.8780 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	44211	4.8487 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

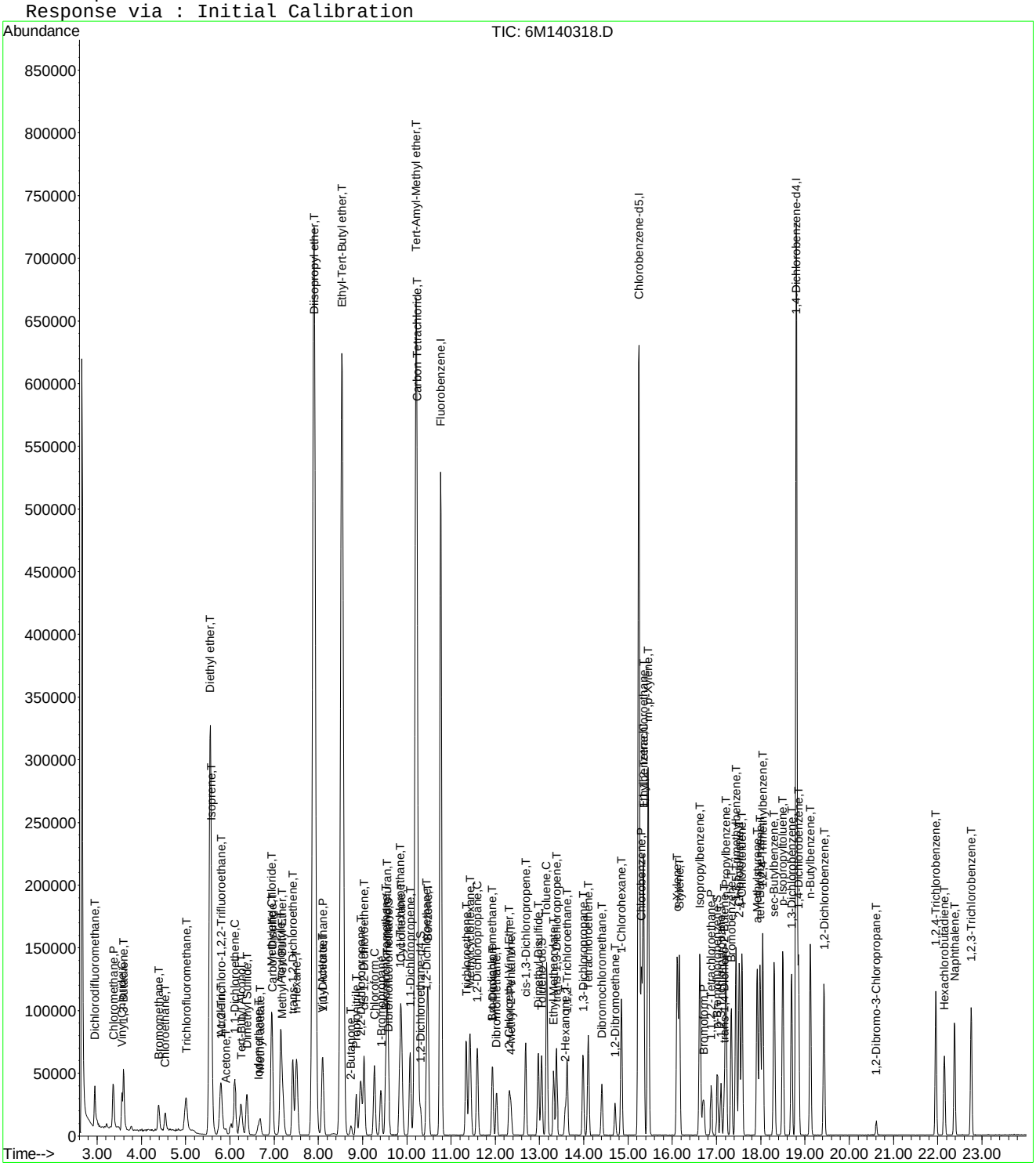

6M140318.D 8260WTR.M Fri Jul 01 14:21:32 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3342	13.3	100	0.00
3	P	Chloromethane	5.0000	4.7839	4.3	100	0.00
4	C	Vinyl Chloride	5.0000	4.9063	1.9	100	0.00
5	T	1,3-Butadiene	5.0000	3.0943	38.1#	100	0.00
6	T	Bromomethane	5.0000	4.8868	2.3	100	0.02
7	T	Chloroethane	5.0000	4.7720	4.6	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7547	4.9	100	0.02
9	T	Diethyl ether	50.0000	51.5928	-3.2	100	0.00
10	T	Isoprene	5.0000	4.7626	4.7	100	0.00
11	T	Acrolein	25.0000	24.8183	0.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7420	5.2	100	0.02
13	T	Acetone	5.0000	5.3716	-7.4	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7390	5.2	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	96.1048	3.9	100	-0.03
16	T	Dimethyl Sulfide	5.0000	4.7966	4.1	100	0.00
17	T	Iodomethane	5.0000	3.7502	25.0#	100	0.01
18	T	Methyl acetate	5.0000	5.0309	-0.6	100	0.00
19	T	Methylene Chloride	5.0000	4.8909	2.2	100	0.00
20	T	Carbon Disulfide	5.0000	4.8502	3.0	100	0.00
21	T	Acrylonitrile	25.0000	24.6331	1.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.9113	1.8	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.8519	3.0	100	0.00
24	T	n-Hexane	5.0000	5.0375	-0.7	100	0.00
25	T	Diisopropyl ether	50.0000	50.7719	-1.5	100	0.00
26	T	Vinyl Acetate	5.0000	4.7533	4.9	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.8804	2.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	50.5407	-1.1	100	0.00
29	T	2-Butanone	5.0000	4.8205	3.6	100	0.00
30	T	Propionitrile	50.0000	50.3332	-0.7	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.0475	-0.9	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8356	3.3	100	0.00
33	C	Chloroform	5.0000	4.7802	4.4	100	0.00
34		1-Bromopropane	5.0000	4.7391	5.2	100	0.01
35	T	Bromochloromethane	5.0000	5.0261	-0.5	100	0.00
36	T	Tetrahydrofuran	50.0000	48.8630	2.3	100	0.00
37	S	Dibromofluoromethane	2.5000	2.5471	-1.9	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8581	2.8	100	0.00
39	T	Cyclohexane	5.0000	4.7228	5.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.8139	3.7	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	50.5598	-1.1	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.7344	5.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5813	-3.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	5.0000	4.8012	4.0	100	0.00
46	T	Benzene	5.0000	4.9748	0.5	100	0.00
47	T	Trichloroethene	5.0000	4.9171	1.7	100	0.00
48	T	Methylcyclohexane	5.0000	4.8997	2.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.8802	2.4	100	0.00
50	T	1,4-Dioxane	100.0000	91.8036	8.2	100	0.00
51	T	Bromodichloromethane	5.0000	4.8463	3.1	100	0.00
52	T	Dibromomethane	5.0000	4.9173	1.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.4884	10.2	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.5774	8.5	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8545	2.9	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2526	14.9	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6338	-5.4	100	0.00
59	C	Toluene	5.0000	4.8802	2.4	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.6708	6.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	5.0000	4.7775	4.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.9014	2.0	100	0.00
64	T	2-Hexanone	5.0000	4.5176	9.6	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9096	1.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.9436	1.1	100	0.00
67	T	Dibromochloromethane	5.0000	4.8067	3.9	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.8600	2.8	100	0.00
69	T	1-Chlorohexane	5.0000	4.7880	4.2	100	0.00
70	P	Chlorobenzene	5.0000	4.8834	2.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.8298	3.4	100	0.00
72	C	Ethylbenzene	5.0000	5.0011	-0.0	100	0.00
73	T	m-,p-Xylene	10.0000	10.0299	-0.3	100	-0.01
74	T	o-Xylene	5.0000	4.8970	2.1	100	-0.01
75	T	Styrene	5.0000	4.8681	2.6	100	0.00
76	P	Bromoform	5.0000	4.4099	11.8	100	0.00
77	T	Isopropylbenzene	5.0000	5.0295	-0.6	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8565	2.9	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6052	-4.2	100	-0.01
81	T	1,2,3-Trichloropropane	5.0000	5.2483	-5.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.7426	5.1	100	0.00
83	T	n-Propylbenzene	5.0000	5.0279	-0.6	100	0.00
84	T	Bromobenzene	5.0000	5.0153	-0.3	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9837	0.3	100	-0.01
86	T	2-Chlorotoluene	5.0000	4.7747	4.5	100	-0.01
87	T	4-Chlorotoluene	5.0000	5.1794	-3.6	100	-0.01
88	T	a-Methylstyrene	5.0000	4.6239	7.5	100	0.00
89	T	tert-Butylbenzene	5.0000	4.9076	1.8	100	-0.01
90	T	1,2,4-Trimethylbenzene	5.0000	5.0449	-0.9	100	-0.01
91	T	sec-Butylbenzene	5.0000	5.0108	-0.2	100	-0.01
92	T	p-Isopropyltoluene	5.0000	5.0032	-0.1	100	-0.01
93	T	1,3-Dichlorobenzene	5.0000	4.9385	1.2	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8928	2.1	100	0.00
95	T	n-Butylbenzene	5.0000	4.9935	0.1	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.9553	0.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.0969	18.1	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7727	4.5	100	-0.01
99	T	Hexachlorobutadiene	5.0000	4.7818	4.4	100	0.00
100	T	Naphthalene	5.0000	4.8780	2.4	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.8487	3.0	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140318.D 8260WTR.M Fri Jul 01 14:36:23 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:33 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	668919	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	478690	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	258443	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	70098	10.3290 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.32%#		
43) 1,2-Dichloroethane-d4	10.31	65	89020	10.3908 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.56%#		
58) Toluene-d8	13.04	98	243575	10.3332 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.32%#		
80) p-Bromofluorobenzene	17.01	95	104612	10.3355 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	240030	21.4659 ug/L	100
3) Chloromethane	3.37	50	274164	21.9607 ug/L	99
4) Vinyl Chloride	3.56	62	134656	19.6412 ug/L	99
5) 1,3-Butadiene	3.60	54	109113	26.0590 ug/L	94
6) Bromomethane	4.39	94	95323	20.9234 ug/L	99
7) Chloroethane	4.54	64	90881	20.9793 ug/L	97
8) Trichlorofluoromethane	5.00	101	210753	20.1557 ug/L	99
9) Diethyl ether	5.55	59	494080	80.0844 ug/L	96
10) Isoprene	5.58	67	199958	21.4269 ug/L	96
11) Acrolein	5.79	56	40308	39.2789 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	131653	20.2365 ug/L	96
13) Acetone	5.89	43	44542	20.7841 ug/L	99
14) 1,1-Dichloroethene	6.11	61	254255	20.1429 ug/L	95
15) Tert-Butyl Alcohol	6.25	59	101804	155.3480 ug/L	98
16) Dimethyl Sulfide	6.39	62	115970	21.0658 ug/L	96
17) Iodomethane	6.65	142	79774	18.0326 ug/L	94
18) Methyl acetate	6.69	43	119945	20.6831 ug/L	98
19) Methylene Chloride	6.93	84	145226	20.0632 ug/L	90
20) Carbon Disulfide	6.97	76	495098	21.4053 ug/L	100
21) Acrylonitrile	7.15	53	104807	39.3874 ug/L	95
22) Methyl Tert Butyl Ether	7.18	73	394607	20.5667 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	135387	20.0268 ug/L	87
24) n-Hexane	7.51	57	243963	21.2635 ug/L	99
25) Diisopropyl ether	7.89	45	2475744	80.1704 ug/L	98
26) Vinyl Acetate	8.09	43	239974	18.6153 ug/L	97
27) 1,1-Dichloroethane	8.10	63	295851	20.3263 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	1992124	80.1862 ug/L	98
29) 2-Butanone	8.73	43	66102	20.1493 ug/L	96
30) Propionitrile	8.85	54	71515	80.3272 ug/L	99
31) 2,2-Dichloropropane	8.96	77	220142	20.0476 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	149673	20.2260 ug/L	73
33) Chloroform	9.26	83	260745	19.9968 ug/L	99
34) 1-Bromopropane	9.42	122	23773	20.6056 ug/L	99
35) Bromochloromethane	9.52	130	82689	20.7938 ug/L	100
36) Tetrahydrofuran	9.56	42	173501	75.8239 ug/L	94
38) 1,1,1-Trichloroethane	9.86	97	230314	20.2881 ug/L	98
39) Cyclohexane	9.88	56	309021	20.9230 ug/L	96
40) 1,1-Dichloropropene	10.08	75	198240	20.0489 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1504867	79.7712 ug/L	98
42) Carbon Tetrachloride	10.23	117	197807	21.2209 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140319.D 8260WTR.M Fri Jul 01 14:21:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:33 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	213475	20.4192 ug/L	98
46)	Benzene	10.48	78	563224	20.1824 ug/L	97
47)	Trichloroethene	11.35	130	140565	20.4123 ug/L	91
48)	Methylcyclohexane	11.43	83	229029	21.1847 ug/L	95
49)	1,2-Dichloropropane	11.59	63	163803	20.3822 ug/L	99
50)	1,4-Dioxane	11.94	88	8245	151.5521 ug/L	87
51)	Bromodichloromethane	11.94	83	198529	20.4731 ug/L	99
52)	Dibromomethane	12.02	93	81976	21.0826 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.31	63	84440	20.9563 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	50113	20.2084 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	230873	20.5069 ug/L	99
56)	Dimethyl Disulfide	12.97	79	127875	20.4039 ug/L	99
59)	Toluene	13.15	91	575595	20.1756 ug/L	100
60)	Ethyl Methacrylate	13.32	69	174096	21.4487 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	209635	20.6648 ug/L	96
63)	1,1,2-Trichloroethane	13.62	97	109279	20.6980 ug/L	99
64)	2-Hexanone	13.58	43	101714	20.2903 ug/L	96
65)	1,3-Dichloropropane	13.99	76	199227	20.0217 ug/L	94
66)	Tetrachloroethene	14.10	166	135754	19.9678 ug/L	93
67)	Dibromochloromethane	14.41	129	135289	21.1051 ug/L	100
68)	1,2-Dibromoethane	14.71	107	105892	20.7786 ug/L	100
69)	1-Chlorohexane	14.85	91	199253	20.9862 ug/L	90
70)	Chlorobenzene	15.30	112	368915	20.1622 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	134691	20.6882 ug/L	97
72)	Ethylbenzene	15.35	106	198149	20.6895 ug/L	94
73)	m-,p-Xylene	15.45	106	479614	41.4358 ug/L	94
74)	o-Xylene	16.10	106	239170	20.7178 ug/L	94
75)	Styrene	16.16	104	410666	21.1448 ug/L	94
76)	Bromoform	16.71	173	82284	20.7000 ug/L	97
77)	Isopropylbenzene	16.62	105	620142	20.5887 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	128022	20.4105 ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	39329	21.1491 ug/L	80
82)	trans-1,4-Dichloro-2-Buten	17.18	53	50449	21.2733 ug/L	99
83)	n-Propylbenzene	17.22	91	763535	20.5616 ug/L	97
84)	Bromobenzene	17.34	156	157241	20.2655 ug/L	90
85)	1,3,5-Trimethylbenzene	17.44	105	534922	20.5522 ug/L	97
86)	2-Chlorotoluene	17.52	91	480540	19.1348 ug/L	100
87)	4-Chlorotoluene	17.58	91	506904	21.1723 ug/L	93
88)	a-Methylstyrene	17.92	118	283013	21.6190 ug/L	99
89)	tert-Butylbenzene	17.98	134	108977	20.8400 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	555658	20.8047 ug/L	98
91)	sec-Butylbenzene	18.30	105	646673	20.7557 ug/L	97
92)	p-Isopropyltoluene	18.50	119	553560	20.8482 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	308829	20.2225 ug/L	96
94)	1,4-Dichlorobenzene	18.85	146	309174	20.0243 ug/L	95
95)	n-Butylbenzene	19.12	91	539602	20.7232 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	290193	20.2396 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	25172	20.4911 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	206634	20.3883 ug/L	99
99)	Hexachlorobutadiene	22.15	225	84200	19.9820 ug/L	100
100)	Naphthalene	22.38	128	449397	21.6970 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	193555	20.6254 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140319.D 8260WTR.M Fri Jul 01 14:21:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

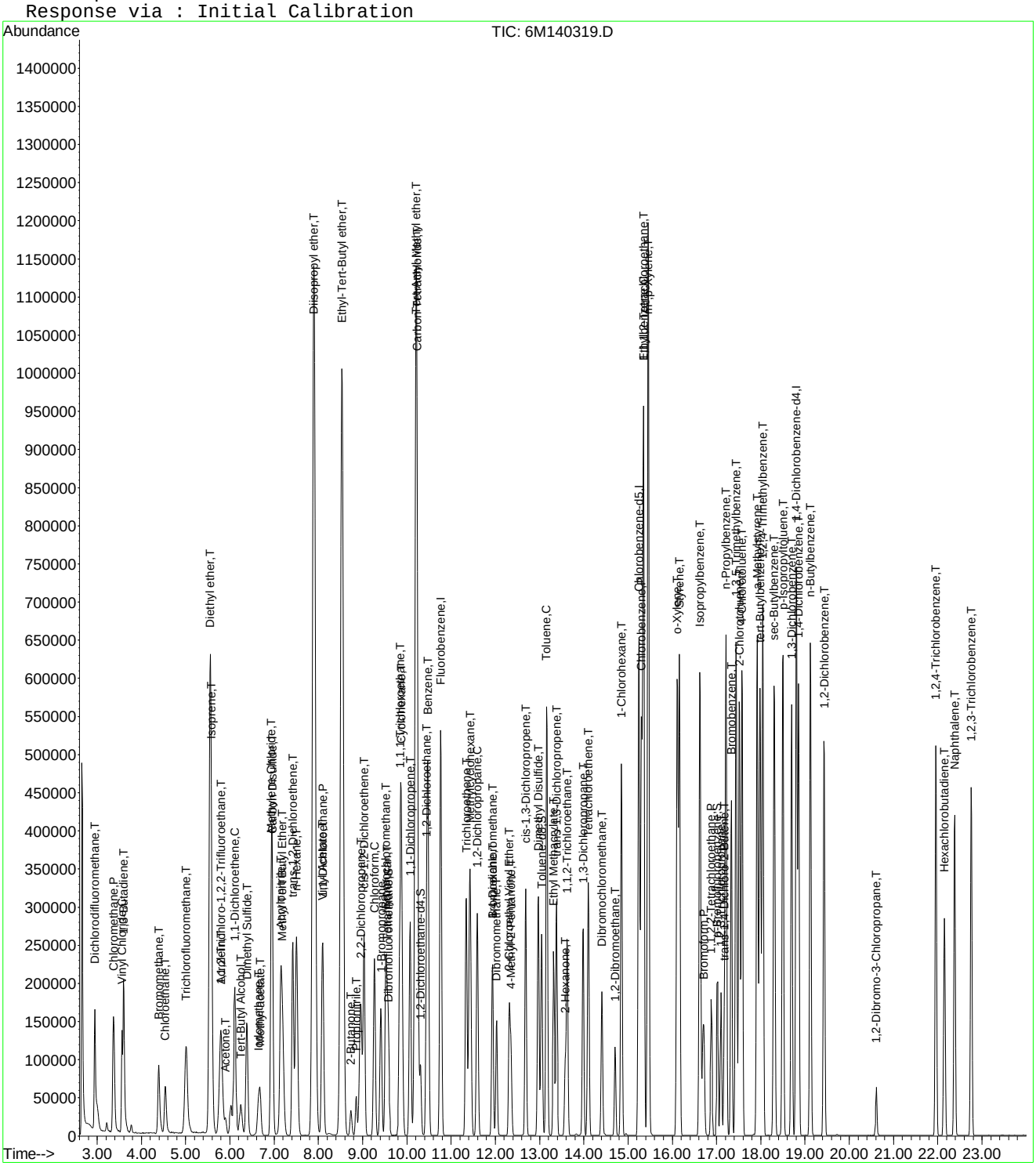

6M140319.D 8260WTR.M Fri Jul 01 14:21:40 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:42 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	665194	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	476977	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	264882	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	171183	25.3652 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.48%		
43) 1,2-Dichloroethane-d4	10.31	65	211795	24.8600 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.44%		
58) Toluene-d8	13.04	98	584965	24.9051 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.64%		
80) p-Bromofluorobenzene	17.02	95	257496	24.8219 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.28%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	582153	52.3535 ug/L	99
3) Chloromethane	3.37	50	615809	49.6030 ug/L	100
4) Vinyl Chloride	3.56	62	346419	50.8123 ug/L	99
5) 1,3-Butadiene	3.59	54	204917	52.0480 ug/L	96
6) Bromomethane	4.39	94	214126	47.2638 ug/L	99
7) Chloroethane	4.53	64	215766	50.0871 ug/L	96
8) Trichlorofluoromethane	5.00	101	495602	47.6630 ug/L	100
9) Diethyl ether	5.56	59	630517	102.7715 ug/L	96
10) Isoprene	5.58	67	475494	51.2378 ug/L	96
11) Acrolein	5.79	56	50160	49.1531 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	318041	49.1602 ug/L	97
13) Acetone	5.90	43	105863	49.6741 ug/L	100
14) 1,1-Dichloroethene	6.11	61	623813	49.6972 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	129177	198.2217 ug/L	99
16) Dimethyl Sulfide	6.39	62	276319	50.4741 ug/L	95
17) Iodomethane	6.65	142	239373	52.6044 ug/L	93
18) Methyl acetate	6.69	43	285035	49.4262 ug/L	98
19) Methylene Chloride	6.94	84	347634	48.2950 ug/L	88
20) Carbon Disulfide	6.96	76	1155252	50.2265 ug/L	100
21) Acrylonitrile	7.15	53	135608	51.2481 ug/L	98
22) Methyl Tert Butyl Ether	7.18	73	953213	49.9591 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	333111	49.5507 ug/L	89
24) n-Hexane	7.51	57	564061	49.4381 ug/L	98
25) Diisopropyl ether	7.90	45	3068443	99.9198 ug/L	98
26) Vinyl Acetate	8.09	43	646413	50.4243 ug/L	98
27) 1,1-Dichloroethane	8.10	63	718876	49.6666 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2470202	99.9864 ug/L	98
29) 2-Butanone	8.73	43	166904	51.1609 ug/L	95
30) Propionitrile	8.85	54	90037	101.6978 ug/L	100
31) 2,2-Dichloropropane	8.96	77	533000	48.8104 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	368400	50.0623 ug/L	73
33) Chloroform	9.26	83	633467	48.8534 ug/L	99
34) 1-Bromopropane	9.42	122	59330	50.9944 ug/L	99
35) Bromochloromethane	9.52	130	203288	51.4071 ug/L	99
36) Tetrahydrofuran	9.56	42	216772	95.2648 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	572724	50.7331 ug/L	99
39) Cyclohexane	9.87	56	723056	49.2305 ug/L	96
40) 1,1-Dichloropropene	10.08	75	488493	49.6802 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	1883625	100.4078 ug/L	98
42) Carbon Tetrachloride	10.23	117	502186	54.1766 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140320.D 8260WTR.M Fri Jul 01 14:21:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:42 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	522936	50.2998 ug/L	99
46)	Benzene	10.48	78	1376892	49.6154 ug/L	97
47)	Trichloroethene	11.35	130	341168	49.8206 ug/L	91
48)	Methylcyclohexane	11.43	83	532584	49.5388 ug/L	95
49)	1,2-Dichloropropane	11.59	63	402187	50.3249 ug/L	99
50)	1,4-Dioxane	11.94	88	11316	209.1652 ug/L	91
51)	Bromodichloromethane	11.94	83	499306	51.7788 ug/L	99
52)	Dibromomethane	12.03	93	200679	51.8998 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	214371	53.5004 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	126993	51.4974 ug/L	97
55)	cis-1,3-Dichloropropene	12.68	75	576590	51.5014 ug/L	99
56)	Dimethyl Disulfide	12.97	79	322099	51.6823 ug/L	98
59)	Toluene	13.15	91	1399906	49.2452 ug/L	99
60)	Ethyl Methacrylate	13.32	69	422208	52.2030 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	522454	51.6858 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	267159	50.7830 ug/L	98
64)	2-Hexanone	13.58	43	256820	51.4155 ug/L	96
65)	1,3-Dichloropropane	13.99	76	494920	49.9167 ug/L	94
66)	Tetrachloroethene	14.10	166	336402	49.6585 ug/L	94
67)	Dibromochloromethane	14.41	129	343402	53.7632 ug/L	100
68)	1,2-Dibromoethane	14.70	107	261585	51.5137 ug/L	100
69)	1-Chlorohexane	14.85	91	477655	50.4894 ug/L	92
70)	Chlorobenzene	15.30	112	903124	49.5353 ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.35	131	337691	52.0547 ug/L	98
72)	Ethylbenzene	15.35	106	484831	50.8048 ug/L	94
73)	m-,p-Xylene	15.46	106	1167250	101.2056 ug/L	95
74)	o-Xylene	16.11	106	590057	51.2966 ug/L	94
75)	Styrene	16.15	104	1015963	52.4987 ug/L	92
76)	Bromoform	16.72	173	210299	53.0943 ug/L	98
77)	Isopropylbenzene	16.62	105	1525364	50.8239 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	326482	50.7855 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	98816	51.8463 ug/L	83
82)	trans-1,4-Dichloro-2-Buten	17.18	53	129320	53.2061 ug/L	97
83)	n-Propylbenzene	17.22	91	1885010	49.5285 ug/L	98
84)	Bromobenzene	17.34	156	390005	49.0426 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	1335066	50.0475 ug/L	97
86)	2-Chlorotoluene	17.52	91	1274044	49.4983 ug/L	96
87)	4-Chlorotoluene	17.58	91	1171374	47.7365 ug/L	96
88)	a-Methylstyrene	17.92	118	690404	51.4571 ug/L	95
89)	tert-Butylbenzene	17.98	134	265842	49.6018 ug/L	70
90)	1,2,4-Trimethylbenzene	18.04	105	1381292	50.4604 ug/L	98
91)	sec-Butylbenzene	18.31	105	1599719	50.0966 ug/L	98
92)	p-Isopropyltoluene	18.50	119	1372031	50.4173 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	767298	49.0222 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	768779	48.5813 ug/L	95
95)	n-Butylbenzene	19.12	91	1348420	50.5266 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	726470	49.4362 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.62	75	64455	51.1937 ug/L	86
98)	1,2,4-Trichlorobenzene	21.97	180	516677	49.7405 ug/L	99
99)	Hexachlorobutadiene	22.16	225	213166	49.3581 ug/L	100
100)	Naphthalene	22.38	128	1126213	53.0520 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	479054	49.8076 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140320.D 8260WTR.M Fri Jul 01 14:21:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

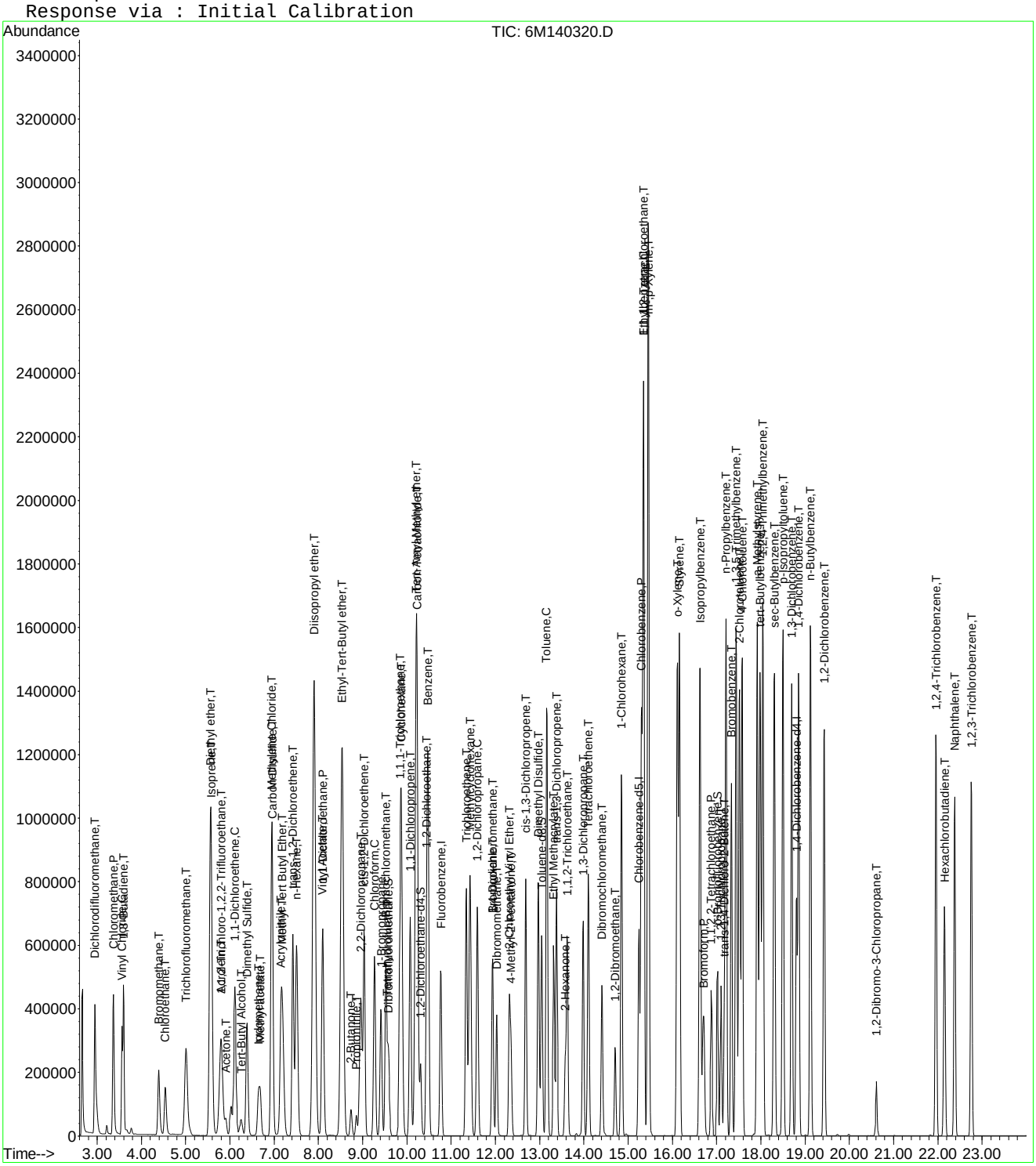

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:51 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	646485	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	471613	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	268377	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	322733	49.2052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 196.84%#		
43) 1,2-Dichloroethane-d4	10.31	65	408267	49.3082 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 197.24%#		
58) Toluene-d8	13.04	98	1099687	47.3521 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 189.40%#		
80) p-Bromofluorobenzene	17.02	95	500608	47.6287 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 190.52%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	1195098	110.5865 ug/L	100
3) Chloromethane	3.37	50	1126306	93.3487 ug/L	100
4) Vinyl Chloride	3.56	62	690730	104.2475 ug/L	100
5) 1,3-Butadiene	3.59	54	397047	106.9364 ug/L	97
6) Bromomethane	4.38	94	423232	96.1231 ug/L	100
7) Chloroethane	4.53	64	421078	100.5763 ug/L	96
8) Trichlorofluoromethane	5.00	101	1039911	102.9045 ug/L	99
9) Diethyl ether	5.56	59	1210825	203.0707 ug/L	96
10) Isoprene	5.57	67	926995	102.7810 ug/L	96
11) Acrolein	5.79	56	100610	101.4435 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	644973	102.5798 ug/L	97
13) Acetone	5.90	43	202374	97.7080 ug/L	98
14) 1,1-Dichloroethene	6.11	61	1233915	101.1469 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	264298	417.3014 ug/L	98
16) Dimethyl Sulfide	6.39	62	533770	100.3234 ug/L	95
17) Iodomethane	6.65	142	485581	108.8245 ug/L	92
18) Methyl acetate	6.69	43	562111	100.2930 ug/L	98
19) Methylene Chloride	6.94	84	680086	97.2151 ug/L	90
20) Carbon Disulfide	6.96	76	2214357	99.0589 ug/L	100
21) Acrylonitrile	7.15	53	269273	104.7069 ug/L	97
22) Methyl Tert Butyl Ether	7.18	73	1885141	101.6619 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	659412	100.9269 ug/L	89
24) n-Hexane	7.51	57	1100352	99.2333 ug/L	97
25) Diisopropyl ether	7.90	45	5806079	194.5388 ug/L	99
26) Vinyl Acetate	8.09	43	1275603	102.3848 ug/L	98
27) 1,1-Dichloroethane	8.10	63	1407131	100.0311 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	4736533	197.2691 ug/L	99
29) 2-Butanone	8.73	43	329619	103.9617 ug/L	96
30) Propionitrile	8.85	54	180672	209.9768 ug/L	99
31) 2,2-Dichloropropane	8.96	77	1063724	100.2315 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	723748	101.1973 ug/L	73
33) Chloroform	9.26	83	1245839	98.8604 ug/L	99
34) 1-Bromopropane	9.42	122	114449	100.7473 ug/L	100
35) Bromochloromethane	9.52	130	399705	104.0018 ug/L	100
36) Tetrahydrofuran	9.56	42	431461	195.1016 ug/L	95
38) 1,1,1-Trichloroethane	9.85	97	1132312	103.2053 ug/L	98
39) Cyclohexane	9.87	56	1422141	99.6310 ug/L	96
40) 1,1-Dichloropropene	10.08	75	970489	101.5559 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	3648605	200.1197 ug/L	98
42) Carbon Tetrachloride	10.23	117	1008047	111.8968 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140321.D 8260WTR.M Fri Jul 01 14:21:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:51 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	1026377	101.5814 ug/L	99
46)	Benzene	10.48	78	2663898	98.7698 ug/L	96
47)	Trichloroethene	11.35	130	659415	99.0807 ug/L	89
48)	Methylcyclohexane	11.43	83	1057163	101.1788 ug/L	95
49)	1,2-Dichloropropane	11.59	63	787420	101.3798 ug/L	97
50)	1,4-Dioxane	11.94	88	22910	435.7239 ug/L	83
51)	Bromodichloromethane	11.94	83	998026	106.4921 ug/L	100
52)	Dibromomethane	12.03	93	402229	107.0352 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	414426	106.4211 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	253505	105.7748 ug/L	99
55)	cis-1,3-Dichloropropene	12.68	75	1145435	105.2719 ug/L	99
56)	Dimethyl Disulfide	12.97	79	637376	105.2297 ug/L	98
59)	Toluene	13.16	91	2716275	96.6387 ug/L	99
60)	Ethyl Methacrylate	13.32	69	835175	104.4378 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	1039244	103.9807 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	530894	102.0629 ug/L	98
64)	2-Hexanone	13.58	43	511940	103.6564 ug/L	98
65)	1,3-Dichloropropane	13.99	76	975019	99.4570 ug/L	94
66)	Tetrachloroethene	14.10	166	663843	99.1087 ug/L	93
67)	Dibromochloromethane	14.41	129	698275	110.5657 ug/L	100
68)	1,2-Dibromoethane	14.70	107	530245	105.6082 ug/L	100
69)	1-Chlorohexane	14.86	91	934249	99.8757 ug/L	91
70)	Chlorobenzene	15.30	112	1757753	97.5073 ug/L	90
71)	1,1,1,2-Tetrachloroethane	15.35	131	672232	104.8024 ug/L	97
72)	Ethylbenzene	15.35	106	960737	101.8195 ug/L	96
73)	m-,p-Xylene	15.46	106	2273350	199.3511 ug/L	96
74)	o-Xylene	16.11	106	1166695	102.5802 ug/L	94
75)	Styrene	16.15	104	2021937	105.6696 ug/L	91
76)	Bromoform	16.72	173	442224	112.9184 ug/L	98
77)	Isopropylbenzene	16.62	105	3022582	101.8554 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	699051	107.3240 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	204344	105.8180 ug/L	81
82)	trans-1,4-Dichloro-2-Buten	17.18	53	271253	110.1481 ug/L	96
83)	n-Propylbenzene	17.22	91	3780776	98.0459 ug/L	98
84)	Bromobenzene	17.34	156	791175	98.1936 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	2708977	100.2286 ug/L	97
86)	2-Chlorotoluene	17.52	91	2557008	98.0494 ug/L	97
87)	4-Chlorotoluene	17.58	91	2386130	95.9746 ug/L	97
88)	a-Methylstyrene	17.92	118	1396050	102.6951 ug/L	95
89)	tert-Butylbenzene	17.99	134	544776	100.3227 ug/L	72
90)	1,2,4-Trimethylbenzene	18.04	105	2808112	101.2481 ug/L	99
91)	sec-Butylbenzene	18.31	105	3235910	100.0157 ug/L	98
92)	p-Isopropyltoluene	18.50	119	2792332	101.2720 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	1561532	98.4661 ug/L	94
94)	1,4-Dichlorobenzene	18.86	146	1567098	97.7396 ug/L	94
95)	n-Butylbenzene	19.12	91	2754111	101.8553 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	1483394	99.6302 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	20.62	75	143837	112.7555 ug/L	86
98)	1,2,4-Trichlorobenzene	21.97	180	1060844	100.7975 ug/L	98
99)	Hexachlorobutadiene	22.15	225	438054	100.1094 ug/L	100
100)	Naphthalene	22.38	128	2317282	107.7376 ug/L	99
101)	1,2,3-Trichlorobenzene	22.76	180	982434	100.8141 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

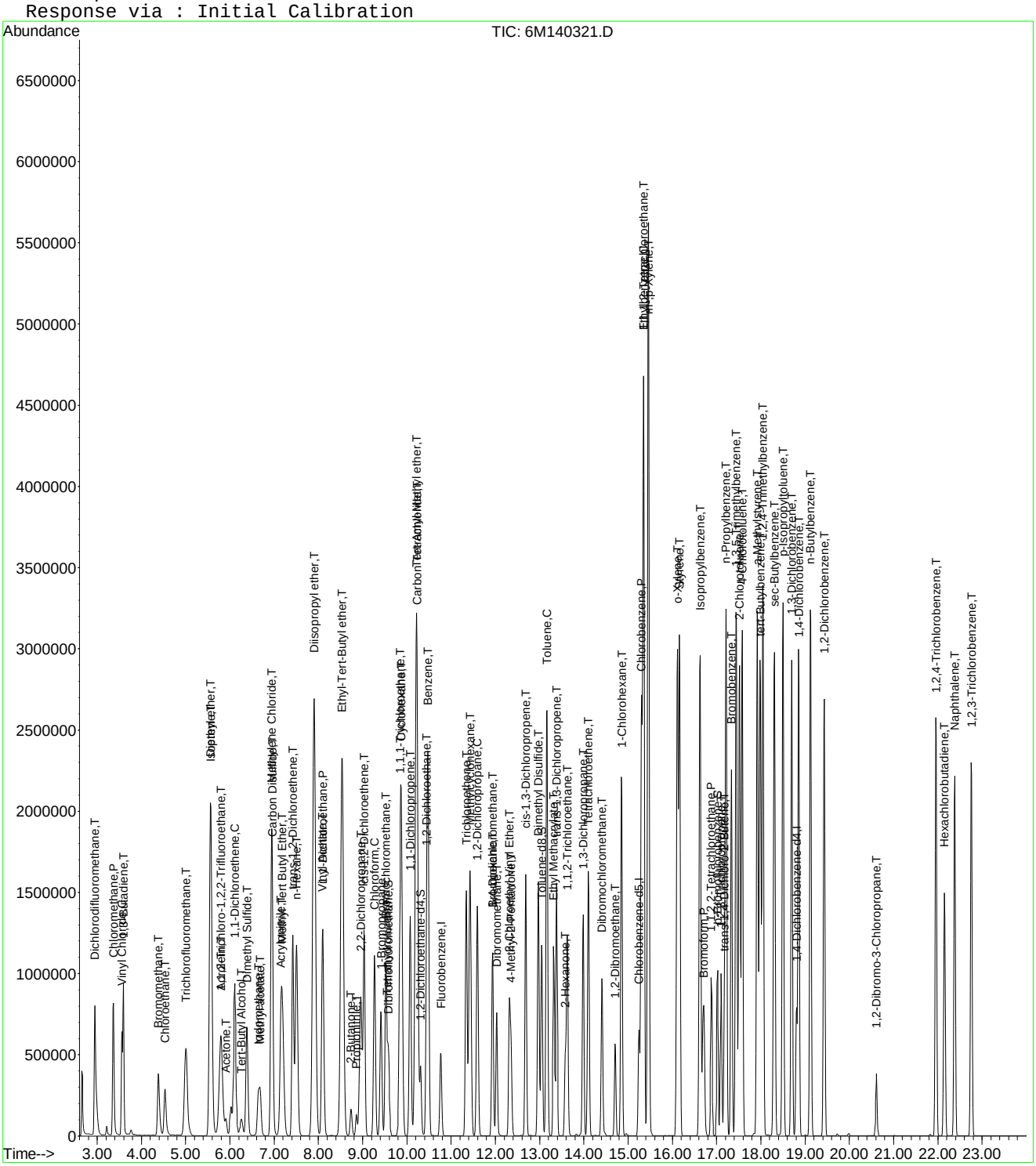

6M140321.D 8260WTR.M Fri Jul 01 14:21:57 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:59 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	674210	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	486785	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	271900	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	671839	98.2191 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 392.88%#		
43) 1,2-Dichloroethane-d4	10.31	65	835948	96.8094 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 387.24%#		
58) Toluene-d8	13.04	98	2262915	94.4033 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 377.60%#		
80) p-Bromofluorobenzene	17.02	95	1044558	98.0934 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 392.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	2392226	212.2580 ug/L	100
3) Chloromethane	3.37	50	2218722	176.3266 ug/L	100
4) Vinyl Chloride	3.56	62	1383750	200.2527 ug/L	99
5) 1,3-Butadiene	3.59	54	790286	206.9928 ug/L	97
6) Bromomethane	4.38	94	916596	199.6138 ug/L	100
7) Chloroethane	4.53	64	905382	207.3615 ug/L	96
8) Trichlorofluoromethane	5.00	101	2065931	196.0277 ug/L	99
10) Isoprene	5.57	67	1944884	206.7723 ug/L	96
11) Acrolein	5.78	56	1541	1.4899 ug/L	69
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	1336247	203.7841 ug/L	97
13) Acetone	5.90	43	421648	195.2041 ug/L	99
14) 1,1-Dichloroethene	6.11	61	2551648	200.5632 ug/L	94
15) Tert-Butyl Alcohol	6.28	59	3198	4.8417 ug/L #	57
16) Dimethyl Sulfide	6.38	62	1109294	199.9208 ug/L	95
17) Iodomethane	6.65	142	972879	208.2422 ug/L	92
18) Methyl acetate	6.69	43	1135963	194.3462 ug/L	99
19) Methylene Chloride	6.94	84	1372201	188.0837 ug/L	89
20) Carbon Disulfide	6.96	76	4495945	192.8546 ug/L	99
21) Acrylonitrile	7.18	53	44700	16.6668 ug/L #	33
22) Methyl Tert Butyl Ether	7.18	73	3851369	199.1557 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	1353415	198.6299 ug/L	88
24) n-Hexane	7.51	57	2284673	197.5664 ug/L	97
26) Vinyl Acetate	8.09	43	2820141	217.0472 ug/L	98
27) 1,1-Dichloroethane	8.10	63	2873257	195.8566 ug/L	99
28) Ethyl-Tert-Butyl ether	8.56	59	6764	0.2701 ug/L #	47
29) 2-Butanone	8.73	43	664492	200.9620 ug/L	97
30) Propionitrile	8.74	54	1576	1.7563 ug/L #	81
31) 2,2-Dichloropropane	8.96	77	2196313	198.4415 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	1477699	198.1211 ug/L	88
33) Chloroform	9.26	83	2557143	194.5712 ug/L	99
34) 1-Bromopropane	9.41	122	241562	203.4107 ug/L	99
35) Bromochloromethane	9.52	130	819022	204.3432 ug/L	99
36) Tetrahydrofuran	9.56	42	4224	1.8315 ug/L #	75
38) 1,1,1-Trichloroethane	9.85	97	2330454	203.6760 ug/L	98
39) Cyclohexane	9.87	56	2930205	196.8399 ug/L	96
40) 1,1-Dichloropropene	10.08	75	2009314	201.6162 ug/L	98
42) Carbon Tetrachloride	10.23	117	2106944	224.2607 ug/L	99
45) 1,2-Dichloroethane	10.45	62	2101049	199.3915 ug/L	99
46) Benzene	10.48	78	5301493	188.4813 ug/L	94
47) Trichloroethene	11.34	130	1327069	191.1997 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M140322.D 8260WTR.M Fri Jul 01 14:22:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:59 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methylcyclohexane	11.43	83	2178870	199.9595 ug/L	95
49)	1,2-Dichloropropane	11.59	63	1619228	199.9016 ug/L	98
50)	1,4-Dioxane	11.93	88	2818	51.3914 ug/L #	14
51)	Bromodichloromethane	11.94	83	2039115	208.6317 ug/L	99
52)	Dibromomethane	12.03	93	816650	208.3783 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	836577	205.9918 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	515506	206.2494 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	2333363	205.6305 ug/L	99
56)	Dimethyl Disulfide	12.97	79	1322167	209.3111 ug/L	97
59)	Toluene	13.16	91	5329560	183.7033 ug/L	98
60)	Ethyl Methacrylate	13.32	69	1710374	207.2144 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	2115027	205.0216 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	1065320	198.4215 ug/L	98
64)	2-Hexanone	13.58	43	1038924	203.8025 ug/L	98
65)	1,3-Dichloropropane	13.99	76	1956962	193.3985 ug/L	94
66)	Tetrachloroethene	14.11	166	1338320	193.5775 ug/L	92
67)	Dibromochloromethane	14.41	129	1402954	215.2216 ug/L	99
68)	1,2-Dibromoethane	14.70	107	1067268	205.9412 ug/L	100
69)	1-Chlorohexane	14.86	91	1899241	196.7097 ug/L	91
70)	Chlorobenzene	15.31	112	3420251	183.8172 ug/L	87
71)	1,1,1,2-Tetrachloroethane	15.35	131	1330581	200.9750 ug/L	97
72)	Ethylbenzene	15.35	106	1873240	192.3394 ug/L	99
73)	m-,p-Xylene	15.46	106	4310843	366.2377 ug/L	95
74)	o-Xylene	16.11	106	2276447	193.9154 ug/L	96
75)	Styrene	16.16	104	3942983	199.6439 ug/L	88
76)	Bromoform	16.72	173	900340	222.7294 ug/L	97
77)	Isopropylbenzene	16.62	105	5752842	187.8178 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.88	83	1421698	215.4425 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	415115	212.1790 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	17.19	53	555836	222.7847 ug/L	92
83)	n-Propylbenzene	17.22	91	7011461	179.4705 ug/L	99
84)	Bromobenzene	17.34	156	1573131	192.7133 ug/L	88
85)	1,3,5-Trimethylbenzene	17.45	105	5208297	190.2034 ug/L	98
86)	2-Chlorotoluene	17.52	91	4893039	185.1943 ug/L	96
87)	4-Chlorotoluene	17.58	91	4739568	188.1643 ug/L	97
88)	a-Methylstyrene	17.92	118	2750894	199.7372 ug/L	94
89)	tert-Butylbenzene	17.99	134	1070344	194.5543 ug/L	74
90)	1,2,4-Trimethylbenzene	18.05	105	5338361	189.9838 ug/L	98
91)	sec-Butylbenzene	18.31	105	6128752	186.9735 ug/L	99
92)	p-Isopropyltoluene	18.50	119	5274399	188.8129 ug/L	100
93)	1,3-Dichlorobenzene	18.70	146	3017581	187.8153 ug/L	92
94)	1,4-Dichlorobenzene	18.86	146	3009321	185.2589 ug/L	92
95)	n-Butylbenzene	19.13	91	5193206	189.5718 ug/L	98
96)	1,2-Dichlorobenzene	19.43	146	2821487	187.0461 ug/L	91
97)	1,2-Dibromo-3-Chloropropan	20.62	75	291664	225.6764 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	2052522	192.4961 ug/L	98
99)	Hexachlorobutadiene	22.16	225	860118	194.0178 ug/L	100
100)	Naphthalene	22.38	128	4383238	201.1498 ug/L	99
101)	1,2,3-Trichlorobenzene	22.76	180	1893203	191.7570 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140322.D 8260WTR.M Fri Jul 01 14:22:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

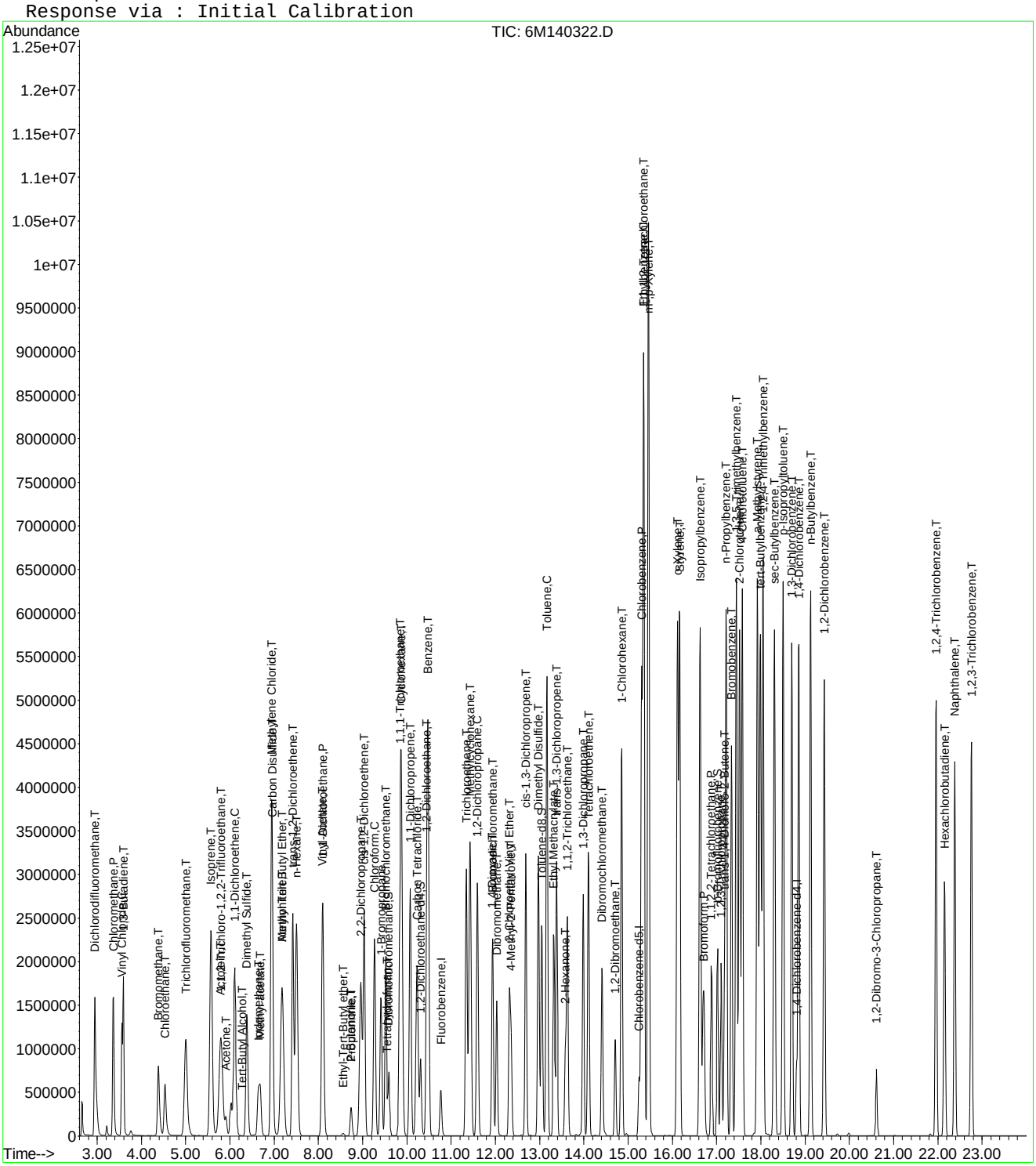

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:07 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	768752	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	513418	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	277427	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	1128188	144.6508 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 578.60%#		
43) 1,2-Dichloroethane-d4	10.31	65	1400537	142.2465 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 569.00%#		
58) Toluene-d8	13.04	98	3666921	145.0395 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 580.16%#		
80) p-Bromofluorobenzene	17.03	95	1580313	145.4490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 581.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.94	85	3603130	280.3824 ug/L	99
3) Chloromethane	3.36	50	3514669	244.9674 ug/L	99
4) Vinyl Chloride	3.56	62	2074164	263.2526 ug/L	98
5) 1,3-Butadiene	3.59	54	1213545	279.8694 ug/L	97
6) Bromomethane	4.37	94	1474577	281.6365 ug/L	100
7) Chloroethane	4.53	64	1490836	299.4574 ug/L	96
8) Trichlorofluoromethane	5.00	101	3451196	287.1972 ug/L	99
9) Diethyl ether	5.55	59	1755505	247.5940 ug/L	97
10) Isoprene	5.57	67	2862617	266.9137 ug/L	94
11) Acrolein	5.79	56	179556	152.2492 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	2228863	298.1095 ug/L	97
13) Acetone	5.91	43	694471	281.9693 ug/L	98
14) 1,1-Dichloroethene	6.10	61	4231203	291.6778 ug/L	94
15) Tert-Butyl Alcohol	6.29	59	515078	683.9134 ug/L	92
16) Dimethyl Sulfide	6.39	62	1850710	292.5220 ug/L	96
17) Iodomethane	6.64	142	1511597	283.4374 ug/L	92
18) Methyl acetate	6.69	43	1992359	298.9430 ug/L	99
19) Methylene Chloride	6.94	84	2215285	266.3004 ug/L	89
20) Carbon Disulfide	6.96	76	7083320	266.4739 ug/L	98
21) Acrylonitrile	7.15	53	497546	162.7001 ug/L	96
22) Methyl Tert Butyl Ether	7.18	73	6401984	290.3361 ug/L	98
23) trans-1,2-Dichloroethene	7.42	96	2224367	286.3050 ug/L	87
24) n-Hexane	7.50	57	3799046	288.1194 ug/L	96
25) Diisopropyl ether	7.90	45	9759184	274.9849 ug/L	99
26) Vinyl Acetate	8.09	43	4448993	300.2991 ug/L	99
27) 1,1-Dichloroethane	8.10	63	4699381	280.9398 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	8098177	283.6338 ug/L	99
29) 2-Butanone	8.73	43	1086721	288.2380 ug/L	98
30) Propionitrile	8.86	54	298217	291.4641 ug/L	98
31) 2,2-Dichloropropane	8.95	77	3622985	287.0872 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	2417494	284.2622 ug/L	71
33) Chloroform	9.26	83	4185224	279.2874 ug/L	99
34) 1-Bromopropane	9.41	122	399109	294.5307 ug/L	100
35) Bromochloromethane	9.52	130	1339573	293.1163 ug/L	99
36) Tetrahydrofuran	9.56	42	723977	275.3063 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3817009	292.5710 ug/L	97
39) Cyclohexane	9.88	56	4836948	284.9676 ug/L	96
40) 1,1-Dichloropropene	10.07	75	3335607	293.5361 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	6187488	285.3971 ug/L	98
42) Carbon Tetrachloride	10.23	117	3426898	319.8971 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140323.D 8260WTR.M Fri Jul 01 14:22:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:07 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	3436626	286.0301 ug/L	99
46)	Benzene	10.48	78	8206846	255.8911 ug/L	92
47)	Trichloroethene	11.34	130	2157856	272.6623 ug/L	85
48)	Methylcyclohexane	11.43	83	3572510	287.5366 ug/L	94
49)	1,2-Dichloropropane	11.59	63	2654885	287.4504 ug/L	98
50)	1,4-Dioxane	11.94	88	37500	599.7769 ug/L	90
51)	Bromodichloromethane	11.93	83	3309122	296.9343 ug/L	99
52)	Dibromomethane	12.02	93	1336996	299.1959 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	1349189	291.3572 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	816641	286.5491 ug/L	98
55)	cis-1,3-Dichloropropene	12.69	75	3726475	288.0131 ug/L	98
56)	Dimethyl Disulfide	12.97	79	2153813	299.0355 ug/L	97
59)	Toluene	13.16	91	7972275	260.5398 ug/L	94
60)	Ethyl Methacrylate	13.32	69	2708040	311.0642 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	3319850	305.1184 ug/L	96
63)	1,1,2-Trichloroethane	13.62	97	1658699	292.9155 ug/L	98
64)	2-Hexanone	13.58	43	1609874	299.4219 ug/L	99
65)	1,3-Dichloropropane	13.99	76	3035134	284.3902 ug/L	93
66)	Tetrachloroethene	14.10	166	2112313	289.6805 ug/L	90
67)	Dibromochloromethane	14.41	129	2168054	315.3397 ug/L	99
68)	1,2-Dibromoethane	14.71	107	1650327	301.9297 ug/L	99
69)	1-Chlorohexane	14.85	91	2920904	286.8330 ug/L	90
70)	Chlorobenzene	15.30	112	5078928	258.8012 ug/L	85
71)	1,1,1,2-Tetrachloroethane	15.35	131	1989897	284.9688 ug/L	97
72)	Ethylbenzene	15.35	106	2784005	271.0260 ug/L	89
73)	m-,p-Xylene	15.46	106	6169523	496.9567 ug/L	82
74)	o-Xylene	16.12	106	3353804	270.8685 ug/L	99
75)	Styrene	16.16	104	5692194	273.2606 ug/L	85
76)	Bromoform	16.71	173	1364903	320.1393 ug/L	96
77)	Isopropylbenzene	16.63	105	8032217	248.6314 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.88	83	2127089	315.9149 ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	617415	309.2940 ug/L	88
82)	trans-1,4-Dichloro-2-Buten	17.18	53	846450	332.5067 ug/L	93
83)	n-Propylbenzene	17.22	91	9328034	234.0103 ug/L	95
84)	Bromobenzene	17.34	156	2312758	277.6754 ug/L	88
85)	1,3,5-Trimethylbenzene	17.45	105	7210752	258.0855 ug/L	99
86)	2-Chlorotoluene	17.53	91	7014220	260.1890 ug/L	97
87)	4-Chlorotoluene	17.59	91	6424073	249.9594 ug/L	98
88)	a-Methylstyrene	17.92	118	3960625	281.8443 ug/L	93
89)	tert-Butylbenzene	18.00	134	1565290	278.8513 ug/L	79
90)	1,2,4-Trimethylbenzene	18.06	105	7348747	256.3200 ug/L	97
91)	sec-Butylbenzene	18.31	105	8392860	250.9449 ug/L	98
92)	p-Isopropyltoluene	18.51	119	7284847	255.5874 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	4306096	262.6735 ug/L	90
94)	1,4-Dichlorobenzene	18.85	146	4284929	258.5323 ug/L	90
95)	n-Butylbenzene	19.12	91	7177388	256.7823 ug/L	99
96)	1,2-Dichlorobenzene	19.44	146	4035185	262.1770 ug/L	90
97)	1,2-Dibromo-3-Chloropropan	20.61	75	433780	328.9526 ug/L	84
98)	1,2,4-Trichlorobenzene	21.97	180	2937231	269.9807 ug/L	97
99)	Hexachlorobutadiene	22.15	225	1256182	277.7132 ug/L	99
100)	Naphthalene	22.39	128	6036194	271.4865 ug/L	97
101)	1,2,3-Trichlorobenzene	22.76	180	2707781	268.7993 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140323.D 8260WTR.M Fri Jul 01 14:22:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

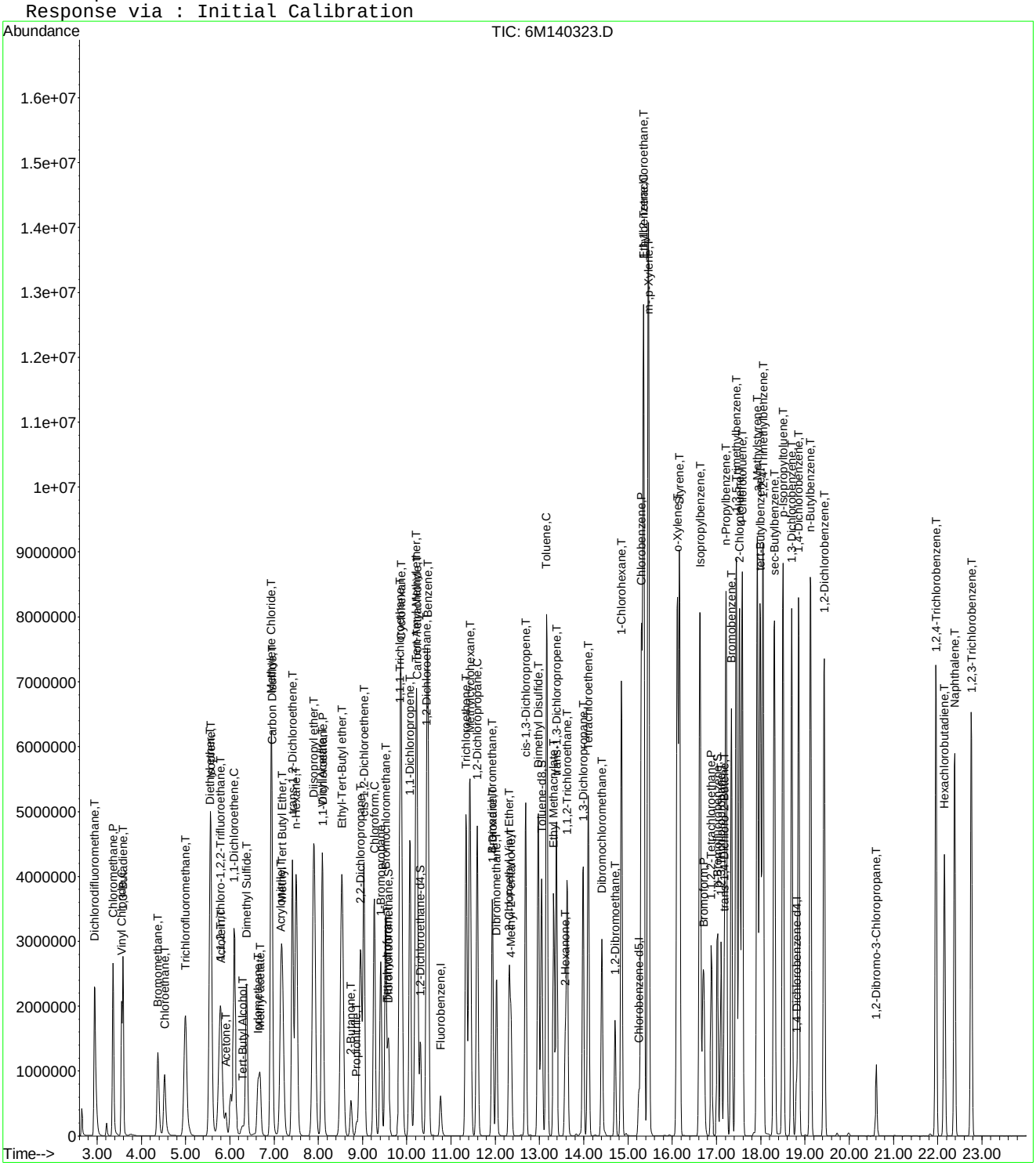

6M140323.D 8260WTR.M Fri Jul 01 14:22:13 2016 Page 3

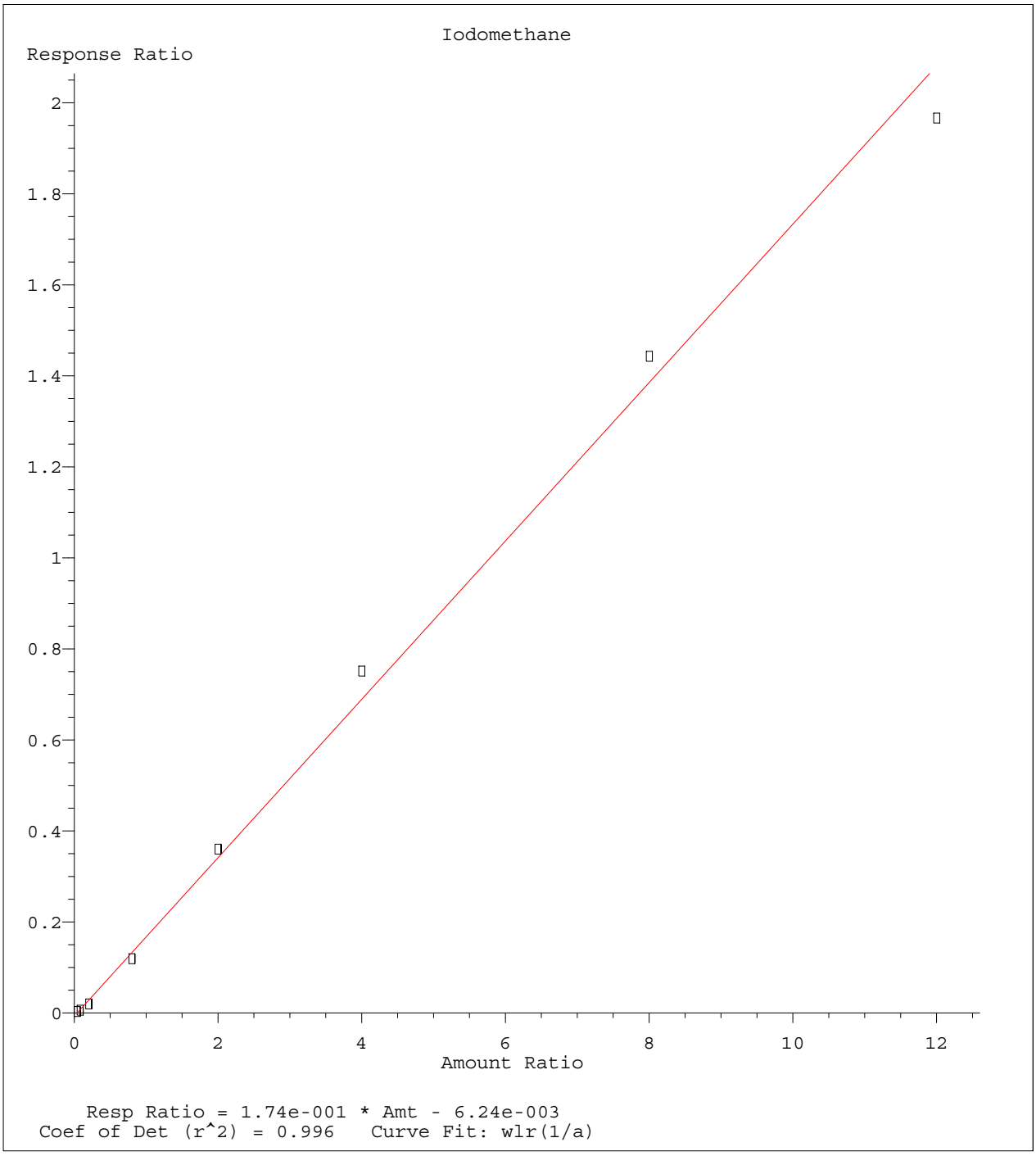

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

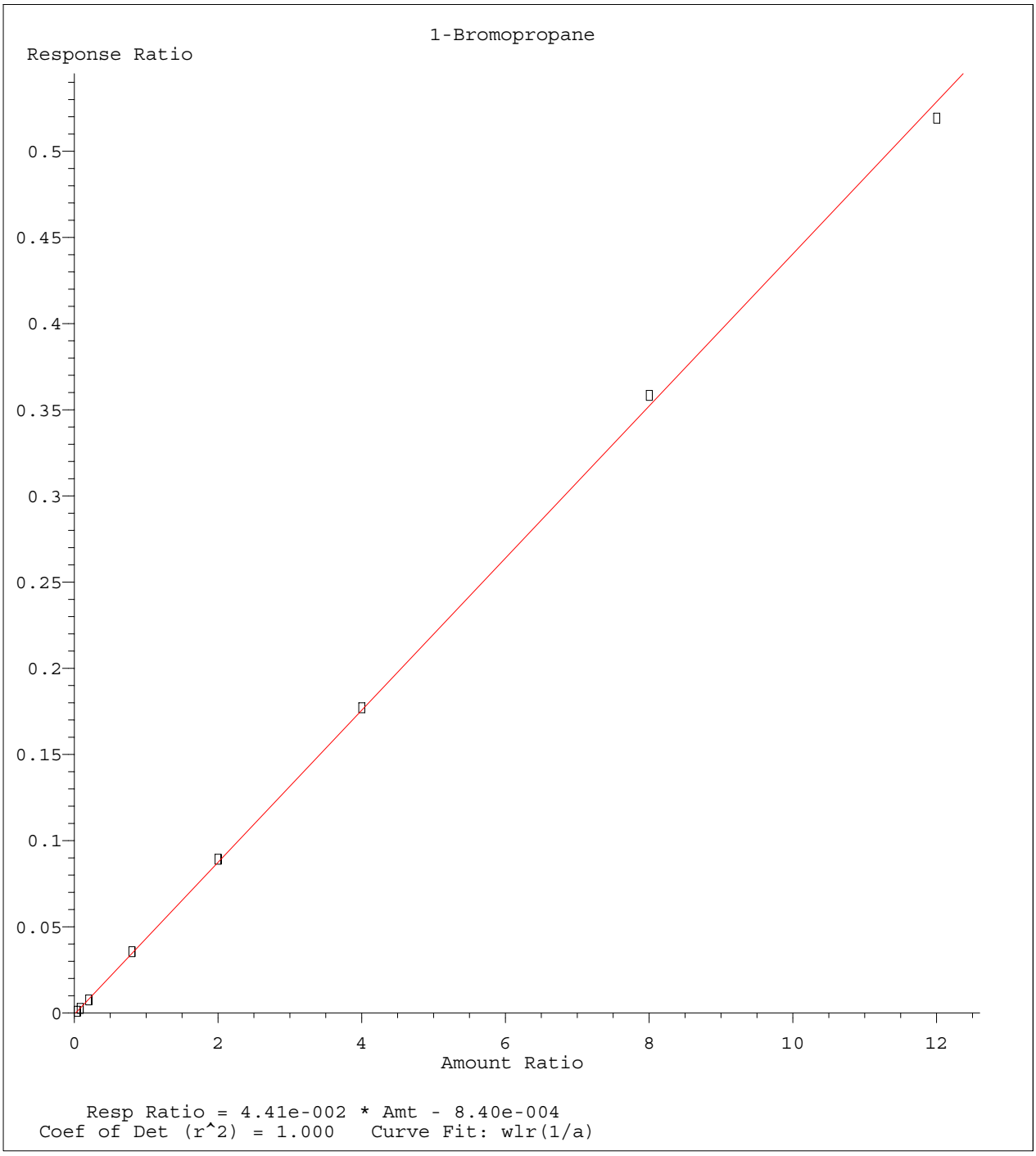

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

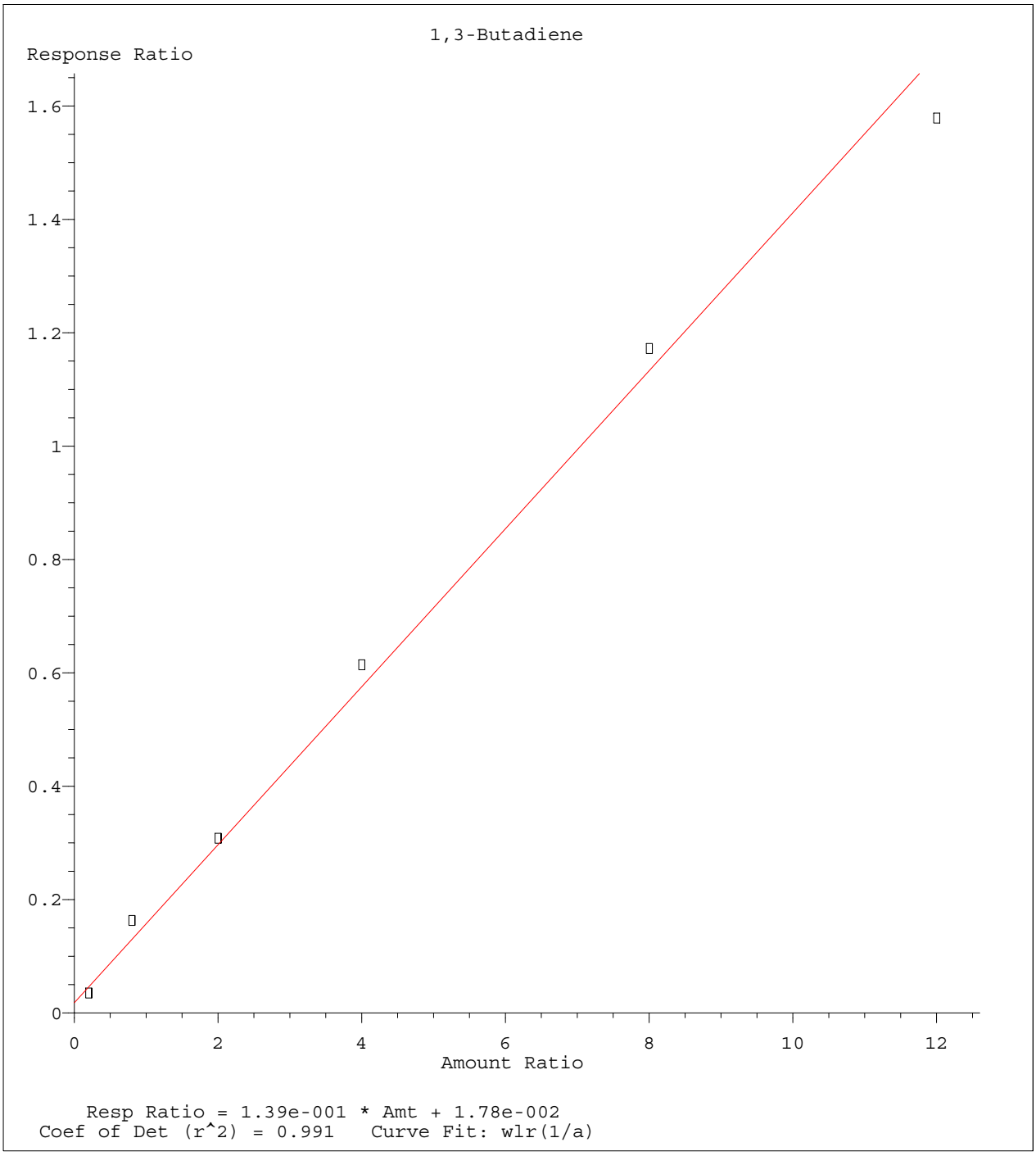

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:31 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	713701	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	500221	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	261664	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	181470	25.0619 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.24%		
43) 1,2-Dichloroethane-d4	10.31	65	220889	24.1652 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.68%		
58) Toluene-d8	13.04	98	608395	24.6990 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.80%		
80) p-Bromofluorobenzene	17.02	95	256905	25.0695 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	485701	40.7108 ug/L	100
3) Chloromethane	3.37	50	521316	39.1377 ug/L	100
4) Vinyl Chloride	3.55	62	337528	46.1434 ug/L	100
5) 1,3-Butadiene	3.60	54	155736	35.9374 ug/L	97
6) Bromomethane	4.37	94	235295	48.4066 ug/L	100
7) Chloroethane	4.52	64	239156	51.7436 ug/L	97
8) Trichlorofluoromethane	4.99	101	525851	47.1350 ug/L	100
9) Diethyl ether	5.56	59	680169	103.3296 ug/L	97
10) Isoprene	5.57	67	555397	55.7803 ug/L	96
11) Acrolein	5.79	56	131596	120.1899 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	356202	51.3167 ug/L	97
13) Acetone	5.91	43	107340	46.9439 ug/L	98
14) 1,1-Dichloroethene	6.11	61	594692	44.1572 ug/L	95
15) Tert-Butyl Alcohol	6.28	59	140341	200.7163 ug/L	98
16) Dimethyl Sulfide	6.38	62	515949	87.8409 ug/L	96
17) Iodomethane	6.64	142	294876	60.2646 ug/L	92
18) Methyl acetate	6.69	43	338698	54.7398 ug/L	99
19) Methylene Chloride	6.93	84	359823	46.5909 ug/L	90
20) Carbon Disulfide	6.95	76	1077126	43.6470 ug/L	100
21) Acrylonitrile	7.15	53	146978	51.7699 ug/L	100
22) Methyl Tert Butyl Ether	7.18	73	1049922	51.2877 ug/L	100
23) trans-1,2-Dichloroethene	7.41	96	339388	47.0532 ug/L	88
24) n-Hexane	7.51	57	547762	44.7466 ug/L	97
25) Diisopropyl ether	7.90	45	3459050	104.9838 ug/L	98
26) Vinyl Acetate	8.09	43	697771	50.7312 ug/L	98
27) 1,1-Dichloroethane	8.10	63	721539	46.4625 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2578321	97.2697 ug/L	98
29) 2-Butanone	8.73	43	177594	50.7378 ug/L	96
30) Propionitrile	8.85	54	95623	100.6665 ug/L	96
31) 2,2-Dichloropropane	8.96	77	593953	50.6955 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	392808	49.7512 ug/L	72
33) Chloroform	9.26	83	665890	47.8636 ug/L	100
34) 1-Bromopropane	9.41	122	83509	66.7495 ug/L	100
35) Bromochloromethane	9.52	130	207412	48.8852 ug/L	100
36) Tetrahydrofuran	9.56	42	224799	92.0780 ug/L	95
38) 1,1,1-Trichloroethane	9.85	97	598191	49.3876 ug/L	99
39) Cyclohexane	9.88	56	748359	47.4902 ug/L	96
40) 1,1-Dichloropropene	10.08	75	507584	48.1132 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	2097011	104.1851 ug/L	98
42) Carbon Tetrachloride	10.23	117	511641	51.4451 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140326.D 8260WTR.M Fri Jul 01 14:22:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:31 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	551012	49.3981 ug/L	98
46)	Benzene	10.48	78	1452601	48.7860 ug/L	97
47)	Trichloroethene	11.35	130	359806	48.9712 ug/L	90
48)	Methylcyclohexane	11.43	83	563704	48.8698 ug/L	95
49)	1,2-Dichloropropane	11.59	63	446228	52.0408 ug/L	99
50)	1,4-Dioxane	11.94	88	11529	198.6187 ug/L	84
51)	Bromodichloromethane	11.94	83	530754	51.2992 ug/L	100
52)	Dibromomethane	12.03	93	203238	48.9892 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	227435	52.9030 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	134103	50.6846 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	676117	56.2867 ug/L	100
56)	Dimethyl Disulfide	12.97	79	359470	53.7585 ug/L	98
59)	Toluene	13.15	91	1496307	50.1905 ug/L	99
60)	Ethyl Methacrylate	13.32	69	454272	53.5575 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	565632	53.3572 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	287265	52.0675 ug/L	98
64)	2-Hexanone	13.58	43	260461	49.7214 ug/L	97
65)	1,3-Dichloropropane	13.99	76	552828	53.1662 ug/L	94
66)	Tetrachloroethene	14.10	166	346278	48.7411 ug/L	93
67)	Dibromochloromethane	14.41	129	360309	53.7889 ug/L	99
68)	1,2-Dibromoethane	14.71	107	279233	52.4339 ug/L	100
69)	1-Chlorohexane	14.85	91	508330	51.2350 ug/L	92
70)	Chlorobenzene	15.30	112	974362	50.9593 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	357715	52.5791 ug/L	98
72)	Ethylbenzene	15.35	106	517345	51.6928 ug/L	93
73)	m-,p-Xylene	15.46	106	1254856	103.7457 ug/L	95
74)	o-Xylene	16.11	106	643998	53.3844 ug/L	94
75)	Styrene	16.16	104	1074202	52.9288 ug/L	92
76)	Bromoform	16.72	173	205149	49.3874 ug/L	98
77)	Isopropylbenzene	16.62	105	1626117	51.6632 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	352344	55.4825 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	103329	54.8809 ug/L	79
82)	trans-1,4-Dichloro-2-Buten	17.18	53	121642	50.6626 ug/L	96
83)	n-Propylbenzene	17.22	91	2019179	53.7062 ug/L	98
84)	Bromobenzene	17.34	156	398353	50.7084 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	1384872	52.5530 ug/L	97
86)	2-Chlorotoluene	17.52	91	1343673	52.8455 ug/L	96
87)	4-Chlorotoluene	17.58	91	1234147	50.9132 ug/L	97
88)	a-Methylstyrene	17.92	118	769488	58.0567 ug/L	95
89)	tert-Butylbenzene	17.98	134	281622	53.1924 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	1394233	51.5596 ug/L	98
91)	sec-Butylbenzene	18.30	105	1658086	52.5630 ug/L	97
92)	p-Isopropyltoluene	18.50	119	1389218	51.6766 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	793356	51.3104 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	809665	51.7942 ug/L	94
95)	n-Butylbenzene	19.12	91	1353617	51.3451 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	761556	52.4611 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.62	75	69221	55.6553 ug/L	83
98)	1,2,4-Trichlorobenzene	21.97	180	527905	51.4464 ug/L	99
99)	Hexachlorobutadiene	22.15	225	224309	52.5770 ug/L	99
100)	Naphthalene	22.38	128	1033625	49.2893 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	485666	51.1160 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

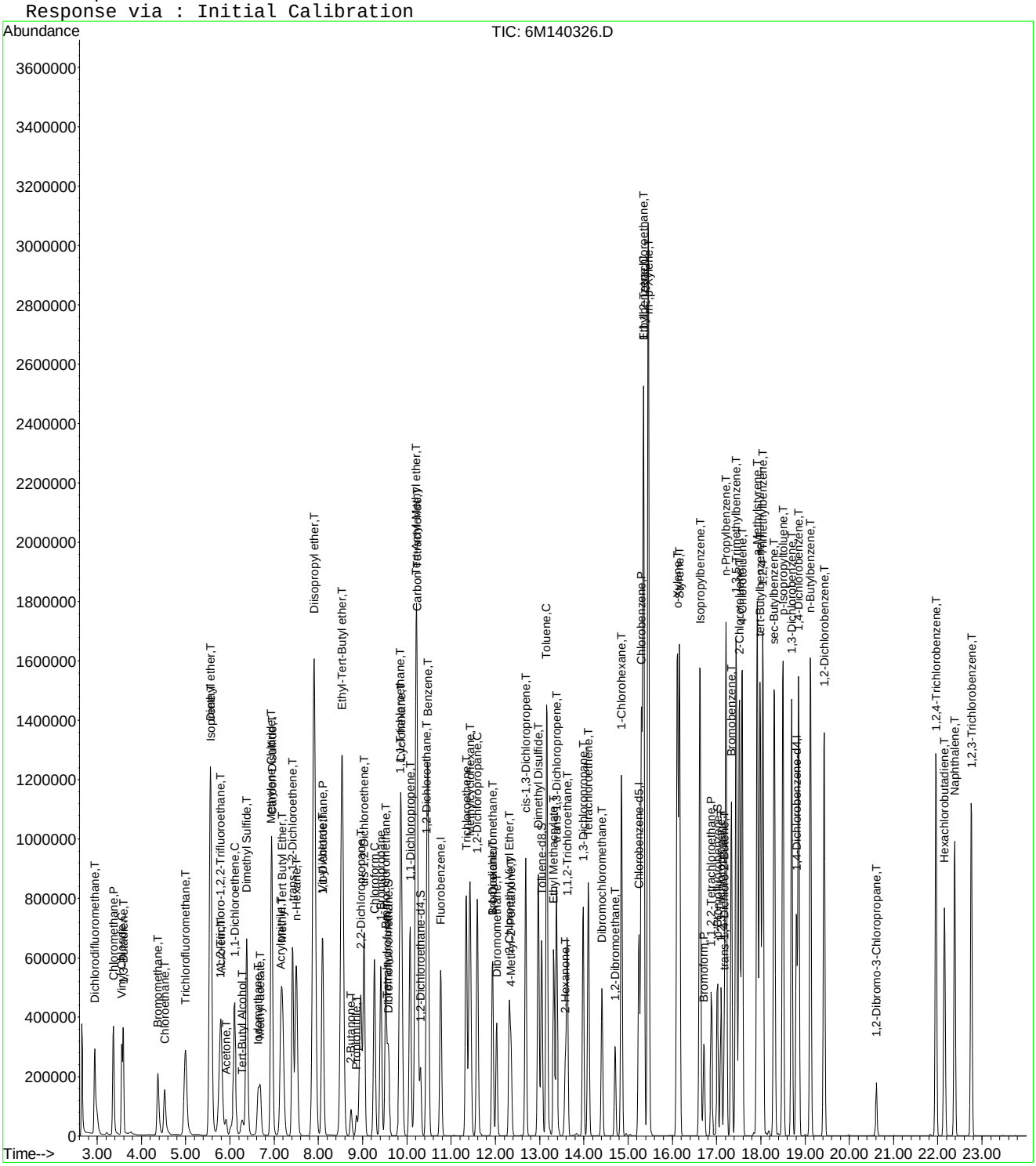

6M140326.D 8260WTR.M Fri Jul 01 14:22:38 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	40.7108	18.6	83	0.00
3	P	Chloromethane	50.0000	39.1377	21.7#	85	0.00
4	C	Vinyl Chloride	50.0000	46.1434	7.7	97	0.00
5	T	1,3-Butadiene	50.0000	35.9374	28.1#	76	0.00
6	T	Bromomethane	50.0000	48.4066	3.2	110	0.00
7	T	Chloroethane	50.0000	51.7436	-3.5	111	0.00
8	T	Trichlorofluoromethane	50.0000	47.1350	5.7	106	0.00
9	T	Diethyl ether	100.0000	103.3296	-3.3	108	0.00
10	T	Isoprene	50.0000	55.7803	-11.6	117	0.00
11	T	Acrolein	50.0000	120.1899	-140.4#	262	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3167	-2.6	112	0.00
13	T	Acetone	50.0000	46.9439	6.1	101	0.00
14	C	1,1-Dichloroethene	50.0000	44.1572	11.7	95	0.00
15	T	Tert-Butyl Alcohol	200.0000	200.7163	-0.4	109	-0.01
16	T	Dimethyl Sulfide	50.0000	87.8409	-75.7#	187	0.00
17	T	Iodomethane	50.0000	60.2646	-20.5#	123	0.00
18	T	Methyl acetate	50.0000	54.7398	-9.5	119	0.00
19	T	Methylene Chloride	50.0000	46.5909	6.8	104	0.00
20	T	Carbon Disulfide	50.0000	43.6470	12.7	93	0.00
21	T	Acrylonitrile	50.0000	51.7698	-3.5	108	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.2877	-2.6	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	47.0532	5.9	102	0.00
24	T	n-Hexane	50.0000	44.7466	10.5	97	0.00
25	T	Diisopropyl ether	100.0000	104.9838	-5.0	113	0.00
26	T	Vinyl Acetate	50.0000	50.7312	-1.5	108	0.00
27	P	1,1-Dichloroethane	50.0000	46.4625	7.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	97.2697	2.7	104	0.00
29	T	2-Butanone	50.0000	50.7378	-1.5	106	0.00
30	T	Propionitrile	100.0000	100.6665	-0.7	106	0.00
31	T	2,2-Dichloropropane	50.0000	50.6955	-1.4	111	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.7512	0.5	107	0.00
33	C	Chloroform	50.0000	47.8636	4.3	105	0.00
34		1-Bromopropane	50.0000	66.7495	-33.5#	141	0.00
35	T	Bromochloromethane	50.0000	48.8852	2.2	102	0.00
36	T	Tetrahydrofuran	100.0000	92.0780	7.9	104	0.00
37	S	Dibromofluoromethane	25.0000	25.0619	-0.2	106	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.3876	1.2	104	0.00
39	T	Cyclohexane	50.0000	47.4902	5.0	103	0.00
40	T	1,1-Dichloropropene	50.0000	48.1132	3.8	104	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	104.1851	-4.2	111	0.00
42	T	Carbon Tetrachloride	50.0000	51.4451	-2.9	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.1652	3.3	104	0.00
44		Heptane	-1.0000	0.0000	0.0	111	0.00
45	T	1,2-Dichloroethane	50.0000	49.3981	1.2	105	0.00
46	T	Benzene	50.0000	48.7860	2.4	105	0.00
47	T	Trichloroethene	50.0000	48.9712	2.1	105	0.00
48	T	Methylcyclohexane	50.0000	48.8698	2.3	106	0.00
49	C	1,2-Dichloropropane	50.0000	52.0408	-4.1	111	0.00
50	T	1,4-Dioxane	200.0000	198.6187	0.7	102	0.00
51	T	Bromodichloromethane	50.0000	51.2992	-2.6	106	0.00
52	T	Dibromomethane	50.0000	48.9892	2.0	101	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.9030	-5.8	106	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.6846	-1.4	106	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.2867	-12.6	117	0.00
56	T	Dimethyl Disulfide	50.0000	53.7585	-7.5	112	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
58	S	Toluene-d8	25.0000	24.6990	1.2	104	0.00
59	C	Toluene	50.0000	50.1905	-0.4	107	0.00
60	T	Ethyl Methacrylate	50.0000	53.5575	-7.1	108	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	107	0.00
62	T	trans-1,3-Dichloropropene	50.0000	53.3572	-6.7	108	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.0675	-4.1	108	0.00
64	T	2-Hexanone	50.0000	49.7214	0.6	101	0.00
65	T	1,3-Dichloropropane	50.0000	53.1662	-6.3	112	0.00
66	T	Tetrachloroethene	50.0000	48.7411	2.5	103	0.00
67	T	Dibromochloromethane	50.0000	53.7889	-7.6	105	0.00
68	T	1,2-Dibromoethane	50.0000	52.4339	-4.9	107	0.00
69	T	1-Chlorohexane	50.0000	51.2350	-2.5	106	0.00
70	P	Chlorobenzene	50.0000	50.9593	-1.9	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.5791	-5.2	106	0.00
72	C	Ethylbenzene	50.0000	51.6928	-3.4	107	0.00
73	T	m-,p-Xylene	100.0000	103.7457	-3.7	108	0.00
74	T	o-Xylene	50.0000	53.3844	-6.8	109	0.00
75	T	Styrene	50.0000	52.9288	-5.9	106	0.00
76	P	Bromoform	50.0000	49.3873	1.2	98	0.00
77	T	Isopropylbenzene	50.0000	51.6632	-3.3	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	99	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.4825	-11.0	108	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0695	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	50.0000	54.8809	-9.8	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	50.6626	-1.3	94	0.00
83	T	n-Propylbenzene	50.0000	53.7062	-7.4	107	0.00
84	T	Bromobenzene	50.0000	50.7084	-1.4	102	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.5530	-5.1	104	-0.01
86	T	2-Chlorotoluene	50.0000	52.8455	-5.7	105	0.00
87	T	4-Chlorotoluene	50.0000	50.9132	-1.8	105	0.00
88	T	a-Methylstyrene	50.0000	58.0567	-16.1	111	0.00
89	T	tert-Butylbenzene	50.0000	53.1924	-6.4	106	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	51.5596	-3.1	101	-0.01
91	T	sec-Butylbenzene	50.0000	52.5630	-5.1	104	-0.01
92	T	p-Isopropyltoluene	50.0000	51.6766	-3.4	101	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.3104	-2.6	103	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7942	-3.6	105	0.00
95	T	n-Butylbenzene	50.0000	51.3451	-2.7	100	0.00
96	T	1,2-Dichlorobenzene	50.0000	52.4611	-4.9	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	55.6553	-11.3	107	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.4464	-2.9	102	0.00
99	T	Hexachlorobutadiene	50.0000	52.5770	-5.2	105	0.00
100	T	Naphthalene	50.0000	49.2893	1.4	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	51.1160	-2.2	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140326.D 8260WTR.M Fri Jul 01 14:37:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070216\11M13043.D Vial: 3
Acq On : 2 Jul 2016 14:39 Operator: TMB
Sample : WG575085-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 02 15:00:48 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	574186	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	476712	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	275891	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	153795	24.4741 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.88%		
43) 1,2-Dichloroethane-d4	10.23	65	139713	19.4990 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.00%#		
57) Toluene-d8	12.47	98	527542	25.4690 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.88%		
78) p-Bromofluorobenzene	15.64	95	199584	23.4677 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	437738	48.6568 ug/L	93
3) Chloromethane	3.72	50	315334	43.7649 ug/L	99
4) Vinyl Chloride	3.96	62	284133	47.4857 ug/L	89
5) 1,3-Butadiene	4.00	54	257917	43.3493 ug/L	97
6) Bromomethane	4.85	94	185050	44.9802 ug/L	98
7) Chloroethane	5.00	64	187828	48.8558 ug/L	100
8) Trichlorofluoromethane	5.48	101	527773	44.2530 ug/L	99
9) Diethyl ether	6.01	59	381433	86.4781 ug/L	88
10) Isoprene	6.04	67	340735	46.3521 ug/L	84
11) Acrolein	6.23	56	27028	46.7102 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	282521	48.8198 ug/L	94
13) Acetone	6.34	43	45358	33.2675 ug/L	86
14) 1,1-Dichloroethene	6.56	61	452871	43.0834 ug/L	90
15) Tert-Butyl Alcohol	6.66	59	56627	150.1513 ug/L	94
16) Dimethyl Sulfide	6.81	62	179876	42.8494 ug/L	79
17) Iodomethane	7.06	142	199978	42.1044 ug/L	91
18) Methyl acetate	7.06	43	131599	30.4813 ug/L	90
19) Methylene Chloride	7.31	84	258150	47.4534 ug/L	70
20) Carbon Disulfide	7.36	76	880206	50.0185 ug/L	100
21) Acrylonitrile	7.49	53	74190	40.5840 ug/L	97
22) Methyl Tert Butyl Ether	7.52	73	590377	43.5113 ug/L	95
23) trans-1,2-Dichloroethene	7.74	96	284929	48.9774 ug/L	87
24) n-Hexane	7.82	57	446003	46.0297 ug/L	95
25) Diisopropyl ether	8.15	45	1852871	76.6346 ug/L	96
26) Vinyl Acetate	8.31	43	367770	39.7114 ug/L	97
27) 1,1-Dichloroethane	8.34	63	525744	45.0395 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1660292	84.3696 ug/L	97
29) 2-Butanone	8.87	43	73496	35.6564 ug/L	89
30) Propionitrile	8.97	54	47053	77.9394 ug/L	96
31) 2,2-Dichloropropane	9.09	77	441209	48.3094 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	313852	48.9291 ug/L	86
33) Chloroform	9.35	83	509344	44.4334 ug/L	100
34) 1-Bromopropane	9.48	122	59106	51.8485 ug/L	97
35) Bromochloromethane	9.57	130	200982	52.7585 ug/L	80
36) Tetrahydrofuran	9.60	42	94800	65.1306 ug/L	83
38) 1,1,1-Trichloroethane	9.85	97	501648	44.4703 ug/L	95
39) Cyclohexane	9.88	56	551982	44.8994 ug/L	91
40) 1,1-Dichloropropene	10.04	75	376609	46.7583 ug/L	97
41) Carbon Tetrachloride	10.18	117	499882	45.3807 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1216941	88.9960 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070216\11M13043.D Vial: 3
Acq On : 2 Jul 2016 14:39 Operator: TMB
Sample : WG575085-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 02 15:00:48 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	366651	39.3818 ug/L	98
45)	Benzene	10.38	78	1051709	47.6981 ug/L	100
46)	Trichloroethene	11.08	130	354182	49.4196 ug/L	98
47)	Methylcyclohexane	11.17	83	451137	51.0060 ug/L	90
48)	1,2-Dichloropropane	11.29	63	274623	44.9940 ug/L	95
49)	1,4-Dioxane	11.55	88	5442	163.0778 ug/L	97
50)	Bromodichloromethane	11.57	83	385990	45.0480 ug/L	99
51)	Dibromomethane	11.65	93	145682	45.8035 ug/L	94
52)	2-Chloroethyl Vinyl Ether	11.84	63	124432	41.3646 ug/L	95
53)	4-Methyl-2-Pentanone	11.87	58	69739	41.1034 ug/L	91
54)	cis-1,3-Dichloropropene	12.17	75	408162	47.6258 ug/L	99
55)	Dimethyl Disulfide	12.42	79	227739	44.1597 ug/L	94
58)	Toluene	12.56	91	1227520	50.8647 ug/L	99
59)	Ethyl Methacrylate	12.64	69	242340	47.0279 ug/L	77
60)	trans-1,3-Dichloropropene	12.73	75	361112	46.6178 ug/L	95
61)	1,1,2-Trichloroethane	12.93	97	202960	47.4278 ug/L	99
62)	2-Hexanone	12.86	43	112696	35.8570 ug/L	89
63)	1,3-Dichloropropane	13.21	76	318949	46.4124 ug/L	79
64)	Tetrachloroethene	13.34	164	295580	52.6685 ug/L	95
65)	Dibromochloromethane	13.59	129	319627	48.9686 ug/L	99
66)	1,2-Dibromoethane	13.82	107	203166	47.3861 ug/L	100
67)	1-Chlorohexane	13.89	91	413192	51.9312 ug/L	83
68)	Chlorobenzene	14.29	112	894247	50.5817 ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	351254	49.1018 ug/L	100
70)	Ethylbenzene	14.31	106	459513	50.6875 ug/L	96
71)	m-,p-Xylene	14.39	106	1115343	101.2005 ug/L	95
72)	o-Xylene	14.92	106	536218	49.9934 ug/L	96
73)	Styrene	14.95	104	923508	52.1140 ug/L	93
74)	Bromoform	15.43	173	193767	48.9801 ug/L	100
75)	Isopropylbenzene	15.31	105	1427684	50.3325 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.51	83	200276	46.6158 ug/L	98
79)	1,2,3-Trichloropropane	15.70	110	69484	43.1546 ug/L	98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	65217	31.7695 ug/L	56
81)	n-Propylbenzene	15.79	91	1609371	50.3698 ug/L	97
82)	Bromobenzene	15.91	156	422139	50.3499 ug/L	88
83)	1,3,5-Trimethylbenzene	15.95	105	1219642	50.0221 ug/L	97
84)	2-Chlorotoluene	16.05	91	1119151	50.0086 ug/L	96
85)	4-Chlorotoluene	16.09	91	942020	46.9923 ug/L	97
86)	a-Methylstyrene	16.34	118	662994	51.5443 ug/L	95
87)	tert-Butylbenzene	16.39	134	271907	52.6378 ug/L	87
88)	1,2,4-Trimethylbenzene	16.44	105	1253603	50.4912 ug/L	98
89)	sec-Butylbenzene	16.65	105	1476110	50.4195 ug/L	98
90)	p-Isopropyltoluene	16.79	119	1366380	50.8119 ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	814156	50.2790 ug/L	96
92)	1,4-Dichlorobenzene	17.10	146	811235	49.4253 ug/L	97
93)	n-Butylbenzene	17.28	91	1141618	48.1779 ug/L	97
94)	1,2-Dichlorobenzene	17.56	146	730809	49.5437 ug/L	96
95)	1,2-Dibromo-3-Chloropropan	18.49	75	35940	37.2741 ug/L	84
96)	1,2,4-Trichlorobenzene	19.54	180	529643	49.0696 ug/L	99
97)	Hexachlorobutadiene	19.69	225	213905	44.9841 ug/L	96
98)	Naphthalene	19.89	128	926446	46.2426 ug/L	99
99)	1,2,3-Trichlorobenzene	20.18	180	468864	47.3310 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M13043.D 8260WT.M Sat Jul 02 15:00:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070216\11M13043.D Vial: 3
Acq On : 2 Jul 2016 14:39 Operator: TMB
Sample : WG575085-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 15:00 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

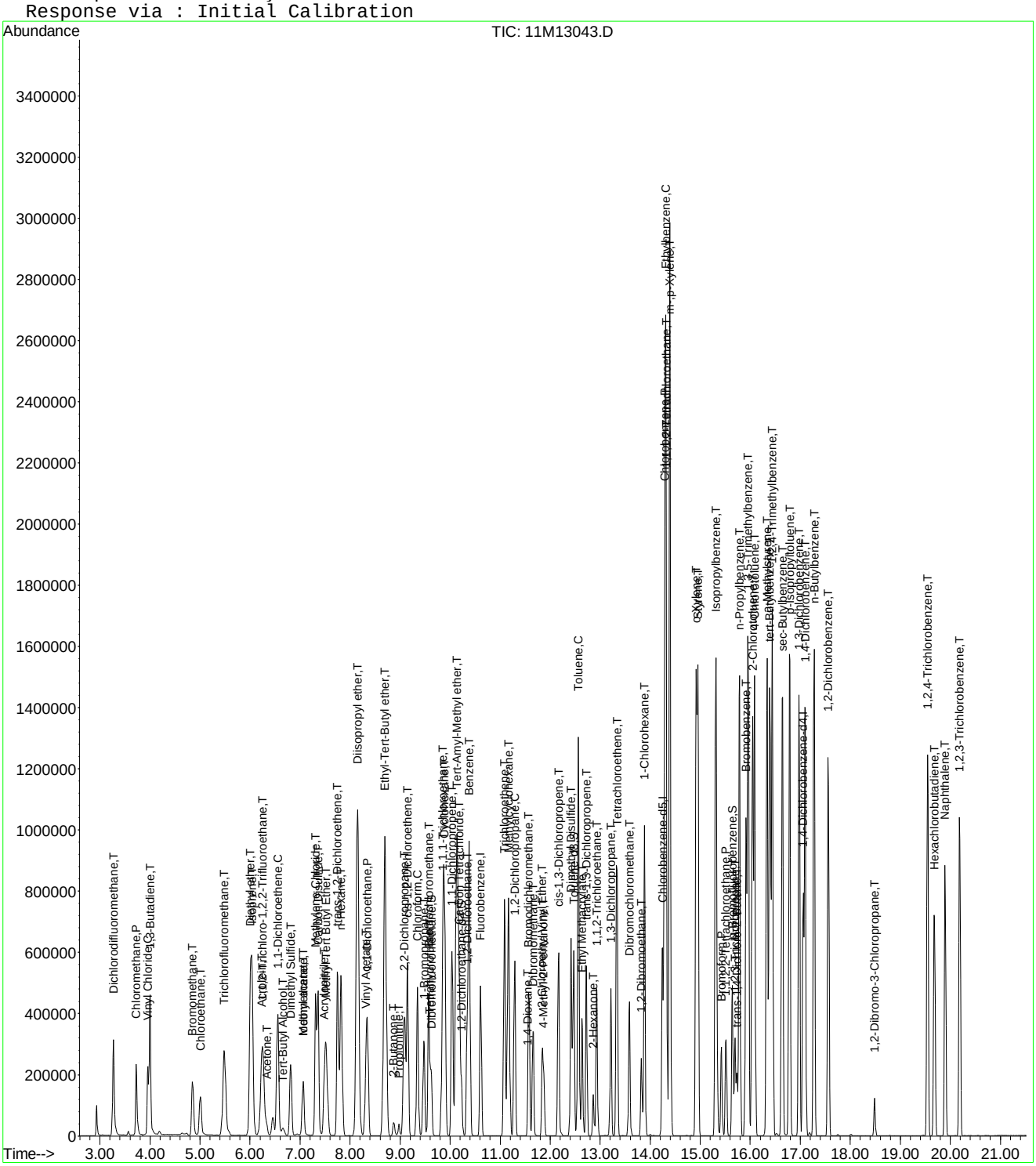

Continuing Calibration Area and RT check

Instrument: hpms11
Initial cal date: 13 May 2016 17:51
CCV date: 2 Jul 2016 14:39
CCV Filename: 11M13043.D

	Fluorobenzene		**Chlorobenzene-d5**		**1,4-Dichlorobenzene-d4**	
	Amount	RT	Amount	RT	Amount	RT
InitCal	521583	10.61	438582	14.25	263885	17.06
CCV	574186	10.61	476712	14.25	275891	17.06

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070216\11M13043.D Vial: 3
Acq On : 2 Jul 2016 14:39 Operator: TMB
Sample : WG575085-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	110	0.00
2	T	Dichlorodifluoromethane	0.3917	0.3812	2.7	105	0.00
3	P	Chloromethane	0.3137	0.2746	12.5	110	0.00
4	C	Vinyl Chloride	0.2605	0.2474	5.0	109	0.00
5	T	1,3-Butadiene	0.2591	0.2246	13.3	92	0.00
6	T	Bromomethane	0.1791	0.1611	10.0	107	0.00
7	T	Chloroethane	0.1674	0.1636	2.3	112	0.00
8	T	Trichlorofluoromethane	0.5193	0.4596	11.5	102	0.00
9	T	Diethyl ether	0.1920	0.1661	13.5	97	0.00
10	T	Isoprene	0.3201	0.2967	7.3	103	0.00
11	T	Acrolein	0.0228	0.0235	-3.4	107	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2520	0.2460	2.4	111	0.00
13	T	Acetone	0.0594	0.0395	33.5#	75	0.00
14	C	1,1-Dichloroethene	0.4577	0.3944	13.8	98	0.00
15	T	Tert-Butyl Alcohol	0.0164	0.0123	24.9	82	0.00
16	T	Dimethyl Sulfide	0.1828	0.1566	14.3	93	0.00
17	T	Iodomethane	0.1615	0.1741	-7.8	93	0.00
18	T	Methyl acetate	0.2006	0.1146	42.9#	71	0.00
19	T	Methylene Chloride	0.2369	0.2248	5.1	111	0.00
20	T	Carbon Disulfide	0.7662	0.7665	-0.0	108	0.00
21	T	Acrylonitrile	0.0796	0.0646	18.8	87	0.00
22	T	Methyl Tert Butyl Ether	0.5908	0.5141	13.0	97	0.00
23	T	trans-1,2-Dichloroethene	0.2533	0.2481	2.0	113	0.00
24	T	n-Hexane	0.4219	0.3884	7.9	99	0.00
25	T	Diisopropyl ether	1.0527	0.8067	23.4	85	0.00
26	T	Vinyl Acetate	0.3793	0.3202	15.6	90	0.00
27	P	1,1-Dichloroethane	0.5082	0.4578	9.9	102	0.00
28	T	Ethyl-Tert-Butyl ether	0.8568	0.7229	15.6	93	0.00
29	T	2-Butanone	0.0897	0.0640	28.7#	81	0.00
30	T	Propionitrile	0.0263	0.0205	22.1	83	0.00
31	T	2,2-Dichloropropane	0.3977	0.3842	3.4	110	0.00
32	T	cis-1,2-Dichloroethene	0.2793	0.2733	2.1	111	0.00
33	C	Chloroform	0.4991	0.4435	11.1	104	0.00
34	T	1-Bromopropane	0.0432	0.0515	-19.2	118	0.00
35	T	Bromochloromethane	0.1659	0.1750	-5.5	112	0.00
36	T	Tetrahydrofuran	0.0634	0.0413	34.9#	74	0.00
37	S	Dibromofluoromethane	0.2736	0.2678	2.1	110	0.00
38	T	1,1,1-Trichloroethane	0.4911	0.4368	11.1	101	0.00
39	T	Cyclohexane	0.5353	0.4807	10.2	96	0.00
40	T	1,1-Dichloropropene	0.3507	0.3280	6.5	107	0.00
41	T	Carbon Tetrachloride	0.4796	0.4353	9.2	101	0.00
42	T	Tert-Amyl-Methyl ether	0.5954	0.5299	11.0	99	0.00
43	S	1,2-Dichloroethane-d4	0.3120	0.2433	22.0	88	0.00
44	T	1,2-Dichloroethane	0.4054	0.3193	21.2	88	0.00
45	T	Benzene	0.9600	0.9158	4.6	111	0.00
46	T	Trichloroethene	0.3120	0.3084	1.2	115	-0.01
47	T	Methylcyclohexane	0.3851	0.3928	-2.0	108	0.00
48	C	1,2-Dichloropropane	0.2657	0.2391	10.0	102	0.00
49	T	1,4-Dioxane	0.0014	0.0012	15.7	93	0.00
50	T	Bromodichloromethane	0.3731	0.3361	9.9	100	0.00
51	T	Dibromomethane	0.1385	0.1269	8.4	102	0.00
52	T	2-Chloroethyl Vinyl Ether	0.1310	0.1084	17.3	93	0.00
53	T	4-Methyl-2-Pentanone	0.0739	0.0607	17.8	92	0.00
54	T	cis-1,3-Dichloropropene	0.3731	0.3554	4.7	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070216\11M13043.D Vial: 3
Acq On : 2 Jul 2016 14:39 Operator: TMB
Sample : WG575085-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2245	0.1983	11.7	96	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	109	0.00
57	S	Toluene-d8	1.0862	1.1066	-1.9	114	0.00
58	C	Toluene	1.2656	1.2875	-1.7	112	0.00
59	T	Ethyl Methacrylate	0.2702	0.2542	5.9	97	-0.01
60	T	trans-1,3-Dichloropropene	0.4062	0.3787	6.8	99	0.00
61	T	1,1,2-Trichloroethane	0.2244	0.2129	5.1	105	0.00
62	T	2-Hexanone	0.1648	0.1182	28.3#	78	0.00
63	T	1,3-Dichloropropane	0.3604	0.3345	7.2	101	0.00
64	T	Tetrachloroethene	0.2943	0.3100	-5.3	118	0.00
65	T	Dibromochloromethane	0.3423	0.3352	2.1	103	0.00
66	T	1,2-Dibromoethane	0.2248	0.2131	5.2	103	0.00
67	T	1-Chlorohexane	0.4173	0.4334	-3.9	110	0.00
68	P	Chlorobenzene	0.9272	0.9379	-1.2	112	0.00
69	T	1,1,1,2-Tetrachloroethane	0.3751	0.3684	1.8	108	0.00
70	C	Ethylbenzene	0.4754	0.4820	-1.4	112	0.00
71	T	m-,p-Xylene	0.5780	0.5849	-1.2	112	0.00
72	T	o-Xylene	0.5625	0.5624	0.0	109	0.00
73	T	Styrene	0.9293	0.9686	-4.2	110	0.00
74	P	Bromoform	0.2075	0.2032	2.0	105	0.00
75	T	Isopropylbenzene	1.4875	1.4974	-0.7	109	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	105	0.00
77	P	1,1,2,2-Tetrachloroethane	0.3893	0.3630	6.8	96	-0.01
78	S	p-Bromofluorobenzene	0.7706	0.7234	6.1	106	0.00
79	T	1,2,3-Trichloropropane	0.1351	0.1259	6.8	96	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.1588	0.1182	25.6#	69	0.00
81	T	n-Propylbenzene	2.8953	2.9167	-0.7	106	0.00
82	T	Bromobenzene	0.7597	0.7651	-0.7	111	-0.01
83	T	1,3,5-Trimethylbenzene	2.2094	2.2104	-0.0	107	-0.01
84	T	2-Chlorotoluene	2.0279	2.0282	-0.0	110	0.00
85	T	4-Chlorotoluene	1.8165	1.7072	6.0	101	0.00
86	T	a-Methylstyrene	1.1656	1.2015	-3.1	102	0.00
87	T	tert-Butylbenzene	0.4681	0.4928	-5.3	112	-0.01
88	T	1,2,4-Trimethylbenzene	2.2498	2.2719	-1.0	106	0.00
89	T	sec-Butylbenzene	2.6529	2.6752	-0.8	106	0.00
90	T	p-Isopropyltoluene	2.4367	2.4763	-1.6	107	0.00
91	T	1,3-Dichlorobenzene	1.4673	1.4755	-0.6	110	0.00
92	T	1,4-Dichlorobenzene	1.4873	1.4702	1.1	109	0.00
93	T	n-Butylbenzene	2.1472	2.0690	3.6	101	0.00
94	T	1,2-Dichlorobenzene	1.3366	1.3244	0.9	107	-0.01
95	T	1,2-Dibromo-3-Chloropropane	0.0825	0.0651	21.0	84	0.00
96	T	1,2,4-Trichlorobenzene	0.9781	0.9599	1.9	103	-0.01
97	T	Hexachlorobutadiene	0.4309	0.3877	10.0	98	0.00
98	T	Naphthalene	1.8154	1.6790	7.5	96	-0.01
99	T	1,2,3-Trichlorobenzene	0.8976	0.8497	5.3	103	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M13043.D 8260WT.M Sun Jul 03 09:38:05 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070216\11M13043.D Vial: 3
Acq On : 2 Jul 2016 14:39 Operator: TMB
Sample : WG575085-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	110	0.00
2	T	Dichlorodifluoromethane	50.0000	48.6568	2.7	105	0.00
3	P	Chloromethane	50.0000	43.7649	12.5	110	0.00
4	C	Vinyl Chloride	50.0000	47.4857	5.0	109	0.00
5	T	1,3-Butadiene	50.0000	43.3493	13.3	92	0.00
6	T	Bromomethane	50.0000	44.9802	10.0	107	0.00
7	T	Chloroethane	50.0000	48.8558	2.3	112	0.00
8	T	Trichlorofluoromethane	50.0000	44.2530	11.5	102	0.00
9	T	Diethyl ether	100.0000	86.4781	13.5	97	0.00
10	T	Isoprene	50.0000	46.3521	7.3	103	0.00
11	T	Acrolein	50.0000	46.7102	6.6	107	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	48.8198	2.4	111	0.00
13	T	Acetone	50.0000	33.2674	33.5#	75	0.00
14	C	1,1-Dichloroethene	50.0000	43.0834	13.8	98	0.00
15	T	Tert-Butyl Alcohol	200.0000	150.1513	24.9	82	0.00
16	T	Dimethyl Sulfide	50.0000	42.8494	14.3	93	0.00
17	T	Iodomethane	50.0000	42.1044	15.8	93	0.00
18	T	Methyl acetate	50.0000	30.4813	39.0#	71	0.00
19	T	Methylene Chloride	50.0000	47.4534	5.1	111	0.00
20	T	Carbon Disulfide	50.0000	50.0185	-0.0	108	0.00
21	T	Acrylonitrile	50.0000	40.5840	18.8	87	0.00
22	T	Methyl Tert Butyl Ether	50.0000	43.5113	13.0	97	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.9774	2.0	113	0.00
24	T	n-Hexane	50.0000	46.0297	7.9	99	0.00
25	T	Diisopropyl ether	100.0000	76.6346	23.4	85	0.00
26	T	Vinyl Acetate	50.0000	39.7114	20.6	90	0.00
27	P	1,1-Dichloroethane	50.0000	45.0395	9.9	102	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	84.3696	15.6	93	0.00
29	T	2-Butanone	50.0000	35.6565	28.7#	81	0.00
30	T	Propionitrile	100.0000	77.9394	22.1	83	0.00
31	T	2,2-Dichloropropane	50.0000	48.3094	3.4	110	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9291	2.1	111	0.00
33	C	Chloroform	50.0000	44.4334	11.1	104	0.00
34	T	1-Bromopropane	50.0000	51.8485	-3.7	118	0.00
35	T	Bromochloromethane	50.0000	52.7585	-5.5	112	0.00
36	T	Tetrahydrofuran	100.0000	65.1306	34.9#	74	0.00
37	S	Dibromofluoromethane	25.0000	24.4741	2.1	110	0.00
38	T	1,1,1-Trichloroethane	50.0000	44.4703	11.1	101	0.00
39	T	Cyclohexane	50.0000	44.8993	10.2	96	0.00
40	T	1,1-Dichloropropene	50.0000	46.7582	6.5	107	0.00
41	T	Carbon Tetrachloride	50.0000	45.3807	9.2	101	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	88.9959	11.0	99	0.00
43	S	1,2-Dichloroethane-d4	25.0000	19.4990	22.0	88	0.00
44	T	1,2-Dichloroethane	50.0000	39.3818	21.2	88	0.00
45	T	Benzene	50.0000	47.6981	4.6	111	0.00
46	T	Trichloroethene	50.0000	49.4196	1.2	115	-0.01
47	T	Methylcyclohexane	50.0000	51.0060	-2.0	108	0.00
48	C	1,2-Dichloropropane	50.0000	44.9940	10.0	102	0.00
49	T	1,4-Dioxane	200.0000	163.0778	18.5	93	0.00
50	T	Bromodichloromethane	50.0000	45.0480	9.9	100	0.00
51	T	Dibromomethane	50.0000	45.8035	8.4	102	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	41.3646	17.3	93	0.00
53	T	4-Methyl-2-Pentanone	50.0000	41.1034	17.8	92	0.00
54	T	cis-1,3-Dichloropropene	50.0000	47.6258	4.7	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070216\11M13043.D Vial: 3
Acq On : 2 Jul 2016 14:39 Operator: TMB
Sample : WG575085-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	44.1597	11.7	96	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	109	0.00
57	S	Toluene-d8	25.0000	25.4690	-1.9	114	0.00
58	C	Toluene	50.0000	50.8646	-1.7	112	0.00
59	T	Ethyl Methacrylate	50.0000	47.0279	5.9	97	-0.01
60	T	trans-1,3-Dichloropropene	50.0000	46.6178	6.8	99	0.00
61	T	1,1,2-Trichloroethane	50.0000	47.4278	5.1	105	0.00
62	T	2-Hexanone	50.0000	35.8570	28.3#	78	0.00
63	T	1,3-Dichloropropane	50.0000	46.4124	7.2	101	0.00
64	T	Tetrachloroethene	50.0000	52.6685	-5.3	118	0.00
65	T	Dibromochloromethane	50.0000	48.9686	2.1	103	0.00
66	T	1,2-Dibromoethane	50.0000	47.3861	5.2	103	0.00
67	T	1-Chlorohexane	50.0000	51.9312	-3.9	110	0.00
68	P	Chlorobenzene	50.0000	50.5817	-1.2	112	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	49.1018	1.8	108	0.00
70	C	Ethylbenzene	50.0000	50.6876	-1.4	112	0.00
71	T	m-,p-Xylene	100.0000	101.2005	-1.2	112	0.00
72	T	o-Xylene	50.0000	49.9934	0.0	109	0.00
73	T	Styrene	50.0000	52.1140	-4.2	110	0.00
74	P	Bromoform	50.0000	48.9801	2.0	105	0.00
75	T	Isopropylbenzene	50.0000	50.3325	-0.7	109	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	105	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	46.6158	6.8	96	-0.01
78	S	p-Bromofluorobenzene	25.0000	23.4677	6.1	106	0.00
79	T	1,2,3-Trichloropropane	50.0000	43.1546	13.7	96	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	31.7695	36.5#	69	0.00
81	T	n-Propylbenzene	50.0000	50.3698	-0.7	106	0.00
82	T	Bromobenzene	50.0000	50.3499	-0.7	111	-0.01
83	T	1,3,5-Trimethylbenzene	50.0000	50.0221	-0.0	107	-0.01
84	T	2-Chlorotoluene	50.0000	50.0086	-0.0	110	0.00
85	T	4-Chlorotoluene	50.0000	46.9923	6.0	101	0.00
86	T	a-Methylstyrene	50.0000	51.5443	-3.1	102	0.00
87	T	tert-Butylbenzene	50.0000	52.6378	-5.3	112	-0.01
88	T	1,2,4-Trimethylbenzene	50.0000	50.4912	-1.0	106	0.00
89	T	sec-Butylbenzene	50.0000	50.4195	-0.8	106	0.00
90	T	p-Isopropyltoluene	50.0000	50.8119	-1.6	107	0.00
91	T	1,3-Dichlorobenzene	50.0000	50.2790	-0.6	110	0.00
92	T	1,4-Dichlorobenzene	50.0000	49.4253	1.1	109	0.00
93	T	n-Butylbenzene	50.0000	48.1779	3.6	101	0.00
94	T	1,2-Dichlorobenzene	50.0000	49.5437	0.9	107	-0.01
95	T	1,2-Dibromo-3-Chloropropane	50.0000	37.2741	25.5#	84	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	49.0696	1.9	103	-0.01
97	T	Hexachlorobutadiene	50.0000	44.9841	10.0	98	0.00
98	T	Naphthalene	50.0000	46.2426	7.5	96	-0.01
99	T	1,2,3-Trichlorobenzene	50.0000	47.3310	5.3	103	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 18:32:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	519117	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	445640	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	268117	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	142795	25.1342 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.52%		
43) 1,2-Dichloroethane-d4	10.24	65	140499	21.6888 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.76%		
57) Toluene-d8	12.47	98	479312	24.7539 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.00%		
78) p-Bromofluorobenzene	15.64	95	190243	23.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.08%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	453155	55.7138 ug/L	95
3) Chloromethane	3.72	50	327935	50.3420 ug/L	99
4) Vinyl Chloride	3.96	62	288555	53.3405 ug/L	100
5) 1,3-Butadiene	4.00	54	251573	46.7685 ug/L	98
6) Bromomethane	4.85	94	196547	52.8428 ug/L	99
7) Chloroethane	5.00	64	177181	50.9753 ug/L	99
8) Trichlorofluoromethane	5.48	101	547200	50.7492 ug/L	100
9) Diethyl ether	6.01	59	360421	90.3827 ug/L	92
10) Isoprene	6.04	67	300874	45.2715 ug/L	89
11) Acrolein	6.23	56	26861	51.1966 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	280747	53.6596 ug/L	96
13) Acetone	6.34	43	48590	39.4185 ug/L	92
14) 1,1-Dichloroethene	6.56	61	461972	48.6115 ug/L	93
15) Tert-Butyl Alcohol	6.66	59	52416	153.7293 ug/L	96
16) Dimethyl Sulfide	6.81	62	167274	44.0745 ug/L	86
17) Iodomethane	7.06	142	192346	44.6594 ug/L	94
18) Methyl acetate	7.07	43	135963	35.0481 ug/L	93
19) Methylene Chloride	7.31	84	248044	50.4326 ug/L	79
20) Carbon Disulfide	7.36	76	790696	49.6985 ug/L	99
21) Acrylonitrile	7.49	53	72060	43.6004 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	603474	49.1947 ug/L	97
23) trans-1,2-Dichloroethene	7.75	96	276353	52.5425 ug/L	90
24) n-Hexane	7.82	57	406376	46.3891 ug/L	97
25) Diisopropyl ether	8.15	45	1802503	82.4600 ug/L	97
26) Vinyl Acetate	8.31	43	363953	43.2381 ug/L	98
27) 1,1-Dichloroethane	8.34	63	525902	49.8324 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1605084	90.2167 ug/L	97
29) 2-Butanone	8.87	43	73968	39.6922 ug/L	90
30) Propionitrile	8.97	54	45453	83.2760 ug/L	99
31) 2,2-Dichloropropane	9.09	77	457421	55.3975 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	302897	52.2305 ug/L	91
33) Chloroform	9.35	83	505159	48.7431 ug/L	100
34) 1-Bromopropane	9.48	122	54957	53.3051 ug/L	95
35) Bromochloromethane	9.57	130	197042	57.2112 ug/L	84
36) Tetrahydrofuran	9.60	42	98177	74.6061 ug/L	90
38) 1,1,1-Trichloroethane	9.85	97	517330	50.7254 ug/L	96
39) Cyclohexane	9.88	56	509177	45.8112 ug/L	94
40) 1,1-Dichloropropene	10.04	75	374472	51.4250 ug/L	98
41) Carbon Tetrachloride	10.18	117	520748	52.2900 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1170914	94.7138 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13078.D 8260WT.M Tue Jul 05 18:32:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 18:32:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	392578	46.6397 ug/L	97
45) Benzene	10.38	78	1005654	50.4477 ug/L	99
46) Trichloroethene	11.09	130	345580	53.3346 ug/L	97
47) Methylcyclohexane	11.17	83	401328	50.1879 ug/L	92
48) 1,2-Dichloropropane	11.29	63	271197	49.1462 ug/L	98
49) 1,4-Dioxane	11.56	88	3852	132.7307 ug/L	95
50) Bromodichloromethane	11.57	83	392958	50.7262 ug/L	99
51) Dibromomethane	11.65	93	147932	51.4449 ug/L	96
52) 2-Chloroethyl Vinyl Ether	11.84	63	120595	44.3418 ug/L	96
53) 4-Methyl-2-Pentanone	11.87	58	69824	45.5192 ug/L	95
54) cis-1,3-Dichloropropene	12.17	75	406877	52.5122 ug/L	100
55) Dimethyl Disulfide	12.42	79	222479	47.7161 ug/L	97
58) Toluene	12.56	91	1180139	52.3109 ug/L	99
59) Ethyl Methacrylate	12.64	69	238449	49.4992 ug/L	83
60) trans-1,3-Dichloropropene	12.73	75	368912	50.9453 ug/L	97
61) 1,1,2-Trichloroethane	12.94	97	201340	50.3297 ug/L	99
62) 2-Hexanone	12.86	43	117905	40.1301 ug/L	93
63) 1,3-Dichloropropane	13.21	76	321195	49.9981 ug/L	84
64) Tetrachloroethene	13.34	164	286918	54.6897 ug/L	97
65) Dibromochloromethane	13.59	129	328698	53.8695 ug/L	100
66) 1,2-Dibromoethane	13.82	107	205135	51.1814 ug/L	99
67) 1-Chlorohexane	13.89	91	371751	49.9805 ug/L	88
68) Chlorobenzene	14.29	112	872095	52.7681 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	353143	52.8079 ug/L	100
70) Ethylbenzene	14.31	106	442668	52.2340 ug/L	98
71) m-,p-Xylene	14.39	106	1087185	105.5236 ug/L	95
72) o-Xylene	14.92	106	522904	52.1513 ug/L	97
73) Styrene	14.95	104	900060	54.3322 ug/L	95
74) Bromoform	15.43	173	201589	54.5103 ug/L	98
75) Isopropylbenzene	15.31	105	1401962	52.8719 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.52	83	206004	49.3393 ug/L	97
79) 1,2,3-Trichloropropane	15.70	110	73178	46.7361 ug/L	93
80) trans-1,4-Dichloro-2-Buten	15.74	53	69553	34.7917 ug/L	65
81) n-Propylbenzene	15.79	91	1599961	51.5272 ug/L	98
82) Bromobenzene	15.92	156	418724	51.3906 ug/L	89
83) 1,3,5-Trimethylbenzene	15.95	105	1204780	50.8453 ug/L	98
84) 2-Chlorotoluene	16.05	91	1066813	49.0521 ug/L	96
85) 4-Chlorotoluene	16.09	91	963367	49.4506 ug/L	97
86) a-Methylstyrene	16.34	118	621072	49.6851 ug/L	98
87) tert-Butylbenzene	16.39	134	267904	53.3666 ug/L	89
88) 1,2,4-Trimethylbenzene	16.44	105	1243081	51.5191 ug/L	99
89) sec-Butylbenzene	16.65	105	1458282	51.2548 ug/L	99
90) p-Isopropyltoluene	16.79	119	1359102	52.0067 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	802523	50.9975 ug/L	96
92) 1,4-Dichlorobenzene	17.10	146	800036	50.1563 ug/L	97
93) n-Butylbenzene	17.28	91	1139305	49.4744 ug/L	98
94) 1,2-Dichlorobenzene	17.57	146	727247	50.7317 ug/L	97
95) 1,2-Dibromo-3-Chloropropan	18.49	75	40180	42.7833 ug/L	94
96) 1,2,4-Trichlorobenzene	19.55	180	521138	49.6815 ug/L	99
97) Hexachlorobutadiene	19.69	225	217588	47.0854 ug/L	96
98) Naphthalene	19.90	128	930586	47.7960 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	464270	48.2261 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 5 18:32 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

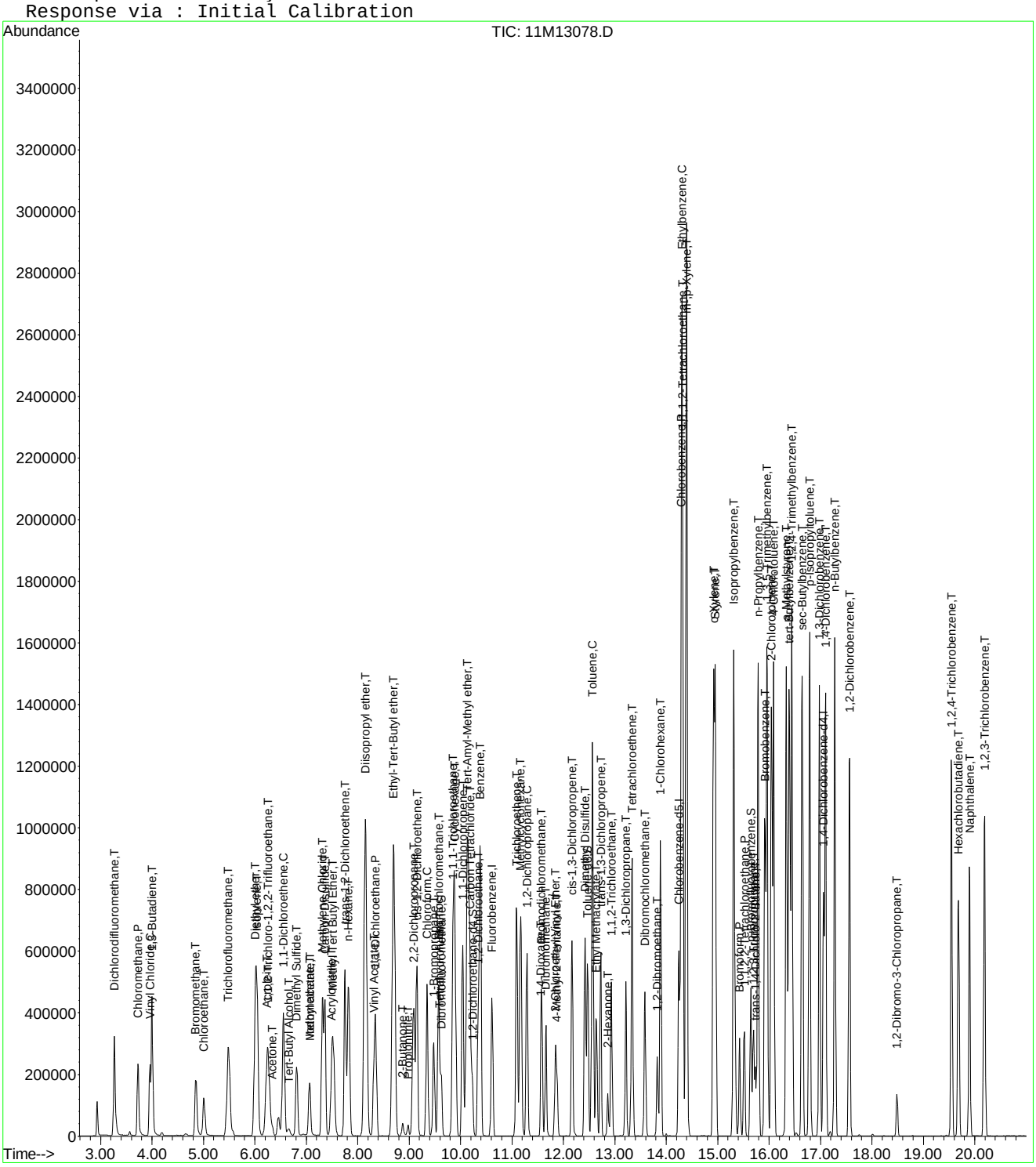

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.3917	0.4365	-11.4	109	0.00
3	P	Chloromethane	0.3137	0.3159	-0.7	114	0.00
4	C	Vinyl Chloride	0.2605	0.2779	-6.7	111	0.00
5	T	1,3-Butadiene	0.2591	0.2423	6.5	90	0.00
6	T	Bromomethane	0.1791	0.1893	-5.7	114	0.00
7	T	Chloroethane	0.1674	0.1707	-2.0	105	0.00
8	T	Trichlorofluoromethane	0.5193	0.5271	-1.5	105	0.00
9	T	Diethyl ether	0.1920	0.1736	9.6	92	0.00
10	T	Isoprene	0.3201	0.2898	9.5	91	0.00
11	T	Acrolein	0.0228	0.0259	-13.6	106	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2520	0.2704	-7.3	110	0.01
13	T	Acetone	0.0594	0.0468	21.2	81	0.00
14	C	1,1-Dichloroethene	0.4577	0.4450	2.8	100	0.00
15	T	Tert-Butyl Alcohol	0.0164	0.0126	23.1	76	0.00
16	T	Dimethyl Sulfide	0.1828	0.1611	11.9	86	0.00
17	T	Iodomethane	0.1615	0.1853	-14.7	90	0.00
18	T	Methyl acetate	0.2006	0.1310	34.7#	73	0.01
19	T	Methylene Chloride	0.2369	0.2389	-0.9	106	0.00
20	T	Carbon Disulfide	0.7662	0.7616	0.6	97	0.00
21	T	Acrylonitrile	0.0796	0.0694	12.8	85	0.00
22	T	Methyl Tert Butyl Ether	0.5908	0.5813	1.6	99	0.00
23	T	trans-1,2-Dichloroethene	0.2533	0.2662	-5.1	109	0.01
24	T	n-Hexane	0.4219	0.3914	7.2	90	0.00
25	T	Diisopropyl ether	1.0527	0.8681	17.5	83	0.00
26	T	Vinyl Acetate	0.3793	0.3505	7.6	89	0.00
27	P	1,1-Dichloroethane	0.5082	0.5065	0.3	102	0.00
28	T	Ethyl-Tert-Butyl ether	0.8568	0.7730	9.8	90	0.00
29	T	2-Butanone	0.0897	0.0712	20.6	81	0.00
30	T	Propionitrile	0.0263	0.0219	16.7	80	0.00
31	T	2,2-Dichloropropane	0.3977	0.4406	-10.8	114	0.00
32	T	cis-1,2-Dichloroethene	0.2793	0.2917	-4.5	107	0.00
33	C	Chloroform	0.4991	0.4866	2.5	103	0.00
34	T	1-Bromopropane	0.0432	0.0529	-22.6	110	0.00
35	T	Bromochloromethane	0.1659	0.1898	-14.4	110	0.00
36	T	Tetrahydrofuran	0.0634	0.0473	25.4#	77	0.00
37	S	Dibromofluoromethane	0.2736	0.2751	-0.5	102	0.00
38	T	1,1,1-Trichloroethane	0.4911	0.4983	-1.5	104	0.00
39	T	Cyclohexane	0.5353	0.4904	8.4	89	0.00
40	T	1,1-Dichloropropene	0.3507	0.3607	-2.8	106	0.00
41	T	Carbon Tetrachloride	0.4796	0.5016	-4.6	106	0.00
42	T	Tert-Amyl-Methyl ether	0.5954	0.5639	5.3	95	0.00
43	S	1,2-Dichloroethane-d4	0.3120	0.2707	13.2	89	0.01
44	T	1,2-Dichloroethane	0.4054	0.3781	6.7	94	0.00
45	T	Benzene	0.9600	0.9686	-0.9	106	0.00
46	T	Trichloroethene	0.3120	0.3328	-6.7	112	0.00
47	T	Methylcyclohexane	0.3851	0.3866	-0.4	96	0.00
48	C	1,2-Dichloropropane	0.2657	0.2612	1.7	101	0.00
49	T	1,4-Dioxane	0.0014	0.0009	33.6#	66	0.01
50	T	Bromodichloromethane	0.3731	0.3785	-1.5	102	0.00
51	T	Dibromomethane	0.1385	0.1425	-2.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	0.1310	0.1162	11.3	91	0.00
53	T	4-Methyl-2-Pentanone	0.0739	0.0673	9.0	92	0.00
54	T	cis-1,3-Dichloropropene	0.3731	0.3919	-5.0	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2245	0.2143	4.6	94	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	102	0.00
57	S	Toluene-d8	1.0862	1.0756	1.0	104	0.00
58	C	Toluene	1.2656	1.3241	-4.6	108	0.00
59	T	Ethyl Methacrylate	0.2702	0.2675	1.0	95	-0.01
60	T	trans-1,3-Dichloropropene	0.4062	0.4139	-1.9	101	0.00
61	T	1,1,2-Trichloroethane	0.2244	0.2259	-0.7	104	0.00
62	T	2-Hexanone	0.1648	0.1323	19.7	82	0.00
63	T	1,3-Dichloropropane	0.3604	0.3604	0.0	101	0.00
64	T	Tetrachloroethene	0.2943	0.3219	-9.4	114	0.00
65	T	Dibromochloromethane	0.3423	0.3688	-7.7	106	0.00
66	T	1,2-Dibromoethane	0.2248	0.2302	-2.4	104	0.00
67	T	1-Chlorohexane	0.4173	0.4171	0.0	99	0.00
68	P	Chlorobenzene	0.9272	0.9785	-5.5	109	0.00
69	T	1,1,1,2-Tetrachloroethane	0.3751	0.3962	-5.6	108	0.00
70	C	Ethylbenzene	0.4754	0.4967	-4.5	108	0.00
71	T	m-,p-Xylene	0.5780	0.6099	-5.5	109	0.00
72	T	o-Xylene	0.5625	0.5867	-4.3	106	0.00
73	T	Styrene	0.9293	1.0098	-8.7	107	0.00
74	P	Bromoform	0.2075	0.2262	-9.0	109	0.00
75	T	Isopropylbenzene	1.4875	1.5730	-5.7	107	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	102	0.00
77	P	1,1,2,2-Tetrachloroethane	0.3893	0.3842	1.3	99	0.00
78	S	p-Bromofluorobenzene	0.7706	0.7096	7.9	101	0.00
79	T	1,2,3-Trichloropropane	0.1351	0.1365	-1.0	101	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.1588	0.1297	18.3	74	0.00
81	T	n-Propylbenzene	2.8953	2.9837	-3.1	105	0.00
82	T	Bromobenzene	0.7597	0.7809	-2.8	110	0.00
83	T	1,3,5-Trimethylbenzene	2.2094	2.2467	-1.7	105	-0.01
84	T	2-Chlorotoluene	2.0279	1.9894	1.9	104	0.00
85	T	4-Chlorotoluene	1.8165	1.7965	1.1	104	0.00
86	T	a-Methylstyrene	1.1656	1.1582	0.6	96	0.00
87	T	tert-Butylbenzene	0.4681	0.4996	-6.7	111	-0.01
88	T	1,2,4-Trimethylbenzene	2.2498	2.3182	-3.0	105	0.00
89	T	sec-Butylbenzene	2.6529	2.7195	-2.5	105	0.00
90	T	p-Isopropyltoluene	2.4367	2.5345	-4.0	106	0.00
91	T	1,3-Dichlorobenzene	1.4673	1.4966	-2.0	109	0.00
92	T	1,4-Dichlorobenzene	1.4873	1.4920	-0.3	108	0.00
93	T	n-Butylbenzene	2.1472	2.1246	1.1	101	0.00
94	T	1,2-Dichlorobenzene	1.3366	1.3562	-1.5	106	0.00
95	T	1,2-Dibromo-3-Chloropropane	0.0825	0.0749	9.2	94	0.00
96	T	1,2,4-Trichlorobenzene	0.9781	0.9718	0.6	102	0.00
97	T	Hexachlorobutadiene	0.4309	0.4058	5.8	99	0.00
98	T	Naphthalene	1.8154	1.7354	4.4	97	0.00
99	T	1,2,3-Trichlorobenzene	0.8976	0.8658	3.5	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M13078.D 8260WT.M Tue Jul 05 18:32:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	50.0000	55.7138	-11.4	109	0.00
3	P	Chloromethane	50.0000	50.3420	-0.7	114	0.00
4	C	Vinyl Chloride	50.0000	53.3405	-6.7	111	0.00
5	T	1,3-Butadiene	50.0000	46.7685	6.5	90	0.00
6	T	Bromomethane	50.0000	52.8428	-5.7	114	0.00
7	T	Chloroethane	50.0000	50.9753	-2.0	105	0.00
8	T	Trichlorofluoromethane	50.0000	50.7492	-1.5	105	0.00
9	T	Diethyl ether	100.0000	90.3827	9.6	92	0.00
10	T	Isoprene	50.0000	45.2715	9.5	91	0.00
11	T	Acrolein	50.0000	51.1966	-2.4	106	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.6596	-7.3	110	0.01
13	T	Acetone	50.0000	39.4185	21.2	81	0.00
14	C	1,1-Dichloroethene	50.0000	48.6115	2.8	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	153.7293	23.1	76	0.00
16	T	Dimethyl Sulfide	50.0000	44.0745	11.9	86	0.00
17	T	Iodomethane	50.0000	44.6594	10.7	90	0.00
18	T	Methyl acetate	50.0000	35.0481	29.9#	73	0.01
19	T	Methylene Chloride	50.0000	50.4326	-0.9	106	0.00
20	T	Carbon Disulfide	50.0000	49.6985	0.6	97	0.00
21	T	Acrylonitrile	50.0000	43.6004	12.8	85	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.1947	1.6	99	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.5425	-5.1	109	0.01
24	T	n-Hexane	50.0000	46.3891	7.2	90	0.00
25	T	Diisopropyl ether	100.0000	82.4600	17.5	83	0.00
26	T	Vinyl Acetate	50.0000	43.2381	13.5	89	0.00
27	P	1,1-Dichloroethane	50.0000	49.8324	0.3	102	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	90.2167	9.8	90	0.00
29	T	2-Butanone	50.0000	39.6922	20.6	81	0.00
30	T	Propionitrile	100.0000	83.2760	16.7	80	0.00
31	T	2,2-Dichloropropane	50.0000	55.3976	-10.8	114	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.2305	-4.5	107	0.00
33	C	Chloroform	50.0000	48.7431	2.5	103	0.00
34	T	1-Bromopropane	50.0000	53.3051	-6.6	110	0.00
35	T	Bromochloromethane	50.0000	57.2112	-14.4	110	0.00
36	T	Tetrahydrofuran	100.0000	74.6060	25.4#	77	0.00
37	S	Dibromofluoromethane	25.0000	25.1342	-0.5	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.7254	-1.5	104	0.00
39	T	Cyclohexane	50.0000	45.8112	8.4	89	0.00
40	T	1,1-Dichloropropene	50.0000	51.4250	-2.8	106	0.00
41	T	Carbon Tetrachloride	50.0000	52.2900	-4.6	106	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	94.7138	5.3	95	0.00
43	S	1,2-Dichloroethane-d4	25.0000	21.6888	13.2	89	0.01
44	T	1,2-Dichloroethane	50.0000	46.6397	6.7	94	0.00
45	T	Benzene	50.0000	50.4477	-0.9	106	0.00
46	T	Trichloroethene	50.0000	53.3346	-6.7	112	0.00
47	T	Methylcyclohexane	50.0000	50.1879	-0.4	96	0.00
48	C	1,2-Dichloropropane	50.0000	49.1462	1.7	101	0.00
49	T	1,4-Dioxane	200.0000	132.7307	33.6#	66	0.01
50	T	Bromodichloromethane	50.0000	50.7262	-1.5	102	0.00
51	T	Dibromomethane	50.0000	51.4449	-2.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	44.3418	11.3	91	0.00
53	T	4-Methyl-2-Pentanone	50.0000	45.5192	9.0	92	0.00
54	T	cis-1,3-Dichloropropene	50.0000	52.5122	-5.0	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	47.7161	4.6	94	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	102	0.00
57	S	Toluene-d8	25.0000	24.7539	1.0	104	0.00
58	C	Toluene	50.0000	52.3109	-4.6	108	0.00
59	T	Ethyl Methacrylate	50.0000	49.4992	1.0	95	-0.01
60	T	trans-1,3-Dichloropropene	50.0000	50.9453	-1.9	101	0.00
61	T	1,1,2-Trichloroethane	50.0000	50.3297	-0.7	104	0.00
62	T	2-Hexanone	50.0000	40.1301	19.7	82	0.00
63	T	1,3-Dichloropropane	50.0000	49.9981	0.0	101	0.00
64	T	Tetrachloroethene	50.0000	54.6897	-9.4	114	0.00
65	T	Dibromochloromethane	50.0000	53.8695	-7.7	106	0.00
66	T	1,2-Dibromoethane	50.0000	51.1814	-2.4	104	0.00
67	T	1-Chlorohexane	50.0000	49.9805	0.0	99	0.00
68	P	Chlorobenzene	50.0000	52.7681	-5.5	109	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	52.8079	-5.6	108	0.00
70	C	Ethylbenzene	50.0000	52.2340	-4.5	108	0.00
71	T	m-,p-Xylene	100.0000	105.5236	-5.5	109	0.00
72	T	o-Xylene	50.0000	52.1513	-4.3	106	0.00
73	T	Styrene	50.0000	54.3322	-8.7	107	0.00
74	P	Bromoform	50.0000	54.5103	-9.0	109	0.00
75	T	Isopropylbenzene	50.0000	52.8719	-5.7	107	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	102	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	49.3393	1.3	99	0.00
78	S	p-Bromofluorobenzene	25.0000	23.0180	7.9	101	0.00
79	T	1,2,3-Trichloropropane	50.0000	46.7361	6.5	101	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	34.7917	30.4#	74	0.00
81	T	n-Propylbenzene	50.0000	51.5272	-3.1	105	0.00
82	T	Bromobenzene	50.0000	51.3906	-2.8	110	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	50.8453	-1.7	105	-0.01
84	T	2-Chlorotoluene	50.0000	49.0521	1.9	104	0.00
85	T	4-Chlorotoluene	50.0000	49.4506	1.1	104	0.00
86	T	a-Methylstyrene	50.0000	49.6851	0.6	96	0.00
87	T	tert-Butylbenzene	50.0000	53.3666	-6.7	111	-0.01
88	T	1,2,4-Trimethylbenzene	50.0000	51.5191	-3.0	105	0.00
89	T	sec-Butylbenzene	50.0000	51.2548	-2.5	105	0.00
90	T	p-Isopropyltoluene	50.0000	52.0067	-4.0	106	0.00
91	T	1,3-Dichlorobenzene	50.0000	50.9975	-2.0	109	0.00
92	T	1,4-Dichlorobenzene	50.0000	50.1563	-0.3	108	0.00
93	T	n-Butylbenzene	50.0000	49.4744	1.1	101	0.00
94	T	1,2-Dichlorobenzene	50.0000	50.7317	-1.5	106	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	42.7833	14.4	94	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	49.6815	0.6	102	0.00
97	T	Hexachlorobutadiene	50.0000	47.0854	5.8	99	0.00
98	T	Naphthalene	50.0000	47.7960	4.4	97	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	48.2261	3.5	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M13078.D 8260WT.M Tue Jul 05 18:33:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140390.D Vial: 3
Acq On : 3 Jul 2016 11:01 Operator: TMB
Sample : WG575091-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 11:27:24 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	610792	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	440916	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	243629	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	158386	25.5593 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.24%		
43) 1,2-Dichloroethane-d4	10.31	65	196920	25.1727 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.68%		
58) Toluene-d8	13.04	98	541250	24.9286 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.72%		
80) p-Bromofluorobenzene	17.02	95	234648	24.5926 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.36%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	598266	58.5947 ug/L	100
3) Chloromethane	3.36	50	522098	45.8004 ug/L	99
4) Vinyl Chloride	3.56	62	355205	56.7416 ug/L	100
5) 1,3-Butadiene	3.60	54	235267	65.8778 ug/L	92
6) Bromomethane	4.38	94	190964	45.9056 ug/L	100
7) Chloroethane	4.53	64	205919	52.0588 ug/L	93
8) Trichlorofluoromethane	5.00	101	626469	65.6150 ug/L	100
9) Diethyl ether	5.55	59	569601	101.1118 ug/L	95
10) Isoprene	5.57	67	453481	53.2181 ug/L	94
11) Acrolein	5.79	56	47740	50.9484 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	321257	54.0802 ug/L	97
13) Acetone	5.90	43	95362	48.7322 ug/L	98
14) 1,1-Dichloroethene	6.11	61	609434	52.8761 ug/L	94
15) Tert-Butyl Alcohol	6.25	59	109302	182.6624 ug/L	100
16) Dimethyl Sulfide	6.38	62	249437	49.6220 ug/L	92
17) Iodomethane	6.65	142	222054	53.1355 ug/L	89
18) Methyl acetate	6.69	43	269275	50.8522 ug/L	97
19) Methylene Chloride	6.93	84	329564	49.8626 ug/L	88
20) Carbon Disulfide	6.97	76	1101267	52.1439 ug/L	100
21) Acrylonitrile	7.15	53	122697	50.4989 ug/L	98
22) Methyl Tert Butyl Ether	7.18	73	882848	50.3924 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	319372	51.7383 ug/L	88
24) n-Hexane	7.51	57	576878	55.0649 ug/L	97
25) Diisopropyl ether	7.89	45	2849066	101.0394 ug/L	98
26) Vinyl Acetate	8.09	43	739586	62.8310 ug/L	97
27) 1,1-Dichloroethane	8.10	63	682401	51.3458 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2255051	99.4077 ug/L	98
29) 2-Butanone	8.73	43	148875	49.6990 ug/L	96
30) Propionitrile	8.85	54	80041	98.4596 ug/L	98
31) 2,2-Dichloropropane	8.96	77	561148	55.9651 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	349159	51.6737 ug/L	88
33) Chloroform	9.26	83	616814	51.8060 ug/L	99
34) 1-Bromopropane	9.41	122	55995	52.4013 ug/L	100
35) Bromochloromethane	9.52	130	194503	53.5664 ug/L	100
36) Tetrahydrofuran	9.56	42	188840	90.3812 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	566562	54.6573 ug/L	98
39) Cyclohexane	9.88	56	695349	51.5608 ug/L	95
40) 1,1-Dichloropropene	10.08	75	468718	51.9148 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1706431	99.0642 ug/L	97
42) Carbon Tetrachloride	10.23	117	508934	59.7948 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140390.D 8260WTR.M Sun Jul 03 11:27:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140390.D Vial: 3
Acq On : 3 Jul 2016 11:01 Operator: TMB
Sample : WG575091-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 11:27:24 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	507654	53.1790 ug/L	98
46)	Benzene	10.48	78	1299096	50.9816 ug/L	96
47)	Trichloroethene	11.35	130	314126	49.9573 ug/L	88
48)	Methylcyclohexane	11.43	83	515633	52.2340 ug/L	94
49)	1,2-Dichloropropane	11.59	63	371455	50.6193 ug/L	95
50)	1,4-Dioxane	11.94	88	9171	184.6155 ug/L	93
51)	Bromodichloromethane	11.93	83	481923	54.4275 ug/L	99
52)	Dibromomethane	12.03	93	190013	53.5182 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.32	63	178209	48.4368 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	114989	50.7829 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	546953	53.2056 ug/L	99
56)	Dimethyl Disulfide	12.97	79	297353	51.9613 ug/L	99
59)	Toluene	13.15	91	1324388	50.3990 ug/L	100
60)	Ethyl Methacrylate	13.32	69	383812	51.3368 ug/L	93
62)	trans-1,3-Dichloropropene	13.39	75	497889	53.2841 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	249929	51.3933 ug/L	99
64)	2-Hexanone	13.58	43	230833	49.9925 ug/L	96
65)	1,3-Dichloropropane	13.99	76	457061	49.8685 ug/L	93
66)	Tetrachloroethene	14.10	166	323265	51.6220 ug/L	92
67)	Dibromochloromethane	14.41	129	327604	55.4847 ug/L	99
68)	1,2-Dibromoethane	14.71	107	243708	51.9183 ug/L	99
69)	1-Chlorohexane	14.85	91	454321	51.9505 ug/L	89
70)	Chlorobenzene	15.30	112	853146	50.6212 ug/L	91
71)	1,1,1,2-Tetrachloroethane	15.35	131	325894	54.3448 ug/L	97
72)	Ethylbenzene	15.35	106	460105	52.1571 ug/L	92
73)	m-,p-Xylene	15.45	106	1108930	104.0127 ug/L	93
74)	o-Xylene	16.10	106	555031	52.1979 ug/L	92
75)	Styrene	16.16	104	950218	53.1173 ug/L	92
76)	Bromoform	16.71	173	199222	54.4114 ug/L	98
77)	Isopropylbenzene	16.61	105	1445737	52.1105 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	312845	52.9095 ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	88575	50.5272 ug/L	80
82)	trans-1,4-Dichloro-2-Buten	17.18	53	122874	54.9641 ug/L	99
83)	n-Propylbenzene	17.22	91	1804158	51.5394 ug/L	98
84)	Bromobenzene	17.34	156	371494	50.7901 ug/L	90
85)	1,3,5-Trimethylbenzene	17.44	105	1269771	51.7521 ug/L	97
86)	2-Chlorotoluene	17.51	91	1127394	47.6217 ug/L	99
87)	4-Chlorotoluene	17.57	91	1202180	53.2658 ug/L	93
88)	a-Methylstyrene	17.92	118	651345	52.7808 ug/L	95
89)	tert-Butylbenzene	17.98	134	252542	51.2308 ug/L	70
90)	1,2,4-Trimethylbenzene	18.04	105	1328864	52.7800 ug/L	97
91)	sec-Butylbenzene	18.30	105	1518021	51.6852 ug/L	98
92)	p-Isopropyltoluene	18.50	119	1306113	52.1819 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	733780	50.9704 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	730801	50.2100 ug/L	94
95)	n-Butylbenzene	19.12	91	1290014	52.5548 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	682425	50.4901 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.62	75	63230	54.6018 ug/L	80
98)	1,2,4-Trichlorobenzene	21.96	180	478570	50.0910 ug/L	99
99)	Hexachlorobutadiene	22.15	225	199578	50.2431 ug/L	99
100)	Naphthalene	22.38	128	978689	50.1244 ug/L	100
101)	1,2,3-Trichlorobenzene	22.75	180	431388	48.7643 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140390.D 8260WTR.M Sun Jul 03 11:27:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140390.D Vial: 3
Acq On : 3 Jul 2016 11:01 Operator: TMB
Sample : WG575091-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 3 11:27 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

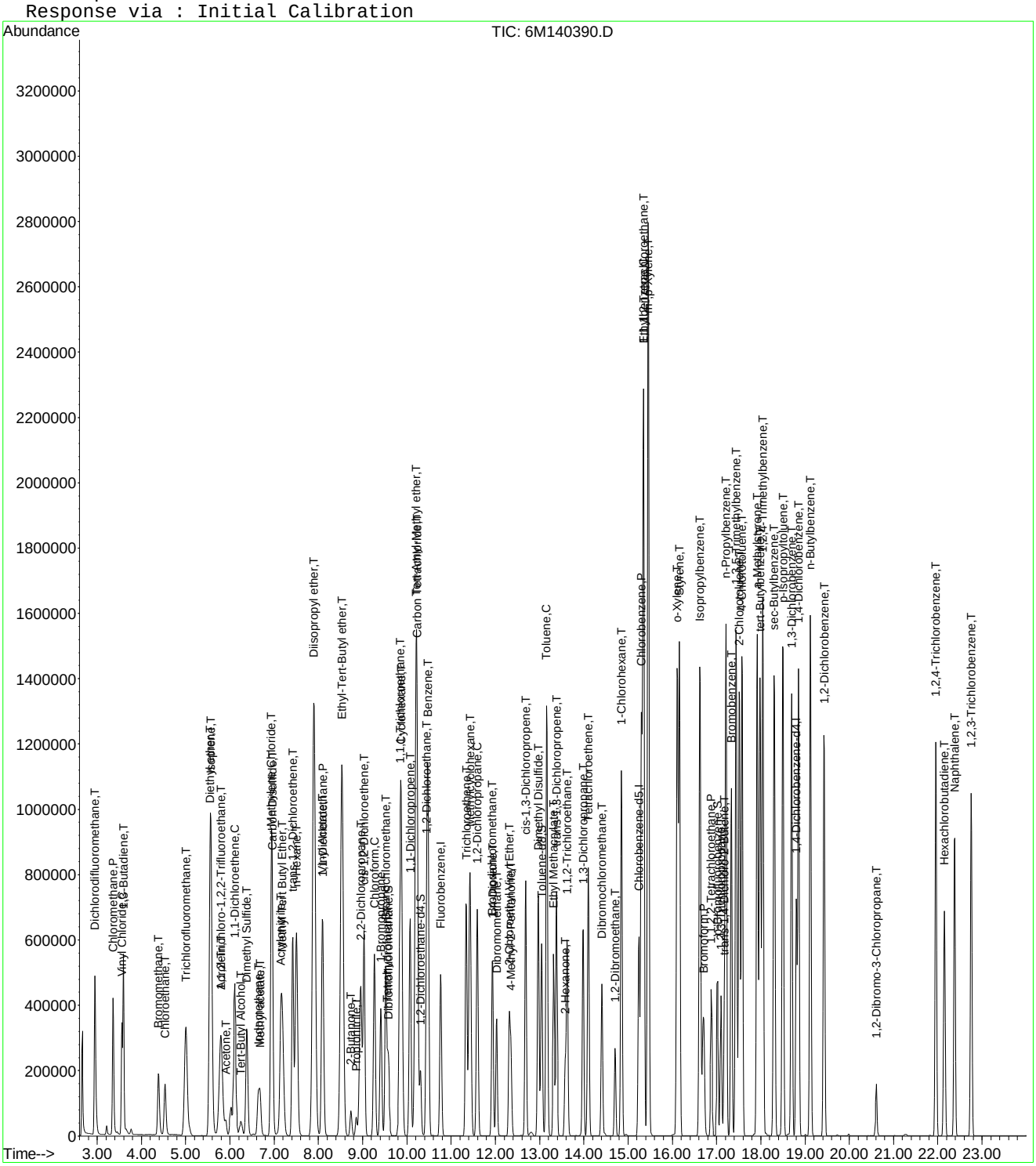

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140390.D Vial: 3
Acq On : 3 Jul 2016 11:01 Operator: TMB
Sample : WG575091-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	92	0.00
2	T	Dichlorodifluoromethane	0.4179	0.4898	-17.2	103	0.00
3	P	Chloromethane	0.4666	0.4274	8.4	85	0.00
4	C	Vinyl Chloride	0.2562	0.2908	-13.5	103	0.00
5	T	1,3-Butadiene	0.1608	0.1926	-19.8	115	0.00
6	T	Bromomethane	0.1703	0.1563	8.2	89	0.00
7	T	Chloroethane	0.1619	0.1686	-4.1	95	0.00
8	T	Trichlorofluoromethane	0.3908	0.5128	-31.2#	126	0.00
9	T	Diethyl ether	0.2306	0.2331	-1.1	90	0.00
10	T	Isoprene	0.3488	0.3712	-6.4	95	0.00
11	T	Acrolein	0.0384	0.0391	-1.9	95	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2431	0.2630	-8.2	101	0.00
13	T	Acetone	0.0801	0.0781	2.5	90	0.00
14	C	1,1-Dichloroethene	0.4718	0.4989	-5.8	98	0.00
15	T	Tert-Butyl Alcohol	0.0245	0.0224	8.7	85	-0.04
16	T	Dimethyl Sulfide	0.2057	0.2042	0.8	90	0.00
17	T	Iodomethane	0.1391	0.1818	-30.7#	93	0.00
18	T	Methyl acetate	0.2167	0.2204	-1.7	94	0.00
19	T	Methylene Chloride	0.2705	0.2698	0.3	95	0.00
20	T	Carbon Disulfide	0.8644	0.9015	-4.3	95	0.00
21	T	Acrylonitrile	0.0994	0.1004	-1.0	90	0.00
22	T	Methyl Tert Butyl Ether	0.7171	0.7227	-0.8	93	0.00
23	T	trans-1,2-Dichloroethene	0.2527	0.2614	-3.5	96	0.00
24	T	n-Hexane	0.4288	0.4722	-10.1	102	0.00
25	T	Diisopropyl ether	1.1541	1.1661	-1.0	93	0.00
26	T	Vinyl Acetate	0.4818	0.6054	-25.7#	114	0.00
27	P	1,1-Dichloroethane	0.5440	0.5586	-2.7	95	0.00
28	T	Ethyl-Tert-Butyl ether	0.9285	0.9230	0.6	91	0.00
29	T	2-Butanone	0.1226	0.1219	0.6	89	0.00
30	T	Propionitrile	0.0333	0.0328	1.5	89	0.00
31	T	2,2-Dichloropropane	0.4104	0.4594	-11.9	105	0.00
32	T	cis-1,2-Dichloroethene	0.2766	0.2858	-3.3	95	0.00
33	C	Chloroform	0.4873	0.5049	-3.6	97	0.00
34		1-Bromopropane	0.0394	0.0458	-16.2	94	0.00
35	T	Bromochloromethane	0.1486	0.1592	-7.1	96	0.00
36	T	Tetrahydrofuran	0.0855	0.0773	9.6	87	0.00
37	S	Dibromofluoromethane	0.2536	0.2593	-2.2	93	0.00
38	T	1,1,1-Trichloroethane	0.4243	0.4638	-9.3	99	0.00
39	T	Cyclohexane	0.5520	0.5692	-3.1	96	0.00
40	T	1,1-Dichloropropene	0.3695	0.3837	-3.8	96	0.00
41	T	Tert-Amyl-Methyl ether	0.7050	0.6985	0.9	91	0.00
42	T	Carbon Tetrachloride	0.3484	0.4166	-19.6	101	0.00
43	S	1,2-Dichloroethane-d4	0.3202	0.3224	-0.7	93	0.00
44		Heptane	0.0000	0.0000	0.0	91	0.00
45	T	1,2-Dichloroethane	0.3907	0.4156	-6.4	97	0.00
46	T	Benzene	1.0430	1.0635	-2.0	94	0.00
47	T	Trichloroethene	0.2574	0.2571	0.1	92	0.00
48	T	Methylcyclohexane	0.4041	0.4221	-4.5	97	0.00
49	C	1,2-Dichloropropane	0.3004	0.3041	-1.2	92	0.00
50	T	1,4-Dioxane	0.0020	0.0019	7.4	81	0.00
51	T	Bromodichloromethane	0.3624	0.3945	-8.9	97	0.00
52	T	Dibromomethane	0.1453	0.1555	-7.0	95	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1506	0.1459	3.1	83	0.00
54	T	4-Methyl-2-Pentanone	0.0927	0.0941	-1.6	91	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140390.D Vial: 3
Acq On : 3 Jul 2016 11:01 Operator: TMB
Sample : WG575091-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4208	0.4477	-6.4	95	0.00
56	T	Dimethyl Disulfide	0.2342	0.2434	-3.9	92	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	92	0.00
58	S	Toluene-d8	1.2311	1.2276	0.3	93	0.00
59	C	Toluene	1.4900	1.5019	-0.8	95	0.00
60	T	Ethyl Methacrylate	0.4239	0.4352	-2.7	91	0.00
61		Paraldehyde	0.0000	0.0000	0.0	93	0.00
62	T	trans-1,3-Dichloropropene	0.5298	0.5646	-6.6	95	0.00
63	T	1,1,2-Trichloroethane	0.2757	0.2834	-2.8	94	0.00
64	T	2-Hexanone	0.2618	0.2618	0.0	90	0.00
65	T	1,3-Dichloropropane	0.5197	0.5183	0.3	92	0.00
66	T	Tetrachloroethene	0.3551	0.3666	-3.2	96	0.00
67	T	Dibromochloromethane	0.3348	0.3715	-11.0	95	0.00
68	T	1,2-Dibromoethane	0.2662	0.2764	-3.8	93	0.00
69	T	1-Chlorohexane	0.4959	0.5152	-3.9	95	0.00
70	P	Chlorobenzene	0.9556	0.9675	-1.2	94	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3400	0.3696	-8.7	97	0.00
72	C	Ethylbenzene	0.5002	0.5218	-4.3	95	0.00
73	T	m-,p-Xylene	0.6045	0.6288	-4.0	95	-0.01
74	T	o-Xylene	0.6029	0.6294	-4.4	94	-0.01
75	T	Styrene	1.0143	1.0776	-6.2	94	0.00
76	P	Bromoform	0.2076	0.2259	-8.8	95	0.00
77	T	Isopropylbenzene	1.5731	1.6395	-4.2	95	-0.01
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	92	-0.01
79	P	1,1,2,2-Tetrachloroethane	0.6068	0.6421	-5.8	96	0.00
80	S	p-Bromofluorobenzene	0.9791	0.9631	1.6	91	0.00
81	T	1,2,3-Trichloropropane	0.1799	0.1818	-1.1	90	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2294	0.2522	-9.9	95	0.00
83	T	n-Propylbenzene	3.5921	3.7027	-3.1	96	0.00
84	T	Bromobenzene	0.7506	0.7624	-1.6	95	0.00
85	T	1,3,5-Trimethylbenzene	2.5177	2.6060	-3.5	95	-0.01
86	T	2-Chlorotoluene	2.4293	2.3138	4.8	88	-0.01
87	T	4-Chlorotoluene	2.3160	2.4672	-6.5	103	-0.01
88	T	a-Methylstyrene	1.2663	1.3368	-5.6	94	0.00
89	T	tert-Butylbenzene	0.5058	0.5183	-2.5	95	-0.01
90	T	1,2,4-Trimethylbenzene	2.5836	2.7272	-5.6	96	-0.01
91	T	sec-Butylbenzene	3.0139	3.1154	-3.4	95	-0.01
92	T	p-Isopropyltoluene	2.5685	2.6805	-4.4	95	0.00
93	T	1,3-Dichlorobenzene	1.4773	1.5059	-1.9	96	0.00
94	T	1,4-Dichlorobenzene	1.4935	1.4998	-0.4	95	0.00
95	T	n-Butylbenzene	2.5188	2.6475	-5.1	96	0.00
96	T	1,2-Dichlorobenzene	1.3869	1.4005	-1.0	94	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1188	0.1298	-9.2	98	0.00
98	T	1,2,4-Trichlorobenzene	0.9804	0.9822	-0.2	93	-0.01
99	T	Hexachlorobutadiene	0.4076	0.4096	-0.5	94	0.00
100	T	Naphthalene	2.0036	2.0086	-0.2	87	0.00
101	T	1,2,3-Trichlorobenzene	0.9078	0.8853	2.5	90	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140390.D 8260WTR.M Sun Jul 03 11:27:37 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140390.D Vial: 3
Acq On : 3 Jul 2016 11:01 Operator: TMB
Sample : WG575091-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	0.00
2	T	Dichlorodifluoromethane	50.0000	58.5947	-17.2	103	0.00
3	P	Chloromethane	50.0000	45.8004	8.4	85	0.00
4	C	Vinyl Chloride	50.0000	56.7416	-13.5	103	0.00
5	T	1,3-Butadiene	50.0000	65.8778	-31.8#	115	0.00
6	T	Bromomethane	50.0000	45.9056	8.2	89	0.00
7	T	Chloroethane	50.0000	52.0588	-4.1	95	0.00
8	T	Trichlorofluoromethane	50.0000	65.6150	-31.2#	126	0.00
9	T	Diethyl ether	100.0000	101.1118	-1.1	90	0.00
10	T	Isoprene	50.0000	53.2181	-6.4	95	0.00
11	T	Acrolein	50.0000	50.9484	-1.9	95	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.0802	-8.2	101	0.00
13	T	Acetone	50.0000	48.7322	2.5	90	0.00
14	C	1,1-Dichloroethene	50.0000	52.8761	-5.8	98	0.00
15	T	Tert-Butyl Alcohol	200.0000	182.6624	8.7	85	-0.04
16	T	Dimethyl Sulfide	50.0000	49.6220	0.8	90	0.00
17	T	Iodomethane	50.0000	53.1355	-6.3	93	0.00
18	T	Methyl acetate	50.0000	50.8522	-1.7	94	0.00
19	T	Methylene Chloride	50.0000	49.8626	0.3	95	0.00
20	T	Carbon Disulfide	50.0000	52.1439	-4.3	95	0.00
21	T	Acrylonitrile	50.0000	50.4988	-1.0	90	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.3924	-0.8	93	0.00
23	T	trans-1,2-Dichloroethene	50.0000	51.7383	-3.5	96	0.00
24	T	n-Hexane	50.0000	55.0649	-10.1	102	0.00
25	T	Diisopropyl ether	100.0000	101.0394	-1.0	93	0.00
26	T	Vinyl Acetate	50.0000	62.8310	-25.7#	114	0.00
27	P	1,1-Dichloroethane	50.0000	51.3458	-2.7	95	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.4077	0.6	91	0.00
29	T	2-Butanone	50.0000	49.6990	0.6	89	0.00
30	T	Propionitrile	100.0000	98.4596	1.5	89	0.00
31	T	2,2-Dichloropropane	50.0000	55.9651	-11.9	105	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.6737	-3.3	95	0.00
33	C	Chloroform	50.0000	51.8060	-3.6	97	0.00
34		1-Bromopropane	50.0000	52.4013	-4.8	94	0.00
35	T	Bromochloromethane	50.0000	53.5664	-7.1	96	0.00
36	T	Tetrahydrofuran	100.0000	90.3812	9.6	87	0.00
37	S	Dibromofluoromethane	25.0000	25.5593	-2.2	93	0.00
38	T	1,1,1-Trichloroethane	50.0000	54.6573	-9.3	99	0.00
39	T	Cyclohexane	50.0000	51.5608	-3.1	96	0.00
40	T	1,1-Dichloropropene	50.0000	51.9148	-3.8	96	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.0642	0.9	91	0.00
42	T	Carbon Tetrachloride	50.0000	59.7948	-19.6	101	0.00
43	S	1,2-Dichloroethane-d4	25.0000	25.1727	-0.7	93	0.00
44		Heptane	-1.0000	0.0000	0.0	91	0.00
45	T	1,2-Dichloroethane	50.0000	53.1790	-6.4	97	0.00
46	T	Benzene	50.0000	50.9816	-2.0	94	0.00
47	T	Trichloroethene	50.0000	49.9573	0.1	92	0.00
48	T	Methylcyclohexane	50.0000	52.2340	-4.5	97	0.00
49	C	1,2-Dichloropropane	50.0000	50.6193	-1.2	92	0.00
50	T	1,4-Dioxane	200.0000	184.6155	7.7	81	0.00
51	T	Bromodichloromethane	50.0000	54.4275	-8.9	97	0.00
52	T	Dibromomethane	50.0000	53.5182	-7.0	95	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	48.4368	3.1	83	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.7829	-1.6	91	0.00

(#) = Out of Range
6M140390.D 8260WTR.M Sun Jul 03 11:27:40 2016 Page 1

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140390.D Vial: 3
Acq On : 3 Jul 2016 11:01 Operator: TMB
Sample : WG575091-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.2056	-6.4	95	0.00
56	T	Dimethyl Disulfide	50.0000	51.9613	-3.9	92	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	92	0.00
58	S	Toluene-d8	25.0000	24.9286	0.3	93	0.00
59	C	Toluene	50.0000	50.3990	-0.8	95	0.00
60	T	Ethyl Methacrylate	50.0000	51.3368	-2.7	91	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	93	0.00
62	T	trans-1,3-Dichloropropene	50.0000	53.2841	-6.6	95	0.00
63	T	1,1,2-Trichloroethane	50.0000	51.3933	-2.8	94	0.00
64	T	2-Hexanone	50.0000	49.9925	0.0	90	0.00
65	T	1,3-Dichloropropane	50.0000	49.8685	0.3	92	0.00
66	T	Tetrachloroethene	50.0000	51.6220	-3.2	96	0.00
67	T	Dibromochloromethane	50.0000	55.4847	-11.0	95	0.00
68	T	1,2-Dibromoethane	50.0000	51.9183	-3.8	93	0.00
69	T	1-Chlorohexane	50.0000	51.9505	-3.9	95	0.00
70	P	Chlorobenzene	50.0000	50.6212	-1.2	94	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	54.3448	-8.7	97	0.00
72	C	Ethylbenzene	50.0000	52.1571	-4.3	95	0.00
73	T	m-,p-Xylene	100.0000	104.0127	-4.0	95	-0.01
74	T	o-Xylene	50.0000	52.1979	-4.4	94	-0.01
75	T	Styrene	50.0000	53.1173	-6.2	94	0.00
76	P	Bromoform	50.0000	54.4114	-8.8	95	0.00
77	T	Isopropylbenzene	50.0000	52.1105	-4.2	95	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	92	-0.01
79	P	1,1,2,2-Tetrachloroethane	50.0000	52.9095	-5.8	96	0.00
80	S	p-Bromofluorobenzene	25.0000	24.5926	1.6	91	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.5272	-1.1	90	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	54.9641	-9.9	95	0.00
83	T	n-Propylbenzene	50.0000	51.5394	-3.1	96	0.00
84	T	Bromobenzene	50.0000	50.7901	-1.6	95	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.7521	-3.5	95	-0.01
86	T	2-Chlorotoluene	50.0000	47.6217	4.8	88	-0.01
87	T	4-Chlorotoluene	50.0000	53.2658	-6.5	103	-0.01
88	T	a-Methylstyrene	50.0000	52.7808	-5.6	94	0.00
89	T	tert-Butylbenzene	50.0000	51.2308	-2.5	95	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	52.7800	-5.6	96	-0.01
91	T	sec-Butylbenzene	50.0000	51.6852	-3.4	95	-0.01
92	T	p-Isopropyltoluene	50.0000	52.1819	-4.4	95	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.9704	-1.9	96	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.2100	-0.4	95	0.00
95	T	n-Butylbenzene	50.0000	52.5549	-5.1	96	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4900	-1.0	94	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	54.6018	-9.2	98	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.0910	-0.2	93	-0.01
99	T	Hexachlorobutadiene	50.0000	50.2431	-0.5	94	0.00
100	T	Naphthalene	50.0000	50.1244	-0.2	87	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	48.7643	2.5	90	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140390.D 8260WTR.M Sun Jul 03 11:27:40 2016 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\1\DATA\042416\6M138750.D Vial: 1
Acq On : 24 Apr 2016 16:33 Operator: JDS
Sample : WG566155-01 50ng BFB 826-A9 Inst : HPMS6
Misc : 1,1 STD75485 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

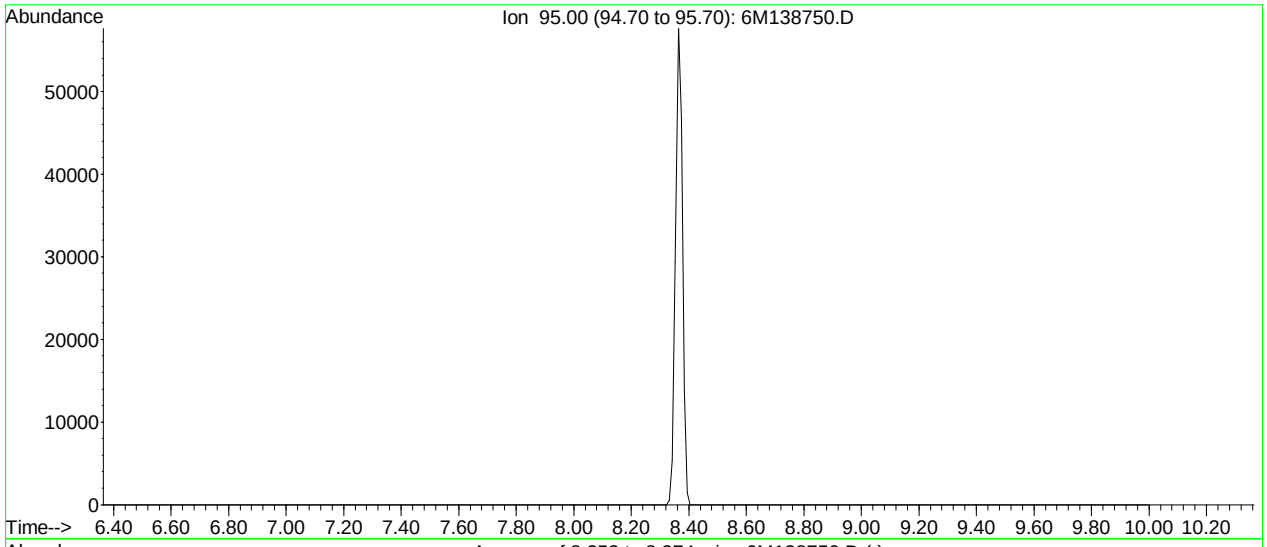

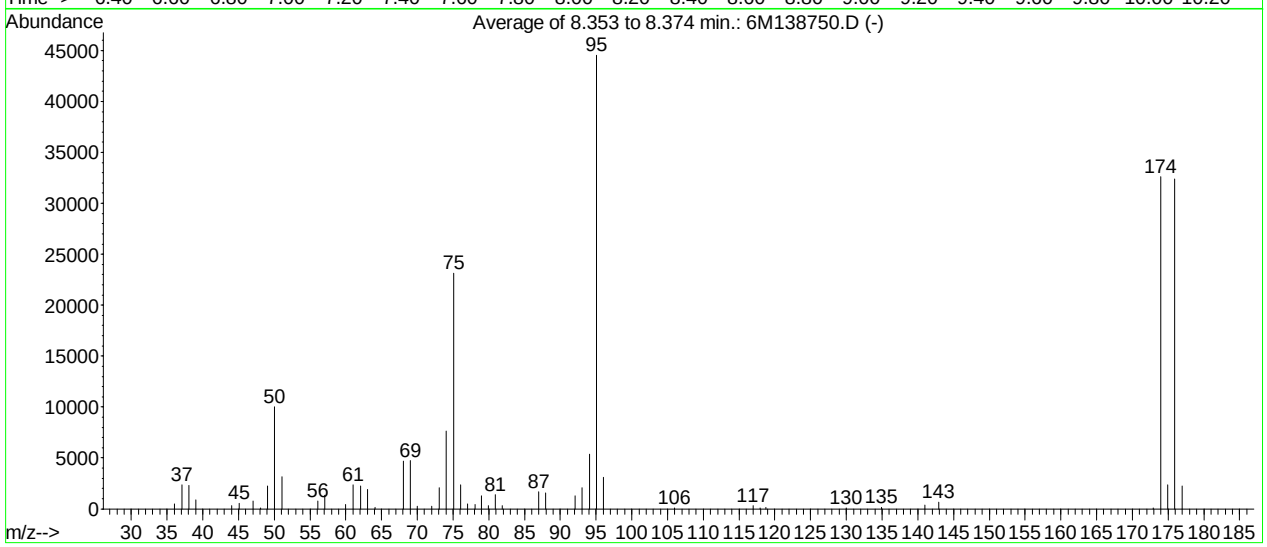

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	10010	PASS
75	95	30	60	52.0	23152	PASS
95	95	100	100	100.0	44552	PASS
96	95	5	9	6.9	3085	PASS
173	174	0.00	2	0.3	113	PASS
174	95	50	100	73.2	32632	PASS
175	174	5	9	7.2	2336	PASS
176	174	95	101	99.2	32384	PASS
177	176	5	9	7.0	2251	PASS

6M138750.D BFB.M Mon Apr 25 09:21:54 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\051316\11M11836.D          Vial: 2
Acq On    : 13 May 2016  14:15                        Operator: JDS
Sample    : WG568769-01 50ng BFB STD 8260             Inst    : hpms11
Misc      : 1,1 STD76034                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

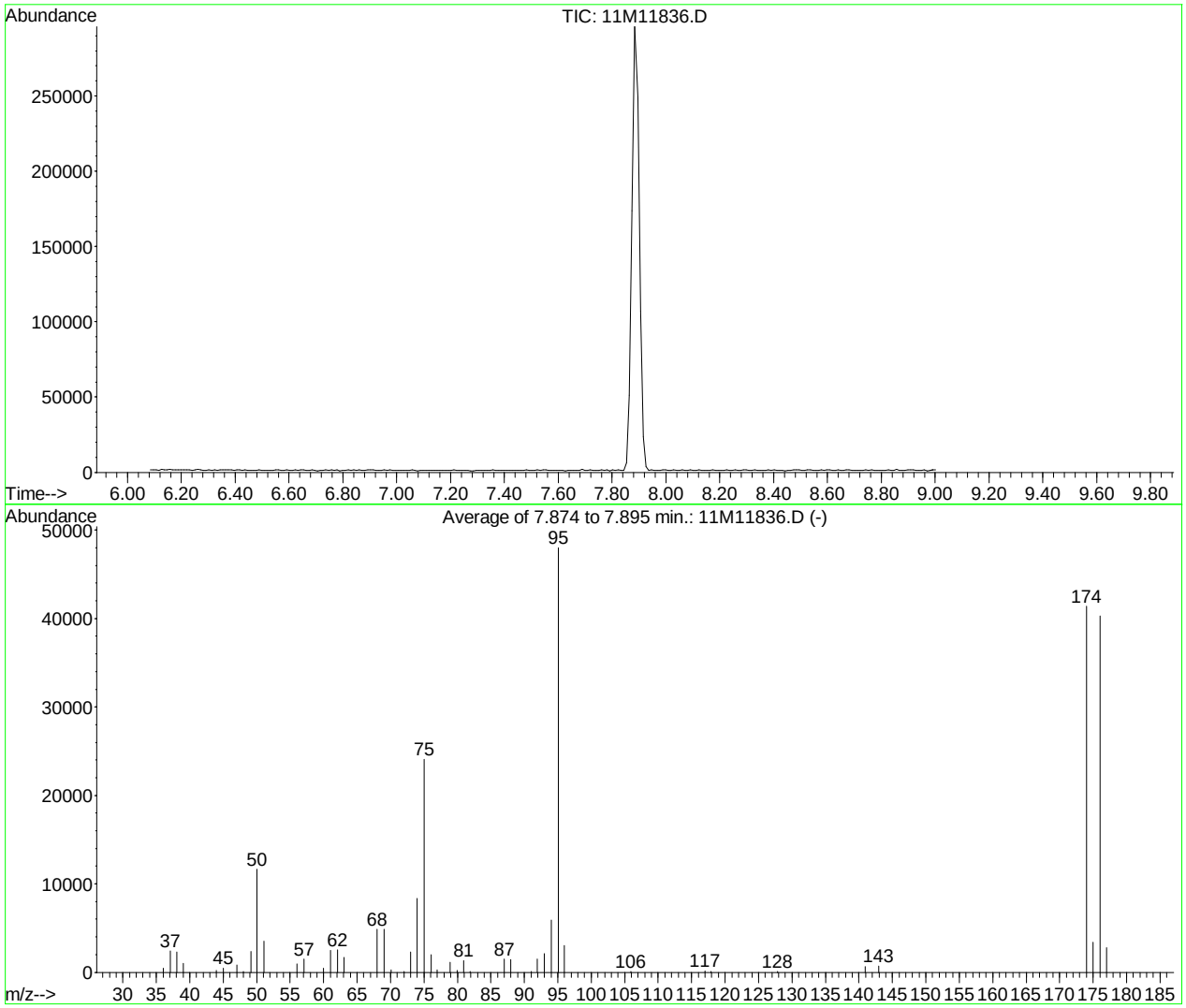

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.2	11638	PASS
75	95	30	60	50.2	24088	PASS
95	95	100	100	100.0	48016	PASS
96	95	5	9	6.3	3008	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.2	41402	PASS
175	174	5	9	8.3	3421	PASS
176	174	95	101	97.3	40288	PASS
177	176	5	9	6.9	2789	PASS

11M11836.D 8260WT.M Tue May 17 14:18:03 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140313.D Vial: 1
Acq On    : 30 Jun 2016  11:36                        Operator: TMB
Sample    : WG574723-01 50ng BFB STD 8260             Inst    : HPMS6
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:MSV01  06-30-16 - HPMS6
```

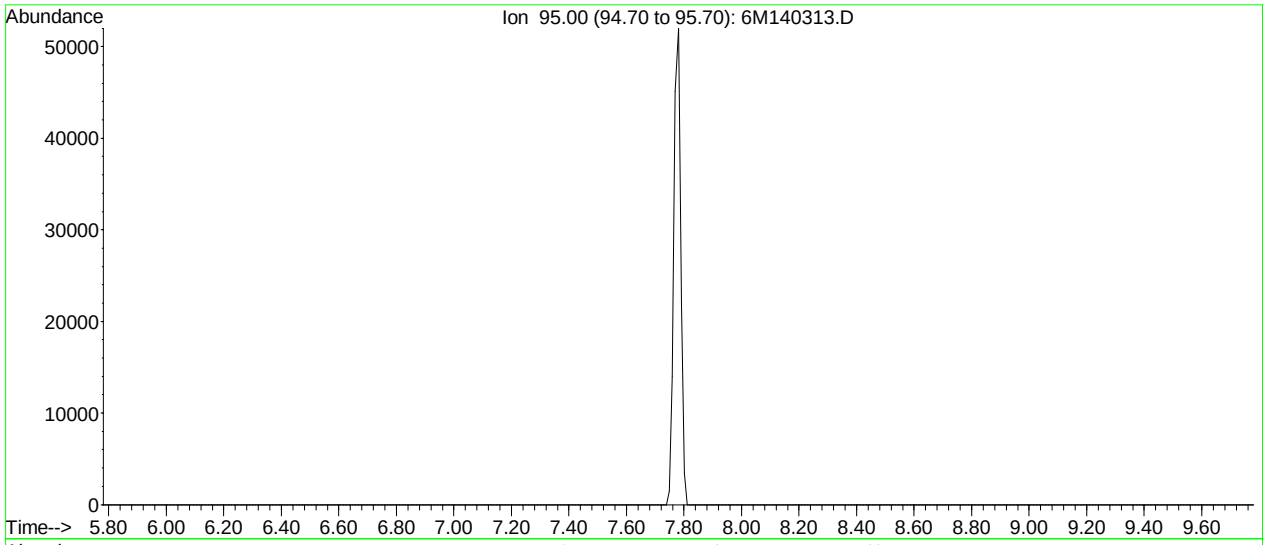

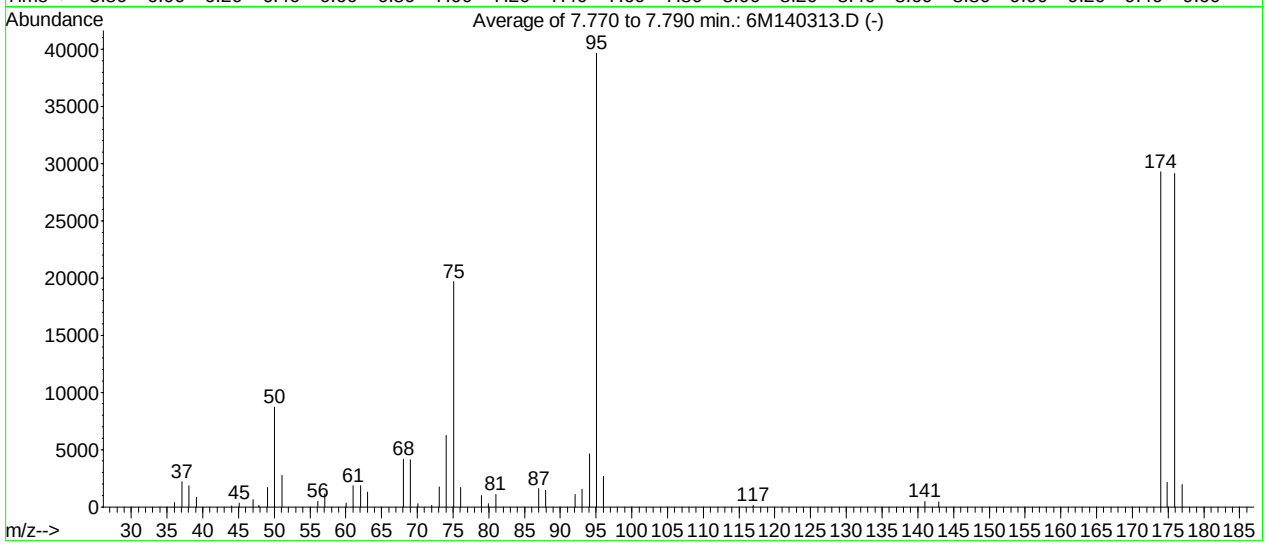

AutoFind: Scans 263, 264, 265; Background Corrected with Scan 258

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.0	8707	PASS
75	95	30	60	49.7	19699	PASS
95	95	100	100	100.0	39664	PASS
96	95	5	9	6.7	2652	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.8	29282	PASS
175	174	5	9	7.3	2131	PASS
176	174	95	101	99.6	29157	PASS
177	176	5	9	6.8	1969	PASS

6M140313.D 8260WTR.M Fri Jul 01 14:33:49 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\070216\11M13041.D          Vial: 3
Acq On    :  2 Jul 2016  13:39                       Operator: TMB
Sample    : WG575085-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD76496                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

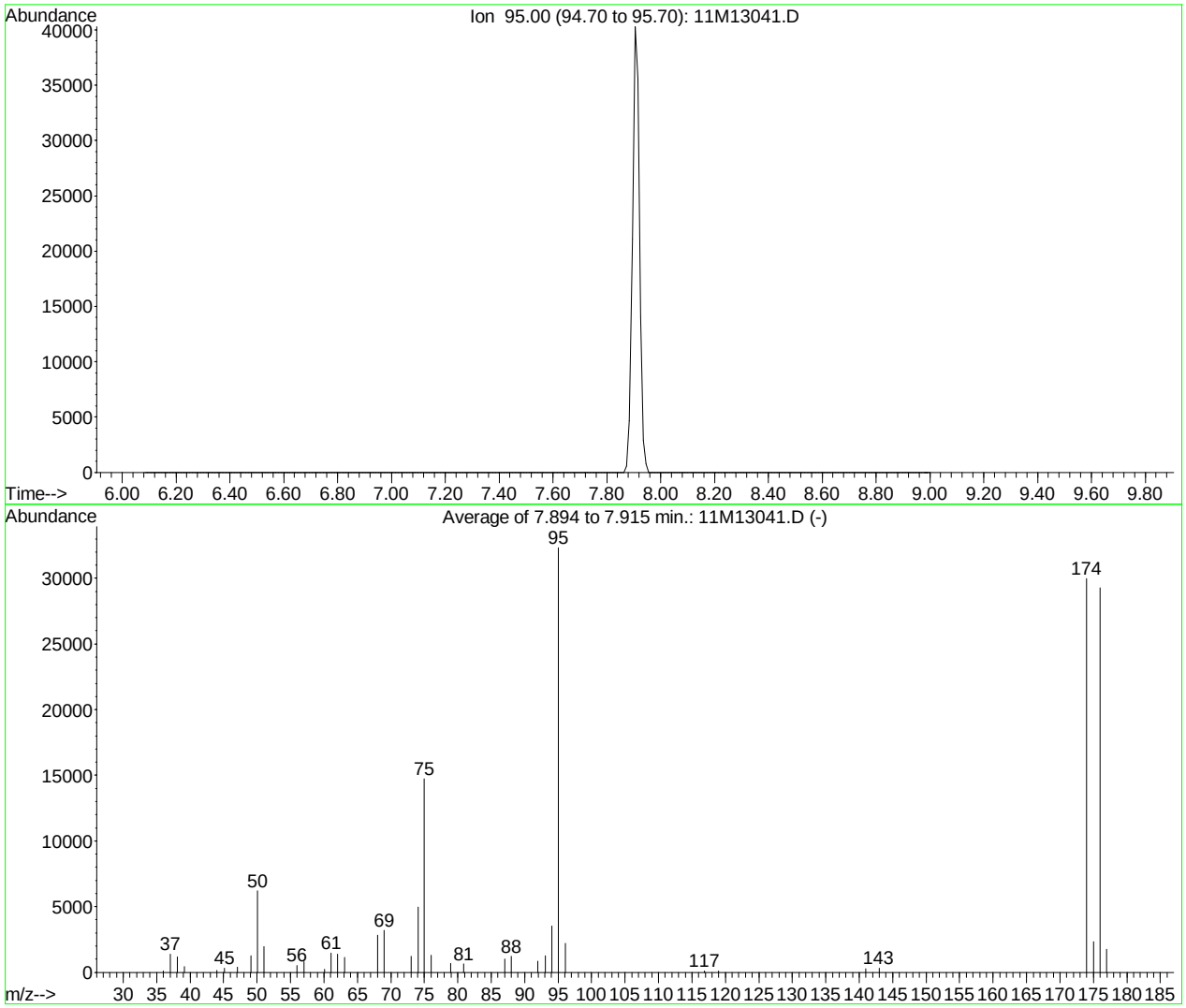

AutoFind: Scans 176, 177, 178; Background Corrected with Scan 171

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.2	6217	PASS
75	95	30	60	45.6	14733	PASS
95	95	100	100	100.0	32333	PASS
96	95	5	9	6.8	2189	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	92.7	29965	PASS
175	174	5	9	7.8	2333	PASS
176	174	95	101	97.7	29286	PASS
177	176	5	9	5.9	1736	PASS

11M13041.D 8260WT.M Sat Jul 02 13:49:18 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\070516\11M13076.D          Vial: 1
Acq On    :  5 Jul 2016  17:13                       Operator: JDS
Sample    : WG575198-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD76496                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

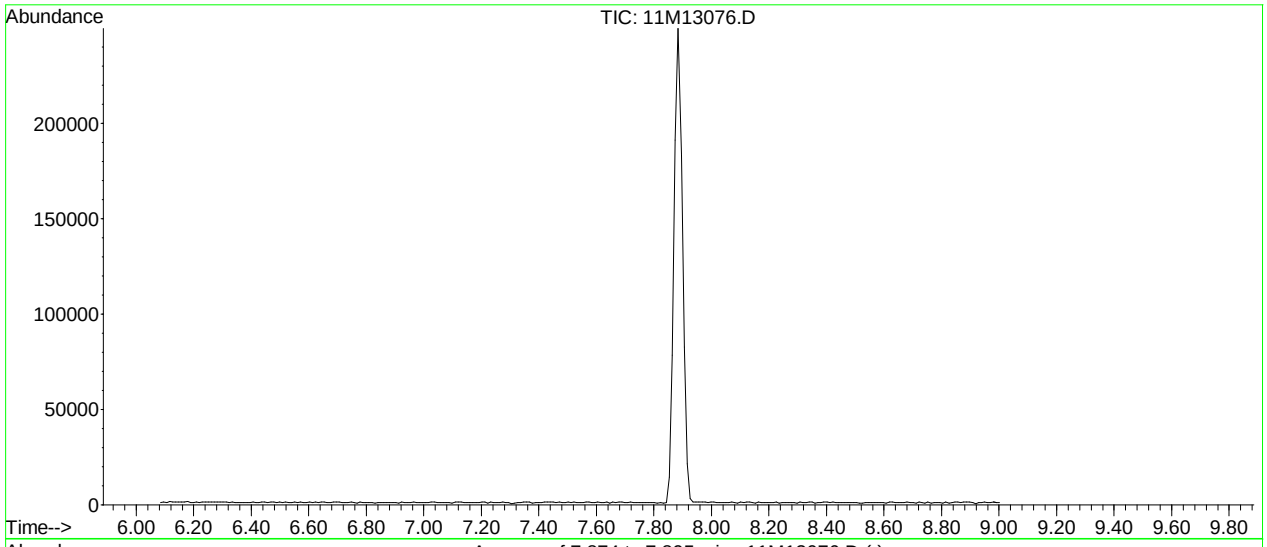

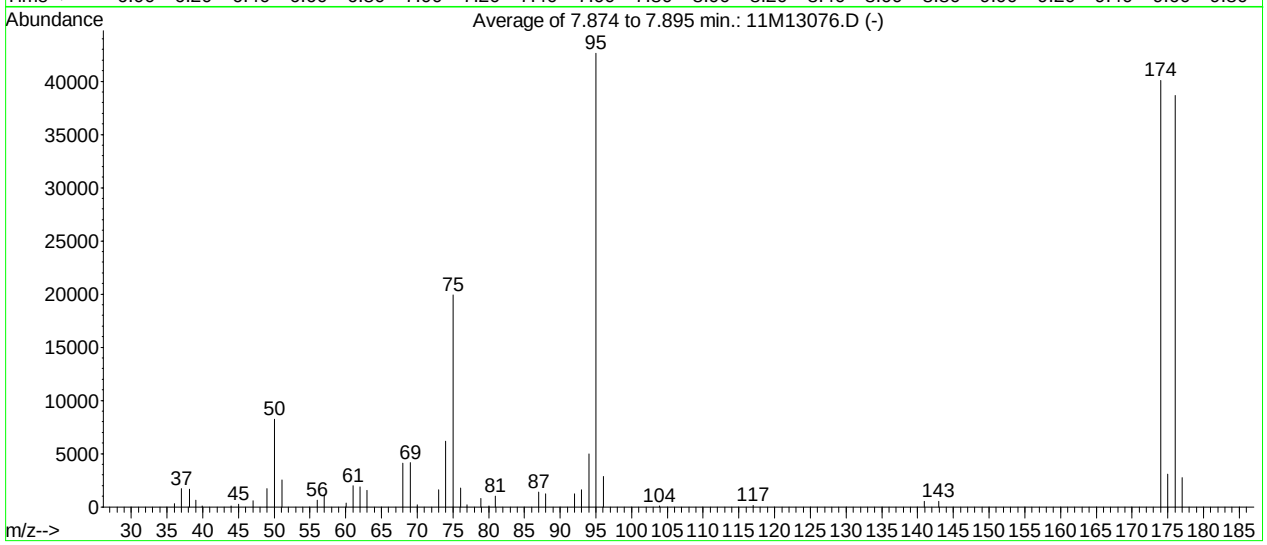

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.4	8258	PASS
75	95	30	60	46.8	19945	PASS
95	95	100	100	100.0	42653	PASS
96	95	5	9	6.7	2862	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	94.0	40085	PASS
175	174	5	9	7.7	3095	PASS
176	174	95	101	96.5	38688	PASS
177	176	5	9	7.1	2730	PASS

11M13076.D 8260WT.M Wed Jul 06 09:11:17 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13045.D Vial: 5
Acq On : 2 Jul 2016 15:43 Operator: TMB
Sample : WG575086-01 VBLK0702 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 07 12:04:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	526215	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	437666	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	247728	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	139753	24.2669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.08%		
43) 1,2-Dichloroethane-d4	10.23	65	132268	20.1428 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 80.56%		
57) Toluene-d8	12.47	98	482305	25.3623 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.44%		
78) p-Bromofluorobenzene	15.64	95	182044	23.8388 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.36%		

Target Compounds					Qvalue
13) Acetone	6.33	43	186	0.1489 ug/L #	49
36) Tetrahydrofuran	9.60	42	1252	0.9386 ug/L #	47
58) Toluene	12.56	91	2700	0.1219 ug/L	77

(#) = qualifier out of range (m) = manual integration
11M13045.D 8260WT.M Thu Jul 07 12:04:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13045.D Vial: 5
Acq On : 2 Jul 2016 15:43 Operator: TMB
Sample : WG575086-01 VBLK0702 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 7 12:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

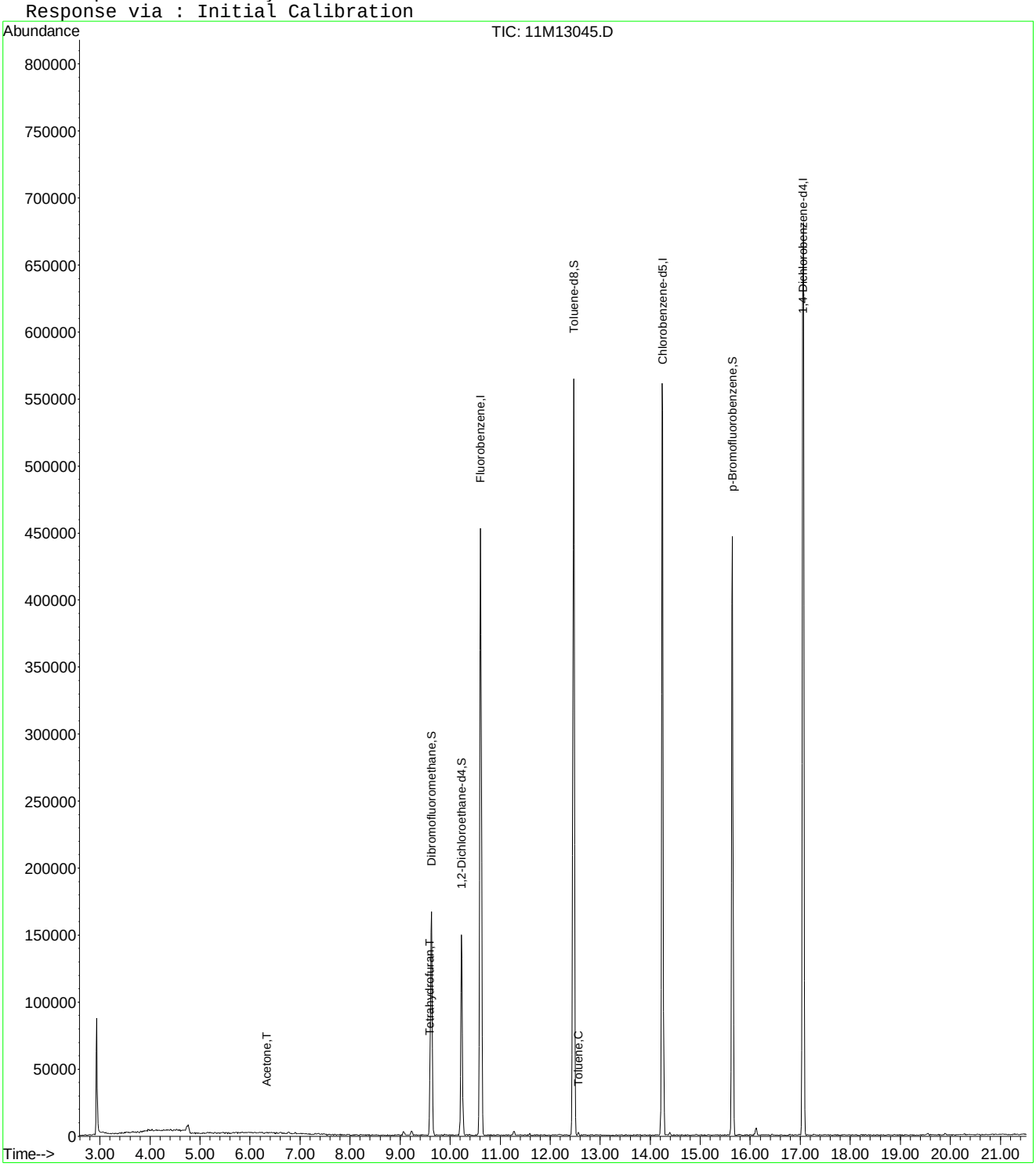

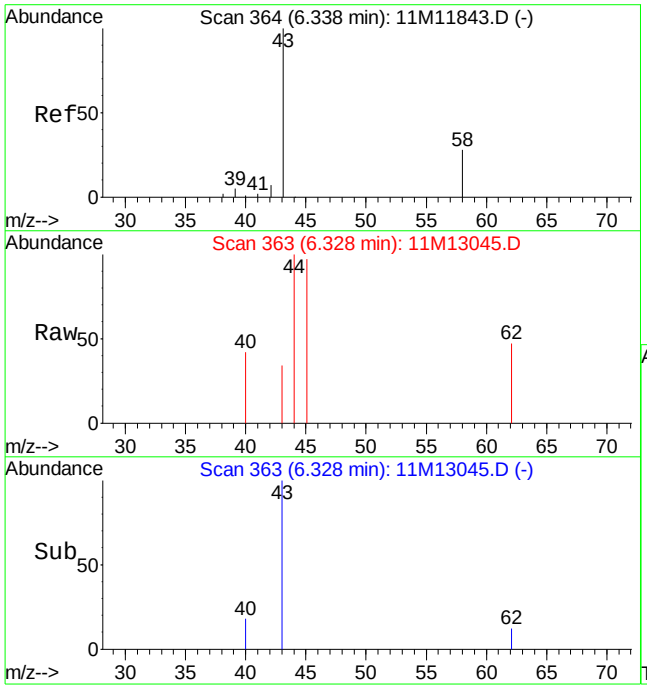

#13
Acetone
Concen: 0.15 ug/L
RT: 6.33 min Scan# 363
Delta R.T. -0.01 min
Lab File: 11M13045.D
Acq: 2 Jul 2016 15:43

Tgt Ion: 43 Resp: 186

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

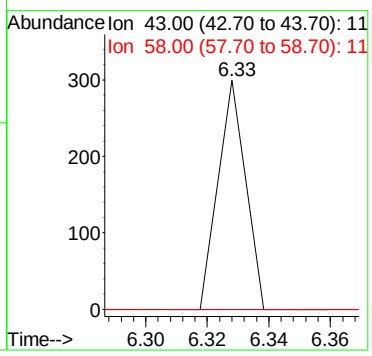

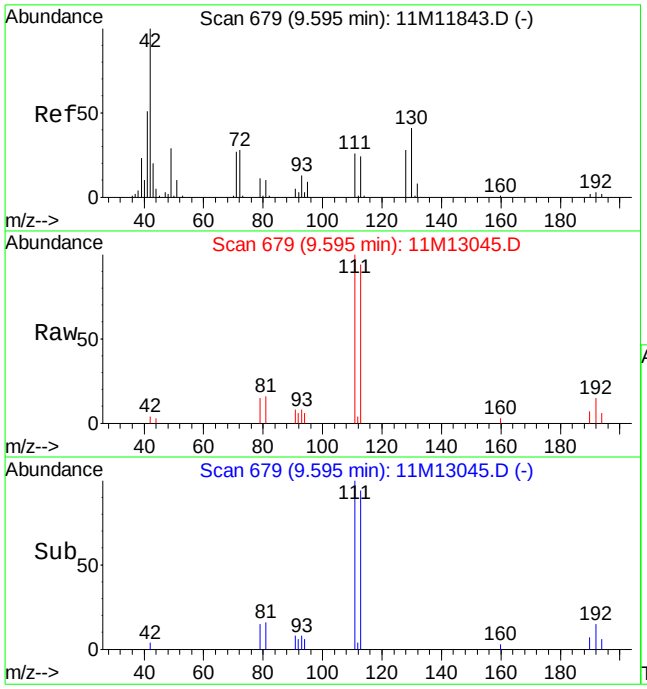

#36
Tetrahydrofuran
Concen: 0.94 ug/L
RT: 9.60 min Scan# 679
Delta R.T. -0.00 min
Lab File: 11M13045.D
Acq: 2 Jul 2016 15:43

Tgt Ion: 42 Resp: 1252

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

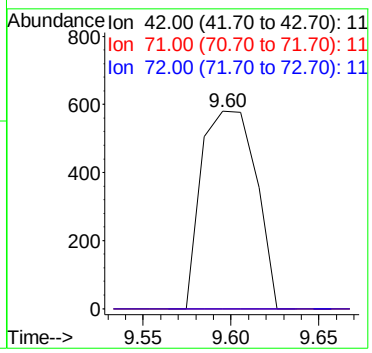

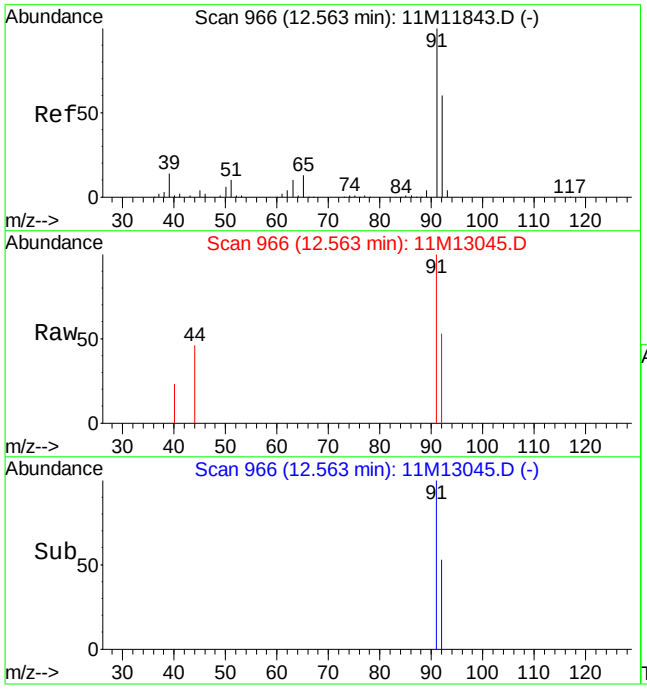

#58
Toluene
Concen: 0.12 ug/L
RT: 12.56 min Scan# 966
Delta R.T. -0.00 min
Lab File: 11M13045.D
Acq: 2 Jul 2016 15:43

Tgt Ion: 91 Resp: 2700

Ion	Ratio	Lower	Upper
91	100		
92	42.0	35.7	83.3

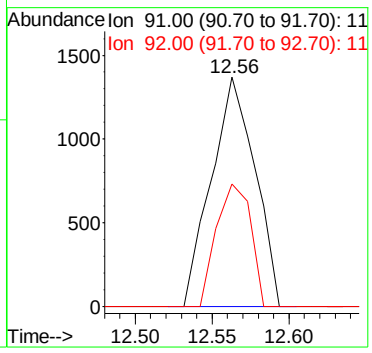

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13080.D Vial: 5
Acq On : 5 Jul 2016 19:15 Operator: JDS
Sample : WG575199-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 06 09:19:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	472304	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	408648	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	236090	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	128454	24.8510 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.40%		
43) 1,2-Dichloroethane-d4	10.23	65	129250	21.9299 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.72%		
57) Toluene-d8	12.47	98	437801	24.6568 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.64%		
78) p-Bromofluorobenzene	15.64	95	166664	22.9006 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.60%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M13080.D 8260WT.M Wed Jul 06 09:19:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13080.D Vial: 5
Acq On : 5 Jul 2016 19:15 Operator: JDS
Sample : WG575199-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 6 9:19 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

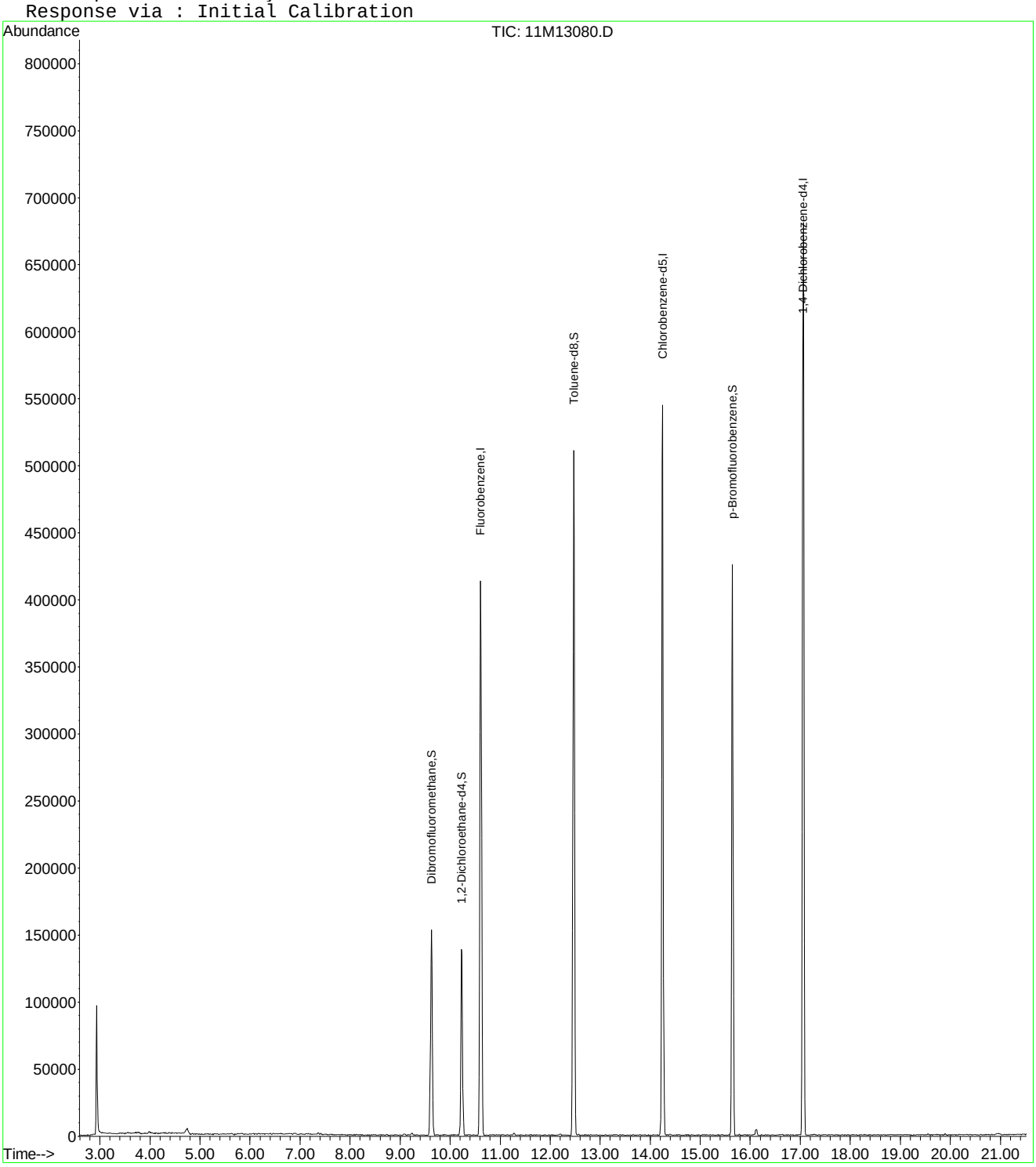

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140391.D Vial: 4
Acq On : 3 Jul 2016 11:33 Operator: TMB
Sample : WG575092-01 VBLK0703 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 08:34:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	592251	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	419172	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	214148	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	152783	25.4270 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.72%		
43) 1,2-Dichloroethane-d4	10.32	65	193723	25.5393 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.16%		
58) Toluene-d8	13.04	98	511071	24.7597 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.04%		
80) p-Bromofluorobenzene	17.01	95	210367	25.0830 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.32%		
Target Compounds					Qvalue
13) Acetone	5.90	43	660	0.3478 ug/L #	48
15) Tert-Butyl Alcohol	6.25	59	5381	9.2741 ug/L #	79
36) Tetrahydrofuran	9.57	42	2863	1.4132 ug/L #	47
50) 1,4-Dioxane	11.94	88	1361	28.2551 ug/L	69
98) 1,2,4-Trichlorobenzene	21.97	180	1556	0.1853 ug/L #	82
99) Hexachlorobutadiene	22.15	225	1076	0.3082 ug/L #	30
100) Naphthalene	22.39	128	5409	0.3152 ug/L #	67
101) 1,2,3-Trichlorobenzene	22.75	180	2356	0.3030 ug/L #	80

(#) = qualifier out of range (m) = manual integration
6M140391.D 8260WTR.M Tue Jul 05 08:34:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140391.D Vial: 4
Acq On : 3 Jul 2016 11:33 Operator: TMB
Sample : WG575092-01 VBLK0703 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 5 8:34 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

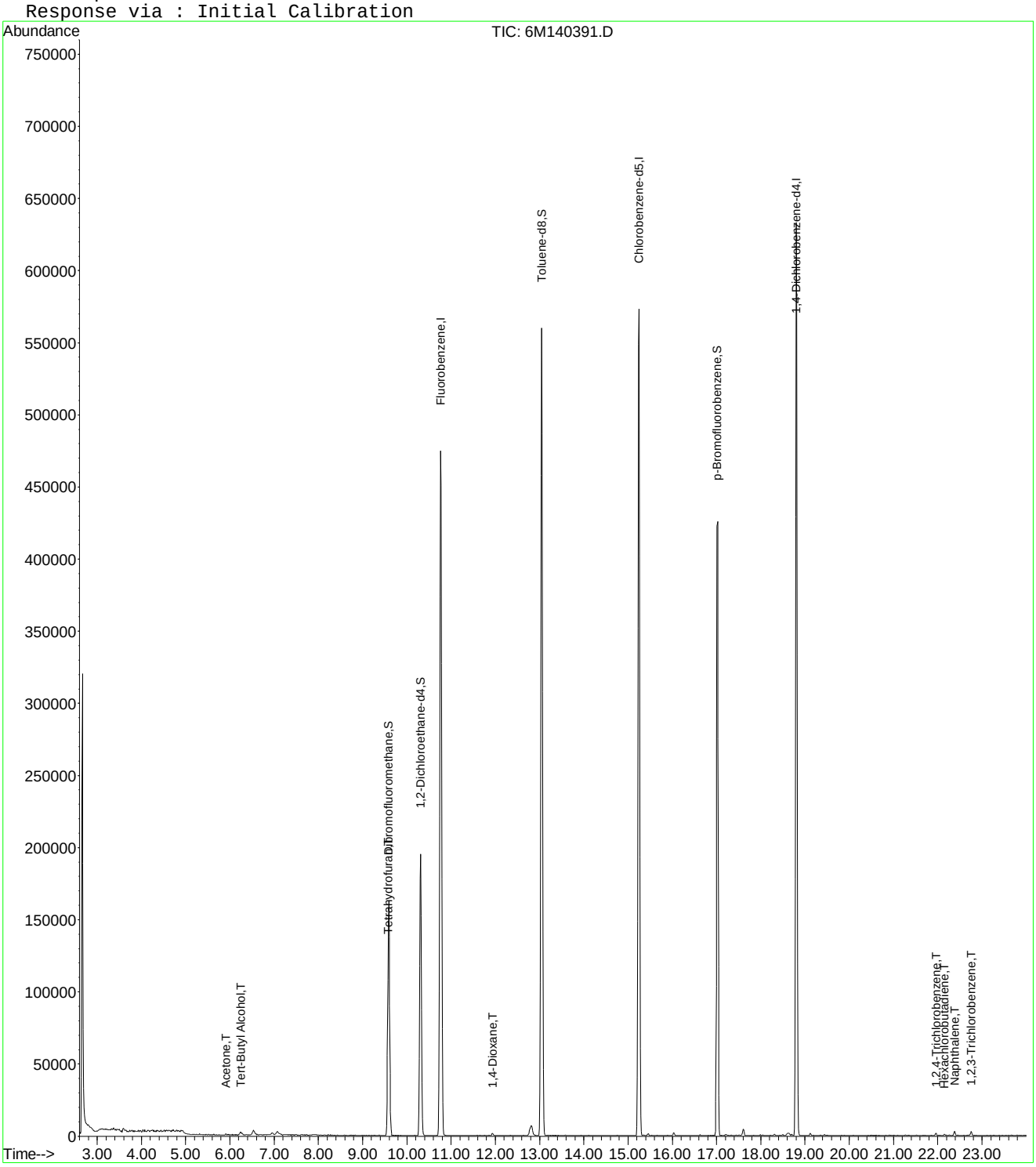

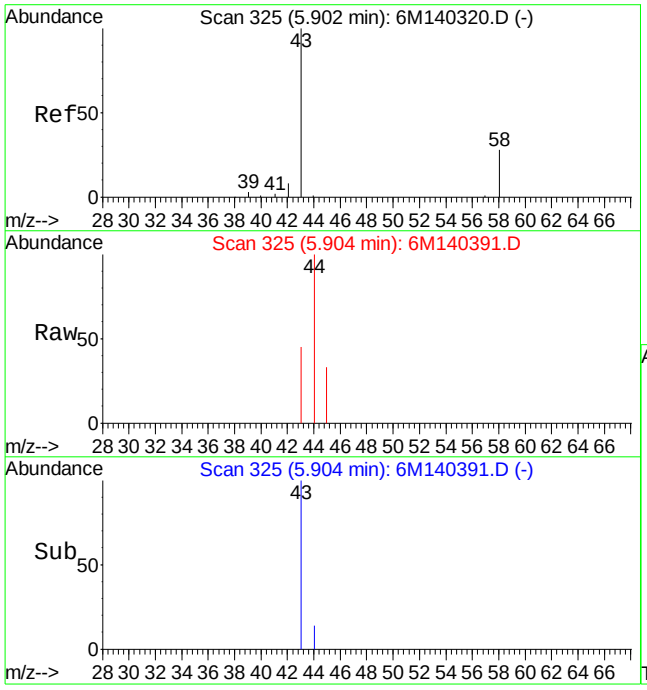

#13
Acetone
Concen: 0.35 ug/L
RT: 5.90 min Scan# 325
Delta R.T. -0.00 min
Lab File: 6M140391.D
Acq: 3 Jul 2016 11:33

Tgt Ion: 43 Resp: 660

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

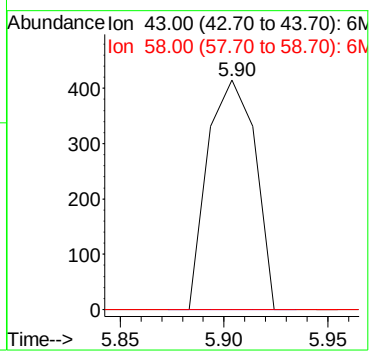

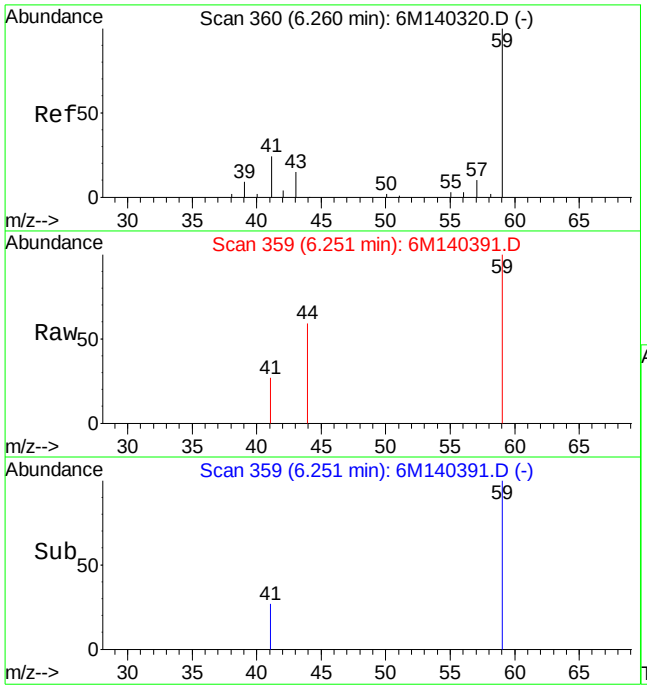

#15
Tert-Butyl Alcohol
Concen: 9.27 ug/L
RT: 6.25 min Scan# 359
Delta R.T. -0.04 min
Lab File: 6M140391.D
Acq: 3 Jul 2016 11:33

Tgt Ion: 59 Resp: 5381

Ion	Ratio	Lower	Upper
59	100		
41	15.2	14.6	34.0
57	0.0	6.4	14.8#

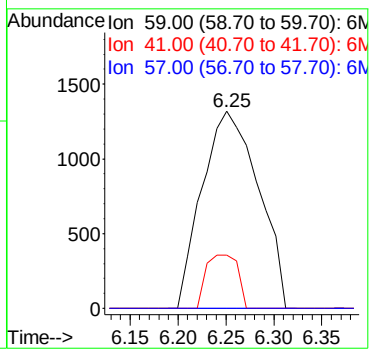

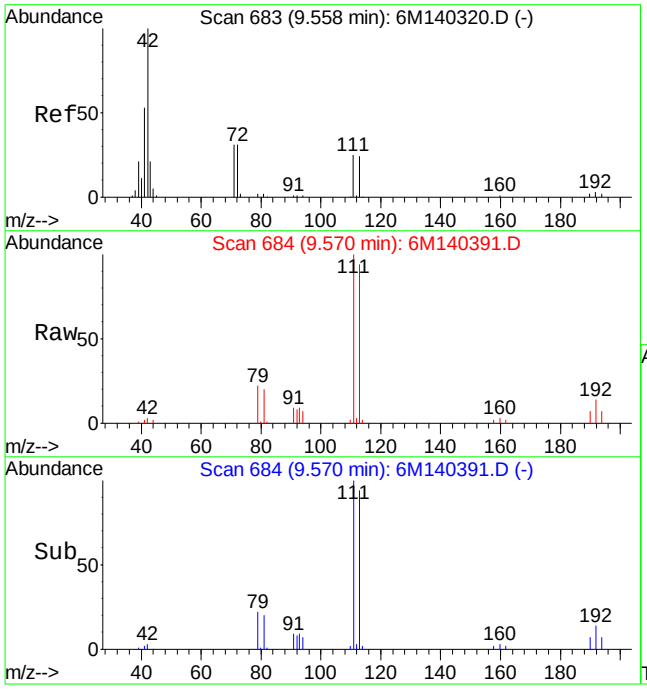

#36
Tetrahydrofuran
Concen: 1.41 ug/L
RT: 9.57 min Scan# 684
Delta R.T. 0.01 min
Lab File: 6M140391.D
Acq: 3 Jul 2016 11:33

Tgt Ion: 42 Resp: 2863

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	7.3	19.9	46.5#

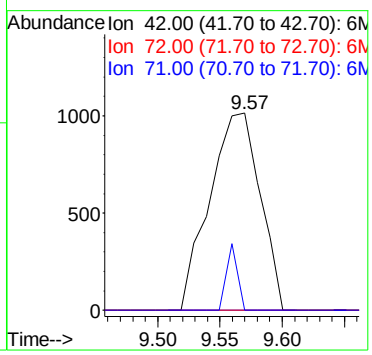

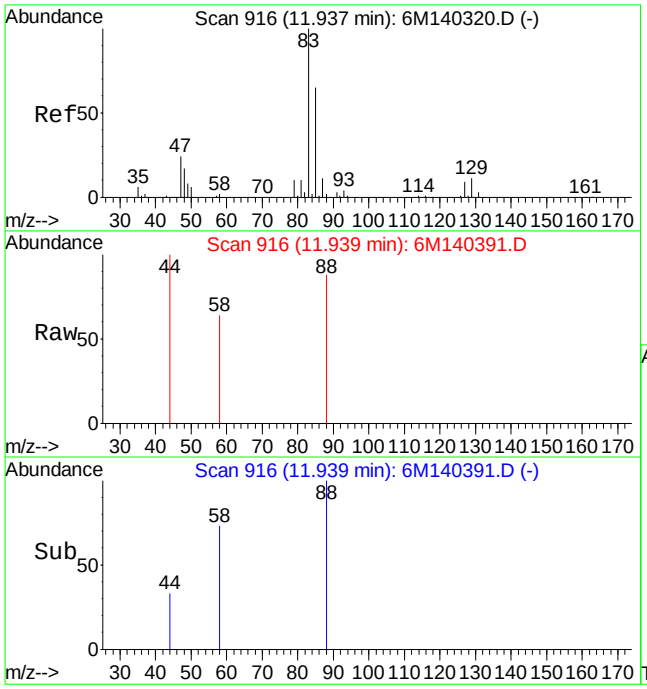

#50
1,4-Dioxane
Concen: 28.26 ug/L
RT: 11.94 min Scan# 916
Delta R.T. -0.00 min
Lab File: 6M140391.D
Acq: 3 Jul 2016 11:33

Tgt Ion: 88 Resp: 1361

Ion	Ratio	Lower	Upper
88	100		
58	96.7	42.6	99.4

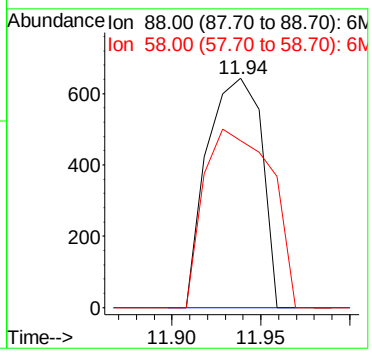

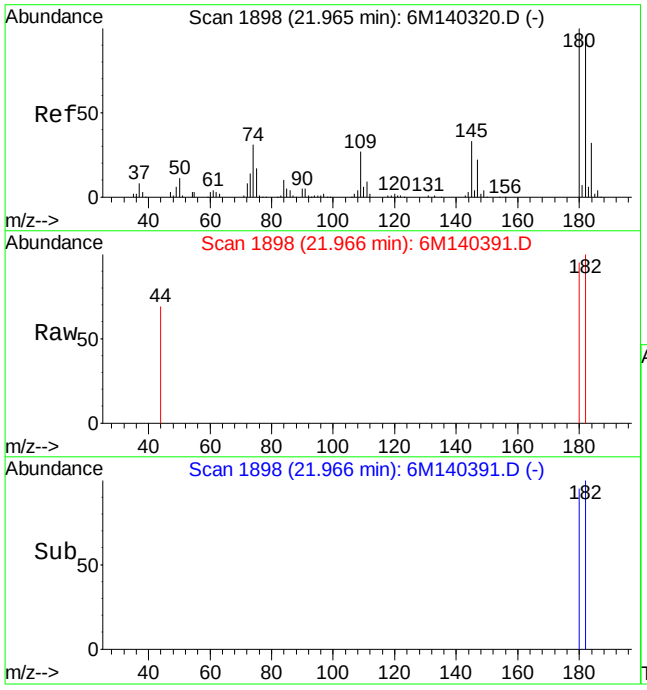

#98
1,2,4-Trichlorobenzene
Concen: 0.19 ug/L
RT: 21.97 min Scan# 1898
Delta R.T. -0.00 min
Lab File: 6M140391.D
Acq: 3 Jul 2016 11:33

Tgt Ion:180 Resp: 1556

Ion	Ratio	Lower	Upper
180	100		
182	90.7	57.7	134.5
145	0.0	19.0	44.4#

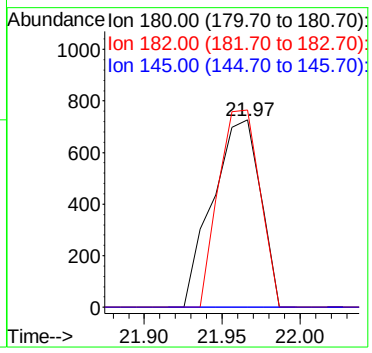

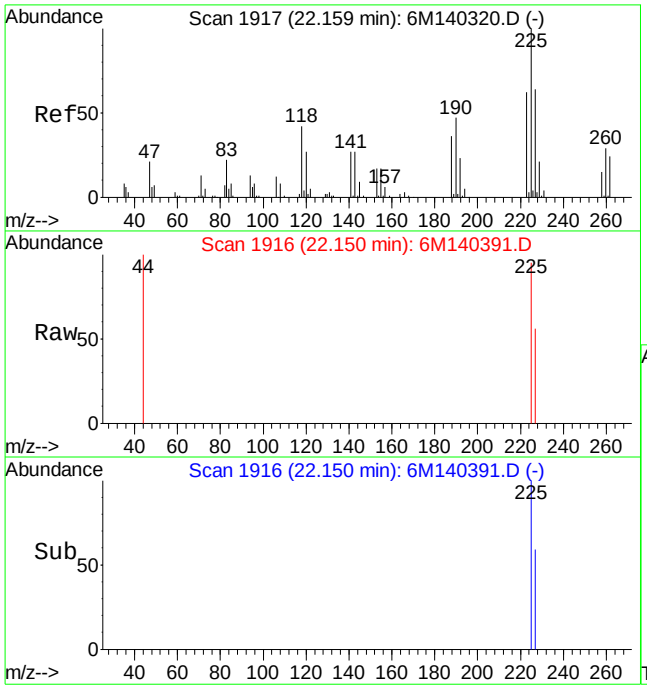

#99
Hexachlorobutadiene
Concen: 0.31 ug/L
RT: 22.15 min Scan# 1916
Delta R.T. -0.00 min
Lab File: 6M140391.D
Acq: 3 Jul 2016 11:33

Tgt Ion:225 Resp: 1076

Ion	Ratio	Lower	Upper
225	100		
223	0.0	37.7	88.1#
227	17.8	38.6	90.0#

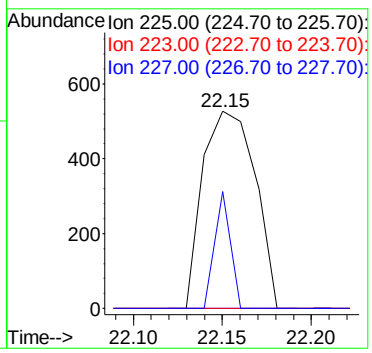

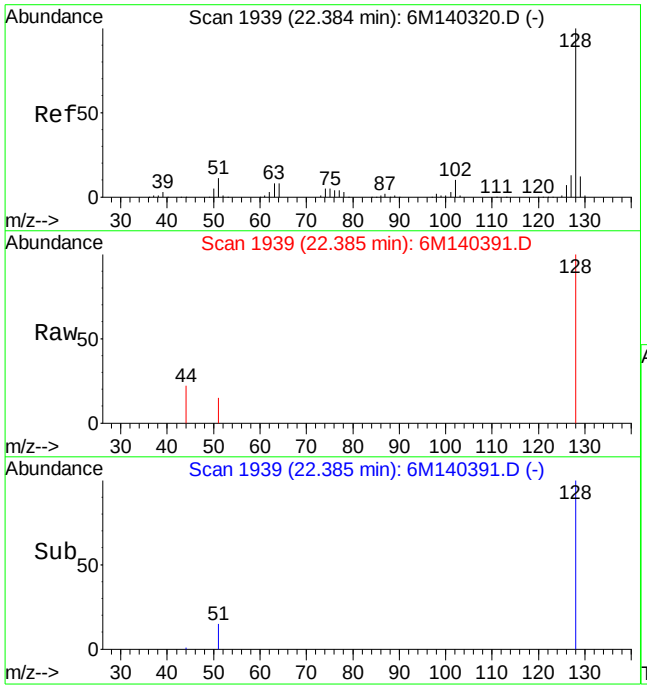

#100
Naphthalene
Concen: 0.32 ug/L
RT: 22.39 min Scan# 1939
Delta R.T. -0.00 min
Lab File: 6M140391.D
Acq: 3 Jul 2016 11:33

Tgt Ion:128 Resp: 5409

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.8	18.2#

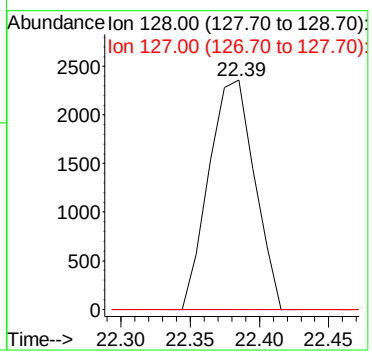

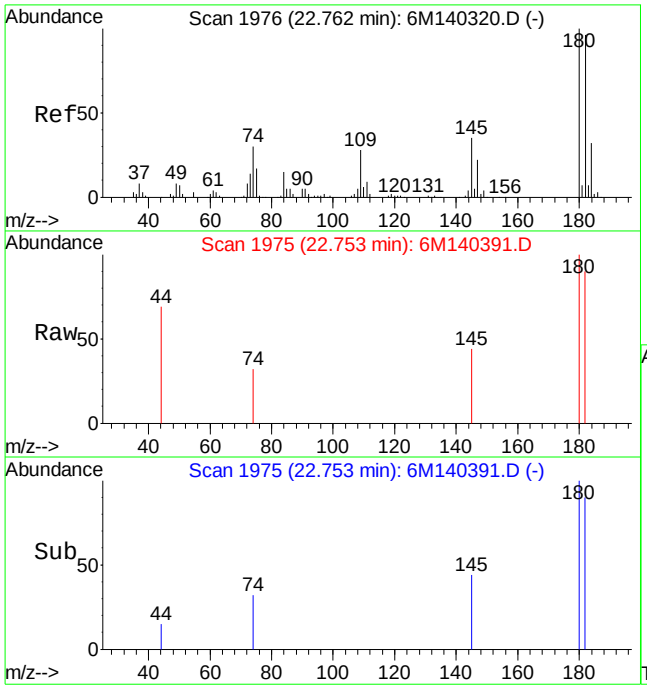

#101
1,2,3-Trichlorobenzene
Concen: 0.30 ug/L
RT: 22.75 min Scan# 1975
Delta R.T. -0.01 min
Lab File: 6M140391.D
Acq: 3 Jul 2016 11:33

Tgt Ion:180 Resp: 2356

Ion	Ratio	Lower	Upper
180	100		
182	83.0	57.8	135.0
145	11.4	20.5	47.7#

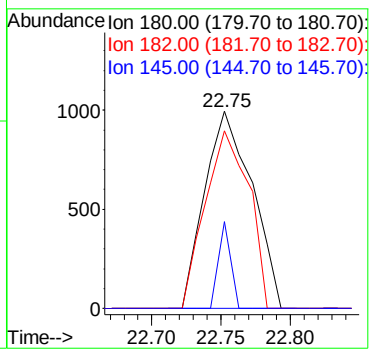

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13065.D Vial: 25
Acq On : 3 Jul 2016 2:20 Operator: TMB
Sample : WG575086-04 VBLK0702 BLANK STD 624 Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 07 12:05:43 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	452349	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	384134	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	219842	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	123560	24.9587 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.84%		
43) 1,2-Dichloroethane-d4	10.23	65	124652	22.0827 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.32%		
57) Toluene-d8	12.47	98	417646	25.0228 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.08%		
78) p-Bromofluorobenzene	15.64	95	156918	23.1550 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.64%		

Target Compounds					Qvalue
16) Dimethyl Sulfide	6.79	62	679	0.2053 ug/L #	1
36) Tetrahydrofuran	9.58	42	794	0.6924 ug/L #	47

(#) = qualifier out of range (m) = manual integration
11M13065.D 8260WT.M Thu Jul 07 12:05:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13065.D Vial: 25
Acq On : 3 Jul 2016 2:20 Operator: TMB
Sample : WG575086-04 VBLK0702 BLANK STD 624 Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 7 12:05 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

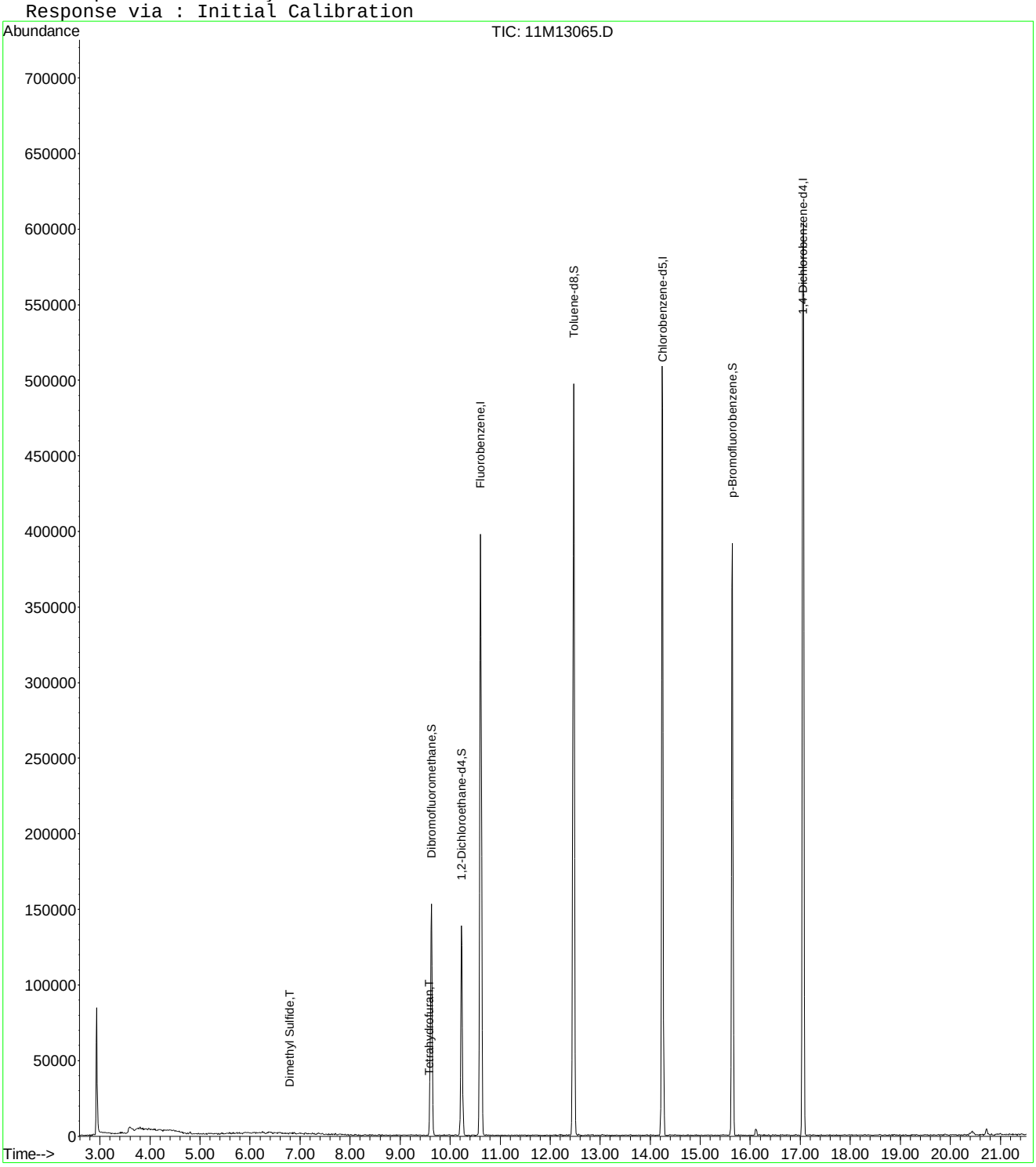

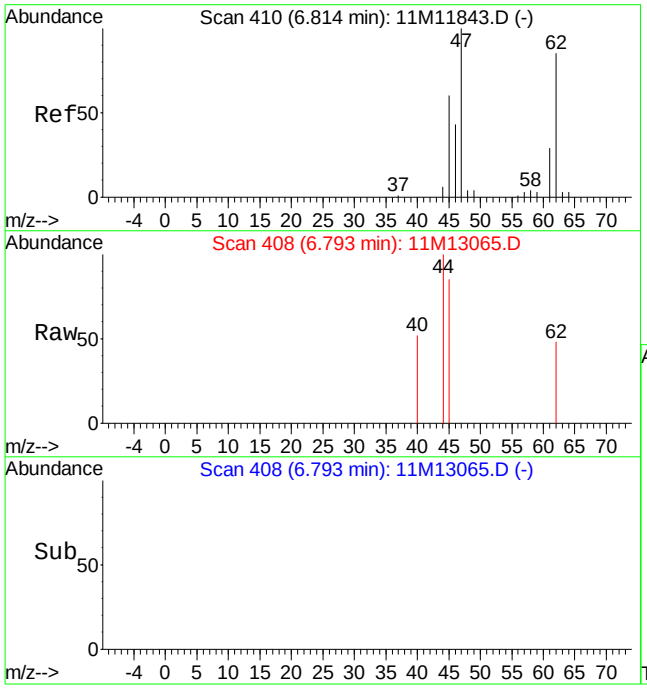

#16
Dimethyl Sulfide
Concen: 0.21 ug/L
RT: 6.79 min Scan# 408
Delta R.T. -0.02 min
Lab File: 11M13065.D
Acq: 3 Jul 2016 2:20

Tgt Ion: 62 Resp: 679

Ion	Ratio	Lower	Upper
62	100		
47	0.0	73.4	171.2#

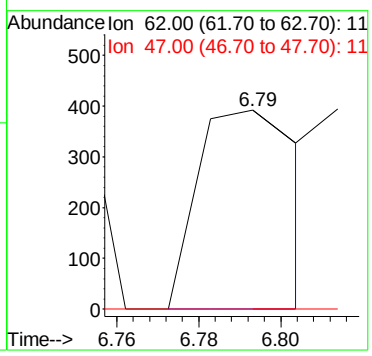

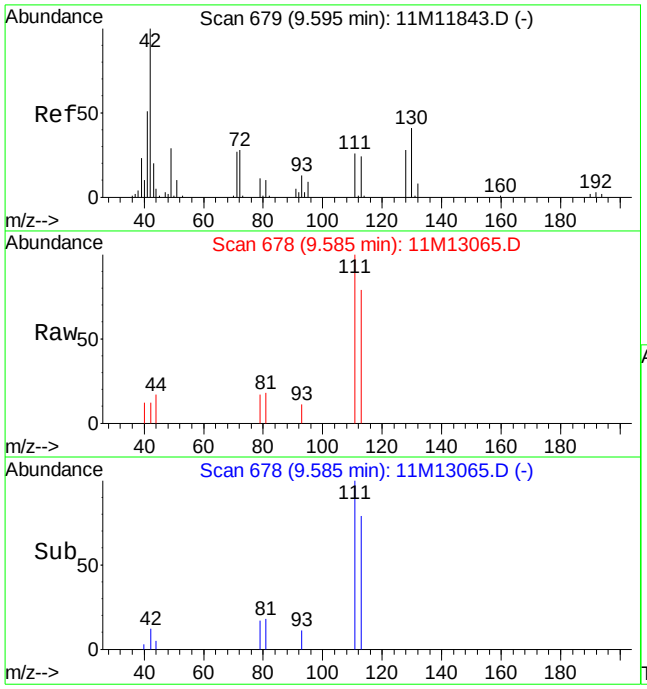

#36
Tetrahydrofuran
Concen: 0.69 ug/L
RT: 9.58 min Scan# 678
Delta R.T. -0.01 min
Lab File: 11M13065.D
Acq: 3 Jul 2016 2:20

Tgt Ion: 42 Resp: 794

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

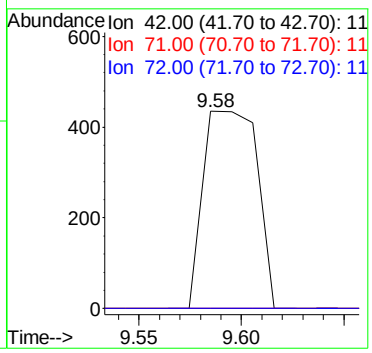

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070216\11M13062.D Vial: 22
Acq On : 3 Jul 2016 00:45 Operator: TMB
Sample : WG575086-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 03 01:06:54 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	489868	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	423028	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	250295	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	135697	25.3109 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.24%		
43) 1,2-Dichloroethane-d4	10.23	65	135424	22.1536 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.60%		
57) Toluene-d8	12.47	98	457328	24.8811 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.52%		
78) p-Bromofluorobenzene	15.64	95	175003	22.6817 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.72%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	78524	10.2307 ug/L	93
3) Chloromethane	3.72	50	73849	12.0136 ug/L	100
4) Vinyl Chloride	3.95	62	87173	17.0764 ug/L #	41
5) 1,3-Butadiene	3.99	54	66797	13.1593 ug/L	97
6) Bromomethane	4.85	94	46694	13.3035 ug/L	99
7) Chloroethane	5.00	64	60367	18.4047 ug/L	99
8) Trichlorofluoromethane	5.48	101	177959	17.4900 ug/L	100
9) Diethyl ether	6.01	59	315802	83.9221 ug/L	91
10) Isoprene	6.04	67	110891	17.6816 ug/L	91
11) Acrolein	6.24	56	44500	88.7419 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	108181	21.9114 ug/L	96
13) Acetone	6.34	43	20004	17.1971 ug/L	97
14) 1,1-Dichloroethene	6.56	61	132114	14.7319 ug/L	95
15) Tert-Butyl Alcohol	6.66	59	47895	148.8570 ug/L	98
16) Dimethyl Sulfide	6.81	62	107571	30.0359 ug/L	85
17) Iodomethane	7.06	142	59787	16.1904 ug/L	92
18) Methyl acetate	7.07	43	55439	14.3967 ug/L #	91
19) Methylene Chloride	7.31	84	84861	18.2843 ug/L	81
20) Carbon Disulfide	7.36	76	235454	15.6829 ug/L	99
21) Acrylonitrile	7.49	53	27091	17.3703 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	217407	18.7810 ug/L	95
23) trans-1,2-Dichloroethene	7.75	96	87698	17.6694 ug/L	92
24) n-Hexane	7.82	57	106535	12.8874 ug/L	96
25) Diisopropyl ether	8.15	45	1737907	84.2520 ug/L	97
26) Vinyl Acetate	8.31	43	37724	6.9147 ug/L	98
27) 1,1-Dichloroethane	8.34	63	168223	16.8919 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1424288	84.8346 ug/L	97
29) 2-Butanone	8.87	43	29294	16.6581 ug/L	95
30) Propionitrile	8.98	54	44170	85.7572 ug/L	95
31) 2,2-Dichloropropane	9.09	77	104776	13.4469 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	105568	19.2907 ug/L	86
33) Chloroform	9.35	83	178584	18.2606 ug/L	99
34) 1-Bromopropane	9.48	122	25888	26.9247 ug/L	99
35) Bromochloromethane	9.57	130	67603	20.8005 ug/L	85
36) Tetrahydrofuran	9.60	42	87996	70.8620 ug/L	89
38) 1,1,1-Trichloroethane	9.85	97	178451	18.5423 ug/L	95
39) Cyclohexane	9.88	56	173792	16.5698 ug/L	94
40) 1,1-Dichloropropene	10.04	75	121647	17.7028 ug/L	99
41) Carbon Tetrachloride	10.17	117	176671	18.7993 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1120535	96.0505 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070216\11M13062.D Vial: 22
Acq On : 3 Jul 2016 00:45 Operator: TMB
Sample : WG575086-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 03 01:06:54 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	143791	18.1029 ug/L		97
45)	Benzene	10.38	78	350094	18.6107 ug/L		98
46)	Trichloroethene	11.08	130	142614	23.3243 ug/L		97
47)	Methylcyclohexane	11.17	83	134336	17.8024 ug/L		93
48)	1,2-Dichloropropane	11.29	63	99892	19.1833 ug/L		99
49)	1,4-Dioxane	11.56	88	3279	122.0128 ug/L		84
50)	Bromodichloromethane	11.57	83	142052	19.4321 ug/L		99
51)	Dibromomethane	11.65	93	51595	19.0140 ug/L		95
52)	2-Chloroethyl Vinyl Ether	11.84	63	42551	16.5798 ug/L		100
53)	4-Methyl-2-Pentanone	11.87	58	24991	17.2647 ug/L		96
54)	cis-1,3-Dichloropropene	12.17	75	148132	20.2597 ug/L		99
55)	Dimethyl Disulfide	12.42	79	78624	17.8697 ug/L		90
58)	Toluene	12.56	91	425472	19.8676 ug/L		100
59)	Ethyl Methacrylate	12.64	69	88900	19.4410 ug/L		82
60)	trans-1,3-Dichloropropene	12.73	75	125524	18.2609 ug/L		96
61)	1,1,2-Trichloroethane	12.92	97	76793	20.2223 ug/L		99
62)	2-Hexanone	12.86	43	42716	15.3159 ug/L	#	93
63)	1,3-Dichloropropane	13.21	76	125750	20.6209 ug/L		88
64)	Tetrachloroethene	13.34	164	98134	19.7053 ug/L		97
65)	Dibromochloromethane	13.59	129	121085	20.9050 ug/L		99
66)	1,2-Dibromoethane	13.82	107	77031	20.2466 ug/L		98
67)	1-Chlorohexane	13.89	91	133776	18.9471 ug/L		88
68)	Chlorobenzene	14.29	112	330773	21.0840 ug/L		100
69)	1,1,1,2-Tetrachloroethane	14.32	131	132555	20.8814 ug/L		98
70)	Ethylbenzene	14.31	106	161047	20.0190 ug/L		100
71)	m-,p-Xylene	14.39	106	400960	40.9979 ug/L		97
72)	o-Xylene	14.92	106	196194	20.6131 ug/L		99
73)	Styrene	14.95	104	335599	21.3413 ug/L		95
74)	Bromoform	15.43	173	69815	19.8873 ug/L		99
75)	Isopropylbenzene	15.31	105	525297	20.8693 ug/L		99
77)	1,1,2,2-Tetrachloroethane	15.51	83	64229	16.4786 ug/L		96
79)	1,2,3-Trichloropropane	15.70	110	28517	19.7220 ug/L		81
80)	trans-1,4-Dichloro-2-Buten	15.73	53	15612	8.9299 ug/L	#	1
81)	n-Propylbenzene	15.78	91	607981	20.9744 ug/L		99
82)	Bromobenzene	15.91	156	156203	20.5361 ug/L		90
83)	1,3,5-Trimethylbenzene	15.95	105	454603	20.5517 ug/L		98
84)	2-Chlorotoluene	16.05	91	440458	21.6943 ug/L		99
85)	4-Chlorotoluene	16.09	91	350126	19.2520 ug/L		97
86)	a-Methylstyrene	16.34	118	250752	21.4882 ug/L		97
87)	tert-Butylbenzene	16.39	134	102368	21.8437 ug/L		91
88)	1,2,4-Trimethylbenzene	16.44	105	470901	20.9060 ug/L		99
89)	sec-Butylbenzene	16.64	105	549917	20.7044 ug/L		99
90)	p-Isopropyltoluene	16.78	119	501818	20.5696 ug/L		99
91)	1,3-Dichlorobenzene	16.98	146	310260	21.1198 ug/L		96
92)	1,4-Dichlorobenzene	17.10	146	312658	20.9970 ug/L		97
93)	n-Butylbenzene	17.28	91	404773	18.8289 ug/L		98
94)	1,2-Dichlorobenzene	17.56	146	286922	21.4404 ug/L		97
95)	1,2-Dibromo-3-Chloropropan	18.49	75	14431	16.8549 ug/L		84
96)	1,2,4-Trichlorobenzene	19.54	180	192154	19.6229 ug/L		99
97)	Hexachlorobutadiene	19.68	225	75379	17.4733 ug/L		96
98)	Naphthalene	19.89	128	318871	17.5437 ug/L		99
99)	1,2,3-Trichlorobenzene	20.18	180	173044	19.2549 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M13062.D 8260WT.M Sun Jul 03 01:06:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070216\11M13062.D Vial: 22
Acq On : 3 Jul 2016 00:45 Operator: TMB
Sample : WG575086-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 3 1:06 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

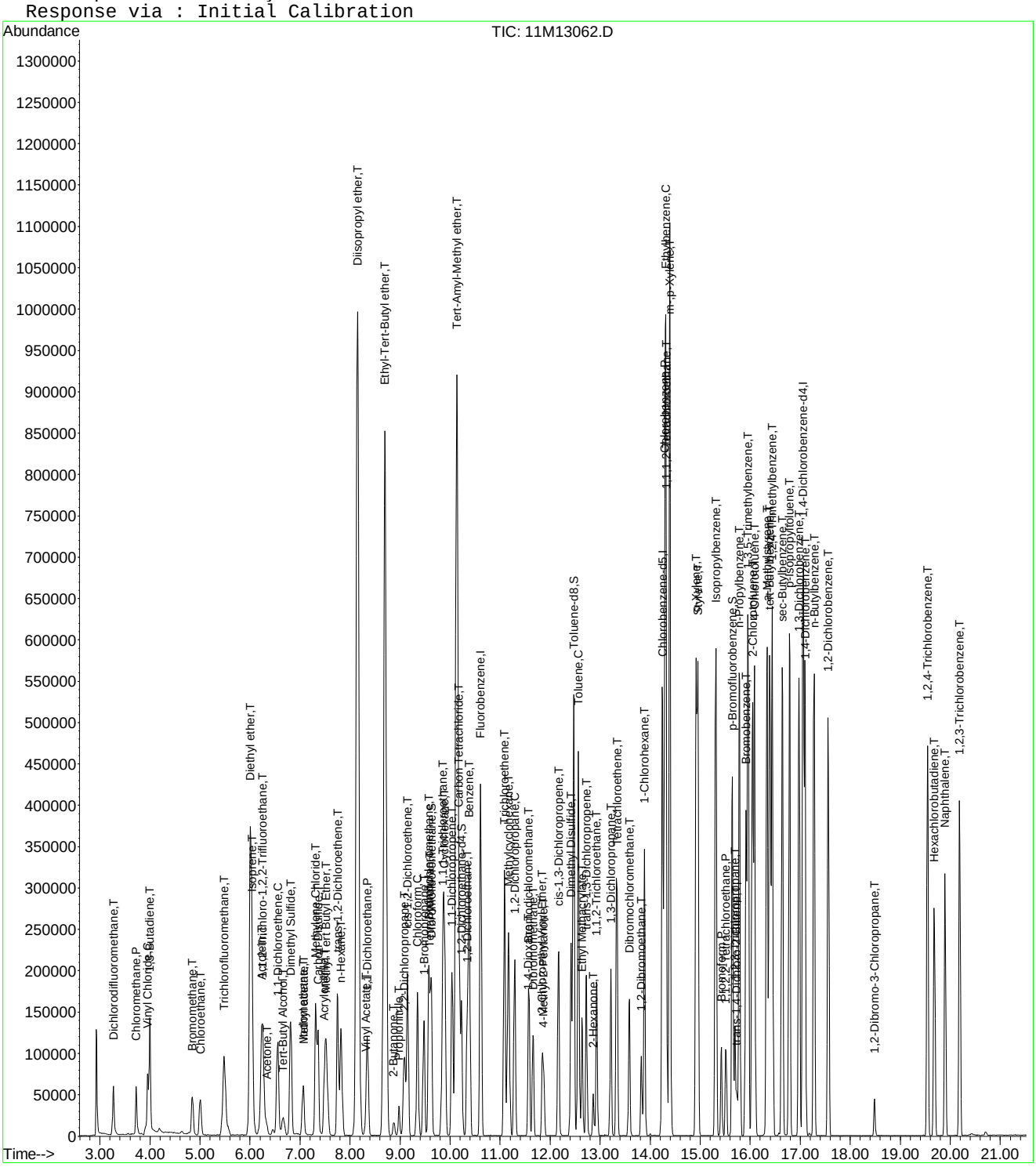

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13081.D Vial: 6
Acq On : 5 Jul 2016 19:47 Operator: JDS
Sample : WG575199-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 20:09:12 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	485527	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	420960	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	250949	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	133281	25.0826 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.32%		
43) 1,2-Dichloroethane-d4	10.23	65	130691	21.5705 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.28%		
57) Toluene-d8	12.47	98	453731	24.8066 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.24%		
78) p-Bromofluorobenzene	15.64	95	176443	22.8088 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.24%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	16305	2.1433 ug/L	88
3) Chloromethane	3.72	50	37862	6.2144 ug/L	97
4) Vinyl Chloride	3.96	62	52558	10.3877 ug/L	100
5) 1,3-Butadiene	3.99	54	55112	10.9544 ug/L	97
6) Bromomethane	4.85	94	50018	14.3780 ug/L	99
7) Chloroethane	5.00	64	47789	14.7002 ug/L	95
8) Trichlorofluoromethane	5.48	101	144326	14.3113 ug/L	100
9) Diethyl ether	6.01	59	347541	93.1823 ug/L	91
10) Isoprene	6.05	67	92238	14.8389 ug/L	89
11) Acrolein	6.24	56	53640	107.5996 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	84494	17.2667 ug/L	94
13) Acetone	6.34	43	18831	16.3335 ug/L	91
14) 1,1-Dichloroethene	6.56	61	97590	10.9794 ug/L	94
15) Tert-Butyl Alcohol	6.66	59	56281	176.4845 ug/L	96
16) Dimethyl Sulfide	6.81	62	96926	27.3055 ug/L	83
17) Iodomethane	7.06	142	33415	10.1123 ug/L	89
18) Methyl acetate	7.06	43	54804	14.3559 ug/L	91
19) Methylene Chloride	7.31	84	74421	16.1782 ug/L	82
20) Carbon Disulfide	7.36	76	186343	12.5227 ug/L	100
21) Acrylonitrile	7.49	53	26646	17.2377 ug/L	98
22) Methyl Tert Butyl Ether	7.52	73	214315	18.6795 ug/L	96
23) trans-1,2-Dichloroethene	7.75	96	76897	15.6317 ug/L	93
24) n-Hexane	7.82	57	104395	12.7415 ug/L	98
25) Diisopropyl ether	8.15	45	1823373	89.1856 ug/L	97
26) Vinyl Acetate	8.31	43	82525	12.3252 ug/L	98
27) 1,1-Dichloroethane	8.34	63	156858	15.8915 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1486876	89.3543 ug/L	97
29) 2-Butanone	8.87	43	30190	17.3211 ug/L	92
30) Propionitrile	8.98	54	45375	88.8844 ug/L	99
31) 2,2-Dichloropropane	9.09	77	129310	16.7440 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	102485	18.8948 ug/L	87
33) Chloroform	9.35	83	172538	17.8001 ug/L	99
34) 1-Bromopropane	9.48	122	23188	24.3929 ug/L	96
35) Bromochloromethane	9.57	130	64466	20.0127 ug/L	85
36) Tetrahydrofuran	9.60	42	90443	73.4837 ug/L	90
38) 1,1,1-Trichloroethane	9.85	97	163000	17.0882 ug/L	97
39) Cyclohexane	9.88	56	162076	15.5910 ug/L	95
40) 1,1-Dichloropropene	10.04	75	113575	16.6759 ug/L	99
41) Carbon Tetrachloride	10.18	117	161700	17.3601 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1157324	100.0910 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13081.D 8260WT.M Tue Jul 05 20:09:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13081.D Vial: 6
Acq On : 5 Jul 2016 19:47 Operator: JDS
Sample : WG575199-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 20:09:12 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	139210	17.6828 ug/L	97
45) Benzene	10.38	78	327011	17.5391 ug/L	100
46) Trichloroethene	11.09	130	124940	20.6164 ug/L	97
47) Methylcyclohexane	11.17	83	129576	17.3251 ug/L	94
48) 1,2-Dichloropropane	11.29	63	98003	18.9888 ug/L	99
49) 1,4-Dioxane	11.56	88	4293	153.6995 ug/L	93
50) Bromodichloromethane	11.58	83	141356	19.5098 ug/L	99
51) Dibromomethane	11.66	93	48416	18.0020 ug/L	91
52) 2-Chloroethyl Vinyl Ether	11.84	63	43754	17.2010 ug/L	95
53) 4-Methyl-2-Pentanone	11.87	58	26172	18.2422 ug/L	96
54) cis-1,3-Dichloropropene	12.17	75	152721	21.0740 ug/L	99
55) Dimethyl Disulfide	12.42	79	79762	18.2904 ug/L	86
58) Toluene	12.56	91	416905	19.5632 ug/L	99
59) Ethyl Methacrylate	12.65	69	89611	19.6928 ug/L	81
60) trans-1,3-Dichloropropene	12.73	75	130874	19.1328 ug/L	96
61) 1,1,2-Trichloroethane	12.94	97	77302	20.4564 ug/L	98
62) 2-Hexanone	12.86	43	44868	16.1666 ug/L	96
63) 1,3-Dichloropropane	13.21	76	124753	20.5579 ug/L	86
64) Tetrachloroethene	13.34	164	97379	19.6497 ug/L	97
65) Dibromochloromethane	13.59	129	123036	21.3462 ug/L	98
66) 1,2-Dibromoethane	13.82	107	77090	20.3617 ug/L	98
67) 1-Chlorohexane	13.89	91	134106	19.0871 ug/L	88
68) Chlorobenzene	14.29	112	329746	21.1218 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	134990	21.3694 ug/L	100
70) Ethylbenzene	14.31	106	159392	19.9106 ug/L	98
71) m-,p-Xylene	14.39	106	402286	41.3356 ug/L	98
72) o-Xylene	14.92	106	200275	21.1453 ug/L	95
73) Styrene	14.95	104	336945	21.5322 ug/L	95
74) Bromoform	15.43	173	71332	20.4192 ug/L	99
75) Isopropylbenzene	15.31	105	528646	21.1056 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.51	83	74522	19.0696 ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	29529	20.3567 ug/L	81
80) trans-1,4-Dichloro-2-Buten	15.74	53	17694	9.9975 ug/L #	1
81) n-Propylbenzene	15.79	91	609142	20.9597 ug/L	98
82) Bromobenzene	15.92	156	159575	20.9247 ug/L	88
83) 1,3,5-Trimethylbenzene	15.95	105	459994	20.7412 ug/L	98
84) 2-Chlorotoluene	16.05	91	424313	20.8447 ug/L	97
85) 4-Chlorotoluene	16.09	91	374404	20.5333 ug/L	97
86) a-Methylstyrene	16.34	118	255080	21.8022 ug/L	96
87) tert-Butylbenzene	16.39	134	107044	22.7820 ug/L	86
88) 1,2,4-Trimethylbenzene	16.44	105	470116	20.8168 ug/L	98
89) sec-Butylbenzene	16.65	105	560911	21.0633 ug/L	99
90) p-Isopropyltoluene	16.79	119	512984	20.9725 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	312636	21.2261 ug/L	97
92) 1,4-Dichlorobenzene	17.10	146	318443	21.3298 ug/L	99
93) n-Butylbenzene	17.28	91	424537	19.6968 ug/L	97
94) 1,2-Dichlorobenzene	17.57	146	287798	21.4498 ug/L	98
95) 1,2-Dibromo-3-Chloropropan	18.49	75	15410	17.9096 ug/L	92
96) 1,2,4-Trichlorobenzene	19.55	180	200754	20.4477 ug/L	99
97) Hexachlorobutadiene	19.69	225	80845	18.6915 ug/L	97
98) Naphthalene	19.89	128	330356	18.1283 ug/L	99
99) 1,2,3-Trichlorobenzene	20.19	180	179442	19.9147 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13081.D Vial: 6
Acq On : 5 Jul 2016 19:47 Operator: JDS
Sample : WG575199-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 5 20:09 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

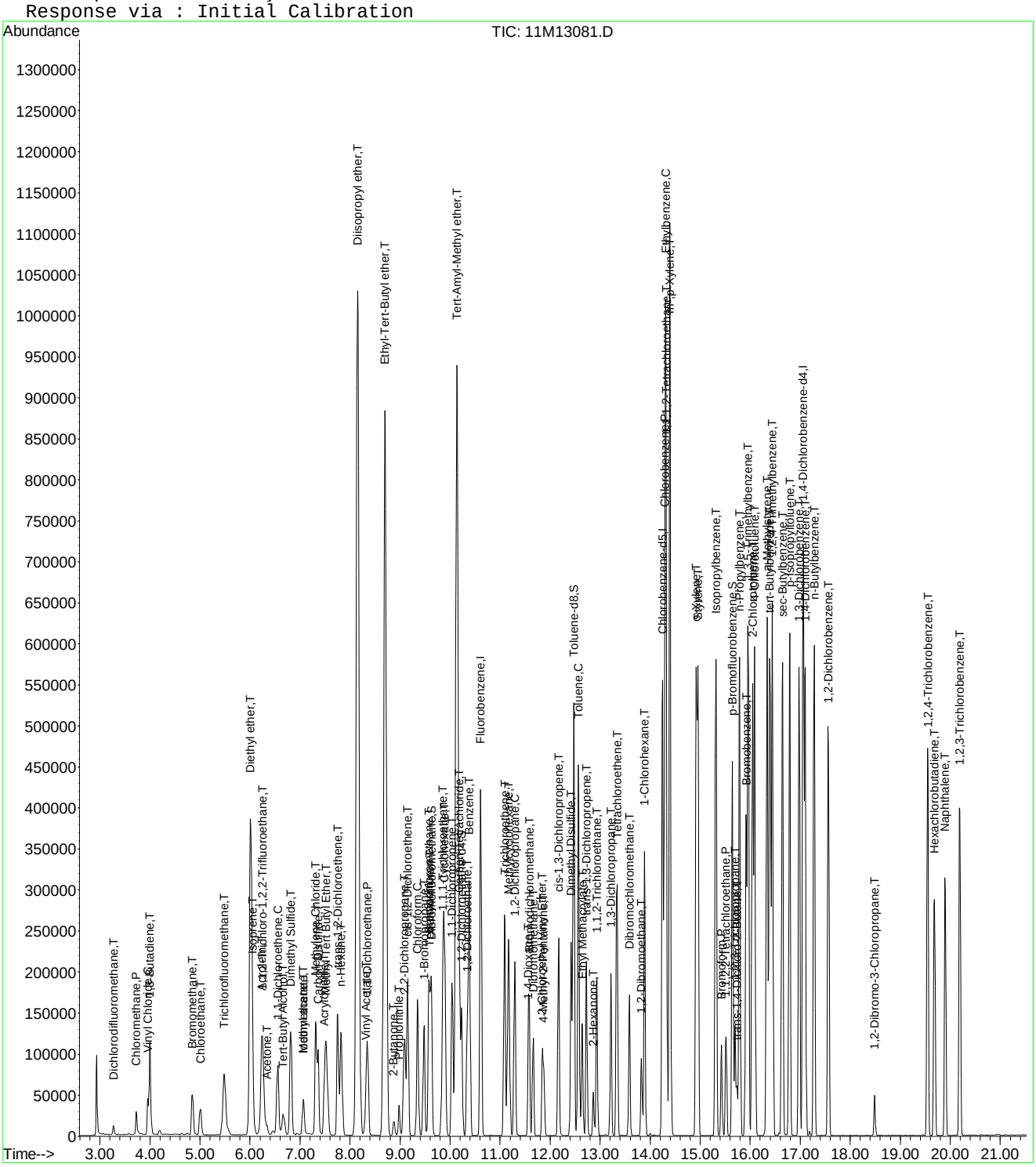

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140392.D Vial: 5
Acq On : 3 Jul 2016 12:05 Operator: TMB
Sample : WG575092-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 08:18:14 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	566229	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	407645	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	233201	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	147416	25.6613 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.64%		
43) 1,2-Dichloroethane-d4	10.31	65	186675	25.7411 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.96%		
58) Toluene-d8	13.04	98	502709	25.0432 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.16%		
80) p-Bromofluorobenzene	17.02	95	220154	24.1053 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	136981	14.4719 ug/L	98
3) Chloromethane	3.37	50	173326	16.4014 ug/L	100
4) Vinyl Chloride	3.56	62	124429	21.4410 ug/L	99
5) 1,3-Butadiene	3.59	54	63408	16.8899 ug/L	95
6) Bromomethane	4.39	94	71120	18.4420 ug/L	99
7) Chloroethane	4.53	64	82007	22.3640 ug/L	93
8) Trichlorofluoromethane	5.00	101	187634	21.1990 ug/L	99
9) Diethyl ether	5.55	59	497120	95.1905 ug/L	95
10) Isoprene	5.58	67	182766	23.1365 ug/L	92
11) Acrolein	5.79	56	96961	111.6211 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	116947	21.2361 ug/L	97
13) Acetone	5.90	43	37946	20.9174 ug/L	96
14) 1,1-Dichloroethene	6.11	61	176556	16.5240 ug/L	92
15) Tert-Butyl Alcohol	6.26	59	96611	174.1602 ug/L	98
16) Dimethyl Sulfide	6.39	62	170483	36.5844 ug/L	92
17) Iodomethane	6.65	142	98172	25.8093 ug/L	87
18) Methyl acetate	6.69	43	110425	22.4948 ug/L	97
19) Methylene Chloride	6.94	84	113454	18.5164 ug/L	86
20) Carbon Disulfide	6.96	76	368568	18.8248 ug/L	100
21) Acrylonitrile	7.15	53	45805	20.3358 ug/L	97
22) Methyl Tert Butyl Ether	7.18	73	340405	20.9593 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	104347	18.2346 ug/L	84
24) n-Hexane	7.51	57	190666	19.6320 ug/L	96
25) Diisopropyl ether	7.89	45	2716251	103.9105 ug/L	98
26) Vinyl Acetate	8.09	43	215809	19.7768 ug/L	96
27) 1,1-Dichloroethane	8.10	63	231975	18.8282 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2034301	96.7342 ug/L	98
29) 2-Butanone	8.73	43	58040	20.9004 ug/L	92
30) Propionitrile	8.85	54	74842	99.3098 ug/L	98
31) 2,2-Dichloropropane	8.96	77	187126	20.1315 ug/L	97
32) cis-1,2-Dichloroethene	9.03	96	126761	20.2364 ug/L	70
33) Chloroform	9.26	83	224531	20.3424 ug/L	99
34) 1-Bromopropane	9.42	122	25786	26.2698 ug/L	100
35) Bromochloromethane	9.52	130	67708	20.1144 ug/L	100
36) Tetrahydrofuran	9.56	42	172642	89.1317 ug/L	93
38) 1,1,1-Trichloroethane	9.85	97	202522	21.0753 ug/L	99
39) Cyclohexane	9.87	56	247850	19.8247 ug/L	95
40) 1,1-Dichloropropene	10.08	75	159676	19.0775 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1638898	102.6316 ug/L	97
42) Carbon Tetrachloride	10.23	117	175269	22.2131 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140392.D 8260WTR.M Tue Jul 05 08:18:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140392.D Vial: 5
Acq On : 3 Jul 2016 12:05 Operator: TMB
Sample : WG575092-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 08:18:14 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	191988	21.6944 ug/L	96
46)	Benzene	10.48	78	467883	19.8066 ug/L	95
47)	Trichloroethene	11.35	130	119707	20.5360 ug/L	88
48)	Methylcyclohexane	11.43	83	187911	20.5336 ug/L	95
49)	1,2-Dichloropropane	11.59	63	141715	20.8318 ug/L	95
50)	1,4-Dioxane	11.94	88	5737	124.5769 ug/L	92
51)	Bromodichloromethane	11.94	83	179423	21.8585 ug/L	99
52)	Dibromomethane	12.03	93	69034	20.9741 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.32	63	66100	19.3798 ug/L	97
54)	4-Methyl-2-Pentanone	12.35	58	41666	19.8492 ug/L	97
55)	cis-1,3-Dichloropropene	12.68	75	219975	23.0824 ug/L	98
56)	Dimethyl Disulfide	12.97	79	110093	20.7524 ug/L	100
59)	Toluene	13.15	91	498180	20.5053 ug/L	100
60)	Ethyl Methacrylate	13.32	69	141955	20.5369 ug/L	93
62)	trans-1,3-Dichloropropene	13.39	75	192321	22.2621 ug/L	94
63)	1,1,2-Trichloroethane	13.62	97	99624	22.1579 ug/L	98
64)	2-Hexanone	13.58	43	82470	19.3186 ug/L	95
65)	1,3-Dichloropropane	13.99	76	189369	22.3478 ug/L	91
66)	Tetrachloroethene	14.10	166	119545	20.6482 ug/L	93
67)	Dibromochloromethane	14.41	129	124595	22.8243 ug/L	98
68)	1,2-Dibromoethane	14.70	107	93736	21.5989 ug/L	100
69)	1-Chlorohexane	14.85	91	163813	20.2605 ug/L	88
70)	Chlorobenzene	15.30	112	339686	21.8002 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	129188	23.3012 ug/L	96
72)	Ethylbenzene	15.35	106	178776	21.9199 ug/L	92
73)	m-,p-Xylene	15.45	106	440192	44.6579 ug/L	93
74)	o-Xylene	16.11	106	224323	22.8183 ug/L	92
75)	Styrene	16.15	104	378051	22.8579 ug/L	92
76)	Bromoform	16.71	173	73900	21.8308 ug/L	98
77)	Isopropylbenzene	16.62	105	585549	22.8283 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	127315	22.4948 ug/L	99
81)	1,2,3-Trichloropropane	17.10	110	38297	22.8232 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	17.18	53	39354	18.3910 ug/L	98
83)	n-Propylbenzene	17.22	91	737016	21.9958 ug/L	98
84)	Bromobenzene	17.34	156	144861	20.6908 ug/L	88
85)	1,3,5-Trimethylbenzene	17.44	105	515299	21.9412 ug/L	96
86)	2-Chlorotoluene	17.52	91	501970	22.1516 ug/L	96
87)	4-Chlorotoluene	17.58	91	459790	21.2832 ug/L	95
88)	a-Methylstyrene	17.92	118	267297	22.6286 ug/L	95
89)	tert-Butylbenzene	17.98	134	106439	22.5578 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	528083	21.9124 ug/L	99
91)	sec-Butylbenzene	18.30	105	628616	22.3600 ug/L	98
92)	p-Isopropyltoluene	18.50	119	534222	22.2977 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	306228	22.2226 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	310625	22.2959 ug/L	94
95)	n-Butylbenzene	19.12	91	517162	22.0112 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	294097	22.7321 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.62	75	25333	22.8543 ug/L	84
98)	1,2,4-Trichlorobenzene	21.95	180	197738	21.6224 ug/L	99
99)	Hexachlorobutadiene	22.15	225	86747	22.8148 ug/L	99
100)	Naphthalene	22.38	128	360426	19.2850 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	177748	20.9912 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140392.D Vial: 5
Acq On : 3 Jul 2016 12:05 Operator: TMB
Sample : WG575092-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 5 8:18 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

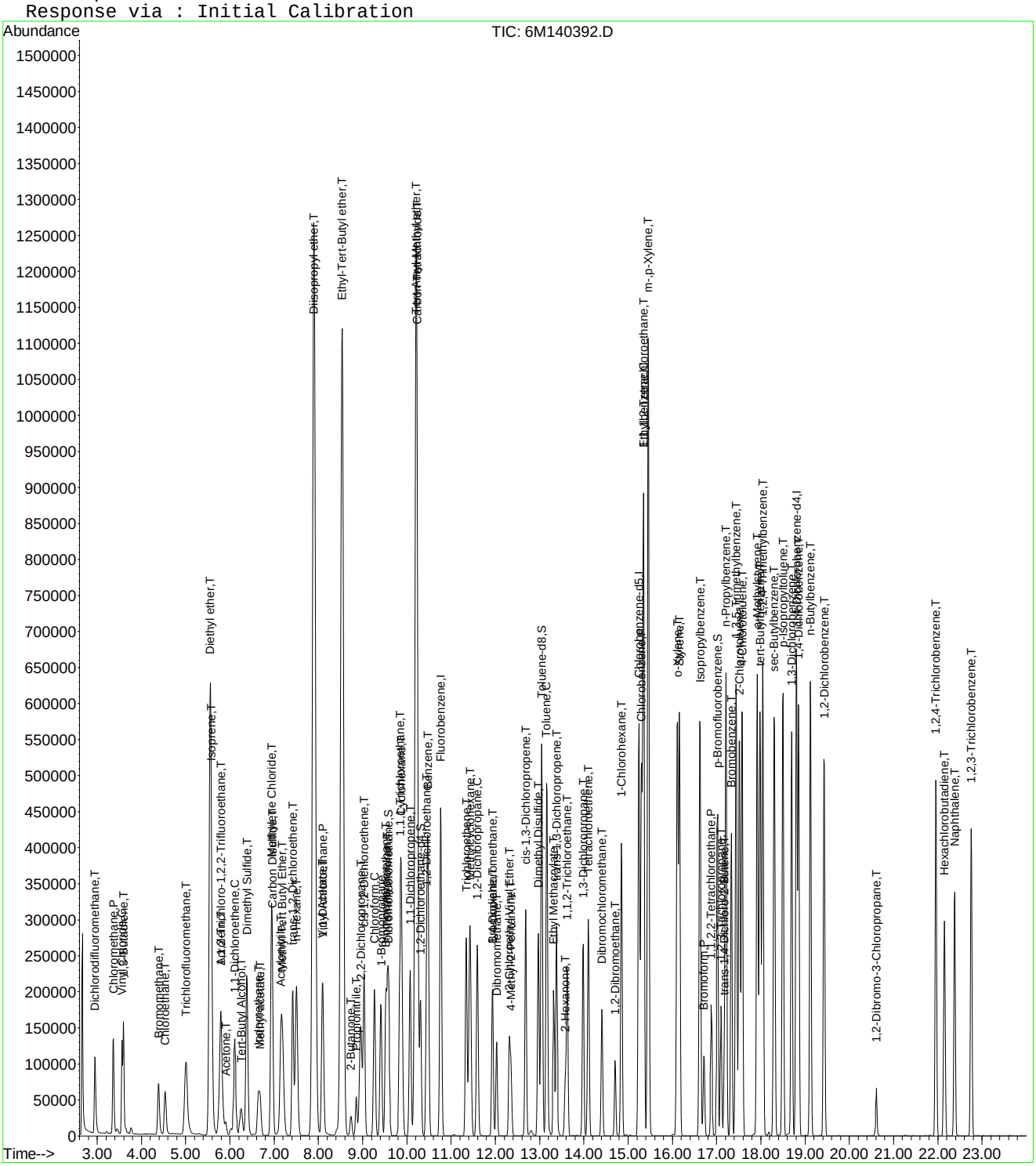

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070216\11M13063.D Vial: 23
Acq On : 3 Jul 2016 1:16 Operator: TMB
Sample : WG575086-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 03 01:38:35 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	486638	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.24	117	412869	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	246042	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	132381	24.8563 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.44%		
43) 1,2-Dichloroethane-d4	10.23	65	131981	21.7337 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.92%		
57) Toluene-d8	12.47	98	452079	25.2007 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.80%		
78) p-Bromofluorobenzene	15.63	95	173718	22.9044 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.60%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	78481	10.2930 ug/L	94
3) Chloromethane	3.72	50	76883	12.5902 ug/L	100
4) Vinyl Chloride	3.96	62	86137	16.9855 ug/L #	13
5) 1,3-Butadiene	3.99	54	63447	12.5823 ug/L	99
6) Bromomethane	4.85	94	48606	13.9402 ug/L	98
7) Chloroethane	5.00	64	61975	19.0204 ug/L	97
8) Trichlorofluoromethane	5.48	101	169352	16.7545 ug/L	99
9) Diethyl ether	6.01	59	314199	84.0503 ug/L	92
10) Isoprene	6.04	67	108128	17.3555 ug/L	91
11) Acrolein	6.24	56	44398	89.1197 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.24	101	93985	19.1624 ug/L	93
13) Acetone	6.34	43	20823	18.0200 ug/L	94
14) 1,1-Dichloroethene	6.56	61	134532	15.1011 ug/L	96
15) Tert-Butyl Alcohol	6.66	59	56467	176.6635 ug/L	95
16) Dimethyl Sulfide	6.81	62	108078	30.3777 ug/L	85
17) Iodomethane	7.06	142	88846	23.1106 ug/L	93
18) Methyl acetate	7.06	43	56169	14.7072 ug/L	93
19) Methylene Chloride	7.31	84	84954	18.4258 ug/L	79
20) Carbon Disulfide	7.36	76	232816	15.6101 ug/L	99
21) Acrylonitrile	7.49	53	28476	18.3795 ug/L	94
22) Methyl Tert Butyl Ether	7.53	73	215908	18.7753 ug/L	95
23) trans-1,2-Dichloroethene	7.74	96	88779	18.0059 ug/L	92
24) n-Hexane	7.82	57	105878	12.8930 ug/L	99
25) Diisopropyl ether	8.15	45	1735484	84.6929 ug/L	98
26) Vinyl Acetate	8.31	43	45127	7.8298 ug/L	99
27) 1,1-Dichloroethane	8.34	63	170341	17.2181 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1423965	85.3783 ug/L	97
29) 2-Butanone	8.87	43	28925	16.5575 ug/L	94
30) Propionitrile	8.98	54	44326	86.6313 ug/L	97
31) 2,2-Dichloropropane	9.09	77	106533	13.7631 ug/L	98
32) cis-1,2-Dichloroethene	9.15	96	105721	19.4469 ug/L	87
33) Chloroform	9.35	83	179187	18.4438 ug/L	99
34) 1-Bromopropane	9.48	122	24635	25.8181 ug/L	98
35) Bromochloromethane	9.57	130	68209	21.1263 ug/L	82
36) Tetrahydrofuran	9.60	42	90341	73.2333 ug/L	90
38) 1,1,1-Trichloroethane	9.85	97	178324	18.6521 ug/L	96
39) Cyclohexane	9.88	56	170596	16.3731 ug/L	93
40) 1,1-Dichloropropene	10.04	75	121023	17.7289 ug/L	98
41) Carbon Tetrachloride	10.17	117	174776	18.7211 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1119265	96.5784 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M13063.D 8260WT.M Sun Jul 03 01:38:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070216\11M13063.D Vial: 23
Acq On : 3 Jul 2016 1:16 Operator: TMB
Sample : WG575086-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 03 01:38:35 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	143600	18.1988 ug/L	96
45)	Benzene	10.38	78	347339	18.5868 ug/L	99
46)	Trichloroethene	11.08	130	140889	23.1951 ug/L	97
47)	Methylcyclohexane	11.17	83	134251	17.9092 ug/L	93
48)	1,2-Dichloropropane	11.29	63	98672	19.0747 ug/L	98
49)	1,4-Dioxane	11.56	88	4990	174.5274 ug/L	89
50)	Bromodichloromethane	11.57	83	142252	19.5886 ug/L	99
51)	Dibromomethane	11.65	93	49807	18.4769 ug/L	94
52)	2-Chloroethyl Vinyl Ether	11.84	63	42494	16.6675 ug/L	98
53)	4-Methyl-2-Pentanone	11.87	58	25177	17.5087 ug/L	93
54)	cis-1,3-Dichloropropene	12.17	75	149814	20.6257 ug/L	99
55)	Dimethyl Disulfide	12.42	79	78004	17.8465 ug/L	91
58)	Toluene	12.56	91	426358	20.3989 ug/L	100
59)	Ethyl Methacrylate	12.64	69	88933	19.9268 ug/L	81
60)	trans-1,3-Dichloropropene	12.73	75	124905	18.6180 ug/L	97
61)	1,1,2-Trichloroethane	12.92	97	75368	20.3354 ug/L	98
62)	2-Hexanone	12.86	43	43044	15.8133 ug/L	91
63)	1,3-Dichloropropane	13.21	76	125642	21.1102 ug/L	85
64)	Tetrachloroethene	13.33	164	100685	20.7150 ug/L	95
65)	Dibromochloromethane	13.59	129	120513	21.3182 ug/L	99
66)	1,2-Dibromoethane	13.82	107	77821	20.9576 ug/L	98
67)	1-Chlorohexane	13.89	91	131180	19.0365 ug/L	89
68)	Chlorobenzene	14.29	112	330759	21.6019 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	132537	21.3923 ug/L	100
70)	Ethylbenzene	14.31	106	163743	20.8550 ug/L	97
71)	m-,p-Xylene	14.39	106	403537	42.2767 ug/L	97
72)	o-Xylene	14.92	106	198416	21.3595 ug/L	99
73)	Styrene	14.95	104	333825	21.7509 ug/L	95
74)	Bromoform	15.43	173	69918	20.4067 ug/L	98
75)	Isopropylbenzene	15.31	105	524327	21.3434 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.51	83	67103	17.5136 ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	29249	20.5621 ug/L	83
80)	trans-1,4-Dichloro-2-Buten	15.73	53	16069	9.3152 ug/L #	1
81)	n-Propylbenzene	15.78	91	609362	21.3854 ug/L	98
82)	Bromobenzene	15.91	156	157279	21.0350 ug/L	89
83)	1,3,5-Trimethylbenzene	15.95	105	459865	21.1489 ug/L	98
84)	2-Chlorotoluene	16.05	91	437875	21.9399 ug/L	97
85)	4-Chlorotoluene	16.09	91	352145	19.6977 ug/L	96
86)	a-Methylstyrene	16.34	118	252155	21.9820 ug/L	95
87)	tert-Butylbenzene	16.39	134	101670	22.0698 ug/L	92
88)	1,2,4-Trimethylbenzene	16.44	105	466529	21.0699 ug/L	99
89)	sec-Butylbenzene	16.64	105	549628	21.0512 ug/L	99
90)	p-Isopropyltoluene	16.78	119	507959	21.1812 ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	310568	21.5062 ug/L	97
92)	1,4-Dichlorobenzene	17.10	146	313824	21.4396 ug/L	99
93)	n-Butylbenzene	17.28	91	405939	19.2095 ug/L	97
94)	1,2-Dichlorobenzene	17.56	146	288184	21.9070 ug/L	97
95)	1,2-Dibromo-3-Chloropropan	18.49	75	15136	17.9409 ug/L	97
96)	1,2,4-Trichlorobenzene	19.54	180	192557	20.0040 ug/L	99
97)	Hexachlorobutadiene	19.69	225	77645	18.3096 ug/L	96
98)	Naphthalene	19.89	128	325534	18.2199 ug/L	99
99)	1,2,3-Trichlorobenzene	20.18	180	178308	20.1836 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13063.D 8260WT.M Sun Jul 03 01:38:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070216\11M13063.D Vial: 23
Acq On : 3 Jul 2016 1:16 Operator: TMB
Sample : WG575086-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 3 1:38 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

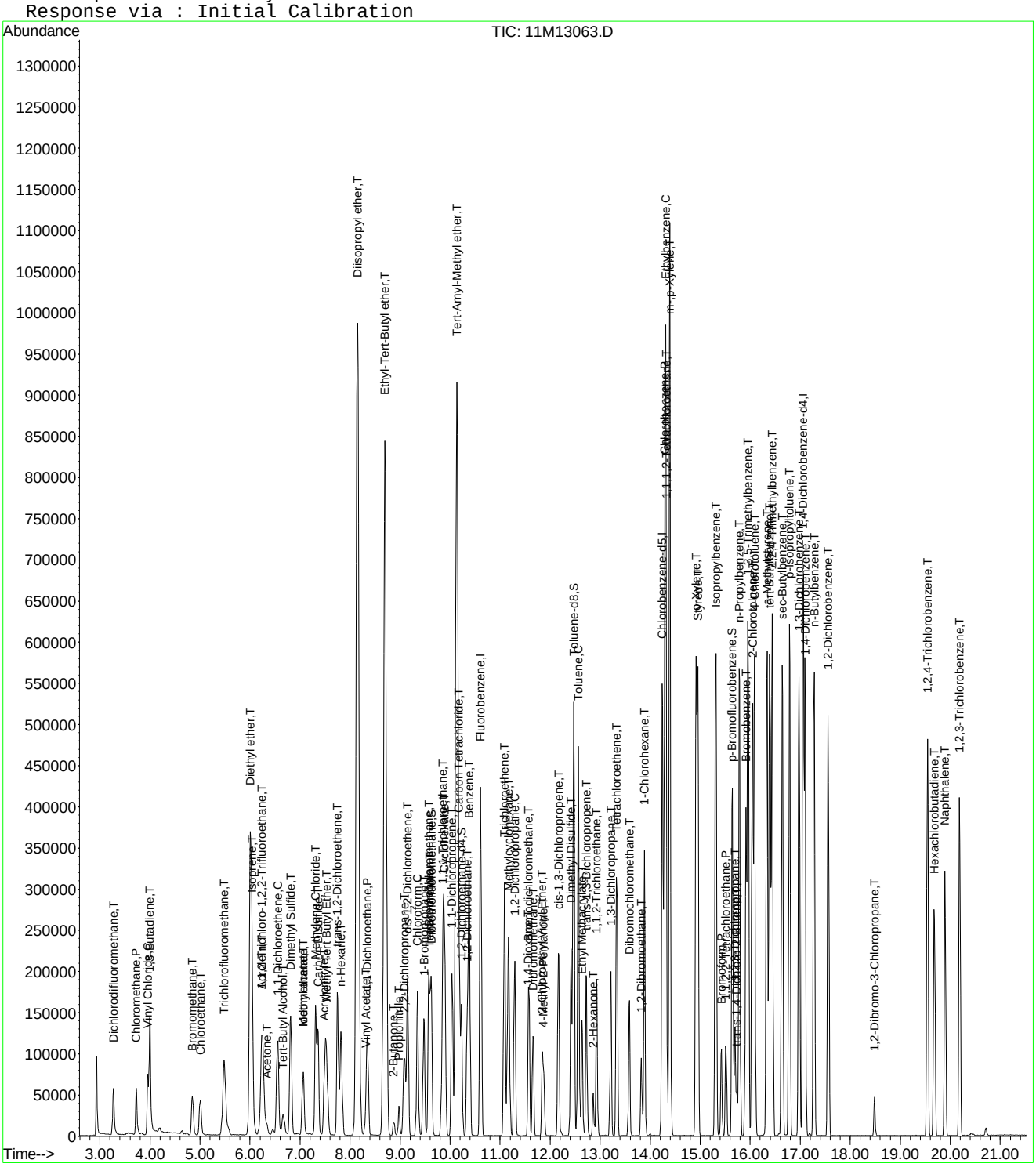

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13082.D Vial: 7
Acq On : 5 Jul 2016 20:19 Operator: JDS
Sample : WG575199-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 20:41:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	499574	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	435197	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	257746	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	133896	24.4898 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.24	65	132952	21.3266 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.32%		
57) Toluene-d8	12.47	98	460639	24.3604 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.44%		
78) p-Bromofluorobenzene	15.64	95	177047	22.2833 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 89.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	16441	2.1004 ug/L	91
3) Chloromethane	3.72	50	38761	6.1831 ug/L	99
4) Vinyl Chloride	3.95	62	50973	9.7912 ug/L	99
5) 1,3-Butadiene	3.99	54	54702	10.5672 ug/L	98
6) Bromomethane	4.85	94	47616	13.3026 ug/L	100
7) Chloroethane	5.00	64	48422	14.4761 ug/L	99
8) Trichlorofluoromethane	5.48	101	142912	13.7726 ug/L	100
9) Diethyl ether	6.01	59	346761	90.3589 ug/L	91
10) Isoprene	6.04	67	91920	14.3719 ug/L	89
11) Acrolein	6.24	56	52005	101.4736 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	84842	16.8503 ug/L	96
13) Acetone	6.34	43	18744	15.8009 ug/L	87
14) 1,1-Dichloroethene	6.56	61	99965	10.9304 ug/L	95
15) Tert-Butyl Alcohol	6.66	59	56349	171.7293 ug/L	95
16) Dimethyl Sulfide	6.81	62	96196	26.3379 ug/L	85
17) Iodomethane	7.06	142	59265	15.8001 ug/L	91
18) Methyl acetate	7.07	43	54456	13.8222 ug/L	95
19) Methylene Chloride	7.31	84	75472	15.9454 ug/L	80
20) Carbon Disulfide	7.36	76	187108	12.2206 ug/L	100
21) Acrylonitrile	7.50	53	26454	16.6323 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	210169	17.8030 ug/L	95
23) trans-1,2-Dichloroethene	7.75	96	77946	15.3995 ug/L	92
24) n-Hexane	7.82	57	105297	12.4902 ug/L	97
25) Diisopropyl ether	8.15	45	1837066	87.3288 ug/L	98
26) Vinyl Acetate	8.31	43	73482	10.9935 ug/L	98
27) 1,1-Dichloroethane	8.34	63	160354	15.7889 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	1490520	87.0547 ug/L	98
29) 2-Butanone	8.87	43	28830	16.0758 ug/L	93
30) Propionitrile	8.97	54	46405	88.3461 ug/L	99
31) 2,2-Dichloropropane	9.09	77	127067	15.9909 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	99878	17.8964 ug/L	91
33) Chloroform	9.35	83	174018	17.4480 ug/L	99
34) 1-Bromopropane	9.48	122	23460	23.9956 ug/L	99
35) Bromochloromethane	9.57	130	64818	19.5562 ug/L	85
36) Tetrahydrofuran	9.60	42	91952	72.6091 ug/L	90
38) 1,1,1-Trichloroethane	9.85	97	165597	16.8724 ug/L	97
39) Cyclohexane	9.88	56	161922	15.1382 ug/L	93
40) 1,1-Dichloropropene	10.04	75	114691	16.3663 ug/L	98
41) Carbon Tetrachloride	10.17	117	161998	16.9031 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	1149931	96.6552 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13082.D 8260WT.M Tue Jul 05 20:41:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13082.D Vial: 7
Acq On : 5 Jul 2016 20:19 Operator: JDS
Sample : WG575199-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 20:41:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	140231	17.3117 ug/L	97
45) Benzene	10.38	78	329594	17.1806 ug/L	100
46) Trichloroethene	11.09	130	129142	20.7106 ug/L	96
47) Methylcyclohexane	11.17	83	136280	17.7091 ug/L	92
48) 1,2-Dichloropropane	11.29	63	97074	18.2799 ug/L	98
49) 1,4-Dioxane	11.56	88	5277	179.0847 ug/L	87
50) Bromodichloromethane	11.57	83	141358	18.9615 ug/L	99
51) Dibromomethane	11.66	93	49416	17.8572 ug/L	94
52) 2-Chloroethyl Vinyl Ether	11.84	63	45259	17.2924 ug/L	99
53) 4-Methyl-2-Pentanone	11.87	58	25341	17.1664 ug/L	97
54) cis-1,3-Dichloropropene	12.17	75	153263	20.5542 ug/L	99
55) Dimethyl Disulfide	12.42	79	79868	17.7998 ug/L	87
58) Toluene	12.56	91	419026	19.0195 ug/L	100
59) Ethyl Methacrylate	12.64	69	87618	18.6249 ug/L	83
60) trans-1,3-Dichloropropene	12.73	75	130070	18.3932 ug/L	95
61) 1,1,2-Trichloroethane	12.94	97	77080	19.7303 ug/L	98
62) 2-Hexanone	12.86	43	42951	14.9696 ug/L	90
63) 1,3-Dichloropropane	13.21	76	128843	20.5373 ug/L	83
64) Tetrachloroethene	13.34	164	99929	19.5046 ug/L	96
65) Dibromochloromethane	13.59	129	121633	20.4125 ug/L	99
66) 1,2-Dibromoethane	13.82	107	74524	19.0400 ug/L	100
67) 1-Chlorohexane	13.89	91	134491	18.5157 ug/L	89
68) Chlorobenzene	14.29	112	332854	20.6234 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	136389	20.8846 ug/L	99
70) Ethylbenzene	14.31	106	165999	20.0576 ug/L	96
71) m-,p-Xylene	14.39	106	406553	40.4074 ug/L	98
72) o-Xylene	14.92	106	202548	20.6857 ug/L	96
73) Styrene	14.95	104	338874	20.9470 ug/L	95
74) Bromoform	15.43	173	70042	19.3940 ug/L	100
75) Isopropylbenzene	15.31	105	535530	20.6810 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	71826	17.8950 ug/L	97
79) 1,2,3-Trichloropropane	15.70	110	28697	19.2811 ug/L	86
80) trans-1,4-Dichloro-2-Buten	15.74	53	17321	9.5635 ug/L #	14
81) n-Propylbenzene	15.79	91	618279	20.7130 ug/L	97
82) Bromobenzene	15.91	156	160721	20.5192 ug/L	88
83) 1,3,5-Trimethylbenzene	15.95	105	469315	20.6034 ug/L	98
84) 2-Chlorotoluene	16.05	91	427722	20.4580 ug/L	97
85) 4-Chlorotoluene	16.09	91	378690	20.2207 ug/L	97
86) a-Methylstyrene	16.34	118	256680	21.3604 ug/L	96
87) tert-Butylbenzene	16.39	134	103322	21.4100 ug/L	94
88) 1,2,4-Trimethylbenzene	16.44	105	478753	20.6402 ug/L	99
89) sec-Butylbenzene	16.65	105	563310	20.5955 ug/L	99
90) p-Isopropyltoluene	16.79	119	519522	20.6797 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	316178	20.9005 ug/L	97
92) 1,4-Dichlorobenzene	17.10	146	323650	21.1069 ug/L	98
93) n-Butylbenzene	17.28	91	426283	19.2562 ug/L	98
94) 1,2-Dichlorobenzene	17.57	146	292022	21.1907 ug/L	97
95) 1,2-Dibromo-3-Chloropropan	18.49	75	14581	16.5498 ug/L	89
96) 1,2,4-Trichlorobenzene	19.55	180	204340	20.2641 ug/L	97
97) Hexachlorobutadiene	19.69	225	85684	19.2878 ug/L	96
98) Naphthalene	19.90	128	331784	17.7265 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	184214	19.9052 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M13082.D 8260WT.M Tue Jul 05 20:41:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13082.D Vial: 7
Acq On : 5 Jul 2016 20:19 Operator: JDS
Sample : WG575199-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 5 20:41 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

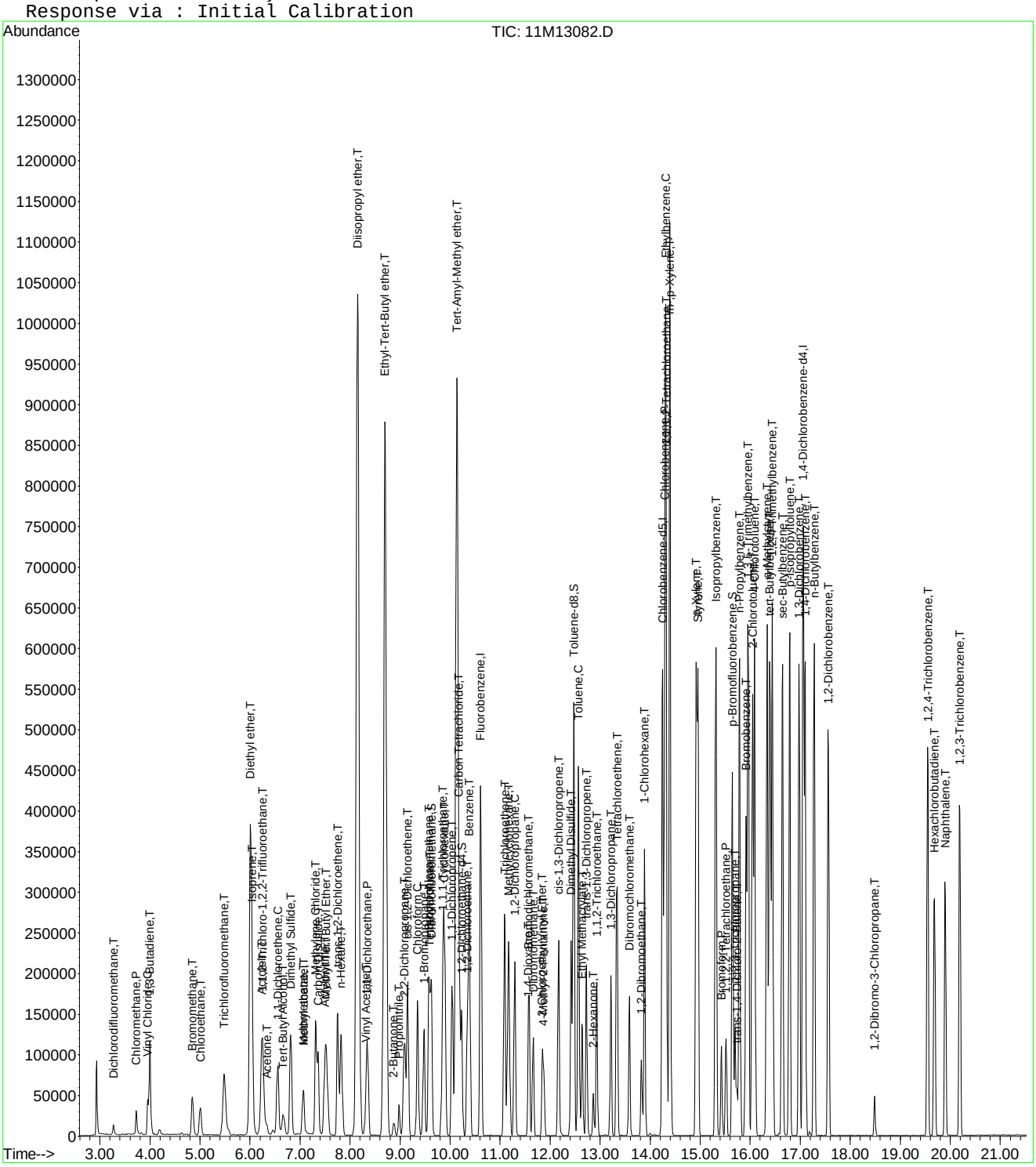

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW16-062116	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 01:14
Collect Date:	06/21/2016 13:20	**Dilution:**	1	**File ID:**	15M18702
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	54.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW16-062116	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/05/2016 17:29
Collect Date:	06/21/2016 14:40	**Dilution:**	5	**File ID:**	15M18724
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	18.0		10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	73.0	20	129	

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	109-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 01:59
Collect Date:	06/22/2016 07:20	**Dilution:**	1	**File ID:**	15M18704
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	85.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW07-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/05/2016 18:37
Collect Date:	06/22/2016 08:30	**Dilution:**	1	**File ID:**	15M18727
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	49.9	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG574286
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/27/2016 14:01
SOP: EXB01 Revison 20
Spike Witness: NPH
Surr Solution: STD76628

TIME ON: 17:30 OFF: 11:35 ON: 16:50 OFF: 10:35

CH2CL2 Lot #: COA18982
Sodium Sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16061289-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
2	L16061289-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
3	L16061289-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
4	L16061289-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
5	L16061290-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
6	L16061290-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
7	L16061290-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
8	L16061290-06	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
9	L16061345-04	RS01		827-DIOX	<2>12	810 mL	.05 mL			1 mL	Colored
10	L16061345-05	MS01	L16061345-04	827-DIOX	<2>12	760 mL	.05 mL	.5 mL	STD75268	1 mL	Colored
11	L16061345-06	SD01	L16061345-04	827-DIOX	<2>12	810 mL	.05 mL	.5 mL	STD75268	1 mL	Colored
12	L16061345-08	SAMP		827-DIOX	<2>12	950 mL	.05 mL			1 mL	Transparent
13	L16061413-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
14	L16061450-04	SAMP		827-DIOX	<2>12	840 mL	.05 mL			1 mL	Colored
15	L16061450-05	SAMP		827-DIOX	<2>12	740 mL	.05 mL			1 mL	Transparent
16	L16061452-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
17	L16061452-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
18	L16061452-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
19	L16061453-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
20	L16061453-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
21	L16061453-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
22	WG574286-01	BLANK		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
23	WG574286-02	LCS		827-DIOXANE	<2>12	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
24	WG574286-03	REF	L16061345-04	827-DIOX	<2>12	810 mL	.05 mL			1 mL	Colored
25	WG574286-04	MS	L16061345-04	827-DIOX	<2>12	760 mL	.05 mL	.5 mL	STD75268	1 mL	Colored
26	WG574286-05	MSD	L16061345-04	827-DIOX	<2>12	810 mL	.05 mL	.5 mL	STD75268	1 mL	Colored

Analyst: Chelsea Davis

Reviewer: Chris Hill

EXTRACT - Modified 01/23/2009
PDF ID: 4831965
Report generated: 06/29/2016 18:18

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

Page: 1 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 063016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG574775

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18666	BAKEOUT	1	1		06/30/16 10:57
2	15M18667	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 11:17
3	15M18668	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 11:34
4	15M18669	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 12:17
5	15M18670	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 12:34
6	15M18671	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 13:23
7	15M18672	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 13:39
8	15M18673	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 14:24
9	15M18674	WG574781-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/30/16 14:42
10	15M18675	WG574543-01 BLANK 6/29	7	1	SOIL	06/30/16 15:04
11	15M18676	WG574543-02 LCS 6/29	7	1	SOIL	06/30/16 15:27
12	15M18677	WG574543-03 LCSDUP 6/29	7	1	SOIL	06/30/16 15:49
13	15M18678	WG574286-01 BLANK 6/27	1	1		06/30/16 16:12
14	15M18679	WG574286-02 LCS 6/27	1	1		06/30/16 16:34
15	15M18680	L16060637-02 RE 827-DIOX	7	1	SOIL	06/30/16 16:57
16	15M18681	L16060756-01 RE 827-DIOX	7	1	SOIL	06/30/16 17:19
17	15M18682	L16060756-02 RE 827-DIOX	7	1	SOIL	06/30/16 17:42
18	15M18683	L16060756-03 RE 827-DIOX	7	1	SOIL	06/30/16 18:05
19	15M18684	L16060809-01 RE 827-DIOX	7	1	SOIL	06/30/16 18:28
20	15M18685	L16060809-02 RE 827-DIOX	7	1	SOIL	06/30/16 18:50
21	15M18686	L16060930-01 RE 827-DIOX	7	1	SOIL	06/30/16 19:13
22	15M18687	L16060930-02 RE 827-DIOX	7	1	SOIL	06/30/16 19:35
23	15M18688	L16061413-01 827-DIOX	1	1		06/30/16 19:58
24	15M18689	L16061213-01 RE 827-DIOX	7	1	SOIL	06/30/16 20:21
25	15M18690	L16061213-02 RE 827-DIOX	7	1	SOIL	06/30/16 20:43
26	15M18691	L16061213-03 RE 827-DIOX	7	1	SOIL	06/30/16 21:06
27	15M18692	L16061213-04 RE 827-DIOX	7	1	SOIL	06/30/16 21:28
28	15M18693	L16061213-05 RE 827-DIOX	7	1	SOIL	06/30/16 21:51
29	15M18694	L16061213-06 RE 827-DIOX	7	1	SOIL	06/30/16 22:13
30	15M18695	L16061450-01 827-DIOX	7	1	SOIL	06/30/16 22:36
31	15M18696	L16061450-02 827-DIOX	7	1	SOIL	06/30/16 22:59
32	15M18697	L16061450-03 827-DIOX	7	1	SOIL	06/30/16 23:22
33	15M18698	L16061289-01 827-DIOX	1	1		06/30/16 23:44

Page: 1 Approved: 06-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 063016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG574775

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18699	L16061289-02 827-DIOX	1	1		07/01/16 00:06
35	15M18700	L16061289-03 827-DIOX	1	1		07/01/16 00:29
36	15M18701	L16061289-05 827-DIOX	1	1		07/01/16 00:51
37	15M18702	L16061290-01 827-DIOX	1	1		07/01/16 01:14
38	15M18703	L16061290-02 827-DIOX	1	1		07/01/16 01:36
39	15M18704	L16061290-05 827-DIOX	1	1		07/01/16 01:59
40	15M18705	BAKEOUT	1	1		07/01/16 02:21
41	15M18706	BAKEOUT	1	1		07/01/16 02:43
42	15M18707	BAKEOUT	1	1		07/01/16 03:06

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	Rerun DFTPP, ion ratio failed.			
3				
	Rerun DFTPP, ion ratio failed. Performed a quicktune.			
4				
	Rerun DFTPP, ion ratio failed. Changed the liner.			
5				
	Rerun DFTPP, ion ratio failed. PCP tailing >2. Changed gold seal and clipped column.			
6				
	Rerun DFTPP, ion ratio failed. Retuned.			
7				
	Rerun DFTPP, ion ratio failed. Retuned.			
31				
	L16061450-02 827-DIOX surrogate recovery is less than 10%. Needs re-extracted.			
33	X	10	Surrogate standard failure	
	L16061289-01 827-DIOX surrogate is high due to SMI.			
38	X	5	Over Calibration Range	
	L16061290-02 827-DIOX			

Page: 2 Approved: 06-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments: File 15M18715 does not exist.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18708	BAKEOUT	1	1		07/05/16 10:31
2	15M18709	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 10:51
3	15M18710	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 11:11
4	15M18711	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 11:33
5	15M18712	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 12:30
6	15M18713	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 12:47
7	15M18714	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 14:14
8	15M18716	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 14:33
9	15M18717	WG575159-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	07/05/16 14:51
10	15M18718	WG574706-01 BLANK 6/30	1	1		07/05/16 15:14
11	15M18719	WG574706-02 LCS 6/30	1	1		07/05/16 15:38
12	15M18720	WG574706-03 LCSDUP 6/30	1	1		07/05/16 16:01
13	15M18721	WG574873-01 BLANK 7/1	7	1	SOIL	07/05/16 16:23
14	15M18722	WG574873-02 LCS 7/1	7	1	SOIL	07/05/16 16:45
15	15M18723	WG574873-03 LCSDUP 7/1	7	1	SOIL	07/05/16 17:07
16	15M18724	L16061290-02 5X 827-DIOX	1	5		07/05/16 17:29
17	15M18725	L16061289-01 10X 827-DIOX	1	10		07/05/16 17:52
18	15M18726	L16061227-01 RE 827-DIOX	1	10		07/05/16 18:15
19	15M18727	L16061290-06 827-DIOX	1	1		07/05/16 18:37
20	15M18728	L16061345-08 827-DIOX	1	1		07/05/16 19:00
21	15M18729	L16061345-04 REF 827-DIOX	1	1		07/05/16 19:23
22	15M18730	L16061345-05 MS 827-DIOX	1	1		07/05/16 19:45
23	15M18731	L16061345-06 MSD 827-DIOX	1	1		07/05/16 20:08
24	15M18732	L16061345-03 RE 827-DIOX	7	1	SOIL	07/05/16 20:31
25	15M18733	L16061345-01 RE 827-DIOX	7	1	SOIL	07/05/16 20:54
26	15M18734	L16061560-01 827-DIOX	1	1		07/05/16 21:16
27	15M18735	L16061648-01 827-DIOX	1	1		07/05/16 21:39
28	15M18736	L16061452-01 827-DIOX	1	1		07/05/16 22:02
29	15M18737	L16061452-02 827-DIOX	1	1		07/05/16 22:24
30	15M18738	L16061452-03 827-DIOX	1	1		07/05/16 22:46
31	15M18739	L16061453-01 827-DIOX	1	1		07/05/16 23:09
32	15M18740	L16061453-02 827-DIOX	1	1		07/05/16 23:32
33	15M18741	L16061453-03 827-DIOX	1	1		07/05/16 23:54

Page: 1 Approved: 11-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18742	L16061450-04 827-DIOX	1	1		07/06/16 00:17
35	15M18743	L16061450-05 827-DIOX	1	1		07/06/16 00:39
36	15M18744	BAKEOUT	1	1		07/06/16 01:02
37	15M18745	BAKEOUT	1	1		07/06/16 01:25
38	15M18746	BAKEOUT	1	1		07/06/16 01:47
39	15M18747	BAKEOUT	1	1		07/06/16 02:10
40	15M18748	BAKEOUT	1	1		07/06/16 02:32
41	15M18749	BAKEOUT	1	1		07/06/16 02:55
42	15M18750	BAKEOUT	1	1		07/06/16 03:17
43	15M18751	BAKEOUT	1	1		07/06/16 03:40
44	15M18752	BAKEOUT	1	1		07/06/16 04:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	Rerun DFTPP, ion ratio fails.			
3				
	Rerun DFTPP, ion ratio fails. Performed a quicktune.			
4				
	Rerun DFTPP, ion ratio fails. Changed the liner.			
5				
	Rerun DFTPP, ion ratio fails. Retuned.			
6				
	Rerun DFTPP, PCP tailing >2.			
7				
	Rerun DFTPP, PCP tailing >2. Clipping the column.			
13				
	WG574873-01 BLANK 7/1 surrogate is low.			
17				
	L16061289-01 10X 827-DIOX confirms high surrogate recovery; DNR. Surrogate is high due to SMI. Sample is not being re-extracted.			
18				
	L16061227-01 RE 827-DIOX surrogate recovery is good; does not confirm original extraction.			
21	X	20	Over Calibration Range	
	L16061345-04 REF			
22				
	L16061345-05 MS 827-DIOX DNR-sample is spiked for 827-SPE-DIOX			

Page: 2 Approved: 11-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
23				
	L16061345-06 MSD 827-DIOX DNR-sample is spiked for 827-SPE-DIOX			
24				
	L16061345-03 RE 827-DIOX confirms low surrogate recovery.			
25				
	L16061345-01 RE 827-DIOX confirms low surrogate recovery.			
26	X	5	Over Calibration Range	
	L16061560-01 827-DIOX			
30	X	2	Over Calibration Range	
	L16061452-03 827-DIOX			
31	X	10	Surrogate standard failure	
	L16061453-01 surrogate high due to SMI. Not re-extracting.			

Page: 3 Approved: 11-JUL-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 76103
Analytical Workgroups: L16060637,0756,0809,0930,1213,1450,1289,1290,1413

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 05-JUL-2016

Secondary Reviewer: 06-JUL-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUL-06-2016 10:46:55

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 76120
Analytical Workgroups: L16061345, 061227, 1560, 1648, 1290, 1450, 1452, 1453

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 06-JUL-2016

Secondary Reviewer: 11-JUL-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUL-11-2016 11:01:30

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG574772

Login Number: L16061290

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW16-062116	01	06/21/16					06/27/2016	6	7		07/01/16	3.5	40	
MW16-062116	02	06/21/16					06/27/2016	6	7		07/05/16	8.1	40	
109-062216	05	06/22/16					06/27/2016	5.3	7		07/01/16	3.5	40	
18CPTMW07-062216	06	06/22/16					06/27/2016	5.2	7		07/05/16	8.2	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4838931
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061290
Instrument Id: HPMS15
Workgroup (AAB#): WG574772

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16061290-01	1.00	01	54.6
L16061290-02	5.00	DL01	73.0
L16061290-05	1.00	01	85.5
L16061290-06	1.00	01	49.9
WG574286-01	1.00	01	43.4
WG574286-02	1.00	01	48.9

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4838939
Report generated: 07/06/2016 11:19

METHOD BLANK SUMMARY

Login Number: L16061290
Blank File ID: 15M18678
Prep Date: 06/27/16 14:01
Analyzed Date: 06/30/16 16:12
Analyst: MES

Work Group: WG574772
Blank Sample ID: WG574286-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574286-02	15M18679	06/30/16 16:34	01
18CPTMW16-062116	L16061290-01	15M18702	07/01/16 01:14	01
109-062216	L16061290-05	15M18704	07/01/16 01:59	01
MW16-062116	L16061290-02	15M18724	07/05/16 17:29	DL01
18CPTMW07-062216	L16061290-06	15M18727	07/05/16 18:37	01

Report Name: BLANK_SUMMARY
PDF File ID: 4840254
Report generated 07/06/2016 10:44

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 06/27/16 14:01 Sample ID: WG574286-01
Instrument ID: HPMS15 Run Date: 06/30/16 16:12 Prep Method: 3520C
File ID: 15M18678 Analyst: MES Method: 8270D
Workgroup (AAB#): WG574772 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	43.4	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4838932
06-JUL-2016 11:19

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Run Date: 06/30/2016 Sample ID: WG574286-02
Instrument ID: HPMS15 Run Time: 16:34 Prep Method: 3520C
File ID: 15M18679 Analyst: MES Method: 8270D
Workgroup (AAB#): WG574772 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75256 Cal ID: HPMS15-21-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,4-Dioxane	5.00	2.78	55.6	30 - 104	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	48.9	20 - 129	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4838933
Report generated: 07/06/2016 11:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061290
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4838936
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061290
Instrument: HPMS15
Analyst: MES
Workgroup: WG574781

Tune ID: WG574781-01
Run Date: 06/30/2016
Run Time: 14:24
File ID: 15M18673
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	44.6	24370	PASS
68.0	69.0	0	2.00	1.41	352	PASS
69.0	198	0	100	45.7	24921	PASS
70.0	69.0	0	2.00	0.959	239	PASS
127	198	40.0	60.0	57.0	31104	PASS
197	198	0	1.00	0.291	159	PASS
198	198	100	100	100	54589	PASS
199	198	5.00	9.00	7.03	3838	PASS
275	198	10.0	30.0	24.8	13523	PASS
365	198	1.00	100	2.78	1520	PASS
441	443	0.0100	100	75.2	5686	PASS
442	198	40.0	100	70.8	38669	PASS
443	442	17.0	23.0	19.5	7559	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574781-02	CCV	01	06/30/2016 14:42	
WG574286-01	BLANK	01	06/30/2016 16:12	
WG574286-02	LCS	01	06/30/2016 16:34	
L16061290-01	18CPTMW16-062116	01	07/01/2016 01:14	
L16061290-05	109-062216	01	07/01/2016 01:59	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4838936
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061290
Instrument: HPMS15
Analyst: MES
Workgroup: WG575159

Tune ID: WG575159-01
Run Date: 07/05/2016
Run Time: 14:33
File ID: 15M18716
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	46.2	37745	PASS
68.0	69.0	0	2.00	1.95	734	PASS
69.0	198	0	100	46.2	37667	PASS
70.0	69.0	0	2.00	0.337	127	PASS
127	198	40.0	60.0	57.5	46941	PASS
197	198	0	1.00	0.380	310	PASS
198	198	100	100	100	81613	PASS
199	198	5.00	9.00	7.55	6162	PASS
275	198	10.0	30.0	24.6	20072	PASS
365	198	1.00	100	2.93	2392	PASS
441	443	0.0100	100	70.8	8479	PASS
442	198	40.0	100	73.3	59805	PASS
443	442	17.0	23.0	20.0	11980	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575159-02	CCV	01	07/05/2016 14:51	
L16061290-02	MW16-062116	DL01	07/05/2016 17:29	
L16061290-06	18CPTMW07-062216	01	07/05/2016 18:37	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4838936
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061290
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4838934
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061290

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4838934
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061290

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4838934
Report generated 07/06/2016 11:19

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061290 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4838935
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 06/30/2016
Sample ID: WG574781-02
Instrument ID: HPMS15
Run Time: 14:42
Method: 8270D
File ID: 15M18674
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG574772
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5210	ug/L	0.319	4.14	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4838937
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/05/2016
Sample ID: WG575159-02
Instrument ID: HPMS15
Run Time: 14:51
Method: 8270D
File ID: 15M18717
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG574772
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5230	ug/L	0.320	4.63	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4838937
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061290
Instrument ID: HPMS15
Workgroup (AAB#): WG574772

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16061290-01	1.00	01	26288
L16061290-02	5.00	DL01	35892
L16061290-05	1.00	01	22255
L16061290-06	1.00	01	34292
WG574286-01	1.00	01	28516
WG574286-02	1.00	01	22815

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4838938
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061290
Instrument ID: HPMS15
Workgroup (AAB#): WG574772

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	6.93
Upper Limit	NA	NA	7.43
Lower Limit	NA	NA	6.43
L16061290-01	1.00	01	6.87
L16061290-02	5.00	DL01	6.866
L16061290-05	1.00	01	6.87
L16061290-06	1.00	01	6.867
WG574286-01	1.00	01	6.87
WG574286-02	1.00	01	6.87

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4840255
Report generated: 07/06/2016 10:44

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18702.D
Acq On : 1 Jul 2016 1:14
Operator : MES
Sample : L16061290-01 827-DIOX
Misc : 1,1
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Jul 05 08:20:16 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	26288	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.770	96	29514	2.7285	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	54.60%	
4) Nitrobenzene-d5	7.377	82	2178	0.0784	ug/L	0.01
Spiked Amount 5.000			Recovery	=	1.60%	
5) 2-Fluorobiphenyl	8.860	172	412	0.0059	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.078	244	501	0.0074	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18702.D
Acq On : 1 Jul 2016 1:14
Operator : MES
Sample : L16061290-01 827-DIOX
Misc : 1,1
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Jul 05 08:20:16 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

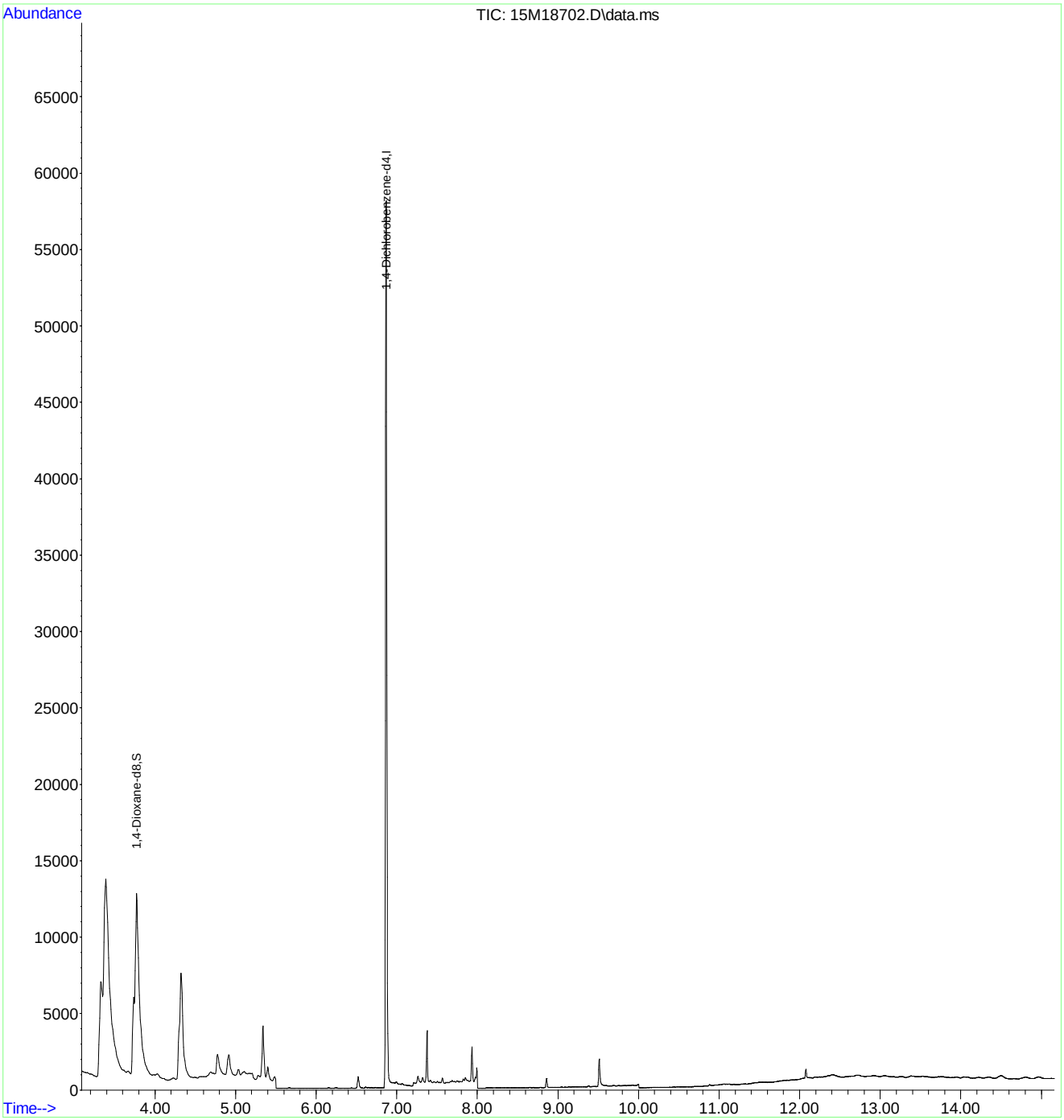

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18724.D
Acq On : 5 Jul 2016 17:29
Operator : MES
Sample : L16061290-02 5X 827-DIOX
Misc : 1,5
ALS Vial : 9 Sample Multiplier: 5

Quant Time: Jul 05 18:16:27 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.866	152	35892	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.686	96	10774	3.6475	ug/L	-0.10
Spiked Amount 5.000			Recovery	=	73.00%	
4) Nitrobenzene-d5	7.372	82	371	0.0489	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.852	172	102	0.0053	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.066	244	9	0.0005	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.813	58	39549	3.6013	ug/L	77

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18724.D
Acq On : 5 Jul 2016 17:29
Operator : MES
Sample : L16061290-02 5X 827-DIOX
Misc : 1,5
ALS Vial : 9 Sample Multiplier: 5

Quant Time: Jul 05 18:16:27 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

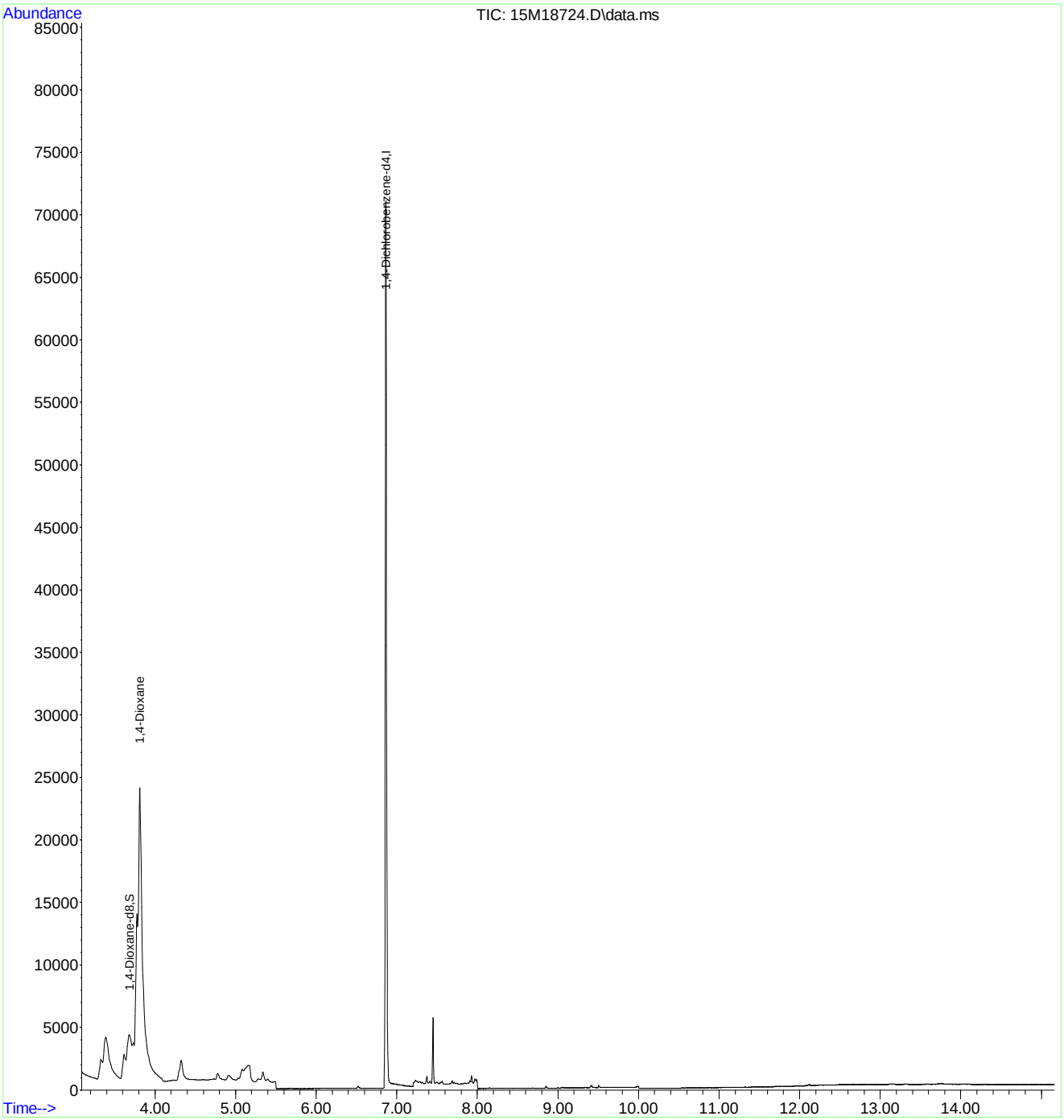

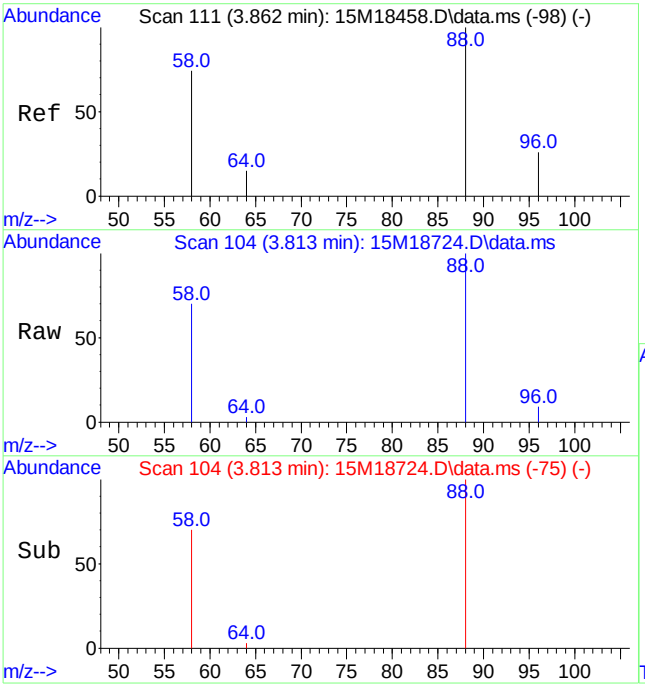

#2
1,4-Dioxane
Concen: 3.60 ug/L
RT: 3.813 min Scan# 104
Delta R.T. -0.007 min
Lab File: 15M18724.D
Acq: 5 Jul 2016 17:29

Tgt Ion: 58 Resp: 39549

Ion	Ratio	Lower	Upper
58	100		
88	140.4	103.1	240.7

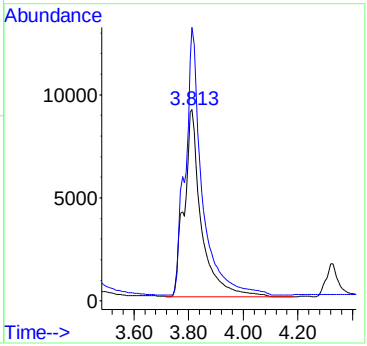

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18704.D
Acq On : 1 Jul 2016 1:59
Operator : MES
Sample : L16061290-05 827-DIOX
Misc : 1,1
ALS Vial : 32 Sample Multiplier: 1

Quant Time: Jul 05 08:20:22 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	22255	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.764	96	39132	4.2732	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	85.40%	
4) Nitrobenzene-d5	7.377	82	1641	0.0698	ug/L	0.01
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.860	172	167	0.0028	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.078	244	312	0.0055	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18704.D
Acq On : 1 Jul 2016 1:59
Operator : MES
Sample : L16061290-05 827-DIOX
Misc : 1,1
ALS Vial : 32 Sample Multiplier: 1

Quant Time: Jul 05 08:20:22 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

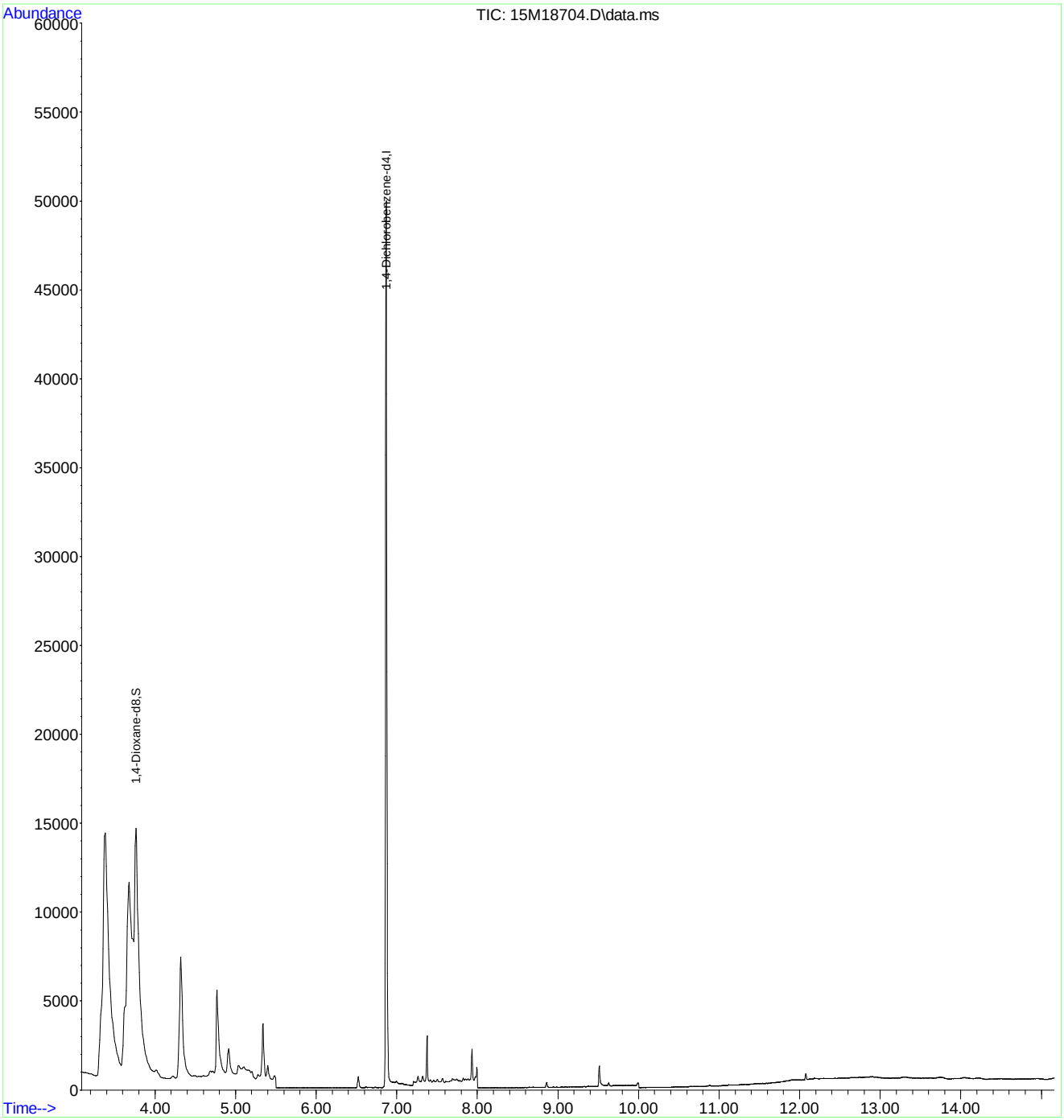

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18727.D
Acq On : 5 Jul 2016 18:37
Operator : MES
Sample : L16061290-06 827-DIOX
Misc : 1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 06 08:13:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.867	152	34292	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.771	96	35233	2.4969	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	50.00%	
4) Nitrobenzene-d5	7.372	82	2589	0.0715	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.853	172	1586	0.0173	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.100	244	277	0.0031	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	4950	0.4718	ug/L	69

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18727.D
Acq On : 5 Jul 2016 18:37
Operator : MES
Sample : L16061290-06 827-DIOX
Misc : 1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 06 08:13:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

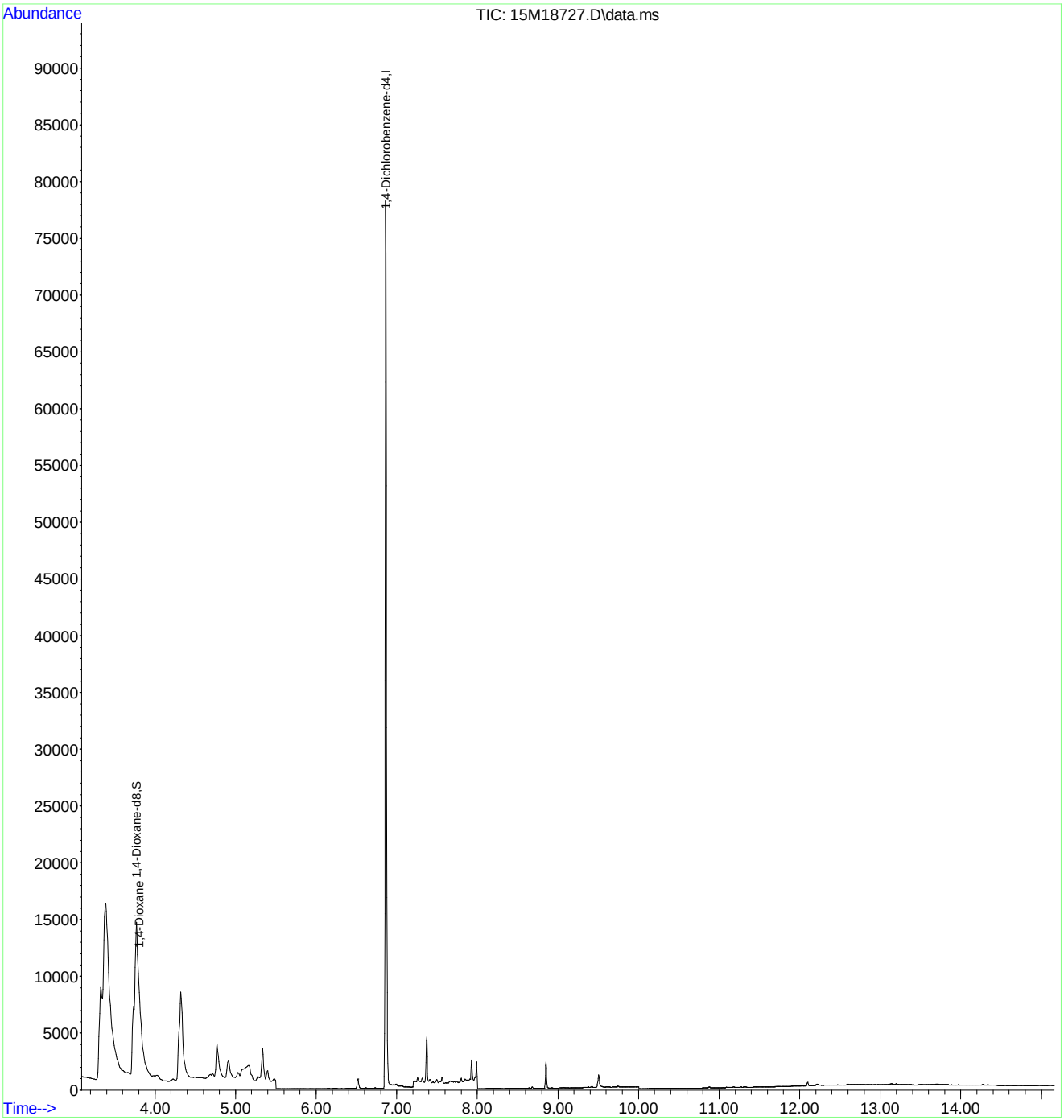

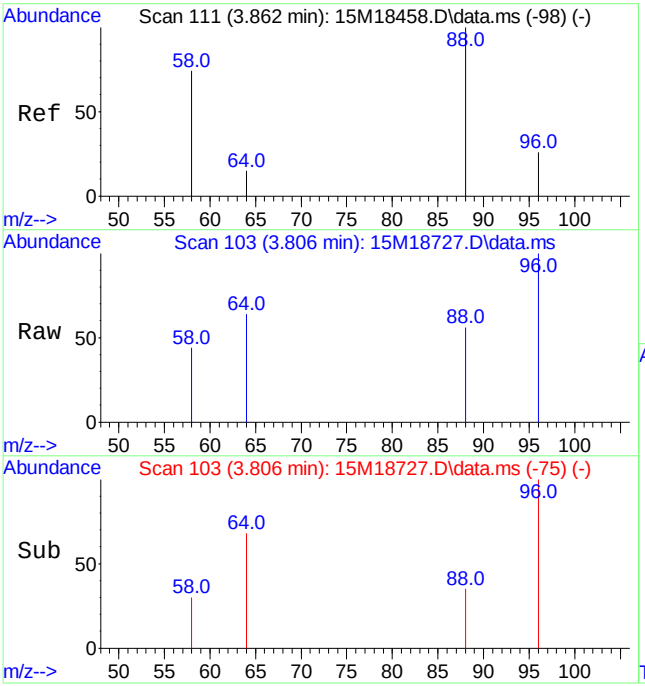

#2
1,4-Dioxane
Concen: 0.47 ug/L
RT: 3.806 min Scan# 103
Delta R.T. -0.014 min
Lab File: 15M18727.D
Acq: 5 Jul 2016 18:37

Tgt Ion: 58 Resp: 4950

Ion	Ratio	Lower	Upper
58	100		
88	128.8	103.1	240.7

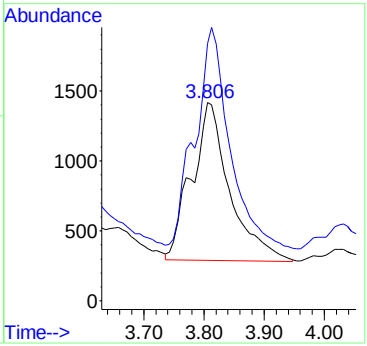

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 10:23:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	60	0.00
2	1,4-Dioxane	0.325	0.307	5.5	57	-0.03
3 S	1,4-Dioxane-d8	0.419	0.417	0.5	60	-0.04
4 S	Nitrobenzene-d5	0.904	1.128	-24.8	69	0.00
5 S	2-Fluorobiphenyl	2.613	2.691	-3.0	63	0.00
6 S	p-Terphenyl-d14	2.562	2.622	-2.3	61	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 10:23:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	60	0.00
2	1,4-Dioxane	5.000	4.721	5.6	57	-0.03
3 S	1,4-Dioxane-d8	5.000	4.979	0.4	60	-0.04
4 S	Nitrobenzene-d5	5.000	5.474	-9.5	69	0.00
5 S	2-Fluorobiphenyl	5.000	5.150	-3.0	63	0.00
6 S	p-Terphenyl-d14	5.000	5.115	-2.3	61	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

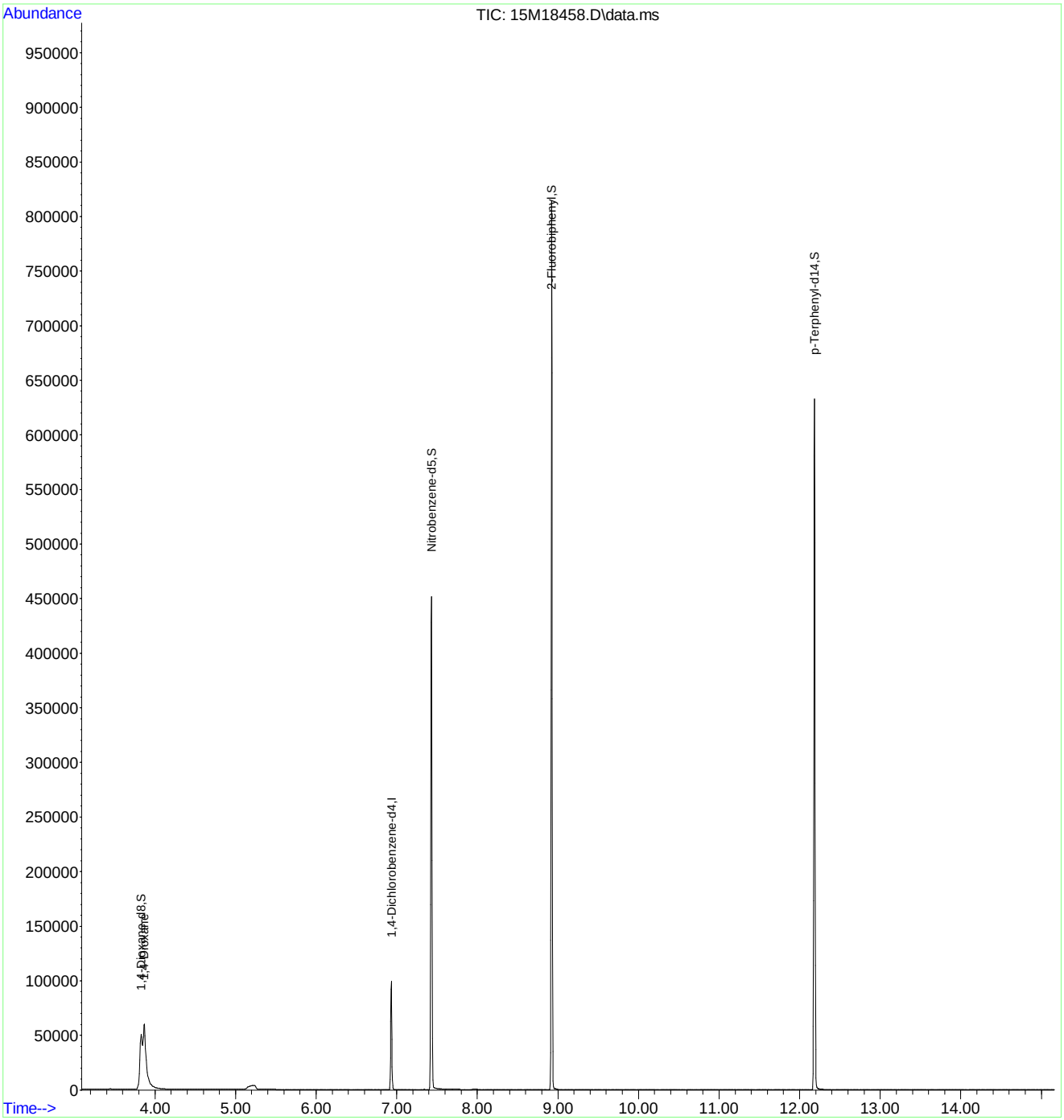

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

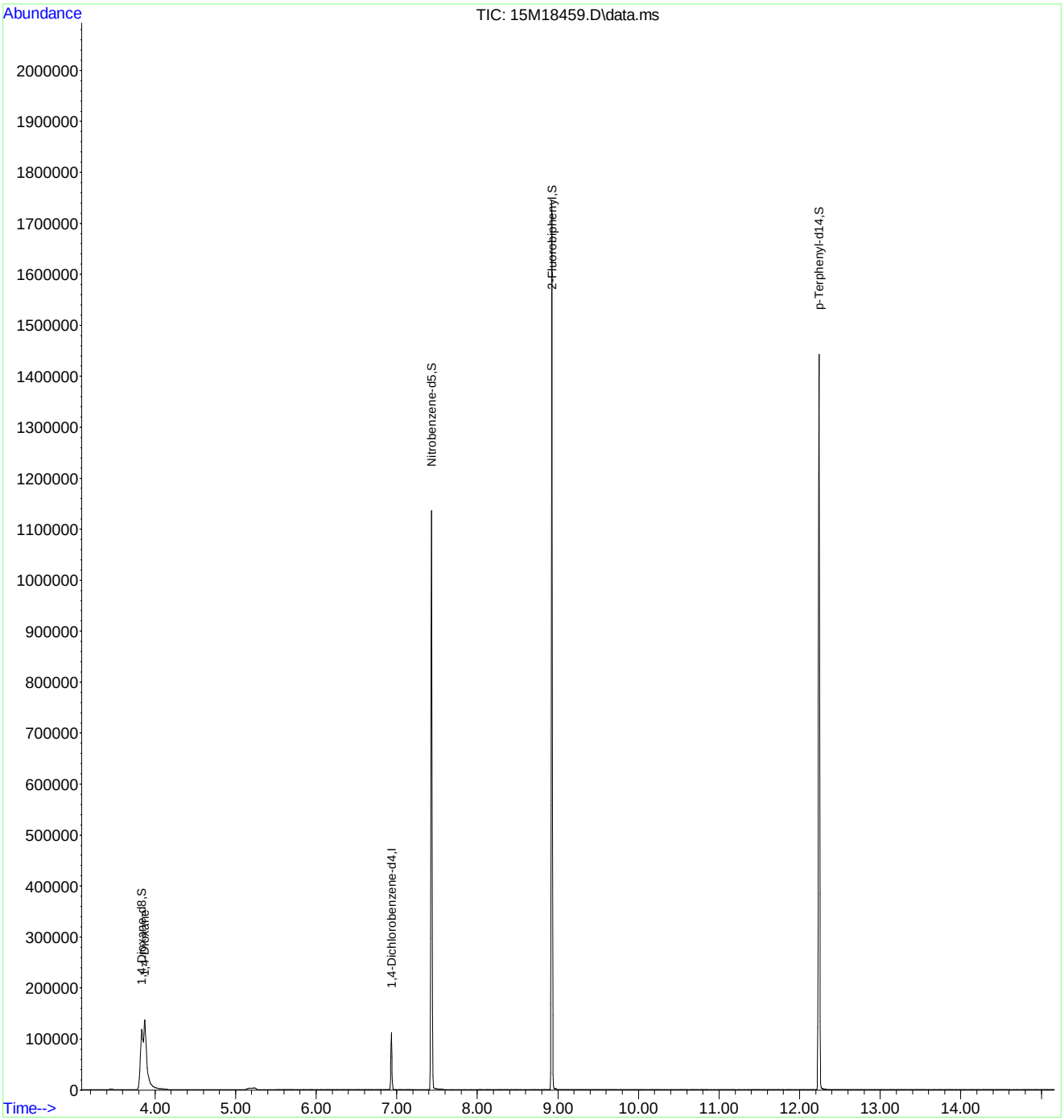

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

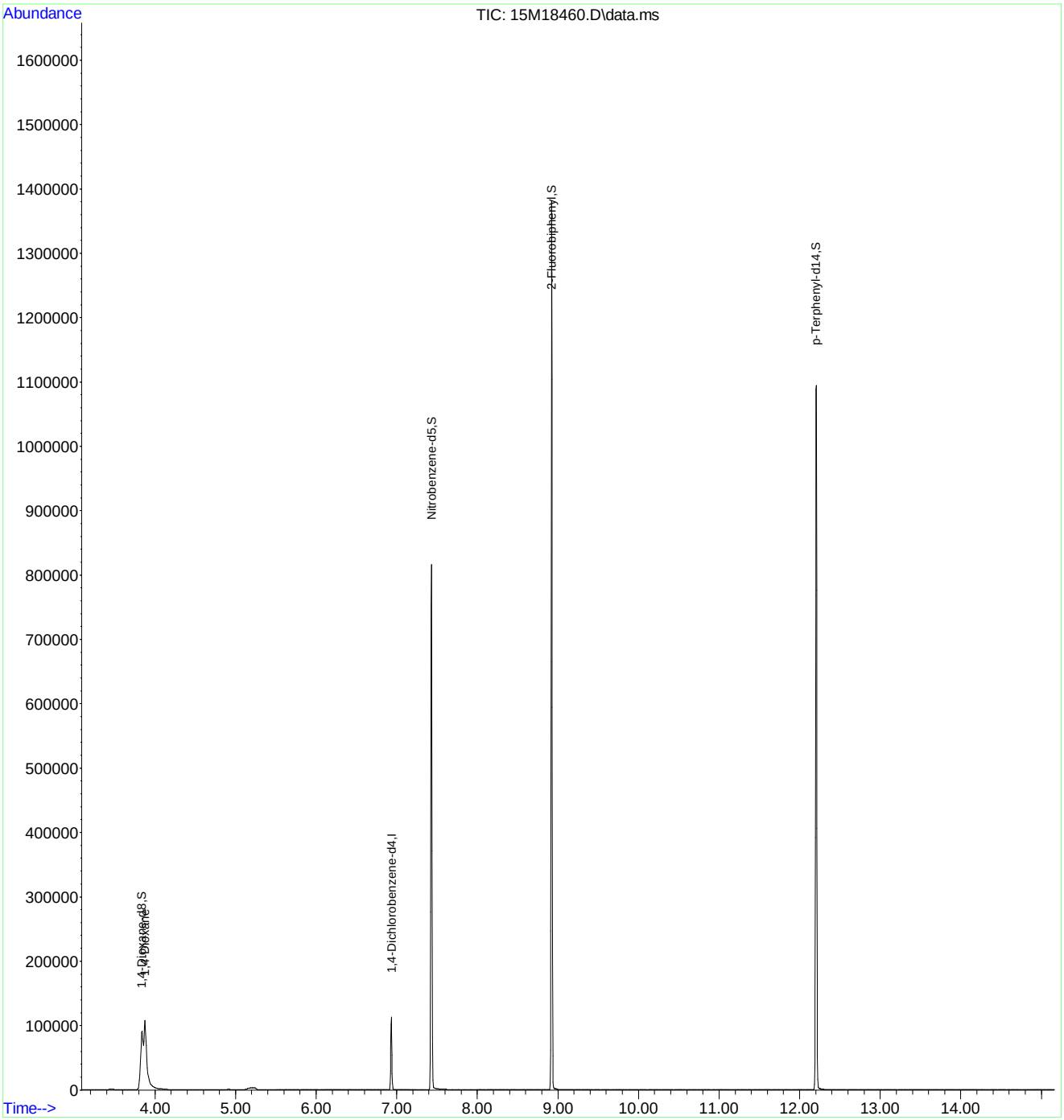

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406 ug/L	0.00
Spiked Amount 5.000			Recovery	= 48.80%	
4) Nitrobenzene-d5	7.431	82	88869	2.3714 ug/L	0.00
Spiked Amount 5.000			Recovery	= 47.40%	
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579 ug/L	0.00
Spiked Amount 5.000			Recovery	= 49.20%	
6) p-Terphenyl-d14	12.199	244	218191	2.3930 ug/L	0.02
Spiked Amount 5.000			Recovery	= 47.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259 ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

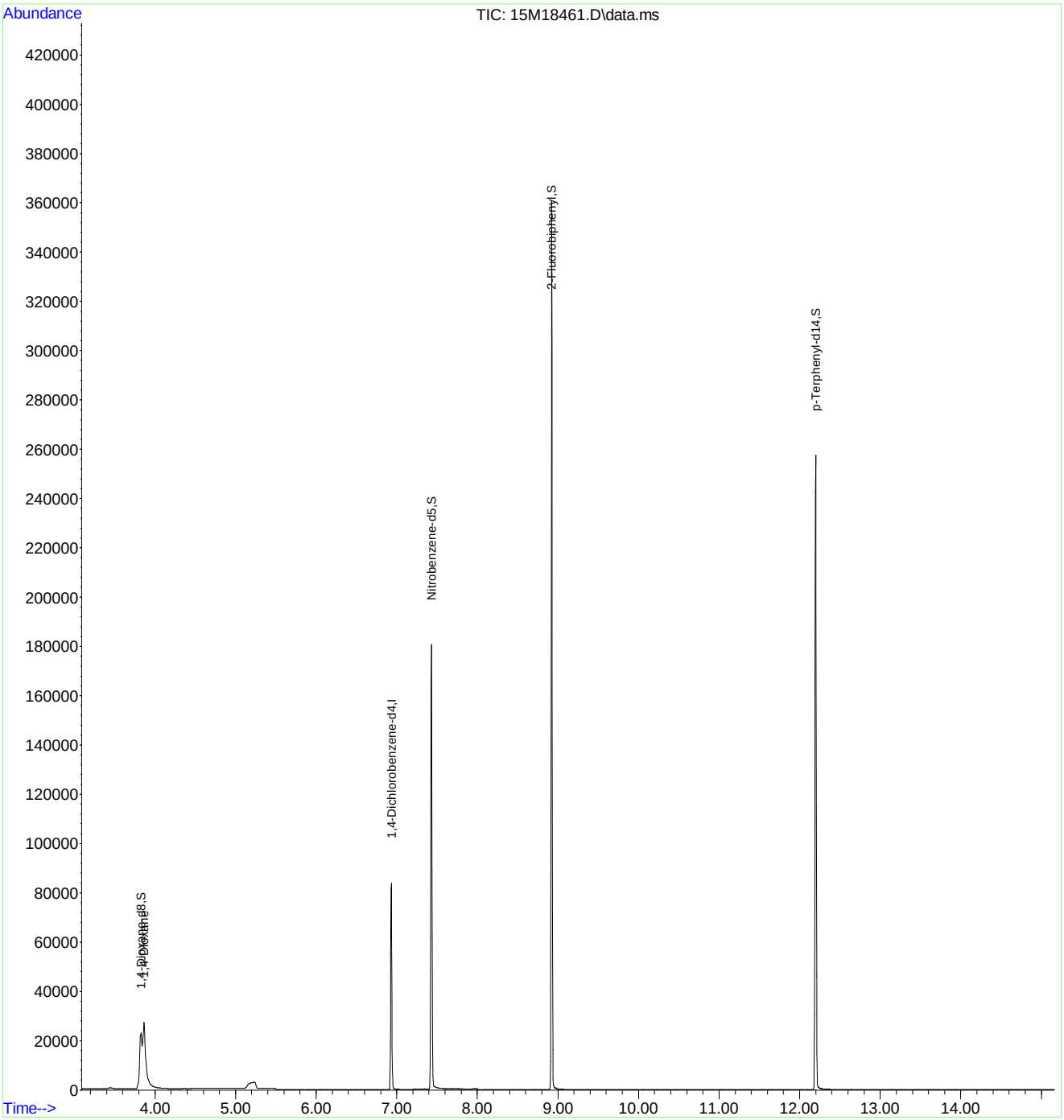

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607 ug/L	0.01
Spiked Amount 5.000			Recovery	= 19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776 ug/L	0.00
Spiked Amount 5.000			Recovery	= 17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612 ug/L	0.00
Spiked Amount 5.000			Recovery	= 19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208 ug/L	0.02
Spiked Amount 5.000			Recovery	= 18.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694 ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

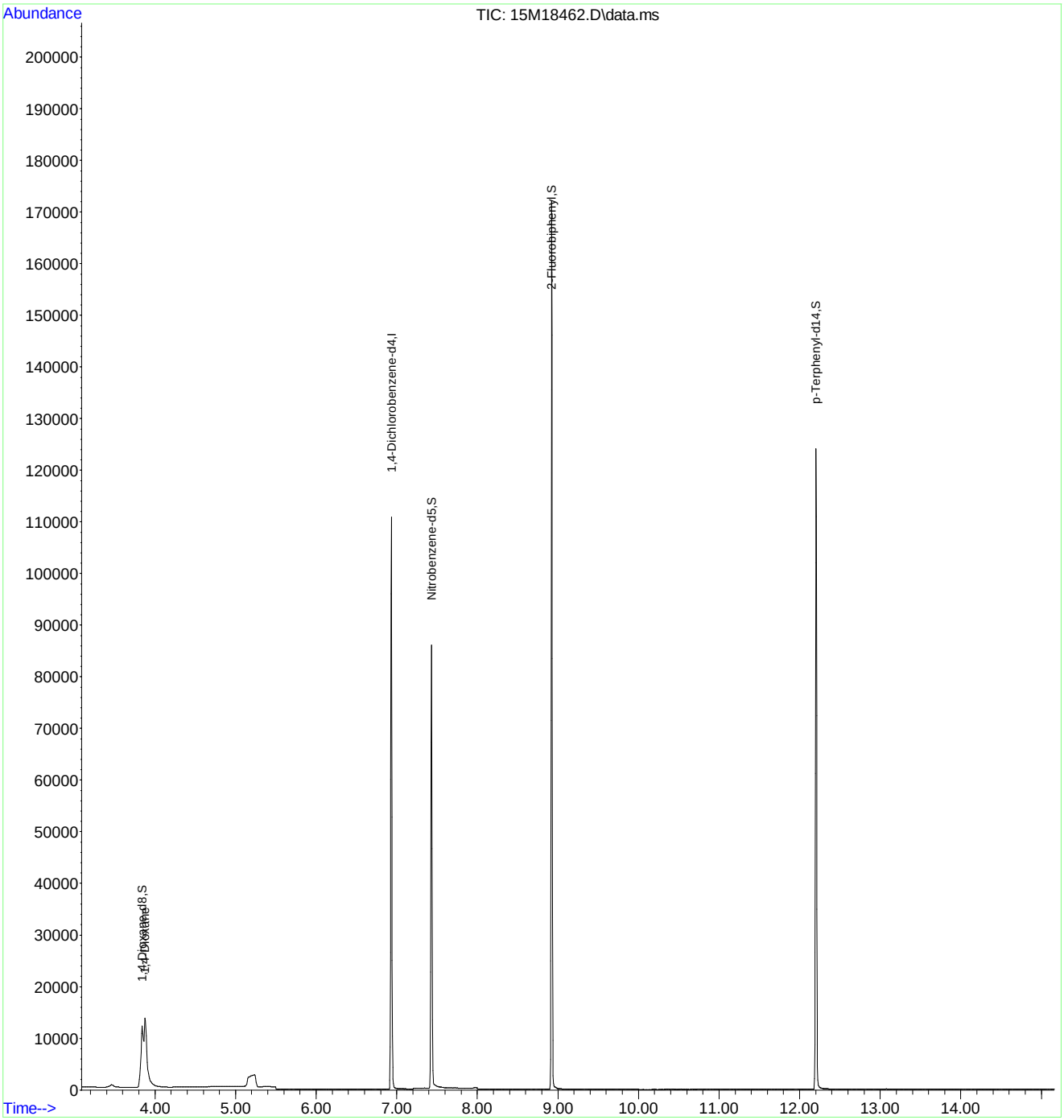

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

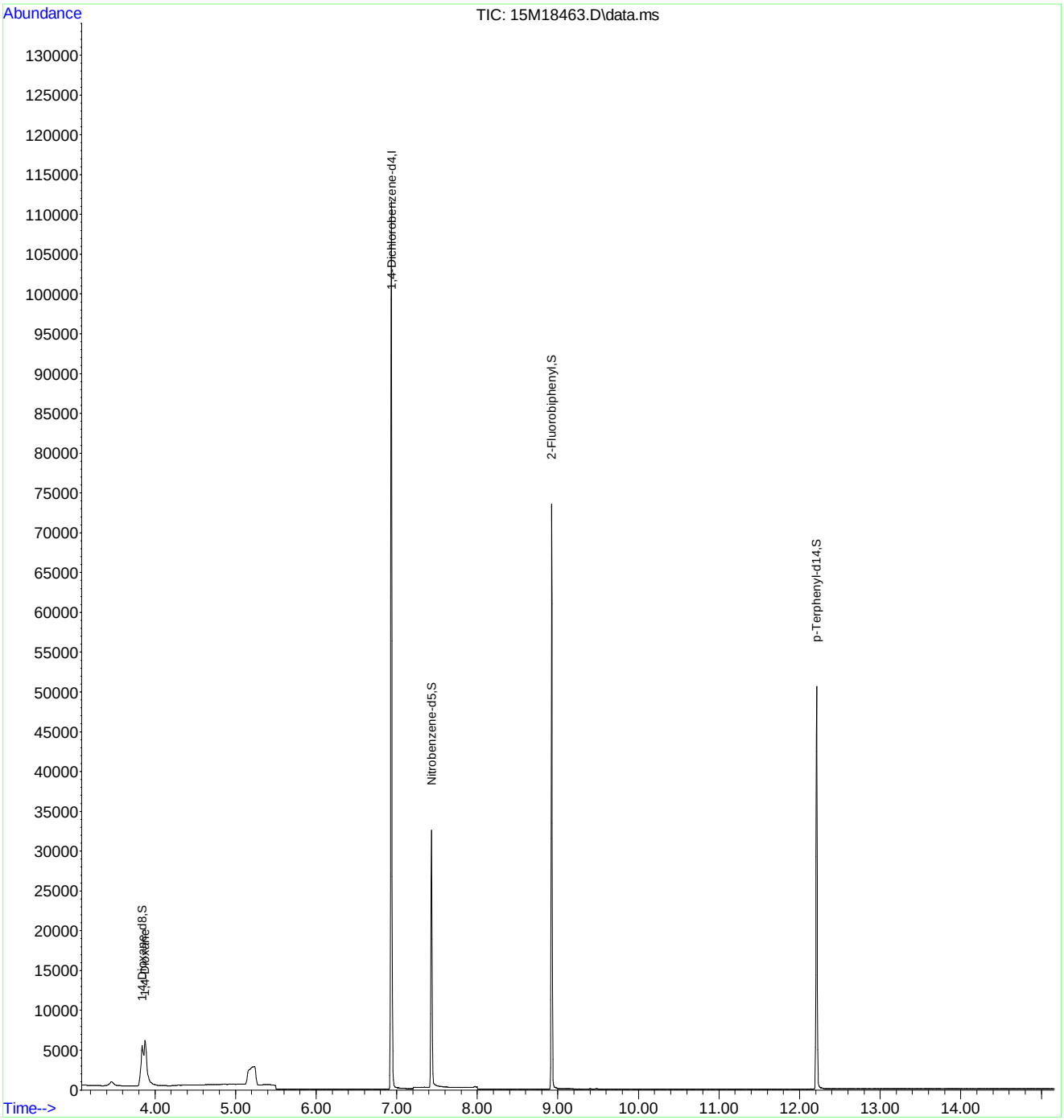

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2	1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3 S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4 S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

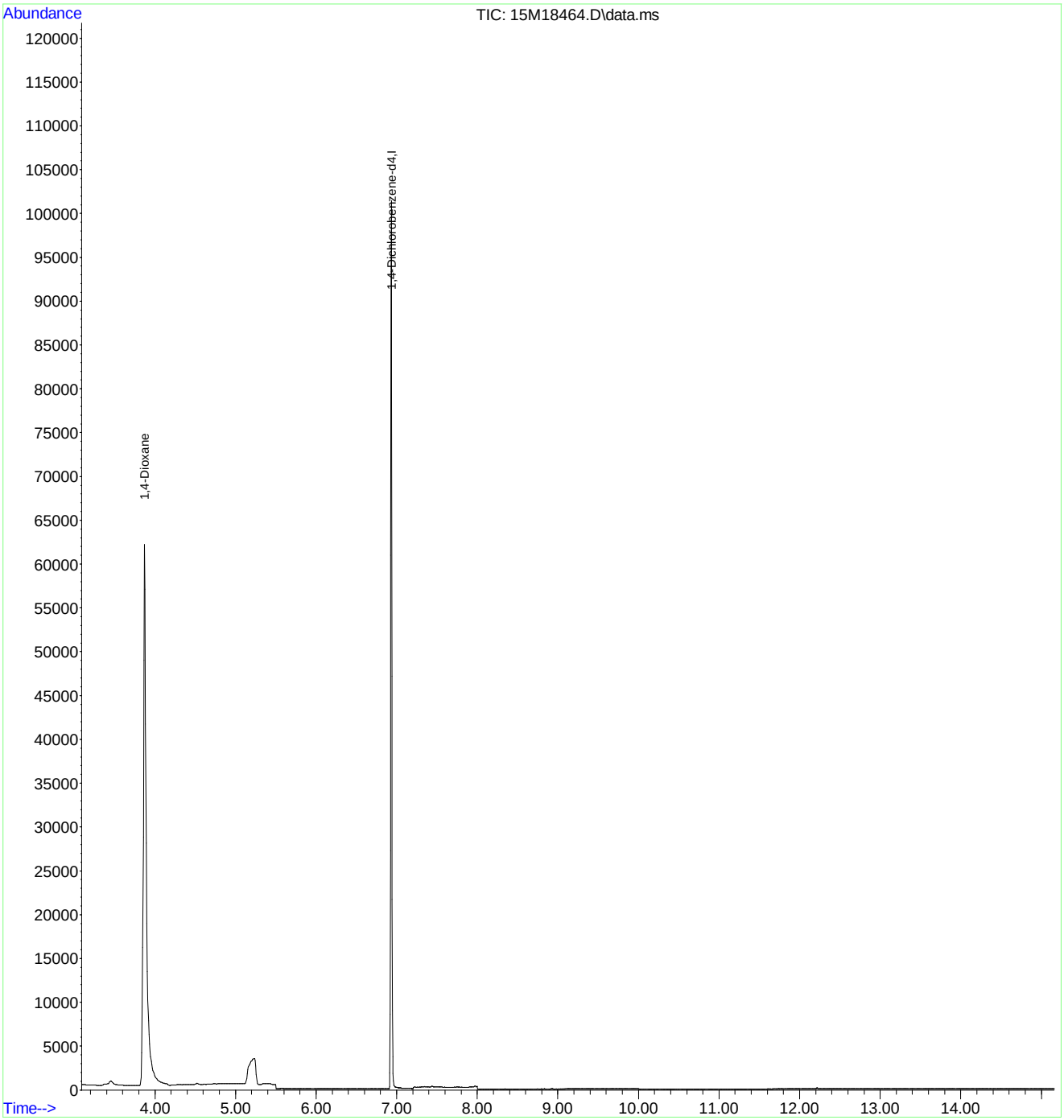

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18674.D
Acq On : 30 Jun 2016 14:42
Operator : MES
Sample : WG574781-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 30 14:58:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.870	152	31348	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.777	96	62277	4.8280 ug/L	0.00
Spiked Amount 5.000			Recovery	= 96.60%	
4) Nitrobenzene-d5	7.366	82	199647	6.0293 ug/L	0.00
Spiked Amount 5.000			Recovery	= 120.60%	
5) 2-Fluorobiphenyl	8.856	172	445070	5.3250 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.40%	
6) p-Terphenyl-d14	12.147	244	423287	5.2541 ug/L	0.06
Spiked Amount 5.000			Recovery	= 105.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.813	58	49944	5.2072 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Continuing Calibration Area and RT check

Instrument: HPMS15
Initial cal date: 06/21/16
CCV date: 06/30/16
CCV Filename: 15M18674

1,4-Dichlorobenzene-d4

	Amount	RT
InitCal	39637	6.93
CCV	31348	6.87

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18674.D
Acq On : 30 Jun 2016 14:42
Operator : MES
Sample : WG574781-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 30 14:58:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	79	0.00
2	1,4-Dioxane	5.000	5.207	-4.1	82	0.00
3 S	1,4-Dioxane-d8	5.000	4.828	3.4	75	0.00
4 S	Nitrobenzene-d5	5.000	6.029	-20.6	89	0.00
5 S	2-Fluorobiphenyl	5.000	5.325	-6.5	83	0.00
6 S	p-Terphenyl-d14	5.000	5.254	-5.1	82	0.06

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18674.D
Acq On : 30 Jun 2016 14:42
Operator : MES
Sample : WG574781-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 30 14:58:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

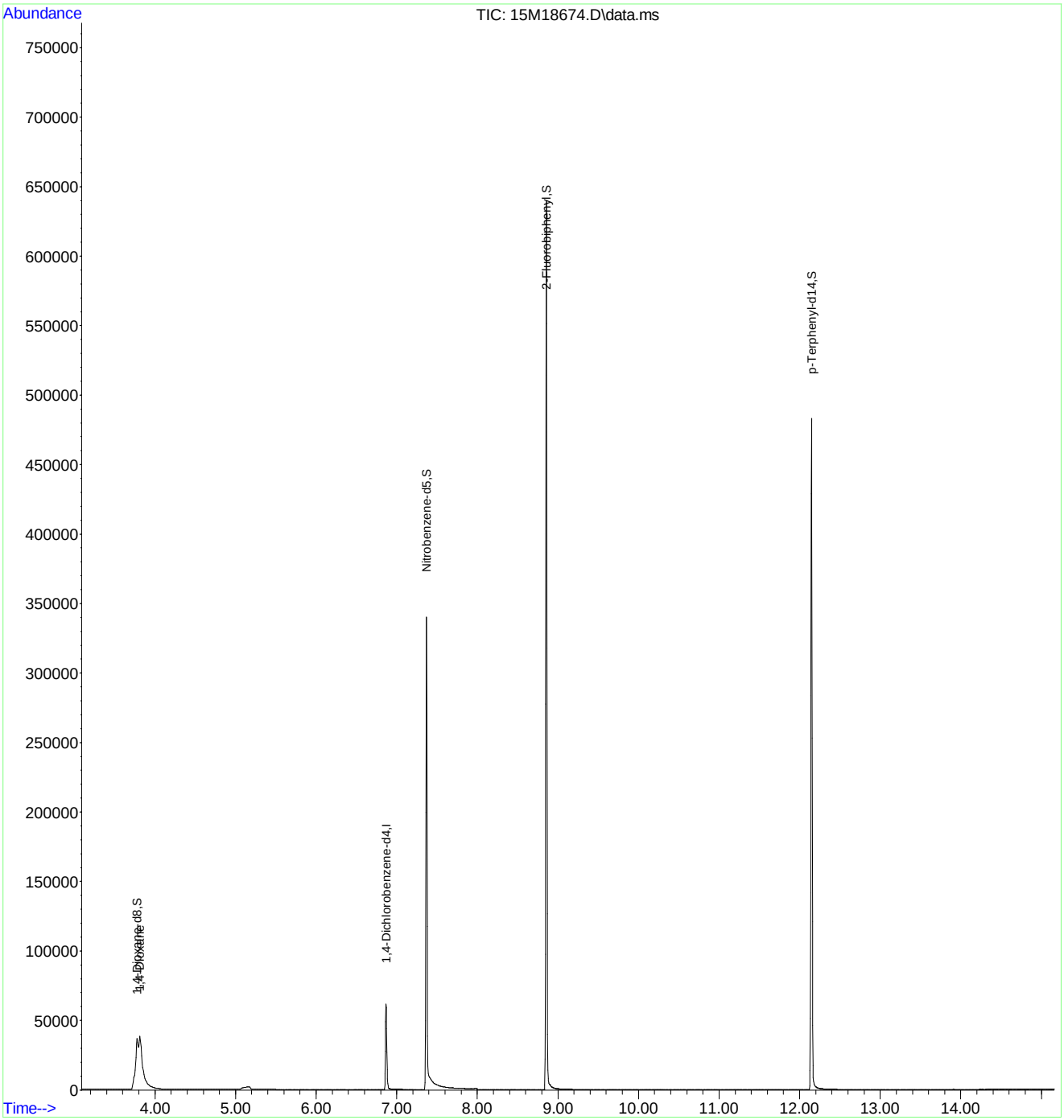

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.867	152	50685	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.778	96	100564	4.8218 ug/L	0.00
Spiked Amount 5.000			Recovery	= 96.40%	
4) Nitrobenzene-d5	7.367	82	310249	5.7949 ug/L	0.00
Spiked Amount 5.000			Recovery	= 115.80%	
5) 2-Fluorobiphenyl	8.853	172	677739	5.0151 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.40%	
6) p-Terphenyl-d14	12.122	244	688752	5.2876 ug/L	0.03
Spiked Amount 5.000			Recovery	= 105.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.813	58	81128	5.2314 ug/L	78

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Continuing Calibration Area and RT check

Instrument: HPMS15
Initial cal date: 06/21/16
CCV date: 07/05/16
CCV Filename: 15M18717

1,4-Dichlorobenzene-d4

	Amount	RT
InitCal	39637	6.93
CCV	50685	6.87

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	128	0.00
2	1,4-Dioxane	5.000	5.231	-4.6	133	0.00
3 S	1,4-Dioxane-d8	5.000	4.822	3.6	122	0.00
4 S	Nitrobenzene-d5	5.000	5.795	-15.9	139	0.00
5 S	2-Fluorobiphenyl	5.000	5.015	-0.3	127	0.00
6 S	p-Terphenyl-d14	5.000	5.288	-5.8	133	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

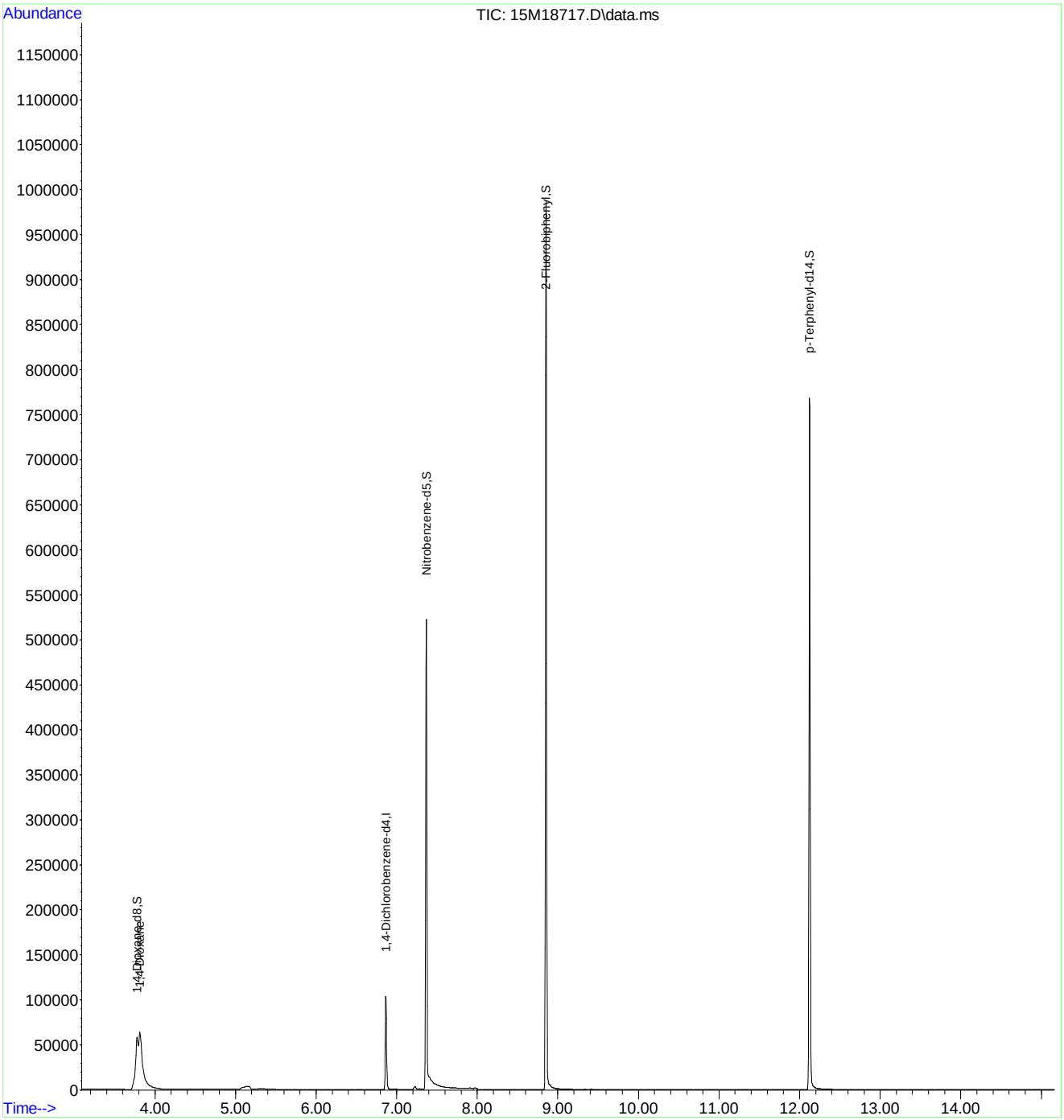

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

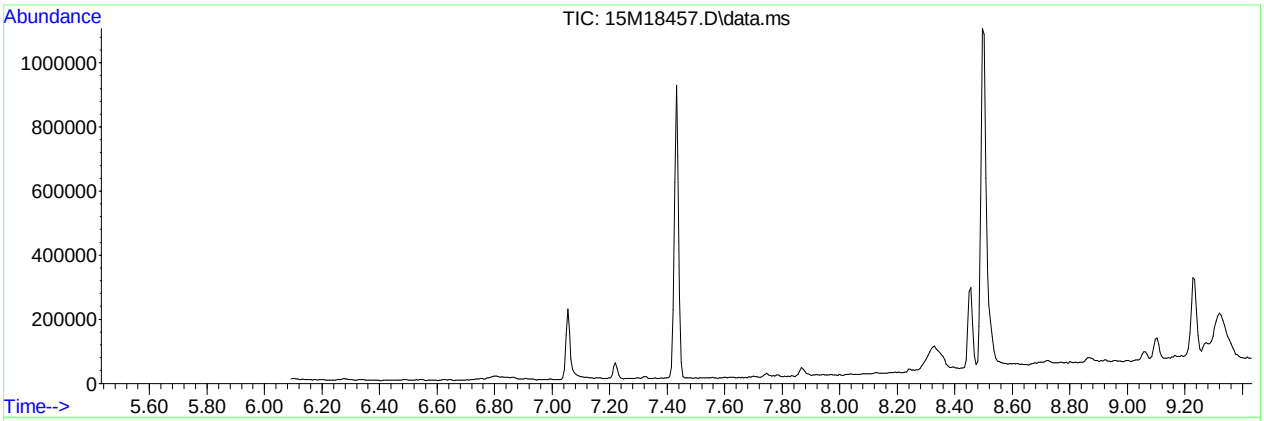

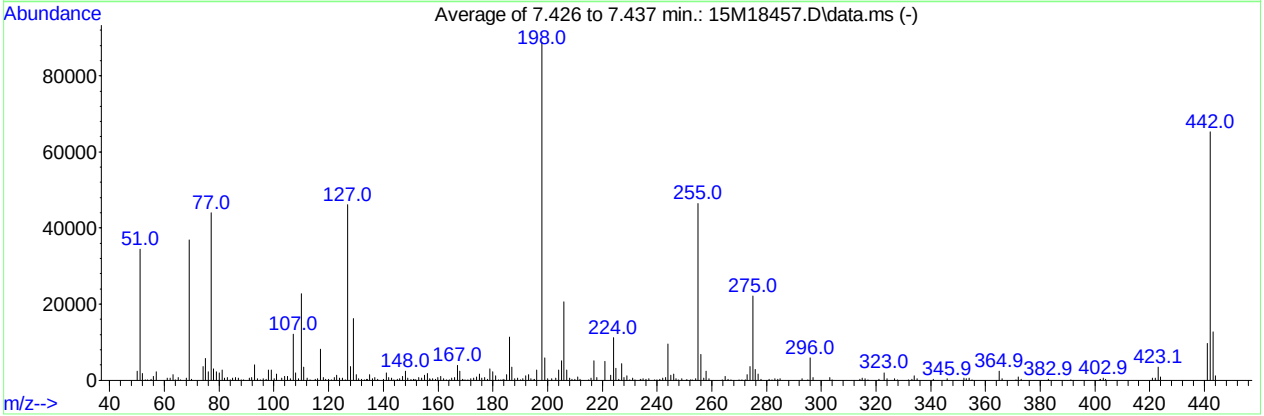

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

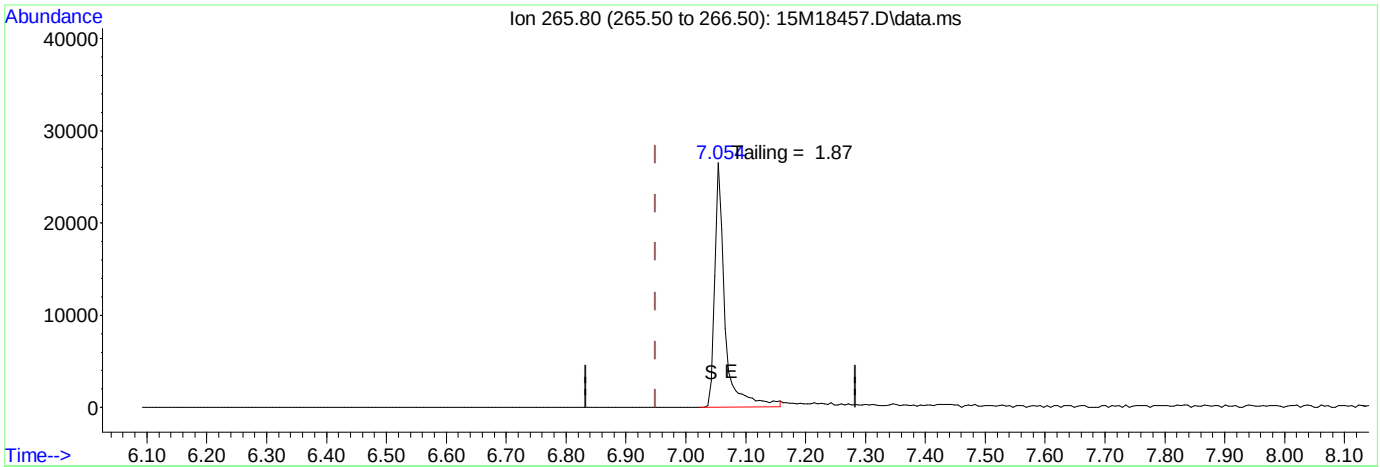

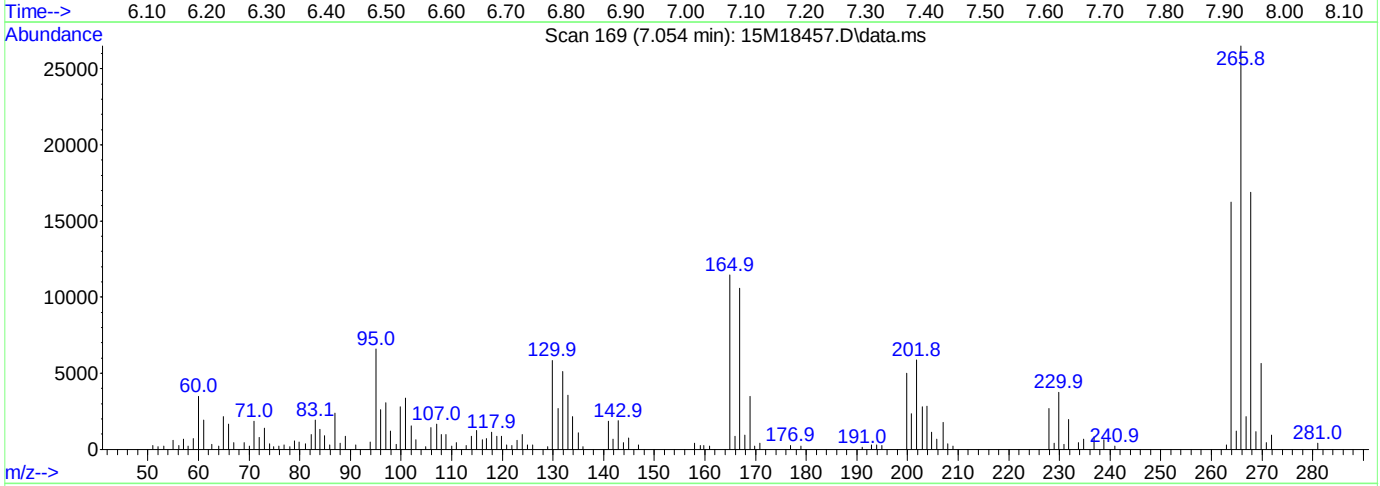

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

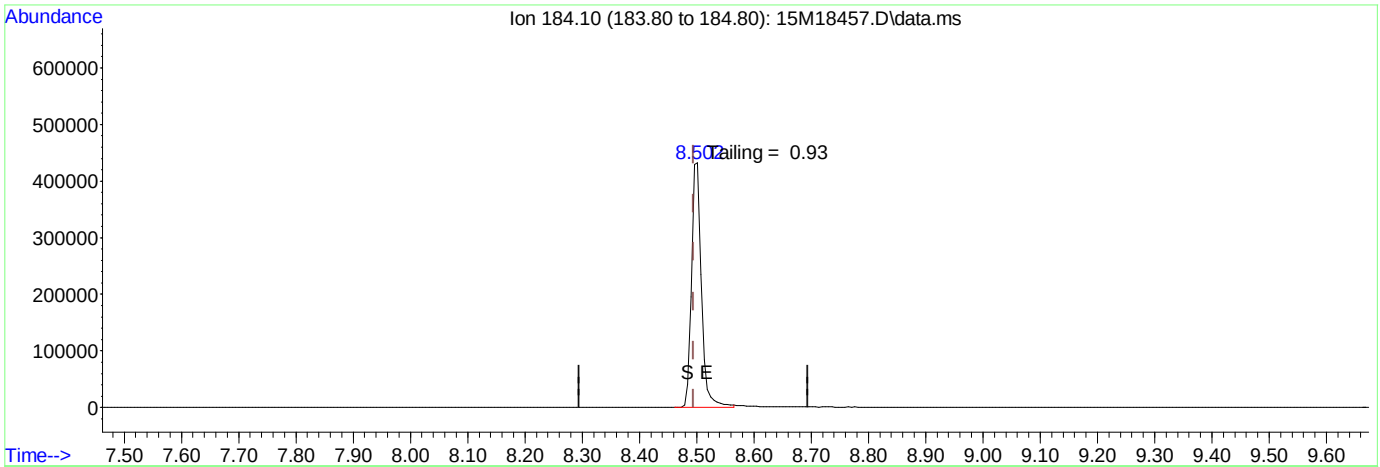

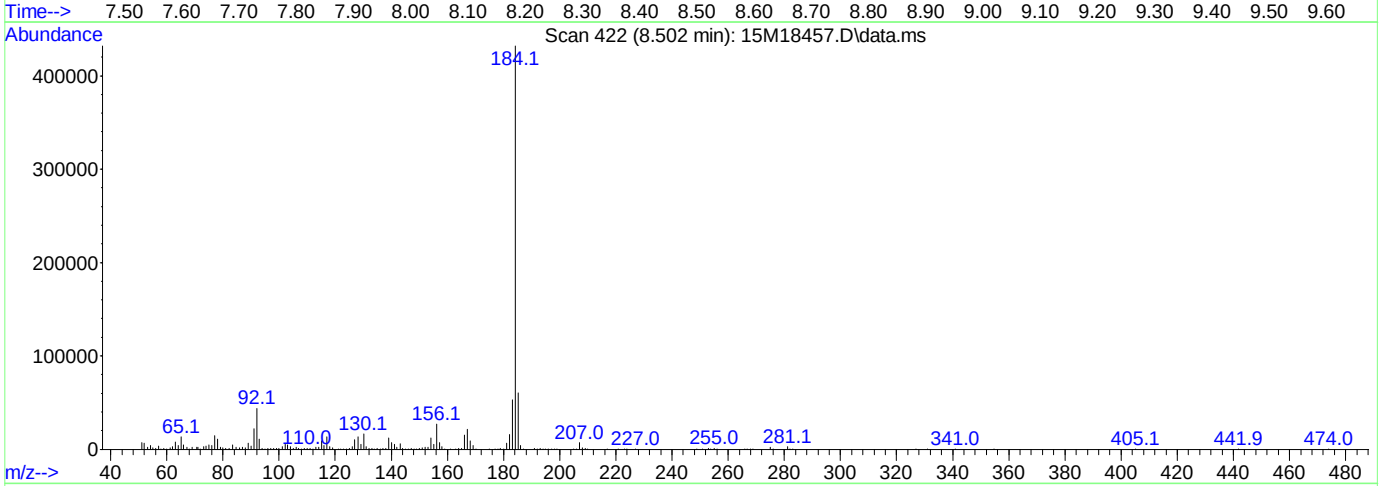

TIC: 15M18457.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

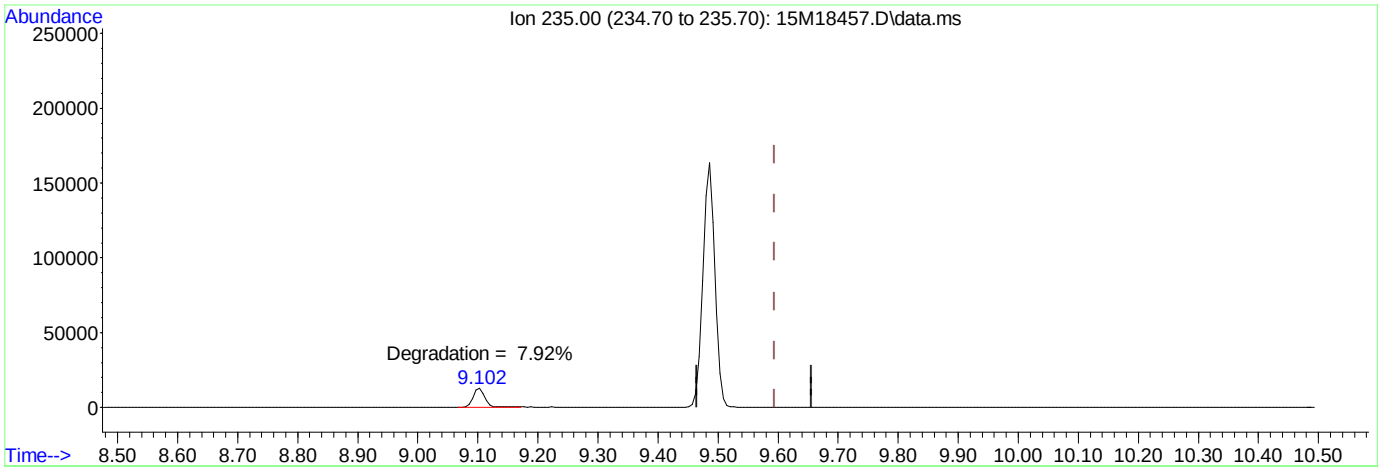

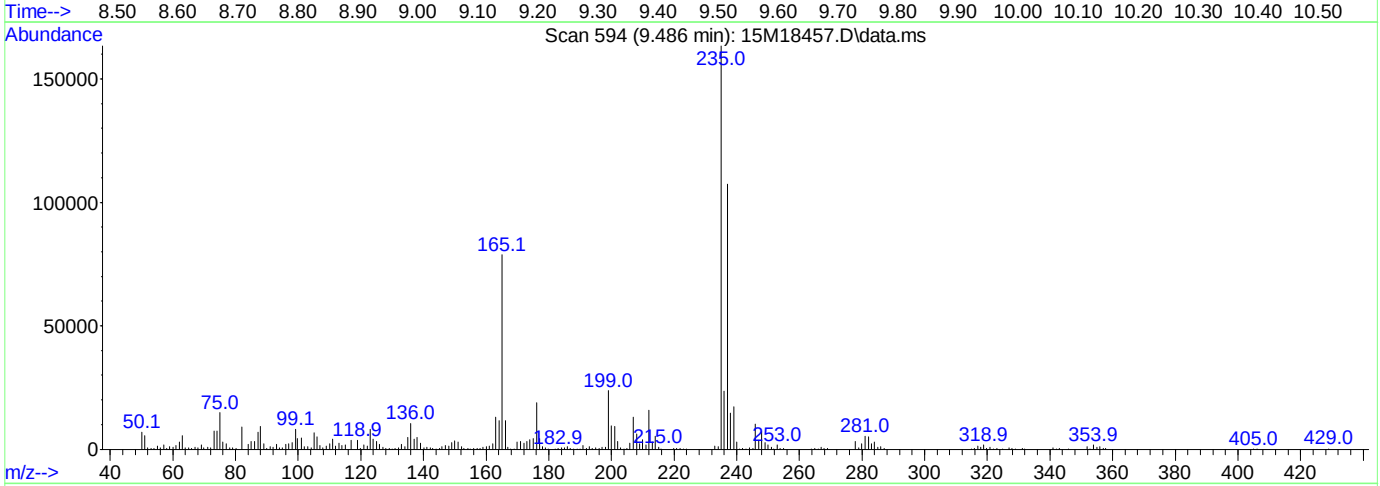

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

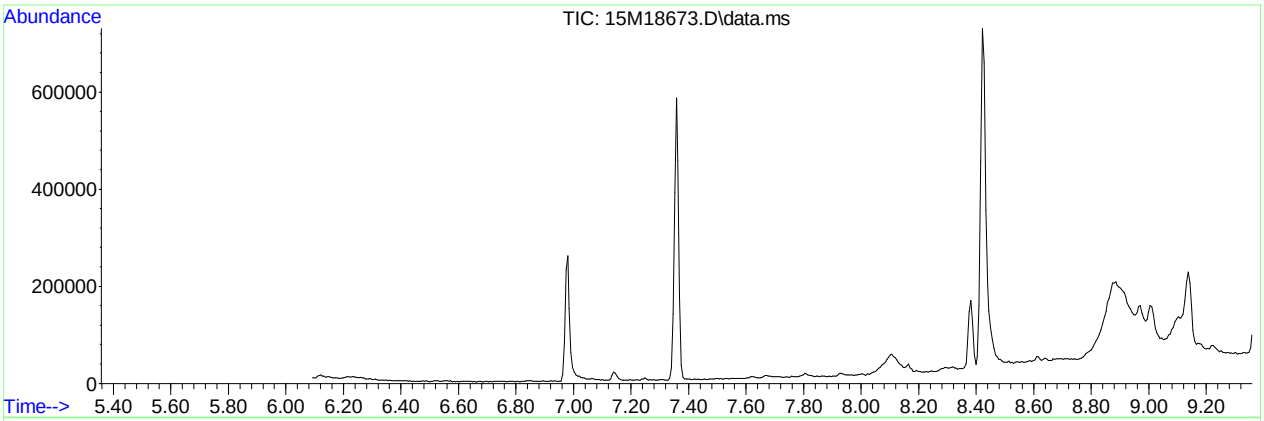

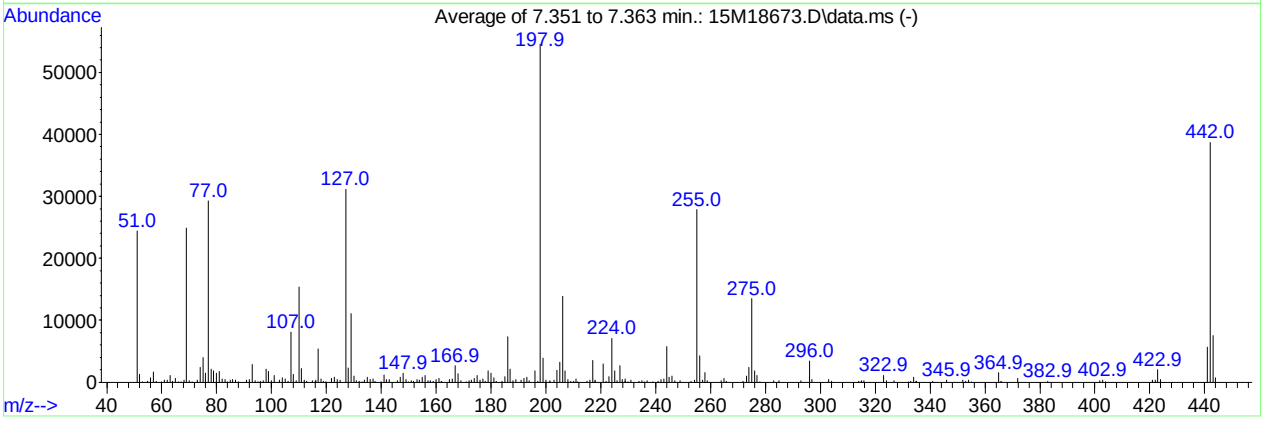

AutoFind: Scans 221, 222, 223; Background Corrected with Scan 215

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	44.6	24370	PASS
68	69	0.00	2	1.4	352	PASS
69	198	0.00	100	45.7	24921	PASS
70	69	0.00	2	1.0	239	PASS
127	198	40	60	57.0	31104	PASS
197	198	0.00	1	0.3	159	PASS
198	198	100	100	100.0	54589	PASS
199	198	5	9	7.0	3838	PASS
275	198	10	30	24.8	13523	PASS
365	198	1	100	2.8	1520	PASS
441	443	0.01	100	75.2	5686	PASS
442	198	40	100	70.8	38669	PASS
443	442	17	23	19.5	7559	PASS

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 30 14:35:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

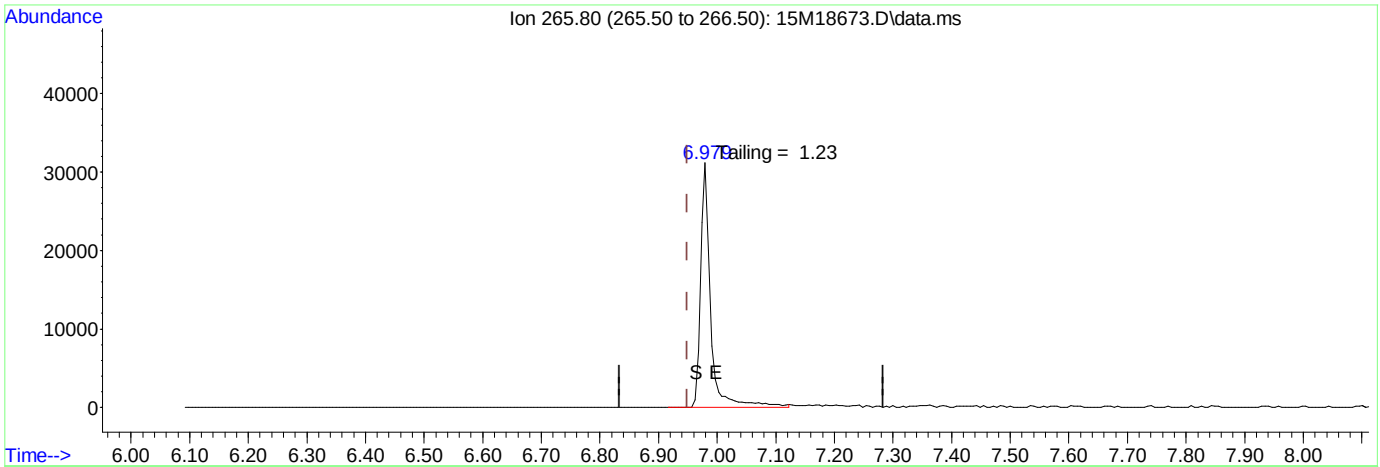

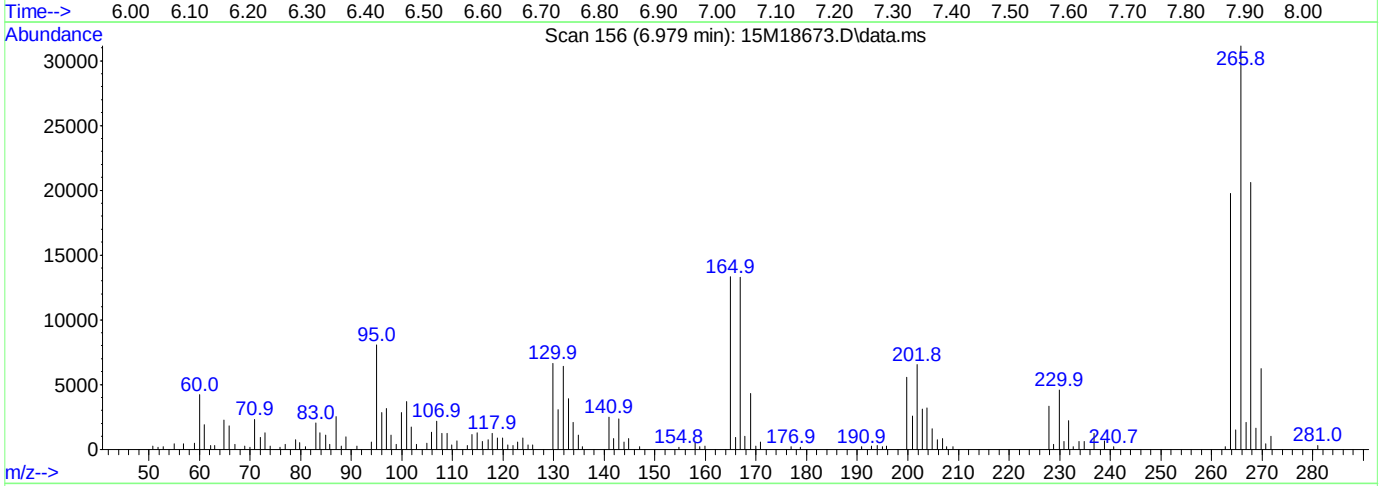

TIC: 15M18673.D\data.ms

(1) Pentachlorophenol

6.979min (+ 0.030) 0.00 ug/ml

response 37511

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 30 14:35:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

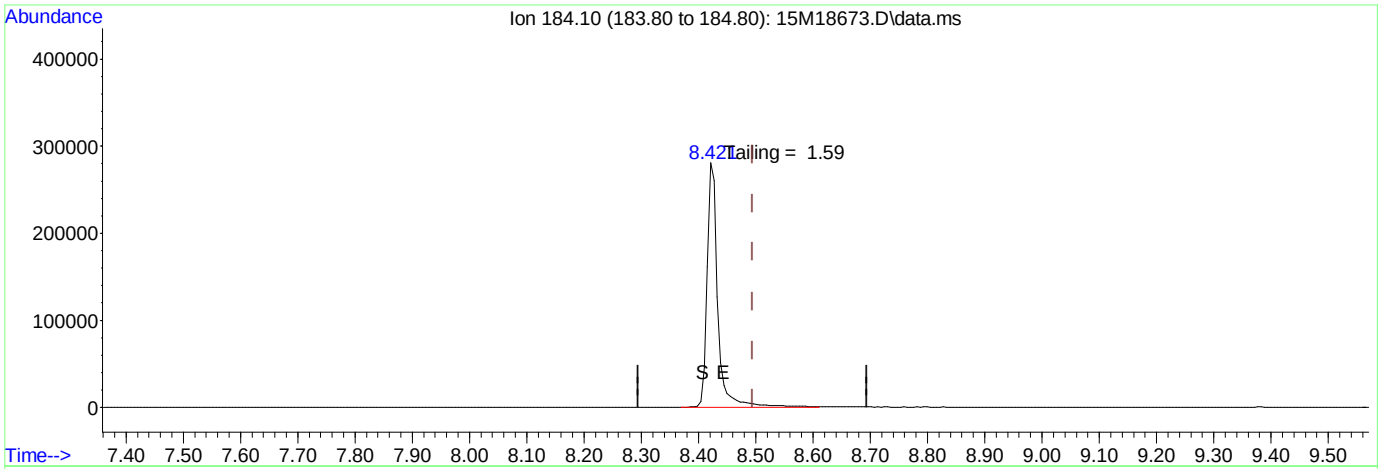

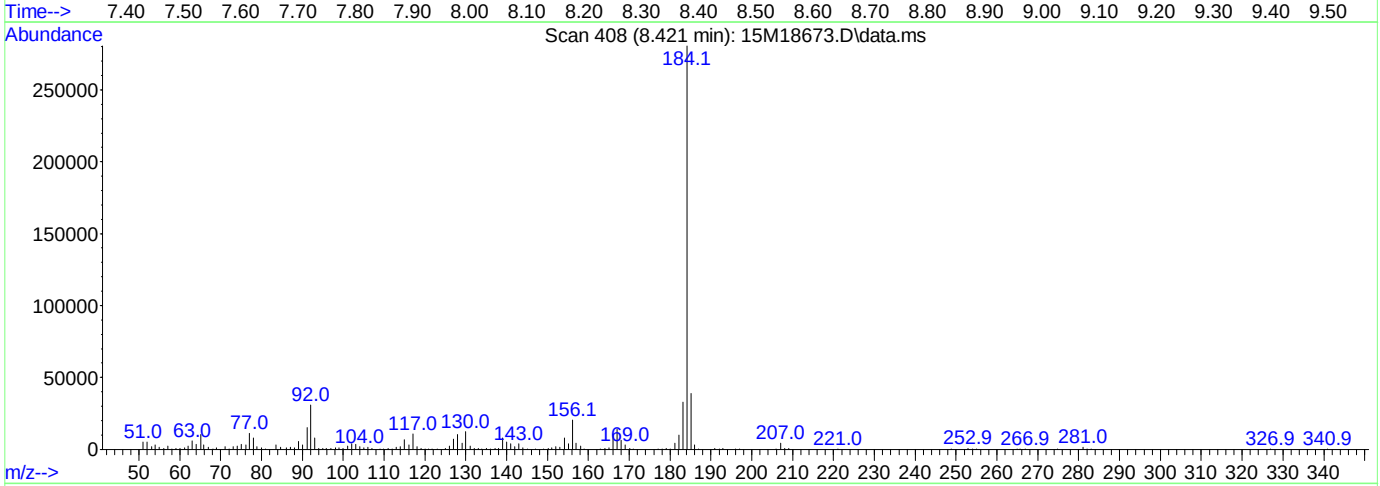

TIC: 15M18673.D\data.ms

(2) Benzidine

8.421min (-0.073) 0.00 ug/ml

response 363129

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 30 14:35:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

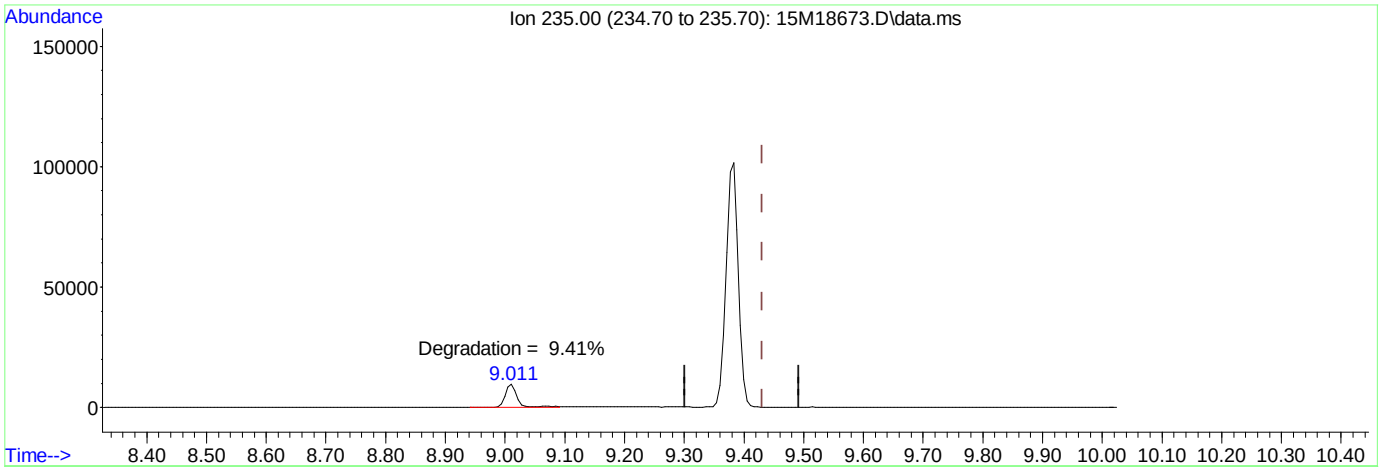

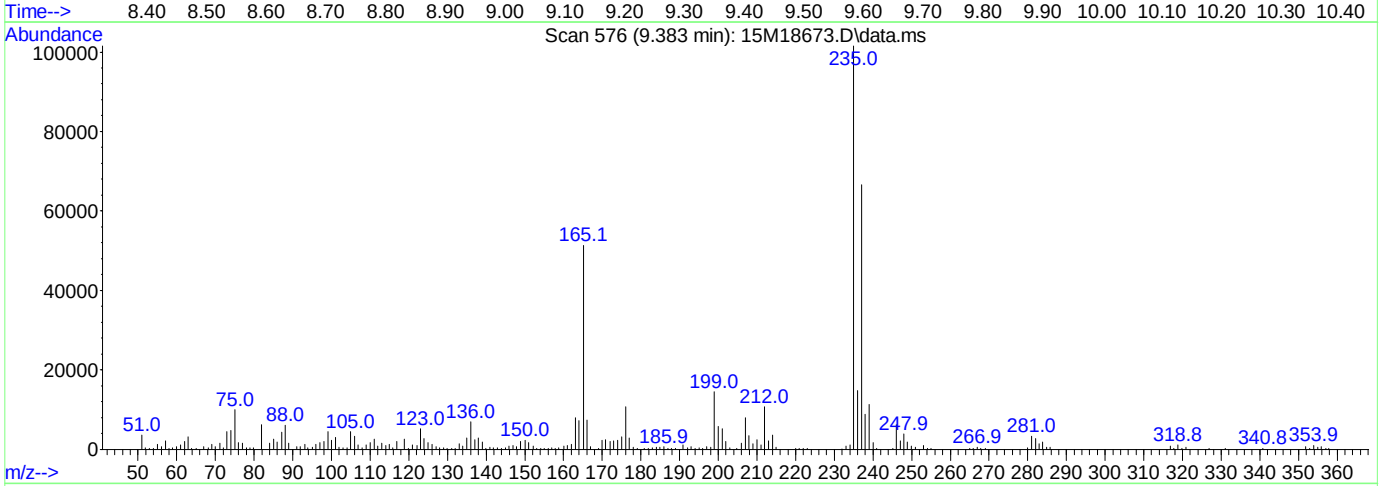

(3) DDT

9.383min (-0.047) 0.00 ug/ml

response 147438

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

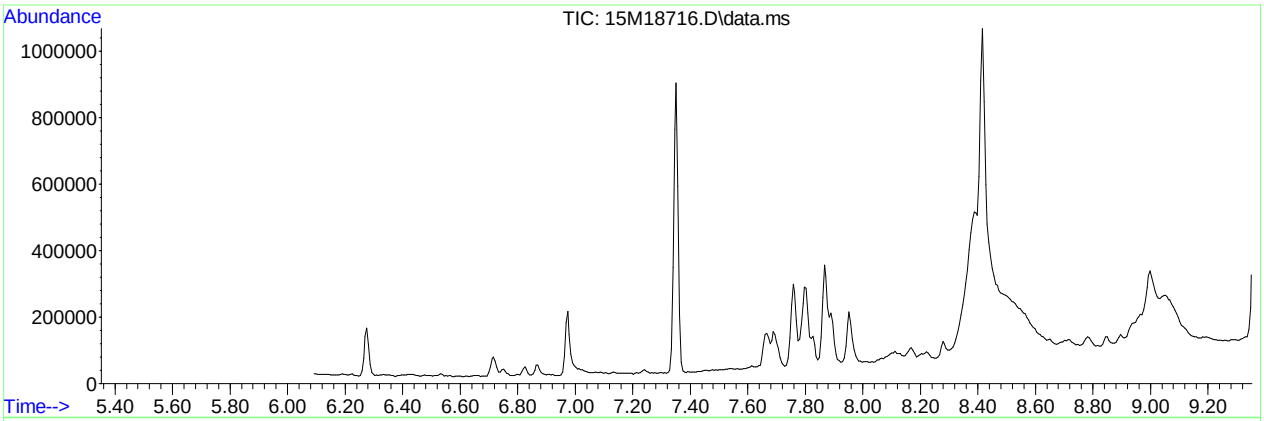

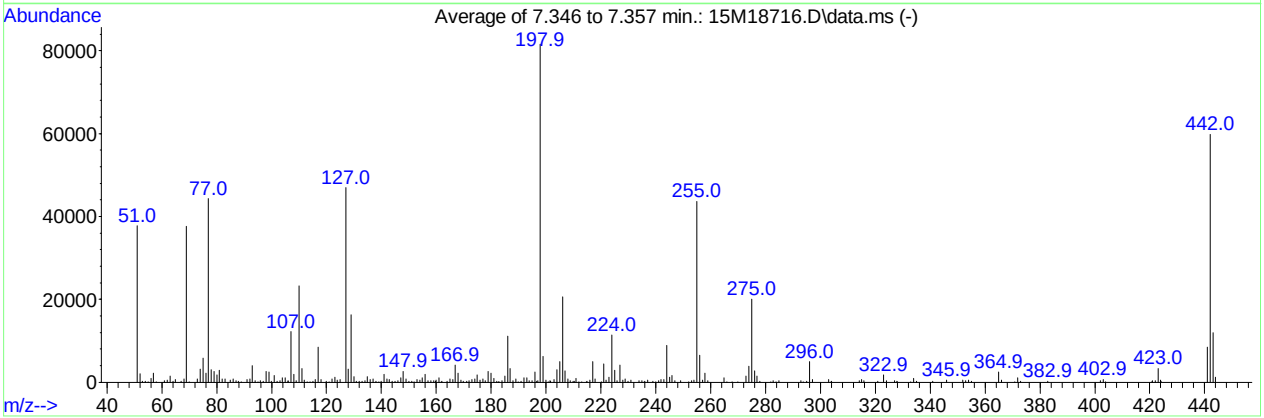

AutoFind: Scans 220, 221, 222; Background Corrected with Scan 214

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	46.2	37745	PASS
68	69	0.00	2	1.9	734	PASS
69	198	0.00	100	46.2	37667	PASS
70	69	0.00	2	0.3	127	PASS
127	198	40	60	57.5	46941	PASS
197	198	0.00	1	0.4	310	PASS
198	198	100	100	100.0	81613	PASS
199	198	5	9	7.6	6162	PASS
275	198	10	30	24.6	20072	PASS
365	198	1	100	2.9	2392	PASS
441	443	0.01	100	70.8	8479	PASS
442	198	40	100	73.3	59805	PASS
443	442	17	23	20.0	11980	PASS

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

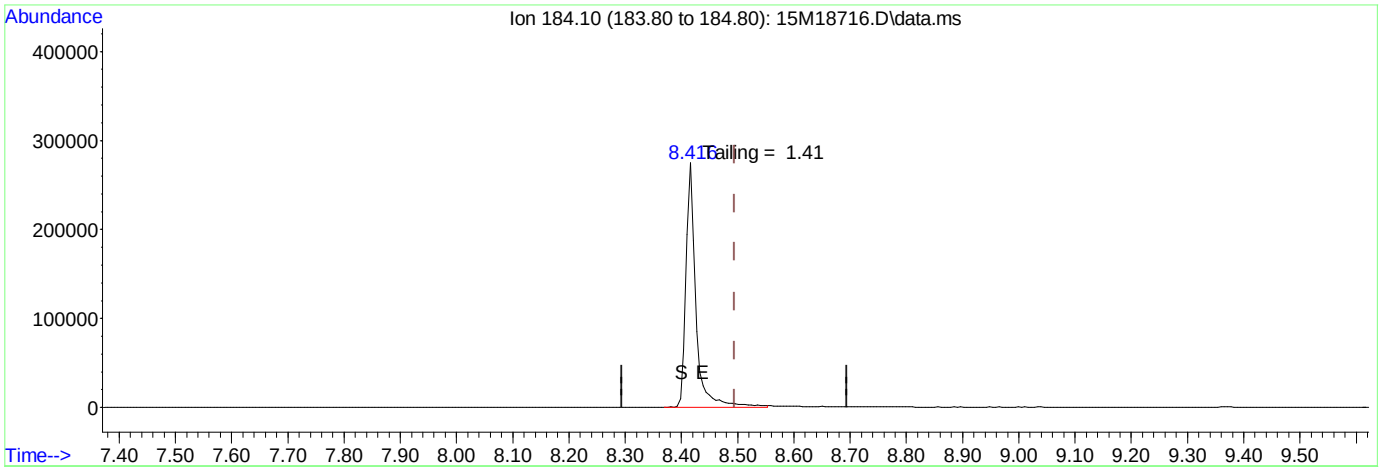

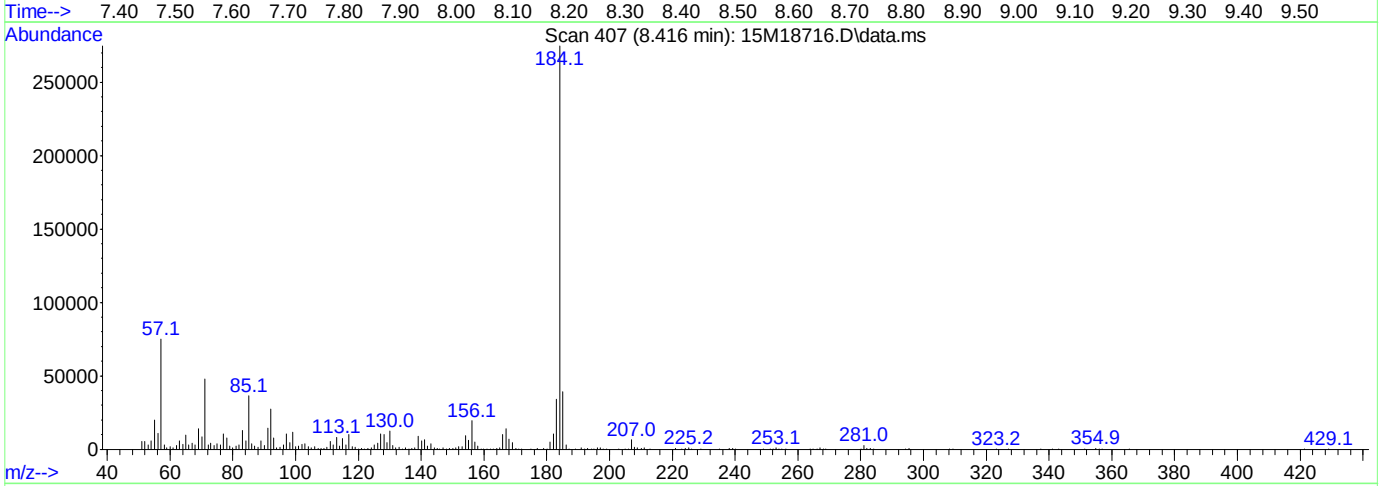

TIC: 15M18716.D\data.ms

(2) Benzidine

8.416min (-0.078) 0.00 ug/ml

response 340801

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

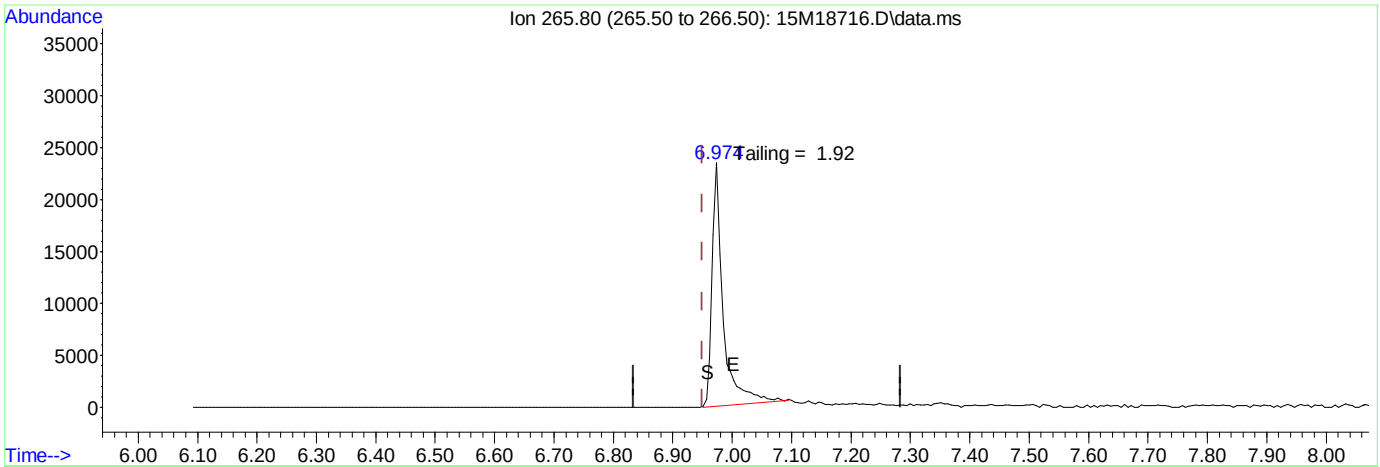

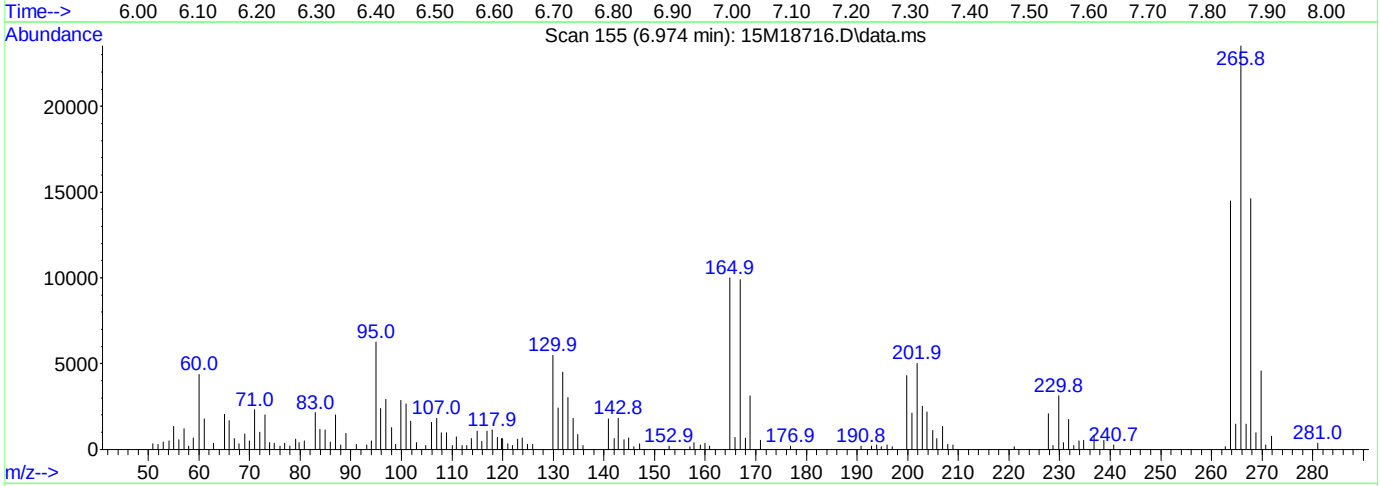

TIC: 15M18716.D\data.ms

(1) Pentachlorophenol

6.974min (+ 0.025) 0.00 ug/ml

response 32364

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

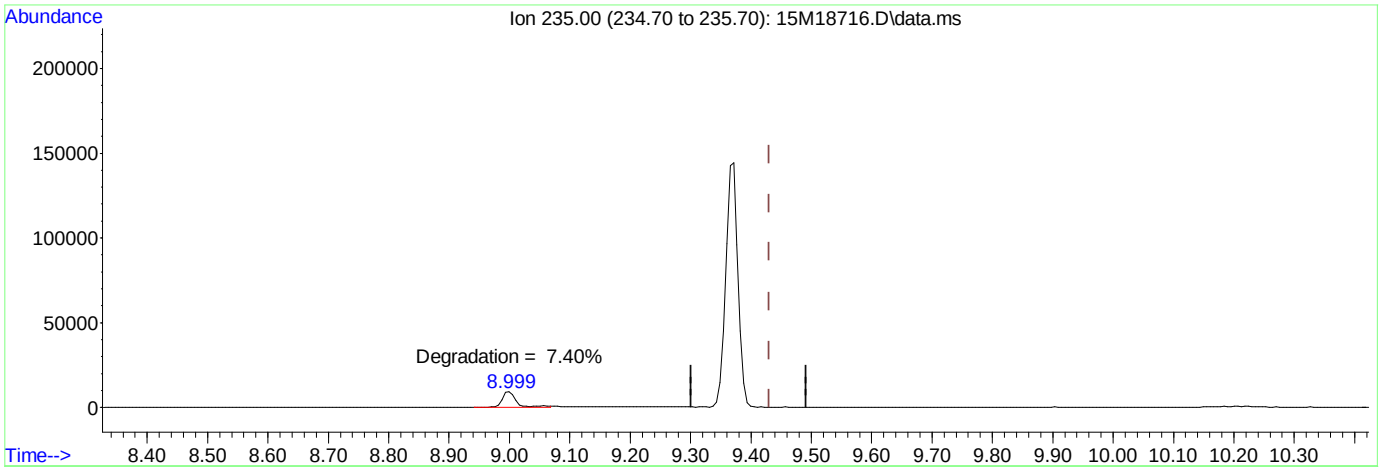

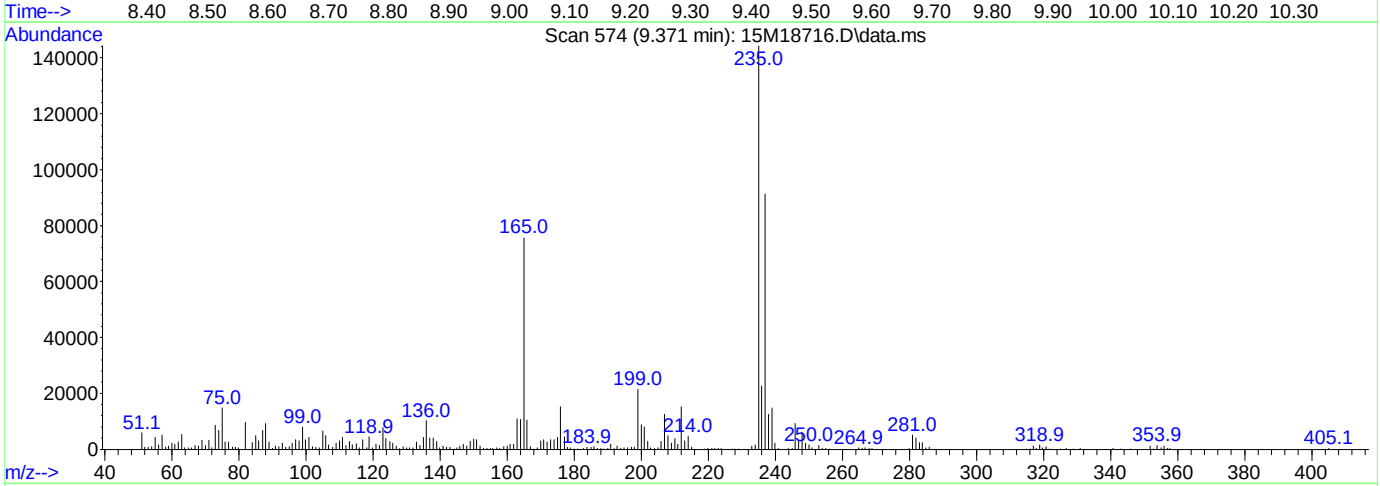

(3) DDT

9.371min (-0.059) 0.00 ug/ml

response 208755

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18678.D
Acq On : 30 Jun 2016 16:12
Operator : MES
Sample : WG574286-01 BLANK 6/27
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 30 16:57:35 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	28516	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	25448	2.1688	ug/L	0.00
Spiked Amount 5.000			Recovery = 43.40%			
4) Nitrobenzene-d5	7.367	82	1047426	34.7736	ug/L	0.00
Spiked Amount 5.000			Recovery = 695.40%			
5) 2-Fluorobiphenyl	8.856	172	1915171	25.1894	ug/L	0.00
Spiked Amount 5.000			Recovery = 503.80%			
6) p-Terphenyl-d14	12.137	244	2891842	39.4601	ug/L	0.05
Spiked Amount 5.000			Recovery = 789.20%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18678.D
Acq On : 30 Jun 2016 16:12
Operator : MES
Sample : WG574286-01 BLANK 6/27
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 30 16:57:35 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

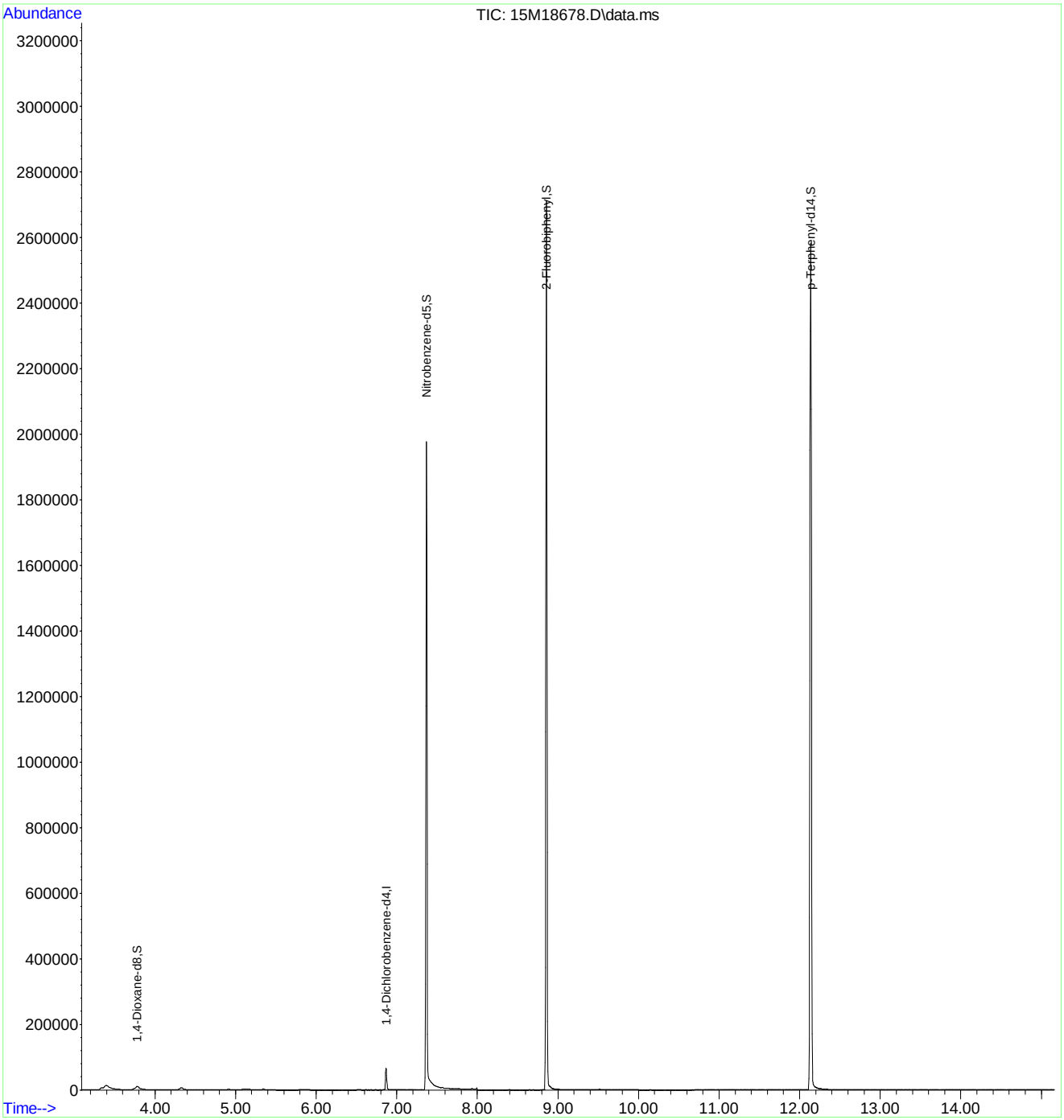

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18679.D
Acq On : 30 Jun 2016 16:34
Operator : MES
Sample : WG574286-02 LCS 6/27
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 30 16:57:20 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	22815	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.770	96	22955	2.4451	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	49.00%	
4) Nitrobenzene-d5	7.372	82	1584	0.0657	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.860	172	964	0.0158	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.107	244	620	0.0106	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	19389	2.7776	ug/L	67

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18679.D
Acq On : 30 Jun 2016 16:34
Operator : MES
Sample : WG574286-02 LCS 6/27
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 30 16:57:20 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

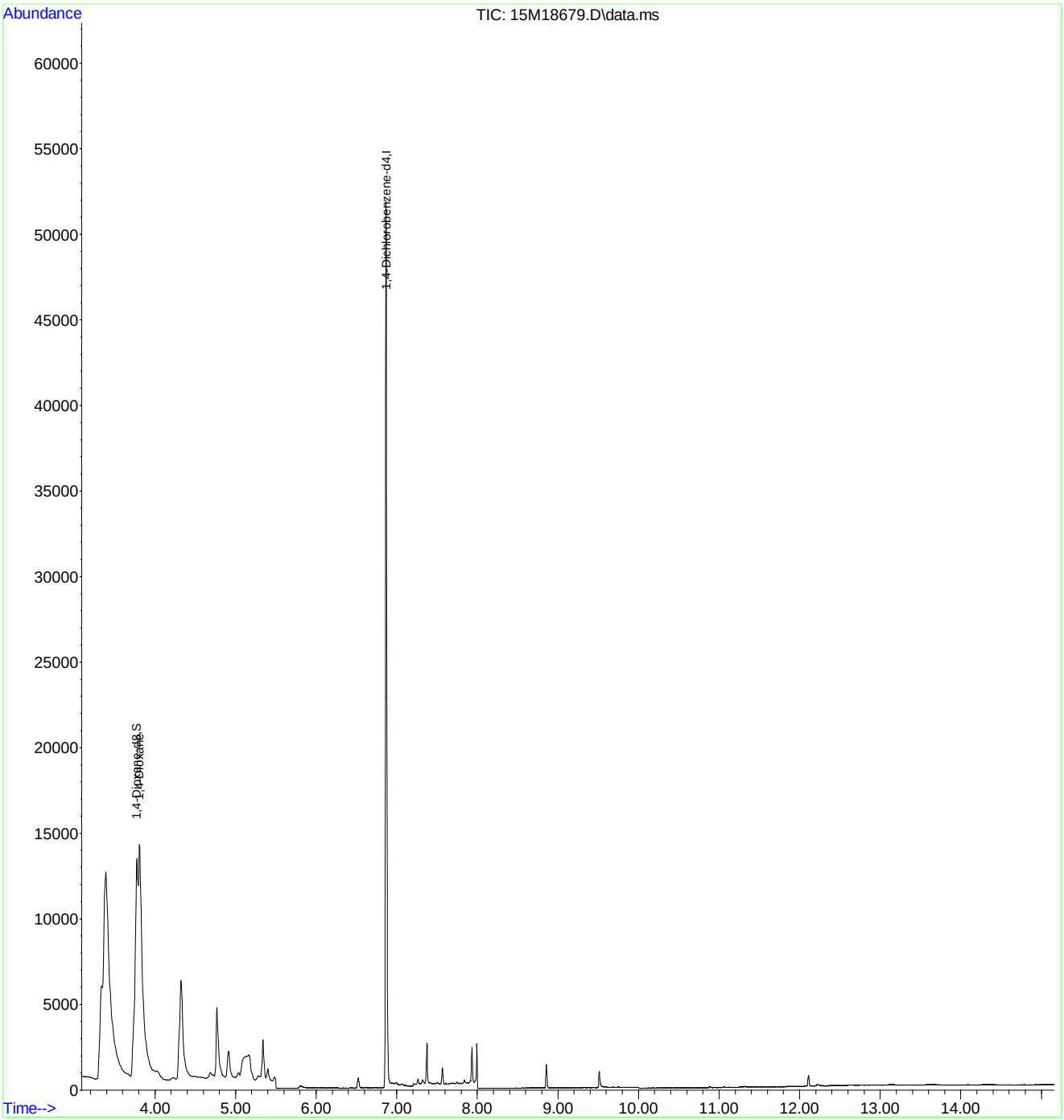

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW16-062116	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 21:17
Collect Date:	06/21/2016 13:20	**Dilution:**	1	**File ID:**	1LM.LM35585
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW16-062116	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 21:36
Collect Date:	06/21/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM35586
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.615		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061290-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	125-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 21:55
Collect Date:	06/22/2016 06:55	**Dilution:**	500	**File ID:**	1LM.LM35587
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	935		200	100	50.0

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	109-062216	**Prep Method:**	6850	**Prep Date:**	07/05/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575171	**Analyst:**	JWR	**Run Date:**	07/05/2016 17:06
Collect Date:	06/22/2016 07:20	**Dilution:**	1000	**File ID:**	1LM.LM35610
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1810		400	200	100

Certificate of Analysis

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16061290-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW07-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 22:33
Collect Date:	06/22/2016 08:30	**Dilution:**	1	**File ID:**	1LM.LM35589
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.634		0.400	0.200	0.100

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1415 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG575005-01 MCT	10,020.	
-02 Blank	0.31	
-03 LCS	0.44	
-04 LCS2	0.41	
L16070001-01 LOD	0.38	
L16070003-01 LOQ	0.43	
-09 LOQ	0.45	
L16061289-01	6,210.	
-02	147.9	
-03	105.2	
-05	1,381.	
L16061290-01	594.	
-02	1,157.	
-04	219.	
-05	172.8	
-06	826.	
L16061452-01	1,890.	
-03	1,179.	
L16061453-01	2,610.	
-02	1,188.	
-03	1,101.	
L16061559-01	3,040.	
-02	3,140.	
L16061648-01	669.	

Analyst: John Richards

Date/Time: 07/01/16 19:50

DCN#119454

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1422 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG575171-01 MCT	10,040.	
-02 Blank	0.34	
-03 LCS	0.54 ~~0.054~~ JWR 07/06/16	
L16061290-05	186.1	
L16070033-01	346.	
-02	8,150.	
-03	98.2	
-04	97.4	
-05 RS	185.7	
-06 MS	185.5	
-07 MSD	185.7	
-08	84.2	
-09	6,140.	

Analyst: John Richards

Date/Time: 07/06/16 / 16:50

DCN#119508

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070116_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575005 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples L16061289(-01,-02), L16061290-05 and L16061452-03 were analyzed at dilutions based on their historical results.
Samples L16061290-04 and L16061453-01 had inconsistent historical results. These samples were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35568	WG575015-01 CCB	1	1		07/01/16 15:55
2	1LM.LM35569	WG575015-02 CCV (1.0ug/L)	1	1	STD75510	07/01/16 16:14
3	1LM.LM35570	WG575005-05 MRL (0.2ug/L)	1	1	STD75510	07/01/16 16:33
4	1LM.LM35571	WG575005-01 MCT (0.2ug/L)	1	1	STD75512	07/01/16 16:52
5	1LM.LM35572	WG575005-02 BLANK	1	1		07/01/16 17:11
6	1LM.LM35573	WG575005-03 LCS (0.2ug/L)	1	1	STD75512	07/01/16 17:30
7	1LM.LM35574	WG575005-04 LCS2 (0.2ug/L)	1	1	STD75512	07/01/16 17:49
8	1LM.LM35575	L16070001-01 LOD (0.1ug/L)	1	1	STD75512	07/01/16 18:08
9	1LM.LM35576	L16070003-01 LOQ (0.2ug/L)	1	1	STD75512	07/01/16 18:27
10	1LM.LM35577	L16070003-09 LOQ (0.2ug/L)	1	1	STD75512	07/01/16 18:46
11	1LM.LM35578	L16061289-01 (10,000x)	1	10000		07/01/16 19:05
12	1LM.LM35579	L16061289-02 (100x)	1	100		07/01/16 19:24
13	1LM.LM35580	L16061289-03	1	1		07/01/16 19:43
14	1LM.LM35581	WG575015-03 CCV (1.0ug/L)	1	1	STD75510	07/01/16 20:02
15	1LM.LM35582	WG575005-06 MRL (0.2ug/L)	1	1	STD75510	07/01/16 20:21
16	1LM.LM35583	WG575015-04 CCB	1	1		07/01/16 20:39
17	1LM.LM35584	L16061289-05	1	1		07/01/16 20:58
18	1LM.LM35585	L16061290-01	1	1		07/01/16 21:17
19	1LM.LM35586	L16061290-02	1	1		07/01/16 21:36
20	1LM.LM35587	L16061290-04 (500x)	1	500		07/01/16 21:55
21	1LM.LM35588	L16061290-05 (10,000x) (NR)	1	10000		07/01/16 22:14
22	1LM.LM35589	L16061290-06	1	1		07/01/16 22:33
23	1LM.LM35590	L16061452-01	1	1		07/01/16 22:52
24	1LM.LM35591	L16061452-03 (10,000x)	1	10000		07/01/16 23:11
25	1LM.LM35592	L16061453-01 (10x)	1	10		07/01/16 23:30
26	1LM.LM35593	L16061453-02	1	1		07/01/16 23:49
27	1LM.LM35594	WG575015-05 CCV (1.0ug/L)	1	1	STD75510	07/02/16 00:08
28	1LM.LM35595	WG575005-07 MRL (0.2ug/L)	1	1	STD75510	07/02/16 00:27
29	1LM.LM35596	WG575015-06 CCB	1	1		07/02/16 00:46
30	1LM.LM35597	L16061453-03	1	1		07/02/16 01:05
31	1LM.LM35598	L16061559-01	1	1		07/02/16 01:23
32	1LM.LM35599	L16061559-02	1	1		07/02/16 01:42

Page: 1 Approved: 06-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070116_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575005 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
33	1LM.LM35600	L16061648-01	1	1		07/02/16 02:01
34	1LM.LM35601	WG575015-07 CCV (1.0ug/L)	1	1	STD75510	07/02/16 02:20
35	1LM.LM35602	WG575005-08 MRL (0.2ug/L)	1	1	STD75510	07/02/16 02:39
36	1LM.LM35603	WG575015-08 CCB	1	1		07/02/16 02:58

Comments

Seq.	Rerun	Dil.	Reason	Analytes
21	X	1000	Analyzed too dilute	
	L16061290-05 (10,000x) (NR) : This sample did not conform to its historical results and was analyzed too dilute at 10,000x dilution. This sample will be ungrouped from this analytical batch and reanalyzed at a 1000x dilution on another day.			

Page: 2 Approved: 06-JUL-16

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070516_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575171 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: Sample L16061290-05 was analyzed at a 1000x dilution based on the results from its initial analysis on 07/01/2016.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35604	WG575212-01 CCB	1	1		07/05/16 15:12
2	1LM.LM35605	WG575212-02 CCV (1.0ug/L)	1	1	STD75510	07/05/16 15:31
3	1LM.LM35606	WG575171-07 MRL (0.2ug/L)	1	1	STD75510	07/05/16 15:50
4	1LM.LM35607	WG575171-01 MCT (0.2ug/L)	1	1	STD75512	07/05/16 16:09
5	1LM.LM35608	WG575171-02 BLANK	1	1		07/05/16 16:28
6	1LM.LM35609	WG575171-03 LCS (0.2ug/L)	1	1	STD75512	07/05/16 16:47
7	1LM.LM35610	L16061290-05 (1000x)	1	1000		07/05/16 17:06
8	1LM.LM35611	L16070033-01	1	1		07/05/16 17:25
9	1LM.LM35612	L16070033-02	1	1		07/05/16 17:44
10	1LM.LM35613	L16070033-03	1	1		07/05/16 18:03
11	1LM.LM35614	L16070033-04	1	1		07/05/16 18:22
12	1LM.LM35615	L16070033-08	1	1		07/05/16 18:41
13	1LM.LM35616	L16070033-09	1	1		07/05/16 18:59
14	1LM.LM35617	WG575212-03 CCV (1.0ug/L)	1	1	STD75510	07/05/16 19:18
15	1LM.LM35618	WG575171-08 MRL (0.2ug/L)	1	1	STD75510	07/05/16 19:37
16	1LM.LM35619	WG575212-04 CCB	1	1		07/05/16 19:56
17	1LM.LM35620	L16070033-05 RS	1	1		07/05/16 20:15
18	1LM.LM35621	L16070033-06 MS	1	1	STD75512	07/05/16 20:34
19	1LM.LM35622	L16070033-07 MSD	1	1	STD75512	07/05/16 20:53
20	1LM.LM35623	WG575212-05 CCV (1.0ug/L)	1	1	STD75510	07/05/16 21:12
21	1LM.LM35624	WG575171-09 MRL (0.2ug/L)	1	1	STD75510	07/05/16 21:31
22	1LM.LM35625	WG575212-06 CCB	1	1		07/05/16 21:50

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 06-JUL-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 04-MAY-2016 John Richards

Secondary Reviewer: 05-MAY-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 76123
Analytical Workgroups: L16061289,1290,1452,1453,1559,1648 L16070001(LOD), 0003(LOQ)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
06-JUL-2016
John Richards

Secondary Reviewer:
06-JUL-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-06-2016 14:48:43

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 76133
Analytical Workgroups: L16061290-05 L16070033

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
06-JUL-2016
John Richards

Secondary Reviewer:
06-JUL-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-06-2016 15:35:02

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG575005

Login Number: L16061290

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW16-062116	01	06/21/16					07/01/2016	10	28		07/01/16	.3	28	
MW16-062116	02	06/21/16					07/01/2016	10	28		07/01/16	.3	28	
125-062216	04	06/22/16					07/01/2016	9.3	28		07/01/16	.4	28	
18CPTMW07-062216	06	06/22/16					07/01/2016	9.2	28		07/01/16	.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4841035
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG575171

Login Number: L16061290

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
109-062216	05	06/22/16					07/05/2016	13.3	28		07/05/16	.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4841035
Report generated 07/07/2016 09:01

METHOD BLANK SUMMARY

Login Number: L16061290
Blank File ID: 1LM.LM35572
Prep Date: 07/01/16 13:30
Analyzed Date: 07/01/16 17:11
Analyst: JWR

Work Group: WG575005
Blank Sample ID: WG575005-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG575005-05	1LM.LM35570	07/01/16 16:33	01
MCT	WG575005-01	1LM.LM35571	07/01/16 16:52	01
LCS	WG575005-03	1LM.LM35573	07/01/16 17:30	01
LCS2	WG575005-04	1LM.LM35574	07/01/16 17:49	01
QCMRL	WG575005-06	1LM.LM35582	07/01/16 20:21	01
18CPTMW16-062116	L16061290-01	1LM.LM35585	07/01/16 21:17	01
MW16-062116	L16061290-02	1LM.LM35586	07/01/16 21:36	01
125-062216	L16061290-04	1LM.LM35587	07/01/16 21:55	DL01
18CPTMW07-062216	L16061290-06	1LM.LM35589	07/01/16 22:33	01
QCMRL	WG575005-07	1LM.LM35595	07/02/16 00:27	01
QCMRL	WG575005-08	1LM.LM35602	07/02/16 02:39	01

Report Name: BLANK_SUMMARY
PDF File ID: 4841036
Report generated 07/07/2016 09:01

METHOD BLANK SUMMARY

Login Number: L16061290
Blank File ID: 1LM.LM35608
Prep Date: 07/05/16 15:00
Analyzed Date: 07/05/16 16:28
Analyst: JWR

Work Group: WG575171
Blank Sample ID: WG575171-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG575171-07	1LM.LM35606	07/05/16 15:50	01
MCT	WG575171-01	1LM.LM35607	07/05/16 16:09	01
LCS	WG575171-03	1LM.LM35609	07/05/16 16:47	01
109-062216	L16061290-05	1LM.LM35610	07/05/16 17:06	DL01
QCMRL	WG575171-08	1LM.LM35618	07/05/16 19:37	01
QCMRL	WG575171-09	1LM.LM35624	07/05/16 21:31	01

Report Name: BLANK_SUMMARY
PDF File ID: 4841036
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 07/01/16 13:30 Sample ID: WG575005-02
Instrument ID: LCMS1 Run Date: 07/01/16 17:11 Prep Method: 6850
File ID: 1LM.LM35572 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4841037
07-JUL-2016 09:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 07/05/16 15:00 Sample ID: WG575171-02
Instrument ID: LCMS1 Run Date: 07/05/16 16:28 Prep Method: 6850
File ID: 1LM.LM35608 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575171 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4841037
07-JUL-2016 09:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Run Date: 07/05/2016 Sample ID: WG575171-03
Instrument ID: LCMS1 Run Time: 16:47 Prep Method: 6850
File ID: 1LM.LM35609 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575171 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.198	99.0	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4841510
Report generated: 07/07/2016 09:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG575005 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG575005-03 LCS File ID: 1LM.LM35573 Run Date: 07/01/2016 17:30
Sample ID: WG575005-04 LCS2 File ID: 1LM.LM35574 Run Date: 07/01/2016 17:49

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.201	101	0.200	0.211	106	4.85	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4841038
Report generated: 07/07/2016 09:01

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061290
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4841492
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061290

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4841492
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061290

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4841492
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061290

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4841492

Report generated 07/07/2016 09:01

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061290 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4841493
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575015-01
Instrument ID: LCMS1
Run Time: 15:55
Method: 6850
File ID: 1LM.LM35568
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841041
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575015-04
Instrument ID: LCMS1
Run Time: 20:39
Method: 6850
File ID: 1LM.LM35583
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841041
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/02/2016
Sample ID: WG575015-06
Instrument ID: LCMS1
Run Time: 00:46
Method: 6850
File ID: 1LM.LM35596
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841041
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/02/2016
Sample ID: WG575015-08
Instrument ID: LCMS1
Run Time: 02:58
Method: 6850
File ID: 1LM.LM35603
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841041
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/05/2016
Sample ID: WG575212-01
Instrument ID: LCMS1
Run Time: 15:12
Method: 6850
File ID: 1LM.LM35604
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575171
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841041
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/05/2016
Sample ID: WG575212-04
Instrument ID: LCMS1
Run Time: 19:56
Method: 6850
File ID: 1LM.LM35619
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575171
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841041
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/05/2016
Sample ID: WG575212-06
Instrument ID: LCMS1
Run Time: 21:50
Method: 6850
File ID: 1LM.LM35625
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575171
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841041
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575015-02
Instrument ID: LCMS1
Run Time: 16:14
Method: 6850
File ID: 1LM.LM35569
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841040
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575015-03
Instrument ID: LCMS1
Run Time: 20:02
Method: 6850
File ID: 1LM.LM35581
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841040
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290 Run Date: 07/02/2016 Sample ID: WG575015-05
Instrument ID: LCMS1 Run Time: 00:08 Method: 6850
File ID: 1LM.LM35594 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG575005 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841040
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/02/2016
Sample ID: WG575015-07
Instrument ID: LCMS1
Run Time: 02:20
Method: 6850
File ID: 1LM.LM35601
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841040
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290 Run Date: 07/05/2016 Sample ID: WG575212-02
Instrument ID: LCMS1 Run Time: 15:31 Method: 6850
File ID: 1LM.LM35605 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG575171 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.981	ug/L	1.66	1.90	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841040
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290 Run Date: 07/05/2016 Sample ID: WG575212-03
Instrument ID: LCMS1 Run Time: 19:18 Method: 6850
File ID: 1LM.LM35617 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG575171 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.00	ug/L	1.69	0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841040
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/05/2016
Sample ID: WG575212-05
Instrument ID: LCMS1
Run Time: 21:12
Method: 6850
File ID: 1LM.LM35623
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575171
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.996	ug/L	1.68	0.400	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841040
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061290 Run Date: 07/01/2016 Sample ID: WG575005-05
Instrument ID: LCMS1 Run Time: 16:33 Prep Method: 6850
File ID: 1LM.LM35570 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841039
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061290 Run Date: 07/01/2016 Sample ID: WG575005-06
Instrument ID: LCMS1 Run Time: 20:21 Prep Method: 6850
File ID: 1LM.LM35582 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841039
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061290 Run Date: 07/02/2016 Sample ID: WG575005-07
Instrument ID: LCMS1 Run Time: 00:27 Prep Method: 6850
File ID: 1LM.LM35595 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841039
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061290 Run Date: 07/02/2016 Sample ID: WG575005-08
Instrument ID: LCMS1 Run Time: 02:39 Prep Method: 6850
File ID: 1LM.LM35602 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841039
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061290 Run Date: 07/05/2016 Sample ID: WG575171-07
Instrument ID: LCMS1 Run Time: 15:50 Prep Method: 6850
File ID: 1LM.LM35606 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575171 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.199	99.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841039
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061290 Run Date: 07/05/2016 Sample ID: WG575171-08
Instrument ID: LCMS1 Run Time: 19:37 Prep Method: 6850
File ID: 1LM.LM35618 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575171 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.198	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841039
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061290 Run Date: 07/05/2016 Sample ID: WG575171-09
Instrument ID: LCMS1 Run Time: 21:31 Prep Method: 6850
File ID: 1LM.LM35624 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575171 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841039
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061290
Instrument ID: LCMS1
Workgroup (AAB#): WG575005

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061290-01	1.00	01	390000
L16061290-02	1.00	01	364000
L16061290-04	500	DL01	449000
L16061290-06	1.00	01	368000
WG575005-02	1.00	01	451000
WG575005-03	1.00	01	451000
WG575005-04	1.00	01	450000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4841042
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061290
Instrument ID: LCMS1
Workgroup (AAB#): WG575171

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061290-05	1000	DL01	440000
WG575171-02	1.00	01	436000
WG575171-03	1.00	01	439000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4841042
Report generated 07/07/2016 09:01

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	L16061290-01
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35585
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 21:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	L16061290-02
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35586
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 21:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	75800	26900	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	L16061290-04
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35587
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 21:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	284000	97100	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	L16061290-05
Instrument:	LCMS1	**Prep Date:**	07/05/2016 15:00	**File ID:**	1LM.LM35610
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 17:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	269000	93100	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	L16061290-06
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35589
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 22:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	79000	26700	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575005-01
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35571
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30200	9940	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575005-02
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35572
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575005-03
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35573
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:30	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31100	11300	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575005-04
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35574
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32500	11800	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575005-05
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35570
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33000	11700	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575005-06
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35582
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32800	11400	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575005-07
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35595
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35700	12900	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575005-08
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35602
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	12300	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575015-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35568
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 15:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575015-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35569
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	163000	56900	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575015-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35581
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	167000	58000	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575015-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35583
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575015-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35594
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	57200	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575015-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35596
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575015-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35601
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	58500	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575015-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35603
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575171-01
Instrument:	LCMS1	**Prep Date:**	07/05/2016 15:00	**File ID:**	1LM.LM35607
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 16:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	26700	9850	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575171-02
Instrument:	LCMS1	**Prep Date:**	07/05/2016 15:00	**File ID:**	1LM.LM35608
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 16:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575171-03
Instrument:	LCMS1	**Prep Date:**	07/05/2016 15:00	**File ID:**	1LM.LM35609
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 16:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	29700	10900	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575171-07
Instrument:	LCMS1	**Prep Date:**	07/05/2016 15:00	**File ID:**	1LM.LM35606
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 15:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	29700	10800	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575171-08
Instrument:	LCMS1	**Prep Date:**	07/05/2016 15:00	**File ID:**	1LM.LM35618
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 19:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34500	12500	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575171-09
Instrument:	LCMS1	**Prep Date:**	07/05/2016 15:00	**File ID:**	1LM.LM35624
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 21:31	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35800	12800	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575212-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35604
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 15:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575212-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35605
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 15:31	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	152000	54100	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575212-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35617
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 19:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	157000	54600	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575212-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35619
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 19:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	181	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575212-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35623
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 21:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	165000	55700	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575212-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35625
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 21:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:31 PM

Data File	LM35585.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 9:17:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061290-01	**Injection Vial**	15.00
Data File	LM35585.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 9:17:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061290-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.900e+05	9.46	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.46(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

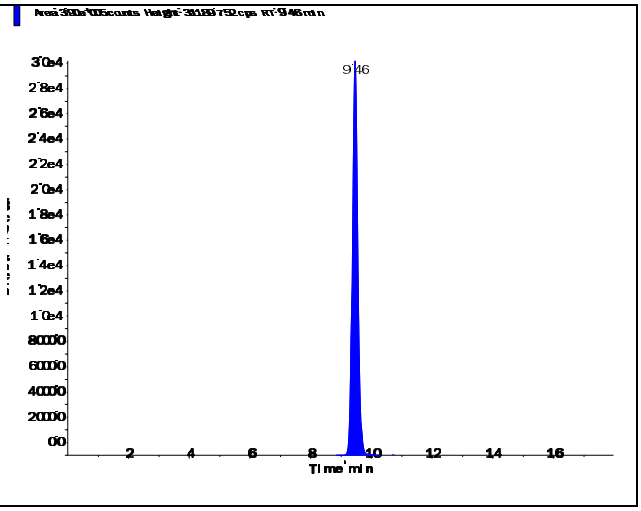

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:31 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

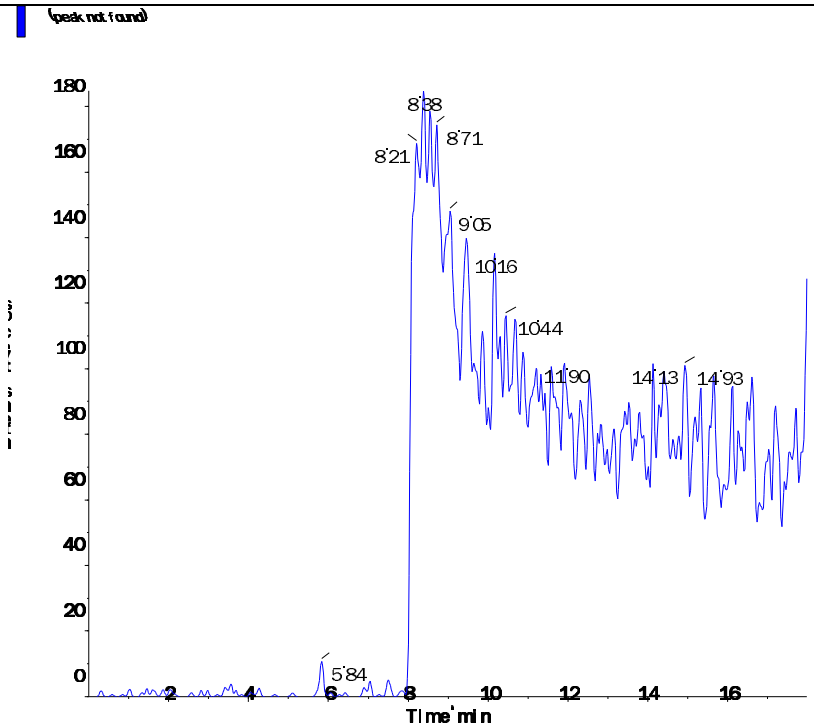

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

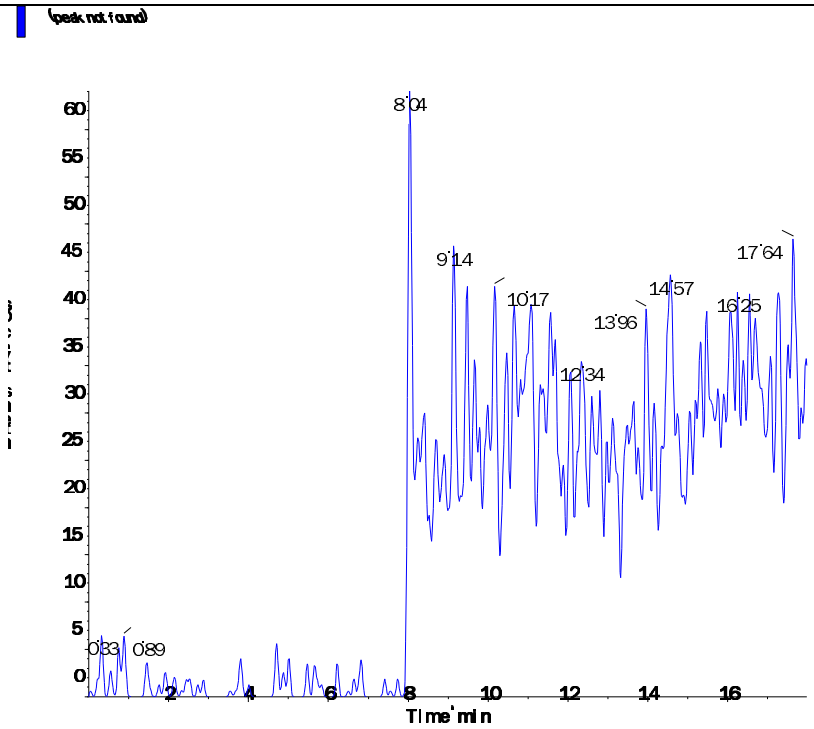

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:32 PM

Data File	LM35586.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 9:36:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061290-02	**Injection Vial**	16.00
Data File	LM35586.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 9:36:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061290-02	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.640e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.580e+04	9.37	N/A	0.615
Perchlorate conf	2.690e+04	9.36	N/A	0.641

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

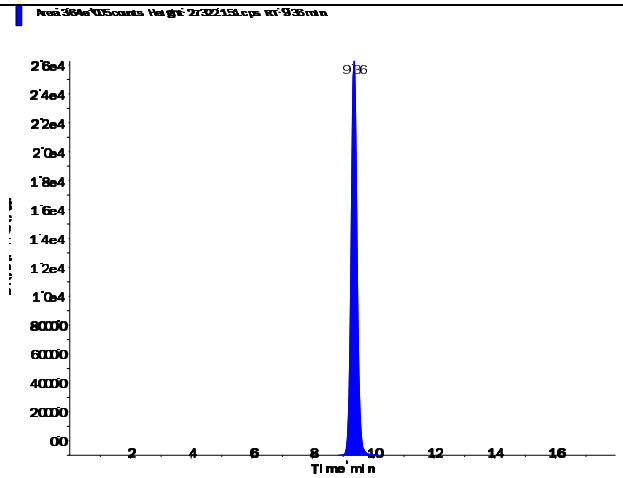

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:32 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.615 ng/ml
Area Ratio:	0.208
Sample Type:	(Unknown)

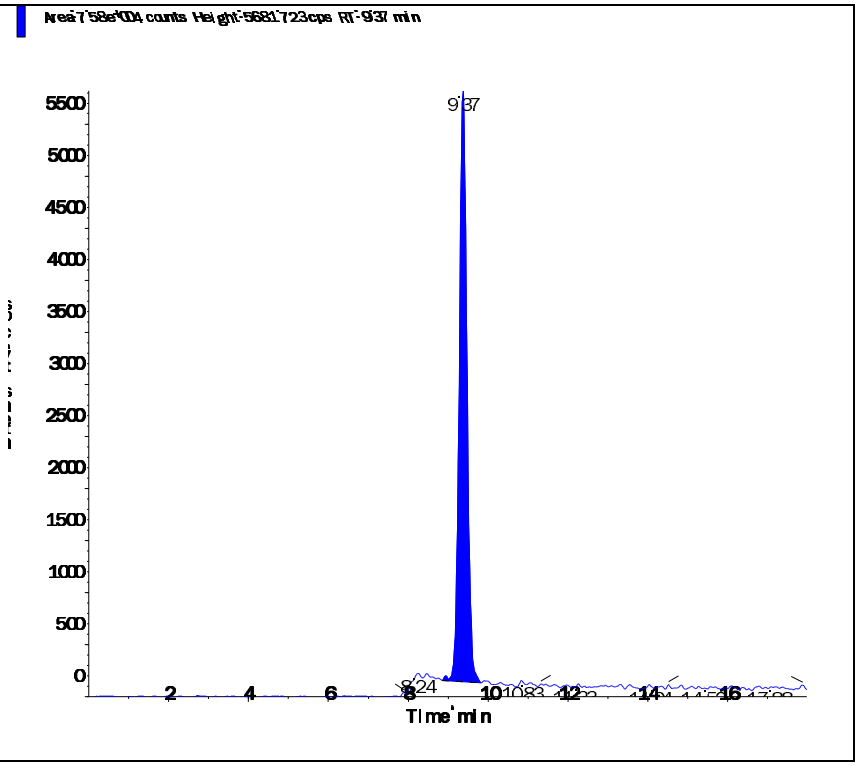

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	0.641 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

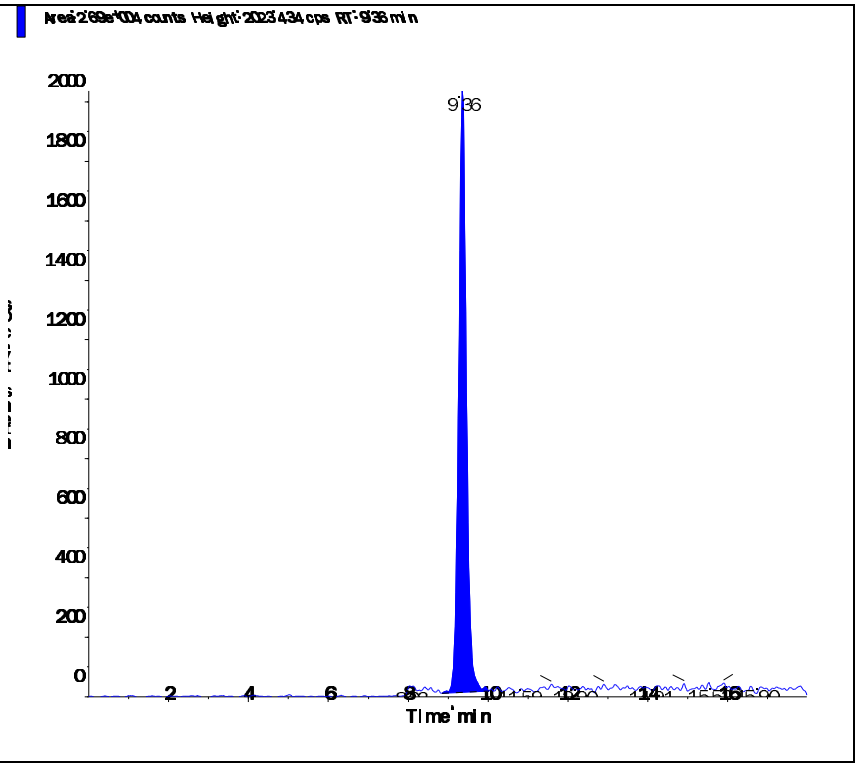

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:32 PM

Data File	LM35587.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 9:55:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061290-04 (500x)	**Injection Vial**	17.00
Data File	LM35587.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 9:55:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061290-04	**Dilution Factor**	1.00
Sample Comment	1,500 (screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.840e+05	9.70	N/A	1.87
Perchlorate conf	9.710e+04	9.69	N/A	1.92

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

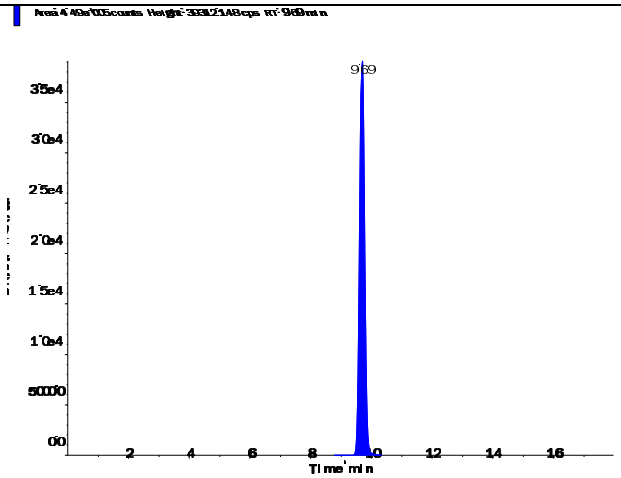

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:32 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.70 (9.84) min
Calculated conc:	1.87 ng/ml
Area Ratio:	0.631
Sample Type:	(Unknown)

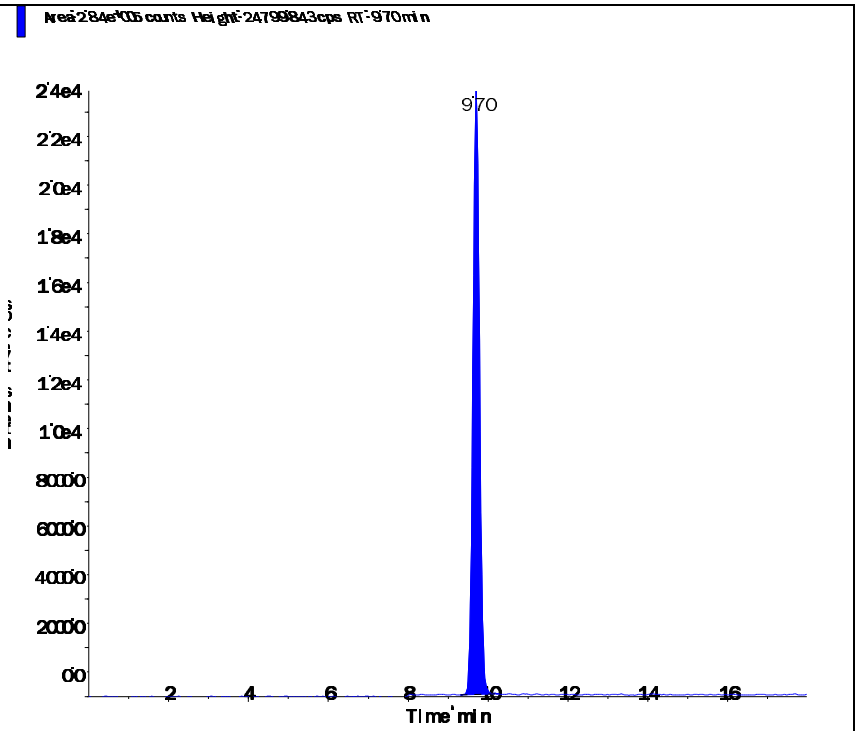

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	1.92 ng/ml
Area Ratio:	0.216
Sample Type:	(Unknown)

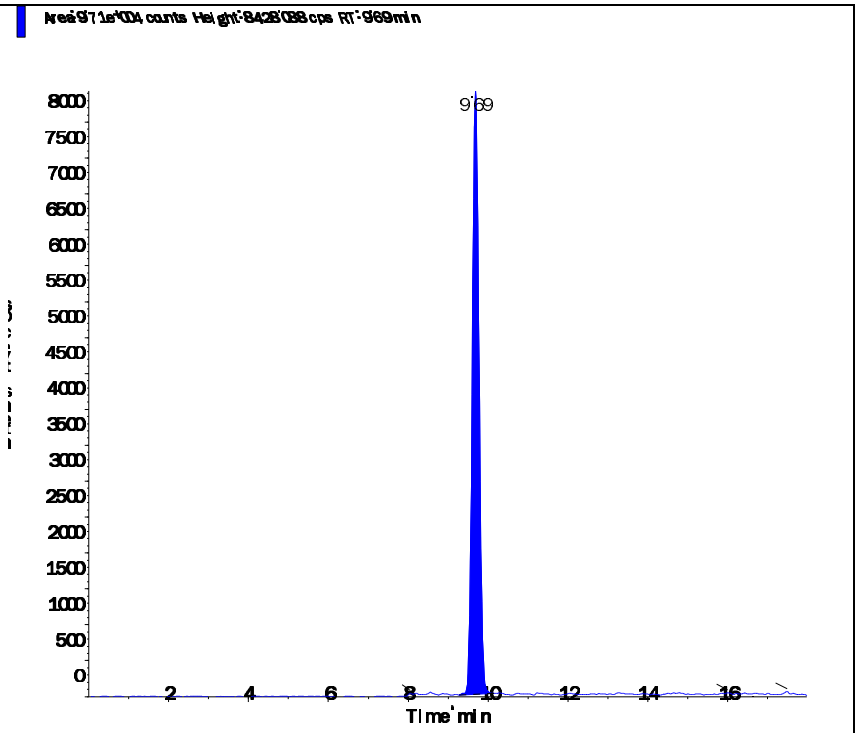

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:58 AM

Data File	LM35610.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 5:06:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061290-05 (1000x)	**Injection Vial**	7.00
Data File	LM35610.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 5:06:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	L16061290-05	**Dilution Factor**	1.00
Sample Comment	1,1000 (Rerun)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.400e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.690e+05	9.72	N/A	1.81
Perchlorate conf	9.310e+04	9.70	N/A	1.87

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

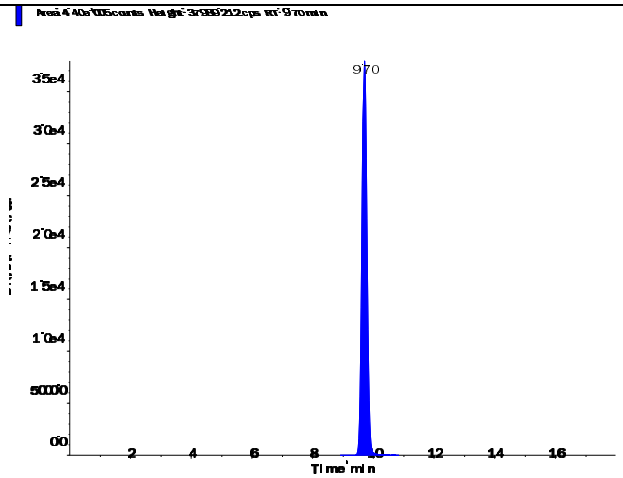

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:58 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.72 (9.84) min
Calculated conc:	1.81 ng/ml
Area Ratio:	0.61
Sample Type:	(Unknown)

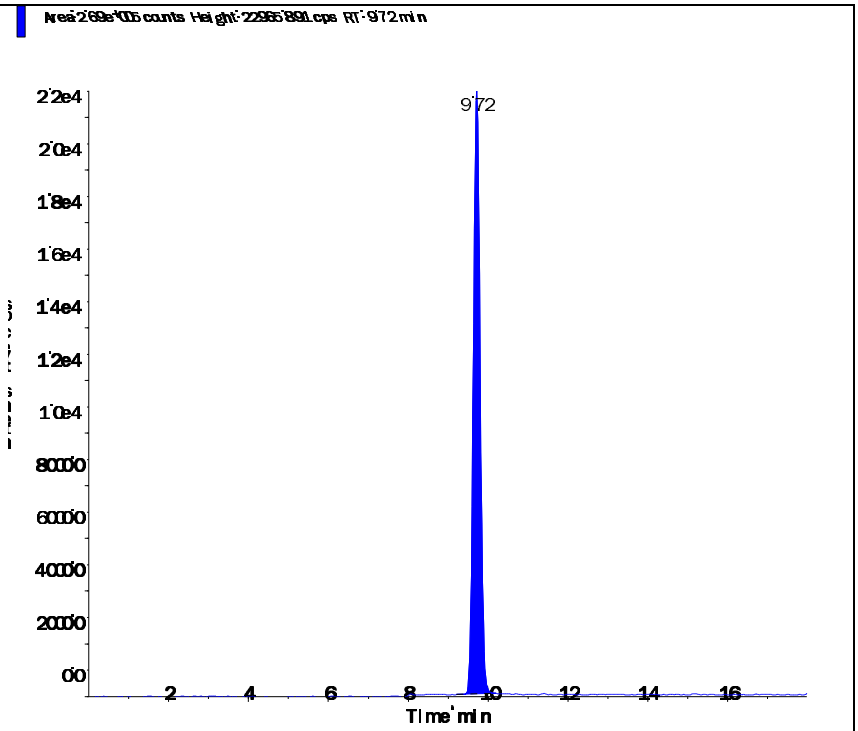

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.70 (9.84) min
Calculated conc:	1.87 ng/ml
Area Ratio:	0.211
Sample Type:	(Unknown)

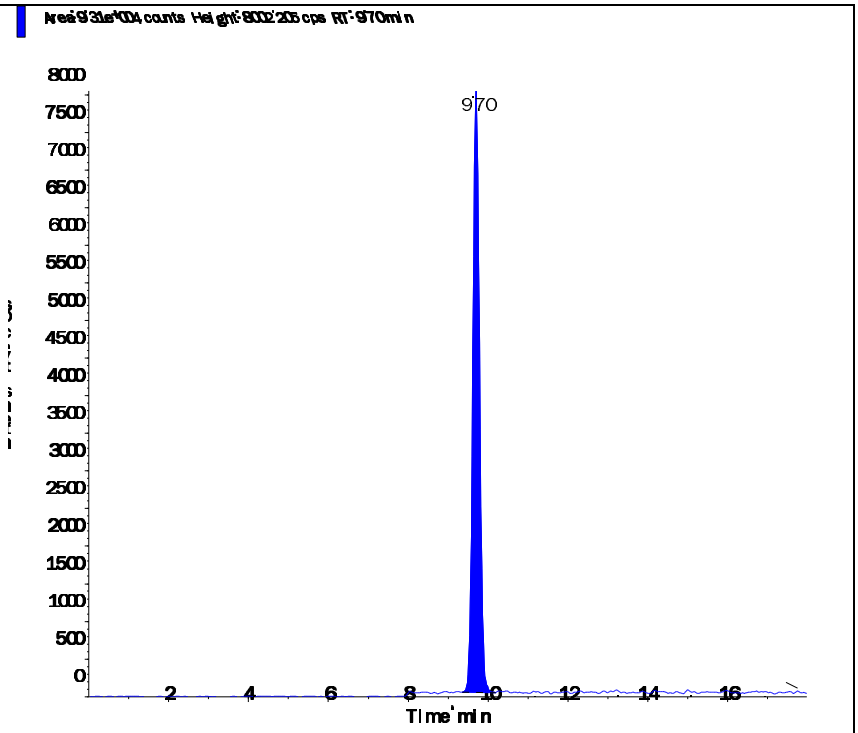

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:32 PM

Data File	LM35589.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 10:33:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061290-06	**Injection Vial**	19.00
Data File	LM35589.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 10:33:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061290-06	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.680e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.900e+04	9.36	N/A	0.634
Perchlorate conf	2.670e+04	9.35	N/A	0.628

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

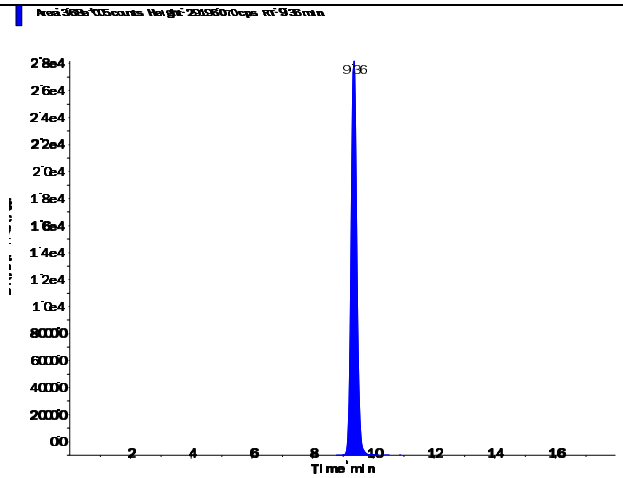

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:32 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	0.634 ng/ml
Area Ratio:	0.215
Sample Type:	(Unknown)

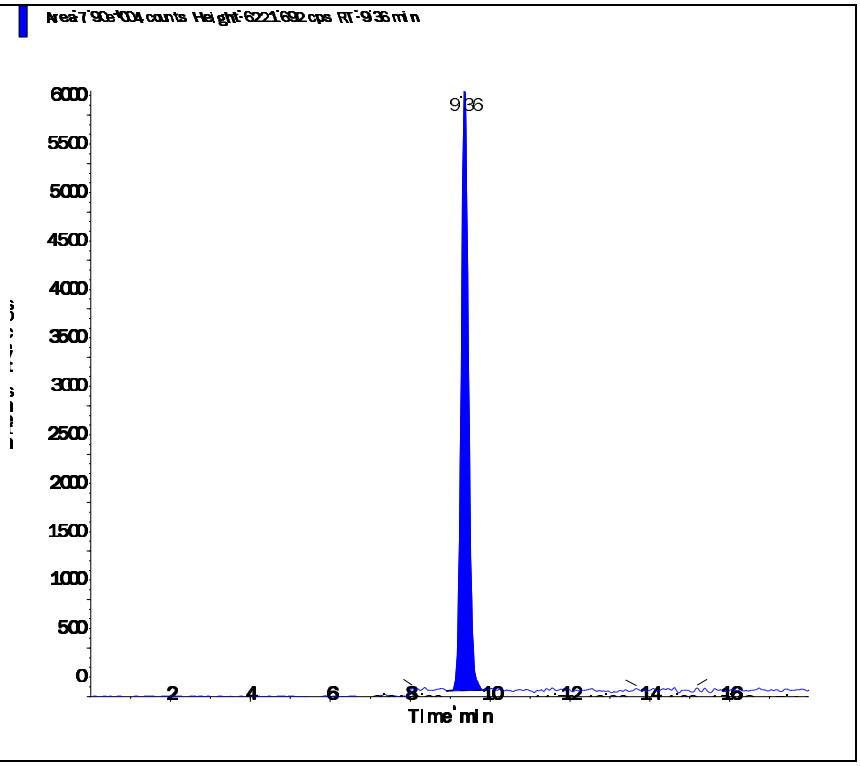

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.628 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

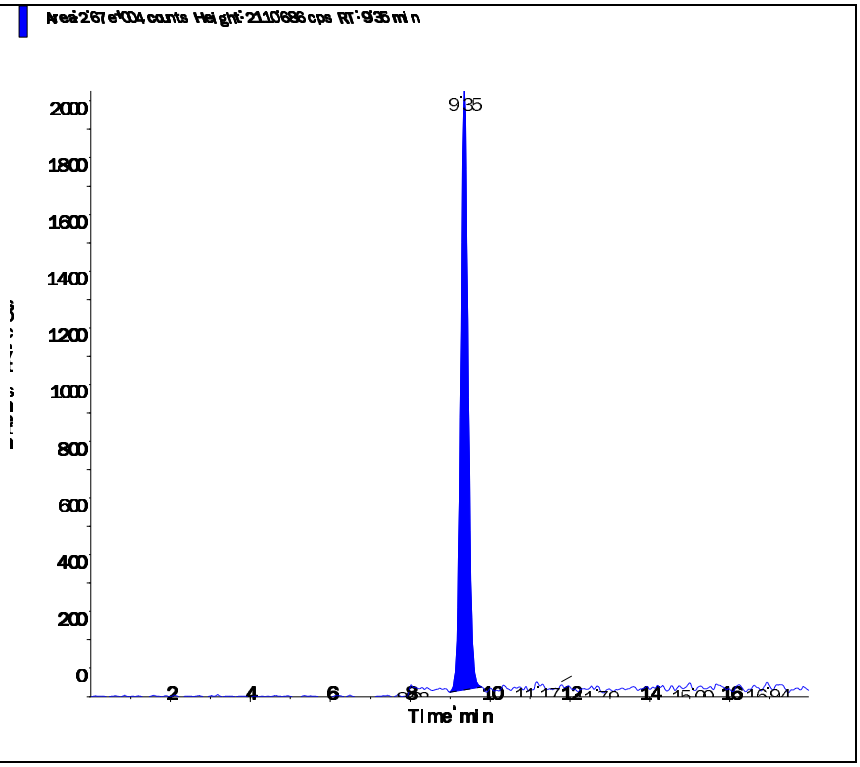

s.dataFile Page 2 of 2

2.2.2.4 Standards Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:53 AM

Data File	LM34686.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

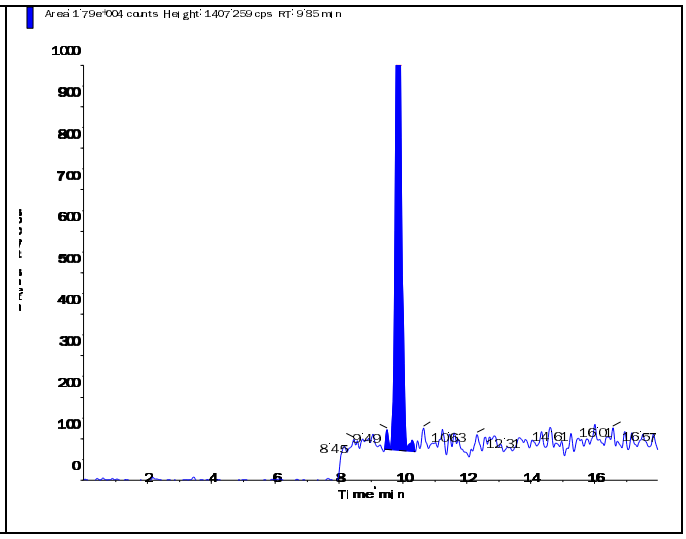

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:53 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

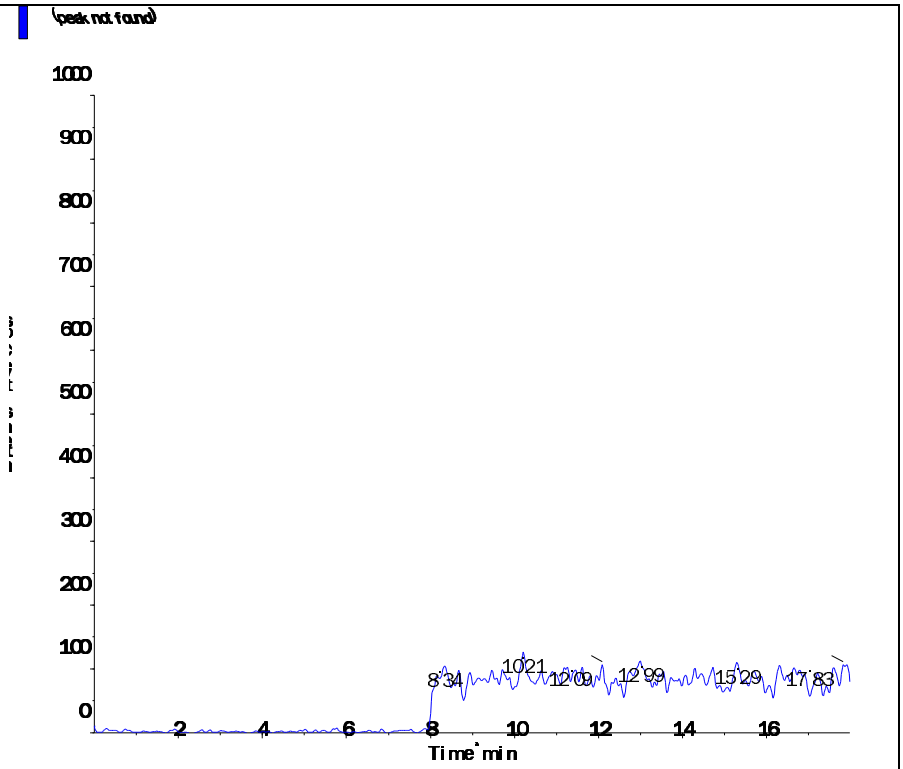

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

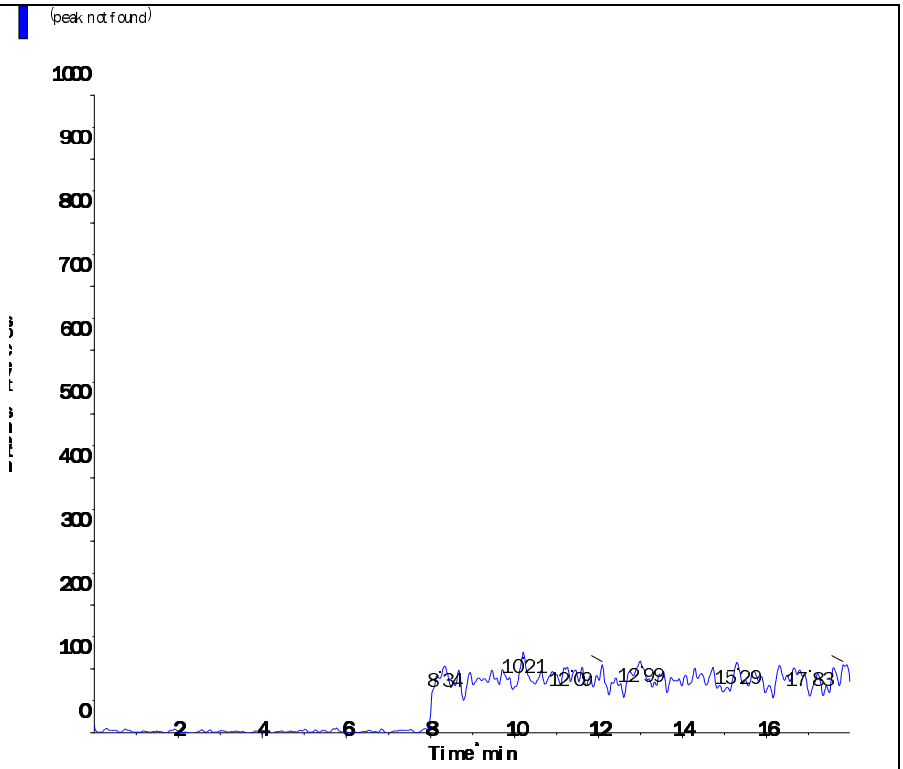

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

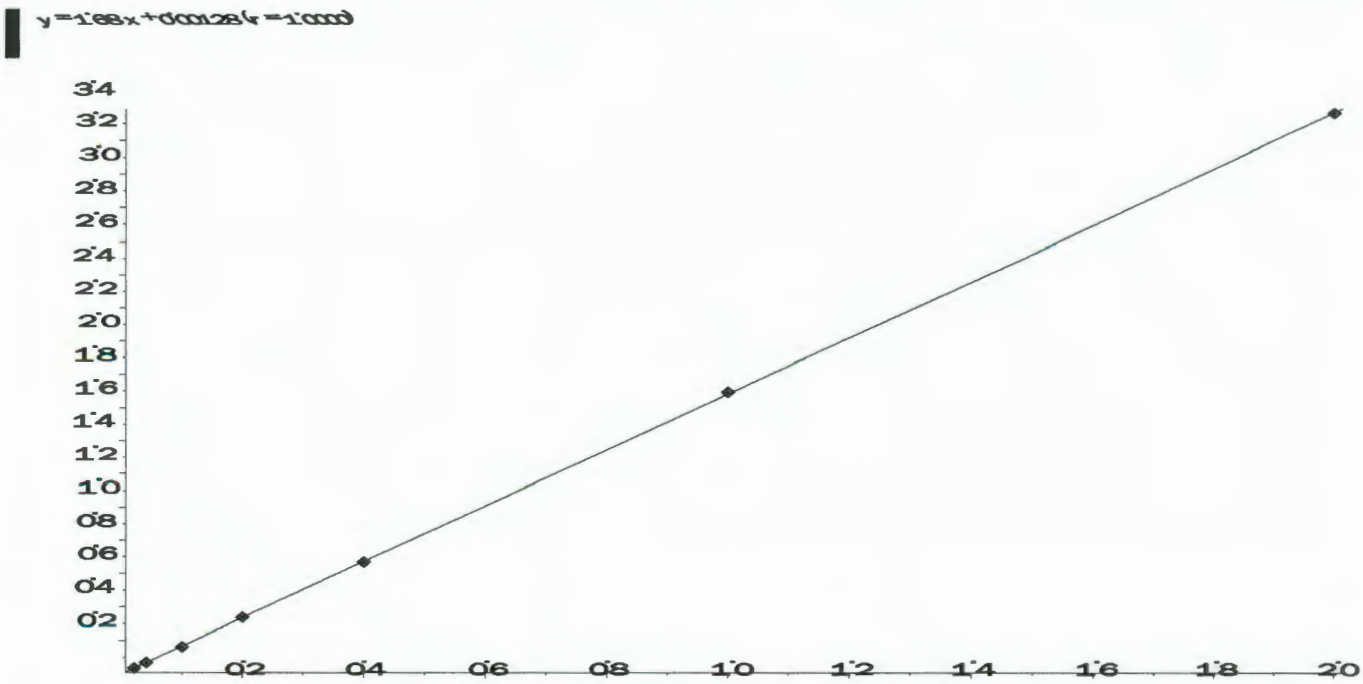

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

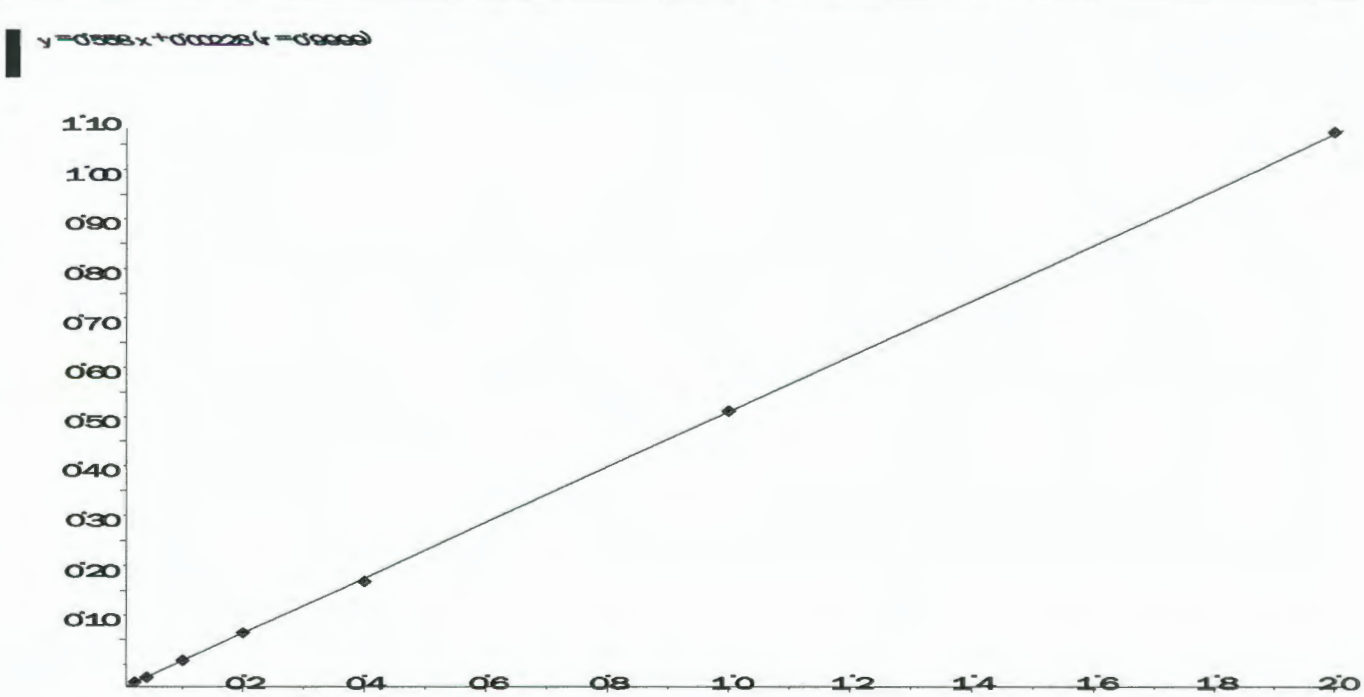

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:54 AM

Data File	LM34687.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

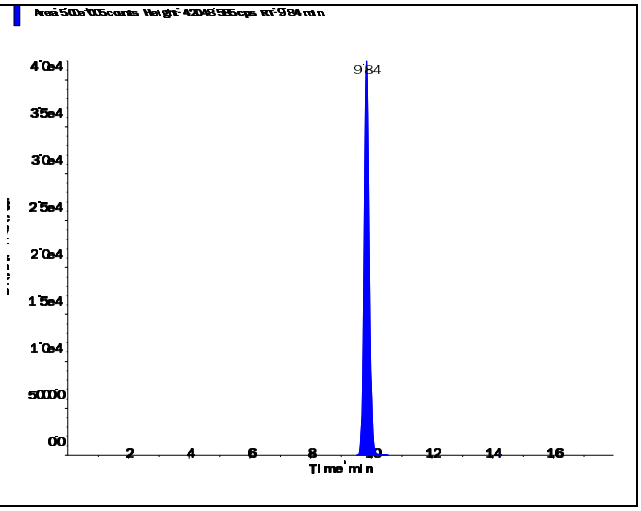

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:54 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.103 ng/ml Area Ratio: 0.036 Sample Type: (Standard)	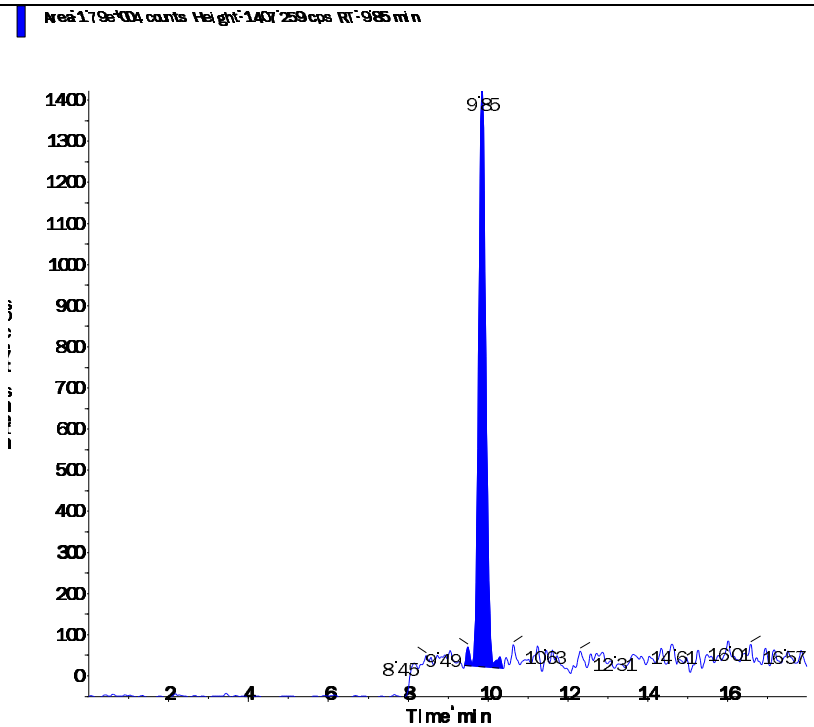
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 0.104 ng/ml Area Ratio: 0.014 Sample Type: (Standard)	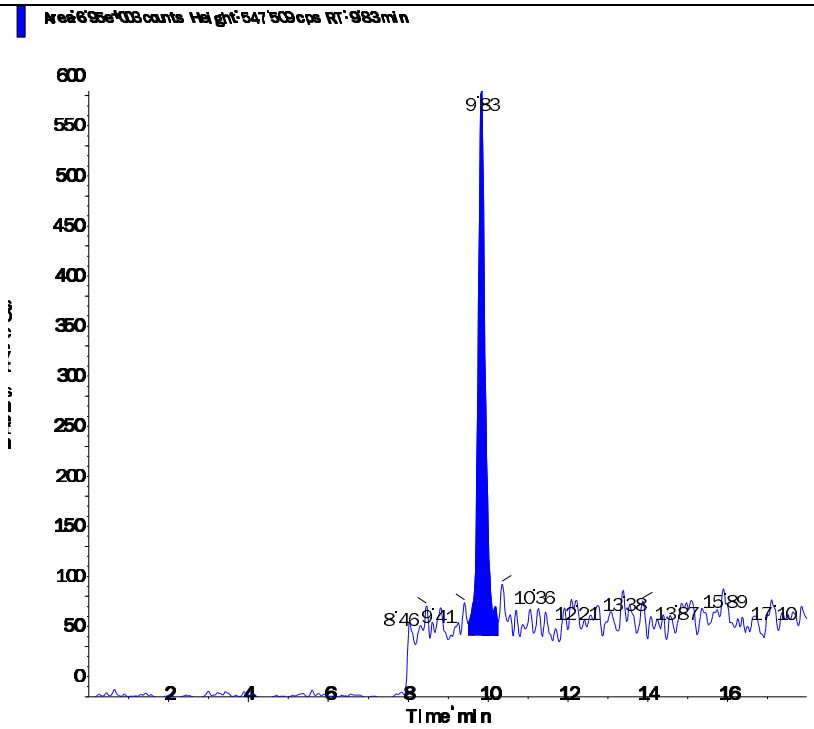

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:54 AM

Data File	LM34688.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

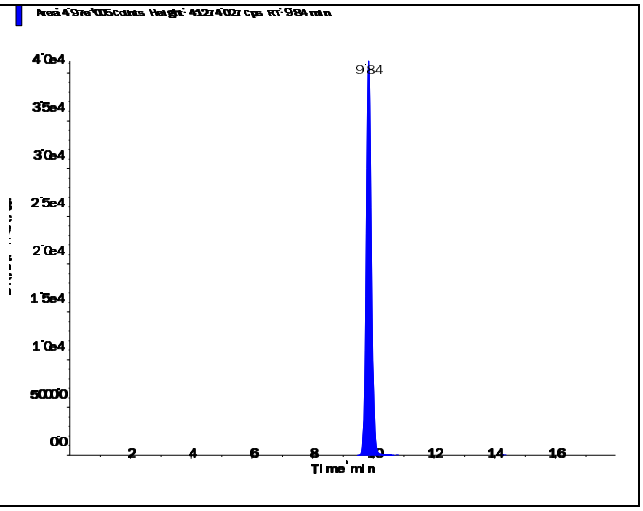

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:54 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

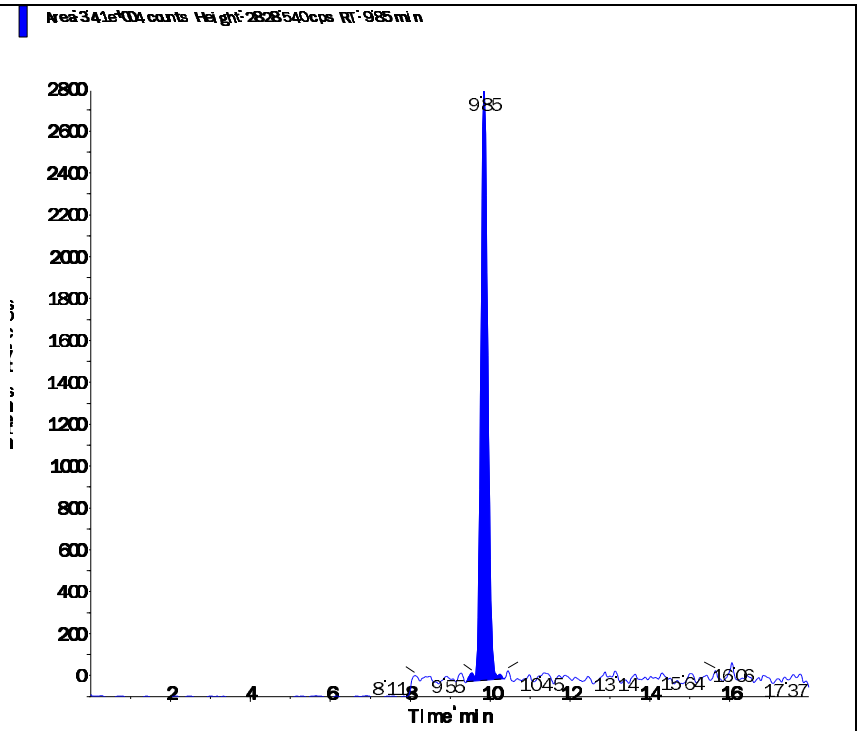

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

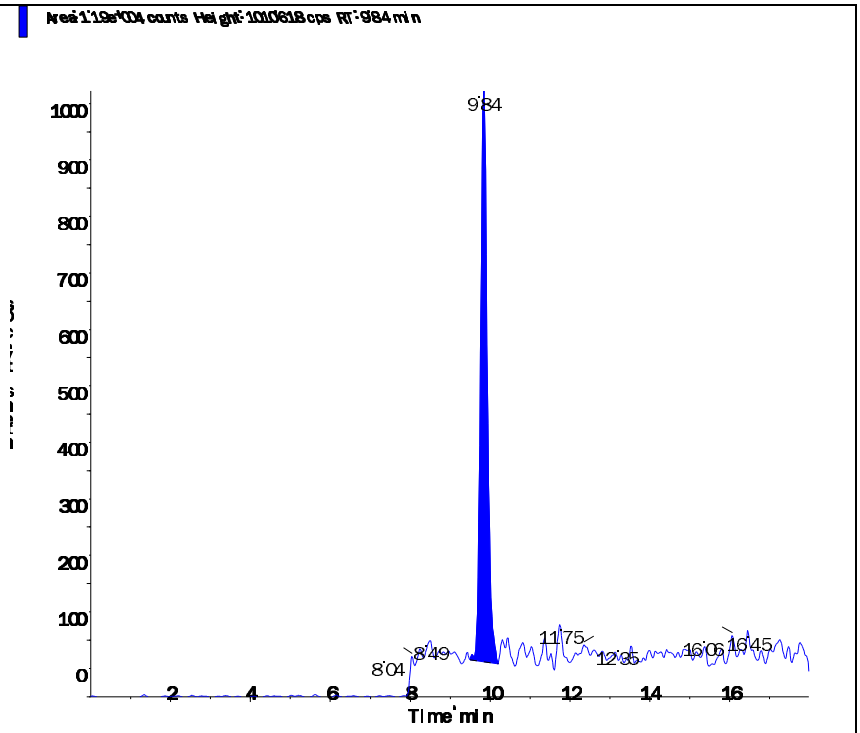

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Data File	LM34689.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

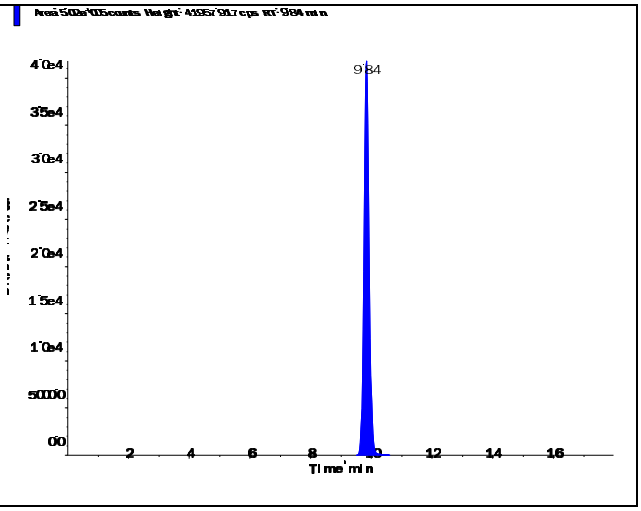

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

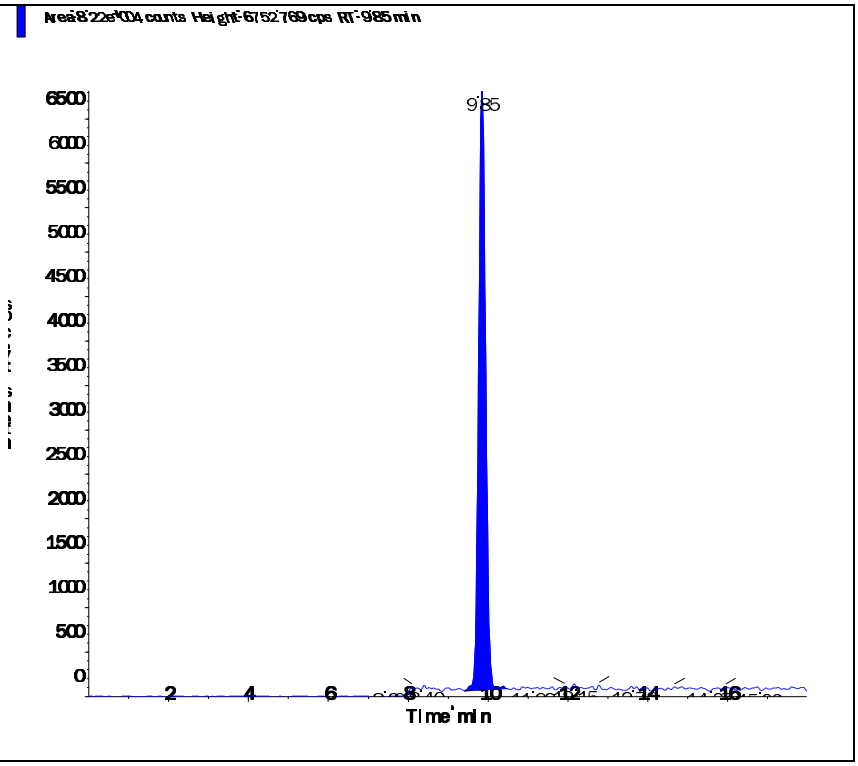

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

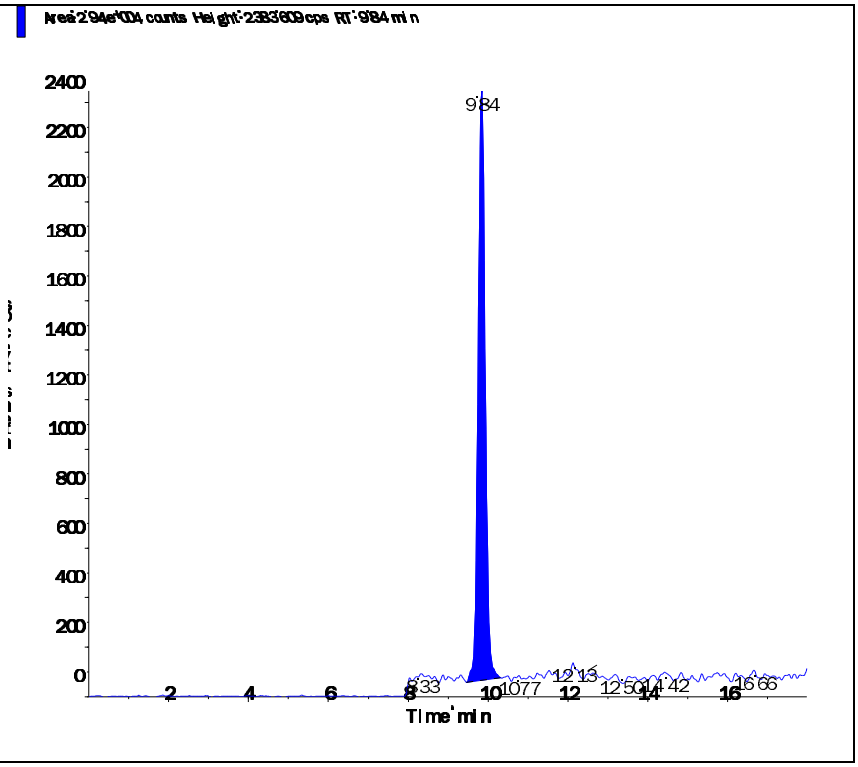

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Data File	LM34690.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

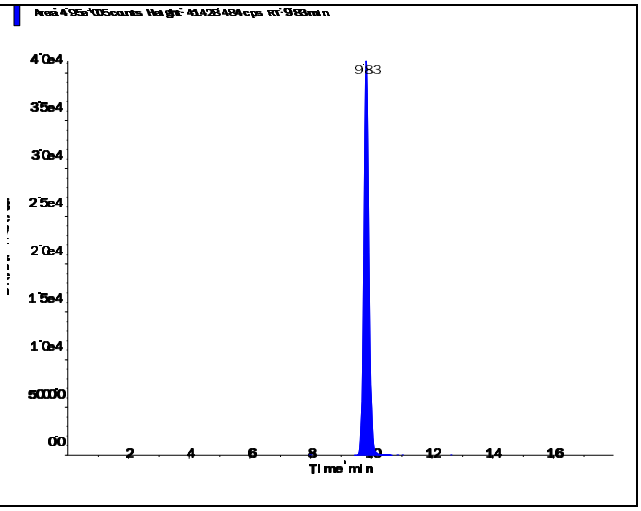

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

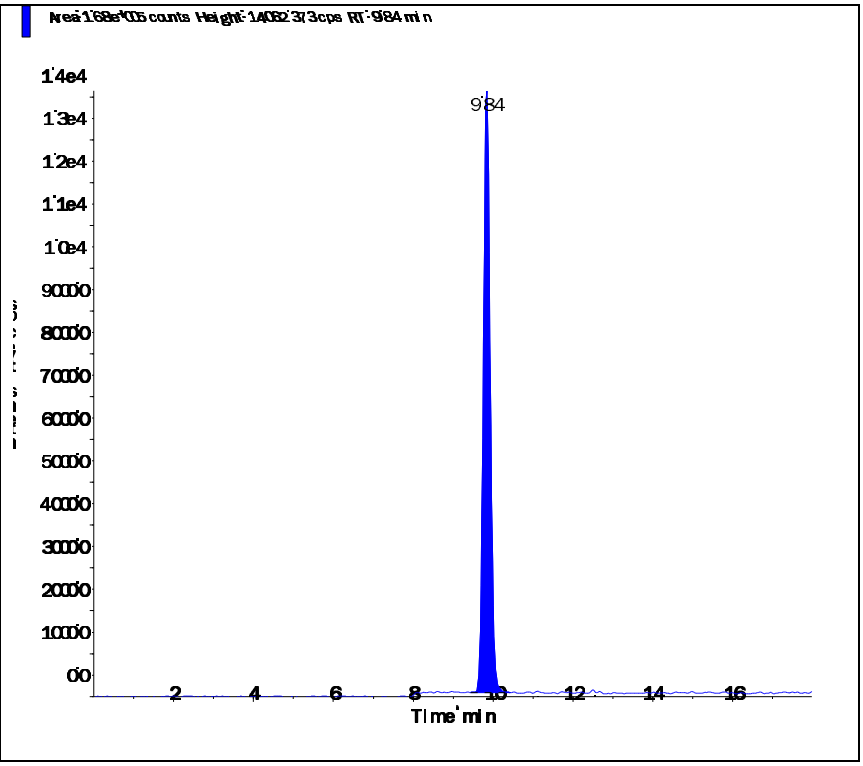

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

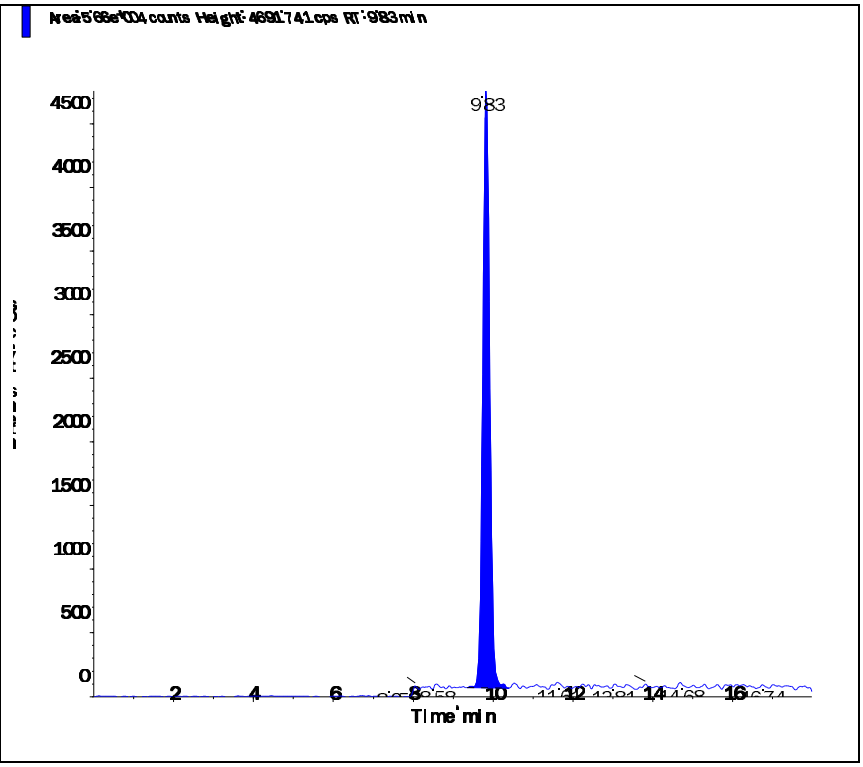

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Data File	LM34691.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

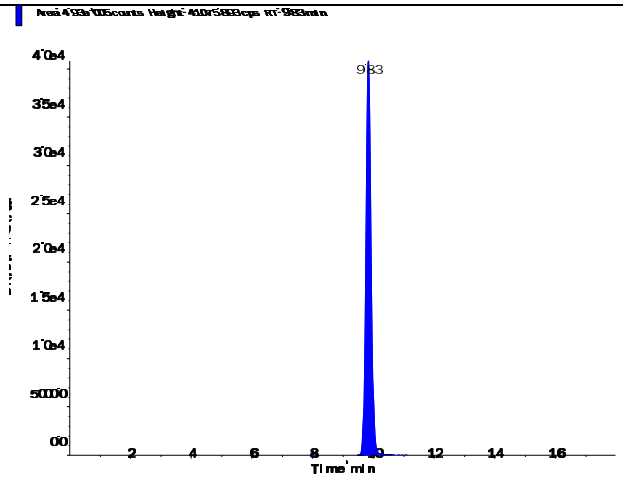

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

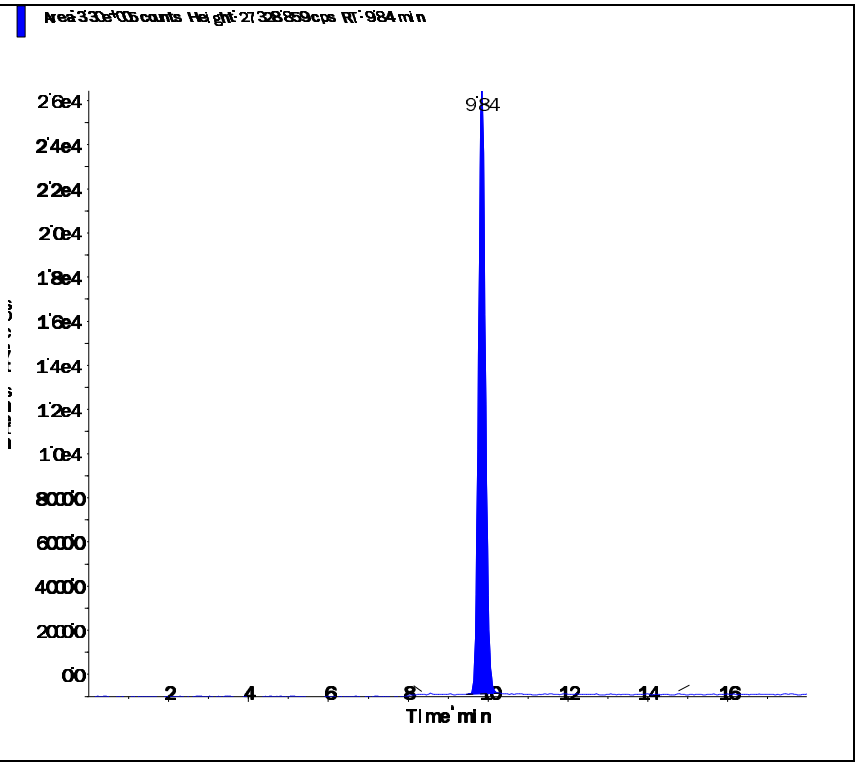

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

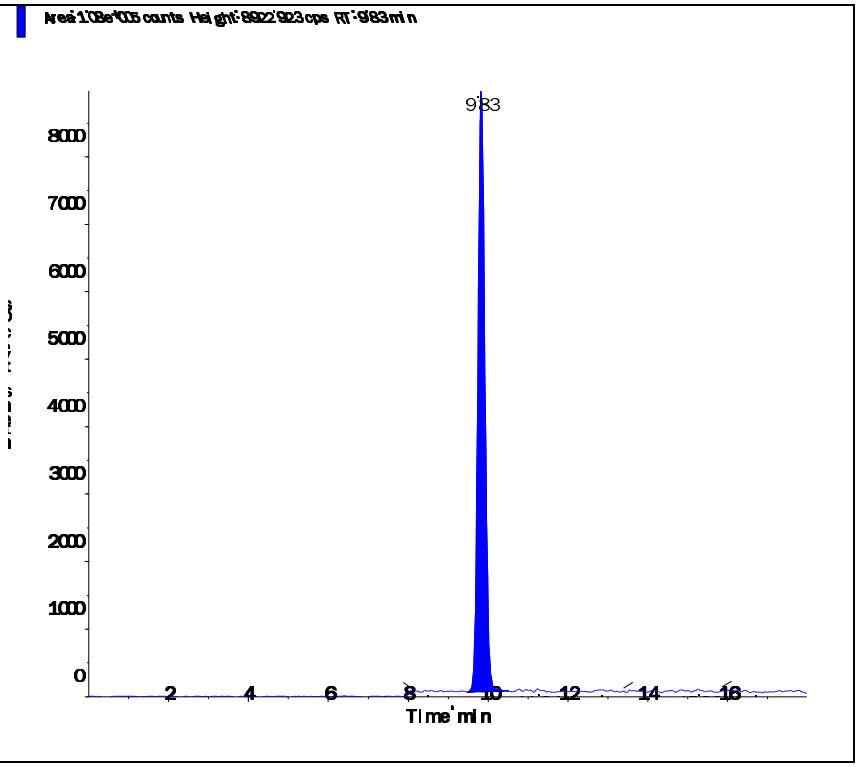

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Data File	LM34692.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

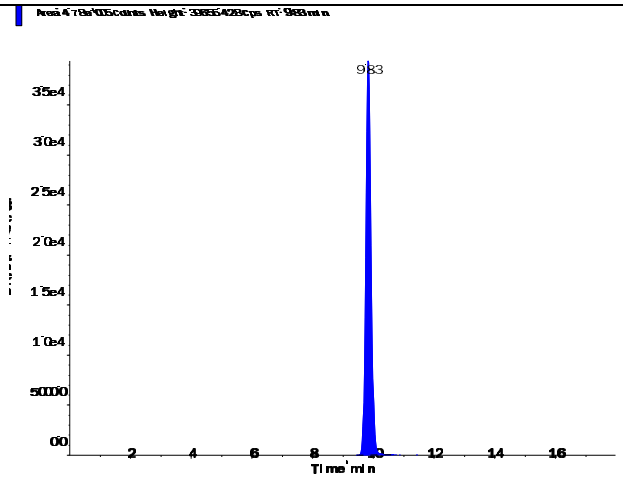

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

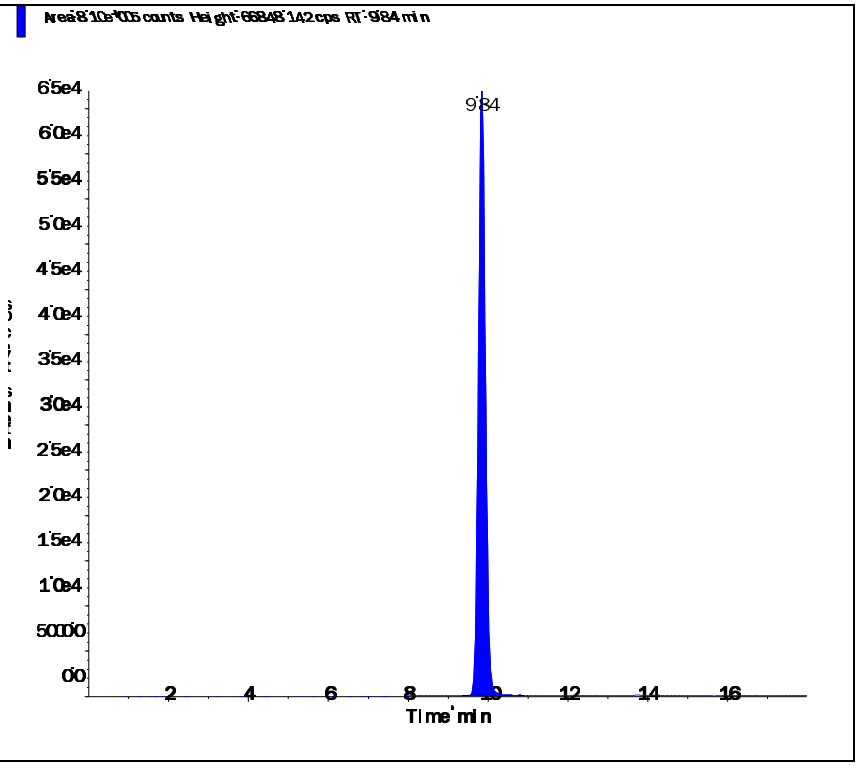

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

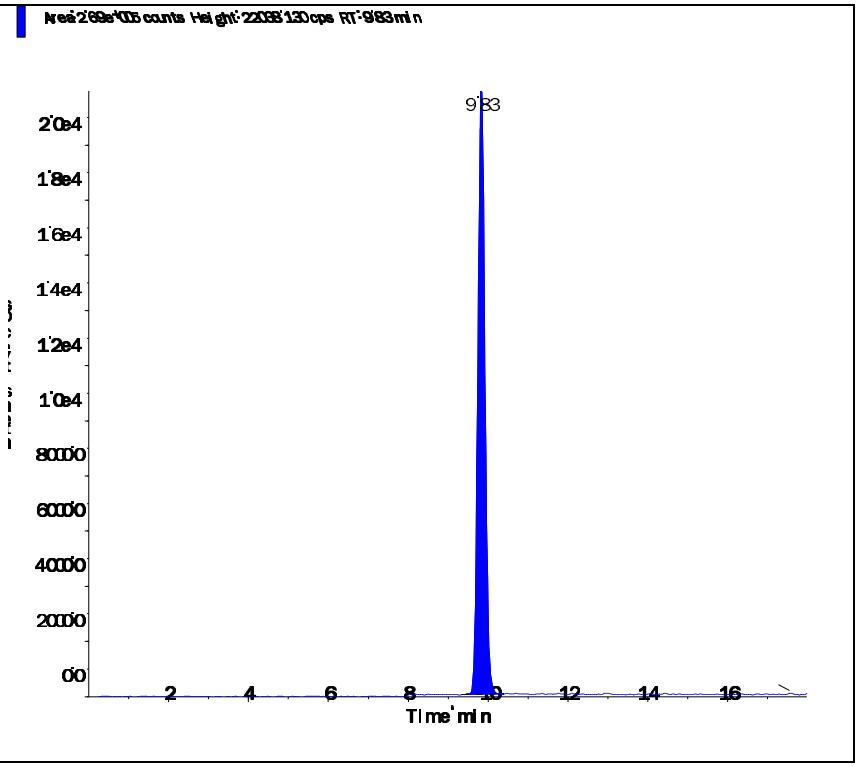

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:56 AM

Data File	LM34693.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

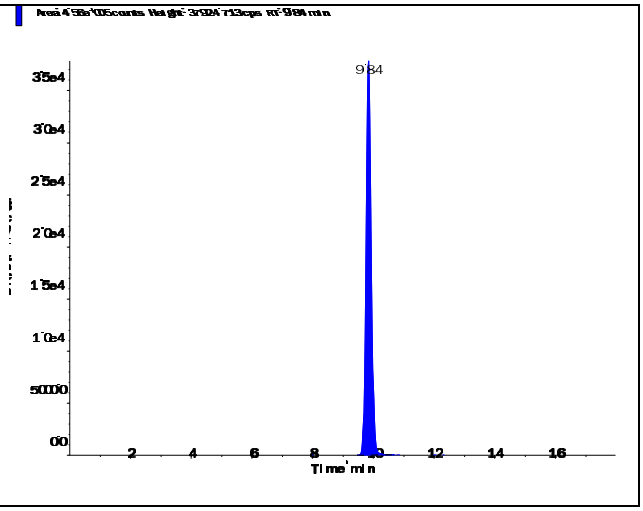

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:56 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

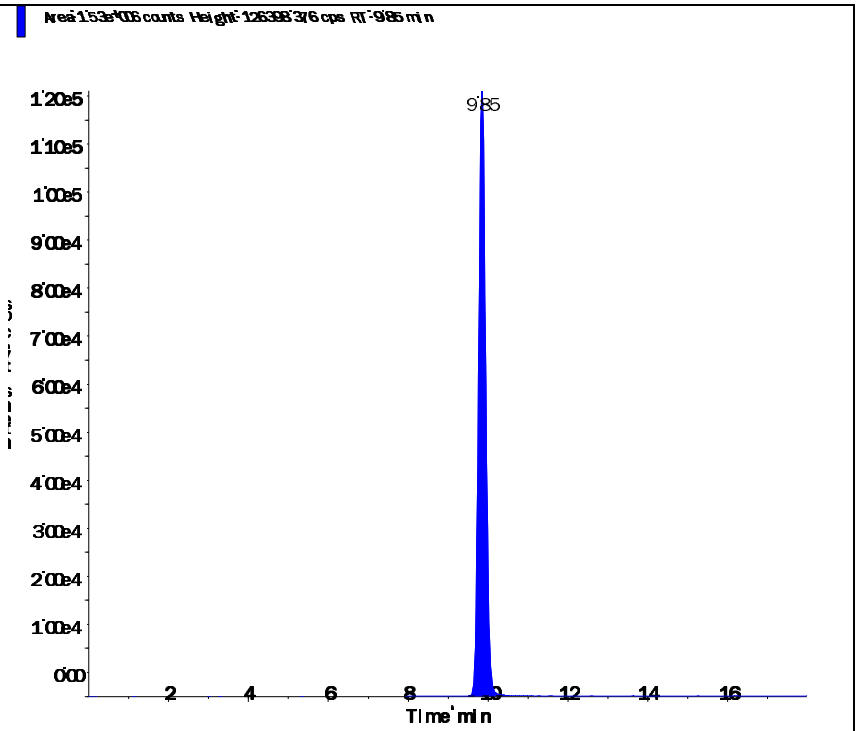

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

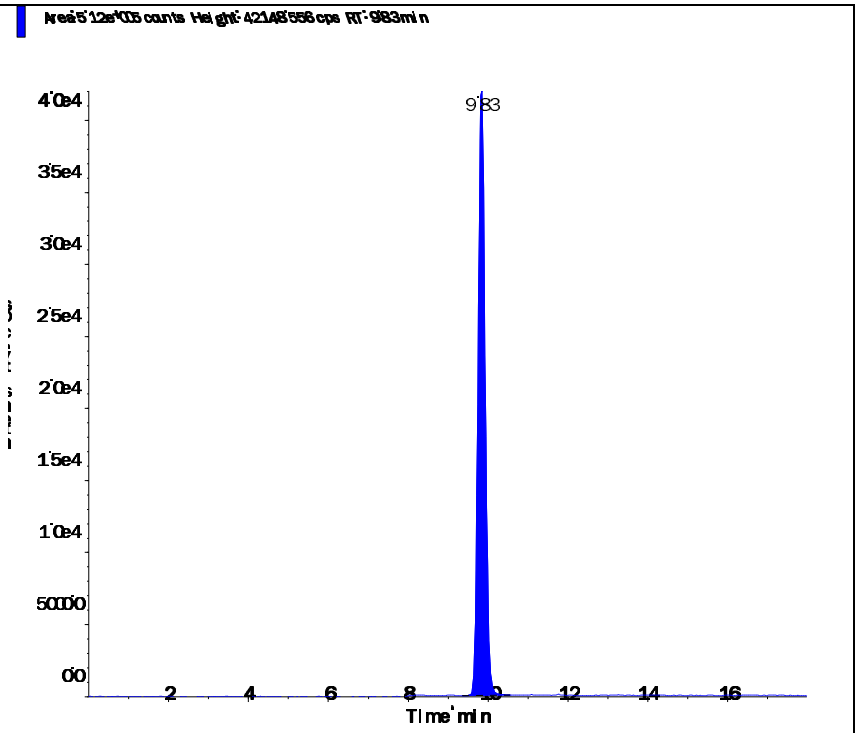

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

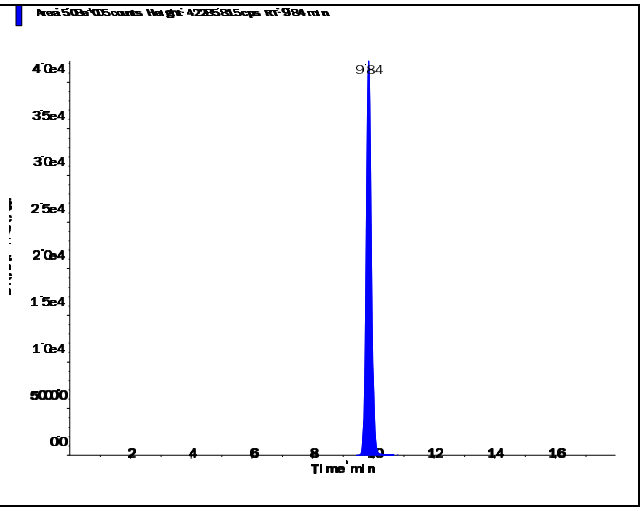

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

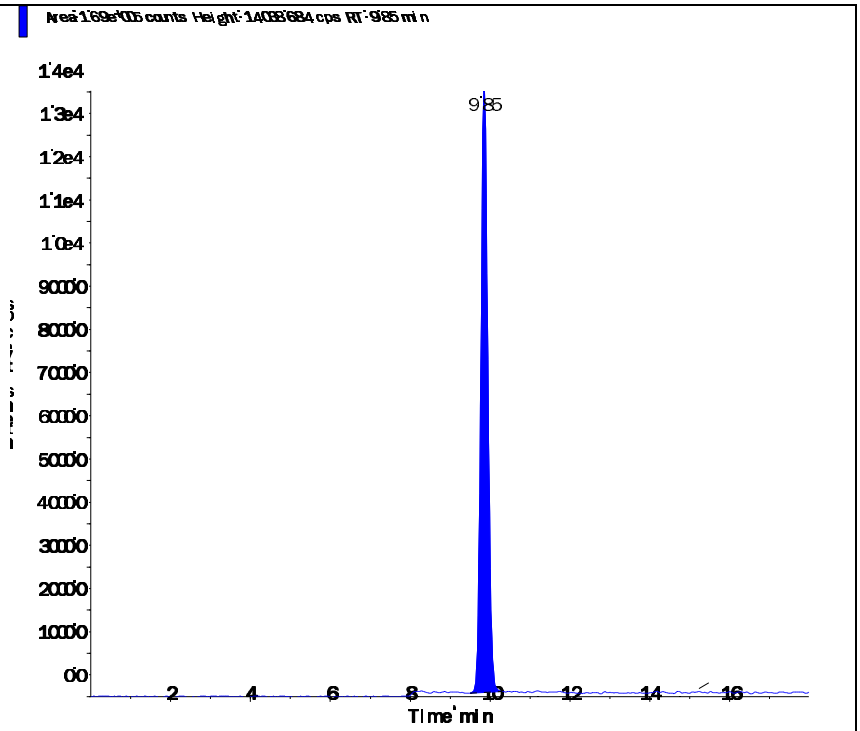

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

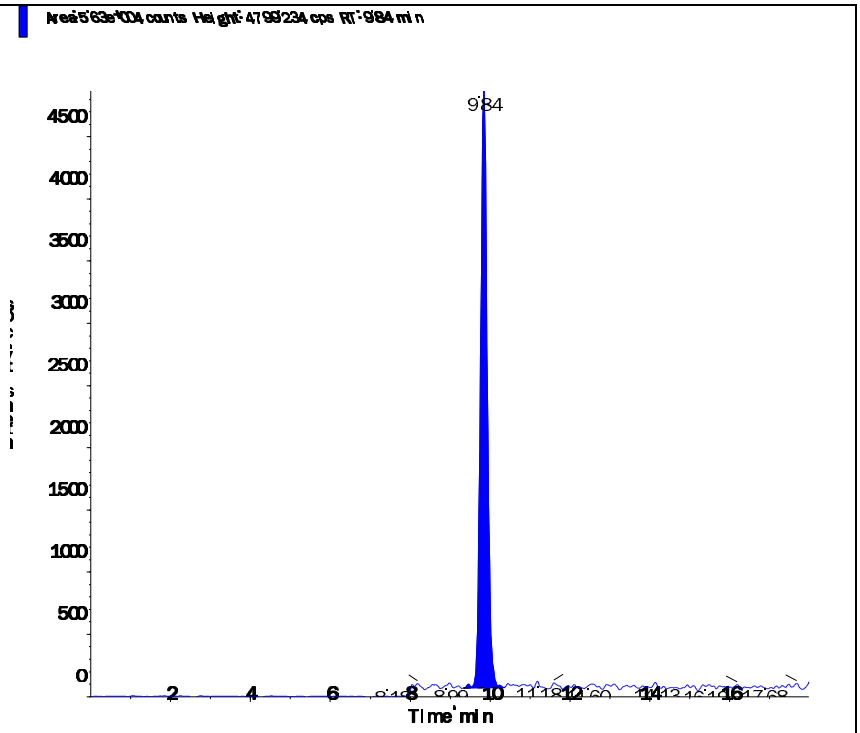

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Data File	LM35569.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35569.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.630e+05	9.40	1.00	1.03
Perchlorate conf	5.690e+04	9.38	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

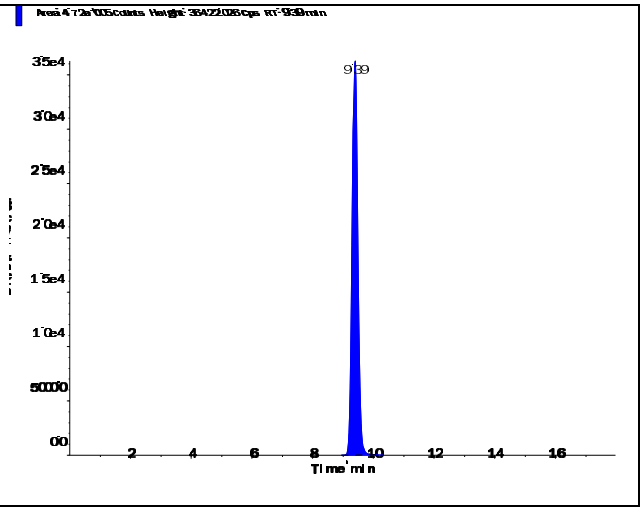

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

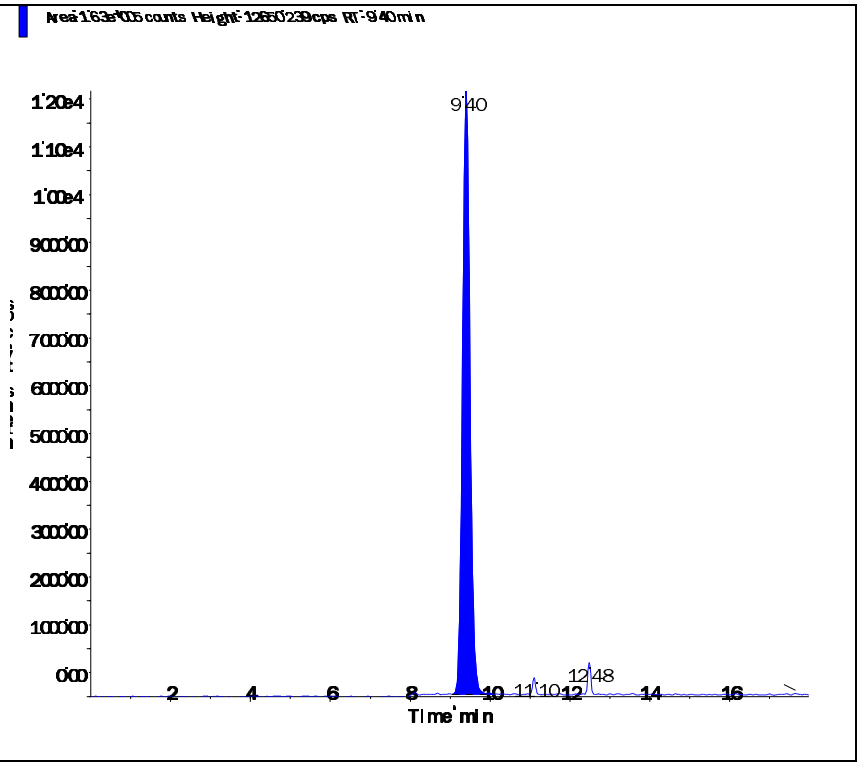

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

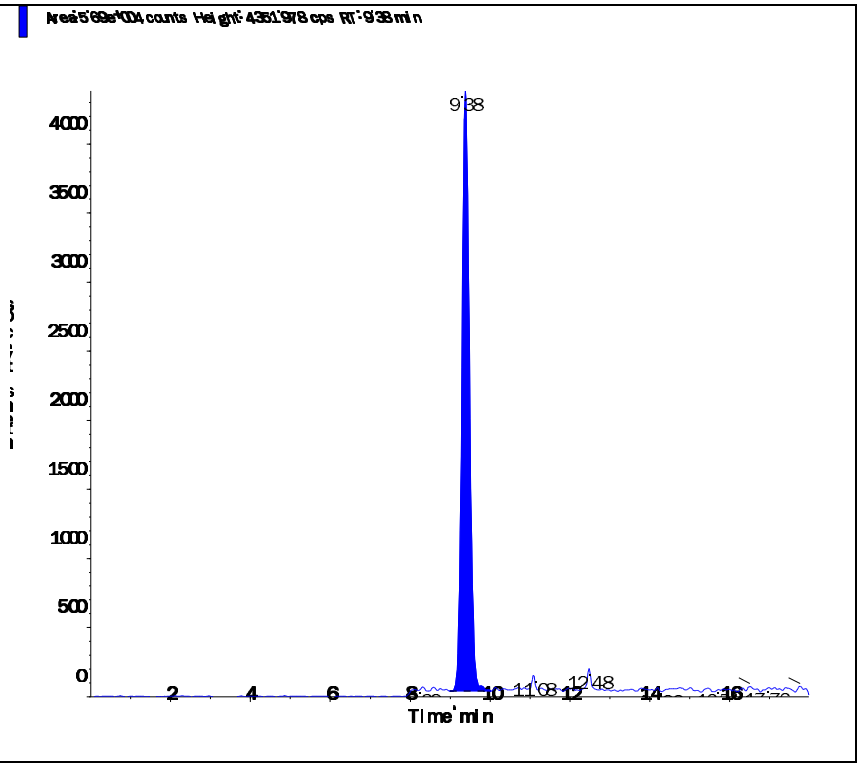

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:30 PM

Data File	LM35581.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:02:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35581.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:02:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.670e+05	9.40	1.00	1.02
Perchlorate conf	5.800e+04	9.39	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

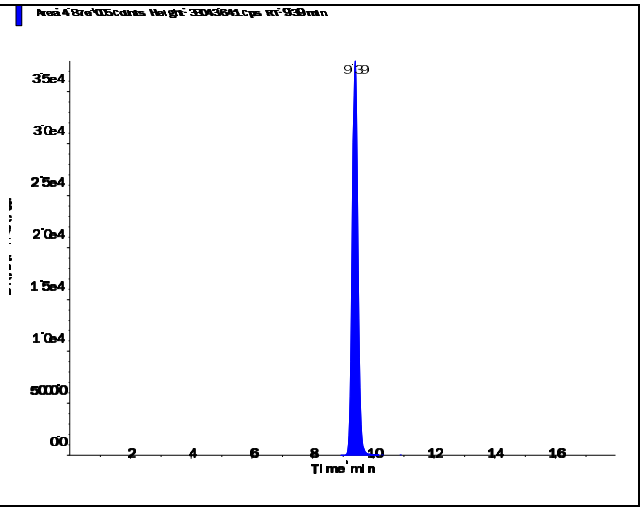

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:30 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.343
Sample Type:	(Quality Control)

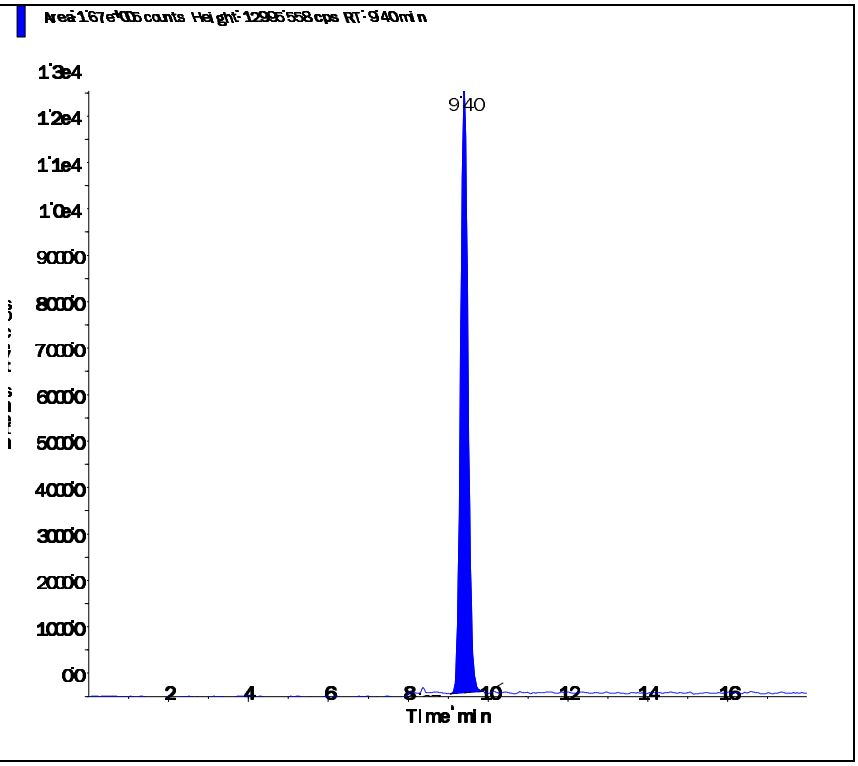

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

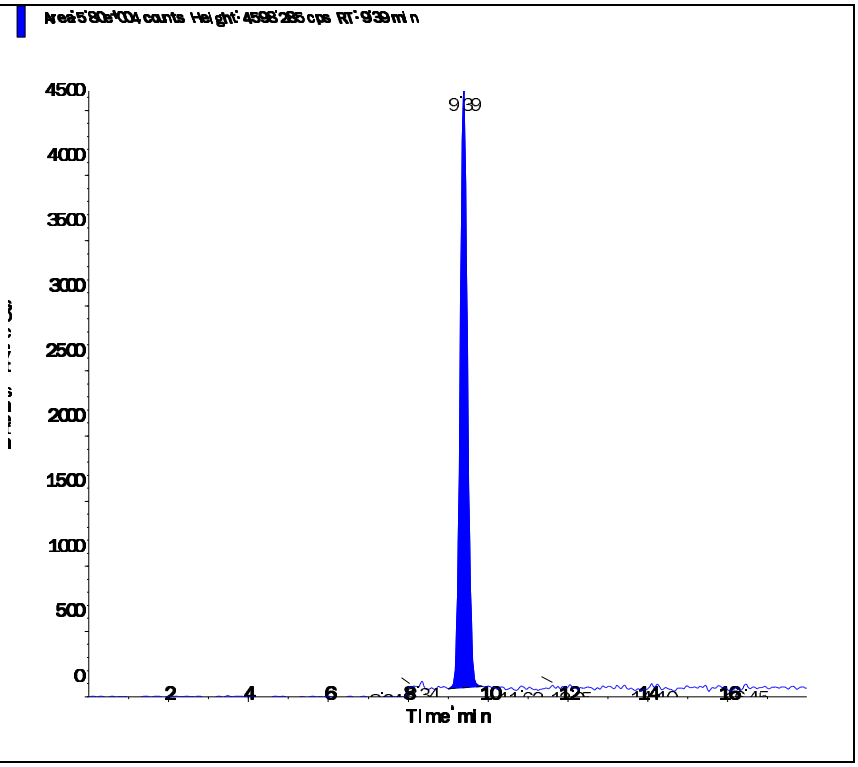

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:34 PM

Data File	LM35594.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:08:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35594.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:08:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.40	1.00	1.03
Perchlorate conf	5.720e+04	9.39	1.00	0.997

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

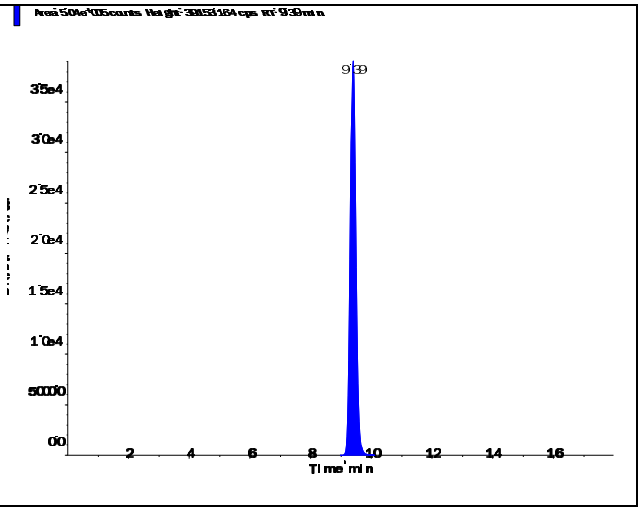

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:34 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

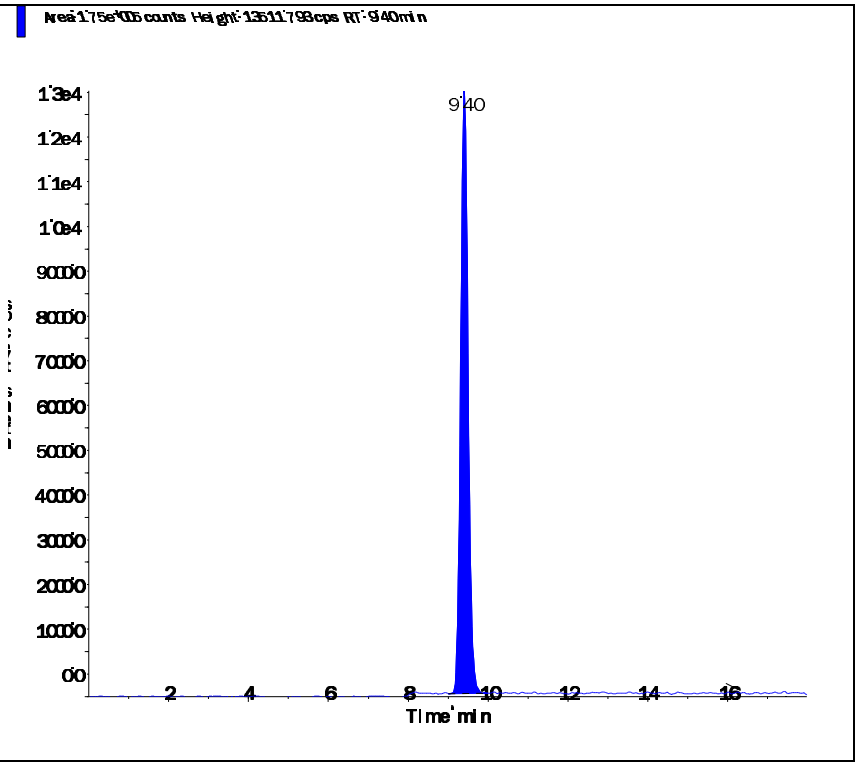

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.997 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

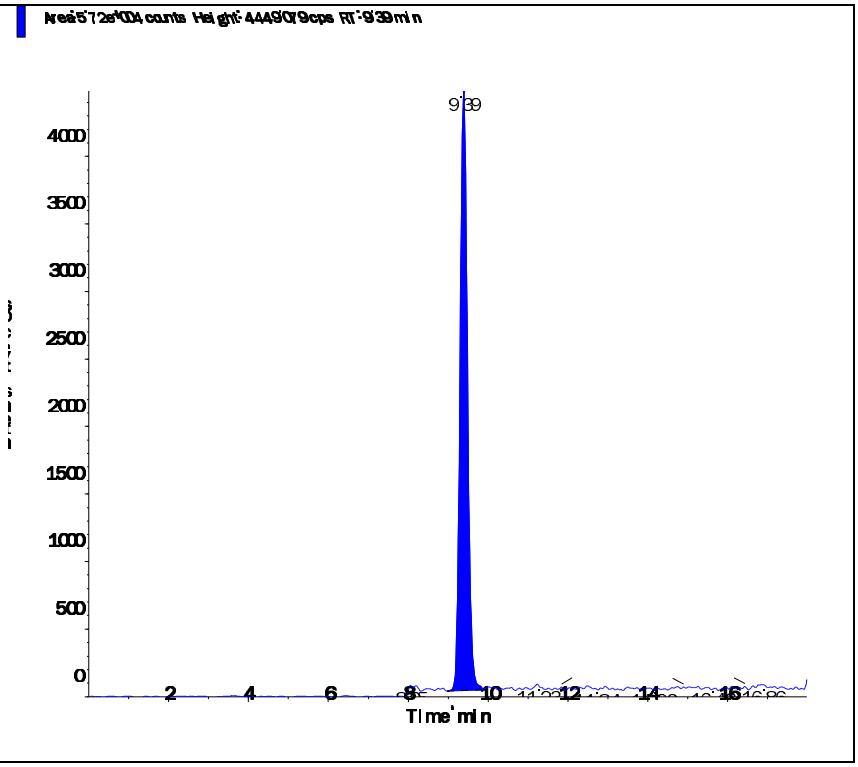

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:36 PM

Data File	LM35601.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:20:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35601.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:20:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.40	1.00	1.01
Perchlorate conf	5.850e+04	9.38	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

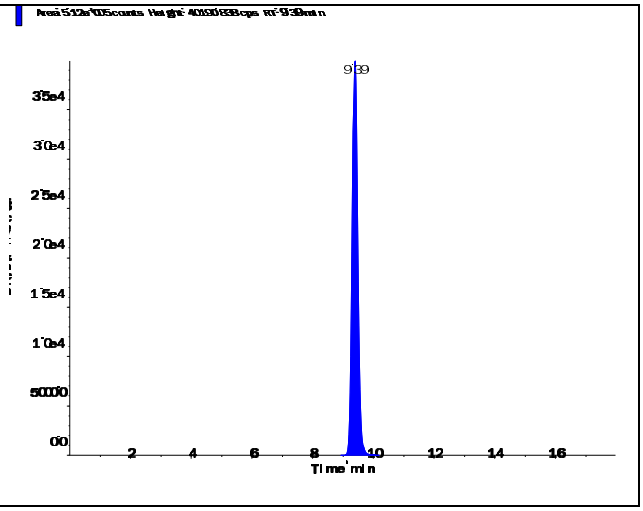

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:36 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

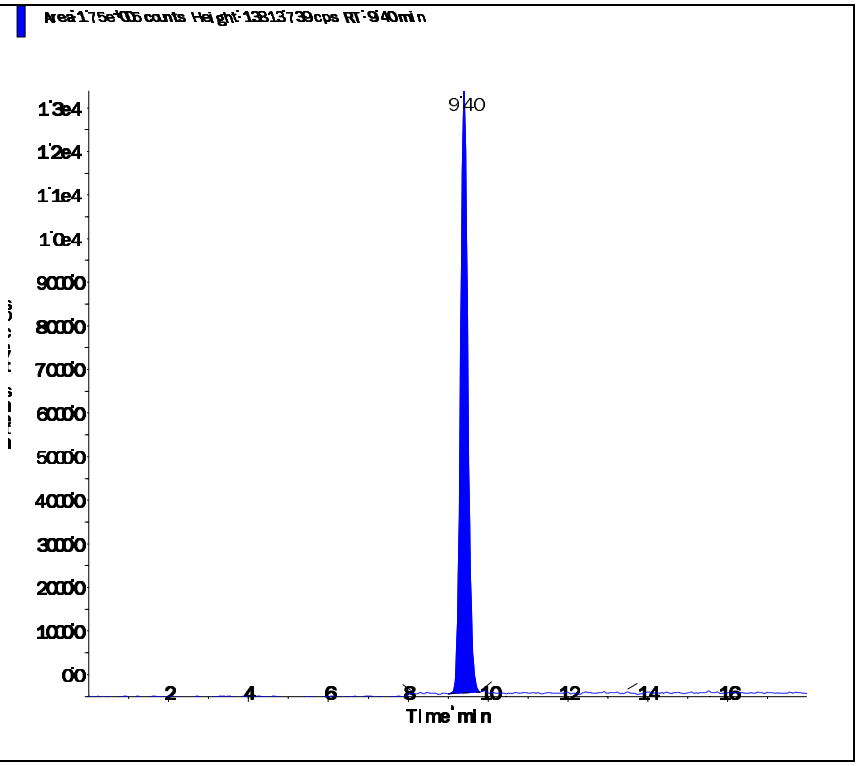

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

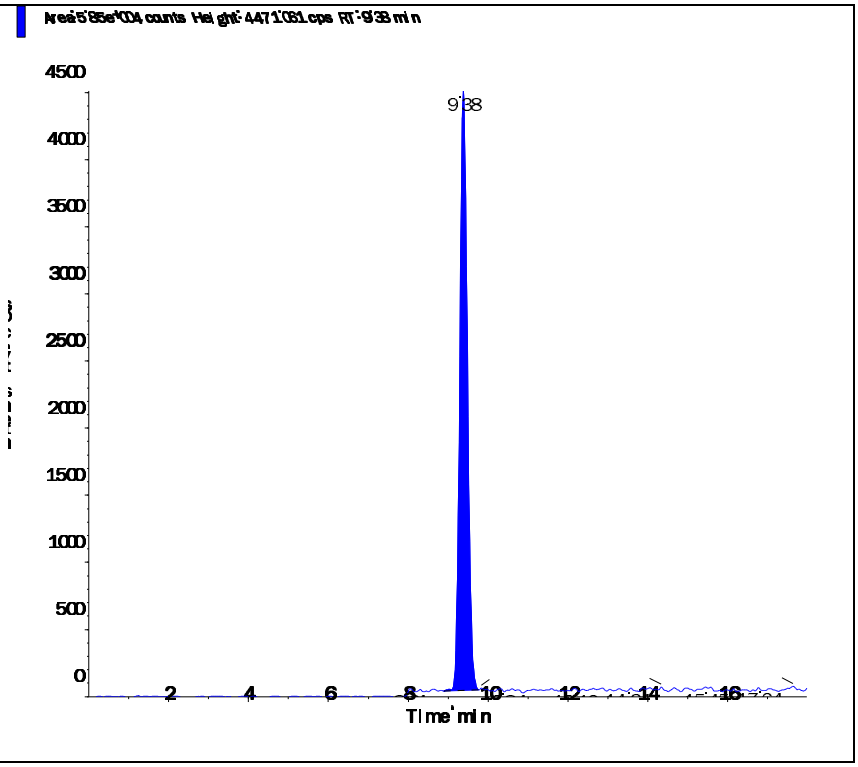

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:56 AM

Data File	LM35605.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 3:31:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575212-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35605.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 3:31:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575212-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.590e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.520e+05	9.40	1.00	0.981
Perchlorate conf	5.410e+04	9.39	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

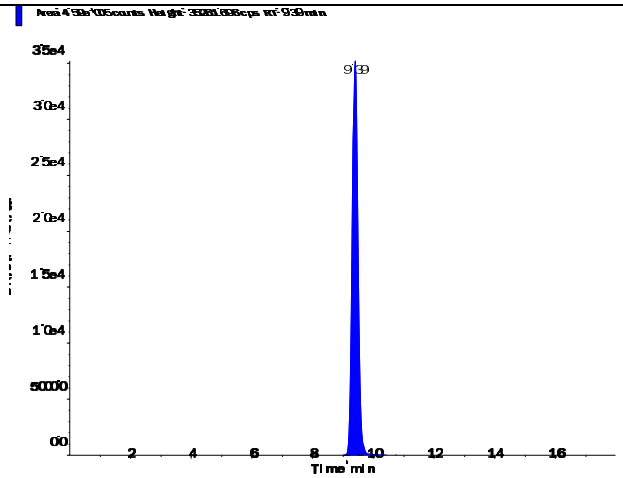

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.981 ng/ml
Area Ratio:	0.331
Sample Type:	(Quality Control)

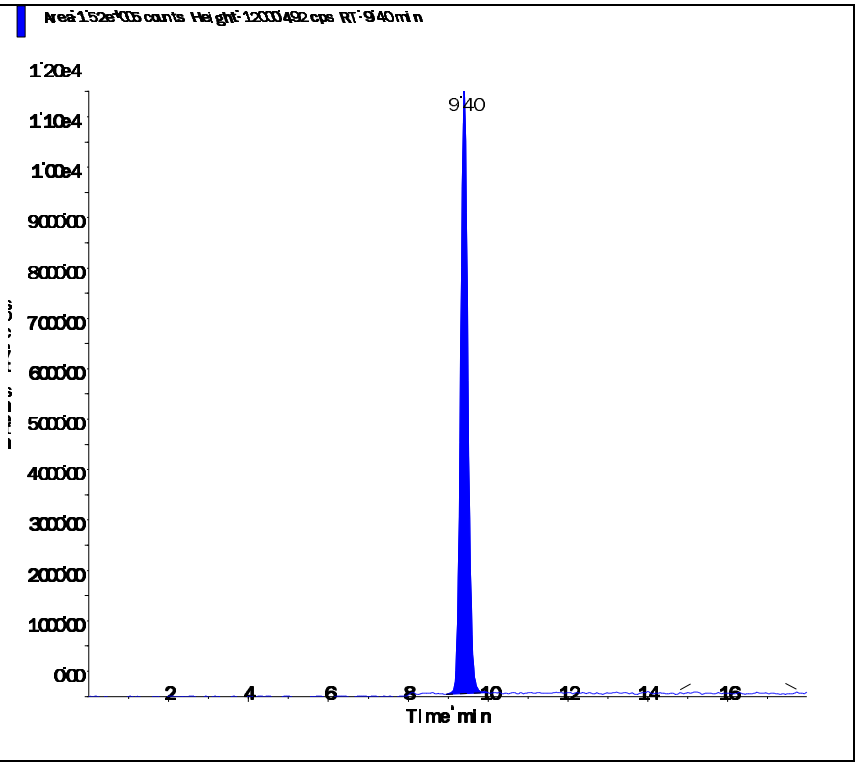

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

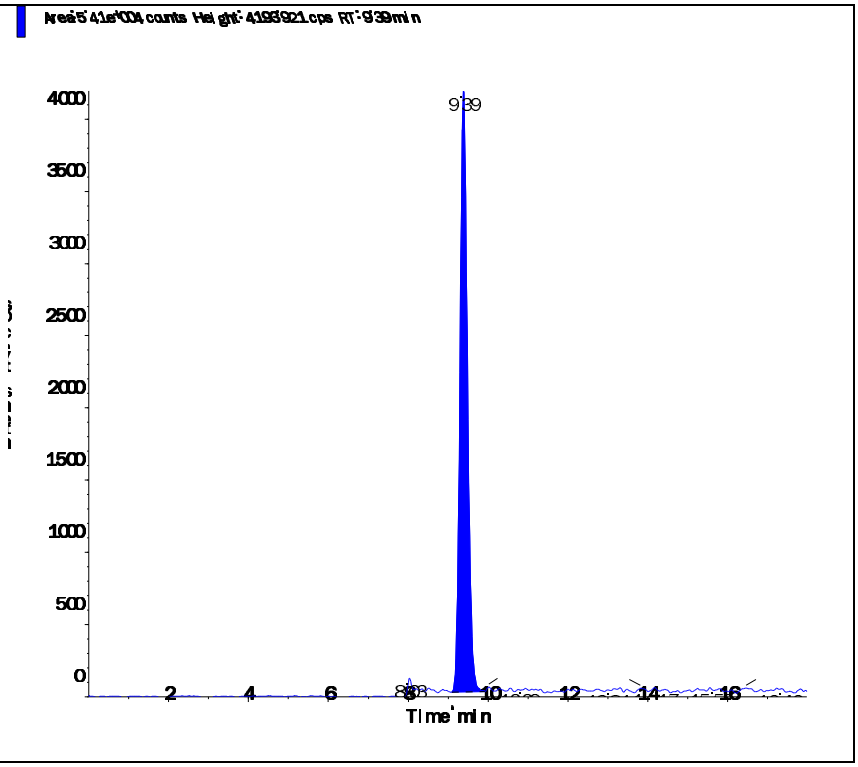

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 11:00 AM

Data File	LM35617.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 7:18:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575212-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35617.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 7:18:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575212-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.49	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.570e+05	9.50	1.00	1.00
Perchlorate conf	5.460e+04	9.49	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.49(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

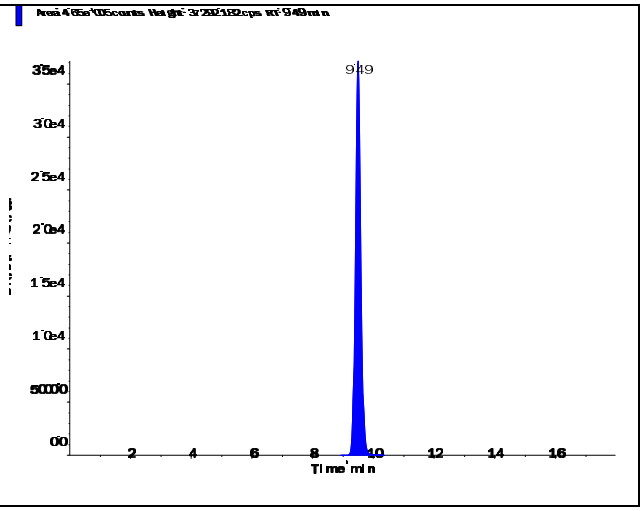

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 11:00 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.50 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.338
Sample Type:	(Quality Control)

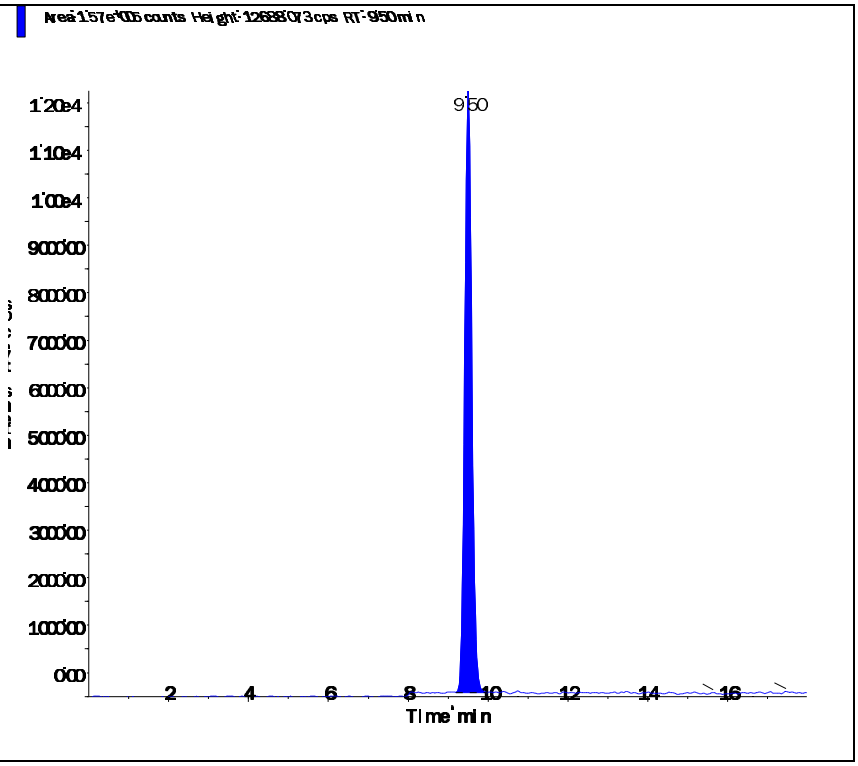

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.49 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

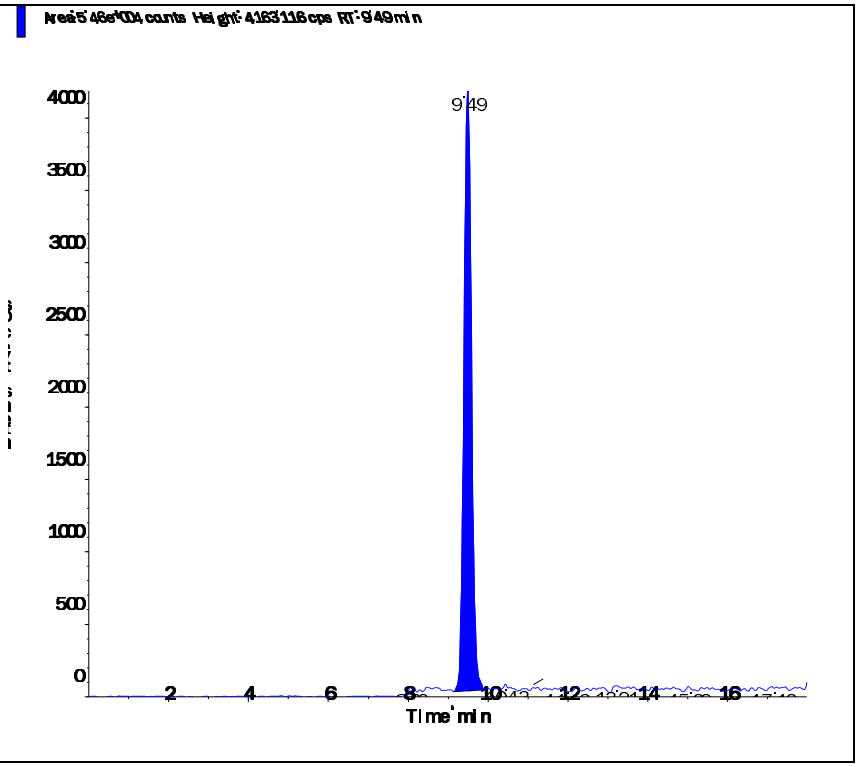

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 11:02 AM

Data File	LM35623.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 9:12:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575212-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35623.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 9:12:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575212-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.49	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+05	9.50	1.00	0.996
Perchlorate conf	5.570e+04	9.49	1.00	0.999

O18LP (Internal Standard)

RT (Exp. RT): 9.49(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

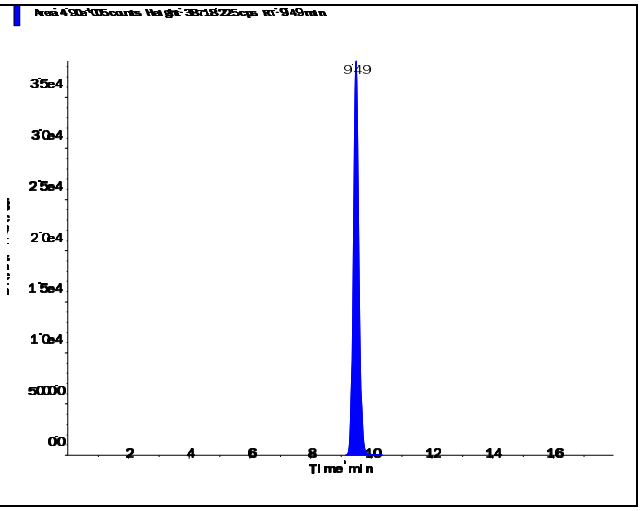

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 11:02 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.50 (9.84) min Calculated conc: 0.996 ng/ml Area Ratio: 0.336 Sample Type: (Quality Control)	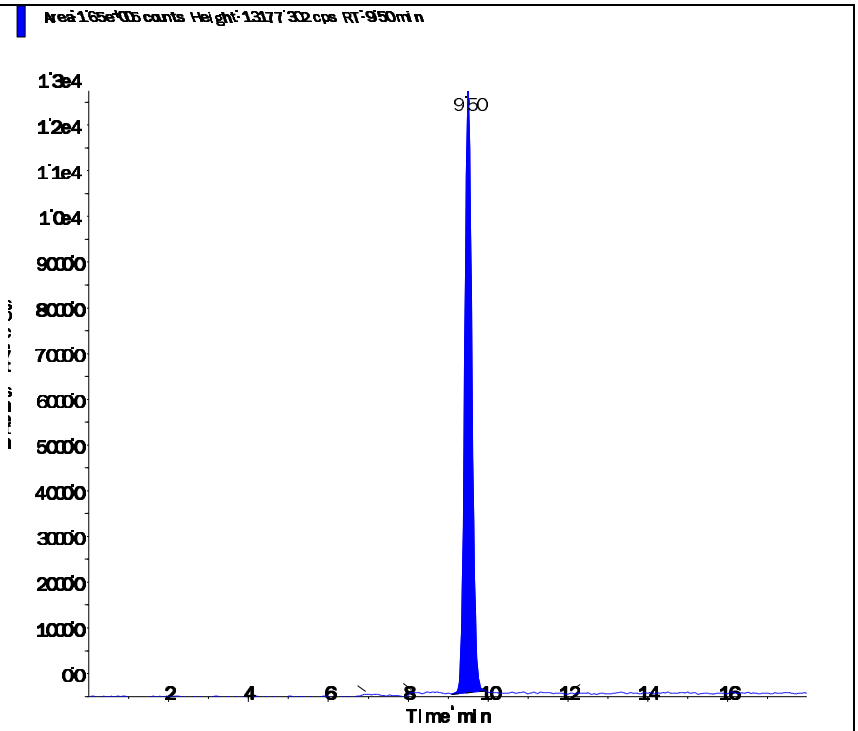
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.49 (9.84) min Calculated conc: 0.999 ng/ml Area Ratio: 0.114 Sample Type: (Quality Control)	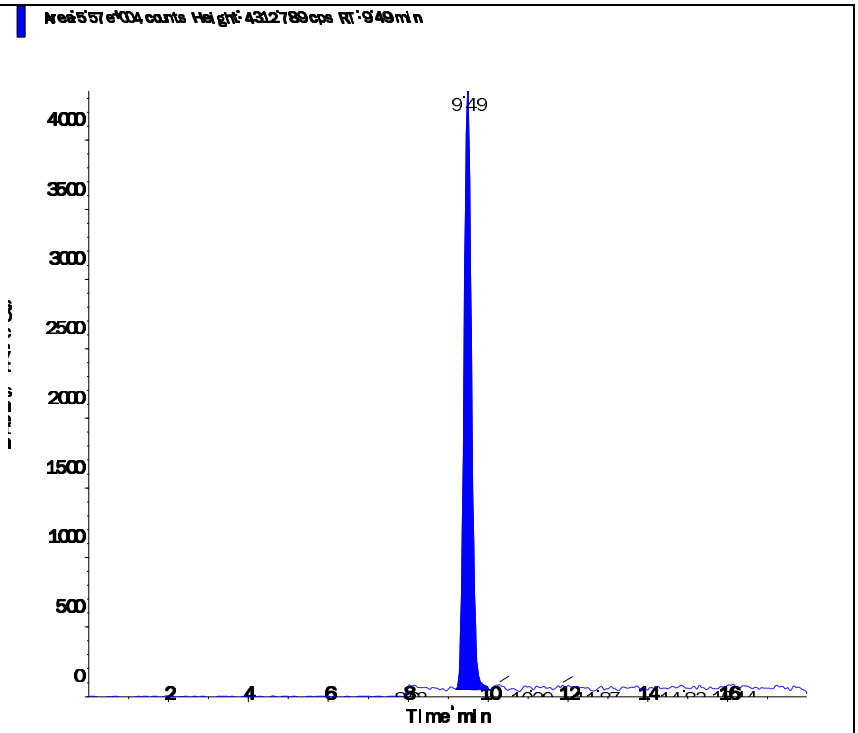

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Data File	LM35570.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:33:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35570.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:33:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+04	9.44	N/A	0.207
Perchlorate conf	1.170e+04	9.44	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

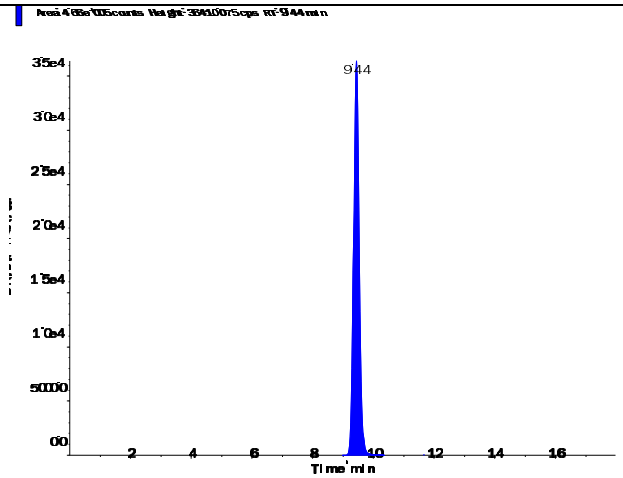

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

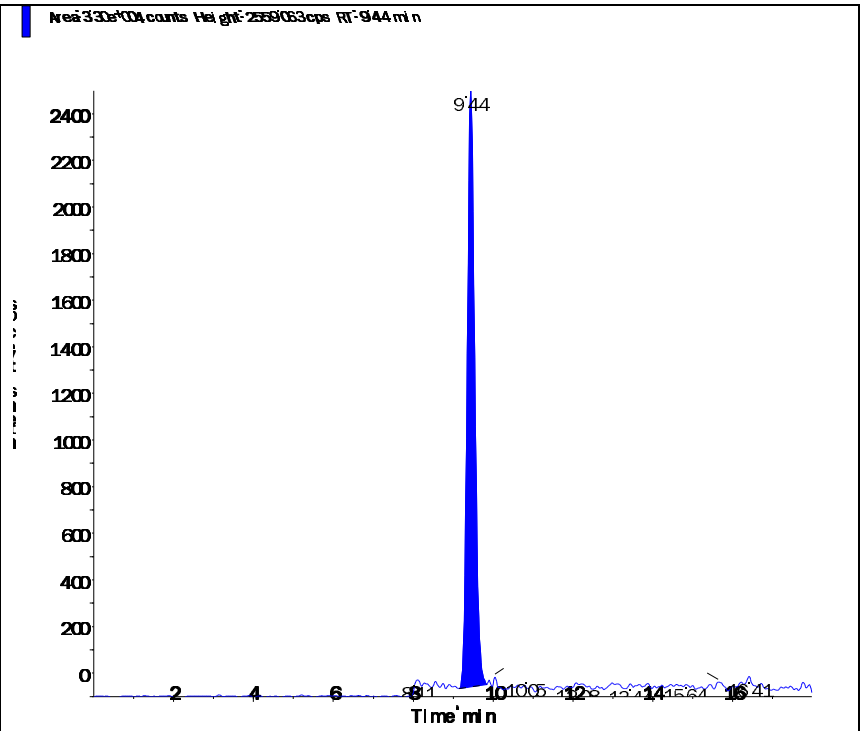

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

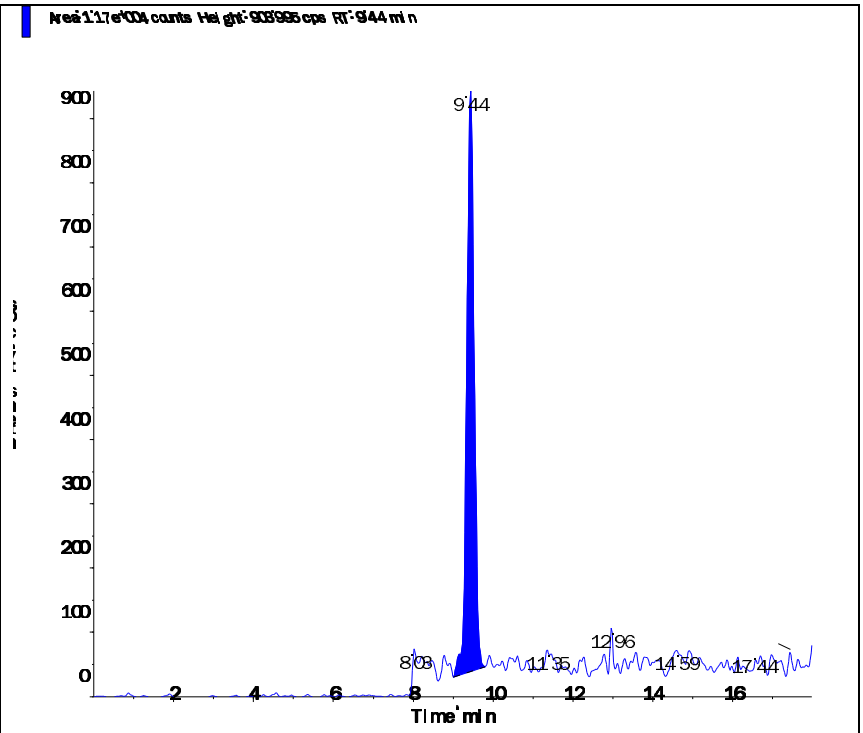

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:30 PM

Data File	LM35582.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:21:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35582.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:21:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.280e+04	9.44	N/A	0.206
Perchlorate conf	1.140e+04	9.43	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

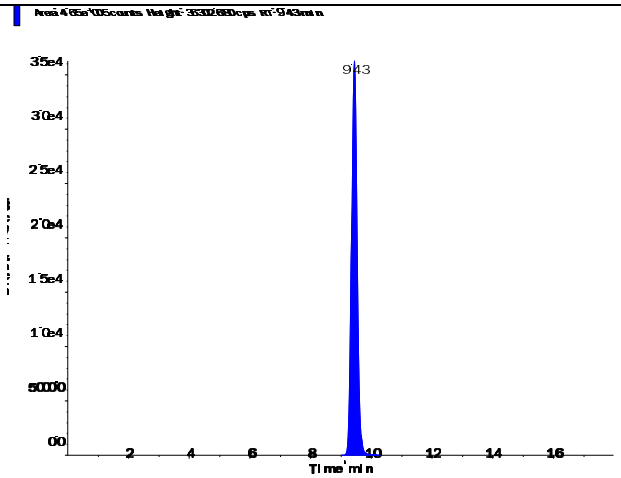

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:30 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

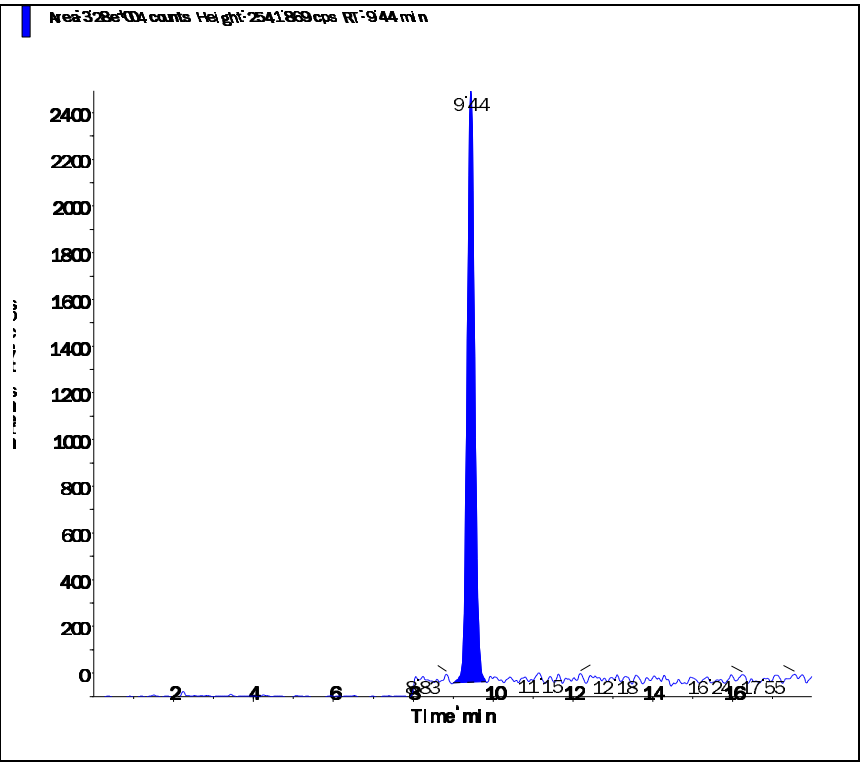

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

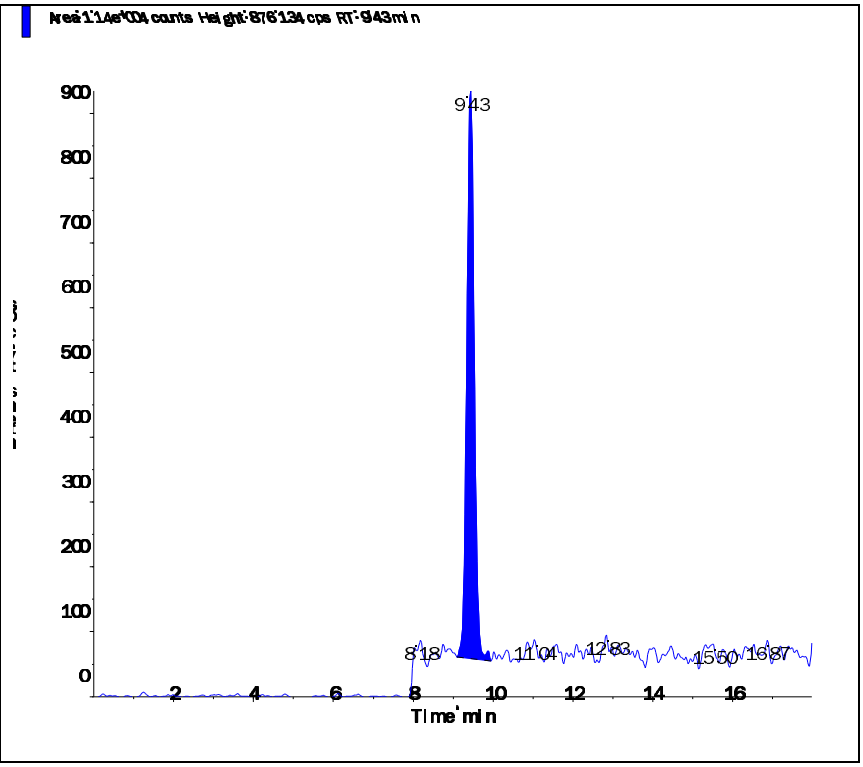

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:34 PM

Data File	LM35595.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:27:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35595.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:27:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.570e+04	9.45	N/A	0.207
Perchlorate conf	1.290e+04	9.44	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

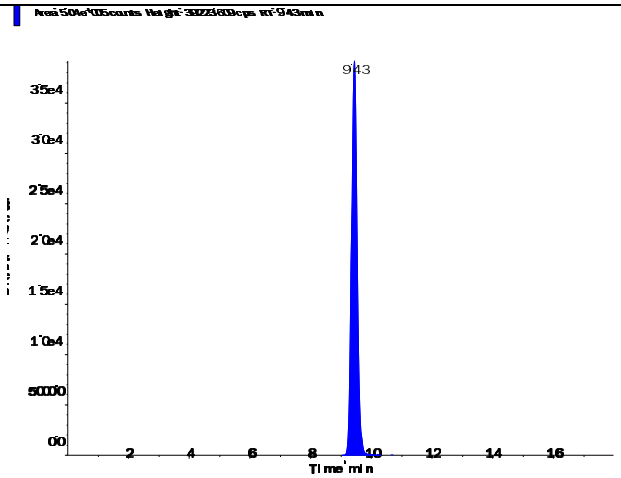

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

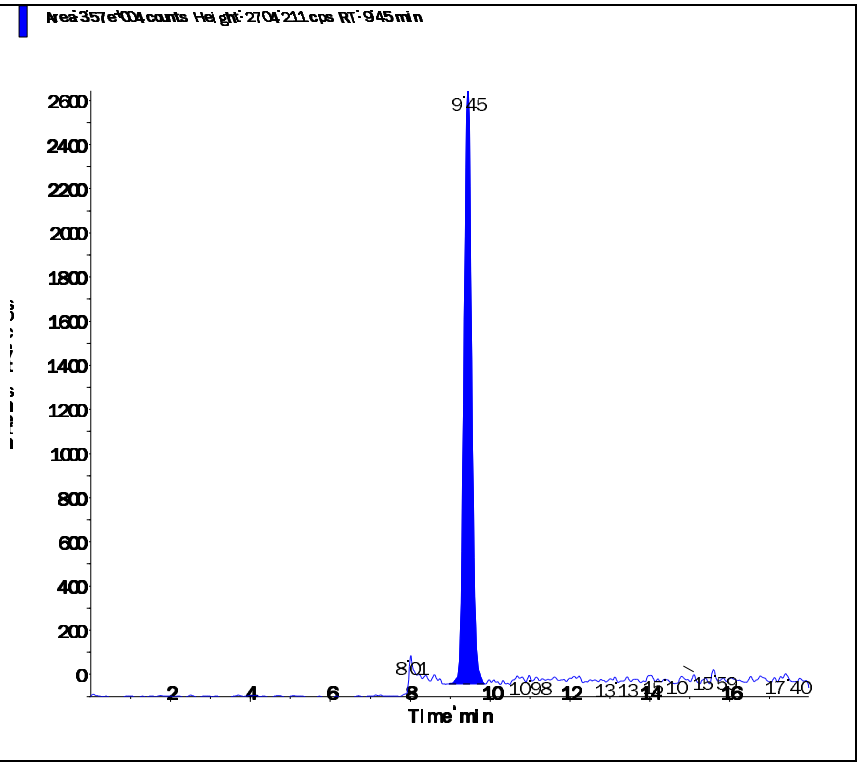

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

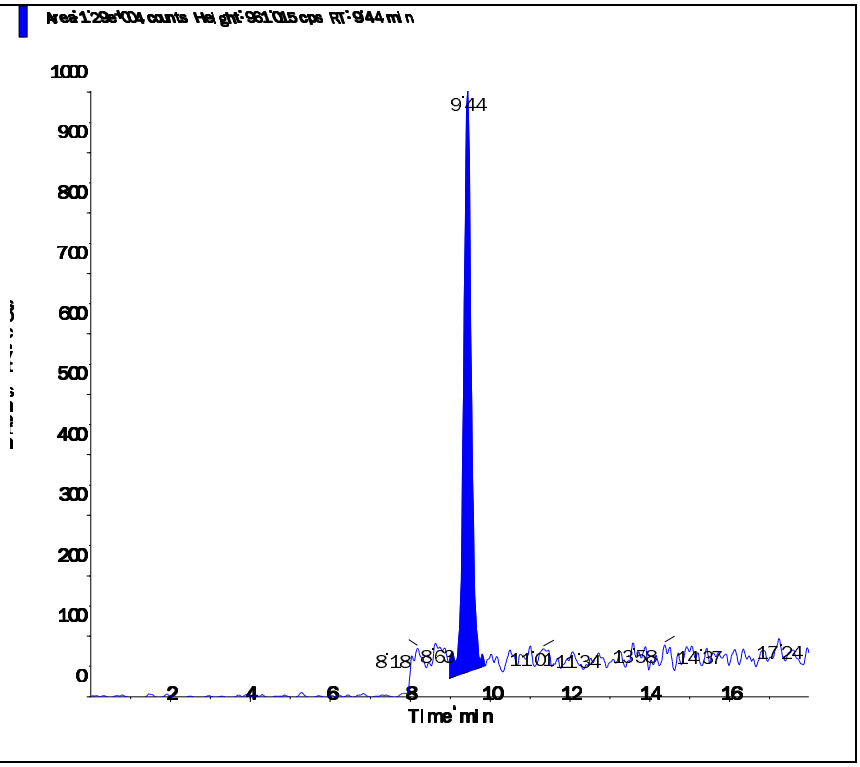

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Data File	LM35602.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:39:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35602.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:39:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.44	N/A	0.209
Perchlorate conf	1.230e+04	9.42	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

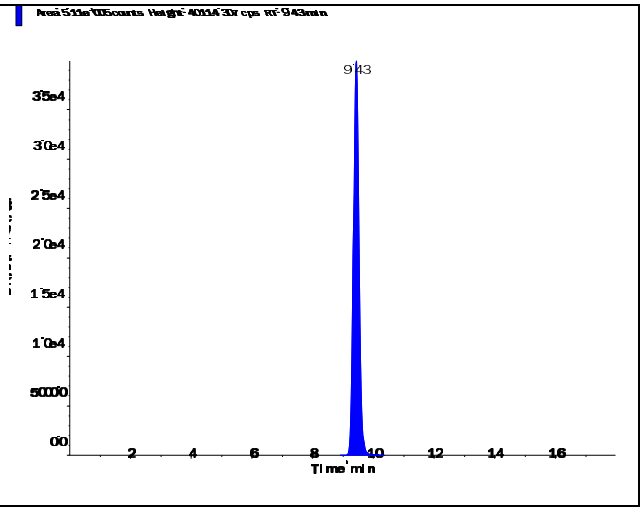

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

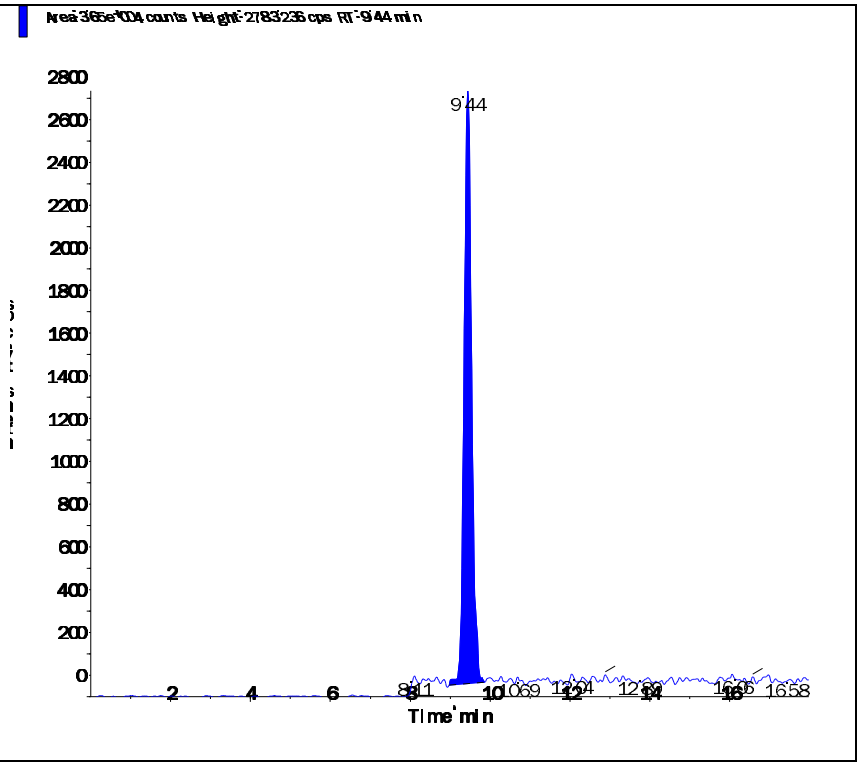

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

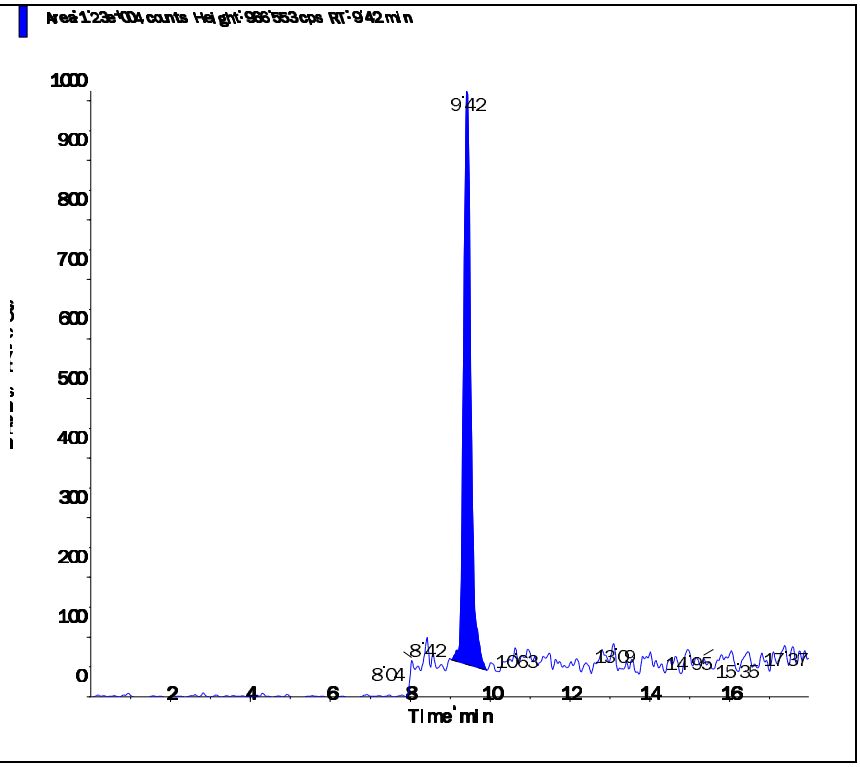

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:57 AM

Data File	LM35606.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 3:50:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575171-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35606.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 3:50:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575171-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.350e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.970e+04	9.45	N/A	0.199
Perchlorate conf	1.080e+04	9.44	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

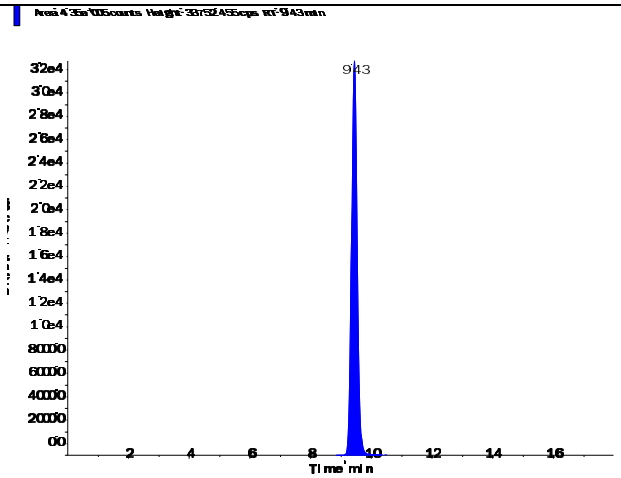

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:57 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

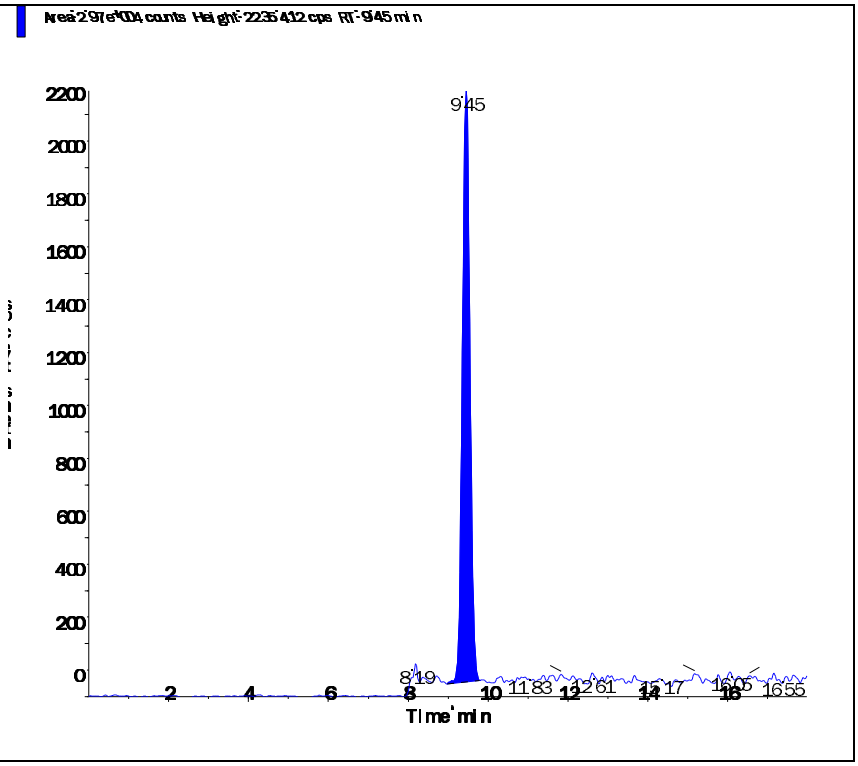

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

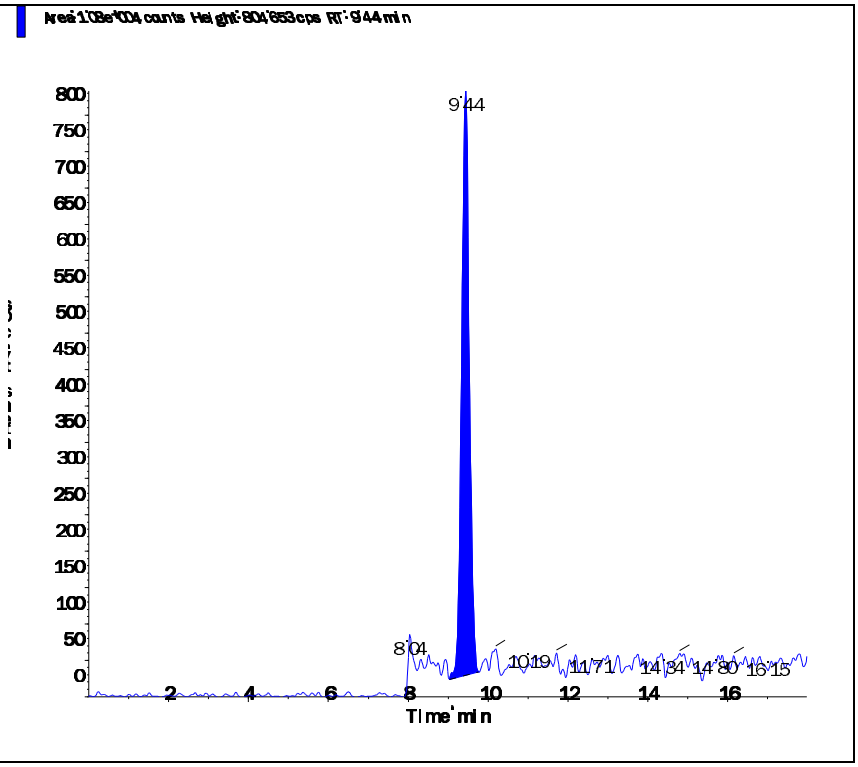

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 11:01 AM

Data File	LM35618.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 7:37:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575171-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35618.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 7:37:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575171-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.070e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.450e+04	9.53	N/A	0.198
Perchlorate conf	1.250e+04	9.51	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.52(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

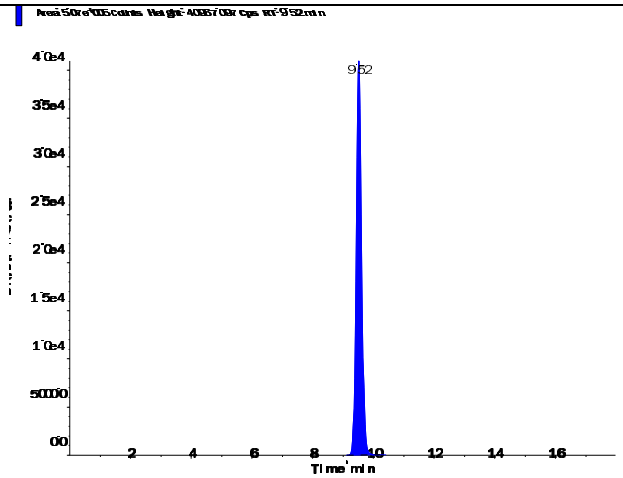

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 11:01 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

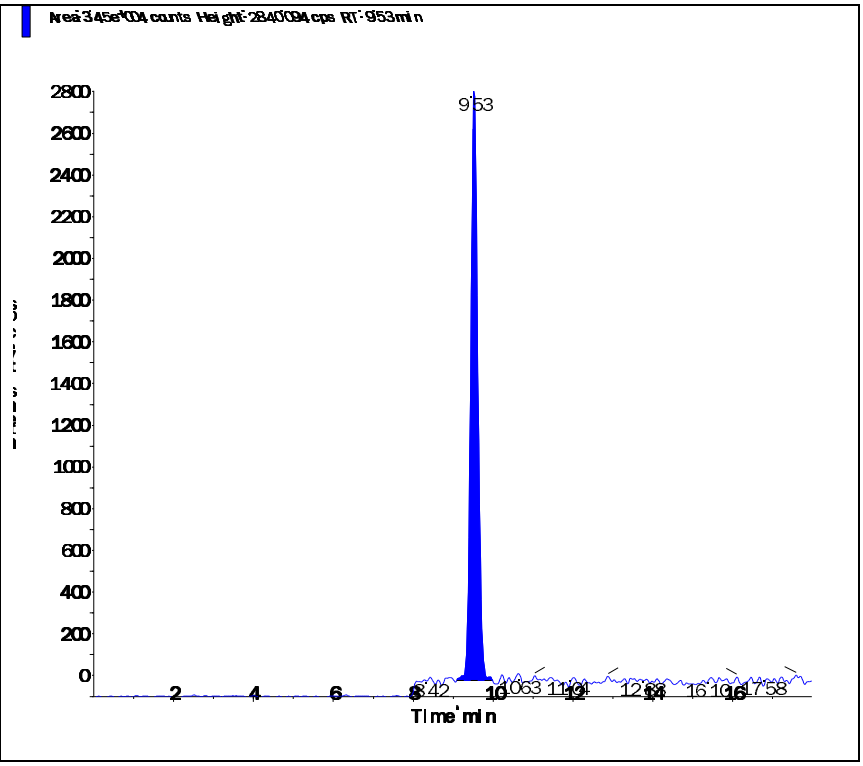

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.51 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

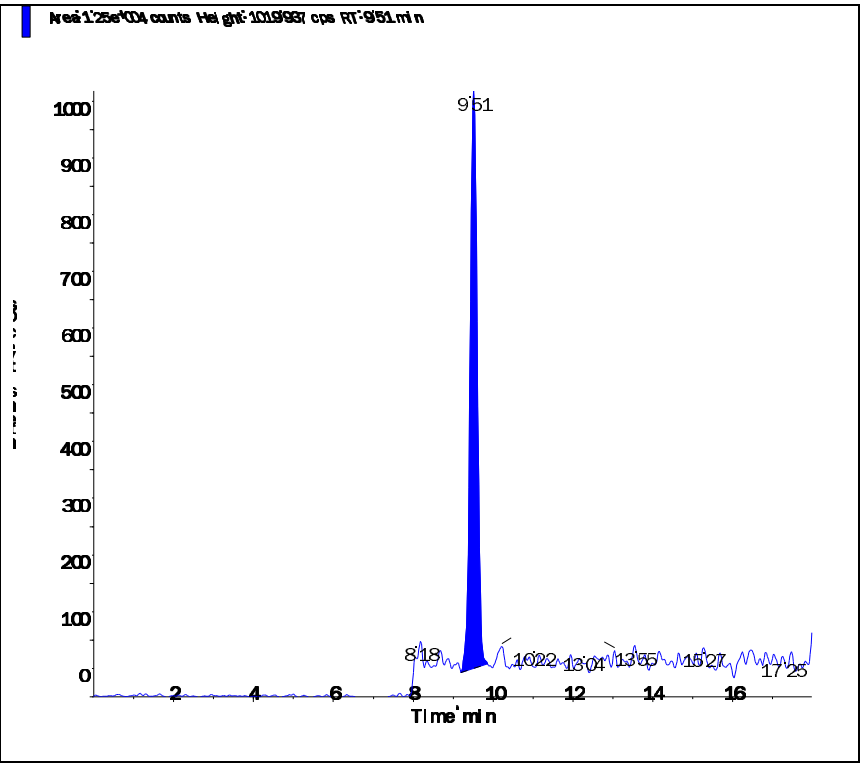

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 11:03 AM

Data File	LM35624.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 9:31:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575171-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35624.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 9:31:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575171-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.190e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+04	9.53	N/A	0.201
Perchlorate conf	1.280e+04	9.51	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.52(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

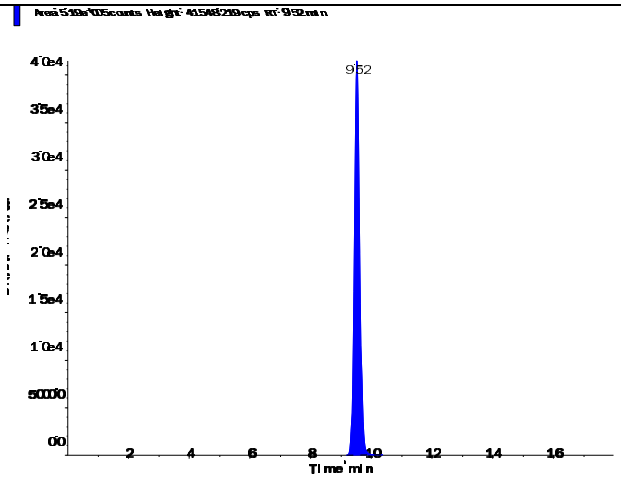

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 11:03 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.53 (9.84) min Calculated conc: 0.201 ng/ml Area Ratio: 0.069 Sample Type: (Unknown)	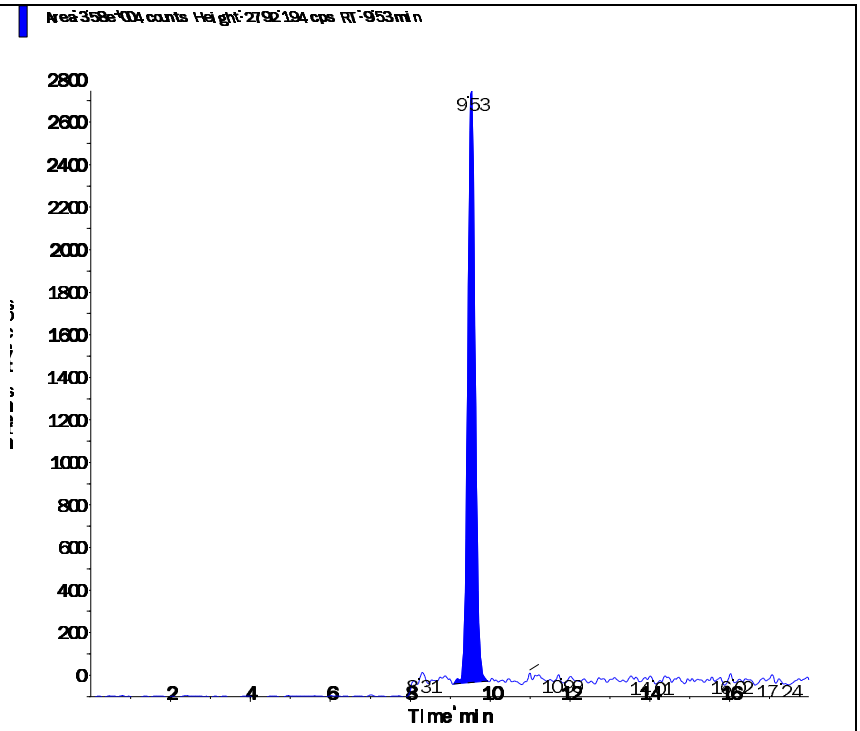
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.51 (9.84) min Calculated conc: 0.20 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	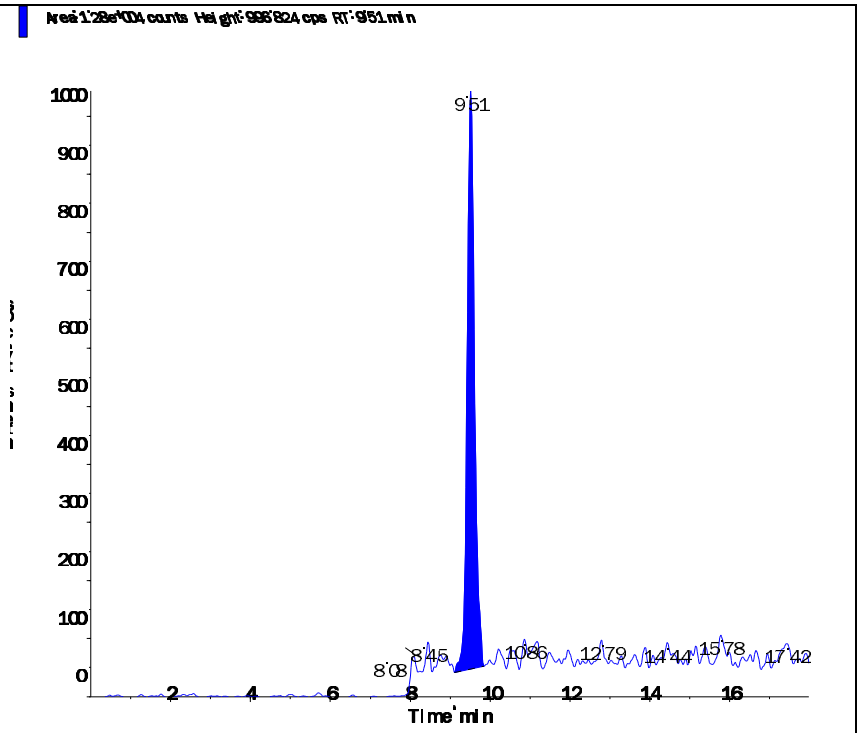

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Data File	LM35568.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 3:55:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-01 CCB	**Injection Vial**	1.00
Data File	LM35568.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 3:55:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.68	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.68(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

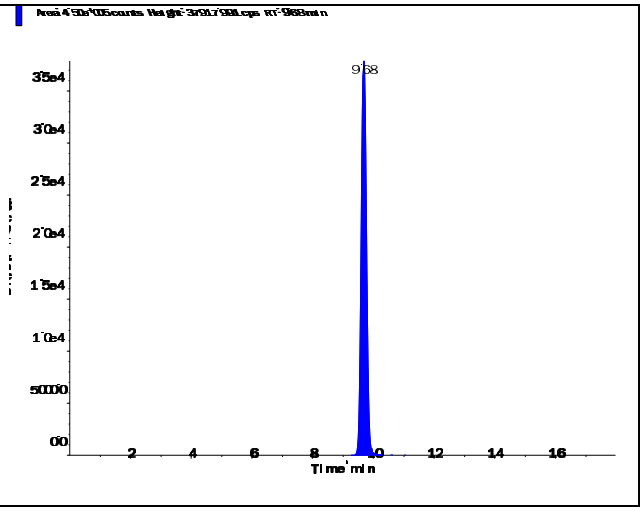

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

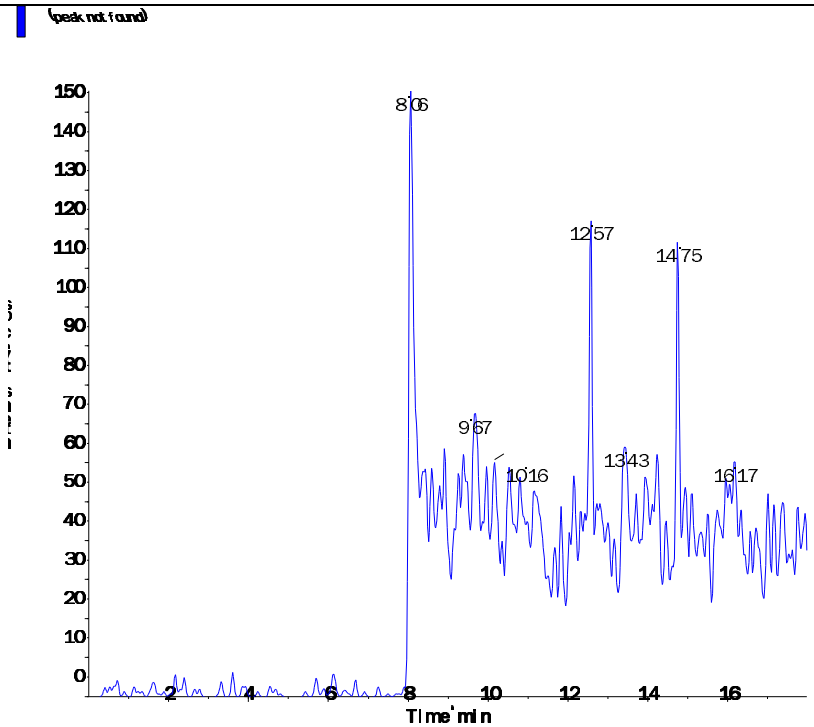

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

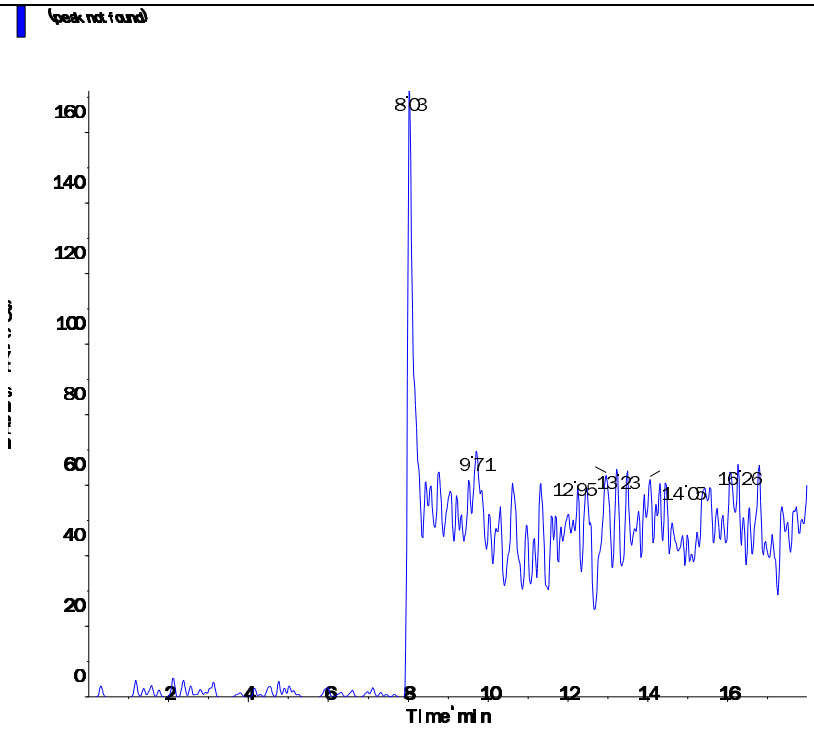

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:31 PM

Data File	LM35583.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:39:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-04 CCB	**Injection Vial**	1.00
Data File	LM35583.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:39:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

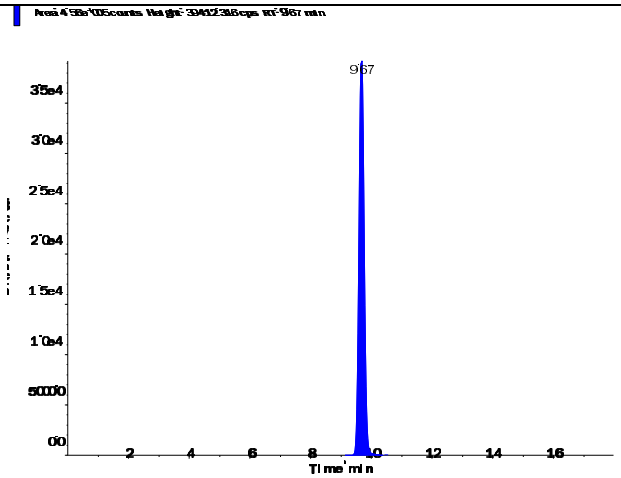

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:31 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

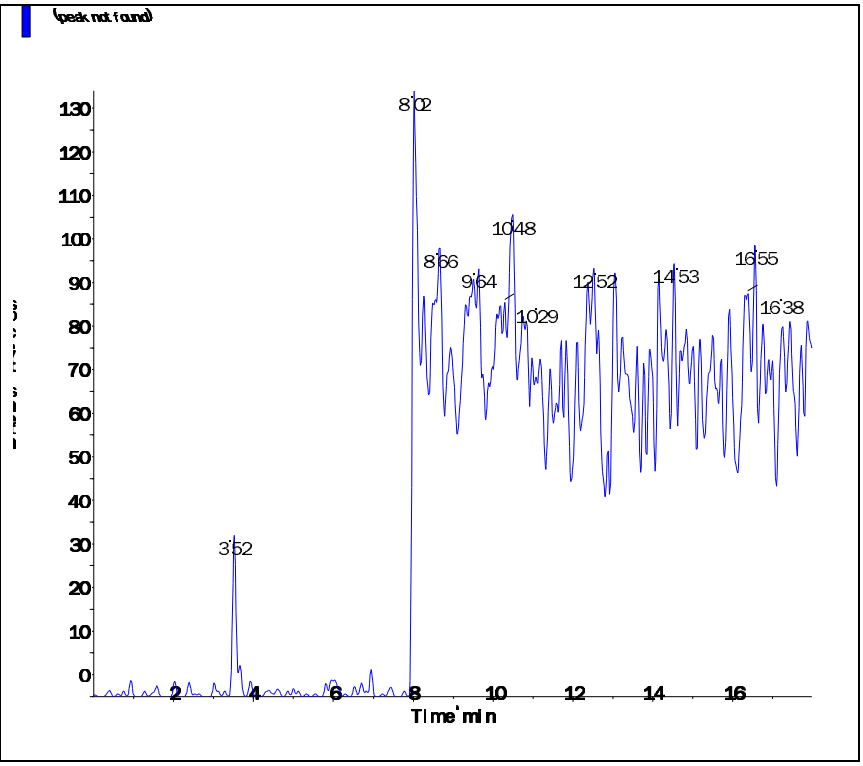

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

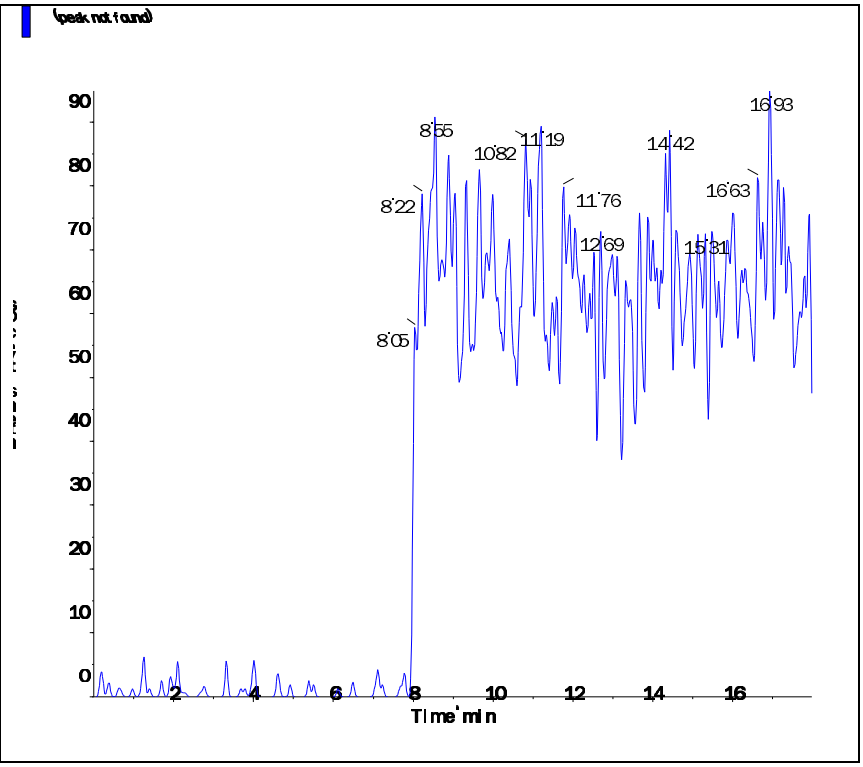

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:35 PM

Data File	LM35596.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:46:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-06 CCB	**Injection Vial**	1.00
Data File	LM35596.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:46:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

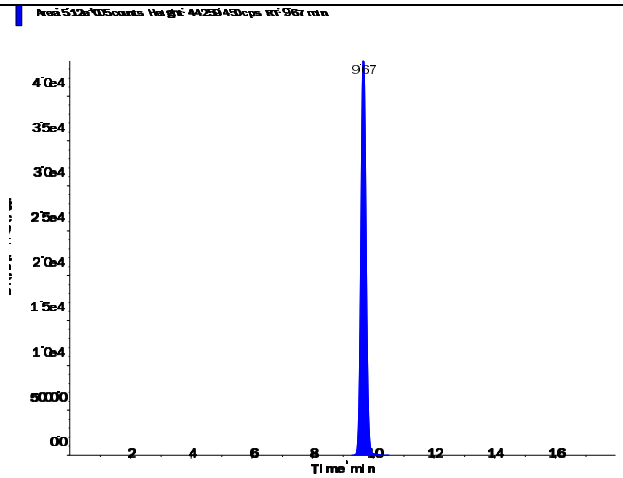

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

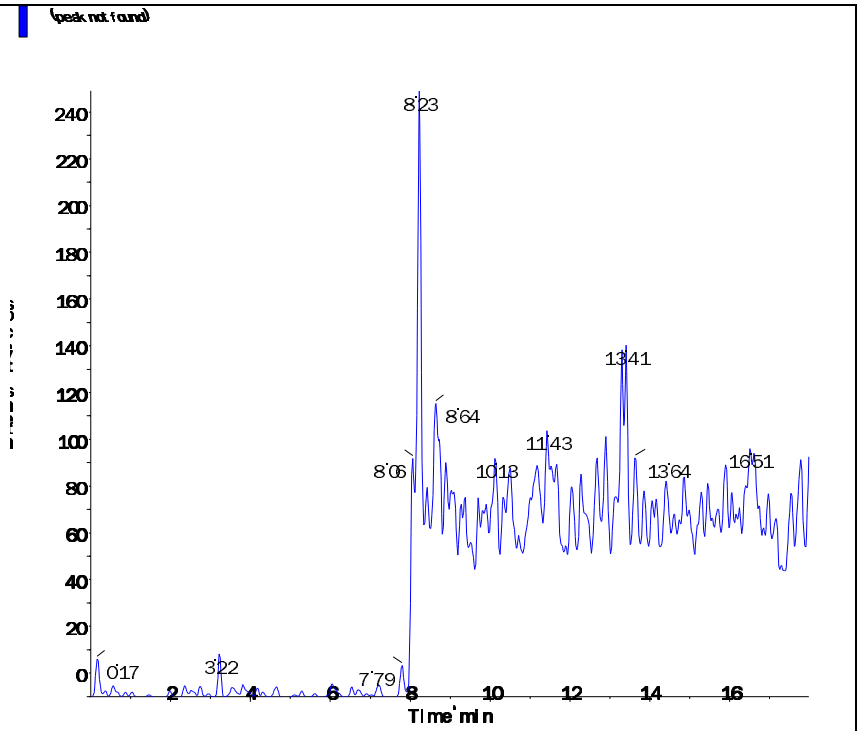

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

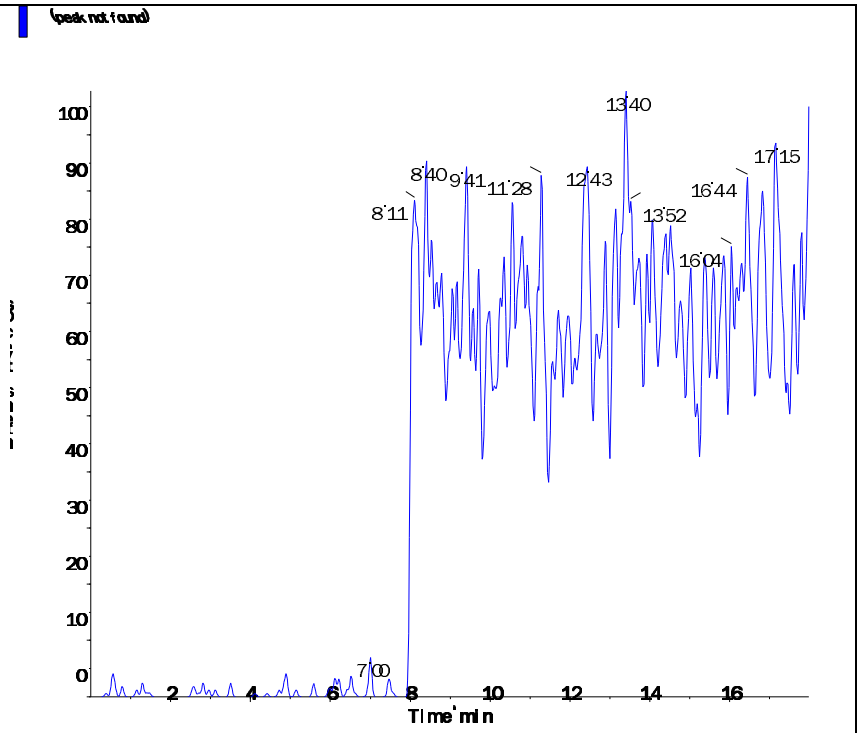

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Data File	LM35603.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:58:39 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-08 CCB	**Injection Vial**	1.00
Data File	LM35603.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:58:39 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.250e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

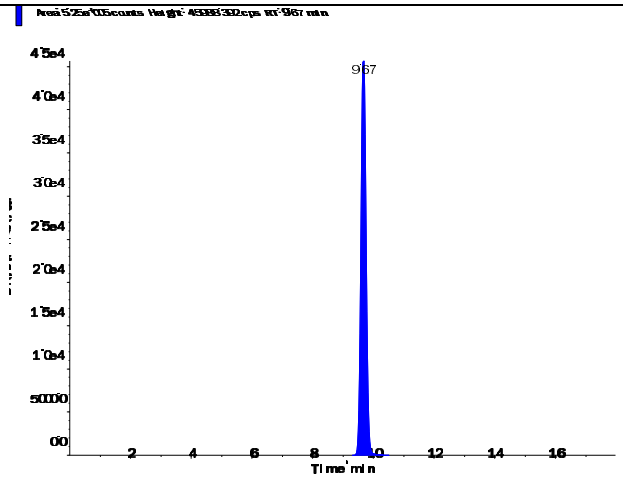

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

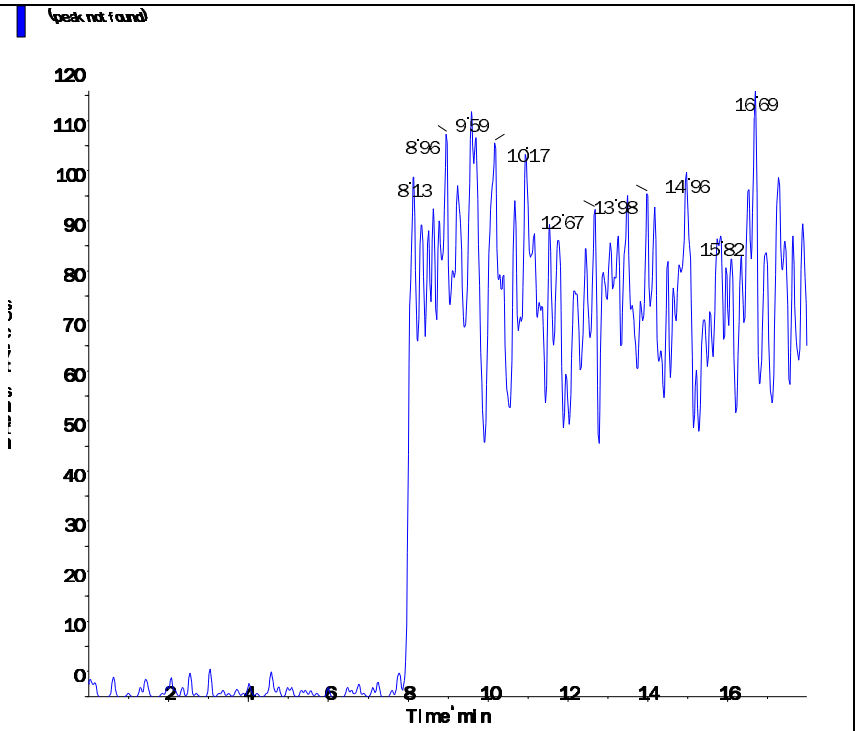

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

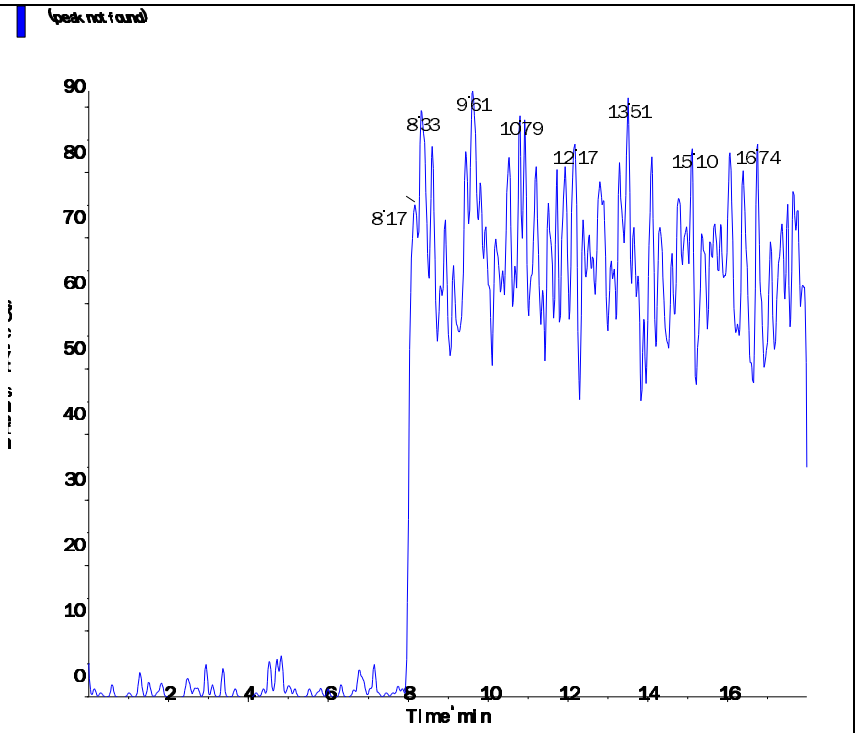

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:56 AM

Data File	LM35604.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 3:12:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575212-01 CCB	**Injection Vial**	1.00
Data File	LM35604.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 3:12:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575212-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.620e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

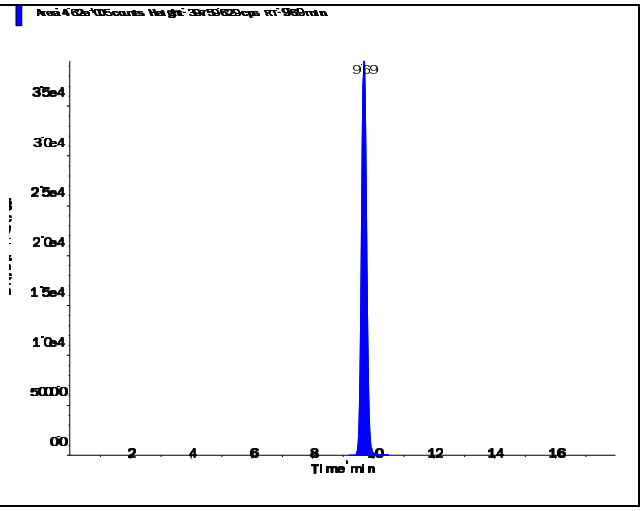

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:56 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	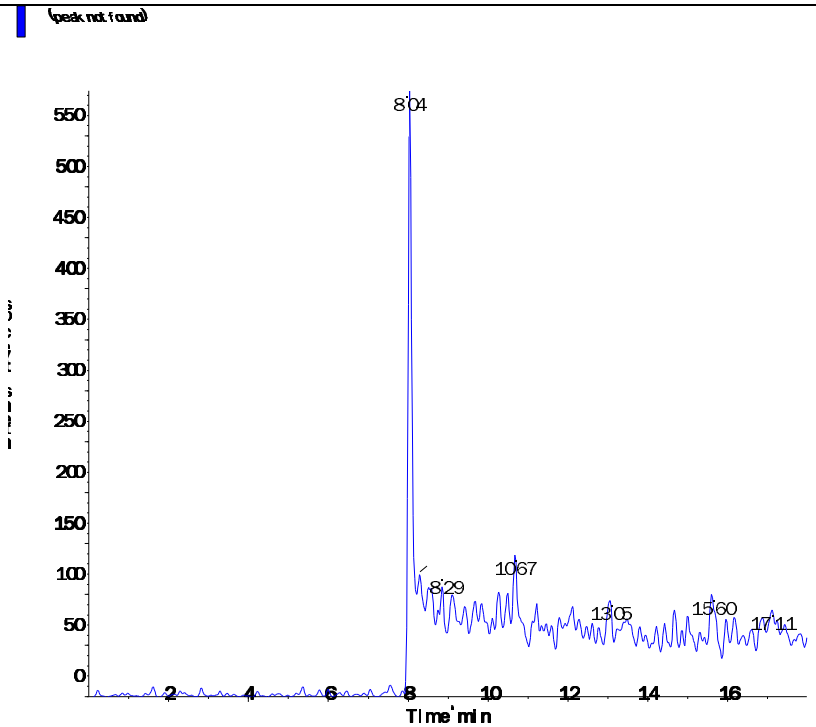
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	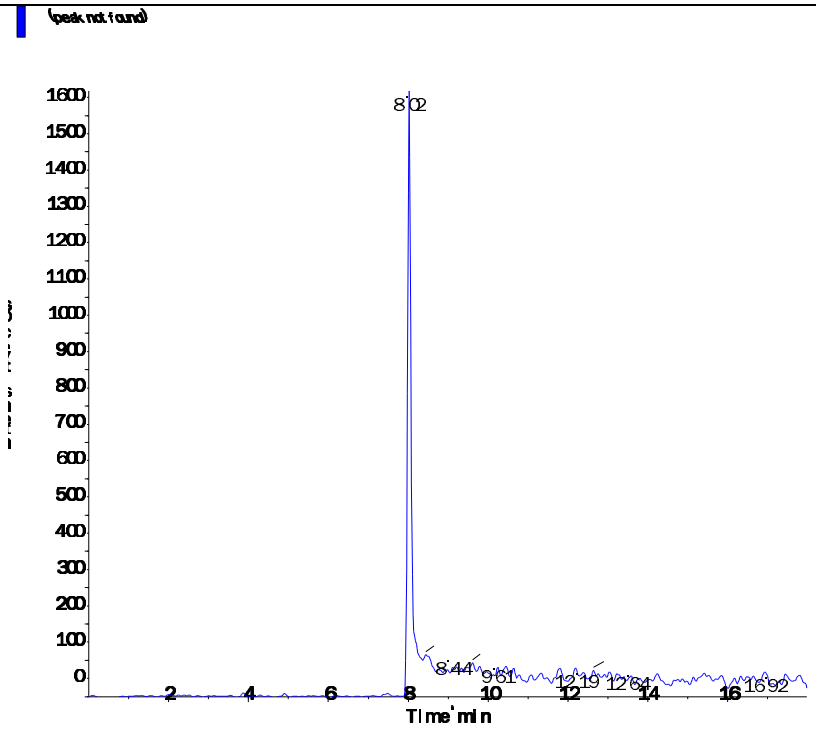

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 11:01 AM

Data File	LM35619.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 7:56:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575212-04 CCB	**Injection Vial**	1.00
Data File	LM35619.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 7:56:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575212-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.180e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	1.810e+02	9.45	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

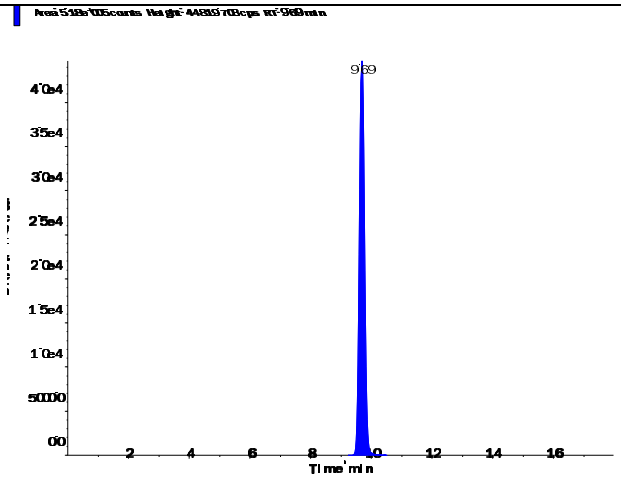

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 11:01 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	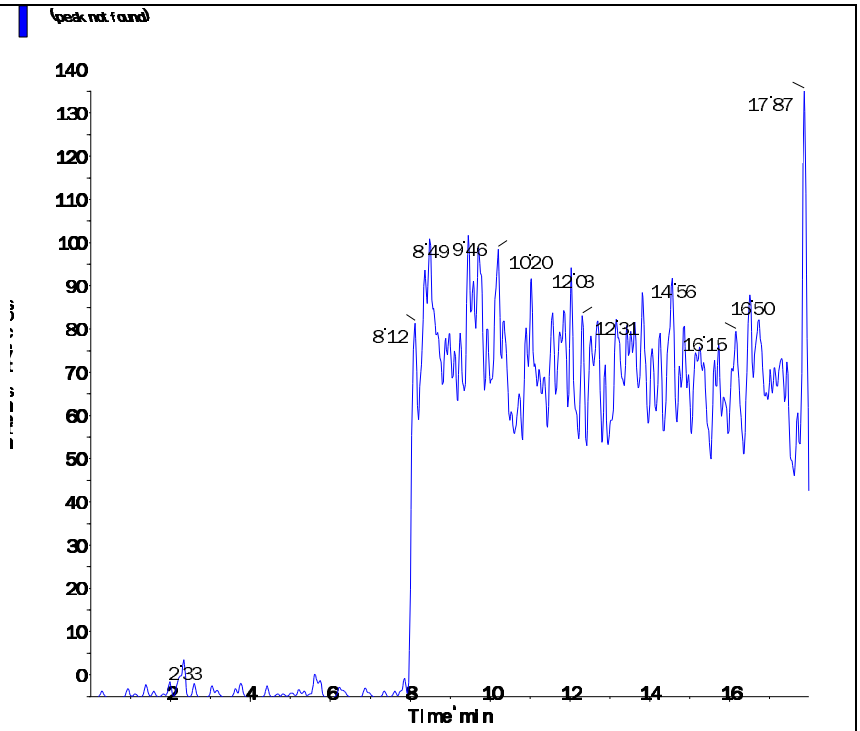
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.45 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	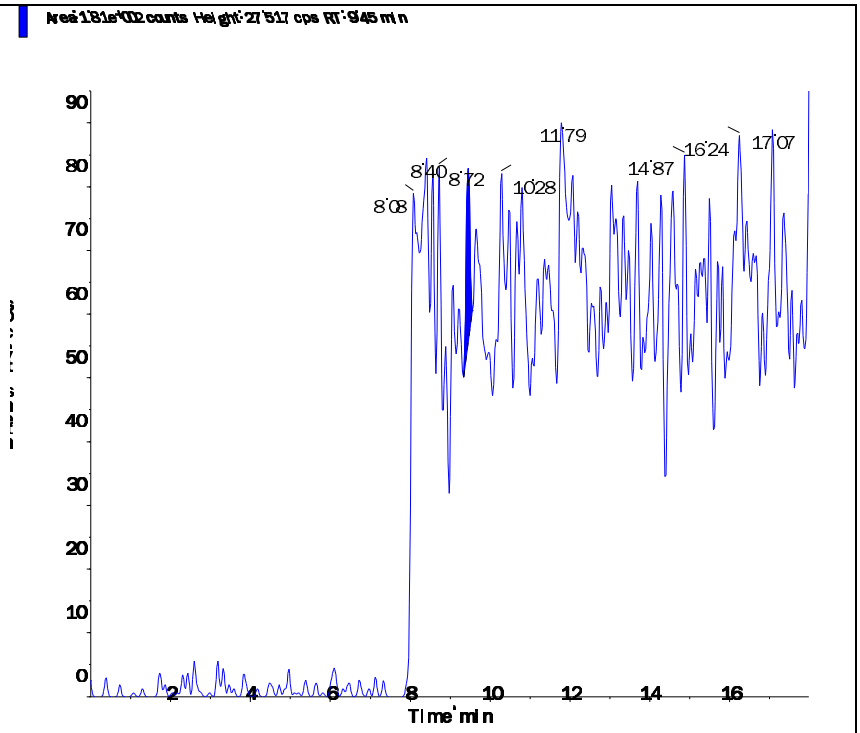

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 11:03 AM

Data File	LM35625.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 9:50:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575212-06 CCB	**Injection Vial**	1.00
Data File	LM35625.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 9:50:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575212-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.180e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

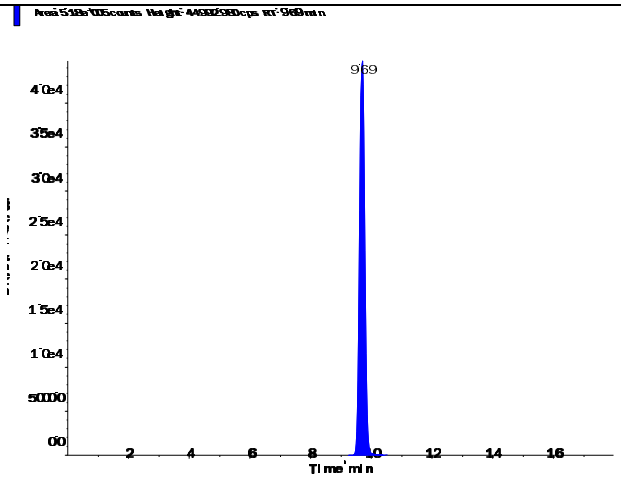

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 11:03 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

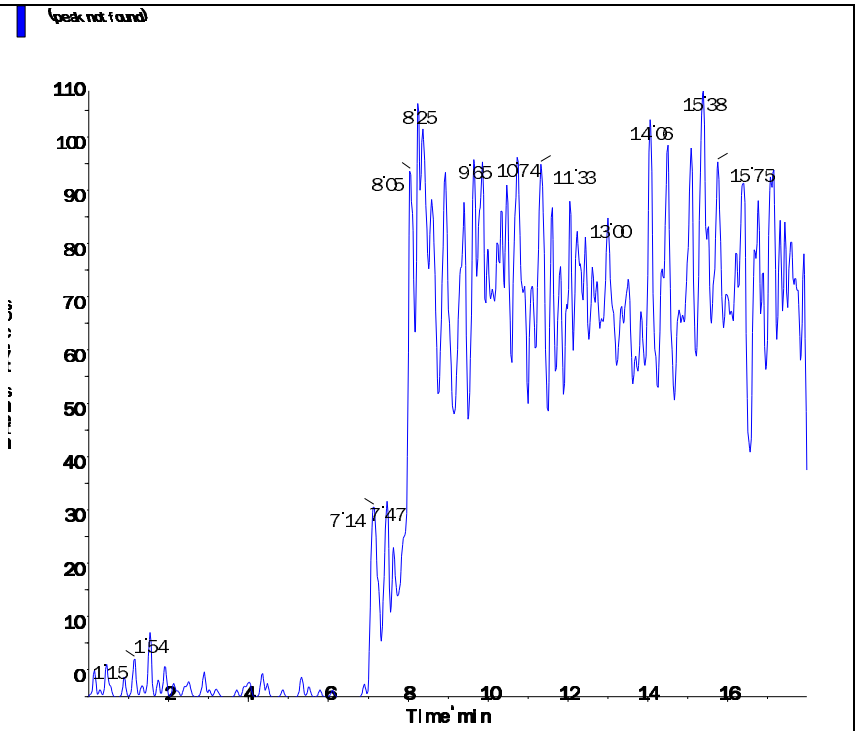

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

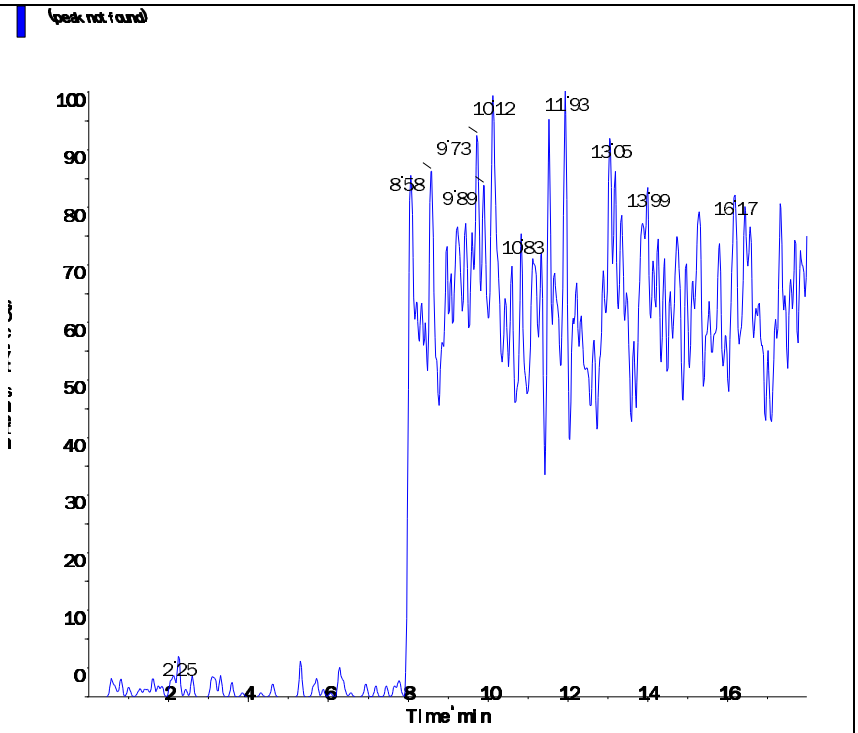

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35571.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:52:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35571.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:52:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.330e+05	9.04	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.020e+04	9.05	N/A	0.204
Perchlorate conf	9.940e+03	9.05	N/A	0.185

O18LP (Internal Standard)

RT (Exp. RT): 9.04(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

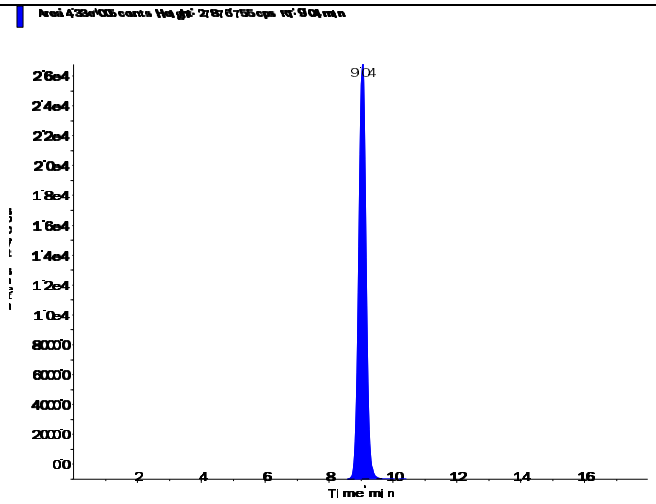

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.05 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

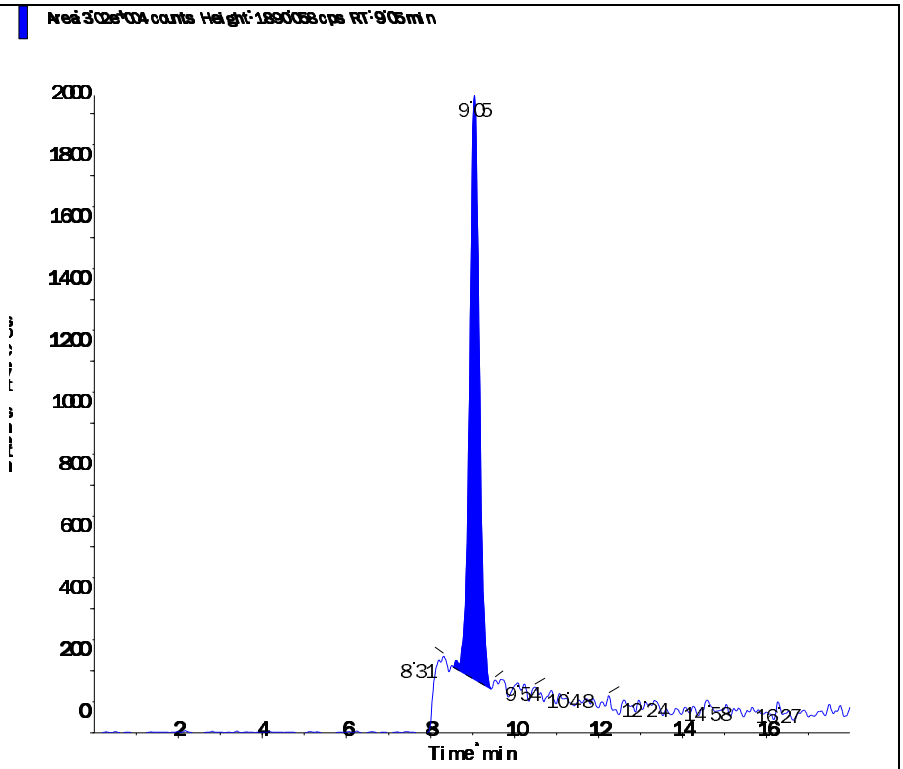

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.05 (9.84) min
Calculated conc:	0.185 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

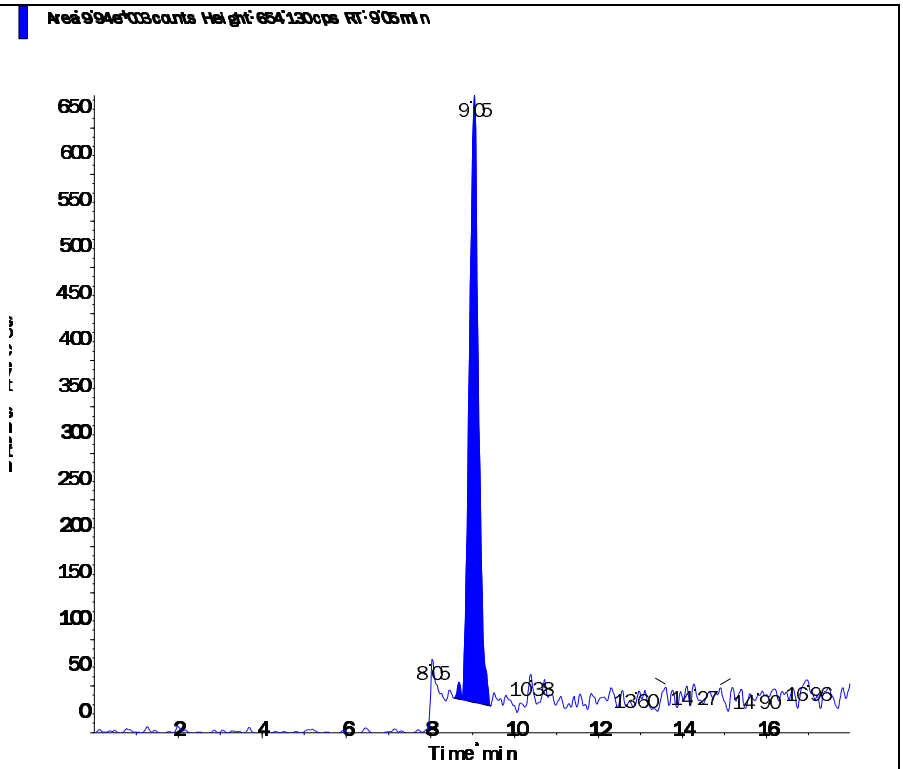

Printing Time: 6:47:51 PM
Printing Date: Friday, July 01, 2016

Sample Name: "WG575005-01 MCT (0.2ug/L)" Sample ID: "WG575005-01" File: "LM35571.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.231 ug/L
Acq. Date:	7/1/2016
Acq. Time:	4:52:43 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.05 min
Area:	3.42e+004 counts
Height:	1959.447 cps
Start Time:	8.566 min
End Time:	9.457 min

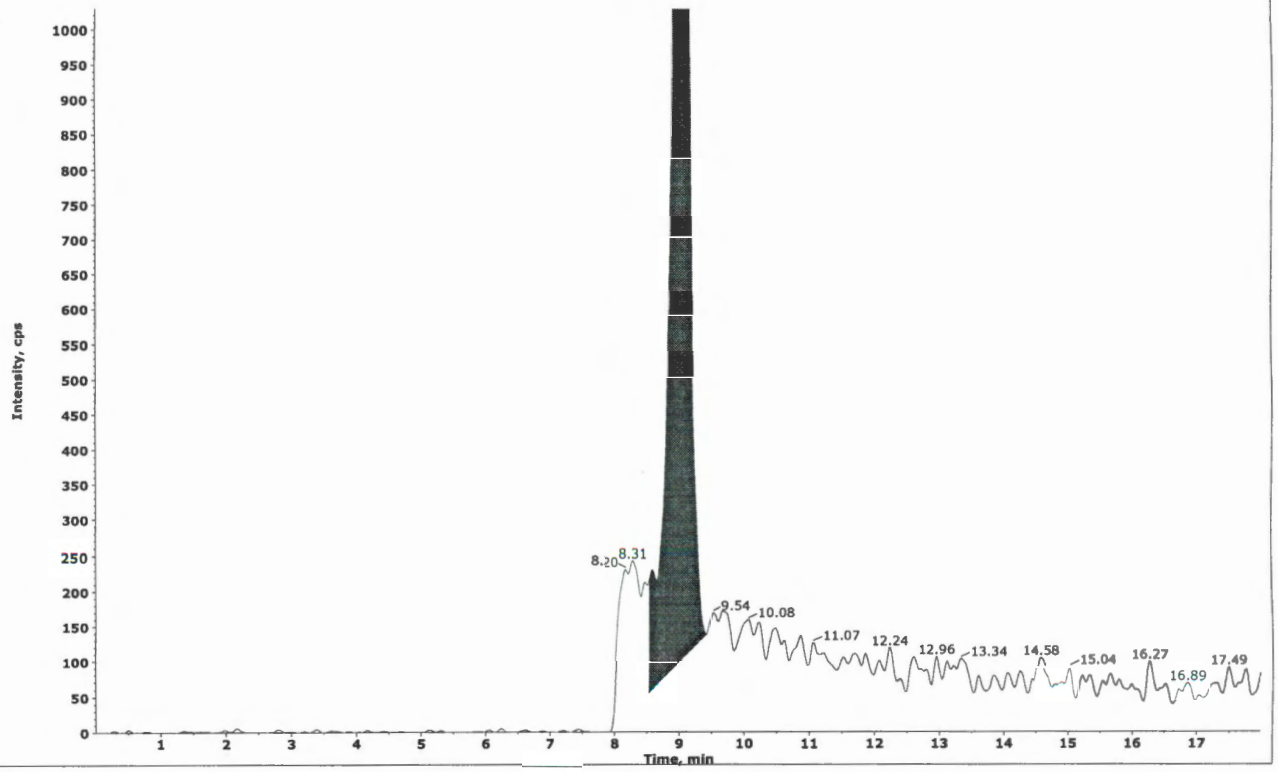

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 6:51:20 PM
Printing Date: Friday, July 01, 2016

Sample Name: "WG575005-01 HCT (0.2ug/L)" Sample ID: "WG575005-01" File: "LM35571.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.204 ug/L
Acq. Date:	7/1/2016
Acq. Time:	4:52:43 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	9.05 min
Area:	3.02e+004 counts
Height:	1890.058 cps
Start Time:	8.546 min
End Time:	9.437 min

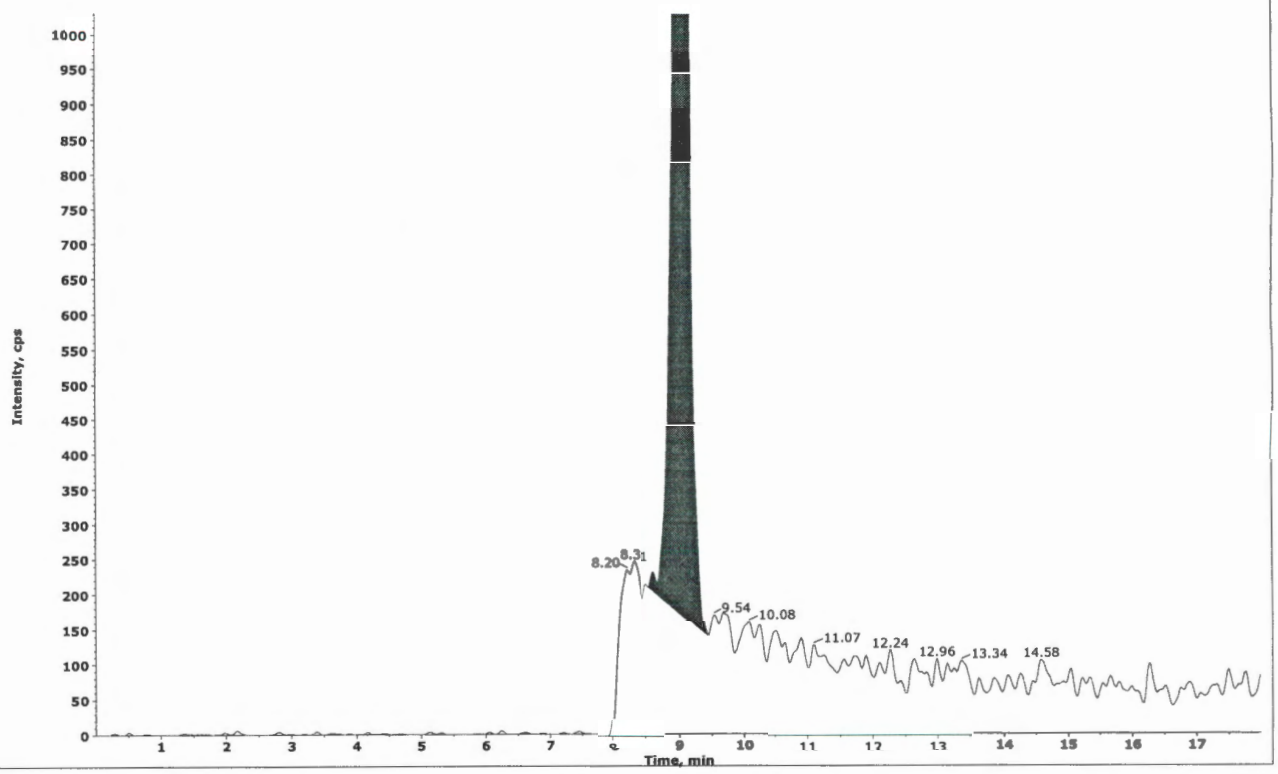

#4
JWR/07/01/16

✓ WED
7-6-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:57 AM

Data File	LM35607.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 4:09:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575171-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35607.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 4:09:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575171-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.210e+05	9.05	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.670e+04	9.08	N/A	0.184
Perchlorate conf	9.850e+03	9.05	N/A	0.189

O18LP (Internal Standard)

RT (Exp. RT): 9.05(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

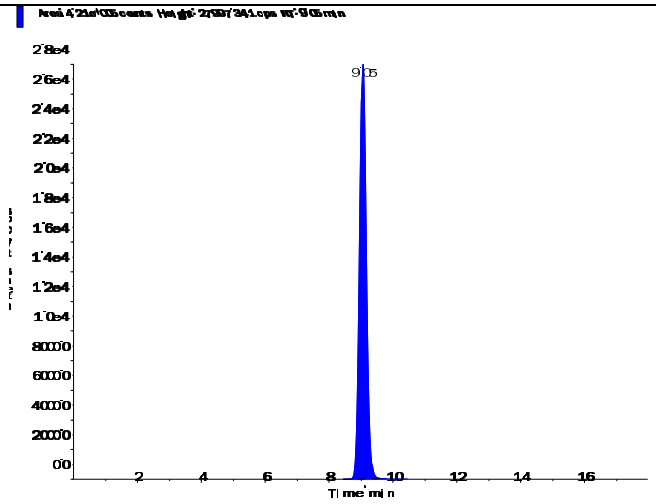

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:57 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.08 (9.84) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.063
Sample Type:	(Unknown)

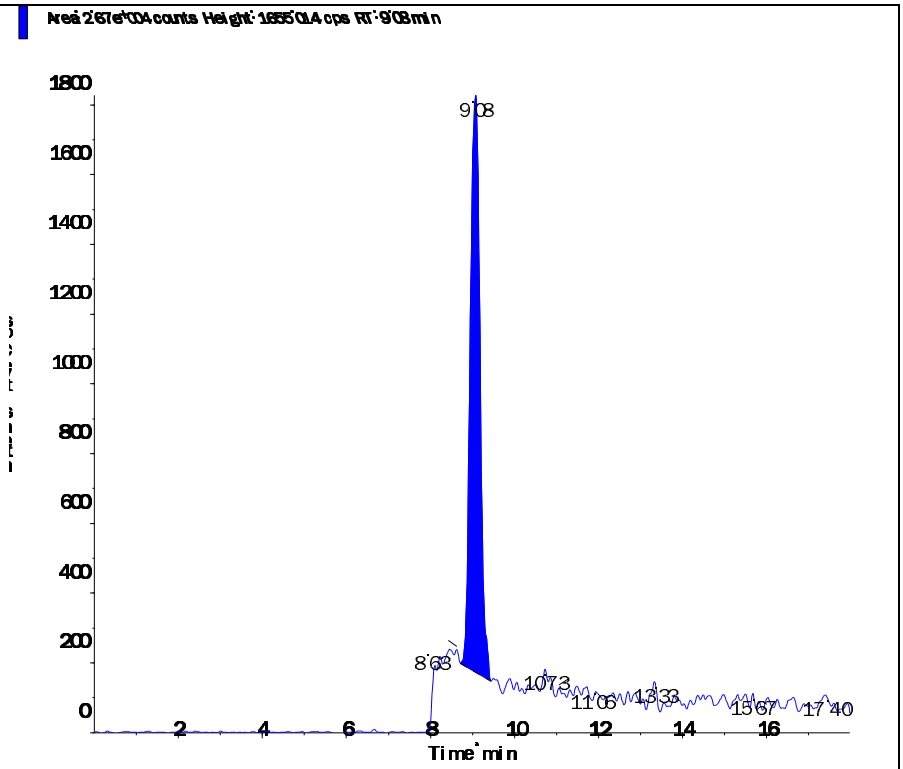

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.05 (9.84) min
Calculated conc:	0.189 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

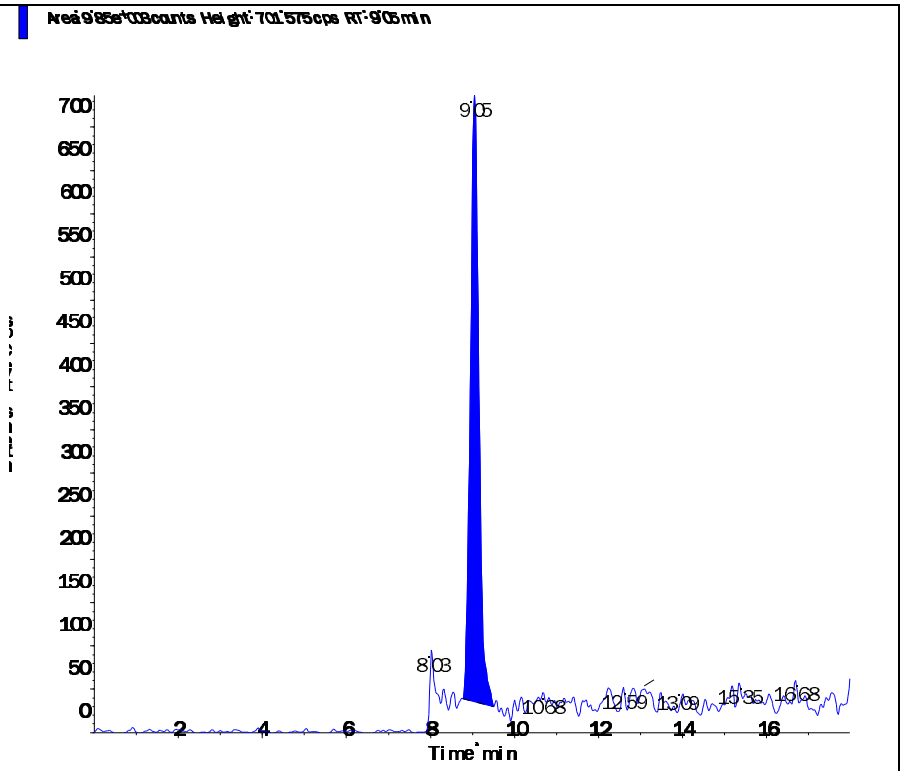

s.dataFile Page 2 of 2

Printing Time: 10:32:02 AM
Printing Date: Wednesday, July 06, 2016

Sample Name: "WG575171-01 MCT (0.2ug/L)" Sample ID: "WG575171-01" File: "LM35607.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.203 ug/L
Acq. Date: 7/5/2016
Acq. Time: 4:09:27 PM

Modified: No
Proc. Algorithm: Analyst Classic
Bunching Factor: 2
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Valley
Retention Time: 9.08 min
Area: 2.93e+004 counts
Height: 1714.650 cps
Start Time: 8.708 min
End Time: 9.437 min

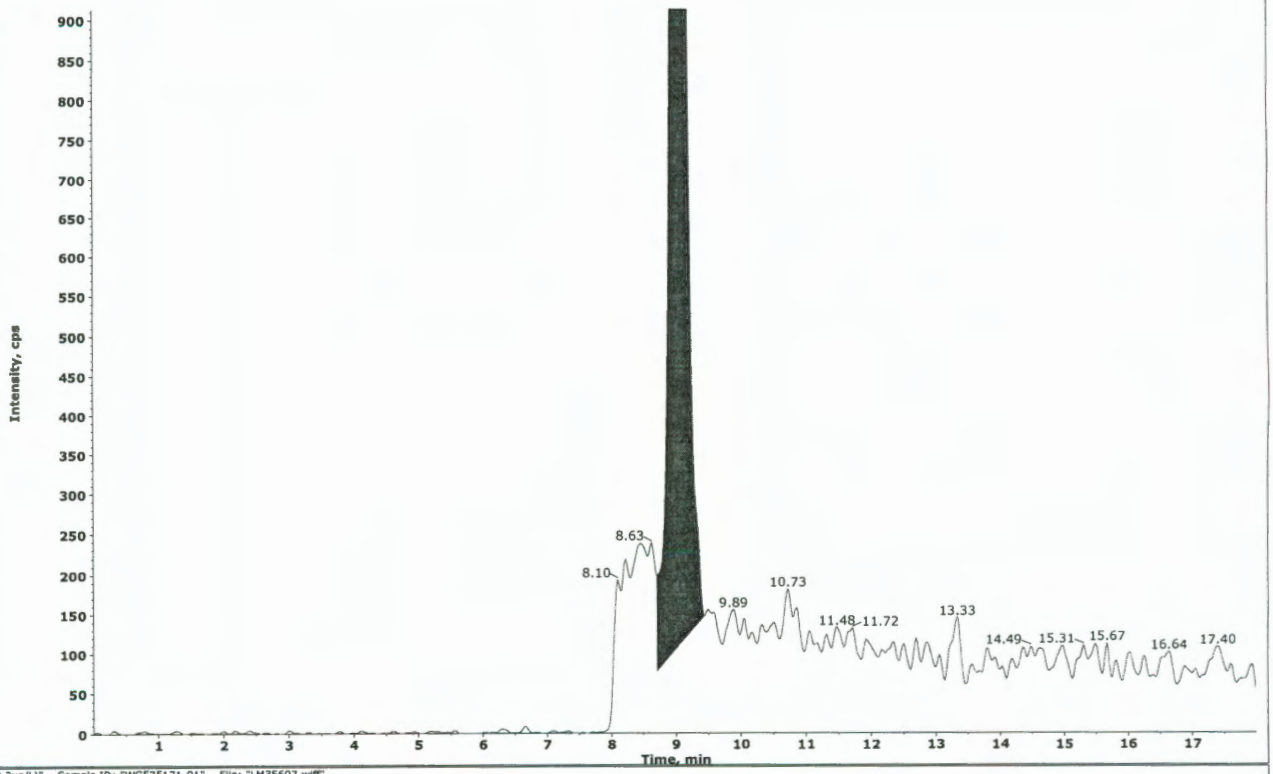

Sample Name: "WG575171-01 MCT (0.2ug/L)" Sample ID: "WG575171-01" File: "LM35607.wiff"
Peak Name: "Perchlorate conf" Mass(es): "100.8/85.2 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.203 ug/L
Acq. Date: 7/5/2016
Acq. Time: 4:09:27 PM

Modified: No
Proc. Algorithm: Analyst Classic
Bunching Factor: 2
Noise Threshold: 7.14 cps
Area Threshold: 35.71 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Base To Base
Retention Time: 9.05 min
Area: 1.05e+004 counts
Height: 712.660 cps
Start Time: 8.627 min
End Time: 9.761 min

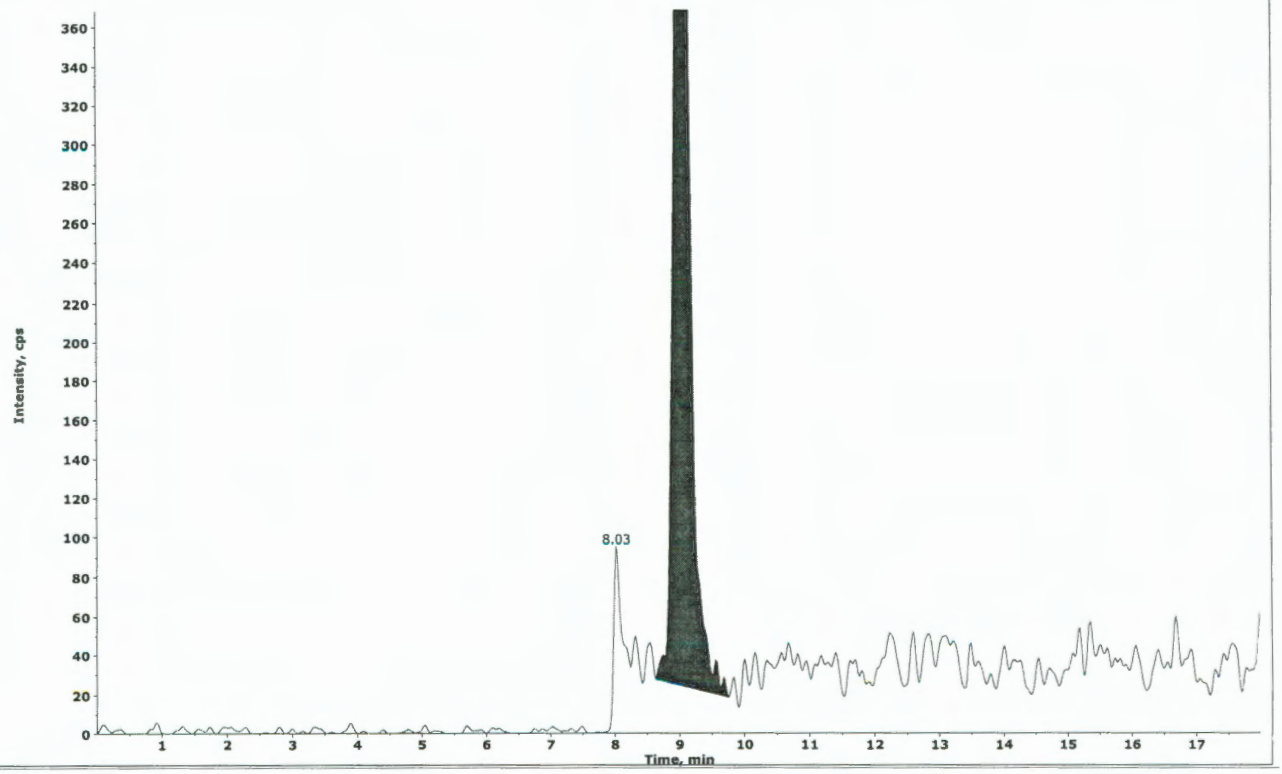

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 10:35:23 AM
Printing Date: Wednesday, July 06, 2016

Sample Name: "WG575171-01 MCT (0.2ug/L)" Sample ID: "WG575171-01" File: "LM35607.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.184 ng/L
Acq. Date: 7/5/2016
Acq. Time: 4:09:27 PM

Modified: Yes
Proc. Algorithm: Analyst Classic
Smoothing Factor: 1
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Base To Base
Retention Time: 9.08 min
Area: 2.67e+004 counts
Height: 1655.014 cps
Start Time: 8.708 min
End Time: 9.437 min

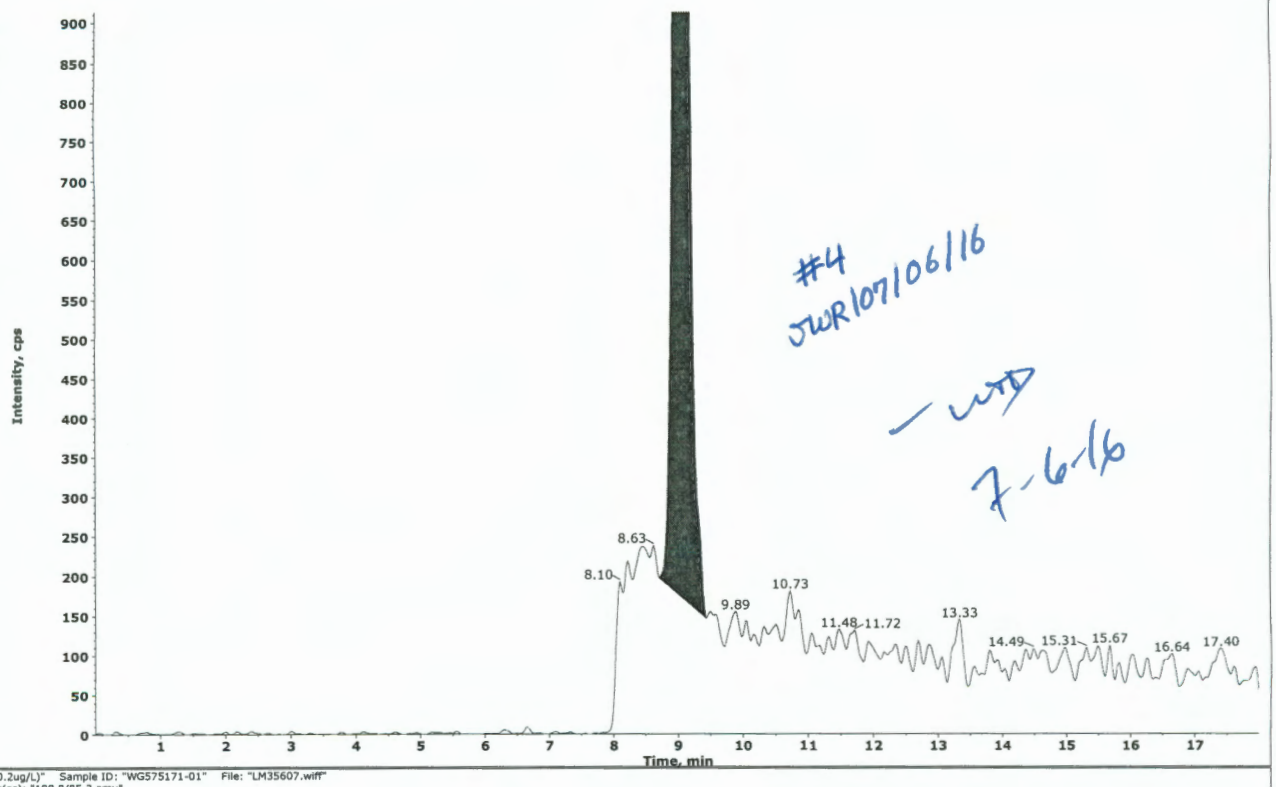

#4
JWR107106116
— WD
7-6-16

Sample Name: "WG575171-01 MCT (0.2ug/L)" Sample ID: "WG575171-01" File: "LM35607.wiff"
Peak Name: "Perchlorate conf" Mass(es): "100.8/85.2 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.189 ng/L
Acq. Date: 7/5/2016
Acq. Time: 4:09:27 PM

Modified: Yes
Proc. Algorithm: Analyst Classic
Smoothing Factor: 2
Noise Threshold: 7.14 cps
Area Threshold: 35.71 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Manual
Retention Time: 9.05 min
Area: 9.85e+003 counts
Height: 701.575 cps
Start Time: 8.769 min
End Time: 9.498 min

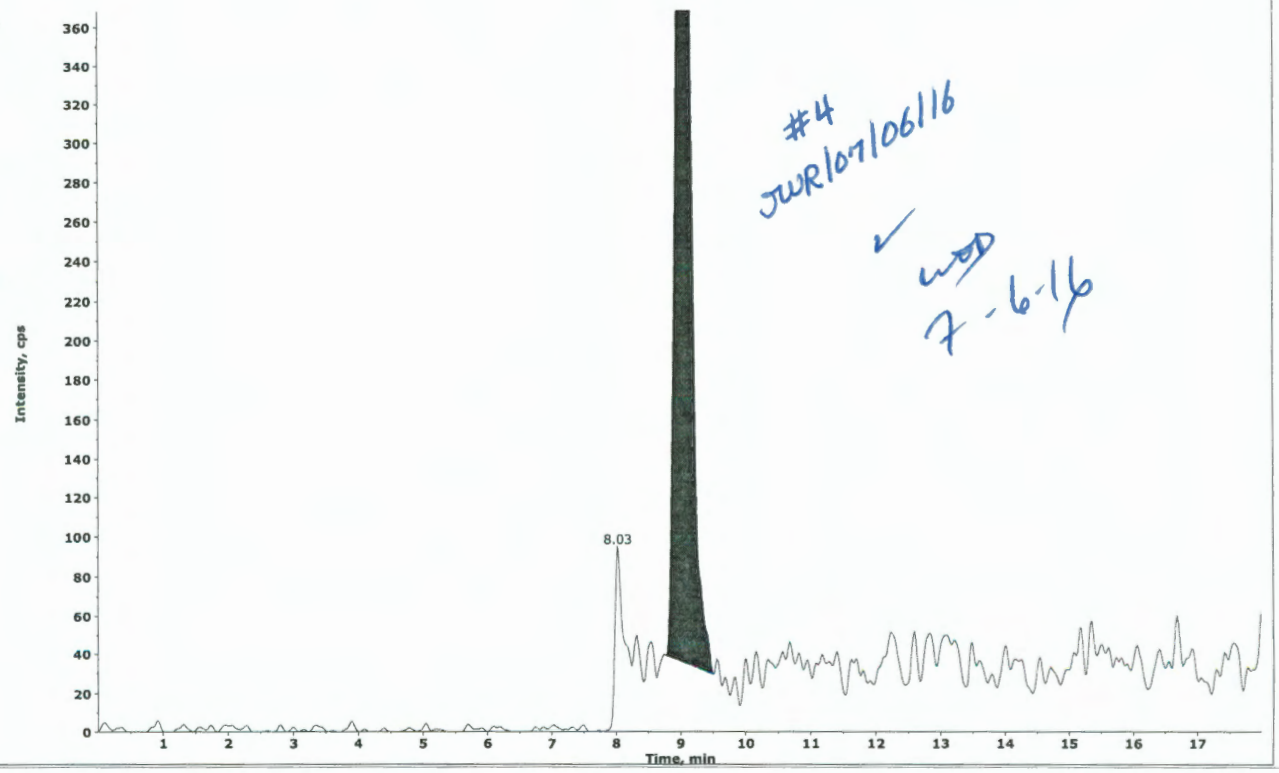

#4
JWR107106116
✓
WD
7-6-16

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

2.2.2.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35572.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-02 BLANK	**Injection Vial**	5.00
Data File	LM35572.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

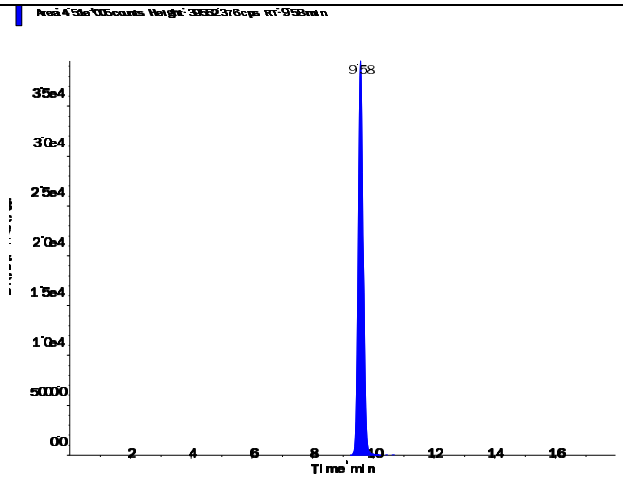

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

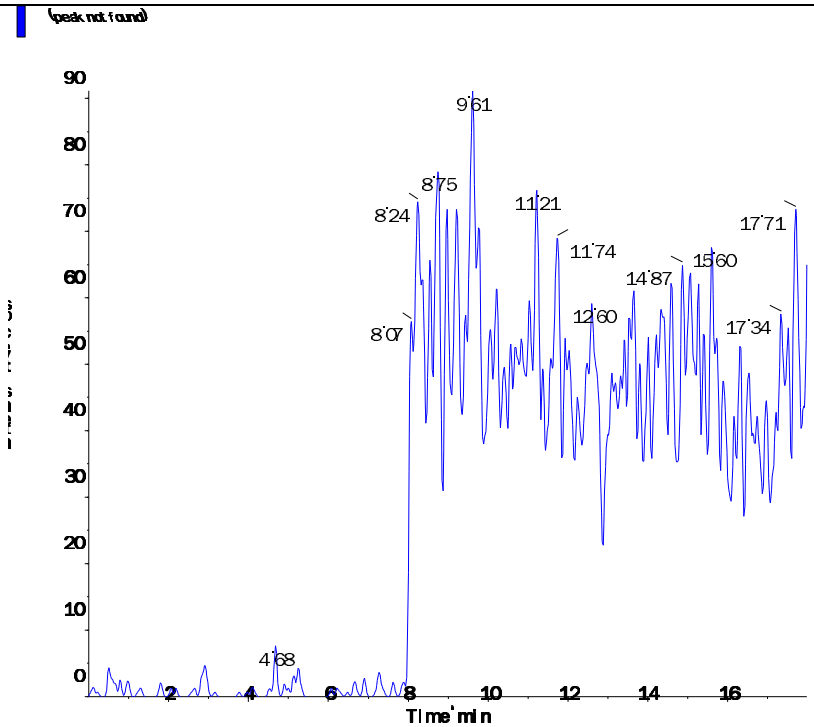

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

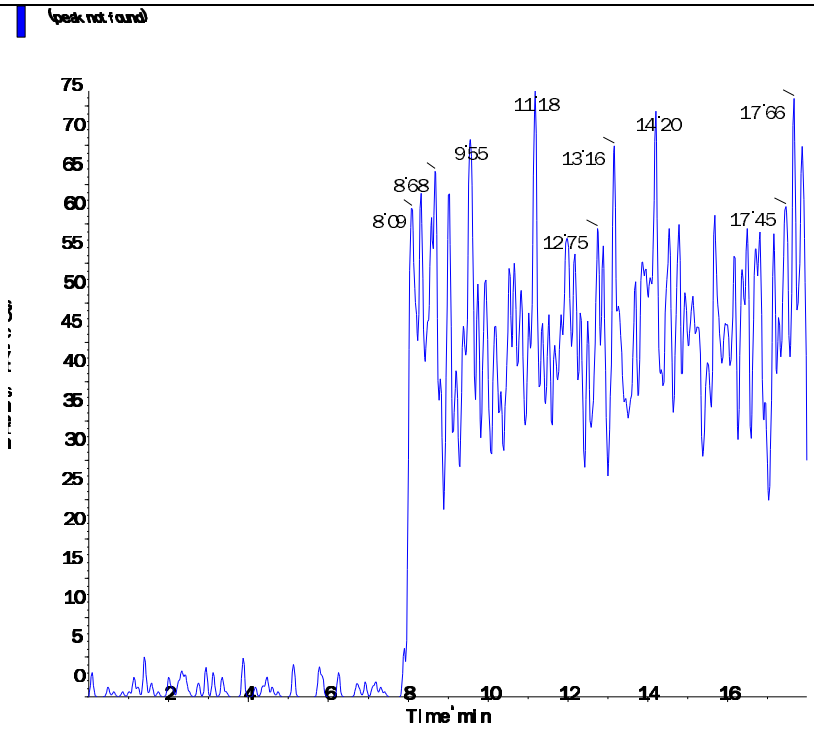

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:57 AM

Data File	LM35608.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 4:28:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575171-02 BLANK	**Injection Vial**	5.00
Data File	LM35608.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 4:28:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575171-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.360e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

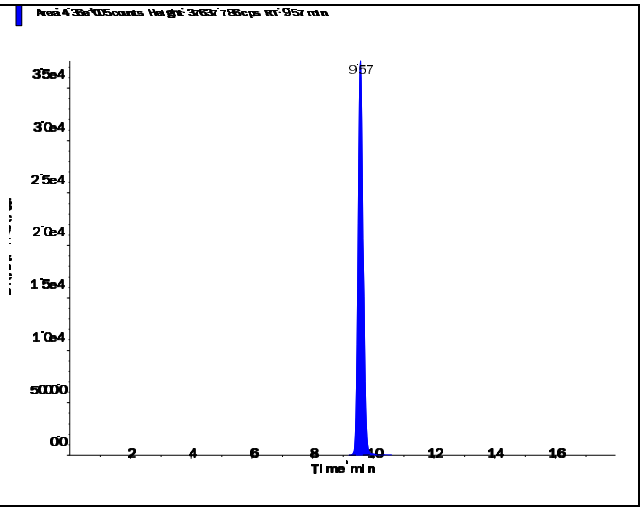

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:57 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

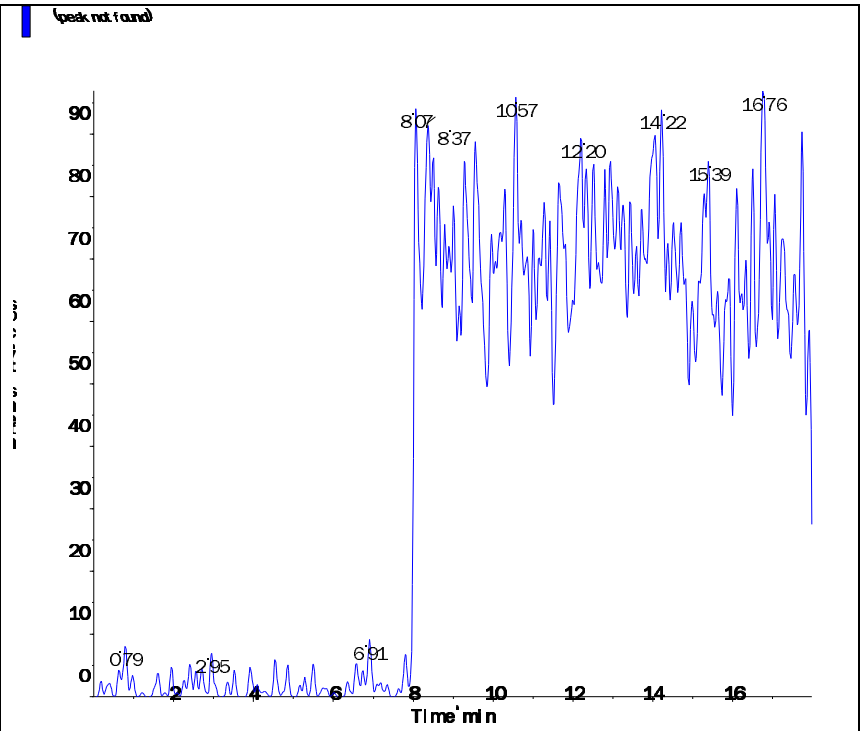

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

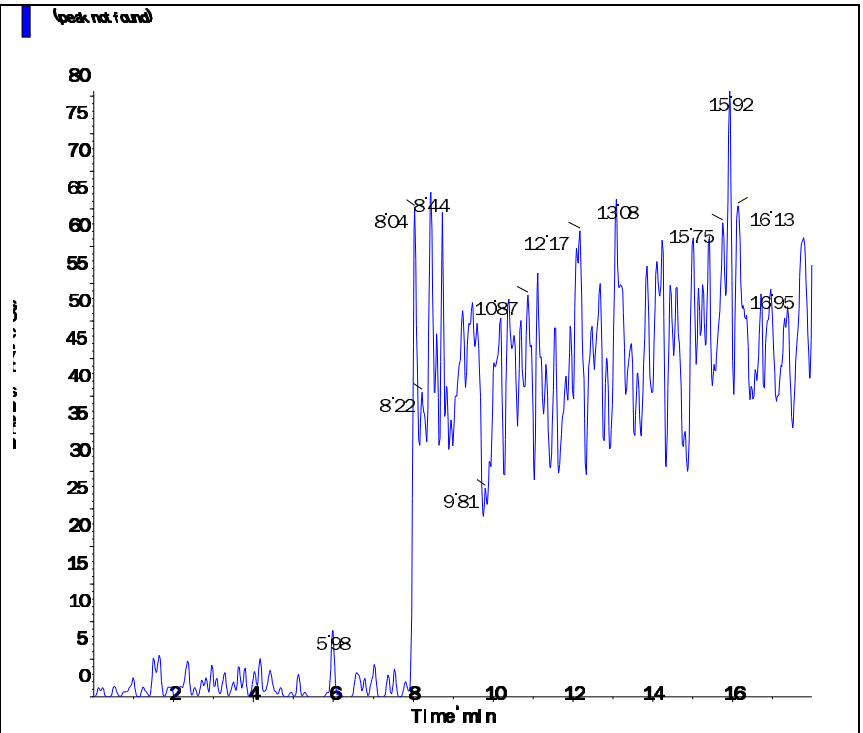

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35573.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:30:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35573.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:30:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.110e+04	9.61	N/A	0.201
Perchlorate conf	1.130e+04	9.60	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

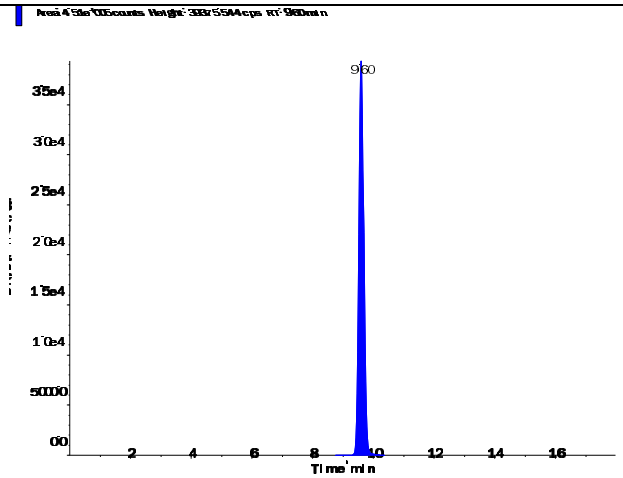

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.61 (9.84) min Calculated conc: 0.201 ng/ml Area Ratio: 0.069 Sample Type: (Unknown)	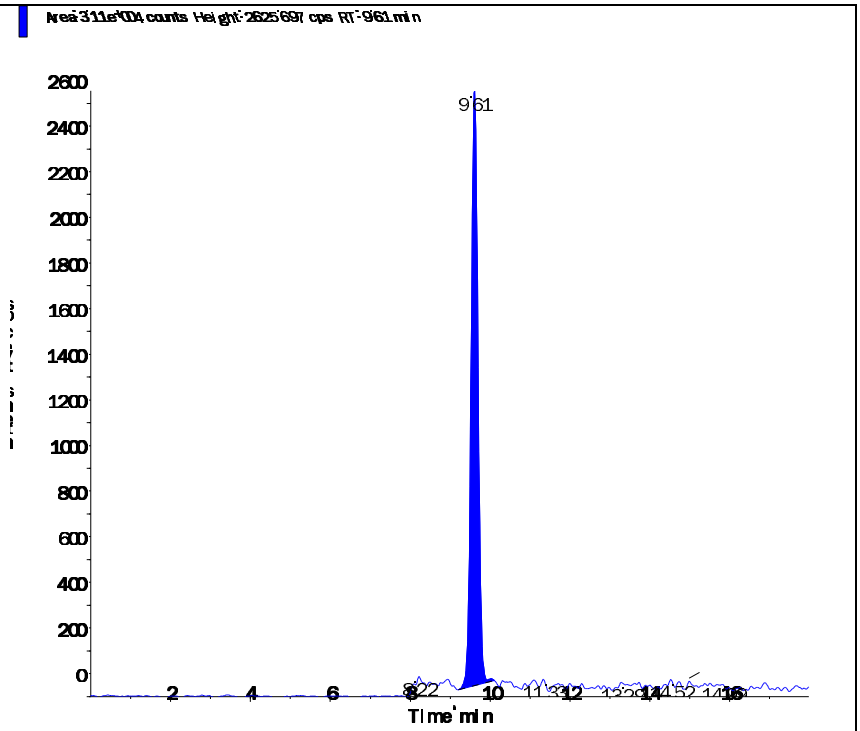
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: 0.204 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	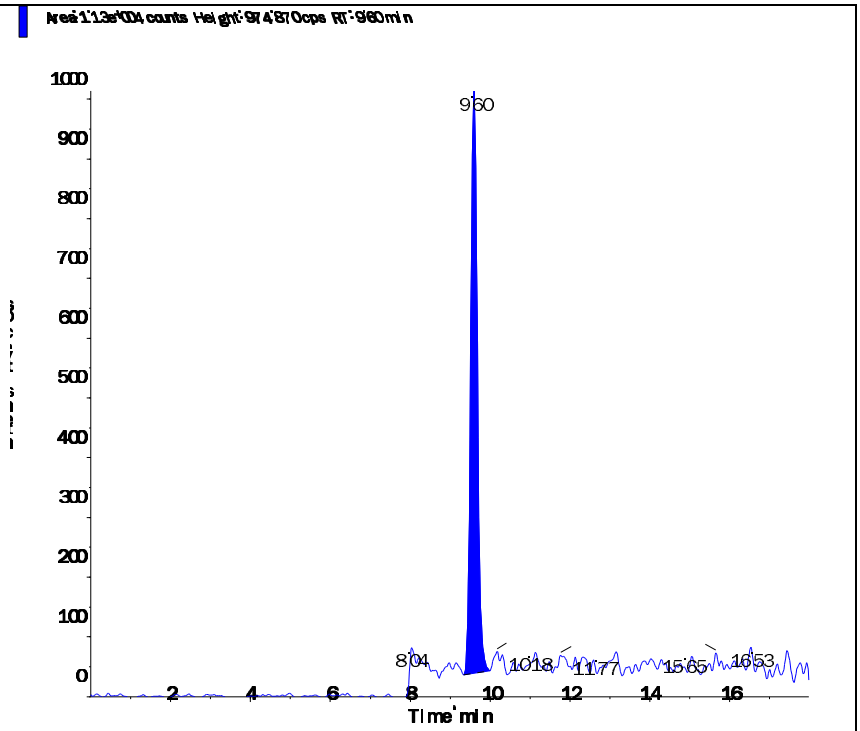

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:58 AM

Data File	LM35609.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 4:47:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575171-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35609.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 4:47:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575171-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.390e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.970e+04	9.61	N/A	0.198
Perchlorate conf	1.090e+04	9.59	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

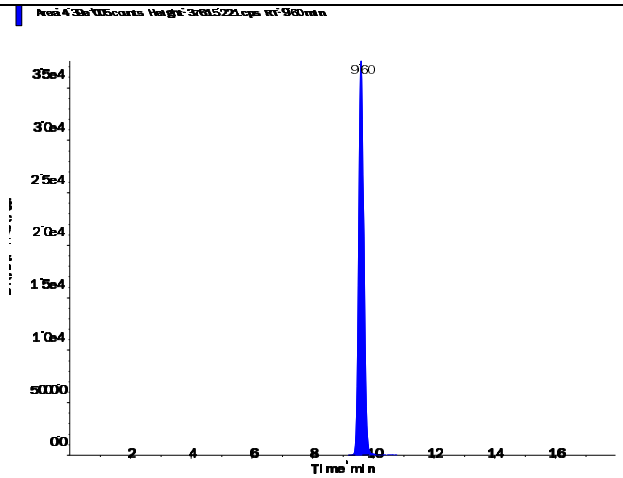

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:58 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.61 (9.84) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

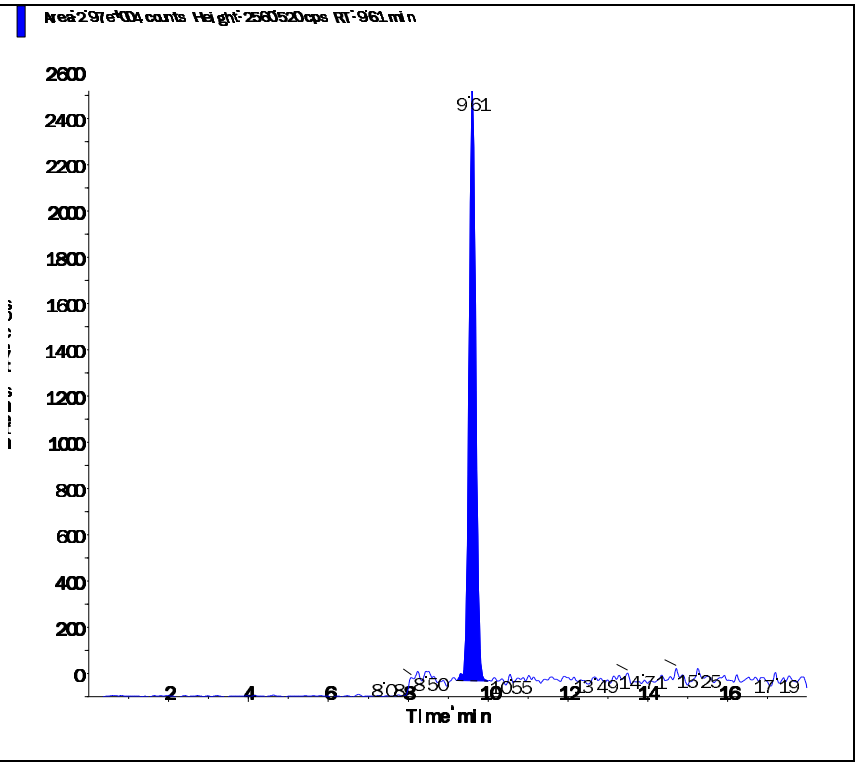

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

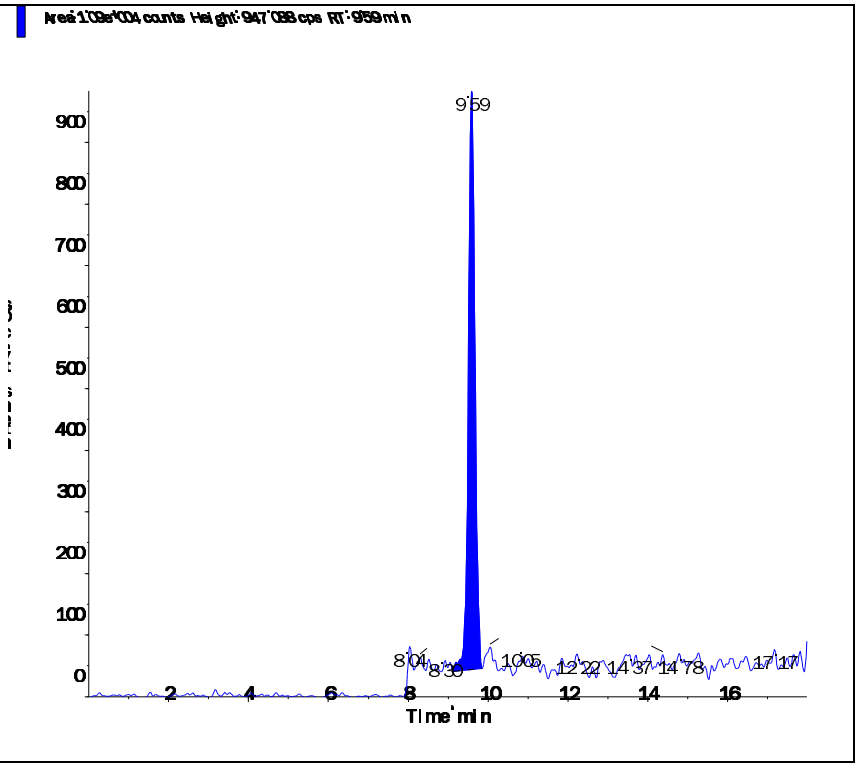

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:28 PM

Data File	LM35574.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:49:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35574.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:49:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.250e+04	9.66	N/A	0.211
Perchlorate conf	1.180e+04	9.65	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

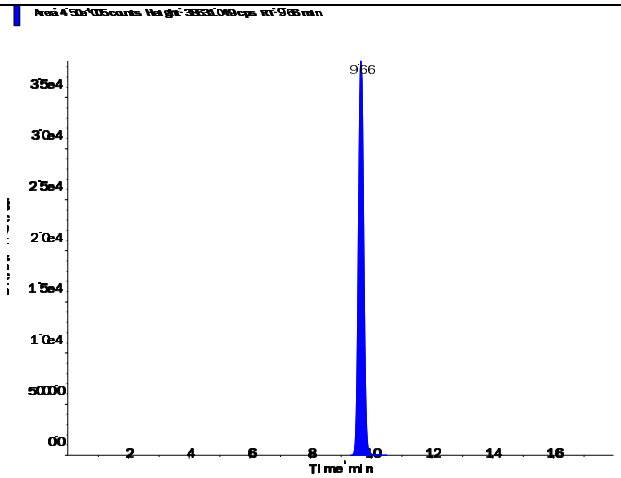

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:28 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

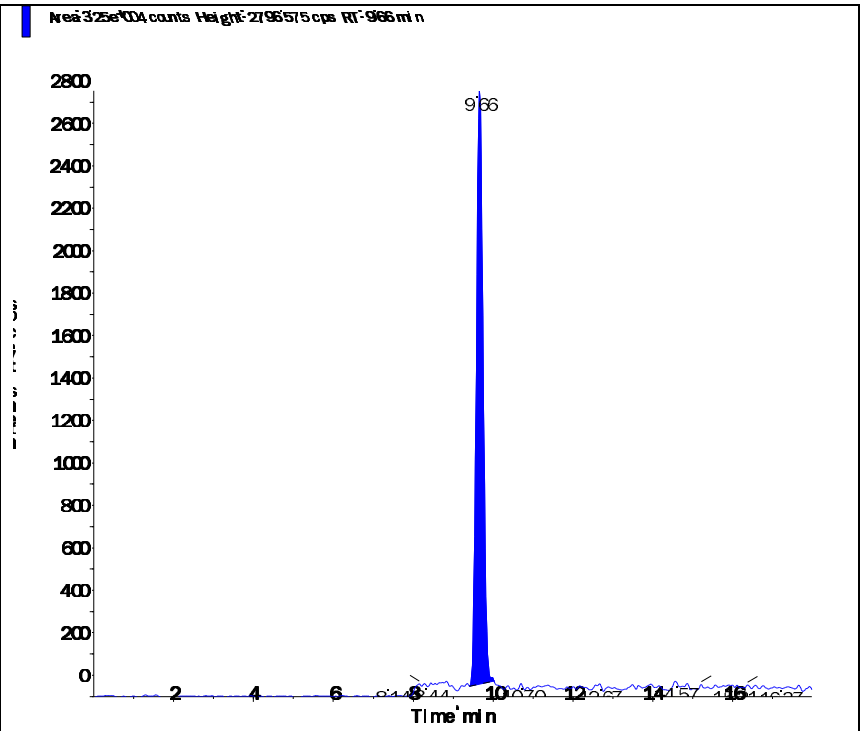

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

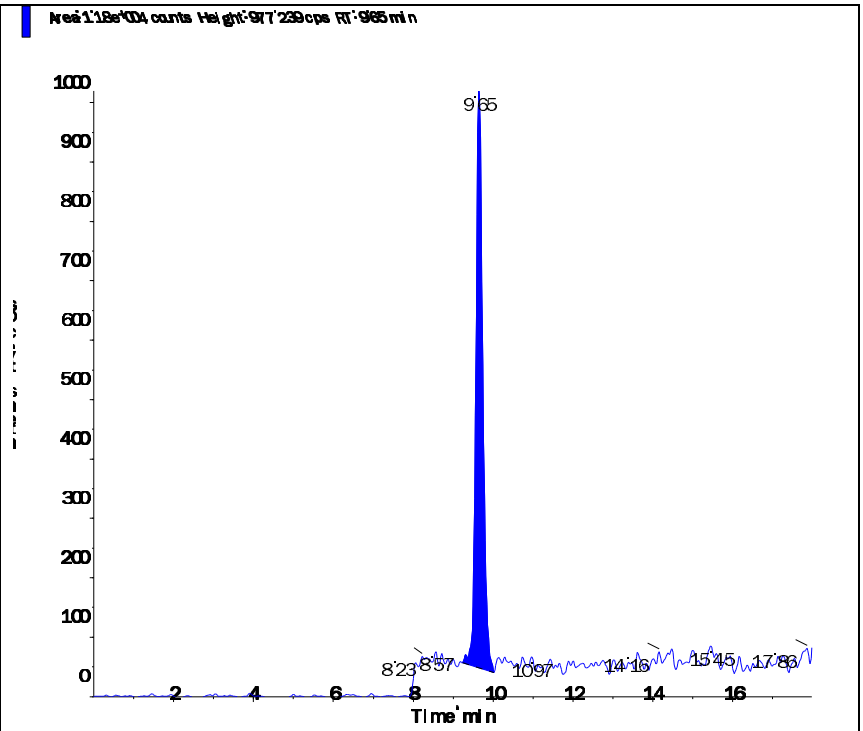

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW16F-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 15:00
Collect Date:	06/21/2016 14:40	**Dilution:**	1	**File ID:**	T3.062416.150030
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.289		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Magnesium, Total	7439-95-4	17.3		1.00	0.500	0.250
Potassium, Total	7440-09-7	4.10		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00641	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW16F-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/27/2016 13:19
Collect Date:	06/21/2016 14:40	**Dilution:**	20	**File ID:**	T3.062716.131923
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	23.7		10.0	5.00	2.50
Iron, Total	7439-89-6	38.8		4.00	2.00	1.00
Sodium, Total	7440-23-5	142		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	109-062216	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 15:04
Collect Date:	06/22/2016 07:20	**Dilution:**	1	**File ID:**	T3.062416.150424
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	3.62		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	2.30		0.500	0.250	0.125
Iron, Total	7439-89-6	3.98		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.90		1.00	0.500	0.250
Potassium, Total	7440-09-7	0.692	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00538	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	33.8		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573994
Analyst: ERP
Spike Analyst: ERP
Run Date: 06/24/2016 07:18
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 06/24/2016 07:38

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: VC
HNO3 Lot #: COA18905
HCL Lot #: COA18769
40 & 50 ML. DIGESTION TU COA18987
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573994-02	BLANK	1	40 mL	50 mL	205.799 g	205.793 g		
2	WG573994-03	LCS	1	40 mL	50 mL	211.523 g	211.513 g	5 mL	
3	L16060961-03	SAMP	1	40 mL	50 mL	205.052 g	205.037 g		06/24/16
4	L16061129-01	SAMP	1	40 mL	50 mL	206.124 g	206.112 g		07/05/16
5	L16061129-02	SAMP	1	40 mL	50 mL	206.489 g	206.476 g		07/05/16
6	L16061129-03	SAMP	1	40 mL	50 mL	205.825 g	205.808 g		07/05/16
7	L16061129-04	SAMP	1	40 mL	50 mL	205.354 g	205.348 g		07/05/16
8	L16061129-05	SAMP	1	40 mL	50 mL	205.317 g	205.299 g		07/05/16
9	L16061227-01	SAMP	1	40 mL	50 mL	204.465 g	204.443 g		07/01/16
10	L16061227-03	SAMP	1	40 mL	50 mL	204.813 g	204.793 g		07/01/16
11	L16061227-05	SAMP	1	40 mL	50 mL	206.069 g	206.05 g		07/01/16
12	L16061227-06	SAMP	1	40 mL	50 mL	202.826 g	202.812 g		07/01/16
13	L16061227-07	SAMP	1	40 mL	50 mL	205.408 g	205.392 g		07/01/16
14	L16061272-01	SAMP	1	40 mL	50 mL	206.813 g	206.794 g		06/30/16
15	L16061272-02	SAMP	1	40 mL	50 mL	208.22 g	208.202 g		06/30/16
16	L16061279-01	SAMP	1	40 mL	50 mL	206.107 g	206.09 g		06/28/16
17	WG573994-01	REF	1	40 mL	50 mL	204.432 g	204.415 g		
18	L16061279-02	RS01	1	40 mL	50 mL	204.432 g	204.415 g		06/28/16
19	WG573994-04	MS	1	40 mL	50 mL	213.413 g	213.398 g	5 mL	
20	L16061279-03	MS01	1	40 mL	50 mL	213.413 g	213.398 g	5 mL	06/28/16
21	WG573994-05	MSD	1	40 mL	50 mL	211.644 g	211.636 g	5 mL	
22	L16061279-04	SD01	1	40 mL	50 mL	211.644 g	211.636 g	5 mL	06/28/16
23	L16061279-05	SAMP	1	40 mL	50 mL	206.357 g	206.345 g		06/28/16
24	L16061289-01	SAMP	1	40 mL	50 mL	208.182 g	208.164 g		07/04/16
25	L16061289-04	SAMP	1	40 mL	50 mL	204.262 g	204.255 g		07/04/16
26	L16061290-03	SAMP	1	40 mL	50 mL	208.194 g	208.183 g		07/04/16
27	L16061290-05	SAMP	1	40 mL	50 mL	205.844 g	205.821 g		07/04/16

L16061279-03	filtered digestate
L16061279-04	filtered digestate
L16061279-01	filtered digestate
L16061279-02	filtered digestate
WG573994-01	filtered digestate
WG573994-04	filtered digestate
WG573994-05	filtered digestate
L16061279-05	filtered digestate

MW_DIG - Modified 09/30/2009
PDF ID: 4821834
Report generated: 06/24/2016 08:17

Microbac Laboratories Inc.
Microwave Digestion Log

Analyst: Erin Potter

SOP:
Spike Solution:
Reviewer: Jackie Collins
Spike Witness:

Method:
Balance:
Instrument:
Instrument Start:

MW_DIG - Modified 09/30/2009
PDF ID: 4821834
Report generated: 06/24/2016 08:17

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062416.100206	WG574123-01	Calibration Point		1		06/24/16 10:02
2	T3.062416.100606	WG574123-02	Calibration Point		1		06/24/16 10:06
3	T3.062416.101006	WG574123-03	Calibration Point		1		06/24/16 10:10
4	T3.062416.101405	WG574123-04	Calibration Point		1		06/24/16 10:14
5	T3.062416.101742	WG574123-05	Calibration Point		1		06/24/16 10:17
6	T3.062416.102118	WG574123-06	Initial Calibration Verification		1		06/24/16 10:21
7	T3.062416.102444	WG574123-07	Initial Calib Blank		1		06/24/16 10:24
8	T3.062416.102843	WG574123-08	Low Level Initial Calibration V		1		06/24/16 10:28
9	T3.062416.103239	WG574123-09	Low Level Initial Calibration V		1		06/24/16 10:32
10	T3.062416.103634	WG574123-10	Interference Check		1		06/24/16 10:36
11	T3.062416.104027	WG574123-11	Interference Check		1		06/24/16 10:40
12	T3.062416.104409	WG574123-12	CCV		1		06/24/16 10:44
13	T3.062416.104746	WG574123-13	CCB		1		06/24/16 10:47
14	T3.062416.105146	WG573823-01	Method/Prep Blank	1/50	1		06/24/16 10:51
15	T3.062416.105915	WG573823-02	Laboratory Control S	1/50	1		06/24/16 10:59
16	T3.062416.110255	WG573823-03	Laboratory Control S	1/50	1		06/24/16 11:02
17	T3.062416.110635	L16061143-01	500662-WP-002	1/50	1		06/24/16 11:06
18	T3.062416.111030	L16061143-02	500662-WP-003	1/50	1		06/24/16 11:10
19	T3.062416.111424	L16061143-03	500662-WP-004	1/50	1		06/24/16 11:14
20	T3.062416.111816	WG574050-01	Post Digestion Spike		1	L16061143-03	06/24/16 11:18
21	T3.062416.112154	WG574050-02	Serial Dilution		5	L16061143-03	06/24/16 11:21
22	T3.062416.112553	L16060724-01	ABW_06142016	40/50	1000		06/24/16 11:25
23	T3.062416.112949	L16060787-10	U517TW006C	40/50	10		06/24/16 11:29
24	T3.062416.113347	WG574123-14	CCV		1		06/24/16 11:33
25	T3.062416.113725	WG574123-15	CCB		1		06/24/16 11:37
26	T3.062416.114112	L16060787-18	U517TW008A	40/50	10		06/24/16 11:41
27	T3.062416.114510	WG573707-03	Method/Prep Blank	40/50	1		06/24/16 11:45
28	T3.062416.114908	WG573707-04	Laboratory Control S	40/50	1		06/24/16 11:49
29	T3.062416.115249	WG573594-01	Fluid Blank 1		1		06/24/16 11:52
30	T3.062416.115648	WG573594-02	Fluid Blank 2		1		06/24/16 11:56
31	T3.062416.120048	WG573707-01	Reference Sample		1	L16061151-01	06/24/16 12:00
32	T3.062416.120443	WG573707-05	Matrix Spike	40/50	1	L16061151-01	06/24/16 12:04
33	T3.062416.120811	WG573707-06	Matrix Spike Duplica	40/50	1	L16061151-01	06/24/16 12:08
34	T3.062416.121149	L16061140-01	60500-SSP0042-SSP0042	5/50	1		06/24/16 12:11

Page: 1 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062416.121541	WG574055-02	Serial Dilution		5	L16061140-01	06/24/16 12:15
36	T3.062416.121926	WG574123-16	CCV		1		06/24/16 12:19
37	T3.062416.122304	WG574123-17	CCB		1		06/24/16 12:23
38	T3.062416.122703	WG574055-01	Post Digestion Spike		1	L16061140-01	06/24/16 12:27
39	T3.062416.123043	L16061140-03	60500-SSP0037-SPLP023	5/50	1		06/24/16 12:30
40	T3.062416.123437	WG572980-02	Method/Prep Blank	40/50	1		06/24/16 12:34
41	T3.062416.123836	WG572980-03	Laboratory Control S	40/50	1		06/24/16 12:38
42	T3.062416.124216	L16060732-01	LH18/24-SP650-6371-GRAB	40/50	1		06/24/16 12:42
43	T3.062416.124614	WG572980-01	Reference Sample		1	L16060796-01	06/24/16 12:46
44	T3.062416.125002	WG572980-04	Matrix Spike	5/50	1	L16060796-01	06/24/16 12:50
45	T3.062416.125340	WG572980-05	Matrix Spike Duplica	5/50	1	L16060796-01	06/24/16 12:53
46	T3.062416.125716	L16060732-02	LH18/24-SP650-6371-COMP	40/50	1		06/24/16 12:57
47	T3.062416.130110	L16060794-01	A08-MW06-Y1S2	40/50	10		06/24/16 13:01
48	T3.062416.130507	WG574123-18	CCV		1		06/24/16 13:05
49	T3.062416.130845	WG574123-19	CCB		1		06/24/16 13:08
50	T3.062416.131244	L16060794-04	A09-MW07-Y1S2	40/50	10		06/24/16 13:12
51	T3.062416.131643	L16060796-04	500662-DS-002	5/50	1		06/24/16 13:16
52	T3.062416.132032	WG573149-01	Post Digestion Spike		1	L16060796-04	06/24/16 13:20
53	T3.062416.132408	WG573149-02	Serial Dilution		5	L16060796-04	06/24/16 13:24
54	T3.062416.132801	WG573149-02	Serial Dilution		25	L16060796-04	06/24/16 13:28
55	T3.062416.133159	WG573994-02	Method/Prep Blank	40/50	1		06/24/16 13:31
56	T3.062416.133557	WG573994-03	Laboratory Control S	40/50	1		06/24/16 13:35
57	T3.062416.133937	WG573994-01	Reference Sample		1	L16061279-02	06/24/16 13:39
58	T3.062416.134328	WG573994-04	Matrix Spike	40/50	1	L16061279-02	06/24/16 13:43
59	T3.062416.134705	WG573994-05	Matrix Spike Duplica	40/50	1	L16061279-02	06/24/16 13:47
60	T3.062416.135042	WG574123-20	CCV		1		06/24/16 13:50
61	T3.062416.135419	WG574123-21	CCB		1		06/24/16 13:54
62	T3.062416.135818	L16060961-03	GH58HS_MELZER_03-03-(	40/50	1		06/24/16 13:58
63	T3.062416.140215	WG574076-01	Post Digestion Spike		1	L16060961-03	06/24/16 14:02
64	T3.062416.140555	WG574076-02	Serial Dilution		5	L16060961-03	06/24/16 14:05
65	T3.062416.140952	WG574076-02	Serial Dilution		25	L16060961-03	06/24/16 14:09
66	T3.062416.141350	L16061227-01	18WW22-062116	40/50	1		06/24/16 14:13
67	T3.062416.141746	L16061227-03	C04F-062116	40/50	1		06/24/16 14:17
68	T3.062416.142142	L16061227-05	C04FFD-062116	40/50	1		06/24/16 14:21

Page: 2 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062416.142526	L16061227-06	18CPTMW18-062116	40/50	1		06/24/16 14:25
70	T3.062416.142928	L16061227-01	18WW22-062116		10		06/24/16 14:29
71	T3.062416.143326	WG574123-22	CCV		1		06/24/16 14:33
72	T3.062416.143703	WG574123-23	CCB		1		06/24/16 14:37
73	T3.062416.144104	WG574123-24	Low Level Continuing Calibra		1		06/24/16 14:41
74	T3.062416.144501	WG574123-25	Low Level Continuing Calibra		1		06/24/16 14:45
75	T3.062416.144853	L16061227-07	18WW18-062116	40/50	1		06/24/16 14:48
76	T3.062416.145235	L16061289-01	MW21-062216	40/50	1		06/24/16 14:52
77	T3.062416.145634	L16061289-04	18WW02F-062216	40/50	1		06/24/16 14:56
78	T3.062416.150030	L16061290-03	MW16F-062116	40/50	1		06/24/16 15:00
79	T3.062416.150424	L16061290-05	109-062216	40/50	1		06/24/16 15:04
80	T3.062416.150820	L16061129-01	MW-22-002	40/50	1		06/24/16 15:08
81	T3.062416.151215	L16061129-02	MW-22-010	40/50	1		06/24/16 15:12
82	T3.062416.151609	L16061129-03	MW-22-007	40/50	1		06/24/16 15:16
83	T3.062416.152008	WG574123-26	CCV		1		06/24/16 15:20
84	T3.062416.152346	WG574123-27	CCB		1		06/24/16 15:23
85	T3.062416.152745	L16061129-04	FD061716	40/50	1		06/24/16 15:27
86	T3.062416.153140	L16061129-05	EB-WATER A	40/50	1		06/24/16 15:31
87	T3.062416.153539	L16061272-01	SS007MW0B18-007	40/50	1		06/24/16 15:35
88	T3.062416.153937	L16061272-02	SS007MWN752-007	40/50	1		06/24/16 15:39
89	T3.062416.154332	L16061279-01	XU936TW007A	40/50	1		06/24/16 15:43
90	T3.062416.154725	L16061279-05	XU936TW019A	40/50	1		06/24/16 15:47
91	T3.062416.155118	L16060729-01	A09-MW10-Y1S2	40/50	1		06/24/16 15:51
92	T3.062416.155514	L16060729-02	A09-MW11-Y1S2	40/50	1		06/24/16 15:55
93	T3.062416.155910	L16060729-03	A09-MW12-Y1S2	40/50	1		06/24/16 15:59
94	T3.062416.160303	WG574123-28	CCV		1		06/24/16 16:03
95	T3.062416.160640	WG574123-29	CCB		1		06/24/16 16:06
96	T3.062416.161038	L16061148-01	DP005SW0513-007		1		06/24/16 16:10
97	T3.062416.161432	L16061148-02	DP005SW0514-007		1		06/24/16 16:14
98	T3.062416.161828	L16061150-01	SS007SW0709-007		1		06/24/16 16:18
99	T3.062416.162223	L16061150-02	SS007SW0710-007		1		06/24/16 16:22
100	T3.062416.162617	L16061151-02	LF003SW0311-007 DUP		1		06/24/16 16:26
101	T3.062416.163012	L16061151-05	LF003SW0312-007		1		06/24/16 16:30
102	T3.062416.163406	WG573707-02	Reference Sample		1	L16061154-01	06/24/16 16:34

Page: 3 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062416.163809	WG573707-07	Matrix Spike		1	L16061154-01	06/24/16 16:38
104	T3.062416.164156	WG573707-08	Matrix Spike Duplica		1	L16061154-01	06/24/16 16:41
105	T3.062416.164542	L16061154-04	FQC-RB06201601-CB		1		06/24/16 16:45
106	T3.062416.164941	WG574123-30	CCV		1		06/24/16 16:49
107	T3.062416.165319	WG574123-31	CCB		1		06/24/16 16:53
108	T3.062416.165718	L16061155-01	ST008MW0812-007		1		06/24/16 16:57
109	T3.062416.170338	WG574123-32	CCV		1		06/24/16 17:03
110	T3.062416.170715	WG574123-33	CCB		1		06/24/16 17:07
111	T3.062416.171114	WG574123-34	Low Level Continuing Calibra		1		06/24/16 17:11
112	T3.062416.171510	WG574123-35	Low Level Continuing Calibra		1		06/24/16 17:15

Page: 4 Approved: June 24, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062716T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574214,574076

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062716.101109	WG574382-01	Calibration Point		1		06/27/16 10:11
2	T3.062716.101506	WG574382-02	Calibration Point		1		06/27/16 10:15
3	T3.062716.101903	WG574382-03	Calibration Point		1		06/27/16 10:19
4	T3.062716.102300	WG574382-04	Calibration Point		1		06/27/16 10:23
5	T3.062716.102637	WG574382-05	Calibration Point		1		06/27/16 10:26
6	T3.062716.103013	WG574382-06	Initial Calibration Verification		1		06/27/16 10:30
7	T3.062716.103339	WG574382-07	Initial Calib Blank		1		06/27/16 10:33
8	T3.062716.103737	WG574382-08	Low Level Initial Calibration V		1		06/27/16 10:37
9	T3.062716.104131	WG574382-09	Interference Check		1		06/27/16 10:41
10	T3.062716.104522	WG574382-10	Interference Check		1		06/27/16 10:45
11	T3.062716.104904	WG574382-11	CCV		1		06/27/16 10:49
12	T3.062716.105241	WG574382-12	CCB		1		06/27/16 10:52
13	T3.062716.105639	WG573656-02	Method/Prep Blank	40/50	1		06/27/16 10:56
14	T3.062716.110423	WG573656-03	Laboratory Control S	40/50	1		06/27/16 11:04
15	T3.062716.110802	WG573656-01	Reference Sample		1	L16060996-01	06/27/16 11:08
16	T3.062716.111157	WG573656-04	Matrix Spike	40/50	1	L16060996-01	06/27/16 11:11
17	T3.062716.111535	WG573656-05	Matrix Spike Duplica	40/50	1	L16060996-01	06/27/16 11:15
18	T3.062716.111914	L16061179-01	13273-G06-WQ-W0218	40/50	1		06/27/16 11:19
19	T3.062716.112312	WG574214-01	Post Digestion Spike		1	L16061179-01	06/27/16 11:23
20	T3.062716.112651	WG574214-02	Serial Dilution		5	L16061179-01	06/27/16 11:26
21	T3.062716.113048	WG574214-02	Serial Dilution		25	L16061179-01	06/27/16 11:30
22	T3.062716.113445	WG574382-13	CCV		1		06/27/16 11:34
23	T3.062716.113822	WG574382-14	CCB		1		06/27/16 11:38
24	T3.062716.114220	L16061026-02	18WW16F-061616	40/50	1		06/27/16 11:42
25	T3.062716.114614	L16061026-04	129-061616	40/50	1		06/27/16 11:46
26	T3.062716.115009	L16061026-06	120F-061616	40/50	1		06/27/16 11:50
27	T3.062716.115400	L16061026-07	123-061616	40/50	1		06/27/16 11:54
28	T3.062716.115753	L16060840-01	MW-24-004R	40/50	1		06/27/16 11:57
29	T3.062716.120148	L16060840-02	MW-24-003R	40/50	1		06/27/16 12:01
30	T3.062716.120539	L16060840-03	FR-061416-24	40/50	1		06/27/16 12:05
31	T3.062716.120930	L16060840-04	MW-24-002R	40/50	1		06/27/16 12:09
32	T3.062716.121323	L16060840-05	MW-24-005	40/50	1		06/27/16 12:13
33	T3.062716.121733	L16060840-06	EB-LOW FLOW TUBING	40/50	1		06/27/16 12:17
34	T3.062716.122130	WG574382-15	CCV		1		06/27/16 12:21

Page: 1 Approved: June 28, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062716T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574214,574076

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062716.122507	WG574382-16	CCB		1		06/27/16 12:25
36	T3.062716.122905	L16060996-04	MW-21-006	40/50	1		06/27/16 12:29
37	T3.062716.123259	L16060996-05	MW-21-002	40/50	1		06/27/16 12:32
38	T3.062716.123653	L16060996-06	FD-061516-21	40/50	1		06/27/16 12:36
39	T3.062716.124047	L16060996-07	MW-21-009	40/50	1		06/27/16 12:40
40	T3.062716.124440	L16060996-08	MW-21-005	40/50	1		06/27/16 12:44
41	T3.062716.124834	L16060996-09	MW-21-004	40/50	1		06/27/16 12:48
42	T3.062716.125227	L16061116-23	062016-PS-CB027	40/50	1		06/27/16 12:52
43	T3.062716.125618	L16061116-24	062016-PS-CB027	40/50	1		06/27/16 12:56
44	T3.062716.130008	L16061026-02	18WW16F-061616	40/50	20		06/27/16 13:00
45	T3.062716.130358	L16061026-04	129-061616	40/50	20		06/27/16 13:03
46	T3.062716.130753	WG574382-17	CCV		1		06/27/16 13:07
47	T3.062716.131130	WG574382-18	CCB		1		06/27/16 13:11
48	T3.062716.131528	L16061026-06	120F-061616	40/50	20		06/27/16 13:15
49	T3.062716.131923	L16061290-03	MW16F-062116	40/50	20		06/27/16 13:19
50	T3.062716.132320	WG574382-19	CCV		1		06/27/16 13:23
51	T3.062716.132646	WG574382-20	CCB		1		06/27/16 13:26
52	T3.062716.133045	WG574382-21	Low Level Continuing Calibra		1		06/27/16 13:30

Page: 2 Approved: June 28, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574123
Runlog ID: 75912
Analytical Workgroups: 574050,574055,574076,573560,573149,573561

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1129
Level 4	1140,1143,1151,1227,1272,1279
	1289,1290,729,732,794,787,724
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
26-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-26-2016 10:34:20

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574382
Runlog ID: 75950
Analytical Workgroups: 574656,574076

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	840,996
Level 4	1026,1179,1290
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
28-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 10:41:09

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG574076

Login Number: L16061290

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW16F-062116	03	06/21/16					06/24/2016	2.7	180		06/24/16	3	180	
MW16F-062116	03	06/21/16					06/24/2016	2.7	180		06/27/16	5.9	180	
109-062216	05	06/22/16					06/24/2016	2	180		06/24/16	2.3	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4824731
Report generated 06/28/2016 09:30

METHOD BLANK SUMMARY

Login Number: L16061290
Blank File ID: T3.062416.133159
Prep Date: 06/24/16 07:18
Analyzed Date: 06/24/16 13:31
Analyst: JYH

Work Group: WG574076
Blank Sample ID: WG573994-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573994-03	T3.062416.133557	06/24/16 13:35	01
MW16F-062116	L16061290-03	T3.062416.150030	06/24/16 15:00	01
109-062216	L16061290-05	T3.062416.150424	06/24/16 15:04	01
MW16F-062116	L16061290-03	T3.062716.131923	06/27/16 13:19	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4824732
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 06/24/16 07:18 Sample ID: WG573994-02
Instrument ID: ICP-THERMO3 Run Date: 06/24/16 13:31 Prep Method: 3015
File ID: T3.062416.133159 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574076 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-24-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0719	1	J
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.182	1	J
Iron, Total	0.0500	0.200	0.0950	1	J
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4824733
28-JUN-2016 09:30

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Run Date: 06/24/2016 Sample ID: WG573994-03
Instrument ID: ICP-THERMO3 Run Time: 13:35 Prep Method: 3015
File ID: T3.062416.133557 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574076 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-24-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.37	102	80 - 120	
Beryllium, Total	0.0313	0.0306	97.8	80 - 120	
Calcium, Total	6.25	6.65	106	80 - 120	
Iron, Total	2.50	2.53	101	80 - 120	
Magnesium, Total	6.25	6.45	103	80 - 120	
Potassium, Total	31.3	32.7	105	80 - 120	
Selenium, Total	0.250	0.251	101	80 - 120	
Sodium, Total	31.3	32.8	105	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4824734
Report generated: 06/28/2016 09:30

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061290 Cal ID: ICP-THERMO3 - Worknum: WG574076
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573994-01 File ID: T3.062416.133937 Dil: 1 Matrix: WATER
Sample ID: WG573994-04 MS File ID: T3.062416.134328 Dil: 1 Units: mg/L
Sample ID: WG573994-05 MSD File ID: T3.062416.134705 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	19.7	6.25	25.8	97.8	6.25	27.1	119	4.89	80 - 120	20	
Beryllium	ND	0.0313	0.0301	96.4	0.0313	0.0309	98.8	2.42	80 - 120	20	
Potassium	7.81	31.3	38.1	96.9	31.3	39.6	102	3.81	80 - 120	20	
Selenium	ND	0.250	0.243	97.1	0.250	0.246	98.5	1.53	80 - 120	20	
Sodium	23.5	31.3	54.5	98.9	31.3	55.6	103	2.15	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4824735
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061290 Cal ID: ICP-THERMO3- Worknum: WG574076
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573994-01 File ID: T3.062516.152518 Dil: 20 Matrix: WATER
Sample ID: WG573994-04 MS File ID: T3.062516.153646 Dil: 20 Units: mg/L
Sample ID: WG573994-05 MSD File ID: T3.062516.154039 Dil: 20

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Calcium	234	6.25	249	243	6.25	247	200	1.10	80 - 120	20	*
Iron	27.6	2.50	26.9	-27.9	2.50	26.4	-47.0	1.79	80 - 120	20	*
Magnesium	95.8	6.25	106	157	6.25	105	154	0.173	80 - 120	20	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4824735
Report generated 07/12/2016 11:11

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061290 **Worknum:** WG574076
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574076-02 **File ID:** T3.062416.140555 **Dil:** 5 **Units:** ug/L
Sample: L16060961-03 **File ID:** T3.062416.135818 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	91.4		87.2		4.65	
Beryllium	ND	U	0.300		3100.00	
Calcium	50100		49300		1.56	
Iron	36.6		77.9		113.00	E
Magnesium	15200		15200		0.54	
Potassium	1350		1740		28.90	E
Selenium	4.57		26.5		480.00	E
Sodium	9650		9940		3.08	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4824729
06/28/2016 09:30

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061290 **Worknum:** WG574076
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574076-01 **File ID:** T3.062416.140215 **Dil:** 1 **Units:** ug/L
Sample ID: L16060961-03 **File ID:** T3.062416.135818 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5160		91.4	F	5000	101.5	75 - 125	
BERYLLIUM	24.6		0	U	25	98.3	75 - 125	
CALCIUM	50300		50100		5000	104.5	75 - 125	
IRON	2080		0	U	2000	103.9	75 - 125	
MAGNESIUM	18800		15200		5000	102.3	75 - 125	
POTASSIUM	27400		1350	F	25000	104.7	75 - 125	
SELENIUM	208		4.57	F	200	102.1	75 - 125	
SODIUM	34900		9650		25000	105.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4824730
Report generated: 06/28/2016 09:30

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061290	Workgroup (AAB#):	WG574076
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574123	Initial Calibration Date:	24-JUN-2016 10:17

	WG574123-01		WG574123-02		WG574123-03		WG574123-04		WG574123-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000920	.1	0.00153	.2	0.00215	10	0.0811	20	0.159	.999969	
BERYLLIUM	0	0.000510	.0005	0.000790	.001	0.00116	.05	0.0467	.1	0.0919	.999879	
CALCIUM	0	0.000820	.1	0.00503	.2	0.00837	10	0.457	20	0.881	.999811	
IRON	0	-0.000100	.04	0.000570	.08	0.00116	4	0.0886	8	0.172	.999867	
MAGNESIUM	0	-0.000440	NA	NA	.2	0.000830	10	0.0815	20	0.157	.999846	
POTASSIUM	0	-0.0108	.5	0.0152	1	0.0397	50	3.07	100	5.95	.999864	
SELENIUM	0	-0.000160	NA	NA	.008	-0.000100	.4	0.00655	.8	0.0133	.999466	
SODIUM	0	-0.0319	.5	0.0316	1	0.0972	50	8.45	100	16.4	.999892	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4824738
Report generated: 28-JUN-2016 09:30

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061290	Workgroup (AAB#):	WG574076
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574382	Initial Calibration Date:	27-JUN-2016 10:26

	WG574382-01		WG574382-02		WG574382-03		WG574382-04		WG574382-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000800	.1	0.00149	.2	0.00217	10	0.0861	20	0.161	.999541	
BERYLLIUM	0	0.000690	.0005	0.00111	.001	0.00148	.05	0.0508	.1	0.0959	.999682	
CALCIUM	0	0.00169	.1	0.00256	.2	0.00981	10	0.474	20	0.899	.998908	
IRON	0	0.0000700	.04	0.000210	.08	0.00147	4	0.0959	8	0.181	.998751	
MAGNESIUM	0	-0.0000400	NA	NA	.2	0.00164	10	0.0916	20	0.172	.999436	
POTASSIUM	0	-0.0166	.5	0.00590	1	0.0309	50	2.79	100	5.30	.999643	
SELENIUM	0	-0.000420	NA	NA	.008	-0.000340	.4	0.00633	.8	0.0123	.999365	
SODIUM	0	-0.0629	.5	0.0187	1	0.0937	50	9.16	100	17.5	.999663	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4824738
Report generated: 28-JUN-2016 09:30

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-07
Instrument ID: ICP-THERMO3
Run Time: 10:24
Method: 6010C
File ID: T3.062416.102444
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-THERI - 24-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.0052	F
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4824740
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-07
Instrument ID: ICP-THERMO3
Run Time: 10:33
Method: 6010C
File ID: T3.062716.103339
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-THERI - 27-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	-.00421	F
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4824740
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-13
Instrument ID: ICP-THERMO3
Run Time: 10:47
Method: 6010C
File ID: T3.062416.104746
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824743
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-19
Instrument ID: ICP-THERMO3
Run Time: 13:08
Method: 6010C
File ID: T3.062416.130845
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824743
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-21
Instrument ID: ICP-THERMO3
Run Time: 13:54
Method: 6010C
File ID: T3.062416.135419
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824743
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-23
Instrument ID: ICP-THERMO3
Run Time: 14:37
Method: 6010C
File ID: T3.062416.143703
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824743
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-27
Instrument ID: ICP-THERMO3
Run Time: 15:23
Method: 6010C
File ID: T3.062416.152346
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824743
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-12
Instrument ID: ICP-THERMO3
Run Time: 10:52
Method: 6010C
File ID: T3.062716.105241
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00430	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824743
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-18
Instrument ID: ICP-THERMO3
Run Time: 13:11
Method: 6010C
File ID: T3.062716.131130
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824743
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-20
Instrument ID: ICP-THERMO3
Run Time: 13:26
Method: 6010C
File ID: T3.062716.132646
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824743
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061290 Run Date: 06/24/2016 Sample ID: WG574123-06
Instrument ID: ICP-THERMO3 Run Time: 10:21 Method: 6010C
File ID: T3.062416.102118 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG574076 Cal ID: ICP-TH - 24-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0499	99.9	90 - 110	
Calcium		10	9.97	99.7	90 - 110	
Iron		4	4.01	100	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.4	101	90 - 110	
Selenium		.4	0.410	102	90 - 110	
Sodium		50	50.2	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4824739
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-06
Instrument ID: ICP-THERMO3
Run Time: 10:30
Method: 6010C
File ID: T3.062716.103013
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 27-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.0	100	90 - 110	
Beryllium		.05	0.0495	99.0	90 - 110	
Calcium		10	9.89	98.9	90 - 110	
Iron		4	3.95	98.7	90 - 110	
Magnesium		10	10.0	100	90 - 110	
Potassium		50	49.5	99.0	90 - 110	
Selenium		.4	0.405	101	90 - 110	
Sodium		50	49.6	99.1	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4824739
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061290 Run Date: 06/25/2016 Sample ID: WG574249-06
Instrument ID: ICP-THERMO3 Run Time: 12:40 Method: 6010C
File ID: T3.062516.124009 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG574076 Cal ID: ICP-TH - 25-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0504	101	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.05	101	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.3	101	90 - 110	
Selenium		.4	0.400	100	90 - 110	
Sodium		50	50.1	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4824739
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-12
Instrument ID: ICP-THERMO3
Run Time: 10:44
Method: 6010C
File ID: T3.062416.104409
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0500	mg/L	100	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.08	mg/L	102	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.409	mg/L	102	90 - 110		
Sodium		50.0	50.8	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824742
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-18
Instrument ID: ICP-THERMO3
Run Time: 13:05
Method: 6010C
File ID: T3.062416.130507
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0505	mg/L	101	90 - 110		
Calcium		10.0	10.6	mg/L	106	90 - 110		
Iron		4.00	4.16	mg/L	104	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	53.3	mg/L	107	90 - 110		
Selenium		0.400	0.423	mg/L	106	90 - 110		
Sodium		50.0	52.9	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824742
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-20
Instrument ID: ICP-THERMO3
Run Time: 13:50
Method: 6010C
File ID: T3.062416.135042
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.60	mg/L	96.0	90 - 110		
Beryllium		0.0500	0.0470	mg/L	93.9	90 - 110		
Calcium		10.0	9.67	mg/L	96.7	90 - 110		
Iron		4.00	3.83	mg/L	95.8	90 - 110		
Magnesium		10.0	9.49	mg/L	94.9	90 - 110		
Potassium		50.0	49.1	mg/L	98.2	90 - 110		
Selenium		0.400	0.391	mg/L	97.8	90 - 110		
Sodium		50.0	48.8	mg/L	97.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824742
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-22
Instrument ID: ICP-THERMO3
Run Time: 14:33
Method: 6010C
File ID: T3.062416.143326
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0505	mg/L	101	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	4.19	mg/L	105	90 - 110		
Magnesium		10.0	10.5	mg/L	105	90 - 110		
Potassium		50.0	53.3	mg/L	107	90 - 110		
Selenium		0.400	0.417	mg/L	104	90 - 110		
Sodium		50.0	53.0	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824742
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-26
Instrument ID: ICP-THERMO3
Run Time: 15:20
Method: 6010C
File ID: T3.062416.152008
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0508	mg/L	102	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.13	mg/L	103	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	52.6	mg/L	105	90 - 110		
Selenium		0.400	0.416	mg/L	104	90 - 110		
Sodium		50.0	52.2	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824742
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-11
Instrument ID: ICP-THERMO3
Run Time: 10:49
Method: 6010C
File ID: T3.062716.104904
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.7	mg/L	107	90 - 110		
Beryllium		0.0500	0.0516	mg/L	103	90 - 110		
Calcium		10.0	10.8	mg/L	108	90 - 110		
Iron		4.00	4.30	mg/L	108	90 - 110		
Magnesium		10.0	10.8	mg/L	108	90 - 110		
Potassium		50.0	51.5	mg/L	103	90 - 110		
Selenium		0.400	0.421	mg/L	105	90 - 110		
Sodium		50.0	51.6	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824742
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-17
Instrument ID: ICP-THERMO3
Run Time: 13:07
Method: 6010C
File ID: T3.062716.130753
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.98	mg/L	99.8	90 - 110		
Beryllium		0.0500	0.0490	mg/L	97.9	90 - 110		
Calcium		10.0	9.54	mg/L	95.4	90 - 110		
Iron		4.00	3.77	mg/L	94.1	90 - 110		
Magnesium		10.0	9.47	mg/L	94.7	90 - 110		
Potassium		50.0	47.1	mg/L	94.2	90 - 110		
Selenium		0.400	0.421	mg/L	105	90 - 110		
Sodium		50.0	48.1	mg/L	96.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824742
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-19
Instrument ID: ICP-THERMO3
Run Time: 13:23
Method: 6010C
File ID: T3.062716.132320
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.90	mg/L	99.0	90 - 110		
Beryllium		0.0500	0.0485	mg/L	97.0	90 - 110		
Calcium		10.0	9.79	mg/L	97.9	90 - 110		
Iron		4.00	3.90	mg/L	97.4	90 - 110		
Magnesium		10.0	9.50	mg/L	95.0	90 - 110		
Potassium		50.0	47.8	mg/L	95.6	90 - 110		
Selenium		0.400	0.409	mg/L	102	90 - 110		
Sodium		50.0	49.3	mg/L	98.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824742
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-08
Instrument ID: ICP-THERMO3
Run Time: 10:28
Method: 6010C
File ID: T3.062416.102843
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.175	mg/L	109	70 - 130		
Beryllium		0.00160	0.00162	mg/L	101	70 - 130		
Calcium		0.400	0.420	mg/L	105	70 - 130		
Iron		0.0800	0.0855	mg/L	107	70 - 130		
Magnesium		0.400	0.437	mg/L	109	70 - 130		
Potassium		0.800	0.954	mg/L	119	70 - 130		
Selenium		0.0160	0.0180	mg/L	112	70 - 130		
Sodium		0.400	0.448	mg/L	112	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824744
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-24
Instrument ID: ICP-THERMO3
Run Time: 14:41
Method: 6010C
File ID: T3.062416.144104
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.168	mg/L	105	70 - 130		
Beryllium		0.00160	0.00164	mg/L	103	70 - 130		
Calcium		0.400	0.416	mg/L	104	70 - 130		
Iron		0.0800	0.0993	mg/L	124	70 - 130		
Magnesium		0.400	0.414	mg/L	103	70 - 130		
Potassium		0.800	0.972	mg/L	121	70 - 130		
Selenium		0.0160	0.0132	mg/L	82.7	70 - 130		
Sodium		0.400	0.473	mg/L	118	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824744
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-34
Instrument ID: ICP-THERMO3
Run Time: 17:11
Method: 6010C
File ID: T3.062416.171114
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.171	mg/L	107	70 - 130		
Beryllium		0.00160	0.00166	mg/L	104	70 - 130		
Calcium		0.400	0.434	mg/L	109	70 - 130		
Iron		0.0800	0.0873	mg/L	109	70 - 130		
Magnesium		0.400	0.381	mg/L	95.2	70 - 130		
Potassium		0.800	0.824	mg/L	103	70 - 130		
Selenium		0.0160	0.0183	mg/L	115	70 - 130		
Sodium		0.400	0.490	mg/L	123	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824744
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-08
Instrument ID: ICP-THERMO3
Run Time: 10:37
Method: 6010C
File ID: T3.062716.103737
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.161	mg/L	101	70 - 130		
Beryllium		0.00160	0.00171	mg/L	107	70 - 130		
Calcium		0.400	0.413	mg/L	103	70 - 130		
Iron		0.0800	0.0618	mg/L	77.3	70 - 130		
Magnesium		0.400	0.370	mg/L	92.5	70 - 130		
Potassium		0.800	0.831	mg/L	104	70 - 130		
Selenium		0.0160	0.0156	mg/L	97.2	70 - 130		
Sodium		0.400	0.456	mg/L	114	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824744
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-21
Instrument ID: ICP-THERMO3
Run Time: 13:30
Method: 6010C
File ID: T3.062716.133045
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.168	mg/L	105	70 - 130		
Beryllium		0.00160	0.00157	mg/L	98.1	70 - 130		
Calcium		0.400	0.410	mg/L	102	70 - 130		
Iron		0.0800	0.0608	mg/L	76.0	70 - 130		
Magnesium		0.400	0.392	mg/L	98.0	70 - 130		
Potassium		0.800	0.912	mg/L	114	70 - 130		
Selenium		0.0160	0.0148	mg/L	92.2	70 - 130		
Sodium		0.400	0.499	mg/L	125	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824744
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061290
Instrument ID: ICP-THERMO3
Sol. A : WG574123-10 **File ID:** T3.062416.103634
Sol. AB : WG574123-11 **File ID:** T3.062416.104027

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	272	109	250	274	110	
Beryllium	NS	-0.0000400	NS	0.250	0.246	98.4	
Calcium	250	256	102	250	255	102	
Iron	100	102	102	100	99.9	99.9	
Magnesium	250	260	104	250	256	102	
Potassium	NS	0.0930	NS	5.00	5.48	110	
Selenium	NS	0.00445	NS	0.250	0.267	107	
Sodium	NS	0.0388	NS	5.00	5.59	112	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4824741
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061290
Instrument ID: ICP-THERMO3
Sol. A : WG574382-09 **File ID:** T3.062716.104131
Sol. AB : WG574382-10 **File ID:** T3.062716.104522

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	274	110	250	256	102	
Beryllium	NS	-0.0000500	NS	0.250	0.237	94.8	
Calcium	250	255	102	250	239	95.6	
Iron	100	101	101	100	93.5	93.5	
Magnesium	250	258	103	250	239	95.6	
Potassium	NS	-0.0902	NS	5.00	5.12	102	
Selenium	NS	-0.00510	NS	0.250	0.245	98.0	
Sodium	NS	0.0834	NS	5.00	5.19	104	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4824741
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061290 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824737
Report generated: 06/28/2016 09:30

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061290 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824737
Report generated: 06/28/2016 09:30

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061290 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824737
Report generated: 06/28/2016 09:30

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061290 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824737
Report generated: 06/28/2016 09:30

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061290 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824737
Report generated: 06/28/2016 09:30

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061290 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824737
Report generated: 06/28/2016 09:30

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061290 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824737
Report generated: 06/28/2016 09:30

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061290 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4824736
Report generated: 06/28/2016 09:30

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000141	0.050748	0.000000	1.000000
Al 308.215 {109}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000916	0.007866	0.000000	1.000000
As 189.042 {478}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000058	0.023675	0.000000	1.000000
B 249.678 {135}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000060	0.022039	0.000000	1.000000
Ba 455.403 { 74}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.014298	2.093262	0.000000	1.000000
Be 313.107 {108}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000510	0.898055	0.000000	1.000000
Ca 422.673 { 80}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000824	0.044581	0.000000	1.000000
Cd 228.802 {447}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000030	0.563251	0.000000	1.000000
Co 228.616 {447}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000034	0.344510	0.000000	1.000000
Cr 267.716 {126}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000180	0.055863	0.000000	1.000000
Cu 224.700 {450}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000060	0.121643	0.000000	1.000000
Fe 261.187 {129}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000103	0.021701	0.000000	1.000000
K 766.490 { 44}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.010819	0.060325	0.000000	1.000000
Li 670.784 { 50}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.007531	1.496173	0.000000	1.000000
Mg 279.079 {121}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000442	0.008016	0.000000	1.000000
Mn 257.610 {131}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000827	0.279912	0.000000	1.000000
Mo 202.030 {467}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000039	0.179523	0.000000	1.000000
Na 589.592 { 57}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.031897	0.166281	0.000000	1.000000
Ni 231.604 {446}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000651	0.129323	0.000000	1.000000
P 214.914 {457}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000172	0.012827	0.000000	1.000000
Pb 220.353 {453}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000520	0.058788	0.000000	1.000000
Sb 206.833 {463}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000001	0.030127	0.000000	1.000000
Se 196.090 {472}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000164	0.016794	0.000000	1.000000
Si 212.412 {459}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000911	0.038950	0.000000	1.000000
Sn 189.989 {477}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000052	0.066907	0.000000	1.000000
Sr 407.771 { 83}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.002037	3.549642	0.000000	1.000000
Ti 337.280 {100}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.001943	0.119996	0.000000	1.000000
Tl 190.856 {477}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000361	0.028102	0.000000	1.000000
V 292.402 {115}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000023	0.065920	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000153	0.391840	0.000000	1.000000
Zr 339.198 { 99}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.012098	2.809224	0.000000	1.000000

Approved: June 25, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999737	0.000003	0.002049	0.006830	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999969	0.000004	0.009025	0.030084	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999986	0.000000	0.003104	0.010346	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999939	0.000001	0.002779	0.009264	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999858	0.000224	0.000982	0.003272	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999879	0.000005	0.000094	0.000312	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999811	0.000055	0.038318	0.127728	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999763	0.000004	0.000260	0.000866	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999919	0.000006	0.000408	0.001359	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999801	0.000004	0.001181	0.003936	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999857	0.000007	0.001355	0.004518	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999867	0.000009	0.021737	0.072458	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999864	0.000316	0.090153	0.300511	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999907	0.000200	0.003625	0.012085	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999846	0.000014	0.078797	0.262658	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999412	0.000030	0.002338	0.007792	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999986	0.000006	0.000418	0.001395	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999892	0.000776	0.030119	0.100396	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999935	0.000005	0.001154	0.003846	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999988	0.000004	0.007248	0.024159	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999843	0.000003	0.003678	0.012262	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999953	0.000002	0.004278	0.014260	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999466	0.000002	0.006279	0.020930	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999584	0.000036	0.002252	0.007507	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999937	0.000005	0.000895	0.002983	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999850	0.000390	0.000401	0.001336	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999443	0.000025	0.006504	0.021681	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999820	0.000002	0.003079	0.010263	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999965	0.000003	0.000964	0.003213	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999941	0.000027	0.000206	0.000686	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999713	0.000427	0.000581	0.001936	OK.	1.000000	0.000000	1	0

Approved: June 25, 2016

Sample Name: S0 Acquired: 6/24/2016 10:02:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00014**	**.00092**	**-.00006**	**.00006**	**.01430**	**.00051**	**.00082**
Stddev	.00007	.00003	.00003	.00005	.00089	.00003	.00150
%RSD	48.462	3.7804	46.676	91.000	6.2407	5.9747	181.89
#1	-.00007	.00091	-.00009	.00011	.01533	.00048	-.00036
#2	-.00014	.00089	-.00003	.00007	.01383	.00054	.00251
#3	-.00021	.00095	-.00005	.00000	.01373	.00052	.00032

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00003**	**.00003**	**.00018**	**-.00006**	**-.00010**	**-.01082**	**-.00753**
Stddev	.00009	.00005	.00004	.00017	.00045	.00335	.00353
%RSD	281.39	147.40	23.426	287.67	438.41	30.962	46.865
#1	.00005	.00004	.00020	-.00025	.00041	-.00724	-.00439
#2	-.00003	-.00002	.00013	-.00002	-.00044	-.01389	-.00686
#3	-.00012	.00008	.00021	.00009	-.00028	-.01133	-.01135

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00044**	**.00083**	**-.00004**	**-.03189**	**-.00065**	**-.00017**	**-.00052**
Stddev	.00045	.00015	.00006	.00093	.00012	.00009	.00017
%RSD	102.79	17.791	163.60	2.9103	19.006	49.513	32.607
#1	-.00010	.00071	.00001	-.03192	-.00069	-.00027	-.00032
#2	-.00096	.00099	-.00002	-.03095	-.00051	-.00010	-.00062
#3	-.00026	.00079	-.00011	-.03280	-.00075	-.00015	-.00062

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00000**	**-.00016**	**.00091**	**.00005**	**.00204**	**-.00194**	**-.00036**
Stddev	.00012	.00004	.00007	.00002	.00021	.00013	.00002
%RSD	19810.	21.583	7.1930	34.140	10.449	6.4605	4.5673
#1	-.00014	-.00013	.00087	.00005	.00206	-.00182	-.00038
#2	.00005	-.00020	.00088	.00007	.00181	-.00194	-.00035
#3	.00009	-.00016	.00099	.00004	.00224	-.00207	-.00035

Approved: June 25, 2016

Sample Name: S0 Acquired: 6/24/2016 10:02:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00002	.00015	-.01209
Stddev	.00007	.00001	.00188
%RSD	312.68	7.9561	15.539
#1	.00011	.00015	-.01411
#2	-.00002	.00014	-.01039
#3	-.00002	.00017	-.01176
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10103.	63387.	3436.7
Stddev	24.	229.	8.8
%RSD	.23353	.36169	.25626
#1	10111.	63214.	3446.2
#2	10121.	63647.	3428.8
#3	10076.	63299.	3435.0

Approved: June 25, 2016

Sample Name: S1 Acquired: 6/24/2016 10:06:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00005**	**.00153**	**.03093**	**.00079**	**.00503**	**.00010**	**.00049**
Stddev	.00003	.00005	.00195	.00002	.00170	.00011	.00005
%RSD	59.232	2.9452	6.3135	3.1378	33.768	117.90	11.244
#1	-.00004	.00157	.02902	.00082	.00307	-.00000	.00053
#2	-.00008	.00153	.03085	.00078	.00607	.00007	.00051
#3	-.00003	.00148	.03292	.00077	.00594	.00022	.00042

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00047**	**.00031**	**.00057**	**.01522**	**.00155**	**.00132**	**.03160**
Stddev	.00005	.00001	.00017	.00200	.00074	.00003	.00575
%RSD	11.209	2.0951	30.554	13.113	47.893	2.1780	18.185
#1	.00046	.00031	.00053	.01296	.00101	.00135	.02748
#2	.00052	.00030	.00076	.01674	.00123	.00133	.02916
#3	.00042	.00031	.00042	.01597	.00239	.00129	.03817

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00014**	**.00081**	**-.00022**	**.00030**	**.00226**	**.00054**	**.03050**
Stddev	.00010	.00005	.00018	.00003	.00007	.00002	.00065
%RSD	73.955	5.5812	79.260	8.9775	2.9020	4.3963	2.1231
#1	-.00011	.00077	-.00030	.00033	.00229	.00052	.03078
#2	-.00005	.00086	-.00002	.00028	.00230	.00056	.02976
#3	-.00025	.00081	-.00035	.00030	.00218	.00052	.03096

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00144**	**.00052**	**.00324**	**.00445**
Stddev	.00042	.00004	.00013	.00179
%RSD	29.218	7.4619	4.0938	40.182
#1	-.00191	.00057	.00337	.00539
#2	-.00110	.00049	.00325	.00556
#3	-.00131	.00051	.00311	.00239

Approved: June 25, 2016

Sample Name: S1 Acquired: 6/24/2016 10:06:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10065.**	**62767.**	**3441.4**
Stddev	30.	97.	22.9
%RSD	.29930	.15510	.66663
#1	10069.	62771.	3417.8
#2	10093.	62861.	3463.7
#3	10033.	62667.	3442.7

Approved: June 25, 2016

Sample Name: S2 Acquired: 6/24/2016 10:10:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00021	.00215	.00010	.00026	.04762	.00116	.00837
Stddev	.00002	.00007	.00007	.00004	.00057	.00005	.00106
%RSD	8.9724	3.4344	65.774	15.619	1.1893	4.2144	12.640
#1	.00023	.00213	.00004	.00025	.04721	.00122	.00897
#2	.00020	.00223	.00018	.00022	.04739	.00114	.00715
#3	.00021	.00209	.00009	.00031	.04827	.00113	.00899

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00040	.00105	.00069	.00083	.00116	.03965	.01598
Stddev	.00005	.00003	.00003	.00008	.00031	.00217	.00181
%RSD	12.890	2.9404	4.0733	9.8734	26.550	5.4632	11.347
#1	.00035	.00103	.00067	.00092	.00083	.03746	.01389
#2	.00040	.00103	.00072	.00079	.00144	.03971	.01716
#3	.00045	.00108	.00068	.00077	.00121	.04179	.01688

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00083	.00238	.00276	.09724	.00041	.00174	-.00009
Stddev	.00012	.00062	.00011	.00164	.00010	.00006	.00030
%RSD	14.311	26.076	3.9026	1.6822	25.278	3.1866	350.41
#1	.00094	.00257	.00281	.09776	.00035	.00177	-.00007
#2	.00070	.00169	.00283	.09541	.00036	.00177	.00021
#3	.00086	.00289	.00264	.09856	.00053	.00168	-.00039

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00052	-.00010	.00385	.00103	.05810	-.00053	-.00015
Stddev	.00006	.00007	.00008	.00003	.00070	.00022	.00003
%RSD	12.430	68.938	2.1687	3.1112	1.2101	41.302	21.567
#1	.00055	-.00017	.00394	.00106	.05859	-.00045	-.00014
#2	.00056	-.00003	.00384	.00103	.05729	-.00036	-.00018
#3	.00045	-.00011	.00378	.00100	.05842	-.00077	-.00012

Approved: June 25, 2016

Sample Name: S2 Acquired: 6/24/2016 10:10:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00100	.00632	.02594
Stddev	.00007	.00019	.00102
%RSD	6.6145	2.9709	3.9200
#1	.00097	.00638	.02711
#2	.00108	.00648	.02521
#3	.00096	.00611	.02551
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10036.	62714.	3425.0
Stddev	5.	277.	24.9
%RSD	.04560	.44190	.72564
#1	10035.	62498.	3405.6
#2	10031.	62619.	3453.0
#3	10040.	63027.	3416.3

Approved: June 25, 2016

Sample Name: S3 Acquired: 6/24/2016 10:14:05 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02012**	**.08112**	**.00937**	**.01100**	**2.1577**	**.04667**	**.45680**	**.03089**
Stddev	.00014	.00067	.00024	.00003	.0127	.00048	.00088	.00088
%RSD	.68506	.82535	2.5122	.26795	.58663	1.0260	.19280	2.8481
#1	.02016	.08148	.00911	.01102	2.1723	.04686	.45715	.02988
#2	.02024	.08154	.00955	.01102	2.1508	.04702	.45579	.03151
#3	.01997	.08035	.00946	.01097	2.1500	.04612	.45745	.03127

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06952**	**.02847**	**.06168**	**.08857**	**3.0711**	**1.5176**	**.08149**	**.14484**
Stddev	.00185	.00019	.00161	.00089	.0148	.0183	.00050	.00149
%RSD	2.6617	.68366	2.6084	1.0060	.48208	1.2061	.60781	1.0306
#1	.06739	.02860	.05982	.08958	3.0854	1.5375	.08112	.14654
#2	.07070	.02858	.06252	.08789	3.0720	1.5016	.08130	.14374
#3	.07047	.02825	.06269	.08824	3.0558	1.5136	.08205	.14425

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.18057**	**8.4539**	**.06503**	**.12666**	**.02949**	**.03516**	**.00655**	**.20419**
Stddev	.00413	.0477	.00183	.00333	.00086	.00099	.00019	.00532
%RSD	2.2896	.56431	2.8080	2.6258	2.9031	2.8239	2.8275	2.6074
#1	.17586	8.5022	.06294	.12282	.02853	.03401	.00634	.19804
#2	.18358	8.4528	.06629	.12868	.02978	.03578	.00666	.20727
#3	.18229	8.4068	.06587	.12849	.03017	.03568	.00667	.20725

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06764**	**3.6392**	**.12025**	**.01285**	**.06639**	**.39780**	**2.8658**
Stddev	.00187	.0221	.00095	.00032	.00069	.00999	.0226
%RSD	2.7649	.60748	.79359	2.4638	1.0447	2.5111	.78950
#1	.06551	3.6628	.12131	.01249	.06673	.38631	2.8817
#2	.06902	3.6359	.11996	.01298	.06685	.40437	2.8758
#3	.06839	3.6189	.11946	.01308	.06559	.40274	2.8399

Approved: June 25, 2016

Sample Name: S3 Acquired: 6/24/2016 10:14:05 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9803.5	60605.	3302.4
Stddev	185.3	628.	25.0
%RSD	1.8907	1.0370	.75704
#1	10017.	60237.	3292.4
#2	9686.1	60248.	3283.9
#3	9707.3	61331.	3330.8

Approved: June 25, 2016

Sample Name: S4 Acquired: 6/24/2016 10:17:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.04037**	**.15882**	**.01874**	**.02204**	**4.1509**	**.09188**	**.88125**	**.06147**
Stddev	.00017	.00011	.00011	.00010	.0087	.00023	.00269	.00039
%RSD	.41570	.06765	.58871	.45251	.20975	.25568	.30549	.62850
#1	.04024	.15875	.01878	.02202	4.1571	.09190	.88218	.06177
#2	.04056	.15877	.01882	.02215	4.1547	.09211	.88335	.06161
#3	.04031	.15895	.01861	.02196	4.1410	.09164	.87821	.06104

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.13710**	**.05562**	**.12100**	**.17176**	**5.9519**	**2.9563**	**.15745**	**.27789**
Stddev	.00070	.00009	.00059	.00098	.0096	.0021	.00153	.00068
%RSD	.50874	.16610	.48875	.57160	.16058	.07181	.96992	.24355
#1	.13749	.05558	.12123	.17129	5.9624	2.9588	.15599	.27711
#2	.13751	.05557	.12144	.17289	5.9495	2.9553	.15904	.27832
#3	.13629	.05573	.12033	.17109	5.9438	2.9549	.15733	.27824

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.35800**	**16.431**	**.12763**	**.25198**	**.05815**	**.07137**	**.01334**	**.38448**
Stddev	.00153	.049	.00061	.00022	.00023	.00008	.00003	.00032
%RSD	.42830	.29740	.47754	.08776	.39302	.10858	.22101	.08296
#1	.35959	16.449	.12796	.25213	.05792	.07142	.01337	.38462
#2	.35789	16.469	.12801	.25208	.05838	.07141	.01335	.38412
#3	.35653	16.376	.12693	.25172	.05815	.07128	.01331	.38471

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.13295**	**7.0149**	**.23633**	**.02503**	**.13104**	**.77753**	**5.5495**
Stddev	.00033	.0145	.00010	.00014	.00013	.00089	.0276
%RSD	.24509	.20672	.04320	.55584	.09686	.11476	.49668
#1	.13312	7.0177	.23635	.02504	.13089	.77820	5.5811
#2	.13314	7.0278	.23621	.02517	.13109	.77787	5.5303
#3	.13257	6.9992	.23641	.02489	.13113	.77652	5.5370

Approved: June 25, 2016

Sample Name: S4 Acquired: 6/24/2016 10:17:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9688.2**	**60219.**	**3370.4**
Stddev	7.1	189.	23.3
%RSD	.07324	.31409	.69082
#1	9691.6	60213.	3345.2
#2	9693.0	60033.	3375.0
#3	9680.0	60411.	3391.1

Approved: June 25, 2016

Sample Name: ICV Acquired: 6/24/2016 10:21:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39846**	**10.055**	**.40187**	**.50195**	**1.0043**	**.04994**	**9.9690**	**.05093**
Stddev	.00107	.004	.00071	.00352	.0049	.00015	.0985	.00023
%RSD	.26882	.04093	.17558	.70141	.48280	.30027	.98769	.44509
#1	.39801	10.053	.40263	.49813	1.0045	.04992	9.9634	.05069
#2	.39768	10.052	.40124	.50265	1.0091	.04980	10.070	.05113
#3	.39968	10.059	.40172	.50506	.99939	.05010	9.8735	.05098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20275**	**.50186**	**.50806**	**4.0077**	**50.412**	**.99409**	**10.076**	**.50349**
Stddev	.00040	.00174	.00074	.0287	.156	.00370	.047	.00310
%RSD	.19601	.34705	.14641	.71708	.31025	.37246	.46653	.61637
#1	.20246	.50009	.50763	4.0406	50.449	.99815	10.023	.50004
#2	.20321	.50191	.50892	3.9950	50.546	.99323	10.093	.50606
#3	.20259	.50357	.50763	3.9874	50.240	.99090	10.113	.50436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0161**	**50.208**	**.50900**	**10.102**	**.50737**	**1.1976**	**.40954**	**5.2491**
Stddev	.0035	.189	.00106	.014	.00059	.0046	.00351	.0132
%RSD	.34222	.37709	.20816	.13865	.11567	.38093	.85796	.25182
#1	1.0181	50.185	.50781	10.089	.50756	1.1956	.40737	5.2341
#2	1.0182	50.408	.50932	10.117	.50784	1.2028	.40767	5.2590
#3	1.0121	50.031	.50986	10.099	.50671	1.1944	.41360	5.2542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: ICV Acquired: 6/24/2016 10:21:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0142**	**1.0055**	**1.0016**	**.51308**	**1.0042**	**1.0176**	**1.0099**
Stddev	.0008	.0052	.0045	.00359	.0054	.0023	.0053
%RSD	.07353	.51381	.45332	.69940	.53899	.22236	.52327
#1	1.0146	1.0049	1.0056	.51163	1.0037	1.0169	1.0108
#2	1.0147	1.0110	.99666	.51043	.99912	1.0202	1.0042
#3	1.0134	1.0007	1.0027	.51716	1.0099	1.0158	1.0147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9784.6**	**61155.**	**3360.6**
Stddev	16.4	126.	16.3
%RSD	.16756	.20531	.48534
#1	9800.9	61010.	3348.1
#2	9785.0	61229.	3379.0
#3	9768.1	61226.	3354.6

Approved: June 25, 2016

Sample Name: ICB Acquired: 6/24/2016 10:24:44 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00039	.00064	.00491	.00035	-.00004	.01970	-.00008
Stddev	.00118	.00395	.00185	.00079	.00095	.00004	.02171	.00007
%RSD	1355.8	1016.1	287.94	16.133	270.92	92.692	110.19	83.262
#1	.00054	-.00464	.00266	.00474	.00126	-.00001	.02755	-.00005
#2	-.00125	.00030	-.00097	.00577	-.00064	-.00002	.03640	-.00016
#3	.00097	.00318	.00023	.00421	.00044	-.00008	-.00484	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00131	-.00137	.02320	.06358	-.00066	.03856	-.00312
Stddev	.00017	.00055	.00043	.00941	.08768	.00266	.00747	.00261
%RSD	51.480	41.866	31.575	40.581	137.91	406.13	19.360	83.590
#1	-.00049	.00166	-.00107	.01306	.06334	-.00147	.03003	-.00355
#2	-.00033	.00160	-.00186	.03167	.15137	-.00281	.04179	-.00549
#3	-.00015	.00068	-.00116	.02486	-.02399	.00232	.04387	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00441	.05025	.00065	-.00381	-.00087	.00778	.00520	.00608
Stddev	.00033	.01048	.00078	.00461	.00397	.00208	.00680	.00201
%RSD	7.4861	20.853	119.99	121.10	458.20	26.759	130.76	33.156
#1	.00405	.05291	.00003	-.00874	-.00277	.00736	.00296	.00721
#2	.00448	.03870	.00040	.00039	.00370	.01003	-.00020	.00727
#3	.00470	.05914	.00153	-.00306	-.00353	.00593	.01285	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: ICB Acquired: 6/24/2016 10:24:44 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00012**	**.00094**	**.00181**	**-.00101**	**.00060**	**.00145**
Stddev	.00042	.00009	.00041	.00207	.00005	.00020	.00038
%RSD	513.90	78.925	43.774	114.17	4.9873	33.766	26.340
#1	.00040	.00003	.00072	-.00054	-.00105	.00057	.00107
#2	-.00028	.00022	.00068	.00334	-.00102	.00042	.00183
#3	-.00036	.00011	.00141	.00262	-.00096	.00082	.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9828.6**	**62200.**	**3394.8**
Stddev	28.2	217.	16.2
%RSD	.28655	.34911	.47848
#1	9855.6	62450.	3410.7
#2	9830.8	62058.	3378.2
#3	9799.4	62092.	3395.6

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:28:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00861	.17456	.00875	.08415	.00845	.00162	.42018	.00080
Stddev	.00241	.00320	.00584	.00044	.00062	.00010	.04537	.00016
%RSD	28.028	1.8340	66.707	.52598	7.3619	6.0745	10.799	19.768
#1	.00915	.17680	.01356	.08464	.00808	.00156	.43983	.00091
#2	.00598	.17599	.00226	.08403	.00809	.00173	.36829	.00086
#3	.01071	.17089	.01043	.08378	.00916	.00156	.45241	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00400	.00560	.00345	.08548	.95350	.08105	.43655	.00707
Stddev	.00008	.00034	.00088	.01230	.04581	.00390	.09350	.00382
%RSD	2.0075	6.1076	25.604	14.389	4.8041	4.8127	21.418	54.018
#1	.00403	.00571	.00253	.09530	.99396	.07722	.34739	.00473
#2	.00391	.00522	.00353	.07168	.96278	.08091	.42840	.01148
#3	.00406	.00588	.00429	.08946	.90376	.08502	.53386	.00500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00937	.44836	.01641	.81013	.00755	.08949	.01796	.80576
Stddev	.00033	.00782	.00043	.01533	.00353	.00603	.00226	.00882
%RSD	3.5349	1.7431	2.6293	1.8922	46.785	6.7340	12.603	1.0947
#1	.00911	.45731	.01596	.82200	.00588	.09248	.01611	.81287
#2	.00974	.44487	.01647	.81558	.01161	.09343	.02049	.80853
#3	.00925	.44289	.01682	.79283	.00517	.08255	.01729	.79589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:28:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41092**	**.04172**	**.02043**	**.15548**	**.00810**	**.01698**	**.04605**
Stddev	.00936	.00016	.00448	.00254	.00066	.00050	.00187
%RSD	2.2770	.37475	21.916	1.6360	8.1067	2.9288	4.0649
#1	.41622	.04190	.02523	.15718	.00756	.01728	.04465
#2	.41644	.04163	.01969	.15671	.00791	.01725	.04533
#3	.40012	.04164	.01637	.15256	.00883	.01640	.04818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9545.8**	**59931.**	**3275.5**
Stddev	15.6	83.	34.7
%RSD	.16333	.13820	1.0584
#1	9534.4	59838.	3252.2
#2	9539.4	59961.	3315.3
#3	9563.5	59995.	3258.9

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:32:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02155	.40824	.02077	.20167	.02174	.00400	1.0366	.00202
Stddev	.00054	.00443	.00281	.00124	.00028	.00001	.0243	.00009
%RSD	2.5225	1.0863	13.516	.61328	1.2824	.22063	2.3424	4.3173
#1	.02133	.41154	.02394	.20052	.02183	.00399	1.0194	.00205
#2	.02115	.40999	.01859	.20150	.02142	.00401	1.0644	.00192
#3	.02216	.40320	.01978	.20298	.02196	.00400	1.0260	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00994	.01113	.01102	.16765	2.1953	.20551	1.0506	.01921
Stddev	.00018	.00047	.00052	.00874	.0565	.00363	.0388	.00199
%RSD	1.8457	4.1791	4.7625	5.2113	2.5738	1.7653	3.6929	10.372
#1	.01014	.01147	.01043	.15847	2.1428	.20211	1.0170	.02151
#2	.00990	.01060	.01123	.17586	2.2551	.20509	1.0931	.01818
#3	.00978	.01132	.01141	.16862	2.1879	.20933	1.0419	.01794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02056	1.0699	.04161	2.0283	.02093	.22105	.04598	1.9872
Stddev	.00073	.0134	.00029	.0213	.00141	.00521	.00230	.0146
%RSD	3.5426	1.2493	.69643	1.0505	6.7264	2.3551	5.0056	.73437
#1	.02134	1.0745	.04129	2.0517	.02096	.22638	.04821	1.9992
#2	.02046	1.0548	.04165	2.0232	.01951	.21598	.04361	1.9913
#3	.01989	1.0803	.04187	2.0101	.02232	.22080	.04611	1.9709
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:32:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0190**	**.10349**	**.06088**	**.38102**	**.01945**	**.04193**	**.10461**
Stddev	.0194	.00012	.00319	.00475	.00050	.00058	.00065
%RSD	1.9018	.11797	5.2343	1.2466	2.5499	1.3820	.62471
#1	1.0324	.10361	.06403	.38543	.01945	.04208	.10441
#2	1.0279	.10348	.06095	.38164	.01995	.04242	.10534
#3	.99680	.10337	.05766	.37599	.01896	.04129	.10408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9527.9**	**60013.**	**3283.4**
Stddev	15.1	148.	21.9
%RSD	.15821	.24736	.66596
#1	9513.0	59863.	3269.8
#2	9527.6	60160.	3271.8
#3	9543.1	60017.	3308.6

Approved: June 25, 2016

Sample Name: ICSA Acquired: 6/24/2016 10:36:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	272.29	-.00639	.01187	.00097	-.00004	255.70	-.00011
Stddev	.00186	.14	.00204	.00102	.00103	.00005	.88	.00012
%RSD	388.65	.05142	31.923	8.6029	106.35	111.27	.34460	113.29
#1	-.00160	272.44	-.00702	.01157	.00211	-.00001	256.63	-.00021
#2	.00199	272.24	-.00411	.01301	.00068	-.00002	255.62	.00003
#3	.00104	272.17	-.00804	.01104	.00011	-.00009	254.87	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00172	.00015	-.00116	101.53	.09300	.00567	259.96	-.00382
Stddev	.00042	.00130	.00167	.28	.03409	.00366	.64	.00294
%RSD	24.472	881.01	143.42	.27829	36.657	64.638	.24529	76.986
#1	-.00152	-.00007	-.00240	101.84	.05558	.00951	260.50	-.00473
#2	-.00143	-.00103	.00073	101.29	.10113	.00529	260.13	-.00620
#3	-.00220	.00155	-.00182	101.47	.12229	.00221	259.26	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.03878	-.00045	.04376	.00245	-.00458	.00445	.01844
Stddev	.00046	.04600	.00064	.01101	.00539	.00310	.00348	.00549
%RSD	287.16	118.61	140.72	25.160	220.05	67.775	78.148	29.762
#1	.00025	.00054	.00028	.04277	.00150	-.00104	.00050	.01603
#2	-.00065	.08983	-.00075	.03327	.00825	-.00682	.00580	.01457
#3	-.00008	.02597	-.00089	.05522	-.00240	-.00589	.00705	.02472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: ICSA Acquired: 6/24/2016 10:36:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00019	-.01134	-.00093	-.00397	-.00488	.00384
Stddev	.00032	.00049	.00588	.00258	.00006	.00039	.00038
%RSD	95.122	259.22	51.833	278.90	1.5390	7.9827	9.8011
#1	.00019	.00071	-.01724	.00196	-.00401	-.00532	.00366
#2	.00071	-.00024	-.00549	-.00301	-.00400	-.00461	.00427
#3	.00012	.00009	-.01128	-.00172	-.00390	-.00469	.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8869.1	55471.	3153.2
Stddev	26.5	151.	18.0
%RSD	.29867	.27155	.57209
#1	8897.8	55567.	3139.7
#2	8845.6	55550.	3146.3
#3	8864.0	55298.	3173.7

Approved: June 25, 2016

Sample Name: ICSAB Acquired: 6/24/2016 10:40:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52801	273.86	.25914	.01325	.26102	.24578	255.40	.50739
Stddev	.00250	.16	.00666	.00063	.00070	.00039	.53	.00146
%RSD	.47355	.05748	2.5695	4.7909	.26706	.16053	.20826	.28726
#1	.52830	274.03	.26069	.01398	.26152	.24535	255.50	.50785
#2	.52537	273.71	.26489	.01290	.26131	.24586	254.82	.50857
#3	.53035	273.85	.25184	.01286	.26022	.24613	255.87	.50576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.24727	.25565	.25562	99.861	5.4779	.00519	256.26	.25260
Stddev	.00097	.00095	.00265	.277	.0348	.00184	.86	.00168
%RSD	.39106	.37321	1.0376	.27690	.63446	35.421	.33443	.66352
#1	.24802	.25466	.25814	99.853	5.4700	.00385	255.90	.25222
#2	.24762	.25656	.25586	99.588	5.5160	.00443	255.64	.25443
#3	.24618	.25572	.25285	100.14	5.4478	.00728	257.24	.25115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	5.5858	.49274	.02117	.50583	.50989	.26678	.01309
Stddev	.00050	.0197	.00095	.01408	.00041	.00290	.00610	.00127
%RSD	250.13	.35306	.19217	66.536	.08120	.56902	2.2850	9.6691
#1	.00037	5.6063	.49240	.00688	.50630	.51290	.26722	.01358
#2	-.00039	5.5669	.49381	.02158	.50553	.50963	.27265	.01404
#3	-.00058	5.5841	.49200	.03503	.50566	.50712	.26048	.01165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: ICSAB Acquired: 6/24/2016 10:40:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.00067	-.01040	.47266	.25528	.50449	.00315
Stddev	.00100	.00032	.00325	.00524	.00094	.00232	.00022
%RSD	58.680	47.423	31.248	1.1093	.36860	.45903	6.9061
#1	.00125	.00096	-.01186	.47276	.25634	.50607	.00293
#2	.00102	.00072	-.01267	.47786	.25494	.50556	.00318
#3	.00286	.00033	-.00668	.46737	.25455	.50183	.00336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8976.9	56220.	3187.5
Stddev	14.0	172.	27.3
%RSD	.15560	.30511	.85579
#1	8966.6	56386.	3171.0
#2	8992.8	56232.	3219.0
#3	8971.4	56043.	3172.5

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 10:44:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40510	10.227	.40997	.50470	1.0199	.05000	10.224	.05209
Stddev	.00259	.020	.00313	.00376	.0032	.00018	.050	.00003
%RSD	.63884	.19087	.76260	.74531	.31908	.36523	.48810	.05352
#1	.40303	10.211	.40694	.50216	1.0162	.04979	10.170	.05206
#2	.40800	10.220	.40978	.50293	1.0222	.05008	10.235	.05212
#3	.40426	10.248	.41318	.50902	1.0213	.05013	10.268	.05208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20659	.50266	.51958	4.0815	51.148	1.0118	10.141	.51100
Stddev	.00025	.00146	.00022	.0426	.163	.0071	.045	.00204
%RSD	.12249	.29059	.04172	1.0445	.31821	.70440	.43990	.39976
#1	.20659	.50117	.51956	4.0379	50.961	1.0054	10.140	.50966
#2	.20684	.50409	.51937	4.1230	51.259	1.0106	10.186	.51335
#3	.20634	.50270	.51980	4.0835	51.225	1.0195	10.097	.50999
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0360	50.833	.51458	10.241	.51207	1.2224	.40899	5.3321
Stddev	.0063	.180	.00026	.014	.00288	.0026	.00371	.0135
%RSD	.60708	.35445	.05040	.13553	.56209	.21445	.90595	.25328
#1	1.0403	50.639	.51460	10.242	.51048	1.2194	.41231	5.3186
#2	1.0389	50.864	.51483	10.254	.51034	1.2245	.40499	5.3456
#3	1.0288	50.996	.51431	10.227	.51539	1.2232	.40965	5.3320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 10:44:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0297**	**1.0232**	**1.0245**	**.52009**	**1.0074**	**1.0340**	**1.0135**
Stddev	.0029	.0039	.0041	.00364	.0035	.0016	.0058
%RSD	.27812	.38337	.40197	.69967	.34932	.15074	.57645
#1	1.0298	1.0187	1.0198	.51637	1.0034	1.0332	1.0152
#2	1.0325	1.0257	1.0262	.52364	1.0085	1.0358	1.0070
#3	1.0267	1.0252	1.0274	.52025	1.0102	1.0330	1.0183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9522.9**	**60073.**	**3307.5**
Stddev	11.7	184.	13.2
%RSD	.12286	.30629	.39835
#1	9509.8	60132.	3293.3
#2	9526.4	59867.	3319.3
#3	9532.4	60221.	3310.0

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 10:47:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	-.00231	.00174	.00317	.00089	.00008	.01478	-.00009
Stddev	.00098	.00197	.00138	.00099	.00051	.00008	.01897	.00016
%RSD	1615.6	85.585	79.150	31.308	57.430	97.913	128.33	176.75
#1	.00074	-.00458	.00332	.00208	.00145	.00015	-.00627	-.00026
#2	.00050	-.00127	.00081	.00403	.00044	.00008	.02007	-.00007
#3	-.00106	-.00107	.00109	.00339	.00079	.00000	.03055	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.00201	-.00144	.01198	.09764	.00160	-.01376	-.00139
Stddev	.00007	.00062	.00140	.00633	.05541	.00323	.09391	.00206
%RSD	9.5195	30.966	97.276	52.810	56.748	201.98	682.68	147.81
#1	-.00064	.00243	-.00111	.01172	.03926	.00278	.06859	-.00281
#2	-.00066	.00129	-.00023	.00579	.14949	-.00205	-.11603	-.00233
#3	-.00076	.00231	-.00297	.01844	.10416	.00406	.00617	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	.05554	.00020	-.00275	-.00017	.00433	.00267	.00326
Stddev	.00008	.01502	.00042	.00646	.00019	.00156	.00847	.00120
%RSD	2.3629	27.048	205.82	234.70	111.96	35.900	317.53	36.710
#1	.00322	.04802	.00003	.00456	-.00027	.00254	.00057	.00458
#2	.00336	.07283	-.00010	-.00514	.00005	.00529	.01198	.00225
#3	.00323	.04576	.00069	-.00769	-.00029	.00517	-.00456	.00295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 10:47:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00050**	**-.00470**	**-.00050**	**-.00052**	**.00020**	**.00116**
Stddev	.00046	.00047	.00508	.00198	.00127	.00011	.00086
%RSD	806.59	93.281	108.17	398.14	242.75	53.066	73.939
#1	.00001	.00104	-.00897	.00149	-.00184	.00011	.00135
#2	.00036	.00017	-.00606	-.00052	-.00043	.00032	.00022
#3	-.00055	.00030	.00092	-.00246	.00070	.00017	.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9455.5**	**60247.**	**3262.6**
Stddev	21.9	389.	18.3
%RSD	.23119	.64505	.56229
#1	9449.8	59825.	3242.4
#2	9479.6	60328.	3267.4
#3	9437.0	60589.	3278.1

Approved: June 25, 2016

Sample Name: PBS DH Acquired: 6/24/2016 10:51:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.06424	.00963	.02920	.00211	-.00012	.91755	.00095
Stddev	.00146	.00403	.00255	.00180	.00069	.00002	.02625	.00023
%RSD	154.86	6.2780	26.453	6.1638	32.462	16.135	2.8607	24.438
#1	.00027	.06611	.00687	.03111	.00143	-.00014	.93724	.00119
#2	.00262	.05961	.01011	.02753	.00212	-.00010	.92766	.00096
#3	-.00006	.06700	.01190	.02897	.00280	-.00012	.88775	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.00196	.02606	.05611	.86754	-.00266	2.2157	.00096
Stddev	.00046	.00074	.00067	.01940	.03735	.00126	.0698	.00076
%RSD	132.65	37.622	2.5777	34.579	4.3057	47.393	3.1523	79.295
#1	-.00064	.00148	.02576	.06271	.88691	-.00288	2.1420	.00166
#2	.00018	.00281	.02683	.07136	.89123	-.00379	2.2810	.00015
#3	-.00057	.00159	.02558	.03427	.82448	-.00130	2.2241	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00347	1.2358	.00309	.40462	.00290	.01813	.08932	.52615
Stddev	.00027	.0193	.00147	.02012	.00064	.00254	.00325	.01166
%RSD	7.8234	1.5654	47.492	4.9731	22.045	14.035	3.6331	2.2168
#1	.00357	1.2508	.00188	.42577	.00296	.01803	.09153	.53855
#2	.00367	1.2140	.00472	.40239	.00223	.02071	.09083	.52450
#3	.00316	1.2428	.00266	.38571	.00351	.01563	.08560	.51539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBS DH Acquired: 6/24/2016 10:51:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01154	.00411	.00342	-.03779	-.00138	1.3066	.00905
Stddev	.00028	.00050	.00647	.00170	.00059	.0332	.00154
%RSD	2.4661	12.170	189.43	4.4933	42.724	2.5423	17.055
#1	.01162	.00444	.00927	-.03729	-.00161	1.3427	.00767
#2	.01122	.00436	-.00353	-.03639	-.00071	1.2998	.00877
#3	.01177	.00354	.00451	-.03968	-.00182	1.2773	.01072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9550.6	62753.	3709.8
Stddev	143.7	354.	18.2
%RSD	1.5048	.56355	.49089
#1	9384.7	62418.	3722.3
#2	9637.3	62720.	3688.9
#3	9629.7	63122.	3718.1

Approved: June 25, 2016

Sample Name: LCSS DH Acquired: 6/24/2016 10:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18247**	**4.5986**	**.19429**	**.89801**	**.50201**	**.02364**	**6.0280**	**.02381**
Stddev	.00498	.0862	.00294	.01488	.00719	.00048	.0822	.00026
%RSD	2.7299	1.8745	1.5140	1.6566	1.4323	2.0299	1.3633	1.0767
#1	.18767	4.6908	.19687	.91506	.49496	.02417	5.9363	.02410
#2	.18199	4.5849	.19109	.89128	.50174	.02351	6.0524	.02372
#3	.17774	4.5200	.19490	.88769	.50933	.02323	6.0952	.02362
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09575**	**.24396**	**.26604**	**2.0685**	**25.217**	**.49155**	**7.2727**	**.24507**
Stddev	.00128	.00454	.00424	.0072	.406	.00739	.2108	.00531
%RSD	1.3405	1.8602	1.5932	.34707	1.6111	1.5036	2.8983	2.1657
#1	.09698	.24884	.27087	2.0602	24.814	.48835	7.0584	.24165
#2	.09442	.24317	.26294	2.0726	25.211	.48631	7.2799	.24237
#3	.09586	.23987	.26432	2.0727	25.626	.50001	7.4798	.25118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49901**	**25.673**	**.23896**	**5.1500**	**.23582**	**.55555**	**.23212**	**3.3580**
Stddev	.00666	.317	.00299	.0593	.00138	.00716	.00897	.0420
%RSD	1.3352	1.2341	1.2511	1.1512	.58344	1.2890	3.8646	1.2518
#1	.50607	25.359	.24230	5.2165	.23738	.56336	.24189	3.4044
#2	.49283	25.668	.23655	5.1025	.23531	.54930	.22426	3.3223
#3	.49814	25.992	.23802	5.1310	.23477	.55398	.23021	3.3474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSS DH Acquired: 6/24/2016 10:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47087**	**.50955**	**.50009**	**.22590**	**.48434**	**2.0632**	**.00627**
Stddev	.00683	.00732	.00690	.00326	.01049	.0277	.00044
%RSD	1.4508	1.4356	1.3790	1.4427	2.1662	1.3435	7.0255
#1	.47818	.50245	.49214	.22809	.49569	2.0928	.00585
#2	.46464	.50912	.50437	.22215	.48231	2.0378	.00625
#3	.46981	.51706	.50378	.22746	.47500	2.0590	.00673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9997.3**	**62835.**	**3576.8**
Stddev	90.8	1056.	48.3
%RSD	.90842	1.6801	1.3504
#1	9896.1	61710.	3631.4
#2	10072.	62993.	3559.4
#3	10024.	63803.	3539.7

Approved: June 25, 2016

Sample Name: LCSS DP Acquired: 6/24/2016 11:02:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.17820**	**4.3366**	**.22875**	**.90184**	**.50529**	**.02446**	**5.8810**	**.02577**
Stddev	.00193	.0746	.01418	.01394	.01186	.00029	.1832	.00151
%RSD	1.0838	1.7190	6.1991	1.5457	2.3469	1.1886	3.1144	5.8704
#1	.17769	4.3180	.24506	.90296	.49226	.02426	5.6858	.02746
#2	.17657	4.2731	.22184	.88737	.51544	.02431	6.0491	.02530
#3	.18033	4.4187	.21935	.91519	.50818	.02479	5.9081	.02455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10444**	**.24563**	**.28336**	**1.9956**	**24.666**	**.49175**	**7.0829**	**.24263**
Stddev	.00645	.00190	.01874	.0724	.577	.01385	.2327	.00720
%RSD	6.1730	.77249	6.6147	3.6300	2.3398	2.8160	3.2852	2.9669
#1	.11189	.24455	.30494	1.9215	24.049	.47780	6.8155	.23468
#2	.10090	.24453	.27395	2.0663	25.192	.50549	7.1939	.24871
#3	.10054	.24782	.27118	1.9991	24.758	.49196	7.2394	.24449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55730**	**25.233**	**.26065**	**5.6927**	**.24891**	**.61155**	**.33091**	**3.1863**
Stddev	.03375	.569	.01436	.3577	.01270	.03374	.01816	.1852
%RSD	6.0554	2.2563	5.5090	6.2841	5.1039	5.5171	5.4865	5.8116
#1	.59622	24.626	.27718	6.1055	.26343	.65012	.35188	3.3998
#2	.53962	25.755	.25355	5.4986	.23984	.59708	.32033	3.0888
#3	.53608	25.317	.25122	5.4739	.24345	.58746	.32053	3.0702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSS DP Acquired: 6/24/2016 11:02:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51198**	**.51153**	**.50880**	**.21284**	**.49128**	**2.1277**	**.00181**
Stddev	.03023	.01298	.01459	.01301	.00684	.1239	.00013
%RSD	5.9037	2.5381	2.8677	6.1112	1.3917	5.8220	7.2522
#1	.54684	.49772	.49512	.22747	.49101	2.2706	.00196
#2	.49599	.52349	.52416	.20844	.48458	2.0612	.00173
#3	.49310	.51336	.50711	.20260	.49825	2.0512	.00173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9072.1**	**62124.**	**3651.9**
Stddev	334.9	431.	66.7
%RSD	3.6913	.69305	1.8269
#1	8685.5	62374.	3723.4
#2	9261.7	62371.	3591.3
#3	9269.2	61627.	3640.9

Approved: June 25, 2016

Sample Name: L1606114301 Acquired: 6/24/2016 11:06:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00340	.63384	.00605	.03311	.02504	-.00013	1.8306	.00360
Stddev	.00146	.01591	.00255	.00247	.00039	.00009	.0364	.00013
%RSD	42.981	2.5096	42.114	7.4636	1.5650	72.615	1.9881	3.6185
#1	.00487	.64708	.00405	.03597	.02496	-.00022	1.8648	.00356
#2	.00194	.61620	.00892	.03168	.02547	-.00004	1.8345	.00375
#3	.00340	.63825	.00519	.03170	.02471	-.00013	1.7924	.00350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.05627	.80386	5.1093	1.0547	.00294	1.5234	.06438
Stddev	.00009	.00071	.01373	.0178	.0718	.00145	.0795	.00165
%RSD	5.5825	1.2566	1.7075	.34819	6.8037	49.424	5.2181	2.5676
#1	.00161	.05677	.81424	5.0951	1.0867	.00418	1.5850	.06354
#2	.00168	.05546	.80905	5.1293	1.1049	.00329	1.5515	.06628
#3	.00150	.05659	.78830	5.1035	.97252	.00134	1.4337	.06332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00632	1.2820	.04272	.30849	.10441	.02066	.07677	.84241
Stddev	.00030	.0102	.00117	.00874	.00199	.00387	.00489	.01140
%RSD	4.8199	.79829	2.7325	2.8327	1.9073	18.733	6.3709	1.3529
#1	.00599	1.2908	.04257	.31674	.10484	.02431	.07533	.85254
#2	.00639	1.2708	.04396	.30939	.10616	.02107	.08222	.84461
#3	.00659	1.2845	.04164	.29933	.10225	.01660	.07276	.83007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114301 Acquired: 6/24/2016 11:06:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01737	.00705	.05358	-.03179	.00265	5.9842	.00421
Stddev	.00159	.00017	.00866	.00194	.00017	.0953	.00010
%RSD	9.1419	2.4404	16.162	6.1073	6.4079	1.5932	2.3093
#1	.01793	.00724	.04586	-.03088	.00248	6.0574	.00413
#2	.01859	.00700	.06294	-.03048	.00266	6.0188	.00432
#3	.01557	.00691	.05193	-.03402	.00282	5.8764	.00418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9433.8	62273.	3673.3
Stddev	13.8	108.	33.0
%RSD	.14593	.17345	.89868
#1	9423.3	62153.	3665.0
#2	9449.4	62303.	3645.2
#3	9428.7	62363.	3709.6

Approved: June 25, 2016

Sample Name: L1606114302 Acquired: 6/24/2016 11:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.70974	.00483	.03211	.03431	-.00008	3.7526	.00880
Stddev	.00086	.00429	.00488	.00269	.00095	.00003	.0801	.00018
%RSD	286.06	.60458	101.04	8.3916	2.7576	37.081	2.1342	2.0709
#1	.00079	.71454	.00872	.03444	.03386	-.00010	3.7049	.00896
#2	.00080	.70628	.00640	.03273	.03367	-.00010	3.7078	.00884
#3	-.00069	.70840	-.00064	.02916	.03539	-.00005	3.8450	.00860
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03006	.01986	.07908	1.9614	1.7476	.00189	1.7739	.07217
Stddev	.00057	.00040	.00176	.0337	.0301	.00072	.0437	.00266
%RSD	1.8855	2.0050	2.2306	1.7184	1.7202	38.094	2.4665	3.6877
#1	.02997	.01958	.08079	1.9631	1.7210	.00189	1.7325	.07238
#2	.03067	.01968	.07918	1.9269	1.7417	.00118	1.8197	.06941
#3	.02955	.02032	.07727	1.9943	1.7802	.00262	1.7695	.07472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	3.1867	.29445	.97828	.08164	.18406	.05191	.60601
Stddev	.00039	.0400	.00282	.02017	.00359	.00750	.00201	.00524
%RSD	25.606	1.2539	.95732	2.0615	4.3941	4.0727	3.8629	.86420
#1	.00122	3.1678	.29637	.99318	.08425	.18826	.05038	.60880
#2	.00138	3.1598	.29576	.98632	.08312	.18852	.05418	.60926
#3	.00195	3.2326	.29122	.95533	.07755	.17541	.05116	.59997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114302 Acquired: 6/24/2016 11:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03851	.01220	.05871	-.02123	.00148	.92404	.00252
Stddev	.00125	.00043	.00052	.00163	.00043	.01192	.00035
%RSD	3.2486	3.5183	.88626	7.6964	29.162	1.2895	13.799
#1	.03869	.01230	.05838	-.02100	.00130	.93196	.00257
#2	.03966	.01173	.05843	-.02297	.00197	.92983	.00284
#3	.03718	.01257	.05931	-.01972	.00117	.91034	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9579.3	62698.	3582.6
Stddev	23.6	409.	31.5
%RSD	.24595	.65242	.88053
#1	9558.8	62230.	3582.4
#2	9574.2	62875.	3614.3
#3	9605.1	62989.	3551.2

Approved: June 25, 2016

Sample Name: L1606114303 Acquired: 6/24/2016 11:14:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	4.8207	.00231	.09925	.06384	-.00014	20.352	.03065
Stddev	.00115	.0169	.00244	.00272	.00062	.00004	.361	.00032
%RSD	57.119	.35023	105.60	2.7419	.97505	30.491	1.7725	1.0317
#1	.00068	4.8310	-.00033	.10036	.06456	-.00017	20.604	.03098
#2	.00273	4.8012	.00278	.09615	.06348	-.00009	19.939	.03063
#3	.00261	4.8299	.00448	.10125	.06347	-.00016	20.514	.03035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00385	.02269	.31038	.72640	3.9876	.00384	1.7996	.03505
Stddev	.00028	.00031	.00455	.03117	.1244	.00103	.0301	.00196
%RSD	7.3418	1.3582	1.4671	4.2904	3.1197	26.784	1.6740	5.6019
#1	.00418	.02300	.31423	.75545	4.1176	.00266	1.8228	.03702
#2	.00370	.02267	.31155	.69348	3.8697	.00453	1.7655	.03503
#3	.00368	.02239	.30535	.73028	3.9755	.00433	1.8103	.03309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	69.304	.01792	.75789	.92900	.21972	.06124	1.0845
Stddev	.00052	1.191	.00091	.01147	.01251	.00309	.00193	.0066
%RSD	36.480	1.7182	5.0997	1.5130	1.3471	1.4069	3.1453	.61193
#1	.00085	70.245	.01893	.76639	.93239	.22277	.05909	1.0852
#2	.00156	67.965	.01715	.76244	.93946	.21982	.06281	1.0908
#3	.00187	69.701	.01768	.74485	.91513	.21659	.06183	1.0776
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114303 Acquired: 6/24/2016 11:14:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06697	.02914	.17767	-.02618	.00084	1.1510	.00805
Stddev	.00103	.00029	.00367	.00124	.00100	.0176	.00078
%RSD	1.5441	1.0005	2.0643	4.7450	119.01	1.5335	9.6465
#1	.06805	.02923	.17998	-.02601	.00069	1.1598	.00715
#2	.06687	.02881	.17959	-.02504	.00191	1.1626	.00843
#3	.06599	.02937	.17344	-.02750	-.00008	1.1307	.00856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9381.8	61970.	3689.1
Stddev	33.6	321.	57.3
%RSD	.35761	.51747	1.5540
#1	9391.7	61677.	3628.9
#2	9344.4	62313.	3743.0
#3	9409.2	61920.	3695.5

Approved: June 25, 2016

Sample Name: L1606114303PS Acquired: 6/24/2016 11:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574050-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19282**	**9.1030**	**.21930**	**1.0209**	**.57480**	**.02552**	**23.549**	**.05319**
Stddev	.00378	.1224	.00387	.0139	.00847	.00050	.384	.00014
%RSD	1.9610	1.3448	1.7659	1.3603	1.4741	1.9641	1.6292	.25923
#1	.19718	9.2398	.22265	1.0369	.57451	.02610	23.500	.05313
#2	.19085	9.0654	.22018	1.0119	.58342	.02525	23.955	.05335
#3	.19044	9.0038	.21506	1.0138	.56648	.02522	23.192	.05310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10838**	**.27489**	**.53510**	**2.6325**	**28.426**	**.51916**	**6.4335**	**.28113**
Stddev	.00048	.00487	.00271	.0470	.438	.00652	.0658	.00732
%RSD	.44135	1.7702	.50609	1.7864	1.5402	1.2563	1.0234	2.6026
#1	.10883	.28050	.53765	2.6400	28.393	.51849	6.4132	.27737
#2	.10842	.27183	.53540	2.6753	28.879	.52600	6.5071	.28956
#3	.10788	.27234	.53226	2.5822	28.005	.51300	6.3802	.27645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55563**	**88.072**	**.27127**	**5.7330**	**1.0887**	**.80555**	**.28267**	**3.5801**
Stddev	.00233	1.489	.00140	.0340	.0052	.00245	.00476	.0110
%RSD	.41977	1.6902	.51481	.59236	.48130	.30394	1.6852	.30687
#1	.55781	87.868	.27253	5.7647	1.0876	.80600	.27727	3.5781
#2	.55592	89.652	.27153	5.7371	1.0944	.80774	.28448	3.5920
#3	.55317	86.695	.26977	5.6971	1.0841	.80291	.28627	3.5703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114303PS Acquired: 6/24/2016 11:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574050-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55832**	**.55250**	**.68468**	**.22830**	**.51898**	**1.4956**	**.00754**
Stddev	.00108	.00586	.00982	.00156	.00603	.0050	.00034
%RSD	.19343	1.0607	1.4349	.68445	1.1613	.33628	4.5321
#1	.55934	.55124	.67374	.23005	.52593	1.4982	.00780
#2	.55844	.55889	.69276	.22777	.51583	1.4988	.00765
#3	.55719	.54737	.68753	.22706	.51518	1.4898	.00715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9369.0**	**61127.**	**3634.8**
Stddev	22.7	764.	54.2
%RSD	.24213	1.2496	1.4904
#1	9362.2	60252.	3618.8
#2	9350.5	61471.	3590.4
#3	9394.3	61659.	3695.1

Approved: June 25, 2016

Sample Name: L1606114303SDL Acquired: 6/24/2016 11:21:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574050-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	1.0261	.00297	.02318	.01266	-.00007	4.1845	.00623
Stddev	.00123	.0061	.00330	.00327	.00031	.00005	.0503	.00014
%RSD	365.72	.59880	111.06	14.127	2.4185	73.446	1.2012	2.2131
#1	-.00107	1.0196	.00542	.02404	.01302	-.00002	4.1771	.00614
#2	.00083	1.0267	-.00078	.01956	.01249	-.00012	4.1383	.00639
#3	.00124	1.0319	.00428	.02594	.01249	-.00008	4.2380	.00617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00540	.06226	.15898	.95529	-.00007	.39328	.00447
Stddev	.00025	.00082	.00151	.01807	.04331	.00277	.02612	.00106
%RSD	50.129	15.194	2.4288	11.369	4.5341	3914.2	6.6415	23.792
#1	.00077	.00446	.06382	.13919	.97561	-.00233	.38332	.00500
#2	.00037	.00596	.06216	.17463	.98470	.00302	.42292	.00517
#3	.00033	.00577	.06080	.16312	.90555	-.00090	.37361	.00325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	14.368	.00341	.14113	.19112	.04241	.01311	.21447
Stddev	.00015	.033	.00044	.00572	.00278	.00110	.00399	.00347
%RSD	22.588	.22958	12.788	4.0544	1.4560	2.5835	30.424	1.6176
#1	.00054	14.331	.00376	.14763	.19272	.04265	.01583	.21733
#2	.00066	14.378	.00292	.13686	.19273	.04121	.00853	.21548
#3	.00085	14.394	.00355	.13890	.18791	.04336	.01496	.21061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114303SDL Acquired: 6/24/2016 11:21:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574050-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01266**	**.00566**	**.03785**	**-.00383**	**-.00075**	**.23612**	**.00185**
Stddev	.00065	.00028	.00383	.00311	.00045	.00453	.00029
%RSD	5.1470	5.0211	10.115	81.132	60.764	1.9188	15.554
#1	.01193	.00542	.03347	-.00556	-.00022	.23954	.00216
#2	.01290	.00558	.03952	-.00024	-.00102	.23784	.00159
#3	.01316	.00597	.04057	-.00569	-.00099	.23098	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10057.**	**64667.**	**3566.1**
Stddev	24.	239.	18.3
%RSD	.24189	.36921	.51318
#1	10061.	64539.	3548.5
#2	10080.	64942.	3585.1
#3	10031.	64519.	3564.7

Approved: June 25, 2016

Sample Name: L1606072401 Acquired: 6/24/2016 11:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.00315**	**.00035**	**.10432**	**.27002**	**-.00002**	**19.485**	**-.00008**
Stddev	.00044	.00317	.00249	.00108	.00200	.00009	.116	.00017
%RSD	1758.5	100.57	717.90	1.0354	.74150	535.21	.59419	213.12
#1	.00051	-.00633	.00240	.10390	.26802	.00008	19.352	-.00022
#2	-.00037	.00001	.00106	.10555	.27202	-.00009	19.546	-.00012
#3	-.00006	-.00313	-.00242	.10352	.27001	-.00003	19.558	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00046**	**-.00104**	**.04832**	**1.6362**	**.06448**	**1.9423**	**.00728**
Stddev	.00032	.00099	.00074	.01250	.0309	.00265	.0169	.00214
%RSD	60.154	216.03	70.782	25.871	1.8896	4.1051	.87020	29.355
#1	-.00026	.00125	-.00020	.06077	1.6689	.06381	1.9502	.00486
#2	-.00046	.00077	-.00159	.04843	1.6074	.06740	1.9228	.00808
#3	-.00090	-.00065	-.00133	.03577	1.6323	.06224	1.9537	.00891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**45.826**	**-.00085**	**.00269**	**-.00068**	**-.00086**	**.00607**	**.02783**
Stddev	.00032	.230	.00099	.00141	.00111	.00064	.00697	.00182
%RSD	148.51	.50191	116.77	52.456	163.34	74.836	114.77	6.5364
#1	.00042	45.682	-.00200	.00191	-.00152	-.00014	.00291	.02894
#2	-.00016	46.091	-.00033	.00185	-.00108	-.00138	.01406	.02882
#3	.00039	45.704	-.00023	.00433	.00057	-.00105	.00124	.02573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072401 Acquired: 6/24/2016 11:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	3.7849	-.00208	.00102	-.00025	.00077	.00029
Stddev	.00032	.0200	.00520	.00060	.00104	.00010	.00043
%RSD	74.660	.52945	249.46	58.995	412.82	12.438	148.48
#1	-.00041	3.7649	.00110	.00076	-.00044	.00066	.00051
#2	-.00012	3.8049	.00073	.00059	.00087	.00082	-.00021
#3	-.00077	3.7849	-.00808	.00171	-.00118	.00083	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9875.5	62339.	3387.9
Stddev	19.3	92.	22.4
%RSD	.19558	.14698	.65977
#1	9880.5	62376.	3412.5
#2	9891.8	62234.	3382.5
#3	9854.1	62405.	3368.8

Approved: June 25, 2016

Sample Name: L1606078710 Acquired: 6/24/2016 11:29:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.01245	.00093	.00672	.00888	-.00004	5.1268	-.00003
Stddev	.00207	.00513	.00062	.00160	.00032	.00006	.0280	.00009
%RSD	1015.8	41.172	67.473	23.880	3.6189	161.49	.54640	338.65
#1	-.00259	.01156	.00060	.00537	.00890	.00003	5.1020	.00003
#2	.00103	.01797	.00053	.00629	.00918	-.00004	5.1212	-.00013
#3	.00095	.00783	.00164	.00850	.00854	-.00010	5.1572	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.00129	-.00031	.02121	.09124	.00142	1.6609	.00016
Stddev	.00030	.00103	.00028	.02108	.02779	.00443	.0362	.00043
%RSD	83.898	80.266	88.228	99.367	30.455	310.98	2.1784	267.47
#1	-.00002	.00013	-.00000	.02577	.07595	.00096	1.6192	.00066
#2	-.00047	.00163	-.00042	.03964	.12332	.00607	1.6798	-.00009
#3	-.00058	.00211	-.00052	-.00177	.07447	-.00275	1.6837	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.40629	-.00019	.02344	.00142	.00036	.00428	.86102
Stddev	.00008	.01566	.00070	.00293	.00389	.00131	.00308	.00301
%RSD	282.85	3.8547	375.84	12.494	274.41	367.61	71.795	.35006
#1	-.00005	.39122	-.00061	.02282	-.00202	-.00116	.00142	.85766
#2	.00002	.40516	.00062	.02087	.00564	.00112	.00390	.86349
#3	.00011	.42248	-.00056	.02663	.00064	.00110	.00753	.86190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606078710 Acquired: 6/24/2016 11:29:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.01418	.00262	.00104	-.00029	.00070	.00018
Stddev	.00037	.00086	.00142	.00185	.00024	.00007	.00067
%RSD	43.228	6.0990	54.198	178.45	83.020	9.6277	377.85
#1	-.00122	.01515	.00146	.00231	-.00032	.00062	-.00035
#2	-.00082	.01393	.00221	.00189	-.00003	.00073	.00093
#3	-.00049	.01347	.00421	-.00108	-.00051	.00074	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9908.1	62790.	3396.7
Stddev	24.3	134.	24.8
%RSD	.24489	.21371	.72925
#1	9883.2	62654.	3377.5
#2	9909.3	62793.	3388.0
#3	9931.7	62922.	3424.7

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 11:33:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38810**	**9.7098**	**.39689**	**.47714**	**.99058**	**.04739**	**9.8701**	**.05060**
Stddev	.00283	.0174	.01197	.00133	.00631	.00022	.0513	.00128
%RSD	.72928	.17891	3.0148	.27927	.63726	.46575	.51962	2.5352
#1	.39081	9.7194	.38991	.47646	.98553	.04761	9.8110	.04949
#2	.38516	9.6898	.39005	.47629	.99766	.04716	9.9033	.05031
#3	.38833	9.7203	.41070	.47868	.98855	.04739	9.8959	.05200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20045**	**.47745**	**.50304**	**3.8652**	**49.851**	**.98139**	**9.6090**	**.49428**
Stddev	.00476	.00182	.01308	.0187	.275	.00271	.1197	.00115
%RSD	2.3737	.38128	2.6009	.48458	.55213	.27645	1.2457	.23357
#1	.19707	.47916	.49332	3.8535	49.648	.97918	9.5187	.49428
#2	.19839	.47554	.49789	3.8554	50.165	.98442	9.7448	.49544
#3	.20589	.47766	.51792	3.8868	49.742	.98056	9.5635	.49313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0051**	**49.395**	**.49829**	**9.9011**	**.49766**	**1.1837**	**.40223**	**5.1765**
Stddev	.0221	.266	.01338	.2380	.01263	.0295	.01301	.1331
%RSD	2.2022	.53859	2.6859	2.4036	2.5373	2.4958	3.2354	2.5717
#1	.99057	49.185	.48864	9.7382	.49052	1.1641	.39764	5.0820
#2	.99416	49.694	.49266	9.7909	.49023	1.1694	.39213	5.1189
#3	1.0306	49.307	.51357	10.174	.51224	1.2177	.41691	5.3288
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 11:33:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99780**	**.99494**	**.99460**	**.50316**	**.95384**	**.99778**	**.96366**
Stddev	.02505	.00582	.00941	.01064	.00112	.02481	.00332
%RSD	2.5106	.58510	.94620	2.1156	.11735	2.4862	.34462
#1	.98222	.99006	.98399	.49648	.95510	.98037	.96166
#2	.98449	1.0014	.99788	.49756	.95296	.98679	.96750
#3	1.0267	.99339	1.0019	.51543	.95347	1.0262	.96183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9609.5**	**61484.**	**3367.3**
Stddev	179.1	149.	17.5
%RSD	1.8637	.24184	.51943
#1	9727.0	61424.	3387.4
#2	9698.3	61653.	3355.3
#3	9403.4	61374.	3359.2

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 11:37:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00172**	**-.00134**	**.00309**	**.00209**	**.00125**	**-.00002**	**-.01440**	**-.00007**
Stddev	.00091	.00614	.00420	.00059	.00035	.00008	.00898	.00028
%RSD	52.779	459.15	136.12	28.437	28.440	502.17	62.405	405.50
#1	-.00077	-.00780	.00268	.00192	.00104	-.00008	-.01028	-.00013
#2	-.00183	-.00062	-.00090	.00275	.00104	-.00004	-.00821	-.00031
#3	-.00257	.00441	.00748	.00160	.00165	.00007	-.02470	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00219**	**-.00096**	**.01429**	**.07201**	**-.00051**	**-.01423**	**-.00338**
Stddev	.00025	.00091	.00116	.02391	.02885	.00127	.05533	.00160
%RSD	42.952	41.583	120.36	167.30	40.061	249.18	388.71	47.289
#1	-.00086	.00313	-.00216	.03857	.05729	-.00120	.01249	-.00407
#2	-.00049	.00132	.00015	-.00924	.05349	.00096	-.07785	-.00452
#3	-.00039	.00212	-.00087	.01355	.10524	-.00129	.02266	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00397**	**.05772**	**.00049**	**.00166**	**.00060**	**.00709**	**.00415**	**.00501**
Stddev	.00025	.00897	.00091	.00777	.00062	.00346	.00064	.00058
%RSD	6.2010	15.535	183.67	469.35	103.11	48.715	15.417	11.538
#1	.00371	.06438	.00022	.00269	-.00009	.00377	.00431	.00485
#2	.00402	.04752	-.00024	.00886	.00078	.01067	.00470	.00452
#3	.00419	.06126	.00151	-.00658	.00112	.00684	.00345	.00565
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 11:37:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00004**	**-.00290**	**-.00180**	**-.00095**	**.00026**	**.00127**
Stddev	.00126	.00040	.00531	.00104	.00030	.00018	.00033
%RSD	720.33	1037.6	182.93	57.739	31.840	69.543	26.201
#1	-.00138	.00030	.00232	-.00292	-.00094	.00041	.00115
#2	-.00028	-.00048	-.00273	-.00162	-.00066	.00030	.00101
#3	.00113	.00007	-.00830	-.00087	-.00126	.00006	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9475.4**	**60828.**	**3302.4**
Stddev	15.9	240.	28.2
%RSD	.16749	.39397	.85256
#1	9486.2	60837.	3325.2
#2	9482.7	61063.	3270.9
#3	9457.1	60584.	3311.0

Approved: June 25, 2016

Sample Name: L1606078718 Acquired: 6/24/2016 11:41:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.12278**	**-.00107**	**.00913**	**.01523**	**.00001**	**5.3107**	**-.00005**
Stddev	.00135	.00087	.00075	.00238	.00045	.00002	.0439	.00007
%RSD	307.59	.71051	70.678	26.118	2.9624	290.46	.82581	147.98
#1	-.00119	.12179	-.00040	.01179	.01472	.00003	5.2601	-.00013
#2	-.00124	.12310	-.00188	.00842	.01537	.00000	5.3382	.00001
#3	.00112	.12344	-.00091	.00718	.01559	-.00001	5.3338	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00156**	**.00001**	**.12761**	**.28289**	**-.00057**	**2.0930**	**.00966**
Stddev	.00025	.00095	.00078	.01136	.02940	.00292	.1311	.00143
%RSD	123.91	60.819	13550.	8.9048	10.391	511.67	6.2613	14.807
#1	.00004	.00136	.00041	.11857	.31451	-.00375	2.2066	.00912
#2	-.00046	.00072	.00051	.14037	.25639	.00005	1.9496	.00858
#3	-.00018	.00259	-.00090	.12389	.27778	.00199	2.1228	.01128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00091**	**.96070**	**.00021**	**.01639**	**.00142**	**.00012**	**.00174**	**.95670**
Stddev	.00022	.02144	.00152	.00378	.00110	.00353	.00315	.00064
%RSD	24.211	2.2317	705.53	23.047	77.668	2852.2	180.36	.06663
#1	.00066	.96380	-.00103	.01922	.00239	-.00367	.00218	.95743
#2	.00108	.98042	.00190	.01784	.00022	.00073	-.00160	.95644
#3	.00099	.93788	-.00022	.01210	.00165	.00331	.00465	.95624
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606078718 Acquired: 6/24/2016 11:41:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.02113**	**-.00261**	**.00155**	**.00015**	**.00102**	**.00007**
Stddev	.00039	.00013	.00231	.00262	.00009	.00008	.00015
%RSD	3458.6	.60621	88.436	169.06	60.666	7.5915	217.66
#1	-.00027	.02099	-.00355	.00304	.00004	.00110	-.00006
#2	.00044	.02124	.00002	-.00148	.00020	.00094	.00004
#3	-.00021	.02116	-.00429	.00309	.00019	.00102	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9833.8**	**62560.**	**3368.7**
Stddev	10.6	179.	20.6
%RSD	.10814	.28665	.61199
#1	9837.0	62447.	3366.4
#2	9821.9	62767.	3349.3
#3	9842.4	62467.	3390.3

Approved: June 25, 2016

Sample Name: PBW 76 Acquired: 6/24/2016 11:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00756**	**-.00027**	**.00227**	**.00060**	**.00001**	**.00703**	**.00010**
Stddev	.00134	.00214	.00202	.00255	.00065	.00005	.01557	.00013
%RSD	7726.0	28.331	745.35	112.37	108.24	426.81	221.55	123.75
#1	.00015	.00960	.00041	.00019	.00119	.00007	-.00446	.00001
#2	.00123	.00774	.00132	.00150	-.00010	-.00002	.02475	.00024
#3	-.00144	.00533	-.00255	.00512	.00071	-.00001	.00079	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00074**	**.00189**	**-.00169**	**.00228**	**.02645**	**-.00293**	**.08622**	**-.00171**
Stddev	.00036	.00154	.00145	.01650	.09764	.00154	.04513	.00322
%RSD	48.622	81.673	85.412	724.65	369.14	52.587	52.347	188.75
#1	-.00110	.00346	-.00193	.01977	.12997	-.00130	.13664	-.00066
#2	-.00076	.00182	-.00301	.00009	-.06399	-.00437	.04959	-.00532
#3	-.00037	.00038	-.00014	-.01302	.01337	-.00312	.07244	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**.03990**	**-.00047**	**-.00713**	**-.00416**	**-.00155**	**-.00282**	**.01609**
Stddev	.00011	.02208	.00015	.00734	.00167	.00446	.00425	.00127
%RSD	17.385	55.332	31.359	102.96	40.213	287.62	150.70	7.8845
#1	.00065	.03197	-.00031	-.00456	-.00533	.00097	.00195	.01464
#2	.00055	.02288	-.00051	-.01540	-.00224	.00108	-.00421	.01696
#3	.00078	.06484	-.00059	-.00142	-.00490	-.00670	-.00621	.01668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBW 76 Acquired: 6/24/2016 11:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**-.00012**	**-.00291**	**.00062**	**-.00065**	**.00076**	**.00063**
Stddev	.00117	.00017	.00323	.00163	.00060	.00007	.00005
%RSD	281.50	146.61	111.08	263.50	92.819	8.5570	7.9907
#1	.00066	.00000	-.00316	-.00124	-.00007	.00071	.00069
#2	-.00166	-.00004	-.00601	.00179	-.00127	.00074	.00060
#3	-.00025	-.00031	.00044	.00131	-.00060	.00084	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9158.3**	**58514.**	**3173.6**
Stddev	21.5	54.	54.1
%RSD	.23481	.09167	1.7045
#1	9170.2	58456.	3116.8
#2	9171.2	58527.	3224.6
#3	9133.5	58561.	3179.5

Approved: June 25, 2016

Sample Name: LCSW 76 Acquired: 6/24/2016 11:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19957	5.0577	.20359	.97778	.51970	.02459	5.2560	.02583
Stddev	.00111	.0209	.00144	.00585	.00573	.00009	.0253	.00026
%RSD	.55649	.41409	.70902	.59861	1.1018	.38272	.48154	.99696
#1	.19952	5.0735	.20526	.97949	.51449	.02469	5.2312	.02570
#2	.19848	5.0657	.20267	.98260	.51879	.02457	5.2550	.02613
#3	.20070	5.0340	.20285	.97127	.52583	.02451	5.2818	.02566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10438	.25143	.25975	2.0526	25.715	.51843	5.1244	.25887
Stddev	.00049	.00212	.00051	.0472	.222	.00558	.0767	.00446
%RSD	.46631	.84222	.19672	2.2997	.86399	1.0771	1.4961	1.7214
#1	.10490	.25326	.25929	2.0703	25.495	.51419	5.0400	.25801
#2	.10428	.25193	.25965	1.9991	25.711	.51635	5.1897	.25491
#3	.10394	.24911	.26030	2.0884	25.939	.52476	5.1436	.26370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53107	25.841	.25948	4.9583	.25768	.61986	.20199	2.6208
Stddev	.00128	.248	.00088	.0110	.00363	.00187	.00566	.0027
%RSD	.24060	.95967	.33951	.22193	1.4073	.30098	2.7997	.10443
#1	.53215	25.579	.25869	4.9612	.25468	.61882	.19650	2.6225
#2	.53139	25.870	.26043	4.9675	.25665	.62201	.20780	2.6222
#3	.52966	26.073	.25932	4.9461	.26171	.61875	.20168	2.6176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSW 76 Acquired: 6/24/2016 11:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51623**	**.53123**	**.52244**	**.25565**	**.49959**	**.51393**	**.00579**
Stddev	.00132	.00381	.00132	.00319	.00144	.00042	.00111
%RSD	.25652	.71784	.25180	1.2488	.28878	.08123	19.246
#1	.51555	.52808	.52357	.25635	.50112	.51432	.00458
#2	.51775	.53013	.52276	.25844	.49939	.51397	.00604
#3	.51538	.53547	.52100	.25217	.49826	.51349	.00677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9055.9**	**57815.**	**3183.8**
Stddev	4.9	347.	20.8
%RSD	.05361	.60036	.65296
#1	9054.8	57514.	3207.6
#2	9061.2	57737.	3174.7
#3	9051.7	58195.	3169.1

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:52:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.01913	.00045	.00564	.00075	.00006	.03446	.00003
Stddev	.00067	.00249	.00285	.00093	.00023	.00008	.05634	.00010
%RSD	248.40	13.009	640.39	16.412	30.810	153.80	163.51	360.07
#1	-.00005	.01749	.00372	.00458	.00101	.00001	.06139	-.00008
#2	-.00018	.01791	-.00146	.00604	.00070	.00015	-.03030	.00007
#3	.00104	.02200	-.00093	.00630	.00056	.00000	.07228	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00253	-.00156	-.00596	.16777	.00070	.01889	-.00191
Stddev	.00044	.00121	.00070	.01626	.08879	.00348	.08939	.00126
%RSD	226.82	47.714	44.960	272.74	52.925	500.27	473.10	66.049
#1	-.00068	.00392	-.00085	-.00089	.18512	.00292	-.08304	-.00336
#2	-.00006	.00176	-.00226	-.02415	.07158	-.00331	.08391	-.00130
#3	.00016	.00191	-.00157	.00716	.24660	.00248	.05581	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	146.88	-.00010	-.00997	-.00192	-.00060	.00086	.01689
Stddev	.00007	2.32	.00022	.01062	.00306	.00058	.00486	.00219
%RSD	5.9044	1.5789	217.75	106.58	159.22	97.608	562.25	12.982
#1	.00123	147.49	-.00010	-.00418	.00110	-.00085	.00099	.01941
#2	.00122	144.32	-.00032	-.02223	-.00503	-.00101	-.00405	.01582
#3	.00135	148.83	.00012	-.00350	-.00184	.00007	.00565	.01544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:52:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00019	.00465	-.00056	-.00077	.00385	.00047
Stddev	.00062	.00009	.00622	.00067	.00006	.00008	.00058
%RSD	351.13	48.859	133.64	119.24	7.9259	2.1598	122.28
#1	-.00018	.00019	.00196	-.00117	-.00080	.00376	.00110
#2	.00090	.00028	.00023	-.00067	-.00082	.00387	.00035
#3	-.00018	.00010	.01176	.00016	-.00070	.00392	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9082.3	57649.	3191.0
Stddev	16.5	168.	36.6
%RSD	.18193	.29213	1.1475
#1	9087.4	57544.	3194.2
#2	9063.8	57561.	3225.9
#3	9095.7	57844.	3152.9

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00681**	**-.00106**	**.00396**	**-.00038**	**.00008**	**.00787**
Stddev	.00115	.00552	.00081	.00188	.00038	.00004	.02622
%RSD	428.61	81.084	76.687	47.340	102.50	53.257	333.03
#1	.00038	.01319	-.00187	.00403	-.00074	.00010	-.00305
#2	-.00094	.00367	-.00107	.00205	.00003	.00010	-.01112
#3	.00136	.00358	-.00024	.00580	-.00042	.00003	.03779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00070**	**.00137**	**-.00027**	**-.00002**	**.15945**	**-.00128**
Stddev	.00010	.00002	.00054	.00110	.02466	.06888	.00479
%RSD	101.48	2.8007	39.168	401.57	161320.	43.197	373.14
#1	-.00002	-.00067	.00075	-.00109	-.02191	.10599	.00293
#2	.00017	-.00071	.00165	-.00072	-.00485	.13518	-.00650
#3	.00015	-.00071	.00170	.00098	.02671	.23717	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01684**	F **-.00418**	**.00067**	**.09707**	**-.00070**	**-.01284**	**.00022**
Stddev	.07248	.00187	.00051	.02145	.00086	.00271	.00131
%RSD	430.41	44.681	75.988	22.093	121.92	21.113	591.13
#1	-.09127	-.00633	.00026	.09161	-.00137	-.01596	.00169
#2	-.01277	-.00318	.00124	.12072	.00026	-.01112	-.00022
#3	.05352	-.00303	.00051	.07889	-.00100	-.01143	-.00081
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	-.00165	.01154	-.00016	-.00000	.00524	-.00258
Stddev	.00243	.00564	.00134	.00055	.00028	.00100	.00016
%RSD	433.82	342.87	11.581	341.26	38088.	19.138	6.0823
#1	.00049	-.00470	.01307	-.00007	.00005	.00482	-.00263
#2	-.00334	.00486	.01061	.00034	.00025	.00451	-.00270
#3	.00117	-.00510	.01094	-.00075	-.00031	.00638	-.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00082	.00321	.00040
Stddev	.00090	.00006	.00064
%RSD	109.84	1.7754	160.28
#1	-.00106	.00319	-.00006
#2	-.00159	.00327	.00013
#3	.00017	.00316	.00114
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9251.2	59193.	3228.6
Stddev	29.0	219.	50.6
%RSD	.31309	.36916	1.5681
#1	9282.5	58943.	3171.4
#2	9245.5	59348.	3246.5
#3	9225.4	59289.	3267.8

Approved: June 25, 2016

Sample Name: L1606115101 Acquired: 6/24/2016 12:00:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.15830	.00196	.12061	.07888	-.00001	37.815	.00010
Stddev	.00120	.00530	.00056	.00140	.00081	.00003	.248	.00022
%RSD	304.15	3.3498	28.525	1.1602	1.0231	231.96	.65454	212.58
#1	-.00079	.16067	.00184	.12082	.07945	-.00001	38.100	.00001
#2	.00095	.15223	.00257	.12189	.07796	.00002	37.690	-.00006
#3	-.00134	.16201	.00147	.11912	.07925	-.00005	37.655	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.00290	.00097	.21119	2.5400	.00368	20.418	.06424
Stddev	.00015	.00059	.00066	.01074	.0733	.00380	.216	.00165
%RSD	27.920	20.440	67.678	5.0831	2.8878	103.15	1.0559	2.5751
#1	-.00061	.00239	.00022	.21267	2.5710	.00761	20.667	.06262
#2	-.00065	.00277	.00126	.22111	2.4562	.00340	20.289	.06593
#3	-.00037	.00355	.00144	.19979	2.5927	.00003	20.297	.06416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00311	101.77	.00045	.04117	.00135	.00380	.00157	5.3677
Stddev	.00045	.72	.00047	.00987	.00181	.00230	.00252	.0303
%RSD	14.570	.71009	104.97	23.979	133.91	60.522	159.90	.56381
#1	.00300	102.57	.00075	.03748	.00144	.00202	.00106	5.3896
#2	.00272	101.55	.00069	.05236	.00312	.00299	-.00065	5.3804
#3	.00360	101.18	-.00009	.03367	-.00050	.00640	.00431	5.3332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115101 Acquired: 6/24/2016 12:00:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.24842**	**-.00797**	**-.00198**	**.00331**	**.01122**	**.00043**
Stddev	.00079	.00184	.00414	.00305	.00081	.00007	.00023
%RSD	148.48	.74257	51.976	153.47	24.555	.58389	52.792
#1	-.00089	.25043	-.00512	-.00050	.00292	.01123	.00048
#2	.00038	.24800	-.01272	-.00549	.00277	.01128	.00018
#3	-.00108	.24682	-.00607	.00004	.00425	.01115	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9014.8**	**57274.**	**3214.0**
Stddev	3.7	444.	16.2
%RSD	.04144	.77607	.50389
#1	9010.8	56777.	3196.3
#2	9018.1	57410.	3228.0
#3	9015.6	57634.	3217.6

Approved: June 25, 2016

Sample Name: L1606115103S Acquired: 6/24/2016 12:04:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19866**	**5.2333**	**.20489**	**1.0841**	**.58829**	**.02453**	**41.795**	**.02565**
Stddev	.00248	.0391	.00312	.0094	.00934	.00022	.762	.00024
%RSD	1.2478	.74796	1.5219	.86801	1.5872	.88296	1.8223	.94310
#1	.20143	5.2782	.20405	1.0949	.59855	.02478	42.664	.02538
#2	.19665	5.2065	.20834	1.0778	.58603	.02443	41.476	.02586
#3	.19791	5.2153	.20228	1.0795	.58029	.02438	41.245	.02571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10099**	**.24641**	**.25195**	**2.2589**	**28.126**	**.51539**	**24.622**	**.31292**
Stddev	.00052	.00196	.00102	.0296	.653	.00581	.350	.00628
%RSD	.51212	.79406	.40526	1.3088	2.3212	1.1278	1.4196	2.0063
#1	.10114	.24829	.25234	2.2928	28.857	.52178	24.997	.31972
#2	.10142	.24656	.25272	2.2452	27.918	.51397	24.564	.31172
#3	.10041	.24438	.25079	2.2387	27.601	.51042	24.305	.30733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52635**	**123.51**	**.24930**	**5.0586**	**.24835**	**.61205**	**.20210**	**7.9483**
Stddev	.00263	2.21	.00102	.0099	.00401	.00458	.01142	.0147
%RSD	.50034	1.7930	.40840	.19611	1.6157	.74825	5.6519	.18492
#1	.52939	126.01	.25035	5.0677	.24616	.61628	.19120	7.9616
#2	.52472	122.75	.24832	5.0480	.25298	.61267	.20111	7.9508
#3	.52495	121.78	.24922	5.0600	.24590	.60719	.21398	7.9325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115103S Acquired: 6/24/2016 12:04:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50472	.74393	.51319	.24877	.50017	.50921	.00163
Stddev	.00229	.01406	.00107	.00330	.00462	.00094	.00046
%RSD	.45343	1.8895	.20946	1.3249	.92272	.18364	28.196
#1	.50713	.75976	.51270	.24643	.50544	.51012	.00133
#2	.50447	.73914	.51244	.24733	.49686	.50925	.00215
#3	.50257	.73289	.51442	.25254	.49821	.50826	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8967.8	56968.	3188.4
Stddev	14.4	310.	46.6
%RSD	.16024	.54356	1.4614
#1	8982.4	56611.	3137.2
#2	8953.6	57142.	3228.2
#3	8967.3	57152.	3199.9

Approved: June 25, 2016

Sample Name: L1606115104SD Acquired: 6/24/2016 12:08:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20050**	**5.5362**	**.21145**	**1.1171**	**.60094**	**.02473**	**43.628**	**.02602**
Stddev	.00367	.0392	.00196	.0038	.00661	.00023	.422	.00015
%RSD	1.8310	.70851	.92588	.33636	1.0992	.92800	.96702	.56220
#1	.20453	5.5755	.20937	1.1208	.60449	.02497	43.830	.02607
#2	.19734	5.5360	.21326	1.1133	.60501	.02469	43.911	.02586
#3	.19964	5.4970	.21172	1.1174	.59332	.02452	43.143	.02614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10332**	**.25201**	**.25751**	**2.4745**	**28.765**	**.52930**	**25.537**	**.32828**
Stddev	.00022	.00113	.00140	.0515	.250	.00229	.203	.00242
%RSD	.20838	.44890	.54386	2.0800	.86748	.43222	.79310	.73866
#1	.10312	.25327	.25864	2.4622	28.794	.52881	25.355	.33071
#2	.10331	.25107	.25594	2.5310	28.999	.53179	25.755	.32826
#3	.10355	.25171	.25796	2.4303	28.503	.52730	25.502	.32586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53696**	**128.06**	**.25435**	**5.1848**	**.25573**	**.62539**	**.20371**	**8.6826**
Stddev	.00235	1.16	.00112	.0104	.00231	.00094	.00431	.0179
%RSD	.43756	.90349	.43872	.20045	.90135	.15109	2.1170	.20639
#1	.53930	128.62	.25342	5.1916	.25485	.62446	.19905	8.6946
#2	.53698	128.84	.25558	5.1899	.25835	.62536	.20453	8.6911
#3	.53460	126.73	.25403	5.1728	.25400	.62635	.20756	8.6620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115104SD Acquired: 6/24/2016 12:08:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51403**	**.76306**	**.52079**	**.25353**	**.50800**	**.54740**	**.00120**
Stddev	.00207	.00813	.00728	.00246	.00215	.00115	.00023
%RSD	.40270	1.0651	1.3976	.96966	.42297	.21071	19.008
#1	.51525	.76972	.51741	.25073	.51047	.54816	.00120
#2	.51521	.76547	.52914	.25449	.50702	.54797	.00097
#3	.51164	.75401	.51581	.25536	.50652	.54608	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8971.1**	**57029.**	**3176.4**
Stddev	7.5	275.	37.9
%RSD	.08397	.48302	1.1936
#1	8971.7	56728.	3149.0
#2	8963.3	57269.	3160.4
#3	8978.3	57089.	3219.6

Approved: June 25, 2016

Sample Name: L1606114001 Acquired: 6/24/2016 12:11:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.02288	.00406	.04082	.07775	.00002	146.18	.00803
Stddev	.00117	.00176	.00168	.00145	.00148	.00006	1.41	.00013
%RSD	105.07	7.7135	41.352	3.5486	1.9065	431.51	.96792	1.6005
#1	-.00015	.02175	.00435	.04246	.07857	-.00005	147.59	.00799
#2	.00217	.02197	.00557	.04032	.07604	.00008	144.76	.00794
#3	.00133	.02491	.00225	.03970	.07864	.00002	146.20	.00818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00113	.15059	.00257	2.0589	.00836	2.1895	.15039
Stddev	.00020	.00056	.00328	.04967	.1178	.00105	.0405	.00204
%RSD	197.71	50.139	2.1779	1935.6	5.7222	12.511	1.8515	1.3546
#1	-.00033	.00053	.15163	.05781	2.1539	.00743	2.1519	.15272
#2	.00004	.00166	.15323	-.01173	1.9271	.00816	2.2324	.14950
#3	-.00002	.00119	.14692	-.03838	2.0957	.00949	2.1841	.14894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	4.5457	.00499	.37451	.09772	.00116	.00727	.91983
Stddev	.00011	.0157	.00049	.00549	.00291	.00520	.00545	.00530
%RSD	11.074	.34568	9.8108	1.4647	2.9765	448.88	74.937	.57580
#1	.00106	4.5461	.00536	.38066	.10096	.00620	.00098	.92472
#2	.00085	4.5299	.00444	.37010	.09534	-.00419	.01057	.92057
#3	.00099	4.5613	.00518	.37278	.09685	.00146	.01027	.91421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114001 Acquired: 6/24/2016 12:11:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.43857**	**-.02336**	**-.00142**	**-.00154**	**.50322**	**.00005**
Stddev	.00104	.00448	.00196	.00344	.00065	.00330	.00027
%RSD	131.08	1.0215	8.3791	242.90	42.008	.65521	545.16
#1	.00012	.44211	-.02243	-.00473	-.00200	.50529	-.00008
#2	-.00193	.43353	-.02204	-.00165	-.00182	.50495	.00036
#3	-.00058	.44006	-.02561	.00214	-.00080	.49942	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9099.5**	**58355.**	**3254.5**
Stddev	20.8	103.	52.9
%RSD	.22848	.17565	1.6262
#1	9103.9	58241.	3200.3
#2	9076.9	58438.	3306.0
#3	9117.7	58387.	3257.0

Approved: June 25, 2016

Sample Name: L1606114001SDL Acquired: 6/24/2016 12:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574055-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.01331	.00099	.00780	.01560	.00000	29.557	.00158
Stddev	.00087	.00321	.00169	.00203	.00098	.00002	.054	.00027
%RSD	236.49	24.147	171.32	26.026	6.2683	4328.2	.18417	17.124
#1	.00062	.01694	-.00029	.00636	.01450	-.00002	29.529	.00183
#2	-.00104	.01084	.00035	.00692	.01636	.00002	29.620	.00130
#3	-.00069	.01214	.00290	.01013	.01596	.00000	29.522	.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00132	.03151	.00499	.41194	.00149	.47888	.02876
Stddev	.00033	.00049	.00083	.01420	.07529	.00168	.04968	.00203
%RSD	299.16	36.877	2.6222	284.58	18.277	112.60	10.373	7.0541
#1	.00017	.00076	.03108	.02107	.49470	.00200	.52478	.03053
#2	-.00047	.00152	.03098	-.00580	.34749	-.00038	.48574	.02654
#3	-.00003	.00167	.03246	-.00031	.39365	.00285	.42614	.02921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.89244	.00037	.07391	.02034	.00194	-.00119	.19852
Stddev	.00030	.03461	.00035	.00616	.00060	.00167	.00867	.00138
%RSD	58.379	3.8778	96.553	8.3343	2.9674	86.300	729.26	.69508
#1	.00070	.85307	.00064	.08066	.02076	.00316	-.00830	.19746
#2	.00017	.90617	.00049	.07249	.02062	.00003	.00847	.19802
#3	.00070	.91807	-.00003	.06859	.01965	.00263	-.00373	.20008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114001SDL Acquired: 6/24/2016 12:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574055-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.08546**	**-.00162**	**-.00038**	**-.00143**	**.10505**	**.00026**
Stddev	.00052	.00084	.00796	.00370	.00041	.00083	.00026
%RSD	132.53	.98750	491.04	963.99	29.011	.78998	99.384
#1	-.00083	.08458	.00175	-.00262	-.00159	.10430	-.00004
#2	.00018	.08626	.00410	-.00242	-.00096	.10490	.00043
#3	-.00052	.08553	-.01071	.00389	-.00173	.10594	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9347.7**	**59748.**	**3254.8**
Stddev	37.4	288.	18.3
%RSD	.39956	.48239	.56188
#1	9390.7	59990.	3243.3
#2	9323.6	59429.	3245.1
#3	9328.6	59825.	3275.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 12:19:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42650**	**10.713**	**.42746**	**.52823**	**1.0913**	**.05212**	**10.834**
Stddev	.00317	.052	.00096	.00261	.0070	.00012	.031
%RSD	.74327	.48970	.22392	.49473	.63946	.22148	.28418
#1	.43016	10.771	.42726	.53089	1.0867	.05225	10.857
#2	.42452	10.698	.42850	.52814	1.0879	.05204	10.799
#3	.42483	10.670	.42662	.52566	1.0994	.05205	10.846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05499**	**.21760**	**.52572**	**.54475**	**4.2777**	**54.613**	**1.0769**
Stddev	.00032	.00106	.00228	.00053	.0326	.264	.0102
%RSD	.58459	.48849	.43328	.09756	.76212	.48255	.94636
#1	.05491	.21872	.52812	.54439	4.2464	54.561	1.0684
#2	.05534	.21660	.52545	.54450	4.2752	54.379	1.0742
#3	.05472	.21750	.52359	.54536	4.3115	54.899	1.0882
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.527**	**.54567**	**1.0931**	**54.266**	**.54162**	**10.766**	**.54062**
Stddev	.021	.00325	.0051	.187	.00238	.011	.00023
%RSD	.20378	.59558	.46292	.34370	.43925	.10654	.04330
#1	10.503	.54270	1.0987	54.187	.54208	10.764	.54087
#2	10.533	.54517	1.0919	54.131	.53904	10.778	.54059
#3	10.545	.54914	1.0888	54.479	.54373	10.755	.54040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 12:19:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2945**	**.43428**	F **5.6098**	**1.0799**	**1.0949**	F **1.1021**	**.54481**
Stddev	.0041	.00361	.0019	.0026	.0045	.0067	.00469
%RSD	.31714	.83239	.03336	.24374	.40814	.60549	.86133
#1	1.2974	.43838	5.6080	1.0827	1.0928	1.1058	.54545
#2	1.2963	.43289	5.6096	1.0794	1.0919	1.0944	.54914
#3	1.2898	.43156	5.6117	1.0775	1.1000	1.1060	.53983
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value			5.0000			1.0000	
Range			10.000%			10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0454**	**1.0803**	**1.0570**
Stddev	.0034	.0013	.0088
%RSD	.32628	.12126	.82774
#1	1.0490	1.0816	1.0630
#2	1.0452	1.0790	1.0470
#3	1.0422	1.0802	1.0611
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8984.8**	**56710.**	**3113.2**
Stddev	45.5	317.	15.4
%RSD	.50651	.55948	.49324
#1	8944.0	56442.	3100.3
#2	9033.9	56628.	3130.2
#3	8976.6	57060.	3109.1

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 12:23:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00344	.00145	.00294	.00035	-.00004	.02215	-.00021
Stddev	.00041	.00219	.00240	.00079	.00121	.00010	.03194	.00009
%RSD	124.54	63.593	165.80	26.762	344.83	259.48	144.18	42.051
#1	.00029	.00529	.00096	.00384	-.00003	.00006	.00228	-.00030
#2	-.00006	.00400	.00406	.00262	.00171	-.00003	.00518	-.00013
#3	.00075	.00102	-.00067	.00237	-.00062	-.00014	.05900	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.00201	-.00150	-.01822	.10568	.00099	.05713	-.00256
Stddev	.00021	.00106	.00016	.00191	.02617	.00205	.07243	.00079
%RSD	59.613	52.971	10.403	10.463	24.764	207.53	126.79	30.925
#1	-.00051	.00267	-.00144	-.02010	.13480	-.00038	.04350	-.00234
#2	-.00011	.00078	-.00167	-.01829	.08413	-.00000	.13541	-.00189
#3	-.00044	.00258	-.00137	-.01629	.09812	.00334	-.00752	-.00343
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	.06866	.00015	-.00196	-.00068	.00350	-.00029	.00611
Stddev	.00028	.01714	.00016	.00299	.00126	.00201	.00292	.00286
%RSD	7.7510	24.965	113.48	152.53	184.92	57.392	1023.3	46.714
#1	.00336	.04977	.00032	-.00175	-.00073	.00541	.00071	.00898
#2	.00392	.08323	.00011	.00092	.00060	.00371	.00201	.00327
#3	.00361	.07297	-.00000	-.00506	-.00193	.00140	-.00357	.00609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 12:23:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.00010**	**.00153**	**.00025**	**-.00049**	**.00022**	**.00163**
Stddev	.00020	.00030	.00816	.00155	.00055	.00013	.00062
%RSD	35.071	304.81	532.55	618.43	111.20	57.646	37.867
#1	-.00034	-.00011	.00782	-.00052	-.00106	.00017	.00094
#2	-.00065	.00044	.00447	.00204	-.00045	.00013	.00184
#3	-.00071	-.00004	-.00769	-.00077	.00003	.00037	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9479.9**	**60625.**	**3266.1**
Stddev	27.2	250.	24.0
%RSD	.28740	.41169	.73490
#1	9455.0	60338.	3293.8
#2	9475.6	60791.	3252.7
#3	9509.0	60746.	3251.7

Approved: June 25, 2016

Sample Name: L1606114001PS Acquired: 6/24/2016 12:27:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574055-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20275**	**5.1419**	**.21333**	**1.0253**	**.59504**	**.02467**	**139.85**	**.03335**
Stddev	.00382	.0464	.00182	.0020	.00731	.00012	1.53	.00017
%RSD	1.8833	.90229	.85200	.19620	1.2293	.48386	1.0954	.51011
#1	.20665	5.1917	.21522	1.0245	.60106	.02477	141.22	.03328
#2	.20258	5.0999	.21318	1.0237	.58690	.02454	138.19	.03323
#3	.19902	5.1341	.21159	1.0275	.59717	.02471	140.14	.03355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10344**	**.25015**	**.39465**	**2.0433**	**28.277**	**.53767**	**7.1211**	**.39716**
Stddev	.00038	.00249	.00031	.0120	.363	.00734	.1390	.00381
%RSD	.37083	.99698	.07885	.58514	1.2820	1.3649	1.9524	.95928
#1	.10301	.25285	.39486	2.0474	28.575	.54252	7.2778	.40080
#2	.10376	.24793	.39481	2.0298	27.873	.52923	7.0126	.39320
#3	.10354	.24968	.39430	2.0526	28.383	.54126	7.0729	.39748
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53753**	**30.414**	**.25886**	**5.5881**	**.34388**	**.63595**	**.21104**	**3.5188**
Stddev	.00106	.282	.00133	.0038	.00319	.00220	.00441	.0017
%RSD	.19634	.92682	.51475	.06847	.92887	.34549	2.0903	.04959
#1	.53826	30.705	.25820	5.5918	.34514	.63840	.21585	3.5208
#2	.53800	30.142	.26040	5.5842	.34625	.63530	.21010	3.5182
#3	.53632	30.394	.25800	5.5882	.34025	.63416	.20718	3.5175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114001PS Acquired: 6/24/2016 12:27:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574055-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51595**	**.91725**	**.50579**	**.25689**	**.50349**	**.95723**	**.00511**
Stddev	.00180	.01150	.00924	.00144	.00222	.00117	.00123
%RSD	.34968	1.2533	1.8261	.55957	.44179	.12188	24.042
#1	.51532	.92818	.50881	.25546	.50563	.95817	.00409
#2	.51798	.90526	.49543	.25686	.50119	.95761	.00476
#3	.51455	.91830	.51315	.25834	.50365	.95593	.00647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8910.4**	**56997.**	**3158.7**
Stddev	14.9	491.	36.1
%RSD	.16773	.86203	1.1429
#1	8920.8	56440.	3132.1
#2	8917.3	57366.	3199.8
#3	8893.3	57187.	3144.2

Approved: June 25, 2016

Sample Name: L1606114003 Acquired: 6/24/2016 12:30:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.01986	.00301	.09457	.03965	-.00002	99.687	.00252
Stddev	.00131	.00825	.00228	.00100	.00036	.00012	.899	.00019
%RSD	294.41	41.551	75.602	1.0569	.91914	587.37	.90168	7.4764
#1	.00190	.01049	.00563	.09524	.04006	.00003	99.938	.00273
#2	.00009	.02603	.00186	.09504	.03938	.00007	98.690	.00241
#3	-.00065	.02306	.00154	.09342	.03950	-.00016	100.43	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.00208	.10263	.00520	1.9156	.00501	1.6642	.08675
Stddev	.00011	.00029	.00205	.01228	.0169	.00341	.0459	.00101
%RSD	52.022	14.106	2.0016	236.15	.88223	68.128	2.7554	1.1666
#1	-.00011	.00239	.10453	-.00392	1.9128	.00145	1.6708	.08733
#2	-.00033	.00205	.10292	.01917	1.9003	.00533	1.6155	.08558
#3	-.00020	.00181	.10045	.00036	1.9337	.00825	1.7065	.08735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00442	143.17	.00079	-.00261	.00210	.00294	.00376	1.6066
Stddev	.00010	1.44	.00082	.00325	.00305	.00131	.00329	.0083
%RSD	2.2634	1.0055	104.33	124.46	145.56	44.519	87.514	.51571
#1	.00431	143.63	.00159	-.00023	.00390	.00415	.00530	1.6124
#2	.00444	141.56	.00083	-.00129	-.00143	.00311	-.00002	1.6103
#3	.00450	144.33	-.00005	-.00631	.00382	.00155	.00599	1.5971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114003 Acquired: 6/24/2016 12:30:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.24737	-.01388	-.00120	-.00079	.01628	.00040
Stddev	.00066	.00187	.00938	.00377	.00043	.00034	.00030
%RSD	1229.4	.75472	67.590	313.73	54.177	2.1058	74.950
#1	-.00005	.24839	-.01059	-.00290	-.00056	.01656	.00005
#2	-.00054	.24522	-.00658	-.00383	-.00128	.01637	.00055
#3	.00076	.24851	-.02446	.00312	-.00053	.01589	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8916.0	56782.	3182.3
Stddev	15.2	240.	28.8
%RSD	.17040	.42235	.90629
#1	8911.2	56706.	3188.3
#2	8903.7	56590.	3207.7
#3	8933.0	57051.	3151.0

Approved: June 25, 2016

Sample Name: PBW 61 Acquired: 6/24/2016 12:34:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00076	-.00110	.00309	.00002	-.00001	.04326	.00013
Stddev	.00120	.00826	.00369	.00133	.00052	.00010	.01711	.00011
%RSD	135.53	1088.1	334.09	43.079	2914.6	1198.4	39.552	82.637
#1	.00082	.00363	-.00464	.00435	-.00058	.00006	.02365	.00001
#2	.00212	.00720	-.00139	.00170	.00038	-.00013	.05514	.00017
#3	-.00028	-.00856	.00272	.00323	.00025	.00004	.05100	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.00182	-.00080	-.00810	.10020	-.00237	-.01055	-.00142
Stddev	.00016	.00010	.00134	.00626	.03798	.00342	.06161	.00080
%RSD	28.563	5.2588	167.88	77.374	37.898	144.42	583.87	56.732
#1	-.00040	.00172	-.00029	-.01312	.14090	.00069	-.02862	-.00057
#2	-.00073	.00183	-.00231	-.01009	.09401	-.00173	.05807	-.00217
#3	-.00055	.00191	.00021	-.00108	.06571	-.00606	-.06110	-.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.11467	.00021	-.00772	.00041	.00316	.00139	.00970
Stddev	.00036	.04360	.00087	.00814	.00175	.00439	.00571	.00153
%RSD	54.368	38.021	410.51	105.39	431.56	139.19	411.25	15.736
#1	.00069	.16070	-.00007	-.00034	.00056	.00189	-.00497	.00794
#2	.00029	.10932	.00118	-.00638	-.00141	-.00047	.00607	.01053
#3	.00101	.07400	-.00048	-.01645	.00207	.00804	.00307	.01063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBW 61 Acquired: 6/24/2016 12:34:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00027	-.00192	-.00257	-.00043	.00076	.00010
Stddev	.00031	.00059	.00385	.00044	.00062	.00010	.00031
%RSD	110.25	220.35	200.29	17.018	145.00	13.528	301.29
#1	.00056	.00090	-.00630	-.00275	.00014	.00080	.00026
#2	-.00005	.00016	.00092	-.00207	-.00033	.00065	.00030
#3	.00034	-.00026	-.00038	-.00288	-.00109	.00084	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9302.1	60410.	3281.7
Stddev	66.0	229.	39.4
%RSD	.71003	.37905	1.2004
#1	9378.1	60509.	3291.2
#2	9269.4	60574.	3315.5
#3	9258.7	60149.	3238.5

Approved: June 25, 2016

Sample Name: LCSW 61 Acquired: 6/24/2016 12:38:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20555	5.1784	.21096	1.0013	.53967	.02506	5.4631	.02661
Stddev	.00138	.0089	.00216	.0010	.00107	.00006	.0285	.00023
%RSD	.67151	.17182	1.0226	.10140	.19803	.23645	.52091	.86362
#1	.20492	5.1749	.20961	1.0025	.54073	.02507	5.4711	.02660
#2	.20459	5.1885	.21345	1.0007	.53859	.02511	5.4315	.02684
#3	.20713	5.1718	.20982	1.0007	.53967	.02500	5.4867	.02638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10709	.25748	.26833	2.1158	26.774	.53895	5.2920	.26712
Stddev	.00110	.00150	.00102	.0163	.146	.00177	.0899	.00207
%RSD	1.0293	.58418	.37911	.77089	.54628	.32794	1.6996	.77309
#1	.10822	.25770	.26921	2.1123	26.910	.54072	5.3158	.26847
#2	.10704	.25587	.26857	2.1015	26.620	.53718	5.1925	.26474
#3	.10601	.25886	.26722	2.1335	26.793	.53894	5.3676	.26814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54645	26.922	.26606	5.0982	.26690	.63372	.20697	2.6537
Stddev	.00284	.049	.00199	.0187	.00116	.00467	.00438	.0104
%RSD	.51896	.18215	.74936	.36751	.43630	.73649	2.1177	.39305
#1	.54806	26.978	.26787	5.1053	.26563	.63639	.20777	2.6597
#2	.54811	26.888	.26639	5.1123	.26792	.63643	.21090	2.6598
#3	.54317	26.899	.26392	5.0769	.26714	.62833	.20224	2.6417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSW 61 Acquired: 6/24/2016 12:38:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52855	.54930	.53444	.26386	.50928	.52661	.00239
Stddev	.00351	.00114	.00402	.00245	.00130	.00227	.00045
%RSD	.66494	.20774	.75201	.92725	.25500	.43047	18.960
#1	.53111	.55029	.53018	.26437	.51078	.52813	.00281
#2	.53000	.54956	.53500	.26601	.50848	.52769	.00191
#3	.52455	.54805	.53816	.26120	.50859	.52400	.00243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8971.4	57490.	3144.1
Stddev	22.2	244.	32.0
%RSD	.24747	.42367	1.0188
#1	8950.2	57763.	3107.1
#2	8969.5	57293.	3162.4
#3	8994.5	57415.	3162.7

Approved: June 25, 2016

Sample Name: L1606073201 Acquired: 6/24/2016 12:42:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.02820	.00033	.03332	.25570	.00005	29.348
Stddev	.00081	.00477	.00048	.00258	.00135	.00008	.107
%RSD	1060.6	16.901	146.21	7.7292	.52666	149.81	.36550
#1	-.00060	.02574	.00042	.03159	.25466	.00010	29.343
#2	.00085	.02517	.00076	.03208	.25522	.00010	29.244
#3	-.00048	.03370	-.00019	.03628	.25722	-.00004	29.458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00130	.00737	-.00082	.13349	1.5334	.02731
Stddev	.00012	.00035	.00052	.00188	.00764	.0113	.00141
%RSD	74.130	26.900	7.0457	230.52	5.7259	.73635	5.1517
#1	.00029	.00115	.00727	-.00281	.12571	1.5462	.02848
#2	.00008	.00170	.00692	-.00056	.14099	1.5249	.02772
#3	.00010	.00105	.00794	.00093	.13376	1.5292	.02575
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.404	.04547	.00090	F 358.79	.00311	1.6349	.00068
Stddev	.236	.00197	.00021	5.43	.00059	.0190	.00121
%RSD	.60011	4.3318	23.625	1.5145	19.047	1.1597	178.50
#1	39.143	.04349	.00067	363.98	.00244	1.6526	-.00059
#2	39.604	.04743	.00109	359.24	.00355	1.6374	.00080
#3	39.464	.04549	.00094	353.14	.00335	1.6149	.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606073201 Acquired: 6/24/2016 12:42:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**-.00067**	**16.076**	**-.00001**	**.55040**	**-.00810**	**-.00164**
Stddev	.00164	.00536	.145	.00052	.00274	.00406	.00137
%RSD	293.19	800.42	.90295	6770.2	.49860	50.069	83.155
#1	.00126	.00045	16.195	.00001	.55128	-.00732	-.00243
#2	-.00103	.00404	16.119	.00051	.54733	-.01249	-.00007
#3	-.00191	-.00650	15.914	-.00054	.55260	-.00449	-.00243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00202**	**.11146**	**.00024**
Stddev	.00089	.00179	.00037
%RSD	44.331	1.6093	152.52
#1	-.00107	.11286	-.00010
#2	-.00215	.11208	.00019
#3	-.00284	.10944	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8764.9**	**55502.**	**3127.7**
Stddev	30.2	118.	26.0
%RSD	.34400	.21327	.83247
#1	8763.7	55639.	3097.6
#2	8735.4	55438.	3142.4
#3	8795.6	55430.	3143.0

Approved: June 25, 2016

Sample Name: L1606079601 Acquired: 6/24/2016 12:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	3.2297	-.00034	1.2911	.04906	.00162	186.51	.23531
Stddev	.00208	.0109	.00397	.0030	.00128	.00007	1.50	.00040
%RSD	132.18	.33690	1166.8	.23101	2.6157	4.4542	.80345	.17130
#1	.00186	3.2175	-.00327	1.2892	.05043	.00168	188.24	.23541
#2	-.00064	3.2328	.00418	1.2895	.04885	.00163	185.56	.23565
#3	.00350	3.2386	-.00192	1.2945	.04789	.00154	185.75	.23486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00732	.00840	.45442	1.2197	3.3021	.04141	30.000	3.1182
Stddev	.00026	.00095	.00241	.0142	.0440	.00123	.108	.0244
%RSD	3.6023	11.313	.53119	1.1615	1.3334	2.9646	.35889	.78321
#1	.00761	.00870	.45446	1.2311	3.3071	.04020	30.001	3.1462
#2	.00710	.00734	.45681	1.2038	3.2557	.04266	30.107	3.1009
#3	.00725	.00917	.45198	1.2241	3.3434	.04138	29.892	3.1075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	11.561	.03416	.23588	1.4062	.27976	.00687	32.216
Stddev	.00020	.096	.00128	.00330	.0033	.00623	.00652	.075
%RSD	6.5058	.82760	3.7349	1.4007	.23470	2.2270	94.974	.23255
#1	.00335	11.669	.03517	.23243	1.4095	.28680	.00689	32.264
#2	.00296	11.487	.03459	.23620	1.4062	.27751	.01338	32.254
#3	.00305	11.527	.03273	.23902	1.4029	.27496	.00033	32.130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079601 Acquired: 6/24/2016 12:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00507	.47885	.00429	-.00276	-.00000	9.0027	.00215
Stddev	.00101	.00357	.00463	.00394	.00060	.0349	.00057
%RSD	19.835	.74545	107.79	142.73	15473.	.38752	26.596
#1	.00531	.48291	.00292	-.00082	-.00067	9.0287	.00188
#2	.00397	.47741	.00051	-.00017	.00016	9.0163	.00176
#3	.00594	.47623	.00946	-.00729	.00049	8.9631	.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8969.1	57515.	3201.7
Stddev	26.5	246.	24.8
%RSD	.29529	.42843	.77548
#1	8939.3	57271.	3173.1
#2	8989.8	57764.	3217.4
#3	8978.3	57511.	3214.7

Approved: June 25, 2016

Sample Name: L1606079602S Acquired: 6/24/2016 12:50:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20637**	**8.4667**	**.21215**	**2.3299**	**.55765**	**.02670**	**211.15**
Stddev	.00096	.0253	.00204	.0051	.00324	.00014	1.09
%RSD	.46531	.29867	.96304	.22080	.58025	.52132	.51779
#1	.20600	8.4950	.21018	2.3354	.56090	.02681	212.24
#2	.20746	8.4589	.21426	2.3291	.55443	.02675	210.05
#3	.20566	8.4462	.21202	2.3252	.55761	.02655	211.18
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22906**	**.10963**	**.25719**	**.36273**	**3.8155**	**30.167**	**.57896**
Stddev	.00047	.00050	.00101	.00163	.0076	.190	.00294
%RSD	.20432	.45993	.39435	.45055	.20055	.62859	.50762
#1	.22922	.11004	.25752	.36247	3.8169	30.297	.58056
#2	.22942	.10977	.25800	.36448	3.8224	29.949	.57557
#3	.22853	.10907	.25606	.36125	3.8073	30.255	.58076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**37.556**	**3.7302**	**.53671**	**36.032**	**.27262**	**5.4147**	**1.3723**
Stddev	.123	.0178	.00271	.149	.00159	.0196	.0051
%RSD	.32741	.47715	.50439	.41445	.58430	.36193	.37180
#1	37.642	3.7506	.53723	36.198	.27244	5.4232	1.3668
#2	37.610	3.7181	.53911	35.908	.27429	5.4287	1.3769
#3	37.415	3.7219	.53377	35.990	.27112	5.3923	1.3731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 25, 2016

Sample Name: L1606079602S Acquired: 6/24/2016 12:50:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.83295**	**.19904**	F **39.559**	**.51924**	**1.0206**	**.52855**	**.25056**
Stddev	.00381	.00362	.080	.00060	.0057	.00488	.00264
%RSD	.45758	1.8206	.20246	.11565	.55920	.92319	1.0541
#1	.83134	.19546	39.613	.51864	1.0248	.53056	.24812
#2	.83021	.20271	39.596	.51984	1.0141	.53210	.25336
#3	.83731	.19894	39.467	.51925	1.0230	.52298	.25020
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50387**	**8.9533**	**.00345**
Stddev	.00127	.0255	.00012
%RSD	.25293	.28527	3.4468
#1	.50516	8.9684	.00349
#2	.50262	8.9677	.00353
#3	.50382	8.9238	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8874.4**	**56986.**	**3197.8**
Stddev	22.9	183.	31.1
%RSD	.25749	.32104	.97251
#1	8874.8	56794.	3162.9
#2	8851.3	57004.	3208.1
#3	8897.0	57159.	3222.4

Approved: June 25, 2016

Sample Name: L1606079603SD Acquired: 6/24/2016 12:53:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20348**	**8.3907**	**.20803**	**2.3205**	**.55659**	**.02675**	**210.01**
Stddev	.00067	.0070	.00227	.0041	.00308	.00007	1.03
%RSD	.32994	.08394	1.0916	.17615	.55344	.27317	.49200
#1	.20367	8.3952	.20541	2.3200	.55995	.02674	211.18
#2	.20273	8.3942	.20930	2.3249	.55593	.02682	209.61
#3	.20403	8.3826	.20938	2.3168	.55390	.02668	209.24
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22784**	**.10941**	**.25693**	**.36070**	**3.7620**	**30.137**	**.57482**
Stddev	.00074	.00005	.00145	.00097	.0431	.085	.00367
%RSD	.32525	.04726	.56542	.26971	1.1460	.28231	.63776
#1	.22787	.10946	.25585	.36143	3.8070	30.228	.57882
#2	.22856	.10941	.25858	.36107	3.7577	30.060	.57405
#3	.22708	.10936	.25635	.35959	3.7211	30.123	.57161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**37.283**	**3.7093**	**.53679**	**35.887**	**.27192**	**5.4059**	**1.3646**
Stddev	.065	.0166	.00208	.175	.00166	.0027	.0036
%RSD	.17309	.44772	.38783	.48671	.61140	.04904	.26708
#1	37.346	3.7273	.53879	36.088	.27204	5.4084	1.3687
#2	37.217	3.6945	.53693	35.772	.27352	5.4063	1.3630
#3	37.287	3.7060	.53464	35.802	.27020	5.4031	1.3620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 25, 2016

Sample Name: L1606079603SD Acquired: 6/24/2016 12:53:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.82814**	**.20815**	F **39.014**	**.51935**	**1.0179**	**.52731**	**.25200**
Stddev	.00575	.00609	.081	.00143	.0071	.00449	.00183
%RSD	.69405	2.9239	.20860	.27470	.69999	.85144	.72692
#1	.83047	.20229	39.103	.52035	1.0259	.52320	.25130
#2	.83236	.21444	38.997	.52000	1.0123	.53210	.25063
#3	.82159	.20773	38.943	.51772	1.0154	.52662	.25408
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50350**	**8.8879**	**.00305**
Stddev	.00153	.0209	.00040
%RSD	.30487	.23506	13.114
#1	.50377	8.9078	.00308
#2	.50488	8.8897	.00344
#3	.50184	8.8661	.00264
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8883.7**	**57187.**	**3189.9**
Stddev	10.5	142.	22.6
%RSD	.11868	.24879	.70751
#1	8871.6	57137.	3171.1
#2	8889.1	57077.	3183.6
#3	8890.5	57348.	3214.9

Approved: June 25, 2016

Sample Name: L1606073202 Acquired: 6/24/2016 12:57:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.02813**	**.00029**	**.04299**	**.22283**	**-.00000**	**25.162**
Stddev	.00134	.00280	.00082	.00132	.00277	.00003	.241
%RSD	252.84	9.9565	284.55	3.0648	1.2409	1017.5	.95893
#1	.00086	.02578	-.00044	.04447	.22588	-.00003	25.435
#2	-.00095	.03123	.00118	.04255	.22048	-.00000	24.976
#3	.00168	.02737	.00013	.04195	.22213	.00002	25.076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.00120**	**.00613**	**.00149**	**.12035**	**1.4886**	**.02096**
Stddev	.00024	.00046	.00062	.00013	.01000	.0590	.00309
%RSD	67.894	38.073	10.067	8.8118	8.3106	3.9648	14.734
#1	.00061	.00150	.00611	.00148	.12839	1.5495	.01933
#2	.00031	.00067	.00552	.00163	.10915	1.4316	.01904
#3	.00014	.00141	.00675	.00137	.12352	1.4846	.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**34.325**	**.04040**	**.00125**	F **349.63**	**.00292**	**1.6666**	**-.00030**
Stddev	.171	.00030	.00019	3.15	.00063	.0019	.00596
%RSD	.49775	.74283	15.066	.90066	21.672	.11272	1957.9
#1	34.517	.04074	.00107	353.18	.00219	1.6662	-.00079
#2	34.189	.04026	.00124	347.17	.00327	1.6687	.00588
#3	34.268	.04019	.00144	348.55	.00329	1.6650	-.00601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606073202 Acquired: 6/24/2016 12:57:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	-.00482	14.835	.00019	.47317	-.00604	-.00166
Stddev	.00130	.00284	.080	.00103	.00252	.00346	.00171
%RSD	85.788	58.877	.53712	538.43	.53296	57.319	103.01
#1	.00271	-.00798	14.887	-.00082	.47605	-.00268	-.00297
#2	.00013	-.00397	14.874	.00125	.47138	-.00959	-.00227
#3	.00172	-.00250	14.743	.00015	.47207	-.00585	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00139	.05739	-.00049
Stddev	.00087	.00042	.00019
%RSD	62.489	.72596	39.112
#1	-.00058	.05772	-.00067
#2	-.00129	.05752	-.00029
#3	-.00232	.05692	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8802.2	55900.	3156.1
Stddev	11.1	153.	34.7
%RSD	.12621	.27340	1.0995
#1	8812.1	55724.	3124.8
#2	8804.3	55980.	3193.4
#3	8790.1	55996.	3150.2

Approved: June 25, 2016

Sample Name: L1606079401 Acquired: 6/24/2016 13:01:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.02285	.00059	.01157	.02302	.00000	4.1138	-.00026
Stddev	.00123	.00652	.00275	.00121	.00057	.00006	.0762	.00008
%RSD	894.56	28.519	469.79	10.441	2.4922	18199.	1.8516	31.902
#1	.00152	.03028	.00311	.01119	.02254	.00007	4.0311	-.00021
#2	-.00086	.01808	-.00234	.01292	.02366	-.00004	4.1811	-.00035
#3	-.00024	.02020	.00099	.01059	.02287	-.00003	4.1291	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00282	.00194	-.00143	1.2835	.37695	-.00156	.69132	.35802
Stddev	.00007	.00024	.00107	.0207	.07463	.00067	.08990	.00400
%RSD	2.5452	12.396	74.963	1.6127	19.797	43.171	13.004	1.1172
#1	.00277	.00188	-.00074	1.2630	.41442	-.00084	.58775	.35346
#2	.00278	.00173	-.00266	1.2831	.42541	-.00165	.73706	.35965
#3	.00290	.00220	-.00088	1.3044	.29101	-.00218	.74916	.36094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	1.0149	.00037	.00773	.00315	-.00108	-.00499	.64556
Stddev	.00014	.0157	.00052	.00611	.00167	.00193	.00347	.00397
%RSD	56.327	1.5446	141.49	79.119	52.980	178.21	69.644	.61433
#1	.00011	1.0219	.00010	.00835	.00264	.00009	-.00688	.64105
#2	.00039	.99693	.00097	.00133	.00501	-.00331	-.00098	.64715
#3	.00023	1.0258	.00003	.01351	.00179	-.00003	-.00710	.64849
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079401 Acquired: 6/24/2016 13:01:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00092	.05805	-.00327	-.00056	-.00053	.00096	.00059
Stddev	.00114	.00063	.00604	.00146	.00079	.00036	.00072
%RSD	123.36	1.0876	184.48	261.81	147.56	37.712	123.27
#1	.00038	.05734	-.01006	-.00036	-.00137	.00094	.00093
#2	-.00142	.05854	-.00127	-.00211	-.00042	.00132	.00107
#3	-.00173	.05828	.00151	.00080	.00019	.00060	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9564.9	61114.	3314.5
Stddev	38.3	230.	20.8
%RSD	.40006	.37594	.62656
#1	9609.1	60917.	3337.8
#2	9542.4	61367.	3307.7
#3	9543.2	61059.	3298.0

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:05:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41271	10.424	.41660	.51679	1.0602	.05053	10.566	.05362
Stddev	.00072	.006	.00234	.00241	.0072	.00015	.111	.00017
%RSD	.17421	.06111	.56160	.46715	.67846	.30430	1.0504	.32244
#1	.41217	10.431	.41393	.51409	1.0550	.05068	10.515	.05356
#2	.41352	10.425	.41825	.51875	1.0572	.05054	10.490	.05381
#3	.41242	10.418	.41764	.51753	1.0684	.05038	10.693	.05348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21181	.51018	.52957	4.1573	53.268	1.0472	10.263	.52911
Stddev	.00033	.00144	.00298	.0756	.251	.0098	.140	.00211
%RSD	.15714	.28312	.56359	1.8185	.47129	.93371	1.3615	.39822
#1	.21169	.51128	.52701	4.1046	53.131	1.0438	10.102	.52758
#2	.21219	.51070	.53285	4.1234	53.116	1.0395	10.336	.52824
#3	.21155	.50854	.52885	4.2439	53.558	1.0582	10.352	.53151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0610	52.921	.52624	10.442	.52470	1.2541	.42316	5.4481
Stddev	.0035	.320	.00081	.014	.00136	.0015	.01147	.0021
%RSD	.33117	.60540	.15460	.13298	.25996	.12313	2.7101	.03871
#1	1.0639	52.775	.52615	10.457	.52471	1.2556	.42209	5.4501
#2	1.0620	52.700	.52548	10.441	.52332	1.2541	.43512	5.4484
#3	1.0571	53.289	.52710	10.429	.52605	1.2526	.41226	5.4459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:05:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0484**	**1.0667**	**1.0685**	**.52661**	**1.0185**	**1.0523**	**1.0248**
Stddev	.0029	.0081	.0058	.00076	.0042	.0021	.0004
%RSD	.27896	.76213	.54537	.14465	.41241	.19459	.03894
#1	1.0494	1.0599	1.0694	.52577	1.0227	1.0505	1.0248
#2	1.0508	1.0645	1.0623	.52727	1.0143	1.0545	1.0251
#3	1.0451	1.0757	1.0739	.52677	1.0186	1.0520	1.0243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8882.5**	**56177.**	**3089.4**
Stddev	29.7	314.	12.2
%RSD	.33414	.55818	.39365
#1	8886.9	55855.	3082.5
#2	8850.9	56481.	3103.4
#3	8909.8	56196.	3082.2

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:08:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00717**	**.00127**	**.00627**	**.00069**	**-.00006**	**.00287**	**-.00006**
Stddev	.00063	.00318	.00265	.00132	.00023	.00015	.01707	.00010
%RSD	166.42	44.334	208.86	21.039	33.283	255.17	595.44	163.89
#1	-.00060	.00479	-.00178	.00475	.00046	-.00015	.01040	.00004
#2	-.00086	.00594	.00294	.00693	.00092	.00012	-.01667	-.00008
#3	.00033	.01078	.00264	.00712	.00068	-.00014	.01487	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00066**	**.00118**	**-.00013**	**.00795**	**.06402**	**.00192**	**.03240**	**-.00221**
Stddev	.00031	.00059	.00046	.01622	.02889	.00308	.06616	.00161
%RSD	46.769	49.794	363.48	203.93	45.129	160.88	204.20	72.497
#1	-.00075	.00088	-.00022	-.00484	.09445	.00205	.07082	-.00406
#2	-.00091	.00081	-.00053	.00251	.06064	.00493	.07038	-.00147
#3	-.00031	.00186	.00037	.02619	.03696	-.00123	-.04400	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00371**	**.05101**	**-.00022**	**.00146**	**-.00202**	**.00697**	**.00163**	**.00460**
Stddev	.00026	.03364	.00082	.00530	.00080	.00025	.00566	.00230
%RSD	6.8808	65.949	378.04	362.25	39.756	3.5609	347.26	49.896
#1	.00342	.02221	.00011	.00725	-.00248	.00705	-.00479	.00356
#2	.00389	.08799	-.00115	-.00314	-.00109	.00717	.00590	.00724
#3	.00383	.04284	.00039	.00027	-.00249	.00669	.00378	.00301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:08:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00033**	**.00076**	**.00152**	**-.00024**	**.00025**	**.00081**
Stddev	.00122	.00031	.00671	.00233	.00128	.00006	.00064
%RSD	703.43	94.176	886.46	153.63	523.84	22.798	78.759
#1	-.00032	.00041	-.00664	.00398	-.00158	.00031	.00152
#2	.00111	-.00001	.00247	-.00065	-.00011	.00025	.00027
#3	-.00131	.00061	.00645	.00122	.00096	.00019	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9421.6**	**60299.**	**3256.8**
Stddev	40.2	274.	24.0
%RSD	.42621	.45387	.73587
#1	9409.1	60564.	3247.8
#2	9466.5	60316.	3284.0
#3	9389.1	60018.	3238.7

Approved: June 25, 2016

Sample Name: L1606079404 Acquired: 6/24/2016 13:12:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00130**	**.03039**	**.00126**	**.01940**	**.01369**	**-.00002**	**1.1950**	**-.00001**
Stddev	.00260	.00196	.00092	.00094	.00095	.00007	.0239	.00007
%RSD	199.44	6.4564	73.167	4.8262	6.9231	344.58	2.0032	832.28
#1	.00428	.03265	.00020	.01939	.01470	-.00010	1.1970	-.00005
#2	-.00048	.02933	.00188	.02034	.01282	.00002	1.2179	.00007
#3	.00011	.02918	.00170	.01847	.01356	.00002	1.1702	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00476**	**.00102**	**-.00131**	**.16723**	**.50681**	**.00113**	**.89694**	**.29822**
Stddev	.00006	.00143	.00104	.01047	.10066	.00302	.04328	.00708
%RSD	1.2851	139.37	79.584	6.2602	19.860	268.19	4.8253	2.3747
#1	.00479	.00230	-.00080	.16355	.51557	-.00071	.91414	.29874
#2	.00479	.00129	-.00063	.17904	.60281	.00461	.84771	.29089
#3	.00469	-.00052	-.00251	.15910	.40207	-.00053	.92899	.30502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00074**	**1.7317**	**.00193**	**.00148**	**-.00119**	**.00062**	**-.00351**	**.47199**
Stddev	.00027	.0084	.00075	.00037	.00298	.00284	.00231	.00520
%RSD	36.771	.48737	38.705	24.708	250.89	456.80	65.733	1.1011
#1	.00105	1.7226	.00246	.00187	.00075	-.00174	-.00431	.47009
#2	.00065	1.7392	.00108	.00115	-.00462	-.00018	-.00531	.47787
#3	.00053	1.7334	.00225	.00142	.00031	.00378	-.00091	.46801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079404 Acquired: 6/24/2016 13:12:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.01018**	**-.00222**	**-.00094**	**-.00079**	**.00167**	**-.00018**
Stddev	.00054	.00018	.00543	.00236	.00070	.00023	.00054
%RSD	144.91	1.8060	245.09	251.26	89.393	13.688	304.63
#1	-.00075	.01035	.00066	-.00355	-.00160	.00168	.00043
#2	.00024	.00998	.00118	.00103	-.00040	.00190	-.00060
#3	-.00060	.01019	-.00848	-.00029	-.00036	.00144	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9520.7**	**60796.**	**3261.1**
Stddev	19.0	197.	21.3
%RSD	.19963	.32380	.65193
#1	9542.3	60651.	3283.6
#2	9506.7	61020.	3258.3
#3	9513.1	60717.	3241.3

Approved: June 25, 2016

Sample Name: L1606079604 Acquired: 6/24/2016 13:16:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.21348	.00260	.19976	.03690	-.00001	52.193	.22780
Stddev	.00107	.00411	.00425	.00172	.00071	.00003	.631	.00068
%RSD	113.51	1.9260	163.38	.86255	1.9207	405.78	1.2096	.29779
#1	.00212	.21057	.00526	.20093	.03689	-.00005	52.321	.22786
#2	.00003	.21818	-.00230	.20058	.03620	.00001	51.507	.22845
#3	.00068	.21169	.00486	.19779	.03761	.00001	52.750	.22710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05125	.00479	.36483	1.6560	14.660	.00877	5.5763	1.7147
Stddev	.00059	.00039	.00218	.0283	.159	.00350	.1053	.0147
%RSD	1.1535	8.1173	.59715	1.7093	1.0875	39.833	1.8880	.85941
#1	.05172	.00435	.36580	1.6545	14.708	.00650	5.6506	1.7174
#2	.05144	.00493	.36636	1.6284	14.482	.00702	5.4558	1.6988
#3	.05059	.00509	.36234	1.6850	14.789	.01280	5.6224	1.7279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00313	144.14	.03035	1.0211	.07552	1.1557	.00411	6.5697
Stddev	.00027	1.70	.00122	.0047	.00250	.0045	.00525	.0440
%RSD	8.5563	1.1770	4.0360	.45700	3.3107	.39015	127.81	.67014
#1	.00330	144.93	.02943	1.0218	.07815	1.1592	.00478	6.5572
#2	.00282	142.19	.02987	1.0254	.07523	1.1572	-.00145	6.6186
#3	.00326	145.29	.03174	1.0161	.07318	1.1506	.00899	6.5332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604 Acquired: 6/24/2016 13:16:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.18481	-.00844	-.00188	-.00071	5.6059	.00341
Stddev	.00069	.00240	.00426	.00360	.00127	.0265	.00050
%RSD	794.10	1.2974	50.412	191.50	178.39	.47276	14.789
#1	-.00018	.18518	-.01246	-.00564	-.00052	5.6217	.00292
#2	.00087	.18225	-.00889	.00153	-.00206	5.6207	.00337
#3	-.00043	.18700	-.00398	-.00152	.00045	5.5753	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8988.0	57229.	3212.0
Stddev	23.6	64.	31.1
%RSD	.26299	.11256	.96670
#1	8965.7	57166.	3192.3
#2	9012.7	57227.	3247.8
#3	8985.6	57294.	3196.0

Approved: June 25, 2016

Sample Name: L1606079604PS Acquired: 6/24/2016 13:20:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573149-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20280**	**5.3027**	**.21231**	**1.1801**	**.55540**	**.02495**	**51.809**	**.23407**
Stddev	.00015	.0166	.00321	.0002	.00387	.00010	.375	.00041
%RSD	.07637	.31377	1.5120	.01812	.69757	.40956	.72434	.17452
#1	.20297	5.3201	.20923	1.1802	.55963	.02507	52.222	.23449
#2	.20267	5.2869	.21564	1.1802	.55202	.02492	51.489	.23404
#3	.20275	5.3010	.21207	1.1798	.55456	.02487	51.718	.23367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.15079**	**.25382**	**.59150**	**3.4910**	**39.388**	**.53018**	**9.9531**	**1.8085**
Stddev	.00020	.00094	.00182	.0662	.329	.00406	.0974	.0116
%RSD	.13400	.36852	.30736	1.8955	.83526	.76532	.97892	.64231
#1	.15097	.25482	.59345	3.5674	39.766	.53137	9.9424	1.8174
#2	.15082	.25365	.58986	3.4523	39.170	.52566	10.055	1.7953
#3	.15057	.25298	.59118	3.4533	39.227	.53351	9.8614	1.8127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53968**	**156.98**	**.28383**	**6.1212**	**.32198**	**1.6775**	**.20819**	**8.6076**
Stddev	.00242	1.04	.00051	.0203	.00460	.0049	.00352	.0069
%RSD	.44873	.66195	.17819	.33148	1.4283	.29355	1.6930	.08070
#1	.54031	158.15	.28435	6.1431	.31988	1.6722	.20467	8.6149
#2	.54173	156.18	.28379	6.1177	.32725	1.6786	.21172	8.6066
#3	.53701	156.60	.28334	6.1030	.31880	1.6818	.20817	8.6011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604PS Acquired: 6/24/2016 13:20:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573149-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51592**	**.68475**	**.51913**	**.25074**	**.50296**	**5.5697**	**.00437**
Stddev	.00194	.00530	.00608	.00071	.00238	.0089	.00064
%RSD	.37560	.77350	1.1715	.28316	.47332	.16068	14.638
#1	.51652	.69043	.51759	.25150	.50454	5.5773	.00374
#2	.51749	.67994	.51397	.25009	.50413	5.5720	.00435
#3	.51376	.68387	.52584	.25065	.50022	5.5599	.00502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8909.6**	**56843.**	**3204.4**
Stddev	1.8	290.	30.2
%RSD	.02032	.50970	.94121
#1	8908.8	56575.	3171.8
#2	8911.6	56804.	3210.2
#3	8908.2	57150.	3231.3

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.04368	.00122	.04349	.00806	.00002	10.277	.04768
Stddev	.00134	.00228	.00094	.00292	.00145	.00002	.058	.00062
%RSD	180.24	5.2256	77.601	6.7258	18.013	78.531	.56466	1.2952
#1	.00171	.04149	.00122	.04259	.00639	.00001	10.219	.04698
#2	-.00079	.04604	.00027	.04676	.00878	.00002	10.275	.04788
#3	.00130	.04352	.00216	.04112	.00901	.00005	10.335	.04817
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01026	.00202	.07565	.33169	2.8985	.00465	1.0790	.33882
Stddev	.00047	.00069	.00245	.00173	.0396	.00433	.0895	.00405
%RSD	4.6085	33.927	3.2368	.52127	1.3666	93.002	8.2910	1.1946
#1	.01002	.00234	.07292	.33127	2.9371	.00369	1.1027	.33415
#2	.00994	.00249	.07637	.33358	2.9004	.00938	1.1541	.34103
#3	.01080	.00123	.07766	.33020	2.8580	.00089	.98002	.34129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	28.363	.00700	.21122	.01400	.23816	-.00306	1.3640
Stddev	.00041	.289	.00119	.00332	.00222	.00413	.00166	.0164
%RSD	40.909	1.0206	17.017	1.5709	15.868	1.7347	54.387	1.2062
#1	.00110	28.030	.00564	.20999	.01155	.23760	-.00373	1.3521
#2	.00054	28.554	.00752	.20870	.01588	.24255	-.00116	1.3571
#3	.00133	28.504	.00785	.21498	.01456	.23435	-.00428	1.3828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.03606**	**-.00264**	**.00053**	**-.00029**	**1.2005**	**.00050**
Stddev	.00043	.00042	.00853	.00500	.00064	.0141	.00037
%RSD	124.76	1.1669	322.65	938.33	219.25	1.1743	73.895
#1	-.00085	.03565	.00325	-.00513	-.00080	1.1865	.00067
#2	-.00013	.03603	.00124	.00430	.00042	1.2003	.00008
#3	-.00007	.03649	-.01242	.00243	-.00049	1.2147	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9105.6**	**58170.**	**3212.7**
Stddev	27.3	280.	23.5
%RSD	.30017	.48123	.73253
#1	9103.8	58409.	3225.9
#2	9133.8	57862.	3185.5
#3	9079.2	58239.	3226.6

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:28:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00040**	**.00857**	**.00134**	**.01061**	**.00165**	**-.00001**	**1.9132**	**.00874**
Stddev	.00181	.00667	.00234	.00249	.00017	.00001	.0173	.00010
%RSD	455.89	77.825	174.32	23.446	10.373	116.47	.90342	1.1541
#1	-.00243	.00394	-.00136	.01199	.00166	-.00002	1.8935	.00866
#2	.00104	.01621	.00261	.01210	.00181	.00000	1.9199	.00871
#3	.00020	.00555	.00278	.00774	.00147	-.00001	1.9261	.00885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00120**	**.00140**	**.01276**	**.04419**	**.61000**	**-.00198**	**.19513**	**.06168**
Stddev	.00016	.00155	.00074	.02220	.04844	.00354	.07685	.00239
%RSD	13.116	110.63	5.7727	50.228	7.9412	178.84	39.385	3.8731
#1	.00124	-.00031	.01191	.06977	.66578	-.00239	.22434	.06192
#2	.00103	.00272	.01324	.03282	.57847	.00175	.25310	.06394
#3	.00134	.00179	.01313	.02998	.58575	-.00529	.10796	.05918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**5.4833**	**.00115**	**.03698**	**.00356**	**.04416**	**-.00362**	**.25512**
Stddev	.00017	.0430	.00058	.00189	.00182	.00432	.00289	.00216
%RSD	41.091	.78460	50.355	5.1167	51.028	9.7754	79.738	.84721
#1	.00022	5.4343	.00122	.03480	.00150	.04644	-.00041	.25572
#2	.00054	5.5006	.00054	.03817	.00427	.04686	-.00445	.25692
#3	.00047	5.5150	.00169	.03798	.00492	.03918	-.00600	.25272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:28:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.00660**	**-.00393**	**.00088**	**-.00118**	**.21826**	**.00069**
Stddev	.00041	.00021	.00248	.00276	.00061	.00108	.00021
%RSD	65.439	3.1746	63.297	315.82	51.724	.49261	30.159
#1	-.00015	.00666	-.00674	-.00231	-.00182	.21725	.00045
#2	-.00090	.00637	-.00302	.00267	-.00111	.21814	.00079
#3	-.00081	.00678	-.00202	.00226	-.00060	.21939	.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9580.6**	**61020.**	**3283.6**
Stddev	11.6	138.	12.0
%RSD	.12149	.22602	.36655
#1	9581.4	60926.	3271.0
#2	9591.8	60956.	3294.9
#3	9568.6	61178.	3284.8

Approved: June 25, 2016

Sample Name: PBW 96 Acquired: 6/24/2016 13:31:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.05750	-.00115	.00379	.00035	.00004	.14547	-.00001
Stddev	.00114	.00534	.00113	.00242	.00047	.00004	.01120	.00032
%RSD	155.47	9.2868	98.477	63.976	132.21	109.74	7.6992	4547.8
#1	-.00055	.06232	.00006	.00550	.00089	.00008	.15412	.00029
#2	.00165	.05843	-.00133	.00485	.00009	.00004	.13282	-.00034
#3	.00110	.05176	-.00218	.00102	.00008	-.00000	.14948	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00132	-.00117	.07602	.06648	-.00036	.02744	.00190
Stddev	.00018	.00131	.00109	.00738	.09369	.00127	.07199	.00082
%RSD	89.489	99.783	93.607	9.7097	140.92	355.05	262.29	42.953
#1	-.00009	.00101	-.00242	.07287	.07235	-.00017	-.04949	.00102
#2	-.00011	.00276	-.00042	.08445	.15710	.00081	.09317	.00263
#3	-.00041	.00019	-.00066	.07074	-.03000	-.00171	.03866	.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.10510	.00092	-.01236	.00247	-.00114	-.00226	.03159
Stddev	.00026	.02680	.00039	.01242	.00253	.00255	.00507	.00112
%RSD	54.501	25.498	41.922	100.45	102.42	223.14	224.49	3.5471
#1	.00035	.09773	.00136	-.02382	-.00008	-.00396	-.00341	.03261
#2	.00078	.08276	.00067	-.01410	.00250	-.00049	.00329	.03178
#3	.00031	.13482	.00072	.00083	.00497	.00102	-.00665	.03039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBW 96 Acquired: 6/24/2016 13:31:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00097**	**.00038**	**-.00465**	**.00081**	**-.00039**	**.00272**	**.00004**
Stddev	.00085	.00027	.00283	.00149	.00021	.00004	.00053
%RSD	87.746	71.935	60.728	183.22	53.537	1.5511	1208.2
#1	-.00022	.00065	-.00629	.00062	-.00015	.00268	-.00031
#2	-.00189	.00011	-.00139	-.00057	-.00048	.00274	.00065
#3	-.00079	.00036	-.00628	.00240	-.00054	.00276	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9001.9**	**57577.**	**3145.6**
Stddev	5.1	289.	25.4
%RSD	.05668	.50260	.80877
#1	9003.5	57315.	3116.7
#2	8996.2	57888.	3155.1
#3	9006.1	57528.	3164.8

Approved: June 25, 2016

Sample Name: LCSW 96 Acquired: 6/24/2016 13:35:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19950**	**5.0939**	**.20372**	**1.0208**	**.52299**	**.02445**	**5.3163**	**.02590**
Stddev	.00336	.0048	.00192	.0030	.00511	.00010	.0742	.00036
%RSD	1.6828	.09397	.94086	.29468	.97686	.41134	1.3965	1.3919
#1	.20287	5.0993	.20151	1.0195	.52801	.02450	5.4020	.02630
#2	.19946	5.0902	.20478	1.0242	.51780	.02452	5.2747	.02561
#3	.19616	5.0921	.20487	1.0186	.52318	.02434	5.2723	.02578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10423**	**.25027**	**.26092**	**2.0255**	**26.189**	**.52677**	**5.1629**	**.25877**
Stddev	.00040	.00138	.00033	.0200	.298	.00291	.1198	.00454
%RSD	.38380	.55012	.12503	.98782	1.1361	.55208	2.3196	1.7548
#1	.10469	.25146	.26057	2.0378	26.464	.52733	5.0560	.26368
#2	.10408	.24876	.26099	2.0025	25.873	.52362	5.2924	.25792
#3	.10393	.25058	.26122	2.0363	26.231	.52935	5.1404	.25472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53131**	**26.270**	**.25798**	**4.9905**	**.25688**	**.61782**	**.20100**	**2.6938**
Stddev	.00094	.237	.00094	.0107	.00325	.00214	.00148	.0078
%RSD	.17719	.90374	.36573	.21426	1.2655	.34651	.73738	.28974
#1	.53238	26.488	.25831	5.0026	.26007	.61978	.20078	2.7028
#2	.53091	26.017	.25692	4.9867	.25701	.61816	.20257	2.6890
#3	.53063	26.306	.25872	4.9822	.25357	.61554	.19963	2.6897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSW 96 Acquired: 6/24/2016 13:35:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51498**	**.53518**	**.52231**	**.25730**	**.49620**	**.51662**	**.00156**
Stddev	.00201	.00522	.00398	.00216	.00213	.00142	.00028
%RSD	.38972	.97497	.76237	.83781	.43000	.27422	18.205
#1	.51604	.54037	.52691	.25811	.49794	.51823	.00133
#2	.51624	.52993	.51991	.25486	.49685	.51608	.00147
#3	.51266	.53524	.52012	.25893	.49382	.51556	.00188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8976.4**	**57450.**	**3148.6**
Stddev	16.7	311.	9.0
%RSD	.18579	.54143	.28702
#1	8994.0	57165.	3138.5
#2	8960.8	57403.	3156.0
#3	8974.5	57782.	3151.2

Approved: June 25, 2016

Sample Name: L1606127902 Acquired: 6/24/2016 13:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	15.737	.00504	.17704	.19989	.00100	197.77	.00050
Stddev	.00231	.039	.00324	.00132	.00099	.00006	.59	.00022
%RSD	1507.6	.25058	64.174	.74832	.49635	5.6554	.29748	43.504
#1	.00250	15.783	.00357	.17765	.20103	.00098	198.43	.00025
#2	-.00170	15.713	.00280	.17553	.19919	.00095	197.29	.00066
#3	-.00126	15.717	.00875	.17796	.19946	.00106	197.58	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01128	.04276	.02006	22.872	6.2512	.04284	80.521	2.6589
Stddev	.00030	.00028	.00041	.038	.0825	.00592	.183	.0133
%RSD	2.6928	.64348	2.0282	.16663	1.3204	13.819	.22689	.50023
#1	.01147	.04247	.01996	22.869	6.1704	.04629	80.723	2.6697
#2	.01143	.04279	.02051	22.835	6.3354	.03601	80.469	2.6441
#3	.01093	.04302	.01971	22.911	6.2479	.04623	80.369	2.6630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00681	18.837	.02941	.79338	.01403	-.00060	.00131	29.051
Stddev	.00038	.047	.00138	.00484	.00107	.00255	.00127	.105
%RSD	5.5050	.25020	4.6749	.61023	7.5974	423.13	97.049	.36059
#1	.00646	18.890	.03067	.78819	.01333	-.00349	.00219	29.106
#2	.00720	18.818	.02794	.79419	.01526	.00035	-.00015	29.116
#3	.00678	18.801	.02963	.79777	.01350	.00133	.00188	28.930
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127902 Acquired: 6/24/2016 13:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.96724	.15250	.00117	.03346	.15890	.00476
Stddev	.00040	.00326	.00547	.00105	.00024	.00053	.00041
%RSD	34.705	.33744	3.5900	89.594	.72954	.33381	8.5619
#1	.00163	.97101	.14892	.00229	.03370	.15915	.00519
#2	.00097	.96527	.14979	.00101	.03348	.15926	.00472
#3	.00090	.96545	.15881	.00021	.03321	.15829	.00438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8809.1	56197.	3156.2
Stddev	17.1	169.	15.4
%RSD	.19391	.29996	.48903
#1	8823.3	56057.	3138.5
#2	8813.9	56150.	3167.0
#3	8790.1	56384.	3163.0

Approved: June 25, 2016

Sample Name: L1606127903S Acquired: 6/24/2016 13:43:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19326**	**20.629**	**.20505**	**1.1242**	**.67887**	**.02411**	**202.49**	**.02516**
Stddev	.00124	.031	.00568	.0038	.00396	.00002	1.42	.00004
%RSD	.63990	.14876	2.7693	.33476	.58405	.08259	.70154	.15637
#1	.19467	20.662	.20382	1.1250	.68345	.02412	204.10	.02518
#2	.19238	20.624	.21124	1.1275	.67642	.02413	201.40	.02512
#3	.19273	20.601	.20009	1.1201	.67675	.02409	201.97	.02518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10665**	**.26645**	**.25704**	**21.289**	**30.486**	**.53447**	**84.560**	**2.9029**
Stddev	.00029	.00084	.00157	.139	.180	.01012	.672	.0309
%RSD	.27245	.31377	.61183	.65337	.58896	1.8942	.79485	1.0632
#1	.10698	.26680	.25771	21.445	30.561	.54519	85.295	2.9385
#2	.10646	.26550	.25817	21.245	30.281	.52507	83.976	2.8873
#3	.10650	.26706	.25524	21.177	30.616	.53315	84.410	2.8830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50244**	**43.573**	**.26189**	**5.8590**	**.25372**	**.55116**	**.19410**	**32.382**
Stddev	.00157	.327	.00132	.0159	.00269	.00988	.00408	.058
%RSD	.31334	.74940	.50585	.27121	1.0586	1.7922	2.1037	.17891
#1	.50275	43.950	.26334	5.8677	.25501	.56055	.18982	32.390
#2	.50384	43.381	.26161	5.8686	.25064	.54086	.19452	32.435
#3	.50074	43.388	.26073	5.8406	.25553	.55206	.19795	32.320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127903S Acquired: 6/24/2016 13:43:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48639**	**1.4540**	**.59410**	**.23913**	**.50539**	**.70433**	**.01017**
Stddev	.00047	.0117	.00764	.00139	.00117	.00111	.00008
%RSD	.09761	.80721	1.2860	.58290	.23204	.15818	.79769
#1	.48692	1.4674	.59934	.23991	.50616	.70442	.01015
#2	.48623	1.4457	.58533	.23752	.50597	.70539	.01010
#3	.48602	1.4488	.59762	.23995	.50404	.70317	.01026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8732.4**	**55709.**	**3136.3**
Stddev	12.8	133.	9.5
%RSD	.14604	.23913	.30143
#1	8741.8	55582.	3125.8
#2	8737.4	55848.	3138.8
#3	8717.9	55698.	3144.2

Approved: June 25, 2016

Sample Name: L1606127904SD Acquired: 6/24/2016 13:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19840	21.664	.21549	1.1518	.68554	.02470	203.86
Stddev	.00350	.173	.00239	.0093	.00255	.00012	.48
%RSD	1.7631	.79987	1.1079	.81137	.37163	.47958	.23568
#1	.19923	21.766	.21789	1.1585	.68363	.02482	204.27
#2	.20141	21.762	.21547	1.1557	.68843	.02468	203.97
#3	.19456	21.464	.21311	1.1411	.68456	.02459	203.33
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02560	.10985	.27087	.26369	21.250	31.671	.54653
Stddev	.00010	.00064	.00286	.00112	.102	.097	.00418
%RSD	.40730	.58209	1.0577	.42589	.48182	.30643	.76563
#1	.02572	.11059	.27368	.26496	21.309	31.764	.54887
#2	.02555	.10947	.27099	.26284	21.310	31.678	.54902
#3	.02554	.10950	.26795	.26328	21.132	31.570	.54170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	85.131	2.9406	.52074	44.518	.26846	6.1103	.26144
Stddev	.178	.0135	.00200	.085	.00112	.0182	.00268
%RSD	.20906	.45814	.38482	.19000	.41689	.29863	1.0264
#1	84.960	2.9560	.52294	44.584	.26874	6.1155	.26438
#2	85.315	2.9345	.52024	44.548	.26723	6.0900	.26081
#3	85.119	2.9312	.51903	44.423	.26941	6.1253	.25913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 25, 2016

Sample Name: L1606127904SD Acquired: 6/24/2016 13:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.57453**	**.19709**	F **36.344**	**.50382**	**1.4735**	**.64850**	**.24413**
Stddev	.00418	.00789	.056	.00257	.0019	.00602	.00132
%RSD	.72824	4.0016	.15274	.50962	.13256	.92766	.53874
#1	.57287	.19772	36.404	.50677	1.4750	.65107	.24435
#2	.57929	.20464	36.334	.50206	1.4742	.65280	.24272
#3	.57143	.18890	36.295	.50263	1.4713	.64162	.24532
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.52196**	**.56684**	**.01080**
Stddev	.00375	.00342	.00015
%RSD	.71940	.60354	1.3985
#1	.52583	.56511	.01079
#2	.52171	.56462	.01095
#3	.51833	.57078	.01065
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8712.5**	**55773.**	**3120.2**
Stddev	3.2	331.	12.8
%RSD	.03729	.59418	.41169
#1	8713.6	55403.	3119.9
#2	8708.8	55873.	3107.5
#3	8715.0	56043.	3133.2

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:50:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38140**	**9.6036**	**.38549**	**.47990**	**.97583**	**.04697**	**9.6736**	**.04936**
Stddev	.00083	.0155	.00161	.00272	.00700	.00039	.0481	.00043
%RSD	.21651	.16083	.41796	.56755	.71776	.83544	.49724	.87879
#1	.38093	9.6166	.38518	.48096	.97193	.04728	9.6575	.04905
#2	.38235	9.6078	.38723	.48193	.97165	.04709	9.6356	.04986
#3	.38091	9.5866	.38405	.47680	.98392	.04652	9.7277	.04917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19524**	**.47322**	**.49109**	**3.8323**	**49.097**	**.96492**	**9.4888**	**.48870**
Stddev	.00085	.00448	.00144	.0650	.263	.00666	.0433	.00395
%RSD	.43326	.94684	.29398	1.6953	.53510	.68973	.45628	.80862
#1	.19584	.47670	.49055	3.7748	48.999	.96096	9.4388	.48630
#2	.19562	.47480	.49272	3.8193	48.897	.96120	9.5117	.48654
#3	.19427	.46817	.48999	3.9028	49.395	.97260	9.5158	.49326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98079**	**48.817**	**.48770**	**9.6771**	**.48808**	**1.1568**	**.39117**	**5.0500**
Stddev	.00652	.291	.00120	.0180	.00541	.0169	.00115	.0077
%RSD	.66469	.59531	.24539	.18616	1.1087	1.4624	.29359	.15164
#1	.98623	48.688	.48889	9.6790	.49412	1.1640	.39004	5.0445
#2	.98257	48.614	.48771	9.6941	.48368	1.1689	.39234	5.0588
#3	.97357	49.150	.48649	9.6582	.48644	1.1374	.39112	5.0467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:50:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.97107**	**.97794**	**.98195**	**.48922**	**.94029**	**.97547**	**.95262**
Stddev	.00207	.00590	.00292	.00294	.00290	.00075	.01313
%RSD	.21287	.60287	.29764	.60052	.30843	.07725	1.3786
#1	.97343	.97629	.98320	.49172	.94213	.97546	.93766
#2	.96960	.97304	.97861	.48994	.93695	.97623	.95795
#3	.97018	.98448	.98404	.48598	.94180	.97472	.96224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9252.7**	**58629.**	**3212.3**
Stddev	24.3	490.	28.7
%RSD	.26211	.83545	.89213
#1	9236.4	58082.	3245.1
#2	9241.1	58779.	3198.9
#3	9280.5	59026.	3192.7

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:54:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	-.00051	.00183	.00655	.00026	-.00000	.00852	-.00022
Stddev	.00064	.00733	.00105	.00104	.00009	.00005	.04466	.00023
%RSD	179.80	1430.7	57.749	15.843	35.947	4708.9	523.90	106.47
#1	.00048	.00366	.00121	.00743	.00035	-.00005	.04854	-.00006
#2	-.00034	-.00897	.00123	.00681	.00027	-.00001	-.03965	-.00048
#3	.00092	.00378	.00304	.00540	.00016	.00005	.01668	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00227	-.00072	-.01318	.07124	.00049	.08648	-.00199
Stddev	.00023	.00064	.00050	.02673	.03864	.00139	.01953	.00183
%RSD	260.70	28.077	69.839	202.79	54.246	286.14	22.586	92.121
#1	-.00012	.00157	-.00036	-.03888	.08538	-.00076	.08196	-.00332
#2	-.00029	.00242	-.00130	-.01513	.10082	.00022	.10787	-.00274
#3	.00016	.00282	-.00051	.01447	.02752	.00199	.06960	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00342	.05697	-.00032	.00309	.00127	.00324	.00119	.00515
Stddev	.00032	.02946	.00116	.00580	.00261	.00123	.00629	.00054
%RSD	9.4112	51.713	361.47	187.66	205.38	38.030	528.76	10.506
#1	.00378	.04217	.00100	-.00305	.00285	.00465	.00735	.00465
#2	.00317	.09090	-.00078	.00846	.00271	.00268	.00143	.00572
#3	.00331	.03785	-.00118	.00386	-.00175	.00238	-.00522	.00507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:54:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.00036**	**.00418**	**-.00158**	**-.00051**	**.00017**	**.00102**
Stddev	.00053	.00033	.01062	.00055	.00051	.00029	.00036
%RSD	171.93	91.019	254.34	34.602	100.39	177.91	35.103
#1	-.00010	.00004	.00137	-.00145	-.00031	.00038	.00135
#2	-.00091	.00035	.01591	-.00218	-.00013	.00029	.00064
#3	.00009	.00069	-.00476	-.00111	-.00109	-.00017	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9545.2**	**60729.**	**3266.7**
Stddev	24.9	237.	23.8
%RSD	.26058	.39065	.72829
#1	9540.3	60493.	3240.2
#2	9523.2	60727.	3286.2
#3	9572.2	60967.	3273.7

Approved: June 25, 2016

Sample Name: L1606096103 Acquired: 6/24/2016 13:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.09140	.00112	.03611	.03358	-.00001	50.084	.00013
Stddev	.00022	.00238	.00188	.00195	.00041	.00008	.422	.00018
%RSD	185.41	2.6039	167.01	5.3975	1.2258	580.55	.84237	141.64
#1	.00013	.08878	-.00078	.03488	.03351	-.00003	50.499	.00032
#2	-.00026	.09197	.00117	.03835	.03321	.00007	49.656	-.00003
#3	-.00023	.09344	.00297	.03508	.03403	-.00009	50.096	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00184	-.00114	.03656	1.3467	.00581	15.245	.00051
Stddev	.00014	.00073	.00091	.02407	.0686	.00337	.260	.00254
%RSD	61.138	39.585	79.397	65.853	5.0911	58.003	1.7074	500.61
#1	-.00015	.00167	-.00218	.01202	1.2696	.00901	15.489	.00250
#2	-.00015	.00121	-.00074	.03751	1.4008	.00612	14.971	.00138
#3	-.00040	.00264	-.00050	.06014	1.3699	.00229	15.275	-.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00260	9.6468	.00019	-.00521	-.00233	.00331	.00457	4.0826
Stddev	.00028	.0838	.00028	.00366	.00219	.00207	.00459	.0345
%RSD	10.599	.86900	141.53	70.238	94.267	62.612	100.63	.84571
#1	.00231	9.7410	.00004	-.00109	.00018	.00092	.00224	4.1042
#2	.00263	9.6187	.00051	-.00810	-.00328	.00434	.00160	4.1009
#3	.00286	9.5806	.00003	-.00645	-.00389	.00466	.00986	4.0428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606096103 Acquired: 6/24/2016 13:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**.25691**	**-.00637**	**-.00259**	**-.00050**	**.00292**	**.00135**
Stddev	.00049	.00223	.00705	.00153	.00034	.00040	.00049
%RSD	72.565	.86751	110.76	58.917	67.376	13.663	36.114
#1	-.00091	.25924	-.00795	-.00331	-.00034	.00317	.00087
#2	-.00099	.25480	.00134	-.00084	-.00090	.00314	.00133
#3	-.00011	.25669	-.01249	-.00363	-.00028	.00246	.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8942.3**	**57388.**	**3165.4**
Stddev	36.0	169.	10.5
%RSD	.40295	.29363	.33091
#1	8915.6	57232.	3155.7
#2	8928.0	57367.	3176.5
#3	8983.2	57567.	3163.9

Approved: June 25, 2016

Sample Name: L1606096103PS Acquired: 6/24/2016 14:02:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574076-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20212**	**5.1577**	**.20995**	**1.0218**	**.55067**	**.02458**	**50.301**	**.02595**
Stddev	.00257	.0134	.00150	.0020	.00278	.00001	.286	.00016
%RSD	1.2694	.25951	.71236	.19511	.50565	.03510	.56934	.61701
#1	.20209	5.1522	.20849	1.0233	.55372	.02459	50.529	.02608
#2	.19957	5.1479	.20988	1.0196	.54826	.02458	49.980	.02599
#3	.20470	5.1729	.21148	1.0227	.55003	.02457	50.394	.02577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10297**	**.25008**	**.25544**	**2.0785**	**27.389**	**.52844**	**18.834**	**.25830**
Stddev	.00023	.00157	.00241	.0113	.185	.00335	.039	.00347
%RSD	.22302	.62649	.94504	.54163	.67510	.63326	.20820	1.3448
#1	.10320	.25049	.25823	2.0826	27.472	.53144	18.843	.26189
#2	.10274	.25140	.25409	2.0658	27.177	.52483	18.867	.25495
#3	.10299	.24834	.25401	2.0872	27.518	.52905	18.790	.25805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53490**	**34.932**	**.25626**	**5.1271**	**.25681**	**.62874**	**.20828**	**6.2999**
Stddev	.00204	.144	.00031	.0135	.00377	.00039	.00270	.0306
%RSD	.38190	.41152	.12115	.26248	1.4693	.06250	1.2974	.48507
#1	.53528	35.050	.25602	5.1233	.25437	.62829	.20809	6.2859
#2	.53673	34.772	.25661	5.1420	.26116	.62899	.21107	6.2787
#3	.53270	34.975	.25617	5.1159	.25492	.62895	.20567	6.3349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606096103PS Acquired: 6/24/2016 14:02:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574076-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51595	.74881	.52242	.25818	.49972	.51357	.00455
Stddev	.00103	.00313	.00297	.00309	.00213	.00106	.00114
%RSD	.19954	.41852	.56925	1.1985	.42627	.20581	24.932
#1	.51562	.75083	.52020	.25542	.50129	.51430	.00341
#2	.51710	.74520	.52125	.26152	.49729	.51406	.00457
#3	.51512	.75039	.52580	.25759	.50057	.51236	.00568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8833.6	56651.	3119.7
Stddev	9.3	223.	21.6
%RSD	.10547	.39347	.69133
#1	8823.9	56539.	3116.6
#2	8834.3	56908.	3142.7
#3	8842.5	56506.	3099.9

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:05:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.01743	-.00053	.01293	.00637	.00006	9.8603	-.00009
Stddev	.00112	.00543	.00066	.00212	.00093	.00006	.1510	.00026
%RSD	749.50	31.156	123.78	16.425	14.637	106.44	1.5314	273.36
#1	.00120	.01486	-.00015	.01142	.00533	.00013	9.7000	-.00016
#2	-.00103	.01376	-.00130	.01536	.00714	.00001	9.8810	.00019
#3	.00028	.02366	-.00015	.01201	.00663	.00003	9.9999	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.00166	-.00081	.01557	.34726	.00184	3.0327	-.00090
Stddev	.00014	.00107	.00071	.01602	.05466	.00348	.0951	.00076
%RSD	37.681	64.012	87.782	102.86	15.742	189.11	3.1367	84.164
#1	-.00021	.00202	-.00151	.03338	.29666	.00458	2.9721	-.00121
#2	-.00048	.00047	-.00085	.00235	.40524	-.00207	2.9836	-.00147
#3	-.00039	.00251	-.00008	.01099	.33988	.00301	3.1423	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	1.9887	-.00002	.00349	-.00035	.00256	.00530	.86568
Stddev	.00011	.0321	.00087	.00714	.00172	.00490	.00381	.00616
%RSD	11.175	1.6161	4064.9	204.77	495.04	191.24	71.852	.71180
#1	.00095	1.9586	.00085	.00447	-.00202	.00804	.00476	.85861
#2	.00114	1.9850	-.00088	.01010	.00141	-.00140	.00179	.86846
#3	.00094	2.0226	-.00004	-.00409	-.00043	.00105	.00936	.86996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:05:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.05064**	**-.00115**	**-.00120**	**-.00043**	**.00102**	**.00056**
Stddev	.00024	.00069	.00525	.00297	.00106	.00012	.00014
%RSD	123.48	1.3651	458.63	247.68	244.53	11.508	24.672
#1	-.00046	.05019	-.00523	.00208	-.00117	.00096	.00072
#2	.00002	.05028	.00478	-.00371	.00078	.00115	.00045
#3	-.00016	.05143	-.00298	-.00197	-.00092	.00094	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9336.0**	**59375.**	**3208.5**
Stddev	30.5	401.	15.3
%RSD	.32641	.67506	.47725
#1	9354.3	58920.	3216.8
#2	9352.8	59525.	3217.8
#3	9300.8	59678.	3190.8

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:09:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**-.00610**	**.00005**	**.00302**	**.00139**	**.00003**	**1.6849**
Stddev	.00180	.00456	.00220	.00222	.00079	.00007	.0160
%RSD	1577.6	74.679	4707.9	73.380	56.616	247.76	.94725
#1	-.00191	-.00084	.00190	.00055	.00194	-.00002	1.6688
#2	.00156	-.00881	-.00239	.00484	.00049	.00011	1.6853
#3	.00069	-.00865	.00063	.00368	.00173	-.00000	1.7007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00034**	**.00088**	**-.00158**	**-.01440**	**.06844**	**-.00175**
Stddev	.00002	.00023	.00083	.00061	.02220	.06326	.00363
%RSD	17.353	67.549	94.267	38.708	154.12	92.431	206.96
#1	-.00013	-.00058	.00179	-.00208	-.00955	.00265	-.00311
#2	-.00013	-.00034	.00017	-.00175	.00496	.07385	.00236
#3	-.00017	-.00012	.00067	-.00090	-.03863	.12882	-.00450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50957**	F **-.00383**	**.00039**	**.34445**	**-.00062**	**.00381**	**.00016**
Stddev	.01311	.00095	.00039	.03811	.00071	.00070	.00411
%RSD	2.5722	24.725	100.59	11.064	115.35	18.437	2540.0
#1	.51930	-.00358	.00051	.30657	-.00144	.00305	.00427
#2	.49466	-.00488	-.00005	.34400	-.00029	.00397	.00016
#3	.51474	-.00303	.00071	.38278	-.00013	.00443	-.00394
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:09:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00087	-.00357	.15888	-.00031	.00850	-.00426	-.00009
Stddev	.00426	.00083	.00168	.00044	.00026	.00237	.00296
%RSD	491.21	23.304	1.0573	142.12	3.0361	55.651	3369.4
#1	-.00335	-.00426	.16039	-.00013	.00878	-.00423	-.00261
#2	.00077	-.00382	.15707	.00001	.00827	-.00191	-.00083
#3	.00518	-.00265	.15920	-.00080	.00846	-.00665	.00318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00092	.00058	.00040
Stddev	.00059	.00015	.00004
%RSD	63.347	25.599	9.4015
#1	-.00155	.00045	.00043
#2	-.00084	.00056	.00036
#3	-.00039	.00074	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9633.6	61477.	3283.0
Stddev	23.5	199.	25.8
%RSD	.24437	.32309	.78547
#1	9635.1	61706.	3253.9
#2	9656.4	61364.	3291.9
#3	9609.4	61360.	3303.1

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:13:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	2.0538	.00424	.05679	.30137	.00008	160.95	.00040
Stddev	.00099	.0179	.00360	.00161	.00191	.00003	.73	.00020
%RSD	625.72	.87190	84.976	2.8342	.63262	40.857	.45089	48.680
#1	.00035	2.0639	.00523	.05846	.30342	.00005	161.69	.00049
#2	.00047	2.0331	.00724	.05525	.30104	.00011	160.24	.00018
#3	-.00129	2.0644	.00025	.05665	.29964	.00010	160.92	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.05022	.00244	.06600	6.7325	.04174	.86990	-.00077
Stddev	.00001	.00071	.00046	.01751	.0793	.00094	.03086	.00154
%RSD	53.643	1.4082	18.989	26.534	1.1771	2.2575	3.5476	200.44
#1	.00001	.04993	.00251	.08607	6.8151	.04258	.83482	-.00255
#2	.00004	.04971	.00286	.05817	6.6571	.04192	.89287	.00018
#3	.00002	.05103	.00194	.05378	6.7254	.04072	.88200	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	48.508	-.00031	.00741	.00060	.00514	.00422	24.472
Stddev	.00063	.271	.00042	.00441	.00602	.00302	.00618	.118
%RSD	17.442	.55872	138.52	59.544	1003.1	58.729	146.53	.48061
#1	.00434	48.810	.00008	.00233	-.00322	.00761	.00742	24.541
#2	.00342	48.287	-.00076	.00957	-.00252	.00604	.00813	24.539
#3	.00313	48.427	-.00023	.01033	.00753	.00178	-.00291	24.336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:13:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	5.2882	-.02037	.00182	.05925	.00281	.00089
Stddev	.00045	.0260	.00947	.00098	.00078	.00019	.00080
%RSD	393.62	.49150	46.471	53.984	1.3207	6.6303	89.786
#1	.00029	5.3179	-.02819	.00291	.05902	.00280	.00160
#2	-.00060	5.2694	-.00985	.00102	.05861	.00264	.00002
#3	-.00003	5.2773	-.02308	.00151	.06012	.00301	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8732.6	55925.	3130.6
Stddev	32.6	420.	35.3
%RSD	.37294	.75148	1.1265
#1	8752.4	55468.	3120.1
#2	8695.0	56294.	3101.8
#3	8750.3	56014.	3169.9

Approved: June 25, 2016

Sample Name: L1606122703 Acquired: 6/24/2016 14:17:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00125	.01521	-.00287	.00860	.24123	.00006	11.154	.00028
Stddev	.00085	.00707	.00119	.00183	.00246	.00004	.069	.00007
%RSD	68.571	46.481	41.621	21.280	1.0214	57.404	.61514	23.989
#1	-.00147	.01209	-.00178	.00649	.24385	.00010	11.223	.00034
#2	-.00030	.02330	-.00414	.00957	.24090	.00003	11.086	.00021
#3	-.00196	.01024	-.00269	.00975	.23895	.00006	11.152	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00080	.00213	-.00033	6.2073	1.5140	.01688	6.1835	.21929
Stddev	.00038	.00091	.00079	.0143	.0539	.00306	.0220	.00289
%RSD	47.624	42.694	240.58	.23060	3.5610	18.131	.35514	1.3175
#1	-.00036	.00194	-.00091	6.2218	1.4901	.01738	6.2077	.21708
#2	-.00104	.00133	-.00064	6.2069	1.5757	.01967	6.1777	.22256
#3	-.00101	.00312	.00057	6.1932	1.4762	.01361	6.1650	.21823
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	22.350	-.00018	.00938	-.00137	-.00029	-.00050	19.516
Stddev	.00056	.096	.00083	.00138	.00104	.00383	.01117	.085
%RSD	465.42	.43143	468.12	14.678	75.834	1305.1	2216.4	.43604
#1	.00023	22.450	-.00078	.01058	-.00249	.00050	.00759	19.566
#2	-.00049	22.343	.00077	.00788	-.00044	.00308	-.01325	19.564
#3	.00062	22.257	-.00052	.00969	-.00117	-.00445	.00414	19.418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122703 Acquired: 6/24/2016 14:17:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.28084	-.00425	-.00304	-.00105	.00790	.00058
Stddev	.00052	.00163	.00869	.00081	.00050	.00008	.00060
%RSD	129.02	.57971	204.61	26.615	47.317	.97873	103.43
#1	.00050	.28163	-.01407	-.00299	-.00104	.00799	-.00005
#2	-.00016	.28192	-.00109	-.00388	-.00056	.00785	.00113
#3	.00088	.27897	.00242	-.00226	-.00155	.00786	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8914.3	56961.	3130.5
Stddev	14.2	82.	32.4
%RSD	.15879	.14313	1.0351
#1	8914.6	56997.	3101.6
#2	8928.4	57018.	3165.5
#3	8900.0	56867.	3124.5

Approved: June 25, 2016

Sample Name: L1606122705 Acquired: 6/24/2016 14:21:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.01545	-.00191	.01058	.23750	.00006	11.195	.00012
Stddev	.00118	.00798	.00344	.00158	.00031	.00003	.021	.00013
%RSD	328.15	51.664	180.02	14.936	.13063	48.409	.18618	104.64
#1	-.00055	.02466	-.00569	.01043	.23772	.00010	11.181	.00021
#2	-.00143	.01046	-.00109	.01223	.23762	.00004	11.184	-.00002
#3	.00090	.01124	.00105	.00908	.23714	.00005	11.219	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.00085	.00038	5.7661	1.5123	.01984	5.9756	.21100
Stddev	.00025	.00106	.00080	.0245	.0653	.00200	.0212	.00231
%RSD	56.521	123.64	211.76	.42500	4.3208	10.094	.35441	1.0971
#1	-.00018	.00141	.00088	5.7931	1.5331	.01943	5.9657	.21198
#2	-.00046	-.00036	.00081	5.7454	1.5646	.02202	5.9611	.20836
#3	-.00068	.00152	-.00055	5.7597	1.4390	.01808	5.9999	.21267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	21.980	.00038	.00585	.00105	.00337	.00431	19.270
Stddev	.00021	.073	.00055	.00335	.00503	.00336	.00279	.078
%RSD	47.614	.33289	144.30	57.337	476.55	99.815	64.659	.40393
#1	.00067	22.029	.00075	.00771	.00214	-.00034	.00547	19.312
#2	.00029	21.896	-.00025	.00198	-.00442	.00622	.00113	19.317
#3	.00034	22.015	.00065	.00787	.00545	.00421	.00633	19.180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122705 Acquired: 6/24/2016 14:21:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.27996**	**-.00062**	**-.00391**	**-.00113**	**.00732**	**.00022**
Stddev	.00053	.00057	.00735	.00180	.00037	.00025	.00038
%RSD	211.26	.20369	1193.3	46.137	32.740	3.4555	174.33
#1	.00056	.27981	-.00799	-.00285	-.00106	.00752	.00033
#2	-.00036	.27948	-.00055	-.00288	-.00079	.00740	.00052
#3	.00056	.28059	.00670	-.00599	-.00152	.00703	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8854.7**	**56642.**	**3127.3**
Stddev	12.3	243.	13.9
%RSD	.13917	.42956	.44340
#1	8861.1	56590.	3116.3
#2	8840.5	56906.	3122.8
#3	8862.4	56428.	3142.9

Approved: June 25, 2016

Sample Name: L1606122706 Acquired: 6/24/2016 14:25:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.21684	.00222	.01917	.58049	.00013	F 284.46
Stddev	.00156	.00289	.00054	.00104	.00288	.00003	1.45
%RSD	398.54	1.3347	24.456	5.4065	.49594	21.763	.51127
#1	-.00197	.21619	.00253	.01999	.58052	.00015	284.58
#2	-.00036	.22000	.00160	.01951	.57760	.00015	282.95
#3	.00116	.21433	.00254	.01800	.58336	.00010	285.86
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.01684	.00998	.00007	1.9553	6.3020	.09974
Stddev	.00017	.00034	.00117	.00099	.0143	.1315	.00214
%RSD	224.89	2.0370	11.743	1484.4	.73067	2.0859	2.1442
#1	.00026	.01703	.01112	-.00102	1.9407	6.1530	.09856
#2	-.00001	.01704	.01006	.00031	1.9692	6.3513	.10221
#3	-.00004	.01644	.00877	.00091	1.9560	6.4016	.09846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	176.37	2.2714	.00006	F 731.74	.01123	.01665	.00357
Stddev	1.24	.0213	.00040	6.78	.00115	.00399	.00138
%RSD	.70410	.93819	724.13	.92699	10.201	23.948	38.657
#1	175.84	2.2688	.00050	724.41	.01123	.01905	.00394
#2	175.48	2.2515	-.00029	737.80	.01238	.01886	.00473
#3	177.79	2.2938	-.00004	733.01	.01008	.01205	.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606122706 Acquired: 6/24/2016 14:25:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00122**	**.00616**	**15.356**	**.00023**	**6.6069**	F **-.03816**	**-.00311**
Stddev	.00529	.00300	.153	.00037	.0311	.00253	.00229
%RSD	434.20	48.780	.99792	161.00	.47035	6.6290	73.823
#1	.00695	.00959	15.424	.00029	6.6061	-.03560	-.00215
#2	.00016	.00487	15.464	.00056	6.5762	-.04066	-.00573
#3	-.00346	.00401	15.181	-.00017	6.6383	-.03822	-.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00168**	**.01200**	**.00044**
Stddev	.00075	.00025	.00035
%RSD	44.955	2.0469	79.672
#1	-.00143	.01227	.00080
#2	-.00252	.01195	.00041
#3	-.00108	.01179	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8072.3**	**51267.**	**2974.1**
Stddev	26.3	41.	21.1
%RSD	.32607	.08087	.70892
#1	8102.7	51312.	2967.6
#2	8056.8	51231.	2997.7
#3	8057.4	51256.	2957.1

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s -.00023	s -.00927	s .00164	s .00296	F -10.167	s .00041
Stddev	.00419	.07786	.00312	.00485	17.626	.00078
%RSD	1785.1	839.67	190.10	164.03	173.37	190.38
#1	k .00417	k -.06650	s .00369	k .00589	-30.520	k -.00012
#2	-.00072	-.04071	-.00195	-.00264	.0178	.00004
#3	s -.00416	s .07939	s .00318	s .00563	.0011	s .00131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit					45.000	
Low Limit					-.00500	

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.030	sF -.00051	s -.00092	s .00395	sF -.01544	k 24.560
Stddev	69.051	.00101	.00091	.00756	.02567	42.585
%RSD	172.50	198.69	98.282	191.07	166.28	173.39
#1	119.76	s -.00168	s -.00047	k -.00260	s -.04508	73.733
#2	.3162	.00002	-.00033	.00225	-.00024	-.06625
#3	.0107	s .00013	s -.00197	s .01222	s -.00100	k .01283
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit		4.5000			180.00	
Low Limit		-.00050			-.00500	

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	372.11	8.6195	k 47.738	k .33032	s .00028	133.30
Stddev	645.21	14.952	82.949	.57767	.00009	230.76
%RSD	173.39	173.47	173.76	174.88	32.225	173.11
#1	1117.1	25.884	k 143.52	k .99736	s .00023	399.76
#2	-.711	-.02432	-.3221	-.00440	.00022	-.0382
#3	-.088	-.00165	k .0166	k -.00198	s .00038	.1779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00045**	s **-.03655**	s **.00172**	s **-.00108**	s **.00075**	s **.01008**
Stddev	.00179	.02808	.00469	.00283	.00609	.01972
%RSD	400.97	76.830	273.03	261.89	809.17	195.59
#1	s -.00054	s -.06589	s .00446	s -.00311	s .00551	s -.00694
#2	.00139	-.00993	.00440	.00215	.00286	.00550
#3	s -.00220	s -.03383	s -.00370	s -.00228	s -.00611	s .03169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00057**	F **-1.1360**	k **20.365**	s **.00055**	s **-.00167**	s **.00003**
Stddev	.00097	1.9693	35.298	.00527	.00210	.00029
%RSD	171.04	173.35	173.32	963.15	126.00	986.03
#1	s -.00081	-3.4099	k 61.124	s .00555	k -.00082	s -.00019
#2	-.00139	.00126	-.03016	.00104	-.00012	-.00009
#3	s .00050	.00067	k .00214	s -.00495	s -.00406	s .00036
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		9.0000				
Low Limit		-.01000				

Elem	Zr3391
Units	ppm
Avg	k **4.7431**
Stddev	8.2177
%RSD	173.26
#1	14.232
#2	-.00307
#3	k .00025
Check ?	Chk Pass
High Limit	
Low Limit	

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	^ *****	^ *****	**1491.6**
Stddev	-----	-----	1744.8
%RSD	-----	-----	116.98
#1	^ -----	96744.	-.833
#2	11739.	67740.	1065.6
#3	^ -----	^ -----	3409.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 14:33:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41166**	**10.425**	**.41797**	**.51029**	**1.0577**	**.05047**	**10.520**	**.05316**
Stddev	.00099	.032	.00238	.00238	.0098	.00020	.066	.00029
%RSD	.24027	.31060	.57018	.46712	.92494	.40032	.62805	.55014
#1	.41078	10.417	.41616	.50822	1.0524	.05037	10.498	.05343
#2	.41273	10.461	.42067	.50975	1.0690	.05033	10.595	.05285
#3	.41147	10.398	.41708	.51289	1.0516	.05070	10.468	.05319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21206**	**.51386**	**.53059**	**4.1899**	**53.263**	**1.0467**	**10.468**	**.52856**
Stddev	.00073	.00321	.00100	.0374	.462	.0063	.076	.00530
%RSD	.34314	.62500	.18884	.89375	.86682	.60297	.72564	1.0030
#1	.21259	.51287	.52997	4.1684	53.043	1.0454	10.485	.52611
#2	.21236	.51126	.53175	4.2331	53.794	1.0536	10.535	.53465
#3	.21123	.51745	.53006	4.1681	52.952	1.0412	10.385	.52494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0576**	**52.995**	**.52777**	**10.435**	**.52686**	**1.2496**	**.41651**	**5.4396**
Stddev	.0040	.485	.00212	.015	.00639	.0066	.00244	.0073
%RSD	.37921	.91430	.40168	.14821	1.2125	.52987	.58470	.13514
#1	1.0613	52.838	.52972	10.450	.53351	1.2484	.41859	5.4468
#2	1.0581	53.538	.52809	10.437	.52631	1.2567	.41712	5.4400
#3	1.0533	52.608	.52552	10.419	.52077	1.2437	.41383	5.4321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 14:33:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0505**	**1.0599**	**1.0626**	**.52487**	**1.0199**	**1.0599**	**1.0481**
Stddev	.0030	.0080	.0069	.00177	.0063	.0016	.0076
%RSD	.28497	.75748	.64716	.33685	.61433	.14858	.72179
#1	1.0520	1.0581	1.0658	.52283	1.0139	1.0617	1.0532
#2	1.0524	1.0687	1.0673	.52604	1.0264	1.0591	1.0518
#3	1.0471	1.0529	1.0547	.52572	1.0194	1.0589	1.0394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8638.4**	**54702.**	**2962.1**
Stddev	25.7	232.	26.1
%RSD	.29729	.42351	.88130
#1	8638.5	54949.	2963.0
#2	8664.0	54489.	2935.5
#3	8612.6	54670.	2987.7

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 14:37:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00059**	**.00701**	**.00029**	**.00414**	**.00107**	**.00004**	**.00238**	**-.00012**
Stddev	.00084	.00406	.00078	.00126	.00076	.00005	.01029	.00020
%RSD	141.95	57.911	270.00	30.394	71.506	123.23	431.54	160.84
#1	-.00109	.01100	-.00061	.00436	.00031	-.00001	.01410	-.00018
#2	.00038	.00714	.00070	.00527	.00106	.00009	-.00516	-.00029
#3	-.00106	.00289	.00078	.00278	.00183	.00005	-.00179	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.00101**	**-.00109**	**-.00812**	**.09168**	**-.00067**	**.00355**	**-.00145**
Stddev	.00012	.00041	.00020	.01093	.16535	.00286	.05597	.00191
%RSD	587.69	41.101	17.982	134.63	180.37	426.73	1575.4	131.49
#1	-.00012	.00144	-.00126	-.01947	.12855	-.00390	-.02086	.00074
#2	.00007	.00098	-.00088	.00235	.23548	.00155	.06758	-.00233
#3	.00010	.00061	-.00113	-.00724	-.08900	.00034	-.03606	-.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00376**	**.06309**	**-.00078**	**-.00146**	**-.00295**	**.00728**	**.00080**	**.00640**
Stddev	.00004	.00813	.00031	.00130	.00447	.00341	.00273	.00142
%RSD	1.1880	12.887	39.066	89.596	151.30	46.848	341.20	22.217
#1	.00379	.05447	-.00081	-.00002	-.00292	.00343	-.00228	.00491
#2	.00377	.07062	-.00047	-.00257	.00150	.00849	.00178	.00774
#3	.00371	.06419	-.00108	-.00177	-.00745	.00993	.00291	.00656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 14:37:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00030**	**-.00170**	**-.00383**	**-.00049**	**.00017**	**.00063**
Stddev	.00071	.00015	.00190	.00217	.00068	.00011	.00064
%RSD	416.03	50.304	111.76	56.611	138.47	65.323	100.79
#1	-.00090	-.00046	-.00195	-.00355	.00013	.00005	.00048
#2	.00053	-.00016	.00031	-.00613	-.00121	.00020	.00009
#3	-.00015	-.00029	-.00347	-.00182	-.00039	.00026	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8962.4**	**57043.**	**3076.8**
Stddev	9.4	202.	30.1
%RSD	.10495	.35434	.97741
#1	8959.6	57191.	3062.7
#2	8973.0	57124.	3056.5
#3	8954.8	56812.	3111.4

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:41:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00718	.16778	.00705	.07965	.00910	.00164	.41639	.00077
Stddev	.00111	.00850	.00155	.00224	.00038	.00008	.03685	.00016
%RSD	15.437	5.0649	22.016	2.8126	4.2151	4.9707	8.8498	21.171
#1	.00835	.16257	.00591	.07934	.00933	.00163	.41364	.00096
#2	.00706	.17759	.00643	.08204	.00930	.00156	.38099	.00069
#3	.00615	.16318	.00882	.07759	.00865	.00172	.45453	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00372	.00553	.00388	.09928	.97152	.08315	.41379	.00739
Stddev	.00019	.00133	.00032	.02549	.05199	.00523	.08500	.00248
%RSD	5.0726	23.979	8.3772	25.673	5.3513	6.2898	20.543	33.559
#1	.00382	.00499	.00359	.11432	.99435	.08891	.42868	.00950
#2	.00350	.00456	.00423	.06985	1.0082	.08183	.49036	.00801
#3	.00383	.00704	.00382	.11368	.91202	.07870	.32232	.00466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00887	.47333	.01623	.81221	.00542	.09064	.01323	.80543
Stddev	.00034	.01785	.00027	.00285	.00284	.00218	.00846	.00484
%RSD	3.8186	3.7704	1.6489	.35135	52.439	2.4043	63.964	.60120
#1	.00857	.45283	.01639	.81336	.00707	.09020	.00353	.80991
#2	.00924	.48541	.01638	.81431	.00704	.08871	.01911	.80609
#3	.00882	.48176	.01592	.80897	.00214	.09300	.01705	.80029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:41:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40870**	**.04207**	**.01931**	**.15366**	**.00710**	**.01712**	**.04603**
Stddev	.00512	.00019	.00171	.00094	.00077	.00047	.00074
%RSD	1.2534	.44963	8.8459	.61383	10.891	2.7601	1.5991
#1	.41191	.04225	.01832	.15474	.00771	.01740	.04532
#2	.41140	.04187	.02128	.15326	.00736	.01737	.04598
#3	.40280	.04210	.01832	.15299	.00623	.01657	.04679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8982.1**	**57067.**	**3060.2**
Stddev	26.2	300.	11.7
%RSD	.29148	.52636	.38103
#1	8991.8	56753.	3059.1
#2	8952.5	57352.	3072.4
#3	9002.1	57094.	3049.1

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:45:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01869	.41297	.02026	.19746	.02185	.00383	1.0200	.00188
Stddev	.00035	.00586	.00154	.00067	.00147	.00014	.0338	.00015
%RSD	1.8526	1.4186	7.6007	.34025	6.7142	3.6282	3.3179	7.8964
#1	.01874	.40831	.01848	.19818	.02288	.00367	1.0151	.00196
#2	.01900	.41106	.02109	.19686	.02017	.00390	1.0560	.00198
#3	.01832	.41955	.02120	.19732	.02249	.00393	.98885	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00984	.01123	.00919	.18681	2.1247	.20721	.93148	.01619
Stddev	.00014	.00068	.00093	.01106	.0926	.00369	.07781	.00078
%RSD	1.4606	6.0688	10.105	5.9217	4.3598	1.7823	8.3530	4.8206
#1	.01001	.01162	.00904	.19951	2.2112	.20690	.86422	.01547
#2	.00973	.01162	.00834	.18161	2.0269	.21106	.91352	.01702
#3	.00979	.01044	.01018	.17930	2.1360	.20369	1.0167	.01609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02014	1.0870	.04071	1.9977	.02135	.21673	.03821	1.9741
Stddev	.00016	.0210	.00055	.0167	.00069	.00325	.00268	.0082
%RSD	.80007	1.9300	1.3616	.83571	3.2506	1.4993	7.0016	.41651
#1	.02032	1.0994	.04122	2.0148	.02110	.22042	.03544	1.9835
#2	.02003	1.0989	.04080	1.9969	.02082	.21547	.04077	1.9682
#3	.02006	1.0628	.04012	1.9814	.02214	.21430	.03841	1.9708
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:45:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0107**	**.10392**	**.05575**	**.37550**	**.01879**	**.04191**	**.10568**
Stddev	.0090	.00047	.00558	.00228	.00032	.00016	.00084
%RSD	.89117	.44849	9.9995	.60763	1.6789	.38616	.79660
#1	1.0189	.10438	.05893	.37732	.01895	.04186	.10565
#2	1.0122	.10392	.05901	.37624	.01842	.04209	.10485
#3	1.0011	.10345	.04932	.37294	.01899	.04177	.10653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9009.7**	**57472.**	**3066.3**
Stddev	19.1	37.	13.0
%RSD	.21156	.06500	.42365
#1	9017.9	57429.	3056.0
#2	9023.2	57498.	3080.9
#3	8987.9	57490.	3062.1

Approved: June 25, 2016

Sample Name: L1606122707 Acquired: 6/24/2016 14:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.02228	-.00310	.03187	.86009	.00012	39.489	.00003
Stddev	.00018	.00656	.00152	.00057	.00717	.00003	.379	.00032
%RSD	46.468	29.432	49.079	1.8038	.83341	26.472	.96018	1147.1
#1	-.00055	.02985	-.00161	.03125	.86719	.00008	39.879	-.00019
#2	-.00020	.01820	-.00302	.03199	.86023	.00013	39.466	-.00011
#3	-.00040	.01880	-.00465	.03238	.85285	.00015	39.122	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00072	-.00028	.00013	59.587	2.9995	.04414	25.073	1.2878
Stddev	.00057	.00083	.00110	.643	.1016	.00412	.231	.0116
%RSD	79.076	299.88	865.71	1.0796	3.3860	9.3424	.92024	.90415
#1	-.00051	.00068	-.00113	60.213	3.0838	.04323	25.311	1.3011
#2	-.00137	-.00084	.00089	59.621	2.8867	.04865	25.057	1.2792
#3	-.00029	-.00068	.00062	58.928	3.0279	.04055	24.851	1.2831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	115.27	.04203	.01368	.00281	-.00143	.00296	14.747
Stddev	.00037	1.33	.00072	.00307	.00173	.00239	.00365	.039
%RSD	499.83	1.1534	1.7107	22.425	61.439	167.46	123.56	.26370
#1	.00026	116.59	.04143	.01139	.00244	-.00272	.00713	14.784
#2	-.00048	115.27	.04283	.01716	.00130	.00133	.00141	14.750
#3	-.00000	113.93	.04183	.01248	.00470	-.00289	.00033	14.707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122707 Acquired: 6/24/2016 14:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.95862**	**.00605**	**-.00068**	**-.00091**	**.00548**	**.00149**
Stddev	.00073	.01229	.00320	.00267	.00068	.00026	.00022
%RSD	553.72	1.2819	52.980	390.15	74.575	4.7467	14.628
#1	-.00098	.96985	.00245	.00197	-.00106	.00564	.00171
#2	.00022	.96050	.00860	-.00066	-.00151	.00563	.00127
#3	.00036	.94549	.00708	-.00336	-.00017	.00518	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8796.8**	**55980.**	**3081.4**
Stddev	13.6	173.	49.3
%RSD	.15430	.30941	1.6006
#1	8782.9	56135.	3034.1
#2	8810.1	56011.	3077.6
#3	8797.3	55793.	3132.6

Approved: June 25, 2016

Sample Name: L1606128901 Acquired: 6/24/2016 14:52:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.04962**	**.00112**	**.00988**	**5.2736**	**-.00000**	**172.96**
Stddev	.00150	.00386	.00106	.00285	.0237	.00005	.90
%RSD	521.82	7.7690	94.694	28.895	.44889	7806.7	.52141
#1	.00036	.05342	.00225	.00730	5.2908	-.00004	173.59
#2	.00175	.04571	.00014	.00938	5.2466	.00005	171.93
#3	-.00125	.04974	.00097	.01295	5.2835	-.00001	173.36
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00136**	**.04532**	**.13640**	**.02803**	**.82377**	**2.0910**	**.06524**
Stddev	.00008	.00075	.00127	.00169	.01843	.0634	.00121
%RSD	6.1045	1.6593	.93452	6.0401	2.2378	3.0301	1.8477
#1	.00135	.04615	.13543	.02951	.80742	2.1500	.06406
#2	.00144	.04511	.13594	.02618	.82014	2.0990	.06519
#3	.00128	.04469	.13784	.02838	.84375	2.0241	.06647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**132.57**	**1.5484**	**.00399**	F **475.43**	**.60664**	**-.00181**	**.00112**
Stddev	1.22	.0105	.00019	6.67	.00940	.00176	.00123
%RSD	.92353	.67771	4.8057	1.4023	1.5491	97.473	109.90
#1	133.54	1.5549	.00379	480.67	.61634	-.00043	.00090
#2	131.19	1.5363	.00417	477.68	.60602	-.00120	.00245
#3	132.97	1.5541	.00401	467.92	.59758	-.00379	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606128901 Acquired: 6/24/2016 14:52:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.00044	20.411	-.00001	3.3220	-.02680	-.00165
Stddev	.00177	.00688	.223	.00059	.0144	.00356	.00200
%RSD	411.04	1578.1	1.0946	9208.5	.43324	13.269	121.77
#1	-.00012	.00683	20.657	.00066	3.3359	-.02623	-.00015
#2	-.00234	.00133	20.356	-.00024	3.3072	-.03061	-.00392
#3	.00117	-.00685	20.220	-.00044	3.3229	-.02356	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00230	.01606	-.00030
Stddev	.00111	.00038	.00039
%RSD	48.336	2.3357	128.61
#1	-.00215	.01640	.00003
#2	-.00348	.01614	-.00073
#3	-.00127	.01566	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8386.8	53296.	3021.6
Stddev	37.8	223.	29.3
%RSD	.45026	.41852	.97129
#1	8352.5	53490.	2991.9
#2	8427.3	53347.	3050.6
#3	8380.7	53052.	3022.3

Approved: June 25, 2016

Sample Name: L1606128904 Acquired: 6/24/2016 14:56:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00078	.89254	-.00069	.01964	.04255	.00011	5.6683	.00028
Stddev	.00076	.01581	.00109	.00257	.00109	.00004	.0152	.00014
%RSD	98.022	1.7713	158.41	13.060	2.5725	41.643	.26758	50.825
#1	-.00164	.87537	-.00125	.01833	.04129	.00015	5.6815	.00024
#2	-.00048	.89576	.00057	.01800	.04324	.00007	5.6517	.00016
#3	-.00021	.90650	-.00137	.02260	.04312	.00010	5.6716	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00425	.00494	1.2848	1.7945	.00004	1.0750	.06944
Stddev	.00027	.00147	.00133	.0357	.1112	.00319	.1047	.00259
%RSD	122.02	34.538	27.001	2.7795	6.1951	7919.7	9.7411	3.7251
#1	-.00019	.00333	.00648	1.3254	1.8687	-.00206	1.1443	.06646
#2	-.00051	.00594	.00405	1.2582	1.8481	.00371	1.1263	.07089
#3	.00003	.00347	.00430	1.2709	1.6666	-.00153	.95457	.07099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00253	11.300	.00403	.05743	-.00017	-.00179	.00195	3.8550
Stddev	.00020	.072	.00110	.00105	.00329	.00658	.00226	.1069
%RSD	7.7182	.63637	27.173	1.8233	1906.1	368.28	115.87	2.7717
#1	.00264	11.368	.00517	.05829	.00210	-.00819	-.00037	3.9182
#2	.00264	11.309	.00299	.05627	-.00395	.00496	.00208	3.9152
#3	.00230	11.225	.00394	.05774	.00133	-.00213	.00413	3.7317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606128904 Acquired: 6/24/2016 14:56:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.05757**	**.02633**	**-.00071**	**.00137**	**.00722**	**.00200**
Stddev	.00035	.00023	.00560	.00355	.00071	.00007	.00033
%RSD	91.722	.39740	21.269	498.75	51.627	.91462	16.350
#1	-.00073	.05778	.02000	-.00383	.00175	.00716	.00162
#2	-.00038	.05732	.02834	-.00145	.00181	.00729	.00222
#3	-.00003	.05760	.03065	.00315	.00055	.00719	.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8865.6**	**56649.**	**3059.6**
Stddev	13.5	96.	21.0
%RSD	.15270	.17031	.68631
#1	8866.0	56591.	3042.3
#2	8878.9	56761.	3053.7
#3	8851.9	56596.	3083.0

Approved: June 25, 2016

Sample Name: L1606129003 Acquired: 6/24/2016 15:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.23085**	**.01034**	**.01559**	**.36719**	**.00005**	**21.705**	**.00048**
Stddev	.00066	.01132	.00405	.00112	.00034	.00003	.125	.00008
%RSD	83.316	4.9053	39.209	7.1670	.09361	52.637	.57576	16.613
#1	-.00053	.21806	.00670	.01651	.36734	.00007	21.802	.00057
#2	-.00154	.23489	.01470	.01592	.36743	.00007	21.749	.00042
#3	-.00030	.23961	.00961	.01435	.36680	.00002	21.564	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00832**	**.00224**	**.00061**	**33.420**	**3.2767**	**.01261**	**13.855**	**.58209**
Stddev	.00025	.00111	.00133	.070	.0433	.00234	.192	.00232
%RSD	3.0553	49.670	217.79	.20879	1.3202	18.546	1.3850	.39779
#1	.00834	.00100	.00061	33.467	3.2844	.00992	14.064	.58474
#2	.00805	.00316	.00195	33.452	3.3155	.01415	13.814	.58108
#3	.00856	.00256	-.00072	33.340	3.2300	.01376	13.686	.58045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**119.40**	**.01660**	**.07210**	**.00341**	**.00143**	**.00513**	**10.118**
Stddev	.00033	.47	.00077	.00340	.00220	.00378	.00738	.080
%RSD	1430.2	.39268	4.6557	4.7101	64.624	264.86	143.85	.79057
#1	.00020	119.78	.01610	.06894	.00133	.00564	-.00235	10.112
#2	-.00035	119.55	.01749	.07569	.00317	-.00168	.00533	10.200
#3	.00022	118.87	.01621	.07166	.00572	.00033	.01240	10.041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606129003 Acquired: 6/24/2016 15:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00825	.48338	.01285	-.00007	-.00099	.02470	.00130
Stddev	.00046	.00133	.00609	.00020	.00008	.00029	.00043
%RSD	5.5459	.27526	47.375	267.50	8.5468	1.1648	33.241
#1	.00847	.48381	.01168	-.00026	-.00091	.02465	.00080
#2	.00855	.48444	.00743	-.00009	-.00108	.02501	.00160
#3	.00772	.48189	.01943	.00013	-.00099	.02444	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8589.3	54682.	3050.6
Stddev	24.0	271.	24.0
%RSD	.27972	.49573	.78517
#1	8590.4	54964.	3023.0
#2	8564.7	54423.	3063.9
#3	8612.7	54659.	3065.0

Approved: June 25, 2016

Sample Name: L1606129005 Acquired: 6/24/2016 15:04:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00093**	**2.8940**	**.00006**	**.01007**	**.07684**	**.00018**	**1.8409**	**.00000**
Stddev	.00144	.0184	.00220	.00073	.00162	.00006	.0138	.00046
%RSD	154.30	.63640	3601.3	7.2287	2.1026	31.323	.75067	9347.2
#1	-.00260	2.9086	-.00247	.00925	.07870	.00012	1.8257	.00046
#2	-.00011	2.9000	.00139	.01032	.07576	.00019	1.8444	.00000
#3	-.00010	2.8733	.00126	.01063	.07607	.00023	1.8526	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00091**	**.00434**	**-.00038**	**3.1829**	**.55321**	**.00872**	**1.5188**	**.02267**
Stddev	.00018	.00090	.00079	.0133	.03931	.00184	.0455	.00119
%RSD	20.184	20.776	205.81	.41668	7.1064	21.146	2.9981	5.2528
#1	.00112	.00469	-.00125	3.1779	.59786	.01068	1.4921	.02373
#2	.00082	.00502	.00029	3.1979	.52378	.00846	1.5714	.02138
#3	.00078	.00332	-.00019	3.1728	.53798	.00702	1.4930	.02289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**27.020**	**.00272**	**.08458**	**.00016**	**.00433**	**.00430**	**18.456**
Stddev	.00073	.100	.00065	.00188	.00203	.00206	.00371	.304
%RSD	171.02	.37092	23.861	2.2211	1248.4	47.523	86.151	1.6472
#1	-.00010	27.134	.00249	.08421	.00247	.00531	.00264	18.631
#2	.00012	26.983	.00222	.08662	-.00061	.00572	.00172	18.633
#3	.00126	26.944	.00345	.08292	-.00137	.00197	.00855	18.105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606129005 Acquired: 6/24/2016 15:04:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.03803	.06036	-.00240	.00545	.00944	.00214
Stddev	.00054	.00054	.00300	.00069	.00057	.00004	.00035
%RSD	54.381	1.4172	4.9720	28.734	10.423	.45223	16.538
#1	.00056	.03865	.06382	-.00184	.00519	.00939	.00180
#2	.00160	.03778	.05850	-.00219	.00610	.00947	.00213
#3	.00083	.03766	.05876	-.00318	.00505	.00946	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8715.6	55373.	3004.3
Stddev	28.8	88.	20.9
%RSD	.33098	.15973	.69504
#1	8735.4	55391.	2980.2
#2	8728.9	55276.	3014.4
#3	8682.5	55450.	3018.2

Approved: June 25, 2016

Sample Name: L1606112901 Acquired: 6/24/2016 15:08:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00153	.04742	-.00095	.03453	.02713	.00001	86.360	.00034
Stddev	.00217	.00415	.00049	.00360	.00063	.00009	.224	.00044
%RSD	141.80	8.7609	51.957	10.417	2.3220	657.60	.25919	128.64
#1	-.00346	.04486	-.00039	.03082	.02758	-.00008	86.344	.00072
#2	-.00196	.04519	-.00115	.03800	.02641	.00009	86.145	-.00014
#3	.00082	.05221	-.00131	.03476	.02740	.00002	86.592	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00312	.00177	.94597	3.2694	-.00206	18.533	.11547
Stddev	.00014	.00126	.00037	.01236	.0834	.00303	.037	.00006
%RSD	78.771	40.351	21.042	1.3061	2.5502	147.38	.19767	.05424
#1	-.00029	.00408	.00217	.94560	3.3573	-.00518	18.524	.11541
#2	-.00002	.00169	.00170	.93380	3.1914	.00088	18.501	.11554
#3	-.00020	.00357	.00144	.95851	3.2594	-.00189	18.573	.11545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	63.757	.00088	-.00345	-.00001	.00390	.00201	4.3369
Stddev	.00012	.098	.00080	.00790	.00073	.00356	.00350	.0154
%RSD	20.681	.15440	91.170	229.23	11400.	91.387	174.14	.35496
#1	.00052	63.708	.00165	-.00774	-.00051	.00796	-.00076	4.3485
#2	.00048	63.692	.00005	.00567	-.00034	.00129	.00594	4.3428
#3	.00070	63.870	.00094	-.00827	.00083	.00245	.00085	4.3194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112901 Acquired: 6/24/2016 15:08:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.26173	-.00856	-.00313	-.00118	.00293	.00052
Stddev	.00080	.00134	.00446	.00054	.00143	.00016	.00098
%RSD	51.891	.51077	52.060	17.221	121.68	5.3885	189.16
#1	.00076	.26032	-.01247	-.00264	-.00215	.00304	.00128
#2	.00236	.26190	-.00951	-.00371	.00047	.00300	.00086
#3	.00153	.26298	-.00371	-.00305	-.00185	.00275	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8540.9	54113.	2989.8
Stddev	45.6	156.	19.9
%RSD	.53331	.28793	.66720
#1	8508.8	54182.	2978.9
#2	8520.8	53935.	2977.6
#3	8593.0	54223.	3012.8

Approved: June 25, 2016

Sample Name: L1606112902 Acquired: 6/24/2016 15:12:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.29983	.00210	.00463	.01662	.00001	61.912	.00008
Stddev	.00140	.00599	.00218	.00166	.00062	.00006	.415	.00006
%RSD	851.26	1.9983	103.64	35.749	3.7122	644.92	.67074	85.148
#1	.00063	.30673	.00242	.00653	.01642	-.00001	62.250	.00000
#2	.00065	.29672	.00410	.00344	.01613	.00007	61.449	.00009
#3	-.00178	.29603	-.00022	.00393	.01731	-.00004	62.038	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.01059	.00129	.94804	2.0675	.00069	20.139	.47034
Stddev	.00027	.00122	.00016	.02696	.0775	.00357	.320	.00402
%RSD	2948.5	11.527	12.380	2.8436	3.7492	519.77	1.5901	.85492
#1	-.00008	.00944	.00121	.97580	2.0012	.00465	20.332	.47062
#2	-.00020	.01048	.00148	.92196	2.0486	-.00226	19.770	.46619
#3	.00031	.01187	.00119	.94637	2.1528	-.00033	20.317	.47422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	30.320	.00364	.05395	.00396	.00836	-.00176	4.3013
Stddev	.00027	.212	.00081	.00668	.00208	.00440	.00252	.0395
%RSD	24.472	.70024	22.172	12.380	52.449	52.578	143.06	.91824
#1	.00086	30.527	.00437	.06160	.00615	.01344	-.00322	4.3162
#2	.00138	30.102	.00277	.04930	.00201	.00571	.00115	4.3312
#3	.00102	30.330	.00377	.05095	.00373	.00594	-.00320	4.2566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112902 Acquired: 6/24/2016 15:12:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.22725**	**.00528**	**-.00256**	**-.00043**	**.00529**	**.00068**
Stddev	.00083	.00096	.00459	.00338	.00037	.00010	.00058
%RSD	564.50	.42062	86.815	132.11	87.049	1.8289	84.780
#1	-.00087	.22693	.00443	-.00640	-.00011	.00518	.00078
#2	.00076	.22649	.00118	-.00002	-.00084	.00537	.00006
#3	-.00033	.22832	.01024	-.00126	-.00035	.00532	.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8571.6**	**54279.**	**2969.2**
Stddev	16.1	210.	28.2
%RSD	.18756	.38604	.95029
#1	8572.3	54497.	2938.5
#2	8555.3	54260.	2975.3
#3	8587.4	54079.	2993.9

Approved: June 25, 2016

Sample Name: L1606112903 Acquired: 6/24/2016 15:16:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00206**	**.02810**	**.00131**	**.04316**	**.02401**	**.00003**	**88.103**	**-.00001**
Stddev	.00163	.00424	.00349	.00036	.00097	.00004	.414	.00006
%RSD	79.332	15.095	266.64	.84369	4.0298	138.71	.47027	1013.7
#1	-.00372	.03153	.00085	.04353	.02406	.00000	88.569	-.00003
#2	-.00046	.02336	-.00193	.04281	.02302	.00007	87.962	-.00006
#3	-.00199	.02942	.00501	.04314	.02496	.00001	87.777	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.00253**	**.00131**	**.96589**	**1.3495**	**.00123**	**21.585**	**.10128**
Stddev	.00042	.00035	.00067	.03405	.0842	.00325	.244	.00173
%RSD	70.727	13.720	51.685	3.5257	6.2420	263.39	1.1308	1.7072
#1	-.00095	.00223	.00070	.96112	1.2530	.00259	21.821	.10325
#2	-.00013	.00291	.00203	1.0021	1.4081	.00359	21.599	.10062
#3	-.00070	.00244	.00119	.93447	1.3875	-.00247	21.334	.09998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**45.687**	**-.00078**	**-.00721**	**.00004**	**.00503**	**.00046**	**5.7282**
Stddev	.00004	.226	.00053	.00474	.00119	.00065	.00200	.0193
%RSD	10.964	.49543	68.227	65.769	3232.3	13.018	432.45	.33624
#1	.00035	45.948	-.00018	-.00213	-.00052	.00542	.00277	5.7412
#2	.00034	45.538	-.00095	-.00799	.00140	.00427	-.00053	5.7373
#3	.00041	45.576	-.00121	-.01151	-.00077	.00539	-.00085	5.7061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112903 Acquired: 6/24/2016 15:16:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.26833**	**-.01816**	**-.00283**	**-.00066**	**.00168**	**-.00020**
Stddev	.00078	.00133	.00789	.00034	.00071	.00025	.00040
%RSD	532.76	.49719	43.454	11.860	108.55	14.856	199.35
#1	-.00105	.26982	-.01296	-.00288	-.00092	.00197	-.00067
#2	.00022	.26790	-.02724	-.00248	.00015	.00158	-.00001
#3	.00038	.26726	-.01427	-.00314	-.00120	.00151	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8598.7**	**54568.**	**2985.2**
Stddev	14.7	155.	28.7
%RSD	.17099	.28360	.96063
#1	8589.5	54461.	2952.2
#2	8615.7	54497.	2998.6
#3	8591.0	54745.	3004.7

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 15:20:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40824	10.420	.41623	.50512	1.0434	.05077	10.410	.05303
Stddev	.00102	.011	.00166	.00159	.0051	.00011	.048	.00003
%RSD	.24985	.10317	.39821	.31537	.48909	.20971	.45682	.05731
#1	.40928	10.415	.41742	.50640	1.0406	.05065	10.460	.05302
#2	.40724	10.413	.41433	.50561	1.0402	.05085	10.366	.05306
#3	.40821	10.433	.41693	.50333	1.0493	.05082	10.403	.05300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21118	.51349	.53049	4.1296	52.613	1.0448	10.282	.52373
Stddev	.00035	.00153	.00198	.0197	.215	.0121	.119	.00095
%RSD	.16775	.29847	.37336	.47674	.40803	1.1621	1.1607	.18074
#1	.21141	.51175	.53242	4.1285	52.846	1.0585	10.343	.52404
#2	.21135	.51410	.53058	4.1499	52.423	1.0356	10.145	.52448
#3	.21077	.51463	.52847	4.1106	52.571	1.0402	10.359	.52266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0543	52.234	.52970	10.421	.53044	1.2449	.41601	5.4104
Stddev	.0058	.138	.00167	.015	.00320	.0077	.00786	.0069
%RSD	.55132	.26343	.31583	.14051	.60281	.61774	1.8884	.12671
#1	1.0591	52.228	.53040	10.408	.52788	1.2425	.41688	5.4032
#2	1.0560	52.100	.53092	10.437	.53402	1.2535	.42340	5.4168
#3	1.0478	52.375	.52780	10.419	.52942	1.2386	.40776	5.4113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 15:20:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0527**	**1.0427**	**1.0445**	**.52624**	**1.0215**	**1.0629**	**1.0377**
Stddev	.0032	.0041	.0034	.00504	.0054	.0007	.0080
%RSD	.30129	.38916	.32629	.95804	.53233	.06397	.77418
#1	1.0545	1.0426	1.0412	.52173	1.0217	1.0629	1.0451
#2	1.0546	1.0387	1.0480	.53168	1.0159	1.0636	1.0389
#3	1.0491	1.0468	1.0444	.52530	1.0268	1.0623	1.0291
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8453.3**	**53500.**	**2924.6**
Stddev	46.2	193.	16.5
%RSD	.54695	.36073	.56251
#1	8402.3	53503.	2906.8
#2	8492.4	53692.	2927.9
#3	8465.1	53306.	2939.2

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 15:23:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00065	.00992	.00234	.00351	.00116	.00005	.02900	-.00001
Stddev	.00127	.00415	.00228	.00015	.00102	.00007	.00886	.00016
%RSD	194.64	41.872	97.529	4.1352	87.524	137.88	30.568	1159.7
#1	-.00112	.01430	-.00008	.00361	.00056	.00012	.03894	-.00002
#2	-.00162	.00942	.00265	.00358	.00234	-.00001	.02614	.00015
#3	.00078	.00604	.00445	.00334	.00060	.00004	.02192	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00116	-.00112	-.00648	.12931	-.00349	.00279	-.00148
Stddev	.00033	.00174	.00093	.02647	.07085	.00052	.12182	.00041
%RSD	102.16	151.03	83.446	408.59	54.789	15.028	4365.9	27.406
#1	-.00027	.00292	-.00056	-.01439	.08320	-.00296	.07318	-.00103
#2	-.00002	.00111	-.00220	.02304	.09384	-.00350	-.13788	-.00160
#3	-.00068	-.00057	-.00060	-.02808	.21088	-.00401	.07307	-.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00377	.03069	-.00012	-.00362	.00099	.00980	-.00258	.00553
Stddev	.00021	.00731	.00017	.00052	.00072	.00250	.00356	.00133
%RSD	5.5503	23.828	141.85	14.411	72.602	25.470	137.60	24.033
#1	.00400	.03907	-.00021	-.00421	.00089	.01055	-.00604	.00429
#2	.00359	.02561	-.00021	-.00320	.00174	.01183	.00106	.00693
#3	.00372	.02739	.00007	-.00346	.00032	.00701	-.00278	.00538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 15:23:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00006	.00390	-.00184	-.00019	.00017	.00074
Stddev	.00034	.00047	.00298	.00079	.00043	.00010	.00028
%RSD	126.24	847.27	76.444	42.940	222.76	60.338	37.477
#1	.00001	-.00046	.00433	-.00204	-.00069	.00029	.00091
#2	.00066	.00046	.00665	-.00251	.00004	.00014	.00042
#3	.00015	.00017	.00073	-.00097	.00007	.00009	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9150.0	58046.	3103.6
Stddev	34.2	243.	28.5
%RSD	.37419	.41787	.91849
#1	9166.8	58132.	3091.9
#2	9172.6	58235.	3082.8
#3	9110.6	57773.	3136.1

Approved: June 25, 2016

Sample Name: L1606112904 Acquired: 6/24/2016 15:27:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.30610	.00349	.00484	.01680	-.00005	61.162	.00024
Stddev	.00266	.00425	.00225	.00067	.00024	.00004	.150	.00011
%RSD	1354.1	1.3879	64.385	13.909	1.4087	89.396	.24565	45.340
#1	-.00149	.30821	.00608	.00459	.01688	-.00002	61.102	.00011
#2	-.00119	.30889	.00214	.00560	.01653	-.00010	61.332	.00032
#3	.00327	.30121	.00224	.00432	.01699	-.00002	61.050	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.01616	.00247	1.0511	2.1639	.00265	19.710	.53272
Stddev	.00012	.00059	.00049	.0193	.0834	.00241	.173	.00246
%RSD	129.55	3.6203	19.814	1.8330	3.8560	91.029	.87731	.46259
#1	-.00009	.01640	.00191	1.0288	2.1065	.00152	19.534	.52992
#2	.00002	.01659	.00280	1.0622	2.1255	.00541	19.716	.53455
#3	-.00022	.01550	.00269	1.0622	2.2596	.00101	19.880	.53369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00224	29.844	.00743	.06304	.00618	.01638	.00390	4.1954
Stddev	.00008	.159	.00126	.00450	.00021	.00264	.00288	.0213
%RSD	3.3560	.53301	16.998	7.1387	3.3773	16.138	73.999	.50670
#1	.00231	29.838	.00709	.06811	.00642	.01793	.00356	4.2121
#2	.00224	30.006	.00883	.05951	.00606	.01788	.00693	4.2026
#3	.00216	29.688	.00638	.06151	.00605	.01333	.00119	4.1715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112904 Acquired: 6/24/2016 15:27:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.22406	.00181	.00036	-.00058	.00615	.00172
Stddev	.00007	.00022	.00734	.00244	.00087	.00015	.00076
%RSD	17.459	.09649	406.25	670.43	150.42	2.4773	44.222
#1	.00049	.22431	-.00276	.00318	.00042	.00630	.00086
#2	.00040	.22393	-.00209	-.00113	-.00100	.00600	.00231
#3	.00035	.22394	.01028	-.00095	-.00117	.00614	.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8744.7	55412.	3026.9
Stddev	38.5	169.	22.6
%RSD	.44021	.30480	.74756
#1	8749.8	55267.	3016.4
#2	8780.4	55372.	3011.4
#3	8703.9	55597.	3052.8

Approved: June 25, 2016

Sample Name: L1606112905 Acquired: 6/24/2016 15:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.01140	.00022	.00122	.00193	.00011	.07553	.00012
Stddev	.00193	.01011	.00272	.00166	.00083	.00003	.00088	.00020
%RSD	340.70	88.707	1246.3	135.40	43.103	31.594	1.1614	171.20
#1	.00179	.01735	.00330	.00313	.00287	.00010	.07465	-.00009
#2	.00157	.01711	-.00076	.00011	.00161	.00008	.07641	.00013
#3	-.00166	-.00028	-.00188	.00044	.00131	.00014	.07552	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.00179	-.00013	-.00208	.05937	-.00493	.01993	-.00020
Stddev	.00039	.00092	.00162	.01996	.01936	.00171	.04297	.00398
%RSD	69.405	51.134	1287.4	957.73	32.612	34.778	215.57	2030.5
#1	-.00019	.00143	.00175	.00550	.07429	-.00691	-.01080	-.00459
#2	-.00097	.00283	-.00102	-.02473	.03749	-.00396	.06904	.00316
#3	-.00052	.00111	-.00111	.01297	.06632	-.00392	.00157	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.19673	.00066	-.00598	-.00007	.00185	.00246	.04335
Stddev	.00032	.01934	.00099	.00702	.00356	.00034	.00251	.00410
%RSD	52.254	9.8320	149.70	117.31	5122.7	18.375	102.19	9.4602
#1	.00034	.21710	.00051	-.01339	.00401	.00225	.00393	.03880
#2	.00096	.17861	-.00025	-.00514	-.00170	.00164	-.00044	.04677
#3	.00053	.19448	.00171	.00057	-.00252	.00167	.00389	.04446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112905 Acquired: 6/24/2016 15:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00050	.00137	-.00139	-.00093	.00257	-.00038
Stddev	.00056	.00024	.01168	.00187	.00042	.00002	.00017
%RSD	55.495	48.882	850.09	134.64	45.297	.75245	45.272
#1	.00129	.00076	.00019	-.00328	-.00062	.00258	-.00051
#2	.00036	.00028	.01360	.00046	-.00076	.00255	-.00018
#3	.00137	.00046	-.00967	-.00135	-.00142	.00257	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8734.1	55771.	2977.0
Stddev	61.0	169.	16.5
%RSD	.69849	.30321	.55417
#1	8730.3	55638.	2990.1
#2	8797.0	55713.	2958.5
#3	8675.1	55961.	2982.4

Approved: June 25, 2016

Sample Name: L1606127201 Acquired: 6/24/2016 15:35:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.02906	.00201	.10271	.01218	.00003	20.213	.00009
Stddev	.00117	.00902	.00030	.00201	.00114	.00005	.197	.00012
%RSD	4520.9	31.026	14.913	1.9615	9.3835	162.60	.97382	138.86
#1	.00128	.03946	.00223	.10504	.01090	.00001	20.371	.00012
#2	-.00038	.02417	.00215	.10159	.01253	-.00000	19.992	.00020
#3	-.00097	.02355	.00167	.10152	.01310	.00009	20.275	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.00322	.00018	.00370	.50036	.00507	3.7531	-.00235
Stddev	.00050	.00044	.00072	.02394	.09084	.00627	.0578	.00152
%RSD	321.71	13.795	410.19	646.53	18.154	123.69	1.5413	64.541
#1	.00023	.00369	.00101	-.02389	.60518	.00467	3.7411	-.00063
#2	.00003	.00318	-.00019	.01903	.44485	-.00099	3.8160	-.00291
#3	-.00072	.00280	-.00029	.01596	.45103	.01152	3.7022	-.00351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	138.48	-.00049	.00895	.00151	.00220	.00648	4.7916
Stddev	.00020	.68	.00066	.00484	.00341	.00275	.00555	.0247
%RSD	16.240	.49155	133.40	54.067	226.53	125.05	85.629	.51620
#1	.00108	138.86	-.00055	.01077	-.00143	.00260	.01252	4.8079
#2	.00145	137.70	.00019	.01263	.00069	-.00073	.00536	4.8036
#3	.00114	138.89	-.00113	.00347	.00525	.00472	.00158	4.7631
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127201 Acquired: 6/24/2016 15:35:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.06627	-.00304	-.00129	.00718	.00237	.00290
Stddev	.00103	.00053	.00409	.00463	.00068	.00008	.00098
%RSD	265.57	.80562	134.51	357.80	9.5384	3.2543	33.907
#1	.00080	.06650	-.00069	-.00660	.00664	.00231	.00179
#2	-.00096	.06566	-.00067	.00082	.00695	.00246	.00367
#3	-.00101	.06665	-.00777	.00190	.00795	.00235	.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8640.6	54537.	2976.3
Stddev	33.4	414.	2.8
%RSD	.38600	.75997	.09304
#1	8644.3	54100.	2977.4
#2	8672.0	54589.	2978.3
#3	8605.6	54924.	2973.1

Approved: June 25, 2016

Sample Name: L1606127202 Acquired: 6/24/2016 15:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00186	.20642	.00481	.36475	.06011	.00013	99.662
Stddev	.00151	.00493	.00284	.00380	.00039	.00009	.247
%RSD	81.194	2.3881	58.969	1.0428	.65090	70.313	.24793
#1	-.00316	.20852	.00188	.36055	.06036	.00024	99.944
#2	-.00221	.20995	.00754	.36574	.06030	.00009	99.557
#3	-.00020	.20079	.00500	.36796	.05966	.00007	99.485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	-.00019	.00432	.00026	.09326	2.6088	.04279
Stddev	.00015	.00023	.00087	.00198	.00865	.0720	.00422
%RSD	400.35	123.60	20.116	760.87	9.2780	2.7582	9.8647
#1	.00014	-.00025	.00365	-.00200	.10250	2.6023	.04293
#2	-.00013	.00007	.00402	.00170	.09194	2.6838	.03850
#3	.00011	-.00038	.00531	.00108	.08535	2.5403	.04694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	56.637	.00259	.00352	F 291.42	.00153	.00653	.00125
Stddev	.045	.00205	.00017	.68	.00123	.00611	.00197
%RSD	.08009	79.394	4.9276	.23185	80.436	93.561	157.56
#1	56.602	.00444	.00340	292.14	.00132	.01203	-.00086
#2	56.688	.00294	.00372	291.32	.00042	.00760	.00158
#3	56.620	.00038	.00344	290.80	.00286	-.00004	.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606127202 Acquired: 6/24/2016 15:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00336	.01090	9.4240	.00071	1.0342	-.01392	-.00220
Stddev	.00383	.00615	.0240	.00151	.0037	.00663	.00343
%RSD	114.00	56.427	.25425	212.99	.35481	47.596	156.09
#1	.00463	.00381	9.4269	.00142	1.0381	-.00964	-.00233
#2	-.00094	.01477	9.4464	-.00103	1.0335	-.02155	-.00556
#3	.00639	.01413	9.3988	.00174	1.0309	-.01057	.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00964	.00621	.00119
Stddev	.00038	.00006	.00099
%RSD	3.9446	.99408	82.742
#1	.00988	.00626	.00026
#2	.00920	.00614	.00109
#3	.00983	.00622	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8435.9	53530.	2970.9
Stddev	12.7	193.	17.9
%RSD	.15053	.36100	.60288
#1	8449.6	53485.	2950.4
#2	8433.7	53742.	2979.1
#3	8424.5	53363.	2983.2

Approved: June 25, 2016

Sample Name: L1606127901 Acquired: 6/24/2016 15:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00142**	**4.7663**	**.00159**	**.19149**	**.18987**	**.00044**	**117.30**	**.00019**
Stddev	.00097	.0101	.00508	.00228	.00171	.00003	.36	.00019
%RSD	68.564	.21115	319.18	1.1931	.90121	7.9858	.30828	101.16
#1	-.00138	4.7733	-.00262	.19304	.18994	.00044	117.72	.00036
#2	-.00047	4.7548	.00724	.19255	.18812	.00047	117.12	-.00002
#3	-.00241	4.7708	.00015	.18886	.19154	.00040	117.06	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00381**	**.02665**	**.00736**	**7.4592**	**1.7020**	**.01711**	**47.630**	**.93316**
Stddev	.00023	.00138	.00126	.0357	.0635	.00342	.150	.00698
%RSD	6.1636	5.1938	17.091	.47804	3.7303	19.974	.31555	.74834
#1	.00401	.02594	.00596	7.4987	1.7516	.02100	47.481	.93898
#2	.00386	.02577	.00840	7.4496	1.7241	.01458	47.626	.92542
#3	.00355	.02825	.00770	7.4293	1.6305	.01576	47.782	.93509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00556**	**8.7030**	**.01355**	**.23085**	**.00447**	**-.00025**	**.00322**	**15.121**
Stddev	.00008	.0290	.00146	.00413	.00381	.00657	.00291	.053
%RSD	1.3705	.33347	10.784	1.7907	85.136	2585.4	90.596	.35335
#1	.00557	8.7074	.01369	.22722	.00571	.00305	.00109	15.155
#2	.00548	8.6721	.01493	.23000	.00751	.00401	.00202	15.147
#3	.00563	8.7296	.01202	.23535	.00020	-.00782	.00654	15.059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127901 Acquired: 6/24/2016 15:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00095**	**.60203**	**.04472**	**-.00029**	**.01037**	**.12433**	**.00197**
Stddev	.00031	.00068	.00309	.00162	.00044	.00100	.00042
%RSD	32.369	.11312	6.9034	565.97	4.2747	.80201	21.277
#1	.00130	.60249	.04781	-.00207	.01047	.12469	.00218
#2	.00073	.60125	.04470	.00012	.00988	.12510	.00223
#3	.00082	.60235	.04164	.00109	.01075	.12321	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8541.6**	**54387.**	**2958.0**
Stddev	16.9	129.	6.0
%RSD	.19780	.23665	.20194
#1	8551.3	54242.	2952.3
#2	8522.0	54430.	2964.2
#3	8551.3	54488.	2957.4

Approved: June 25, 2016

Sample Name: L1606127905 Acquired: 6/24/2016 15:47:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	8.8519	.00642	.19520	.18168	.00060	88.855	.00021
Stddev	.00244	.0381	.00178	.00225	.00180	.00002	.745	.00017
%RSD	304.73	.43060	27.774	1.1510	.99112	4.1261	.83808	83.018
#1	-.00092	8.8959	.00767	.19423	.18198	.00060	88.810	.00015
#2	.00359	8.8302	.00438	.19361	.18331	.00058	89.621	.00007
#3	-.00027	8.8295	.00720	.19777	.17975	.00063	88.133	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00371	.01642	.00773	9.7705	2.6089	.02290	51.286	.37067
Stddev	.00016	.00003	.00088	.0365	.0601	.00215	.182	.00572
%RSD	4.3765	.17741	11.436	.37305	2.3051	9.3850	.35555	1.5433
#1	.00374	.01645	.00699	9.7786	2.6549	.02048	51.464	.37725
#2	.00353	.01639	.00870	9.8021	2.5408	.02367	51.099	.36781
#3	.00386	.01643	.00749	9.7306	2.6308	.02456	51.296	.36694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00429	17.960	.01399	.58938	.00723	.00345	.01660	21.595
Stddev	.00025	.178	.00089	.00540	.00230	.00161	.00485	.031
%RSD	5.7811	.99221	6.3701	.91546	31.747	46.678	29.224	.14556
#1	.00411	17.965	.01309	.59443	.00477	.00160	.01386	21.612
#2	.00457	18.136	.01402	.58370	.00760	.00453	.01374	21.615
#3	.00418	17.779	.01487	.59001	.00932	.00422	.02220	21.559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127905 Acquired: 6/24/2016 15:47:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00678	.39124	.08635	-.00072	.01938	.20486	.00337
Stddev	.00081	.00258	.00286	.00091	.00084	.00112	.00043
%RSD	12.000	.65984	3.3097	126.77	4.3495	.54646	12.804
#1	.00772	.39217	.08786	-.00156	.01996	.20592	.00287
#2	.00628	.39323	.08814	.00025	.01978	.20498	.00362
#3	.00633	.38833	.08306	-.00084	.01842	.20369	.00361
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8506.2	53713.	2954.1
Stddev	7.0	248.	24.6
%RSD	.08199	.46129	.83302
#1	8500.8	53999.	2935.6
#2	8503.6	53563.	2944.7
#3	8514.1	53577.	2982.0

Approved: June 25, 2016

Sample Name: L1606072901 Acquired: 6/24/2016 15:51:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	1.8041	.00151	.01140	.10342	.00036	3.3368	.00006
Stddev	.00108	.0244	.00306	.00144	.00016	.00001	.0325	.00013
%RSD	427.84	1.3517	203.06	12.597	.15291	1.6360	.97262	213.80
#1	-.00004	1.8139	.00460	.01195	.10325	.00036	3.3478	.00020
#2	.00071	1.7764	.00145	.01248	.10357	.00035	3.3623	.00000
#3	-.00142	1.8221	-.00153	.00977	.10345	.00036	3.3003	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00601	.00511	.00285	8.2259	3.9554	.00145	2.3354	.17823
Stddev	.00015	.00146	.00144	.0492	.0266	.00103	.0397	.00509
%RSD	2.5410	28.552	50.611	.59798	.67201	71.162	1.7012	2.8559
#1	.00590	.00675	.00119	8.2785	3.9276	.00182	2.3174	.17617
#2	.00596	.00394	.00359	8.2184	3.9579	.00029	2.3079	.18402
#3	.00619	.00465	.00379	8.1810	3.9806	.00225	2.3809	.17449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	8.3779	.00603	.06450	.00384	.00090	.00053	7.1161
Stddev	.00020	.1155	.00102	.00385	.00543	.00485	.00847	.0228
%RSD	31.960	1.3781	16.958	5.9688	141.68	539.69	1590.2	.32114
#1	.00082	8.4900	.00592	.06848	.00179	-.00460	.00777	7.1376
#2	.00068	8.3843	.00710	.06080	-.00028	.00272	-.00879	7.1186
#3	.00042	8.2593	.00507	.06423	.01000	.00457	.00261	7.0921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072901 Acquired: 6/24/2016 15:51:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.04015**	**.03567**	**-.00369**	**.00716**	**.03681**	**.00098**
Stddev	.00043	.00039	.00196	.00299	.00019	.00045	.00038
%RSD	304.20	.97044	5.5017	80.892	2.6476	1.2228	39.254
#1	.00025	.04034	.03670	-.00592	.00694	.03696	.00089
#2	-.00033	.04041	.03689	-.00486	.00725	.03716	.00065
#3	.00052	.03970	.03340	-.00030	.00729	.03630	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8601.0**	**55071.**	**2949.1**
Stddev	22.1	435.	50.8
%RSD	.25740	.79039	1.7219
#1	8576.7	54573.	2940.0
#2	8620.1	55377.	2903.5
#3	8606.2	55264.	3003.9

Approved: June 25, 2016

Sample Name: L1606072902 Acquired: 6/24/2016 15:55:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00183	.07171	-.00004	.00877	.08968	.00017	3.1101	.00014
Stddev	.00133	.00367	.00088	.00181	.00076	.00008	.0257	.00041
%RSD	72.550	5.1181	2064.2	20.689	.84741	48.064	.82680	296.40
#1	-.00115	.07091	-.00060	.01060	.09049	.00019	3.1398	.00007
#2	-.00335	.06851	.00097	.00697	.08956	.00008	3.0951	.00058
#3	-.00098	.07572	-.00050	.00874	.08898	.00025	3.0953	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	.00242	-.00092	.10471	3.8808	.00116	2.1628	.09158
Stddev	.00017	.00058	.00163	.02662	.0547	.00465	.0847	.00129
%RSD	8.4444	23.790	177.68	25.419	1.4105	401.58	3.9169	1.4137
#1	.00216	.00221	-.00063	.12487	3.9348	.00494	2.1162	.09307
#2	.00216	.00307	-.00267	.07454	3.8824	.00256	2.1116	.09074
#3	.00186	.00198	.00055	.11471	3.8253	-.00403	2.2606	.09093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	8.6660	.00357	-.01372	-.00186	.00337	.00433	5.4192
Stddev	.00050	.0276	.00104	.00287	.00136	.00414	.00201	.0141
%RSD	81.607	.31795	29.178	20.893	72.911	123.08	46.400	.26036
#1	.00102	8.6437	.00292	-.01305	-.00038	.00625	.00365	5.4112
#2	.00005	8.6574	.00477	-.01686	-.00305	-.00138	.00275	5.4355
#3	.00077	8.6968	.00302	-.01125	-.00214	.00523	.00659	5.4109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072902 Acquired: 6/24/2016 15:55:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.04141	.00013	-.00361	-.00026	.00979	-.00013
Stddev	.00063	.00072	.00249	.00115	.00139	.00018	.00021
%RSD	803.32	1.7354	1938.9	31.844	526.60	1.8652	168.23
#1	.00042	.04184	.00137	-.00388	-.00173	.00988	.00006
#2	.00046	.04058	.00175	-.00235	-.00009	.00991	-.00008
#3	-.00065	.04180	-.00274	-.00460	.00103	.00958	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8610.5	55271.	2985.6
Stddev	26.5	458.	16.5
%RSD	.30752	.82920	.55375
#1	8583.1	55190.	2988.7
#2	8612.5	55764.	2967.7
#3	8635.9	54858.	3000.3

Approved: June 25, 2016

Sample Name: L1606072903 Acquired: 6/24/2016 15:59:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00118**	**3.0417**	**.00235**	**.05187**	**.04806**	**.00261**	**52.177**	**.00034**
Stddev	.00191	.0195	.00046	.00139	.00143	.00010	.964	.00029
%RSD	162.37	.64007	19.486	2.6772	2.9802	3.6445	1.8470	86.323
#1	-.00068	3.0605	.00250	.05336	.04904	.00255	52.373	.00001
#2	.00314	3.0430	.00183	.05062	.04641	.00272	51.130	.00058
#3	.00108	3.0216	.00270	.05162	.04872	.00256	53.027	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05155**	**.00163**	**.00615**	**3.2341**	**2.3681**	**.00264**	**15.355**	**.83166**
Stddev	.00029	.00223	.00059	.0481	.0794	.00380	.178	.01170
%RSD	.56184	136.36	9.6575	1.4861	3.3536	143.97	1.1614	1.4068
#1	.05176	.00341	.00624	3.2584	2.3449	-.00169	15.410	.84099
#2	.05167	.00234	.00669	3.1788	2.4565	.00542	15.156	.81853
#3	.05122	-.00086	.00552	3.2652	2.3028	.00418	15.500	.83544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00086**	**6.0920**	**.02162**	**-.00809**	**.00351**	**.00212**	**-.00139**	**5.6304**
Stddev	.00023	.0506	.00096	.00241	.00275	.00391	.00054	.0235
%RSD	26.502	.83131	4.4295	29.822	78.325	184.24	38.556	.41692
#1	.00068	6.1333	.02268	-.00867	.00452	-.00008	-.00126	5.6575
#2	.00079	6.0355	.02082	-.00544	.00040	-.00019	-.00198	5.6160
#3	.00112	6.1071	.02136	-.01016	.00562	.00664	-.00093	5.6178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072903 Acquired: 6/24/2016 15:59:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.47657**	**-.00608**	**-.00476**	**-.00070**	**.06207**	**.00194**
Stddev	.00020	.00492	.00552	.00119	.00050	.00066	.00073
%RSD	500.65	1.0315	90.719	25.070	72.152	1.0565	37.457
#1	-.00001	.48049	.00025	-.00490	-.00086	.06272	.00252
#2	-.00026	.47105	-.00862	-.00588	-.00110	.06208	.00113
#3	.00015	.47816	-.00987	-.00350	-.00013	.06141	.00218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8765.4**	**55697.**	**3007.0**
Stddev	29.6	471.	42.7
%RSD	.33730	.84576	1.4194
#1	8742.0	55550.	2962.9
#2	8755.4	55316.	3048.1
#3	8798.6	56224.	3009.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:03:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41289	10.450	.41348	.51043	1.0555	.05100	10.588	.05276
Stddev	.00257	.033	.00046	.00258	.0038	.00013	.036	.00002
%RSD	.62124	.31280	.11216	.50484	.35613	.25797	.33694	.04519
#1	.41200	10.430	.41401	.50751	1.0515	.05085	10.563	.05275
#2	.41089	10.432	.41328	.51239	1.0590	.05106	10.629	.05274
#3	.41578	10.488	.41315	.51139	1.0561	.05109	10.571	.05278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21164	.51432	.52788	4.1964	53.258	1.0465	10.545	.52810
Stddev	.00062	.00111	.00081	.0580	.178	.0014	.008	.00391
%RSD	.29347	.21487	.15291	1.3823	.33451	.13725	.07407	.74105
#1	.21169	.51306	.52786	4.1294	53.061	1.0455	10.542	.52435
#2	.21223	.51514	.52709	4.2295	53.408	1.0459	10.540	.52778
#3	.21099	.51475	.52870	4.2303	53.304	1.0481	10.554	.53216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0563	52.905	.52985	10.441	.52745	1.2469	.41732	5.4599
Stddev	.0050	.293	.00133	.026	.00100	.0023	.00481	.0125
%RSD	.47494	.55369	.25035	.25038	.18928	.18400	1.1515	.22826
#1	1.0597	52.572	.53125	10.452	.52655	1.2494	.41899	5.4724
#2	1.0587	53.123	.52861	10.460	.52727	1.2448	.42108	5.4598
#3	1.0506	53.021	.52970	10.412	.52852	1.2466	.41191	5.4474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:03:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0560**	**1.0590**	**1.0626**	**.52607**	**1.0260**	**1.0604**	**1.0440**
Stddev	.0044	.0030	.0208	.00455	.0043	.0021	.0098
%RSD	.42093	.28690	1.9614	.86396	.41541	.20224	.93608
#1	1.0595	1.0556	1.0394	.53131	1.0214	1.0614	1.0527
#2	1.0574	1.0601	1.0799	.52323	1.0298	1.0619	1.0458
#3	1.0510	1.0613	1.0685	.52368	1.0267	1.0580	1.0334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8488.4**	**53377.**	**2896.8**
Stddev	8.3	364.	12.7
%RSD	.09787	.68148	.43965
#1	8479.0	53754.	2889.4
#2	8491.5	53348.	2889.4
#3	8494.7	53029.	2911.5

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:06:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00237**	**.00904**	**-.00013**	**.00126**	**.00087**	**.00009**	**-.03750**	**-.00001**
Stddev	.00028	.00458	.00263	.00213	.00072	.00007	.02259	.00008
%RSD	11.906	50.683	2037.4	169.22	82.542	80.192	60.228	1296.7
#1	-.00241	.00648	.00161	-.00103	.00165	.00017	-.03103	-.00010
#2	-.00207	.01433	.00116	.00161	.00026	.00004	-.06261	.00006
#3	-.00263	.00631	-.00315	.00320	.00069	.00005	-.01886	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.00163**	**-.00062**	**-.00620**	**.11573**	**-.00304**	**.01488**	**-.00078**
Stddev	.00019	.00081	.00029	.01930	.05076	.00240	.08011	.00324
%RSD	50.224	49.496	47.487	311.51	43.862	78.989	538.48	412.93
#1	-.00042	.00249	-.00061	-.01546	.17426	-.00529	-.06290	.00186
#2	-.00056	.00088	-.00092	-.01911	.08368	-.00051	.01039	.00018
#3	-.00018	.00152	-.00033	.01599	.08926	-.00333	.09714	-.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00388**	**.01952**	**-.00090**	**.00067**	**.00140**	**.00754**	**.00367**	**.00739**
Stddev	.00023	.03874	.00071	.00300	.00256	.00569	.00313	.00164
%RSD	6.0070	198.45	79.652	449.20	182.69	75.419	85.488	22.213
#1	.00376	.02524	-.00008	-.00038	.00209	.01012	.00682	.00912
#2	.00415	-.02176	-.00124	-.00167	-.00143	.01148	.00055	.00586
#3	.00373	.05509	-.00138	.00405	.00355	.00102	.00364	.00718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:06:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00023	-.00285	.00152	-.00011	.00008	.00116
Stddev	.00056	.00010	.00052	.00103	.00094	.00006	.00015
%RSD	318.85	44.632	18.333	67.447	850.45	74.145	12.905
#1	.00055	.00034	-.00230	.00197	.00080	.00011	.00132
#2	-.00047	.00013	-.00334	.00225	-.00005	.00011	.00114
#3	.00045	.00022	-.00292	.00035	-.00108	.00001	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8999.0	56919.	3062.6
Stddev	9.4	30.	18.0
%RSD	.10413	.05237	.58755
#1	9009.8	56950.	3042.1
#2	8994.5	56918.	3075.7
#3	8992.7	56890.	3070.0

Approved: June 25, 2016

Sample Name: L1606114801 Acquired: 6/24/2016 16:10:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	.79294	.00201	.13513	.08691	.00012	28.737	.00030
Stddev	.00214	.00688	.00416	.00148	.00038	.00006	.282	.00020
%RSD	404.68	.86711	206.32	1.0978	.43964	55.958	.98042	65.656
#1	-.00285	.79770	.00316	.13676	.08683	.00010	28.751	.00014
#2	-.00010	.78505	.00548	.13388	.08658	.00006	28.449	.00052
#3	.00136	.79606	-.00260	.13474	.08733	.00019	29.012	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00303	.00093	.48318	5.0170	.00697	15.013	.02622
Stddev	.00047	.00140	.00169	.02352	.0508	.00319	.317	.00088
%RSD	624.02	46.131	181.65	4.8676	1.0122	45.790	2.1109	3.3547
#1	-.00062	.00464	.00230	.46183	4.9691	.00964	14.955	.02533
#2	.00023	.00225	.00145	.50839	5.0118	.00344	14.729	.02708
#3	.00016	.00220	-.00096	.47933	5.0702	.00783	15.355	.02625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	68.950	.00101	.04783	-.00130	.00580	.00131	4.7242
Stddev	.00040	.584	.00074	.00541	.00251	.00495	.00256	.0383
%RSD	15.214	.84747	72.757	11.317	193.03	85.336	195.73	.81053
#1	.00232	69.030	.00034	.05397	-.00090	.00563	.00084	4.7496
#2	.00249	68.330	.00180	.04371	-.00398	.00094	.00407	4.7429
#3	.00308	69.490	.00090	.04583	.00099	.01083	-.00099	4.6802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114801 Acquired: 6/24/2016 16:10:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.27997**	**.00221**	**-.00090**	**.00318**	**.00551**	**.00289**
Stddev	.00064	.00232	.00318	.00103	.00034	.00004	.00087
%RSD	411.94	.83018	144.19	113.71	10.535	.75135	29.945
#1	.00041	.28044	.00583	.00027	.00296	.00549	.00189
#2	-.00003	.27744	-.00015	-.00131	.00357	.00556	.00344
#3	-.00085	.28201	.00094	-.00166	.00301	.00548	.00335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8599.5**	**54385.**	**2981.3**
Stddev	16.0	89.	24.9
%RSD	.18617	.16380	.83644
#1	8603.2	54438.	2974.6
#2	8613.3	54435.	3008.9
#3	8581.9	54282.	2960.3

Approved: June 25, 2016

Sample Name: L1606114802 Acquired: 6/24/2016 16:14:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00204**	**.04975**	**.00299**	**.13869**	**.15047**	**-.00005**	**55.818**	**.00017**
Stddev	.00109	.01051	.00093	.00193	.00152	.00005	.396	.00020
%RSD	53.121	21.121	30.942	1.3904	1.0132	102.05	.70964	116.40
#1	-.00265	.04009	.00388	.13978	.15223	-.00009	56.185	-.00006
#2	-.00269	.06094	.00203	.13983	.14951	.00001	55.872	.00027
#3	-.00079	.04821	.00306	.13647	.14968	-.00007	55.398	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00481**	**.00009**	**.04662**	**2.9224**	**.00713**	**49.316**	**.00366**
Stddev	.00044	.00030	.00072	.01678	.0836	.00442	.171	.00293
%RSD	1148.5	6.2977	802.56	35.999	2.8609	61.973	.34731	80.138
#1	-.00051	.00471	-.00074	.03351	2.9561	.00300	49.393	.00341
#2	.00002	.00515	.00053	.04082	2.8272	.00660	49.435	.00671
#3	.00037	.00456	.00048	.06554	2.9839	.01179	49.119	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**121.90**	**.00147**	**.02233**	**.00149**	**.00278**	**.01025**	**6.1560**
Stddev	.00035	.74	.00041	.00365	.00184	.00274	.00234	.0472
%RSD	18.786	.61102	27.946	16.368	123.30	98.711	22.816	.76606
#1	.00151	122.69	.00179	.01811	-.00020	.00379	.01254	6.1806
#2	.00191	121.83	.00160	.02439	.00122	-.00033	.01035	6.1857
#3	.00221	121.20	.00101	.02449	.00344	.00487	.00787	6.1016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114802 Acquired: 6/24/2016 16:14:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.39251**	**-.00823**	**-.00167**	**.00748**	**.00735**	**.00172**
Stddev	.00093	.00157	.00304	.00302	.00088	.00035	.00065
%RSD	461.50	.40050	36.982	180.68	11.724	4.7920	38.067
#1	-.00008	.39329	-.00720	-.00346	.00697	.00775	.00121
#2	.00066	.39355	-.00584	-.00336	.00697	.00723	.00149
#3	-.00119	.39070	-.01166	.00181	.00849	.00708	.00246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8495.3**	**54006.**	**2982.2**
Stddev	21.4	124.	30.9
%RSD	.25175	.22933	1.0346
#1	8477.7	53900.	2949.3
#2	8519.1	54142.	3010.5
#3	8489.1	53977.	2986.7

Approved: June 25, 2016

Sample Name: L1606115001 Acquired: 6/24/2016 16:18:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	1.0029	.00299	.14279	.11041	.00016	35.956	.00009
Stddev	.00251	.0141	.00281	.00105	.00192	.00007	.317	.00003
%RSD	627.75	1.4010	94.062	.73688	1.7392	40.398	.88245	32.058
#1	.00224	1.0135	.00421	.14372	.11062	.00023	36.172	.00007
#2	.00142	.98692	.00498	.14165	.10839	.00010	35.592	.00007
#3	-.00246	1.0082	-.00023	.14300	.11222	.00016	36.105	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00317	.00169	.71808	2.8256	.00873	22.732	.05335
Stddev	.00027	.00048	.00070	.01344	.0315	.00112	.258	.00149
%RSD	4893.9	15.268	41.765	1.8711	1.1137	12.865	1.1351	2.7844
#1	.00025	.00269	.00090	.73141	2.8424	.00751	22.933	.05174
#2	.00004	.00315	.00188	.70454	2.7893	.00972	22.441	.05367
#3	-.00028	.00366	.00227	.71827	2.8451	.00896	22.823	.05466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00379	119.94	.00083	.11747	.00336	.00193	-.00362	5.3987
Stddev	.00029	.91	.00054	.00963	.00165	.00170	.00327	.0216
%RSD	7.6691	.75510	65.143	8.1950	48.899	88.260	90.387	.40081
#1	.00400	120.59	.00089	.11089	.00147	.00389	-.00507	5.4237
#2	.00392	118.90	.00135	.11301	.00415	.00109	.00013	5.3854
#3	.00346	120.32	.00027	.12852	.00447	.00081	-.00591	5.3870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115001 Acquired: 6/24/2016 16:18:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.24860**	**.00831**	**.00040**	**.00721**	**.00897**	**.00156**
Stddev	.00102	.00079	.00563	.00208	.00033	.00019	.00032
%RSD	900.41	.31800	67.748	518.71	4.6076	2.0684	20.721
#1	-.00127	.24885	.00936	.00280	.00755	.00907	.00137
#2	.00028	.24771	.00223	-.00097	.00689	.00909	.00139
#3	.00065	.24923	.01334	-.00062	.00718	.00876	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8658.5**	**54840.**	**3032.2**
Stddev	11.5	83.	32.1
%RSD	.13234	.15154	1.0598
#1	8653.8	54773.	3000.1
#2	8671.6	54933.	3064.4
#3	8650.2	54814.	3032.3

Approved: June 25, 2016

Sample Name: L1606115002 Acquired: 6/24/2016 16:22:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00114	.54802	.00239	.07237	.04756	.00011	17.868	-.00002
Stddev	.00116	.00304	.00234	.00183	.00074	.00011	.296	.00023
%RSD	101.69	.55434	98.297	2.5331	1.5569	98.769	1.6590	1035.8
#1	-.00186	.54599	.00388	.07434	.04758	.00024	18.086	-.00007
#2	.00020	.55151	.00360	.07071	.04682	.00003	17.530	-.00022
#3	-.00176	.54656	-.00032	.07205	.04830	.00007	17.987	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00269	.00128	.42445	5.1441	.00730	5.7440	.01494
Stddev	.00045	.00114	.00159	.02138	.0765	.00321	.0131	.00279
%RSD	2112.8	42.310	124.60	5.0376	1.4863	44.008	.22880	18.670
#1	.00037	.00359	.00010	.43132	5.0900	.01003	5.7588	.01523
#2	.00009	.00307	.00065	.40047	5.1108	.00376	5.7337	.01757
#3	-.00052	.00141	.00309	.44154	5.2316	.00811	5.7395	.01202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	41.148	.00106	.06447	-.00062	.00281	.00337	1.7279
Stddev	.00070	.471	.00049	.00342	.00129	.00199	.00517	.0310
%RSD	71.365	1.1451	45.916	5.3017	208.13	70.714	153.38	1.7951
#1	.00087	41.063	.00159	.06818	.00051	.00505	.00033	1.7430
#2	.00034	40.725	.00095	.06144	-.00034	.00212	.00044	1.7484
#3	.00173	41.656	.00063	.06379	-.00203	.00126	.00935	1.6922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115002 Acquired: 6/24/2016 16:22:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.10093**	**.00308**	**-.00183**	**.00519**	**.00618**	**.00126**
Stddev	.00067	.00110	.00218	.00277	.00055	.00020	.00057
%RSD	398.57	1.0927	70.842	151.99	10.532	3.3140	45.733
#1	-.00011	.10080	.00275	.00082	.00488	.00640	.00076
#2	-.00086	.09989	.00108	-.00159	.00582	.00617	.00189
#3	.00047	.10209	.00541	-.00471	.00488	.00599	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8768.3**	**55601.**	**3006.8**
Stddev	44.8	353.	32.6
%RSD	.51146	.63549	1.0826
#1	8739.7	56008.	3020.9
#2	8745.2	55379.	3029.9
#3	8820.0	55415.	2969.6

Approved: June 25, 2016

Sample Name: L1606115102 Acquired: 6/24/2016 16:26:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00157	.16673	-.00164	.11324	.07508	.00006	35.965	.00009
Stddev	.00123	.00968	.00381	.00123	.00110	.00006	.070	.00012
%RSD	78.798	5.8070	231.94	1.0834	1.4713	89.197	.19353	140.18
#1	-.00058	.15593	.00273	.11273	.07407	.00011	35.891	.00006
#2	-.00295	.17462	-.00340	.11236	.07626	.00000	35.974	.00023
#3	-.00117	.16964	-.00425	.11464	.07493	.00008	36.029	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.00268	.00078	.22571	2.4607	.00715	20.455	.06028
Stddev	.00017	.00071	.00110	.01627	.0572	.00329	.118	.00255
%RSD	80.425	26.322	141.38	7.2093	2.3240	45.999	.57620	4.2253
#1	-.00019	.00196	.00195	.23780	2.5245	.01081	20.570	.06072
#2	-.00005	.00272	-.00023	.23211	2.4140	.00618	20.461	.06258
#3	-.00038	.00337	.00061	.20721	2.4435	.00445	20.335	.05755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00276	97.835	-.00067	.04806	-.00242	.00513	.00378	5.3799
Stddev	.00044	.396	.00100	.00252	.00339	.00529	.00744	.2322
%RSD	15.877	.40451	148.20	5.2532	139.98	103.15	196.88	4.3153
#1	.00319	97.412	.00043	.04730	.00016	.00550	.01195	5.2447
#2	.00231	98.197	-.00093	.05087	-.00625	.01022	-.00261	5.2471
#3	.00278	97.896	-.00151	.04600	-.00116	-.00034	.00199	5.6480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115102 Acquired: 6/24/2016 16:26:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00071**	**.23607**	**-.00930**	**.00015**	**.00351**	**.01289**	**.00068**
Stddev	.00028	.00125	.00346	.00259	.00142	.00062	.00031
%RSD	39.765	.53152	37.213	1786.3	40.411	4.8488	45.284
#1	-.00042	.23498	-.00585	.00230	.00418	.01260	.00081
#2	-.00072	.23744	-.00927	.00087	.00188	.01246	.00090
#3	-.00098	.23579	-.01277	-.00273	.00448	.01361	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8582.8**	**55285.**	**3037.3**
Stddev	259.2	168.	27.1
%RSD	3.0201	.30413	.89376
#1	8731.0	55097.	3068.5
#2	8733.8	55422.	3018.9
#3	8283.5	55335.	3024.5

Approved: June 25, 2016

Sample Name: L1606115105 Acquired: 6/24/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00162	.10538	.00245	.14951	.09631	.00009	45.968	.00027
Stddev	.00070	.00798	.00198	.00195	.00083	.00004	.579	.00038
%RSD	42.968	7.5757	80.657	1.3067	.86692	43.233	1.2597	142.70
#1	-.00098	.11396	.00050	.14740	.09536	.00011	46.292	.00068
#2	-.00153	.09816	.00240	.15125	.09664	.00005	45.300	-.00007
#3	-.00237	.10403	.00446	.14988	.09693	.00012	46.313	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00270	-.00048	.17572	2.0276	.00721	26.821	.07924
Stddev	.00018	.00083	.00087	.01470	.0656	.00380	.415	.00616
%RSD	45.378	30.889	179.73	8.3676	3.2368	52.699	1.5460	7.7799
#1	-.00018	.00343	-.00076	.15875	2.0306	.00292	26.890	.08485
#2	-.00050	.00179	-.00118	.18434	2.0917	.01014	26.377	.07264
#3	-.00048	.00289	.00049	.18408	1.9605	.00857	27.198	.08022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	129.55	-.00083	.03925	.00528	.00057	.00250	6.3879
Stddev	.00022	1.74	.00110	.00683	.00391	.00168	.00309	.0293
%RSD	6.5817	1.3407	132.79	17.395	74.018	296.78	123.71	.45807
#1	.00302	130.39	-.00047	.04701	.00428	.00171	.00164	6.4058
#2	.00340	127.55	-.00206	.03419	.00959	-.00136	-.00008	6.4037
#3	.00339	130.71	.00005	.03653	.00197	.00136	.00592	6.3541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115105 Acquired: 6/24/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**.30328**	**-.00537**	**-.00168**	**.00336**	**.00866**	**.00060**
Stddev	.00061	.00418	.00652	.00091	.00046	.00013	.00023
%RSD	83.700	1.3769	121.45	54.113	13.812	1.5061	38.244
#1	-.00141	.30492	-.01282	-.00078	.00283	.00877	.00050
#2	-.00022	.29853	-.00064	-.00260	.00371	.00870	.00044
#3	-.00057	.30639	-.00266	-.00165	.00352	.00851	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8543.0**	**54064.**	**2974.7**
Stddev	21.3	458.	55.5
%RSD	.24931	.84639	1.8656
#1	8566.3	53562.	2939.2
#2	8524.4	54174.	3038.7
#3	8538.3	54457.	2946.3

Approved: June 25, 2016

Sample Name: L1606115401 Acquired: 6/24/2016 16:34:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00112**	**.08710**	**.00114**	**1.7588**	**.02106**	**.00002**	F **475.73**
Stddev	.00180	.00226	.00412	.0043	.00048	.00007	2.70
%RSD	160.71	2.5955	360.37	.24448	2.2952	394.51	.56675
#1	.00049	.08967	-.00088	1.7610	.02071	.00002	477.13
#2	-.00307	.08544	.00589	1.7616	.02085	.00009	472.62
#3	-.00079	.08619	-.00158	1.7539	.02161	-.00005	477.44
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00093**	**.00346**	**.00194**	**.05481**	**4.3815**	**.10949**
Stddev	.00005	.00052	.00138	.00145	.01743	.0383	.00511
%RSD	50.448	56.000	39.846	74.561	31.801	.87412	4.6701
#1	.00014	.00075	.00476	.00027	.04818	4.4220	.10952
#2	.00007	.00053	.00201	.00283	.07458	4.3766	.10437
#3	.00006	.00152	.00360	.00271	.04166	4.3458	.11459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**113.88**	**.27248**	**.02443**	F **962.52**	**-.00144**	**.02893**	**.00007**
Stddev	.66	.00359	.00021	16.50	.00136	.00999	.00237
%RSD	.58361	1.3185	.87734	1.7144	94.283	34.540	3393.1
#1	114.28	.27132	.02429	980.75	-.00065	.03963	-.00254
#2	113.11	.26961	.02467	958.20	-.00301	.02733	.00065
#3	114.24	.27651	.02431	948.60	-.00067	.01983	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606115401 Acquired: 6/24/2016 16:34:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00227	.05452	5.3738	-.00180	8.7578	F -.06233	-.00181
Stddev	.00372	.01187	.0403	.00058	.0451	.00486	.00179
%RSD	164.10	21.769	.74949	32.077	.51456	7.7978	98.539
#1	.00553	.05924	5.3959	-.00119	8.7791	-.06137	-.00108
#2	-.00178	.06330	5.3982	-.00185	8.7060	-.06760	-.00385
#3	.00305	.04102	5.3273	-.00234	8.7883	-.05802	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01547	.00549	.00090
Stddev	.00027	.00005	.00051
%RSD	1.7389	.84148	56.410
#1	.01521	.00546	.00038
#2	.01575	.00554	.00139
#3	.01545	.00546	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7824.9	49741.	2897.8
Stddev	25.7	56.	41.7
%RSD	.32891	.11264	1.4378
#1	7852.3	49711.	2855.6
#2	7801.3	49805.	2938.9
#3	7821.1	49706.	2898.8

Approved: June 25, 2016

Sample Name: L1606115402S Acquired: 6/24/2016 16:38:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20827	5.3848	.22077	2.7748	.54172	.02512	F 481.48
Stddev	.00188	.0082	.00532	.0041	.00285	.00016	3.09
%RSD	.90285	.15294	2.4089	.14749	.52604	.62525	.64217
#1	.20610	5.3941	.22023	2.7718	.54377	.02494	484.49
#2	.20928	5.3784	.21574	2.7795	.53847	.02524	478.32
#3	.20943	5.3820	.22633	2.7732	.54294	.02519	481.64
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02719	.10282	.25237	.25450	2.0775	32.155	.65463
Stddev	.00089	.00263	.00138	.00503	.0009	.192	.00487
%RSD	3.2606	2.5533	.54827	1.9758	.04312	.59849	.74370
#1	.02745	.10267	.25157	.25657	2.0772	32.268	.65849
#2	.02620	.10027	.25158	.24877	2.0768	31.933	.64916
#3	.02792	.10551	.25397	.25816	2.0785	32.264	.65623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	118.98	.51147	.55840	F 977.71	.24997	5.5144	.24919
Stddev	.84	.00370	.01031	13.22	.00452	.1131	.00286
%RSD	.70668	.72420	1.8456	1.3517	1.8092	2.0516	1.1484
#1	119.22	.51132	.56227	988.78	.25125	5.5401	.24784
#2	118.05	.50785	.54671	963.08	.24494	5.3907	.24725
#3	119.67	.51526	.56620	981.27	.25371	5.6125	.25247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606115402S Acquired: 6/24/2016 16:38:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.65290	.26530	8.4198	.51035	F 9.1325	.46797	.23861
Stddev	.01747	.00322	.1773	.00998	.0563	.00190	.00481
%RSD	2.6758	1.2148	2.1060	1.9552	.61631	.40567	2.0152
#1	.65559	.26528	8.4639	.51157	9.1879	.46964	.23992
#2	.63423	.26208	8.2246	.49982	9.0754	.46837	.23329
#3	.66886	.26853	8.5709	.51967	9.1341	.46591	.24263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.52988	.50936	.00371
Stddev	.00272	.00898	.00129
%RSD	.51319	1.7635	34.695
#1	.52752	.51212	.00232
#2	.53285	.49932	.00397
#3	.52929	.51664	.00486
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7884.5	49106.	2856.5
Stddev	105.8	326.	14.3
%RSD	1.3422	.66476	.50060
#1	7820.3	49374.	2840.1
#2	8006.6	48742.	2866.5
#3	7826.4	49201.	2863.0

Approved: June 25, 2016

Sample Name: L1606115403SD Acquired: 6/24/2016 16:41:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21318	5.5219	.22092	2.8411	.55147	.02575	F 492.79
Stddev	.00065	.0112	.00589	.0011	.00218	.00014	1.50
%RSD	.30664	.20191	2.6650	.03940	.39554	.52600	.30476
#1	.21335	5.5119	.22701	2.8414	.55201	.02561	493.55
#2	.21373	5.5198	.21525	2.8420	.55334	.02574	493.76
#3	.21246	5.5339	.22050	2.8398	.54907	.02588	491.06
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02750	.10490	.25795	.25725	2.1243	32.619	.67266
Stddev	.00021	.00070	.00047	.00265	.0074	.077	.00146
%RSD	.77118	.66790	.18314	1.0291	.34930	.23491	.21692
#1	.02742	.10569	.25827	.25739	2.1327	32.707	.67327
#2	.02774	.10437	.25740	.25983	2.1215	32.578	.67371
#3	.02733	.10462	.25816	.25454	2.1186	32.570	.67099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	121.94	.53555	.56884	F 1003.0	.25497	5.6115	.25353
Stddev	1.03	.00255	.00183	18.6	.00121	.0201	.00219
%RSD	.84627	.47696	.32086	1.8553	.47333	.35743	.86324
#1	122.15	.53804	.57050	985.68	.25562	5.6230	.25369
#2	122.86	.53294	.56914	1022.7	.25358	5.6231	.25563
#3	120.83	.53569	.56689	1000.7	.25572	5.5883	.25126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606115403SD Acquired: 6/24/2016 16:41:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.65696	.26457	8.4131	.52165	F 9.4226	.46735	.23912
Stddev	.00333	.00374	.0316	.00269	.0362	.01011	.00184
%RSD	.50727	1.4118	.37513	.51544	.38375	2.1625	.76932
#1	.65370	.26813	8.4363	.52387	9.4401	.47243	.24121
#2	.65681	.26068	8.4259	.52242	9.4467	.47392	.23839
#3	.66036	.26490	8.3772	.51866	9.3810	.45571	.23775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.54896	.51795	.00121
Stddev	.00138	.00177	.00029
%RSD	.25147	.34088	23.705
#1	.54994	.51962	.00099
#2	.54738	.51811	.00110
#3	.54956	.51610	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7860.1	48589.	2847.4
Stddev	50.1	121.	22.3
%RSD	.63713	.24945	.78175
#1	7818.4	48525.	2848.5
#2	7915.7	48729.	2824.6
#3	7846.2	48513.	2869.0

Approved: June 25, 2016

Sample Name: L1606115404 Acquired: 6/24/2016 16:45:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00122**	**.01860**	**-.00030**	**.01638**	**.00225**	**.00005**	**.28683**	**-.00012**
Stddev	.00163	.00994	.00314	.00092	.00043	.00004	.01104	.00018
%RSD	133.72	53.451	1055.5	5.6210	18.855	79.103	3.8486	155.68
#1	-.00307	.02997	-.00390	.01572	.00263	.00002	.29952	-.00004
#2	-.00060	.01154	.00185	.01743	.00234	.00010	.27937	.00001
#3	.00001	.01428	.00116	.01599	.00179	.00004	.28161	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.01568**	**.00001**	**.06012**	**.09546**	**-.00324**	**.00979**	**.00031**
Stddev	.00056	.00036	.00106	.01420	.11597	.00346	.08319	.00089
%RSD	231.82	2.2719	10907.	23.626	121.49	106.87	849.48	288.55
#1	-.00089	.01585	.00111	.07503	.19093	-.00003	.06904	.00129
#2	.00009	.01527	-.00008	.05858	.12903	-.00690	.04565	.00007
#3	.00007	.01593	-.00101	.04675	-.03359	-.00278	-.08531	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00255**	**.66337**	**.00857**	**-.00604**	**-.00185**	**.00349**	**.00131**	**.15854**
Stddev	.00019	.05593	.00126	.00424	.00110	.00087	.00666	.00230
%RSD	7.5264	8.4316	14.741	70.198	59.693	24.819	509.73	1.4538
#1	.00259	.72482	.00746	-.00130	-.00068	.00343	.00738	.16031
#2	.00235	.64984	.00994	-.00737	-.00288	.00439	.00236	.15939
#3	.00273	.61544	.00829	-.00947	-.00198	.00266	-.00582	.15593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115404 Acquired: 6/24/2016 16:45:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.00192	-.00273	-.00024	-.00105	.00380	-.00006
Stddev	.00043	.00049	.00812	.00123	.00122	.00012	.00020
%RSD	38.035	25.716	297.07	517.69	116.94	3.1680	325.23
#1	.00113	.00170	.00647	.00075	.00015	.00366	.00009
#2	.00071	.00158	-.00889	-.00162	-.00230	.00388	.00001
#3	.00157	.00249	-.00577	.00015	-.00099	.00385	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8580.0	54662.	2910.1
Stddev	27.2	355.	25.0
%RSD	.31663	.64995	.85931
#1	8600.6	54561.	2884.9
#2	8549.2	54369.	2910.5
#3	8590.1	55057.	2934.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:49:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43680	F 11.176	.43789	.54982	F 1.1171	.05445	F 11.119
Stddev	.00172	.018	.00189	.00440	.0014	.00015	.036
%RSD	.39299	.15765	.43249	.80088	.12620	.27540	.32719
#1	.43691	11.183	.43822	.54528	1.1178	.05443	11.142
#2	.43503	11.190	.43585	.55010	1.1155	.05461	11.077
#3	.43846	11.156	.43959	.55407	1.1181	.05432	11.138
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail
Value		10.000			1.0000		10.000
Range		10.000%			10.000%		10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .05633	F .22617	F .55126	F .56533	F 4.4609	F 55.977	F 1.1059
Stddev	.00017	.00064	.00319	.00048	.0397	.128	.0055
%RSD	.29635	.28432	.57821	.08567	.88958	.22829	.49468
#1	.05616	.22640	.55107	.56585	4.4151	56.054	1.1075
#2	.05649	.22544	.55454	.56490	4.4847	56.049	1.0998
#3	.05636	.22667	.54818	.56522	4.4829	55.830	1.1104
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 11.384	F .56189	F 1.1214	F 56.250	F .56448	F 11.114	F .56389
Stddev	.114	.00225	.0062	.207	.00324	.010	.00157
%RSD	1.0047	.39966	.55197	.36872	.57382	.08753	.27797
#1	11.258	.56141	1.1267	56.351	.56745	11.125	.56213
#2	11.411	.55993	1.1229	56.011	.56498	11.108	.56513
#3	11.482	.56434	1.1146	56.388	.56103	11.109	.56440
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:49:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.3274	F .44356	F 5.7903	F 1.1245	F 1.1149	F 1.1307	F .56203
Stddev	.0049	.00768	.0098	.0024	.0021	.0005	.00057
%RSD	.36997	1.7311	.16930	.21252	.19132	.04240	.10129
#1	1.3317	.45066	5.7923	1.1260	1.1167	1.1307	.56147
#2	1.3285	.43541	5.7990	1.1258	1.1126	1.1312	.56261
#3	1.3221	.44459	5.7797	1.1218	1.1155	1.1302	.56203
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0960	F 1.1347	F 1.1407
Stddev	.0015	.0007	.0035
%RSD	.13658	.06108	.30311
#1	1.0952	1.1349	1.1440
#2	1.0977	1.1353	1.1410
#3	1.0950	1.1339	1.1371
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8096.2	51142.	2733.9
Stddev	29.8	63.	5.0
%RSD	.36765	.12288	.18140
#1	8130.4	51179.	2732.9
#2	8076.4	51177.	2739.3
#3	8081.7	51069.	2729.5

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:53:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.01327	.00238	.00643	.00121	.00007	-.00167	-.00005
Stddev	.00141	.01171	.00342	.00125	.00080	.00010	.03044	.00029
%RSD	426.78	88.245	144.15	19.490	66.292	147.81	1819.0	607.59
#1	.00128	.01371	-.00152	.00772	.00190	.00009	.02045	.00023
#2	-.00132	.00135	.00372	.00522	.00033	-.00004	.01093	-.00002
#3	-.00095	.02475	.00492	.00636	.00140	.00016	-.03639	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00240	-.00122	.00892	.06454	-.00208	.01293	-.00217
Stddev	.00023	.00085	.00133	.03053	.04042	.00235	.09468	.00444
%RSD	57.271	35.494	108.62	342.28	62.627	112.51	732.17	204.98
#1	-.00056	.00224	-.00068	.03546	.02108	.00042	-.02621	-.00033
#2	-.00049	.00164	-.00274	-.02444	.10100	-.00423	-.05591	-.00724
#3	-.00014	.00333	-.00025	.01574	.07154	-.00243	.12091	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00412	.05925	-.00060	.00128	-.00151	.00790	.00028	.00721
Stddev	.00047	.02488	.00110	.00409	.00218	.00364	.00257	.00069
%RSD	11.345	41.996	183.24	319.65	144.28	46.033	911.72	9.6357
#1	.00409	.04650	-.00151	.00204	-.00359	.00755	.00027	.00786
#2	.00461	.04332	-.00091	.00493	.00076	.00445	-.00228	.00728
#3	.00367	.08792	.00062	-.00314	-.00171	.01170	.00286	.00648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:53:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.00010**	**-.00054**	**-.00150**	**-.00005**	**-.00017**	**.00104**
Stddev	.00040	.00035	.00043	.00099	.00012	.00015	.00121
%RSD	50.261	334.74	79.697	65.771	246.62	83.311	116.20
#1	-.00103	.00027	-.00013	-.00083	-.00015	-.00024	-.00027
#2	-.00033	-.00030	-.00099	-.00264	-.00008	-.00027	.00129
#3	-.00101	.00034	-.00050	-.00104	.00008	-.00001	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8805.7**	**55774.**	**2937.7**
Stddev	23.4	137.	34.1
%RSD	.26594	.24637	1.1609
#1	8792.6	55618.	2899.6
#2	8791.8	55877.	2948.2
#3	8832.7	55828.	2965.3

Approved: June 25, 2016

Sample Name: L1606115501 Acquired: 6/24/2016 16:57:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00057	.02931	.00224	.28378	.19240	.00016	48.483	.00005
Stddev	.00217	.00495	.00248	.00304	.00180	.00006	.260	.00014
%RSD	383.36	16.898	111.07	1.0699	.93528	36.773	.53700	254.61
#1	-.00028	.02866	.00462	.28285	.19438	.00013	48.783	.00004
#2	-.00287	.03456	.00243	.28717	.19087	.00022	48.333	-.00007
#3	.00145	.02472	-.00034	.28131	.19193	.00012	48.332	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00176	-.00033	.06151	1.8575	.00843	30.251	1.7892
Stddev	.00026	.00067	.00098	.00944	.0885	.00304	.179	.0058
%RSD	228.27	38.060	297.98	15.343	4.7667	36.016	.59249	.32588
#1	-.00041	.00253	.00018	.05715	1.7633	.00492	30.428	1.7956
#2	.00007	.00133	-.00146	.05504	1.9389	.01012	30.255	1.7880
#3	-.00000	.00141	.00029	.07234	1.8704	.01024	30.070	1.7841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00582	81.691	.00244	.01501	-.00223	-.00056	-.00145	7.4745
Stddev	.00028	.416	.00117	.00629	.00029	.00368	.01007	.0211
%RSD	4.7345	.50929	48.012	41.908	13.132	656.69	696.09	.28232
#1	.00551	82.168	.00344	.01672	-.00255	-.00468	.00744	7.4894
#2	.00592	81.495	.00115	.00804	-.00198	.00243	-.01239	7.4839
#3	.00603	81.408	.00271	.02027	-.00215	.00056	.00060	7.4504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115501 Acquired: 6/24/2016 16:57:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.33344	-.00658	-.00209	.00011	.00570	.00257
Stddev	.00106	.00035	.00428	.00263	.00083	.00010	.00078
%RSD	223.38	.10616	65.090	125.54	754.41	1.8064	30.180
#1	-.00065	.33321	-.01123	-.00333	-.00033	.00562	.00170
#2	.00062	.33384	-.00281	-.00388	.00107	.00566	.00320
#3	.00146	.33325	-.00569	.00092	-.00041	.00581	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8634.4	54473.	2945.1
Stddev	22.0	176.	15.6
%RSD	.25462	.32393	.53091
#1	8609.5	54271.	2929.8
#2	8642.5	54551.	2944.5
#3	8651.2	54598.	2961.1

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 17:03:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42367	10.747	.42629	.52762	1.0843	.05276	10.761
Stddev	.00097	.006	.00332	.00473	.0045	.00023	.022
%RSD	.22915	.05727	.77849	.89635	.41439	.43445	.20363
#1	.42292	10.740	.42268	.53147	1.0830	.05302	10.738
#2	.42477	10.748	.42699	.52904	1.0893	.05268	10.782
#3	.42334	10.752	.42920	.52234	1.0807	.05258	10.765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05458	.21800	.53531	.54481	4.3293	54.482	1.0763
Stddev	.00018	.00077	.00463	.00133	.0649	.210	.0028
%RSD	.33409	.35513	.86430	.24390	1.5001	.38571	.26065
#1	.05444	.21711	.54060	.54342	4.3823	54.397	1.0795
#2	.05451	.21849	.53336	.54493	4.2568	54.722	1.0741
#3	.05479	.21841	.53198	.54607	4.3486	54.328	1.0754
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.954	.53768	1.0810	54.597	.54494	10.746	.54224
Stddev	.073	.00516	.0021	.145	.00206	.017	.00691
%RSD	.66315	.95904	.19634	.26611	.37752	.15638	1.2744
#1	10.974	.53636	1.0834	54.523	.54602	10.734	.54106
#2	10.873	.54337	1.0793	54.764	.54257	10.738	.53600
#3	11.014	.53331	1.0802	54.503	.54624	10.765	.54966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 17:03:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2878**	**.42218**	F **5.5868**	**1.0842**	**1.0823**	**1.0915**	**.53968**
Stddev	.0066	.00770	.0181	.0027	.0008	.0080	.00486
%RSD	.51604	1.8246	.32415	.25252	.07373	.73397	.90080
#1	1.2824	.41329	5.5712	1.0822	1.0817	1.0897	.54355
#2	1.2952	.42684	5.5826	1.0830	1.0832	1.1002	.53422
#3	1.2859	.42641	5.6067	1.0873	1.0820	1.0845	.54127
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			5.0000				
Range			10.000%				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0672**	**1.0954**	F **1.1050**
Stddev	.0073	.0020	.0196
%RSD	.68319	.18139	1.7744
#1	1.0743	1.0932	1.1148
#2	1.0677	1.0971	1.1179
#3	1.0597	1.0957	1.0825
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8333.6**	**52219.**	**2792.6**
Stddev	32.6	347.	29.8
%RSD	.39073	.66376	1.0675
#1	8369.0	52505.	2785.6
#2	8326.7	52317.	2766.9
#3	8305.0	51833.	2825.3

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 17:07:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00168	.00948	.00107	.00396	.00131	.00016	.00218	.00005
Stddev	.00109	.00336	.00285	.00104	.00055	.00007	.03388	.00013
%RSD	65.124	35.414	267.10	26.281	42.238	42.512	1551.9	288.80
#1	-.00279	.00607	.00431	.00399	.00120	.00015	.00227	-.00009
#2	-.00060	.01278	-.00104	.00499	.00081	.00009	.03602	.00018
#3	-.00165	.00957	-.00007	.00291	.00190	.00023	-.03174	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	.00204	-.00144	.00580	.12922	-.00361	-.07098	-.00320
Stddev	.00007	.00108	.00019	.02952	.06584	.00293	.01475	.00096
%RSD	10.271	52.987	13.402	509.07	50.955	81.051	20.781	29.927
#1	-.00071	.00324	-.00131	.01437	.20522	-.00696	-.05840	-.00311
#2	-.00072	.00112	-.00134	.03009	.09285	-.00151	-.06732	-.00419
#3	-.00060	.00177	-.00166	-.02706	.08958	-.00237	-.08722	-.00228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00408	.05994	-.00013	-.00144	-.00210	.00616	.00859	.00767
Stddev	.00025	.02279	.00056	.00665	.00161	.00436	.00553	.00095
%RSD	6.1054	38.019	429.27	461.82	76.927	70.723	64.392	12.387
#1	.00379	.03723	-.00071	-.00577	-.00238	.01090	.01202	.00667
#2	.00424	.05979	.00040	.00621	-.00355	.00232	.00221	.00777
#3	.00421	.08281	-.00008	-.00476	-.00036	.00527	.01155	.00857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 17:07:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00001**	**-.00517**	**-.00304**	**-.00045**	**.00003**	**.00076**
Stddev	.00048	.00019	.00338	.00065	.00042	.00018	.00062
%RSD	261.79	1449.3	65.434	21.349	94.527	672.09	81.583
#1	-.00007	-.00010	-.00269	-.00319	-.00035	-.00018	.00059
#2	-.00071	.00023	-.00379	-.00360	-.00091	.00016	.00024
#3	.00023	-.00009	-.00902	-.00233	-.00008	.00010	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8894.8**	**56498.**	**2997.3**
Stddev	31.9	155.	19.4
%RSD	.35842	.27403	.64771
#1	8872.9	56642.	2988.9
#2	8931.4	56516.	2983.4
#3	8880.1	56335.	3019.5

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:11:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00729	.17062	.00725	.08257	.00939	.00166	.43404	.00082
Stddev	.00150	.00550	.00171	.00143	.00067	.00000	.00453	.00026
%RSD	20.543	3.2221	23.640	1.7280	7.1418	.27584	1.0437	32.305
#1	.00698	.16434	.00552	.08412	.00866	.00166	.43775	.00111
#2	.00892	.17298	.00895	.08230	.00999	.00167	.42899	.00059
#3	.00598	.17455	.00726	.08130	.00952	.00166	.43538	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00316	.00622	.00237	.08729	.82404	.07713	.38089	.00688
Stddev	.00032	.00044	.00096	.00991	.11097	.00284	.04555	.00202
%RSD	10.108	7.0265	40.647	11.357	13.466	3.6833	11.960	29.313
#1	.00327	.00595	.00209	.09021	.69916	.08037	.42142	.00748
#2	.00280	.00598	.00158	.07624	.86164	.07506	.38965	.00853
#3	.00341	.00672	.00344	.09542	.91132	.07596	.33159	.00463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00923	.49030	.01578	.78636	.00525	.08658	.01834	.78477
Stddev	.00007	.03975	.00067	.00747	.00099	.00290	.00535	.00340
%RSD	.74996	8.1063	4.2563	.94991	18.916	3.3503	29.197	.43361
#1	.00926	.45824	.01504	.78721	.00446	.08899	.01320	.78668
#2	.00928	.47789	.01596	.79336	.00636	.08336	.01794	.78678
#3	.00915	.53477	.01635	.77850	.00492	.08740	.02388	.78084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:11:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40023**	**.04088**	**.01998**	**.14896**	**.00689**	**.01796**	**.04648**
Stddev	.00496	.00040	.00962	.00157	.00043	.00056	.00102
%RSD	1.2386	.97028	48.154	1.0558	6.1789	3.1279	2.2003
#1	.40336	.04052	.01081	.14857	.00653	.01791	.04580
#2	.40281	.04082	.02999	.15069	.00680	.01855	.04599
#3	.39451	.04131	.01914	.14762	.00736	.01743	.04766
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8990.7**	**57102.**	**2996.8**
Stddev	6.3	282.	27.6
%RSD	.06972	.49387	.92128
#1	8985.6	56782.	2987.6
#2	8988.8	57212.	2975.0
#3	8997.7	57313.	3027.9

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:15:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01993**	**.40715**	**.01910**	**.19302**	**.02123**	**.00379**	**.98840**	**.00192**
Stddev	.00107	.00875	.00166	.00240	.00062	.00009	.02416	.00014
%RSD	5.3570	2.1496	8.6872	1.2431	2.9288	2.2601	2.4441	7.0566
#1	.01892	.40857	.02077	.19136	.02062	.00370	.96658	.00208
#2	.01983	.41511	.01745	.19577	.02121	.00387	.98425	.00184
#3	.02105	.39778	.01908	.19192	.02186	.00380	1.0144	.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00956**	**.01134**	**.01016**	**.19020**	**1.9527**	**.19631**	**.96503**	**.01651**
Stddev	.00018	.00018	.00095	.01584	.0809	.00356	.08170	.00201
%RSD	1.8827	1.5892	9.3610	8.3286	4.1432	1.8125	8.4664	12.178
#1	.00947	.01153	.01097	.18785	1.9630	.19792	1.0093	.01700
#2	.00944	.01133	.01040	.20708	2.0279	.19878	1.0150	.01822
#3	.00976	.01117	.00911	.17566	1.8671	.19223	.87074	.01429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01930**	**1.0243**	**.04009**	**1.9435**	**.01831**	**.21107**	**.04027**	**1.9113**
Stddev	.00016	.0191	.00077	.0087	.00305	.00083	.00398	.0011
%RSD	.83239	1.8612	1.9166	.44854	16.636	.39124	9.8865	.05610
#1	.01914	1.0212	.03957	1.9465	.02165	.21172	.03698	1.9101
#2	.01929	1.0447	.04097	1.9503	.01761	.21014	.03912	1.9122
#3	.01946	1.0070	.03972	1.9336	.01568	.21134	.04469	1.9117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:15:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98617**	**.09828**	**.05324**	**.36623**	**.01818**	**.04214**	**.10201**
Stddev	.00140	.00119	.00120	.00194	.00049	.00021	.00105
%RSD	.14233	1.2069	2.2499	.53068	2.7064	.48792	1.0280
#1	.98608	.09782	.05188	.36811	.01820	.04207	.10169
#2	.98481	.09963	.05376	.36635	.01768	.04237	.10318
#3	.98762	.09739	.05410	.36423	.01866	.04197	.10116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9036.2**	**57273.**	**3074.0**
Stddev	31.1	288.	33.7
%RSD	.34415	.50309	1.0950
#1	9072.0	57245.	3047.1
#2	9015.3	57573.	3063.1
#3	9021.4	56999.	3111.7

Approved: June 25, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000219	0.051332	0.000000	1.000000
Al 308.215 {109}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000797	0.008110	0.000000	1.000000
As 189.042 {478}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000055	0.023360	0.000000	1.000000
B 249.678 {135}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000001	0.022663	0.000000	1.000000
Ba 455.403 { 74}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.055586	2.146038	0.000000	1.000000
Be 313.107 {108}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000688	0.950408	0.000000	1.000000
Ca 422.673 { 80}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.001692	0.045598	0.000000	1.000000
Cd 228.802 {447}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000094	0.563612	0.000000	1.000000
Co 228.616 {447}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000104	0.359063	0.000000	1.000000
Cr 267.716 {126}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000207	0.060248	0.000000	1.000000
Cu 224.700 {450}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000063	0.126227	0.000000	1.000000
Fe 261.187 {129}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000073	0.023032	0.000000	1.000000
K 766.490 { 44}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.016555	0.054237	0.000000	1.000000
Li 670.784 { 50}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.004397	1.544241	0.000000	1.000000
Mg 279.079 {121}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000044	0.008813	0.000000	1.000000
Mn 257.610 {131}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000249	0.281817	0.000000	1.000000
Mo 202.030 {467}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000046	0.182222	0.000000	1.000000
Na 589.592 { 57}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.062909	0.178536	0.000000	1.000000
Ni 231.604 {446}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000706	0.133269	0.000000	1.000000
P 214.914 {457}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000179	0.013467	0.000000	1.000000
Pb 220.353 {453}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000979	0.062395	0.000000	1.000000
Sb 206.833 {463}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000288	0.029684	0.000000	1.000000
Se 196.090 {472}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000416	0.016174	0.000000	1.000000
Si 212.412 {459}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.002457	0.038614	0.000000	1.000000
Sn 189.989 {477}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000032	0.070434	0.000000	1.000000
Sr 407.771 { 83}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000984	3.576768	0.000000	1.000000
Ti 337.280 {100}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.001213	0.097488	0.000000	1.000000
Tl 190.856 {477}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000404	0.028714	0.000000	1.000000
V 292.402 {115}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000025	0.070640	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000222	0.414339	0.000000	1.000000
Zr 339.198 { 99}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.004799	3.597030	0.000000	1.000000

Approved: June 28, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999219	0.000005	0.002404	0.008013	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999541	0.000016	0.010486	0.034953	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999717	0.000002	0.003514	0.011712	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999559	0.000003	0.003229	0.010763	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999622	0.000374	0.001188	0.003959	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999682	0.000008	0.000105	0.000351	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.998908	0.000135	0.046468	0.154893	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999582	0.000006	0.000295	0.000984	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999651	0.000012	0.000445	0.001484	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999210	0.000008	0.001312	0.004375	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999350	0.000015	0.001489	0.004962	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.998751	0.000029	0.029643	0.098810	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999643	0.000460	0.132623	0.442075	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999776	0.000321	0.004353	0.014511	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999436	0.000029	0.087066	0.290220	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999089	0.000038	0.002851	0.009505	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999789	0.000024	0.000466	0.001553	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999663	0.001472	0.035366	0.117888	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999563	0.000013	0.001271	0.004238	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999580	0.000024	0.007845	0.026150	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.998800	0.000010	0.003957	0.013189	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999499	0.000007	0.004891	0.016304	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999365	0.000002	0.007423	0.024744	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999891	0.000018	0.002581	0.008604	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999675	0.000011	0.000958	0.003192	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999546	0.000684	0.000493	0.001644	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.997531	0.000043	0.009062	0.030207	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999388	0.000005	0.003390	0.011298	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999660	0.000012	0.001079	0.003598	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999413	0.000090	0.000220	0.000735	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999407	0.000786	0.000564	0.001879	OK.	1.000000	0.000000	1	0

Approved: June 28, 2016

Sample Name: S0 Acquired: 6/27/2016 10:11:09 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00022**	**.00080**	**.00005**	**-.00000**	**.05558**	**.00069**	**.00169**
Stddev	.00009	.00005	.00001	.00001	.00343	.00010	.00171
%RSD	41.038	6.2901	19.225	757.31	6.1761	14.508	100.89
#1	-.00028	.00085	.00004	.00001	.05677	.00057	.00305
#2	-.00012	.00079	.00007	-.00001	.05827	.00074	-.00023
#3	-.00027	.00075	.00006	.00000	.05171	.00075	.00226

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00009**	**-.00010**	**.00021**	**.00006**	**.00007**	**-.01656**	**-.00440**
Stddev	.00009	.00008	.00005	.00012	.00021	.00039	.00634
%RSD	91.046	78.768	26.095	189.05	283.56	2.3394	144.17
#1	-.00005	-.00014	.00014	.00010	.00028	-.01656	.00211
#2	-.00019	-.00016	.00023	.00016	.00009	-.01694	-.00474
#3	-.00004	-.00001	.00024	-.00007	-.00014	-.01617	-.01056

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00004**	**.00025**	**-.00005**	**-.06293**	**-.00071**	**-.00018**	**-.00098**
Stddev	.00014	.00078	.00008	.01073	.00010	.00001	.00026
%RSD	309.31	312.25	167.27	17.052	14.737	6.2600	26.253
#1	-.00014	.00113	-.00005	-.06678	-.00074	-.00017	-.00122
#2	.00011	-.00035	.00003	-.05080	-.00079	-.00019	-.00101
#3	-.00010	-.00004	-.00012	-.07120	-.00059	-.00018	-.00071

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00029**	**-.00042**	**.00246**	**.00003**	**.00098**	**-.00121**	**-.00040**
Stddev	.00006	.00008	.00007	.00002	.00168	.00048	.00011
%RSD	21.252	20.303	2.7310	73.870	172.37	39.424	26.113
#1	.00028	-.00050	.00242	.00001	.00288	-.00094	-.00028
#2	.00035	-.00033	.00242	.00005	-.00031	-.00176	-.00045
#3	.00023	-.00042	.00253	.00003	.00036	-.00093	-.00047

Approved: June 28, 2016

Sample Name: S0 Acquired: 6/27/2016 10:11:09 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**-.00002**	**.00022**	**-.00480**
Stddev	.00006	.00004	.00081
%RSD	232.69	19.281	16.811
#1	.00001	.00027	-.00516
#2	.00000	.00020	-.00387
#3	-.00009	.00019	-.00536
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9360.7**	**56289.**	**2789.5**
Stddev	12.0	199.	9.9
%RSD	.12862	.35359	.35524
#1	9347.7	56429.	2778.2
#2	9362.8	56061.	2796.7
#3	9371.5	56376.	2793.6

Approved: June 28, 2016

Sample Name: S1 Acquired: 6/27/2016 10:15:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00002**	**.00149**	**.07501**	**.00111**	**.00256**	**.00019**	**.00048**
Stddev	.00004	.00003	.00130	.00003	.00054	.00000	.00012
%RSD	235.36	1.8291	1.7274	3.0313	21.065	2.0861	24.410
#1	.00003	.00146	.07531	.00115	.00264	.00019	.00036
#2	-.00003	.00151	.07359	.00111	.00199	.00019	.00059
#3	.00005	.00151	.07613	.00108	.00306	.00020	.00049

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00052**	**.00073**	**.00021**	**.00590**	**.00180**	**.00157**	**.01873**
Stddev	.00010	.00013	.00039	.00261	.00100	.00005	.00232
%RSD	18.633	17.713	184.86	44.235	55.870	3.0472	12.407
#1	.00062	.00086	.00004	.00630	.00167	.00152	.02125
#2	.00042	.00060	.00065	.00312	.00086	.00158	.01668
#3	.00052	.00074	-.00007	.00829	.00286	.00161	.01826

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00019**	**.00098**	**-.00091**	**.00069**	**.00415**	**.00064**	**.03417**
Stddev	.00010	.00003	.00038	.00011	.00003	.00003	.00071
%RSD	53.461	3.4756	41.630	15.291	.77728	4.6599	2.0672
#1	-.00029	.00101	-.00109	.00069	.00416	.00068	.03441
#2	-.00009	.00099	-.00047	.00080	.00418	.00063	.03337
#3	-.00018	.00095	-.00116	.00059	.00412	.00062	.03472

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00142**	**.00056**	**.00379**	**.02139**
Stddev	.00038	.00006	.00002	.00234
%RSD	26.838	9.9829	.42124	10.947
#1	-.00118	.00061	.00377	.02369
#2	-.00121	.00058	.00380	.02146
#3	-.00186	.00050	.00379	.01901

Approved: June 28, 2016

Sample Name: S1 Acquired: 6/27/2016 10:15:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9406.4**	**56869.**	**2813.2**
Stddev	17.9	99.	5.4
%RSD	.18981	.17489	.19258
#1	9415.6	56895.	2818.5
#2	9417.7	56760.	2813.3
#3	9385.8	56954.	2807.7

Approved: June 28, 2016

Sample Name: S2 Acquired: 6/27/2016 10:19:03 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00019	.00217	.00019	.00017	.09097	.00148	.00981
Stddev	.00010	.00007	.00004	.00006	.00192	.00005	.00183
%RSD	52.118	3.1223	20.733	37.133	2.1077	3.6422	18.643
#1	.00022	.00221	.00022	.00021	.09288	.00154	.01182
#2	.00008	.00209	.00021	.00019	.09098	.00149	.00936
#3	.00027	.00220	.00015	.00010	.08905	.00143	.00824

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00046	.00101	.00085	.00125	.00147	.03094	.02040
Stddev	.00011	.00020	.00003	.00016	.00011	.00596	.00709
%RSD	24.286	20.196	3.9657	12.594	7.8265	19.261	34.737
#1	.00054	.00105	.00082	.00140	.00135	.03776	.02303
#2	.00050	.00119	.00084	.00127	.00157	.02830	.01238
#3	.00033	.00079	.00088	.00108	.00148	.02676	.02580

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00164	.00196	.00309	.09374	.00041	.00222	-.00046
Stddev	.00038	.00079	.00004	.01209	.00013	.00011	.00029
%RSD	23.225	40.222	1.2531	12.896	30.782	4.8080	63.126
#1	.00162	.00249	.00314	.08010	.00046	.00212	-.00025
#2	.00127	.00233	.00308	.09800	.00050	.00233	-.00079
#3	.00203	.00105	.00307	.10312	.00026	.00221	-.00034

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00091	-.00034	.00573	.00119	.06491	.00017	-.00015
Stddev	.00010	.00006	.00002	.00005	.00081	.00072	.00004
%RSD	10.635	17.225	.29680	4.1503	1.2526	428.70	27.714
#1	.00083	-.00029	.00572	.00116	.06568	.00089	-.00012
#2	.00102	-.00033	.00575	.00125	.06406	-.00056	-.00013
#3	.00090	-.00040	.00572	.00117	.06500	.00018	-.00019

Approved: June 28, 2016

Sample Name: S2 Acquired: 6/27/2016 10:19:03 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00120	.00738	.04944
Stddev	.00007	.00006	.00070
%RSD	5.6773	.87197	1.4116
#1	.00118	.00744	.05008
#2	.00114	.00738	.04954
#3	.00127	.00732	.04870

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9443.2	56709.	2845.2
Stddev	3.5	174.	6.8
%RSD	.03751	.30616	.23990
#1	9441.6	56633.	2837.4
#2	9447.3	56587.	2849.5
#3	9440.8	56908.	2848.9

Approved: June 28, 2016

Sample Name: S3 Acquired: 6/27/2016 10:23:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02092	.08605	.00965	.01177	2.2814	.05082	.47399	.03171
Stddev	.00009	.00009	.00006	.00007	.0081	.00011	.00141	.00016
%RSD	.44413	.10972	.62223	.59949	.35348	.21174	.29780	.50827
#1	.02097	.08616	.00961	.01185	2.2766	.05071	.47378	.03182
#2	.02098	.08602	.00972	.01174	2.2908	.05092	.47550	.03179
#3	.02081	.08598	.00962	.01172	2.2769	.05085	.47271	.03153

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07428	.03147	.06632	.09593	2.7929	1.5861	.09155	.14801
Stddev	.00025	.00009	.00009	.00042	.0165	.0024	.00035	.00046
%RSD	.34137	.28140	.13410	.43596	.58971	.15475	.37815	.31281
#1	.07440	.03141	.06640	.09607	2.7817	1.5848	.09185	.14757
#2	.07444	.03143	.06635	.09545	2.8118	1.5890	.09164	.14849
#3	.07398	.03157	.06622	.09625	2.7852	1.5847	.09117	.14798

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18692	9.1586	.06869	.13735	.03188	.03618	.00633	.19982
Stddev	.00095	.0246	.00038	.00018	.00005	.00008	.00006	.00030
%RSD	.50865	.26851	.55910	.13312	.14375	.21004	.95433	.15185
#1	.18754	9.1579	.06868	.13721	.03187	.03616	.00627	.19957
#2	.18740	9.1836	.06909	.13756	.03193	.03626	.00639	.20015
#3	.18583	9.1344	.06832	.13729	.03184	.03611	.00632	.19973

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07280	3.7149	.09996	.01331	.07292	.43380	3.7667
Stddev	.00018	.0060	.00049	.00007	.00019	.00078	.0189
%RSD	.24836	.16167	.49462	.49011	.25771	.17890	.50287
#1	.07265	3.7109	.09960	.01337	.07280	.43456	3.7451
#2	.07300	3.7218	.09976	.01324	.07314	.43381	3.7806
#3	.07274	3.7121	.10052	.01332	.07283	.43301	3.7744

Approved: June 28, 2016

Sample Name: S3 Acquired: 6/27/2016 10:23:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9721.9	58099.	2930.8
Stddev	18.9	74.	10.9
%RSD	.19470	.12678	.37352
#1	9743.1	58020.	2942.5
#2	9706.5	58111.	2920.7
#3	9716.1	58166.	2929.2

Approved: June 28, 2016

Sample Name: S4 Acquired: 6/27/2016 10:26:37 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03974	.16089	.01833	.02213	4.2645	.09586	.89929	.06038
Stddev	.00005	.00019	.00006	.00006	.0077	.00012	.00503	.00018
%RSD	.11654	.11956	.34341	.25502	.18096	.12203	.55878	.29985
#1	.03968	.16079	.01837	.02214	4.2575	.09600	.89526	.06018
#2	.03976	.16111	.01826	.02207	4.2633	.09579	.89769	.06053
#3	.03977	.16076	.01837	.02218	4.2728	.09580	.90492	.06045

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14063	.05916	.12449	.18125	5.3047	3.0377	.17177	.27547
Stddev	.00052	.00006	.00037	.00104	.0273	.0084	.00079	.00147
%RSD	.37329	.09570	.29429	.57556	.51409	.27796	.45809	.53422
#1	.14021	.05914	.12420	.18098	5.2909	3.0280	.17115	.27390
#2	.14121	.05922	.12491	.18037	5.2872	3.0420	.17150	.27568
#3	.14045	.05912	.12437	.18241	5.3361	3.0431	.17265	.27682

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.35921	17.472	.12976	.25968	.06042	.06915	.01227	.38616
Stddev	.00077	.044	.00041	.00013	.00014	.00023	.00002	.00037
%RSD	.21360	.25231	.31950	.04942	.23319	.32893	.13923	.09489
#1	.35987	17.454	.12931	.25960	.06034	.06889	.01229	.38588
#2	.35938	17.440	.13013	.25983	.06033	.06932	.01226	.38658
#3	.35837	17.522	.12985	.25962	.06058	.06923	.01226	.38603

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13808	7.0066	.19048	.02529	.13828	.80821	7.0194
Stddev	.00024	.0219	.00266	.00011	.00020	.00129	.0190
%RSD	.17717	.31279	1.3974	.43280	.14820	.16017	.27028
#1	.13814	6.9980	.18870	.02521	.13848	.80908	7.0103
#2	.13829	6.9903	.18921	.02525	.13830	.80882	7.0066
#3	.13781	7.0315	.19354	.02541	.13807	.80672	7.0412

Approved: June 28, 2016

Sample Name: S4 Acquired: 6/27/2016 10:26:37 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9771.3**	**58546.**	**2991.1**
Stddev	5.3	169.	6.3
%RSD	.05411	.28803	.21196
#1	9765.6	58357.	2985.0
#2	9776.0	58602.	2997.6
#3	9772.3	58680.	2990.8

Approved: June 28, 2016

Sample Name: ICV Acquired: 6/27/2016 10:30:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39656	9.9968	.39605	.49913	.99354	.04949	9.8900	.04960
Stddev	.00038	.0168	.00361	.00130	.00797	.00012	.1192	.00034
%RSD	.09463	.16774	.91201	.26037	.80254	.24834	1.2050	.67893
#1	.39683	10.016	.39921	.49920	.99329	.04957	9.8437	.04996
#2	.39672	9.9871	.39211	.49780	1.0016	.04955	10.025	.04956
#3	.39613	9.9872	.39682	.50040	.98569	.04935	9.8010	.04929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19960	.49616	.50076	3.9491	49.503	.98788	10.028	.49846
Stddev	.00072	.00107	.00153	.0174	.377	.01095	.058	.00163
%RSD	.36296	.21613	.30576	.43969	.76139	1.1083	.57412	.32766
#1	.20035	.49503	.50215	3.9291	49.521	.98444	9.9746	.49786
#2	.19954	.49627	.49912	3.9607	49.871	1.0001	10.089	.50030
#3	.19890	.49717	.50101	3.9574	49.117	.97907	10.020	.49721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98929	49.553	.50008	9.9383	.49711	1.1842	.40491	4.9048
Stddev	.00695	.361	.00310	.0420	.00341	.0012	.00380	.0152
%RSD	.70230	.72857	.61963	.42238	.68619	.10088	.93725	.30954
#1	.99664	49.590	.50317	9.9837	.49981	1.1844	.40809	4.9217
#2	.98842	49.894	.50009	9.9303	.49824	1.1853	.40593	4.9005
#3	.98282	49.175	.49697	9.9009	.49328	1.1829	.40071	4.8922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: ICV Acquired: 6/27/2016 10:30:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99382	.99081	.99014	.50327	.99007	1.0044	.99998
Stddev	.00477	.00901	.00242	.00334	.00183	.0042	.00712
%RSD	.47986	.90979	.24468	.66313	.18511	.41413	.71179
#1	.99906	.99161	.99266	.50658	.98958	1.0088	1.0007
#2	.99266	.99939	.98992	.50331	.99209	1.0036	1.0067
#3	.98974	.98142	.98783	.49991	.98852	1.0006	.99254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9944.5	59548.	3007.2
Stddev	7.0	104.	19.1
%RSD	.07028	.17468	.63490
#1	9939.5	59668.	3013.8
#2	9941.5	59493.	2985.7
#3	9952.5	59483.	3022.1

Approved: June 28, 2016

Sample Name: ICB Acquired: 6/27/2016 10:33:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	.00806	-.00035	.00524	.00096	.00003	.04488
Stddev	.00255	.00339	.00155	.00316	.00054	.00006	.03416
%RSD	146.61	42.061	438.03	60.356	56.377	169.93	76.128
#1	.00413	.01096	-.00078	.00453	.00153	.00002	.04662
#2	-.00095	.00889	-.00165	.00869	.00045	-.00001	.07814
#3	.00204	.00433	.00137	.00249	.00091	.00010	.00988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00021	.00264	.00138	-.01027	.11431	-.00187
Stddev	.00023	.00025	.00090	.00135	.02697	.10019	.00400
%RSD	90.076	117.41	34.187	98.005	262.67	87.648	214.31
#1	.00019	.00011	.00242	.00087	.02024	.22955	-.00367
#2	.00007	.00003	.00363	.00292	-.02010	.06552	-.00465
#3	.00052	.00050	.00186	.00036	-.03093	.04786	.00272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.07897	.00101	.00510	.11885	-.00064	F .01147	-.00335
Stddev	.04472	.00084	.00024	.04616	.00013	.00517	.00352
%RSD	56.634	82.917	4.6972	38.837	20.205	45.049	105.12
#1	-.03785	.00103	.00483	.16190	-.00071	.01200	-.00401
#2	-.12658	.00016	.00517	.12455	-.00049	.01635	.00046
#3	-.07246	.00185	.00530	.07011	-.00073	.00606	-.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 28, 2016

Sample Name: ICB Acquired: 6/27/2016 10:33:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00383	-.00421	.01837	.00133	.00214	-.00619	.00159
Stddev	.00530	.00215	.00326	.00121	.00026	.00445	.00067
%RSD	138.24	51.159	17.738	90.647	12.024	71.914	42.141
#1	.00877	-.00203	.02032	.00237	.00238	-.00553	.00121
#2	-.00176	-.00633	.02019	.00162	.00218	-.01094	.00119
#3	.00449	-.00427	.01461	.00001	.00187	-.00211	.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00117	.00107	.00150
Stddev	.00040	.00023	.00032
%RSD	33.968	21.646	21.450
#1	.00144	.00132	.00117
#2	.00136	.00103	.00151
#3	.00071	.00086	.00182
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9485.8	56960.	2827.2
Stddev	22.7	62.	13.4
%RSD	.23928	.10801	.47261
#1	9462.0	57031.	2842.2
#2	9488.3	56934.	2822.9
#3	9507.2	56917.	2816.6

Approved: June 28, 2016

Sample Name: LLICV Acquired: 6/27/2016 10:37:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00811	.16107	.00546	.08342	.00820	.00171	.41320	.00104
Stddev	.00154	.00831	.00174	.00283	.00174	.00005	.05309	.00032
%RSD	18.985	5.1608	31.869	3.3900	21.229	3.2040	12.848	30.976
#1	.00877	.17043	.00450	.08566	.00976	.00165	.44800	.00137
#2	.00635	.15823	.00748	.08024	.00632	.00173	.35210	.00072
#3	.00921	.15456	.00442	.08437	.00853	.00175	.43951	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00385	.00622	.00454	.06184	.83144	.08347	.36989	.00868
Stddev	.00035	.00111	.00053	.00835	.03960	.00277	.07407	.00380
%RSD	9.1544	17.869	11.677	13.497	4.7632	3.3221	20.024	43.760
#1	.00354	.00567	.00393	.06716	.81243	.08203	.29122	.00933
#2	.00376	.00549	.00491	.06614	.87696	.08170	.38018	.00459
#3	.00423	.00750	.00478	.05222	.80492	.08666	.43828	.01210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00933	.45563	.01629	.80974	.00826	.08707	.01555	.84594
Stddev	.00021	.01951	.00128	.00898	.00183	.00241	.00253	.00721
%RSD	2.2323	4.2816	7.8796	1.1092	22.131	2.7708	16.251	.85208
#1	.00915	.46087	.01543	.81937	.00648	.08622	.01843	.85233
#2	.00956	.43404	.01777	.80827	.01013	.08979	.01372	.84735
#3	.00929	.47199	.01568	.80159	.00817	.08519	.01449	.83813
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LLICV Acquired: 6/27/2016 10:37:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41453	.04310	.02153	.15768	.00889	.01738	.04625
Stddev	.00755	.00023	.00874	.00411	.00040	.00018	.00135
%RSD	1.8207	.53307	40.597	2.6083	4.5428	1.0465	2.9262
#1	.41925	.04320	.01815	.15896	.00867	.01736	.04544
#2	.41852	.04284	.03146	.16100	.00865	.01758	.04550
#3	.40583	.04326	.01499	.15308	.00936	.01721	.04781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9608.8	58008.	2882.7
Stddev	13.9	202.	11.3
%RSD	.14503	.34866	.39311
#1	9595.5	57793.	2870.0
#2	9607.5	58037.	2891.6
#3	9623.3	58195.	2886.6

Approved: June 28, 2016

Sample Name: ICSA Acquired: 6/27/2016 10:41:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00348**	**274.46**	**-.00360**	**-.01905**	**-.00118**	**-.00005**	**255.24**	**-.00047**
Stddev	.00080	.12	.00424	.00363	.00140	.00007	.64	.00022
%RSD	22.958	.04489	117.79	19.069	118.85	159.46	.24922	45.496
#1	-.00266	274.32	-.00283	-.01618	-.00225	-.00002	254.54	-.00071
#2	-.00425	274.55	-.00817	-.01785	-.00168	-.00013	255.78	-.00029
#3	-.00353	274.52	.00020	-.02314	.00040	.00001	255.40	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00138**	**.00013**	**.00026**	**100.86**	**-.09019**	**.00712**	**258.19**	**-.00082**
Stddev	.00020	.00043	.00219	.24	.06234	.00564	.51	.00449
%RSD	14.369	328.27	851.02	.23590	69.125	79.115	.19632	546.94
#1	-.00121	.00037	.00206	100.59	-.14551	.00643	257.65	-.00388
#2	-.00133	-.00036	.00088	100.95	-.02263	.00187	258.26	-.00293
#3	-.00159	.00038	-.00218	101.04	-.10243	.01307	258.66	.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.08336**	**-.00068**	**.02055**	**.00062**	**-.00085**	**-.00510**	**-.01322**
Stddev	.00049	.00057	.00126	.01032	.00616	.00460	.00665	.00103
%RSD	550.79	.68258	185.29	50.215	988.12	543.87	130.28	7.7725
#1	-.00016	.08380	-.00213	.03143	-.00603	.00410	-.01192	-.01441
#2	.00065	.08356	.00000	.01933	.00179	-.00500	.00136	-.01264
#3	-.00023	.08271	.00009	.01090	.00611	-.00163	-.00475	-.01262
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: ICSA Acquired: 6/27/2016 10:41:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.00072	.00255	-.00142	-.00297	-.00684	-.00350
Stddev	.00092	.00022	.00227	.00469	.00113	.00030	.00043
%RSD	104.29	30.744	88.699	331.16	38.033	4.3723	12.250
#1	.00194	.00091	.00433	-.00152	-.00422	-.00699	-.00322
#2	.00027	.00078	.00000	-.00606	-.00263	-.00650	-.00330
#3	.00043	.00048	.00332	.00333	-.00204	-.00704	-.00400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9003.1	53741.	2830.1
Stddev	29.5	88.	13.2
%RSD	.32793	.16418	.46682
#1	8969.0	53843.	2836.5
#2	9019.7	53686.	2838.9
#3	9020.6	53695.	2814.9

Approved: June 28, 2016

Sample Name: ICSAB Acquired: 6/27/2016 10:45:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49885	256.39	.25252	-.01918	.24309	.23676	239.36	.48503
Stddev	.00077	.65	.00502	.00271	.00045	.00050	.30	.00068
%RSD	.15367	.25216	1.9898	14.136	.18678	.21093	.12664	.14053
#1	.49899	255.73	.25330	-.01721	.24333	.23629	239.67	.48508
#2	.49802	256.43	.25711	-.01805	.24256	.23671	239.35	.48569
#3	.49953	257.02	.24715	-.02227	.24337	.23729	239.06	.48433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23429	.24086	.24530	93.507	5.1189	.00241	239.40	.23738
Stddev	.00111	.00266	.00136	.226	.0691	.00187	.35	.00351
%RSD	.47486	1.1032	.55335	.24199	1.3498	77.806	.14736	1.4794
#1	.23518	.23891	.24433	93.596	5.0482	.00227	239.45	.24113
#2	.23465	.24388	.24472	93.675	5.1223	.00060	239.72	.23418
#3	.23304	.23978	.24685	93.249	5.1863	.00434	239.02	.23682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	5.1902	.46938	.09211	.47966	.49223	.24503	-.02683
Stddev	.00007	.0094	.00026	.00814	.00226	.00746	.00251	.00281
%RSD	13.615	.18091	.05557	8.8363	.47050	1.5148	1.0231	10.477
#1	-.00046	5.1797	.46968	.08370	.48227	.49724	.24688	-.02680
#2	-.00060	5.1978	.46920	.09995	.47849	.49580	.24602	-.02404
#3	-.00052	5.1931	.46926	.09267	.47824	.48366	.24217	-.02966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: ICSAB Acquired: 6/27/2016 10:45:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.00073	-.00122	.45265	.24279	.46530	-.00351
Stddev	.00042	.00033	.00788	.00412	.00036	.00116	.00030
%RSD	67.531	45.343	645.29	.90940	.14968	.24968	8.4247
#1	.00101	.00064	-.00686	.45617	.24254	.46493	-.00322
#2	.00071	.00109	.00778	.44813	.24320	.46660	-.00349
#3	.00017	.00045	-.00458	.45366	.24261	.46437	-.00381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9451.1	56687.	2980.7
Stddev	12.7	235.	6.1
%RSD	.13402	.41481	.20363
#1	9456.2	56956.	2985.6
#2	9436.6	56517.	2982.5
#3	9460.3	56590.	2973.9

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 10:49:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41238**	**10.669**	**.41191**	**.52005**	**1.0384**	**.05158**	**10.784**	**.05227**
Stddev	.00183	.046	.00331	.00113	.0055	.00021	.067	.00041
%RSD	.44263	.42702	.80236	.21781	.53089	.39861	.62379	.77509
#1	.41421	10.697	.41543	.52118	1.0324	.05173	10.736	.05274
#2	.41056	10.694	.40887	.52006	1.0433	.05167	10.860	.05201
#3	.41238	10.617	.41143	.51892	1.0395	.05134	10.754	.05206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20803**	**.51861**	**.51945**	**4.3037**	**51.532**	**1.0319**	**10.785**	**.52164**
Stddev	.00094	.00265	.00200	.0480	.292	.0030	.169	.00151
%RSD	.45047	.51067	.38573	1.1144	.56743	.29472	1.5692	.28971
#1	.20905	.51951	.52105	4.2715	51.286	1.0285	10.755	.52005
#2	.20720	.52068	.51721	4.3588	51.855	1.0344	10.967	.52182
#3	.20783	.51562	.52010	4.2807	51.456	1.0328	10.633	.52306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0260**	**51.605**	**.52017**	**10.355**	**.51948**	**1.2287**	**.42141**	**5.0896**
Stddev	.0062	.392	.00213	.026	.00211	.0063	.00578	.0141
%RSD	.60581	.75948	.40961	.24947	.40593	.51662	1.3721	.27654
#1	1.0327	51.153	.52203	10.384	.52081	1.2352	.42600	5.1052
#2	1.0247	51.808	.51785	10.341	.52057	1.2225	.42332	5.0779
#3	1.0205	51.853	.52065	10.339	.51705	1.2285	.41492	5.0858
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 10:49:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0329**	**1.0366**	**1.0326**	**.52078**	**1.0290**	**1.0446**	**1.0377**
Stddev	.0036	.0061	.0096	.00149	.0042	.0040	.0092
%RSD	.34765	.58644	.92987	.28568	.40577	.38739	.89149
#1	1.0370	1.0299	1.0217	.52198	1.0329	1.0493	1.0281
#2	1.0312	1.0418	1.0361	.52124	1.0295	1.0419	1.0386
#3	1.0304	1.0380	1.0399	.51911	1.0246	1.0427	1.0465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9679.9**	**58019.**	**2940.7**
Stddev	31.4	99.	31.3
%RSD	.32391	.17011	1.0639
#1	9650.4	58117.	2973.3
#2	9676.5	57919.	2937.9
#3	9712.8	58020.	2910.9

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 10:52:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.03709	-.00042	.00235	.00221	.00011	.02800	.00010
Stddev	.00285	.00947	.00333	.00050	.00064	.00007	.06022	.00006
%RSD	347.74	25.544	801.20	21.057	29.249	66.828	215.11	60.876
#1	.00282	.04765	-.00314	.00195	.00194	.00016	.00724	.00009
#2	.00208	.02934	.00330	.00220	.00174	.00014	.09585	.00005
#3	-.00244	.03428	-.00140	.00291	.00294	.00003	-.01910	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00256	-.00018	.01123	.17852	-.00287	.01155	.00102
Stddev	.00023	.00130	.00111	.02322	.06304	.00388	.06528	.00239
%RSD	1385.9	50.913	614.81	206.72	35.311	135.30	565.34	235.33
#1	-.00006	.00365	-.00083	-.00086	.24920	-.00008	.05161	.00372
#2	.00023	.00291	.00111	.03801	.15825	-.00730	.04682	.00017
#3	-.00022	.00112	-.00082	-.00345	.12812	-.00122	-.06378	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00391	.11054	-.00006	.00936	-.00106	.00780	-.00430	.01094
Stddev	.00026	.02224	.00106	.00259	.00450	.00116	.00727	.00205
%RSD	6.5484	20.121	1773.4	27.704	423.55	14.865	169.26	18.686
#1	.00386	.10773	-.00045	.01132	-.00217	.00693	-.00997	.01182
#2	.00368	.13405	.00114	.01035	.00389	.00735	.00390	.00861
#3	.00419	.08984	-.00087	.00642	-.00490	.00911	-.00683	.01240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 10:52:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.00171	-.00592	.00236	.00119	.00045	.00147
Stddev	.00073	.00018	.00639	.00105	.00056	.00012	.00032
%RSD	97.462	10.324	107.89	44.349	47.225	27.229	21.897
#1	.00158	.00178	-.00302	.00218	.00104	.00058	.00181
#2	.00028	.00184	-.01324	.00141	.00182	.00042	.00143
#3	.00037	.00151	-.00150	.00348	.00072	.00034	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9210.0	55620.	2799.3
Stddev	17.9	95.	5.4
%RSD	.19389	.17128	.19191
#1	9214.9	55547.	2802.8
#2	9190.2	55728.	2793.2
#3	9224.9	55585.	2802.1

Approved: June 28, 2016

Sample Name: PBW AD Acquired: 6/27/2016 10:56:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	-.00551	-.00164	.00133	-.00255	.00001	-.02140	.00006
Stddev	.00131	.00261	.00242	.00099	.00017	.00008	.01807	.00008
%RSD	918.94	47.461	147.34	73.999	6.7565	679.86	84.478	126.18
#1	.00002	-.00708	-.00377	.00068	-.00272	-.00003	-.02206	-.00001
#2	-.00152	-.00249	.00099	.00085	-.00237	.00011	-.00300	.00014
#3	.00108	-.00696	-.00214	.00247	-.00257	-.00004	-.03913	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00044	-.00011	-.01481	.08157	-.00450	-.05709	-.00127
Stddev	.00038	.00059	.00174	.01969	.08524	.00309	.05809	.00048
%RSD	282.02	134.36	1518.6	132.89	104.49	68.616	101.75	38.034
#1	-.00023	.00035	.00020	.00330	.03640	-.00806	-.03041	-.00111
#2	.00028	-.00010	.00145	-.03577	.17989	-.00289	-.01713	-.00088
#3	-.00045	.00107	-.00199	-.01198	.02843	-.00255	-.12373	-.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	.12315	-.00007	.00271	.00049	-.00196	-.00731	-.02994
Stddev	.00005	.02063	.00058	.00658	.00069	.00072	.00330	.00107
%RSD	4.3907	16.754	814.35	242.50	141.11	36.905	45.123	3.5596
#1	.00125	.13009	.00059	.01030	.00122	-.00130	-.00403	-.02923
#2	.00120	.13943	-.00033	-.00131	.00041	-.00184	-.01063	-.02942
#3	.00114	.09994	-.00048	-.00086	-.00016	-.00274	-.00728	-.03117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Approved: June 28, 2016

Sample Name: PBW AD Acquired: 6/27/2016 10:56:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00122	.00010	.00267	.00012	.00086	.00027
Stddev	.00021	.00039	.00337	.00318	.00091	.00006	.00046
%RSD	418.85	32.122	3386.6	119.01	765.24	7.0777	171.03
#1	.00014	.00104	-.00194	.00621	.00001	.00079	.00037
#2	-.00019	.00095	.00399	.00178	.00108	.00091	.00068
#3	.00020	.00167	-.00175	.00003	-.00073	.00089	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10078.	61154.	3066.5
Stddev	38.	65.	16.3
%RSD	.37265	.10633	.53272
#1	10035.	61205.	3085.2
#2	10105.	61081.	3054.8
#3	10094.	61176.	3059.6

Approved: June 28, 2016

Sample Name: PBW AD Acquired: 6/27/2016 10:56:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	-.00551	-.00164	.00133	-.00255	.00001	-.02140	.00006
Stddev	.00131	.00261	.00242	.00099	.00017	.00008	.01807	.00008
%RSD	907.10	47.461	147.33	74.064	6.7565	679.87	84.478	126.16
#1	.00002	-.00708	-.00377	.00068	-.00272	-.00003	-.02206	-.00001
#2	-.00153	-.00249	.00099	.00085	-.00237	.00011	-.00300	.00014
#3	.00108	-.00696	-.00214	.00247	-.00257	-.00004	-.03913	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00044	-.00011	-.01686	.08157	-.00450	-.05709	-.00127
Stddev	.00038	.00059	.00176	.02442	.08524	.00309	.05809	.00048
%RSD	282.05	134.26	1612.9	144.86	104.49	68.616	101.75	38.034
#1	-.00023	.00035	.00021	-.00014	.03640	-.00806	-.03041	-.00111
#2	.00028	-.00010	.00147	-.04488	.17989	-.00289	-.01713	-.00088
#3	-.00045	.00107	-.00200	-.00555	.02843	-.00255	-.12373	-.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	.12315	-.00007	.00272	.00049	-.00196	-.00731	-.02994
Stddev	.00005	.02063	.00058	.00658	.00069	.00072	.00330	.00107
%RSD	4.3907	16.754	815.45	242.20	141.11	36.924	45.121	3.5596
#1	.00125	.13009	.00059	.01031	.00122	-.00130	-.00403	-.02923
#2	.00120	.13943	-.00033	-.00129	.00041	-.00184	-.01062	-.02942
#3	.00114	.09994	-.00048	-.00087	-.00016	-.00274	-.00727	-.03117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: PBW AD Acquired: 6/27/2016 10:56:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00122	.00009	.00267	.00012	.00086	.00027
Stddev	.00021	.00039	.00336	.00318	.00091	.00006	.00046
%RSD	419.00	32.122	3582.0	119.01	765.15	7.0777	170.99
#1	.00014	.00104	-.00194	.00621	.00001	.00079	.00037
#2	-.00019	.00095	.00397	.00178	.00108	.00091	.00068
#3	.00020	.00167	-.00175	.00003	-.00073	.00089	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10078.	61154.	3066.5
Stddev	38.	65.	16.3
%RSD	.37265	.10633	.53272
#1	10035.	61205.	3085.2
#2	10105.	61081.	3054.8
#3	10094.	61176.	3059.6

Approved: June 28, 2016

Sample Name: LCSW AD Acquired: 6/27/2016 11:04:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18930	4.7185	.19003	.93469	.47985	.02336	4.8179	.02393
Stddev	.00264	.0066	.00083	.00065	.00055	.00013	.0255	.00027
%RSD	1.3934	.14053	.43752	.06932	.11364	.56886	.52848	1.1239
#1	.18653	4.7163	.19007	.93542	.48039	.02321	4.8423	.02405
#2	.19179	4.7132	.19083	.93448	.47985	.02342	4.7915	.02363
#3	.18958	4.7259	.18917	.93418	.47930	.02346	4.8198	.02412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09659	.23846	.24088	1.9086	23.854	.48243	4.8127	.24088
Stddev	.00021	.00006	.00176	.0299	.024	.00111	.0520	.00346
%RSD	.21848	.02654	.72986	1.5671	.09958	.22942	1.0798	1.4373
#1	.09683	.23854	.24210	1.8741	23.834	.48253	4.8448	.24488
#2	.09652	.23842	.24168	1.9261	23.880	.48128	4.7527	.23902
#3	.09642	.23843	.23887	1.9256	23.848	.48349	4.8404	.23875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48317	24.148	.24158	4.6577	.24353	.56968	.18766	2.2805
Stddev	.00185	.055	.00273	.0177	.00404	.00132	.00193	.0062
%RSD	.38336	.22645	1.1294	.38107	1.6575	.23248	1.0271	.27261
#1	.48319	24.206	.24282	4.6549	.24677	.56938	.18565	2.2798
#2	.48502	24.139	.24347	4.6766	.24481	.56853	.18785	2.2870
#3	.48131	24.098	.23845	4.6414	.23901	.57113	.18949	2.2746
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LCSW AD Acquired: 6/27/2016 11:04:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47831	.48449	.47945	.24451	.47571	.47996	.00474
Stddev	.00220	.00031	.00246	.00024	.00157	.00168	.00104
%RSD	.46005	.06434	.51251	.09744	.33103	.35074	21.927
#1	.47940	.48464	.47744	.24424	.47543	.48089	.00375
#2	.47976	.48413	.48219	.24467	.47429	.48098	.00463
#3	.47578	.48470	.47872	.24462	.47740	.47802	.00582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10036.	60667.	3061.3
Stddev	16.	132.	7.4
%RSD	.15906	.21753	.24216
#1	10038.	60818.	3054.0
#2	10019.	60573.	3061.1
#3	10050.	60609.	3068.8

Approved: June 28, 2016

Sample Name: L1606099601 Acquired: 6/27/2016 11:08:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	.00326	-.00134	.00556	.00464	-.00007	56.162	.00040
Stddev	.00178	.00987	.00131	.00195	.00069	.00003	.529	.00030
%RSD	144.06	302.41	98.032	35.136	14.856	45.396	.94107	74.669
#1	.00220	.00071	.00016	.00782	.00529	-.00003	55.776	.00007
#2	.00234	.01416	-.00191	.00447	.00392	-.00009	55.945	.00048
#3	-.00082	-.00508	-.00226	.00439	.00472	-.00008	56.764	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.00191	.00098	.00705	.36876	-.00116	22.804	.00093
Stddev	.00019	.00044	.00158	.01150	.11856	.00128	.343	.00214
%RSD	64.737	23.037	160.94	163.08	32.150	110.47	1.5021	228.81
#1	-.00024	.00235	.00067	.01641	.45961	-.00058	22.504	.00325
#2	-.00052	.00191	.00270	-.00578	.41204	-.00262	23.177	-.00096
#3	-.00015	.00147	-.00042	.01053	.23465	-.00027	22.730	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00111	4.1289	.00028	.00948	.00046	.00145	.00097	2.9475
Stddev	.00031	.0524	.00074	.00210	.00339	.00155	.00585	.0217
%RSD	27.978	1.2680	265.78	22.177	735.63	107.03	604.94	.73695
#1	.00110	4.0702	-.00001	.00869	.00432	.00119	-.00275	2.9626
#2	.00081	4.1708	.00111	.00789	-.00092	.00310	.00771	2.9573
#3	.00143	4.1456	-.00027	.01186	-.00202	.00004	-.00206	2.9226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099601 Acquired: 6/27/2016 11:08:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.08076	-.01280	.00056	.00130	.00146	-.00019
Stddev	.00029	.00049	.00307	.00274	.00086	.00015	.00072
%RSD	60.177	.60538	24.011	488.83	65.984	10.053	371.62
#1	.00039	.08032	-.01635	-.00058	.00183	.00138	-.00101
#2	.00024	.08128	-.01096	.00369	.00175	.00163	.00038
#3	.00080	.08066	-.01109	-.00142	.00031	.00137	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10059.	60827.	3058.7
Stddev	29.	228.	2.0
%RSD	.29168	.37466	.06551
#1	10025.	60569.	3056.7
#2	10081.	61002.	3058.5
#3	10070.	60909.	3060.7

Approved: June 28, 2016

Sample Name: L1606099602S Acquired: 6/27/2016 11:11:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18813	4.7350	.18948	.94279	.48703	.02341	61.170	.02398
Stddev	.00277	.0076	.00172	.00254	.00188	.00011	.164	.00007
%RSD	1.4748	.16161	.90580	.26991	.38499	.47028	.26817	.30979
#1	.18980	4.7388	.19100	.94494	.48912	.02350	61.264	.02400
#2	.18493	4.7400	.18981	.93998	.48647	.02346	61.266	.02403
#3	.18966	4.7262	.18762	.94345	.48550	.02329	60.981	.02389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09458	.23494	.23535	1.9256	24.153	.48381	27.282	.23869
Stddev	.00063	.00040	.00037	.0171	.111	.00423	.196	.00329
%RSD	.66218	.16824	.15837	.88843	.45831	.87512	.71904	1.3801
#1	.09454	.23528	.23512	1.9446	24.042	.48848	27.445	.23993
#2	.09522	.23450	.23515	1.9207	24.263	.48274	27.064	.24118
#3	.09397	.23504	.23578	1.9114	24.153	.48021	27.336	.23495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48631	28.289	.23480	4.7714	.23561	.57505	.18257	5.2951
Stddev	.00099	.078	.00097	.0059	.00124	.00076	.00243	.0024
%RSD	.20421	.27704	.41396	.12448	.52582	.13199	1.3292	.04484
#1	.48717	28.373	.23464	4.7777	.23525	.57420	.18377	5.2952
#2	.48654	28.219	.23585	4.7707	.23699	.57531	.17978	5.2974
#3	.48523	28.274	.23393	4.7659	.23459	.57565	.18417	5.2926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099602S Acquired: 6/27/2016 11:11:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47604**	**.56589**	**.46385**	**.24049**	**.47449**	**.47286**	**.00122**
Stddev	.00004	.00229	.00771	.00260	.00102	.00053	.00044
%RSD	.00866	.40463	1.6627	1.0819	.21533	.11153	35.825
#1	.47602	.56845	.46505	.24323	.47561	.47256	.00081
#2	.47609	.56517	.45561	.23806	.47362	.47346	.00118
#3	.47602	.56404	.47090	.24019	.47423	.47254	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9956.7**	**60350.**	**3056.9**
Stddev	32.2	88.	8.3
%RSD	.32388	.14559	.27133
#1	9988.9	60290.	3047.9
#2	9924.4	60310.	3058.6
#3	9956.7	60451.	3064.2

Approved: June 28, 2016

Sample Name: L1606099603SD Acquired: 6/27/2016 11:15:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19028	4.7868	.19269	.94867	.48722	.02346	60.919	.02406
Stddev	.00212	.0181	.00136	.00219	.00189	.00006	.253	.00014
%RSD	1.1126	.37744	.70818	.23039	.38720	.26793	.41487	.57233
#1	.19148	4.7722	.19359	.94673	.48507	.02353	60.675	.02401
#2	.18784	4.8070	.19112	.95104	.48802	.02344	60.902	.02395
#3	.19154	4.7811	.19336	.94824	.48858	.02341	61.180	.02421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09518	.23692	.23715	1.9314	24.167	.48716	27.262	.23905
Stddev	.00047	.00079	.00143	.0184	.183	.00439	.044	.00192
%RSD	.49502	.33520	.60154	.95364	.75718	.90103	.16297	.80434
#1	.09469	.23782	.23571	1.9395	23.964	.48436	27.211	.23873
#2	.09522	.23634	.23856	1.9445	24.216	.48492	27.285	.23730
#3	.09563	.23660	.23717	1.9104	24.319	.49222	27.291	.24111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48886	28.229	.23606	4.7975	.24121	.57136	.18866	5.3330
Stddev	.00146	.184	.00176	.0017	.00169	.00269	.01260	.0141
%RSD	.29961	.65348	.74735	.03493	.70048	.47096	6.6800	.26466
#1	.49043	28.016	.23710	4.7973	.24241	.57255	.18833	5.3193
#2	.48863	28.338	.23706	4.7959	.24195	.57324	.20142	5.3475
#3	.48753	28.333	.23402	4.7993	.23928	.56827	.17622	5.3323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099603SD Acquired: 6/27/2016 11:15:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47890**	**.56537**	**.47324**	**.24435**	**.47813**	**.47683**	**.00060**
Stddev	.00286	.00273	.01175	.00100	.00128	.00077	.00020
%RSD	.59645	.48334	2.4839	.40879	.26843	.16191	32.886
#1	.48155	.56309	.46094	.24471	.47955	.47751	.00072
#2	.47926	.56463	.47442	.24512	.47781	.47699	.00071
#3	.47587	.56840	.48436	.24322	.47704	.47599	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9937.3**	**60391.**	**3077.2**
Stddev	14.8	124.	21.3
%RSD	.14891	.20584	.69260
#1	9920.4	60281.	3101.8
#2	9943.6	60366.	3065.2
#3	9947.9	60526.	3064.6

Approved: June 28, 2016

Sample Name: L1606117901 Acquired: 6/27/2016 11:19:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	.02080	-.00015	.00912	-.00135	-.00001	.18554	.00009
Stddev	.00163	.01061	.00134	.00085	.00073	.00009	.03244	.00025
%RSD	227.50	50.989	907.80	9.2958	53.948	957.01	17.482	271.74
#1	.00097	.03252	.00133	.00831	-.00071	.00008	.19286	-.00017
#2	.00220	.01803	-.00129	.01000	-.00120	-.00010	.15007	.00033
#3	-.00102	.01186	-.00049	.00904	-.00214	-.00001	.21370	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00195	.00009	.02926	.07448	-.00083	.07412	.00218
Stddev	.00030	.00118	.00112	.04525	.16774	.00245	.02265	.00214
%RSD	96.395	60.268	1181.8	154.65	225.20	294.22	30.559	98.076
#1	-.00038	.00143	-.00002	-.01797	-.07824	-.00029	.04822	.00395
#2	.00002	.00330	.00126	.03352	.04769	.00130	.09021	.00278
#3	-.00058	.00112	-.00096	.07223	.25401	-.00351	.08393	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.15073	.00024	.00759	-.00104	.00154	-.00041	-.01205
Stddev	.00034	.03848	.00074	.00602	.00153	.00314	.00173	.00267
%RSD	38.727	25.532	313.77	79.298	146.52	204.07	419.45	22.167
#1	.00069	.14959	-.00056	.01447	.00072	.00196	.00111	-.00897
#2	.00069	.18977	.00089	.00499	-.00186	.00444	-.00229	-.01372
#3	.00129	.11282	.00038	.00331	-.00200	-.00179	-.00006	-.01346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606117901 Acquired: 6/27/2016 11:19:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00123	-.00396	-.00083	.00060	.00107	-.00024
Stddev	.00073	.00029	.00070	.00214	.00012	.00021	.00050
%RSD	69743.	23.931	17.704	257.74	20.309	19.961	205.14
#1	.00084	.00157	-.00320	.00160	.00049	.00130	-.00015
#2	-.00035	.00106	-.00411	-.00168	.00073	.00102	-.00078
#3	-.00049	.00105	-.00458	-.00242	.00059	.00088	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10211.	62110.	3089.5
Stddev	13.	186.	5.8
%RSD	.12645	.29961	.18789
#1	10203.	62198.	3083.6
#2	10225.	61896.	3095.2
#3	10204.	62236.	3089.7

Approved: June 28, 2016

Sample Name: L1606117901PS Acquired: 6/27/2016 11:23:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574214-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18751	4.6924	.18741	.92180	.47420	.02302	4.9755	.02354
Stddev	.00138	.0184	.00060	.00040	.00158	.00005	.0105	.00025
%RSD	.73597	.39242	.32238	.04391	.33360	.22042	.21030	1.0799
#1	.18888	4.7119	.18682	.92179	.47602	.02303	4.9647	.02334
#2	.18612	4.6753	.18739	.92141	.47324	.02296	4.9856	.02383
#3	.18752	4.6899	.18803	.92222	.47333	.02306	4.9762	.02345
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09588	.23472	.23888	1.9126	23.415	.47894	4.7182	.23827
Stddev	.00035	.00100	.00116	.0071	.048	.00290	.0903	.00057
%RSD	.36630	.42739	.48450	.37295	.20447	.60570	1.9132	.24122
#1	.09598	.23575	.23947	1.9074	23.375	.48172	4.6611	.23837
#2	.09616	.23375	.23962	1.9096	23.402	.47593	4.6712	.23766
#3	.09549	.23467	.23755	1.9207	23.468	.47917	4.8222	.23879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47661	23.842	.23804	4.6066	.23860	.55603	.17930	2.2773
Stddev	.00152	.022	.00175	.0111	.00481	.00366	.00848	.0068
%RSD	.31904	.09402	.73670	.24161	2.0142	.65792	4.7280	.29846
#1	.47744	23.817	.23835	4.6121	.23447	.55198	.16952	2.2796
#2	.47754	23.847	.23962	4.6139	.24387	.55702	.18392	2.2826
#3	.47486	23.861	.23616	4.5938	.23746	.55910	.18447	2.2696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606117901PS Acquired: 6/27/2016 11:23:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574214-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47165**	**.47956**	**.47085**	**.24029**	**.46670**	**.47457**	**.00055**
Stddev	.00140	.00029	.00956	.00263	.00189	.00170	.00039
%RSD	.29768	.06000	2.0311	1.0939	.40453	.35895	71.804
#1	.47125	.47964	.47754	.23905	.46790	.47446	.00081
#2	.47321	.47924	.47511	.23851	.46452	.47633	.00075
#3	.47048	.47980	.45990	.24331	.46767	.47292	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10135.**	**61356.**	**3086.5**
Stddev	4.	169.	6.2
%RSD	.04127	.27468	.20041
#1	10138.	61169.	3079.4
#2	10130.	61496.	3090.6
#3	10136.	61402.	3089.5

Approved: June 28, 2016

Sample Name: L1606117901SDL Acquired: 6/27/2016 11:26:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	-.00876	-.00158	.00420	-.00145	-.00006	.01959	.00013
Stddev	.00139	.00831	.00054	.00197	.00159	.00007	.02852	.00015
%RSD	76.113	94.876	34.316	46.949	109.92	115.61	145.60	111.05
#1	.00305	.00028	-.00125	.00647	-.00089	.00000	.04998	.00030
#2	.00209	-.01048	-.00128	.00316	-.00021	-.00005	.01539	.00002
#3	.00032	-.01607	-.00220	.00296	-.00325	-.00013	-.00660	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00078	.00077	.02010	.17744	-.00181	-.00514	.00019
Stddev	.00029	.00095	.00050	.00816	.07146	.00342	.03381	.00246
%RSD	124.09	121.80	65.402	40.597	40.275	189.49	657.34	1314.0
#1	-.00049	.00179	.00026	.01194	.25402	.00022	-.02869	.00024
#2	-.00029	-.00010	.00079	.02826	.11253	-.00576	-.02034	-.00230
#3	.00008	.00065	.00126	.02009	.16576	.00012	.03360	.00262
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	.10897	.00042	.00853	-.00135	.00022	-.00397	-.02369
Stddev	.00009	.00391	.00083	.00771	.00206	.00158	.00375	.00072
%RSD	9.7431	3.5859	195.85	90.342	152.42	719.67	94.434	3.0224
#1	.00096	.10458	.00127	.00472	.00097	.00168	-.00530	-.02420
#2	.00082	.11027	-.00039	.00348	-.00298	-.00146	.00026	-.02287
#3	.00099	.11207	.00039	.01741	-.00204	.00043	-.00687	-.02400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606117901SDL Acquired: 6/27/2016 11:26:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574214-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00095	.00206	.00175	.00023	.00090	-.00011
Stddev	.00081	.00029	.00575	.00174	.00011	.00015	.00028
%RSD	447.31	30.155	279.47	99.665	49.179	16.523	251.35
#1	-.00057	.00062	.00863	.00026	.00024	.00096	-.00037
#2	.00104	.00111	-.00043	.00367	.00012	.00101	-.00014
#3	.00008	.00112	-.00203	.00132	.00035	.00073	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10479.	63800.	3157.1
Stddev	55.	94.	17.6
%RSD	.52430	.14744	.55775
#1	10534.	63713.	3156.5
#2	10480.	63899.	3175.0
#3	10424.	63787.	3139.8

Approved: June 28, 2016

Sample Name: L1606117901SDL Acquired: 6/27/2016 11:30:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**-.01463**	**-.00147**	**.00136**	**-.00217**	**-.00007**	**-.02052**
Stddev	.00223	.00395	.00125	.00151	.00072	.00009	.04242
%RSD	4811.9	27.034	84.817	111.15	33.177	132.09	206.74
#1	-.00198	-.01008	-.00234	.00035	-.00228	-.00011	.02000
#2	-.00031	-.01726	-.00004	.00309	-.00284	.00003	-.06461
#3	.00243	-.01654	-.00202	.00064	-.00141	-.00012	-.01694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**-.00005**	**.00100**	**-.00041**	F **-.02087**	**.05390**	**-.00380**
Stddev	.00014	.00044	.00061	.00080	.02667	.11692	.00540
%RSD	89.389	864.20	61.266	196.75	127.82	216.92	141.87
#1	.00015	-.00056	.00069	-.00020	-.05130	-.07225	-.00999
#2	.00002	.00022	.00171	.00027	-.00157	.15862	-.00007
#3	.00030	.00019	.00061	-.00129	-.00972	.07533	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03363**	**.00221**	**.00046**	**.04075**	**-.00021**	**.00528**	**-.00228**
Stddev	.02463	.00034	.00014	.01938	.00110	.00417	.00173
%RSD	73.257	15.401	29.515	47.560	531.64	78.936	75.715
#1	.00529	.00248	.00060	.03410	.00021	.00120	-.00371
#2	.04992	.00232	.00047	.02557	-.00145	.00953	-.00036
#3	.04568	.00183	.00032	.06258	.00062	.00510	-.00278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 28, 2016

Sample Name: L1606117901SDL Acquired: 6/27/2016 11:30:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574214-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00148**	**.00052**	**-.02939**	**-.00005**	**.00027**	**-.00175**	**.00170**
Stddev	.00281	.00262	.00025	.00021	.00036	.00601	.00037
%RSD	189.85	505.51	.84423	394.19	132.35	344.06	22.015
#1	-.00270	.00158	-.02920	-.00027	.00047	-.00069	.00166
#2	-.00348	-.00246	-.02967	.00015	-.00014	.00367	.00209
#3	.00173	.00244	-.02930	-.00004	.00049	-.00822	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00042**	**.00042**	**-.00030**
Stddev	.00063	.00012	.00034
%RSD	149.80	28.720	112.76
#1	-.00114	.00032	-.00062
#2	.00002	.00038	-.00036
#3	-.00014	.00055	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10431.**	**63091.**	**3111.2**
Stddev	16.	252.	21.2
%RSD	.15804	.39869	.68135
#1	10444.	63211.	3098.3
#2	10438.	63260.	3135.7
#3	10413.	62802.	3099.7

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 11:34:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41029**	**10.314**	**.41311**	**.51300**	**1.0292**	**.05084**	**10.180**	**.05150**
Stddev	.00136	.009	.00246	.00180	.0068	.00017	.038	.00051
%RSD	.33182	.09125	.59569	.35017	.65999	.32692	.37198	.99887
#1	.40919	10.310	.41560	.51161	1.0232	.05065	10.141	.05186
#2	.40986	10.307	.41306	.51237	1.0366	.05092	10.217	.05173
#3	.41181	10.325	.41068	.51503	1.0278	.05095	10.182	.05091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20710**	**.51032**	**.52099**	**4.0892**	**50.815**	**1.0221**	**10.252**	**.51220**
Stddev	.00166	.00085	.00175	.0040	.318	.0029	.037	.00281
%RSD	.80235	.16676	.33637	.09673	.62496	.28272	.36345	.54826
#1	.20850	.50937	.52285	4.0847	50.552	1.0201	10.295	.50976
#2	.20755	.51102	.52076	4.0921	51.168	1.0255	10.238	.51527
#3	.20526	.51055	.51937	4.0908	50.726	1.0208	10.224	.51156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0210**	**51.237**	**.51895**	**10.296**	**.51615**	**1.2226**	**.41042**	**5.0648**
Stddev	.0077	.306	.00211	.030	.00345	.0091	.00397	.0173
%RSD	.75227	.59797	.40704	.29113	.66809	.74330	.96773	.34141
#1	1.0285	50.954	.52109	10.330	.51651	1.2329	.41221	5.0786
#2	1.0215	51.563	.51889	10.286	.51254	1.2195	.41319	5.0704
#3	1.0131	51.194	.51687	10.272	.51941	1.2156	.40587	5.0454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 11:34:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0301**	**1.0276**	**1.0224**	**.52111**	**1.0183**	**1.0425**	**1.0206**
Stddev	.0050	.0038	.0117	.00210	.0025	.0036	.0032
%RSD	.48419	.37352	1.1487	.40271	.24354	.34135	.30940
#1	1.0346	1.0244	1.0153	.52324	1.0181	1.0453	1.0170
#2	1.0309	1.0319	1.0359	.52105	1.0159	1.0436	1.0231
#3	1.0247	1.0267	1.0159	.51905	1.0209	1.0385	1.0217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9545.4**	**57355.**	**2920.6**
Stddev	16.0	98.	12.9
%RSD	.16742	.17123	.44036
#1	9535.4	57468.	2935.4
#2	9537.0	57297.	2914.0
#3	9563.8	57299.	2912.3

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 11:38:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00504**	**-.00201**	**.00368**	**.00256**	**.00009**	**.01404**
Stddev	.00219	.00642	.00250	.00148	.00163	.00009	.04911
%RSD	527.90	127.30	124.48	40.110	63.751	100.94	349.75
#1	.00239	.00398	.00030	.00311	.00407	.00018	.06082
#2	-.00194	.01193	-.00166	.00536	.00276	.00009	.01840
#3	.00080	-.00078	-.00467	.00258	.00083	.00000	-.03710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**-.00005**	**.00229**	**.00038**	**.02444**	**.20214**	**-.00177**
Stddev	.00013	.00037	.00132	.00078	.03885	.05544	.00386
%RSD	111.48	696.52	57.782	205.08	158.97	27.426	217.74
#1	-.00023	.00007	.00222	.00101	.05224	.16080	.00022
#2	.00003	-.00047	.00100	.00062	-.01995	.26514	-.00622
#3	-.00016	.00024	.00364	-.00049	.04104	.18047	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03023**	**.00028**	**.00420**	**.13919**	**-.00004**	F **.01462**	**.00241**
Stddev	.11455	.00120	.00024	.02048	.00017	.00305	.00207
%RSD	378.91	434.05	5.6517	14.715	417.93	20.859	86.062
#1	-.03575	.00137	.00447	.15454	-.00014	.01761	.00384
#2	-.14193	-.00101	.00411	.11593	.00015	.01475	.00003
#3	.08698	.00047	.00403	.14709	-.00013	.01151	.00335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 11:38:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00518	-.00119	.01136	.00155	.00215	-.00792	.00076
Stddev	.00420	.00357	.00200	.00064	.00047	.00257	.00569
%RSD	81.176	299.26	17.574	41.045	21.906	32.387	751.91
#1	.00995	-.00456	.01333	.00222	.00256	-.00563	-.00271
#2	.00206	.00254	.01141	.00146	.00225	-.01069	-.00235
#3	.00351	-.00155	.00934	.00096	.00164	-.00745	.00733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00124	.00038	.00159
Stddev	.00096	.00031	.00019
%RSD	76.994	82.329	11.704
#1	.00222	.00051	.00138
#2	.00031	.00062	.00166
#3	.00119	.00002	.00173
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9358.9	56547.	2794.8
Stddev	20.4	165.	12.6
%RSD	.21850	.29146	.44991
#1	9359.7	56591.	2780.9
#2	9338.0	56684.	2805.3
#3	9378.9	56364.	2798.2

Approved: June 28, 2016

Sample Name: L1606102602 Acquired: 6/27/2016 11:42:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.26453**	**-.00232**	**.01137**	**.14455**	**.00168**	**156.80**
Stddev	.00213	.00553	.00315	.00190	.00153	.00005	.86
%RSD	514.79	2.0924	135.85	16.713	1.0603	2.7135	.54868
#1	.00257	.27024	-.00572	.00947	.14575	.00166	157.76
#2	.00036	.26416	-.00174	.01139	.14507	.00165	156.58
#3	-.00169	.25919	.00050	.01327	.14282	.00174	156.08
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00793**	**.29026**	**4.1463**	**.79834**	**18.146**	**10.415**	**.14997**
Stddev	.00013	.00197	.0069	.00546	.096	.012	.00155
%RSD	1.6398	.67726	.16696	.68358	.52983	.11605	1.0303
#1	.00806	.29105	4.1518	.80306	18.217	10.402	.15171
#2	.00780	.29171	4.1487	.79960	18.185	10.426	.14875
#3	.00793	.28803	4.1385	.79237	18.036	10.416	.14945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**117.35**	**2.7508**	**.04403**	F **463.92**	**11.613**	**.23944**	**.00538**
Stddev	.19	.0034	.00069	5.22	.075	.00408	.00236
%RSD	.16323	.12385	1.5776	1.1254	.64419	1.7056	43.762
#1	117.53	2.7538	.04451	469.94	11.676	.23503	.00518
#2	117.15	2.7516	.04435	460.70	11.634	.24308	.00783
#3	117.37	2.7471	.04323	461.11	11.530	.24022	.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 28, 2016

Sample Name: L1606102602 Acquired: 6/27/2016 11:42:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.03604	.00167	21.855	-.00030	2.7919	-.02523	.00328
Stddev	.00078	.00175	.048	.00077	.0132	.01080	.00542
%RSD	2.1519	104.78	.21795	256.83	.47315	42.798	165.41
#1	-.03690	.00316	21.910	-.00045	2.8052	-.02849	.00549
#2	-.03581	.00211	21.837	.00053	2.7919	-.03401	-.00290
#3	-.03540	-.00026	21.820	-.00099	2.7788	-.01317	.00724
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	45.000						
Low Limit	-.02000						

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00181	.12543	-.00203
Stddev	.00054	.00077	.00044
%RSD	29.945	.61364	21.462
#1	-.00127	.12603	-.00164
#2	-.00180	.12571	-.00195
#3	-.00236	.12456	-.00250
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9341.9	56331.	2987.1
Stddev	32.3	177.	26.1
%RSD	.34579	.31360	.87222
#1	9359.2	56340.	2957.6
#2	9362.0	56151.	2996.7
#3	9304.7	56503.	3007.0

Approved: June 28, 2016

Sample Name: L1606102604 Acquired: 6/27/2016 11:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.51537	-.00135	.04849	.25692	.00002	10.597	.00065
Stddev	.00097	.00417	.00160	.00232	.00117	.00006	.071	.00028
%RSD	119.61	.80856	118.17	4.7769	.45645	334.00	.67436	43.209
#1	.00084	.51600	-.00179	.04829	.25614	.00001	10.599	.00088
#2	.00178	.51092	-.00268	.05091	.25827	-.00004	10.668	.00073
#3	-.00017	.51918	.00042	.04629	.25636	.00009	10.525	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	.00804	.00219	.94506	.57282	.01957	8.3432	.04056
Stddev	.00025	.00118	.00070	.02358	.17090	.00552	.1393	.00132
%RSD	17.728	14.672	31.807	2.4955	29.835	28.200	1.6694	3.2511
#1	.00136	.00921	.00247	.92684	.76429	.02561	8.4862	.03904
#2	.00171	.00806	.00270	.97170	.43570	.01479	8.3352	.04139
#3	.00122	.00685	.00140	.93664	.51849	.01831	8.2080	.04125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	111.22	.01184	.05038	.00139	.00283	-.00142	30.099
Stddev	.00005	.58	.00193	.00219	.00224	.00277	.00860	.182
%RSD	6.3443	.52474	16.326	4.3492	161.71	98.192	607.40	.60408
#1	.00082	110.78	.01373	.04932	.00371	.00258	-.00365	30.191
#2	.00082	111.88	.01193	.05290	.00122	.00018	-.00868	30.217
#3	.00073	111.00	.00987	.04892	-.00077	.00571	.00808	29.890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102604 Acquired: 6/27/2016 11:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.21272	.00487	.00126	.00108	.00766	.00061
Stddev	.00022	.00072	.00311	.00378	.00014	.00024	.00054
%RSD	31.509	.33665	63.798	300.82	12.513	3.1489	89.018
#1	.00046	.21236	.00741	.00517	.00119	.00770	.00081
#2	.00077	.21354	.00140	.00095	.00112	.00788	.00102
#3	.00089	.21225	.00580	-.00236	.00093	.00740	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9804.0	59120.	3006.8
Stddev	14.0	114.	4.7
%RSD	.14307	.19206	.15632
#1	9819.7	59017.	3005.4
#2	9792.7	59241.	3002.9
#3	9799.5	59101.	3012.0

Approved: June 28, 2016

Sample Name: L1606102606 Acquired: 6/27/2016 11:50:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	1.2239	-.00174	.01161	.03727	.00027	5.5157
Stddev	.00080	.0104	.00223	.00250	.00221	.00006	.1070
%RSD	652.80	.85109	128.19	21.558	5.9287	21.417	1.9394
#1	.00092	1.2359	.00079	.01170	.03931	.00028	5.6257
#2	.00014	1.2178	-.00341	.00906	.03758	.00032	5.4120
#3	-.00069	1.2180	-.00260	.01407	.03493	.00021	5.5094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.01245	.00844	.00357	1.6333	1.2394	.06022
Stddev	.00012	.00034	.00111	.00096	.0776	.0714	.00425
%RSD	29.771	2.7570	13.173	26.915	4.7517	5.7615	7.0639
#1	.00032	.01223	.00839	.00440	1.7197	1.3197	.06065
#2	.00055	.01228	.00957	.00252	1.5695	1.2156	.06423
#3	.00036	.01285	.00735	.00380	1.6107	1.1830	.05576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.8139	.13811	.00206	248.44	.05729	.26089	.00094
Stddev	.1184	.00127	.00026	6.69	.00127	.00873	.00227
%RSD	2.0371	.91838	12.474	2.6922	2.2255	3.3451	240.98
#1	5.8695	.13935	.00185	255.89	.05875	.25082	.00120
#2	5.8943	.13817	.00234	242.94	.05639	.26617	-.00144
#3	5.6779	.13682	.00197	246.50	.05673	.26568	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 28, 2016

Sample Name: L1606102606 Acquired: 6/27/2016 11:50:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00105	F 36.384	.00024	.10851	.01712	-.00030
Stddev	.00500	.00476	.192	.00071	.00323	.00573	.00124
%RSD	1024.8	454.95	.52638	293.29	2.9813	33.469	416.21
#1	.00624	-.00445	36.500	-.00042	.11191	.02347	-.00061
#2	-.00191	.00369	36.488	.00015	.10548	.01232	-.00135
#3	-.00286	.00389	36.163	.00100	.10813	.01557	.00107
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00535	.16936	.00138
Stddev	.00042	.00122	.00039
%RSD	7.7851	.71943	28.035
#1	.00578	.16980	.00152
#2	.00533	.17029	.00168
#3	.00495	.16798	.00094
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9626.3	57886.	2983.8
Stddev	18.3	261.	74.6
%RSD	.19058	.45101	2.5006
#1	9647.5	57585.	2901.3
#2	9616.7	58049.	3046.6
#3	9614.8	58025.	3003.6

Approved: June 28, 2016

Sample Name: L1606102607 Acquired: 6/27/2016 11:54:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	1.1323	-.00238	.04660	.10958	.00010	6.5258	.00037
Stddev	.00080	.0175	.00050	.00030	.00243	.00010	.0579	.00010
%RSD	257.95	1.5429	20.924	.64173	2.2156	104.38	.88676	26.723
#1	-.00092	1.1127	-.00240	.04687	.10738	.00021	6.4875	.00037
#2	.00060	1.1463	-.00188	.04628	.10917	.00010	6.4976	.00027
#3	-.00061	1.1378	-.00287	.04666	.11218	-.00000	6.5924	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00187	.00297	.00159	1.3290	.57069	.00275	3.8665	.01222
Stddev	.00009	.00021	.00046	.0290	.04032	.00285	.0619	.00283
%RSD	4.6234	7.1037	28.704	2.1787	7.0656	103.56	1.6015	23.182
#1	.00187	.00273	.00106	1.3104	.54271	.00511	3.8437	.01540
#2	.00178	.00310	.00180	1.3143	.61691	.00356	3.8192	.00998
#3	.00195	.00309	.00189	1.3624	.55245	-.00042	3.9366	.01126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	20.808	.00171	.02360	-.00106	.00153	.00040	8.8461
Stddev	.00018	.091	.00048	.00800	.00292	.00392	.00140	.1098
%RSD	17.429	.43937	27.803	33.897	275.11	256.50	351.43	1.2414
#1	.00085	20.802	.00191	.01627	-.00308	.00603	-.00121	8.9294
#2	.00103	20.719	.00205	.03214	.00229	-.00117	.00118	8.8872
#3	.00121	20.902	.00117	.02239	-.00240	-.00027	.00122	8.7216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102607 Acquired: 6/27/2016 11:54:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.12250	.01094	.00018	.00267	.07442	.00061
Stddev	.00032	.00081	.00149	.00374	.00039	.00117	.00047
%RSD	181.48	.65945	13.593	2023.2	14.549	1.5745	76.234
#1	-.00005	.12246	.01133	-.00363	.00276	.07517	.00038
#2	.00054	.12171	.01218	.00033	.00300	.07502	.00115
#3	.00004	.12332	.00929	.00385	.00224	.07307	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9791.2	59635.	2975.2
Stddev	8.5	18.	25.1
%RSD	.08713	.02982	.84202
#1	9783.0	59652.	2959.7
#2	9790.4	59616.	3004.1
#3	9800.1	59637.	2961.9

Approved: June 28, 2016

Sample Name: L1606084001 Acquired: 6/27/2016 11:57:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	.00453	-.00231	.01392	.03067	-.00008	53.120	.00080
Stddev	.00088	.01618	.00071	.00201	.00012	.00007	.441	.00016
%RSD	86.051	357.15	30.592	14.417	.38086	81.244	.83058	20.432
#1	.00104	-.00250	-.00154	.01565	.03054	-.00015	53.330	.00085
#2	.00013	-.00695	-.00246	.01439	.03076	-.00007	53.418	.00062
#3	.00188	.02304	-.00294	.01172	.03072	-.00002	52.613	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00170	.00123	.32459	1.0265	-.00206	12.392	.94460
Stddev	.00013	.00072	.00102	.00668	.0613	.00244	.121	.00127
%RSD	16.603	42.489	83.413	2.0577	5.9742	118.69	.97455	.13438
#1	.00096	.00095	.00005	.31956	1.0133	-.00472	12.401	.94427
#2	.00077	.00177	.00186	.33217	.97280	-.00155	12.267	.94353
#3	.00070	.00239	.00178	.32204	1.0933	.00009	12.508	.94600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	5.1723	.00021	.01672	-.00134	-.00196	.00063	4.1375
Stddev	.00018	.0275	.00068	.00105	.00210	.00242	.00481	.0318
%RSD	28.323	.53205	318.26	6.3027	156.43	123.76	761.62	.76821
#1	.00086	5.1913	.00009	.01551	.00023	.00018	.00452	4.1074
#2	.00051	5.1849	-.00040	.01723	-.00053	-.00459	.00212	4.1343
#3	.00057	5.1407	.00095	.01742	-.00372	-.00146	-.00475	4.1707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084001 Acquired: 6/27/2016 11:57:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.24263**	**-.01886**	**-.00031**	**-.00033**	**.01399**	**-.00001**
Stddev	.00032	.00045	.00470	.00047	.00081	.00026	.00028
%RSD	46.464	.18625	24.915	152.40	243.31	1.8674	2189.7
#1	-.00052	.24229	-.02136	-.00072	-.00123	.01369	-.00029
#2	-.00050	.24315	-.01344	-.00041	.00034	.01408	-.00002
#3	-.00107	.24246	-.02177	.00020	-.00011	.01419	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58693.**	**2932.5**
Stddev	88.7	624.	9.6
%RSD	.92300	1.0624	.32835
#1	9677.1	58033.	2921.5
#2	9644.5	59272.	2936.8
#3	9509.8	58775.	2939.2

Approved: June 28, 2016

Sample Name: L1606084002 Acquired: 6/27/2016 12:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00128**	**-.00139**	**.00224**	**.08634**	**.09552**	**-.00002**	**120.61**	**.00014**
Stddev	.00250	.00876	.00171	.00338	.00036	.00006	.69	.00026
%RSD	194.67	631.07	76.296	3.9175	.37645	245.45	.57215	192.80
#1	-.00402	-.01109	.00064	.08244	.09586	.00004	119.84	.00033
#2	-.00069	.00593	.00204	.08824	.09555	-.00007	121.15	-.00016
#3	.00087	.00100	.00403	.08835	.09514	-.00004	120.85	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.00077**	**.00147**	**43.081**	**4.5386**	**.00310**	**11.268**	**.67312**
Stddev	.00017	.00005	.00320	.235	.0338	.00167	.145	.00147
%RSD	26.964	6.9558	217.13	.54506	.74492	54.079	1.2833	.21851
#1	-.00075	.00072	.00503	42.809	4.5769	.00120	11.171	.67359
#2	-.00043	.00076	.00055	43.216	4.5263	.00372	11.198	.67430
#3	-.00069	.00082	-.00116	43.216	4.5127	.00437	11.434	.67147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00116**	**5.4244**	**.00012**	**.11801**	**.00233**	**.00183**	**-.00652**	**7.6403**
Stddev	.00020	.0386	.00089	.00434	.00125	.00095	.00211	.1136
%RSD	17.017	.71102	759.90	3.6803	53.783	51.671	32.377	1.4866
#1	.00110	5.3838	-.00060	.11342	.00098	.00292	-.00818	7.7661
#2	.00100	5.4288	.00111	.11857	.00255	.00144	-.00414	7.6097
#3	.00138	5.4605	-.00016	.12205	.00346	.00115	-.00724	7.5452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084002 Acquired: 6/27/2016 12:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.68115	.00149	.00003	.00035	.00200	-.00075
Stddev	.00013	.00063	.00809	.00250	.00042	.00020	.00050
%RSD	21.360	.09243	543.95	9778.5	119.63	9.8337	66.242
#1	.00061	.68055	.00036	-.00281	-.00013	.00223	-.00067
#2	.00046	.68181	-.00598	.00096	.00057	.00186	-.00128
#3	.00071	.68110	.01008	.00193	.00063	.00192	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9739.0	57938.	2928.4
Stddev	102.1	129.	16.1
%RSD	1.0478	.22223	.54818
#1	9622.7	57791.	2946.0
#2	9781.2	57992.	2924.9
#3	9813.3	58031.	2914.5

Approved: June 28, 2016

Sample Name: L1606084003 Acquired: 6/27/2016 12:05:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00121	.08071	.00172	.09081	.09959	-.00012	123.30	.00045
Stddev	.00149	.00384	.00171	.00145	.00117	.00007	1.07	.00020
%RSD	122.93	4.7551	99.258	1.5948	1.1749	56.220	.86783	45.782
#1	.00002	.08463	.00369	.09156	.09973	-.00020	122.33	.00068
#2	.00073	.07696	.00088	.08914	.10068	-.00009	124.45	.00031
#3	.00288	.08054	.00059	.09174	.09835	-.00007	123.11	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.00087	.00289	43.973	4.6960	.00430	11.675	.66419
Stddev	.00015	.00041	.00047	.300	.1683	.00551	.133	.00687
%RSD	21.226	47.747	16.160	.68244	3.5840	127.88	1.1395	1.0342
#1	-.00071	.00059	.00238	43.670	4.7091	-.00204	11.575	.65887
#2	-.00082	.00134	.00298	44.270	4.8574	.00712	11.826	.67195
#3	-.00053	.00067	.00330	43.978	4.5216	.00783	11.625	.66177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	5.5885	.00111	.13500	.00082	.00343	-.00607	7.9482
Stddev	.00015	.0707	.00031	.00464	.00148	.00147	.00397	.0520
%RSD	10.645	1.2649	27.924	3.4356	181.08	42.697	65.305	.65412
#1	.00123	5.5076	.00132	.14035	.00252	.00509	-.00876	7.9966
#2	.00152	5.6384	.00075	.13201	-.00018	.00231	-.00152	7.9546
#3	.00135	5.6196	.00126	.13265	.00012	.00290	-.00794	7.8933
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084003 Acquired: 6/27/2016 12:05:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.69838**	**.00629**	**.00178**	**-.00059**	**.00222**	**-.00084**
Stddev	.00157	.00675	.00940	.00291	.00056	.00018	.00039
%RSD	291.19	.96596	149.56	163.25	95.098	8.3166	46.054
#1	-.00069	.69240	.00543	.00493	-.00119	.00201	-.00053
#2	.00110	.70570	.01609	.00124	-.00007	.00234	-.00128
#3	-.00203	.69705	-.00266	-.00082	-.00052	.00232	-.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9762.2**	**58678.**	**2957.0**
Stddev	32.4	138.	19.3
%RSD	.33194	.23584	.65148
#1	9726.5	58612.	2972.9
#2	9770.6	58584.	2935.6
#3	9789.6	58837.	2962.6

Approved: June 28, 2016

Sample Name: L1606084004 Acquired: 6/27/2016 12:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00340	.57839	.00309	.04986	.07128	-.00014	78.157	.00024
Stddev	.00231	.00473	.00177	.00231	.00149	.00006	.489	.00016
%RSD	67.902	.81696	57.428	4.6304	2.0875	41.855	.62597	66.282
#1	.00236	.58363	.00106	.04772	.07297	-.00021	78.703	.00036
#2	.00179	.57447	.00437	.05231	.07070	-.00013	77.759	.00006
#3	.00604	.57706	.00382	.04954	.07017	-.00009	78.008	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00268	.00209	13.902	2.3115	.00063	10.947	6.5059
Stddev	.00048	.00131	.00044	.065	.1653	.00105	.167	.0351
%RSD	65.715	48.910	20.939	.46649	7.1526	166.23	1.5274	.53929
#1	.00027	.00338	.00167	13.930	2.4961	.00110	10.946	6.5456
#2	.00070	.00349	.00255	13.949	2.1770	.00137	10.779	6.4928
#3	.00124	.00117	.00206	13.828	2.2613	-.00057	11.114	6.4792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	6.4050	.00124	.08236	.00411	-.00373	.00110	7.1748
Stddev	.00021	.0135	.00010	.00949	.00291	.00074	.00066	.0315
%RSD	24.174	.21060	7.7642	11.522	70.779	19.789	59.906	.43949
#1	.00092	6.4182	.00133	.09095	.00714	-.00298	.00137	7.1943
#2	.00065	6.3912	.00123	.08397	.00386	-.00375	.00158	7.1917
#3	.00106	6.4055	.00114	.07217	.00134	-.00446	.00035	7.1384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084004 Acquired: 6/27/2016 12:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.46037**	**.01892**	**-.00148**	**.00190**	**.00560**	**.00084**
Stddev	.00044	.00319	.00662	.00110	.00051	.00012	.00070
%RSD	94.473	.69285	34.994	74.711	26.966	2.1834	83.839
#1	-.00082	.46398	.02521	-.00240	.00240	.00568	.00094
#2	.00003	.45792	.01952	-.00177	.00138	.00566	.00149
#3	-.00060	.45920	.01202	-.00026	.00192	.00546	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9834.1**	**59607.**	**3008.2**
Stddev	10.8	123.	8.6
%RSD	.10933	.20604	.28680
#1	9822.0	59582.	3001.2
#2	9842.6	59499.	3017.8
#3	9837.6	59741.	3005.5

Approved: June 28, 2016

Sample Name: L1606084005 Acquired: 6/27/2016 12:13:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00668	-.00213	.05778	.13125	-.00012	73.966	.00069
Stddev	.00063	.00810	.00246	.00044	.00094	.00005	.524	.00019
%RSD	961.46	121.37	115.65	.76854	.71462	44.545	.70822	27.315
#1	.00045	.01321	-.00423	.05814	.13220	-.00015	74.552	.00072
#2	.00012	-.00239	-.00273	.05791	.13032	-.00015	73.804	.00085
#3	-.00077	.00921	.00058	.05728	.13121	-.00006	73.542	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00184	.00120	7.9376	2.7914	-.00180	9.2146	6.0686
Stddev	.00052	.00037	.00060	.0230	.0535	.00432	.1741	.0460
%RSD	124.87	20.296	50.060	.29024	1.9151	239.98	1.8892	.75859
#1	.00002	.00226	.00162	7.9508	2.7329	-.00167	9.4003	6.1216
#2	.00100	.00155	.00148	7.9110	2.8376	.00245	9.1881	6.0382
#3	.00022	.00171	.00051	7.9510	2.8038	-.00619	9.0552	6.0461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00401	5.5235	.00009	.03809	.00162	.00315	.00025	5.3185
Stddev	.00034	.0158	.00120	.00432	.00281	.00219	.00692	.0583
%RSD	8.3556	.28595	1268.4	11.330	173.81	69.373	2730.8	1.0955
#1	.00384	5.5412	-.00129	.03382	.00477	.00067	-.00567	5.2569
#2	.00440	5.5110	.00065	.04245	-.00066	.00477	-.00143	5.3727
#3	.00379	5.5181	.00092	.03799	.00075	.00402	.00786	5.3258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084005 Acquired: 6/27/2016 12:13:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.43025	-.01337	.00358	.00145	.00273	.00046
Stddev	.00078	.00329	.00402	.00506	.00034	.00007	.00083
%RSD	245.46	.76446	30.110	141.13	23.301	2.6980	182.02
#1	-.00058	.43394	-.01623	-.00199	.00115	.00271	.00009
#2	.00069	.42916	-.00876	.00789	.00138	.00281	-.00013
#3	.00083	.42764	-.01510	.00485	.00182	.00266	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9841.4	59195.	3025.3
Stddev	94.8	297.	10.0
%RSD	.96296	.50136	.33059
#1	9950.6	59537.	3015.3
#2	9781.1	59011.	3035.3
#3	9792.5	59037.	3025.3

Approved: June 28, 2016

Sample Name: L1606084006 Acquired: 6/27/2016 12:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00164	-.00719	-.00434	.00375	-.00054	.00002	.11974	.00043
Stddev	.00261	.00725	.00073	.00189	.00054	.00006	.00960	.00020
%RSD	159.01	100.86	16.872	50.405	100.03	227.54	8.0185	45.897
#1	-.00010	-.00070	-.00454	.00485	-.00005	-.00000	.11624	.00065
#2	.00465	-.00585	-.00353	.00157	-.00045	-.00001	.13060	.00028
#3	.00038	-.01502	-.00495	.00483	-.00112	.00009	.11238	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00229	.00265	-.00130	.02514	-.00449	.04252	.00721
Stddev	.00026	.00051	.00063	.00266	.08048	.00083	.04044	.00181
%RSD	173.46	22.403	23.726	203.56	320.08	18.531	95.099	25.105
#1	.00029	.00183	.00312	-.00319	.11298	-.00545	.04311	.00535
#2	.00032	.00284	.00289	.00173	-.04506	-.00414	.00179	.00897
#3	-.00015	.00218	.00193	-.00246	.00751	-.00389	.08265	.00733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.18897	.00020	-.00594	-.00252	-.00088	-.00520	-.00198
Stddev	.00048	.00835	.00100	.00884	.00248	.00457	.00518	.00107
%RSD	253.64	4.4186	510.98	148.75	98.389	518.63	99.733	53.864
#1	-.00019	.19627	-.00072	.00197	-.00532	.00083	-.00935	-.00093
#2	.00002	.17986	.00004	-.01549	-.00162	.00258	.00061	-.00194
#3	.00073	.19077	.00127	-.00432	-.00061	-.00606	-.00686	-.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084006 Acquired: 6/27/2016 12:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00072	-.00045	-.00026	.00094	.00173	-.00031
Stddev	.00035	.00028	.00524	.00154	.00035	.00024	.00032
%RSD	41.281	38.237	1171.4	600.81	37.636	13.582	100.73
#1	.00126	.00102	-.00580	.00038	.00116	.00170	-.00050
#2	.00070	.00048	.00466	-.00202	.00112	.00152	-.00049
#3	.00061	.00067	-.00020	.00086	.00053	.00198	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9745.8	60648.	2978.8
Stddev	99.8	834.	31.6
%RSD	1.0242	1.3759	1.0602
#1	9633.7	61604.	2998.6
#2	9778.5	60275.	2942.3
#3	9825.2	60065.	2995.3

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 12:21:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40982**	**10.326**	**.41213**	**.51242**	**1.0926**	**.05082**	**10.880**	**.05201**
Stddev	.00878	.252	.01063	.01050	.0236	.00138	.223	.00114
%RSD	2.1419	2.4371	2.5798	2.0490	2.1601	2.7195	2.0480	2.1946
#1	.40490	10.191	.41289	.50779	1.1037	.04992	11.005	.05241
#2	.41995	10.616	.40114	.52444	1.0655	.05241	10.623	.05073
#3	.40460	10.170	.42237	.50503	1.1087	.05012	11.012	.05290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20803**	**.50919**	**.52134**	**4.3447**	**53.527**	**1.0805**	**10.776**	**.54239**
Stddev	.00484	.01280	.01202	.1267	1.095	.0260	.268	.00962
%RSD	2.3249	2.5137	2.3048	2.9152	2.0452	2.4085	2.4916	1.7730
#1	.20997	.50240	.52340	4.3706	54.097	1.0939	10.816	.54819
#2	.20252	.52396	.50843	4.2071	52.265	1.0505	10.489	.53129
#3	.21159	.50123	.53220	4.4564	54.220	1.0971	11.021	.54769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0267**	**54.607**	**.52138**	**10.371**	**.52185**	**1.2269**	**.41575**	**5.0879**
Stddev	.0227	1.123	.01426	.241	.01274	.0284	.01189	.1164
%RSD	2.2055	2.0562	2.7346	2.3230	2.4413	2.3136	2.8599	2.2884
#1	1.0360	55.161	.52713	10.417	.52334	1.2314	.41415	5.1192
#2	1.0009	53.314	.50515	10.110	.50843	1.1965	.40474	4.9590
#3	1.0433	55.345	.53187	10.585	.53378	1.2528	.42836	5.1854
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 12:21:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0336**	**1.0901**	**1.0684**	**.51892**	**1.0206**	**1.0509**	**1.0769**
Stddev	.0240	.0234	.0198	.00908	.0266	.0248	.0112
%RSD	2.3229	2.1457	1.8498	1.7494	2.6067	2.3611	1.0424
#1	1.0429	1.1002	1.0762	.52256	1.0058	1.0571	1.0826
#2	1.0064	1.0633	1.0460	.50859	1.0513	1.0236	1.0640
#3	1.0516	1.1067	1.0831	.52561	1.0046	1.0721	1.0842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9564.4**	**57358.**	**2776.3**
Stddev	173.7	1171.	41.5
%RSD	1.8165	2.0418	1.4935
#1	9502.6	58080.	2762.2
#2	9760.6	56007.	2823.0
#3	9430.0	57987.	2743.8

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 12:25:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00801	-.00103	.00276	.00212	.00010	.01237
Stddev	.00054	.00191	.00555	.00165	.00059	.00005	.02593
%RSD	305.81	23.874	537.57	59.553	27.793	47.886	209.61
#1	-.00026	.00966	.00519	.00338	.00190	.00007	.02126
#2	.00001	.00845	-.00548	.00401	.00279	.00007	.03268
#3	.00077	.00592	-.00281	.00090	.00167	.00015	-.01683
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00008	.00176	.00058	-.00953	.07351	-.00534
Stddev	.00020	.00028	.00092	.00111	.01699	.12532	.00361
%RSD	218.62	347.28	52.557	191.12	178.34	170.47	67.695
#1	-.00011	-.00011	.00227	.00172	-.02080	.11336	-.00262
#2	.00029	.00021	.00069	.00051	-.01780	.17407	-.00944
#3	.00010	-.00035	.00231	-.00049	.01002	-.06689	-.00396
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03981	.00109	.00405	.14258	-.00036	F .01086	-.00169
Stddev	.10294	.00213	.00039	.04484	.00148	.00691	.00374
%RSD	258.57	194.73	9.6251	31.448	414.81	63.624	221.75
#1	.05401	.00259	.00446	.16898	.00116	.01849	-.00130
#2	-.06949	-.00134	.00368	.16795	-.00043	.00505	.00185
#3	.13492	.00203	.00401	.09081	-.00180	.00903	-.00561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 12:25:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00417	-.00073	.01248	.00092	.00175	-.00304	-.00057
Stddev	.00221	.00348	.00144	.00071	.00054	.00973	.00215
%RSD	53.083	478.32	11.507	77.419	30.591	319.59	377.76
#1	.00663	.00318	.01101	.00084	.00217	.00790	.00142
#2	.00236	-.00349	.01254	.00166	.00193	-.00634	-.00285
#3	.00351	-.00187	.01388	.00025	.00115	-.01070	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00062	.00044	.00126
Stddev	.00058	.00021	.00081
%RSD	93.624	46.980	64.473
#1	.00079	.00067	.00217
#2	-.00003	.00035	.00059
#3	.00109	.00029	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9088.4	55797.	2803.9
Stddev	32.8	363.	16.7
%RSD	.36063	.64995	.59502
#1	9123.1	56185.	2793.2
#2	9058.0	55741.	2823.1
#3	9084.0	55466.	2795.3

Approved: June 28, 2016

Sample Name: L1606099604 Acquired: 6/27/2016 12:29:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00580	.00190	.08139	.16840	-.00013	103.32	.00028
Stddev	.00128	.00535	.00228	.00254	.00185	.00011	.61	.00017
%RSD	659.73	92.321	120.00	3.1234	1.1007	81.225	.59136	59.820
#1	-.00019	.00495	.00330	.08419	.17029	-.00020	104.00	.00042
#2	.00163	.00092	-.00073	.08076	.16658	-.00019	103.14	.00010
#3	-.00085	.01152	.00315	.07922	.16832	-.00001	102.82	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00208	.00210	.00220	6.9135	5.7572	.00318	22.797	1.3714
Stddev	.00011	.00106	.00087	.0506	.1417	.00514	.164	.0068
%RSD	5.4227	50.496	39.640	.73143	2.4607	161.87	.71742	.49651
#1	.00195	.00113	.00136	6.9709	5.9167	.00682	22.816	1.3781
#2	.00218	.00193	.00214	6.8940	5.7092	-.00270	22.951	1.3717
#3	.00210	.00323	.00310	6.8755	5.6458	.00541	22.625	1.3644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00150	62.898	.00398	.00777	.00038	.00178	-.00471	6.2512
Stddev	.00040	.352	.00112	.00125	.00232	.00142	.00311	.1087
%RSD	26.641	.56029	28.045	16.108	606.93	79.640	66.020	1.7380
#1	.00104	63.287	.00289	.00700	.00207	.00015	-.00636	6.1377
#2	.00168	62.806	.00392	.00922	.00135	.00276	-.00666	6.3542
#3	.00178	62.600	.00512	.00710	-.00227	.00244	-.00112	6.2616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099604 Acquired: 6/27/2016 12:29:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.65534**	**-.02030**	**.00255**	**.00033**	**.00193**	**.00063**
Stddev	.00084	.00661	.00061	.00162	.00088	.00009	.00010
%RSD	408.85	1.0090	3.0257	63.401	268.16	4.7892	15.595
#1	.00026	.66296	-.01985	.00143	.00108	.00204	.00054
#2	.00030	.65206	-.02005	.00182	-.00064	.00187	.00073
#3	-.00118	.65102	-.02100	.00441	.00055	.00188	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9558.4**	**57612.**	**2936.4**
Stddev	116.5	315.	16.4
%RSD	1.2191	.54701	.55800
#1	9690.7	57619.	2920.8
#2	9471.2	57923.	2953.4
#3	9513.3	57293.	2935.0

Approved: June 28, 2016

Sample Name: L1606099605 Acquired: 6/27/2016 12:32:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.00440	.00035	.08600	.15334	-.00004	92.678	.00021
Stddev	.00208	.00968	.00234	.00157	.00545	.00009	2.912	.00015
%RSD	334.34	219.84	676.18	1.8291	3.5523	214.26	3.1425	70.670
#1	-.00176	.01391	-.00219	.08664	.15180	.00006	91.339	.00015
#2	-.00188	.00474	.00081	.08715	.14883	-.00009	90.677	.00010
#3	.00178	-.00544	.00241	.08421	.15939	-.00010	96.020	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00365	.00086	.00243	6.0484	5.7709	.00063	31.503	.66090
Stddev	.00047	.00042	.00069	.1770	.1598	.00208	1.094	.02168
%RSD	12.764	48.920	28.484	2.9268	2.7695	327.96	3.4720	3.2802
#1	.00403	.00109	.00318	5.9427	5.7426	.00246	30.808	.65326
#2	.00379	.00111	.00182	5.9498	5.6271	.00107	30.938	.64407
#3	.00313	.00037	.00230	6.2528	5.9430	-.00163	32.764	.68536
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	61.738	.00237	.01553	-.00133	-.00075	.00297	7.5875
Stddev	.00014	1.868	.00046	.00404	.00513	.00268	.00109	.0444
%RSD	9.1322	3.0264	19.551	26.021	385.98	357.61	36.581	.58550
#1	.00174	60.825	.00241	.01740	.00350	-.00313	.00247	7.6172
#2	.00145	60.502	.00188	.01089	-.00672	.00216	.00422	7.5364
#3	.00158	63.888	.00280	.01829	-.00077	-.00128	.00222	7.6088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099605 Acquired: 6/27/2016 12:32:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.55768	-.01630	.00067	-.00017	.00329	-.00008
Stddev	.00043	.01691	.00417	.00102	.00046	.00006	.00023
%RSD	123.49	3.0323	25.549	153.35	265.30	1.7576	273.28
#1	-.00015	.55046	-.02083	.00130	.00034	.00334	.00017
#2	.00059	.54557	-.01263	.00121	-.00055	.00330	-.00027
#3	.00062	.57700	-.01545	-.00051	-.00031	.00322	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9505.0	58408.	2954.9
Stddev	81.9	1154.	71.1
%RSD	.86161	1.9755	2.4052
#1	9512.0	57442.	2997.1
#2	9583.1	58096.	2994.7
#3	9419.8	59685.	2872.8

Approved: June 28, 2016

Sample Name: L1606099606 Acquired: 6/27/2016 12:36:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	-.00165	-.00025	.08564	.14629	-.00000	89.804	.00032
Stddev	.00112	.01113	.00212	.00090	.00530	.00004	2.055	.00020
%RSD	524.99	674.83	853.55	1.0466	3.6261	1039.4	2.2878	63.164
#1	-.00107	-.01404	-.00260	.08522	.14152	-.00005	87.909	.00022
#2	.00100	.00748	.00036	.08503	.14536	.00003	89.515	.00019
#3	.00071	.00161	.00150	.08667	.15200	.00000	91.988	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00381	.00210	.00165	5.4359	5.6681	.00480	30.776	.64316
Stddev	.00033	.00040	.00014	.1393	.3324	.00308	.659	.01538
%RSD	8.6138	18.872	8.4193	2.5628	5.8637	64.199	2.1405	2.3911
#1	.00416	.00166	.00181	5.3390	5.2912	.00550	30.170	.63168
#2	.00374	.00222	.00155	5.3732	5.9193	.00143	30.682	.63716
#3	.00352	.00242	.00160	5.5956	5.7937	.00748	31.477	.66063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	59.640	.00253	.00574	-.00082	.00120	-.00418	7.2856
Stddev	.00018	1.339	.00036	.00490	.00097	.00213	.00105	.0742
%RSD	16.247	2.2447	14.289	85.380	118.02	177.90	25.030	1.0179
#1	.00127	58.460	.00258	.00918	-.00191	.00329	-.00447	7.3494
#2	.00120	59.366	.00286	.00013	-.00009	.00129	-.00505	7.3032
#3	.00092	61.095	.00214	.00790	-.00046	-.00098	-.00302	7.2042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099606 Acquired: 6/27/2016 12:36:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.54135	-.01376	.00040	-.00120	.00295	.00019
Stddev	.00026	.01206	.01048	.00370	.00038	.00007	.00031
%RSD	36.596	2.2286	76.185	932.18	31.665	2.5208	166.02
#1	.00092	.53114	-.02355	-.00349	-.00076	.00294	.00053
#2	.00079	.53824	-.01502	.00080	-.00140	.00303	.00011
#3	.00042	.55466	-.00270	.00387	-.00144	.00288	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9559.9	57603.	2976.2
Stddev	50.2	882.	41.3
%RSD	.52468	1.5319	1.3891
#1	9523.1	58519.	3014.9
#2	9539.5	56758.	2981.1
#3	9617.0	57532.	2932.6

Approved: June 28, 2016

Sample Name: L1606099607 Acquired: 6/27/2016 12:40:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.02230	-.00450	.01108	.02439	-.00009	66.480	.00028
Stddev	.00090	.00160	.00101	.00392	.00092	.00006	.638	.00009
%RSD	138.75	7.1527	22.436	35.403	3.7818	65.215	.95998	33.028
#1	.00137	.02347	-.00529	.01551	.02514	-.00011	66.633	.00038
#2	.00095	.02049	-.00484	.00964	.02466	-.00015	67.029	.00020
#3	-.00037	.02295	-.00336	.00808	.02336	-.00003	65.780	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00261	.00143	.00596	.78106	-.00208	22.738	.00477
Stddev	.00016	.00097	.00054	.00364	.04317	.00124	.231	.00310
%RSD	209.97	37.223	38.069	61.110	5.5276	59.612	1.0158	65.020
#1	.00010	.00357	.00150	.00834	.79239	-.00102	22.748	.00706
#2	-.00014	.00263	.00194	.00177	.73335	-.00177	22.964	.00601
#3	-.00020	.00163	.00085	.00778	.81744	-.00344	22.502	.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	37.923	-.00023	.01749	-.00363	.00068	-.00604	3.0026
Stddev	.00021	.357	.00012	.00610	.00208	.00469	.01001	.0238
%RSD	15.717	.94215	53.708	34.863	57.244	691.11	165.66	.79333
#1	.00125	38.024	-.00022	.01463	-.00430	.00280	.00439	3.0290
#2	.00117	38.219	-.00036	.02449	-.00528	.00393	-.00694	2.9963
#3	.00157	37.526	-.00011	.01335	-.00130	-.00469	-.01558	2.9826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099607 Acquired: 6/27/2016 12:40:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.18785**	**-.01422**	**.00080**	**-.00056**	**.00150**	**.00005**
Stddev	.00064	.00221	.01247	.00073	.00042	.00008	.00019
%RSD	298.26	1.1744	87.668	90.724	75.529	5.2164	388.21
#1	-.00057	.18821	-.01454	-.00004	-.00039	.00152	.00027
#2	-.00060	.18986	-.00160	.00120	-.00025	.00158	-.00007
#3	.00052	.18549	-.02652	.00124	-.00105	.00142	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9625.0**	**57772.**	**2941.4**
Stddev	36.2	586.	22.1
%RSD	.37614	1.0139	.75110
#1	9589.4	58436.	2946.1
#2	9661.8	57328.	2917.4
#3	9623.9	57553.	2960.8

Approved: June 28, 2016

Sample Name: L1606099608 Acquired: 6/27/2016 12:44:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	-.00400	-.00422	.02442	.03822	-.00001	83.891	.00034
Stddev	.00221	.00770	.00245	.00158	.00186	.00003	2.002	.00031
%RSD	807.22	192.30	58.014	6.4809	4.8795	554.60	2.3863	89.786
#1	.00167	.00126	-.00362	.02390	.03905	.00003	85.735	.00061
#2	.00143	-.01284	-.00691	.02619	.03952	-.00002	84.176	.00001
#3	-.00228	-.00043	-.00212	.02316	.03608	-.00003	81.762	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.00209	-.00003	-.01556	1.4704	.00084	27.649	.00085
Stddev	.00056	.00083	.00024	.04252	.1367	.00339	.634	.00109
%RSD	120.26	39.828	718.46	273.26	9.2945	402.48	2.2947	127.95
#1	-.00029	.00113	.00015	.01609	1.6204	-.00304	28.230	.00203
#2	-.00110	.00260	.00006	-.06389	1.3530	.00320	27.744	-.00012
#3	-.00002	.00253	-.00031	.00112	1.4378	.00237	26.972	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	14.025	.00030	.00574	-.00047	.00142	-.00271	4.1744
Stddev	.00012	.309	.00096	.00391	.00392	.00326	.00511	.0659
%RSD	19.654	2.2009	321.09	68.078	840.14	229.87	188.88	1.5797
#1	.00046	14.291	-.00049	.00124	.00385	-.00144	-.00858	4.2497
#2	.00065	14.097	.00137	.00774	-.00380	.00496	.00078	4.1468
#3	.00067	13.687	.00002	.00825	-.00145	.00073	-.00032	4.1267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099608 Acquired: 6/27/2016 12:44:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.27436	-.01978	.00108	-.00021	.00139	.00004
Stddev	.00051	.00737	.00167	.00298	.00020	.00042	.00088
%RSD	60.476	2.6846	8.4580	276.35	96.056	30.038	2176.4
#1	.00048	.28120	-.02080	-.00127	-.00011	.00096	-.00045
#2	.00143	.27533	-.02070	.00007	-.00045	.00179	-.00049
#3	.00062	.26656	-.01785	.00444	-.00007	.00143	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9658.7	58755.	2964.1
Stddev	91.6	479.	46.2
%RSD	.94862	.81444	1.5591
#1	9554.0	59299.	2924.6
#2	9698.2	58563.	2952.9
#3	9724.0	58402.	3014.9

Approved: June 28, 2016

Sample Name: L1606099609 Acquired: 6/27/2016 12:48:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00165	-.00164	.02800	.04080	-.00005	79.419	.00020
Stddev	.00144	.01010	.00345	.00084	.00081	.00005	.294	.00013
%RSD	904.18	610.85	210.58	3.0153	1.9890	101.31	.37081	67.386
#1	-.00165	-.00621	.00217	.02847	.04012	-.00005	79.151	.00012
#2	-.00005	-.00866	-.00254	.02851	.04170	-.00010	79.371	.00035
#3	.00122	.00992	-.00454	.02703	.04060	-.00000	79.734	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00217	.00166	1.5879	2.0306	-.00104	26.930	.09297
Stddev	.00011	.00067	.00041	.0178	.0539	.00177	.185	.00101
%RSD	198.11	31.130	24.824	1.1212	2.6567	169.28	.68530	1.0817
#1	-.00004	.00198	.00182	1.5969	2.0012	-.00243	26.817	.09181
#2	.00003	.00160	.00198	1.5673	2.0929	.00095	26.831	.09351
#3	.00018	.00291	.00120	1.5993	1.9978	-.00165	27.143	.09359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00378	15.834	.00047	.00185	-.00068	.00054	-.00357	4.8185
Stddev	.00016	.099	.00142	.00274	.00173	.00291	.00711	.0240
%RSD	4.2873	.62302	302.36	147.91	253.19	536.20	199.32	.49750
#1	.00360	15.733	.00204	.00453	-.00160	.00292	-.01102	4.8453
#2	.00391	15.841	-.00074	.00196	-.00175	.00142	-.00283	4.8113
#3	.00382	15.930	.00011	-.00094	.00131	-.00271	.00315	4.7990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099609 Acquired: 6/27/2016 12:48:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.50689**	**-.01603**	**-.00012**	**.00024**	**.00132**	**.00004**
Stddev	.00051	.00207	.00331	.00296	.00071	.00015	.00003
%RSD	122.28	.40838	20.614	2431.3	295.76	11.101	65.300
#1	-.00086	.50564	-.01656	.00002	.00084	.00147	.00001
#2	-.00052	.50575	-.01250	-.00315	-.00055	.00118	.00004
#3	.00014	.50928	-.01905	.00276	.00043	.00130	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9626.1**	**58293.**	**2964.2**
Stddev	20.6	405.	2.4
%RSD	.21356	.69449	.08122
#1	9613.0	58609.	2962.4
#2	9649.8	58434.	2966.9
#3	9615.6	57837.	2963.3

Approved: June 28, 2016

Sample Name: L1606111623 Acquired: 6/27/2016 12:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	.01556	.00438	.34960	.01944	.00464	21.262	.00011
Stddev	.00220	.00714	.00244	.00217	.00139	.00008	.175	.00026
%RSD	150.19	45.914	55.653	.61929	7.1373	1.6984	.82515	246.93
#1	.00261	.02114	.00269	.35205	.01916	.00470	21.452	.00033
#2	-.00107	.01803	.00328	.34794	.02095	.00467	21.229	.00017
#3	.00286	.00751	.00718	.34880	.01822	.00455	21.106	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00359	.00308	.01919	4.9518	.00186	9.2859	.00223
Stddev	.00020	.00096	.00072	.01132	.0871	.00204	.0483	.00253
%RSD	26.204	26.861	23.462	58.996	1.7581	109.65	.51972	113.63
#1	.00052	.00359	.00285	.02309	4.8522	.00180	9.2359	.00360
#2	.00086	.00263	.00390	.00644	4.9899	.00393	9.3323	-.00069
#3	.00087	.00455	.00250	.02805	5.0133	-.00015	9.2894	.00377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2853	142.47	.00504	.05255	-.00148	-.00027	.00638	3.3753
Stddev	.0046	.05	.00090	.00619	.00245	.00321	.00461	.0181
%RSD	.36184	.03676	17.858	11.771	165.71	1172.5	72.258	.53501
#1	1.2812	142.46	.00437	.04543	-.00416	.00001	.00525	3.3544
#2	1.2904	142.53	.00606	.05561	-.00095	-.00361	.00244	3.3867
#3	1.2843	142.43	.00468	.05661	.00066	.00278	.01145	3.3846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606111623 Acquired: 6/27/2016 12:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.17063	-.00486	.10658	2.7863	.00832	.00293
Stddev	.00042	.00034	.00551	.00239	.0072	.00022	.00040
%RSD	65.420	.19950	113.37	2.2436	.25677	2.6012	13.547
#1	.00097	.17024	-.00043	.10882	2.7881	.00807	.00261
#2	.00017	.17079	-.00312	.10406	2.7784	.00847	.00281
#3	.00077	.17087	-.01102	.10687	2.7923	.00842	.00338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9640.9	57918.	2931.6
Stddev	63.9	253.	5.2
%RSD	.66309	.43737	.17860
#1	9706.3	57711.	2937.4
#2	9637.9	58200.	2927.2
#3	9578.6	57841.	2930.2

Approved: June 28, 2016

Sample Name: L1606111624 Acquired: 6/27/2016 12:56:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	-.00937	.00229	.34841	.01823	.00462	20.849	.00020
Stddev	.00272	.00762	.00155	.00132	.00111	.00006	.357	.00036
%RSD	778.23	81.308	67.611	.37972	6.0899	1.2421	1.7140	175.16
#1	.00231	-.00854	.00224	.34926	.01889	.00469	20.690	.00048
#2	-.00024	-.00220	.00077	.34688	.01695	.00458	20.599	-.00020
#3	-.00312	-.01737	.00386	.34907	.01886	.00460	21.258	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00358	.00241	.00141	4.9328	-.00143	8.9933	.00088
Stddev	.00039	.00084	.00071	.01661	.0286	.00191	.2621	.00152
%RSD	41.102	23.367	29.333	1179.3	.58066	133.79	2.9139	171.80
#1	.00128	.00441	.00275	.00238	4.9523	-.00291	8.7732	.00227
#2	.00104	.00274	.00288	.01751	4.9000	.00073	8.9236	.00111
#3	.00052	.00360	.00159	-.01567	4.9463	-.00209	9.2832	-.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.3099	139.68	.00458	.05064	.00100	.00160	.00511	3.3994
Stddev	.0115	1.69	.00119	.00399	.00202	.00134	.01025	.0147
%RSD	.87517	1.2074	26.070	7.8709	201.03	83.535	200.37	.43322
#1	1.3217	138.45	.00428	.05313	.00056	.00152	.01443	3.4160
#2	1.3093	138.98	.00357	.04605	-.00076	.00031	-.00586	3.3942
#3	1.2988	141.60	.00590	.05276	.00320	.00298	.00677	3.3879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606111624 Acquired: 6/27/2016 12:56:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.16713**	**-.01305**	**.10902**	**2.8061**	**.00565**	**.00181**
Stddev	.00110	.00200	.00201	.00362	.0198	.00017	.00047
%RSD	2965.9	1.1939	15.396	3.3176	.70560	3.0758	26.191
#1	.00109	.16647	-.01124	.11271	2.8277	.00557	.00141
#2	-.00111	.16554	-.01521	.10886	2.8016	.00554	.00169
#3	-.00010	.16937	-.01269	.10548	2.7889	.00585	.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9621.1**	**58104.**	**2981.3**
Stddev	30.0	389.	29.4
%RSD	.31156	.66925	.98702
#1	9591.7	57688.	2988.3
#2	9651.6	58165.	3006.6
#3	9620.1	58458.	2949.0

Approved: June 28, 2016

Sample Name: L1606102602 Acquired: 6/27/2016 13:00:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00205	-.00136	.00107	.00338	-.00000	7.7827	.00040
Stddev	.00107	.00744	.00195	.00235	.00045	.00005	.1451	.00005
%RSD	486.55	362.63	143.73	219.19	13.467	1020.0	1.8641	13.006
#1	-.00007	.00972	-.00084	.00337	.00386	-.00001	7.6418	.00039
#2	-.00067	-.00514	.00028	.00118	.00331	.00005	7.9316	.00045
#3	.00141	.00158	-.00351	-.00133	.00296	-.00005	7.7745	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01549	.21171	.04406	.85896	.46778	.00399	5.8381	.13373
Stddev	.00042	.00465	.00090	.03523	.09590	.00226	.2053	.00527
%RSD	2.6989	2.1945	2.0404	4.1009	20.502	56.710	3.5163	3.9399
#1	.01595	.21640	.04347	.85962	.49628	.00152	5.6471	.12924
#2	.01537	.20711	.04509	.89386	.36085	.00448	6.0552	.13953
#3	.01514	.21162	.04361	.82342	.54620	.00596	5.8120	.13242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00408	23.497	.65304	.01847	-.00152	-.00473	.00137	1.1130
Stddev	.00023	.589	.00091	.00293	.00244	.00451	.00512	.0018
%RSD	5.7186	2.5087	.13863	15.888	160.52	95.318	373.36	.15722
#1	.00432	22.966	.65370	.01509	-.00185	-.00890	.00472	1.1127
#2	.00405	24.132	.65201	.01989	.00107	-.00537	.00391	1.1149
#3	.00386	23.394	.65342	.02042	-.00378	.00006	-.00452	1.1114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102602 Acquired: 6/27/2016 13:00:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.13845**	**-.00360**	**.00164**	**.00318**	**.00781**	**-.00040**
Stddev	.00028	.00342	.01364	.00088	.00009	.00014	.00006
%RSD	162.07	2.4708	378.91	53.643	2.7914	1.8499	16.297
#1	-.00041	.13497	.01208	.00068	.00319	.00794	-.00047
#2	.00013	.14180	-.01270	.00183	.00309	.00785	-.00038
#3	-.00024	.13857	-.01018	.00241	.00326	.00765	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10522.**	**63691.**	**3160.7**
Stddev	147.	1450.	56.7
%RSD	1.3981	2.2767	1.7935
#1	10388.	62026.	3208.2
#2	10501.	64677.	3097.9
#3	10679.	64370.	3176.0

Approved: June 28, 2016

Sample Name: L1606102604 Acquired: 6/27/2016 13:03:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	.02320	-.00068	.00317	.01081	-.00005	.53402	.00002
Stddev	.00006	.00903	.00370	.00080	.00173	.00015	.04625	.00007
%RSD	4.8840	38.933	545.28	25.090	16.044	287.43	8.6606	360.15
#1	.00115	.03309	.00318	.00228	.01279	-.00004	.54280	.00007
#2	.00120	.01539	-.00419	.00343	.01009	.00009	.57525	.00005
#3	.00127	.02113	-.00102	.00380	.00955	-.00021	.48401	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00131	-.00136	.02682	.04953	-.00210	.41888	.00169
Stddev	.00009	.00024	.00075	.02522	.04733	.00367	.07583	.00236
%RSD	89.070	18.283	55.333	94.024	95.563	174.33	18.102	140.13
#1	-.00016	.00148	-.00209	.01757	.00624	-.00538	.50346	.00180
#2	.00000	.00141	-.00059	.00754	.04227	.00186	.35699	.00399
#3	-.00016	.00104	-.00138	.05537	.10006	-.00279	.39619	-.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	5.8344	.00024	.00937	-.00078	-.00008	-.00087	1.5329
Stddev	.00017	.1289	.00146	.00288	.00160	.00208	.00351	.0177
%RSD	18.772	2.2091	603.01	30.760	204.78	2500.1	404.55	1.1558
#1	.00104	5.9515	.00088	.00698	-.00120	.00230	-.00352	1.5130
#2	.00098	5.6963	-.00143	.01257	.00098	-.00158	.00311	1.5385
#3	.00072	5.8554	.00127	.00855	-.00212	-.00096	-.00220	1.5471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102604 Acquired: 6/27/2016 13:03:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01129**	**-.00425**	**.00453**	**.00073**	**.00062**	**-.00033**
Stddev	.00016	.00049	.00124	.00218	.00029	.00001	.00040
%RSD	168.17	4.3032	29.246	48.226	39.627	1.7802	124.10
#1	-.00024	.01184	-.00555	.00662	.00044	.00062	-.00011
#2	.00008	.01092	-.00308	.00226	.00073	.00061	-.00008
#3	-.00014	.01111	-.00410	.00470	.00102	.00063	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10264.**	**61770.**	**3063.1**
Stddev	82.	1823.	36.6
%RSD	.80048	2.9515	1.1947
#1	10355.	59854.	3033.0
#2	10241.	61974.	3103.8
#3	10196.	63483.	3052.5

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 13:07:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39855	9.9772	.42046	.50344	.95772	.04895	9.5448	.05172
Stddev	.00683	.1980	.00527	.01093	.00739	.00095	.0947	.00030
%RSD	1.7128	1.9841	1.2532	2.1714	.77178	1.9362	.99206	.57149
#1	.39069	9.7501	.42628	.49084	.95811	.04786	9.4971	.05193
#2	.40204	10.069	.41910	.50905	.95015	.04942	9.4833	.05186
#3	.40294	10.113	.41601	.51043	.96492	.04957	9.6538	.05138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20728	.49174	.52427	3.7658	47.113	.95130	9.4667	.47419
Stddev	.00145	.01084	.00292	.0457	.314	.00824	.2111	.00912
%RSD	.70027	2.2054	.55705	1.2121	.66610	.86617	2.2300	1.9228
#1	.20870	.48004	.52679	3.7302	47.107	.95111	9.2849	.48066
#2	.20735	.49371	.52495	3.7499	46.802	.94315	9.4170	.46377
#3	.20580	.50146	.52107	3.8173	47.430	.95963	9.6982	.47816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0270	48.116	.52240	10.440	.51931	1.2424	.42085	5.1300
Stddev	.0100	.448	.00357	.065	.00444	.0023	.00479	.0296
%RSD	.97214	.93093	.68267	.62704	.85492	.18669	1.1372	.57801
#1	1.0357	48.131	.52517	10.496	.52062	1.2397	.42531	5.1539
#2	1.0293	47.660	.52366	10.455	.52295	1.2439	.42146	5.1394
#3	1.0161	48.555	.51838	10.368	.51436	1.2434	.41579	5.0968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 13:07:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0297**	**.95746**	**.93834**	**.51847**	**.98130**	**1.0528**	**.95999**
Stddev	.0063	.00952	.01582	.00063	.02074	.0067	.01007
%RSD	.61354	.99395	1.6856	.12159	2.1136	.63322	1.0495
#1	1.0359	.95765	.94753	.51819	.95739	1.0591	.95621
#2	1.0300	.94785	.92008	.51919	.99197	1.0533	.95235
#3	1.0233	.96688	.94742	.51802	.99452	1.0458	.97141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9551.0**	**58673.**	**3085.7**
Stddev	21.5	957.	26.3
%RSD	.22509	1.6314	.85238
#1	9526.7	59766.	3082.4
#2	9558.6	58271.	3113.4
#3	9567.7	57983.	3061.2

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 13:11:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00445**	**-.00119**	**.00208**	**-.00135**	**-.00001**	**-.01457**	**.00003**
Stddev	.00236	.00341	.00067	.00250	.00099	.00005	.05566	.00031
%RSD	1640.9	76.698	56.614	120.45	73.479	318.32	382.09	1088.0
#1	-.00287	-.00801	-.00141	.00100	-.00037	-.00003	.02640	.00026
#2	.00127	-.00415	-.00043	.00029	-.00133	.00004	-.07794	.00015
#3	.00117	-.00120	-.00172	.00493	-.00235	-.00005	.00784	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00199**	**-.00040**	**-.00353**	**.17000**	**-.00171**	**.00538**	**.00159**
Stddev	.00010	.00055	.00131	.03844	.02716	.00277	.06978	.00187
%RSD	35.764	27.862	324.55	1087.7	15.978	162.37	1297.3	117.63
#1	.00032	.00216	.00054	.04081	.15267	-.00456	-.00664	.00232
#2	.00016	.00244	-.00190	-.02729	.20130	.00098	-.05761	.00298
#3	.00034	.00137	.00015	-.02412	.15602	-.00155	.08039	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00379**	**.14492**	**.00033**	**.00576**	**-.00060**	**.00422**	**.00182**	**.00473**
Stddev	.00034	.01572	.00035	.01026	.00051	.00038	.00185	.00216
%RSD	8.8594	10.849	107.73	177.93	84.779	8.9533	101.57	45.720
#1	.00391	.14066	.00063	-.00473	-.00071	.00432	.00390	.00674
#2	.00406	.16233	-.00006	.00626	-.00004	.00454	.00119	.00499
#3	.00342	.13177	.00041	.01577	-.00103	.00380	.00036	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 13:11:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00183	-.00426	.00298	.00111	.00029	.00146
Stddev	.00071	.00019	.00560	.00028	.00120	.00009	.00044
%RSD	94.654	10.537	131.40	9.4307	107.69	30.310	30.073
#1	-.00003	.00189	-.00424	.00272	.00097	.00036	.00109
#2	.00137	.00161	.00133	.00328	.00238	.00032	.00194
#3	.00091	.00198	-.00988	.00294	-.00001	.00019	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9906.1	59989.	3002.2
Stddev	128.4	1165.	36.0
%RSD	1.2959	1.9425	1.1986
#1	9929.8	60699.	2993.2
#2	9767.5	58645.	2971.6
#3	10021.	60625.	3041.8

Approved: June 28, 2016

Sample Name: L1606102606 Acquired: 6/27/2016 13:15:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.04310	-.00091	.00135	-.00138	-.00011	.24063	-.00005
Stddev	.00111	.00627	.00105	.00334	.00056	.00005	.02008	.00033
%RSD	96.010	14.536	114.92	247.26	40.605	47.397	8.3444	670.72
#1	.00206	.03718	.00029	.00008	-.00171	-.00017	.26380	-.00039
#2	-.00008	.04246	-.00143	.00513	-.00073	-.00009	.22972	.00028
#3	.00149	.04966	-.00159	-.00117	-.00170	-.00007	.22837	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00158	.00015	.07506	.12658	-.00200	.31903	.00533
Stddev	.00016	.00116	.00212	.01437	.08050	.00181	.11842	.00296
%RSD	39.271	73.288	1442.2	19.147	63.596	90.890	37.118	55.433
#1	.00059	.00233	.00165	.06693	.20692	-.00396	.40405	.00527
#2	.00032	.00216	.00107	.09165	.12692	-.00037	.18378	.00241
#3	.00031	.00025	-.00228	.06659	.04591	-.00166	.36926	.00832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	12.138	.00292	.01735	-.00104	-.00224	-.00069	1.7912
Stddev	.00024	.512	.00070	.00389	.00235	.00340	.00256	.0299
%RSD	23.803	4.2149	24.131	22.406	225.03	151.77	368.24	1.6684
#1	.00119	12.592	.00310	.01880	-.00327	.00006	.00221	1.7616
#2	.00113	11.584	.00351	.02030	-.00127	-.00063	-.00261	1.7906
#3	.00074	12.237	.00214	.01294	.00141	-.00615	-.00168	1.8214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102606 Acquired: 6/27/2016 13:15:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00523**	**-.00029**	**.00262**	**.00035**	**.00896**	**.00010**
Stddev	.00061	.00027	.00252	.00323	.00155	.00029	.00031
%RSD	158.35	5.1856	883.43	123.20	444.62	3.2537	301.10
#1	-.00031	.00523	.00262	.00309	-.00004	.00869	.00034
#2	-.00102	.00496	-.00161	-.00082	-.00097	.00891	.00022
#3	.00019	.00550	-.00187	.00560	.00206	.00927	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10417.**	**62883.**	**3149.1**
Stddev	112.	932.	103.0
%RSD	1.0779	1.4828	3.2700
#1	10511.	63478.	3064.6
#2	10447.	63364.	3263.8
#3	10293.	61809.	3118.8

Approved: June 28, 2016

Sample Name: L1606129003 Acquired: 6/27/2016 13:19:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	-.00490	-.00263	.00116	.01488	-.00005	.94835	.00015
Stddev	.00069	.00784	.00207	.00095	.00153	.00008	.04705	.00024
%RSD	1049.5	159.97	78.911	82.431	10.267	159.57	4.9610	155.58
#1	.00007	.00408	-.00489	.00009	.01319	-.00005	.89413	.00038
#2	-.00081	-.01036	-.00082	.00191	.01529	-.00014	.97836	-.00009
#3	.00054	-.00843	-.00217	.00147	.01616	.00003	.97256	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00029	-.00021	1.5518	.25213	-.00855	.61811	.02470
Stddev	.00039	.00089	.00104	.0399	.11756	.00244	.10475	.00149
%RSD	197.27	311.51	508.66	2.5733	46.628	28.589	16.946	6.0350
#1	.00030	-.00038	.00014	1.5114	.14886	-.01109	.56411	.02301
#2	.00052	-.00006	-.00138	1.5912	.22746	-.00621	.73884	.02584
#3	-.00023	.00130	.00062	1.5527	.38007	-.00834	.55139	.02525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	5.6687	.00119	.01042	-.00074	.00208	.00052	.41967
Stddev	.00026	.1634	.00066	.00843	.00287	.00220	.00352	.01113
%RSD	90.448	2.8821	55.491	80.953	390.80	105.66	671.07	2.6529
#1	.00015	5.4801	.00181	.00715	.00094	.00366	-.00340	.42637
#2	.00058	5.7661	.00050	.00411	-.00406	-.00043	.00157	.42582
#3	.00012	5.7600	.00125	.02000	.00091	.00301	.00340	.40682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606129003 Acquired: 6/27/2016 13:19:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.02183	.00273	.00216	.00029	.00131	-.00013
Stddev	.00047	.00102	.00597	.00367	.00048	.00011	.00029
%RSD	147.15	4.6769	218.71	169.95	165.96	8.6066	231.95
#1	.00006	.02065	.00326	.00621	.00084	.00127	.00001
#2	.00004	.02241	-.00349	-.00095	.00002	.00123	-.00046
#3	.00086	.02242	.00842	.00122	.00000	.00144	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10192.	62198.	3074.6
Stddev	151.	896.	60.3
%RSD	1.4841	1.4413	1.9622
#1	10087.	63037.	3142.4
#2	10123.	62304.	3026.8
#3	10365.	61254.	3054.7

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 13:23:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39466	9.8952	.40043	.50143	.97919	.04849	9.7927	.05038
Stddev	.01306	.3836	.01000	.02169	.00739	.00183	.0660	.00133
%RSD	3.3098	3.8763	2.4963	4.3256	.75498	3.7815	.67452	2.6465
#1	.38704	9.6439	.40978	.48959	.97741	.04728	9.8281	.05184
#2	.38719	9.7049	.40160	.48825	.98731	.04758	9.8334	.05005
#3	.40974	10.337	.38990	.52647	.97285	.05060	9.7165	.04923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20069	.48650	.50460	3.8975	47.776	.97248	9.4955	.48926
Stddev	.00441	.01900	.01134	.0630	.388	.00867	.0671	.00174
%RSD	2.1979	3.9054	2.2474	1.6171	.81251	.89105	.70691	.35652
#1	.20508	.47470	.51551	3.8721	47.744	.97251	9.4735	.48919
#2	.20071	.47638	.50543	3.9692	48.180	.98114	9.5709	.49104
#3	.19626	.50842	.49287	3.8510	47.405	.96381	9.4422	.48755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99535	49.328	.50566	10.124	.50743	1.2005	.40926	4.9655
Stddev	.02398	.381	.01095	.218	.01442	.0269	.00502	.1016
%RSD	2.4097	.77333	2.1647	2.1554	2.8422	2.2416	1.2268	2.0468
#1	1.0203	49.197	.51675	10.351	.52175	1.2284	.41424	5.0701
#2	.99336	49.758	.50537	10.104	.50763	1.1982	.40933	4.9591
#3	.97242	49.030	.49486	9.9158	.49291	1.1748	.40420	4.8672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 13:23:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99630	.97913	.95380	.50300	.97315	1.0214	.97706
Stddev	.02300	.00787	.00906	.01053	.03812	.0240	.00719
%RSD	2.3082	.80329	.94947	2.0942	3.9168	2.3493	.73581
#1	1.0198	.97521	.96013	.51368	.94863	1.0450	.97116
#2	.99534	.98818	.95783	.50269	.95376	1.0222	.97495
#3	.97380	.97399	.94342	.49262	1.0171	.99699	.98507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9660.1	58486.	3001.0
Stddev	163.9	1564.	9.9
%RSD	1.6964	2.6746	.32945
#1	9505.7	59464.	2995.2
#2	9642.7	59312.	2995.4
#3	9832.0	56682.	3012.5

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 13:26:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00303**	**-.00373**	**.00500**	**-.00055**	**-.00003**	**.00393**
Stddev	.00170	.00499	.00268	.00031	.00065	.00008	.03122
%RSD	1689.8	164.71	71.961	6.1638	118.06	299.30	794.56
#1	.00106	.00037	-.00375	.00491	-.00130	.00001	-.03094
#2	.00068	-.00007	-.00103	.00474	-.00008	.00003	.01342
#3	-.00205	.00879	-.00640	.00534	-.00028	-.00012	.02931
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00015**	**.00156**	**-.00015**	**-.01189**	**.13544**	**-.00177**
Stddev	.00011	.00034	.00096	.00093	.01157	.09102	.00528
%RSD	70.413	226.11	61.816	600.89	97.339	67.203	297.58
#1	.00003	.00039	.00064	-.00100	-.00558	.20922	-.00741
#2	.00018	-.00024	.00149	-.00030	-.02525	.03373	.00306
#3	.00025	.00029	.00256	.00084	-.00484	.16338	-.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01205**	**.00050**	**.00395**	**.16416**	**.00017**	F **.01114**	**-.00270**
Stddev	.01807	.00205	.00042	.03616	.00046	.00174	.00166
%RSD	150.01	409.81	10.590	22.026	265.71	15.573	61.523
#1	.02884	.00064	.00398	.19851	-.00024	.01014	-.00178
#2	-.00708	.00248	.00436	.12643	.00066	.01014	-.00462
#3	.01438	-.00162	.00352	.16753	.00010	.01315	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 13:26:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00393	.00112	.00872	.00073	.00181	.01167	.00102
Stddev	.00151	.00746	.00139	.00019	.00058	.00506	.00117
%RSD	38.515	664.39	15.940	25.365	32.293	43.335	115.09
#1	.00316	-.00100	.00967	.00052	.00245	.00931	.00206
#2	.00567	.00941	.00935	.00088	.00131	.00823	.00126
#3	.00295	-.00504	.00712	.00078	.00166	.01748	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00126	.00021	.00147
Stddev	.00076	.00021	.00080
%RSD	60.083	103.19	54.681
#1	.00163	.00042	.00075
#2	.00039	.00020	.00233
#3	.00175	-.00000	.00132
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9947.5	59758.	3010.4
Stddev	96.7	1863.	52.9
%RSD	.97166	3.1170	1.7571
#1	10052.	59475.	3024.7
#2	9862.1	61746.	2951.8
#3	9928.1	58053.	3054.7

Approved: June 28, 2016

Sample Name: LLCCV Acquired: 6/27/2016 13:30:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00878	.16766	.00389	.08557	.00677	.00157	.40977	.00073
Stddev	.00207	.00346	.00021	.00327	.00081	.00006	.02595	.00024
%RSD	23.531	2.0622	5.4293	3.8191	11.914	3.9744	6.3339	33.165
#1	.01068	.16888	.00391	.08931	.00721	.00156	.38214	.00070
#2	.00908	.17034	.00409	.08409	.00584	.00164	.41351	.00098
#3	.00658	.16376	.00367	.08329	.00727	.00151	.43365	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00384	.00587	.00477	.06082	.91229	.08113	.39200	.00719
Stddev	.00038	.00131	.00041	.02730	.02861	.00171	.10933	.00172
%RSD	9.8067	22.365	8.5727	44.890	3.1359	2.1106	27.890	23.950
#1	.00418	.00493	.00504	.05726	.93538	.08181	.26640	.00586
#2	.00392	.00737	.00430	.03548	.92120	.07919	.44374	.00914
#3	.00343	.00531	.00496	.08973	.88029	.08240	.46585	.00658
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00867	.49948	.01573	.80363	.00797	.08206	.01475	.83298
Stddev	.00028	.02628	.00123	.00471	.00119	.00489	.00371	.00454
%RSD	3.1854	5.2609	7.8331	.58570	14.963	5.9538	25.165	.54557
#1	.00835	.47045	.01523	.80835	.00800	.08756	.01866	.83750
#2	.00881	.52163	.01713	.80362	.00915	.08036	.01127	.83302
#3	.00884	.50635	.01482	.79893	.00677	.07824	.01432	.82841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LLCCV Acquired: 6/27/2016 13:30:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40284	.04313	.02333	.15595	.00848	.01704	.04589
Stddev	.00545	.00068	.00788	.00367	.00039	.00004	.00162
%RSD	1.3539	1.5742	33.792	2.3562	4.5484	.25639	3.5272
#1	.40779	.04330	.03084	.15591	.00827	.01709	.04451
#2	.40373	.04238	.02402	.15965	.00892	.01703	.04548
#3	.39699	.04370	.01512	.15230	.00824	.01701	.04767
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9797.4	58651.	2881.8
Stddev	19.7	674.	40.9
%RSD	.20082	1.1484	1.4200
#1	9782.0	58269.	2909.3
#2	9819.6	58255.	2901.4
#3	9790.6	59429.	2834.8

Approved: June 28, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW16F-062116	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 12:38
Collect Date:	06/21/2016 14:40	**Dilution:**	1	**File ID:**	NI.070116.123834
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0156		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000563	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00236	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00976		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0181		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.000902	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0293	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW16F-062116	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 16:08
Collect Date:	06/21/2016 14:40	**Dilution:**	10	**File ID:**	NI.070116.160841
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.411		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.659		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	109-062216	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 12:41
Collect Date:	06/22/2016 07:20	**Dilution:**	1	**File ID:**	NI.070116.124145
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00137	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0812		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00387	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00149	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00212	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00176	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0280		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00389	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00678		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0126	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG574416
Analyst: VC
Spike Analyst: VC
Run Date: 06/28/2016 07:30
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/28/2016 07:36

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18987
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG574416-04	BLANK	1	20 mL	50 mL	180.382 g	180.312 g		
2	WG574416-05	LCS	1	20 mL	50 mL	183.694 g	183.682 g	.25 mL	
3	L16061289-01	SAMP	1	20 mL	50 mL	182.848 g	182.84 g		07/05/16
4	L16061289-04	SAMP	1	20 mL	50 mL	182.912 g	182.885 g		07/05/16
5	L16061290-03	SAMP	1	20 mL	50 mL	184.003 g	183.986 g		07/05/16
6	L16061290-05	SAMP	1	20 mL	50 mL	181.663 g	181.642 g		07/05/16
7	L16061417-01	SAMP	1	20 mL	50 mL	179.943 g	179.922 g		07/01/16
8	L16061417-02	SAMP	1	20 mL	50 mL	179.851 g	179.837 g		07/01/16
9	L16061417-03	SAMP	1	20 mL	50 mL	182.296 g	182.285 g		07/01/16
10	L16061417-04	SAMP	1	20 mL	50 mL	184.788 g	184.773 g		07/01/16
11	WG574416-01	REF	1	20 mL	50 mL	183.479 g	183.463 g		
12	L16061417-05	RS01	1	20 mL	50 mL	183.479 g	183.463 g		07/01/16
13	WG574416-06	MS	1	20 mL	50 mL	181.151 g	181.132 g	.25 mL	
14	L16061417-06	MS01	1	20 mL	50 mL	181.151 g	181.132 g	.25 mL	07/01/16
15	WG574416-07	MSD	1	20 mL	50 mL	182.336 g	182.32 g	.25 mL	
16	L16061417-07	SD01	1	20 mL	50 mL	182.336 g	182.32 g	.25 mL	07/01/16
17	L16061417-08	SAMP	1	20 mL	50 mL	182.44 g	182.422 g		07/01/16
18	L16061417-09	SAMP	1	20 mL	50 mL	182.182 g	182.167 g		07/01/16
19	L16061441-01	SAMP	1	20 mL	50 mL	181.307 g	181.285 g		06/30/16
20	L16061441-02	SAMP	1	20 mL	50 mL	182.852 g	182.839 g		06/30/16
21	WG574416-02	REF	1	20 mL	50 mL	183.787 g	183.766 g		
22	L16061442-01	RS01	1	20 mL	50 mL	183.787 g	183.766 g		06/30/16
23	L16061442-02	SAMP	1	20 mL	50 mL	182.815 g	182.785 g		06/30/16
24	WG574416-08	MS	1	20 mL	50 mL	181.69 g	181.68 g	.25 mL	
25	L16061442-03	MS01	1	20 mL	50 mL	181.69 g	181.68 g	.25 mL	06/30/16
26	WG574416-09	MSD	1	20 mL	50 mL	183.48 g	183.462 g	.25 mL	
27	L16061442-04	SD01	1	20 mL	50 mL	183.48 g	183.462 g	.25 mL	06/30/16
28	L16061446-01	SAMP	2	20 mL	50 mL	182.938 g	182.914 g		06/30/16
29	WG574416-03	REF	2	20 mL	50 mL	183.343 g	183.326 g		
30	L16061447-01	SAMP	2	20 mL	50 mL	183.343 g	183.326 g		06/30/16
31	WG574416-10	DUP	1	20 mL	50 mL	182.848 g	182.825 g		

L16061442-03	FILTERED DIGESTATE
L16061442-04	FILTERED DIGESTATE
L16061441-01	FILTERED DIGESTATE
L16061441-02	FILTERED DIGESTATE
L16061442-01	FILTERED DIGESTATE
WG574416-02	FILTERED DIGESTATE

MW_DIG - Modified 09/30/2009
PDF ID: 4828145
Report generated: 06/28/2016 09:42

Microbac Laboratories Inc.
Microwave Digestion Log

L16061442-02	FILTERED DIGESTATE	SOP:
WG574416-08	FILTERED DIGESTATE	Spike Solution:
WG574416-09	FILTERED DIGESTATE	Spike Witness:

Method:
Balance:
Analyst: Nicki Collins
Instrument:
Instrument Start:

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4828145
Report generated: 06/28/2016 09:42

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.070116.102728	Blank	Blank		1		07/01/16 10:27
2	NI.070116.103040	WG575028-01	Calibration Point		1		07/01/16 10:30
3	NI.070116.103351	WG575028-02	Calibration Point		1		07/01/16 10:33
4	NI.070116.103702	WG575028-03	Calibration Point		1		07/01/16 10:37
5	NI.070116.104014	WG575028-04	Calibration Point		1		07/01/16 10:40
6	NI.070116.104327	WG575028-05	Initial Calibration Verification		1		07/01/16 10:43
7	NI.070116.104640	WG575028-06	Initial Calib Blank		1		07/01/16 10:46
8	NI.070116.104953	WG575028-07	Low Level Initial Calibration V		1		07/01/16 10:49
9	NI.070116.105304	WG575028-08	Interference Check		1		07/01/16 10:53
10	NI.070116.105616	WG575028-09	Interference Check		1		07/01/16 10:56
11	NI.070116.105929	WG575028-10	CCV		1		07/01/16 10:59
12	NI.070116.110241	WG575028-11	CCB		1		07/01/16 11:02
13	NI.070116.110553	WG574416-04	Method/Prep Blank	20/50	1		07/01/16 11:05
14	NI.070116.110904	WG574416-05	Laboratory Control S	20/50	1		07/01/16 11:09
15	NI.070116.111216	WG574416-01	Reference Sample		1	L16061417-05	07/01/16 11:12
16	NI.070116.111527	WG574416-06	Matrix Spike	20/50	1	L16061417-05	07/01/16 11:15
17	NI.070116.111839	WG574416-07	Matrix Spike Duplica	20/50	1	L16061417-05	07/01/16 11:18
18	NI.070116.112150	L16061417-01	SS007MW0B04-007	20/50	1		07/01/16 11:21
19	NI.070116.112502	L16061417-02	SS007MW0B06-007	20/50	1		07/01/16 11:25
20	NI.070116.112813	WG574808-01	Post Digestion Spike		1	L16061417-02	07/01/16 11:28
21	NI.070116.113125	WG574808-02	Serial Dilution		5	L16061417-02	07/01/16 11:31
22	NI.070116.113436	WG574808-02	Serial Dilution		25	L16061417-02	07/01/16 11:34
23	NI.070116.113750	WG575028-12	CCV		1		07/01/16 11:37
24	NI.070116.114101	WG575028-13	CCB		1		07/01/16 11:41
25	NI.070116.114414	L16061417-03	SS007MW0B06-007DUP	20/50	1		07/01/16 11:44
26	NI.070116.114726	L16061417-04	SS007MW0B13-007	20/50	1		07/01/16 11:47
27	NI.070116.115037	L16061417-08	SS007MWN748-007	20/50	1		07/01/16 11:50
28	NI.070116.115349	L16061417-09	FQC-RB06221601-CC	20/50	1		07/01/16 11:53
29	NI.070116.115701	L16061441-01	TS935TW002A	20/50	1		07/01/16 11:57
30	NI.070116.120012	L16061441-02	TS935TW005A	20/50	1		07/01/16 12:00
31	NI.070116.120324	WG574416-02	Reference Sample		1	L16061442-01	07/01/16 12:03
32	NI.070116.120635	L16061442-02	TS935TW010C	20/50	1		07/01/16 12:06
33	NI.070116.120947	WG574416-08	Matrix Spike	20/50	1	L16061442-01	07/01/16 12:09
34	NI.070116.121258	WG574416-09	Matrix Spike Duplica	20/50	1	L16061442-01	07/01/16 12:12

Page: 1 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.070116.121611	WG575028-14	CCV		1		07/01/16 12:16
36	NI.070116.121923	WG575028-15	CCB		1		07/01/16 12:19
37	NI.070116.122236	L16061446-01	GH9-HSPRING	20/50	1		07/01/16 12:22
38	NI.070116.122548	WG574416-03	Reference Sample		1	L16061447-01	07/01/16 12:25
39	NI.070116.122859	WG574416-10	Duplicate	20/50	1	L16061447-01	07/01/16 12:28
40	NI.070116.123211	L16061289-01	MW21-062216	20/50	1		07/01/16 12:32
41	NI.070116.123523	L16061289-04	18WW02F-062216	20/50	1		07/01/16 12:35
42	NI.070116.123834	L16061290-03	MW16F-062116	20/50	1		07/01/16 12:38
43	NI.070116.124145	L16061290-05	109-062216	20/50	1		07/01/16 12:41
44	NI.070116.124458	WG575028-16	CCV		1		07/01/16 12:44
45	NI.070116.124810	WG575028-17	CCB		1		07/01/16 12:48
46	NI.070116.125836	WG574419-03	Method/Prep Blank	20/50	1		07/01/16 12:58
47	NI.070116.130334	WG574419-04	Laboratory Control S	20/50	1		07/01/16 13:03
48	NI.070116.130646	WG574419-01	Reference Sample		1	L16061400-06	07/01/16 13:06
49	NI.070116.130957	WG574419-05	Matrix Spike	20/50	1	L16061400-06	07/01/16 13:09
50	NI.070116.131309	WG574419-06	Matrix Spike Duplica	20/50	1	L16061400-06	07/01/16 13:13
51	NI.070116.131620	WG574419-02	Reference Sample		1	L16061427-01	07/01/16 13:16
52	NI.070116.131932	WG574419-07	Duplicate	20/50	1	L16061427-01	07/01/16 13:19
53	NI.070116.132243	L16061468-01	H6F0605-01	20/50	1		07/01/16 13:22
54	NI.070116.132555	WG574824-01	Post Digestion Spike		1	L16061468-01	07/01/16 13:25
55	NI.070116.132906	WG574824-02	Serial Dilution		5	L16061468-01	07/01/16 13:29
56	NI.070116.133218	WG575028-18	CCV		1		07/01/16 13:32
57	NI.070116.133530	WG575028-19	CCB		1		07/01/16 13:35
58	NI.070116.133842	L16061470-01	S6F0639-01	20/50	1		07/01/16 13:38
59	NI.070116.134154	L16061471-01	S6F0244-01	20/50	1		07/01/16 13:41
60	NI.070116.134505	WG574593-01	Reference Sample		2	L16061536-01	07/01/16 13:45
61	NI.070116.134817	WG574593-04	Duplicate	20/50	2	L16061536-01	07/01/16 13:48
62	NI.070116.135128	WG574593-05	Matrix Spike	20/50	2	L16061536-01	07/01/16 13:51
63	NI.070116.135440	WG574593-06	Matrix Spike Duplica	20/50	2	L16061536-01	07/01/16 13:54
64	NI.070116.135751	L16061068-04	C01-061716	20/50	50		07/01/16 13:57
65	NI.070116.140103	L16061068-05	C01FD-061716	20/50	50		07/01/16 14:01
66	NI.070116.140414	L16061068-11	MW19F-061716	20/50	10		07/01/16 14:04
67	NI.070116.140725	WG574840-01	Post Digestion Spike		10	L16061622-02	07/01/16 14:07
68	NI.070116.141039	WG575028-20	CCV		1		07/01/16 14:10

Page: 2 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.070116.141350	WG575028-21	CCB		1		07/01/16 14:13
70	NI.070116.141703	WG574840-04	L1606106815S WG574840-0	20/50	10		07/01/16 14:17
71	NI.070116.142015	WG574840-05	L1606106817SD WG574840	20/50	10		07/01/16 14:20
72	NI.070116.142326	L16061065-02	MW-23-006	20/50	50		07/01/16 14:23
73	NI.070116.142637	L16061065-03	MW-23-008	20/50	50		07/01/16 14:26
74	NI.070116.142949	L16061065-04	MW-23-009	20/50	50		07/01/16 14:29
75	NI.070116.143302	WG575028-22	CCV		1		07/01/16 14:33
76	NI.070116.143613	WG575028-23	CCB		1		07/01/16 14:36
77	NI.070116.143926	WG575028-24	Low Level Continuing Calibra		1		07/01/16 14:39
78	NI.070116.151112	L16061360-01	NP0116-LM1	20/50	1		07/01/16 15:11
79	NI.070116.151423	L16061360-02	EB-062416	20/50	1		07/01/16 15:14
80	NI.070116.151735	L16061400-01	MW-22-008	20/50	1		07/01/16 15:17
81	NI.070116.152046	L16061400-02	MW-22-016	20/50	1		07/01/16 15:20
82	NI.070116.152358	L16061400-03	MW-22-006	20/50	1		07/01/16 15:23
83	NI.070116.152709	L16061400-04	MW-22-005	20/50	1		07/01/16 15:27
84	NI.070116.153021	L16061400-05	MW-22-001	20/50	1		07/01/16 15:30
85	NI.070116.153332	L16061400-09	MW-22-003	20/50	1		07/01/16 15:33
86	NI.070116.153643	L16061400-10	MW-22-004	20/50	1		07/01/16 15:36
87	NI.070116.153955	L16061444-11	EB03	20/50	1		07/01/16 15:39
88	NI.070116.154308	WG575028-25	CCV		1		07/01/16 15:43
89	NI.070116.154619	WG575028-26	CCB		1		07/01/16 15:46
90	NI.070116.154932	L16061452-01	18CPTMW12SW-062416	20/50	1		07/01/16 15:49
91	NI.070116.155244	L16061453-01	MW2-062416	20/50	1		07/01/16 15:52
92	NI.070116.155555	L16061453-03	18CPTMW01SW-062416	20/50	1		07/01/16 15:55
93	NI.070116.155907	WG574419-02	Reference Sample		5	L16061427-01	07/01/16 15:59
94	NI.070116.160218	WG574419-07	Duplicate	20/50	5	L16061427-01	07/01/16 16:02
95	NI.070116.160530	L16061289-01	MW21-062216	20/50	50		07/01/16 16:05
96	NI.070116.160841	L16061290-03	MW16F-062116	20/50	10		07/01/16 16:08
97	NI.070116.161155	WG575028-27	CCV		1		07/01/16 16:11
98	NI.070116.161506	WG575028-28	CCB		1		07/01/16 16:15
99	NI.070116.163708	WG574521-03	Method/Prep Blank	.25/100	1		07/01/16 16:37
100	NI.070116.164019	WG574521-04	Laboratory Control S	.25/100	1		07/01/16 16:40
101	NI.070116.164331	WG574521-01	Reference Sample		1	L16061445-04	07/01/16 16:43
102	NI.070116.164642	WG574521-05	Matrix Spike	.254/100	1	L16061445-04	07/01/16 16:46

Page: 3 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.070116.164954	WG574521-06	Matrix Spike Duplica	.25/100	1	L16061445-04	07/01/16 16:49
104	NI.070116.165305	L16061451-01	GS165SS062016S-ES	.251/100	1		07/01/16 16:53
105	NI.070116.165617	L16061451-02	GS159SS062116G-ES	.25/100	1		07/01/16 16:56
106	NI.070116.165928	WG575057-01	Post Digestion Spike		1	L16061451-02	07/01/16 16:59
107	NI.070116.170240	WG575057-02	Serial Dilution		5	L16061451-02	07/01/16 17:02
108	NI.070116.170552	WG575057-02	Serial Dilution		25	L16061451-02	07/01/16 17:05
109	NI.070116.170905	WG575028-29	CCV		1		07/01/16 17:09
110	NI.070116.171217	WG575028-30	CCB		1		07/01/16 17:12
111	NI.070116.171825	L16061451-03	GS164SS062116S-ES	.251/100	1		07/01/16 17:18
112	NI.070116.172204	L16061451-04	GS164SS062116P-ES	.253/100	1		07/01/16 17:22
113	NI.070116.172516	L16061451-05	GS154SS062316X-ES	.253/100	1		07/01/16 17:25
114	NI.070116.172827	WG574521-02	Reference Sample		1	L16061451-06	07/01/16 17:28
115	NI.070116.173139	L16061451-07	GS153SS0622316X-ES	.253/100	1		07/01/16 17:31
116	NI.070116.173450	L16061451-08	GS153SS062316X-ESD	.256/100	1		07/01/16 17:34
117	NI.070116.173802	WG574521-07	Matrix Spike	.258/100	1	L16061451-06	07/01/16 17:38
118	NI.070116.174113	WG574521-08	Matrix Spike Duplica	.256/100	1	L16061451-06	07/01/16 17:41
119	NI.070116.174425	L16061445-01	TS935DS00700A	.258/100	1		07/01/16 17:44
120	NI.070116.174736	L16061445-02	TS935DS00705A	.256/100	1		07/01/16 17:47
121	NI.070116.175049	WG575028-31	CCV		1		07/01/16 17:50
122	NI.070116.175401	WG575028-32	CCB		1		07/01/16 17:54
123	NI.070116.175714	L16061445-03	TS935DS00800A		1		07/01/16 17:57
124	NI.070116.180025	L16061445-07	TS935DS00900A		1		07/01/16 18:00
125	NI.070116.180337	L16061445-08	TS935DS00905A		1		07/01/16 18:03
126	NI.070116.180648	L16061445-09	TS935DS00905C		1		07/01/16 18:06
127	NI.070116.181000	L16061445-10	TS935DS01000A		1		07/01/16 18:10
128	NI.070116.181311	L16061445-11	TS935DS01005A		1		07/01/16 18:13
129	NI.070116.181623	L16061445-12	TS935DS01205A		1		07/01/16 18:16
130	NI.070116.181934	L16061451-01	GS165SS062016S-ES		10		07/01/16 18:19
131	NI.070116.182246	L16061451-02	GS159SS062116G-ES		10		07/01/16 18:22
132	NI.070116.182557	WG575057-01	Post Digestion Spike		10	L16061451-02	07/01/16 18:25
133	NI.070116.182910	WG575028-33	CCV		1		07/01/16 18:29
134	NI.070116.183222	WG575028-34	CCB		1		07/01/16 18:32
135	NI.070116.183535	WG575057-02	Serial Dilution		50	L16061451-02	07/01/16 18:35
136	NI.070116.183846	L16061451-03	GS164SS062116S-ES		10		07/01/16 18:38

Page: 4 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.070116.184158	L16061451-04	GS164SS062116P-ES		10		07/01/16 18:41
138	NI.070116.184509	L16061451-05	GS154SS062316X-ES		10		07/01/16 18:45
139	NI.070116.184821	WG574521-02	Reference Sample		10	L16061451-06	07/01/16 18:48
140	NI.070116.185132	L16061451-07	GS153SS0622316X-ES		10		07/01/16 18:51
141	NI.070116.185444	L16061451-08	GS153SS062316X-ESD		10		07/01/16 18:54
142	NI.070116.185755	WG574521-07	Matrix Spike		10	L16061451-06	07/01/16 18:57
143	NI.070116.190107	WG574521-08	Matrix Spike Duplica		10	L16061451-06	07/01/16 19:01
144	NI.070116.190419	WG575028-35	CCV		1		07/01/16 19:04
145	NI.070116.190731	WG575028-36	CCB		1		07/01/16 19:07
146	NI.070116.191044	WG575028-37	Low Level Continuing Calibra		1		07/01/16 19:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
67				
Seq. 67, 70-71: wrong WG numbers. JYH				

Page: 5 Approved: July 05, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 575028
Runlog ID: 76079
Analytical Workgroups: 574808,574849,574824,574804,575057

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1441,1442,1360,1400,1444,1445
Level 4	1289,12901417,1452,1453,1068
	1065,1451
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:

Secondary Reviewer:
05-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 15:57:13

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG574808

Login Number: L16061290

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW16F-062116	03	06/21/16					06/28/2016	6.7	180		07/01/16	10.1	180	
MW16F-062116	03	06/21/16					06/28/2016	6.7	180		07/01/16	9.9	180	
109-062216	05	06/22/16					06/28/2016	6	180		07/01/16	9.2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4837104
Report generated 07/02/2016 13:13

METHOD BLANK SUMMARY

Login Number: L16061290
Blank File ID: NI.070116.110553
Prep Date: 06/28/16 07:30
Analyzed Date: 07/01/16 11:05
Analyst: JYH

Work Group: WG574808
Blank Sample ID: WG574416-04
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574416-05	NI.070116.110904	07/01/16 11:09	01
DUP	WG574416-10	NI.070116.122859	07/01/16 12:28	01
MW16F-062116	L16061290-03	NI.070116.123834	07/01/16 12:38	01
109-062216	L16061290-05	NI.070116.124145	07/01/16 12:41	01
MW16F-062116	L16061290-03	NI.070116.160841	07/01/16 16:08	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4837105
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 06/28/16 07:30 Sample ID: WG574416-04
Instrument ID: ICP-MS2 Run Date: 07/01/16 11:05 Prep Method: 3015
File ID: NI.070116.110553 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574808 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-01-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000150	1	J
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4837106
02-JUL-2016 13:13

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Run Date: 07/01/2016 Sample ID: WG574416-05
Instrument ID: ICP-MS2 Run Time: 11:09 Prep Method: 3015
File ID: NI.070116.110904 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574808 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-01-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.120	95.7	80 - 120	
Arsenic, Total	0.125	0.127	102	80 - 120	
Barium, Total	0.125	0.125	99.9	80 - 120	
Cadmium, Total	0.125	0.127	101	80 - 120	
Chromium, Total	0.125	0.126	101	80 - 120	
Cobalt, Total	0.125	0.126	101	80 - 120	
Copper, Total	0.125	0.129	103	80 - 120	
Lead, Total	0.125	0.127	101	80 - 120	
Manganese, Total	0.125	0.128	103	80 - 120	
Nickel, Total	0.125	0.126	101	80 - 120	
Silver, Total	0.125	0.128	103	80 - 120	
Thallium, Total	0.125	0.126	101	80 - 120	
Vanadium, Total	0.125	0.126	101	80 - 120	
Zinc, Total	0.125	0.129	103	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4837107
Report generated: 07/02/2016 13:13

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061290 Cal ID: ICP-MS2- Worknum: WG574808
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG574416-01 File ID: NI.070116.111216 Dil: 1 Matrix: WATER
Sample ID: WG574416-06 MS File ID: NI.070116.111527 Dil: 1 Units: mg/L
Sample ID: WG574416-07 MSD File ID: NI.070116.111839 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.00144	0.125	0.131	104	0.125	0.131	104	0.181	80 - 120	20	
Arsenic	0.00444	0.125	0.136	105	0.125	0.137	106	1.09	80 - 120	20	
Barium	0.0818	0.125	0.203	96.9	0.125	0.203	96.8	0.0521	80 - 120	20	
Cadmium	ND	0.125	0.124	98.9	0.125	0.125	100	1.35	80 - 120	20	
Chromium	0.00255	0.125	0.127	99.6	0.125	0.128	100	0.615	80 - 120	20	
Cobalt	ND	0.125	0.125	100	0.125	0.126	101	0.860	80 - 120	20	
Copper	0.00221	0.125	0.124	97.3	0.125	0.124	97.5	0.251	80 - 120	20	
Lead	ND	0.125	0.126	101	0.125	0.127	102	1.02	80 - 120	20	
Manganese	0.00484	0.125	0.128	98.6	0.125	0.127	97.8	0.814	80 - 120	20	
Nickel	0.00380	0.125	0.124	96.6	0.125	0.127	98.5	1.92	80 - 120	20	
Silver	ND	0.125	0.0941	75.3	0.125	0.0975	78.0	3.59	80 - 120	20	*
Thallium	0.000110	0.125	0.126	101	0.125	0.126	101	0.436	80 - 120	20	
Vanadium	0.0113	0.125	0.140	103	0.125	0.140	103	0.406	80 - 120	20	
Zinc	ND	0.125	0.135	108	0.125	0.133	106	1.61	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4837108
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061290 Cal ID: ICP-MS2- Worknum: WG574808
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG574416-02 File ID: NI.070116.120324 Dil: 1 Matrix: WATER
Sample ID: WG574416-08 MS File ID: NI.070116.120947 Dil: 1 Units: mg/L
Sample ID: WG574416-09 MSD File ID: NI.070116.121258 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	ND	0.125	0.0862	69.0	0.125	0.0829	66.3	3.92	80 - 120	20	*
Arsenic	0.00389	0.125	0.129	100	0.125	0.130	101	0.631	80 - 120	20	
Barium	0.210	0.125	0.338	103	0.125	0.342	106	1.10	80 - 120	20	
Cadmium	ND	0.125	0.122	98.0	0.125	0.123	98.5	0.508	80 - 120	20	
Chromium	0.00565	0.125	0.129	99.0	0.125	0.130	99.8	0.778	80 - 120	20	
Cobalt	0.00360	0.125	0.129	101	0.125	0.130	101	0.830	80 - 120	20	
Copper	0.00453	0.125	0.125	96.4	0.125	0.124	95.9	0.486	80 - 120	20	
Lead	0.00377	0.125	0.128	99.0	0.125	0.129	100	1.39	80 - 120	20	
Manganese	0.159	0.125	0.320	129	0.125	0.319	128	0.176	80 - 120	20	*
Nickel	0.00998	0.125	0.132	97.5	0.125	0.130	96.4	1.09	80 - 120	20	
Silver	ND	0.125	0.117	93.4	0.125	0.119	95.0	1.65	80 - 120	20	
Thallium	ND	0.125	0.123	98.3	0.125	0.125	100	1.70	80 - 120	20	
Vanadium	0.0141	0.125	0.143	103	0.125	0.142	102	0.636	80 - 120	20	
Zinc	0.0428	0.125	0.171	102	0.125	0.159	92.7	7.41	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4837108
Report generated 07/12/2016 11:06

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061290 **Worknum:** WG574808
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574808-02 **File ID:** NI.070116.113125 **Dil:** 5 **Units:** ug/L
Sample: L16061417-02 **File ID:** NI.070116.112502 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	1.64	F	2480.00	
Arsenic	1.32	X	1.35	F	2.60	
Barium	8.30	X	8.28	F	0.33	
Cadmium	ND	U	ND	U		
Chromium	1.74	X	ND	U		
Cobalt	ND	U	ND	U		
Copper	0.623	F	ND	U		
Lead	ND	U	ND	U		
Manganese	0.853	F	ND	U		
Nickel	1.38	F	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	3.65	X	3.68	F	0.78	
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4837102
07/02/2016 13:13

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061290 **Worknum:** WG574808
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574808-01 **File ID:** NI.070116.112813 **Dil:** 1 **Units:** ug/L
Sample ID: L16061417-02 **File ID:** NI.070116.112502 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	50.8		0	U	50	101.7	75 - 125	
ARSENIC	55.6		1.32		50	108.7	75 - 125	
BARIUM	59.2		8.30		50	101.9	75 - 125	
CADMIUM	51.5		0	U	50	103.0	75 - 125	
CHROMIUM	53.7		1.74		50	103.9	75 - 125	
COBALT	52.2		0	U	50	104.4	75 - 125	
COPPER	51.5		0.623	F	50	101.7	75 - 125	
LEAD	52.8		0	U	50	105.6	75 - 125	
MANGANESE	52.6		0.853	F	50	103.6	75 - 125	
NICKEL	51.7		1.38	F	50	100.6	75 - 125	
SILVER	49.5		0	U	50	98.9	75 - 125	
THALLIUM	52.3		0	U	50	104.7	75 - 125	
VANADIUM	57.2		3.65		50	107.1	75 - 125	
ZINC	54.8		0	U	50	109.7	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4837103
Report generated: 07/02/2016 13:13

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061290	Workgroup (AAB#):	WG574808
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG575028	Initial Calibration Date:	01-JUL-2016 10:40

	WG575028-01		WG575028-02		WG575028-03		WG575028-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	259	.4	428	50	250000	100	508000	.999935	
ARSENIC	0	-59.9	.4	5.90	50	61400	100	123000	.999997	
BARIUM	0	20.7	.4	146	50	107000	100	210000	.99998	
CADMIUM	0	2.60	.4	119	50	113000	100	223000	.999998	
CHROMIUM	0	7690	.4	8190	50	412000	100	812000	1	
COBALT	0	201	.4	604	50	385000	100	759000	.999986	
COPPER	0	167	.4	251	50	103000	100	201000	.999949	
LEAD	0	930	.4	2060	50	1040000	100	2040000	.999999	
MANGANESE	0	715	.4	1140	50	380000	100	751000	.999989	
NICKEL	0	335	.4	418	50	105000	100	205000	.999979	
SILVER	0	83.3	.4	447	50	352000	100	698000	1	
THALLIUM	0	7.70	.4	454	50	444000	100	872000	.999994	
VANADIUM	0	1560	.4	2030	50	413000	100	818000	.999998	
ZINC	0	240	.4	280	50	61600	100	122000	.999992	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4837112
Report generated: 02-JUL-2016 13:14

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-06
Instrument ID: ICP-MS2
Run Time: 10:46
Method: 6020A
File ID: NI.070116.104640
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS2 - 01-JUL-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.2	U
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4837114
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-11
Instrument ID: ICP-MS2
Run Time: 11:02
Method: 6020A
File ID: NI.070116.110241
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.276	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837117
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-13
Instrument ID: ICP-MS2
Run Time: 11:41
Method: 6020A
File ID: NI.070116.114101
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837117
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-15
Instrument ID: ICP-MS2
Run Time: 12:19
Method: 6020A
File ID: NI.070116.121923
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837117
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-17
Instrument ID: ICP-MS2
Run Time: 12:48
Method: 6020A
File ID: NI.070116.124810
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837117
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-26
Instrument ID: ICP-MS2
Run Time: 15:46
Method: 6020A
File ID: NI.070116.154619
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837117
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-28
Instrument ID: ICP-MS2
Run Time: 16:15
Method: 6020A
File ID: NI.070116.161506
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837117
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061290 Run Date: 07/01/2016 Sample ID: WG575028-05
Instrument ID: ICP-MS2 Run Time: 10:43 Method: 6020A
File ID: NI.070116.104327 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG574808 Cal ID: ICP-MS - 01-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.5	98.9	90 - 110	
Arsenic		50	50.5	101	90 - 110	
Barium		50	49.1	98.3	90 - 110	
Cadmium		50	49.7	99.4	90 - 110	
Chromium		50	50.3	101	90 - 110	
Cobalt		50	50.9	102	90 - 110	
Copper		50	50.6	101	90 - 110	
Lead		50	50.4	101	90 - 110	
Manganese		50	51.2	102	90 - 110	
Nickel		50	50.3	101	90 - 110	
Silver		50	49.2	98.3	90 - 110	
Thallium		50	49.7	99.3	90 - 110	
Vanadium		50	50.3	101	90 - 110	
Zinc		50	51.2	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4837113
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-10
Instrument ID: ICP-MS2
Run Time: 10:59
Method: 6020A
File ID: NI.070116.105929
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0511	mg/L	102	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0496	mg/L	99.2	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0506	mg/L	101	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0505	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0502	mg/L	100	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0509	mg/L	102	90 - 110		
Zinc		0.0500	0.0502	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837116
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290 Run Date: 07/01/2016 Sample ID: WG575028-12
Instrument ID: ICP-MS2 Run Time: 11:37 Method: 6020A
File ID: NI.070116.113750 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG574808 Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0494	mg/L	98.9	90 - 110		
Arsenic		0.0500	0.0503	mg/L	101	90 - 110		
Barium		0.0500	0.0493	mg/L	98.6	90 - 110		
Cadmium		0.0500	0.0498	mg/L	99.6	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0505	mg/L	101	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0500	mg/L	100	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0497	mg/L	99.4	90 - 110		
Thallium		0.0500	0.0497	mg/L	99.5	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0500	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837116
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-14
Instrument ID: ICP-MS2
Run Time: 12:16
Method: 6020A
File ID: NI.070116.121611
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0495	mg/L	98.9	90 - 110		
Arsenic		0.0500	0.0500	mg/L	99.9	90 - 110		
Barium		0.0500	0.0486	mg/L	97.3	90 - 110		
Cadmium		0.0500	0.0496	mg/L	99.2	90 - 110		
Chromium		0.0500	0.0495	mg/L	99.1	90 - 110		
Cobalt		0.0500	0.0518	mg/L	104	90 - 110		
Copper		0.0500	0.0496	mg/L	99.1	90 - 110		
Lead		0.0500	0.0504	mg/L	101	90 - 110		
Manganese		0.0500	0.0499	mg/L	99.9	90 - 110		
Nickel		0.0500	0.0494	mg/L	98.9	90 - 110		
Silver		0.0500	0.0496	mg/L	99.3	90 - 110		
Thallium		0.0500	0.0500	mg/L	100	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0493	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837116
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-16
Instrument ID: ICP-MS2
Run Time: 12:44
Method: 6020A
File ID: NI.070116.124458
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0495	mg/L	99.0	90 - 110		
Arsenic		0.0500	0.0496	mg/L	99.1	90 - 110		
Barium		0.0500	0.0491	mg/L	98.3	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0506	mg/L	101	90 - 110		
Lead		0.0500	0.0509	mg/L	102	90 - 110		
Manganese		0.0500	0.0503	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0498	mg/L	99.5	90 - 110		
Thallium		0.0500	0.0507	mg/L	101	90 - 110		
Vanadium		0.0500	0.0502	mg/L	100	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837116
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290 Run Date: 07/01/2016 Sample ID: WG575028-25
Instrument ID: ICP-MS2 Run Time: 15:43 Method: 6020A
File ID: NI.070116.154308 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG574808 Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0499	mg/L	99.9	90 - 110		
Arsenic		0.0500	0.0504	mg/L	101	90 - 110		
Barium		0.0500	0.0490	mg/L	97.9	90 - 110		
Cadmium		0.0500	0.0497	mg/L	99.4	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cobalt		0.0500	0.0515	mg/L	103	90 - 110		
Copper		0.0500	0.0508	mg/L	102	90 - 110		
Lead		0.0500	0.0513	mg/L	103	90 - 110		
Manganese		0.0500	0.0505	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0499	mg/L	99.7	90 - 110		
Thallium		0.0500	0.0502	mg/L	100	90 - 110		
Vanadium		0.0500	0.0509	mg/L	102	90 - 110		
Zinc		0.0500	0.0507	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837116
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-27
Instrument ID: ICP-MS2
Run Time: 16:11
Method: 6020A
File ID: NI.070116.161155
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0489	mg/L	97.7	90 - 110		
Arsenic		0.0500	0.0500	mg/L	100	90 - 110		
Barium		0.0500	0.0487	mg/L	97.3	90 - 110		
Cadmium		0.0500	0.0502	mg/L	100	90 - 110		
Chromium		0.0500	0.0502	mg/L	100	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0503	mg/L	101	90 - 110		
Lead		0.0500	0.0522	mg/L	104	90 - 110		
Manganese		0.0500	0.0497	mg/L	99.4	90 - 110		
Nickel		0.0500	0.0503	mg/L	101	90 - 110		
Silver		0.0500	0.0498	mg/L	99.7	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0500	mg/L	100	90 - 110		
Zinc		0.0500	0.0500	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837116
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-07
Instrument ID: ICP-MS2
Run Time: 10:49
Method: 6020A
File ID: NI.070116.104953
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.364	ug/L	91.0	70 - 130		
Arsenic		0.400	0.390	ug/L	97.6	70 - 130		
Barium		0.750	0.697	ug/L	92.9	70 - 130		
Cadmium		0.240	0.238	ug/L	99.3	70 - 130		
Chromium		0.800	0.709	ug/L	88.6	70 - 130		
Cobalt		0.400	0.371	ug/L	92.7	70 - 130		
Copper		0.800	0.775	ug/L	96.9	70 - 130		
Lead		0.200	0.193	ug/L	96.3	70 - 130		
Manganese		0.500	0.457	ug/L	91.3	70 - 130		
Nickel		1.60	1.52	ug/L	95.0	70 - 130		
Silver		0.400	0.392	ug/L	98.0	70 - 130		
Thallium		0.0800	0.0815	ug/L	102	70 - 130		
Vanadium		0.400	0.339	ug/L	84.7	70 - 130		
Zinc		6.25	6.40	ug/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837118
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-24
Instrument ID: ICP-MS2
Run Time: 14:39
Method: 6020A
File ID: NI.070116.143926
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.364	ug/L	90.9	70 - 130		
Arsenic		0.400	0.415	ug/L	104	70 - 130		
Barium		0.750	0.660	ug/L	88.0	70 - 130		
Cadmium		0.240	0.234	ug/L	97.3	70 - 130		
Chromium		0.800	0.671	ug/L	83.8	70 - 130		
Cobalt		0.400	0.393	ug/L	98.3	70 - 130		
Copper		0.800	0.781	ug/L	97.7	70 - 130		
Lead		0.200	0.199	ug/L	99.6	70 - 130		
Manganese		0.500	0.428	ug/L	85.7	70 - 130		
Nickel		1.60	1.54	ug/L	96.4	70 - 130		
Silver		0.400	0.385	ug/L	96.2	70 - 130		
Thallium		0.0800	0.0813	ug/L	102	70 - 130		
Vanadium		0.400	0.360	ug/L	90.0	70 - 130		
Zinc		6.25	7.08	ug/L	113	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837118
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-37
Instrument ID: ICP-MS2
Run Time: 19:10
Method: 6020A
File ID: NI.070116.191044
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.327	ug/L	81.8	70 - 130		
Arsenic		0.400	0.408	ug/L	102	70 - 130		
Barium		0.750	0.693	ug/L	92.4	70 - 130		
Cadmium		0.240	0.228	ug/L	94.8	70 - 130		
Chromium		0.800	0.796	ug/L	99.5	70 - 130		
Cobalt		0.400	0.378	ug/L	94.5	70 - 130		
Copper		0.800	0.768	ug/L	96.0	70 - 130		
Lead		0.200	0.198	ug/L	98.9	70 - 130		
Manganese		0.500	0.461	ug/L	92.1	70 - 130		
Nickel		1.60	1.51	ug/L	94.1	70 - 130		
Silver		0.400	0.387	ug/L	96.6	70 - 130		
Thallium		0.0800	0.0773	ug/L	96.6	70 - 130		
Vanadium		0.400	0.364	ug/L	91.0	70 - 130		
Zinc		6.25	7.03	ug/L	113	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837118
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061290
Instrument ID: ICP-MS2
Sol. A : WG575028-08 **File ID:** NI.070116.105304
Sol. AB : WG575028-09 **File ID:** NI.070116.105616

Workgroup (AAB#): WG574808
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.118	NS	100	96.8	96.8	
Arsenic	NS	0	NS	100	100	100	
Barium	NS	0.406	NS	100	98.7	98.7	
Cadmium	NS	-0.0920	NS	100	99.5	99.5	
Chromium	NS	0.0974	NS	100	97.8	97.8	
Cobalt	NS	0.0353	NS	100	98.4	98.4	
Copper	NS	0.287	NS	100	98.5	98.5	
Lead	NS	0.0642	NS	100	98.7	98.7	
Manganese	NS	0.0949	NS	100	99.2	99.2	
Nickel	NS	0.398	NS	100	97.1	97.1	
Silver	NS	0.0605	NS	100	87.4	87.4	
Thallium	NS	0.0383	NS	100	98.2	98.2	
Vanadium	NS	0.0180	NS	100	99.7	99.7	
Zinc	NS	1.24	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4837115
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061290 **Analytical Method:** 6020
Analytical Workgroup: WG574808 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 01-JUL-2016 10:30

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061290-03	SAMP	01-JUL-2016 12:38	100.88	108.228	104.29
L16061290-03	SAMP	01-JUL-2016 16:08	98.288	99.516	97.353
L16061290-05	SAMP	01-JUL-2016 12:41	104.049	109.28	107.894
L16061417-02	SAMP	01-JUL-2016 11:25	91.126	95.137	93.308
WG574416-04	BLANK	01-JUL-2016 11:05	100.583	100.822	100.484
WG574416-05	LCS	01-JUL-2016 11:09	100.945	101.711	100.689
WG574808-01	PSPK	01-JUL-2016 11:28	92.143	96.479	93.904
WG574808-02	SERIAL	01-JUL-2016 11:31	92.982	94.302	91.966
WG575028-05	ICV	01-JUL-2016 10:43	99.388	100.45	101.227
WG575028-06	ICB	01-JUL-2016 10:46	99.921	101.195	100.88
WG575028-07	LLICV	01-JUL-2016 10:49	97.843	98.579	96.464
WG575028-08	ICS	01-JUL-2016 10:53	97.097	100.956	98.373
WG575028-09	ICS	01-JUL-2016 10:56	99.537	101.553	98.936
WG575028-10	CCV	01-JUL-2016 10:59	98.413	100.239	99.347
WG575028-11	CCB	01-JUL-2016 11:02	101.078	100.828	100.108
WG575028-12	CCV	01-JUL-2016 11:37	99.995	101.052	100.573
WG575028-13	CCB	01-JUL-2016 11:41	101.368	101.564	100.677
WG575028-14	CCV	01-JUL-2016 12:16	105.497	108.146	107.23
WG575028-15	CCB	01-JUL-2016 12:19	107.619	108.395	108.168
WG575028-16	CCV	01-JUL-2016 12:44	103.303	109.496	107.231
WG575028-17	CCB	01-JUL-2016 12:48	105.044	109.74	107.547
WG575028-24	LLCCV	01-JUL-2016 14:39	100.804	98.706	100.09
WG575028-25	CCV	01-JUL-2016 15:43	100.989	103.315	102.712
WG575028-26	CCB	01-JUL-2016 15:46	101.711	104.453	104.379
WG575028-27	CCV	01-JUL-2016 16:11	100.912	105.898	104.016
WG575028-28	CCB	01-JUL-2016 16:15	103.124	105.323	105.946
WG575028-37	LLCCV	01-JUL-2016 19:10	93.446	100.247	96.576

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4837111
Report generated: 07/02/2016 13:13

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061290 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4837109
Report generated: 07/02/2016 13:13

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Friday, July 01, 2016 10:13:04

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1329	2024	0.709	
Mg	23.985	23.975	4503	2020	0.696	
Co	58.933	58.925	11692	2022	0.691	
In	114.904	114.875	22859	2028	0.686	
U	238.050	238.025	47457	2043	0.687	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	3.598
5.575	4.718
5.625	3.789
5.675	2.527
5.725	1.318
5.775	1.142
5.825	2.913
5.875	3.428
5.925	4.580
5.975	3.116
6.025	1.509
6.075	2.372
6.125	1.519
6.175	1.841
6.225	5.064
6.275	40.937
6.325	69.722
6.375	49.793
6.425	63.949
6.475	46.187
6.525	18.017
6.575	4.888
6.625	1.946
6.675	3.206
6.725	1.995
6.775	2.218
6.825	1.690

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 1

Approved: July 02, 2016

6.875	1.781
6.925	1.186
6.975	1.328
7.025	1.344
7.075	1.081
7.125	0.453
7.175	2.067
7.225	2.391
7.275	2.950
7.325	17.639
7.375	57.735
7.425	72.436
7.475	223.607
7.525	61.237
7.575	61.237
7.625	74.689
7.675	43.853
7.725	81.441
7.775	70.711
7.825	49.793
7.875	81.441
7.925	71.261
7.975	63.888
8.025	108.327
8.075	69.722
8.125	100.000
8.175	69.722
8.225	63.191
8.275	46.481
8.325	59.265
8.375	94.786
8.425	43.853
8.475	35.355
22.525	100.000
22.575	24.845
22.625	11.877
22.675	14.821
22.725	27.507
22.775	16.675
22.825	18.109
22.875	27.152
22.925	12.748
22.975	17.626
23.025	12.284
23.075	17.138
23.125	22.852
23.175	24.755

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 2

Approved: July 02, 2016

23.225	27.794
23.275	13.465
23.325	28.287
23.375	27.216
23.425	29.613
23.475	25.156
23.525	5.738
23.575	3.240
23.625	2.912
23.675	3.295
23.725	2.834
23.775	3.434
23.825	2.694
23.875	2.849
23.925	2.371
23.975	2.335
24.025	3.002
24.075	2.407
24.125	2.590
24.175	2.561
24.225	3.038
24.275	3.732
24.325	13.243
24.375	46.291
24.425	31.044
24.475	3.900
24.525	3.690
24.575	1.518
24.625	2.041
24.675	1.011
24.725	0.948
24.775	1.552
24.825	1.240
24.875	0.999
24.925	2.206
24.975	1.206
25.025	1.519
25.075	1.903
25.125	0.579
25.175	1.714
25.225	2.460
25.275	18.990
25.325	26.352
25.375	57.810
25.425	13.305
25.475	13.731
57.525	8.299

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 3

Approved: July 02, 2016

57.575	3.825
57.625	2.379
57.675	1.810
57.725	1.941
57.775	3.194
57.825	3.753
57.875	1.813
57.925	1.247
57.975	2.156
58.025	1.826
58.075	1.503
58.125	1.715
58.175	3.179
58.225	2.838
58.275	20.250
58.325	47.507
58.375	33.055
58.425	7.046
58.475	7.950
58.525	1.298
58.575	2.456
58.625	0.689
58.675	2.468
58.725	2.353
58.775	0.839
58.825	1.215
58.875	1.050
58.925	1.190
58.975	1.362
59.025	1.477
59.075	1.339
59.125	2.122
59.175	2.562
59.225	3.714
59.275	10.687
59.325	73.193
59.375	43.301
59.425	29.315
59.475	15.449
59.525	9.592
59.575	4.491
59.625	3.077
59.675	2.739
59.725	2.974
59.775	4.607
59.825	3.985
59.875	2.185

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 4

Approved: July 02, 2016

59.925	2.525
59.975	1.104
60.025	3.006
60.075	3.085
60.125	2.240
60.175	5.388
60.225	7.934
60.275	43.006
60.325	15.215
60.375	46.351
60.425	85.267
60.475	44.721
113.525	8.024
113.575	2.930
113.625	3.520
113.675	3.350
113.725	2.512
113.775	1.897
113.825	2.146
113.875	1.417
113.925	2.337
113.975	2.849
114.025	1.596
114.075	1.757
114.125	1.986
114.175	3.937
114.225	7.420
114.275	16.156
114.325	23.697
114.375	19.422
114.425	6.964
114.475	6.194
114.525	3.847
114.575	1.824
114.625	1.449
114.675	1.397
114.725	1.117
114.775	1.853
114.825	0.668
114.875	1.048
114.925	1.062
114.975	0.807
115.025	1.604
115.075	0.617
115.125	0.990
115.175	1.502
115.225	4.478

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 5

Approved: July 02, 2016

115.275	6.474
115.325	39.891
115.375	63.816
115.425	37.630
115.475	30.031
115.525	14.465
115.575	9.978
115.625	2.212
115.675	2.597
115.725	4.004
115.775	4.700
115.825	2.647
115.875	1.521
115.925	0.934
115.975	2.944
116.025	2.211
116.075	6.400
116.125	6.342
116.175	7.120
116.225	10.108
116.275	16.197
116.325	46.481
116.375	69.722
116.425	51.349
116.475	37.029
236.525	
236.575	29.186
236.625	24.495
236.675	29.186
236.725	31.126
236.775	17.430
236.825	21.320
236.875	35.016
236.925	29.487
236.975	22.480
237.025	20.328
237.075	5.167
237.125	26.770
237.175	39.033
237.225	35.209
237.275	32.070
237.325	18.731
237.375	19.628
237.425	26.854
237.475	32.050
237.525	17.891
237.575	10.999

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 6

Approved: July 02, 2016

237.625	4.356
237.675	1.280
237.725	1.988
237.775	1.816
237.825	1.251
237.875	1.667
237.925	1.057
237.975	0.998
238.025	0.960
238.075	1.070
238.125	0.734
238.175	2.008
238.225	0.722
238.275	1.413
238.325	1.849
238.375	2.376
238.425	2.444
238.475	2.524
238.525	19.935
238.575	20.360
238.625	13.507
238.675	21.195
238.725	21.155
238.775	6.804
238.825	10.080
238.875	12.811
238.925	23.344
238.975	11.513
239.025	14.758
239.075	30.366
239.125	18.763
239.175	14.417
239.225	4.027
239.275	13.280
239.325	20.761
239.375	27.288
239.425	21.246
239.475	21.217

Approved: July 02, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 7/1/2016 10:17:38 AM
End Time: 7/1/2016 10:19:50 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 6753.37
        Obtained Intensity (Mg 23.985): 350422.63
        Obtained Intensity (In 114.904): 74054.21
        Obtained Intensity (U 238.05): 161864.28
        Obtained Intensity (Bkgd 220): 0.13
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4067.61 / 207928.14)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2367.92 / 207928.14)
```

Report Date/Time: Friday, July 01, 2016 10:19:50
Page 1

Approved: July 02, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 7/1/2016 10:17:38 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 6753.37
                Obtained Intensity (Mg 23.985): 350422.63
                Obtained Intensity (In 114.904): 74054.21
                Obtained Intensity (U 238.05): 161864.28
                Obtained Intensity (Bkgd 220): 0.13
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4067.61 / 207928.14)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2367.92 / 207928.14)
[Passed]  Optimum value(s): N/A

End Time: 7/1/2016 10:19:50 AM
```


Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Friday, July 01, 2016 10:27:28
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76455.8	1.4				ug/L		Standard
	Be	9	20.0	50.0				ug/L		Standard
	Al	27	1306.7	8.4				ug/L		Standard
	Sc	45	41174.2	1.3				ug/L		Standard
	Ti	47	27.3	20.1				ug/L		Standard
	V	51	1434.3	4.1				ug/L		Standard
	Cr	52	7733.0	1.4				ug/L		Standard
	Cr	53	441.7	6.2				ug/L		Standard
	Mn	55	722.7	2.8				ug/L		Standard
	Co	59	217.3	3.4				ug/L		Standard
	Ni	60	304.3	3.8				ug/L		Standard
	Cu	65	181.0	9.6				ug/L		Standard
	Zn	66	214.7	7.4				ug/L		Standard
>	Ge	72	520809.4	1.3				ug/L		Standard
	As	75	-51.8	28.3				ug/L		Standard
	Se	82	16.9	16.8				ug/L		Standard
	Se-1	77	56.0	13.9				ug/L		Standard
>	Ga	71	25.0	34.6				mg/L		Standard
	Rb	85	28.3	71.3				ug/L		Standard
	Y	89	447394.9	1.2				ug/L		Standard
>	Rh	103	15.0	0.0				ug/L		Standard
	Mo	98	112.7	27.3				ug/L		Standard
	Ag	107	108.0	3.2				ug/L		Standard
	Cd	111	3.1	49.9				mg/L		Standard
	Cd	114	19.8	49.9				ug/L		Standard
>	In	115	625727.9	1.1				ug/L		Standard
	Sn	118	568.3	11.1				ug/L		Standard
	Sb	123	611.9	31.5				ug/L		Standard
	Ba	135	21.0	20.8				ug/L		Standard
	Ce	140	245.0	41.7				ug/L		Standard
>	Tb	159	950397.3	0.8				ug/L		Standard
	Ho	165	6.7	114.6				ug/L		Standard
	Tl	203	15.0	17.6				ug/L		Standard
	Tl	205	13.3	57.3				ug/L		Standard
	Pb	206	263.7	1.3				ug/L		Standard
	Pb	207	221.7	2.3				ug/L		Standard
	Pb	208	958.7	0.3				ug/L		Standard
	U	238	9.3	30.9				ug/L		Standard
>	Bi	209	552820.8	0.2				ug/L		Standard

Sample ID: Blank
Report Date/Time: Friday, July 01, 2016 10:29:45
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	mg/L	Standard
Mg	24	55.0	15.7	mg/L	Standard
K	39	28.3	27.0	mg/L	Standard
Ca	43	26.7	47.2	mg/L	Standard
Fe	54	147.3	8.3	mg/L	Standard
Fe	57	268.3	12.1	mg/L	Standard
> **Sc-1**	45	41174.2	1.3	mg/L	Standard
Cl	35	69550.0	1.7	ug/L	Standard
Kr	83	0.7	86.6	ug/L	Standard
Br	81	1950.1	7.9	ug/L	Standard
P	31	21156.4	1.5	ug/L	Standard
S	34	3418.7	4.4	ug/L	Standard
Sr	88	71.7	49.5	ug/L	Standard
C	12	163.3	19.7	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	16.7	69.3	mg/L	Standard
Dy	164	16.3	91.8	mg/L	Standard
Ho-1	165	6.7	114.6	mg/L	Standard
Er	166	6.7	86.6	mg/L	Standard
I	127	19499.2	0.9	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Blank
Report Date/Time: Friday, July 01, 2016 10:29:45
Page 2

Approved: July 02, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Friday, July 01, 2016 10:29:45
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Friday, July 01, 2016 10:30:40
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76115.8	2.8				ug/L	76456	Standard
	Be	9	13.3	21.7				ug/L	20	Standard
	Al	27	1265.1	6.9				ug/L	1307	Standard
	Sc	45	40428.9	1.7				ug/L	41174	Standard
	Ti	47	21.7	32.4				ug/L	27	Standard
	V	51	1555.0	2.9				ug/L	1434	Standard
	Cr	52	7686.3	1.0				ug/L	7733	Standard
	Cr	53	466.7	11.8				ug/L	442	Standard
	Mn	55	715.0	5.0				ug/L	723	Standard
	Co	59	200.7	6.9				ug/L	217	Standard
	Ni	60	335.0	2.6				ug/L	304	Standard
	Cu	65	166.7	3.3				ug/L	181	Standard
	Zn	66	240.0	2.6				ug/L	215	Standard
>	**Ge**	72	524095.0	0.6				ug/L	520809	Standard
	As	75	-59.9	59.9				ug/L	-52	Standard
	Se	82	13.2	52.5				ug/L	17	Standard
	Se-1	77	54.7	18.5				ug/L	56	Standard
>	**Ga**	71	33.3	45.8				mg/L	25	Standard
	Rb	85	11.7	89.2				ug/L	28	Standard
	Y	89	451430.1	1.0				ug/L	447395	Standard
>	**Rh**	103	13.3	142.0				ug/L	15	Standard
	Mo	98	59.2	36.8				ug/L	113	Standard
	Ag	107	83.3	15.2				ug/L	108	Standard
	Cd	111	2.6	60.3				mg/L	3	Standard
	Cd	114	6.8	257.6				ug/L	20	Standard
>	**In**	115	626754.1	0.5				ug/L	625728	Standard
	Sn	118	553.3	6.0				ug/L	568	Standard
	Sb	123	259.4	31.5				ug/L	612	Standard
	Ba	135	20.7	14.8				ug/L	21	Standard
	Ce	140	71.7	8.1				ug/L	245	Standard
>	**Tb**	159	970231.2	1.1				ug/L	950397	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	7.7	32.8				ug/L	15	Standard
	Tl	205	6.7	43.3				ug/L	13	Standard
	Pb	206	273.7	9.4				ug/L	264	Standard
	Pb	207	216.3	5.9				ug/L	222	Standard
	Pb	208	930.0	2.3				ug/L	959	Standard
	U	238	2.3	24.7				ug/L	9	Standard
>	**Bi**	209	552479.9	0.9				ug/L	552821	Standard

Sample ID: Standard 1
Report Date/Time: Friday, July 01, 2016 10:32:57
Page 1

Approved: July 02, 2016

	Na	23	0.0		mg/L	2	Standard
	Mg	24	65.0	20.4	mg/L	55	Standard
	K	39	38.3	19.9	mg/L	28	Standard
	Ca	43	28.3	53.9	mg/L	27	Standard
	Fe	54	142.9	16.5	mg/L	147	Standard
	Fe	57	211.7	5.9	mg/L	268	Standard
>	**Sc-1**	45	40428.9	1.7	mg/L	41174	Standard
	Cl	35	69484.3	2.2	ug/L	69550	Standard
	Kr	83	1.0	0.0	ug/L	1	Standard
	Br	81	2066.8	4.1	ug/L	1950	Standard
	P	31	21174.8	5.7	ug/L	21156	Standard
	S	34	3378.7	3.5	ug/L	3419	Standard
	Sr	88	91.7	20.7	ug/L	72	Standard
	C	12	160.0	28.6	mg/L	163	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	16.7	91.7	mg/L	17	Standard
	Dy	164	6.3	93.2	mg/L	16	Standard
	Ho-1	165	3.3	173.2	mg/L	7	Standard
	Er	166	6.7	86.6	mg/L	7	Standard
	I	127	19828.0	1.1	mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 1
Report Date/Time: Friday, July 01, 2016 10:32:57
Page 2

Approved: July 02, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Friday, July 01, 2016 10:32:57
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Friday, July 01, 2016 10:33:51
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74986.8	1.6				ug/L	76456	Standard
	Be	9	76.7	43.4				ug/L	20	Standard
	Al	27	10110.0	3.2				ug/L	1307	Standard
	Sc	45	40704.6	1.5				ug/L	41174	Standard
	Ti	47	59.7	6.8				ug/L	27	Standard
	V	51	2028.1	3.7				ug/L	1434	Standard
	Cr	52	8189.5	1.1				ug/L	7733	Standard
	Cr	53	468.3	4.9				ug/L	442	Standard
	Mn	55	1137.0	2.8				ug/L	723	Standard
	Co	59	604.0	2.0				ug/L	217	Standard
	Ni	60	418.3	1.4				ug/L	304	Standard
	Cu	65	251.3	1.9				ug/L	181	Standard
	Zn	66	280.0	1.2				ug/L	215	Standard
>	**Ge**	72	516908.5	0.1				ug/L	520809	Standard
	As	75	5.9	557.4				ug/L	-52	Standard
	Se	82	22.1	63.4				ug/L	17	Standard
	Se-1	77	62.3	6.5				ug/L	56	Standard
>	**Ga**	71	28.3	62.0				mg/L	25	Standard
	Rb	85	13.3	142.0				ug/L	28	Standard
	Y	89	452397.3	1.6				ug/L	447395	Standard
>	**Rh**	103	8.3	91.7				ug/L	15	Standard
	Mo	98	371.2	3.3				ug/L	113	Standard
	Ag	107	447.0	1.8				ug/L	108	Standard
	Cd	111	119.4	7.1				mg/L	3	Standard
	Cd	114	282.1	4.3				ug/L	20	Standard
>	**In**	115	619630.9	0.5				ug/L	625728	Standard
	Sn	118	855.0	13.6				ug/L	568	Standard
	Sb	123	428.3	12.3				ug/L	612	Standard
	Ba	135	146.3	3.9				ug/L	21	Standard
	Ce	140	45.0	50.9				ug/L	245	Standard
>	**Tb**	159	965634.3	1.4				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	454.3	3.7				ug/L	15	Standard
	Tl	205	475.0	1.1				ug/L	13	Standard
	Pb	206	529.3	1.0				ug/L	264	Standard
	Pb	207	492.7	3.7				ug/L	222	Standard
	Pb	208	2058.4	0.9				ug/L	959	Standard
	U	238	404.0	3.6				ug/L	9	Standard
>	**Bi**	209	551272.3	0.2				ug/L	552821	Standard

Sample ID: Standard 2
Report Date/Time: Friday, July 01, 2016 10:36:08
Page 1

Approved: July 02, 2016

Na	23	0.0		mg/L	2	Standard
Mg	24	55.0	39.6	mg/L	55	Standard
K	39	35.0	51.5	mg/L	28	Standard
Ca	43	26.7	28.6	mg/L	27	Standard
Fe	54	131.1	29.5	mg/L	147	Standard
Fe	57	260.0	13.9	mg/L	268	Standard
> **Sc-1**	45	40704.6	1.5	mg/L	41174	Standard
Cl	35	69075.1	1.1	ug/L	69550	Standard
Kr	83	2.0	50.0	ug/L	1	Standard
Br	81	2083.5	5.5	ug/L	1950	Standard
P	31	20977.8	1.6	ug/L	21156	Standard
S	34	3237.0	8.2	ug/L	3419	Standard
Sr	88	66.7	30.3	ug/L	72	Standard
C	12	120.0	16.7	mg/L	163	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	16.7	34.6	mg/L	17	Standard
Dy	164	19.5	0.0	mg/L	16	Standard
Ho-1	165	8.3	69.3	mg/L	7	Standard
Er	166	10.0		mg/L	7	Standard
I	127	19168.8	3.3	mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Standard 2
Report Date/Time: Friday, July 01, 2016 10:36:08
Page 2

Approved: July 02, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Friday, July 01, 2016 10:36:08
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Friday, July 01, 2016 10:37:02
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74971.7	1.7				ug/L	76456	Standard
	Be	9	54860.9	3.6	**50.0000**	1.210	2.4	ug/L	20	Standard
	Al	27	8440082.6	0.7	**50.0000**	0.980	2.0	ug/L	1307	Standard
	Sc	45	40865.0	1.5				ug/L	41174	Standard
	Ti	47	32329.8	0.6	**100.0000**	0.832	0.8	ug/L	27	Standard
	V	51	412896.9	0.3	**50.0000**	0.270	0.5	ug/L	1434	Standard
	Cr	52	411678.8	0.9	**50.0000**	0.611	1.2	ug/L	7733	Standard
	Cr	53	51159.6	0.9	**50.0000**	0.580	1.2	ug/L	442	Standard
	Mn	55	380443.4	1.4	**50.0000**	0.789	1.6	ug/L	723	Standard
	Co	59	384667.7	0.9	**50.0000**	0.374	0.7	ug/L	217	Standard
	Ni	60	104566.9	0.5	**50.0000**	0.292	0.6	ug/L	304	Standard
	Cu	65	103056.3	0.1	**50.0000**	0.150	0.3	ug/L	181	Standard
	Zn	66	61622.7	0.7	**50.0000**	0.151	0.3	ug/L	215	Standard
>	**Ge**	72	520018.0	0.4				ug/L	520809	Standard
	As	75	61417.5	0.3	**50.0000**	0.279	0.6	ug/L	-52	Standard
	Se	82	6337.3	1.0	**50.0000**	0.692	1.4	ug/L	17	Standard
	Se-1	77	4335.3	1.3	**50.0000**	0.572	1.1	ug/L	56	Standard
>	**Ga**	71	61.7	40.0				mg/L	25	Standard
	Rb	85	878.4	2.6				ug/L	28	Standard
	Y	89	444837.1	3.4				ug/L	447395	Standard
>	**Rh**	103	30.0	44.1				ug/L	15	Standard
	Mo	98	294287.0	0.6	**100.0000**	0.409	0.4	ug/L	113	Standard
	Ag	107	351901.5	1.0	**50.0000**	0.404	0.8	ug/L	108	Standard
	Cd	111	112966.0	0.5	**50.0000**	0.196	0.4	mg/L	3	Standard
	Cd	114	280940.2	0.5	**50.0000**	0.110	0.2	ug/L	20	Standard
>	**In**	115	612769.1	0.4				ug/L	625728	Standard
	Sn	118	314258.0	2.0	**50.0000**	1.163	2.3	ug/L	568	Standard
	Sb	123	250330.0	0.3	**50.0000**	0.094	0.2	ug/L	612	Standard
	Ba	135	107237.2	0.5	**50.0000**	0.330	0.7	ug/L	21	Standard
	Ce	140	96.7	19.6				ug/L	245	Standard
>	**Tb**	159	945727.5	1.1				ug/L	950397	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	443860.6	0.2	**50.0000**	0.306	0.6	ug/L	15	Standard
	Tl	205	392135.3	1.5	**50.0000**	0.676	1.4	ug/L	13	Standard
	Pb	206	280519.3	0.4	**50.0000**	0.226	0.5	ug/L	264	Standard
	Pb	207	254589.8	0.6	**50.0000**	0.448	0.9	ug/L	222	Standard
	Pb	208	1037250.6	0.5	**50.0000**	0.611	1.2	ug/L	959	Standard
	U	238	392629.2	0.3	**50.0000**	0.515	1.0	ug/L	9	Standard
>	**Bi**	209	544795.2	0.7				ug/L	552821	Standard

Sample ID: Standard 3
Report Date/Time: Friday, July 01, 2016 10:39:19
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**5.0000**	4.327	86.5	mg/L	2	Standard
Mg	24	4290.6	8.9	**5.0000**	0.514	10.3	mg/L	55	Standard
K	39	1336.7	14.8	**5.0000**	0.680	13.6	mg/L	28	Standard
Ca	43	78.3	9.8	**5.0000**	0.715	14.3	mg/L	27	Standard
Fe	54	6652.7	2.6	**5.0000**	0.189	3.8	mg/L	147	Standard
Fe	57	1848.4	3.7	**5.0000**	0.193	3.9	mg/L	268	Standard
Sc-1	45	40865.0	1.5				mg/L	41174	Standard
Cl	35	67370.1	1.9				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1980.1	7.8				ug/L	1950	Standard
P	31	22366.5	1.7				ug/L	21156	Standard
S	34	3632.1	4.0				ug/L	3419	Standard
Sr	88	68.3	33.8				ug/L	72	Standard
C	12	116.7	13.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	120.2				mg/L	17	Standard
Dy	164	5.7	108.5				mg/L	16	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	24309.5	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 3
Report Date/Time: Friday, July 01, 2016 10:39:19
Page 2

Approved: July 02, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
Report Date/Time: Friday, July 01, 2016 10:39:19
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Friday, July 01, 2016 10:40:14
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74573.1	2.4				ug/L	76456	Standard
	Be	9	109282.8	1.9	100.0980	2.509	2.5	ug/L	20	Standard
	Al	27	16601431.1	0.9	99.4425	1.710	1.7	ug/L	1307	Standard
	Sc	45	41180.9	0.8				ug/L	41174	Standard
	Ti	47	65332.6	0.8	201.3970	0.318	0.2	ug/L	27	Standard
	V	51	817909.9	1.4	99.7804	1.578	1.6	ug/L	1434	Standard
	Cr	52	812246.8	1.3	99.9568	0.856	0.9	ug/L	7733	Standard
	Cr	53	100426.9	3.2	99.4382	3.780	3.8	ug/L	442	Standard
	Mn	55	750652.7	0.8	99.5323	0.364	0.4	ug/L	723	Standard
	Co	59	758624.4	0.2	99.4757	0.655	0.7	ug/L	217	Standard
	Ni	60	205495.5	0.6	99.3580	0.343	0.3	ug/L	304	Standard
	Cu	65	201186.2	0.4	98.9880	0.686	0.7	ug/L	181	Standard
	Zn	66	121678.0	0.3	99.6126	1.153	1.2	ug/L	215	Standard
>	Ge	72	518357.9	0.9				ug/L	520809	Standard
	As	75	123132.9	0.9	100.2583	0.732	0.7	ug/L	-52	Standard
	Se	82	12560.6	0.3	99.7710	0.579	0.6	ug/L	17	Standard
	Se-1	77	8548.4	1.2	99.7880	1.005	1.0	ug/L	56	Standard
>	Ga	71	40.0	45.1				mg/L	25	Standard
	Rb	85	1701.8	13.2				ug/L	28	Standard
	Y	89	451914.9	2.5				ug/L	447395	Standard
>	Rh	103	40.0	25.0				ug/L	15	Standard
	Mo	98	592109.5	0.9	201.3215	2.481	1.2	ug/L	113	Standard
	Ag	107	698129.6	0.3	99.9561	0.390	0.4	ug/L	108	Standard
	Cd	111	223398.5	0.3	99.7914	0.348	0.3	mg/L	3	Standard
	Cd	114	550589.1	2.0	99.3411	2.205	2.2	ug/L	20	Standard
>	In	115	608447.5	0.3				ug/L	625728	Standard
	Sn	118	629099.1	1.2	100.4410	1.420	1.4	ug/L	568	Standard
	Sb	123	508420.5	1.6	101.1418	1.887	1.9	ug/L	612	Standard
	Ba	135	210242.6	0.2	99.3661	0.116	0.1	ug/L	21	Standard
	Ce	140	141.7	20.7				ug/L	245	Standard
>	Tb	159	939885.9	0.8				ug/L	950397	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	872285.6	0.1	99.6647	0.211	0.2	ug/L	15	Standard
	Tl	205	778762.6	2.1	100.1937	1.912	1.9	ug/L	13	Standard
	Pb	206	549521.0	0.7	99.5257	0.453	0.5	ug/L	264	Standard
	Pb	207	499379.9	0.5	99.5919	0.286	0.3	ug/L	222	Standard
	Pb	208	2044680.9	0.3	99.8400	0.419	0.4	ug/L	959	Standard
	U	238	794936.5	0.3	101.1523	0.190	0.2	ug/L	9	Standard
>	Bi	209	538915.4	0.3				ug/L	552821	Standard

Sample ID: Standard 4
Report Date/Time: Friday, July 01, 2016 10:42:31
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8624.1	2.7	**10.0117**	0.211	2.1	mg/L	55	Standard
K	39	2628.6	4.6	**9.9475**	0.505	5.1	mg/L	28	Standard
Ca	43	143.3	11.2	**10.5644**	1.388	13.1	mg/L	27	Standard
Fe	54	12475.4	2.0	**9.6818**	0.117	1.2	mg/L	147	Standard
Fe	57	3570.4	3.6	**10.1632**	0.334	3.3	mg/L	268	Standard
Sc-1	45	41180.9	0.8				mg/L	41174	Standard
Cl	35	66505.0	1.1				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1963.5	9.6				ug/L	1950	Standard
P	31	23055.9	3.6				ug/L	21156	Standard
S	34	3625.4	3.4				ug/L	3419	Standard
Sr	88	81.7	21.5				ug/L	72	Standard
C	12	133.3	30.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	17	Standard
Dy	164	12.1	43.5				mg/L	16	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	3062.0	8.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 4
Report Date/Time: Friday, July 01, 2016 10:42:31
Page 2

Approved: July 02, 2016

	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Friday, July 01, 2016 10:42:31
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Friday, July 01, 2016 10:43:27
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73226.6	2.1				ug/L	76456	Standard
	Be	9	55138.5	1.1	**51.4232**	1.173	2.3	ug/L	20	Standard
	Al	27	8364287.3	0.8	**51.0145**	0.701	1.4	ug/L	1307	Standard
	Sc	45	42051.6	1.4				ug/L	41174	Standard
	Ti	47	32632.1	1.2	**99.6299**	0.273	0.3	ug/L	27	Standard
	V	51	416986.8	1.2	**50.3040**	0.153	0.3	ug/L	1434	Standard
	Cr	52	416377.2	0.8	**50.2986**	0.675	1.3	ug/L	7733	Standard
	Cr	53	51450.5	1.0	**50.2662**	0.513	1.0	ug/L	442	Standard
	Mn	55	390114.9	0.6	**51.2101**	0.808	1.6	ug/L	723	Standard
	Co	59	391917.0	0.9	**50.9056**	0.274	0.5	ug/L	217	Standard
	Ni	60	105069.4	0.7	**50.2680**	0.977	1.9	ug/L	304	Standard
	Cu	65	103770.8	0.9	**50.5551**	0.555	1.1	ug/L	181	Standard
	Zn	66	63280.5	0.6	**51.2430**	0.408	0.8	ug/L	215	Standard
>	Ge	72	523154.7	1.4				ug/L	520809	Standard
	As	75	62592.0	0.8	**50.5289**	1.093	2.2	ug/L	-52	Standard
	Se	82	6421.3	0.7	**50.4779**	0.451	0.9	ug/L	17	Standard
	Se-1	77	4421.6	3.1	**50.8264**	2.224	4.4	ug/L	56	Standard
>	Ga	71	38.3	30.1				mg/L	25	Standard
	Rb	85	941.7	14.7				ug/L	28	Standard
	Y	89	448213.9	1.5				ug/L	447395	Standard
>	Rh	103	35.0	49.5				ug/L	15	Standard
	Mo	98	294940.7	1.4	**96.3152**	0.728	0.8	ug/L	113	Standard
	Ag	107	357502.4	1.0	**49.1663**	0.717	1.5	ug/L	108	Standard
	Cd	111	115768.3	0.2	**49.6787**	0.607	1.2	mg/L	3	Standard
	Cd	114	281209.7	0.6	**48.7423**	0.787	1.6	ug/L	20	Standard
>	In	115	633404.9	1.1				ug/L	625728	Standard
	Sn	118	321628.0	0.8	**49.2868**	0.611	1.2	ug/L	568	Standard
	Sb	123	258956.5	0.4	**49.4694**	0.480	1.0	ug/L	612	Standard
	Ba	135	108217.8	0.6	**49.1275**	0.780	1.6	ug/L	21	Standard
	Ce	140	141.7	45.4				ug/L	245	Standard
>	Tb	159	959365.6	0.2				ug/L	950397	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	443048.1	0.6	**49.6569**	0.744	1.5	ug/L	15	Standard
	Tl	205	398039.0	0.4	**50.2306**	0.560	1.1	ug/L	13	Standard
	Pb	206	281925.4	0.1	**50.0662**	0.613	1.2	ug/L	264	Standard
	Pb	207	256662.1	1.0	**50.1891**	0.845	1.7	ug/L	222	Standard
	Pb	208	1053544.2	0.4	**50.4385**	0.548	1.1	ug/L	959	Standard
	U	238	395989.8	1.3	**49.4226**	0.077	0.2	ug/L	9	Standard
>	Bi	209	549436.2	1.2				ug/L	552821	Standard

Sample ID: QC Std 1
Report Date/Time: Friday, July 01, 2016 10:45:44
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.9322**	8.534	173.0	mg/L	2	Standard
Mg	24	4375.6	3.8	**4.9437**	0.134	2.7	mg/L	55	Standard
K	39	1525.1	4.3	**5.5930**	0.165	3.0	mg/L	28	Standard
Ca	43	100.0	13.2	**6.4519**	1.261	19.5	mg/L	27	Standard
Fe	54	6527.6	4.7	**4.9145**	0.265	5.4	mg/L	147	Standard
Fe	57	1855.1	8.5	**4.7782**	0.491	10.3	mg/L	268	Standard
Sc-1	45	42051.6	1.4				mg/L	41174	Standard
Cl	35	67170.6	2.2				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1903.5	10.0				ug/L	1950	Standard
P	31	22763.8	0.6				ug/L	21156	Standard
S	34	3593.8	4.0				ug/L	3419	Standard
Sr	88	85.0	40.8				ug/L	72	Standard
C	12	133.3	15.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	132.3				mg/L	17	Standard
Dy	164	16.5	70.8				mg/L	16	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	23309.6	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.846		
Al	27	102.029		
Sc	45			
Ti	47	99.630		
V	51	100.608		
Cr	52	100.597		
Cr	53			
Mn	55	102.420		
Co	59	101.811		
Ni	60	100.536		
Cu	65	101.110		
Zn	66	102.486		
Ge	72		100.450	
As	75	101.058		
Se	82	100.956		
Se-1	77			
Ga	71			

Sample ID: QC Std 1
Report Date/Time: Friday, July 01, 2016 10:45:44
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	96.315		
Ag	107	98.333		
Cd	111	99.357		
Cd	114			
In	115		101.227	
Sn	118	98.574		
Sb	123	98.939		
Ba	135	98.255		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.314		
Tl	205			
Pb	206	100.132		
Pb	207	100.378		
Pb	208	100.877		
U	238	98.845		
Bi	209		99.388	
Na	23	98.644		
Mg	24	98.874		
K	39	111.859		
Ca	43	129.039		
Fe	54	98.290		
Fe	57	95.564		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

Sample ID: QC Std 1
Report Date/Time: Friday, July 01, 2016 10:45:44
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Friday, July 01, 2016 10:46:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73082.5	1.7				ug/L	76456	Standard
	Be	9	35.0	65.5	**0.0129**	0.022	168.2	ug/L	20	Standard
	Al	27	2900.3	16.4	**0.0075**	0.003	39.6	ug/L	1307	Standard
	Sc	45	41413.2	2.8				ug/L	41174	Standard
	Ti	47	35.3	18.8	**0.0225**	0.019	85.6	ug/L	27	Standard
	V	51	1420.2	5.2	**-0.0279**	0.008	27.9	ug/L	1434	Standard
	Cr	52	6961.6	2.3	**-0.1197**	0.018	14.9	ug/L	7733	Standard
	Cr	53	446.7	2.3	**0.0198**	0.006	30.4	ug/L	442	Standard
	Mn	55	849.7	3.5	**0.0096**	0.004	44.1	ug/L	723	Standard
	Co	59	304.7	6.6	**0.0099**	0.003	30.2	ug/L	217	Standard
	Ni	60	329.3	2.5	**0.0037**	0.005	136.9	ug/L	304	Standard
	Cu	65	206.0	9.7	**0.0257**	0.010	38.8	ug/L	181	Standard
	Zn	66	265.3	8.1	**0.0337**	0.016	46.4	ug/L	215	Standard
>	**Ge**	72	527031.7	1.0				ug/L	520809	Standard
	As	75	-62.3	20.0	**-0.0048**	0.010	219.6	ug/L	-52	Standard
	Se	82	14.1	36.1	**-0.0165**	0.039	235.1	ug/L	17	Standard
	Se-1	77	48.7	10.1	**-0.1219**	0.059	48.3	ug/L	56	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	26.7	84.5				ug/L	28	Standard
	Y	89	456491.7	1.0				ug/L	447395	Standard
>	**Rh**	103	26.7	57.3				ug/L	15	Standard
	Mo	98	335.9	6.6	**0.0861**	0.007	7.7	ug/L	113	Standard
	Ag	107	180.3	7.4	**0.0120**	0.002	16.2	ug/L	108	Standard
	Cd	111	27.1	26.6	**0.0093**	0.003	33.3	mg/L	3	Standard
	Cd	114	66.3	29.5	**0.0115**	0.003	29.4	ug/L	20	Standard
>	**In**	115	631231.9	0.6				ug/L	625728	Standard
	Sn	118	1070.0	25.4	**0.0807**	0.043	52.8	ug/L	568	Standard
	Sb	123	986.7	28.6	**0.1557**	0.055	35.3	ug/L	612	Standard
	Ba	135	49.3	8.4	**0.0046**	0.002	42.1	ug/L	21	Standard
	Ce	140	21.7	58.1				ug/L	245	Standard
>	**Tb**	159	958993.9	0.7				ug/L	950397	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	132.3	25.5	**0.0140**	0.004	27.2	ug/L	15	Standard
	Tl	205	123.3	29.3	**0.0057**	0.005	80.1	ug/L	13	Standard
	Pb	206	354.7	6.4	**0.0189**	0.004	22.4	ug/L	264	Standard
	Pb	207	298.7	4.5	**0.0120**	0.003	23.0	ug/L	222	Standard
	Pb	208	1215.7	2.5	**0.0096**	0.002	16.0	ug/L	959	Standard
	U	238	110.7	12.5	**0.0135**	0.002	13.1	ug/L	9	Standard
>	**Bi**	209	552384.0	0.3				ug/L	552821	Standard

Sample ID: QC Std 2
Report Date/Time: Friday, July 01, 2016 10:48:57
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.1172**	8.855	173.0	mg/L	2	Standard
Mg	24	61.7	49.5	**0.0114**	0.035	305.2	mg/L	55	Standard
K	39	43.3	29.0	**0.0349**	0.052	149.9	mg/L	28	Standard
Ca	43	15.0	66.7	**-1.1126**	0.876	78.7	mg/L	27	Standard
Fe	54	155.9	11.0	**0.0227**	0.013	57.8	mg/L	147	Standard
Fe	57	246.7	5.1	**-0.0507**	0.023	46.3	mg/L	268	Standard
> **Sc-1**	45	41413.2	2.8				mg/L	41174	Standard
Cl	35	67081.5	1.7				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1926.8	4.5				ug/L	1950	Standard
P	31	22241.3	1.7				ug/L	21156	Standard
S	34	3415.4	3.5				ug/L	3419	Standard
Sr	88	56.7	39.8				ug/L	72	Standard
C	12	120.0	30.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	12.7	43.5				mg/L	16	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	18017.4	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.195	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 2
Report Date/Time: Friday, July 01, 2016 10:48:57
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.880	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.921	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Na	23	
QC Std 2	Ca	43	

Sample ID: QC Std 2
Report Date/Time: Friday, July 01, 2016 10:48:57
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Friday, July 01, 2016 10:49:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71014.5	3.1				ug/L	76456	Standard
	Be	9	276.7	13.7	**0.2467**	0.041	16.7	ug/L	20	Standard
	Al	27	1433.4	19.2	**-0.0012**	0.001	117.3	ug/L	1307	Standard
	Sc	45	40355.3	1.3				ug/L	41174	Standard
	Ti	47	21.0	29.7	**-0.0191**	0.020	103.3	ug/L	27	Standard
	V	51	4354.1	2.4	**0.3388**	0.016	4.6	ug/L	1434	Standard
	Cr	52	13385.9	0.6	**0.7089**	0.010	1.4	ug/L	7733	Standard
	Cr	53	1290.1	5.1	**0.8778**	0.062	7.0	ug/L	442	Standard
	Mn	55	4164.2	0.5	**0.4567**	0.004	0.8	ug/L	723	Standard
	Co	59	3022.0	3.5	**0.3708**	0.015	4.0	ug/L	217	Standard
	Ni	60	3422.7	3.0	**1.5204**	0.058	3.8	ug/L	304	Standard
	Cu	65	1708.4	1.3	**0.7752**	0.014	1.9	ug/L	181	Standard
	Zn	66	7949.4	1.3	**6.4016**	0.063	1.0	ug/L	215	Standard
>	**Ge**	72	513410.3	0.5				ug/L	520809	Standard
	As	75	420.2	2.0	**0.3904**	0.006	1.5	ug/L	-52	Standard
	Se	82	57.4	15.1	**0.3348**	0.072	21.4	ug/L	17	Standard
	Se-1	77	86.3	6.6	**0.3399**	0.069	20.2	ug/L	56	Standard
>	**Ga**	71	38.3	7.5				mg/L	25	Standard
	Rb	85	15.0	115.5				ug/L	28	Standard
	Y	89	441603.6	1.2				ug/L	447395	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	125.5	7.4	**0.0191**	0.003	17.3	ug/L	113	Standard
	Ag	107	2803.6	3.0	**0.3918**	0.011	2.9	ug/L	108	Standard
	Cd	111	534.5	1.7	**0.2383**	0.004	1.8	mg/L	3	Standard
	Cd	114	1340.9	4.1	**0.2439**	0.009	3.8	ug/L	20	Standard
>	**In**	115	603601.4	0.4				ug/L	625728	Standard
	Sn	118	588.3	20.4	**0.0106**	0.020	185.6	ug/L	568	Standard
	Sb	123	1982.0	3.1	**0.3639**	0.013	3.7	ug/L	612	Standard
	Ba	135	1500.1	4.2	**0.6970**	0.033	4.7	ug/L	21	Standard
	Ce	140	13.3	57.3				ug/L	245	Standard
>	**Tb**	159	923552.7	1.3				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	722.4	6.5	**0.0815**	0.005	6.2	ug/L	15	Standard
	Tl	205	658.3	9.8	**0.0746**	0.008	10.9	ug/L	13	Standard
	Pb	206	1350.7	0.3	**0.2001**	0.002	0.8	ug/L	264	Standard
	Pb	207	1167.0	2.9	**0.1859**	0.007	3.6	ug/L	222	Standard
	Pb	208	4949.3	2.3	**0.1926**	0.005	2.7	ug/L	959	Standard
	U	238	3051.6	1.8	**0.3866**	0.007	1.9	ug/L	9	Standard
>	**Bi**	209	540899.0	0.4				ug/L	552821	Standard

Sample ID: QC Std 3
Report Date/Time: Friday, July 01, 2016 10:52:10
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**10.1911**	8.823	86.6	mg/L	2	Standard
Mg	24	73.3	17.2	**0.0273**	0.016	58.3	mg/L	55	Standard
K	39	43.3	17.6	**0.0384**	0.030	78.8	mg/L	28	Standard
Ca	43	21.7	13.3	**-0.4451**	0.256	57.4	mg/L	27	Standard
Fe	54	112.1	10.4	**-0.0092**	0.008	90.3	mg/L	147	Standard
Fe	57	220.0	10.4	**-0.1144**	0.071	61.7	mg/L	268	Standard
Sc-1	45	40355.3	1.3				mg/L	41174	Standard
Cl	35	64985.1	1.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1890.1	8.2				ug/L	1950	Standard
P	31	15399.5	2.8				ug/L	21156	Standard
S	34	3492.1	3.5				ug/L	3419	Standard
Sr	88	78.3	3.7				ug/L	72	Standard
C	12	140.0	14.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	12.9	182.9				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2308.5	15.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	123.368		
Al	27	-0.122		
Sc	45			
Ti	47			
V	51	84.694		
Cr	52	88.608		
Cr	53			
Mn	55	91.340		
Co	59	92.690		
Ni	60	95.026		
Cu	65	96.904		
Zn	66	102.426		
Ge	72		98.579	
As	75	97.610		
Se	82	83.691		
Se-1	77			
Ga	71			

Sample ID: QC Std 3
Report Date/Time: Friday, July 01, 2016 10:52:10
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.953		
Cd	111	99.297		
Cd	114			
> In	115			96.464
Sn	118			
Sb	123	90.972		
Ba	135	92.929		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.839		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.295		
U	238	96.660		
> Bi	209			97.843
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
Report Date/Time: Friday, July 01, 2016 10:52:10
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Friday, July 01, 2016 10:53:04
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72812.9	1.2				ug/L	76456	Standard
	Be	9	36.7	20.8	**0.0145**	0.007	47.6	ug/L	20	Standard
	Al	27	8248243.5	1.3	**50.5822**	0.139	0.3	ug/L	1307	Standard
	Sc	45	42120.1	1.9				ug/L	41174	Standard
	Ti	47	35838.7	1.4	**108.8763**	0.923	0.8	ug/L	27	Standard
	V	51	1796.6	6.7	**0.0180**	0.017	92.8	ug/L	1434	Standard
	Cr	52	8717.2	1.4	**0.0974**	0.005	5.1	ug/L	7733	Standard
	Cr	53	5294.3	3.4	**4.7714**	0.146	3.1	ug/L	442	Standard
	Mn	55	1499.1	2.5	**0.0949**	0.007	6.9	ug/L	723	Standard
	Co	59	500.3	4.2	**0.0353**	0.003	8.8	ug/L	217	Standard
	Ni	60	1153.7	2.9	**0.3978**	0.021	5.4	ug/L	304	Standard
	Cu	65	743.0	1.9	**0.2866**	0.009	3.1	ug/L	181	Standard
	Zn	66	1750.4	2.4	**1.2353**	0.049	3.9	ug/L	215	Standard
>	Ge	72	525789.4	1.1				ug/L	520809	Standard
	As	75	-56.5	78.0	**0.0000**	0.035	94213.4	ug/L	-52	Standard
	Se	82	21.9	13.2	**0.0450**	0.024	52.9	ug/L	17	Standard
	Se-1	77	369.0	3.8	**3.5902**	0.118	3.3	ug/L	56	Standard
>	Ga	71	190.0	4.6				mg/L	25	Standard
	Rb	85	1346.7	12.1				ug/L	28	Standard
	Y	89	446130.3	1.4				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	294809.8	0.7	**99.0666**	0.826	0.8	ug/L	113	Standard
	Ag	107	518.7	43.1	**0.0605**	0.032	52.1	ug/L	108	Standard
	Cd	111	-203.1	6.2	**-0.0920**	0.006	6.1	mg/L	3	Standard
	Cd	114	646.5	2.5	**0.1153**	0.003	2.6	ug/L	20	Standard
>	In	115	615550.0	0.1				ug/L	625728	Standard
	Sn	118	1126.7	15.8	**0.0937**	0.028	29.8	ug/L	568	Standard
	Sb	123	769.4	36.4	**0.1176**	0.055	46.8	ug/L	612	Standard
	Ba	135	907.7	4.8	**0.4062**	0.020	4.9	ug/L	21	Standard
	Ce	140	310.0	5.6				ug/L	245	Standard
>	Tb	159	945278.1	1.3				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	340.3	40.4	**0.0383**	0.016	41.1	ug/L	15	Standard
	Tl	205	238.3	11.6	**0.0211**	0.004	17.6	ug/L	13	Standard
	Pb	206	679.7	9.3	**0.0799**	0.011	14.4	ug/L	264	Standard
	Pb	207	580.3	10.0	**0.0701**	0.011	16.1	ug/L	222	Standard
	Pb	208	2295.1	2.9	**0.0642**	0.002	3.2	ug/L	959	Standard
	U	238	77.3	37.1	**0.0096**	0.004	37.6	ug/L	9	Standard
>	Bi	209	536774.2	1.2				ug/L	552821	Standard

Sample ID: QC Std 4
Report Date/Time: Friday, July 01, 2016 10:55:21
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.7734**	16.919	173.1	mg/L	2	Standard
Mg	24	10777.2	2.6	**12.2531**	0.537	4.4	mg/L	55	Standard
K	39	1383.4	9.9	**5.0519**	0.468	9.3	mg/L	28	Standard
Ca	43	138.3	7.5	**9.8265**	0.682	6.9	mg/L	27	Standard
Fe	54	16161.2	1.3	**12.2930**	0.303	2.5	mg/L	147	Standard
Fe	57	4369.0	2.7	**12.3260**	0.594	4.8	mg/L	268	Standard
> **Sc-1**	45	42120.1	1.9				mg/L	41174	Standard
Cl	35	65421.7	2.5				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1906.8	13.4				ug/L	1950	Standard
P	31	21114.7	2.7				ug/L	21156	Standard
S	34	3085.3	2.7				ug/L	3419	Standard
Sr	88	60.0	33.3				ug/L	72	Standard
C	12	210.0	31.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	54.9				mg/L	17	Standard
Dy	164	19.7	50.8				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	3048.6	5.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	1.012		
Sc	45			
Ti	47	108.876		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.956	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 4
Report Date/Time: Friday, July 01, 2016 10:55:21
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	99.067		
Ag	107			
Cd	111			
Cd	114			
> In	115			98.373
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			97.097
Na	23	78.187		
Mg	24	245.062		
K	39	101.039		
Ca	43	65.510		
Fe	54	98.344		
Fe	57	98.608		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Ba	135	
QC Std 4	Na	23	

Sample ID: QC Std 4
Report Date/Time: Friday, July 01, 2016 10:55:21
Page 3

Approved: July 02, 2016

QC Std 4	Mg	24
QC Std 4	Ca	43

Sample ID: QC Std 4
Report Date/Time: Friday, July 01, 2016 10:55:21
Page 4

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Friday, July 01, 2016 10:56:16
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75903.0	2.2				ug/L	76456	Standard
	Be	9	113931.8	1.0	**102.5442**	3.204	3.1	ug/L	20	Standard
	Al	27	7231990.8	1.8	**42.5454**	0.182	0.4	ug/L	1307	Standard
	Sc	45	42432.7	2.4				ug/L	41174	Standard
	Ti	47	30737.8	1.0	**92.8199**	0.734	0.8	ug/L	27	Standard
	V	51	833696.6	0.9	**99.6740**	0.237	0.2	ug/L	1434	Standard
	Cr	52	810709.3	1.6	**97.7572**	1.161	1.2	ug/L	7733	Standard
	Cr	53	105220.8	1.3	**102.1011**	1.018	1.0	ug/L	442	Standard
	Mn	55	763205.2	1.1	**99.1800**	1.093	1.1	ug/L	723	Standard
	Co	59	765446.7	1.5	**98.3652**	1.221	1.2	ug/L	217	Standard
	Ni	60	204863.4	0.8	**97.0735**	0.398	0.4	ug/L	304	Standard
	Cu	65	204176.2	1.0	**98.4523**	0.417	0.4	ug/L	181	Standard
	Zn	66	128188.4	1.6	**102.8491**	1.339	1.3	ug/L	215	Standard
>	Ge	72	528896.0	0.7				ug/L	520809	Standard
	As	75	125724.6	1.1	**100.3319**	1.466	1.5	ug/L	-52	Standard
	Se	82	12709.7	1.6	**98.9446**	1.879	1.9	ug/L	17	Standard
	Se-1	77	8838.2	1.3	**101.1222**	0.967	1.0	ug/L	56	Standard
>	Ga	71	141.7	2.0				mg/L	25	Standard
	Rb	85	858.4	8.2				ug/L	28	Standard
	Y	89	450945.0	1.6				ug/L	447395	Standard
>	Rh	103	58.3	17.8				ug/L	15	Standard
	Mo	98	252063.2	0.9	**84.2200**	0.957	1.1	ug/L	113	Standard
	Ag	107	620939.1	2.7	**87.3716**	1.954	2.2	ug/L	108	Standard
	Cd	111	226578.4	0.5	**99.4783**	0.760	0.8	mg/L	3	Standard
	Cd	114	558953.6	2.4	**99.1106**	1.789	1.8	ug/L	20	Standard
>	In	115	619069.3	0.8				ug/L	625728	Standard
	Sn	118	1101.7	13.0	**0.0889**	0.024	26.9	ug/L	568	Standard
	Sb	123	495062.3	2.0	**96.7840**	1.258	1.3	ug/L	612	Standard
	Ba	135	212436.2	0.4	**98.6825**	0.524	0.5	ug/L	21	Standard
	Ce	140	106.7	5.4				ug/L	245	Standard
>	Tb	159	965012.6	0.9				ug/L	950397	Standard
	Ho	165	11.7	89.2				ug/L	7	Standard
	Tl	203	877864.5	0.6	**98.2340**	0.597	0.6	ug/L	15	Standard
	Tl	205	786061.6	0.2	**99.0500**	0.141	0.1	ug/L	13	Standard
	Pb	206	570990.7	1.2	**101.2826**	1.116	1.1	ug/L	264	Standard
	Pb	207	499235.8	0.8	**97.5091**	0.551	0.6	ug/L	222	Standard
	Pb	208	2063776.1	0.5	**98.6933**	0.341	0.3	ug/L	959	Standard
	U	238	778595.3	0.8	**97.0297**	0.672	0.7	ug/L	9	Standard
>	Bi	209	550260.8	0.2				ug/L	552821	Standard

Sample ID: QC Std 5
Report Date/Time: Friday, July 01, 2016 10:58:33
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**14.6626**	14.607	99.6	mg/L	2	Standard
Mg	24	9379.6	3.3	**10.5777**	0.497	4.7	mg/L	55	Standard
K	39	1123.4	14.5	**4.0598**	0.702	17.3	mg/L	28	Standard
Ca	43	151.7	14.9	**10.9556**	2.287	20.9	mg/L	27	Standard
Fe	54	13756.2	0.9	**10.3738**	0.327	3.2	mg/L	147	Standard
Fe	57	3798.8	1.3	**10.5253**	0.250	2.4	mg/L	268	Standard
> **Sc-1**	45	42432.7	2.4				mg/L	41174	Standard
Cl	35	63162.8	2.2				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2016.8	12.5				ug/L	1950	Standard
P	31	19924.8	3.7				ug/L	21156	Standard
S	34	3145.3	1.7				ug/L	3419	Standard
Sr	88	73.3	10.4				ug/L	72	Standard
C	12	216.7	17.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	29.4	59.5				mg/L	16	Standard
Ho-1	165	11.7	89.2				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	3137.0	10.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.544		
Al	27	0.851		
Sc	45			
Ti	47	92.820		
V	51	99.674		
Cr	52	97.757		
Cr	53			
Mn	55	99.180		
Co	59	98.365		
Ni	60	97.073		
Cu	65	98.452		
Zn	66	102.849		
> Ge	72		101.553	
As	75	100.332		
Se	82	98.945		
Se-1	77			
> Ga	71			

Sample ID: QC Std 5
Report Date/Time: Friday, July 01, 2016 10:58:33
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	84.220		
Ag	107	87.372		
Cd	111	99.478		
Cd	114			
> In	115		98.936	
Sn	118			
Sb	123	96.784		
Ba	135	98.683		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.234		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.693		
U	238	97.030		
> Bi	209		99.537	
Na	23	117.301		
Mg	24	211.554		
K	39	81.196		
Ca	43	73.037		
Fe	54	82.990		
Fe	57	84.202		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
Report Date/Time: Friday, July 01, 2016 10:58:33
Page 3

Approved: July 02, 2016

QC Std 5	Ca	43

Sample ID: QC Std 5
Report Date/Time: Friday, July 01, 2016 10:58:33
Page 4

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 10:59:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76397.1	0.4				ug/L	76456	Standard
	Be	9	56429.9	0.6	**50.4288**	0.323	0.6	ug/L	20	Standard
	Al	27	8608329.7	1.2	**50.3148**	0.658	1.3	ug/L	1307	Standard
	Sc	45	41418.2	1.5				ug/L	41174	Standard
	Ti	47	32560.9	0.4	**99.6282**	1.278	1.3	ug/L	27	Standard
	V	51	420616.9	0.3	**50.8527**	0.410	0.8	ug/L	1434	Standard
	Cr	52	416237.8	1.3	**50.3856**	0.640	1.3	ug/L	7733	Standard
	Cr	53	51529.2	2.3	**50.4433**	0.671	1.3	ug/L	442	Standard
	Mn	55	384144.6	2.2	**50.5271**	1.192	2.4	ug/L	723	Standard
	Co	59	391365.2	2.6	**50.9408**	1.337	2.6	ug/L	217	Standard
	Ni	60	104660.9	0.3	**50.1718**	0.419	0.8	ug/L	304	Standard
	Cu	65	103744.3	0.5	**50.6474**	0.422	0.8	ug/L	181	Standard
	Zn	66	61920.9	0.7	**50.2420**	0.301	0.6	ug/L	215	Standard
>	Ge	72	522053.0	1.0				ug/L	520809	Standard
	As	75	62496.7	0.9	**50.5498**	0.506	1.0	ug/L	-52	Standard
	Se	82	6394.4	1.6	**50.3673**	0.526	1.0	ug/L	17	Standard
	Se-1	77	4303.6	0.6	**49.5434**	0.744	1.5	ug/L	56	Standard
>	Ga	71	55.0	9.1				mg/L	25	Standard
	Rb	85	888.4	10.1				ug/L	28	Standard
	Y	89	456826.7	1.0				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	297194.2	1.6	**98.9144**	2.943	3.0	ug/L	113	Standard
	Ag	107	358131.2	0.8	**50.1903**	1.051	2.1	ug/L	108	Standard
	Cd	111	114353.1	0.3	**50.0023**	0.782	1.6	mg/L	3	Standard
	Cd	114	281397.0	1.0	**49.6948**	0.508	1.0	ug/L	20	Standard
>	In	115	621643.5	1.3				ug/L	625728	Standard
	Sn	118	312305.8	0.1	**48.7658**	0.722	1.5	ug/L	568	Standard
	Sb	123	262685.9	0.2	**51.1341**	0.568	1.1	ug/L	612	Standard
	Ba	135	107196.2	0.5	**49.5868**	0.878	1.8	ug/L	21	Standard
	Ce	140	91.7	19.2				ug/L	245	Standard
>	Tb	159	949369.3	0.9				ug/L	950397	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	446446.9	0.3	**50.5283**	0.234	0.5	ug/L	15	Standard
	Tl	205	397524.5	2.6	**50.6566**	1.177	2.3	ug/L	13	Standard
	Pb	206	283032.1	0.6	**50.7560**	0.110	0.2	ug/L	264	Standard
	Pb	207	256737.6	0.4	**50.6961**	0.167	0.3	ug/L	222	Standard
	Pb	208	1049117.6	0.6	**50.7200**	0.161	0.3	ug/L	959	Standard
	U	238	395685.5	0.4	**49.8743**	0.152	0.3	ug/L	9	Standard
>	Bi	209	544048.8	0.4				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:01:46
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.9687**	17.258	173.1	mg/L	2	Standard
Mg	24	4517.3	2.2	**5.1854**	0.050	1.0	mg/L	55	Standard
K	39	1296.7	2.0	**4.8131**	0.164	3.4	mg/L	28	Standard
Ca	43	80.0	16.5	**4.7867**	1.292	27.0	mg/L	27	Standard
Fe	54	6442.2	3.1	**4.9235**	0.148	3.0	mg/L	147	Standard
Fe	57	1841.8	2.1	**4.8233**	0.186	3.8	mg/L	268	Standard
Sc-1	45	41418.2	1.5				mg/L	41174	Standard
Cl	35	65714.2	0.5				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1946.8	7.2				ug/L	1950	Standard
P	31	21396.8	2.5				ug/L	21156	Standard
S	34	3327.0	3.8				ug/L	3419	Standard
Sr	88	70.0	18.9				ug/L	72	Standard
C	12	130.0	20.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	17	Standard
Dy	164	9.5	107.6				mg/L	16	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	23620.1	0.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.858		
Al	27	100.630		
Sc	45			
Ti	47	99.628		
V	51	101.705		
Cr	52	100.771		
Cr	53			
Mn	55	101.054		
Co	59	101.882		
Ni	60	100.344		
Cu	65	101.295		
Zn	66	100.484		
Ge	72		100.239	
As	75	101.100		
Se	82	100.735		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:01:46
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.914		
Ag	107	100.381		
Cd	111	100.005		
Cd	114			
In	115			99.347
Sn	118	97.532		
Sb	123	102.268		
Ba	135	99.174		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.057		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.440		
U	238	99.749		
Bi	209			98.413
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:01:46
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 11:02:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76638.3	0.9				ug/L	76456	Standard
	Be	9	45.0	69.4	**0.0201**	0.027	136.2	ug/L	20	Standard
	Al	27	2771.9	19.2	**0.0059**	0.003	49.8	ug/L	1307	Standard
	Sc	45	41874.5	1.3				ug/L	41174	Standard
	Ti	47	34.3	22.6	**0.0199**	0.023	116.0	ug/L	27	Standard
	V	51	1314.7	3.0	**-0.0400**	0.005	13.2	ug/L	1434	Standard
	Cr	52	7063.3	2.5	**-0.1041**	0.024	23.4	ug/L	7733	Standard
	Cr	53	583.3	6.1	**0.1556**	0.035	22.3	ug/L	442	Standard
	Mn	55	795.7	2.1	**0.0029**	0.003	97.4	ug/L	723	Standard
	Co	59	301.0	14.0	**0.0095**	0.006	58.4	ug/L	217	Standard
	Ni	60	322.3	4.2	**0.0009**	0.006	613.3	ug/L	304	Standard
	Cu	65	188.3	9.4	**0.0175**	0.009	51.5	ug/L	181	Standard
	Zn	66	246.3	14.0	**0.0191**	0.028	144.2	ug/L	215	Standard
>	**Ge**	72	525121.4	0.6				ug/L	520809	Standard
	As	75	-40.2	86.9	**0.0130**	0.028	214.4	ug/L	-52	Standard
	Se	82	15.7	75.3	**-0.0027**	0.093	3488.1	ug/L	17	Standard
	Se-1	77	53.7	18.4	**-0.0615**	0.118	192.4	ug/L	56	Standard
>	**Ga**	71	31.7	18.2				mg/L	25	Standard
	Rb	85	18.3	15.7				ug/L	28	Standard
	Y	89	447115.8	1.8				ug/L	447395	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	330.0	12.1	**0.0850**	0.013	15.3	ug/L	113	Standard
	Ag	107	352.0	8.7	**0.0361**	0.004	11.5	ug/L	108	Standard
	Cd	111	29.4	26.4	**0.0104**	0.003	32.2	mg/L	3	Standard
	Cd	114	71.8	39.3	**0.0126**	0.005	39.2	ug/L	20	Standard
>	**In**	115	626402.7	0.2				ug/L	625728	Standard
	Sn	118	865.0	27.7	**0.0501**	0.037	74.4	ug/L	568	Standard
	Sb	123	1603.3	32.0	**0.2763**	0.100	36.1	ug/L	612	Standard
	Ba	135	44.0	23.9	**0.0023**	0.005	210.3	ug/L	21	Standard
	Ce	140	16.7	34.6				ug/L	245	Standard
>	**Tb**	159	964218.0	1.0				ug/L	950397	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	134.0	19.6	**0.0140**	0.003	21.2	ug/L	15	Standard
	Tl	205	110.0	16.4	**0.0039**	0.002	58.2	ug/L	13	Standard
	Pb	206	338.3	8.4	**0.0154**	0.006	35.8	ug/L	264	Standard
	Pb	207	297.0	6.8	**0.0111**	0.004	39.6	ug/L	222	Standard
	Pb	208	1217.7	7.2	**0.0091**	0.005	50.4	ug/L	959	Standard
	U	238	104.0	26.4	**0.0125**	0.003	27.7	ug/L	9	Standard
>	**Bi**	209	558778.4	1.0				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:04:58
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	45.1	**-0.0142**	0.021	147.6	mg/L	55	Standard
K	39	25.0	72.1	**-0.0375**	0.066	177.3	mg/L	28	Standard
Ca	43	30.0	33.3	**0.2279**	0.902	395.6	mg/L	27	Standard
Fe	54	134.1	12.9	**0.0047**	0.015	308.3	mg/L	147	Standard
Fe	57	221.7	27.3	**-0.1357**	0.173	127.8	mg/L	268	Standard
> **Sc-1**	45	41874.5	1.3				mg/L	41174	Standard
Cl	35	67946.0	1.7				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	1943.5	9.7				ug/L	1950	Standard
P	31	20762.6	2.5				ug/L	21156	Standard
S	34	3392.0	1.6				ug/L	3419	Standard
Sr	88	48.3	36.3				ug/L	72	Standard
C	12	116.7	42.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	15.9	71.9				mg/L	16	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	17685.3	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:04:58
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.108
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.078
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:04:58
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: PBW 78 WG574416-04
Sample Date/Time: Friday, July 01, 2016 11:05:53
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76067.2	2.6				ug/L	76456	Standard
	Be	9	91.7	22.0	**0.0624**	0.018	28.1	ug/L	20	Standard
	Al	27	9900.0	18.4	**0.0479**	0.010	21.7	ug/L	1307	Standard
	Sc	45	42185.3	1.2				ug/L	41174	Standard
	Ti	47	37.3	6.7	**0.0291**	0.007	24.8	ug/L	27	Standard
	V	51	1740.2	8.5	**0.0114**	0.018	156.7	ug/L	1434	Standard
	Cr	52	8205.6	2.3	**0.0360**	0.018	50.7	ug/L	7733	Standard
	Cr	53	613.3	22.1	**0.1846**	0.130	70.5	ug/L	442	Standard
	Mn	55	2289.5	4.2	**0.1986**	0.011	5.7	ug/L	723	Standard
	Co	59	620.0	11.0	**0.0508**	0.009	16.8	ug/L	217	Standard
	Ni	60	519.3	1.9	**0.0951**	0.005	5.1	ug/L	304	Standard
	Cu	65	329.0	6.1	**0.0858**	0.009	10.4	ug/L	181	Standard
	Zn	66	3237.3	0.8	**2.4406**	0.012	0.5	ug/L	215	Standard
>	**Ge**	72	525088.2	0.5				ug/L	520809	Standard
	As	75	30.8	108.7	**0.0699**	0.027	38.5	ug/L	-52	Standard
	Se	82	25.8	16.5	**0.0760**	0.033	43.0	ug/L	17	Standard
	Se-1	77	68.3	8.1	**0.1083**	0.066	60.6	ug/L	56	Standard
>	**Ga**	71	20.0	66.1				mg/L	25	Standard
	Rb	85	38.3	7.5				ug/L	28	Standard
	Y	89	448293.9	2.2				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	197.6	7.0	**0.0411**	0.005	11.2	ug/L	113	Standard
	Ag	107	356.3	27.8	**0.0365**	0.014	37.3	ug/L	108	Standard
	Cd	111	135.0	20.3	**0.0560**	0.012	21.0	mg/L	3	Standard
	Cd	114	292.8	13.1	**0.0511**	0.007	12.9	ug/L	20	Standard
>	**In**	115	628756.6	0.3				ug/L	625728	Standard
	Sn	118	890.0	6.8	**0.0534**	0.009	17.4	ug/L	568	Standard
	Sb	123	903.8	20.1	**0.1404**	0.035	25.1	ug/L	612	Standard
	Ba	135	176.0	12.6	**0.0626**	0.010	15.9	ug/L	21	Standard
	Ce	140	53.3	61.0				ug/L	245	Standard
>	**Tb**	159	955139.7	2.0				ug/L	950397	Standard
	Ho	165	11.7	49.5				ug/L	7	Standard
	Tl	203	548.0	21.5	**0.0598**	0.012	20.5	ug/L	15	Standard
	Tl	205	510.0	24.7	**0.0537**	0.015	27.8	ug/L	13	Standard
	Pb	206	677.0	11.7	**0.0750**	0.013	16.8	ug/L	264	Standard
	Pb	207	544.7	11.6	**0.0591**	0.011	18.5	ug/L	222	Standard
	Pb	208	2290.4	8.0	**0.0601**	0.007	12.3	ug/L	959	Standard
	U	238	102.7	66.1	**0.0123**	0.008	66.3	ug/L	9	Standard
>	**Bi**	209	556043.1	1.2				ug/L	552821	Standard

Sample ID: PBW 78 WG574416-04
Report Date/Time: Friday, July 01, 2016 11:08:10
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	46.1	**0.0100**	0.032	319.9	mg/L	55	Standard
K	39	35.0	57.1	**0.0003**	0.076	23783.0	mg/L	28	Standard
Ca	43	23.3	32.7	**-0.3783**	0.697	184.3	mg/L	27	Standard
Fe	54	175.9	11.5	**0.0357**	0.014	38.5	mg/L	147	Standard
Fe	57	216.7	10.7	**-0.1545**	0.066	42.5	mg/L	268	Standard
> **Sc-1**	45	42185.3	1.2				mg/L	41174	Standard
Cl	35	67744.4	0.4				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2090.1	1.7				ug/L	1950	Standard
P	31	21226.5	2.4				ug/L	21156	Standard
S	34	3468.7	3.7				ug/L	3419	Standard
Sr	88	66.7	18.9				ug/L	72	Standard
C	12	106.7	51.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	6.2	100.1				mg/L	16	Standard
Ho-1	165	11.7	49.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2538.5	15.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.492	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.822	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 78 WG574416-04
Report Date/Time: Friday, July 01, 2016 11:08:10
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.484
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.583
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 78 WG574416-04
Report Date/Time: Friday, July 01, 2016 11:08:10
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: LCSW 78 WG574416-05
Sample Date/Time: Friday, July 01, 2016 11:09:04
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76480.9	1.3				ug/L	76456	Standard
	Be	9	57299.8	1.8	**51.1515**	0.782	1.5	ug/L	20	Standard
	Al	27	13893.0	5.9	**0.0710**	0.006	8.3	ug/L	1307	Standard
	Sc	45	41525.2	3.0				ug/L	41174	Standard
	Ti	47	50.0	14.4	**0.0663**	0.021	31.6	ug/L	27	Standard
	V	51	423867.5	0.4	**50.5009**	0.287	0.6	ug/L	1434	Standard
	Cr	52	423554.6	0.4	**50.5309**	0.121	0.2	ug/L	7733	Standard
	Cr	53	51463.9	0.2	**49.6485**	0.215	0.4	ug/L	442	Standard
	Mn	55	395604.7	0.2	**51.2819**	0.431	0.8	ug/L	723	Standard
	Co	59	393078.4	0.7	**50.4221**	0.467	0.9	ug/L	217	Standard
	Ni	60	106911.2	0.9	**50.5097**	0.714	1.4	ug/L	304	Standard
	Cu	65	106870.6	0.8	**51.4201**	0.725	1.4	ug/L	181	Standard
	Zn	66	64695.2	1.1	**51.7405**	0.880	1.7	ug/L	215	Standard
>	Ge	72	529720.7	0.6				ug/L	520809	Standard
	As	75	63865.6	0.7	**50.9077**	0.332	0.7	ug/L	-52	Standard
	Se	82	6442.1	1.2	**50.0074**	0.423	0.8	ug/L	17	Standard
	Se-1	77	4460.3	1.4	**50.6149**	0.735	1.5	ug/L	56	Standard
>	Ga	71	33.3	48.2				mg/L	25	Standard
	Rb	85	51.7	53.3				ug/L	28	Standard
	Y	89	451210.1	0.7				ug/L	447395	Standard
>	Rh	103	28.3	10.2				ug/L	15	Standard
	Mo	98	211.5	58.2	**0.0455**	0.040	88.5	ug/L	113	Standard
	Ag	107	371127.1	0.8	**51.3096**	0.429	0.8	ug/L	108	Standard
	Cd	111	117429.0	0.6	**50.6559**	0.197	0.4	mg/L	3	Standard
	Cd	114	286369.4	2.1	**49.8969**	1.108	2.2	ug/L	20	Standard
>	In	115	630039.4	0.2				ug/L	625728	Standard
	Sn	118	975.0	11.8	**0.0662**	0.017	26.4	ug/L	568	Standard
	Sb	123	249155.3	2.4	**47.8470**	1.151	2.4	ug/L	612	Standard
	Ba	135	109490.5	0.6	**49.9659**	0.356	0.7	ug/L	21	Standard
	Ce	140	110.0	22.7				ug/L	245	Standard
>	Tb	159	961658.5	1.2				ug/L	950397	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	456267.9	0.6	**50.3461**	0.267	0.5	ug/L	15	Standard
	Tl	205	402501.7	1.2	**50.0083**	0.617	1.2	ug/L	13	Standard
	Pb	206	293954.8	0.6	**51.3969**	0.546	1.1	ug/L	264	Standard
	Pb	207	256579.6	0.1	**49.3966**	0.497	1.0	ug/L	222	Standard
	Pb	208	1074330.1	0.6	**50.6396**	0.527	1.0	ug/L	959	Standard
	U	238	394562.7	0.9	**48.4869**	0.395	0.8	ug/L	9	Standard
>	Bi	209	558043.6	1.1				ug/L	552821	Standard

Sample ID: LCSW 78 WG574416-05
Report Date/Time: Friday, July 01, 2016 11:11:21
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	20.4	**0.0111**	0.013	120.9	mg/L	55	Standard
K	39	35.0	37.8	**0.0010**	0.048	4646.6	mg/L	28	Standard
Ca	43	28.3	36.7	**0.0919**	0.886	964.6	mg/L	27	Standard
Fe	54	169.1	21.5	**0.0325**	0.027	81.8	mg/L	147	Standard
Fe	57	220.0	8.2	**-0.1334**	0.058	43.3	mg/L	268	Standard
Sc-1	45	41525.2	3.0				mg/L	41174	Standard
Cl	35	67082.2	2.2				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	2023.5	3.3				ug/L	1950	Standard
P	31	22251.3	1.9				ug/L	21156	Standard
S	34	3218.7	6.1				ug/L	3419	Standard
Sr	88	76.7	10.0				ug/L	72	Standard
C	12	130.0	27.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	12.2	119.1				mg/L	16	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	1945.1	18.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.033	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.711	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 78 WG574416-05
Report Date/Time: Friday, July 01, 2016 11:11:21
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.689
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.945
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 78 WG574416-05
Report Date/Time: Friday, July 01, 2016 11:11:21
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141705 WG574416-01
Sample Date/Time: Friday, July 01, 2016 11:12:16
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78995.4	1.2				ug/L	76456	Standard
	Be	9	58.3	4.9	**0.0306**	0.003	9.8	ug/L	20	Standard
	Al	27	21381126.3	0.9	**120.8920**	2.463	2.0	ug/L	1307	Standard
	Sc	45	41005.4	0.8				ug/L	41174	Standard
	Ti	47	385.7	14.4	**1.1313**	0.162	14.4	ug/L	27	Standard
	V	51	37880.1	0.4	**4.5394**	0.067	1.5	ug/L	1434	Standard
	Cr	52	15651.7	0.4	**1.0197**	0.032	3.2	ug/L	7733	Standard
	Cr	53	6074.6	20.3	**5.7629**	1.265	22.0	ug/L	442	Standard
	Mn	55	15005.4	0.7	**1.9367**	0.029	1.5	ug/L	723	Standard
	Co	59	1426.7	2.3	**0.1620**	0.002	1.4	ug/L	217	Standard
	Ni	60	3377.0	1.1	**1.5203**	0.032	2.1	ug/L	304	Standard
	Cu	65	1905.1	1.9	**0.8856**	0.009	1.0	ug/L	181	Standard
	Zn	66	4588.7	1.0	**3.6704**	0.063	1.7	ug/L	215	Standard
>	**Ge**	72	506618.0	1.2				ug/L	520809	Standard
	As	75	2080.8	8.4	**1.7774**	0.135	7.6	ug/L	-52	Standard
	Se	82	818.2	2.3	**6.5307**	0.077	1.2	ug/L	17	Standard
	Se-1	77	895.7	3.3	**10.0889**	0.428	4.2	ug/L	56	Standard
>	**Ga**	71	153.3	31.3				mg/L	25	Standard
	Rb	85	3665.4	2.3				ug/L	28	Standard
	Y	89	429409.0	1.3				ug/L	447395	Standard
>	**Rh**	103	178.3	12.6				ug/L	15	Standard
	Mo	98	683.2	5.3	**0.2157**	0.014	6.4	ug/L	113	Standard
	Ag	107	300.3	34.9	**0.0315**	0.016	49.6	ug/L	108	Standard
	Cd	111	82.5	7.8	**0.0356**	0.003	8.6	mg/L	3	Standard
	Cd	114	158.8	23.9	**0.0295**	0.007	23.3	ug/L	20	Standard
>	**In**	115	590046.0	0.5				ug/L	625728	Standard
	Sn	118	975.0	8.9	**0.0764**	0.014	18.3	ug/L	568	Standard
	Sb	123	2972.1	30.5	**0.5762**	0.187	32.4	ug/L	612	Standard
	Ba	135	67195.3	0.7	**32.7370**	0.271	0.8	ug/L	21	Standard
	Ce	140	5165.9	1.6				ug/L	245	Standard
>	**Tb**	159	918152.8	1.4				ug/L	950397	Standard
	Ho	165	105.0	29.7				ug/L	7	Standard
	Tl	203	363.0	14.1	**0.0439**	0.007	15.0	ug/L	15	Standard
	Tl	205	258.3	37.0	**0.0260**	0.013	51.2	ug/L	13	Standard
	Pb	206	917.4	3.4	**0.1351**	0.007	5.1	ug/L	264	Standard
	Pb	207	764.4	2.1	**0.1180**	0.005	4.0	ug/L	222	Standard
	Pb	208	3197.8	4.0	**0.1198**	0.007	5.7	ug/L	959	Standard
	U	238	29042.1	0.6	**3.9760**	0.053	1.3	ug/L	9	Standard
>	**Bi**	209	500900.4	0.8				ug/L	552821	Standard

Sample ID: L1606141705 WG574416-01
Report Date/Time: Friday, July 01, 2016 11:14:33
Page 1

Approved: July 02, 2016

Na	23	6.7	43.3	**19.9855**	8.657	43.3	mg/L	2	Standard
Mg	24	126521.1	1.0	**148.3441**	0.501	0.3	mg/L	55	Standard
K	39	181.7	30.9	**0.5679**	0.214	37.7	mg/L	28	Standard
Ca	43	465.0	16.3	**40.0054**	7.184	18.0	mg/L	27	Standard
Fe	54	240.2	12.6	**0.0904**	0.025	28.1	mg/L	147	Standard
Fe	57	603.3	4.8	**1.0579**	0.102	9.7	mg/L	268	Standard
Sc-1	45	41005.4	0.8				mg/L	41174	Standard
Cl	35	90433.8	0.8				ug/L	69550	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	57739.9	3.1				ug/L	1950	Standard
P	31	24640.0	1.7				ug/L	21156	Standard
S	34	3010.3	1.4				ug/L	3419	Standard
Sr	88	401.7	14.4				ug/L	72	Standard
C	12	506.7	3.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	132.3				mg/L	17	Standard
Dy	164	121.7	25.2				mg/L	16	Standard
Ho-1	165	105.0	29.7				mg/L	7	Standard
Er	166	103.3	29.6				mg/L	7	Standard
I	127	25413.0	5.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.322	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.275	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141705 WG574416-01
Report Date/Time: Friday, July 01, 2016 11:14:33
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.298
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.608
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141705 WG574416-01
Report Date/Time: Friday, July 01, 2016 11:14:33
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141706S WG574416-06
Sample Date/Time: Friday, July 01, 2016 11:15:27
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82487.3	1.1				ug/L	76456	Standard
	Be	9	59434.7	2.0	**49.1890**	0.474	1.0	ug/L	20	Standard
	Al	27	21126866.6	0.7	**114.3857**	1.245	1.1	ug/L	1307	Standard
	Sc	45	42071.7	1.5				ug/L	41174	Standard
	Ti	47	445.7	9.0	**1.3272**	0.106	8.0	ug/L	27	Standard
	V	51	448794.0	1.2	**56.1906**	0.338	0.6	ug/L	1434	Standard
	Cr	52	405302.2	0.8	**50.8030**	0.762	1.5	ug/L	7733	Standard
	Cr	53	55872.8	0.8	**56.6886**	1.157	2.0	ug/L	442	Standard
	Mn	55	376409.4	1.7	**51.2605**	1.187	2.3	ug/L	723	Standard
	Co	59	371466.0	0.9	**50.0608**	1.026	2.0	ug/L	217	Standard
	Ni	60	100340.5	1.4	**49.7984**	1.011	2.0	ug/L	304	Standard
	Cu	65	97977.1	1.5	**49.5201**	1.028	2.1	ug/L	181	Standard
	Zn	66	64249.3	1.5	**53.9822**	0.650	1.2	ug/L	215	Standard
>	Ge	72	504287.9	1.5				ug/L	520809	Standard
	As	75	64736.7	1.2	**54.2084**	0.977	1.8	ug/L	-52	Standard
	Se	82	7105.9	2.4	**57.9770**	1.906	3.3	ug/L	17	Standard
	Se-1	77	5081.5	1.0	**60.7211**	1.522	2.5	ug/L	56	Standard
>	Ga	71	93.3	21.7				mg/L	25	Standard
	Rb	85	3385.4	7.7				ug/L	28	Standard
	Y	89	437587.9	1.2				ug/L	447395	Standard
>	Rh	103	133.3	19.2				ug/L	15	Standard
	Mo	98	712.0	6.4	**0.2258**	0.015	6.5	ug/L	113	Standard
	Ag	107	254706.8	0.6	**37.6267**	0.420	1.1	ug/L	108	Standard
	Cd	111	107324.5	0.5	**49.4721**	0.054	0.1	mg/L	3	Standard
	Cd	114	266264.7	1.6	**49.5778**	1.034	2.1	ug/L	20	Standard
>	In	115	589608.9	0.6				ug/L	625728	Standard
	Sn	118	1198.4	5.9	**0.1134**	0.011	9.9	ug/L	568	Standard
	Sb	123	255276.2	0.1	**52.3884**	0.301	0.6	ug/L	612	Standard
	Ba	135	166458.1	0.3	**81.1840**	0.412	0.5	ug/L	21	Standard
	Ce	140	2188.5	3.6				ug/L	245	Standard
>	Tb	159	935892.6	1.8				ug/L	950397	Standard
	Ho	165	80.0	12.5				ug/L	7	Standard
	Tl	203	416301.7	0.5	**50.3128**	0.740	1.5	ug/L	15	Standard
	Tl	205	372797.3	0.4	**50.7287**	0.513	1.0	ug/L	13	Standard
	Pb	206	269916.3	0.3	**51.6884**	0.658	1.3	ug/L	264	Standard
	Pb	207	235694.4	0.5	**49.6950**	0.399	0.8	ug/L	222	Standard
	Pb	208	976732.6	0.6	**50.4213**	0.371	0.7	ug/L	959	Standard
	U	238	405996.3	0.5	**54.6443**	0.642	1.2	ug/L	9	Standard
>	Bi	209	509531.8	1.0				ug/L	552821	Standard

Sample ID: L1606141706S WG574416-06
Report Date/Time: Friday, July 01, 2016 11:17:44
Page 1

Approved: July 02, 2016

Na	23	6.7	86.6	**19.6383**	17.003	86.6	mg/L	2	Standard
Mg	24	124588.6	1.9	**142.3700**	0.938	0.7	mg/L	55	Standard
K	39	133.3	31.9	**0.3687**	0.159	43.1	mg/L	28	Standard
Ca	43	506.7	5.0	**42.5935**	1.641	3.9	mg/L	27	Standard
Fe	54	191.0	18.5	**0.0477**	0.027	55.6	mg/L	147	Standard
Fe	57	573.3	0.5	**0.9203**	0.025	2.7	mg/L	268	Standard
> **Sc-1**	45	42071.7	1.5				mg/L	41174	Standard
Cl	35	93134.7	1.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	57294.9	3.7				ug/L	1950	Standard
P	31	24481.4	0.9				ug/L	21156	Standard
S	34	3050.3	2.6				ug/L	3419	Standard
Sr	88	351.7	17.1				ug/L	72	Standard
C	12	470.0	15.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	66.5	44.7				mg/L	16	Standard
Ho-1	165	80.0	12.5				mg/L	7	Standard
Er	166	73.3	92.8				mg/L	7	Standard
I	127	27035.8	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.889	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141706S WG574416-06
Report Date/Time: Friday, July 01, 2016 11:17:44
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.228
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.169
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141706S WG574416-06
Report Date/Time: Friday, July 01, 2016 11:17:44
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141707SD WG574416-07
Sample Date/Time: Friday, July 01, 2016 11:18:39
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83771.0	2.5				ug/L	76456	Standard
	Be	9	60537.4	1.9	**49.3442**	0.599	1.2	ug/L	20	Standard
	Al	27	20909187.8	2.0	**111.4909**	2.320	2.1	ug/L	1307	Standard
	Sc	45	42178.7	2.5				ug/L	41174	Standard
	Ti	47	385.0	17.2	**1.1368**	0.214	18.9	ug/L	27	Standard
	V	51	446877.6	0.6	**55.9631**	0.571	1.0	ug/L	1434	Standard
	Cr	52	407703.5	1.0	**51.1164**	0.567	1.1	ug/L	7733	Standard
	Cr	53	57269.7	0.1	**58.1199**	0.209	0.4	ug/L	442	Standard
	Mn	55	373320.3	1.2	**50.8451**	0.769	1.5	ug/L	723	Standard
	Co	59	374639.0	0.7	**50.4931**	0.593	1.2	ug/L	217	Standard
	Ni	60	102269.7	0.8	**50.7649**	0.500	1.0	ug/L	304	Standard
	Cu	65	98211.9	0.3	**49.6447**	0.334	0.7	ug/L	181	Standard
	Zn	66	63211.9	0.4	**53.1189**	0.394	0.7	ug/L	215	Standard
>	Ge	72	504167.3	0.4				ug/L	520809	Standard
	As	75	65436.1	0.6	**54.8009**	0.553	1.0	ug/L	-52	Standard
	Se	82	7107.1	0.1	**57.9877**	0.247	0.4	ug/L	17	Standard
	Se-1	77	5193.9	0.7	**62.0795**	0.521	0.8	ug/L	56	Standard
>	Ga	71	93.3	56.3				mg/L	25	Standard
	Rb	85	2987.0	1.6				ug/L	28	Standard
	Y	89	428781.1	0.8				ug/L	447395	Standard
>	Rh	103	146.7	3.9				ug/L	15	Standard
	Mo	98	634.9	1.7	**0.2009**	0.001	0.6	ug/L	113	Standard
	Ag	107	261558.3	0.6	**39.0020**	0.323	0.8	ug/L	108	Standard
	Cd	111	107761.1	1.2	**50.1421**	0.734	1.5	mg/L	3	Standard
	Cd	114	265170.0	1.2	**49.8331**	0.062	0.1	ug/L	20	Standard
>	In	115	584141.3	1.3				ug/L	625728	Standard
	Sn	118	778.4	10.9	**0.0453**	0.014	30.6	ug/L	568	Standard
	Sb	123	253357.3	0.7	**52.4833**	0.432	0.8	ug/L	612	Standard
	Ba	135	164823.3	0.7	**81.1417**	0.473	0.6	ug/L	21	Standard
	Ce	140	1715.1	1.1				ug/L	245	Standard
>	Tb	159	919374.0	0.5				ug/L	950397	Standard
	Ho	165	48.3	26.0				ug/L	7	Standard
	Tl	203	415993.7	1.0	**50.5326**	0.446	0.9	ug/L	15	Standard
	Tl	205	377462.4	0.7	**51.6305**	0.656	1.3	ug/L	13	Standard
	Pb	206	269578.4	0.3	**51.8894**	0.298	0.6	ug/L	264	Standard
	Pb	207	236101.7	0.1	**50.0395**	0.358	0.7	ug/L	222	Standard
	Pb	208	981599.1	1.3	**50.9367**	0.779	1.5	ug/L	959	Standard
	U	238	408604.0	0.1	**55.2799**	0.488	0.9	ug/L	9	Standard
>	Bi	209	506896.7	0.8				ug/L	552821	Standard

Sample ID: L1606141707SD WG574416-07
Report Date/Time: Friday, July 01, 2016 11:20:56
Page 1

Approved: July 02, 2016

Na	23	6.7	86.6	**19.7141**	17.069	86.6	mg/L	2	Standard
Mg	24	123424.1	1.3	**140.7631**	4.816	3.4	mg/L	55	Standard
K	39	126.7	21.7	**0.3448**	0.114	32.9	mg/L	28	Standard
Ca	43	478.3	6.3	**39.9606**	1.868	4.7	mg/L	27	Standard
Fe	54	159.8	26.4	**0.0241**	0.035	144.2	mg/L	147	Standard
Fe	57	558.3	4.0	**0.8725**	0.108	12.4	mg/L	268	Standard
Sc-1	45	42178.7	2.5				mg/L	41174	Standard
Cl	35	93263.5	1.5				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	55210.4	0.6				ug/L	1950	Standard
P	31	24391.3	2.2				ug/L	21156	Standard
S	34	2932.0	3.7				ug/L	3419	Standard
Sr	88	386.7	9.1				ug/L	72	Standard
C	12	800.0	2.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	64.1	17.0				mg/L	16	Standard
Ho-1	165	48.3	26.0				mg/L	7	Standard
Er	166	53.3	39.0				mg/L	7	Standard
I	127	27236.1	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.568	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.805	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141707SD WG574416-07
Report Date/Time: Friday, July 01, 2016 11:20:56
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.354
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.693
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141707SD WG574416-07
Report Date/Time: Friday, July 01, 2016 11:20:56
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141701
Sample Date/Time: Friday, July 01, 2016 11:21:50
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83420.7	1.6				ug/L	76456	Standard
	Be	9	53.3	21.7	**0.0237**	0.009	37.8	ug/L	20	Standard
	Al	27	31084082.3	1.3	**166.4192**	1.988	1.2	ug/L	1307	Standard
	Sc	45	42130.2	2.0				ug/L	41174	Standard
	Ti	47	170.3	8.2	**0.4375**	0.044	10.0	ug/L	27	Standard
	V	51	22939.6	1.3	**2.5877**	0.032	1.2	ug/L	1434	Standard
	Cr	52	13097.0	1.3	**0.6468**	0.025	3.9	ug/L	7733	Standard
	Cr	53	1960.1	6.9	**1.5196**	0.135	8.9	ug/L	442	Standard
	Mn	55	3766.5	0.8	**0.3954**	0.005	1.2	ug/L	723	Standard
	Co	59	709.0	6.9	**0.0630**	0.006	10.1	ug/L	217	Standard
	Ni	60	2223.2	1.0	**0.9167**	0.012	1.3	ug/L	304	Standard
	Cu	65	739.0	2.4	**0.2875**	0.008	2.9	ug/L	181	Standard
	Zn	66	2322.5	1.8	**1.7125**	0.036	2.1	ug/L	215	Standard
>	Ge	72	521624.8	0.2				ug/L	520809	Standard
	As	75	515.4	8.1	**0.4620**	0.033	7.2	ug/L	-52	Standard
	Se	82	150.1	4.3	**1.0601**	0.051	4.8	ug/L	17	Standard
	Se-1	77	163.7	3.7	**1.2270**	0.071	5.8	ug/L	56	Standard
>	Ga	71	35.0	42.9				mg/L	25	Standard
	Rb	85	1295.1	7.1				ug/L	28	Standard
	Y	89	450422.8	1.4				ug/L	447395	Standard
>	Rh	103	130.0	23.4				ug/L	15	Standard
	Mo	98	654.1	6.4	**0.1969**	0.014	7.3	ug/L	113	Standard
	Ag	107	196.0	12.7	**0.0150**	0.004	24.0	ug/L	108	Standard
	Cd	111	38.8	25.3	**0.0149**	0.004	28.8	mg/L	3	Standard
	Cd	114	102.9	24.1	**0.0184**	0.004	23.7	ug/L	20	Standard
>	In	115	612771.9	0.4				ug/L	625728	Standard
	Sn	118	700.0	1.2	**0.0268**	0.002	5.6	ug/L	568	Standard
	Sb	123	677.6	31.8	**0.1003**	0.043	43.0	ug/L	612	Standard
	Ba	135	79352.9	0.7	**37.2291**	0.386	1.0	ug/L	21	Standard
	Ce	140	398.3	12.2				ug/L	245	Standard
>	Tb	159	943156.7	0.8				ug/L	950397	Standard
	Ho	165	36.7	20.8				ug/L	7	Standard
	Tl	203	227.0	14.0	**0.0253**	0.004	14.6	ug/L	15	Standard
	Tl	205	246.7	13.8	**0.0221**	0.004	19.4	ug/L	13	Standard
	Pb	206	454.7	7.7	**0.0390**	0.006	16.7	ug/L	264	Standard
	Pb	207	363.0	3.8	**0.0266**	0.003	11.0	ug/L	222	Standard
	Pb	208	1563.4	3.8	**0.0284**	0.003	10.4	ug/L	959	Standard
	U	238	20328.0	1.2	**2.5974**	0.039	1.5	ug/L	9	Standard
>	Bi	209	536649.8	0.3				ug/L	552821	Standard

Sample ID: L1606141701
Report Date/Time: Friday, July 01, 2016 11:24:07
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	14153.3	4.2	**16.0944**	0.416	2.6	mg/L	55	Standard
K	39	73.3	50.3	**0.1418**	0.131	92.5	mg/L	28	Standard
Ca	43	301.7	14.5	**24.2946**	3.319	13.7	mg/L	27	Standard
Fe	54	192.1	16.5	**0.0481**	0.021	43.9	mg/L	147	Standard
Fe	57	448.3	3.9	**0.5433**	0.078	14.4	mg/L	268	Standard
> **Sc-1**	45	42130.2	2.0				mg/L	41174	Standard
Cl	35	78637.6	2.5				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	17710.4	7.6				ug/L	1950	Standard
P	31	24940.5	2.0				ug/L	21156	Standard
S	34	3180.3	5.3				ug/L	3419	Standard
Sr	88	363.3	6.9				ug/L	72	Standard
C	12	386.7	16.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	17	Standard
Dy	164	45.1	46.6				mg/L	16	Standard
Ho-1	165	36.7	20.8				mg/L	7	Standard
Er	166	33.3	17.3				mg/L	7	Standard
I	127	17748.8	7.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.110	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.157	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141701
Report Date/Time: Friday, July 01, 2016 11:24:07
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.929
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.075
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141701
Report Date/Time: Friday, July 01, 2016 11:24:07
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141702
Sample Date/Time: Friday, July 01, 2016 11:25:02
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84178.2	0.8				ug/L	76456	Standard
	Be	9	68.3	33.0	**0.0357**	0.019	52.5	ug/L	20	Standard
	Al	27	21395590.4	1.7	**113.5091**	1.891	1.7	ug/L	1307	Standard
	Sc	45	40557.5	1.2				ug/L	41174	Standard
	Ti	47	235.3	3.5	**0.6749**	0.030	4.5	ug/L	27	Standard
	V	51	30102.8	0.4	**3.6510**	0.042	1.2	ug/L	1434	Standard
	Cr	52	20877.7	0.2	**1.7436**	0.023	1.3	ug/L	7733	Standard
	Cr	53	13953.1	1.5	**14.0948**	0.198	1.4	ug/L	442	Standard
	Mn	55	6869.6	2.0	**0.8525**	0.013	1.6	ug/L	723	Standard
	Co	59	1049.0	2.3	**0.1145**	0.004	3.2	ug/L	217	Standard
	Ni	60	3023.6	1.9	**1.3787**	0.032	2.3	ug/L	304	Standard
	Cu	65	1353.7	2.9	**0.6232**	0.017	2.7	ug/L	181	Standard
	Zn	66	2790.6	0.7	**2.2139**	0.010	0.4	ug/L	215	Standard
>	Ge	72	495483.9	0.7				ug/L	520809	Standard
	As	75	1494.2	7.1	**1.3177**	0.098	7.4	ug/L	-52	Standard
	Se	82	1155.8	1.9	**9.4896**	0.142	1.5	ug/L	17	Standard
	Se-1	77	1366.7	2.9	**16.1232**	0.600	3.7	ug/L	56	Standard
>	Ga	71	65.0	46.8				mg/L	25	Standard
	Rb	85	1118.4	6.5				ug/L	28	Standard
	Y	89	431041.5	1.8				ug/L	447395	Standard
>	Rh	103	106.7	2.7				ug/L	15	Standard
	Mo	98	636.9	5.4	**0.2018**	0.013	6.3	ug/L	113	Standard
	Ag	107	175.7	31.4	**0.0134**	0.008	62.4	ug/L	108	Standard
	Cd	111	69.9	26.7	**0.0302**	0.009	28.8	mg/L	3	Standard
	Cd	114	141.9	41.1	**0.0267**	0.011	41.2	ug/L	20	Standard
>	In	115	583855.1	0.8				ug/L	625728	Standard
	Sn	118	985.0	7.5	**0.0798**	0.012	15.3	ug/L	568	Standard
	Sb	123	469.0	23.7	**0.0635**	0.023	35.9	ug/L	612	Standard
	Ba	135	16891.1	0.4	**8.3035**	0.096	1.2	ug/L	21	Standard
	Ce	140	950.0	9.1				ug/L	245	Standard
>	Tb	159	915987.8	1.1				ug/L	950397	Standard
	Ho	165	58.3	13.1				ug/L	7	Standard
	Tl	203	239.0	33.8	**0.0285**	0.010	35.2	ug/L	15	Standard
	Tl	205	226.7	28.0	**0.0215**	0.009	41.6	ug/L	13	Standard
	Pb	206	491.0	11.7	**0.0515**	0.012	22.7	ug/L	264	Standard
	Pb	207	417.3	7.3	**0.0430**	0.007	16.1	ug/L	222	Standard
	Pb	208	1796.4	4.5	**0.0456**	0.005	10.2	ug/L	959	Standard
	U	238	24911.1	0.1	**3.3908**	0.016	0.5	ug/L	9	Standard
>	Bi	209	503762.9	0.6				ug/L	552821	Standard

Sample ID: L1606141702
Report Date/Time: Friday, July 01, 2016 11:27:19
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**10.0444**	8.695	86.6	mg/L	2	Standard
Mg	24	132735.6	1.2	**157.3747**	3.155	2.0	mg/L	55	Standard
K	39	131.7	11.6	**0.3818**	0.065	17.1	mg/L	28	Standard
Ca	43	436.7	8.3	**37.8132**	2.966	7.8	mg/L	27	Standard
Fe	54	188.4	13.0	**0.0512**	0.020	39.7	mg/L	147	Standard
Fe	57	626.7	13.5	**1.1530**	0.288	25.0	mg/L	268	Standard
Sc-1	45	40557.5	1.2				mg/L	41174	Standard
Cl	35	95111.1	2.9				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	69814.0	4.5				ug/L	1950	Standard
P	31	24122.5	3.6				ug/L	21156	Standard
S	34	3262.0	2.8				ug/L	3419	Standard
Sr	88	431.7	9.9				ug/L	72	Standard
C	12	460.0	22.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	50.5	77.6				mg/L	16	Standard
Ho-1	165	58.3	13.1				mg/L	7	Standard
Er	166	60.0	44.1				mg/L	7	Standard
I	127	37230.7	1.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.101	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.137	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141702
Report Date/Time: Friday, July 01, 2016 11:27:19
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.308
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.126
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141702
Report Date/Time: Friday, July 01, 2016 11:27:19
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141702PS WG574808-01
Sample Date/Time: Friday, July 01, 2016 11:28:13
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84706.2	1.4				ug/L	76456	Standard
	Be	9	61248.6	0.7	**49.3719**	0.771	1.6	ug/L	20	Standard
	Al	27	21521134.5	1.9	**113.4962**	3.763	3.3	ug/L	1307	Standard
	Sc	45	40794.9	2.7				ug/L	41174	Standard
	Ti	47	240.0	10.1	**0.6796**	0.085	12.5	ug/L	27	Standard
	V	51	455261.1	1.0	**57.2107**	0.562	1.0	ug/L	1434	Standard
	Cr	52	426443.6	1.0	**53.6956**	0.415	0.8	ug/L	7733	Standard
	Cr	53	63767.3	2.8	**64.9856**	1.904	2.9	ug/L	442	Standard
	Mn	55	385209.5	0.8	**52.6493**	0.868	1.6	ug/L	723	Standard
	Co	59	385929.7	0.6	**52.1919**	0.293	0.6	ug/L	217	Standard
	Ni	60	103771.2	0.7	**51.6879**	0.282	0.5	ug/L	304	Standard
	Cu	65	101476.7	1.4	**51.4688**	0.149	0.3	ug/L	181	Standard
	Zn	66	65028.6	0.8	**54.8362**	0.235	0.4	ug/L	215	Standard
>	Ge	72	502470.5	1.2				ug/L	520809	Standard
	As	75	66227.4	1.6	**55.6481**	0.524	0.9	ug/L	-52	Standard
	Se	82	7664.8	0.5	**62.7619**	0.423	0.7	ug/L	17	Standard
	Se-1	77	5635.0	2.2	**67.6351**	0.810	1.2	ug/L	56	Standard
>	Ga	71	56.7	41.7				mg/L	25	Standard
	Rb	85	1151.7	5.5				ug/L	28	Standard
	Y	89	435252.0	2.3				ug/L	447395	Standard
>	Rh	103	131.7	9.6				ug/L	15	Standard
	Mo	98	659.3	4.3	**0.2083**	0.012	5.6	ug/L	113	Standard
	Ag	107	333584.9	1.2	**49.4501**	0.303	0.6	ug/L	108	Standard
	Cd	111	111317.0	0.6	**51.4929**	0.677	1.3	mg/L	3	Standard
	Cd	114	272508.8	2.4	**50.9184**	1.531	3.0	ug/L	20	Standard
>	In	115	587582.2	0.8				ug/L	625728	Standard
	Sn	118	1173.4	7.2	**0.1100**	0.015	13.8	ug/L	568	Standard
	Sb	123	246884.2	2.4	**50.8360**	0.942	1.9	ug/L	612	Standard
	Ba	135	121048.6	0.4	**59.2388**	0.725	1.2	ug/L	21	Standard
	Ce	140	995.0	2.7				ug/L	245	Standard
>	Tb	159	924930.3	1.0				ug/L	950397	Standard
	Ho	165	51.7	39.1				ug/L	7	Standard
	Tl	203	432904.6	0.1	**52.3301**	0.247	0.5	ug/L	15	Standard
	Tl	205	391263.3	1.6	**53.2578**	1.128	2.1	ug/L	13	Standard
	Pb	206	282728.2	0.5	**54.1561**	0.449	0.8	ug/L	264	Standard
	Pb	207	246312.6	0.2	**51.9491**	0.256	0.5	ug/L	222	Standard
	Pb	208	1022028.0	0.9	**52.7764**	0.638	1.2	ug/L	959	Standard
	U	238	421958.1	0.7	**56.8072**	0.698	1.2	ug/L	9	Standard
>	Bi	209	509385.6	0.5				ug/L	552821	Standard

Sample ID: L1606141702PS WG574808-01
Report Date/Time: Friday, July 01, 2016 11:30:30
Page 1

Approved: July 02, 2016

Na	23	10.0	50.0	**29.8847**	14.237	47.6	mg/L	2	Standard
Mg	24	133593.1	0.8	**157.5206**	4.134	2.6	mg/L	55	Standard
K	39	128.3	35.1	**0.3678**	0.182	49.5	mg/L	28	Standard
Ca	43	420.0	20.7	**36.0275**	7.706	21.4	mg/L	27	Standard
Fe	54	180.1	10.8	**0.0439**	0.018	40.9	mg/L	147	Standard
Fe	57	538.3	4.2	**0.8651**	0.032	3.7	mg/L	268	Standard
> **Sc-1**	45	40794.9	2.7				mg/L	41174	Standard
Cl	35	96279.6	0.7				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	71609.1	5.3				ug/L	1950	Standard
P	31	24898.8	2.0				ug/L	21156	Standard
S	34	3225.3	2.1				ug/L	3419	Standard
Sr	88	406.7	4.3				ug/L	72	Standard
C	12	440.0	36.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	27.8	36.1				mg/L	16	Standard
Ho-1	165	51.7	39.1				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	7	Standard
I	127	36331.8	0.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.479	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141702PS WG574808-01
Report Date/Time: Friday, July 01, 2016 11:30:30
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.904
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.143
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141702PS WG574808-01
Report Date/Time: Friday, July 01, 2016 11:30:30
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141702SDL WG574808-02
Sample Date/Time: Friday, July 01, 2016 11:31:25
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79270.2	1.4				ug/L	76456	Standard
	Be	9	48.3	15.8	**0.0218**	0.006	29.8	ug/L	20	Standard
	Al	27	4222516.4	1.3	**23.7801**	0.015	0.1	ug/L	1307	Standard
	Sc	45	38916.6	1.8				ug/L	41174	Standard
	Ti	47	59.3	17.5	**0.1088**	0.035	32.6	ug/L	27	Standard
	V	51	7243.4	2.3	**0.7359**	0.026	3.5	ug/L	1434	Standard
	Cr	52	10348.9	1.0	**0.3868**	0.014	3.5	ug/L	7733	Standard
	Cr	53	3842.2	2.6	**3.6141**	0.077	2.1	ug/L	442	Standard
	Mn	55	1712.4	2.4	**0.1385**	0.004	3.2	ug/L	723	Standard
	Co	59	414.7	3.6	**0.0280**	0.003	9.0	ug/L	217	Standard
	Ni	60	921.4	5.7	**0.3179**	0.030	9.6	ug/L	304	Standard
	Cu	65	476.3	6.6	**0.1735**	0.018	10.2	ug/L	181	Standard
	Zn	66	1250.7	2.0	**0.9024**	0.030	3.3	ug/L	215	Standard
>	Ge	72	491133.0	0.8				ug/L	520809	Standard
	As	75	262.0	15.9	**0.2704**	0.037	13.9	ug/L	-52	Standard
	Se	82	270.1	2.3	**2.1408**	0.063	2.9	ug/L	17	Standard
	Se-1	77	339.3	3.5	**3.5247**	0.142	4.0	ug/L	56	Standard
>	Ga	71	25.0	20.0				mg/L	25	Standard
	Rb	85	250.0	13.1				ug/L	28	Standard
	Y	89	411909.2	0.7				ug/L	447395	Standard
>	Rh	103	60.0	30.0				ug/L	15	Standard
	Mo	98	158.0	15.1	**0.0328**	0.008	25.5	ug/L	113	Standard
	Ag	107	268.7	10.2	**0.0278**	0.004	15.6	ug/L	108	Standard
	Cd	111	28.7	19.4	**0.0112**	0.003	23.8	mg/L	3	Standard
	Cd	114	92.0	14.0	**0.0176**	0.002	14.2	ug/L	20	Standard
>	In	115	575454.3	0.4				ug/L	625728	Standard
	Sn	118	298.3	6.8	**-0.0338**	0.003	9.9	ug/L	568	Standard
	Sb	123	1720.4	31.0	**0.3280**	0.111	33.8	ug/L	612	Standard
	Ba	135	3347.4	3.0	**1.6553**	0.056	3.4	ug/L	21	Standard
	Ce	140	181.7	6.9				ug/L	245	Standard
>	Tb	159	890346.9	0.6				ug/L	950397	Standard
	Ho	165	23.3	32.7				ug/L	7	Standard
	Tl	203	214.3	9.6	**0.0249**	0.002	9.4	ug/L	15	Standard
	Tl	205	275.0	41.2	**0.0273**	0.015	55.9	ug/L	13	Standard
	Pb	206	399.7	2.6	**0.0322**	0.002	4.9	ug/L	264	Standard
	Pb	207	322.7	4.0	**0.0214**	0.002	11.0	ug/L	222	Standard
	Pb	208	1435.0	2.3	**0.0252**	0.002	7.2	ug/L	959	Standard
	U	238	5076.5	3.7	**0.6771**	0.028	4.1	ug/L	9	Standard
>	Bi	209	514021.2	0.5				ug/L	552821	Standard

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:33:42
Page 1

Approved: July 02, 2016

Na	23	6.7	114.6	**21.2259**	24.589	115.8	mg/L	2	Standard
Mg	24	26095.8	2.9	**32.1961**	0.941	2.9	mg/L	55	Standard
K	39	48.3	21.5	**0.0648**	0.042	64.9	mg/L	28	Standard
Ca	43	73.3	25.8	**4.5982**	1.826	39.7	mg/L	27	Standard
Fe	54	79.1	19.4	**-0.0333**	0.012	34.7	mg/L	147	Standard
Fe	57	293.3	4.3	**0.1499**	0.049	32.9	mg/L	268	Standard
Sc-1	45	38916.6	1.8				mg/L	41174	Standard
Cl	35	81436.9	1.0				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	16265.4	2.3				ug/L	1950	Standard
P	31	10428.6	1.9				ug/L	21156	Standard
S	34	3263.7	1.5				ug/L	3419	Standard
Sr	88	118.3	30.0				ug/L	72	Standard
C	12	173.3	3.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	17	Standard
Dy	164	22.2	71.3				mg/L	16	Standard
Ho-1	165	23.3	32.7				mg/L	7	Standard
Er	166	23.3	107.9				mg/L	7	Standard
I	127	34272.1	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.681	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.302	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:33:42
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.982
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141702SDL WG574808-02
Sample Date/Time: Friday, July 01, 2016 11:34:36
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75492.7	3.2				ug/L	76456	Standard
	Be	9	23.3	12.4	**0.0012**	0.002	197.6	ug/L	20	Standard
	Al	27	829607.4	2.3	**4.8996**	0.125	2.6	ug/L	1307	Standard
	Sc	45	37073.7	3.1				ug/L	41174	Standard
	Ti	47	28.0	12.9	**0.0070**	0.012	174.3	ug/L	27	Standard
	V	51	3170.1	5.9	**0.2118**	0.020	9.4	ug/L	1434	Standard
	Cr	52	8461.0	1.1	**0.1435**	0.006	4.5	ug/L	7733	Standard
	Cr	53	1218.4	12.8	**0.8668**	0.167	19.3	ug/L	442	Standard
	Mn	55	694.0	1.2	**-0.0037**	0.001	25.0	ug/L	723	Standard
	Co	59	224.0	8.2	**0.0017**	0.003	168.9	ug/L	217	Standard
	Ni	60	457.0	4.9	**0.0814**	0.014	16.9	ug/L	304	Standard
	Cu	65	221.3	9.3	**0.0415**	0.012	28.9	ug/L	181	Standard
	Zn	66	1093.0	3.6	**0.7694**	0.029	3.8	ug/L	215	Standard
>	Ge	72	489217.1	1.1				ug/L	520809	Standard
	As	75	21.5	96.2	**0.0638**	0.018	28.2	ug/L	-52	Standard
	Se	82	69.4	5.3	**0.4582**	0.034	7.4	ug/L	17	Standard
	Se-1	77	109.3	5.9	**0.6765**	0.067	9.8	ug/L	56	Standard
>	Ga	71	15.0	33.3				mg/L	25	Standard
	Rb	85	76.7	16.4				ug/L	28	Standard
	Y	89	405198.5	2.3				ug/L	447395	Standard
>	Rh	103	26.7	60.3				ug/L	15	Standard
	Mo	98	142.2	38.6	**0.0281**	0.020	72.6	ug/L	113	Standard
	Ag	107	112.7	10.2	**0.0045**	0.002	36.8	ug/L	108	Standard
	Cd	111	8.1	48.9	**0.0015**	0.002	126.2	mg/L	3	Standard
	Cd	114	16.9	33.2	**0.0033**	0.001	33.5	ug/L	20	Standard
>	In	115	566627.7	0.7				ug/L	625728	Standard
	Sn	118	178.3	10.6	**-0.0536**	0.003	6.2	ug/L	568	Standard
	Sb	123	679.8	12.9	**0.1116**	0.020	17.6	ug/L	612	Standard
	Ba	135	676.7	1.6	**0.3256**	0.006	1.8	ug/L	21	Standard
	Ce	140	45.0	61.9				ug/L	245	Standard
>	Tb	159	881967.0	0.2				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	116.0	4.3	**0.0131**	0.001	4.5	ug/L	15	Standard
	Tl	205	140.0	3.6	**0.0090**	0.001	6.9	ug/L	13	Standard
	Pb	206	294.0	3.6	**0.0118**	0.002	17.2	ug/L	264	Standard
	Pb	207	254.0	8.5	**0.0068**	0.004	64.3	ug/L	222	Standard
	Pb	208	1072.0	4.7	**0.0063**	0.003	41.6	ug/L	959	Standard
	U	238	957.7	4.8	**0.1269**	0.006	4.8	ug/L	9	Standard
>	Bi	209	516500.7	0.3				ug/L	552821	Standard

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:36:53
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4970.8	4.5	**6.3914**	0.307	4.8	mg/L	55	Standard
K	39	25.0	0.0	**-0.0247**	0.003	13.3	mg/L	28	Standard
Ca	43	50.0	34.6	**2.6288**	1.919	73.0	mg/L	27	Standard
Fe	54	54.5	0.1	**-0.0513**	0.002	3.0	mg/L	147	Standard
Fe	57	253.3	6.3	**0.0613**	0.067	109.5	mg/L	268	Standard
> **Sc-1**	45	37073.7	3.1				mg/L	41174	Standard
Cl	35	80495.3	1.6				ug/L	69550	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	5040.8	9.7				ug/L	1950	Standard
P	31	7305.1	3.6				ug/L	21156	Standard
S	34	3295.4	6.8				ug/L	3419	Standard
Sr	88	108.3	11.6				ug/L	72	Standard
C	12	146.7	3.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	17	Standard
Dy	164	-1.1	89.2				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	7	Standard
I	127	33724.2	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.740	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.934	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:36:53
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.555
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.430
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 11:37:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79886.8	2.4				ug/L	76456	Standard
	Be	9	60216.2	2.8	**51.4590**	0.417	0.8	ug/L	20	Standard
	Al	27	8658161.3	1.0	**48.4053**	0.695	1.4	ug/L	1307	Standard
	Sc	45	41946.3	1.7				ug/L	41174	Standard
	Ti	47	32783.8	1.1	**99.4934**	0.341	0.3	ug/L	27	Standard
	V	51	421947.6	0.5	**50.6006**	0.209	0.4	ug/L	1434	Standard
	Cr	52	415783.8	0.5	**49.9191**	0.677	1.4	ug/L	7733	Standard
	Cr	53	52323.5	0.7	**50.8163**	0.079	0.2	ug/L	442	Standard
	Mn	55	383488.2	0.5	**50.0327**	0.303	0.6	ug/L	723	Standard
	Co	59	396921.5	0.3	**51.2480**	0.300	0.6	ug/L	217	Standard
	Ni	60	105550.0	0.7	**50.1916**	0.654	1.3	ug/L	304	Standard
	Cu	65	104187.0	0.3	**50.4533**	0.298	0.6	ug/L	181	Standard
	Zn	66	62119.1	0.9	**49.9953**	0.242	0.5	ug/L	215	Standard
>	Ge	72	526287.7	0.8				ug/L	520809	Standard
	As	75	62653.6	0.5	**50.2687**	0.288	0.6	ug/L	-52	Standard
	Se	82	6502.0	0.1	**50.8075**	0.476	0.9	ug/L	17	Standard
	Se-1	77	4394.6	2.3	**50.1962**	1.546	3.1	ug/L	56	Standard
>	Ga	71	41.7	34.6				mg/L	25	Standard
	Rb	85	811.7	7.3				ug/L	28	Standard
	Y	89	449443.8	0.8				ug/L	447395	Standard
>	Rh	103	28.3	20.4				ug/L	15	Standard
	Mo	98	299240.3	0.5	**98.3551**	0.449	0.5	ug/L	113	Standard
	Ag	107	359054.0	0.7	**49.6967**	0.335	0.7	ug/L	108	Standard
	Cd	111	115287.0	0.4	**49.7893**	0.202	0.4	mg/L	3	Standard
	Cd	114	284203.9	0.6	**49.5756**	0.249	0.5	ug/L	20	Standard
>	In	115	629316.2	0.1				ug/L	625728	Standard
	Sn	118	316403.3	1.4	**48.7968**	0.695	1.4	ug/L	568	Standard
	Sb	123	257145.7	0.4	**49.4396**	0.256	0.5	ug/L	612	Standard
	Ba	135	107880.7	0.2	**49.2873**	0.099	0.2	ug/L	21	Standard
	Ce	140	80.0	12.5				ug/L	245	Standard
>	Tb	159	959375.1	0.6				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	446456.6	0.5	**49.7300**	0.195	0.4	ug/L	15	Standard
	Tl	205	404447.0	0.4	**50.7263**	0.364	0.7	ug/L	13	Standard
	Pb	206	281579.7	0.3	**49.6971**	0.317	0.6	ug/L	264	Standard
	Pb	207	257039.7	0.6	**49.9528**	0.358	0.7	ug/L	222	Standard
	Pb	208	1065428.7	1.4	**50.6922**	0.446	0.9	ug/L	959	Standard
	U	238	401590.9	0.5	**49.8178**	0.056	0.1	ug/L	9	Standard
>	Bi	209	552793.0	0.6				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:40:07
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4465.7	1.7	**5.0623**	0.170	3.4	mg/L	55	Standard
K	39	1175.0	4.1	**4.2914**	0.166	3.9	mg/L	28	Standard
Ca	43	80.0	12.5	**4.6810**	0.869	18.6	mg/L	27	Standard
Fe	54	6475.2	2.0	**4.8865**	0.136	2.8	mg/L	147	Standard
Fe	57	1960.1	2.3	**5.1091**	0.183	3.6	mg/L	268	Standard
> **Sc-1**	45	41946.3	1.7				mg/L	41174	Standard
Cl	35	79383.6	3.3				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2656.9	5.2				ug/L	1950	Standard
P	31	23768.6	2.4				ug/L	21156	Standard
S	34	4000.5	6.6				ug/L	3419	Standard
Sr	88	80.0	43.3				ug/L	72	Standard
C	12	120.0	25.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	12.4	100.1				mg/L	16	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	22111.1	1.9				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.918		
	Al	27	96.811		
	Sc	45			
	Ti	47	99.493		
	V	51	101.201		
	Cr	52	99.838		
	Cr	53			
	Mn	55	100.065		
	Co	59	102.496		
	Ni	60	100.383		
	Cu	65	100.907		
	Zn	66	99.991		
>	Ge	72		101.052	
	As	75	100.537		
	Se	82	101.615		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:40:07
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
Rh	103		
Mo	98	98.355	
Ag	107	99.393	
Cd	111	99.579	
Cd	114		
In	115		100.573
Sn	118	97.594	
Sb	123	98.879	
Ba	135	98.575	
Ce	140		
Tb	159		
Ho	165		
Tl	203	99.460	
Tl	205		
Pb	206		
Pb	207		
Pb	208	101.384	
U	238	99.636	
Bi	209		99.995
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:40:07
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 11:41:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79854.9	1.2				ug/L	76456	Standard
	Be	9	28.3	44.4	**0.0043**	0.011	247.6	ug/L	20	Standard
	Al	27	4860.8	30.8	**0.0170**	0.009	51.0	ug/L	1307	Standard
	Sc	45	40828.3	2.4				ug/L	41174	Standard
	Ti	47	33.7	26.8	**0.0170**	0.026	153.3	ug/L	27	Standard
	V	51	1448.8	4.8	**-0.0250**	0.010	39.6	ug/L	1434	Standard
	Cr	52	7320.1	2.9	**-0.0792**	0.016	19.8	ug/L	7733	Standard
	Cr	53	573.3	8.4	**0.1415**	0.043	30.2	ug/L	442	Standard
	Mn	55	774.7	1.8	**-0.0006**	0.001	182.2	ug/L	723	Standard
	Co	59	305.0	4.6	**0.0098**	0.001	15.1	ug/L	217	Standard
	Ni	60	339.0	2.3	**0.0078**	0.005	67.4	ug/L	304	Standard
	Cu	65	197.7	11.1	**0.0212**	0.010	48.2	ug/L	181	Standard
	Zn	66	269.3	7.5	**0.0362**	0.017	46.8	ug/L	215	Standard
>	**Ge**	72	528956.5	1.1				ug/L	520809	Standard
	As	75	-45.6	52.3	**0.0087**	0.019	224.1	ug/L	-52	Standard
	Se	82	23.2	12.4	**0.0547**	0.023	42.1	ug/L	17	Standard
	Se-1	77	56.7	21.6	**-0.0309**	0.148	479.3	ug/L	56	Standard
>	**Ga**	71	35.0	62.3				mg/L	25	Standard
	Rb	85	25.0	34.6				ug/L	28	Standard
	Y	89	451349.1	0.6				ug/L	447395	Standard
>	**Rh**	103	21.7	48.0				ug/L	15	Standard
	Mo	98	237.5	8.6	**0.0541**	0.007	13.2	ug/L	113	Standard
	Ag	107	234.7	5.8	**0.0196**	0.002	10.5	ug/L	108	Standard
	Cd	111	27.2	17.4	**0.0094**	0.002	21.1	mg/L	3	Standard
	Cd	114	66.4	34.3	**0.0116**	0.004	34.4	ug/L	20	Standard
>	**In**	115	629965.8	0.8				ug/L	625728	Standard
	Sn	118	940.0	21.0	**0.0607**	0.029	48.4	ug/L	568	Standard
	Sb	123	1092.2	32.6	**0.1759**	0.067	38.2	ug/L	612	Standard
	Ba	135	59.0	17.7	**0.0090**	0.005	54.2	ug/L	21	Standard
	Ce	140	21.7	70.5				ug/L	245	Standard
>	**Tb**	159	955018.0	0.8				ug/L	950397	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	126.3	20.6	**0.0132**	0.003	22.7	ug/L	15	Standard
	Tl	205	113.3	18.4	**0.0043**	0.003	62.2	ug/L	13	Standard
	Pb	206	346.7	4.9	**0.0167**	0.003	20.4	ug/L	264	Standard
	Pb	207	322.3	7.2	**0.0158**	0.005	30.9	ug/L	222	Standard
	Pb	208	1248.7	4.5	**0.0104**	0.003	28.9	ug/L	959	Standard
	U	238	111.7	26.1	**0.0134**	0.004	27.1	ug/L	9	Standard
>	**Bi**	209	560384.3	0.8				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:43:18
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	59.6	**0.0047**	0.039	831.6	mg/L	55	Standard
K	39	35.0	37.8	**0.0039**	0.051	1305.2	mg/L	28	Standard
Ca	43	11.7	24.7	**-1.3816**	0.279	20.2	mg/L	27	Standard
Fe	54	175.9	8.8	**0.0403**	0.012	30.1	mg/L	147	Standard
Fe	57	250.0	2.0	**-0.0293**	0.009	29.6	mg/L	268	Standard
> **Sc-1**	45	40828.3	2.4				mg/L	41174	Standard
Cl	35	77022.6	1.0				ug/L	69550	Standard
Kr	83	3.3	34.6				ug/L	1	Standard
Br	81	2493.5	3.8				ug/L	1950	Standard
P	31	23044.2	2.3				ug/L	21156	Standard
S	34	3880.5	1.7				ug/L	3419	Standard
Sr	88	65.0	33.5				ug/L	72	Standard
C	12	130.0	40.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	17	Standard
Dy	164	9.0	113.3				mg/L	16	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	16675.8	0.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.564	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:43:18
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.677
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.368
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:43:18
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141703
Sample Date/Time: Friday, July 01, 2016 11:44:14
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81889.0	0.6				ug/L	76456	Standard
	Be	9	25.0	91.7	**0.0010**	0.019	1981.7	ug/L	20	Standard
	Al	27	20848394.4	0.7	**113.6982**	1.012	0.9	ug/L	1307	Standard
	Sc	45	42434.3	1.1				ug/L	41174	Standard
	Ti	47	234.7	10.2	**0.6592**	0.078	11.8	ug/L	27	Standard
	V	51	28681.8	1.4	**3.4038**	0.038	1.1	ug/L	1434	Standard
	Cr	52	19756.9	2.1	**1.5522**	0.054	3.5	ug/L	7733	Standard
	Cr	53	14119.9	6.2	**14.0078**	0.905	6.5	ug/L	442	Standard
	Mn	55	3334.7	3.0	**0.3535**	0.012	3.4	ug/L	723	Standard
	Co	59	938.4	1.3	**0.0970**	0.001	0.7	ug/L	217	Standard
	Ni	60	2864.9	3.9	**1.2722**	0.046	3.6	ug/L	304	Standard
	Cu	65	1854.4	2.7	**0.8643**	0.032	3.7	ug/L	181	Standard
	Zn	66	2610.6	1.0	**2.0198**	0.039	1.9	ug/L	215	Standard
>	**Ge**	72	504450.0	0.8				ug/L	520809	Standard
	As	75	1324.6	1.2	**1.1530**	0.022	1.9	ug/L	-52	Standard
	Se	82	1104.4	0.5	**8.8990**	0.094	1.1	ug/L	17	Standard
	Se-1	77	1261.1	5.7	**14.5449**	0.840	5.8	ug/L	56	Standard
>	**Ga**	71	50.0	43.6				mg/L	25	Standard
	Rb	85	1121.7	4.1				ug/L	28	Standard
	Y	89	436048.7	1.9				ug/L	447395	Standard
>	**Rh**	103	121.7	29.7				ug/L	15	Standard
	Mo	98	645.7	3.5	**0.2020**	0.005	2.6	ug/L	113	Standard
	Ag	107	223.7	26.2	**0.0200**	0.008	40.7	ug/L	108	Standard
	Cd	111	51.2	16.5	**0.0212**	0.004	16.8	mg/L	3	Standard
	Cd	114	113.2	6.3	**0.0210**	0.002	7.4	ug/L	20	Standard
>	**In**	115	591186.7	1.3				ug/L	625728	Standard
	Sn	118	875.0	14.2	**0.0597**	0.021	34.7	ug/L	568	Standard
	Sb	123	602.8	25.4	**0.0895**	0.030	33.5	ug/L	612	Standard
	Ba	135	16459.3	1.1	**7.9899**	0.039	0.5	ug/L	21	Standard
	Ce	140	880.0	5.0				ug/L	245	Standard
>	**Tb**	159	920155.8	2.2				ug/L	950397	Standard
	Ho	165	50.0	34.6				ug/L	7	Standard
	Tl	203	157.7	7.1	**0.0182**	0.001	6.2	ug/L	15	Standard
	Tl	205	155.0	27.9	**0.0113**	0.006	51.8	ug/L	13	Standard
	Pb	206	453.0	2.5	**0.0428**	0.002	4.5	ug/L	264	Standard
	Pb	207	378.7	4.5	**0.0335**	0.003	9.5	ug/L	222	Standard
	Pb	208	1616.4	3.0	**0.0349**	0.002	5.2	ug/L	959	Standard
	U	238	24675.7	1.0	**3.3100**	0.026	0.8	ug/L	9	Standard
>	**Bi**	209	511192.5	1.2				ug/L	552821	Standard

Sample ID: L1606141703
Report Date/Time: Friday, July 01, 2016 11:46:31
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**14.4476**	14.513	100.4	mg/L	2	Standard
Mg	24	129302.7	0.5	**146.5117**	1.623	1.1	mg/L	55	Standard
K	39	120.0	31.5	**0.3147**	0.137	43.6	mg/L	28	Standard
Ca	43	443.3	15.8	**36.6451**	6.259	17.1	mg/L	27	Standard
Fe	54	170.0	14.6	**0.0304**	0.017	57.5	mg/L	147	Standard
Fe	57	581.7	5.3	**0.9302**	0.090	9.7	mg/L	268	Standard
> **Sc-1**	45	42434.3	1.1				mg/L	41174	Standard
Cl	35	97340.4	1.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	68893.1	4.4				ug/L	1950	Standard
P	31	25483.1	3.6				ug/L	21156	Standard
S	34	3482.1	6.0				ug/L	3419	Standard
Sr	88	398.3	9.6				ug/L	72	Standard
C	12	456.7	3.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	44.0	27.1				mg/L	16	Standard
Ho-1	165	50.0	34.6				mg/L	7	Standard
Er	166	56.7	53.9				mg/L	7	Standard
I	127	49472.4	4.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.106	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.859	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141703
Report Date/Time: Friday, July 01, 2016 11:46:31
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.480
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141703
Report Date/Time: Friday, July 01, 2016 11:46:31
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141704
Sample Date/Time: Friday, July 01, 2016 11:47:26
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84196.6	0.3				ug/L	76456	Standard
	Be	9	33.3	22.9	**0.0072**	0.006	86.7	ug/L	20	Standard
	Al	27	15514677.9	3.0	**82.2819**	2.194	2.7	ug/L	1307	Standard
	Sc	45	43039.4	2.0				ug/L	41174	Standard
	Ti	47	214.3	5.1	**0.5706**	0.026	4.6	ug/L	27	Standard
	V	51	104787.8	1.3	**12.4991**	0.095	0.8	ug/L	1434	Standard
	Cr	52	15259.3	0.7	**0.9095**	0.033	3.7	ug/L	7733	Standard
	Cr	53	5951.2	3.9	**5.4474**	0.187	3.4	ug/L	442	Standard
	Mn	55	4057.5	2.5	**0.4326**	0.014	3.2	ug/L	723	Standard
	Co	59	713.7	6.2	**0.0633**	0.005	7.8	ug/L	217	Standard
	Ni	60	1861.4	2.8	**0.7406**	0.029	3.9	ug/L	304	Standard
	Cu	65	1343.1	2.6	**0.5817**	0.025	4.2	ug/L	181	Standard
	Zn	66	2743.6	1.9	**2.0501**	0.019	0.9	ug/L	215	Standard
>	Ge	72	522881.1	1.2				ug/L	520809	Standard
	As	75	2151.6	2.6	**1.7810**	0.033	1.9	ug/L	-52	Standard
	Se	82	460.2	1.1	**3.5021**	0.008	0.2	ug/L	17	Standard
	Se-1	77	457.3	2.7	**4.6435**	0.083	1.8	ug/L	56	Standard
>	Ga	71	48.3	41.8				mg/L	25	Standard
	Rb	85	1016.7	4.8				ug/L	28	Standard
	Y	89	448180.4	0.4				ug/L	447395	Standard
>	Rh	103	61.7	28.5				ug/L	15	Standard
	Mo	98	2950.5	2.8	**0.9697**	0.025	2.6	ug/L	113	Standard
	Ag	107	125.3	5.6	**0.0049**	0.001	22.3	ug/L	108	Standard
	Cd	111	47.4	9.4	**0.0186**	0.002	10.0	mg/L	3	Standard
	Cd	114	120.7	5.3	**0.0216**	0.001	5.2	ug/L	20	Standard
>	In	115	614296.5	0.6				ug/L	625728	Standard
	Sn	118	906.7	10.1	**0.0592**	0.014	23.4	ug/L	568	Standard
	Sb	123	614.0	19.1	**0.0872**	0.022	25.7	ug/L	612	Standard
	Ba	135	28748.9	0.6	**13.4426**	0.042	0.3	ug/L	21	Standard
	Ce	140	528.3	5.7				ug/L	245	Standard
>	Tb	159	947954.0	1.2				ug/L	950397	Standard
	Ho	165	23.3	12.4				ug/L	7	Standard
	Tl	203	129.3	12.8	**0.0142**	0.002	13.1	ug/L	15	Standard
	Tl	205	116.7	9.9	**0.0055**	0.002	28.8	ug/L	13	Standard
	Pb	206	445.0	3.2	**0.0379**	0.002	6.0	ug/L	264	Standard
	Pb	207	341.0	4.4	**0.0228**	0.003	12.0	ug/L	222	Standard
	Pb	208	1493.7	0.5	**0.0256**	0.000	1.6	ug/L	959	Standard
	U	238	70565.6	0.2	**9.0963**	0.034	0.4	ug/L	9	Standard
>	Bi	209	531969.0	0.4				ug/L	552821	Standard

Sample ID: L1606141704
Report Date/Time: Friday, July 01, 2016 11:49:43
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	88574.8	1.4	**98.9343**	0.707	0.7	mg/L	55	Standard
K	39	85.0	11.8	**0.1808**	0.038	21.2	mg/L	28	Standard
Ca	43	236.7	3.2	**18.1358**	1.082	6.0	mg/L	27	Standard
Fe	54	139.8	11.5	**0.0060**	0.011	187.7	mg/L	147	Standard
Fe	57	440.0	15.9	**0.4880**	0.189	38.8	mg/L	268	Standard
> **Sc-1**	45	43039.4	2.0				mg/L	41174	Standard
Cl	35	92305.0	1.1				ug/L	69550	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	47838.7	1.5				ug/L	1950	Standard
P	31	25832.0	1.0				ug/L	21156	Standard
S	34	3398.7	3.3				ug/L	3419	Standard
Sr	88	276.7	16.4				ug/L	72	Standard
C	12	396.7	10.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	28.9	100.6				mg/L	16	Standard
Ho-1	165	23.3	12.4				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	7	Standard
I	127	50935.5	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.125	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.398	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141704
Report Date/Time: Friday, July 01, 2016 11:49:43
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.173
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.228
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141708
Sample Date/Time: Friday, July 01, 2016 11:50:37
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89411.4	1.5				ug/L	76456	Standard
	Be	9	40.0	65.0	**0.0106**	0.020	184.8	ug/L	20	Standard
	Al	27	22078727.0	1.3	**110.2973**	2.573	2.3	ug/L	1307	Standard
	Sc	45	45105.4	2.6				ug/L	41174	Standard
	Ti	47	320.0	7.2	**0.8822**	0.060	6.8	ug/L	27	Standard
	V	51	99984.6	2.1	**11.7774**	0.066	0.6	ug/L	1434	Standard
	Cr	52	21104.0	1.8	**1.5998**	0.060	3.7	ug/L	7733	Standard
	Cr	53	17553.5	0.8	**16.6868**	0.266	1.6	ug/L	442	Standard
	Mn	55	6430.0	0.9	**0.7351**	0.014	1.9	ug/L	723	Standard
	Co	59	852.7	2.7	**0.0802**	0.004	4.4	ug/L	217	Standard
	Ni	60	2949.0	1.3	**1.2465**	0.031	2.4	ug/L	304	Standard
	Cu	65	1272.1	1.7	**0.5397**	0.010	1.8	ug/L	181	Standard
	Zn	66	3425.7	3.7	**2.5723**	0.060	2.3	ug/L	215	Standard
>	Ge	72	528948.8	1.6				ug/L	520809	Standard
	As	75	3475.1	1.0	**2.8171**	0.043	1.5	ug/L	-52	Standard
	Se	82	859.6	2.0	**6.5725**	0.024	0.4	ug/L	17	Standard
	Se-1	77	1345.7	4.1	**14.8113**	0.393	2.7	ug/L	56	Standard
>	Ga	71	66.7	11.5				mg/L	25	Standard
	Rb	85	4762.4	2.0				ug/L	28	Standard
	Y	89	458548.0	1.5				ug/L	447395	Standard
>	Rh	103	130.0	17.6				ug/L	15	Standard
	Mo	98	5253.1	0.6	**1.7250**	0.023	1.4	ug/L	113	Standard
	Ag	107	143.3	4.2	**0.0072**	0.001	7.4	ug/L	108	Standard
	Cd	111	26.0	42.6	**0.0090**	0.005	53.4	mg/L	3	Standard
	Cd	114	74.8	31.1	**0.0133**	0.004	31.5	ug/L	20	Standard
>	In	115	621514.7	1.7				ug/L	625728	Standard
	Sn	118	2120.1	10.2	**0.2472**	0.030	12.0	ug/L	568	Standard
	Sb	123	722.8	13.7	**0.1069**	0.018	16.5	ug/L	612	Standard
	Ba	135	16530.7	1.8	**7.6319**	0.034	0.4	ug/L	21	Standard
	Ce	140	651.7	0.4				ug/L	245	Standard
>	Tb	159	970516.7	2.5				ug/L	950397	Standard
	Ho	165	30.0	28.9				ug/L	7	Standard
	Tl	203	115.3	7.9	**0.0125**	0.001	8.0	ug/L	15	Standard
	Tl	205	93.3	21.7	**0.0024**	0.003	115.8	ug/L	13	Standard
	Pb	206	443.0	3.9	**0.0372**	0.003	8.7	ug/L	264	Standard
	Pb	207	377.3	5.1	**0.0298**	0.003	10.5	ug/L	222	Standard
	Pb	208	1645.4	1.3	**0.0327**	0.002	5.5	ug/L	959	Standard
	U	238	38430.4	2.4	**4.9290**	0.066	1.3	ug/L	9	Standard
>	Bi	209	534585.3	1.1				ug/L	552821	Standard

Sample ID: L1606141708
Report Date/Time: Friday, July 01, 2016 11:52:54
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.3062**	16.110	173.1	mg/L	2	Standard
Mg	24	132828.1	1.2	**141.6540**	4.533	3.2	mg/L	55	Standard
K	39	191.7	1.5	**0.5400**	0.021	3.8	mg/L	28	Standard
Ca	43	260.0	27.1	**19.0243**	5.272	27.7	mg/L	27	Standard
Fe	54	173.3	10.7	**0.0254**	0.016	61.2	mg/L	147	Standard
Fe	57	418.3	15.9	**0.3725**	0.215	57.6	mg/L	268	Standard
> **Sc-1**	45	45105.4	2.6				mg/L	41174	Standard
Cl	35	100939.1	0.9				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	47925.8	4.8				ug/L	1950	Standard
P	31	29869.4	2.0				ug/L	21156	Standard
S	34	3397.0	1.1				ug/L	3419	Standard
Sr	88	423.3	25.1				ug/L	72	Standard
C	12	363.3	14.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	21.9	26.4				mg/L	16	Standard
Ho-1	165	30.0	28.9				mg/L	7	Standard
Er	166	30.0	0.0				mg/L	7	Standard
I	127	41419.9	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.945	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.563	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141708
Report Date/Time: Friday, July 01, 2016 11:52:54
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.327
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.701
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141708
Report Date/Time: Friday, July 01, 2016 11:52:54
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141709
Sample Date/Time: Friday, July 01, 2016 11:53:49
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89000.7	1.7				ug/L	76456	Standard
	Be	9	21.7	53.3	**-0.0032**	0.009	283.0	ug/L	20	Standard
	Al	27	81398.6	19.6	**0.3975**	0.073	18.3	ug/L	1307	Standard
	Sc	45	44555.4	0.6				ug/L	41174	Standard
	Ti	47	68.3	11.1	**0.1083**	0.021	19.5	ug/L	27	Standard
	V	51	3436.2	9.0	**0.1857**	0.034	18.2	ug/L	1434	Standard
	Cr	52	29812.6	1.5	**2.4193**	0.055	2.3	ug/L	7733	Standard
	Cr	53	3683.8	3.4	**2.9342**	0.118	4.0	ug/L	442	Standard
	Mn	55	6681.5	2.0	**0.7101**	0.015	2.0	ug/L	723	Standard
	Co	59	555.0	20.9	**0.0372**	0.014	37.4	ug/L	217	Standard
	Ni	60	3463.7	2.0	**1.3816**	0.031	2.2	ug/L	304	Standard
	Cu	65	1056.0	4.0	**0.4017**	0.019	4.6	ug/L	181	Standard
	Zn	66	4593.4	1.7	**3.2666**	0.053	1.6	ug/L	215	Standard
>	Ge	72	566488.4	0.2				ug/L	520809	Standard
	As	75	-5.4	928.8	**0.0411**	0.038	91.4	ug/L	-52	Standard
	Se	82	29.8	40.3	**0.0905**	0.087	96.5	ug/L	17	Standard
	Se-1	77	89.0	15.9	**0.2724**	0.151	55.6	ug/L	56	Standard
>	Ga	71	38.3	15.1				mg/L	25	Standard
	Rb	85	258.3	31.9				ug/L	28	Standard
	Y	89	491649.6	0.6				ug/L	447395	Standard
>	Rh	103	20.0	0.0				ug/L	15	Standard
	Mo	98	1080.6	3.0	**0.3054**	0.011	3.5	ug/L	113	Standard
	Ag	107	233.3	81.3	**0.0171**	0.024	142.6	ug/L	108	Standard
	Cd	111	62.5	42.8	**0.0227**	0.011	47.4	mg/L	3	Standard
	Cd	114	173.3	77.7	**0.0281**	0.022	77.8	ug/L	20	Standard
>	In	115	678768.0	0.3				ug/L	625728	Standard
	Sn	118	3542.1	5.1	**0.4232**	0.027	6.3	ug/L	568	Standard
	Sb	123	458.8	15.3	**0.0481**	0.013	26.4	ug/L	612	Standard
	Ba	135	1179.0	5.3	**0.4817**	0.027	5.6	ug/L	21	Standard
	Ce	140	250.0	8.7				ug/L	245	Standard
>	Tb	159	1017740.7	0.9				ug/L	950397	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	186.0	120.6	**0.0185**	0.023	124.9	ug/L	15	Standard
	Tl	205	108.3	94.3	**0.0029**	0.012	410.9	ug/L	13	Standard
	Pb	206	582.3	26.2	**0.0521**	0.024	46.8	ug/L	264	Standard
	Pb	207	512.3	24.2	**0.0467**	0.022	46.6	ug/L	222	Standard
	Pb	208	1988.1	15.4	**0.0399**	0.013	32.1	ug/L	959	Standard
	U	238	126.0	91.3	**0.0142**	0.013	92.3	ug/L	9	Standard
>	Bi	209	592807.4	1.2				ug/L	552821	Standard

Sample ID: L1606141709
Report Date/Time: Friday, July 01, 2016 11:56:06
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	260.0	26.4	**0.2207**	0.075	34.1	mg/L	55	Standard
K	39	20.0	25.0	**-0.0603**	0.018	29.6	mg/L	28	Standard
Ca	43	25.0	40.0	**-0.3533**	0.844	239.0	mg/L	27	Standard
Fe	54	209.5	1.2	**0.0530**	0.003	4.8	mg/L	147	Standard
Fe	57	231.7	15.2	**-0.1465**	0.097	65.9	mg/L	268	Standard
Sc-1	45	44555.4	0.6				mg/L	41174	Standard
Cl	35	92666.6	2.2				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	3473.7	14.7				ug/L	1950	Standard
P	31	23892.2	1.7				ug/L	21156	Standard
S	34	3687.1	4.5				ug/L	3419	Standard
Sr	88	46.7	37.6				ug/L	72	Standard
C	12	203.3	12.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	32.1	49.0				mg/L	16	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	7	Standard
I	127	2500.2	19.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.408	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.771	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141709
Report Date/Time: Friday, July 01, 2016 11:56:06
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.477
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.233
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144101
Sample Date/Time: Friday, July 01, 2016 11:57:01
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90118.9	1.7				ug/L	76456	Standard
	Be	9	590.0	6.6	**0.4275**	0.033	7.7	ug/L	20	Standard
	Al	27	41637732.7	0.8	**206.3623**	2.003	1.0	ug/L	1307	Standard
	Sc	45	52748.3	1.3				ug/L	41174	Standard
	Ti	47	25849.4	0.9	**75.9425**	0.582	0.8	ug/L	27	Standard
	V	51	119191.4	0.7	**13.6962**	0.128	0.9	ug/L	1434	Standard
	Cr	52	206171.6	0.2	**23.4624**	0.147	0.6	ug/L	7733	Standard
	Cr	53	26030.7	3.1	**24.2644**	0.827	3.4	ug/L	442	Standard
	Mn	55	3362426.1	1.3	**425.5410**	6.574	1.5	ug/L	723	Standard
	Co	59	45394.2	0.9	**5.6490**	0.060	1.1	ug/L	217	Standard
	Ni	60	38170.7	0.8	**17.4748**	0.075	0.4	ug/L	304	Standard
	Cu	65	32375.9	0.9	**15.1289**	0.102	0.7	ug/L	181	Standard
	Zn	66	132720.1	0.4	**103.6234**	0.326	0.3	ug/L	215	Standard
>	Ge	72	543517.2	0.4				ug/L	520809	Standard
	As	75	40511.0	0.4	**31.4895**	0.240	0.8	ug/L	-52	Standard
	Se	82	271.3	7.7	**1.9305**	0.150	7.7	ug/L	17	Standard
	Se-1	77	159.7	0.7	**1.1051**	0.008	0.7	ug/L	56	Standard
>	Ga	71	10717.1	0.7				mg/L	25	Standard
	Rb	85	127736.4	2.6				ug/L	28	Standard
	Y	89	566400.0	1.2				ug/L	447395	Standard
>	Rh	103	230.0	10.0				ug/L	15	Standard
	Mo	98	19958.9	0.3	**6.3798**	0.036	0.6	ug/L	113	Standard
	Ag	107	307.3	4.7	**0.0287**	0.002	7.3	ug/L	108	Standard
	Cd	111	352.1	11.3	**0.1461**	0.017	11.5	mg/L	3	Standard
	Cd	114	941.3	14.8	**0.1602**	0.023	14.2	ug/L	20	Standard
>	In	115	644859.8	0.7				ug/L	625728	Standard
	Sn	118	2065.1	2.2	**0.2271**	0.006	2.7	ug/L	568	Standard
	Sb	123	1536.5	9.5	**0.2547**	0.026	10.2	ug/L	612	Standard
	Ba	135	755795.9	0.3	**337.0929**	2.903	0.9	ug/L	21	Standard
	Ce	140	578983.3	0.3				ug/L	245	Standard
>	Tb	159	997623.6	0.4				ug/L	950397	Standard
	Ho	165	8542.4	1.8				ug/L	7	Standard
	Tl	203	679.7	2.4	**0.0742**	0.002	2.6	ug/L	15	Standard
	Tl	205	551.7	3.8	**0.0587**	0.002	3.1	ug/L	13	Standard
	Pb	206	82465.5	0.5	**14.3726**	0.198	1.4	ug/L	264	Standard
	Pb	207	67377.8	0.6	**12.9242**	0.183	1.4	ug/L	222	Standard
	Pb	208	291536.5	0.2	**13.6926**	0.174	1.3	ug/L	959	Standard
	U	238	4078.5	1.0	**0.5004**	0.006	1.2	ug/L	9	Standard
>	Bi	209	558632.4	1.1				ug/L	552821	Standard

Sample ID: L1606144101
Report Date/Time: Friday, July 01, 2016 11:59:18
Page 1

Approved: July 02, 2016

Na	23	6.7	43.3	**15.4842**	6.494	41.9	mg/L	2	Standard
Mg	24	15246.0	1.4	**13.8434**	0.267	1.9	mg/L	55	Standard
K	39	708.3	3.5	**1.9891**	0.079	4.0	mg/L	28	Standard
Ca	43	650.0	13.5	**43.6069**	5.619	12.9	mg/L	27	Standard
Fe	54	24640.5	1.6	**14.9863**	0.360	2.4	mg/L	147	Standard
Fe	57	6984.9	0.7	**15.9501**	0.213	1.3	mg/L	268	Standard
Sc-1	45	52748.3	1.3				mg/L	41174	Standard
Cl	35	77949.4	2.2				ug/L	69550	Standard
Kr	83	4.0	50.0				ug/L	1	Standard
Br	81	47491.0	0.5				ug/L	1950	Standard
P	31	44155.9	1.6				ug/L	21156	Standard
S	34	4003.9	3.1				ug/L	3419	Standard
Sr	88	953.4	8.4				ug/L	72	Standard
C	12	680.0	10.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	17	Standard
Dy	164	14685.5	3.1				mg/L	16	Standard
Ho-1	165	8542.4	1.8				mg/L	7	Standard
Er	166	7695.3	3.1				mg/L	7	Standard
I	127	857640.2	8.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.871	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.360	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144101
Report Date/Time: Friday, July 01, 2016 11:59:18
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.058
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.051
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606144101
Report Date/Time: Friday, July 01, 2016 11:59:18
Page 3

Approved: July 02, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144102
Sample Date/Time: Friday, July 01, 2016 12:00:12
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	98658.5	1.5				ug/L	76456	Standard
	Be	9	2670.2	2.5	**1.8290**	0.053	2.9	ug/L	20	Standard
	Al	27	100018655.9	1.5	**452.7643**	1.271	0.3	ug/L	1307	Standard
	Sc	45	67269.1	3.4				ug/L	41174	Standard
	Ti	47	65558.9	1.5	**191.1007**	3.376	1.8	ug/L	27	Standard
	V	51	394103.6	0.8	**45.3542**	0.603	1.3	ug/L	1434	Standard
	Cr	52	244910.5	0.4	**27.8063**	0.223	0.8	ug/L	7733	Standard
	Cr	53	30011.4	1.8	**27.7958**	0.566	2.0	ug/L	442	Standard
	Mn	55	9446087.0	0.8	**1185.4895**	15.339	1.3	ug/L	723	Standard
	Co	59	127992.0	0.5	**15.8451**	0.159	1.0	ug/L	217	Standard
	Ni	60	80262.0	0.9	**36.5997**	0.485	1.3	ug/L	304	Standard
	Cu	65	41760.1	1.2	**19.3697**	0.328	1.7	ug/L	181	Standard
	Zn	66	117095.1	0.6	**90.6239**	0.738	0.8	ug/L	215	Standard
>	Ge	72	548186.8	0.5				ug/L	520809	Standard
	As	75	12213.4	1.0	**9.4446**	0.140	1.5	ug/L	-52	Standard
	Se	82	168.5	1.4	**1.1404**	0.019	1.7	ug/L	17	Standard
	Se-1	77	183.7	6.1	**1.3567**	0.128	9.4	ug/L	56	Standard
>	Ga	71	38156.3	0.9				mg/L	25	Standard
	Rb	85	401776.2	1.3				ug/L	28	Standard
	Y	89	977933.0	0.9				ug/L	447395	Standard
>	Rh	103	285.0	6.1				ug/L	15	Standard
	Mo	98	2398.4	0.8	**0.7441**	0.003	0.4	ug/L	113	Standard
	Ag	107	404.7	5.9	**0.0417**	0.003	8.1	ug/L	108	Standard
	Cd	111	528.3	1.5	**0.2199**	0.003	1.2	mg/L	3	Standard
	Cd	114	1302.9	4.8	**0.2213**	0.008	3.8	ug/L	20	Standard
>	In	115	646109.7	1.1				ug/L	625728	Standard
	Sn	118	1073.4	7.7	**0.0773**	0.012	15.1	ug/L	568	Standard
	Sb	123	1069.4	22.8	**0.1664**	0.044	26.2	ug/L	612	Standard
	Ba	135	1753079.8	0.5	**780.4145**	5.897	0.8	ug/L	21	Standard
	Ce	140	2444826.3	0.9				ug/L	245	Standard
>	Tb	159	1048030.7	0.8				ug/L	950397	Standard
	Ho	165	43214.9	0.3				ug/L	7	Standard
	Tl	203	1815.1	1.2	**0.2022**	0.002	1.2	ug/L	15	Standard
	Tl	205	1641.8	6.8	**0.1969**	0.014	6.9	ug/L	13	Standard
	Pb	206	125036.8	0.6	**22.1250**	0.076	0.3	ug/L	264	Standard
	Pb	207	102892.9	0.5	**20.0422**	0.120	0.6	ug/L	222	Standard
	Pb	208	445404.9	0.2	**21.2431**	0.093	0.4	ug/L	959	Standard
	U	238	8589.4	1.3	**1.0692**	0.015	1.4	ug/L	9	Standard
>	Bi	209	550757.7	0.3				ug/L	552821	Standard

Sample ID: L1606144102
Report Date/Time: Friday, July 01, 2016 12:02:29
Page 1

Approved: July 02, 2016

Na	23	15.0	33.3	**27.3614**	8.722	31.9	mg/L	2	Standard
Mg	24	11512.7	3.2	**8.1734**	0.184	2.3	mg/L	55	Standard
K	39	1368.4	5.6	**3.0793**	0.098	3.2	mg/L	28	Standard
Ca	43	1295.1	4.3	**69.6682**	4.720	6.8	mg/L	27	Standard
Fe	54	38707.5	2.1	**18.4898**	0.545	2.9	mg/L	147	Standard
Fe	57	11109.1	1.4	**20.0998**	0.536	2.7	mg/L	268	Standard
> **Sc-1**	45	67269.1	3.4				mg/L	41174	Standard
Cl	35	76892.0	1.5				ug/L	69550	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	13365.9	1.5				ug/L	1950	Standard
P	31	63609.9	1.5				ug/L	21156	Standard
S	34	3752.1	6.7				ug/L	3419	Standard
Sr	88	1298.4	6.6				ug/L	72	Standard
C	12	780.0	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	20.4				mg/L	17	Standard
Dy	164	72319.7	1.0				mg/L	16	Standard
Ho-1	165	43214.9	0.3				mg/L	7	Standard
Er	166	38789.6	1.4				mg/L	7	Standard
I	127	200464.2	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.040	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144102
Report Date/Time: Friday, July 01, 2016 12:02:29
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.257	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.627	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	

Sample ID: L1606144102
Report Date/Time: Friday, July 01, 2016 12:02:29
Page 3

Approved: July 02, 2016

Mn 55 Upper, S, EEE	Mn	55
Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144201 WG574416-02
Sample Date/Time: Friday, July 01, 2016 12:03:24
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	91136.7	2.7				ug/L	76456	Standard
	Be	9	201.7	10.3	**0.1314**	0.018	13.5	ug/L	20	Standard
	Al	27	21905405.8	1.2	**107.3706**	1.869	1.7	ug/L	1307	Standard
	Sc	45	50086.0	0.8				ug/L	41174	Standard
	Ti	47	9316.5	1.4	**26.0675**	0.608	2.3	ug/L	27	Standard
	V	51	52523.0	0.3	**5.6447**	0.076	1.3	ug/L	1434	Standard
	Cr	52	28573.6	1.1	**2.2609**	0.041	1.8	ug/L	7733	Standard
	Cr	53	3023.6	5.3	**2.3192**	0.157	6.8	ug/L	442	Standard
	Mn	55	526886.3	1.1	**63.5454**	0.695	1.1	ug/L	723	Standard
	Co	59	12298.0	1.4	**1.4386**	0.020	1.4	ug/L	217	Standard
	Ni	60	9400.9	1.0	**3.9901**	0.052	1.3	ug/L	304	Standard
	Cu	65	4207.6	2.8	**1.8116**	0.065	3.6	ug/L	181	Standard
	Zn	66	23172.4	0.3	**17.1155**	0.171	1.0	ug/L	215	Standard
>	Ge	72	569574.4	1.1				ug/L	520809	Standard
	As	75	2039.6	1.1	**1.5560**	0.025	1.6	ug/L	-52	Standard
	Se	82	85.8	3.3	**0.4942**	0.015	3.0	ug/L	17	Standard
	Se-1	77	88.7	8.5	**0.2643**	0.088	33.1	ug/L	56	Standard
>	Ga	71	3267.0	3.2				mg/L	25	Standard
	Rb	85	51683.0	1.3				ug/L	28	Standard
	Y	89	529527.6	0.3				ug/L	447395	Standard
>	Rh	103	150.0	5.8				ug/L	15	Standard
	Mo	98	1541.7	1.1	**0.4475**	0.001	0.3	ug/L	113	Standard
	Ag	107	153.0	7.4	**0.0069**	0.002	23.0	ug/L	108	Standard
	Cd	111	40.7	6.3	**0.0140**	0.001	8.1	mg/L	3	Standard
	Cd	114	102.3	14.8	**0.0166**	0.003	15.4	ug/L	20	Standard
>	In	115	676532.0	0.8				ug/L	625728	Standard
	Sn	118	971.7	4.9	**0.0555**	0.008	14.3	ug/L	568	Standard
	Sb	123	639.0	14.8	**0.0807**	0.018	21.8	ug/L	612	Standard
	Ba	135	197467.2	0.8	**83.9345**	0.680	0.8	ug/L	21	Standard
	Ce	140	158462.8	1.7				ug/L	245	Standard
>	Tb	159	1025960.2	1.0				ug/L	950397	Standard
	Ho	165	2715.2	3.4				ug/L	7	Standard
	Tl	203	280.3	9.2	**0.0292**	0.003	9.9	ug/L	15	Standard
	Tl	205	271.7	10.1	**0.0229**	0.003	13.4	ug/L	13	Standard
	Pb	206	9533.7	0.7	**1.5691**	0.011	0.7	ug/L	264	Standard
	Pb	207	7883.1	1.1	**1.4223**	0.009	0.6	ug/L	222	Standard
	Pb	208	34084.4	0.9	**1.5063**	0.007	0.5	ug/L	959	Standard
	U	238	20271.2	0.7	**2.4081**	0.030	1.3	ug/L	9	Standard
>	Bi	209	577230.0	0.8				ug/L	552821	Standard

Sample ID: L1606144201 WG574416-02
Report Date/Time: Friday, July 01, 2016 12:05:41
Page 1

Approved: July 02, 2016

Na	23	10.0	86.6	**24.6403**	21.507	87.3	mg/L	2	Standard
Mg	24	4422.3	4.5	**4.1870**	0.202	4.8	mg/L	55	Standard
K	39	186.7	8.6	**0.4573**	0.052	11.3	mg/L	28	Standard
Ca	43	566.7	10.9	**39.8634**	4.346	10.9	mg/L	27	Standard
Fe	54	2666.0	2.2	**1.6199**	0.041	2.5	mg/L	147	Standard
Fe	57	1331.7	5.5	**2.5595**	0.178	6.9	mg/L	268	Standard
> **Sc-1**	45	50086.0	0.8				mg/L	41174	Standard
Cl	35	83929.2	1.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	13155.7	1.8				ug/L	1950	Standard
P	31	31337.4	1.4				ug/L	21156	Standard
S	34	3528.7	1.1				ug/L	3419	Standard
Sr	88	476.7	5.8				ug/L	72	Standard
C	12	400.0	7.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	4673.5	1.6				mg/L	16	Standard
Ho-1	165	2715.2	3.4				mg/L	7	Standard
Er	166	2656.9	8.5				mg/L	7	Standard
I	127	16687.6	14.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.202	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.363	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144201 WG574416-02
Report Date/Time: Friday, July 01, 2016 12:05:41
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.119
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.415
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606144201 WG574416-02
Report Date/Time: Friday, July 01, 2016 12:05:41
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144202
Sample Date/Time: Friday, July 01, 2016 12:06:35
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90507.9	1.9				ug/L	76456	Standard
	Be	9	248.3	5.8	0.1675	0.008	4.9	ug/L	20	Standard
	Al	27	22277088.2	0.8	109.9375	1.745	1.6	ug/L	1307	Standard
	Sc	45	50101.1	3.7				ug/L	41174	Standard
	Ti	47	12264.6	1.2	34.7196	0.584	1.7	ug/L	27	Standard
	V	51	62744.3	1.8	6.8585	0.146	2.1	ug/L	1434	Standard
	Cr	52	32463.4	1.9	2.7415	0.091	3.3	ug/L	7733	Standard
	Cr	53	3775.5	3.5	3.0371	0.138	4.6	ug/L	442	Standard
	Mn	55	731304.2	2.1	89.2163	2.199	2.5	ug/L	723	Standard
	Co	59	14984.4	2.2	1.7791	0.048	2.7	ug/L	217	Standard
	Ni	60	11028.3	1.8	4.7605	0.068	1.4	ug/L	304	Standard
	Cu	65	5131.2	1.5	2.2507	0.042	1.9	ug/L	181	Standard
	Zn	66	19672.8	1.3	14.6652	0.250	1.7	ug/L	215	Standard
>	Ge	72	563354.5	0.6				ug/L	520809	Standard
	As	75	2285.7	4.9	1.7571	0.090	5.1	ug/L	-52	Standard
	Se	82	78.7	24.0	0.4498	0.141	31.2	ug/L	17	Standard
	Se-1	77	96.3	4.2	0.3571	0.042	11.8	ug/L	56	Standard
>	Ga	71	4088.9	0.8				mg/L	25	Standard
	Rb	85	66167.5	0.6				ug/L	28	Standard
	Y	89	527047.3	1.0				ug/L	447395	Standard
>	Rh	103	133.3	20.7				ug/L	15	Standard
	Mo	98	1560.3	2.2	0.4569	0.008	1.8	ug/L	113	Standard
	Ag	107	236.0	37.0	0.0178	0.011	63.3	ug/L	108	Standard
	Cd	111	70.9	65.6	0.0263	0.019	71.1	mg/L	3	Standard
	Cd	114	182.9	70.7	0.0299	0.021	70.2	ug/L	20	Standard
>	In	115	671365.1	1.0				ug/L	625728	Standard
	Sn	118	1011.7	2.2	0.0623	0.004	5.8	ug/L	568	Standard
	Sb	123	671.0	17.2	0.0874	0.022	24.8	ug/L	612	Standard
	Ba	135	208248.7	0.6	89.2003	0.372	0.4	ug/L	21	Standard
	Ce	140	195369.9	1.1				ug/L	245	Standard
>	Tb	159	1017569.8	0.3				ug/L	950397	Standard
	Ho	165	3448.7	3.2				ug/L	7	Standard
	Tl	203	464.3	26.6	0.0488	0.013	26.2	ug/L	15	Standard
	Tl	205	373.3	2.0	0.0351	0.001	2.1	ug/L	13	Standard
	Pb	206	11404.0	0.3	1.8871	0.014	0.7	ug/L	264	Standard
	Pb	207	9244.8	0.8	1.6776	0.026	1.6	ug/L	222	Standard
	Pb	208	39660.1	0.9	1.7621	0.018	1.0	ug/L	959	Standard
	U	238	20504.2	1.2	2.4376	0.012	0.5	ug/L	9	Standard
>	Bi	209	576748.8	0.8				ug/L	552821	Standard

Sample ID: L1606144202
Report Date/Time: Friday, July 01, 2016 12:08:52
Page 1

Approved: July 02, 2016

Na	23	8.3	34.6	**20.5955**	7.569	36.8	mg/L	2	Standard
Mg	24	4662.4	4.9	**4.4148**	0.085	1.9	mg/L	55	Standard
K	39	218.3	22.9	**0.5540**	0.135	24.3	mg/L	28	Standard
Ca	43	601.7	7.9	**42.4925**	3.322	7.8	mg/L	27	Standard
Fe	54	3310.4	1.9	**2.0364**	0.082	4.1	mg/L	147	Standard
Fe	57	1525.1	5.8	**3.0549**	0.352	11.5	mg/L	268	Standard
> **Sc-1**	45	50101.1	3.7				mg/L	41174	Standard
Cl	35	83923.1	0.7				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	11030.7	1.9				ug/L	1950	Standard
P	31	32000.4	1.7				ug/L	21156	Standard
S	34	3522.1	3.8				ug/L	3419	Standard
Sr	88	531.7	5.7				ug/L	72	Standard
C	12	333.3	12.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	5934.4	7.8				mg/L	16	Standard
Ho-1	165	3448.7	3.2				mg/L	7	Standard
Er	166	3343.7	6.8				mg/L	7	Standard
I	127	14929.0	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.379	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.169	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144202
Report Date/Time: Friday, July 01, 2016 12:08:52
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.293
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.328
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606144202
Report Date/Time: Friday, July 01, 2016 12:08:52
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144203S WG574416-08
Sample Date/Time: Friday, July 01, 2016 12:09:47
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90030.2	2.8				ug/L	76456	Standard
	Be	9	67451.5	0.8	**51.1736**	1.267	2.5	ug/L	20	Standard
	Al	27	22083553.0	1.2	**109.5762**	1.952	1.8	ug/L	1307	Standard
	Sc	45	48706.5	1.6				ug/L	41174	Standard
	Ti	47	11744.6	3.0	**33.6397**	0.840	2.5	ug/L	27	Standard
	V	51	504596.4	0.3	**57.2364**	0.479	0.8	ug/L	1434	Standard
	Cr	52	455560.7	0.5	**51.7411**	0.108	0.2	ug/L	7733	Standard
	Cr	53	56769.5	0.3	**52.1372**	0.385	0.7	ug/L	442	Standard
	Mn	55	1036346.8	0.7	**127.9850**	0.471	0.4	ug/L	723	Standard
	Co	59	423691.1	0.7	**51.7179**	0.252	0.5	ug/L	217	Standard
	Ni	60	117301.3	0.2	**52.7412**	0.343	0.7	ug/L	304	Standard
	Cu	65	109232.0	1.3	**50.0075**	0.589	1.2	ug/L	181	Standard
	Zn	66	89717.5	1.0	**68.3316**	0.407	0.6	ug/L	215	Standard
>	**Ge**	72	556663.9	0.5				ug/L	520809	Standard
	As	75	68119.8	0.9	**51.6696**	0.438	0.8	ug/L	-52	Standard
	Se	82	6698.0	0.6	**49.4767**	0.038	0.1	ug/L	17	Standard
	Se-1	77	4484.0	0.7	**48.3919**	0.526	1.1	ug/L	56	Standard
>	**Ga**	71	4812.4	3.6				mg/L	25	Standard
	Rb	85	61444.3	0.8				ug/L	28	Standard
	Y	89	517239.3	0.8				ug/L	447395	Standard
>	**Rh**	103	106.7	32.9				ug/L	15	Standard
	Mo	98	1731.4	0.3	**0.5186**	0.008	1.5	ug/L	113	Standard
	Ag	107	354175.3	0.9	**46.7205**	0.584	1.2	ug/L	108	Standard
	Cd	111	119010.3	1.4	**48.9848**	0.748	1.5	mg/L	3	Standard
	Cd	114	293416.8	0.7	**48.7814**	0.554	1.1	ug/L	20	Standard
>	**In**	115	660339.6	1.1				ug/L	625728	Standard
	Sn	118	1475.1	6.5	**0.1329**	0.012	9.2	ug/L	568	Standard
	Sb	123	188284.4	1.5	**34.4893**	0.374	1.1	ug/L	612	Standard
	Ba	135	310505.8	0.4	**135.2331**	0.887	0.7	ug/L	21	Standard
	Ce	140	169550.1	0.7				ug/L	245	Standard
>	**Tb**	159	1009819.6	1.8				ug/L	950397	Standard
	Ho	165	3057.0	3.5				ug/L	7	Standard
	Tl	203	459336.1	0.3	**49.1469**	0.484	1.0	ug/L	15	Standard
	Tl	205	419582.5	1.2	**50.5538**	1.161	2.3	ug/L	13	Standard
	Pb	206	306250.8	0.1	**51.9221**	0.623	1.2	ug/L	264	Standard
	Pb	207	267507.5	0.3	**49.9387**	0.751	1.5	ug/L	222	Standard
	Pb	208	1116297.0	0.4	**51.0219**	0.722	1.4	ug/L	959	Standard
	U	238	433722.1	0.8	**51.6863**	1.022	2.0	ug/L	9	Standard
>	**Bi**	209	575528.3	1.2				ug/L	552821	Standard

Sample ID: L1606144203S WG574416-08
Report Date/Time: Friday, July 01, 2016 12:12:04
Page 1

Approved: July 02, 2016

Na	23	16.7	75.5	**41.7692**	31.215	74.7	mg/L	2	Standard
Mg	24	4830.8	1.7	**4.7112**	0.123	2.6	mg/L	55	Standard
K	39	223.3	5.2	**0.5924**	0.027	4.5	mg/L	28	Standard
Ca	43	666.7	3.0	**48.7692**	1.740	3.6	mg/L	27	Standard
Fe	54	3420.8	4.4	**2.1691**	0.101	4.6	mg/L	147	Standard
Fe	57	1528.4	2.8	**3.1654**	0.056	1.8	mg/L	268	Standard
Sc-1	45	48706.5	1.6				mg/L	41174	Standard
Cl	35	82992.7	2.0				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	7521.9	4.9				ug/L	1950	Standard
P	31	32994.2	3.4				ug/L	21156	Standard
S	34	3745.5	4.1				ug/L	3419	Standard
Sr	88	541.7	13.3				ug/L	72	Standard
C	12	350.0	24.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	17	Standard
Dy	164	4986.9	2.7				mg/L	16	Standard
Ho-1	165	3057.0	3.5				mg/L	7	Standard
Er	166	2656.9	3.8				mg/L	7	Standard
I	127	14203.3	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.755	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.884	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144203S WG574416-08
Report Date/Time: Friday, July 01, 2016 12:12:04
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.531
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.108
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144203S WG574416-08
Report Date/Time: Friday, July 01, 2016 12:12:04
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144204SD WG574416-09
Sample Date/Time: Friday, July 01, 2016 12:12:58
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90070.3	0.3				ug/L	76456	Standard
	Be	9	67068.2	2.3	**50.8355**	1.023	2.0	ug/L	20	Standard
	Al	27	22820326.8	1.6	**113.1467**	1.840	1.6	ug/L	1307	Standard
	Sc	45	48614.5	1.1				ug/L	41174	Standard
	Ti	47	12429.8	0.9	**35.6977**	0.390	1.1	ug/L	27	Standard
	V	51	500213.8	0.9	**56.8738**	0.256	0.4	ug/L	1434	Standard
	Cr	52	457920.4	0.8	**52.1452**	0.679	1.3	ug/L	7733	Standard
	Cr	53	55433.0	3.5	**51.0119**	1.142	2.2	ug/L	442	Standard
	Mn	55	1032001.7	0.7	**127.7596**	0.851	0.7	ug/L	723	Standard
	Co	59	426181.5	0.6	**52.1492**	0.363	0.7	ug/L	217	Standard
	Ni	60	115745.8	0.4	**52.1679**	0.569	1.1	ug/L	304	Standard
	Cu	65	108435.6	0.5	**49.7650**	0.481	1.0	ug/L	181	Standard
	Zn	66	83122.4	0.9	**63.4509**	0.540	0.9	ug/L	215	Standard
>	Ge	72	555340.6	1.3				ug/L	520809	Standard
	As	75	68386.4	1.0	**51.9966**	0.210	0.4	ug/L	-52	Standard
	Se	82	6617.0	1.4	**48.9951**	0.511	1.0	ug/L	17	Standard
	Se-1	77	4553.0	1.4	**49.2655**	0.470	1.0	ug/L	56	Standard
>	Ga	71	4989.2	4.2				mg/L	25	Standard
	Rb	85	63782.3	0.6				ug/L	28	Standard
	Y	89	508585.3	3.2				ug/L	447395	Standard
>	Rh	103	155.0	16.8				ug/L	15	Standard
	Mo	98	1690.9	2.2	**0.5065**	0.021	4.1	ug/L	113	Standard
	Ag	107	359804.6	1.4	**47.4968**	0.270	0.6	ug/L	108	Standard
	Cd	111	119520.8	0.7	**49.2344**	0.563	1.1	mg/L	3	Standard
	Cd	114	293080.3	1.6	**48.7653**	1.035	2.1	ug/L	20	Standard
>	In	115	659870.1	1.8				ug/L	625728	Standard
	Sn	118	1175.0	5.3	**0.0889**	0.010	10.9	ug/L	568	Standard
	Sb	123	180927.8	2.0	**33.1631**	0.062	0.2	ug/L	612	Standard
	Ba	135	313663.8	0.6	**136.7260**	2.307	1.7	ug/L	21	Standard
	Ce	140	181386.0	0.5				ug/L	245	Standard
>	Tb	159	1008393.6	0.8				ug/L	950397	Standard
	Ho	165	2945.3	1.9				ug/L	7	Standard
	Tl	203	461671.8	0.2	**49.9891**	0.298	0.6	ug/L	15	Standard
	Tl	205	421242.1	0.2	**51.3576**	0.369	0.7	ug/L	13	Standard
	Pb	206	307820.1	0.5	**52.8142**	0.466	0.9	ug/L	264	Standard
	Pb	207	267725.9	1.2	**50.5746**	0.254	0.5	ug/L	222	Standard
	Pb	208	1118569.9	0.5	**51.7383**	0.472	0.9	ug/L	959	Standard
	U	238	435363.6	0.2	**52.5003**	0.385	0.7	ug/L	9	Standard
>	Bi	209	568683.1	0.8				ug/L	552821	Standard

Sample ID: L1606144204SD WG574416-09
Report Date/Time: Friday, July 01, 2016 12:15:15
Page 1

Approved: July 02, 2016

Na	23	10.0	50.0	**25.2590**	12.492	49.5	mg/L	2	Standard
Mg	24	4682.4	0.4	**4.5730**	0.070	1.5	mg/L	55	Standard
K	39	196.7	12.8	**0.5079**	0.086	17.0	mg/L	28	Standard
Ca	43	620.0	2.8	**45.2717**	1.537	3.4	mg/L	27	Standard
Fe	54	3578.4	8.9	**2.2770**	0.195	8.6	mg/L	147	Standard
Fe	57	1561.7	1.9	**3.2607**	0.102	3.1	mg/L	268	Standard
> **Sc-1**	45	48614.5	1.1				mg/L	41174	Standard
Cl	35	83140.8	0.7				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	7508.5	3.6				ug/L	1950	Standard
P	31	33216.4	1.3				ug/L	21156	Standard
S	34	3633.8	2.2				ug/L	3419	Standard
Sr	88	566.7	11.0				ug/L	72	Standard
C	12	476.7	6.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	17	Standard
Dy	164	4984.3	2.5				mg/L	16	Standard
Ho-1	165	2945.3	1.9				mg/L	7	Standard
Er	166	2850.3	2.1				mg/L	7	Standard
I	127	15054.2	4.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.807	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.630	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144204SD WG574416-09
Report Date/Time: Friday, July 01, 2016 12:15:15
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.456
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.869
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144204SD WG574416-09
Report Date/Time: Friday, July 01, 2016 12:15:15
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 12:16:11
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87445.1	3.4				ug/L	76456	Standard
	Be	9	64070.2	0.9	**50.0545**	1.445	2.9	ug/L	20	Standard
	Al	27	9240352.4	0.8	**47.2275**	1.909	4.0	ug/L	1307	Standard
	Sc	45	44832.9	2.4				ug/L	41174	Standard
	Ti	47	34259.7	1.0	**97.1606**	1.714	1.8	ug/L	27	Standard
	V	51	451230.5	0.6	**50.5628**	0.294	0.6	ug/L	1434	Standard
	Cr	52	441549.7	0.7	**49.5261**	0.488	1.0	ug/L	7733	Standard
	Cr	53	54047.9	0.8	**49.0333**	0.166	0.3	ug/L	442	Standard
	Mn	55	409600.5	0.8	**49.9366**	0.757	1.5	ug/L	723	Standard
	Co	59	429332.5	1.0	**51.7968**	0.540	1.0	ug/L	217	Standard
	Ni	60	111250.6	0.3	**49.4298**	0.556	1.1	ug/L	304	Standard
	Cu	65	109537.2	0.3	**49.5637**	0.351	0.7	ug/L	181	Standard
	Zn	66	65566.2	0.7	**49.3061**	0.180	0.4	ug/L	215	Standard
>	Ge	72	563235.2	0.9				ug/L	520809	Standard
	As	75	66627.6	0.4	**49.9511**	0.273	0.5	ug/L	-52	Standard
	Se	82	6922.5	0.6	**50.5422**	0.157	0.3	ug/L	17	Standard
	Se-1	77	4596.0	1.5	**49.0283**	0.390	0.8	ug/L	56	Standard
>	Ga	71	40.0	21.7				mg/L	25	Standard
	Rb	85	993.4	8.3				ug/L	28	Standard
	Y	89	482225.9	1.1				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	318941.8	1.3	**98.3261**	1.568	1.6	ug/L	113	Standard
	Ag	107	382282.6	0.5	**49.6279**	0.362	0.7	ug/L	108	Standard
	Cd	111	122482.8	0.3	**49.6133**	0.042	0.1	mg/L	3	Standard
	Cd	114	296548.6	0.8	**48.5180**	0.351	0.7	ug/L	20	Standard
>	In	115	670966.5	0.3				ug/L	625728	Standard
	Sn	118	338852.8	1.5	**49.0149**	0.673	1.4	ug/L	568	Standard
	Sb	123	274306.5	0.2	**49.4654**	0.232	0.5	ug/L	612	Standard
	Ba	135	113482.1	0.5	**48.6277**	0.189	0.4	ug/L	21	Standard
	Ce	140	308.3	9.8				ug/L	245	Standard
>	Tb	159	1016008.3	2.4				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	473547.1	1.1	**49.9959**	0.041	0.1	ug/L	15	Standard
	Tl	205	428096.0	1.4	**50.8923**	0.684	1.3	ug/L	13	Standard
	Pb	206	298789.4	0.8	**49.9841**	0.126	0.3	ug/L	264	Standard
	Pb	207	271570.2	0.6	**50.0267**	0.582	1.2	ug/L	222	Standard
	Pb	208	1117926.1	0.2	**50.4203**	0.478	0.9	ug/L	959	Standard
	U	238	428309.5	0.4	**50.3630**	0.285	0.6	ug/L	9	Standard
>	Bi	209	583209.8	1.0				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:18:28
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4910.8	1.7	**5.2115**	0.207	4.0	mg/L	55	Standard
K	39	1366.7	7.2	**4.6780**	0.226	4.8	mg/L	28	Standard
Ca	43	96.7	13.0	**5.6017**	0.863	15.4	mg/L	27	Standard
Fe	54	7079.3	0.6	**5.0021**	0.155	3.1	mg/L	147	Standard
Fe	57	2068.5	8.1	**5.0303**	0.399	7.9	mg/L	268	Standard
> **Sc-1**	45	44832.9	2.4				mg/L	41174	Standard
Cl	35	82615.3	1.2				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2370.2	6.2				ug/L	1950	Standard
P	31	24917.1	2.0				ug/L	21156	Standard
S	34	4207.3	4.1				ug/L	3419	Standard
Sr	88	65.0	33.5				ug/L	72	Standard
C	12	150.0	30.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	25.7	41.7				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	20977.9	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.109		
Al	27	94.455		
Sc	45			
Ti	47	97.161		
V	51	101.126		
Cr	52	99.052		
Cr	53			
Mn	55	99.873		
Co	59	103.594		
Ni	60	98.860		
Cu	65	99.127		
Zn	66	98.612		
> Ge	72		108.146	
As	75	99.902		
Se	82	101.084		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:18:28
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	98.326		
Ag	107	99.256		
Cd	111	99.227		
Cd	114			
> In	115			107.230
Sn	118	98.030		
Sb	123	98.931		
Ba	135	97.255		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.992		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.841		
U	238	100.726		
> Bi	209			105.497
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:18:28
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 12:19:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86888.4	1.2				ug/L	76456	Standard
	Be	9	43.3	6.7	**0.0142**	0.002	14.4	ug/L	20	Standard
	Al	27	10504.4	54.9	**0.0440**	0.030	68.3	ug/L	1307	Standard
	Sc	45	44657.4	2.0				ug/L	41174	Standard
	Ti	47	39.3	11.5	**0.0270**	0.014	53.3	ug/L	27	Standard
	V	51	1529.0	2.6	**-0.0269**	0.007	25.9	ug/L	1434	Standard
	Cr	52	7711.0	1.1	**-0.0906**	0.015	16.9	ug/L	7733	Standard
	Cr	53	511.7	5.7	**0.0505**	0.033	65.1	ug/L	442	Standard
	Mn	55	1157.7	24.7	**0.0401**	0.037	91.8	ug/L	723	Standard
	Co	59	342.7	7.9	**0.0119**	0.004	32.6	ug/L	217	Standard
	Ni	60	345.0	7.1	**0.0004**	0.013	3536.3	ug/L	304	Standard
	Cu	65	196.7	14.8	**0.0150**	0.014	96.7	ug/L	181	Standard
	Zn	66	265.3	6.8	**0.0197**	0.016	82.6	ug/L	215	Standard
>	**Ge**	72	564532.3	1.4				ug/L	520809	Standard
	As	75	-63.0	4.9	**-0.0020**	0.003	148.8	ug/L	-52	Standard
	Se	82	13.5	49.1	**-0.0274**	0.049	178.6	ug/L	17	Standard
	Se-1	77	66.7	9.6	**0.0356**	0.080	224.7	ug/L	56	Standard
>	**Ga**	71	36.7	34.3				mg/L	25	Standard
	Rb	85	50.0	17.3				ug/L	28	Standard
	Y	89	485264.3	1.4				ug/L	447395	Standard
>	**Rh**	103	23.3	65.5				ug/L	15	Standard
	Mo	98	248.2	9.5	**0.0519**	0.007	13.4	ug/L	113	Standard
	Ag	107	217.7	28.5	**0.0151**	0.008	51.7	ug/L	108	Standard
	Cd	111	38.2	50.7	**0.0130**	0.008	59.2	mg/L	3	Standard
	Cd	114	103.6	56.8	**0.0168**	0.009	56.1	ug/L	20	Standard
>	**In**	115	676839.2	0.6				ug/L	625728	Standard
	Sn	118	985.0	18.1	**0.0572**	0.025	43.7	ug/L	568	Standard
	Sb	123	1289.0	34.6	**0.1967**	0.079	40.2	ug/L	612	Standard
	Ba	135	163.7	48.0	**0.0515**	0.033	64.0	ug/L	21	Standard
	Ce	140	190.0	43.5				ug/L	245	Standard
>	**Tb**	159	1027800.2	0.9				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	185.7	43.6	**0.0185**	0.008	45.3	ug/L	15	Standard
	Tl	205	140.0	34.4	**0.0066**	0.006	85.8	ug/L	13	Standard
	Pb	206	391.7	5.7	**0.0205**	0.004	17.4	ug/L	264	Standard
	Pb	207	348.0	8.5	**0.0168**	0.005	31.6	ug/L	222	Standard
	Pb	208	1428.4	8.6	**0.0149**	0.005	36.0	ug/L	959	Standard
	U	238	152.0	24.6	**0.0173**	0.004	24.9	ug/L	9	Standard
>	**Bi**	209	594942.4	0.2				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:21:40
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.6930**	8.120	173.0	mg/L	2	Standard
Mg	24	61.7	4.7	**0.0063**	0.004	70.3	mg/L	55	Standard
K	39	21.7	58.1	**-0.0541**	0.046	85.2	mg/L	28	Standard
Ca	43	16.7	45.8	**-1.0495**	0.670	63.8	mg/L	27	Standard
Fe	54	185.9	12.3	**0.0354**	0.014	39.9	mg/L	147	Standard
Fe	57	231.7	7.6	**-0.1482**	0.038	25.4	mg/L	268	Standard
> **Sc-1**	45	44657.4	2.0				mg/L	41174	Standard
Cl	35	83476.7	1.5				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	2133.5	9.1				ug/L	1950	Standard
P	31	25304.5	3.5				ug/L	21156	Standard
S	34	4207.3	4.6				ug/L	3419	Standard
Sr	88	80.0	16.5				ug/L	72	Standard
C	12	116.7	44.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	15.7	39.4				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	16377.2	4.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.395	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:21:40
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.168
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.619
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:21:40
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144601
Sample Date/Time: Friday, July 01, 2016 12:22:36
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85066.5	1.2				ug/L	76456	Standard
	Be	9	16.7	45.8	**-0.0065**	0.006	94.4	ug/L	20	Standard
	Al	27	9710029.6	1.9	**50.9822**	1.574	3.1	ug/L	1307	Standard
	Sc	45	45336.1	0.8				ug/L	41174	Standard
	Ti	47	130.7	11.5	**0.2865**	0.040	13.8	ug/L	27	Standard
	V	51	2965.5	17.4	**0.1358**	0.062	45.7	ug/L	1434	Standard
	Cr	52	10925.6	1.4	**0.2804**	0.032	11.4	ug/L	7733	Standard
	Cr	53	6674.8	19.2	**5.7008**	1.204	21.1	ug/L	442	Standard
	Mn	55	17608.9	0.7	**2.0519**	0.031	1.5	ug/L	723	Standard
	Co	59	843.4	6.2	**0.0725**	0.007	9.6	ug/L	217	Standard
	Ni	60	3752.8	1.2	**1.5211**	0.029	1.9	ug/L	304	Standard
	Cu	65	735.7	3.5	**0.2597**	0.015	5.9	ug/L	181	Standard
	Zn	66	4713.1	0.8	**3.3806**	0.039	1.2	ug/L	215	Standard
>	Ge	72	562685.3	1.1				ug/L	520809	Standard
	As	75	331.7	14.1	**0.2942**	0.038	12.9	ug/L	-52	Standard
	Se	82	169.7	3.4	**1.1168**	0.055	5.0	ug/L	17	Standard
	Se-1	77	298.3	16.2	**2.5437**	0.506	19.9	ug/L	56	Standard
>	Ga	71	43.3	17.6				mg/L	25	Standard
	Rb	85	1375.1	8.1				ug/L	28	Standard
	Y	89	479863.0	1.4				ug/L	447395	Standard
>	Rh	103	75.0	23.1				ug/L	15	Standard
	Mo	98	184.0	20.7	**0.0331**	0.012	35.3	ug/L	113	Standard
	Ag	107	187.7	22.7	**0.0116**	0.006	47.6	ug/L	108	Standard
	Cd	111	61.4	13.6	**0.0226**	0.003	14.9	mg/L	3	Standard
	Cd	114	163.1	19.9	**0.0268**	0.005	19.9	ug/L	20	Standard
>	In	115	667538.0	0.2				ug/L	625728	Standard
	Sn	118	1128.4	13.7	**0.0801**	0.022	27.7	ug/L	568	Standard
	Sb	123	642.2	32.3	**0.0827**	0.037	45.2	ug/L	612	Standard
	Ba	135	124733.7	0.4	**53.7257**	0.253	0.5	ug/L	21	Standard
	Ce	140	376.7	16.7				ug/L	245	Standard
>	Tb	159	1007994.8	2.0				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	197.3	10.9	**0.0203**	0.002	12.2	ug/L	15	Standard
	Tl	205	216.7	21.8	**0.0163**	0.006	35.8	ug/L	13	Standard
	Pb	206	891.0	6.5	**0.1071**	0.008	7.9	ug/L	264	Standard
	Pb	207	795.4	2.4	**0.1022**	0.003	2.6	ug/L	222	Standard
	Pb	208	3278.5	4.0	**0.1014**	0.007	7.1	ug/L	959	Standard
	U	238	85.3	43.4	**0.0099**	0.004	45.2	ug/L	9	Standard
>	Bi	209	576617.3	0.8				ug/L	552821	Standard

Sample ID: L1606144601
Report Date/Time: Friday, July 01, 2016 12:24:53
Page 1

Approved: July 02, 2016

Na	23	5.0	0.0	**13.5582**	0.108	0.8	mg/L	2	Standard
Mg	24	5319.3	4.2	**5.5837**	0.252	4.5	mg/L	55	Standard
K	39	98.3	41.1	**0.2120**	0.143	67.6	mg/L	28	Standard
Ca	43	363.3	7.8	**27.5274**	2.210	8.0	mg/L	27	Standard
Fe	54	179.0	5.5	**0.0286**	0.006	20.9	mg/L	147	Standard
Fe	57	463.3	13.0	**0.4888**	0.165	33.8	mg/L	268	Standard
> **Sc-1**	45	45336.1	0.8				mg/L	41174	Standard
Cl	35	89142.8	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	30834.8	6.1				ug/L	1950	Standard
P	31	26140.9	1.9				ug/L	21156	Standard
S	34	4027.2	2.4				ug/L	3419	Standard
Sr	88	260.0	15.3				ug/L	72	Standard
C	12	170.0	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	38.6	3.3				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	7	Standard
I	127	3538.7	10.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.262	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.041	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144601
Report Date/Time: Friday, July 01, 2016 12:24:53
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.682
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.305
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144701 WG574416-03
Sample Date/Time: Friday, July 01, 2016 12:25:48
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88482.7	2.3				ug/L	76456	Standard
	Be	9	38.3	39.8	**0.0099**	0.012	125.1	ug/L	20	Standard
	Al	27	11359959.6	1.4	**57.3517**	1.667	2.9	ug/L	1307	Standard
	Sc	45	45563.4	2.6				ug/L	41174	Standard
	Ti	47	479.3	13.4	**1.2787**	0.172	13.4	ug/L	27	Standard
	V	51	3530.4	7.8	**0.1998**	0.034	17.3	ug/L	1434	Standard
	Cr	52	12134.2	0.3	**0.4209**	0.011	2.6	ug/L	7733	Standard
	Cr	53	7648.6	5.0	**6.6019**	0.407	6.2	ug/L	442	Standard
	Mn	55	16091.5	2.0	**1.8699**	0.055	2.9	ug/L	723	Standard
	Co	59	1173.0	4.1	**0.1126**	0.006	5.8	ug/L	217	Standard
	Ni	60	3889.5	2.3	**1.5848**	0.031	1.9	ug/L	304	Standard
	Cu	65	1317.7	0.5	**0.5246**	0.003	0.5	ug/L	181	Standard
	Zn	66	3687.1	0.9	**2.6100**	0.006	0.2	ug/L	215	Standard
>	Ge	72	561722.8	0.8				ug/L	520809	Standard
	As	75	1392.1	5.5	**1.0905**	0.054	4.9	ug/L	-52	Standard
	Se	82	606.7	3.3	**4.3252**	0.116	2.7	ug/L	17	Standard
	Se-1	77	418.0	2.5	**3.8492**	0.119	3.1	ug/L	56	Standard
>	Ga	71	115.0	8.7				mg/L	25	Standard
	Rb	85	5234.2	9.4				ug/L	28	Standard
	Y	89	487944.7	1.1				ug/L	447395	Standard
>	Rh	103	568.3	20.1				ug/L	15	Standard
	Mo	98	1044.2	2.3	**0.3054**	0.008	2.6	ug/L	113	Standard
	Ag	107	187.3	42.9	**0.0121**	0.011	91.2	ug/L	108	Standard
	Cd	111	55.0	27.2	**0.0204**	0.006	30.3	mg/L	3	Standard
	Cd	114	135.5	6.2	**0.0227**	0.001	5.1	ug/L	20	Standard
>	In	115	656101.2	1.3				ug/L	625728	Standard
	Sn	118	1038.4	15.8	**0.0699**	0.026	37.7	ug/L	568	Standard
	Sb	123	573.4	30.4	**0.0724**	0.034	46.6	ug/L	612	Standard
	Ba	135	501979.0	0.4	**220.0552**	2.127	1.0	ug/L	21	Standard
	Ce	140	2408.5	3.7				ug/L	245	Standard
>	Tb	159	999721.2	1.2				ug/L	950397	Standard
	Ho	165	475.0	13.8				ug/L	7	Standard
	Tl	203	180.7	18.9	**0.0191**	0.004	19.9	ug/L	15	Standard
	Tl	205	181.7	18.3	**0.0127**	0.004	33.1	ug/L	13	Standard
	Pb	206	1433.1	5.5	**0.2055**	0.013	6.5	ug/L	264	Standard
	Pb	207	1269.4	7.4	**0.1971**	0.019	9.6	ug/L	222	Standard
	Pb	208	5249.0	0.8	**0.1978**	0.003	1.5	ug/L	959	Standard
	U	238	833.4	3.5	**0.1015**	0.003	3.3	ug/L	9	Standard
>	Bi	209	561437.9	0.5				ug/L	552821	Standard

Sample ID: L1606144701 WG574416-03
Report Date/Time: Friday, July 01, 2016 12:28:05
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.1266**	7.900	86.6	mg/L	2	Standard
Mg	24	22316.4	4.6	**23.4898**	0.474	2.0	mg/L	55	Standard
K	39	291.7	17.2	**0.8820**	0.191	21.6	mg/L	28	Standard
Ca	43	361.7	17.8	**27.2179**	4.974	18.3	mg/L	27	Standard
Fe	54	219.1	19.9	**0.0560**	0.027	47.8	mg/L	147	Standard
Fe	57	508.3	13.1	**0.6052**	0.153	25.3	mg/L	268	Standard
> **Sc-1**	45	45563.4	2.6				mg/L	41174	Standard
Cl	35	95139.1	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	117746.0	3.1				ug/L	1950	Standard
P	31	26077.4	3.3				ug/L	21156	Standard
S	34	3920.5	3.9				ug/L	3419	Standard
Sr	88	1768.4	4.8				ug/L	72	Standard
C	12	193.3	38.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	700.0	19.1				mg/L	16	Standard
Ho-1	165	475.0	13.8				mg/L	7	Standard
Er	166	486.7	19.4				mg/L	7	Standard
I	127	22775.4	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.731	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.856	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144701 WG574416-03
Report Date/Time: Friday, July 01, 2016 12:28:05
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.854
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.559
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144701 WG574416-03
Report Date/Time: Friday, July 01, 2016 12:28:05
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144701DP WG574416-10
Sample Date/Time: Friday, July 01, 2016 12:28:59
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88142.4	1.7				ug/L	76456	Standard
	Be	9	40.0	37.5	**0.0111**	0.011	101.8	ug/L	20	Standard
	Al	27	11494838.5	2.0	**58.2408**	1.266	2.2	ug/L	1307	Standard
	Sc	45	46242.2	2.8				ug/L	41174	Standard
	Ti	47	491.0	28.0	**1.3133**	0.392	29.8	ug/L	27	Standard
	V	51	4065.2	7.6	**0.2601**	0.033	12.8	ug/L	1434	Standard
	Cr	52	12264.0	1.3	**0.4365**	0.008	1.9	ug/L	7733	Standard
	Cr	53	8637.5	5.6	**7.5132**	0.490	6.5	ug/L	442	Standard
	Mn	55	16026.8	1.0	**1.8627**	0.011	0.6	ug/L	723	Standard
	Co	59	1127.4	3.0	**0.1071**	0.004	3.8	ug/L	217	Standard
	Ni	60	3889.8	1.2	**1.5861**	0.030	1.9	ug/L	304	Standard
	Cu	65	1351.4	4.3	**0.5403**	0.027	5.0	ug/L	181	Standard
	Zn	66	3072.3	1.9	**2.1459**	0.033	1.5	ug/L	215	Standard
>	Ge	72	561430.2	0.7				ug/L	520809	Standard
	As	75	1450.6	6.2	**1.1355**	0.075	6.6	ug/L	-52	Standard
	Se	82	626.4	4.3	**4.4737**	0.217	4.8	ug/L	17	Standard
	Se-1	77	446.7	4.4	**4.1629**	0.222	5.3	ug/L	56	Standard
>	Ga	71	118.3	21.3				mg/L	25	Standard
	Rb	85	5335.9	4.4				ug/L	28	Standard
	Y	89	485232.7	0.7				ug/L	447395	Standard
>	Rh	103	503.3	5.6				ug/L	15	Standard
	Mo	98	890.3	4.1	**0.2555**	0.010	3.8	ug/L	113	Standard
	Ag	107	130.0	4.8	**0.0043**	0.001	19.6	ug/L	108	Standard
	Cd	111	38.1	10.0	**0.0134**	0.002	12.3	mg/L	3	Standard
	Cd	114	93.0	28.3	**0.0155**	0.004	28.0	ug/L	20	Standard
>	In	115	659077.6	0.9				ug/L	625728	Standard
	Sn	118	881.7	14.6	**0.0459**	0.019	42.5	ug/L	568	Standard
	Sb	123	507.6	19.6	**0.0596**	0.019	31.6	ug/L	612	Standard
	Ba	135	515199.9	0.5	**224.8243**	2.217	1.0	ug/L	21	Standard
	Ce	140	2820.3	8.4				ug/L	245	Standard
>	Tb	159	1000855.8	0.8				ug/L	950397	Standard
	Ho	165	511.7	6.7				ug/L	7	Standard
	Tl	203	145.0	5.2	**0.0151**	0.001	5.3	ug/L	15	Standard
	Tl	205	140.0	29.2	**0.0075**	0.005	66.5	ug/L	13	Standard
	Pb	206	896.0	1.8	**0.1117**	0.003	2.6	ug/L	264	Standard
	Pb	207	768.4	3.7	**0.1007**	0.005	5.0	ug/L	222	Standard
	Pb	208	3189.1	0.1	**0.1009**	0.001	0.5	ug/L	959	Standard
	U	238	824.4	5.0	**0.1002**	0.005	5.0	ug/L	9	Standard
>	Bi	209	562695.6	0.4				ug/L	552821	Standard

Sample ID: L1606144701DP WG574416-10
Report Date/Time: Friday, July 01, 2016 12:31:16
Page 1

Approved: July 02, 2016

Na	23	8.3	34.6	**22.1713**	7.744	34.9	mg/L	2	Standard
Mg	24	23199.4	1.6	**24.0879**	0.996	4.1	mg/L	55	Standard
K	39	276.7	2.8	**0.8134**	0.006	0.8	mg/L	28	Standard
Ca	43	471.7	6.8	**35.7746**	3.568	10.0	mg/L	27	Standard
Fe	54	212.8	23.2	**0.0499**	0.035	69.4	mg/L	147	Standard
Fe	57	470.0	11.3	**0.4850**	0.177	36.5	mg/L	268	Standard
> **Sc-1**	45	46242.2	2.8				mg/L	41174	Standard
Cl	35	96975.4	1.3				ug/L	69550	Standard
Kr	83	2.3	137.8				ug/L	1	Standard
Br	81	120957.8	2.8				ug/L	1950	Standard
P	31	25446.4	2.8				ug/L	21156	Standard
S	34	3975.5	1.0				ug/L	3419	Standard
Sr	88	1878.4	2.6				ug/L	72	Standard
C	12	223.3	38.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	17	Standard
Dy	164	658.1	9.2				mg/L	16	Standard
Ho-1	165	511.7	6.7				mg/L	7	Standard
Er	166	526.7	11.0				mg/L	7	Standard
I	127	23127.6	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.285	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.800	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144701DP WG574416-10
Report Date/Time: Friday, July 01, 2016 12:31:16
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.330
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.786
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606128901
Sample Date/Time: Friday, July 01, 2016 12:32:11
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	100202.1	2.7				ug/L	76456	Standard
	Be	9	85.0	61.4	**0.0383**	0.036	94.9	ug/L	20	Standard
	Al	27	121494771.0	1.8	**541.6309**	8.514	1.6	ug/L	1307	Standard
	Sc	45	48803.5	2.8				ug/L	41174	Standard
	Ti	47	545.3	5.0	**1.5278**	0.038	2.5	ug/L	27	Standard
	V	51	10661.2	18.0	**1.0481**	0.197	18.8	ug/L	1434	Standard
	Cr	52	662482.0	2.6	**77.9794**	0.550	0.7	ug/L	7733	Standard
	Cr	53	138513.8	2.3	**131.6729**	2.729	2.1	ug/L	442	Standard
	Mn	55	5966787.8	1.9	**759.5704**	10.887	1.4	ug/L	723	Standard
	Co	59	181210.6	0.8	**22.7724**	0.421	1.8	ug/L	217	Standard
	Ni	60	645750.8	2.4	**299.7645**	3.348	1.1	ug/L	304	Standard
	Cu	65	22297.4	3.7	**10.4538**	0.196	1.9	ug/L	181	Standard
	Zn	66	11919.4	2.6	**9.1948**	0.114	1.2	ug/L	215	Standard
>	Ge	72	540486.8	2.6				ug/L	520809	Standard
	As	75	4102.0	1.8	**3.2473**	0.027	0.8	ug/L	-52	Standard
	Se	82	1886.5	4.1	**14.2618**	0.413	2.9	ug/L	17	Standard
	Se-1	77	4801.8	0.7	**53.4605**	1.123	2.1	ug/L	56	Standard
>	Ga	71	275.0	24.6				mg/L	25	Standard
	Rb	85	16008.5	1.9				ug/L	28	Standard
	Y	89	482574.6	0.5				ug/L	447395	Standard
>	Rh	103	891.7	13.1				ug/L	15	Standard
	Mo	98	6427.1	1.7	**2.1501**	0.036	1.7	ug/L	113	Standard
	Ag	107	215.3	42.5	**0.0178**	0.013	73.5	ug/L	108	Standard
	Cd	111	1192.8	4.2	**0.5277**	0.023	4.3	mg/L	3	Standard
	Cd	114	2955.5	4.3	**0.5305**	0.024	4.6	ug/L	20	Standard
>	In	115	611635.6	0.3				ug/L	625728	Standard
	Sn	118	1171.7	1.6	**0.1020**	0.003	2.8	ug/L	568	Standard
	Sb	123	952.5	13.3	**0.1549**	0.025	16.4	ug/L	612	Standard
	Ba	135	5659971.5	1.5	**2661.5360**	36.316	1.4	ug/L	21	Standard
	Ce	140	34602.8	2.7				ug/L	245	Standard
>	Tb	159	987729.2	0.4				ug/L	950397	Standard
	Ho	165	555.0	3.6				ug/L	7	Standard
	Tl	203	271.3	38.8	**0.0315**	0.013	40.1	ug/L	15	Standard
	Tl	205	228.3	29.2	**0.0208**	0.009	43.4	ug/L	13	Standard
	Pb	206	682.3	7.9	**0.0848**	0.010	12.2	ug/L	264	Standard
	Pb	207	562.7	4.7	**0.0706**	0.006	7.9	ug/L	222	Standard
	Pb	208	2400.7	5.1	**0.0736**	0.007	9.1	ug/L	959	Standard
	U	238	485.7	17.4	**0.0640**	0.011	17.8	ug/L	9	Standard
>	Bi	209	518402.7	0.8				ug/L	552821	Standard

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 12:34:28
Page 1

Approved: July 02, 2016

Na	23	6.7	43.3	**16.7312**	6.981	41.7	mg/L	2	Standard
Mg	24	234951.0	0.3	**231.6239**	7.038	3.0	mg/L	55	Standard
K	39	286.7	15.7	**0.7989**	0.169	21.2	mg/L	28	Standard
Ca	43	935.0	7.2	**69.1820**	3.528	5.1	mg/L	27	Standard
Fe	54	758.4	8.2	**0.4032**	0.043	10.6	mg/L	147	Standard
Fe	57	1138.4	6.9	**2.1447**	0.127	5.9	mg/L	268	Standard
Sc-1	45	48803.5	2.8				mg/L	41174	Standard
Cl	35	88877.9	0.3				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	391239.0	2.6				ug/L	1950	Standard
P	31	37070.3	1.2				ug/L	21156	Standard
S	34	4178.9	3.9				ug/L	3419	Standard
Sr	88	2831.9	1.5				ug/L	72	Standard
C	12	466.7	21.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	17	Standard
Dy	164	667.5	12.4				mg/L	16	Standard
Ho-1	165	555.0	3.6				mg/L	7	Standard
Er	166	540.0	8.5				mg/L	7	Standard
I	127	188266.3	8.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		131.059	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.778	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 12:34:28
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.748	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	93.774	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 53 Upper, S, EEE	Cr	53	

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 12:34:28
Page 3

Approved: July 02, 2016

Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606128904
Sample Date/Time: Friday, July 01, 2016 12:35:23
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80174.9	0.5				ug/L	76456	Standard
	Be	9	53.3	27.1	**0.0255**	0.012	47.2	ug/L	20	Standard
	Al	27	1032791.8	1.6	**5.7430**	0.086	1.5	ug/L	1307	Standard
	Sc	45	47549.6	3.6				ug/L	41174	Standard
	Ti	47	1435.7	2.3	**3.8643**	0.058	1.5	ug/L	27	Standard
	V	51	10110.4	0.9	**0.9038**	0.025	2.8	ug/L	1434	Standard
	Cr	52	20122.7	4.1	**1.2588**	0.042	3.3	ug/L	7733	Standard
	Cr	53	3665.5	16.0	**2.8260**	0.446	15.8	ug/L	442	Standard
	Mn	55	288289.9	2.5	**34.0207**	0.139	0.4	ug/L	723	Standard
	Co	59	1477.7	1.3	**0.1434**	0.004	2.6	ug/L	217	Standard
	Ni	60	4239.3	2.2	**1.6775**	0.005	0.3	ug/L	304	Standard
	Cu	65	5707.4	2.9	**2.4318**	0.022	0.9	ug/L	181	Standard
	Zn	66	6174.6	2.5	**4.3354**	0.036	0.8	ug/L	215	Standard
>	Ge	72	581260.9	2.3				ug/L	520809	Standard
	As	75	447.8	4.7	**0.3704**	0.019	5.1	ug/L	-52	Standard
	Se	82	65.6	5.7	**0.3388**	0.024	6.9	ug/L	17	Standard
	Se-1	77	141.0	9.5	**0.7917**	0.108	13.6	ug/L	56	Standard
>	Ga	71	390.0	12.2				mg/L	25	Standard
	Rb	85	14513.6	3.3				ug/L	28	Standard
	Y	89	508182.1	0.9				ug/L	447395	Standard
>	Rh	103	35.0	14.3				ug/L	15	Standard
	Mo	98	3302.1	0.9	**0.9834**	0.006	0.6	ug/L	113	Standard
	Ag	107	192.0	6.8	**0.0118**	0.002	15.7	ug/L	108	Standard
	Cd	111	79.5	7.9	**0.0295**	0.002	7.8	mg/L	3	Standard
	Cd	114	220.0	7.1	**0.0356**	0.003	7.0	ug/L	20	Standard
>	In	115	678248.4	0.8				ug/L	625728	Standard
	Sn	118	933.4	10.8	**0.0496**	0.015	30.5	ug/L	568	Standard
	Sb	123	584.6	1.8	**0.0706**	0.002	3.0	ug/L	612	Standard
	Ba	135	45177.6	1.6	**19.1408**	0.317	1.7	ug/L	21	Standard
	Ce	140	30016.4	0.4				ug/L	245	Standard
>	Tb	159	1007751.2	0.8				ug/L	950397	Standard
	Ho	165	761.7	12.8				ug/L	7	Standard
	Tl	203	113.3	7.1	**0.0112**	0.001	7.0	ug/L	15	Standard
	Tl	205	111.7	14.4	**0.0035**	0.002	52.8	ug/L	13	Standard
	Pb	206	3404.0	3.3	**0.5260**	0.017	3.3	ug/L	264	Standard
	Pb	207	2818.6	2.1	**0.4734**	0.010	2.1	ug/L	222	Standard
	Pb	208	12328.3	2.3	**0.5080**	0.010	2.0	ug/L	959	Standard
	U	238	374.0	2.0	**0.0437**	0.001	1.8	ug/L	9	Standard
>	Bi	209	583367.9	0.5				ug/L	552821	Standard

Sample ID: L1606128904
Report Date/Time: Friday, July 01, 2016 12:37:39
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.1425**	7.166	173.0	mg/L	2	Standard
Mg	24	5377.6	1.9	**5.3817**	0.098	1.8	mg/L	55	Standard
K	39	255.0	12.2	**0.7172**	0.121	16.8	mg/L	28	Standard
Ca	43	56.7	51.7	**1.9556**	2.109	107.9	mg/L	27	Standard
Fe	54	965.3	12.0	**0.5554**	0.055	10.0	mg/L	147	Standard
Fe	57	456.7	2.8	**0.4120**	0.054	13.1	mg/L	268	Standard
> **Sc-1**	45	47549.6	3.6				mg/L	41174	Standard
Cl	35	89186.5	3.0				ug/L	69550	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	9616.5	21.7				ug/L	1950	Standard
P	31	24750.2	1.9				ug/L	21156	Standard
S	34	3972.2	3.0				ug/L	3419	Standard
Sr	88	126.7	22.8				ug/L	72	Standard
C	12	306.7	35.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	1037.0	4.9				mg/L	16	Standard
Ho-1	165	761.7	12.8				mg/L	7	Standard
Er	166	690.0	14.7				mg/L	7	Standard
I	127	33632.4	5.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.864	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.607	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606128904
Report Date/Time: Friday, July 01, 2016 12:37:39
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.393
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.526
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606129003
Sample Date/Time: Friday, July 01, 2016 12:38:34
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84017.4	2.6				ug/L	76456	Standard
	Be	9	56.7	41.7	**0.0265**	0.020	76.1	ug/L	20	Standard
	Al	27	11410287.5	2.4	**60.6815**	2.547	4.2	ug/L	1307	Standard
	Sc	45	47460.9	2.7				ug/L	41174	Standard
	Ti	47	632.0	2.0	**1.7083**	0.053	3.1	ug/L	27	Standard
	V	51	4979.6	9.0	**0.3608**	0.043	11.9	ug/L	1434	Standard
	Cr	52	16733.9	1.7	**0.9422**	0.057	6.1	ug/L	7733	Standard
	Cr	53	16242.1	5.6	**14.4384**	0.968	6.7	ug/L	442	Standard
	Mn	55	2106790.2	0.3	**257.0785**	2.759	1.1	ug/L	723	Standard
	Co	59	32596.4	0.7	**3.9025**	0.026	0.7	ug/L	217	Standard
	Ni	60	16570.4	1.9	**7.2264**	0.135	1.9	ug/L	304	Standard
	Cu	65	821.7	5.9	**0.2979**	0.020	6.6	ug/L	181	Standard
	Zn	66	15799.9	1.0	**11.7367**	0.172	1.5	ug/L	215	Standard
>	Ge	72	563660.3	1.3				ug/L	520809	Standard
	As	75	8280.0	0.5	**6.2429**	0.078	1.2	ug/L	-52	Standard
	Se	82	523.6	3.6	**3.7022**	0.090	2.4	ug/L	17	Standard
	Se-1	77	661.3	8.7	**6.4700**	0.719	11.1	ug/L	56	Standard
>	Ga	71	153.3	26.4				mg/L	25	Standard
	Rb	85	22955.7	2.8				ug/L	28	Standard
	Y	89	481907.4	0.8				ug/L	447395	Standard
>	Rh	103	116.7	21.1				ug/L	15	Standard
	Mo	98	609.0	1.0	**0.1691**	0.001	0.8	ug/L	113	Standard
	Ag	107	122.3	6.1	**0.0035**	0.001	30.0	ug/L	108	Standard
	Cd	111	546.6	6.3	**0.2253**	0.014	6.3	mg/L	3	Standard
	Cd	114	1227.9	3.1	**0.2066**	0.006	2.8	ug/L	20	Standard
>	In	115	652572.6	0.4				ug/L	625728	Standard
	Sn	118	2255.2	0.8	**0.2518**	0.004	1.5	ug/L	568	Standard
	Sb	123	396.5	22.6	**0.0398**	0.016	41.0	ug/L	612	Standard
	Ba	135	362353.4	0.4	**159.6881**	0.037	0.0	ug/L	21	Standard
	Ce	140	11014.0	2.2				ug/L	245	Standard
>	Tb	159	996583.7	1.1				ug/L	950397	Standard
	Ho	165	233.3	12.4				ug/L	7	Standard
	Tl	203	149.3	13.7	**0.0157**	0.002	13.7	ug/L	15	Standard
	Tl	205	146.7	18.8	**0.0085**	0.003	39.2	ug/L	13	Standard
	Pb	206	578.7	5.4	**0.0575**	0.005	8.6	ug/L	264	Standard
	Pb	207	484.0	0.4	**0.0472**	0.000	0.8	ug/L	222	Standard
	Pb	208	2033.4	0.6	**0.0477**	0.001	2.3	ug/L	959	Standard
	U	238	110.3	15.4	**0.0133**	0.002	15.3	ug/L	9	Standard
>	Bi	209	557686.0	0.7				ug/L	552821	Standard

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 12:40:51
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.4332**	7.670	173.0	mg/L	2	Standard
Mg	24	51897.1	1.5	**52.5721**	2.174	4.1	mg/L	55	Standard
K	39	418.3	15.8	**1.2584**	0.193	15.3	mg/L	28	Standard
Ca	43	125.0	28.0	**7.4017**	2.760	37.3	mg/L	27	Standard
Fe	54	21570.7	2.6	**14.5894**	0.772	5.3	mg/L	147	Standard
Fe	57	5684.4	0.4	**14.3563**	0.459	3.2	mg/L	268	Standard
> **Sc-1**	45	47460.9	2.7				mg/L	41174	Standard
Cl	35	86591.4	1.7				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	106345.6	3.6				ug/L	1950	Standard
P	31	31901.9	1.3				ug/L	21156	Standard
S	34	4255.6	0.8				ug/L	3419	Standard
Sr	88	460.0	1.1				ug/L	72	Standard
C	12	313.3	22.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	343.4	18.1				mg/L	16	Standard
Ho-1	165	233.3	12.4				mg/L	7	Standard
Er	166	276.7	12.7				mg/L	7	Standard
I	127	558531.1	6.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.890	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.228	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 12:40:51
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.290
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.880
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 12:40:51
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606129005
Sample Date/Time: Friday, July 01, 2016 12:41:45
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85192.2	0.8				ug/L	76456	Standard
	Be	9	115.0	19.0	**0.0724**	0.018	24.9	ug/L	20	Standard
	Al	27	1289763.0	0.8	**6.7519**	0.110	1.6	ug/L	1307	Standard
	Sc	45	49773.3	2.8				ug/L	41174	Standard
	Ti	47	6020.5	2.3	**16.8263**	0.429	2.6	ug/L	27	Standard
	V	51	26156.2	0.5	**2.7133**	0.015	0.6	ug/L	1434	Standard
	Cr	52	22253.3	0.9	**1.5480**	0.025	1.6	ug/L	7733	Standard
	Cr	53	3922.2	9.7	**3.1342**	0.341	10.9	ug/L	442	Standard
	Mn	55	93436.0	2.3	**11.1943**	0.294	2.6	ug/L	723	Standard
	Co	59	5246.2	1.4	**0.5973**	0.011	1.8	ug/L	217	Standard
	Ni	60	3873.2	3.3	**1.5552**	0.062	4.0	ug/L	304	Standard
	Cu	65	2052.1	1.1	**0.8462**	0.011	1.3	ug/L	181	Standard
	Zn	66	6978.9	2.8	**5.0326**	0.156	3.1	ug/L	215	Standard
>	Ge	72	569140.4	0.4				ug/L	520809	Standard
	As	75	675.9	4.5	**0.5462**	0.024	4.5	ug/L	-52	Standard
	Se	82	122.4	11.2	**0.7599**	0.101	13.3	ug/L	17	Standard
	Se-1	77	130.3	23.7	**0.7102**	0.329	46.3	ug/L	56	Standard
>	Ga	71	1996.8	2.2				mg/L	25	Standard
	Rb	85	22308.1	1.4				ug/L	28	Standard
	Y	89	509803.9	1.2				ug/L	447395	Standard
>	Rh	103	36.7	31.5				ug/L	15	Standard
	Mo	98	326.9	4.2	**0.0762**	0.004	5.1	ug/L	113	Standard
	Ag	107	126.0	4.2	**0.0034**	0.001	17.4	ug/L	108	Standard
	Cd	111	98.1	1.5	**0.0371**	0.001	1.9	mg/L	3	Standard
	Cd	114	296.0	9.7	**0.0481**	0.005	9.6	ug/L	20	Standard
>	In	115	675122.4	0.6				ug/L	625728	Standard
	Sn	118	1330.1	3.9	**0.1073**	0.007	6.6	ug/L	568	Standard
	Sb	123	517.6	11.1	**0.0591**	0.010	16.6	ug/L	612	Standard
	Ba	135	76309.4	0.8	**32.4918**	0.196	0.6	ug/L	21	Standard
	Ce	140	95146.2	1.3				ug/L	245	Standard
>	Tb	159	1016001.4	1.3				ug/L	950397	Standard
	Ho	165	1441.7	4.0				ug/L	7	Standard
	Tl	203	251.7	11.3	**0.0262**	0.003	11.5	ug/L	15	Standard
	Tl	205	263.3	19.1	**0.0220**	0.006	26.3	ug/L	13	Standard
	Pb	206	4604.0	0.8	**0.7379**	0.007	1.0	ug/L	264	Standard
	Pb	207	3793.5	2.8	**0.6632**	0.027	4.1	ug/L	222	Standard
	Pb	208	16401.2	0.5	**0.7024**	0.005	0.7	ug/L	959	Standard
	U	238	755.4	2.7	**0.0898**	0.002	2.3	ug/L	9	Standard
>	Bi	209	575207.2	1.1				ug/L	552821	Standard

Sample ID: L1606129005
Report Date/Time: Friday, July 01, 2016 12:44:02
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11827.9	2.0	**11.3730**	0.250	2.2	mg/L	55	Standard
K	39	63.3	12.1	**0.0696**	0.022	31.4	mg/L	28	Standard
Ca	43	26.7	39.0	**-0.4604**	0.739	160.5	mg/L	27	Standard
Fe	54	2263.3	3.3	**1.3710**	0.089	6.5	mg/L	147	Standard
Fe	57	798.4	7.3	**1.2235**	0.092	7.5	mg/L	268	Standard
> **Sc-1**	45	49773.3	2.8				mg/L	41174	Standard
Cl	35	80793.5	1.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	20093.3	2.4				ug/L	1950	Standard
P	31	35491.5	0.9				ug/L	21156	Standard
S	34	3435.4	2.3				ug/L	3419	Standard
Sr	88	86.7	16.7				ug/L	72	Standard
C	12	120.0	16.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	17	Standard
Dy	164	2283.5	2.5				mg/L	16	Standard
Ho-1	165	1441.7	4.0				mg/L	7	Standard
Er	166	1253.4	17.9				mg/L	7	Standard
I	127	29910.2	19.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.280	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129005
Report Date/Time: Friday, July 01, 2016 12:44:02
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.894
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.049
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 12:44:58
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83031.9	1.8				ug/L	76456	Standard
	Be	9	62607.4	1.8	**51.4790**	0.092	0.2	ug/L	20	Standard
	Al	27	9205440.0	1.0	**49.5101**	0.482	1.0	ug/L	1307	Standard
	Sc	45	45279.2	0.9				ug/L	41174	Standard
	Ti	47	35616.8	0.8	**99.7569**	0.384	0.4	ug/L	27	Standard
	V	51	453381.0	1.3	**50.1773**	0.834	1.7	ug/L	1434	Standard
	Cr	52	454717.9	0.4	**50.3900**	0.329	0.7	ug/L	7733	Standard
	Cr	53	56792.9	2.0	**50.9006**	0.670	1.3	ug/L	442	Standard
	Mn	55	417865.9	1.4	**50.3140**	0.768	1.5	ug/L	723	Standard
	Co	59	427490.0	0.8	**50.9392**	0.677	1.3	ug/L	217	Standard
	Ni	60	114502.7	0.7	**50.2468**	0.055	0.1	ug/L	304	Standard
	Cu	65	113283.0	1.3	**50.6253**	0.452	0.9	ug/L	181	Standard
	Zn	66	67088.2	1.2	**49.8311**	0.666	1.3	ug/L	215	Standard
>	**Ge**	72	570265.5	0.7				ug/L	520809	Standard
	As	75	66940.7	0.7	**49.5659**	0.028	0.1	ug/L	-52	Standard
	Se	82	6904.8	0.9	**49.7902**	0.542	1.1	ug/L	17	Standard
	Se-1	77	4848.4	1.0	**51.1131**	0.306	0.6	ug/L	56	Standard
>	**Ga**	71	33.3	34.6				mg/L	25	Standard
	Rb	85	945.0	6.5				ug/L	28	Standard
	Y	89	486567.9	0.8				ug/L	447395	Standard
>	**Rh**	103	36.7	43.8				ug/L	15	Standard
	Mo	98	321546.8	0.2	**99.1357**	1.367	1.4	ug/L	113	Standard
	Ag	107	383263.2	0.3	**49.7591**	0.678	1.4	ug/L	108	Standard
	Cd	111	123447.9	0.3	**50.0091**	0.713	1.4	mg/L	3	Standard
	Cd	114	300381.5	2.0	**49.1538**	1.432	2.9	ug/L	20	Standard
>	**In**	115	670977.0	1.2				ug/L	625728	Standard
	Sn	118	339655.3	1.3	**49.1307**	0.150	0.3	ug/L	568	Standard
	Sb	123	274538.6	0.7	**49.5136**	0.951	1.9	ug/L	612	Standard
	Ba	135	114656.9	0.7	**49.1372**	0.870	1.8	ug/L	21	Standard
	Ce	140	131.7	33.2				ug/L	245	Standard
>	**Tb**	159	1007430.4	0.6				ug/L	950397	Standard
	Ho	165	15.0	88.2				ug/L	7	Standard
	Tl	203	470169.7	1.1	**50.6935**	0.361	0.7	ug/L	15	Standard
	Tl	205	427547.4	1.3	**51.9072**	0.778	1.5	ug/L	13	Standard
	Pb	206	295170.9	0.9	**50.4289**	0.577	1.1	ug/L	264	Standard
	Pb	207	268434.7	0.6	**50.4969**	0.171	0.3	ug/L	222	Standard
	Pb	208	1104478.8	0.4	**50.8716**	0.540	1.1	ug/L	959	Standard
	U	238	418715.2	0.4	**50.2797**	0.305	0.6	ug/L	9	Standard
>	**Bi**	209	571081.7	0.7				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:47:15
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4769.1	1.8	**5.0062**	0.108	2.1	mg/L	55	Standard
K	39	1336.7	4.6	**4.5306**	0.241	5.3	mg/L	28	Standard
Ca	43	75.0	17.6	**3.7457**	1.100	29.4	mg/L	27	Standard
Fe	54	7200.7	4.3	**5.0367**	0.239	4.8	mg/L	147	Standard
Fe	57	2128.5	4.4	**5.1427**	0.247	4.8	mg/L	268	Standard
> **Sc-1**	45	45279.2	0.9				mg/L	41174	Standard
Cl	35	81839.8	0.8				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	3040.3	8.6				ug/L	1950	Standard
P	31	24877.1	2.1				ug/L	21156	Standard
S	34	3887.2	7.0				ug/L	3419	Standard
Sr	88	81.7	7.1				ug/L	72	Standard
C	12	123.3	12.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	17	Standard
Dy	164	9.4	3.0				mg/L	16	Standard
Ho-1	165	15.0	88.2				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	21875.8	2.3				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.958		
	Al	27	99.020		
	Sc	45			
	Ti	47	99.757		
	V	51	100.355		
	Cr	52	100.780		
	Cr	53			
	Mn	55	100.628		
	Co	59	101.878		
	Ni	60	100.494		
	Cu	65	101.251		
	Zn	66	99.662		
>	Ge	72		109.496	
	As	75	99.132		
	Se	82	99.580		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:47:15
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	99.136		
Ag	107	99.518		
Cd	111	100.018		
Cd	114			
In	115			107.231
Sn	118	98.261		
Sb	123	99.027		
Ba	135	98.274		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.387		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.743		
U	238	100.559		
Bi	209			103.303
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:47:15
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 12:48:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79667.3	2.3				ug/L	76456	Standard
	Be	9	48.3	39.2	**0.0215**	0.016	74.4	ug/L	20	Standard
	Al	27	13667.3	103.9	**0.0663**	0.079	119.0	ug/L	1307	Standard
	Sc	45	44725.9	0.8				ug/L	41174	Standard
	Ti	47	40.3	36.1	**0.0282**	0.040	143.2	ug/L	27	Standard
	V	51	1800.6	20.7	**0.0010**	0.041	3971.4	ug/L	1434	Standard
	Cr	52	8069.5	1.6	**-0.0611**	0.005	7.9	ug/L	7733	Standard
	Cr	53	805.0	12.6	**0.3085**	0.086	27.9	ug/L	442	Standard
	Mn	55	1891.2	86.3	**0.1261**	0.196	155.3	ug/L	723	Standard
	Co	59	402.0	57.1	**0.0183**	0.027	148.1	ug/L	217	Standard
	Ni	60	380.0	16.0	**0.0137**	0.026	190.1	ug/L	304	Standard
	Cu	65	200.3	16.4	**0.0153**	0.014	94.0	ug/L	181	Standard
	Zn	66	277.3	5.9	**0.0260**	0.012	46.5	ug/L	215	Standard
>	**Ge**	72	571534.4	1.1				ug/L	520809	Standard
	As	75	-32.7	47.9	**0.0211**	0.011	53.6	ug/L	-52	Standard
	Se	82	21.0	34.3	**0.0252**	0.052	206.6	ug/L	17	Standard
	Se-1	77	64.3	8.6	**0.0008**	0.051	6596.2	ug/L	56	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	26.7	75.8				ug/L	28	Standard
	Y	89	488434.0	1.5				ug/L	447395	Standard
>	**Rh**	103	18.3	56.8				ug/L	15	Standard
	Mo	98	360.1	51.7	**0.0867**	0.057	65.8	ug/L	113	Standard
	Ag	107	301.7	75.6	**0.0262**	0.029	112.6	ug/L	108	Standard
	Cd	111	35.8	64.4	**0.0121**	0.009	76.9	mg/L	3	Standard
	Cd	114	93.7	41.3	**0.0153**	0.006	41.1	ug/L	20	Standard
>	**In**	115	672952.0	0.6				ug/L	625728	Standard
	Sn	118	2098.5	22.4	**0.2192**	0.070	31.8	ug/L	568	Standard
	Sb	123	1021.0	31.2	**0.1501**	0.058	38.5	ug/L	612	Standard
	Ba	135	296.3	92.5	**0.1088**	0.117	107.6	ug/L	21	Standard
	Ce	140	101.7	62.5				ug/L	245	Standard
>	**Tb**	159	1018483.3	2.2				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	228.7	95.2	**0.0235**	0.023	98.1	ug/L	15	Standard
	Tl	205	170.0	71.4	**0.0105**	0.014	137.1	ug/L	13	Standard
	Pb	206	473.7	49.2	**0.0358**	0.039	109.0	ug/L	264	Standard
	Pb	207	396.7	45.3	**0.0273**	0.033	121.3	ug/L	222	Standard
	Pb	208	1490.7	28.8	**0.0193**	0.019	100.6	ug/L	959	Standard
	U	238	168.7	71.3	**0.0196**	0.014	72.1	ug/L	9	Standard
>	**Bi**	209	580702.6	1.0				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:50:27
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	85.0	38.6	**0.0310**	0.035	111.2	mg/L	55	Standard
K	39	35.0	37.8	**-0.0077**	0.046	604.4	mg/L	28	Standard
Ca	43	16.7	105.4	**-1.0542**	1.482	140.5	mg/L	27	Standard
Fe	54	153.9	28.2	**0.0123**	0.031	255.3	mg/L	147	Standard
Fe	57	300.0	3.3	**0.0447**	0.032	71.4	mg/L	268	Standard
Sc-1	45	44725.9	0.8				mg/L	41174	Standard
Cl	35	82881.4	0.4				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2540.2	1.8				ug/L	1950	Standard
P	31	24578.3	4.0				ug/L	21156	Standard
S	34	4135.6	7.4				ug/L	3419	Standard
Sr	88	55.0	27.3				ug/L	72	Standard
C	12	116.7	21.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	16.5	36.7				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	16210.3	1.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.740	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:50:27
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.547
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.044
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:50:27
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: PBW 07 WG574419-03
Sample Date/Time: Friday, July 01, 2016 12:58:36
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81259.0	1.7				ug/L	76456	Standard
	Be	9	25.0	52.9	**0.0011**	0.011	980.8	ug/L	20	Standard
	Al	27	43520.8	2.0	**0.2290**	0.003	1.2	ug/L	1307	Standard
	Sc	45	45160.6	1.8				ug/L	41174	Standard
	Ti	47	37.3	12.7	**0.0196**	0.013	67.8	ug/L	27	Standard
	V	51	1890.1	0.3	**0.0103**	0.002	20.9	ug/L	1434	Standard
	Cr	52	10254.5	1.2	**0.1819**	0.016	8.6	ug/L	7733	Standard
	Cr	53	800.0	8.4	**0.3021**	0.055	18.2	ug/L	442	Standard
	Mn	55	1844.4	0.9	**0.1201**	0.001	0.9	ug/L	723	Standard
	Co	59	227.3	7.0	**-0.0025**	0.002	69.8	ug/L	217	Standard
	Ni	60	435.3	6.3	**0.0376**	0.014	36.1	ug/L	304	Standard
	Cu	65	169.0	18.5	**0.0011**	0.014	1207.4	ug/L	181	Standard
	Zn	66	2605.6	4.5	**1.7518**	0.074	4.2	ug/L	215	Standard
>	**Ge**	72	573164.6	0.8				ug/L	520809	Standard
	As	75	-74.5	34.0	**-0.0097**	0.019	192.2	ug/L	-52	Standard
	Se	82	11.5	10.8	**-0.0437**	0.008	19.0	ug/L	17	Standard
	Se-1	77	70.7	5.9	**0.0666**	0.045	68.1	ug/L	56	Standard
>	**Ga**	71	35.0	65.5				mg/L	25	Standard
	Rb	85	83.3	9.2				ug/L	28	Standard
	Y	89	497110.0	0.3				ug/L	447395	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	63.4	20.9	**-0.0047**	0.004	88.1	ug/L	113	Standard
	Ag	107	104.7	2.9	**0.0005**	0.001	97.2	ug/L	108	Standard
	Cd	111	8.9	29.5	**0.0012**	0.001	90.2	mg/L	3	Standard
	Cd	114	20.2	129.3	**0.0033**	0.004	129.2	ug/L	20	Standard
>	**In**	115	681820.3	1.0				ug/L	625728	Standard
	Sn	118	1671.8	12.8	**0.1542**	0.031	19.9	ug/L	568	Standard
	Sb	123	510.3	25.3	**0.0569**	0.023	40.1	ug/L	612	Standard
	Ba	135	135.7	5.5	**0.0393**	0.003	7.0	ug/L	21	Standard
	Ce	140	68.3	33.0				ug/L	245	Standard
>	**Tb**	159	1025294.3	0.6				ug/L	950397	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	44.0	21.7	**0.0039**	0.001	25.6	ug/L	15	Standard
	Tl	205	40.0	25.0	**-0.0050**	0.001	25.0	ug/L	13	Standard
	Pb	206	314.3	3.7	**0.0090**	0.002	26.0	ug/L	264	Standard
	Pb	207	276.7	9.5	**0.0051**	0.005	106.7	ug/L	222	Standard
	Pb	208	1132.0	1.7	**0.0030**	0.001	48.7	ug/L	959	Standard
	U	238	26.0	17.6	**0.0028**	0.001	20.4	ug/L	9	Standard
>	**Bi**	209	581506.6	1.1				ug/L	552821	Standard

Sample ID: PBW 07 WG574419-03
Report Date/Time: Friday, July 01, 2016 13:00:53
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.6090**	7.974	173.0	mg/L	2	Standard
Mg	24	81.7	9.4	**0.0269**	0.009	33.7	mg/L	55	Standard
K	39	40.0	21.7	**0.0086**	0.030	348.4	mg/L	28	Standard
Ca	43	30.0	33.3	**0.0262**	0.793	3031.4	mg/L	27	Standard
Fe	54	180.2	26.2	**0.0304**	0.036	118.2	mg/L	147	Standard
Fe	57	258.3	6.2	**-0.0804**	0.042	52.2	mg/L	268	Standard
> **Sc-1**	45	45160.6	1.8				mg/L	41174	Standard
Cl	35	85551.6	2.1				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	2493.5	7.2				ug/L	1950	Standard
P	31	25546.6	9.0				ug/L	21156	Standard
S	34	4053.9	0.5				ug/L	3419	Standard
Sr	88	75.0	13.3				ug/L	72	Standard
C	12	136.7	53.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	19.4	51.7				mg/L	16	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	10762.2	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.282	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.053	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 07 WG574419-03
Report Date/Time: Friday, July 01, 2016 13:00:53
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.964
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.189
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 07 WG574419-03
Report Date/Time: Friday, July 01, 2016 13:00:53
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: LCSW 07 WG574419-04
Sample Date/Time: Friday, July 01, 2016 13:03:34
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80883.7	2.2				ug/L	76456	Standard
	Be	9	63273.5	1.3	**53.4233**	1.134	2.1	ug/L	20	Standard
	Al	27	15556.3	4.2	**0.0758**	0.006	7.3	ug/L	1307	Standard
	Sc	45	46230.4	2.2				ug/L	41174	Standard
	Ti	47	48.3	18.7	**0.0475**	0.025	52.8	ug/L	27	Standard
	V	51	465592.0	1.2	**50.1984**	0.441	0.9	ug/L	1434	Standard
	Cr	52	471783.2	1.2	**50.9433**	0.486	1.0	ug/L	7733	Standard
	Cr	53	57119.2	2.3	**49.8721**	1.291	2.6	ug/L	442	Standard
	Mn	55	436781.1	0.8	**51.2372**	0.113	0.2	ug/L	723	Standard
	Co	59	434567.5	1.2	**50.4450**	0.373	0.7	ug/L	217	Standard
	Ni	60	118551.0	1.3	**50.6835**	0.443	0.9	ug/L	304	Standard
	Cu	65	119119.1	1.3	**51.8651**	0.602	1.2	ug/L	181	Standard
	Zn	66	71172.1	1.7	**51.5055**	0.595	1.2	ug/L	215	Standard
>	**Ge**	72	585340.9	0.6				ug/L	520809	Standard
	As	75	69945.5	1.2	**50.4563**	0.545	1.1	ug/L	-52	Standard
	Se	82	7094.3	1.4	**49.8362**	0.433	0.9	ug/L	17	Standard
	Se-1	77	4867.8	0.7	**49.9806**	0.170	0.3	ug/L	56	Standard
>	**Ga**	71	31.7	24.1				mg/L	25	Standard
	Rb	85	36.7	41.7				ug/L	28	Standard
	Y	89	498458.5	0.8				ug/L	447395	Standard
>	**Rh**	103	18.3	41.7				ug/L	15	Standard
	Mo	98	78.0	18.4	**-0.0003**	0.004	1563.8	ug/L	113	Standard
	Ag	107	402127.6	1.2	**51.3787**	0.778	1.5	ug/L	108	Standard
	Cd	111	126507.9	1.2	**50.4309**	0.392	0.8	mg/L	3	Standard
	Cd	114	308784.3	0.8	**49.7196**	0.327	0.7	ug/L	20	Standard
>	**In**	115	681801.9	1.3				ug/L	625728	Standard
	Sn	118	1796.8	16.1	**0.1722**	0.043	25.0	ug/L	568	Standard
	Sb	123	288724.4	0.5	**51.2448**	0.727	1.4	ug/L	612	Standard
	Ba	135	116686.9	0.7	**49.2097**	0.376	0.8	ug/L	21	Standard
	Ce	140	85.0	38.6				ug/L	245	Standard
>	**Tb**	159	1014866.4	0.7				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	482185.7	0.8	**50.5384**	0.275	0.5	ug/L	15	Standard
	Tl	205	444917.2	1.5	**52.5153**	1.373	2.6	ug/L	13	Standard
	Pb	206	312986.7	0.5	**51.9814**	0.469	0.9	ug/L	264	Standard
	Pb	207	271686.9	0.6	**49.6820**	0.381	0.8	ug/L	222	Standard
	Pb	208	1142411.3	0.4	**51.1494**	0.415	0.8	ug/L	959	Standard
	U	238	421119.4	1.0	**49.1551**	0.103	0.2	ug/L	9	Standard
>	**Bi**	209	587494.5	1.1				ug/L	552821	Standard

Sample ID: LCSW 07 WG574419-04
Report Date/Time: Friday, July 01, 2016 13:05:51
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**8.7572**	7.580	86.6	mg/L	2	Standard
Mg	24	76.7	21.0	**0.0195**	0.016	83.2	mg/L	55	Standard
K	39	21.7	26.6	**-0.0575**	0.018	32.0	mg/L	28	Standard
Ca	43	18.3	83.3	**-0.9528**	1.279	134.3	mg/L	27	Standard
Fe	54	147.9	28.9	**0.0041**	0.028	686.0	mg/L	147	Standard
Fe	57	245.0	10.8	**-0.1326**	0.084	63.2	mg/L	268	Standard
> Sc-1	45	46230.4	2.2				mg/L	41174	Standard
Cl	35	86090.6	2.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2420.2	0.7				ug/L	1950	Standard
P	31	25546.5	4.4				ug/L	21156	Standard
S	34	3980.5	6.3				ug/L	3419	Standard
Sr	88	56.7	20.4				ug/L	72	Standard
C	12	156.7	16.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	17	Standard
Dy	164	19.7	89.4				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	4735.7	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.391	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 07 WG574419-04
Report Date/Time: Friday, July 01, 2016 13:05:51
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.961
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.272
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 07 WG574419-04
Report Date/Time: Friday, July 01, 2016 13:05:51
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140006 WG574419-01
Sample Date/Time: Friday, July 01, 2016 13:06:46
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80758.0	0.8				ug/L	76456	Standard
	Be	9	41.7	6.9	**0.0154**	0.002	16.2	ug/L	20	Standard
	Al	27	11868534.0	1.1	**65.6266**	0.514	0.8	ug/L	1307	Standard
	Sc	45	45759.0	1.2				ug/L	41174	Standard
	Ti	47	2320.2	10.4	**6.5166**	0.703	10.8	ug/L	27	Standard
	V	51	6253.1	3.7	**0.5063**	0.022	4.3	ug/L	1434	Standard
	Cr	52	20690.1	0.7	**1.4009**	0.007	0.5	ug/L	7733	Standard
	Cr	53	7241.7	4.8	**6.2224**	0.278	4.5	ug/L	442	Standard
	Mn	55	361893.7	0.6	**44.2063**	0.556	1.3	ug/L	723	Standard
	Co	59	1899.1	4.5	**0.2003**	0.011	5.6	ug/L	217	Standard
	Ni	60	3188.7	2.0	**1.2710**	0.022	1.8	ug/L	304	Standard
	Cu	65	3204.0	1.0	**1.3811**	0.024	1.8	ug/L	181	Standard
	Zn	66	3650.1	1.8	**2.5809**	0.057	2.2	ug/L	215	Standard
>	Ge	72	561976.5	0.7				ug/L	520809	Standard
	As	75	349.0	10.2	**0.3073**	0.028	9.1	ug/L	-52	Standard
	Se	82	95.4	7.6	**0.5731**	0.052	9.1	ug/L	17	Standard
	Se-1	77	310.3	6.8	**2.6788**	0.206	7.7	ug/L	56	Standard
>	Ga	71	306.7	3.4				mg/L	25	Standard
	Rb	85	9304.5	4.6				ug/L	28	Standard
	Y	89	479158.2	2.5				ug/L	447395	Standard
>	Rh	103	63.3	19.9				ug/L	15	Standard
	Mo	98	462.6	2.2	**0.1212**	0.004	3.1	ug/L	113	Standard
	Ag	107	229.3	10.2	**0.0174**	0.003	18.1	ug/L	108	Standard
	Cd	111	314.9	4.8	**0.1274**	0.007	5.3	mg/L	3	Standard
	Cd	114	778.8	0.7	**0.1296**	0.002	1.2	ug/L	20	Standard
>	In	115	659596.7	0.4				ug/L	625728	Standard
	Sn	118	3462.1	8.7	**0.4262**	0.046	10.8	ug/L	568	Standard
	Sb	123	25160.0	1.7	**4.5846**	0.068	1.5	ug/L	612	Standard
	Ba	135	24755.2	1.0	**10.7771**	0.149	1.4	ug/L	21	Standard
	Ce	140	10733.8	0.6				ug/L	245	Standard
>	Tb	159	997525.3	0.9				ug/L	950397	Standard
	Ho	165	248.3	11.4				ug/L	7	Standard
	Tl	203	323.7	9.0	**0.0349**	0.003	8.9	ug/L	15	Standard
	Tl	205	295.0	13.5	**0.0268**	0.005	17.8	ug/L	13	Standard
	Pb	206	13733.6	1.1	**2.3523**	0.014	0.6	ug/L	264	Standard
	Pb	207	11541.7	1.2	**2.1713**	0.021	1.0	ug/L	222	Standard
	Pb	208	49582.7	0.8	**2.2840**	0.012	0.5	ug/L	959	Standard
	U	238	794.4	5.3	**0.0971**	0.005	5.3	ug/L	9	Standard
>	Bi	209	559684.2	0.5				ug/L	552821	Standard

Sample ID: L1606140006 WG574419-01
Report Date/Time: Friday, July 01, 2016 13:09:03
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**13.3851**	13.441	100.4	mg/L	2	Standard
Mg	24	23146.0	2.0	**24.2692**	0.405	1.7	mg/L	55	Standard
K	39	161.7	7.1	**0.4263**	0.034	7.9	mg/L	28	Standard
Ca	43	226.7	16.0	**16.1036**	3.136	19.5	mg/L	27	Standard
Fe	54	423.4	7.8	**0.1999**	0.022	10.8	mg/L	147	Standard
Fe	57	503.3	8.4	**0.5885**	0.131	22.2	mg/L	268	Standard
> **Sc-1**	45	45759.0	1.2				mg/L	41174	Standard
Cl	35	89790.6	1.3				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	17466.7	4.8				ug/L	1950	Standard
P	31	27324.6	2.0				ug/L	21156	Standard
S	34	4078.9	2.0				ug/L	3419	Standard
Sr	88	211.7	20.1				ug/L	72	Standard
C	12	163.3	9.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	17	Standard
Dy	164	363.3	15.2				mg/L	16	Standard
Ho-1	165	248.3	11.4				mg/L	7	Standard
Er	166	280.0	3.6				mg/L	7	Standard
I	127	49912.2	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.627	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140006 WG574419-01
Report Date/Time: Friday, July 01, 2016 13:09:03
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.413
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.242
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140007S WG574419-05
Sample Date/Time: Friday, July 01, 2016 13:09:57
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80711.1	0.9				ug/L	76456	Standard
	Be	9	64078.6	1.3	**54.2065**	0.745	1.4	ug/L	20	Standard
	Al	27	12211012.4	1.5	**67.5580**	0.517	0.8	ug/L	1307	Standard
	Sc	45	44934.9	0.8				ug/L	41174	Standard
	Ti	47	2064.8	6.8	**5.8866**	0.415	7.1	ug/L	27	Standard
	V	51	459064.1	0.1	**52.4156**	0.397	0.8	ug/L	1434	Standard
	Cr	52	459452.2	0.5	**52.5615**	0.550	1.0	ug/L	7733	Standard
	Cr	53	62920.4	1.2	**58.2380**	1.104	1.9	ug/L	442	Standard
	Mn	55	774817.1	0.6	**96.3273**	0.870	0.9	ug/L	723	Standard
	Co	59	418465.0	0.9	**51.4354**	0.672	1.3	ug/L	217	Standard
	Ni	60	114181.6	0.7	**51.6930**	0.726	1.4	ug/L	304	Standard
	Cu	65	110934.3	0.7	**51.1428**	0.660	1.3	ug/L	181	Standard
	Zn	66	70146.7	0.6	**53.7582**	0.090	0.2	ug/L	215	Standard
>	Ge	72	552840.2	0.7				ug/L	520809	Standard
	As	75	68517.6	0.7	**52.3310**	0.386	0.7	ug/L	-52	Standard
	Se	82	6918.4	0.6	**51.4649**	0.420	0.8	ug/L	17	Standard
	Se-1	77	5005.2	0.2	**54.4756**	0.506	0.9	ug/L	56	Standard
>	Ga	71	246.7	21.7				mg/L	25	Standard
	Rb	85	8369.0	3.4				ug/L	28	Standard
	Y	89	475828.1	0.8				ug/L	447395	Standard
>	Rh	103	60.0	8.3				ug/L	15	Standard
	Mo	98	444.1	3.8	**0.1178**	0.005	4.5	ug/L	113	Standard
	Ag	107	373105.8	0.7	**50.1488**	0.527	1.1	ug/L	108	Standard
	Cd	111	121300.2	0.5	**50.8704**	0.210	0.4	mg/L	3	Standard
	Cd	114	296777.5	0.3	**50.2713**	0.199	0.4	ug/L	20	Standard
>	In	115	648070.4	0.4				ug/L	625728	Standard
	Sn	118	3198.7	11.7	**0.3955**	0.054	13.6	ug/L	568	Standard
	Sb	123	305348.9	0.8	**57.0152**	0.685	1.2	ug/L	612	Standard
	Ba	135	127151.7	1.1	**56.4152**	0.853	1.5	ug/L	21	Standard
	Ce	140	10170.1	11.9				ug/L	245	Standard
>	Tb	159	984910.5	1.3				ug/L	950397	Standard
	Ho	165	243.3	11.3				ug/L	7	Standard
	Tl	203	460227.9	0.5	**50.9164**	0.584	1.1	ug/L	15	Standard
	Tl	205	419164.2	0.8	**52.2197**	1.079	2.1	ug/L	13	Standard
	Pb	206	308797.4	0.7	**54.1380**	1.001	1.8	ug/L	264	Standard
	Pb	207	269438.3	0.3	**52.0122**	0.916	1.8	ug/L	222	Standard
	Pb	208	1139591.7	0.5	**53.8600**	0.817	1.5	ug/L	959	Standard
	U	238	412122.6	0.9	**50.7770**	0.583	1.1	ug/L	9	Standard
>	Bi	209	556623.0	1.5				ug/L	552821	Standard

Sample ID: L1606140007S WG574419-05
Report Date/Time: Friday, July 01, 2016 13:12:14
Page 1

Approved: July 02, 2016

Na	23	5.0	0.0	**13.6792**	0.103	0.8	mg/L	2	Standard
Mg	24	24264.4	1.3	**25.9117**	0.145	0.6	mg/L	55	Standard
K	39	138.3	27.1	**0.3549**	0.133	37.4	mg/L	28	Standard
Ca	43	288.3	17.1	**21.5709**	4.241	19.7	mg/L	27	Standard
Fe	54	394.0	6.5	**0.1843**	0.018	9.9	mg/L	147	Standard
Fe	57	461.7	10.0	**0.4961**	0.134	27.1	mg/L	268	Standard
> **Sc-1**	45	44934.9	0.8				mg/L	41174	Standard
Cl	35	90855.7	2.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	11284.2	7.1				ug/L	1950	Standard
P	31	27506.6	4.3				ug/L	21156	Standard
S	34	4052.2	3.2				ug/L	3419	Standard
Sr	88	215.0	8.1				ug/L	72	Standard
C	12	163.3	9.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	17	Standard
Dy	164	319.9	13.5				mg/L	16	Standard
Ho-1	165	243.3	11.3				mg/L	7	Standard
Er	166	280.0	25.8				mg/L	7	Standard
I	127	66618.3	7.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.566	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.150	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140007S WG574419-05
Report Date/Time: Friday, July 01, 2016 13:12:14
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.571
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140008SD WG574419-06
Sample Date/Time: Friday, July 01, 2016 13:13:09
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79700.7	0.7				ug/L	76456	Standard
	Be	9	61700.4	1.6	**52.8560**	0.961	1.8	ug/L	20	Standard
	Al	27	12099353.2	1.1	**67.7900**	0.341	0.5	ug/L	1307	Standard
	Sc	45	46046.6	2.1				ug/L	41174	Standard
	Ti	47	1942.8	6.7	**5.5490**	0.345	6.2	ug/L	27	Standard
	V	51	439192.0	0.4	**50.2950**	0.725	1.4	ug/L	1434	Standard
	Cr	52	444362.9	0.8	**50.9606**	0.244	0.5	ug/L	7733	Standard
	Cr	53	61436.0	0.3	**57.0274**	0.463	0.8	ug/L	442	Standard
	Mn	55	751669.2	0.7	**93.7402**	1.592	1.7	ug/L	723	Standard
	Co	59	399707.3	0.9	**49.2832**	0.963	2.0	ug/L	217	Standard
	Ni	60	109770.2	0.4	**49.8430**	0.612	1.2	ug/L	304	Standard
	Cu	65	108323.5	0.5	**50.0917**	0.642	1.3	ug/L	181	Standard
	Zn	66	68554.1	0.3	**52.6985**	0.620	1.2	ug/L	215	Standard
>	Ge	72	551156.5	1.1				ug/L	520809	Standard
	As	75	66401.2	0.7	**50.8743**	0.706	1.4	ug/L	-52	Standard
	Se	82	6730.1	0.5	**50.2159**	0.522	1.0	ug/L	17	Standard
	Se-1	77	4856.1	2.0	**53.0004**	1.342	2.5	ug/L	56	Standard
>	Ga	71	258.3	16.5				mg/L	25	Standard
	Rb	85	8118.8	3.8				ug/L	28	Standard
	Y	89	478755.4	1.4				ug/L	447395	Standard
>	Rh	103	76.7	3.8				ug/L	15	Standard
	Mo	98	512.6	9.1	**0.1403**	0.015	10.9	ug/L	113	Standard
	Ag	107	359474.2	1.7	**48.4964**	0.550	1.1	ug/L	108	Standard
	Cd	111	117797.3	1.3	**49.5872**	0.214	0.4	mg/L	3	Standard
	Cd	114	286908.0	1.1	**48.7832**	0.247	0.5	ug/L	20	Standard
>	In	115	645632.6	1.1				ug/L	625728	Standard
	Sn	118	3095.3	10.7	**0.3822**	0.054	14.0	ug/L	568	Standard
	Sb	123	295379.5	0.9	**55.3607**	0.341	0.6	ug/L	612	Standard
	Ba	135	123159.2	0.4	**54.8524**	0.674	1.2	ug/L	21	Standard
	Ce	140	9327.9	2.1				ug/L	245	Standard
>	Tb	159	983378.7	0.8				ug/L	950397	Standard
	Ho	165	230.0	2.2				ug/L	7	Standard
	Tl	203	446759.8	0.8	**49.4389**	0.212	0.4	ug/L	15	Standard
	Tl	205	408461.1	0.9	**50.8970**	0.668	1.3	ug/L	13	Standard
	Pb	206	301254.5	0.8	**52.8246**	0.290	0.5	ug/L	264	Standard
	Pb	207	261947.7	0.8	**50.5743**	0.209	0.4	ug/L	222	Standard
	Pb	208	1104059.4	0.6	**52.1919**	0.419	0.8	ug/L	959	Standard
	U	238	402584.9	0.8	**49.6175**	0.619	1.2	ug/L	9	Standard
>	Bi	209	556417.0	0.4				ug/L	552821	Standard

Sample ID: L1606140008SD WG574419-06
Report Date/Time: Friday, July 01, 2016 13:15:26
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**13.3094**	13.444	101.0	mg/L	2	Standard
Mg	24	23635.1	1.3	**24.6326**	0.412	1.7	mg/L	55	Standard
K	39	136.7	2.1	**0.3374**	0.002	0.7	mg/L	28	Standard
Ca	43	218.3	2.6	**15.2980**	0.780	5.1	mg/L	27	Standard
Fe	54	402.8	5.8	**0.1835**	0.012	6.4	mg/L	147	Standard
Fe	57	453.3	11.2	**0.4438**	0.163	36.7	mg/L	268	Standard
> **Sc-1**	45	46046.6	2.1				mg/L	41174	Standard
Cl	35	91583.3	0.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	12164.9	6.2				ug/L	1950	Standard
P	31	27852.3	5.0				ug/L	21156	Standard
S	34	4047.2	6.0				ug/L	3419	Standard
Sr	88	165.0	13.2				ug/L	72	Standard
C	12	173.3	28.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	17	Standard
Dy	164	272.5	13.7				mg/L	16	Standard
Ho-1	165	230.0	2.2				mg/L	7	Standard
Er	166	296.7	5.1				mg/L	7	Standard
I	127	59372.8	2.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.244	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140008SD WG574419-06
Report Date/Time: Friday, July 01, 2016 13:15:26
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.181
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.651
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606142701 WG574419-02
Sample Date/Time: Friday, July 01, 2016 13:16:20
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	94406.8	3.4				ug/L	76456	Standard
	Be	9	85.0	35.3	**0.0412**	0.020	47.7	ug/L	20	Standard
	Al	27	56617238.2	4.0	**267.8022**	1.372	0.5	ug/L	1307	Standard
	Sc	45	46416.0	2.3				ug/L	41174	Standard
	Ti	47	884.0	4.8	**2.5428**	0.066	2.6	ug/L	27	Standard
	V	51	553940.5	2.9	**65.0728**	0.307	0.5	ug/L	1434	Standard
	Cr	52	299233.7	2.3	**34.8806**	0.725	2.1	ug/L	7733	Standard
	Cr	53	52044.3	2.2	**49.4662**	0.542	1.1	ug/L	442	Standard
	Mn	55	240351.0	1.7	**30.6595**	0.508	1.7	ug/L	723	Standard
	Co	59	198012.4	2.6	**25.0083**	0.182	0.7	ug/L	217	Standard
	Ni	60	153480.0	2.1	**71.5090**	1.345	1.9	ug/L	304	Standard
	Cu	65	58814.7	2.8	**27.8441**	0.424	1.5	ug/L	181	Standard
	Zn	66	154855.3	2.4	**122.2558**	1.271	1.0	ug/L	215	Standard
>	Ge	72	537771.5	3.3				ug/L	520809	Standard
	As	75	14927.7	4.1	**11.7537**	0.103	0.9	ug/L	-52	Standard
	Se	82	5918.7	4.3	**45.2355**	0.439	1.0	ug/L	17	Standard
	Se-1	77	1154.4	4.7	**12.3907**	0.295	2.4	ug/L	56	Standard
>	Ga	71	381.7	7.4				mg/L	25	Standard
	Rb	85	99551.2	2.9				ug/L	28	Standard
	Y	89	473605.3	2.9				ug/L	447395	Standard
>	Rh	103	343.3	14.9				ug/L	15	Standard
	Mo	98	2403599.9	3.3	**789.6820**	1.502	0.2	ug/L	113	Standard
	Ag	107	348.7	11.5	**0.0353**	0.004	11.4	ug/L	108	Standard
	Cd	111	-1248.7	2.3	**-0.5414**	0.006	1.1	mg/L	3	Standard
	Cd	114	4967.3	3.8	**0.8659**	0.009	1.0	ug/L	20	Standard
>	In	115	629706.1	3.1				ug/L	625728	Standard
	Sn	118	2805.3	14.7	**0.3479**	0.050	14.4	ug/L	568	Standard
	Sb	123	2974.2	8.0	**0.5376**	0.028	5.2	ug/L	612	Standard
	Ba	135	206845.8	2.1	**94.4794**	0.976	1.0	ug/L	21	Standard
	Ce	140	2191.8	6.3				ug/L	245	Standard
>	Tb	159	977368.8	3.8				ug/L	950397	Standard
	Ho	165	160.0	22.5				ug/L	7	Standard
	Tl	203	430.0	2.3	**0.0496**	0.002	4.9	ug/L	15	Standard
	Tl	205	390.0	8.0	**0.0417**	0.005	11.7	ug/L	13	Standard
	Pb	206	8083.8	1.9	**1.4566**	0.015	1.0	ug/L	264	Standard
	Pb	207	6744.5	3.2	**1.3320**	0.010	0.7	ug/L	222	Standard
	Pb	208	28675.7	2.4	**1.3865**	0.012	0.8	ug/L	959	Standard
	U	238	878.7	4.2	**0.1143**	0.007	5.7	ug/L	9	Standard
>	Bi	209	526224.9	2.9				ug/L	552821	Standard

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 13:18:37
Page 1

Approved: July 02, 2016

Na	23	10.0	100.0	**26.3285**	25.935	98.5	mg/L	2	Standard
Mg	24	138231.5	3.2	**143.1647**	1.819	1.3	mg/L	55	Standard
K	39	2051.8	3.6	**6.8480**	0.212	3.1	mg/L	28	Standard
Ca	43	1005.0	4.6	**78.6144**	4.822	6.1	mg/L	27	Standard
Fe	54	1298.8	6.4	**0.8054**	0.072	8.9	mg/L	147	Standard
Fe	57	1345.1	6.6	**2.8597**	0.164	5.7	mg/L	268	Standard
> **Sc-1**	45	46416.0	2.3				mg/L	41174	Standard
Cl	35	167690.5	2.1				ug/L	69550	Standard
Kr	83	3.0	66.7				ug/L	1	Standard
Br	81	1167966.9	3.9				ug/L	1950	Standard
P	31	32757.0	0.7				ug/L	21156	Standard
S	34	3867.2	4.1				ug/L	3419	Standard
Sr	88	1343.4	2.4				ug/L	72	Standard
C	12	240.0	12.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1276.7	2.5				mg/L	17	Standard
Dy	164	1123.0	11.7				mg/L	16	Standard
Ho-1	165	160.0	22.5				mg/L	7	Standard
Er	166	146.7	14.2				mg/L	7	Standard
I	127	116304.4	6.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.479	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 13:18:37
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.636	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.189	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 13:18:37
Page 3

Approved: July 02, 2016

Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606142701DP WG574419-07
Sample Date/Time: Friday, July 01, 2016 13:19:32
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	104046.1	2.0				ug/L	76456	Standard
	Be	9	46.7	34.4	**0.0108**	0.011	98.8	ug/L	20	Standard
	Al	27	58682132.6	0.8	**251.9338**	4.223	1.7	ug/L	1307	Standard
	Sc	45	49029.2	0.9				ug/L	41174	Standard
	Ti	47	887.4	3.2	**2.4062**	0.089	3.7	ug/L	27	Standard
	V	51	572508.3	0.6	**63.4877**	0.191	0.3	ug/L	1434	Standard
	Cr	52	308728.3	0.4	**33.9428**	0.266	0.8	ug/L	7733	Standard
	Cr	53	52407.2	1.8	**46.9988**	0.886	1.9	ug/L	442	Standard
	Mn	55	248854.2	1.2	**29.9599**	0.484	1.6	ug/L	723	Standard
	Co	59	205279.2	0.1	**24.4744**	0.076	0.3	ug/L	217	Standard
	Ni	60	157071.7	0.8	**69.0682**	0.457	0.7	ug/L	304	Standard
	Cu	65	60395.8	1.4	**26.9893**	0.358	1.3	ug/L	181	Standard
	Zn	66	157884.7	1.0	**117.6566**	1.110	0.9	ug/L	215	Standard
>	Ge	72	569569.1	0.4				ug/L	520809	Standard
	As	75	17073.6	1.5	**12.6909**	0.145	1.1	ug/L	-52	Standard
	Se	82	6774.5	1.0	**48.9062**	0.303	0.6	ug/L	17	Standard
	Se-1	77	1068.4	1.0	**10.7433**	0.123	1.1	ug/L	56	Standard
>	Ga	71	446.7	9.5				mg/L	25	Standard
	Rb	85	100812.6	1.2				ug/L	28	Standard
	Y	89	506159.4	0.9				ug/L	447395	Standard
>	Rh	103	378.3	6.5				ug/L	15	Standard
	Mo	98	2476607.9	0.6	**769.3094**	6.421	0.8	ug/L	113	Standard
	Ag	107	277.0	7.6	**0.0234**	0.003	11.5	ug/L	108	Standard
	Cd	111	-1309.7	3.6	**-0.5367**	0.015	2.9	mg/L	3	Standard
	Cd	114	4986.9	3.4	**0.8220**	0.028	3.4	ug/L	20	Standard
>	In	115	666048.1	0.7				ug/L	625728	Standard
	Sn	118	2695.2	8.4	**0.3091**	0.031	9.9	ug/L	568	Standard
	Sb	123	2859.3	3.8	**0.4860**	0.016	3.4	ug/L	612	Standard
	Ba	135	211685.9	0.6	**91.3948**	0.192	0.2	ug/L	21	Standard
	Ce	140	2868.6	2.4				ug/L	245	Standard
>	Tb	159	1029121.0	0.5				ug/L	950397	Standard
	Ho	165	185.0	14.3				ug/L	7	Standard
	Tl	203	334.0	8.3	**0.0363**	0.003	8.5	ug/L	15	Standard
	Tl	205	321.7	4.7	**0.0304**	0.002	6.7	ug/L	13	Standard
	Pb	206	8239.2	0.3	**1.4051**	0.008	0.6	ug/L	264	Standard
	Pb	207	6707.8	0.3	**1.2527**	0.005	0.4	ug/L	222	Standard
	Pb	208	28813.8	0.3	**1.3177**	0.005	0.4	ug/L	959	Standard
	U	238	815.7	5.7	**0.1005**	0.006	5.9	ug/L	9	Standard
>	Bi	209	555326.9	0.6				ug/L	552821	Standard

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 13:21:49
Page 1

Approved: July 02, 2016

Na	23	11.7	89.2	**29.1295**	26.033	89.4	mg/L	2	Standard
Mg	24	145830.2	1.6	**142.9963**	1.122	0.8	mg/L	55	Standard
K	39	1910.1	4.3	**6.0209**	0.304	5.1	mg/L	28	Standard
Ca	43	1011.7	3.6	**74.7713**	3.380	4.5	mg/L	27	Standard
Fe	54	1358.4	2.2	**0.7959**	0.027	3.4	mg/L	147	Standard
Fe	57	1346.7	4.5	**2.6702**	0.125	4.7	mg/L	268	Standard
> **Sc-1**	45	49029.2	0.9				mg/L	41174	Standard
Cl	35	174677.8	0.8				ug/L	69550	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1284910.2	3.2				ug/L	1950	Standard
P	31	34656.3	1.1				ug/L	21156	Standard
S	34	3823.8	7.2				ug/L	3419	Standard
Sr	88	1511.7	7.3				ug/L	72	Standard
C	12	326.7	14.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1320.1	5.5				mg/L	17	Standard
Dy	164	1289.7	16.2				mg/L	16	Standard
Ho-1	165	185.0	14.3				mg/L	7	Standard
Er	166	146.7	50.3				mg/L	7	Standard
I	127	128302.1	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.087	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.362	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 13:21:49
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.444
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.453
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 13:21:49
Page 3

Approved: July 02, 2016

Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606146801
Sample Date/Time: Friday, July 01, 2016 13:22:43
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	95246.8	1.7				ug/L	76456	Standard
	Be	9	60.0	36.3	**0.0230**	0.015	65.8	ug/L	20	Standard
	Al	27	35472226.0	0.8	**166.3429**	2.244	1.3	ug/L	1307	Standard
	Sc	45	46670.1	1.2				ug/L	41174	Standard
	Ti	47	140.0	21.5	**0.3094**	0.088	28.6	ug/L	27	Standard
	V	51	4190.3	5.3	**0.2681**	0.025	9.2	ug/L	1434	Standard
	Cr	52	13346.9	2.4	**0.5405**	0.016	3.1	ug/L	7733	Standard
	Cr	53	6873.2	1.9	**5.8101**	0.177	3.1	ug/L	442	Standard
	Mn	55	19772.6	3.3	**2.2894**	0.049	2.1	ug/L	723	Standard
	Co	59	1288.4	10.2	**0.1244**	0.014	11.2	ug/L	217	Standard
	Ni	60	3544.7	6.0	**1.4102**	0.074	5.2	ug/L	304	Standard
	Cu	65	6205.3	5.0	**2.7088**	0.103	3.8	ug/L	181	Standard
	Zn	66	22108.8	2.9	**16.3375**	0.265	1.6	ug/L	215	Standard
>	Ge	72	568906.9	1.3				ug/L	520809	Standard
	As	75	543.4	5.2	**0.4480**	0.017	3.7	ug/L	-52	Standard
	Se	82	262.1	5.1	**1.7720**	0.073	4.1	ug/L	17	Standard
	Se-1	77	440.0	5.3	**4.0275**	0.247	6.1	ug/L	56	Standard
>	Ga	71	158.3	3.6				mg/L	25	Standard
	Rb	85	31255.6	3.8				ug/L	28	Standard
	Y	89	486688.8	1.2				ug/L	447395	Standard
>	Rh	103	48.3	15.8				ug/L	15	Standard
	Mo	98	2311.5	33.1	**0.6846**	0.225	32.9	ug/L	113	Standard
	Ag	107	184.3	31.5	**0.0110**	0.007	66.0	ug/L	108	Standard
	Cd	111	67.6	38.4	**0.0249**	0.010	40.7	mg/L	3	Standard
	Cd	114	137.0	32.2	**0.0223**	0.007	31.3	ug/L	20	Standard
>	In	115	673094.9	1.4				ug/L	625728	Standard
	Sn	118	1788.4	15.0	**0.1745**	0.042	24.3	ug/L	568	Standard
	Sb	123	351.8	14.1	**0.0296**	0.010	32.6	ug/L	612	Standard
	Ba	135	56024.1	0.9	**23.9231**	0.201	0.8	ug/L	21	Standard
	Ce	140	3798.8	2.1				ug/L	245	Standard
>	Tb	159	1033945.4	1.1				ug/L	950397	Standard
	Ho	165	101.7	7.5				ug/L	7	Standard
	Tl	203	1144.4	9.6	**0.1229**	0.010	8.3	ug/L	15	Standard
	Tl	205	953.4	4.2	**0.1063**	0.005	4.8	ug/L	13	Standard
	Pb	206	1672.1	2.6	**0.2429**	0.007	2.7	ug/L	264	Standard
	Pb	207	1423.7	2.4	**0.2227**	0.003	1.2	ug/L	222	Standard
	Pb	208	6035.8	3.4	**0.2307**	0.005	2.3	ug/L	959	Standard
	U	238	4452.3	3.5	**0.5357**	0.011	2.0	ug/L	9	Standard
>	Bi	209	569516.4	1.6				ug/L	552821	Standard

Sample ID: L1606146801
Report Date/Time: Friday, July 01, 2016 13:25:00
Page 1

Approved: July 02, 2016

Na	23	8.3	34.6	**21.9971**	7.770	35.3	mg/L	2	Standard
Mg	24	21678.8	1.3	**22.2848**	0.435	2.0	mg/L	55	Standard
K	39	2645.2	6.0	**8.8196**	0.578	6.6	mg/L	28	Standard
Ca	43	443.3	15.1	**33.0787**	5.254	15.9	mg/L	27	Standard
Fe	54	243.9	19.5	**0.0697**	0.031	44.8	mg/L	147	Standard
Fe	57	548.3	7.8	**0.6829**	0.122	17.9	mg/L	268	Standard
> **Sc-1**	45	46670.1	1.2				mg/L	41174	Standard
Cl	35	103993.1	1.8				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	45849.6	8.7				ug/L	1950	Standard
P	31	27049.2	4.2				ug/L	21156	Standard
S	34	3738.8	3.2				ug/L	3419	Standard
Sr	88	155.0	11.6				ug/L	72	Standard
C	12	323.3	23.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	17	Standard
Dy	164	114.1	9.2				mg/L	16	Standard
Ho-1	165	101.7	7.5				mg/L	7	Standard
Er	166	123.3	9.4				mg/L	7	Standard
I	127	41777.5	0.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.578	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.235	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606146801
Report Date/Time: Friday, July 01, 2016 13:25:00
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.570
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.020
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606146801PS WG574824-01
Sample Date/Time: Friday, July 01, 2016 13:25:55
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90108.8	0.5				ug/L	76456	Standard
	Be	9	70249.2	1.7	**53.2245**	0.671	1.3	ug/L	20	Standard
	Al	27	34044331.9	1.0	**168.7325**	2.084	1.2	ug/L	1307	Standard
	Sc	45	45399.6	0.8				ug/L	41174	Standard
	Ti	47	138.7	17.3	**0.3148**	0.070	22.1	ug/L	27	Standard
	V	51	476317.0	1.0	**54.1491**	0.294	0.5	ug/L	1434	Standard
	Cr	52	466031.0	0.5	**53.0857**	0.077	0.1	ug/L	7733	Standard
	Cr	53	63049.2	0.3	**58.0938**	0.175	0.3	ug/L	442	Standard
	Mn	55	440401.5	1.9	**54.4612**	0.687	1.3	ug/L	723	Standard
	Co	59	434977.5	1.9	**53.2245**	0.684	1.3	ug/L	217	Standard
	Ni	60	116940.2	0.8	**52.7068**	0.130	0.2	ug/L	304	Standard
	Cu	65	117328.2	0.6	**53.8548**	0.631	1.2	ug/L	181	Standard
	Zn	66	90120.9	0.2	**68.8123**	0.512	0.7	ug/L	215	Standard
>	Ge	72	555295.5	0.6				ug/L	520809	Standard
	As	75	70805.4	0.6	**53.8379**	0.372	0.7	ug/L	-52	Standard
	Se	82	7397.3	0.8	**54.7911**	0.368	0.7	ug/L	17	Standard
	Se-1	77	5164.9	2.2	**55.9837**	1.347	2.4	ug/L	56	Standard
>	Ga	71	125.0	14.4				mg/L	25	Standard
	Rb	85	30505.7	1.7				ug/L	28	Standard
	Y	89	478605.6	2.2				ug/L	447395	Standard
>	Rh	103	46.7	43.3				ug/L	15	Standard
	Mo	98	839.0	9.3	**0.2402**	0.025	10.4	ug/L	113	Standard
	Ag	107	377133.6	0.1	**49.9818**	0.291	0.6	ug/L	108	Standard
	Cd	111	125097.0	1.5	**51.7283**	0.533	1.0	mg/L	3	Standard
	Cd	114	305450.5	0.6	**51.0188**	0.497	1.0	ug/L	20	Standard
>	In	115	657251.3	0.6				ug/L	625728	Standard
	Sn	118	2133.5	27.9	**0.2313**	0.087	37.7	ug/L	568	Standard
	Sb	123	274150.2	2.6	**50.4698**	1.311	2.6	ug/L	612	Standard
	Ba	135	169708.2	1.1	**74.2483**	0.737	1.0	ug/L	21	Standard
	Ce	140	3655.4	2.8				ug/L	245	Standard
>	Tb	159	997893.3	1.3				ug/L	950397	Standard
	Ho	165	96.7	3.0				ug/L	7	Standard
	Tl	203	479768.6	1.3	**52.5300**	0.668	1.3	ug/L	15	Standard
	Tl	205	441867.2	0.2	**54.4752**	0.081	0.1	ug/L	13	Standard
	Pb	206	307910.6	0.5	**53.4209**	0.305	0.6	ug/L	264	Standard
	Pb	207	270893.2	0.6	**51.7493**	0.347	0.7	ug/L	222	Standard
	Pb	208	1132008.2	0.1	**52.9464**	0.115	0.2	ug/L	959	Standard
	U	238	437881.5	0.7	**53.3944**	0.388	0.7	ug/L	9	Standard
>	Bi	209	562372.5	0.1				ug/L	552821	Standard

Sample ID: L1606146801PS WG574824-01
Report Date/Time: Friday, July 01, 2016 13:28:12
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.0238**	15.621	173.1	mg/L	2	Standard
Mg	24	21021.2	2.0	**22.2136**	0.609	2.7	mg/L	55	Standard
K	39	2403.5	9.2	**8.2292**	0.795	9.7	mg/L	28	Standard
Ca	43	463.3	6.3	**35.7330**	2.393	6.7	mg/L	27	Standard
Fe	54	243.1	16.8	**0.0741**	0.029	39.0	mg/L	147	Standard
Fe	57	501.7	6.6	**0.5936**	0.084	14.1	mg/L	268	Standard
> **Sc-1**	45	45399.6	0.8				mg/L	41174	Standard
Cl	35	103755.4	0.3				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	34723.1	4.1				ug/L	1950	Standard
P	31	26186.0	3.6				ug/L	21156	Standard
S	34	3878.8	0.5				ug/L	3419	Standard
Sr	88	156.7	22.4				ug/L	72	Standard
C	12	250.0	6.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	17	Standard
Dy	164	122.0	12.6				mg/L	16	Standard
Ho-1	165	96.7	3.0				mg/L	7	Standard
Er	166	96.7	21.5				mg/L	7	Standard
I	127	39521.5	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.622	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606146801PS WG574824-01
Report Date/Time: Friday, July 01, 2016 13:28:12
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.038
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.728
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606146801PS WG574824-01
Report Date/Time: Friday, July 01, 2016 13:28:12
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606146801SDL WG574824-02
Sample Date/Time: Friday, July 01, 2016 13:29:06
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81934.4	2.4				ug/L	76456	Standard
	Be	9	23.3	12.4	**-0.0004**	0.002	528.6	ug/L	20	Standard
	Al	27	6372058.3	0.6	**34.7368**	0.867	2.5	ug/L	1307	Standard
	Sc	45	41202.6	2.0				ug/L	41174	Standard
	Ti	47	41.3	2.8	**0.0406**	0.003	7.7	ug/L	27	Standard
	V	51	2837.9	5.4	**0.1420**	0.017	12.0	ug/L	1434	Standard
	Cr	52	10022.3	0.9	**0.2524**	0.016	6.4	ug/L	7733	Standard
	Cr	53	2263.5	3.6	**1.7926**	0.079	4.4	ug/L	442	Standard
	Mn	55	3961.5	5.6	**0.4150**	0.030	7.3	ug/L	723	Standard
	Co	59	455.7	11.3	**0.0293**	0.007	23.1	ug/L	217	Standard
	Ni	60	945.7	5.5	**0.2966**	0.026	8.9	ug/L	304	Standard
	Cu	65	1313.7	2.7	**0.5610**	0.018	3.2	ug/L	181	Standard
	Zn	66	5244.2	0.6	**4.0427**	0.043	1.1	ug/L	215	Standard
>	**Ge**	72	527921.1	0.4				ug/L	520809	Standard
	As	75	85.0	19.3	**0.1131**	0.013	11.5	ug/L	-52	Standard
	Se	82	67.2	5.5	**0.3985**	0.027	6.7	ug/L	17	Standard
	Se-1	77	133.3	10.0	**0.8545**	0.159	18.6	ug/L	56	Standard
>	**Ga**	71	51.7	34.0				mg/L	25	Standard
	Rb	85	5692.7	3.6				ug/L	28	Standard
	Y	89	450949.6	1.2				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	345.8	14.9	**0.0912**	0.015	16.7	ug/L	113	Standard
	Ag	107	237.3	15.4	**0.0205**	0.005	24.9	ug/L	108	Standard
	Cd	111	35.8	40.8	**0.0133**	0.006	46.9	mg/L	3	Standard
	Cd	114	93.4	10.0	**0.0165**	0.001	8.4	ug/L	20	Standard
>	**In**	115	620231.7	1.6				ug/L	625728	Standard
	Sn	118	866.7	12.4	**0.0518**	0.019	35.8	ug/L	568	Standard
	Sb	123	1735.5	30.3	**0.3061**	0.107	34.9	ug/L	612	Standard
	Ba	135	10779.2	0.9	**4.9812**	0.056	1.1	ug/L	21	Standard
	Ce	140	791.7	4.9				ug/L	245	Standard
>	**Tb**	159	942729.5	1.8				ug/L	950397	Standard
	Ho	165	28.3	36.7				ug/L	7	Standard
	Tl	203	339.3	13.7	**0.0372**	0.005	12.3	ug/L	15	Standard
	Tl	205	293.3	14.5	**0.0272**	0.005	18.3	ug/L	13	Standard
	Pb	206	612.0	8.4	**0.0647**	0.008	11.7	ug/L	264	Standard
	Pb	207	519.7	9.7	**0.0553**	0.008	14.9	ug/L	222	Standard
	Pb	208	2221.7	7.6	**0.0579**	0.007	11.9	ug/L	959	Standard
	U	238	900.0	3.6	**0.1118**	0.003	3.1	ug/L	9	Standard
>	**Bi**	209	550585.9	1.6				ug/L	552821	Standard

Sample ID: L1606146801SDL WG574824-02
Report Date/Time: Friday, July 01, 2016 13:31:23
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.0521**	8.742	173.0	mg/L	2	Standard
Mg	24	4062.2	4.3	**4.6808**	0.132	2.8	mg/L	55	Standard
K	39	498.3	11.6	**1.7809**	0.252	14.1	mg/L	28	Standard
Ca	43	101.7	7.5	**6.7726**	0.507	7.5	mg/L	27	Standard
Fe	54	107.3	30.2	**-0.0145**	0.026	180.3	mg/L	147	Standard
Fe	57	291.7	13.3	**0.0919**	0.123	133.6	mg/L	268	Standard
> **Sc-1**	45	41202.6	2.0				mg/L	41174	Standard
Cl	35	96829.8	0.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	10183.4	2.4				ug/L	1950	Standard
P	31	11094.1	2.9				ug/L	21156	Standard
S	34	3683.8	0.7				ug/L	3419	Standard
Sr	88	95.0	24.1				ug/L	72	Standard
C	12	163.3	7.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	17	Standard
Dy	164	29.5	32.3				mg/L	16	Standard
Ho-1	165	28.3	36.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	35264.3	1.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.166	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.366	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606146801SDL WG574824-02
Report Date/Time: Friday, July 01, 2016 13:31:23
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.122
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.596
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 13:32:18
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83467.6	1.4				ug/L	76456	Standard
	Be	9	63718.7	0.7	**52.1231**	0.475	0.9	ug/L	20	Standard
	Al	27	9062605.1	0.9	**48.4842**	0.275	0.6	ug/L	1307	Standard
	Sc	45	44059.0	1.3				ug/L	41174	Standard
	Ti	47	34404.0	1.1	**99.0094**	0.671	0.7	ug/L	27	Standard
	V	51	443244.1	0.4	**50.4051**	0.454	0.9	ug/L	1434	Standard
	Cr	52	434951.0	1.6	**49.5050**	0.344	0.7	ug/L	7733	Standard
	Cr	53	55258.9	0.5	**50.8922**	0.303	0.6	ug/L	442	Standard
	Mn	55	403371.8	0.9	**49.9032**	0.315	0.6	ug/L	723	Standard
	Co	59	418724.4	1.0	**51.2643**	0.239	0.5	ug/L	217	Standard
	Ni	60	110119.8	2.0	**49.6473**	0.559	1.1	ug/L	304	Standard
	Cu	65	108317.9	1.6	**49.7353**	0.387	0.8	ug/L	181	Standard
	Zn	66	65643.9	0.2	**50.1012**	0.420	0.8	ug/L	215	Standard
>	**Ge**	72	555003.0	0.9				ug/L	520809	Standard
	As	75	65592.7	0.9	**49.9040**	0.350	0.7	ug/L	-52	Standard
	Se	82	6752.9	1.3	**50.0327**	0.319	0.6	ug/L	17	Standard
	Se-1	77	4634.4	1.8	**50.1857**	0.510	1.0	ug/L	56	Standard
>	**Ga**	71	43.3	43.7				mg/L	25	Standard
	Rb	85	895.0	1.7				ug/L	28	Standard
	Y	89	470300.0	1.3				ug/L	447395	Standard
>	**Rh**	103	21.7	53.3				ug/L	15	Standard
	Mo	98	316268.1	0.4	**99.0881**	0.889	0.9	ug/L	113	Standard
	Ag	107	376354.5	0.2	**49.6535**	0.293	0.6	ug/L	108	Standard
	Cd	111	120441.8	1.1	**49.5792**	0.292	0.6	mg/L	3	Standard
	Cd	114	295637.4	1.1	**49.1550**	0.340	0.7	ug/L	20	Standard
>	**In**	115	660227.7	0.5				ug/L	625728	Standard
	Sn	118	331178.7	0.6	**48.6841**	0.135	0.3	ug/L	568	Standard
	Sb	123	273404.4	0.5	**50.1048**	0.039	0.1	ug/L	612	Standard
	Ba	135	110185.5	0.7	**47.9831**	0.253	0.5	ug/L	21	Standard
	Ce	140	71.7	8.1				ug/L	245	Standard
>	**Tb**	159	984792.3	0.6				ug/L	950397	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	462531.1	0.4	**50.2621**	0.297	0.6	ug/L	15	Standard
	Tl	205	421818.4	1.3	**51.6134**	0.810	1.6	ug/L	13	Standard
	Pb	206	290494.8	0.7	**50.0181**	0.451	0.9	ug/L	264	Standard
	Pb	207	263168.3	0.9	**49.8939**	0.483	1.0	ug/L	222	Standard
	Pb	208	1101207.6	0.2	**51.1172**	0.228	0.4	ug/L	959	Standard
	U	238	418119.7	0.4	**50.6018**	0.328	0.6	ug/L	9	Standard
>	**Bi**	209	566634.4	0.3				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 13:34:35
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4939.1	6.4	**5.3310**	0.320	6.0	mg/L	55	Standard
K	39	1245.1	5.8	**4.3288**	0.211	4.9	mg/L	28	Standard
Ca	43	85.0	25.6	**4.7651**	1.854	38.9	mg/L	27	Standard
Fe	54	6867.9	1.6	**4.9353**	0.136	2.8	mg/L	147	Standard
Fe	57	2071.8	2.6	**5.1454**	0.157	3.1	mg/L	268	Standard
> **Sc-1**	45	44059.0	1.3				mg/L	41174	Standard
Cl	35	90383.1	4.1				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	4354.0	6.6				ug/L	1950	Standard
P	31	26625.0	1.6				ug/L	21156	Standard
S	34	4595.7	0.9				ug/L	3419	Standard
Sr	88	73.3	21.9				ug/L	72	Standard
C	12	80.0	25.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	9.7	105.8				mg/L	16	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	17566.9	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.246		
Al	27	96.968		
Sc	45			
Ti	47	99.009		
V	51	100.810		
Cr	52	99.010		
Cr	53			
Mn	55	99.806		
Co	59	102.529		
Ni	60	99.295		
Cu	65	99.471		
Zn	66	100.202		
> Ge	72		106.565	
As	75	99.808		
Se	82	100.065		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 13:34:35
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	99.088		
Ag	107	99.307		
Cd	111	99.158		
Cd	114			
> In	115			105.514
Sn	118	97.368		
Sb	123	100.210		
Ba	135	95.966		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.524		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.234		
U	238	101.204		
> Bi	209			102.499
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 13:34:35
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 13:35:30
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81907.5	2.0				ug/L	76456	Standard
	Be	9	33.3	37.7	**0.0081**	0.011	136.7	ug/L	20	Standard
	Al	27	3658.8	6.2	**0.0097**	0.001	9.1	ug/L	1307	Standard
	Sc	45	43395.4	0.6				ug/L	41174	Standard
	Ti	47	24.0	4.2	**-0.0151**	0.003	16.8	ug/L	27	Standard
	V	51	1486.9	6.2	**-0.0280**	0.012	41.3	ug/L	1434	Standard
	Cr	52	7626.6	0.2	**-0.0811**	0.008	9.6	ug/L	7733	Standard
	Cr	53	623.3	4.9	**0.1647**	0.029	17.3	ug/L	442	Standard
	Mn	55	758.4	6.6	**-0.0069**	0.006	85.9	ug/L	723	Standard
	Co	59	258.3	7.6	**0.0024**	0.003	111.1	ug/L	217	Standard
	Ni	60	313.7	6.6	**-0.0106**	0.010	91.1	ug/L	304	Standard
	Cu	65	185.7	9.2	**0.0117**	0.008	71.7	ug/L	181	Standard
	Zn	66	252.7	5.5	**0.0142**	0.012	81.1	ug/L	215	Standard
>	**Ge**	72	552319.3	0.7				ug/L	520809	Standard
	As	75	-27.0	147.4	**0.0246**	0.030	123.9	ug/L	-52	Standard
	Se	82	28.2	27.0	**0.0839**	0.058	69.1	ug/L	17	Standard
	Se-1	77	72.0	11.0	**0.1099**	0.092	83.3	ug/L	56	Standard
>	**Ga**	71	16.7	62.4				mg/L	25	Standard
	Rb	85	41.7	61.6				ug/L	28	Standard
	Y	89	471686.6	0.8				ug/L	447395	Standard
>	**Rh**	103	6.7	114.6				ug/L	15	Standard
	Mo	98	354.1	7.5	**0.0877**	0.008	9.3	ug/L	113	Standard
	Ag	107	160.0	3.9	**0.0084**	0.001	9.7	ug/L	108	Standard
	Cd	111	21.1	31.9	**0.0064**	0.003	43.8	mg/L	3	Standard
	Cd	114	42.3	49.2	**0.0071**	0.003	48.8	ug/L	20	Standard
>	**In**	115	656112.9	0.3				ug/L	625728	Standard
	Sn	118	1841.8	22.7	**0.1887**	0.062	32.7	ug/L	568	Standard
	Sb	123	1164.1	37.2	**0.1810**	0.080	44.0	ug/L	612	Standard
	Ba	135	49.7	23.3	**0.0039**	0.005	131.8	ug/L	21	Standard
	Ce	140	23.3	81.1				ug/L	245	Standard
>	**Tb**	159	980631.2	1.7				ug/L	950397	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	97.0	22.3	**0.0098**	0.002	24.1	ug/L	15	Standard
	Tl	205	98.3	10.6	**0.0022**	0.001	58.4	ug/L	13	Standard
	Pb	206	329.0	7.5	**0.0127**	0.004	31.8	ug/L	264	Standard
	Pb	207	298.7	13.9	**0.0104**	0.008	73.2	ug/L	222	Standard
	Pb	208	1210.7	3.3	**0.0078**	0.002	20.2	ug/L	959	Standard
	U	238	84.3	9.6	**0.0099**	0.001	9.3	ug/L	9	Standard
>	**Bi**	209	568472.1	0.5				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 13:37:47
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	32.8	**-0.0177**	0.014	79.8	mg/L	55	Standard
K	39	20.0	43.3	**-0.0585**	0.031	53.1	mg/L	28	Standard
Ca	43	10.0	50.0	**-1.5919**	0.429	27.0	mg/L	27	Standard
Fe	54	159.5	25.8	**0.0198**	0.030	153.3	mg/L	147	Standard
Fe	57	218.3	15.2	**-0.1678**	0.094	56.0	mg/L	268	Standard
Sc-1	45	43395.4	0.6				mg/L	41174	Standard
Cl	35	88102.1	0.5				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	3323.7	4.5				ug/L	1950	Standard
P	31	24955.5	2.9				ug/L	21156	Standard
S	34	4405.6	3.7				ug/L	3419	Standard
Sr	88	81.7	3.5				ug/L	72	Standard
C	12	120.0	8.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	-1.1	49.5				mg/L	16	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	7	Standard
I	127	13129.0	1.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.050	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 13:37:47
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.856
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.831
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 13:37:47
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606147001
Sample Date/Time: Friday, July 01, 2016 13:38:42
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81631.0	0.4				ug/L	76456	Standard
	Be	9	53.3	51.6	**0.0248**	0.023	93.4	ug/L	20	Standard
	Al	27	1267924.9	0.3	**6.9269**	0.012	0.2	ug/L	1307	Standard
	Sc	45	44398.3	2.2				ug/L	41174	Standard
	Ti	47	2584.6	3.5	**7.4850**	0.306	4.1	ug/L	27	Standard
	V	51	6589.9	3.8	**0.5661**	0.025	4.4	ug/L	1434	Standard
	Cr	52	17924.3	2.1	**1.1443**	0.040	3.5	ug/L	7733	Standard
	Cr	53	3320.4	0.9	**2.7174**	0.024	0.9	ug/L	442	Standard
	Mn	55	64462.5	1.4	**8.0226**	0.071	0.9	ug/L	723	Standard
	Co	59	2066.5	2.4	**0.2279**	0.005	2.1	ug/L	217	Standard
	Ni	60	3389.4	1.0	**1.4053**	0.013	0.9	ug/L	304	Standard
	Cu	65	36919.6	0.8	**17.1868**	0.112	0.7	ug/L	181	Standard
	Zn	66	100190.5	0.7	**77.8387**	0.507	0.7	ug/L	215	Standard
>	Ge	72	545904.9	0.6				ug/L	520809	Standard
	As	75	297.3	18.2	**0.2747**	0.041	14.8	ug/L	-52	Standard
	Se	82	57.3	13.9	**0.3062**	0.059	19.1	ug/L	17	Standard
	Se-1	77	123.0	8.6	**0.6885**	0.126	18.3	ug/L	56	Standard
>	Ga	71	431.7	8.5				mg/L	25	Standard
	Rb	85	29366.8	1.1				ug/L	28	Standard
	Y	89	475138.4	0.5				ug/L	447395	Standard
>	Rh	103	50.0	45.8				ug/L	15	Standard
	Mo	98	2283.8	2.0	**0.7046**	0.016	2.2	ug/L	113	Standard
	Ag	107	471.3	8.2	**0.0505**	0.006	10.9	ug/L	108	Standard
	Cd	111	442.4	4.4	**0.1831**	0.009	4.8	mg/L	3	Standard
	Cd	114	1113.8	8.0	**0.1885**	0.014	7.5	ug/L	20	Standard
>	In	115	648548.7	0.6				ug/L	625728	Standard
	Sn	118	6074.6	8.1	**0.8267**	0.078	9.5	ug/L	568	Standard
	Sb	123	3585.4	3.4	**0.6357**	0.026	4.1	ug/L	612	Standard
	Ba	135	28482.1	1.1	**12.6131**	0.063	0.5	ug/L	21	Standard
	Ce	140	9227.8	4.3				ug/L	245	Standard
>	Tb	159	980514.4	0.6				ug/L	950397	Standard
	Ho	165	175.0	22.7				ug/L	7	Standard
	Tl	203	154.0	7.9	**0.0159**	0.001	7.9	ug/L	15	Standard
	Tl	205	146.7	61.1	**0.0082**	0.011	135.5	ug/L	13	Standard
	Pb	206	300241.0	0.6	**51.5086**	0.588	1.1	ug/L	264	Standard
	Pb	207	251797.0	0.4	**47.5618**	0.476	1.0	ug/L	222	Standard
	Pb	208	1082895.4	0.4	**50.0819**	0.392	0.8	ug/L	959	Standard
	U	238	477.3	8.6	**0.0573**	0.005	9.4	ug/L	9	Standard
>	Bi	209	568731.4	0.7				ug/L	552821	Standard

Sample ID: L1606147001
Report Date/Time: Friday, July 01, 2016 13:40:59
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4449.0	1.5	**4.7618**	0.165	3.5	mg/L	55	Standard
K	39	216.7	12.7	**0.6389**	0.091	14.3	mg/L	28	Standard
Ca	43	100.0	13.2	**5.9773**	1.125	18.8	mg/L	27	Standard
Fe	54	785.4	6.3	**0.4720**	0.024	5.1	mg/L	147	Standard
Fe	57	430.0	12.3	**0.4211**	0.144	34.2	mg/L	268	Standard
> **Sc-1**	45	44398.3	2.2				mg/L	41174	Standard
Cl	35	84373.7	2.1				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	8569.1	5.7				ug/L	1950	Standard
P	31	27454.9	2.2				ug/L	21156	Standard
S	34	3758.8	6.0				ug/L	3419	Standard
Sr	88	151.7	5.0				ug/L	72	Standard
C	12	163.3	44.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	436.7	46.5				mg/L	17	Standard
Dy	164	239.6	2.7				mg/L	16	Standard
Ho-1	165	175.0	22.7				mg/L	7	Standard
Er	166	146.7	15.7				mg/L	7	Standard
I	127	165778.6	7.4				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.769	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.819	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606147001
Report Date/Time: Friday, July 01, 2016 13:40:59
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.647
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.878
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606147101
Sample Date/Time: Friday, July 01, 2016 13:41:54
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82165.6	1.5				ug/L	76456	Standard
	Be	9	25.0	60.0	**0.0010**	0.013	1235.0	ug/L	20	Standard
	Al	27	7420176.1	1.8	**40.3263**	0.745	1.8	ug/L	1307	Standard
	Sc	45	43403.8	1.8				ug/L	41174	Standard
	Ti	47	118.3	2.1	**0.2622**	0.007	2.8	ug/L	27	Standard
	V	51	2485.8	8.9	**0.0901**	0.026	28.6	ug/L	1434	Standard
	Cr	52	11852.6	4.6	**0.4290**	0.067	15.6	ug/L	7733	Standard
	Cr	53	3065.3	10.5	**2.4783**	0.300	12.1	ug/L	442	Standard
	Mn	55	13532.4	4.2	**1.6054**	0.074	4.6	ug/L	723	Standard
	Co	59	973.4	27.9	**0.0919**	0.034	37.1	ug/L	217	Standard
	Ni	60	2788.9	4.3	**1.1302**	0.057	5.1	ug/L	304	Standard
	Cu	65	167698.1	1.5	**78.3834**	1.378	1.8	ug/L	181	Standard
	Zn	66	18490.9	1.1	**14.2285**	0.192	1.3	ug/L	215	Standard
>	Ge	72	545541.7	0.2				ug/L	520809	Standard
	As	75	56.9	102.5	**0.0892**	0.045	50.6	ug/L	-52	Standard
	Se	82	46.0	7.1	**0.2215**	0.025	11.4	ug/L	17	Standard
	Se-1	77	165.0	10.0	**1.1579**	0.182	15.8	ug/L	56	Standard
>	Ga	71	40.0	45.1				mg/L	25	Standard
	Rb	85	1635.1	4.7				ug/L	28	Standard
	Y	89	467449.1	1.6				ug/L	447395	Standard
>	Rh	103	46.7	27.0				ug/L	15	Standard
	Mo	98	638.2	33.3	**0.1798**	0.068	38.0	ug/L	113	Standard
	Ag	107	803.4	8.9	**0.0950**	0.010	10.3	ug/L	108	Standard
	Cd	111	142.8	28.8	**0.0575**	0.017	29.9	mg/L	3	Standard
	Cd	114	382.8	34.4	**0.0647**	0.022	33.9	ug/L	20	Standard
>	In	115	648871.9	1.3				ug/L	625728	Standard
	Sn	118	1820.1	16.8	**0.1889**	0.050	26.3	ug/L	568	Standard
	Sb	123	517.0	31.6	**0.0630**	0.032	50.1	ug/L	612	Standard
	Ba	135	105021.4	1.0	**46.5367**	0.469	1.0	ug/L	21	Standard
	Ce	140	176.7	12.8				ug/L	245	Standard
>	Tb	159	974106.7	1.7				ug/L	950397	Standard
	Ho	165	20.0	43.3				ug/L	7	Standard
	Tl	203	182.7	61.2	**0.0196**	0.013	64.0	ug/L	15	Standard
	Tl	205	260.0	110.0	**0.0228**	0.036	157.4	ug/L	13	Standard
	Pb	206	1477.4	2.4	**0.2162**	0.008	3.6	ug/L	264	Standard
	Pb	207	1248.7	8.1	**0.1959**	0.021	10.5	ug/L	222	Standard
	Pb	208	5698.4	18.4	**0.2221**	0.051	22.9	ug/L	959	Standard
	U	238	669.4	46.7	**0.0825**	0.039	47.3	ug/L	9	Standard
>	Bi	209	555056.3	0.6				ug/L	552821	Standard

Sample ID: L1606147101
Report Date/Time: Friday, July 01, 2016 13:44:11
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8267.3	1.5	**9.1027**	0.178	2.0	mg/L	55	Standard
K	39	178.3	20.3	**0.5189**	0.142	27.4	mg/L	28	Standard
Ca	43	265.0	15.0	**20.3615**	3.046	15.0	mg/L	27	Standard
Fe	54	255.7	20.5	**0.0914**	0.039	42.6	mg/L	147	Standard
Fe	57	411.7	6.1	**0.3970**	0.095	23.9	mg/L	268	Standard
> **Sc-1**	45	43403.8	1.8				mg/L	41174	Standard
Cl	35	91879.7	0.6				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	5647.7	9.0				ug/L	1950	Standard
P	31	26070.8	4.0				ug/L	21156	Standard
S	34	4028.9	4.5				ug/L	3419	Standard
Sr	88	183.3	6.3				ug/L	72	Standard
C	12	180.0	24.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	57.3				mg/L	17	Standard
Dy	164	38.6	26.6				mg/L	16	Standard
Ho-1	165	20.0	43.3				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	7	Standard
I	127	15740.0	17.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.468	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.749	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606147101
Report Date/Time: Friday, July 01, 2016 13:44:11
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.699
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606153601 WG574593-01
Sample Date/Time: Friday, July 01, 2016 13:45:05
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	105632.1	2.8				ug/L	76456	Standard
	Be	9	31.7	39.7	**0.0005**	0.008	1597.2	ug/L	20	Standard
	Al	27	9212844.4	2.9	**38.9423**	0.330	0.8	ug/L	1307	Standard
	Sc	45	37845.6	1.8				ug/L	41174	Standard
	Ti	47	303.7	8.6	**0.9123**	0.111	12.1	ug/L	27	Standard
	V	51	24245.6	11.6	**2.9541**	0.410	13.9	ug/L	1434	Standard
	Cr	52	16917.1	2.1	**1.2643**	0.091	7.2	ug/L	7733	Standard
	Cr	53	9354.6	13.4	**9.4775**	1.472	15.5	ug/L	442	Standard
	Mn	55	60166.6	2.3	**8.3838**	0.064	0.8	ug/L	723	Standard
	Co	59	59968.5	3.2	**8.3264**	0.059	0.7	ug/L	217	Standard
	Ni	60	11329.9	3.4	**5.6751**	0.056	1.0	ug/L	304	Standard
	Cu	65	10538.7	5.5	**5.4379**	0.239	4.4	ug/L	181	Standard
	Zn	66	77341.6	1.9	**67.2161**	0.503	0.7	ug/L	215	Standard
>	Ge	72	487884.6	2.6				ug/L	520809	Standard
	As	75	3262.4	6.3	**2.8666**	0.175	6.1	ug/L	-52	Standard
	Se	82	371.0	19.1	**3.0068**	0.587	19.5	ug/L	17	Standard
	Se-1	77	623.3	8.4	**7.1096**	0.803	11.3	ug/L	56	Standard
>	Ga	71	1885.1	4.1				mg/L	25	Standard
	Rb	85	131658.3	3.5				ug/L	28	Standard
	Y	89	431897.9	2.3				ug/L	447395	Standard
>	Rh	103	143.3	38.9				ug/L	15	Standard
	Mo	98	627591.1	3.5	**227.1784**	5.050	2.2	ug/L	113	Standard
	Ag	107	276.3	2.5	**0.0293**	0.001	4.0	ug/L	108	Standard
	Cd	111	-404.3	7.2	**-0.1947**	0.015	7.6	mg/L	3	Standard
	Cd	114	1007.4	4.4	**0.1935**	0.003	1.7	ug/L	20	Standard
>	In	115	571506.3	2.8				ug/L	625728	Standard
	Sn	118	2893.6	2.8	**0.4084**	0.024	5.8	ug/L	568	Standard
	Sb	123	6941.9	4.4	**1.4365**	0.025	1.7	ug/L	612	Standard
	Ba	135	39683.6	1.8	**19.9579**	0.305	1.5	ug/L	21	Standard
	Ce	140	421.7	17.2				ug/L	245	Standard
>	Tb	159	912620.2	2.1				ug/L	950397	Standard
	Ho	165	31.7	24.1				ug/L	7	Standard
	Tl	203	8399.3	2.5	**1.0755**	0.030	2.8	ug/L	15	Standard
	Tl	205	7106.7	3.1	**1.0155**	0.022	2.2	ug/L	13	Standard
	Pb	206	2580.9	3.9	**0.4804**	0.009	1.9	ug/L	264	Standard
	Pb	207	2297.2	1.5	**0.4679**	0.011	2.3	ug/L	222	Standard
	Pb	208	9454.2	3.4	**0.4694**	0.008	1.7	ug/L	959	Standard
	U	238	1115.7	2.4	**0.1590**	0.005	3.3	ug/L	9	Standard
>	Bi	209	480711.3	2.7				ug/L	552821	Standard

Sample ID: L1606153601 WG574593-01
Report Date/Time: Friday, July 01, 2016 13:47:22
Page 1

Approved: July 02, 2016

Na	23	8.3	34.6	**27.1734**	9.738	35.8	mg/L	2	Standard
Mg	24	507921.7	2.6	**645.4329**	9.385	1.5	mg/L	55	Standard
K	39	415.0	4.8	**1.6014**	0.114	7.1	mg/L	28	Standard
Ca	43	481.7	12.6	**45.2243**	6.627	14.7	mg/L	27	Standard
Fe	54	127.9	17.8	**0.0101**	0.018	174.2	mg/L	147	Standard
Fe	57	770.0	11.3	**1.7671**	0.242	13.7	mg/L	268	Standard
> **Sc-1**	45	37845.6	1.8				mg/L	41174	Standard
Cl	35	383189.3	2.3				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	30317.0	3.7				ug/L	1950	Standard
P	31	15528.0	3.6				ug/L	21156	Standard
S	34	3745.5	2.5				ug/L	3419	Standard
Sr	88	250.0	23.1				ug/L	72	Standard
C	12	176.7	14.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26862.7	37.9				mg/L	17	Standard
Dy	164	21.9	26.7				mg/L	16	Standard
Ho-1	165	31.7	24.1				mg/L	7	Standard
Er	166	30.0	66.7				mg/L	7	Standard
I	127	123380.9	8.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.161	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601 WG574593-01
Report Date/Time: Friday, July 01, 2016 13:47:22
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.335
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.956
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606153601 WG574593-01
Report Date/Time: Friday, July 01, 2016 13:47:22
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606153601DP WG574593-04
Sample Date/Time: Friday, July 01, 2016 13:48:17
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	113476.7	0.3				ug/L	76456	Standard
	Be	9	31.7	39.7	**-0.0008**	0.008	933.9	ug/L	20	Standard
	Al	27	9155815.3	1.0	**36.0246**	0.289	0.8	ug/L	1307	Standard
	Sc	45	38106.2	3.0				ug/L	41174	Standard
	Ti	47	317.7	11.6	**0.9598**	0.126	13.2	ug/L	27	Standard
	V	51	23799.7	13.5	**2.9030**	0.438	15.1	ug/L	1434	Standard
	Cr	52	15774.9	0.6	**1.1182**	0.010	0.9	ug/L	7733	Standard
	Cr	53	7253.4	7.9	**7.2700**	0.659	9.1	ug/L	442	Standard
	Mn	55	54277.4	0.5	**7.5755**	0.086	1.1	ug/L	723	Standard
	Co	59	56802.6	1.1	**7.9092**	0.067	0.8	ug/L	217	Standard
	Ni	60	10522.3	1.7	**5.2767**	0.120	2.3	ug/L	304	Standard
	Cu	65	10358.5	2.3	**5.3602**	0.097	1.8	ug/L	181	Standard
	Zn	66	63839.2	1.1	**55.6043**	0.258	0.5	ug/L	215	Standard
>	Ge	72	486471.3	0.9				ug/L	520809	Standard
	As	75	3361.1	6.7	**2.9591**	0.174	5.9	ug/L	-52	Standard
	Se	82	440.0	19.1	**3.5994**	0.683	19.0	ug/L	17	Standard
	Se-1	77	548.0	6.3	**6.1810**	0.486	7.9	ug/L	56	Standard
>	Ga	71	1580.1	9.0				mg/L	25	Standard
	Rb	85	128497.6	0.7				ug/L	28	Standard
	Y	89	437852.1	1.2				ug/L	447395	Standard
>	Rh	103	195.0	13.3				ug/L	15	Standard
	Mo	98	610817.8	0.2	**219.3028**	1.490	0.7	ug/L	113	Standard
	Ag	107	270.0	5.4	**0.0280**	0.002	7.9	ug/L	108	Standard
	Cd	111	-435.5	5.5	**-0.2078**	0.012	5.8	mg/L	3	Standard
	Cd	114	1008.9	7.4	**0.1923**	0.015	7.6	ug/L	20	Standard
>	In	115	576209.6	0.5				ug/L	625728	Standard
	Sn	118	2962.0	1.1	**0.4156**	0.007	1.7	ug/L	568	Standard
	Sb	123	5993.6	0.1	**1.2257**	0.006	0.5	ug/L	612	Standard
	Ba	135	37997.3	1.1	**18.9491**	0.250	1.3	ug/L	21	Standard
	Ce	140	438.3	13.3				ug/L	245	Standard
>	Tb	159	912922.8	0.6				ug/L	950397	Standard
	Ho	165	23.3	44.6				ug/L	7	Standard
	Tl	203	7035.6	2.0	**0.8846**	0.019	2.1	ug/L	15	Standard
	Tl	205	6231.3	4.9	**0.8732**	0.041	4.7	ug/L	13	Standard
	Pb	206	2197.2	4.0	**0.3947**	0.019	4.9	ug/L	264	Standard
	Pb	207	1945.1	0.8	**0.3813**	0.005	1.2	ug/L	222	Standard
	Pb	208	7974.8	0.5	**0.3808**	0.004	1.1	ug/L	959	Standard
	U	238	1110.0	6.5	**0.1553**	0.010	6.5	ug/L	9	Standard
>	Bi	209	489368.4	0.9				ug/L	552821	Standard

Sample ID: L1606153601DP WG574593-04
Report Date/Time: Friday, July 01, 2016 13:50:34
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.3506**	9.259	173.0	mg/L	2	Standard
Mg	24	497934.2	1.5	**628.6633**	12.777	2.0	mg/L	55	Standard
K	39	386.7	13.3	**1.4712**	0.210	14.3	mg/L	28	Standard
Ca	43	468.3	8.9	**43.5651**	4.343	10.0	mg/L	27	Standard
Fe	54	108.4	32.3	**-0.0071**	0.029	411.5	mg/L	147	Standard
Fe	57	688.3	12.0	**1.4795**	0.238	16.1	mg/L	268	Standard
> **Sc-1**	45	38106.2	3.0				mg/L	41174	Standard
Cl	35	369584.8	0.9				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	29598.9	3.8				ug/L	1950	Standard
P	31	15125.9	2.3				ug/L	21156	Standard
S	34	3780.5	5.9				ug/L	3419	Standard
Sr	88	230.0	13.6				ug/L	72	Standard
C	12	213.3	38.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30656.1	29.8				mg/L	17	Standard
Dy	164	16.0	70.4				mg/L	16	Standard
Ho-1	165	23.3	44.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	76869.6	2.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		148.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.407	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601DP WG574593-04
Report Date/Time: Friday, July 01, 2016 13:50:34
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.086
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.522
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606153601DP WG574593-04
Report Date/Time: Friday, July 01, 2016 13:50:34
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606153601S WG574593-05
Sample Date/Time: Friday, July 01, 2016 13:51:28
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	114783.5	3.4				ug/L	76456	Standard
	Be	9	31472.7	2.0	**18.7219**	0.754	4.0	ug/L	20	Standard
	Al	27	8967809.3	2.2	**34.8925**	0.413	1.2	ug/L	1307	Standard
	Sc	45	36838.1	2.1				ug/L	41174	Standard
	Ti	47	293.0	5.4	**0.9041**	0.043	4.8	ug/L	27	Standard
	V	51	144707.0	17.5	**19.1390**	3.192	16.7	ug/L	1434	Standard
	Cr	52	181657.1	2.0	**23.7324**	0.270	1.1	ug/L	7733	Standard
	Cr	53	26979.0	1.6	**28.9363**	0.245	0.8	ug/L	442	Standard
	Mn	55	196630.4	2.3	**28.4601**	0.390	1.4	ug/L	723	Standard
	Co	59	229358.7	1.0	**32.8948**	0.071	0.2	ug/L	217	Standard
	Ni	60	50822.4	1.0	**26.7818**	0.048	0.2	ug/L	304	Standard
	Cu	65	50564.2	0.8	**27.1746**	0.164	0.6	ug/L	181	Standard
	Zn	66	34538.3	0.8	**30.8215**	0.391	1.3	ug/L	215	Standard
>	Ge	72	473620.3	1.0				ug/L	520809	Standard
	As	75	32972.2	0.9	**29.4152**	0.246	0.8	ug/L	-52	Standard
	Se	82	3843.3	1.0	**33.3303**	0.606	1.8	ug/L	17	Standard
	Se-1	77	2661.6	3.4	**33.5483**	0.893	2.7	ug/L	56	Standard
>	Ga	71	381.7	15.1				mg/L	25	Standard
	Rb	85	125348.3	2.7				ug/L	28	Standard
	Y	89	429677.9	2.4				ug/L	447395	Standard
>	Rh	103	226.7	13.3				ug/L	15	Standard
	Mo	98	605966.7	1.3	**219.9601**	1.216	0.6	ug/L	113	Standard
	Ag	107	143805.9	1.0	**21.9725**	0.186	0.8	ug/L	108	Standard
	Cd	111	47375.9	2.4	**22.5887**	0.138	0.6	mg/L	3	Standard
	Cd	114	117916.6	2.4	**22.7105**	0.229	1.0	ug/L	20	Standard
>	In	115	569946.5	1.8				ug/L	625728	Standard
	Sn	118	2151.8	16.9	**0.2836**	0.068	23.8	ug/L	568	Standard
	Sb	123	117947.9	1.3	**25.0246**	0.247	1.0	ug/L	612	Standard
	Ba	135	80315.6	0.5	**40.5194**	0.565	1.4	ug/L	21	Standard
	Ce	140	525.0	16.6				ug/L	245	Standard
>	Tb	159	909446.5	2.1				ug/L	950397	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	188663.7	0.8	**24.0492**	0.050	0.2	ug/L	15	Standard
	Tl	205	172066.6	1.3	**24.6917**	0.238	1.0	ug/L	13	Standard
	Pb	206	123402.9	1.1	**24.9025**	0.136	0.5	ug/L	264	Standard
	Pb	207	107579.3	1.1	**23.9013**	0.073	0.3	ug/L	222	Standard
	Pb	208	446533.6	1.0	**24.2893**	0.091	0.4	ug/L	959	Standard
	U	238	179675.3	1.7	**25.5069**	0.325	1.3	ug/L	9	Standard
>	Bi	209	483038.3	0.9				ug/L	552821	Standard

Sample ID: L1606153601S WG574593-05
Report Date/Time: Friday, July 01, 2016 13:53:45
Page 1

Approved: July 02, 2016

Na	23	13.3	21.7	**44.4001**	9.083	20.5	mg/L	2	Standard
Mg	24	482486.9	1.9	**629.9240**	1.410	0.2	mg/L	55	Standard
K	39	456.7	2.3	**1.8260**	0.024	1.3	mg/L	28	Standard
Ca	43	443.3	6.2	**42.6201**	3.595	8.4	mg/L	27	Standard
Fe	54	107.2	30.6	**-0.0052**	0.027	515.1	mg/L	147	Standard
Fe	57	646.7	6.6	**1.4187**	0.179	12.6	mg/L	268	Standard
> **Sc-1**	45	36838.1	2.1				mg/L	41174	Standard
Cl	35	363789.4	1.4				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	29438.6	3.1				ug/L	1950	Standard
P	31	15032.5	1.4				ug/L	21156	Standard
S	34	3710.5	3.9				ug/L	3419	Standard
Sr	88	215.0	4.7				ug/L	72	Standard
C	12	186.7	18.8				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	44900.2	29.0				mg/L	17	Standard
Dy	164	12.5	117.7				mg/L	16	Standard
Ho-1	165	18.3	56.8				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	7	Standard
I	127	80914.0	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.131	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.939	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601S WG574593-05
Report Date/Time: Friday, July 01, 2016 13:53:45
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.085
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.377
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606153601S WG574593-05
Report Date/Time: Friday, July 01, 2016 13:53:45
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606153601SD WG574593-06
Sample Date/Time: Friday, July 01, 2016 13:54:40
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	112397.1	1.9				ug/L	76456	Standard
	Be	9	31070.2	1.4	**18.8667**	0.550	2.9	ug/L	20	Standard
	Al	27	8839135.1	2.6	**35.1153**	0.794	2.3	ug/L	1307	Standard
	Sc	45	36505.6	0.6				ug/L	41174	Standard
	Ti	47	313.3	8.2	**0.9879**	0.083	8.4	ug/L	27	Standard
	V	51	166809.7	7.9	**22.4386**	1.861	8.3	ug/L	1434	Standard
	Cr	52	176635.7	0.7	**23.3939**	0.040	0.2	ug/L	7733	Standard
	Cr	53	26448.1	1.1	**28.7705**	0.310	1.1	ug/L	442	Standard
	Mn	55	190612.1	1.7	**27.9819**	0.319	1.1	ug/L	723	Standard
	Co	59	229904.6	2.0	**33.4420**	0.439	1.3	ug/L	217	Standard
	Ni	60	50248.2	1.0	**26.8570**	0.085	0.3	ug/L	304	Standard
	Cu	65	50373.6	1.7	**27.4578**	0.363	1.3	ug/L	181	Standard
	Zn	66	32810.8	2.5	**29.6880**	0.646	2.2	ug/L	215	Standard
>	Ge	72	466958.0	0.7				ug/L	520809	Standard
	As	75	31818.9	1.7	**28.7902**	0.285	1.0	ug/L	-52	Standard
	Se	82	3739.0	3.2	**32.8806**	0.943	2.9	ug/L	17	Standard
	Se-1	77	2572.6	1.3	**32.8825**	0.665	2.0	ug/L	56	Standard
>	Ga	71	335.0	0.0				mg/L	25	Standard
	Rb	85	123842.4	1.0				ug/L	28	Standard
	Y	89	424204.0	1.6				ug/L	447395	Standard
>	Rh	103	250.0	19.1				ug/L	15	Standard
	Mo	98	596887.3	1.2	**220.8114**	1.891	0.9	ug/L	113	Standard
	Ag	107	140477.5	2.4	**21.8716**	0.278	1.3	ug/L	108	Standard
	Cd	111	46478.5	0.9	**22.5882**	0.134	0.6	mg/L	3	Standard
	Cd	114	114740.4	2.4	**22.5229**	0.416	1.8	ug/L	20	Standard
>	In	115	559219.9	1.1				ug/L	625728	Standard
	Sn	118	2036.8	20.6	**0.2701**	0.075	27.8	ug/L	568	Standard
	Sb	123	115612.8	1.8	**24.9963**	0.192	0.8	ug/L	612	Standard
	Ba	135	78486.8	0.7	**40.3510**	0.202	0.5	ug/L	21	Standard
	Ce	140	446.7	6.2				ug/L	245	Standard
>	Tb	159	894070.3	0.6				ug/L	950397	Standard
	Ho	165	23.3	24.7				ug/L	7	Standard
	Tl	203	185499.3	0.6	**23.8373**	0.171	0.7	ug/L	15	Standard
	Tl	205	169836.9	2.3	**24.5659**	0.283	1.2	ug/L	13	Standard
	Pb	206	121903.1	0.8	**24.7990**	0.171	0.7	ug/L	264	Standard
	Pb	207	105852.8	0.4	**23.7090**	0.262	1.1	ug/L	222	Standard
	Pb	208	438929.8	1.6	**24.0671**	0.200	0.8	ug/L	959	Standard
	U	238	177358.8	1.6	**25.3810**	0.202	0.8	ug/L	9	Standard
>	Bi	209	479179.3	1.2				ug/L	552821	Standard

Sample ID: L1606153601SD WG574593-06
Report Date/Time: Friday, July 01, 2016 13:56:57
Page 1

Approved: July 02, 2016

Na	23	6.7	86.6	**22.4621**	19.450	86.6	mg/L	2	Standard
Mg	24	471196.6	0.7	**620.7791**	4.974	0.8	mg/L	55	Standard
K	39	408.3	16.7	**1.6356**	0.302	18.5	mg/L	28	Standard
Ca	43	436.7	18.5	**42.2777**	8.047	19.0	mg/L	27	Standard
Fe	54	118.9	19.0	**0.0063**	0.019	307.7	mg/L	147	Standard
Fe	57	681.7	4.2	**1.5588**	0.115	7.4	mg/L	268	Standard
> **Sc-1**	45	36505.6	0.6				mg/L	41174	Standard
Cl	35	356982.4	1.5				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	28717.2	3.6				ug/L	1950	Standard
P	31	15301.1	0.8				ug/L	21156	Standard
S	34	3565.4	1.6				ug/L	3419	Standard
Sr	88	228.3	25.6				ug/L	72	Standard
C	12	156.7	38.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50532.6	17.8				mg/L	17	Standard
Dy	164	15.4	96.7				mg/L	16	Standard
Ho-1	165	23.3	24.7				mg/L	7	Standard
Er	166	26.7	78.1				mg/L	7	Standard
I	127	86335.9	6.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.009	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601SD WG574593-06
Report Date/Time: Friday, July 01, 2016 13:56:57
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.371
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.679
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606153601SD WG574593-06
Report Date/Time: Friday, July 01, 2016 13:56:57
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106804
Sample Date/Time: Friday, July 01, 2016 13:57:51
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92136.1	2.7				ug/L	76456	Standard
	Be	9	31.7	32.9	**0.0036**	0.008	216.5	ug/L	20	Standard
	Al	27	859023.9	1.9	**4.1545**	0.040	1.0	ug/L	1307	Standard
	Sc	45	36834.7	2.5				ug/L	41174	Standard
	Ti	47	40.0	19.5	**0.0448**	0.025	54.9	ug/L	27	Standard
	V	51	5203.8	19.0	**0.4694**	0.132	28.1	ug/L	1434	Standard
	Cr	52	6735.2	1.8	**-0.0924**	0.015	16.5	ug/L	7733	Standard
	Cr	53	918.4	10.2	**0.5415**	0.104	19.3	ug/L	442	Standard
	Mn	55	2241.8	1.6	**0.2108**	0.003	1.6	ug/L	723	Standard
	Co	59	300.7	9.6	**0.0119**	0.004	33.8	ug/L	217	Standard
	Ni	60	672.3	1.0	**0.1885**	0.006	3.2	ug/L	304	Standard
	Cu	65	1685.8	29.1	**0.7955**	0.246	31.0	ug/L	181	Standard
	Zn	66	3230.4	18.8	**2.5967**	0.499	19.2	ug/L	215	Standard
>	**Ge**	72	494044.1	0.8				ug/L	520809	Standard
	As	75	465.2	37.5	**0.4417**	0.146	33.1	ug/L	-52	Standard
	Se	82	234.7	30.5	**1.8293**	0.582	31.8	ug/L	17	Standard
	Se-1	77	90.3	10.8	**0.4300**	0.128	29.8	ug/L	56	Standard
>	**Ga**	71	38.3	39.8				mg/L	25	Standard
	Rb	85	223.3	18.1				ug/L	28	Standard
	Y	89	421894.0	1.5				ug/L	447395	Standard
>	**Rh**	103	131.7	22.3				ug/L	15	Standard
	Mo	98	5006.3	9.4	**1.7140**	0.193	11.2	ug/L	113	Standard
	Ag	107	126.3	16.6	**0.0056**	0.003	50.1	ug/L	108	Standard
	Cd	111	16.1	25.5	**0.0049**	0.002	35.5	mg/L	3	Standard
	Cd	114	61.4	11.1	**0.0113**	0.001	10.9	ug/L	20	Standard
>	**In**	115	596688.0	1.6				ug/L	625728	Standard
	Sn	118	568.3	15.2	**0.0085**	0.015	181.1	ug/L	568	Standard
	Sb	123	246.2	18.9	**0.0163**	0.010	61.8	ug/L	612	Standard
	Ba	135	7350.5	3.5	**3.5247**	0.082	2.3	ug/L	21	Standard
	Ce	140	23.3	32.7				ug/L	245	Standard
>	**Tb**	159	916453.6	1.2				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	304.7	24.9	**0.0334**	0.008	23.6	ug/L	15	Standard
	Tl	205	111.7	6.8	**0.0044**	0.001	16.4	ug/L	13	Standard
	Pb	206	327.7	8.6	**0.0145**	0.004	27.3	ug/L	264	Standard
	Pb	207	301.0	9.8	**0.0128**	0.005	36.7	ug/L	222	Standard
	Pb	208	1200.4	8.2	**0.0093**	0.004	42.0	ug/L	959	Standard
	U	238	75.7	24.1	**0.0092**	0.002	23.9	ug/L	9	Standard
>	**Bi**	209	548664.2	1.8				ug/L	552821	Standard

Sample ID: L1606106804
Report Date/Time: Friday, July 01, 2016 14:00:08
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2398.5	7.1	**3.0753**	0.279	9.1	mg/L	55	Standard
K	39	18.3	56.8	**-0.0529**	0.044	83.5	mg/L	28	Standard
Ca	43	20.0	43.3	**-0.4071**	0.939	230.7	mg/L	27	Standard
Fe	54	72.6	4.6	**-0.0352**	0.002	4.7	mg/L	147	Standard
Fe	57	226.7	6.4	**-0.0245**	0.066	267.2	mg/L	268	Standard
> **Sc-1**	45	36834.7	2.5				mg/L	41174	Standard
Cl	35	83689.9	2.1				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	5874.5	1.4				ug/L	1950	Standard
P	31	8095.5	4.0				ug/L	21156	Standard
S	34	3318.7	0.5				ug/L	3419	Standard
Sr	88	98.3	10.6				ug/L	72	Standard
C	12	110.0	9.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	12785.7	29.7				mg/L	17	Standard
Dy	164	19.7	89.4				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	43990.5	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.509	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.861	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106804
Report Date/Time: Friday, July 01, 2016 14:00:08
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.359
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.248
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106805
Sample Date/Time: Friday, July 01, 2016 14:01:03
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88670.5	2.3				ug/L	76456	Standard
	Be	9	28.3	53.9	**0.0021**	0.012	582.5	ug/L	20	Standard
	Al	27	846462.5	1.2	**4.2550**	0.126	3.0	ug/L	1307	Standard
	Sc	45	36754.5	1.7				ug/L	41174	Standard
	Ti	47	37.0	14.0	**0.0369**	0.018	47.7	ug/L	27	Standard
	V	51	2755.7	12.5	**0.1599**	0.048	29.8	ug/L	1434	Standard
	Cr	52	6950.6	2.2	**-0.0520**	0.020	37.7	ug/L	7733	Standard
	Cr	53	901.7	5.0	**0.5360**	0.035	6.6	ug/L	442	Standard
	Mn	55	2061.5	1.0	**0.1896**	0.005	2.5	ug/L	723	Standard
	Co	59	262.3	1.3	**0.0071**	0.000	6.4	ug/L	217	Standard
	Ni	60	603.3	3.0	**0.1577**	0.014	9.0	ug/L	304	Standard
	Cu	65	649.0	15.6	**0.2657**	0.052	19.6	ug/L	181	Standard
	Zn	66	1686.8	6.3	**1.2909**	0.094	7.3	ug/L	215	Standard
>	Ge	72	487470.5	1.6				ug/L	520809	Standard
	As	75	91.9	24.0	**0.1249**	0.020	16.4	ug/L	-52	Standard
	Se	82	68.6	9.5	**0.4538**	0.061	13.4	ug/L	17	Standard
	Se-1	77	88.7	15.6	**0.4255**	0.192	45.1	ug/L	56	Standard
>	Ga	71	20.0	25.0				mg/L	25	Standard
	Rb	85	151.7	6.9				ug/L	28	Standard
	Y	89	408691.1	1.5				ug/L	447395	Standard
>	Rh	103	55.0	47.2				ug/L	15	Standard
	Mo	98	2038.3	34.8	**0.7007**	0.261	37.3	ug/L	113	Standard
	Ag	107	89.7	17.4	**0.0005**	0.003	460.6	ug/L	108	Standard
	Cd	111	8.9	44.4	**0.0018**	0.002	101.9	mg/L	3	Standard
	Cd	114	22.8	93.4	**0.0043**	0.004	93.2	ug/L	20	Standard
>	In	115	583988.4	1.5				ug/L	625728	Standard
	Sn	118	641.7	21.4	**0.0228**	0.025	107.3	ug/L	568	Standard
	Sb	123	149.4	23.6	**-0.0027**	0.008	291.8	ug/L	612	Standard
	Ba	135	7693.6	5.0	**3.7701**	0.138	3.7	ug/L	21	Standard
	Ce	140	23.3	32.7				ug/L	245	Standard
>	Tb	159	893255.5	0.4				ug/L	950397	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	160.7	5.8	**0.0177**	0.001	6.5	ug/L	15	Standard
	Tl	205	106.7	47.9	**0.0040**	0.007	165.6	ug/L	13	Standard
	Pb	206	280.3	10.7	**0.0072**	0.005	74.5	ug/L	264	Standard
	Pb	207	240.3	4.9	**0.0020**	0.003	130.9	ug/L	222	Standard
	Pb	208	1064.0	7.7	**0.0038**	0.004	108.8	ug/L	959	Standard
	U	238	55.7	89.2	**0.0069**	0.006	93.0	ug/L	9	Standard
>	Bi	209	537449.2	0.6				ug/L	552821	Standard

Sample ID: L1606106805
Report Date/Time: Friday, July 01, 2016 14:03:20
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2241.8	5.9	**2.8723**	0.129	4.5	mg/L	55	Standard
K	39	31.7	48.2	**0.0047**	0.065	1378.1	mg/L	28	Standard
Ca	43	28.3	53.9	**0.4489**	1.610	358.7	mg/L	27	Standard
Fe	54	77.8	24.1	**-0.0306**	0.015	50.4	mg/L	147	Standard
Fe	57	243.3	20.8	**0.0319**	0.163	509.9	mg/L	268	Standard
Sc-1	45	36754.5	1.7				mg/L	41174	Standard
Cl	35	86917.3	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	5100.9	3.4				ug/L	1950	Standard
P	31	8162.2	1.3				ug/L	21156	Standard
S	34	3385.4	1.8				ug/L	3419	Standard
Sr	88	96.7	14.9				ug/L	72	Standard
C	12	130.0	13.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	4313.9	5.0				mg/L	17	Standard
Dy	164	12.7	43.5				mg/L	16	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	41831.0	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.599	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106805
Report Date/Time: Friday, July 01, 2016 14:03:20
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.329
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.219
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106811
Sample Date/Time: Friday, July 01, 2016 14:04:14
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87384.7	2.1				ug/L	76456	Standard
	Be	9	386.7	6.4	**0.2826**	0.024	8.6	ug/L	20	Standard
	Al	27	801461.1	1.1	**4.0865**	0.037	0.9	ug/L	1307	Standard
	Sc	45	38134.6	2.7				ug/L	41174	Standard
	Ti	47	4667.1	1.1	**15.1502**	0.207	1.4	ug/L	27	Standard
	V	51	48516.8	1.5	**6.0786**	0.102	1.7	ug/L	1434	Standard
	Cr	52	40220.3	0.9	**4.3195**	0.059	1.4	ug/L	7733	Standard
	Cr	53	4720.7	0.9	**4.5507**	0.057	1.3	ug/L	442	Standard
	Mn	55	311842.6	1.0	**43.7090**	0.370	0.8	ug/L	723	Standard
	Co	59	8423.7	2.0	**1.1400**	0.022	1.9	ug/L	217	Standard
	Ni	60	8146.2	0.4	**4.0222**	0.012	0.3	ug/L	304	Standard
	Cu	65	10805.5	1.3	**5.5573**	0.061	1.1	ug/L	181	Standard
	Zn	66	50531.5	0.7	**43.6829**	0.260	0.6	ug/L	215	Standard
>	Ge	72	489720.8	0.2				ug/L	520809	Standard
	As	75	655.4	1.6	**0.6098**	0.008	1.3	ug/L	-52	Standard
	Se	82	60.2	5.5	**0.3806**	0.029	7.6	ug/L	17	Standard
	Se-1	77	67.3	4.5	**0.1530**	0.036	23.8	ug/L	56	Standard
>	Ga	71	4829.1	0.8				mg/L	25	Standard
	Rb	85	40306.9	0.9				ug/L	28	Standard
	Y	89	441421.4	0.7				ug/L	447395	Standard
>	Rh	103	40.0	54.5				ug/L	15	Standard
	Mo	98	794.4	11.9	**0.2560**	0.030	11.9	ug/L	113	Standard
	Ag	107	205.0	13.7	**0.0176**	0.004	24.9	ug/L	108	Standard
	Cd	111	469.4	3.6	**0.2151**	0.008	3.7	mg/L	3	Standard
	Cd	114	1178.5	4.6	**0.2206**	0.012	5.5	ug/L	20	Standard
>	In	115	586618.1	1.1				ug/L	625728	Standard
	Sn	118	1050.0	35.8	**0.0894**	0.061	68.0	ug/L	568	Standard
	Sb	123	166.1	12.7	**0.0005**	0.004	734.3	ug/L	612	Standard
	Ba	135	56741.7	0.9	**27.8031**	0.108	0.4	ug/L	21	Standard
	Ce	140	116496.1	0.3				ug/L	245	Standard
>	Tb	159	902035.2	0.5				ug/L	950397	Standard
	Ho	165	2190.2	5.6				ug/L	7	Standard
	Tl	203	356.0	5.6	**0.0396**	0.002	5.7	ug/L	15	Standard
	Tl	205	270.0	10.3	**0.0247**	0.004	14.6	ug/L	13	Standard
	Pb	206	16366.5	1.5	**2.8988**	0.049	1.7	ug/L	264	Standard
	Pb	207	13229.8	1.5	**2.5731**	0.042	1.6	ug/L	222	Standard
	Pb	208	57216.2	0.2	**2.7252**	0.006	0.2	ug/L	959	Standard
	U	238	2067.8	1.8	**0.2608**	0.005	1.9	ug/L	9	Standard
>	Bi	209	543128.9	0.1				ug/L	552821	Standard

Sample ID: L1606106811
Report Date/Time: Friday, July 01, 2016 14:06:31
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	836.7	5.2	**0.9955**	0.059	5.9	mg/L	55	Standard
K	39	96.7	23.3	**0.2695**	0.095	35.1	mg/L	28	Standard
Ca	43	25.0	52.9	**-0.0121**	1.244	10273.4	mg/L	27	Standard
Fe	54	3385.4	5.7	**2.7677**	0.147	5.3	mg/L	147	Standard
Fe	57	1086.7	6.1	**2.8007**	0.187	6.7	mg/L	268	Standard
> **Sc-1**	45	38134.6	2.7				mg/L	41174	Standard
Cl	35	72343.0	2.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2266.8	11.8				ug/L	1950	Standard
P	31	15112.5	3.0				ug/L	21156	Standard
S	34	3132.0	3.9				ug/L	3419	Standard
Sr	88	90.0	11.1				ug/L	72	Standard
C	12	160.0	39.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1193.4	7.9				mg/L	17	Standard
Dy	164	3446.2	2.4				mg/L	16	Standard
Ho-1	165	2190.2	5.6				mg/L	7	Standard
Er	166	2036.8	6.1				mg/L	7	Standard
I	127	34445.8	1.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.294	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.031	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106811
Report Date/Time: Friday, July 01, 2016 14:06:31
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.750
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.247
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106813 ~~WG574840-01~~ WG573840-01
Sample Date/Time: Friday, July 01, 2016 14:07:25
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85735.2	1.3				ug/L	76456	Standard
	Be	9	26.7	28.6	**0.0014**	0.006	443.3	ug/L	20	Standard
	Al	27	449795.7	0.8	**2.3331**	0.023	1.0	ug/L	1307	Standard
	Sc	45	35930.9	1.1				ug/L	41174	Standard
	Ti	47	472.3	1.7	**1.4707**	0.057	3.8	ug/L	27	Standard
	V	51	4534.5	3.6	**0.3927**	0.010	2.6	ug/L	1434	Standard
	Cr	52	9314.9	0.9	**0.2650**	0.027	10.0	ug/L	7733	Standard
	Cr	53	2433.5	4.4	**2.1645**	0.092	4.2	ug/L	442	Standard
	Mn	55	102294.5	0.4	**14.3920**	0.341	2.4	ug/L	723	Standard
	Co	59	3018.3	3.5	**0.3929**	0.007	1.8	ug/L	217	Standard
	Ni	60	5415.6	1.7	**2.6457**	0.041	1.6	ug/L	304	Standard
	Cu	65	743.0	9.7	**0.3169**	0.044	14.0	ug/L	181	Standard
	Zn	66	3480.1	1.7	**2.8660**	0.076	2.6	ug/L	215	Standard
>	Ge	72	485745.7	2.0				ug/L	520809	Standard
	As	75	242.8	9.7	**0.2563**	0.025	9.6	ug/L	-52	Standard
	Se	82	97.2	2.1	**0.6986**	0.030	4.2	ug/L	17	Standard
	Se-1	77	117.0	14.6	**0.7818**	0.201	25.7	ug/L	56	Standard
>	Ga	71	268.3	10.3				mg/L	25	Standard
	Rb	85	4108.9	5.5				ug/L	28	Standard
	Y	89	416309.3	1.5				ug/L	447395	Standard
>	Rh	103	45.0	50.9				ug/L	15	Standard
	Mo	98	680.6	19.4	**0.2163**	0.043	19.7	ug/L	113	Standard
	Ag	107	83.7	9.0	**-0.0004**	0.001	316.0	ug/L	108	Standard
	Cd	111	203.5	6.4	**0.0922**	0.005	5.5	mg/L	3	Standard
	Cd	114	545.9	14.8	**0.1025**	0.015	14.8	ug/L	20	Standard
>	In	115	585054.4	1.7				ug/L	625728	Standard
	Sn	118	836.7	33.0	**0.0543**	0.043	80.0	ug/L	568	Standard
	Sb	123	125.9	11.8	**-0.0077**	0.003	35.5	ug/L	612	Standard
	Ba	135	12781.1	0.9	**6.2667**	0.128	2.0	ug/L	21	Standard
	Ce	140	5152.5	0.8				ug/L	245	Standard
>	Tb	159	900548.7	1.5				ug/L	950397	Standard
	Ho	165	100.0	10.0				ug/L	7	Standard
	Tl	203	107.7	11.0	**0.0117**	0.001	10.8	ug/L	15	Standard
	Tl	205	76.7	10.0	**0.0002**	0.001	348.4	ug/L	13	Standard
	Pb	206	778.4	4.5	**0.0993**	0.008	7.9	ug/L	264	Standard
	Pb	207	661.0	3.8	**0.0876**	0.005	5.2	ug/L	222	Standard
	Pb	208	2799.8	2.1	**0.0904**	0.002	2.4	ug/L	959	Standard
	U	238	156.0	3.6	**0.0199**	0.000	2.4	ug/L	9	Standard
>	Bi	209	531551.0	1.5				ug/L	552821	Standard

Sample ID: L1606106813 ~~WG574840-01~~
Report Date/Time: Friday, July 01, 2016 14:09:42
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8015.5	3.4	**10.6709**	0.401	3.8	mg/L	55	Standard
K	39	28.3	50.9	**-0.0070**	0.062	882.4	mg/L	28	Standard
Ca	43	31.7	36.5	**0.8382**	1.170	139.6	mg/L	27	Standard
Fe	54	628.6	3.1	**0.4660**	0.014	3.0	mg/L	147	Standard
Fe	57	371.7	8.1	**0.5046**	0.104	20.5	mg/L	268	Standard
> **Sc-1**	45	35930.9	1.1				mg/L	41174	Standard
Cl	35	72947.2	1.3				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	16705.9	1.9				ug/L	1950	Standard
P	31	9869.9	4.0				ug/L	21156	Standard
S	34	3002.0	2.0				ug/L	3419	Standard
Sr	88	73.3	38.8				ug/L	72	Standard
C	12	123.3	24.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	670.0	12.2				mg/L	17	Standard
Dy	164	162.7	37.8				mg/L	16	Standard
Ho-1	165	100.0	10.0				mg/L	7	Standard
Er	166	83.3	25.0				mg/L	7	Standard
I	127	64636.1	5.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.267	
As	75			
Se	82			
Se-1	77			
> Ga	71			

WG573840-01

Sample ID: L1606106813 ~~WG574840-01~~
Report Date/Time: Friday, July 01, 2016 14:09:42
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.500
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.152
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
WG573840-01			

Sample ID: L1606106813 ~~WG574840-01~~
Report Date/Time: Friday, July 01, 2016 14:09:42
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 14:10:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88849.8	2.1				ug/L	76456	Standard
	Be	9	66753.5	2.5	**51.2959**	0.926	1.8	ug/L	20	Standard
	Al	27	8854426.6	1.6	**44.5025**	0.510	1.1	ug/L	1307	Standard
	Sc	45	39063.7	3.7				ug/L	41174	Standard
	Ti	47	30764.2	0.5	**94.6692**	0.333	0.4	ug/L	27	Standard
	V	51	413476.1	0.1	**50.2774**	0.192	0.4	ug/L	1434	Standard
	Cr	52	400969.6	0.9	**48.7893**	0.334	0.7	ug/L	7733	Standard
	Cr	53	49330.2	1.0	**48.5611**	0.384	0.8	ug/L	442	Standard
	Mn	55	368164.8	0.7	**48.7020**	0.201	0.4	ug/L	723	Standard
	Co	59	403506.1	0.3	**52.8271**	0.036	0.1	ug/L	217	Standard
	Ni	60	101394.2	1.2	**48.8833**	0.523	1.1	ug/L	304	Standard
	Cu	65	100114.0	0.9	**49.1563**	0.410	0.8	ug/L	181	Standard
	Zn	66	60654.2	0.4	**49.4979**	0.106	0.2	ug/L	215	Standard
>	Ge	72	519017.5	0.3				ug/L	520809	Standard
	As	75	61466.0	0.5	**50.0055**	0.153	0.3	ug/L	-52	Standard
	Se	82	6464.5	2.4	**51.2180**	1.098	2.1	ug/L	17	Standard
	Se-1	77	4373.3	1.3	**50.6496**	0.533	1.1	ug/L	56	Standard
>	Ga	71	66.7	18.9				mg/L	25	Standard
	Rb	85	861.7	5.9				ug/L	28	Standard
	Y	89	449328.6	2.0				ug/L	447395	Standard
>	Rh	103	36.7	31.5				ug/L	15	Standard
	Mo	98	305460.5	0.7	**100.5610**	1.227	1.2	ug/L	113	Standard
	Ag	107	357889.2	0.5	**49.6167**	0.755	1.5	ug/L	108	Standard
	Cd	111	115251.7	0.3	**49.8541**	0.558	1.1	mg/L	3	Standard
	Cd	114	285891.9	1.9	**49.9459**	0.709	1.4	ug/L	20	Standard
>	In	115	628352.9	1.0				ug/L	625728	Standard
	Sn	118	322603.7	1.4	**49.8300**	0.182	0.4	ug/L	568	Standard
	Sb	123	256839.4	0.5	**49.4582**	0.316	0.6	ug/L	612	Standard
	Ba	135	105057.6	0.5	**48.0726**	0.299	0.6	ug/L	21	Standard
	Ce	140	361.7	34.4				ug/L	245	Standard
>	Tb	159	960077.3	1.9				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	452676.3	0.7	**49.9830**	0.213	0.4	ug/L	15	Standard
	Tl	205	410938.2	0.4	**51.0915**	0.351	0.7	ug/L	13	Standard
	Pb	206	286259.6	0.4	**50.0826**	0.130	0.3	ug/L	264	Standard
	Pb	207	259240.1	0.9	**49.9407**	0.356	0.7	ug/L	222	Standard
	Pb	208	1080903.3	0.1	**50.9831**	0.221	0.4	ug/L	959	Standard
	U	238	414937.8	0.7	**51.0249**	0.218	0.4	ug/L	9	Standard
>	Bi	209	557647.7	0.3				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:12:56
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4484.0	1.2	**5.4671**	0.257	4.7	mg/L	55	Standard
K	39	1023.4	3.3	**4.0066**	0.130	3.2	mg/L	28	Standard
Ca	43	43.3	53.3	**1.7517**	2.400	137.0	mg/L	27	Standard
Fe	54	6523.2	1.6	**5.2995**	0.275	5.2	mg/L	147	Standard
Fe	57	1890.1	7.4	**5.3143**	0.301	5.7	mg/L	268	Standard
Sc-1	45	39063.7	3.7				mg/L	41174	Standard
Cl	35	79213.9	1.2				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2563.6	1.5				ug/L	1950	Standard
P	31	24057.4	1.2				ug/L	21156	Standard
S	34	3523.7	3.2				ug/L	3419	Standard
Sr	88	65.0	7.7				ug/L	72	Standard
C	12	140.0	57.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	940.0	34.1				mg/L	17	Standard
Dy	164	25.2	57.6				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	7	Standard
I	127	15756.5	3.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.592		
Al	27	89.005		
Sc	45			
Ti	47	94.669		
V	51	100.555		
Cr	52	97.579		
Cr	53			
Mn	55	97.404		
Co	59	105.654		
Ni	60	97.767		
Cu	65	98.313		
Zn	66	98.996		
Ge	72		99.656	
As	75	100.011		
Se	82	102.436		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:12:56
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	100.561		
Ag	107	99.233		
Cd	111	99.708		
Cd	114			
> In	115			100.420
Sn	118	99.660		
Sb	123	98.916		
Ba	135	96.145		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.966		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.966		
U	238	102.050		
> Bi	209			100.873
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:12:56
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 14:13:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88888.4	2.2				ug/L	76456	Standard
	Be	9	38.3	52.7	**0.0094**	0.015	161.5	ug/L	20	Standard
	Al	27	2825.3	17.3	**0.0040**	0.002	53.4	ug/L	1307	Standard
	Sc	45	39005.1	1.5				ug/L	41174	Standard
	Ti	47	28.0	19.9	**0.0028**	0.016	582.3	ug/L	27	Standard
	V	51	2415.4	18.1	**0.1010**	0.058	57.8	ug/L	1434	Standard
	Cr	52	6917.2	0.7	**-0.0998**	0.014	13.7	ug/L	7733	Standard
	Cr	53	555.0	5.9	**0.1417**	0.025	17.3	ug/L	442	Standard
	Mn	55	752.7	2.2	**-0.0001**	0.003	2090.7	ug/L	723	Standard
	Co	59	252.7	11.5	**0.0041**	0.003	85.1	ug/L	217	Standard
	Ni	60	429.7	6.2	**0.0575**	0.011	18.3	ug/L	304	Standard
	Cu	65	263.0	14.8	**0.0569**	0.017	30.5	ug/L	181	Standard
	Zn	66	279.3	0.5	**0.0518**	0.003	5.0	ug/L	215	Standard
>	Ge	72	511815.0	1.6				ug/L	520809	Standard
	As	75	-18.1	92.8	**0.0301**	0.014	46.4	ug/L	-52	Standard
	Se	82	24.7	15.0	**0.0723**	0.029	39.9	ug/L	17	Standard
	Se-1	77	58.0	10.8	**0.0062**	0.079	1288.4	ug/L	56	Standard
>	Ga	71	13.3	78.1				mg/L	25	Standard
	Rb	85	38.3	7.5				ug/L	28	Standard
	Y	89	444682.5	1.8				ug/L	447395	Standard
>	Rh	103	18.3	15.7				ug/L	15	Standard
	Mo	98	598.8	12.4	**0.1734**	0.026	14.8	ug/L	113	Standard
	Ag	107	140.0	4.0	**0.0066**	0.001	12.4	ug/L	108	Standard
	Cd	111	12.3	61.1	**0.0030**	0.003	109.1	mg/L	3	Standard
	Cd	114	49.0	43.7	**0.0086**	0.004	42.9	ug/L	20	Standard
>	In	115	628245.6	0.7				ug/L	625728	Standard
	Sn	118	1961.8	30.2	**0.2198**	0.093	42.5	ug/L	568	Standard
	Sb	123	904.2	34.2	**0.1408**	0.061	43.0	ug/L	612	Standard
	Ba	135	57.3	10.7	**0.0083**	0.003	31.6	ug/L	21	Standard
	Ce	140	128.3	30.3				ug/L	245	Standard
>	Tb	159	944365.6	0.9				ug/L	950397	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	108.0	13.0	**0.0111**	0.001	13.5	ug/L	15	Standard
	Tl	205	96.7	15.8	**0.0022**	0.002	85.6	ug/L	13	Standard
	Pb	206	339.7	1.4	**0.0152**	0.001	5.3	ug/L	264	Standard
	Pb	207	305.3	7.3	**0.0122**	0.004	33.7	ug/L	222	Standard
	Pb	208	1308.0	3.7	**0.0129**	0.002	16.1	ug/L	959	Standard
	U	238	87.3	40.5	**0.0104**	0.004	41.2	ug/L	9	Standard
>	Bi	209	562720.5	0.3				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:16:07
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	75.0	23.1	**0.0324**	0.022	69.0	mg/L	55	Standard
K	39	33.3	45.8	**0.0031**	0.060	1894.0	mg/L	28	Standard
Ca	43	15.0	33.3	**-1.0175**	0.462	45.4	mg/L	27	Standard
Fe	54	165.7	9.2	**0.0385**	0.014	37.1	mg/L	147	Standard
Fe	57	250.0	12.0	**0.0061**	0.086	1418.1	mg/L	268	Standard
> **Sc-1**	45	39005.1	1.5				mg/L	41174	Standard
Cl	35	79585.8	1.1				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	2136.8	1.9				ug/L	1950	Standard
P	31	23918.9	4.5				ug/L	21156	Standard
S	34	3433.7	5.0				ug/L	3419	Standard
Sr	88	81.7	12.7				ug/L	72	Standard
C	12	130.0	20.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	723.4	38.9				mg/L	17	Standard
Dy	164	12.1	100.4				mg/L	16	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	11843.0	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.273	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:16:07
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.402
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.791
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:16:07
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

WG573840-04

Sample ID: L1606106815S ~~WG574840-04~~
Sample Date/Time: Friday, July 01, 2016 14:17:03
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83265.1	4.4				ug/L	76456	Standard
	Be	9	6339.7	3.7	**5.1828**	0.150	2.9	ug/L	20	Standard
	Al	27	349898.6	2.2	**1.8682**	0.063	3.4	ug/L	1307	Standard
	Sc	45	36113.0	0.7				ug/L	41174	Standard
	Ti	47	374.0	5.7	**1.1636**	0.064	5.5	ug/L	27	Standard
	V	51	40708.6	1.1	**5.1868**	0.031	0.6	ug/L	1434	Standard
	Cr	52	46718.3	0.7	**5.3127**	0.067	1.3	ug/L	7733	Standard
	Cr	53	6618.1	2.8	**6.7048**	0.239	3.6	ug/L	442	Standard
	Mn	55	114395.6	0.5	**16.3321**	0.067	0.4	ug/L	723	Standard
	Co	59	38195.1	1.8	**5.3924**	0.078	1.4	ug/L	217	Standard
	Ni	60	13663.5	1.3	**7.0078**	0.080	1.1	ug/L	304	Standard
	Cu	65	9944.3	1.7	**5.2251**	0.077	1.5	ug/L	181	Standard
	Zn	66	9492.0	1.6	**8.2445**	0.108	1.3	ug/L	215	Standard
>	Ge	72	478934.2	0.5				ug/L	520809	Standard
	As	75	6298.1	2.1	**5.5931**	0.137	2.4	ug/L	-52	Standard
	Se	82	745.3	1.6	**6.2890**	0.131	2.1	ug/L	17	Standard
	Se-1	77	565.0	3.4	**6.5031**	0.256	3.9	ug/L	56	Standard
>	Ga	71	210.0	14.9				mg/L	25	Standard
	Rb	85	3015.3	2.7				ug/L	28	Standard
	Y	89	406713.6	1.2				ug/L	447395	Standard
>	Rh	103	30.0	44.1				ug/L	15	Standard
	Mo	98	643.2	26.9	**0.2086**	0.062	29.9	ug/L	113	Standard
	Ag	107	33003.9	0.1	**5.0128**	0.031	0.6	ug/L	108	Standard
	Cd	111	11239.0	0.3	**5.3366**	0.046	0.9	mg/L	3	Standard
	Cd	114	27301.6	1.5	**5.2380**	0.071	1.4	ug/L	20	Standard
>	In	115	572178.3	0.7				ug/L	625728	Standard
	Sn	118	856.7	28.9	**0.0614**	0.042	68.6	ug/L	568	Standard
	Sb	123	23676.7	0.6	**4.9767**	0.063	1.3	ug/L	612	Standard
	Ba	135	19520.2	0.7	**9.7948**	0.108	1.1	ug/L	21	Standard
	Ce	140	4247.3	5.7				ug/L	245	Standard
>	Tb	159	879458.6	1.4				ug/L	950397	Standard
	Ho	165	76.7	30.1				ug/L	7	Standard
	Tl	203	41384.8	1.8	**4.8673**	0.052	1.1	ug/L	15	Standard
	Tl	205	37817.2	2.3	**4.9998**	0.080	1.6	ug/L	13	Standard
	Pb	206	27923.4	1.8	**5.1651**	0.060	1.2	ug/L	264	Standard
	Pb	207	24211.0	1.2	**4.9273**	0.030	0.6	ug/L	222	Standard
	Pb	208	101923.3	0.8	**5.0783**	0.055	1.1	ug/L	959	Standard
	U	238	37622.7	0.8	**4.9287**	0.050	1.0	ug/L	9	Standard
>	Bi	209	523442.8	0.7				ug/L	552821	Standard

Sample ID: L1606106815S ~~WG574840-04~~
Report Date/Time: Friday, July 01, 2016 14:19:20
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.6795**	9.828	173.1	mg/L	2	Standard
Mg	24	6323.0	5.1	**8.3634**	0.482	5.8	mg/L	55	Standard
K	39	55.0	24.1	**0.1095**	0.059	54.3	mg/L	28	Standard
Ca	43	28.3	83.4	**0.4924**	2.471	501.8	mg/L	27	Standard
Fe	54	574.3	6.7	**0.4148**	0.038	9.1	mg/L	147	Standard
Fe	57	356.7	11.3	**0.4458**	0.147	32.9	mg/L	268	Standard
> **Sc-1**	45	36113.0	0.7				mg/L	41174	Standard
Cl	35	72434.1	0.7				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	13466.0	3.1				ug/L	1950	Standard
P	31	9684.8	1.1				ug/L	21156	Standard
S	34	3162.0	7.4				ug/L	3419	Standard
Sr	88	88.3	6.5				ug/L	72	Standard
C	12	126.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	493.3	11.2				mg/L	17	Standard
Dy	164	135.8	20.6				mg/L	16	Standard
Ho-1	165	76.7	30.1				mg/L	7	Standard
Er	166	86.7	40.5				mg/L	7	Standard
I	127	53586.4	4.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.906	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.960	
As	75			
Se	82			
Se-1	77			
> Ga	71			

WG573840-04

Sample ID: L1606106815S ~~WG574840-04~~
Report Date/Time: Friday, July 01, 2016 14:19:20
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.442
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

WG573840-04

Sample ID: L1606106815S ~~WG574840-04~~
Report Date/Time: Friday, July 01, 2016 14:19:20
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

WG573840-05

Sample ID: L1606106817SD ~~WG574840-05~~
Sample Date/Time: Friday, July 01, 2016 14:20:15
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81106.5	1.7				ug/L	76456	Standard
	Be	9	6459.7	2.4	**5.4224**	0.225	4.2	ug/L	20	Standard
	Al	27	501960.4	2.3	**2.7550**	0.103	3.7	ug/L	1307	Standard
	Sc	45	36201.5	0.9				ug/L	41174	Standard
	Ti	47	1052.0	1.1	**3.4327**	0.017	0.5	ug/L	27	Standard
	V	51	46082.9	1.9	**5.9078**	0.087	1.5	ug/L	1434	Standard
	Cr	52	58550.9	1.6	**6.9166**	0.078	1.1	ug/L	7733	Standard
	Cr	53	8594.1	3.3	**8.8449**	0.268	3.0	ug/L	442	Standard
	Mn	55	145669.8	2.3	**20.8582**	0.361	1.7	ug/L	723	Standard
	Co	59	40340.0	2.3	**5.7063**	0.097	1.7	ug/L	217	Standard
	Ni	60	15750.9	2.0	**8.1157**	0.154	1.9	ug/L	304	Standard
	Cu	65	10601.7	1.3	**5.5848**	0.040	0.7	ug/L	181	Standard
	Zn	66	10298.5	1.1	**8.9757**	0.069	0.8	ug/L	215	Standard
>	Ge	72	478135.2	0.6				ug/L	520809	Standard
	As	75	6490.3	1.3	**5.7717**	0.072	1.2	ug/L	-52	Standard
	Se	82	783.8	3.6	**6.6313**	0.232	3.5	ug/L	17	Standard
	Se-1	77	575.7	8.4	**6.6484**	0.573	8.6	ug/L	56	Standard
>	Ga	71	653.3	4.4				mg/L	25	Standard
	Rb	85	7186.7	2.7				ug/L	28	Standard
	Y	89	409741.2	2.1				ug/L	447395	Standard
>	Rh	103	31.7	18.2				ug/L	15	Standard
	Mo	98	998.2	56.5	**0.3366**	0.205	60.9	ug/L	113	Standard
	Ag	107	33931.3	1.3	**5.1521**	0.034	0.7	ug/L	108	Standard
	Cd	111	11629.2	3.5	**5.5186**	0.109	2.0	mg/L	3	Standard
	Cd	114	28711.5	1.0	**5.5071**	0.084	1.5	ug/L	20	Standard
>	In	115	572419.1	1.9				ug/L	625728	Standard
	Sn	118	771.7	35.0	**0.0463**	0.043	93.9	ug/L	568	Standard
	Sb	123	22618.6	1.5	**4.7509**	0.051	1.1	ug/L	612	Standard
	Ba	135	24808.3	0.6	**12.4494**	0.172	1.4	ug/L	21	Standard
	Ce	140	9864.9	1.2				ug/L	245	Standard
>	Tb	159	882133.3	1.2				ug/L	950397	Standard
	Ho	165	175.0	13.1				ug/L	7	Standard
	Tl	203	43094.9	1.3	**5.0490**	0.012	0.2	ug/L	15	Standard
	Tl	205	38782.9	1.4	**5.1088**	0.109	2.1	ug/L	13	Standard
	Pb	206	28842.8	0.9	**5.3164**	0.076	1.4	ug/L	264	Standard
	Pb	207	24928.5	1.0	**5.0552**	0.065	1.3	ug/L	222	Standard
	Pb	208	104803.4	1.3	**5.2025**	0.040	0.8	ug/L	959	Standard
	U	238	38305.0	0.8	**4.9987**	0.028	0.6	ug/L	9	Standard
>	Bi	209	525482.1	1.1				ug/L	552821	Standard

Sample ID: L1606106817SD ~~WG574840-05~~
Report Date/Time: Friday, July 01, 2016 14:22:32
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**11.2046**	19.398	173.1	mg/L	2	Standard
Mg	24	8434.0	5.4	**11.1454**	0.594	5.3	mg/L	55	Standard
K	39	58.3	13.1	**0.1234**	0.036	28.8	mg/L	28	Standard
Ca	43	20.0	75.0	**-0.3837**	1.563	407.4	mg/L	27	Standard
Fe	54	968.4	3.8	**0.7651**	0.040	5.3	mg/L	147	Standard
Fe	57	503.3	13.7	**0.9549**	0.241	25.2	mg/L	268	Standard
> **Sc-1**	45	36201.5	0.9				mg/L	41174	Standard
Cl	35	71982.6	1.3				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18638.1	5.1				ug/L	1950	Standard
P	31	10710.5	1.0				ug/L	21156	Standard
S	34	3345.4	0.8				ug/L	3419	Standard
Sr	88	73.3	27.6				ug/L	72	Standard
C	12	120.0	57.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	436.7	13.4				mg/L	17	Standard
Dy	164	280.4	13.3				mg/L	16	Standard
Ho-1	165	175.0	13.1				mg/L	7	Standard
Er	166	200.0	13.2				mg/L	7	Standard
I	127	66018.7	4.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.083	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.806	
As	75			
Se	82			
Se-1	77			
> Ga	71	WG573840-05		

Sample ID: L1606106817SD ~~WG574840-05~~
Report Date/Time: Friday, July 01, 2016 14:22:32
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.481
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.055
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

WG573840-05

Sample ID: L1606106817SD ~~**WG574840-05**~~
Report Date/Time: Friday, July 01, 2016 14:22:32
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106502
Sample Date/Time: Friday, July 01, 2016 14:23:26
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80066.0	1.1				ug/L	76456	Standard
	Be	9	30.0	115.5	**0.0056**	0.029	520.4	ug/L	20	Standard
	Al	27	180778.3	4.1	**0.9982**	0.041	4.1	ug/L	1307	Standard
	Sc	45	36360.3	2.0				ug/L	41174	Standard
	Ti	47	27.3	18.4	**0.0052**	0.016	312.3	ug/L	27	Standard
	V	51	1588.1	11.5	**0.0081**	0.023	286.5	ug/L	1434	Standard
	Cr	52	81053.1	3.8	**9.7557**	0.368	3.8	ug/L	7733	Standard
	Cr	53	9971.6	2.0	**10.1419**	0.234	2.3	ug/L	442	Standard
	Mn	55	13954.4	0.7	**1.8714**	0.017	0.9	ug/L	723	Standard
	Co	59	649.0	8.3	**0.0612**	0.008	12.7	ug/L	217	Standard
	Ni	60	1447.4	0.9	**0.5934**	0.004	0.6	ug/L	304	Standard
	Cu	65	486.7	11.5	**0.1810**	0.028	15.4	ug/L	181	Standard
	Zn	66	1353.4	2.5	**1.0020**	0.034	3.4	ug/L	215	Standard
>	Ge	72	486676.1	0.5				ug/L	520809	Standard
	As	75	-22.0	245.7	**0.0260**	0.047	179.9	ug/L	-52	Standard
	Se	82	18.1	72.4	**0.0263**	0.110	418.7	ug/L	17	Standard
	Se-1	77	60.7	2.5	**0.0749**	0.022	28.9	ug/L	56	Standard
>	Ga	71	25.0	20.0				mg/L	25	Standard
	Rb	85	138.3	26.6				ug/L	28	Standard
	Y	89	406376.2	1.0				ug/L	447395	Standard
>	Rh	103	16.7	69.3				ug/L	15	Standard
	Mo	98	1770.7	17.5	**0.6016**	0.111	18.5	ug/L	113	Standard
	Ag	107	129.0	37.0	**0.0063**	0.007	112.2	ug/L	108	Standard
	Cd	111	16.9	116.6	**0.0055**	0.009	166.8	mg/L	3	Standard
	Cd	114	59.1	100.8	**0.0111**	0.011	100.7	ug/L	20	Standard
>	In	115	585828.3	0.2				ug/L	625728	Standard
	Sn	118	591.7	24.5	**0.0140**	0.024	173.1	ug/L	568	Standard
	Sb	123	173.5	26.1	**0.0021**	0.009	438.7	ug/L	612	Standard
	Ba	135	254.0	14.4	**0.1068**	0.018	16.8	ug/L	21	Standard
	Ce	140	36.7	55.1				ug/L	245	Standard
>	Tb	159	883738.0	0.6				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	137.0	50.5	**0.0151**	0.008	51.9	ug/L	15	Standard
	Tl	205	130.0	90.1	**0.0071**	0.015	211.0	ug/L	13	Standard
	Pb	206	304.3	19.3	**0.0122**	0.010	84.1	ug/L	264	Standard
	Pb	207	261.0	10.0	**0.0068**	0.005	70.4	ug/L	222	Standard
	Pb	208	1149.7	15.1	**0.0087**	0.008	92.0	ug/L	959	Standard
	U	238	112.0	113.8	**0.0141**	0.016	115.0	ug/L	9	Standard
>	Bi	209	530616.0	1.0				ug/L	552821	Standard

Sample ID: L1606106502
Report Date/Time: Friday, July 01, 2016 14:25:43
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1146.7	22.2	**1.4533**	0.307	21.1	mg/L	55	Standard
K	39	28.3	44.4	**-0.0074**	0.057	769.4	mg/L	28	Standard
Ca	43	26.7	54.1	**0.3104**	1.522	490.2	mg/L	27	Standard
Fe	54	101.6	8.0	**-0.0086**	0.008	94.5	mg/L	147	Standard
Fe	57	255.0	17.0	**0.0854**	0.166	194.4	mg/L	268	Standard
> **Sc-1**	45	36360.3	2.0				mg/L	41174	Standard
Cl	35	73712.2	1.2				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2090.1	10.3				ug/L	1950	Standard
P	31	7825.4	0.6				ug/L	21156	Standard
S	34	3022.0	4.6				ug/L	3419	Standard
Sr	88	71.7	8.1				ug/L	72	Standard
C	12	96.7	23.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1313.4	4.6				mg/L	17	Standard
Dy	164	22.1	25.6				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	7	Standard
I	127	28513.5	2.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.722	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.446	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106502
Report Date/Time: Friday, July 01, 2016 14:25:43
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.623
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.983
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106503
Sample Date/Time: Friday, July 01, 2016 14:26:37
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79132.8	1.3				ug/L	76456	Standard
	Be	9	20.0	90.1	-0.0027	0.015	566.6	ug/L	20	Standard
	Al	27	183681.8	1.0	1.0266	0.021	2.0	ug/L	1307	Standard
	Sc	45	35984.4	2.9				ug/L	41174	Standard
	Ti	47	20.7	12.2	-0.0167	0.009	53.6	ug/L	27	Standard
	V	51	1554.3	4.0	0.0034	0.007	204.4	ug/L	1434	Standard
	Cr	52	22825.5	4.8	2.0452	0.152	7.4	ug/L	7733	Standard
	Cr	53	2823.6	3.2	2.5679	0.111	4.3	ug/L	442	Standard
	Mn	55	25588.9	0.9	3.5097	0.037	1.1	ug/L	723	Standard
	Co	59	286.3	4.8	0.0105	0.002	16.3	ug/L	217	Standard
	Ni	60	1267.4	3.9	0.4993	0.024	4.9	ug/L	304	Standard
	Cu	65	240.7	4.8	0.0519	0.005	9.1	ug/L	181	Standard
	Zn	66	1398.4	2.4	1.0389	0.016	1.6	ug/L	215	Standard
>	Ge	72	487565.1	1.1				ug/L	520809	Standard
	As	75	-30.6	81.1	0.0187	0.022	115.7	ug/L	-52	Standard
	Se	82	20.5	30.4	0.0466	0.051	110.3	ug/L	17	Standard
	Se-1	77	71.3	18.1	0.2061	0.156	75.5	ug/L	56	Standard
>	Ga	71	30.0	33.3				mg/L	25	Standard
	Rb	85	90.0	53.6				ug/L	28	Standard
	Y	89	411794.3	0.5				ug/L	447395	Standard
>	Rh	103	21.7	13.3				ug/L	15	Standard
	Mo	98	702.5	37.7	0.2235	0.093	41.6	ug/L	113	Standard
	Ag	107	100.7	6.4	0.0021	0.001	44.2	ug/L	108	Standard
	Cd	111	3.1	64.7	-0.0009	0.001	98.3	mg/L	3	Standard
	Cd	114	10.2	126.7	0.0019	0.002	125.3	ug/L	20	Standard
>	In	115	587395.6	0.4				ug/L	625728	Standard
	Sn	118	551.7	28.8	0.0071	0.026	370.3	ug/L	568	Standard
	Sb	123	119.5	11.5	-0.0091	0.003	31.3	ug/L	612	Standard
	Ba	135	603.3	5.0	0.2775	0.015	5.3	ug/L	21	Standard
	Ce	140	43.3	40.5				ug/L	245	Standard
>	Tb	159	891615.0	1.6				ug/L	950397	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	80.7	10.3	0.0085	0.001	11.1	ug/L	15	Standard
	Tl	205	53.3	57.3	-0.0028	0.004	140.3	ug/L	13	Standard
	Pb	206	274.3	3.4	0.0064	0.002	26.4	ug/L	264	Standard
	Pb	207	227.0	9.3	-0.0004	0.004	980.7	ug/L	222	Standard
	Pb	208	977.7	5.7	-0.0001	0.003	2332.0	ug/L	959	Standard
	U	238	23.7	16.0	0.0028	0.000	17.0	ug/L	9	Standard
>	Bi	209	534397.5	0.8				ug/L	552821	Standard

Sample ID: L1606106503
Report Date/Time: Friday, July 01, 2016 14:28:54
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1421.7	2.1	**1.8418**	0.090	4.9	mg/L	55	Standard
K	39	28.3	40.8	**-0.0067**	0.051	756.8	mg/L	28	Standard
Ca	43	21.7	35.3	**-0.2051**	0.778	379.2	mg/L	27	Standard
Fe	54	96.5	16.4	**-0.0124**	0.012	96.4	mg/L	147	Standard
Fe	57	246.7	7.7	**0.0625**	0.044	71.0	mg/L	268	Standard
> **Sc-1**	45	35984.4	2.9				mg/L	41174	Standard
Cl	35	75787.1	1.4				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	1940.1	11.4				ug/L	1950	Standard
P	31	7708.6	3.3				ug/L	21156	Standard
S	34	3283.7	7.0				ug/L	3419	Standard
Sr	88	81.7	3.5				ug/L	72	Standard
C	12	93.3	6.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	810.0	7.7				mg/L	17	Standard
Dy	164	19.4	51.7				mg/L	16	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	28069.3	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.617	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106503
Report Date/Time: Friday, July 01, 2016 14:28:54
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.874
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.667
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106504
Sample Date/Time: Friday, July 01, 2016 14:29:49
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79397.5	1.7				ug/L	76456	Standard
	Be	9	16.7	45.8	**-0.0055**	0.007	119.4	ug/L	20	Standard
	Al	27	291025.7	1.9	**1.6271**	0.036	2.2	ug/L	1307	Standard
	Sc	45	36009.4	0.8				ug/L	41174	Standard
	Ti	47	26.7	15.2	**0.0019**	0.013	690.9	ug/L	27	Standard
	V	51	1704.2	12.5	**0.0204**	0.028	139.1	ug/L	1434	Standard
	Cr	52	30766.6	4.8	**3.0469**	0.189	6.2	ug/L	7733	Standard
	Cr	53	3653.8	5.4	**3.4005**	0.215	6.3	ug/L	442	Standard
	Mn	55	17036.6	2.3	**2.2748**	0.050	2.2	ug/L	723	Standard
	Co	59	958.7	6.2	**0.1027**	0.008	8.2	ug/L	217	Standard
	Ni	60	2008.1	1.5	**0.8687**	0.014	1.6	ug/L	304	Standard
	Cu	65	251.7	3.4	**0.0561**	0.005	9.3	ug/L	181	Standard
	Zn	66	1482.7	0.2	**1.0976**	0.010	0.9	ug/L	215	Standard
>	Ge	72	493269.0	0.6				ug/L	520809	Standard
	As	75	-44.8	49.5	**0.0068**	0.019	282.1	ug/L	-52	Standard
	Se	82	18.7	10.9	**0.0294**	0.017	58.4	ug/L	17	Standard
	Se-1	77	64.3	6.3	**0.1099**	0.049	45.0	ug/L	56	Standard
>	Ga	71	26.7	43.3				mg/L	25	Standard
	Rb	85	2356.8	1.6				ug/L	28	Standard
	Y	89	413880.0	0.1				ug/L	447395	Standard
>	Rh	103	25.0	0.0				ug/L	15	Standard
	Mo	98	624.4	36.8	**0.1955**	0.081	41.4	ug/L	113	Standard
	Ag	107	92.7	17.9	**0.0009**	0.003	292.7	ug/L	108	Standard
	Cd	111	11.5	37.2	**0.0030**	0.002	67.8	mg/L	3	Standard
	Cd	114	45.1	23.2	**0.0084**	0.002	22.0	ug/L	20	Standard
>	In	115	588539.3	1.1				ug/L	625728	Standard
	Sn	118	616.7	20.1	**0.0176**	0.020	114.5	ug/L	568	Standard
	Sb	123	351.6	3.8	**0.0386**	0.003	9.0	ug/L	612	Standard
	Ba	135	231.7	10.0	**0.0953**	0.011	11.7	ug/L	21	Standard
	Ce	140	43.3	88.1				ug/L	245	Standard
>	Tb	159	885756.3	0.8				ug/L	950397	Standard
	Ho	165	16.7	34.6				ug/L	7	Standard
	Tl	203	73.3	2.8	**0.0077**	0.000	3.3	ug/L	15	Standard
	Tl	205	65.0	13.3	**-0.0013**	0.001	87.3	ug/L	13	Standard
	Pb	206	322.7	5.3	**0.0151**	0.003	19.7	ug/L	264	Standard
	Pb	207	256.3	3.1	**0.0054**	0.001	26.7	ug/L	222	Standard
	Pb	208	1164.0	5.3	**0.0090**	0.003	33.0	ug/L	959	Standard
	U	238	19.0	34.5	**0.0022**	0.001	38.3	ug/L	9	Standard
>	Bi	209	534942.7	0.4				ug/L	552821	Standard

Sample ID: L1606106504
Report Date/Time: Friday, July 01, 2016 14:32:06
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**11.3879**	9.859	86.6	mg/L	2	Standard
Mg	24	1060.0	6.8	**1.3559**	0.099	7.3	mg/L	55	Standard
K	39	55.0	32.8	**0.1095**	0.077	70.3	mg/L	28	Standard
Ca	43	21.7	48.0	**-0.2024**	1.077	531.9	mg/L	27	Standard
Fe	54	98.8	37.3	**-0.0103**	0.032	312.2	mg/L	147	Standard
Fe	57	268.3	7.1	**0.1387**	0.065	46.8	mg/L	268	Standard
> **Sc-1**	45	36009.4	0.8				mg/L	41174	Standard
Cl	35	77523.2	0.3				ug/L	69550	Standard
Kr	83	2.7	114.6				ug/L	1	Standard
Br	81	2113.5	9.3				ug/L	1950	Standard
P	31	7710.3	3.6				ug/L	21156	Standard
S	34	3393.7	3.0				ug/L	3419	Standard
Sr	88	65.0	23.1				ug/L	72	Standard
C	12	106.7	28.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	623.3	9.8				mg/L	17	Standard
Dy	164	15.7	70.9				mg/L	16	Standard
Ho-1	165	16.7	34.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	28194.6	4.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.848	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.712	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106504
Report Date/Time: Friday, July 01, 2016 14:32:06
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.057
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.766
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 14:33:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84479.9	0.6				ug/L	76456	Standard
	Be	9	65431.0	1.7	**52.8839**	1.234	2.3	ug/L	20	Standard
	Al	27	9107293.6	1.3	**48.1391**	0.761	1.6	ug/L	1307	Standard
	Sc	45	41221.0	1.1				ug/L	41174	Standard
	Ti	47	32532.9	2.1	**96.4064**	2.590	2.7	ug/L	27	Standard
	V	51	430170.6	0.9	**50.3648**	0.150	0.3	ug/L	1434	Standard
	Cr	52	419842.9	0.7	**49.1999**	0.629	1.3	ug/L	7733	Standard
	Cr	53	51666.3	1.8	**48.9792**	1.063	2.2	ug/L	442	Standard
	Mn	55	386049.1	1.6	**49.1731**	0.734	1.5	ug/L	723	Standard
	Co	59	420011.6	1.0	**52.9472**	0.520	1.0	ug/L	217	Standard
	Ni	60	107142.5	0.5	**49.7412**	0.431	0.9	ug/L	304	Standard
	Cu	65	106376.5	0.2	**50.2954**	0.371	0.7	ug/L	181	Standard
	Zn	66	63768.9	0.5	**50.1114**	0.441	0.9	ug/L	215	Standard
>	Ge	72	539029.9	0.6				ug/L	520809	Standard
	As	75	63720.4	0.2	**49.9158**	0.187	0.4	ug/L	-52	Standard
	Se	82	6616.1	1.4	**50.4720**	0.409	0.8	ug/L	17	Standard
	Se-1	77	4538.7	1.1	**50.6161**	0.744	1.5	ug/L	56	Standard
>	Ga	71	41.7	36.7				mg/L	25	Standard
	Rb	85	886.7	6.2				ug/L	28	Standard
	Y	89	466133.9	1.1				ug/L	447395	Standard
>	Rh	103	45.0	48.4				ug/L	15	Standard
	Mo	98	316079.0	1.2	**100.9623**	1.590	1.6	ug/L	113	Standard
	Ag	107	372581.7	1.1	**50.1169**	0.847	1.7	ug/L	108	Standard
	Cd	111	118352.7	0.1	**49.6717**	0.324	0.7	mg/L	3	Standard
	Cd	114	294028.3	2.4	**49.8404**	1.066	2.1	ug/L	20	Standard
>	In	115	647595.9	0.6				ug/L	625728	Standard
	Sn	118	333519.2	0.4	**49.9888**	0.512	1.0	ug/L	568	Standard
	Sb	123	262566.9	2.8	**49.0609**	1.554	3.2	ug/L	612	Standard
	Ba	135	108230.2	0.7	**48.0518**	0.424	0.9	ug/L	21	Standard
	Ce	140	185.0	15.0				ug/L	245	Standard
>	Tb	159	963986.1	0.6				ug/L	950397	Standard
	Ho	165	15.0	115.5				ug/L	7	Standard
	Tl	203	457975.8	1.0	**50.2126**	0.379	0.8	ug/L	15	Standard
	Tl	205	420042.8	0.3	**51.8564**	0.350	0.7	ug/L	13	Standard
	Pb	206	291174.6	0.8	**50.5849**	0.394	0.8	ug/L	264	Standard
	Pb	207	263877.7	0.4	**50.4775**	0.161	0.3	ug/L	222	Standard
	Pb	208	1113044.3	0.4	**52.1318**	0.466	0.9	ug/L	959	Standard
	U	238	419550.2	0.5	**51.2295**	0.115	0.2	ug/L	9	Standard
>	Bi	209	561599.8	0.5				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:35:18
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4695.7	3.2	**5.4185**	0.141	2.6	mg/L	55	Standard
K	39	1080.0	1.9	**4.0059**	0.102	2.5	mg/L	28	Standard
Ca	43	58.3	9.9	**2.8430**	0.540	19.0	mg/L	27	Standard
Fe	54	6681.6	1.6	**5.1353**	0.107	2.1	mg/L	147	Standard
Fe	57	1935.1	3.8	**5.1339**	0.159	3.1	mg/L	268	Standard
> **Sc-1**	45	41221.0	1.1				mg/L	41174	Standard
Cl	35	86136.9	2.1				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2180.2	1.6				ug/L	1950	Standard
P	31	25733.5	2.6				ug/L	21156	Standard
S	34	4153.9	3.6				ug/L	3419	Standard
Sr	88	75.0	13.3				ug/L	72	Standard
C	12	106.7	28.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	720.0	29.7				mg/L	17	Standard
Dy	164	22.7	24.3				mg/L	16	Standard
Ho-1	165	15.0	115.5				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	15117.5	1.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.768		
Al	27	96.278		
Sc	45			
Ti	47	96.406		
V	51	100.730		
Cr	52	98.400		
Cr	53			
Mn	55	98.346		
Co	59	105.894		
Ni	60	99.482		
Cu	65	100.591		
Zn	66	100.223		
> Ge	72		103.499	
As	75	99.832		
Se	82	100.944		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:35:18
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.962		
Ag	107	100.234		
Cd	111	99.343		
Cd	114			
In	115			103.495
Sn	118	99.978		
Sb	123	98.122		
Ba	135	96.104		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.425		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.264		
U	238	102.459		
Bi	209			101.588
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:35:18
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 14:36:13
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84748.1	2.2				ug/L	76456	Standard
	Be	9	28.3	27.0	**0.0029**	0.006	204.3	ug/L	20	Standard
	Al	27	2800.3	34.3	**0.0045**	0.005	111.4	ug/L	1307	Standard
	Sc	45	41077.3	1.7				ug/L	41174	Standard
	Ti	47	26.0	26.6	**-0.0072**	0.021	288.8	ug/L	27	Standard
	V	51	1826.7	11.6	**0.0166**	0.026	154.1	ug/L	1434	Standard
	Cr	52	7089.7	2.6	**-0.1215**	0.019	15.7	ug/L	7733	Standard
	Cr	53	518.3	19.4	**0.0795**	0.095	119.0	ug/L	442	Standard
	Mn	55	744.0	2.7	**-0.0062**	0.002	40.3	ug/L	723	Standard
	Co	59	250.7	12.3	**0.0022**	0.004	175.9	ug/L	217	Standard
	Ni	60	366.0	4.1	**0.0177**	0.007	39.1	ug/L	304	Standard
	Cu	65	215.0	5.8	**0.0279**	0.006	21.4	ug/L	181	Standard
	Zn	66	258.3	5.8	**0.0239**	0.012	50.5	ug/L	215	Standard
>	Ge	72	537853.0	0.3				ug/L	520809	Standard
	As	75	-50.7	30.0	**0.0054**	0.012	222.4	ug/L	-52	Standard
	Se	82	23.4	28.3	**0.0526**	0.050	95.5	ug/L	17	Standard
	Se-1	77	56.3	13.3	**-0.0464**	0.086	185.9	ug/L	56	Standard
>	Ga	71	38.3	66.9				mg/L	25	Standard
	Rb	85	33.3	67.6				ug/L	28	Standard
	Y	89	471394.3	0.7				ug/L	447395	Standard
>	Rh	103	18.3	63.0				ug/L	15	Standard
	Mo	98	398.2	17.4	**0.1019**	0.023	22.4	ug/L	113	Standard
	Ag	107	141.3	16.6	**0.0060**	0.003	53.5	ug/L	108	Standard
	Cd	111	18.0	20.7	**0.0051**	0.002	31.3	mg/L	3	Standard
	Cd	114	51.0	12.7	**0.0086**	0.001	12.0	ug/L	20	Standard
>	In	115	655049.2	0.7				ug/L	625728	Standard
	Sn	118	1826.8	33.6	**0.1873**	0.093	49.6	ug/L	568	Standard
	Sb	123	1005.7	35.1	**0.1525**	0.066	43.6	ug/L	612	Standard
	Ba	135	50.7	11.6	**0.0043**	0.003	59.6	ug/L	21	Standard
	Ce	140	55.0	18.2				ug/L	245	Standard
>	Tb	159	963692.0	2.2				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	91.3	32.5	**0.0091**	0.003	36.2	ug/L	15	Standard
	Tl	205	100.0	20.0	**0.0024**	0.003	107.2	ug/L	13	Standard
	Pb	206	358.7	4.9	**0.0174**	0.003	18.6	ug/L	264	Standard
	Pb	207	299.3	9.7	**0.0101**	0.006	57.2	ug/L	222	Standard
	Pb	208	1241.0	6.1	**0.0088**	0.004	42.7	ug/L	959	Standard
	U	238	67.3	26.7	**0.0078**	0.002	28.5	ug/L	9	Standard
>	Bi	209	572676.0	1.1				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:38:30
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	27.6	**0.0080**	0.018	227.2	mg/L	55	Standard
K	39	31.7	24.1	**-0.0097**	0.028	287.6	mg/L	28	Standard
Ca	43	30.0	60.1	**0.2757**	1.623	588.8	mg/L	27	Standard
Fe	54	132.3	15.7	**0.0051**	0.015	299.1	mg/L	147	Standard
Fe	57	226.7	3.4	**-0.1060**	0.019	17.5	mg/L	268	Standard
> **Sc-1**	45	41077.3	1.7				mg/L	41174	Standard
Cl	35	85337.0	1.5				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	2146.8	7.1				ug/L	1950	Standard
P	31	24845.4	3.5				ug/L	21156	Standard
S	34	4015.5	0.7				ug/L	3419	Standard
Sr	88	58.3	27.6				ug/L	72	Standard
C	12	116.7	9.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	523.3	24.3				mg/L	17	Standard
Dy	164	6.0	187.1				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	11185.8	0.6				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.273	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:38:30
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.686
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.592
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:38:30
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, July 01, 2016 14:39:26
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82750.5	2.9				ug/L	76456	Standard
	Be	9	285.0	17.8	**0.2151**	0.039	18.0	ug/L	20	Standard
	Al	27	1818.4	16.8	**-0.0004**	0.002	418.1	ug/L	1307	Standard
	Sc	45	39031.9	2.5				ug/L	41174	Standard
	Ti	47	23.0	28.5	**-0.0130**	0.020	154.9	ug/L	27	Standard
	V	51	4531.3	0.6	**0.3599**	0.004	1.1	ug/L	1434	Standard
	Cr	52	13097.3	0.4	**0.6705**	0.008	1.2	ug/L	7733	Standard
	Cr	53	1321.7	4.4	**0.9081**	0.059	6.5	ug/L	442	Standard
	Mn	55	3958.5	1.2	**0.4284**	0.005	1.2	ug/L	723	Standard
	Co	59	3194.7	3.0	**0.3931**	0.014	3.5	ug/L	217	Standard
	Ni	60	3472.1	3.0	**1.5421**	0.046	3.0	ug/L	304	Standard
	Cu	65	1723.1	3.0	**0.7813**	0.023	3.0	ug/L	181	Standard
	Zn	66	8776.2	0.9	**7.0769**	0.052	0.7	ug/L	215	Standard
>	Ge	72	514072.5	0.3				ug/L	520809	Standard
	As	75	450.1	8.8	**0.4145**	0.032	7.7	ug/L	-52	Standard
	Se	82	70.4	7.3	**0.4383**	0.043	9.7	ug/L	17	Standard
	Se-1	77	94.3	4.8	**0.4334**	0.056	12.9	ug/L	56	Standard
>	Ga	71	21.7	35.3				mg/L	25	Standard
	Rb	85	21.7	53.3				ug/L	28	Standard
	Y	89	438183.2	1.3				ug/L	447395	Standard
>	Rh	103	16.7	105.4				ug/L	15	Standard
	Mo	98	167.4	18.5	**0.0314**	0.011	34.8	ug/L	113	Standard
	Ag	107	2856.9	3.2	**0.3846**	0.011	2.9	ug/L	108	Standard
	Cd	111	543.4	2.2	**0.2335**	0.007	3.2	mg/L	3	Standard
	Cd	114	1301.0	2.4	**0.2280**	0.003	1.3	ug/L	20	Standard
>	In	115	626288.8	1.2				ug/L	625728	Standard
	Sn	118	1146.7	25.4	**0.0941**	0.047	50.1	ug/L	568	Standard
	Sb	123	2055.0	1.9	**0.3637**	0.012	3.3	ug/L	612	Standard
	Ba	135	1475.7	2.5	**0.6597**	0.010	1.5	ug/L	21	Standard
	Ce	140	10.0	50.0				ug/L	245	Standard
>	Tb	159	937003.8	0.8				ug/L	950397	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	742.4	3.9	**0.0813**	0.003	3.9	ug/L	15	Standard
	Tl	205	635.0	7.6	**0.0693**	0.006	9.0	ug/L	13	Standard
	Pb	206	1423.4	1.3	**0.2057**	0.004	1.8	ug/L	264	Standard
	Pb	207	1222.7	2.7	**0.1898**	0.007	3.5	ug/L	222	Standard
	Pb	208	5238.4	1.7	**0.1992**	0.005	2.7	ug/L	959	Standard
	U	238	3209.7	2.1	**0.3947**	0.010	2.6	ug/L	9	Standard
>	Bi	209	557268.2	0.5				ug/L	552821	Standard

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 14:41:43
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.3145**	9.196	173.0	mg/L	2	Standard
Mg	24	45.0	11.1	**-0.0048**	0.005	106.0	mg/L	55	Standard
K	39	16.7	45.8	**-0.0643**	0.029	45.1	mg/L	28	Standard
Ca	43	28.3	40.8	**0.2822**	1.159	410.5	mg/L	27	Standard
Fe	54	125.5	27.9	**0.0049**	0.029	586.2	mg/L	147	Standard
Fe	57	236.7	18.2	**-0.0367**	0.142	386.3	mg/L	268	Standard
> **Sc-1**	45	39031.9	2.5				mg/L	41174	Standard
Cl	35	80966.5	1.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2093.5	4.3				ug/L	1950	Standard
P	31	17104.7	1.6				ug/L	21156	Standard
S	34	3810.5	3.5				ug/L	3419	Standard
Sr	88	53.3	51.6				ug/L	72	Standard
C	12	146.7	52.1				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	223.3	40.6				mg/L	17	Standard
Dy	164	5.7	102.5				mg/L	16	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	1610.1	16.8				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	107.542		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	89.972		
	Cr	52	83.818		
	Cr	53			
	Mn	55	85.687		
	Co	59	98.272		
	Ni	60	96.381		
	Cu	65	97.667		
	Zn	66	113.230		
>	Ge	72		98.706	
	As	75	103.620		
	Se	82	109.583		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 14:41:43
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.144		
Cd	111	97.300		
Cd	114			
> In	115			100.090
Sn	118			
Sb	123	90.914		
Ba	135	87.967		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.600		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.596		
U	238	98.687		
> Bi	209			100.804
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 14:41:43
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606136001
Sample Date/Time: Friday, July 01, 2016 15:11:12
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	102032.6	2.7				ug/L	76456	Standard
	Be	9	25.0	34.6	-0.0031	0.006	188.0	ug/L	20	Standard
	Al	27	55269386.4	1.6	242.0065	6.248	2.6	ug/L	1307	Standard
	Sc	45	42982.6	3.7				ug/L	41174	Standard
	Ti	47	671.0	5.7	1.9148	0.128	6.7	ug/L	27	Standard
	V	51	4267.5	6.4	0.3052	0.033	10.8	ug/L	1434	Standard
	Cr	52	10596.7	1.5	0.3014	0.025	8.3	ug/L	7733	Standard
	Cr	53	1925.1	6.6	1.4310	0.107	7.5	ug/L	442	Standard
	Mn	55	5430678.9	1.0	696.1378	12.327	1.8	ug/L	723	Standard
	Co	59	2218.2	2.4	0.2516	0.009	3.5	ug/L	217	Standard
	Ni	60	4312.3	3.2	1.8641	0.080	4.3	ug/L	304	Standard
	Cu	65	798.0	4.6	0.3054	0.016	5.3	ug/L	181	Standard
	Zn	66	2494.5	0.6	1.7957	0.026	1.4	ug/L	215	Standard
>	Ge	72	536693.6	0.8				ug/L	520809	Standard
	As	75	4266.7	1.8	3.3992	0.072	2.1	ug/L	-52	Standard
	Se	82	495.3	5.2	3.6793	0.225	6.1	ug/L	17	Standard
	Se-1	77	148.7	2.7	1.0032	0.054	5.4	ug/L	56	Standard
>	Ga	71	150.0	23.3				mg/L	25	Standard
	Rb	85	52107.8	0.6				ug/L	28	Standard
	Y	89	450964.8	1.0				ug/L	447395	Standard
>	Rh	103	411.7	6.2				ug/L	15	Standard
	Mo	98	1387.0	5.2	0.4385	0.030	6.9	ug/L	113	Standard
	Ag	107	200.3	32.4	0.0153	0.009	61.2	ug/L	108	Standard
	Cd	111	14.4	26.9	0.0039	0.002	40.7	mg/L	3	Standard
	Cd	114	17.5	189.3	0.0031	0.006	189.4	ug/L	20	Standard
>	In	115	620931.3	1.4				ug/L	625728	Standard
	Sn	118	1585.1	13.6	0.1643	0.037	22.3	ug/L	568	Standard
	Sb	123	1484.9	28.1	0.2566	0.085	33.0	ug/L	612	Standard
	Ba	135	185434.9	0.7	85.8822	0.643	0.7	ug/L	21	Standard
	Ce	140	220.0	14.2				ug/L	245	Standard
>	Tb	159	948217.7	1.1				ug/L	950397	Standard
	Ho	165	31.7	9.1				ug/L	7	Standard
	Tl	203	125.3	17.6	0.0138	0.003	19.7	ug/L	15	Standard
	Tl	205	88.3	14.2	0.0018	0.002	100.1	ug/L	13	Standard
	Pb	206	400.7	10.7	0.0298	0.009	29.3	ug/L	264	Standard
	Pb	207	353.0	2.8	0.0252	0.002	8.1	ug/L	222	Standard
	Pb	208	1381.0	1.8	0.0200	0.002	10.5	ug/L	959	Standard
	U	238	1004.0	3.9	0.1291	0.007	5.4	ug/L	9	Standard
>	Bi	209	532629.6	1.5				ug/L	552821	Standard

Sample ID: L1606136001
Report Date/Time: Friday, July 01, 2016 15:13:29
Page 1

Approved: July 02, 2016

Na	23	15.0	33.3	**42.5757**	12.711	29.9	mg/L	2	Standard
Mg	24	49159.6	0.3	**55.0024**	2.117	3.8	mg/L	55	Standard
K	39	1461.7	10.0	**5.2295**	0.334	6.4	mg/L	28	Standard
Ca	43	601.7	4.7	**50.0156**	4.072	8.1	mg/L	27	Standard
Fe	54	4574.4	1.8	**3.3398**	0.110	3.3	mg/L	147	Standard
Fe	57	1803.4	3.2	**4.5113**	0.320	7.1	mg/L	268	Standard
Sc-1	45	42982.6	3.7				mg/L	41174	Standard
Cl	35	94962.0	0.7				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	95694.6	1.2				ug/L	1950	Standard
P	31	33902.9	0.5				ug/L	21156	Standard
S	34	4128.9	1.2				ug/L	3419	Standard
Sr	88	1591.8	1.7				ug/L	72	Standard
C	12	436.7	25.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	510.0	42.5				mg/L	17	Standard
Dy	164	37.8	54.9				mg/L	16	Standard
Ho-1	165	31.7	9.1				mg/L	7	Standard
Er	166	46.7	32.7				mg/L	7	Standard
I	127	121671837.9	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.453	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.050	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606136001
Report Date/Time: Friday, July 01, 2016 15:13:29
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.233
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.348
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606136001
Report Date/Time: Friday, July 01, 2016 15:13:29
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606136002
Sample Date/Time: Friday, July 01, 2016 15:14:23
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85581.0	1.5				ug/L	76456	Standard
	Be	9	25.0	60.0	**0.0002**	0.012	7141.4	ug/L	20	Standard
	Al	27	55900.2	24.1	**0.2811**	0.067	23.9	ug/L	1307	Standard
	Sc	45	42536.3	1.1				ug/L	41174	Standard
	Ti	47	133.7	20.6	**0.3028**	0.078	25.8	ug/L	27	Standard
	V	51	2309.2	3.2	**0.0668**	0.010	14.4	ug/L	1434	Standard
	Cr	52	10748.5	0.6	**0.2852**	0.003	0.9	ug/L	7733	Standard
	Cr	53	1006.7	5.2	**0.5242**	0.053	10.1	ug/L	442	Standard
	Mn	55	5954.9	24.0	**0.6413**	0.175	27.3	ug/L	723	Standard
	Co	59	262.0	8.2	**0.0029**	0.003	90.0	ug/L	217	Standard
	Ni	60	497.3	9.2	**0.0733**	0.022	29.6	ug/L	304	Standard
	Cu	65	2911.9	5.2	**1.2738**	0.065	5.1	ug/L	181	Standard
	Zn	66	1381.4	5.9	**0.8847**	0.058	6.6	ug/L	215	Standard
>	**Ge**	72	551341.1	0.5				ug/L	520809	Standard
	As	75	-21.8	42.5	**0.0285**	0.007	24.8	ug/L	-52	Standard
	Se	82	22.1	22.3	**0.0391**	0.037	95.8	ug/L	17	Standard
	Se-1	77	66.7	24.4	**0.0515**	0.176	341.9	ug/L	56	Standard
>	**Ga**	71	61.7	33.8				mg/L	25	Standard
	Rb	85	408.3	7.2				ug/L	28	Standard
	Y	89	470361.2	0.7				ug/L	447395	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	156.0	25.9	**0.0252**	0.013	53.1	ug/L	113	Standard
	Ag	107	109.0	5.1	**0.0016**	0.001	52.8	ug/L	108	Standard
	Cd	111	14.4	21.7	**0.0036**	0.001	37.8	mg/L	3	Standard
	Cd	114	35.6	84.3	**0.0060**	0.005	83.9	ug/L	20	Standard
>	**In**	115	658802.4	1.3				ug/L	625728	Standard
	Sn	118	3085.3	1.9	**0.3711**	0.008	2.1	ug/L	568	Standard
	Sb	123	348.5	35.2	**0.0306**	0.023	76.5	ug/L	612	Standard
	Ba	135	1852.8	5.0	**0.7908**	0.032	4.1	ug/L	21	Standard
	Ce	140	210.0	16.5				ug/L	245	Standard
>	**Tb**	159	984012.0	1.0				ug/L	950397	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	41.3	6.1	**0.0037**	0.000	7.2	ug/L	15	Standard
	Tl	205	46.7	68.9	**-0.0041**	0.004	94.4	ug/L	13	Standard
	Pb	206	460.7	0.7	**0.0345**	0.001	2.0	ug/L	264	Standard
	Pb	207	404.0	4.8	**0.0295**	0.003	11.6	ug/L	222	Standard
	Pb	208	1690.4	3.1	**0.0292**	0.002	7.9	ug/L	959	Standard
	U	238	26.3	7.9	**0.0029**	0.000	8.7	ug/L	9	Standard
>	**Bi**	209	574438.2	0.4				ug/L	552821	Standard

Sample ID: L1606136002
Report Date/Time: Friday, July 01, 2016 15:16:40
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	250.0	12.5	**0.2227**	0.038	16.8	mg/L	55	Standard
K	39	21.7	48.0	**-0.0507**	0.039	76.8	mg/L	28	Standard
Ca	43	33.3	45.8	**0.4827**	1.350	279.7	mg/L	27	Standard
Fe	54	174.0	19.0	**0.0332**	0.024	72.4	mg/L	147	Standard
Fe	57	240.0	20.1	**-0.0912**	0.137	149.9	mg/L	268	Standard
> **Sc-1**	45	42536.3	1.1				mg/L	41174	Standard
Cl	35	95107.6	2.0				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2680.2	5.4				ug/L	1950	Standard
P	31	27181.0	2.6				ug/L	21156	Standard
S	34	4080.5	2.6				ug/L	3419	Standard
Sr	88	60.0	8.3				ug/L	72	Standard
C	12	186.7	8.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	346.7	61.6				mg/L	17	Standard
Dy	164	25.7	79.6				mg/L	16	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	835274.3	37.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.935	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.862	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606136002
Report Date/Time: Friday, July 01, 2016 15:16:40
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.286
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.910
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140001
Sample Date/Time: Friday, July 01, 2016 15:17:35
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83445.8	0.6				ug/L	76456	Standard
	Be	9	45.0	29.4	**0.0170**	0.011	63.9	ug/L	20	Standard
	Al	27	7040110.3	1.1	**37.6724**	0.642	1.7	ug/L	1307	Standard
	Sc	45	41625.4	2.0				ug/L	41174	Standard
	Ti	47	4285.9	4.9	**12.7764**	0.570	4.5	ug/L	27	Standard
	V	51	7078.2	1.9	**0.6435**	0.022	3.4	ug/L	1434	Standard
	Cr	52	21057.0	0.1	**1.5759**	0.026	1.6	ug/L	7733	Standard
	Cr	53	3443.7	1.2	**2.9149**	0.056	1.9	ug/L	442	Standard
	Mn	55	883702.1	0.7	**114.0510**	1.835	1.6	ug/L	723	Standard
	Co	59	2499.5	0.8	**0.2896**	0.004	1.4	ug/L	217	Standard
	Ni	60	4161.2	2.0	**1.8082**	0.061	3.4	ug/L	304	Standard
	Cu	65	3327.7	0.9	**1.5204**	0.005	0.4	ug/L	181	Standard
	Zn	66	4188.9	1.5	**3.1626**	0.022	0.7	ug/L	215	Standard
>	Ge	72	532673.4	1.1				ug/L	520809	Standard
	As	75	1321.1	0.2	**1.0915**	0.014	1.3	ug/L	-52	Standard
	Se	82	41.1	15.2	**0.1918**	0.049	25.5	ug/L	17	Standard
	Se-1	77	114.0	7.6	**0.6197**	0.107	17.2	ug/L	56	Standard
>	Ga	71	1218.4	5.9				mg/L	25	Standard
	Rb	85	38403.6	2.5				ug/L	28	Standard
	Y	89	469727.3	1.0				ug/L	447395	Standard
>	Rh	103	41.7	25.0				ug/L	15	Standard
	Mo	98	855.3	9.6	**0.2517**	0.030	12.0	ug/L	113	Standard
	Ag	107	118.0	3.1	**0.0031**	0.000	8.0	ug/L	108	Standard
	Cd	111	168.9	5.8	**0.0690**	0.003	4.5	mg/L	3	Standard
	Cd	114	422.3	16.9	**0.0721**	0.011	15.8	ug/L	20	Standard
>	In	115	642729.5	1.7				ug/L	625728	Standard
	Sn	118	2336.8	13.7	**0.2695**	0.050	18.6	ug/L	568	Standard
	Sb	123	10092.5	4.2	**1.8672**	0.060	3.2	ug/L	612	Standard
	Ba	135	14880.6	0.5	**6.6421**	0.083	1.2	ug/L	21	Standard
	Ce	140	38117.9	1.2				ug/L	245	Standard
>	Tb	159	971949.7	2.4				ug/L	950397	Standard
	Ho	165	766.7	0.8				ug/L	7	Standard
	Tl	203	84.7	11.9	**0.0086**	0.001	13.1	ug/L	15	Standard
	Tl	205	65.0	26.6	**-0.0017**	0.002	121.5	ug/L	13	Standard
	Pb	206	5500.7	2.1	**0.9180**	0.006	0.6	ug/L	264	Standard
	Pb	207	4505.0	2.1	**0.8213**	0.015	1.9	ug/L	222	Standard
	Pb	208	19667.7	0.6	**0.8791**	0.020	2.3	ug/L	959	Standard
	U	238	150.0	6.0	**0.0182**	0.001	7.7	ug/L	9	Standard
>	Bi	209	558473.2	1.6				ug/L	552821	Standard

Sample ID: L1606140001
Report Date/Time: Friday, July 01, 2016 15:19:52
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.9489**	8.563	173.0	mg/L	2	Standard
Mg	24	2895.3	5.1	**3.2866**	0.193	5.9	mg/L	55	Standard
K	39	586.7	6.5	**2.0948**	0.159	7.6	mg/L	28	Standard
Ca	43	126.7	13.9	**8.9443**	1.703	19.0	mg/L	27	Standard
Fe	54	1267.9	7.9	**0.8860**	0.097	10.9	mg/L	147	Standard
Fe	57	600.0	6.3	**1.0204**	0.129	12.6	mg/L	268	Standard
Sc-1	45	41625.4	2.0				mg/L	41174	Standard
Cl	35	87177.5	2.1				ug/L	69550	Standard
Kr	83	2.0	173.2				ug/L	1	Standard
Br	81	7248.4	5.5				ug/L	1950	Standard
P	31	28932.6	1.2				ug/L	21156	Standard
S	34	4053.9	3.3				ug/L	3419	Standard
Sr	88	248.3	11.1				ug/L	72	Standard
C	12	190.0	13.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	326.7	32.7				mg/L	17	Standard
Dy	164	1103.7	6.9				mg/L	16	Standard
Ho-1	165	766.7	0.8				mg/L	7	Standard
Er	166	690.0	9.5				mg/L	7	Standard
I	127	358932.7	7.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.143	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.278	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606140001
Report Date/Time: Friday, July 01, 2016 15:19:52
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.717
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.022
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140002
Sample Date/Time: Friday, July 01, 2016 15:20:46
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83243.1	1.8				ug/L	76456	Standard
	Be	9	40.0	66.1	**0.0127**	0.021	164.7	ug/L	20	Standard
	Al	27	20806325.7	1.5	**111.6281**	1.089	1.0	ug/L	1307	Standard
	Sc	45	42705.1	1.7				ug/L	41174	Standard
	Ti	47	521.0	4.2	**1.4841**	0.067	4.5	ug/L	27	Standard
	V	51	3344.5	4.3	**0.2005**	0.017	8.4	ug/L	1434	Standard
	Cr	52	11575.8	0.5	**0.4337**	0.008	1.8	ug/L	7733	Standard
	Cr	53	3380.4	6.9	**2.8639**	0.226	7.9	ug/L	442	Standard
	Mn	55	948881.0	1.2	**122.8502**	1.452	1.2	ug/L	723	Standard
	Co	59	2088.1	1.4	**0.2379**	0.004	1.7	ug/L	217	Standard
	Ni	60	3829.2	1.0	**1.6570**	0.016	1.0	ug/L	304	Standard
	Cu	65	1020.7	3.6	**0.4165**	0.018	4.3	ug/L	181	Standard
	Zn	66	1711.1	3.0	**1.1897**	0.044	3.7	ug/L	215	Standard
>	Ge	72	530967.7	0.1				ug/L	520809	Standard
	As	75	120.6	26.2	**0.1410**	0.025	17.8	ug/L	-52	Standard
	Se	82	48.6	18.0	**0.2506**	0.068	27.3	ug/L	17	Standard
	Se-1	77	180.0	11.7	**1.3805**	0.238	17.3	ug/L	56	Standard
>	Ga	71	128.3	39.0				mg/L	25	Standard
	Rb	85	2536.9	2.3				ug/L	28	Standard
	Y	89	459396.3	1.3				ug/L	447395	Standard
>	Rh	103	68.3	16.9				ug/L	15	Standard
	Mo	98	164.7	11.0	**0.0301**	0.006	21.2	ug/L	113	Standard
	Ag	107	87.7	14.4	**-0.0008**	0.002	218.3	ug/L	108	Standard
	Cd	111	68.1	9.8	**0.0269**	0.003	10.0	mg/L	3	Standard
	Cd	114	155.0	26.9	**0.0270**	0.007	27.3	ug/L	20	Standard
>	In	115	631529.9	1.1				ug/L	625728	Standard
	Sn	118	1490.1	25.7	**0.1455**	0.061	42.2	ug/L	568	Standard
	Sb	123	888.6	10.6	**0.1367**	0.019	13.9	ug/L	612	Standard
	Ba	135	26458.7	0.5	**12.0331**	0.137	1.1	ug/L	21	Standard
	Ce	140	9911.6	1.3				ug/L	245	Standard
>	Tb	159	958775.7	0.7				ug/L	950397	Standard
	Ho	165	208.3	2.8				ug/L	7	Standard
	Tl	203	123.7	9.6	**0.0132**	0.001	9.6	ug/L	15	Standard
	Tl	205	103.3	42.3	**0.0034**	0.005	161.1	ug/L	13	Standard
	Pb	206	646.3	4.8	**0.0721**	0.004	5.3	ug/L	264	Standard
	Pb	207	521.7	7.3	**0.0568**	0.007	11.5	ug/L	222	Standard
	Pb	208	2324.1	2.2	**0.0641**	0.003	5.2	ug/L	959	Standard
	U	238	1352.7	2.4	**0.1701**	0.003	1.9	ug/L	9	Standard
>	Bi	209	544667.8	1.5				ug/L	552821	Standard

Sample ID: L1606140002
Report Date/Time: Friday, July 01, 2016 15:23:03
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.5374**	16.511	173.1	mg/L	2	Standard
Mg	24	12897.2	1.9	**14.4668**	0.241	1.7	mg/L	55	Standard
K	39	143.3	40.4	**0.3966**	0.206	52.0	mg/L	28	Standard
Ca	43	550.0	11.0	**45.7421**	5.294	11.6	mg/L	27	Standard
Fe	54	409.1	1.1	**0.2106**	0.008	3.9	mg/L	147	Standard
Fe	57	643.3	9.1	**1.1039**	0.202	18.3	mg/L	268	Standard
> **Sc-1**	45	42705.1	1.7				mg/L	41174	Standard
Cl	35	94915.1	1.1				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	7108.3	0.6				ug/L	1950	Standard
P	31	28478.4	1.9				ug/L	21156	Standard
S	34	4015.5	4.7				ug/L	3419	Standard
Sr	88	310.0	10.1				ug/L	72	Standard
C	12	300.0	17.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	246.7	10.2				mg/L	17	Standard
Dy	164	399.0	15.6				mg/L	16	Standard
Ho-1	165	208.3	2.8				mg/L	7	Standard
Er	166	230.0	11.5				mg/L	7	Standard
I	127	149991.1	7.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.877	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.950	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140002
Report Date/Time: Friday, July 01, 2016 15:23:03
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.927	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.525	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140003
Sample Date/Time: Friday, July 01, 2016 15:23:58
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82504.1	1.6				ug/L	76456	Standard
	Be	9	21.7	48.0	**-0.0018**	0.009	480.2	ug/L	20	Standard
	Al	27	13452706.7	0.5	**72.8294**	1.526	2.1	ug/L	1307	Standard
	Sc	45	41709.0	1.4				ug/L	41174	Standard
	Ti	47	2378.5	5.3	**7.0809**	0.376	5.3	ug/L	27	Standard
	V	51	7214.8	5.3	**0.6629**	0.045	6.8	ug/L	1434	Standard
	Cr	52	13978.1	0.6	**0.7263**	0.017	2.4	ug/L	7733	Standard
	Cr	53	7091.7	6.1	**6.4687**	0.376	5.8	ug/L	442	Standard
	Mn	55	62406.3	0.1	**7.9906**	0.075	0.9	ug/L	723	Standard
	Co	59	1446.4	2.2	**0.1559**	0.006	3.6	ug/L	217	Standard
	Ni	60	2083.8	4.2	**0.8328**	0.047	5.6	ug/L	304	Standard
	Cu	65	965.4	1.3	**0.3903**	0.010	2.5	ug/L	181	Standard
	Zn	66	2028.5	1.9	**1.4450**	0.043	3.0	ug/L	215	Standard
>	Ge	72	530627.2	0.9				ug/L	520809	Standard
	As	75	140.1	24.4	**0.1567**	0.028	17.9	ug/L	-52	Standard
	Se	82	39.3	18.1	**0.1786**	0.052	29.4	ug/L	17	Standard
	Se-1	77	316.3	5.9	**2.9476**	0.217	7.4	ug/L	56	Standard
>	Ga	71	366.7	8.0				mg/L	25	Standard
	Rb	85	8984.3	2.4				ug/L	28	Standard
	Y	89	458813.5	0.8				ug/L	447395	Standard
>	Rh	103	51.7	39.1				ug/L	15	Standard
	Mo	98	313.7	15.4	**0.0798**	0.016	20.1	ug/L	113	Standard
	Ag	107	93.7	11.2	**0.0002**	0.001	781.2	ug/L	108	Standard
	Cd	111	28.1	20.3	**0.0099**	0.002	24.9	mg/L	3	Standard
	Cd	114	65.8	57.7	**0.0116**	0.007	57.4	ug/L	20	Standard
>	In	115	625934.2	0.5				ug/L	625728	Standard
	Sn	118	1398.4	16.4	**0.1329**	0.035	26.4	ug/L	568	Standard
	Sb	123	422.7	21.1	**0.0480**	0.017	35.9	ug/L	612	Standard
	Ba	135	6793.5	0.6	**3.1038**	0.028	0.9	ug/L	21	Standard
	Ce	140	15908.3	1.9				ug/L	245	Standard
>	Tb	159	944178.7	1.1				ug/L	950397	Standard
	Ho	165	355.0	16.2				ug/L	7	Standard
	Tl	203	120.3	15.9	**0.0130**	0.002	16.8	ug/L	15	Standard
	Tl	205	111.7	23.0	**0.0046**	0.003	71.8	ug/L	13	Standard
	Pb	206	1028.4	3.3	**0.1425**	0.006	4.1	ug/L	264	Standard
	Pb	207	909.0	1.6	**0.1352**	0.003	2.4	ug/L	222	Standard
	Pb	208	3805.2	1.1	**0.1376**	0.002	1.8	ug/L	959	Standard
	U	238	790.4	10.0	**0.1003**	0.010	10.2	ug/L	9	Standard
>	Bi	209	538993.4	0.2				ug/L	552821	Standard

Sample ID: L1606140003
Report Date/Time: Friday, July 01, 2016 15:26:15
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.8709**	8.546	86.6	mg/L	2	Standard
Mg	24	22061.0	0.3	**25.3844**	0.436	1.7	mg/L	55	Standard
K	39	113.3	9.2	**0.2976**	0.036	12.0	mg/L	28	Standard
Ca	43	235.0	16.1	**18.6613**	3.690	19.8	mg/L	27	Standard
Fe	54	444.8	12.4	**0.2457**	0.044	17.8	mg/L	147	Standard
Fe	57	475.0	1.1	**0.6368**	0.010	1.6	mg/L	268	Standard
Sc-1	45	41709.0	1.4				mg/L	41174	Standard
Cl	35	94012.8	1.3				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	5417.6	1.0				ug/L	1950	Standard
P	31	27702.0	0.2				ug/L	21156	Standard
S	34	3952.2	4.7				ug/L	3419	Standard
Sr	88	203.3	6.2				ug/L	72	Standard
C	12	180.0	5.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	206.7	46.0				mg/L	17	Standard
Dy	164	524.4	5.0				mg/L	16	Standard
Ho-1	165	355.0	16.2				mg/L	7	Standard
Er	166	326.7	23.8				mg/L	7	Standard
I	127	92501.9	4.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.885	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140003
Report Date/Time: Friday, July 01, 2016 15:26:15
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.033
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.499
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140004
Sample Date/Time: Friday, July 01, 2016 15:27:09
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81751.7	2.2				ug/L	76456	Standard
	Be	9	135.0	7.4	**0.0930**	0.010	10.5	ug/L	20	Standard
	Al	27	16409591.9	0.7	**89.6714**	2.399	2.7	ug/L	1307	Standard
	Sc	45	43657.8	2.3				ug/L	41174	Standard
	Ti	47	15858.0	1.7	**48.2292**	0.843	1.7	ug/L	27	Standard
	V	51	24903.7	1.5	**2.8088**	0.058	2.1	ug/L	1434	Standard
	Cr	52	24554.9	2.0	**2.0436**	0.044	2.1	ug/L	7733	Standard
	Cr	53	8734.2	4.6	**8.1598**	0.352	4.3	ug/L	442	Standard
	Mn	55	321581.9	1.2	**42.0644**	0.335	0.8	ug/L	723	Standard
	Co	59	9091.1	1.5	**1.1485**	0.011	1.0	ug/L	217	Standard
	Ni	60	4968.8	2.8	**2.2237**	0.057	2.6	ug/L	304	Standard
	Cu	65	4956.5	2.1	**2.3370**	0.063	2.7	ug/L	181	Standard
	Zn	66	24116.8	0.6	**19.3591**	0.218	1.1	ug/L	215	Standard
>	Ge	72	524703.9	0.5				ug/L	520809	Standard
	As	75	614.6	10.2	**0.5395**	0.053	9.9	ug/L	-52	Standard
	Se	82	60.0	7.2	**0.3447**	0.037	10.6	ug/L	17	Standard
	Se-1	77	320.0	6.3	**3.0305**	0.221	7.3	ug/L	56	Standard
>	Ga	71	2358.5	3.8				mg/L	25	Standard
	Rb	85	29106.3	0.5				ug/L	28	Standard
	Y	89	488820.8	1.3				ug/L	447395	Standard
>	Rh	103	41.7	36.7				ug/L	15	Standard
	Mo	98	207.5	20.0	**0.0449**	0.014	31.5	ug/L	113	Standard
	Ag	107	157.7	11.6	**0.0091**	0.002	27.1	ug/L	108	Standard
	Cd	111	394.0	4.6	**0.1692**	0.008	4.7	mg/L	3	Standard
	Cd	114	994.3	3.1	**0.1748**	0.005	2.7	ug/L	20	Standard
>	In	115	624414.0	0.6				ug/L	625728	Standard
	Sn	118	1828.4	12.1	**0.2006**	0.036	17.9	ug/L	568	Standard
	Sb	123	719.7	13.7	**0.1059**	0.020	18.8	ug/L	612	Standard
	Ba	135	28855.8	0.8	**13.2740**	0.137	1.0	ug/L	21	Standard
	Ce	140	181035.3	1.7				ug/L	245	Standard
>	Tb	159	950705.2	0.6				ug/L	950397	Standard
	Ho	165	3198.7	2.4				ug/L	7	Standard
	Tl	203	267.3	11.5	**0.0298**	0.004	11.9	ug/L	15	Standard
	Tl	205	255.0	10.9	**0.0230**	0.004	15.5	ug/L	13	Standard
	Pb	206	5712.7	1.8	**0.9909**	0.019	1.9	ug/L	264	Standard
	Pb	207	4766.7	1.5	**0.9045**	0.014	1.5	ug/L	222	Standard
	Pb	208	20771.3	1.3	**0.9660**	0.013	1.3	ug/L	959	Standard
	U	238	597.3	5.0	**0.0757**	0.004	5.0	ug/L	9	Standard
>	Bi	209	539160.5	0.0				ug/L	552821	Standard

Sample ID: L1606140004
Report Date/Time: Friday, July 01, 2016 15:29:26
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.3434**	8.093	86.6	mg/L	2	Standard
Mg	24	23045.8	1.2	**25.3403**	0.746	2.9	mg/L	55	Standard
K	39	200.0	16.4	**0.5941**	0.134	22.5	mg/L	28	Standard
Ca	43	263.3	19.5	**20.1662**	4.729	23.5	mg/L	27	Standard
Fe	54	2633.0	5.5	**1.8499**	0.135	7.3	mg/L	147	Standard
Fe	57	1085.0	6.4	**2.3396**	0.175	7.5	mg/L	268	Standard
Sc-1	45	43657.8	2.3				mg/L	41174	Standard
Cl	35	89531.9	3.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	8986.0	7.5				ug/L	1950	Standard
P	31	30121.6	2.2				ug/L	21156	Standard
S	34	4117.2	5.6				ug/L	3419	Standard
Sr	88	208.3	27.6				ug/L	72	Standard
C	12	203.3	12.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	336.7	30.9				mg/L	17	Standard
Dy	164	4587.9	2.0				mg/L	16	Standard
Ho-1	165	3198.7	2.4				mg/L	7	Standard
Er	166	3260.4	5.8				mg/L	7	Standard
I	127	86340.3	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.927	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.748	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606140004
Report Date/Time: Friday, July 01, 2016 15:29:26
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.790
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.529
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140005
Sample Date/Time: Friday, July 01, 2016 15:30:21
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81575.7	1.3				ug/L	76456	Standard
	Be	9	31.7	45.6	**0.0067**	0.012	182.8	ug/L	20	Standard
	Al	27	11361131.6	0.7	**62.2005**	1.160	1.9	ug/L	1307	Standard
	Sc	45	41289.5	1.9				ug/L	41174	Standard
	Ti	47	446.7	4.2	**1.2710**	0.064	5.1	ug/L	27	Standard
	V	51	6339.2	1.7	**0.5637**	0.005	0.9	ug/L	1434	Standard
	Cr	52	14053.8	0.9	**0.7478**	0.031	4.1	ug/L	7733	Standard
	Cr	53	3397.0	0.8	**2.9061**	0.060	2.1	ug/L	442	Standard
	Mn	55	91180.2	0.3	**11.8062**	0.126	1.1	ug/L	723	Standard
	Co	59	1636.1	3.3	**0.1817**	0.006	3.3	ug/L	217	Standard
	Ni	60	2420.2	3.0	**0.9998**	0.030	3.0	ug/L	304	Standard
	Cu	65	1115.7	0.8	**0.4664**	0.010	2.1	ug/L	181	Standard
	Zn	66	4102.9	4.8	**3.1313**	0.189	6.0	ug/L	215	Standard
>	Ge	72	526864.0	1.0				ug/L	520809	Standard
	As	75	209.1	23.9	**0.2126**	0.040	18.9	ug/L	-52	Standard
	Se	82	44.2	19.7	**0.2192**	0.067	30.8	ug/L	17	Standard
	Se-1	77	143.0	9.9	**0.9701**	0.178	18.4	ug/L	56	Standard
>	Ga	71	123.3	14.2				mg/L	25	Standard
	Rb	85	2268.5	7.3				ug/L	28	Standard
	Y	89	460843.6	0.6				ug/L	447395	Standard
>	Rh	103	38.3	7.5				ug/L	15	Standard
	Mo	98	138.6	17.2	**0.0223**	0.008	37.4	ug/L	113	Standard
	Ag	107	89.7	12.2	**-0.0003**	0.002	618.7	ug/L	108	Standard
	Cd	111	119.1	4.0	**0.0498**	0.002	3.9	mg/L	3	Standard
	Cd	114	332.6	23.3	**0.0590**	0.014	24.0	ug/L	20	Standard
>	In	115	620430.9	1.0				ug/L	625728	Standard
	Sn	118	1270.1	10.3	**0.1149**	0.022	19.3	ug/L	568	Standard
	Sb	123	506.5	10.9	**0.0652**	0.012	17.9	ug/L	612	Standard
	Ba	135	12723.7	1.4	**5.8806**	0.073	1.2	ug/L	21	Standard
	Ce	140	16098.5	0.3				ug/L	245	Standard
>	Tb	159	949690.5	1.0				ug/L	950397	Standard
	Ho	165	733.4	8.1				ug/L	7	Standard
	Tl	203	89.0	5.8	**0.0094**	0.001	6.1	ug/L	15	Standard
	Tl	205	71.7	4.0	**-0.0005**	0.000	65.6	ug/L	13	Standard
	Pb	206	791.4	4.4	**0.0994**	0.006	5.9	ug/L	264	Standard
	Pb	207	690.7	3.6	**0.0915**	0.005	5.0	ug/L	222	Standard
	Pb	208	2860.4	1.4	**0.0912**	0.002	1.7	ug/L	959	Standard
	U	238	438.0	6.5	**0.0554**	0.003	6.2	ug/L	9	Standard
>	Bi	209	539820.6	0.5				ug/L	552821	Standard

Sample ID: L1606140005
Report Date/Time: Friday, July 01, 2016 15:32:38
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.8050**	16.974	173.1	mg/L	2	Standard
Mg	24	7792.0	1.0	**9.0186**	0.177	2.0	mg/L	55	Standard
K	39	263.3	14.7	**0.8766**	0.155	17.6	mg/L	28	Standard
Ca	43	330.0	19.8	**27.4186**	5.627	20.5	mg/L	27	Standard
Fe	54	735.5	15.2	**0.4767**	0.090	18.9	mg/L	147	Standard
Fe	57	581.7	10.7	**0.9796**	0.205	21.0	mg/L	268	Standard
> **Sc-1**	45	41289.5	1.9				mg/L	41174	Standard
Cl	35	92233.2	0.5				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	7218.4	8.8				ug/L	1950	Standard
P	31	25119.1	2.5				ug/L	21156	Standard
S	34	4015.5	4.2				ug/L	3419	Standard
Sr	88	198.3	12.9				ug/L	72	Standard
C	12	296.7	7.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	29.4				mg/L	17	Standard
Dy	164	946.6	5.7				mg/L	16	Standard
Ho-1	165	733.4	8.1				mg/L	7	Standard
Er	166	766.7	15.2				mg/L	7	Standard
I	127	70972.5	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.697	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.163	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140005
Report Date/Time: Friday, July 01, 2016 15:32:38
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.648
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140009
Sample Date/Time: Friday, July 01, 2016 15:33:32
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81176.9	1.8				ug/L	76456	Standard
	Be	9	121.7	33.5	**0.0827**	0.035	42.4	ug/L	20	Standard
	Al	27	9588194.5	0.1	**52.7539**	0.999	1.9	ug/L	1307	Standard
	Sc	45	43500.7	0.9				ug/L	41174	Standard
	Ti	47	16231.4	1.0	**49.4700**	1.142	2.3	ug/L	27	Standard
	V	51	27177.8	1.2	**3.0895**	0.018	0.6	ug/L	1434	Standard
	Cr	52	30590.2	0.3	**2.7921**	0.043	1.5	ug/L	7733	Standard
	Cr	53	15214.3	3.9	**14.5584**	0.723	5.0	ug/L	442	Standard
	Mn	55	419736.2	0.6	**55.0489**	1.027	1.9	ug/L	723	Standard
	Co	59	9146.8	1.6	**1.1580**	0.019	1.6	ug/L	217	Standard
	Ni	60	5875.8	2.7	**2.6630**	0.065	2.4	ug/L	304	Standard
	Cu	65	6513.4	1.0	**3.1007**	0.066	2.1	ug/L	181	Standard
	Zn	66	26692.5	0.5	**21.4893**	0.375	1.7	ug/L	215	Standard
>	Ge	72	523713.8	1.4				ug/L	520809	Standard
	As	75	573.5	19.4	**0.5079**	0.095	18.7	ug/L	-52	Standard
	Se	82	88.9	5.9	**0.5739**	0.045	7.8	ug/L	17	Standard
	Se-1	77	673.7	3.9	**7.1522**	0.285	4.0	ug/L	56	Standard
>	Ga	71	2611.9	4.8				mg/L	25	Standard
	Rb	85	28024.2	1.3				ug/L	28	Standard
	Y	89	508019.1	1.4				ug/L	447395	Standard
>	Rh	103	75.0	11.5				ug/L	15	Standard
	Mo	98	440.1	11.3	**0.1259**	0.017	13.3	ug/L	113	Standard
	Ag	107	293.3	3.4	**0.0292**	0.001	4.2	ug/L	108	Standard
	Cd	111	123.6	12.9	**0.0529**	0.007	13.0	mg/L	3	Standard
	Cd	114	259.6	1.9	**0.0469**	0.001	2.3	ug/L	20	Standard
>	In	115	607695.5	0.5				ug/L	625728	Standard
	Sn	118	1815.1	15.8	**0.2060**	0.044	21.6	ug/L	568	Standard
	Sb	123	1181.5	5.3	**0.2017**	0.012	6.1	ug/L	612	Standard
	Ba	135	44851.3	1.2	**21.2102**	0.264	1.2	ug/L	21	Standard
	Ce	140	233746.2	1.6				ug/L	245	Standard
>	Tb	159	940005.0	0.9				ug/L	950397	Standard
	Ho	165	4862.4	3.3				ug/L	7	Standard
	Tl	203	294.3	3.6	**0.0336**	0.001	3.3	ug/L	15	Standard
	Tl	205	293.3	8.4	**0.0288**	0.003	10.7	ug/L	13	Standard
	Pb	206	14978.4	0.2	**2.7295**	0.019	0.7	ug/L	264	Standard
	Pb	207	12667.6	1.3	**2.5366**	0.044	1.7	ug/L	222	Standard
	Pb	208	54283.9	0.6	**2.6615**	0.029	1.1	ug/L	959	Standard
	U	238	853.7	3.9	**0.1108**	0.005	4.3	ug/L	9	Standard
>	Bi	209	527415.0	0.5				ug/L	552821	Standard

Sample ID: L1606140009
Report Date/Time: Friday, July 01, 2016 15:35:49
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58944.5	2.4	**65.1233**	1.989	3.1	mg/L	55	Standard
K	39	308.3	15.9	**0.9880**	0.180	18.2	mg/L	28	Standard
Ca	43	298.3	31.7	**23.1691**	7.979	34.4	mg/L	27	Standard
Fe	54	3472.7	3.0	**2.4787**	0.071	2.9	mg/L	147	Standard
Fe	57	1280.1	3.7	**2.9195**	0.164	5.6	mg/L	268	Standard
> **Sc-1**	45	43500.7	0.9				mg/L	41174	Standard
Cl	35	88358.4	3.5				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	13829.7	7.0				ug/L	1950	Standard
P	31	28925.9	0.9				ug/L	21156	Standard
S	34	3962.2	5.0				ug/L	3419	Standard
Sr	88	261.7	17.1				ug/L	72	Standard
C	12	160.0	39.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	233.3	49.3				mg/L	17	Standard
Dy	164	7255.6	1.4				mg/L	16	Standard
Ho-1	165	4862.4	3.3				mg/L	7	Standard
Er	166	4654.0	5.4				mg/L	7	Standard
I	127	97026.7	3.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.175	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140009
Report Date/Time: Friday, July 01, 2016 15:35:49
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.118
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140010
Sample Date/Time: Friday, July 01, 2016 15:36:43
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81063.0	2.2				ug/L	76456	Standard
	Be	9	45.0	40.1	**0.0179**	0.015	82.9	ug/L	20	Standard
	Al	27	11177331.1	2.6	**61.5680**	0.262	0.4	ug/L	1307	Standard
	Sc	45	42046.6	2.8				ug/L	41174	Standard
	Ti	47	3513.4	4.8	**10.6195**	0.508	4.8	ug/L	27	Standard
	V	51	6549.3	3.1	**0.5923**	0.026	4.4	ug/L	1434	Standard
	Cr	52	28159.1	0.6	**2.4863**	0.028	1.1	ug/L	7733	Standard
	Cr	53	13474.3	4.4	**12.8172**	0.601	4.7	ug/L	442	Standard
	Mn	55	64803.6	1.2	**8.3962**	0.117	1.4	ug/L	723	Standard
	Co	59	2906.3	2.0	**0.3471**	0.007	2.1	ug/L	217	Standard
	Ni	60	4725.7	1.8	**2.1076**	0.036	1.7	ug/L	304	Standard
	Cu	65	5144.9	0.4	**2.4285**	0.010	0.4	ug/L	181	Standard
	Zn	66	4108.2	1.9	**3.1482**	0.066	2.1	ug/L	215	Standard
>	Ge	72	524692.7	0.2				ug/L	520809	Standard
	As	75	145.9	6.5	**0.1625**	0.008	4.8	ug/L	-52	Standard
	Se	82	112.8	12.6	**0.7595**	0.112	14.8	ug/L	17	Standard
	Se-1	77	626.7	4.9	**6.5924**	0.373	5.7	ug/L	56	Standard
>	Ga	71	708.3	9.6				mg/L	25	Standard
	Rb	85	114385.2	1.8				ug/L	28	Standard
	Y	89	451161.9	0.3				ug/L	447395	Standard
>	Rh	103	126.7	19.5				ug/L	15	Standard
	Mo	98	337.8	3.9	**0.0889**	0.005	5.8	ug/L	113	Standard
	Ag	107	99.0	14.6	**0.0011**	0.002	190.6	ug/L	108	Standard
	Cd	111	210.4	3.4	**0.0899**	0.004	4.2	mg/L	3	Standard
	Cd	114	526.0	13.1	**0.0932**	0.013	13.7	ug/L	20	Standard
>	In	115	619724.1	0.7				ug/L	625728	Standard
	Sn	118	3008.6	5.9	**0.3878**	0.029	7.5	ug/L	568	Standard
	Sb	123	32833.7	1.0	**6.3811**	0.045	0.7	ug/L	612	Standard
	Ba	135	22694.3	1.2	**10.5145**	0.070	0.7	ug/L	21	Standard
	Ce	140	24100.8	3.3				ug/L	245	Standard
>	Tb	159	942819.0	1.4				ug/L	950397	Standard
	Ho	165	435.0	17.4				ug/L	7	Standard
	Tl	203	173.7	3.3	**0.0194**	0.001	3.9	ug/L	15	Standard
	Tl	205	150.0	13.3	**0.0098**	0.003	26.2	ug/L	13	Standard
	Pb	206	11753.6	0.5	**2.1162**	0.005	0.2	ug/L	264	Standard
	Pb	207	9878.9	1.2	**1.9529**	0.015	0.8	ug/L	222	Standard
	Pb	208	42950.0	0.3	**2.0797**	0.006	0.3	ug/L	959	Standard
	U	238	632.3	2.5	**0.0814**	0.002	2.7	ug/L	9	Standard
>	Bi	209	531366.5	0.5				ug/L	552821	Standard

Sample ID: L1606140010
Report Date/Time: Friday, July 01, 2016 15:39:00
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**10.0447**	17.389	173.1	mg/L	2	Standard
Mg	24	54402.5	1.7	**62.2231**	2.757	4.4	mg/L	55	Standard
K	39	598.3	6.5	**2.1139**	0.085	4.0	mg/L	28	Standard
Ca	43	330.0	10.9	**26.8723**	2.438	9.1	mg/L	27	Standard
Fe	54	560.8	9.0	**0.3316**	0.032	9.6	mg/L	147	Standard
Fe	57	588.3	6.5	**0.9662**	0.103	10.6	mg/L	268	Standard
Sc-1	45	42046.6	2.8				mg/L	41174	Standard
Cl	35	90806.6	0.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18608.1	1.3				ug/L	1950	Standard
P	31	26292.8	1.7				ug/L	21156	Standard
S	34	4085.6	2.8				ug/L	3419	Standard
Sr	88	385.0	14.8				ug/L	72	Standard
C	12	186.7	30.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	136.7	27.7				mg/L	17	Standard
Dy	164	734.0	6.8				mg/L	16	Standard
Ho-1	165	435.0	17.4				mg/L	7	Standard
Er	166	403.3	10.0				mg/L	7	Standard
I	127	125158.4	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.026	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.746	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606140010
Report Date/Time: Friday, July 01, 2016 15:39:00
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.041
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.119
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144411
Sample Date/Time: Friday, July 01, 2016 15:39:55
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81448.4	1.6				ug/L	76456	Standard
	Be	9	11.7	65.5	**-0.0101**	0.006	63.9	ug/L	20	Standard
	Al	27	21525.3	7.9	**0.1077**	0.007	6.9	ug/L	1307	Standard
	Sc	45	43096.2	1.6				ug/L	41174	Standard
	Ti	47	91.7	3.5	**0.1831**	0.008	4.3	ug/L	27	Standard
	V	51	5715.4	7.0	**0.4625**	0.039	8.5	ug/L	1434	Standard
	Cr	52	72666.9	1.2	**7.5774**	0.036	0.5	ug/L	7733	Standard
	Cr	53	9179.5	6.4	**8.2203**	0.500	6.1	ug/L	442	Standard
	Mn	55	17987.3	2.4	**2.1587**	0.042	2.0	ug/L	723	Standard
	Co	59	1272.7	1.0	**0.1286**	0.001	0.4	ug/L	217	Standard
	Ni	60	1771.4	2.8	**0.6589**	0.022	3.3	ug/L	304	Standard
	Cu	65	890.7	4.0	**0.3410**	0.015	4.4	ug/L	181	Standard
	Zn	66	2169.2	1.7	**1.5037**	0.020	1.3	ug/L	215	Standard
>	**Ge**	72	547560.2	1.1				ug/L	520809	Standard
	As	75	-25.7	84.9	**0.0255**	0.017	64.8	ug/L	-52	Standard
	Se	82	30.2	19.3	**0.1012**	0.046	45.5	ug/L	17	Standard
	Se-1	77	82.7	3.0	**0.2352**	0.029	12.5	ug/L	56	Standard
>	**Ga**	71	61.7	16.9				mg/L	25	Standard
	Rb	85	225.0	18.2				ug/L	28	Standard
	Y	89	463078.5	0.6				ug/L	447395	Standard
>	**Rh**	103	16.7	34.6				ug/L	15	Standard
	Mo	98	9345.0	1.0	**2.9323**	0.025	0.9	ug/L	113	Standard
	Ag	107	88.3	4.7	**-0.0011**	0.001	50.3	ug/L	108	Standard
	Cd	111	4.7	106.3	**-0.0004**	0.002	489.8	mg/L	3	Standard
	Cd	114	53.3	48.8	**0.0090**	0.004	49.5	ug/L	20	Standard
>	**In**	115	654026.5	1.0				ug/L	625728	Standard
	Sn	118	6959.9	4.7	**0.9503**	0.045	4.8	ug/L	568	Standard
	Sb	123	309.2	21.8	**0.0236**	0.013	55.3	ug/L	612	Standard
	Ba	135	560.7	1.9	**0.2287**	0.006	2.5	ug/L	21	Standard
	Ce	140	275.0	28.4				ug/L	245	Standard
>	**Tb**	159	972057.0	0.8				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	71.3	7.7	**0.0070**	0.001	9.6	ug/L	15	Standard
	Tl	205	56.7	27.0	**-0.0028**	0.002	64.9	ug/L	13	Standard
	Pb	206	408.7	2.4	**0.0268**	0.002	8.8	ug/L	264	Standard
	Pb	207	323.7	7.4	**0.0155**	0.005	32.9	ug/L	222	Standard
	Pb	208	1481.0	2.8	**0.0207**	0.002	11.3	ug/L	959	Standard
	U	238	26.3	21.6	**0.0029**	0.001	22.8	ug/L	9	Standard
>	**Bi**	209	565291.9	1.0				ug/L	552821	Standard

Sample ID: L1606144411
Report Date/Time: Friday, July 01, 2016 15:42:12
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	118.3	31.7	**0.0714**	0.040	55.7	mg/L	55	Standard
K	39	33.3	8.7	**-0.0090**	0.012	135.9	mg/L	28	Standard
Ca	43	25.0	20.0	**-0.2843**	0.417	146.5	mg/L	27	Standard
Fe	54	653.3	3.0	**0.3905**	0.007	1.8	mg/L	147	Standard
Fe	57	318.3	7.9	**0.1302**	0.066	51.0	mg/L	268	Standard
> **Sc-1**	45	43096.2	1.6				mg/L	41174	Standard
Cl	35	93637.8	1.2				ug/L	69550	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	4000.5	7.9				ug/L	1950	Standard
P	31	25331.2	1.4				ug/L	21156	Standard
S	34	4190.6	5.7				ug/L	3419	Standard
Sr	88	63.3	25.4				ug/L	72	Standard
C	12	126.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	170.0	56.1				mg/L	17	Standard
Dy	164	16.0	67.7				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	17883.9	8.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.136	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144411
Report Date/Time: Friday, July 01, 2016 15:42:12
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.523
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.256
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 15:43:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79848.2	1.4				ug/L	76456	Standard
	Be	9	61340.6	1.3	**52.4607**	1.344	2.6	ug/L	20	Standard
	Al	27	8840196.9	1.7	**49.4449**	1.243	2.5	ug/L	1307	Standard
	Sc	45	42292.3	2.5				ug/L	41174	Standard
	Ti	47	33237.8	0.4	**98.6642**	0.509	0.5	ug/L	27	Standard
	V	51	434298.1	1.3	**50.9427**	0.727	1.4	ug/L	1434	Standard
	Cr	52	424946.0	0.9	**49.8972**	0.200	0.4	ug/L	7733	Standard
	Cr	53	51918.8	0.3	**49.3069**	0.192	0.4	ug/L	442	Standard
	Mn	55	396032.4	2.3	**50.5349**	0.943	1.9	ug/L	723	Standard
	Co	59	408091.6	1.9	**51.5332**	0.754	1.5	ug/L	217	Standard
	Ni	60	107986.8	0.7	**50.2226**	0.157	0.3	ug/L	304	Standard
	Cu	65	107294.9	0.3	**50.8210**	0.440	0.9	ug/L	181	Standard
	Zn	66	64441.1	1.0	**50.7299**	0.295	0.6	ug/L	215	Standard
>	Ge	72	538072.4	0.6				ug/L	520809	Standard
	As	75	64224.3	0.8	**50.3990**	0.228	0.5	ug/L	-52	Standard
	Se	82	6653.0	0.9	**50.8468**	0.498	1.0	ug/L	17	Standard
	Se-1	77	4539.7	1.5	**50.7170**	0.744	1.5	ug/L	56	Standard
>	Ga	71	38.3	19.9				mg/L	25	Standard
	Rb	85	878.4	4.8				ug/L	28	Standard
	Y	89	464875.9	0.9				ug/L	447395	Standard
>	Rh	103	28.3	56.7				ug/L	15	Standard
	Mo	98	306641.4	1.5	**98.6937**	1.489	1.5	ug/L	113	Standard
	Ag	107	367901.9	1.4	**49.8620**	0.492	1.0	ug/L	108	Standard
	Cd	111	117489.0	1.1	**49.6867**	0.641	1.3	mg/L	3	Standard
	Cd	114	291631.0	1.7	**49.8103**	0.297	0.6	ug/L	20	Standard
>	In	115	642695.4	1.1				ug/L	625728	Standard
	Sn	118	325840.7	2.1	**49.2102**	1.100	2.2	ug/L	568	Standard
	Sb	123	265299.9	1.4	**49.9473**	0.644	1.3	ug/L	612	Standard
	Ba	135	109451.6	0.3	**48.9670**	0.439	0.9	ug/L	21	Standard
	Ce	140	91.7	17.5				ug/L	245	Standard
>	Tb	159	960139.4	0.5				ug/L	950397	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	455308.6	0.4	**50.2176**	0.333	0.7	ug/L	15	Standard
	Tl	205	418174.0	0.6	**51.9308**	0.055	0.1	ug/L	13	Standard
	Pb	206	287949.4	0.0	**50.3217**	0.263	0.5	ug/L	264	Standard
	Pb	207	261570.9	0.7	**50.3350**	0.638	1.3	ug/L	222	Standard
	Pb	208	1088813.8	0.8	**51.2998**	0.701	1.4	ug/L	959	Standard
	U	238	413789.6	1.0	**50.8288**	0.805	1.6	ug/L	9	Standard
>	Bi	209	558286.7	0.5				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 15:45:25
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4697.4	5.9	**5.2790**	0.180	3.4	mg/L	55	Standard
K	39	1176.7	4.0	**4.2662**	0.289	6.8	mg/L	28	Standard
Ca	43	75.0	40.6	**4.2243**	2.811	66.5	mg/L	27	Standard
Fe	54	6836.4	1.2	**5.1227**	0.153	3.0	mg/L	147	Standard
Fe	57	1986.8	1.5	**5.1413**	0.153	3.0	mg/L	268	Standard
> **Sc-1**	45	42292.3	2.5				mg/L	41174	Standard
Cl	35	87844.6	1.1				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2156.8	5.6				ug/L	1950	Standard
P	31	26853.8	2.9				ug/L	21156	Standard
S	34	4549.0	3.6				ug/L	3419	Standard
Sr	88	63.3	24.1				ug/L	72	Standard
C	12	106.7	10.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	173.3	43.3				mg/L	17	Standard
Dy	164	9.0	191.8				mg/L	16	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	21254.9	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.921		
Al	27	98.890		
Sc	45			
Ti	47	98.664		
V	51	101.885		
Cr	52	99.794		
Cr	53			
Mn	55	101.070		
Co	59	103.066		
Ni	60	100.445		
Cu	65	101.642		
Zn	66	101.460		
> Ge	72		103.315	
As	75	100.798		
Se	82	101.694		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 15:45:25
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	98.694		
Ag	107	99.724		
Cd	111	99.373		
Cd	114			
> In	115			102.712
Sn	118	98.420		
Sb	123	99.895		
Ba	135	97.934		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.435		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.600		
U	238	101.658		
> Bi	209			100.989
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 15:45:25
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 15:46:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79389.1	1.5				ug/L	76456	Standard
	Be	9	21.7	58.1	**-0.0012**	0.011	924.7	ug/L	20	Standard
	Al	27	2653.6	26.5	**0.0047**	0.004	80.6	ug/L	1307	Standard
	Sc	45	42380.9	4.0				ug/L	41174	Standard
	Ti	47	29.7	33.8	**0.0025**	0.028	1148.4	ug/L	27	Standard
	V	51	1542.6	6.8	**-0.0189**	0.014	72.9	ug/L	1434	Standard
	Cr	52	7249.7	1.4	**-0.1121**	0.006	5.1	ug/L	7733	Standard
	Cr	53	556.7	17.0	**0.1098**	0.084	76.1	ug/L	442	Standard
	Mn	55	781.0	5.8	**-0.0026**	0.005	178.6	ug/L	723	Standard
	Co	59	230.7	5.2	**-0.0006**	0.001	192.9	ug/L	217	Standard
	Ni	60	287.0	3.3	**-0.0207**	0.003	16.9	ug/L	304	Standard
	Cu	65	178.0	9.4	**0.0094**	0.008	88.1	ug/L	181	Standard
	Zn	66	241.3	7.8	**0.0083**	0.014	168.4	ug/L	215	Standard
>	**Ge**	72	544000.0	1.1				ug/L	520809	Standard
	As	75	-38.4	128.5	**0.0152**	0.039	254.8	ug/L	-52	Standard
	Se	82	20.0	53.3	**0.0245**	0.079	323.1	ug/L	17	Standard
	Se-1	77	71.7	19.7	**0.1170**	0.150	127.9	ug/L	56	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	31.7	9.1				ug/L	28	Standard
	Y	89	461634.5	1.4				ug/L	447395	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	249.2	9.7	**0.0550**	0.007	12.4	ug/L	113	Standard
	Ag	107	132.3	12.7	**0.0048**	0.002	45.5	ug/L	108	Standard
	Cd	111	16.9	42.6	**0.0047**	0.003	63.4	mg/L	3	Standard
	Cd	114	56.7	84.7	**0.0095**	0.008	83.3	ug/L	20	Standard
>	**In**	115	653131.6	1.3				ug/L	625728	Standard
	Sn	118	1488.4	26.0	**0.1378**	0.060	43.6	ug/L	568	Standard
	Sb	123	795.3	31.1	**0.1141**	0.047	41.5	ug/L	612	Standard
	Ba	135	49.7	33.1	**0.0039**	0.007	180.6	ug/L	21	Standard
	Ce	140	41.7	13.9				ug/L	245	Standard
>	**Tb**	159	951623.8	1.5				ug/L	950397	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	77.3	16.4	**0.0077**	0.001	17.6	ug/L	15	Standard
	Tl	205	83.3	27.7	**0.0005**	0.003	538.8	ug/L	13	Standard
	Pb	206	329.3	15.7	**0.0134**	0.008	63.3	ug/L	264	Standard
	Pb	207	295.3	8.1	**0.0104**	0.004	40.0	ug/L	222	Standard
	Pb	208	1227.0	6.3	**0.0091**	0.003	35.4	ug/L	959	Standard
	U	238	66.0	40.1	**0.0078**	0.003	40.9	ug/L	9	Standard
>	**Bi**	209	562277.6	0.8				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 15:48:36
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	16.9	**0.0099**	0.013	128.3	mg/L	55	Standard
K	39	20.0	25.0	**-0.0563**	0.020	35.8	mg/L	28	Standard
Ca	43	20.0	25.0	**-0.6925**	0.397	57.4	mg/L	27	Standard
Fe	54	164.3	3.0	**0.0265**	0.005	17.4	mg/L	147	Standard
Fe	57	226.7	11.3	**-0.1282**	0.057	44.8	mg/L	268	Standard
> **Sc-1**	45	42380.9	4.0				mg/L	41174	Standard
Cl	35	88109.5	1.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2156.8	5.0				ug/L	1950	Standard
P	31	25852.0	1.3				ug/L	21156	Standard
S	34	4487.3	2.3				ug/L	3419	Standard
Sr	88	56.7	5.1				ug/L	72	Standard
C	12	96.7	39.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	113.3	10.2				mg/L	17	Standard
Dy	164	6.2	100.1				mg/L	16	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	15996.8	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.453	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 15:48:36
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.379
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.711
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 15:48:36
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145201
Sample Date/Time: Friday, July 01, 2016 15:49:32
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	94816.0	3.6				ug/L	76456	Standard
	Be	9	25.0	40.0	**-0.0020**	0.007	332.6	ug/L	20	Standard
	Al	27	21072085.0	1.8	**99.2963**	2.302	2.3	ug/L	1307	Standard
	Sc	45	43716.3	1.4				ug/L	41174	Standard
	Ti	47	397.0	3.2	**1.1396**	0.053	4.7	ug/L	27	Standard
	V	51	4169.6	18.7	**0.3116**	0.101	32.4	ug/L	1434	Standard
	Cr	52	31233.8	0.8	**2.9091**	0.081	2.8	ug/L	7733	Standard
	Cr	53	20687.6	10.5	**20.1582**	2.403	11.9	ug/L	442	Standard
	Mn	55	2658788.2	0.4	**352.6307**	4.074	1.2	ug/L	723	Standard
	Co	59	29637.6	0.8	**3.8558**	0.023	0.6	ug/L	217	Standard
	Ni	60	6462.7	2.0	**2.9745**	0.037	1.3	ug/L	304	Standard
	Cu	65	861.0	3.9	**0.3497**	0.019	5.5	ug/L	181	Standard
	Zn	66	6645.5	1.6	**5.2668**	0.080	1.5	ug/L	215	Standard
>	Ge	72	518645.6	1.3				ug/L	520809	Standard
	As	75	3126.8	4.4	**2.5897**	0.143	5.5	ug/L	-52	Standard
	Se	82	664.6	4.5	**5.1588**	0.301	5.8	ug/L	17	Standard
	Se-1	77	930.7	11.1	**10.2587**	1.337	13.0	ug/L	56	Standard
>	Ga	71	203.3	20.9				mg/L	25	Standard
	Rb	85	1041748.9	1.1				ug/L	28	Standard
	Y	89	448254.4	0.8				ug/L	447395	Standard
>	Rh	103	201.7	17.6				ug/L	15	Standard
	Mo	98	637.0	2.3	**0.1927**	0.005	2.4	ug/L	113	Standard
	Ag	107	163.3	33.8	**0.0105**	0.008	72.2	ug/L	108	Standard
	Cd	111	106.6	9.0	**0.0453**	0.005	10.1	mg/L	3	Standard
	Cd	114	259.2	18.0	**0.0469**	0.009	19.3	ug/L	20	Standard
>	In	115	608292.3	1.4				ug/L	625728	Standard
	Sn	118	1770.1	23.1	**0.1984**	0.063	31.6	ug/L	568	Standard
	Sb	123	609.0	15.5	**0.0875**	0.018	20.6	ug/L	612	Standard
	Ba	135	570406.1	1.3	**269.6937**	1.874	0.7	ug/L	21	Standard
	Ce	140	4143.9	0.7				ug/L	245	Standard
>	Tb	159	943834.4	0.3				ug/L	950397	Standard
	Ho	165	73.3	37.6				ug/L	7	Standard
	Tl	203	318.3	4.1	**0.0368**	0.002	4.3	ug/L	15	Standard
	Tl	205	295.0	13.5	**0.0294**	0.005	17.1	ug/L	13	Standard
	Pb	206	463.0	0.4	**0.0429**	0.001	1.6	ug/L	264	Standard
	Pb	207	397.7	5.2	**0.0359**	0.005	12.9	ug/L	222	Standard
	Pb	208	1684.0	4.4	**0.0367**	0.004	11.5	ug/L	959	Standard
	U	238	1098.4	2.7	**0.1441**	0.005	3.4	ug/L	9	Standard
>	Bi	209	521779.5	0.6				ug/L	552821	Standard

Sample ID: L1606145201
Report Date/Time: Friday, July 01, 2016 15:51:49
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.7590**	8.234	173.0	mg/L	2	Standard
Mg	24	80860.2	1.3	**88.9060**	0.128	0.1	mg/L	55	Standard
K	39	8253.9	2.9	**29.6886**	1.293	4.4	mg/L	28	Standard
Ca	43	198.3	3.9	**14.5226**	0.636	4.4	mg/L	27	Standard
Fe	54	1838.9	5.0	**1.2589**	0.053	4.2	mg/L	147	Standard
Fe	57	841.7	4.0	**1.6326**	0.120	7.3	mg/L	268	Standard
> **Sc-1**	45	43716.3	1.4				mg/L	41174	Standard
Cl	35	88622.4	0.4				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	138083.1	1.2				ug/L	1950	Standard
P	31	31377.5	0.7				ug/L	21156	Standard
S	34	4085.6	4.2				ug/L	3419	Standard
Sr	88	866.7	4.6				ug/L	72	Standard
C	12	386.7	12.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	63.6				mg/L	17	Standard
Dy	164	120.3	12.9				mg/L	16	Standard
Ho-1	165	73.3	37.6				mg/L	7	Standard
Er	166	63.3	9.1				mg/L	7	Standard
I	127	189740.0	7.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.014	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.585	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145201
Report Date/Time: Friday, July 01, 2016 15:51:49
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.214
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.385
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145201
Report Date/Time: Friday, July 01, 2016 15:51:49
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145301
Sample Date/Time: Friday, July 01, 2016 15:52:44
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89907.9	3.9				ug/L	76456	Standard
	Be	9	211.7	15.2	**0.1412**	0.026	18.7	ug/L	20	Standard
	Al	27	42254036.6	2.1	**209.9919**	4.107	2.0	ug/L	1307	Standard
	Sc	45	48114.6	1.7				ug/L	41174	Standard
	Ti	47	742.0	6.1	**2.0824**	0.104	5.0	ug/L	27	Standard
	V	51	8101.4	4.4	**0.7396**	0.044	5.9	ug/L	1434	Standard
	Cr	52	57499.6	0.2	**5.7989**	0.111	1.9	ug/L	7733	Standard
	Cr	53	37860.6	3.1	**35.2327**	0.609	1.7	ug/L	442	Standard
	Mn	55	6394718.4	1.0	**803.9667**	4.505	0.6	ug/L	723	Standard
	Co	59	184000.3	2.5	**22.8310**	0.339	1.5	ug/L	217	Standard
	Ni	60	37990.6	1.7	**17.2738**	0.133	0.8	ug/L	304	Standard
	Cu	65	1519.1	2.8	**0.6345**	0.018	2.9	ug/L	181	Standard
	Zn	66	65750.7	0.3	**50.9054**	0.635	1.2	ug/L	215	Standard
>	Ge	72	547197.2	1.5				ug/L	520809	Standard
	As	75	6205.1	1.8	**4.8294**	0.085	1.7	ug/L	-52	Standard
	Se	82	411.3	4.6	**2.9717**	0.112	3.8	ug/L	17	Standard
	Se-1	77	1750.8	0.4	**18.8117**	0.357	1.9	ug/L	56	Standard
>	Ga	71	151.7	19.9				mg/L	25	Standard
	Rb	85	17248.1	1.6				ug/L	28	Standard
	Y	89	479799.4	2.3				ug/L	447395	Standard
>	Rh	103	326.7	3.2				ug/L	15	Standard
	Mo	98	555.5	3.1	**0.1551**	0.002	1.1	ug/L	113	Standard
	Ag	107	126.3	11.0	**0.0043**	0.002	53.3	ug/L	108	Standard
	Cd	111	138.7	16.3	**0.0566**	0.011	19.3	mg/L	3	Standard
	Cd	114	356.3	13.9	**0.0611**	0.010	15.7	ug/L	20	Standard
>	In	115	641727.3	2.7				ug/L	625728	Standard
	Sn	118	1815.1	14.3	**0.1914**	0.045	23.5	ug/L	568	Standard
	Sb	123	789.7	10.3	**0.1155**	0.018	15.5	ug/L	612	Standard
	Ba	135	2472744.3	1.1	**1108.6111**	20.421	1.8	ug/L	21	Standard
	Ce	140	34706.4	3.0				ug/L	245	Standard
>	Tb	159	985263.1	3.4				ug/L	950397	Standard
	Ho	165	401.7	6.3				ug/L	7	Standard
	Tl	203	117.7	8.7	**0.0126**	0.001	10.2	ug/L	15	Standard
	Tl	205	90.0	11.1	**0.0018**	0.001	56.0	ug/L	13	Standard
	Pb	206	577.0	6.7	**0.0602**	0.005	9.1	ug/L	264	Standard
	Pb	207	486.3	6.2	**0.0505**	0.006	11.6	ug/L	222	Standard
	Pb	208	2130.1	2.6	**0.0553**	0.003	5.9	ug/L	959	Standard
	U	238	158.7	10.2	**0.0198**	0.002	9.7	ug/L	9	Standard
>	Bi	209	541702.7	2.6				ug/L	552821	Standard

Sample ID: L1606145301
Report Date/Time: Friday, July 01, 2016 15:55:01
Page 1

Approved: July 02, 2016

Na	23	6.7	114.6	**17.2516**	19.854	115.1	mg/L	2	Standard
Mg	24	87429.9	0.9	**87.3596**	1.878	2.1	mg/L	55	Standard
K	39	405.0	18.3	**1.2003**	0.260	21.7	mg/L	28	Standard
Ca	43	375.0	6.7	**26.7244**	2.231	8.3	mg/L	27	Standard
Fe	54	4204.7	3.3	**2.7242**	0.135	5.0	mg/L	147	Standard
Fe	57	1598.4	2.6	**3.4000**	0.148	4.3	mg/L	268	Standard
Sc-1	45	48114.6	1.7				mg/L	41174	Standard
Cl	35	91040.7	1.1				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	68651.9	2.9				ug/L	1950	Standard
P	31	44045.6	3.3				ug/L	21156	Standard
S	34	4263.9	3.9				ug/L	3419	Standard
Sr	88	1216.7	5.1				ug/L	72	Standard
C	12	740.0	12.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	150.0	40.6				mg/L	17	Standard
Dy	164	420.2	5.3				mg/L	16	Standard
Ho-1	165	401.7	6.3				mg/L	7	Standard
Er	166	413.3	49.7				mg/L	7	Standard
I	127	1073738.4	7.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.595	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.067	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145301
Report Date/Time: Friday, July 01, 2016 15:55:01
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.557	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.989	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145303
Sample Date/Time: Friday, July 01, 2016 15:55:55
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86373.8	1.1				ug/L	76456	Standard
	Be	9	46.7	12.4	**0.0170**	0.005	27.0	ug/L	20	Standard
	Al	27	14145040.2	0.8	**73.1395**	1.317	1.8	ug/L	1307	Standard
	Sc	45	47950.8	2.8				ug/L	41174	Standard
	Ti	47	645.7	4.6	**1.7427**	0.078	4.5	ug/L	27	Standard
	V	51	5119.6	16.2	**0.3758**	0.094	25.1	ug/L	1434	Standard
	Cr	52	15660.8	1.2	**0.8154**	0.028	3.4	ug/L	7733	Standard
	Cr	53	17461.7	5.9	**15.5162**	0.994	6.4	ug/L	442	Standard
	Mn	55	1851750.9	0.7	**225.4523**	0.893	0.4	ug/L	723	Standard
	Co	59	6079.9	0.1	**0.7024**	0.002	0.3	ug/L	217	Standard
	Ni	60	3414.1	2.2	**1.3640**	0.029	2.1	ug/L	304	Standard
	Cu	65	716.4	2.9	**0.2496**	0.010	3.9	ug/L	181	Standard
	Zn	66	5607.0	0.9	**4.0396**	0.027	0.7	ug/L	215	Standard
>	**Ge**	72	564834.0	0.3				ug/L	520809	Standard
	As	75	9187.6	1.4	**6.9075**	0.115	1.7	ug/L	-52	Standard
	Se	82	374.5	2.3	**2.6072**	0.072	2.8	ug/L	17	Standard
	Se-1	77	677.0	5.1	**6.6170**	0.347	5.3	ug/L	56	Standard
>	**Ga**	71	156.7	12.9				mg/L	25	Standard
	Rb	85	67336.0	0.8				ug/L	28	Standard
	Y	89	479624.4	2.5				ug/L	447395	Standard
>	**Rh**	103	165.0	24.1				ug/L	15	Standard
	Mo	98	376.6	7.3	**0.0951**	0.009	9.5	ug/L	113	Standard
	Ag	107	95.7	7.7	**-0.0001**	0.001	907.0	ug/L	108	Standard
	Cd	111	85.6	10.8	**0.0332**	0.004	11.6	mg/L	3	Standard
	Cd	114	251.0	20.4	**0.0421**	0.008	19.8	ug/L	20	Standard
>	**In**	115	654613.0	0.6				ug/L	625728	Standard
	Sn	118	2261.8	11.1	**0.2519**	0.039	15.5	ug/L	568	Standard
	Sb	123	469.5	25.9	**0.0532**	0.023	43.1	ug/L	612	Standard
	Ba	135	790046.7	0.9	**347.1125**	3.141	0.9	ug/L	21	Standard
	Ce	140	7066.6	1.9				ug/L	245	Standard
>	**Tb**	159	995476.8	2.0				ug/L	950397	Standard
	Ho	165	136.7	9.2				ug/L	7	Standard
	Tl	203	120.3	3.1	**0.0125**	0.000	3.4	ug/L	15	Standard
	Tl	205	115.0	19.9	**0.0045**	0.003	61.6	ug/L	13	Standard
	Pb	206	675.0	1.7	**0.0742**	0.002	2.8	ug/L	264	Standard
	Pb	207	573.0	0.8	**0.0642**	0.001	1.0	ug/L	222	Standard
	Pb	208	2423.1	1.0	**0.0659**	0.001	2.1	ug/L	959	Standard
	U	238	289.7	4.3	**0.0353**	0.002	5.0	ug/L	9	Standard
>	**Bi**	209	558695.9	0.8				ug/L	552821	Standard

Sample ID: L1606145303
Report Date/Time: Friday, July 01, 2016 15:58:12
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**12.9192**	12.771	98.9	mg/L	2	Standard
Mg	24	36766.2	0.7	**36.8431**	1.290	3.5	mg/L	55	Standard
K	39	516.7	3.4	**1.5703**	0.055	3.5	mg/L	28	Standard
Ca	43	131.7	25.3	**7.7852**	2.329	29.9	mg/L	27	Standard
Fe	54	27742.4	0.7	**18.5905**	0.497	2.7	mg/L	147	Standard
Fe	57	7620.3	4.0	**19.3167**	1.147	5.9	mg/L	268	Standard
Sc-1	45	47950.8	2.8				mg/L	41174	Standard
Cl	35	87125.8	1.5				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	74331.9	2.0				ug/L	1950	Standard
P	31	38512.2	1.7				ug/L	21156	Standard
S	34	4447.3	3.4				ug/L	3419	Standard
Sr	88	553.3	7.8				ug/L	72	Standard
C	12	426.7	14.3				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	150.0	48.1				mg/L	17	Standard
Dy	164	179.8	21.5				mg/L	16	Standard
Ho-1	165	136.7	9.2				mg/L	7	Standard
Er	166	143.3	22.4				mg/L	7	Standard
I	127	215985.2	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.972	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.453	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145303
Report Date/Time: Friday, July 01, 2016 15:58:12
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.616
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.063
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606142701 WG574419-02
Sample Date/Time: Friday, July 01, 2016 15:59:07
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79441.0	0.3				ug/L	76456	Standard
	Be	9	21.7	96.1	**-0.0013**	0.018	1415.0	ug/L	20	Standard
	Al	27	10303389.4	2.0	**57.9147**	1.116	1.9	ug/L	1307	Standard
	Sc	45	40113.1	2.6				ug/L	41174	Standard
	Ti	47	184.0	9.4	**0.4748**	0.053	11.1	ug/L	27	Standard
	V	51	103393.4	0.6	**12.2581**	0.142	1.2	ug/L	1434	Standard
	Cr	52	60643.8	2.1	**6.4579**	0.232	3.6	ug/L	7733	Standard
	Cr	53	11869.6	1.2	**11.2148**	0.255	2.3	ug/L	442	Standard
	Mn	55	46538.0	1.1	**5.9867**	0.050	0.8	ug/L	723	Standard
	Co	59	37235.0	0.6	**4.7844**	0.072	1.5	ug/L	217	Standard
	Ni	60	30036.7	0.7	**14.1841**	0.259	1.8	ug/L	304	Standard
	Cu	65	12213.6	1.3	**5.8539**	0.146	2.5	ug/L	181	Standard
	Zn	66	33617.6	0.9	**26.9954**	0.533	2.0	ug/L	215	Standard
>	Ge	72	525941.0	1.1				ug/L	520809	Standard
	As	75	2649.6	1.8	**2.1706**	0.042	1.9	ug/L	-52	Standard
	Se	82	1059.1	1.9	**8.1767**	0.235	2.9	ug/L	17	Standard
	Se-1	77	280.3	4.4	**2.5625**	0.130	5.1	ug/L	56	Standard
>	Ga	71	101.7	18.6				mg/L	25	Standard
	Rb	85	18985.2	1.5				ug/L	28	Standard
	Y	89	446075.2	1.3				ug/L	447395	Standard
>	Rh	103	71.7	26.4				ug/L	15	Standard
	Mo	98	435588.8	0.8	**147.3741**	1.220	0.8	ug/L	113	Standard
	Ag	107	124.3	1.7	**0.0049**	0.000	10.0	ug/L	108	Standard
	Cd	111	-216.2	12.9	**-0.0985**	0.013	12.8	mg/L	3	Standard
	Cd	114	902.1	8.1	**0.1619**	0.011	7.0	ug/L	20	Standard
>	In	115	611441.0	1.1				ug/L	625728	Standard
	Sn	118	915.0	18.3	**0.0613**	0.027	44.2	ug/L	568	Standard
	Sb	123	652.5	5.8	**0.0955**	0.006	6.7	ug/L	612	Standard
	Ba	135	39982.7	1.2	**18.7899**	0.104	0.6	ug/L	21	Standard
	Ce	140	376.7	4.3				ug/L	245	Standard
>	Tb	159	929616.4	0.5				ug/L	950397	Standard
	Ho	165	33.3	48.2				ug/L	7	Standard
	Tl	203	136.7	9.3	**0.0150**	0.001	9.9	ug/L	15	Standard
	Tl	205	106.7	11.8	**0.0041**	0.002	39.6	ug/L	13	Standard
	Pb	206	1749.8	1.5	**0.2761**	0.005	1.9	ug/L	264	Standard
	Pb	207	1478.4	2.6	**0.2515**	0.008	3.1	ug/L	222	Standard
	Pb	208	6375.9	0.9	**0.2660**	0.002	0.9	ug/L	959	Standard
	U	238	161.7	12.3	**0.0205**	0.003	12.5	ug/L	9	Standard
>	Bi	209	534118.6	0.2				ug/L	552821	Standard

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 16:01:24
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**10.0941**	8.741	86.6	mg/L	2	Standard
Mg	24	25695.1	1.2	**30.7602**	0.665	2.2	mg/L	55	Standard
K	39	365.0	11.7	**1.3075**	0.193	14.8	mg/L	28	Standard
Ca	43	230.0	14.3	**18.9742**	2.668	14.1	mg/L	27	Standard
Fe	54	302.2	7.9	**0.1442**	0.013	8.8	mg/L	147	Standard
Fe	57	455.0	18.2	**0.6271**	0.222	35.4	mg/L	268	Standard
> **Sc-1**	45	40113.1	2.6				mg/L	41174	Standard
Cl	35	98380.0	3.9				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	216720.0	3.3				ug/L	1950	Standard
P	31	13189.1	3.4				ug/L	21156	Standard
S	34	3895.5	7.2				ug/L	3419	Standard
Sr	88	283.3	22.8				ug/L	72	Standard
C	12	173.3	27.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	316.7	12.8				mg/L	17	Standard
Dy	164	233.8	13.8				mg/L	16	Standard
Ho-1	165	33.3	48.2				mg/L	7	Standard
Er	166	60.0	33.3				mg/L	7	Standard
I	127	62818.3	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.985	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 16:01:24
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.717	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.617	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 16:01:24
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606142701DP WG574419-07
Sample Date/Time: Friday, July 01, 2016 16:02:18
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77749.0	1.6				ug/L	76456	Standard
	Be	9	6.7	43.3	**-0.0140**	0.002	17.3	ug/L	20	Standard
	Al	27	9817097.2	1.8	**56.3855**	0.837	1.5	ug/L	1307	Standard
	Sc	45	39810.6	1.5				ug/L	41174	Standard
	Ti	47	174.0	5.5	**0.4563**	0.027	5.9	ug/L	27	Standard
	V	51	99457.7	1.9	**12.0558**	0.214	1.8	ug/L	1434	Standard
	Cr	52	58802.6	0.7	**6.3951**	0.090	1.4	ug/L	7733	Standard
	Cr	53	11255.8	2.7	**10.8641**	0.366	3.4	ug/L	442	Standard
	Mn	55	43355.3	1.9	**5.6990**	0.079	1.4	ug/L	723	Standard
	Co	59	35792.9	1.2	**4.7027**	0.031	0.7	ug/L	217	Standard
	Ni	60	28593.6	0.6	**13.8042**	0.061	0.4	ug/L	304	Standard
	Cu	65	11425.0	1.5	**5.5962**	0.062	1.1	ug/L	181	Standard
	Zn	66	32386.6	1.1	**26.5937**	0.385	1.4	ug/L	215	Standard
>	Ge	72	514230.5	0.6				ug/L	520809	Standard
	As	75	2594.3	1.9	**2.1736**	0.050	2.3	ug/L	-52	Standard
	Se	82	1064.6	1.8	**8.4087**	0.182	2.2	ug/L	17	Standard
	Se-1	77	269.0	6.0	**2.5031**	0.207	8.3	ug/L	56	Standard
>	Ga	71	116.7	27.9				mg/L	25	Standard
	Rb	85	18095.8	1.8				ug/L	28	Standard
	Y	89	436440.0	0.3				ug/L	447395	Standard
>	Rh	103	98.3	34.6				ug/L	15	Standard
	Mo	98	417319.1	1.0	**143.2353**	2.296	1.6	ug/L	113	Standard
	Ag	107	105.3	7.0	**0.0024**	0.001	42.1	ug/L	108	Standard
	Cd	111	-221.7	8.5	**-0.1024**	0.009	8.7	mg/L	3	Standard
	Cd	114	915.2	5.7	**0.1667**	0.008	5.0	ug/L	20	Standard
>	In	115	602737.8	0.7				ug/L	625728	Standard
	Sn	118	925.0	27.3	**0.0648**	0.040	61.0	ug/L	568	Standard
	Sb	123	629.8	5.8	**0.0928**	0.007	7.1	ug/L	612	Standard
	Ba	135	37742.0	0.9	**17.9925**	0.177	1.0	ug/L	21	Standard
	Ce	140	530.0	15.0				ug/L	245	Standard
>	Tb	159	918022.5	0.6				ug/L	950397	Standard
	Ho	165	26.7	47.2				ug/L	7	Standard
	Tl	203	122.7	8.6	**0.0136**	0.001	8.7	ug/L	15	Standard
	Tl	205	120.0	23.2	**0.0061**	0.004	61.9	ug/L	13	Standard
	Pb	206	1673.8	3.7	**0.2676**	0.008	2.9	ug/L	264	Standard
	Pb	207	1385.7	3.3	**0.2377**	0.006	2.4	ug/L	222	Standard
	Pb	208	6038.1	1.4	**0.2546**	0.001	0.3	ug/L	959	Standard
	U	238	134.0	4.7	**0.0173**	0.001	3.8	ug/L	9	Standard
>	Bi	209	524841.4	1.3				ug/L	552821	Standard

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 16:04:35
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**10.3333**	8.947	86.6	mg/L	2	Standard
Mg	24	24359.6	1.9	**29.3745**	0.694	2.4	mg/L	55	Standard
K	39	391.7	23.4	**1.4257**	0.389	27.3	mg/L	28	Standard
Ca	43	220.0	19.4	**18.2274**	4.000	21.9	mg/L	27	Standard
Fe	54	293.3	15.9	**0.1391**	0.037	26.9	mg/L	147	Standard
Fe	57	398.3	15.7	**0.4602**	0.182	39.6	mg/L	268	Standard
> **Sc-1**	45	39810.6	1.5				mg/L	41174	Standard
Cl	35	101579.4	0.9				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	218312.6	3.3				ug/L	1950	Standard
P	31	12735.4	2.4				ug/L	21156	Standard
S	34	3657.1	4.9				ug/L	3419	Standard
Sr	88	253.3	24.1				ug/L	72	Standard
C	12	143.3	20.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	270.0	11.1				mg/L	17	Standard
Dy	164	258.1	16.7				mg/L	16	Standard
Ho-1	165	26.7	47.2				mg/L	7	Standard
Er	166	40.0	25.0				mg/L	7	Standard
I	127	57368.4	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.691	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.737	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 16:04:35
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.326
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.939
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 16:04:35
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606128901
Sample Date/Time: Friday, July 01, 2016 16:05:30
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76109.2	3.3				ug/L	76456	Standard
	Be	9	26.7	10.8	**0.0041**	0.003	75.2	ug/L	20	Standard
	Al	27	2157263.5	1.2	**12.6549**	0.272	2.1	ug/L	1307	Standard
	Sc	45	39362.7	1.0				ug/L	41174	Standard
	Ti	47	31.0	25.6	**0.0115**	0.025	213.1	ug/L	27	Standard
	V	51	2160.8	9.2	**0.0669**	0.026	39.1	ug/L	1434	Standard
	Cr	52	18224.3	3.5	**1.3053**	0.079	6.0	ug/L	7733	Standard
	Cr	53	3937.2	3.2	**3.5166**	0.125	3.6	ug/L	442	Standard
	Mn	55	109531.5	1.1	**14.5084**	0.090	0.6	ug/L	723	Standard
	Co	59	3522.7	2.0	**0.4349**	0.006	1.3	ug/L	217	Standard
	Ni	60	12809.7	0.5	**6.0810**	0.080	1.3	ug/L	304	Standard
	Cu	65	624.3	3.1	**0.2348**	0.009	4.0	ug/L	181	Standard
	Zn	66	2829.3	0.5	**2.1516**	0.027	1.3	ug/L	215	Standard
>	**Ge**	72	515809.2	1.0				ug/L	520809	Standard
	As	75	48.3	6.2	**0.0847**	0.002	2.4	ug/L	-52	Standard
	Se	82	67.8	11.0	**0.4157**	0.062	15.0	ug/L	17	Standard
	Se-1	77	139.0	6.9	**0.9565**	0.097	10.1	ug/L	56	Standard
>	**Ga**	71	33.3	31.2				mg/L	25	Standard
	Rb	85	320.0	16.9				ug/L	28	Standard
	Y	89	425911.6	0.3				ug/L	447395	Standard
>	**Rh**	103	23.3	61.9				ug/L	15	Standard
	Mo	98	1200.8	19.7	**0.3848**	0.082	21.3	ug/L	113	Standard
	Ag	107	75.3	7.8	**-0.0021**	0.001	36.3	ug/L	108	Standard
	Cd	111	25.6	20.9	**0.0091**	0.002	26.3	mg/L	3	Standard
	Cd	114	59.2	25.8	**0.0107**	0.003	26.4	ug/L	20	Standard
>	**In**	115	608157.1	1.0				ug/L	625728	Standard
	Sn	118	525.0	20.9	**-0.0004**	0.017	4881.3	ug/L	568	Standard
	Sb	123	165.4	19.3	**-0.0007**	0.007	874.9	ug/L	612	Standard
	Ba	135	100056.7	1.7	**47.3091**	1.176	2.5	ug/L	21	Standard
	Ce	140	223.3	64.9				ug/L	245	Standard
>	**Tb**	159	910863.8	0.3				ug/L	950397	Standard
	Ho	165	15.0	57.7				ug/L	7	Standard
	Tl	203	83.0	10.7	**0.0087**	0.001	10.8	ug/L	15	Standard
	Tl	205	80.0	31.3	**0.0005**	0.003	626.9	ug/L	13	Standard
	Pb	206	270.7	3.7	**0.0052**	0.002	42.5	ug/L	264	Standard
	Pb	207	242.0	6.8	**0.0021**	0.003	162.6	ug/L	222	Standard
	Pb	208	1024.7	1.6	**0.0016**	0.001	40.9	ug/L	959	Standard
	U	238	10.0	43.6	**0.0010**	0.001	55.3	ug/L	9	Standard
>	**Bi**	209	540336.1	0.9				ug/L	552821	Standard

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 16:07:47
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4055.5	6.4	**4.8960**	0.330	6.7	mg/L	55	Standard
K	39	15.0	66.7	**-0.0710**	0.040	57.0	mg/L	28	Standard
Ca	43	48.3	26.0	**2.1421**	1.207	56.4	mg/L	27	Standard
Fe	54	63.5	15.9	**-0.0467**	0.009	18.5	mg/L	147	Standard
Fe	57	253.3	5.0	**0.0103**	0.042	410.2	mg/L	268	Standard
> **Sc-1**	45	39362.7	1.0				mg/L	41174	Standard
Cl	35	90744.3	1.5				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	11220.8	7.7				ug/L	1950	Standard
P	31	8672.5	2.6				ug/L	21156	Standard
S	34	4007.2	6.6				ug/L	3419	Standard
Sr	88	146.7	20.0				ug/L	72	Standard
C	12	96.7	36.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	436.7	13.4				mg/L	17	Standard
Dy	164	6.5	179.6				mg/L	16	Standard
Ho-1	165	15.0	57.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	40273.5	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.547	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.040	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 16:07:47
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.192
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.742
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606129003
Sample Date/Time: Friday, July 01, 2016 16:08:41
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74300.1	2.3				ug/L	76456	Standard
	Be	9	33.3	70.9	**0.0108**	0.022	200.3	ug/L	20	Standard
	Al	27	1109788.9	1.6	**6.6634**	0.204	3.1	ug/L	1307	Standard
	Sc	45	38913.3	2.4				ug/L	41174	Standard
	Ti	47	72.3	13.4	**0.1384**	0.027	19.6	ug/L	27	Standard
	V	51	1833.5	12.2	**0.0257**	0.030	115.0	ug/L	1434	Standard
	Cr	52	6791.5	6.8	**-0.1263**	0.061	48.5	ug/L	7733	Standard
	Cr	53	2288.5	7.5	**1.8597**	0.192	10.3	ug/L	442	Standard
	Mn	55	199243.2	0.7	**26.3506**	0.434	1.6	ug/L	723	Standard
	Co	59	3319.7	2.1	**0.4061**	0.014	3.4	ug/L	217	Standard
	Ni	60	1865.1	2.1	**0.7502**	0.017	2.3	ug/L	304	Standard
	Cu	65	304.7	2.9	**0.0760**	0.006	7.4	ug/L	181	Standard
	Zn	66	5878.8	1.2	**4.6424**	0.117	2.5	ug/L	215	Standard
>	**Ge**	72	518291.1	1.3				ug/L	520809	Standard
	As	75	792.5	2.6	**0.6902**	0.010	1.5	ug/L	-52	Standard
	Se	82	76.5	13.2	**0.4817**	0.073	15.2	ug/L	17	Standard
	Se-1	77	129.3	15.3	**0.8357**	0.233	27.9	ug/L	56	Standard
>	**Ga**	71	50.0	26.5				mg/L	25	Standard
	Rb	85	2285.2	6.7				ug/L	28	Standard
	Y	89	427107.4	1.7				ug/L	447395	Standard
>	**Rh**	103	36.7	56.8				ug/L	15	Standard
	Mo	98	394.1	11.3	**0.1099**	0.015	13.4	ug/L	113	Standard
	Ag	107	108.3	28.6	**0.0026**	0.004	163.3	ug/L	108	Standard
	Cd	111	66.5	18.4	**0.0273**	0.005	18.9	mg/L	3	Standard
	Cd	114	176.4	7.1	**0.0318**	0.002	6.8	ug/L	20	Standard
>	**In**	115	609166.7	1.0				ug/L	625728	Standard
	Sn	118	880.0	21.8	**0.0564**	0.032	56.6	ug/L	568	Standard
	Sb	123	119.8	10.9	**-0.0099**	0.003	28.1	ug/L	612	Standard
	Ba	135	34816.0	1.5	**16.4201**	0.118	0.7	ug/L	21	Standard
	Ce	140	1188.4	1.5				ug/L	245	Standard
>	**Tb**	159	905742.5	1.6				ug/L	950397	Standard
	Ho	165	23.3	32.7				ug/L	7	Standard
	Tl	203	105.7	16.3	**0.0112**	0.002	15.9	ug/L	15	Standard
	Tl	205	100.0	22.9	**0.0030**	0.003	94.5	ug/L	13	Standard
	Pb	206	323.0	3.6	**0.0143**	0.002	17.0	ug/L	264	Standard
	Pb	207	282.3	3.6	**0.0098**	0.001	12.1	ug/L	222	Standard
	Pb	208	1225.0	3.7	**0.0111**	0.002	20.3	ug/L	959	Standard
	U	238	27.3	27.5	**0.0032**	0.001	29.6	ug/L	9	Standard
>	**Bi**	209	543356.0	1.6				ug/L	552821	Standard

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 16:10:58
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4887.5	0.8	**5.9826**	0.111	1.8	mg/L	55	Standard
K	39	70.0	31.1	**0.1543**	0.094	61.0	mg/L	28	Standard
Ca	43	26.7	78.1	**0.1318**	2.068	1569.3	mg/L	27	Standard
Fe	54	2091.2	5.6	**1.6384**	0.138	8.4	mg/L	147	Standard
Fe	57	790.0	3.5	**1.7657**	0.122	6.9	mg/L	268	Standard
> **Sc-1**	45	38913.3	2.4				mg/L	41174	Standard
Cl	35	85357.9	2.8				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	12818.8	1.9				ug/L	1950	Standard
P	31	10578.7	2.6				ug/L	21156	Standard
S	34	4063.9	1.6				ug/L	3419	Standard
Sr	88	108.3	11.6				ug/L	72	Standard
C	12	110.0	32.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	17	Standard
Dy	164	55.7	26.3				mg/L	16	Standard
Ho-1	165	23.3	32.7				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	7	Standard
I	127	94261.3	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.181	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.516	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 16:10:58
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.353
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.288
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 16:11:55
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78995.5	2.2				ug/L	76456	Standard
	Be	9	60502.3	2.1	**52.2922**	0.491	0.9	ug/L	20	Standard
	Al	27	8989002.2	0.8	**50.8245**	0.985	1.9	ug/L	1307	Standard
	Sc	45	42305.6	0.7				ug/L	41174	Standard
	Ti	47	34061.9	1.0	**98.6488**	1.546	1.6	ug/L	27	Standard
	V	51	436960.5	1.1	**50.0001**	0.513	1.0	ug/L	1434	Standard
	Cr	52	437865.8	0.9	**50.1688**	0.753	1.5	ug/L	7733	Standard
	Cr	53	53937.5	1.4	**49.9817**	0.858	1.7	ug/L	442	Standard
	Mn	55	399271.1	0.3	**49.7080**	0.463	0.9	ug/L	723	Standard
	Co	59	415402.7	0.9	**51.1776**	0.121	0.2	ug/L	217	Standard
	Ni	60	110781.9	0.5	**50.2680**	0.560	1.1	ug/L	304	Standard
	Cu	65	108848.6	0.7	**50.2966**	0.042	0.1	ug/L	181	Standard
	Zn	66	65152.1	0.8	**50.0366**	0.239	0.5	ug/L	215	Standard
>	**Ge**	72	551526.5	0.7				ug/L	520809	Standard
	As	75	65288.4	0.5	**49.9868**	0.536	1.1	ug/L	-52	Standard
	Se	82	6767.7	1.1	**50.4635**	0.866	1.7	ug/L	17	Standard
	Se-1	77	4643.0	1.4	**50.6038**	0.550	1.1	ug/L	56	Standard
>	**Ga**	71	51.7	27.9				mg/L	25	Standard
	Rb	85	896.7	7.7				ug/L	28	Standard
	Y	89	469245.9	0.9				ug/L	447395	Standard
>	**Rh**	103	30.0	50.0				ug/L	15	Standard
	Mo	98	315176.0	0.7	**100.1655**	0.835	0.8	ug/L	113	Standard
	Ag	107	372454.9	1.5	**49.8448**	0.674	1.4	ug/L	108	Standard
	Cd	111	120309.5	0.5	**50.2390**	0.275	0.5	mg/L	3	Standard
	Cd	114	296771.3	0.4	**50.0551**	0.319	0.6	ug/L	20	Standard
>	**In**	115	650857.3	0.3				ug/L	625728	Standard
	Sn	118	332008.2	0.6	**49.5103**	0.318	0.6	ug/L	568	Standard
	Sb	123	262896.6	1.7	**48.8713**	0.775	1.6	ug/L	612	Standard
	Ba	135	110171.1	0.5	**48.6680**	0.323	0.7	ug/L	21	Standard
	Ce	140	123.3	16.9				ug/L	245	Standard
>	**Tb**	159	962981.5	0.4				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	457474.5	0.7	**50.4943**	0.334	0.7	ug/L	15	Standard
	Tl	205	418439.6	0.8	**52.0062**	0.714	1.4	ug/L	13	Standard
	Pb	206	289168.5	1.0	**50.5726**	0.399	0.8	ug/L	264	Standard
	Pb	207	263060.3	0.2	**50.6591**	0.254	0.5	ug/L	222	Standard
	Pb	208	1106275.9	0.6	**52.1627**	0.606	1.2	ug/L	959	Standard
	U	238	414349.5	1.0	**50.9359**	0.727	1.4	ug/L	9	Standard
>	**Bi**	209	557861.1	0.5				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 16:14:12
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.8874**	8.457	173.0	mg/L	2	Standard
Mg	24	4582.4	2.1	**5.1503**	0.148	2.9	mg/L	55	Standard
K	39	1161.7	7.3	**4.2028**	0.289	6.9	mg/L	28	Standard
Ca	43	63.3	9.1	**3.1474**	0.494	15.7	mg/L	27	Standard
Fe	54	6769.4	2.9	**5.0672**	0.121	2.4	mg/L	147	Standard
Fe	57	2078.5	6.0	**5.4119**	0.382	7.1	mg/L	268	Standard
> **Sc-1**	45	42305.6	0.7				mg/L	41174	Standard
Cl	35	87401.4	1.9				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	3040.3	9.5				ug/L	1950	Standard
P	31	27000.7	1.2				ug/L	21156	Standard
S	34	4354.0	2.5				ug/L	3419	Standard
Sr	88	48.3	31.6				ug/L	72	Standard
C	12	120.0	22.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	296.7	25.3				mg/L	17	Standard
Dy	164	9.4	107.0				mg/L	16	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	16158.6	6.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.584		
Al	27	101.649		
Sc	45			
Ti	47	98.649		
V	51	100.000		
Cr	52	100.338		
Cr	53			
Mn	55	99.416		
Co	59	102.355		
Ni	60	100.536		
Cu	65	100.593		
Zn	66	100.073		
> Ge	72		105.898	
As	75	99.974		
Se	82	100.927		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 16:14:12
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.165		
Ag	107	99.690		
Cd	111	100.478		
Cd	114			
In	115			104.016
Sn	118	99.021		
Sb	123	97.743		
Ba	135	97.336		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.989		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.325		
U	238	101.872		
Bi	209			100.912
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 16:14:12
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 16:15:06
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79089.3	2.9				ug/L	76456	Standard
	Be	9	15.0	57.7	**-0.0068**	0.008	113.4	ug/L	20	Standard
	Al	27	2235.2	13.9	**0.0024**	0.001	57.8	ug/L	1307	Standard
	Sc	45	43469.0	3.3				ug/L	41174	Standard
	Ti	47	28.3	17.4	**-0.0019**	0.015	796.4	ug/L	27	Standard
	V	51	1493.4	3.9	**-0.0261**	0.008	30.6	ug/L	1434	Standard
	Cr	52	7368.5	3.1	**-0.1054**	0.021	19.8	ug/L	7733	Standard
	Cr	53	613.3	6.6	**0.1595**	0.042	26.4	ug/L	442	Standard
	Mn	55	787.0	3.1	**-0.0026**	0.002	90.1	ug/L	723	Standard
	Co	59	245.7	12.9	**0.0010**	0.004	377.8	ug/L	217	Standard
	Ni	60	277.3	6.7	**-0.0262**	0.009	35.5	ug/L	304	Standard
	Cu	65	184.0	15.4	**0.0115**	0.013	111.3	ug/L	181	Standard
	Zn	66	259.7	4.8	**0.0209**	0.009	40.6	ug/L	215	Standard
>	Ge	72	548531.1	0.8				ug/L	520809	Standard
	As	75	-66.9	12.4	**-0.0063**	0.007	105.6	ug/L	-52	Standard
	Se	82	22.1	15.5	**0.0395**	0.025	62.6	ug/L	17	Standard
	Se-1	77	54.7	22.1	**-0.0780**	0.131	167.8	ug/L	56	Standard
>	Ga	71	23.3	75.3				mg/L	25	Standard
	Rb	85	18.3	56.8				ug/L	28	Standard
	Y	89	474502.6	0.9				ug/L	447395	Standard
>	Rh	103	10.0					ug/L	15	Standard
	Mo	98	353.6	10.5	**0.0864**	0.011	12.8	ug/L	113	Standard
	Ag	107	117.0	12.6	**0.0025**	0.002	78.3	ug/L	108	Standard
	Cd	111	11.4	37.7	**0.0023**	0.002	74.6	mg/L	3	Standard
	Cd	114	48.0	51.5	**0.0079**	0.004	50.7	ug/L	20	Standard
>	In	115	662932.4	0.6				ug/L	625728	Standard
	Sn	118	1505.1	27.3	**0.1367**	0.061	44.7	ug/L	568	Standard
	Sb	123	848.9	30.9	**0.1215**	0.049	40.0	ug/L	612	Standard
	Ba	135	79.0	17.7	**0.0163**	0.006	35.9	ug/L	21	Standard
	Ce	140	31.7	24.1				ug/L	245	Standard
>	Tb	159	977903.3	1.9				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	71.7	6.3	**0.0070**	0.000	7.1	ug/L	15	Standard
	Tl	205	66.7	28.4	**-0.0016**	0.002	147.5	ug/L	13	Standard
	Pb	206	325.0	5.7	**0.0119**	0.003	21.2	ug/L	264	Standard
	Pb	207	293.0	9.6	**0.0091**	0.005	50.3	ug/L	222	Standard
	Pb	208	1180.4	1.4	**0.0062**	0.001	14.3	ug/L	959	Standard
	U	238	63.3	11.6	**0.0074**	0.001	11.2	ug/L	9	Standard
>	Bi	209	570093.4	1.3				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 16:17:23
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	13.3	**-0.0123**	0.005	38.9	mg/L	55	Standard
K	39	35.0	14.3	**-0.0036**	0.022	615.4	mg/L	28	Standard
Ca	43	20.0	25.0	**-0.7333**	0.424	57.9	mg/L	27	Standard
Fe	54	187.6	24.1	**0.0414**	0.038	91.6	mg/L	147	Standard
Fe	57	236.7	10.0	**-0.1153**	0.063	54.7	mg/L	268	Standard
> **Sc-1**	45	43469.0	3.3				mg/L	41174	Standard
Cl	35	86433.8	0.2				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	2503.5	3.8				ug/L	1950	Standard
P	31	25746.9	1.4				ug/L	21156	Standard
S	34	4332.3	3.9				ug/L	3419	Standard
Sr	88	76.7	27.2				ug/L	72	Standard
C	12	100.0	65.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	49.3				mg/L	17	Standard
Dy	164	6.3	86.6				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	12004.8	4.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.323	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 16:17:23
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.946
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.124
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 16:17:23
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: PBS H2 WG574521-03
Sample Date/Time: Friday, July 01, 2016 16:37:08
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79271.8	0.3				ug/L	76456	Standard
	Be	9	20.0	66.1	**-0.0027**	0.011	426.9	ug/L	20	Standard
	Al	27	18129.4	51.1	**0.0920**	0.053	57.1	ug/L	1307	Standard
	Sc	45	43671.2	1.7				ug/L	41174	Standard
	Ti	47	42.0	27.0	**0.0356**	0.031	88.1	ug/L	27	Standard
	V	51	1815.5	7.2	**0.0075**	0.013	168.1	ug/L	1434	Standard
	Cr	52	9893.9	1.4	**0.1721**	0.017	10.1	ug/L	7733	Standard
	Cr	53	775.0	10.2	**0.2997**	0.080	26.8	ug/L	442	Standard
	Mn	55	2337.2	54.3	**0.1861**	0.154	82.5	ug/L	723	Standard
	Co	59	338.7	60.7	**0.0117**	0.025	210.3	ug/L	217	Standard
	Ni	60	460.3	4.6	**0.0540**	0.007	13.4	ug/L	304	Standard
	Cu	65	246.0	5.3	**0.0385**	0.005	13.8	ug/L	181	Standard
	Zn	66	1190.0	1.7	**0.7267**	0.005	0.6	ug/L	215	Standard
>	**Ge**	72	557757.5	1.2				ug/L	520809	Standard
	As	75	-45.2	46.1	**0.0109**	0.016	146.4	ug/L	-52	Standard
	Se	82	21.5	16.2	**0.0326**	0.024	74.5	ug/L	17	Standard
	Se-1	77	60.7	14.0	**-0.0215**	0.097	452.0	ug/L	56	Standard
>	**Ga**	71	30.0	33.3				mg/L	25	Standard
	Rb	85	78.3	35.2				ug/L	28	Standard
	Y	89	482555.7	1.9				ug/L	447395	Standard
>	**Rh**	103	8.3	91.7				ug/L	15	Standard
	Mo	98	332.0	91.4	**0.0799**	0.095	118.5	ug/L	113	Standard
	Ag	107	123.7	31.0	**0.0035**	0.005	145.5	ug/L	108	Standard
	Cd	111	20.3	82.0	**0.0060**	0.007	114.1	mg/L	3	Standard
	Cd	114	52.4	144.8	**0.0087**	0.013	144.6	ug/L	20	Standard
>	**In**	115	660410.5	0.4				ug/L	625728	Standard
	Sn	118	1340.1	28.5	**0.1130**	0.056	49.2	ug/L	568	Standard
	Sb	123	501.3	30.5	**0.0581**	0.028	47.8	ug/L	612	Standard
	Ba	135	141.0	74.3	**0.0434**	0.045	104.7	ug/L	21	Standard
	Ce	140	65.0	13.3				ug/L	245	Standard
>	**Tb**	159	984326.5	0.5				ug/L	950397	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	36.3	87.4	**0.0032**	0.003	108.0	ug/L	15	Standard
	Tl	205	81.7	141.4	**0.0002**	0.014	6303.1	ug/L	13	Standard
	Pb	206	357.0	4.6	**0.0175**	0.003	15.4	ug/L	264	Standard
	Pb	207	301.0	13.7	**0.0108**	0.008	73.3	ug/L	222	Standard
	Pb	208	1410.0	25.6	**0.0170**	0.017	98.8	ug/L	959	Standard
	U	238	79.0	155.7	**0.0093**	0.015	160.0	ug/L	9	Standard
>	**Bi**	209	568547.7	0.3				ug/L	552821	Standard

Sample ID: PBS H2 WG574521-03
Report Date/Time: Friday, July 01, 2016 16:39:25
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	83.3	70.3	**0.0311**	0.063	203.4	mg/L	55	Standard
K	39	26.7	47.2	**-0.0352**	0.044	125.3	mg/L	28	Standard
Ca	43	13.3	43.3	**-1.3140**	0.480	36.5	mg/L	27	Standard
Fe	54	179.3	22.8	**0.0338**	0.030	89.2	mg/L	147	Standard
Fe	57	248.3	6.5	**-0.0850**	0.036	42.0	mg/L	268	Standard
> **Sc-1**	45	43671.2	1.7				mg/L	41174	Standard
Cl	35	94694.4	1.8				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2446.9	5.5				ug/L	1950	Standard
P	31	26514.9	2.3				ug/L	21156	Standard
S	34	4310.6	3.2				ug/L	3419	Standard
Sr	88	95.0	13.9				ug/L	72	Standard
C	12	123.3	28.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	223.3	40.1				mg/L	17	Standard
Dy	164	6.2	193.4				mg/L	16	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	20320.3	3.3				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.683	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		107.094	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: PBS H2 WG574521-03
Report Date/Time: Friday, July 01, 2016 16:39:25
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.543
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.845
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS H2 WG574521-03
Report Date/Time: Friday, July 01, 2016 16:39:25
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: LCSS H2 WG574521-04
Sample Date/Time: Friday, July 01, 2016 16:40:19
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78206.3	1.2				ug/L	76456	Standard
	Be	9	30357.1	1.3	**26.4935**	0.412	1.6	ug/L	20	Standard
	Al	27	14527.0	3.3	**0.0727**	0.002	2.4	ug/L	1307	Standard
	Sc	45	43500.7	0.4				ug/L	41174	Standard
	Ti	47	50.0	23.1	**0.0598**	0.033	54.4	ug/L	27	Standard
	V	51	219978.8	0.3	**24.9959**	0.252	1.0	ug/L	1434	Standard
	Cr	52	227773.4	1.1	**25.5491**	0.376	1.5	ug/L	7733	Standard
	Cr	53	27710.3	2.0	**25.3978**	0.708	2.8	ug/L	442	Standard
	Mn	55	209603.4	1.5	**25.9644**	0.258	1.0	ug/L	723	Standard
	Co	59	210851.5	1.3	**25.8831**	0.352	1.4	ug/L	217	Standard
	Ni	60	56751.8	1.2	**25.5968**	0.369	1.4	ug/L	304	Standard
	Cu	65	56217.4	1.4	**25.8605**	0.261	1.0	ug/L	181	Standard
	Zn	66	34071.3	0.3	**26.0003**	0.170	0.7	ug/L	215	Standard
>	Ge	72	553234.9	0.8				ug/L	520809	Standard
	As	75	33169.4	0.5	**25.3389**	0.170	0.7	ug/L	-52	Standard
	Se	82	3351.8	0.3	**24.8507**	0.232	0.9	ug/L	17	Standard
	Se-1	77	2368.9	3.2	**25.4071**	1.040	4.1	ug/L	56	Standard
>	Ga	71	33.3	31.2				mg/L	25	Standard
	Rb	85	63.3	32.9				ug/L	28	Standard
	Y	89	471256.9	0.9				ug/L	447395	Standard
>	Rh	103	23.3	75.3				ug/L	15	Standard
	Mo	98	151.2	23.7	**0.0237**	0.012	48.5	ug/L	113	Standard
	Ag	107	190870.7	0.3	**25.3271**	0.087	0.3	ug/L	108	Standard
	Cd	111	60282.1	0.5	**24.9635**	0.019	0.1	mg/L	3	Standard
	Cd	114	147909.0	1.0	**24.7417**	0.334	1.4	ug/L	20	Standard
>	In	115	656276.3	0.4				ug/L	625728	Standard
	Sn	118	1236.7	17.5	**0.0991**	0.033	33.0	ug/L	568	Standard
	Sb	123	139998.4	0.5	**25.7951**	0.218	0.8	ug/L	612	Standard
	Ba	135	55761.4	0.2	**24.4204**	0.141	0.6	ug/L	21	Standard
	Ce	140	101.7	7.5				ug/L	245	Standard
>	Tb	159	982894.1	0.9				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	233767.2	0.4	**25.3362**	0.353	1.4	ug/L	15	Standard
	Tl	205	211866.2	1.4	**25.8487**	0.316	1.2	ug/L	13	Standard
	Pb	206	151902.3	0.4	**26.0680**	0.572	2.2	ug/L	264	Standard
	Pb	207	132458.5	0.8	**25.0234**	0.298	1.2	ug/L	222	Standard
	Pb	208	562733.9	0.2	**26.0307**	0.442	1.7	ug/L	959	Standard
	U	238	206496.7	1.0	**24.9238**	0.246	1.0	ug/L	9	Standard
>	Bi	209	568206.0	1.8				ug/L	552821	Standard

Sample ID: LCSS H2 WG574521-04
Report Date/Time: Friday, July 01, 2016 16:42:36
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	26.2	**0.0044**	0.017	394.1	mg/L	55	Standard
K	39	25.0	20.0	**-0.0405**	0.018	44.5	mg/L	28	Standard
Ca	43	28.3	10.2	**-0.0167**	0.239	1431.0	mg/L	27	Standard
Fe	54	163.4	6.9	**0.0225**	0.008	36.3	mg/L	147	Standard
Fe	57	255.0	14.8	**-0.0621**	0.113	181.2	mg/L	268	Standard
Sc-1	45	43500.7	0.4				mg/L	41174	Standard
Cl	35	91778.5	1.5				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	5150.9	3.9				ug/L	1950	Standard
P	31	26144.2	2.1				ug/L	21156	Standard
S	34	4105.6	2.0				ug/L	3419	Standard
Sr	88	88.3	25.5				ug/L	72	Standard
C	12	90.0	19.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	216.7	38.7				mg/L	17	Standard
Dy	164	12.1	119.9				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	7	Standard
I	127	5989.5	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.290	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.226	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSS H2 WG574521-04
Report Date/Time: Friday, July 01, 2016 16:42:36
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.882
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.783
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS H2 WG574521-04
Report Date/Time: Friday, July 01, 2016 16:42:36
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144504 WG574521-01
Sample Date/Time: Friday, July 01, 2016 16:43:31
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82711.9	1.7				ug/L	76456	Standard
	Be	9	1393.4	1.7	**1.1308**	0.019	1.7	ug/L	20	Standard
	Al	27	12446064.6	0.4	**67.2063**	1.063	1.6	ug/L	1307	Standard
	Sc	45	49798.4	0.9				ug/L	41174	Standard
	Ti	47	3275.7	2.4	**9.3815**	0.258	2.8	ug/L	27	Standard
	V	51	187113.3	0.3	**21.2321**	0.189	0.9	ug/L	1434	Standard
	Cr	52	137212.2	0.9	**15.0050**	0.153	1.0	ug/L	7733	Standard
	Cr	53	16570.7	1.1	**15.0184**	0.113	0.8	ug/L	442	Standard
	Mn	55	3185070.4	0.3	**396.0143**	1.958	0.5	ug/L	723	Standard
	Co	59	91536.7	1.1	**11.2200**	0.101	0.9	ug/L	217	Standard
	Ni	60	45707.8	1.2	**20.5854**	0.156	0.8	ug/L	304	Standard
	Cu	65	23258.8	1.9	**10.6559**	0.153	1.4	ug/L	181	Standard
	Zn	66	46036.5	0.5	**35.1961**	0.406	1.2	ug/L	215	Standard
>	**Ge**	72	553218.9	0.6				ug/L	520809	Standard
	As	75	5739.6	2.8	**4.4216**	0.100	2.3	ug/L	-52	Standard
	Se	82	54.0	18.0	**0.2758**	0.072	26.2	ug/L	17	Standard
	Se-1	77	126.7	3.9	**0.7105**	0.061	8.6	ug/L	56	Standard
>	**Ga**	71	21134.7	1.1				mg/L	25	Standard
	Rb	85	212914.0	1.2				ug/L	28	Standard
	Y	89	733052.8	0.4				ug/L	447395	Standard
>	**Rh**	103	31.7	50.8				ug/L	15	Standard
	Mo	98	356.5	15.7	**0.0888**	0.017	19.2	ug/L	113	Standard
	Ag	107	670.0	12.8	**0.0764**	0.011	14.4	ug/L	108	Standard
	Cd	111	132.6	4.8	**0.0528**	0.002	4.3	mg/L	3	Standard
	Cd	114	355.4	28.0	**0.0597**	0.017	27.7	ug/L	20	Standard
>	**In**	115	653864.1	0.7				ug/L	625728	Standard
	Sn	118	1290.1	26.4	**0.1075**	0.050	46.3	ug/L	568	Standard
	Sb	123	594.8	48.0	**0.0762**	0.052	68.5	ug/L	612	Standard
	Ba	135	574692.3	0.9	**252.7729**	0.765	0.3	ug/L	21	Standard
	Ce	140	1393840.8	0.9				ug/L	245	Standard
>	**Tb**	159	1000230.3	1.3				ug/L	950397	Standard
	Ho	165	21410.1	1.0				ug/L	7	Standard
	Tl	203	1416.4	11.1	**0.1555**	0.018	11.5	ug/L	15	Standard
	Tl	205	1253.4	9.7	**0.1459**	0.016	10.8	ug/L	13	Standard
	Pb	206	71530.8	0.4	**12.4648**	0.067	0.5	ug/L	264	Standard
	Pb	207	58749.0	0.7	**11.2666**	0.094	0.8	ug/L	222	Standard
	Pb	208	258108.7	0.1	**12.1209**	0.070	0.6	ug/L	959	Standard
	U	238	3402.4	1.9	**0.4176**	0.009	2.1	ug/L	9	Standard
>	**Bi**	209	558413.2	0.5				ug/L	552821	Standard

Sample ID: L1606144504 WG574521-01
Report Date/Time: Friday, July 01, 2016 16:45:48
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.0919**	7.079	173.0	mg/L	2	Standard
Mg	24	115.0	19.0	**0.0509**	0.021	40.8	mg/L	55	Standard
K	39	340.0	8.9	**0.9470**	0.101	10.7	mg/L	28	Standard
Ca	43	83.3	24.2	**3.8084**	1.512	39.7	mg/L	27	Standard
Fe	54	19898.8	3.5	**12.8021**	0.403	3.1	mg/L	147	Standard
Fe	57	5240.9	4.1	**12.5122**	0.602	4.8	mg/L	268	Standard
> **Sc-1**	45	49798.4	0.9				mg/L	41174	Standard
Cl	35	83679.2	2.8				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	3150.3	10.3				ug/L	1950	Standard
P	31	25890.4	3.1				ug/L	21156	Standard
S	34	4145.6	3.5				ug/L	3419	Standard
Sr	88	115.0	15.1				ug/L	72	Standard
C	12	180.0	25.5				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	210.0	42.3				mg/L	17	Standard
Dy	164	35643.1	1.6				mg/L	16	Standard
Ho-1	165	21410.1	1.0				mg/L	7	Standard
Er	166	18878.4	2.2				mg/L	7	Standard
I	127	27002.4	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.183	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.223	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144504 WG574521-01
Report Date/Time: Friday, July 01, 2016 16:45:48
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.497
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.012
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144504 WG574521-01
Report Date/Time: Friday, July 01, 2016 16:45:48
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144505S WG574521-05
Sample Date/Time: Friday, July 01, 2016 16:46:42
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81052.9	2.1				ug/L	76456	Standard
	Be	9	30676.0	2.4	**25.8290**	0.259	1.0	ug/L	20	Standard
	Al	27	13294166.7	2.5	**73.2465**	1.294	1.8	ug/L	1307	Standard
	Sc	45	48179.8	2.6				ug/L	41174	Standard
	Ti	47	6953.9	1.9	**20.0934**	0.295	1.5	ug/L	27	Standard
	V	51	398485.1	1.1	**45.6308**	0.280	0.6	ug/L	1434	Standard
	Cr	52	346453.3	0.7	**39.5366**	0.280	0.7	ug/L	7733	Standard
	Cr	53	41902.9	1.3	**38.7788**	0.379	1.0	ug/L	442	Standard
	Mn	55	3061942.5	1.0	**382.3072**	4.386	1.1	ug/L	723	Standard
	Co	59	255934.9	0.7	**31.5572**	0.332	1.1	ug/L	217	Standard
	Ni	60	90655.7	0.5	**41.1541**	0.349	0.8	ug/L	304	Standard
	Cu	65	74619.0	0.4	**34.4964**	0.137	0.4	ug/L	181	Standard
	Zn	66	75694.3	0.6	**58.2286**	0.173	0.3	ug/L	215	Standard
>	Ge	72	550897.8	0.5				ug/L	520809	Standard
	As	75	34828.9	0.1	**26.7169**	0.137	0.5	ug/L	-52	Standard
	Se	82	2635.3	1.9	**19.5943**	0.381	1.9	ug/L	17	Standard
	Se-1	77	1869.4	1.0	**19.9893**	0.095	0.5	ug/L	56	Standard
>	Ga	71	20570.6	1.4				mg/L	25	Standard
	Rb	85	177643.7	0.9				ug/L	28	Standard
	Y	89	691746.1	1.0				ug/L	447395	Standard
>	Rh	103	35.0	37.8				ug/L	15	Standard
	Mo	98	1110.7	3.0	**0.3333**	0.010	3.0	ug/L	113	Standard
	Ag	107	178239.6	0.1	**24.1330**	0.242	1.0	ug/L	108	Standard
	Cd	111	58613.6	0.8	**24.7671**	0.188	0.8	mg/L	3	Standard
	Cd	114	143184.7	2.0	**24.4376**	0.381	1.6	ug/L	20	Standard
>	In	115	643190.5	1.0				ug/L	625728	Standard
	Sn	118	1398.4	22.6	**0.1275**	0.050	39.0	ug/L	568	Standard
	Sb	123	4282.3	1.0	**0.7725**	0.016	2.0	ug/L	612	Standard
	Ba	135	345608.0	0.5	**154.5433**	2.126	1.4	ug/L	21	Standard
	Ce	140	1299122.5	1.1				ug/L	245	Standard
>	Tb	159	990488.4	0.8				ug/L	950397	Standard
	Ho	165	18067.4	1.7				ug/L	7	Standard
	Tl	203	217125.4	0.9	**24.1291**	0.277	1.1	ug/L	15	Standard
	Tl	205	198577.9	0.6	**24.8432**	0.213	0.9	ug/L	13	Standard
	Pb	206	259935.7	1.5	**45.7680**	0.825	1.8	ug/L	264	Standard
	Pb	207	221787.2	1.0	**42.9961**	0.567	1.3	ug/L	222	Standard
	Pb	208	955436.3	0.5	**45.3507**	0.360	0.8	ug/L	959	Standard
	U	238	203540.4	0.9	**25.1914**	0.306	1.2	ug/L	9	Standard
>	Bi	209	554076.2	0.3				ug/L	552821	Standard

Sample ID: L1606144505S WG574521-05
Report Date/Time: Friday, July 01, 2016 16:48:59
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**8.7132**	15.083	173.1	mg/L	2	Standard
Mg	24	123.3	10.2	**0.0629**	0.011	18.2	mg/L	55	Standard
K	39	401.7	6.9	**1.1840**	0.057	4.8	mg/L	28	Standard
Ca	43	85.0	17.6	**4.1392**	1.063	25.7	mg/L	27	Standard
Fe	54	19135.8	0.4	**12.7297**	0.274	2.2	mg/L	147	Standard
Fe	57	5282.6	2.0	**13.0758**	0.572	4.4	mg/L	268	Standard
Sc-1	45	48179.8	2.6				mg/L	41174	Standard
Cl	35	81193.7	1.4				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3463.7	11.3				ug/L	1950	Standard
P	31	25893.8	3.3				ug/L	21156	Standard
S	34	3793.8	6.6				ug/L	3419	Standard
Sr	88	98.3	7.8				ug/L	72	Standard
C	12	150.0	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	31.6				mg/L	17	Standard
Dy	164	30043.9	1.0				mg/L	16	Standard
Ho-1	165	18067.4	1.7				mg/L	7	Standard
Er	166	16368.8	2.5				mg/L	7	Standard
I	127	31820.1	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.013	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.777	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144505S WG574521-05
Report Date/Time: Friday, July 01, 2016 16:48:59
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.791
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.227
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144505S WG574521-05
Report Date/Time: Friday, July 01, 2016 16:48:59
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144506SD WG574521-06
Sample Date/Time: Friday, July 01, 2016 16:49:54
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80097.9	2.8				ug/L	76456	Standard
	Be	9	30038.1	2.5	25.6081	1.007	3.9	ug/L	20	Standard
	Al	27	25838350.2	1.3	144.1079	2.593	1.8	ug/L	1307	Standard
	Sc	45	47559.6	2.9				ug/L	41174	Standard
	Ti	47	6556.4	1.8	19.3875	0.685	3.5	ug/L	27	Standard
	V	51	371950.4	0.9	43.5770	0.897	2.1	ug/L	1434	Standard
	Cr	52	331664.7	2.0	38.7230	1.629	4.2	ug/L	7733	Standard
	Cr	53	41130.8	1.7	38.9560	1.095	2.8	ug/L	442	Standard
	Mn	55	3596932.1	1.0	459.6785	15.165	3.3	ug/L	723	Standard
	Co	59	263231.1	1.3	33.2200	1.092	3.3	ug/L	217	Standard
	Ni	60	95938.5	1.6	44.5917	1.721	3.9	ug/L	304	Standard
	Cu	65	74284.7	1.9	35.1502	1.281	3.6	ug/L	181	Standard
	Zn	66	76677.6	1.5	60.3810	2.186	3.6	ug/L	215	Standard
>	Ge	72	538522.8	2.5				ug/L	520809	Standard
	As	75	31096.8	1.3	24.4196	0.873	3.6	ug/L	-52	Standard
	Se	82	2411.7	1.1	18.3435	0.519	2.8	ug/L	17	Standard
	Se-1	77	1751.1	3.2	19.1315	0.710	3.7	ug/L	56	Standard
>	Ga	71	19424.1	1.9				mg/L	25	Standard
	Rb	85	183661.6	1.6				ug/L	28	Standard
	Y	89	704841.2	2.1				ug/L	447395	Standard
>	Rh	103	36.7	20.8				ug/L	15	Standard
	Mo	98	611.4	5.3	0.1763	0.010	5.6	ug/L	113	Standard
	Ag	107	174143.9	1.6	24.0046	0.280	1.2	ug/L	108	Standard
	Cd	111	57620.6	0.9	24.7920	0.490	2.0	mg/L	3	Standard
	Cd	114	139765.7	1.6	24.2901	0.536	2.2	ug/L	20	Standard
>	In	115	631733.1	1.1				ug/L	625728	Standard
	Sn	118	1106.7	20.2	0.0862	0.035	40.7	ug/L	568	Standard
	Sb	123	5971.0	2.3	1.1106	0.013	1.2	ug/L	612	Standard
	Ba	135	389506.4	0.2	177.3323	1.766	1.0	ug/L	21	Standard
	Ce	140	1279386.9	0.6				ug/L	245	Standard
>	Tb	159	976334.8	1.3				ug/L	950397	Standard
	Ho	165	21239.9	2.3				ug/L	7	Standard
	Tl	203	212476.8	0.4	24.3917	0.306	1.3	ug/L	15	Standard
	Tl	205	190802.6	2.3	24.6603	0.758	3.1	ug/L	13	Standard
	Pb	206	194049.7	0.6	35.2833	0.374	1.1	ug/L	264	Standard
	Pb	207	165998.7	0.6	33.2303	0.156	0.5	ug/L	222	Standard
	Pb	208	711047.9	1.1	34.8555	0.746	2.1	ug/L	959	Standard
	U	238	196776.4	1.6	25.1602	0.659	2.6	ug/L	9	Standard
>	Bi	209	536411.2	1.1				ug/L	552821	Standard

Sample ID: L1606144506SD WG574521-06
Report Date/Time: Friday, July 01, 2016 16:52:11
Page 1

Approved: July 02, 2016

Na	23	5.0	0.0	**12.9314**	0.378	2.9	mg/L	2	Standard
Mg	24	121.7	21.1	**0.0630**	0.027	42.3	mg/L	55	Standard
K	39	396.7	12.8	**1.1837**	0.137	11.6	mg/L	28	Standard
Ca	43	198.3	9.5	**13.1529**	1.459	11.1	mg/L	27	Standard
Fe	54	17265.4	3.0	**11.6302**	0.519	4.5	mg/L	147	Standard
Fe	57	5002.5	1.8	**12.5110**	0.483	3.9	mg/L	268	Standard
> **Sc-1**	45	47559.6	2.9				mg/L	41174	Standard
Cl	35	82047.6	0.3				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2713.6	16.2				ug/L	1950	Standard
P	31	26575.0	0.8				ug/L	21156	Standard
S	34	4360.6	2.1				ug/L	3419	Standard
Sr	88	131.7	17.9				ug/L	72	Standard
C	12	140.0	31.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	120.0	25.0				mg/L	17	Standard
Dy	164	35523.7	1.8				mg/L	16	Standard
Ho-1	165	21239.9	2.3				mg/L	7	Standard
Er	166	19068.7	0.7				mg/L	7	Standard
I	127	21363.4	3.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.764	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.401	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144506SD WG574521-06
Report Date/Time: Friday, July 01, 2016 16:52:11
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.960
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.032
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144506SD WG574521-06
Report Date/Time: Friday, July 01, 2016 16:52:11
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Friday, July 01, 2016 16:53:05
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77083.9	1.4				ug/L	76456	Standard
	Be	9	475.0	1.1	**0.4010**	0.005	1.3	ug/L	20	Standard
	Al	27	2237415.9	0.9	**12.9552**	0.241	1.9	ug/L	1307	Standard
	Sc	45	46143.5	0.6				ug/L	41174	Standard
	Ti	47	14229.3	1.3	**40.3569**	0.503	1.2	ug/L	27	Standard
	V	51	81926.5	1.2	**9.0305**	0.138	1.5	ug/L	1434	Standard
	Cr	52	71884.8	0.5	**7.2617**	0.092	1.3	ug/L	7733	Standard
	Cr	53	8222.2	3.8	**7.1184**	0.362	5.1	ug/L	442	Standard
	Mn	55	1326114.2	0.7	**162.1111**	1.014	0.6	ug/L	723	Standard
	Co	59	18265.0	0.3	**2.1786**	0.035	1.6	ug/L	217	Standard
	Ni	60	14421.9	1.4	**6.2826**	0.026	0.4	ug/L	304	Standard
	Cu	65	20275.6	1.0	**9.1261**	0.043	0.5	ug/L	181	Standard
	Zn	66	84084.7	0.5	**63.3707**	0.506	0.8	ug/L	215	Standard
>	Ge	72	562486.4	1.3				ug/L	520809	Standard
	As	75	12273.7	0.0	**9.2515**	0.118	1.3	ug/L	-52	Standard
	Se	82	80.8	6.1	**0.4662**	0.041	8.7	ug/L	17	Standard
	Se-1	77	117.0	7.4	**0.5834**	0.109	18.6	ug/L	56	Standard
>	Ga	71	7775.3	1.7				mg/L	25	Standard
	Rb	85	53367.2	1.6				ug/L	28	Standard
	Y	89	546880.1	0.9				ug/L	447395	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	1997.9	3.1	**0.5987**	0.021	3.5	ug/L	113	Standard
	Ag	107	409.7	7.2	**0.0409**	0.004	9.7	ug/L	108	Standard
	Cd	111	850.8	2.0	**0.3460**	0.009	2.5	mg/L	3	Standard
	Cd	114	2106.8	7.8	**0.3483**	0.025	7.1	ug/L	20	Standard
>	In	115	663939.9	0.6				ug/L	625728	Standard
	Sn	118	2050.1	14.8	**0.2160**	0.045	20.8	ug/L	568	Standard
	Sb	123	671.1	9.1	**0.0887**	0.011	12.6	ug/L	612	Standard
	Ba	135	107917.7	1.0	**46.7326**	0.441	0.9	ug/L	21	Standard
	Ce	140	627825.8	0.9				ug/L	245	Standard
>	Tb	159	987128.9	0.6				ug/L	950397	Standard
	Ho	165	5104.2	2.7				ug/L	7	Standard
	Tl	203	689.0	1.9	**0.0742**	0.001	1.8	ug/L	15	Standard
	Tl	205	618.3	5.7	**0.0660**	0.005	7.0	ug/L	13	Standard
	Pb	206	276291.1	0.7	**47.6167**	0.411	0.9	ug/L	264	Standard
	Pb	207	230628.0	0.7	**43.7624**	0.472	1.1	ug/L	222	Standard
	Pb	208	1006911.8	0.1	**46.7816**	0.251	0.5	ug/L	959	Standard
	U	238	4725.7	2.3	**0.5722**	0.012	2.1	ug/L	9	Standard
>	Bi	209	566085.1	0.4				ug/L	552821	Standard

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 16:55:22
Page 1

Approved: July 02, 2016

Na	23	8.3	124.9	**22.1583**	27.707	125.0	mg/L	2	Standard
Mg	24	85.0	11.8	**0.0284**	0.010	35.7	mg/L	55	Standard
K	39	100.0	15.0	**0.2109**	0.050	23.9	mg/L	28	Standard
Ca	43	75.0	6.7	**3.6275**	0.385	10.6	mg/L	27	Standard
Fe	54	8171.7	3.6	**5.6200**	0.239	4.3	mg/L	147	Standard
Fe	57	2388.5	3.0	**5.7441**	0.167	2.9	mg/L	268	Standard
> **Sc-1**	45	46143.5	0.6				mg/L	41174	Standard
Cl	35	81155.5	2.1				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	3463.7	7.7				ug/L	1950	Standard
P	31	25539.9	4.4				ug/L	21156	Standard
S	34	3917.2	3.0				ug/L	3419	Standard
Sr	88	76.7	18.8				ug/L	72	Standard
C	12	486.7	15.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	256.7	4.5				mg/L	17	Standard
Dy	164	8760.5	4.1				mg/L	16	Standard
Ho-1	165	5104.2	2.7				mg/L	7	Standard
Er	166	4777.4	5.8				mg/L	7	Standard
I	127	36602.6	6.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.822	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.002	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 16:55:22
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.107
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.399
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 16:55:22
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Friday, July 01, 2016 16:56:17
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78477.8	2.4				ug/L	76456	Standard
	Be	9	601.7	8.2	**0.5033**	0.031	6.2	ug/L	20	Standard
	Al	27	4781763.5	1.4	**27.2109**	0.622	2.3	ug/L	1307	Standard
	Sc	45	48186.5	2.1				ug/L	41174	Standard
	Ti	47	26915.6	1.4	**75.8086**	1.495	2.0	ug/L	27	Standard
	V	51	170171.2	0.3	**18.8187**	0.180	1.0	ug/L	1434	Standard
	Cr	52	138418.5	1.4	**14.7553**	0.301	2.0	ug/L	7733	Standard
	Cr	53	16907.8	0.5	**14.9504**	0.076	0.5	ug/L	442	Standard
	Mn	55	4385050.3	0.1	**532.0225**	4.124	0.8	ug/L	723	Standard
	Co	59	55284.7	0.4	**6.6001**	0.055	0.8	ug/L	217	Standard
	Ni	60	30764.2	0.1	**13.4670**	0.097	0.7	ug/L	304	Standard
	Cu	65	65698.5	1.0	**29.5008**	0.365	1.2	ug/L	181	Standard
	Zn	66	217089.2	0.9	**162.5825**	0.761	0.5	ug/L	215	Standard
>	Ge	72	566980.9	0.7				ug/L	520809	Standard
	As	75	11103.7	0.8	**8.3069**	0.047	0.6	ug/L	-52	Standard
	Se	82	132.6	4.8	**0.8380**	0.046	5.5	ug/L	17	Standard
	Se-1	77	150.3	12.7	**0.9313**	0.212	22.8	ug/L	56	Standard
>	Ga	71	15192.6	2.9				mg/L	25	Standard
	Rb	85	155948.5	0.6				ug/L	28	Standard
	Y	89	601495.0	1.4				ug/L	447395	Standard
>	Rh	103	23.3	32.7				ug/L	15	Standard
	Mo	98	5496.7	0.9	**1.6857**	0.006	0.4	ug/L	113	Standard
	Ag	107	775.4	2.6	**0.0887**	0.002	2.3	ug/L	108	Standard
	Cd	111	1034.2	3.3	**0.4202**	0.011	2.7	mg/L	3	Standard
	Cd	114	2656.7	6.0	**0.4384**	0.024	5.5	ug/L	20	Standard
>	In	115	665198.2	0.6				ug/L	625728	Standard
	Sn	118	1311.7	13.8	**0.1076**	0.028	25.7	ug/L	568	Standard
	Sb	123	507.6	23.3	**0.0588**	0.022	37.4	ug/L	612	Standard
	Ba	135	246404.5	0.4	**106.5243**	0.535	0.5	ug/L	21	Standard
	Ce	140	708985.8	1.9				ug/L	245	Standard
>	Tb	159	1000873.3	0.7				ug/L	950397	Standard
	Ho	165	8867.6	1.0				ug/L	7	Standard
	Tl	203	1805.8	2.5	**0.1960**	0.004	2.0	ug/L	15	Standard
	Tl	205	1731.8	4.2	**0.2027**	0.009	4.2	ug/L	13	Standard
	Pb	206	179680.5	0.2	**31.0013**	0.201	0.6	ug/L	264	Standard
	Pb	207	147967.3	0.2	**28.1058**	0.174	0.6	ug/L	222	Standard
	Pb	208	649286.1	0.4	**30.1982**	0.309	1.0	ug/L	959	Standard
	U	238	11590.8	1.2	**1.4062**	0.023	1.6	ug/L	9	Standard
>	Bi	209	565178.3	0.6				ug/L	552821	Standard

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 16:58:34
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**8.3775**	14.502	173.1	mg/L	2	Standard
Mg	24	161.7	21.7	**0.1008**	0.032	31.7	mg/L	55	Standard
K	39	290.0	13.0	**0.8193**	0.124	15.2	mg/L	28	Standard
Ca	43	116.7	13.8	**6.5999**	1.152	17.5	mg/L	27	Standard
Fe	54	19162.0	2.8	**12.7406**	0.220	1.7	mg/L	147	Standard
Fe	57	5199.2	1.1	**12.8525**	0.447	3.5	mg/L	268	Standard
Sc-1	45	48186.5	2.1				mg/L	41174	Standard
Cl	35	81627.3	0.9				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	4627.4	6.5				ug/L	1950	Standard
P	31	26000.6	1.2				ug/L	21156	Standard
S	34	3977.2	4.8				ug/L	3419	Standard
Sr	88	111.7	18.6				ug/L	72	Standard
C	12	856.7	2.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	230.0	17.4				mg/L	17	Standard
Dy	164	14613.4	2.0				mg/L	16	Standard
Ho-1	165	8867.6	1.0				mg/L	7	Standard
Er	166	8085.5	6.9				mg/L	7	Standard
I	127	50293.4	2.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.645	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.865	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 16:58:34
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.308
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.235
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 16:58:34
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102PS WG575057-01
Sample Date/Time: Friday, July 01, 2016 16:59:28
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79385.8	1.3				ug/L	76456	Standard
	Be	9	66132.4	2.2	**56.8900**	1.804	3.2	ug/L	20	Standard
	Al	27	4677646.6	0.6	**26.3080**	0.258	1.0	ug/L	1307	Standard
	Sc	45	48036.1	2.2				ug/L	41174	Standard
	Ti	47	26404.3	1.4	**75.0881**	1.235	1.6	ug/L	27	Standard
	V	51	638356.3	0.3	**71.8329**	0.463	0.6	ug/L	1434	Standard
	Cr	52	595924.0	0.5	**67.3875**	0.498	0.7	ug/L	7733	Standard
	Cr	53	74037.1	1.4	**67.5313**	1.159	1.7	ug/L	442	Standard
	Mn	55	4772659.1	0.6	**584.6747**	1.033	0.2	ug/L	723	Standard
	Co	59	500476.8	0.3	**60.5691**	0.409	0.7	ug/L	217	Standard
	Ni	60	148905.8	0.4	**66.4112**	0.102	0.2	ug/L	304	Standard
	Cu	65	183049.8	0.4	**83.1281**	0.455	0.5	ug/L	181	Standard
	Zn	66	287669.1	1.1	**217.6035**	2.596	1.2	ug/L	215	Standard
>	Ge	72	561514.3	0.4				ug/L	520809	Standard
	As	75	82895.8	0.4	**62.3258**	0.436	0.7	ug/L	-52	Standard
	Se	82	7441.1	0.8	**54.5039**	0.359	0.7	ug/L	17	Standard
	Se-1	77	5169.2	1.0	**55.4015**	0.590	1.1	ug/L	56	Standard
>	Ga	71	15267.7	1.1				mg/L	25	Standard
	Rb	85	154189.3	2.6				ug/L	28	Standard
	Y	89	603447.9	0.9				ug/L	447395	Standard
>	Rh	103	43.3	24.0				ug/L	15	Standard
	Mo	98	5476.6	2.0	**1.7012**	0.041	2.4	ug/L	113	Standard
	Ag	107	391731.6	0.9	**51.9492**	0.634	1.2	ug/L	108	Standard
	Cd	111	129263.1	1.2	**53.4846**	0.463	0.9	mg/L	3	Standard
	Cd	114	313124.4	0.6	**52.3315**	0.333	0.6	ug/L	20	Standard
>	In	115	656847.0	0.4				ug/L	625728	Standard
	Sn	118	1576.8	23.5	**0.1493**	0.056	37.2	ug/L	568	Standard
	Sb	123	282627.6	1.8	**52.0619**	0.839	1.6	ug/L	612	Standard
	Ba	135	360531.0	1.0	**157.8560**	2.191	1.4	ug/L	21	Standard
	Ce	140	708239.5	1.1				ug/L	245	Standard
>	Tb	159	993751.4	0.6				ug/L	950397	Standard
	Ho	165	9054.4	1.6				ug/L	7	Standard
	Tl	203	489986.8	0.9	**53.0644**	0.590	1.1	ug/L	15	Standard
	Tl	205	443077.3	1.1	**54.0276**	0.463	0.9	ug/L	13	Standard
	Pb	206	490668.3	0.8	**84.2254**	0.742	0.9	ug/L	264	Standard
	Pb	207	417558.3	0.6	**78.9219**	0.638	0.8	ug/L	222	Standard
	Pb	208	1796810.4	0.6	**83.1513**	0.452	0.5	ug/L	959	Standard
	U	238	437485.4	0.2	**52.7644**	0.211	0.4	ug/L	9	Standard
>	Bi	209	568575.4	0.3				ug/L	552821	Standard

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 17:01:45
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.3123**	7.460	173.0	mg/L	2	Standard
Mg	24	195.0	13.6	**0.1353**	0.029	21.4	mg/L	55	Standard
K	39	278.3	18.2	**0.7825**	0.157	20.1	mg/L	28	Standard
Ca	43	116.7	21.1	**6.6089**	1.697	25.7	mg/L	27	Standard
Fe	54	18988.9	2.1	**12.6650**	0.048	0.4	mg/L	147	Standard
Fe	57	5222.6	2.2	**12.9542**	0.402	3.1	mg/L	268	Standard
> **Sc-1**	45	48036.1	2.2				mg/L	41174	Standard
Cl	35	79157.6	0.9				ug/L	69550	Standard
Kr	83	3.0	88.2				ug/L	1	Standard
Br	81	4567.4	7.8				ug/L	1950	Standard
P	31	25140.8	1.9				ug/L	21156	Standard
S	34	3993.9	5.1				ug/L	3419	Standard
Sr	88	141.7	14.7				ug/L	72	Standard
C	12	916.7	5.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	220.0	20.8				mg/L	17	Standard
Dy	164	14636.5	2.9				mg/L	16	Standard
Ho-1	165	9054.4	1.6				mg/L	7	Standard
Er	166	8719.2	6.2				mg/L	7	Standard
I	127	60985.9	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.832	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.816	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 17:01:45
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.973
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.850
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 17:01:45
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 17:02:40
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72896.8	3.6				ug/L	76456	Standard
	Be	9	151.7	28.0	**0.1215**	0.035	28.7	ug/L	20	Standard
	Al	27	886084.1	1.1	**5.4244**	0.245	4.5	ug/L	1307	Standard
	Sc	45	40265.1	1.1				ug/L	41174	Standard
	Ti	47	4872.5	1.7	**14.8447**	0.431	2.9	ug/L	27	Standard
	V	51	31678.7	1.1	**3.6484**	0.093	2.5	ug/L	1434	Standard
	Cr	52	29443.9	1.3	**2.6645**	0.094	3.5	ug/L	7733	Standard
	Cr	53	3295.4	2.1	**2.8380**	0.099	3.5	ug/L	442	Standard
	Mn	55	811630.5	1.3	**106.9281**	2.799	2.6	ug/L	723	Standard
	Co	59	10016.3	0.5	**1.2757**	0.020	1.5	ug/L	217	Standard
	Ni	60	6049.9	1.8	**2.7576**	0.087	3.1	ug/L	304	Standard
	Cu	65	12638.9	1.7	**6.1089**	0.185	3.0	ug/L	181	Standard
	Zn	66	44343.1	2.3	**35.9528**	1.298	3.6	ug/L	215	Standard
>	Ge	72	521851.4	1.3				ug/L	520809	Standard
	As	75	2135.0	1.6	**1.7715**	0.050	2.8	ug/L	-52	Standard
	Se	82	32.7	15.9	**0.1321**	0.044	33.6	ug/L	17	Standard
	Se-1	77	80.0	15.4	**0.2505**	0.153	61.0	ug/L	56	Standard
>	Ga	71	2831.9	8.0				mg/L	25	Standard
	Rb	85	29441.9	2.0				ug/L	28	Standard
	Y	89	460347.3	0.7				ug/L	447395	Standard
>	Rh	103	23.3	44.6				ug/L	15	Standard
	Mo	98	1036.0	4.3	**0.3306**	0.018	5.5	ug/L	113	Standard
	Ag	107	240.3	7.9	**0.0218**	0.002	11.3	ug/L	108	Standard
	Cd	111	192.5	10.6	**0.0842**	0.009	10.8	mg/L	3	Standard
	Cd	114	501.8	24.8	**0.0913**	0.024	25.9	ug/L	20	Standard
>	In	115	604796.3	1.1				ug/L	625728	Standard
	Sn	118	678.3	14.5	**0.0250**	0.017	67.9	ug/L	568	Standard
	Sb	123	1577.0	34.7	**0.2828**	0.113	39.9	ug/L	612	Standard
	Ba	135	46358.8	0.3	**22.0307**	0.285	1.3	ug/L	21	Standard
	Ce	140	135977.5	1.1				ug/L	245	Standard
>	Tb	159	909731.4	0.9				ug/L	950397	Standard
	Ho	165	1651.8	7.4				ug/L	7	Standard
	Tl	203	404.7	3.9	**0.0462**	0.002	3.6	ug/L	15	Standard
	Tl	205	413.3	12.1	**0.0442**	0.006	14.3	ug/L	13	Standard
	Pb	206	34246.7	0.6	**6.2517**	0.027	0.4	ug/L	264	Standard
	Pb	207	28334.8	0.4	**5.6896**	0.033	0.6	ug/L	222	Standard
	Pb	208	122940.1	1.3	**6.0452**	0.111	1.8	ug/L	959	Standard
	U	238	2224.5	2.8	**0.2869**	0.007	2.3	ug/L	9	Standard
>	Bi	209	531198.7	0.5				ug/L	552821	Standard

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:04:57
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.1506**	8.913	173.0	mg/L	2	Standard
Mg	24	81.7	18.7	**0.0373**	0.018	48.0	mg/L	55	Standard
K	39	76.7	26.4	**0.1697**	0.081	47.8	mg/L	28	Standard
Ca	43	40.0	25.0	**1.2573**	0.889	70.7	mg/L	27	Standard
Fe	54	3471.8	1.5	**2.6857**	0.073	2.7	mg/L	147	Standard
Fe	57	1143.4	4.3	**2.7898**	0.194	6.9	mg/L	268	Standard
> **Sc-1**	45	40265.1	1.1				mg/L	41174	Standard
Cl	35	70995.3	1.2				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2253.5	3.8				ug/L	1950	Standard
P	31	10969.0	0.7				ug/L	21156	Standard
S	34	3750.5	0.4				ug/L	3419	Standard
Sr	88	80.0	12.5				ug/L	72	Standard
C	12	226.7	9.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	17	Standard
Dy	164	2685.5	6.0				mg/L	16	Standard
Ho-1	165	1651.8	7.4				mg/L	7	Standard
Er	166	1560.1	5.1				mg/L	7	Standard
I	127	40504.1	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.345	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.200	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:04:57
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.655
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.089
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 17:05:52
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70195.6	2.2				ug/L	76456	Standard
	Be	9	78.3	41.0	**0.0567**	0.033	57.8	ug/L	20	Standard
	Al	27	176403.2	5.8	**1.1130**	0.082	7.4	ug/L	1307	Standard
	Sc	45	38834.7	0.9				ug/L	41174	Standard
	Ti	47	931.7	5.0	**2.8080**	0.157	5.6	ug/L	27	Standard
	V	51	7219.8	2.6	**0.6896**	0.020	2.9	ug/L	1434	Standard
	Cr	52	9795.8	4.3	**0.2546**	0.049	19.3	ug/L	7733	Standard
	Cr	53	816.7	8.0	**0.4003**	0.064	16.0	ug/L	442	Standard
	Mn	55	156110.5	2.6	**20.7536**	0.477	2.3	ug/L	723	Standard
	Co	59	2209.5	13.5	**0.2622**	0.038	14.6	ug/L	217	Standard
	Ni	60	1399.1	2.2	**0.5287**	0.012	2.4	ug/L	304	Standard
	Cu	65	2640.2	2.1	**1.2343**	0.024	2.0	ug/L	181	Standard
	Zn	66	9656.7	1.3	**7.7908**	0.073	0.9	ug/L	215	Standard
>	**Ge**	72	514985.8	0.4				ug/L	520809	Standard
	As	75	413.0	1.8	**0.3835**	0.006	1.4	ug/L	-52	Standard
	Se	82	23.7	20.7	**0.0632**	0.039	61.2	ug/L	17	Standard
	Se-1	77	57.0	6.1	**-0.0104**	0.039	372.4	ug/L	56	Standard
>	**Ga**	71	518.3	3.7				mg/L	25	Standard
	Rb	85	5472.7	4.6				ug/L	28	Standard
	Y	89	432045.4	1.1				ug/L	447395	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	406.8	30.7	**0.1173**	0.043	37.1	ug/L	113	Standard
	Ag	107	155.3	56.4	**0.0098**	0.013	129.9	ug/L	108	Standard
	Cd	111	62.6	64.4	**0.0262**	0.018	70.2	mg/L	3	Standard
	Cd	114	167.6	61.4	**0.0309**	0.019	61.4	ug/L	20	Standard
>	**In**	115	596116.9	0.1				ug/L	625728	Standard
	Sn	118	588.3	26.0	**0.0117**	0.025	212.4	ug/L	568	Standard
	Sb	123	388.4	28.3	**0.0452**	0.022	49.6	ug/L	612	Standard
	Ba	135	8995.0	2.1	**4.3221**	0.097	2.2	ug/L	21	Standard
	Ce	140	24040.7	2.3				ug/L	245	Standard
>	**Tb**	159	895791.4	0.8				ug/L	950397	Standard
	Ho	165	243.3	11.3				ug/L	7	Standard
	Tl	203	146.7	64.0	**0.0163**	0.011	66.9	ug/L	15	Standard
	Tl	205	206.7	97.8	**0.0173**	0.026	152.8	ug/L	13	Standard
	Pb	206	6377.7	1.6	**1.1327**	0.021	1.9	ug/L	264	Standard
	Pb	207	5284.9	1.3	**1.0274**	0.015	1.5	ug/L	222	Standard
	Pb	208	23160.0	2.5	**1.1036**	0.032	2.9	ug/L	959	Standard
	U	238	525.7	30.5	**0.0678**	0.021	30.5	ug/L	9	Standard
>	**Bi**	209	529365.9	0.5				ug/L	552821	Standard

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:08:09
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	68.3	23.5	**0.0243**	0.019	79.3	mg/L	55	Standard
K	39	26.7	78.1	**-0.0227**	0.085	373.8	mg/L	28	Standard
Ca	43	28.3	36.7	**0.2726**	0.981	359.8	mg/L	27	Standard
Fe	54	762.6	6.6	**0.5352**	0.041	7.7	mg/L	147	Standard
Fe	57	421.7	1.8	**0.5696**	0.019	3.3	mg/L	268	Standard
> **Sc-1**	45	38834.7	0.9				mg/L	41174	Standard
Cl	35	69123.3	0.3				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	1883.5	2.0				ug/L	1950	Standard
P	31	7872.0	1.6				ug/L	21156	Standard
S	34	3360.4	5.9				ug/L	3419	Standard
Sr	88	80.0	32.5				ug/L	72	Standard
C	12	90.0	22.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	38.2				mg/L	17	Standard
Dy	164	420.7	27.3				mg/L	16	Standard
Ho-1	165	243.3	11.3				mg/L	7	Standard
Er	166	263.3	34.5				mg/L	7	Standard
I	127	37972.5	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.812	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.882	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:08:09
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.268
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.757
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 17:09:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74588.1	0.3				ug/L	76456	Standard
	Be	9	57897.1	2.0	**52.9977**	1.204	2.3	ug/L	20	Standard
	Al	27	8733198.2	1.7	**52.2835**	0.984	1.9	ug/L	1307	Standard
	Sc	45	42748.6	2.7				ug/L	41174	Standard
	Ti	47	34213.3	0.6	**98.3209**	0.421	0.4	ug/L	27	Standard
	V	51	442681.7	1.0	**50.2684**	0.638	1.3	ug/L	1434	Standard
	Cr	52	439186.0	0.4	**49.9273**	0.312	0.6	ug/L	7733	Standard
	Cr	53	53859.0	4.5	**49.5163**	2.076	4.2	ug/L	442	Standard
	Mn	55	408283.6	1.1	**50.4406**	0.633	1.3	ug/L	723	Standard
	Co	59	418347.3	1.1	**51.1465**	0.625	1.2	ug/L	217	Standard
	Ni	60	111527.3	0.5	**50.2172**	0.479	1.0	ug/L	304	Standard
	Cu	65	110380.0	1.0	**50.6153**	0.665	1.3	ug/L	181	Standard
	Zn	66	65800.9	0.7	**50.1493**	0.538	1.1	ug/L	215	Standard
>	Ge	72	555788.6	0.5				ug/L	520809	Standard
	As	75	65659.0	0.5	**49.8836**	0.337	0.7	ug/L	-52	Standard
	Se	82	6718.9	0.9	**49.7097**	0.395	0.8	ug/L	17	Standard
	Se-1	77	4636.4	0.7	**50.1376**	0.106	0.2	ug/L	56	Standard
>	Ga	71	43.3	35.3				mg/L	25	Standard
	Rb	85	1065.0	6.1				ug/L	28	Standard
	Y	89	468359.1	2.1				ug/L	447395	Standard
>	Rh	103	20.0	25.0				ug/L	15	Standard
	Mo	98	314455.9	1.0	**100.8766**	0.307	0.3	ug/L	113	Standard
	Ag	107	371694.7	0.4	**50.2132**	0.146	0.3	ug/L	108	Standard
	Cd	111	119048.0	0.9	**50.1804**	0.274	0.5	mg/L	3	Standard
	Cd	114	295369.7	1.4	**50.2861**	0.415	0.8	ug/L	20	Standard
>	In	115	644781.5	0.7				ug/L	625728	Standard
	Sn	118	326587.3	0.5	**49.1617**	0.446	0.9	ug/L	568	Standard
	Sb	123	269765.0	0.9	**50.6219**	0.112	0.2	ug/L	612	Standard
	Ba	135	109973.0	0.0	**49.0395**	0.330	0.7	ug/L	21	Standard
	Ce	140	1043.4	21.6				ug/L	245	Standard
>	Tb	159	966885.6	0.6				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	449950.1	0.5	**50.5682**	0.198	0.4	ug/L	15	Standard
	Tl	205	409109.7	0.2	**51.7709**	0.214	0.4	ug/L	13	Standard
	Pb	206	284448.3	0.6	**50.6536**	0.284	0.6	ug/L	264	Standard
	Pb	207	258444.3	0.7	**50.6761**	0.292	0.6	ug/L	222	Standard
	Pb	208	1085344.7	0.3	**52.1064**	0.244	0.5	ug/L	959	Standard
	U	238	403930.8	0.4	**50.5574**	0.115	0.2	ug/L	9	Standard
>	Bi	209	547878.4	0.3				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:11:22
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.4428**	8.174	86.6	mg/L	2	Standard
Mg	24	4510.7	2.8	**5.0184**	0.235	4.7	mg/L	55	Standard
K	39	1208.4	6.0	**4.3343**	0.305	7.0	mg/L	28	Standard
Ca	43	88.3	31.2	**5.2894**	2.418	45.7	mg/L	27	Standard
Fe	54	6821.5	2.8	**5.0554**	0.184	3.6	mg/L	147	Standard
Fe	57	2156.8	8.4	**5.5723**	0.370	6.6	mg/L	268	Standard
Sc-1	45	42748.6	2.7				mg/L	41174	Standard
Cl	35	80981.2	1.3				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	2280.2	6.1				ug/L	1950	Standard
P	31	25067.4	1.4				ug/L	21156	Standard
S	34	4143.9	4.2				ug/L	3419	Standard
Sr	88	66.7	51.1				ug/L	72	Standard
C	12	116.7	24.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	173.3	61.7				mg/L	17	Standard
Dy	164	15.5	97.9				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	7	Standard
I	127	10653.7	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	105.995		
Al	27	104.567		
Sc	45			
Ti	47	98.321		
V	51	100.537		
Cr	52	99.855		
Cr	53			
Mn	55	100.881		
Co	59	102.293		
Ni	60	100.434		
Cu	65	101.231		
Zn	66	100.299		
Ge	72		106.716	
As	75	99.767		
Se	82	99.419		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:11:22
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.877		
Ag	107	100.426		
Cd	111	100.361		
Cd	114			
In	115			103.045
Sn	118	98.323		
Sb	123	101.244		
Ba	135	98.079		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.136		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.213		
U	238	101.115		
Bi	209			99.106
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:11:22
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 17:12:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73740.8	2.8				ug/L	76456	Standard
	Be	9	30.0	16.7	**0.0079**	0.005	57.8	ug/L	20	Standard
	Al	27	2383.5	29.7	**0.0042**	0.004	92.9	ug/L	1307	Standard
	Sc	45	42364.1	1.1				ug/L	41174	Standard
	Ti	47	28.3	8.2	**-0.0020**	0.008	409.9	ug/L	27	Standard
	V	51	1463.8	6.3	**-0.0298**	0.010	33.6	ug/L	1434	Standard
	Cr	52	7082.7	1.2	**-0.1402**	0.009	6.6	ug/L	7733	Standard
	Cr	53	485.0	17.5	**0.0388**	0.087	223.5	ug/L	442	Standard
	Mn	55	856.7	6.3	**0.0059**	0.006	103.8	ug/L	723	Standard
	Co	59	239.7	17.2	**0.0002**	0.005	2435.9	ug/L	217	Standard
	Ni	60	264.7	3.4	**-0.0322**	0.006	18.2	ug/L	304	Standard
	Cu	65	171.0	2.0	**0.0054**	0.002	46.6	ug/L	181	Standard
	Zn	66	243.3	6.7	**0.0079**	0.011	133.5	ug/L	215	Standard
>	**Ge**	72	549483.2	1.7				ug/L	520809	Standard
	As	75	-74.2	16.4	**-0.0117**	0.009	74.0	ug/L	-52	Standard
	Se	82	18.9	27.4	**0.0161**	0.041	258.0	ug/L	17	Standard
	Se-1	77	51.3	15.1	**-0.1160**	0.081	69.5	ug/L	56	Standard
>	**Ga**	71	21.7	53.3				mg/L	25	Standard
	Rb	85	48.3	33.3				ug/L	28	Standard
	Y	89	469146.0	2.8				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	269.5	12.3	**0.0621**	0.010	15.8	ug/L	113	Standard
	Ag	107	131.3	8.8	**0.0048**	0.002	32.6	ug/L	108	Standard
	Cd	111	13.9	69.3	**0.0035**	0.004	115.1	mg/L	3	Standard
	Cd	114	67.3	28.0	**0.0114**	0.003	28.7	ug/L	20	Standard
>	**In**	115	647674.1	1.6				ug/L	625728	Standard
	Sn	118	1591.8	26.5	**0.1547**	0.062	40.2	ug/L	568	Standard
	Sb	123	1048.5	31.2	**0.1625**	0.061	37.8	ug/L	612	Standard
	Ba	135	62.3	27.9	**0.0097**	0.008	77.5	ug/L	21	Standard
	Ce	140	363.3	30.0				ug/L	245	Standard
>	**Tb**	159	949797.9	2.5				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	92.0	24.5	**0.0095**	0.002	24.5	ug/L	15	Standard
	Tl	205	60.0	22.0	**-0.0022**	0.002	85.3	ug/L	13	Standard
	Pb	206	340.0	6.2	**0.0166**	0.004	25.1	ug/L	264	Standard
	Pb	207	288.7	4.1	**0.0103**	0.002	15.3	ug/L	222	Standard
	Pb	208	1226.7	6.9	**0.0104**	0.004	37.3	ug/L	959	Standard
	U	238	77.0	45.5	**0.0093**	0.004	45.3	ug/L	9	Standard
>	**Bi**	209	550276.1	2.1				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:14:34
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	24.7	**-0.0073**	0.013	171.5	mg/L	55	Standard
K	39	21.7	48.0	**-0.0502**	0.039	78.2	mg/L	28	Standard
Ca	43	33.3	17.3	**0.4877**	0.477	97.9	mg/L	27	Standard
Fe	54	195.9	17.0	**0.0503**	0.024	47.6	mg/L	147	Standard
Fe	57	191.7	26.4	**-0.2314**	0.152	65.8	mg/L	268	Standard
> **Sc-1**	45	42364.1	1.1				mg/L	41174	Standard
Cl	35	80980.6	1.9				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2003.5	11.5				ug/L	1950	Standard
P	31	23999.0	2.6				ug/L	21156	Standard
S	34	4252.3	5.6				ug/L	3419	Standard
Sr	88	71.7	21.3				ug/L	72	Standard
C	12	100.0	34.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	36.4				mg/L	17	Standard
Dy	164	16.5	70.8				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	7548.5	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.506	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:14:34
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.507
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.540
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:14:34
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Friday, July 01, 2016 17:18:25
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77464.3	3.3				ug/L	76456	Standard
	Be	9	561.7	8.9	**0.4749**	0.032	6.7	ug/L	20	Standard
	Al	27	1784965.6	1.0	**10.2905**	0.435	4.2	ug/L	1307	Standard
	Sc	45	46648.4	2.7				ug/L	41174	Standard
	Ti	47	18184.2	0.6	**50.8412**	0.521	1.0	ug/L	27	Standard
	V	51	103032.2	1.3	**11.2383**	0.206	1.8	ug/L	1434	Standard
	Cr	52	92595.8	0.6	**9.4776**	0.042	0.4	ug/L	7733	Standard
	Cr	53	11107.4	3.1	**9.6118**	0.373	3.9	ug/L	442	Standard
	Mn	55	2019437.5	1.0	**243.2931**	1.293	0.5	ug/L	723	Standard
	Co	59	22651.9	1.2	**2.6686**	0.043	1.6	ug/L	217	Standard
	Ni	60	16329.8	0.7	**7.0275**	0.020	0.3	ug/L	304	Standard
	Cu	65	24727.8	0.3	**10.9821**	0.036	0.3	ug/L	181	Standard
	Zn	66	127705.3	0.5	**94.9239**	0.754	0.8	ug/L	215	Standard
>	Ge	72	570830.0	0.6				ug/L	520809	Standard
	As	75	6011.6	0.9	**4.4881**	0.053	1.2	ug/L	-52	Standard
	Se	82	95.5	2.7	**0.5629**	0.016	2.8	ug/L	17	Standard
	Se-1	77	101.0	4.3	**0.3932**	0.042	10.6	ug/L	56	Standard
>	Ga	71	9259.5	1.6				mg/L	25	Standard
	Rb	85	72246.9	1.1				ug/L	28	Standard
	Y	89	547009.7	0.9				ug/L	447395	Standard
>	Rh	103	31.7	24.1				ug/L	15	Standard
	Mo	98	3914.2	0.5	**1.1794**	0.014	1.2	ug/L	113	Standard
	Ag	107	483.7	3.9	**0.0498**	0.002	4.8	ug/L	108	Standard
	Cd	111	987.4	2.0	**0.3964**	0.008	2.0	mg/L	3	Standard
	Cd	114	2496.5	1.3	**0.4073**	0.007	1.6	ug/L	20	Standard
>	In	115	673007.1	0.7				ug/L	625728	Standard
	Sn	118	1876.8	14.9	**0.1869**	0.040	21.4	ug/L	568	Standard
	Sb	123	1273.6	19.1	**0.1953**	0.043	22.1	ug/L	612	Standard
	Ba	135	110926.6	0.4	**47.3888**	0.135	0.3	ug/L	21	Standard
	Ce	140	529177.4	0.3				ug/L	245	Standard
>	Tb	159	1007132.0	0.8				ug/L	950397	Standard
	Ho	165	4118.9	3.9				ug/L	7	Standard
	Tl	203	1019.0	7.4	**0.1098**	0.008	7.6	ug/L	15	Standard
	Tl	205	931.7	3.7	**0.1041**	0.004	4.2	ug/L	13	Standard
	Pb	206	349755.5	0.5	**60.1201**	0.233	0.4	ug/L	264	Standard
	Pb	207	290008.2	0.8	**54.8870**	0.434	0.8	ug/L	222	Standard
	Pb	208	1256548.1	0.6	**58.2295**	0.582	1.0	ug/L	959	Standard
	U	238	5395.3	1.0	**0.6515**	0.003	0.5	ug/L	9	Standard
>	Bi	209	567672.3	0.6				ug/L	552821	Standard

Sample ID: L1606145103
Report Date/Time: Friday, July 01, 2016 17:20:42
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	26.4	**0.0141**	0.021	150.8	mg/L	55	Standard
K	39	116.7	6.5	**0.2640**	0.032	12.1	mg/L	28	Standard
Ca	43	40.0	33.1	**0.7666**	1.123	146.5	mg/L	27	Standard
Fe	54	10538.1	0.8	**7.1995**	0.244	3.4	mg/L	147	Standard
Fe	57	2908.6	5.3	**7.0806**	0.202	2.9	mg/L	268	Standard
> **Sc-1**	45	46648.4	2.7				mg/L	41174	Standard
Cl	35	80143.5	2.5				ug/L	69550	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	3830.5	4.5				ug/L	1950	Standard
P	31	23700.2	1.3				ug/L	21156	Standard
S	34	3720.5	5.4				ug/L	3419	Standard
Sr	88	83.3	28.4				ug/L	72	Standard
C	12	560.0	12.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	286.7	34.2				mg/L	17	Standard
Dy	164	6970.4	6.6				mg/L	16	Standard
Ho-1	165	4118.9	3.9				mg/L	7	Standard
Er	166	3853.8	3.6				mg/L	7	Standard
I	127	33669.0	1.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.319	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.604	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145103
Report Date/Time: Friday, July 01, 2016 17:20:42
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.556
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Friday, July 01, 2016 17:22:04
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75591.5	2.3				ug/L	76456	Standard
	Be	9	436.7	14.5	**0.3755**	0.064	17.2	ug/L	20	Standard
	Al	27	7695752.7	1.5	**45.4726**	1.098	2.4	ug/L	1307	Standard
	Sc	45	44985.0	2.4				ug/L	41174	Standard
	Ti	47	18604.1	2.8	**52.8354**	1.232	2.3	ug/L	27	Standard
	V	51	86248.0	1.1	**9.5259**	0.091	1.0	ug/L	1434	Standard
	Cr	52	84116.5	1.2	**8.6708**	0.090	1.0	ug/L	7733	Standard
	Cr	53	9486.3	1.6	**8.2820**	0.108	1.3	ug/L	442	Standard
	Mn	55	1964825.3	2.7	**240.4380**	5.305	2.2	ug/L	723	Standard
	Co	59	30224.8	2.1	**3.6271**	0.056	1.5	ug/L	217	Standard
	Ni	60	18384.5	0.8	**8.0589**	0.068	0.8	ug/L	304	Standard
	Cu	65	28824.7	1.7	**13.0170**	0.152	1.2	ug/L	181	Standard
	Zn	66	125736.6	1.1	**94.9340**	0.526	0.6	ug/L	215	Standard
>	Ge	72	561947.7	0.6				ug/L	520809	Standard
	As	75	5595.8	2.2	**4.2465**	0.119	2.8	ug/L	-52	Standard
	Se	82	88.4	10.6	**0.5221**	0.073	13.9	ug/L	17	Standard
	Se-1	77	109.0	11.9	**0.4966**	0.134	27.0	ug/L	56	Standard
>	Ga	71	7550.2	3.3				mg/L	25	Standard
	Rb	85	65005.8	0.9				ug/L	28	Standard
	Y	89	541545.4	1.1				ug/L	447395	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	5215.9	1.9	**1.6229**	0.033	2.0	ug/L	113	Standard
	Ag	107	406.7	7.0	**0.0412**	0.004	9.1	ug/L	108	Standard
	Cd	111	829.8	3.4	**0.3418**	0.009	2.5	mg/L	3	Standard
	Cd	114	1989.6	6.7	**0.3333**	0.022	6.7	ug/L	20	Standard
>	In	115	655315.6	1.0				ug/L	625728	Standard
	Sn	118	1885.1	5.0	**0.1955**	0.016	8.1	ug/L	568	Standard
	Sb	123	963.7	16.2	**0.1445**	0.030	21.0	ug/L	612	Standard
	Ba	135	109632.3	1.8	**48.0987**	0.601	1.2	ug/L	21	Standard
	Ce	140	540393.1	1.7				ug/L	245	Standard
>	Tb	159	980324.3	0.6				ug/L	950397	Standard
	Ho	165	4750.7	4.0				ug/L	7	Standard
	Tl	203	1323.7	5.2	**0.1446**	0.008	5.6	ug/L	15	Standard
	Tl	205	1150.0	7.8	**0.1324**	0.010	7.6	ug/L	13	Standard
	Pb	206	276145.9	0.9	**48.0493**	0.456	0.9	ug/L	264	Standard
	Pb	207	230196.6	0.9	**44.1005**	0.476	1.1	ug/L	222	Standard
	Pb	208	1005008.2	0.4	**47.1436**	0.504	1.1	ug/L	959	Standard
	U	238	6299.6	1.7	**0.7703**	0.019	2.4	ug/L	9	Standard
>	Bi	209	560704.1	0.8				ug/L	552821	Standard

Sample ID: L1606145104
Report Date/Time: Friday, July 01, 2016 17:24:21
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	86.7	31.8	**0.0328**	0.031	93.1	mg/L	55	Standard
K	39	151.7	23.2	**0.4031**	0.135	33.6	mg/L	28	Standard
Ca	43	201.7	16.5	**14.3695**	3.198	22.3	mg/L	27	Standard
Fe	54	9525.1	4.7	**6.7386**	0.306	4.5	mg/L	147	Standard
Fe	57	2743.6	3.6	**6.9108**	0.154	2.2	mg/L	268	Standard
Sc-1	45	44985.0	2.4				mg/L	41174	Standard
Cl	35	83879.0	2.3				ug/L	69550	Standard
Kr	83	3.7	68.6				ug/L	1	Standard
Br	81	3460.4	7.8				ug/L	1950	Standard
P	31	24561.6	1.4				ug/L	21156	Standard
S	34	4369.0	1.4				ug/L	3419	Standard
Sr	88	116.7	25.8				ug/L	72	Standard
C	12	810.0	9.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	280.0	22.3				mg/L	17	Standard
Dy	164	8460.7	2.9				mg/L	16	Standard
Ho-1	165	4750.7	4.0				mg/L	7	Standard
Er	166	4977.5	6.3				mg/L	7	Standard
I	127	28665.4	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.870	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.899	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145104
Report Date/Time: Friday, July 01, 2016 17:24:21
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.729
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.426
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Friday, July 01, 2016 17:25:16
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76445.7	1.5				ug/L	76456	Standard
	Be	9	1478.4	3.1	**1.3014**	0.055	4.2	ug/L	20	Standard
	Al	27	1064223.2	1.9	**6.2082**	0.151	2.4	ug/L	1307	Standard
	Sc	45	47139.9	1.1				ug/L	41174	Standard
	Ti	47	53065.8	1.2	**150.6405**	1.848	1.2	ug/L	27	Standard
	V	51	112245.2	0.3	**12.4388**	0.221	1.8	ug/L	1434	Standard
	Cr	52	137183.3	1.2	**14.7291**	0.173	1.2	ug/L	7733	Standard
	Cr	53	16672.5	1.8	**14.8516**	0.459	3.1	ug/L	442	Standard
	Mn	55	332066.2	0.6	**40.4939**	0.573	1.4	ug/L	723	Standard
	Co	59	15191.9	1.6	**1.8061**	0.055	3.0	ug/L	217	Standard
	Ni	60	16308.4	0.5	**7.1212**	0.143	2.0	ug/L	304	Standard
	Cu	65	21255.2	1.0	**9.5654**	0.170	1.8	ug/L	181	Standard
	Zn	66	82188.0	0.4	**61.9044**	1.216	2.0	ug/L	215	Standard
>	Ge	72	562856.9	1.5				ug/L	520809	Standard
	As	75	14736.1	1.0	**11.0928**	0.282	2.5	ug/L	-52	Standard
	Se	82	116.4	6.1	**0.7268**	0.063	8.7	ug/L	17	Standard
	Se-1	77	132.3	7.3	**0.7485**	0.116	15.5	ug/L	56	Standard
>	Ga	71	12084.8	1.2				mg/L	25	Standard
	Rb	85	57895.4	0.4				ug/L	28	Standard
	Y	89	579341.1	3.7				ug/L	447395	Standard
>	Rh	103	25.0	52.9				ug/L	15	Standard
	Mo	98	3018.2	2.6	**0.9183**	0.011	1.2	ug/L	113	Standard
	Ag	107	450.3	2.5	**0.0464**	0.001	1.9	ug/L	108	Standard
	Cd	111	1161.6	1.5	**0.4742**	0.011	2.3	mg/L	3	Standard
	Cd	114	2894.3	3.4	**0.4797**	0.022	4.7	ug/L	20	Standard
>	In	115	662690.4	1.5				ug/L	625728	Standard
	Sn	118	2460.2	11.3	**0.2766**	0.040	14.4	ug/L	568	Standard
	Sb	123	1480.8	9.6	**0.2369**	0.027	11.6	ug/L	612	Standard
	Ba	135	103973.2	0.1	**45.1144**	0.613	1.4	ug/L	21	Standard
	Ce	140	278912.2	1.0				ug/L	245	Standard
>	Tb	159	988921.6	2.1				ug/L	950397	Standard
	Ho	165	6249.6	2.1				ug/L	7	Standard
	Tl	203	4793.4	0.3	**0.5229**	0.004	0.8	ug/L	15	Standard
	Tl	205	4507.3	1.9	**0.5447**	0.012	2.1	ug/L	13	Standard
	Pb	206	156846.0	1.0	**27.1285**	0.554	2.0	ug/L	264	Standard
	Pb	207	129940.5	0.3	**24.7412**	0.348	1.4	ug/L	222	Standard
	Pb	208	563558.5	1.1	**26.2711**	0.203	0.8	ug/L	959	Standard
	U	238	4562.4	2.7	**0.5547**	0.010	1.7	ug/L	9	Standard
>	Bi	209	563740.5	1.2				ug/L	552821	Standard

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 17:27:33
Page 1

Approved: July 02, 2016

Na	23	5.0	0.0	**13.0402**	0.148	1.1	mg/L	2	Standard
Mg	24	245.0	9.4	**0.1897**	0.021	11.0	mg/L	55	Standard
K	39	223.3	12.3	**0.6174**	0.098	15.9	mg/L	28	Standard
Ca	43	61.7	26.1	**2.4323**	1.213	49.9	mg/L	27	Standard
Fe	54	13777.8	1.0	**9.3394**	0.181	1.9	mg/L	147	Standard
Fe	57	3655.4	2.7	**9.0074**	0.309	3.4	mg/L	268	Standard
Sc-1	45	47139.9	1.1				mg/L	41174	Standard
Cl	35	79351.4	2.7				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3307.0	6.7				ug/L	1950	Standard
P	31	25337.8	0.8				ug/L	21156	Standard
S	34	3845.5	8.8				ug/L	3419	Standard
Sr	88	98.3	15.5				ug/L	72	Standard
C	12	523.3	19.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	236.7	19.1				mg/L	17	Standard
Dy	164	9446.5	2.6				mg/L	16	Standard
Ho-1	165	6249.6	2.1				mg/L	7	Standard
Er	166	6261.3	4.0				mg/L	7	Standard
I	127	33405.2	4.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.987	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.073	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 17:27:33
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145106 WG574521-02
Sample Date/Time: Friday, July 01, 2016 17:28:27
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77424.0	1.4				ug/L	76456	Standard
	Be	9	1420.1	5.3	1.2334	0.078	6.4	ug/L	20	Standard
	Al	27	3898597.3	2.1	22.4779	0.265	1.2	ug/L	1307	Standard
	Sc	45	51348.6	3.6				ug/L	41174	Standard
	Ti	47	30144.6	2.1	85.8695	0.856	1.0	ug/L	27	Standard
	V	51	531061.4	1.0	59.8240	0.037	0.1	ug/L	1434	Standard
	Cr	52	163422.1	1.8	17.8054	0.173	1.0	ug/L	7733	Standard
	Cr	53	19674.4	1.7	17.6680	0.130	0.7	ug/L	442	Standard
	Mn	55	2218244.0	2.3	272.1177	3.374	1.2	ug/L	723	Standard
	Co	59	32222.6	2.7	3.8780	0.063	1.6	ug/L	217	Standard
	Ni	60	47836.8	2.1	21.2646	0.223	1.0	ug/L	304	Standard
	Cu	65	112081.4	1.4	50.9532	0.215	0.4	ug/L	181	Standard
	Zn	66	110645.9	1.3	83.7216	0.252	0.3	ug/L	215	Standard
>	Ge	72	560589.7	1.1				ug/L	520809	Standard
	As	75	18364.3	1.7	13.8646	0.106	0.8	ug/L	-52	Standard
	Se	82	562.0	1.7	4.0067	0.091	2.3	ug/L	17	Standard
	Se-1	77	479.0	3.5	4.5225	0.226	5.0	ug/L	56	Standard
>	Ga	71	14325.1	2.5				mg/L	25	Standard
	Rb	85	53934.2	0.6				ug/L	28	Standard
	Y	89	962525.9	0.6				ug/L	447395	Standard
>	Rh	103	61.7	4.7				ug/L	15	Standard
	Mo	98	10152.0	1.8	3.1844	0.030	1.0	ug/L	113	Standard
	Ag	107	989.4	6.5	0.1188	0.009	7.5	ug/L	108	Standard
	Cd	111	5112.5	1.5	2.1203	0.021	1.0	mg/L	3	Standard
	Cd	114	12820.7	1.5	2.1502	0.050	2.3	ug/L	20	Standard
>	In	115	654652.2	1.1				ug/L	625728	Standard
	Sn	118	1108.4	23.7	0.0806	0.040	50.1	ug/L	568	Standard
	Sb	123	662.0	36.0	0.0890	0.045	50.9	ug/L	612	Standard
	Ba	135	290178.7	0.4	127.4785	1.030	0.8	ug/L	21	Standard
	Ce	140	1471841.9	0.9				ug/L	245	Standard
>	Tb	159	1014801.8	1.4				ug/L	950397	Standard
	Ho	165	35576.7	1.0				ug/L	7	Standard
	Tl	203	2282.2	3.2	0.2479	0.009	3.5	ug/L	15	Standard
	Tl	205	2125.1	5.8	0.2510	0.016	6.2	ug/L	13	Standard
	Pb	206	184986.8	1.0	31.9104	0.323	1.0	ug/L	264	Standard
	Pb	207	153794.0	1.0	29.2069	0.234	0.8	ug/L	222	Standard
	Pb	208	672139.8	1.3	31.2540	0.308	1.0	ug/L	959	Standard
	U	238	23718.9	1.7	2.8769	0.043	1.5	ug/L	9	Standard
>	Bi	209	565303.0	0.3				ug/L	552821	Standard

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 17:30:44
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**12.1905**	12.475	102.3	mg/L	2	Standard
Mg	24	515.0	7.3	**0.4218**	0.020	4.8	mg/L	55	Standard
K	39	145.0	15.8	**0.3133**	0.055	17.6	mg/L	28	Standard
Ca	43	251.7	14.6	**15.9361**	3.051	19.1	mg/L	27	Standard
Fe	54	21541.2	1.4	**13.4547**	0.377	2.8	mg/L	147	Standard
Fe	57	6066.2	2.9	**14.1508**	0.552	3.9	mg/L	268	Standard
Sc-1	45	51348.6	3.6				mg/L	41174	Standard
Cl	35	83904.4	2.5				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	7455.2	1.0				ug/L	1950	Standard
P	31	24167.7	6.9				ug/L	21156	Standard
S	34	4078.9	4.5				ug/L	3419	Standard
Sr	88	178.3	24.5				ug/L	72	Standard
C	12	1733.4	9.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	446.7	14.4				mg/L	17	Standard
Dy	164	52369.2	4.0				mg/L	16	Standard
Ho-1	165	35576.7	1.0				mg/L	7	Standard
Er	166	35010.4	0.8				mg/L	7	Standard
I	127	69199.4	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.266	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.638	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 17:30:44
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.623
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.258
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 17:30:44
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Friday, July 01, 2016 17:31:39
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77976.9	3.0				ug/L	76456	Standard
	Be	9	4238.9	1.2	**3.6947**	0.093	2.5	ug/L	20	Standard
	Al	27	6498898.5	1.0	**37.2377**	1.289	3.5	ug/L	1307	Standard
	Sc	45	49464.0	2.1				ug/L	41174	Standard
	Ti	47	128073.0	0.5	**363.1539**	6.490	1.8	ug/L	27	Standard
	V	51	349457.1	2.0	**39.0869**	1.161	3.0	ug/L	1434	Standard
	Cr	52	339178.2	1.4	**37.7839**	0.334	0.9	ug/L	7733	Standard
	Cr	53	41896.2	0.9	**37.8898**	0.902	2.4	ug/L	442	Standard
	Mn	55	1606512.7	1.3	**195.9725**	1.717	0.9	ug/L	723	Standard
	Co	59	54787.2	1.9	**6.5778**	0.027	0.4	ug/L	217	Standard
	Ni	60	49280.4	1.6	**21.7906**	0.290	1.3	ug/L	304	Standard
	Cu	65	58505.7	1.0	**26.4179**	0.486	1.8	ug/L	181	Standard
	Zn	66	199363.7	0.4	**150.1818**	2.763	1.8	ug/L	215	Standard
>	Ge	72	563783.0	2.2				ug/L	520809	Standard
	As	75	72841.2	1.2	**54.5595**	0.676	1.2	ug/L	-52	Standard
	Se	82	260.0	4.3	**1.7742**	0.048	2.7	ug/L	17	Standard
	Se-1	77	240.0	3.1	**1.9101**	0.113	5.9	ug/L	56	Standard
>	Ga	71	27433.2	2.3				mg/L	25	Standard
	Rb	85	214873.2	1.9				ug/L	28	Standard
	Y	89	688224.7	2.2				ug/L	447395	Standard
>	Rh	103	50.0	34.6				ug/L	15	Standard
	Mo	98	15750.9	1.3	**5.0545**	0.122	2.4	ug/L	113	Standard
	Ag	107	1137.7	4.6	**0.1417**	0.010	7.3	ug/L	108	Standard
	Cd	111	4595.8	1.9	**1.9447**	0.072	3.7	mg/L	3	Standard
	Cd	114	11753.0	1.4	**2.0112**	0.076	3.8	ug/L	20	Standard
>	In	115	641892.6	2.4				ug/L	625728	Standard
	Sn	118	2545.2	5.6	**0.3012**	0.016	5.3	ug/L	568	Standard
	Sb	123	1737.1	5.6	**0.2941**	0.021	7.1	ug/L	612	Standard
	Ba	135	236984.3	0.4	**106.2043**	2.197	2.1	ug/L	21	Standard
	Ce	140	773385.4	0.4				ug/L	245	Standard
>	Tb	159	984938.0	3.6				ug/L	950397	Standard
	Ho	165	16265.4	1.5				ug/L	7	Standard
	Tl	203	22667.3	0.8	**2.5566**	0.057	2.2	ug/L	15	Standard
	Tl	205	20584.0	2.7	**2.6047**	0.030	1.2	ug/L	13	Standard
	Pb	206	321586.0	1.4	**57.4914**	1.247	2.2	ug/L	264	Standard
	Pb	207	267373.6	0.8	**52.6407**	1.680	3.2	ug/L	222	Standard
	Pb	208	1175990.0	0.9	**56.6808**	1.299	2.3	ug/L	959	Standard
	U	238	16091.9	1.2	**2.0215**	0.038	1.9	ug/L	9	Standard
>	Bi	209	546013.7	3.1				ug/L	552821	Standard

Sample ID: L1606145107
Report Date/Time: Friday, July 01, 2016 17:33:56
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**8.3896**	14.523	173.1	mg/L	2	Standard
Mg	24	313.3	12.2	**0.2450**	0.042	17.2	mg/L	55	Standard
K	39	578.3	4.1	**1.7142**	0.039	2.3	mg/L	28	Standard
Ca	43	190.0	22.5	**11.8882**	2.994	25.2	mg/L	27	Standard
Fe	54	47361.4	0.7	**30.8245**	0.629	2.0	mg/L	147	Standard
Fe	57	12388.4	2.6	**30.8824**	0.658	2.1	mg/L	268	Standard
> **Sc-1**	45	49464.0	2.1				mg/L	41174	Standard
Cl	35	79796.9	1.5				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	3437.1	6.8				ug/L	1950	Standard
P	31	26398.0	3.4				ug/L	21156	Standard
S	34	4072.2	2.6				ug/L	3419	Standard
Sr	88	165.0	6.1				ug/L	72	Standard
C	12	630.0	4.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	340.0	26.1				mg/L	17	Standard
Dy	164	25210.3	0.7				mg/L	16	Standard
Ho-1	165	16265.4	1.5				mg/L	7	Standard
Er	166	15487.9	0.9				mg/L	7	Standard
I	127	25923.8	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.990	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.251	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145107
Report Date/Time: Friday, July 01, 2016 17:33:56
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.583	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.769	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Approved: July 02, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Friday, July 01, 2016 17:34:50
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78296.8	0.6				ug/L	76456	Standard
	Be	9	5035.8	1.1	**4.3730**	0.045	1.0	ug/L	20	Standard
	Al	27	8296103.3	2.9	**47.3081**	1.104	2.3	ug/L	1307	Standard
	Sc	45	51448.9	3.1				ug/L	41174	Standard
	Ti	47	143723.1	0.7	**413.9468**	6.279	1.5	ug/L	27	Standard
	V	51	366509.9	0.1	**41.6481**	0.419	1.0	ug/L	1434	Standard
	Cr	52	544163.4	1.5	**62.1923**	1.314	2.1	ug/L	7733	Standard
	Cr	53	66433.7	1.1	**61.2720**	0.593	1.0	ug/L	442	Standard
	Mn	55	1841665.0	0.6	**228.2274**	2.393	1.0	ug/L	723	Standard
	Co	59	60732.8	1.2	**7.4113**	0.113	1.5	ug/L	217	Standard
	Ni	60	55300.1	1.5	**24.8624**	0.580	2.3	ug/L	304	Standard
	Cu	65	53837.8	1.0	**24.6886**	0.479	1.9	ug/L	181	Standard
	Zn	66	206840.0	0.6	**158.2701**	2.252	1.4	ug/L	215	Standard
>	Ge	72	554963.2	0.9				ug/L	520809	Standard
	As	75	66893.4	0.9	**50.8958**	0.201	0.4	ug/L	-52	Standard
	Se	82	248.2	6.5	**1.7168**	0.104	6.0	ug/L	17	Standard
	Se-1	77	241.0	3.2	**1.9609**	0.071	3.6	ug/L	56	Standard
>	Ga	71	28399.9	2.1				mg/L	25	Standard
	Rb	85	238607.6	1.1				ug/L	28	Standard
	Y	89	727081.9	1.3				ug/L	447395	Standard
>	Rh	103	48.3	48.9				ug/L	15	Standard
	Mo	98	16138.3	0.6	**5.1475**	0.088	1.7	ug/L	113	Standard
	Ag	107	1178.0	3.1	**0.1461**	0.006	4.0	ug/L	108	Standard
	Cd	111	4690.3	1.4	**1.9722**	0.048	2.4	mg/L	3	Standard
	Cd	114	11637.8	1.7	**1.9789**	0.055	2.8	ug/L	20	Standard
>	In	115	645732.9	1.1				ug/L	625728	Standard
	Sn	118	2240.2	14.5	**0.2530**	0.048	19.0	ug/L	568	Standard
	Sb	123	1441.2	4.7	**0.2365**	0.011	4.5	ug/L	612	Standard
	Ba	135	274841.1	0.7	**122.4109**	1.640	1.3	ug/L	21	Standard
	Ce	140	887134.9	0.7				ug/L	245	Standard
>	Tb	159	985869.5	0.8				ug/L	950397	Standard
	Ho	165	18397.8	1.0				ug/L	7	Standard
	Tl	203	22726.7	1.1	**2.5470**	0.017	0.7	ug/L	15	Standard
	Tl	205	20669.1	0.8	**2.5996**	0.009	0.3	ug/L	13	Standard
	Pb	206	304509.2	0.5	**54.0918**	0.193	0.4	ug/L	264	Standard
	Pb	207	255448.0	0.1	**49.9624**	0.361	0.7	ug/L	222	Standard
	Pb	208	1107233.4	0.4	**53.0246**	0.467	0.9	ug/L	959	Standard
	U	238	17326.6	1.5	**2.1631**	0.047	2.2	ug/L	9	Standard
>	Bi	209	549274.6	0.7				ug/L	552821	Standard

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 17:37:07
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**8.1301**	14.073	173.1	mg/L	2	Standard
Mg	24	360.0	2.4	**0.2767**	0.016	5.7	mg/L	55	Standard
K	39	590.0	10.2	**1.6839**	0.234	13.9	mg/L	28	Standard
Ca	43	221.7	16.9	**13.7026**	2.998	21.9	mg/L	27	Standard
Fe	54	51880.7	2.5	**32.4850**	1.445	4.4	mg/L	147	Standard
Fe	57	13546.1	1.6	**32.5153**	0.491	1.5	mg/L	268	Standard
Sc-1	45	51448.9	3.1				mg/L	41174	Standard
Cl	35	79311.7	1.5				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	2893.6	2.1				ug/L	1950	Standard
P	31	26569.9	1.7				ug/L	21156	Standard
S	34	4178.9	3.2				ug/L	3419	Standard
Sr	88	200.0	24.6				ug/L	72	Standard
C	12	570.0	12.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	283.3	10.2				mg/L	17	Standard
Dy	164	28615.4	0.7				mg/L	16	Standard
Ho-1	165	18397.8	1.0				mg/L	7	Standard
Er	166	17950.6	1.5				mg/L	7	Standard
I	127	24543.2	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.408	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.558	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 17:37:07
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.197	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.359	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 17:37:07
Page 3

Approved: July 02, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145109S WG574521-07
Sample Date/Time: Friday, July 01, 2016 17:38:02
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77300.2	4.1				ug/L	76456	Standard
	Be	9	31013.4	0.9	**27.4058**	0.869	3.2	ug/L	20	Standard
	Al	27	4089154.1	3.2	**23.6238**	0.470	2.0	ug/L	1307	Standard
	Sc	45	51686.4	2.6				ug/L	41174	Standard
	Ti	47	34757.2	1.7	**100.2574**	1.039	1.0	ug/L	27	Standard
	V	51	798652.3	3.3	**91.1648**	1.278	1.4	ug/L	1434	Standard
	Cr	52	383358.6	3.0	**43.6124**	0.316	0.7	ug/L	7733	Standard
	Cr	53	46656.8	2.4	**42.9982**	0.311	0.7	ug/L	442	Standard
	Mn	55	2313030.1	2.9	**287.2366**	2.286	0.8	ug/L	723	Standard
	Co	59	229099.5	3.1	**28.0933**	0.227	0.8	ug/L	217	Standard
	Ni	60	103411.0	3.4	**46.7113**	0.544	1.2	ug/L	304	Standard
	Cu	65	167787.3	3.4	**77.2413**	0.870	1.1	ug/L	181	Standard
	Zn	66	148653.6	2.3	**113.9303**	0.817	0.7	ug/L	215	Standard
>	Ge	72	553789.9	2.3				ug/L	520809	Standard
	As	75	50674.7	3.7	**38.6402**	0.614	1.6	ug/L	-52	Standard
	Se	82	4006.1	3.7	**29.6916**	0.620	2.1	ug/L	17	Standard
	Se-1	77	2822.3	6.3	**30.3505**	1.406	4.6	ug/L	56	Standard
>	Ga	71	15926.7	1.8				mg/L	25	Standard
	Rb	85	61213.5	2.5				ug/L	28	Standard
	Y	89	995780.9	3.8				ug/L	447395	Standard
>	Rh	103	80.0	39.0				ug/L	15	Standard
	Mo	98	11202.2	1.3	**3.5351**	0.100	2.8	ug/L	113	Standard
	Ag	107	172476.6	3.4	**23.0491**	0.075	0.3	ug/L	108	Standard
	Cd	111	62525.5	2.9	**26.0819**	0.217	0.8	mg/L	3	Standard
	Cd	114	155090.1	3.1	**26.1298**	0.108	0.4	ug/L	20	Standard
>	In	115	651612.6	3.5				ug/L	625728	Standard
	Sn	118	1198.4	14.3	**0.0953**	0.032	33.2	ug/L	568	Standard
	Sb	123	13746.3	2.5	**2.5212**	0.035	1.4	ug/L	612	Standard
	Ba	135	355128.0	2.7	**156.7604**	1.139	0.7	ug/L	21	Standard
	Ce	140	1618154.9	2.5				ug/L	245	Standard
>	Tb	159	1001149.2	2.4				ug/L	950397	Standard
	Ho	165	38079.5	2.2				ug/L	7	Standard
	Tl	203	217506.4	3.1	**24.1924**	0.167	0.7	ug/L	15	Standard
	Tl	205	199413.9	1.5	**24.9766**	0.301	1.2	ug/L	13	Standard
	Pb	206	340199.5	1.6	**59.9805**	0.583	1.0	ug/L	264	Standard
	Pb	207	287102.8	2.6	**55.7262**	0.520	0.9	ug/L	222	Standard
	Pb	208	1239148.8	1.7	**58.8977**	0.622	1.1	ug/L	959	Standard
	U	238	215333.8	2.0	**26.6800**	0.294	1.1	ug/L	9	Standard
>	Bi	209	553529.4	2.5				ug/L	552821	Standard

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 17:40:19
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**8.0461**	6.964	86.6	mg/L	2	Standard
Mg	24	420.0	23.2	**0.3305**	0.090	27.3	mg/L	55	Standard
K	39	140.0	12.9	**0.2971**	0.061	20.5	mg/L	28	Standard
Ca	43	243.3	22.2	**15.1089**	3.441	22.8	mg/L	27	Standard
Fe	54	22645.6	2.0	**14.0499**	0.221	1.6	mg/L	147	Standard
Fe	57	6007.9	4.3	**13.9009**	0.509	3.7	mg/L	268	Standard
Sc-1	45	51686.4	2.6				mg/L	41174	Standard
Cl	35	80429.2	4.3				ug/L	69550	Standard
Kr	83	2.7	86.6				ug/L	1	Standard
Br	81	13772.9	3.0				ug/L	1950	Standard
P	31	24882.1	4.1				ug/L	21156	Standard
S	34	3928.8	5.2				ug/L	3419	Standard
Sr	88	231.7	13.2				ug/L	72	Standard
C	12	2016.8	5.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	526.7	13.7				mg/L	17	Standard
Dy	164	57272.5	3.0				mg/L	16	Standard
Ho-1	165	38079.5	2.2				mg/L	7	Standard
Er	166	36791.3	0.3				mg/L	7	Standard
I	127	68461.0	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.105	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.333	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 17:40:19
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.128
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 17:40:19
Page 3

Approved: July 02, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145110SD WG574521-08
Sample Date/Time: Friday, July 01, 2016 17:41:13
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75000.2	2.3				ug/L	76456	Standard
	Be	9	30976.6	1.7	**28.1959**	0.613	2.2	ug/L	20	Standard
	Al	27	3439220.2	1.5	**20.4763**	0.514	2.5	ug/L	1307	Standard
	Sc	45	50167.9	0.3				ug/L	41174	Standard
	Ti	47	20331.3	1.6	**60.1182**	0.386	0.6	ug/L	27	Standard
	V	51	735011.2	1.2	**86.0697**	0.811	0.9	ug/L	1434	Standard
	Cr	52	348065.1	1.5	**40.5590**	0.525	1.3	ug/L	7733	Standard
	Cr	53	41963.1	3.7	**39.6270**	0.656	1.7	ug/L	442	Standard
	Mn	55	2126490.8	1.0	**270.9327**	3.985	1.5	ug/L	723	Standard
	Co	59	224148.6	1.1	**28.2013**	0.328	1.2	ug/L	217	Standard
	Ni	60	97510.5	1.6	**45.1854**	0.391	0.9	ug/L	304	Standard
	Cu	65	159657.8	0.8	**75.4140**	0.961	1.3	ug/L	181	Standard
	Zn	66	122702.2	1.2	**96.4430**	0.853	0.9	ug/L	215	Standard
>	Ge	72	539893.8	2.0				ug/L	520809	Standard
	As	75	43731.6	1.5	**34.2188**	0.207	0.6	ug/L	-52	Standard
	Se	82	3851.1	1.9	**29.2807**	0.182	0.6	ug/L	17	Standard
	Se-1	77	2693.2	3.6	**29.7006**	0.473	1.6	ug/L	56	Standard
>	Ga	71	10877.2	4.3				mg/L	25	Standard
	Rb	85	26646.7	1.9				ug/L	28	Standard
	Y	89	984741.5	1.3				ug/L	447395	Standard
>	Rh	103	75.0	23.1				ug/L	15	Standard
	Mo	98	12396.0	1.1	**4.0096**	0.009	0.2	ug/L	113	Standard
	Ag	107	167394.8	1.6	**22.9251**	0.326	1.4	ug/L	108	Standard
	Cd	111	61689.6	0.9	**26.3685**	0.182	0.7	mg/L	3	Standard
	Cd	114	150249.5	3.1	**25.9377**	0.589	2.3	ug/L	20	Standard
>	In	115	635843.6	1.2				ug/L	625728	Standard
	Sn	118	1905.1	12.7	**0.2074**	0.041	19.5	ug/L	568	Standard
	Sb	123	35922.0	1.1	**6.8066**	0.045	0.7	ug/L	612	Standard
	Ba	135	328480.5	1.3	**148.5677**	0.342	0.2	ug/L	21	Standard
	Ce	140	1483643.4	1.0				ug/L	245	Standard
>	Tb	159	980223.1	1.4				ug/L	950397	Standard
	Ho	165	36555.7	1.5				ug/L	7	Standard
	Tl	203	214476.5	1.2	**24.1754**	0.120	0.5	ug/L	15	Standard
	Tl	205	195033.9	0.4	**24.7497**	0.108	0.4	ug/L	13	Standard
	Pb	206	331178.4	0.7	**59.1601**	0.433	0.7	ug/L	264	Standard
	Pb	207	281134.0	0.6	**55.2947**	0.155	0.3	ug/L	222	Standard
	Pb	208	1213063.3	0.7	**58.4179**	0.082	0.1	ug/L	959	Standard
	U	238	215012.5	0.4	**26.9929**	0.177	0.7	ug/L	9	Standard
>	Bi	209	546245.7	0.8				ug/L	552821	Standard

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 17:43:30
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	401.7	8.7	**0.3249**	0.034	10.5	mg/L	55	Standard
K	39	65.0	53.8	**0.0732**	0.110	149.7	mg/L	28	Standard
Ca	43	258.3	8.9	**16.8169**	1.773	10.5	mg/L	27	Standard
Fe	54	18860.0	1.9	**12.0398**	0.263	2.2	mg/L	147	Standard
Fe	57	5239.2	5.1	**12.4090**	0.703	5.7	mg/L	268	Standard
> **Sc-1**	45	50167.9	0.3				mg/L	41174	Standard
Cl	35	77473.7	3.0				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	7528.5	1.9				ug/L	1950	Standard
P	31	23025.8	3.4				ug/L	21156	Standard
S	34	3772.1	4.4				ug/L	3419	Standard
Sr	88	236.7	6.8				ug/L	72	Standard
C	12	2743.6	3.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	510.0	3.4				mg/L	17	Standard
Dy	164	54236.1	2.2				mg/L	16	Standard
Ho-1	165	36555.7	1.5				mg/L	7	Standard
Er	166	36333.5	1.9				mg/L	7	Standard
I	127	50945.5	2.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.664	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 17:43:30
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.617	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.811	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 17:43:30
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144501
Sample Date/Time: Friday, July 01, 2016 17:44:25
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75614.9	1.3				ug/L	76456	Standard
	Be	9	616.7	9.4	**0.5370**	0.050	9.3	ug/L	20	Standard
	Al	27	13167988.3	1.5	**77.7749**	1.539	2.0	ug/L	1307	Standard
	Sc	45	44936.5	0.9				ug/L	41174	Standard
	Ti	47	2539.2	1.9	**7.5419**	0.159	2.1	ug/L	27	Standard
	V	51	86547.1	1.5	**10.1041**	0.180	1.8	ug/L	1434	Standard
	Cr	52	60907.8	0.8	**6.4000**	0.028	0.4	ug/L	7733	Standard
	Cr	53	7250.1	1.9	**6.6027**	0.158	2.4	ug/L	442	Standard
	Mn	55	1905061.9	1.8	**246.1332**	2.751	1.1	ug/L	723	Standard
	Co	59	36801.3	0.6	**4.6715**	0.060	1.3	ug/L	217	Standard
	Ni	60	21869.8	1.0	**10.1605**	0.108	1.1	ug/L	304	Standard
	Cu	65	17811.5	0.6	**8.4670**	0.104	1.2	ug/L	181	Standard
	Zn	66	27607.8	0.3	**21.8690**	0.071	0.3	ug/L	215	Standard
>	Ge	72	532269.5	0.7				ug/L	520809	Standard
	As	75	3673.7	1.1	**2.9570**	0.036	1.2	ug/L	-52	Standard
	Se	82	41.1	14.0	**0.1921**	0.043	22.6	ug/L	17	Standard
	Se-1	77	92.7	12.4	**0.3761**	0.133	35.3	ug/L	56	Standard
>	Ga	71	8445.7	4.3				mg/L	25	Standard
	Rb	85	79397.5	0.6				ug/L	28	Standard
	Y	89	617711.9	0.3				ug/L	447395	Standard
>	Rh	103	20.0	50.0				ug/L	15	Standard
	Mo	98	513.2	4.5	**0.1463**	0.008	5.2	ug/L	113	Standard
	Ag	107	411.0	5.4	**0.0445**	0.003	7.0	ug/L	108	Standard
	Cd	111	224.8	17.0	**0.0956**	0.017	17.3	mg/L	3	Standard
	Cd	114	528.5	15.3	**0.0930**	0.014	15.2	ug/L	20	Standard
>	In	115	623854.0	0.2				ug/L	625728	Standard
	Sn	118	1113.4	15.3	**0.0893**	0.027	30.1	ug/L	568	Standard
	Sb	123	402.5	19.7	**0.0444**	0.016	34.9	ug/L	612	Standard
	Ba	135	200643.8	0.9	**92.4876**	1.043	1.1	ug/L	21	Standard
	Ce	140	742147.0	0.8				ug/L	245	Standard
>	Tb	159	959744.7	0.8				ug/L	950397	Standard
	Ho	165	13928.1	1.6				ug/L	7	Standard
	Tl	203	447.0	8.8	**0.0505**	0.005	9.0	ug/L	15	Standard
	Tl	205	406.7	11.9	**0.0427**	0.006	14.6	ug/L	13	Standard
	Pb	206	40310.6	0.6	**7.2786**	0.040	0.5	ug/L	264	Standard
	Pb	207	33326.3	0.4	**6.6200**	0.027	0.4	ug/L	222	Standard
	Pb	208	145576.7	0.6	**7.0813**	0.040	0.6	ug/L	959	Standard
	U	238	2828.3	0.6	**0.3605**	0.002	0.6	ug/L	9	Standard
>	Bi	209	537569.5	0.1				ug/L	552821	Standard

Sample ID: L1606144501
Report Date/Time: Friday, July 01, 2016 17:46:42
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.1104**	7.886	86.6	mg/L	2	Standard
Mg	24	76.7	7.5	**0.0219**	0.006	26.1	mg/L	55	Standard
K	39	218.3	9.5	**0.6363**	0.080	12.5	mg/L	28	Standard
Ca	43	151.7	22.0	**10.1772**	2.793	27.4	mg/L	27	Standard
Fe	54	7340.4	3.8	**5.1756**	0.204	3.9	mg/L	147	Standard
Fe	57	2196.8	7.0	**5.3817**	0.451	8.4	mg/L	268	Standard
Sc-1	45	44936.5	0.9				mg/L	41174	Standard
Cl	35	75625.0	1.8				ug/L	69550	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	2456.9	6.6				ug/L	1950	Standard
P	31	22234.7	4.3				ug/L	21156	Standard
S	34	3950.5	4.3				ug/L	3419	Standard
Sr	88	111.7	18.1				ug/L	72	Standard
C	12	203.3	42.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	36.6				mg/L	17	Standard
Dy	164	23311.5	2.8				mg/L	16	Standard
Ho-1	165	13928.1	1.6				mg/L	7	Standard
Er	166	12401.8	5.5				mg/L	7	Standard
I	127	16120.2	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.900	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.200	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606144501
Report Date/Time: Friday, July 01, 2016 17:46:42
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.701
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.241
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606144501
Report Date/Time: Friday, July 01, 2016 17:46:42
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144502
Sample Date/Time: Friday, July 01, 2016 17:47:36
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80582.1	0.6				ug/L	76456	Standard
	Be	9	1050.0	6.5	**0.8699**	0.053	6.1	ug/L	20	Standard
	Al	27	10543226.3	2.9	**58.4275**	1.839	3.1	ug/L	1307	Standard
	Sc	45	50111.1	1.7				ug/L	41174	Standard
	Ti	47	7592.6	3.2	**21.5864**	0.745	3.5	ug/L	27	Standard
	V	51	232882.8	0.5	**26.1453**	0.088	0.3	ug/L	1434	Standard
	Cr	52	180590.6	0.7	**19.7971**	0.199	1.0	ug/L	7733	Standard
	Cr	53	21970.9	2.4	**19.7976**	0.515	2.6	ug/L	442	Standard
	Mn	55	4529682.0	0.5	**556.3104**	4.224	0.8	ug/L	723	Standard
	Co	59	72279.7	0.5	**8.7442**	0.060	0.7	ug/L	217	Standard
	Ni	60	42964.2	0.1	**19.1012**	0.022	0.1	ug/L	304	Standard
	Cu	65	47497.7	0.8	**21.5696**	0.226	1.0	ug/L	181	Standard
	Zn	66	105865.9	1.3	**80.1698**	1.221	1.5	ug/L	215	Standard
>	Ge	72	560104.1	0.3				ug/L	520809	Standard
	As	75	7808.3	0.8	**5.9264**	0.056	0.9	ug/L	-52	Standard
	Se	82	138.7	8.9	**0.8941**	0.089	9.9	ug/L	17	Standard
	Se-1	77	161.0	3.3	**1.0667**	0.061	5.7	ug/L	56	Standard
>	Ga	71	24149.2	0.8				mg/L	25	Standard
	Rb	85	233795.1	1.1				ug/L	28	Standard
	Y	89	725001.6	1.1				ug/L	447395	Standard
>	Rh	103	41.7	18.3				ug/L	15	Standard
	Mo	98	1317.7	5.6	**0.3993**	0.019	4.9	ug/L	113	Standard
	Ag	107	864.0	1.1	**0.1041**	0.002	2.4	ug/L	108	Standard
	Cd	111	1117.0	0.9	**0.4692**	0.009	1.8	mg/L	3	Standard
	Cd	114	2788.0	2.8	**0.4754**	0.015	3.1	ug/L	20	Standard
>	In	115	643922.1	1.0				ug/L	625728	Standard
	Sn	118	2010.1	12.1	**0.2191**	0.034	15.5	ug/L	568	Standard
	Sb	123	437.2	13.5	**0.0484**	0.010	21.4	ug/L	612	Standard
	Ba	135	1679042.7	0.5	**749.9950**	6.832	0.9	ug/L	21	Standard
	Ce	140	1471540.7	0.8				ug/L	245	Standard
>	Tb	159	984687.8	0.7				ug/L	950397	Standard
	Ho	165	20360.3	1.4				ug/L	7	Standard
	Tl	203	1212.7	2.5	**0.1370**	0.004	2.6	ug/L	15	Standard
	Tl	205	1158.4	9.0	**0.1384**	0.013	9.2	ug/L	13	Standard
	Pb	206	419173.3	0.5	**75.4515**	0.814	1.1	ug/L	264	Standard
	Pb	207	344138.4	0.6	**68.2056**	0.866	1.3	ug/L	222	Standard
	Pb	208	1506247.3	0.9	**73.0918**	0.807	1.1	ug/L	959	Standard
	U	238	5748.4	0.4	**0.7268**	0.007	1.0	ug/L	9	Standard
>	Bi	209	542199.4	0.6				ug/L	552821	Standard

Sample ID: L1606144502
Report Date/Time: Friday, July 01, 2016 17:49:53
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	146.7	3.9	**0.0806**	0.004	4.7	mg/L	55	Standard
K	39	706.7	5.1	**2.0968**	0.148	7.0	mg/L	28	Standard
Ca	43	91.7	22.0	**4.4031**	1.569	35.6	mg/L	27	Standard
Fe	54	24940.6	4.4	**15.9770**	0.842	5.3	mg/L	147	Standard
Fe	57	6641.5	3.9	**15.9699**	0.826	5.2	mg/L	268	Standard
> **Sc-1**	45	50111.1	1.7				mg/L	41174	Standard
Cl	35	76057.1	1.3				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	3847.2	5.3				ug/L	1950	Standard
P	31	23633.4	0.7				ug/L	21156	Standard
S	34	3662.1	4.5				ug/L	3419	Standard
Sr	88	171.7	11.8				ug/L	72	Standard
C	12	470.0	20.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	233.3	19.3				mg/L	17	Standard
Dy	164	34433.8	0.7				mg/L	16	Standard
Ho-1	165	20360.3	1.4				mg/L	7	Standard
Er	166	19082.0	1.0				mg/L	7	Standard
I	127	32727.0	1.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.397	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.545	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144502
Report Date/Time: Friday, July 01, 2016 17:49:53
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.908
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 17:50:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75660.1	1.1				ug/L	76456	Standard
	Be	9	60406.9	2.0	**54.5087**	0.731	1.3	ug/L	20	Standard
	Al	27	8901183.3	0.4	**52.5361**	0.439	0.8	ug/L	1307	Standard
	Sc	45	43571.0	4.5				ug/L	41174	Standard
	Ti	47	34622.5	2.0	**98.8044**	2.139	2.2	ug/L	27	Standard
	V	51	445398.2	1.1	**50.2213**	0.481	1.0	ug/L	1434	Standard
	Cr	52	446008.3	0.3	**50.3583**	0.638	1.3	ug/L	7733	Standard
	Cr	53	54342.3	1.8	**49.6105**	0.179	0.4	ug/L	442	Standard
	Mn	55	412872.1	1.4	**50.6530**	0.943	1.9	ug/L	723	Standard
	Co	59	423920.9	1.9	**51.4674**	1.144	2.2	ug/L	217	Standard
	Ni	60	112641.5	1.2	**50.3629**	0.567	1.1	ug/L	304	Standard
	Cu	65	112208.4	1.7	**51.0893**	0.402	0.8	ug/L	181	Standard
	Zn	66	66744.0	0.4	**50.5145**	0.608	1.2	ug/L	215	Standard
>	**Ge**	72	559742.9	1.5				ug/L	520809	Standard
	As	75	66794.1	0.6	**50.3914**	0.530	1.1	ug/L	-52	Standard
	Se	82	6873.9	1.4	**50.5047**	0.860	1.7	ug/L	17	Standard
	Se-1	77	4690.7	2.0	**50.3684**	0.411	0.8	ug/L	56	Standard
>	**Ga**	71	70.0	37.1				mg/L	25	Standard
	Rb	85	931.7	8.4				ug/L	28	Standard
	Y	89	472026.6	0.3				ug/L	447395	Standard
>	**Rh**	103	31.7	32.9				ug/L	15	Standard
	Mo	98	318819.4	0.9	**100.5497**	0.545	0.5	ug/L	113	Standard
	Ag	107	375898.4	1.4	**49.9218**	0.531	1.1	ug/L	108	Standard
	Cd	111	121191.8	0.6	**50.2220**	0.334	0.7	mg/L	3	Standard
	Cd	114	302196.5	1.8	**50.5816**	0.945	1.9	ug/L	20	Standard
>	**In**	115	655853.7	0.4				ug/L	625728	Standard
	Sn	118	335213.1	1.5	**49.6075**	0.708	1.4	ug/L	568	Standard
	Sb	123	270386.5	1.1	**49.8811**	0.362	0.7	ug/L	612	Standard
	Ba	135	111336.6	0.9	**48.8080**	0.417	0.9	ug/L	21	Standard
	Ce	140	1411.7	25.7				ug/L	245	Standard
>	**Tb**	159	970990.0	1.2				ug/L	950397	Standard
	Ho	165	26.7	71.0				ug/L	7	Standard
	Tl	203	450496.8	1.2	**50.6789**	0.648	1.3	ug/L	15	Standard
	Tl	205	413746.4	0.4	**52.4089**	0.448	0.9	ug/L	13	Standard
	Pb	206	283628.8	0.6	**50.5558**	0.102	0.2	ug/L	264	Standard
	Pb	207	257451.9	0.7	**50.5301**	0.341	0.7	ug/L	222	Standard
	Pb	208	1074344.6	0.3	**51.6273**	0.180	0.3	ug/L	959	Standard
	U	238	402853.9	0.7	**50.4710**	0.276	0.5	ug/L	9	Standard
>	**Bi**	209	547356.6	0.6				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:53:06
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4665.7	4.0	**5.1012**	0.401	7.9	mg/L	55	Standard
K	39	1318.4	2.8	**4.6563**	0.350	7.5	mg/L	28	Standard
Ca	43	68.3	16.9	**3.4315**	1.098	32.0	mg/L	27	Standard
Fe	54	7100.4	2.7	**5.1707**	0.292	5.6	mg/L	147	Standard
Fe	57	2145.2	7.2	**5.4299**	0.465	8.6	mg/L	268	Standard
> **Sc-1**	45	43571.0	4.5				mg/L	41174	Standard
Cl	35	80089.1	0.5				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2080.1	5.8				ug/L	1950	Standard
P	31	24411.3	2.1				ug/L	21156	Standard
S	34	4227.3	2.4				ug/L	3419	Standard
Sr	88	76.7	45.8				ug/L	72	Standard
C	12	110.0	45.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	56.7				mg/L	17	Standard
Dy	164	54.4	29.0				mg/L	16	Standard
Ho-1	165	26.7	71.0				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	7	Standard
I	127	7775.3	3.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.017		
Al	27	105.072		
Sc	45			
Ti	47	98.804		
V	51	100.443		
Cr	52	100.717		
Cr	53			
Mn	55	101.306		
Co	59	102.935		
Ni	60	100.726		
Cu	65	102.179		
Zn	66	101.029		
> Ge	72		107.476	
As	75	100.783		
Se	82	101.009		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:53:06
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	100.550		
Ag	107	99.844		
Cd	111	100.444		
Cd	114			
> In	115			104.815
Sn	118	99.215		
Sb	123	99.762		
Ba	135	97.616		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.358		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.255		
U	238	100.942		
> Bi	209			99.012
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:53:06
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 17:54:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76125.8	1.7				ug/L	76456	Standard
	Be	9	28.3	40.8	**0.0054**	0.010	184.7	ug/L	20	Standard
	Al	27	3772.2	25.1	**0.0119**	0.005	45.3	ug/L	1307	Standard
	Sc	45	44115.8	1.5				ug/L	41174	Standard
	Ti	47	36.0	36.4	**0.0190**	0.038	200.0	ug/L	27	Standard
	V	51	1432.6	3.3	**-0.0355**	0.004	12.4	ug/L	1434	Standard
	Cr	52	7275.4	1.9	**-0.1286**	0.011	8.9	ug/L	7733	Standard
	Cr	53	543.3	3.8	**0.0861**	0.017	20.2	ug/L	442	Standard
	Mn	55	1260.1	9.4	**0.0544**	0.014	25.4	ug/L	723	Standard
	Co	59	264.3	9.7	**0.0028**	0.003	106.4	ug/L	217	Standard
	Ni	60	263.3	2.3	**-0.0344**	0.002	7.2	ug/L	304	Standard
	Cu	65	186.3	1.1	**0.0113**	0.000	4.4	ug/L	181	Standard
	Zn	66	283.0	3.7	**0.0359**	0.009	24.2	ug/L	215	Standard
>	Ge	72	556594.5	0.6				ug/L	520809	Standard
	As	75	-80.7	20.9	**-0.0160**	0.013	82.1	ug/L	-52	Standard
	Se	82	15.4	35.3	**-0.0124**	0.040	323.4	ug/L	17	Standard
	Se-1	77	60.3	15.0	**-0.0241**	0.101	419.2	ug/L	56	Standard
>	Ga	71	31.7	63.8				mg/L	25	Standard
	Rb	85	60.0					ug/L	28	Standard
	Y	89	477190.1	1.0				ug/L	447395	Standard
>	Rh	103	8.3	124.9				ug/L	15	Standard
	Mo	98	226.0	18.3	**0.0476**	0.013	27.7	ug/L	113	Standard
	Ag	107	150.7	15.9	**0.0072**	0.003	44.5	ug/L	108	Standard
	Cd	111	16.6	57.3	**0.0046**	0.004	86.9	mg/L	3	Standard
	Cd	114	59.8	49.5	**0.0101**	0.005	49.3	ug/L	20	Standard
>	In	115	653461.3	0.4				ug/L	625728	Standard
	Sn	118	1496.7	19.9	**0.1384**	0.044	31.8	ug/L	568	Standard
	Sb	123	746.4	28.2	**0.1046**	0.039	37.1	ug/L	612	Standard
	Ba	135	171.7	17.2	**0.0577**	0.013	22.8	ug/L	21	Standard
	Ce	140	668.3	13.8				ug/L	245	Standard
>	Tb	159	971042.5	0.5				ug/L	950397	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	88.3	25.2	**0.0090**	0.002	27.2	ug/L	15	Standard
	Tl	205	80.0	16.5	**0.0002**	0.002	912.8	ug/L	13	Standard
	Pb	206	378.0	7.1	**0.0223**	0.005	20.2	ug/L	264	Standard
	Pb	207	334.0	19.5	**0.0182**	0.012	68.6	ug/L	222	Standard
	Pb	208	1457.7	7.9	**0.0204**	0.005	25.7	ug/L	959	Standard
	U	238	80.3	16.8	**0.0096**	0.002	17.0	ug/L	9	Standard
>	Bi	209	558602.1	0.7				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:56:18
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	25.0	**0.0053**	0.017	313.2	mg/L	55	Standard
K	39	28.3	44.4	**-0.0302**	0.044	144.5	mg/L	28	Standard
Ca	43	16.7	75.5	**-1.0452**	1.061	101.5	mg/L	27	Standard
Fe	54	162.7	23.0	**0.0200**	0.026	130.3	mg/L	147	Standard
Fe	57	228.3	8.3	**-0.1492**	0.054	36.5	mg/L	268	Standard
> **Sc-1**	45	44115.8	1.5				mg/L	41174	Standard
Cl	35	79992.6	1.1				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2276.8	13.7				ug/L	1950	Standard
P	31	23509.9	2.2				ug/L	21156	Standard
S	34	4122.2	2.6				ug/L	3419	Standard
Sr	88	61.7	24.8				ug/L	72	Standard
C	12	93.3	16.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	60.0	16.7				mg/L	17	Standard
Dy	164	41.6	40.0				mg/L	16	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	36.7	83.3				mg/L	7	Standard
I	127	5142.5	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.871	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:56:18
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.432
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.046
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:56:18
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144503
Sample Date/Time: Friday, July 01, 2016 17:57:14
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81064.6	1.5				ug/L	76456	Standard
	Be	9	923.4	4.6	**0.7579**	0.026	3.5	ug/L	20	Standard
	Al	27	9265006.3	1.5	**51.0345**	0.228	0.4	ug/L	1307	Standard
	Sc	45	49278.4	2.1				ug/L	41174	Standard
	Ti	47	6532.7	0.9	**18.1480**	0.376	2.1	ug/L	27	Standard
	V	51	196838.4	1.2	**21.5756**	0.486	2.3	ug/L	1434	Standard
	Cr	52	144221.5	0.4	**15.2461**	0.132	0.9	ug/L	7733	Standard
	Cr	53	17702.0	4.1	**15.5134**	0.839	5.4	ug/L	442	Standard
	Mn	55	4322666.6	0.8	**519.0669**	3.003	0.6	ug/L	723	Standard
	Co	59	73004.8	0.8	**8.6351**	0.046	0.5	ug/L	217	Standard
	Ni	60	37595.6	1.2	**16.3200**	0.066	0.4	ug/L	304	Standard
	Cu	65	29226.2	0.6	**12.9475**	0.087	0.7	ug/L	181	Standard
	Zn	66	73620.1	0.4	**54.4550**	0.675	1.2	ug/L	215	Standard
>	Ge	72	572863.4	1.2				ug/L	520809	Standard
	As	75	5889.9	1.0	**4.3827**	0.015	0.3	ug/L	-52	Standard
	Se	82	131.9	5.2	**0.8223**	0.038	4.7	ug/L	17	Standard
	Se-1	77	184.3	3.7	**1.2757**	0.064	5.0	ug/L	56	Standard
>	Ga	71	19340.7	1.8				mg/L	25	Standard
	Rb	85	221404.3	0.5				ug/L	28	Standard
	Y	89	706877.6	0.9				ug/L	447395	Standard
>	Rh	103	30.0	72.6				ug/L	15	Standard
	Mo	98	2018.2	3.9	**0.6082**	0.025	4.1	ug/L	113	Standard
	Ag	107	770.7	2.0	**0.0888**	0.002	2.2	ug/L	108	Standard
	Cd	111	2871.4	1.3	**1.1792**	0.015	1.3	mg/L	3	Standard
	Cd	114	6981.1	2.4	**1.1603**	0.029	2.5	ug/L	20	Standard
>	In	115	660500.6	0.1				ug/L	625728	Standard
	Sn	118	1633.4	19.7	**0.1562**	0.047	30.4	ug/L	568	Standard
	Sb	123	766.2	17.6	**0.1067**	0.025	23.2	ug/L	612	Standard
	Ba	135	509530.1	0.7	**221.8605**	1.691	0.8	ug/L	21	Standard
	Ce	140	1234713.5	0.5				ug/L	245	Standard
>	Tb	159	1007837.3	0.4				ug/L	950397	Standard
	Ho	165	17965.6	2.4				ug/L	7	Standard
	Tl	203	1067.0	3.3	**0.1181**	0.003	2.2	ug/L	15	Standard
	Tl	205	1001.7	2.4	**0.1159**	0.004	3.7	ug/L	13	Standard
	Pb	206	195840.9	0.6	**34.5471**	0.280	0.8	ug/L	264	Standard
	Pb	207	161774.1	0.6	**31.4180**	0.202	0.6	ug/L	222	Standard
	Pb	208	705256.5	0.4	**33.5368**	0.236	0.7	ug/L	959	Standard
	U	238	5486.7	0.6	**0.6803**	0.004	0.5	ug/L	9	Standard
>	Bi	209	552878.3	1.1				ug/L	552821	Standard

Sample ID: L1606144503
Report Date/Time: Friday, July 01, 2016 17:59:31
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	775.0	0.6	**0.6965**	0.018	2.6	mg/L	55	Standard
K	39	456.7	20.3	**1.3315**	0.288	21.7	mg/L	28	Standard
Ca	43	66.7	11.5	**2.6050**	0.520	20.0	mg/L	27	Standard
Fe	54	19066.0	1.2	**12.3984**	0.367	3.0	mg/L	147	Standard
Fe	57	5245.9	1.7	**12.6645**	0.072	0.6	mg/L	268	Standard
> **Sc-1**	45	49278.4	2.1				mg/L	41174	Standard
Cl	35	75533.8	1.8				ug/L	69550	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	12581.9	2.8				ug/L	1950	Standard
P	31	23234.5	1.4				ug/L	21156	Standard
S	34	3415.4	8.9				ug/L	3419	Standard
Sr	88	155.0	8.5				ug/L	72	Standard
C	12	606.7	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	183.3	45.4				mg/L	17	Standard
Dy	164	30531.0	0.8				mg/L	16	Standard
Ho-1	165	17965.6	2.4				mg/L	7	Standard
Er	166	16101.9	2.4				mg/L	7	Standard
I	127	47399.3	7.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.028	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.995	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144503
Report Date/Time: Friday, July 01, 2016 17:59:31
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.557
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.010
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144503
Report Date/Time: Friday, July 01, 2016 17:59:31
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144507
Sample Date/Time: Friday, July 01, 2016 18:00:25
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81719.8	0.5				ug/L	76456	Standard
	Be	9	1150.0	3.4	**0.9414**	0.038	4.0	ug/L	20	Standard
	Al	27	19122972.5	1.5	**104.5075**	1.996	1.9	ug/L	1307	Standard
	Sc	45	50161.3	3.1				ug/L	41174	Standard
	Ti	47	4290.6	1.9	**12.0513**	0.158	1.3	ug/L	27	Standard
	V	51	176002.8	1.5	**19.5347**	0.381	2.0	ug/L	1434	Standard
	Cr	52	202519.5	0.7	**22.1111**	0.164	0.7	ug/L	7733	Standard
	Cr	53	24688.4	0.5	**22.0962**	0.312	1.4	ug/L	442	Standard
	Mn	55	3882576.5	0.7	**472.5626**	1.691	0.4	ug/L	723	Standard
	Co	59	74015.0	0.7	**8.8755**	0.153	1.7	ug/L	217	Standard
	Ni	60	49898.7	0.5	**22.0097**	0.116	0.5	ug/L	304	Standard
	Cu	65	49732.2	0.6	**22.3872**	0.351	1.6	ug/L	181	Standard
	Zn	66	114291.8	0.2	**85.7937**	1.009	1.2	ug/L	215	Standard
>	Ge	72	565157.3	1.0				ug/L	520809	Standard
	As	75	14435.4	1.1	**10.8205**	0.032	0.3	ug/L	-52	Standard
	Se	82	92.4	6.7	**0.5475**	0.040	7.3	ug/L	17	Standard
	Se-1	77	153.7	16.6	**0.9738**	0.293	30.1	ug/L	56	Standard
>	Ga	71	20582.3	3.6				mg/L	25	Standard
	Rb	85	203311.7	0.8				ug/L	28	Standard
	Y	89	751032.3	1.4				ug/L	447395	Standard
>	Rh	103	46.7	44.6				ug/L	15	Standard
	Mo	98	590.9	4.0	**0.1610**	0.008	5.2	ug/L	113	Standard
	Ag	107	615.7	5.5	**0.0683**	0.004	5.9	ug/L	108	Standard
	Cd	111	2075.5	3.1	**0.8510**	0.024	2.8	mg/L	3	Standard
	Cd	114	5077.8	10.1	**0.8428**	0.077	9.1	ug/L	20	Standard
>	In	115	661094.1	1.5				ug/L	625728	Standard
	Sn	118	1358.4	19.5	**0.1160**	0.042	36.3	ug/L	568	Standard
	Sb	123	1552.9	6.2	**0.2509**	0.021	8.4	ug/L	612	Standard
	Ba	135	403285.7	0.6	**175.4541**	1.609	0.9	ug/L	21	Standard
	Ce	140	1308604.3	1.2				ug/L	245	Standard
>	Tb	159	1004791.8	1.1				ug/L	950397	Standard
	Ho	165	21420.1	0.2				ug/L	7	Standard
	Tl	203	1393.7	1.3	**0.1546**	0.002	1.2	ug/L	15	Standard
	Tl	205	1293.4	6.5	**0.1525**	0.010	6.7	ug/L	13	Standard
	Pb	206	576456.5	0.6	**101.8203**	0.799	0.8	ug/L	264	Standard
	Pb	207	487118.2	0.8	**94.7368**	0.502	0.5	ug/L	222	Standard
	Pb	208	2107804.8	0.1	**100.3728**	0.432	0.4	ug/L	959	Standard
	U	238	4448.0	2.0	**0.5517**	0.009	1.6	ug/L	9	Standard
>	Bi	209	552606.6	0.3				ug/L	552821	Standard

Sample ID: L1606144507
Report Date/Time: Friday, July 01, 2016 18:02:42
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**3.9605**	6.851	173.0	mg/L	2	Standard
Mg	24	146.7	22.7	**0.0801**	0.030	37.5	mg/L	55	Standard
K	39	540.0	0.9	**1.5696**	0.061	3.9	mg/L	28	Standard
Ca	43	96.7	3.0	**4.7655**	0.419	8.8	mg/L	27	Standard
Fe	54	17314.9	1.0	**11.0515**	0.258	2.3	mg/L	147	Standard
Fe	57	4700.7	3.1	**11.0529**	0.214	1.9	mg/L	268	Standard
> **Sc-1**	45	50161.3	3.1				mg/L	41174	Standard
Cl	35	76662.1	1.5				ug/L	69550	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	3767.1	7.9				ug/L	1950	Standard
P	31	23611.7	2.9				ug/L	21156	Standard
S	34	3682.1	3.0				ug/L	3419	Standard
Sr	88	63.3	31.9				ug/L	72	Standard
C	12	343.3	8.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	210.0	26.5				mg/L	17	Standard
Dy	164	35453.0	4.2				mg/L	16	Standard
Ho-1	165	21420.1	0.2				mg/L	7	Standard
Er	166	19218.8	0.6				mg/L	7	Standard
I	127	28176.2	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.515	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144507
Report Date/Time: Friday, July 01, 2016 18:02:42
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.652	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.961	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Pb 206 Upper, S, EEE	Pb	206
Pb 208 Upper, S, EEE	Pb	208

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144508
Sample Date/Time: Friday, July 01, 2016 18:03:37
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80067.7	0.8				ug/L	76456	Standard
	Be	9	1216.7	3.5	**1.0182**	0.042	4.1	ug/L	20	Standard
	Al	27	26828418.5	2.0	**149.6306**	1.983	1.3	ug/L	1307	Standard
	Sc	45	50947.2	1.6				ug/L	41174	Standard
	Ti	47	5410.0	2.3	**15.2604**	0.406	2.7	ug/L	27	Standard
	V	51	186134.5	1.5	**20.7252**	0.259	1.2	ug/L	1434	Standard
	Cr	52	142957.3	0.4	**15.3665**	0.097	0.6	ug/L	7733	Standard
	Cr	53	17178.1	1.5	**15.2891**	0.249	1.6	ug/L	442	Standard
	Mn	55	4606939.6	1.4	**562.2720**	9.197	1.6	ug/L	723	Standard
	Co	59	80106.5	0.8	**9.6337**	0.111	1.2	ug/L	217	Standard
	Ni	60	49331.5	0.8	**21.8172**	0.266	1.2	ug/L	304	Standard
	Cu	65	27262.5	1.2	**12.2715**	0.190	1.6	ug/L	181	Standard
	Zn	66	50487.3	0.6	**37.8990**	0.363	1.0	ug/L	215	Standard
>	Ge	72	563626.3	0.4				ug/L	520809	Standard
	As	75	5127.9	0.4	**3.8833**	0.025	0.7	ug/L	-52	Standard
	Se	82	63.4	13.7	**0.3372**	0.065	19.3	ug/L	17	Standard
	Se-1	77	127.0	8.8	**0.6885**	0.125	18.2	ug/L	56	Standard
>	Ga	71	20874.4	1.1				mg/L	25	Standard
	Rb	85	200244.6	0.8				ug/L	28	Standard
	Y	89	753887.4	1.4				ug/L	447395	Standard
>	Rh	103	23.3	24.7				ug/L	15	Standard
	Mo	98	546.6	7.3	**0.1509**	0.014	9.6	ug/L	113	Standard
	Ag	107	629.3	8.8	**0.0718**	0.007	9.6	ug/L	108	Standard
	Cd	111	214.4	9.4	**0.0877**	0.009	10.1	mg/L	3	Standard
	Cd	114	474.4	3.2	**0.0805**	0.003	3.5	ug/L	20	Standard
>	In	115	647228.9	1.0				ug/L	625728	Standard
	Sn	118	1141.7	25.6	**0.0873**	0.044	50.2	ug/L	568	Standard
	Sb	123	347.3	21.7	**0.0313**	0.014	45.5	ug/L	612	Standard
	Ba	135	428959.8	0.0	**190.6168**	1.771	0.9	ug/L	21	Standard
	Ce	140	1454827.7	0.7				ug/L	245	Standard
>	Tb	159	993072.0	0.4				ug/L	950397	Standard
	Ho	165	23219.4	1.9				ug/L	7	Standard
	Tl	203	1106.7	1.7	**0.1248**	0.002	1.9	ug/L	15	Standard
	Tl	205	985.0	10.2	**0.1162**	0.014	11.7	ug/L	13	Standard
	Pb	206	63645.1	1.2	**11.4085**	0.083	0.7	ug/L	264	Standard
	Pb	207	52266.7	0.7	**10.3105**	0.095	0.9	ug/L	222	Standard
	Pb	208	232091.9	0.7	**11.2123**	0.155	1.4	ug/L	959	Standard
	U	238	4568.7	1.3	**0.5771**	0.011	1.9	ug/L	9	Standard
>	Bi	209	542669.3	0.8				ug/L	552821	Standard

Sample ID: L1606144508
Report Date/Time: Friday, July 01, 2016 18:05:54
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.0478**	7.002	173.0	mg/L	2	Standard
Mg	24	115.0	7.5	**0.0484**	0.008	16.3	mg/L	55	Standard
K	39	411.7	8.1	**1.1441**	0.093	8.1	mg/L	28	Standard
Ca	43	256.7	13.7	**16.4263**	2.858	17.4	mg/L	27	Standard
Fe	54	19822.2	2.5	**12.4655**	0.367	2.9	mg/L	147	Standard
Fe	57	5277.6	3.2	**12.3025**	0.438	3.6	mg/L	268	Standard
Sc-1	45	50947.2	1.6				mg/L	41174	Standard
Cl	35	80549.5	0.6				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	2766.9	10.3				ug/L	1950	Standard
P	31	24564.9	2.5				ug/L	21156	Standard
S	34	4093.9	1.0				ug/L	3419	Standard
Sr	88	131.7	11.6				ug/L	72	Standard
C	12	213.3	21.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	17	Standard
Dy	164	39354.5	1.1				mg/L	16	Standard
Ho-1	165	23219.4	1.9				mg/L	7	Standard
Er	166	20997.9	3.9				mg/L	7	Standard
I	127	17520.1	0.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		104.724	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.221	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606144508
Report Date/Time: Friday, July 01, 2016 18:05:54
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.436
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.164
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144508
Report Date/Time: Friday, July 01, 2016 18:05:54
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144509
Sample Date/Time: Friday, July 01, 2016 18:06:48
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79442.8	2.3				ug/L	76456	Standard
	Be	9	943.4	17.8	**0.7923**	0.154	19.4	ug/L	20	Standard
	Al	27	24668673.1	1.9	**138.6963**	2.466	1.8	ug/L	1307	Standard
	Sc	45	50062.6	1.9				ug/L	41174	Standard
	Ti	47	4807.4	4.3	**13.5672**	0.456	3.4	ug/L	27	Standard
	V	51	136414.7	0.2	**15.1594**	0.132	0.9	ug/L	1434	Standard
	Cr	52	121344.3	1.1	**12.9168**	0.132	1.0	ug/L	7733	Standard
	Cr	53	14567.0	3.2	**12.9202**	0.381	2.9	ug/L	442	Standard
	Mn	55	3584400.6	1.7	**438.0976**	8.663	2.0	ug/L	723	Standard
	Co	59	62786.5	0.8	**7.5554**	0.042	0.6	ug/L	217	Standard
	Ni	60	42141.2	1.3	**18.6419**	0.218	1.2	ug/L	304	Standard
	Cu	65	21722.6	0.6	**9.7770**	0.072	0.7	ug/L	181	Standard
	Zn	66	42178.0	0.8	**31.6788**	0.359	1.1	ug/L	215	Standard
>	Ge	72	562814.6	1.1				ug/L	520809	Standard
	As	75	3148.0	1.0	**2.4049**	0.028	1.2	ug/L	-52	Standard
	Se	82	55.8	21.4	**0.2824**	0.087	30.8	ug/L	17	Standard
	Se-1	77	111.3	15.0	**0.5195**	0.168	32.3	ug/L	56	Standard
>	Ga	71	17067.9	0.7				mg/L	25	Standard
	Rb	85	155458.5	0.3				ug/L	28	Standard
	Y	89	728811.9	0.2				ug/L	447395	Standard
>	Rh	103	40.0	21.7				ug/L	15	Standard
	Mo	98	532.8	6.7	**0.1442**	0.009	6.6	ug/L	113	Standard
	Ag	107	508.0	7.7	**0.0547**	0.005	9.0	ug/L	108	Standard
	Cd	111	168.7	12.8	**0.0676**	0.009	13.2	mg/L	3	Standard
	Cd	114	363.5	9.1	**0.0610**	0.006	10.1	ug/L	20	Standard
>	In	115	655174.8	1.1				ug/L	625728	Standard
	Sn	118	1111.7	18.9	**0.0808**	0.031	38.4	ug/L	568	Standard
	Sb	123	305.1	22.1	**0.0226**	0.012	54.1	ug/L	612	Standard
	Ba	135	334401.7	0.7	**146.7912**	1.362	0.9	ug/L	21	Standard
	Ce	140	1157016.3	1.7				ug/L	245	Standard
>	Tb	159	995793.1	2.4				ug/L	950397	Standard
	Ho	165	19706.1	2.6				ug/L	7	Standard
	Tl	203	788.7	4.8	**0.0883**	0.005	5.9	ug/L	15	Standard
	Tl	205	705.0	5.8	**0.0799**	0.004	5.3	ug/L	13	Standard
	Pb	206	52940.3	0.9	**9.4349**	0.070	0.7	ug/L	264	Standard
	Pb	207	43455.2	0.3	**8.5217**	0.073	0.9	ug/L	222	Standard
	Pb	208	192505.6	0.3	**9.2450**	0.110	1.2	ug/L	959	Standard
	U	238	3706.1	1.6	**0.4657**	0.006	1.4	ug/L	9	Standard
>	Bi	209	545400.8	1.1				ug/L	552821	Standard

Sample ID: L1606144509
Report Date/Time: Friday, July 01, 2016 18:09:05
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	125.0	18.3	**0.0601**	0.024	39.7	mg/L	55	Standard
K	39	280.0	4.7	**0.7524**	0.056	7.4	mg/L	28	Standard
Ca	43	271.7	13.1	**17.8657**	2.769	15.5	mg/L	27	Standard
Fe	54	13853.2	3.1	**8.8410**	0.431	4.9	mg/L	147	Standard
Fe	57	3842.2	1.2	**8.9061**	0.079	0.9	mg/L	268	Standard
> **Sc-1**	45	50062.6	1.9				mg/L	41174	Standard
Cl	35	80728.5	0.4				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	3187.0	4.9				ug/L	1950	Standard
P	31	24401.3	1.1				ug/L	21156	Standard
S	34	4165.6	2.7				ug/L	3419	Standard
Sr	88	115.0	7.5				ug/L	72	Standard
C	12	200.0	13.2				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	93.3	32.7				mg/L	17	Standard
Dy	164	33342.9	1.0				mg/L	16	Standard
Ho-1	165	19706.1	2.6				mg/L	7	Standard
Er	166	17443.4	2.1				mg/L	7	Standard
I	127	18624.8	0.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.907	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.065	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144509
Report Date/Time: Friday, July 01, 2016 18:09:05
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.706	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.658	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144509
Report Date/Time: Friday, July 01, 2016 18:09:05
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144510
Sample Date/Time: Friday, July 01, 2016 18:10:00
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79271.9	1.9				ug/L	76456	Standard
	Be	9	960.0	8.0	**0.8081**	0.079	9.8	ug/L	20	Standard
	Al	27	12161180.8	1.6	**68.5142**	1.144	1.7	ug/L	1307	Standard
	Sc	45	48484.1	1.3				ug/L	41174	Standard
	Ti	47	2552.9	3.2	**7.1191**	0.297	4.2	ug/L	27	Standard
	V	51	134266.7	0.5	**14.8155**	0.217	1.5	ug/L	1434	Standard
	Cr	52	132714.7	0.2	**14.1160**	0.211	1.5	ug/L	7733	Standard
	Cr	53	15915.0	2.5	**14.0541**	0.174	1.2	ug/L	442	Standard
	Mn	55	2692161.6	0.9	**326.7761**	3.297	1.0	ug/L	723	Standard
	Co	59	60946.7	0.7	**7.2843**	0.165	2.3	ug/L	217	Standard
	Ni	60	37036.2	0.7	**16.2553**	0.354	2.2	ug/L	304	Standard
	Cu	65	25813.0	0.6	**11.5528**	0.129	1.1	ug/L	181	Standard
	Zn	66	59196.1	0.9	**44.2314**	0.719	1.6	ug/L	215	Standard
>	Ge	72	566689.9	1.6				ug/L	520809	Standard
	As	75	6333.8	0.9	**4.7613**	0.105	2.2	ug/L	-52	Standard
	Se	82	64.1	11.3	**0.3404**	0.060	17.7	ug/L	17	Standard
	Se-1	77	129.7	6.6	**0.7103**	0.107	15.1	ug/L	56	Standard
>	Ga	71	16113.6	0.3				mg/L	25	Standard
	Rb	85	159279.6	1.1				ug/L	28	Standard
	Y	89	713422.0	1.5				ug/L	447395	Standard
>	Rh	103	25.0	60.0				ug/L	15	Standard
	Mo	98	950.0	4.7	**0.2755**	0.014	5.2	ug/L	113	Standard
	Ag	107	562.7	10.8	**0.0618**	0.008	12.5	ug/L	108	Standard
	Cd	111	481.0	9.3	**0.1967**	0.017	8.8	mg/L	3	Standard
	Cd	114	1249.3	10.0	**0.2089**	0.020	9.7	ug/L	20	Standard
>	In	115	656399.0	0.7				ug/L	625728	Standard
	Sn	118	1210.0	13.0	**0.0951**	0.024	25.2	ug/L	568	Standard
	Sb	123	969.1	5.8	**0.1450**	0.010	7.1	ug/L	612	Standard
	Ba	135	317720.7	1.4	**139.1962**	1.098	0.8	ug/L	21	Standard
	Ce	140	1155794.9	1.0				ug/L	245	Standard
>	Tb	159	984841.2	0.9				ug/L	950397	Standard
	Ho	165	19197.2	4.8				ug/L	7	Standard
	Tl	203	845.0	15.2	**0.0944**	0.014	15.2	ug/L	15	Standard
	Tl	205	828.4	29.5	**0.0953**	0.031	32.1	ug/L	13	Standard
	Pb	206	243494.3	0.6	**43.4500**	0.261	0.6	ug/L	264	Standard
	Pb	207	203498.1	0.4	**39.9806**	0.200	0.5	ug/L	222	Standard
	Pb	208	891072.1	0.5	**42.8651**	0.261	0.6	ug/L	959	Standard
	U	238	4045.9	6.6	**0.5073**	0.034	6.6	ug/L	9	Standard
>	Bi	209	546682.6	0.7				ug/L	552821	Standard

Sample ID: L1606144510
Report Date/Time: Friday, July 01, 2016 18:12:17
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	171.7	38.0	**0.1098**	0.063	57.3	mg/L	55	Standard
K	39	336.7	16.4	**0.9661**	0.187	19.4	mg/L	28	Standard
Ca	43	73.3	23.9	**3.2010**	1.330	41.6	mg/L	27	Standard
Fe	54	13407.2	1.8	**8.8316**	0.255	2.9	mg/L	147	Standard
Fe	57	3832.2	1.2	**9.1972**	0.235	2.6	mg/L	268	Standard
> **Sc-1**	45	48484.1	1.3				mg/L	41174	Standard
Cl	35	75838.8	2.7				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	3700.5	4.5				ug/L	1950	Standard
P	31	23035.9	5.5				ug/L	21156	Standard
S	34	3642.1	4.8				ug/L	3419	Standard
Sr	88	118.3	23.3				ug/L	72	Standard
C	12	246.7	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	39.6				mg/L	17	Standard
Dy	164	31661.9	4.0				mg/L	16	Standard
Ho-1	165	19197.2	4.8				mg/L	7	Standard
Er	166	17109.7	2.4				mg/L	7	Standard
I	127	24686.8	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.683	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.809	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144510
Report Date/Time: Friday, July 01, 2016 18:12:17
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.902	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.890	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144511
Sample Date/Time: Friday, July 01, 2016 18:13:11
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81056.3	1.5				ug/L	76456	Standard
	Be	9	1300.1	7.1	**1.0750**	0.063	5.9	ug/L	20	Standard
	Al	27	14087735.3	1.0	**77.6176**	0.555	0.7	ug/L	1307	Standard
	Sc	45	51079.3	2.3				ug/L	41174	Standard
	Ti	47	4050.2	1.8	**11.4166**	0.113	1.0	ug/L	27	Standard
	V	51	160903.7	0.9	**17.9135**	0.308	1.7	ug/L	1434	Standard
	Cr	52	157358.9	0.5	**17.0353**	0.148	0.9	ug/L	7733	Standard
	Cr	53	18739.9	2.5	**16.7418**	0.591	3.5	ug/L	442	Standard
	Mn	55	3983343.0	1.3	**486.7711**	7.837	1.6	ug/L	723	Standard
	Co	59	83282.3	0.9	**10.0291**	0.055	0.6	ug/L	217	Standard
	Ni	60	47596.6	1.1	**21.0730**	0.432	2.1	ug/L	304	Standard
	Cu	65	29877.1	1.6	**13.4740**	0.341	2.5	ug/L	181	Standard
	Zn	66	86877.7	1.2	**65.4276**	0.744	1.1	ug/L	215	Standard
>	Ge	72	562928.2	1.0				ug/L	520809	Standard
	As	75	5744.5	1.7	**4.3502**	0.061	1.4	ug/L	-52	Standard
	Se	82	56.4	20.2	**0.2867**	0.086	29.8	ug/L	17	Standard
	Se-1	77	130.3	3.1	**0.7263**	0.056	7.7	ug/L	56	Standard
>	Ga	71	21874.1	2.3				mg/L	25	Standard
	Rb	85	221462.0	1.4				ug/L	28	Standard
	Y	89	734796.1	0.6				ug/L	447395	Standard
>	Rh	103	31.7	24.1				ug/L	15	Standard
	Mo	98	474.5	3.0	**0.1270**	0.006	4.5	ug/L	113	Standard
	Ag	107	695.0	1.5	**0.0803**	0.002	2.7	ug/L	108	Standard
	Cd	111	1334.9	2.9	**0.5556**	0.015	2.7	mg/L	3	Standard
	Cd	114	3103.4	3.0	**0.5239**	0.011	2.1	ug/L	20	Standard
>	In	115	650267.1	1.0				ug/L	625728	Standard
	Sn	118	1253.4	12.9	**0.1031**	0.024	22.9	ug/L	568	Standard
	Sb	123	352.0	10.4	**0.0318**	0.006	20.1	ug/L	612	Standard
	Ba	135	635709.1	1.1	**281.1732**	3.369	1.2	ug/L	21	Standard
	Ce	140	1385894.9	1.0				ug/L	245	Standard
>	Tb	159	992786.2	1.1				ug/L	950397	Standard
	Ho	165	21371.7	1.6				ug/L	7	Standard
	Tl	203	1170.7	2.5	**0.1317**	0.002	1.8	ug/L	15	Standard
	Tl	205	1111.7	6.4	**0.1319**	0.009	7.1	ug/L	13	Standard
	Pb	206	547145.1	0.5	**98.1007**	0.480	0.5	ug/L	264	Standard
	Pb	207	460226.0	0.7	**90.8567**	0.149	0.2	ug/L	222	Standard
	Pb	208	1990544.8	1.0	**96.2154**	0.264	0.3	ug/L	959	Standard
	U	238	4825.8	2.0	**0.6077**	0.015	2.5	ug/L	9	Standard
>	Bi	209	544394.6	0.9				ug/L	552821	Standard

Sample ID: L1606144511
Report Date/Time: Friday, July 01, 2016 18:15:28
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**11.9370**	12.019	100.7	mg/L	2	Standard
Mg	24	136.7	11.2	**0.0686**	0.016	23.2	mg/L	55	Standard
K	39	338.3	18.4	**0.9175**	0.216	23.5	mg/L	28	Standard
Ca	43	100.0	10.0	**4.8632**	0.562	11.6	mg/L	27	Standard
Fe	54	19768.1	3.7	**12.3944**	0.190	1.5	mg/L	147	Standard
Fe	57	5529.3	1.5	**12.8981**	0.490	3.8	mg/L	268	Standard
Sc-1	45	51079.3	2.3				mg/L	41174	Standard
Cl	35	74695.0	1.8				ug/L	69550	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	3833.8	5.0				ug/L	1950	Standard
P	31	23369.7	3.5				ug/L	21156	Standard
S	34	3573.8	8.7				ug/L	3419	Standard
Sr	88	135.0	7.4				ug/L	72	Standard
C	12	190.0	24.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	156.7	38.5				mg/L	17	Standard
Dy	164	36620.1	2.1				mg/L	16	Standard
Ho-1	165	21371.7	1.6				mg/L	7	Standard
Er	166	19966.5	1.7				mg/L	7	Standard
I	127	25928.9	6.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.017	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.087	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144511
Report Date/Time: Friday, July 01, 2016 18:15:28
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.922	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.476	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144512
Sample Date/Time: Friday, July 01, 2016 18:16:23
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80562.0	2.1				ug/L	76456	Standard
	Be	9	1056.7	6.8	**0.8755**	0.044	5.0	ug/L	20	Standard
	Al	27	20325479.9	1.3	**112.6812**	0.924	0.8	ug/L	1307	Standard
	Sc	45	51024.2	3.8				ug/L	41174	Standard
	Ti	47	4124.6	2.4	**11.6241**	0.214	1.8	ug/L	27	Standard
	V	51	179971.8	1.0	**20.0519**	0.111	0.6	ug/L	1434	Standard
	Cr	52	122094.3	0.7	**12.9955**	0.054	0.4	ug/L	7733	Standard
	Cr	53	14728.8	1.7	**13.0624**	0.219	1.7	ug/L	442	Standard
	Mn	55	2566086.0	1.4	**313.4230**	2.590	0.8	ug/L	723	Standard
	Co	59	71959.5	1.0	**8.6588**	0.038	0.4	ug/L	217	Standard
	Ni	60	44539.0	0.4	**19.7019**	0.201	1.0	ug/L	304	Standard
	Cu	65	25837.7	1.3	**11.6371**	0.150	1.3	ug/L	181	Standard
	Zn	66	46860.0	0.7	**35.1959**	0.095	0.3	ug/L	215	Standard
>	Ge	72	563090.4	0.6				ug/L	520809	Standard
	As	75	4748.6	0.5	**3.6029**	0.030	0.8	ug/L	-52	Standard
	Se	82	50.2	5.5	**0.2414**	0.021	8.8	ug/L	17	Standard
	Se-1	77	123.7	5.2	**0.6532**	0.062	9.5	ug/L	56	Standard
>	Ga	71	18362.8	1.6				mg/L	25	Standard
	Rb	85	168707.6	2.0				ug/L	28	Standard
	Y	89	736703.2	2.4				ug/L	447395	Standard
>	Rh	103	25.0	52.9				ug/L	15	Standard
	Mo	98	488.2	3.8	**0.1323**	0.005	4.0	ug/L	113	Standard
	Ag	107	511.0	3.1	**0.0560**	0.002	3.4	ug/L	108	Standard
	Cd	111	253.2	7.3	**0.1041**	0.008	7.3	mg/L	3	Standard
	Cd	114	604.4	7.2	**0.1026**	0.007	6.9	ug/L	20	Standard
>	In	115	646543.9	0.3				ug/L	625728	Standard
	Sn	118	893.4	21.7	**0.0501**	0.029	58.0	ug/L	568	Standard
	Sb	123	312.5	6.0	**0.0248**	0.004	14.8	ug/L	612	Standard
	Ba	135	248072.4	0.5	**110.3400**	0.769	0.7	ug/L	21	Standard
	Ce	140	1301357.0	1.2				ug/L	245	Standard
>	Tb	159	989062.4	0.6				ug/L	950397	Standard
	Ho	165	20744.2	1.0				ug/L	7	Standard
	Tl	203	836.4	5.3	**0.0943**	0.005	5.4	ug/L	15	Standard
	Tl	205	765.0	4.3	**0.0882**	0.004	4.8	ug/L	13	Standard
	Pb	206	112087.8	1.3	**20.1669**	0.259	1.3	ug/L	264	Standard
	Pb	207	94165.7	0.9	**18.6506**	0.174	0.9	ug/L	222	Standard
	Pb	208	412221.0	0.6	**19.9915**	0.120	0.6	ug/L	959	Standard
	U	238	4509.7	0.8	**0.5708**	0.005	0.8	ug/L	9	Standard
>	Bi	209	541556.4	0.0				ug/L	552821	Standard

Sample ID: L1606144512
Report Date/Time: Friday, July 01, 2016 18:18:40
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	148.3	8.5	**0.0799**	0.015	18.6	mg/L	55	Standard
K	39	408.3	5.1	**1.1318**	0.019	1.7	mg/L	28	Standard
Ca	43	105.0	12.6	**5.2550**	1.011	19.2	mg/L	27	Standard
Fe	54	15896.3	3.5	**9.9615**	0.123	1.2	mg/L	147	Standard
Fe	57	4270.6	7.1	**9.8107**	1.132	11.5	mg/L	268	Standard
> **Sc-1**	45	51024.2	3.8				mg/L	41174	Standard
Cl	35	77017.9	0.8				ug/L	69550	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	2873.6	4.9				ug/L	1950	Standard
P	31	23741.9	3.7				ug/L	21156	Standard
S	34	3792.1	2.1				ug/L	3419	Standard
Sr	88	118.3	26.8				ug/L	72	Standard
C	12	150.0	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	31.2				mg/L	17	Standard
Dy	164	35215.7	0.8				mg/L	16	Standard
Ho-1	165	20744.2	1.0				mg/L	7	Standard
Er	166	18591.4	0.2				mg/L	7	Standard
I	127	15219.3	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144512
Report Date/Time: Friday, July 01, 2016 18:18:40
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.327	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.962	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Friday, July 01, 2016 18:19:34
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70388.2	2.1				ug/L	76456	Standard
	Be	9	61.7	23.4	**0.0400**	0.014	34.9	ug/L	20	Standard
	Al	27	209415.6	0.4	**1.3190**	0.033	2.5	ug/L	1307	Standard
	Sc	45	39780.5	3.1				ug/L	41174	Standard
	Ti	47	1335.7	4.5	**4.0093**	0.186	4.6	ug/L	27	Standard
	V	51	9011.5	1.4	**0.8961**	0.016	1.8	ug/L	1434	Standard
	Cr	52	11942.0	0.5	**0.5043**	0.017	3.5	ug/L	7733	Standard
	Cr	53	965.0	9.9	**0.5365**	0.094	17.4	ug/L	442	Standard
	Mn	55	122738.2	0.8	**16.0893**	0.228	1.4	ug/L	723	Standard
	Co	59	1833.1	0.9	**0.2095**	0.004	1.9	ug/L	217	Standard
	Ni	60	1543.4	2.6	**0.5897**	0.025	4.3	ug/L	304	Standard
	Cu	65	2084.5	3.4	**0.9460**	0.041	4.4	ug/L	181	Standard
	Zn	66	9962.3	1.5	**7.9386**	0.062	0.8	ug/L	215	Standard
>	Ge	72	521595.8	0.8				ug/L	520809	Standard
	As	75	1195.1	0.9	**1.0118**	0.011	1.1	ug/L	-52	Standard
	Se	82	24.1	17.0	**0.0642**	0.032	49.3	ug/L	17	Standard
	Se-1	77	62.0	12.6	**0.0393**	0.087	222.5	ug/L	56	Standard
>	Ga	71	756.7	9.6				mg/L	25	Standard
	Rb	85	4860.8	2.7				ug/L	28	Standard
	Y	89	439023.6	1.3				ug/L	447395	Standard
>	Rh	103	15.0	33.3				ug/L	15	Standard
	Mo	98	289.5	25.4	**0.0755**	0.025	33.7	ug/L	113	Standard
	Ag	107	108.0	4.2	**0.0028**	0.001	24.8	ug/L	108	Standard
	Cd	111	86.5	15.6	**0.0367**	0.006	16.4	mg/L	3	Standard
	Cd	114	262.8	23.2	**0.0479**	0.011	23.5	ug/L	20	Standard
>	In	115	602493.1	0.2				ug/L	625728	Standard
	Sn	118	640.0	28.2	**0.0191**	0.029	153.5	ug/L	568	Standard
	Sb	123	159.0	14.4	**-0.0017**	0.005	267.5	ug/L	612	Standard
	Ba	135	10231.8	1.1	**4.8666**	0.057	1.2	ug/L	21	Standard
	Ce	140	59325.9	0.4				ug/L	245	Standard
>	Tb	159	901387.3	1.6				ug/L	950397	Standard
	Ho	165	468.3	19.0				ug/L	7	Standard
	Tl	203	67.3	15.2	**0.0072**	0.001	16.6	ug/L	15	Standard
	Tl	205	53.3	56.5	**-0.0027**	0.004	151.9	ug/L	13	Standard
	Pb	206	25545.5	0.9	**4.7304**	0.064	1.3	ug/L	264	Standard
	Pb	207	21325.3	0.3	**4.3424**	0.022	0.5	ug/L	222	Standard
	Pb	208	92265.3	0.3	**4.6006**	0.019	0.4	ug/L	959	Standard
	U	238	418.3	2.9	**0.0547**	0.002	3.4	ug/L	9	Standard
>	Bi	209	522518.3	0.5				ug/L	552821	Standard

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 18:21:51
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	0.0	**-0.0057**	0.002	29.9	mg/L	55	Standard
K	39	30.0	28.9	**-0.0116**	0.036	313.3	mg/L	28	Standard
Ca	43	28.3	50.9	**0.2419**	1.466	606.3	mg/L	27	Standard
Fe	54	830.6	5.4	**0.5751**	0.021	3.7	mg/L	147	Standard
Fe	57	475.0	3.8	**0.7085**	0.100	14.1	mg/L	268	Standard
> **Sc-1**	45	39780.5	3.1				mg/L	41174	Standard
Cl	35	69290.7	0.6				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2023.5	4.8				ug/L	1950	Standard
P	31	8517.4	4.8				ug/L	21156	Standard
S	34	3302.0	4.3				ug/L	3419	Standard
Sr	88	81.7	7.1				ug/L	72	Standard
C	12	106.7	19.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	43.3				mg/L	17	Standard
Dy	164	723.4	6.0				mg/L	16	Standard
Ho-1	165	468.3	19.0				mg/L	7	Standard
Er	166	416.7	9.7				mg/L	7	Standard
I	127	33121.2	4.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.064	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.151	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 18:21:51
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.287
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.519
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Friday, July 01, 2016 18:22:46
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69181.0	2.1				ug/L	76456	Standard
	Be	9	58.3	32.5	**0.0378**	0.019	50.7	ug/L	20	Standard
	Al	27	441238.9	1.7	**2.8389**	0.059	2.1	ug/L	1307	Standard
	Sc	45	40783.2	1.8				ug/L	41174	Standard
	Ti	47	2459.5	1.5	**7.4205**	0.178	2.4	ug/L	27	Standard
	V	51	16925.1	1.2	**1.8483**	0.038	2.1	ug/L	1434	Standard
	Cr	52	18122.2	1.5	**1.2572**	0.011	0.8	ug/L	7733	Standard
	Cr	53	1788.4	11.0	**1.3411**	0.181	13.5	ug/L	442	Standard
	Mn	55	409161.8	0.6	**53.6291**	0.654	1.2	ug/L	723	Standard
	Co	59	5121.9	2.3	**0.6351**	0.012	1.9	ug/L	217	Standard
	Ni	60	3165.0	1.3	**1.3633**	0.033	2.4	ug/L	304	Standard
	Cu	65	6880.2	2.6	**3.2772**	0.073	2.2	ug/L	181	Standard
	Zn	66	23732.9	1.1	**19.0745**	0.015	0.1	ug/L	215	Standard
>	Ge	72	523960.3	1.1				ug/L	520809	Standard
	As	75	1016.3	2.7	**0.8637**	0.031	3.5	ug/L	-52	Standard
	Se	82	21.9	9.7	**0.0461**	0.018	39.0	ug/L	17	Standard
	Se-1	77	60.7	6.2	**0.0211**	0.052	244.3	ug/L	56	Standard
>	Ga	71	1423.4	6.3				mg/L	25	Standard
	Rb	85	14632.1	2.4				ug/L	28	Standard
	Y	89	450617.7	0.3				ug/L	447395	Standard
>	Rh	103	8.3	69.3				ug/L	15	Standard
	Mo	98	554.2	6.5	**0.1661**	0.012	7.3	ug/L	113	Standard
	Ag	107	138.0	6.6	**0.0071**	0.001	19.2	ug/L	108	Standard
	Cd	111	114.3	13.8	**0.0491**	0.007	14.2	mg/L	3	Standard
	Cd	114	241.5	19.5	**0.0440**	0.009	19.7	ug/L	20	Standard
>	In	115	603273.3	0.3				ug/L	625728	Standard
	Sn	118	566.7	21.3	**0.0071**	0.019	272.0	ug/L	568	Standard
	Sb	123	143.4	25.7	**-0.0049**	0.007	148.6	ug/L	612	Standard
	Ba	135	23042.5	1.3	**10.9682**	0.165	1.5	ug/L	21	Standard
	Ce	140	67983.9	1.1				ug/L	245	Standard
>	Tb	159	906786.3	1.4				ug/L	950397	Standard
	Ho	165	761.7	6.0				ug/L	7	Standard
	Tl	203	182.7	10.3	**0.0207**	0.002	11.4	ug/L	15	Standard
	Tl	205	140.0	10.7	**0.0088**	0.002	22.7	ug/L	13	Standard
	Pb	206	16671.2	1.2	**3.0640**	0.050	1.6	ug/L	264	Standard
	Pb	207	13875.7	1.0	**2.8020**	0.007	0.2	ug/L	222	Standard
	Pb	208	60739.5	0.7	**3.0044**	0.029	1.0	ug/L	959	Standard
	U	238	1048.7	0.5	**0.1370**	0.000	0.3	ug/L	9	Standard
>	Bi	209	523858.2	0.8				ug/L	552821	Standard

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 18:25:03
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0		**0.0047**	0.001	24.2	mg/L	55	Standard
K	39	31.7	48.2	**-0.0079**	0.061	772.0	mg/L	28	Standard
Ca	43	26.7	92.5	**0.0138**	2.317	16826.1	mg/L	27	Standard
Fe	54	1768.8	1.5	**1.3016**	0.007	0.5	mg/L	147	Standard
Fe	57	735.0	6.2	**1.4753**	0.115	7.8	mg/L	268	Standard
> **Sc-1**	45	40783.2	1.8				mg/L	41174	Standard
Cl	35	69789.0	1.4				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1950.1	1.4				ug/L	1950	Standard
P	31	8389.0	2.9				ug/L	21156	Standard
S	34	3198.7	3.3				ug/L	3419	Standard
Sr	88	73.3	17.2				ug/L	72	Standard
C	12	130.0	27.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	17	Standard
Dy	164	1484.1	12.1				mg/L	16	Standard
Ho-1	165	761.7	6.0				mg/L	7	Standard
Er	166	820.0	8.5				mg/L	7	Standard
I	127	32808.8	1.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.485	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 18:25:03
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.411
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.761
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102PS WG575057-01
Sample Date/Time: Friday, July 01, 2016 18:25:57
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68702.1	2.1				ug/L	76456	Standard
	Be	9	54558.1	0.5	**54.2325**	1.076	2.0	ug/L	20	Standard
	Al	27	435359.5	0.4	**2.8209**	0.068	2.4	ug/L	1307	Standard
	Sc	45	39865.7	0.5				ug/L	41174	Standard
	Ti	47	2435.2	3.0	**7.3862**	0.145	2.0	ug/L	27	Standard
	V	51	420388.1	0.9	**50.9256**	0.275	0.5	ug/L	1434	Standard
	Cr	52	419034.6	1.2	**50.8325**	0.081	0.2	ug/L	7733	Standard
	Cr	53	51908.8	1.8	**50.9245**	0.712	1.4	ug/L	442	Standard
	Mn	55	776755.3	1.1	**102.4737**	0.893	0.9	ug/L	723	Standard
	Co	59	378685.6	0.4	**49.3890**	0.417	0.8	ug/L	217	Standard
	Ni	60	108298.4	0.9	**52.0251**	0.585	1.1	ug/L	304	Standard
	Cu	65	113206.4	0.7	**55.3835**	0.277	0.5	ug/L	181	Standard
	Zn	66	96400.4	0.9	**78.4751**	0.327	0.4	ug/L	215	Standard
>	Ge	72	521011.3	1.1				ug/L	520809	Standard
	As	75	67285.7	0.6	**54.5295**	0.414	0.8	ug/L	-52	Standard
	Se	82	7236.2	0.6	**57.1362**	0.906	1.6	ug/L	17	Standard
	Se-1	77	4996.5	1.7	**57.7421**	0.807	1.4	ug/L	56	Standard
>	Ga	71	1458.4	7.9				mg/L	25	Standard
	Rb	85	14268.4	1.9				ug/L	28	Standard
	Y	89	451572.6	1.0				ug/L	447395	Standard
>	Rh	103	11.7	65.5				ug/L	15	Standard
	Mo	98	552.6	6.3	**0.1658**	0.011	6.4	ug/L	113	Standard
	Ag	107	351874.8	0.5	**50.8757**	0.454	0.9	ug/L	108	Standard
	Cd	111	117424.6	1.2	**52.9718**	0.394	0.7	mg/L	3	Standard
	Cd	114	288020.9	0.5	**52.4815**	0.298	0.6	ug/L	20	Standard
>	In	115	602467.1	0.7				ug/L	625728	Standard
	Sn	118	795.0	18.9	**0.0440**	0.023	53.3	ug/L	568	Standard
	Sb	123	215335.2	6.0	**43.2556**	2.906	6.7	ug/L	612	Standard
	Ba	135	125031.8	0.4	**59.6735**	0.233	0.4	ug/L	21	Standard
	Ce	140	66756.7	0.9				ug/L	245	Standard
>	Tb	159	900882.6	0.1				ug/L	950397	Standard
	Ho	165	808.4	8.4				ug/L	7	Standard
	Tl	203	420669.9	0.3	**49.6255**	0.118	0.2	ug/L	15	Standard
	Tl	205	380791.1	1.2	**50.5823**	0.852	1.7	ug/L	13	Standard
	Pb	206	285006.3	0.5	**53.2753**	0.097	0.2	ug/L	264	Standard
	Pb	207	249618.4	0.3	**51.3775**	0.277	0.5	ug/L	222	Standard
	Pb	208	1065809.7	0.5	**53.7118**	0.481	0.9	ug/L	959	Standard
	U	238	362717.7	0.5	**47.6544**	0.373	0.8	ug/L	9	Standard
>	Bi	209	521960.5	0.5				ug/L	552821	Standard

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 18:28:14
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**10.3171**	17.861	173.1	mg/L	2	Standard
Mg	24	45.0	11.1	**-0.0059**	0.006	106.3	mg/L	55	Standard
K	39	41.7	36.7	**0.0338**	0.061	179.3	mg/L	28	Standard
Ca	43	31.7	39.7	**0.5190**	1.184	228.2	mg/L	27	Standard
Fe	54	1881.8	1.4	**1.4253**	0.028	2.0	mg/L	147	Standard
Fe	57	691.7	14.6	**1.3919**	0.331	23.7	mg/L	268	Standard
> **Sc-1**	45	39865.7	0.5				mg/L	41174	Standard
Cl	35	69700.6	0.3				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	2040.1	6.7				ug/L	1950	Standard
P	31	8364.0	2.5				ug/L	21156	Standard
S	34	3095.3	6.1				ug/L	3419	Standard
Sr	88	78.3	13.3				ug/L	72	Standard
C	12	143.3	45.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	76.7	27.2				mg/L	17	Standard
Dy	164	1201.3	2.6				mg/L	16	Standard
Ho-1	165	808.4	8.4				mg/L	7	Standard
Er	166	740.0	7.2				mg/L	7	Standard
I	127	33642.3	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.859	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 18:28:14
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.283
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.418
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 18:28:14
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 18:29:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58021.1	45.4				ug/L	76456	Standard
	Be	9	6020.3	96.8	**8.3334**	6.673	80.1	ug/L	20	Standard
	Al	27	1011614.4	93.0	**9.3377**	7.369	78.9	ug/L	1307	Standard
	Sc	45	36951.3	31.6				ug/L	41174	Standard
	Ti	47	4070.2	92.8	**14.0397**	11.313	80.6	ug/L	27	Standard
	V	51	57472.3	77.9	**8.2250**	6.608	80.3	ug/L	1434	Standard
	Cr	52	54950.0	85.4	**6.7134**	5.707	85.0	ug/L	7733	Standard
	Cr	53	6442.1	89.3	**6.7802**	5.559	82.0	ug/L	442	Standard
	Mn	55	56604.6	81.4	**8.6926**	6.701	77.1	ug/L	723	Standard
	Co	59	53000.8	82.9	**8.1234**	6.317	77.8	ug/L	217	Standard
	Ni	60	12997.1	88.3	**6.9634**	5.472	78.6	ug/L	304	Standard
	Cu	65	12947.1	88.8	**7.1426**	5.586	78.2	ug/L	181	Standard
	Zn	66	7783.4	89.0	**6.9746**	5.495	78.8	ug/L	215	Standard
>	Ge	72	483616.6	27.5				ug/L	520809	Standard
	As	75	8453.5	94.9	**7.7122**	6.230	80.8	ug/L	-52	Standard
	Se	82	939.4	85.8	**8.3049**	6.310	76.0	ug/L	17	Standard
	Se-1	77	622.0	88.3	**7.4670**	6.184	82.8	ug/L	56	Standard
>	Ga	71	31.7	18.2				mg/L	25	Standard
	Rb	85	225.0	67.8				ug/L	28	Standard
	Y	89	466261.8	17.1				ug/L	447395	Standard
>	Rh	103	20.0	25.0				ug/L	15	Standard
	Mo	98	38601.8	81.6	**16.0710**	14.394	89.6	ug/L	113	Standard
	Ag	107	46584.8	78.1	**8.1335**	7.118	87.5	ug/L	108	Standard
	Cd	111	17137.6	87.9	**9.4386**	9.351	99.1	mg/L	3	Standard
	Cd	114	41205.7	85.8	**9.1450**	8.904	97.4	ug/L	20	Standard
>	In	115	568605.0	21.6				ug/L	625728	Standard
	Sn	118	45202.2	81.7	**8.7560**	8.318	95.0	ug/L	568	Standard
	Sb	123	37304.6	74.8	**8.9935**	7.626	84.8	ug/L	612	Standard
	Ba	135	15451.6	84.3	**8.9549**	8.599	96.0	ug/L	21	Standard
	Ce	140	933.4	35.7				ug/L	245	Standard
>	Tb	159	834241.1	25.5				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	59816.1	84.3	**8.9067**	8.400	94.3	ug/L	15	Standard
	Tl	205	54932.9	85.7	**9.2244**	8.777	95.1	ug/L	13	Standard
	Pb	206	36885.4	75.9	**8.5933**	7.372	85.8	ug/L	264	Standard
	Pb	207	34161.2	77.5	**8.7804**	7.649	87.1	ug/L	222	Standard
	Pb	208	153924.2	83.6	**9.7508**	9.146	93.8	ug/L	959	Standard
	U	238	54480.0	85.8	**9.0581**	8.618	95.1	ug/L	9	Standard
>	Bi	209	483651.3	25.0				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 18:31:27
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	588.3	82.1	**0.7880**	0.634	80.5	mg/L	55	Standard
K	39	178.3	67.8	**0.7306**	0.604	82.7	mg/L	28	Standard
Ca	43	45.0	40.1	**2.8887**	3.750	129.8	mg/L	27	Standard
Fe	54	989.8	78.7	**0.8883**	0.763	85.9	mg/L	147	Standard
Fe	57	551.7	36.3	**1.2806**	1.046	81.6	mg/L	268	Standard
> **Sc-1**	45	36951.3	31.6				mg/L	41174	Standard
Cl	35	32002.2	14.3				ug/L	69550	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	793.4	7.2				ug/L	1950	Standard
P	31	12486.0	48.7				ug/L	21156	Standard
S	34	1356.7	20.0				ug/L	3419	Standard
Sr	88	81.7	21.5				ug/L	72	Standard
C	12	106.7	35.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	246.7	83.3				mg/L	17	Standard
Dy	164	12.1	44.0				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	7	Standard
I	127	4540.7	35.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	16.667		
Al	27	18.675		
Sc	45			
Ti	47	14.040		
V	51	16.450		
Cr	52	13.427		
Cr	53			
Mn	55	17.385		
Co	59	16.247		
Ni	60	13.927		
Cu	65	14.285		
Zn	66	13.949		
> Ge	72		92.859	
As	75	15.424		
Se	82	16.610		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 18:31:27
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	16.071		
Ag	107	16.267		
Cd	111	18.877		
Cd	114			
> In	115			90.871
Sn	118	17.512		
Sb	123	17.987		
Ba	135	17.910		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	17.813		
Tl	205			
Pb	206			
Pb	207			
Pb	208	19.502		
U	238	18.116		
> Bi	209			87.488
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Ti	47	

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 18:31:27
Page 3

Approved: July 02, 2016

QC Std 6	V	51
QC Std 6	Cr	52
QC Std 6	Mn	55
QC Std 6	Co	59
QC Std 6	Ni	60
QC Std 6	Cu	65
QC Std 6	Zn	66
QC Std 6	As	75
QC Std 6	Se	82
QC Std 6	Mo	98
QC Std 6	Ag	107
QC Std 6	Cd	111
QC Std 6	Sb	123
QC Std 6	Ba	135
QC Std 6	Tl	203
QC Std 6	Pb	208
QC Std 6	U	238

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 18:32:22
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73071.2	5.8				ug/L	76456	Standard
	Be	9	8.3	34.6	**-0.0120**	0.003	24.3	ug/L	20	Standard
	Al	27	2066.8	22.2	**0.0025**	0.003	126.6	ug/L	1307	Standard
	Sc	45	38902.0	12.0				ug/L	41174	Standard
	Ti	47	28.7	14.1	**0.0029**	0.006	212.7	ug/L	27	Standard
	V	51	892.2	10.9	**-0.0904**	0.007	8.2	ug/L	1434	Standard
	Cr	52	3594.8	10.0	**-0.5264**	0.046	8.8	ug/L	7733	Standard
	Cr	53	233.3	24.1	**-0.1899**	0.023	11.9	ug/L	442	Standard
	Mn	55	789.0	24.3	**0.0021**	0.023	1087.1	ug/L	723	Standard
	Co	59	303.0	15.4	**0.0101**	0.007	68.9	ug/L	217	Standard
	Ni	60	205.0	9.3	**-0.0541**	0.015	27.0	ug/L	304	Standard
	Cu	65	106.0	5.3	**-0.0215**	0.011	50.6	ug/L	181	Standard
	Zn	66	184.7	6.5	**-0.0287**	0.024	81.9	ug/L	215	Standard
>	Ge	72	527063.8	18.3				ug/L	520809	Standard
	As	75	45.7	91.0	**0.0818**	0.037	44.8	ug/L	-52	Standard
	Se	82	44.8	44.7	**0.2236**	0.160	71.7	ug/L	17	Standard
	Se-1	77	43.0	11.6	**-0.1831**	0.048	26.1	ug/L	56	Standard
>	Ga	71	36.7	7.9				mg/L	25	Standard
	Rb	85	58.3	40.5				ug/L	28	Standard
	Y	89	504597.8	24.2				ug/L	447395	Standard
>	Rh	103	18.3	83.3				ug/L	15	Standard
	Mo	98	262.6	10.7	**0.0552**	0.011	19.4	ug/L	113	Standard
	Ag	107	185.3	19.2	**0.0107**	0.005	48.4	ug/L	108	Standard
	Cd	111	28.5	36.7	**0.0089**	0.004	43.7	mg/L	3	Standard
	Cd	114	81.6	56.2	**0.0129**	0.006	47.4	ug/L	20	Standard
>	In	115	700695.8	22.4				ug/L	625728	Standard
	Sn	118	6341.5	38.7	**0.7820**	0.237	30.3	ug/L	568	Standard
	Sb	123	763.9	43.6	**0.0944**	0.040	42.0	ug/L	612	Standard
	Ba	135	62.7	16.0	**0.0082**	0.003	42.5	ug/L	21	Standard
	Ce	140	145.0	79.5				ug/L	245	Standard
>	Tb	159	1042763.2	15.4				ug/L	950397	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	182.0	22.0	**0.0180**	0.002	11.1	ug/L	15	Standard
	Tl	205	148.3	9.7	**0.0076**	0.002	25.0	ug/L	13	Standard
	Pb	206	414.0	16.3	**0.0241**	0.004	18.3	ug/L	264	Standard
	Pb	207	348.0	9.0	**0.0172**	0.006	37.6	ug/L	222	Standard
	Pb	208	1430.4	10.4	**0.0153**	0.006	41.0	ug/L	959	Standard
	U	238	124.7	10.8	**0.0142**	0.002	12.8	ug/L	9	Standard
>	Bi	209	596038.7	14.4				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 18:34:39
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	26.7	65.8	**-0.0280**	0.021	73.8	mg/L	55	Standard
K	39	30.0	60.1	**-0.0132**	0.067	507.4	mg/L	28	Standard
Ca	43	28.3	10.2	**0.2774**	0.122	44.0	mg/L	27	Standard
Fe	54	104.6	43.7	**-0.0136**	0.033	242.5	mg/L	147	Standard
Fe	57	286.7	7.0	**0.1321**	0.048	36.6	mg/L	268	Standard
Sc-1	45	38902.0	12.0				mg/L	41174	Standard
Cl	35	29524.2	6.8				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	630.0	34.9				ug/L	1950	Standard
P	31	11456.4	38.3				ug/L	21156	Standard
S	34	1375.1	3.3				ug/L	3419	Standard
Sr	88	53.3	37.9				ug/L	72	Standard
C	12	66.7	48.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	77.5				mg/L	17	Standard
Dy	164	13.0	179.6				mg/L	16	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	2638.6	27.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.201	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 18:34:39
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	111.981	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.818	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sn	118	

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 18:34:39
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 18:35:35
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62174.0	2.2				ug/L	76456	Standard
	Be	9	20.0	25.0	**0.0022**	0.006	269.5	ug/L	20	Standard
	Al	27	84546.9	0.4	**0.5973**	0.011	1.9	ug/L	1307	Standard
	Sc	45	38149.7	3.1				ug/L	41174	Standard
	Ti	47	483.3	4.9	**1.4725**	0.081	5.5	ug/L	27	Standard
	V	51	4248.5	1.3	**0.3438**	0.006	1.8	ug/L	1434	Standard
	Cr	52	8109.2	1.0	**0.0820**	0.013	16.2	ug/L	7733	Standard
	Cr	53	496.7	23.7	**0.0992**	0.125	126.0	ug/L	442	Standard
	Mn	55	78567.9	0.9	**10.7900**	0.016	0.2	ug/L	723	Standard
	Co	59	1117.0	0.8	**0.1236**	0.000	0.1	ug/L	217	Standard
	Ni	60	775.4	3.9	**0.2391**	0.018	7.4	ug/L	304	Standard
	Cu	65	1369.4	4.4	**0.6302**	0.035	5.5	ug/L	181	Standard
	Zn	66	5157.9	1.7	**4.2377**	0.083	2.0	ug/L	215	Standard
>	Ge	72	496310.3	0.7				ug/L	520809	Standard
	As	75	145.9	13.8	**0.1691**	0.016	9.6	ug/L	-52	Standard
	Se	82	21.4	35.8	**0.0511**	0.064	125.1	ug/L	17	Standard
	Se-1	77	46.7	8.7	**-0.1116**	0.053	47.6	ug/L	56	Standard
>	Ga	71	255.0	16.8				mg/L	25	Standard
	Rb	85	2703.6	4.1				ug/L	28	Standard
	Y	89	417509.6	1.1				ug/L	447395	Standard
>	Rh	103	16.7	69.3				ug/L	15	Standard
	Mo	98	345.0	36.3	**0.1002**	0.045	45.1	ug/L	113	Standard
	Ag	107	125.3	22.2	**0.0061**	0.004	68.7	ug/L	108	Standard
	Cd	111	34.3	46.4	**0.0139**	0.008	54.2	mg/L	3	Standard
	Cd	114	42.7	17.1	**0.0082**	0.001	17.1	ug/L	20	Standard
>	In	115	575196.5	0.1				ug/L	625728	Standard
	Sn	118	706.7	42.9	**0.0352**	0.051	145.6	ug/L	568	Standard
	Sb	123	527.1	13.9	**0.0772**	0.015	20.0	ug/L	612	Standard
	Ba	135	4163.9	5.4	**2.0642**	0.113	5.5	ug/L	21	Standard
	Ce	140	7787.1	30.7				ug/L	245	Standard
>	Tb	159	864381.3	0.7				ug/L	950397	Standard
	Ho	165	85.0	63.6				ug/L	7	Standard
	Tl	203	83.3	41.3	**0.0096**	0.004	45.0	ug/L	15	Standard
	Tl	205	73.3	55.1	**0.0005**	0.006	1188.2	ug/L	13	Standard
	Pb	206	2545.5	9.1	**0.4551**	0.047	10.4	ug/L	264	Standard
	Pb	207	2088.8	9.3	**0.4046**	0.043	10.7	ug/L	222	Standard
	Pb	208	9232.8	9.4	**0.4395**	0.047	10.7	ug/L	959	Standard
	U	238	222.7	20.7	**0.0304**	0.006	21.2	ug/L	9	Standard
>	Bi	209	498353.7	0.7				ug/L	552821	Standard

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 18:37:52
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.2196**	9.032	173.0	mg/L	2	Standard
Mg	24	50.0	30.0	**0.0033**	0.021	637.4	mg/L	55	Standard
K	39	31.7	32.9	**-0.0007**	0.041	5467.5	mg/L	28	Standard
Ca	43	28.3	50.9	**0.3254**	1.410	433.3	mg/L	27	Standard
Fe	54	321.0	6.6	**0.1731**	0.021	12.0	mg/L	147	Standard
Fe	57	343.3	20.8	**0.3318**	0.218	65.6	mg/L	268	Standard
> **Sc-1**	45	38149.7	3.1				mg/L	41174	Standard
Cl	35	66614.8	2.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1683.4	14.0				ug/L	1950	Standard
P	31	6868.2	3.4				ug/L	21156	Standard
S	34	2993.6	2.7				ug/L	3419	Standard
Sr	88	78.3	16.1				ug/L	72	Standard
C	12	60.0					mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	190.0	34.5				mg/L	17	Standard
Dy	164	136.6	41.3				mg/L	16	Standard
Ho-1	165	85.0	63.6				mg/L	7	Standard
Er	166	140.0	70.3				mg/L	7	Standard
I	127	27162.7	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.320	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.296	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 18:37:52
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.924
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.147
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 18:37:52
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Friday, July 01, 2016 18:38:46
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63245.1	2.3				ug/L	76456	Standard
	Be	9	45.0	29.4	**0.0289**	0.015	52.5	ug/L	20	Standard
	Al	27	154217.6	1.4	**1.0792**	0.028	2.6	ug/L	1307	Standard
	Sc	45	38011.0	1.7				ug/L	41174	Standard
	Ti	47	1647.1	2.7	**5.2249**	0.166	3.2	ug/L	27	Standard
	V	51	10217.6	1.1	**1.1067**	0.009	0.8	ug/L	1434	Standard
	Cr	52	13566.7	1.7	**0.7914**	0.021	2.7	ug/L	7733	Standard
	Cr	53	1203.4	4.0	**0.8334**	0.047	5.6	ug/L	442	Standard
	Mn	55	179485.2	0.5	**24.7976**	0.092	0.4	ug/L	723	Standard
	Co	59	2042.5	2.9	**0.2506**	0.009	3.7	ug/L	217	Standard
	Ni	60	1701.1	1.2	**0.7078**	0.006	0.9	ug/L	304	Standard
	Cu	65	2602.9	0.6	**1.2654**	0.012	0.9	ug/L	181	Standard
	Zn	66	13566.1	2.3	**11.4481**	0.299	2.6	ug/L	215	Standard
>	Ge	72	495954.1	0.5				ug/L	520809	Standard
	As	75	526.1	8.4	**0.4926**	0.036	7.4	ug/L	-52	Standard
	Se	82	19.2	20.2	**0.0327**	0.031	96.0	ug/L	17	Standard
	Se-1	77	60.7	19.3	**0.0602**	0.141	233.6	ug/L	56	Standard
>	Ga	71	858.4	5.0				mg/L	25	Standard
	Rb	85	6271.3	6.6				ug/L	28	Standard
	Y	89	419752.0	1.1				ug/L	447395	Standard
>	Rh	103	16.7	45.8				ug/L	15	Standard
	Mo	98	384.6	7.0	**0.1144**	0.010	8.4	ug/L	113	Standard
	Ag	107	109.3	5.4	**0.0037**	0.001	23.4	ug/L	108	Standard
	Cd	111	94.6	7.9	**0.0424**	0.003	8.2	mg/L	3	Standard
	Cd	114	251.8	5.8	**0.0481**	0.003	5.6	ug/L	20	Standard
>	In	115	575203.1	0.2				ug/L	625728	Standard
	Sn	118	680.0	22.3	**0.0307**	0.025	82.8	ug/L	568	Standard
	Sb	123	333.6	22.9	**0.0365**	0.016	43.9	ug/L	612	Standard
	Ba	135	10023.6	1.9	**4.9942**	0.091	1.8	ug/L	21	Standard
	Ce	140	48280.1	1.0				ug/L	245	Standard
>	Tb	159	860542.4	0.9				ug/L	950397	Standard
	Ho	165	373.3	17.4				ug/L	7	Standard
	Tl	203	98.7	6.5	**0.0114**	0.001	7.5	ug/L	15	Standard
	Tl	205	111.7	22.1	**0.0057**	0.003	56.6	ug/L	13	Standard
	Pb	206	31345.7	1.0	**6.0875**	0.078	1.3	ug/L	264	Standard
	Pb	207	25979.9	0.2	**5.5497**	0.058	1.0	ug/L	222	Standard
	Pb	208	113055.9	0.8	**5.9143**	0.107	1.8	ug/L	959	Standard
	U	238	480.3	2.8	**0.0657**	0.001	2.2	ug/L	9	Standard
>	Bi	209	499251.2	1.0				ug/L	552821	Standard

Sample ID: L1606145103
Report Date/Time: Friday, July 01, 2016 18:41:03
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	6.2	**-0.0011**	0.005	417.9	mg/L	55	Standard
K	39	40.0	50.0	**0.0355**	0.084	236.7	mg/L	28	Standard
Ca	43	20.0	43.3	**-0.4832**	0.857	177.3	mg/L	27	Standard
Fe	54	979.0	3.0	**0.7328**	0.021	2.8	mg/L	147	Standard
Fe	57	456.7	4.4	**0.7168**	0.091	12.6	mg/L	268	Standard
Sc-1	45	38011.0	1.7				mg/L	41174	Standard
Cl	35	67610.5	0.8				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1716.8	12.9				ug/L	1950	Standard
P	31	8008.8	5.2				ug/L	21156	Standard
S	34	2928.6	6.6				ug/L	3419	Standard
Sr	88	71.7	26.4				ug/L	72	Standard
C	12	106.7	54.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	68.6				mg/L	17	Standard
Dy	164	644.2	14.1				mg/L	16	Standard
Ho-1	165	373.3	17.4				mg/L	7	Standard
Er	166	400.0	22.2				mg/L	7	Standard
I	127	30482.3	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		82.721	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.228	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145103
Report Date/Time: Friday, July 01, 2016 18:41:03
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.925
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.310
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Friday, July 01, 2016 18:41:58
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63385.7	2.2				ug/L	76456	Standard
	Be	9	50.0	26.5	**0.0338**	0.013	38.3	ug/L	20	Standard
	Al	27	725235.3	1.5	**5.1021**	0.166	3.3	ug/L	1307	Standard
	Sc	45	39148.9	2.8				ug/L	41174	Standard
	Ti	47	1767.4	1.7	**5.5568**	0.163	2.9	ug/L	27	Standard
	V	51	9435.8	2.3	**0.9951**	0.038	3.8	ug/L	1434	Standard
	Cr	52	13141.4	0.9	**0.7193**	0.019	2.6	ug/L	7733	Standard
	Cr	53	1133.4	1.8	**0.7491**	0.025	3.3	ug/L	442	Standard
	Mn	55	184948.0	0.3	**25.3023**	0.378	1.5	ug/L	723	Standard
	Co	59	2891.6	3.9	**0.3629**	0.009	2.4	ug/L	217	Standard
	Ni	60	1981.8	1.1	**0.8399**	0.007	0.8	ug/L	304	Standard
	Cu	65	2972.3	0.4	**1.4404**	0.025	1.7	ug/L	181	Standard
	Zn	66	14124.9	1.1	**11.8061**	0.091	0.8	ug/L	215	Standard
>	Ge	72	500981.4	1.8				ug/L	520809	Standard
	As	75	525.3	4.0	**0.4878**	0.024	5.0	ug/L	-52	Standard
	Se	82	27.2	11.1	**0.0974**	0.029	29.5	ug/L	17	Standard
	Se-1	77	60.0	10.4	**0.0461**	0.088	191.5	ug/L	56	Standard
>	Ga	71	815.0	2.8				mg/L	25	Standard
	Rb	85	6224.6	2.3				ug/L	28	Standard
	Y	89	425374.4	1.5				ug/L	447395	Standard
>	Rh	103	25.0	40.0				ug/L	15	Standard
	Mo	98	520.6	8.2	**0.1605**	0.013	8.3	ug/L	113	Standard
	Ag	107	111.7	7.6	**0.0038**	0.001	37.5	ug/L	108	Standard
	Cd	111	92.7	8.2	**0.0408**	0.003	7.6	mg/L	3	Standard
	Cd	114	200.3	11.6	**0.0377**	0.005	12.6	ug/L	20	Standard
>	In	115	583569.6	1.1				ug/L	625728	Standard
	Sn	118	673.3	18.0	**0.0279**	0.019	69.1	ug/L	568	Standard
	Sb	123	316.8	22.4	**0.0319**	0.014	44.3	ug/L	612	Standard
	Ba	135	10430.3	1.6	**5.1226**	0.027	0.5	ug/L	21	Standard
	Ce	140	51980.7	2.3				ug/L	245	Standard
>	Tb	159	866344.8	1.0				ug/L	950397	Standard
	Ho	165	438.3	11.9				ug/L	7	Standard
	Tl	203	128.0	6.4	**0.0149**	0.001	5.7	ug/L	15	Standard
	Tl	205	108.3	13.3	**0.0051**	0.002	35.3	ug/L	13	Standard
	Pb	206	26433.4	1.2	**5.0710**	0.132	2.6	ug/L	264	Standard
	Pb	207	22121.5	0.6	**4.6673**	0.113	2.4	ug/L	222	Standard
	Pb	208	95760.1	0.8	**4.9468**	0.074	1.5	ug/L	959	Standard
	U	238	579.3	5.3	**0.0785**	0.005	6.6	ug/L	9	Standard
>	Bi	209	504799.5	1.9				ug/L	552821	Standard

Sample ID: L1606145104
Report Date/Time: Friday, July 01, 2016 18:44:14
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.2809**	9.138	173.0	mg/L	2	Standard
Mg	24	46.7	27.0	**-0.0030**	0.014	461.6	mg/L	55	Standard
K	39	46.7	6.2	**0.0571**	0.014	24.3	mg/L	28	Standard
Ca	43	46.7	16.4	**2.0216**	0.845	41.8	mg/L	27	Standard
Fe	54	948.7	5.1	**0.6833**	0.021	3.0	mg/L	147	Standard
Fe	57	496.7	2.9	**0.8012**	0.035	4.4	mg/L	268	Standard
> **Sc-1**	45	39148.9	2.8				mg/L	41174	Standard
Cl	35	69866.8	2.4				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1733.4	3.8				ug/L	1950	Standard
P	31	8088.8	1.5				ug/L	21156	Standard
S	34	3277.0	4.5				ug/L	3419	Standard
Sr	88	95.0	27.9				ug/L	72	Standard
C	12	93.3	49.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	709.7	12.9				mg/L	16	Standard
Ho-1	165	438.3	11.9				mg/L	7	Standard
Er	166	493.3	16.5				mg/L	7	Standard
I	127	31300.6	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.193	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145104
Report Date/Time: Friday, July 01, 2016 18:44:14
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.263
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.313
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Friday, July 01, 2016 18:45:09
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64614.2	2.4				ug/L	76456	Standard
	Be	9	185.0	11.8	**0.1761**	0.027	15.5	ug/L	20	Standard
	Al	27	102955.3	1.3	**0.7016**	0.016	2.3	ug/L	1307	Standard
	Sc	45	38894.9	1.6				ug/L	41174	Standard
	Ti	47	5095.2	2.9	**16.0563**	0.595	3.7	ug/L	27	Standard
	V	51	12093.5	2.4	**1.3198**	0.050	3.8	ug/L	1434	Standard
	Cr	52	18515.6	1.7	**1.3928**	0.062	4.4	ug/L	7733	Standard
	Cr	53	1865.1	14.6	**1.4862**	0.264	17.8	ug/L	442	Standard
	Mn	55	32921.4	0.8	**4.3867**	0.071	1.6	ug/L	723	Standard
	Co	59	1608.8	2.8	**0.1873**	0.008	4.3	ug/L	217	Standard
	Ni	60	1860.4	4.4	**0.7722**	0.043	5.6	ug/L	304	Standard
	Cu	65	2193.8	2.2	**1.0354**	0.028	2.7	ug/L	181	Standard
	Zn	66	9716.8	1.5	**8.0047**	0.192	2.4	ug/L	215	Standard
>	Ge	72	504722.0	1.0				ug/L	520809	Standard
	As	75	1470.5	3.8	**1.2746**	0.057	4.4	ug/L	-52	Standard
	Se	82	28.8	14.7	**0.1088**	0.036	32.9	ug/L	17	Standard
	Se-1	77	55.7	13.5	**-0.0132**	0.085	641.5	ug/L	56	Standard
>	Ga	71	1173.4	4.0				mg/L	25	Standard
	Rb	85	5657.7	5.6				ug/L	28	Standard
	Y	89	430091.6	2.7				ug/L	447395	Standard
>	Rh	103	10.0	100.0				ug/L	15	Standard
	Mo	98	330.9	6.7	**0.0921**	0.006	6.8	ug/L	113	Standard
	Ag	107	127.3	16.8	**0.0060**	0.003	57.0	ug/L	108	Standard
	Cd	111	132.1	1.6	**0.0585**	0.002	2.8	mg/L	3	Standard
	Cd	114	337.6	10.3	**0.0629**	0.007	11.3	ug/L	20	Standard
>	In	115	589920.6	1.4				ug/L	625728	Standard
	Sn	118	773.4	25.8	**0.0430**	0.031	72.7	ug/L	568	Standard
	Sb	123	374.2	12.0	**0.0430**	0.008	19.0	ug/L	612	Standard
	Ba	135	10208.8	2.5	**4.9590**	0.061	1.2	ug/L	21	Standard
	Ce	140	28101.1	3.0				ug/L	245	Standard
>	Tb	159	866375.5	1.2				ug/L	950397	Standard
	Ho	165	575.0	13.6				ug/L	7	Standard
	Tl	203	486.0	6.3	**0.0582**	0.003	5.7	ug/L	15	Standard
	Tl	205	386.7	8.6	**0.0431**	0.004	8.7	ug/L	13	Standard
	Pb	206	15320.4	2.2	**2.9057**	0.025	0.9	ug/L	264	Standard
	Pb	207	12702.3	2.1	**2.6467**	0.028	1.1	ug/L	222	Standard
	Pb	208	55482.0	1.8	**2.8316**	0.013	0.4	ug/L	959	Standard
	U	238	430.7	1.5	**0.0580**	0.000	0.2	ug/L	9	Standard
>	Bi	209	507193.8	1.5				ug/L	552821	Standard

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 18:47:26
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.2063**	9.009	173.0	mg/L	2	Standard
Mg	24	56.7	27.0	**0.0097**	0.018	185.7	mg/L	55	Standard
K	39	65.0	33.5	**0.1320**	0.085	64.4	mg/L	28	Standard
Ca	43	21.7	13.3	**-0.3705**	0.255	68.8	mg/L	27	Standard
Fe	54	1363.7	6.4	**1.0335**	0.073	7.1	mg/L	147	Standard
Fe	57	556.7	6.9	**1.0056**	0.095	9.5	mg/L	268	Standard
Sc-1	45	38894.9	1.6				mg/L	41174	Standard
Cl	35	69609.5	0.8				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	1780.1	1.7				ug/L	1950	Standard
P	31	8205.6	2.3				ug/L	21156	Standard
S	34	3335.4	2.7				ug/L	3419	Standard
Sr	88	61.7	20.4				ug/L	72	Standard
C	12	93.3	6.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	17	Standard
Dy	164	880.2	8.3				mg/L	16	Standard
Ho-1	165	575.0	13.6				mg/L	7	Standard
Er	166	553.3	3.8				mg/L	7	Standard
I	127	31464.3	3.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		84.512	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.911	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 18:47:26
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.277
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.747
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145106 WG574521-02
Sample Date/Time: Friday, July 01, 2016 18:48:21
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64025.1	3.2				ug/L	76456	Standard
	Be	9	150.0	10.0	**0.1401**	0.015	10.9	ug/L	20	Standard
	Al	27	373954.4	3.8	**2.6005**	0.138	5.3	ug/L	1307	Standard
	Sc	45	39992.7	0.8				ug/L	41174	Standard
	Ti	47	2911.6	0.9	**9.0743**	0.125	1.4	ug/L	27	Standard
	V	51	51458.1	1.3	**6.2169**	0.098	1.6	ug/L	1434	Standard
	Cr	52	21030.6	1.9	**1.6951**	0.060	3.5	ug/L	7733	Standard
	Cr	53	2078.5	6.6	**1.6910**	0.147	8.7	ug/L	442	Standard
	Mn	55	214722.6	3.4	**28.9695**	1.071	3.7	ug/L	723	Standard
	Co	59	3170.7	6.3	**0.3948**	0.028	7.2	ug/L	217	Standard
	Ni	60	4965.8	2.8	**2.2998**	0.080	3.5	ug/L	304	Standard
	Cu	65	11632.1	2.0	**5.7677**	0.126	2.2	ug/L	181	Standard
	Zn	66	12643.6	1.6	**10.3959**	0.197	1.9	ug/L	215	Standard
>	Ge	72	508214.5	0.5				ug/L	520809	Standard
	As	75	1760.7	0.9	**1.5067**	0.007	0.5	ug/L	-52	Standard
	Se	82	70.2	4.5	**0.4430**	0.026	5.8	ug/L	17	Standard
	Se-1	77	108.3	3.0	**0.6142**	0.044	7.2	ug/L	56	Standard
>	Ga	71	1403.4	6.8				mg/L	25	Standard
	Rb	85	5152.5	5.6				ug/L	28	Standard
	Y	89	465204.1	0.9				ug/L	447395	Standard
>	Rh	103	8.3	34.6				ug/L	15	Standard
	Mo	98	986.2	8.1	**0.3241**	0.024	7.4	ug/L	113	Standard
	Ag	107	197.7	29.4	**0.0165**	0.008	50.2	ug/L	108	Standard
	Cd	111	516.3	5.7	**0.2371**	0.011	4.7	mg/L	3	Standard
	Cd	114	1344.3	1.8	**0.2519**	0.006	2.5	ug/L	20	Standard
>	In	115	585874.6	1.3				ug/L	625728	Standard
	Sn	118	588.3	39.7	**0.0131**	0.038	286.1	ug/L	568	Standard
	Sb	123	350.0	28.7	**0.0385**	0.020	51.5	ug/L	612	Standard
	Ba	135	28617.3	1.6	**14.0306**	0.052	0.4	ug/L	21	Standard
	Ce	140	147578.6	1.0				ug/L	245	Standard
>	Tb	159	879044.3	0.3				ug/L	950397	Standard
	Ho	165	3460.4	5.6				ug/L	7	Standard
	Tl	203	284.7	28.0	**0.0338**	0.010	29.0	ug/L	15	Standard
	Tl	205	251.7	41.0	**0.0246**	0.014	57.8	ug/L	13	Standard
	Pb	206	17853.2	2.3	**3.3893**	0.091	2.7	ug/L	264	Standard
	Pb	207	14882.6	2.2	**3.1053**	0.081	2.6	ug/L	222	Standard
	Pb	208	65337.9	2.2	**3.3392**	0.088	2.6	ug/L	959	Standard
	U	238	2254.5	5.6	**0.3042**	0.018	6.0	ug/L	9	Standard
>	Bi	209	507833.7	0.4				ug/L	552821	Standard

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 18:50:37
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.0936**	8.814	173.0	mg/L	2	Standard
Mg	24	113.3	21.8	**0.0760**	0.029	37.9	mg/L	55	Standard
K	39	38.3	27.2	**0.0199**	0.040	200.6	mg/L	28	Standard
Ca	43	53.3	27.1	**2.5349**	1.339	52.8	mg/L	27	Standard
Fe	54	2059.6	7.3	**1.5638**	0.117	7.5	mg/L	147	Standard
Fe	57	870.0	4.0	**1.9479**	0.099	5.1	mg/L	268	Standard
> **Sc-1**	45	39992.7	0.8				mg/L	41174	Standard
Cl	35	70901.6	2.0				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2260.2	4.2				ug/L	1950	Standard
P	31	8212.2	3.0				ug/L	21156	Standard
S	34	3600.4	1.9				ug/L	3419	Standard
Sr	88	90.0	9.6				ug/L	72	Standard
C	12	176.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	40.0				mg/L	17	Standard
Dy	164	5100.9	5.6				mg/L	16	Standard
Ho-1	165	3460.4	5.6				mg/L	7	Standard
Er	166	3200.3	6.8				mg/L	7	Standard
I	127	34541.0	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.741	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.582	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 18:50:37
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.631
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.862
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Friday, July 01, 2016 18:51:32
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64661.0	1.8				ug/L	76456	Standard
	Be	9	435.0	25.2	**0.4383**	0.108	24.7	ug/L	20	Standard
	Al	27	688124.2	2.3	**4.7442**	0.162	3.4	ug/L	1307	Standard
	Sc	45	39658.5	2.4				ug/L	41174	Standard
	Ti	47	13864.7	2.7	**43.2019**	1.047	2.4	ug/L	27	Standard
	V	51	37809.2	1.4	**4.4801**	0.052	1.2	ug/L	1434	Standard
	Cr	52	41323.6	2.8	**4.2278**	0.133	3.1	ug/L	7733	Standard
	Cr	53	4789.1	2.3	**4.4030**	0.102	2.3	ug/L	442	Standard
	Mn	55	173827.6	1.4	**23.2563**	0.280	1.2	ug/L	723	Standard
	Co	59	5908.8	1.9	**0.7552**	0.015	2.0	ug/L	217	Standard
	Ni	60	5550.3	1.2	**2.5679**	0.031	1.2	ug/L	304	Standard
	Cu	65	7217.7	3.4	**3.5237**	0.120	3.4	ug/L	181	Standard
	Zn	66	24798.3	1.6	**20.4085**	0.308	1.5	ug/L	215	Standard
>	Ge	72	512004.2	0.3				ug/L	520809	Standard
	As	75	8113.7	1.3	**6.7304**	0.082	1.2	ug/L	-52	Standard
	Se	82	47.8	17.9	**0.2581**	0.069	26.7	ug/L	17	Standard
	Se-1	77	78.3	7.5	**0.2474**	0.068	27.6	ug/L	56	Standard
>	Ga	71	2850.3	1.2				mg/L	25	Standard
	Rb	85	22646.9	3.8				ug/L	28	Standard
	Y	89	456860.0	1.6				ug/L	447395	Standard
>	Rh	103	15.0	57.7				ug/L	15	Standard
	Mo	98	1709.2	2.3	**0.5713**	0.010	1.8	ug/L	113	Standard
	Ag	107	176.7	8.5	**0.0131**	0.002	17.8	ug/L	108	Standard
	Cd	111	527.4	1.5	**0.2390**	0.005	2.0	mg/L	3	Standard
	Cd	114	1273.9	8.3	**0.2354**	0.018	7.7	ug/L	20	Standard
>	In	115	594063.6	0.5				ug/L	625728	Standard
	Sn	118	725.0	18.7	**0.0344**	0.022	63.4	ug/L	568	Standard
	Sb	123	399.2	21.2	**0.0476**	0.017	35.7	ug/L	612	Standard
	Ba	135	25921.5	1.4	**12.5319**	0.140	1.1	ug/L	21	Standard
	Ce	140	84609.0	2.8				ug/L	245	Standard
>	Tb	159	884122.7	1.5				ug/L	950397	Standard
	Ho	165	1811.8	3.2				ug/L	7	Standard
	Tl	203	2382.2	2.0	**0.2851**	0.004	1.5	ug/L	15	Standard
	Tl	205	2155.2	0.8	**0.2815**	0.002	0.8	ug/L	13	Standard
	Pb	206	34780.5	0.5	**6.5761**	0.037	0.6	ug/L	264	Standard
	Pb	207	29105.6	0.4	**6.0542**	0.048	0.8	ug/L	222	Standard
	Pb	208	126449.0	1.6	**6.4404**	0.086	1.3	ug/L	959	Standard
	U	238	1711.1	3.8	**0.2285**	0.010	4.3	ug/L	9	Standard
>	Bi	209	513045.7	0.5				ug/L	552821	Standard

Sample ID: L1606145107
Report Date/Time: Friday, July 01, 2016 18:53:49
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	66.7	21.7	**0.0208**	0.018	87.5	mg/L	55	Standard
K	39	66.7	33.8	**0.1333**	0.086	64.5	mg/L	28	Standard
Ca	43	33.3	8.7	**0.6944**	0.305	44.0	mg/L	27	Standard
Fe	54	5014.4	0.7	**3.9857**	0.129	3.2	mg/L	147	Standard
Fe	57	1586.7	5.6	**4.2576**	0.247	5.8	mg/L	268	Standard
> **Sc-1**	45	39658.5	2.4				mg/L	41174	Standard
Cl	35	72080.4	1.0				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	1970.1	9.5				ug/L	1950	Standard
P	31	8810.9	5.8				ug/L	21156	Standard
S	34	3717.1	6.6				ug/L	3419	Standard
Sr	88	71.7	22.4				ug/L	72	Standard
C	12	120.0	16.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	13.3				mg/L	17	Standard
Dy	164	2375.7	6.5				mg/L	16	Standard
Ho-1	165	1811.8	3.2				mg/L	7	Standard
Er	166	1693.4	3.3				mg/L	7	Standard
I	127	32022.1	0.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.573	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.309	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145107
Report Date/Time: Friday, July 01, 2016 18:53:49
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.940
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.805
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Friday, July 01, 2016 18:54:44
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65516.4	2.1				ug/L	76456	Standard
	Be	9	508.3	16.0	**0.5110**	0.092	17.9	ug/L	20	Standard
	Al	27	800380.4	1.8	**5.4489**	0.215	3.9	ug/L	1307	Standard
	Sc	45	41087.3	0.8				ug/L	41174	Standard
	Ti	47	14067.5	1.7	**43.1737**	0.244	0.6	ug/L	27	Standard
	V	51	35953.7	1.5	**4.1835**	0.016	0.4	ug/L	1434	Standard
	Cr	52	58594.1	1.0	**6.2897**	0.017	0.3	ug/L	7733	Standard
	Cr	53	6973.3	2.0	**6.4961**	0.144	2.2	ug/L	442	Standard
	Mn	55	180922.6	1.7	**23.8431**	0.175	0.7	ug/L	723	Standard
	Co	59	6047.5	0.4	**0.7616**	0.011	1.5	ug/L	217	Standard
	Ni	60	5785.8	2.5	**2.6404**	0.042	1.6	ug/L	304	Standard
	Cu	65	5630.4	0.4	**2.6905**	0.031	1.2	ug/L	181	Standard
	Zn	66	23391.7	1.5	**18.9480**	0.094	0.5	ug/L	215	Standard
>	Ge	72	519833.8	1.1				ug/L	520809	Standard
	As	75	6871.0	0.9	**5.6213**	0.013	0.2	ug/L	-52	Standard
	Se	82	36.9	12.8	**0.1662**	0.040	24.4	ug/L	17	Standard
	Se-1	77	75.7	12.8	**0.2017**	0.109	53.9	ug/L	56	Standard
>	Ga	71	2690.2	10.4				mg/L	25	Standard
	Rb	85	22987.4	0.8				ug/L	28	Standard
	Y	89	454979.6	1.6				ug/L	447395	Standard
>	Rh	103	13.3	78.1				ug/L	15	Standard
	Mo	98	1493.9	2.8	**0.4956**	0.012	2.5	ug/L	113	Standard
	Ag	107	175.0	7.7	**0.0128**	0.002	15.5	ug/L	108	Standard
	Cd	111	498.3	4.3	**0.2253**	0.011	4.8	mg/L	3	Standard
	Cd	114	1246.2	5.5	**0.2300**	0.012	5.2	ug/L	20	Standard
>	In	115	594885.0	1.0				ug/L	625728	Standard
	Sn	118	763.4	27.5	**0.0404**	0.033	82.5	ug/L	568	Standard
	Sb	123	358.6	20.7	**0.0392**	0.014	36.9	ug/L	612	Standard
	Ba	135	27274.9	0.9	**13.1693**	0.072	0.5	ug/L	21	Standard
	Ce	140	89319.2	2.1				ug/L	245	Standard
>	Tb	159	880456.6	1.2				ug/L	950397	Standard
	Ho	165	2008.5	5.9				ug/L	7	Standard
	Tl	203	2224.8	1.1	**0.2667**	0.002	0.9	ug/L	15	Standard
	Tl	205	2000.1	8.4	**0.2612**	0.026	9.8	ug/L	13	Standard
	Pb	206	30072.5	0.9	**5.6895**	0.126	2.2	ug/L	264	Standard
	Pb	207	25200.3	0.2	**5.2438**	0.069	1.3	ug/L	222	Standard
	Pb	208	108593.2	0.7	**5.5329**	0.068	1.2	ug/L	959	Standard
	U	238	1657.1	2.7	**0.2215**	0.003	1.4	ug/L	9	Standard
>	Bi	209	512295.4	1.3				ug/L	552821	Standard

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 18:57:00
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	51.4	**0.0236**	0.043	182.4	mg/L	55	Standard
K	39	88.3	14.2	**0.2082**	0.048	23.2	mg/L	28	Standard
Ca	43	35.0	42.9	**0.7276**	1.340	184.1	mg/L	27	Standard
Fe	54	5032.2	2.8	**3.8559**	0.118	3.1	mg/L	147	Standard
Fe	57	1495.1	12.3	**3.7984**	0.557	14.7	mg/L	268	Standard
> **Sc-1**	45	41087.3	0.8				mg/L	41174	Standard
Cl	35	70479.6	1.8				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1836.8	12.0				ug/L	1950	Standard
P	31	8665.8	3.6				ug/L	21156	Standard
S	34	3460.4	4.7				ug/L	3419	Standard
Sr	88	80.0	18.8				ug/L	72	Standard
C	12	90.0	22.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	17	Standard
Dy	164	2628.5	8.2				mg/L	16	Standard
Ho-1	165	2008.5	5.9				mg/L	7	Standard
Er	166	1706.8	7.3				mg/L	7	Standard
I	127	30609.2	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.692	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.813	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 18:57:00
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.071
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145109S WG574521-07
Sample Date/Time: Friday, July 01, 2016 18:57:55
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66169.2	2.4				ug/L	76456	Standard
	Be	9	2845.3	1.4	**2.9179**	0.070	2.4	ug/L	20	Standard
	Al	27	402052.1	1.7	**2.7039**	0.037	1.4	ug/L	1307	Standard
	Sc	45	40838.3	0.3				ug/L	41174	Standard
	Ti	47	3598.8	1.2	**10.9719**	0.146	1.3	ug/L	27	Standard
	V	51	79956.8	0.6	**9.5376**	0.034	0.4	ug/L	1434	Standard
	Cr	52	43849.7	0.5	**4.4576**	0.028	0.6	ug/L	7733	Standard
	Cr	53	4982.5	0.8	**4.5178**	0.059	1.3	ug/L	442	Standard
	Mn	55	232874.6	0.3	**30.6911**	0.183	0.6	ug/L	723	Standard
	Co	59	22573.1	0.9	**2.9200**	0.017	0.6	ug/L	217	Standard
	Ni	60	11202.5	1.2	**5.2509**	0.054	1.0	ug/L	304	Standard
	Cu	65	17763.4	0.2	**8.6391**	0.027	0.3	ug/L	181	Standard
	Zn	66	17798.8	0.5	**14.3610**	0.032	0.2	ug/L	215	Standard
>	**Ge**	72	520328.1	0.5				ug/L	520809	Standard
	As	75	5212.0	2.2	**4.2712**	0.111	2.6	ug/L	-52	Standard
	Se	82	460.7	3.7	**3.5240**	0.138	3.9	ug/L	17	Standard
	Se-1	77	349.3	2.1	**3.4060**	0.106	3.1	ug/L	56	Standard
>	**Ga**	71	1643.4	2.5				mg/L	25	Standard
	Rb	85	6298.0	3.7				ug/L	28	Standard
	Y	89	489232.3	1.4				ug/L	447395	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	1075.7	0.6	**0.3442**	0.006	1.8	ug/L	113	Standard
	Ag	107	17796.8	1.4	**2.5517**	0.014	0.5	ug/L	108	Standard
	Cd	111	6560.4	0.7	**2.9469**	0.016	0.6	mg/L	3	Standard
	Cd	114	16108.1	2.8	**2.9255**	0.113	3.9	ug/L	20	Standard
>	**In**	115	604614.2	1.1				ug/L	625728	Standard
	Sn	118	576.7	20.9	**0.0084**	0.019	221.8	ug/L	568	Standard
	Sb	123	1529.4	1.9	**0.2726**	0.009	3.4	ug/L	612	Standard
	Ba	135	36016.4	1.8	**17.1151**	0.222	1.3	ug/L	21	Standard
	Ce	140	166971.8	1.4				ug/L	245	Standard
>	**Tb**	159	893545.7	0.7				ug/L	950397	Standard
	Ho	165	3838.8	4.6				ug/L	7	Standard
	Tl	203	21813.4	0.5	**2.5793**	0.005	0.2	ug/L	15	Standard
	Tl	205	20096.7	2.1	**2.6671**	0.046	1.7	ug/L	13	Standard
	Pb	206	33592.2	0.8	**6.2573**	0.064	1.0	ug/L	264	Standard
	Pb	207	28855.8	0.9	**5.9141**	0.073	1.2	ug/L	222	Standard
	Pb	208	125010.5	0.5	**6.2737**	0.013	0.2	ug/L	959	Standard
	U	238	20841.0	0.6	**2.7450**	0.006	0.2	ug/L	9	Standard
>	**Bi**	209	520594.3	0.4				ug/L	552821	Standard

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 19:00:12
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	78.3	32.1	**0.0321**	0.030	93.3	mg/L	55	Standard
K	39	38.3	30.1	**0.0170**	0.045	263.0	mg/L	28	Standard
Ca	43	36.7	7.9	**0.9069**	0.276	30.5	mg/L	27	Standard
Fe	54	2344.4	2.1	**1.7548**	0.045	2.6	mg/L	147	Standard
Fe	57	823.4	10.1	**1.7471**	0.264	15.1	mg/L	268	Standard
Sc-1	45	40838.3	0.3				mg/L	41174	Standard
Cl	35	72934.5	2.0				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	2890.3	3.7				ug/L	1950	Standard
P	31	8855.9	3.2				ug/L	21156	Standard
S	34	3612.1	4.5				ug/L	3419	Standard
Sr	88	103.3	32.9				ug/L	72	Standard
C	12	236.7	17.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	17	Standard
Dy	164	5672.6	5.0				mg/L	16	Standard
Ho-1	165	3838.8	4.6				mg/L	7	Standard
Er	166	3727.1	2.9				mg/L	7	Standard
I	127	35476.5	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.546	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.908	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 19:00:12
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.626
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.171
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145110SD WG574521-08
Sample Date/Time: Friday, July 01, 2016 19:01:07
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67019.7	4.1				ug/L	76456	Standard
	Be	9	2773.6	7.8	**2.8076**	0.211	7.5	ug/L	20	Standard
	Al	27	343053.6	0.5	**2.2782**	0.082	3.6	ug/L	1307	Standard
	Sc	45	40390.5	2.4				ug/L	41174	Standard
	Ti	47	2125.1	3.6	**6.3589**	0.289	4.5	ug/L	27	Standard
	V	51	73913.9	1.7	**8.6823**	0.187	2.2	ug/L	1434	Standard
	Cr	52	39647.8	1.1	**3.8723**	0.091	2.4	ug/L	7733	Standard
	Cr	53	4390.6	6.6	**3.8749**	0.313	8.1	ug/L	442	Standard
	Mn	55	211704.6	1.1	**27.5205**	0.540	2.0	ug/L	723	Standard
	Co	59	22138.2	1.1	**2.8248**	0.052	1.9	ug/L	217	Standard
	Ni	60	10229.1	2.4	**4.7164**	0.156	3.3	ug/L	304	Standard
	Cu	65	16797.3	0.8	**8.0558**	0.132	1.6	ug/L	181	Standard
	Zn	66	14601.7	0.9	**11.5899**	0.103	0.9	ug/L	215	Standard
>	**Ge**	72	527370.0	0.8				ug/L	520809	Standard
	As	75	4454.0	0.3	**3.6083**	0.041	1.1	ug/L	-52	Standard
	Se	82	433.6	3.6	**3.2627**	0.107	3.3	ug/L	17	Standard
	Se-1	77	342.3	4.4	**3.2706**	0.183	5.6	ug/L	56	Standard
>	**Ga**	71	1086.7	7.6				mg/L	25	Standard
	Rb	85	2715.2	5.0				ug/L	28	Standard
	Y	89	495479.9	0.9				ug/L	447395	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	1199.6	3.2	**0.3822**	0.017	4.5	ug/L	113	Standard
	Ag	107	16994.5	0.8	**2.4097**	0.040	1.7	ug/L	108	Standard
	Cd	111	6581.3	0.3	**2.9241**	0.026	0.9	mg/L	3	Standard
	Cd	114	16115.1	1.4	**2.8941**	0.037	1.3	ug/L	20	Standard
>	**In**	115	611286.5	1.2				ug/L	625728	Standard
	Sn	118	688.3	30.3	**0.0255**	0.034	134.7	ug/L	568	Standard
	Sb	123	3492.9	2.6	**0.6580**	0.010	1.5	ug/L	612	Standard
	Ba	135	33066.0	1.8	**15.5404**	0.233	1.5	ug/L	21	Standard
	Ce	140	153693.9	0.5				ug/L	245	Standard
>	**Tb**	159	899836.2	0.9				ug/L	950397	Standard
	Ho	165	3548.7	3.5				ug/L	7	Standard
	Tl	203	21026.9	1.7	**2.4700**	0.040	1.6	ug/L	15	Standard
	Tl	205	19092.0	1.1	**2.5170**	0.051	2.0	ug/L	13	Standard
	Pb	206	32793.8	0.3	**6.0676**	0.075	1.2	ug/L	264	Standard
	Pb	207	27703.0	0.3	**5.6387**	0.064	1.1	ug/L	222	Standard
	Pb	208	120754.5	1.4	**6.0193**	0.142	2.4	ug/L	959	Standard
	U	238	20391.4	0.6	**2.6683**	0.017	0.6	ug/L	9	Standard
>	**Bi**	209	524030.2	1.0				ug/L	552821	Standard

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 19:03:24
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	73.3	17.2	**0.0271**	0.015	54.1	mg/L	55	Standard
K	39	33.3	22.9	**-0.0010**	0.029	2803.3	mg/L	28	Standard
Ca	43	38.3	52.7	**1.0972**	1.891	172.3	mg/L	27	Standard
Fe	54	1833.3	6.8	**1.3677**	0.115	8.4	mg/L	147	Standard
Fe	57	725.0	5.5	**1.4696**	0.176	12.0	mg/L	268	Standard
Sc-1	45	40390.5	2.4				mg/L	41174	Standard
Cl	35	74325.2	0.8				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2540.2	14.3				ug/L	1950	Standard
P	31	8757.5	2.9				ug/L	21156	Standard
S	34	3718.8	1.1				ug/L	3419	Standard
Sr	88	85.0					ug/L	72	Standard
C	12	270.0	14.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	32.9				mg/L	17	Standard
Dy	164	5206.1	3.7				mg/L	16	Standard
Ho-1	165	3548.7	3.5				mg/L	7	Standard
Er	166	3510.4	5.0				mg/L	7	Standard
I	127	34255.4	2.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		87.658	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.260	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 19:03:24
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.692
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.792
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 19:03:24
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 19:04:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73296.1	8.8				ug/L	76456	Standard
	Be	9	3.3	86.6	**-0.0168**	0.003	15.9	ug/L	20	Standard
	Al	27	943.4	25.1	**-0.0045**	0.001	28.6	ug/L	1307	Standard
	Sc	45	42173.6	2.9				ug/L	41174	Standard
	Ti	47	21.7	46.5	**-0.0224**	0.026	115.7	ug/L	27	Standard
	V	51	784.0	11.8	**-0.1085**	0.008	7.8	ug/L	1434	Standard
	Cr	52	3455.1	8.0	**-0.5654**	0.042	7.4	ug/L	7733	Standard
	Cr	53	226.7	14.2	**-0.2044**	0.032	15.6	ug/L	442	Standard
	Mn	55	689.7	25.5	**-0.0155**	0.019	124.5	ug/L	723	Standard
	Co	59	203.0	2.5	**-0.0043**	0.002	53.5	ug/L	217	Standard
	Ni	60	207.7	13.9	**-0.0589**	0.005	8.9	ug/L	304	Standard
	Cu	65	99.0	11.2	**-0.0283**	0.002	6.7	ug/L	181	Standard
	Zn	66	182.3	13.6	**-0.0400**	0.008	19.1	ug/L	215	Standard
>	**Ge**	72	551871.4	10.1				ug/L	520809	Standard
	As	75	90.2	75.8	**0.1123**	0.046	40.9	ug/L	-52	Standard
	Se	82	68.2	54.7	**0.3731**	0.233	62.5	ug/L	17	Standard
	Se-1	77	38.3	14.4	**-0.2548**	0.102	40.0	ug/L	56	Standard
>	**Ga**	71	36.7	7.9				mg/L	25	Standard
	Rb	85	36.7	39.4				ug/L	28	Standard
	Y	89	441182.6	6.0				ug/L	447395	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	46.2	9.0	**-0.0083**	0.001	14.8	ug/L	113	Standard
	Ag	107	129.7	15.8	**0.0056**	0.002	35.3	ug/L	108	Standard
	Cd	111	10.6	19.3	**0.0023**	0.001	28.9	mg/L	3	Standard
	Cd	114	32.4	13.3	**0.0058**	0.001	9.2	ug/L	20	Standard
>	**In**	115	611252.6	5.3				ug/L	625728	Standard
	Sn	118	5131.0	39.9	**0.7226**	0.283	39.2	ug/L	568	Standard
	Sb	123	96.0	32.5	**-0.0149**	0.005	34.0	ug/L	612	Standard
	Ba	135	116.3	18.2	**0.0366**	0.007	20.0	ug/L	21	Standard
	Ce	140	506.7	18.4				ug/L	245	Standard
>	**Tb**	159	937034.7	2.8				ug/L	950397	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	55.7	37.9	**0.0055**	0.002	44.3	ug/L	15	Standard
	Tl	205	48.3	15.8	**-0.0037**	0.001	24.8	ug/L	13	Standard
	Pb	206	388.7	9.1	**0.0251**	0.008	30.5	ug/L	264	Standard
	Pb	207	329.7	11.1	**0.0183**	0.008	44.7	ug/L	222	Standard
	Pb	208	1314.7	9.8	**0.0144**	0.005	32.0	ug/L	959	Standard
	U	238	44.3	33.9	**0.0053**	0.002	35.7	ug/L	9	Standard
>	**Bi**	209	551718.3	2.9				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 19:06:36
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.9772**	8.612	173.0	mg/L	2	Standard
Mg	24	23.3	12.4	**-0.0336**	0.003	9.5	mg/L	55	Standard
K	39	23.3	12.4	**-0.0439**	0.009	21.3	mg/L	28	Standard
Ca	43	31.7	24.1	**0.3653**	0.722	197.6	mg/L	27	Standard
Fe	54	110.7	37.7	**-0.0145**	0.030	207.1	mg/L	147	Standard
Fe	57	338.3	3.4	**0.2110**	0.026	12.2	mg/L	268	Standard
Sc-1	45	42173.6	2.9				mg/L	41174	Standard
Cl	35	30776.6	3.7				ug/L	69550	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	663.3	12.3				ug/L	1950	Standard
P	31	11284.4	27.3				ug/L	21156	Standard
S	34	1555.1	2.6				ug/L	3419	Standard
Sr	88	83.3	25.0				ug/L	72	Standard
C	12	73.3	15.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	44.4				mg/L	17	Standard
Dy	164	28.9	93.2				mg/L	16	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	2166.8	15.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	-0.034		
Al	27	-0.009		
Sc	45			
Ti	47	-0.022		
V	51	-0.217		
Cr	52	-1.131		
Cr	53			
Mn	55	-0.031		
Co	59	-0.009		
Ni	60	-0.118		
Cu	65	-0.057		
Zn	66	-0.080		
Ge	72		105.964	
As	75	0.225		
Se	82	0.746		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 19:06:36
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	-0.008		
Ag	107	0.011		
Cd	111	0.005		
Cd	114			
> In	115		97.687	
Sn	118	1.445		
Sb	123	-0.030		
Ba	135	0.073		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	0.011		
Tl	205			
Pb	206			
Pb	207			
Pb	208	0.029		
U	238	0.011		
> Bi	209		99.801	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Ti	47	

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 19:06:36
Page 3

Approved: July 02, 2016

QC Std 6	V	51
QC Std 6	Cr	52
QC Std 6	Mn	55
QC Std 6	Co	59
QC Std 6	Ni	60
QC Std 6	Cu	65
QC Std 6	Zn	66
QC Std 6	As	75
QC Std 6	Se	82
QC Std 6	Mo	98
QC Std 6	Ag	107
QC Std 6	Cd	111
QC Std 6	Sb	123
QC Std 6	Ba	135
QC Std 6	Tl	203
QC Std 6	Pb	208
QC Std 6	U	238

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 19:07:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63162.0	21.4				ug/L	76456	Standard
	Be	9	3.3	86.6	**-0.0166**	0.003	17.1	ug/L	20	Standard
	Al	27	735.0	20.4	**-0.0048**	0.002	36.2	ug/L	1307	Standard
	Sc	45	35650.7	12.8				ug/L	41174	Standard
	Ti	47	25.7	17.6	**-0.0049**	0.017	351.0	ug/L	27	Standard
	V	51	759.8	6.3	**-0.1049**	0.017	16.4	ug/L	1434	Standard
	Cr	52	3500.7	6.1	**-0.5352**	0.034	6.4	ug/L	7733	Standard
	Cr	53	196.7	21.6	**-0.2204**	0.047	21.1	ug/L	442	Standard
	Mn	55	654.0	15.9	**-0.0132**	0.024	180.8	ug/L	723	Standard
	Co	59	209.0	9.3	**-0.0019**	0.004	213.5	ug/L	217	Standard
	Ni	60	214.3	6.6	**-0.0494**	0.006	12.6	ug/L	304	Standard
	Cu	65	67.0	1.5	**-0.0410**	0.004	9.4	ug/L	181	Standard
	Zn	66	162.0	9.0	**-0.0461**	0.027	57.9	ug/L	215	Standard
>	**Ge**	72	520650.3	11.0				ug/L	520809	Standard
	As	75	34.9	127.0	**0.0765**	0.042	54.6	ug/L	-52	Standard
	Se	82	46.9	39.0	**0.2593**	0.198	76.5	ug/L	17	Standard
	Se-1	77	47.0	7.4	**-0.1317**	0.051	38.8	ug/L	56	Standard
>	**Ga**	71	33.3	37.7				mg/L	25	Standard
	Rb	85	20.0	0.0				ug/L	28	Standard
	Y	89	481329.7	5.0				ug/L	447395	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	40.1	16.4	**-0.0110**	0.002	22.0	ug/L	113	Standard
	Ag	107	85.7	14.5	**-0.0013**	0.001	114.3	ug/L	108	Standard
	Cd	111	7.3	15.9	**0.0008**	0.001	101.5	mg/L	3	Standard
	Cd	114	33.4	55.5	**0.0060**	0.004	67.7	ug/L	20	Standard
>	**In**	115	646206.1	11.6				ug/L	625728	Standard
	Sn	118	4905.8	30.1	**0.6479**	0.164	25.3	ug/L	568	Standard
	Sb	123	55.7	59.6	**-0.0232**	0.006	25.1	ug/L	612	Standard
	Ba	135	35.0	22.9	**-0.0022**	0.004	171.6	ug/L	21	Standard
	Ce	140	271.7	45.9				ug/L	245	Standard
>	**Tb**	159	974497.4	20.4				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	26.0	40.2	**0.0024**	0.002	88.7	ug/L	15	Standard
	Tl	205	23.3	32.7	**-0.0066**	0.002	26.3	ug/L	13	Standard
	Pb	206	286.0	20.6	**0.0054**	0.003	50.2	ug/L	264	Standard
	Pb	207	250.0	14.9	**0.0018**	0.006	349.2	ug/L	222	Standard
	Pb	208	1018.7	14.9	**-0.0005**	0.007	1419.7	ug/L	959	Standard
	U	238	28.0	71.2	**0.0037**	0.004	102.7	ug/L	9	Standard
>	**Bi**	209	573676.7	25.6				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 19:09:48
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	31.2	**-0.0144**	0.017	121.3	mg/L	55	Standard
K	39	30.0	44.1	**-0.0003**	0.051	19938.3	mg/L	28	Standard
Ca	43	26.7	47.2	**0.2749**	0.978	355.7	mg/L	27	Standard
Fe	54	97.7	28.6	**-0.0085**	0.033	388.9	mg/L	147	Standard
Fe	57	278.3	18.1	**0.2066**	0.281	136.1	mg/L	268	Standard
Sc-1	45	35650.7	12.8				mg/L	41174	Standard
Cl	35	30318.5	8.6				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	573.3	9.6				ug/L	1950	Standard
P	31	10907.3	13.1				ug/L	21156	Standard
S	34	1410.1	10.3				ug/L	3419	Standard
Sr	88	83.3	36.7				ug/L	72	Standard
C	12	66.7	60.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	38.5				mg/L	17	Standard
Dy	164	2.1	274.3				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	7	Standard
I	127	2056.8	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.969	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 19:09:48
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.273
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.773
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sn	118	

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 19:09:48
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, July 01, 2016 19:10:44
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61946.4	1.9				ug/L	76456	Standard
	Be	9	210.0	10.4	**0.2115**	0.020	9.6	ug/L	20	Standard
	Al	27	790.0	4.9	**-0.0045**	0.000	4.1	ug/L	1307	Standard
	Sc	45	40494.0	1.1				ug/L	41174	Standard
	Ti	47	28.3	17.8	**0.0022**	0.015	682.7	ug/L	27	Standard
	V	51	4636.0	0.9	**0.3641**	0.011	3.1	ug/L	1434	Standard
	Cr	52	14316.1	1.4	**0.7957**	0.001	0.1	ug/L	7733	Standard
	Cr	53	1240.1	3.8	**0.8075**	0.059	7.3	ug/L	442	Standard
	Mn	55	4264.3	2.5	**0.4605**	0.007	1.5	ug/L	723	Standard
	Co	59	3130.7	5.2	**0.3781**	0.017	4.5	ug/L	217	Standard
	Ni	60	3450.1	1.6	**1.5055**	0.006	0.4	ug/L	304	Standard
	Cu	65	1721.8	1.7	**0.7678**	0.026	3.4	ug/L	181	Standard
	Zn	66	8860.9	0.9	**7.0348**	0.045	0.6	ug/L	215	Standard
>	Ge	72	522095.7	1.4				ug/L	520809	Standard
	As	75	448.5	11.8	**0.4078**	0.044	10.9	ug/L	-52	Standard
	Se	82	67.9	14.5	**0.4100**	0.082	20.0	ug/L	17	Standard
	Se-1	77	86.0	19.1	**0.3190**	0.193	60.5	ug/L	56	Standard
>	Ga	71	40.0	37.5				mg/L	25	Standard
	Rb	85	30.0	28.9				ug/L	28	Standard
	Y	89	446341.0	1.0				ug/L	447395	Standard
>	Rh	103	11.7	65.5				ug/L	15	Standard
	Mo	98	31.0	24.0	**-0.0133**	0.003	19.1	ug/L	113	Standard
	Ag	107	2769.6	1.6	**0.3865**	0.006	1.6	ug/L	108	Standard
	Cd	111	511.0	7.5	**0.2275**	0.017	7.5	mg/L	3	Standard
	Cd	114	1362.0	6.3	**0.2474**	0.016	6.3	ug/L	20	Standard
>	In	115	604305.4	0.0				ug/L	625728	Standard
	Sn	118	1045.0	27.9	**0.0839**	0.047	56.0	ug/L	568	Standard
	Sb	123	1800.2	6.2	**0.3270**	0.022	6.8	ug/L	612	Standard
	Ba	135	1494.4	2.1	**0.6933**	0.015	2.2	ug/L	21	Standard
	Ce	140	240.0	28.9				ug/L	245	Standard
>	Tb	159	892072.4	1.2				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	655.0	0.9	**0.0773**	0.001	1.2	ug/L	15	Standard
	Tl	205	608.3	6.1	**0.0719**	0.005	7.4	ug/L	13	Standard
	Pb	206	1282.4	3.9	**0.1986**	0.006	3.2	ug/L	264	Standard
	Pb	207	1103.0	2.6	**0.1835**	0.003	1.7	ug/L	222	Standard
	Pb	208	4828.3	0.4	**0.1978**	0.004	2.3	ug/L	959	Standard
	U	238	2919.9	3.2	**0.3875**	0.018	4.7	ug/L	9	Standard
>	Bi	209	516591.6	1.5				ug/L	552821	Standard

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 19:13:01
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.0546**	8.746	173.0	mg/L	2	Standard
Mg	24	45.0	50.9	**-0.0067**	0.027	406.4	mg/L	55	Standard
K	39	28.3	71.3	**-0.0210**	0.078	373.7	mg/L	28	Standard
Ca	43	15.0	33.3	**-1.0703**	0.448	41.8	mg/L	27	Standard
Fe	54	120.9	25.4	**-0.0025**	0.024	952.7	mg/L	147	Standard
Fe	57	251.7	19.1	**-0.0185**	0.145	784.6	mg/L	268	Standard
> **Sc-1**	45	40494.0	1.1				mg/L	41174	Standard
Cl	35	72851.4	0.8				ug/L	69550	Standard
Kr	83	2.3	99.0				ug/L	1	Standard
Br	81	1900.1	5.1				ug/L	1950	Standard
P	31	14266.7	2.8				ug/L	21156	Standard
S	34	3213.7	2.6				ug/L	3419	Standard
Sr	88	90.0	16.7				ug/L	72	Standard
C	12	96.7	57.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	17	Standard
Dy	164	16.2	35.8				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	1820.1	14.1				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	105.733		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	91.026		
	Cr	52	99.459		
	Cr	53			
	Mn	55	92.107		
	Co	59	94.532		
	Ni	60	94.095		
	Cu	65	95.977		
	Zn	66	112.556		
>	Ge	72		100.247	
	As	75	101.941		
	Se	82	102.498		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 19:13:01
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.613		
Cd	111	94.773		
Cd	114			
> In	115			96.576
Sn	118			
Sb	123	81.741		
Ba	135	92.447		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.671		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.904		
U	238	96.884		
> Bi	209			93.446
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 19:13:01
Page 3

Approved: July 02, 2016

2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW16F-062116	**Prep Method:**	7470A	**Prep Date:**	06/25/2016 11:30
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 10:18
Workgroup #:	WG574691	**Analyst:**	AMA	**Run Date:**	07/01/2016 11:39
Collect Date:	06/21/2016 14:40	**Dilution:**	1	**File ID:**	M7.070116.113952
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	109-062216	**Prep Method:**	7470A	**Prep Date:**	06/25/2016 11:30
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 10:18
Workgroup #:	WG574691	**Analyst:**	AMA	**Run Date:**	07/01/2016 11:42
Collect Date:	06/22/2016 07:20	**Dilution:**	1	**File ID:**	M7.070116.114222
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG574194
Analyst: ERP
Spike Analyst: ERP
Method: 7470A
Run Date: 06/25/2016 11:30
Hotblock Start Temp: 95.2 @ 06:35
Hotblock End Temp: 95.7 @ 08:35
Instrument: HB6

SOP: ME404 Revison 17
Spike Solution: STD76824
Spike Witness: VC
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
KMnO4 1:1 Lot #: RGT37128
H2SO4 Lot #: COA18359
K2S2O8 1:1 Lot #: RGT37142
Mercury Water ICV Lot #: STD76826
HG H2O STDS 10PPM Lot #: STD76832

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG574194-02	BLANK	1	40 mL	40 mL		
2	WG574194-03	LCS	1	40 mL	40 mL	4 mL	
3	L16061130-01	SAMP	1	40 mL	40 mL		07/05/16
4	L16061130-02	SAMP	1	40 mL	40 mL		07/05/16
5	L16061130-03	SAMP	1	40 mL	40 mL		07/05/16
6	L16061130-04	SAMP	1	40 mL	40 mL		07/05/16
7	L16061130-05	SAMP	1	40 mL	40 mL		07/05/16
8	L16061244-01	SAMP	17	4 mL	40 mL		06/29/16
9	L16061244-02	SAMP	17	4 mL	40 mL		06/29/16
10	WG574194-01	REF	1	40 mL	40 mL		
11	L16061265-01	RS01	1	40 mL	40 mL		06/30/16
12	WG574194-04	MS	1	36 mL	40 mL	4 mL	
13	L16061265-02	MS01	1	36 mL	40 mL	4 mL	06/30/16
14	WG574194-05	MSD	1	36 mL	40 mL	4 mL	
15	L16061265-03	SD01	1	36 mL	40 mL	4 mL	06/30/16
16	L16061265-04	SAMP	1	40 mL	40 mL		06/30/16
17	L16061265-05	SAMP	1	40 mL	40 mL		06/30/16
18	L16061265-06	SAMP	1	40 mL	40 mL		06/30/16
19	L16061266-01	SAMP	1	40 mL	40 mL		06/30/16
20	L16061269-01	SAMP	1	40 mL	40 mL		06/30/16
21	L16061272-01	SAMP	1	40 mL	40 mL		06/30/16
22	L16061272-02	SAMP	1	40 mL	40 mL		06/30/16
23	L16061289-01	SAMP	1	40 mL	40 mL		07/05/16
24	L16061289-04	SAMP	1	40 mL	40 mL		07/05/16
25	L16061290-03	SAMP	1	40 mL	40 mL		07/05/16
26	L16061290-05	SAMP	1	40 mL	40 mL		07/05/16
27	L16061402-01	SAMP	1	40 mL	40 mL		07/01/16

Analyst: Erin Potter

Reviewer: Vicki Collins

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4824610
Report generated: 06/25/2016 11:30

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 070116A.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76832 ICV Std: STD76826 Post Spike: STD76832

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 574691

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.070116.100604	WG575044-01	Calibration Point		1		07/01/16 10:06
2	M7.070116.100835	WG575044-02	Calibration Point		1		07/01/16 10:08
3	M7.070116.101107	WG575044-03	Calibration Point		1		07/01/16 10:11
4	M7.070116.101340	WG575044-04	Calibration Point		1		07/01/16 10:13
5	M7.070116.101613	WG575044-05	Calibration Point		1		07/01/16 10:16
6	M7.070116.101846	WG575044-06	Calibration Point		1		07/01/16 10:18
7	M7.070116.102121	WG575044-07	Initial Calibration Verification		1		07/01/16 10:21
8	M7.070116.102351	WG575044-08	Initial Calib Blank		1		07/01/16 10:23
9	M7.070116.102624	WG575044-09	CCV		1		07/01/16 10:26
10	M7.070116.102855	WG575044-10	CCB		1		07/01/16 10:28
11	M7.070116.103126	WG574194-02	Method/Prep Blank	40/40	1		07/01/16 10:31
12	M7.070116.103357	WG574194-03	Laboratory Control S	40/40	1		07/01/16 10:33
13	M7.070116.103628	L16061130-01	MW-23-012	40/40	1		07/01/16 10:36
14	M7.070116.103900	WG574691-01	Post Digestion Spike		1	L16061130-01	07/01/16 10:39
15	M7.070116.104132	L16061130-02	MW-23-003	40/40	1		07/01/16 10:41
16	M7.070116.104404	L16061130-03	MW-23-013	40/40	1		07/01/16 10:44
17	M7.070116.104636	L16061130-04	MW-23-001	40/40	1		07/01/16 10:46
18	M7.070116.104909	L16061130-05	EB (1) WATER A	40/40	1		07/01/16 10:49
19	M7.070116.105142	L16061244-01	K6F0679-01	4/40	1		07/01/16 10:51
20	M7.070116.105416	WG574691-02	Post Digestion Spike		1	L16061244-01	07/01/16 10:54
21	M7.070116.105648	WG575044-11	CCV		1		07/01/16 10:56
22	M7.070116.105919	WG575044-12	CCB		1		07/01/16 10:59
23	M7.070116.110152	L16061244-02	K6F0679-02	4/40	1		07/01/16 11:01
24	M7.070116.110426	WG574194-01	Reference Sample	40/40	1	L16061265-01	07/01/16 11:04
25	M7.070116.110657	L16061265-02	SS007MWN750-007 MS	36/40	1	WG574194-04	07/01/16 11:06
26	M7.070116.110927	L16061265-03	SS007MWN750-007 MSD	36/40	1	WG574194-05	07/01/16 11:09
27	M7.070116.111158	L16061265-04	SS007MWOB16-007	40/40	1		07/01/16 11:11
28	M7.070116.111429	L16061265-05	SS007MWOB21-007	40/40	1		07/01/16 11:14
29	M7.070116.111701	L16061265-06	FQC-RB06211601-CC	40/40	1		07/01/16 11:17
30	M7.070116.111932	L16061266-01	ST008MW0805-007	40/40	1		07/01/16 11:19
31	M7.070116.112204	L16061269-01	FT002MW0204-007	40/40	1		07/01/16 11:22
32	M7.070116.112437	L16061272-01	SS007MW0B18-007	40/40	1		07/01/16 11:24
33	M7.070116.112709	WG575044-13	CCV		1		07/01/16 11:27
34	M7.070116.112940	WG575044-14	CCB		1		07/01/16 11:29

Page: 1 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 070116A.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76832 ICV Std: STD76826 Post Spike: STD76832

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 574691

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.070116.113212	L16061272-02	SS007MWN752-007	40/40	1		07/01/16 11:32
36	M7.070116.113445	L16061289-01	MW21-062216	40/40	1		07/01/16 11:34
37	M7.070116.113718	L16061289-04	18WW02F-062216	40/40	1		07/01/16 11:37
38	M7.070116.113952	L16061290-03	MW16F-062116	40/40	1		07/01/16 11:39
39	M7.070116.114222	L16061290-05	109-062216	40/40	1		07/01/16 11:42
40	M7.070116.114453	L16061402-01	SS007MW0715-007	40/40	1		07/01/16 11:44
41	M7.070116.114725	WG575044-15	CCV		1		07/01/16 11:47
42	M7.070116.114956	WG575044-16	CCB		1		07/01/16 11:49

Page: 2 Approved: July 05, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 575044
Runlog ID: 76085
Analytical Workgroups: 574691

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1130,1265,1266,1269,
Case Narrative	1272,1289,1290,1402
Client Forms	X
Level X	
Level 3	1130
Level 4	1265,1266,1269,1272
Level 4	1289,1290,1402
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	BKT
Comments	

Primary Reviewer: 01-JUL-2016 Alexandra M. Alfred

Secondary Reviewer: 05-JUL-2016 Brian Zimm

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 12:35:40

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG574691

Login Number: L16061290

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW16F-062116	03	06/21/16					06/25/2016	3.9	28		07/01/16	9.9	28	
109-062216	05	06/22/16					06/25/2016	3.2	28		07/01/16	9.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4834842
Report generated 07/01/2016 15:49

METHOD BLANK SUMMARY

Login Number: L16061290
Blank File ID: M7.070116.103126
Prep Date: 06/25/16 11:30
Analyzed Date: 07/01/16 10:31
Analyst: AMA

Work Group: WG574691
Blank Sample ID: WG574194-02
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574194-03	M7.070116.103357	07/01/16 10:33	01
MW16F-062116	L16061290-03	M7.070116.113952	07/01/16 11:39	01
109-062216	L16061290-05	M7.070116.114222	07/01/16 11:42	01

Report Name: BLANK_SUMMARY
PDF File ID: 4834843
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 06/25/16 11:30 Sample ID: WG574194-02
Instrument ID: CVAA1 Run Date: 07/01/16 10:31 Prep Method: 7470A
File ID: M7.070116.103126 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG574691 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-01-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4834844
01-JUL-2016 15:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Run Date: 07/01/2016 Sample ID: WG574194-03
Instrument ID: CVAA1 Run Time: 10:33 Prep Method: 7470A
File ID: M7.070116.103357 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG574691 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76824 Cal ID: CVAA1-01-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00401	100	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4834845
Report generated: 07/01/2016 15:49

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061290 Cal ID: CVAA1 - Worknum: WG574691
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG574194-01 File ID: M7.070116.110426 Dil: 1 Matrix: WATER
Sample ID: WG574194-04 MS File ID: M7.070116.110657 Dil: 1 Units: mg/L
Sample ID: WG574194-05 MSD File ID: M7.070116.110927 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00450	101	0.00444	0.00445	100	1.07	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4834846
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061290 **Worknum:** WG574691
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG574691-01 **File ID:** M7.070116.103900 **Dil:** 1 **Units:** ug/L
Sample ID: L16061130-01 **File ID:** M7.070116.103628 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.00		0	U	1	100.0	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4834841
Report generated: 07/01/2016 15:49

Microbac Laboratories Inc.
INITIAL CALIBRATION SUMMARY

Login Number: L16061290
Analytical Method: 7470A
ICAL Worknum: WG575044

Workgroup (AAB#): WG574691
Instrument ID: CVAA1
Initial Calibration Date: 07/01/2016 10:18

Analyte	WG575044-01		WG575044-02		WG575044-03		WG575044-04		WG575044-05		WG575044-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	32.06	0.200	2295	1.00	10710	2.00	21560	5.00	53500	10.0	104800

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4834847
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061290
Analytical Method: 7470A
ICAL Worknum: WG575044

Workgroup (AAB#): WG574691
Instrument ID: CVAA1
Initial Calibration Date: 07/01/2016 10:18

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4834847
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061290
Instrument ID: CVAA1
File ID: M7.070116.102351
Workgroup (AAB#): WG574691
Matrix: WATER

Run Date: 07/01/2016
Run Time: 10:23
Analyst: AMA
Cal ID: CVAA1 - 01-JUL-16

Sample ID: WG575044-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4834849
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575044-10
Instrument ID: CVAA1
Run Time: 10:28
Method: 7470A
File ID: M7.070116.102855
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834851
Report generated 07/01/2016 15:50

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575044-12
Instrument ID: CVAA1
Run Time: 10:59
Method: 7470A
File ID: M7.070116.105919
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834851
Report generated 07/01/2016 15:50

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575044-14
Instrument ID: CVAA1
Run Time: 11:29
Method: 7470A
File ID: M7.070116.112940
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834851
Report generated 07/01/2016 15:50

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575044-16
Instrument ID: CVAA1
Run Time: 11:49
Method: 7470A
File ID: M7.070116.114956
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834851
Report generated 07/01/2016 15:50

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061290 Run Date: 07/01/2016 Sample ID: WG575044-07
Instrument ID: CVAA1 Run Time: 10:21 Method: 7470A
File ID: M7.070116.102121 Analyst: AMA Units: ug/L
Workgroup (AAB#): WG574691 Cal ID: CVAA1 - 01-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.10	105	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4834848
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575044-09
Instrument ID: CVAA1
Run Time: 10:26
Method: 7470A
File ID: M7.070116.102624
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00207	mg/L	103	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834850
Report generated 07/01/2016 15:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575044-11
Instrument ID: CVAA1
Run Time: 10:56
Method: 7470A
File ID: M7.070116.105648
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00216	mg/L	108	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834850
Report generated 07/01/2016 15:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575044-13
Instrument ID: CVAA1
Run Time: 11:27
Method: 7470A
File ID: M7.070116.112709
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00220	mg/L	110	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834850
Report generated 07/01/2016 15:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575044-15
Instrument ID: CVAA1
Run Time: 11:47
Method: 7470A
File ID: M7.070116.114725
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00224	mg/L	112	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834850
Report generated 07/01/2016 15:50

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\070116A.wsz
Date Started: 7/1/2016 9:38:14 AM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	07/01/16 10:06:04 am	0.0000	32	51.53		1.00
Replicates	33.9	9.2	48.5	36.7							
Standard #1 (0.2 ug/L)					STD	07/01/16 10:08:35 am	0.2000	2295	0.39		1.00
Replicates	2283.8	2292.8	2302.1	2302.8							
Standard #2 (1.0 ug/L)					STD	07/01/16 10:11:07 am	1.0000	10713	0.20		1.00
Replicates	10683.7	10720.4	10713.1	10735.4							
Standard #3 (2.0 ug/L)					STD	07/01/16 10:13:40 am	2.0000	21562	0.38		1.00
Replicates	21463.6	21528.1	21609.0	21649.1							
Standard #4 (5.0 ug/L)					STD	07/01/16 10:16:13 am	5.0000	53499	0.23		1.00
Replicates	53337.3	53478.0	53550.0	53628.8							
Standard #5 (10.0 ug/L)					STD	07/01/16 10:18:46 am	10.0000	104841	0.45		1.00
Replicates	104298.3	104651.5	105011.5	105402.7							

Calibration

Equation: A = 339.906 + 10489.180C
R2: 0.99990
SEE: 460.6227
Flags:

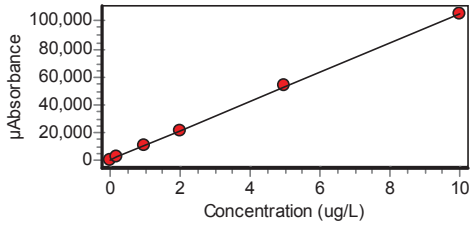

ICV					ICV	07/01/16 10:21:21 am	2.0960	22321	0.23		1.00
Replicates	22263.7	22304.4	22327.0	22388.5							
% Recovery	104.78										

Approved: July 01, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	07/01/16 10:23:51 am	-0.0320	5	241.36		1.00
Replicates	21.4	0.6	-0.6	-2.8							
CCV					CCV	07/01/16 10:26:24 am	2.0690	22040	0.78		1.00
Replicates	21832.9	21978.2	22121.4	22228.2							
% Recovery	103.44										
CCB					CCB	07/01/16 10:28:55 am	-0.0304	21	102.47		1.00
Replicates	31.7	46.9	5.0	1.4							
WG574194-02					MB	07/01/16 10:31:26 am	-0.0310	15	206.72		1.00
Replicates	11.9	54.7	15.1	-21.4							
WG574194-03					LCS	07/01/16 10:33:57 am	4.0120	42423	0.07		1.00
Replicates	42391.4	42417.5	42418.6	42464.5							
% Recovery	100.30										
L1606113001					UNK	07/01/16 10:36:28 am	-0.0328	-4	248.94		1.00
Replicates	-5.3	-15.2	-6.7	10.2							
WG574691-01					SPK	07/01/16 10:39:00 am	1.0000	10832	0.07		1.00
Replicates	10831.4	10821.7	10839.2	10836.2							
% Recovery	103.31										
L1606113002					UNK	07/01/16 10:41:32 am	-0.0290	35	27.30		1.00
Replicates	21.8	43.2	41.1	35.2							
L1606113003					UNK	07/01/16 10:44:04 am	-0.0301	24	48.09		1.00
Replicates	39.8	14.8	15.9	25.9							
L1606113004					UNK	07/01/16 10:46:36 am	-0.0259	69	17.22		1.00
Replicates	69.2	78.1	51.8	75.3							
L1606113005					UNK	07/01/16 10:49:09 am	-0.0288	38	73.36		1.00
Replicates	2.3	62.5	29.7	58.0							
L1606124401					UNK	07/01/16 10:51:42 am	-0.0319	5	147.97		1.00
Replicates	16.8	-2.4	2.9	4.6							

Approved: July 01, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
WG574691-02					SPK	07/01/16 10:54:16 am	0.9821	10641	0.47		1.00
Replicates	10703.5	10646.3	10632.5	10582.2							
% Recovery	101.40										
CCV					CCV	07/01/16 10:56:48 am	2.1580	22970	0.40		1.00
Replicates	22846.6	22954.2	23027.7	23053.0							
% Recovery	107.88										
CCB					CCB	07/01/16 10:59:19 am	-0.0323	1	266.19		1.00
Replicates	13.4	-2.1	-22.0	16.2							
L1606124402					UNK	07/01/16 11:01:52 am	-0.0296	29	53.06		1.00
Replicates	28.3	10.8	29.3	48.8							
L1606126501					UNK	07/01/16 11:04:26 am	-0.0300	25	44.66		1.00
Replicates	39.4	11.6	25.9	24.9							
WG574194-04					UNK	07/01/16 11:06:57 am	4.0520	42840	0.26		1.00
Replicates	42715.4	42805.0	42864.0	42976.5							
WG574194-05					UNK	07/01/16 11:09:27 am	4.0090	42388	0.05		1.00
Replicates	42388.5	42402.2	42406.7	42355.4							
L1606126504					UNK	07/01/16 11:11:58 am	-0.0336	-12	175.35		1.00
Replicates	-17.4	-39.9	-0.4	8.8							
L1606126505					UNK	07/01/16 11:14:29 am	-0.0296	29	54.43		1.00
Replicates	29.8	49.7	11.6	25.1							
L1606126506					UNK	07/01/16 11:17:01 am	-0.0334	-11	155.89		1.00
Replicates	-19.7	-0.3	6.5	-28.8							
L1606126601					UNK	07/01/16 11:19:32 am	-0.0029	310	3.21		1.00
Replicates	312.8	299.6	322.1	304.1							
L1606126901					UNK	07/01/16 11:22:04 am	-0.0296	30	92.97		1.00
Replicates	-11.7	44.4	42.9	43.0							

Approved: July 01, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606127201					UNK	07/01/16 11:24:37 am	-0.0307	18	64.86		1.00
Replicates	9.0	12.6	34.5	14.5							
CCV					CCV	07/01/16 11:27:09 am	2.1950	23367	0.59		1.00
Replicates	23176.4	23356.5	23444.0	23490.0							
% Recovery	109.76										
CCB					CCB	07/01/16 11:29:40 am	-0.0286	40	27.79		1.00
Replicates	38.5	31.4	56.3	34.3							
L1606127202					UNK	07/01/16 11:32:12 am	-0.0315	10	178.11		1.00
Replicates	23.2	25.6	-7.1	-3.2							
L1606128901					UNK	07/01/16 11:34:45 am	-0.0302	23	90.38		1.00
Replicates	52.6	15.7	6.4	15.7							
L1606128904					UNK	07/01/16 11:37:18 am	-0.0247	81	20.61		1.00
Replicates	93.7	94.1	75.4	59.4							
L1606129003					UNK	07/01/16 11:39:52 am	-0.0269	58	24.23		1.00
Replicates	77.1	56.4	53.5	43.9							
L1606129005					UNK	07/01/16 11:42:22 am	-0.0181	150	5.19		1.00
Replicates	152.2	159.2	141.7	145.2							
L1606140201					UNK	07/01/16 11:44:53 am	-0.0291	35	65.85		1.00
Replicates	2.6	54.3	34.9	48.3							
CCV					CCV	07/01/16 11:47:25 am	2.2370	23803	0.28		1.00
Replicates	23718.6	23781.3	23841.0	23871.3							
% Recovery	111.84										
CCB					CCB	07/01/16 11:49:56 am	-0.0306	19	30.24		1.00
Replicates	12.2	24.2	22.5	15.7							

Approved: July 01, 2016
Alexandra M. Alpred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 18, 2016

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - Hanah D. Coe
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RNP - RICK N. PETTY
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 18, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 18, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD		
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18CPTmw16-062216			6/21/16	1320		✓	W	3		✓		✓					
	mw16-062216			6/21/16	1440		✓	W	6	✓	✓		✓					
	mw16F-062216			6/21/16	1440		✓	W	1			✓						
	125-062216			6/22/16	0655		✓	W	4	✓	✓							
	109-062216			6/22/16	0720		✓	W	7	✓	✓	✓	✓					
	18CPTmw07-062216			6/22/16	0830		✓	W	6	✓	✓		✓					
	TRip Blank			6/22/16			✓	W	2	✓								

Comments: **STANDARD TAT**

	Date	Time	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	6/22/16	1545					
Relinquished by: (Signature)	Date	Time	Received (Signature)				Remarks:

Microbac OVD
Received: 06/23/2016 09:57
By: BRENDA GREGORY
221000087582
Brenda Gregory

*Homogenize all composite samples prior to analysis

Pink QA/QC Manager

00727421

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061290
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061290-01	765250	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:01	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061290-01	765251	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:23	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061290
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061290-02	765252	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Samplenum	Container ID	Products
L16061290-02	765253	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061290
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061290-02	765254	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:24	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

Samplenum	Container ID	Products
L16061290-03	765255	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	PREP	W1	DIG	23-JUN-2016 15:10	ERP	BRG	
3	ANALYZ*	DIG	METALS	24-JUN-2016 11:51	JYH	ERP	
4	STORE	DIG	A1	28-JUN-2016 13:55	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061290-04	765256	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061290
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061290-04	765257	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:24	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

Samplenum	Container ID	Products
L16061290-05	765258	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061290
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061290-05	765259	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	STORE	W1	A1	24-JUN-2016 10:00	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061290-05	765260	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:24	JWR	CLS	
3	STORE	SEM	A1	11-JUL-2016 11:21	CLS	JWR	

Samplenum	Container ID	Products
L16061290-05	765261	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	PREP	W1	DIG	23-JUN-2016 15:10	ERP	BRG	
3	ANALYZ*	DIG	METALS	24-JUN-2016 11:51	JYH	ERP	
4	STORE	DIG	A1	28-JUN-2016 13:56	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061290
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061290-06	765262	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Samplenum	Container ID	Products
L16061290-06	765263	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	STORE	W1	A1	24-JUN-2016 10:00	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061290
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061290-06	765264	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:24	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

Samplenum	Container ID	Products
L16061290-07	765265	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16061452

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 19 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0019234	H	3.0		J2317164877	X
0018829	H	3.0		J2317164868	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW12SW-062416	L16061452-01	06/24/2016 07:50	06/25/2016 10:39
18CPTMW12DW-062416	L16061452-02	06/24/2016 08:55	06/25/2016 10:39
MW7-062416	L16061452-03	06/24/2016 09:55	06/25/2016 10:39
TRIP BLANK	L16061452-04	06/24/2016 00:01	06/25/2016 10:39

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16061452
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 43
2.0 Full Sample Data Package 61
2.1 Volatiles Data 62
2.1.1 Volatiles GCMS Data (8260) 63
2.1.1.1 Summary Data 64
2.1.1.2 QC Summary Data 74
2.1.1.3 Sample Data 99
2.1.1.4 Standards Data 118
2.1.1.5 Raw QC Data 180
2.2 Semivolatiles Data 291
2.2.1 Semivolatiles GC/MS Data (Dioxane) 192
2.2.1.1 Summary Data 193
2.2.1.2 QC Summary Data 197
2.2.1.3 Sample Data 231
2.2.1.4 Standards Data 240
2.2.1.5 Raw QC Data 270
2.2 General Chromatography Data 291
2.2.2 6850 LC/MS Data 292
2.2.2.1 Summary Data 293
2.2.2.2 QC Summary Data 295
2.2.2.3 Sample Data 352
2.2.2.4 Standards Data 357
2.2.2.5 Raw QC Data 406
2.3 Metals Data 413
2.3.1 Metals I C P Data 414
2.3.1.1 Summary Data 415
2.3.1.2 QC Summary Data 419
2.3.1.3 Raw Data 484
2.3.2 Metals ICP-MS Data 1087
2.3.2.1 Summary Data 1088
2.3.2.2 QC Summary Data 1092
2.3.2.3 Raw Data 1151
2.3.3 Metals CVAA Data (Mercury) 2140
2.3.3.1 Summary Data 2141
2.3.3.2 QC Summary 2145
2.3.3.3 Raw Data 2168
3.0 Attachments 2173

1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575199	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-13 13:01:36

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575199	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575199	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			2
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575199	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575199	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575199	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Acetone and 2-Butanone were below the lower control limit in the CCV WG575198-02 analyzed 07/05/2016 on HPMS11.

2. 1,1-Dichloroethene, Chloromethane, Dichlorodifluoromethane were below the lower control limit in the LCS WG575199-02 and the LCSD WG575199-03 analyzed 07/05/2016 on HPMS11. Vinyl chloride was below the lower control limit in the LCSD WG575199-03 analyzed 07/05/2016 on HPMS11.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-07-12 12:36:23

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-06 18:31:04

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574636	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-19 13:35:19

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574636	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574636	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574636	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574636	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574636	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 01 required dilution analyses in order to obtain results for calcium, magnesium, and sodium within the calibration range.

ER#2 - The low level continuing calibration verification analyzed initially on 30-Jun-2016 at 14:46 yielded a noncompliant recovery for iron. Client sample 01 and batch QA/QC samples were reanalyzed on a later calibration which was compliant for iron.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574419	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-19 13:26:36

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574419	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574419	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574419	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574419	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574419	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 01 required dilution analysis in order to obtain results for barium and manganese within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574502	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-19 13:23:22

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574502	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574502	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574502	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574502	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574502	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18CPTMW12SW-062416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575199	**Analyst:**	JDS	**Run Date:**	07/06/2016 02:10
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	11M13093
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.70		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	89.0	70	120	
Toluene-d8	98.6	85	120	
4-Bromofluorobenzene	94.8	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/05/2016 22:02
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	15M18736
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	55.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW12SW-062416	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 22:52
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	1LM.LM35590
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.92		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3015	**Prep Date:**	06/29/2016 12:37
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/30/2016 12:04
Workgroup #:	WG574839	**Analyst:**	JYH	**Run Date:**	06/30/2016 17:41
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	T3.063016.174121
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0712	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	82.0		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3015	**Prep Date:**	06/29/2016 12:37
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	07/14/2016 12:14
Workgroup #:	WG574839	**Analyst:**	JYH	**Run Date:**	07/14/2016 17:27
Collect Date:	06/24/2016 07:50	**Dilution:**	5	**File ID:**	T3.071416.172719
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	45.3		2.50	1.25	0.625
Iron, Total	7439-89-6	3.46		1.00	0.500	0.250
Magnesium, Total	7439-95-4	32.8		5.00	2.50	1.25
Sodium, Total	7440-23-5	235		5.00	2.50	1.25

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3015	**Prep Date:**	06/28/2016 08:58
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574824	**Analyst:**	JYH	**Run Date:**	07/01/2016 15:49
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	NI.070116.154932
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00647		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00727		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00964		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00744	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.000779	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0132	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3015	**Prep Date:**	06/28/2016 08:58
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/06/2016 09:17
Workgroup #:	WG574824	**Analyst:**	JYH	**Run Date:**	07/06/2016 18:43
Collect Date:	06/24/2016 07:50	**Dilution:**	50	**File ID:**	NI.070616.184328
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.667		0.300	0.150	0.0750
Manganese, Total	7439-96-5	0.893		0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW12SW-062416	**Prep Method:**	7470A	**Prep Date:**	06/28/2016 13:03
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 13:34
Workgroup #:	WG574982	**Analyst:**	AMA	**Run Date:**	07/01/2016 14:38
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	M7.070116.143807
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW12DW-062416	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/05/2016 22:24
Collect Date:	06/24/2016 08:55	**Dilution:**	1	**File ID:**	15M18737
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	56.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW7-062416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575199	**Analyst:**	JDS	**Run Date:**	07/06/2016 03:46
Collect Date:	06/24/2016 09:55	**Dilution:**	10	**File ID:**	11M13096
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	Q	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	Q	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	2.77	J	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	14.1		10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	28.0		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	5.80	J	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	13.8		10.0	5.00	2.50

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
Trichloroethene	79-01-6	1740		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	89.1	70	120	
Toluene-d8	98.9	85	120	
4-Bromofluorobenzene	92.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW7-062416	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/06/2016 12:35
Collect Date:	06/24/2016 09:55	**Dilution:**	2	**File ID:**	15M18762
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	13.4		4.00	2.00	1.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	91.2	20	129	

Certificate of Analysis

Sample #:	L16061452-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW7-062416	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 23:11
Collect Date:	06/24/2016 09:55	**Dilution:**	10000	**File ID:**	1LM.LM35591
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	22200		4000	2000	1000

Certificate of Analysis

Sample #:	L16061452-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575199	**Analyst:**	JDS	**Run Date:**	07/06/2016 01:06
Collect Date:	06/24/2016 00:01	**Dilution:**	1	**File ID:**	11M13091
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	89.2	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	91.7	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18CPTMW12SW-062416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575199	**Analyst:**	JDS	**Run Date:**	07/06/2016 02:10
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	11M13093
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.70		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	89.0	70	120	
Toluene-d8	98.6	85	120	
4-Bromofluorobenzene	94.8	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW7-062416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575199	**Analyst:**	JDS	**Run Date:**	07/06/2016 03:46
Collect Date:	06/24/2016 09:55	**Dilution:**	10	**File ID:**	11M13096
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	Q	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	Q	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	2.77	J	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	14.1		10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	28.0		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	5.80	J	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	13.8		10.0	5.00	2.50

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
Trichloroethene	79-01-6	1740		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	89.1	70	120	
Toluene-d8	98.9	85	120	
4-Bromofluorobenzene	92.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575199	**Analyst:**	JDS	**Run Date:**	07/06/2016 01:06
Collect Date:	06/24/2016 00:01	**Dilution:**	1	**File ID:**	11M13091
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	89.2	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	91.7	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 051316
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 23 / 0
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 18 / 0
Method: 624 SOP: MSV10 Rev: 14
Maintenance Log ID:

Internal Standard: STD76110 Surrogate Standard: STD75929
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568769

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M11835	RINSE	NA	1	1		05/13/16 11:59
11M11836	WG568769-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 14:15
11M11837	WG568769-02 0.3ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 14:40
11M11838	WG568769-03 0.4ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:12
11M11839	WG568769-04 1.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:43
11M11840	WG568769-05 2.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:15
11M11841	WG568769-06 5.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:47
11M11842	WG568769-07 20ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:19
11M11843	WG568769-08 50ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:51
11M11844	WG568769-09 100ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:22
11M11845	WG568769-10 200ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:54
11M11846	WG568769-11 300ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 19:26
11M11847	RINSE	NA	1	1		05/13/16 19:58
11M11848	WG568769-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 20:30
11M11849	RINSE	NA	1	1		05/13/16 21:02
11M11850	RINSE	NA	1	1		05/13/16 21:34

Approved: May 23, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 070516
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76881 Surrogate Standard: STD76782
CCV: STD76892 LCS: STD76870 MS/MSD: NA

Column 1 ID: Column 2 ID: NA
Workgroups: WG575199

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M13072	WG575198-01 50ng BFB STD 8260	NA	1	1	STD76496	07/05/16 14:37
11M13073	WG575198-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/05/16 15:03
11M13074	WG575198-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/05/16 15:40
11M13076	WG575198-01 50ng BFB STD 8260	NA	1	1	STD76496	07/05/16 17:13
11M13077	WG575198-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/05/16 17:37
11M13078	WG575198-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/05/16 18:11
11M13079	WGXXXXXX-01 50ug/L A9-CCV STD 8260	NA	1	1	STDXXXXX	07/05/16 18:43
11M13080	WG575199-01 BLANK STD 8260	NA	1	1		07/05/16 19:15
11M13081	WG575199-02 20ug/L LCS STD 8260	NA	1	1	STD76870	07/05/16 19:47
11M13082	WG575199-03 20ug/L LCS2 STD 8260	NA	1	1	STD76870	07/05/16 20:19
11M13083	L16061509-02 B D1 100X 826-BETX	<2	1	100		07/05/16 20:51
11M13084	L16061509-03 B D1 100X 826-BETX	<2	1	100		07/05/16 21:23
11M13085	L16061509-06 B D1 10X 826-BETX	<2	1	10		07/05/16 21:54
11M13086	L16061509-10 B D1 5X 826-BETX	<2	1	5		07/05/16 22:26
11M13087	L16061507-01 B D1 100X 826-SPE2	<2	1	100		07/05/16 22:59
11M13088	L16061507-02 B D1 5X 826-SPE2	<2	1	5		07/05/16 23:30
11M13089	L16061406-04 B 00 2.5X 826-SPE	<2	1	2.5		07/06/16 00:02
11M13090	L16061290-04 B A1 826-SPE	<2	1	1		07/06/16 00:34
11M13091	L16061452-04 A TB 826-LOW	<2	1	1		07/06/16 01:06
11M13092	L16061453-04 A TB 826-LOW	<2	1	1		07/06/16 01:38
11M13093	L16061452-01 A 826-LOW	<2	1	1		07/06/16 02:10
11M13094	L16061453-02 A 826-LOW	<2	1	1		07/06/16 02:42
11M13095	L16061561-01 10X AF 826-TC	<2	17	10		07/06/16 03:14
11M13096	L16061452-03 10X A 826-LOW	<2	1	10		07/06/16 03:46
11M13097	L16061453-01 500X A 826-LOW	<2	1	500		07/06/16 04:18
11M13098	L16061453-03 25X A 826-LOW	<2	1	25		07/06/16 04:50
11M13099	L16061410-01 5X A 826-LOW	<2	1	5		07/06/16 05:21
11M13100	CCV	NA	1	1		07/06/16 05:53
11M13101	RINSE	NA	1	1		07/06/16 06:25
11M13102	RINSE	NA	1	1		07/06/16 06:57

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: July 13, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 070516
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76881 Surrogate Standard: STD76782
CCV: STD76892 LCS: STD76870 MS/MSD: NA

Column 1 ID: Column 2 ID: NA
Workgroups: WG575199

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3	X			
File ID: 11M13074				
	WG575198-02 CCV aborted due to analyst error			
6			Check Standard Failure	
File ID: 11M13078				
	failed low for ace., meth. ace., 2-but.			
25	X	250	Analyzed too dilute	
File ID: 11M13097				
	L16061453-01			
26	X	10	Analyzed too dilute	
File ID: 11M13098				
	L16061453-03			
27	X	1	Analyzed too dilute	
File ID: 11M13099				
	L16061410-01			

Approved: July 13, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75133
Analytical Workgroups: WG568769

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-MAY-2016

Secondary Reviewer:
23-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-23-2016 15:39:32

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 76231
Analytical Workgroups: WG575199

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	JDS
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
11-JUL-2016

Secondary Reviewer:
13-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-13-2016 08:01:44

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG575199

Login Number: L16061452

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW12SW-062416	01	06/24/16					07/06/2016	11.8	14		07/06/16	11.8	14	
MW7-062416	03	06/24/16					07/06/2016	11.7	14		07/06/16	11.7	14	
TRIP BLANK	04	06/24/16					07/06/2016	12	14		07/06/16	12	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4849104
Report generated 07/13/2016 08:51

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061452
Instrument Id: HPMS11
Workgroup (AAB#): WG575199

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061452-01	1.00	01	89.0	103	94.8	98.6
L16061452-03	10.0	DL01	89.1	100	92.7	98.9
L16061452-04	1.00	01	89.2	100	91.7	101
WG575199-01	1.00	01	87.7	99.4	91.6	98.6
WG575199-02	1.00	01	86.3	100	91.2	99.2
WG575199-03	1.00	01	85.3	98.0	89.1	97.4

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4849112
Report generated: 07/13/2016 08:52

METHOD BLANK SUMMARY

Login Number: L16061452
Blank File ID: 11M13080
Prep Date: 07/05/16 19:15
Analyzed Date: 07/05/16 19:15
Analyst: JDS

Work Group: WG575199
Blank Sample ID: WG575199-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG575199-02	11M13081	07/05/16 19:47	01
LCS2	WG575199-03	11M13082	07/05/16 20:19	01
TRIP BLANK	L16061452-04	11M13091	07/06/16 01:06	01
18CPTMW12SW-062416	L16061452-01	11M13093	07/06/16 02:10	01
MW7-062416	L16061452-03	11M13096	07/06/16 03:46	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4849105
Report generated 07/13/2016 08:51

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061452 Prep Date: 07/05/16 19:15 Sample ID: WG575199-01
Instrument ID: HPMS11 Run Date: 07/05/16 19:15 Prep Method: 5030B/5030C/503
File ID: 11M13080 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG575199 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4849106
13-JUL-2016 08:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061452 Prep Date: 07/05/16 19:15 Sample ID: WG575199-01
Instrument ID: HPMS11 Run Date: 07/05/16 19:15 Prep Method: 5030B/5030C/503
File ID: 11M13080 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG575199 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	99.4	85 - 115	PASS
1,2-Dichloroethane-d4	87.7	70 - 120	PASS
Toluene-d8	98.6	85 - 120	PASS
4-Bromofluorobenzene	91.6	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4849106
13-JUL-2016 08:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061452 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575199 Units: ug/L
QC Key: DOD4 Lot #: STD76870

Sample ID: WG575199-02 LCS File ID: 11M13081 Run Date: 07/05/2016 19:47
Sample ID: WG575199-03 LCS2 File ID: 11M13082 Run Date: 07/05/2016 20:19

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.4	107	20.0	20.9	104	2.29	80 - 130	30	
1,1,1-Trichloroethane	20.0	17.1	85.4	20.0	16.9	84.4	1.27	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	19.1	95.3	20.0	17.9	89.5	6.36	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.5	102	20.0	19.7	98.7	3.61	75 - 125	30	
1,1-Dichloroethane	20.0	15.9	79.5	20.0	15.8	78.9	0.648	70 - 135	30	
1,1-Dichloroethene	20.0	11.0	54.9	20.0	10.9	54.7	0.448	70 - 130	30	*
1,1-Dichloropropene	20.0	16.7	83.4	20.0	16.4	81.8	1.87	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.9	99.6	20.0	19.9	99.5	0.0479	55 - 140	30	
1,2,3-Trichloropropane	20.0	20.4	102	20.0	19.3	96.4	5.43	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	20.4	102	20.0	20.3	101	0.902	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.8	104	20.0	20.6	103	0.852	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	17.9	89.5	20.0	16.5	82.7	7.89	50 - 130	30	
1,2-Dibromoethane	20.0	20.4	102	20.0	19.0	95.2	6.71	80 - 120	30	
1,2-Dichlorobenzene	20.0	21.4	107	20.0	21.2	106	1.22	70 - 120	30	
1,2-Dichloroethane	20.0	17.7	88.4	20.0	17.3	86.6	2.12	70 - 130	30	
1,2-Dichloropropane	20.0	19.0	94.9	20.0	18.3	91.4	3.80	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.7	104	20.0	20.6	103	0.666	75 - 130	30	
1,3-Dichlorobenzene	20.0	21.2	106	20.0	20.9	105	1.55	75 - 125	30	
1,3-Dichloropropane	20.0	20.6	103	20.0	20.5	103	0.100	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.3	107	20.0	21.1	106	1.05	75 - 125	30	
2,2-Dichloropropane	20.0	16.7	83.7	20.0	16.0	80.0	4.60	70 - 135	30	
2-Butanone	20.0	17.3	86.6	20.0	16.1	80.4	7.46	30 - 150	30	
2-Chlorotoluene	20.0	20.8	104	20.0	20.5	102	1.87	75 - 125	30	
2-Hexanone	20.0	16.2	80.8	20.0	15.0	74.8	7.69	55 - 130	30	
4-Chlorotoluene	20.0	20.5	103	20.0	20.2	101	1.53	75 - 130	30	
4-Methyl-2-pentanone	20.0	18.2	91.2	20.0	17.2	85.8	6.08	60 - 135	30	
Acetone	20.0	16.3	81.7	20.0	15.8	79.0	3.31	40 - 140	30	
Benzene	20.0	17.5	87.7	20.0	17.2	85.9	2.07	80 - 120	30	
Bromobenzene	20.0	20.9	105	20.0	20.5	103	1.96	75 - 125	30	
Bromochloromethane	20.0	20.0	100	20.0	19.6	97.8	2.31	65 - 130	30	
Bromodichloromethane	20.0	19.5	97.5	20.0	19.0	94.8	2.85	75 - 120	30	
Bromoform	20.0	20.4	102	20.0	19.4	97.0	5.15	70 - 130	30	
Bromomethane	20.0	14.4	71.9	20.0	13.3	66.5	7.77	30 - 145	30	
Carbon disulfide	20.0	12.5	62.6	20.0	12.2	61.1	2.44	35 - 160	30	
Carbon tetrachloride	20.0	17.4	86.8	20.0	16.9	84.5	2.67	65 - 140	30	
Chlorobenzene	20.0	21.1	106	20.0	20.6	103	2.39	80 - 120	30	
Chloroethane	20.0	14.7	73.5	20.0	14.5	72.4	1.54	60 - 135	30	
Chloroform	20.0	17.8	89.0	20.0	17.4	87.2	2.00	65 - 135	30	
Chloromethane	20.0	6.21	31.1	20.0	6.18	30.9	0.505	40 - 125	30	*
cis-1,2-Dichloroethene	20.0	18.9	94.5	20.0	17.9	89.5	5.43	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4849107
Report generated: 07/13/2016 08:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061452 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575199 Units: ug/L
QC Key: DOD4 Lot #: STD76870

Sample ID: WG575199-02 LCS File ID: 11M13081 Run Date: 07/05/2016 19:47
Sample ID: WG575199-03 LCS2 File ID: 11M13082 Run Date: 07/05/2016 20:19

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.1	105	20.0	20.6	103	2.50	70 - 130	30	
Chlorodibromomethane	20.0	21.3	107	20.0	20.4	102	4.47	60 - 135	30	
Dibromomethane	20.0	18.0	90.0	20.0	17.9	89.3	0.808	75 - 125	30	
Dichlorodifluoromethane	20.0	2.14	10.7	20.0	2.10	10.5	2.02	30 - 155	30	*
Ethylbenzene	20.0	19.9	99.6	20.0	20.1	100	0.735	75 - 125	30	
Hexachlorobutadiene	20.0	18.7	93.5	20.0	19.3	96.4	3.14	50 - 140	30	
Isopropylbenzene	20.0	21.1	106	20.0	20.7	103	2.03	75 - 125	30	
m-,p-Xylene	40.0	41.3	103	40.0	40.4	101	2.27	75 - 130	30	
Methylene chloride	20.0	16.2	80.9	20.0	15.9	79.7	1.45	55 - 140	30	
n-Butylbenzene	20.0	19.7	98.5	20.0	19.3	96.3	2.26	70 - 135	30	
n-Propylbenzene	20.0	21.0	105	20.0	20.7	104	1.18	70 - 130	30	
Naphthalene	20.0	18.1	90.6	20.0	17.7	88.6	2.24	55 - 140	30	
o-Xylene	20.0	21.1	106	20.0	20.7	103	2.20	80 - 120	30	
p-Isopropyltoluene	20.0	21.0	105	20.0	20.7	103	1.41	75 - 130	30	
sec-Butylbenzene	20.0	21.1	105	20.0	20.6	103	2.25	70 - 125	30	
Styrene	20.0	21.5	108	20.0	20.9	105	2.76	65 - 135	30	
tert-Butylbenzene	20.0	22.8	114	20.0	21.4	107	6.21	70 - 130	30	
Tetrachloroethene	20.0	19.6	98.2	20.0	19.5	97.5	0.741	45 - 150	30	
Toluene	20.0	19.6	97.8	20.0	19.0	95.1	2.82	75 - 120	30	
trans-1,2-Dichloroethene	20.0	15.6	78.2	20.0	15.4	77.0	1.50	60 - 140	30	
trans-1,3-Dichloropropene	20.0	19.1	95.7	20.0	18.4	92.0	3.94	55 - 140	30	
Trichloroethene	20.0	20.6	103	20.0	20.7	104	0.456	70 - 125	30	
Trichlorofluoromethane	20.0	14.3	71.6	20.0	13.8	68.9	3.84	60 - 145	30	
Vinyl chloride	20.0	10.4	51.9	20.0	9.79	49.0	5.91	50 - 145	30	*

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	86.3	85.3	70 - 120	PASS
Dibromofluoromethane	100	98.0	85 - 115	PASS
4-Bromofluorobenzene	91.2	89.1	75 - 120	PASS
Toluene-d8	99.2	97.4	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4849107
Report generated: 07/13/2016 08:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061452
Instrument: HPMS11
Analyst: JDS
Workgroup: WG568769

Tune ID: WG568769-01
Run Date: 05/13/2016
Run Time: 14:15
File ID: 11M11836
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.2	11638	PASS
75.0	95.0	30.0	60.0	50.2	24088	PASS
95.0	95.0	100	100	100	48016	PASS
96.0	95.0	5.00	9.00	6.26	3008	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.2	41402	PASS
175	174	5.00	9.00	8.26	3421	PASS
176	174	95.0	101	97.3	40288	PASS
177	176	5.00	9.00	6.92	2789	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568769-02	STD	01	05/13/2016 14:40	
WG568769-03	STD	01	05/13/2016 15:12	
WG568769-04	STD	01	05/13/2016 15:43	
WG568769-05	STD	01	05/13/2016 16:15	
WG568769-06	STD	01	05/13/2016 16:47	
WG568769-07	STD	01	05/13/2016 17:19	
WG568769-08	STD-CCV	01	05/13/2016 17:51	
WG568769-09	STD	01	05/13/2016 18:22	
WG568769-10	STD	01	05/13/2016 18:54	
WG568769-11	STD	01	05/13/2016 19:26	
WG568769-12	SSCV	01	05/13/2016 20:30	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4849109
Report generated 07/13/2016 08:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061452
Instrument: HPMS11
Analyst: JDS
Workgroup: WG575198

Tune ID: WG575198-01
Run Date: 07/05/2016
Run Time: 17:13
File ID: 11M13076
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.4	8258	PASS
75.0	95.0	30.0	60.0	46.8	19945	PASS
95.0	95.0	100	100	100	42653	PASS
96.0	95.0	5.00	9.00	6.71	2862	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	94.0	40085	PASS
175	174	5.00	9.00	7.72	3095	PASS
176	174	95.0	101	96.5	38688	PASS
177	176	5.00	9.00	7.06	2730	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575198-02	CCV	01	07/05/2016 18:11	
WG575199-01	BLANK	01	07/05/2016 19:15	
WG575199-02	LCS	01	07/05/2016 19:47	
WG575199-03	LCS2	01	07/05/2016 20:19	
L16061452-04	TRIP BLANK	01	07/06/2016 01:06	
L16061452-01	18CPTMW12SW-062416	01	07/06/2016 02:10	
L16061452-03	MW7-062416	DL01	07/06/2016 03:46	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4849109
Report generated 07/13/2016 08:51

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Calibration: Sat May 14 18:45:57 2016
Curve: WG568769
Calibration Files

	Compound	0.3 11M11837.D	0.4 11M11838.D	1 11M11839.D	2 11M11840.D	5 11M11841.D	20 11M11842.D	50 11M11843.D	100 11M11844.D	200 11M11845.D	300 11M11846.D	Avg	%RSD	Linear	Quadratic
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.345	0.368	0.326	0.431	0.400	0.424	0.417	0.424	0.392	10.308		
P	Chloromethane			0.348	0.363	0.289	0.310	0.276	0.296	0.305	0.324	0.314	9.474		
C	Vinyl Chloride		0.275	0.241	0.249	0.244	0.268	0.250	0.271	0.271	0.276	0.261	5.458		
T	1,3-Butadiene					0.242	0.284	0.269	0.264	0.256	0.240	0.259	6.530		
T	Bromomethane			0.167	0.174	0.164	0.180	0.165	0.182	0.194	0.206	0.179	8.292		
T	Chloroethane			0.164	0.165	0.151	0.174	0.161	0.171	0.173	0.181	0.167	5.524		
T	Trichlorofluoromethane		0.514	0.523	0.537	0.496	0.552	0.498	0.524	0.514	0.514	0.519	3.376		
T	Diethyl ether			0.189	0.191	0.195	0.196	0.188	0.193		0.192	0.192	1.552		
T	Isoprene					0.299	0.331	0.317	0.323	0.325	0.325	0.320	3.522		
T	Acrolein			0.013	0.022	0.024	0.024	0.024	0.025		0.027	0.023	19.436	0.999	
T	1,1,2-Trichloro-1,2,2-Trifluor			0.261	0.245	0.234	0.268	0.245	0.252	0.254	0.257	0.252	4.225		
T	Acetone					0.063	0.067	0.058	0.057	0.057	0.054	0.059	7.931		
C	1,1-Dichloroethene		0.459	0.452	0.460	0.429	0.492	0.441	0.464	0.461	0.461	0.458	3.810		
T	Tert-Butyl Alcohol			0.014	0.015	0.017	0.018	0.017	0.017		0.017	0.016	9.673		
T	Dimethyl Sulfide					0.169	0.185	0.186	0.185	0.188	0.184	0.183	3.765		
T	Iodomethane				0.043	0.072	0.164	0.206	0.217	0.219	0.208	0.162	45.603		0.999
T	Methyl acetate				0.182	0.317	0.215	0.178	0.176	0.169	0.168	0.201	26.745		1.000
T	Methylene Chloride			0.239	0.256	0.230	0.243	0.224	0.232	0.234	0.238	0.237	4.076		
T	Carbon Disulfide			0.737	0.762	0.714	0.798	0.783	0.783	0.782	0.770	0.766	3.624		
T	Acrylonitrile			0.072	0.069	0.075	0.085	0.081	0.085		0.090	0.080	9.576		
T	Methyl Tert Butyl Ether			0.568	0.546	0.564	0.650	0.585	0.606	0.612	0.595	0.591	5.543		
T	trans-1,2-Dichloroethene		0.288	0.230	0.264	0.229	0.263	0.242	0.251	0.254	0.260	0.253	7.263		
T	n-Hexane				0.424	0.377	0.450	0.431	0.426	0.424	0.422	0.422	5.186		
T	Diisopropyl ether			1.034	1.075	1.083	1.055	1.046	1.062		1.015	1.053	2.218		
T	Vinyl Acetate					0.235	0.391	0.393	0.395	0.430	0.431	0.379	19.260	0.999	
P	1,1-Dichloroethane		0.463	0.517	0.527	0.505	0.535	0.495	0.513	0.511	0.508	0.508	4.023		
T	Ethyl-Tert-Butyl ether			0.815	0.854	0.881	0.876	0.855	0.873		0.844	0.857	2.667		
T	2-Butanone					0.079	0.097	0.087	0.092	0.092	0.091	0.090	6.720		
T	Propionitrile			0.023	0.025	0.026	0.029	0.027	0.027		0.027	0.026	7.381		
T	2,2-Dichloropropane		0.325	0.372	0.435	0.395	0.406	0.386	0.422	0.418	0.419	0.398	8.479		
T	cis-1,2-Dichloroethene		0.276	0.266	0.289	0.269	0.294	0.271	0.280	0.284	0.285	0.279	3.456		
C	Chloroform	0.587	0.483	0.491	0.514	0.480	0.509	0.470	0.486	0.489	0.482	0.499	6.767		
T	1-Bromopropane			0.014	0.041	0.045	0.047	0.048	0.049	0.050	0.050	0.043	28.190	1.000	
T	Bromochloromethane		0.115	0.140	0.169	0.167	0.188	0.172	0.179	0.180	0.181	0.166	14.065		
T	Tetrahydrofuran			0.074	0.061	0.058	0.067	0.061	0.062		0.059	0.063	8.769		
S	Dibromofluoromethane				0.251	0.266	0.284	0.268	0.284	0.285	0.278	0.274	4.605		
T	1,1,1-Trichloroethane		0.475	0.478	0.508	0.471	0.515	0.477	0.502	0.499	0.495	0.491	3.293		
T	Cyclohexane		0.477	0.485	0.547	0.509	0.574	0.551	0.560	0.558	0.556	0.535	6.606		
T	1,1-Dichloropropene		0.342	0.350	0.346	0.332	0.370	0.339	0.358	0.359	0.362	0.351	3.562		
T	Carbon Tetrachloride		0.409	0.457	0.522	0.465	0.518	0.473	0.496	0.492	0.486	0.480	7.177		
T	Tert-Amyl-Methyl ether			0.565	0.596	0.603	0.611	0.588	0.605		0.6	0.59537	2.5818		
S	1,2-Dichloroethane-d4			0.315	0.304	0.32	0.326	0.303	0.319	0.31	0.298	0.31197	3.15125		
T	1,2-Dichloroethane		0.388	0.391	0.419	0.395	0.441	0.402	0.413	0.409	0.391	0.40536	4.2274		
T	Benzene		1.058	0.952	1.016	0.923	0.996	0.908	0.943	0.931	0.914	0.96002	5.38884		
T	Trichloroethene		0.308	0.317	0.329	0.306	0.322	0.294	0.313	0.309	0.311	0.31204	3.21019		
T	Methylcyclohexane		0.332	0.37	0.389	0.35	0.411	0.401	0.4	0.405	0.407	0.3851	7.28708		
C	1,2-Dichloropropane		0.259	0.262	0.273	0.254	0.276	0.257	0.268	0.27	0.273	0.26575	2.95636		
T	1,4-Dioxane				0.001	0.001	0.002	0.001	0.002		0.002	0.0014	19.4617	0.999	
T	Bromodichloromethane		0.346	0.346	0.373	0.362	0.4	0.369	0.387	0.389	0.385	0.37307	5.09783		
T	Dibromomethane		0.118	0.136	0.135	0.137	0.149	0.137	0.146	0.145	0.144	0.13848	6.69192		
T	2-Chloroethyl Vinyl Ether					0.112	0.138	0.128	0.136	0.138	0.135	0.13098	7.7176		
T	4-Methyl-2-Pentanone					0.06	0.08	0.073	0.076	0.077	0.077	0.07387	9.67651		
T	cis-1,3-Dichloropropene		0.326	0.338	0.358	0.357	0.406	0.379	0.395	0.401	0.399	0.37315	7.91395		
T	Dimethyl Disulfide					0.185	0.229	0.227	0.233	0.238	0.235	0.22454	8.74309		

I	Chlorobenzene-d5	ISTD												
S	Toluene-d8				1.101	1.093	1.115	1.056	1.103	1.092	1.044	1.08625	2.42896	
C	Toluene		1.309	1.253	1.287	1.269	1.347	1.249	1.287	1.241	1.149	1.2656	4.33323	
T	Ethyl Methacrylate			0.234	0.233	0.25	0.299	0.285	0.289	0.291	0.281	0.27024	9.93745	
T	trans-1,3-Dichloropropene			0.335	0.388	0.387	0.448	0.418	0.432	0.43	0.412	0.40623	8.82781	
T	1,1,2-Trichloroethane		0.222	0.201	0.243	0.21	0.246	0.221	0.228	0.227	0.221	0.22442	6.30977	
T	2-Hexanone					0.137	0.179	0.165	0.172	0.172	0.165	0.16482	8.91224	
T	1,3-Dichloropropane		0.337	0.338	0.351	0.355	0.396	0.361	0.374	0.373	0.358	0.36039	5.16222	
T	Tetrachloroethene		0.274	0.287	0.317	0.286	0.306	0.286	0.3	0.299	0.294	0.29431	4.41886	
T	Dibromochloromethane		0.283	0.297	0.336	0.33	0.378	0.354	0.372	0.372	0.359	0.3423	9.88235	
T	1,2-Dibromoethane		0.232	0.182	0.228	0.214	0.243	0.224	0.233	0.235	0.232	0.22485	7.92714	
T	1-Chlorohexane		0.37	0.399	0.414	0.391	0.442	0.429	0.44	0.438	0.432	0.41726	6.09034	
P	Chlorobenzene		0.927	0.917	0.998	0.932	0.976	0.909	0.93	0.902	0.853	0.92715	4.48215	
T	1,1,1,2-Tetrachloroethane		0.341	0.361	0.405	0.366	0.388	0.371	0.384	0.385	0.376	0.37515	4.87731	
C	Ethylbenzene		0.453	0.457	0.512	0.463	0.495	0.466	0.482	0.479	0.472	0.47542	3.94078	
T	m-,p-Xylene		0.619	0.583	0.605	0.564	0.604	0.568	0.579	0.559	0.522	0.57798	5.08853	
T	o-Xylene		0.539	0.549	0.574	0.539	0.6	0.561	0.574	0.57	0.557	0.56249	3.43829	
T	Styrene		0.865	0.848	0.897	0.918	1.018	0.955	0.985	0.959	0.917	0.92933	5.96246	
P	Bromoform			0.172	0.189	0.185	0.226	0.21	0.225	0.226	0.228	0.20747	10.9157	
T	Isopropylbenzene		1.515	1.456	1.567	1.46	1.592	1.493	1.534	1.449	1.323	1.48754	5.34769	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.288	0.357	0.369	0.371	0.441	0.396	0.412	0.428	0.442	0.38931	12.6902	
S	p-Bromofluorobenzene				0.772	0.784	0.794	0.716	0.767	0.789	0.773	0.77065	3.38935	
T	1,2,3-Trichloropropane			0.087	0.129	0.138	0.151	0.137	0.142	0.148	0.148	0.13515	15.3522	0.999
T	trans-1,4-Dichloro-2-Butene			0.105	0.117	0.124	0.177	0.178	0.184	0.192	0.193	0.15883	23.0996	0.999
T	n-Propylbenzene		2.87	2.8	3.077	2.949	3.134	2.886	2.979	2.836	2.526	2.89527	6.10377	
T	Bromobenzene	0.663	0.778	0.81	0.798	0.765	0.784	0.718	0.752	0.769	0.76	0.75973	5.57443	
T	1,3,5-Trimethylbenzene		2.338	2.056	2.263	2.172	2.357	2.166	2.252	2.223	2.059	2.20939	4.86261	
T	2-Chlorotoluene		2.158	2.096	2.122	2.033	2.128	1.936	2.002	1.954	1.82	2.0279	5.4704	
T	4-Chlorotoluene		1.782	1.755	1.937	1.808	1.916	1.763	1.832	1.838	1.717	1.8165	4.03452	
T	a-Methylstyrene			1	1.066	1.101	1.241	1.231	1.235	1.242	1.208	1.16555	8.18507	
T	tert-Butylbenzene		0.378	0.44	0.48	0.489	0.498	0.458	0.483	0.49	0.497	0.46809	8.31778	
T	1,2,4-Trimethylbenzene		2.159	2.195	2.274	2.295	2.472	2.234	2.309	2.244	2.067	2.24981	4.97706	
T	sec-Butylbenzene			2.593	2.734	2.647	2.87	2.634	2.723	2.617	2.404	2.65291	5.05975	
T	p-Isopropyltoluene			2.247	2.592	2.45	2.641	2.43	2.506	2.404	2.226	2.43674	6.05243	
T	1,3-Dichlorobenzene		1.487	1.488	1.538	1.46	1.53	1.398	1.451	1.446	1.406	1.46732	3.33475	
T	1,4-Dichlorobenzene	1.482	1.601	1.511	1.569	1.484	1.538	1.404	1.456	1.434	1.395	1.4873	4.59741	
T	n-Butylbenzene		2.048	2.099	2.295	2.049	2.32	2.134	2.224	2.136	2.021	2.14721	5.09289	
T	1,2-Dichlorobenzene	1.33	1.26	1.333	1.432	1.33	1.406	1.296	1.343	1.326	1.31	1.33665	3.71841	
T	1,2-Dibromo-3-Chloropropane				0.057	0.079	0.096	0.081	0.086	0.087	0.091	0.08248	15.3444	0.999
T	1,2,4-Trichlorobenzene		0.927	0.903	0.957	0.956	1.042	0.972	0.998	1.002	1.047	0.97808	4.96993	
T	Hexachlorobutadiene		0.393	0.381	0.451	0.418	0.447	0.415	0.441	0.442	0.49	0.43089	7.64497	
T	Naphthalene		1.885	1.633	1.765	1.712	2.026	1.824	1.878	1.821	1.794	1.81543	6.15168	
T	1,2,3-Trichlorobenzene	0.854	0.957	0.865	0.918	0.834	0.946	0.86	0.889	0.912	0.943	0.89764	4.8559	

Tue May 17 13:57:02 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061452 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.6	ug/L	0.475	4.80	20	
1,1-Dichloroethene	CCC	50.0	47.5	ug/L	0.435	4.90	20	
1,2-Dichloropropane	CCC	50.0	52.8	ug/L	0.281	5.60	20	
Ethylbenzene	CCC	50.0	52.4	ug/L	0.498	4.80	20	
Toluene	CCC	50.0	53.8	ug/L	1.36	7.50	20	
Vinyl Chloride	CCC	50.0	56.1	ug/L	0.292	12.2	20	
Bromoform	SPCC	50.0	49.8	ug/L	0.207	0.300	20	
Chlorobenzene	SPCC	50.0	53.3	ug/L	0.988	6.60	20	
Chloromethane	SPCC	50.0	55.1	ug/L	0.346	10.2	20	
1,1-Dichloroethane	SPCC	50.0	48.5	ug/L	0.493	3.00	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	54.9	ug/L	0.428	9.90	20	
Acetone		50.0	49.7	ug/L	0.0590	0.700	20	
Benzene		50.0	51.2	ug/L	0.983	2.40	20	
Bromobenzene		50.0	51.6	ug/L	0.785	3.30	20	
Bromochloromethane		50.0	53.9	ug/L	0.179	7.80	20	
Bromodichloromethane		50.0	49.5	ug/L	0.370	0.900	20	
Bromomethane		50.0	50.5	ug/L	0.181	1.00	20	
2-Butanone		50.0	50.3	ug/L	0.0904	0.700	20	
n-Butylbenzene		50.0	53.9	ug/L	2.31	7.80	20	
sec-Butylbenzene		50.0	55.9	ug/L	2.97	11.8	20	
tert-Butylbenzene		50.0	56.5	ug/L	0.529	13.1	20	
Carbon Disulfide		50.0	44.7	ug/L	0.685	10.6	20	
Carbon Tetrachloride		50.0	47.3	ug/L	0.454	5.30	20	
Dibromochloromethane		50.0	52.5	ug/L	0.360	5.10	20	
Chloroethane		50.0	58.9	ug/L	0.197	17.7	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.14	5.50	20	
4-Chlorotoluene		50.0	55.4	ug/L	2.01	10.8	20	
1,2-Dibromo-3-Chloropropane		50.0	48.1	ug/L	0.0844	3.80	20	
1,2-Dibromoethane		50.0	52.6	ug/L	0.237	5.30	20	
Dibromomethane		50.0	48.0	ug/L	0.133	3.90	20	
1,2-Dichlorobenzene		50.0	53.6	ug/L	1.43	7.20	20	
1,3-Dichlorobenzene		50.0	52.7	ug/L	1.55	5.40	20	
1,4-Dichlorobenzene		50.0	53.0	ug/L	1.58	6.10	20	
Dichlorodifluoromethane		50.0	56.6	ug/L	0.443	13.2	20	
1,2-Dichloroethane		50.0	47.9	ug/L	0.388	4.20	20	
cis-1,2-Dichloroethene		50.0	53.2	ug/L	0.297	6.30	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.264	4.30	20	
1,3-Dichloropropane		50.0	56.3	ug/L	0.406	12.6	20	
2,2-Dichloropropane		50.0	45.6	ug/L	0.362	8.90	20	
cis-1,3-Dichloropropene		50.0	57.6	ug/L	0.430	15.2	20	
trans-1,3-Dichloropropene		50.0	52.1	ug/L	0.423	4.20	20	
1,1-Dichloropropene		50.0	50.1	ug/L	0.352	0.200	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4849108
Report generated 07/13/2016 08:51

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061452 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.2	ug/L	0.172	4.40	20	
Hexachlorobutadiene		50.0	55.9	ug/L	0.482	11.8	20	
Isopropylbenzene		50.0	54.2	ug/L	1.61	8.50	20	
p-Isopropyltoluene		50.0	54.7	ug/L	2.67	9.40	20	
4-Methyl-2-Pentanone		50.0	52.6	ug/L	0.0777	5.10	20	
Methylene Chloride		50.0	52.0	ug/L	0.246	4.00	20	
Naphthalene		50.0	51.1	ug/L	1.86	2.30	20	
n-Propylbenzene		50.0	56.6	ug/L	3.28	13.2	20	
Styrene		50.0	55.0	ug/L	1.02	9.90	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/L	0.383	2.10	20	
Tetrachloroethene		50.0	52.2	ug/L	0.307	4.40	20	
1,2,3-Trichlorobenzene		50.0	54.1	ug/L	0.971	8.10	20	
1,2,4-Trichlorobenzene		50.0	55.4	ug/L	1.08	10.9	20	
1,1,1-Trichloroethane		50.0	48.1	ug/L	0.472	3.90	20	
1,1,2-Trichloroethane		50.0	52.8	ug/L	0.237	5.50	20	
Trichloroethene		50.0	52.3	ug/L	0.327	4.60	20	
Trichlorofluoromethane		50.0	47.5	ug/L	0.494	4.90	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.147	0.300	20	
1,2,4-Trimethylbenzene		50.0	53.8	ug/L	2.42	7.70	20	
1,3,5-Trimethylbenzene		50.0	55.1	ug/L	2.44	10.3	20	
o-Xylene		50.0	54.7	ug/L	0.615	9.40	20	
m-,p-Xylene		100	107	ug/L	0.620	7.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4849108
Report generated 07/13/2016 08:51

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452 Run Date: 07/05/2016 Sample ID: WG575198-02
Instrument ID: HPMS11 Run Time: 18:11 Method: 8260B
File ID: 11M13078 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG575199 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.7	ug/L	0.487	2.51	20	
1,1-Dichloroethene	CCC	50.0	48.6	ug/L	0.445	2.78	20	
1,2-Dichloropropane	CCC	50.0	49.1	ug/L	0.261	1.71	20	
Ethylbenzene	CCC	50.0	52.2	ug/L	0.497	4.47	20	
Toluene	CCC	50.0	52.3	ug/L	1.32	4.62	20	
Vinyl Chloride	CCC	50.0	53.3	ug/L	0.278	6.68	20	
Bromoform	SPCC	50.0	54.5	ug/L	0.226	9.02	20	
Chlorobenzene	SPCC	50.0	52.8	ug/L	0.979	5.54	20	
Chloromethane	SPCC	50.0	50.3	ug/L	0.316	0.684	20	
1,1-Dichloroethane	SPCC	50.0	49.8	ug/L	0.507	0.335	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.3	ug/L	0.384	1.32	20	
Xylenes		150	158	ug/L	0.598	5.12	20	
Acetone		50.0	39.4	ug/L	0.0468	21.2	20	*
Benzene		50.0	50.4	ug/L	0.969	0.895	20	
Bromobenzene		50.0	51.4	ug/L	0.781	2.78	20	
Bromochloromethane		50.0	57.2	ug/L	0.190	14.4	20	
Bromodichloromethane		50.0	50.7	ug/L	0.379	1.45	20	
Bromomethane		50.0	52.8	ug/L	0.189	5.69	20	
2-Butanone		50.0	39.7	ug/L	0.0712	20.6	20	*
n-Butylbenzene		50.0	49.5	ug/L	2.12	1.05	20	
sec-Butylbenzene		50.0	51.3	ug/L	2.72	2.51	20	
tert-Butylbenzene		50.0	53.4	ug/L	0.500	6.73	20	
Carbon Disulfide		50.0	49.7	ug/L	0.762	0.603	20	
Carbon Tetrachloride		50.0	52.3	ug/L	0.502	4.58	20	
Dibromochloromethane		50.0	53.9	ug/L	0.369	7.74	20	
Chloroethane		50.0	51.0	ug/L	0.171	1.95	20	
2-Chlorotoluene		50.0	49.1	ug/L	1.99	1.90	20	
4-Chlorotoluene		50.0	49.5	ug/L	1.80	1.10	20	
1,2-Dibromo-3-Chloropropane		50.0	42.8	ug/L	0.0749	14.4	20	
1,2-Dibromoethane		50.0	51.2	ug/L	0.230	2.36	20	
Dibromomethane		50.0	51.4	ug/L	0.143	2.89	20	
1,2-Dichlorobenzene		50.0	50.7	ug/L	1.36	1.46	20	
1,3-Dichlorobenzene		50.0	51.0	ug/L	1.50	2.00	20	
1,4-Dichlorobenzene		50.0	50.2	ug/L	1.49	0.313	20	
Dichlorodifluoromethane		50.0	55.7	ug/L	0.437	11.4	20	
1,2-Dichloroethane		50.0	46.6	ug/L	0.378	6.72	20	
cis-1,2-Dichloroethene		50.0	52.2	ug/L	0.292	4.46	20	
trans-1,2-Dichloroethene		50.0	52.5	ug/L	0.266	5.09	20	
1,3-Dichloropropane		50.0	50.0	ug/L	0.360	0.00380	20	
2,2-Dichloropropane		50.0	55.4	ug/L	0.441	10.8	20	
cis-1,3-Dichloropropene		50.0	52.5	ug/L	0.392	5.02	20	
trans-1,3-Dichloropropene		50.0	50.9	ug/L	0.414	1.89	20	

CCV - Modified 03/05/2008
PDF File ID: 4849110
Report generated 07/13/2016 08:51

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452 Run Date: 07/05/2016 Sample ID: WG575198-02
Instrument ID: HPMS11 Run Time: 18:11 Method: 8260B
File ID: 11M13078 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG575199 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.4	ug/L	0.361	2.85	20	
2-Hexanone		50.0	40.1	ug/L	0.132	19.7	20	
Hexachlorobutadiene		50.0	47.1	ug/L	0.406	5.83	20	
Isopropylbenzene		50.0	52.9	ug/L	1.57	5.74	20	
p-Isopropyltoluene		50.0	52.0	ug/L	2.53	4.01	20	
4-Methyl-2-Pentanone		50.0	45.5	ug/L	0.0673	8.96	20	
Methylene Chloride		50.0	50.4	ug/L	0.239	0.865	20	
Naphthalene		50.0	47.8	ug/L	1.74	4.41	20	
n-Propylbenzene		50.0	51.5	ug/L	2.98	3.05	20	
Styrene		50.0	54.3	ug/L	1.01	8.66	20	
1,1,1,2-Tetrachloroethane		50.0	52.8	ug/L	0.396	5.62	20	
Tetrachloroethene		50.0	54.7	ug/L	0.322	9.38	20	
1,2,3-Trichlorobenzene		50.0	48.2	ug/L	0.866	3.55	20	
1,2,4-Trichlorobenzene		50.0	49.7	ug/L	0.972	0.637	20	
1,1,1-Trichloroethane		50.0	50.7	ug/L	0.498	1.45	20	
1,1,2-Trichloroethane		50.0	50.3	ug/L	0.226	0.659	20	
Trichloroethene		50.0	53.3	ug/L	0.333	6.67	20	
Trichlorofluoromethane		50.0	50.7	ug/L	0.527	1.50	20	
1,2,3-Trichloropropane		50.0	46.7	ug/L	0.137	6.53	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/L	2.32	3.04	20	
1,3,5-Trimethylbenzene		50.0	50.8	ug/L	2.25	1.69	20	
o-Xylene		50.0	52.2	ug/L	0.587	4.30	20	
m-,p-Xylene		100	106	ug/L	0.610	5.52	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4849110
Report generated 07/13/2016 08:51

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061452
Instrument ID: HPMS11
Workgroup (AAB#): WG575199

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16061452-01	1.00	01	226151	395202	452230
L16061452-03	10.0	DL01	225213	391581	454519
L16061452-04	1.00	01	232571	394530	459223
WG575199-01	1.00	01	236090	408648	472304
WG575199-02	1.00	01	250949	420960	485527
WG575199-03	1.00	01	257746	435197	499574

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4849111
Report generated 07/13/2016 08:52

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061452
Instrument ID: HPMS11
Workgroup (AAB#): WG575199

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16061452-01	1.00	01	17.06	14.25	10.61
L16061452-03	10.0	DL01	17.06	14.25	10.61
L16061452-04	1.00	01	17.06	14.25	10.61
WG575199-01	1.00	01	17.06	14.25	10.61
WG575199-02	1.00	01	17.06	14.25	10.61
WG575199-03	1.00	01	17.06	14.25	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4849113
Report generated: 07/13/2016 08:52

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13093.D Vial: 18
Acq On : 6 Jul 2016 2:10 Operator: JDS
Sample : L16061452-01 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 06 09:19:49 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	452230	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	395202	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	226151	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	126967	25.6536 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.60%		
43) 1,2-Dichloroethane-d4	10.23	65	125530	22.2441 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.96%		
57) Toluene-d8	12.47	98	423325	24.6527 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.60%		
78) p-Bromofluorobenzene	15.64	95	165165	23.6920 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.76%		

Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	2160	0.4739 ug/L	98
13) Acetone	6.34	43	917	0.8539 ug/L #	49
46) Trichloroethene	11.09	130	9583	1.6977 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M13093.D 8260WT.M Wed Jul 06 09:19:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13093.D Vial: 18
Acq On : 6 Jul 2016 2:10 Operator: JDS
Sample : L16061452-01 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 6 9:19 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

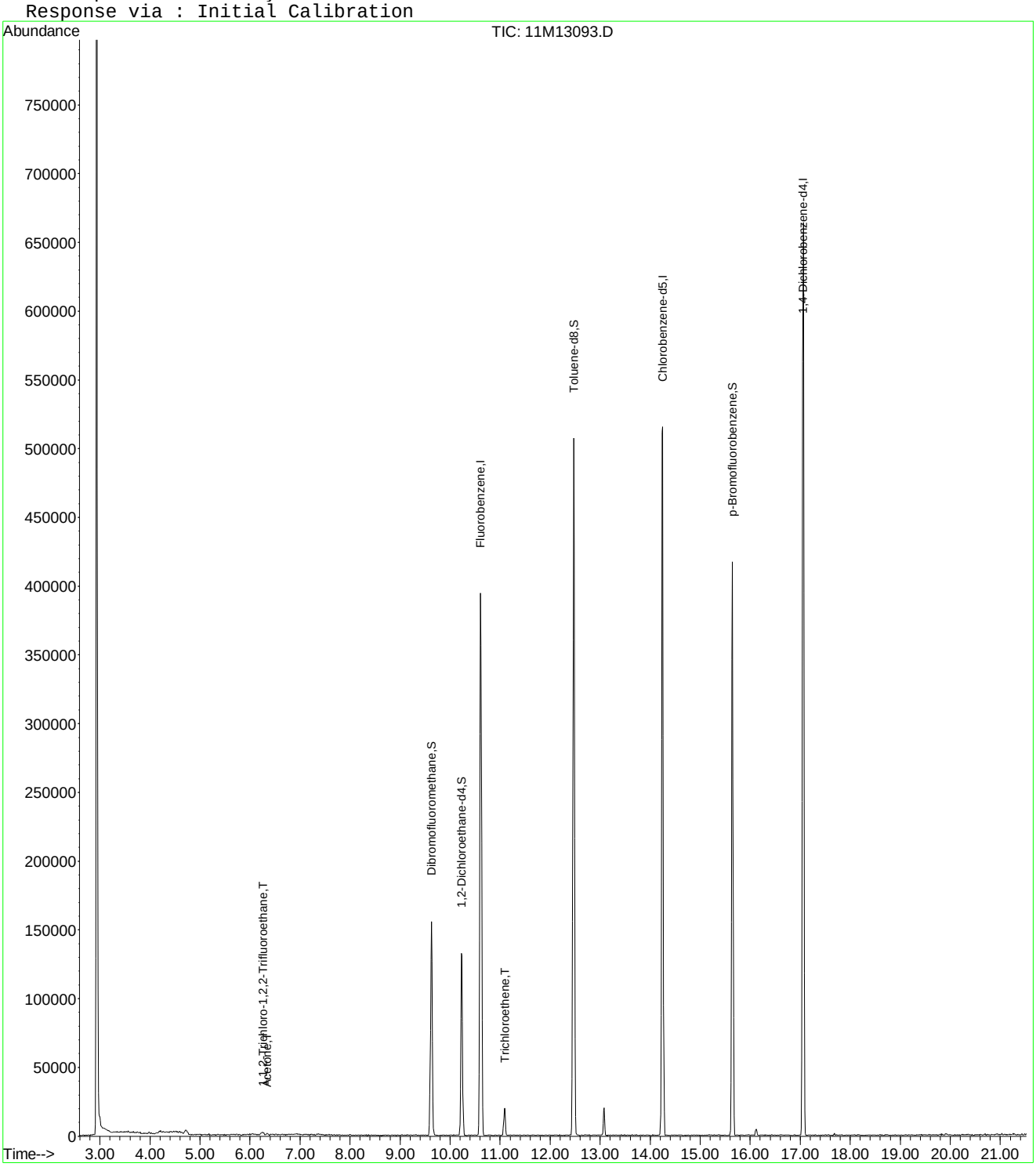

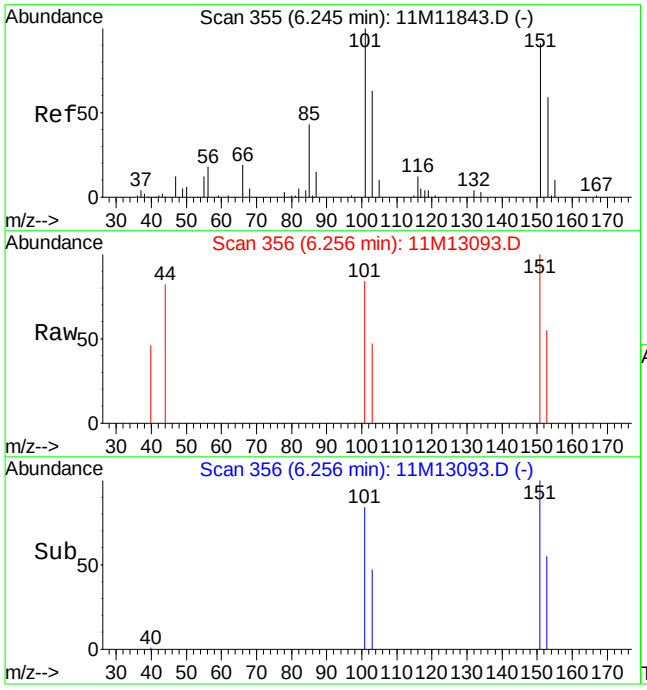

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.47 ug/L
RT: 6.26 min Scan# 356
Delta R.T. 0.01 min
Lab File: 11M13093.D
Acq: 6 Jul 2016 2:10

Tgt Ion:101 Resp: 2160

Ion	Ratio	Lower	Upper
101	100		
151	88.7	50.7	130.7

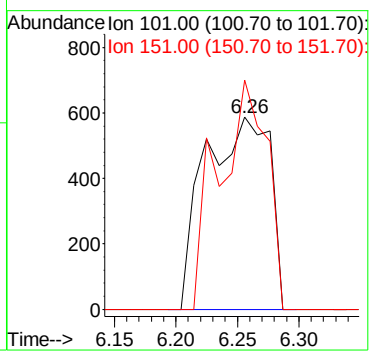

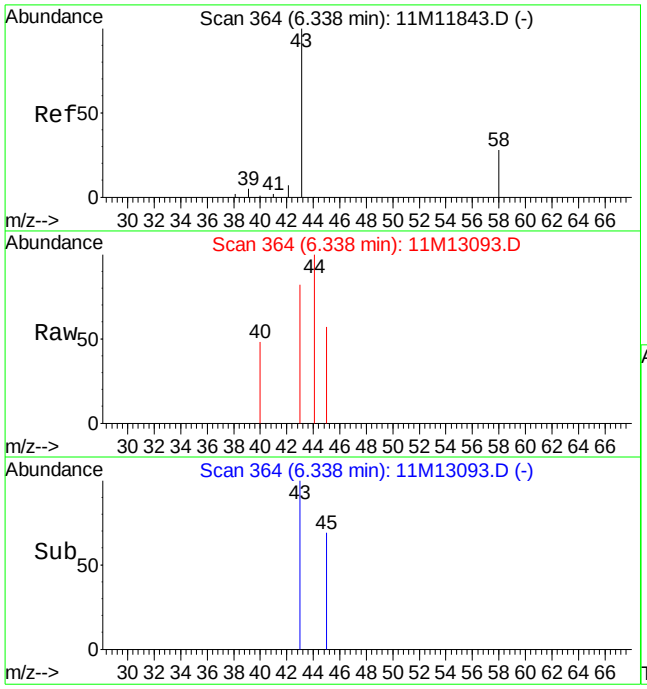

#13
Acetone
Concen: 0.85 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M13093.D
Acq: 6 Jul 2016 2:10

Tgt Ion: 43 Resp: 917

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

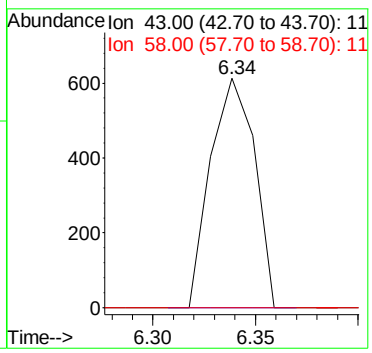

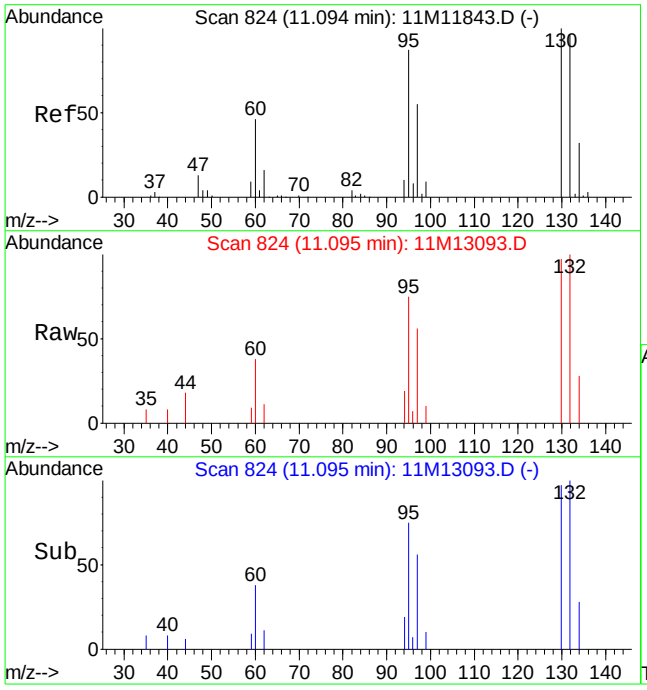

#46
Trichloroethene
Concen: 1.70 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M13093.D
Acq: 6 Jul 2016 2:10

Tgt Ion:130 Resp: 9583

Ion	Ratio	Lower	Upper
130	100		
132	98.6	58.3	136.1
95	84.4	55.6	129.8

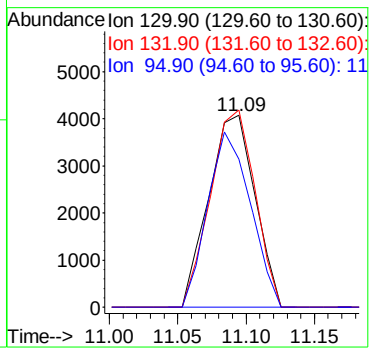

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13096.D Vial: 21
Acq On : 6 Jul 2016 3:46 Operator: JDS
Sample : L16061452-03 10X A 826-LOW Inst : hpms11
Misc : 1,10 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 06 09:20:00 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	454519	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	391581	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	225213	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	124515	25.0315 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.12%		
43) 1,2-Dichloroethane-d4	10.23	65	126317	22.2709 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.08%		
57) Toluene-d8	12.47	98	420681	24.7253 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.92%		
78) p-Bromofluorobenzene	15.64	95	160848	23.1689 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.68%		

Target Compounds

					Qvalue
3) Chloromethane	3.73	50	1166	0.2044 ug/L #	73
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	24204	5.2836 ug/L	98
13) Acetone	6.34	43	388	0.3595 ug/L #	49
14) 1,1-Dichloroethene	6.57	61	4828	0.5802 ug/L	100
26) Vinyl Acetate	8.22	43	1039	2.5657 ug/L #	79
29) 2-Butanone	8.87	43	699	0.4284 ug/L #	62
32) cis-1,2-Dichloroethene	9.15	96	7006	1.3798 ug/L	81
33) Chloroform	9.35	83	12772	1.4075 ug/L	97
36) Tetrahydrofuran	9.60	42	759	0.6587 ug/L #	47
41) Carbon Tetrachloride	10.20	117	2412	0.2766 ug/L #	89
44) 1,2-Dichloroethane	10.34	62	20608	2.7963 ug/L	92
46) Trichloroethene	11.09	130	985023	173.6281 ug/L	98
47) Methylcyclohexane	11.09	83	9583	1.3687 ug/L #	1
58) Toluene	12.57	91	2496	0.1259 ug/L #	64
70) Ethylbenzene	14.40	106	966	0.1297 ug/L	66

(#) = qualifier out of range (m) = manual integration
11M13096.D 8260WT.M Wed Jul 06 09:20:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13096.D Vial: 21
Acq On : 6 Jul 2016 3:46 Operator: JDS
Sample : L16061452-03 10X A 826-LOW Inst : hpms11
Misc : 1,10 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 6 9:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

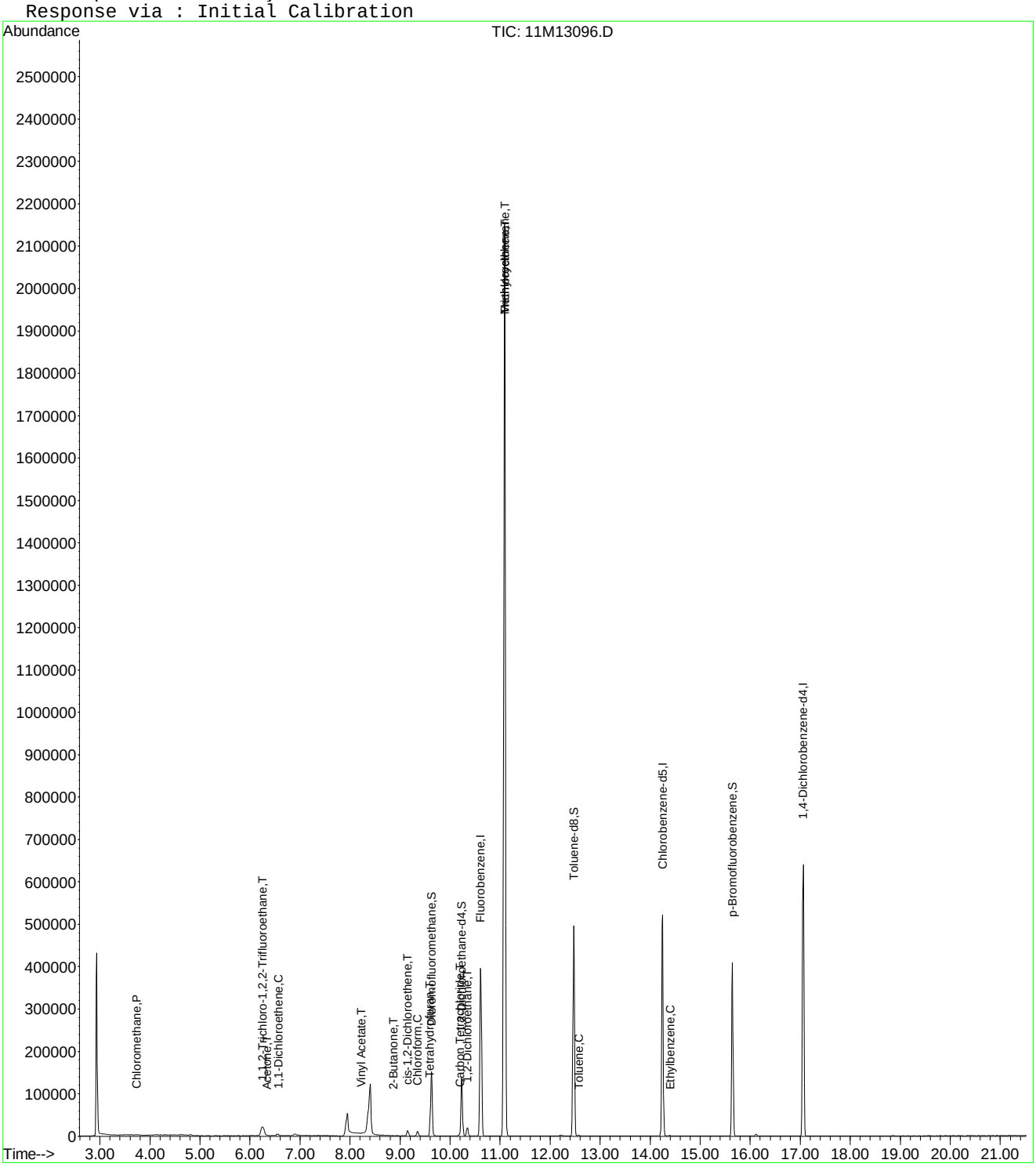

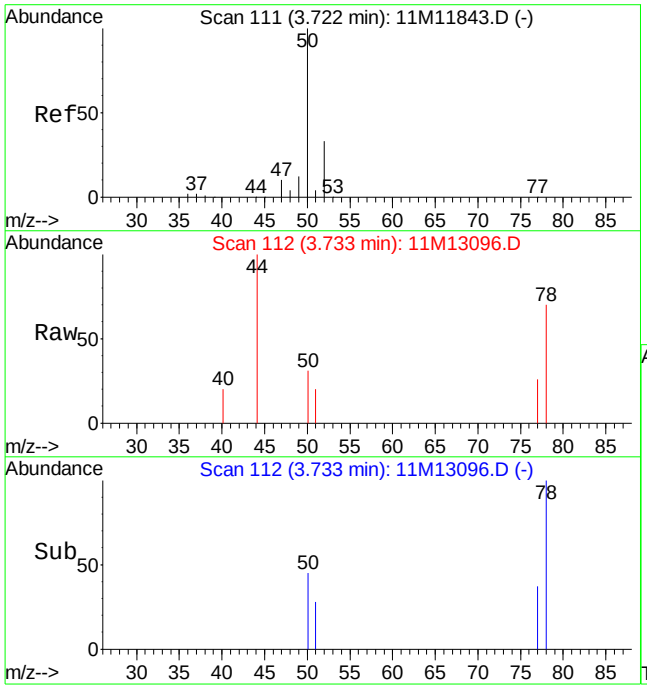

#3
Chloromethane
Concen: 0.20 ug/L
RT: 3.73 min Scan# 112
Delta R.T. 0.01 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 50 Resp: 1166

Ion	Ratio	Lower	Upper
50	100		
52	17.8	20.0	46.6#

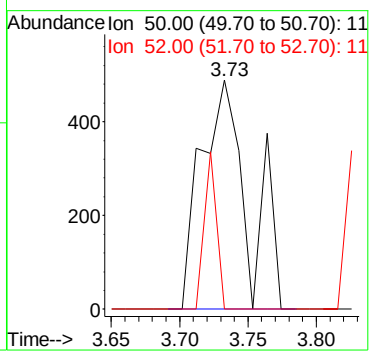

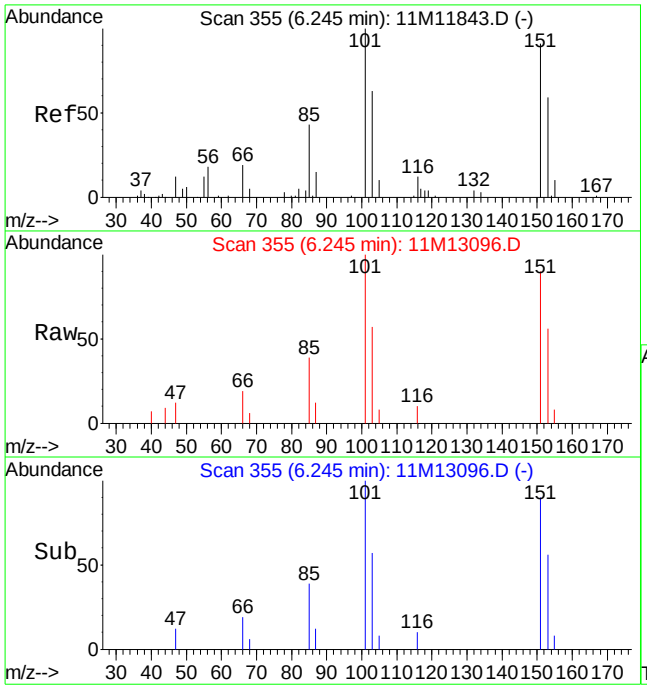

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 5.28 ug/L
RT: 6.25 min Scan# 355
Delta R.T. 0.00 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion:101 Resp: 24204

Ion	Ratio	Lower	Upper
101	100		
151	92.2	50.7	130.7

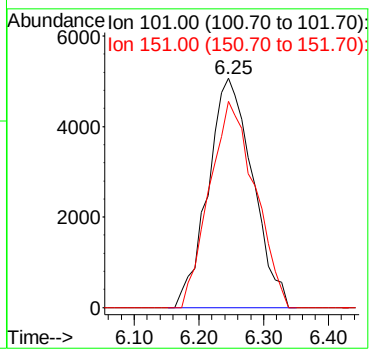

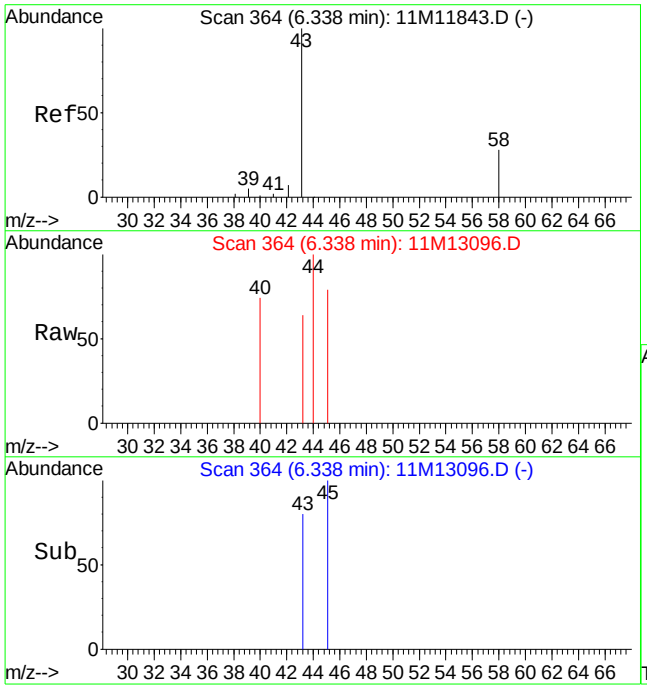

#13
Acetone
Concen: 0.36 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 43 Resp: 388

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

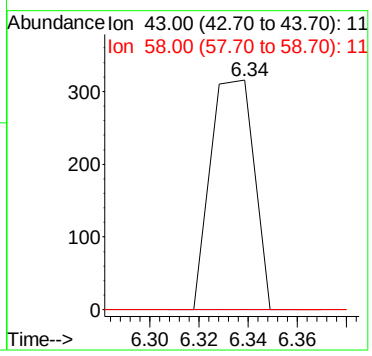

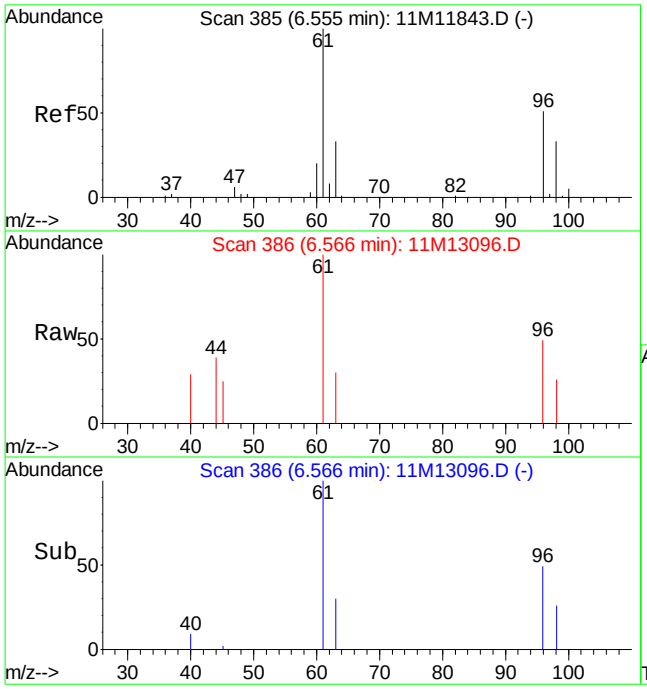

#14
1,1-Dichloroethene
Concen: 0.58 ug/L
RT: 6.57 min Scan# 386
Delta R.T. 0.01 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 61 Resp: 4828

Ion	Ratio	Lower	Upper
61	100		
96	49.9	30.1	70.3

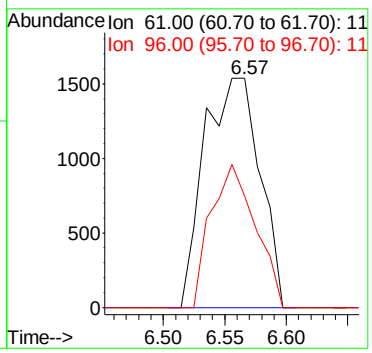

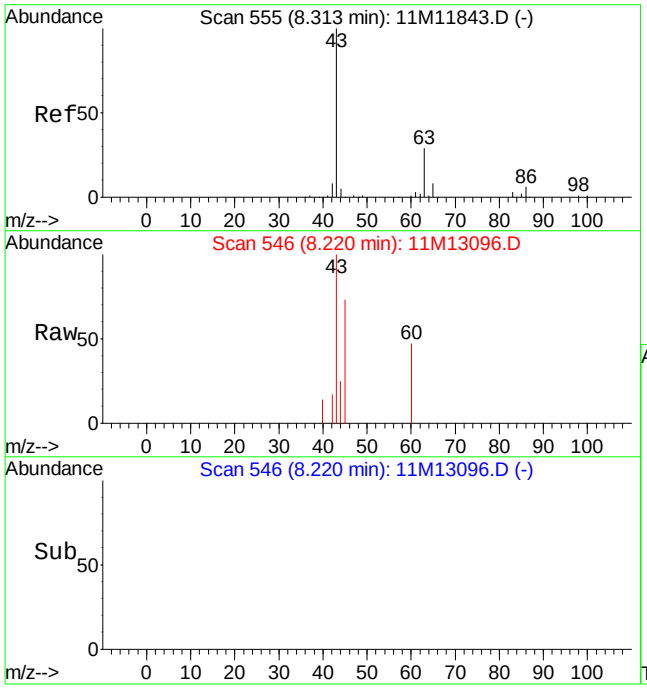

#26
Vinyl Acetate
Concen: 2.57 ug/L
RT: 8.22 min Scan# 546
Delta R.T. -0.09 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 43 Resp: 1039

Ion	Ratio	Lower	Upper
43	100		
42	0.0	5.0	11.6#
86	0.0	3.8	9.0#

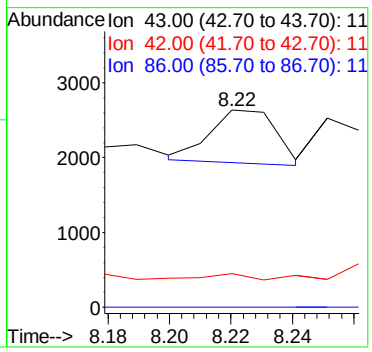

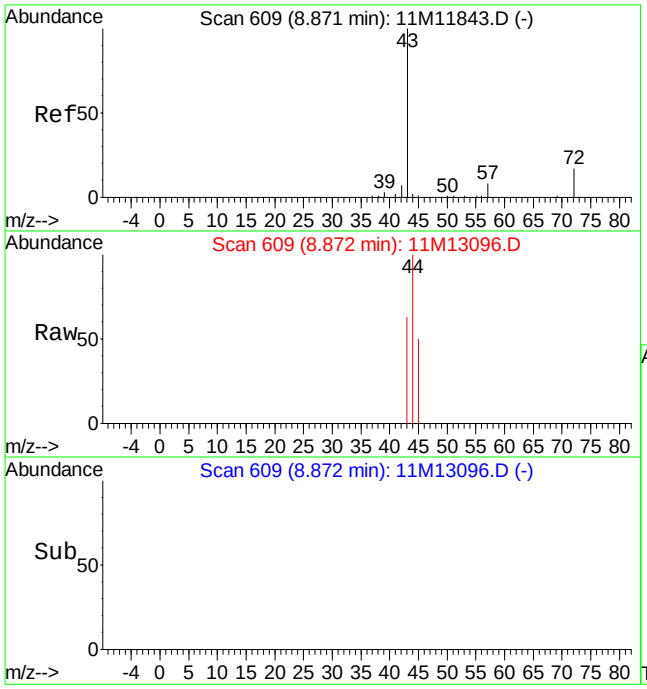

#29
2-Butanone
Concen: 0.43 ug/L
RT: 8.87 min Scan# 609
Delta R.T. 0.00 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 43 Resp: 699

Ion	Ratio	Lower	Upper
43	100		
72	0.0	9.6	22.4#

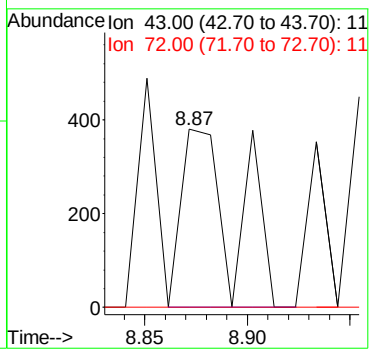

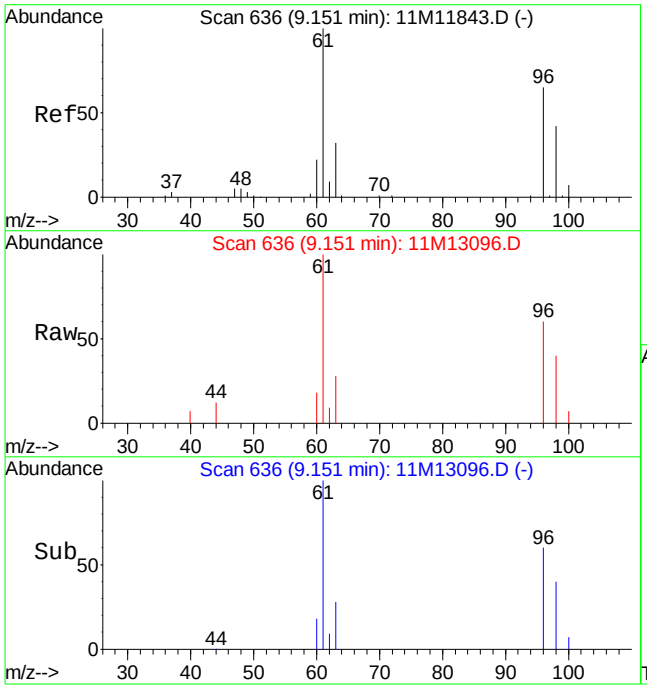

#32
cis-1,2-Dichloroethene
Concen: 1.38 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 96 Resp: 7006

Ion	Ratio	Lower	Upper
96	100		
61	148.5	105.2	245.6

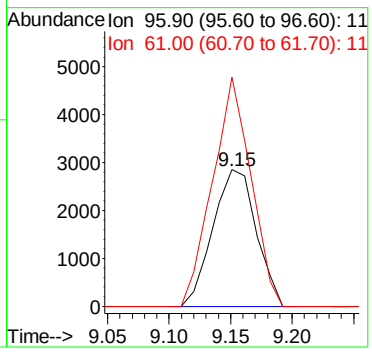

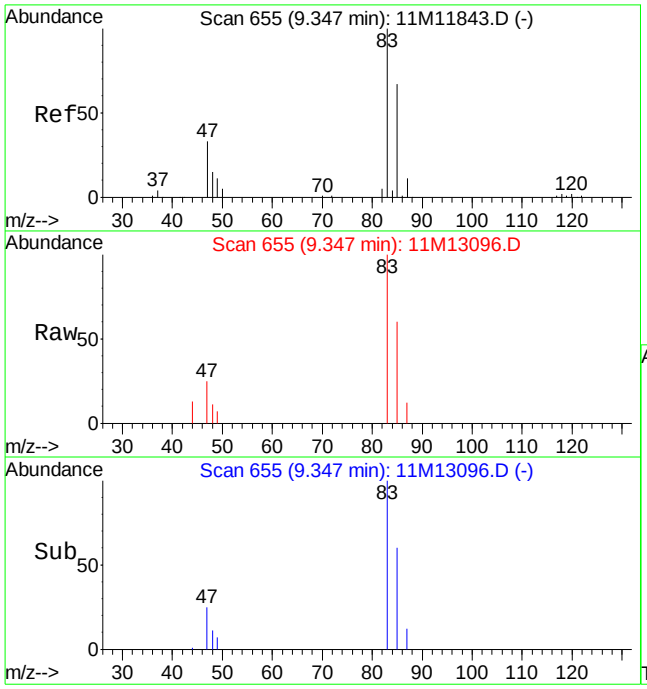

#33
Chloroform
Concen: 1.41 ug/L
RT: 9.35 min Scan# 655
Delta R.T. 0.00 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 83 Resp: 12772

Ion	Ratio	Lower	Upper
83	100		
85	63.0	39.2	91.4

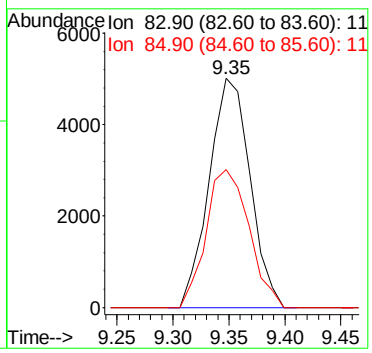

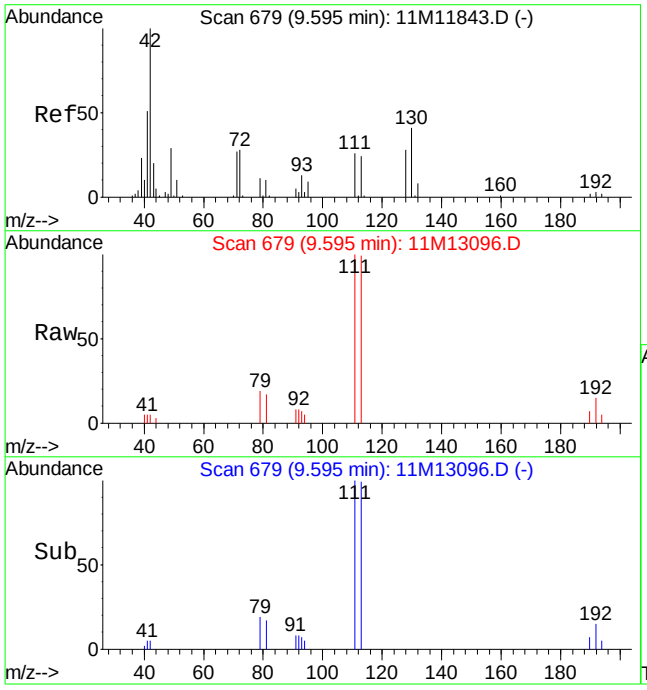

#36
Tetrahydrofuran
Concen: 0.66 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 42 Resp: 759

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

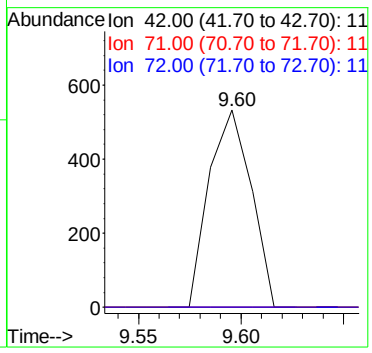

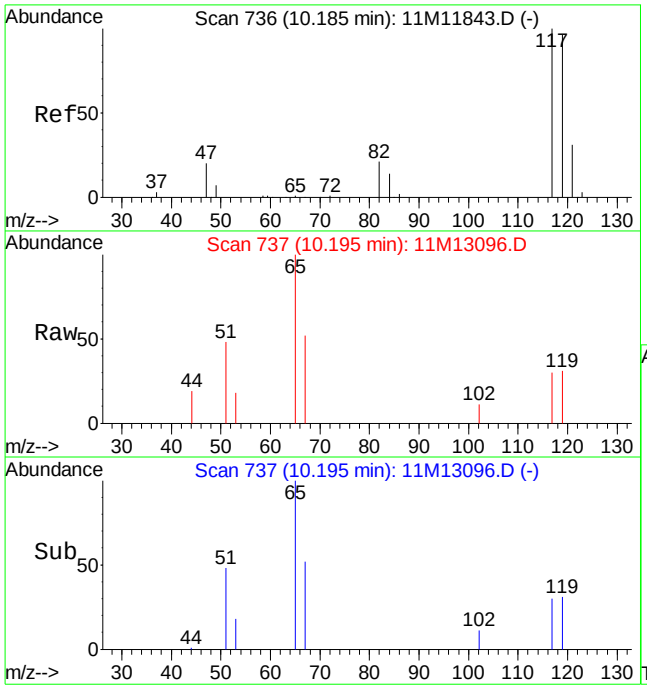

#41
Carbon Tetrachloride
Concen: 0.28 ug/L
RT: 10.20 min Scan# 737
Delta R.T. 0.01 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion:117 Resp: 2412

Ion	Ratio	Lower	Upper
117	100		
119	99.1	57.7	134.5
82	0.0	13.0	30.2#

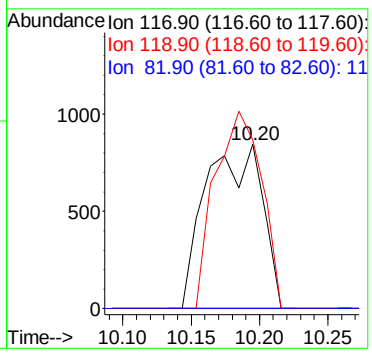

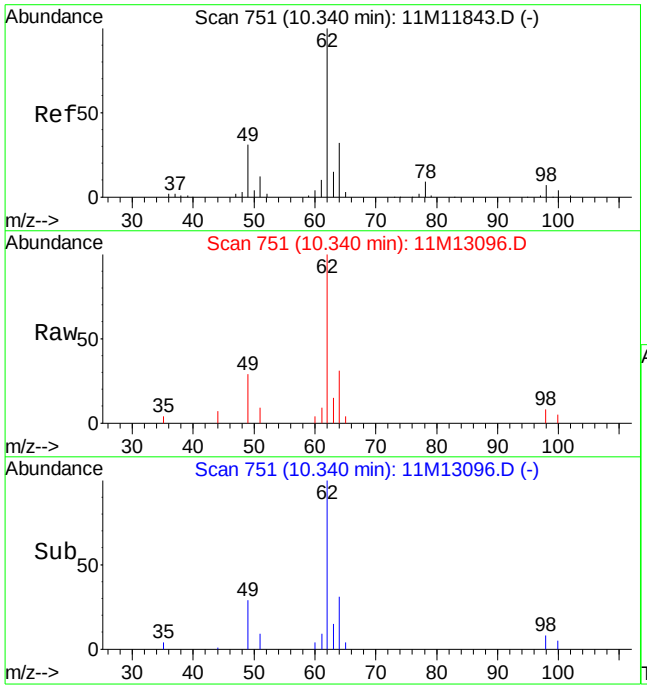

#44
1,2-Dichloroethane
Concen: 2.80 ug/L
RT: 10.34 min Scan# 751
Delta R.T. 0.00 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 62 Resp: 20608

Ion	Ratio	Lower	Upper
62	100		
64	30.2	18.7	43.7
49	28.9	22.3	52.1

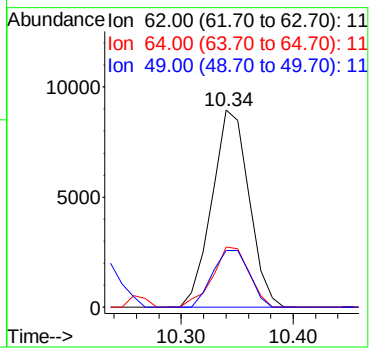

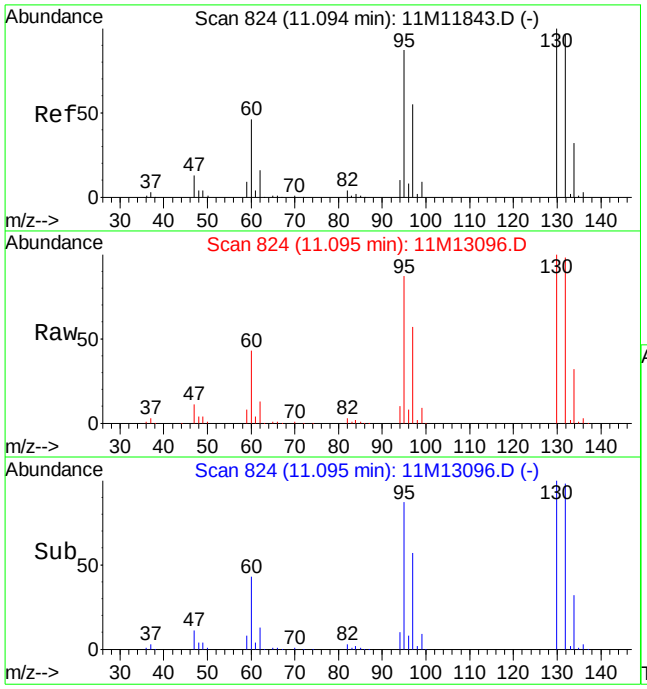

#46
Trichloroethene
Concen: 173.63 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion:130 Resp: 985023

Ion	Ratio	Lower	Upper
130	100		
132	97.3	58.3	136.1
95	89.1	55.6	129.8

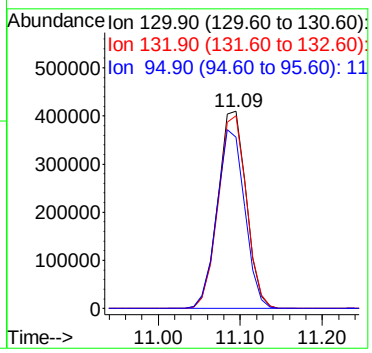

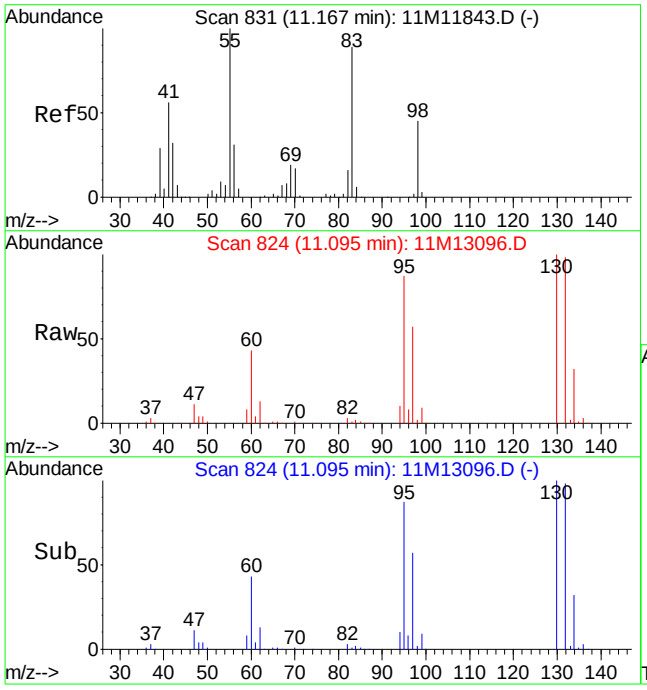

#47
Methylcyclohexane
Concen: 1.37 ug/L
RT: 11.09 min Scan# 824
Delta R.T. -0.07 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 83 Resp: 9583

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	249.8	29.9	69.7#

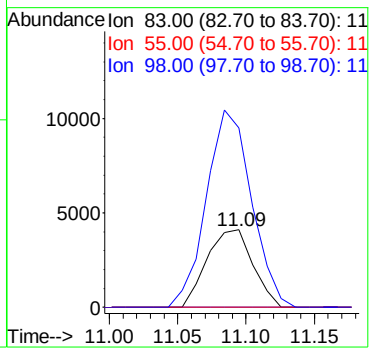

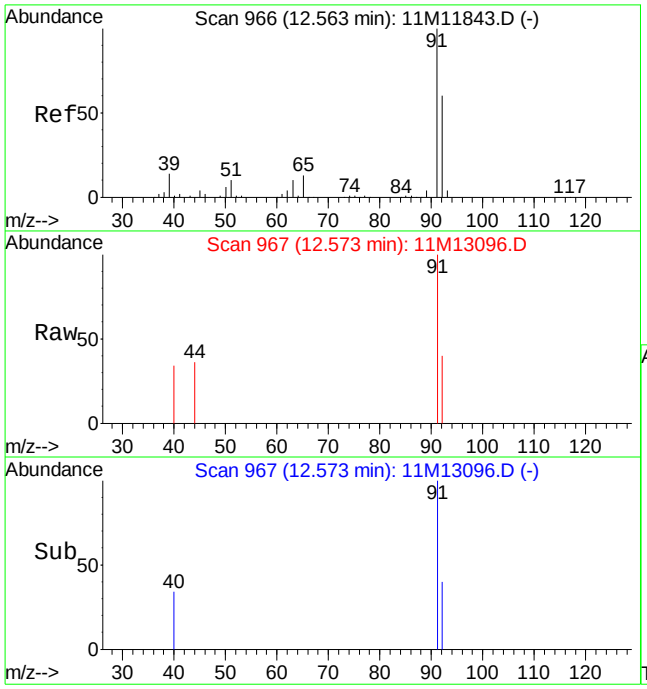

#58
Toluene
Concen: 0.13 ug/L
RT: 12.57 min Scan# 967
Delta R.T. 0.01 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 91 Resp: 2496

Ion	Ratio	Lower	Upper
91	100		
92	32.1	35.7	83.3#

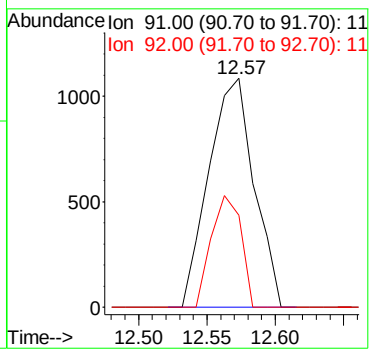

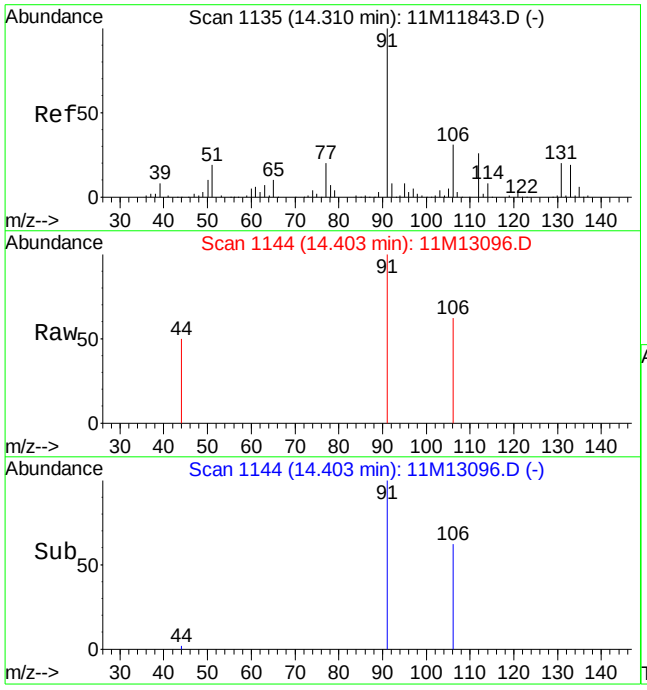

#70
Ethylbenzene
Concen: 0.13 ug/L
RT: 14.40 min Scan# 1144
Delta R.T. 0.09 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion:106 Resp: 966

Ion	Ratio	Lower	Upper
106	100		
91	252.2	193.5	451.5

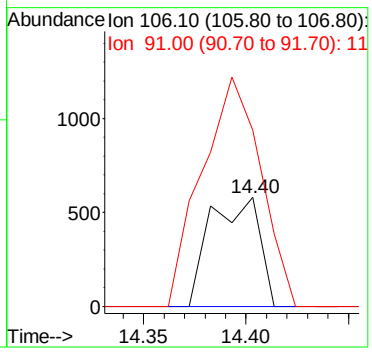

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13091.D Vial: 16
Acq On : 6 Jul 2016 1:06 Operator: JDS
Sample : L16061452-04 A TB 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 06 09:19:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	459223	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	394530	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	232571	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	125608	24.9926 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.96%		
43) 1,2-Dichloroethane-d4	10.23	65	127778	22.2977 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.20%		
57) Toluene-d8	12.47	98	431782	25.1881 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.76%		
78) p-Bromofluorobenzene	15.64	95	164373	22.9276 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.72%		

Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	14279	3.0851 ug/L	96
13) Acetone	6.34	43	208	0.1907 ug/L #	49
36) Tetrahydrofuran	9.60	42	1115	0.9578 ug/L #	47

(#) = qualifier out of range (m) = manual integration
11M13091.D 8260WT.M Wed Jul 06 09:19:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13091.D Vial: 16
Acq On : 6 Jul 2016 1:06 Operator: JDS
Sample : L16061452-04 A TB 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 6 9:19 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

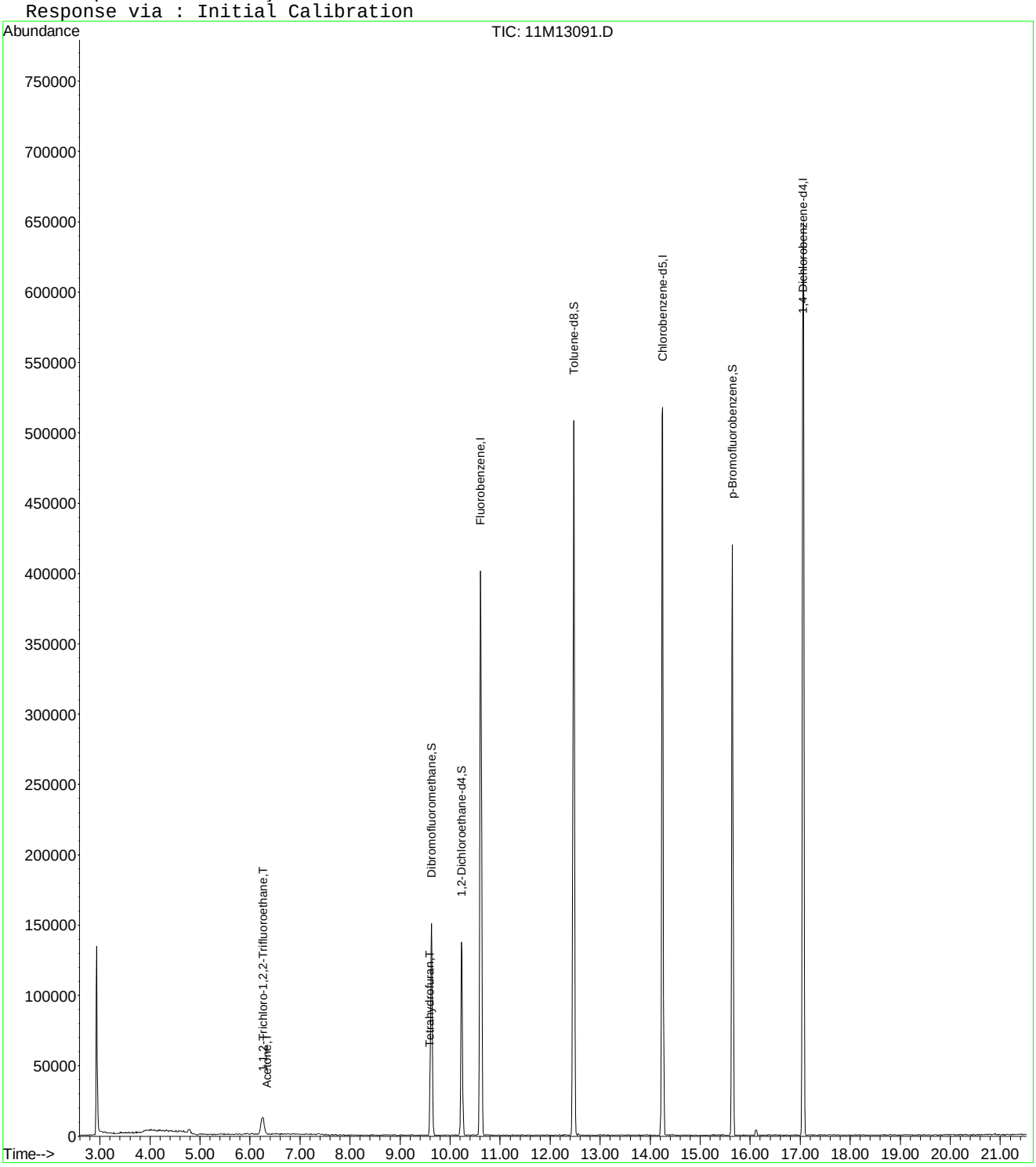

11M13091.D 8260WT.M Wed Jul 06 09:19:46 2016 Page 2

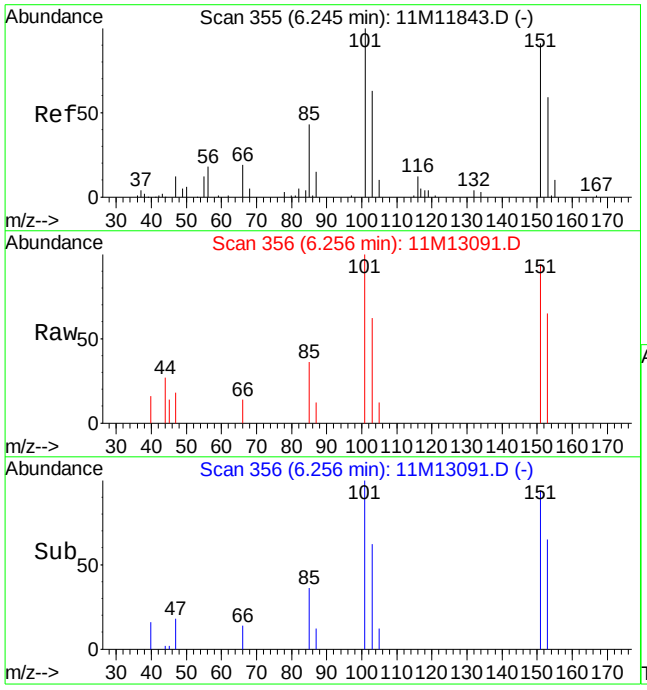

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 3.09 ug/L
RT: 6.26 min Scan# 356
Delta R.T. 0.01 min
Lab File: 11M13091.D
Acq: 6 Jul 2016 1:06

Tgt Ion:101 Resp: 14279

Ion	Ratio	Lower	Upper
101	100		
151	94.0	50.7	130.7

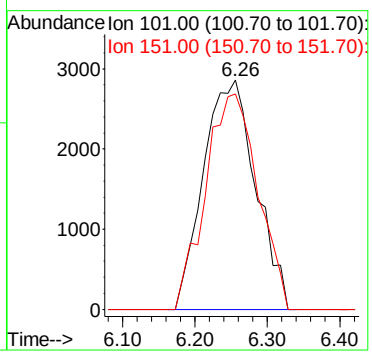

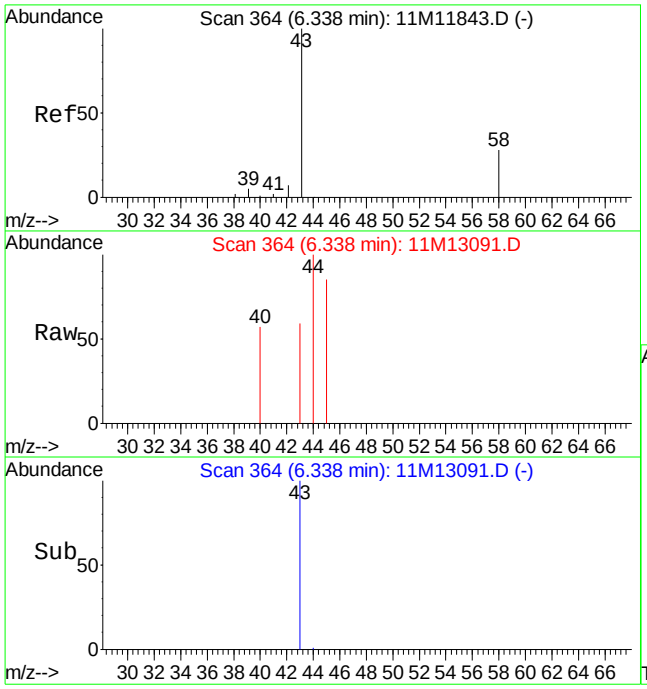

#13
Acetone
Concen: 0.19 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M13091.D
Acq: 6 Jul 2016 1:06

Tgt Ion: 43 Resp: 208

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

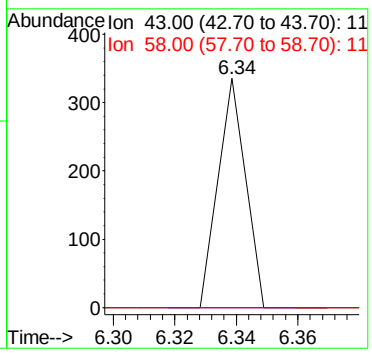

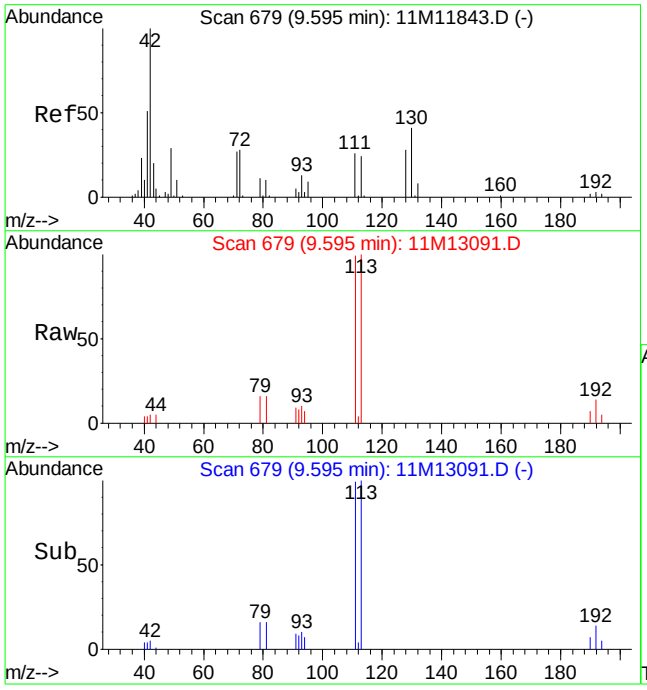

#36
Tetrahydrofuran
Concen: 0.96 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M13091.D
Acq: 6 Jul 2016 1:06

Tgt Ion: 42 Resp: 1115

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

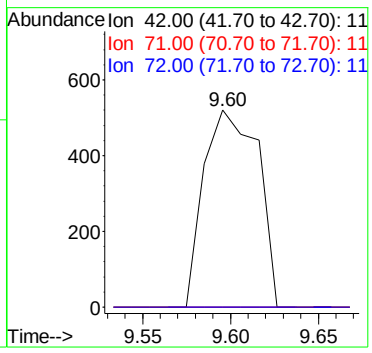

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	538041	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	450050	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	251600	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	12.47	98	210	0.0099 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#	
78) p-Bromofluorobenzene	15.64	95	566	0.0689 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2475	0.3135 ug/L #	66
3) Chloromethane	3.72	50	4639	0.6471 ug/L	91
4) Vinyl Chloride	3.96	62	1882	0.3288 ug/L #	44
5) 1,3-Butadiene	4.01	54	1564	0.2900 ug/L #	19
6) Bromomethane	4.84	94	1717	0.4723 ug/L	83
7) Chloroethane	5.00	64	616	0.1589 ug/L #	45
8) Trichlorofluoromethane	5.49	101	3531	0.3330 ug/L	97
10) Isoprene	6.04	67	1746	0.2381 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	1344	0.2515 ug/L	96
13) Acetone	6.34	43	2389	1.4850 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3780	0.3817 ug/L	78
16) Dimethyl Sulfide	6.80	62	762	0.1697 ug/L	78
18) Methyl acetate	7.02	43	24685	4.4975 ug/L #	70
19) Methylene Chloride	7.31	84	1766	0.3184 ug/L	74
20) Carbon Disulfide	7.36	76	5848	0.3373 ug/L	92
22) Methyl Tert Butyl Ether	7.54	73	3068	0.2131 ug/L #	48
23) trans-1,2-Dichloroethene	7.75	96	1449	0.2556 ug/L	91
24) n-Hexane	7.82	57	3745	0.4031 ug/L #	73
26) Vinyl Acetate	8.30	43	2410	0.6995 ug/L #	78
27) 1,1-Dichloroethane	8.35	63	3312	0.2969 ug/L #	76
31) 2,2-Dichloropropane	9.10	77	2449	0.3040 ug/L #	42
32) cis-1,2-Dichloroethene	9.15	96	1729	0.2748 ug/L	96
33) Chloroform	9.35	83	3792	0.3639 ug/L	92
35) Bromochloromethane	9.56	130	948	0.2355 ug/L #	68
38) 1,1,1-Trichloroethane	9.85	97	3449	0.3423 ug/L #	79
39) Cyclohexane	9.88	56	3639	0.2986 ug/L #	84
40) 1,1-Dichloropropene	10.04	75	2365	0.3106 ug/L #	53
41) Carbon Tetrachloride	10.17	117	2613	0.2748 ug/L	87
44) 1,2-Dichloroethane	10.35	62	2493	0.2788 ug/L #	73
45) Benzene	10.38	78	7133	0.3275 ug/L	99
46) Trichloroethene	11.09	130	1973	0.2780 ug/L	93
47) Methylcyclohexane	11.17	83	2570	0.2986 ug/L	84
48) 1,2-Dichloropropane	11.29	63	1665	0.2692 ug/L	87
50) Bromodichloromethane	11.57	83	2418	0.2950 ug/L #	82
51) Dibromomethane	11.65	93	756	0.2331 ug/L	88
54) cis-1,3-Dichloropropene	12.17	75	1869	0.2166 ug/L #	82
55) Dimethyl Disulfide	12.42	79	1028	0.1910 ug/L	95
58) Toluene	12.57	91	7355	0.3156 ug/L	91
59) Ethyl Methacrylate	12.64	69	1041	0.1887 ug/L	88
60) trans-1,3-Dichloropropene	12.72	75	1951	0.2556 ug/L #	51

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
61) 1,1,2-Trichloroethane	12.92	97	1087	0.2492 ug/L	87
62) 2-Hexanone	12.86	43	687	0.1910 ug/L #	29
63) 1,3-Dichloropropane	13.21	76	1673	0.2309 ug/L	94
64) Tetrachloroethene	13.34	164	1703	0.3238 ug/L	94
65) Dibromochloromethane	13.59	129	1515	0.2406 ug/L	92
66) 1,2-Dibromoethane	13.82	107	966	0.2181 ug/L	98
67) 1-Chlorohexane	13.89	91	2128	0.2784 ug/L	97
68) Chlorobenzene	14.29	112	5248	0.3062 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	2025	0.3082 ug/L	98
70) Ethylbenzene	14.31	106	2602	0.2992 ug/L	88
71) m-,p-Xylene	14.40	106	6296	0.6083 ug/L	82
72) o-Xylene	14.92	106	3032	0.2937 ug/L	95
73) Styrene	14.95	104	4953	0.2828 ug/L	95
75) Isopropylbenzene	15.31	105	7848	0.3006 ug/L	93
77) 1,1,2,2-Tetrachloroethane	15.52	83	1145	0.2759 ug/L	68
81) n-Propylbenzene	15.79	91	9421	0.3332 ug/L	94
82) Bromobenzene	15.92	156	2002	0.2551 ug/L	66
83) 1,3,5-Trimethylbenzene	15.95	105	6742	0.3138 ug/L	91
84) 2-Chlorotoluene	16.05	91	6735	0.3228 ug/L	96
85) 4-Chlorotoluene	16.09	91	6023	0.3518 ug/L	99
86) a-Methylstyrene	16.34	118	2850	0.2387 ug/L	95
87) tert-Butylbenzene	16.39	134	1197	0.2539 ug/L	64
88) 1,2,4-Trimethylbenzene	16.44	105	6992	0.3180 ug/L	88
89) sec-Butylbenzene	16.65	105	8335	0.3278 ug/L	97
90) p-Isopropyltoluene	16.79	119	7094	0.3065 ug/L	96
91) 1,3-Dichlorobenzene	16.98	146	4505	0.3090 ug/L	96
92) 1,4-Dichlorobenzene	17.10	146	4475	0.3006 ug/L #	1
93) n-Butylbenzene	17.28	91	7076	0.3396 ug/L #	93
94) 1,2-Dichlorobenzene	17.56	146	4016	0.2922 ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	2964	0.2902 ug/L	99
97) Hexachlorobutadiene	19.69	225	1160	0.2796 ug/L #	71
98) Naphthalene	19.90	128	4679	0.2394 ug/L #	93
99) 1,2,3-Trichlorobenzene	20.19	180	2578	0.2696 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M11837.D 8260WT.M Fri May 13 17:04:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

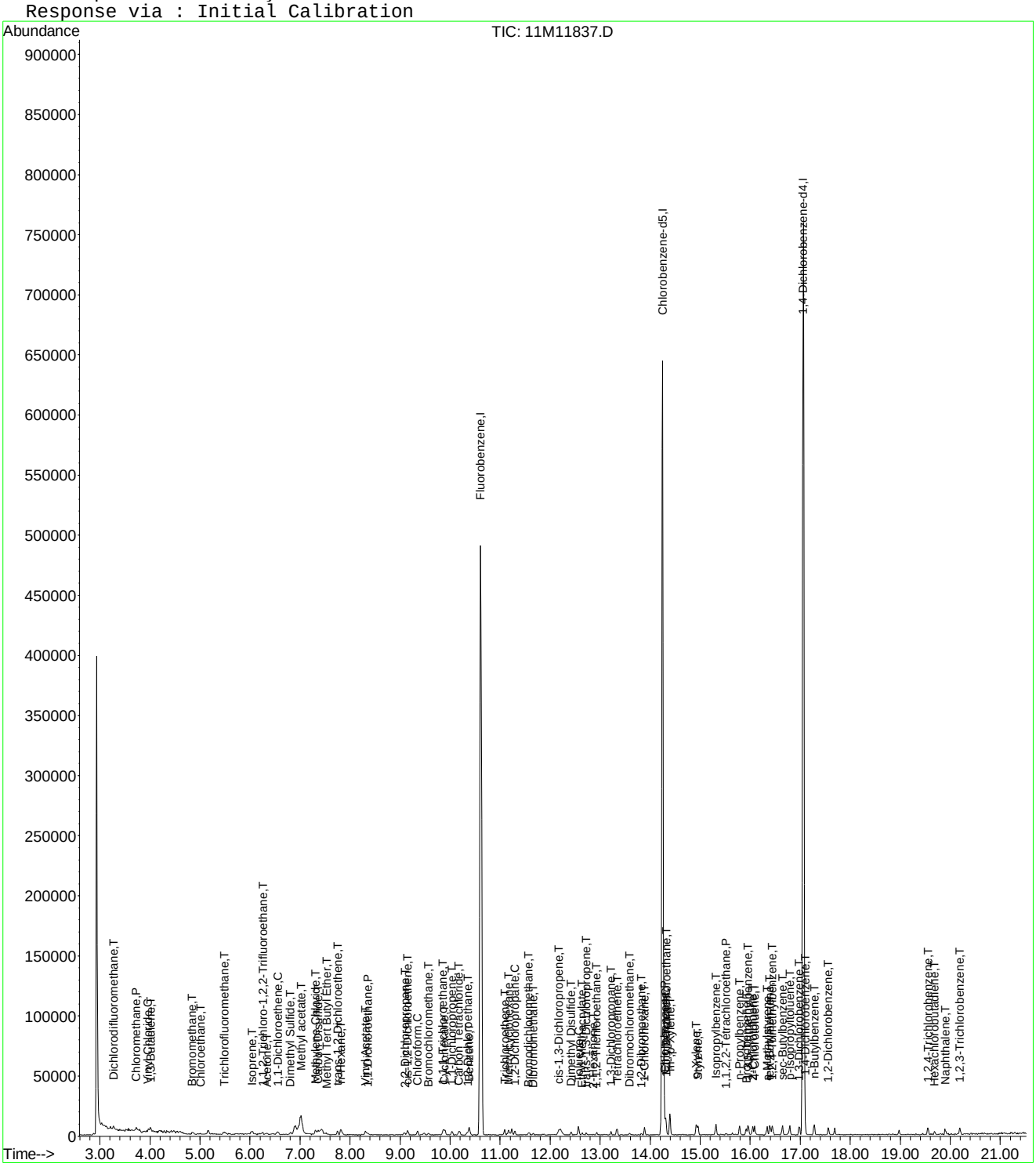

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2936	0.0	0	0.00
3	P	Chloromethane	-1.0000	0.6871	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.3357	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.2805	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.4454	0.0	0	-0.01
7	T	Chloroethane	-1.0000	0.1710	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.3160	0.0	0	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.01#
10	T	Isoprene	-1.0000	0.2535	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.23#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2478	0.0	0	0.01
13	T	Acetone	-1.0000	1.8699	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3838	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.66#
16	T	Dimethyl Sulfide	-1.0000	0.1937	0.0	0	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.06#
18	T	Methyl acetate	-1.0000	5.1442	0.0	0	-0.04
19	T	Methylene Chloride	-1.0000	0.3464	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.3546	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.49#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2413	0.0	0	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2658	0.0	0	0.01
24	T	n-Hexane	-1.0000	0.4125	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0083	0.0	0	0.08
26	T	Vinyl Acetate	-1.0000	2.6933	0.0	0	-0.01
27	P	1,1-Dichloroethane	-1.0000	0.3028	0.0	0	0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.70#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.87#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.97#
31	T	2,2-Dichloropropane	-1.0000	0.2862	0.0	0	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.2877	0.0	0	0.00
33	C	Chloroform	0.3000	0.3530	-17.7	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.48#
35	T	Bromochloromethane	-1.0000	0.2656	0.0	0	-0.01
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-9.60#
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.63#
38	T	1,1,1-Trichloroethane	-1.0000	0.3263	0.0	0	0.00
39	T	Cyclohexane	-1.0000	0.3159	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3134	0.0	0	0.00
41	T	Carbon Tetrachloride	-1.0000	0.2532	0.0	0	-0.01
42	T	Tert-Amyl-Methyl ether	-1.0000	0.0152	0.0	0	-0.09
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.23#
44	T	1,2-Dichloroethane	-1.0000	0.2858	0.0	0	0.01
45	T	Benzene	-1.0000	0.3452	0.0	0	0.00
46	T	Trichloroethene	-1.0000	0.2938	0.0	0	0.00
47	T	Methylcyclohexane	-1.0000	0.3101	0.0	0	0.00
48	C	1,2-Dichloropropane	-1.0000	0.2911	0.0	0	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.55#
50	T	Bromodichloromethane	-1.0000	0.3012	0.0	0	0.00
51	T	Dibromomethane	-1.0000	0.2537	0.0	0	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-11.84#
53	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-11.87#
54	T	cis-1,3-Dichloropropene	-1.0000	0.2327	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.2127	0.0	0	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0107	0.0	0	0.00
58	C	Toluene	-1.0000	0.3228	0.0	0	0.01
59	T	Ethyl Methacrylate	-1.0000	0.2140	0.0	0	-0.01
60	T	trans-1,3-Dichloropropene	-1.0000	0.2668	0.0	0	-0.01
61	T	1,1,2-Trichloroethane	-1.0000	0.2691	0.0	0	-0.01
62	T	2-Hexanone	-1.0000	0.2315	0.0	0	0.00
63	T	1,3-Dichloropropane	-1.0000	0.2579	0.0	0	0.00
64	T	Tetrachloroethene	-1.0000	0.3214	0.0	0	0.00
65	T	Dibromochloromethane	-1.0000	0.2459	0.0	0	0.00
66	T	1,2-Dibromoethane	-1.0000	0.2387	0.0	0	0.00
67	T	1-Chlorohexane	-1.0000	0.2833	0.0	0	0.00
68	P	Chlorobenzene	-1.0000	0.3144	0.0	0	0.00
69	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2998	0.0	0	0.00
70	C	Ethylbenzene	-1.0000	0.3040	0.0	0	0.00
71	T	m-,p-Xylene	-1.0000	0.6051	0.0	0	0.01
72	T	o-Xylene	-1.0000	0.2994	0.0	0	0.00
73	T	Styrene	-1.0000	0.2961	0.0	0	0.00
74	P	Bromoform	-1.0000	0.0798	0.0	0	-0.01
75	T	Isopropylbenzene	-1.0000	0.2931	0.0	0	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2922	0.0	0	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.0730	0.0	0	0.00
79	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-15.70#
80	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-15.74#
81	T	n-Propylbenzene	-1.0000	0.3233	0.0	0	0.00
82	T	Bromobenzene	0.3000	0.2618	12.7	100	0.00
83	T	1,3,5-Trimethylbenzene	-1.0000	0.3032	0.0	0	-0.01
84	T	2-Chlorotoluene	-1.0000	0.3300	0.0	0	0.00
85	T	4-Chlorotoluene	-1.0000	0.3295	0.0	0	0.00
86	T	a-Methylstyrene	-1.0000	0.2430	0.0	0	0.00
87	T	tert-Butylbenzene	-1.0000	0.2541	0.0	0	-0.01
88	T	1,2,4-Trimethylbenzene	-1.0000	0.3088	0.0	0	0.00
89	T	sec-Butylbenzene	-1.0000	0.3122	0.0	0	0.00
90	T	p-Isopropyltoluene	-1.0000	0.2893	0.0	0	0.00
91	T	1,3-Dichlorobenzene	-1.0000	0.3051	0.0	0	0.00
92	T	1,4-Dichlorobenzene	0.3000	0.2990	0.3	100	0.00
93	T	n-Butylbenzene	-1.0000	0.3274	0.0	0	0.00
94	T	1,2-Dichlorobenzene	0.3000	0.2985	0.5	100	-0.01
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-18.49#
96	T	1,2,4-Trichlorobenzene	-1.0000	0.3011	0.0	0	0.00
97	T	Hexachlorobutadiene	-1.0000	0.2675	0.0	0	0.00
98	T	Naphthalene	-1.0000	0.2561	0.0	0	0.00
99	T	1,2,3-Trichlorobenzene	0.3000	0.2854	4.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11837.D 8260WT.M Sat May 14 18:41:07 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	515473	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	435266	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244818	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
78) p-Bromofluorobenzene	15.64	95	236	0.0295 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2765	0.3656 ug/L #	66
3) Chloromethane	3.72	50	4021	0.5854 ug/L #	77
4) Vinyl Chloride	3.96	62	2267	0.4134 ug/L #	64
5) 1,3-Butadiene	4.01	54	2044	0.3956 ug/L #	18
6) Bromomethane	4.85	94	1571	0.4511 ug/L	89
7) Chloroethane	5.01	64	1496	0.4029 ug/L #	45
8) Trichlorofluoromethane	5.49	101	4241	0.4175 ug/L	96
10) Isoprene	6.03	67	2394	0.3408 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1439	0.2811 ug/L #	23
13) Acetone	6.33	43	1125	0.7299 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3786	0.3990 ug/L	77
16) Dimethyl Sulfide	6.80	62	1622	0.3769 ug/L	59
18) Methyl acetate	7.01	43	21364	4.0629 ug/L #	70
19) Methylene Chloride	7.32	84	2266	0.4265 ug/L	97
20) Carbon Disulfide	7.35	76	6628	0.3991 ug/L #	82
22) Methyl Tert Butyl Ether	7.52	73	4808	0.3486 ug/L #	74
23) trans-1,2-Dichloroethene	7.74	96	2372	0.4368 ug/L	93
24) n-Hexane	7.83	57	4212	0.4732 ug/L #	73
26) Vinyl Acetate	8.34	43	434	0.1315 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	3822	0.3576 ug/L #	89
29) 2-Butanone	8.88	43	484	0.2099 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	2680	0.3472 ug/L #	55
32) cis-1,2-Dichloroethene	9.15	96	2277	0.3777 ug/L	91
33) Chloroform	9.35	83	3981	0.3988 ug/L	89
35) Bromochloromethane	9.57	130	952	0.2468 ug/L	57
36) Tetrahydrofuran	9.59	42	212	0.1340 ug/L #	46
38) 1,1,1-Trichloroethane	9.85	97	3917	0.4058 ug/L #	84
39) Cyclohexane	9.88	56	3935	0.3371 ug/L #	80
40) 1,1-Dichloropropene	10.04	75	2817	0.3862 ug/L	82
41) Carbon Tetrachloride	10.18	117	3373	0.3702 ug/L #	88
44) 1,2-Dichloroethane	10.35	62	3201	0.3737 ug/L #	78
45) Benzene	10.39	78	8729	0.4184 ug/L	90
46) Trichloroethene	11.08	130	2537	0.3731 ug/L	93
47) Methylcyclohexane	11.17	83	2742	0.3325 ug/L	90
48) 1,2-Dichloropropane	11.29	63	2133	0.3600 ug/L	84
50) Bromodichloromethane	11.58	83	2857	0.3638 ug/L #	84
51) Dibromomethane	11.65	93	972	0.3128 ug/L	81
52) 2-Chloroethyl Vinyl Ether	11.85	63	791	0.2560 ug/L #	50
54) cis-1,3-Dichloropropene	12.17	75	2689	0.3253 ug/L	99
55) Dimethyl Disulfide	12.42	79	1113	0.2158 ug/L	74

(#) = qualifier out of range (m) = manual integration
11M11838.D 8260WT.M Fri May 13 17:04:23 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
58)	Toluene	12.56	91	9113	0.4043 ug/L		99
59)	Ethyl Methacrylate	12.65	69	1556	0.2916 ug/L		96
60)	trans-1,3-Dichloropropene	12.73	75	2303	0.3119 ug/L		86
61)	1,1,2-Trichloroethane	12.94	97	1549	0.3672 ug/L		85
62)	2-Hexanone	12.86	43	840	0.2415 ug/L	#	11
63)	1,3-Dichloropropane	13.21	76	2345	0.3346 ug/L		82
64)	Tetrachloroethene	13.34	164	1905	0.3745 ug/L		88
65)	Dibromochloromethane	13.59	129	1972	0.3238 ug/L		89
66)	1,2-Dibromoethane	13.82	107	1617	0.3776 ug/L		69
67)	1-Chlorohexane	13.89	91	2578	0.3487 ug/L		77
68)	Chlorobenzene	14.29	112	6458	0.3896 ug/L		93
69)	1,1,1,2-Tetrachloroethane	14.31	131	2374	0.3736 ug/L		98
70)	Ethylbenzene	14.31	106	3158	0.3754 ug/L		79
71)	m-,p-Xylene	14.39	106	8621	0.8613 ug/L		93
72)	o-Xylene	14.93	106	3752	0.3758 ug/L		96
73)	Styrene	14.95	104	6027	0.3558 ug/L		90
74)	Bromoform	15.44	173	931	0.2454 ug/L		87
75)	Isopropylbenzene	15.31	105	10551	0.4179 ug/L		95
77)	1,1,2,2-Tetrachloroethane	15.52	83	1129	0.2796 ug/L		84
79)	1,2,3-Trichloropropane	15.71	110	200	0.1341 ug/L	#	28
81)	n-Propylbenzene	15.79	91	11244	0.4087 ug/L		98
82)	Bromobenzene	15.91	156	3048	0.3991 ug/L		95
83)	1,3,5-Trimethylbenzene	15.96	105	9158	0.4381 ug/L		92
84)	2-Chlorotoluene	16.05	91	8455	0.4164 ug/L		96
85)	4-Chlorotoluene	16.09	91	6979	0.4189 ug/L		92
86)	a-Methylstyrene	16.34	118	4052	0.3488 ug/L		74
87)	tert-Butylbenzene	16.40	134	1479	0.3224 ug/L		63
88)	1,2,4-Trimethylbenzene	16.45	105	8457	0.3953 ug/L		95
89)	sec-Butylbenzene	16.65	105	10479	0.4236 ug/L		93
90)	p-Isopropyltoluene	16.79	119	9613	0.4269 ug/L		93
91)	1,3-Dichlorobenzene	16.98	146	5826	0.4107 ug/L		93
92)	1,4-Dichlorobenzene	17.10	146	6273	0.4331 ug/L	#	74
93)	n-Butylbenzene	17.28	91	8021	0.3956 ug/L	#	91
94)	1,2-Dichlorobenzene	17.57	146	4937	0.3691 ug/L		97
96)	1,2,4-Trichlorobenzene	19.55	180	3632	0.3655 ug/L		95
97)	Hexachlorobutadiene	19.69	225	1539	0.3812 ug/L		96
98)	Naphthalene	19.90	128	7383	0.3882 ug/L		97
99)	1,2,3-Trichlorobenzene	20.19	180	3748	0.4028 ug/L		84

(#) = qualifier out of range (m) = manual integration
11M11838.D 8260WT.M Fri May 13 17:04:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

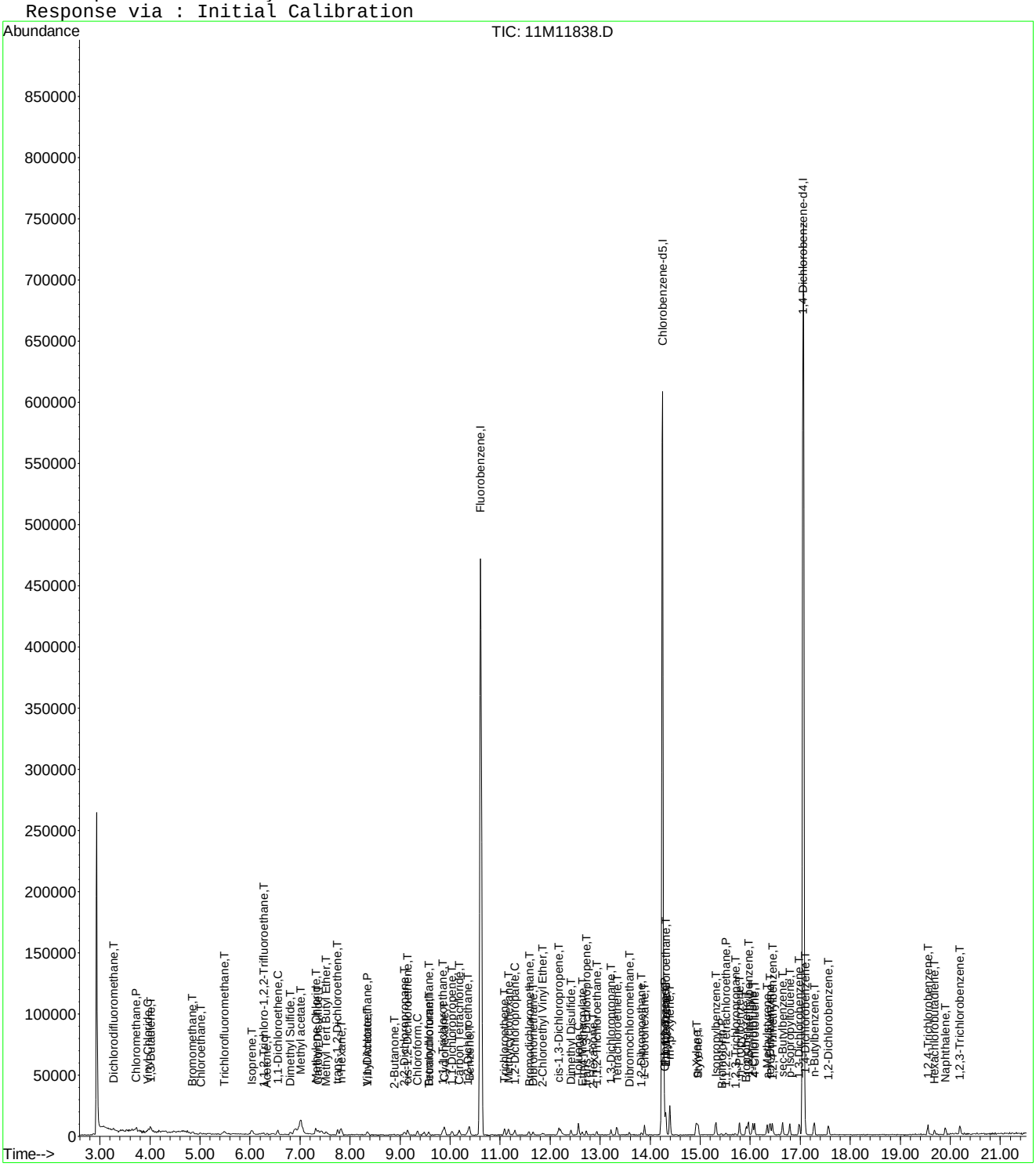

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	523425	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	440574	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	249989	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	1729	0.2910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.16%#	
43) 1,2-Dichloroethane-d4	10.23	65	3301	0.4585 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.84%#	
57) Toluene-d8	12.47	98	9307	0.4494 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.80%#	
78) p-Bromofluorobenzene	15.64	95	4047	0.4956 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	7215	0.9394 ug/L	98
3) Chloromethane	3.72	50	7292	1.0455 ug/L	80
4) Vinyl Chloride	3.96	62	5040	0.9051 ug/L	92
5) 1,3-Butadiene	4.02	54	5876	1.1198 ug/L #	76
6) Bromomethane	4.85	94	3488	0.9862 ug/L	94
7) Chloroethane	4.99	64	3425	0.9083 ug/L #	57
8) Trichlorofluoromethane	5.49	101	10960	1.0625 ug/L	95
9) Diethyl ether	6.01	59	19830	4.2253 ug/L	90
10) Isoprene	6.04	67	6121	0.8582 ug/L	94
11) Acrolein	6.25	56	697	1.2730 ug/L	65
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	5456	1.0497 ug/L	90
13) Acetone	6.34	43	1782	1.1386 ug/L #	45
14) 1,1-Dichloroethene	6.55	61	9456	0.9814 ug/L	91
15) Tert-Butyl Alcohol	6.67	59	2848	6.8484 ug/L #	67
16) Dimethyl Sulfide	6.80	62	3631	0.8310 ug/L	93
18) Methyl acetate	7.01	43	20953	3.9242 ug/L #	70
19) Methylene Chloride	7.31	84	5001	0.9270 ug/L	97
20) Carbon Disulfide	7.36	76	15438	0.9154 ug/L	99
21) Acrylonitrile	7.50	53	3780	1.8795 ug/L	89
22) Methyl Tert Butyl Ether	7.53	73	11891	0.8490 ug/L	90
23) trans-1,2-Dichloroethene	7.75	96	4815	0.8732 ug/L	95
24) n-Hexane	7.82	57	9213	1.0194 ug/L #	81
25) Diisopropyl ether	8.15	45	108233	4.5267 ug/L	99
26) Vinyl Acetate	8.31	43	1723	0.5141 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	10818	0.9968 ug/L	95
28) Ethyl-Tert-Butyl ether	8.70	59	85288	4.3548 ug/L	99
29) 2-Butanone	8.88	43	1368	0.5844 ug/L #	60
30) Propionitrile	8.99	54	2406	3.5185 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	7787	0.9935 ug/L	90
32) cis-1,2-Dichloroethene	9.15	96	5567	0.9095 ug/L	94
33) Chloroform	9.35	83	10278	1.0139 ug/L	96
34) 1-Bromopropane	9.48	122	295	0.2934 ug/L	49
35) Bromochloromethane	9.57	130	2941	0.7509 ug/L	88
36) Tetrahydrofuran	9.60	42	7790	4.8493 ug/L	92
38) 1,1,1-Trichloroethane	9.85	97	10000	1.0202 ug/L #	90
39) Cyclohexane	9.88	56	10164	0.8574 ug/L	98
40) 1,1-Dichloropropene	10.04	75	7321	0.9884 ug/L	92
41) Carbon Tetrachloride	10.18	117	9558	1.0331 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	59107	4.2417 ug/L	97
44) 1,2-Dichloroethane	10.34	62	8181	0.9406 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	Benzene	10.38	78	19924	0.9404 ug/L		95
46)	Trichloroethene	11.08	130	6636	0.9611 ug/L		92
47)	Methylcyclohexane	11.18	83	7740	0.9243 ug/L		94
48)	1,2-Dichloropropane	11.29	63	5477	0.9103 ug/L		99
49)	1,4-Dioxane	11.55	88	187	5.1264 ug/L	#	10
50)	Bromodichloromethane	11.57	83	7238	0.9076 ug/L		94
51)	Dibromomethane	11.65	93	2839	0.8997 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	1934	0.6164 ug/L	#	72
53)	4-Methyl-2-Pentanone	11.87	58	1016	0.5282 ug/L	#	42
54)	cis-1,3-Dichloropropene	12.17	75	7078	0.8432 ug/L		99
55)	Dimethyl Disulfide	12.42	79	3514	0.6710 ug/L		93
58)	Toluene	12.56	91	22074	0.9676 ug/L		96
59)	Ethyl Methacrylate	12.64	69	4130	0.7646 ug/L		88
60)	trans-1,3-Dichloropropene	12.73	75	5897	0.7891 ug/L		90
61)	1,1,2-Trichloroethane	12.94	97	3547	0.8307 ug/L		96
62)	2-Hexanone	12.87	43	2461	0.6990 ug/L	#	63
63)	1,3-Dichloropropane	13.21	76	5965	0.8410 ug/L		87
64)	Tetrachloroethene	13.34	164	5050	0.9809 ug/L		94
65)	Dibromochloromethane	13.59	129	5237	0.8497 ug/L		90
66)	1,2-Dibromoethane	13.82	107	3214	0.7414 ug/L		91
67)	1-Chlorohexane	13.89	91	7025	0.9387 ug/L		91
68)	Chlorobenzene	14.29	112	16160	0.9630 ug/L		95
69)	1,1,1,2-Tetrachloroethane	14.32	131	6361	0.9889 ug/L		97
70)	Ethylbenzene	14.31	106	8050	0.9455 ug/L		93
71)	m-,p-Xylene	14.39	106	20545	2.0278 ug/L		95
72)	o-Xylene	14.92	106	9683	0.9581 ug/L		96
73)	Styrene	14.96	104	14946	0.8716 ug/L		98
74)	Bromoform	15.43	173	3024	0.7876 ug/L		97
75)	Isopropylbenzene	15.31	105	25656	1.0039 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	3569	0.8655 ug/L		89
79)	1,2,3-Trichloropropane	15.71	110	872	0.5724 ug/L		84
80)	trans-1,4-Dichloro-2-Buten	15.74	53	1048	0.6163 ug/L	#	44
81)	n-Propylbenzene	15.79	91	27998	0.9967 ug/L		98
82)	Bromobenzene	15.92	156	8101	1.0388 ug/L		89
83)	1,3,5-Trimethylbenzene	15.96	105	20563	0.9633 ug/L		98
84)	2-Chlorotoluene	16.05	91	20962	1.0111 ug/L		96
85)	4-Chlorotoluene	16.09	91	17553	1.0318 ug/L		100
86)	a-Methylstyrene	16.34	118	10002	0.8431 ug/L		97
87)	tert-Butylbenzene	16.40	134	4396	0.9384 ug/L		84
88)	1,2,4-Trimethylbenzene	16.44	105	21945	1.0045 ug/L		96
89)	sec-Butylbenzene	16.65	105	25927	1.0263 ug/L		100
90)	p-Isopropyltoluene	16.79	119	22467	0.9771 ug/L		96
91)	1,3-Dichlorobenzene	16.98	146	14883	1.0274 ug/L		96
92)	1,4-Dichlorobenzene	17.10	146	15106	1.0213 ug/L	#	67
93)	n-Butylbenzene	17.28	91	20991	1.0139 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	13331	0.9762 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	493	0.5750 ug/L		75
96)	1,2,4-Trichlorobenzene	19.55	180	9030	0.8899 ug/L		96
97)	Hexachlorobutadiene	19.69	225	3810	0.9242 ug/L		95
98)	Naphthalene	19.90	128	16333	0.8410 ug/L		99
99)	1,2,3-Trichlorobenzene	20.19	180	8645	0.9098 ug/L		88

(#) = qualifier out of range (m) = manual integration
11M11839.D 8260WT.M Fri May 13 17:04:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

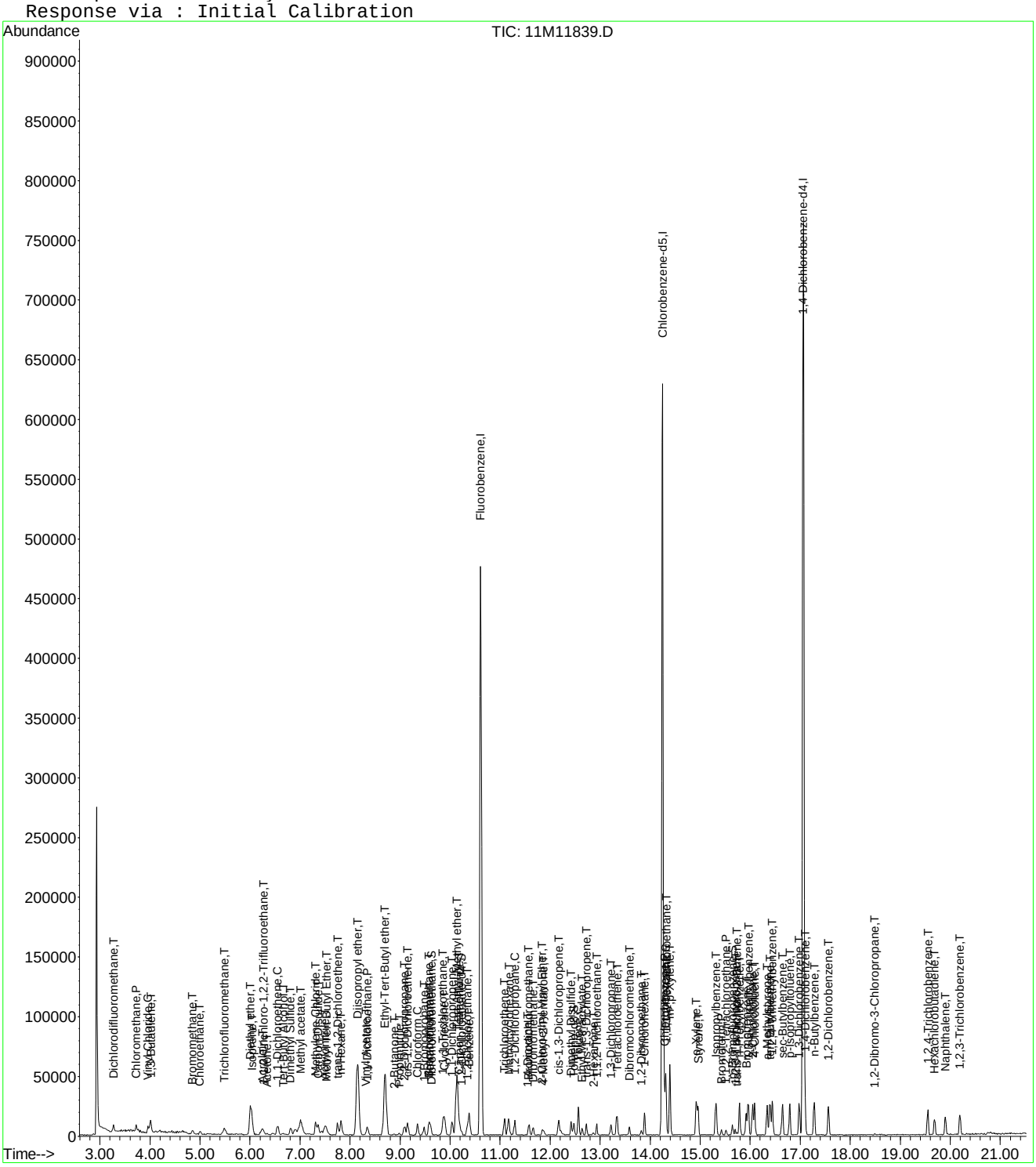

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.8798	12.0	100	0.00
3	P	Chloromethane	1.0000	1.1102	-11.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.9240	7.6	100	0.00
5	T	1,3-Butadiene	-1.0000	1.0834	0.0	100	0.02
6	T	Bromomethane	1.0000	0.9301	7.0	100	0.00
7	T	Chloroethane	1.0000	0.9773	2.3	100	-0.01
8	T	Trichlorofluoromethane	1.0000	1.0081	-0.8	100	0.01
9	T	Diethyl ether	5.0000	4.9318	1.4	100	0.00
10	T	Isoprene	-1.0000	0.9134	0.0	100	0.00
11	T	Acrolein	2.5000	2.7854	-11.4	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0342	-3.4	100	0.02
13	T	Acetone	-1.0000	1.4337	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9868	1.3	100	-0.01
15	T	Tert-Butyl Alcohol	10.0000	8.2841	17.2	100	0.01
16	T	Dimethyl Sulfide	-1.0000	0.9488	0.0	100	-0.01
17	T	Iodomethane	-1.0000	2.2962	0.0	0	0.01
18	T	Methyl acetate	-1.0000	4.2835	0.0	0	-0.05
19	T	Methylene Chloride	1.0000	1.0084	-0.8	100	0.00
20	T	Carbon Disulfide	1.0000	0.9624	3.8	100	0.00
21	T	Acrylonitrile	2.5000	2.2683	9.3	100	0.01
22	T	Methyl Tert Butyl Ether	1.0000	0.9614	3.9	100	0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9079	9.2	100	0.01
24	T	n-Hexane	-1.0000	1.0430	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.9106	1.8	100	0.00
26	T	Vinyl Acetate	-1.0000	2.6242	0.0	0	0.00
27	P	1,1-Dichloroethane	1.0000	1.0166	-1.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.7543	4.9	100	0.00
29	T	2-Butanone	-1.0000	0.7280	0.0	0	0.01
30	T	Propionitrile	5.0000	4.3718	12.6	100	0.01
31	T	2,2-Dichloropropane	1.0000	0.9353	6.5	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9520	4.8	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	1.0000	0.9106	8.9	100	0.00
35	T	Bromochloromethane	1.0000	0.8469	15.3	100	0.00
36	T	Tetrahydrofuran	5.0000	5.8710	-17.4	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.3018	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9725	2.8	100	0.00
39	T	Cyclohexane	1.0000	0.9069	9.3	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9971	0.3	100	0.00
41	T	Carbon Tetrachloride	1.0000	0.9518	4.8	100	0.00
42	T	Tert-Amyl-Methyl ether	5.0000	4.7417	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.5054	-1.1	100	0.00
44	T	1,2-Dichloroethane	1.0000	0.9639	3.6	100	0.00
45	T	Benzene	1.0000	0.9912	0.9	100	0.00
46	T	Trichloroethene	1.0000	1.0157	-1.6	100	-0.01
47	T	Methylcyclohexane	1.0000	0.9600	4.0	100	0.01
48	C	1,2-Dichloropropane	1.0000	0.9844	1.6	100	0.00
49	T	1,4-Dioxane	-1.0000	28.5532	0.0	0	0.00
50	T	Bromodichloromethane	1.0000	0.9266	7.3	100	0.00
51	T	Dibromomethane	1.0000	0.9792	2.1	100	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7053	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	0.6569	0.0	0	0.00
54	T	cis-1,3-Dichloropropene	1.0000	0.9060	9.4	100	0.00

(#) = Out of Range
11M11839.D 8260WT.M Sat May 14 18:41:49 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.7475	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.4862	0.0	100	0.00
58	C	Toluene	1.0000	0.9897	1.0	100	0.00
59	T	Ethyl Methacrylate	1.0000	0.8672	13.3	100	-0.01
60	T	trans-1,3-Dichloropropene	1.0000	0.8237	17.6	100	0.00
61	T	1,1,2-Trichloroethane	1.0000	0.8969	10.3	100	0.00
62	T	2-Hexanone	-1.0000	0.8473	0.0	100	0.01
63	T	1,3-Dichloropropane	1.0000	0.9392	6.1	100	0.00
64	T	Tetrachloroethene	1.0000	0.9737	2.6	100	0.00
65	T	Dibromochloromethane	1.0000	0.8681	13.2	100	0.00
66	T	1,2-Dibromoethane	1.0000	0.8111	18.9	100	0.00
67	T	1-Chlorohexane	1.0000	0.9554	4.5	100	0.00
68	P	Chlorobenzene	1.0000	0.9890	1.1	100	0.00
69	T	1,1,1,2-Tetrachloroethane	1.0000	0.9621	3.8	100	0.00
70	C	Ethylbenzene	1.0000	0.9608	3.9	100	0.00
71	T	m-,p-Xylene	2.0000	2.0170	-0.9	100	0.00
72	T	o-Xylene	1.0000	0.9768	2.3	100	0.00
73	T	Styrene	1.0000	0.9126	8.7	100	0.01
74	P	Bromoform	1.0000	0.8271	17.3	100	0.00
75	T	Isopropylbenzene	1.0000	0.9787	2.1	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	1.0000	0.9168	8.3	100	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.5252	0.0	100	0.00
79	T	1,2,3-Trichloropropane	1.0000	0.9573	4.3	100	0.01
80	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2934	-29.3#	100	0.00
81	T	n-Propylbenzene	1.0000	0.9671	3.3	100	0.00
82	T	Bromobenzene	1.0000	1.0663	-6.6	100	0.00
83	T	1,3,5-Trimethylbenzene	1.0000	0.9307	6.9	100	0.00
84	T	2-Chlorotoluene	1.0000	1.0337	-3.4	100	0.00
85	T	4-Chlorotoluene	1.0000	0.9664	3.4	100	0.00
86	T	a-Methylstyrene	1.0000	0.8582	14.2	100	0.00
87	T	tert-Butylbenzene	1.0000	0.9392	6.1	100	0.00
88	T	1,2,4-Trimethylbenzene	1.0000	0.9755	2.5	100	0.00
89	T	sec-Butylbenzene	1.0000	0.9774	2.3	100	0.00
90	T	p-Isopropyltoluene	1.0000	0.9221	7.8	100	0.00
91	T	1,3-Dichlorobenzene	1.0000	1.0144	-1.4	100	0.00
92	T	1,4-Dichlorobenzene	1.0000	1.0157	-1.6	100	0.00
93	T	n-Butylbenzene	1.0000	0.9776	2.2	100	0.00
94	T	1,2-Dichlorobenzene	1.0000	0.9974	0.3	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1961	0.0	100	0.00
96	T	1,2,4-Trichlorobenzene	1.0000	0.9233	7.7	100	0.00
97	T	Hexachlorobutadiene	1.0000	0.8843	11.6	100	0.00
98	T	Naphthalene	1.0000	0.8997	10.0	100	0.00
99	T	1,2,3-Trichlorobenzene	1.0000	0.9631	3.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11839.D 8260WT.M Sat May 14 18:41:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	504626	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	418265	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	241104	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	5067	0.8846 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.52%#	
43) 1,2-Dichloroethane-d4	10.23	65	6143	0.8851 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.56%#	
57) Toluene-d8	12.47	98	18425	0.9371 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.76%#	
78) p-Bromofluorobenzene	15.64	95	7442	0.9449 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.76%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	14866	2.0077 ug/L	98
3) Chloromethane	3.72	50	14641	2.1775 ug/L	94
4) Vinyl Chloride	3.96	62	10045	1.8711 ug/L	99
5) 1,3-Butadiene	4.01	54	10590	2.0934 ug/L	82
6) Bromomethane	4.85	94	7024	2.0600 ug/L	94
7) Chloroethane	4.99	64	6661	1.8324 ug/L	97
8) Trichlorofluoromethane	5.49	101	21690	2.1811 ug/L	99
9) Diethyl ether	6.01	59	96350	21.2945 ug/L	97
10) Isoprene	6.04	67	12682	1.8443 ug/L	94
11) Acrolein	6.23	56	5531	10.4784 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	9909	1.9774 ug/L	96
13) Acetone	6.35	43	3346	2.2176 ug/L #	68
14) 1,1-Dichloroethene	6.56	61	18584	2.0007 ug/L	98
15) Tert-Butyl Alcohol	6.66	59	15203	37.9194 ug/L #	93
16) Dimethyl Sulfide	6.81	62	7308	1.7348 ug/L	98
17) Iodomethane	7.06	142	1747	0.4335 ug/L #	49
18) Methyl acetate	7.01	43	17794	3.4567 ug/L #	75
19) Methylene Chloride	7.31	84	10330	1.9861 ug/L	99
20) Carbon Disulfide	7.36	76	30745	1.8910 ug/L	99
21) Acrylonitrile	7.49	53	17499	9.0252 ug/L	91
22) Methyl Tert Butyl Ether	7.52	73	22031	1.6315 ug/L	97
23) trans-1,2-Dichloroethene	7.74	96	10660	2.0051 ug/L	95
24) n-Hexane	7.82	57	17125	1.9654 ug/L #	94
25) Diisopropyl ether	8.15	45	542272	23.5246 ug/L	99
26) Vinyl Acetate	8.31	43	6813	2.1084 ug/L #	84
27) 1,1-Dichloroethane	8.34	63	21278	2.0336 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	431080	22.8311 ug/L	100
29) 2-Butanone	8.87	43	3175	1.4068 ug/L #	60
30) Propionitrile	8.99	54	12529	19.0049 ug/L	98
31) 2,2-Dichloropropane	9.09	77	17576	2.3259 ug/L	94
32) cis-1,2-Dichloroethene	9.15	96	11652	1.9746 ug/L	96
33) Chloroform	9.35	83	20769	2.1252 ug/L	96
34) 1-Bromopropane	9.48	122	1648	1.7003 ug/L	70
35) Bromochloromethane	9.57	130	6812	1.8040 ug/L	100
36) Tetrahydrofuran	9.60	42	30834	19.9093 ug/L	96
38) 1,1,1-Trichloroethane	9.84	97	20518	2.1713 ug/L #	94
39) Cyclohexane	9.88	56	22087	1.9325 ug/L	98
40) 1,1-Dichloropropene	10.04	75	13954	1.9542 ug/L	98
41) Carbon Tetrachloride	10.18	117	21054	2.3604 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	300593	22.3753 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11840.D 8260WT.M Fri May 13 17:04:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	16928	2.0188 ug/L		98
45)	Benzene	10.38	78	41004	2.0075 ug/L		97
46)	Trichloroethene	11.08	130	13283	1.9954 ug/L		96
47)	Methylcyclohexane	11.17	83	15711	1.9461 ug/L		95
48)	1,2-Dichloropropane	11.29	63	11010	1.8980 ug/L		91
49)	1,4-Dioxane	11.55	88	898	25.5347 ug/L		88
50)	Bromodichloromethane	11.57	83	15058	1.9584 ug/L		100
51)	Dibromomethane	11.66	93	5461	1.7952 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	4894	1.6180 ug/L		83
53)	4-Methyl-2-Pentanone	11.87	58	2173	1.1717 ug/L	#	65
54)	cis-1,3-Dichloropropene	12.17	75	14440	1.7842 ug/L		91
55)	Dimethyl Disulfide	12.42	79	7378	1.4613 ug/L		97
58)	Toluene	12.56	91	43051	1.9877 ug/L		98
59)	Ethyl Methacrylate	12.64	69	7792	1.5195 ug/L		95
60)	trans-1,3-Dichloropropene	12.73	75	12991	1.8310 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	8138	2.0075 ug/L		91
62)	2-Hexanone	12.86	43	4715	1.4106 ug/L	#	61
63)	1,3-Dichloropropane	13.21	76	11740	1.7434 ug/L		95
64)	Tetrachloroethene	13.34	164	10610	2.1708 ug/L		90
65)	Dibromochloromethane	13.59	129	11236	1.9202 ug/L		96
66)	1,2-Dibromoethane	13.82	107	7613	1.8499 ug/L		99
67)	1-Chlorohexane	13.89	91	13853	1.9499 ug/L		96
68)	Chlorobenzene	14.29	112	33381	2.0954 ug/L		99
69)	1,1,1,2-Tetrachloroethane	14.32	131	13541	2.2175 ug/L		97
70)	Ethylbenzene	14.31	106	17116	2.1175 ug/L		98
71)	m-,p-Xylene	14.39	106	40469	4.2073 ug/L		95
72)	o-Xylene	14.92	106	19196	2.0006 ug/L		99
73)	Styrene	14.96	104	30019	1.8440 ug/L		92
74)	Bromoform	15.43	173	6309	1.7308 ug/L		96
75)	Isopropylbenzene	15.31	105	52419	2.1605 ug/L		98
77)	1,1,2,2-Tetrachloroethane	15.51	83	7118	1.7898 ug/L		100
79)	1,2,3-Trichloropropane	15.70	110	2487	1.6927 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	2265	1.3810 ug/L		68
81)	n-Propylbenzene	15.79	91	59353	2.1908 ug/L		100
82)	Bromobenzene	15.91	156	15393	2.0465 ug/L		97
83)	1,3,5-Trimethylbenzene	15.95	105	43641	2.1197 ug/L		98
84)	2-Chlorotoluene	16.05	91	40923	2.0467 ug/L		96
85)	4-Chlorotoluene	16.09	91	37360	2.2771 ug/L		97
86)	a-Methylstyrene	16.34	118	20567	1.7976 ug/L		92
87)	tert-Butylbenzene	16.40	134	9253	2.0481 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	43857	2.0815 ug/L		99
89)	sec-Butylbenzene	16.65	105	52733	2.1643 ug/L		99
90)	p-Isopropyltoluene	16.79	119	49990	2.2541 ug/L		98
91)	1,3-Dichlorobenzene	16.98	146	29674	2.1240 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	30258	2.1211 ug/L		87
93)	n-Butylbenzene	17.28	91	44260	2.2167 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	27619	2.0969 ug/L		95
95)	1,2-Dibromo-3-Chloropropan	18.49	75	1094	1.3229 ug/L		60
96)	1,2,4-Trichlorobenzene	19.55	180	18455	1.8857 ug/L		98
97)	Hexachlorobutadiene	19.69	225	8691	2.1858 ug/L		89
98)	Naphthalene	19.90	128	34041	1.8174 ug/L	#	95
99)	1,2,3-Trichlorobenzene	20.19	180	17703	1.9318 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

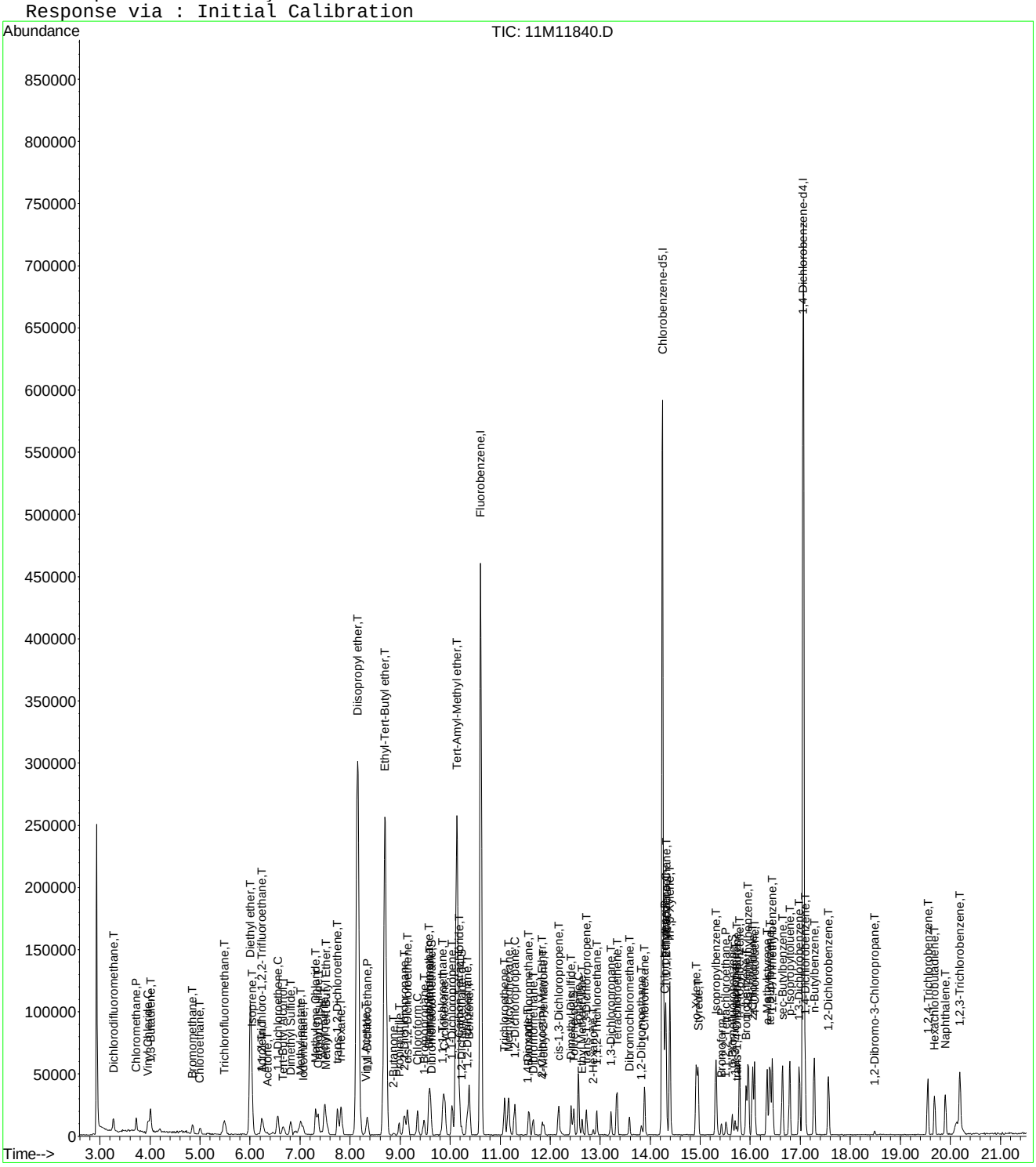

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8802	6.0	100	0.00
3	P	Chloromethane	2.0000	2.3121	-15.6	100	0.00
4	C	Vinyl Chloride	2.0000	1.9102	4.5	100	0.00
5	T	1,3-Butadiene	-1.0000	2.0253	0.0	100	0.01
6	T	Bromomethane	2.0000	1.9427	2.9	100	0.00
7	T	Chloroethane	2.0000	1.9714	1.4	100	-0.01
8	T	Trichlorofluoromethane	2.0000	2.0694	-3.5	100	0.01
9	T	Diethyl ether	25.0000	24.8555	0.6	100	0.00
10	T	Isoprene	-1.0000	1.9630	0.0	100	0.00
11	T	Acrolein	12.5000	12.0322	3.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9483	2.6	100	-0.01
13	T	Acetone	-1.0000	2.7924	0.0	100	0.01
14	C	1,1-Dichloroethene	2.0000	2.0117	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	45.8688	8.3	100	0.00
16	T	Dimethyl Sulfide	-1.0000	1.9809	0.0	100	0.00
17	T	Iodomethane	2.0000	2.6580	-32.9#	100	0.00
18	T	Methyl acetate	2.0000	0.8555	57.2#	100	0.00
19	T	Methylene Chloride	2.0000	2.1606	-8.0	100	0.00
20	T	Carbon Disulfide	2.0000	1.9879	0.6	100	0.00
21	T	Acrylonitrile	12.5000	10.8919	12.9	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8475	7.6	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0850	-4.2	100	0.00
24	T	n-Hexane	2.0000	2.0110	-0.6	100	0.00
25	T	Diisopropyl ether	25.0000	25.5200	-2.1	100	0.00
26	T	Vinyl Acetate	-1.0000	3.2184	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0741	-3.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.9254	0.3	100	0.00
29	T	2-Butanone	-1.0000	1.7527	0.0	0	0.00
30	T	Propionitrile	25.0000	23.6140	5.5	100	0.01
31	T	2,2-Dichloropropane	2.0000	2.1897	-9.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0669	-3.3	100	0.00
33	C	Chloroform	2.0000	2.0616	-3.1	100	0.00
34	T	1-Bromopropane	2.0000	2.2551	-12.8	100	0.00
35	T	Bromochloromethane	2.0000	2.0347	-1.7	100	0.00
36	T	Tetrahydrofuran	25.0000	24.1040	3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9175	8.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0696	-3.5	100	-0.01
39	T	Cyclohexane	2.0000	2.0442	-2.2	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9713	1.4	100	0.00
41	T	Carbon Tetrachloride	2.0000	2.1748	-8.7	100	0.00
42	T	Tert-Amyl-Methyl ether	25.0000	25.0128	-0.1	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	0.9755	2.4	100	0.00
44	T	1,2-Dichloroethane	2.0000	2.0689	-3.4	100	0.00
45	T	Benzene	2.0000	2.1160	-5.8	100	0.00
46	T	Trichloroethene	2.0000	2.1089	-5.4	100	-0.01
47	T	Methylcyclohexane	2.0000	2.0212	-1.1	100	0.00
48	C	1,2-Dichloropropane	2.0000	2.0525	-2.6	100	0.00
49	T	1,4-Dioxane	50.0000	49.5313	0.9	100	0.00
50	T	Bromodichloromethane	2.0000	1.9996	0.0	100	0.00
51	T	Dibromomethane	2.0000	1.9537	2.3	100	0.01
52	T	2-Chloroethyl Vinyl Ether	-1.0000	1.8512	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	1.4573	0.0	100	0.00
54	T	cis-1,3-Dichloropropene	2.0000	1.9172	4.1	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	1.6278	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	1.0000	1.0138	-1.4	100	0.00
58	C	Toluene	2.0000	2.0332	-1.7	100	0.00
59	T	Ethyl Methacrylate	2.0000	1.7234	13.8	100	-0.01
60	T	trans-1,3-Dichloropropene	2.0000	1.9114	4.4	100	0.00
61	T	1,1,2-Trichloroethane	2.0000	2.1674	-8.4	100	0.00
62	T	2-Hexanone	-1.0000	1.7098	0.0	100	0.00
63	T	1,3-Dichloropropane	2.0000	1.9471	2.6	100	0.00
64	T	Tetrachloroethene	2.0000	2.1547	-7.7	100	0.00
65	T	Dibromochloromethane	2.0000	1.9620	1.9	100	0.00
66	T	1,2-Dibromoethane	2.0000	2.0238	-1.2	100	0.00
67	T	1-Chlorohexane	2.0000	1.9844	0.8	100	0.00
68	P	Chlorobenzene	2.0000	2.1520	-7.6	100	0.00
69	T	1,1,1,2-Tetrachloroethane	2.0000	2.1574	-7.9	100	0.00
70	C	Ethylbenzene	2.0000	2.1518	-7.6	100	0.00
71	T	m-,p-Xylene	4.0000	4.1851	-4.6	100	0.00
72	T	o-Xylene	2.0000	2.0398	-2.0	100	0.00
73	T	Styrene	2.0000	1.9307	3.5	100	0.01
74	P	Bromoform	2.0000	1.8176	9.1	100	0.00
75	T	Isopropylbenzene	2.0000	2.1063	-5.3	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	2.0000	1.8958	5.2	100	-0.01
78	S	p-Bromofluorobenzene	1.0000	1.0013	-0.1	100	0.00
79	T	1,2,3-Trichloropropane	2.0000	2.1172	-5.9	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	2.0000	1.9762	1.2	100	0.00
81	T	n-Propylbenzene	2.0000	2.1256	-6.3	100	0.00
82	T	Bromobenzene	2.0000	2.1009	-5.0	100	-0.01
83	T	1,3,5-Trimethylbenzene	2.0000	2.0481	-2.4	100	-0.01
84	T	2-Chlorotoluene	2.0000	2.0925	-4.6	100	0.00
85	T	4-Chlorotoluene	2.0000	2.1326	-6.6	100	0.00
86	T	a-Methylstyrene	2.0000	1.8297	8.5	100	0.00
87	T	tert-Butylbenzene	2.0000	2.0497	-2.5	100	0.00
88	T	1,2,4-Trimethylbenzene	2.0000	2.0213	-1.1	100	0.00
89	T	sec-Butylbenzene	2.0000	2.0611	-3.1	100	0.00
90	T	p-Isopropyltoluene	2.0000	2.1272	-6.4	100	0.00
91	T	1,3-Dichlorobenzene	2.0000	2.0970	-4.8	100	0.00
92	T	1,4-Dichlorobenzene	2.0000	2.1095	-5.5	100	0.00
93	T	n-Butylbenzene	2.0000	2.1373	-6.9	100	0.00
94	T	1,2-Dichlorobenzene	2.0000	2.1425	-7.1	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	2.0000	1.9175	4.1	100	0.00
96	T	1,2,4-Trichlorobenzene	2.0000	1.9565	2.2	100	0.00
97	T	Hexachlorobutadiene	2.0000	2.0914	-4.6	100	0.00
98	T	Naphthalene	2.0000	1.9443	2.8	100	0.00
99	T	1,2,3-Trichlorobenzene	2.0000	2.0449	-2.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11840.D 8260WT.M Sat May 14 18:46:53 2016 Page 2

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

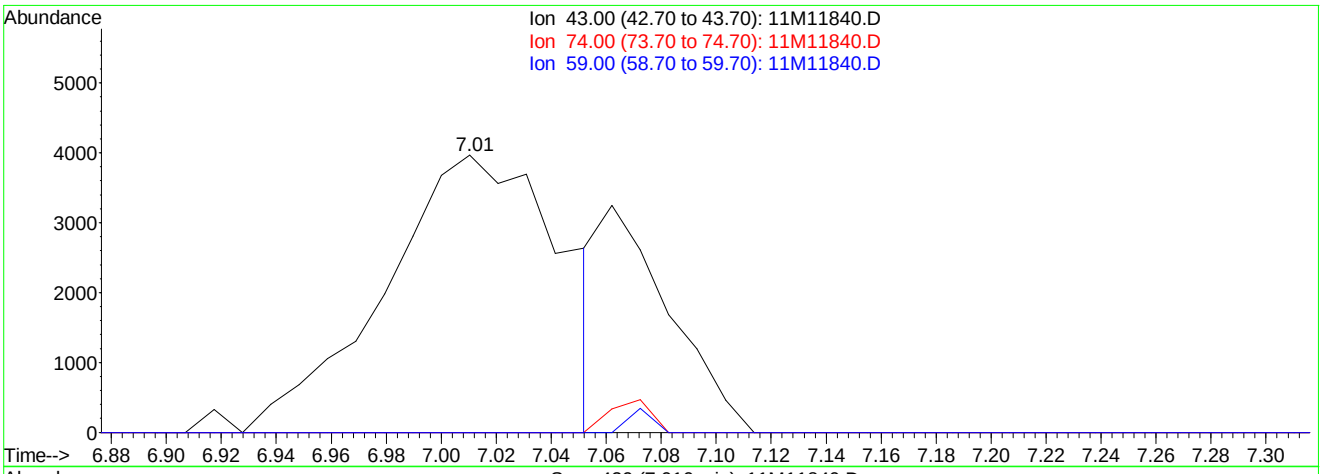

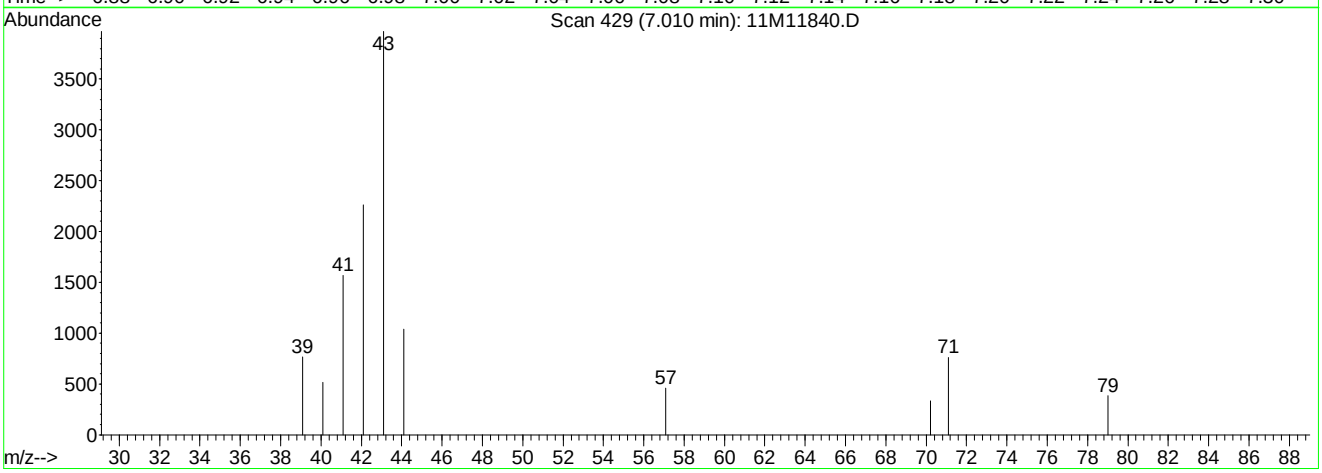

TIC: 11M11840.D

(18) Methyl acetate (T)

7.01min 3.69ug/L

response 17794

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	2.82#
59.00	6.50	1.21#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:34 2016

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

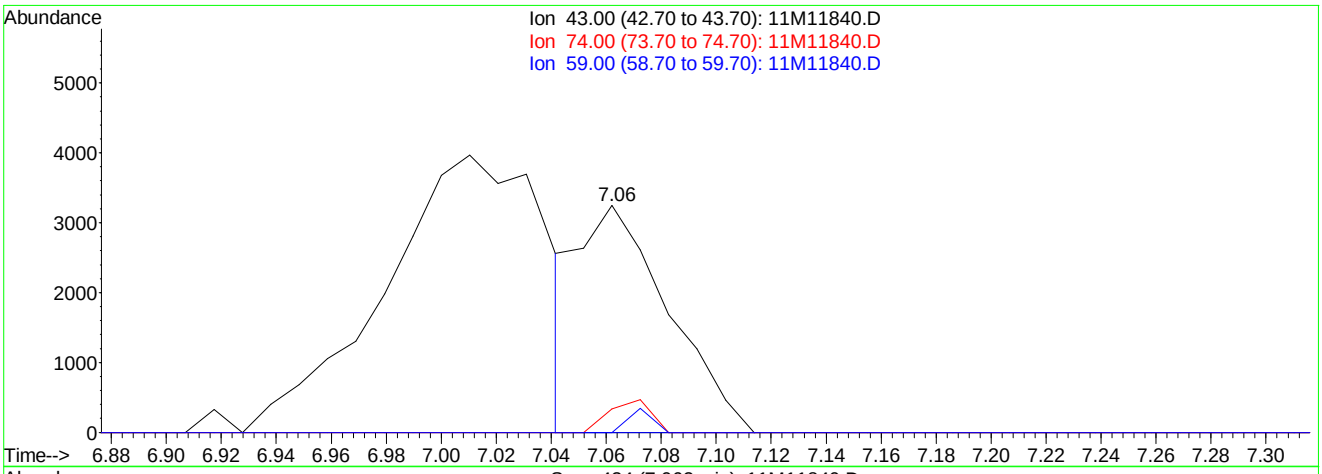

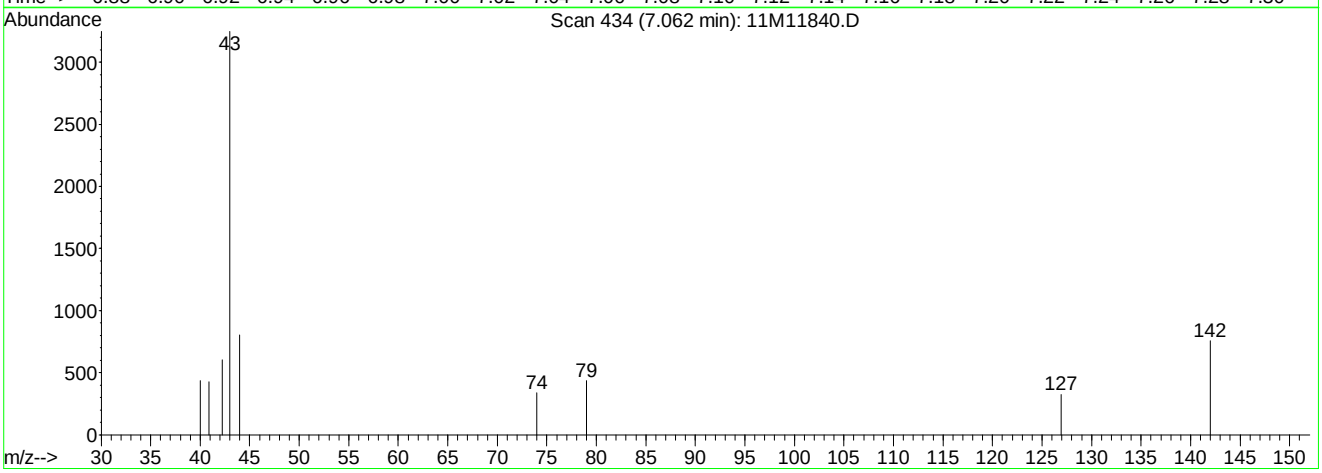

TIC: 11M11840.D

(18) Methyl acetate (T)

7.06min 0.86ug/L mint

response 7344

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	6.84#
59.00	6.50	2.93#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:39 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	510485	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	424113	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244127	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	13577	2.3093 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.24%#	
43) 1,2-Dichloroethane-d4	10.23	65	16340	2.3640 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.44%#	
57) Toluene-d8	12.47	98	46369	2.3570 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.44%#	
78) p-Bromofluorobenzene	15.64	95	19139	2.4218 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.68%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	33260	4.2909 ug/L	97
3) Chloromethane	3.72	50	29484	4.2588 ug/L	100
4) Vinyl Chloride	3.96	62	24947	4.6446 ug/L	98
5) 1,3-Butadiene	4.00	54	24704	4.8274 ug/L	87
6) Bromomethane	4.85	94	16794	4.7876 ug/L	96
7) Chloroethane	5.00	64	15417	4.1982 ug/L	96
8) Trichlorofluoromethane	5.48	101	50663	4.8750 ug/L	98
9) Diethyl ether	6.01	59	199353	45.0064 ug/L	100
10) Isoprene	6.04	67	30513	4.3864 ug/L	99
11) Acrolein	6.25	56	12345	23.3877 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	23865	4.5585 ug/L	97
13) Acetone	6.35	43	6439	4.2186 ug/L	86
14) 1,1-Dichloroethene	6.56	61	43769	4.6158 ug/L	96
15) Tert-Butyl Alcohol	6.66	59	34212	87.4805 ug/L	100
16) Dimethyl Sulfide	6.81	62	17251	4.0482 ug/L	99
17) Iodomethane	7.06	142	7385	2.0684 ug/L	94
18) Methyl acetate	7.06	43	32363	5.4250 ug/L #	83
19) Methylene Chloride	7.31	84	23476	4.4707 ug/L	98
20) Carbon Disulfide	7.36	76	72931	4.4715 ug/L	98
21) Acrylonitrile	7.49	53	38039	20.0847 ug/L	96
22) Methyl Tert Butyl Ether	7.52	73	57597	4.3071 ug/L	98
23) trans-1,2-Dichloroethene	7.74	96	23369	4.3390 ug/L	99
24) n-Hexane	7.82	57	38507	4.3615 ug/L	99
25) Diisopropyl ether	8.15	45	1105208	48.2180 ug/L	99
26) Vinyl Acetate	8.31	43	24007	7.3442 ug/L	97
27) 1,1-Dichloroethane	8.34	63	51535	4.8316 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	899266	48.1312 ug/L	99
29) 2-Butanone	8.88	43	8098	3.5469 ug/L	98
30) Propionitrile	8.98	54	26204	41.2561 ug/L	97
31) 2,2-Dichloropropane	9.09	77	40285	5.2526 ug/L	97
32) cis-1,2-Dichloroethene	9.15	96	27456	4.6081 ug/L	91
33) Chloroform	9.35	83	48958	4.7306 ug/L	97
34) 1-Bromopropane	9.47	122	4632	4.9482 ug/L	88
35) Bromochloromethane	9.57	130	17073	4.6807 ug/L	99
36) Tetrahydrofuran	9.60	42	59638	39.6839 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	48123	4.8983 ug/L	100
39) Cyclohexane	9.88	56	51945	4.5931 ug/L	98
40) 1,1-Dichloropropene	10.04	75	33867	4.6344 ug/L	99
41) Carbon Tetrachloride	10.17	117	47434	5.0851 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	615710	46.3601 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	40281	4.6727 ug/L	99
45)	Benzene	10.38	78	94223	4.6151 ug/L	99
46)	Trichloroethene	11.08	130	31195	4.7740 ug/L	96
47)	Methylcyclohexane	11.17	83	35731	4.4100 ug/L	96
48)	1,2-Dichloropropane	11.29	63	25973	4.4921 ug/L	93
49)	1,4-Dioxane	11.56	88	2747	80.2363 ug/L	93
50)	Bromodichloromethane	11.57	83	36997	4.7467 ug/L	99
51)	Dibromomethane	11.65	93	13963	4.5774 ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	11417	3.7313 ug/L	95
53)	4-Methyl-2-Pentanone	11.87	58	6133	3.2690 ug/L	90
54)	cis-1,3-Dichloropropene	12.17	75	36461	4.5343 ug/L	100
55)	Dimethyl Disulfide	12.42	79	18914	3.7032 ug/L	99
58)	Toluene	12.56	91	107617	4.9467 ug/L	100
59)	Ethyl Methacrylate	12.65	69	21187	4.1021 ug/L	99
60)	trans-1,3-Dichloropropene	12.73	75	32824	4.5778 ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	17791	4.3060 ug/L	98
62)	2-Hexanone	12.86	43	11606	3.4244 ug/L	99
63)	1,3-Dichloropropane	13.21	76	30121	4.5460 ug/L	97
64)	Tetrachloroethene	13.33	164	24241	4.8819 ug/L	95
65)	Dibromochloromethane	13.59	129	27989	4.7024 ug/L	95
66)	1,2-Dibromoethane	13.82	107	18147	4.4382 ug/L	96
67)	1-Chlorohexane	13.89	91	33195	4.6591 ug/L	97
68)	Chlorobenzene	14.29	112	79059	4.9583 ug/L	98
69)	1,1,1,2-Tetrachloroethane	14.32	131	31047	4.8956 ug/L	97
70)	Ethylbenzene	14.31	106	39304	4.8168 ug/L	95
71)	m-,p-Xylene	14.39	106	95751	9.7273 ug/L	95
72)	o-Xylene	14.92	106	45759	4.7228 ug/L	96
73)	Styrene	14.95	104	77900	4.8227 ug/L	98
74)	Bromoform	15.43	173	15663	4.1856 ug/L	97
75)	Isopropylbenzene	15.31	105	123883	4.9827 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.51	83	18105	4.4049 ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	6717	4.7266 ug/L	85
80)	trans-1,4-Dichloro-2-Buten	15.74	53	6067	3.6507 ug/L	69
81)	n-Propylbenzene	15.79	91	143972	5.2435 ug/L	99
82)	Bromobenzene	15.92	156	37345	4.9800 ug/L	93
83)	1,3,5-Trimethylbenzene	15.95	105	106030	5.0309 ug/L	100
84)	2-Chlorotoluene	16.05	91	99279	4.9734 ug/L	100
85)	4-Chlorotoluene	16.09	91	88275	5.1992 ug/L	98
86)	a-Methylstyrene	16.34	118	53766	4.7153 ug/L	98
87)	tert-Butylbenzene	16.39	134	23868	5.2956 ug/L	97
88)	1,2,4-Trimethylbenzene	16.44	105	112072	5.2401 ug/L	99
89)	sec-Butylbenzene	16.65	105	129249	5.1810 ug/L	99
90)	p-Isopropyltoluene	16.79	119	119605	5.2524 ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	71265	5.0271 ug/L	99
92)	1,4-Dichlorobenzene	17.10	146	72437	5.0122 ug/L	96
93)	n-Butylbenzene	17.28	91	100062	4.9277 ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	64925	4.9520 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	3875	4.6567 ug/L	87
96)	1,2,4-Trichlorobenzene	19.55	180	46664	4.8629 ug/L	97
97)	Hexachlorobutadiene	19.69	225	20419	5.1319 ug/L	96
98)	Naphthalene	19.90	128	83612	4.4869 ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	40714	4.5323 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration

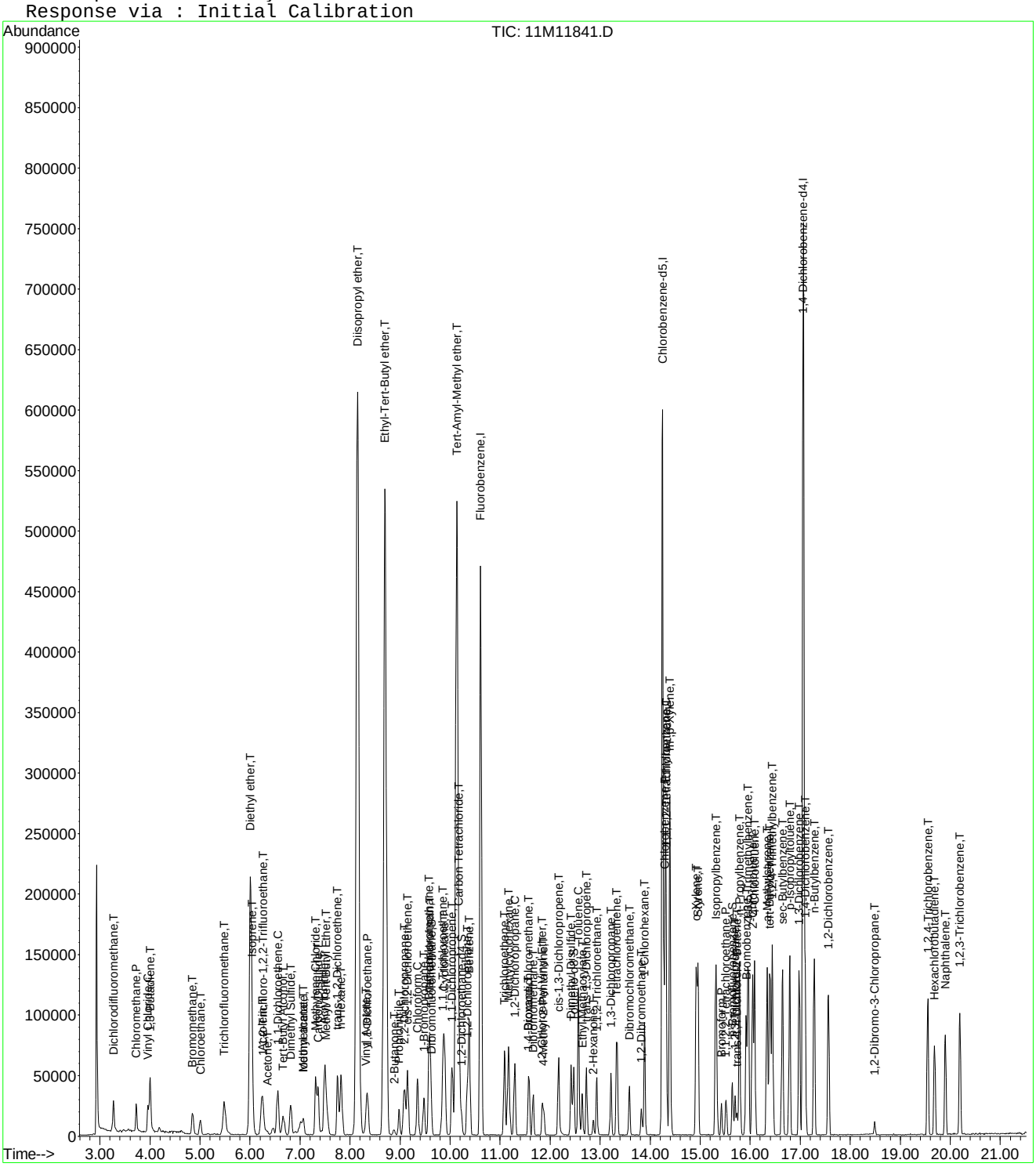

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.1584	16.8	100	0.00
3	P	Chloromethane	5.0000	4.6027	7.9	100	0.00
4	C	Vinyl Chloride	5.0000	4.6895	6.2	100	0.00
5	T	1,3-Butadiene	5.0000	4.6702	6.6	100	0.00
6	T	Bromomethane	5.0000	4.5915	8.2	100	0.00
7	T	Chloroethane	5.0000	4.5105	9.8	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7781	4.4	100	0.00
9	T	Diethyl ether	50.0000	50.8371	-1.7	100	0.00
10	T	Isoprene	5.0000	4.6688	6.6	100	0.00
11	T	Acrolein	25.0000	24.7297	1.1	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6385	7.2	100	0.01
13	T	Acetone	5.0000	5.3120	-6.2	100	0.01
14	C	1,1-Dichloroethene	5.0000	4.6835	6.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	102.0360	-2.0	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6223	7.6	100	0.00
17	T	Iodomethane	5.0000	3.9124	21.8	100	0.00
18	T	Methyl acetate	5.0000	7.5474	-50.9#	100	0.00
19	T	Methylene Chloride	5.0000	4.8539	2.9	100	0.00
20	T	Carbon Disulfide	5.0000	4.6615	6.8	100	0.00
21	T	Acrylonitrile	25.0000	23.4049	6.4	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.7747	4.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.5182	9.6	100	0.00
24	T	n-Hexane	5.0000	4.4700	10.6	100	0.00
25	T	Diisopropyl ether	50.0000	51.4154	-2.8	100	0.00
26	T	Vinyl Acetate	5.0000	5.1698	-3.4	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9658	0.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.3996	-2.8	100	0.00
29	T	2-Butanone	5.0000	4.4190	11.6	100	0.01
30	T	Propionitrile	50.0000	48.8210	2.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9614	0.8	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8145	3.7	100	0.00
33	C	Chloroform	5.0000	4.8039	3.9	100	0.00
34	T	1-Bromopropane	5.0000	5.1449	-2.9	100	0.00
35	T	Bromochloromethane	5.0000	5.0410	-0.8	100	0.00
36	T	Tetrahydrofuran	50.0000	46.0861	7.8	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4302	2.8	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7984	4.0	100	0.00
39	T	Cyclohexane	5.0000	4.7526	4.9	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.7295	5.4	100	0.00
41	T	Carbon Tetrachloride	5.0000	4.8435	3.1	100	-0.01
42	T	Tert-Amyl-Methyl ether	50.0000	50.6462	-1.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5650	-2.6	100	0.00
44	T	1,2-Dichloroethane	5.0000	4.8665	2.7	100	0.00
45	T	Benzene	5.0000	4.8065	3.9	100	0.00
46	T	Trichloroethene	5.0000	4.8959	2.1	100	-0.01
47	T	Methylcyclohexane	5.0000	4.5439	9.1	100	0.00
48	C	1,2-Dichloropropane	5.0000	4.7864	4.3	100	0.00
49	T	1,4-Dioxane	100.0000	102.6541	-2.7	100	0.01
50	T	Bromodichloromethane	5.0000	4.8566	2.9	100	0.00
51	T	Dibromomethane	5.0000	4.9379	1.2	100	0.00
52	T	2-Chloroethyl Vinyl Ether	5.0000	4.2689	14.6	100	0.00
53	T	4-Methyl-2-Pentanone	5.0000	4.0658	18.7	100	0.00
54	T	cis-1,3-Dichloropropene	5.0000	4.7853	4.3	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	5.0000	4.1252	17.5	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	2.5000	2.5163	-0.7	100	0.00
58	C	Toluene	5.0000	5.0124	-0.2	100	0.00
59	T	Ethyl Methacrylate	5.0000	4.6214	7.6	100	0.00
60	T	trans-1,3-Dichloropropene	5.0000	4.7629	4.7	100	0.00
61	T	1,1,2-Trichloroethane	5.0000	4.6730	6.5	100	0.00
62	T	2-Hexanone	5.0000	4.1507	17.0	100	0.00
63	T	1,3-Dichloropropane	5.0000	4.9267	1.5	100	0.00
64	T	Tetrachloroethene	5.0000	4.8551	2.9	100	-0.01
65	T	Dibromochloromethane	5.0000	4.8199	3.6	100	0.00
66	T	1,2-Dibromoethane	5.0000	4.7575	4.8	100	0.00
67	T	1-Chlorohexane	5.0000	4.6895	6.2	100	0.00
68	P	Chlorobenzene	5.0000	5.0264	-0.5	100	0.00
69	T	1,1,1,2-Tetrachloroethane	5.0000	4.8783	2.4	100	0.00
70	C	Ethylbenzene	5.0000	4.8732	2.5	100	0.00
71	T	m-,p-Xylene	10.0000	9.7654	2.3	100	0.00
72	T	o-Xylene	5.0000	4.7954	4.1	100	0.00
73	T	Styrene	5.0000	4.9411	1.2	100	0.00
74	P	Bromoform	5.0000	4.4503	11.0	100	0.00
75	T	Isopropylbenzene	5.0000	4.9091	1.8	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	5.0000	4.7624	4.8	100	-0.01
78	S	p-Bromofluorobenzene	2.5000	2.5432	-1.7	100	0.00
79	T	1,2,3-Trichloropropane	5.0000	5.0393	-0.8	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0050	19.9	100	0.00
81	T	n-Propylbenzene	5.0000	5.0923	-1.8	100	0.00
82	T	Bromobenzene	5.0000	5.0338	-0.7	100	0.00
83	T	1,3,5-Trimethylbenzene	5.0000	4.9145	1.7	100	-0.01
84	T	2-Chlorotoluene	5.0000	5.0134	-0.3	100	0.00
85	T	4-Chlorotoluene	5.0000	4.9765	0.5	100	0.00
86	T	a-Methylstyrene	5.0000	4.7239	5.5	100	0.00
87	T	tert-Butylbenzene	5.0000	5.2217	-4.4	100	-0.01
88	T	1,2,4-Trimethylbenzene	5.0000	5.1012	-2.0	100	0.00
89	T	sec-Butylbenzene	5.0000	4.9892	0.2	100	0.00
90	T	p-Isopropyltoluene	5.0000	5.0265	-0.5	100	0.00
91	T	1,3-Dichlorobenzene	5.0000	4.9737	0.5	100	0.00
92	T	1,4-Dichlorobenzene	5.0000	4.9875	0.2	100	0.00
93	T	n-Butylbenzene	5.0000	4.7722	4.6	100	0.00
94	T	1,2-Dichlorobenzene	5.0000	4.9741	0.5	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1051	-2.1	100	0.00
96	T	1,2,4-Trichlorobenzene	5.0000	4.8858	2.3	100	0.00
97	T	Hexachlorobutadiene	5.0000	4.8528	2.9	100	0.00
98	T	Naphthalene	5.0000	4.7164	5.7	100	0.00
99	T	1,2,3-Trichlorobenzene	5.0000	4.6448	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11841.D 8260WT.M Sat May 14 18:48:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	512017	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	433937	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	255524	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	58089	10.3664 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.48%#		
43) 1,2-Dichloroethane-d4	10.23	65	66804	10.4555 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.84%#		
57) Toluene-d8	12.47	98	193532	10.2645 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.04%#		
78) p-Bromofluorobenzene	15.64	95	81186	10.3070 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	176636	22.0179 ug/L	99
3) Chloromethane	3.72	50	126901	19.7510 ug/L	98
4) Vinyl Chloride	3.96	62	109592	20.5394 ug/L	98
5) 1,3-Butadiene	4.00	54	116317	21.9237 ug/L	96
6) Bromomethane	4.85	94	73878	20.1380 ug/L	93
7) Chloroethane	5.00	64	71103	20.7401 ug/L	100
8) Trichlorofluoromethane	5.49	101	225913	21.2425 ug/L	99
9) Diethyl ether	6.01	59	321203	81.6650 ug/L	99
10) Isoprene	6.04	67	135641	20.6925 ug/L	98
11) Acrolein	6.24	56	19366	37.8284 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	109792	21.2757 ug/L	99
13) Acetone	6.34	43	27399	22.5356 ug/L	96
14) 1,1-Dichloroethene	6.56	61	201658	21.5139 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	60081	178.6532 ug/L	99
16) Dimethyl Sulfide	6.81	62	75759	20.2383 ug/L	97
17) Iodomethane	7.06	142	67280	17.2594 ug/L	97
18) Methyl acetate	7.07	43	87945	22.4983 ug/L	96
19) Methylene Chloride	7.31	84	99453	20.5013 ug/L	100
20) Carbon Disulfide	7.36	76	327043	20.8410 ug/L	100
21) Acrylonitrile	7.49	53	69618	42.7070 ug/L	95
22) Methyl Tert Butyl Ether	7.52	73	266288	22.0086 ug/L	99
23) trans-1,2-Dichloroethene	7.75	96	107858	20.7912 ug/L	99
24) n-Hexane	7.82	57	184135	21.3111 ug/L	99
25) Diisopropyl ether	8.15	45	1729257	80.2062 ug/L	99
26) Vinyl Acetate	8.31	43	160029	20.6235 ug/L	99
27) 1,1-Dichloroethane	8.34	63	218994	21.0387 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1435318	81.7933 ug/L	100
29) 2-Butanone	8.87	43	39878	21.6958 ug/L	99
30) Propionitrile	8.97	54	47221	87.7149 ug/L	99
31) 2,2-Dichloropropane	9.09	77	166427	20.4352 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	120620	21.0877 ug/L	99
33) Chloroform	9.35	83	208615	20.4085 ug/L	99
34) 1-Bromopropane	9.48	122	19153	19.2424 ug/L	96
35) Bromochloromethane	9.57	130	77189	22.7226 ug/L	99
36) Tetrahydrofuran	9.60	42	109362	84.2581 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	210871	20.9631 ug/L	98
39) Cyclohexane	9.88	56	235071	21.4428 ug/L	99
40) 1,1-Dichloropropene	10.04	75	151682	21.1188 ug/L	99
41) Carbon Tetrachloride	10.17	117	212111	21.5941 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1001790	82.1572 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	180438	21.7339 ug/L	99
45) Benzene	10.38	78	407777	20.7394 ug/L	100
46) Trichloroethene	11.08	130	132094	20.6692 ug/L	99
47) Methylcyclohexane	11.17	83	168355	21.3455 ug/L	98
48) 1,2-Dichloropropane	11.29	63	112875	20.7388 ug/L	99
49) 1,4-Dioxane	11.56	88	4948	165.8209 ug/L	99
50) Bromodichloromethane	11.57	83	163762	21.4329 ug/L	98
51) Dibromomethane	11.65	93	61028	21.5174 ug/L	98
52) 2-Chloroethyl Vinyl Ether	11.84	63	56664	21.1238 ug/L	99
53) 4-Methyl-2-Pentanone	11.87	58	32621	21.5609 ug/L	99
54) cis-1,3-Dichloropropene	12.17	75	166399	21.7735 ug/L	100
55) Dimethyl Disulfide	12.42	79	93808	20.3984 ug/L	99
58) Toluene	12.56	91	467769	21.2936 ug/L	99
59) Ethyl Methacrylate	12.64	69	103892	22.1484 ug/L	98
60) trans-1,3-Dichloropropene	12.73	75	155661	22.0759 ug/L	100
61) 1,1,2-Trichloroethane	12.94	97	85297	21.8971 ug/L	100
62) 2-Hexanone	12.86	43	62113	21.7109 ug/L	99
63) 1,3-Dichloropropane	13.21	76	137448	21.9726 ug/L	98
64) Tetrachloroethene	13.34	164	106368	20.8217 ug/L	99
65) Dibromochloromethane	13.59	129	131143	22.0723 ug/L	99
66) 1,2-Dibromoethane	13.82	107	84381	21.6209 ug/L	99
67) 1-Chlorohexane	13.89	91	153420	21.1830 ug/L	100
68) Chlorobenzene	14.29	112	338669	21.0446 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	134571	20.6660 ug/L	98
70) Ethylbenzene	14.31	106	171752	20.8130 ug/L	97
71) m-,p-Xylene	14.39	106	419228	41.7882 ug/L	99
72) o-Xylene	14.92	106	208125	21.3170 ug/L	99
73) Styrene	14.95	104	353452	21.9116 ug/L	98
74) Bromoform	15.43	173	78592	21.8247 ug/L	100
75) Isopropylbenzene	15.31	105	552747	21.4078 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.52	83	90122	22.6486 ug/L	98
79) 1,2,3-Trichloropropane	15.70	110	30969	20.9562 ug/L	97
80) trans-1,4-Dichloro-2-Buten	15.74	53	36190	19.3325 ug/L	86
81) n-Propylbenzene	15.79	91	640711	21.6512 ug/L	100
82) Bromobenzene	15.92	156	160227	20.6340 ug/L	100
83) 1,3,5-Trimethylbenzene	15.95	105	481759	21.3337 ug/L	100
84) 2-Chlorotoluene	16.05	91	435100	20.9919 ug/L	99
85) 4-Chlorotoluene	16.09	91	391759	21.1004 ug/L	100
86) a-Methylstyrene	16.34	118	253642	21.2911 ug/L	99
87) tert-Butylbenzene	16.39	134	101859	21.2903 ug/L	99
88) 1,2,4-Trimethylbenzene	16.44	105	505239	21.9714 ug/L	98
89) sec-Butylbenzene	16.65	105	586770	21.6398 ug/L	100
90) p-Isopropyltoluene	16.79	119	539795	21.6735 ug/L	100
91) 1,3-Dichlorobenzene	16.98	146	312832	20.8591 ug/L	99
92) 1,4-Dichlorobenzene	17.10	146	314339	20.6779 ug/L	99
93) n-Butylbenzene	17.28	91	474312	21.6121 ug/L	99
94) 1,2-Dichlorobenzene	17.57	146	287316	21.0305 ug/L	100
95) 1,2-Dibromo-3-Chloropropan	18.49	75	19607	22.2193 ug/L	89
96) 1,2,4-Trichlorobenzene	19.55	180	212916	21.2982 ug/L	100
97) Hexachlorobutadiene	19.69	225	91388	20.7507 ug/L	99
98) Naphthalene	19.90	128	414073	22.3154 ug/L	99
99) 1,2,3-Trichlorobenzene	20.19	180	193437	21.0836 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11842.D 8260WT.M Sat May 14 18:50:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

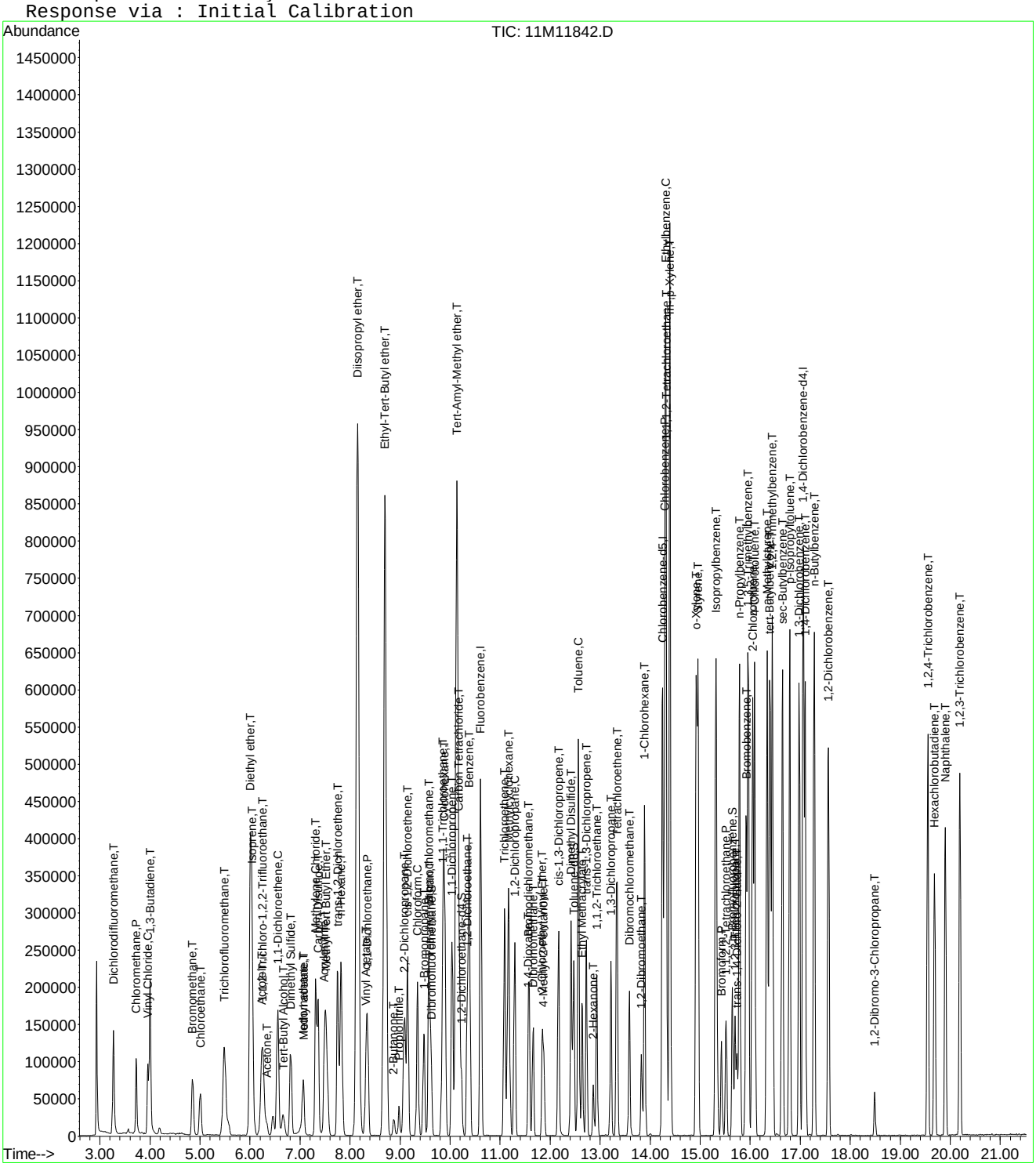

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	521583	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	438582	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	263885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	139784	24.4879 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.23	65	158200	24.3058 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.24%		
57) Toluene-d8	12.47	98	462969	24.2947 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.16%		
78) p-Bromofluorobenzene	15.64	95	188875	23.2189 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	416971	51.0228 ug/L	100
3) Chloromethane	3.72	50	287508	43.9273 ug/L	100
4) Vinyl Chloride	3.96	62	261024	48.0232 ug/L	100
5) 1,3-Butadiene	4.00	54	280913	51.9760 ug/L	100
6) Bromomethane	4.85	94	172294	46.1032 ug/L	100
7) Chloroethane	5.00	64	167978	48.0991 ug/L	100
8) Trichlorofluoromethane	5.48	101	519806	47.9806 ug/L	100
9) Diethyl ether	6.01	59	391891	97.8098 ug/L	100
10) Isoprene	6.04	67	331169	49.5943 ug/L	100
11) Acrolein	6.23	56	25228	47.9550 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	255341	48.5730 ug/L	100
13) Acetone	6.34	43	57896	46.7459 ug/L	98
14) 1,1-Dichloroethene	6.56	61	459793	48.1534 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	69395	202.5643 ug/L	100
16) Dimethyl Sulfide	6.81	62	193959	50.8640 ug/L	100
17) Iodomethane	7.06	142	214554	49.3519 ug/L	100
18) Methyl acetate	7.06	43	185465	48.1983 ug/L	100
19) Methylene Chloride	7.31	84	233601	47.2715 ug/L	100
20) Carbon Disulfide	7.36	76	816514	51.0786 ug/L	100
21) Acrylonitrile	7.49	53	84821	51.0789 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	610666	49.5457 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	252405	47.7624 ug/L	100
24) n-Hexane	7.82	57	449694	51.0913 ug/L	100
25) Diisopropyl ether	8.15	45	2181723	99.3365 ug/L	100
26) Vinyl Acetate	8.31	43	410275	48.2141 ug/L	100
27) 1,1-Dichloroethane	8.34	63	516691	48.7281 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	1783350	99.7625 ug/L	100
29) 2-Butanone	8.87	43	91238	48.7281 ug/L	100
30) Propionitrile	8.97	54	56538	103.0954 ug/L	100
31) 2,2-Dichloropropane	9.09	77	402511	48.5170 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	282222	48.4353 ug/L	100
33) Chloroform	9.35	83	489993	47.0562 ug/L	100
34) 1-Bromopropane	9.48	122	50180	48.4991 ug/L	100
35) Bromochloromethane	9.57	130	179921	51.9932 ug/L	100
36) Tetrahydrofuran	9.60	42	127999	96.8083 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	497667	48.5667 ug/L	100
39) Cyclohexane	9.88	56	575045	51.4928 ug/L	100
40) 1,1-Dichloropropene	10.04	75	353148	48.2674 ug/L	100
41) Carbon Tetrachloride	10.18	117	493225	49.2921 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1227500	98.8215 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	419000	49.5434 ug/L	100
45) Benzene	10.38	78	947514	47.3064 ug/L	100
46) Trichloroethene	11.09	130	307211	47.1888 ug/L	100
47) Methylcyclohexane	11.17	83	418631	52.1043 ug/L	100
48) 1,2-Dichloropropane	11.29	63	268423	48.4136 ug/L	100
49) 1,4-Dioxane	11.55	88	5866	189.1665 ug/L	100
50) Bromodichloromethane	11.57	83	385292	49.5015 ug/L	100
51) Dibromomethane	11.65	93	142910	49.4635 ug/L	100
52) 2-Chloroethyl Vinyl Ether	11.84	63	133225	48.7541 ug/L	100
53) 4-Methyl-2-Pentanone	11.87	58	75720	49.1295 ug/L	100
54) cis-1,3-Dichloropropene	12.17	75	394857	50.7199 ug/L	100
55) Dimethyl Disulfide	12.42	79	236984	50.5867 ug/L	100
58) Toluene	12.56	91	1095397	49.3360 ug/L	100
59) Ethyl Methacrylate	12.65	69	249821	52.6944 ug/L	100
60) trans-1,3-Dichloropropene	12.73	75	366443	51.4187 ug/L	100
61) 1,1,2-Trichloroethane	12.93	97	194150	49.3135 ug/L	100
62) 2-Hexanone	12.86	43	144364	49.9264 ug/L	100
63) 1,3-Dichloropropane	13.21	76	316783	50.1049 ug/L	100
64) Tetrachloroethene	13.34	164	251037	48.6205 ug/L	100
65) Dibromochloromethane	13.59	129	310662	51.7330 ug/L	100
66) 1,2-Dibromoethane	13.82	107	196704	49.8676 ug/L	100
67) 1-Chlorohexane	13.89	91	376690	51.4596 ug/L	100
68) Chlorobenzene	14.29	112	797442	49.0276 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	325801	49.5033 ug/L	100
70) Ethylbenzene	14.31	106	408749	49.0078 ug/L	100
71) m-,p-Xylene	14.39	106	996141	98.2427 ug/L	100
72) o-Xylene	14.92	106	492043	49.8632 ug/L	100
73) Styrene	14.95	104	838125	51.4077 ug/L	100
74) Bromoform	15.43	173	184100	50.5823 ug/L	100
75) Isopropylbenzene	15.31	105	1309383	50.1751 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	208930	50.8426 ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	72411	46.9859 ug/L	100
80) trans-1,4-Dichloro-2-Buten	15.74	53	94075	47.5347 ug/L	100
81) n-Propylbenzene	15.79	91	1522917	49.8325 ug/L	100
82) Bromobenzene	15.92	156	379178	47.2834 ug/L	100
83) 1,3,5-Trimethylbenzene	15.96	105	1143246	49.0221 ug/L	100
84) 2-Chlorotoluene	16.05	91	1021921	47.7415 ug/L	100
85) 4-Chlorotoluene	16.09	91	930690	48.5394 ug/L	100
86) a-Methylstyrene	16.34	118	649847	52.8208 ug/L	100
87) tert-Butylbenzene	16.40	134	241955	48.9705 ug/L	100
88) 1,2,4-Trimethylbenzene	16.44	105	1178963	49.6454 ug/L	100
89) sec-Butylbenzene	16.65	105	1390388	49.6522 ug/L	100
90) p-Isopropyltoluene	16.79	119	1282252	49.8529 ug/L	100
91) 1,3-Dichlorobenzene	16.98	146	737967	47.6473 ug/L	100
92) 1,4-Dichlorobenzene	17.10	146	740977	47.1987 ug/L	100
93) n-Butylbenzene	17.28	91	1126170	49.6883 ug/L	100
94) 1,2-Dichlorobenzene	17.57	146	684016	48.4812 ug/L	100
95) 1,2-Dibromo-3-Chloropropan	18.49	75	42848	46.3023 ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	512927	49.6830 ug/L	100
97) Hexachlorobutadiene	19.69	225	219129	48.1793 ug/L	100
98) Naphthalene	19.90	128	962852	50.2463 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	453828	47.8975 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

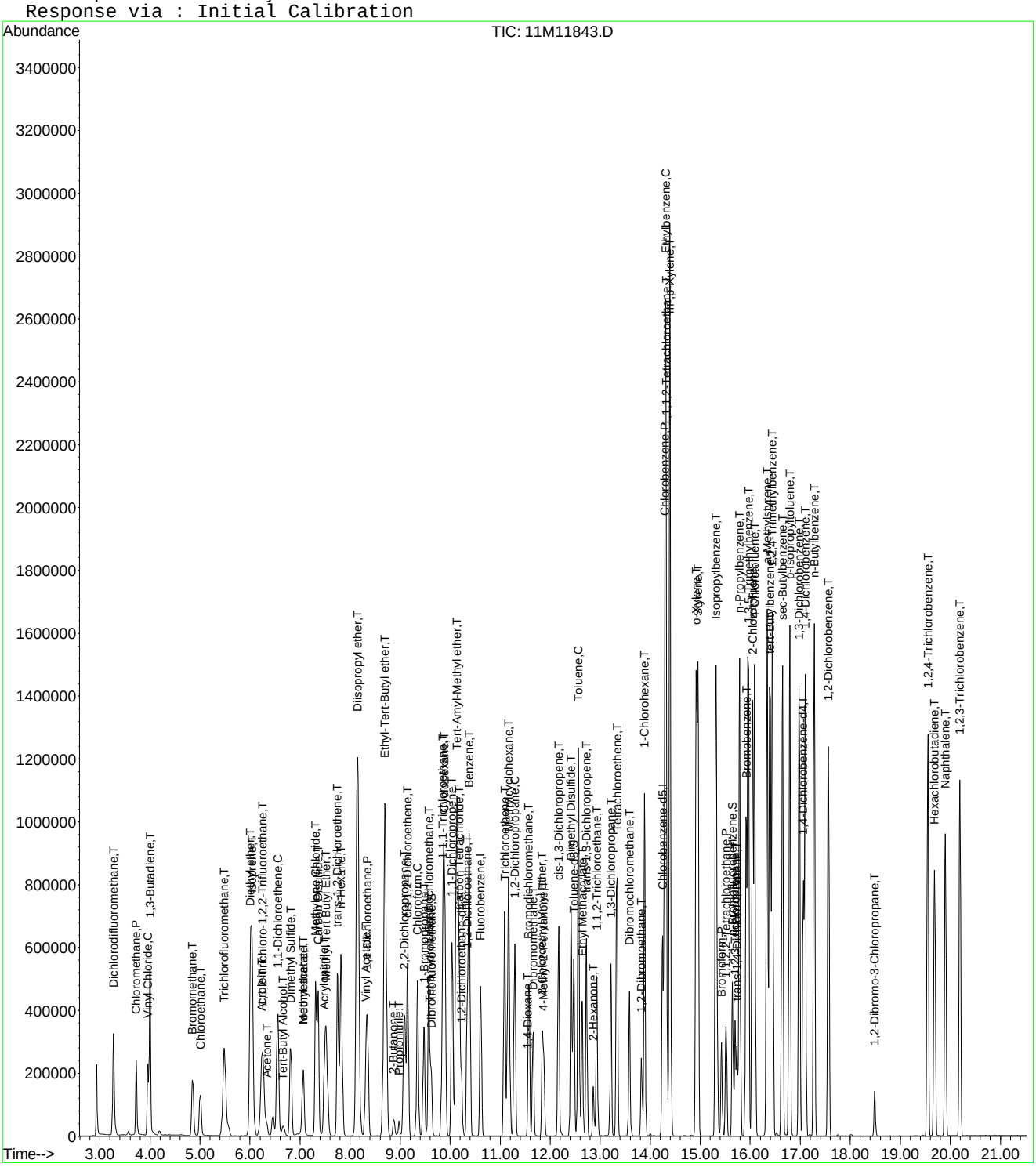

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	541540	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	458522	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	275719	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	307700	51.9175 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 207.68%#		
43) 1,2-Dichloroethane-d4	10.23	65	345779	51.1676 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 204.68%#		
57) Toluene-d8	12.47	98	1011334	50.7627 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 203.04%#		
78) p-Bromofluorobenzene	15.64	95	423157	49.7872 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 199.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	918088	108.2020 ug/L	100
3) Chloromethane	3.72	50	641242	94.3625 ug/L	99
4) Vinyl Chloride	3.95	62	586615	103.9481 ug/L	100
5) 1,3-Butadiene	3.99	54	571156	101.7838 ug/L	99
6) Bromomethane	4.85	94	394826	101.7560 ug/L	99
7) Chloroethane	5.00	64	370541	102.1913 ug/L	99
8) Trichlorofluoromethane	5.48	101	1135647	100.9627 ug/L	98
9) Diethyl ether	6.01	59	836495	201.0821 ug/L	99
10) Isoprene	6.04	67	699724	100.9257 ug/L	100
11) Acrolein	6.24	56	55228	99.4421 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	545013	99.8560 ug/L	100
13) Acetone	6.34	43	123799	96.2731 ug/L	95
14) 1,1-Dichloroethene	6.56	61	1004294	101.3022 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	148134	416.4687 ug/L	98
16) Dimethyl Sulfide	6.81	62	401237	101.3432 ug/L	100
17) Iodomethane	7.06	142	471112	102.3553 ug/L	100
18) Methyl acetate	7.07	43	381031	98.0957 ug/L	99
19) Methylene Chloride	7.31	84	501609	97.7649 ug/L	99
20) Carbon Disulfide	7.36	76	1695322	102.1458 ug/L	100
21) Acrylonitrile	7.49	53	184461	106.9881 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	1312901	102.5951 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	542907	98.9478 ug/L	98
24) n-Hexane	7.82	57	921942	100.8849 ug/L	99
25) Diisopropyl ether	8.15	45	4599625	201.7086 ug/L	99
26) Vinyl Acetate	8.31	43	855488	94.3763 ug/L	99
27) 1,1-Dichloroethane	8.34	63	1111115	100.9254 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	3780769	203.7060 ug/L	100
29) 2-Butanone	8.87	43	198511	102.1130 ug/L	100
30) Propionitrile	8.98	54	118699	208.4678 ug/L	97
31) 2,2-Dichloropropane	9.09	77	914695	106.1904 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	606774	100.2977 ug/L	99
33) Chloroform	9.35	83	1053766	97.4685 ug/L	100
34) 1-Bromopropane	9.48	122	106914	98.8615 ug/L	100
35) Bromochloromethane	9.57	130	387239	107.7795 ug/L	100
36) Tetrahydrofuran	9.60	42	270148	196.7890 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	1088263	102.2884 ug/L	99
39) Cyclohexane	9.88	56	1213186	104.6320 ug/L	100
40) 1,1-Dichloropropene	10.04	75	775674	102.1101 ug/L	98
41) Carbon Tetrachloride	10.18	117	1074698	103.4456 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	2619501	203.1147 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	895394	101.9714	ug/L	100
45)	Benzene	10.38	78	2041856	98.1867	ug/L	100
46)	Trichloroethene	11.08	130	677193	100.1861	ug/L	99
47)	Methylcyclohexane	11.17	83	867487	103.9915	ug/L	100
48)	1,2-Dichloropropane	11.29	63	580562	100.8530	ug/L	98
49)	1,4-Dioxane	11.56	88	13651	395.0901	ug/L	100
50)	Bromodichloromethane	11.57	83	837797	103.6717	ug/L	99
51)	Dibromomethane	11.65	93	315786	105.2707	ug/L	99
52)	2-Chloroethyl Vinyl Ether	11.84	63	293822	103.5626	ug/L	100
53)	4-Methyl-2-Pentanone	11.87	58	164890	103.0430	ug/L	98
54)	cis-1,3-Dichloropropene	12.17	75	854611	105.7305	ug/L	99
55)	Dimethyl Disulfide	12.42	79	505463	103.9202	ug/L	99
58)	Toluene	12.56	91	2361378	101.7300	ug/L	100
59)	Ethyl Methacrylate	12.65	69	529740	106.8782	ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	793063	106.4420	ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	418327	101.6330	ug/L	99
62)	2-Hexanone	12.86	43	314588	104.0648	ug/L	99
63)	1,3-Dichloropropane	13.21	76	685844	103.7610	ug/L	100
64)	Tetrachloroethene	13.34	164	550335	101.9528	ug/L	99
65)	Dibromochloromethane	13.59	129	681591	108.5659	ug/L	100
66)	1,2-Dibromoethane	13.82	107	427945	103.7729	ug/L	99
67)	1-Chlorohexane	13.89	91	807177	105.4730	ug/L	98
68)	Chlorobenzene	14.29	112	1705646	100.3046	ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	704959	102.4557	ug/L	100
70)	Ethylbenzene	14.31	106	883839	101.3614	ug/L	99
71)	m-,p-Xylene	14.39	106	2123651	200.3333	ug/L	98
72)	o-Xylene	14.92	106	1053682	102.1356	ug/L	100
73)	Styrene	14.95	104	1807222	106.0282	ug/L	99
74)	Bromoform	15.43	173	412378	108.3755	ug/L	100
75)	Isopropylbenzene	15.31	105	2813193	103.1127	ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	454052	105.7501	ug/L	99
79)	1,2,3-Trichloropropane	15.70	110	156532	96.8210	ug/L	100
80)	trans-1,4-Dichloro-2-Buten	15.74	53	203327	97.5343	ug/L	96
81)	n-Propylbenzene	15.79	91	3285915	102.9061	ug/L	99
82)	Bromobenzene	15.92	156	828973	98.9359	ug/L	99
83)	1,3,5-Trimethylbenzene	15.96	105	2483230	101.9102	ug/L	100
84)	2-Chlorotoluene	16.05	91	2208423	98.7437	ug/L	100
85)	4-Chlorotoluene	16.09	91	2020827	100.8710	ug/L	100
86)	a-Methylstyrene	16.34	118	1361545	105.9190	ug/L	99
87)	tert-Butylbenzene	16.40	134	532522	103.1540	ug/L	98
88)	1,2,4-Trimethylbenzene	16.44	105	2546912	102.6457	ug/L	100
89)	sec-Butylbenzene	16.65	105	3003570	102.6569	ug/L	99
90)	p-Isopropyltoluene	16.79	119	2763313	102.8241	ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	1600684	98.9134	ug/L	100
92)	1,4-Dichlorobenzene	17.10	146	1605475	97.8762	ug/L	100
93)	n-Butylbenzene	17.28	91	2452438	103.5609	ug/L	100
94)	1,2-Dichlorobenzene	17.57	146	1481276	100.4827	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	95062	97.5959	ug/L	99
96)	1,2,4-Trichlorobenzene	19.55	180	1100416	102.0133	ug/L	100
97)	Hexachlorobutadiene	19.69	225	486893	102.4572	ug/L	100
98)	Naphthalene	19.90	128	2071229	103.4477	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	980181	99.0092	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

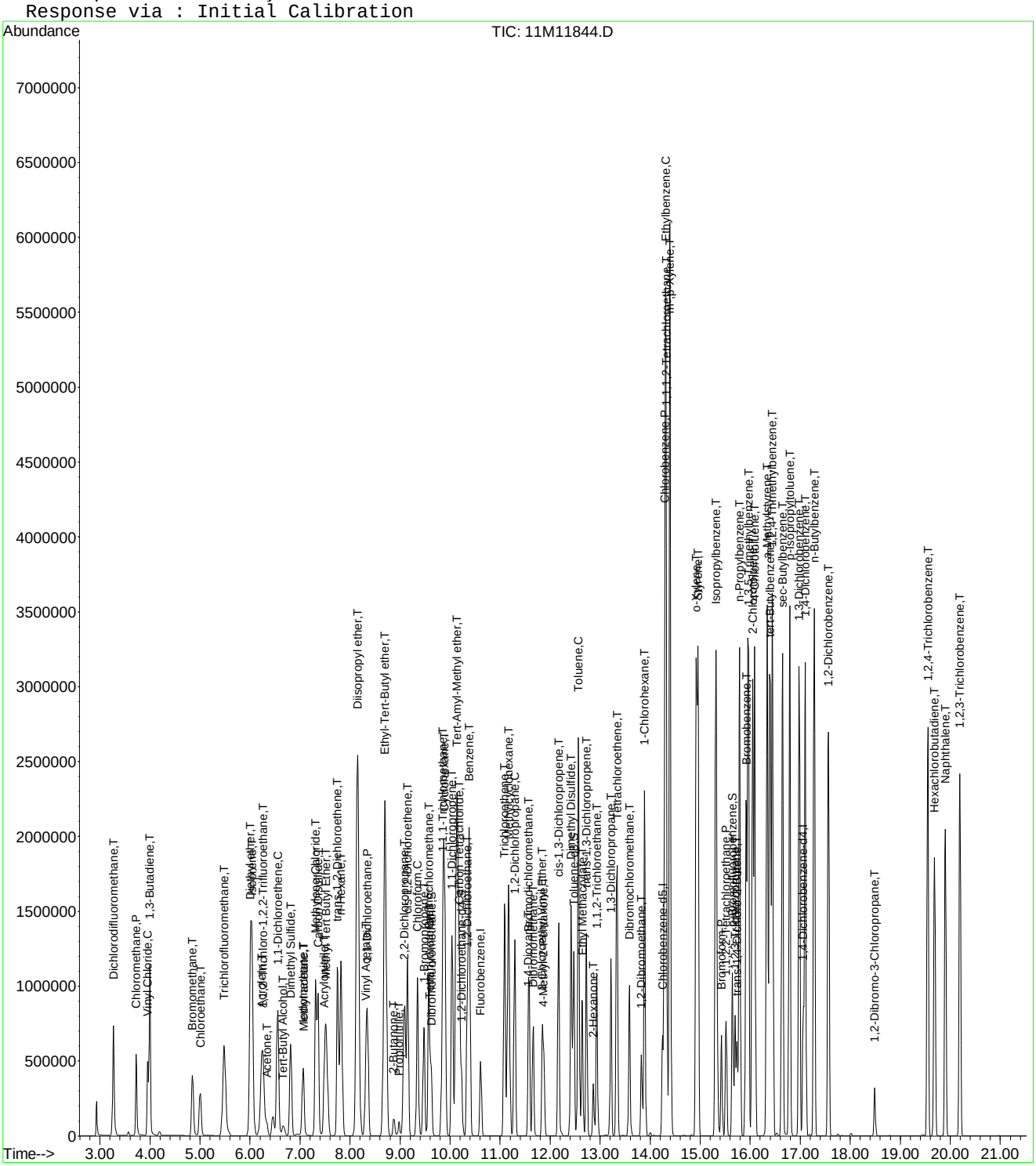

11M11844.D 8260WT.M Sat May 14 18:50:59 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	552905	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	473364	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	274188	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	629894	104.0960 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 416.40%#		
43) 1,2-Dichloroethane-d4	10.23	65	684792	99.2511 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 397.00%#		
57) Toluene-d8	12.47	98	2068111	100.5516 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 402.20%#		
78) p-Bromofluorobenzene	15.64	95	864999	102.3411 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 409.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	1843265	212.7741 ug/L	99
3) Chloromethane	3.72	50	1346993	194.1434 ug/L	100
4) Vinyl Chloride	3.95	62	1199147	208.1209 ug/L	100
5) 1,3-Butadiene	3.99	54	1131910	197.5677 ug/L	97
6) Bromomethane	4.85	94	859963	217.0771 ug/L	100
7) Chloroethane	5.00	64	764060	206.3883 ug/L	100
8) Trichlorofluoromethane	5.48	101	2275404	198.1327 ug/L	100
9) Diethyl ether	6.03	59	2592	0.6103 ug/L #	21
10) Isoprene	6.04	67	1435794	202.8369 ug/L	97
11) Acrolein	6.25	56	3061	6.8231 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1123889	201.6837 ug/L	99
13) Acetone	6.34	43	254053	193.5049 ug/L	96
14) 1,1-Dichloroethene	6.56	61	2040432	201.5858 ug/L	99
15) Tert-Butyl Alcohol	6.67	59	7729	21.2829 ug/L #	82
16) Dimethyl Sulfide	6.81	62	830179	205.3739 ug/L	99
17) Iodomethane	7.06	142	969857	206.1133 ug/L	99
18) Methyl acetate	7.07	43	749575	196.5068 ug/L	97
19) Methylene Chloride	7.31	84	1035656	197.7029 ug/L	97
20) Carbon Disulfide	7.36	76	3459748	204.1704 ug/L	99
21) Acrylonitrile	7.52	53	35662	20.2589 ug/L #	39
22) Methyl Tert Butyl Ether	7.52	73	2706665	207.1616 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1121963	200.2808 ug/L	99
24) n-Hexane	7.82	57	1873652	200.8128 ug/L	99
25) Diisopropyl ether	8.16	45	16567	0.7116 ug/L #	87
26) Vinyl Acetate	8.31	43	1904053	202.8645 ug/L	100
27) 1,1-Dichloroethane	8.34	63	2261904	201.2314 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	9063	0.4783 ug/L	90
29) 2-Butanone	8.87	43	407543	205.3288 ug/L	99
30) Propionitrile	8.97	54	4182	7.1938 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	1850091	210.3692 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	1257477	203.5843 ug/L	100
33) Chloroform	9.35	83	2160999	195.7739 ug/L	100
34) 1-Bromopropane	9.48	122	222798	201.1267 ug/L	98
35) Bromochloromethane	9.57	130	798076	217.5612 ug/L	99
36) Tetrahydrofuran	9.60	42	9110	6.4998 ug/L	97
38) 1,1,1-Trichloroethane	9.85	97	2208198	203.2875 ug/L	99
39) Cyclohexane	9.88	56	2467804	208.4625 ug/L	100
40) 1,1-Dichloropropene	10.04	75	1587009	204.6205 ug/L	99
41) Carbon Tetrachloride	10.18	117	2174730	205.0269 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	6538	0.4965 ug/L #	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	1808450	201.7209 ug/L		99
45)	Benzene	10.38	78	4119227	194.0096 ug/L		99
46)	Trichloroethene	11.09	130	1367103	198.0963 ug/L		100
47)	Methylcyclohexane	11.17	83	1789256	210.0812 ug/L		99
48)	1,2-Dichloropropane	11.29	63	1196100	203.5109 ug/L		99
49)	1,4-Dioxane	11.57	88	2656	94.1370 ug/L	#	31
50)	Bromodichloromethane	11.58	83	1721733	208.6734 ug/L		99
51)	Dibromomethane	11.66	93	641583	209.4825 ug/L		100
52)	2-Chloroethyl Vinyl Ether	11.84	63	608231	209.9748 ug/L		99
53)	4-Methyl-2-Pentanone	11.87	58	342251	209.4831 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	1772737	214.8108 ug/L		100
55)	Dimethyl Disulfide	12.42	79	1052498	211.9395 ug/L		98
58)	Toluene	12.56	91	4699240	196.0993 ug/L		98
59)	Ethyl Methacrylate	12.65	69	1101451	215.2567 ug/L		97
60)	trans-1,3-Dichloropropene	12.73	75	1627488	211.5866 ug/L		99
61)	1,1,2-Trichloroethane	12.93	97	860113	202.4133 ug/L		99
62)	2-Hexanone	12.86	43	651287	208.6888 ug/L		99
63)	1,3-Dichloropropane	13.21	76	1412360	206.9756 ug/L		99
64)	Tetrachloroethene	13.34	164	1133410	203.3874 ug/L		99
65)	Dibromochloromethane	13.59	129	1409248	217.4313 ug/L		99
66)	1,2-Dibromoethane	13.82	107	889951	209.0389 ug/L		99
67)	1-Chlorohexane	13.89	91	1659272	210.0173 ug/L		97
68)	Chlorobenzene	14.29	112	3416597	194.6214 ug/L		98
69)	1,1,1,2-Tetrachloroethane	14.32	131	1457008	205.1158 ug/L		100
70)	Ethylbenzene	14.31	106	1814385	201.5551 ug/L		91
71)	m-,p-Xylene	14.39	106	4230307	386.5510 ug/L		85
72)	o-Xylene	14.92	106	2156790	202.5071 ug/L		96
73)	Styrene	14.96	104	3630570	206.3240 ug/L		98
74)	Bromoform	15.43	173	854308	217.4778 ug/L		100
75)	Isopropylbenzene	15.31	105	5485636	194.7621 ug/L		97
77)	1,1,2,2-Tetrachloroethane	15.52	83	939708	220.0830 ug/L		98
79)	1,2,3-Trichloropropane	15.70	110	325518	202.0716 ug/L		99
80)	trans-1,4-Dichloro-2-Buten	15.74	53	421012	202.2796 ug/L		97
81)	n-Propylbenzene	15.79	91	6220435	195.8952 ug/L		95
82)	Bromobenzene	15.92	156	1685980	202.3412 ug/L		99
83)	1,3,5-Trimethylbenzene	15.96	105	4875063	201.1866 ug/L		97
84)	2-Chlorotoluene	16.05	91	4287026	192.7532 ug/L		98
85)	4-Chlorotoluene	16.09	91	4030756	202.3214 ug/L		98
86)	a-Methylstyrene	16.34	118	2724122	213.1015 ug/L		98
87)	tert-Butylbenzene	16.40	134	1075661	209.5280 ug/L		96
88)	1,2,4-Trimethylbenzene	16.44	105	4921395	199.4496 ug/L		97
89)	sec-Butylbenzene	16.65	105	5740919	197.3104 ug/L		97
90)	p-Isopropyltoluene	16.79	119	5274037	197.3451 ug/L		95
91)	1,3-Dichlorobenzene	16.98	146	3171808	197.0945 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	3145357	192.8244 ug/L		99
93)	n-Butylbenzene	17.28	91	4684496	198.9203 ug/L		97
94)	1,2-Dichlorobenzene	17.57	146	2909224	198.4498 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	191088	196.6217 ug/L		99
96)	1,2,4-Trichlorobenzene	19.55	180	2198003	204.9021 ug/L		99
97)	Hexachlorobutadiene	19.69	225	969160	205.0797 ug/L		99
98)	Naphthalene	19.90	128	3994903	200.6399 ug/L		98
99)	1,2,3-Trichlorobenzene	20.19	180	1999949	203.1452 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M11845.D 8260WT.M Sat May 14 18:51:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

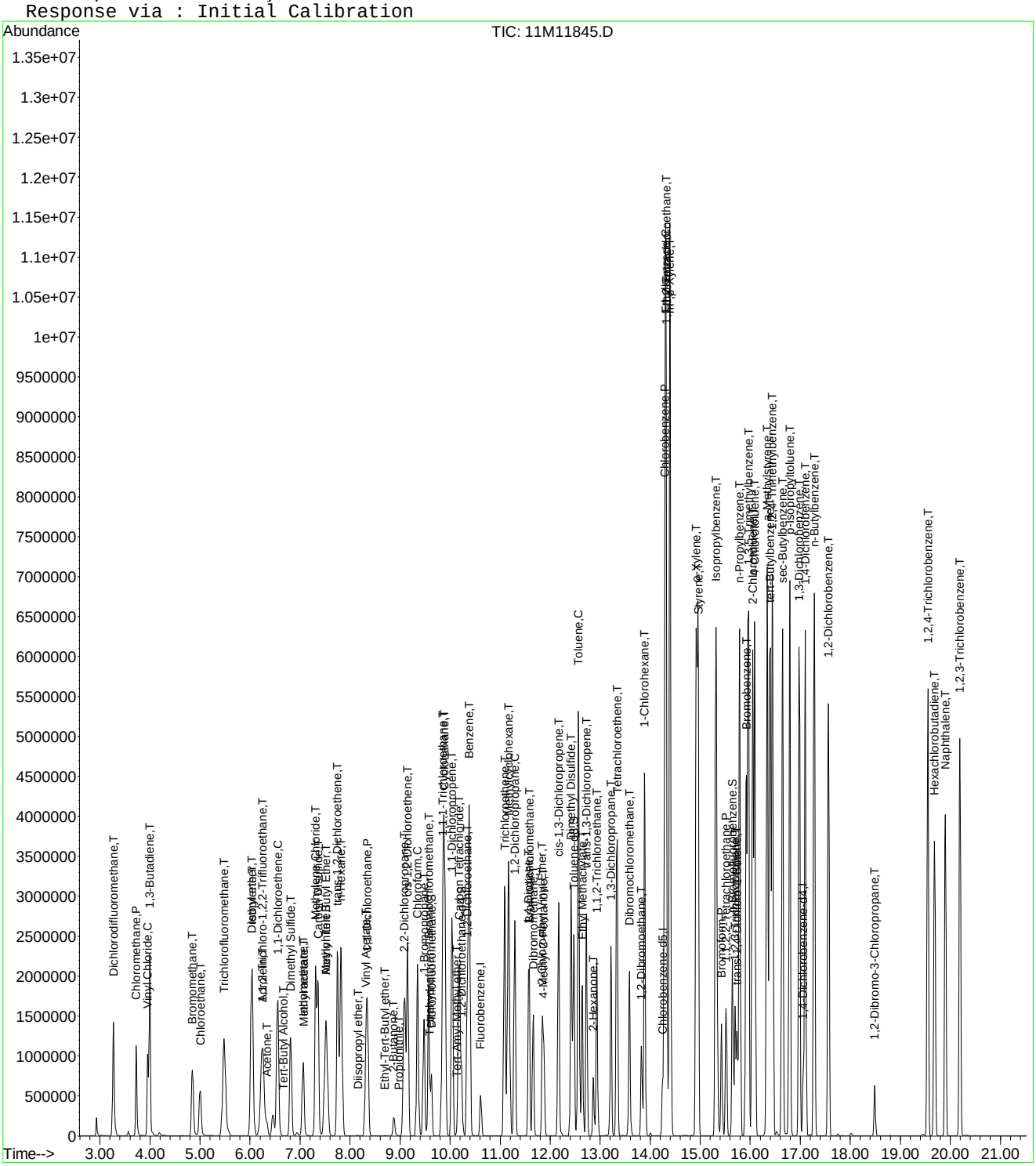

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	543599	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	479542	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	277309	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	905755	152.2472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 609.00%#		
43) 1,2-Dichloroethane-d4	10.23	65	970758	143.1066 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 572.44%#		
57) Toluene-d8	12.47	98	3002456	144.0987 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 576.40%#		
78) p-Bromofluorobenzene	15.64	95	1285822	150.4179 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 601.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2762707	324.3678 ug/L	99
3) Chloromethane	3.72	50	2113477	309.8323 ug/L	100
4) Vinyl Chloride	3.95	62	1802126	318.1269 ug/L	100
5) 1,3-Butadiene	3.99	54	1562377	277.3715 ug/L	98
6) Bromomethane	4.85	94	1341865	344.5204 ug/L	100
7) Chloroethane	5.00	64	1181546	324.6236 ug/L	100
8) Trichlorofluoromethane	5.48	101	3351045	296.7904 ug/L	99
9) Diethyl ether	6.01	59	1250668	299.5049 ug/L	97
10) Isoprene	6.04	67	2121830	304.8859 ug/L	97
11) Acrolein	6.23	56	87016	155.2272 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1679276	306.5076 ug/L	99
13) Acetone	6.34	43	352141	272.8074 ug/L	95
14) 1,1-Dichloroethene	6.56	61	3009080	302.3733 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	227782	637.9680 ug/L	97
16) Dimethyl Sulfide	6.81	62	1199487	301.8151 ug/L	96
17) Iodomethane	7.06	142	1359092	295.3515 ug/L	96
18) Methyl acetate	7.07	43	1093862	303.3719 ug/L	97
19) Methylene Chloride	7.31	84	1550974	301.1438 ug/L	91
20) Carbon Disulfide	7.36	76	5025219	301.6304 ug/L	99
21) Acrylonitrile	7.49	53	292311	168.8994 ug/L	94
22) Methyl Tert Butyl Ether	7.52	73	3880019	302.0512 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1693308	307.4459 ug/L	98
24) n-Hexane	7.82	57	2752540	300.0599 ug/L	99
25) Diisopropyl ether	8.15	45	6621718	289.2841 ug/L	99
26) Vinyl Acetate	8.31	43	2814279	303.7518 ug/L	99
27) 1,1-Dichloroethane	8.34	63	3313473	299.8312 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	5508427	295.6672 ug/L	99
29) 2-Butanone	8.87	43	590742	302.7235 ug/L	97
30) Propionitrile	8.99	54	177454	310.4771 ug/L	98
31) 2,2-Dichloropropane	9.09	77	2735421	316.3626 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	1856543	305.7181 ug/L	98
33) Chloroform	9.35	83	3144758	289.7739 ug/L	100
34) 1-Bromopropane	9.48	122	329211	301.9597 ug/L	98
35) Bromochloromethane	9.57	130	1179409	327.0194 ug/L	97
36) Tetrahydrofuran	9.60	42	386389	280.3985 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3227247	302.1877 ug/L	99
39) Cyclohexane	9.88	56	3625895	311.5332 ug/L	99
40) 1,1-Dichloropropene	10.04	75	2360605	309.5743 ug/L	100
41) Carbon Tetrachloride	10.18	117	3172921	304.2542 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	3912691	302.2388 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	2551762	289.5052 ug/L		98
45)	Benzene	10.38	78	5961793	285.5987 ug/L		97
46)	Trichloroethene	11.09	130	2025948	298.5901 ug/L		99
47)	Methylcyclohexane	11.17	83	2657028	317.3092 ug/L		98
48)	1,2-Dichloropropane	11.29	63	1781372	308.2809 ug/L		96
49)	1,4-Dioxane	11.56	88	21540	607.7372 ug/L		100
50)	Bromodichloromethane	11.57	83	2511276	309.5762 ug/L		100
51)	Dibromomethane	11.65	93	939605	312.0413 ug/L		99
52)	2-Chloroethyl Vinyl Ether	11.84	63	879534	308.8327 ug/L		100
53)	4-Methyl-2-Pentanone	11.87	58	505191	314.5081 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	2604960	321.0589 ug/L		99
55)	Dimethyl Disulfide	12.42	79	1529785	313.3234 ug/L		99
58)	Toluene	12.56	91	6613670	272.4329 ug/L		95
59)	Ethyl Methacrylate	12.65	69	1618015	312.1351 ug/L		94
60)	trans-1,3-Dichloropropene	12.73	75	2369133	304.0383 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	1271039	295.2644 ug/L		98
62)	2-Hexanone	12.86	43	950079	300.5074 ug/L		97
63)	1,3-Dichloropropane	13.21	76	2062188	298.3119 ug/L		97
64)	Tetrachloroethene	13.34	164	1691190	299.5697 ug/L		98
65)	Dibromochloromethane	13.59	129	2065480	314.5750 ug/L		100
66)	1,2-Dibromoethane	13.82	107	1334668	309.4588 ug/L		99
67)	1-Chlorohexane	13.89	91	2483371	310.2757 ug/L		95
68)	Chlorobenzene	14.29	112	4911463	276.1698 ug/L		96
69)	1,1,1,2-Tetrachloroethane	14.32	131	2161701	300.4009 ug/L		100
70)	Ethylbenzene	14.31	106	2715675	297.7904 ug/L		79
71)	m-,p-Xylene	14.39	106	6004062	541.5626 ug/L		73
72)	o-Xylene	14.92	106	3202500	296.8179 ug/L		90
73)	Styrene	14.96	104	5278134	296.0902 ug/L		96
74)	Bromoform	15.43	173	1313245	330.0007 ug/L		100
75)	Isopropylbenzene	15.31	105	7610374	266.7178 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	1470787	340.5868 ug/L		97
79)	1,2,3-Trichloropropane	15.70	110	494041	303.0514 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	640812	304.0444 ug/L		94
81)	n-Propylbenzene	15.79	91	8405785	261.7374 ug/L		88
82)	Bromobenzene	15.92	156	2530711	300.3025 ug/L		98
83)	1,3,5-Trimethylbenzene	15.96	105	6851753	279.5793 ug/L		93
84)	2-Chlorotoluene	16.05	91	6055423	269.1996 ug/L		95
85)	4-Chlorotoluene	16.09	91	5712933	283.5299 ug/L		94
86)	a-Methylstyrene	16.34	118	4020347	310.9625 ug/L		96
87)	tert-Butylbenzene	16.40	134	1654009	318.5583 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	6879061	275.6504 ug/L		91
89)	sec-Butylbenzene	16.65	105	7999374	271.8373 ug/L		92
90)	p-Isopropyltoluene	16.79	119	7406083	274.0036 ug/L		90
91)	1,3-Dichlorobenzene	16.98	146	4679194	287.4903 ug/L		97
92)	1,4-Dichlorobenzene	17.10	146	4642399	281.3967 ug/L		96
93)	n-Butylbenzene	17.28	91	6723928	282.3084 ug/L		93
94)	1,2-Dichlorobenzene	17.57	146	4360022	294.0672 ug/L		96
95)	1,2-Dibromo-3-Chloropropan	18.49	75	302346	307.2381 ug/L		100
96)	1,2,4-Trichlorobenzene	19.55	180	3482946	321.0328 ug/L		97
97)	Hexachlorobutadiene	19.69	225	1629665	340.9652 ug/L		98
98)	Naphthalene	19.90	128	5970381	296.4815 ug/L	#	96
99)	1,2,3-Trichlorobenzene	20.19	180	3137470	315.1025 ug/L		98

(#) = qualifier out of range (m) = manual integration
11M11846.D 8260WT.M Sat May 14 18:51:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

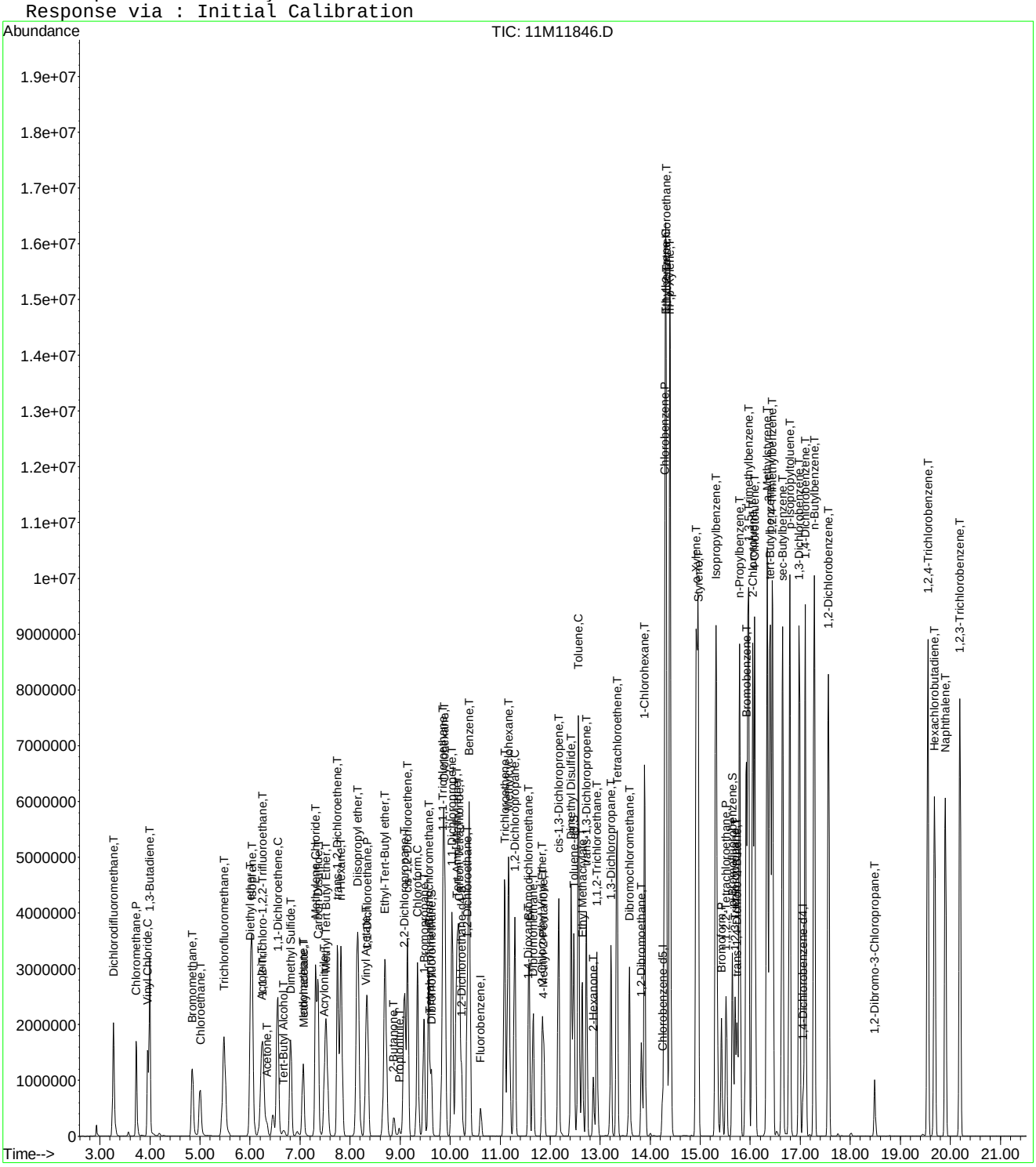

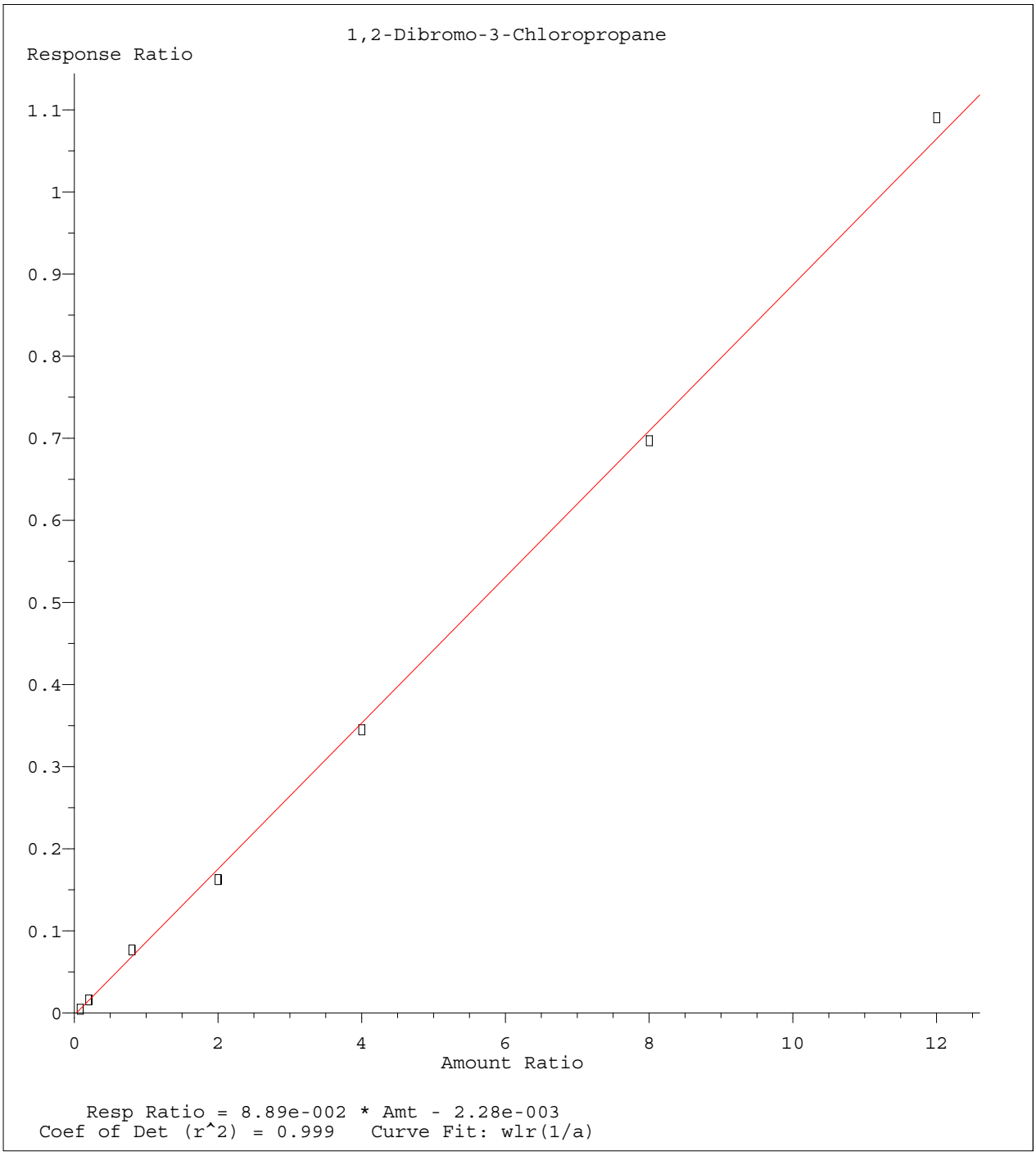

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

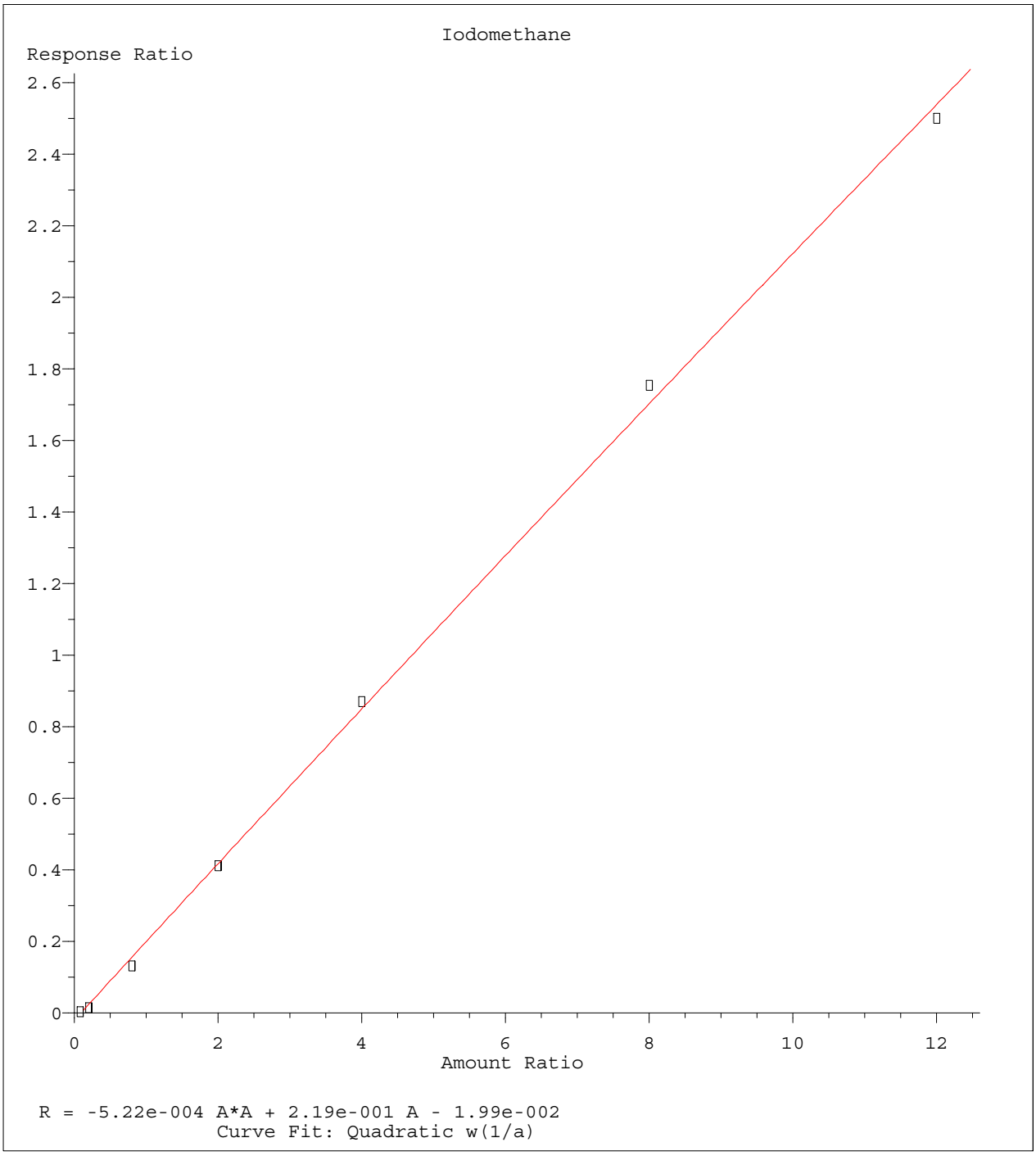

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

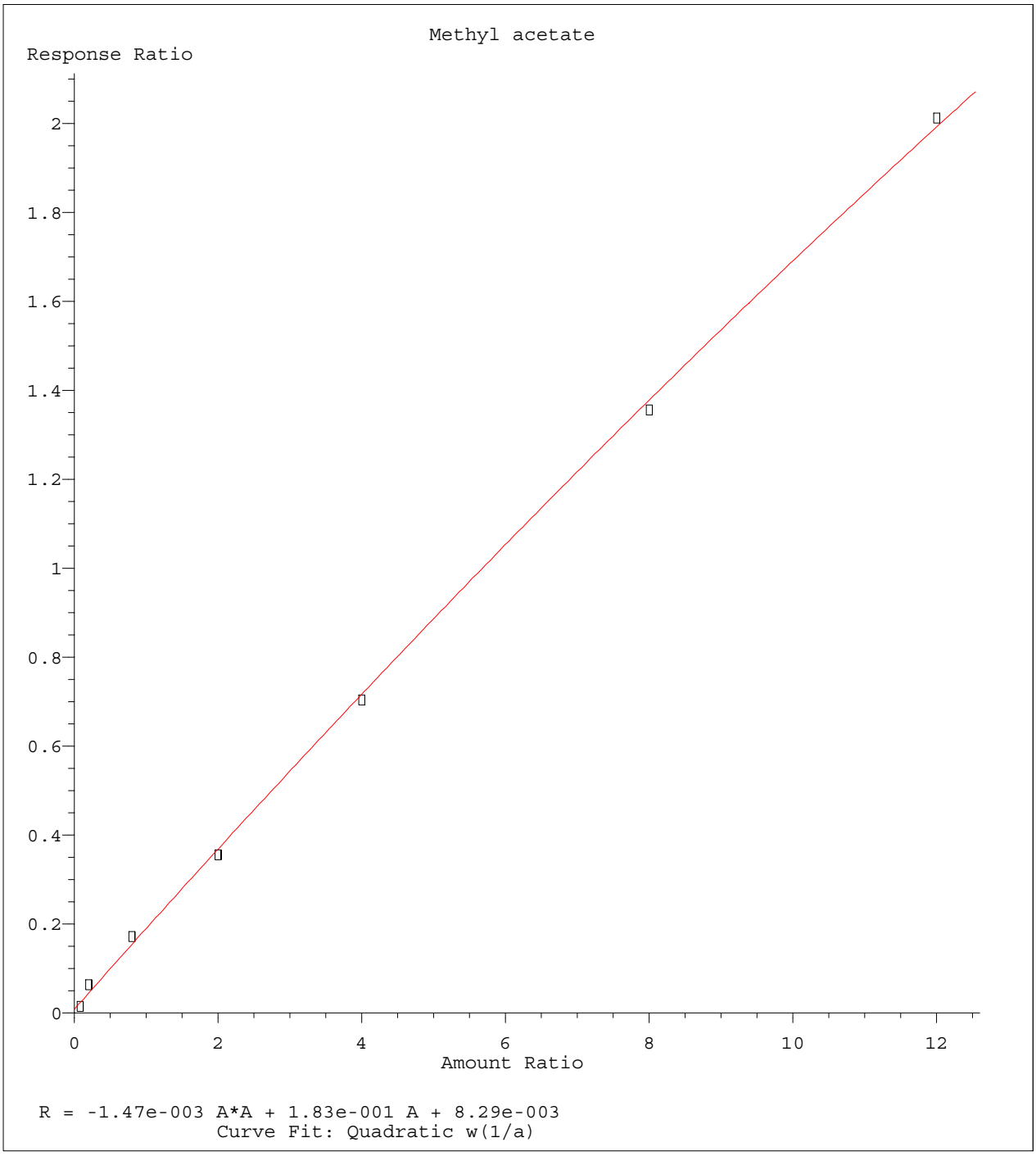

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

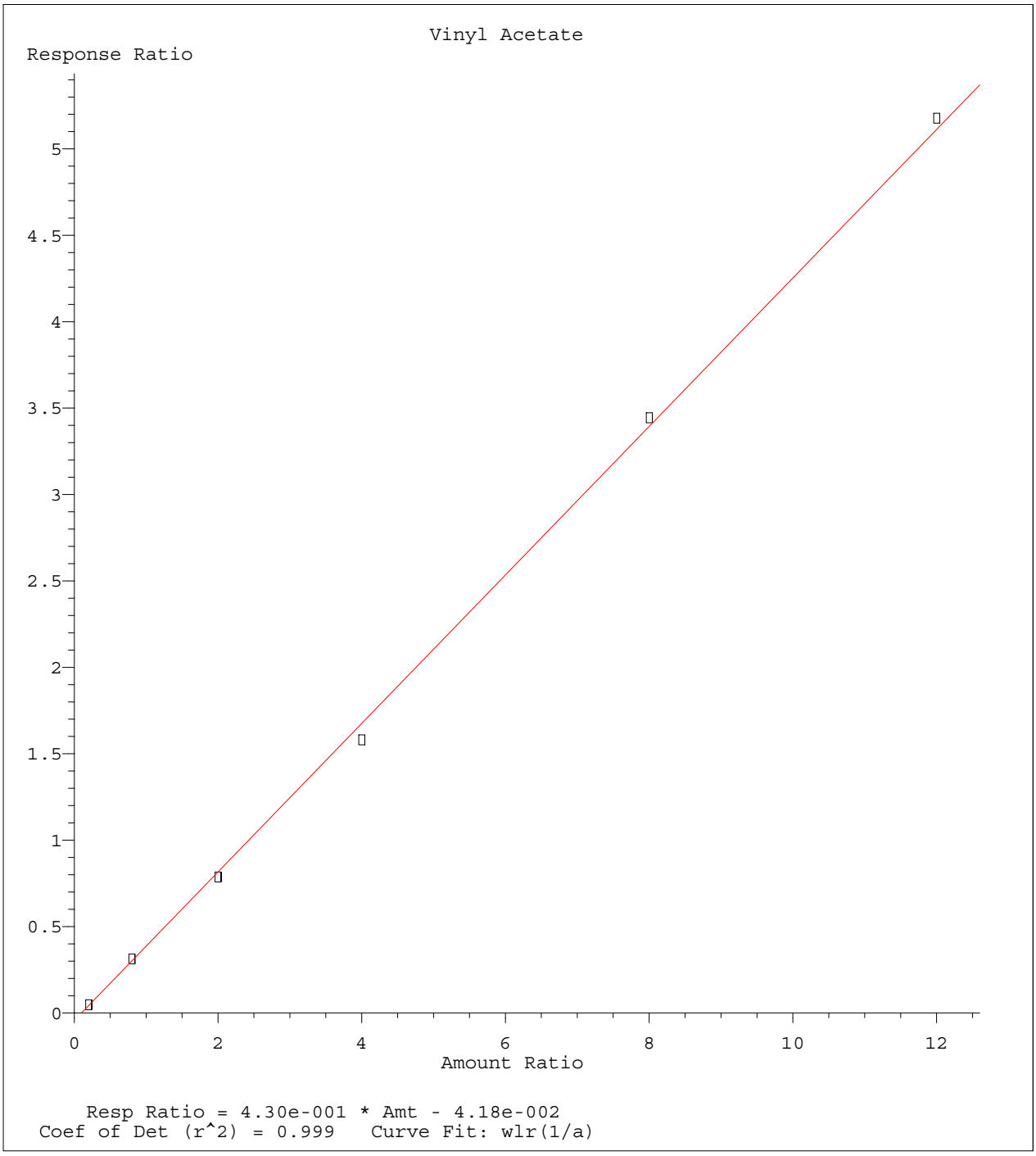

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

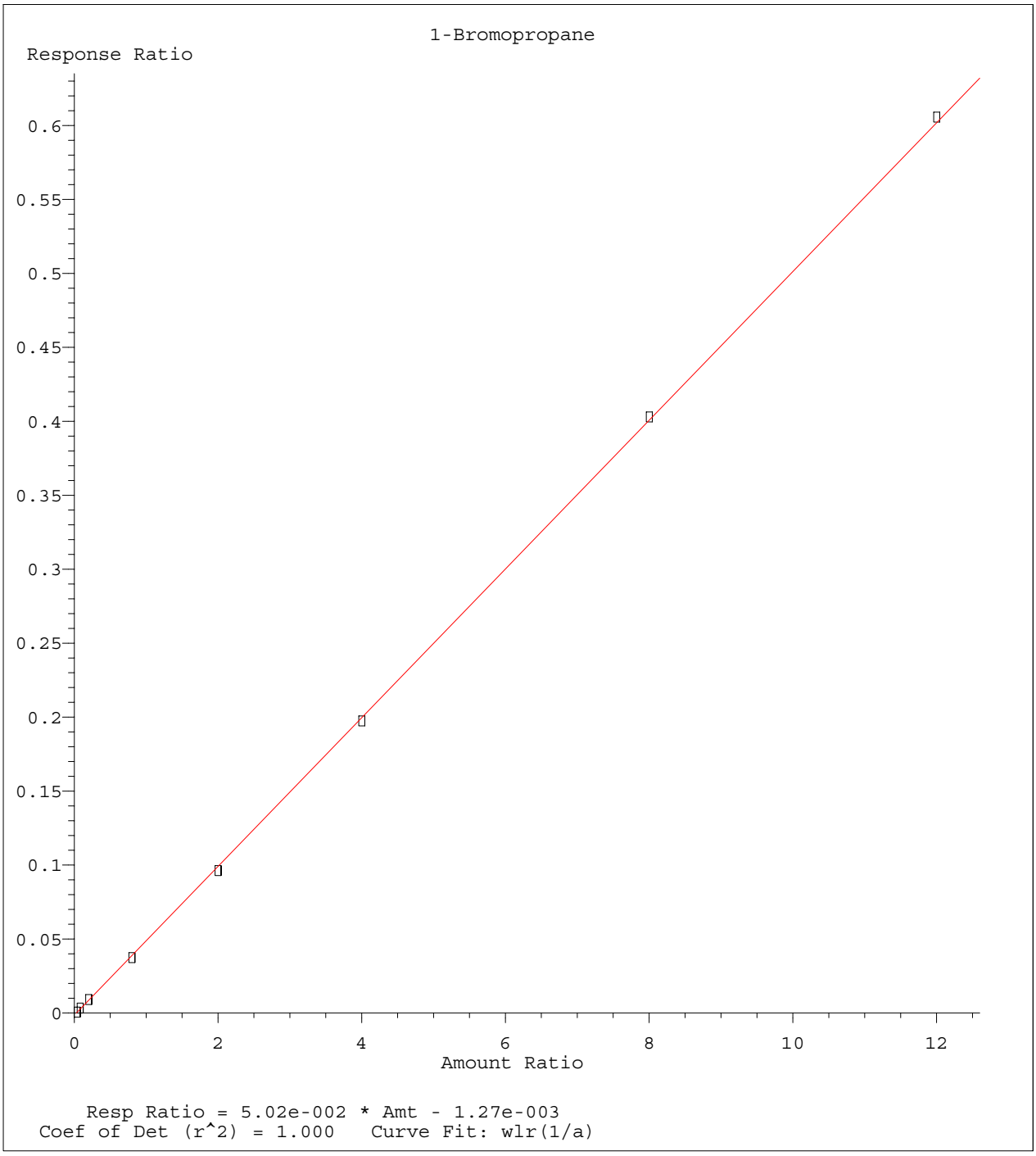

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

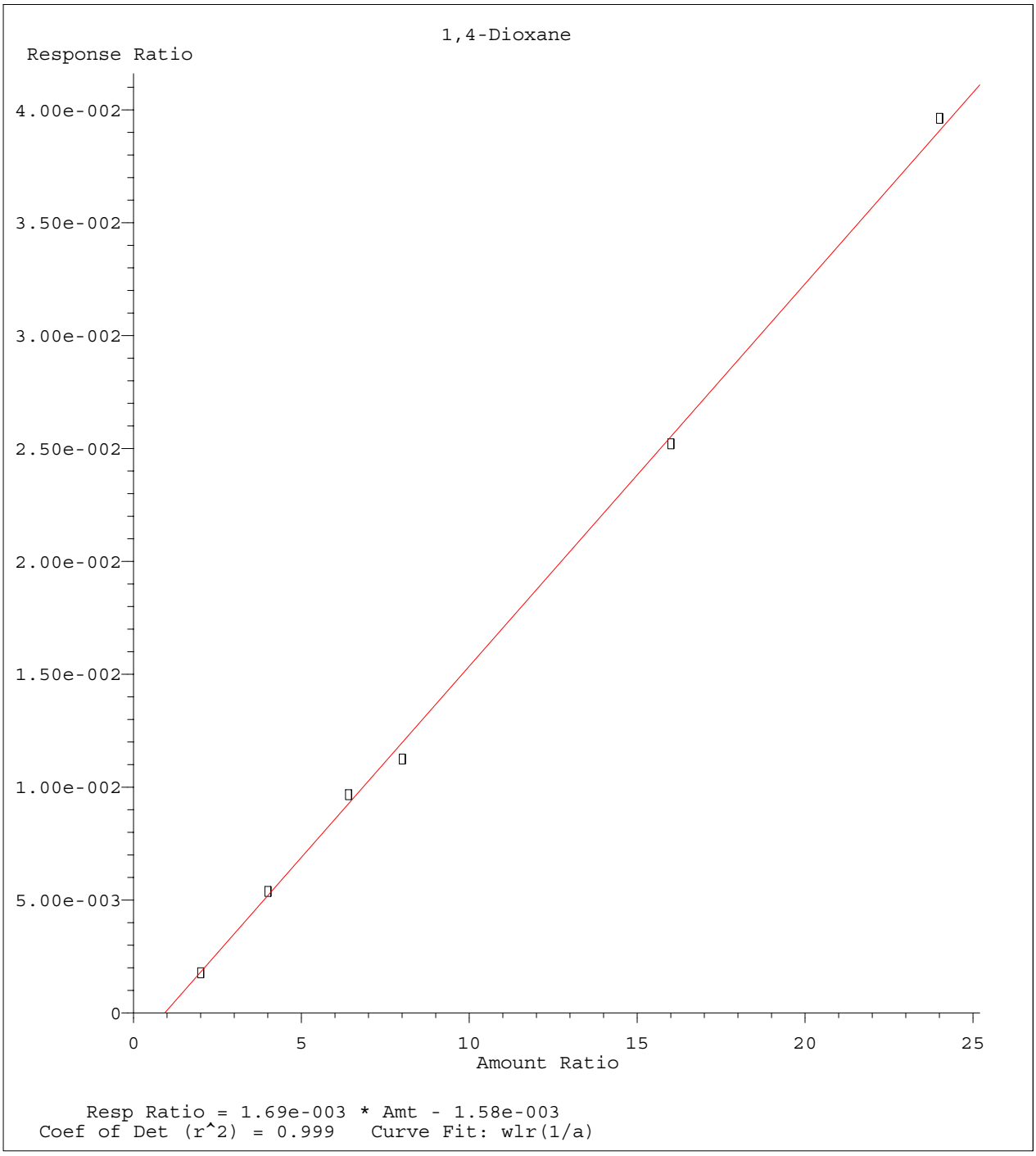

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

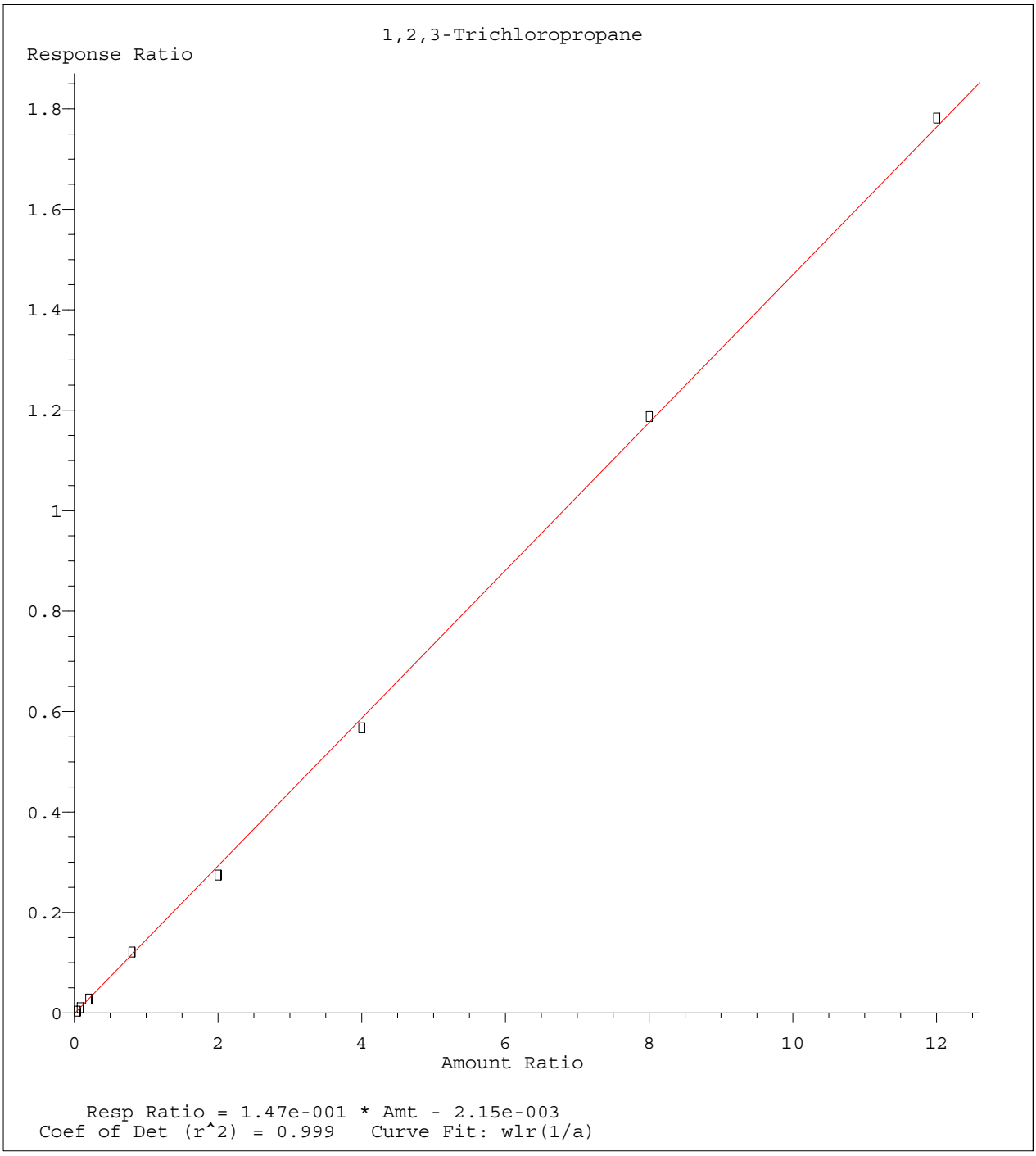

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

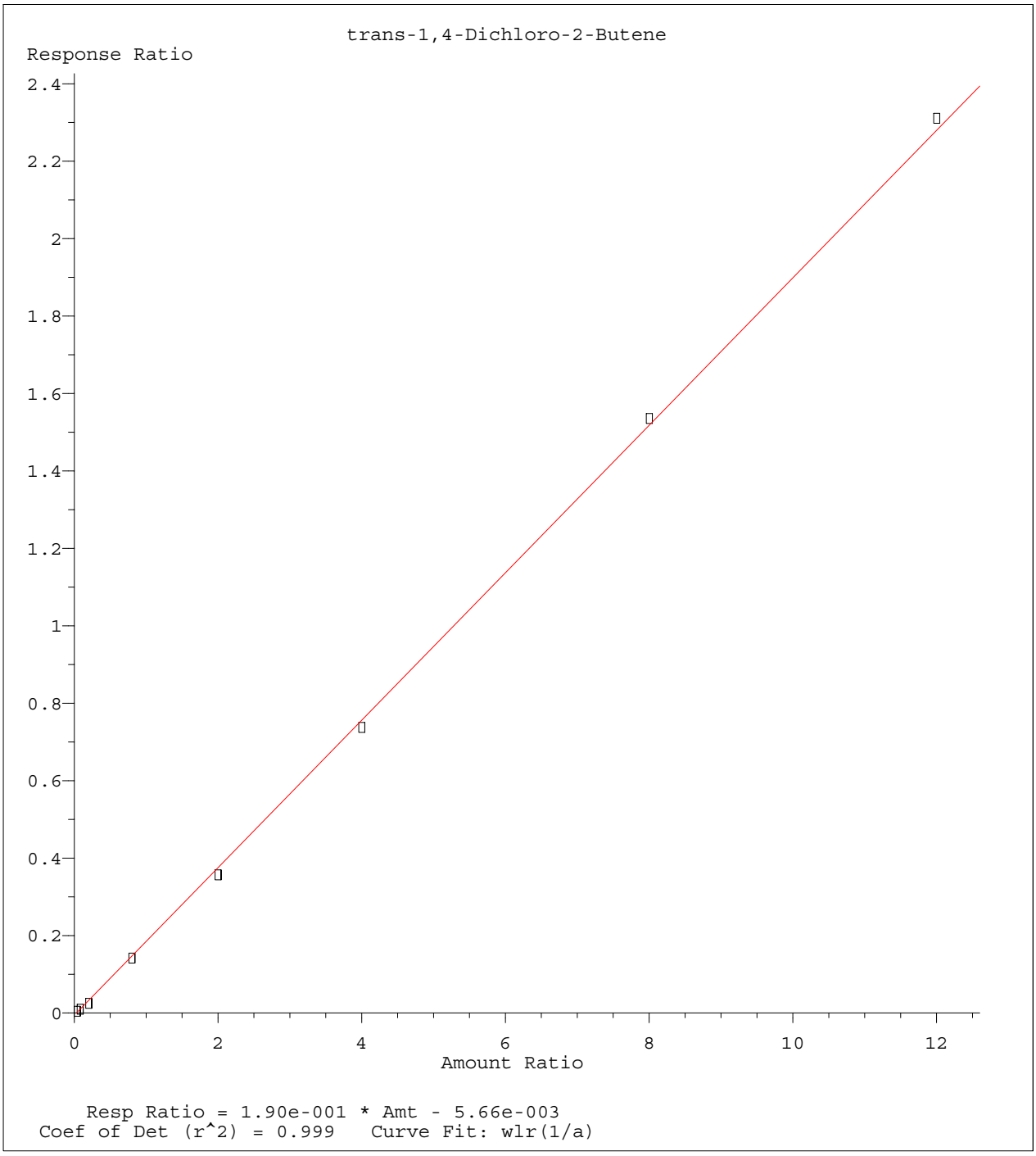

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

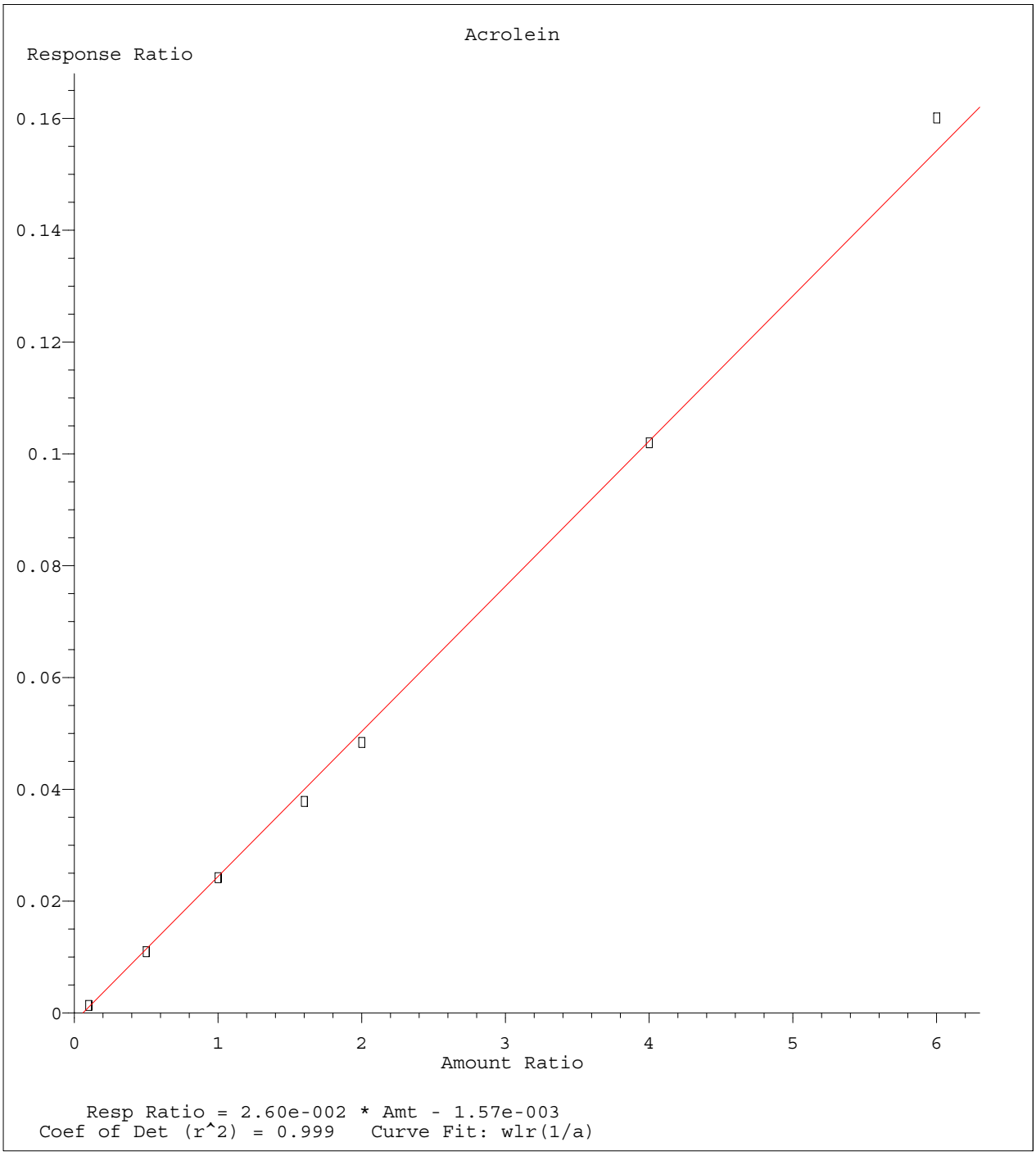

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	559172	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	461765	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	267551	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	155853	25.4675 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.88%		
43) 1,2-Dichloroethane-d4	10.23	65	160000	22.9299 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.72%		
57) Toluene-d8	12.47	98	531547	26.4930 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.96%		
78) p-Bromofluorobenzene	15.64	95	203747	24.7040 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	495777	56.5878 ug/L	98
3) Chloromethane	3.72	50	386673	55.1069 ug/L	100
4) Vinyl Chloride	3.95	62	326996	56.1165 ug/L	100
5) 1,3-Butadiene	3.99	54	212443	36.6650 ug/L	98
6) Bromomethane	4.84	94	202280	50.4885 ug/L	99
7) Chloroethane	5.00	64	220373	58.8601 ug/L	99
8) Trichlorofluoromethane	5.48	101	552017	47.5286 ug/L	99
9) Diethyl ether	6.01	59	453011	105.4639 ug/L	97
10) Isoprene	6.04	67	388108	54.2141 ug/L	93
11) Acrolein	6.23	56	56029	97.7296 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	292836	51.9609 ug/L	99
13) Acetone	6.35	43	65954	49.6723 ug/L	97
14) 1,1-Dichloroethene	6.55	61	486567	47.5319 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	79387	216.1534 ug/L	96
16) Dimethyl Sulfide	6.81	62	290204	70.9875 ug/L	94
17) Iodomethane	7.06	142	176766	38.4128 ug/L	92
18) Methyl acetate	7.07	43	200985	48.7416 ug/L	98
19) Methylene Chloride	7.31	84	275442	51.9916 ug/L	91
20) Carbon Disulfide	7.35	76	765803	44.6859 ug/L	99
21) Acrylonitrile	7.49	53	93674	52.6181 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	687029	51.9942 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	295337	52.1295 ug/L	97
24) n-Hexane	7.82	57	420811	44.5959 ug/L	99
25) Diisopropyl ether	8.15	45	2449232	104.0201 ug/L	98
26) Vinyl Acetate	8.31	43	395913	43.6417 ug/L	99
27) 1,1-Dichloroethane	8.34	63	551372	48.5033 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1884917	98.3560 ug/L	99
29) 2-Butanone	8.87	43	101045	50.3380 ug/L	98
30) Propionitrile	8.99	54	62190	105.7785 ug/L	98
31) 2,2-Dichloropropane	9.09	77	405332	45.5727 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	332086	53.1618 ug/L	94
33) Chloroform	9.35	83	531122	47.5773 ug/L	100
34) 1-Bromopropane	9.48	122	76460	68.6656 ug/L	96
35) Bromochloromethane	9.57	130	199933	53.8923 ug/L	96
36) Tetrahydrofuran	9.60	42	131835	93.0068 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	527857	48.0501 ug/L	99
39) Cyclohexane	9.88	56	601180	50.2142 ug/L	99
40) 1,1-Dichloropropene	10.04	75	393057	50.1107 ug/L	100
41) Carbon Tetrachloride	10.18	117	507914	47.3479 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1406419	105.6143 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M11848.D 8260WT.M Sat May 14 18:47:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	434117	47.8802	ug/L	99
45)	Benzene	10.38	78	1098993	51.1808	ug/L	100
46)	Trichloroethene	11.08	130	365193	52.3242	ug/L	99
47)	Methylcyclohexane	11.17	83	450581	52.3110	ug/L	97
48)	1,2-Dichloropropane	11.29	63	313901	52.8102	ug/L	94
49)	1,4-Dioxane	11.56	88	6366	191.2043	ug/L	95
50)	Bromodichloromethane	11.57	83	413329	49.5339	ug/L	99
51)	Dibromomethane	11.65	93	148822	48.0471	ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	152083	51.9140	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	86849	52.5623	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	480729	57.5993	ug/L	99
55)	Dimethyl Disulfide	12.42	79	261188	52.0055	ug/L	96
58)	Toluene	12.56	91	1256481	53.7500	ug/L	100
59)	Ethyl Methacrylate	12.65	69	284944	57.0854	ug/L	90
60)	trans-1,3-Dichloropropene	12.73	75	391013	52.1118	ug/L	97
61)	1,1,2-Trichloroethane	12.93	97	218717	52.7643	ug/L	99
62)	2-Hexanone	12.86	43	158873	52.1857	ug/L	98
63)	1,3-Dichloropropane	13.21	76	374611	56.2767	ug/L	95
64)	Tetrachloroethene	13.34	164	283714	52.1906	ug/L	97
65)	Dibromochloromethane	13.59	129	332092	52.5252	ug/L	99
66)	1,2-Dibromoethane	13.82	107	218604	52.6373	ug/L	99
67)	1-Chlorohexane	13.89	91	420217	54.5237	ug/L	92
68)	Chlorobenzene	14.29	112	912650	53.2936	ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	353663	51.0389	ug/L	98
70)	Ethylbenzene	14.31	106	460093	52.3943	ug/L	99
71)	m-,p-Xylene	14.39	106	1144896	107.2445	ug/L	98
72)	o-Xylene	14.92	106	568307	54.7003	ug/L	100
73)	Styrene	14.95	104	943635	54.9735	ug/L	98
74)	Bromoform	15.43	173	190959	49.8328	ug/L	99
75)	Isopropylbenzene	15.31	105	1490416	54.2449	ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.52	83	228913	54.9422	ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	78385	50.1407	ug/L	92
80)	trans-1,4-Dichloro-2-Buten	15.74	53	73730	36.9129	ug/L	62
81)	n-Propylbenzene	15.79	91	1753049	56.5769	ug/L	99
82)	Bromobenzene	15.92	156	419932	51.6479	ug/L	99
83)	1,3,5-Trimethylbenzene	15.95	105	1303495	55.1277	ug/L	99
84)	2-Chlorotoluene	16.05	91	1145029	52.7599	ug/L	99
85)	4-Chlorotoluene	16.09	91	1077116	55.4064	ug/L	99
86)	a-Methylstyrene	16.34	118	741671	59.4584	ug/L	99
87)	tert-Butylbenzene	16.40	134	283244	56.5417	ug/L	95
88)	1,2,4-Trimethylbenzene	16.44	105	1296091	53.8297	ug/L	99
89)	sec-Butylbenzene	16.65	105	1586978	55.8961	ug/L	100
90)	p-Isopropyltoluene	16.79	119	1426648	54.7069	ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	827515	52.6969	ug/L	98
92)	1,4-Dichlorobenzene	17.10	146	844174	53.0354	ug/L	98
93)	n-Butylbenzene	17.28	91	1238500	53.8957	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	766416	53.5772	ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	45158	48.1046	ug/L	97
96)	1,2,4-Trichlorobenzene	19.55	180	580278	55.4365	ug/L	99
97)	Hexachlorobutadiene	19.69	225	257859	55.9180	ug/L	98
98)	Naphthalene	19.90	128	993390	51.1296	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	519374	54.0642	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

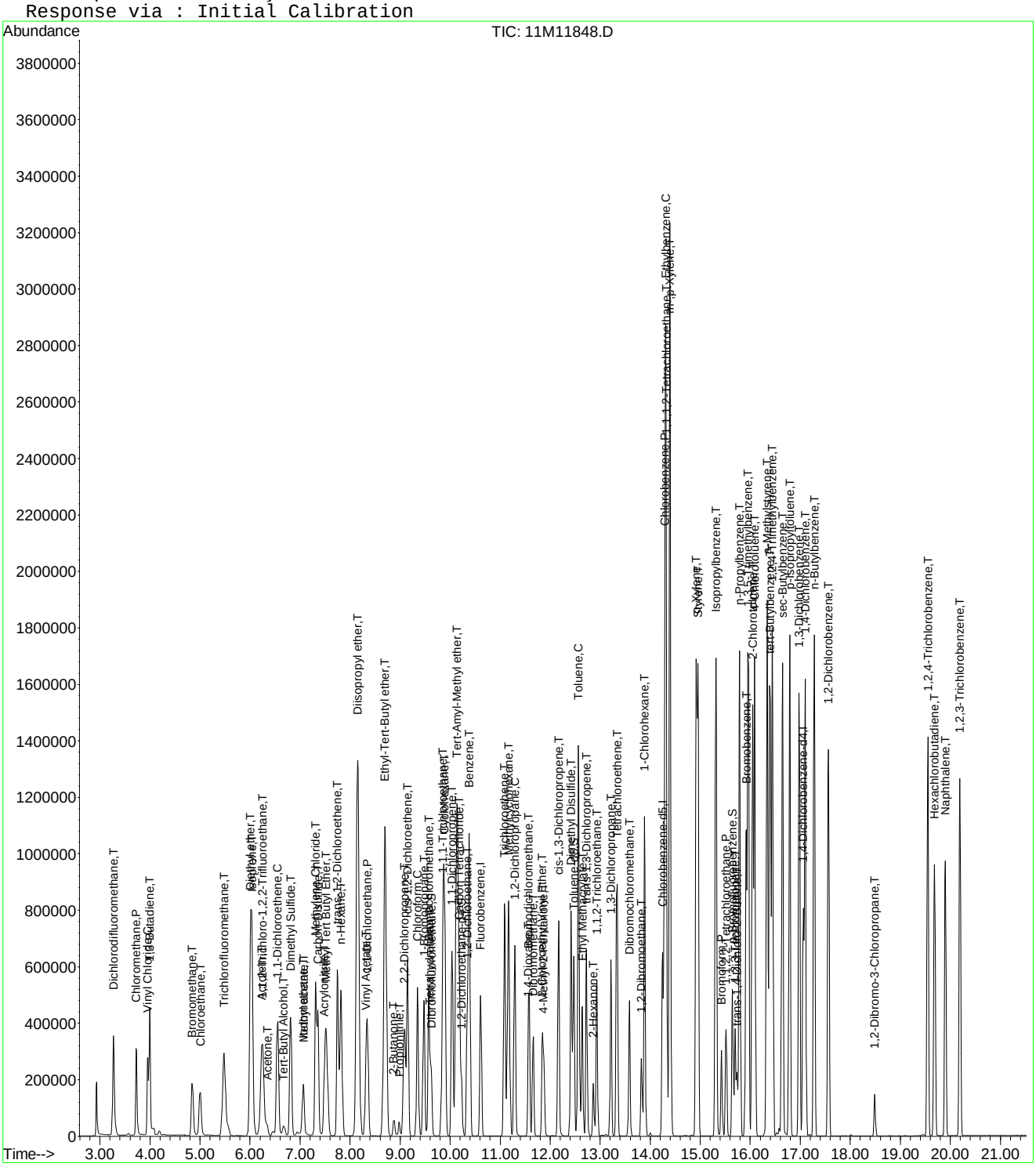

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	56.5878	-13.2	119	0.00
3	P	Chloromethane	50.0000	55.1069	-10.2	134	0.00
4	C	Vinyl Chloride	50.0000	56.1165	-12.2	125	-0.01
5	T	1,3-Butadiene	50.0000	36.6650	26.7#	76	-0.01
6	T	Bromomethane	50.0000	50.4885	-1.0	117	-0.01
7	T	Chloroethane	50.0000	58.8601	-17.7	131	0.00
8	T	Trichlorofluoromethane	50.0000	47.5286	4.9	106	0.00
9	T	Diethyl ether	100.0000	105.4639	-5.5	116	0.00
10	T	Isoprene	50.0000	54.2141	-8.4	117	0.00
11	T	Acrolein	50.0000	97.7296	-95.5#	222	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.9609	-3.9	115	0.00
13	T	Acetone	50.0000	49.6723	0.7	110	0.01
14	C	1,1-Dichloroethene	50.0000	47.5320	4.9	106	-0.01
15	T	Tert-Butyl Alcohol	200.0000	216.1534	-8.1	114	0.01
16	T	Dimethyl Sulfide	50.0000	70.9875	-42.0#	150	0.00
17	T	Iodomethane	50.0000	38.4128	23.2	82	0.00
18	T	Methyl acetate	50.0000	48.7416	2.5	108	0.01
19	T	Methylene Chloride	50.0000	51.9916	-4.0	118	0.00
20	T	Carbon Disulfide	50.0000	44.6859	10.6	94	-0.01
21	T	Acrylonitrile	50.0000	52.6181	-5.2	110	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.9942	-4.0	113	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.1295	-4.3	117	0.00
24	T	n-Hexane	50.0000	44.5959	10.8	94	0.00
25	T	Diisopropyl ether	100.0000	104.0201	-4.0	112	0.00
26	T	Vinyl Acetate	50.0000	43.6417	12.7	96	0.00
27	P	1,1-Dichloroethane	50.0000	48.5033	3.0	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.3560	1.6	106	0.00
29	T	2-Butanone	50.0000	50.3381	-0.7	111	0.00
30	T	Propionitrile	100.0000	105.7786	-5.8	110	0.01
31	T	2,2-Dichloropropane	50.0000	45.5727	8.9	101	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.1618	-6.3	118	0.00
33	C	Chloroform	50.0000	47.5773	4.8	108	0.00
34	T	1-Bromopropane	50.0000	68.6656	-37.3#	152	0.00
35	T	Bromochloromethane	50.0000	53.8923	-7.8	111	0.00
36	T	Tetrahydrofuran	100.0000	93.0068	7.0	103	0.00
37	S	Dibromofluoromethane	25.0000	25.4675	-1.9	111	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.0501	3.9	106	0.00
39	T	Cyclohexane	50.0000	50.2142	-0.4	105	0.00
40	T	1,1-Dichloropropene	50.0000	50.1107	-0.2	111	0.00
41	T	Carbon Tetrachloride	50.0000	47.3479	5.3	103	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	105.6143	-5.6	115	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.9299	8.3	101	0.00
44	T	1,2-Dichloroethane	50.0000	47.8802	4.2	104	0.00
45	T	Benzene	50.0000	51.1809	-2.4	116	0.00
46	T	Trichloroethene	50.0000	52.3242	-4.6	119	-0.01
47	T	Methylcyclohexane	50.0000	52.3110	-4.6	108	0.00
48	C	1,2-Dichloropropane	50.0000	52.8102	-5.6	117	0.00
49	T	1,4-Dioxane	200.0000	191.2043	4.4	109	0.01
50	T	Bromodichloromethane	50.0000	49.5339	0.9	107	0.00
51	T	Dibromomethane	50.0000	48.0471	3.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	51.9140	-3.8	114	0.00
53	T	4-Methyl-2-Pentanone	50.0000	52.5623	-5.1	115	0.00
54	T	cis-1,3-Dichloropropene	50.0000	57.5993	-15.2	122	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	52.0055	-4.0	110	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
57	S	Toluene-d8	25.0000	26.4930	-6.0	115	0.00
58	C	Toluene	50.0000	53.7500	-7.5	115	0.00
59	T	Ethyl Methacrylate	50.0000	57.0854	-14.2	114	0.00
60	T	trans-1,3-Dichloropropene	50.0000	52.1118	-4.2	107	0.00
61	T	1,1,2-Trichloroethane	50.0000	52.7643	-5.5	113	0.00
62	T	2-Hexanone	50.0000	52.1857	-4.4	110	0.00
63	T	1,3-Dichloropropane	50.0000	56.2767	-12.6	118	0.00
64	T	Tetrachloroethene	50.0000	52.1906	-4.4	113	0.00
65	T	Dibromochloromethane	50.0000	52.5251	-5.1	107	0.00
66	T	1,2-Dibromoethane	50.0000	52.6373	-5.3	111	0.00
67	T	1-Chlorohexane	50.0000	54.5237	-9.0	112	0.00
68	P	Chlorobenzene	50.0000	53.2936	-6.6	114	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	51.0388	-2.1	109	0.00
70	C	Ethylbenzene	50.0000	52.3943	-4.8	113	0.00
71	T	m-,p-Xylene	100.0000	107.2445	-7.2	115	0.00
72	T	o-Xylene	50.0000	54.7003	-9.4	115	0.00
73	T	Styrene	50.0000	54.9735	-9.9	113	0.00
74	P	Bromoform	50.0000	49.8327	0.3	104	0.00
75	T	Isopropylbenzene	50.0000	54.2449	-8.5	114	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	54.9422	-9.9	110	0.00
78	S	p-Bromofluorobenzene	25.0000	24.7040	1.2	108	0.00
79	T	1,2,3-Trichloropropane	50.0000	50.1407	-0.3	108	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	36.9129	26.2#	78	0.00
81	T	n-Propylbenzene	50.0000	56.5769	-13.2	115	0.00
82	T	Bromobenzene	50.0000	51.6479	-3.3	111	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	55.1277	-10.3	114	-0.01
84	T	2-Chlorotoluene	50.0000	52.7599	-5.5	112	0.00
85	T	4-Chlorotoluene	50.0000	55.4064	-10.8	116	0.00
86	T	a-Methylstyrene	50.0000	59.4584	-18.9	114	0.00
87	T	tert-Butylbenzene	50.0000	56.5417	-13.1	117	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	53.8297	-7.7	110	0.00
89	T	sec-Butylbenzene	50.0000	55.8961	-11.8	114	0.00
90	T	p-Isopropyltoluene	50.0000	54.7069	-9.4	111	0.00
91	T	1,3-Dichlorobenzene	50.0000	52.6969	-5.4	112	0.00
92	T	1,4-Dichlorobenzene	50.0000	53.0354	-6.1	114	0.00
93	T	n-Butylbenzene	50.0000	53.8957	-7.8	110	0.00
94	T	1,2-Dichlorobenzene	50.0000	53.5772	-7.2	112	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	48.1046	3.8	105	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	55.4365	-10.9	113	0.00
97	T	Hexachlorobutadiene	50.0000	55.9180	-11.8	118	0.00
98	T	Naphthalene	50.0000	51.1296	-2.3	103	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	54.0642	-8.1	114	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11848.D 8260WT.M Sat May 14 18:47:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 18:32:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	519117	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	445640	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	268117	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	142795	25.1342 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.52%		
43) 1,2-Dichloroethane-d4	10.24	65	140499	21.6888 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.76%		
57) Toluene-d8	12.47	98	479312	24.7539 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.00%		
78) p-Bromofluorobenzene	15.64	95	190243	23.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.08%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	453155	55.7138 ug/L	95
3) Chloromethane	3.72	50	327935	50.3420 ug/L	99
4) Vinyl Chloride	3.96	62	288555	53.3405 ug/L	100
5) 1,3-Butadiene	4.00	54	251573	46.7685 ug/L	98
6) Bromomethane	4.85	94	196547	52.8428 ug/L	99
7) Chloroethane	5.00	64	177181	50.9753 ug/L	99
8) Trichlorofluoromethane	5.48	101	547200	50.7492 ug/L	100
9) Diethyl ether	6.01	59	360421	90.3827 ug/L	92
10) Isoprene	6.04	67	300874	45.2715 ug/L	89
11) Acrolein	6.23	56	26861	51.1966 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	280747	53.6596 ug/L	96
13) Acetone	6.34	43	48590	39.4185 ug/L	92
14) 1,1-Dichloroethene	6.56	61	461972	48.6115 ug/L	93
15) Tert-Butyl Alcohol	6.66	59	52416	153.7293 ug/L	96
16) Dimethyl Sulfide	6.81	62	167274	44.0745 ug/L	86
17) Iodomethane	7.06	142	192346	44.6594 ug/L	94
18) Methyl acetate	7.07	43	135963	35.0481 ug/L	93
19) Methylene Chloride	7.31	84	248044	50.4326 ug/L	79
20) Carbon Disulfide	7.36	76	790696	49.6985 ug/L	99
21) Acrylonitrile	7.49	53	72060	43.6004 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	603474	49.1947 ug/L	97
23) trans-1,2-Dichloroethene	7.75	96	276353	52.5425 ug/L	90
24) n-Hexane	7.82	57	406376	46.3891 ug/L	97
25) Diisopropyl ether	8.15	45	1802503	82.4600 ug/L	97
26) Vinyl Acetate	8.31	43	363953	43.2381 ug/L	98
27) 1,1-Dichloroethane	8.34	63	525902	49.8324 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1605084	90.2167 ug/L	97
29) 2-Butanone	8.87	43	73968	39.6922 ug/L	90
30) Propionitrile	8.97	54	45453	83.2760 ug/L	99
31) 2,2-Dichloropropane	9.09	77	457421	55.3975 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	302897	52.2305 ug/L	91
33) Chloroform	9.35	83	505159	48.7431 ug/L	100
34) 1-Bromopropane	9.48	122	54957	53.3051 ug/L	95
35) Bromochloromethane	9.57	130	197042	57.2112 ug/L	84
36) Tetrahydrofuran	9.60	42	98177	74.6061 ug/L	90
38) 1,1,1-Trichloroethane	9.85	97	517330	50.7254 ug/L	96
39) Cyclohexane	9.88	56	509177	45.8112 ug/L	94
40) 1,1-Dichloropropene	10.04	75	374472	51.4250 ug/L	98
41) Carbon Tetrachloride	10.18	117	520748	52.2900 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1170914	94.7138 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13078.D 8260WT.M Tue Jul 05 18:32:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 18:32:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	392578	46.6397 ug/L	97
45)	Benzene	10.38	78	1005654	50.4477 ug/L	99
46)	Trichloroethene	11.09	130	345580	53.3346 ug/L	97
47)	Methylcyclohexane	11.17	83	401328	50.1879 ug/L	92
48)	1,2-Dichloropropane	11.29	63	271197	49.1462 ug/L	98
49)	1,4-Dioxane	11.56	88	3852	132.7307 ug/L	95
50)	Bromodichloromethane	11.57	83	392958	50.7262 ug/L	99
51)	Dibromomethane	11.65	93	147932	51.4449 ug/L	96
52)	2-Chloroethyl Vinyl Ether	11.84	63	120595	44.3418 ug/L	96
53)	4-Methyl-2-Pentanone	11.87	58	69824	45.5192 ug/L	95
54)	cis-1,3-Dichloropropene	12.17	75	406877	52.5122 ug/L	100
55)	Dimethyl Disulfide	12.42	79	222479	47.7161 ug/L	97
58)	Toluene	12.56	91	1180139	52.3109 ug/L	99
59)	Ethyl Methacrylate	12.64	69	238449	49.4992 ug/L	83
60)	trans-1,3-Dichloropropene	12.73	75	368912	50.9453 ug/L	97
61)	1,1,2-Trichloroethane	12.94	97	201340	50.3297 ug/L	99
62)	2-Hexanone	12.86	43	117905	40.1301 ug/L	93
63)	1,3-Dichloropropane	13.21	76	321195	49.9981 ug/L	84
64)	Tetrachloroethene	13.34	164	286918	54.6897 ug/L	97
65)	Dibromochloromethane	13.59	129	328698	53.8695 ug/L	100
66)	1,2-Dibromoethane	13.82	107	205135	51.1814 ug/L	99
67)	1-Chlorohexane	13.89	91	371751	49.9805 ug/L	88
68)	Chlorobenzene	14.29	112	872095	52.7681 ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	353143	52.8079 ug/L	100
70)	Ethylbenzene	14.31	106	442668	52.2340 ug/L	98
71)	m-,p-Xylene	14.39	106	1087185	105.5236 ug/L	95
72)	o-Xylene	14.92	106	522904	52.1513 ug/L	97
73)	Styrene	14.95	104	900060	54.3322 ug/L	95
74)	Bromoform	15.43	173	201589	54.5103 ug/L	98
75)	Isopropylbenzene	15.31	105	1401962	52.8719 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	206004	49.3393 ug/L	97
79)	1,2,3-Trichloropropane	15.70	110	73178	46.7361 ug/L	93
80)	trans-1,4-Dichloro-2-Buten	15.74	53	69553	34.7917 ug/L	65
81)	n-Propylbenzene	15.79	91	1599961	51.5272 ug/L	98
82)	Bromobenzene	15.92	156	418724	51.3906 ug/L	89
83)	1,3,5-Trimethylbenzene	15.95	105	1204780	50.8453 ug/L	98
84)	2-Chlorotoluene	16.05	91	1066813	49.0521 ug/L	96
85)	4-Chlorotoluene	16.09	91	963367	49.4506 ug/L	97
86)	a-Methylstyrene	16.34	118	621072	49.6851 ug/L	98
87)	tert-Butylbenzene	16.39	134	267904	53.3666 ug/L	89
88)	1,2,4-Trimethylbenzene	16.44	105	1243081	51.5191 ug/L	99
89)	sec-Butylbenzene	16.65	105	1458282	51.2548 ug/L	99
90)	p-Isopropyltoluene	16.79	119	1359102	52.0067 ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	802523	50.9975 ug/L	96
92)	1,4-Dichlorobenzene	17.10	146	800036	50.1563 ug/L	97
93)	n-Butylbenzene	17.28	91	1139305	49.4744 ug/L	98
94)	1,2-Dichlorobenzene	17.57	146	727247	50.7317 ug/L	97
95)	1,2-Dibromo-3-Chloropropan	18.49	75	40180	42.7833 ug/L	94
96)	1,2,4-Trichlorobenzene	19.55	180	521138	49.6815 ug/L	99
97)	Hexachlorobutadiene	19.69	225	217588	47.0854 ug/L	96
98)	Naphthalene	19.90	128	930586	47.7960 ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	464270	48.2261 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 5 18:32 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

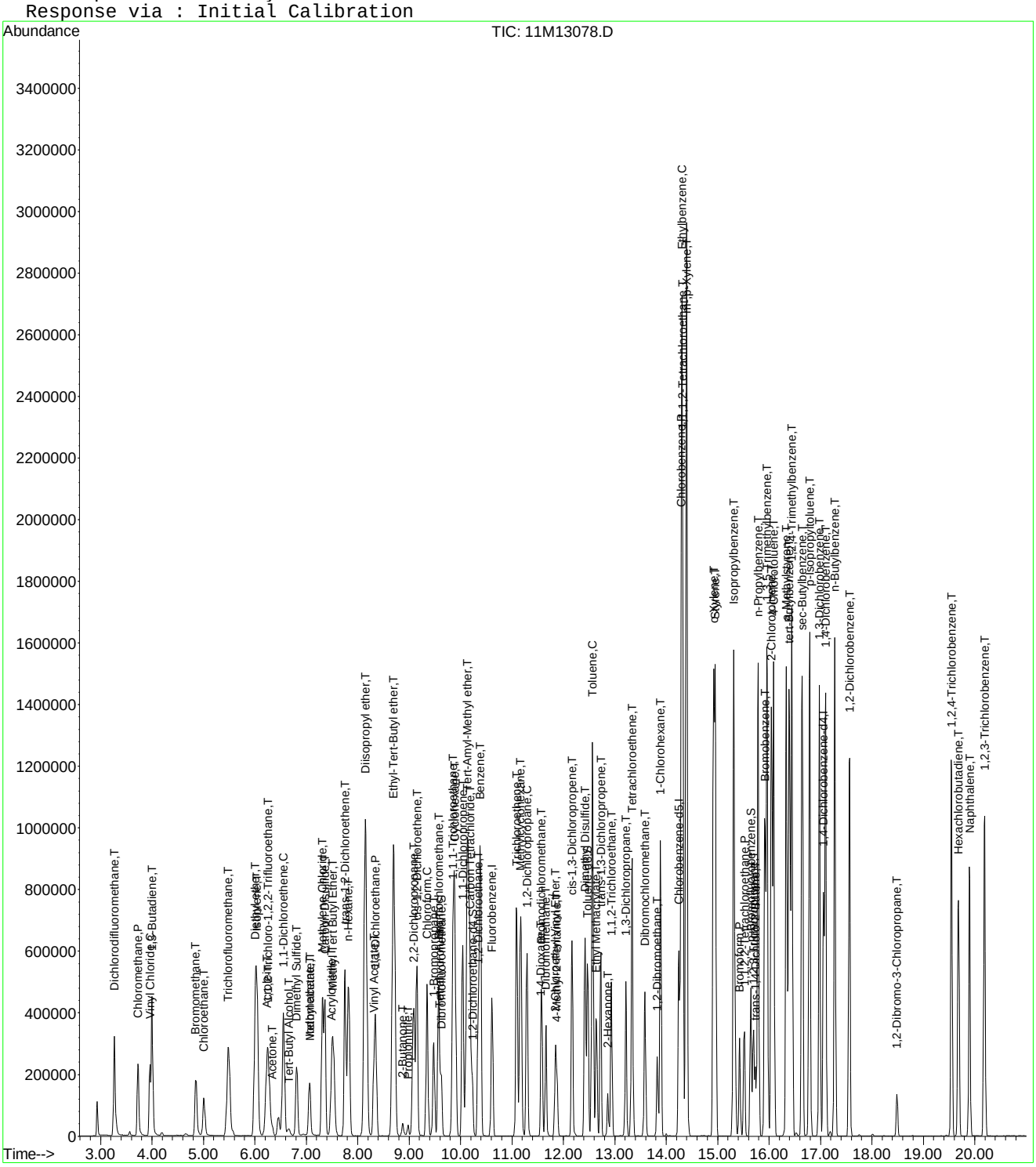

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.3917	0.4365	-11.4	109	0.00
3	P	Chloromethane	0.3137	0.3159	-0.7	114	0.00
4	C	Vinyl Chloride	0.2605	0.2779	-6.7	111	0.00
5	T	1,3-Butadiene	0.2591	0.2423	6.5	90	0.00
6	T	Bromomethane	0.1791	0.1893	-5.7	114	0.00
7	T	Chloroethane	0.1674	0.1707	-2.0	105	0.00
8	T	Trichlorofluoromethane	0.5193	0.5271	-1.5	105	0.00
9	T	Diethyl ether	0.1920	0.1736	9.6	92	0.00
10	T	Isoprene	0.3201	0.2898	9.5	91	0.00
11	T	Acrolein	0.0228	0.0259	-13.6	106	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2520	0.2704	-7.3	110	0.01
13	T	Acetone	0.0594	0.0468	21.2	81	0.00
14	C	1,1-Dichloroethene	0.4577	0.4450	2.8	100	0.00
15	T	Tert-Butyl Alcohol	0.0164	0.0126	23.1	76	0.00
16	T	Dimethyl Sulfide	0.1828	0.1611	11.9	86	0.00
17	T	Iodomethane	0.1615	0.1853	-14.7	90	0.00
18	T	Methyl acetate	0.2006	0.1310	34.7#	73	0.01
19	T	Methylene Chloride	0.2369	0.2389	-0.9	106	0.00
20	T	Carbon Disulfide	0.7662	0.7616	0.6	97	0.00
21	T	Acrylonitrile	0.0796	0.0694	12.8	85	0.00
22	T	Methyl Tert Butyl Ether	0.5908	0.5813	1.6	99	0.00
23	T	trans-1,2-Dichloroethene	0.2533	0.2662	-5.1	109	0.01
24	T	n-Hexane	0.4219	0.3914	7.2	90	0.00
25	T	Diisopropyl ether	1.0527	0.8681	17.5	83	0.00
26	T	Vinyl Acetate	0.3793	0.3505	7.6	89	0.00
27	P	1,1-Dichloroethane	0.5082	0.5065	0.3	102	0.00
28	T	Ethyl-Tert-Butyl ether	0.8568	0.7730	9.8	90	0.00
29	T	2-Butanone	0.0897	0.0712	20.6	81	0.00
30	T	Propionitrile	0.0263	0.0219	16.7	80	0.00
31	T	2,2-Dichloropropane	0.3977	0.4406	-10.8	114	0.00
32	T	cis-1,2-Dichloroethene	0.2793	0.2917	-4.5	107	0.00
33	C	Chloroform	0.4991	0.4866	2.5	103	0.00
34	T	1-Bromopropane	0.0432	0.0529	-22.6	110	0.00
35	T	Bromochloromethane	0.1659	0.1898	-14.4	110	0.00
36	T	Tetrahydrofuran	0.0634	0.0473	25.4#	77	0.00
37	S	Dibromofluoromethane	0.2736	0.2751	-0.5	102	0.00
38	T	1,1,1-Trichloroethane	0.4911	0.4983	-1.5	104	0.00
39	T	Cyclohexane	0.5353	0.4904	8.4	89	0.00
40	T	1,1-Dichloropropene	0.3507	0.3607	-2.8	106	0.00
41	T	Carbon Tetrachloride	0.4796	0.5016	-4.6	106	0.00
42	T	Tert-Amyl-Methyl ether	0.5954	0.5639	5.3	95	0.00
43	S	1,2-Dichloroethane-d4	0.3120	0.2707	13.2	89	0.01
44	T	1,2-Dichloroethane	0.4054	0.3781	6.7	94	0.00
45	T	Benzene	0.9600	0.9686	-0.9	106	0.00
46	T	Trichloroethene	0.3120	0.3328	-6.7	112	0.00
47	T	Methylcyclohexane	0.3851	0.3866	-0.4	96	0.00
48	C	1,2-Dichloropropane	0.2657	0.2612	1.7	101	0.00
49	T	1,4-Dioxane	0.0014	0.0009	33.6#	66	0.01
50	T	Bromodichloromethane	0.3731	0.3785	-1.5	102	0.00
51	T	Dibromomethane	0.1385	0.1425	-2.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	0.1310	0.1162	11.3	91	0.00
53	T	4-Methyl-2-Pentanone	0.0739	0.0673	9.0	92	0.00
54	T	cis-1,3-Dichloropropene	0.3731	0.3919	-5.0	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2245	0.2143	4.6	94	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	102	0.00
57	S	Toluene-d8	1.0862	1.0756	1.0	104	0.00
58	C	Toluene	1.2656	1.3241	-4.6	108	0.00
59	T	Ethyl Methacrylate	0.2702	0.2675	1.0	95	-0.01
60	T	trans-1,3-Dichloropropene	0.4062	0.4139	-1.9	101	0.00
61	T	1,1,2-Trichloroethane	0.2244	0.2259	-0.7	104	0.00
62	T	2-Hexanone	0.1648	0.1323	19.7	82	0.00
63	T	1,3-Dichloropropane	0.3604	0.3604	0.0	101	0.00
64	T	Tetrachloroethene	0.2943	0.3219	-9.4	114	0.00
65	T	Dibromochloromethane	0.3423	0.3688	-7.7	106	0.00
66	T	1,2-Dibromoethane	0.2248	0.2302	-2.4	104	0.00
67	T	1-Chlorohexane	0.4173	0.4171	0.0	99	0.00
68	P	Chlorobenzene	0.9272	0.9785	-5.5	109	0.00
69	T	1,1,1,2-Tetrachloroethane	0.3751	0.3962	-5.6	108	0.00
70	C	Ethylbenzene	0.4754	0.4967	-4.5	108	0.00
71	T	m-,p-Xylene	0.5780	0.6099	-5.5	109	0.00
72	T	o-Xylene	0.5625	0.5867	-4.3	106	0.00
73	T	Styrene	0.9293	1.0098	-8.7	107	0.00
74	P	Bromoform	0.2075	0.2262	-9.0	109	0.00
75	T	Isopropylbenzene	1.4875	1.5730	-5.7	107	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	102	0.00
77	P	1,1,2,2-Tetrachloroethane	0.3893	0.3842	1.3	99	0.00
78	S	p-Bromofluorobenzene	0.7706	0.7096	7.9	101	0.00
79	T	1,2,3-Trichloropropane	0.1351	0.1365	-1.0	101	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.1588	0.1297	18.3	74	0.00
81	T	n-Propylbenzene	2.8953	2.9837	-3.1	105	0.00
82	T	Bromobenzene	0.7597	0.7809	-2.8	110	0.00
83	T	1,3,5-Trimethylbenzene	2.2094	2.2467	-1.7	105	-0.01
84	T	2-Chlorotoluene	2.0279	1.9894	1.9	104	0.00
85	T	4-Chlorotoluene	1.8165	1.7965	1.1	104	0.00
86	T	a-Methylstyrene	1.1656	1.1582	0.6	96	0.00
87	T	tert-Butylbenzene	0.4681	0.4996	-6.7	111	-0.01
88	T	1,2,4-Trimethylbenzene	2.2498	2.3182	-3.0	105	0.00
89	T	sec-Butylbenzene	2.6529	2.7195	-2.5	105	0.00
90	T	p-Isopropyltoluene	2.4367	2.5345	-4.0	106	0.00
91	T	1,3-Dichlorobenzene	1.4673	1.4966	-2.0	109	0.00
92	T	1,4-Dichlorobenzene	1.4873	1.4920	-0.3	108	0.00
93	T	n-Butylbenzene	2.1472	2.1246	1.1	101	0.00
94	T	1,2-Dichlorobenzene	1.3366	1.3562	-1.5	106	0.00
95	T	1,2-Dibromo-3-Chloropropane	0.0825	0.0749	9.2	94	0.00
96	T	1,2,4-Trichlorobenzene	0.9781	0.9718	0.6	102	0.00
97	T	Hexachlorobutadiene	0.4309	0.4058	5.8	99	0.00
98	T	Naphthalene	1.8154	1.7354	4.4	97	0.00
99	T	1,2,3-Trichlorobenzene	0.8976	0.8658	3.5	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M13078.D 8260WT.M Tue Jul 05 18:32:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	50.0000	55.7138	-11.4	109	0.00
3	P	Chloromethane	50.0000	50.3420	-0.7	114	0.00
4	C	Vinyl Chloride	50.0000	53.3405	-6.7	111	0.00
5	T	1,3-Butadiene	50.0000	46.7685	6.5	90	0.00
6	T	Bromomethane	50.0000	52.8428	-5.7	114	0.00
7	T	Chloroethane	50.0000	50.9753	-2.0	105	0.00
8	T	Trichlorofluoromethane	50.0000	50.7492	-1.5	105	0.00
9	T	Diethyl ether	100.0000	90.3827	9.6	92	0.00
10	T	Isoprene	50.0000	45.2715	9.5	91	0.00
11	T	Acrolein	50.0000	51.1966	-2.4	106	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.6596	-7.3	110	0.01
13	T	Acetone	50.0000	39.4185	21.2	81	0.00
14	C	1,1-Dichloroethene	50.0000	48.6115	2.8	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	153.7293	23.1	76	0.00
16	T	Dimethyl Sulfide	50.0000	44.0745	11.9	86	0.00
17	T	Iodomethane	50.0000	44.6594	10.7	90	0.00
18	T	Methyl acetate	50.0000	35.0481	29.9#	73	0.01
19	T	Methylene Chloride	50.0000	50.4326	-0.9	106	0.00
20	T	Carbon Disulfide	50.0000	49.6985	0.6	97	0.00
21	T	Acrylonitrile	50.0000	43.6004	12.8	85	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.1947	1.6	99	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.5425	-5.1	109	0.01
24	T	n-Hexane	50.0000	46.3891	7.2	90	0.00
25	T	Diisopropyl ether	100.0000	82.4600	17.5	83	0.00
26	T	Vinyl Acetate	50.0000	43.2381	13.5	89	0.00
27	P	1,1-Dichloroethane	50.0000	49.8324	0.3	102	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	90.2167	9.8	90	0.00
29	T	2-Butanone	50.0000	39.6922	20.6	81	0.00
30	T	Propionitrile	100.0000	83.2760	16.7	80	0.00
31	T	2,2-Dichloropropane	50.0000	55.3976	-10.8	114	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.2305	-4.5	107	0.00
33	C	Chloroform	50.0000	48.7431	2.5	103	0.00
34	T	1-Bromopropane	50.0000	53.3051	-6.6	110	0.00
35	T	Bromochloromethane	50.0000	57.2112	-14.4	110	0.00
36	T	Tetrahydrofuran	100.0000	74.6060	25.4#	77	0.00
37	S	Dibromofluoromethane	25.0000	25.1342	-0.5	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.7254	-1.5	104	0.00
39	T	Cyclohexane	50.0000	45.8112	8.4	89	0.00
40	T	1,1-Dichloropropene	50.0000	51.4250	-2.8	106	0.00
41	T	Carbon Tetrachloride	50.0000	52.2900	-4.6	106	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	94.7138	5.3	95	0.00
43	S	1,2-Dichloroethane-d4	25.0000	21.6888	13.2	89	0.01
44	T	1,2-Dichloroethane	50.0000	46.6397	6.7	94	0.00
45	T	Benzene	50.0000	50.4477	-0.9	106	0.00
46	T	Trichloroethene	50.0000	53.3346	-6.7	112	0.00
47	T	Methylcyclohexane	50.0000	50.1879	-0.4	96	0.00
48	C	1,2-Dichloropropane	50.0000	49.1462	1.7	101	0.00
49	T	1,4-Dioxane	200.0000	132.7307	33.6#	66	0.01
50	T	Bromodichloromethane	50.0000	50.7262	-1.5	102	0.00
51	T	Dibromomethane	50.0000	51.4449	-2.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	44.3418	11.3	91	0.00
53	T	4-Methyl-2-Pentanone	50.0000	45.5192	9.0	92	0.00
54	T	cis-1,3-Dichloropropene	50.0000	52.5122	-5.0	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	47.7161	4.6	94	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	102	0.00
57	S	Toluene-d8	25.0000	24.7539	1.0	104	0.00
58	C	Toluene	50.0000	52.3109	-4.6	108	0.00
59	T	Ethyl Methacrylate	50.0000	49.4992	1.0	95	-0.01
60	T	trans-1,3-Dichloropropene	50.0000	50.9453	-1.9	101	0.00
61	T	1,1,2-Trichloroethane	50.0000	50.3297	-0.7	104	0.00
62	T	2-Hexanone	50.0000	40.1301	19.7	82	0.00
63	T	1,3-Dichloropropane	50.0000	49.9981	0.0	101	0.00
64	T	Tetrachloroethene	50.0000	54.6897	-9.4	114	0.00
65	T	Dibromochloromethane	50.0000	53.8695	-7.7	106	0.00
66	T	1,2-Dibromoethane	50.0000	51.1814	-2.4	104	0.00
67	T	1-Chlorohexane	50.0000	49.9805	0.0	99	0.00
68	P	Chlorobenzene	50.0000	52.7681	-5.5	109	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	52.8079	-5.6	108	0.00
70	C	Ethylbenzene	50.0000	52.2340	-4.5	108	0.00
71	T	m-,p-Xylene	100.0000	105.5236	-5.5	109	0.00
72	T	o-Xylene	50.0000	52.1513	-4.3	106	0.00
73	T	Styrene	50.0000	54.3322	-8.7	107	0.00
74	P	Bromoform	50.0000	54.5103	-9.0	109	0.00
75	T	Isopropylbenzene	50.0000	52.8719	-5.7	107	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	102	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	49.3393	1.3	99	0.00
78	S	p-Bromofluorobenzene	25.0000	23.0180	7.9	101	0.00
79	T	1,2,3-Trichloropropane	50.0000	46.7361	6.5	101	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	34.7917	30.4#	74	0.00
81	T	n-Propylbenzene	50.0000	51.5272	-3.1	105	0.00
82	T	Bromobenzene	50.0000	51.3906	-2.8	110	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	50.8453	-1.7	105	-0.01
84	T	2-Chlorotoluene	50.0000	49.0521	1.9	104	0.00
85	T	4-Chlorotoluene	50.0000	49.4506	1.1	104	0.00
86	T	a-Methylstyrene	50.0000	49.6851	0.6	96	0.00
87	T	tert-Butylbenzene	50.0000	53.3666	-6.7	111	-0.01
88	T	1,2,4-Trimethylbenzene	50.0000	51.5191	-3.0	105	0.00
89	T	sec-Butylbenzene	50.0000	51.2548	-2.5	105	0.00
90	T	p-Isopropyltoluene	50.0000	52.0067	-4.0	106	0.00
91	T	1,3-Dichlorobenzene	50.0000	50.9975	-2.0	109	0.00
92	T	1,4-Dichlorobenzene	50.0000	50.1563	-0.3	108	0.00
93	T	n-Butylbenzene	50.0000	49.4744	1.1	101	0.00
94	T	1,2-Dichlorobenzene	50.0000	50.7317	-1.5	106	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	42.7833	14.4	94	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	49.6815	0.6	102	0.00
97	T	Hexachlorobutadiene	50.0000	47.0854	5.8	99	0.00
98	T	Naphthalene	50.0000	47.7960	4.4	97	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	48.2261	3.5	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M13078.D 8260WT.M Tue Jul 05 18:33:02 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\051316\11M11836.D          Vial: 2
Acq On    : 13 May 2016  14:15                        Operator: JDS
Sample    : WG568769-01 50ng BFB STD 8260             Inst    : hpms11
Misc      : 1,1 STD76034                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

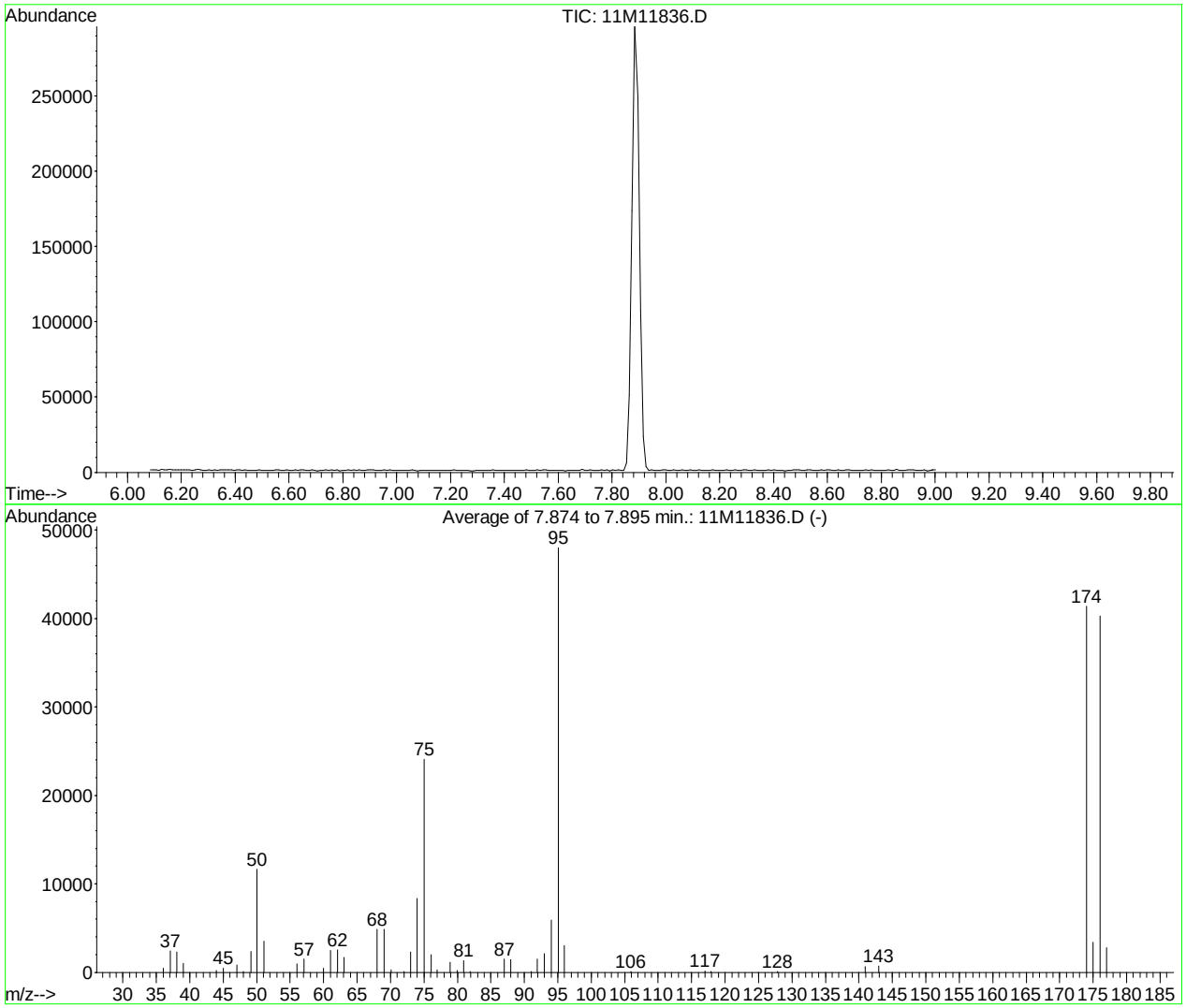

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.2	11638	PASS
75	95	30	60	50.2	24088	PASS
95	95	100	100	100.0	48016	PASS
96	95	5	9	6.3	3008	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.2	41402	PASS
175	174	5	9	8.3	3421	PASS
176	174	95	101	97.3	40288	PASS
177	176	5	9	6.9	2789	PASS

11M11836.D 8260WT.M Tue May 17 14:18:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\070516\11M13076.D          Vial: 1
Acq On    :  5 Jul 2016  17:13                       Operator: JDS
Sample    : WG575198-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD76496                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

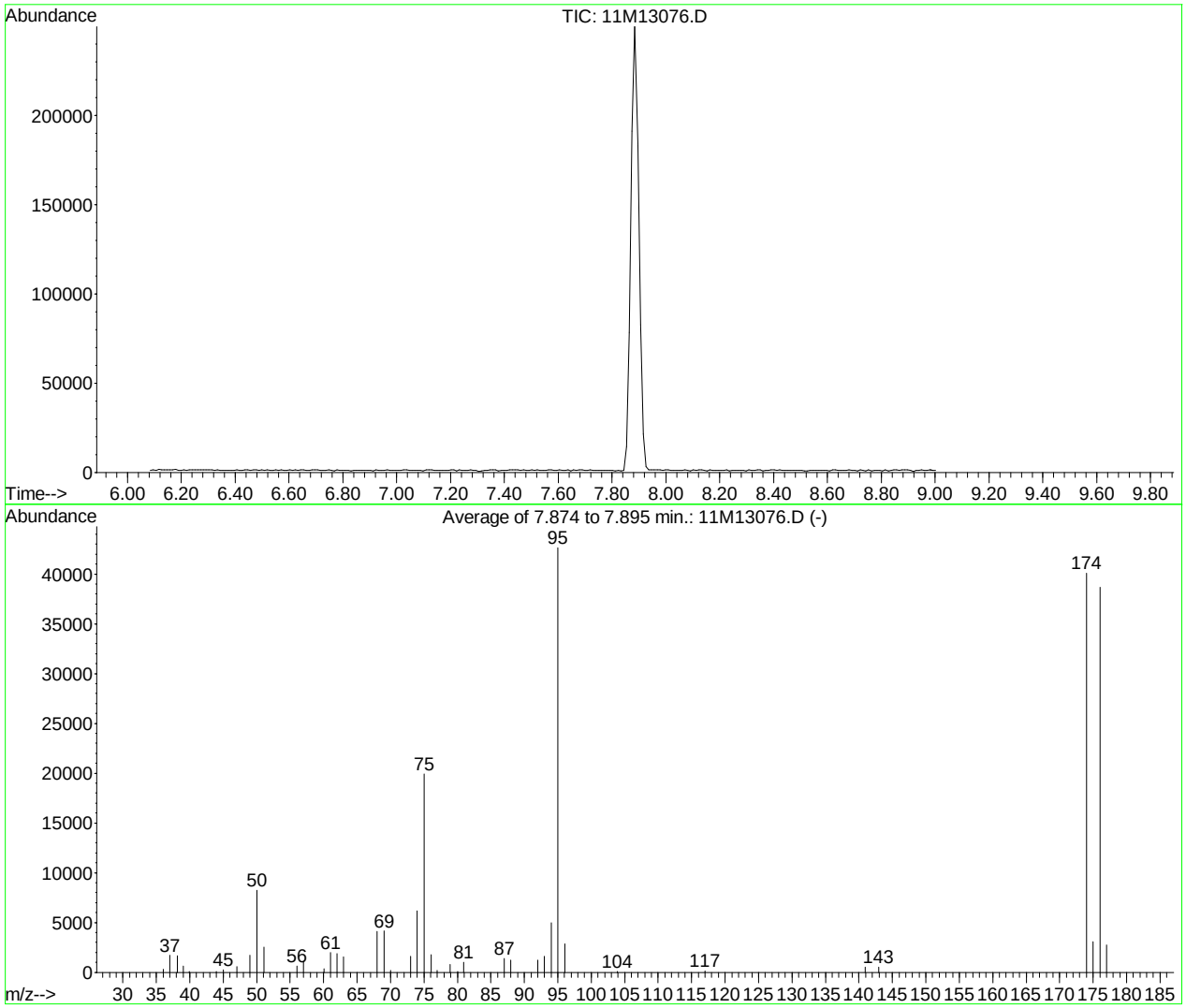

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.4	8258	PASS
75	95	30	60	46.8	19945	PASS
95	95	100	100	100.0	42653	PASS
96	95	5	9	6.7	2862	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	94.0	40085	PASS
175	174	5	9	7.7	3095	PASS
176	174	95	101	96.5	38688	PASS
177	176	5	9	7.1	2730	PASS

11M13076.D 8260WT.M Wed Jul 06 09:11:17 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13080.D Vial: 5
Acq On : 5 Jul 2016 19:15 Operator: JDS
Sample : WG575199-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 06 09:19:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	472304	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	408648	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	236090	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	128454	24.8510 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.40%		
43) 1,2-Dichloroethane-d4	10.23	65	129250	21.9299 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.72%		
57) Toluene-d8	12.47	98	437801	24.6568 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.64%		
78) p-Bromofluorobenzene	15.64	95	166664	22.9006 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.60%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M13080.D 8260WT.M Wed Jul 06 09:19:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13080.D Vial: 5
Acq On : 5 Jul 2016 19:15 Operator: JDS
Sample : WG575199-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 6 9:19 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

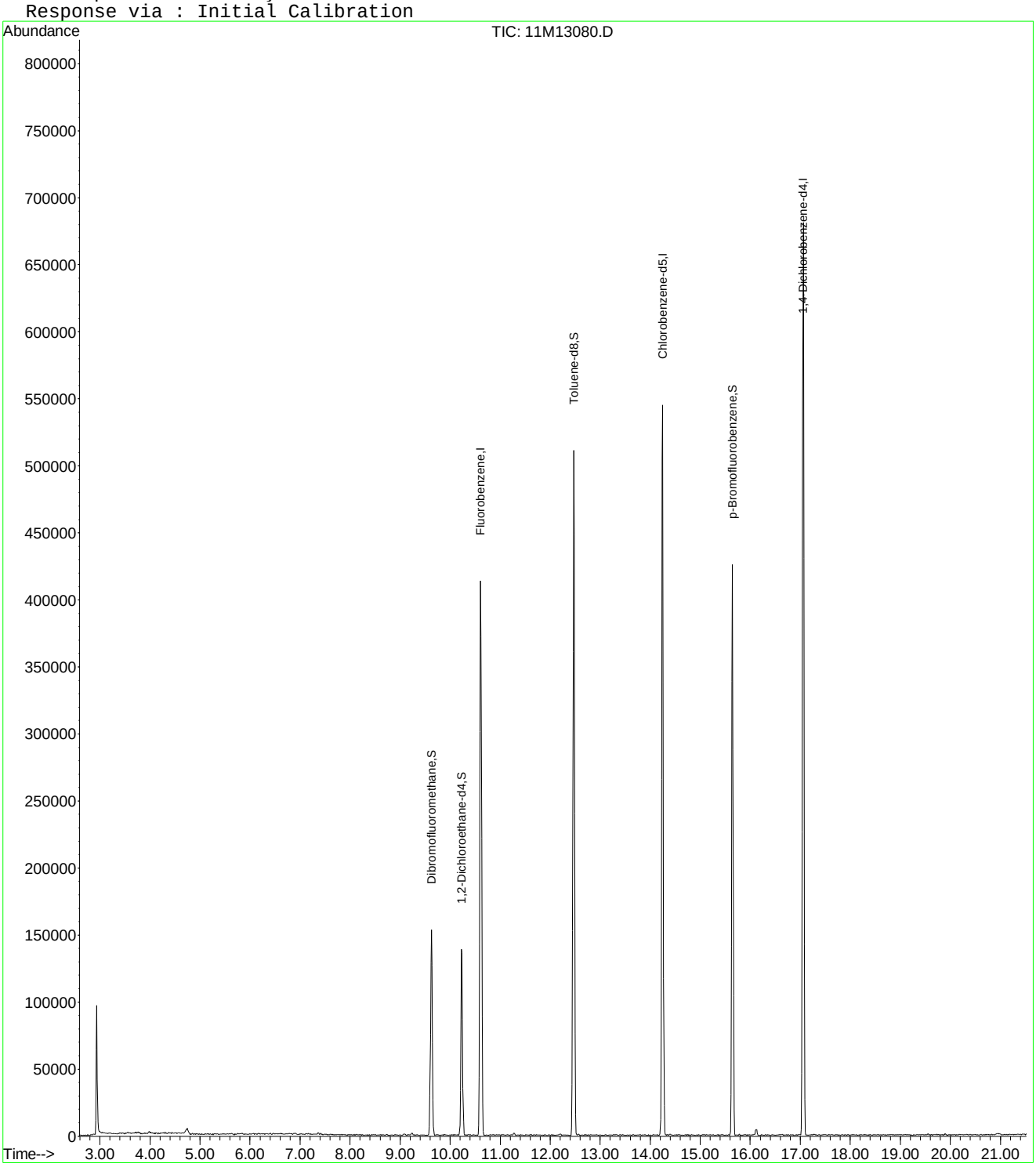

11M13080.D 8260WT.M Wed Jul 06 09:19:10 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13081.D Vial: 6
Acq On : 5 Jul 2016 19:47 Operator: JDS
Sample : WG575199-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 20:09:12 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	485527	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	420960	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	250949	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	133281	25.0826 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.32%		
43) 1,2-Dichloroethane-d4	10.23	65	130691	21.5705 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.28%		
57) Toluene-d8	12.47	98	453731	24.8066 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.24%		
78) p-Bromofluorobenzene	15.64	95	176443	22.8088 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.24%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	16305	2.1433 ug/L	88
3) Chloromethane	3.72	50	37862	6.2144 ug/L	97
4) Vinyl Chloride	3.96	62	52558	10.3877 ug/L	100
5) 1,3-Butadiene	3.99	54	55112	10.9544 ug/L	97
6) Bromomethane	4.85	94	50018	14.3780 ug/L	99
7) Chloroethane	5.00	64	47789	14.7002 ug/L	95
8) Trichlorofluoromethane	5.48	101	144326	14.3113 ug/L	100
9) Diethyl ether	6.01	59	347541	93.1823 ug/L	91
10) Isoprene	6.05	67	92238	14.8389 ug/L	89
11) Acrolein	6.24	56	53640	107.5996 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	84494	17.2667 ug/L	94
13) Acetone	6.34	43	18831	16.3335 ug/L	91
14) 1,1-Dichloroethene	6.56	61	97590	10.9794 ug/L	94
15) Tert-Butyl Alcohol	6.66	59	56281	176.4845 ug/L	96
16) Dimethyl Sulfide	6.81	62	96926	27.3055 ug/L	83
17) Iodomethane	7.06	142	33415	10.1123 ug/L	89
18) Methyl acetate	7.06	43	54804	14.3559 ug/L	91
19) Methylene Chloride	7.31	84	74421	16.1782 ug/L	82
20) Carbon Disulfide	7.36	76	186343	12.5227 ug/L	100
21) Acrylonitrile	7.49	53	26646	17.2377 ug/L	98
22) Methyl Tert Butyl Ether	7.52	73	214315	18.6795 ug/L	96
23) trans-1,2-Dichloroethene	7.75	96	76897	15.6317 ug/L	93
24) n-Hexane	7.82	57	104395	12.7415 ug/L	98
25) Diisopropyl ether	8.15	45	1823373	89.1856 ug/L	97
26) Vinyl Acetate	8.31	43	82525	12.3252 ug/L	98
27) 1,1-Dichloroethane	8.34	63	156858	15.8915 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1486876	89.3543 ug/L	97
29) 2-Butanone	8.87	43	30190	17.3211 ug/L	92
30) Propionitrile	8.98	54	45375	88.8844 ug/L	99
31) 2,2-Dichloropropane	9.09	77	129310	16.7440 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	102485	18.8948 ug/L	87
33) Chloroform	9.35	83	172538	17.8001 ug/L	99
34) 1-Bromopropane	9.48	122	23188	24.3929 ug/L	96
35) Bromochloromethane	9.57	130	64466	20.0127 ug/L	85
36) Tetrahydrofuran	9.60	42	90443	73.4837 ug/L	90
38) 1,1,1-Trichloroethane	9.85	97	163000	17.0882 ug/L	97
39) Cyclohexane	9.88	56	162076	15.5910 ug/L	95
40) 1,1-Dichloropropene	10.04	75	113575	16.6759 ug/L	99
41) Carbon Tetrachloride	10.18	117	161700	17.3601 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1157324	100.0910 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13081.D 8260WT.M Tue Jul 05 20:09:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13081.D Vial: 6
Acq On : 5 Jul 2016 19:47 Operator: JDS
Sample : WG575199-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 20:09:12 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	139210	17.6828 ug/L	97
45) Benzene	10.38	78	327011	17.5391 ug/L	100
46) Trichloroethene	11.09	130	124940	20.6164 ug/L	97
47) Methylcyclohexane	11.17	83	129576	17.3251 ug/L	94
48) 1,2-Dichloropropane	11.29	63	98003	18.9888 ug/L	99
49) 1,4-Dioxane	11.56	88	4293	153.6995 ug/L	93
50) Bromodichloromethane	11.58	83	141356	19.5098 ug/L	99
51) Dibromomethane	11.66	93	48416	18.0020 ug/L	91
52) 2-Chloroethyl Vinyl Ether	11.84	63	43754	17.2010 ug/L	95
53) 4-Methyl-2-Pentanone	11.87	58	26172	18.2422 ug/L	96
54) cis-1,3-Dichloropropene	12.17	75	152721	21.0740 ug/L	99
55) Dimethyl Disulfide	12.42	79	79762	18.2904 ug/L	86
58) Toluene	12.56	91	416905	19.5632 ug/L	99
59) Ethyl Methacrylate	12.65	69	89611	19.6928 ug/L	81
60) trans-1,3-Dichloropropene	12.73	75	130874	19.1328 ug/L	96
61) 1,1,2-Trichloroethane	12.94	97	77302	20.4564 ug/L	98
62) 2-Hexanone	12.86	43	44868	16.1666 ug/L	96
63) 1,3-Dichloropropane	13.21	76	124753	20.5579 ug/L	86
64) Tetrachloroethene	13.34	164	97379	19.6497 ug/L	97
65) Dibromochloromethane	13.59	129	123036	21.3462 ug/L	98
66) 1,2-Dibromoethane	13.82	107	77090	20.3617 ug/L	98
67) 1-Chlorohexane	13.89	91	134106	19.0871 ug/L	88
68) Chlorobenzene	14.29	112	329746	21.1218 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	134990	21.3694 ug/L	100
70) Ethylbenzene	14.31	106	159392	19.9106 ug/L	98
71) m-,p-Xylene	14.39	106	402286	41.3356 ug/L	98
72) o-Xylene	14.92	106	200275	21.1453 ug/L	95
73) Styrene	14.95	104	336945	21.5322 ug/L	95
74) Bromoform	15.43	173	71332	20.4192 ug/L	99
75) Isopropylbenzene	15.31	105	528646	21.1056 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.51	83	74522	19.0696 ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	29529	20.3567 ug/L	81
80) trans-1,4-Dichloro-2-Buten	15.74	53	17694	9.9975 ug/L #	1
81) n-Propylbenzene	15.79	91	609142	20.9597 ug/L	98
82) Bromobenzene	15.92	156	159575	20.9247 ug/L	88
83) 1,3,5-Trimethylbenzene	15.95	105	459994	20.7412 ug/L	98
84) 2-Chlorotoluene	16.05	91	424313	20.8447 ug/L	97
85) 4-Chlorotoluene	16.09	91	374404	20.5333 ug/L	97
86) a-Methylstyrene	16.34	118	255080	21.8022 ug/L	96
87) tert-Butylbenzene	16.39	134	107044	22.7820 ug/L	86
88) 1,2,4-Trimethylbenzene	16.44	105	470116	20.8168 ug/L	98
89) sec-Butylbenzene	16.65	105	560911	21.0633 ug/L	99
90) p-Isopropyltoluene	16.79	119	512984	20.9725 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	312636	21.2261 ug/L	97
92) 1,4-Dichlorobenzene	17.10	146	318443	21.3298 ug/L	99
93) n-Butylbenzene	17.28	91	424537	19.6968 ug/L	97
94) 1,2-Dichlorobenzene	17.57	146	287798	21.4498 ug/L	98
95) 1,2-Dibromo-3-Chloropropan	18.49	75	15410	17.9096 ug/L	92
96) 1,2,4-Trichlorobenzene	19.55	180	200754	20.4477 ug/L	99
97) Hexachlorobutadiene	19.69	225	80845	18.6915 ug/L	97
98) Naphthalene	19.89	128	330356	18.1283 ug/L	99
99) 1,2,3-Trichlorobenzene	20.19	180	179442	19.9147 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13081.D 8260WT.M Tue Jul 05 20:09:15 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13081.D Vial: 6
Acq On : 5 Jul 2016 19:47 Operator: JDS
Sample : WG575199-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 5 20:09 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

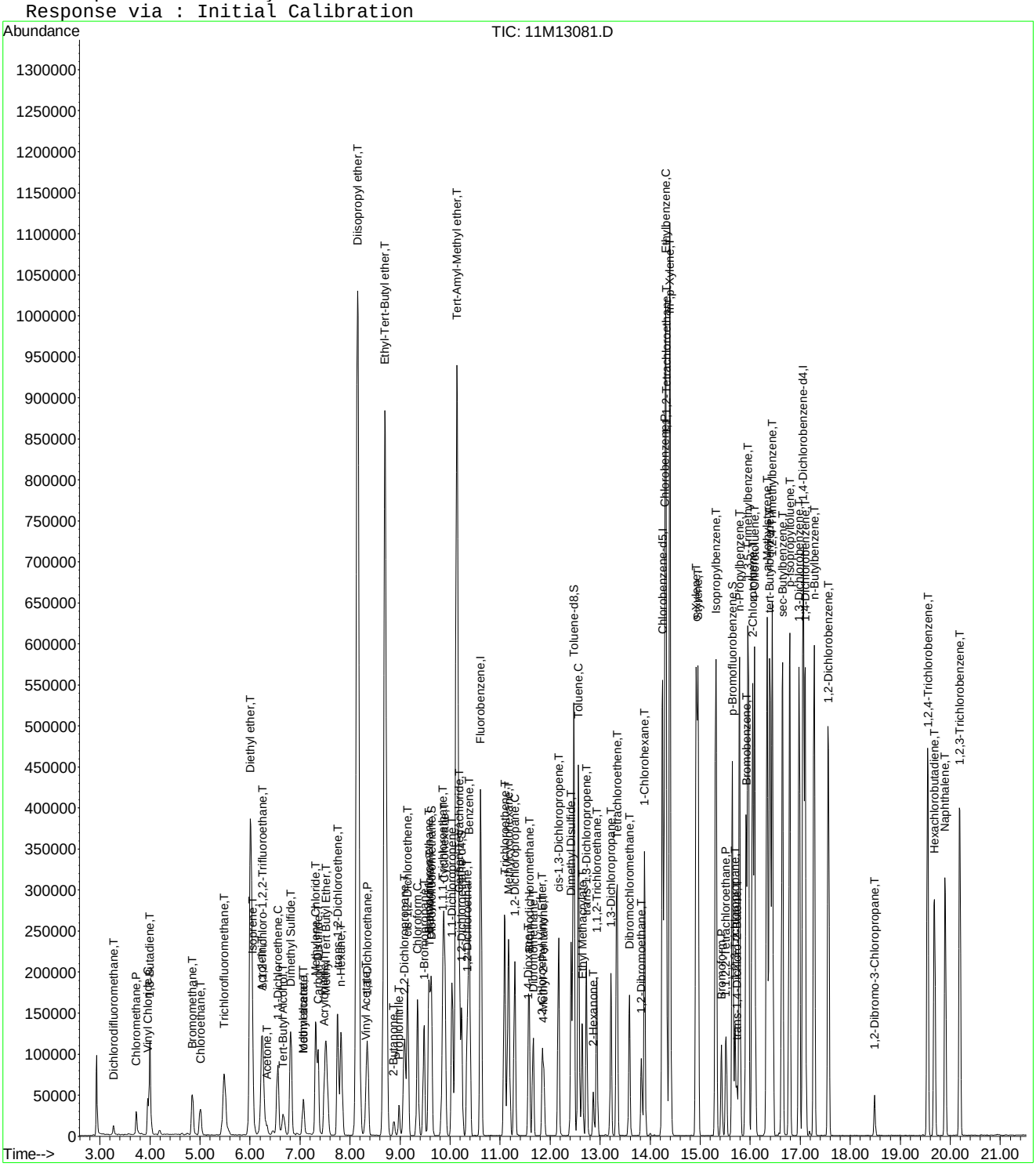

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13082.D Vial: 7
Acq On : 5 Jul 2016 20:19 Operator: JDS
Sample : WG575199-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 20:41:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	499574	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	435197	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	257746	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	133896	24.4898 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.24	65	132952	21.3266 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.32%		
57) Toluene-d8	12.47	98	460639	24.3604 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.44%		
78) p-Bromofluorobenzene	15.64	95	177047	22.2833 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 89.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	16441	2.1004 ug/L	91
3) Chloromethane	3.72	50	38761	6.1831 ug/L	99
4) Vinyl Chloride	3.95	62	50973	9.7912 ug/L	99
5) 1,3-Butadiene	3.99	54	54702	10.5672 ug/L	98
6) Bromomethane	4.85	94	47616	13.3026 ug/L	100
7) Chloroethane	5.00	64	48422	14.4761 ug/L	99
8) Trichlorofluoromethane	5.48	101	142912	13.7726 ug/L	100
9) Diethyl ether	6.01	59	346761	90.3589 ug/L	91
10) Isoprene	6.04	67	91920	14.3719 ug/L	89
11) Acrolein	6.24	56	52005	101.4736 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	84842	16.8503 ug/L	96
13) Acetone	6.34	43	18744	15.8009 ug/L	87
14) 1,1-Dichloroethene	6.56	61	99965	10.9304 ug/L	95
15) Tert-Butyl Alcohol	6.66	59	56349	171.7293 ug/L	95
16) Dimethyl Sulfide	6.81	62	96196	26.3379 ug/L	85
17) Iodomethane	7.06	142	59265	15.8001 ug/L	91
18) Methyl acetate	7.07	43	54456	13.8222 ug/L	95
19) Methylene Chloride	7.31	84	75472	15.9454 ug/L	80
20) Carbon Disulfide	7.36	76	187108	12.2206 ug/L	100
21) Acrylonitrile	7.50	53	26454	16.6323 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	210169	17.8030 ug/L	95
23) trans-1,2-Dichloroethene	7.75	96	77946	15.3995 ug/L	92
24) n-Hexane	7.82	57	105297	12.4902 ug/L	97
25) Diisopropyl ether	8.15	45	1837066	87.3288 ug/L	98
26) Vinyl Acetate	8.31	43	73482	10.9935 ug/L	98
27) 1,1-Dichloroethane	8.34	63	160354	15.7889 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	1490520	87.0547 ug/L	98
29) 2-Butanone	8.87	43	28830	16.0758 ug/L	93
30) Propionitrile	8.97	54	46405	88.3461 ug/L	99
31) 2,2-Dichloropropane	9.09	77	127067	15.9909 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	99878	17.8964 ug/L	91
33) Chloroform	9.35	83	174018	17.4480 ug/L	99
34) 1-Bromopropane	9.48	122	23460	23.9956 ug/L	99
35) Bromochloromethane	9.57	130	64818	19.5562 ug/L	85
36) Tetrahydrofuran	9.60	42	91952	72.6091 ug/L	90
38) 1,1,1-Trichloroethane	9.85	97	165597	16.8724 ug/L	97
39) Cyclohexane	9.88	56	161922	15.1382 ug/L	93
40) 1,1-Dichloropropene	10.04	75	114691	16.3663 ug/L	98
41) Carbon Tetrachloride	10.17	117	161998	16.9031 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	1149931	96.6552 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13082.D 8260WT.M Tue Jul 05 20:41:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13082.D Vial: 7
Acq On : 5 Jul 2016 20:19 Operator: JDS
Sample : WG575199-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 20:41:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	140231	17.3117 ug/L	97
45)	Benzene	10.38	78	329594	17.1806 ug/L	100
46)	Trichloroethene	11.09	130	129142	20.7106 ug/L	96
47)	Methylcyclohexane	11.17	83	136280	17.7091 ug/L	92
48)	1,2-Dichloropropane	11.29	63	97074	18.2799 ug/L	98
49)	1,4-Dioxane	11.56	88	5277	179.0847 ug/L	87
50)	Bromodichloromethane	11.57	83	141358	18.9615 ug/L	99
51)	Dibromomethane	11.66	93	49416	17.8572 ug/L	94
52)	2-Chloroethyl Vinyl Ether	11.84	63	45259	17.2924 ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	25341	17.1664 ug/L	97
54)	cis-1,3-Dichloropropene	12.17	75	153263	20.5542 ug/L	99
55)	Dimethyl Disulfide	12.42	79	79868	17.7998 ug/L	87
58)	Toluene	12.56	91	419026	19.0195 ug/L	100
59)	Ethyl Methacrylate	12.64	69	87618	18.6249 ug/L	83
60)	trans-1,3-Dichloropropene	12.73	75	130070	18.3932 ug/L	95
61)	1,1,2-Trichloroethane	12.94	97	77080	19.7303 ug/L	98
62)	2-Hexanone	12.86	43	42951	14.9696 ug/L	90
63)	1,3-Dichloropropane	13.21	76	128843	20.5373 ug/L	83
64)	Tetrachloroethene	13.34	164	99929	19.5046 ug/L	96
65)	Dibromochloromethane	13.59	129	121633	20.4125 ug/L	99
66)	1,2-Dibromoethane	13.82	107	74524	19.0400 ug/L	100
67)	1-Chlorohexane	13.89	91	134491	18.5157 ug/L	89
68)	Chlorobenzene	14.29	112	332854	20.6234 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	136389	20.8846 ug/L	99
70)	Ethylbenzene	14.31	106	165999	20.0576 ug/L	96
71)	m-,p-Xylene	14.39	106	406553	40.4074 ug/L	98
72)	o-Xylene	14.92	106	202548	20.6857 ug/L	96
73)	Styrene	14.95	104	338874	20.9470 ug/L	95
74)	Bromoform	15.43	173	70042	19.3940 ug/L	100
75)	Isopropylbenzene	15.31	105	535530	20.6810 ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.52	83	71826	17.8950 ug/L	97
79)	1,2,3-Trichloropropane	15.70	110	28697	19.2811 ug/L	86
80)	trans-1,4-Dichloro-2-Buten	15.74	53	17321	9.5635 ug/L #	14
81)	n-Propylbenzene	15.79	91	618279	20.7130 ug/L	97
82)	Bromobenzene	15.91	156	160721	20.5192 ug/L	88
83)	1,3,5-Trimethylbenzene	15.95	105	469315	20.6034 ug/L	98
84)	2-Chlorotoluene	16.05	91	427722	20.4580 ug/L	97
85)	4-Chlorotoluene	16.09	91	378690	20.2207 ug/L	97
86)	a-Methylstyrene	16.34	118	256680	21.3604 ug/L	96
87)	tert-Butylbenzene	16.39	134	103322	21.4100 ug/L	94
88)	1,2,4-Trimethylbenzene	16.44	105	478753	20.6402 ug/L	99
89)	sec-Butylbenzene	16.65	105	563310	20.5955 ug/L	99
90)	p-Isopropyltoluene	16.79	119	519522	20.6797 ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	316178	20.9005 ug/L	97
92)	1,4-Dichlorobenzene	17.10	146	323650	21.1069 ug/L	98
93)	n-Butylbenzene	17.28	91	426283	19.2562 ug/L	98
94)	1,2-Dichlorobenzene	17.57	146	292022	21.1907 ug/L	97
95)	1,2-Dibromo-3-Chloropropan	18.49	75	14581	16.5498 ug/L	89
96)	1,2,4-Trichlorobenzene	19.55	180	204340	20.2641 ug/L	97
97)	Hexachlorobutadiene	19.69	225	85684	19.2878 ug/L	96
98)	Naphthalene	19.90	128	331784	17.7265 ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	184214	19.9052 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13082.D Vial: 7
Acq On : 5 Jul 2016 20:19 Operator: JDS
Sample : WG575199-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 5 20:41 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

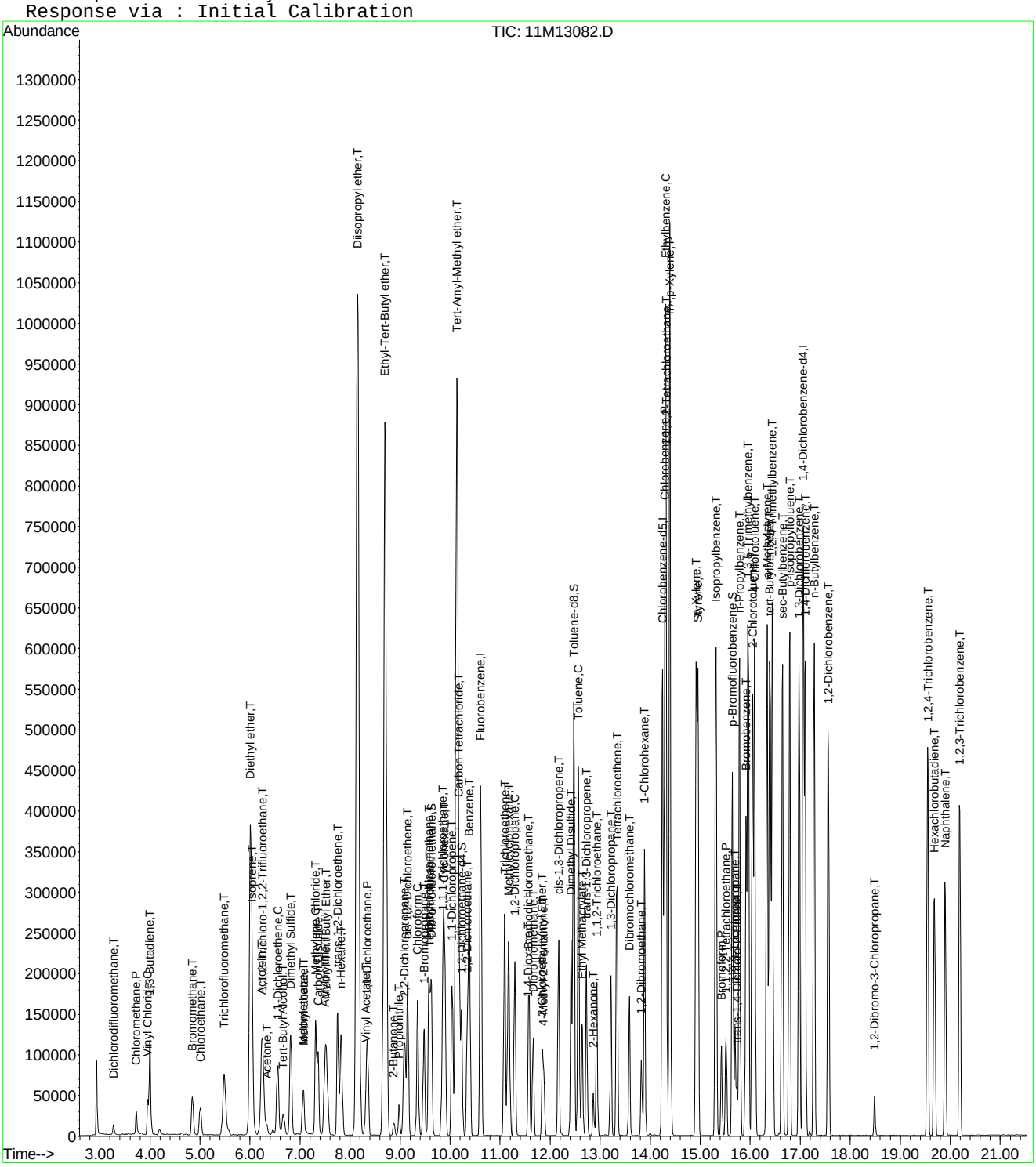

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/05/2016 22:02
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	15M18736
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	55.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW12DW-062416	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/05/2016 22:24
Collect Date:	06/24/2016 08:55	**Dilution:**	1	**File ID:**	15M18737
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	56.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW7-062416	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/06/2016 12:35
Collect Date:	06/24/2016 09:55	**Dilution:**	2	**File ID:**	15M18762
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	13.4		4.00	2.00	1.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	91.2	20	129	

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG574286
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/27/2016 14:01
SOP: EXB01 Revison 20
Spike Witness: NPH
Surr Solution: STD76628

TIME ON: 17:30 OFF: 11:35 ON: 16:50 OFF: 10:35

CH2CL2 Lot #: COA18982
Sodium Sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16061289-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
2	L16061289-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
3	L16061289-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
4	L16061289-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
5	L16061290-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
6	L16061290-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
7	L16061290-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
8	L16061290-06	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
9	L16061345-04	RS01		827-DIOX	<2>12	810 mL	.05 mL			1 mL	Colored
10	L16061345-05	MS01	L16061345-04	827-DIOX	<2>12	760 mL	.05 mL	.5 mL	STD75268	1 mL	Colored
11	L16061345-06	SD01	L16061345-04	827-DIOX	<2>12	810 mL	.05 mL	.5 mL	STD75268	1 mL	Colored
12	L16061345-08	SAMP		827-DIOX	<2>12	950 mL	.05 mL			1 mL	Transparent
13	L16061413-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
14	L16061450-04	SAMP		827-DIOX	<2>12	840 mL	.05 mL			1 mL	Colored
15	L16061450-05	SAMP		827-DIOX	<2>12	740 mL	.05 mL			1 mL	Transparent
16	L16061452-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
17	L16061452-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
18	L16061452-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
19	L16061453-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
20	L16061453-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
21	L16061453-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
22	WG574286-01	BLANK		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
23	WG574286-02	LCS		827-DIOXANE	<2>12	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
24	WG574286-03	REF	L16061345-04	827-DIOX	<2>12	810 mL	.05 mL			1 mL	Colored
25	WG574286-04	MS	L16061345-04	827-DIOX	<2>12	760 mL	.05 mL	.5 mL	STD75268	1 mL	Colored
26	WG574286-05	MSD	L16061345-04	827-DIOX	<2>12	810 mL	.05 mL	.5 mL	STD75268	1 mL	Colored

Analyst: Chelsea Davis

Reviewer: Chris Hill

EXTRACT - Modified 01/23/2009
PDF ID: 4831962
Report generated: 06/29/2016 18:18

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

Page: 1 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 063016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG574775

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18666	BAKEOUT	1	1		06/30/16 10:57
2	15M18667	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 11:17
3	15M18668	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 11:34
4	15M18669	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 12:17
5	15M18670	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 12:34
6	15M18671	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 13:23
7	15M18672	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 13:39
8	15M18673	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 14:24
9	15M18674	WG574781-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/30/16 14:42
10	15M18675	WG574543-01 BLANK 6/29	7	1	SOIL	06/30/16 15:04
11	15M18676	WG574543-02 LCS 6/29	7	1	SOIL	06/30/16 15:27
12	15M18677	WG574543-03 LCSDUP 6/29	7	1	SOIL	06/30/16 15:49
13	15M18678	WG574286-01 BLANK 6/27	1	1		06/30/16 16:12
14	15M18679	WG574286-02 LCS 6/27	1	1		06/30/16 16:34
15	15M18680	L16060637-02 RE 827-DIOX	7	1	SOIL	06/30/16 16:57
16	15M18681	L16060756-01 RE 827-DIOX	7	1	SOIL	06/30/16 17:19
17	15M18682	L16060756-02 RE 827-DIOX	7	1	SOIL	06/30/16 17:42
18	15M18683	L16060756-03 RE 827-DIOX	7	1	SOIL	06/30/16 18:05
19	15M18684	L16060809-01 RE 827-DIOX	7	1	SOIL	06/30/16 18:28
20	15M18685	L16060809-02 RE 827-DIOX	7	1	SOIL	06/30/16 18:50
21	15M18686	L16060930-01 RE 827-DIOX	7	1	SOIL	06/30/16 19:13
22	15M18687	L16060930-02 RE 827-DIOX	7	1	SOIL	06/30/16 19:35
23	15M18688	L16061413-01 827-DIOX	1	1		06/30/16 19:58
24	15M18689	L16061213-01 RE 827-DIOX	7	1	SOIL	06/30/16 20:21
25	15M18690	L16061213-02 RE 827-DIOX	7	1	SOIL	06/30/16 20:43
26	15M18691	L16061213-03 RE 827-DIOX	7	1	SOIL	06/30/16 21:06
27	15M18692	L16061213-04 RE 827-DIOX	7	1	SOIL	06/30/16 21:28
28	15M18693	L16061213-05 RE 827-DIOX	7	1	SOIL	06/30/16 21:51
29	15M18694	L16061213-06 RE 827-DIOX	7	1	SOIL	06/30/16 22:13
30	15M18695	L16061450-01 827-DIOX	7	1	SOIL	06/30/16 22:36
31	15M18696	L16061450-02 827-DIOX	7	1	SOIL	06/30/16 22:59
32	15M18697	L16061450-03 827-DIOX	7	1	SOIL	06/30/16 23:22
33	15M18698	L16061289-01 827-DIOX	1	1		06/30/16 23:44

Page: 1 Approved: 06-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 063016
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG574775

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18699	L16061289-02 827-DIOX	1	1		07/01/16 00:06
35	15M18700	L16061289-03 827-DIOX	1	1		07/01/16 00:29
36	15M18701	L16061289-05 827-DIOX	1	1		07/01/16 00:51
37	15M18702	L16061290-01 827-DIOX	1	1		07/01/16 01:14
38	15M18703	L16061290-02 827-DIOX	1	1		07/01/16 01:36
39	15M18704	L16061290-05 827-DIOX	1	1		07/01/16 01:59
40	15M18705	BAKEOUT	1	1		07/01/16 02:21
41	15M18706	BAKEOUT	1	1		07/01/16 02:43
42	15M18707	BAKEOUT	1	1		07/01/16 03:06

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	Rerun DFTPP, ion ratio failed.			
3				
	Rerun DFTPP, ion ratio failed. Performed a quicktune.			
4				
	Rerun DFTPP, ion ratio failed. Changed the liner.			
5				
	Rerun DFTPP, ion ratio failed. PCP tailing >2. Changed gold seal and clipped column.			
6				
	Rerun DFTPP, ion ratio failed. Retuned.			
7				
	Rerun DFTPP, ion ratio failed. Retuned.			
31				
	L16061450-02 827-DIOX surrogate recovery is less than 10%. Needs re-extracted.			
33	X	10	Surrogate standard failure	
	L16061289-01 827-DIOX surrogate is high due to SMI.			
38	X	5	Over Calibration Range	
	L16061290-02 827-DIOX			

Page: 2 Approved: 06-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments: File 15M18715 does not exist.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18708	BAKEOUT	1	1		07/05/16 10:31
2	15M18709	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 10:51
3	15M18710	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 11:11
4	15M18711	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 11:33
5	15M18712	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 12:30
6	15M18713	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 12:47
7	15M18714	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 14:14
8	15M18716	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 14:33
9	15M18717	WG575159-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	07/05/16 14:51
10	15M18718	WG574706-01 BLANK 6/30	1	1		07/05/16 15:14
11	15M18719	WG574706-02 LCS 6/30	1	1		07/05/16 15:38
12	15M18720	WG574706-03 LCSDUP 6/30	1	1		07/05/16 16:01
13	15M18721	WG574873-01 BLANK 7/1	7	1	SOIL	07/05/16 16:23
14	15M18722	WG574873-02 LCS 7/1	7	1	SOIL	07/05/16 16:45
15	15M18723	WG574873-03 LCSDUP 7/1	7	1	SOIL	07/05/16 17:07
16	15M18724	L16061290-02 5X 827-DIOX	1	5		07/05/16 17:29
17	15M18725	L16061289-01 10X 827-DIOX	1	10		07/05/16 17:52
18	15M18726	L16061227-01 RE 827-DIOX	1	10		07/05/16 18:15
19	15M18727	L16061290-06 827-DIOX	1	1		07/05/16 18:37
20	15M18728	L16061345-08 827-DIOX	1	1		07/05/16 19:00
21	15M18729	L16061345-04 REF 827-DIOX	1	1		07/05/16 19:23
22	15M18730	L16061345-05 MS 827-DIOX	1	1		07/05/16 19:45
23	15M18731	L16061345-06 MSD 827-DIOX	1	1		07/05/16 20:08
24	15M18732	L16061345-03 RE 827-DIOX	7	1	SOIL	07/05/16 20:31
25	15M18733	L16061345-01 RE 827-DIOX	7	1	SOIL	07/05/16 20:54
26	15M18734	L16061560-01 827-DIOX	1	1		07/05/16 21:16
27	15M18735	L16061648-01 827-DIOX	1	1		07/05/16 21:39
28	15M18736	L16061452-01 827-DIOX	1	1		07/05/16 22:02
29	15M18737	L16061452-02 827-DIOX	1	1		07/05/16 22:24
30	15M18738	L16061452-03 827-DIOX	1	1		07/05/16 22:46
31	15M18739	L16061453-01 827-DIOX	1	1		07/05/16 23:09
32	15M18740	L16061453-02 827-DIOX	1	1		07/05/16 23:32
33	15M18741	L16061453-03 827-DIOX	1	1		07/05/16 23:54

Page: 1 Approved: 11-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18742	L16061450-04 827-DIOX	1	1		07/06/16 00:17
35	15M18743	L16061450-05 827-DIOX	1	1		07/06/16 00:39
36	15M18744	BAKEOUT	1	1		07/06/16 01:02
37	15M18745	BAKEOUT	1	1		07/06/16 01:25
38	15M18746	BAKEOUT	1	1		07/06/16 01:47
39	15M18747	BAKEOUT	1	1		07/06/16 02:10
40	15M18748	BAKEOUT	1	1		07/06/16 02:32
41	15M18749	BAKEOUT	1	1		07/06/16 02:55
42	15M18750	BAKEOUT	1	1		07/06/16 03:17
43	15M18751	BAKEOUT	1	1		07/06/16 03:40
44	15M18752	BAKEOUT	1	1		07/06/16 04:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	Rerun DFTPP, ion ratio fails.			
3				
	Rerun DFTPP, ion ratio fails. Performed a quicktune.			
4				
	Rerun DFTPP, ion ratio fails. Changed the liner.			
5				
	Rerun DFTPP, ion ratio fails. Retuned.			
6				
	Rerun DFTPP, PCP tailing >2.			
7				
	Rerun DFTPP, PCP tailing >2. Clipping the column.			
13				
	WG574873-01 BLANK 7/1 surrogate is low.			
17				
	L16061289-01 10X 827-DIOX confirms high surrogate recovery; DNR. Surrogate is high due to SMI. Sample is not being re-extracted.			
18				
	L16061227-01 RE 827-DIOX surrogate recovery is good; does not confirm original extraction.			
21	X	20	Over Calibration Range	
	L16061345-04 REF			
22				
	L16061345-05 MS 827-DIOX DNR-sample is spiked for 827-SPE-DIOX			

Page: 2 Approved: 11-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
23				
	L16061345-06 MSD 827-DIOX DNR-sample is spiked for 827-SPE-DIOX			
24				
	L16061345-03 RE 827-DIOX confirms low surrogate recovery.			
25				
	L16061345-01 RE 827-DIOX confirms low surrogate recovery.			
26	X	5	Over Calibration Range	
	L16061560-01 827-DIOX			
30	X	2	Over Calibration Range	
	L16061452-03 827-DIOX			
31	X	10	Surrogate standard failure	
	L16061453-01 surrogate high due to SMI. Not re-extracting.			

Page: 3 Approved: 11-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070616
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045

Internal STD: STD76976 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
17	15M18753	BAKEOUT	1	1		07/06/16 08:49
1	15M18754	WG575269-01 5PPM DFTPP STD	1	1	STD75016	07/06/16 09:09
2	15M18755	WG575269-01 5PPM DFTPP STD	1	1	STD75016	07/06/16 09:28
3	15M18756	WG575269-01 5PPM DFTPP STD	1	1	STD75016	07/06/16 09:55
4	15M18757	WG575269-01 5PPM DFTPP STD	1	1	STD75016	07/06/16 10:43
5	15M18758	WG575269-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	07/06/16 11:01
6	15M18759	WG574873-01 BLANK RR	7	1	SOIL	07/06/16 11:27
7	15M18760	L16061345-04 REF 20X 827-DIOX	1	20		07/06/16 11:49
8	15M18761	L16061560-01 5X 827-DIOX	1	5		07/06/16 12:12
9	15M18762	L16061452-03 2X 827-DIOX	1	2		07/06/16 12:35
10	15M18763	L16061453-01 10X 827-DIOX	1	10		07/06/16 12:58
18	15M18764	BAKEOUT	1	1		07/06/16 13:20
19	15M18765	L16061345-04 REF 40X 827-DIOX	1	40		07/06/16 13:43
12	15M18766	10PPM PAHL STD FULL SCAN	1	1		07/06/16 14:04
13	15M18767	WG575382-01 5PPM DFTPP STD	1	1	STD75016	07/06/16 15:15
14	15M18768	WG575382-01 5PPM DFTPP STD	1	1	STD75016	07/06/16 15:35
15	15M18769	WG575382-01 5PPM DFTPP STD	1	1	STD75016	07/06/16 15:54
16	15M18771	RINSE	1	1		07/06/16 16:36

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1				
	Rerun DFTPP, ion ratio failed.			
2				
	Rerun DFTPP, benzidine tailing >2. Tightened column nut.			
3				
	Rerun DFTPP, benzidine tailing >2. Clipped 5cm from the column.			
6				
	WG574873-01 BLANK RR DNR-confirms low surrogate recovery.			
7	X	40	Over Calibration Range	
	L16061345-04 REF 20X 827-DIOX DNR			
10				
	L16061453-01 10X 827-DIOX DNR-confirms high surrogate recovery.			

Page: 1 Approved: 11-JUL-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 76103
Analytical Workgroups: L16060637,0756,0809,0930,1213,1450,1289,1290,1413

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 05-JUL-2016

Secondary Reviewer: 06-JUL-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUL-06-2016 10:46:55

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 76120
Analytical Workgroups: L16061345, 061227, 1560, 1648, 1290, 1450, 1452, 1453

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 06-JUL-2016

Secondary Reviewer: 11-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-11-2016 11:01:30

Microbac Laboratories Inc.

Data Checklist

Date: 06-JUL-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 76152
Analytical Workgroups: L16061345, L16061452, L16061560

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 07-JUL-2016

Secondary Reviewer: 11-JUL-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUL-11-2016 11:06:44

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG574772

Login Number: L16061452

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW12SW-062416	01	06/24/16					06/27/2016	3.3	7		07/05/16	8.3	40	
18CPTMW12DW-062416	02	06/24/16					06/27/2016	3.2	7		07/05/16	8.3	40	
MW7-062416	03	06/24/16					06/27/2016	3.2	7		07/06/16	8.9	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4840897
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061452
Instrument Id: HPMS15
Workgroup (AAB#): WG574772

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16061452-01	1.00	01	55.4
L16061452-02	1.00	01	56.5
L16061452-03	2.00	DL01	91.2
WG574286-01	1.00	01	43.4
WG574286-02	1.00	01	48.9

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4840905
Report generated: 07/07/2016 11:45

METHOD BLANK SUMMARY

Login Number: L16061452
Blank File ID: 15M18678
Prep Date: 06/27/16 14:01
Analyzed Date: 06/30/16 16:12
Analyst: MES

Work Group: WG574772
Blank Sample ID: WG574286-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574286-02	15M18679	06/30/16 16:34	01
18CPTMW12SW-062416	L16061452-01	15M18736	07/05/16 22:02	01
18CPTMW12DW-062416	L16061452-02	15M18737	07/05/16 22:24	01
MW7-062416	L16061452-03	15M18762	07/06/16 12:35	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4848540
Report generated 07/12/2016 08:35

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061452 Prep Date: 06/27/16 14:01 Sample ID: WG574286-01
Instrument ID: HPMS15 Run Date: 06/30/16 16:12 Prep Method: 3520C
File ID: 15M18678 Analyst: MES Method: 8270D
Workgroup (AAB#): WG574772 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	43.4	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4840898
07-JUL-2016 11:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061452 Run Date: 06/30/2016 Sample ID: WG574286-02
Instrument ID: HPMS15 Run Time: 16:34 Prep Method: 3520C
File ID: 15M18679 Analyst: MES Method: 8270D
Workgroup (AAB#): WG574772 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75256 Cal ID: HPMS15-21-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,4-Dioxane	5.00	2.78	55.6	30 - 104	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	48.9	20 - 129	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4840899
Report generated: 07/07/2016 11:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061452
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4840902
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061452
Instrument: HPMS15
Analyst: MES
Workgroup: WG574781

Tune ID: WG574781-01
Run Date: 06/30/2016
Run Time: 14:24
File ID: 15M18673
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	44.6	24370	PASS
68.0	69.0	0	2.00	1.41	352	PASS
69.0	198	0	100	45.7	24921	PASS
70.0	69.0	0	2.00	0.959	239	PASS
127	198	40.0	60.0	57.0	31104	PASS
197	198	0	1.00	0.291	159	PASS
198	198	100	100	100	54589	PASS
199	198	5.00	9.00	7.03	3838	PASS
275	198	10.0	30.0	24.8	13523	PASS
365	198	1.00	100	2.78	1520	PASS
441	443	0.0100	100	75.2	5686	PASS
442	198	40.0	100	70.8	38669	PASS
443	442	17.0	23.0	19.5	7559	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574781-02	CCV	01	06/30/2016 14:42	
WG574286-01	BLANK	01	06/30/2016 16:12	
WG574286-02	LCS	01	06/30/2016 16:34	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4840902
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061452
Instrument: HPMS15
Analyst: MES
Workgroup: WG575159

Tune ID: WG575159-01
Run Date: 07/05/2016
Run Time: 14:33
File ID: 15M18716
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	46.2	37745	PASS
68.0	69.0	0	2.00	1.95	734	PASS
69.0	198	0	100	46.2	37667	PASS
70.0	69.0	0	2.00	0.337	127	PASS
127	198	40.0	60.0	57.5	46941	PASS
197	198	0	1.00	0.380	310	PASS
198	198	100	100	100	81613	PASS
199	198	5.00	9.00	7.55	6162	PASS
275	198	10.0	30.0	24.6	20072	PASS
365	198	1.00	100	2.93	2392	PASS
441	443	0.0100	100	70.8	8479	PASS
442	198	40.0	100	73.3	59805	PASS
443	442	17.0	23.0	20.0	11980	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575159-02	CCV	01	07/05/2016 14:51	
L16061452-01	18CPTMW12SW-062416	01	07/05/2016 22:02	
L16061452-02	18CPTMW12DW-062416	01	07/05/2016 22:24	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4840902
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061452
Instrument: HPMS15
Analyst: MES
Workgroup: WG575269

Tune ID: WG575269-01
Run Date: 07/06/2016
Run Time: 10:43
File ID: 15M18757
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	48.8	33792	PASS
68.0	69.0	0	2.00	0.927	307	PASS
69.0	198	0	100	47.8	33107	PASS
70.0	69.0	0	2.00	0.390	129	PASS
127	198	40.0	60.0	59.4	41184	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	69301	PASS
199	198	5.00	9.00	7.21	4997	PASS
275	198	10.0	30.0	23.4	16187	PASS
365	198	1.00	100	2.72	1882	PASS
441	443	0.0100	100	72.2	6174	PASS
442	198	40.0	100	60.3	41784	PASS
443	442	17.0	23.0	20.5	8552	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575269-02	CCV	01	07/06/2016 11:01	
L16061452-03	MW7-062416	DL01	07/06/2016 12:35	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4840902
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061452
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4840900
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061452

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4840900
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061452
Analytical Method: 8270D

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4840900
Report generated 07/07/2016 11:45

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061452 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4840901
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574781-02
Instrument ID: HPMS15
Run Time: 14:42
Method: 8270D
File ID: 15M18674
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG574772
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5210	ug/L	0.319	4.14	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4840903
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/05/2016
Sample ID: WG575159-02
Instrument ID: HPMS15
Run Time: 14:51
Method: 8270D
File ID: 15M18717
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG574772
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5230	ug/L	0.320	4.63	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4840903
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575269-02
Instrument ID: HPMS15
Run Time: 11:01
Method: 8270D
File ID: 15M18758
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG574772
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5560	ug/L	0.341	11.3	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4840903
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061452
Instrument ID: HPMS15
Workgroup (AAB#): WG574772

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16061452-01	1.00	01	32054
L16061452-02	1.00	01	31996
L16061452-03	2.00	DL01	26788
WG574286-01	1.00	01	28516
WG574286-02	1.00	01	22815

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4840904
Report generated 07/07/2016 11:45

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18736.D
Acq On : 5 Jul 2016 22:02
Operator : MES
Sample : L16061452-01 827-DIOX
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jul 06 08:13:25 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.867	152	32054	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.771	96	36502	2.7675	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	55.40%	
4) Nitrobenzene-d5	7.372	82	3271	0.0966	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.00%	
5) 2-Fluorobiphenyl	8.853	172	387	0.0045	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.078	244	1179	0.0143	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	2013	0.2053	ug/L #	48

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18736.D
Acq On : 5 Jul 2016 22:02
Operator : MES
Sample : L16061452-01 827-DIOX
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jul 06 08:13:25 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

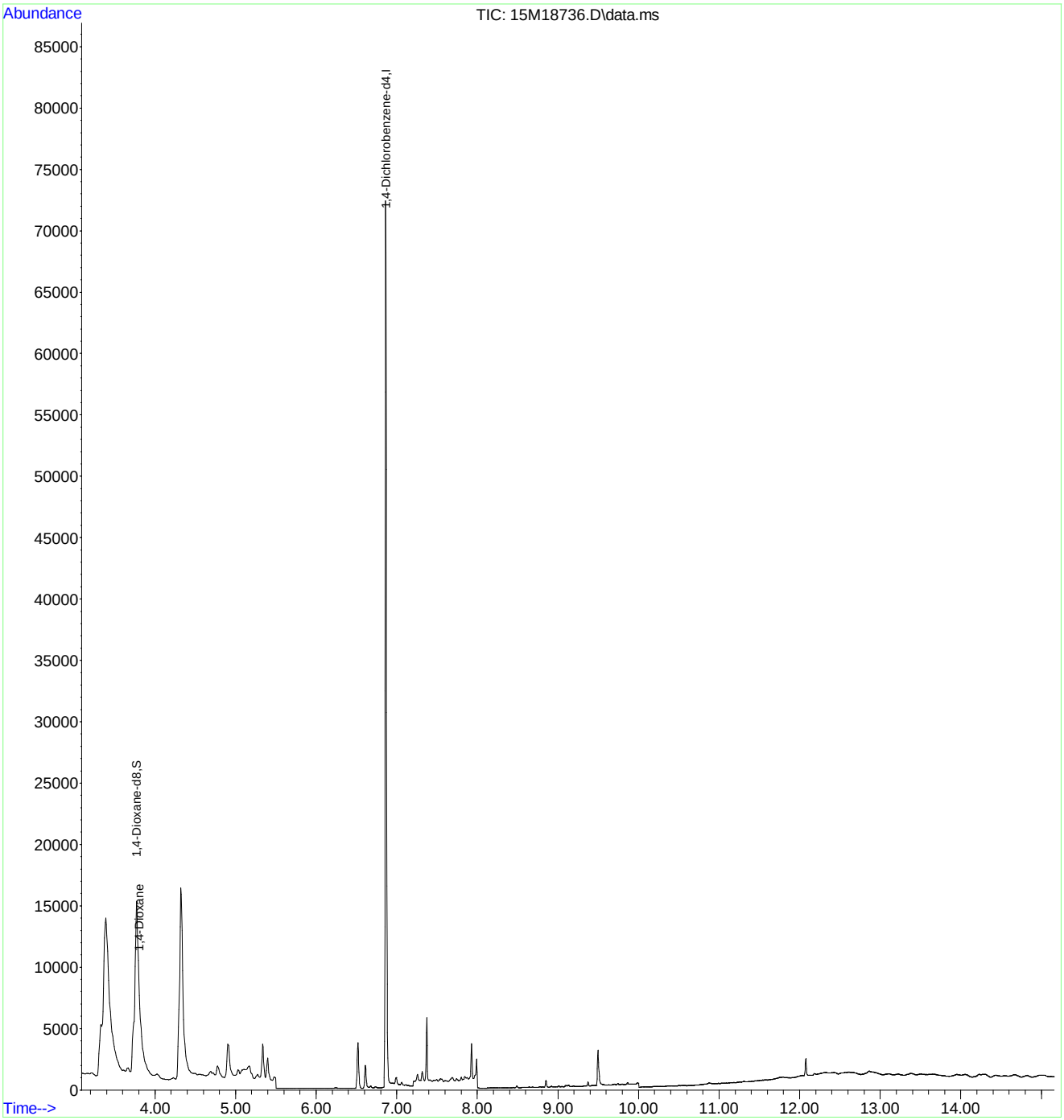

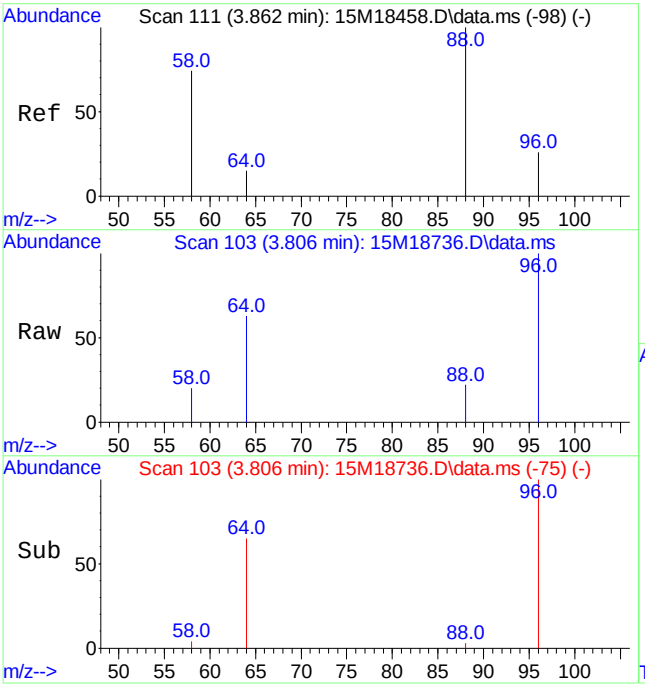

#2
1,4-Dioxane
Concen: 0.21 ug/L
RT: 3.806 min Scan# 103
Delta R.T. -0.014 min
Lab File: 15M18736.D
Acq: 5 Jul 2016 22:02

Tgt Ion: 58 Resp: 2013

Ion	Ratio	Lower	Upper
58	100		
88	100.0	103.1	240.7#

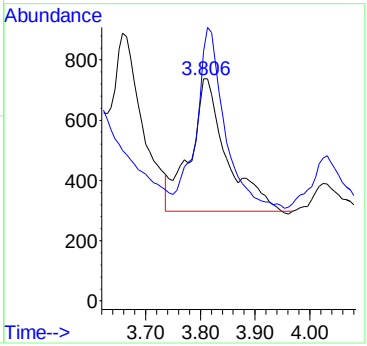

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18737.D
Acq On : 5 Jul 2016 22:24
Operator : MES
Sample : L16061452-02 827-DIOX
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jul 06 08:13:28 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.866	152	31996	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.770	96	37214	2.8266	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	56.60%	
4) Nitrobenzene-d5	7.372	82	2854	0.0844	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.60%	
5) 2-Fluorobiphenyl	8.852	172	230	0.0027	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.096	244	2177	0.0265	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.60%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18737.D
Acq On : 5 Jul 2016 22:24
Operator : MES
Sample : L16061452-02 827-DIOX
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jul 06 08:13:28 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

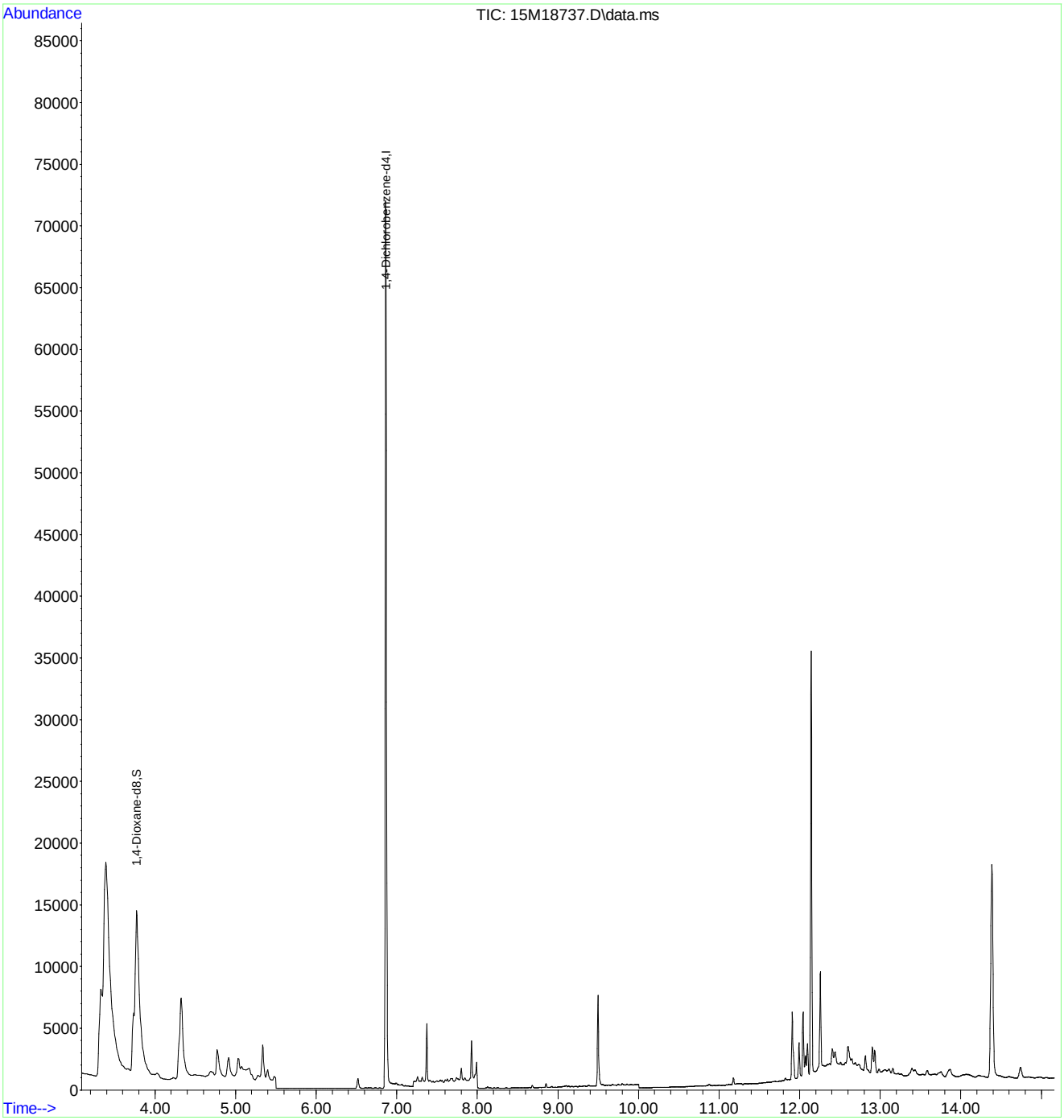

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070616\
Data File : 15M18762.D
Acq On : 6 Jul 2016 12:35
Operator : MES
Sample : L16061452-03 2X 827-DIOX
Misc : 1,2
ALS Vial : 6 Sample Multiplier: 2

Quant Time: Jul 06 13:17:03 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.855	152	26788	1.0000	ug/mL	#-0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.721	96	25119	4.5576	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	91.20%	
4) Nitrobenzene-d5	7.366	82	1371	0.0969	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.00%	
5) 2-Fluorobiphenyl	8.849	172	80	0.0022	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.000	244	7	0.0002	ug/L	-0.09
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.756	58	54889	6.6969	ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070616\
Data File : 15M18762.D
Acq On : 6 Jul 2016 12:35
Operator : MES
Sample : L16061452-03 2X 827-DIOX
Misc : 1,2
ALS Vial : 6 Sample Multiplier: 2

Quant Time: Jul 06 13:17:03 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

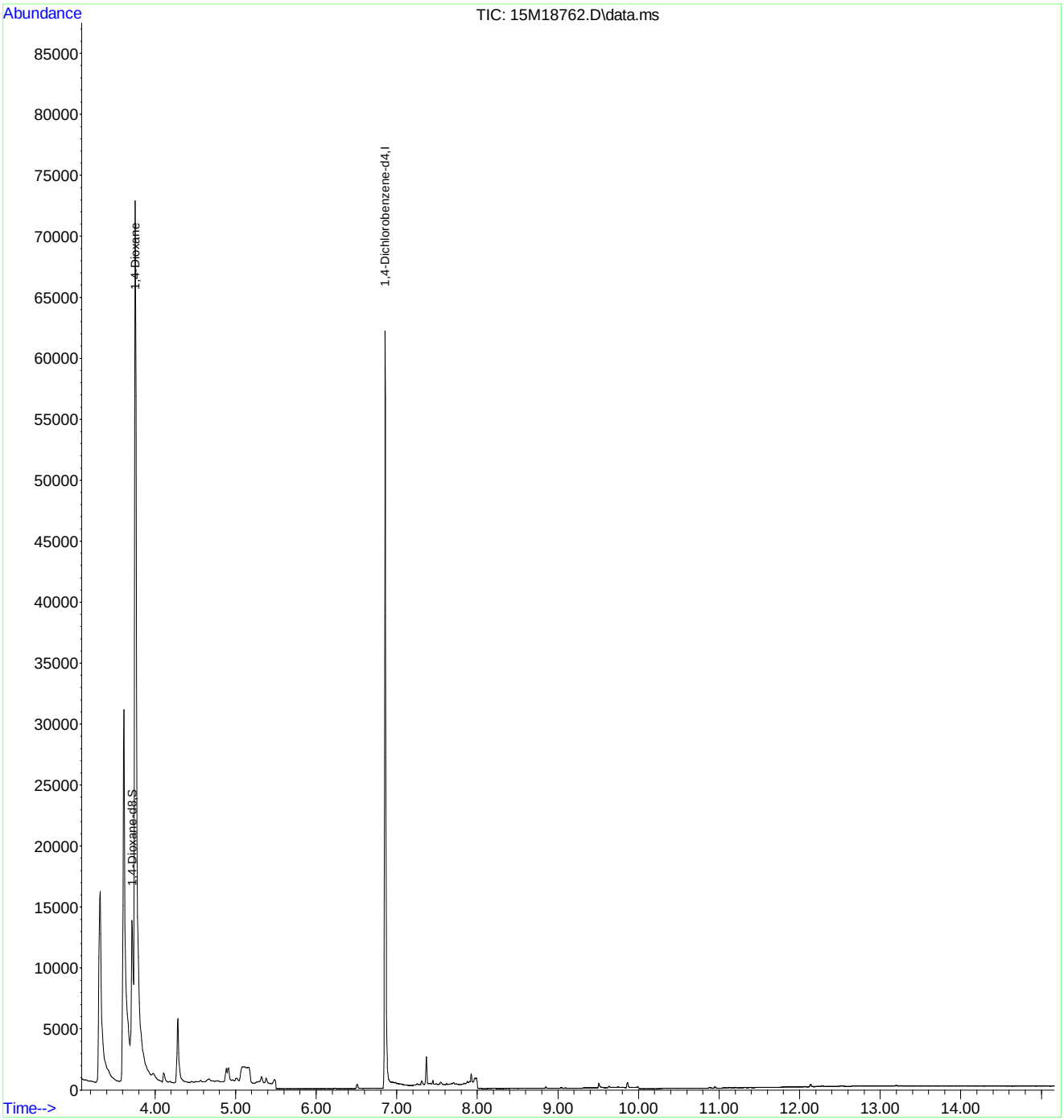

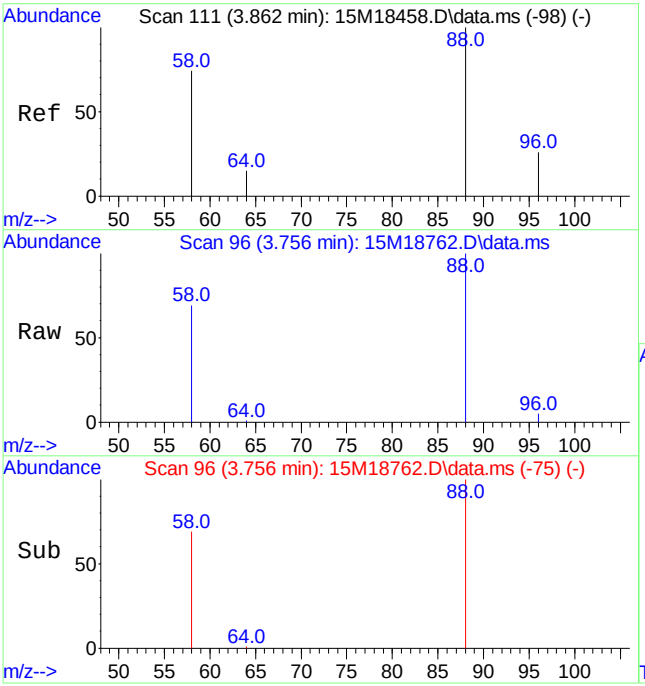

#2
1,4-Dioxane
Concen: 6.70 ug/L
RT: 3.756 min Scan# 96
Delta R.T. -0.063 min
Lab File: 15M18762.D
Acq: 6 Jul 2016 12:35

Tgt Ion: 58 Resp: 54889

Ion	Ratio	Lower	Upper
58	100		
88	145.2	103.1	240.7

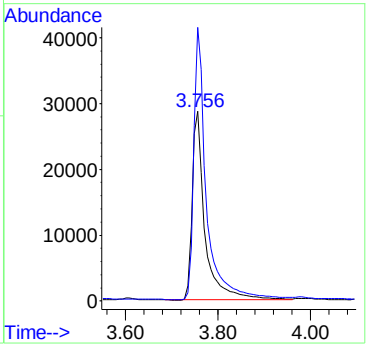

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 10:23:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	60	0.00
2		1,4-Dioxane	0.325	0.307	5.5	57	-0.03
3	S	1,4-Dioxane-d8	0.419	0.417	0.5	60	-0.04
4	S	Nitrobenzene-d5	0.904	1.128	-24.8	69	0.00
5	S	2-Fluorobiphenyl	2.613	2.691	-3.0	63	0.00
6	S	p-Terphenyl-d14	2.562	2.622	-2.3	61	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 10:23:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	60	0.00
2	1,4-Dioxane	5.000	4.721	5.6	57	-0.03
3 S	1,4-Dioxane-d8	5.000	4.979	0.4	60	-0.04
4 S	Nitrobenzene-d5	5.000	5.474	-9.5	69	0.00
5 S	2-Fluorobiphenyl	5.000	5.150	-3.0	63	0.00
6 S	p-Terphenyl-d14	5.000	5.115	-2.3	61	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

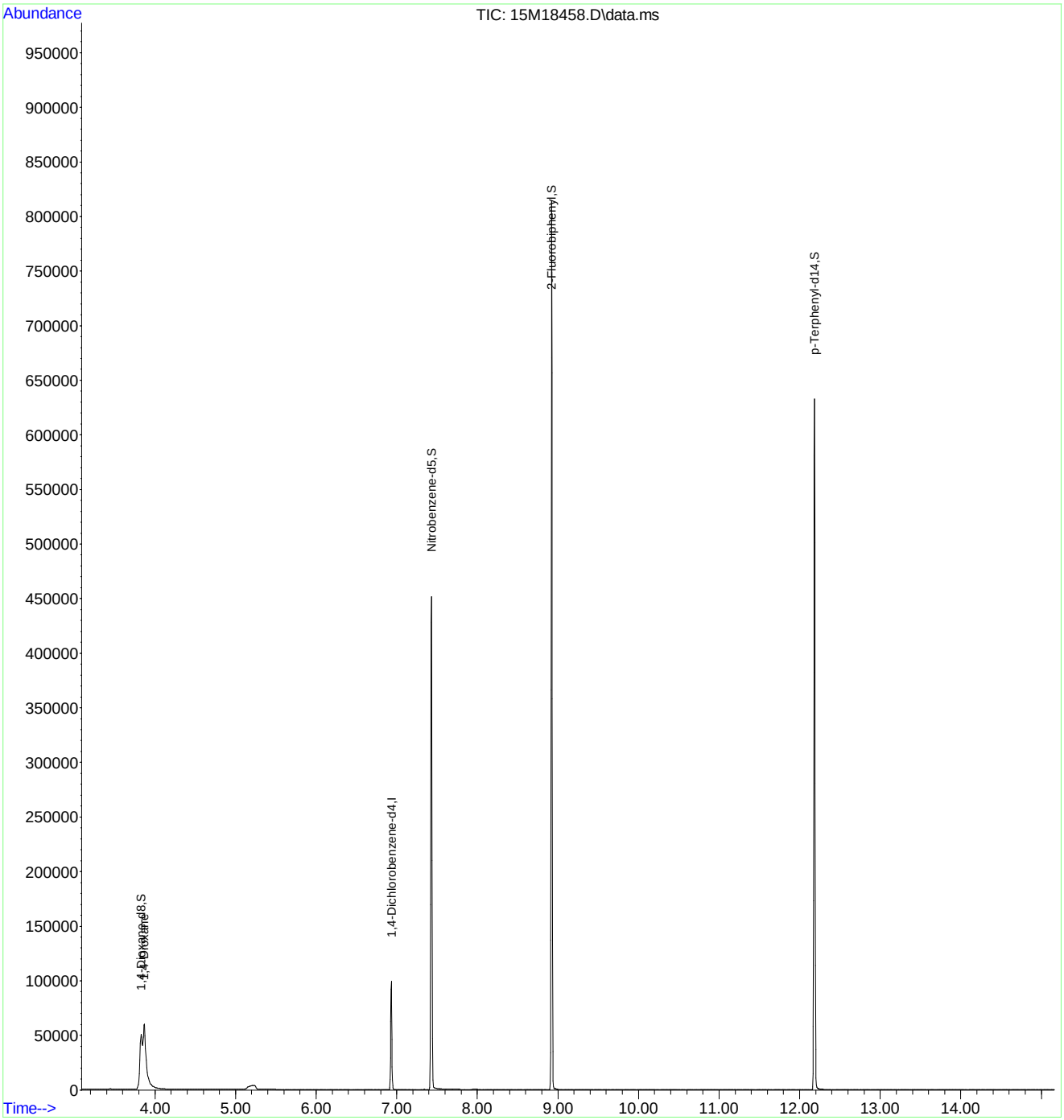

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

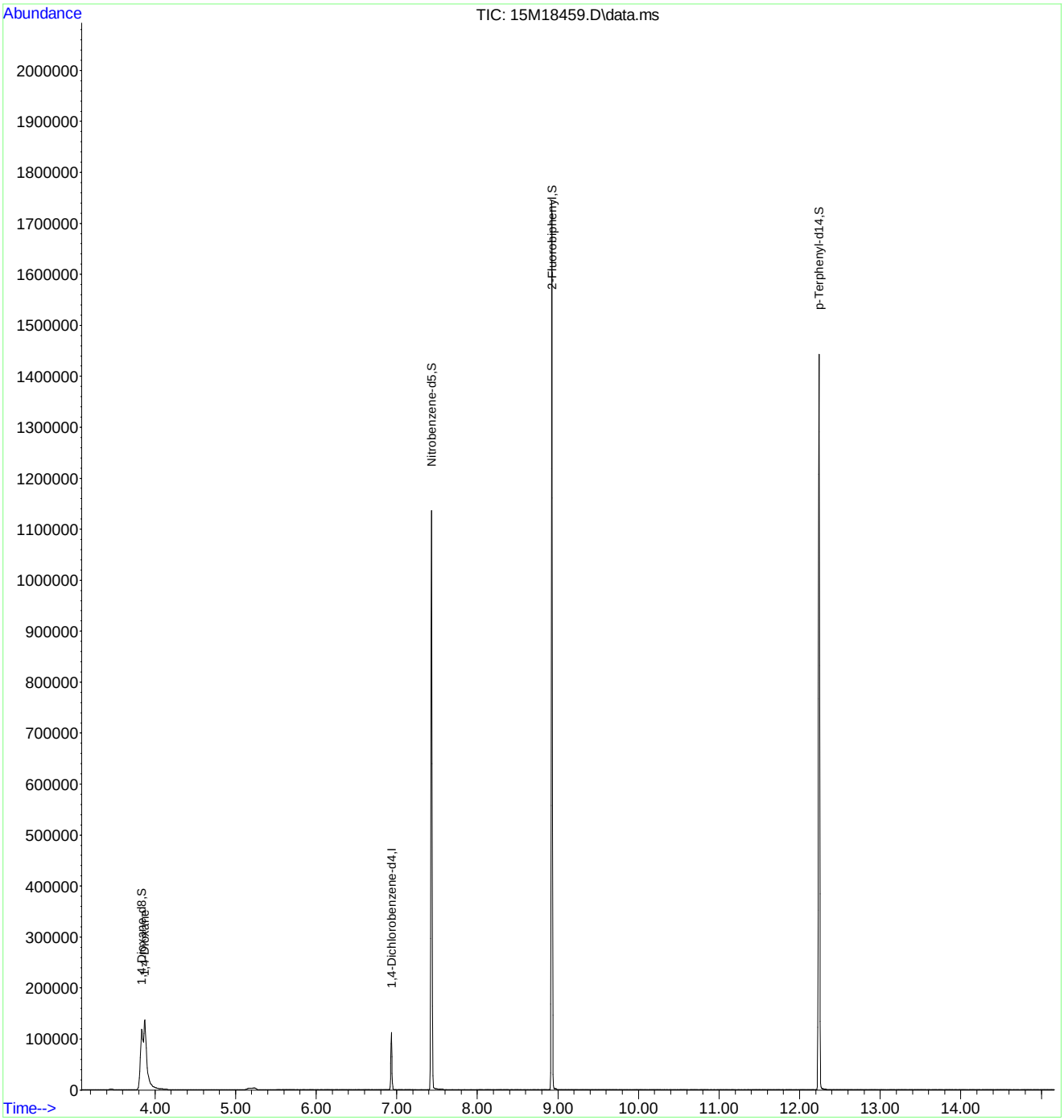

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

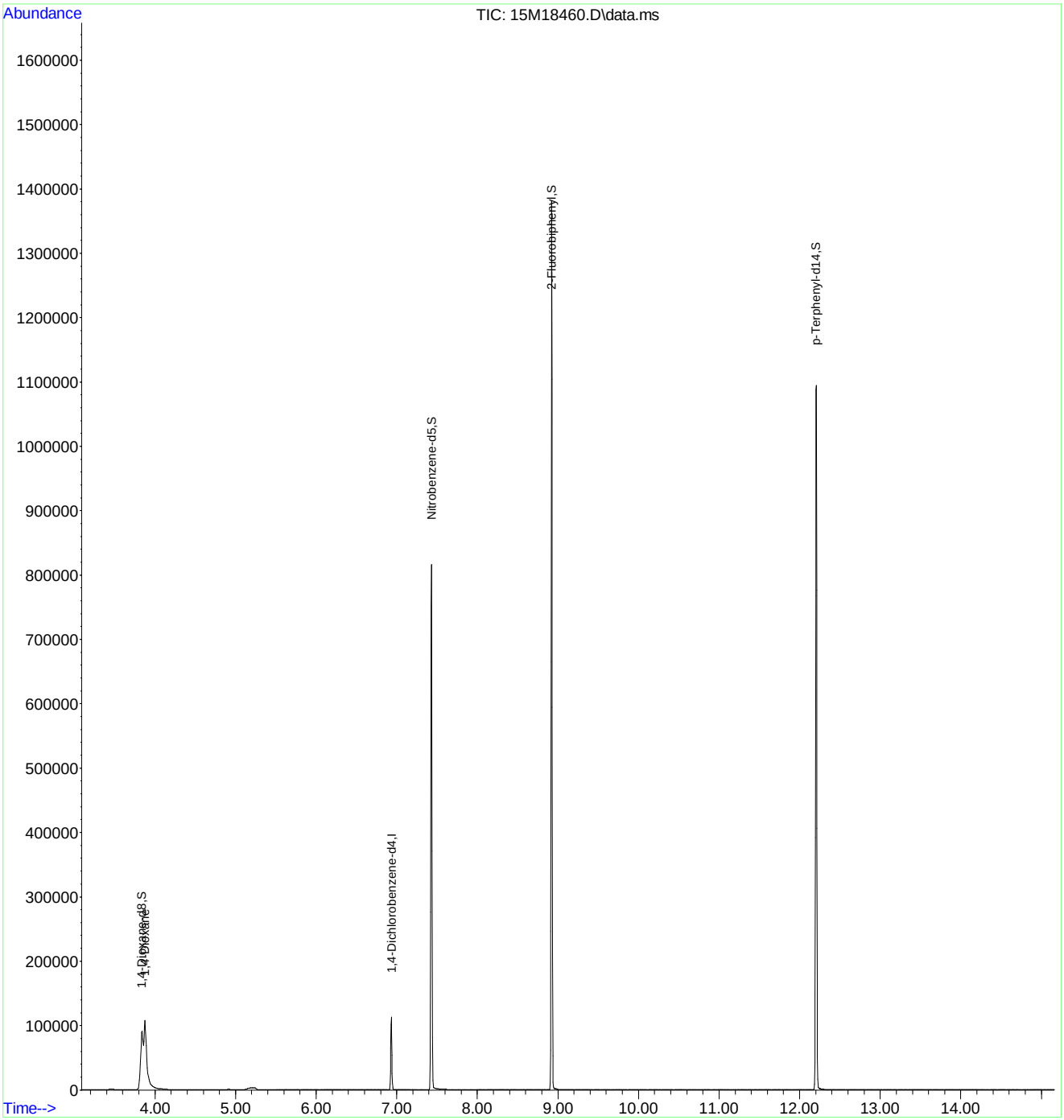

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406 ug/L	0.00
Spiked Amount 5.000			Recovery	= 48.80%	
4) Nitrobenzene-d5	7.431	82	88869	2.3714 ug/L	0.00
Spiked Amount 5.000			Recovery	= 47.40%	
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579 ug/L	0.00
Spiked Amount 5.000			Recovery	= 49.20%	
6) p-Terphenyl-d14	12.199	244	218191	2.3930 ug/L	0.02
Spiked Amount 5.000			Recovery	= 47.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259 ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

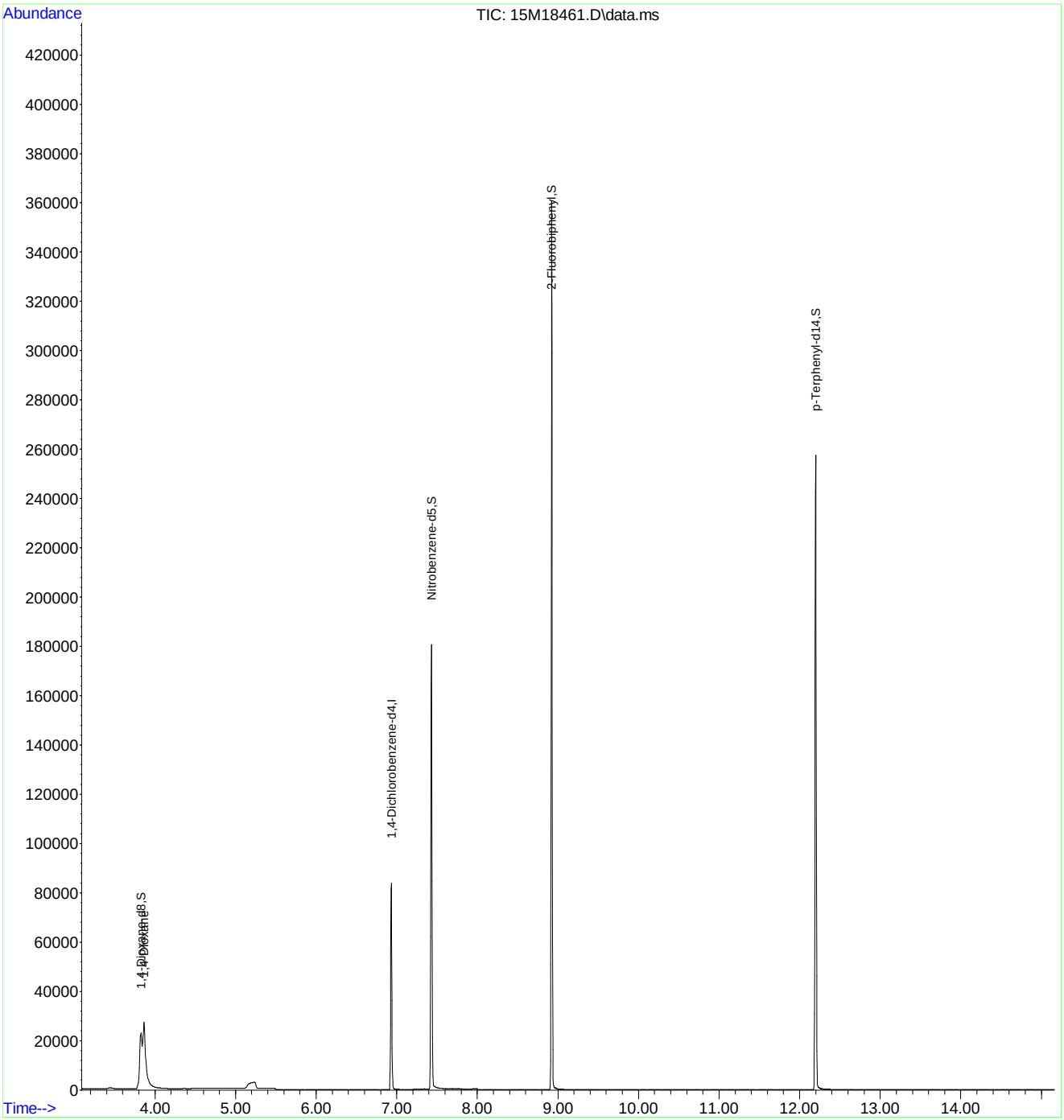

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607	ug/L	0.01
Spiked Amount 5.000			Recovery	=	19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776	ug/L	0.00
Spiked Amount 5.000			Recovery	=	17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612	ug/L	0.00
Spiked Amount 5.000			Recovery	=	19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208	ug/L	0.02
Spiked Amount 5.000			Recovery	=	18.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

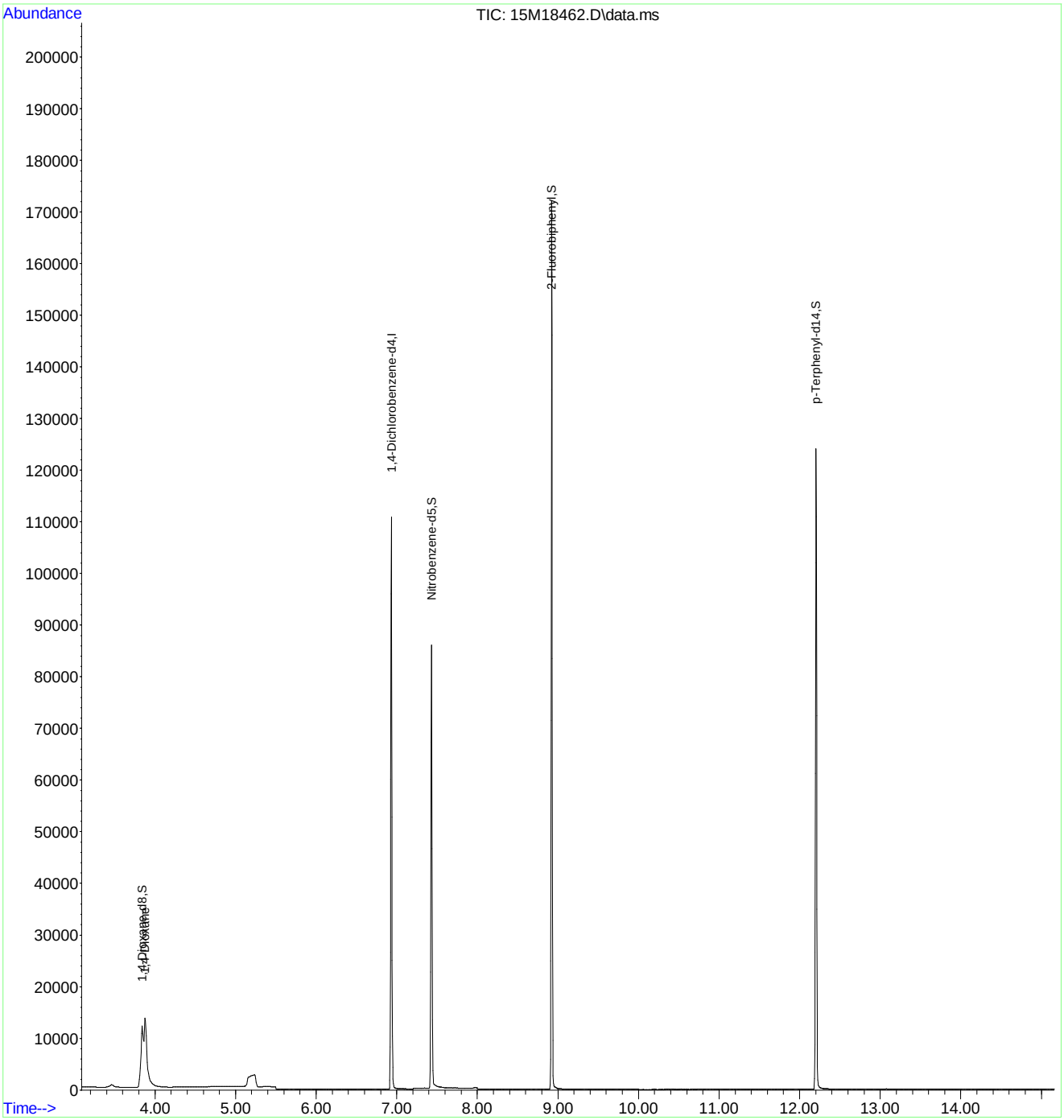

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

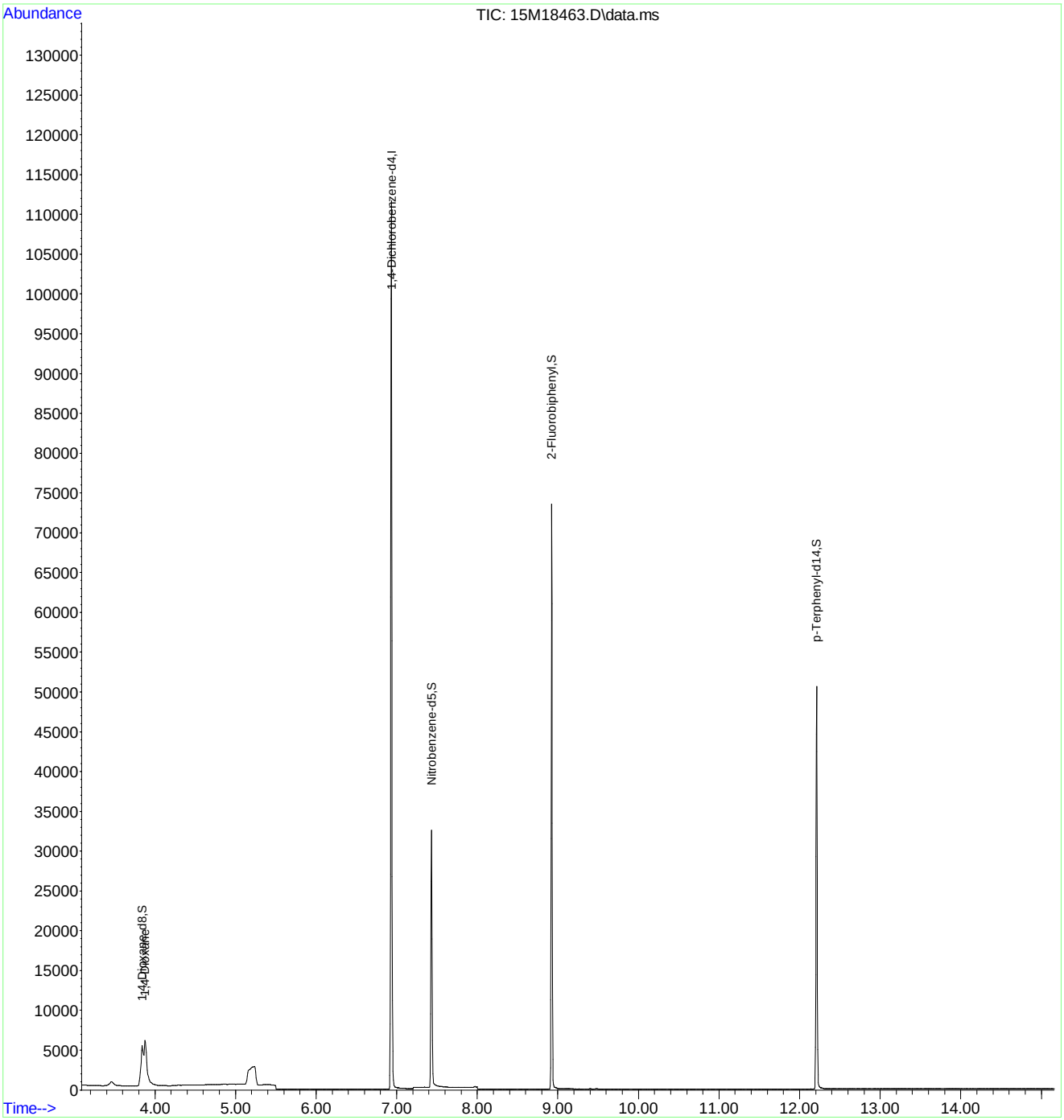

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2		1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3	S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4	S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5	S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6	S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

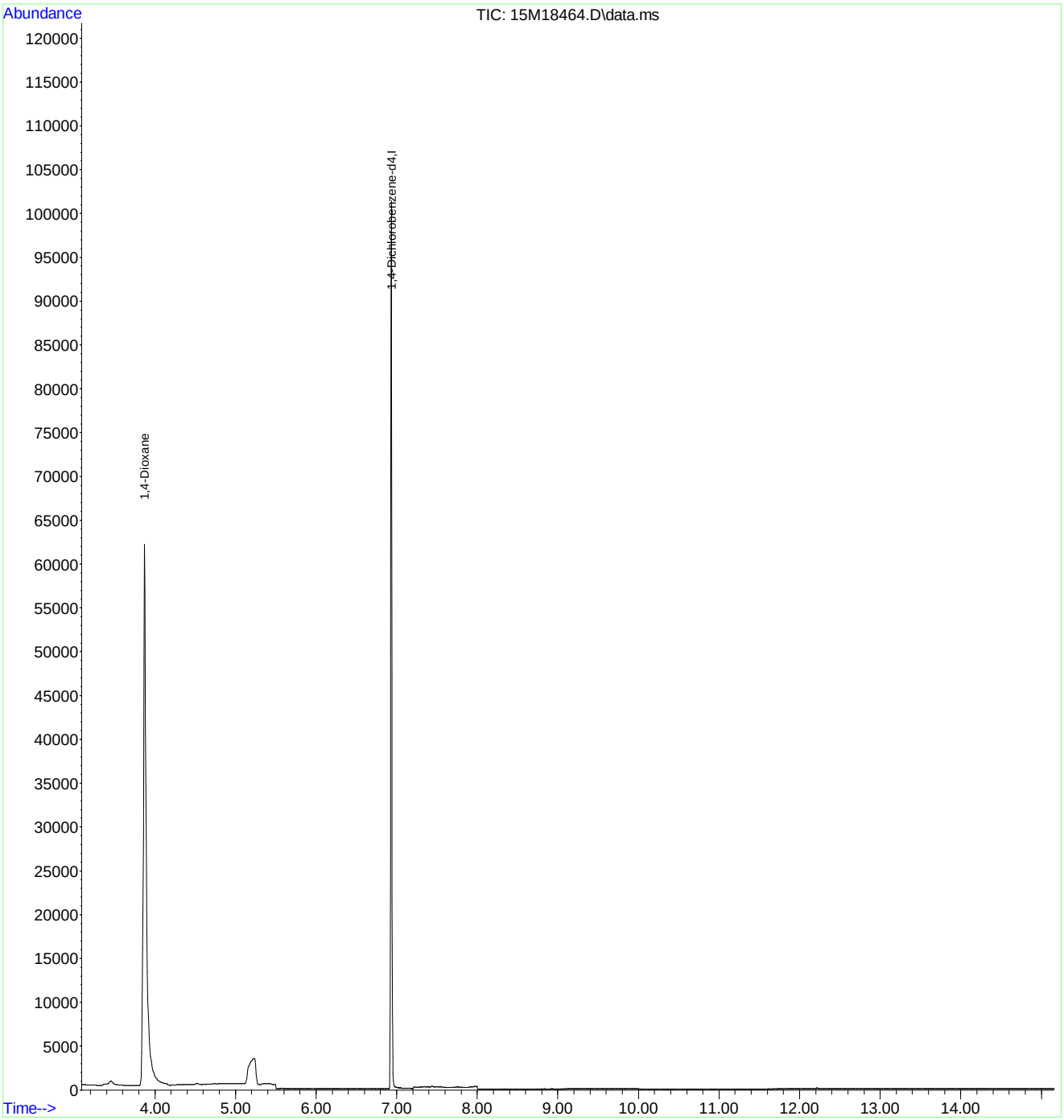

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18674.D
Acq On : 30 Jun 2016 14:42
Operator : MES
Sample : WG574781-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 30 14:58:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.870	152	31348	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.777	96	62277	4.8280 ug/L	0.00
Spiked Amount 5.000			Recovery	= 96.60%	
4) Nitrobenzene-d5	7.366	82	199647	6.0293 ug/L	0.00
Spiked Amount 5.000			Recovery	= 120.60%	
5) 2-Fluorobiphenyl	8.856	172	445070	5.3250 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.40%	
6) p-Terphenyl-d14	12.147	244	423287	5.2541 ug/L	0.06
Spiked Amount 5.000			Recovery	= 105.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.813	58	49944	5.2072 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Continuing Calibration Area and RT check

Instrument: HPMS15
Initial cal date: 06/21/16
CCV date: 06/30/16
CCV Filename: 15M18674

1,4-Dichlorobenzene-d4

	Amount	RT
InitCal	39637	6.93
CCV	31348	6.87

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18674.D
Acq On : 30 Jun 2016 14:42
Operator : MES
Sample : WG574781-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 30 14:58:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	79	0.00
2	1,4-Dioxane	5.000	5.207	-4.1	82	0.00
3 S	1,4-Dioxane-d8	5.000	4.828	3.4	75	0.00
4 S	Nitrobenzene-d5	5.000	6.029	-20.6	89	0.00
5 S	2-Fluorobiphenyl	5.000	5.325	-6.5	83	0.00
6 S	p-Terphenyl-d14	5.000	5.254	-5.1	82	0.06

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18674.D
Acq On : 30 Jun 2016 14:42
Operator : MES
Sample : WG574781-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 30 14:58:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

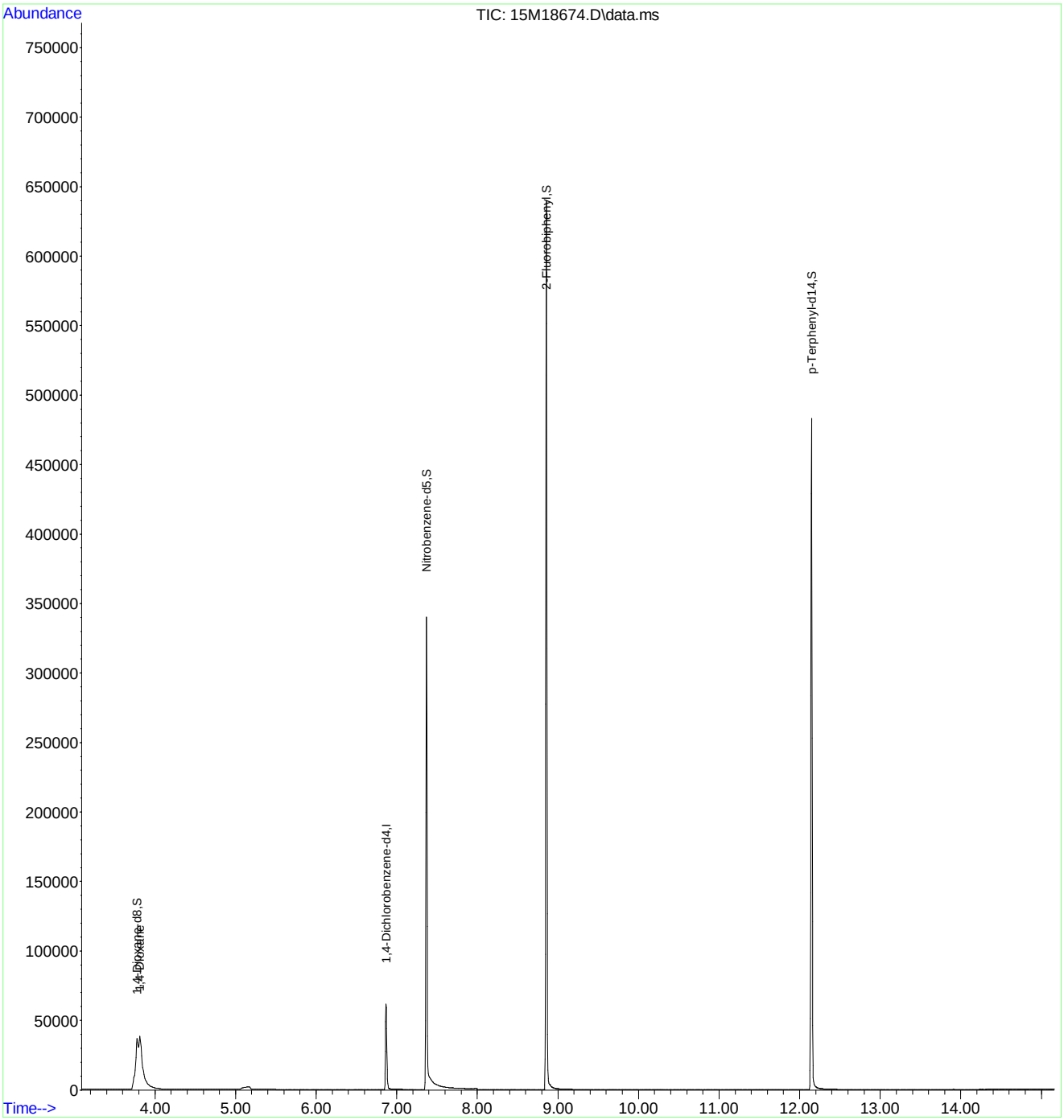

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.867	152	50685	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.778	96	100564	4.8218 ug/L	0.00
Spiked Amount 5.000			Recovery	= 96.40%	
4) Nitrobenzene-d5	7.367	82	310249	5.7949 ug/L	0.00
Spiked Amount 5.000			Recovery	= 115.80%	
5) 2-Fluorobiphenyl	8.853	172	677739	5.0151 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.40%	
6) p-Terphenyl-d14	12.122	244	688752	5.2876 ug/L	0.03
Spiked Amount 5.000			Recovery	= 105.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.813	58	81128	5.2314 ug/L	78

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Continuing Calibration Area and RT check

Instrument: HPMS15
Initial cal date: 06/21/16
CCV date: 07/05/16
CCV Filename: 15M18717

1,4-Dichlorobenzene-d4

	Amount	RT
InitCal	39637	6.93
CCV	50685	6.87

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	128	0.00
2	1,4-Dioxane	5.000	5.231	-4.6	133	0.00
3 S	1,4-Dioxane-d8	5.000	4.822	3.6	122	0.00
4 S	Nitrobenzene-d5	5.000	5.795	-15.9	139	0.00
5 S	2-Fluorobiphenyl	5.000	5.015	-0.3	127	0.00
6 S	p-Terphenyl-d14	5.000	5.288	-5.8	133	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

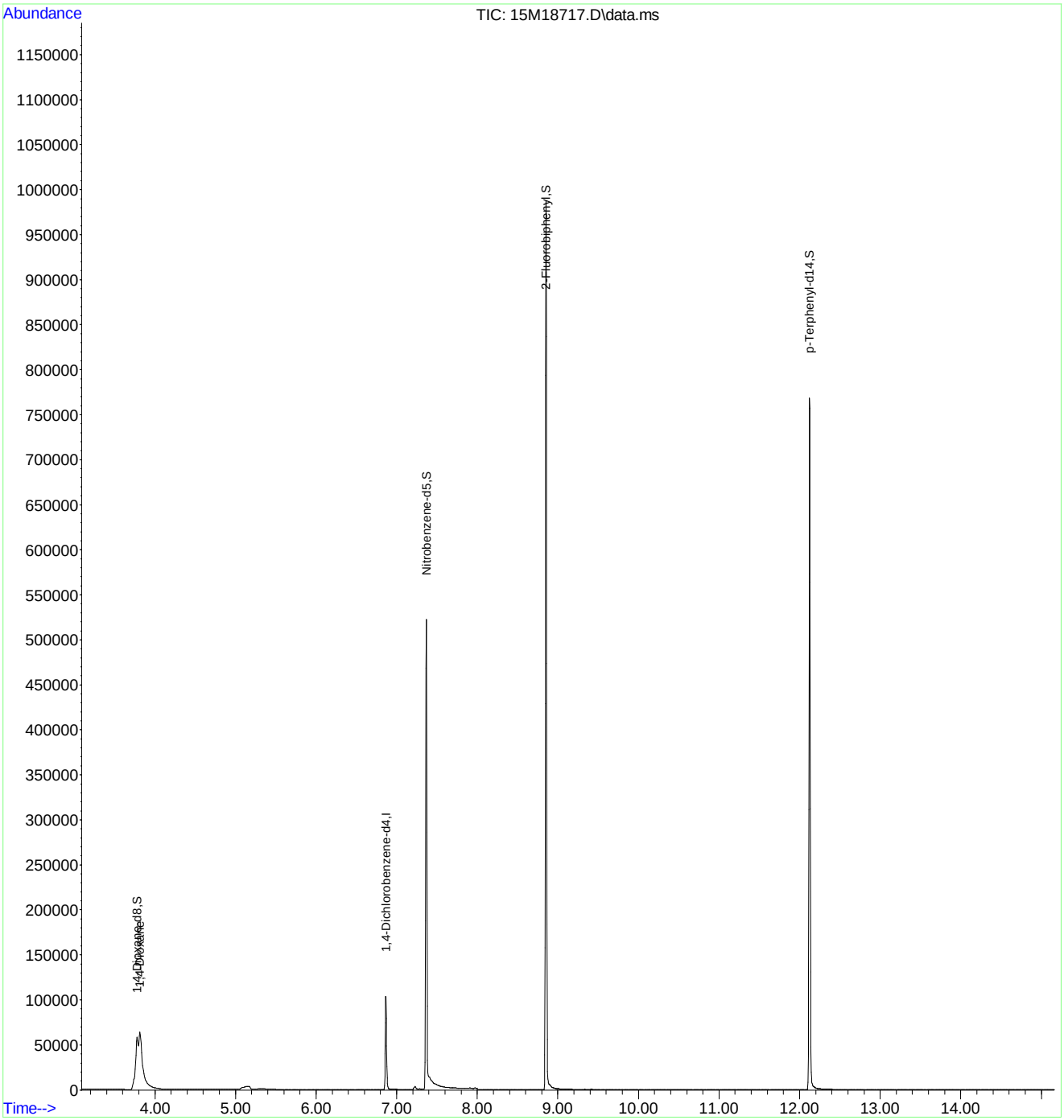

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070616\
Data File : 15M18758.D
Acq On : 6 Jul 2016 11:01
Operator : MES
Sample : WG575269-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 06 11:18:09 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.856	152	39125	1.0000 ug/mL	#-0.01
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.714	96	83422	5.1817 ug/L	-0.07
Spiked Amount 5.000			Recovery	= 103.60%	
4) Nitrobenzene-d5	7.361	82	223113	5.3987 ug/L	0.00
Spiked Amount 5.000			Recovery	= 108.00%	
5) 2-Fluorobiphenyl	8.849	172	486814	4.6667 ug/L	0.00
Spiked Amount 5.000			Recovery	= 93.40%	
6) p-Terphenyl-d14	12.118	244	498003	4.9528 ug/L	0.03
Spiked Amount 5.000			Recovery	= 99.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.749	58	66606	5.5640 ug/L	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Continuing Calibration Area and RT check

Instrument: HPMS15
Initial cal date: 06/21/16
CCV date: 07/06/16
CCV Filename: 15M18758

1,4-Dichlorobenzene-d4

	Amount	RT
InitCal	39637	6.93
CCV	39125	6.86

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\070616\
Data File : 15M18758.D
Acq On : 6 Jul 2016 11:01
Operator : MES
Sample : WG575269-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 06 11:18:09 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	99	-0.01
2	1,4-Dioxane	5.000	5.564	-11.3	109	-0.07
3 S	1,4-Dioxane-d8	5.000	5.182	-3.6	101	-0.07
4 S	Nitrobenzene-d5	5.000	5.399	-8.0	100	0.00
5 S	2-Fluorobiphenyl	5.000	4.667	6.7	91	0.00
6 S	p-Terphenyl-d14	5.000	4.953	0.9	96	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\070616\
Data File : 15M18758.D
Acq On : 6 Jul 2016 11:01
Operator : MES
Sample : WG575269-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 06 11:18:09 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

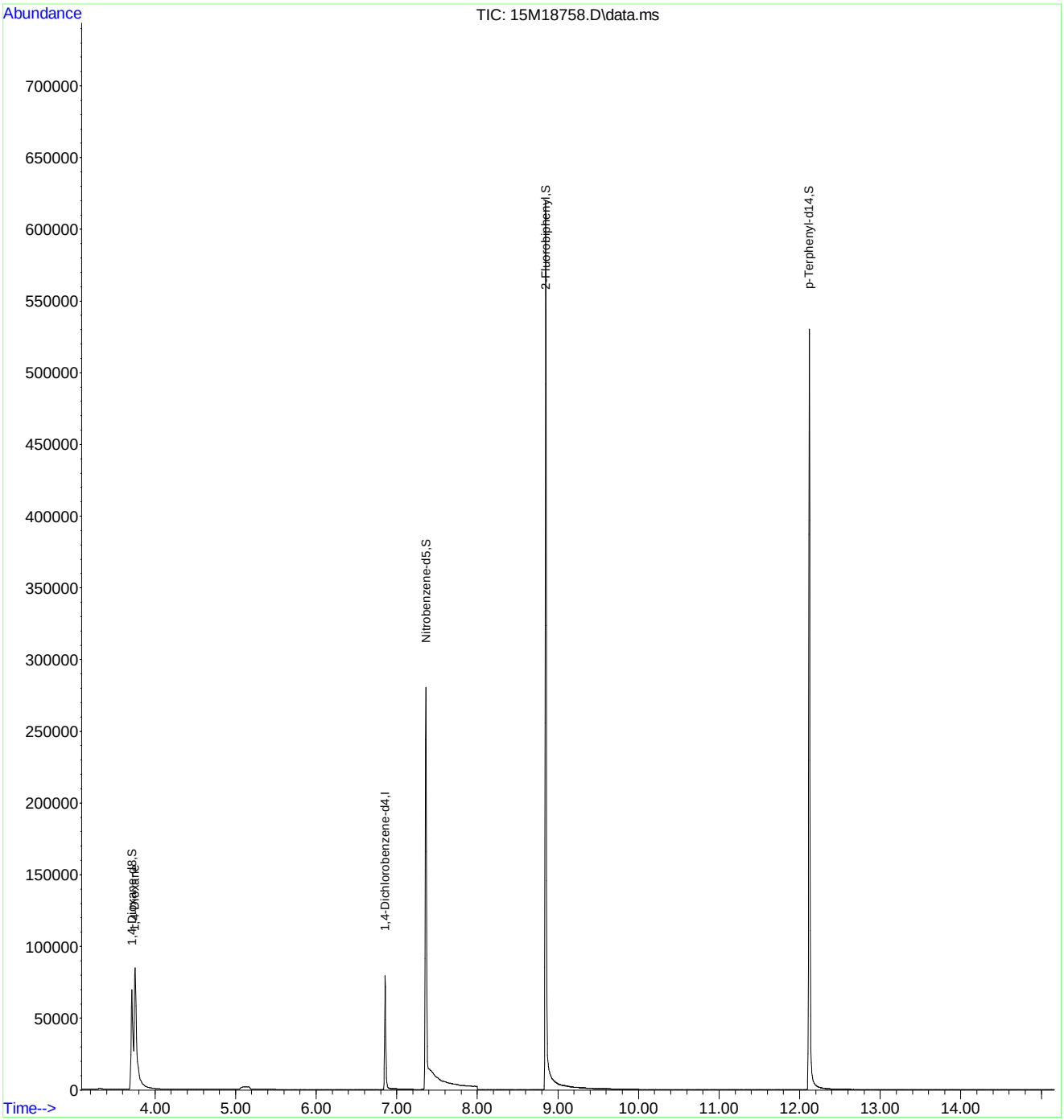

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

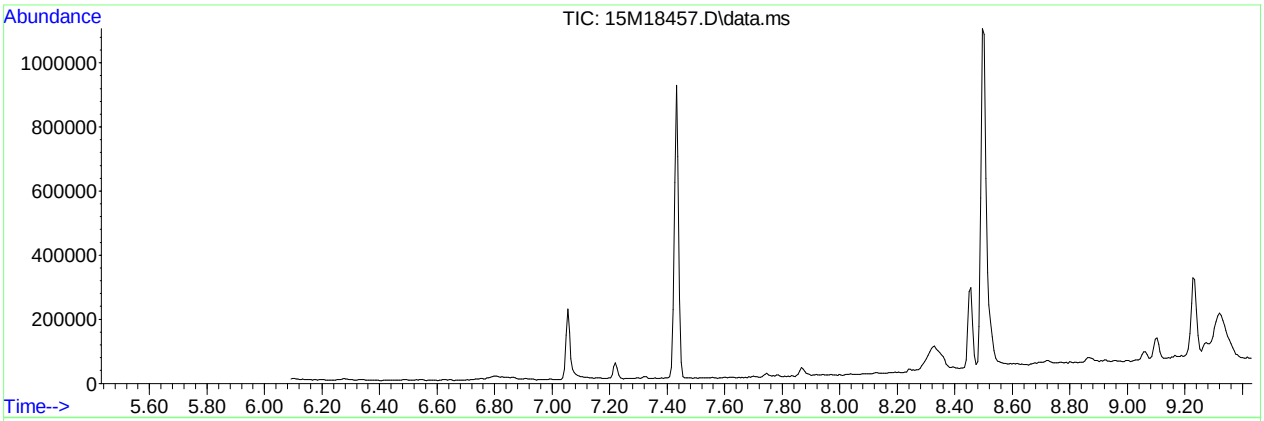

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

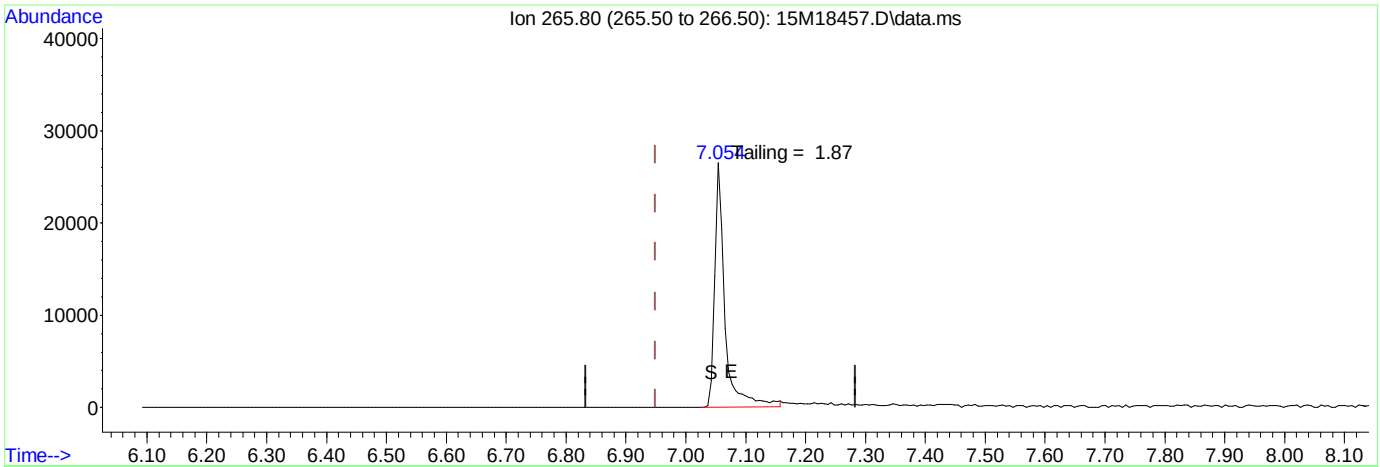

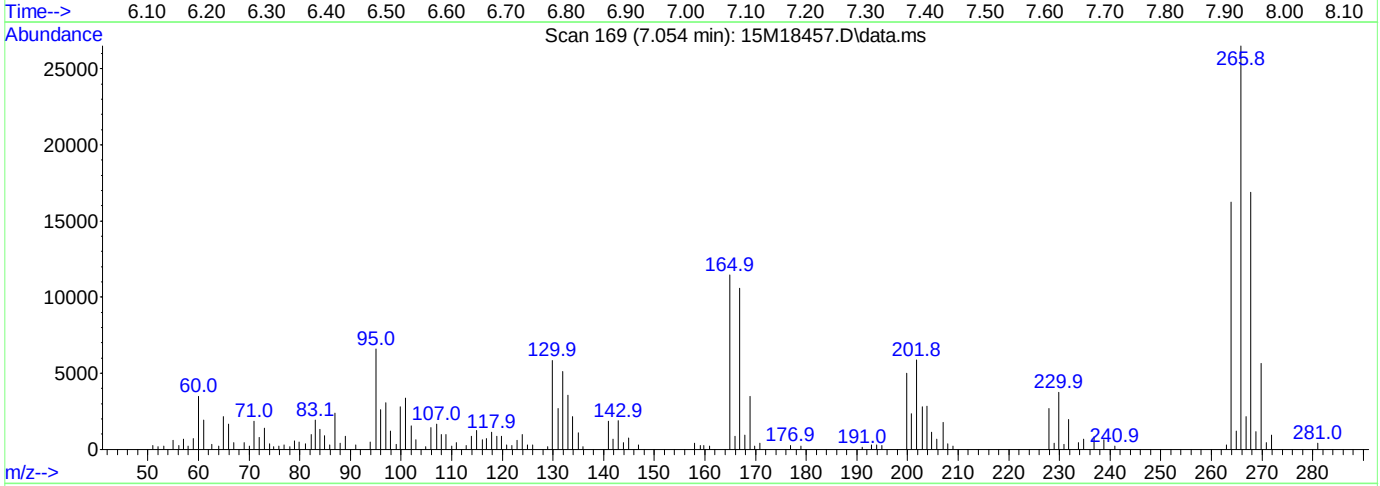

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

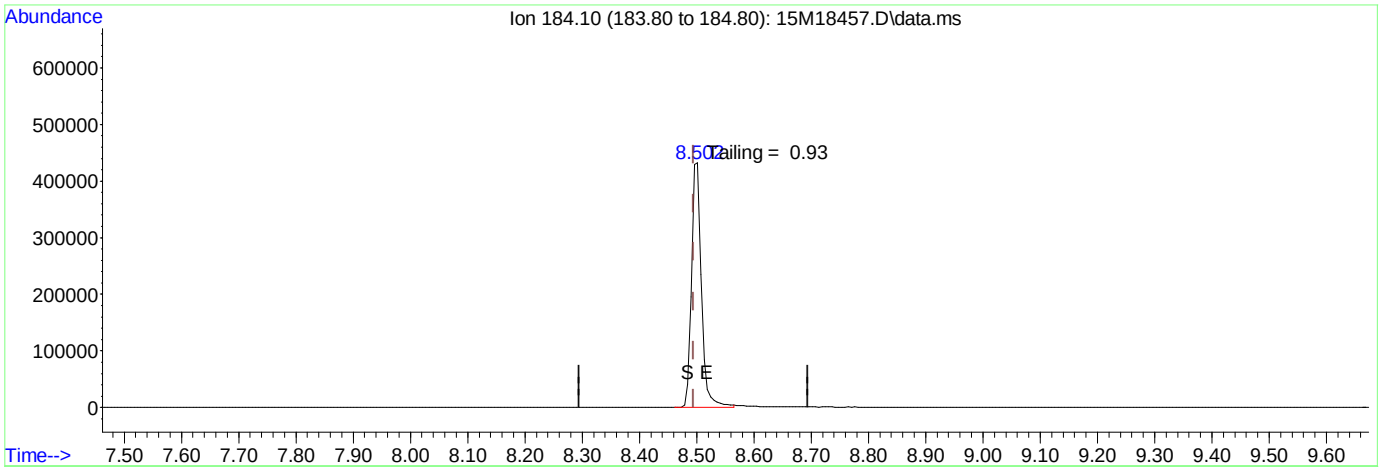

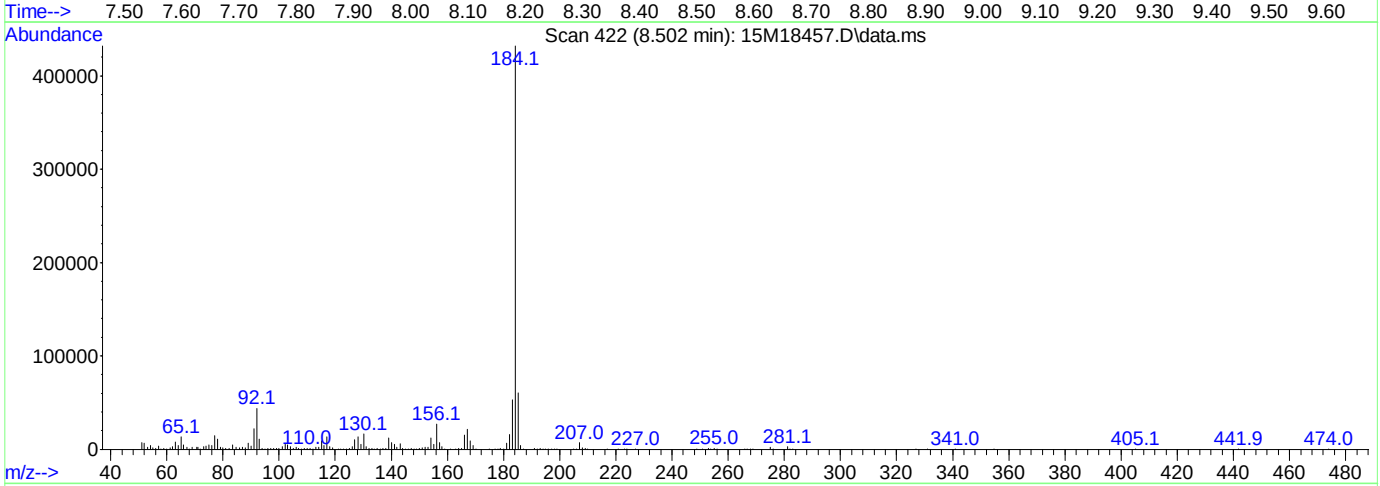

TIC: 15M18457.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

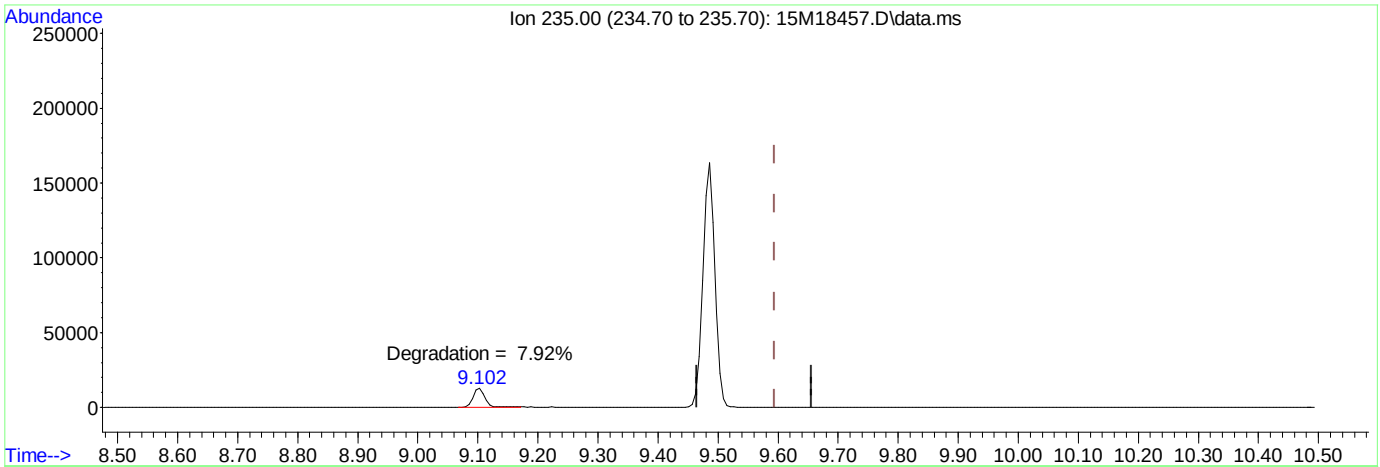

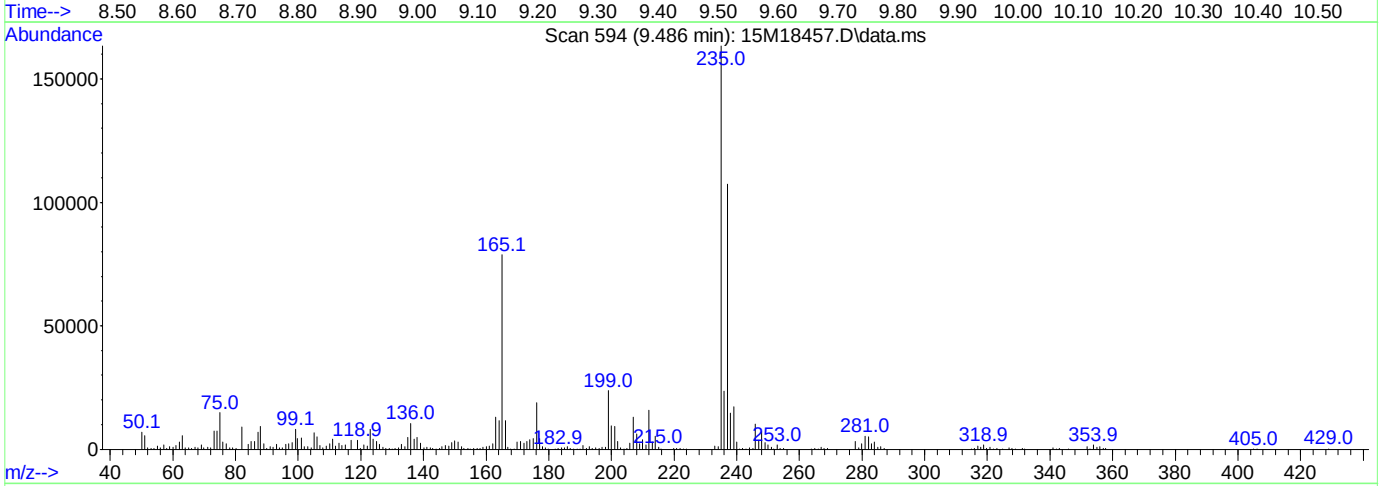

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

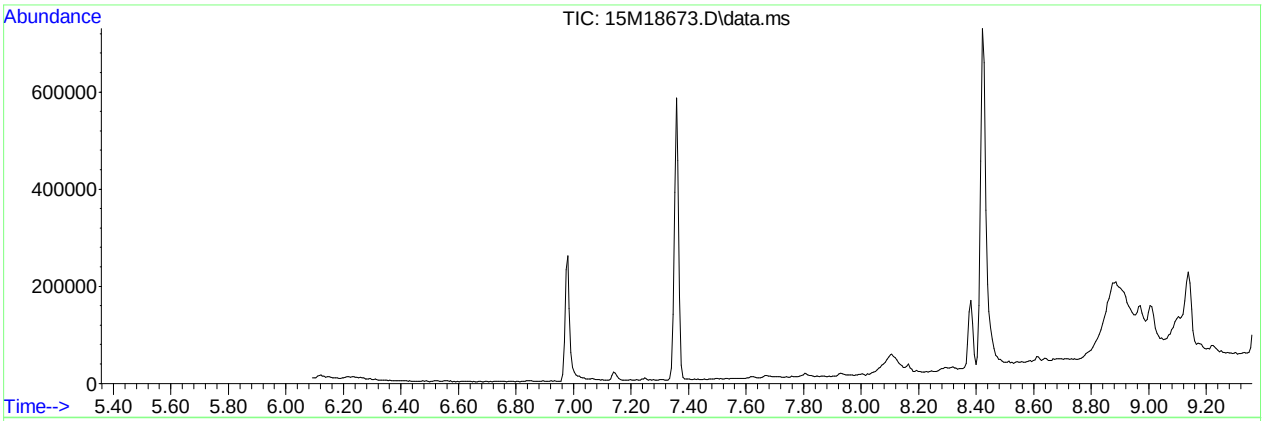

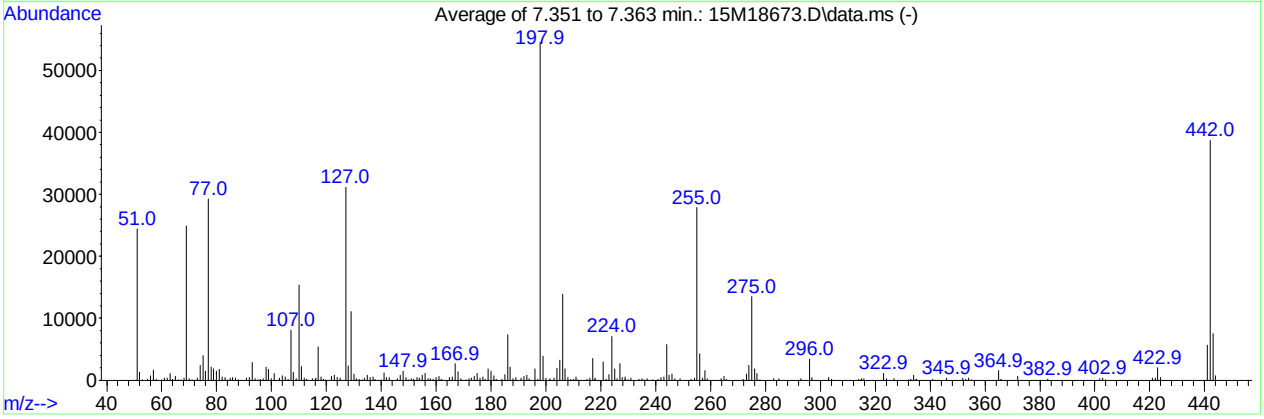

AutoFind: Scans 221, 222, 223; Background Corrected with Scan 215

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	44.6	24370	PASS
68	69	0.00	2	1.4	352	PASS
69	198	0.00	100	45.7	24921	PASS
70	69	0.00	2	1.0	239	PASS
127	198	40	60	57.0	31104	PASS
197	198	0.00	1	0.3	159	PASS
198	198	100	100	100.0	54589	PASS
199	198	5	9	7.0	3838	PASS
275	198	10	30	24.8	13523	PASS
365	198	1	100	2.8	1520	PASS
441	443	0.01	100	75.2	5686	PASS
442	198	40	100	70.8	38669	PASS
443	442	17	23	19.5	7559	PASS

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 30 14:35:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

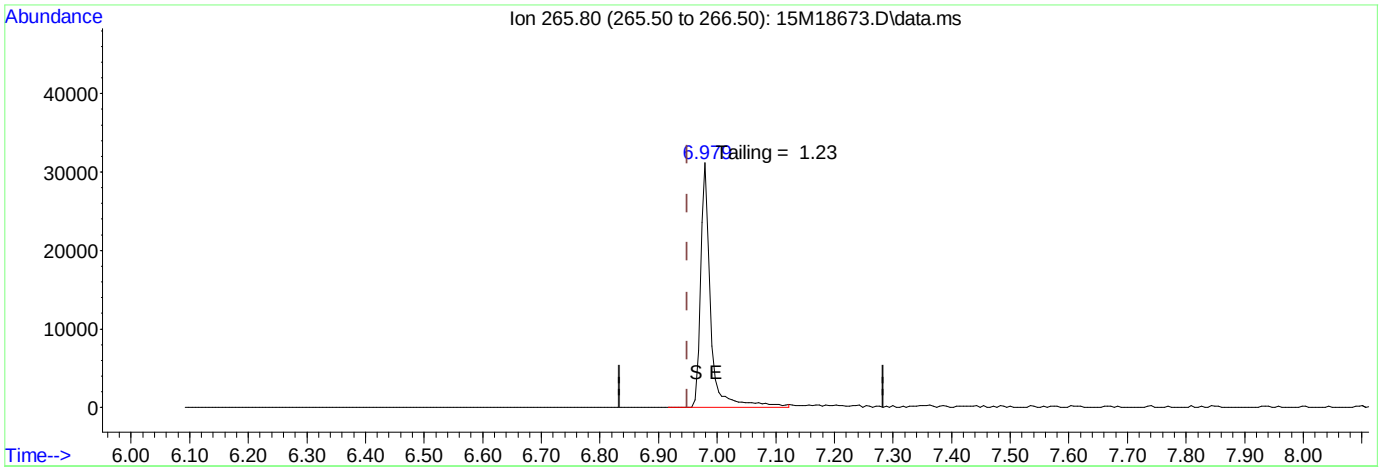

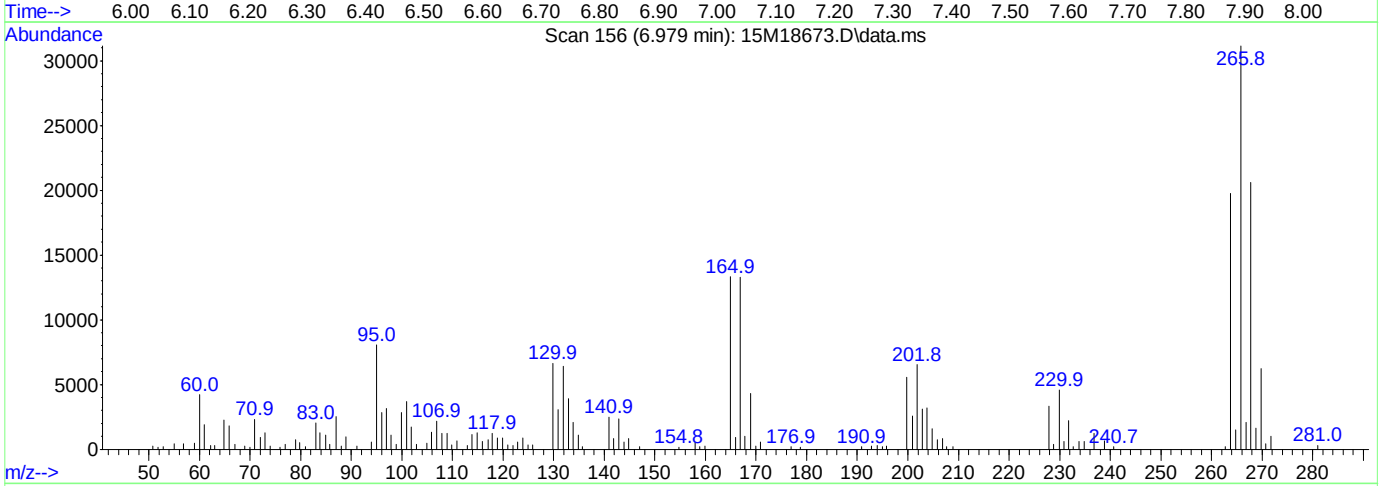

TIC: 15M18673.D\data.ms

(1) Pentachlorophenol

6.979min (+ 0.030) 0.00 ug/ml

response 37511

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 30 14:35:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

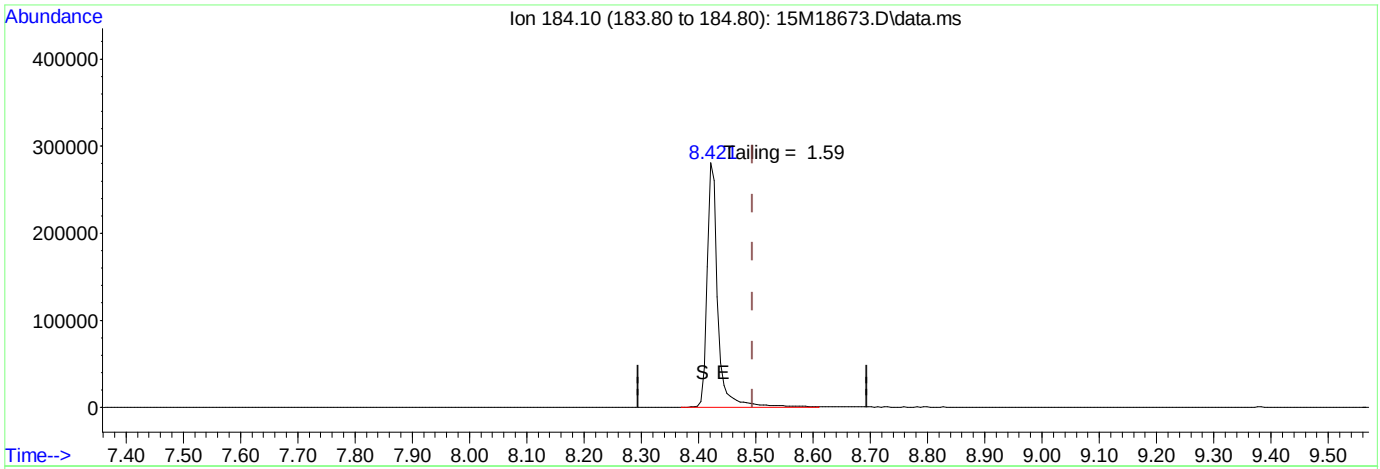

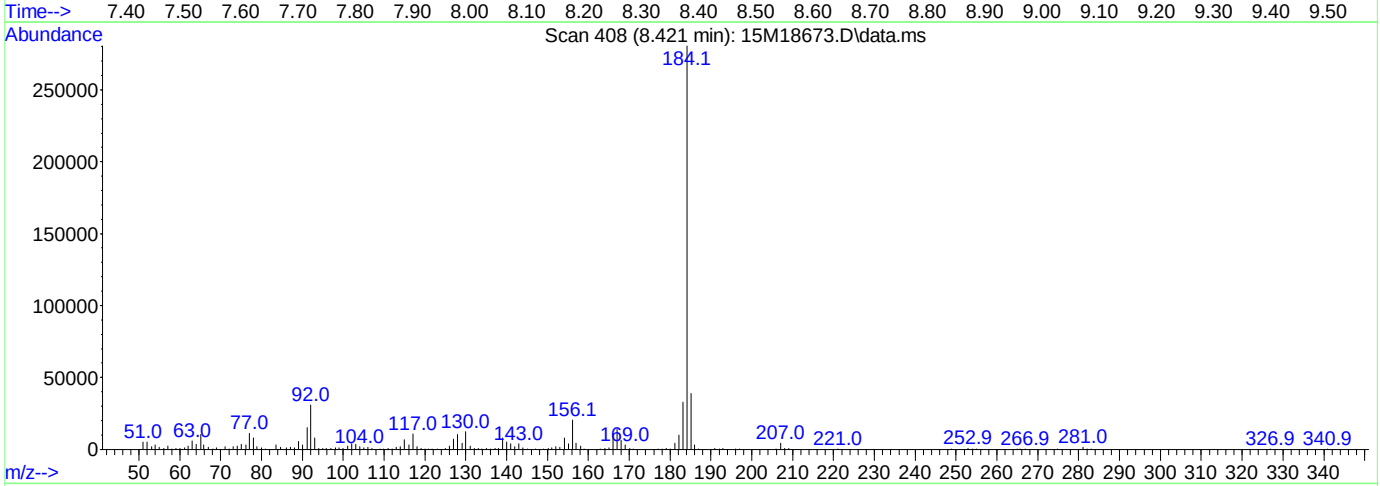

TIC: 15M18673.D\data.ms

(2) Benzidine

8.421min (-0.073) 0.00 ug/ml

response 363129

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 30 14:35:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

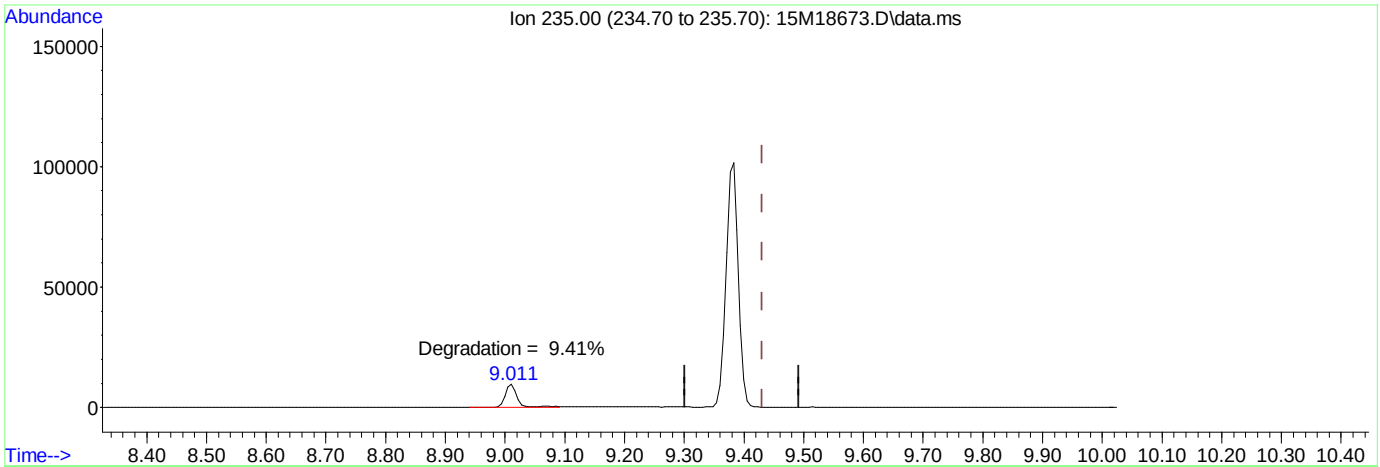

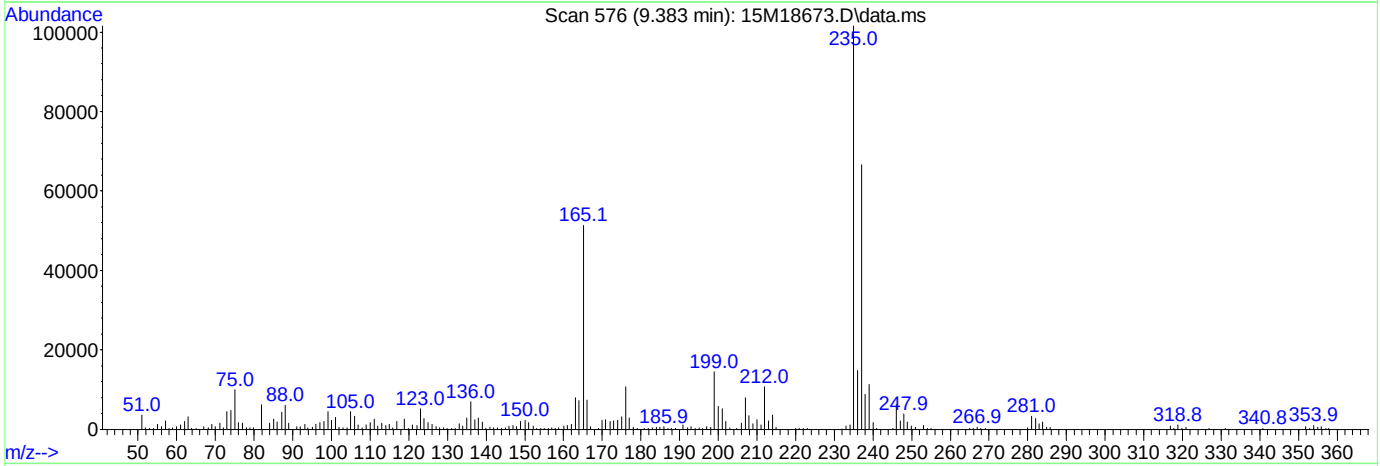

(3) DDT

9.383min (-0.047) 0.00 ug/ml

response 147438

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

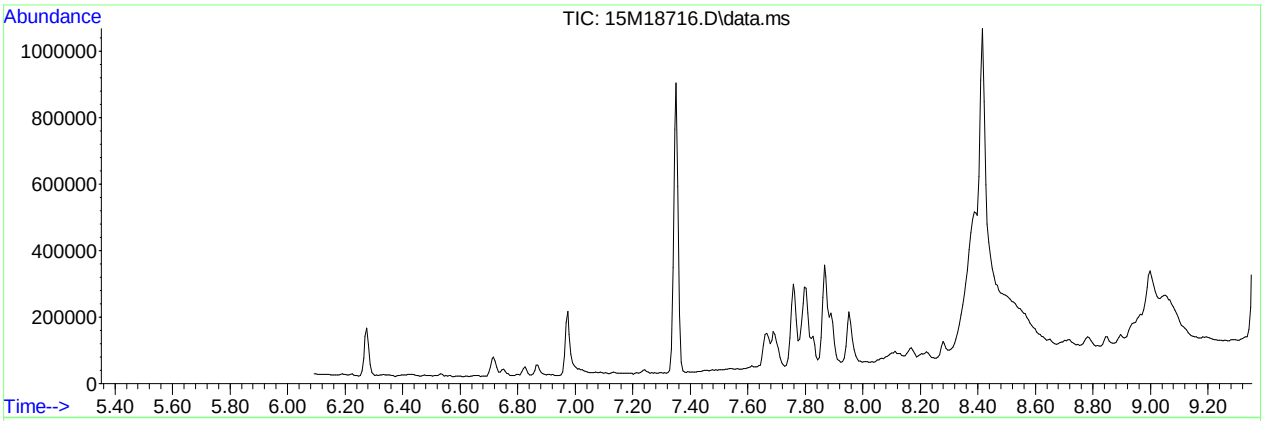

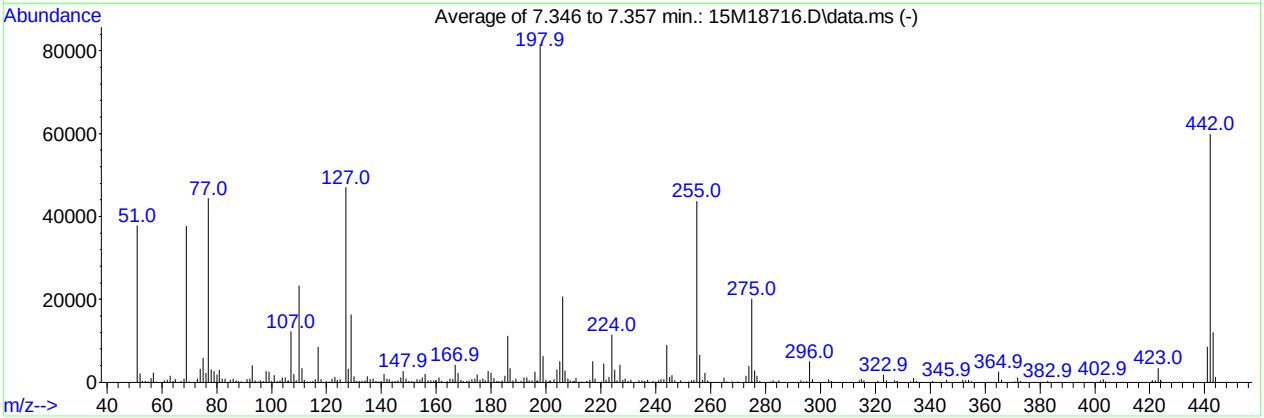

AutoFind: Scans 220, 221, 222; Background Corrected with Scan 214

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	46.2	37745	PASS
68	69	0.00	2	1.9	734	PASS
69	198	0.00	100	46.2	37667	PASS
70	69	0.00	2	0.3	127	PASS
127	198	40	60	57.5	46941	PASS
197	198	0.00	1	0.4	310	PASS
198	198	100	100	100.0	81613	PASS
199	198	5	9	7.6	6162	PASS
275	198	10	30	24.6	20072	PASS
365	198	1	100	2.9	2392	PASS
441	443	0.01	100	70.8	8479	PASS
442	198	40	100	73.3	59805	PASS
443	442	17	23	20.0	11980	PASS

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

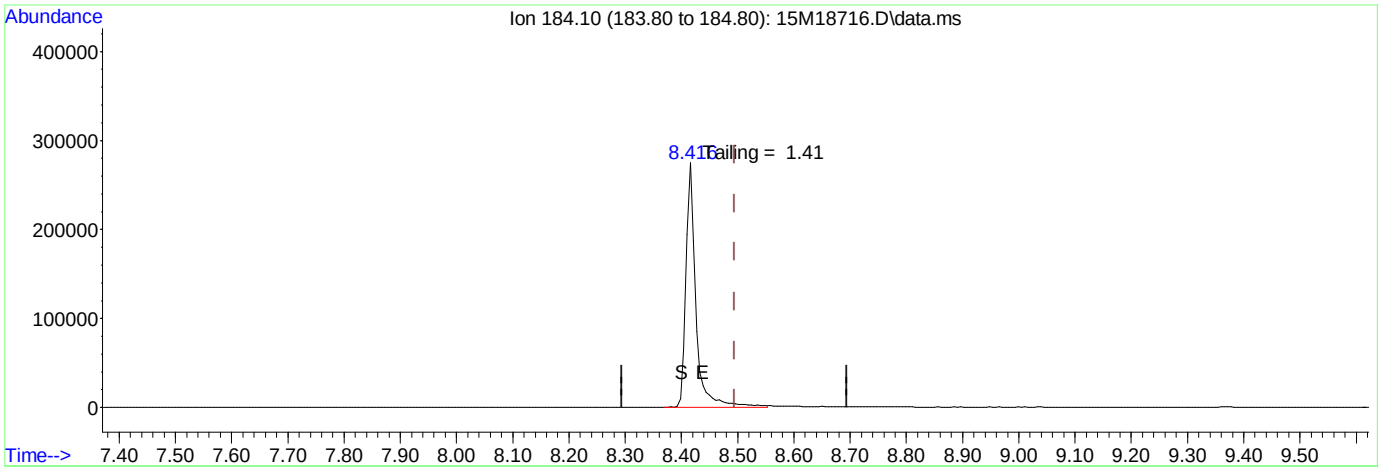

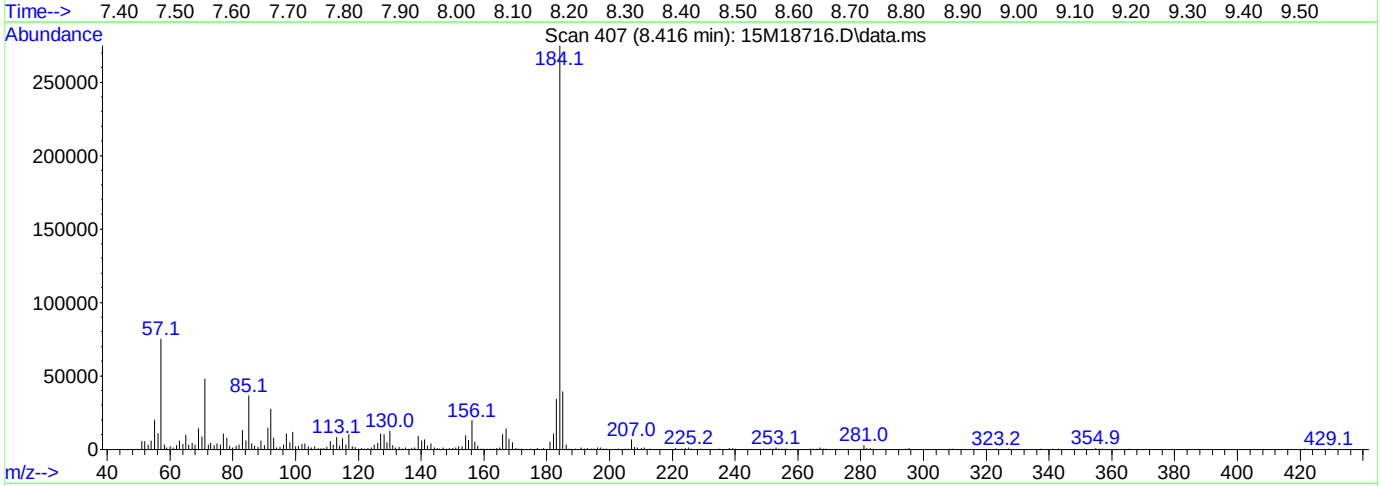

TIC: 15M18716.D\data.ms

(2) Benzidine

8.416min (-0.078) 0.00 ug/ml

response 340801

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

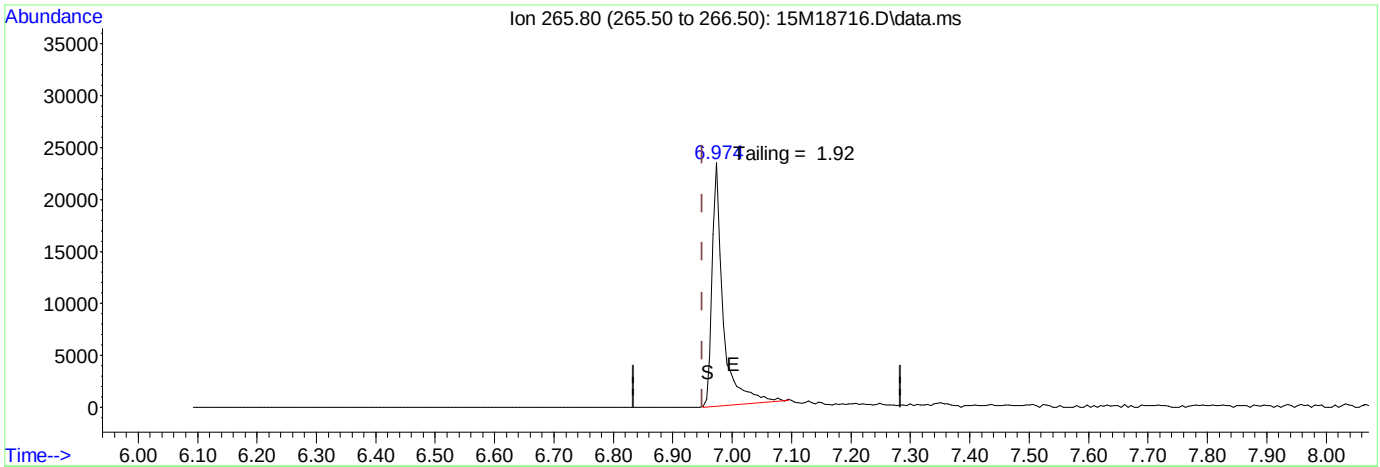

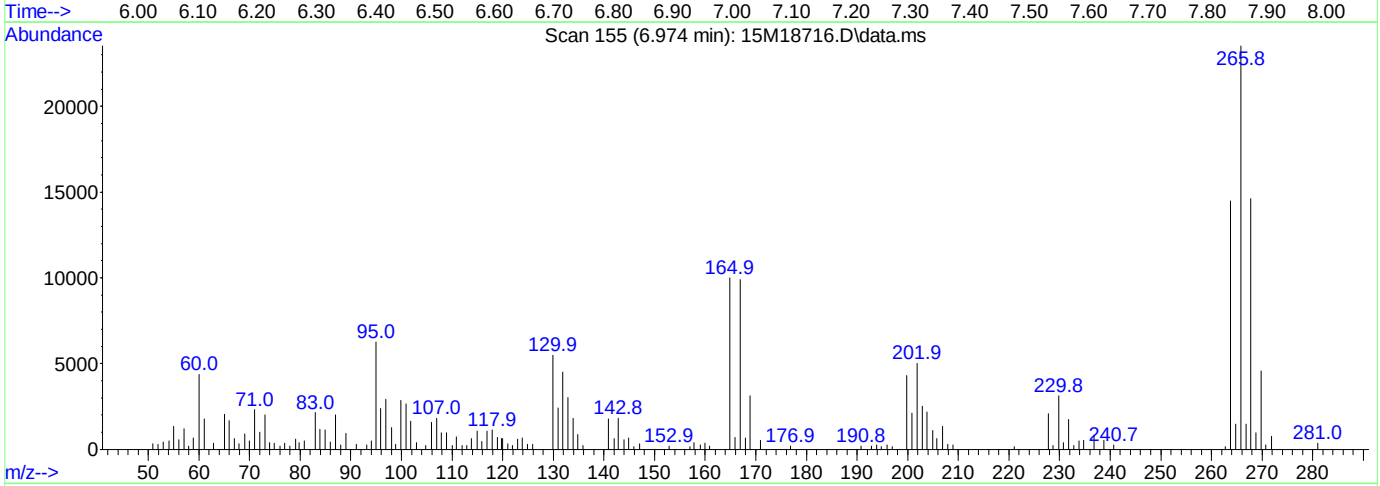

TIC: 15M18716.D\data.ms

(1) Pentachlorophenol

6.974min (+ 0.025) 0.00 ug/ml

response 32364

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

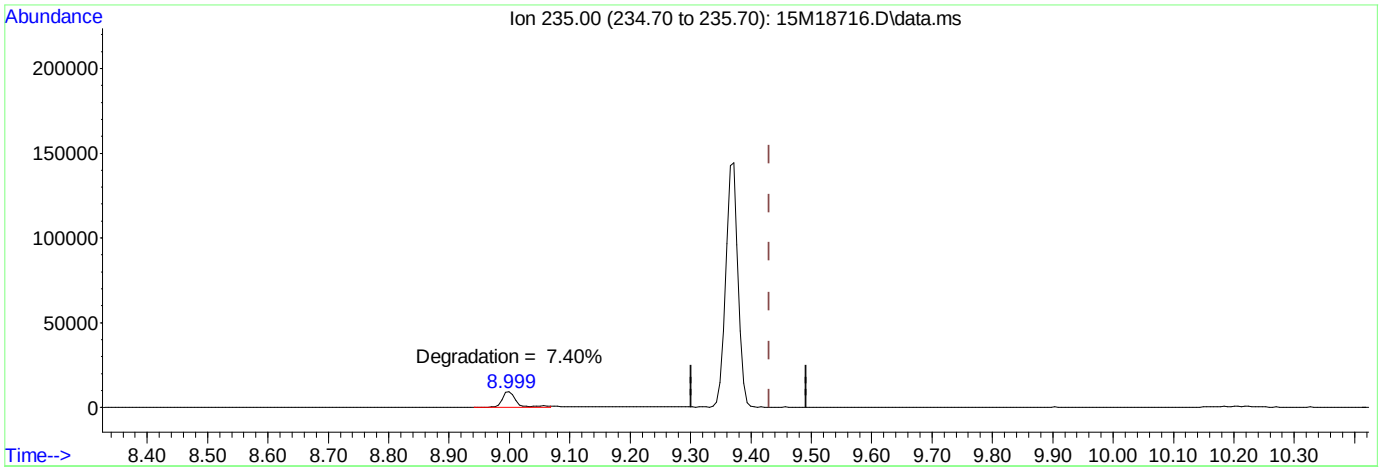

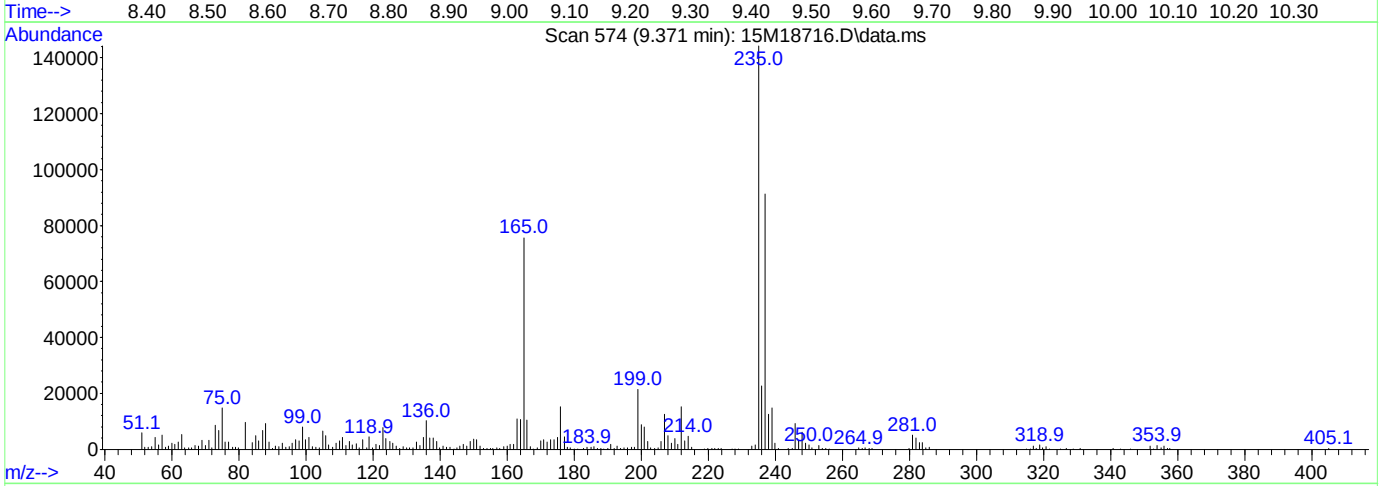

(3) DDT

9.371min (-0.059) 0.00 ug/ml

response 208755

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070616\
Data File : 15M18757.D
Acq On : 6 Jul 2016 10:43
Operator : MES
Sample : WG575269-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

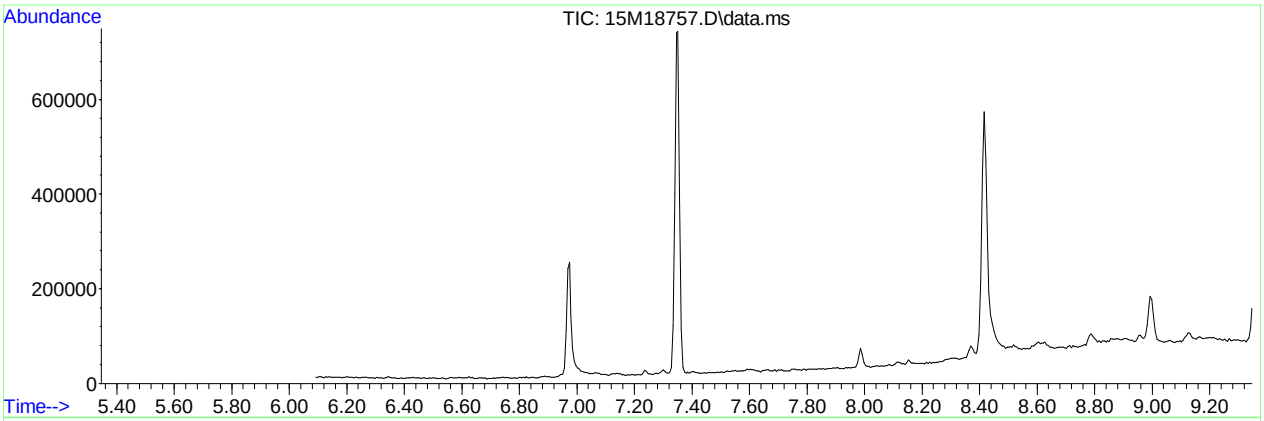

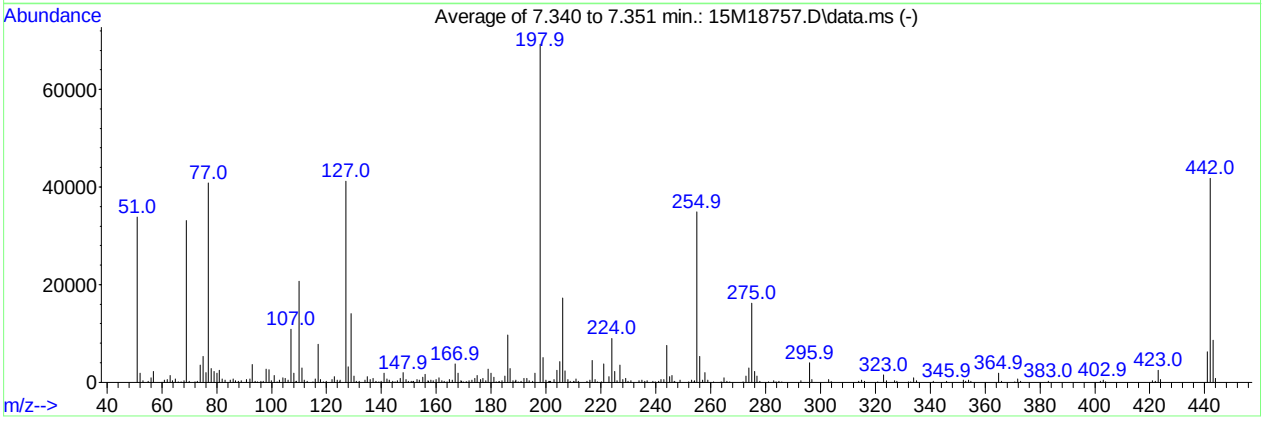

AutoFind: Scans 219, 220, 221; Background Corrected with Scan 214

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	48.8	33792	PASS
68	69	0.00	2	0.9	307	PASS
69	198	0.00	100	47.8	33107	PASS
70	69	0.00	2	0.4	129	PASS
127	198	40	60	59.4	41184	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	69301	PASS
199	198	5	9	7.2	4997	PASS
275	198	10	30	23.4	16187	PASS
365	198	1	100	2.7	1882	PASS
441	443	0.01	100	72.2	6174	PASS
442	198	40	100	60.3	41784	PASS
443	442	17	23	20.5	8552	PASS

Data Path : C:\msdchem\1\data\070616\
Data File : 15M18757.D
Acq On : 6 Jul 2016 10:43
Operator : MES
Sample : WG575269-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 06 10:55:17 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

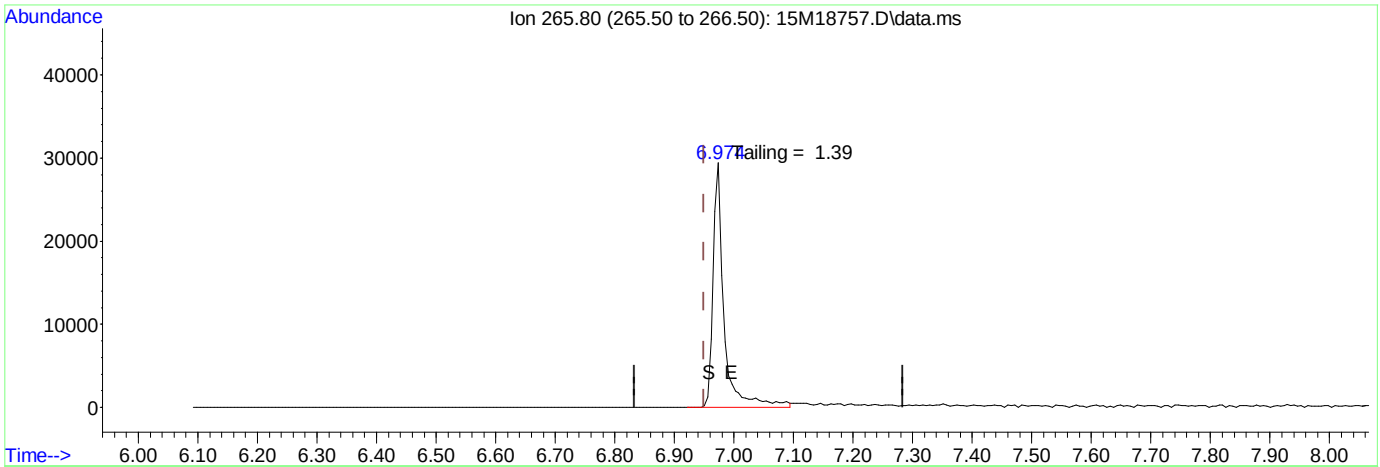

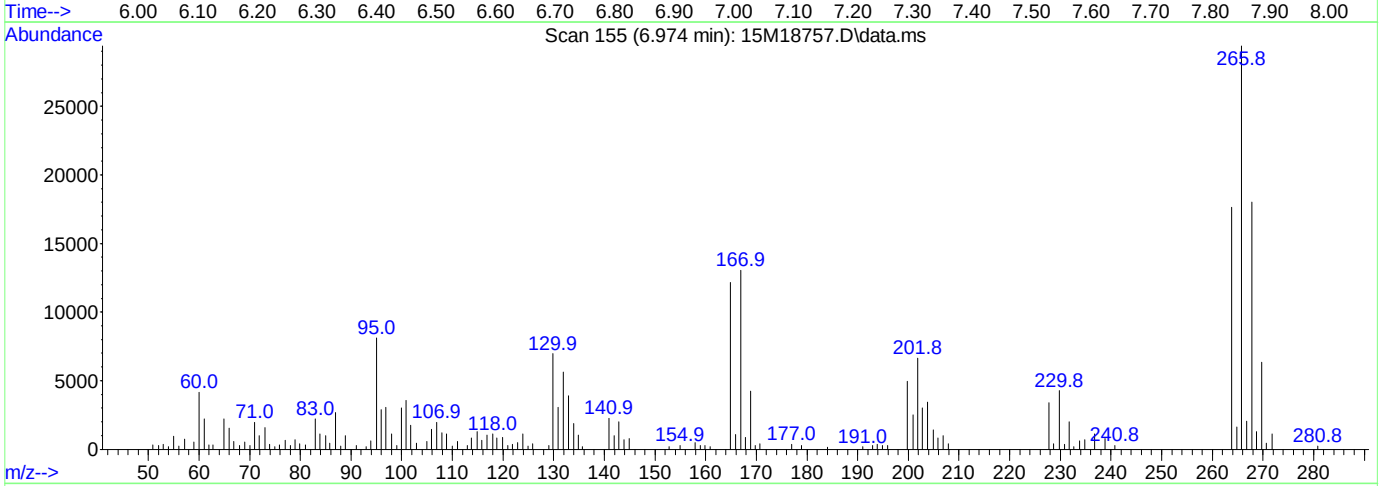

TIC: 15M18757.D\data.ms

(1) Pentachlorophenol

6.974min (+ 0.025) 0.00 ug/ml

response 36263

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070616\
Data File : 15M18757.D
Acq On : 6 Jul 2016 10:43
Operator : MES
Sample : WG575269-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 06 10:55:17 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

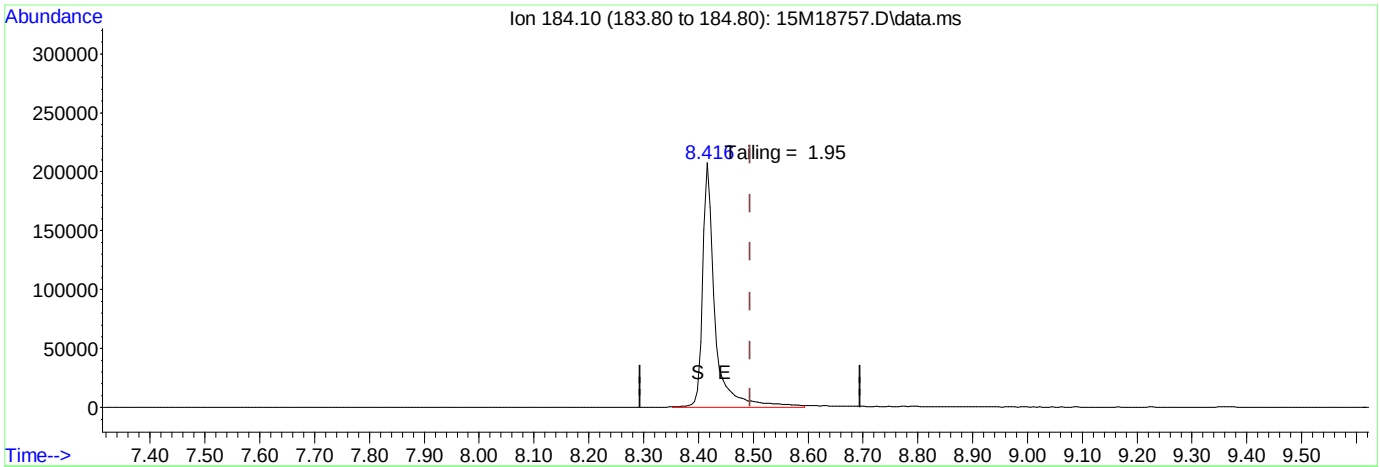

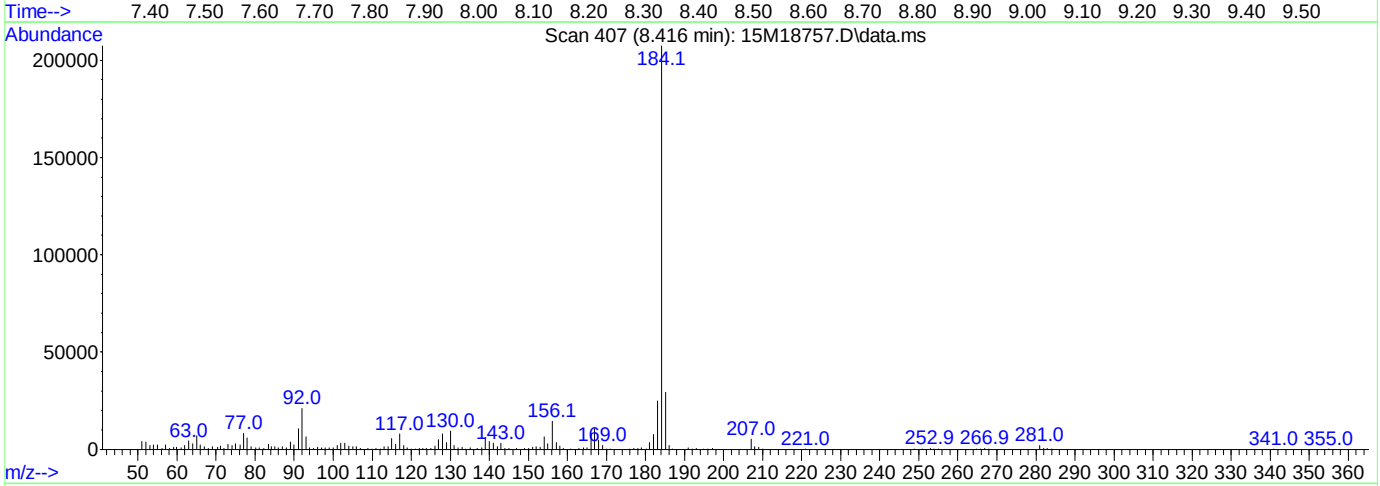

TIC: 15M18757.D\data.ms

(2) Benzidine

8.416min (-0.078) 0.00 ug/ml

response 331099

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070616\
Data File : 15M18757.D
Acq On : 6 Jul 2016 10:43
Operator : MES
Sample : WG575269-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 06 10:55:17 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

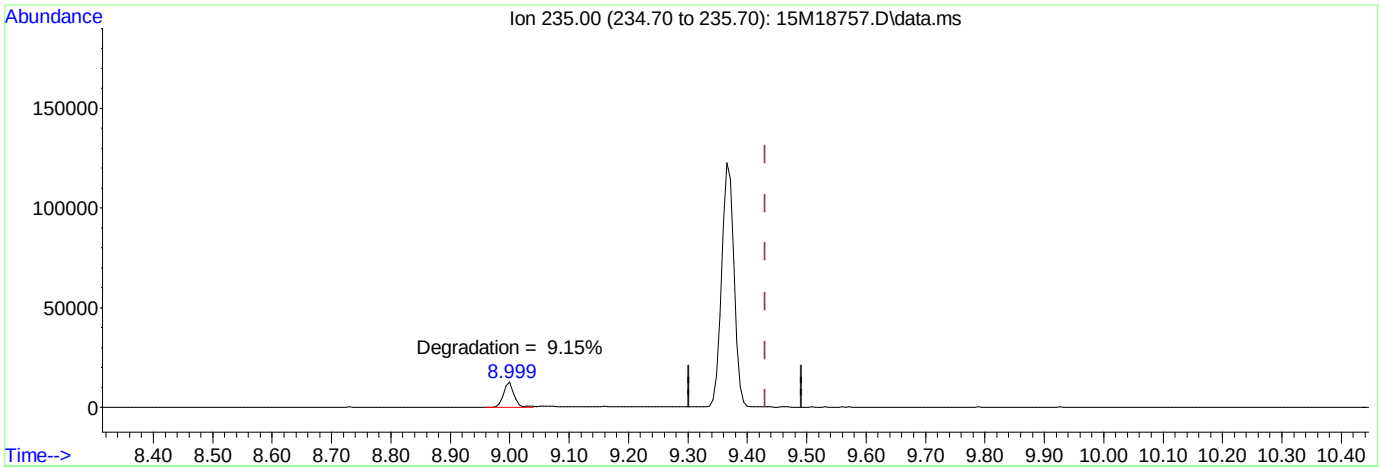

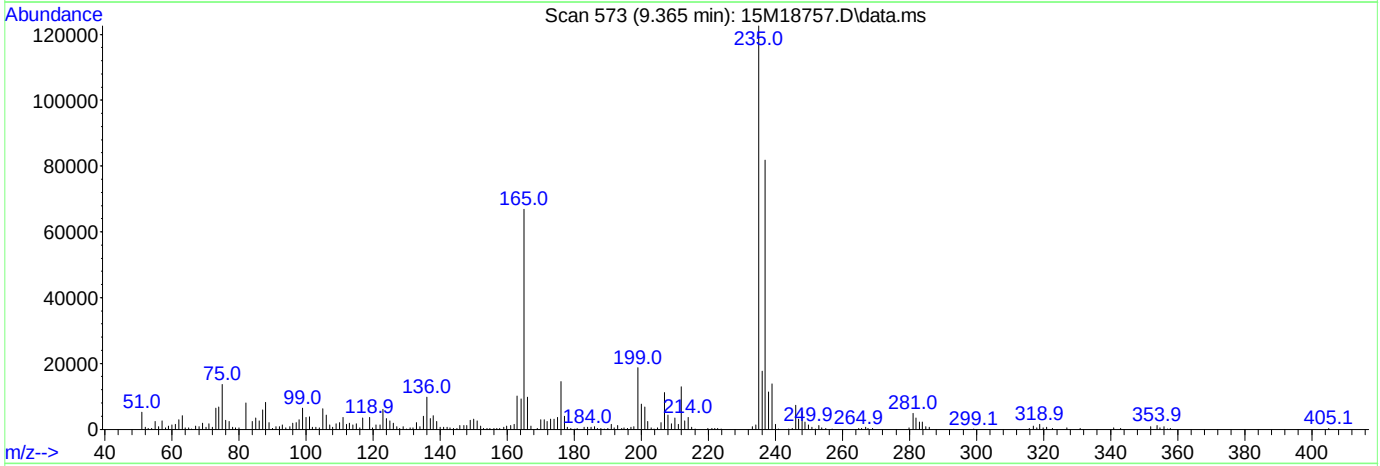

TIC: 15M18757.D\data.ms

(3) DDT

9.365min (-0.065) 0.00 ug/ml

response 178077

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18678.D
Acq On : 30 Jun 2016 16:12
Operator : MES
Sample : WG574286-01 BLANK 6/27
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 30 16:57:35 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	28516	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	25448	2.1688	ug/L	0.00
Spiked Amount 5.000			Recovery = 43.40%			
4) Nitrobenzene-d5	7.367	82	1047426	34.7736	ug/L	0.00
Spiked Amount 5.000			Recovery = 695.40%			
5) 2-Fluorobiphenyl	8.856	172	1915171	25.1894	ug/L	0.00
Spiked Amount 5.000			Recovery = 503.80%			
6) p-Terphenyl-d14	12.137	244	2891842	39.4601	ug/L	0.05
Spiked Amount 5.000			Recovery = 789.20%			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18678.D
Acq On : 30 Jun 2016 16:12
Operator : MES
Sample : WG574286-01 BLANK 6/27
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 30 16:57:35 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

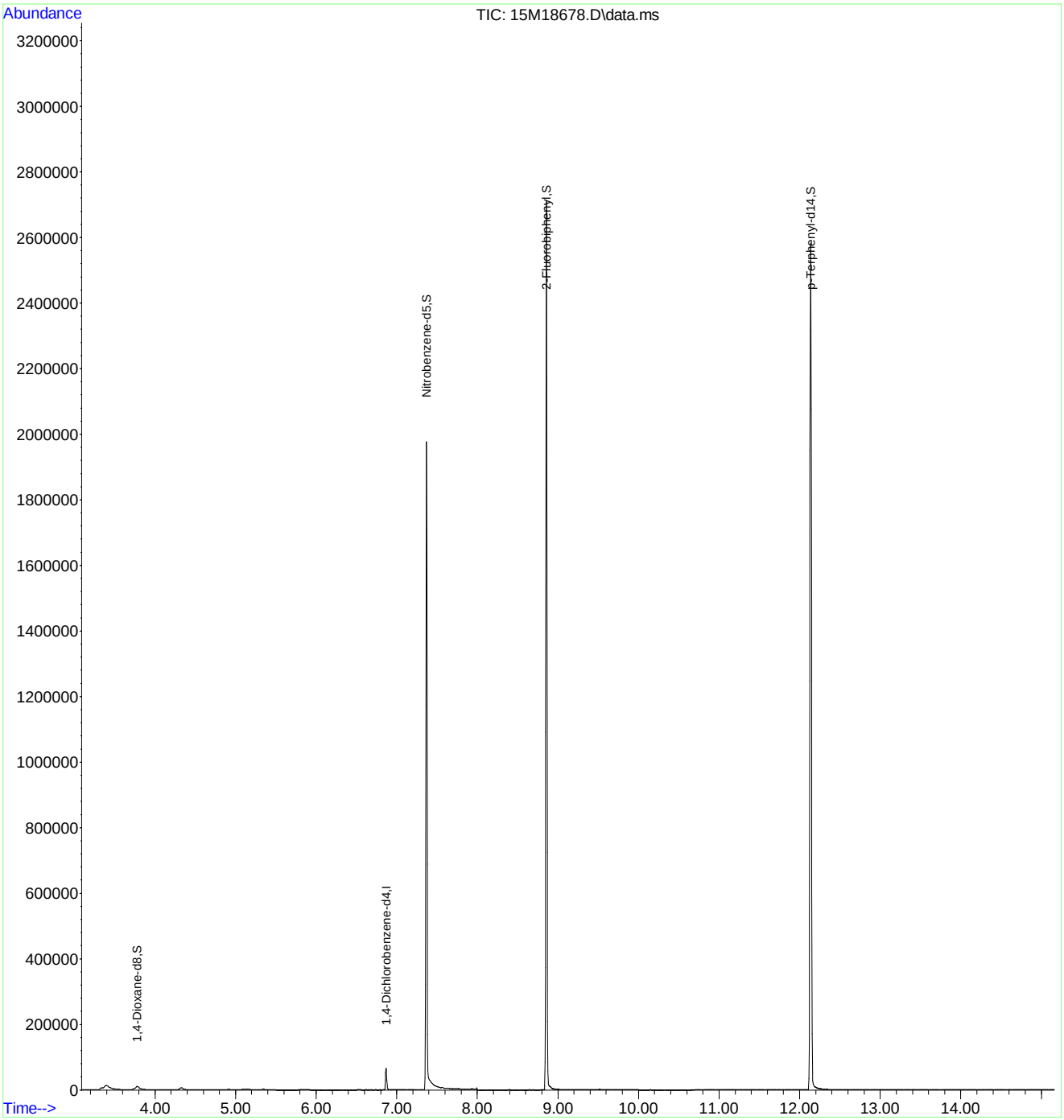

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18679.D
Acq On : 30 Jun 2016 16:34
Operator : MES
Sample : WG574286-02 LCS 6/27
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 30 16:57:20 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	22815	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.770	96	22955	2.4451	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	49.00%	
4) Nitrobenzene-d5	7.372	82	1584	0.0657	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.860	172	964	0.0158	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.107	244	620	0.0106	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	19389	2.7776	ug/L	67

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18679.D
Acq On : 30 Jun 2016 16:34
Operator : MES
Sample : WG574286-02 LCS 6/27
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 30 16:57:20 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

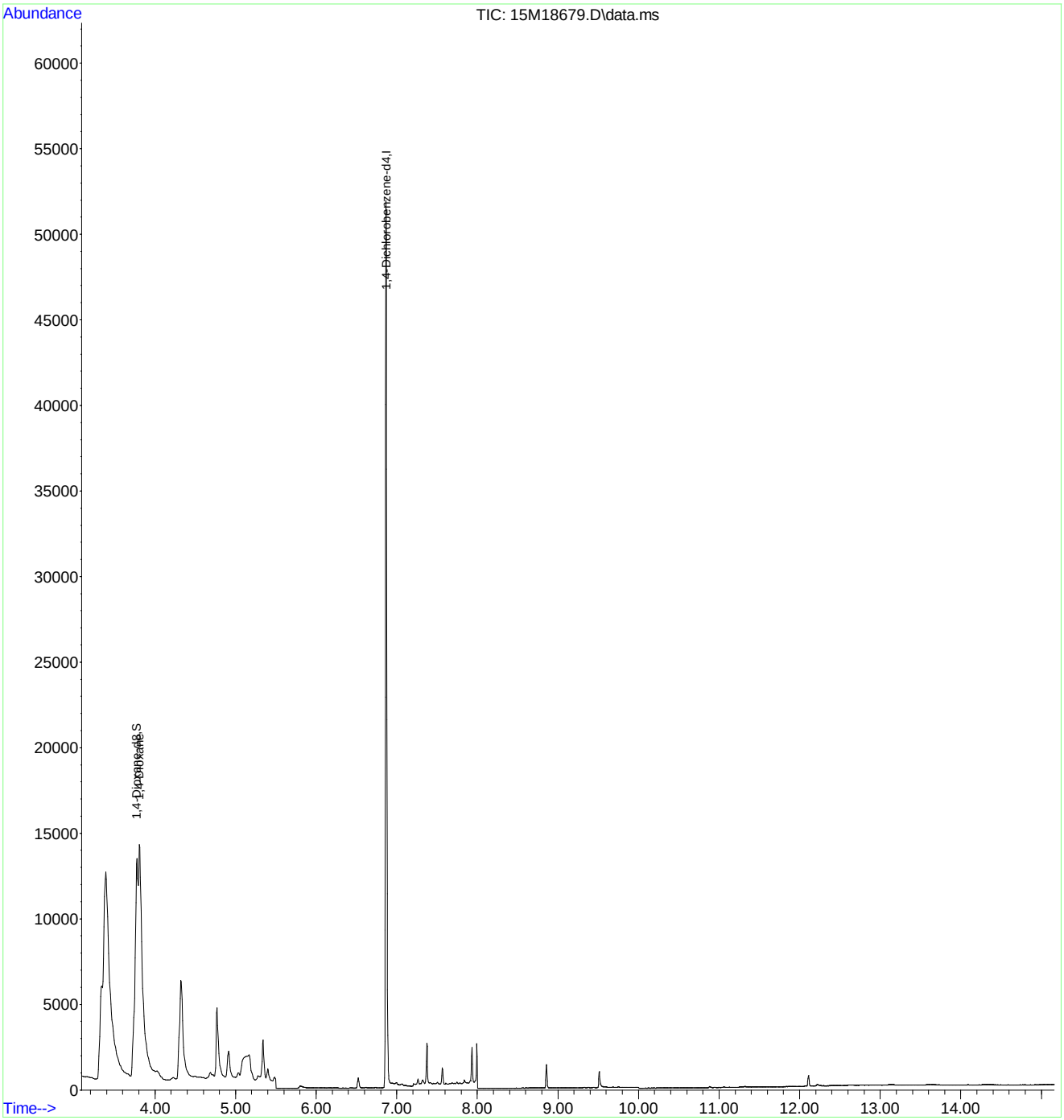

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW12SW-062416	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 22:52
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	1LM.LM35590
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.92		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061452-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW7-062416	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 23:11
Collect Date:	06/24/2016 09:55	**Dilution:**	10000	**File ID:**	1LM.LM35591
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	22200		4000	2000	1000

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1415 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG575005-01 MCT	10,020.	
-02 Blank	0.31	
-03 LCS	0.44	
-04 LCS2	0.41	
L16070001-01 LOD	0.38	
L16070003-01 LOQ	0.43	
-09 LOQ	0.45	
L16061289-01	6,210.	
-02	147.9	
-03	105.2	
-05	1,381.	
L16061290-01	594.	
-02	1,157.	
-04	219.	
-05	172.8	
-06	826.	
L16061452-01	1,890.	
-03	1,179.	
L16061453-01	2,610.	
-02	1,188.	
-03	1,101.	
L16061559-01	3,040.	
-02	3,140.	
L16061648-01	669.	

Analyst: John Richards

Date/Time: 07/01/16 19:50

DCN#119454

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070116_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575005 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples L16061289(-01,-02), L16061290-05 and L16061452-03 were analyzed at dilutions based on their historical results.
Samples L16061290-04 and L16061453-01 had inconsistent historical results. These samples were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35568	WG575015-01 CCB	1	1		07/01/16 15:55
2	1LM.LM35569	WG575015-02 CCV (1.0ug/L)	1	1	STD75510	07/01/16 16:14
3	1LM.LM35570	WG575005-05 MRL (0.2ug/L)	1	1	STD75510	07/01/16 16:33
4	1LM.LM35571	WG575005-01 MCT (0.2ug/L)	1	1	STD75512	07/01/16 16:52
5	1LM.LM35572	WG575005-02 BLANK	1	1		07/01/16 17:11
6	1LM.LM35573	WG575005-03 LCS (0.2ug/L)	1	1	STD75512	07/01/16 17:30
7	1LM.LM35574	WG575005-04 LCS2 (0.2ug/L)	1	1	STD75512	07/01/16 17:49
8	1LM.LM35575	L16070001-01 LOD (0.1ug/L)	1	1	STD75512	07/01/16 18:08
9	1LM.LM35576	L16070003-01 LOQ (0.2ug/L)	1	1	STD75512	07/01/16 18:27
10	1LM.LM35577	L16070003-09 LOQ (0.2ug/L)	1	1	STD75512	07/01/16 18:46
11	1LM.LM35578	L16061289-01 (10,000x)	1	10000		07/01/16 19:05
12	1LM.LM35579	L16061289-02 (100x)	1	100		07/01/16 19:24
13	1LM.LM35580	L16061289-03	1	1		07/01/16 19:43
14	1LM.LM35581	WG575015-03 CCV (1.0ug/L)	1	1	STD75510	07/01/16 20:02
15	1LM.LM35582	WG575005-06 MRL (0.2ug/L)	1	1	STD75510	07/01/16 20:21
16	1LM.LM35583	WG575015-04 CCB	1	1		07/01/16 20:39
17	1LM.LM35584	L16061289-05	1	1		07/01/16 20:58
18	1LM.LM35585	L16061290-01	1	1		07/01/16 21:17
19	1LM.LM35586	L16061290-02	1	1		07/01/16 21:36
20	1LM.LM35587	L16061290-04 (500x)	1	500		07/01/16 21:55
21	1LM.LM35588	L16061290-05 (10,000x) (NR)	1	10000		07/01/16 22:14
22	1LM.LM35589	L16061290-06	1	1		07/01/16 22:33
23	1LM.LM35590	L16061452-01	1	1		07/01/16 22:52
24	1LM.LM35591	L16061452-03 (10,000x)	1	10000		07/01/16 23:11
25	1LM.LM35592	L16061453-01 (10x)	1	10		07/01/16 23:30
26	1LM.LM35593	L16061453-02	1	1		07/01/16 23:49
27	1LM.LM35594	WG575015-05 CCV (1.0ug/L)	1	1	STD75510	07/02/16 00:08
28	1LM.LM35595	WG575005-07 MRL (0.2ug/L)	1	1	STD75510	07/02/16 00:27
29	1LM.LM35596	WG575015-06 CCB	1	1		07/02/16 00:46
30	1LM.LM35597	L16061453-03	1	1		07/02/16 01:05
31	1LM.LM35598	L16061559-01	1	1		07/02/16 01:23
32	1LM.LM35599	L16061559-02	1	1		07/02/16 01:42

Page: 1 Approved: 06-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070116_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575005 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
33	1LM.LM35600	L16061648-01	1	1		07/02/16 02:01
34	1LM.LM35601	WG575015-07 CCV (1.0ug/L)	1	1	STD75510	07/02/16 02:20
35	1LM.LM35602	WG575005-08 MRL (0.2ug/L)	1	1	STD75510	07/02/16 02:39
36	1LM.LM35603	WG575015-08 CCB	1	1		07/02/16 02:58

Comments

Seq.	Rerun	Dil.	Reason	Analytes
21	X	1000	Analyzed too dilute	
	L16061290-05 (10,000x) (NR) : This sample did not conform to its historical results and was analyzed too dilute at 10,000x dilution. This sample will be ungrouped from this analytical batch and reanalyzed at a 1000x dilution on another day.			

Page: 2 Approved: 06-JUL-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 76123
Analytical Workgroups: L16061289,1290,1452,1453,1559,1648 L16070001(LOD), 0003(LOQ)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 06-JUL-2016 John Richards

Secondary Reviewer: 06-JUL-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-06-2016 14:48:43

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG575005

Login Number: L16061452

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW12SW-062416	01	06/24/16					07/01/2016	7.2	28		07/01/16	.4	28	
MW7-062416	03	06/24/16					07/01/2016	7.1	28		07/01/16	.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4841043
Report generated 07/07/2016 09:02

METHOD BLANK SUMMARY

Login Number: L16061452
Blank File ID: 1LM.LM35572
Prep Date: 07/01/16 13:30
Analyzed Date: 07/01/16 17:11
Analyst: JWR

Work Group: WG575005
Blank Sample ID: WG575005-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG575005-05	1LM.LM35570	07/01/16 16:33	01
MCT	WG575005-01	1LM.LM35571	07/01/16 16:52	01
LCS	WG575005-03	1LM.LM35573	07/01/16 17:30	01
LCS2	WG575005-04	1LM.LM35574	07/01/16 17:49	01
QCMRL	WG575005-06	1LM.LM35582	07/01/16 20:21	01
18CPTMW12SW-062416	L16061452-01	1LM.LM35590	07/01/16 22:52	01
MW7-062416	L16061452-03	1LM.LM35591	07/01/16 23:11	DL01
QCMRL	WG575005-07	1LM.LM35595	07/02/16 00:27	01
QCMRL	WG575005-08	1LM.LM35602	07/02/16 02:39	01

Report Name: BLANK_SUMMARY
PDF File ID: 4841044
Report generated 07/07/2016 09:02

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061452 Prep Date: 07/01/16 13:30 Sample ID: WG575005-02
Instrument ID: LCMS1 Run Date: 07/01/16 17:11 Prep Method: 6850
File ID: 1LM.LM35572 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4841045
07-JUL-2016 09:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061452 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG575005 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG575005-03 LCS File ID: 1LM.LM35573 Run Date: 07/01/2016 17:30
Sample ID: WG575005-04 LCS2 File ID: 1LM.LM35574 Run Date: 07/01/2016 17:49

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.201	101	0.200	0.211	106	4.85	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4841046
Report generated: 07/07/2016 09:02

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061452
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4841503
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061452

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4841503
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061452

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4841503
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061452

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4841503

Report generated 07/07/2016 09:03

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061452 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4841504
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575015-01
Instrument ID: LCMS1
Run Time: 15:55
Method: 6850
File ID: 1LM.LM35568
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841049
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575015-04
Instrument ID: LCMS1
Run Time: 20:39
Method: 6850
File ID: 1LM.LM35583
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841049
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/02/2016
Sample ID: WG575015-06
Instrument ID: LCMS1
Run Time: 00:46
Method: 6850
File ID: 1LM.LM35596
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841049
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/02/2016
Sample ID: WG575015-08
Instrument ID: LCMS1
Run Time: 02:58
Method: 6850
File ID: 1LM.LM35603
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841049
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575015-02
Instrument ID: LCMS1
Run Time: 16:14
Method: 6850
File ID: 1LM.LM35569
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841048
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575015-03
Instrument ID: LCMS1
Run Time: 20:02
Method: 6850
File ID: 1LM.LM35581
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841048
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/02/2016
Sample ID: WG575015-05
Instrument ID: LCMS1
Run Time: 00:08
Method: 6850
File ID: 1LM.LM35594
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841048
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/02/2016
Sample ID: WG575015-07
Instrument ID: LCMS1
Run Time: 02:20
Method: 6850
File ID: 1LM.LM35601
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841048
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061452 Run Date: 07/01/2016 Sample ID: WG575005-05
Instrument ID: LCMS1 Run Time: 16:33 Prep Method: 6850
File ID: 1LM.LM35570 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841047
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061452 Run Date: 07/01/2016 Sample ID: WG575005-06
Instrument ID: LCMS1 Run Time: 20:21 Prep Method: 6850
File ID: 1LM.LM35582 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841047
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061452 Run Date: 07/02/2016 Sample ID: WG575005-07
Instrument ID: LCMS1 Run Time: 00:27 Prep Method: 6850
File ID: 1LM.LM35595 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841047
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061452 Run Date: 07/02/2016 Sample ID: WG575005-08
Instrument ID: LCMS1 Run Time: 02:39 Prep Method: 6850
File ID: 1LM.LM35602 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841047
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061452
Instrument ID: LCMS1
Workgroup (AAB#): WG575005

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061452-01	1.00	01	345000
L16061452-03	10000	DL01	430000
WG575005-02	1.00	01	451000
WG575005-03	1.00	01	451000
WG575005-04	1.00	01	450000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4841050
Report generated 07/07/2016 09:03

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	L16061452-01
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35590
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 22:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	456000	156000	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	L16061452-03
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35591
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 23:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	321000	107000	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	WG575005-01
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35571
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30200	9940	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	WG575005-02
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35572
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	WG575005-03
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35573
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:30	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31100	11300	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	WG575005-04
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35574
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32500	11800	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	WG575005-05
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35570
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33000	11700	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	WG575005-06
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35582
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32800	11400	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	WG575005-07
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35595
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35700	12900	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	WG575005-08
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35602
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	12300	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG575015-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35568
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 15:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG575015-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35569
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	163000	56900	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG575015-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35581
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	167000	58000	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG575015-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35583
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG575015-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35594
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	57200	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG575015-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35596
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG575015-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35601
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	58500	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG575015-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35603
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:33 PM

Data File	LM35590.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 10:52:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061452-01	**Injection Vial**	20.00
Data File	LM35590.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 10:52:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061452-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.450e+05	9.26	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.560e+05	9.27	N/A	3.92
Perchlorate conf	1.560e+05	9.26	N/A	4.03

O18LP (Internal Standard)

RT (Exp. RT): 9.26(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

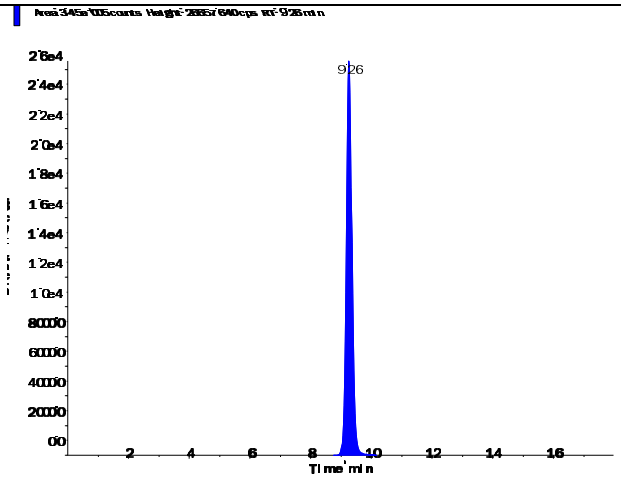

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:33 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	3.92 ng/ml
Area Ratio:	1.32
Sample Type:	(Unknown)

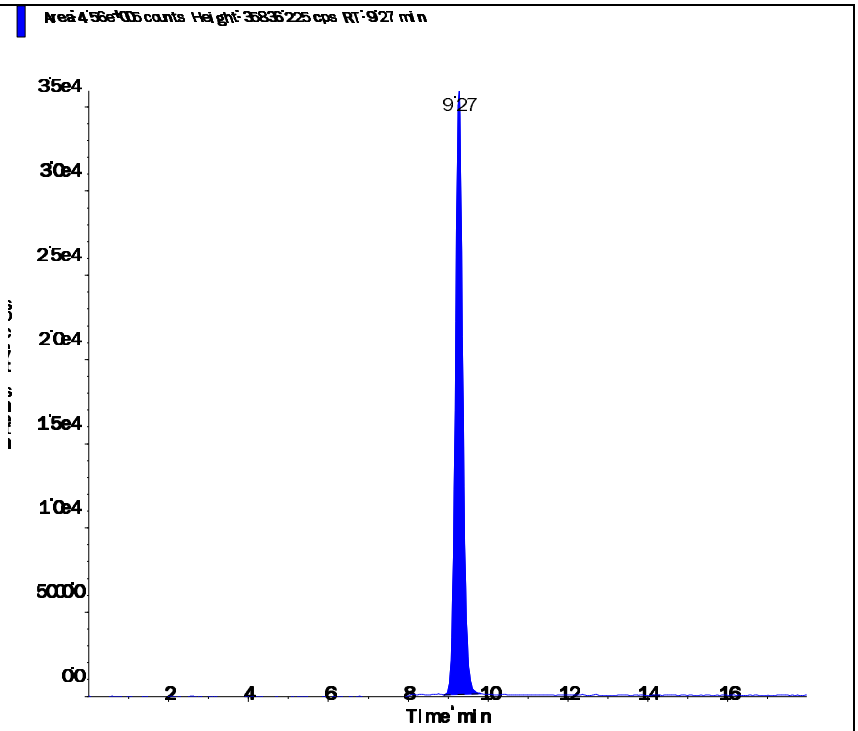

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.26 (9.84) min
Calculated conc:	4.03 ng/ml
Area Ratio:	0.452
Sample Type:	(Unknown)

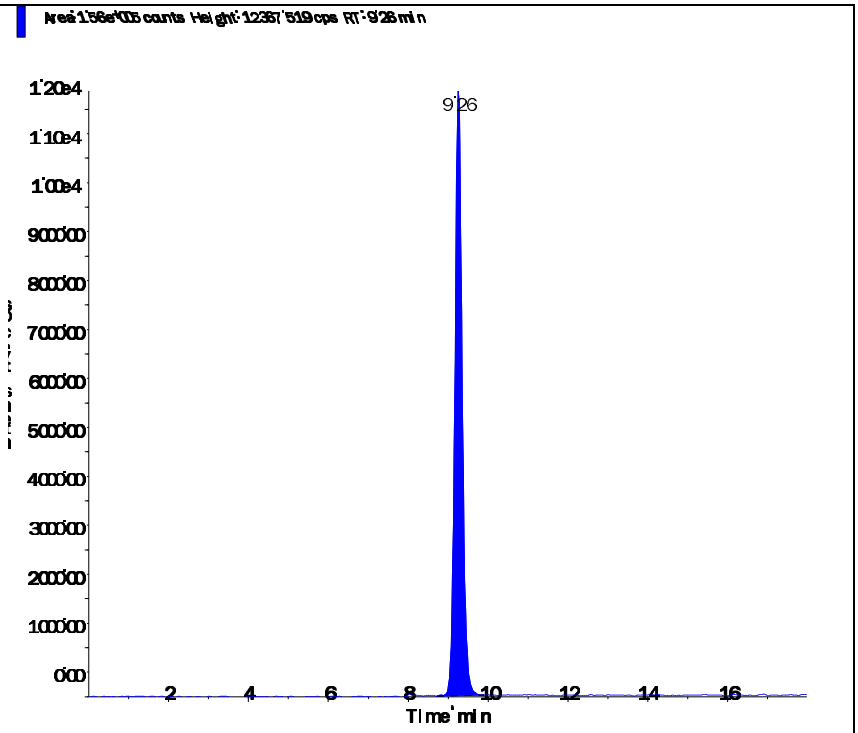

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:33 PM

Data File	LM35591.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 11:11:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061452-03 (10,000x)	**Injection Vial**	21.00
Data File	LM35591.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 11:11:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061452-03	**Dilution Factor**	1.00
Sample Comment	1,10000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.300e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.210e+05	9.70	N/A	2.22
Perchlorate conf	1.070e+05	9.68	N/A	2.22

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

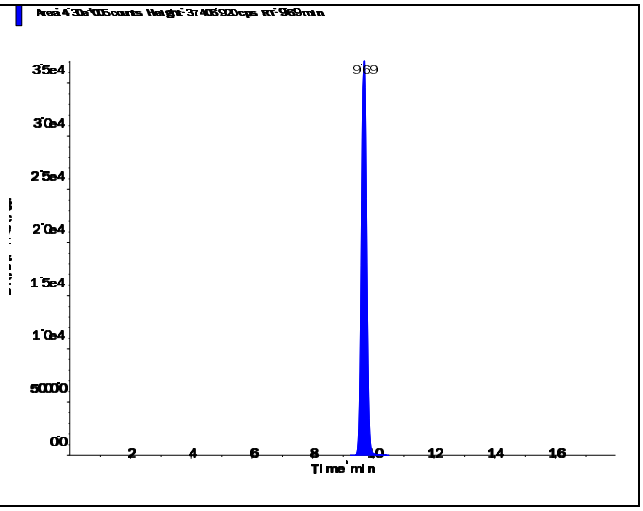

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:33 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.70 (9.84) min
Calculated conc:	2.22 ng/ml
Area Ratio:	0.747
Sample Type:	(Unknown)

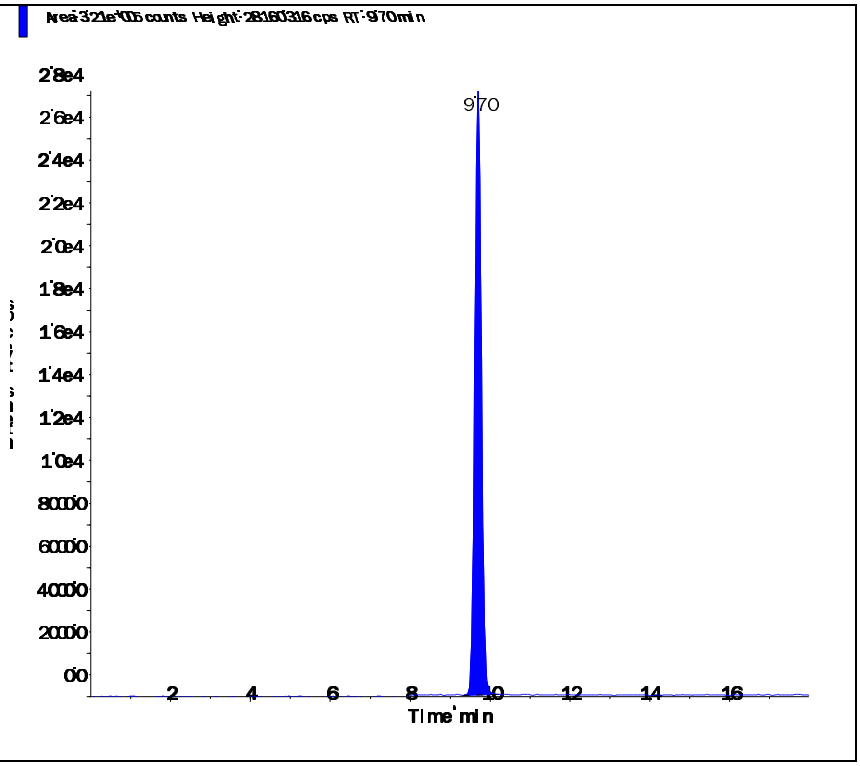

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	2.22 ng/ml
Area Ratio:	0.25
Sample Type:	(Unknown)

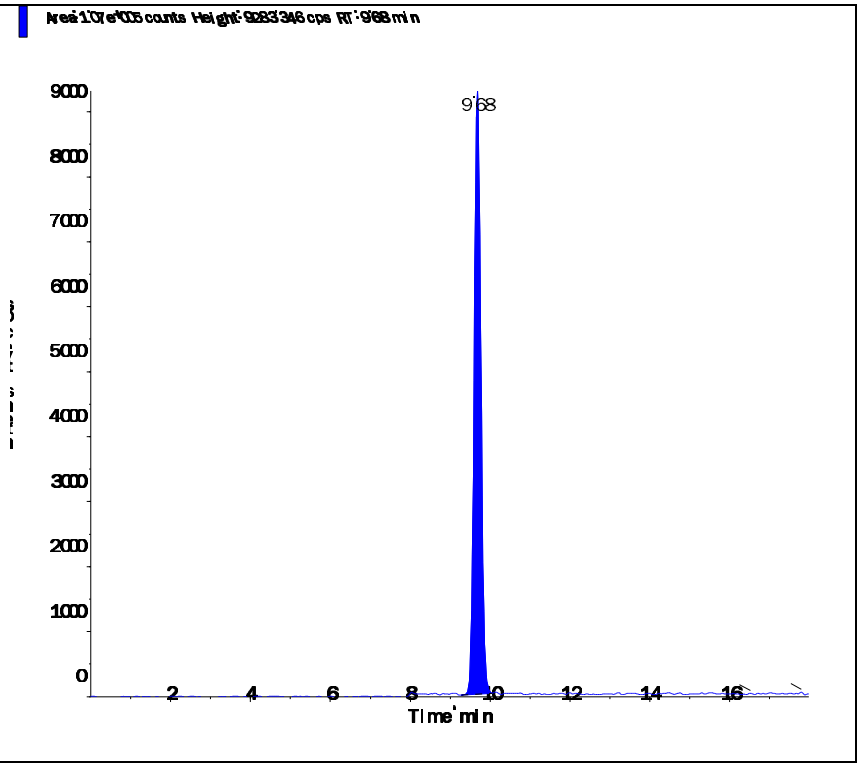

s.dataFile Page 2 of 2

2.2.2.4 Standards Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:53 AM

Data File	LM34686.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

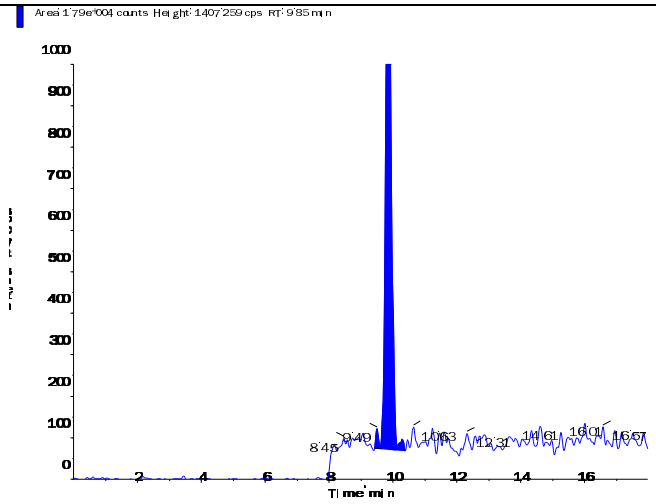

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:53 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

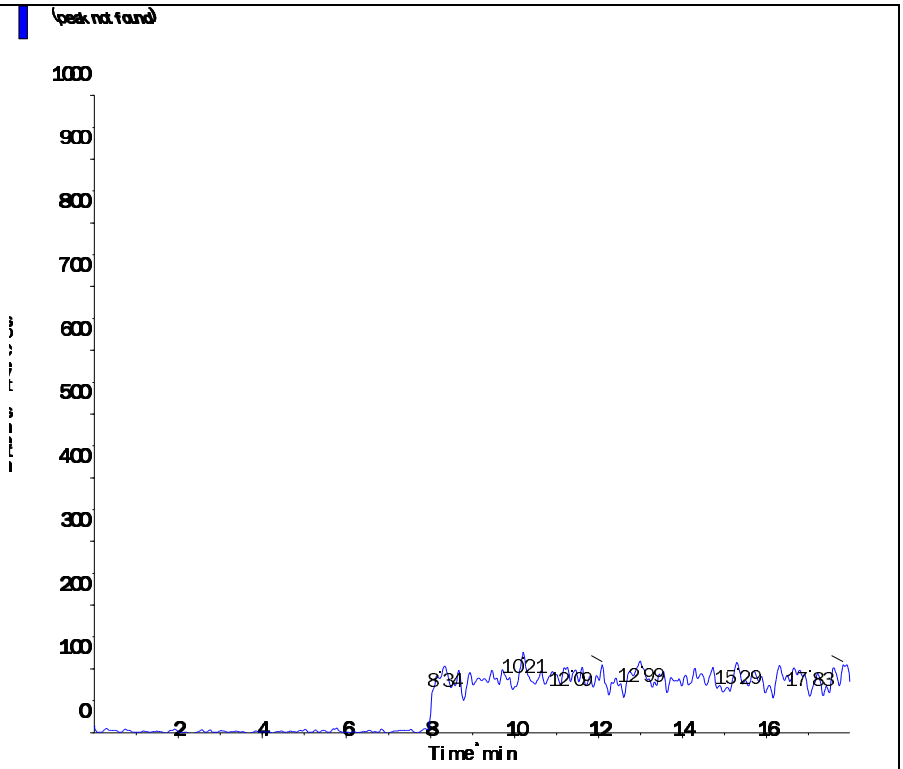

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

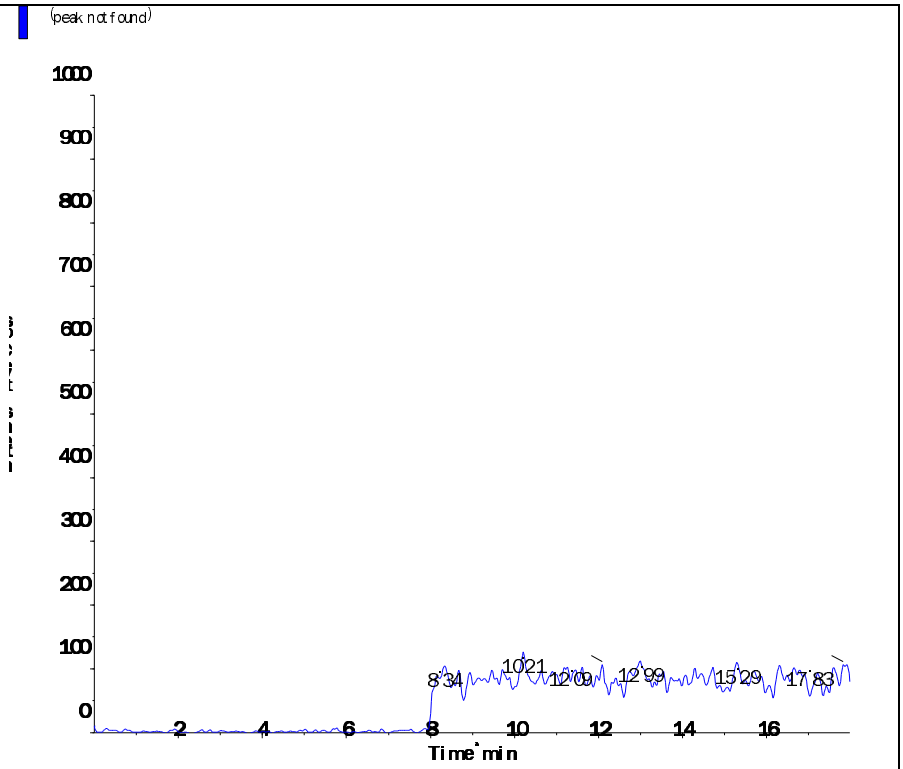

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

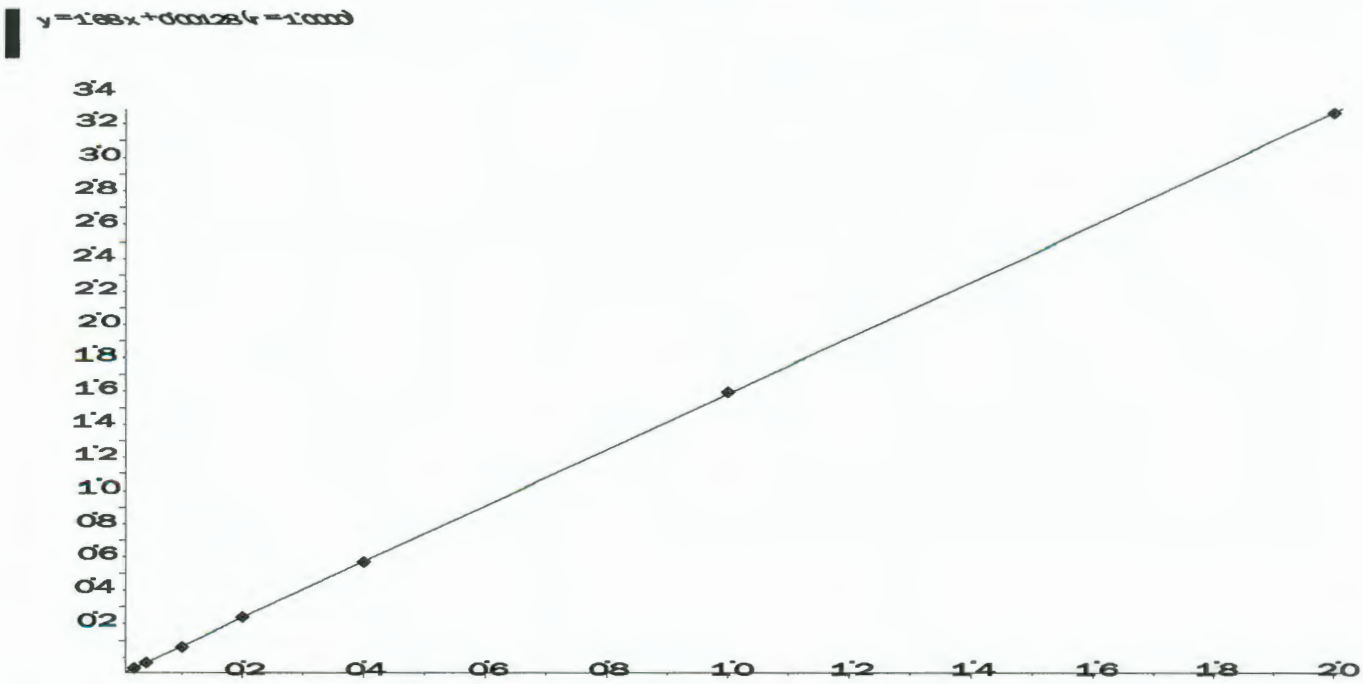

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

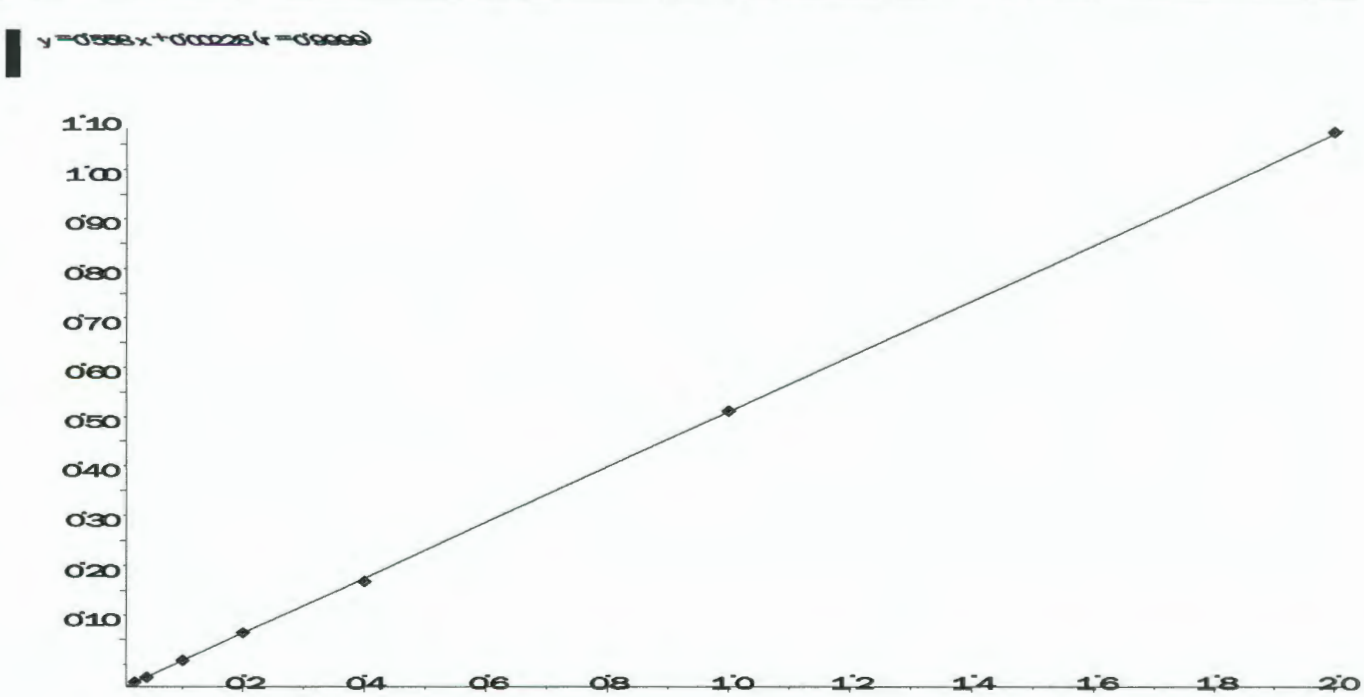

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:54 AM

Data File	LM34687.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

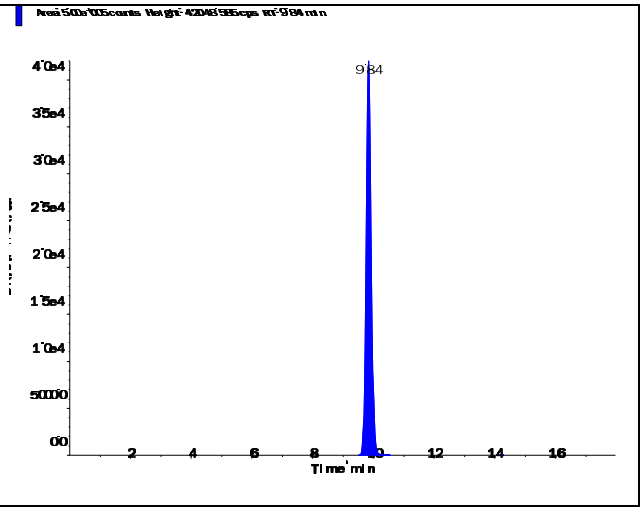

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:54 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

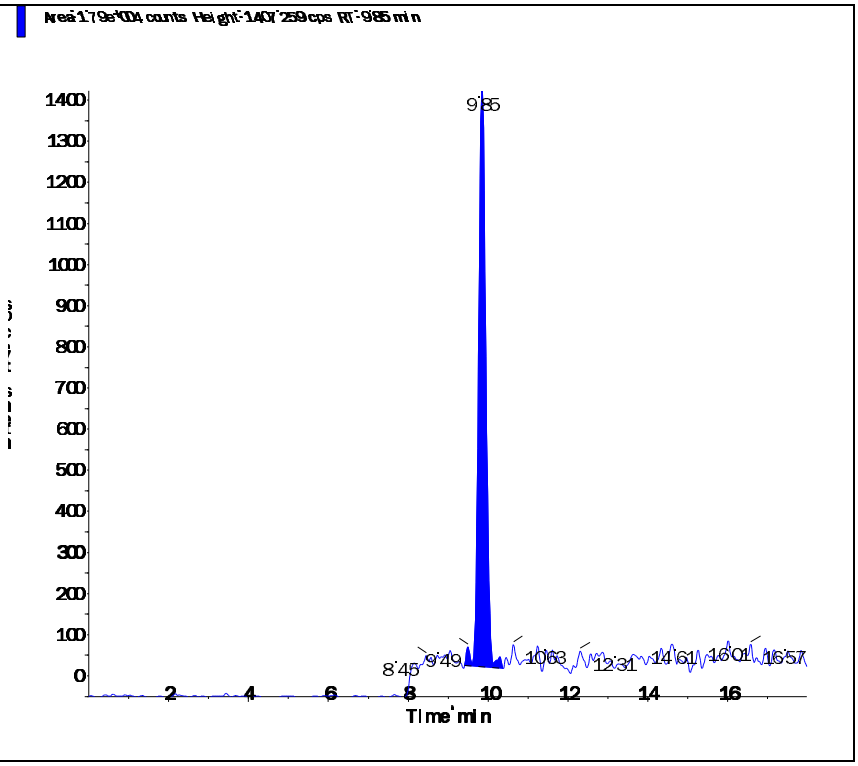

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

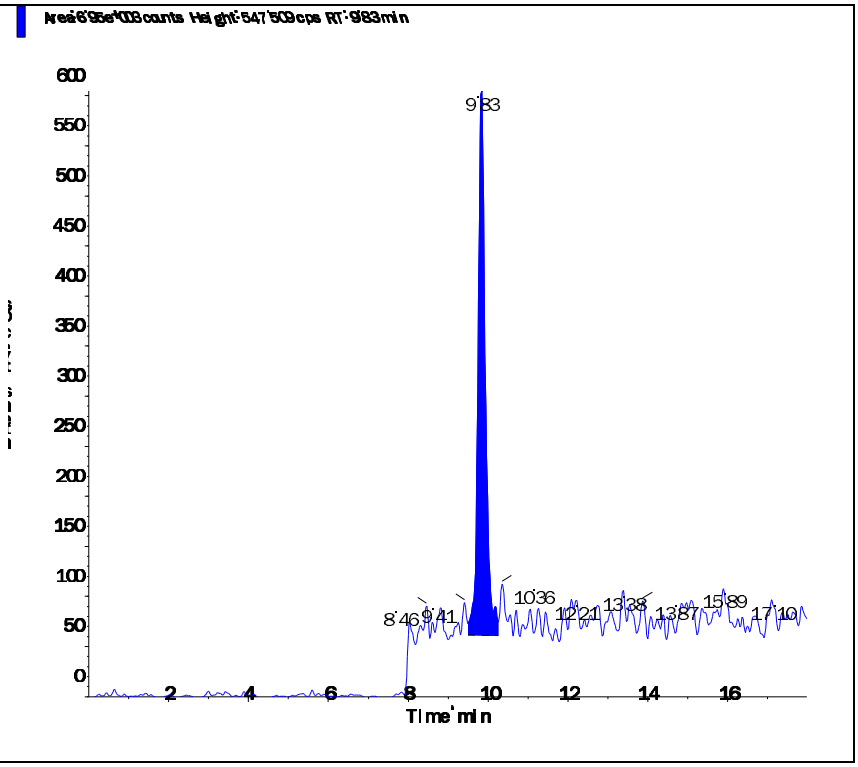

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:54 AM

Data File	LM34688.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

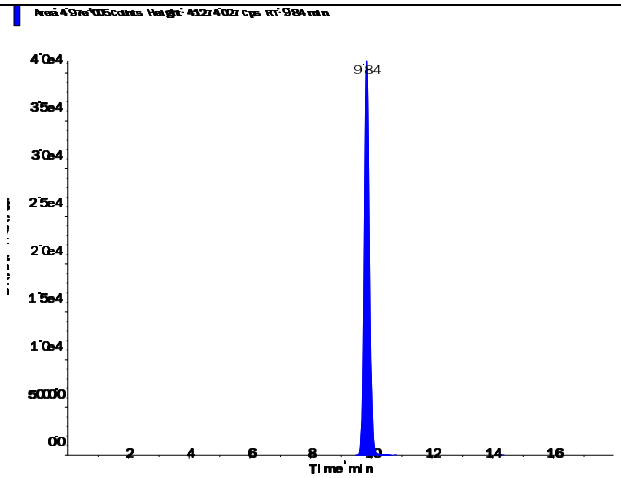

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:54 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

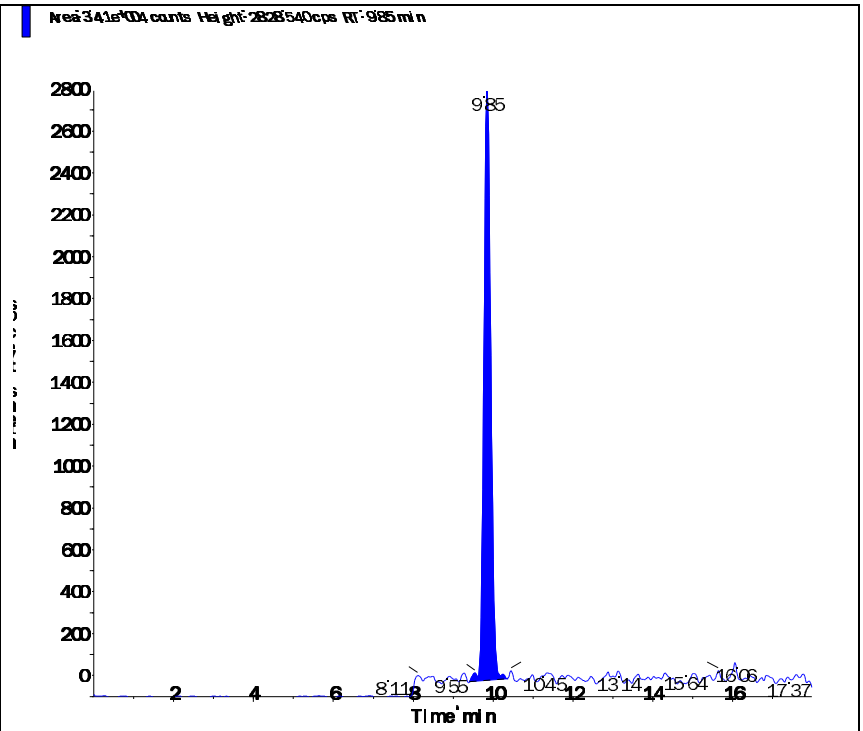

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

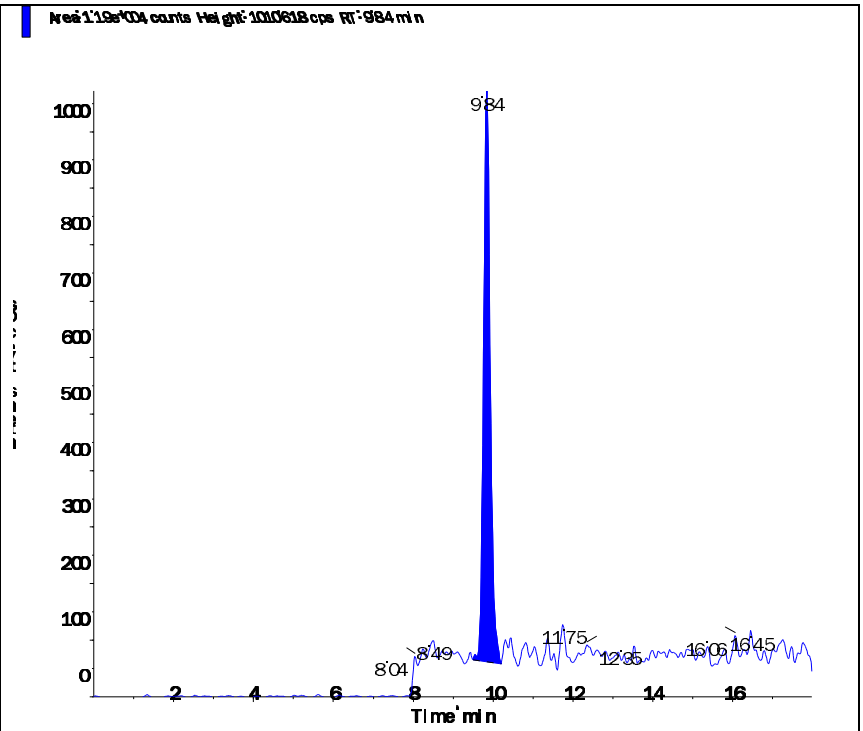

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Data File	LM34689.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

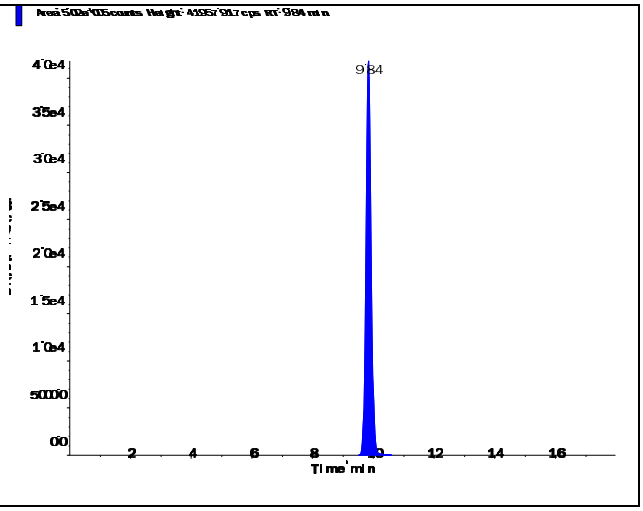

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

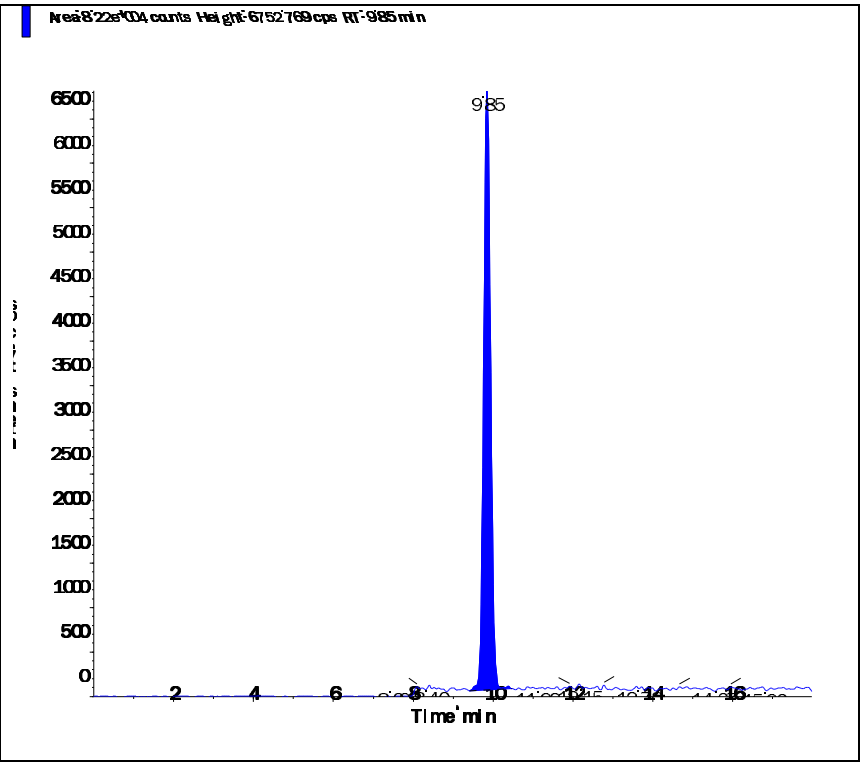

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

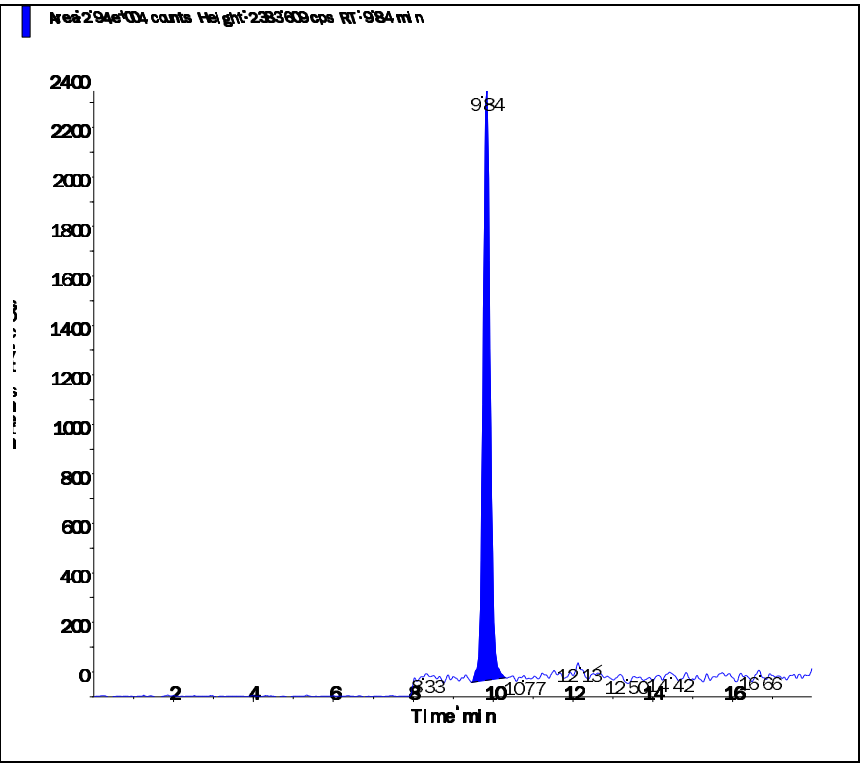

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Data File	LM34690.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

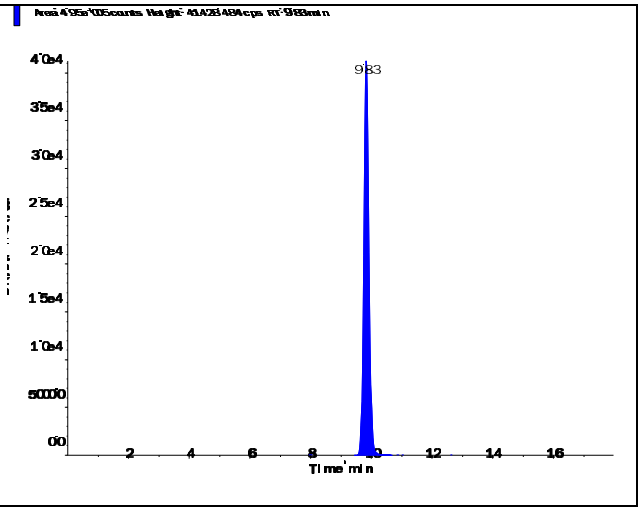

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

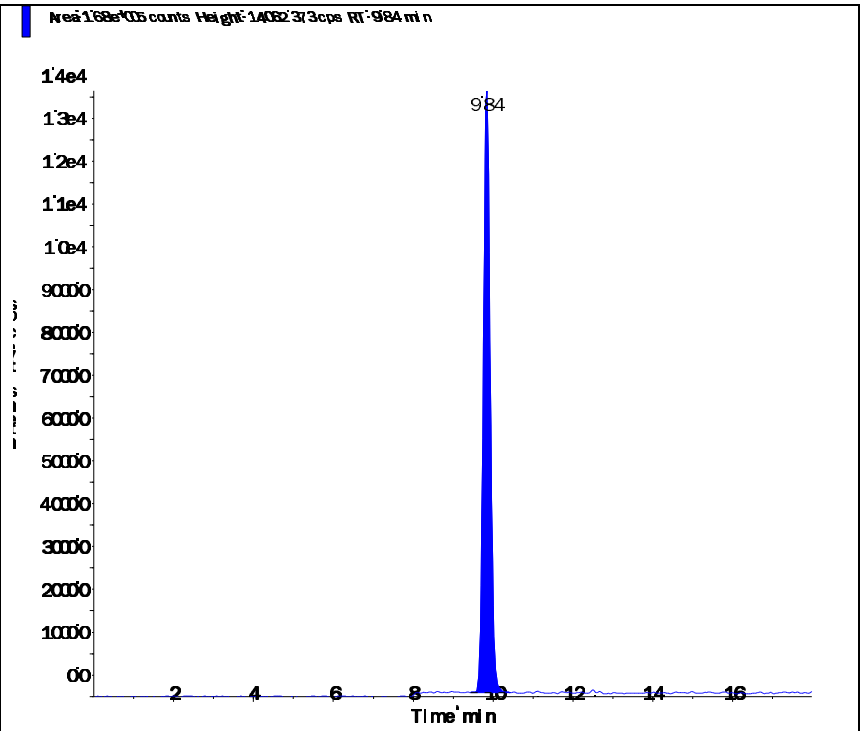

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

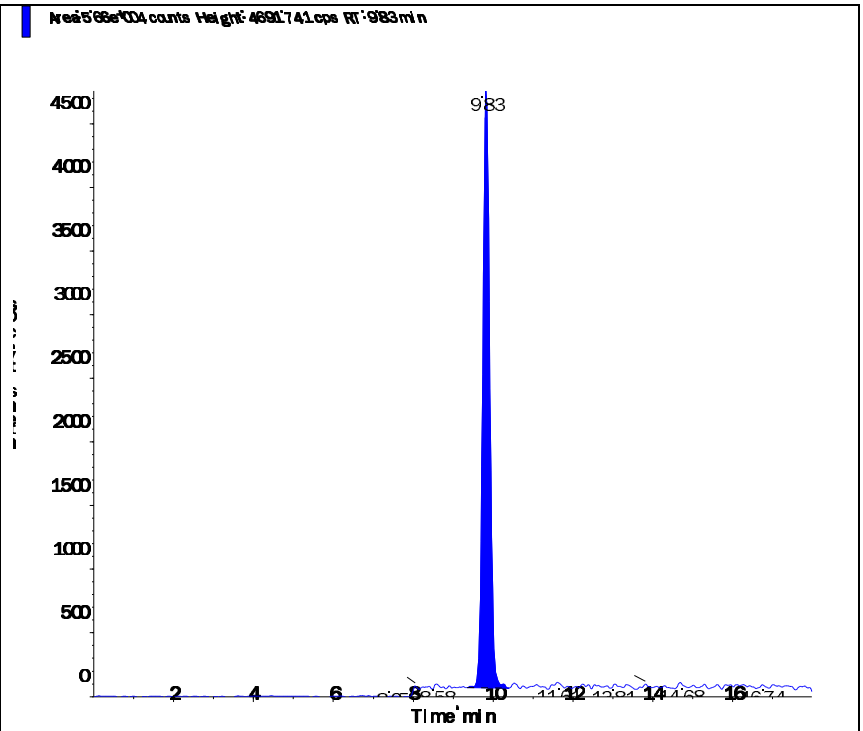

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Data File	LM34691.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

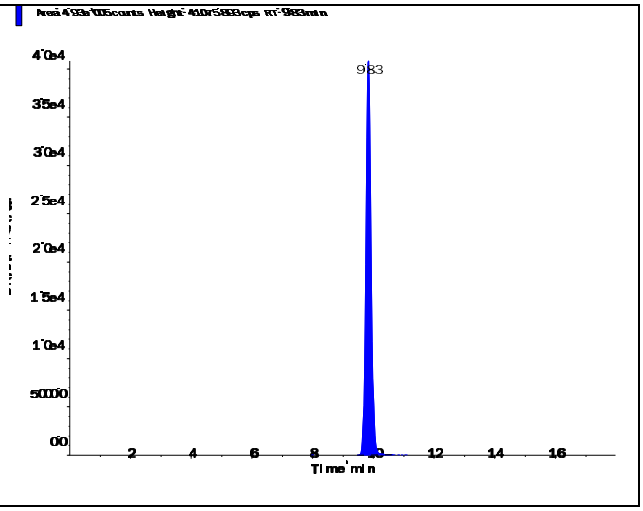

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

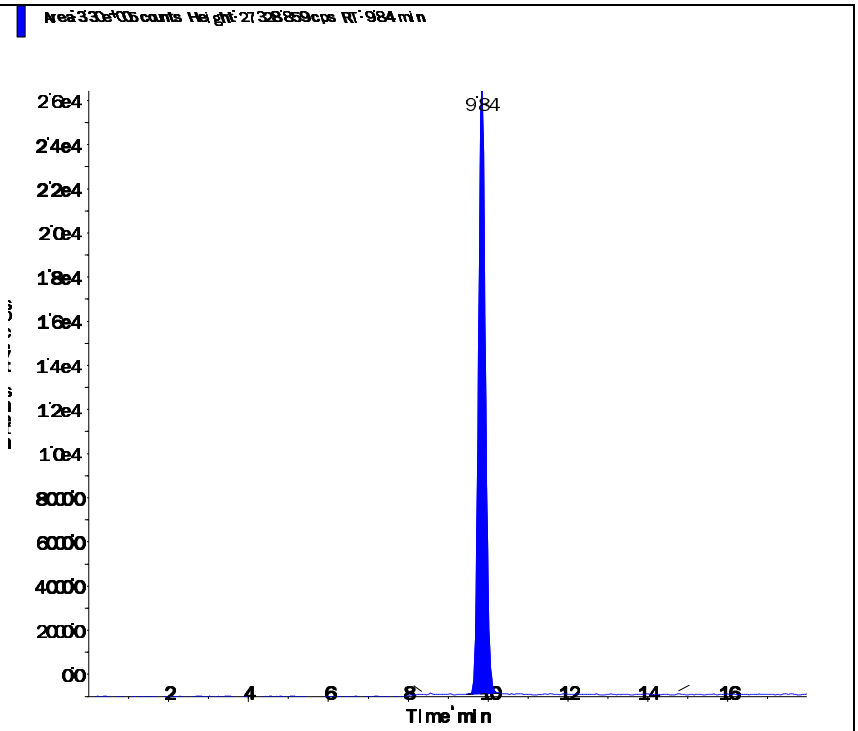

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

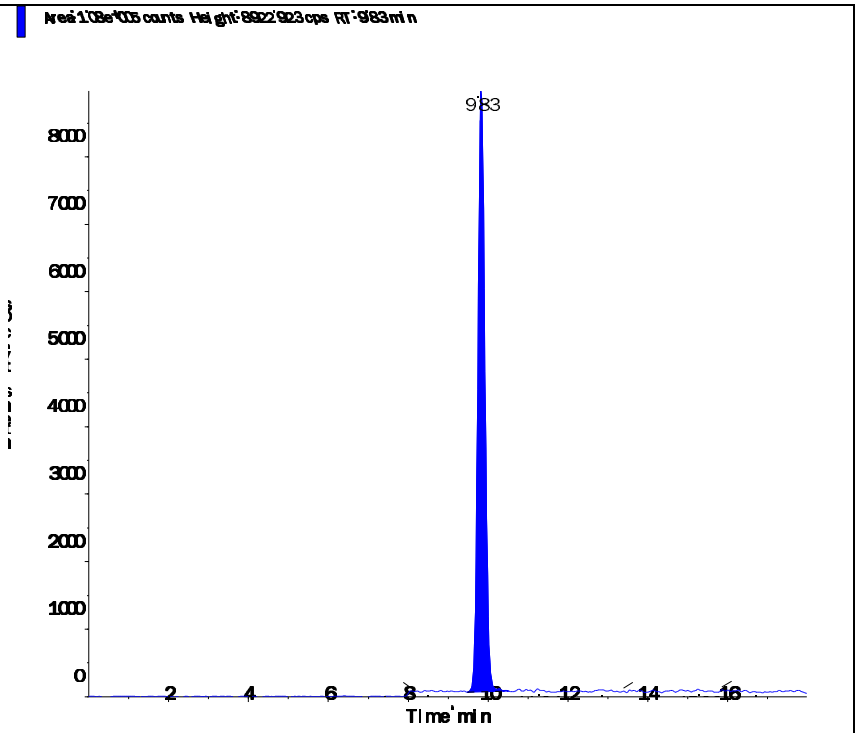

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Data File	LM34692.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

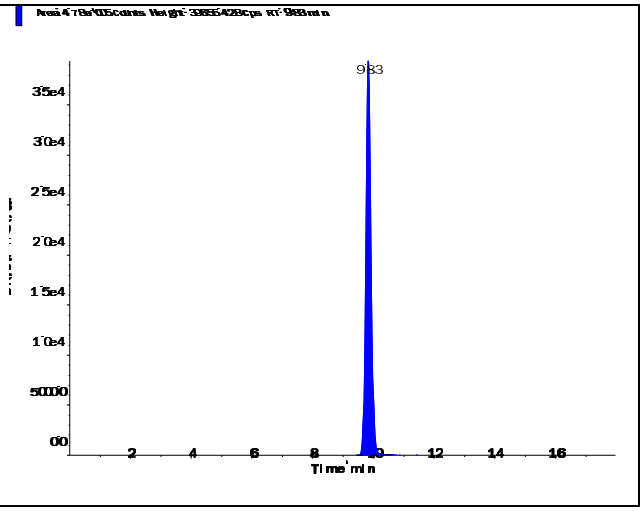

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

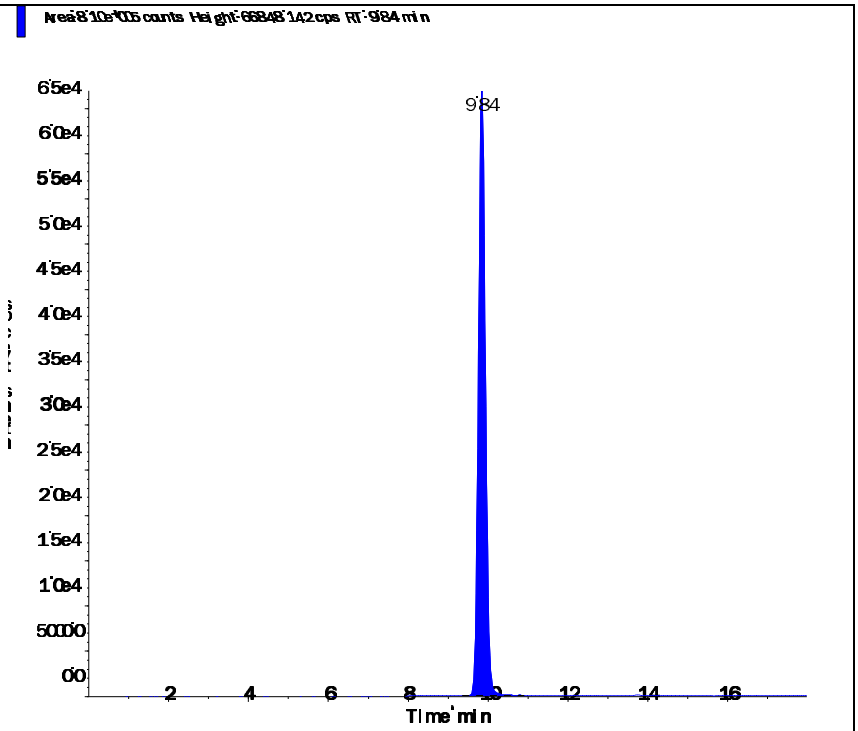

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

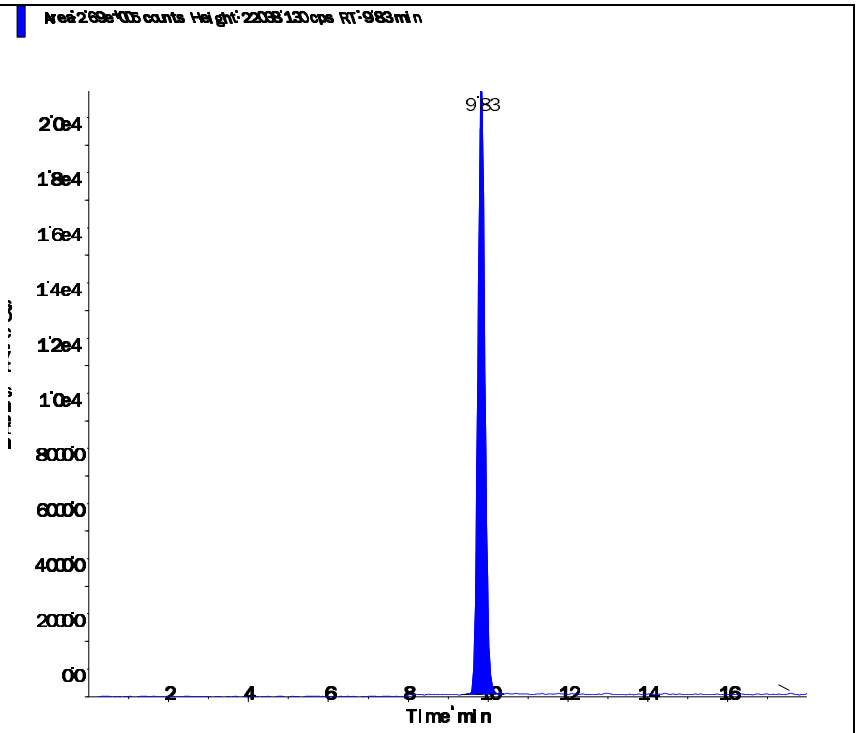

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:56 AM

Data File	LM34693.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

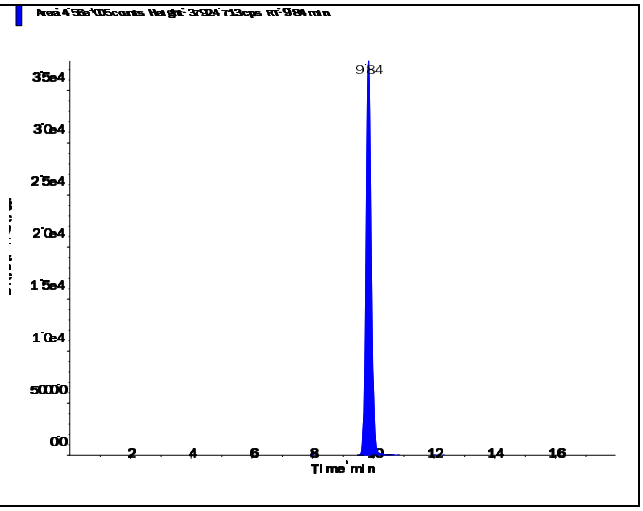

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

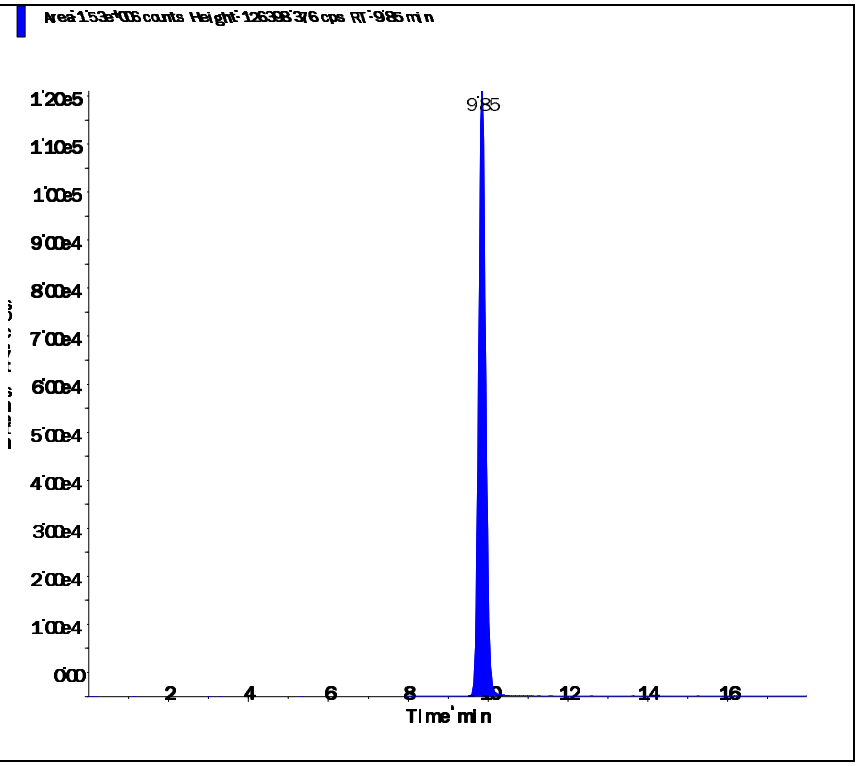

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

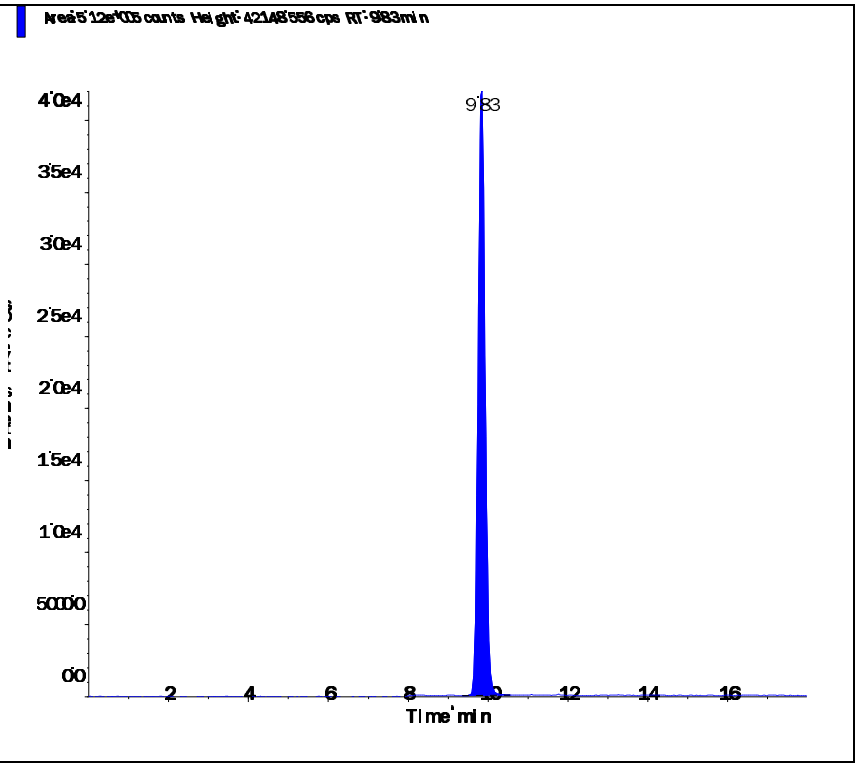

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

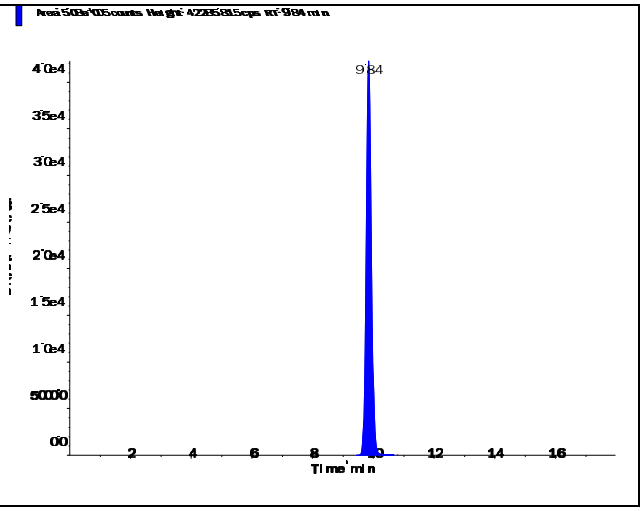

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

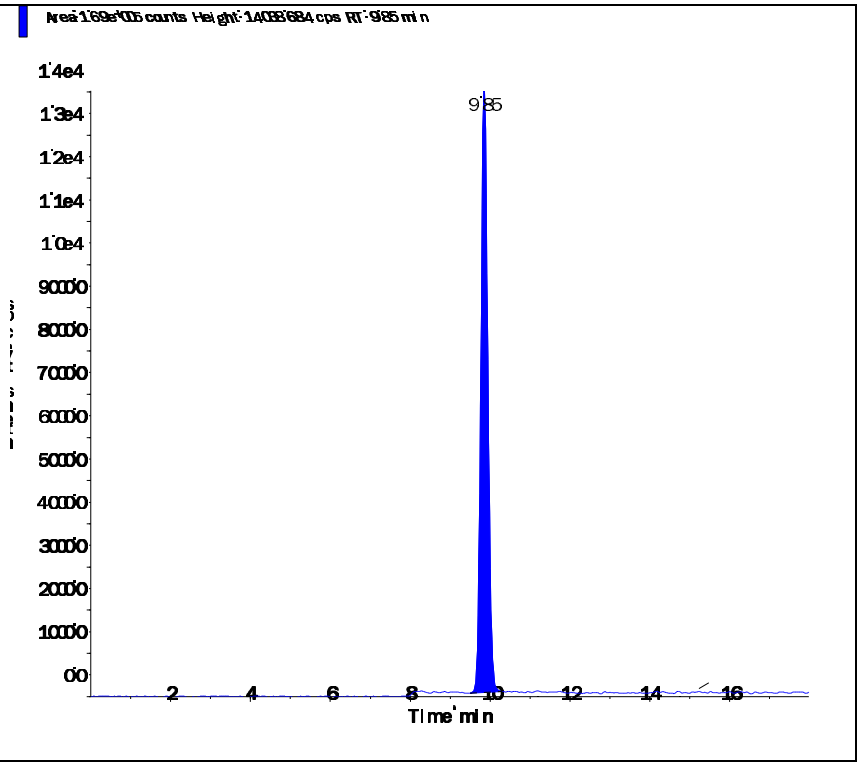

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

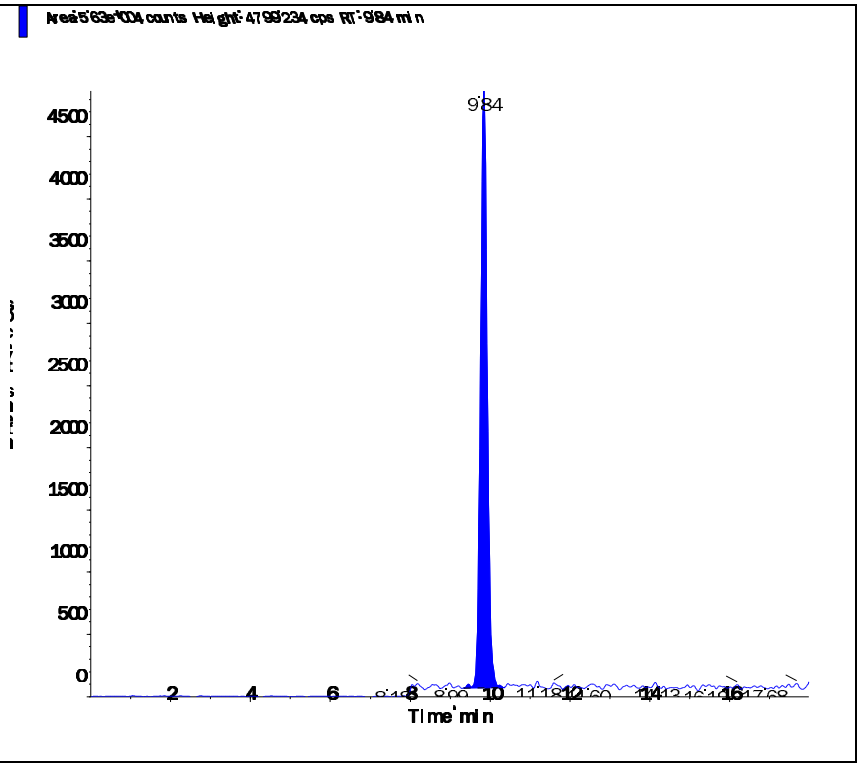

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Data File	LM35569.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35569.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.630e+05	9.40	1.00	1.03
Perchlorate conf	5.690e+04	9.38	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

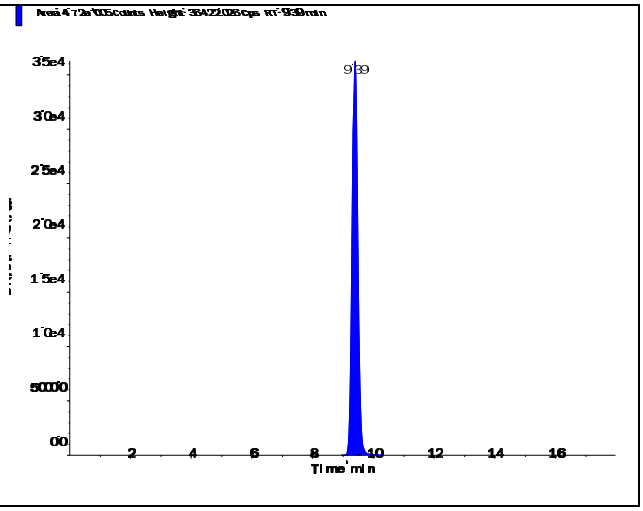

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

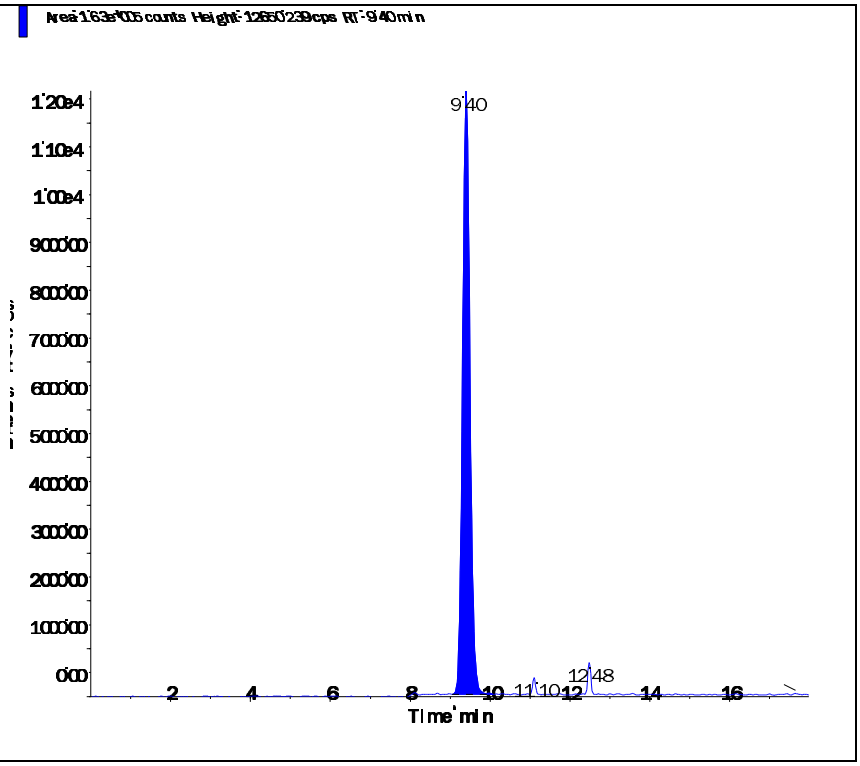

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

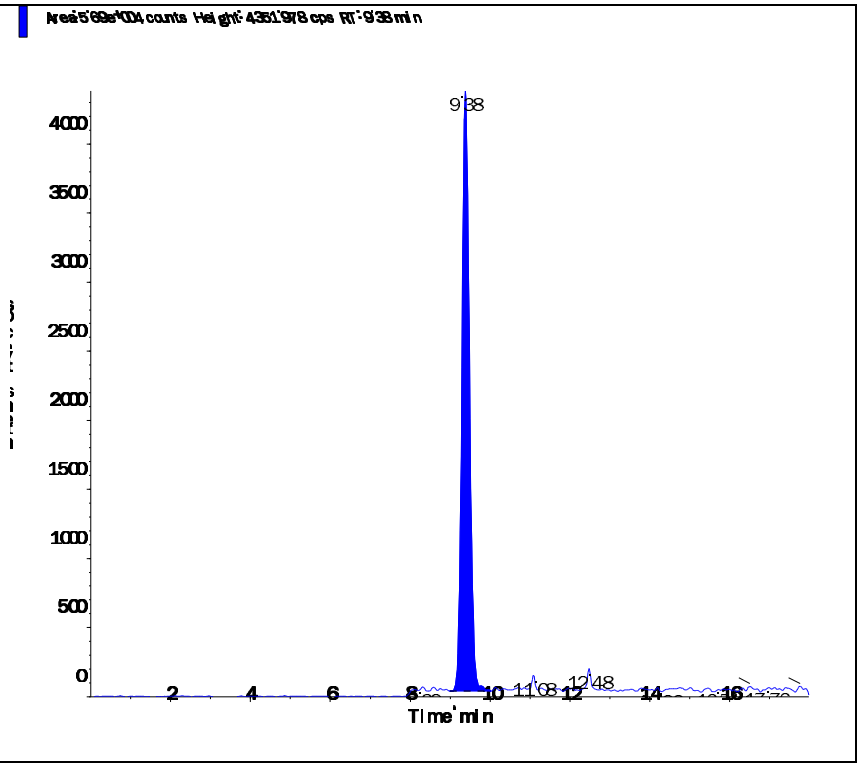

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:30 PM

Data File	LM35581.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:02:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35581.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:02:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.670e+05	9.40	1.00	1.02
Perchlorate conf	5.800e+04	9.39	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

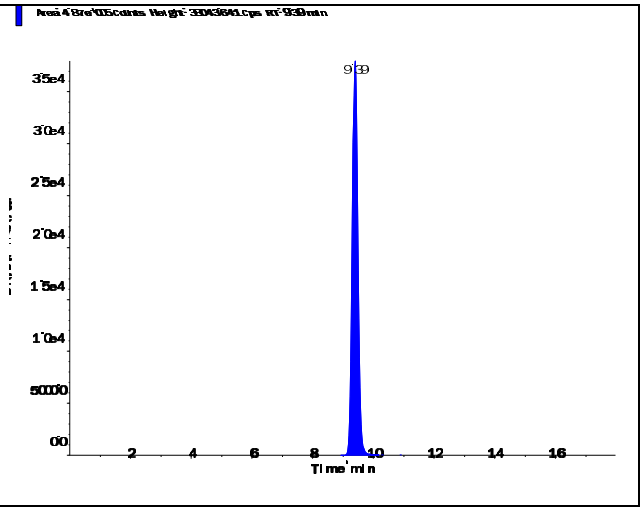

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.343
Sample Type:	(Quality Control)

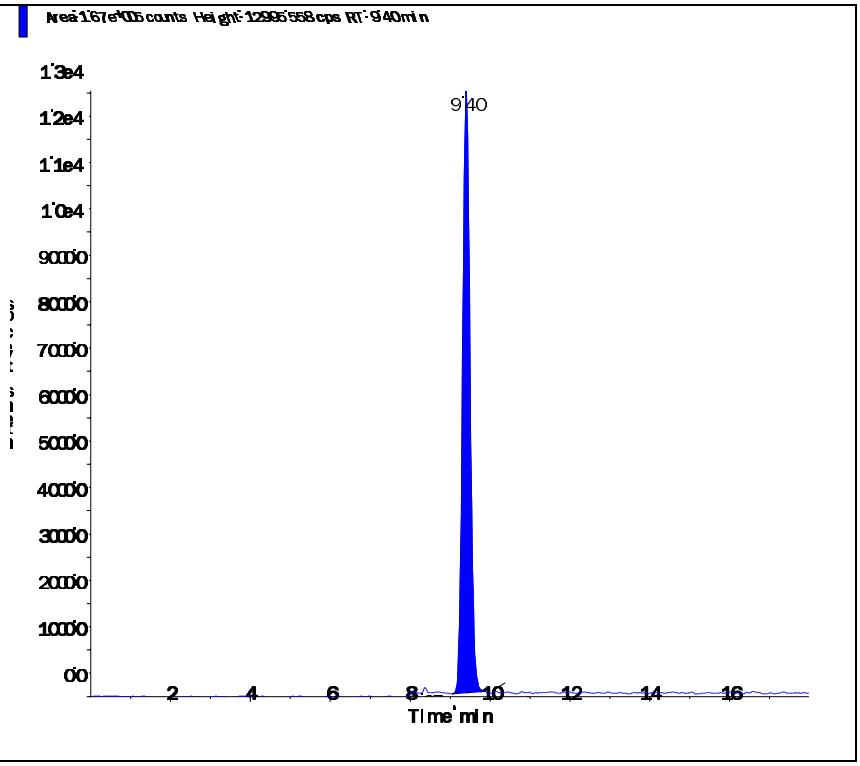

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

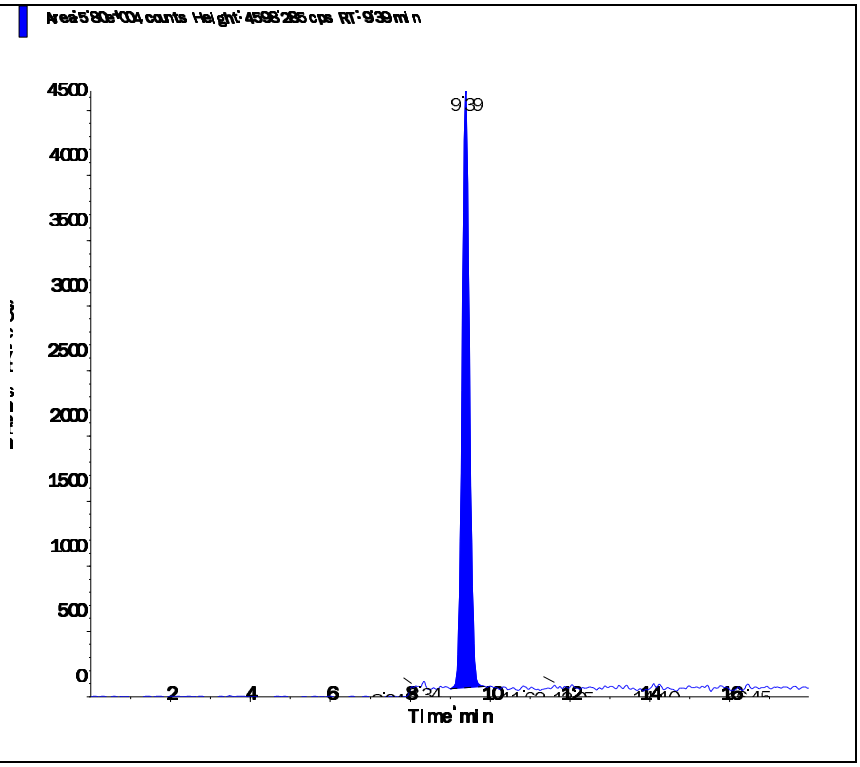

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:34 PM

Data File	LM35594.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:08:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35594.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:08:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.40	1.00	1.03
Perchlorate conf	5.720e+04	9.39	1.00	0.997

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

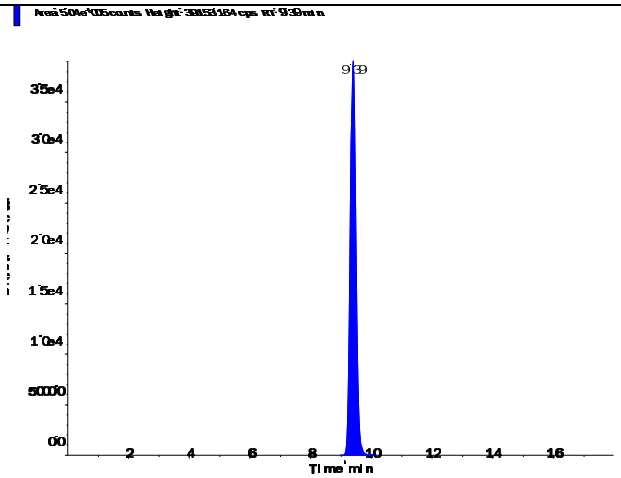

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

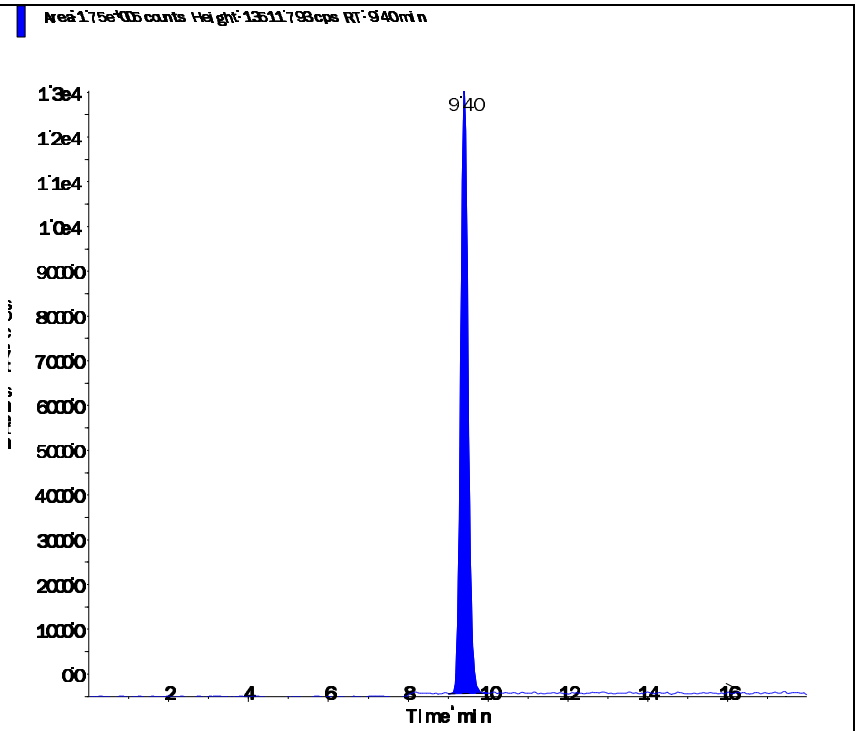

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.997 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

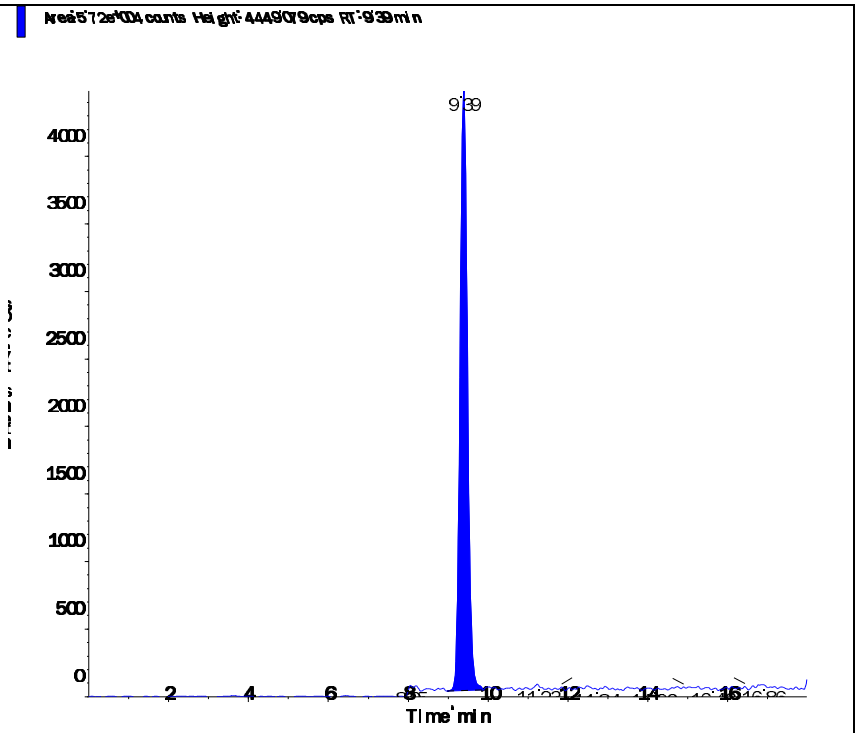

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:36 PM

Data File	LM35601.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:20:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35601.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:20:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.40	1.00	1.01
Perchlorate conf	5.850e+04	9.38	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

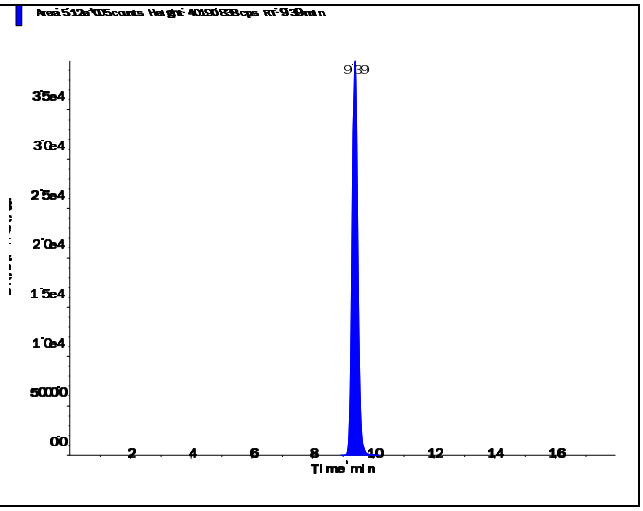

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:36 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

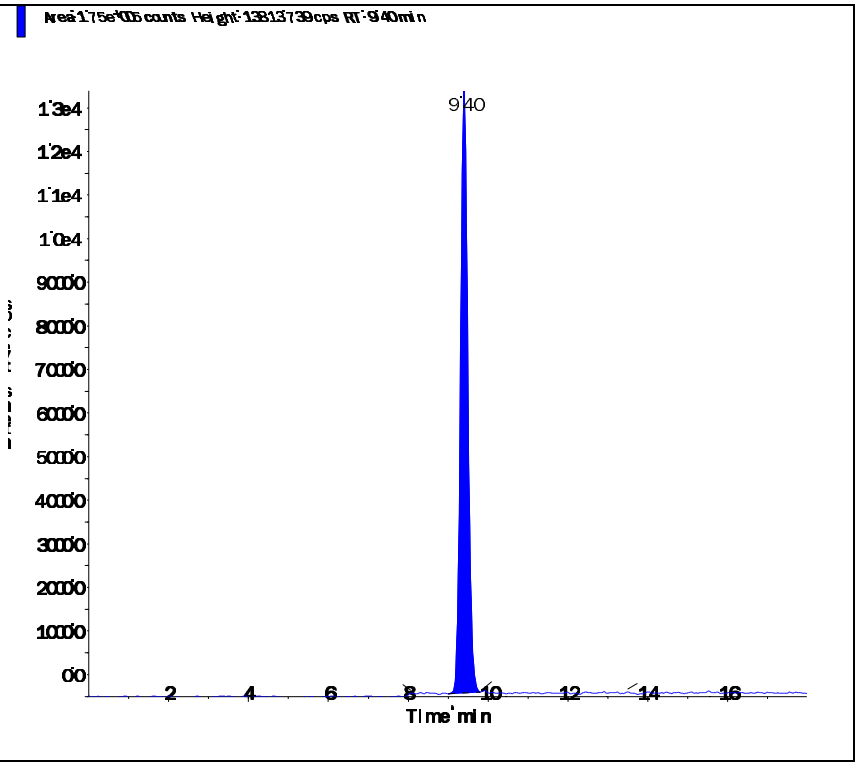

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

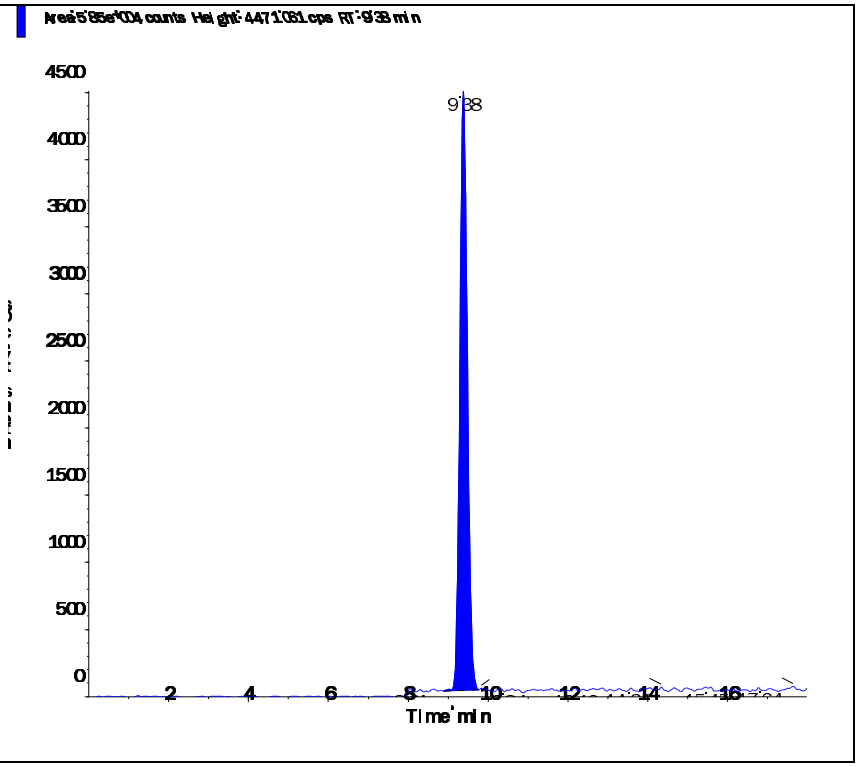

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Data File	LM35570.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:33:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35570.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:33:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+04	9.44	N/A	0.207
Perchlorate conf	1.170e+04	9.44	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

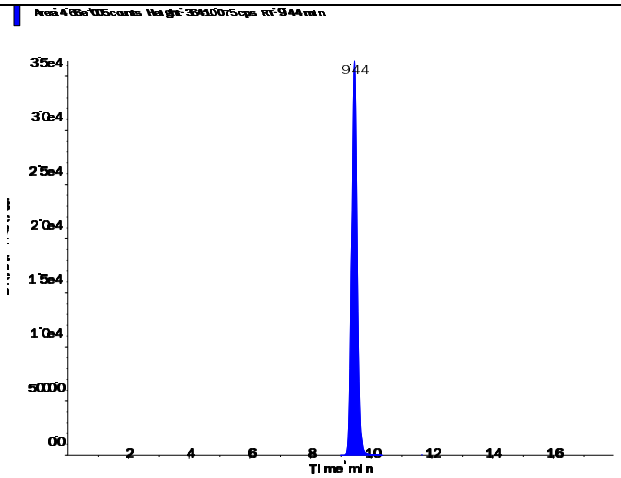

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

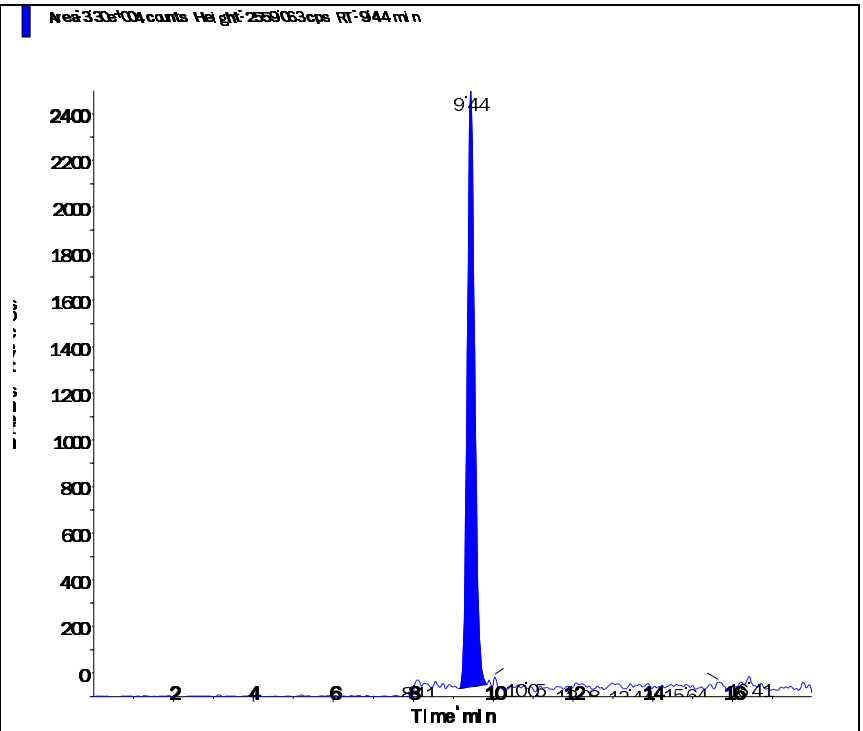

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

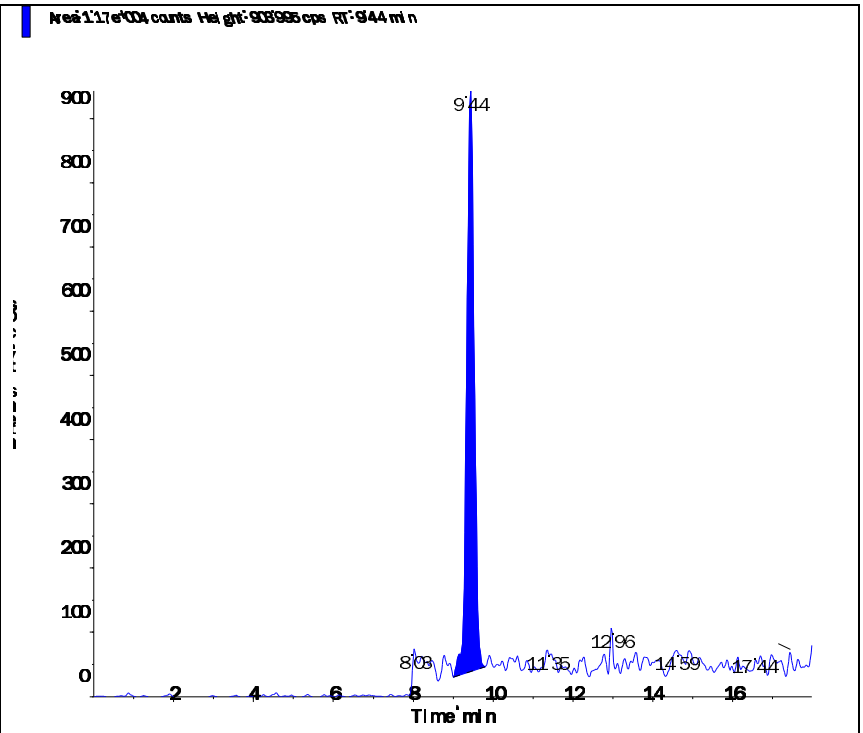

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:30 PM

Data File	LM35582.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:21:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35582.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:21:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.280e+04	9.44	N/A	0.206
Perchlorate conf	1.140e+04	9.43	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

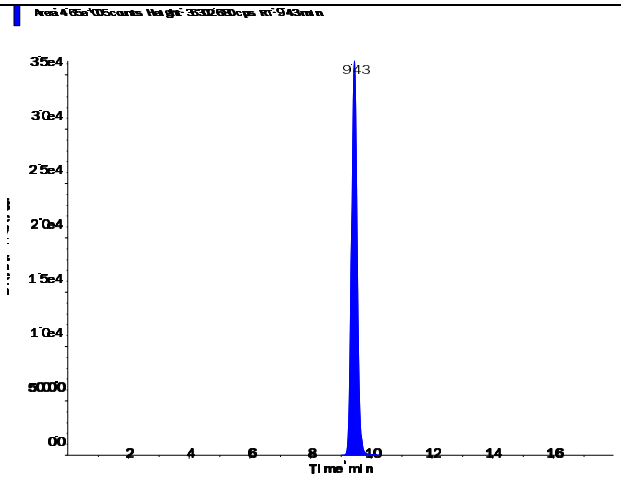

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

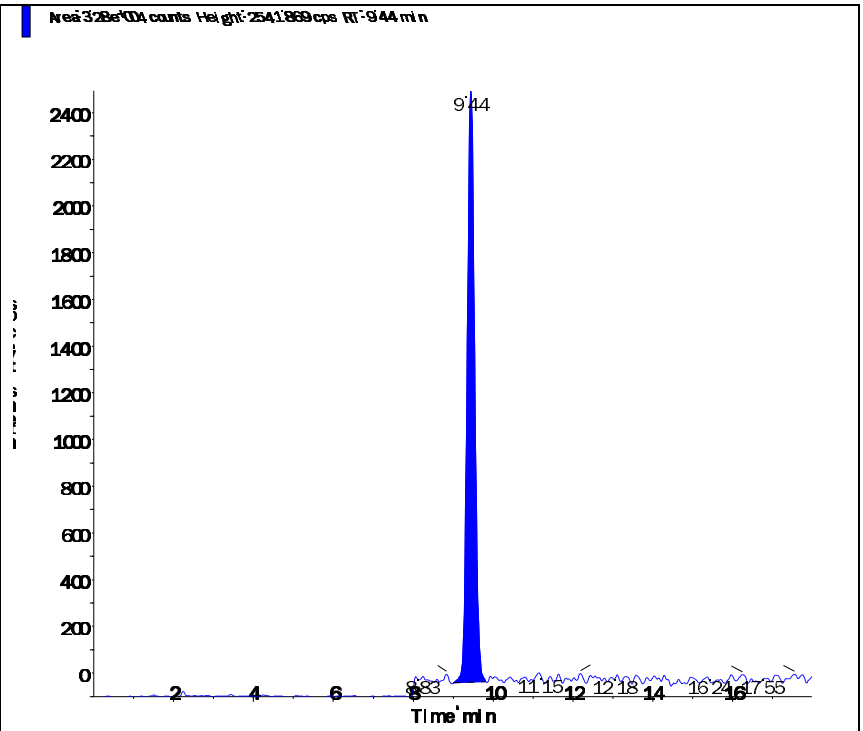

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

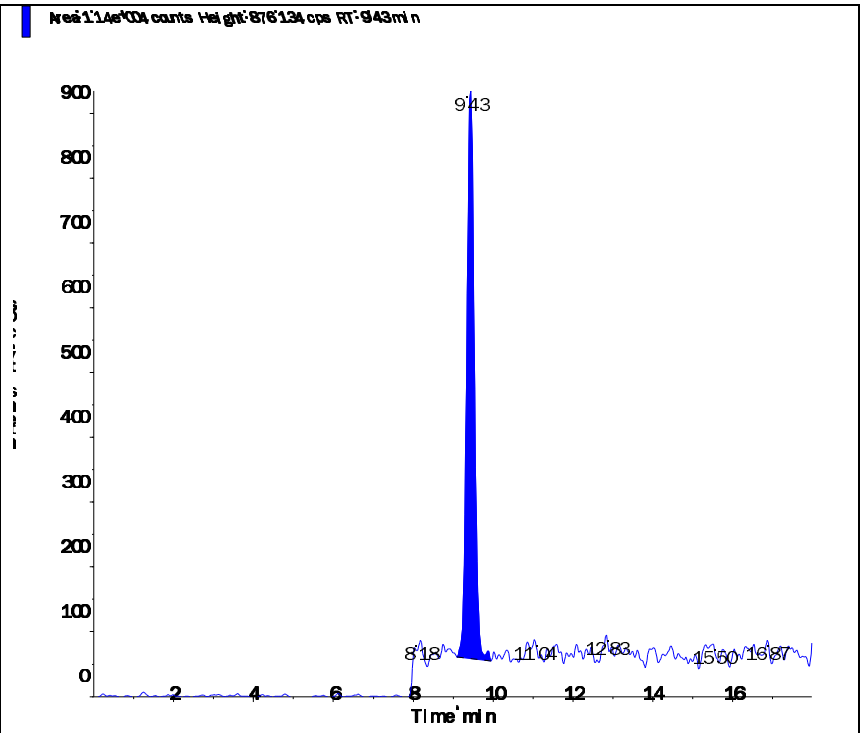

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:34 PM

Data File	LM35595.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:27:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35595.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:27:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.570e+04	9.45	N/A	0.207
Perchlorate conf	1.290e+04	9.44	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

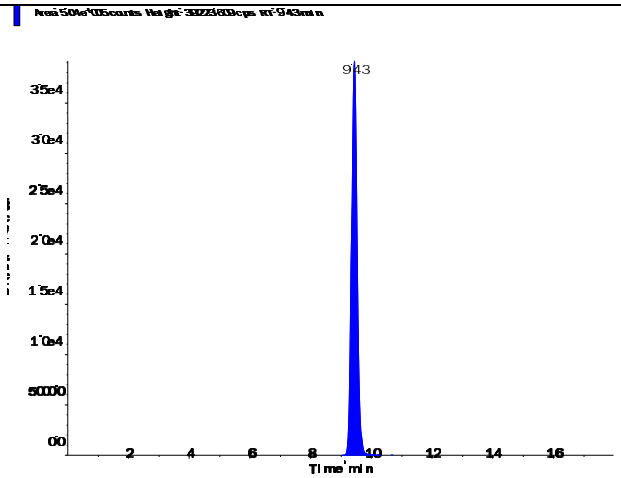

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

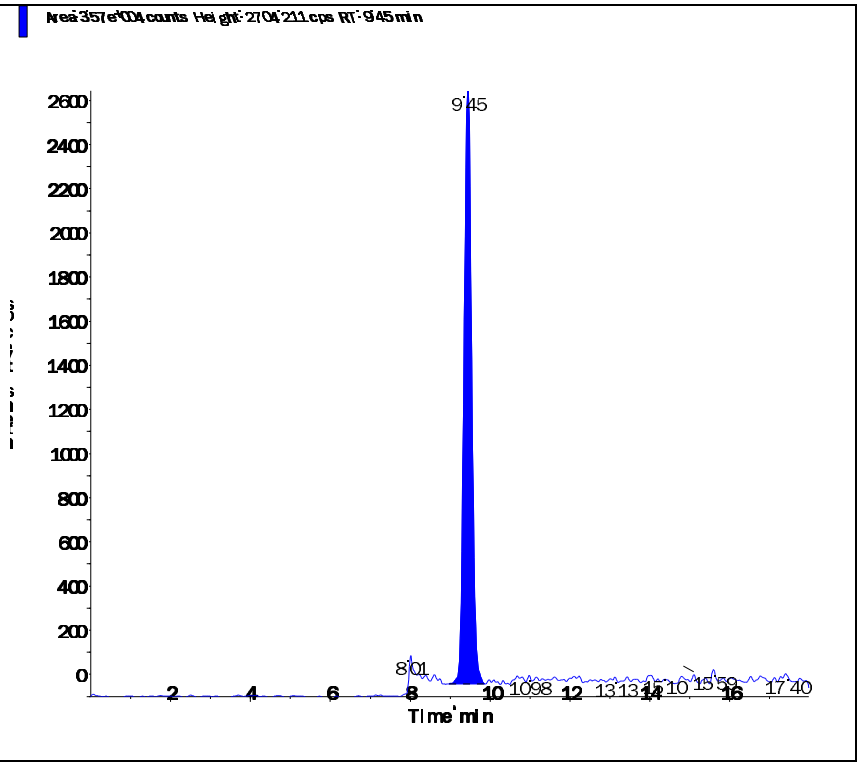

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

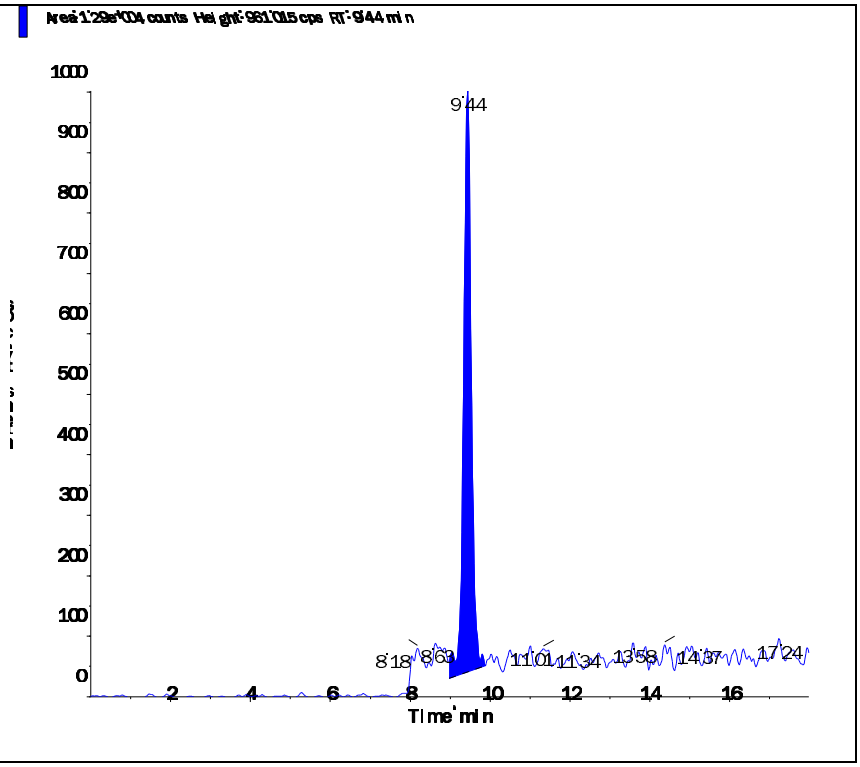

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Data File	LM35602.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:39:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35602.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:39:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.44	N/A	0.209
Perchlorate conf	1.230e+04	9.42	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

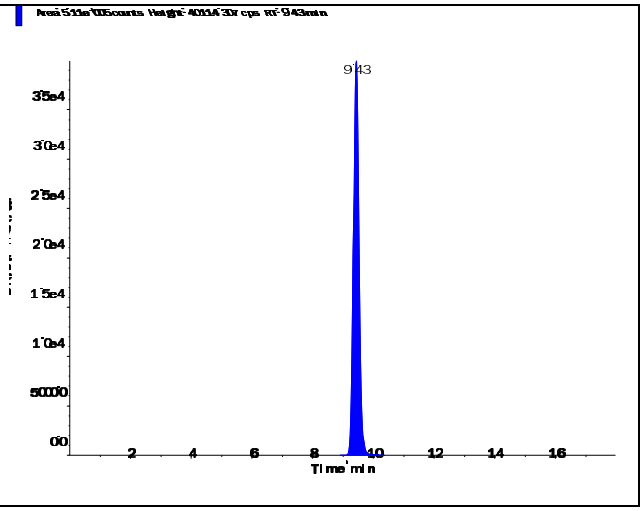

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

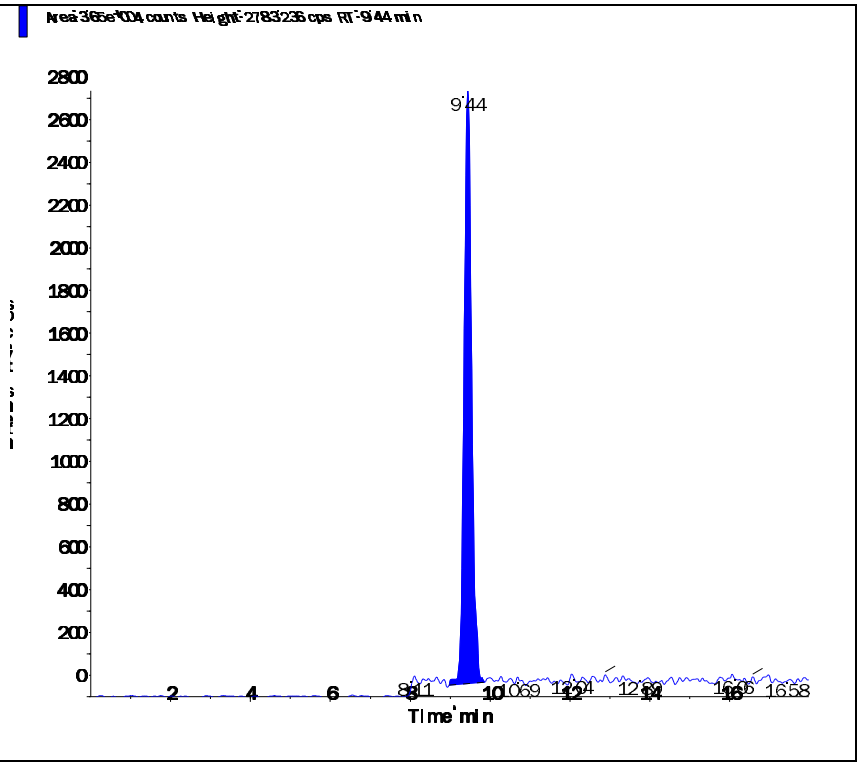

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

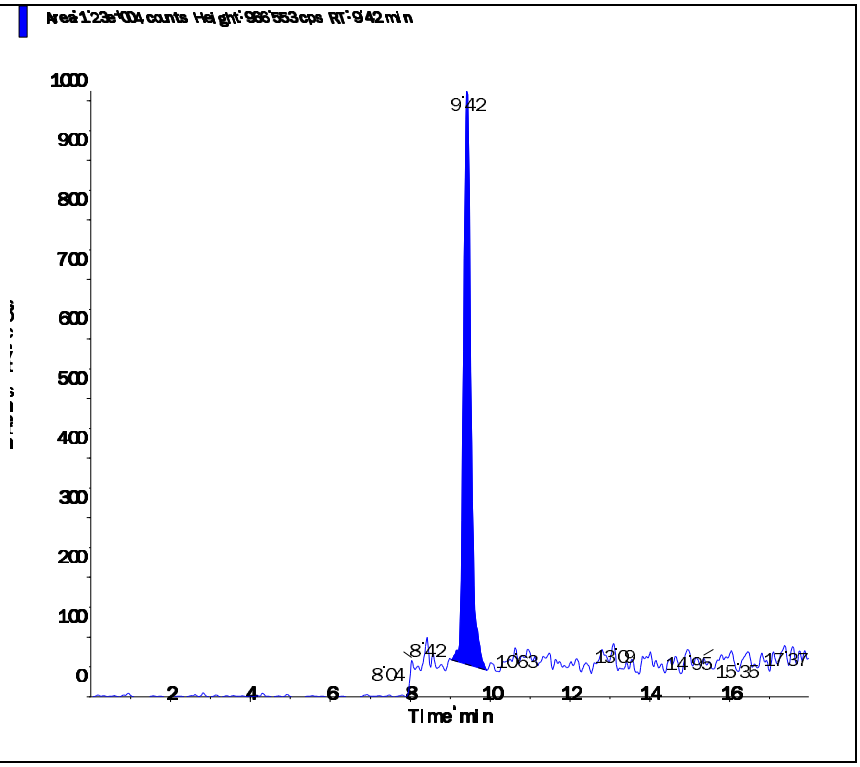

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Data File	LM35568.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 3:55:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-01 CCB	**Injection Vial**	1.00
Data File	LM35568.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 3:55:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.68	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.68(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

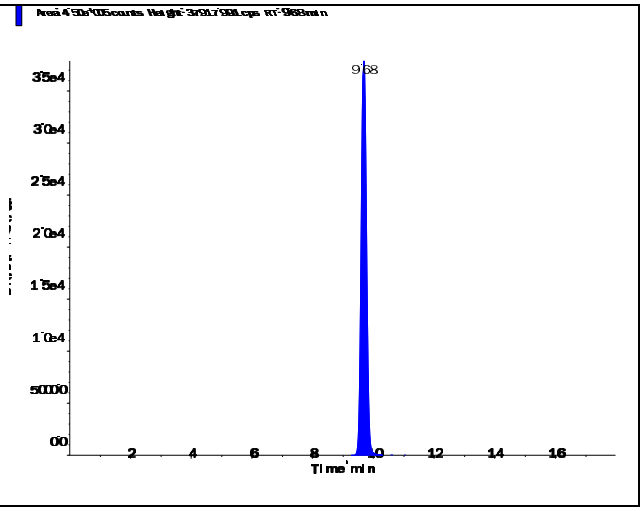

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

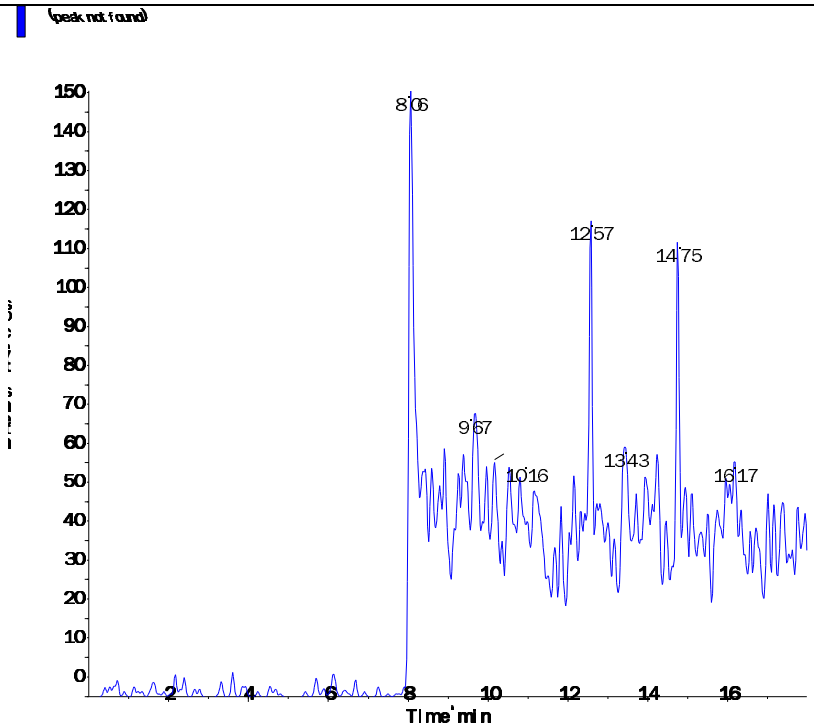

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

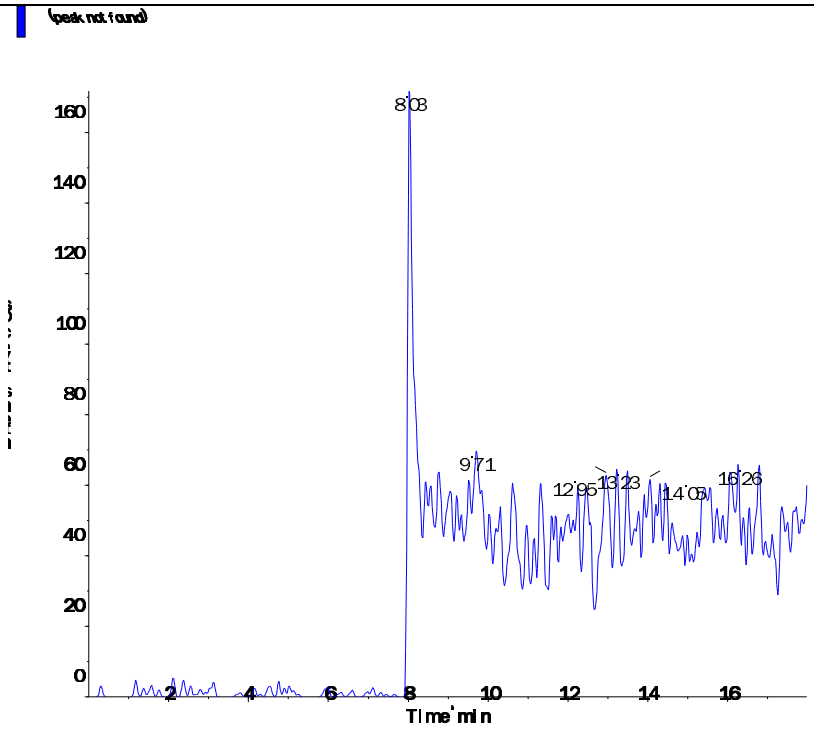

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:31 PM

Data File	LM35583.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:39:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-04 CCB	**Injection Vial**	1.00
Data File	LM35583.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:39:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

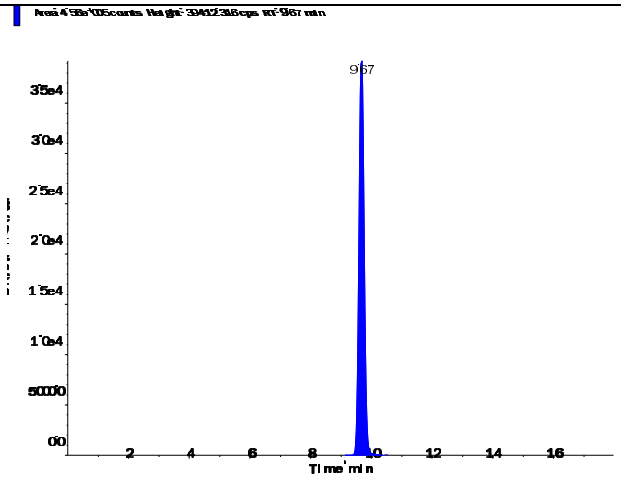

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:31 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

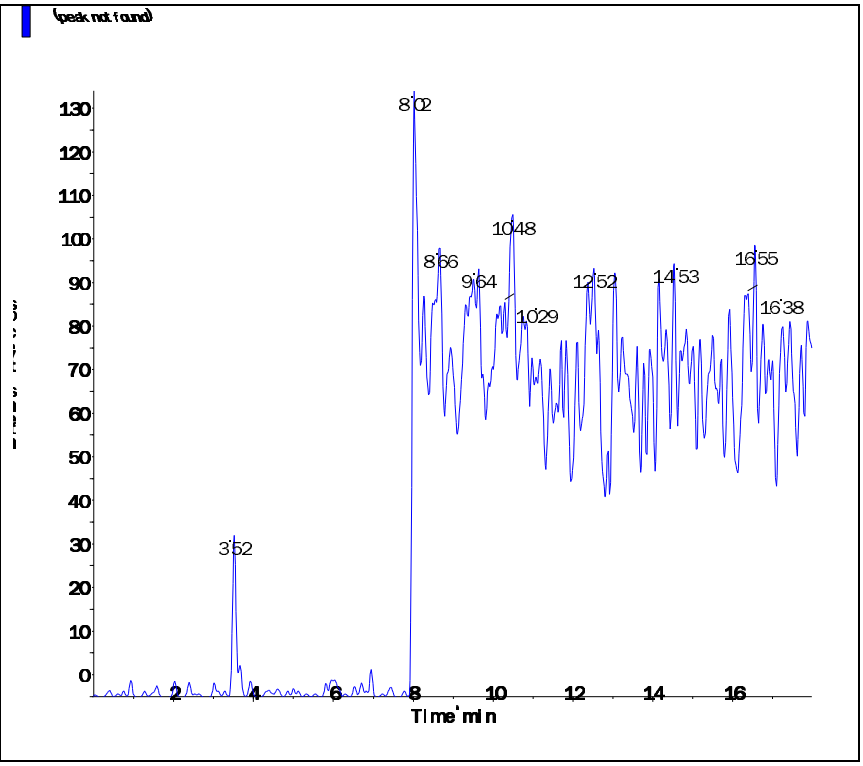

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

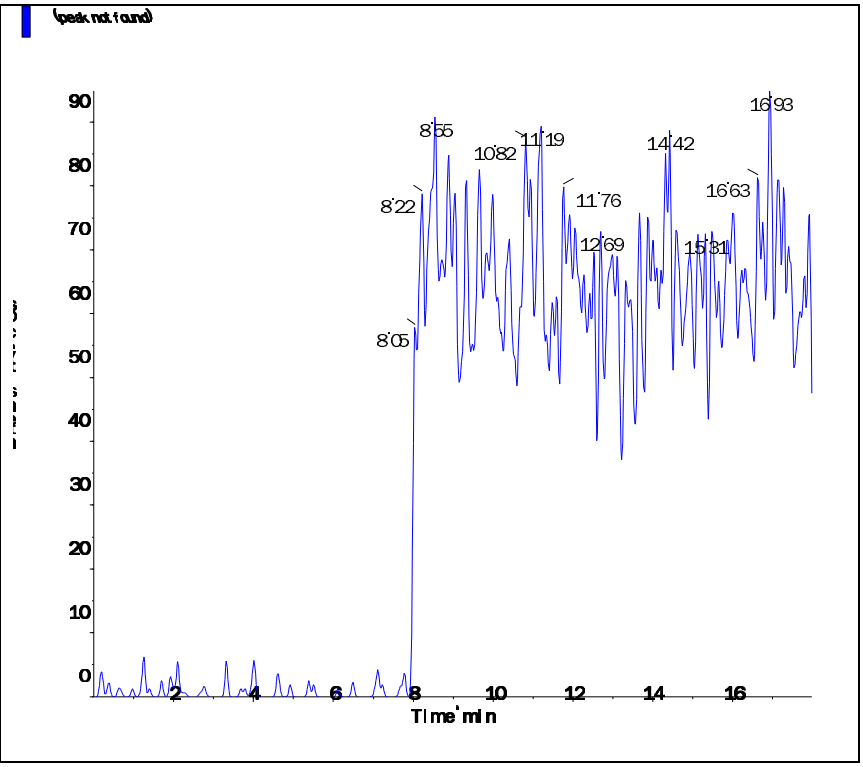

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:35 PM

Data File	LM35596.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:46:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-06 CCB	**Injection Vial**	1.00
Data File	LM35596.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:46:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

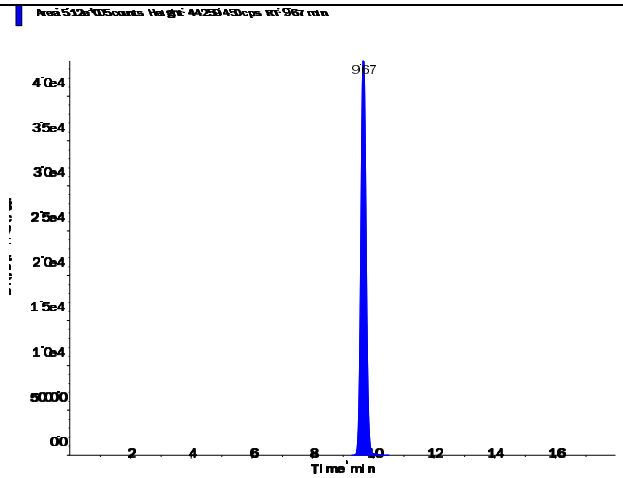

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

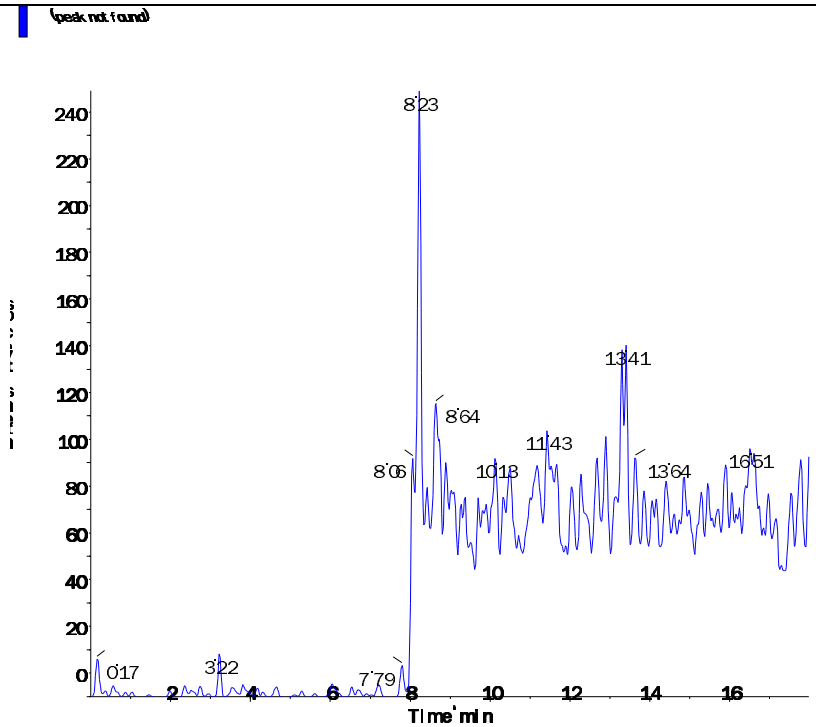

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

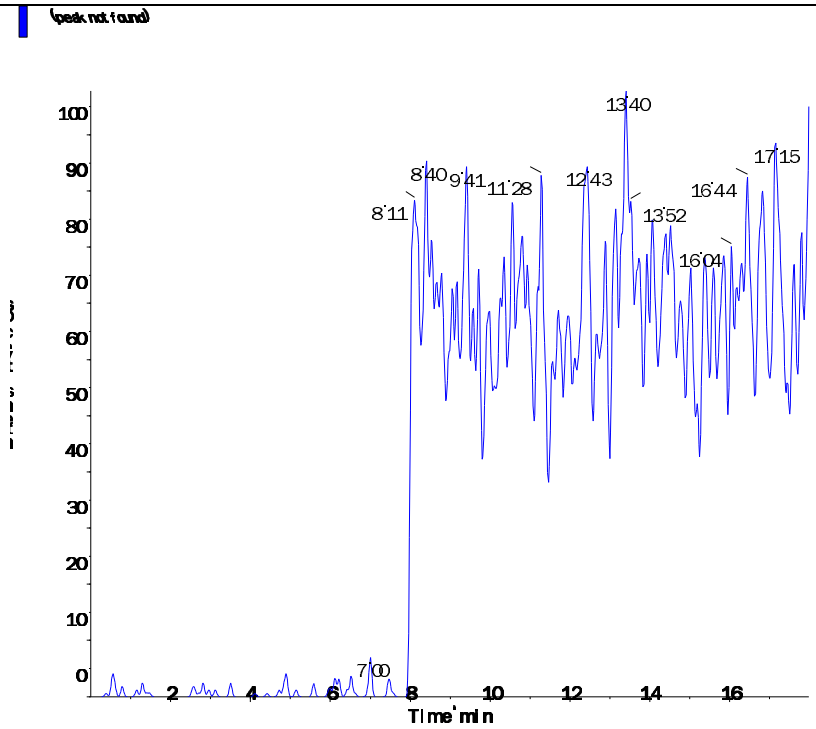

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Data File	LM35603.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:58:39 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-08 CCB	**Injection Vial**	1.00
Data File	LM35603.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:58:39 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.250e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

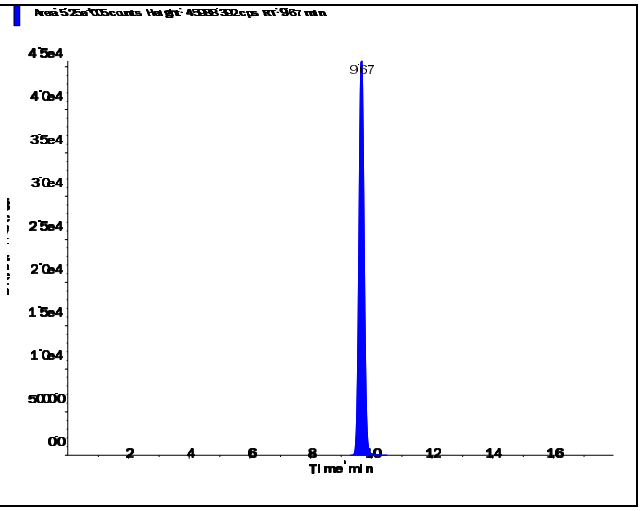

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

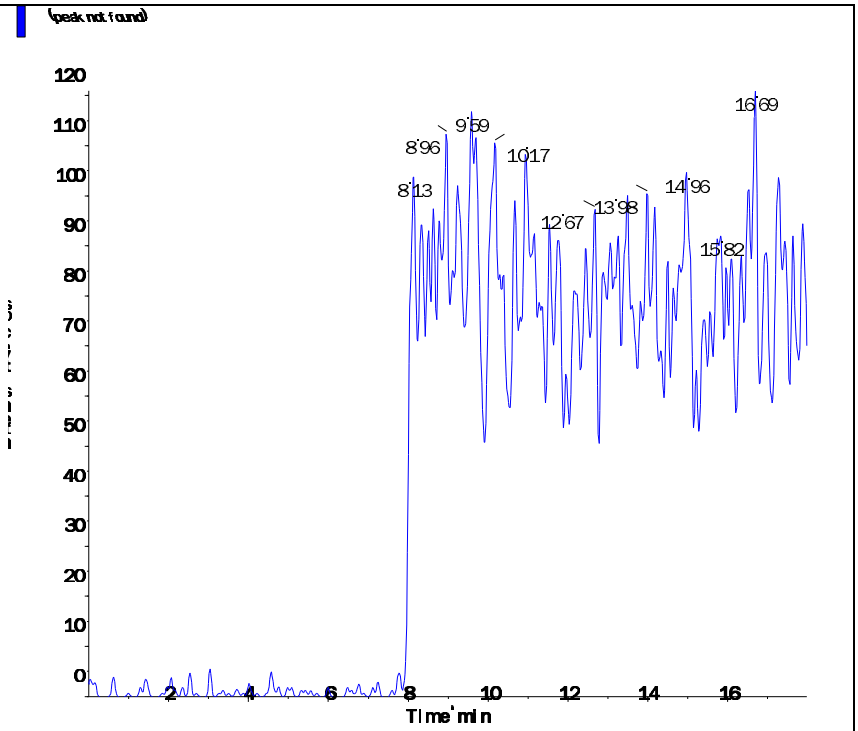

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

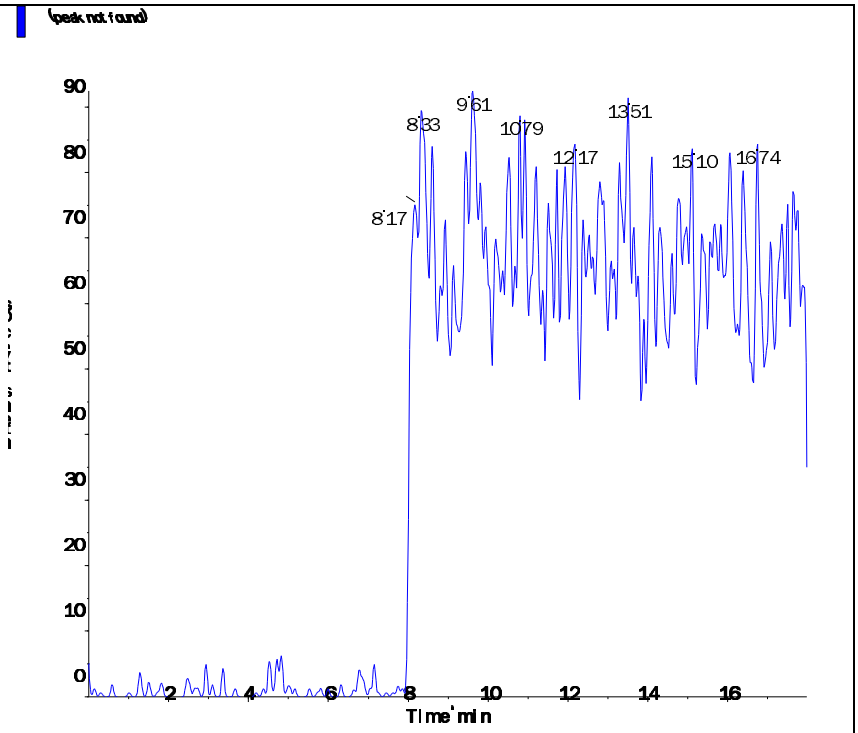

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35571.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:52:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35571.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:52:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.330e+05	9.04	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.020e+04	9.05	N/A	0.204
Perchlorate conf	9.940e+03	9.05	N/A	0.185

O18LP (Internal Standard)

RT (Exp. RT): 9.04(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

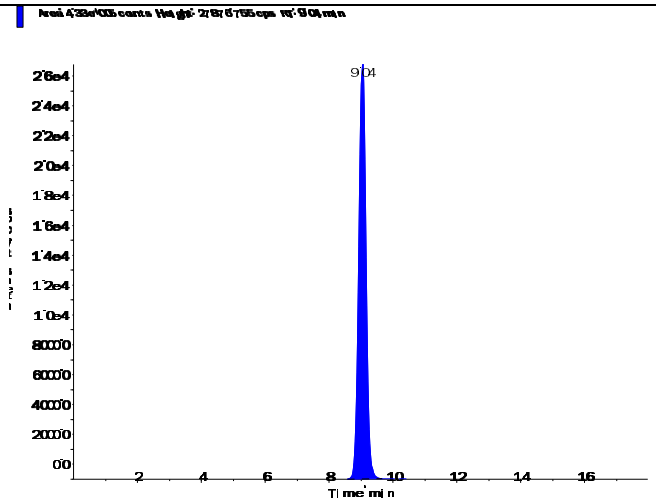

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.05 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

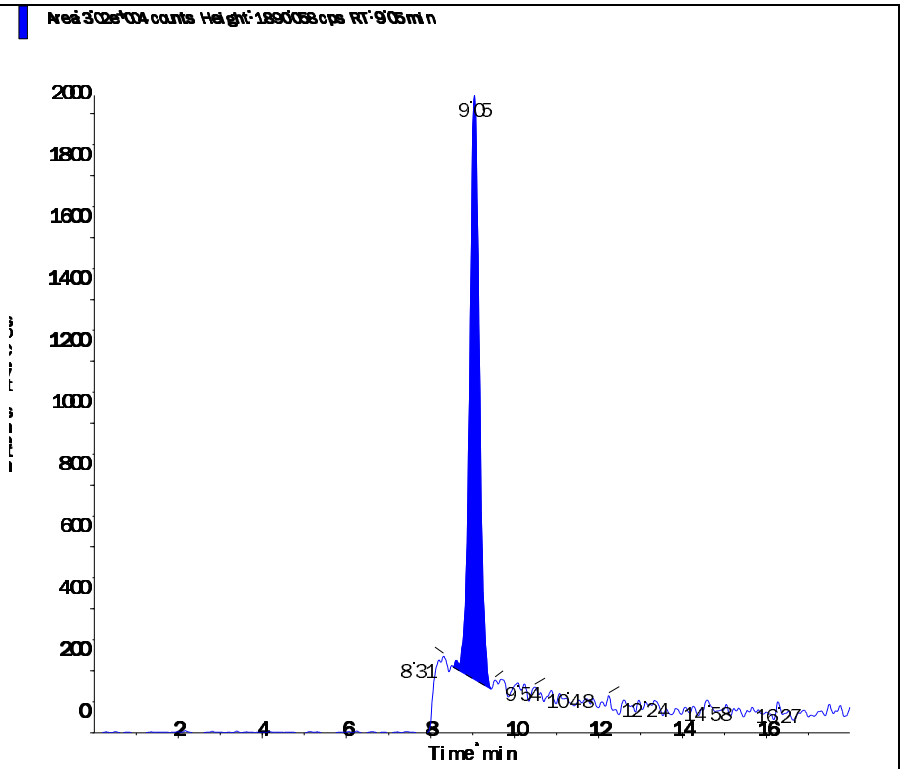

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.05 (9.84) min
Calculated conc:	0.185 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

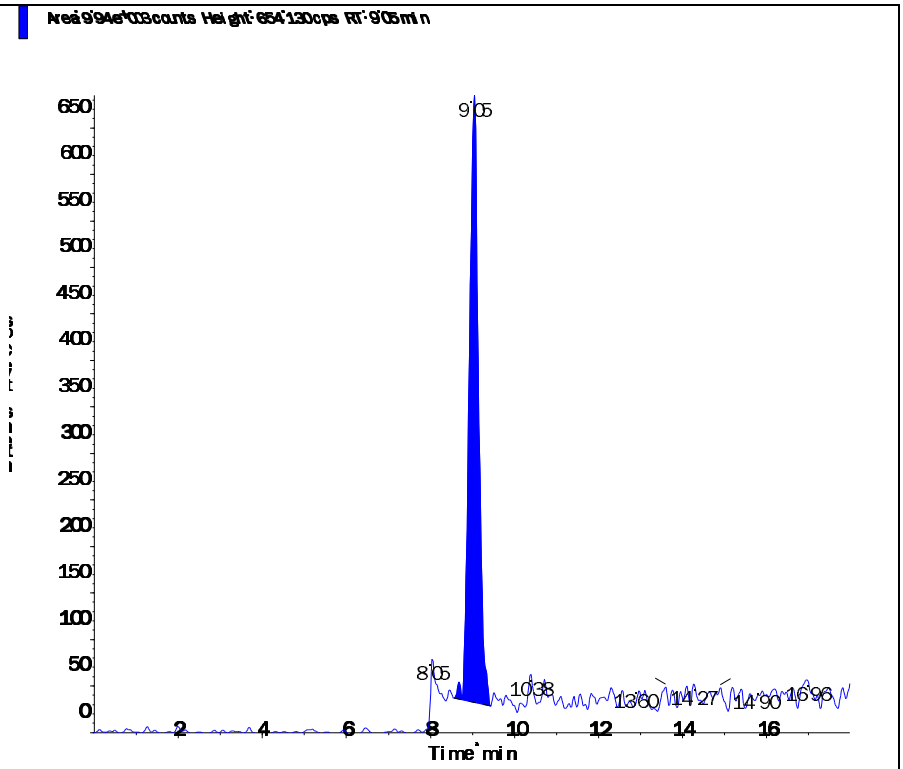

Printing Time: 6:47:51 PM
Printing Date: Friday, July 01, 2016

Sample Name: "WG575005-01 MCT (0.2ug/L)" Sample ID: "WG575005-01" File: "LM35571.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.231 ug/L
Acq. Date:	7/1/2016
Acq. Time:	4:52:43 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.05 min
Area:	3.42e+004 counts
Height:	1959.447 cps
Start Time:	8.566 min
End Time:	9.457 min

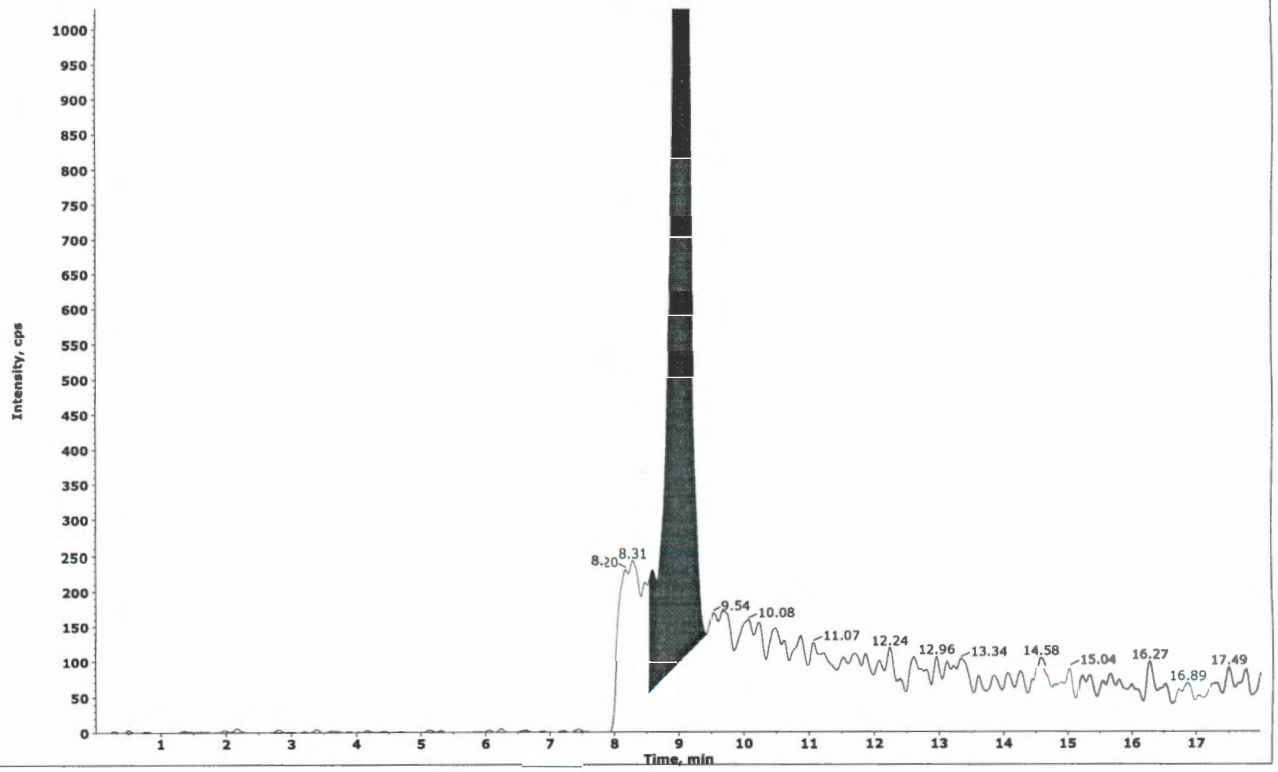

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 6:51:20 PM
Printing Date: Friday, July 01, 2016

Sample Name: "WG575005-01 HCT (0.2ug/L)" Sample ID: "WG575005-01" File: "LM35571.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.204 ug/L
Acq. Date:	7/1/2016
Acq. Time:	4:52:43 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	9.05 min
Area:	3.02e+004 counts
Height:	1890.058 cps
Start Time:	8.546 min
End Time:	9.437 min

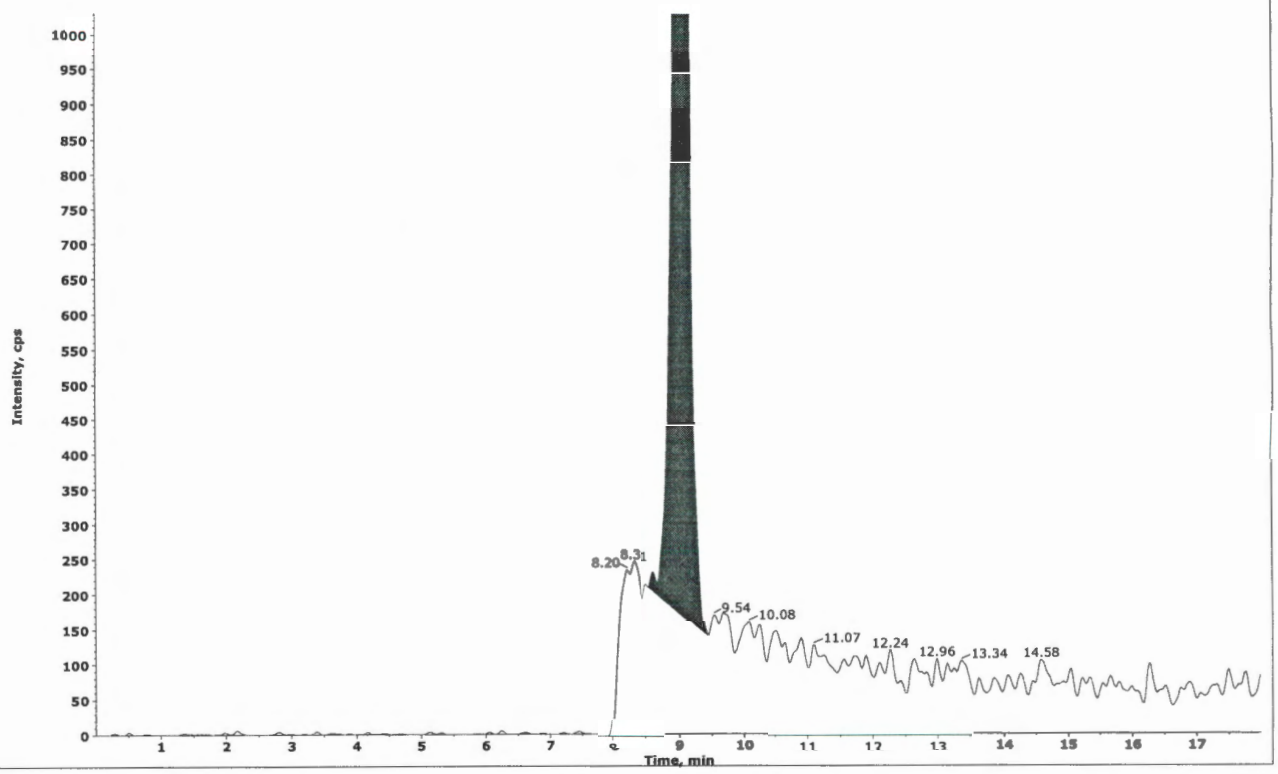

#4
JWR/07/01/16

✓ WED
7-6-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35572.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-02 BLANK	**Injection Vial**	5.00
Data File	LM35572.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

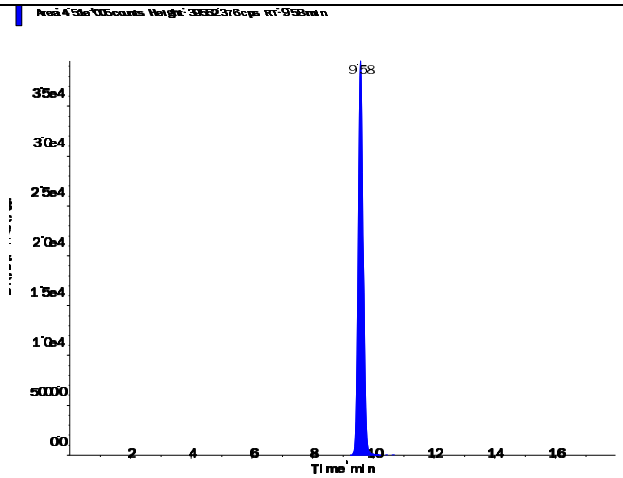

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

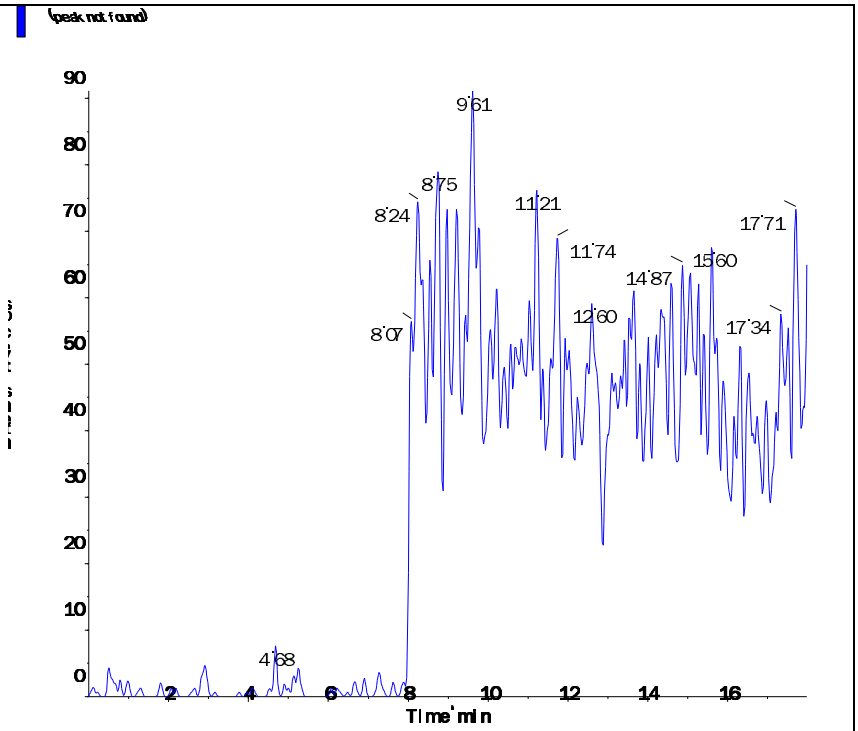

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

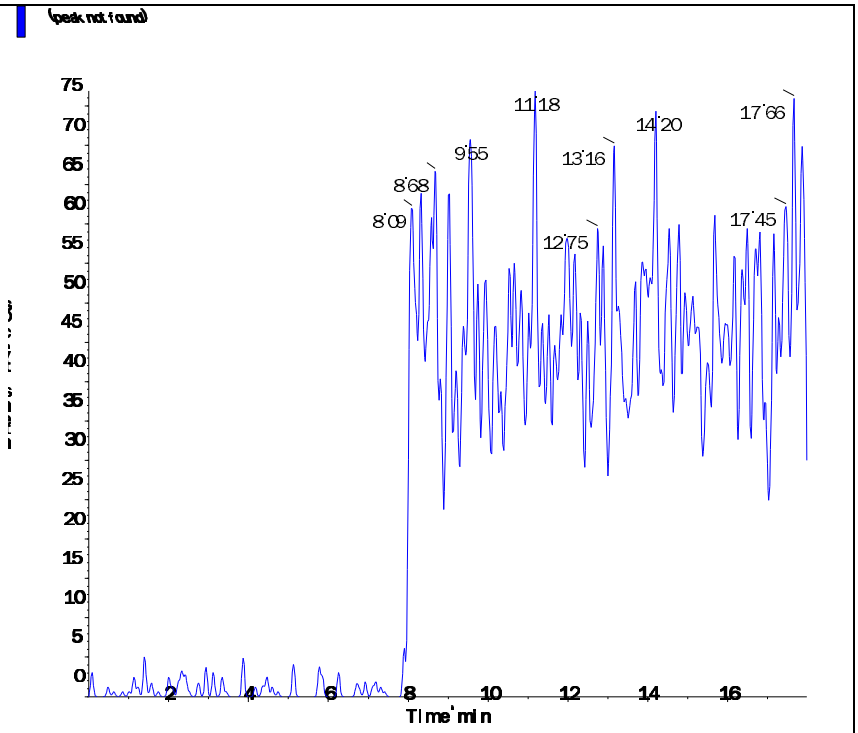

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35573.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:30:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35573.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:30:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.110e+04	9.61	N/A	0.201
Perchlorate conf	1.130e+04	9.60	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

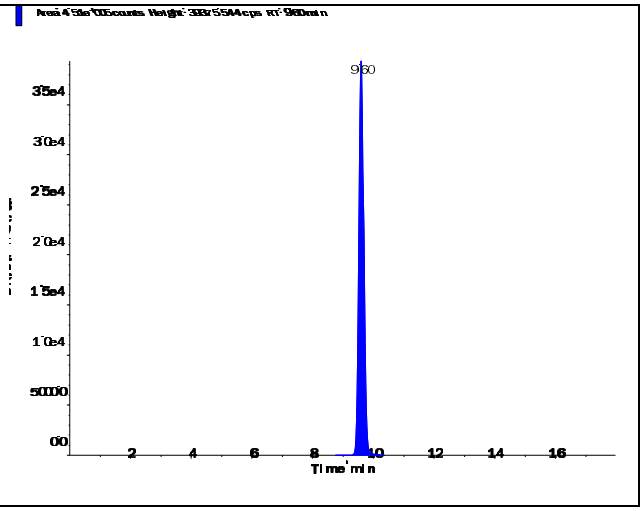

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.61 (9.84) min Calculated conc: 0.201 ng/ml Area Ratio: 0.069 Sample Type: (Unknown)	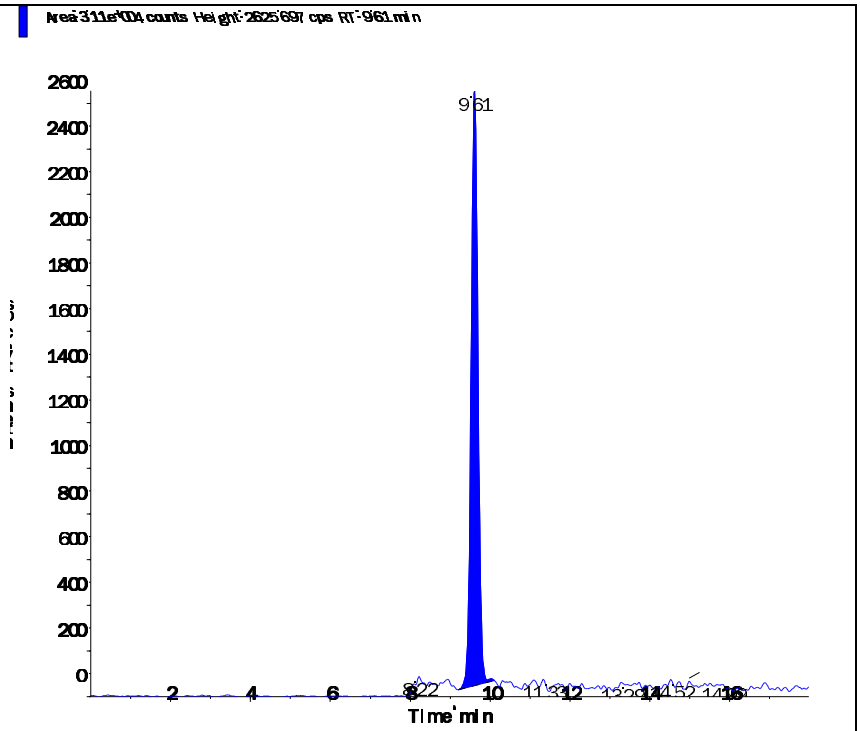
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: 0.204 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	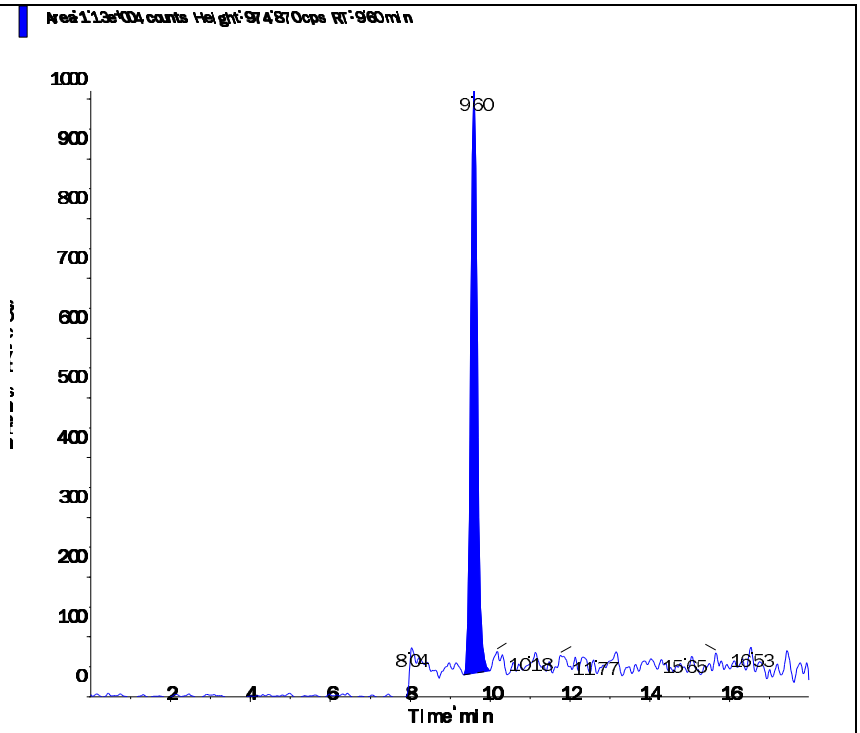

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:28 PM

Data File	LM35574.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:49:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35574.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:49:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.250e+04	9.66	N/A	0.211
Perchlorate conf	1.180e+04	9.65	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

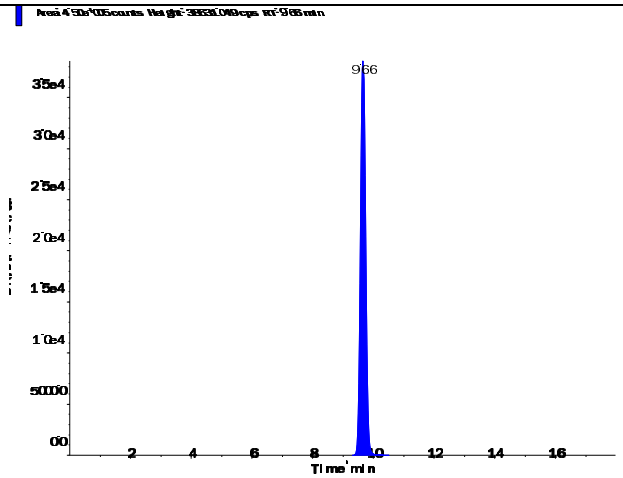

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:28 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

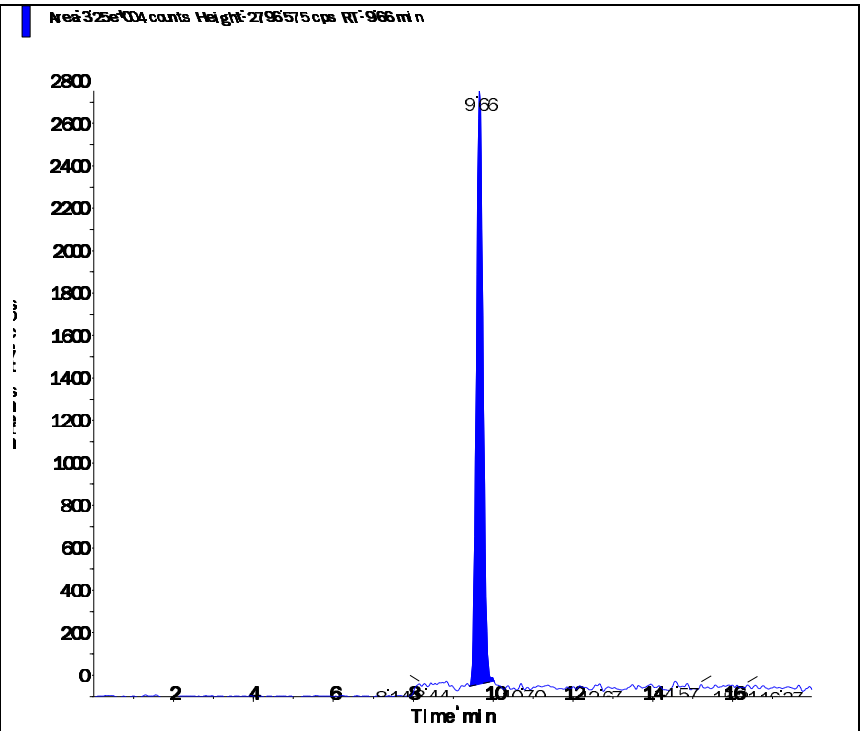

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

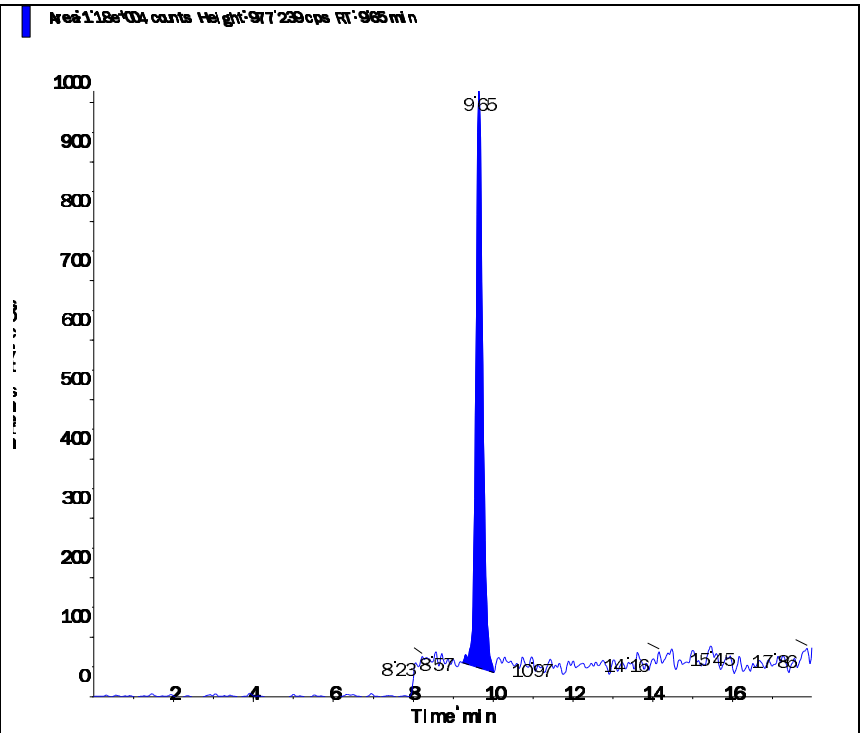

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3015	**Prep Date:**	06/29/2016 12:37
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/30/2016 12:04
Workgroup #:	WG574839	**Analyst:**	JYH	**Run Date:**	06/30/2016 17:41
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	T3.063016.174121
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0712	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	82.0		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3015	**Prep Date:**	06/29/2016 12:37
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	07/14/2016 12:14
Workgroup #:	WG574839	**Analyst:**	JYH	**Run Date:**	07/14/2016 17:27
Collect Date:	06/24/2016 07:50	**Dilution:**	5	**File ID:**	T3.071416.172719
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	45.3		2.50	1.25	0.625
Iron, Total	7439-89-6	3.46		1.00	0.500	0.250
Magnesium, Total	7439-95-4	32.8		5.00	2.50	1.25
Sodium, Total	7440-23-5	235		5.00	2.50	1.25

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG574636
Analyst: AC
Spike Analyst: AC
Run Date: 06/29/2016 12:37
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 06/29/2016 12:37

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: VC
HNO3 Lot #: COA18905
HCL Lot #: COA18769
ICP Filters- fisher-Lot# RGT35619
40 & 50 ML. DIGESTION TU COA18987

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG574636-02	BLANK	1	40 mL	50 mL	203.949 g	203.936 g		
2	WG574636-03	LCS	1	40 mL	50 mL	211.247 g	211.242 g	5 mL	
3	L16061452-01	SAMP	1	40 mL	50 mL	205.209 g	205.197 g		07/08/16
4	L16061453-01	SAMP	1	40 mL	50 mL	204.971 g	204.957 g		07/08/16
5	L16061453-03	SAMP	1	40 mL	50 mL	206.906 g	206.897 g		07/08/16
6	L16061455-01	SAMP	1	40 mL	50 mL	205.053 g	205.028 g		07/11/16
7	WG574636-01	REF	1	40 mL	50 mL	205.051 g	205.04 g		
8	L16061455-02	RS01	1	40 mL	50 mL	205.051 g	205.04 g		07/11/16
9	WG574636-04	MS	1	40 mL	50 mL	208.99 g	208.978 g	5 mL	
10	L16061455-03	MS01	1	40 mL	50 mL	208.99 g	208.978 g	5 mL	07/11/16
11	WG574636-05	MSD	1	40 mL	50 mL	211.873 g	211.856 g	5 mL	
12	L16061455-04	SD01	1	40 mL	50 mL	211.873 g	211.856 g	5 mL	07/11/16
13	L16061455-05	SAMP	1	40 mL	50 mL	204.175 g	204.154 g		07/11/16
14	L16061478-01	SAMP	1	40 mL	50 mL	204.905 g	204.899 g		07/06/16
15	L16061478-02	SAMP	1	40 mL	50 mL	206.065 g	206.052 g		07/06/16
16	L16061498-01	SAMP	1	40 mL	50 mL	206.923 g	206.908 g		07/12/16
17	L16061540-01	SAMP	1	40 mL	50 mL	205.199 g	205.179 g		07/06/16
18	L16061540-02	SAMP	1	40 mL	50 mL	206.627 g	206.611 g		07/06/16
19	L16061540-03	SAMP	1	40 mL	50 mL	204.117 g	204.101 g		07/06/16
20	L16061559-01	SAMP	1	40 mL	50 mL	206.575 g	206.562 g		07/08/16
21	L16061559-02	SAMP	1	40 mL	50 mL	206.502 g	206.484 g		07/08/16
22	L16061564-02	SAMP	1	1 mL	50 mL	203.852 g	203.837 g		07/08/16
23	L16061564-04	SAMP	1	1 mL	50 mL	206.627 g	206.612 g		07/08/16
24	L16061564-06	SAMP	1	1 mL	50 mL	204.592 g	204.578 g		07/08/16

L16061564-04	Filtered Digestate

Analyst: Andrea R Cochrel

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4831260
Report generated: 06/29/2016 13:20

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 063016T3.3R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574685,574802,574668,574839,574840

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.063016.114847	WG574911-01	Calibration Point		1		06/30/16 11:48
2	T3.063016.115245	WG574911-02	Calibration Point		1		06/30/16 11:52
3	T3.063016.115645	WG574911-03	Calibration Point		1		06/30/16 11:56
4	T3.063016.120044	WG574911-04	Calibration Point		1		06/30/16 12:00
5	T3.063016.120423	WG574911-05	Calibration Point		1		06/30/16 12:04
6	T3.063016.120759	WG574911-06	Initial Calibration Verification		1		06/30/16 12:07
7	T3.063016.121137	WG574911-07	Initial Calib Blank		1		06/30/16 12:11
8	T3.063016.121535	WG574911-08	Low Level Initial Calibration V		1		06/30/16 12:15
9	T3.063016.121930	WG574911-09	Low Level Initial Calibration V		1		06/30/16 12:19
10	T3.063016.122323	WG574911-10	Interference Check		1		06/30/16 12:23
11	T3.063016.122713	WG574911-11	Interference Check		1		06/30/16 12:27
12	T3.063016.123056	WG574911-12	CCV		1		06/30/16 12:30
13	T3.063016.123434	WG574911-13	CCB		1		06/30/16 12:34
14	T3.063016.123832	WG574028-02	Method/Prep Blank	40/50	1		06/30/16 12:38
15	T3.063016.124230	WG574028-03	Laboratory Control S	40/50	1		06/30/16 12:42
16	T3.063016.124558	L16061244-01	K6F0679-01	5/50	1		06/30/16 12:45
17	T3.063016.124958	L16061244-02	K6F0679-02	5/50	1		06/30/16 12:49
18	T3.063016.125356	L16061251-01	35006890800-W-1-06-22-16	40/50	1		06/30/16 12:53
19	T3.063016.125749	L16061251-03	35006890800-W-2-06-22-16	40/50	1		06/30/16 12:57
20	T3.063016.130142	L16061253-01	350068392000-W-1-06-22-16	40/50	1		06/30/16 13:01
21	T3.063016.130536	L16061253-03	350068392000-W-1-06-22-16	40/50	1		06/30/16 13:05
22	T3.063016.130928	L16061254-01	350068384000-W-1-06-22-16	40/50	1		06/30/16 13:09
23	T3.063016.131322	L16061255-01	350069852000-06-22-16 P1	40/50	1		06/30/16 13:13
24	T3.063016.131717	WG574911-14	CCV		1		06/30/16 13:17
25	T3.063016.132056	WG574911-15	CCB		1		06/30/16 13:20
26	T3.063016.132454	L16061255-03	350069848000-W-1-06-22-16	40/50	1		06/30/16 13:24
27	T3.063016.132849	L16061255-05	350069848000-W-2-06-22-16	40/50	1		06/30/16 13:28
28	T3.063016.133242	L16061256-01	350070123001-W-1-06-22-16	40/50	1		06/30/16 13:32
29	T3.063016.133638	WG574028-01	Reference Sample		1	L16061265-01	06/30/16 13:36
30	T3.063016.134037	WG574028-04	Matrix Spike	40/50	1	L16061265-01	06/30/16 13:40
31	T3.063016.134423	WG574028-05	Matrix Spike Duplica	40/50	1	L16061265-01	06/30/16 13:44
32	T3.063016.134811	L16061265-04	SS007MWOB16-007	40/50	1		06/30/16 13:48
33	T3.063016.135206	L16061265-05	SS007MWOB21-007	40/50	1		06/30/16 13:52
34	T3.063016.135600	L16061265-06	FQC-RB06211601-CC	40/50	1		06/30/16 13:56

Page: 1 Approved: July 01, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 063016T3.3R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574685,574802,574668,574839,574840

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.063016.140000	L16061266-01	ST008MW0805-007	40/50	1		06/30/16 14:00
36	T3.063016.140354	WG574911-16	CCV		1		06/30/16 14:03
37	T3.063016.140732	WG574911-17	CCB		1		06/30/16 14:07
38	T3.063016.141130	L16061269-01	FT002MW0204-007	40/50	1		06/30/16 14:11
39	T3.063016.141526	L16061292-01	350069904000-W-1-06-23-16	40/50	1		06/30/16 14:15
40	T3.063016.141921	L16061293-01	STREAM 1-06-23-16	40/50	1		06/30/16 14:19
41	T3.063016.142313	L16061294-03	EB01	40/50	1		06/30/16 14:23
42	T3.063016.142711	WG574685-01	Post Digestion Spike		1	L16061293-01	06/30/16 14:27
43	T3.063016.143050	WG574685-02	Serial Dilution		5	L16061293-01	06/30/16 14:30
44	T3.063016.143445	WG574685-02	Serial Dilution		25	L16061293-01	06/30/16 14:34
45	T3.063016.143844	WG574911-18	CCV		1		06/30/16 14:38
46	T3.063016.144222	WG574911-19	CCB		1		06/30/16 14:42
47	T3.063016.144622	WG574911-20	Low Level Continuing Calibra		1		06/30/16 14:46
48	T3.063016.145015	WG574911-21	Low Level Continuing Calibra		1		06/30/16 14:50
49	T3.063016.145407	WG574448-07	Method/Prep Blank	40/50	1		06/30/16 14:54
50	T3.063016.145806	WG574448-08	Laboratory Control S	40/50	1		06/30/16 14:58
51	T3.063016.150145	WG574277-01	Fluid Blank 1		1		06/30/16 15:01
52	T3.063016.150543	WG574277-02	Fluid Blank 2		1		06/30/16 15:05
53	T3.063016.150942	L16061396-02	062316-FA	5/50	1		06/30/16 15:09
54	T3.063016.151338	L16061396-06	062316-BA	5/50	1		06/30/16 15:13
55	T3.063016.151735	L16061396-08	062316-WWC	5/50	1		06/30/16 15:17
56	T3.063016.152132	L16061398-01	LIME GRIT WASTE	5/50	1		06/30/16 15:21
57	T3.063016.152520	L16061400-01	MW-22-008	40/50	1		06/30/16 15:25
58	T3.063016.152915	L16061400-02	MW-22-016	40/50	1		06/30/16 15:29
59	T3.063016.153313	WG574911-22	CCV		1		06/30/16 15:33
60	T3.063016.153652	WG574911-23	CCB		1		06/30/16 15:36
61	T3.063016.154040	L16061400-03	MW-22-006	40/50	1		06/30/16 15:40
62	T3.063016.154436	L16061400-04	MW-22-005	40/50	1		06/30/16 15:44
63	T3.063016.154832	L16061400-05	MW-22-001	40/50	1		06/30/16 15:48
64	T3.063016.155220	WG574448-06	Reference Sample		1	L16061400-06	06/30/16 15:52
65	T3.063016.160144	WG574448-09	Matrix Spike	40/50	1	L16061400-06	06/30/16 16:01
66	T3.063016.160523	WG574448-10	Matrix Spike Duplica	40/50	1	L16061400-06	06/30/16 16:05
67	T3.063016.160902	L16061400-09	MW-22-003	40/50	1		06/30/16 16:09
68	T3.063016.161254	L16061400-10	MW-22-004	40/50	1		06/30/16 16:12

Page: 2 Approved: July 01, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 063016T3.3R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574685,574802,574668,574839,574840

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.063016.161648	L16061412-01	SS007MW0B05-007	40/50	1		06/30/16 16:16
70	T3.063016.162042	L16061412-02	SS007MW0B02-007	40/50	1		06/30/16 16:20
71	T3.063016.162436	WG574911-24	CCV		1		06/30/16 16:24
72	T3.063016.162814	WG574911-25	CCB		1		06/30/16 16:28
73	T3.063016.163211	L16061413-01	DP005MW0504-007	40/50	1		06/30/16 16:32
74	T3.063016.163604	L16061416-01	DP005MW0509-007	40/50	1		06/30/16 16:36
75	T3.063016.163958	L16061416-02	DP005MW0518-007	40/50	1		06/30/16 16:39
76	T3.063016.164352	L16061421-01	LF003MW03	40/50	1		06/30/16 16:43
77	T3.063016.164746	WG574802-01	Post Digestion Spike		1	L16061421-01	06/30/16 16:47
78	T3.063016.165125	WG574802-02	Serial Dilution		5	L16061421-01	06/30/16 16:51
79	T3.063016.165520	WG574802-02	Serial Dilution		25	L16061421-01	06/30/16 16:55
80	T3.063016.165917	WG574911-26	CCV		1		06/30/16 16:59
81	T3.063016.170256	WG574911-27	CCB		1		06/30/16 17:02
82	T3.063016.170652	L16061476-56	16300-WP01-WP010	1/50	1		06/30/16 17:06
83	T3.063016.171037	L16061476-42	13283-WP07-WP044	1/50	1		06/30/16 17:10
84	T3.063016.171434	WG574668-01	Post Digestion Spike		1	L16061476-42	06/30/16 17:14
85	T3.063016.171813	WG574668-02	Serial Dilution		5	L16061476-42	06/30/16 17:18
86	T3.063016.172211	WG574668-02	Serial Dilution		25	L16061476-42	06/30/16 17:22
87	T3.063016.172607	WG574911-28	CCV		1		06/30/16 17:26
88	T3.063016.172945	WG574911-29	CCB		1		06/30/16 17:29
89	T3.063016.173343	WG574636-02	Method/Prep Blank	40/50	1		06/30/16 17:33
90	T3.063016.173741	WG574636-03	Laboratory Control S	40/50	1		06/30/16 17:37
91	T3.063016.174121	L16061452-01	18CPTMW12SW-062416	40/50	1		06/30/16 17:41
92	T3.063016.174514	L16061453-01	MW2-062416	40/50	1		06/30/16 17:45
93	T3.063016.174906	L16061453-03	18CPTMW01SW-062416	40/50	1		06/30/16 17:49
94	T3.063016.175259	L16061455-01	ST2H15-SW-02	40/50	1		06/30/16 17:52
95	T3.063016.175652	WG574636-01	Reference Sample		1	L16061455-02	06/30/16 17:56
96	T3.063016.180045	WG574636-04	Matrix Spike	40/50	1	L16061455-02	06/30/16 18:00
97	T3.063016.180425	WG574636-05	Matrix Spike Duplica	40/50	1	L16061455-02	06/30/16 18:04
98	T3.063016.180804	L16061455-05	ST2H15-SW-04	40/50	1		06/30/16 18:08
99	T3.063016.181159	WG574911-30	CCV		1		06/30/16 18:11
100	T3.063016.181537	WG574911-31	CCB		1		06/30/16 18:15
101	T3.063016.181936	L16061478-01	40582-01	40/50	1		06/30/16 18:19
102	T3.063016.182331	L16061478-02	BRNSCR-14	40/50	1		06/30/16 18:23

Page: 3 Approved: July 01, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 063016T3.3R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574685,574802,574668,574839,574840

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.063016.182725	L16061498-01	AG6056	40/50	1		06/30/16 18:27
104	T3.063016.183118	L16061540-01	27-11-5.04 RW3 (T)	40/50	1		06/30/16 18:31
105	T3.063016.183515	L16061540-02	27-11-5.04 RW3 (U)	40/50	1		06/30/16 18:35
106	T3.063016.183909	L16061540-03	27-18-4.03 RW1	40/50	1		06/30/16 18:39
107	T3.063016.184303	L16061559-01	LH18/24-SP650-6374-GRAB	40/50	1		06/30/16 18:43
108	T3.063016.184657	L16061559-02	LH18/24-SP650-6374-COMP	40/50	1		06/30/16 18:46
109	T3.063016.185051	L16061564-02	PERMEATE	1/50	1		06/30/16 18:50
110	T3.063016.185448	L16061564-04	BLEED	1/50	1		06/30/16 18:54
111	T3.063016.185841	WG574911-32	CCV		1		06/30/16 18:58
112	T3.063016.190219	WG574911-33	CCB		1		06/30/16 19:02
113	T3.063016.190618	L16061564-06	N. DOCK FLUME	1/50	1		06/30/16 19:06
114	T3.063016.191016	WG574839-01	Post Digestion Spike		1	L16061564-06	06/30/16 19:10
115	T3.063016.191356	WG574839-02	SERIAL DILUTION		5	L16061564-06	06/30/16 19:13
116	T3.063016.191752	WG574839-02	SERIAL DILUTION		25	L16061564-06	06/30/16 19:17
117	T3.063016.192150	WG574911-34	CCV		1		06/30/16 19:21
118	T3.063016.192529	WG574911-35	CCB		1		06/30/16 19:25
119	T3.063016.192926	WG574911-36	Low Level Continuing Calibra		1		06/30/16 19:29
120	T3.063016.193321	WG574911-37	Low Level Continuing Calibra		1		06/30/16 19:33
121	T3.063016.193712	WG574770-02	Method/Prep Blank	40/50	1		06/30/16 19:37
122	T3.063016.194110	WG574770-03	Laboratory Control S	40/50	1		06/30/16 19:41
123	T3.063016.194450	WG574635-01	Fluid Blank 1		1		06/30/16 19:44
124	T3.063016.194847	L16061501-01	KILN AREA RIGHT	5/50	1		06/30/16 19:48
125	T3.063016.195239	L16061501-02	KILN AREA LEFT	5/50	1		06/30/16 19:52
126	T3.063016.195630	L16061534-01	WC01	5/50	1		06/30/16 19:56
127	T3.063016.200025	L16061561-01	V-1105	5/50	1		06/30/16 20:00
128	T3.063016.200419	L16061568-01	IA N\&S	40/50	1		06/30/16 20:04
129	T3.063016.200813	L16061569-01	SP-1A-30	40/50	1		06/30/16 20:08
130	T3.063016.201209	L16061570-01	POND OUTFALL	40/50	1		06/30/16 20:12
131	T3.063016.201605	WG574911-38	CCV		1		06/30/16 20:16
132	T3.063016.201943	WG574911-39	CCB		1		06/30/16 20:19
133	T3.063016.202330	L16061576-01	6-10-27.06 W1	40/50	1		06/30/16 20:23
134	T3.063016.202724	L16061577-01	1802-134 W1 (S)	40/50	1		06/30/16 20:27
135	T3.063016.203116	L16061577-02	1802-134 W1 (F)	40/50	1		06/30/16 20:31
136	T3.063016.203512	L16061578-01	SHOT BLAST	5/50	1		06/30/16 20:35

Page: 4 Approved: July 01, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 063016T3.3R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574685,574802,574668,574839,574840

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.063016.203905	WG574770-01	Reference Sample		1	L16061588-01	06/30/16 20:39
138	T3.063016.204301	WG574770-04	Matrix Spike	40/50	1	L16061588-01	06/30/16 20:43
139	T3.063016.204641	WG574770-05	Matrix Spike Duplica	40/50	1	L16061588-01	06/30/16 20:46
140	T3.063016.205020	L16061614-01	GREENWOOD RPW1	40/50	1		06/30/16 20:50
141	T3.063016.205414	L16061618-01	27-18-4.08 RW2 (T)	40/50	1		06/30/16 20:54
142	T3.063016.205808	L16061618-02	27-18-4.08 RW2 (U)	40/50	1		06/30/16 20:58
143	T3.063016.210203	WG574911-40	CCV		1		06/30/16 21:02
144	T3.063016.210541	WG574911-41	CCB		1		06/30/16 21:05
145	T3.063016.210938	L16061619-01	45-10-5.02 W1	40/50	1		06/30/16 21:09
146	T3.063016.211333	L16061622-01	2016PRE-131SOUTHST	40/50	1		06/30/16 21:13
147	T3.063016.211727	L16061622-02	2016PRE-131SOUTHST-D	40/50	1		06/30/16 21:17
148	T3.063016.212122	WG574840-01	Post Digestion Spike		1	L16061622-02	06/30/16 21:21
149	T3.063016.212502	WG574840-02	Serial Dilution		5	L16061622-02	06/30/16 21:25
150	T3.063016.212858	WG574840-02	Serial Dilution		25	L16061622-02	06/30/16 21:28
151	T3.063016.213256	WG574911-42	CCV		1		06/30/16 21:32
152	T3.063016.213635	WG574911-43	CCB		1		06/30/16 21:36

Comments

Seq.	Rerun	Dil.	Reason	Analytes
56			Wrong sample label. JYH	
109			Wrong sample label. JYH	
110			Wrong sample label. JYH	

Page: 5 Approved: July 01, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.071416.115859	WG576454-01	Calibration Point		1		07/14/16 11:58
2	T3.071416.120258	WG576454-02	Calibration Point		1		07/14/16 12:02
3	T3.071416.120656	WG576454-03	Calibration Point		1		07/14/16 12:06
4	T3.071416.121043	WG576454-04	Calibration Point		1		07/14/16 12:10
5	T3.071416.121419	WG576454-05	Calibration Point		1		07/14/16 12:14
6	T3.071416.121756	WG576454-06	Initial Calibration Verification		1		07/14/16 12:17
7	T3.071416.122133	WG576454-07	Initial Calib Blank		1		07/14/16 12:21
8	T3.071416.122530	WG576454-08	Low Level Initial Calibration V		1		07/14/16 12:25
9	T3.071416.122922	WG576454-09	Low Level Initial Calibration V		1		07/14/16 12:29
10	T3.071416.123313	WG576454-10	Interference Check		1		07/14/16 12:33
11	T3.071416.123702	WG576454-11	Interference Check		1		07/14/16 12:37
12	T3.071416.124032	WG576454-12	CCV		1		07/14/16 12:40
13	T3.071416.124410	WG576454-13	CCB		1		07/14/16 12:44
14	T3.071416.124809	WG575851-02	Method/Prep Blank	40/50	1		07/14/16 12:48
15	T3.071416.125537	WG575851-03	Laboratory Control S	40/50	1		07/14/16 12:55
16	T3.071416.125915	L16070001-01	MDL-1	40/50	1		07/14/16 12:59
17	T3.071416.130312	L16070003-01	LOQ-1	40/50	1		07/14/16 13:03
18	T3.071416.130705	L16070003-09	LOQ-9	40/50	1		07/14/16 13:07
19	T3.071416.131101	WG576454-14	CCV		1		07/14/16 13:11
20	T3.071416.131436	WG576454-15	CCB		1		07/14/16 13:14
21	T3.071416.131836	WG575851-01	Reference Sample		1	L16070291-01	07/14/16 13:18
22	T3.071416.132229	WG575851-04	Matrix Spike	40/50	1	L16070291-01	07/14/16 13:22
23	T3.071416.132606	WG575851-05	Matrix Spike Duplica	40/50	1	L16070291-01	07/14/16 13:26
24	T3.071416.132943	L16070376-01	1260-B01-WQ-W0002	40/50	1		07/14/16 13:29
25	T3.071416.133339	L16070376-02	1261-F01-WQ-W0012	40/50	1		07/14/16 13:33
26	T3.071416.133736	L16070376-03	5334-B02-WQ-W0008	40/50	1		07/14/16 13:37
27	T3.071416.134133	L16070201-03	T1363	40/50	1		07/14/16 13:41
28	T3.071416.134523	WG576082-01	Post Digestion Spike		1	L16070201-03	07/14/16 13:45
29	T3.071416.134907	WG576082-02	Serial Dilution		5	L16070201-03	07/14/16 13:49
30	T3.071416.135252	WG576082-02	Serial Dilution		25	L16070201-03	07/14/16 13:52
31	T3.071416.135643	WG576454-16	CCV		1		07/14/16 13:56
32	T3.071416.140020	WG576454-17	CCB		1		07/14/16 14:00
33	T3.071416.140419	WG576011-02	Method/Prep Blank	40/50	1		07/14/16 14:04
34	T3.071416.140817	WG576011-03	Laboratory Control S	40/50	1		07/14/16 14:08

Page: 1 Approved: July 14, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.071416.141154	WG575805-01	Fluid Blank 1		1		07/14/16 14:11
36	T3.071416.141552	WG575805-02	Fluid Blank 2		1		07/14/16 14:15
37	T3.071416.141949	WG576011-01	Reference Sample		1	L16070397-01	07/14/16 14:19
38	T3.071416.142344	WG576011-04	Matrix Spike	5/50	1	L16070397-01	07/14/16 14:23
39	T3.071416.142721	WG576011-05	Matrix Spike Duplica	5/50	1	L16070397-01	07/14/16 14:27
40	T3.071416.143058	L16070347-01	TANK 001/INTERIOR	5/50	1		07/14/16 14:30
41	T3.071416.143452	WG576110-01	Post Digestion Spike		1	L16070347-01	07/14/16 14:34
42	T3.071416.143828	WG576110-02	Serial Dilution		5	L16070347-01	07/14/16 14:38
43	T3.071416.144225	WG576454-18	CCV		1		07/14/16 14:42
44	T3.071416.144601	WG576454-19	CCB		1		07/14/16 14:46
45	T3.071416.145001	L16070397-02	S6G0190-02	5/50	1		07/14/16 14:50
46	T3.071416.145355	L16070404-01	18502-G05-WQ-W0025	40/50	1		07/14/16 14:53
47	T3.071416.145752	L16070404-02	18502-G10-WQ-W0049	40/50	1		07/14/16 14:57
48	T3.071416.150148	L16070404-03	19124-G02-WQ-W7	40/50	1		07/14/16 15:01
49	T3.071416.150547	WG576454-20	CCV		1		07/14/16 15:05
50	T3.071416.150924	WG576454-21	CCB		1		07/14/16 15:09
51	T3.071416.151324	L16070238-01	WT-WL-02	5/50	1		07/14/16 15:13
52	T3.071416.151714	L16070340-01	DYNEGY	5/50	1		07/14/16 15:17
53	T3.071416.152107	L16070451-01	59-10-1.02 W1	40/50	1		07/14/16 15:21
54	T3.071416.152459	L16070451-02	59-10-1.02 S1	40/50	1		07/14/16 15:24
55	T3.071416.152852	L16070452-01	1804-105 W1	40/50	1		07/14/16 15:28
56	T3.071416.153244	L16070452-02	1804-105-A W1/S1	40/50	1		07/14/16 15:32
57	T3.071416.153637	L16070453-01	15-13-22 S1	40/50	1		07/14/16 15:36
58	T3.071416.154033	L16070453-02	2212-112 S1	40/50	1		07/14/16 15:40
59	T3.071416.154416	L16070453-03	2212-112 W1	40/50	1		07/14/16 15:44
60	T3.071416.154810	L16070453-04	2212-112 S2	40/50	1		07/14/16 15:48
61	T3.071416.155155	WG576454-22	CCV		1		07/14/16 15:51
62	T3.071416.155532	WG576454-23	CCB		1		07/14/16 15:55
63	T3.071416.155931	L16070453-05	2212-112 P1	40/50	1		07/14/16 15:59
64	T3.071416.160324	L16070454-01	1802-138 W1	40/50	1		07/14/16 16:03
65	T3.071416.160716	L16070201-01	T1360	40/50	2		07/14/16 16:07
66	T3.071416.161109	L16070201-02	T1362	40/50	2		07/14/16 16:11
67	T3.071416.161502	L16070201-04	T1365	40/50	2		07/14/16 16:15
68	T3.071416.161853	L16070249-03	25034-S		1		07/14/16 16:18

Page: 2 Approved: July 14, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.071416.162238	WG576454-24	CCV		1		07/14/16 16:22
70	T3.071416.162613	WG576454-25	CCB		1		07/14/16 16:26
71	T3.071416.163012	L16070291-02	MOR9 MW2	40/50	1		07/14/16 16:30
72	T3.071416.163355	L16070291-03	MOR9 MW3	40/50	1		07/14/16 16:33
73	T3.071416.163748	L16070291-04	MOR9 MW4	40/50	1		07/14/16 16:37
74	T3.071416.164139	L16070380-01	2208-127 W1	40/50	1		07/14/16 16:41
75	T3.071416.164530	L16070380-02	15-13-12 W1	40/50	1		07/14/16 16:45
76	T3.071416.164921	L16070380-03	15-13-12 W1	40/50	1		07/14/16 16:49
77	T3.071416.165314	L16070380-04	15-13-23.2 W1	40/50	1		07/14/16 16:53
78	T3.071416.165709	L16070381-01	WATER	40/50	1		07/14/16 16:57
79	T3.071416.170107	WG576454-26	CCV		1		07/14/16 17:01
80	T3.071416.170443	WG576454-27	CCB		1		07/14/16 17:04
81	T3.071416.170841	WG574636-02	Method/Prep Blank	40/50	1		07/14/16 17:08
82	T3.071416.171237	WG574636-03	Laboratory Control S	40/50	1		07/14/16 17:12
83	T3.071416.171614	WG574636-01	Reference Sample		1	L16061455-02	07/14/16 17:16
84	T3.071416.172007	WG574636-04	Matrix Spike	40/50	1	L16061455-02	07/14/16 17:20
85	T3.071416.172342	WG574636-05	Matrix Spike Duplica	40/50	1	L16061455-02	07/14/16 17:23
86	T3.071416.172719	L16061452-01	18CPTMW12SW-062416	40/50	1		07/14/16 17:27
87	T3.071416.173113	L16061453-01	MW2-062416	40/50	5		07/14/16 17:31
88	T3.071416.173506	L16061453-03	18CPTMW01SW-062416	40/50	10		07/14/16 17:35
89	T3.071416.173901	WG574839-03	Post Digestion Spike		10	L16061453-03	07/14/16 17:39
90	T3.071416.174238	WG574839-04	Serial Dilution		50	L16061453-03	07/14/16 17:42
91	T3.071416.174637	WG576454-28	CCV		1		07/14/16 17:46
92	T3.071416.175004	WG576454-29	CCB		1		07/14/16 17:50
93	T3.071416.175404	L16061648-02	18WW25F-062916	40/50	20		07/14/16 17:54
94	T3.071416.175800	WG576454-30	CCV		1		07/14/16 17:58
95	T3.071416.180136	WG576454-31	CCB		1		07/14/16 18:01
96	T3.071416.180534	WG576454-32	Low Level Continuing Calibra		1		07/14/16 18:05
97	T3.071416.180927	WG576454-33	Low Level Continuing Calibra		1		07/14/16 18:09
98	T3.071416.181316	WG575642-07	Method/Prep Blank	40/50	1		07/14/16 18:13
99	T3.071416.181713	WG575642-08	Laboratory Control S	40/50	1		07/14/16 18:17
100	T3.071416.182051	WG575642-06	Reference Sample		1	L16070227-07	07/14/16 18:20
101	T3.071416.182445	WG575642-09	Matrix Spike	40/50	1	L16070227-07	07/14/16 18:24
102	T3.071416.182823	WG575642-10	Matrix Spike Duplica	40/50	1	L16070227-07	07/14/16 18:28

Page: 3 Approved: July 14, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.071416.183200	L16070184-02	LH18/24-SP650-6376-GRAB	40/50	1		07/14/16 18:32
104	T3.071416.183551	WG576077-03	Post Digestion Spike		1	L16070184-02	07/14/16 18:35
105	T3.071416.183929	WG576077-04	Serial Dilution		5	L16070184-02	07/14/16 18:39
106	T3.071416.184322	WG576077-04	Serial Dilution		25	L16070184-02	07/14/16 18:43
107	T3.071416.184717	WG576454-34	CCV		1		07/14/16 18:47
108	T3.071416.185053	WG576454-35	CCB		1		07/14/16 18:50
109	T3.071416.185451	L16070209-01	T6F1104-05	40/50	1		07/14/16 18:54
110	T3.071416.185846	L16070209-02	T6F1104-06	40/50	1		07/14/16 18:58
111	T3.071416.190239	L16070209-03	T6F1104-07	40/50	1		07/14/16 19:02
112	T3.071416.190634	WG576454-36	CCV		1		07/14/16 19:06
113	T3.071416.191010	WG576454-37	CCB		1		07/14/16 19:10
114	T3.071416.191407	WG576454-38	Low Level Continuing Calibra		1		07/14/16 19:14
115	T3.071416.191801	WG576227-02	Method/Prep Blank	40/50	1		07/14/16 19:18
116	T3.071416.192158	WG576227-03	Laboratory Control S	40/50	1		07/14/16 19:21
117	T3.071416.192535	WG576038-02	Fluid Blank 1		1		07/14/16 19:25
118	T3.071416.192933	WG576038-01	Fluid Blank 2		1		07/14/16 19:29
119	T3.071416.193330	WG576227-04	Filter Blank		1		07/14/16 19:33
120	T3.071416.193729	L16070449-01	VTR 850	5/50	1		07/14/16 19:37
121	T3.071416.194121	WG576493-01	Post Digestion Spike		1	L16070449-01	07/14/16 19:41
122	T3.071416.194458	WG576493-02	Serial Dilution		5	L16070449-01	07/14/16 19:44
123	T3.071416.194853	WG576493-02	Serial Dilution		25	L16070449-01	07/14/16 19:48
124	T3.071416.195249	WG576454-39	CCV		1		07/14/16 19:52
125	T3.071416.195625	WG576454-40	CCB		1		07/14/16 19:56
126	T3.071416.200022	WG576227-01	Reference Sample		1	L16070521-01	07/14/16 20:00
127	T3.071416.200403	WG576227-05	Matrix Spike	40/50	1	L16070521-01	07/14/16 20:04
128	T3.071416.200739	WG576227-06	Matrix Spike Duplica	40/50	1	L16070521-01	07/14/16 20:07
129	T3.071416.201104	L16070348-01	350067872000_W1_070820	40/50	1		07/14/16 20:11
130	T3.071416.201454	L16070348-02	350067872000_W1_070820	40/50	1		07/14/16 20:14
131	T3.071416.201844	L16070447-01	REVAN FINES/EXP\#4888	5/50	1		07/14/16 20:18
132	T3.071416.202236	L16070464-01	SAPA 20 BAGS	5/50	1		07/14/16 20:22
133	T3.071416.202631	L16070465-01	ALAN 22 BAGS	5/50	1		07/14/16 20:26
134	T3.071416.203026	L16070466-01	380 SALTCAKE SCREW 10	5/50	1		07/14/16 20:30
135	T3.071416.203424	L16070468-01	URV	5/50	1		07/14/16 20:34
136	T3.071416.203822	WG576454-41	CCV		1		07/14/16 20:38

Page: 4 Approved: July 14, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838

ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD77089 LLCCV: STD77092 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.071416.204158	WG576454-42	CCB		1		07/14/16 20:41
138	T3.071416.204555	L16070474-01	LH18/24-SP650-6378-GRAB	40/50	1		07/14/16 20:45
139	T3.071416.204944	L16070474-02	LH18/24-SP650-6378-COMP	40/50	1		07/14/16 20:49
140	T3.071416.205335	L16070485-01	60500-SSP0045-SSP0045	5/50	1		07/14/16 20:53
141	T3.071416.205723	L16070487-01	13837-SSP0552	5/50	1		07/14/16 20:57
142	T3.071416.210115	L16070519-01	2016PRE-42230BROOKSRD	40/50	1		07/14/16 21:01
143	T3.071416.210507	L16070519-02	2016PRE-2616BEACHDR	40/50	1		07/14/16 21:05
144	T3.071416.210859	L16070524-01	59-8-2.02 W1	40/50	1		07/14/16 21:08
145	T3.071416.211252	WG576454-43	CCV		1		07/14/16 21:12
146	T3.071416.211629	WG576454-44	CCB		1		07/14/16 21:16
147	T3.071416.212025	WG576454-45	Low Level Continuing Calibra		1		07/14/16 21:20

Page: 5 Approved: July 14, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574911
Runlog ID: 76064
Analytical Workgroups: 574685,574802,574668,574839,574840

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1400,1568,1569,1570,1588,1622
Level 4	1265,1266,1269,1294,1412,1413
Level 4	1416,1421,1476,1452,1453,1498
Check for compliance with method and project specific requirements	X
	1559,1534
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
01-JUL-2016

Secondary Reviewer:
01-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-01-2016 15:42:54

Microbac Laboratories Inc.

Data Checklist

Date: 14-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 576454
Runlog ID: 76318
Analytical Workgroups: 576082,576110

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	0001,376,404
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer: 14-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-14-2016 15:54:24

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG574839

Login Number: L16061452

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW12SW-062416	01	06/24/16					06/29/2016	5.2	180		06/30/16	6.4	180	
18CPTMW12SW-062416	01	06/24/16					06/29/2016	5.2	180		07/14/16	20.4	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4836433
Report generated 07/15/2016 07:55

METHOD BLANK SUMMARY

Login Number: L16061452
Blank File ID: T3.063016.173343
Prep Date: 06/29/16 12:37
Analyzed Date: 06/30/16 17:33
Analyst: JYH

Work Group: WG574839
Blank Sample ID: WG574636-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574636-03	T3.063016.173741	06/30/16 17:37	01
18CPTMW12SW-062416	L16061452-01	T3.063016.174121	06/30/16 17:41	01
LCS	WG574636-03	T3.071416.171237	07/14/16 17:12	02
18CPTMW12SW-062416	L16061452-01	T3.071416.172719	07/14/16 17:27	02

Report Name: BLANK_SUMMARY
PDF File ID: 4836434
Report generated 07/15/2016 08:19

METHOD BLANK SUMMARY

Login Number: L16061452
Blank File ID: T3.071416.170841
Prep Date: 06/29/16 12:37
Analyzed Date: 07/14/16 17:08
Analyst: JYH

Work Group: WG574839
Blank Sample ID: WG574636-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574636-03	T3.063016.173741	06/30/16 17:37	01
18CPTMW12SW-062416	L16061452-01	T3.063016.174121	06/30/16 17:41	01
LCS	WG574636-03	T3.071416.171237	07/14/16 17:12	02
18CPTMW12SW-062416	L16061452-01	T3.071416.172719	07/14/16 17:27	02

Report Name: BLANK_SUMMARY
PDF File ID: 4836434
Report generated 07/15/2016 08:19

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061452 Prep Date: 06/29/16 12:37 Sample ID: WG574636-02
Instrument ID: ICP-THERMO3 Run Date: 06/30/16 17:33 Prep Method: 3015
File ID: T3.063016.173343 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574839 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4836435
16-JUL-2016 11:41

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061452 Prep Date: 06/29/16 12:37 Sample ID: WG574636-02
Instrument ID: ICP-THERMO3 Run Date: 07/14/16 17:08 Prep Method: 3015
File ID: T3.071416.170841 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574839 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-14-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Total	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4836435
16-JUL-2016 11:41

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061452 Run Date: 06/30/2016 Sample ID: WG574636-03
Instrument ID: ICP-THERMO3 Run Time: 17:37 Prep Method: 3015
File ID: T3.063016.173741 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574839 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-30-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	5.94	95.0	80 - 120	
Beryllium, Total	0.0313	0.0293	93.8	80 - 120	
Calcium, Total	6.25	5.94	95.1	80 - 120	
Magnesium, Total	6.25	6.06	97.0	80 - 120	
Potassium, Total	31.3	30.2	96.5	80 - 120	
Selenium, Total	0.250	0.221	88.6	80 - 120	
Sodium, Total	31.3	29.3	93.7	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4836436
Report generated: 07/16/2016 11:41

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061452 Run Date: 07/14/2016 Sample ID: WG574636-03
Instrument ID: ICP-THERMO3 Run Time: 17:12 Prep Method: 3015
File ID: T3.071416.171237 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574839 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-14-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Total	2.50	2.60	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4836436
Report generated: 07/16/2016 11:41

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061452 Cal ID: ICP-THERMO3 - Worknum: WG574839
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG574636-01 File ID: T3.063016.175652 Dil: 1 Matrix: WATER
Sample ID: WG574636-04 MS File ID: T3.063016.180045 Dil: 1 Units: mg/L
Sample ID: WG574636-05 MSD File ID: T3.063016.180425 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	0.411	6.25	6.30	94.2	6.25	6.71	101	6.35	80 - 120	20	
Beryllium	ND	0.0313	0.0290	92.7	0.0313	0.0300	96.0	3.52	80 - 120	20	
Calcium	46.1	6.25	50.5	70.0	6.25	52.0	94.2	2.95	80 - 120	20	*
Magnesium	7.31	6.25	13.1	93.3	6.25	13.6	101	3.64	80 - 120	20	
Potassium	4.41	31.3	34.4	95.9	31.3	35.3	98.8	2.60	80 - 120	20	
Selenium	0.00596	0.250	0.221	85.8	0.250	0.229	89.2	3.68	80 - 120	20	
Sodium	1.20	31.3	30.0	92.3	31.3	31.0	95.4	3.21	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4836437
Report generated 07/16/2016 11:41

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061452 Cal ID: ICP-THERMO3 - Worknum: WG574839
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG574636-01 File ID: T3.071416.171614 Dil: 1 Matrix: WATER
Sample ID: WG574636-04 MS File ID: T3.071416.172007 Dil: 1 Units: mg/L
Sample ID: WG574636-05 MSD File ID: T3.071416.172342 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron	0.647	2.50	3.11	98.4	2.50	3.48	113	11.3	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4836437
Report generated 07/16/2016 11:41

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061452 **Worknum:** WG574839
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574839-02 **File ID:** T3.063016.191356 **Dil:** 5 **Units:** ug/L
Sample: L16061564-06 **File ID:** T3.063016.190618 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	ND	U	ND	U		
Beryllium	ND	U	0.400		4100.00	
Calcium	1680		1270		24.00	E
Iron	ND	U	ND	U		
Magnesium	286		281		1.76	
Potassium	248		ND	U		
Selenium	ND	U	7.00		344.00	
Sodium	583		448		23.20	E

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4836431
07/15/2016 07:55

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061452 **Worknum:** WG574839
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574839-04 **File ID:** T3.071416.174238 **Dil:** 50 **Units:** ug/L
Sample: L16061453-03 **File ID:** T3.071416.173506 **Dil:** 10

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	14.3		121		743.00	E
Beryllium	0.400	X	ND	U		
Calcium	23500		21600		8.21	
Iron	43200		40400		6.46	
Magnesium	16100		15200		5.62	
Potassium	3930		5100		30.00	E
Selenium	ND	U	ND	U		
Sodium	81600		83200		2.03	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4836431
07/15/2016 07:55

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061452 **Worknum:** WG574839
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574839-01 **File ID:** T3.063016.191016 **Dil:** 1 **Units:** ug/L
Sample ID: L16061564-06 **File ID:** T3.063016.190618 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	4930		0	U	5000	98.7	75 - 125	
BERYLLIUM	24.6		0	U	25	98.5	75 - 125	
CALCIUM	6400		1680		5000	97.9	75 - 125	
IRON	1950		0	U	2000	97.3	75 - 125	
MAGNESIUM	5220		286	F	5000	99.2	75 - 125	
POTASSIUM	25400		0	U	25000	101.6	75 - 125	
SELENIUM	185		0	U	200	92.4	75 - 125	
SODIUM	24500		583	F	25000	96.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4836432
Report generated: 07/15/2016 08:19

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061452 **Worknum:** WG574839
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574839-03 **File ID:** T3.071416.173901 **Dil:** 10 **Units:** ug/L
Sample ID: L16061453-03 **File ID:** T3.071416.173506 **Dil:** 10 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	4850		0	U	5000	97.1	75 - 125	
BERYLLIUM	23.3		0	U	25	93.3	75 - 125	
CALCIUM	7320		2350		5000	99.4	75 - 125	
IRON	6130		4320		2000	90.5	75 - 125	
MAGNESIUM	6470		1610		5000	97.2	75 - 125	
POTASSIUM	25000		0	U	25000	99.8	75 - 125	
SELENIUM	201		0	U	200	100.6	75 - 125	
SODIUM	32600		8160		25000	97.8	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4836432
Report generated: 07/15/2016 08:19

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061452	Workgroup (AAB#):	WG574839
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574911	Initial Calibration Date:	30-JUN-2016 12:04

	WG574911-01		WG574911-02		WG574911-03		WG574911-04		WG574911-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000810	.1	0.00145	.2	0.00216	10	0.0857	20	0.171	.999995	
BERYLLIUM	0	0.000680	.0005	0.00104	.001	0.00144	.05	0.0501	.1	0.100	.999985	
CALCIUM	0	0.00271	.1	0.00455	.2	0.00879	10	0.483	20	0.976	.999491	
IRON	0	0.000140	.04	0.000300	.08	0.00134	4	0.0941	8	0.187	.999068	
MAGNESIUM	0	-0.000430	NA	NA	.2	0.000550	10	0.0870	20	0.176	.999752	
POTASSIUM	0	-0.0138	.5	0.00806	1	0.0262	50	3.01	100	6.13	.999875	
SELENIUM	0	-0.000490	NA	NA	.008	-0.000370	.4	0.00651	.8	0.0136	.999987	
SODIUM	0	-0.0587	.5	0.0213	1	0.107	50	10.0	100	20.4	.999978	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4836440
Report generated: 15-JUL-2016 07:55

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061452	Workgroup (AAB#):	WG574839
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG576454	Initial Calibration Date:	14-JUL-2016 12:14

	WG576454-01		WG576454-02		WG576454-03		WG576454-04		WG576454-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000730	.1	0.00145	.2	0.00229	10	0.0875	20	0.176	.999953	
BERYLLIUM	0	0.000470	.0005	0.000870	.001	0.00149	.05	0.0553	.1	0.110	.999925	
CALCIUM	0	0.00307	.1	0.00539	.2	0.0101	10	0.447	20	0.906	.999805	
IRON	0	-0.000210	.04	0.0000300	.08	0.000830	4	0.0895	8	0.178	.999221	
MAGNESIUM	0	-0.000220	NA	NA	.2	0.00130	10	0.0877	20	0.174	.999966	
POTASSIUM	0	-0.0139	.5	0.0110	1	0.0388	50	3.64	100	7.33	.99994	
SELENIUM	0	-0.000340	NA	NA	.008	-0.000300	.4	0.00698	.8	0.0142	.998889	
SODIUM	0	-0.0611	.5	0.0269	1	0.0997	50	9.63	100	19.5	.999971	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4836440
Report generated: 15-JUL-2016 07:55

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-07
Instrument ID: ICP-THERMO3
Run Time: 12:11
Method: 6010C
File ID: T3.063016.121137
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-THERI - 30-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	-.00415	F
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4836442
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-07
Instrument ID: ICP-THERMO3
Run Time: 12:21
Method: 6010C
File ID: T3.071416.122133
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-THERI - 14-JUL-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4836442
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-13
Instrument ID: ICP-THERMO3
Run Time: 12:34
Method: 6010C
File ID: T3.063016.123434
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00475	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836445
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-29
Instrument ID: ICP-THERMO3
Run Time: 17:29
Method: 6010C
File ID: T3.063016.172945
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836445
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-31
Instrument ID: ICP-THERMO3
Run Time: 18:15
Method: 6010C
File ID: T3.063016.181537
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836445
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-33
Instrument ID: ICP-THERMO3
Run Time: 19:02
Method: 6010C
File ID: T3.063016.190219
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836445
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-35
Instrument ID: ICP-THERMO3
Run Time: 19:25
Method: 6010C
File ID: T3.063016.192529
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00442	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836445
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-13
Instrument ID: ICP-THERMO3
Run Time: 12:44
Method: 6010C
File ID: T3.071416.124410
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836445
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-27
Instrument ID: ICP-THERMO3
Run Time: 17:04
Method: 6010C
File ID: T3.071416.170443
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00776	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836445
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-29
Instrument ID: ICP-THERMO3
Run Time: 17:50
Method: 6010C
File ID: T3.071416.175004
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00589	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836445
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-06
Instrument ID: ICP-THERMO3
Run Time: 12:17
Method: 6010C
File ID: T3.071416.121756
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 14-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.90	99.0	90 - 110	
Beryllium		.05	0.0501	100	90 - 110	
Calcium		10	9.84	98.4	90 - 110	
Iron		4	3.96	99.0	90 - 110	
Magnesium		10	9.78	97.8	90 - 110	
Potassium		50	49.7	99.3	90 - 110	
Selenium		.4	0.405	101	90 - 110	
Sodium		50	49.4	98.8	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4836441
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-06
Instrument ID: ICP-THERMO3
Run Time: 12:07
Method: 6010C
File ID: T3.063016.120759
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.0	100	90 - 110	
Beryllium		.05	0.0501	100	90 - 110	
Calcium		10	9.98	99.8	90 - 110	
Iron		4	3.97	99.2	90 - 110	
Magnesium		10	10.2	102	90 - 110	
Potassium		50	49.7	99.4	90 - 110	
Selenium		.4	0.406	102	90 - 110	
Sodium		50	49.5	99.0	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4836441
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-12
Instrument ID: ICP-THERMO3
Run Time: 12:30
Method: 6010C
File ID: T3.063016.123056
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Beryllium		0.0500	0.0500	mg/L	100	90 - 110		
Calcium		10.0	10.0	mg/L	100	90 - 110		
Iron		4.00	4.02	mg/L	100	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Potassium		50.0	50.1	mg/L	100	90 - 110		
Selenium		0.400	0.406	mg/L	102	90 - 110		
Sodium		50.0	49.6	mg/L	99.1	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836444
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-28
Instrument ID: ICP-THERMO3
Run Time: 17:26
Method: 6010C
File ID: T3.063016.172607
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.32	mg/L	93.2	90 - 110		
Beryllium		0.0500	0.0466	mg/L	93.2	90 - 110		
Calcium		10.0	9.08	mg/L	90.8	90 - 110		
Iron		4.00	3.64	mg/L	91.0	90 - 110		
Magnesium		10.0	9.45	mg/L	94.5	90 - 110		
Potassium		50.0	47.0	mg/L	93.9	90 - 110		
Selenium		0.400	0.364	mg/L	91.1	90 - 110		
Sodium		50.0	45.3	mg/L	90.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836444
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-30
Instrument ID: ICP-THERMO3
Run Time: 18:11
Method: 6010C
File ID: T3.063016.181159
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.44	mg/L	94.4	90 - 110		
Beryllium		0.0500	0.0471	mg/L	94.3	90 - 110		
Calcium		10.0	9.26	mg/L	92.6	90 - 110		
Iron		4.00	3.71	mg/L	92.7	90 - 110		
Magnesium		10.0	9.60	mg/L	96.0	90 - 110		
Potassium		50.0	48.4	mg/L	96.8	90 - 110		
Selenium		0.400	0.373	mg/L	93.2	90 - 110		
Sodium		50.0	46.4	mg/L	92.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836444
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-32
Instrument ID: ICP-THERMO3
Run Time: 18:58
Method: 6010C
File ID: T3.063016.185841
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.56	mg/L	95.6	90 - 110		
Beryllium		0.0500	0.0478	mg/L	95.5	90 - 110		
Calcium		10.0	9.39	mg/L	93.9	90 - 110		
Iron		4.00	3.73	mg/L	93.2	90 - 110		
Magnesium		10.0	9.86	mg/L	98.6	90 - 110		
Potassium		50.0	48.8	mg/L	97.6	90 - 110		
Selenium		0.400	0.372	mg/L	93.1	90 - 110		
Sodium		50.0	46.9	mg/L	93.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836444
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-34
Instrument ID: ICP-THERMO3
Run Time: 19:21
Method: 6010C
File ID: T3.063016.192150
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.43	mg/L	94.3	90 - 110		
Beryllium		0.0500	0.0478	mg/L	95.5	90 - 110		
Calcium		10.0	9.18	mg/L	91.8	90 - 110		
Iron		4.00	3.66	mg/L	91.4	90 - 110		
Magnesium		10.0	9.64	mg/L	96.4	90 - 110		
Potassium		50.0	48.7	mg/L	97.4	90 - 110		
Selenium		0.400	0.373	mg/L	93.3	90 - 110		
Sodium		50.0	45.5	mg/L	91.1	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836444
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-12
Instrument ID: ICP-THERMO3
Run Time: 12:40
Method: 6010C
File ID: T3.071416.124032
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.89	mg/L	98.9	90 - 110		
Beryllium		0.0500	0.0498	mg/L	99.6	90 - 110		
Calcium		10.0	9.93	mg/L	99.3	90 - 110		
Iron		4.00	3.97	mg/L	99.2	90 - 110		
Magnesium		10.0	9.98	mg/L	99.8	90 - 110		
Potassium		50.0	49.9	mg/L	99.7	90 - 110		
Selenium		0.400	0.406	mg/L	101	90 - 110		
Sodium		50.0	49.5	mg/L	99.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836444
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-26
Instrument ID: ICP-THERMO3
Run Time: 17:01
Method: 6010C
File ID: T3.071416.170107
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Beryllium		0.0500	0.0504	mg/L	101	90 - 110		
Calcium		10.0	10.3	mg/L	103	90 - 110		
Iron		4.00	4.15	mg/L	104	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	51.8	mg/L	104	90 - 110		
Selenium		0.400	0.418	mg/L	104	90 - 110		
Sodium		50.0	52.1	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836444
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-28
Instrument ID: ICP-THERMO3
Run Time: 17:46
Method: 6010C
File ID: T3.071416.174637
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.91	mg/L	99.1	90 - 110		
Beryllium		0.0500	0.0488	mg/L	97.7	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.04	mg/L	101	90 - 110		
Magnesium		10.0	9.93	mg/L	99.3	90 - 110		
Potassium		50.0	50.8	mg/L	102	90 - 110		
Selenium		0.400	0.409	mg/L	102	90 - 110		
Sodium		50.0	51.1	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836444
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-08
Instrument ID: ICP-THERMO3
Run Time: 12:15
Method: 6010C
File ID: T3.063016.121535
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.160	mg/L	99.9	70 - 130		
Beryllium		0.00160	0.00144	mg/L	90.0	70 - 130		
Calcium		0.400	0.404	mg/L	101	70 - 130		
Iron		0.0800	0.0611	mg/L	76.4	70 - 130		
Magnesium		0.400	0.436	mg/L	109	70 - 130		
Potassium		0.800	0.733	mg/L	91.6	70 - 130		
Selenium		0.0160	0.0192	mg/L	120	70 - 130		
Sodium		0.400	0.458	mg/L	114	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4836788
Report generated 07/16/2016 11:41

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-20
Instrument ID: ICP-THERMO3
Run Time: 14:46
Method: 6010C
File ID: T3.063016.144622
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.138	mg/L	86.0	70 - 130		
Beryllium		0.00160	0.00140	mg/L	87.5	70 - 130		
Calcium		0.400	0.380	mg/L	95.0	70 - 130		
Iron		0.0800	0.0325	mg/L	40.6	70 - 130		*
Magnesium		0.400	0.346	mg/L	86.4	70 - 130		
Potassium		0.800	0.718	mg/L	89.7	70 - 130		
Selenium		0.0160	0.0162	mg/L	101	70 - 130		
Sodium		0.400	0.408	mg/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4836788
Report generated 07/16/2016 11:41

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-36
Instrument ID: ICP-THERMO3
Run Time: 19:29
Method: 6010C
File ID: T3.063016.192926
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.142	mg/L	88.7	70 - 130		
Beryllium		0.00160	0.00152	mg/L	95.0	70 - 130		
Calcium		0.400	0.301	mg/L	75.2	70 - 130		
Iron		0.0800	0.0595	mg/L	74.4	70 - 130		
Magnesium		0.400	0.439	mg/L	110	70 - 130		
Potassium		0.800	0.847	mg/L	106	70 - 130		
Selenium		0.0160	0.0188	mg/L	118	70 - 130		
Sodium		0.400	0.391	mg/L	97.6	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4836788
Report generated 07/16/2016 11:41

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-08
Instrument ID: ICP-THERMO3
Run Time: 12:25
Method: 6010C
File ID: T3.071416.122530
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Calcium		0.400	0.383	mg/L	95.7	70 - 130		
Iron		0.0800	0.0902	mg/L	113	70 - 130		
Magnesium		0.400	0.334	mg/L	83.6	70 - 130		
Selenium		0.0160	0.0166	mg/L	104	70 - 130		
Sodium		0.400	0.430	mg/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4836788
Report generated 07/16/2016 11:41

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-32
Instrument ID: ICP-THERMO3
Run Time: 18:05
Method: 6010C
File ID: T3.071416.180534
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Calcium		0.400	0.343	mg/L	85.7	70 - 130		
Iron		0.0800	0.0818	mg/L	102	70 - 130		
Magnesium		0.400	0.418	mg/L	104	70 - 130		
Selenium		0.0160	0.0124	mg/L	77.4	70 - 130		
Sodium		0.400	0.472	mg/L	118	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4836788
Report generated 07/16/2016 11:41

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061452
Instrument ID: ICP-THERMO3
Sol. A : WG574911-10 **File ID:** T3.063016.122323
Sol. AB : WG574911-11 **File ID:** T3.063016.122713

Workgroup (AAB#): WG574839
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	259	104	250	265	106	
Beryllium	NS	-0.000160	NS	0.250	0.240	96.0	
Calcium	250	241	96.4	250	246	98.4	
Iron	100	95.3	95.3	100	96.1	96.1	
Magnesium	250	245	98.0	250	247	98.8	
Potassium	NS	0.0132	NS	5.00	5.23	105	
Selenium	NS	0.00668	NS	0.250	0.245	98.0	
Sodium	NS	0.0676	NS	5.00	5.26	105	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4836443
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061452
Instrument ID: ICP-THERMO3
Sol. A : WG576454-10 **File ID:** T3.071416.123313
Sol. AB : WG576454-11 **File ID:** T3.071416.123702

Workgroup (AAB#): WG574839
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	268	107	250	266	106	
Beryllium	NS	-0.0000100	NS	0.250	0.246	98.4	
Calcium	250	251	100	250	249	99.6	
Iron	100	99.1	99.1	100	96.8	96.8	
Magnesium	250	255	102	250	249	99.6	
Potassium	NS	-0.0266	NS	5.00	5.17	103	
Selenium	NS	0.00789	NS	0.250	0.259	104	
Sodium	NS	0.0552	NS	5.00	5.32	106	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4836443
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061452 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4836439
Report generated: 07/15/2016 07:55

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061452 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4836439
Report generated: 07/15/2016 07:55

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061452 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4836439
Report generated: 07/15/2016 07:55

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061452 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4836439
Report generated: 07/15/2016 07:55

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061452 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4836439
Report generated: 07/15/2016 07:55

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061452 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4836439
Report generated: 07/15/2016 07:55

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061452 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4836439
Report generated: 07/15/2016 07:55

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061452 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4836438
Report generated: 07/15/2016 07:55

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000193	0.052798	0.000000	1.000000
Al 308.215 {109}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000809	0.008423	0.000000	1.000000
As 189.042 {478}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000056	0.025275	0.000000	1.000000
B 249.678 {135}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000036	0.024307	0.000000	1.000000
Ba 455.403 { 74}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.060327	2.321617	0.000000	1.000000
Be 313.107 {108}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000676	0.972709	0.000000	1.000000
Ca 422.673 { 80}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.002708	0.048326	0.000000	1.000000
Cd 228.802 {447}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000098	0.597598	0.000000	1.000000
Co 228.616 {447}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000214	0.374470	0.000000	1.000000
Cr 267.716 {126}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000267	0.061064	0.000000	1.000000
Cu 224.700 {450}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000137	0.133806	0.000000	1.000000
Fe 261.187 {129}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000143	0.023347	0.000000	1.000000
K 766.490 { 44}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.013804	0.061019	0.000000	1.000000
Li 670.784 { 50}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.009937	1.786167	0.000000	1.000000
Mg 279.079 {121}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000430	0.008802	0.000000	1.000000
Mn 257.610 {131}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000243	0.287231	0.000000	1.000000
Mo 202.030 {467}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000016	0.190780	0.000000	1.000000
Na 589.592 { 57}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.058690	0.203593	0.000000	1.000000
Ni 231.604 {446}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000690	0.140071	0.000000	1.000000
P 214.914 {457}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000105	0.014460	0.000000	1.000000
Pb 220.353 {453}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.001037	0.065557	0.000000	1.000000
Sb 206.833 {463}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000213	0.031777	0.000000	1.000000
Se 196.090 {472}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000487	0.017604	0.000000	1.000000
Si 212.412 {459}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000878	0.041134	0.000000	1.000000
Sn 189.989 {477}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000050	0.072964	0.000000	1.000000
Sr 407.771 { 83}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.001911	3.795036	0.000000	1.000000
Ti 337.280 {100}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.003085	0.127329	0.000000	1.000000
Tl 190.856 {477}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000326	0.029804	0.000000	1.000000
V 292.402 {115}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000042	0.071368	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000111	0.441556	0.000000	1.000000
Zr 339.198 { 99}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.007325	4.038535	0.000000	1.000000

Approved: July 01, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999524	0.000004	0.002246	0.007488	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999995	0.000002	0.009695	0.032315	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999564	0.000003	0.003153	0.010509	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999831	0.000002	0.002907	0.009690	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999869	0.000238	0.001120	0.003735	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999985	0.000002	0.000098	0.000327	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999491	0.000098	0.044375	0.147918	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999896	0.000003	0.000270	0.000899	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999959	0.000004	0.000413	0.001377	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999994	0.000001	0.001236	0.004119	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999801	0.000008	0.001358	0.004527	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999068	0.000026	0.029323	0.097744	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999875	0.000306	0.125185	0.417285	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999800	0.000351	0.003979	0.013263	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999752	0.000019	0.087917	0.293055	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999695	0.000023	0.002818	0.009395	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999958	0.000011	0.000431	0.001437	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999978	0.000428	0.032363	0.107877	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999830	0.000008	0.001169	0.003898	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999967	0.000007	0.007069	0.023562	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.998915	0.000010	0.003642	0.012140	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999939	0.000003	0.004429	0.014764	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999987	0.000000	0.006620	0.022067	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999914	0.000017	0.002347	0.007824	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999905	0.000006	0.000895	0.002984	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999995	0.000074	0.000471	0.001570	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999442	0.000027	0.007566	0.025219	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999792	0.000003	0.003157	0.010522	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999979	0.000003	0.001023	0.003409	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999969	0.000022	0.000201	0.000669	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999994	0.000092	0.000531	0.001769	OK.	1.000000	0.000000	1	0

Approved: July 01, 2016

Sample Name: S0 Acquired: 6/30/2016 11:48:47 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00019**	**.00081**	**.00006**	**-.00004**	**.06033**	**.00068**	**.00271**
Stddev	.00006	.00005	.00002	.00004	.00169	.00010	.00129
%RSD	29.272	5.9332	31.921	122.93	2.8032	14.598	47.655
#1	-.00023	.00075	.00007	-.00008	.06224	.00079	.00308
#2	-.00022	.00084	.00006	-.00004	.05976	.00061	.00127
#3	-.00013	.00083	.00004	.00001	.05900	.00063	.00378

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00010**	**-.00021**	**.00027**	**.00014**	**.00014**	**-.01380**	**-.00993**
Stddev	.00003	.00004	.00009	.00011	.00047	.00053	.00373
%RSD	33.005	17.919	34.379	79.164	329.81	3.8567	37.607
#1	-.00013	-.00023	.00037	.00025	-.00026	-.01347	-.01335
#2	-.00010	-.00017	.00024	.00012	.00066	-.01441	-.00594
#3	-.00006	-.00024	.00019	.00004	.00003	-.01352	-.01050

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00043**	**.00024**	**-.00002**	**-.05869**	**-.00069**	**-.00010**	**-.00104**
Stddev	.00101	.00039	.00006	.00542	.00011	.00010	.00004
%RSD	234.70	161.11	374.83	9.2329	15.537	98.599	3.9316
#1	.00049	.00054	.00003	-.05526	-.00057	-.00003	-.00099
#2	-.00151	.00039	-.00008	-.06494	-.00072	-.00006	-.00107
#3	-.00027	-.00020	.00001	-.05587	-.00078	-.00022	-.00106

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00021**	**-.00049**	**.00088**	**.00005**	**.00191**	**-.00309**	**-.00033**
Stddev	.00004	.00005	.00003	.00003	.00014	.00055	.00009
%RSD	18.597	10.112	3.6380	56.311	7.5467	17.814	28.554
#1	.00024	-.00054	.00084	.00002	.00174	-.00354	-.00042
#2	.00017	-.00044	.00090	.00008	.00199	-.00247	-.00033
#3	.00023	-.00048	.00089	.00005	.00200	-.00324	-.00023

Approved: July 01, 2016

Sample Name: S0 Acquired: 6/30/2016 11:48:47 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	-.00004	.00011	-.00733
Stddev	.00004	.00005	.00118
%RSD	90.668	45.589	16.170
#1	-.00003	.00005	-.00632
#2	-.00001	.00015	-.00703
#3	-.00009	.00013	-.00863
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9689.1	58572.	2664.3
Stddev	28.1	81.	6.0
%RSD	.28991	.13777	.22425
#1	9657.5	58643.	2657.5
#2	9698.4	58484.	2667.0
#3	9711.3	58589.	2668.5

Approved: July 01, 2016

Sample Name: S1 Acquired: 6/30/2016 11:52:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00012**	**.00145**	**.07519**	**.00104**	**.00455**	**.00019**	**.00048**
Stddev	.00006	.00004	.00133	.00007	.00130	.00012	.00023
%RSD	54.165	2.5700	1.7657	6.3207	28.530	63.516	47.402
#1	-.00016	.00143	.07366	.00103	.00516	.00020	.00068
#2	-.00014	.00149	.07605	.00099	.00306	.00031	.00053
#3	-.00004	.00142	.07586	.00112	.00542	.00007	.00023

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00053**	**.00053**	**.00030**	**.00806**	**.00191**	**.00134**	**.02128**
Stddev	.00005	.00014	.00039	.00264	.00011	.00032	.00383
%RSD	10.291	25.801	129.91	32.752	5.9498	23.478	18.013
#1	.00049	.00054	.00023	.01092	.00194	.00151	.02118
#2	.00050	.00066	-.00005	.00571	.00179	.00154	.02516
#3	.00059	.00039	.00072	.00756	.00201	.00098	.01749

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00025**	**.00090**	**-.00099**	**.00056**	**.00228**	**.00052**	**.03280**
Stddev	.00011	.00016	.00015	.00017	.00024	.00006	.00112
%RSD	44.619	17.852	14.855	29.590	10.330	12.365	3.4124
#1	-.00028	.00102	-.00094	.00075	.00236	.00055	.03409
#2	-.00013	.00097	-.00088	.00045	.00246	.00056	.03203
#3	-.00036	.00072	-.00115	.00048	.00201	.00044	.03230

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00192**	**.00058**	**.00326**	**.02585**
Stddev	.00024	.00002	.00065	.00251
%RSD	12.475	4.1985	20.032	9.6992
#1	-.00164	.00056	.00356	.02423
#2	-.00209	.00061	.00370	.02874
#3	-.00201	.00058	.00251	.02458

Approved: July 01, 2016

Sample Name: S1 Acquired: 6/30/2016 11:52:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9718.1**	**58956.**	**2683.8**
Stddev	35.2	165.	1.3
%RSD	.36207	.28019	.04958
#1	9697.0	59140.	2685.3
#2	9698.5	58822.	2683.2
#3	9758.7	58905.	2682.9

Approved: July 01, 2016

Sample Name: S2 Acquired: 6/30/2016 11:56:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00009**	**.00216**	**.00015**	**.00020**	**.09127**	**.00144**	**.00879**
Stddev	.00006	.00005	.00002	.00007	.00099	.00007	.00013
%RSD	74.681	2.2882	13.294	34.410	1.0812	4.6029	1.4802
#1	.00003	.00221	.00014	.00013	.09227	.00150	.00873
#2	.00016	.00217	.00014	.00022	.09030	.00146	.00871
#3	.00007	.00211	.00018	.00027	.09125	.00137	.00894

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00048**	**.00105**	**.00075**	**.00100**	**.00134**	**.02621**	**.01117**
Stddev	.00015	.00022	.00005	.00014	.00042	.00208	.00237
%RSD	30.682	21.185	7.3050	13.696	31.034	7.9418	21.243
#1	.00049	.00115	.00074	.00102	.00087	.02591	.01003
#2	.00062	.00121	.00070	.00113	.00163	.02842	.01390
#3	.00033	.00080	.00081	.00086	.00154	.02429	.00958

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00055**	**.00232**	**.00276**	**.10726**	**.00021**	**.00201**	**-.00066**
Stddev	.00047	.00077	.00032	.00636	.00021	.00029	.00021
%RSD	84.481	33.124	11.523	5.9311	100.68	14.470	32.556
#1	.00098	.00239	.00297	.10161	.00042	.00220	-.00056
#2	.00005	.00305	.00291	.11415	.00021	.00216	-.00090
#3	.00063	.00152	.00239	.10601	.00000	.00168	-.00051

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00087**	**-.00037**	**.00378**	**.00107**	**.06397**	**-.00017**	**-.00016**
Stddev	.00014	.00009	.00036	.00020	.00163	.00066	.00001
%RSD	16.131	24.406	9.4278	18.634	2.5530	389.76	6.5339
#1	.00098	-.00047	.00401	.00115	.06224	-.00092	-.00016
#2	.00092	-.00030	.00397	.00121	.06418	.00009	-.00018
#3	.00071	-.00034	.00337	.00084	.06549	.00032	-.00016

Approved: July 01, 2016

Sample Name: S2 Acquired: 6/30/2016 11:56:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00110	.00668	.05897
Stddev	.00002	.00100	.00170
%RSD	2.0668	15.028	2.8886
#1	.00111	.00728	.06039
#2	.00112	.00724	.05945
#3	.00108	.00552	.05709
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9701.0	58835.	2699.2
Stddev	46.3	136.	2.1
%RSD	.47776	.23076	.07848
#1	9680.9	58909.	2696.8
#2	9668.1	58679.	2700.3
#3	9754.0	58918.	2700.6

Approved: July 01, 2016

Sample Name: S3 Acquired: 6/30/2016 12:00:44 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02084	.08568	.01009	.01196	2.3772	.05007	.48271	.03232
Stddev	.00017	.00007	.00003	.00009	.0175	.00017	.00297	.00020
%RSD	.80625	.07788	.28827	.73467	.73651	.34557	.61514	.62884
#1	.02073	.08561	.01008	.01200	2.3572	.04993	.48550	.03254
#2	.02103	.08570	.01012	.01202	2.3900	.05001	.48302	.03226
#3	.02075	.08574	.01007	.01186	2.3843	.05026	.47959	.03215

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07450	.03078	.06744	.09405	3.0113	1.7635	.08697	.14299
Stddev	.00022	.00011	.00023	.00115	.0167	.0103	.00138	.00114
%RSD	.29388	.34426	.34550	1.2235	.55307	.58445	1.5826	.79775
#1	.07458	.03088	.06771	.09297	2.9936	1.7518	.08613	.14239
#2	.07468	.03067	.06733	.09391	3.0266	1.7711	.08856	.14431
#3	.07426	.03079	.06728	.09526	3.0137	1.7676	.08622	.14228

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.19165	10.028	.06961	.14205	.03209	.03768	.00651	.20921
Stddev	.00087	.071	.00030	.00031	.00004	.00005	.00008	.00032
%RSD	.45298	.70594	.42969	.21587	.12919	.12025	1.1966	.15375
#1	.19244	9.9490	.06977	.14240	.03214	.03764	.00650	.20952
#2	.19178	10.048	.06980	.14186	.03207	.03772	.00643	.20923
#3	.19072	10.086	.06927	.14188	.03207	.03769	.00659	.20888

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07293	3.7832	.12232	.01348	.07069	.44298	4.0452
Stddev	.00035	.0208	.00072	.00009	.00020	.00104	.0273
%RSD	.47635	.54843	.59050	.63389	.28487	.23561	.67545
#1	.07322	3.7596	.12174	.01339	.07046	.44419	4.0163
#2	.07303	3.7913	.12210	.01349	.07075	.44237	4.0705
#3	.07254	3.7987	.12313	.01356	.07085	.44239	4.0488

Approved: July 01, 2016

Sample Name: S3 Acquired: 6/30/2016 12:00:44 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9475.5**	**57220.**	**2657.2**
Stddev	30.5	81.	10.6
%RSD	.32150	.14099	.39801
#1	9441.3	57209.	2668.9
#2	9485.2	57305.	2654.5
#3	9499.9	57145.	2648.3

Approved: July 01, 2016

Sample Name: S4 Acquired: 6/30/2016 12:04:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.04213**	**.17091**	**.02023**	**.02426**	**4.7183**	**.10012**	**.97616**	**.06536**
Stddev	.00002	.00007	.00011	.00006	.0096	.00035	.00369	.00031
%RSD	.05249	.04163	.52269	.25339	.20378	.35302	.37813	.47583
#1	.04214	.17094	.02012	.02433	4.7100	.10046	.97523	.06504
#2	.04210	.17083	.02026	.02420	4.7160	.09976	.97302	.06566
#3	.04214	.17096	.02032	.02426	4.7288	.10013	.98023	.06537

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.14922**	**.06142**	**.13402**	**.18726**	**6.1252**	**3.5826**	**.17594**	**.28818**
Stddev	.00094	.00001	.00074	.00052	.0137	.0130	.00188	.00031
%RSD	.62842	.02163	.55027	.27843	.22422	.36191	1.0687	.10830
#1	.14839	.06143	.13341	.18670	6.1250	3.5743	.17482	.28853
#2	.15023	.06140	.13484	.18734	6.1391	3.5759	.17811	.28805
#3	.14903	.06143	.13380	.18773	6.1116	3.5975	.17489	.28794

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.38105**	**20.392**	**.13946**	**.28511**	**.06517**	**.07497**	**.01363**	**.41251**
Stddev	.00134	.058	.00080	.00053	.00048	.00031	.00018	.00077
%RSD	.35235	.28256	.57055	.18524	.73271	.41308	1.3105	.18681
#1	.38127	20.356	.13877	.28489	.06463	.07466	.01346	.41257
#2	.38226	20.362	.14033	.28572	.06555	.07528	.01382	.41325
#3	.37961	20.459	.13928	.28473	.06533	.07497	.01362	.41172

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.14591**	**7.6044**	**.25148**	**.02688**	**.14272**	**.88207**	**8.0517**
Stddev	.00063	.0119	.00134	.00011	.00041	.00284	.0418
%RSD	.43229	.15645	.53128	.40207	.28594	.32157	.51852
#1	.14587	7.6087	.24999	.02695	.14307	.88357	8.0903
#2	.14656	7.5909	.25257	.02693	.14227	.88383	8.0074
#3	.14530	7.6135	.25189	.02675	.14281	.87879	8.0575

Approved: July 01, 2016

Sample Name: S4 Acquired: 6/30/2016 12:04:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9363.5	56326.	2647.2
Stddev	14.2	70.	17.3
%RSD	.15200	.12444	.65335
#1	9371.0	56246.	2630.5
#2	9372.3	56378.	2665.1
#3	9347.1	56355.	2645.9

Approved: July 01, 2016

Sample Name: ICV Acquired: 6/30/2016 12:07:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40027	10.040	.40094	.49789	1.0009	.05011	9.9815	.05001
Stddev	.00088	.028	.00642	.00467	.0005	.00013	.0371	.00077
%RSD	.21957	.27612	1.6003	.93850	.05356	.26156	.37153	1.5336
#1	.39943	10.038	.40203	.49914	1.0013	.05010	9.9398	.05078
#2	.40020	10.014	.40673	.49272	1.0003	.04998	10.011	.04999
#3	.40118	10.069	.39404	.50181	1.0011	.05024	9.9938	.04925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20005	.50020	.50121	3.9698	49.687	.99123	10.176	.49943
Stddev	.00305	.00161	.00891	.0576	.357	.00597	.077	.00033
%RSD	1.5234	.32135	1.7781	1.4508	.71866	.60270	.75624	.06545
#1	.20189	.49870	.50647	4.0146	49.908	.99717	10.089	.49922
#2	.20174	.50001	.50623	3.9049	49.878	.98522	10.206	.49926
#3	.19654	.50190	.49092	3.9900	49.275	.99131	10.234	.49980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98147	49.498	.50196	9.8218	.50424	1.2065	.40615	4.9303
Stddev	.01676	.028	.00947	.1023	.00367	.0241	.00614	.0450
%RSD	1.7072	.05564	1.8857	1.0420	.72692	2.0000	1.5110	.91304
#1	.99008	49.471	.50761	9.8807	.50041	1.2231	.41272	4.9514
#2	.99217	49.499	.50724	9.8810	.50771	1.2177	.40056	4.9609
#3	.96216	49.526	.49104	9.7036	.50460	1.1788	.40519	4.8786
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: ICV Acquired: 6/30/2016 12:07:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0104**	**.98895**	**.99394**	**.50636**	**.99673**	**1.0027**	**1.0113**
Stddev	.0176	.00171	.00427	.00473	.00283	.0150	.0049
%RSD	1.7368	.17311	.42947	.93453	.28425	1.5003	.48055
#1	1.0196	.98962	.99781	.51089	.99845	1.0111	1.0158
#2	1.0214	.98700	.99466	.50673	.99346	1.0117	1.0061
#3	.99016	.99022	.98936	.50145	.99829	.98533	1.0119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9476.1**	**57239.**	**2653.6**
Stddev	27.0	189.	16.7
%RSD	.28497	.33077	.62854
#1	9449.3	57065.	2635.7
#2	9475.6	57441.	2668.7
#3	9503.3	57211.	2656.3

Approved: July 01, 2016

Sample Name: ICB Acquired: 6/30/2016 12:11:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00088**	**.00390**	**-.00095**	**.00506**	**-.00081**	**-.00003**	**-.04954**	**.00020**
Stddev	.00194	.00471	.00108	.00177	.00077	.00005	.02644	.00011
%RSD	220.94	120.73	113.92	34.947	95.404	204.36	53.382	53.738
#1	-.00078	.00429	-.00205	.00310	.00007	-.00002	-.07970	.00008
#2	.00101	-.00099	.00010	.00554	-.00115	.00003	-.03036	.00027
#3	-.00286	.00841	-.00089	.00654	-.00135	-.00008	-.03855	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00069**	**-.00061**	**-.02541**	**.00201**	**.00114**	**-.01391**	**.00121**
Stddev	.00030	.00074	.00046	.00762	.10357	.00122	.08551	.00475
%RSD	67.224	107.97	75.175	29.993	5164.7	107.87	614.73	392.27
#1	.00078	.00088	-.00112	-.03074	.07373	.00062	.04435	.00394
#2	.00022	-.00013	-.00044	-.02881	.04902	.00025	-.11208	-.00427
#3	.00033	.00131	-.00026	-.01668	-.11673	.00253	.02600	.00397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00059**	**.06174**	**.00036**	**-.00244**	**-.00143**	**.00317**	**-.00415**	**.00880**
Stddev	.00047	.03575	.00026	.00310	.00198	.00431	.00373	.00115
%RSD	79.805	57.900	73.662	126.85	138.10	135.86	89.892	13.047
#1	.00111	.03252	.00020	-.00500	-.00371	-.00154	-.00019	.00818
#2	.00021	.05111	.00021	.00100	-.00012	.00414	-.00465	.01013
#3	.00044	.10160	.00066	-.00333	-.00047	.00692	-.00759	.00810
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: ICB Acquired: 6/30/2016 12:11:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00059	.00769	-.00266	.00058	.00089	.00077
Stddev	.00059	.00020	.00206	.00182	.00108	.00021	.00059
%RSD	197.36	33.572	26.840	68.537	184.19	22.970	76.283
#1	-.00036	.00080	.00793	-.00476	.00164	.00112	.00142
#2	.00079	.00055	.00552	-.00146	.00063	.00085	.00026
#3	.00046	.00041	.00963	-.00177	-.00051	.00072	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9648.6	58614.	2680.4
Stddev	49.6	124.	18.5
%RSD	.51441	.21107	.68937
#1	9611.1	58476.	2666.9
#2	9629.9	58651.	2672.7
#3	9704.9	58715.	2701.4

Approved: July 01, 2016

Sample Name: LLICV Acquired: 6/30/2016 12:15:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00655**	**.15983**	**.00660**	**.08050**	**.00602**	**.00144**	**.40388**	**.00092**
Stddev	.00125	.00368	.00319	.00287	.00035	.00003	.02155	.00016
%RSD	19.088	2.3016	48.400	3.5594	5.8115	1.9143	5.3357	16.794
#1	.00524	.15965	.00921	.07941	.00635	.00145	.38701	.00105
#2	.00772	.16360	.00304	.07835	.00607	.00146	.39646	.00097
#3	.00670	.15625	.00754	.08375	.00565	.00141	.42816	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00380**	**.00427**	**.00360**	**.06111**	**.73280**	**.07686**	**.43553**	**.00840**
Stddev	.00038	.00115	.00055	.00976	.06213	.00329	.07930	.00255
%RSD	10.114	26.924	15.212	15.970	8.4781	4.2814	18.207	30.402
#1	.00413	.00375	.00299	.05035	.74873	.07338	.46978	.00713
#2	.00390	.00347	.00405	.06939	.78541	.07727	.34487	.01134
#3	.00338	.00558	.00376	.06359	.66425	.07992	.49195	.00673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00740**	**.45782**	**.01545**	**.73259**	**.00602**	**.07788**	**.01924**	**.70650**
Stddev	.00052	.01037	.00160	.07584	.00157	.01046	.00177	.06617
%RSD	6.9947	2.2656	10.344	10.352	25.999	13.426	9.1871	9.3660
#1	.00780	.45101	.01523	.78128	.00774	.08176	.01721	.74614
#2	.00758	.45268	.01715	.77129	.00467	.08583	.02007	.74325
#3	.00681	.46975	.01397	.64521	.00566	.06603	.02045	.63011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LLICV Acquired: 6/30/2016 12:15:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37544**	**.04032**	**.03397**	**.14245**	**.00780**	**.01618**	**.04089**
Stddev	.04800	.00052	.00953	.01417	.00048	.00177	.00047
%RSD	12.785	1.2931	28.044	9.9482	6.1481	10.969	1.1412
#1	.40450	.03988	.04113	.15342	.00727	.01731	.04124
#2	.40179	.04090	.03763	.14748	.00790	.01708	.04036
#3	.32004	.04018	.02316	.12645	.00822	.01413	.04108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9716.1**	**59066.**	**2701.3**
Stddev	10.5	109.	6.5
%RSD	.10825	.18513	.24001
#1	9706.1	59087.	2705.8
#2	9715.2	59162.	2704.2
#3	9727.1	58947.	2693.8

Approved: July 01, 2016

Sample Name: LLICV Acquired: 6/30/2016 12:19:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01850**	**.39387**	**.01539**	**.19444**	**.01763**	**.00374**	**.99224**	**.00205**
Stddev	.00214	.00293	.00156	.00091	.00067	.00003	.04643	.00016
%RSD	11.577	.74349	10.113	.46775	3.7898	.70038	4.6797	7.5824
#1	.01706	.39721	.01514	.19522	.01792	.00371	1.0024	.00189
#2	.01748	.39270	.01705	.19344	.01810	.00376	1.0327	.00219
#3	.02096	.39172	.01397	.19466	.01686	.00376	.94156	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00982**	**.01005**	**.00983**	**.18802**	**1.9090**	**.19634**	**.93539**	**.01791**
Stddev	.00078	.00056	.00052	.00630	.1160	.00089	.06965	.00274
%RSD	7.9294	5.5747	5.2557	3.3491	6.0769	.45277	7.4465	15.282
#1	.01059	.01002	.01033	.19118	1.8837	.19545	.95017	.01574
#2	.00985	.01063	.00988	.18077	1.8077	.19722	.85954	.01701
#3	.00903	.00951	.00930	.19211	2.0356	.19635	.99648	.02099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01865**	**1.0310**	**.03891**	**1.8639**	**.02022**	**.19179**	**.03887**	**1.7887**
Stddev	.00079	.0105	.00256	.0803	.00258	.00180	.00127	.0654
%RSD	4.2580	1.0184	6.5715	4.3101	12.754	.93792	3.2653	3.6569
#1	.01946	1.0295	.03924	1.9113	.01902	.19202	.04034	1.8307
#2	.01862	1.0422	.04129	1.9093	.02319	.19346	.03815	1.8221
#3	.01787	1.0214	.03621	1.7712	.01847	.18989	.03813	1.7134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LLICV Acquired: 6/30/2016 12:19:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96496**	**.09889**	**.06924**	**.36758**	**.01960**	**.04190**	**.10028**
Stddev	.05420	.00135	.01159	.01230	.00107	.00194	.00029
%RSD	5.6169	1.3693	16.742	3.3463	5.4822	4.6260	.29077
#1	.99568	.09753	.07596	.37571	.01836	.04303	.10001
#2	.99683	.10024	.07590	.37359	.02018	.04301	.10059
#3	.90238	.09890	.05585	.35343	.02027	.03966	.10025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9620.2**	**58472.**	**2675.8**
Stddev	7.5	159.	7.9
%RSD	.07808	.27163	.29594
#1	9617.7	58289.	2684.9
#2	9614.3	58560.	2670.3
#3	9628.7	58568.	2672.3

Approved: July 01, 2016

Sample Name: ICSA Acquired: 6/30/2016 12:23:23 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00392**	**258.87**	**.00148**	**-.01294**	**-.00171**	**-.00016**	**240.77**	**-.00062**
Stddev	.00113	.12	.00167	.00160	.00012	.00003	1.27	.00026
%RSD	28.927	.04479	113.16	12.378	6.8370	19.030	.52945	41.473
#1	-.00451	258.96	.00295	-.01143	-.00175	-.00012	241.30	-.00034
#2	-.00462	258.91	-.00034	-.01462	-.00181	-.00018	241.70	-.00068
#3	-.00261	258.74	.00183	-.01277	-.00158	-.00016	239.32	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**-.00075**	**.00080**	**95.292**	**.01319**	**.00586**	**244.73**	**-.00267**
Stddev	.00020	.00108	.00181	.307	.05666	.00244	.25	.00154
%RSD	20.404	144.30	226.36	.32234	429.73	41.538	.10142	57.722
#1	-.00117	-.00134	.00165	95.350	-.01870	.00602	244.61	-.00422
#2	-.00077	.00050	.00202	95.566	-.02035	.00335	245.02	-.00263
#3	-.00103	-.00141	-.00128	94.960	.07861	.00822	244.57	-.00114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00097**	**.06759**	**-.00033**	**.00820**	**.00333**	**.00319**	**.00668**	**.02797**
Stddev	.00052	.02950	.00034	.00852	.00251	.00513	.00557	.00214
%RSD	53.804	43.637	103.14	103.85	75.340	161.09	83.357	7.6618
#1	-.00157	.05698	-.00073	.00978	.00612	-.00247	.00053	.02784
#2	-.00071	.10093	-.00014	.01583	.00258	.00448	.00814	.03017
#3	-.00063	.04487	-.00013	-.00099	.00128	.00754	.01136	.02589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: ICSA Acquired: 6/30/2016 12:23:23 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.00047**	**.00144**	**-.00468**	**-.00233**	**-.00780**	**-.00305**
Stddev	.00135	.00016	.00281	.00175	.00046	.00024	.00029
%RSD	508.06	33.727	194.75	37.301	19.705	3.0738	9.6489
#1	.00019	.00057	.00159	-.00564	-.00229	-.00781	-.00331
#2	.00080	.00029	-.00144	-.00574	-.00190	-.00756	-.00273
#3	-.00179	.00054	.00417	-.00267	-.00281	-.00804	-.00311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9010.9**	**54583.**	**2627.6**
Stddev	2.3	84.	19.1
%RSD	.02548	.15428	.72748
#1	9013.0	54675.	2610.1
#2	9008.5	54561.	2624.8
#3	9011.2	54511.	2648.0

Approved: July 01, 2016

Sample Name: ICSAB Acquired: 6/30/2016 12:27:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50787	265.04	.25154	-.01164	.24798	.24040	245.66	.48600
Stddev	.00113	.70	.00266	.00098	.00067	.00071	1.55	.00204
%RSD	.22260	.26421	1.0574	8.4340	.27184	.29603	.63147	.41874
#1	.50676	264.28	.25163	-.01271	.24727	.23980	243.90	.48669
#2	.50782	265.19	.24883	-.01077	.24805	.24021	246.25	.48760
#3	.50902	265.65	.25415	-.01145	.24861	.24119	246.82	.48371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23726	.24990	.25094	96.136	5.2328	.00737	247.03	.24107
Stddev	.00135	.00160	.00264	.560	.0707	.00291	1.33	.00219
%RSD	.56863	.64022	1.0510	.58292	1.3504	39.522	.53829	.90669
#1	.23719	.24895	.24905	95.500	5.3140	.00969	245.57	.23954
#2	.23863	.24901	.25395	96.349	5.1989	.00410	247.38	.24009
#3	.23594	.25175	.24982	96.558	5.1854	.00833	248.16	.24357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00065	5.2624	.47565	.08607	.48880	.50254	.24514	.03415
Stddev	.00023	.0236	.00349	.00379	.00233	.00126	.00862	.00136
%RSD	35.931	.44907	.73398	4.4063	.47670	.24981	3.5157	3.9779
#1	-.00049	5.2383	.47779	.08171	.48795	.50176	.24659	.03260
#2	-.00091	5.2632	.47755	.08862	.49144	.50399	.23588	.03514
#3	-.00054	5.2856	.47162	.08787	.48702	.50188	.25293	.03470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: ICSAB Acquired: 6/30/2016 12:27:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.00102**	**-.00422**	**.45490**	**.25147**	**.47398**	**-.00300**
Stddev	.00060	.00024	.00647	.00450	.00239	.00260	.00064
%RSD	1162.9	23.595	153.45	.99023	.95219	.54922	21.292
#1	.00029	.00078	-.00877	.45596	.25022	.47379	-.00351
#2	.00050	.00102	.00319	.45879	.24996	.47667	-.00228
#3	-.00063	.00125	-.00708	.44997	.25423	.47147	-.00321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9078.9**	**54620.**	**2626.9**
Stddev	15.3	90.	11.7
%RSD	.16868	.16486	.44498
#1	9089.3	54724.	2631.7
#2	9086.0	54578.	2635.5
#3	9061.3	54559.	2613.6

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 12:30:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40314	10.095	.40022	.49822	.99850	.05003	10.0000
Stddev	.00174	.030	.00262	.00202	.00182	.00020	.06119
%RSD	.43086	.29715	.65572	.40642	.18197	.39284	.61193
#1	.40227	10.114	.40307	.50045	.99925	.05000	9.9707
#2	.40514	10.110	.39791	.49651	.99643	.05023	9.9590
#3	.40200	10.060	.39968	.49769	.99983	.04984	10.070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05052	.20273	.50052	.50644	4.0177	50.053	.99630
Stddev	.00029	.00059	.00123	.00098	.0206	.277	.00488
%RSD	.57672	.29104	.24609	.19424	.51302	.55395	.48966
#1	.05039	.20205	.50158	.50654	4.0123	50.137	.99940
#2	.05086	.20312	.50081	.50736	4.0405	49.743	.99067
#3	.05032	.20301	.49917	.50540	4.0003	50.278	.99882
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.137	.50111	1.0165	49.554	.50645	10.021	.50302
Stddev	.071	.00808	.0013	.140	.00182	.014	.00062
%RSD	.70125	1.6128	.12474	.28192	.36013	.14423	.12305
#1	10.146	.49628	1.0157	49.501	.50438	10.009	.50359
#2	10.203	.49660	1.0179	49.447	.50783	10.037	.50236
#3	10.062	.51044	1.0158	49.712	.50715	10.017	.50311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 12:30:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2040**	**.40648**	**5.0746**	**1.0134**	**.99771**	**.99875**	**.50706**
Stddev	.0041	.00563	.0079	.0023	.00324	.00193	.00143
%RSD	.33812	1.3858	.15506	.22871	.32513	.19321	.28237
#1	1.2054	.40050	5.0658	1.0150	.99840	1.0009	.50635
#2	1.1994	.40726	5.0768	1.0144	.99418	.99718	.50613
#3	1.2072	.41169	5.0811	1.0107	1.0006	.99816	.50871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0047**	**1.0071**	**1.0113**
Stddev	.0062	.0013	.0025
%RSD	.62124	.12593	.24844
#1	1.0119	1.0062	1.0120
#2	1.0005	1.0065	1.0134
#3	1.0018	1.0086	1.0086
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9437.1**	**57173.**	**2647.0**
Stddev	11.1	189.	10.6
%RSD	.11759	.33018	.40036
#1	9424.3	57084.	2648.9
#2	9444.5	57390.	2656.5
#3	9442.4	57046.	2635.6

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 12:34:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.02111	-.00086	.00219	-.00139	.00002	-.00845	.00016
Stddev	.00116	.00377	.00323	.00193	.00117	.00003	.01962	.00008
%RSD	119.14	17.856	377.85	88.206	83.806	136.41	232.08	48.587
#1	.00074	.02512	-.00326	.00031	-.00139	-.00000	-.01655	.00013
#2	.00223	.01764	.00282	.00209	-.00023	.00001	.01392	.00010
#3	-.00005	.02057	-.00212	.00416	-.00256	.00006	-.02273	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00009	-.00094	-.01876	-.07769	.00011	-.02585	.00236
Stddev	.00045	.00073	.00032	.01010	.05795	.00383	.01305	.00184
%RSD	161.49	779.20	34.624	53.807	74.589	3521.7	50.461	77.731
#1	.00045	-.00093	-.00060	-.01043	-.10278	.00078	-.03852	.00301
#2	-.00023	.00028	-.00097	-.01587	-.11886	-.00401	-.02658	.00378
#3	.00062	.00037	-.00124	-.02999	-.01142	.00356	-.01246	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.03700	-.00037	.00255	.00125	.00182	.00475	.00458
Stddev	.00011	.03028	.00104	.00495	.00253	.00276	.00337	.00359
%RSD	557.45	81.824	281.36	193.82	201.98	151.88	70.910	78.269
#1	-.00010	.06158	-.00075	.00805	-.00153	.00388	.00799	.00602
#2	.00012	.04625	-.00116	-.00155	.00187	.00289	.00126	.00050
#3	.00004	.00318	.00080	.00116	.00342	-.00132	.00500	.00723
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 12:34:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.00000**	**.00745**	**-.00213**	**.00035**	**.00062**	**.00027**
Stddev	.00050	.00036	.00272	.00318	.00064	.00007	.00055
%RSD	448.33	10415.	36.591	149.11	186.29	10.715	202.17
#1	-.00045	.00031	.00977	-.00201	.00107	.00066	.00076
#2	.00028	-.00039	.00812	.00098	-.00017	.00066	.00039
#3	.00052	.00009	.00445	-.00537	.00015	.00054	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9577.8**	**58193.**	**2646.6**
Stddev	22.6	215.	14.1
%RSD	.23584	.36905	.53134
#1	9596.7	58438.	2646.6
#2	9584.0	58035.	2632.6
#3	9552.8	58108.	2660.7

Approved: July 01, 2016

Sample Name: PBW 12 Acquired: 6/30/2016 12:38:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.01656**	**-.00190**	**.00427**	**-.00172**	**-.00000**	**.00141**	**.00043**
Stddev	.00298	.00573	.00277	.00221	.00011	.00010	.02317	.00018
%RSD	13600.	34.629	145.49	51.776	6.1770	2595.5	1646.2	42.456
#1	-.00149	.01378	.00129	.00174	-.00185	-.00010	-.02192	.00057
#2	-.00198	.02315	-.00365	.00525	-.00167	.00009	.00172	.00022
#3	.00340	.01275	-.00335	.00581	-.00165	-.00001	.02442	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.00098**	**-.00033**	**-.00015**	**-.10602**	**-.00259**	**.04159**	**-.00044**
Stddev	.00018	.00084	.00094	.01560	.02296	.00137	.02839	.00056
%RSD	164.62	85.731	282.86	10243.	21.653	52.761	68.250	125.72
#1	.00025	.00063	-.00128	-.01146	-.08011	-.00113	.02765	-.00041
#2	.00018	.00194	.00060	.01764	-.11411	-.00281	.02287	-.00102
#3	-.00010	.00037	-.00031	-.00664	-.12383	-.00384	.07425	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.05287**	**-.00005**	**.00039**	**-.00067**	**-.00079**	**.00113**	**.02996**
Stddev	.00032	.03022	.00083	.00424	.00143	.00242	.00494	.00306
%RSD	399.83	57.161	1640.2	1098.5	213.41	305.28	436.54	10.198
#1	-.00029	.06553	-.00030	.00346	-.00065	.00187	-.00418	.03157
#2	.00027	.01838	-.00073	-.00445	.00075	-.00287	.00560	.03188
#3	.00025	.07469	.00088	.00215	-.00211	-.00138	.00198	.02644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: PBW 12 Acquired: 6/30/2016 12:38:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00052**	**.00333**	**-.00311**	**.00028**	**.00217**	**.00049**
Stddev	.00057	.00035	.01014	.00145	.00029	.00009	.00015
%RSD	7598.2	67.426	304.58	46.722	105.43	4.0176	31.045
#1	.00052	.00056	.01350	-.00144	.00029	.00225	.00033
#2	-.00061	.00085	-.00677	-.00377	.00056	.00218	.00052
#3	.00011	.00015	.00326	-.00411	-.00002	.00208	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9566.4**	**58615.**	**2684.2**
Stddev	18.5	91.	21.8
%RSD	.19356	.15580	.81091
#1	9551.8	58649.	2668.6
#2	9587.2	58511.	2674.9
#3	9560.2	58684.	2709.1

Approved: July 01, 2016

Sample Name: LCSW 12 Acquired: 6/30/2016 12:42:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19282**	**4.8757**	**.19057**	**.94851**	**.49215**	**.02414**	**4.9651**	**.02390**
Stddev	.00166	.0068	.00489	.00238	.00190	.00024	.0369	.00059
%RSD	.86218	.14014	2.5652	.25069	.38537	1.0051	.74411	2.4505
#1	.19170	4.8688	.19370	.94728	.49421	.02388	4.9815	.02434
#2	.19202	4.8824	.19306	.95125	.49048	.02417	4.9228	.02412
#3	.19473	4.8760	.18493	.94700	.49176	.02436	4.9910	.02323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09810**	**.24657**	**.24408**	**1.9478**	**24.541**	**.49154**	**4.9010**	**.24467**
Stddev	.00323	.00042	.00882	.0302	.110	.00217	.1185	.00078
%RSD	3.2937	.17173	3.6134	1.5533	.45006	.44111	2.4171	.31882
#1	.10024	.24609	.25123	1.9167	24.668	.49305	4.7643	.24441
#2	.09967	.24690	.24680	1.9493	24.493	.48906	4.9745	.24555
#3	.09438	.24671	.23422	1.9772	24.463	.49252	4.9640	.24405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49192**	**24.584**	**.24441**	**4.6987**	**.24689**	**.57220**	**.18799**	**2.4537**
Stddev	.01597	.046	.00846	.1271	.00454	.01965	.00500	.0519
%RSD	3.2466	.18865	3.4623	2.7045	1.8383	3.4342	2.6592	2.1133
#1	.50210	24.621	.24891	4.7880	.24920	.58377	.19301	2.4881
#2	.50015	24.599	.24967	4.7548	.24981	.58331	.18794	2.4788
#3	.47352	24.532	.23465	4.5532	.24167	.54951	.18301	2.3940
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LCSW 12 Acquired: 6/30/2016 12:42:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48595	.49590	.49197	.24525	.49382	.48417	.00127
Stddev	.01774	.00021	.00649	.00402	.00172	.01490	.00039
%RSD	3.6497	.04176	1.3193	1.6373	.34825	3.0775	30.532
#1	.49801	.49570	.48656	.24817	.49270	.49649	.00114
#2	.49425	.49587	.49916	.24691	.49297	.48842	.00170
#3	.46559	.49611	.49018	.24067	.49580	.46761	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9584.6	58298.	2687.5
Stddev	18.7	42.	6.6
%RSD	.19502	.07205	.24374
#1	9563.5	58336.	2692.9
#2	9591.7	58252.	2689.4
#3	9598.8	58305.	2680.2

Approved: July 01, 2016

Sample Name: L1606124401 Acquired: 6/30/2016 12:45:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.00985	-.00123	.37618	-.00063	-.00002	.11529	.00015
Stddev	.00130	.01037	.00370	.00295	.00036	.00013	.05187	.00019
%RSD	351.16	105.36	300.16	.78437	57.632	540.17	44.994	129.55
#1	-.00049	.00177	.00254	.37318	-.00023	.00012	.06173	-.00004
#2	.00099	.00623	-.00486	.37627	-.00072	-.00012	.11884	.00034
#3	-.00161	.02155	-.00138	.37908	-.00094	-.00007	.16530	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00153	.00044	-.00693	113.20	-.00374	.05769	-.00032
Stddev	.00051	.00049	.00038	.02108	.61	.00241	.02570	.00175
%RSD	180.12	31.824	86.220	304.28	.53878	64.434	44.543	543.87
#1	-.00015	.00102	.00007	-.00312	113.64	-.00270	.05018	.00021
#2	.00085	.00199	.00083	-.02965	113.44	-.00203	.08631	-.00228
#3	.00016	.00159	.00042	.01199	112.50	-.00650	.03659	.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01999	64.541	.00143	.01379	.00188	.00227	-.00352	.06382
Stddev	.00324	.389	.00087	.01011	.00097	.00209	.00114	.00825
%RSD	16.192	.60240	60.924	73.296	51.292	92.314	32.329	12.929
#1	.02207	64.977	.00217	.01539	.00096	.00325	-.00456	.06972
#2	.02163	64.229	.00047	.02301	.00289	.00369	-.00370	.06734
#3	.01626	64.417	.00165	.00298	.00180	-.00014	-.00230	.05439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606124401 Acquired: 6/30/2016 12:45:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00041**	**.00954**	**-.00206**	**.00028**	**.00341**	**.00006**
Stddev	.00019	.00015	.00744	.00539	.00057	.00050	.00051
%RSD	97.407	36.577	77.950	261.58	202.99	14.671	854.67
#1	-.00003	.00054	.01813	-.00473	-.00038	.00372	.00028
#2	-.00041	.00045	.00537	.00414	.00062	.00368	-.00052
#3	-.00015	.00025	.00513	-.00560	.00059	.00283	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9447.3**	**57116.**	**2654.3**
Stddev	24.9	123.	24.8
%RSD	.26382	.21478	.93324
#1	9418.5	56979.	2626.0
#2	9460.7	57215.	2665.0
#3	9462.6	57154.	2672.0

Approved: July 01, 2016

Sample Name: L1606124402 Acquired: 6/30/2016 12:49:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00196**	**-.00192**	**-.00106**	**.17303**	**-.00178**	**-.00014**	**.10595**
Stddev	.00155	.00646	.00197	.00022	.00056	.00006	.04150
%RSD	79.203	336.68	185.68	.12453	31.700	44.069	39.173
#1	-.00081	.00230	-.00259	.17291	-.00115	-.00018	.12292
#2	-.00134	-.00935	.00116	.17289	-.00194	-.00017	.05865
#3	-.00373	.00130	-.00175	.17328	-.00224	-.00007	.13629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00059**	**.00006**	**.00107**	**-.00115**	F **-.02594**	**66.403**	**-.00243**
Stddev	.00022	.00029	.00050	.00094	.01784	.379	.00301
%RSD	37.208	467.53	46.272	82.161	68.749	.57002	123.84
#1	.00082	-.00025	.00111	-.00039	-.00876	66.374	-.00590
#2	.00054	.00032	.00056	-.00220	-.02470	66.039	-.00081
#3	.00039	.00011	.00155	-.00085	-.04437	66.795	-.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04020**	**.00120**	**.02603**	**40.857**	**.00057**	**-.00513**	**-.00224**
Stddev	.04109	.00077	.00231	.136	.00083	.00278	.00082
%RSD	102.20	64.089	8.8589	.33216	146.18	54.157	36.805
#1	.08119	.00101	.02727	40.721	.00050	-.00239	-.00275
#2	-.00099	.00205	.02745	40.859	-.00023	-.00506	-.00129
#3	.04041	.00055	.02337	40.992	.00143	-.00795	-.00268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: L1606124402 Acquired: 6/30/2016 12:49:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00256	.00189	.04624	.00036	-.00000	.00369	-.00200
Stddev	.00139	.00311	.00415	.00117	.00019	.00286	.00263
%RSD	54.432	164.74	8.9681	321.70	13285.	77.386	131.56
#1	.00107	-.00035	.04575	-.00086	-.00009	.00257	-.00477
#2	.00383	.00544	.05061	.00048	-.00014	.00156	-.00171
#3	.00278	.00058	.04236	.00147	.00022	.00693	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00006	.00326	.00046
Stddev	.00035	.00033	.00038
%RSD	619.92	10.125	83.267
#1	-.00040	.00336	.00085
#2	.00030	.00352	.00008
#3	-.00007	.00289	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9522.6	57730.	2678.1
Stddev	47.8	146.	12.0
%RSD	.50234	.25320	.44624
#1	9547.2	57784.	2688.5
#2	9553.1	57565.	2680.8
#3	9467.5	57842.	2665.1

Approved: July 01, 2016

Sample Name: L1606125101 Acquired: 6/30/2016 12:53:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00058	.00235	-.00126	.02061	.08163	-.00006	62.777	.00015
Stddev	.00150	.01071	.00252	.00069	.00187	.00004	.240	.00021
%RSD	257.88	456.09	199.30	3.3405	2.2852	64.775	.38304	138.00
#1	-.00143	.01237	.00158	.01986	.08369	-.00010	62.843	.00033
#2	-.00147	-.00893	-.00218	.02074	.08004	-.00006	62.978	.00021
#3	.00115	.00361	-.00320	.02122	.08118	-.00002	62.511	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00060	.00046	.87830	1.3885	.00931	19.065	.16215
Stddev	.00017	.00073	.00117	.02247	.0856	.00226	.063	.00196
%RSD	76.565	121.64	256.69	2.5583	6.1678	24.227	.32904	1.2087
#1	.00041	.00021	-.00037	.86037	1.4839	.00681	19.129	.16027
#2	.00021	.00015	-.00006	.90351	1.3633	.00995	19.003	.16419
#3	.00006	.00144	.00179	.87103	1.3183	.01119	19.064	.16200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00284	10.906	.00036	.00164	.00167	.00217	-.00308	4.4508
Stddev	.00027	.079	.00021	.00467	.00194	.00244	.00374	.2818
%RSD	9.5730	.72162	59.955	284.97	116.11	112.51	121.39	6.3302
#1	.00294	10.904	.00044	.00022	.00113	.00360	-.00507	4.6006
#2	.00304	10.986	.00051	.00686	.00006	.00355	.00123	4.6260
#3	.00253	10.828	.00011	-.00216	.00383	-.00065	-.00541	4.1258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606125101 Acquired: 6/30/2016 12:53:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.08937**	**-.00365**	**-.00547**	**.00080**	**.09270**	**-.00022**
Stddev	.00034	.00044	.00398	.00193	.00039	.00749	.00024
%RSD	195.67	.49368	109.01	35.286	48.731	8.0793	110.45
#1	-.00033	.08944	-.00007	-.00574	.00038	.09701	.00003
#2	-.00041	.08890	-.00294	-.00725	.00115	.09704	-.00023
#3	.00022	.08978	-.00793	-.00342	.00089	.08405	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9563.1**	**57952.**	**2701.4**
Stddev	57.5	129.	4.5
%RSD	.60144	.22202	.16823
#1	9627.5	58013.	2706.5
#2	9545.0	57805.	2700.1
#3	9516.9	58040.	2697.6

Approved: July 01, 2016

Sample Name: L1606125103 Acquired: 6/30/2016 12:57:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.00618**	**.00178**	**.01973**	**.03921**	**-.00005**	**58.184**	**.00001**
Stddev	.00071	.00571	.00088	.00035	.00071	.00005	.621	.00012
%RSD	174.82	92.370	49.608	1.7989	1.8142	93.390	1.0678	913.36
#1	-.00053	.00445	.00280	.01952	.03944	-.00003	58.890	-.00011
#2	.00036	.00154	.00132	.02014	.03977	-.00002	57.940	.00014
#3	-.00104	.01255	.00123	.01953	.03841	-.00011	57.722	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00184**	**.12253**	**.01104**	**5.1118**	**.74960**	**.00338**	**16.129**	**.23671**
Stddev	.00041	.00075	.00203	.0205	.07046	.00175	.193	.00341
%RSD	22.386	.61005	18.380	.40078	9.3994	51.889	1.1974	1.4415
#1	.00202	.12167	.01191	5.0937	.73471	.00136	15.995	.23330
#2	.00213	.12293	.01250	5.1078	.82631	.00448	16.042	.23671
#3	.00137	.12298	.00872	5.1340	.68778	.00430	16.350	.24013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00367**	**12.954**	**.05744**	**-.00021**	**.00094**	**.00173**	**.00297**	**4.1400**
Stddev	.00090	.038	.00608	.00465	.00238	.00138	.00189	.3665
%RSD	24.404	.29546	10.590	2270.3	253.94	79.606	63.495	8.8530
#1	.00418	12.941	.06059	.00209	-.00060	.00085	.00264	4.3496
#2	.00420	12.997	.06129	.00286	.00369	.00332	.00127	4.3536
#3	.00264	12.924	.05042	-.00556	-.00027	.00103	.00500	3.7168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606125103 Acquired: 6/30/2016 12:57:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**.13461**	**-.00342**	**-.00293**	**.00020**	**.00730**	**-.00022**
Stddev	.00066	.00083	.00266	.00137	.00093	.00086	.00030
%RSD	265.12	.61730	77.629	46.777	460.46	11.826	138.60
#1	-.00075	.13380	-.00169	-.00205	-.00070	.00762	.00013
#2	-.00049	.13458	-.00648	-.00223	.00116	.00796	-.00036
#3	.00050	.13546	-.00210	-.00451	.00014	.00632	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9564.3**	**58403.**	**2697.1**
Stddev	18.0	120.	9.6
%RSD	.18851	.20555	.35773
#1	9582.8	58530.	2686.9
#2	9563.4	58291.	2698.4
#3	9546.7	58387.	2706.1

Approved: July 01, 2016

Sample Name: L1606125301 Acquired: 6/30/2016 13:01:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00140**	**-.00101**	**-.00090**	**.01628**	**.09404**	**-.00001**	**61.963**	**.00031**
Stddev	.00106	.00568	.00138	.00024	.00153	.00002	.158	.00001
%RSD	75.790	564.62	152.81	1.4949	1.6273	181.32	.25437	4.5728
#1	-.00194	.00058	-.00207	.01635	.09272	-.00001	62.141	.00030
#2	-.00018	-.00731	-.00126	.01649	.09572	.00001	61.905	.00033
#3	-.00209	.00371	.00062	.01601	.09368	-.00003	61.843	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00126**	**.00209**	**.00546**	**1.2668**	**.00559**	**13.363**	**.00055**
Stddev	.00061	.00045	.00171	.01304	.0700	.00174	.072	.00162
%RSD	766.88	35.691	81.716	238.86	5.5289	31.168	.54025	295.85
#1	-.00038	.00114	.00406	.01012	1.2604	.00752	13.319	-.00132
#2	-.00048	.00176	.00091	-.00927	1.2002	.00515	13.324	.00142
#3	.00062	.00089	.00131	.01552	1.3398	.00412	13.447	.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00068**	**7.0971**	**.00034**	**.00627**	**.00254**	**.00005**	**-.00240**	**4.2462**
Stddev	.00024	.0587	.00074	.00701	.00262	.00105	.00212	.1974
%RSD	35.470	.82709	214.60	111.70	103.20	2231.1	88.081	4.6476
#1	.00093	7.1567	-.00040	.01433	.00309	.00012	-.00084	4.3703
#2	.00046	7.0393	.00108	.00294	.00483	.00106	-.00156	4.3496
#3	.00064	7.0953	.00035	.00155	-.00032	-.00103	-.00481	4.0186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606125301 Acquired: 6/30/2016 13:01:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.16573	.00435	-.00157	.00010	.09981	.00008
Stddev	.00060	.00092	.00485	.00052	.00042	.00670	.00029
%RSD	632.62	.55585	111.58	33.029	441.61	6.7166	340.46
#1	-.00002	.16624	.00748	-.00126	-.00016	.10413	-.00024
#2	-.00044	.16466	.00680	-.00129	.00058	.10323	.00029
#3	.00075	.16628	-.00124	-.00217	-.00014	.09209	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9499.0	58149.	2692.9
Stddev	22.4	133.	9.1
%RSD	.23563	.22843	.33830
#1	9505.6	58090.	2682.5
#2	9517.3	58301.	2699.2
#3	9474.0	58055.	2697.1

Approved: July 01, 2016

Sample Name: L1606125303 Acquired: 6/30/2016 13:05:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	-.00535	-.00309	.01535	.09003	-.00005	58.758	.00003
Stddev	.00128	.00541	.00079	.00292	.00043	.00005	.113	.00015
%RSD	939.38	101.11	25.443	19.013	.47643	98.554	.19197	455.16
#1	-.00024	-.00460	-.00398	.01407	.09052	-.00004	58.870	-.00014
#2	.00156	-.01110	-.00284	.01329	.08986	-.00001	58.761	.00009
#3	-.00091	-.00035	-.00247	.01869	.08972	-.00011	58.644	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00116	.00152	-.00904	1.2747	.00252	12.653	.00068
Stddev	.00038	.00025	.00112	.02963	.2178	.00137	.057	.00236
%RSD	250.87	21.244	73.488	327.93	17.089	54.572	.44860	347.27
#1	-.00019	.00087	.00159	.02384	1.0509	.00142	12.613	.00144
#2	.00009	.00129	.00037	-.01727	1.4860	.00406	12.718	-.00197
#3	.00056	.00131	.00260	-.03367	1.2872	.00208	12.628	.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	6.7052	.00015	.00053	.00012	.00296	.00170	4.0670
Stddev	.00045	.0198	.00067	.00611	.00223	.00190	.00240	.1105
%RSD	59.477	.29508	462.19	1144.6	1829.8	64.176	141.27	2.7172
#1	.00118	6.7131	-.00056	.00715	.00077	.00200	.00009	4.1333
#2	.00028	6.7198	.00022	-.00066	-.00236	.00515	.00055	4.1283
#3	.00080	6.6827	.00078	-.00489	.00196	.00173	.00445	3.9394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606125303 Acquired: 6/30/2016 13:05:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.15631**	**-.00440**	**-.00198**	**.00012**	**.09816**	**-.00007**
Stddev	.00076	.00065	.00445	.00491	.00025	.00363	.00038
%RSD	123.28	.41483	101.02	247.70	214.14	3.6944	545.15
#1	-.00150	.15704	-.00702	.00051	.00004	.10021	.00034
#2	-.00022	.15582	.00073	.00118	.00040	.10030	-.00042
#3	-.00014	.15606	-.00692	-.00763	-.00009	.09398	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9545.7**	**58351.**	**2690.8**
Stddev	18.4	219.	4.4
%RSD	.19260	.37505	.16345
#1	9530.5	58523.	2693.2
#2	9566.1	58105.	2685.8
#3	9540.5	58426.	2693.5

Approved: July 01, 2016

Sample Name: L1606125401 Acquired: 6/30/2016 13:09:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	.00053	-.00107	.02180	.04649	-.00005	57.424	.00006
Stddev	.00038	.00784	.00174	.00259	.00024	.00004	.105	.00004
%RSD	73.196	1490.3	162.11	11.893	.52498	76.899	.18249	68.089
#1	-.00090	.00344	.00021	.02355	.04673	-.00006	57.380	.00004
#2	-.00055	-.00835	-.00305	.02303	.04624	-.00008	57.544	.00011
#3	-.00013	.00649	-.00038	.01882	.04651	-.00001	57.349	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00129	.00169	.02815	1.1996	.00303	11.719	.00244
Stddev	.00028	.00115	.00158	.02458	.1009	.00245	.125	.00182
%RSD	247.48	89.078	93.317	87.320	8.4070	80.939	1.0640	74.460
#1	.00039	.00116	.00308	.05234	1.2954	.00039	11.579	.00412
#2	.00012	.00251	.00201	.02891	1.0944	.00348	11.816	.00270
#3	-.00017	.00021	-.00002	.00320	1.2090	.00523	11.763	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	8.2654	.00019	.00497	.00007	.00462	-.00319	4.0727
Stddev	.00028	.0415	.00016	.00548	.00314	.00149	.00332	.3228
%RSD	165.20	.50232	81.741	110.23	4299.2	32.159	104.24	7.9254
#1	-.00015	8.2181	.00020	.00029	-.00354	.00358	-.00069	4.2685
#2	.00029	8.2829	.00034	.01100	.00159	.00632	-.00696	4.2495
#3	.00037	8.2954	.00003	.00362	.00217	.00396	-.00191	3.7002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606125401 Acquired: 6/30/2016 13:09:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.10425**	**-.00107**	**-.00065**	**.00058**	**.00400**	**.00030**
Stddev	.00042	.00065	.00527	.00452	.00044	.00082	.00014
%RSD	103.61	.62658	491.18	692.55	76.285	20.478	48.326
#1	-.00031	.10406	-.00248	-.00449	.00010	.00468	.00046
#2	-.00087	.10371	.00476	.00433	.00096	.00422	.00019
#3	-.00004	.10497	-.00550	-.00179	.00069	.00309	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9527.3**	**58277.**	**2677.8**
Stddev	18.0	183.	7.4
%RSD	.18875	.31342	.27669
#1	9520.7	58161.	2669.4
#2	9547.6	58183.	2683.2
#3	9513.5	58488.	2681.0

Approved: July 01, 2016

Sample Name: L1606125501 Acquired: 6/30/2016 13:13:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.24388**	**-.00038**	**.02993**	**.01716**	**-.00008**	**13.329**	**.00006**
Stddev	.00021	.00081	.00348	.00311	.00068	.00002	.011	.00039
%RSD	72.523	.33290	917.95	10.402	3.9482	31.305	.08546	643.76
#1	-.00012	.24294	.00364	.02999	.01643	-.00010	13.342	-.00035
#2	-.00022	.24437	-.00240	.02679	.01776	-.00005	13.324	.00010
#3	-.00052	.24432	-.00238	.03302	.01730	-.00008	13.321	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00054**	**.00140**	**-.00007**	**.32569**	**2.1692**	**-.00143**	**7.7164**	**.03974**
Stddev	.00019	.00024	.00052	.02274	.0605	.00212	.0505	.00358
%RSD	34.355	17.281	693.97	6.9830	2.7892	148.00	.65378	9.0068
#1	.00076	.00167	-.00032	.35076	2.1057	.00101	7.6631	.03705
#2	.00040	.00120	.00052	.30637	2.1758	-.00250	7.7635	.03837
#3	.00047	.00133	-.00042	.31994	2.2262	-.00281	7.7225	.04381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00076**	**7.2840**	**.00010**	**.02596**	**.00156**	**.00233**	**.00144**	**.46864**
Stddev	.00025	.0334	.00116	.00620	.00138	.00154	.00057	.04408
%RSD	32.428	.45851	1110.1	23.864	88.228	65.848	39.666	9.4059
#1	.00049	7.2656	.00135	.03190	.00183	.00278	.00089	.49543
#2	.00083	7.2638	-.00093	.02644	.00279	.00062	.00203	.49274
#3	.00097	7.3225	-.00012	.01954	.00007	.00360	.00141	.41777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606125501 Acquired: 6/30/2016 13:13:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.10993	.00758	-.00211	.00165	.00657	.00037
Stddev	.00018	.00027	.00636	.00321	.00012	.00085	.00049
%RSD	69.652	.24680	83.966	151.97	7.3778	12.896	133.98
#1	.00007	.11008	.00977	-.00446	.00157	.00694	.00076
#2	.00043	.11010	.00041	-.00341	.00160	.00717	-.00018
#3	.00029	.10962	.01256	.00154	.00180	.00560	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9673.0	59056.	2699.3
Stddev	70.4	385.	6.4
%RSD	.72800	.65210	.23718
#1	9697.9	58796.	2698.5
#2	9727.6	58874.	2693.4
#3	9593.5	59499.	2706.1

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 13:17:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40859**	**10.295**	**.39725**	**.50480**	**1.0230**	**.05098**	**10.239**	**.05037**
Stddev	.00170	.031	.01233	.00357	.0022	.00009	.055	.00230
%RSD	.41659	.30269	3.1034	.70776	.21693	.18438	.53290	4.5663
#1	.40986	10.297	.40512	.50769	1.0207	.05102	10.180	.05116
#2	.40926	10.263	.40359	.50080	1.0251	.05105	10.287	.05217
#3	.40666	10.325	.38304	.50590	1.0232	.05088	10.250	.04778
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20257**	**.51569**	**.50670**	**4.0877**	**51.079**	**1.0153**	**10.459**	**.51576**
Stddev	.01027	.00186	.02616	.0458	.265	.0034	.035	.00418
%RSD	5.0697	.36110	5.1631	1.1208	.51935	.33577	.33670	.81029
#1	.20812	.51597	.52196	4.0676	50.800	1.0116	10.443	.51462
#2	.20886	.51370	.52164	4.1401	51.328	1.0160	10.500	.52039
#3	.19071	.51739	.47649	4.0553	51.110	1.0183	10.435	.51227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0067**	**50.582**	**.50575**	**10.063**	**.50730**	**1.2042**	**.40331**	**5.0904**
Stddev	.0546	.174	.02538	.406	.01562	.0534	.00676	.1780
%RSD	5.4222	.34314	5.0182	4.0363	3.0796	4.4343	1.6754	3.4964
#1	1.0290	50.649	.52023	10.281	.51652	1.2366	.40682	5.1859
#2	1.0465	50.712	.52057	10.315	.51612	1.2335	.40758	5.2003
#3	.94446	50.385	.47644	9.5948	.48926	1.1426	.39552	4.8851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 13:17:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0098**	**1.0208**	**1.0140**	**.51459**	**1.0290**	**1.0047**	**1.0392**
Stddev	.0578	.0015	.0091	.01136	.0022	.0475	.0042
%RSD	5.7215	.14475	.89857	2.2079	.21531	4.7265	.40621
#1	1.0438	1.0202	1.0230	.51954	1.0265	1.0298	1.0343
#2	1.0426	1.0224	1.0144	.52264	1.0301	1.0344	1.0421
#3	.94311	1.0196	1.0048	.50160	1.0305	.94991	1.0410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9223.2**	**55745.**	**2568.9**
Stddev	64.5	29.	14.2
%RSD	.69973	.05129	.55429
#1	9193.9	55739.	2584.5
#2	9178.4	55777.	2556.7
#3	9297.2	55720.	2565.3

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 13:20:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00106**	**-.00581**	**-.00328**	**.00332**	**-.00025**	**.00006**	**-.00635**	**.00008**
Stddev	.00184	.00465	.00340	.00321	.00038	.00002	.03185	.00013
%RSD	173.27	79.946	103.71	96.764	149.75	28.109	501.46	155.83
#1	.00182	-.00045	-.00426	.00021	.00007	.00006	.02456	.00023
#2	.00240	-.00867	-.00609	.00312	-.00016	.00008	-.00455	.00004
#3	-.00104	-.00832	.00050	.00662	-.00067	.00005	-.03907	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00106**	**-.00014**	**-.04273**	**.05116**	**-.00149**	**.05552**	**-.00045**
Stddev	.00034	.00027	.00082	.01400	.13907	.00090	.07584	.00226
%RSD	239.70	25.865	578.88	32.758	271.85	60.624	136.60	501.98
#1	-.00021	.00103	-.00070	-.03242	-.01769	-.00249	.02482	.00211
#2	.00047	.00135	.00080	-.03710	-.04006	-.00075	-.00015	-.00217
#3	.00017	.00081	-.00052	-.05867	.21123	-.00122	.14191	-.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.01455**	**-.00044**	**.00023**	**.00104**	**.00189**	**-.00614**	**.00249**
Stddev	.00025	.02450	.00077	.00650	.00166	.00357	.00202	.00174
%RSD	828.31	168.41	175.82	2766.4	158.43	188.69	32.839	69.844
#1	.00030	.02549	.00023	.00270	.00236	.00594	-.00505	.00234
#2	-.00019	.03167	-.00027	-.00714	-.00081	.00060	-.00847	.00083
#3	-.00002	-.01352	-.00127	.00514	.00159	-.00085	-.00491	.00429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 13:20:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00009**	**.00080**	**-.00315**	**-.00001**	**-.00021**	**.00014**
Stddev	.00060	.00024	.00527	.00140	.00034	.00005	.00027
%RSD	313.58	260.83	658.31	44.438	2349.4	22.654	194.24
#1	-.00044	-.00002	.00246	-.00474	-.00040	-.00018	.00042
#2	.00074	-.00007	-.00510	-.00208	.00024	-.00020	.00013
#3	.00027	.00037	.00504	-.00264	.00011	-.00027	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9588.0**	**58148.**	**2626.3**
Stddev	37.9	59.	5.0
%RSD	.39570	.10150	.19153
#1	9562.4	58189.	2631.5
#2	9570.0	58081.	2625.9
#3	9631.6	58176.	2621.4

Approved: July 01, 2016

Sample Name: L1606125503 Acquired: 6/30/2016 13:24:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	-.00223	.00433	.02208	.04920	-.00009	56.298	.00015
Stddev	.00212	.01039	.00167	.00134	.00082	.00003	.044	.00016
%RSD	1116.8	466.35	38.641	6.0536	1.6627	32.546	.07814	102.79
#1	.00007	.00572	.00267	.02054	.04828	-.00008	56.292	-.00003
#2	-.00242	-.01398	.00431	.02292	.04985	-.00006	56.345	.00022
#3	.00178	.00158	.00602	.02278	.04946	-.00012	56.258	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00125	.00013	.48031	1.0529	.00260	10.829	.18445
Stddev	.00024	.00096	.00059	.00387	.1016	.00130	.089	.00111
%RSD	70.607	76.596	463.27	.80619	9.6521	49.897	.81905	.60205
#1	.00042	.00047	-.00012	.47643	1.1552	.00273	10.727	.18478
#2	.00053	.00096	.00080	.48034	.95198	.00125	10.880	.18537
#3	.00007	.00231	-.00030	.48417	1.0515	.00383	10.881	.18322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	11.636	-.00019	.00183	.00098	.00161	.00560	4.0285
Stddev	.00030	.024	.00039	.00256	.00481	.00207	.00258	.2501
%RSD	24.196	.20284	211.60	139.59	490.71	128.71	46.095	6.2074
#1	.00143	11.632	.00003	.00255	.00011	.00064	.00816	4.1779
#2	.00140	11.615	.00005	.00396	.00616	.00020	.00563	4.1679
#3	.00090	11.662	-.00064	-.00101	-.00334	.00398	.00300	3.7398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606125503 Acquired: 6/30/2016 13:24:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.09871**	**-.00184**	**-.00135**	**-.00035**	**.01428**	**-.00031**
Stddev	.00104	.00041	.00595	.00054	.00026	.00117	.00062
%RSD	400.60	.41259	322.49	39.765	74.842	8.2174	202.16
#1	-.00109	.09836	-.00736	-.00156	-.00007	.01520	-.00089
#2	.00090	.09861	.00446	-.00074	-.00038	.01468	.00035
#3	-.00059	.09916	-.00264	-.00175	-.00059	.01296	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9520.6**	**58480.**	**2683.1**
Stddev	5.9	91.	7.4
%RSD	.06236	.15525	.27435
#1	9521.6	58379.	2676.2
#2	9514.2	58506.	2682.2
#3	9526.0	58555.	2690.8

Approved: July 01, 2016

Sample Name: L1606125505 Acquired: 6/30/2016 13:28:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00072	-.00257	.01964	.05955	-.00003	56.704	.00011
Stddev	.00153	.00423	.00344	.00047	.00065	.00010	.206	.00027
%RSD	704.35	584.20	133.58	2.3880	1.0978	408.62	.36347	239.64
#1	.00168	.00297	-.00131	.01921	.05977	-.00010	56.730	.00029
#2	.00033	-.00416	.00006	.02014	.06007	.00009	56.896	-.00019
#3	-.00137	.00336	-.00646	.01958	.05882	-.00007	56.486	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.00203	.00161	.10977	1.0715	.00442	10.811	.00101
Stddev	.00035	.00057	.00090	.02619	.0771	.00161	.112	.00281
%RSD	225.69	28.125	56.056	23.863	7.2004	36.534	1.0382	278.21
#1	.00022	.00190	.00067	.11777	1.1267	.00275	10.881	-.00134
#2	-.00022	.00265	.00246	.13104	.98333	.00454	10.870	.00412
#3	-.00047	.00153	.00170	.08051	1.1044	.00597	10.681	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00156	10.758	-.00004	.00066	.00151	.00277	-.00097	4.0576
Stddev	.00030	.032	.00104	.00754	.00232	.00065	.00332	.3373
%RSD	19.492	.29350	2344.1	1136.8	152.97	23.412	341.45	8.3130
#1	.00171	10.751	-.00120	-.00389	.00274	.00329	-.00050	4.2563
#2	.00121	10.792	.00022	.00937	-.00116	.00298	-.00450	4.2484
#3	.00176	10.730	.00085	-.00349	.00295	.00204	.00208	3.6682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606125505 Acquired: 6/30/2016 13:28:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.09681**	**-.00595**	**-.00399**	**.00118**	**.05062**	**.00006**
Stddev	.00036	.00008	.00489	.00162	.00027	.00565	.00034
%RSD	16089.	.08620	82.262	40.671	22.739	11.155	556.84
#1	-.00041	.09690	-.00091	-.00585	.00094	.05421	.00042
#2	.00020	.09678	-.00624	-.00326	.00147	.05354	.00002
#3	.00020	.09674	-.01068	-.00285	.00113	.04411	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9539.6**	**58178.**	**2689.9**
Stddev	6.8	44.	4.0
%RSD	.07102	.07498	.14991
#1	9536.3	58200.	2685.3
#2	9547.4	58206.	2692.9
#3	9535.2	58127.	2691.6

Approved: July 01, 2016

Sample Name: L1606125601 Acquired: 6/30/2016 13:32:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**-.00146**	**-.00347**	**.01883**	**.06140**	**-.00007**	**59.596**	**.00018**
Stddev	.00066	.00636	.00185	.00057	.00179	.00006	.178	.00015
%RSD	141.02	434.01	53.365	3.0489	2.9162	90.759	.29927	81.673
#1	-.00119	.00536	-.00144	.01862	.05959	-.00013	59.464	.00034
#2	.00011	-.00253	-.00506	.01948	.06317	-.00000	59.799	.00008
#3	-.00032	-.00722	-.00391	.01840	.06142	-.00009	59.525	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.00077**	**.00464**	**-.01139**	**1.2508**	**.00101**	**12.937**	**.00059**
Stddev	.00013	.00018	.00072	.02613	.0448	.00114	.014	.00143
%RSD	53.364	22.768	15.603	229.38	3.5786	112.96	.10452	241.41
#1	-.00022	.00097	.00463	.00947	1.2957	.00078	12.922	-.00059
#2	-.00037	.00064	.00393	-.00294	1.2508	.00000	12.939	.00018
#3	-.00012	.00071	.00538	-.04069	1.2061	.00224	12.949	.00218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**8.4809**	**-.00076**	**.00446**	**-.00152**	**.00215**	**.00503**	**4.4194**
Stddev	.00034	.0394	.00081	.01015	.00157	.00173	.00081	.1773
%RSD	114.98	.46507	106.06	227.36	103.15	80.671	16.045	4.0112
#1	.00029	8.4358	-.00159	.00141	-.00050	.00369	.00420	4.5284
#2	.00065	8.5089	-.00072	.01579	-.00332	.00247	.00508	4.5150
#3	-.00004	8.4979	.00003	-.00381	-.00073	.00028	.00581	4.2149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606125601 Acquired: 6/30/2016 13:32:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**.11428**	**-.00118**	**-.00370**	**.00069**	**.00748**	**.00017**
Stddev	.00047	.00044	.00575	.00114	.00047	.00047	.00020
%RSD	189.89	.38739	489.21	30.753	68.823	6.2339	117.77
#1	-.00075	.11386	-.00773	-.00345	.00034	.00775	-.00004
#2	.00017	.11474	.00117	-.00495	.00123	.00775	.00020
#3	-.00015	.11422	.00303	-.00271	.00049	.00694	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9599.5**	**58437.**	**2701.3**
Stddev	40.4	47.	11.9
%RSD	.42101	.08082	.43894
#1	9552.9	58490.	2693.3
#2	9623.9	58423.	2695.8
#3	9621.8	58399.	2715.0

Approved: July 01, 2016

Sample Name: L1606126501 Acquired: 6/30/2016 13:36:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.00901**	**.00348**	**.47756**	**.01945**	**-.00001**	**100.07**
Stddev	.00211	.00641	.00091	.00750	.00060	.00002	.15
%RSD	574.62	71.111	26.120	1.5710	3.0839	159.64	.14754
#1	.00181	.00728	.00248	.47636	.01912	.00001	100.22
#2	-.00206	.00365	.00372	.47073	.01909	-.00004	99.926
#3	.00135	.01611	.00425	.48559	.02014	-.00001	100.07
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.00092**	**.00565**	**.00040**	**.00548**	**3.2874**	**.04338**
Stddev	.00003	.00023	.00049	.00076	.00681	.1250	.00217
%RSD	6.2981	25.250	8.6582	191.26	124.27	3.8021	4.9968
#1	.00056	.00107	.00595	-.00038	-.00046	3.1512	.04579
#2	.00052	.00065	.00509	.00044	.00398	3.3969	.04160
#3	.00059	.00103	.00592	.00114	.01291	3.3140	.04274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**69.500**	**-.00011**	**.00350**	F **395.79**	**.00055**	**.00223**	**-.00223**
Stddev	.132	.00065	.00079	4.55	.00081	.00564	.00210
%RSD	.18950	601.77	22.572	1.1501	148.00	253.48	94.109
#1	69.539	-.00084	.00417	400.37	-.00034	-.00342	-.00097
#2	69.353	.00040	.00369	391.27	.00125	.00786	-.00465
#3	69.608	.00011	.00263	395.72	.00073	.00224	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 01, 2016

Sample Name: L1606126501 Acquired: 6/30/2016 13:36:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00385	.02029	8.0727	-.00079	1.3291	-.00831	-.00303
Stddev	.00274	.00516	.7628	.00084	.0052	.00351	.00314
%RSD	71.081	25.434	9.4485	106.40	.39045	42.222	103.75
#1	.00107	.02394	8.4911	-.00158	1.3348	-.00644	-.00034
#2	.00394	.02255	8.5348	-.00086	1.3246	-.00613	-.00226
#3	.00654	.01439	7.1923	.00009	1.3281	-.01235	-.00649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01883	.00469	.00064
Stddev	.00066	.00079	.00049
%RSD	3.4994	16.784	76.560
#1	.01847	.00501	.00108
#2	.01842	.00526	.00011
#3	.01959	.00379	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9119.6	55276.	2659.2
Stddev	22.5	187.	17.6
%RSD	.24641	.33790	.66099
#1	9141.7	55321.	2643.5
#2	9096.7	55437.	2678.2
#3	9120.4	55071.	2655.9

Approved: July 01, 2016

Sample Name: L1606126502S Acquired: 6/30/2016 13:40:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19267**	**4.8857**	**.19848**	**1.4440**	**.50442**	**.02403**	**109.09**
Stddev	.00532	.0205	.00913	.0065	.00103	.00020	.07
%RSD	2.7612	.42019	4.5983	.45166	.20391	.82951	.06198
#1	.19858	4.9092	.20511	1.4507	.50331	.02422	109.02
#2	.18828	4.8766	.20225	1.4377	.50463	.02382	109.16
#3	.19113	4.8713	.18807	1.4437	.50533	.02405	109.09
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02373**	**.09320**	**.24561**	**.22859**	**1.9045**	**28.507**	**.54037**
Stddev	.00081	.00546	.00272	.01307	.0350	.099	.00653
%RSD	3.3993	5.8546	1.1082	5.7158	1.8381	.34784	1.2080
#1	.02401	.09622	.24574	.23691	1.9035	28.392	.53335
#2	.02436	.09647	.24826	.23533	1.8700	28.563	.54150
#3	.02282	.08690	.24282	.21353	1.9400	28.565	.54626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**77.399**	**.23795**	**.48526**	F **436.12**	**.22674**	**4.7964**	**.23177**
Stddev	.622	.00173	.02727	.76	.01278	.2255	.01057
%RSD	.80364	.72532	5.6200	.17534	5.6375	4.7018	4.5594
#1	76.681	.23598	.49972	435.52	.23371	4.9314	.23947
#2	77.739	.23872	.50225	436.98	.23453	4.9218	.23611
#3	77.777	.23917	.45380	435.85	.21199	4.5361	.21972
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 01, 2016

Sample Name: L1606126502S Acquired: 6/30/2016 13:40:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.56829	.20154	10.866	.46902	1.8612	.46853	.22591
Stddev	.03425	.00869	.454	.02967	.0048	.01242	.00992
%RSD	6.0261	4.3126	4.1801	6.3256	.25555	2.6516	4.3910
#1	.58581	.20505	11.110	.48448	1.8567	.47588	.22871
#2	.59023	.20793	11.145	.48776	1.8662	.45418	.23413
#3	.52883	.19164	10.342	.43481	1.8607	.47552	.21489
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51373	.45961	.00086
Stddev	.00073	.02683	.00031
%RSD	.14270	5.8377	35.988
#1	.51414	.47520	.00101
#2	.51416	.47499	.00050
#3	.51288	.42863	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9073.3	54696.	2629.2
Stddev	7.3	63.	2.4
%RSD	.08023	.11531	.09192
#1	9081.2	54645.	2626.5
#2	9072.0	54677.	2630.1
#3	9066.8	54767.	2631.1

Approved: July 01, 2016

Sample Name: L1606126503SD Acquired: 6/30/2016 13:44:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19262**	**4.8735**	**.19834**	**1.4316**	**.49490**	**.02396**	**106.44**
Stddev	.00091	.0162	.00177	.0020	.00424	.00008	.64
%RSD	.47122	.33318	.89356	.14064	.85762	.33853	.60003
#1	.19366	4.8548	.20026	1.4320	.49607	.02392	106.72
#2	.19202	4.8838	.19799	1.4335	.49019	.02406	105.71
#3	.19218	4.8819	.19677	1.4295	.49843	.02392	106.89
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02395**	**.09387**	**.24479**	**.23120**	**1.9082**	**28.137**	**.53735**
Stddev	.00041	.00211	.00223	.00604	.0251	.149	.00299
%RSD	1.7224	2.2483	.90955	2.6143	1.3178	.52986	.55593
#1	.02395	.09508	.24346	.23512	1.8832	28.298	.53763
#2	.02436	.09509	.24736	.23424	1.9078	28.003	.53423
#3	.02354	.09143	.24355	.22424	1.9335	28.111	.54019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**75.840**	**.23218**	**.48984**	F **425.23**	**.23007**	**4.8095**	**.23124**
Stddev	.204	.00584	.00967	3.81	.00559	.0646	.00058
%RSD	.26886	2.5163	1.9736	.89660	2.4283	1.3423	.25013
#1	75.733	.23035	.49566	429.43	.23333	4.8463	.23191
#2	75.713	.22748	.49518	421.98	.23326	4.8473	.23093
#3	76.076	.23872	.47868	424.27	.22362	4.7350	.23089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 01, 2016

Sample Name: L1606126503SD Acquired: 6/30/2016 13:44:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.56903**	**.20706**	**10.813**	**.47475**	**1.8175**	**.46737**	**.22771**
Stddev	.00898	.00349	.131	.01059	.0116	.00214	.00305
%RSD	1.5775	1.6866	1.2126	2.2316	.63909	.45721	1.3406
#1	.57287	.21041	10.875	.48135	1.8167	.46540	.22785
#2	.57545	.20732	10.902	.48037	1.8063	.46706	.23069
#3	.55878	.20344	10.663	.46253	1.8295	.46964	.22459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50984**	**.46479**	**.00084**
Stddev	.00085	.00864	.00031
%RSD	.16624	1.8598	37.308
#1	.51042	.46959	.00084
#2	.50887	.46997	.00115
#3	.51023	.45481	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9022.9**	**54405.**	**2610.6**
Stddev	26.8	134.	15.3
%RSD	.29666	.24562	.58733
#1	9046.9	54502.	2603.7
#2	9027.6	54253.	2628.1
#3	8994.0	54460.	2599.9

Approved: July 01, 2016

Sample Name: L1606126504 Acquired: 6/30/2016 13:48:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00055	.06542	-.00015	.08571	.01569	-.00000	65.452	.00017
Stddev	.00170	.00081	.00113	.00144	.00055	.00011	.453	.00004
%RSD	307.72	1.2368	738.87	1.6851	3.4789	2398.8	.69275	20.627
#1	.00099	.06597	-.00100	.08518	.01611	-.00012	65.769	.00018
#2	-.00027	.06580	.00113	.08735	.01590	.00009	65.656	.00021
#3	-.00238	.06449	-.00059	.08461	.01508	.00001	64.933	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00324	.00031	.02195	.60653	.01735	18.858	.00255
Stddev	.00033	.00051	.00025	.01540	.02297	.00252	.243	.00077
%RSD	64.477	15.842	82.099	70.183	3.7877	14.525	1.2889	29.991
#1	.00052	.00264	.00056	.03323	.58117	.01978	18.700	.00181
#2	.00018	.00354	.00005	.00440	.61245	.01752	19.138	.00334
#3	.00084	.00352	.00032	.02821	.62596	.01475	18.735	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	262.71	.00020	.01777	-.00100	.00015	.00684	5.9516
Stddev	.00032	2.21	.00057	.00140	.00120	.00461	.00201	.5482
%RSD	52.379	.84153	283.37	7.9002	119.79	2972.3	29.421	9.2112
#1	.00096	263.71	-.00036	.01618	-.00027	-.00342	.00532	6.2565
#2	.00051	264.24	.00019	.01831	-.00035	-.00147	.00912	6.2795
#3	.00035	260.18	.00077	.01883	-.00239	.00535	.00608	5.3187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606126504 Acquired: 6/30/2016 13:48:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**.26527**	**.00442**	**-.00400**	**.00881**	**.00481**	**.00065**
Stddev	.00007	.00102	.00300	.00092	.00156	.00057	.00034
%RSD	12.505	.38500	67.908	23.107	17.671	11.749	52.377
#1	-.00063	.26515	.00518	-.00465	.01051	.00525	.00101
#2	-.00051	.26634	.00697	-.00440	.00746	.00500	.00060
#3	-.00051	.26431	.00111	-.00294	.00846	.00417	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9235.9**	**55537.**	**2644.9**
Stddev	25.1	150.	6.7
%RSD	.27151	.26931	.25461
#1	9259.0	55629.	2640.5
#2	9209.3	55365.	2641.5
#3	9239.5	55618.	2652.6

Approved: July 01, 2016

Sample Name: L1606126505 Acquired: 6/30/2016 13:52:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00288	.10056	.00955	.23212	.12837	.00007	123.87	.00051
Stddev	.00285	.00261	.00093	.00288	.00067	.00007	.73	.00028
%RSD	99.078	2.5943	9.7059	1.2395	.52089	107.42	.59299	55.885
#1	-.00420	.10148	.01005	.23277	.12888	.00000	124.63	.00026
#2	-.00483	.10259	.00848	.22897	.12761	.00006	123.81	.00045
#3	.00039	.09762	.01012	.23461	.12861	.00015	123.17	.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.00187	.00547	4.4898	.40529	.01487	38.674	.88254
Stddev	.00026	.00063	.00088	.0388	.08814	.00302	.328	.00207
%RSD	25.084	33.621	16.152	.86426	21.746	20.330	.84933	.23456
#1	.00090	.00120	.00494	4.5179	.50643	.01465	38.888	.88095
#2	.00088	.00196	.00649	4.5059	.34494	.01800	38.837	.88179
#3	.00134	.00244	.00498	4.4455	.36451	.01196	38.295	.88488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	236.56	.00027	.06732	.00029	.00304	.00215	8.4977
Stddev	.00014	1.72	.00041	.00402	.00051	.00596	.00463	.1554
%RSD	81.318	.72841	150.20	5.9714	172.61	196.26	215.05	1.8286
#1	.00033	238.38	.00057	.07029	-.00027	-.00346	-.00301	8.5874
#2	.00008	236.36	-.00019	.06892	.00072	.00433	.00595	8.5874
#3	.00010	234.95	.00043	.06274	.00043	.00824	.00351	8.3183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606126505 Acquired: 6/30/2016 13:52:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.57071**	**-.01069**	**-.00505**	**.00109**	**.00334**	**.00084**
Stddev	.00071	.00188	.00214	.00288	.00095	.00017	.00067
%RSD	340.08	.32880	20.000	57.013	86.712	5.0678	80.074
#1	-.00096	.57210	-.00992	-.00427	.00113	.00327	.00156
#2	.00045	.57145	-.00904	-.00263	.00013	.00353	.00071
#3	-.00012	.56857	-.01311	-.00823	.00203	.00321	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9207.6**	**55634.**	**2637.3**
Stddev	17.5	74.	21.5
%RSD	.18960	.13237	.81472
#1	9209.9	55567.	2614.2
#2	9223.8	55623.	2641.2
#3	9189.1	55713.	2656.6

Approved: July 01, 2016

Sample Name: L1606126506 Acquired: 6/30/2016 13:56:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00110**	**.00553**	**-.00323**	**.00322**	**.00015**	**.00001**	**.33113**	**.00009**
Stddev	.00063	.00290	.00066	.00260	.00041	.00007	.04591	.00019
%RSD	57.096	52.477	20.331	80.856	278.48	520.95	13.865	215.50
#1	-.00137	.00730	-.00354	.00473	.00048	-.00001	.29384	-.00013
#2	-.00154	.00218	-.00247	.00021	.00028	.00009	.38241	.00022
#3	-.00038	.00711	-.00367	.00472	-.00031	-.00004	.31714	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00052**	**.01266**	**.00025**	**.05696**	**.09105**	**-.00190**	**.08123**	**.00101**
Stddev	.00007	.00094	.00139	.00960	.07615	.00494	.01617	.00187
%RSD	14.031	7.3900	547.75	16.845	83.636	259.75	19.910	185.21
#1	.00048	.01367	.00113	.06560	.02919	-.00502	.07845	.00210
#2	.00048	.01247	.00098	.04664	.17609	.00379	.06663	.00208
#3	.00061	.01183	-.00135	.05865	.06786	-.00447	.09862	-.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00136**	**.41990**	**.00577**	**.00325**	**.00138**	**.00333**	**.00206**	**.19153**
Stddev	.00048	.03623	.00104	.00320	.00048	.00104	.00160	.02084
%RSD	35.016	8.6292	18.018	98.673	34.453	31.329	77.793	10.879
#1	.00185	.46076	.00698	.00108	.00158	.00424	.00387	.20545
#2	.00135	.40728	.00520	.00693	.00172	.00355	.00150	.20157
#3	.00089	.39167	.00515	.00174	.00084	.00219	.00081	.16758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606126506 Acquired: 6/30/2016 13:56:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	.00136	.00413	-.00414	.00080	.00843	.00028
Stddev	.00031	.00049	.00767	.00088	.00095	.00141	.00039
%RSD	22.401	36.279	185.67	21.232	118.69	16.697	137.81
#1	.00106	.00146	-.00467	-.00313	.00040	.00941	-.00015
#2	.00168	.00180	.00943	-.00462	.00012	.00906	.00061
#3	.00139	.00082	.00763	-.00468	.00189	.00681	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9515.8	58296.	2666.5
Stddev	88.1	169.	12.6
%RSD	.92571	.28964	.47111
#1	9569.7	58364.	2678.2
#2	9563.5	58104.	2653.2
#3	9414.1	58421.	2668.1

Approved: July 01, 2016

Sample Name: L1606126601 Acquired: 6/30/2016 14:00:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.00332	-.00000	.37559	.09290	.00003	75.476	.00029
Stddev	.00146	.01112	.00198	.00159	.00120	.00004	.090	.00007
%RSD	174.96	335.31	157970.	.42353	1.2935	135.27	.11966	24.194
#1	-.00073	.01187	.00091	.37465	.09196	.00006	75.469	.00033
#2	-.00235	-.00925	-.00228	.37469	.09249	-.00002	75.389	.00032
#3	.00057	.00733	.00136	.37743	.09426	.00005	75.569	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00117	.00015	-.01167	.59626	.00839	51.345	.03775
Stddev	.00065	.00031	.00111	.02722	.04006	.00103	.279	.00443
%RSD	2552.9	26.245	755.96	233.29	6.7189	12.224	.54398	11.732
#1	-.00032	.00100	.00116	.01270	.64171	.00746	51.662	.03364
#2	-.00038	.00152	-.00104	-.04104	.56604	.00821	51.136	.04244
#3	.00077	.00099	.00033	-.00665	.58105	.00949	51.236	.03716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	77.502	.00076	.02496	-.00017	.00241	.00415	6.4003
Stddev	.00034	.279	.00050	.00156	.00306	.00125	.00452	.5324
%RSD	113.08	.36002	65.490	6.2298	1765.5	52.146	109.00	8.3186
#1	-.00006	77.705	.00023	.02580	-.00365	.00169	.00418	6.7216
#2	.00034	77.184	.00121	.02591	.00101	.00167	-.00039	6.6935
#3	.00062	77.617	.00084	.02317	.00212	.00386	.00865	5.7857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606126601 Acquired: 6/30/2016 14:00:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.63792	-.00217	-.00276	.00515	.00364	.00077
Stddev	.00101	.00258	.00639	.00274	.00011	.00025	.00052
%RSD	1764.8	.40475	294.27	99.476	2.2275	6.7486	67.791
#1	.00001	.63686	.00360	-.00250	.00528	.00378	.00126
#2	-.00110	.63604	-.00107	-.00015	.00506	.00378	.00023
#3	.00092	.64086	-.00904	-.00562	.00512	.00336	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9278.9	56149.	2621.9
Stddev	25.7	263.	11.3
%RSD	.27654	.46799	.42954
#1	9252.7	56139.	2610.8
#2	9304.0	55891.	2633.3
#3	9279.9	56417.	2621.7

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 14:03:54 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39170**	**9.7592**	**.38143**	**.47972**	**.95914**	**.04886**	**9.5971**	**.04841**
Stddev	.00177	.0101	.00111	.00218	.00768	.00013	.0876	.00037
%RSD	.45074	.10391	.29190	.45387	.80062	.27247	.91241	.76080
#1	.39315	9.7506	.38271	.48195	.95301	.04872	9.5001	.04865
#2	.38974	9.7565	.38092	.47961	.96775	.04898	9.6703	.04859
#3	.39221	9.7704	.38067	.47760	.95665	.04887	9.6209	.04799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19575**	**.49111**	**.48818**	**3.8627**	**49.142**	**.96710**	**9.9610**	**.48203**
Stddev	.00192	.00084	.00403	.0576	.299	.00822	.1386	.00543
%RSD	.97870	.17120	.82507	1.4904	.60851	.84982	1.3910	1.1257
#1	.19691	.49198	.49126	3.8171	49.303	.96417	9.8347	.47600
#2	.19681	.49104	.48967	3.9274	49.325	.97638	10.109	.48651
#3	.19354	.49031	.48362	3.8436	48.796	.96074	9.9390	.48357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.97901**	**47.695**	**.48597**	**9.6210**	**.48847**	**1.1641**	**.39024**	**4.8612**
Stddev	.01058	.506	.00583	.0619	.00024	.0107	.00974	.0254
%RSD	1.0810	1.0615	1.1993	.64353	.04966	.91899	2.4955	.52183
#1	.98696	47.349	.49095	9.6680	.48820	1.1692	.40028	4.8768
#2	.98308	48.276	.48741	9.6442	.48853	1.1713	.38961	4.8748
#3	.96700	47.460	.47956	9.5509	.48867	1.1518	.38083	4.8319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 14:03:54 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97960	.95900	.95728	.49446	.98476	.96397	.98556
Stddev	.01146	.01028	.00388	.00124	.00058	.00855	.00661
%RSD	1.1701	1.0722	.40529	.25031	.05940	.88676	.67085
#1	.98677	.95174	.95534	.49318	.98505	.97024	.98593
#2	.98565	.97077	.96174	.49565	.98409	.96744	.99198
#3	.96638	.95450	.95475	.49456	.98514	.95423	.97877
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9508.3	57309.	2646.1
Stddev	12.2	211.	22.4
%RSD	.12872	.36798	.84491
#1	9506.4	57536.	2657.6
#2	9521.4	57271.	2620.4
#3	9497.1	57120.	2660.4

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 14:07:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00179**	**-.01036**	**-.00217**	**.00092**	**-.00110**	**-.00003**	**-.03937**	**.00011**
Stddev	.00051	.01017	.00271	.00178	.00030	.00001	.05809	.00030
%RSD	28.477	98.172	124.76	194.17	27.273	35.091	147.56	274.76
#1	.00215	-.01592	-.00147	-.00098	-.00076	-.00002	-.08365	.00004
#2	.00202	-.01653	-.00516	.00118	-.00124	-.00004	-.06085	.00044
#3	.00121	.00138	.00012	.00256	-.00131	-.00003	.02640	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.00098**	**-.00072**	**-.01290**	**-.00613**	**-.00088**	**.08244**	**.00108**
Stddev	.00017	.00054	.00062	.01648	.05244	.00071	.10081	.00138
%RSD	41.017	55.444	86.493	127.80	855.15	80.912	122.28	127.71
#1	.00031	.00050	-.00140	-.02007	.05138	-.00046	-.00379	.00172
#2	.00060	.00087	-.00059	.00596	-.01848	-.00048	.19328	.00201
#3	.00030	.00157	-.00018	-.02457	-.05129	-.00169	.05783	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.06021**	**.00019**	**-.00155**	**.00199**	**.00102**	**.00189**	**.00310**
Stddev	.00002	.01862	.00059	.00440	.00021	.00175	.00282	.00052
%RSD	11.110	30.920	314.86	284.07	10.339	171.10	149.01	16.843
#1	-.00020	.08171	-.00025	-.00654	.00209	.00215	.00513	.00354
#2	-.00023	.04950	-.00005	.00177	.00175	.00191	-.00001	.00324
#3	-.00018	.04942	.00086	.00012	.00211	-.00099	.00056	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 14:07:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**-.00020**	**.00736**	**.00055**	**.00049**	**-.00015**	**.00016**
Stddev	.00081	.00042	.01014	.00019	.00045	.00003	.00024
%RSD	1760.9	207.97	137.67	34.258	90.481	20.144	154.66
#1	-.00047	-.00024	.01835	.00052	.00001	-.00018	.00042
#2	.00089	-.00061	-.00163	.00038	.00057	-.00012	.00009
#3	-.00056	.00024	.00537	.00075	.00090	-.00016	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10385.**	**60266.**	**2712.7**
Stddev	76.	209.	7.6
%RSD	.72783	.34681	.28069
#1	10421.	60114.	2710.3
#2	10298.	60504.	2721.2
#3	10437.	60179.	2706.6

Approved: July 01, 2016

Sample Name: L1606126901 Acquired: 6/30/2016 14:11:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	.00785	-.00025	.30299	.14573	-.00008	46.402	.00025
Stddev	.00200	.00617	.00067	.00299	.00096	.00007	.082	.00032
%RSD	318.45	78.553	262.76	.98543	.65680	86.986	.17570	125.45
#1	-.00293	.01154	.00006	.30060	.14641	-.00015	46.425	.00062
#2	.00066	.01128	.00020	.30203	.14614	-.00006	46.470	.00006
#3	.00039	.00073	-.00102	.30633	.14463	-.00002	46.312	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	-.00010	-.00013	.06515	.99925	.00734	28.955	.12411
Stddev	.00012	.00090	.00177	.01454	.08997	.00112	.111	.00118
%RSD	22.582	870.56	1350.9	22.318	9.0040	15.305	.38416	.95442
#1	.00063	-.00088	-.00081	.05171	.99471	.00837	28.902	.12330
#2	.00062	.00088	.00188	.06315	.91163	.00614	29.083	.12547
#3	.00041	-.00032	-.00146	.08058	1.0914	.00751	28.881	.12357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	255.49	.00031	.01715	-.00155	.00417	-.00231	7.1871
Stddev	.00033	.50	.00083	.00777	.00276	.00247	.00327	.6995
%RSD	120.88	.19466	266.32	45.289	178.28	59.334	141.74	9.7328
#1	.00033	255.75	.00003	.02562	-.00439	.00668	-.00326	7.6057
#2	.00057	255.79	.00124	.01037	-.00139	.00174	-.00500	7.5761
#3	-.00008	254.91	-.00034	.01546	.00113	.00408	.00133	6.3796
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606126901 Acquired: 6/30/2016 14:11:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00095**	**.24562**	**.00303**	**-.00094**	**.00263**	**.00470**	**.00187**
Stddev	.00061	.00076	.00932	.00417	.00105	.00060	.00025
%RSD	64.659	.31140	307.57	444.38	39.945	12.740	13.188
#1	-.00024	.24579	.01010	-.00422	.00377	.00514	.00158
#2	-.00129	.24629	-.00753	.00375	.00170	.00495	.00201
#3	-.00131	.24479	.00653	-.00235	.00242	.00402	.00202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9400.9**	**56451.**	**2701.9**
Stddev	51.1	43.	8.1
%RSD	.54335	.07621	.29970
#1	9371.2	56500.	2700.0
#2	9371.5	56419.	2694.9
#3	9459.8	56434.	2710.8

Approved: July 01, 2016

Sample Name: L1606129201 Acquired: 6/30/2016 14:15:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00049**	**-.00995**	**-.00104**	**.02107**	**.08041**	**-.00009**	**62.526**	**.00010**
Stddev	.00193	.00906	.00196	.00307	.00024	.00007	.284	.00017
%RSD	394.29	91.096	189.36	14.546	.29674	76.551	.45384	163.34
#1	-.00047	-.02040	-.00021	.01911	.08068	-.00017	62.320	.00003
#2	-.00242	-.00525	.00038	.02461	.08033	-.00009	62.409	-.00002
#3	.00143	-.00420	-.00327	.01950	.08023	-.00002	62.850	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00149**	**.00651**	**.15014**	**1.2753**	**.00367**	**13.253**	**.00039**
Stddev	.00021	.00067	.00130	.02260	.0329	.00316	.099	.00218
%RSD	1047.0	45.014	19.976	15.054	2.5814	86.001	.74570	556.39
#1	-.00018	.00072	.00682	.16833	1.2806	.00053	13.199	-.00201
#2	-.00010	.00190	.00762	.15726	1.2400	.00684	13.193	.00226
#3	.00022	.00185	.00508	.12484	1.3052	.00364	13.367	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**7.2253**	**-.00012**	**-.00206**	**.00275**	**-.00034**	**.00616**	**4.4083**
Stddev	.00014	.1194	.00107	.00179	.00054	.00135	.00262	.2414
%RSD	22.483	1.6520	856.03	87.075	19.791	398.00	42.492	5.4758
#1	.00050	7.2986	.00039	-.00307	.00337	.00081	.00788	4.5559
#2	.00077	7.0876	-.00135	.00001	.00239	-.00000	.00315	4.5392
#3	.00058	7.2897	.00059	-.00312	.00248	-.00182	.00745	4.1297
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606129201 Acquired: 6/30/2016 14:15:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.14057**	**-.00464**	**-.00506**	**.00004**	**.02568**	**-.00011**
Stddev	.00024	.00176	.00256	.00118	.00039	.00178	.00057
%RSD	52.108	1.2510	55.205	23.351	1040.3	6.9472	534.50
#1	-.00018	.14079	-.00238	-.00628	-.00040	.02668	-.00077
#2	-.00060	.13871	-.00412	-.00392	.00018	.02674	.00025
#3	-.00061	.14221	-.00743	-.00498	.00033	.02362	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9614.6**	**58901.**	**2697.9**
Stddev	10.4	303.	17.8
%RSD	.10835	.51382	.65975
#1	9604.2	58692.	2698.0
#2	9625.0	59248.	2715.7
#3	9614.4	58764.	2680.1

Approved: July 01, 2016

Sample Name: L1606129301 Acquired: 6/30/2016 14:19:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00158	2.2366	.00008	.03043	.04877	.00015	14.674	.00005
Stddev	.00105	.0195	.00130	.00197	.00060	.00005	.079	.00014
%RSD	66.702	.87196	1568.8	6.4718	1.2215	30.799	.54082	274.12
#1	-.00066	2.2414	.00147	.03101	.04944	.00016	14.706	.00004
#2	-.00135	2.2533	-.00112	.03205	.04857	.00019	14.733	.00019
#3	-.00273	2.2151	-.00009	.02824	.04831	.00010	14.584	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	.00451	.00732	3.4857	2.4744	.00023	4.5398	.10605
Stddev	.00043	.00017	.00190	.0470	.0315	.00318	.0353	.00339
%RSD	31.586	3.7289	25.949	1.3487	1.2743	1388.0	.77742	3.1961
#1	.00146	.00431	.00929	3.5397	2.4395	-.00094	4.4999	.10406
#2	.00175	.00461	.00716	3.4537	2.4826	-.00220	4.5669	.10412
#3	.00090	.00460	.00550	3.4637	2.5010	.00383	4.5525	.10996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	4.2799	.00279	.11576	.00515	.00043	.00215	4.8273
Stddev	.00027	.0086	.00081	.00972	.00314	.00098	.00607	.3449
%RSD	45.367	.19979	29.184	8.3946	61.101	227.74	282.49	7.1454
#1	.00029	4.2853	.00338	.12222	.00158	-.00065	.00453	5.0481
#2	.00078	4.2700	.00313	.12046	.00752	.00068	.00666	5.0039
#3	.00075	4.2843	.00186	.10458	.00633	.00126	-.00475	4.4298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606129301 Acquired: 6/30/2016 14:19:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.08094**	**.03839**	**-.00286**	**.00521**	**.05493**	**.00060**
Stddev	.00060	.00020	.00403	.00146	.00088	.00506	.00025
%RSD	373.14	.24219	10.495	51.167	16.912	9.2090	41.857
#1	-.00070	.08116	.03600	-.00250	.00419	.05819	.00089
#2	-.00026	.08087	.04304	-.00447	.00575	.05750	.00052
#3	.00048	.08079	.03614	-.00161	.00568	.04910	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9698.0**	**59164.**	**2696.8**
Stddev	8.7	91.	18.4
%RSD	.08991	.15447	.68281
#1	9688.3	59248.	2680.4
#2	9705.2	59177.	2693.2
#3	9700.6	59067.	2716.7

Approved: July 01, 2016

Sample Name: L1606129403 Acquired: 6/30/2016 14:23:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.00138**	**-.00210**	**.00211**	**-.00049**	**.00003**	**.18633**	**.00008**
Stddev	.00078	.00436	.00146	.00189	.00016	.00003	.01865	.00015
%RSD	126.50	315.63	69.815	89.473	33.623	108.39	10.007	195.85
#1	.00002	.00402	-.00102	-.00006	-.00031	.00001	.20124	-.00004
#2	-.00039	-.00365	-.00376	.00305	-.00063	.00001	.19231	.00025
#3	-.00148	.00378	-.00151	.00335	-.00052	.00006	.16542	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00127**	**.00037**	**-.01884**	**.05160**	**-.00121**	**.10386**	**-.00077**
Stddev	.00060	.00084	.00043	.00206	.07896	.00371	.11172	.00081
%RSD	343.71	66.139	115.24	10.933	153.01	305.17	107.57	104.56
#1	-.00035	.00205	-.00003	-.01735	.00352	.00279	.22926	-.00028
#2	.00049	.00038	.00033	-.01797	.00856	-.00191	.01491	-.00170
#3	-.00066	.00139	.00082	-.02119	.14273	-.00453	.06741	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00336**	**.83415**	**.00069**	**-.00307**	**.00205**	**.00549**	**.00143**	**.03310**
Stddev	.00054	.03129	.00080	.00236	.00152	.00435	.00390	.00194
%RSD	16.068	3.7512	115.04	76.883	74.031	79.384	272.02	5.8661
#1	.00350	.81553	.00032	-.00476	.00144	.01022	.00211	.03458
#2	.00383	.87027	.00015	-.00407	.00094	.00459	.00495	.03381
#3	.00277	.81664	.00161	-.00037	.00379	.00165	-.00276	.03090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606129403 Acquired: 6/30/2016 14:23:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00192**	**.00344**	**-.00330**	**.00039**	**.00159**	**.00052**
Stddev	.00026	.00028	.00731	.00111	.00012	.00042	.00029
%RSD	190.14	14.594	212.73	33.506	30.138	26.329	55.849
#1	.00014	.00197	-.00419	-.00203	.00037	.00191	.00041
#2	-.00038	.00162	.00412	-.00383	.00052	.00174	.00029
#3	-.00017	.00218	.01039	-.00404	.00029	.00112	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9685.2**	**59286.**	**2691.4**
Stddev	27.7	258.	21.2
%RSD	.28565	.43475	.78677
#1	9668.1	58989.	2667.6
#2	9670.3	59422.	2707.9
#3	9717.1	59448.	2698.8

Approved: July 01, 2016

Sample Name: L1606129301PS Acquired: 6/30/2016 14:27:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574685-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18778**	**6.7328**	**.18653**	**.94044**	**.51594**	**.02353**	**17.952**	**.02321**
Stddev	.00085	.0127	.00438	.00239	.00217	.00016	.057	.00052
%RSD	.45149	.18822	2.3480	.25366	.41986	.66178	.31912	2.2303
#1	.18873	6.7191	.18790	.93853	.51378	.02336	17.891	.02333
#2	.18710	6.7441	.19006	.94312	.51811	.02356	17.962	.02366
#3	.18751	6.7353	.18163	.93968	.51592	.02367	18.004	.02265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09662**	**.24212**	**.24177**	**5.0279**	**26.075**	**.47943**	**8.8907**	**.32902**
Stddev	.00266	.00132	.00699	.0295	.199	.00203	.0939	.00294
%RSD	2.7557	.54553	2.8931	.58623	.76327	.42424	1.0557	.89412
#1	.09787	.24097	.24528	5.0149	26.191	.47719	8.8681	.33154
#2	.09842	.24356	.24630	5.0072	25.845	.48117	8.9938	.32579
#3	.09356	.24182	.23371	5.0617	26.188	.47994	8.8102	.32974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47572**	**27.394**	**.23868**	**4.6754**	**.23838**	**.55707**	**.18775**	**6.6695**
Stddev	.01494	.042	.00801	.1195	.00505	.01681	.00455	.1364
%RSD	3.1405	.15188	3.3566	2.5562	2.1181	3.0174	2.4246	2.0445
#1	.48360	27.347	.24344	4.7290	.23942	.56309	.18425	6.7479
#2	.48507	27.425	.24317	4.7587	.24283	.57004	.19289	6.7485
#3	.45849	27.410	.22943	4.5384	.23289	.53808	.18610	6.5120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606129301PS Acquired: 6/30/2016 14:27:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574685-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47257**	**.55223**	**.50982**	**.23900**	**.48398**	**.51147**	**.00125**
Stddev	.01673	.00163	.00980	.00305	.00028	.01530	.00012
%RSD	3.5406	.29484	1.9224	1.2744	.05810	2.9913	9.8620
#1	.48213	.55035	.51451	.24013	.48429	.52047	.00111
#2	.48233	.55330	.51639	.24133	.48390	.52014	.00135
#3	.45325	.55303	.49855	.23556	.48375	.49381	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9631.8**	**58344.**	**2705.5**
Stddev	44.5	18.	7.9
%RSD	.46249	.03003	.29140
#1	9601.3	58348.	2697.4
#2	9611.1	58360.	2713.1
#3	9682.9	58325.	2706.1

Approved: July 01, 2016

Sample Name: L1606129301SDL Acquired: 6/30/2016 14:30:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574685-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00122**	**.44646**	**.00050**	**.00949**	**.00850**	**.00003**	**2.8723**	**.00009**
Stddev	.00039	.00916	.00166	.00114	.00114	.00006	.0319	.00017
%RSD	32.201	2.0516	330.40	12.018	13.423	184.55	1.1122	192.02
#1	-.00161	.44404	.00002	.00910	.00947	.00010	2.9016	.00025
#2	-.00082	.45658	-.00086	.00859	.00724	-.00002	2.8771	.00010
#3	-.00124	.43875	.00235	.01077	.00880	.00001	2.8382	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**.00115**	**.00155**	**.69493**	**.44493**	**-.00213**	**.89613**	**.02093**
Stddev	.00046	.00043	.00135	.00592	.05853	.00146	.05037	.00167
%RSD	64.535	37.180	87.333	.85253	13.155	68.245	5.6214	7.9641
#1	.00073	.00102	.00259	.68830	.38184	-.00376	.86800	.01967
#2	.00025	.00163	.00205	.69680	.49746	-.00170	.86609	.02030
#3	.00117	.00080	.00002	.69969	.45548	-.00094	.95428	.02282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.86844**	**.00024**	**.02452**	**.00055**	**.00351**	**.00234**	**.93080**
Stddev	.00015	.03799	.00013	.00522	.00205	.00102	.00542	.09474
%RSD	51.903	4.3750	54.697	21.271	370.81	29.228	231.65	10.179
#1	.00047	.87349	.00037	.03037	-.00035	.00413	.00716	.99078
#2	.00020	.82817	.00024	.02282	-.00089	.00407	-.00352	.98004
#3	.00021	.90365	.00011	.02037	.00290	.00232	.00338	.82158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606129301SDL Acquired: 6/30/2016 14:30:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574685-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00080**	**.01563**	**.01488**	**-.00299**	**.00116**	**.04614**	**.00016**
Stddev	.00035	.00031	.00233	.00200	.00117	.00494	.00037
%RSD	43.643	1.9782	15.675	66.816	101.16	10.697	232.99
#1	-.00044	.01534	.01435	-.00152	.00209	.04938	-.00013
#2	-.00114	.01595	.01286	-.00526	.00153	.04858	.00058
#3	-.00081	.01562	.01743	-.00219	-.00016	.04046	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10127.**	**61315.**	**2765.9**
Stddev	9.	151.	16.2
%RSD	.09094	.24617	.58688
#1	10118.	61146.	2754.0
#2	10125.	61435.	2759.3
#3	10137.	61366.	2784.4

Approved: July 01, 2016

Sample Name: L1606129301SDL Acquired: 6/30/2016 14:34:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574685-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00117**	**.08819**	**-.00121**	**.00342**	**.00200**	**.00002**	**.58325**	**-.00005**
Stddev	.00045	.00351	.00148	.00202	.00042	.00006	.02347	.00004
%RSD	38.662	3.9811	122.52	59.006	20.838	261.07	4.0239	78.563
#1	-.00111	.08538	-.00017	.00112	.00152	-.00004	.57977	-.00009
#2	-.00075	.08707	-.00290	.00427	.00221	.00008	.60826	-.00001
#3	-.00164	.09213	-.00055	.00489	.00228	.00002	.56171	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.00042**	**-.00035**	**.11464**	**-.04959**	**.00049**	**.24466**	**.00161**
Stddev	.00034	.00144	.00104	.02109	.01857	.00125	.05679	.00301
%RSD	151.68	342.26	300.56	18.400	37.435	255.21	23.212	187.44
#1	.00034	-.00105	-.00094	.09731	-.04831	.00076	.31023	-.00098
#2	-.00016	.00049	-.00095	.13813	-.03170	.00158	.21243	.00492
#3	.00050	.00183	.00085	.10848	-.06877	-.00087	.21132	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.19292**	**-.00062**	**.00664**	**-.00094**	**.00135**	**.00343**	**.19335**
Stddev	.00025	.03602	.00111	.00238	.00121	.00525	.00275	.01949
%RSD	360.23	18.674	180.56	35.847	128.37	388.02	80.068	10.082
#1	-.00021	.15165	.00054	.00449	-.00223	.00681	.00655	.20434
#2	.00027	.21807	-.00070	.00920	.00017	-.00365	.00236	.20488
#3	.00014	.20903	-.00168	.00622	-.00077	.00089	.00138	.17085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606129301SDL Acquired: 6/30/2016 14:34:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574685-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00341**	**.00668**	**-.00320**	**.00064**	**.00317**	**.00012**
Stddev	.00109	.00041	.00357	.00419	.00123	.00038	.00058
%RSD	1392.3	11.897	53.464	131.01	190.53	12.090	471.62
#1	-.00115	.00324	.00653	-.00803	.00000	.00328	.00064
#2	.00093	.00311	.01032	-.00062	-.00013	.00348	-.00051
#3	.00045	.00387	.00318	-.00094	.00206	.00274	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9908.5**	**59787.**	**2658.0**
Stddev	52.0	164.	20.4
%RSD	.52499	.27446	.76744
#1	9853.7	59904.	2657.4
#2	9914.5	59858.	2637.9
#3	9957.2	59600.	2678.7

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 14:38:44 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37250**	**9.2477**	**.36416**	**.45644**	**.91594**	**.04626**	**9.1216**	**.04632**
Stddev	.00057	.0561	.00589	.00131	.00288	.00022	.0330	.00059
%RSD	.15279	.60608	1.6165	.28649	.31426	.47201	.36224	1.2795
#1	.37272	9.3122	.36497	.45791	.91911	.04650	9.0856	.04657
#2	.37185	9.2109	.36960	.45542	.91350	.04618	9.1287	.04675
#3	.37293	9.2200	.35791	.45598	.91521	.04609	9.1505	.04564
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18685**	**.46584**	**.46467**	**3.6604**	**46.698**	**.91712**	**9.4912**	**.45834**
Stddev	.00338	.00170	.00782	.0384	.059	.00708	.0845	.00952
%RSD	1.8075	.36548	1.6834	1.0488	.12618	.77252	.89051	2.0770
#1	.18777	.46597	.46713	3.6871	46.671	.92389	9.4436	.45805
#2	.18966	.46747	.47097	3.6164	46.657	.90976	9.4413	.44897
#3	.18310	.46407	.45591	3.6778	46.765	.91771	9.5888	.46800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.93189**	**45.427**	**.46176**	**9.1792**	**.46193**	**1.1026**	**.36822**	**4.6412**
Stddev	.01584	.165	.00840	.1148	.00623	.0147	.00118	.0453
%RSD	1.6993	.36268	1.8190	1.2506	1.3483	1.3366	.32122	.97580
#1	.93843	45.576	.46368	9.2181	.46291	1.1072	.36946	4.6482
#2	.94341	45.250	.46904	9.2694	.46761	1.1145	.36809	4.6826
#3	.91383	45.456	.45257	9.0500	.45527	1.0861	.36710	4.5928
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 14:38:44 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93297	.91496	.92070	.47171	.93543	.91891	.93060
Stddev	.01874	.00290	.00626	.00306	.00537	.01363	.00707
%RSD	2.0092	.31646	.67977	.64876	.57378	1.4834	.75998
#1	.94124	.91714	.92762	.47287	.93978	.92410	.93711
#2	.94615	.91168	.91906	.47402	.93708	.92918	.92308
#3	.91151	.91607	.91543	.46824	.92943	.90344	.93163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9795.1	59278.	2755.6
Stddev	20.4	187.	21.0
%RSD	.20823	.31474	.76352
#1	9794.3	59063.	2737.6
#2	9775.1	59370.	2778.8
#3	9815.9	59401.	2750.6

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 14:42:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**-.00955**	**-.00391**	**.00413**	**-.00113**	**.00000**	**-.04836**	**.00012**
Stddev	.00172	.00372	.00343	.00212	.00068	.00005	.02850	.00008
%RSD	667.51	38.907	87.871	51.308	59.878	1421.8	58.936	62.949
#1	.00141	-.00637	-.00446	.00447	-.00097	.00003	-.07734	.00004
#2	-.00015	-.00865	-.00703	.00606	-.00188	-.00005	-.02036	.00019
#3	-.00203	-.01363	-.00023	.00186	-.00055	.00003	-.04738	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00019**	**-.00126**	**-.02300**	**.12573**	**-.00254**	**.04800**	**-.00313**
Stddev	.00025	.00087	.00109	.02544	.03413	.00305	.00982	.00272
%RSD	113.53	458.55	86.900	110.58	27.146	120.48	20.468	86.926
#1	.00029	-.00031	.00000	-.00924	.11302	-.00056	.04943	-.00606
#2	.00043	-.00031	-.00194	-.00741	.09978	-.00605	.05703	-.00068
#3	-.00006	.00119	-.00183	-.05236	.16440	-.00100	.03754	-.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.04606**	**-.00083**	**-.00141**	**-.00021**	**.00282**	**-.00174**	**.00321**
Stddev	.00005	.02765	.00044	.00315	.00195	.00490	.00375	.00240
%RSD	141.27	60.025	53.457	223.34	930.54	173.59	215.79	74.887
#1	.00001	.07431	-.00117	-.00438	.00179	.00572	.00079	.00490
#2	-.00008	.01905	-.00100	.00189	-.00032	-.00283	.00005	.00425
#3	-.00003	.04482	-.00033	-.00174	-.00210	.00558	-.00605	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 14:42:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**-.00007**	**.00693**	**-.00126**	**.00028**	**.00004**	**.00047**
Stddev	.00006	.00074	.00234	.00199	.00034	.00013	.00028
%RSD	13.458	1007.3	33.724	158.81	121.60	313.22	60.062
#1	-.00042	-.00050	.00720	-.00317	.00053	-.00010	.00041
#2	-.00039	.00078	.00912	.00081	-.00011	.00015	.00023
#3	-.00050	-.00050	.00447	-.00141	.00041	.00008	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9965.4**	**60529.**	**2743.0**
Stddev	28.5	120.	6.2
%RSD	.28565	.19837	.22544
#1	9939.6	60624.	2736.0
#2	9960.6	60570.	2745.5
#3	9996.0	60394.	2747.6

Approved: July 01, 2016

Sample Name: LLCCV Acquired: 6/30/2016 14:46:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00755**	**.13755**	**.00504**	**.07625**	**.00622**	**.00140**	**.37985**	**.00091**
Stddev	.00060	.00766	.00141	.00302	.00039	.00009	.02688	.00006
%RSD	7.9750	5.5712	27.958	3.9578	6.3357	6.5001	7.0775	6.3246
#1	.00694	.14586	.00387	.07280	.00611	.00130	.40922	.00094
#2	.00757	.13076	.00465	.07840	.00666	.00147	.37388	.00095
#3	.00815	.13604	.00661	.07754	.00589	.00143	.35645	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00332**	**.00458**	**.00370**	**.03249**	**.71781**	**.07474**	**.34559**	**.00830**
Stddev	.00037	.00056	.00217	.01148	.06703	.00263	.12362	.00172
%RSD	11.218	12.257	58.654	35.329	9.3385	3.5127	35.771	20.744
#1	.00375	.00522	.00404	.04550	.76371	.07171	.20549	.00754
#2	.00311	.00433	.00569	.02817	.74883	.07616	.43933	.00709
#3	.00310	.00418	.00138	.02380	.64088	.07636	.39193	.01027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00664**	**.40817**	**.01405**	**.68747**	**.00938**	**.06899**	**.01621**	**.66527**
Stddev	.00113	.03058	.00213	.06242	.00022	.00684	.00387	.05694
%RSD	16.959	7.4930	15.168	9.0796	2.3936	9.9201	23.895	8.5592
#1	.00721	.43641	.01592	.72340	.00913	.07059	.01820	.70168
#2	.00736	.41241	.01449	.72361	.00957	.07489	.01869	.69448
#3	.00534	.37568	.01173	.61539	.00945	.06149	.01175	.59965
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LLCCV Acquired: 6/30/2016 14:46:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.35879**	**.03831**	**.02146**	**.13890**	**.00875**	**.01518**	**.03944**
Stddev	.04244	.00010	.00491	.01112	.00087	.00155	.00053
%RSD	11.830	.25366	22.857	8.0048	9.9857	10.225	1.3499
#1	.38655	.03820	.01999	.14334	.00973	.01612	.03979
#2	.37988	.03839	.02694	.14710	.00806	.01604	.03883
#3	.30993	.03832	.01746	.12624	.00846	.01339	.03971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9944.1**	**60263.**	**2739.7**
Stddev	6.2	35.	12.9
%RSD	.06261	.05790	.47239
#1	9948.5	60275.	2724.9
#2	9937.0	60224.	2749.2
#3	9946.8	60291.	2744.9

Approved: July 01, 2016

Sample Name: LLCCV Acquired: 6/30/2016 14:50:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02008**	**.36043**	**.01582**	**.18333**	**.01808**	**.00367**	**.89770**	**.00211**
Stddev	.00057	.00484	.00197	.00027	.00061	.00007	.04584	.00034
%RSD	2.8551	1.3431	12.444	.14908	3.3589	1.8076	5.1064	16.294
#1	.01985	.35830	.01648	.18323	.01766	.00366	.93117	.00228
#2	.01965	.35702	.01738	.18364	.01780	.00373	.84545	.00233
#3	.02073	.36597	.01361	.18313	.01878	.00360	.91646	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00935**	**.00935**	**.00971**	**.16081**	**1.9021**	**.18770**	**1.0385**	**.01901**
Stddev	.00045	.00015	.00099	.01332	.0692	.00221	.0321	.00306
%RSD	4.7935	1.5924	10.206	8.2832	3.6359	1.1750	3.0900	16.085
#1	.00958	.00936	.01052	.17429	1.8351	.18922	1.0720	.01700
#2	.00964	.00920	.01002	.14765	1.9732	.18517	1.0354	.02253
#3	.00883	.00950	.00860	.16049	1.8979	.18871	1.0081	.01750
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01769**	**1.0187**	**.03593**	**1.7426**	**.01840**	**.18087**	**.03737**	**1.6760**
Stddev	.00160	.0308	.00380	.1010	.00163	.00915	.00446	.0886
%RSD	9.0314	3.0274	10.581	5.7950	8.8845	5.0596	11.943	5.2845
#1	.01848	1.0035	.03744	1.7988	.02022	.18104	.04056	1.7200
#2	.01875	.99838	.03875	1.8030	.01793	.18993	.03928	1.7340
#3	.01585	1.0542	.03161	1.6260	.01705	.17163	.03227	1.5741
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LLCCV Acquired: 6/30/2016 14:50:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.91598**	**.09467**	**.05722**	**.35077**	**.01889**	**.03740**	**.09695**
Stddev	.07316	.00055	.00579	.01781	.00047	.00261	.00068
%RSD	7.9872	.57785	10.120	5.0788	2.4819	6.9816	.69991
#1	.95780	.09489	.05081	.35940	.01940	.03901	.09639
#2	.95864	.09405	.05879	.36263	.01847	.03881	.09770
#3	.83150	.09507	.06207	.33028	.01881	.03439	.09675
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9958.3**	**60305.**	**2738.4**
Stddev	16.7	86.	3.9
%RSD	.16799	.14205	.14249
#1	9977.1	60381.	2742.4
#2	9945.1	60322.	2734.6
#3	9952.8	60212.	2738.1

Approved: July 01, 2016

Sample Name: PBW 76 Acquired: 6/30/2016 14:54:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00140**	**-.00637**	**-.00205**	**.00030**	**-.00218**	**-.00007**	**-.01698**
Stddev	.00228	.00959	.00232	.00217	.00038	.00006	.03411
%RSD	162.77	150.58	113.16	720.50	17.455	92.464	200.87
#1	-.00259	-.01740	-.00006	.00261	-.00175	-.00005	.00605
#2	.00123	-.00166	-.00459	.00000	-.00246	-.00014	-.00083
#3	-.00284	-.00004	-.00148	-.00170	-.00234	-.00002	-.05617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.00020**	**.00068**	**.00040**	F **-.02842**	**-.00096**	**-.00216**
Stddev	.00026	.00010	.00096	.00052	.05198	.06514	.00120
%RSD	150.63	50.555	141.66	131.72	182.93	6770.7	55.717
#1	.00017	.00009	.00067	.00085	.01168	-.07310	-.00226
#2	.00043	.00023	-.00028	.00051	-.00978	.01664	-.00331
#3	-.00009	.00028	.00165	-.00017	-.08715	.05357	-.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03167**	**.00193**	**-.00016**	**.03711**	**.00033**	**.00003**	**.00043**
Stddev	.04509	.00160	.00032	.00715	.00052	.00250	.00314
%RSD	142.37	82.593	204.60	19.273	155.88	8318.8	733.61
#1	.02993	.00377	-.00007	.03245	.00026	.00135	.00350
#2	.07761	.00094	.00011	.03355	.00088	-.00285	.00057
#3	-.01252	.00108	-.00051	.04535	-.00015	.00159	-.00278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: PBW 76 Acquired: 6/30/2016 14:54:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00507**	**-.00132**	**.01027**	**-.00020**	**.00037**	**.00581**	**-.00273**
Stddev	.00072	.00169	.00061	.00051	.00051	.00630	.00145
%RSD	14.304	128.19	5.9637	253.93	138.15	108.41	53.239
#1	.00569	.00051	.01067	.00037	.00061	.01014	-.00244
#2	.00524	-.00283	.00956	-.00062	.00072	.00872	-.00430
#3	.00427	-.00163	.01056	-.00035	-.00022	-.00142	-.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00006**	**.00098**	**.00009**
Stddev	.00016	.00007	.00077
%RSD	254.01	7.5782	812.10
#1	.00007	.00092	.00092
#2	-.00010	.00106	-.00059
#3	.00022	.00096	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9735.7**	**59578.**	**2708.4**
Stddev	18.1	126.	18.2
%RSD	.18593	.21090	.67054
#1	9736.3	59492.	2688.3
#2	9717.3	59722.	2723.7
#3	9753.5	59521.	2713.1

Approved: July 01, 2016

Sample Name: LCSW 76 Acquired: 6/30/2016 14:58:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19406**	**4.8372**	**.18772**	**.93548**	**.48472**	**.02398**	**4.9184**	**.02417**
Stddev	.00040	.0223	.00254	.00287	.00046	.00006	.0222	.00071
%RSD	.20408	.46030	1.3506	.30661	.09484	.26564	.45075	2.9279
#1	.19431	4.8400	.18763	.93285	.48456	.02403	4.8996	.02468
#2	.19426	4.8580	.19031	.93854	.48437	.02399	4.9127	.02445
#3	.19360	4.8137	.18524	.93505	.48524	.02391	4.9429	.02336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09817**	**.24697**	**.24350**	**1.9478**	**24.753**	**.49093**	**5.0002**	**.24461**
Stddev	.00353	.00097	.00776	.0138	.005	.00461	.0771	.00049
%RSD	3.5987	.39459	3.1868	.70954	.02098	.93975	1.5427	.19915
#1	.10026	.24687	.24716	1.9341	24.750	.48827	5.0680	.24490
#2	.10016	.24798	.24875	1.9475	24.759	.48826	4.9163	.24404
#3	.09409	.24604	.23459	1.9618	24.750	.49625	5.0164	.24487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49023**	**24.214**	**.24212**	**4.6436**	**.24249**	**.56796**	**.18453**	**2.3355**
Stddev	.01425	.037	.00605	.0954	.00510	.01564	.00049	.0413
%RSD	2.9073	.15160	2.4970	2.0550	2.1046	2.7539	.26334	1.7675
#1	.49820	24.181	.24420	4.6986	.24833	.57604	.18508	2.3596
#2	.49872	24.253	.24685	4.6988	.23892	.57792	.18436	2.3591
#3	.47378	24.208	.23531	4.5334	.24020	.54994	.18415	2.2879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LCSW 76 Acquired: 6/30/2016 14:58:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48783	.49146	.49341	.24648	.49446	.47899	.00066
Stddev	.01537	.00161	.00809	.00316	.00160	.01185	.00006
%RSD	3.1498	.32695	1.6398	1.2839	.32453	2.4740	8.7665
#1	.49644	.48999	.48436	.24565	.49598	.48288	.00063
#2	.49696	.49318	.49589	.24998	.49461	.48840	.00073
#3	.47009	.49120	.49996	.24381	.49278	.46568	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9596.1	58301.	2689.5
Stddev	3.2	165.	6.3
%RSD	.03287	.28220	.23368
#1	9593.7	58186.	2689.5
#2	9594.8	58227.	2683.2
#3	9599.7	58489.	2695.8

Approved: July 01, 2016

Sample Name: F BLANK Acquired: 6/30/2016 15:01:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574277-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.04188**	**-.00253**	**.00671**	**.00001**	**-.00001**	**.07425**	**.00010**
Stddev	.00045	.00312	.00159	.00179	.00075	.00007	.02200	.00034
%RSD	127.57	7.4533	62.652	26.717	5191.7	1380.5	29.632	326.19
#1	.00083	.04161	-.00425	.00877	.00026	.00002	.08439	-.00027
#2	-.00007	.03890	-.00224	.00585	.00060	.00005	.04900	.00039
#3	.00030	.04513	-.00111	.00551	-.00082	-.00009	.08935	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.00060**	**.00005**	**.09768**	**.04096**	**-.00403**	**.08723**	**.00302**
Stddev	.00012	.00118	.00122	.00997	.19928	.00207	.05436	.00323
%RSD	23.723	198.15	2257.8	10.209	486.57	51.324	62.313	106.91
#1	.00064	-.00069	.00115	.10704	.05407	-.00227	.06313	.00142
#2	.00042	.00083	.00027	.09880	.23335	-.00631	.04910	.00674
#3	.00044	.00164	-.00126	.08719	-.16456	-.00352	.14947	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**128.93**	**-.00045**	**-.00284**	**-.00011**	**-.00048**	**.00433**	**.03532**
Stddev	.00010	.74	.00049	.00497	.00134	.00169	.00496	.00606
%RSD	97.546	.57783	108.83	174.98	1259.0	350.08	114.49	17.150
#1	-.00015	129.69	-.00014	.00264	.00091	-.00099	.00418	.04092
#2	-.00017	128.20	-.00019	-.00705	.00039	.00140	-.00055	.03615
#3	.00001	128.90	-.00101	-.00410	-.00162	-.00187	.00937	.02889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: F BLANK Acquired: 6/30/2016 15:01:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574277-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00116**	**.00074**	**-.00383**	**.00028**	**.00325**	**.00008**
Stddev	.00064	.00038	.00159	.00162	.00072	.00067	.00047
%RSD	295.46	32.327	215.45	42.440	252.05	20.614	621.83
#1	.00042	.00096	-.00088	-.00536	.00032	.00365	.00046
#2	-.00022	.00160	.00079	-.00212	-.00045	.00362	-.00045
#3	-.00086	.00093	.00230	-.00400	.00099	.00248	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9569.0**	**57799.**	**2697.0**
Stddev	46.7	20.	33.0
%RSD	.48836	.03469	1.2229
#1	9531.9	57822.	2659.1
#2	9553.6	57793.	2719.1
#3	9621.5	57783.	2712.9

Approved: July 01, 2016

Sample Name: F BLANK 2 Acquired: 6/30/2016 15:05:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574277-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**-.01028**	**-.00410**	**.00380**	**-.00087**	**-.00000**	**-.03482**	**-.00004**
Stddev	.00138	.00666	.00219	.00034	.00075	.00006	.05685	.00017
%RSD	2784.7	64.806	53.550	9.0182	85.907	17783.	163.29	441.49
#1	-.00099	-.01791	-.00228	.00384	-.00056	.00001	-.06566	-.00022
#2	-.00069	-.00726	-.00653	.00412	-.00033	.00005	.03079	-.00000
#3	.00153	-.00566	-.00347	.00344	-.00172	-.00007	-.06959	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00011**	**.00037**	**-.00243**	**.03190**	**-.00498**	**-.00348**	**.00156**
Stddev	.00013	.00056	.00067	.01662	.10860	.00351	.01276	.00128
%RSD	50.704	487.54	179.30	683.46	340.43	70.496	366.97	82.153
#1	.00038	-.00026	-.00024	-.00213	.05825	-.00123	.00349	.00019
#2	.00012	.00075	.00027	.01404	.12490	-.00552	-.01821	.00273
#3	.00029	-.00015	.00109	-.01920	-.08745	-.00819	.00428	.00176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.05802**	**.00034**	**-.00425**	**.00211**	**.00013**	**-.00121**	**.01397**
Stddev	.00051	.00757	.00051	.00317	.00276	.00125	.00407	.00270
%RSD	11931.	13.055	151.01	74.792	130.40	961.41	336.01	19.292
#1	-.00002	.06263	.00089	-.00624	.00309	.00129	-.00319	.01705
#2	.00052	.04927	-.00010	-.00058	.00425	.00029	-.00391	.01285
#3	-.00051	.06214	.00021	-.00591	-.00100	-.00119	.00347	.01202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: F BLANK 2 Acquired: 6/30/2016 15:05:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574277-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00066	.00035	.00385	-.00176	.00072	.00333	.00018
Stddev	.00104	.00039	.00353	.00276	.00033	.00038	.00028
%RSD	157.58	110.48	91.527	156.45	45.661	11.275	158.19
#1	-.00086	-.00005	-.00001	-.00415	.00076	.00349	.00002
#2	.00046	.00072	.00467	.00125	.00102	.00359	.00001
#3	-.00159	.00038	.00690	-.00239	.00037	.00290	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9701.1	59235.	2684.9
Stddev	13.0	36.	11.0
%RSD	.13445	.06028	.41025
#1	9691.5	59200.	2689.5
#2	9695.8	59272.	2692.9
#3	9715.9	59233.	2672.4

Approved: July 01, 2016

Sample Name: L1606139602 Acquired: 6/30/2016 15:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00193	.13965	.01057	.19322	.02665	.00036	21.590	.00045
Stddev	.00053	.00863	.00082	.00235	.00053	.00010	.075	.00007
%RSD	27.357	6.1828	7.7196	1.2183	1.9761	27.322	.34585	16.520
#1	-.00254	.14822	.01053	.19336	.02625	.00038	21.584	.00045
#2	-.00164	.13095	.00978	.19550	.02646	.00044	21.667	.00038
#3	-.00162	.13979	.01141	.19080	.02725	.00025	21.518	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00393	.00185	.00357	-.01299	1.5109	.05210	1.1273	.07142
Stddev	.00033	.00106	.00211	.01165	.1543	.00339	.0576	.00238
%RSD	8.2754	57.310	59.089	89.708	10.211	6.5060	5.1107	3.3274
#1	.00407	.00118	.00578	-.00344	1.5483	.05002	1.1938	.07152
#2	.00415	.00307	.00336	-.00955	1.3414	.05026	1.0960	.07374
#3	.00356	.00129	.00158	-.02598	1.6430	.05601	1.0921	.06899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01932	129.15	.00573	.00349	.00021	.00277	.00435	2.0497
Stddev	.00279	.31	.00105	.00606	.00075	.00257	.00077	.1872
%RSD	14.417	.23972	18.356	173.77	359.99	92.696	17.808	9.1320
#1	.02127	129.19	.00639	.00949	-.00016	.00160	.00351	2.1635
#2	.02057	129.44	.00628	-.00262	-.00028	.00571	.00450	2.1519
#3	.01613	128.83	.00452	.00358	.00107	.00100	.00504	1.8337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606139602 Acquired: 6/30/2016 15:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.11945**	**.00644**	**.00002**	**.00957**	**.02080**	**.00065**
Stddev	.00054	.00027	.00243	.00255	.00035	.00231	.00027
%RSD	345.27	.22972	37.753	11640.	3.6445	11.103	41.165
#1	-.00037	.11966	.00690	.00294	.00956	.02210	.00055
#2	.00070	.11955	.00862	-.00104	.00923	.02216	.00044
#3	.00013	.11914	.00382	-.00183	.00993	.01813	.00095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9557.0**	**57455.**	**2684.7**
Stddev	15.2	92.	11.0
%RSD	.15952	.15990	.41139
#1	9547.5	57372.	2672.7
#2	9549.0	57440.	2694.5
#3	9574.6	57554.	2686.9

Approved: July 01, 2016

Sample Name: L1606139606 Acquired: 6/30/2016 15:13:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00064**	**.09530**	**-.00072**	**.03528**	**.06156**	**.00012**	**5.0471**	**.00028**
Stddev	.00106	.00355	.00196	.00202	.00249	.00004	.0899	.00042
%RSD	166.97	3.7208	272.19	5.7243	4.0484	36.498	1.7812	147.70
#1	-.00076	.09130	-.00135	.03487	.06181	.00008	5.1439	-.00019
#2	-.00164	.09654	.00148	.03349	.06391	.00011	4.9663	.00058
#3	.00048	.09806	-.00230	.03747	.05895	.00017	5.0311	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00138**	**.00095**	**.00308**	**.00486**	**.43506**	**.00111**	**.84859**	**.04325**
Stddev	.00015	.00022	.00039	.04175	.08069	.00465	.01252	.00244
%RSD	10.691	23.353	12.625	858.42	18.548	418.47	1.4759	5.6390
#1	.00129	.00111	.00352	.01545	.51238	.00571	.86234	.04251
#2	.00155	.00069	.00284	.04030	.44144	-.00359	.84559	.04126
#3	.00130	.00104	.00287	-.04116	.35136	.00122	.83784	.04597
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**131.98**	**.00225**	**.00332**	**-.00045**	**.00078**	**.00435**	**.74799**
Stddev	.00023	.57	.00018	.00401	.00278	.00648	.00343	.04482
%RSD	151.07	.43348	7.9993	120.94	619.11	834.73	78.744	5.9924
#1	.00019	132.64	.00246	.00793	-.00097	-.00027	.00562	.77723
#2	-.00009	131.69	.00219	.00064	.00256	-.00512	.00047	.77035
#3	.00036	131.61	.00212	.00138	-.00293	.00771	.00696	.69638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606139606 Acquired: 6/30/2016 15:13:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.03637	.00336	-.00239	-.00016	.01827	.00048
Stddev	.00051	.00026	.00355	.00026	.00025	.00122	.00026
%RSD	194.48	.70234	105.80	11.003	152.75	6.7033	53.237
#1	.00032	.03651	.00398	-.00225	-.00042	.01900	.00019
#2	.00073	.03652	.00655	-.00224	.00008	.01895	.00065
#3	-.00027	.03607	-.00046	-.00270	-.00016	.01685	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9575.1	57728.	2688.0
Stddev	33.2	86.	13.8
%RSD	.34673	.14866	.51328
#1	9550.5	57665.	2673.3
#2	9561.8	57694.	2689.8
#3	9612.8	57826.	2700.7

Approved: July 01, 2016

Sample Name: L1606139608 Acquired: 6/30/2016 15:17:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00072**	**.01043**	**-.00095**	**.07564**	**.02234**	**.00003**	**5.9300**	**.00020**
Stddev	.00100	.00531	.00262	.00145	.00086	.00002	.0495	.00009
%RSD	139.29	50.966	274.91	1.9163	3.8305	66.694	.83521	47.200
#1	-.00017	.01646	-.00208	.07729	.02250	.00005	5.9868	.00017
#2	-.00187	.00644	-.00282	.07459	.02142	.00004	5.8955	.00030
#3	-.00011	.00838	.00204	.07505	.02310	.00001	5.9078	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00126**	**.00091**	**.00054**	**.00106**	**.16961**	**.00075**	**.76401**	**2.1240**
Stddev	.00021	.00078	.00035	.02269	.05820	.00533	.08914	.0166
%RSD	16.446	85.103	63.925	2137.1	34.316	714.71	11.667	.78020
#1	.00136	.00148	.00083	.02466	.10952	.00328	.72826	2.1431
#2	.00102	.00123	.00063	-.02060	.22573	-.00538	.86547	2.1157
#3	.00141	.00003	.00016	-.00087	.17359	.00434	.69829	2.1133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**148.78**	**.00393**	**.00694**	**.00054**	**.00245**	**-.00136**	**.64270**
Stddev	.00006	.68	.00056	.00260	.00234	.00542	.00234	.05700
%RSD	281.15	.45475	14.224	37.424	429.64	221.47	172.16	8.8681
#1	.00008	149.56	.00457	.00729	.00045	.00849	-.00229	.67682
#2	-.00004	148.35	.00364	.00935	-.00175	.00083	.00131	.67438
#3	.00002	148.43	.00357	.00419	.00293	-.00198	-.00310	.57690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606139608 Acquired: 6/30/2016 15:17:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.02476**	**.00581**	**-.00365**	**.00091**	**.01158**	**.00036**
Stddev	.00010	.00047	.00442	.00253	.00030	.00127	.00058
%RSD	44.503	1.8837	76.125	69.348	33.356	11.006	160.99
#1	-.00017	.02422	.00975	-.00084	.00057	.01227	.00089
#2	-.00017	.02500	.00102	-.00575	.00098	.01237	-.00026
#3	-.00035	.02506	.00667	-.00436	.00117	.01011	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9556.2**	**57642.**	**2695.6**
Stddev	16.4	82.	31.1
%RSD	.17205	.14191	1.1528
#1	9547.3	57553.	2660.1
#2	9546.2	57659.	2709.0
#3	9575.2	57714.	2717.7

Approved: July 01, 2016

L1606139801

Sample Name: ~~L1606138601~~ Acquired: 6/30/2016 15:21:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**.00164**	**-.00329**	**.00626**	**.04173**	**-.00007**	**245.26**
Stddev	.00097	.00239	.00272	.00167	.00093	.00003	.32
%RSD	125.66	145.36	82.750	26.638	2.2174	41.389	.12947
#1	.00134	.00318	-.00139	.00592	.04243	-.00009	244.89
#2	-.00035	.00286	-.00207	.00807	.04209	-.00009	245.44
#3	.00133	-.00111	-.00640	.00479	.04068	-.00004	245.44
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00033**	**.00215**	**.00154**	**-.00866**	**.25593**	**.00433**
Stddev	.00014	.00040	.00088	.00046	.01684	.09389	.00401
%RSD	25.713	123.72	41.024	30.015	194.52	36.685	92.521
#1	.00038	.00041	.00314	.00102	-.02748	.18616	.00850
#2	.00058	-.00011	.00187	.00172	.00498	.36268	.00399
#3	.00065	.00069	.00144	.00189	-.00347	.21895	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.07132**	**.00090**	**.00020**	**2.0087**	**-.00055**	**.00693**	**.00071**
Stddev	.05358	.00277	.00011	.0238	.00107	.00516	.00240
%RSD	75.129	307.41	57.758	1.1847	195.72	74.462	335.51
#1	.12964	-.00218	.00029	1.9890	.00062	.01119	-.00136
#2	.06004	.00319	.00007	2.0351	-.00148	.00842	.00334
#3	.02427	.00169	.00024	2.0019	-.00077	.00119	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: ~~L1606138601~~ Acquired: 6/30/2016 15:21:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00144**	**-.00188**	**.04205**	**-.00036**	**.14545**	F **-.03015**	**-.00381**
Stddev	.00369	.00389	.00358	.00022	.00087	.00823	.00222
%RSD	256.14	206.23	8.5220	61.641	.60068	27.290	58.270
#1	-.00093	-.00569	.04547	-.00062	.14476	-.02643	-.00545
#2	-.00044	.00208	.04234	-.00024	.14515	-.02443	-.00468
#3	.00570	-.00204	.03832	-.00022	.14643	-.03958	-.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00016**	**.00484**	**.00047**
Stddev	.00078	.00034	.00022
%RSD	492.70	6.9665	47.623
#1	-.00073	.00512	.00063
#2	.00050	.00493	.00055
#3	.00071	.00446	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9432.1**	**57669.**	**2697.3**
Stddev	22.9	224.	.8
%RSD	.24274	.38909	.03026
#1	9417.4	57410.	2696.5
#2	9420.3	57787.	2697.5
#3	9458.5	57809.	2698.1

Approved: July 01, 2016

Sample Name: L1606140001 Acquired: 6/30/2016 15:25:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00187	.83314	.00036	.00919	.01492	-.00003	27.124	.00028
Stddev	.00155	.01146	.00163	.00194	.00102	.00001	.118	.00011
%RSD	82.849	1.3755	457.03	21.111	6.8444	46.522	.43432	40.753
#1	-.00277	.82049	.00208	.00988	.01414	-.00004	27.231	.00017
#2	-.00274	.83610	.00013	.00700	.01454	-.00003	27.144	.00039
#3	-.00008	.84283	-.00114	.01070	.01607	-.00001	26.997	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.00842	.00507	1.9258	5.7321	.00213	8.2091	.23426
Stddev	.00022	.00034	.00176	.0442	.0776	.00202	.1210	.00106
%RSD	31.278	3.9863	34.635	2.2975	1.3546	94.931	1.4742	.45460
#1	.00063	.00852	.00414	1.9749	5.8065	.00051	8.2600	.23504
#2	.00096	.00869	.00710	1.9136	5.6516	.00149	8.2963	.23469
#3	.00054	.00804	.00398	1.8890	5.7382	.00440	8.0709	.23305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	6.2660	.00368	.16817	.00379	.00396	.00066	6.4590
Stddev	.00019	.0479	.00036	.01251	.00049	.00250	.00140	.4302
%RSD	22.783	.76417	9.8606	7.4370	12.975	63.174	213.56	6.6610
#1	.00078	6.3193	.00332	.16753	.00418	.00134	-.00079	6.7130
#2	.00107	6.2267	.00367	.18098	.00395	.00632	.00200	6.7018
#3	.00070	6.2519	.00405	.15599	.00324	.00423	.00075	5.9623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606140001 Acquired: 6/30/2016 15:25:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.15481	.03538	-.00557	.00144	.00618	.00095
Stddev	.00067	.00167	.00384	.00312	.00048	.00069	.00020
%RSD	541.56	1.0797	10.849	56.074	33.433	11.125	21.594
#1	.00008	.15582	.03938	-.00363	.00188	.00659	.00075
#2	.00081	.15573	.03504	-.00391	.00152	.00656	.00093
#3	-.00052	.15289	.03173	-.00918	.00092	.00539	.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9600.2	58359.	2664.5
Stddev	21.5	40.	25.0
%RSD	.22389	.06892	.93818
#1	9582.5	58324.	2651.8
#2	9594.0	58349.	2648.4
#3	9624.1	58403.	2693.3

Approved: July 01, 2016

Sample Name: L1606140002 Acquired: 6/30/2016 15:29:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00145	.04897	-.00204	.02891	.02411	-.00005	92.303	.00042
Stddev	.00119	.01185	.00155	.00126	.00077	.00001	.266	.00034
%RSD	82.297	24.206	75.782	4.3570	3.1740	9.5947	.28790	81.525
#1	-.00252	.04721	-.00286	.03023	.02442	-.00006	92.582	.00004
#2	-.00164	.06161	-.00301	.02771	.02324	-.00005	92.052	.00053
#3	-.00017	.03810	-.00026	.02881	.02467	-.00005	92.275	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.00156	.00172	.34047	1.3056	-.00041	23.126	.30684
Stddev	.00014	.00149	.00089	.00617	.0366	.00298	.102	.00392
%RSD	21.777	95.963	51.691	1.8116	2.8038	720.23	.44074	1.2761
#1	.00069	.00104	.00163	.34457	1.3386	-.00386	23.242	.31082
#2	.00049	.00324	.00088	.33338	1.3119	.00143	23.085	.30299
#3	.00076	.00039	.00265	.34346	1.2662	.00119	23.052	.30671
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	27.360	-.00015	.00025	.00070	-.00126	-.00235	4.5098
Stddev	.00022	.085	.00052	.00307	.00461	.00468	.00348	.4297
%RSD	126.98	.31143	339.42	1219.1	659.79	370.28	148.08	9.5271
#1	.00025	27.437	-.00065	.00376	.00598	-.00568	-.00299	4.7749
#2	.00033	27.268	.00038	-.00197	-.00245	.00365	-.00546	4.7405
#3	-.00007	27.374	-.00019	-.00104	-.00144	-.00176	.00141	4.0141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606140002 Acquired: 6/30/2016 15:29:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.26031**	**-.00979**	**-.00354**	**.00076**	**.00183**	**.00006**
Stddev	.00038	.00137	.00739	.00193	.00073	.00039	.00080
%RSD	727.87	.52705	75.512	54.425	95.192	21.438	1318.5
#1	-.00012	.26145	-.00223	-.00425	.00116	.00209	-.00082
#2	.00049	.25879	-.01014	-.00136	-.00008	.00203	.00072
#3	-.00021	.26069	-.01700	-.00502	.00120	.00138	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9438.9**	**57499.**	**2626.2**
Stddev	30.3	24.	10.9
%RSD	.32090	.04103	.41621
#1	9421.1	57472.	2615.0
#2	9421.6	57508.	2636.8
#3	9473.8	57517.	2626.9

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 15:33:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38576**	**9.5844**	**.37779**	**.46864**	**.94654**	**.04790**	**9.4615**	**.04768**
Stddev	.00255	.0433	.00108	.00150	.00224	.00011	.1008	.00032
%RSD	.66017	.45200	.28485	.31920	.23617	.23065	1.0653	.67507
#1	.38312	9.5764	.37657	.46863	.94563	.04794	9.3756	.04759
#2	.38594	9.6311	.37860	.47014	.94908	.04798	9.5725	.04742
#3	.38821	9.5456	.37821	.46714	.94490	.04778	9.4366	.04804
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19474**	**.48209**	**.48249**	**3.7949**	**48.672**	**.95105**	**9.7453**	**.47506**
Stddev	.00009	.00260	.00046	.0361	.138	.00693	.1521	.00571
%RSD	.04592	.53985	.09560	.95082	.28253	.72875	1.5607	1.2023
#1	.19465	.48508	.48251	3.7550	48.557	.94309	9.7664	.47993
#2	.19482	.48034	.48294	3.8044	48.824	.95438	9.5838	.47646
#3	.19475	.48085	.48202	3.8253	48.633	.95569	9.8858	.46877
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96668**	**46.965**	**.47815**	**9.4566**	**.47807**	**1.1381**	**.38347**	**4.7637**
Stddev	.00069	.137	.00033	.0141	.00224	.0026	.00188	.0073
%RSD	.07099	.29073	.06880	.14882	.46912	.22567	.49154	.15410
#1	.96596	46.868	.47802	9.4426	.47550	1.1363	.38415	4.7552
#2	.96676	47.121	.47852	9.4708	.47966	1.1410	.38133	4.7679
#3	.96732	46.905	.47790	9.4565	.47904	1.1369	.38492	4.7679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 15:33:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97131	.94689	.95484	.48552	.96927	.95066	.97219
Stddev	.00290	.00264	.00612	.00081	.00377	.00018	.00522
%RSD	.29903	.27872	.64127	.16759	.38939	.01932	.53659
#1	.97066	.94502	.94859	.48514	.97145	.95050	.97230
#2	.97449	.94991	.95510	.48646	.97145	.95062	.97734
#3	.96879	.94573	.96083	.48498	.96491	.95086	.96691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9665.6	58251.	2674.3
Stddev	7.9	34.	5.5
%RSD	.08158	.05773	.20493
#1	9666.8	58280.	2679.6
#2	9672.8	58258.	2668.6
#3	9657.2	58214.	2674.8

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 15:36:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00207**	**-.01107**	**-.00235**	**.00250**	**-.00030**	**-.00005**	**-.00958**	**-.00000**
Stddev	.00263	.00880	.00227	.00118	.00061	.00004	.00980	.00016
%RSD	127.19	79.535	96.631	47.024	203.01	78.950	102.32	9501.3
#1	-.00272	-.01877	-.00168	.00114	-.00094	-.00004	-.02037	-.00001
#2	.00083	-.00147	-.00488	.00314	-.00023	-.00001	-.00716	-.00016
#3	-.00432	-.01297	-.00049	.00322	.00027	-.00009	-.00121	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**.00040**	**-.00055**	**-.01341**	**-.04630**	**-.00230**	**-.02725**	**.00059**
Stddev	.00029	.00028	.00091	.03178	.12019	.00146	.09790	.00357
%RSD	62.754	69.240	166.97	237.02	259.58	63.516	359.24	607.25
#1	.00056	.00026	-.00150	-.00558	-.16566	-.00111	.08541	-.00274
#2	.00014	.00073	.00032	-.04837	-.04797	-.00392	-.09173	.00014
#3	.00071	.00022	-.00046	.01373	.07471	-.00186	-.07544	.00436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.03701**	**.00014**	**-.00135**	**.00005**	**.00536**	**-.00171**	**.00424**
Stddev	.00064	.01177	.00089	.00702	.00208	.00079	.00266	.00398
%RSD	1023.7	31.797	616.31	519.22	3870.8	14.771	155.99	93.993
#1	.00055	.02363	-.00088	.00650	.00142	.00517	-.00386	.00836
#2	-.00066	.04573	.00059	-.00703	.00109	.00468	-.00254	.00394
#3	.00029	.04168	.00073	-.00352	-.00235	.00623	.00127	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 15:36:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.00034**	**.00286**	**-.00055**	**.00081**	**.00033**	**.00068**
Stddev	.00030	.00018	.00565	.00085	.00042	.00016	.00043
%RSD	65.960	53.768	197.39	155.65	52.745	48.193	63.861
#1	-.00074	.00048	-.00128	-.00060	.00110	.00017	.00118
#2	-.00014	.00039	.00931	.00033	.00100	.00035	.00040
#3	-.00050	.00013	.00056	-.00137	.00032	.00048	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9773.8**	**59366.**	**2699.5**
Stddev	21.8	114.	2.7
%RSD	.22330	.19241	.10052
#1	9794.7	59234.	2697.4
#2	9775.5	59433.	2702.6
#3	9751.1	59431.	2698.7

Approved: July 01, 2016

Sample Name: L1606140003 Acquired: 6/30/2016 15:40:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**.21185**	**-.00229**	**.00993**	**.00416**	**.00003**	**41.208**	**.00004**
Stddev	.00082	.00287	.00187	.00113	.00135	.00005	.461	.00009
%RSD	63.130	1.3563	81.642	11.389	32.480	190.77	1.1190	236.87
#1	-.00183	.21040	-.00022	.00948	.00563	.00004	41.476	.00009
#2	-.00036	.20998	-.00385	.00909	.00298	.00007	40.676	.00010
#3	-.00171	.21515	-.00281	.01122	.00386	-.00003	41.472	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.00098**	**.00133**	**.32267**	**.87287**	**-.00173**	**15.303**	**.01519**
Stddev	.00027	.00059	.00077	.04257	.09542	.00261	.108	.00315
%RSD	72.790	59.493	58.460	13.194	10.932	150.85	.70528	20.717
#1	.00035	.00097	.00119	.33232	.76749	-.00474	15.182	.01262
#2	.00011	.00041	.00216	.27610	.95342	-.00010	15.340	.01427
#3	.00066	.00158	.00063	.35959	.89768	-.00035	15.388	.01870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**47.347**	**-.00108**	**.02126**	**-.00029**	**.00213**	**.00016**	**4.0100**
Stddev	.00009	.565	.00067	.00484	.00405	.00373	.00231	.2023
%RSD	125.60	1.1923	62.401	22.757	1390.4	175.26	1488.5	5.0441
#1	.00005	47.679	-.00125	.02320	.00287	.00633	.00277	4.1228
#2	.00016	46.695	-.00164	.02484	-.00485	-.00082	-.00069	4.1307
#3	-.00001	47.667	-.00033	.01576	.00111	.00088	-.00162	3.7765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606140003 Acquired: 6/30/2016 15:40:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.14971	.00443	-.00542	.00140	.00211	.00062
Stddev	.00072	.00013	.00425	.00279	.00029	.00021	.00062
%RSD	194.63	.08734	96.068	51.430	20.441	9.8730	100.70
#1	.00119	.14974	.00754	-.00228	.00158	.00233	.00110
#2	-.00017	.14982	-.00042	-.00760	.00107	.00192	.00082
#3	.00009	.14956	.00616	-.00639	.00156	.00207	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9465.7	57524.	2678.3
Stddev	27.4	92.	31.7
%RSD	.28940	.15975	1.1854
#1	9440.6	57448.	2650.8
#2	9461.5	57626.	2713.1
#3	9494.9	57496.	2671.1

Approved: July 01, 2016

Sample Name: L1606140004 Acquired: 6/30/2016 15:44:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.00439	2.1069	-.00036	.00811	.02436	.00016	53.033
Stddev	.00175	.0158	.00155	.00100	.00104	.00003	.255
%RSD	39.926	.74764	429.44	12.362	4.2636	18.219	.48106
#1	-.00433	2.1030	.00141	.00903	.02555	.00018	53.318
#2	-.00266	2.1242	-.00143	.00825	.02388	.00016	52.825
#3	-.00616	2.0934	-.00106	.00704	.02364	.00013	52.955
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	9.0000						
Low Limit	-.00400						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00236	.00434	.00769	3.7039	1.2386	.00243
Stddev	.00024	.00015	.00023	.00081	.0191	.1833	.00075
%RSD	49.330	6.4744	5.3152	10.550	.51660	14.799	30.957
#1	.00053	.00226	.00412	.00832	3.7243	1.4362	.00330
#2	.00072	.00253	.00434	.00677	3.6863	1.0741	.00209
#3	.00023	.00229	.00458	.00797	3.7010	1.2054	.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.146	.08127	.00078	50.809	.00192	.12575	.00366
Stddev	.084	.00336	.00006	.245	.00104	.01315	.00051
%RSD	.43667	4.1375	7.7223	.48239	53.963	10.459	14.025
#1	19.219	.08482	.00085	51.091	.00140	.13316	.00309
#2	19.164	.08084	.00073	50.642	.00311	.13352	.00408
#3	19.055	.07813	.00077	50.696	.00124	.11056	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: L1606140004 Acquired: 6/30/2016 15:44:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00301**	**-.00458**	**7.0828**	**-.00006**	**.14891**	**.08149**	**-.00034**
Stddev	.00093	.00379	.5359	.00043	.00109	.00886	.00142
%RSD	30.917	82.848	7.5666	747.20	.73370	10.873	423.59
#1	.00350	-.00025	7.3964	.00037	.15015	.09015	.00084
#2	.00194	-.00730	7.3879	-.00005	.14850	.08188	.00007
#3	.00360	-.00619	6.4639	-.00049	.14808	.07245	-.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00646**	**.02911**	**.00154**
Stddev	.00029	.00285	.00015
%RSD	4.4759	9.7847	9.7325
#1	.00650	.03085	.00137
#2	.00673	.03066	.00162
#3	.00616	.02582	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9463.4**	**57379.**	**2658.5**
Stddev	36.0	78.	24.1
%RSD	.38066	.13637	.90477
#1	9469.5	57431.	2631.4
#2	9424.7	57289.	2677.4
#3	9496.0	57416.	2666.6

Approved: July 01, 2016

Sample Name: L1606140005 Acquired: 6/30/2016 15:48:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.06724	-.00440	.03130	.01082	-.00003	58.752	.00036
Stddev	.00129	.00594	.00182	.00087	.00052	.00002	.431	.00018
%RSD	163.54	8.8413	41.352	2.7793	4.7775	84.589	.73372	50.368
#1	-.00059	.06320	-.00649	.03156	.01141	-.00004	58.739	.00052
#2	.00197	.07407	-.00337	.03200	.01056	-.00000	58.328	.00038
#3	.00099	.06446	-.00332	.03032	.01048	-.00004	59.190	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00280	.00113	.94752	1.8602	-.00157	13.382	.02354
Stddev	.00026	.00051	.00036	.02916	.1452	.00068	.094	.00433
%RSD	141.39	18.320	31.579	3.0776	7.8069	43.113	.69897	18.397
#1	.00034	.00221	.00112	.91889	1.8021	-.00168	13.360	.02352
#2	.00033	.00301	.00149	.94650	2.0255	-.00218	13.301	.02787
#3	-.00012	.00316	.00078	.97718	1.7530	-.00084	13.484	.01921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	16.537	-.00035	.02480	.00133	.00227	.00282	3.4736
Stddev	.00036	.184	.00075	.00247	.00310	.00275	.00164	.2334
%RSD	669.96	1.1114	215.70	9.9487	233.59	120.92	58.246	6.7201
#1	.00046	16.632	-.00060	.02214	.00415	.00374	.00427	3.6134
#2	-.00011	16.325	-.00094	.02701	-.00199	-.00090	.00104	3.6034
#3	-.00019	16.654	.00050	.02526	.00182	.00397	.00316	3.2042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606140005 Acquired: 6/30/2016 15:48:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.15339**	**.00083**	**-.00343**	**.00066**	**.00222**	**.00086**
Stddev	.00069	.00028	.00115	.00180	.00100	.00030	.00028
%RSD	3194.2	.18432	137.48	52.572	150.94	13.665	32.419
#1	.00018	.15339	.00022	-.00491	.00175	.00223	.00097
#2	.00062	.15311	.00216	-.00394	.00045	.00251	.00107
#3	-.00074	.15368	.00012	-.00142	-.00022	.00191	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9511.2**	**57867.**	**2667.0**
Stddev	32.7	143.	24.6
%RSD	.34366	.24750	.92087
#1	9492.3	57716.	2648.6
#2	9492.3	57885.	2694.9
#3	9548.9	58001.	2657.5

Approved: July 01, 2016

Sample Name: L1606140006 Acquired: 6/30/2016 15:52:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00172**	**.27444**	**-.00132**	**.00563**	**.02326**	**-.00006**	**41.161**	**.00046**
Stddev	.00200	.00452	.00102	.00216	.00178	.00005	.095	.00005
%RSD	116.12	1.6476	77.270	38.393	7.6330	82.177	.23040	10.245
#1	-.00141	.27610	-.00029	.00380	.02460	-.00002	41.250	.00050
#2	-.00385	.27789	-.00233	.00508	.02125	-.00004	41.061	.00041
#3	.00011	.26932	-.00133	.00802	.02393	-.00011	41.171	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.00308**	**.00341**	**.39315**	**1.2081**	**.00013**	**14.442**	**.09392**
Stddev	.00010	.00044	.00109	.01840	.1358	.00122	.061	.00201
%RSD	20.764	14.306	32.066	4.6803	11.237	964.48	.42182	2.1445
#1	.00057	.00270	.00429	.38744	1.3170	.00152	14.415	.09584
#2	.00056	.00357	.00219	.37828	1.2514	-.00073	14.511	.09410
#3	.00038	.00299	.00374	.41373	1.0560	-.00041	14.399	.09182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**51.840**	**.00079**	**.02251**	**.00461**	**.01268**	**-.00197**	**3.7102**
Stddev	.00045	.199	.00061	.00210	.00185	.00246	.00292	.3415
%RSD	94.985	.38465	76.845	9.3432	40.170	19.411	148.59	9.2053
#1	.00039	52.046	.00146	.02466	.00623	.01362	.00029	3.9116
#2	.00095	51.648	.00064	.02242	.00500	.01454	-.00093	3.9032
#3	.00007	51.827	.00027	.02046	.00259	.00989	-.00526	3.3159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606140006 Acquired: 6/30/2016 15:52:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.15402	.01400	-.00156	.00059	.00354	.00030
Stddev	.00078	.00043	.00510	.00204	.00089	.00043	.00048
%RSD	402.26	.27702	36.471	130.41	150.38	12.245	158.00
#1	.00069	.15428	.01540	-.00253	.00085	.00348	-.00025
#2	.00060	.15425	.00834	-.00293	-.00040	.00399	.00064
#3	-.00071	.15353	.01825	.00078	.00133	.00313	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9498.6	57375.	2639.1
Stddev	31.2	53.	16.6
%RSD	.32838	.09190	.63024
#1	9487.5	57333.	2619.9
#2	9474.5	57434.	2649.3
#3	9533.8	57357.	2648.1

Approved: July 01, 2016

Sample Name: L1606140007S Acquired: 6/30/2016 16:01:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18866**	**5.0184**	**.18666**	**.91442**	**.48512**	**.02369**	**44.403**	**.02378**
Stddev	.00148	.0137	.00163	.00580	.00110	.00015	.055	.00004
%RSD	.78686	.27352	.87111	.63474	.22624	.62869	.12482	.16408
#1	.18950	5.0294	.18525	.90825	.48393	.02364	44.456	.02377
#2	.18694	5.0030	.18631	.91524	.48608	.02358	44.346	.02383
#3	.18953	5.0227	.18844	.91977	.48536	.02386	44.407	.02376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09597**	**.24513**	**.23641**	**2.2957**	**25.369**	**.48290**	**18.691**	**.32040**
Stddev	.00069	.00040	.00167	.0356	.129	.00186	.108	.00519
%RSD	.71789	.16278	.70458	1.5510	.50875	.38586	.57758	1.6186
#1	.09567	.24519	.23688	2.2595	25.488	.48417	18.573	.32024
#2	.09547	.24550	.23456	2.3307	25.232	.48076	18.714	.31530
#3	.09675	.24471	.23779	2.2970	25.386	.48377	18.785	.32566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48536**	**74.314**	**.23351**	**4.6379**	**.23838**	**.57392**	**.18108**	**6.1060**
Stddev	.00144	.106	.00055	.0161	.00065	.00104	.00277	.0063
%RSD	.29765	.14299	.23349	.34696	.27073	.18099	1.5283	.10297
#1	.48631	74.400	.23406	4.6504	.23811	.57443	.18408	6.1118
#2	.48370	74.195	.23297	4.6198	.23911	.57273	.17863	6.1069
#3	.48608	74.348	.23350	4.6436	.23790	.57461	.18054	6.0993
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606140007S Acquired: 6/30/2016 16:01:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48284**	**.62685**	**.48603**	**.23408**	**.48868**	**.47103**	**.00136**
Stddev	.00108	.00215	.01644	.00058	.00101	.00266	.00049
%RSD	.22442	.34304	3.3821	.24928	.20686	.56474	36.076
#1	.48295	.62496	.49931	.23371	.48795	.46827	.00127
#2	.48171	.62640	.46764	.23377	.48825	.47125	.00188
#3	.48387	.62919	.49114	.23475	.48983	.47357	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9327.7**	**56205.**	**2612.4**
Stddev	16.1	43.	13.1
%RSD	.17271	.07738	.50052
#1	9315.2	56239.	2602.0
#2	9345.9	56156.	2627.0
#3	9321.9	56219.	2608.1

Approved: July 01, 2016

Sample Name: L1606140008SD Acquired: 6/30/2016 16:05:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-10

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18810	4.9300	.18713	.91248	.48307	.02361	43.592	.02384
Stddev	.00120	.0140	.00095	.00339	.00032	.00008	.038	.00011
%RSD	.63726	.28423	.50919	.37105	.06693	.33698	.08708	.44708
#1	.18673	4.9385	.18822	.91406	.48314	.02359	43.578	.02372
#2	.18895	4.9138	.18671	.90860	.48271	.02354	43.635	.02393
#3	.18862	4.9377	.18646	.91479	.48335	.02370	43.562	.02386
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09647	.24359	.23654	2.2388	25.406	.48411	18.687	.32347
Stddev	.00047	.00158	.00136	.0679	.047	.00652	.047	.00238
%RSD	.48882	.64777	.57391	3.0340	.18491	1.3469	.25366	.73503
#1	.09681	.24438	.23783	2.2853	25.362	.48874	18.636	.32306
#2	.09593	.24462	.23665	2.2703	25.456	.48694	18.730	.32602
#3	.09666	.24177	.23512	2.1608	25.400	.47666	18.695	.32132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48898	73.348	.23574	4.6681	.24046	.56838	.18043	5.9164
Stddev	.00106	.130	.00255	.0141	.00169	.00585	.00189	.0080
%RSD	.21769	.17724	1.0821	.30193	.70369	1.0296	1.0493	.13455
#1	.49011	73.426	.23621	4.6823	.24109	.56467	.18025	5.9235
#2	.48800	73.420	.23802	4.6541	.24174	.57513	.17864	5.9179
#3	.48883	73.198	.23299	4.6677	.23854	.56536	.18241	5.9078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606140008SD Acquired: 6/30/2016 16:05:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-10

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48690**	**.62508**	**.48342**	**.23951**	**.49002**	**.46642**	**.00091**
Stddev	.00184	.00179	.00801	.00041	.00150	.00308	.00017
%RSD	.37838	.28587	1.6561	.17299	.30573	.66129	19.179
#1	.48711	.62321	.47537	.23920	.49161	.46493	.00078
#2	.48496	.62677	.49139	.23935	.48980	.46436	.00110
#3	.48862	.62525	.48351	.23998	.48864	.46996	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9346.6**	**56558.**	**2644.0**
Stddev	12.9	266.	15.6
%RSD	.13768	.47105	.59028
#1	9333.4	56260.	2629.0
#2	9359.2	56774.	2642.7
#3	9347.1	56638.	2660.2

Approved: July 01, 2016

Sample Name: L1606140009 Acquired: 6/30/2016 16:09:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00192	3.0624	-.00042	.02250	.04130	.00021	53.122	.00041
Stddev	.00195	.0247	.00218	.00143	.00128	.00001	.229	.00031
%RSD	101.77	.80534	521.86	6.3732	3.1067	5.2598	.43080	76.136
#1	-.00356	3.0552	-.00105	.02229	.04069	.00022	52.938	.00044
#2	.00024	3.0421	-.00222	.02118	.04044	.00020	53.378	.00008
#3	-.00244	3.0898	.00201	.02402	.04278	.00021	53.050	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00302	.00746	.00623	6.2600	2.1833	.00072	11.000	.11215
Stddev	.00025	.00078	.00107	.0730	.0356	.00083	.115	.00174
%RSD	8.4310	10.394	17.217	1.1667	1.6299	114.03	1.0437	1.5543
#1	.00318	.00834	.00544	6.2288	2.2219	-.00019	11.024	.11023
#2	.00316	.00715	.00745	6.3434	2.1760	.00093	10.876	.11364
#3	.00273	.00689	.00580	6.2077	2.1519	.00143	11.102	.11258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	123.71	.00413	.25190	.00521	.00255	.00255	7.0118
Stddev	.00024	.62	.00127	.02433	.00093	.00313	.00367	.3930
%RSD	52.190	.49851	30.630	9.6600	17.868	122.55	143.81	5.6043
#1	.00042	123.26	.00559	.26971	.00583	.00603	.00510	7.2415
#2	.00025	124.42	.00357	.26183	.00567	-.00004	.00421	7.2359
#3	.00073	123.47	.00325	.22418	.00414	.00167	-.00165	6.5581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606140009 Acquired: 6/30/2016 16:09:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**.20365**	**.10716**	**-.00154**	**.00817**	**.03423**	**.00283**
Stddev	.00011	.00139	.00857	.00155	.00011	.00260	.00041
%RSD	26.106	.68378	7.9977	100.10	1.3509	7.5860	14.579
#1	.00056	.20207	.11024	-.00010	.00820	.03556	.00313
#2	.00036	.20417	.09748	-.00136	.00805	.03590	.00236
#3	.00036	.20470	.11377	-.00318	.00827	.03124	.00299
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9411.8**	**56682.**	**2656.6**
Stddev	8.6	112.	20.3
%RSD	.09172	.19707	.76559
#1	9406.2	56601.	2667.1
#2	9407.5	56635.	2633.1
#3	9421.8	56809.	2669.4

Approved: July 01, 2016

Sample Name: L1606140010 Acquired: 6/30/2016 16:12:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.43593	-.00139	.01923	.02204	-.00003	65.468	.00024
Stddev	.00074	.00361	.00155	.00176	.00081	.00010	.469	.00002
%RSD	383.62	.82820	111.69	9.1542	3.6774	363.24	.71640	10.431
#1	.00039	.43641	-.00033	.02092	.02172	.00008	65.128	.00024
#2	-.00063	.43211	-.00067	.01741	.02296	-.00010	66.003	.00021
#3	.00082	.43928	-.00317	.01935	.02144	-.00006	65.272	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.00720	.00413	.74332	4.8677	.00458	13.555	.01855
Stddev	.00035	.00063	.00083	.03170	.0933	.00493	.024	.00145
%RSD	50.703	8.7027	20.005	4.2647	1.9174	107.67	.17926	7.8347
#1	.00033	.00648	.00356	.72348	4.8141	.00731	13.540	.02021
#2	.00073	.00764	.00507	.72660	4.8137	-.00111	13.583	.01792
#3	.00103	.00747	.00374	.77988	4.9755	.00755	13.543	.01752
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	123.18	.00269	.05336	.00665	.01278	.00374	4.7040
Stddev	.00044	.64	.00097	.00897	.00097	.00099	.00581	.3521
%RSD	1651.2	.51682	36.235	16.803	14.615	7.7709	155.52	7.4860
#1	-.00029	122.91	.00181	.05304	.00762	.01217	.00716	4.9283
#2	-.00016	123.91	.00374	.06248	.00665	.01224	.00703	4.8855
#3	.00053	122.73	.00252	.04456	.00568	.01392	-.00297	4.2981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606140010 Acquired: 6/30/2016 16:12:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.40052	.01863	-.00093	.00134	.00491	.00060
Stddev	.00026	.00280	.00504	.00185	.00029	.00054	.00028
%RSD	49.404	.69820	27.031	198.61	21.606	10.973	46.239
#1	.00057	.39839	.01283	.00097	.00150	.00519	.00028
#2	.00077	.40369	.02189	-.00104	.00101	.00525	.00076
#3	.00025	.39949	.02117	-.00273	.00151	.00429	.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9374.2	56624.	2643.8
Stddev	35.7	29.	7.0
%RSD	.38051	.05206	.26426
#1	9333.9	56608.	2645.8
#2	9386.7	56658.	2636.1
#3	9401.9	56606.	2649.6

Approved: July 01, 2016

Sample Name: L1606141201 Acquired: 6/30/2016 16:16:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00219**	**.13192**	**-.00095**	**.09989**	**.02380**	**.00003**	**62.500**
Stddev	.00007	.01254	.00368	.00205	.00122	.00003	1.025
%RSD	3.3953	9.5062	387.07	2.0494	5.1091	112.20	1.6406
#1	-.00215	.12518	-.00080	.09757	.02519	-.00000	63.681
#2	-.00215	.12418	.00265	.10145	.02326	.00003	61.984
#3	-.00228	.14639	-.00471	.10065	.02294	.00006	61.835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00083**	**.00246**	**.00040**	**.16001**	**.70151**	**.01534**
Stddev	.00029	.00039	.00068	.00035	.00726	.19844	.00113
%RSD	114.84	47.511	27.753	88.616	4.5352	28.288	7.3505
#1	-.00005	.00094	.00252	.00039	.15240	.50779	.01408
#2	.00027	.00039	.00312	.00075	.16685	.90435	.01624
#3	.00053	.00115	.00175	.00005	.16079	.69239	.01572
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**18.586**	**.00774**	**.00037**	F **272.84**	**-.00086**	**.02763**	**-.00064**
Stddev	.148	.00065	.00031	2.41	.00061	.00111	.00307
%RSD	.79897	8.3644	83.509	.88361	71.301	4.0103	482.43
#1	18.644	.00845	.00043	275.55	-.00091	.02655	.00284
#2	18.697	.00759	.00064	272.03	-.00022	.02757	-.00296
#3	18.417	.00718	.00004	270.93	-.00144	.02876	-.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 01, 2016

Sample Name: L1606141201 Acquired: 6/30/2016 16:16:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00246	.00691	5.1725	.00007	.24993	.00106	-.00322
Stddev	.00299	.00070	.3498	.00044	.00167	.00381	.00196
%RSD	121.58	10.198	6.7627	616.62	.66656	358.69	61.021
#1	-.00087	.00758	5.3387	-.00003	.25147	-.00166	-.00424
#2	.00490	.00698	5.4082	-.00031	.25017	.00541	-.00095
#3	.00335	.00617	4.7706	.00056	.24816	-.00056	-.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01026	.00363	.00054
Stddev	.00080	.00048	.00023
%RSD	7.8231	13.240	41.490
#1	.00934	.00388	.00028
#2	.01072	.00393	.00067
#3	.01074	.00308	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9282.0	55482.	2621.7
Stddev	20.9	92.	32.6
%RSD	.22487	.16650	1.2439
#1	9283.3	55562.	2590.4
#2	9260.6	55504.	2619.2
#3	9302.2	55381.	2655.5

Approved: July 01, 2016

Sample Name: L1606141202 Acquired: 6/30/2016 16:20:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00185	.00460	-.00037	.17389	.07244	-.00003	70.731	.00017
Stddev	.00017	.00192	.00250	.00131	.00136	.00005	.324	.00014
%RSD	9.2275	41.798	670.17	.75356	1.8787	191.46	.45787	83.528
#1	-.00173	.00392	-.00029	.17489	.07207	.00000	70.504	.00022
#2	-.00205	.00677	.00209	.17438	.07395	-.00009	71.102	.00029
#3	-.00177	.00311	-.00291	.17241	.07131	.00000	70.586	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.00037	-.00006	.00787	.37716	.01115	44.826	.00810
Stddev	.00035	.00113	.00073	.03171	.10278	.00524	.158	.00173
%RSD	53.798	305.13	1190.3	402.69	27.250	46.987	.35335	21.324
#1	.00031	-.00094	.00077	-.01536	.46680	.01498	44.882	.00618
#2	.00064	.00098	-.00032	-.00502	.26499	.01330	44.949	.00952
#3	.00101	.00107	-.00063	.04399	.39970	.00518	44.647	.00861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	93.093	-.00078	.01292	.00127	.00176	.00260	6.6127
Stddev	.00033	.382	.00110	.00802	.00134	.00359	.00177	.3947
%RSD	85.556	.41075	141.03	62.078	105.80	203.37	68.166	5.9687
#1	.00052	92.970	.00039	.01940	.00121	-.00018	.00465	6.8367
#2	.00001	93.522	-.00180	.01541	-.00004	.00590	.00166	6.8445
#3	.00062	92.787	-.00093	.00395	.00264	-.00043	.00150	6.1570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606141202 Acquired: 6/30/2016 16:20:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.52286**	**-.00633**	**-.00297**	**.00652**	**.00295**	**.00025**
Stddev	.00034	.00132	.00446	.00381	.00065	.00028	.00009
%RSD	91.424	.25191	70.388	128.22	10.009	9.5778	36.128
#1	-.00070	.52352	-.01119	-.00006	.00640	.00314	.00034
#2	-.00037	.52372	-.00537	-.00728	.00594	.00310	.00023
#3	-.00003	.52134	-.00243	-.00157	.00723	.00263	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9345.2**	**56322.**	**2623.5**
Stddev	38.5	121.	21.0
%RSD	.41188	.21562	.79918
#1	9326.3	56182.	2621.8
#2	9319.7	56392.	2603.4
#3	9389.5	56392.	2645.2

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 16:24:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38677**	**9.6528**	**.38007**	**.46687**	**.94914**	**.04838**	**9.4879**	**.04775**
Stddev	.00357	.0225	.00134	.00569	.00210	.00009	.0254	.00002
%RSD	.92263	.23268	.35340	1.2195	.22144	.19625	.26801	.05088
#1	.38438	9.6771	.37867	.46672	.95089	.04830	9.4763	.04777
#2	.39087	9.6328	.38020	.46125	.94681	.04848	9.5171	.04773
#3	.38505	9.6486	.38135	.47263	.94971	.04836	9.4704	.04776
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19458**	**.48794**	**.48413**	**3.7744**	**49.128**	**.95639**	**9.8363**	**.47858**
Stddev	.00077	.00141	.00179	.0327	.195	.00278	.0724	.00208
%RSD	.39481	.28993	.36992	.86628	.39775	.29092	.73574	.43562
#1	.19469	.48860	.48456	3.7383	49.299	.95460	9.8667	.47617
#2	.19528	.48632	.48566	3.7828	48.915	.95959	9.7537	.47985
#3	.19376	.48891	.48216	3.8021	49.171	.95497	9.8886	.47971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96636**	**46.946**	**.47716**	**9.4273**	**.47711**	**1.1338**	**.38114**	**4.7253**
Stddev	.00200	.079	.00096	.0272	.00114	.0029	.00637	.0119
%RSD	.20709	.16736	.20141	.28806	.23806	.25533	1.6720	.25172
#1	.96602	47.028	.47652	9.4145	.47663	1.1362	.38594	4.7174
#2	.96852	46.871	.47827	9.4585	.47629	1.1346	.38356	4.7390
#3	.96456	46.941	.47670	9.4090	.47841	1.1306	.37391	4.7195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 16:24:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97454	.94753	.95107	.48737	.97884	.94761	.97767
Stddev	.00376	.00319	.00855	.00267	.00304	.00258	.00325
%RSD	.38560	.33699	.89915	.54682	.31096	.27211	.33293
#1	.97466	.95117	.94928	.49044	.97559	.94690	.98099
#2	.97824	.94519	.94356	.48567	.97929	.95047	.97753
#3	.97073	.94624	.96038	.48600	.98162	.94546	.97449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9645.4	57898.	2650.8
Stddev	20.0	157.	7.6
%RSD	.20733	.27069	.28799
#1	9667.9	57729.	2642.3
#2	9629.6	58039.	2653.2
#3	9638.7	57925.	2657.0

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 16:28:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00172**	**-.01186**	**-.00257**	**.00600**	**-.00045**	**-.00002**	**-.04322**	**.00012**
Stddev	.00183	.00298	.00229	.00271	.00039	.00003	.03107	.00028
%RSD	106.40	25.132	88.947	45.198	86.496	147.10	71.883	229.67
#1	.00022	-.01521	-.00520	.00816	-.00034	-.00006	-.01901	.00042
#2	-.00343	-.00952	-.00139	.00688	-.00087	.00001	-.03241	.00006
#3	-.00196	-.01084	-.00112	.00296	-.00012	-.00001	-.07825	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00041**	**-.00045**	**-.03912**	**.05379**	**-.00254**	**.08150**	**-.00106**
Stddev	.00047	.00108	.00031	.02119	.02577	.00099	.05859	.00065
%RSD	480.05	266.71	69.661	54.179	47.906	39.025	71.894	61.574
#1	.00062	-.00068	-.00054	-.05934	.04456	-.00317	.02951	-.00180
#2	-.00030	-.00133	-.00010	-.04094	.08291	-.00306	.14499	-.00054
#3	-.00002	.00079	-.00071	-.01707	.03391	-.00140	.07000	-.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.04392**	**.00040**	**.00084**	**-.00167**	**.00408**	**.00196**	**.00325**
Stddev	.00025	.00508	.00057	.00155	.00156	.00368	.00279	.00116
%RSD	263.67	11.571	142.48	185.68	93.630	90.332	142.38	35.692
#1	.00031	.04969	-.00025	.00256	-.00210	.00797	.00256	.00459
#2	.00016	.04011	.00080	-.00045	.00006	.00065	-.00108	.00249
#3	-.00018	.04196	.00064	.00040	-.00297	.00362	.00441	.00268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 16:28:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**-.00010**	**.00331**	**-.00180**	**.00038**	**.00028**	**.00100**
Stddev	.00035	.00034	.00208	.00037	.00095	.00005	.00015
%RSD	237.72	328.08	62.774	20.633	248.74	18.464	14.690
#1	-.00029	-.00050	.00555	-.00143	-.00071	.00025	.00104
#2	-.00041	.00013	.00292	-.00179	.00082	.00025	.00084
#3	.00025	.00006	.00145	-.00217	.00103	.00034	.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9752.2**	**59111.**	**2679.2**
Stddev	15.6	76.	8.0
%RSD	.15986	.12838	.29905
#1	9745.5	59186.	2682.2
#2	9741.0	59112.	2685.2
#3	9770.0	59034.	2670.1

Approved: July 01, 2016

Sample Name: L1606141301 Acquired: 6/30/2016 16:32:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00076	.07124	.02734	.36396	.20333	-.00002	74.824	.00006
Stddev	.00134	.00883	.00323	.00274	.00274	.00009	.654	.00040
%RSD	177.83	12.396	11.812	.75306	1.3495	384.76	.87352	643.16
#1	.00012	.07772	.03106	.36119	.20147	.00006	74.617	-.00016
#2	-.00230	.07483	.02574	.36667	.20204	-.00002	74.299	.00052
#3	-.00008	.06118	.02523	.36403	.20648	-.00011	75.556	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	.00030	-.00130	13.367	1.6715	.00951	51.834	.51519
Stddev	.00027	.00126	.00407	.173	.0378	.00284	.421	.00667
%RSD	19.493	415.65	312.48	1.2961	2.2606	29.828	.81182	1.2955
#1	.00136	.00164	-.00005	13.348	1.6317	.01212	52.143	.51408
#2	.00166	-.00085	.00199	13.203	1.7069	.00991	51.355	.50914
#3	.00112	.00012	-.00585	13.548	1.6758	.00649	52.004	.52235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00310	260.78	.00244	.31260	-.00017	.00141	.00223	7.7775
Stddev	.00026	2.39	.00136	.02772	.00053	.00210	.00381	.5086
%RSD	8.4965	.91737	55.682	8.8680	316.39	149.49	170.46	6.5389
#1	.00326	260.56	.00119	.32587	-.00060	-.00092	.00611	8.0786
#2	.00325	258.50	.00388	.33120	.00043	.00198	-.00150	8.0635
#3	.00280	263.27	.00225	.28074	-.00033	.00317	.00209	7.1903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606141301 Acquired: 6/30/2016 16:32:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.49770**	**.00309**	**-.00156**	**.00091**	**.00424**	**.00141**
Stddev	.00095	.00350	.01377	.00208	.00027	.00035	.00019
%RSD	120.67	.70267	445.20	133.08	30.170	8.2547	13.545
#1	-.00187	.49801	-.00597	.00066	.00100	.00453	.00119
#2	-.00009	.49405	-.00369	-.00189	.00060	.00433	.00152
#3	-.00040	.50103	.01894	-.00345	.00113	.00385	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9201.2**	**55415.**	**2635.7**
Stddev	40.2	104.	22.5
%RSD	.43699	.18744	.85209
#1	9167.3	55535.	2630.8
#2	9190.7	55366.	2660.2
#3	9245.7	55345.	2616.1

Approved: July 01, 2016

Sample Name: L1606141601 Acquired: 6/30/2016 16:36:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00726	-.00145	.49237	.00876	-.00002	191.66	.00016
Stddev	.00233	.00320	.00152	.00361	.00018	.00009	1.22	.00014
%RSD	4247.4	44.081	104.65	.73262	2.0583	465.22	.63827	90.321
#1	-.00261	.00868	-.00169	.49488	.00867	-.00012	191.71	.00002
#2	.00107	.00359	.00017	.48824	.00897	.00001	190.41	.00030
#3	.00171	.00949	-.00284	.49400	.00865	.00005	192.86	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.00443	.00071	-.00959	2.1721	.04360	93.286	-.00113
Stddev	.00017	.00054	.00201	.04123	.1082	.00282	.523	.00126
%RSD	29.129	12.161	284.68	429.85	4.9826	6.4577	.56014	110.84
#1	.00040	.00498	.00140	-.04342	2.1594	.04394	93.330	.00029
#2	.00073	.00441	.00227	-.02168	2.0708	.04622	92.743	-.00160
#3	.00062	.00390	-.00156	.03633	2.2861	.04062	93.785	-.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00377	236.02	-.00058	.00576	-.00135	.00456	.02662	8.4969
Stddev	.00035	1.51	.00091	.00129	.00333	.00316	.00413	.5483
%RSD	9.2028	.63776	157.66	22.461	246.61	69.385	15.522	6.4526
#1	.00412	236.36	-.00156	.00647	-.00215	.00557	.02232	8.8261
#2	.00378	234.38	.00025	.00654	-.00421	.00101	.02697	8.8006
#3	.00342	237.33	-.00043	.00426	.00231	.00709	.03056	7.8640
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606141601 Acquired: 6/30/2016 16:36:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00061**	**3.2193**	**-.01896**	**-.00325**	**.02076**	**.00839**	**.00039**
Stddev	.00048	.0198	.00256	.00265	.00089	.00080	.00036
%RSD	79.219	.61605	13.487	81.593	4.2946	9.5831	91.012
#1	-.00072	3.2202	-.01825	-.00439	.02172	.00877	.00009
#2	-.00008	3.1991	-.01683	-.00514	.01996	.00893	.00029
#3	-.00103	3.2387	-.02179	-.00022	.02059	.00747	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9121.7**	**54675.**	**2588.7**
Stddev	44.3	117.	18.2
%RSD	.48577	.21456	.70428
#1	9083.8	54587.	2574.9
#2	9110.7	54629.	2609.3
#3	9170.4	54808.	2581.8

Approved: July 01, 2016

Sample Name: L1606141602 Acquired: 6/30/2016 16:39:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.04290**	**.00210**	**.18996**	**.01706**	**.00011**	**133.24**	**.00029**
Stddev	.00145	.00571	.00129	.00422	.00156	.00003	.25	.00003
%RSD	183.65	13.300	61.535	2.2228	9.1720	23.945	.18524	12.061
#1	-.00030	.03905	.00332	.18567	.01687	.00009	133.30	.00033
#2	.00035	.04021	.00224	.19009	.01559	.00014	133.44	.00026
#3	-.00242	.04946	.00074	.19411	.01871	.00011	132.96	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00637**	**.00092**	**-.01504**	**1.9739**	**.03725**	**87.399**	**.00140**
Stddev	.00030	.00075	.00121	.01681	.0154	.00089	.321	.00347
%RSD	71.248	11.778	131.00	111.78	.77778	2.3798	.36691	248.89
#1	.00063	.00567	.00076	-.03295	1.9721	.03766	87.064	.00521
#2	.00008	.00716	.00220	.00040	1.9595	.03786	87.428	.00057
#3	.00054	.00627	-.00020	-.01257	1.9901	.03623	87.704	-.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00069**	**205.43**	**-.00065**	**.00118**	**.00125**	**.00495**	**.01190**	**10.111**
Stddev	.00036	.41	.00028	.00194	.00239	.00295	.00291	.722
%RSD	52.157	.20137	43.323	165.34	190.24	59.644	24.406	7.1376
#1	.00030	205.45	-.00042	.00185	-.00148	.00791	.01025	10.540
#2	.00075	205.84	-.00056	.00270	.00230	.00490	.01526	10.514
#3	.00101	205.01	-.00096	-.00102	.00294	.00202	.01020	9.2775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606141602 Acquired: 6/30/2016 16:39:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**1.8638**	**-.01183**	**-.00209**	**.01413**	**.00250**	**.00081**
Stddev	.00041	.0046	.00427	.00335	.00050	.00029	.00026
%RSD	208.99	.24890	36.060	160.05	3.5486	11.421	32.622
#1	-.00025	1.8620	-.01327	-.00010	.01355	.00262	.00083
#2	.00056	1.8690	-.00703	-.00022	.01435	.00271	.00054
#3	.00029	1.8603	-.01520	-.00597	.01448	.00218	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9214.7**	**55336.**	**2632.3**
Stddev	43.5	30.	9.7
%RSD	.47224	.05406	.36682
#1	9177.0	55310.	2627.6
#2	9204.8	55368.	2626.0
#3	9262.3	55330.	2643.4

Approved: July 01, 2016

Sample Name: L1606142101 Acquired: 6/30/2016 16:43:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.01664	.01373	.16137	.22037	.00006	83.928	.00039
Stddev	.00115	.00914	.00251	.00124	.00105	.00002	.233	.00004
%RSD	493.46	54.936	18.243	.77000	.47749	31.629	.27721	10.356
#1	-.00125	.00608	.01107	.16153	.22136	.00005	84.163	.00036
#2	.00101	.02184	.01605	.16005	.22050	.00005	83.698	.00037
#3	-.00045	.02200	.01408	.16252	.21926	.00008	83.924	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00136	.00118	1.7633	.27515	.00739	46.529	.74033
Stddev	.00026	.00054	.00133	.0077	.05593	.00242	.227	.00121
%RSD	26.219	40.132	113.13	.43611	20.328	32.679	.48778	.16406
#1	.00097	.00187	.00231	1.7710	.26279	.01012	46.524	.73903
#2	.00124	.00078	.00152	1.7632	.22643	.00552	46.304	.74053
#3	.00073	.00142	-.00029	1.7556	.33623	.00654	46.758	.74144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	191.41	-.00044	.01137	.05887	.00565	-.00019	7.2489
Stddev	.00046	.54	.00058	.00992	.00444	.00102	.00276	.1426
%RSD	165.71	.28300	134.19	87.255	7.5412	18.086	1422.2	1.9674
#1	.00064	191.99	.00018	.00098	.05522	.00551	.00175	7.3305
#2	.00042	190.92	-.00098	.01239	.06381	.00674	.00101	7.3320
#3	-.00024	191.33	-.00050	.02074	.05758	.00471	-.00335	7.0843
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606142101 Acquired: 6/30/2016 16:43:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.57473**	**-.00980**	**-.00414**	**.00480**	**.00572**	**.00137**
Stddev	.00063	.00158	.00424	.00226	.00031	.00006	.00027
%RSD	449.21	.27490	43.282	54.670	6.5044	1.1356	19.922
#1	-.00071	.57497	-.01372	-.00154	.00513	.00564	.00169
#2	.00053	.57304	-.01037	-.00524	.00451	.00577	.00125
#3	-.00024	.57617	-.00530	-.00565	.00476	.00574	.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9300.3**	**56148.**	**2682.8**
Stddev	18.0	156.	8.8
%RSD	.19314	.27844	.32758
#1	9310.2	55969.	2676.4
#2	9279.6	56256.	2679.3
#3	9311.2	56220.	2692.9

Approved: July 01, 2016

Sample Name: L1606142101PS Acquired: 6/30/2016 16:47:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574802-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19178**	**4.8125**	**.20707**	**1.0743**	**.67527**	**.02403**	**81.863**	**.02383**
Stddev	.00164	.0285	.00109	.0024	.00201	.00016	.169	.00008
%RSD	.85366	.59221	.52821	.21915	.29797	.67417	.20680	.32546
#1	.19364	4.8042	.20820	1.0722	.67455	.02400	81.960	.02392
#2	.19057	4.7891	.20700	1.0737	.67755	.02389	81.961	.02378
#3	.19112	4.8443	.20602	1.0768	.67372	.02421	81.668	.02380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09512**	**.24097**	**.23259**	**3.5012**	**25.091**	**.49820**	**47.311**	**.91171**
Stddev	.00172	.00113	.00408	.0258	.041	.00094	.034	.01047
%RSD	1.8084	.46778	1.7523	.73730	.16185	.18785	.07276	1.1489
#1	.09615	.24217	.23551	3.5104	25.121	.49728	47.272	.91325
#2	.09609	.24079	.23431	3.4721	25.106	.49915	47.338	.90055
#3	.09314	.23994	.22793	3.5212	25.044	.49818	47.322	.92133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48785**	**199.21**	**.23016**	**4.7632**	**.28950**	**.56273**	**.18625**	**8.9142**
Stddev	.00735	.35	.00400	.0522	.00315	.00902	.00258	.0900
%RSD	1.5064	.17436	1.7393	1.0964	1.0892	1.6028	1.3845	1.0091
#1	.49219	199.40	.23237	4.7814	.28963	.56983	.18913	8.9684
#2	.49201	199.42	.23257	4.8039	.29259	.56578	.18416	8.9638
#3	.47937	198.81	.22554	4.7043	.28629	.55258	.18546	8.8103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606142101PS Acquired: 6/30/2016 16:47:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574802-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47878	.98280	.48177	.23332	.49777	.47051	.00157
Stddev	.00648	.00312	.00867	.00261	.00274	.00529	.00060
%RSD	1.3527	.31773	1.8000	1.1172	.55066	1.1239	38.097
#1	.48377	.98305	.47225	.23632	.50020	.47580	.00149
#2	.48111	.98578	.48922	.23198	.49832	.47050	.00220
#3	.47146	.97955	.48385	.23165	.49480	.46523	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9287.7	56036.	2656.2
Stddev	39.0	138.	12.5
%RSD	.41984	.24649	.47094
#1	9260.6	56118.	2646.3
#2	9270.1	56114.	2652.2
#3	9332.4	55877.	2670.3

Approved: July 01, 2016

Sample Name: L1606142101DL Acquired: 6/30/2016 16:51:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574802-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00092**	**-.01156**	**-.00221**	**.03452**	**.04090**	**.00002**	**16.303**	**.00028**
Stddev	.00033	.00214	.00165	.00245	.00075	.00005	.041	.00002
%RSD	35.838	18.557	74.669	7.1086	1.8316	290.39	.24985	6.7403
#1	.00074	-.01171	-.00075	.03629	.04004	.00002	16.271	.00027
#2	.00130	-.01362	-.00401	.03555	.04135	.00007	16.348	.00030
#3	.00072	-.00934	-.00188	.03172	.04131	-.00003	16.289	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**-.00022**	**.00044**	**.32664**	**.13133**	**.00034**	**9.1016**	**.14646**
Stddev	.00022	.00078	.00070	.03049	.11585	.00132	.0625	.00583
%RSD	58.791	347.19	157.82	9.3334	88.213	382.07	.68711	3.9792
#1	.00013	-.00040	.00041	.31962	.16884	.00162	9.0479	.14159
#2	.00046	-.00090	.00115	.30028	.00137	.00042	9.0867	.15292
#3	.00055	.00063	-.00024	.36003	.22376	-.00101	9.1703	.14488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**37.176**	**-.00089**	**.00206**	**.01136**	**-.00128**	**.00406**	**1.3491**
Stddev	.00026	.162	.00037	.00485	.00242	.00082	.00482	.1062
%RSD	186.36	.43540	41.505	235.83	21.345	64.391	118.77	7.8693
#1	-.00011	36.995	-.00048	-.00353	.01179	-.00195	.00036	1.4073
#2	-.00040	37.307	-.00120	.00517	.01354	-.00036	.00231	1.4134
#3	.00011	37.227	-.00099	.00453	.00875	-.00153	.00951	1.2266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606142101DL Acquired: 6/30/2016 16:51:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574802-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.11051**	**.00333**	**-.00231**	**.00104**	**.00206**	**.00078**
Stddev	.00078	.00052	.00727	.00096	.00065	.00028	.00048
%RSD	227.08	.47278	217.94	41.400	61.901	13.816	60.933
#1	.00031	.11013	-.00429	-.00124	.00145	.00204	.00102
#2	-.00013	.11029	.01018	-.00309	.00138	.00235	.00110
#3	-.00120	.11110	.00412	-.00260	.00030	.00178	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10040.**	**60876.**	**2752.8**
Stddev	22.	98.	21.7
%RSD	.22300	.16078	.78970
#1	10065.	60767.	2766.7
#2	10025.	60903.	2727.7
#3	10029.	60957.	2763.9

Approved: July 01, 2016

Sample Name: L1606142101DL Acquired: 6/30/2016 16:55:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574802-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**-.01278**	**-.00314**	**.00860**	**.00810**	**-.00002**	**3.3570**	**.00002**
Stddev	.00060	.00600	.00107	.00339	.00129	.00008	.0518	.00020
%RSD	499.44	47.004	34.032	39.389	15.979	372.90	1.5438	1281.4
#1	.00054	-.01951	-.00330	.00500	.00924	-.00008	3.3224	.00014
#2	-.00062	-.01085	-.00412	.00908	.00837	-.00006	3.4166	-.00022
#3	-.00028	-.00797	-.00200	.01172	.00670	.00007	3.3321	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.00046**	**-.00005**	**.04654**	**.00533**	**-.00363**	**2.0080**	**.03106**
Stddev	.00004	.00051	.00014	.03762	.07499	.00358	.0984	.00462
%RSD	19.699	112.22	295.88	80.835	1407.4	98.668	4.9032	14.870
#1	.00016	-.00011	-.00007	.03092	.05687	-.00750	1.9620	.02604
#2	.00022	.00089	-.00017	.08945	.03981	-.00043	2.1210	.03513
#3	.00024	.00059	.00010	.01924	-.08070	-.00296	1.9410	.03202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**7.7053**	**-.00113**	**.00074**	**.00004**	**.00072**	**.00206**	**.27891**
Stddev	.00032	.0621	.00014	.00299	.00209	.00221	.00250	.01916
%RSD	153.27	.80663	12.741	403.10	5593.1	305.29	121.67	6.8711
#1	-.00036	7.6413	-.00123	.00225	-.00063	.00271	.00042	.28930
#2	-.00043	7.7654	-.00119	.00269	.00238	-.00166	.00081	.29063
#3	.00016	7.7093	-.00096	-.00271	-.00164	.00112	.00494	.25679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606142101DL Acquired: 6/30/2016 16:55:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574802-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00089**	**.02314**	**.00270**	**-.00173**	**.00040**	**.00082**	**.00065**
Stddev	.00130	.00056	.00154	.00092	.00116	.00007	.00056
%RSD	146.41	2.4023	57.267	52.864	290.24	8.0739	86.396
#1	-.00239	.02354	.00159	-.00183	-.00060	.00081	.00071
#2	-.00004	.02338	.00204	-.00260	.00168	.00089	.00118
#3	-.00024	.02251	.00446	-.00077	.00012	.00076	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10073.**	**60587.**	**2744.5**
Stddev	15.	336.	11.9
%RSD	.15199	.55487	.43216
#1	10057.	60763.	2751.9
#2	10076.	60798.	2730.8
#3	10087.	60199.	2750.8

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 16:59:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38341**	**9.5291**	**.37694**	**.46993**	**.94064**	**.04767**	**9.3796**	**.04706**
Stddev	.00339	.0137	.00736	.00136	.00339	.00016	.0428	.00109
%RSD	.88491	.14413	1.9515	.28933	.36065	.32654	.45620	2.3223
#1	.38037	9.5320	.37925	.46836	.94453	.04777	9.4085	.04778
#2	.38707	9.5411	.38286	.47067	.93911	.04775	9.3304	.04759
#3	.38279	9.5141	.36871	.47076	.93829	.04749	9.3998	.04580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19041**	**.47904**	**.47355**	**3.7390**	**48.504**	**.94392**	**9.8246**	**.47415**
Stddev	.00561	.00227	.01101	.0154	.282	.00204	.0549	.00176
%RSD	2.9450	.47393	2.3242	.41049	.58204	.21595	.55867	.37051
#1	.19341	.48163	.47978	3.7519	48.750	.94594	9.8237	.47219
#2	.19388	.47811	.48003	3.7432	48.196	.94395	9.8799	.47559
#3	.18394	.47739	.46084	3.7220	48.566	.94186	9.7702	.47466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94769**	**46.774**	**.46731**	**9.3033**	**.47558**	**1.1226**	**.38196**	**4.6778**
Stddev	.02706	.113	.01425	.1959	.00811	.0259	.00078	.0780
%RSD	2.8558	.24202	3.0490	2.1059	1.7063	2.3090	.20414	1.6683
#1	.96294	46.903	.47554	9.4101	.48042	1.1346	.38205	4.7080
#2	.96370	46.690	.47553	9.4226	.48011	1.1403	.38114	4.7363
#3	.91645	46.730	.45086	9.0772	.46621	1.0928	.38269	4.5892
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 16:59:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95040	.94259	.94176	.48154	.96476	.92914	.96355
Stddev	.03134	.00297	.00766	.00460	.00259	.02503	.00159
%RSD	3.2980	.31533	.81353	.95457	.26868	2.6938	.16525
#1	.96627	.94584	.93649	.48254	.96730	.94432	.96358
#2	.97063	.94195	.95055	.48555	.96212	.94284	.96195
#3	.91429	.94000	.93823	.47653	.96485	.90025	.96513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9725.5	58467.	2692.1
Stddev	21.4	126.	9.3
%RSD	.22047	.21629	.34552
#1	9709.5	58322.	2682.8
#2	9717.1	58527.	2701.4
#3	9749.8	58552.	2692.3

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 17:02:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**-.01276**	**-.00413**	**.00320**	**-.00036**	**.00005**	**-.02203**	**.00000**
Stddev	.00045	.00754	.00305	.00033	.00139	.00002	.02799	.00024
%RSD	43.829	59.100	73.853	10.417	387.51	51.756	127.07	4936.0
#1	-.00081	-.01884	-.00108	.00345	-.00149	.00008	.01029	-.00025
#2	-.00073	-.00432	-.00719	.00333	.00119	.00004	-.03864	.00022
#3	-.00155	-.01512	-.00413	.00282	-.00077	.00003	-.03773	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.00038**	**-.00133**	**.00143**	**.08444**	**-.00182**	**-.00119**	**-.00147**
Stddev	.00003	.00052	.00044	.01868	.19546	.00275	.05915	.00215
%RSD	14.418	137.49	33.259	1304.1	231.50	151.23	4953.2	146.46
#1	.00023	.00021	-.00129	.02286	-.00836	-.00211	.06417	-.00038
#2	.00019	.00096	-.00090	-.01141	-.04735	.00107	-.05101	-.00394
#3	.00017	-.00004	-.00178	-.00716	.30901	-.00441	-.01675	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.02374**	**-.00012**	**-.00135**	**-.00155**	**.00076**	**.01114**	**.00414**
Stddev	.00007	.03792	.00039	.00155	.00135	.00393	.00339	.00097
%RSD	40.140	159.75	338.22	115.10	87.479	514.96	30.455	23.330
#1	.00011	.03042	-.00056	-.00285	-.00069	-.00183	.01323	.00311
#2	.00025	-.01708	.00004	-.00143	-.00310	-.00117	.00722	.00429
#3	.00016	.05787	.00018	.00024	-.00085	.00529	.01296	.00503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 17:02:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00007**	**.00682**	**-.00271**	**.00025**	**.00032**	**-.00001**
Stddev	.00090	.00006	.00608	.00158	.00070	.00006	.00034
%RSD	3389.0	81.306	89.109	58.447	281.94	17.422	2621.0
#1	-.00024	.00010	.01370	-.00320	-.00056	.00029	-.00041
#2	-.00080	.00011	.00216	-.00094	.00072	.00030	.00017
#3	.00096	.00000	.00461	-.00399	.00060	.00039	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9911.2**	**60010.**	**2720.9**
Stddev	5.1	106.	21.9
%RSD	.05154	.17678	.80435
#1	9909.3	59887.	2735.0
#2	9907.3	60071.	2695.7
#3	9917.0	60071.	2732.0

Approved: July 01, 2016

Sample Name: L1606147656 Acquired: 6/30/2016 17:06:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00216	.02574	.02735	-.01074	.00272	-.00007	5.5892	.00047
Stddev	.00098	.00463	.00278	.00176	.00038	.00002	.0183	.00003
%RSD	45.179	17.983	10.160	16.336	14.031	32.851	.32778	6.2699
#1	-.00241	.02171	.02818	-.01074	.00259	-.00009	5.5761	.00045
#2	-.00300	.02473	.02962	-.01250	.00315	-.00007	5.6102	.00045
#3	-.00109	.03080	.02425	-.00899	.00243	-.00005	5.5814	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00167	.03264	.08383	2.5454	-.00546	2.7564	.00461
Stddev	.00014	.00074	.00270	.03292	.0598	.00308	.0088	.00176
%RSD	49.431	44.399	8.2597	39.271	2.3483	56.422	.31914	38.133
#1	.00043	.00119	.03452	.09305	2.6010	-.00825	2.7543	.00652
#2	.00015	.00252	.03384	.04728	2.4822	-.00215	2.7489	.00428
#3	.00029	.00129	.02955	.11116	2.5529	-.00600	2.7661	.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	2.3388	.00167	.38470	.00303	.00480	.02496	.67178
Stddev	.00057	.0419	.00062	.03245	.00118	.00482	.00333	.04754
%RSD	178.58	1.7917	37.082	8.4364	39.009	100.32	13.329	7.0773
#1	.00060	2.3197	.00230	.40548	.00437	.00209	.02132	.69910
#2	.00069	2.3098	.00106	.40132	.00257	.01037	.02784	.69936
#3	-.00033	2.3868	.00165	.34730	.00215	.00195	.02572	.61688
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606147656 Acquired: 6/30/2016 17:06:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00965	.00953	.01291	-.03002	.00077	1.6496	.00137
Stddev	.00032	.00033	.00213	.00181	.00061	.1500	.00036
%RSD	3.2893	3.4535	16.525	6.0343	78.618	9.0949	26.547
#1	.00996	.00925	.01537	-.03013	.00056	1.7440	.00124
#2	.00966	.00989	.01154	-.03177	.00030	1.7282	.00178
#3	.00932	.00945	.01183	-.02815	.00146	1.4766	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9413.4	58682.	2785.1
Stddev	48.2	263.	8.2
%RSD	.51237	.44761	.29506
#1	9379.7	58558.	2778.9
#2	9391.9	58504.	2794.4
#3	9468.7	58984.	2782.0

Approved: July 01, 2016

Sample Name: L1606147642 Acquired: 6/30/2016 17:10:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00137	.10525	.02711	.00767	.00851	-.00005	3.8338	.00036
Stddev	.00130	.00685	.00178	.00291	.00046	.00006	.0660	.00016
%RSD	95.012	6.5109	6.5555	37.904	5.4546	120.28	1.7226	44.824
#1	.00005	.11304	.02718	.00499	.00898	.00000	3.8949	.00054
#2	-.00251	.10258	.02885	.01076	.00850	-.00012	3.8429	.00026
#3	-.00165	.10014	.02529	.00727	.00806	-.00004	3.7637	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00297	.00201	.03313	.19077	3.3368	.00236	2.4022	.01414
Stddev	.00048	.00012	.00201	.03205	.1289	.00317	.1334	.00089
%RSD	16.161	5.8146	6.0739	16.798	3.8621	134.13	5.5514	6.2899
#1	.00324	.00193	.03359	.16761	3.2148	-.00090	2.4051	.01418
#2	.00326	.00197	.03486	.17735	3.4716	.00543	2.2675	.01323
#3	.00242	.00215	.03092	.22734	3.3241	.00256	2.5342	.01501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	4.2710	.00157	.75361	.01051	.00498	.02828	.58190
Stddev	.00037	.0192	.00064	.06613	.00359	.00089	.00283	.04099
%RSD	96.607	.44933	40.958	8.7755	34.190	17.788	10.006	7.0443
#1	.00029	4.2493	.00190	.79597	.00784	.00396	.02551	.60150
#2	.00080	4.2777	.00197	.78745	.01460	.00560	.02818	.60942
#3	.00007	4.2859	.00083	.67741	.00909	.00537	.03116	.53479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606147642 Acquired: 6/30/2016 17:10:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01179**	**.01210**	**.01451**	**-.03013**	**.00109**	**1.3936**	**.00078**
Stddev	.00113	.00010	.00117	.00525	.00034	.1241	.00032
%RSD	9.6095	.85623	8.0561	17.436	30.959	8.9033	41.134
#1	.01222	.01200	.01404	-.03189	.00077	1.4640	.00058
#2	.01265	.01221	.01365	-.03427	.00145	1.4664	.00061
#3	.01051	.01208	.01584	-.02422	.00107	1.2503	.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9475.0**	**57518.**	**2703.1**
Stddev	50.7	237.	24.4
%RSD	.53559	.41200	.90109
#1	9465.3	57598.	2675.0
#2	9429.8	57704.	2716.0
#3	9529.9	57251.	2718.4

Approved: July 01, 2016

Sample Name: L1606147642PS Acquired: 6/30/2016 17:14:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574668-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.17933**	**4.3132**	**.23260**	**.84659**	**.48051**	**.02491**	**7.9187**	**.02308**
Stddev	.00246	.0817	.00630	.01309	.00268	.00050	.0270	.00021
%RSD	1.3703	1.8930	2.7076	1.5457	.55695	1.9951	.34035	.92831
#1	.17686	4.2389	.23813	.83376	.48230	.02442	7.9497	.02307
#2	.17936	4.3000	.23391	.84609	.48179	.02490	7.9046	.02330
#3	.18177	4.4006	.22574	.85992	.47743	.02542	7.9016	.02287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10131**	**.25085**	**.26804**	**2.0322**	**26.136**	**.47663**	**6.8371**	**.24733**
Stddev	.00195	.00335	.00645	.0075	.221	.00216	.0329	.00301
%RSD	1.9240	1.3343	2.4081	.37106	.84441	.45350	.48074	1.2184
#1	.10265	.24701	.27203	2.0239	26.324	.47507	6.8332	.24385
#2	.10222	.25315	.27150	2.0339	26.192	.47910	6.8717	.24912
#3	.09908	.25239	.26059	2.0387	25.893	.47572	6.8063	.24902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51011**	**26.207**	**.24062**	**5.3789**	**.24088**	**.54256**	**.25755**	**2.8405**
Stddev	.01050	.067	.00601	.0881	.00464	.01805	.00922	.0325
%RSD	2.0579	.25503	2.4974	1.6372	1.9281	3.3269	3.5789	1.1430
#1	.51632	26.267	.24289	5.4363	.24607	.55596	.26714	2.8643
#2	.51602	26.218	.24516	5.4229	.23943	.54968	.24875	2.8536
#3	.49799	26.135	.23380	5.2775	.23712	.52203	.25675	2.8035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606147642PS Acquired: 6/30/2016 17:14:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574668-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48976**	**.49275**	**.48165**	**.19836**	**.50439**	**1.8118**	**.00132**
Stddev	.01007	.00245	.00444	.00480	.00982	.0347	.00032
%RSD	2.0551	.49817	.92253	2.4197	1.9473	1.9126	24.246
#1	.49590	.49175	.48434	.19622	.49638	1.8351	.00100
#2	.49523	.49555	.48409	.20385	.50143	1.8285	.00132
#3	.47814	.49096	.47652	.19499	.51535	1.7720	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9091.5**	**56567.**	**2779.3**
Stddev	61.1	812.	19.2
%RSD	.67239	1.4356	.69021
#1	9040.8	57339.	2757.9
#2	9074.3	56643.	2785.2
#3	9159.3	55720.	2794.9

Approved: July 01, 2016

Sample Name: L1606147642SDL Acquired: 6/30/2016 17:18:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574668-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.01148	.00271	.00558	.00118	.00001	.73661	.00007
Stddev	.00077	.00528	.00411	.00218	.00084	.00002	.05335	.00019
%RSD	377.93	46.000	151.46	39.013	70.796	123.70	7.2426	280.78
#1	-.00068	.00676	.00728	.00326	.00214	.00002	.73199	-.00015
#2	.00051	.01719	.00154	.00590	.00079	-.00001	.79212	.00015
#3	.00078	.01050	-.00068	.00759	.00061	.00003	.68572	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00052	.00565	.01544	.78444	-.00167	.44279	.00464
Stddev	.00011	.00087	.00191	.01281	.07875	.00493	.07736	.00197
%RSD	21.021	166.17	33.830	82.953	10.039	294.93	17.470	42.467
#1	.00046	.00092	.00782	.02814	.85901	-.00714	.47573	.00480
#2	.00064	.00111	.00492	.01567	.79223	-.00031	.49822	.00653
#3	.00045	-.00047	.00421	.00252	.70209	.00243	.35442	.00260
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.86188	-.00027	.14710	.00269	.00045	.01213	.12134
Stddev	.00024	.03869	.00032	.01843	.00182	.00359	.00727	.01444
%RSD	2058.1	4.4895	118.49	12.529	67.795	796.70	59.943	11.902
#1	-.00027	.87206	-.00002	.16164	.00206	-.00306	.00999	.13217
#2	.00005	.89447	-.00063	.15330	.00126	.00413	.02024	.12690
#3	.00019	.81912	-.00017	.12637	.00474	.00029	.00618	.10495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606147642SDL Acquired: 6/30/2016 17:18:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574668-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00165**	**.00260**	**.00727**	**-.00541**	**.00016**	**.28436**	**.00035**
Stddev	.00097	.00025	.00245	.00407	.00115	.03494	.00051
%RSD	59.024	9.4669	33.668	75.252	737.95	12.288	145.31
#1	.00154	.00244	.00804	-.00876	.00144	.30686	.00070
#2	.00267	.00289	.00453	-.00658	-.00018	.30213	-.00024
#3	.00074	.00249	.00925	-.00088	-.00079	.24411	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9967.9**	**60793.**	**2719.5**
Stddev	34.3	234.	9.7
%RSD	.34433	.38443	.35586
#1	9947.7	60597.	2709.5
#2	9948.5	60730.	2720.3
#3	10008.	61052.	2728.8

Approved: July 01, 2016

Sample Name: L1606147642SDL Acquired: 6/30/2016 17:22:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574668-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00211**	**-.00581**	**-.00253**	**-.00015**	**.00046**	**.00002**	**.12491**	**.00027**
Stddev	.00173	.00943	.00250	.00356	.00032	.00007	.03067	.00010
%RSD	81.840	162.22	98.898	2328.8	70.208	295.72	24.558	36.889
#1	-.00142	-.01664	-.00101	-.00177	.00040	-.00006	.11410	.00020
#2	-.00408	.00061	-.00116	-.00261	.00018	.00008	.10110	.00038
#3	-.00083	-.00141	-.00541	.00392	.00081	.00005	.15952	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00058**	**.00036**	**.00030**	**.00936**	**.09022**	**-.00184**	**.12697**	**.00228**
Stddev	.00012	.00054	.00100	.02332	.10659	.00196	.09330	.00026
%RSD	20.976	149.81	338.71	249.23	118.15	106.50	73.488	11.418
#1	.00072	.00093	.00087	.01728	.05050	.00011	.01948	.00231
#2	.00053	.00031	.00089	-.01689	.21097	-.00382	.17435	.00253
#3	.00050	-.00015	-.00086	.02768	.00919	-.00182	.18707	.00201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.17716**	**-.00091**	**.02663**	**-.00067**	**.00146**	**.00210**	**.02360**
Stddev	.00012	.02294	.00073	.00799	.00406	.00203	.00421	.00232
%RSD	167.48	12.948	80.581	30.028	603.68	139.26	200.47	9.8313
#1	-.00018	.15084	-.00146	.02395	-.00532	.00255	.00534	.02603
#2	-.00009	.19291	-.00119	.03561	.00212	-.00088	-.00266	.02335
#3	.00005	.18774	-.00008	.02031	.00119	.00270	.00362	.02141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606147642SDL Acquired: 6/30/2016 17:22:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574668-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00087**	**.00346**	**-.00239**	**.00014**	**.05998**	**.00011**
Stddev	.00010	.00015	.00343	.00385	.00070	.00485	.00019
%RSD	23.404	17.562	99.081	160.77	487.65	8.0834	176.41
#1	-.00046	.00104	.00123	.00204	.00067	.06284	.00002
#2	-.00034	.00085	.00174	-.00484	-.00065	.06272	-.00002
#3	-.00055	.00073	.00741	-.00439	.00041	.05438	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9878.1**	**59985.**	**2672.7**
Stddev	9.2	103.	20.5
%RSD	.09268	.17234	.76670
#1	9867.5	59939.	2685.9
#2	9884.3	59913.	2649.1
#3	9882.4	60104.	2683.1

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 17:26:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37379	9.3240	.36598	.45191	.91323	.04659	9.0822	.04593
Stddev	.00214	.0078	.00624	.00375	.00228	.00009	.0471	.00083
%RSD	.57333	.08393	1.7045	.83068	.24927	.18882	.51826	1.8045
#1	.37449	9.3283	.36799	.45544	.91512	.04659	9.1296	.04662
#2	.37550	9.3149	.37096	.45233	.91387	.04668	9.0354	.04615
#3	.37139	9.3286	.35898	.44796	.91071	.04650	9.0816	.04501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18589	.47067	.46089	3.6404	46.958	.91542	9.4510	.45853
Stddev	.00485	.00268	.01133	.0312	.129	.00343	.0821	.00215
%RSD	2.6072	.56930	2.4576	.85607	.27368	.37482	.86824	.46825
#1	.18840	.46936	.46817	3.6513	46.827	.91905	9.5294	.45972
#2	.18895	.47375	.46667	3.6646	46.965	.91223	9.3657	.45606
#3	.18030	.46890	.44784	3.6052	47.083	.91497	9.4579	.45983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.92130	45.291	.45492	9.0079	.46008	1.0889	.36443	4.5353
Stddev	.02405	.139	.01181	.1631	.00373	.0226	.00177	.0701
%RSD	2.6100	.30690	2.5965	1.8110	.81149	2.0776	.48681	1.5455
#1	.93626	45.424	.46055	9.0974	.46366	1.1025	.36639	4.5711
#2	.93407	45.301	.46287	9.1066	.46036	1.1014	.36397	4.5803
#3	.89356	45.147	.44135	8.8196	.45621	1.0628	.36294	4.4546
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 17:26:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.92754	.91355	.92342	.47305	.94276	.90281	.94350
Stddev	.02944	.00470	.00076	.00426	.00231	.02079	.00458
%RSD	3.1741	.51428	.08181	.90144	.24543	2.3023	.48496
#1	.94287	.91895	.92384	.46930	.94013	.91494	.93984
#2	.94616	.91124	.92255	.47769	.94365	.91469	.94203
#3	.89360	.91045	.92387	.47215	.94449	.87881	.94863
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9707.1	58371.	2677.1
Stddev	12.0	129.	12.0
%RSD	.12330	.22054	.44642
#1	9709.1	58405.	2685.7
#2	9718.0	58228.	2682.3
#3	9694.3	58479.	2663.5

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 17:29:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.01169	-.00349	.00153	.00021	.00004	-.01275	.00010
Stddev	.00206	.00211	.00436	.00317	.00100	.00003	.01847	.00019
%RSD	1726.2	18.022	125.03	207.01	473.06	77.252	144.88	177.99
#1	-.00156	-.01400	-.00158	.00516	.00112	.00006	-.01341	-.00001
#2	-.00051	-.01118	-.00847	-.00066	.00038	.00005	.00605	.00032
#3	.00243	-.00988	-.00041	.00008	-.00086	.00000	-.03087	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00021	-.00073	-.01325	.01884	-.00128	.00833	-.00008
Stddev	.00022	.00141	.00112	.04267	.04750	.00618	.03383	.00068
%RSD	47.652	688.35	152.96	322.00	252.14	484.10	406.10	903.26
#1	.00050	.00133	-.00185	-.06036	.07084	-.00830	-.02320	.00070
#2	.00023	.00067	-.00073	.02280	.00793	.00117	.04406	-.00033
#3	.00067	-.00138	.00039	-.00219	-.02226	.00330	.00413	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.06276	-.00119	-.00057	.00052	-.00008	.00118	.00425
Stddev	.00022	.04430	.00026	.00433	.00376	.00360	.00210	.00250
%RSD	123.05	70.578	22.097	764.40	719.68	4309.2	178.35	58.857
#1	.00003	.10932	-.00089	.00009	.00445	.00166	.00215	.00713
#2	.00043	.05782	-.00138	-.00518	-.00305	.00231	.00261	.00303
#3	.00007	.02114	-.00129	.00340	.00017	-.00422	-.00123	.00260
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 17:29:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00001**	**.00630**	**-.00137**	**.00044**	**.00027**	**.00047**
Stddev	.00043	.00001	.00321	.00130	.00021	.00005	.00015
%RSD	144.75	84.841	50.858	95.504	46.764	16.981	31.543
#1	-.00015	-.00002	.00633	-.00199	.00067	.00028	.00030
#2	.00071	-.00001	.00950	-.00224	.00030	.00022	.00057
#3	.00033	-.00000	.00309	.00013	.00034	.00032	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9814.0**	**59681.**	**2718.0**
Stddev	14.3	119.	8.4
%RSD	.14536	.20019	.31088
#1	9807.5	59669.	2710.5
#2	9830.4	59806.	2716.5
#3	9804.2	59568.	2727.1

Approved: July 01, 2016

Sample Name: PBW 76 Acquired: 6/30/2016 17:33:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00556**	**-.00198**	**.00276**	**-.00150**	**-.00004**	**-.04662**	**.00032**
Stddev	.00058	.00154	.00297	.00145	.00039	.00004	.01019	.00019
%RSD	494.86	27.753	149.82	52.604	25.961	117.03	21.858	61.694
#1	.00010	-.00709	-.00516	.00428	-.00185	-.00004	-.05810	.00011
#2	.00071	-.00400	.00072	.00261	-.00157	-.00007	-.03862	.00049
#3	-.00045	-.00559	-.00150	.00139	-.00108	.00001	-.04315	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.00059**	**-.00043**	**.00498**	**.04378**	**-.00296**	**.02568**	**.00122**
Stddev	.00008	.00018	.00053	.02233	.05656	.00044	.05071	.00145
%RSD	33.114	30.117	123.71	447.99	129.18	14.876	197.43	118.82
#1	.00021	.00040	-.00101	.01812	-.01095	-.00281	.04171	.00171
#2	.00017	.00061	-.00027	-.02080	.04028	-.00345	-.03110	-.00041
#3	.00031	.00075	.00001	.01763	.10201	-.00261	.06645	.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.03034**	**-.00015**	**.00067**	**-.00333**	**.00066**	**.00203**	**.01484**
Stddev	.00013	.03201	.00097	.00487	.00277	.00595	.00485	.00329
%RSD	173.99	105.50	634.03	725.06	83.182	903.01	238.83	22.193
#1	.00001	-.00525	-.00038	.00293	-.00064	-.00322	-.00331	.01812
#2	.00023	.05678	-.00098	-.00492	-.00318	.00751	.00324	.01486
#3	-.00001	.03951	.00091	.00400	-.00617	-.00231	.00616	.01154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: PBW 76 Acquired: 6/30/2016 17:33:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.00021**	**.00986**	**-.00247**	**.00028**	**.00084**	**.00051**
Stddev	.00021	.00006	.00267	.00259	.00039	.00018	.00017
%RSD	102.07	26.298	27.025	104.75	137.49	21.840	33.533
#1	.00003	.00017	.01287	.00052	.00018	.00105	.00041
#2	-.00029	.00028	.00780	-.00397	.00072	.00073	.00042
#3	-.00036	.00019	.00891	-.00397	-.00004	.00074	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9609.8**	**59048.**	**2676.8**
Stddev	13.6	134.	3.9
%RSD	.14131	.22684	.14473
#1	9623.5	59097.	2681.0
#2	9596.3	58896.	2673.4
#3	9609.6	59150.	2676.0

Approved: July 01, 2016

Sample Name: LCSW 76 Acquired: 6/30/2016 17:37:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18938**	**4.7480**	**.18377**	**.91162**	**.47052**	**.02344**	**4.7536**	**.02352**
Stddev	.00136	.0050	.00560	.00178	.00387	.00012	.0521	.00096
%RSD	.71940	.10622	3.0498	.19535	.82148	.49560	1.0968	4.0716
#1	.19093	4.7538	.18224	.90998	.47299	.02356	4.8044	.02439
#2	.18841	4.7454	.18998	.91135	.46606	.02333	4.7002	.02367
#3	.18878	4.7448	.17908	.91351	.47249	.02344	4.7560	.02250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09637**	**.24250**	**.23781**	**1.8588**	**24.124**	**.48091**	**4.8490**	**.23448**
Stddev	.00293	.00194	.00662	.0220	.141	.00254	.0807	.00228
%RSD	3.0449	.79999	2.7817	1.1854	.58629	.52762	1.6646	.97361
#1	.09783	.24121	.23926	1.8334	23.994	.48018	4.8931	.23626
#2	.09829	.24474	.24357	1.8694	24.103	.47882	4.7559	.23191
#3	.09299	.24157	.23058	1.8735	24.275	.48373	4.8981	.23529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47733**	**23.414**	**.23502**	**4.5158**	**.23659**	**.55305**	**.17713**	**2.2423**
Stddev	.01346	.127	.00845	.1066	.00792	.01680	.00960	.0456
%RSD	2.8208	.54217	3.5969	2.3597	3.3470	3.0368	5.4182	2.0312
#1	.48406	23.482	.23967	4.5768	.23958	.56435	.18484	2.2645
#2	.48611	23.268	.24012	4.5777	.24258	.56105	.18016	2.2725
#3	.46183	23.493	.22526	4.3927	.22761	.53375	.16638	2.1899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LCSW 76 Acquired: 6/30/2016 17:37:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47749**	**.47838**	**.47351**	**.24281**	**.48685**	**.46333**	**.00108**
Stddev	.01636	.00222	.00511	.00296	.00165	.01517	.00024
%RSD	3.4271	.46473	1.0795	1.2181	.33885	3.2737	22.258
#1	.48519	.47899	.47174	.24518	.48536	.47483	.00080
#2	.48858	.47592	.46952	.24376	.48656	.46902	.00123
#3	.45869	.48024	.47928	.23950	.48862	.44614	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9513.3**	**57619.**	**2650.5**
Stddev	11.7	129.	9.3
%RSD	.12262	.22378	.34948
#1	9510.5	57526.	2641.6
#2	9503.3	57565.	2660.1
#3	9526.1	57767.	2649.9

Approved: July 01, 2016

Sample Name: L1606145201 Acquired: 6/30/2016 17:41:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00090	.05699	.00253	.05053	.54161	.00002	33.238	.00037
Stddev	.00052	.01069	.00056	.00032	.00142	.00007	.108	.00007
%RSD	58.078	18.754	22.005	.63387	.26133	276.32	.32504	18.990
#1	-.00035	.05219	.00252	.05054	.54135	.00010	33.137	.00029
#2	-.00138	.04955	.00309	.05020	.54035	-.00002	33.225	.00039
#3	-.00096	.06924	.00198	.05084	.54314	-.00001	33.352	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00749	.00633	.00098	2.4547	65.629	.13804	24.719	.68796
Stddev	.00026	.00102	.00095	.0307	.151	.00276	.126	.00624
%RSD	3.4225	16.162	97.017	1.2510	.22999	1.9980	.50817	.90713
#1	.00771	.00607	.00025	2.4635	65.802	.13519	24.710	.68264
#2	.00756	.00746	.00205	2.4206	65.558	.14069	24.598	.68640
#3	.00721	.00546	.00063	2.4801	65.526	.13823	24.848	.69483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	173.49	.00356	.00270	.00289	.00493	-.00740	8.8349
Stddev	.00016	.35	.00019	.00185	.00116	.00164	.00178	.4730
%RSD	67.120	.20205	5.3314	68.572	39.928	33.202	24.021	5.3535
#1	.00033	173.83	.00343	.00374	.00164	.00368	-.00679	9.0700
#2	.00032	173.13	.00378	.00380	.00391	.00678	-.00940	9.1442
#3	.00005	173.51	.00347	.00056	.00314	.00432	-.00601	8.2904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606145201 Acquired: 6/30/2016 17:41:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.87304**	**.00301**	**-.00233**	**.00030**	**.01611**	**.00070**
Stddev	.00105	.00131	.00261	.00142	.00058	.00103	.00051
%RSD	1039.8	.14963	86.556	60.994	194.18	6.4152	72.887
#1	-.00100	.87454	.00016	-.00349	-.00036	.01667	.00124
#2	.00105	.87229	.00527	-.00074	.00073	.01674	.00066
#3	-.00034	.87227	.00361	-.00275	.00052	.01491	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9301.5**	**55838.**	**2620.1**
Stddev	57.8	131.	9.1
%RSD	.62148	.23421	.34860
#1	9314.0	55961.	2612.4
#2	9238.5	55701.	2630.2
#3	9352.1	55852.	2617.8

Approved: July 01, 2016

Sample Name: L1606145301 Acquired: 6/30/2016 17:45:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00118	.00561	.00368	.01236	2.1197	.00021	62.883	.00044
Stddev	.00062	.00444	.00294	.00256	.0070	.00004	.285	.00006
%RSD	52.566	79.046	79.854	20.693	.32935	20.964	.45337	13.366
#1	-.00186	.00754	.00458	.01519	2.1260	.00018	63.180	.00037
#2	-.00104	.00054	.00040	.01021	2.1209	.00018	62.859	.00048
#3	-.00065	.00876	.00607	.01168	2.1122	.00026	62.611	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04182	.01142	.00073	5.7506	2.7421	.03915	45.929	1.5726
Stddev	.00313	.00097	.00162	.0301	.0766	.00209	.251	.0059
%RSD	7.4890	8.4602	221.04	.52384	2.7936	5.3361	.54738	.37377
#1	.04375	.01032	.00169	5.7635	2.6622	.04155	45.999	1.5765
#2	.04351	.01213	.00165	5.7162	2.8149	.03777	46.138	1.5754
#3	.03821	.01180	-.00114	5.7721	2.7493	.03812	45.650	1.5658
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	176.27	.02835	.02582	-.00081	.00122	.00056	23.977
Stddev	.00011	.68	.00220	.00910	.00285	.00577	.00708	1.386
%RSD	87.179	.38555	7.7676	35.235	351.90	472.89	1268.3	5.7816
#1	.00025	176.89	.03066	.03580	-.00235	.00446	-.00348	24.793
#2	.00003	176.39	.02812	.01799	-.00255	.00464	.00873	24.763
#3	.00011	175.54	.02628	.02367	.00247	-.00544	-.00358	22.377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606145301 Acquired: 6/30/2016 17:45:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	1.2897	-.00168	-.00535	.00112	.08235	.00011
Stddev	.00027	.0046	.00732	.00324	.00022	.00649	.00031
%RSD	119.32	.36066	434.54	60.467	19.865	7.8782	273.65
#1	.00054	1.2938	.00260	-.00591	.00136	.08611	-.00023
#2	.00000	1.2908	.00248	-.00827	.00107	.08609	.00019
#3	.00015	1.2846	-.01013	-.00187	.00092	.07486	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9174.5	55276.	2573.2
Stddev	14.7	164.	8.2
%RSD	.15972	.29606	.31954
#1	9172.1	55090.	2564.0
#2	9161.1	55400.	2575.8
#3	9190.1	55336.	2579.9

Approved: July 01, 2016

Sample Name: L1606145303 Acquired: 6/30/2016 17:49:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.00548	.03491	.00778	.01717	.72545	.00010	22.398
Stddev	.00110	.00407	.00296	.00257	.00628	.00014	.155
%RSD	20.151	11.643	37.982	14.970	.86569	145.84	.69323
#1	-.00658	.03204	.00609	.01619	.72586	.00014	22.396
#2	-.00437	.03957	.01119	.01523	.73152	-.00006	22.555
#3	-.00548	.03314	.00606	.02008	.71898	.00021	22.244
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	9.0000						
Low Limit	-.00400						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00129	.00039	.00126	39.510	3.9877	.03266
Stddev	.00004	.00024	.00099	.00706	.306	.1105	.00114
%RSD	20.390	18.671	257.60	559.26	.77377	2.7702	3.5002
#1	.00023	.00148	.00137	.00579	39.558	3.9460	.03395
#2	.00022	.00102	-.00062	.00487	39.789	4.1130	.03177
#3	.00015	.00136	.00040	-.00688	39.183	3.9042	.03225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.042	.45838	-.00021	75.857	.00187	.16486	.00183
Stddev	.300	.00614	.00032	.719	.00074	.01544	.00269
%RSD	1.8703	1.3393	151.32	.94803	39.666	9.3680	146.82
#1	16.205	.45448	-.00046	75.779	.00127	.17660	-.00104
#2	16.225	.46546	-.00033	76.612	.00270	.17061	.00429
#3	15.695	.45521	.00015	75.180	.00164	.14736	.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: L1606145303 Acquired: 6/30/2016 17:49:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00373**	**-.00422**	**14.047**	**-.00015**	**.52315**	**.02021**	**-.00310**
Stddev	.00621	.00350	.839	.00039	.00553	.00490	.00080
%RSD	166.37	82.973	5.9737	267.34	1.0572	24.232	25.793
#1	.01089	-.00661	14.542	-.00010	.52114	.01463	-.00311
#2	.00055	-.00020	14.520	.00022	.52940	.02225	-.00389
#3	-.00024	-.00584	13.078	-.00056	.51890	.02376	-.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00010**	**.00663**	**-.00123**
Stddev	.00032	.00046	.00021
%RSD	318.68	6.9483	17.240
#1	.00046	.00672	-.00147
#2	.00000	.00703	-.00112
#3	-.00016	.00613	-.00109
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9401.2**	**56714.**	**2605.3**
Stddev	21.2	158.	17.3
%RSD	.22499	.27863	.66210
#1	9377.4	56733.	2604.4
#2	9417.7	56547.	2588.6
#3	9408.6	56861.	2623.0

Approved: July 01, 2016

Sample Name: L1606145501 Acquired: 6/30/2016 17:52:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00282**	**.21736**	**-.00226**	**.01260**	**.01874**	**.00002**	**41.381**	**.00278**
Stddev	.00123	.00598	.00262	.00172	.00217	.00004	.271	.00035
%RSD	43.797	2.7526	116.21	13.644	11.594	202.69	.65600	12.421
#1	-.00141	.22193	-.00525	.01341	.01725	.00002	41.465	.00296
#2	-.00332	.21957	-.00112	.01062	.02123	-.00002	41.600	.00299
#3	-.00372	.21059	-.00039	.01376	.01774	.00006	41.077	.00238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00051**	**.00080**	**.00867**	**.25453**	**3.1341**	**.00197**	**5.2516**	**.01425**
Stddev	.00015	.00091	.00129	.04532	.0183	.00562	.0550	.00143
%RSD	29.355	114.15	14.822	17.807	.58315	285.84	1.0469	10.043
#1	.00047	.00005	.00846	.30683	3.1298	.00375	5.3151	.01572
#2	.00067	.00053	.01005	.22658	3.1542	.00648	5.2188	.01417
#3	.00038	.00181	.00751	.23019	3.1184	-.00433	5.2210	.01286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00070**	**.82414**	**.00469**	**.08251**	**.00108**	**.00385**	**.00215**	**2.3946**
Stddev	.00031	.03204	.00103	.00847	.00264	.00323	.00202	.1940
%RSD	44.050	3.8880	22.038	10.270	245.10	83.871	93.928	8.1016
#1	.00079	.86099	.00475	.08783	-.00090	.00076	.00110	2.5318
#2	.00095	.80859	.00569	.08696	.00005	.00359	.00087	2.4793
#3	.00035	.80283	.00363	.07274	.00407	.00720	.00447	2.1726
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606145501 Acquired: 6/30/2016 17:52:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00081**	**.08617**	**.00783**	**-.00280**	**.00059**	**.28951**	**.00095**
Stddev	.00026	.00070	.00127	.00278	.00104	.02495	.00062
%RSD	32.042	.81443	16.284	99.307	176.21	8.6168	65.229
#1	-.00109	.08600	.00644	-.00020	.00172	.30460	.00045
#2	-.00058	.08694	.00811	-.00573	.00041	.30322	.00076
#3	-.00076	.08557	.00894	-.00247	-.00035	.26071	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9512.0**	**57840.**	**2621.0**
Stddev	14.2	196.	16.7
%RSD	.14930	.33963	.63859
#1	9496.5	57971.	2611.9
#2	9515.0	57934.	2610.8
#3	9524.4	57614.	2640.3

Approved: July 01, 2016

Sample Name: L1606145502 Acquired: 6/30/2016 17:56:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	.32894	-.00179	.01410	.01795	.00004	36.890	.00054
Stddev	.00128	.00649	.00267	.00168	.00122	.00008	.216	.00007
%RSD	204.19	1.9731	148.58	11.945	6.8135	188.76	.58557	13.418
#1	-.00121	.33396	-.00450	.01482	.01934	.00013	36.883	.00058
#2	.00084	.33124	.00082	.01531	.01702	.00002	37.110	.00059
#3	-.00151	.32161	-.00170	.01218	.01750	-.00002	36.678	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00133	.01164	.52857	3.5247	.00291	5.8514	.01428
Stddev	.00024	.00102	.00073	.05343	.1718	.00302	.0401	.00261
%RSD	31.589	76.967	6.2965	10.108	4.8731	103.77	.68598	18.306
#1	.00061	.00139	.01224	.48968	3.6743	-.00021	5.8120	.01451
#2	.00105	.00232	.01185	.58949	3.3371	.00313	5.8501	.01678
#3	.00064	.00028	.01082	.50655	3.5626	.00581	5.8922	.01156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	.95984	.00376	.11198	.00066	.00313	.00477	2.8042
Stddev	.00021	.04744	.00036	.01081	.00235	.00217	.00369	.1915
%RSD	14.747	4.9421	9.6509	9.6511	353.47	69.486	77.451	6.8277
#1	.00153	.93016	.00381	.11811	.00337	.00272	.00068	2.9135
#2	.00119	.93480	.00337	.11832	-.00078	.00119	.00575	2.9160
#3	.00158	1.0145	.00410	.09950	-.00060	.00548	.00787	2.5831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606145502 Acquired: 6/30/2016 17:56:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**.08248**	**.01219**	**-.00198**	**.00127**	**.30399**	**.00028**
Stddev	.00070	.00038	.00253	.00118	.00008	.02015	.00032
%RSD	124.93	.45971	20.743	59.883	6.0114	6.6281	111.74
#1	.00019	.08280	.00977	-.00282	.00120	.31595	.00008
#2	-.00120	.08258	.01199	-.00062	.00126	.31530	.00065
#3	-.00067	.08206	.01481	-.00248	.00136	.28073	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9528.4**	**57847.**	**2640.7**
Stddev	4.7	59.	18.9
%RSD	.04884	.10124	.71498
#1	9533.2	57849.	2627.7
#2	9528.2	57905.	2632.0
#3	9523.9	57788.	2662.4

Approved: July 01, 2016

Sample Name: L1606145503S Acquired: 6/30/2016 18:00:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18556**	**5.0410**	**.18044**	**.90274**	**.47925**	**.02317**	**40.391**	**.02327**
Stddev	.00318	.0123	.00740	.00412	.00199	.00011	.190	.00052
%RSD	1.7155	.24374	4.1020	.45644	.41465	.48529	.47082	2.2372
#1	.18493	5.0481	.18723	.90573	.48089	.02328	40.500	.02338
#2	.18273	5.0480	.18156	.89804	.47981	.02318	40.502	.02373
#3	.18901	5.0268	.17255	.90445	.47704	.02306	40.171	.02270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09419**	**.23876**	**.24153**	**2.2713**	**27.489**	**.47632**	**10.518**	**.24450**
Stddev	.00255	.00039	.00716	.0485	.126	.00472	.163	.00146
%RSD	2.7055	.16246	2.9650	2.1331	.45921	.99195	1.5503	.59901
#1	.09610	.23832	.24603	2.3226	27.383	.47151	10.524	.24281
#2	.09516	.23904	.24529	2.2651	27.629	.47649	10.351	.24542
#3	.09130	.23892	.23327	2.2263	27.456	.48095	10.677	.24527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47009**	**24.035**	**.23319**	**4.5902**	**.22904**	**.54548**	**.17646**	**5.0963**
Stddev	.01298	.132	.00666	.0938	.00274	.01589	.00381	.1114
%RSD	2.7606	.55032	2.8544	2.0428	1.1970	2.9137	2.1618	2.1865
#1	.47859	23.994	.23621	4.6513	.23088	.56030	.17880	5.1486
#2	.47653	24.184	.23781	4.6370	.23036	.54745	.17853	5.1720
#3	.45515	23.929	.22556	4.4822	.22589	.52869	.17206	4.9684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606145503S Acquired: 6/30/2016 18:00:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.46796**	**.55066**	**.47408**	**.23529**	**.47797**	**.74398**	**.00127**
Stddev	.01449	.00072	.00517	.00312	.00131	.01911	.00057
%RSD	3.0963	.13147	1.0897	1.3260	.27449	2.5685	44.764
#1	.47807	.55139	.47107	.23297	.47799	.75667	.00066
#2	.47446	.55065	.48005	.23884	.47665	.75327	.00179
#3	.45136	.54995	.47113	.23405	.47927	.72201	.00138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9414.8**	**56970.**	**2618.1**
Stddev	15.9	144.	22.5
%RSD	.16933	.25235	.85992
#1	9407.9	56815.	2594.2
#2	9433.0	56994.	2621.0
#3	9403.5	57100.	2639.0

Approved: July 01, 2016

Sample Name: L1606145504SD Acquired: 6/30/2016 18:04:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19310**	**5.3714**	**.18751**	**.93355**	**.49745**	**.02400**	**41.601**	**.02405**
Stddev	.00338	.0111	.00271	.00212	.00073	.00017	.072	.00056
%RSD	1.7500	.20670	1.4427	.22755	.14720	.70655	.17267	2.3246
#1	.19560	5.3757	.18995	.93232	.49816	.02398	41.634	.02432
#2	.19445	5.3796	.18796	.93232	.49669	.02418	41.519	.02443
#3	.18926	5.3587	.18460	.93600	.49749	.02385	41.651	.02341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09756**	**.24719**	**.25038**	**2.4552**	**28.214**	**.49449**	**10.908**	**.25608**
Stddev	.00307	.00128	.00521	.0185	.078	.00448	.137	.00220
%RSD	3.1450	.51896	2.0799	.75329	.27754	.90680	1.2556	.86097
#1	.09964	.24867	.25381	2.4746	28.293	.49965	11.051	.25481
#2	.09900	.24657	.25294	2.4378	28.212	.49153	10.777	.25863
#3	.09404	.24634	.24439	2.4532	28.136	.49228	10.897	.25481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48597**	**24.818**	**.23976**	**4.7527**	**.23917**	**.56426**	**.18308**	**5.4535**
Stddev	.01227	.094	.00663	.0831	.00423	.01482	.00241	.1162
%RSD	2.5240	.38048	2.7659	1.7492	1.7687	2.6259	1.3171	2.1299
#1	.49281	24.872	.24415	4.7840	.23720	.57746	.18057	5.5208
#2	.49329	24.873	.24301	4.8157	.24403	.56709	.18329	5.5203
#3	.47181	24.709	.23213	4.6585	.23628	.54823	.18538	5.3193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606145504SD Acquired: 6/30/2016 18:04:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48448**	**.56991**	**.48728**	**.24314**	**.49496**	**.76857**	**.00110**
Stddev	.01265	.00039	.00650	.00228	.00154	.01891	.00039
%RSD	2.6106	.06833	1.3337	.93731	.31047	2.4602	35.526
#1	.49241	.56951	.48468	.24408	.49575	.77976	.00075
#2	.49113	.57028	.48249	.24480	.49319	.77921	.00152
#3	.46989	.56993	.49468	.24054	.49594	.74674	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9416.3**	**56962.**	**2600.6**
Stddev	29.4	188.	18.2
%RSD	.31267	.33038	.69932
#1	9447.8	56826.	2580.7
#2	9411.8	56882.	2616.4
#3	9389.5	57176.	2604.6

Approved: July 01, 2016

Sample Name: L1606145505 Acquired: 6/30/2016 18:08:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00248**	**.19496**	**-.00401**	**.02037**	**.01718**	**.00001**	**33.328**	**.00097**
Stddev	.00088	.01021	.00178	.00185	.00051	.00001	.271	.00015
%RSD	35.337	5.2379	44.383	9.1039	2.9426	80.320	.81393	15.528
#1	-.00163	.18848	-.00222	.01985	.01756	.00001	33.623	.00099
#2	-.00338	.20673	-.00578	.01883	.01737	.00001	33.273	.00081
#3	-.00242	.18967	-.00403	.02243	.01661	.00003	33.089	.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00036**	**.00043**	**.02295**	**.23706**	**3.7131**	**.00165**	**3.8675**	**.00727**
Stddev	.00034	.00009	.00228	.02449	.1323	.00195	.0726	.00091
%RSD	96.701	20.807	9.9299	10.329	3.5637	118.54	1.8780	12.545
#1	.00030	.00042	.02448	.22566	3.8403	.00038	3.9331	.00680
#2	.00004	.00035	.02404	.26516	3.5762	.00066	3.8799	.00832
#3	.00073	.00052	.02033	.22035	3.7230	.00389	3.7895	.00669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00153**	**.89125**	**.01136**	**.11133**	**.00137**	**.00310**	**.00199**	**3.0229**
Stddev	.00024	.03718	.00220	.00668	.00096	.00343	.00319	.2645
%RSD	15.771	4.1720	19.389	5.9983	69.947	110.67	160.53	8.7481
#1	.00164	.88307	.01211	.11780	.00031	-.00036	.00470	3.2076
#2	.00170	.93183	.01310	.11174	.00217	.00650	-.00152	3.1412
#3	.00125	.85883	.00888	.10446	.00162	.00316	.00277	2.7200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606145505 Acquired: 6/30/2016 18:08:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.08728**	**.00883**	**-.00169**	**.00124**	**1.1754**	**.00075**
Stddev	.00068	.00047	.00800	.00109	.00024	.1124	.00066
%RSD	153.29	.53469	90.576	64.439	19.630	9.5638	87.132
#1	-.00109	.08763	.01115	-.00293	.00121	1.2455	.00078
#2	.00027	.08746	.01541	-.00086	.00150	1.2350	.00008
#3	-.00052	.08675	-.00007	-.00129	.00102	1.0458	.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9476.8**	**57883.**	**2627.2**
Stddev	14.5	172.	28.0
%RSD	.15345	.29689	1.0647
#1	9463.1	57837.	2596.4
#2	9492.1	58073.	2634.1
#3	9475.1	57739.	2651.1

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 18:11:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37902**	**9.4416**	**.36890**	**.45937**	**.93295**	**.04713**	**9.2594**	**.04626**
Stddev	.00195	.0037	.00869	.00364	.00366	.00005	.0663	.00119
%RSD	.51446	.03878	2.3549	.79291	.39231	.10186	.71582	2.5775
#1	.37957	9.4452	.37529	.45532	.93572	.04708	9.3301	.04704
#2	.37686	9.4379	.37240	.46041	.93433	.04713	9.2493	.04685
#3	.38064	9.4416	.35901	.46238	.92880	.04718	9.1987	.04489
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18886**	**.47596**	**.46765**	**3.7091**	**48.421**	**.93841**	**9.6002**	**.46922**
Stddev	.00540	.00022	.01369	.0151	.267	.00678	.0311	.00320
%RSD	2.8606	.04648	2.9279	.40697	.55085	.72285	.32402	.68161
#1	.19242	.47621	.47897	3.7201	48.542	.93411	9.5665	.46565
#2	.19151	.47578	.47154	3.7153	48.605	.94623	9.6279	.47183
#3	.18264	.47590	.45243	3.6919	48.115	.93489	9.6062	.47019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.93646**	**46.392**	**.46214**	**9.1787**	**.46691**	**1.1040**	**.37282**	**4.6181**
Stddev	.02656	.208	.01403	.2017	.01153	.0271	.00867	.0812
%RSD	2.8367	.44930	3.0361	2.1974	2.4687	2.4517	2.3249	1.7572
#1	.95544	46.433	.47252	9.3251	.47610	1.1213	.37551	4.6782
#2	.94783	46.577	.46772	9.2622	.47065	1.1178	.37983	4.6502
#3	.90610	46.167	.44618	8.9486	.45397	1.0728	.36313	4.5258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 18:11:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94160**	**.93419**	**.93215**	**.47746**	**.95734**	**.92285**	**.96268**
Stddev	.03048	.00478	.01127	.00266	.00102	.02468	.00196
%RSD	3.2371	.51143	1.2087	.55672	.10631	2.6746	.20344
#1	.96249	.93592	.92019	.47890	.95660	.94147	.96262
#2	.95567	.93787	.93370	.47909	.95691	.93223	.96468
#3	.90662	.92879	.94257	.47439	.95850	.89486	.96076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9631.8**	**57971.**	**2640.1**
Stddev	18.0	61.	9.4
%RSD	.18659	.10524	.35512
#1	9611.5	57939.	2630.1
#2	9638.2	58041.	2641.4
#3	9645.6	57933.	2648.7

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 18:15:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**-.00707**	**-.00309**	**.00499**	**.00032**	**.00002**	**-.04126**	**.00007**
Stddev	.00165	.00634	.00132	.00038	.00008	.00012	.04258	.00011
%RSD	811.23	89.773	42.777	7.6852	23.661	523.44	103.20	155.82
#1	.00141	-.00058	-.00165	.00534	.00029	-.00011	-.04140	.00004
#2	-.00013	-.00736	-.00339	.00506	.00027	.00011	.00139	.00020
#3	-.00189	-.01326	-.00424	.00458	.00041	.00007	-.08377	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**-.00049**	**.00063**	**-.01034**	**.03401**	**.00039**	**.01781**	**-.00065**
Stddev	.00025	.00043	.00054	.01993	.09163	.00225	.03349	.00185
%RSD	75.727	89.059	84.724	192.65	269.46	576.06	188.06	284.17
#1	.00037	.00001	.00003	-.01255	.13861	.00296	-.01934	-.00159
#2	.00006	-.00076	.00105	-.02908	-.03209	-.00055	.04570	.00148
#3	.00055	-.00071	.00083	.01059	-.00450	-.00123	.02707	-.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.03505**	**-.00118**	**.00242**	**.00074**	**.00202**	**.00122**	**.00338**
Stddev	.00033	.01921	.00105	.00238	.00588	.00218	.00143	.00216
%RSD	6972.9	54.814	88.470	98.079	791.88	108.22	117.41	63.891
#1	.00035	.04959	-.00124	.00244	.00719	.00014	-.00043	.00413
#2	-.00006	.04229	-.00220	.00479	-.00434	.00441	.00200	.00505
#3	-.00030	.01327	-.00011	.00004	-.00062	.00150	.00208	.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 18:15:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00034**	**.00291**	**-.00003**	**.00058**	**-.00012**	**.00035**
Stddev	.00064	.00019	.00955	.00053	.00091	.00014	.00052
%RSD	369.28	56.580	327.70	1924.5	156.02	116.22	148.55
#1	.00028	.00028	.01106	.00018	.00027	-.00009	.00031
#2	-.00090	.00018	.00528	-.00063	.00160	.00000	-.00015
#3	.00010	.00055	-.00760	.00036	-.00013	-.00028	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9702.1**	**58918.**	**2651.3**
Stddev	12.5	84.	10.0
%RSD	.12841	.14288	.37853
#1	9705.7	58860.	2662.2
#2	9712.2	58879.	2642.4
#3	9688.2	59014.	2649.4

Approved: July 01, 2016

Sample Name: L1606147801 Acquired: 6/30/2016 18:19:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00118	.48384	.00060	.01785	.04804	.00007	29.066	.00013
Stddev	.00288	.00538	.00319	.00258	.00084	.00013	.471	.00027
%RSD	243.63	1.1125	529.08	14.446	1.7486	180.94	1.6218	196.73
#1	-.00387	.48281	.00045	.02080	.04729	.00022	29.610	.00044
#2	-.00152	.48967	.00387	.01601	.04895	-.00004	28.802	-.00002
#3	.00185	.47906	-.00251	.01675	.04787	.00005	28.785	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.00102	.00097	.73194	3.4244	.00083	4.7227	.13878
Stddev	.00019	.00084	.00083	.00211	.0891	.00561	.0980	.00207
%RSD	20.662	82.512	85.510	.28881	2.6021	679.74	2.0744	1.4891
#1	.00069	.00098	.00191	.73375	3.4145	.00122	4.8261	.14092
#2	.00105	.00020	.00037	.72962	3.5181	.00622	4.7108	.13680
#3	.00095	.00187	.00062	.73245	3.3407	-.00497	4.6313	.13862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	3.0620	.00013	.04951	.00095	.00242	-.00362	3.1683
Stddev	.00005	.0154	.00105	.00983	.00211	.00176	.00195	.1888
%RSD	12.835	.50117	788.77	19.853	222.65	72.715	53.790	5.9591
#1	.00041	3.0713	.00075	.05163	-.00005	.00444	-.00403	3.2809
#2	.00033	3.0443	-.00108	.05811	.00337	.00152	-.00534	3.2737
#3	.00042	3.0703	.00073	.03880	-.00048	.00129	-.00150	2.9503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606147801 Acquired: 6/30/2016 18:19:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00085**	**.10073**	**.00811**	**-.00477**	**.00157**	**.00395**	**.00038**
Stddev	.00056	.00046	.00495	.00121	.00087	.00037	.00091
%RSD	66.125	.45422	60.943	25.394	55.489	9.4191	237.01
#1	-.00122	.10118	.01032	-.00580	.00075	.00417	.00117
#2	-.00113	.10074	.00245	-.00344	.00148	.00416	.00059
#3	-.00020	.10026	.01157	-.00507	.00249	.00352	-.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9394.2**	**57266.**	**2607.9**
Stddev	9.1	199.	9.3
%RSD	.09713	.34688	.35491
#1	9404.0	57037.	2597.4
#2	9385.9	57398.	2612.0
#3	9392.8	57363.	2614.5

Approved: July 01, 2016

Sample Name: L1606147802 Acquired: 6/30/2016 18:23:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	1.5011	-.00124	.02902	.06173	.00002	44.072	.00015
Stddev	.00232	.0079	.00210	.00256	.00035	.00004	.122	.00031
%RSD	1002.1	.52532	169.14	8.8293	.57268	179.88	.27581	197.09
#1	.00197	1.4997	-.00021	.03180	.06182	.00001	44.205	.00005
#2	-.00240	1.5096	-.00366	.02675	.06134	.00007	43.967	.00050
#3	.00113	1.4940	.00014	.02853	.06203	-.00001	44.045	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.00304	.00405	2.4214	6.4590	.00132	8.8818	.78923
Stddev	.00013	.00062	.00045	.0181	.1277	.00126	.0280	.00161
%RSD	7.6921	20.262	11.111	.74925	1.9769	95.851	.31552	.20401
#1	.00175	.00238	.00409	2.4419	6.5810	.00237	8.8521	.78968
#2	.00156	.00360	.00448	2.4149	6.3263	-.00008	8.8855	.79056
#3	.00182	.00313	.00358	2.4075	6.4697	.00167	8.9077	.78744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00196	8.6913	.00288	.07214	.00165	.00103	.00683	4.5873
Stddev	.00011	.0464	.00050	.00951	.00315	.00350	.00245	.3470
%RSD	5.5354	.53399	17.474	13.183	191.38	338.81	35.828	7.5651
#1	.00207	8.7316	.00304	.07491	.00467	.00128	.00892	4.7980
#2	.00194	8.6406	.00232	.07996	-.00161	.00440	.00414	4.7771
#3	.00186	8.7019	.00329	.06155	.00188	-.00258	.00742	4.1867
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606147802 Acquired: 6/30/2016 18:23:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.12293**	**.02761**	**-.00211**	**.00316**	**.00846**	**.00093**
Stddev	.00065	.00087	.00694	.00218	.00008	.00060	.00013
%RSD	108.09	.70913	25.142	103.05	2.4502	7.0820	13.728
#1	-.00065	.12390	.02469	.00039	.00314	.00855	.00087
#2	-.00121	.12222	.02260	-.00320	.00310	.00900	.00107
#3	.00008	.12267	.03553	-.00353	.00325	.00781	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9409.7**	**57046.**	**2602.7**
Stddev	14.8	130.	20.1
%RSD	.15712	.22860	.77202
#1	9393.1	57144.	2579.6
#2	9414.5	56898.	2615.6
#3	9421.4	57096.	2613.0

Approved: July 01, 2016

Sample Name: L1606149801 Acquired: 6/30/2016 18:27:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00340	.13468	.02483	.02047	.04621	.00070	36.795	.00015
Stddev	.00210	.00765	.00300	.00221	.00117	.00007	.093	.00025
%RSD	61.792	5.6795	12.089	10.804	2.5342	9.9073	.25176	171.08
#1	-.00295	.13661	.02479	.01924	.04554	.00072	36.786	.00003
#2	-.00156	.14118	.02785	.02303	.04552	.00076	36.707	-.00002
#3	-.00569	.12625	.02185	.01916	.04756	.00063	36.892	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.00285	.01192	7.2324	3.4712	.00637	2.5525	.83316
Stddev	.00012	.00081	.00238	.0450	.0517	.00375	.0362	.00322
%RSD	11.574	28.515	19.923	.62206	1.4890	58.850	1.4184	.38623
#1	.00098	.00317	.01314	7.1981	3.4234	.00264	2.5296	.83071
#2	.00112	.00346	.01344	7.2159	3.5260	.01014	2.5336	.83198
#3	.00090	.00193	.00919	7.2834	3.4643	.00633	2.5942	.83681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	18.081	.00200	.41861	.00212	.00481	.00268	7.8667
Stddev	.00043	.130	.00025	.02670	.00081	.00253	.00307	.4729
%RSD	51.124	.71828	12.704	6.3786	38.110	52.573	114.76	6.0116
#1	.00099	18.012	.00211	.43565	.00293	.00305	.00539	8.1479
#2	.00036	17.999	.00217	.43234	.00211	.00367	.00331	8.1315
#3	.00118	18.231	.00171	.38784	.00132	.00771	-.00066	7.3207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606149801 Acquired: 6/30/2016 18:27:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.21281**	**.00999**	**-.00319**	**.00181**	**.03737**	**.00054**
Stddev	.00051	.00055	.00673	.00107	.00040	.00279	.00043
%RSD	193.84	.26018	67.337	33.581	21.978	7.4776	78.885
#1	.00006	.21270	.01741	-.00208	.00221	.03895	.00075
#2	-.00084	.21341	.00830	-.00327	.00181	.03900	.00082
#3	.00000	.21231	.00428	-.00422	.00141	.03414	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9268.9**	**56064.**	**2582.7**
Stddev	19.3	147.	15.5
%RSD	.20811	.26254	.59905
#1	9252.1	56177.	2583.8
#2	9290.0	56118.	2597.6
#3	9264.7	55898.	2566.7

Approved: July 01, 2016

Sample Name: L1606154001 Acquired: 6/30/2016 18:31:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00057	.00808	-.00558	.08750	.00402	.00010	1.2213	.00028
Stddev	.00234	.00525	.00437	.00362	.00071	.00012	.0267	.00025
%RSD	414.63	65.065	78.336	4.1343	17.581	119.62	2.1854	89.078
#1	.00192	.01282	-.00981	.08961	.00362	.00003	1.2521	-.00001
#2	-.00274	.00899	-.00108	.08333	.00483	.00003	1.2057	.00041
#3	-.00088	.00243	-.00585	.08957	.00360	.00023	1.2061	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	.00170	.03755	-.00681	.28069	.00076	.43574	-.00133
Stddev	.00015	.00062	.00276	.01600	.08088	.00550	.04929	.00283
%RSD	22.007	36.124	7.3610	235.02	28.816	719.07	11.311	212.69
#1	.00050	.00113	.03895	.01003	.20164	.00242	.48967	.00058
#2	.00071	.00235	.03934	-.02183	.27713	-.00537	.39303	-.00459
#3	.00079	.00163	.03437	-.00863	.36329	.00524	.42452	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	132.15	-.00082	.02127	.00031	.00191	-.00183	3.1975
Stddev	.00027	.60	.00088	.00347	.00022	.00165	.00318	.2073
%RSD	32.190	.45543	107.97	16.310	71.564	86.578	174.47	6.4844
#1	.00064	132.84	-.00102	.02505	.00005	.00002	-.00532	3.3246
#2	.00114	131.72	.00015	.01823	.00042	.00310	.00092	3.3096
#3	.00072	131.90	-.00158	.02053	.00045	.00261	-.00107	2.9582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606154001 Acquired: 6/30/2016 18:31:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.03802	.00388	-.00386	.00047	.01734	.00086
Stddev	.00061	.00030	.00532	.00297	.00009	.00133	.00028
%RSD	1510.1	.78789	137.01	76.892	19.154	7.6763	32.913
#1	.00024	.03835	-.00121	-.00044	.00037	.01808	.00115
#2	.00052	.03794	.00941	-.00541	.00054	.01813	.00058
#3	-.00064	.03777	.00345	-.00575	.00049	.01580	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9201.3	55428.	2535.6
Stddev	13.7	92.	13.7
%RSD	.14863	.16593	.54119
#1	9215.8	55418.	2520.1
#2	9199.6	55341.	2540.6
#3	9188.6	55525.	2546.2

Approved: July 01, 2016

Sample Name: L1606154002 Acquired: 6/30/2016 18:35:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00190**	**.02125**	**-.00102**	**.08131**	**.09253**	**.00000**	**55.030**	**.00012**
Stddev	.00206	.00624	.00143	.00056	.00111	.00010	.267	.00020
%RSD	108.31	29.358	140.64	.68342	1.1967	2768.8	.48559	168.02
#1	-.00087	.02026	-.00075	.08190	.09204	-.00006	55.121	-.00011
#2	-.00427	.02793	.00026	.08124	.09380	-.00004	55.240	.00019
#3	-.00056	.01557	-.00256	.08079	.09175	.00012	54.729	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.00113**	**.02097**	**.01775**	**2.1093**	**.00676**	**24.179**	**.01907**
Stddev	.00005	.00101	.00204	.00984	.0831	.00422	.021	.00251
%RSD	24.053	89.605	9.7060	55.443	3.9401	62.398	.08670	13.156
#1	.00015	.00022	.02232	.00661	2.0149	.01118	24.195	.02004
#2	.00024	.00096	.02196	.02138	2.1716	.00277	24.155	.02095
#3	.00020	.00222	.01863	.02525	2.1413	.00633	24.187	.01622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**25.477**	**.00046**	**.01527**	**.00231**	**.00081**	**.00394**	**3.6193**
Stddev	.00059	.112	.00093	.00554	.00138	.00133	.00385	.2465
%RSD	95.322	.44074	202.16	36.302	59.737	164.68	97.575	6.8117
#1	.00121	25.586	.00018	.01196	.00186	.00099	-.00049	3.7728
#2	.00002	25.483	-.00030	.02167	.00121	-.00060	.00586	3.7501
#3	.00064	25.362	.00150	.01218	.00385	.00204	.00646	3.3349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606154002 Acquired: 6/30/2016 18:35:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	1.8324	-.00173	-.00240	-.00017	.04399	.00042
Stddev	.00068	.0080	.00465	.00110	.00042	.00367	.00022
%RSD	614.96	.43412	268.53	45.676	243.07	8.3462	51.638
#1	.00082	1.8388	-.00647	-.00196	.00004	.04609	.00033
#2	-.00052	1.8350	-.00155	-.00365	-.00066	.04613	.00067
#3	.00003	1.8235	.00283	-.00159	.00010	.03975	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9224.8	55792.	2582.4
Stddev	11.3	57.	7.5
%RSD	.12243	.10138	.29222
#1	9217.6	55833.	2573.7
#2	9218.9	55815.	2587.3
#3	9237.8	55727.	2586.3

Approved: July 01, 2016

Sample Name: L1606154003 Acquired: 6/30/2016 18:39:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00076**	**-.00147**	**.01379**	**.07034**	**.00003**	**60.113**	**.00003**
Stddev	.00045	.00903	.00040	.00203	.00188	.00009	.353	.00025
%RSD	804.34	1186.0	26.892	14.721	2.6786	315.40	.58678	879.50
#1	-.00051	.00468	-.00190	.01604	.07166	-.00005	60.230	.00030
#2	.00039	-.00957	-.00139	.01322	.07118	.00012	60.392	-.00004
#3	-.00005	.00717	-.00112	.01210	.06819	.00001	59.716	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00051**	**.00109**	**.00608**	**.03884**	**1.5358**	**-.00064**	**5.6654**	**.00097**
Stddev	.00027	.00041	.00139	.02432	.1208	.00483	.0597	.00146
%RSD	52.815	37.552	22.849	62.604	7.8638	754.45	1.0533	151.13
#1	.00081	.00094	.00556	.01430	1.4467	-.00375	5.6313	.00146
#2	.00032	.00156	.00766	.06292	1.6733	.00493	5.7343	.00212
#3	.00038	.00078	.00503	.03931	1.4875	-.00310	5.6305	-.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00028**	**8.9187**	**.06481**	**.00248**	**-.00412**	**.00335**	**-.00015**	**2.5330**
Stddev	.00012	.0331	.00656	.00783	.00043	.00214	.00382	.1867
%RSD	44.238	.37087	10.115	315.35	10.516	63.921	2604.2	7.3713
#1	.00014	8.9184	.06951	.01099	-.00460	.00575	.00399	2.6454
#2	.00034	8.9519	.06760	-.00443	-.00401	.00162	-.00088	2.6360
#3	.00036	8.8858	.05732	.00088	-.00375	.00269	-.00355	2.3174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606154003 Acquired: 6/30/2016 18:39:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00110**	**.15481**	**-.00035**	**-.00548**	**-.00004**	**.00448**	**.00018**
Stddev	.00057	.00074	.00903	.00113	.00081	.00035	.00084
%RSD	51.803	.47621	2581.8	20.683	1814.6	7.9051	472.09
#1	-.00084	.15458	-.00191	-.00467	.00044	.00470	.00046
#2	-.00071	.15563	.00936	-.00500	-.00098	.00466	.00085
#3	-.00175	.15421	-.00850	-.00678	.00041	.00407	-.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9214.8**	**56266.**	**2566.6**
Stddev	16.4	75.	20.2
%RSD	.17793	.13321	.78652
#1	9216.4	56335.	2547.5
#2	9230.4	56186.	2564.6
#3	9197.7	56278.	2587.7

Approved: July 01, 2016

Sample Name: L1606155901 Acquired: 6/30/2016 18:43:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**.00915**	**-.00006**	**.02511**	**.22313**	**.00003**	**27.206**
Stddev	.00195	.00516	.00220	.00238	.00233	.00005	.176
%RSD	189.18	56.362	3958.2	9.4822	1.0451	161.49	.64824
#1	-.00014	.01510	.00154	.02376	.22382	-.00003	27.337
#2	-.00326	.00641	-.00256	.02786	.22503	.00005	27.275
#3	.00032	.00594	.00086	.02370	.22052	.00006	27.005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00197**	**.00338**	**.00033**	**.12395**	**1.4772**	**.02068**
Stddev	.00019	.00037	.00053	.00032	.01645	.0909	.00350
%RSD	556.70	18.672	15.556	98.395	13.269	6.1505	16.945
#1	.00025	.00184	.00285	.00068	.13997	1.4018	.01671
#2	-.00003	.00169	.00390	.00006	.10711	1.4518	.02197
#3	-.00012	.00239	.00339	.00023	.12477	1.5781	.02335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**36.505**	**.03598**	**.00034**	F **328.33**	**.00090**	**1.3227**	**.00051**
Stddev	.192	.00185	.00014	2.60	.00092	.0696	.00253
%RSD	.52727	5.1335	39.993	.79262	101.70	5.2623	491.82
#1	36.665	.03803	.00039	329.59	.00144	1.3578	-.00149
#2	36.559	.03546	.00044	330.07	.00142	1.3677	-.00033
#3	36.292	.03445	.00018	325.34	-.00016	1.2425	.00336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 01, 2016

Sample Name: L1606155901 Acquired: 6/30/2016 18:43:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00587	.00063	13.412	.00080	.52856	.00479	-.00502
Stddev	.00438	.00389	.677	.00054	.00281	.00375	.00196
%RSD	74.538	614.35	5.0458	67.579	.53244	78.243	39.098
#1	.00422	.00209	13.796	.00021	.52982	.00059	-.00650
#2	.00256	-.00378	13.811	.00094	.53053	.00779	-.00578
#3	.01083	.00359	12.631	.00127	.52534	.00599	-.00279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00059	.00948	.00045
Stddev	.00081	.00047	.00050
%RSD	138.29	5.0027	109.72
#1	-.00090	.00970	.00051
#2	.00033	.00981	.00092
#3	-.00119	.00894	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8973.2	53735.	2541.3
Stddev	7.9	49.	24.7
%RSD	.08778	.09207	.97057
#1	8964.3	53678.	2522.8
#2	8979.4	53757.	2531.9
#3	8975.9	53770.	2569.3

Approved: July 01, 2016

Sample Name: L1606155902 Acquired: 6/30/2016 18:46:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00244	.01624	-.00371	.02632	.23418	.00007	29.152
Stddev	.00143	.00695	.00143	.00328	.00031	.00009	.072
%RSD	58.755	42.835	38.582	12.450	.13394	125.85	.24584
#1	.00296	.01470	-.00473	.02272	.23412	.00004	29.119
#2	.00082	.01018	-.00432	.02710	.23452	.00017	29.235
#3	.00354	.02383	-.00207	.02914	.23390	.00000	29.103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00211	.00295	.00036	.12305	1.3767	.01982
Stddev	.00020	.00038	.00054	.00055	.01275	.1204	.00452
%RSD	103.98	17.810	18.399	152.04	10.363	8.7447	22.831
#1	-.00003	.00236	.00348	.00029	.13775	1.3527	.01502
#2	.00036	.00230	.00295	.00095	.11640	1.2701	.02401
#3	.00024	.00168	.00240	-.00015	.11499	1.5073	.02042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.148	.03862	.00050	F 330.95	.00173	1.3177	.00129
Stddev	.198	.00101	.00025	.35	.00033	.1006	.00315
%RSD	.50480	2.6116	49.807	.10455	19.053	7.6360	244.31
#1	39.081	.03839	.00078	331.33	.00166	1.3804	-.00218
#2	38.994	.03774	.00042	330.87	.00209	1.3711	.00398
#3	39.371	.03972	.00030	330.65	.00144	1.2016	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 01, 2016

Sample Name: L1606155902 Acquired: 6/30/2016 18:46:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00473**	**.00003**	**13.130**	**.00048**	**.57157**	**-.00066**	**-.00274**
Stddev	.00273	.00287	.897	.00048	.00056	.00707	.00045
%RSD	57.634	10579.	6.8310	100.42	.09786	1066.9	16.351
#1	.00717	.00182	13.659	.00082	.57149	.00683	-.00231
#2	.00524	.00154	13.636	-.00007	.57105	-.00160	-.00321
#3	.00179	-.00328	12.095	.00068	.57216	-.00722	-.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00047**	**.01058**	**.00006**
Stddev	.00117	.00093	.00020
%RSD	250.33	8.7802	319.39
#1	-.00129	.01102	.00001
#2	.00087	.01122	.00028
#3	-.00099	.00952	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8985.6**	**53846.**	**2554.2**
Stddev	8.9	69.	11.9
%RSD	.09849	.12868	.46530
#1	8991.6	53866.	2541.0
#2	8989.6	53769.	2557.8
#3	8975.4	53904.	2563.9

Approved: July 01, 2016

L1606156402

Sample Name: ~~L1606056402~~ Acquired: 6/30/2016 18:50:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.00091**	**-.00442**	**.00758**	**.00182**	**.00004**	**2.7560**	**.00027**
Stddev	.00046	.00834	.00199	.00270	.00068	.00004	.0483	.00008
%RSD	73.738	914.61	45.113	35.621	37.420	110.13	1.7507	30.038
#1	-.00016	-.00664	-.00365	.00483	.00204	.00001	2.7637	.00036
#2	-.00108	.00986	-.00293	.01023	.00236	.00002	2.8000	.00021
#3	-.00064	-.00049	-.00669	.00767	.00106	.00008	2.7044	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.00037**	**.00086**	**-.00822**	**14.689**	**-.00554**	**.60363**	**.00630**
Stddev	.00019	.00106	.00097	.00515	.035	.00351	.08108	.00126
%RSD	90.068	287.42	112.24	62.597	.23781	63.375	13.432	19.961
#1	.00005	.00026	-.00005	-.00249	14.654	-.00158	.51466	.00634
#2	.00017	.00147	.00188	-.00972	14.691	-.00827	.62286	.00754
#3	.00043	-.00063	.00077	-.01246	14.724	-.00677	.67336	.00502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00082**	**30.747**	**.00163**	**1.4604**	**.00027**	**.00382**	**.00086**	**.18117**
Stddev	.00041	.130	.00024	.1469	.00118	.00265	.00289	.01449
%RSD	49.262	.42266	14.494	10.060	441.77	69.427	334.02	7.9981
#1	.00097	30.803	.00138	1.5520	-.00106	.00573	-.00001	.18924
#2	.00114	30.840	.00168	1.5383	.00120	.00079	.00409	.18983
#3	.00037	30.599	.00184	1.2910	.00067	.00493	-.00148	.16444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606056402 Acquired: 6/30/2016 18:50:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00040**	**.00276**	**.00764**	**-.00417**	**.00010**	**.00972**	**-.00021**
Stddev	.00026	.00081	.00384	.00211	.00121	.00113	.00045
%RSD	65.574	29.145	50.239	50.705	1221.0	11.618	214.32
#1	-.00057	.00368	.00446	-.00586	.00080	.01021	-.00070
#2	-.00010	.00217	.01190	-.00484	-.00130	.01053	.00019
#3	-.00052	.00244	.00655	-.00180	.00079	.00843	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9289.5**	**56314.**	**2571.9**
Stddev	27.9	213.	11.3
%RSD	.29991	.37742	.44088
#1	9260.0	56322.	2561.9
#2	9293.4	56097.	2569.6
#3	9315.3	56522.	2584.2

Approved: July 01, 2016

L1606156404

Sample Name: L~~1606056404~~ Acquired: 6/30/2016 18:54:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00236	.09250	-.00082	.01190	.01643	.00007	84.766	.00027
Stddev	.00131	.01090	.00314	.00363	.00083	.00004	1.026	.00020
%RSD	55.394	11.779	381.97	30.469	5.0571	66.485	1.2105	73.636
#1	-.00091	.08595	.00219	.01407	.01704	.00009	85.951	.00048
#2	-.00346	.08647	-.00408	.00771	.01678	.00002	84.156	.00021
#3	-.00271	.10508	-.00058	.01392	.01549	.00009	84.192	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.00709	.01669	.36840	14.831	.00068	4.4269	.18786
Stddev	.00031	.00078	.00069	.02474	.224	.00099	.0879	.00632
%RSD	126.42	10.963	4.1275	6.7167	1.5073	144.98	1.9853	3.3646
#1	.00020	.00641	.01726	.35693	15.086	-.00046	4.3604	.19356
#2	.00058	.00692	.01688	.35148	14.742	.00127	4.3938	.18897
#3	-.00004	.00794	.01592	.39680	14.667	.00124	4.5266	.18106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00187	31.314	.00427	45.036	-.00243	.00302	.00325	.29155
Stddev	.00048	.346	.00032	2.716	.00035	.00294	.00433	.01560
%RSD	25.385	1.1058	7.4817	6.0298	14.238	97.365	133.25	5.3491
#1	.00231	31.709	.00416	46.655	-.00206	.00611	-.00173	.29688
#2	.00194	31.064	.00463	46.553	-.00275	.00025	.00530	.30378
#3	.00137	31.169	.00403	41.901	-.00247	.00271	.00617	.27399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

L1606156404

Sample Name: ~~L1606056404~~ Acquired: 6/30/2016 18:54:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.05885	-.00775	-.00194	.00227	.10541	-.00021
Stddev	.00131	.00040	.00857	.00250	.00144	.00839	.00070
%RSD	1165.7	.68788	110.57	128.47	63.571	7.9588	330.02
#1	-.00091	.05922	-.01596	-.00430	.00115	.11051	-.00080
#2	.00159	.05842	.00115	-.00220	.00390	.10999	.00057
#3	-.00034	.05892	-.00845	.00067	.00176	.09573	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9021.4	54495.	2469.3
Stddev	12.4	321.	11.7
%RSD	.13767	.58877	.47380
#1	9015.2	54137.	2459.9
#2	9013.3	54757.	2465.5
#3	9035.7	54590.	2482.4

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 18:58:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38449**	**9.5576**	**.37097**	**.46331**	**.94045**	**.04776**	**9.3865**	**.04705**
Stddev	.00267	.0246	.00770	.00163	.00112	.00007	.0785	.00086
%RSD	.69398	.25745	2.0769	.35102	.11957	.13857	.83674	1.8287
#1	.38676	9.5746	.37369	.46466	.93921	.04775	9.2958	.04763
#2	.38517	9.5294	.37694	.46150	.94140	.04770	9.4349	.04746
#3	.38155	9.5687	.36227	.46376	.94073	.04783	9.4287	.04606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19104**	**.48097**	**.47121**	**3.7295**	**48.822**	**.94615**	**9.8577**	**.47373**
Stddev	.00553	.00117	.01299	.0687	.163	.00468	.1509	.00378
%RSD	2.8961	.24368	2.7563	1.8418	.33468	.49471	1.5309	.79865
#1	.19456	.48077	.48007	3.6666	48.932	.94970	9.7065	.47024
#2	.19389	.47991	.47726	3.7191	48.901	.94790	10.008	.47321
#3	.18466	.48223	.45630	3.8028	48.634	.94085	9.8582	.47775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94402**	**46.861**	**.46610**	**9.2472**	**.46824**	**1.1122**	**.37247**	**4.6461**
Stddev	.02559	.080	.01367	.1813	.00647	.0251	.00302	.0686
%RSD	2.7110	.17021	2.9320	1.9611	1.3821	2.2576	.81209	1.4774
#1	.95932	46.788	.47619	9.3639	.47147	1.1319	.37188	4.6874
#2	.95828	46.947	.47155	9.3395	.47245	1.1207	.37575	4.6840
#3	.91448	46.849	.45054	9.0383	.46078	1.0839	.36979	4.5669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 18:58:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94950	.94033	.94994	.48312	.96399	.92909	.97815
Stddev	.03011	.00011	.01017	.00567	.00123	.02409	.00297
%RSD	3.1714	.01190	1.0708	1.1738	.12757	2.5929	.30383
#1	.96894	.94028	.93825	.48548	.96507	.94516	.98127
#2	.96475	.94046	.95675	.48724	.96424	.94071	.97784
#3	.91482	.94026	.95483	.47665	.96265	.90139	.97535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9540.5	57585.	2609.0
Stddev	20.5	117.	6.0
%RSD	.21478	.20311	.23076
#1	9562.9	57615.	2602.1
#2	9535.8	57684.	2611.9
#3	9522.7	57456.	2613.0

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 19:02:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00149**	**-.01552**	**-.00316**	**.00197**	**.00094**	**.00002**	**-.03638**	**-.00004**
Stddev	.00121	.00451	.00141	.00096	.00118	.00003	.02087	.00011
%RSD	80.878	29.062	44.471	48.505	124.93	155.61	57.367	291.47
#1	-.00235	-.02073	-.00313	.00133	-.00008	-.00001	-.06026	.00007
#2	-.00011	-.01274	-.00458	.00151	.00068	.00004	-.02163	-.00003
#3	-.00201	-.01310	-.00177	.00307	.00223	.00002	-.02725	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00057**	**-.00009**	**-.00268**	**.06236**	**-.00245**	**.02522**	**-.00160**
Stddev	.00029	.00112	.00125	.01684	.19080	.00148	.02965	.00081
%RSD	105.92	195.93	1387.5	628.60	305.96	60.478	117.58	50.497
#1	.00025	-.00009	-.00153	.01409	.27386	-.00171	-.00722	-.00253
#2	.00057	-.00006	.00060	-.01959	-.09681	-.00149	.03196	-.00120
#3	-.00001	.00187	.00066	-.00254	.01003	-.00416	.05092	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.03479**	**-.00152**	**.00337**	**.00087**	**.00212**	**.00172**	**.00394**
Stddev	.00050	.00757	.00020	.00161	.00244	.00267	.00281	.00328
%RSD	577.03	21.753	13.047	47.779	280.61	125.91	163.16	83.246
#1	-.00003	.02673	-.00166	.00157	.00354	.00520	-.00126	.00767
#2	-.00035	.04175	-.00129	.00387	-.00125	.00079	.00210	.00256
#3	.00064	.03589	-.00160	.00466	.00032	.00038	.00433	.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 19:02:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00006**	**.00408**	**-.00100**	**.00056**	**.00009**	**.00041**
Stddev	.00053	.00046	.00592	.00189	.00072	.00021	.00043
%RSD	379.02	796.89	145.37	189.36	129.08	242.48	106.17
#1	-.00046	-.00012	-.00015	-.00242	-.00023	-.00015	.00045
#2	.00054	-.00029	.01085	.00114	.00074	.00016	.00081
#3	.00033	.00058	.00152	-.00171	.00117	.00025	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9547.6**	**57674.**	**2603.6**
Stddev	11.8	121.	10.0
%RSD	.12314	.20945	.38395
#1	9534.0	57539.	2614.8
#2	9554.1	57709.	2595.8
#3	9554.6	57773.	2600.1

Approved: July 01, 2016

Sample Name: L1606156406 Acquired: 6/30/2016 19:06:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	-.00831	-.00316	.00480	.00255	-.00001	1.6758	.00005
Stddev	.00065	.00701	.00308	.00242	.00098	.00007	.0313	.00009
%RSD	370.16	84.451	97.402	50.286	38.419	567.21	1.8693	181.45
#1	-.00002	-.00478	-.00059	.00755	.00203	-.00003	1.7074	-.00003
#2	-.00089	-.01638	-.00232	.00383	.00194	-.00007	1.6448	.00003
#3	.00038	-.00375	-.00658	.00303	.00368	.00006	1.6752	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00029	-.00052	-.01620	.24819	-.00030	.28577	.03578
Stddev	.00004	.00059	.00084	.01965	.12899	.00500	.04605	.00192
%RSD	13.214	202.26	162.53	121.27	51.971	1684.3	16.114	5.3726
#1	.00029	-.00024	.00039	.00536	.12090	-.00308	.29949	.03795
#2	.00036	.00092	-.00126	-.02087	.24487	-.00328	.32340	.03428
#3	.00029	.00020	-.00068	-.03310	.37880	.00548	.23442	.03512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.58307	.00022	.08846	.00028	.00280	-.00287	.07941
Stddev	.00032	.02717	.00038	.00938	.00070	.00119	.00124	.00619
%RSD	79.689	4.6599	170.52	10.606	247.25	42.389	43.058	7.7987
#1	.00054	.55222	-.00018	.09425	.00082	.00382	-.00308	.08522
#2	.00003	.59357	.00056	.09350	-.00051	.00308	-.00154	.08012
#3	.00061	.60342	.00028	.07763	.00055	.00150	-.00399	.07290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606156406 Acquired: 6/30/2016 19:06:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00491**	**.00225**	**-.00406**	**.00006**	**.00305**	**-.00019**
Stddev	.00077	.00020	.01296	.00128	.00014	.00037	.00025
%RSD	540.12	4.0326	576.42	31.529	221.32	12.262	133.62
#1	-.00042	.00476	.00960	-.00321	-.00001	.00316	.00010
#2	.00102	.00514	.00986	-.00343	-.00002	.00336	-.00033
#3	-.00017	.00484	-.01271	-.00553	.00022	.00263	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9308.5**	**56770.**	**2560.2**
Stddev	29.6	145.	7.5
%RSD	.31804	.25535	.29287
#1	9316.4	56603.	2551.6
#2	9333.3	56863.	2563.7
#3	9275.7	56845.	2565.4

Approved: July 01, 2016

Sample Name: L1606156406PS Acquired: 6/30/2016 19:10:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574839-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19522**	**4.9335**	**.18892**	**.92811**	**.48642**	**.02462**	**6.4020**	**.02402**
Stddev	.00133	.0257	.00349	.00076	.00294	.00021	.0598	.00077
%RSD	.67932	.52075	1.8462	.08158	.60538	.85247	.93391	3.1888
#1	.19409	4.9453	.19273	.92726	.48548	.02443	6.4043	.02444
#2	.19668	4.9040	.18815	.92837	.48971	.02484	6.4606	.02450
#3	.19491	4.9512	.18588	.92871	.48405	.02458	6.3411	.02314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10004**	**.25393**	**.24723**	**1.9455**	**25.393**	**.49650**	**5.2156**	**.27536**
Stddev	.00180	.00156	.00478	.0442	.084	.00244	.1119	.00233
%RSD	1.7965	.61492	1.9322	2.2723	.33007	.49150	2.1452	.84690
#1	.10146	.25272	.24929	1.9733	25.412	.49410	5.1780	.27413
#2	.10065	.25337	.25063	1.9687	25.466	.49897	5.3414	.27804
#3	.09802	.25569	.24177	1.8945	25.302	.49643	5.1273	.27389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49262**	**24.528**	**.24264**	**4.7530**	**.24151**	**.56841**	**.18488**	**2.3398**
Stddev	.01010	.145	.00516	.0624	.00718	.00865	.00209	.0287
%RSD	2.0511	.58943	2.1253	1.3140	2.9748	1.5225	1.1326	1.2258
#1	.49806	24.551	.24643	4.7800	.24584	.57678	.18615	2.3588
#2	.49884	24.659	.24472	4.7974	.24548	.56894	.18246	2.3539
#3	.48096	24.373	.23677	4.6816	.23322	.55950	.18603	2.3068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606156406PS Acquired: 6/30/2016 19:10:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574839-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49468**	**.49462**	**.48468**	**.24698**	**.50622**	**.48337**	**.00116**
Stddev	.01218	.00261	.00393	.00141	.00056	.00564	.00008
%RSD	2.4630	.52750	.81027	.57177	.11040	1.1667	6.9776
#1	.50282	.49564	.48159	.24852	.50558	.48707	.00118
#2	.50054	.49656	.48910	.24575	.50653	.48616	.00107
#3	.48067	.49165	.48336	.24667	.50656	.47688	.00123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9250.3**	**55578.**	**2550.1**
Stddev	31.5	34.	9.9
%RSD	.34105	.06038	.38788
#1	9214.6	55569.	2552.1
#2	9274.3	55616.	2539.3
#3	9262.1	55551.	2558.8

Approved: July 01, 2016

Sample Name: L1606156406DL Acquired: 6/30/2016 19:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574839-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00155**	**-.01507**	**.00026**	**.00451**	**.00331**	**.00008**	**.25484**
Stddev	.00041	.00276	.00086	.00137	.00140	.00008	.06716
%RSD	26.342	18.297	328.91	30.288	42.328	89.618	26.354
#1	.00149	-.01255	.00120	.00302	.00306	.00016	.33086
#2	.00198	-.01801	.00007	.00481	.00205	.00008	.20355
#3	.00117	-.01463	-.00048	.00570	.00482	.00001	.23011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.00029**	**-.00070**	**-.00085**	F **-.02287**	**-.00067**	**-.00618**
Stddev	.00008	.00010	.00036	.00050	.03470	.09395	.00185
%RSD	149.91	36.427	50.885	58.509	151.76	14123.	29.901
#1	.00014	.00017	-.00039	-.00105	-.03303	.10564	-.00822
#2	-.00000	.00035	-.00109	-.00123	-.05136	-.03506	-.00569
#3	.00002	.00034	-.00063	-.00029	.01578	-.07258	-.00462
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05615**	**.00563**	**-.00013**	**.08951**	**-.00080**	**.01495**	**.00016**
Stddev	.04244	.00397	.00020	.02875	.00023	.00346	.00383
%RSD	75.583	70.422	146.87	32.119	28.849	23.154	2377.1
#1	.01359	.00700	-.00019	.06174	-.00102	.01401	-.00216
#2	.09846	.00116	-.00030	.11915	-.00056	.01879	.00458
#3	.05639	.00874	.00008	.08766	-.00082	.01206	-.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: L1606156406DL Acquired: 6/30/2016 19:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574839-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00451**	**.00140**	**.01552**	**.00007**	**.00104**	**.00088**	**-.00058**
Stddev	.00270	.00452	.00103	.00034	.00036	.00401	.00223
%RSD	59.873	321.85	6.6495	498.95	34.792	455.41	385.32
#1	.00331	-.00159	.01664	-.00003	.00098	-.00159	.00089
#2	.00262	-.00080	.01531	-.00021	.00072	-.00127	-.00315
#3	.00761	.00661	.01461	.00044	.00143	.00550	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00015**	**.00179**	**.00012**
Stddev	.00069	.00019	.00043
%RSD	468.45	10.795	354.25
#1	.00038	.00168	-.00022
#2	-.00063	.00201	-.00001
#3	.00069	.00167	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9410.0**	**56706.**	**2543.1**
Stddev	19.6	51.	2.8
%RSD	.20881	.09072	.10969
#1	9427.6	56756.	2545.8
#2	9413.5	56708.	2540.3
#3	9388.8	56654.	2543.1

Approved: July 01, 2016

Sample Name: L1606156406DL Acquired: 6/30/2016 19:17:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574839-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00204**	**-.01447**	**-.00202**	**-.00098**	**.00092**	**.00012**	**-.00827**	**-.00001**
Stddev	.00182	.00242	.00261	.00051	.00043	.00011	.03770	.00015
%RSD	89.119	16.699	129.47	52.234	46.850	92.420	455.57	1206.5
#1	.00001	-.01438	.00030	-.00149	.00140	.00001	-.04414	-.00000
#2	-.00344	-.01693	-.00484	-.00097	.00077	.00012	-.01171	.00013
#3	-.00269	-.01210	-.00150	-.00047	.00058	.00022	.03102	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**.00096**	**-.00004**	**-.00936**	**-.06859**	**-.00139**	**.05644**	**-.00116**
Stddev	.00024	.00023	.00119	.02466	.08484	.00348	.08192	.00532
%RSD	70.523	23.899	3085.0	263.46	123.69	251.13	145.14	457.54
#1	.00019	.00082	.00129	-.03046	-.11887	-.00098	.07856	.00491
#2	.00021	.00123	-.00103	-.01537	-.11627	-.00506	-.03427	-.00335
#3	.00062	.00084	-.00038	.01775	.02937	.00187	.12502	-.00504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.02020**	**-.00158**	**.00200**	**-.00099**	**.00203**	**.00019**	**.00279**
Stddev	.00035	.02600	.00029	.00545	.00277	.00244	.00611	.00157
%RSD	4041.6	128.72	18.187	272.94	280.45	120.62	3223.9	56.377
#1	-.00034	.03895	-.00158	.00123	-.00311	.00480	-.00667	.00178
#2	.00036	-.00948	-.00129	.00779	-.00200	.00017	.00217	.00460
#3	.00000	.03112	-.00187	-.00303	.00215	.00111	.00506	.00198
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606156406DL Acquired: 6/30/2016 19:17:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574839-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00051**	**.00077**	**.00033**	**-.00360**	**-.00016**	**.00082**	**.00005**
Stddev	.00036	.00017	.00181	.00460	.00024	.00009	.00041
%RSD	69.080	21.510	543.79	127.67	152.17	10.883	846.22
#1	-.00028	.00068	-.00174	-.00823	-.00038	.00092	.00029
#2	-.00092	.00097	.00110	-.00353	-.00018	.00075	.00028
#3	-.00034	.00067	.00164	.00096	.00009	.00080	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9416.4**	**56461.**	**2536.3**
Stddev	54.5	180.	12.7
%RSD	.57880	.31878	.49908
#1	9470.6	56420.	2521.7
#2	9416.9	56305.	2544.0
#3	9361.6	56658.	2543.2

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 19:21:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37989**	**9.4266**	**.37394**	**.46053**	**.92537**	**.04776**	**9.1769**	**.04659**
Stddev	.00050	.0222	.00409	.00376	.00224	.00017	.0540	.00054
%RSD	.13167	.23513	1.0950	.81559	.24164	.35483	.58823	1.1625
#1	.37950	9.4215	.37766	.46434	.92506	.04795	9.2172	.04605
#2	.38045	9.4074	.37460	.46041	.92774	.04767	9.1980	.04714
#3	.37972	9.4509	.36955	.45683	.92330	.04765	9.1156	.04659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18972**	**.47785**	**.47043**	**3.6570**	**48.698**	**.93221**	**9.6440**	**.46194**
Stddev	.00166	.00215	.00205	.0258	.237	.00108	.0984	.00104
%RSD	.87356	.45051	.43649	.70646	.48626	.11634	1.0208	.22551
#1	.19033	.48032	.47022	3.6680	48.720	.93283	9.6174	.46262
#2	.19098	.47678	.47258	3.6756	48.923	.93096	9.7531	.46074
#3	.18784	.47644	.46849	3.6275	48.451	.93285	9.5616	.46246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.93845**	**45.537**	**.46470**	**9.1672**	**.46456**	**1.1027**	**.37301**	**4.6027**
Stddev	.00695	.109	.00329	.0522	.00369	.0073	.00288	.0204
%RSD	.74014	.23993	.70702	.56943	.79336	.65917	.77319	.44348
#1	.94067	45.567	.46658	9.1832	.46377	1.1010	.37485	4.5977
#2	.94401	45.629	.46660	9.2095	.46858	1.1107	.37450	4.6252
#3	.93066	45.416	.46090	9.1088	.46134	1.0965	.36969	4.5853
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 19:21:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94714	.92126	.92080	.47754	.96155	.92174	.95158
Stddev	.00868	.00244	.00984	.00381	.00234	.00561	.00540
%RSD	.91656	.26481	1.0685	.79859	.24286	.60866	.56747
#1	.94757	.92393	.91193	.47627	.96296	.92370	.95381
#2	.95559	.92070	.93138	.48183	.95886	.92611	.95551
#3	.93825	.91915	.91910	.47452	.96284	.91541	.94543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9585.7	57144.	2635.2
Stddev	14.1	131.	17.0
%RSD	.14692	.22988	.64631
#1	9569.6	56993.	2628.9
#2	9591.6	57207.	2622.2
#3	9595.9	57232.	2654.5

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 19:25:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**-.01027**	**-.00494**	**.00286**	**.00003**	**.00001**	**-.00762**	**-.00003**
Stddev	.00097	.00209	.00224	.00282	.00109	.00003	.01196	.00026
%RSD	198.18	20.310	45.301	98.518	3236.4	464.49	157.06	887.56
#1	.00136	-.01178	-.00703	.00231	.00125	.00003	-.02120	-.00032
#2	.00065	-.01115	-.00522	.00592	-.00086	.00002	.00138	.00003
#3	-.00055	-.00789	-.00258	.00036	-.00029	-.00003	-.00304	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.00060**	**-.00160**	**-.03551**	**.07474**	**-.00287**	**.00210**	**-.00068**
Stddev	.00021	.00062	.00056	.01357	.24087	.00227	.08878	.00165
%RSD	78.600	103.08	35.382	38.199	322.26	79.060	4230.3	243.28
#1	-.00003	-.00008	-.00118	-.03437	-.19654	-.00400	.03302	-.00251
#2	-.00041	.00114	-.00224	-.02256	.26348	-.00026	.07128	.00071
#3	-.00035	.00074	-.00136	-.04962	.15729	-.00437	-.09800	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.00184**	**-.00102**	**-.00373**	**-.00151**	**.00181**	**.00442**	**.00181**
Stddev	.00018	.01094	.00178	.00218	.00323	.00049	.00377	.00175
%RSD	1889.0	592.83	173.67	58.476	214.00	26.995	85.232	96.712
#1	.00022	-.01446	-.00307	-.00588	-.00073	.00192	.00228	.00313
#2	-.00010	.00498	-.00012	-.00378	-.00506	.00223	.00221	.00248
#3	-.00009	.00395	.00012	-.00152	.00126	.00127	.00877	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 19:25:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.00041**	**.00359**	**-.00107**	**.00002**	**-.00010**	**.00004**
Stddev	.00080	.00052	.00699	.00320	.00066	.00018	.00038
%RSD	664.90	126.94	194.50	299.81	3652.6	190.50	994.70
#1	-.00057	.00087	.00041	.00251	.00010	.00008	.00040
#2	-.00059	-.00016	.01161	-.00204	.00063	-.00029	.00008
#3	.00081	.00052	-.00124	-.00367	-.00068	-.00008	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9765.0**	**58807.**	**2672.7**
Stddev	27.2	225.	19.1
%RSD	.27828	.38249	.71519
#1	9772.2	58564.	2652.8
#2	9735.0	59007.	2690.9
#3	9787.9	58852.	2674.5

Approved: July 01, 2016

Sample Name: LLCCV Acquired: 6/30/2016 19:29:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00659	.14196	.00415	.07320	.00737	.00152	.30097	.00069
Stddev	.00120	.00519	.00159	.00166	.00078	.00012	.02655	.00013
%RSD	18.190	3.6566	38.262	2.2611	10.524	7.8236	8.8228	18.508
#1	.00700	.13883	.00594	.07268	.00707	.00141	.28197	.00079
#2	.00754	.13910	.00289	.07187	.00679	.00164	.33131	.00074
#3	.00524	.14795	.00364	.07505	.00825	.00151	.28963	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00398	.00405	.00361	.05952	.84748	.07063	.43935	.00901
Stddev	.00037	.00081	.00120	.01766	.08757	.00293	.01480	.00253
%RSD	9.3136	20.053	33.359	29.670	10.333	4.1551	3.3691	28.106
#1	.00367	.00496	.00236	.06982	.94553	.06982	.44124	.00872
#2	.00439	.00340	.00372	.06960	.77706	.07389	.42369	.01167
#3	.00389	.00379	.00476	.03913	.81984	.06819	.45311	.00663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00714	.39055	.01370	.71353	.00877	.07288	.01882	.67934
Stddev	.00036	.02434	.00031	.00775	.00193	.00031	.00876	.00208
%RSD	5.0289	6.2318	2.2738	1.0857	22.004	.43091	46.541	.30546
#1	.00752	.38525	.01405	.70489	.01020	.07322	.00874	.68065
#2	.00709	.41711	.01349	.71986	.00954	.07261	.02320	.68044
#3	.00681	.36931	.01354	.71582	.00658	.07279	.02453	.67695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LLCCV Acquired: 6/30/2016 19:29:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38140**	**.03705**	**.03005**	**.14049**	**.00794**	**.01593**	**.03897**
Stddev	.00126	.00043	.00977	.00287	.00040	.00006	.00047
%RSD	.33142	1.1473	32.526	2.0393	5.0741	.36901	1.2053
#1	.37994	.03683	.04110	.14313	.00773	.01589	.03904
#2	.38213	.03754	.02650	.13744	.00840	.01599	.03847
#3	.38212	.03679	.02255	.14091	.00769	.01589	.03940
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9795.9**	**58956.**	**2677.8**
Stddev	12.5	242.	10.2
%RSD	.12715	.41066	.37978
#1	9781.5	59081.	2679.4
#2	9802.4	59110.	2687.1
#3	9803.7	58677.	2667.0

Approved: July 01, 2016

Sample Name: LLCCV Acquired: 6/30/2016 19:33:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01886**	**.36039**	**.01451**	**.17889**	**.01802**	**.00368**	**.92055**	**.00186**
Stddev	.00221	.01202	.00255	.00304	.00106	.00003	.05203	.00013
%RSD	11.727	3.3359	17.599	1.6994	5.8624	.81679	5.6525	7.0178
#1	.01641	.35880	.01746	.17539	.01732	.00366	.86761	.00194
#2	.02071	.34924	.01306	.18088	.01751	.00367	.97163	.00193
#3	.01945	.37313	.01301	.18040	.01923	.00372	.92242	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00974**	**.00955**	**.00834**	**.15349**	**1.8985**	**.18667**	**.91387**	**.01659**
Stddev	.00065	.00088	.00094	.01618	.0476	.00125	.03132	.00130
%RSD	6.6949	9.2008	11.222	10.542	2.5101	.67029	3.4270	7.8120
#1	.00970	.00901	.00882	.13549	1.8939	.18756	.90974	.01801
#2	.01041	.01057	.00893	.15812	1.8533	.18524	.88483	.01547
#3	.00911	.00908	.00726	.16684	1.9483	.18721	.94706	.01629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01763**	**.92448**	**.03587**	**1.7319**	**.01672**	**.18405**	**.03953**	**1.6631**
Stddev	.00083	.01718	.00274	.0473	.00199	.00558	.00126	.0430
%RSD	4.6918	1.8585	7.6334	2.7332	11.918	3.0298	3.1862	2.5841
#1	.01773	.91392	.03721	1.7559	.01902	.18975	.03815	1.6872
#2	.01840	.94430	.03768	1.7625	.01548	.18381	.04062	1.6886
#3	.01675	.91521	.03272	1.6774	.01566	.17860	.03981	1.6135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LLCCV Acquired: 6/30/2016 19:33:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.92566**	**.09190**	**.05968**	**.35088**	**.01953**	**.03727**	**.09620**
Stddev	.03288	.00060	.00162	.00944	.00115	.00116	.00106
%RSD	3.5522	.65258	2.7114	2.6903	5.8817	3.1049	1.1004
#1	.94559	.09126	.05926	.35671	.02028	.03807	.09508
#2	.94368	.09245	.05831	.35594	.02010	.03780	.09634
#3	.88771	.09198	.06147	.33999	.01820	.03595	.09718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9792.0**	**58978.**	**2666.7**
Stddev	4.2	25.	15.3
%RSD	.04312	.04241	.57223
#1	9787.2	59006.	2682.1
#2	9794.1	58963.	2651.6
#3	9794.8	58963.	2666.5

Approved: July 01, 2016

Sample Name: PBW 7P Acquired: 6/30/2016 19:37:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00164**	**-.00126**	**-.00047**	**.00093**	**.00002**	**-.02341**
Stddev	.00144	.00777	.00134	.00096	.00088	.00008	.01945
%RSD	1909.0	473.50	106.27	206.44	94.742	362.34	83.071
#1	.00029	.00657	-.00014	.00061	.00009	-.00002	-.03718
#2	.00140	-.00886	-.00274	-.00124	.00086	-.00003	-.00116
#3	-.00146	-.00263	-.00090	-.00077	.00185	.00012	-.03190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**-.00011**	**.00132**	**-.00025**	F **-.02223**	**-.00674**	**-.00345**
Stddev	.00025	.00023	.00035	.00114	.02329	.06446	.00160
%RSD	152.22	201.22	26.462	458.86	104.77	956.25	46.308
#1	-.00012	-.00033	.00117	-.00073	-.00445	.01547	-.00165
#2	.00035	.00012	.00171	.00106	-.04860	.04368	-.00397
#3	.00027	-.00012	.00107	-.00107	-.01365	-.07937	-.00472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09089**	**-.00078**	**.00013**	**.01644**	**-.00048**	**.00257**	**-.00335**
Stddev	.01606	.00252	.00047	.02156	.00050	.00205	.00156
%RSD	17.670	322.40	379.22	131.12	105.45	79.913	46.752
#1	.09132	-.00332	.00050	.01500	-.00053	.00106	-.00412
#2	.10674	.00173	.00029	.03869	.00005	.00491	-.00438
#3	.07462	-.00076	-.00041	-.00436	-.00095	.00174	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: PBW 7P Acquired: 6/30/2016 19:37:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00300**	**.00283**	**-.00023**	**.00105**	**.00205**	**-.00138**
Stddev	.00441	.00186	.00024	.00043	.00051	.00280	.00117
%RSD	762.37	61.880	8.4100	184.61	48.169	136.13	85.040
#1	-.00538	.00515	.00261	.00024	.00049	.00523	-.00257
#2	.00331	.00194	.00308	-.00059	.00147	-.00005	-.00022
#3	.00034	.00192	.00280	-.00034	.00120	.00099	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00060**	**.00076**	**.00026**
Stddev	.00055	.00006	.00030
%RSD	91.026	7.9367	114.29
#1	.00011	.00077	.00050
#2	.00120	.00082	-.00007
#3	.00051	.00070	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9307.2**	**56410.**	**2568.9**
Stddev	36.5	227.	11.0
%RSD	.39233	.40172	.42870
#1	9343.1	56149.	2579.0
#2	9308.4	56556.	2570.5
#3	9270.1	56526.	2557.2

Approved: July 01, 2016

Sample Name: LCSW 7P Acquired: 6/30/2016 19:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19482**	**4.9546**	**.18718**	**.93123**	**.48681**	**.02474**	**4.9273**	**.02447**
Stddev	.00171	.0157	.00248	.00465	.00116	.00010	.0106	.00014
%RSD	.87629	.31702	1.3273	.49921	.23754	.40937	.21442	.57083
#1	.19369	4.9709	.18912	.92992	.48683	.02464	4.9223	.02453
#2	.19679	4.9535	.18804	.93639	.48796	.02472	4.9394	.02456
#3	.19400	4.9395	.18438	.92738	.48564	.02485	4.9201	.02431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10072**	**.25411**	**.24817**	**1.9618**	**25.319**	**.50113**	**5.1562**	**.24562**
Stddev	.00180	.00103	.00380	.0377	.140	.00409	.1137	.00509
%RSD	1.7871	.40402	1.5316	1.9229	.55464	.81599	2.2049	2.0735
#1	.10129	.25458	.25131	1.9989	25.345	.50097	5.2867	.24663
#2	.10217	.25481	.24927	1.9630	25.445	.50529	5.1032	.24010
#3	.09871	.25293	.24394	1.9235	25.168	.49712	5.0787	.25014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49629**	**24.002**	**.24499**	**4.6501**	**.24411**	**.57131**	**.18624**	**2.3053**
Stddev	.00768	.019	.00338	.0447	.00289	.00423	.00319	.0197
%RSD	1.5479	.07960	1.3813	.96243	1.1854	.73967	1.7149	.85616
#1	.49937	23.979	.24550	4.6686	.24083	.57525	.18947	2.3162
#2	.50195	24.013	.24810	4.6827	.24522	.57184	.18308	2.3172
#3	.48754	24.012	.24139	4.5991	.24629	.56685	.18618	2.2825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LCSW 7P Acquired: 6/30/2016 19:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50032**	**.49495**	**.49124**	**.24894**	**.50880**	**.48167**	**.00028**
Stddev	.00792	.00143	.00695	.00366	.00241	.00823	.00040
%RSD	1.5829	.28959	1.4141	1.4711	.47295	1.7084	142.66
#1	.50560	.49403	.49638	.25132	.50799	.48550	.00019
#2	.50416	.49660	.49399	.25079	.50690	.48728	-.00007
#3	.49122	.49421	.48333	.24473	.51150	.47222	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9182.5**	**55354.**	**2538.7**
Stddev	22.3	130.	.7
%RSD	.24274	.23530	.02660
#1	9168.9	55204.	2539.2
#2	9170.4	55434.	2538.9
#3	9208.2	55424.	2538.0

Approved: July 01, 2016

Sample Name: F BLANK Acquired: 6/30/2016 19:44:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574635-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00059**	**-.00655**	**-.00220**	**.00598**	**.00061**	**.00002**	**-.03586**
Stddev	.00140	.00934	.00120	.00233	.00049	.00005	.01949
%RSD	235.37	142.58	54.560	38.877	79.885	228.45	54.344
#1	-.00149	-.00839	-.00351	.00862	.00110	-.00004	-.03873
#2	-.00131	.00357	-.00192	.00424	.00060	.00004	-.01510
#3	.00102	-.01482	-.00116	.00509	.00013	.00006	-.05376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00040**	**.00115**	**.00064**	F **-.02161**	**-.01966**	**-.00526**
Stddev	.00010	.00034	.00117	.00081	.03456	.05113	.00392
%RSD	38.407	86.462	102.31	127.58	159.90	260.06	74.623
#1	.00018	.00079	.00014	.00118	-.04360	-.07502	-.00073
#2	.00036	.00018	.00243	-.00030	.01822	.02580	-.00746
#3	.00022	.00022	.00086	.00103	-.03946	-.00976	-.00758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11283**	**-.00019**	**.00010**	**133.88**	**-.00098**	**-.00308**	**-.00041**
Stddev	.03451	.00259	.00029	.25	.00069	.00326	.00326
%RSD	30.583	1395.8	284.25	.18637	69.887	105.77	790.16
#1	.15207	.00277	.00035	133.64	-.00169	-.00590	.00137
#2	.09918	-.00126	.00017	134.14	-.00095	.00049	-.00418
#3	.08723	-.00207	-.00022	133.84	-.00031	-.00382	.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: F BLANK Acquired: 6/30/2016 19:44:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574635-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00231	-.00111	.00786	-.00061	.00041	.00524	-.00406
Stddev	.00414	.00223	.00278	.00053	.00049	.00348	.00128
%RSD	178.86	200.46	35.344	86.884	118.59	66.392	31.510
#1	.00242	-.00359	.01106	-.00122	.00089	.00836	-.00498
#2	-.00188	-.00048	.00620	-.00029	.00045	.00588	-.00260
#3	.00640	.00073	.00631	-.00032	-.00009	.00149	-.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00006	.00292	-.00012
Stddev	.00056	.00013	.00095
%RSD	903.76	4.3908	791.46
#1	.00065	.00306	.00045
#2	-.00000	.00288	-.00122
#3	-.00046	.00282	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9181.4	54900.	2554.4
Stddev	15.7	48.	10.3
%RSD	.17110	.08659	.40182
#1	9181.6	54852.	2562.3
#2	9197.0	54901.	2542.8
#3	9165.6	54947.	2558.1

Approved: July 01, 2016

Sample Name: L1606150101 Acquired: 6/30/2016 19:48:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00173	-.00290	-.00344	.01862	.06701	.00006	53.553	.00250
Stddev	.00153	.00663	.00184	.00289	.00128	.00003	.188	.00015
%RSD	88.423	228.47	53.449	15.529	1.9104	53.653	.35047	5.8334
#1	-.00009	.00191	-.00243	.02071	.06574	.00009	53.519	.00242
#2	-.00197	-.01046	-.00556	.01532	.06830	.00002	53.755	.00267
#3	-.00312	-.00015	-.00232	.01983	.06699	.00008	53.384	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.00032	.98925	.00197	.64028	.00141	.98994	.15346
Stddev	.00020	.00052	.06702	.01933	.03539	.00268	.10606	.00132
%RSD	17.870	158.85	6.7744	980.59	5.5266	189.35	10.714	.86091
#1	.00122	.00087	1.0289	.01902	.59949	.00446	1.0624	.15475
#2	.00090	.00025	1.0270	-.01903	.66277	.00036	1.0392	.15211
#3	.00127	-.00015	.91187	.00593	.65857	-.00057	.86821	.15353
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	131.62	.01495	.32828	.00186	.00521	.00228	.39535
Stddev	.00016	.76	.00159	.01542	.00217	.00141	.00489	.01770
%RSD	49.125	.57648	10.645	4.6983	116.52	27.042	214.74	4.4767
#1	-.00026	131.25	.01445	.33144	.00346	.00545	-.00300	.40634
#2	-.00051	132.49	.01673	.34188	-.00061	.00370	.00318	.40479
#3	-.00021	131.11	.01367	.31152	.00272	.00649	.00665	.37494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606150101 Acquired: 6/30/2016 19:48:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.09764**	**.00075**	**-.00089**	**.00014**	**.45909**	**.00012**
Stddev	.00037	.00011	.00810	.00173	.00038	.03124	.00019
%RSD	231.95	.11361	1084.7	193.80	277.77	6.8037	159.66
#1	.00020	.09763	.00729	.00110	.00056	.47422	.00015
#2	-.00023	.09776	-.00831	-.00181	-.00015	.47989	.00029
#3	.00051	.09754	.00326	-.00197	-.00000	.42317	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9106.1**	**54464.**	**2536.2**
Stddev	24.7	257.	7.7
%RSD	.27123	.47195	.30494
#1	9104.3	54754.	2528.3
#2	9131.6	54373.	2536.5
#3	9082.3	54265.	2543.7

Approved: July 01, 2016

Sample Name: L1606150102 Acquired: 6/30/2016 19:52:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00151	.29200	.00053	.04049	.06863	-.00001	21.238	.00298
Stddev	.00242	.00690	.00211	.00202	.00084	.00009	.132	.00009
%RSD	160.04	2.3635	401.62	4.9827	1.2206	1027.8	.61938	3.1183
#1	-.00256	.29981	.00239	.04244	.06846	-.00003	21.086	.00299
#2	.00125	.28672	.00096	.04062	.06955	.00009	21.321	.00289
#3	-.00322	.28947	-.00177	.03841	.06790	-.00008	21.306	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00883	.00131	15.665	.25177	.67222	.00425	.70674	.45310
Stddev	.00076	.00021	.974	.02762	.16484	.00236	.03378	.00494
%RSD	8.6239	15.974	6.2179	10.968	24.521	55.479	4.7797	1.0911
#1	.00938	.00124	16.248	.22271	.86134	.00156	.68575	.45009
#2	.00915	.00115	16.206	.27767	.55903	.00522	.74571	.45881
#3	.00796	.00155	14.540	.25493	.59630	.00597	.68877	.45041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	138.32	.00837	4.6566	.00883	.00428	.00410	.49375
Stddev	.00021	.97	.00031	.2916	.00280	.00182	.00555	.02380
%RSD	2120.9	.70020	3.7647	6.2628	31.775	42.465	135.36	4.8198
#1	.00020	137.21	.00870	4.8268	.00887	.00233	.00679	.50932
#2	-.00022	138.97	.00832	4.8231	.00600	.00593	-.00228	.50558
#3	-.00001	138.78	.00807	4.3198	.01161	.00458	.00780	.46636
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606150102 Acquired: 6/30/2016 19:52:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.09801	.00095	-.00229	-.00054	3.9913	.00061
Stddev	.00080	.00098	.00424	.00064	.00134	.2506	.00035
%RSD	259.16	1.0048	444.74	28.065	247.04	6.2786	57.112
#1	-.00028	.09705	-.00295	-.00275	.00047	4.1412	.00073
#2	.00122	.09901	.00547	-.00257	-.00207	4.1307	.00022
#3	-.00002	.09798	.00035	-.00156	-.00003	3.7020	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8991.2	55005.	2566.6
Stddev	15.5	65.	10.6
%RSD	.17239	.11760	.41211
#1	8975.4	55063.	2576.9
#2	9006.4	54935.	2555.8
#3	8992.0	55017.	2567.3

Approved: July 01, 2016

Sample Name: L1606153401 Acquired: 6/30/2016 19:56:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	-.00038	-.00134	.01749	.10035	.00004	30.511	.00027
Stddev	.00144	.00862	.00090	.00090	.00051	.00008	.102	.00003
%RSD	171.97	2274.5	67.179	5.1658	.51247	206.91	.33514	10.906
#1	.00077	.00795	-.00030	.01716	.10061	-.00002	30.489	.00028
#2	-.00201	.00018	-.00180	.01680	.09976	.00012	30.421	.00023
#3	-.00129	-.00926	-.00191	.01851	.10068	.00000	30.622	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00148	.00025	-.01992	.20630	.00257	3.8838	.11561
Stddev	.00014	.00089	.00052	.01697	.09091	.00277	.0666	.00215
%RSD	13.783	60.502	208.62	85.192	44.069	108.16	1.7155	1.8576
#1	.00088	.00161	.00079	-.03701	.29163	.00292	3.8821	.11430
#2	.00094	.00052	.00023	-.00307	.21659	-.00037	3.9513	.11808
#3	.00114	.00230	-.00026	-.01970	.11068	.00515	3.8181	.11444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	130.84	-.00000	.00178	.00001	.00468	.00113	.83118
Stddev	.00013	.27	.00110	.00951	.00414	.00207	.00342	.05276
%RSD	55.504	.20995	88053.	533.01	68283.	44.289	303.02	6.3473
#1	-.00038	131.10	-.00072	.00032	-.00382	.00528	-.00061	.86085
#2	-.00019	130.55	.00127	.01195	-.00055	.00639	.00506	.86241
#3	-.00014	130.86	-.00055	-.00691	.00439	.00238	-.00107	.77026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606153401 Acquired: 6/30/2016 19:56:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.07216**	**.00269**	**-.00278**	**.00032**	**.00450**	**.00054**
Stddev	.00093	.00027	.00015	.00139	.00052	.00034	.00070
%RSD	119.93	.36826	5.4635	50.049	163.92	7.6269	130.45
#1	-.00028	.07240	.00255	-.00164	.00073	.00477	.00025
#2	-.00186	.07187	.00268	-.00433	.00050	.00461	.00134
#3	-.00020	.07220	.00284	-.00238	-.00027	.00411	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9155.5**	**55030.**	**2567.9**
Stddev	7.4	223.	6.8
%RSD	.08055	.40444	.26356
#1	9163.6	55242.	2560.1
#2	9153.6	54798.	2571.5
#3	9149.3	55050.	2572.2

Approved: July 01, 2016

Sample Name: L1606156101 Acquired: 6/30/2016 20:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00162**	**-.00040**	**-.00026**	**.22109**	**.25770**	**-.00001**	**67.199**	**.00030**
Stddev	.00164	.00035	.00178	.00234	.00191	.00006	.496	.00009
%RSD	101.44	87.531	677.11	1.0584	.74220	504.88	.73822	29.324
#1	-.00001	-.00019	-.00152	.22181	.25752	-.00007	66.849	.00040
#2	-.00154	-.00081	-.00104	.21847	.25970	.00003	67.766	.00027
#3	-.00329	-.00022	.00177	.22298	.25589	.00001	66.980	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00227**	**.00144**	**-.00018**	**.39220**	**1.5737**	**.03169**	**2.2713**	**2.5439**
Stddev	.00043	.00109	.00016	.02226	.1639	.00416	.0873	.0209
%RSD	18.974	75.940	87.875	5.6759	10.412	13.124	3.8452	.82235
#1	.00213	.00022	.00000	.37147	1.6379	.03562	2.3555	2.5343
#2	.00276	.00175	-.00025	.38941	1.6957	.02733	2.1811	2.5679
#3	.00194	.00234	-.00030	.41573	1.3875	.03214	2.2773	2.5295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00204**	**159.36**	**.00510**	**.00107**	**-.00176**	**.00232**	**.00244**	**1.0365**
Stddev	.00054	.90	.00023	.00256	.00308	.00411	.01076	.0288
%RSD	26.670	.56698	4.5286	238.90	174.89	177.32	440.44	2.7773
#1	.00183	159.00	.00534	.00287	-.00505	-.00241	.00467	1.0513
#2	.00266	160.39	.00508	-.00186	-.00126	.00432	.01192	1.0549
#3	.00164	158.69	.00488	.00221	.00104	.00503	-.00926	1.0034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606156101 Acquired: 6/30/2016 20:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00059**	**2.5107**	**-.00818**	**-.00066**	**.00051**	**.01848**	**.00037**
Stddev	.00088	.0141	.00279	.00256	.00040	.00062	.00036
%RSD	148.22	.56312	34.175	385.07	79.123	3.3757	96.232
#1	-.00160	2.5085	-.00524	-.00108	.00095	.01878	.00020
#2	-.00025	2.5258	-.00848	.00208	.00018	.01890	.00013
#3	.00007	2.4977	-.01080	-.00299	.00039	.01776	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9071.7**	**54313.**	**2558.7**
Stddev	26.8	157.	13.4
%RSD	.29585	.28923	.52515
#1	9047.8	54179.	2561.7
#2	9100.7	54273.	2544.1
#3	9066.5	54486.	2570.5

Approved: July 01, 2016

Sample Name: L1606156801 Acquired: 6/30/2016 20:04:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00102**	**.02920**	**-.00319**	**.02322**	**.01815**	**.00010**	**47.735**	**.00032**
Stddev	.00229	.00586	.00154	.00218	.00051	.00005	.530	.00036
%RSD	223.78	20.063	48.187	9.3729	2.7901	49.822	1.1111	111.60
#1	-.00159	.03449	-.00313	.02075	.01869	.00015	47.980	-.00009
#2	-.00297	.03022	-.00476	.02403	.01808	.00009	48.098	.00047
#3	.00150	.02290	-.00169	.02487	.01769	.00005	47.126	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**.00116**	**.00030**	**.94359**	**2.1307**	**-.00457**	**10.213**	**.12867**
Stddev	.00038	.00049	.00134	.02428	.0725	.00467	.035	.00297
%RSD	113.91	41.966	441.97	2.5735	3.4028	102.20	.34628	2.3084
#1	-.00004	.00129	-.00026	.95570	2.2090	.00069	10.248	.13207
#2	.00032	.00157	.00183	.91563	2.1175	-.00619	10.177	.12659
#3	.00073	.00062	-.00066	.95943	2.0658	-.00822	10.216	.12734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**63.415**	**-.00034**	**.01200**	**.00204**	**-.00037**	**.00043**	**2.9761**
Stddev	.00038	.276	.00030	.00298	.00039	.00410	.00517	.1962
%RSD	95.364	.43470	89.141	24.838	19.142	1094.0	1207.2	6.5924
#1	.00075	63.407	-.00017	.01164	.00237	.00276	-.00235	3.0957
#2	-.00000	63.695	-.00015	.00922	.00215	-.00502	.00639	3.0829
#3	.00045	63.144	-.00069	.01515	.00161	.00114	-.00275	2.7497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606156801 Acquired: 6/30/2016 20:04:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00066**	**.15583**	**.00196**	**-.00005**	**.00048**	**.02531**	**.00056**
Stddev	.00025	.00068	.00486	.00079	.00059	.00215	.00058
%RSD	38.557	.43441	247.68	1657.4	121.92	8.4992	102.45
#1	-.00093	.15634	.00302	.00001	.00033	.02681	.00111
#2	-.00043	.15506	-.00334	.00072	.00114	.02628	.00061
#3	-.00062	.15610	.00621	-.00087	-.00002	.02285	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9149.7**	**55168.**	**2544.0**
Stddev	16.5	50.	10.4
%RSD	.18046	.09132	.40866
#1	9137.2	55202.	2532.3
#2	9168.4	55110.	2547.7
#3	9143.4	55192.	2552.1

Approved: July 01, 2016

Sample Name: L1606156901 Acquired: 6/30/2016 20:08:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00238	.00208	-.00126	.02632	.00889	-.00001	50.430	.00012
Stddev	.00089	.00276	.00087	.00167	.00055	.00011	.339	.00019
%RSD	37.128	132.77	69.127	6.3621	6.1843	851.84	.67165	158.70
#1	-.00316	.00050	-.00218	.02697	.00948	.00003	50.125	.00005
#2	-.00142	.00047	-.00113	.02442	.00878	.00006	50.795	-.00003
#3	-.00257	.00526	-.00046	.02757	.00840	-.00014	50.371	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00059	-.00026	.15793	1.2618	.00287	14.852	.11243
Stddev	.00044	.00064	.00128	.01062	.1316	.00418	.013	.00211
%RSD	67.391	108.79	487.15	6.7221	10.426	145.47	.08681	1.8775
#1	.00015	.00097	-.00056	.16294	1.1852	-.00142	14.849	.11464
#2	.00087	.00095	-.00137	.16512	1.1865	.00310	14.840	.11223
#3	.00095	-.00015	.00114	.14574	1.4137	.00693	14.866	.11043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	15.220	-.00003	.00294	-.00144	.00326	.00341	4.4389
Stddev	.00026	.162	.00027	.00545	.00311	.00719	.00365	.3109
%RSD	56.713	1.0645	791.86	185.05	215.41	220.34	107.17	7.0045
#1	.00041	15.117	-.00025	.00912	.00117	-.00494	.00636	4.6242
#2	.00074	15.407	-.00011	.00087	-.00062	.00628	-.00068	4.6126
#3	.00023	15.136	.00026	-.00116	-.00488	.00845	.00454	4.0800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606156901 Acquired: 6/30/2016 20:08:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.16437**	**.00174**	**-.00639**	**.00065**	**.00420**	**.00042**
Stddev	.00031	.00089	.00260	.00355	.00048	.00068	.00048
%RSD	134.31	.54401	149.47	55.565	74.051	16.184	115.40
#1	-.00011	.16336	-.00126	-.00880	.00120	.00463	.00089
#2	.00049	.16507	.00334	-.00805	.00033	.00454	-.00007
#3	.00031	.16467	.00313	-.00231	.00041	.00341	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9179.7**	**55494.**	**2553.6**
Stddev	45.8	121.	20.8
%RSD	.49859	.21731	.81371
#1	9193.0	55459.	2555.0
#2	9217.4	55395.	2532.2
#3	9128.8	55629.	2573.6

Approved: July 01, 2016

Sample Name: L1606157001 Acquired: 6/30/2016 20:12:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.01359**	**-.00208**	**.01579**	**.02062**	**-.00000**	**37.577**	**.00007**
Stddev	.00080	.00638	.00060	.00049	.00126	.00009	.168	.00030
%RSD	258.38	46.907	28.924	3.1197	6.1075	4053.7	.44696	452.15
#1	-.00066	.01520	-.00271	.01627	.02155	.00007	37.547	-.00027
#2	.00060	.01901	-.00203	.01579	.01918	-.00011	37.758	.00016
#3	-.00087	.00657	-.00151	.01529	.02111	.00003	37.426	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00060**	**.00079**	**.00017**	**.35996**	**2.2660**	**-.00258**	**7.4617**	**.04586**
Stddev	.00023	.00040	.00077	.02292	.1275	.00184	.0920	.00231
%RSD	39.242	50.391	458.20	6.3663	5.6272	71.429	1.2334	5.0333
#1	.00075	.00116	-.00029	.38049	2.3012	-.00442	7.4015	.04789
#2	.00071	.00037	.00106	.36415	2.3722	-.00073	7.5676	.04335
#3	.00033	.00085	-.00026	.33524	2.1246	-.00260	7.4160	.04633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00082**	**5.6377**	**.00015**	**.01361**	**.00165**	**.00219**	**-.00255**	**1.2769**
Stddev	.00014	.0369	.00076	.00344	.00097	.00091	.00570	.0853
%RSD	17.184	.65373	506.35	25.252	58.793	41.842	223.46	6.6780
#1	.00066	5.6086	-.00053	.01020	.00092	.00213	-.00185	1.3294
#2	.00093	5.6792	.00098	.01356	.00274	.00313	.00276	1.3227
#3	.00086	5.6254	.00001	.01707	.00128	.00130	-.00857	1.1785
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606157001 Acquired: 6/30/2016 20:12:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.14209**	**-.00244**	**-.00266**	**-.00035**	**.00221**	**-.00009**
Stddev	.00008	.00101	.00663	.00134	.00059	.00010	.00004
%RSD	70.682	.71355	272.29	50.299	168.05	4.7227	45.675
#1	-.00006	.14124	-.00365	-.00413	.00005	.00233	-.00004
#2	-.00021	.14321	-.00837	-.00235	-.00102	.00214	-.00012
#3	-.00008	.14181	.00472	-.00151	-.00008	.00215	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9220.7**	**55950.**	**2539.1**
Stddev	11.0	115.	15.1
%RSD	.11926	.20583	.59477
#1	9212.2	55890.	2546.3
#2	9233.1	55878.	2521.8
#3	9216.9	56083.	2549.3

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 20:16:05 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37698**	**9.3522**	**.36778**	**.45378**	**.91434**	**.04732**	**9.1088**	**.04641**
Stddev	.00421	.0196	.00085	.00296	.00309	.00005	.0584	.00021
%RSD	1.1162	.20939	.23175	.65213	.33819	.11429	.64127	.45317
#1	.37521	9.3314	.36872	.45053	.91077	.04738	9.0427	.04623
#2	.38178	9.3703	.36705	.45632	.91628	.04727	9.1535	.04636
#3	.37394	9.3549	.36757	.45449	.91596	.04733	9.1303	.04664
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18926**	**.47369**	**.46865**	**3.6577**	**48.172**	**.92281**	**9.5018**	**.46131**
Stddev	.00075	.00133	.00288	.0273	.261	.00749	.1346	.00302
%RSD	.39376	.28049	.61495	.74670	.54207	.81138	1.4170	.65431
#1	.18947	.47215	.46681	3.6302	48.046	.91522	9.3610	.46150
#2	.18988	.47443	.47197	3.6580	47.997	.92301	9.5153	.46422
#3	.18843	.47448	.46717	3.6848	48.472	.93019	9.6293	.45819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.93610**	**45.265**	**.46450**	**9.1319**	**.46582**	**1.0988**	**.37221**	**4.5787**
Stddev	.00250	.226	.00254	.0247	.00420	.0022	.00873	.0078
%RSD	.26711	.49990	.54702	.27041	.90228	.20255	2.3446	.17121
#1	.93771	45.004	.46536	9.1282	.46344	1.0985	.38228	4.5738
#2	.93736	45.379	.46651	9.1583	.47067	1.1011	.36763	4.5877
#3	.93322	45.412	.46165	9.1093	.46333	1.0967	.36673	4.5745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 20:16:05 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94464	.91269	.90903	.47747	.95345	.91921	.95463
Stddev	.00578	.00504	.00855	.00191	.00459	.00321	.00332
%RSD	.61240	.55199	.94090	.40089	.48108	.34907	.34799
#1	.94726	.90725	.90345	.47530	.94863	.91972	.95142
#2	.94866	.91361	.91888	.47823	.95776	.92213	.95806
#3	.93801	.91720	.90476	.47890	.95397	.91578	.95441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9642.8	57909.	2639.7
Stddev	14.8	150.	9.9
%RSD	.15343	.25828	.37515
#1	9645.6	58000.	2649.7
#2	9626.7	57991.	2639.4
#3	9655.9	57736.	2629.9

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 20:19:43 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00192**	**-.01084**	**-.00233**	**.00352**	**.00039**	**-.00001**	**-.06163**	**.00017**
Stddev	.00182	.00183	.00059	.00285	.00091	.00005	.05545	.00024
%RSD	94.894	16.858	25.456	80.790	235.22	569.95	89.974	137.10
#1	-.00311	-.01164	-.00193	.00033	.00136	.00002	-.03579	.00024
#2	.00018	-.01213	-.00302	.00443	-.00044	-.00007	-.12529	-.00009
#3	-.00283	-.00875	-.00205	.00581	.00024	.00002	-.02382	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00057**	**.00030**	**-.04588**	**-.06569**	**.00149**	**.07690**	**-.00054**
Stddev	.00023	.00024	.00054	.02167	.10274	.00159	.03418	.00273
%RSD	1990.3	41.497	183.29	47.227	156.39	106.79	44.455	501.90
#1	-.00027	.00043	.00019	-.05238	-.11555	.00148	.04225	.00261
#2	.00008	.00084	-.00019	-.06356	.05246	-.00009	.07784	-.00204
#3	.00016	.00043	.00089	-.02171	-.13399	.00309	.11060	-.00220
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00427**	**-.00060**	**.00383**	**-.00088**	**.00333**	**.00254**	**.00212**
Stddev	.00040	.03166	.00026	.00661	.00313	.00640	.00309	.00221
%RSD	619.41	741.48	44.159	172.62	355.82	192.15	121.87	104.37
#1	-.00040	-.00071	-.00089	-.00057	.00245	.00722	.00125	.00438
#2	.00030	.03812	-.00049	.01144	-.00134	.00683	.00607	.00202
#3	.00030	-.02460	-.00040	.00063	-.00375	-.00406	.00029	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 20:19:43 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00051**	**.00000**	**.00414**	**-.00333**	**.00048**	**-.00008**	**.00043**
Stddev	.00047	.00054	.00426	.00181	.00084	.00010	.00049
%RSD	92.496	451070.	102.77	54.433	175.02	126.54	113.13
#1	-.00035	-.00028	.00858	-.00223	.00029	-.00020	.00018
#2	-.00104	.00062	.00377	-.00234	.00140	.00001	.00100
#3	-.00014	-.00034	.00009	-.00542	-.00025	-.00006	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9747.8**	**58694.**	**2637.3**
Stddev	6.8	53.	16.1
%RSD	.06936	.08981	.60991
#1	9740.1	58753.	2622.9
#2	9752.1	58651.	2634.4
#3	9751.4	58679.	2654.7

Approved: July 01, 2016

Sample Name: L1606157601 Acquired: 6/30/2016 20:23:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00149	-.00501	.02252	.29037	.00001	44.922	.00028
Stddev	.00060	.00297	.00160	.00034	.00192	.00015	.189	.00011
%RSD	695.50	199.05	31.856	1.5039	.66104	1051.2	.42140	38.920
#1	.00057	.00282	-.00602	.02213	.29118	.00005	45.068	.00017
#2	-.00024	-.00191	-.00584	.02267	.29175	-.00015	44.990	.00038
#3	-.00060	.00357	-.00317	.02276	.28817	.00015	44.708	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00168	.02226	.14035	1.2713	.00156	5.8297	.04839
Stddev	.00023	.00087	.00283	.02078	.0402	.00502	.0778	.00219
%RSD	69.398	51.541	12.701	14.808	3.1639	322.53	1.3346	4.5245
#1	.00008	.00088	.02499	.14534	1.2977	.00498	5.9195	.04903
#2	.00037	.00260	.02243	.15818	1.2911	.00389	5.7815	.05018
#3	.00053	.00156	.01935	.11752	1.2250	-.00421	5.7883	.04595
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	8.0518	-.00031	.02681	.00250	.00314	-.00298	2.7521
Stddev	.00020	.0603	.00039	.00359	.00237	.00412	.00532	.1513
%RSD	413.06	.74899	127.04	13.388	94.830	130.98	178.91	5.4974
#1	.00026	8.0375	.00009	.02379	.00408	.00253	-.00910	2.8379
#2	.00001	8.1180	-.00069	.03078	-.00023	.00754	-.00034	2.8410
#3	-.00013	7.9999	-.00032	.02587	.00366	-.00063	.00051	2.5774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606157601 Acquired: 6/30/2016 20:23:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00109**	**.34251**	**.00100**	**-.00134**	**-.00011**	**.05143**	**.00064**
Stddev	.00035	.00114	.00466	.00214	.00067	.00360	.00065
%RSD	32.077	.33269	465.57	160.18	631.24	6.9901	102.34
#1	.00092	.34297	.00624	-.00329	-.00075	.05366	.00067
#2	.00149	.34335	-.00269	-.00167	.00059	.05335	-.00003
#3	.00086	.34122	-.00055	.00095	-.00016	.04728	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9177.5**	**55616.**	**2539.9**
Stddev	17.6	51.	22.2
%RSD	.19230	.09089	.87571
#1	9195.8	55617.	2517.1
#2	9175.9	55666.	2540.9
#3	9160.6	55565.	2561.6

Approved: July 01, 2016

Sample Name: L1606157701 Acquired: 6/30/2016 20:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	.48692	.00617	.11569	.06403	.00010	10.881	.00031
Stddev	.00225	.00938	.00089	.00393	.00067	.00003	.066	.00022
%RSD	441.53	1.9264	14.400	3.3964	1.0423	31.510	.60561	71.147
#1	.00160	.49237	.00633	.12007	.06420	.00014	10.928	.00006
#2	-.00287	.49230	.00521	.11450	.06461	.00007	10.910	.00045
#3	-.00025	.47609	.00696	.11249	.06330	.00009	10.806	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.00080	.26215	.38327	.86561	.00586	2.5129	.02447
Stddev	.00036	.00050	.01598	.02651	.10470	.00180	.0507	.00420
%RSD	45.782	62.875	6.0961	6.9171	12.095	30.812	2.0176	17.178
#1	.00085	.00044	.27105	.37364	.97824	.00788	2.5393	.02893
#2	.00040	.00058	.27170	.41325	.77125	.00443	2.4545	.02390
#3	.00110	.00137	.24370	.36292	.84735	.00525	2.5450	.02058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	149.05	.00160	.11047	.02288	.00360	.00020	3.9085
Stddev	.00043	1.16	.00007	.01220	.00061	.00588	.00439	.2522
%RSD	20.271	.77744	4.4060	11.045	2.6453	163.26	2193.9	6.4532
#1	.00260	149.51	.00158	.12059	.02301	-.00282	.00526	4.0820
#2	.00187	149.90	.00168	.11390	.02222	.00873	-.00256	4.0242
#3	.00185	147.73	.00155	.09692	.02341	.00491	-.00210	3.6191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606157701 Acquired: 6/30/2016 20:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00151	.15038	.01593	-.00130	.00029	.04234	.00046
Stddev	.00016	.00221	.00915	.00125	.00013	.00276	.00036
%RSD	10.332	1.4686	57.435	96.214	45.850	6.5236	76.973
#1	.00133	.15071	.01678	-.00158	.00016	.04424	.00008
#2	.00159	.15240	.02462	.00007	.00043	.04361	.00078
#3	.00162	.14802	.00638	-.00238	.00028	.03917	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9069.8	54569.	2509.1
Stddev	13.5	90.	13.6
%RSD	.14886	.16564	.54117
#1	9056.3	54572.	2495.4
#2	9069.9	54477.	2509.3
#3	9083.3	54658.	2522.5

Approved: July 01, 2016

Sample Name: L1606157702 Acquired: 6/30/2016 20:31:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.05824	.00730	.11297	.05914	.00008	10.696	.00023
Stddev	.00065	.00607	.00243	.00416	.00049	.00005	.016	.00019
%RSD	240.90	10.423	33.364	3.6828	.83160	60.573	.15026	85.744
#1	.00101	.05756	.01011	.11045	.05858	.00014	10.680	.00000
#2	-.00002	.05253	.00577	.11777	.05947	.00007	10.697	.00037
#3	-.00018	.06462	.00602	.11069	.05938	.00004	10.712	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00092	.02668	.02478	.75897	.00558	2.3348	.00536
Stddev	.00037	.00141	.00129	.01427	.04006	.00537	.0450	.00233
%RSD	121.74	152.74	4.8407	57.566	5.2779	96.253	1.9282	43.566
#1	.00013	.00245	.02785	.04121	.79568	.00293	2.3521	.00604
#2	.00073	-.00032	.02688	.01761	.71624	.00205	2.3686	.00276
#3	.00006	.00064	.02529	.01552	.76498	.01177	2.2837	.00728
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00188	148.06	-.00059	.02385	-.00253	.00093	.00136	3.2485
Stddev	.00030	.31	.00054	.00550	.00343	.00464	.00552	.2038
%RSD	15.885	.20993	91.137	23.058	135.69	498.45	406.17	6.2740
#1	.00158	147.72	-.00001	.02418	-.00617	.00333	.00772	3.3639
#2	.00217	148.33	-.00070	.02917	.00064	-.00442	-.00222	3.3684
#3	.00189	148.12	-.00106	.01819	-.00205	.00388	-.00142	3.0131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606157702 Acquired: 6/30/2016 20:31:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.14683**	**.00720**	**-.00490**	**.00046**	**.00166**	**.00017**
Stddev	.00099	.00084	.00391	.00141	.00056	.00023	.00023
%RSD	211.93	.57314	54.311	28.758	122.34	13.636	139.25
#1	.00067	.14732	.00760	-.00328	.00109	.00183	.00001
#2	-.00094	.14731	.01088	-.00584	.00025	.00175	.00005
#3	-.00112	.14586	.00310	-.00557	.00003	.00141	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9070.9**	**54307.**	**2507.2**
Stddev	7.2	142.	11.2
%RSD	.07961	.26154	.44596
#1	9065.0	54335.	2498.3
#2	9079.0	54153.	2519.8
#3	9068.8	54433.	2503.6

Approved: July 01, 2016

Sample Name: L1606157801 Acquired: 6/30/2016 20:35:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.00458	-.00454	-.00227	.00236	.01255	-.00002	1.5071
Stddev	.00156	.01133	.00128	.00045	.00037	.00004	.0089
%RSD	33.974	249.54	56.288	18.909	2.9180	179.41	.58850
#1	-.00313	.00784	-.00159	.00276	.01232	.00001	1.5079
#2	-.00439	-.01438	-.00375	.00243	.01237	-.00001	1.4978
#3	-.00622	-.00708	-.00148	.00188	.01297	-.00007	1.5155
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	9.0000						
Low Limit	-.00400						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00535	-.00177	.00377	63.580	.24647	.00116
Stddev	.00002	.00018	.00097	.00909	.165	.07461	.00286
%RSD	13.024	3.3090	54.675	241.32	.25921	30.270	247.14
#1	-.00016	.00553	-.00104	.00841	63.448	.26280	.00253
#2	-.00020	.00534	-.00141	.00960	63.765	.31157	.00307
#3	-.00018	.00518	-.00287	-.00671	63.528	.16506	-.00213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18562	1.5518	-.00035	124.43	.06791	-.03175	.00128
Stddev	.07598	.0043	.00058	.38	.00432	.00824	.00014
%RSD	40.935	.27780	163.43	.30520	6.3605	25.960	10.626
#1	.15343	1.5487	-.00045	124.13	.07043	-.02448	.00115
#2	.13103	1.5567	-.00087	124.86	.07037	-.03006	.00142
#3	.27240	1.5499	.00027	124.30	.06292	-.04071	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: L1606157801 Acquired: 6/30/2016 20:35:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00158**	**-.00714**	**.12162**	**.00046**	**.02687**	**.01812**	**-.00299**
Stddev	.00189	.00080	.00570	.00023	.00016	.00349	.00190
%RSD	119.76	11.252	4.6845	50.139	.57762	19.269	63.582
#1	-.00060	-.00624	.12518	.00020	.02669	.02207	-.00302
#2	.00283	-.00779	.12463	.00063	.02696	.01685	-.00488
#3	.00250	-.00739	.11505	.00054	.02697	.01544	-.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00012**	**.07635**	**-.00182**
Stddev	.00004	.00519	.00025
%RSD	34.863	6.7976	13.454
#1	-.00012	.07945	-.00175
#2	-.00008	.07925	-.00163
#3	-.00016	.07036	-.00210
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9116.4**	**54937.**	**2532.3**
Stddev	18.1	297.	10.2
%RSD	.19870	.53981	.40314
#1	9102.4	55240.	2542.1
#2	9136.9	54922.	2533.0
#3	9109.9	54648.	2521.7

Approved: July 01, 2016

Sample Name: L1606158801 Acquired: 6/30/2016 20:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00138	.07504	.00400	.23121	.04362	.00010	2.0421
Stddev	.00137	.00035	.00375	.00323	.00119	.00002	.0344
%RSD	98.966	.47159	93.720	1.3985	2.7248	21.780	1.6842
#1	-.00277	.07534	.00008	.23004	.04492	.00008	2.0712
#2	-.00135	.07465	.00756	.22873	.04258	.00009	2.0042
#3	-.00003	.07511	.00437	.23487	.04336	.00012	2.0510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00067	.00074	.00416	.19363	.41691	.00620
Stddev	.00019	.00025	.00039	.00167	.01702	.12873	.00420
%RSD	924.24	37.207	51.850	40.251	8.7877	30.878	67.776
#1	-.00003	.00038	.00118	.00559	.20663	.56307	.01033
#2	-.00014	.00083	.00062	.00457	.19987	.32037	.00635
#3	.00024	.00080	.00043	.00232	.17437	.36728	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47166	.00889	.01641	F 308.49	-.00061	.01528	.00033
Stddev	.11628	.00148	.00119	3.04	.00088	.00228	.00259
%RSD	24.653	16.621	7.2272	.98576	144.57	14.920	795.85
#1	.41574	.00978	.01720	311.84	.00041	.01475	.00071
#2	.39391	.00719	.01700	307.72	-.00106	.01332	-.00244
#3	.60533	.00971	.01505	305.91	-.00119	.01778	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 01, 2016

Sample Name: L1606158801 Acquired: 6/30/2016 20:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00185**	**-.00087**	**2.5722**	**-.00038**	**.12701**	**.00978**	**-.00344**
Stddev	.00636	.00123	.1837	.00033	.00102	.00795	.00129
%RSD	343.78	142.11	7.1434	87.853	.80319	81.252	37.441
#1	.00865	-.00106	2.6827	-.00001	.12803	.01896	-.00352
#2	.00086	-.00199	2.6737	-.00066	.12699	.00492	-.00469
#3	-.00395	.00045	2.3601	-.00046	.12599	.00548	-.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00023**	**.01043**	**.00061**
Stddev	.00130	.00105	.00053
%RSD	568.87	10.070	86.359
#1	.00154	.01123	.00121
#2	.00020	.01081	.00046
#3	-.00105	.00924	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8968.7**	**53176.**	**2488.6**
Stddev	29.4	269.	33.2
%RSD	.32755	.50509	1.3332
#1	8983.6	53269.	2450.3
#2	8987.7	53385.	2507.0
#3	8934.9	52873.	2508.5

Approved: July 01, 2016

Sample Name: L1606158802S Acquired: 6/30/2016 20:43:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19813**	**5.0304**	**.20034**	**1.1726**	**.53175**	**.02543**	**6.8940**
Stddev	.00177	.0170	.00174	.0068	.00351	.00004	.0692
%RSD	.89547	.33739	.86638	.57639	.66071	.14454	1.0042
#1	.20012	5.0114	.20041	1.1656	.53279	.02540	6.8749
#2	.19671	5.0358	.20204	1.1731	.53463	.02542	6.9708
#3	.19756	5.0441	.19857	1.1791	.52784	.02547	6.8363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02446**	**.10048**	**.25397**	**.25059**	**2.1275**	**26.451**	**.51548**
Stddev	.00026	.00080	.00121	.00321	.0197	.102	.00358
%RSD	1.0641	.79577	.47648	1.2803	.92727	.38548	.69453
#1	.02475	.10079	.25321	.24985	2.1418	26.557	.51208
#2	.02437	.10107	.25536	.25411	2.1358	26.354	.51922
#3	.02425	.09957	.25333	.24782	2.1050	26.440	.51515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.4313**	**.25262**	**.51935**	F **331.66**	**.24305**	**4.8442**	**.23983**
Stddev	.1224	.00302	.00468	1.76	.00093	.0343	.00554
%RSD	2.2533	1.1965	.90054	.53144	.38060	.70881	2.3109
#1	5.3457	.25342	.52127	332.59	.24320	4.8464	.23570
#2	5.3768	.25515	.52275	332.76	.24389	4.8773	.24613
#3	5.5715	.24927	.51401	329.63	.24206	4.8088	.23765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 01, 2016

Sample Name: L1606158802S Acquired: 6/30/2016 20:43:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.57379	.18780	5.0978	.50126	.62292	.49594	.24079
Stddev	.00436	.00389	.0209	.00452	.00157	.00401	.00209
%RSD	.75964	2.0713	.40911	.90126	.25134	.80934	.86630
#1	.57683	.18377	5.1048	.50459	.62430	.49424	.23966
#2	.57576	.19153	5.1142	.50309	.62324	.49306	.23952
#3	.56880	.18810	5.0743	.49612	.62122	.50053	.24320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51651	.49980	.00075
Stddev	.00136	.00621	.00075
%RSD	.26256	1.2427	99.715
#1	.51514	.50560	.00058
#2	.51785	.50056	.00157
#3	.51653	.49325	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8971.1	53233.	2524.1
Stddev	8.1	37.	16.7
%RSD	.09033	.06860	.66013
#1	8965.3	53199.	2505.6
#2	8980.3	53229.	2528.8
#3	8967.5	53272.	2537.9

Approved: July 01, 2016

Sample Name: L1606158803SD Acquired: 6/30/2016 20:46:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19131	4.8374	.19365	1.1382	.51552	.02442	6.7396
Stddev	.00423	.0047	.00500	.0030	.00185	.00010	.0770
%RSD	2.2114	.09825	2.5840	.26616	.35808	.39455	1.1422
#1	.18726	4.8421	.19942	1.1350	.51592	.02453	6.8193
#2	.19096	4.8326	.19049	1.1385	.51713	.02435	6.7337
#3	.19570	4.8374	.19103	1.1410	.51351	.02438	6.6657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02397	.09794	.24609	.24163	2.1058	25.647	.50151
Stddev	.00016	.00025	.00155	.00070	.0323	.157	.00381
%RSD	.64970	.25693	.63064	.28906	1.5343	.61150	.75939
#1	.02410	.09819	.24614	.24205	2.1431	25.721	.49983
#2	.02400	.09794	.24451	.24083	2.0869	25.754	.50587
#3	.02380	.09769	.24761	.24203	2.0874	25.467	.49883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.3907	.24552	.50463	F 329.44	.23571	4.6863	.23479
Stddev	.0615	.00461	.00072	1.20	.00110	.0089	.00312
%RSD	1.1414	1.8766	.14366	.36561	.46522	.18976	1.3281
#1	5.3226	.24581	.50380	330.45	.23454	4.6808	.23141
#2	5.4422	.24077	.50495	329.77	.23589	4.6815	.23756
#3	5.4075	.24997	.50514	328.11	.23671	4.6965	.23540
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 01, 2016

Sample Name: L1606158803SD Acquired: 6/30/2016 20:46:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.56092	.18087	4.9972	.48820	.60532	.47561	.23635
Stddev	.00385	.00091	.0110	.00153	.00229	.01241	.00087
%RSD	.68560	.50282	.22041	.31377	.37910	2.6086	.36674
#1	.55891	.18071	4.9845	.48650	.60620	.46203	.23565
#2	.56535	.18185	5.0032	.48946	.60703	.47848	.23732
#3	.55849	.18006	5.0038	.48866	.60271	.48634	.23607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.49814	.49045	.00093
Stddev	.00181	.00108	.00084
%RSD	.36328	.21982	90.424
#1	.49940	.48942	.00057
#2	.49606	.49157	.00188
#3	.49894	.49035	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8996.9	53595.	2514.9
Stddev	19.5	276.	17.0
%RSD	.21686	.51567	.67531
#1	8977.4	53345.	2505.3
#2	9016.5	53892.	2504.8
#3	8996.9	53549.	2534.5

Approved: July 01, 2016

Sample Name: L1606161401 Acquired: 6/30/2016 20:50:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	.40077	-.00052	.02867	.05511	-.00002	65.677	-.00004
Stddev	.00218	.00634	.00272	.00161	.00160	.00008	.528	.00020
%RSD	347.67	1.5820	525.59	5.6200	2.8997	416.56	.80320	522.84
#1	-.00103	.40458	-.00000	.03013	.05454	-.00002	66.123	.00018
#2	-.00258	.39345	-.00346	.02894	.05692	-.00009	65.812	-.00022
#3	.00172	.40428	.00191	.02694	.05388	.00006	65.095	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.00386	.01689	.30460	1.7018	.00515	33.119	.01148
Stddev	.00019	.00085	.00138	.01762	.1964	.00466	.144	.00357
%RSD	21.269	21.925	8.1478	5.7836	11.539	90.456	.43335	31.117
#1	.00097	.00289	.01766	.32460	1.9110	.01017	33.276	.01468
#2	.00101	.00442	.01771	.29783	1.5214	.00429	32.994	.01212
#3	.00067	.00428	.01530	.29138	1.6729	.00098	33.088	.00763
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00181	9.0919	.00148	.01747	-.00039	.00313	-.00165	4.2256
Stddev	.00047	.0387	.00078	.00130	.00287	.00046	.00457	.3091
%RSD	26.057	.42572	52.981	7.4576	728.68	14.738	276.12	7.3144
#1	.00183	9.1325	.00074	.01775	.00099	.00364	.00168	4.4453
#2	.00227	9.0878	.00230	.01605	.00152	.00275	.00022	4.3593
#3	.00133	9.0554	.00139	.01860	-.00369	.00299	-.00686	3.8722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606161401 Acquired: 6/30/2016 20:50:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00061**	**1.1339**	**.00818**	**-.00388**	**-.00004**	**.01599**	**.00090**
Stddev	.00023	.0076	.00786	.00213	.00022	.00102	.00039
%RSD	38.562	.66900	96.118	54.910	527.24	6.3767	43.436
#1	-.00087	1.1393	.00449	-.00321	-.00003	.01663	.00108
#2	-.00053	1.1371	.00284	-.00217	-.00027	.01654	.00118
#3	-.00042	1.1252	.01720	-.00627	.00017	.01482	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9130.0**	**55186.**	**2520.1**
Stddev	28.7	70.	25.3
%RSD	.31416	.12659	1.0053
#1	9105.9	55242.	2506.9
#2	9161.7	55108.	2504.1
#3	9122.5	55209.	2549.3

Approved: July 01, 2016

Sample Name: L1606161801 Acquired: 6/30/2016 20:54:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00103	.04204	.00035	.08383	.13930	.00009	24.755	.00019
Stddev	.00304	.00694	.00111	.00025	.00195	.00010	.181	.00019
%RSD	294.37	16.511	320.17	.30207	1.4009	116.80	.73247	100.76
#1	.00247	.04605	-.00048	.08409	.14155	-.00003	24.943	.00038
#2	-.00272	.04605	.00162	.08382	.13818	.00017	24.581	-.00001
#3	-.00285	.03403	-.00009	.08359	.13817	.00012	24.743	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00144	.04820	.00428	1.0999	.00769	6.4189	.00425
Stddev	.00035	.00070	.00406	.02724	.1351	.00120	.0878	.00173
%RSD	48.406	48.291	8.4196	636.22	12.285	15.654	1.3676	40.770
#1	.00082	.00076	.05134	-.01914	1.1945	.00787	6.3463	.00388
#2	.00102	.00142	.04964	-.00220	.94511	.00641	6.3939	.00613
#3	.00034	.00215	.04362	.03418	1.1600	.00880	6.5164	.00273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	135.23	-.00010	.01814	.00132	.00365	.00043	2.8192
Stddev	.00020	.93	.00158	.00266	.00218	.00310	.00246	.1300
%RSD	12.642	.68514	1509.5	14.689	164.69	84.863	567.27	4.6128
#1	.00166	136.20	.00150	.01602	-.00107	.00594	.00130	2.9008
#2	.00171	134.36	-.00015	.01726	.00319	.00490	-.00234	2.8876
#3	.00134	135.14	-.00166	.02113	.00184	.00012	.00234	2.6692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606161801 Acquired: 6/30/2016 20:54:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.36615**	**-.00040**	**-.00252**	**-.00007**	**.01247**	**.00042**
Stddev	.00088	.00044	.00696	.00253	.00067	.00071	.00017
%RSD	526.93	.11976	1737.9	100.74	958.44	5.7302	39.794
#1	-.00091	.36658	-.00832	-.00057	-.00075	.01287	.00027
#2	-.00040	.36571	.00474	-.00538	-.00005	.01289	.00038
#3	.00081	.36618	.00238	-.00159	.00059	.01164	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9080.7**	**54522.**	**2536.0**
Stddev	9.2	62.	20.8
%RSD	.10142	.11320	.81883
#1	9081.6	54593.	2512.0
#2	9089.4	54480.	2547.3
#3	9071.1	54493.	2548.7

Approved: July 01, 2016

Sample Name: L1606161802 Acquired: 6/30/2016 20:58:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.01457**	**-.00266**	**.08699**	**.13840**	**.00003**	**24.322**	**.00042**
Stddev	.00138	.00386	.00042	.00179	.00117	.00003	.145	.00031
%RSD	985.97	26.522	15.631	2.0559	.84445	118.41	.59775	74.857
#1	.00089	.01011	-.00272	.08867	.13887	.00006	24.426	.00019
#2	.00040	.01687	-.00304	.08719	.13927	.00004	24.384	.00078
#3	-.00171	.01672	-.00222	.08511	.13707	-.00001	24.156	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**.00035**	**.02068**	**-.01744**	**1.1259**	**.00652**	**6.2547**	**.00219**
Stddev	.00030	.00065	.00170	.00504	.1125	.00222	.0997	.00179
%RSD	94.216	186.78	8.2025	28.913	9.9881	34.129	1.5944	81.603
#1	.00023	.00101	.02252	-.01831	1.0008	.00465	6.3238	.00366
#2	.00008	.00031	.02035	-.02200	1.2186	.00593	6.1404	.00020
#3	.00066	-.00028	.01917	-.01202	1.1583	.00898	6.2999	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00142**	**134.06**	**-.00010**	**.00701**	**-.00116**	**.00073**	**.00205**	**2.7534**
Stddev	.00022	.94	.00033	.00742	.00240	.00279	.00724	.1550
%RSD	15.482	.70004	337.03	105.82	206.32	381.35	352.87	5.6301
#1	.00157	134.53	.00028	.01546	-.00208	.00271	.00384	2.8450
#2	.00152	134.67	-.00031	.00398	-.00297	.00195	.00823	2.8407
#3	.00117	132.98	-.00027	.00158	.00156	-.00246	-.00591	2.5744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606161802 Acquired: 6/30/2016 20:58:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.36175**	**-.00367**	**-.00469**	**.00019**	**.01036**	**.00002**
Stddev	.00028	.00009	.00400	.00281	.00041	.00076	.00030
%RSD	75.038	.02551	108.97	59.978	210.77	7.3626	1271.1
#1	-.00068	.36172	-.00114	-.00145	-.00002	.01082	-.00010
#2	-.00033	.36167	-.00828	-.00651	-.00006	.01077	-.00020
#3	-.00012	.36185	-.00159	-.00610	.00066	.00948	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9091.1**	**54411.**	**2518.3**
Stddev	13.2	128.	11.7
%RSD	.14466	.23480	.46536
#1	9106.2	54285.	2515.3
#2	9082.4	54408.	2508.4
#3	9084.7	54541.	2531.3

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 21:02:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37706**	**9.4010**	**.36986**	**.45564**	**.92042**	**.04735**	**9.1691**	**.04640**
Stddev	.00268	.0109	.00208	.00365	.00083	.00013	.0217	.00069
%RSD	.71124	.11536	.56275	.80063	.09062	.27220	.23687	1.4918
#1	.37495	9.3932	.37051	.45151	.92118	.04745	9.1523	.04698
#2	.38008	9.3963	.37154	.45845	.91953	.04740	9.1614	.04659
#3	.37616	9.4134	.36753	.45694	.92057	.04721	9.1936	.04563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18907**	**.47340**	**.46881**	**3.6776**	**48.313**	**.93410**	**9.5767**	**.46282**
Stddev	.00330	.00047	.00637	.0211	.176	.00299	.0241	.00410
%RSD	1.7459	.09923	1.3583	.57402	.36327	.31977	.25128	.88663
#1	.19095	.47318	.47389	3.6636	48.147	.93608	9.5954	.45853
#2	.19100	.47394	.47088	3.6672	48.497	.93555	9.5496	.46671
#3	.18526	.47308	.46166	3.7019	48.296	.93066	9.5853	.46322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.93809**	**45.850**	**.46286**	**9.1311**	**.46464**	**1.0959**	**.36881**	**4.5819**
Stddev	.01440	.095	.00740	.0887	.00547	.0103	.00398	.0297
%RSD	1.5355	.20631	1.5998	.97118	1.1777	.93919	1.0797	.64780
#1	.94465	45.824	.46652	9.1748	.46997	1.1018	.36449	4.5946
#2	.94804	45.955	.46772	9.1894	.46492	1.1018	.36962	4.6031
#3	.92157	45.771	.45433	9.0290	.45903	1.0840	.37233	4.5480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 21:02:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94225	.91998	.92362	.47767	.95680	.92114	.95496
Stddev	.01627	.00075	.01453	.00243	.00225	.01269	.00457
%RSD	1.7266	.08157	1.5735	.50785	.23509	1.3773	.47830
#1	.94985	.92067	.90748	.47666	.95516	.92810	.94980
#2	.95334	.92010	.92772	.48044	.95937	.92882	.95659
#3	.92358	.91918	.93566	.47591	.95589	.90650	.95848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9607.9	57769.	2644.0
Stddev	15.0	139.	3.0
%RSD	.15585	.24126	.11293
#1	9595.8	57614.	2646.7
#2	9603.4	57811.	2644.5
#3	9624.7	57883.	2640.8

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 21:05:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00246**	**-.01425**	**-.00244**	**.00062**	**.00071**	**.00005**	**-.05016**	**.00008**
Stddev	.00324	.00356	.00126	.00231	.00094	.00007	.02301	.00011
%RSD	131.55	24.962	51.485	373.87	131.88	135.14	45.883	133.82
#1	.00574	-.01332	-.00189	.00254	.00060	.00012	-.03354	-.00003
#2	.00238	-.01819	-.00155	-.00194	-.00017	.00004	-.07643	.00019
#3	-.00074	-.01126	-.00388	.00126	.00171	-.00001	-.04051	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**.00041**	**-.00053**	**-.02066**	**.02601**	**-.00412**	**.04365**	**-.00273**
Stddev	.00014	.00046	.00138	.01303	.03098	.00553	.06430	.00168
%RSD	47.790	112.01	259.62	63.055	119.12	134.48	147.32	61.530
#1	.00026	-.00010	-.00053	-.00584	.05157	-.01042	.10653	-.00089
#2	.00018	.00081	.00085	-.03030	.03491	-.00007	.04640	-.00312
#3	.00046	.00053	-.00191	-.02583	-.00845	-.00185	-.02199	-.00418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**.05039**	**-.00043**	**-.00257**	**-.00100**	**.00023**	**-.00109**	**.00188**
Stddev	.00029	.02467	.00040	.00265	.00191	.00315	.00552	.00281
%RSD	168080.	48.960	92.004	103.40	190.75	1342.0	504.57	149.22
#1	.00017	.07401	-.00066	-.00078	-.00146	-.00317	-.00133	.00509
#2	-.00034	.02479	.00003	-.00562	-.00263	.00084	-.00649	.00071
#3	.00017	.05237	-.00067	-.00130	.00109	.00303	.00454	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 21:05:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.00005**	**.00510**	**-.00333**	**.00058**	**-.00022**	**.00001**
Stddev	.00042	.00051	.00686	.00220	.00100	.00006	.00035
%RSD	67.960	1026.0	134.53	66.106	171.56	29.895	3323.6
#1	-.00105	.00063	-.00132	-.00429	.00158	-.00028	-.00035
#2	-.00020	-.00017	.00429	-.00081	.00057	-.00023	.00036
#3	-.00062	-.00031	.01233	-.00489	-.00041	-.00015	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9761.2**	**58796.**	**2645.1**
Stddev	5.7	84.	9.6
%RSD	.05870	.14316	.36242
#1	9757.7	58751.	2636.6
#2	9767.8	58743.	2655.5
#3	9758.1	58893.	2643.2

Approved: July 01, 2016

Sample Name: L1606161901 Acquired: 6/30/2016 21:09:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00138	.02118	-.00362	.01717	.08790	-.00000	65.246	.00031
Stddev	.00074	.00541	.00180	.00063	.00043	.00002	.609	.00014
%RSD	53.083	25.542	49.697	3.6505	.48390	1194.6	.93398	43.748
#1	-.00197	.02384	-.00566	.01692	.08839	-.00002	64.850	.00025
#2	-.00163	.02475	-.00295	.01671	.08767	.00002	65.948	.00022
#3	-.00056	.01496	-.00225	.01789	.08763	-.00001	64.940	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00348	.00121	.00650	1.4850	1.1722	.00326	6.8283	.56449
Stddev	.00026	.00008	.00055	.0148	.0846	.00276	.1154	.00458
%RSD	7.5381	6.5059	8.4863	.99693	7.2178	84.748	1.6904	.81090
#1	.00376	.00124	.00712	1.4968	1.1524	.00416	6.8182	.55934
#2	.00346	.00112	.00606	1.4684	1.2650	.00016	6.9484	.56605
#3	.00323	.00127	.00633	1.4899	1.0993	.00546	6.7182	.56808
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	5.1663	.00102	.05449	.00448	.00031	-.00384	4.5514
Stddev	.00010	.0262	.00072	.01132	.00164	.00361	.00194	.2575
%RSD	19.498	.50758	70.818	20.784	36.666	1165.6	50.576	5.6577
#1	.00050	5.1573	.00053	.06658	.00613	-.00316	-.00213	4.7033
#2	.00058	5.1959	.00068	.05276	.00444	.00003	-.00343	4.6968
#3	.00039	5.1459	.00185	.04413	.00285	.00405	-.00595	4.2541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606161901 Acquired: 6/30/2016 21:09:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.27411	-.00317	-.00486	-.00054	.01607	.00054
Stddev	.00057	.00159	.00424	.00272	.00030	.00116	.00034
%RSD	248.55	.57980	133.83	55.942	55.849	7.2462	63.582
#1	-.00011	.27227	-.00023	-.00677	-.00072	.01678	.00014
#2	.00089	.27510	-.00124	-.00175	-.00019	.01670	.00070
#3	-.00009	.27495	-.00803	-.00606	-.00071	.01472	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9197.1	55837.	2541.1
Stddev	22.3	173.	27.8
%RSD	.24231	.30900	1.0921
#1	9217.3	55819.	2554.1
#2	9200.8	55674.	2509.2
#3	9173.2	56018.	2560.0

Approved: July 01, 2016

Sample Name: L1606162201 Acquired: 6/30/2016 21:13:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.01035	-.00080	.06350	.24641	.00002	46.410	.00016
Stddev	.00303	.00329	.00467	.00179	.00055	.00009	.141	.00004
%RSD	354.31	31.839	584.54	2.8174	.22291	358.16	.30453	22.095
#1	.00020	.00833	-.00192	.06143	.24703	-.00005	46.424	.00019
#2	.00151	.01415	.00433	.06453	.24598	.00012	46.544	.00012
#3	-.00428	.00857	-.00481	.06453	.24622	.00001	46.262	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00061	.00415	-.00204	1.8074	.01015	17.826	.01918
Stddev	.00022	.00014	.00166	.01392	.0430	.00350	.064	.00141
%RSD	280.88	22.933	39.916	681.55	2.3773	34.460	.36011	7.3716
#1	.00002	.00075	.00478	.01311	1.7992	.01107	17.763	.02053
#2	-.00033	.00047	.00541	-.00498	1.7690	.01310	17.822	.01929
#3	.00007	.00063	.00227	-.01426	1.8538	.00629	17.892	.01771
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00272	97.511	-.00072	-.00064	-.00172	-.00099	.00011	2.9703
Stddev	.00014	.235	.00138	.00617	.00208	.00439	.00308	.1152
%RSD	5.1266	.24087	192.55	965.60	120.94	444.05	2922.4	3.8784
#1	.00269	97.601	.00087	.00223	-.00412	.00402	-.00008	3.0309
#2	.00287	97.687	-.00141	-.00773	-.00067	-.00281	-.00288	3.0426
#3	.00259	97.244	-.00162	.00358	-.00037	-.00417	.00328	2.8374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606162201 Acquired: 6/30/2016 21:13:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.99712**	**-.00602**	**-.00233**	**-.00035**	**.00334**	**.00015**
Stddev	.00111	.00312	.00486	.00041	.00062	.00014	.00014
%RSD	178.08	.31248	80.706	17.536	177.04	4.1480	87.717
#1	-.00021	.99632	-.01098	-.00205	.00010	.00338	.00001
#2	-.00187	1.0006	-.00582	-.00214	-.00009	.00346	.00028
#3	.00022	.99448	-.00127	-.00280	-.00106	.00319	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9094.3**	**54899.**	**2525.4**
Stddev	10.0	53.	6.7
%RSD	.11030	.09695	.26574
#1	9087.4	54840.	2519.9
#2	9089.8	54913.	2523.5
#3	9105.8	54944.	2532.9

Approved: July 01, 2016

Sample Name: L1606162202 Acquired: 6/30/2016 21:17:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00227**	**.00160**	**.00220**	**.07022**	**.25723**	**.00010**	**45.653**
Stddev	.00213	.00866	.00058	.00088	.00087	.00002	.204
%RSD	93.740	540.32	26.355	1.2594	.33713	22.987	.44723
#1	-.00009	-.00157	.00283	.07120	.25639	.00012	45.535
#2	-.00434	.01140	.00169	.06996	.25812	.00009	45.889
#3	-.00238	-.00502	.00210	.06949	.25718	.00007	45.536
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00022**	**.00122**	**.00764**	F **-.02121**	**1.7515**	**.01407**
Stddev	.00012	.00046	.00101	.00208	.03832	.0448	.00007
%RSD	83.645	213.05	83.124	27.188	180.66	2.5566	.46494
#1	-.00029	-.00029	.00027	.01000	-.04860	1.7704	.01409
#2	-.00007	.00031	.00229	.00681	.02258	1.7004	.01399
#3	-.00008	.00063	.00109	.00610	-.03761	1.7837	.01412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.316**	**.00811**	**.00356**	**105.72**	**-.00049**	**.00440**	**-.00202**
Stddev	.158	.00124	.00043	.73	.00074	.00075	.00240
%RSD	.91120	15.317	12.151	.68946	149.53	17.088	119.02
#1	17.237	.00946	.00341	105.37	.00009	.00526	-.00104
#2	17.497	.00701	.00323	106.55	-.00132	.00385	-.00475
#3	17.213	.00785	.00405	105.22	-.00024	.00409	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: L1606162202 Acquired: 6/30/2016 21:17:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**.00029**	**2.8555**	**.00040**	**1.0023**	**.00722**	**-.00401**
Stddev	.00307	.00010	.1204	.00073	.0063	.00226	.00267
%RSD	549.97	35.451	4.2160	184.37	.62998	31.329	66.504
#1	-.00400	.00028	2.9212	.00112	1.0016	.00464	-.00309
#2	.00046	.00019	2.9287	.00040	1.0089	.00886	-.00193
#3	.00187	.00040	2.7165	-.00034	.99630	.00816	-.00702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00013**	**.00476**	**.00050**
Stddev	.00054	.00023	.00041
%RSD	433.79	4.8481	82.860
#1	-.00054	.00497	.00097
#2	.00049	.00481	.00021
#3	-.00033	.00451	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9075.0**	**54589.**	**2525.0**
Stddev	25.0	118.	16.5
%RSD	.27593	.21657	.65155
#1	9046.9	54453.	2536.9
#2	9083.1	54657.	2506.2
#3	9095.1	54658.	2531.9

Approved: July 01, 2016

Sample Name: L1606162202PS Acquired: 6/30/2016 21:21:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574840-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19964**	**5.0348**	**.19798**	**1.0214**	**.72915**	**.02527**	**46.421**	**.02494**
Stddev	.00184	.0121	.00167	.0016	.00511	.00006	.281	.00019
%RSD	.92277	.23977	.84567	.15579	.70069	.23132	.60509	.77851
#1	.19890	5.0474	.19949	1.0224	.73482	.02522	46.716	.02515
#2	.20174	5.0233	.19828	1.0223	.72770	.02525	46.388	.02493
#3	.19829	5.0338	.19618	1.0196	.72491	.02534	46.158	.02476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10011**	**.25407**	**.25029**	**1.9748**	**27.343**	**.52167**	**20.880**	**.25422**
Stddev	.00243	.00142	.00629	.0223	.219	.00392	.140	.00494
%RSD	2.4316	.55805	2.5130	1.1311	.79968	.75165	.67132	1.9437
#1	.10154	.25473	.25347	1.9639	27.256	.52006	21.033	.25725
#2	.10149	.25244	.25435	1.9600	27.180	.52614	20.851	.24852
#3	.09730	.25504	.24304	2.0005	27.591	.51880	20.757	.25689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50982**	**120.44**	**.24193**	**4.8860**	**.24444**	**.58728**	**.19236**	**5.0040**
Stddev	.01143	.77	.00561	.0878	.00600	.01670	.00212	.0649
%RSD	2.2416	.63821	2.3191	1.7973	2.4563	2.8437	1.1026	1.2981
#1	.51626	121.33	.24507	4.9431	.24757	.59827	.19409	5.0462
#2	.51657	120.05	.24526	4.9300	.24824	.59551	.19299	5.0367
#3	.49662	119.95	.23545	4.7849	.23752	.56806	.18999	4.9292
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606162202PS Acquired: 6/30/2016 21:21:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574840-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50687	1.4004	.49100	.24787	.51688	.49521	.00119
Stddev	.01299	.0108	.01820	.00286	.00259	.00916	.00018
%RSD	2.5627	.77300	3.7066	1.1547	.50192	1.8491	15.050
#1	.51584	1.4129	.51069	.25004	.51931	.49791	.00098
#2	.51280	1.3946	.47481	.24893	.51415	.50270	.00132
#3	.49198	1.3937	.48748	.24462	.51719	.48500	.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9036.6	54538.	2519.5
Stddev	36.5	180.	15.5
%RSD	.40422	.32936	.61704
#1	9077.0	54346.	2502.0
#2	9027.1	54568.	2524.7
#3	9005.8	54701.	2531.7

Approved: July 01, 2016

Sample Name: L1606162202DL Acquired: 6/30/2016 21:25:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574840-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**-.00899**	**.00019**	**.01659**	**.04919**	**.00001**	**8.8429**
Stddev	.00178	.00150	.00232	.00199	.00182	.00004	.0404
%RSD	295.80	16.684	1210.7	11.984	3.7060	345.55	.45661
#1	.00131	-.01067	.00261	.01763	.05130	-.00003	8.7986
#2	-.00090	-.00779	-.00200	.01785	.04813	.00004	8.8525
#3	-.00222	-.00850	-.00004	.01430	.04816	.00002	8.8776
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00005**	**-.00025**	**.00101**	F **-.02719**	**.32378**	**-.00063**
Stddev	.00018	.00015	.00040	.00116	.02841	.07120	.00224
%RSD	113.34	288.61	161.04	114.78	104.48	21.991	356.23
#1	-.00033	-.00010	-.00060	-.00019	-.05696	.33602	.00107
#2	.00002	.00018	-.00033	.00109	-.00037	.24725	-.00317
#3	-.00016	.00007	.00018	.00214	-.02424	.38806	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.5167**	**.00210**	**.00068**	**20.553**	**-.00090**	**-.00089**	**.00066**
Stddev	.0440	.00319	.00044	.052	.00089	.00768	.00347
%RSD	1.2504	151.70	64.383	.25185	99.236	865.19	528.76
#1	3.4716	-.00137	.00115	20.613	-.00072	-.00866	.00463
#2	3.5191	.00490	.00057	20.522	-.00186	-.00071	-.00091
#3	3.5594	.00278	.00030	20.525	-.00011	.00670	-.00176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: L1606162202DL Acquired: 6/30/2016 21:25:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574840-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00229	.00018	.53743	.00007	.19779	.00740	-.00200
Stddev	.00391	.00145	.03935	.00034	.00088	.00431	.00219
%RSD	170.25	809.40	7.3224	498.77	.44517	58.222	109.63
#1	-.00202	.00026	.56098	-.00030	.19835	.00746	-.00069
#2	.00559	.00159	.55932	.00013	.19824	.00306	-.00078
#3	.00332	-.00131	.49200	.00037	.19677	.01167	-.00453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00006	.00195	.00011
Stddev	.00053	.00033	.00055
%RSD	954.52	16.723	490.69
#1	.00024	.00190	.00031
#2	.00026	.00229	.00054
#3	-.00067	.00164	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9700.9	57886.	2596.9
Stddev	70.4	193.	9.2
%RSD	.72617	.33274	.35380
#1	9658.1	57689.	2594.2
#2	9662.3	57894.	2607.1
#3	9782.2	58074.	2589.3

Approved: July 01, 2016

Sample Name: L1606162202DL Acquired: 6/30/2016 21:28:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574840-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00108**	**-.01124**	**-.00060**	**.00580**	**.00801**	**-.00001**	**1.6771**	**-.00019**
Stddev	.00271	.00590	.00072	.00142	.00100	.00006	.0363	.00013
%RSD	251.56	52.485	119.54	24.444	12.539	467.25	2.1671	70.867
#1	-.00406	-.01247	-.00019	.00678	.00904	.00003	1.6505	-.00011
#2	.00123	-.01642	-.00144	.00417	.00704	-.00009	1.7185	-.00011
#3	-.00040	-.00482	-.00019	.00644	.00794	.00001	1.6623	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**-.00007**	**.00006**	**.00891**	**.09664**	**-.00201**	**.70798**	**-.00172**
Stddev	.00027	.00014	.00018	.00678	.04421	.00120	.02896	.00233
%RSD	200.16	195.72	298.06	76.011	45.747	59.665	4.0902	135.14
#1	-.00015	.00003	-.00015	.00559	.05946	-.00338	.67466	-.00441
#2	.00038	-.00022	.00020	.01671	.14553	-.00138	.72711	-.00020
#3	.00017	-.00002	.00013	.00445	.08494	-.00125	.72216	-.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**4.0974**	**-.00013**	**.00175**	**.00053**	**-.00001**	**.00136**	**.09847**
Stddev	.00028	.0693	.00066	.00173	.00206	.00363	.00174	.00945
%RSD	74.280	1.6906	491.01	98.776	388.04	68921.	128.31	9.5991
#1	.00055	4.1773	-.00054	.00358	-.00040	-.00369	.00200	.10505
#2	.00052	4.0532	.00063	.00014	.00289	.00012	-.00061	.10271
#3	.00005	4.0619	-.00050	.00153	-.00090	.00356	.00269	.08764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606162202DL Acquired: 6/30/2016 21:28:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574840-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.03845**	**.00919**	**-.00038**	**-.00028**	**.00067**	**.00027**
Stddev	.00011	.00024	.00316	.00249	.00050	.00008	.00040
%RSD	249.10	.63701	34.397	658.77	179.80	11.539	150.18
#1	-.00004	.03867	.00659	.00128	.00029	.00060	-.00004
#2	.00017	.03850	.01271	.00083	-.00065	.00075	.00072
#3	-.00000	.03819	.00827	-.00324	-.00047	.00065	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10355.**	**63173.**	**2831.2**
Stddev	41.	64.	21.0
%RSD	.39473	.10198	.74086
#1	10362.	63223.	2807.3
#2	10391.	63101.	2846.4
#3	10311.	63197.	2839.9

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 21:32:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38276**	**9.4386**	**.37842**	**.46803**	**.94286**	**.04668**	**9.3775**	**.04723**
Stddev	.00134	.0146	.00449	.00318	.00647	.00022	.0415	.00086
%RSD	.34923	.15494	1.1875	.67907	.68668	.47116	.44212	1.8125
#1	.38359	9.4548	.38023	.46440	.94193	.04685	9.3298	.04796
#2	.38347	9.4350	.38174	.46938	.94974	.04643	9.4048	.04745
#3	.38121	9.4262	.37331	.47031	.93689	.04675	9.3981	.04629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19049**	**.47081**	**.47204**	**3.7263**	**48.050**	**.94755**	**9.6544**	**.47138**
Stddev	.00462	.00080	.00976	.0097	.441	.00525	.1095	.00314
%RSD	2.4245	.17014	2.0671	.26131	.91781	.55401	1.1344	.66703
#1	.19268	.47172	.47844	3.7357	48.011	.94968	9.6375	.47376
#2	.19360	.47019	.47686	3.7162	48.510	.95140	9.7713	.47257
#3	.18518	.47053	.46081	3.7270	47.630	.94157	9.5542	.46782
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94568**	**46.984**	**.46635**	**9.3053**	**.46936**	**1.1207**	**.37680**	**4.6469**
Stddev	.02305	.179	.01079	.1672	.00686	.0180	.00470	.0587
%RSD	2.4372	.38076	2.3141	1.7971	1.4606	1.6057	1.2481	1.2641
#1	.95788	47.006	.47157	9.3900	.47014	1.1325	.37239	4.6390
#2	.96006	47.151	.47354	9.4133	.47579	1.1296	.38175	4.7092
#3	.91910	46.795	.45394	9.1127	.46215	1.1000	.37626	4.5926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 21:32:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94939	.94658	.95179	.48286	.94935	.92902	.95172
Stddev	.02624	.00429	.01638	.00457	.00358	.01980	.00466
%RSD	2.7635	.45361	1.7210	.94672	.37758	2.1314	.48986
#1	.96219	.94501	.95661	.48789	.95264	.93840	.95214
#2	.96677	.95144	.96522	.48174	.94553	.94238	.95615
#3	.91921	.94330	.93354	.47895	.94989	.90627	.94686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10021.	60756.	2807.2
Stddev	24.	157.	16.6
%RSD	.23969	.25880	.59019
#1	10030.	60576.	2798.7
#2	10038.	60866.	2796.6
#3	9993.2	60827.	2826.3

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 21:36:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**-.01224**	**-.00574**	**.00345**	**-.00118**	**.00001**	**-.02455**	**-.00004**
Stddev	.00177	.00378	.00121	.00043	.00005	.00002	.03203	.00014
%RSD	381.76	30.894	21.124	12.412	4.1353	195.38	130.46	322.06
#1	-.00030	-.01429	-.00712	.00335	-.00123	.00001	-.00125	.00005
#2	.00122	-.01455	-.00530	.00392	-.00117	.00003	-.01133	.00002
#3	-.00231	-.00788	-.00481	.00308	-.00114	-.00001	-.06107	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00063**	**-.00102**	**-.03175**	**.02410**	**-.00307**	**.02654**	**-.00113**
Stddev	.00034	.00083	.00075	.01034	.05863	.00516	.06014	.00231
%RSD	80.983	131.70	73.627	32.552	243.26	167.91	226.64	204.10
#1	.00042	-.00025	-.00044	-.02390	.09171	.00024	.08429	.00100
#2	.00075	.00139	-.00187	-.02790	-.01270	-.00044	-.03573	-.00360
#3	.00008	.00073	-.00075	-.04346	-.00671	-.00901	.03105	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.05183**	**-.00042**	**.00094**	**.00077**	**-.00049**	**.00862**	**.00229**
Stddev	.00018	.03714	.00063	.00207	.00231	.00200	.00116	.00042
%RSD	159.51	71.653	148.47	220.21	298.54	407.29	13.440	18.355
#1	.00033	.09438	-.00006	.00262	.00267	.00063	.00884	.00190
#2	-.00001	.02588	-.00115	-.00138	.00146	-.00280	.00736	.00274
#3	.00002	.03524	-.00006	.00159	-.00180	.00070	.00965	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 21:36:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.00018**	**.00318**	**-.00143**	**.00060**	**-.00018**	**.00051**
Stddev	.00049	.00048	.00406	.00310	.00073	.00005	.00064
%RSD	187.53	268.12	127.60	217.43	120.92	25.551	124.32
#1	-.00060	-.00013	.00073	.00143	.00007	-.00019	.00049
#2	-.00047	-.00006	.00787	-.00099	.00143	-.00013	.00117
#3	.00030	.00074	.00094	-.00472	.00031	-.00022	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10023.**	**60724.**	**2788.0**
Stddev	43.	89.	20.1
%RSD	.42527	.14655	.72198
#1	9984.0	60826.	2769.6
#2	10016.	60662.	2784.8
#3	10069.	60684.	2809.5

Approved: July 01, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000090	0.054978	0.000000	1.000000
Al 308.215 {109}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000726	0.008658	0.000000	1.000000
As 189.042 {478}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000011	0.025290	0.000000	1.000000
B 249.678 {135}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000097	0.025088	0.000000	1.000000
Ba 455.403 { 74}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.056022	2.203041	0.000000	1.000000
Be 313.107 {108}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000475	1.073722	0.000000	1.000000
Ca 422.673 { 80}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.003067	0.044871	0.000000	1.000000
Cd 228.802 {447}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000159	0.598146	0.000000	1.000000
Co 228.616 {447}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000119	0.373840	0.000000	1.000000
Cr 267.716 {126}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000216	0.065586	0.000000	1.000000
Cu 224.700 {450}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000146	0.132310	0.000000	1.000000
Fe 261.187 {129}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000215	0.022272	0.000000	1.000000
K 766.490 { 44}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.013881	0.073290	0.000000	1.000000
Li 670.784 { 50}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.022514	1.830799	0.000000	1.000000
Mg 279.079 {121}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000222	0.008751	0.000000	1.000000
Mn 257.610 {131}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000374	0.274882	0.000000	1.000000
Mo 202.030 {467}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000008	0.189442	0.000000	1.000000
Na 589.592 { 57}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.061070	0.194853	0.000000	1.000000
Ni 231.604 {446}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000582	0.139018	0.000000	1.000000
P 214.914 {457}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000163	0.014579	0.000000	1.000000
Pb 220.353 {453}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000812	0.064848	0.000000	1.000000
Sb 206.833 {463}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000190	0.031630	0.000000	1.000000
Se 196.090 {472}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000338	0.018191	0.000000	1.000000
Si 212.412 {459}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000649	0.039906	0.000000	1.000000
Sn 189.989 {477}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000015	0.073602	0.000000	1.000000
Sr 407.771 { 83}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.002405	3.565105	0.000000	1.000000
Ti 337.280 {100}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.002239	0.118308	0.000000	1.000000
Tl 190.856 {477}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000380	0.030488	0.000000	1.000000
V 292.402 {115}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000019	0.077582	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000174	0.431759	0.000000	1.000000
Zr 339.198 { 99}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.006027	4.377591	0.000000	1.000000

Approved: July 16, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999635	0.000004	0.002083	0.006943	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999953	0.000005	0.009238	0.030795	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999836	0.000002	0.002994	0.009980	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999733	0.000003	0.002739	0.009131	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999972	0.000105	0.001135	0.003785	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999925	0.000004	0.000090	0.000299	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999805	0.000056	0.045625	0.152082	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999434	0.000007	0.000255	0.000850	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999934	0.000005	0.000392	0.001306	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999962	0.000002	0.001142	0.003806	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999904	0.000006	0.001299	0.004330	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999221	0.000022	0.030236	0.100786	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999940	0.000254	0.095451	0.318171	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999709	0.000433	0.003821	0.012737	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999966	0.000007	0.086381	0.287938	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999259	0.000034	0.002854	0.009512	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999985	0.000007	0.000412	0.001374	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999971	0.000474	0.033509	0.111696	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999978	0.000003	0.001116	0.003719	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999983	0.000005	0.006652	0.022173	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.998838	0.000010	0.003486	0.011619	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999850	0.000004	0.004214	0.014046	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.998889	0.000003	0.006099	0.020330	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999822	0.000024	0.002292	0.007639	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999970	0.000004	0.000849	0.002831	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999992	0.000090	0.000477	0.001589	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999887	0.000011	0.007758	0.025861	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999852	0.000002	0.002951	0.009837	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999971	0.000004	0.000932	0.003107	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999976	0.000019	0.000194	0.000647	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999897	0.000399	0.000497	0.001657	OK.	1.000000	0.000000	1	0

Approved: July 16, 2016

Sample Name: S0 Acquired: 7/14/2016 11:58:59 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00009	.00073	-.00001	-.00010	.05602	.00047	.00307
Stddev	.00019	.00008	.00002	.00005	.00161	.00007	.00067
%RSD	210.06	10.455	185.29	49.405	2.8812	14.035	21.784
#1	.00013	.00072	-.00001	-.00009	.05433	.00040	.00230
#2	-.00021	.00081	-.00003	-.00015	.05621	.00049	.00348
#3	-.00018	.00066	.00001	-.00005	.05754	.00053	.00342

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00016	-.00012	.00022	.00015	-.00021	-.01387	-.02252
Stddev	.00012	.00012	.00005	.00005	.00056	.00297	.00367
%RSD	74.910	104.04	22.993	35.021	263.02	21.374	16.288
#1	-.00002	-.00026	.00016	.00010	-.00068	-.01088	-.02668
#2	-.00023	-.00009	.00024	.00013	-.00037	-.01681	-.01973
#3	-.00023	-.00002	.00025	.00020	.00041	-.01393	-.02116

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00022	.00038	.00001	-.06108	-.00058	-.00016	-.00081
Stddev	.00034	.00060	.00003	.00244	.00009	.00005	.00019
%RSD	151.73	160.15	321.53	3.9966	15.819	30.351	23.858
#1	.00012	-.00022	-.00000	-.06037	-.00057	-.00013	-.00061
#2	-.00023	.00036	.00004	-.05908	-.00068	-.00014	-.00100
#3	-.00055	.00099	-.00001	-.06380	-.00050	-.00022	-.00083

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00019	-.00034	.00065	.00001	.00240	-.00224	-.00038
Stddev	.00010	.00001	.00003	.00005	.00098	.00102	.00002
%RSD	52.529	4.3798	5.3665	347.08	40.865	45.623	5.5830
#1	.00008	-.00033	.00069	.00006	.00130	-.00235	-.00039
#2	.00027	-.00033	.00062	.00002	.00275	-.00320	-.00039
#3	.00022	-.00035	.00064	-.00004	.00317	-.00116	-.00036

Approved: July 16, 2016

Sample Name: S0 Acquired: 7/14/2016 11:58:59 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00002	.00017	-.00603
Stddev	.00010	.00005	.00159
%RSD	532.23	31.191	26.374
#1	.00013	.00014	-.00659
#2	-.00006	.00024	-.00423
#3	-.00001	.00015	-.00726
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10146.	59083.	2608.1
Stddev	33.	133.	3.5
%RSD	.32073	.22459	.13291
#1	10184.	59033.	2612.1
#2	10131.	59233.	2606.8
#3	10124.	58982.	2605.5

Approved: July 16, 2016

Sample Name: S1 Acquired: 7/14/2016 12:02:58 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00002	.00145	.07175	.00087	.00539	.00019	.00037
Stddev	.00002	.00001	.00036	.00005	.00151	.00018	.00013
%RSD	67.067	.78603	.49677	6.0419	28.072	93.785	35.479
#1	.00001	.00145	.07186	.00081	.00713	.00023	.00052
#2	.00004	.00144	.07136	.00090	.00470	.00035	.00032
#3	.00001	.00146	.07204	.00090	.00435	-.00000	.00027

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00047	.00057	.00003	.01104	.00103	.00139	.02687
Stddev	.00003	.00011	.00039	.00275	.00109	.00018	.00365
%RSD	7.0748	19.705	1561.4	24.872	105.86	12.664	13.586
#1	.00048	.00064	-.00042	.00920	.00000	.00154	.02869
#2	.00043	.00063	.00018	.00974	.00092	.00144	.02267
#3	.00050	.00044	.00032	.01420	.00217	.00120	.02925

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00009	.00089	-.00079	.00056	.00212	.00060	.03198
Stddev	.00014	.00010	.00009	.00010	.00015	.00007	.00195
%RSD	150.39	11.662	11.639	18.121	6.9890	12.404	6.1090
#1	-.00001	.00099	-.00080	.00065	.00225	.00066	.02999
#2	-.00002	.00088	-.00069	.00059	.00215	.00062	.03390
#3	-.00025	.00078	-.00087	.00045	.00196	.00052	.03205

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00152	.00058	.00340	.02671
Stddev	.00153	.00002	.00045	.00078
%RSD	100.50	3.9098	13.189	2.9187
#1	-.00260	.00056	.00369	.02647
#2	.00023	.00060	.00364	.02758
#3	-.00220	.00059	.00289	.02608

Approved: July 16, 2016

Sample Name: S1 Acquired: 7/14/2016 12:02:58 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10199.**	**59583.**	**2616.4**
Stddev	3.	113.	4.9
%RSD	.03154	.18926	.18723
#1	10198.	59453.	2615.1
#2	10202.	59656.	2612.2
#3	10196.	59640.	2621.8

Approved: July 16, 2016

Sample Name: S2 Acquired: 7/14/2016 12:06:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00017**	**.00229**	**.00011**	**.00016**	**.08980**	**.00149**	**.01014**
Stddev	.00003	.00003	.00007	.00004	.00737	.00005	.00118
%RSD	20.364	1.2987	60.531	26.923	8.2097	3.3393	11.618
#1	.00014	.00231	.00006	.00017	.08218	.00144	.00976
#2	.00020	.00226	.00009	.00020	.09033	.00148	.00919
#3	.00015	.00231	.00019	.00012	.09690	.00154	.01145

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00054**	**.00118**	**.00080**	**.00135**	**.00083**	**.03879**	**.01623**
Stddev	.00012	.00008	.00006	.00014	.00097	.00757	.00311
%RSD	23.164	6.9444	7.5106	10.193	116.76	19.514	19.162
#1	.00042	.00127	.00083	.00135	-.00028	.03008	.01266
#2	.00067	.00113	.00084	.00120	.00147	.04253	.01766
#3	.00053	.00113	.00073	.00148	.00129	.04377	.01836

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00130**	**.00160**	**.00315**	**.09973**	**.00051**	**.00225**	**-.00035**
Stddev	.00047	.00051	.00009	.00708	.00009	.00006	.00021
%RSD	35.945	31.748	2.9835	7.0966	16.941	2.6594	60.528
#1	.00144	.00212	.00318	.09207	.00058	.00223	-.00059
#2	.00167	.00110	.00305	.10110	.00041	.00232	-.00030
#3	.00077	.00158	.00323	.10602	.00054	.00220	-.00017

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00088**	**-.00030**	**.00401**	**.00131**	**.06045**	**-.00055**	**-.00011**
Stddev	.00007	.00002	.00008	.00001	.00636	.00072	.00003
%RSD	8.0754	5.8068	2.0733	.72540	10.520	131.79	25.280
#1	.00080	-.00031	.00407	.00132	.05314	-.00002	-.00009
#2	.00090	-.00028	.00392	.00131	.06470	-.00137	-.00014
#3	.00093	-.00031	.00406	.00131	.06352	-.00026	-.00009

Approved: July 16, 2016

Sample Name: S2 Acquired: 7/14/2016 12:06:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00133	.00762	.06496
Stddev	.00003	.00006	.00491
%RSD	2.3176	.76689	7.5621
#1	.00134	.00767	.05942
#2	.00129	.00764	.06671
#3	.00135	.00756	.06876
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9665.5	56421.	2606.9
Stddev	9.5	142.	145.0
%RSD	.09835	.25179	5.5635
#1	9676.5	56431.	2767.4
#2	9660.5	56274.	2568.1
#3	9659.6	56557.	2485.2

Approved: July 16, 2016

Sample Name: S3 Acquired: 7/14/2016 12:10:43 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02184	.08752	.01000	.01228	2.2476	.05532	.44737	.03249
Stddev	.00003	.00025	.00022	.00008	.0142	.00014	.00350	.00081
%RSD	.13782	.28009	2.1521	.68206	.63198	.25076	.78215	2.4809
#1	.02182	.08770	.01013	.01236	2.2449	.05531	.44714	.03297
#2	.02188	.08724	.01011	.01219	2.2629	.05519	.45097	.03295
#3	.02182	.08763	.00975	.01228	2.2349	.05546	.44399	.03156

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07472	.03290	.06683	.08945	3.6435	1.7919	.08765	.13775
Stddev	.00227	.00003	.00190	.00089	.0170	.0228	.00059	.00085
%RSD	3.0394	.10324	2.8463	.99201	.46579	1.2751	.67187	.62010
#1	.07591	.03293	.06806	.09047	3.6371	1.8168	.08833	.13794
#2	.07614	.03286	.06778	.08903	3.6627	1.7869	.08729	.13849
#3	.07210	.03290	.06464	.08885	3.6306	1.7720	.08734	.13681

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18984	9.6336	.06871	.14355	.03167	.03718	.00698	.19579
Stddev	.00672	.0287	.00204	.00313	.00062	.00094	.00009	.00361
%RSD	3.5404	.29796	2.9671	2.1783	1.9728	2.5286	1.2817	1.8418
#1	.19390	9.6233	.06981	.14574	.03226	.03778	.00703	.19808
#2	.19353	9.6661	.06996	.14494	.03173	.03766	.00703	.19766
#3	.18208	9.6115	.06636	.13997	.03101	.03610	.00688	.19163

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07354	3.5504	.11661	.01372	.07692	.43032	4.4581
Stddev	.00250	.0129	.00157	.00008	.00018	.01199	.0460
%RSD	3.4003	.36214	1.3473	.59054	.22773	2.7869	1.0308
#1	.07509	3.5474	.11568	.01375	.07692	.43740	4.4608
#2	.07487	3.5646	.11842	.01378	.07674	.43709	4.5027
#3	.07066	3.5394	.11572	.01362	.07709	.41648	4.4109

Approved: July 16, 2016

Sample Name: S3 Acquired: 7/14/2016 12:10:43 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10113.**	**58678.**	**2612.5**
Stddev	16.	202.	21.5
%RSD	.15673	.34362	.82166
#1	10104.	58732.	2614.6
#2	10105.	58847.	2590.0
#3	10131.	58455.	2632.8

Approved: July 16, 2016

Sample Name: S4 Acquired: 7/14/2016 12:14:19 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04375	.17576	.02018	.02498	4.4769	.10976	.90627	.06497
Stddev	.00009	.00020	.00045	.00013	.0129	.00044	.00342	.00119
%RSD	.19555	.11328	2.2250	.51044	.28897	.39755	.37726	1.8257
#1	.04376	.17559	.02046	.02501	4.4637	.10945	.90283	.06549
#2	.04382	.17598	.02042	.02509	4.4896	.11026	.90966	.06581
#3	.04365	.17570	.01966	.02484	4.4776	.10958	.90633	.06362

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14898	.06594	.13367	.17820	7.3325	3.6460	.17360	.27671
Stddev	.00375	.00017	.00320	.00045	.0190	.0073	.00162	.00178
%RSD	2.5186	.25861	2.3926	.25381	.25849	.20165	.93277	.64154
#1	.15095	.06589	.13537	.17772	7.3110	3.6375	.17178	.27502
#2	.15134	.06613	.13565	.17862	7.3396	3.6507	.17414	.27856
#3	.14465	.06580	.12998	.17826	7.3469	3.6498	.17489	.27656

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.37846	19.457	.13874	.28670	.06482	.07486	.01423	.40630
Stddev	.00977	.034	.00371	.00507	.00116	.00153	.00023	.00607
%RSD	2.5813	.17451	2.6752	1.7673	1.7893	2.0460	1.5926	1.4942
#1	.38387	19.419	.14065	.28913	.06511	.07563	.01434	.40918
#2	.38433	19.484	.14110	.29010	.06580	.07585	.01438	.41039
#3	.36718	19.469	.13446	.28088	.06354	.07309	.01397	.39932

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14675	7.1481	.23379	.02737	.15525	.86428	8.6624
Stddev	.00417	.0196	.00207	.00030	.00050	.02107	.0311
%RSD	2.8434	.27344	.88575	1.0955	.32249	2.4384	.35911
#1	.14920	7.1257	.23144	.02740	.15505	.87643	8.6443
#2	.14913	7.1575	.23458	.02765	.15582	.87646	8.6983
#3	.14193	7.1612	.23534	.02705	.15488	.83994	8.6445

Approved: July 16, 2016

Sample Name: S4 Acquired: 7/14/2016 12:14:19 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9985.8**	**57666.**	**2610.5**
Stddev	22.9	256.	9.5
%RSD	.22950	.44447	.36475
#1	9962.1	57790.	2618.9
#2	9987.5	57836.	2612.3
#3	10008.	57371.	2600.1

Approved: July 16, 2016

Sample Name: ICV Acquired: 7/14/2016 12:17:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39916**	**9.9044**	**.39875**	**.49582**	**.98580**	**.05007**	**9.8368**	**.04976**
Stddev	.00127	.0242	.00904	.00044	.00643	.00012	.0162	.00139
%RSD	.31728	.24394	2.2680	.08819	.65218	.24106	.16430	2.7861
#1	.39821	9.9001	.40308	.49573	.97900	.05002	9.8249	.05082
#2	.39868	9.8826	.40482	.49544	.99178	.04998	9.8552	.05027
#3	.40060	9.9304	.38836	.49630	.98662	.05021	9.8303	.04819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19958**	**.49555**	**.49704**	**3.9586**	**49.667**	**.99011**	**9.7795**	**.49668**
Stddev	.00643	.00030	.01443	.0300	.356	.00497	.0902	.00349
%RSD	3.2195	.06027	2.9035	.75670	.71716	.50204	.92213	.70201
#1	.20353	.49584	.50622	3.9931	49.297	.99403	9.7031	.49462
#2	.20305	.49557	.50449	3.9431	50.008	.99179	9.7563	.50071
#3	.19217	.49524	.48041	3.9395	49.695	.98452	9.8790	.49472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99290**	**49.381**	**.49609**	**9.9800**	**.49510**	**1.1836**	**.40536**	**4.8641**
Stddev	.03309	.220	.01429	.2341	.00930	.0243	.00631	.0871
%RSD	3.3323	.44492	2.8807	2.3461	1.8794	2.0493	1.5557	1.7899
#1	1.0176	49.153	.50463	10.119	.50095	1.1975	.41264	4.9207
#2	1.0058	49.591	.50405	10.111	.49999	1.1978	.40150	4.9077
#3	.95531	49.400	.47959	9.7097	.48437	1.1556	.40194	4.7638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: ICV Acquired: 7/14/2016 12:17:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99483**	**.98365**	**.98155**	**.50149**	**.99145**	**.99250**	**1.0046**
Stddev	.03487	.00508	.00899	.00315	.00235	.02760	.0065
%RSD	3.5050	.51612	.91561	.62741	.23697	2.7806	.64434
#1	1.0178	.97781	.97466	.50436	.99003	1.0093	.99709
#2	1.0120	.98700	.97827	.50197	.99015	1.0076	1.0083
#3	.95470	.98614	.99171	.49812	.99416	.96065	1.0083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10144.**	**58592.**	**2633.8**
Stddev	33.	28.	18.2
%RSD	.32593	.04817	.69189
#1	10108.	58625.	2652.9
#2	10152.	58572.	2616.6
#3	10173.	58580.	2631.8

Approved: July 16, 2016

Sample Name: ICB Acquired: 7/14/2016 12:21:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.00069**	**-.00000**	**.00415**	**.00002**	**.00002**	**-.03169**	**.00003**
Stddev	.00066	.00496	.00111	.00100	.00071	.00002	.06486	.00008
%RSD	145.05	715.58	243600.	24.205	3121.0	92.313	204.70	277.67
#1	-.00121	.00102	-.00124	.00522	.00060	.00000	.02395	.00008
#2	-.00018	.00548	.00090	.00401	.00023	.00005	-.01607	-.00006
#3	.00002	-.00442	.00034	.00322	-.00077	.00003	-.10293	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00007**	**.00044**	**-.00341**	**.04719**	**.00442**	**-.03448**	**-.00333**
Stddev	.00038	.00098	.00074	.04090	.07336	.00355	.04733	.00325
%RSD	120.24	1493.8	168.50	1198.2	155.47	80.160	137.27	97.634
#1	-.00024	-.00101	-.00000	-.04100	.10796	.00845	.01722	-.00035
#2	.00002	.00090	.00129	.04015	.06791	.00179	-.07566	-.00679
#3	-.00073	.00031	.00002	-.00939	-.03431	.00303	-.04499	-.00284
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.01951**	**-.00052**	**.00204**	**-.00209**	**.00255**	**-.00186**	**.00541**
Stddev	.00030	.02134	.00063	.00329	.00130	.00313	.00380	.00090
%RSD	324.08	109.37	120.99	160.93	62.541	122.71	203.87	16.580
#1	.00007	.00462	-.00064	-.00134	-.00058	.00558	-.00520	.00605
#2	-.00020	.00995	.00016	.00522	-.00289	-.00067	.00227	.00580
#3	.00040	.04396	-.00108	.00224	-.00279	.00274	-.00265	.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: ICB Acquired: 7/14/2016 12:21:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00021	-.00229	-.00010	-.00112	.00052	-.00018
Stddev	.00044	.00025	.01066	.00054	.00021	.00006	.00005
%RSD	56.829	120.30	465.46	554.79	18.848	12.036	29.794
#1	.00053	-.00007	-.01459	.00018	-.00098	.00045	-.00015
#2	.00128	.00041	.00366	.00025	-.00137	.00057	-.00016
#3	.00051	.00029	.00406	-.00072	-.00103	.00055	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10208.	59408.	2627.4
Stddev	29.	39.	10.9
%RSD	.28794	.06596	.41658
#1	10178.	59376.	2636.2
#2	10209.	59396.	2615.1
#3	10237.	59451.	2630.9

Approved: July 16, 2016

Sample Name: LLICV Acquired: 7/14/2016 12:25:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00801	.16056	.00772	.08082	.00812	.00155	.38268	.00092
Stddev	.00066	.01078	.00524	.00145	.00079	.00004	.01020	.00022
%RSD	8.2398	6.7169	67.856	1.7927	9.6814	2.8252	2.6662	23.566
#1	.00729	.14830	.01255	.08078	.00849	.00150	.37215	.00078
#2	.00818	.16480	.00846	.08229	.00722	.00158	.38337	.00117
#3	.00857	.16858	.00215	.07939	.00866	.00157	.39252	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00381	.00457	.00345	.09019	.79243	.08368	.33444	.00637
Stddev	.00075	.00086	.00079	.00663	.04807	.00018	.11231	.00150
%RSD	19.646	18.893	22.965	7.3476	6.0662	.21416	33.583	23.619
#1	.00439	.00544	.00397	.08533	.80460	.08348	.29771	.00793
#2	.00408	.00455	.00254	.09774	.83325	.08374	.24508	.00493
#3	.00297	.00371	.00385	.08750	.73944	.08382	.46052	.00625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00754	.43034	.01420	.74129	.00660	.07662	.01656	.72803
Stddev	.00080	.03411	.00205	.07234	.00062	.00597	.00108	.06547
%RSD	10.637	7.9253	14.468	9.7581	9.3569	7.7881	6.5210	8.9926
#1	.00830	.46884	.01613	.78449	.00700	.07852	.01742	.76990
#2	.00762	.41825	.01443	.78159	.00589	.08141	.01691	.76160
#3	.00670	.40393	.01204	.65778	.00692	.06994	.01535	.65258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLICV Acquired: 7/14/2016 12:25:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38028**	**.04070**	**.03122**	**.14703**	**.00766**	**.01561**	**.04051**
Stddev	.04668	.00043	.00350	.01334	.00058	.00176	.00028
%RSD	12.276	1.0617	11.208	9.0757	7.6051	11.306	.68933
#1	.40961	.04096	.02868	.15251	.00735	.01662	.04032
#2	.40479	.04020	.03521	.15676	.00833	.01663	.04083
#3	.32644	.04094	.02977	.13181	.00730	.01357	.04037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10236.**	**59493.**	**2629.1**
Stddev	36.	53.	7.3
%RSD	.35109	.08833	.27667
#1	10227.	59544.	2635.9
#2	10205.	59439.	2621.5
#3	10275.	59495.	2629.8

Approved: July 16, 2016

Sample Name: LLICV Acquired: 7/14/2016 12:29:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02046	.40440	.02096	.19597	.02076	.00389	.97486	.00218
Stddev	.00178	.00540	.00321	.00085	.00152	.00012	.03214	.00007
%RSD	8.7191	1.3354	15.312	.43158	7.3225	3.1173	3.2967	3.1653
#1	.02248	.39925	.02466	.19587	.02248	.00394	.98402	.00224
#2	.01909	.40391	.01907	.19518	.02019	.00376	1.0014	.00210
#3	.01982	.41002	.01914	.19686	.01961	.00399	.93914	.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01022	.01029	.00962	.19185	1.9260	.19907	.95467	.01798
Stddev	.00031	.00044	.00102	.01498	.0506	.00178	.07069	.00254
%RSD	3.0614	4.3176	10.614	7.8072	2.6283	.89590	7.4047	14.097
#1	.01027	.01004	.01054	.20819	1.9476	.19956	.95071	.01952
#2	.00989	.01002	.00979	.18856	1.8681	.19709	1.0273	.01937
#3	.01051	.01080	.00852	.17878	1.9622	.20056	.88604	.01506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01943	1.0251	.03988	1.9258	.01796	.20123	.03731	1.8975
Stddev	.00049	.0081	.00006	.0058	.00259	.00304	.00288	.0032
%RSD	2.5261	.78639	.15862	.30336	14.422	1.5085	7.7275	.17045
#1	.01895	1.0341	.03996	1.9227	.01956	.20473	.03826	1.9007
#2	.01942	1.0186	.03984	1.9326	.01934	.19956	.03961	1.8976
#3	.01993	1.0226	.03985	1.9222	.01497	.19939	.03408	1.8942
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLICV Acquired: 7/14/2016 12:29:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0143**	**.10031**	**.06148**	**.37673**	**.01872**	**.04161**	**.10056**
Stddev	.0026	.00064	.00479	.00086	.00017	.00006	.00083
%RSD	.25134	.63916	7.7960	.22701	.92152	.15197	.82242
#1	1.0170	.10092	.06640	.37579	.01884	.04167	.10080
#2	1.0140	.09964	.06122	.37746	.01852	.04161	.09964
#3	1.0119	.10036	.05682	.37695	.01879	.04155	.10124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10246.**	**59854.**	**2639.7**
Stddev	25.	162.	9.7
%RSD	.23981	.27063	.36661
#1	10231.	60029.	2631.3
#2	10232.	59824.	2650.2
#3	10274.	59710.	2637.5

Approved: July 16, 2016

Sample Name: ICSA Acquired: 7/14/2016 12:33:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00352**	**268.21**	**.00132**	**-.01430**	**-.00014**	**-.00001**	**250.51**	**-.00027**
Stddev	.00171	.39	.00147	.00270	.00030	.00013	.97	.00017
%RSD	48.671	.14382	111.78	18.904	211.85	1475.1	.38717	64.091
#1	-.00273	267.82	.00277	-.01118	.00009	.00014	249.42	-.00015
#2	-.00234	268.22	.00135	-.01586	-.00003	-.00011	250.82	-.00046
#3	-.00548	268.59	-.00017	-.01587	-.00047	-.00007	251.29	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00131**	**-.00145**	**-.00251**	**99.133**	**-.02663**	**.00787**	**254.82**	**.00226**
Stddev	.00034	.00054	.01112	.349	.06423	.00149	.81	.00458
%RSD	25.893	37.260	443.61	.35175	241.20	18.981	.31849	202.37
#1	-.00104	-.00208	.00432	98.767	-.03428	.00759	253.89	.00029
#2	-.00119	-.00111	.00350	99.462	-.08669	.00949	255.26	.00750
#3	-.00169	-.00117	-.01534	99.170	.04108	.00654	255.33	-.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.05520**	**-.00048**	**.00498**	**-.00036**	**-.00125**	**.00789**	**.03566**
Stddev	.00048	.01144	.00085	.00913	.00672	.00721	.00164	.00322
%RSD	77.513	20.720	175.28	183.40	1889.6	576.41	20.743	9.0419
#1	-.00101	.06840	-.00067	.01425	.00354	.00089	.00632	.03936
#2	-.00008	.04895	.00044	.00471	.00351	.00464	.00775	.03412
#3	-.00076	.04825	-.00122	-.00401	-.00812	-.00929	.00958	.03350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: ICSA Acquired: 7/14/2016 12:33:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.00079**	**-.01204**	**-.00145**	**-.00330**	**-.00618**	**-.00334**
Stddev	.00094	.00062	.00619	.00307	.00081	.00026	.00026
%RSD	76.416	78.625	51.412	211.95	24.461	4.1417	7.8886
#1	.00015	.00070	-.01646	-.00485	-.00273	-.00595	-.00360
#2	.00173	.00144	-.00497	.00113	-.00294	-.00614	-.00334
#3	.00183	.00022	-.01469	-.00063	-.00422	-.00646	-.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9564.1**	**55032.**	**2578.1**
Stddev	8.0	57.	10.1
%RSD	.08404	.10400	.39196
#1	9573.3	55094.	2568.1
#2	9560.8	55022.	2588.3
#3	9558.3	54981.	2577.9

Approved: July 16, 2016

Sample Name: ICSAB Acquired: 7/14/2016 12:37:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51935	266.20	.25555	-.01844	.25489	.24607	249.00	.48809
Stddev	.00146	.04	.00540	.00081	.00174	.00013	.54	.01531
%RSD	.28065	.01371	2.1146	4.4042	.68219	.05127	.21847	3.1361
#1	.52024	266.16	.25582	-.01751	.25377	.24614	248.71	.49669
#2	.51767	266.22	.26082	-.01901	.25400	.24614	248.67	.49716
#3	.52015	266.23	.25002	-.01879	.25689	.24593	249.63	.47041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23850	.25126	.25015	96.758	5.1663	.01221	248.97	.25158
Stddev	.00921	.00041	.01719	.198	.0803	.00405	1.14	.00060
%RSD	3.8619	.16289	6.8711	.20451	1.5547	33.190	.45597	.23775
#1	.24396	.25113	.26001	96.788	5.1507	.00759	248.75	.25156
#2	.24368	.25171	.26013	96.547	5.0949	.01515	247.96	.25098
#3	.22787	.25092	.23030	96.939	5.2533	.01389	250.20	.25218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00078	5.3224	.48019	.08706	.49141	.49782	.25896	.01272
Stddev	.00042	.0112	.01851	.00797	.01542	.02690	.00595	.00154
%RSD	53.575	.21119	3.8542	9.1580	3.1382	5.4034	2.2991	12.143
#1	-.00126	5.3300	.49059	.09580	.50374	.50659	.25989	.01236
#2	-.00059	5.3095	.49116	.08519	.49637	.51924	.26439	.01441
#3	-.00049	5.3277	.45882	.08019	.47412	.46763	.25259	.01138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: ICSAB Acquired: 7/14/2016 12:37:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00059	-.01474	.45777	.25278	.47104	-.00342
Stddev	.00024	.00037	.00230	.01005	.00015	.01736	.00041
%RSD	25.813	62.694	15.615	2.1962	.05870	3.6855	12.087
#1	.00085	.00069	-.01684	.46101	.25261	.48084	-.00294
#2	.00076	.00018	-.01511	.46581	.25286	.48128	-.00371
#3	.00122	.00091	-.01228	.44650	.25287	.45099	-.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9533.9	55010.	2550.3
Stddev	21.7	89.	2.0
%RSD	.22774	.16160	.07801
#1	9512.3	54952.	2548.5
#2	9533.7	55112.	2552.4
#3	9555.7	54966.	2549.9

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 12:40:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40238	9.8867	.40036	.49049	.99013	.04980	9.9286	.05000
Stddev	.00148	.0081	.00874	.00168	.00465	.00010	.1044	.00113
%RSD	.36685	.08214	2.1832	.34260	.46945	.19665	1.0517	2.2636
#1	.40077	9.8812	.40304	.48920	.99204	.04975	9.9140	.05020
#2	.40367	9.8829	.40745	.48987	.99352	.04992	10.040	.05101
#3	.40270	9.8960	.39059	.49239	.98483	.04974	9.8322	.04878
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20108	.49572	.50095	3.9683	49.867	.99106	9.9766	.50269
Stddev	.00629	.00154	.01284	.0290	.172	.00752	.0535	.00376
%RSD	3.1270	.30972	2.5637	.73039	.34559	.75891	.53662	.74729
#1	.20316	.49681	.50503	4.0017	49.951	.99884	9.9213	.49899
#2	.20606	.49637	.51126	3.9510	49.981	.99049	10.028	.50650
#3	.19401	.49396	.48656	3.9520	49.669	.98383	9.9804	.50258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99796	49.503	.49773	10.015	.49955	1.1926	.40587	4.8726
Stddev	.02275	.223	.01406	.204	.00908	.0266	.00592	.0851
%RSD	2.2794	.45040	2.8238	2.0344	1.8183	2.2276	1.4596	1.7466
#1	1.0027	49.640	.50153	10.054	.50243	1.2005	.40344	4.8797
#2	1.0180	49.623	.50949	10.197	.50684	1.2143	.41262	4.9540
#3	.97321	49.246	.48216	9.7950	.48937	1.1629	.40154	4.7842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 12:40:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0005**	**.99100**	**.99102**	**.50480**	**.98756**	**.99587**	**1.0041**
Stddev	.0306	.00467	.00048	.00314	.00318	.02535	.0047
%RSD	3.0533	.47110	.04893	.62136	.32230	2.5457	.46601
#1	1.0120	.99267	.99158	.50466	.98820	1.0031	1.0094
#2	1.0237	.99460	.99076	.50801	.98411	1.0168	1.0024
#3	.96591	.98573	.99071	.50174	.99038	.96769	1.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10101.**	**58744.**	**2633.3**
Stddev	58.	89.	11.2
%RSD	.57499	.15080	.42587
#1	10167.	58762.	2620.5
#2	10078.	58822.	2637.9
#3	10058.	58647.	2641.5

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 12:44:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00378	-.00158	.00512	.00056	.00002	-.02572	.00022
Stddev	.00126	.00318	.00125	.00197	.00002	.00002	.01927	.00018
%RSD	1011.4	84.314	78.639	38.402	4.4181	86.513	74.934	81.598
#1	-.00120	.00280	-.00284	.00290	.00054	.00003	-.02358	.00041
#2	.00028	.00733	-.00156	.00582	.00057	.00004	-.04597	.00017
#3	.00130	.00119	-.00035	.00665	.00058	.00000	-.00761	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00132	-.00067	.01076	-.03728	.00303	-.01580	-.00042
Stddev	.00022	.00035	.00163	.02779	.06295	.00069	.10846	.00069
%RSD	104.52	26.753	244.12	258.26	168.84	22.805	686.61	163.49
#1	.00037	.00123	-.00030	-.01309	-.10766	.00288	.02300	-.00006
#2	.00030	.00171	.00075	.04127	-.01783	.00243	-.13832	.00001
#3	-.00004	.00103	-.00245	.00410	.01364	.00379	.06793	-.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.02743	-.00095	.00601	-.00340	.00104	-.00278	.00333
Stddev	.00043	.03496	.00127	.00109	.00147	.00092	.00286	.00024
%RSD	546.43	127.48	134.28	18.126	43.056	88.048	103.18	7.3358
#1	.00000	.04430	.00045	.00476	-.00479	.00153	-.00043	.00359
#2	.00031	-.01277	-.00204	.00671	-.00355	.00161	-.00597	.00330
#3	-.00054	.05075	-.00126	.00657	-.00187	-.00002	-.00193	.00310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 12:44:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00019	-.00234	.00087	-.00097	-.00025	-.00001
Stddev	.00084	.00032	.00663	.00116	.00048	.00009	.00011
%RSD	266.28	168.80	283.33	132.65	49.744	38.367	1063.7
#1	.00006	.00006	-.00811	.00085	-.00061	-.00016	.00005
#2	.00125	-.00005	.00490	.00204	-.00152	-.00035	-.00014
#3	-.00037	.00055	-.00381	-.00027	-.00078	-.00024	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10161.	59298.	2623.8
Stddev	52.	195.	14.5
%RSD	.51553	.32854	.55092
#1	10137.	59080.	2613.6
#2	10125.	59455.	2640.4
#3	10221.	59358.	2617.6

Approved: July 16, 2016

Sample Name: PBW 96 Acquired: 7/14/2016 12:48:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00101**	**.02118**	**-.00173**	**.00664**	**-.00063**	**.00005**	**.02058**	**.00034**
Stddev	.00124	.01222	.00184	.00134	.00159	.00009	.01848	.00022
%RSD	122.28	57.695	106.41	20.126	251.86	176.10	89.799	65.325
#1	-.00226	.03501	-.00275	.00818	.00118	-.00005	.00270	.00008
#2	-.00098	.01184	-.00283	.00575	-.00178	.00011	.03960	.00046
#3	.00021	.01669	.00039	.00600	-.00129	.00008	.01943	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00095**	**.00052**	**.03112**	**-.04723**	**.00148**	**-.01572**	**-.00029**
Stddev	.00020	.00046	.00075	.00728	.06974	.00180	.05242	.00445
%RSD	69.586	48.379	143.88	23.383	147.65	121.57	333.47	1552.0
#1	-.00020	.00081	.00115	.03907	-.12744	.00268	-.04647	.00356
#2	-.00014	.00058	.00073	.02480	-.01338	-.00059	.04481	-.00515
#3	-.00051	.00146	-.00031	.02948	-.00088	.00234	-.04550	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**-.00094**	**-.00032**	**.00552**	**-.00104**	**.00014**	**-.00642**	**.00416**
Stddev	.00020	.00881	.00086	.00329	.00232	.00290	.00342	.00028
%RSD	82.567	935.35	271.65	59.505	223.25	2034.3	53.297	6.8324
#1	.00043	-.01014	-.00112	.00633	.00100	.00054	-.01005	.00446
#2	.00003	-.00012	.00059	.00833	-.00357	-.00293	-.00325	.00413
#3	.00029	.00743	-.00041	.00191	-.00055	.00282	-.00596	.00390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: PBW 96 Acquired: 7/14/2016 12:48:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00116**	**-.00151**	**-.00126**	**-.00013**	**.00179**	**.00036**
Stddev	.00052	.00041	.00824	.00228	.00092	.00025	.00065
%RSD	571.98	35.251	545.70	181.06	694.31	14.205	181.67
#1	-.00069	.00070	.00552	-.00264	-.00119	.00187	.00059
#2	.00020	.00147	.00053	-.00251	.00053	.00199	.00087
#3	.00022	.00132	-.01058	.00137	.00026	.00150	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10099.**	**59711.**	**2612.6**
Stddev	91.	229.	8.2
%RSD	.89987	.38396	.31568
#1	10146.	59561.	2609.0
#2	10157.	59598.	2622.0
#3	9994.6	59975.	2606.7

Approved: July 16, 2016

Sample Name: LCSW 96 Acquired: 7/14/2016 12:55:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19901**	**4.9118**	**.19676**	**.95271**	**.50121**	**.02418**	**5.1433**	**.02451**
Stddev	.00070	.0213	.00187	.00514	.00368	.00011	.0819	.00034
%RSD	.35148	.43319	.94827	.54001	.73371	.45747	1.5920	1.3726
#1	.19910	4.9253	.19761	.95756	.50321	.02430	5.0874	.02481
#2	.19828	4.9228	.19805	.95325	.50345	.02418	5.2373	.02457
#3	.19967	4.8873	.19462	.94731	.49697	.02408	5.1052	.02414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09928**	**.24602**	**.24915**	**1.9977**	**24.597**	**.50418**	**4.9673**	**.25253**
Stddev	.00287	.00203	.00600	.0334	.115	.00280	.0931	.00570
%RSD	2.8920	.82342	2.4069	1.6738	.46897	.55517	1.8753	2.2579
#1	.10073	.24636	.25379	2.0197	24.637	.50627	5.0686	.24888
#2	.10114	.24785	.25128	1.9592	24.467	.50527	4.8854	.24960
#3	.09597	.24384	.24238	2.0141	24.687	.50100	4.9480	.25910
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50146**	**24.812**	**.24914**	**4.7840**	**.24748**	**.58682**	**.18364**	**2.4233**
Stddev	.01118	.101	.00643	.0903	.00300	.01558	.00353	.0295
%RSD	2.2296	.40523	2.5807	1.8867	1.2110	2.6548	1.9205	1.2165
#1	.50790	24.911	.25356	4.8339	.25081	.59773	.18228	2.4432
#2	.50794	24.814	.25210	4.8384	.24499	.59375	.18764	2.4373
#3	.48855	24.710	.24177	4.6799	.24664	.56898	.18099	2.3894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW 96 Acquired: 7/14/2016 12:55:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49639	.50926	.49701	.24847	.49343	.49269	.52077
Stddev	.01104	.00139	.01620	.00025	.00073	.01058	.00534
%RSD	2.2247	.27241	3.2596	.09945	.14801	2.1478	1.0251
#1	.50341	.51070	.50549	.24875	.49406	.49849	.52650
#2	.50210	.50793	.50721	.24837	.49263	.49911	.51593
#3	.48366	.50914	.47833	.24828	.49359	.48048	.51990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10033.	58482.	2596.2
Stddev	17.	224.	25.4
%RSD	.16614	.38323	.97644
#1	10020.	58368.	2567.8
#2	10026.	58337.	2616.5
#3	10051.	58740.	2604.2

Approved: July 16, 2016

Sample Name: L1607000101 Acquired: 7/14/2016 12:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00362	.08134	.00334	.04281	.00297	.00084	.19444	.00062
Stddev	.00163	.01069	.00072	.00142	.00076	.00001	.03650	.00004
%RSD	45.144	13.141	21.568	3.3277	25.614	.87250	18.769	7.1566
#1	.00346	.08525	.00378	.04348	.00358	.00083	.16630	.00060
#2	.00207	.08952	.00374	.04117	.00212	.00085	.23568	.00059
#3	.00533	.06924	.00251	.04376	.00322	.00085	.18135	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00177	.00173	.00141	.02885	.41855	.04169	.16030	.00436
Stddev	.00057	.00082	.00112	.00578	.08108	.00472	.06384	.00079
%RSD	32.534	47.098	79.188	20.024	19.372	11.322	39.823	18.135
#1	.00229	.00084	.00094	.03549	.36110	.03624	.23048	.00364
#2	.00186	.00191	.00269	.02609	.38325	.04462	.14472	.00521
#3	.00115	.00244	.00061	.02497	.51130	.04420	.10569	.00424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00382	.23448	.00688	.35769	.00040	.03771	.00204	.35876
Stddev	.00064	.00508	.00118	.03491	.00384	.00200	.00218	.03179
%RSD	16.789	2.1647	17.213	9.7585	959.30	5.2947	106.95	8.8619
#1	.00415	.23676	.00811	.37682	.00362	.03777	.00075	.38030
#2	.00423	.23802	.00679	.37885	-.00385	.03968	.00456	.37374
#3	.00308	.22867	.00574	.31740	.00143	.03568	.00081	.32224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607000101 Acquired: 7/14/2016 12:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18708**	**.02058**	**.00645**	**.06881**	**.00338**	**.00853**	**.02042**
Stddev	.02211	.00038	.00483	.00544	.00041	.00090	.00034
%RSD	11.819	1.8236	74.856	7.9060	12.030	10.604	1.6690
#1	.20186	.02088	.00142	.07187	.00336	.00910	.02061
#2	.19773	.02016	.01106	.07204	.00380	.00900	.02062
#3	.16166	.02071	.00688	.06253	.00298	.00749	.02002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10107.**	**59785.**	**2611.1**
Stddev	66.	310.	14.4
%RSD	.65080	.51823	.55174
#1	10147.	59448.	2594.5
#2	10144.	59852.	2620.6
#3	10031.	60056.	2618.1

Approved: July 16, 2016

Sample Name: L1607000301 Acquired: 7/14/2016 13:03:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00707	.15479	.00656	.07574	.00715	.00154	.37229	.00094
Stddev	.00119	.00291	.00112	.00155	.00056	.00008	.02330	.00014
%RSD	16.777	1.8829	17.106	2.0478	7.7978	5.2224	6.2594	15.006
#1	.00679	.15640	.00527	.07722	.00742	.00162	.34685	.00078
#2	.00605	.15143	.00727	.07413	.00651	.00155	.39261	.00103
#3	.00838	.15655	.00715	.07588	.00752	.00146	.37740	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00366	.00448	.00347	.09037	.71712	.08126	.43194	.00865
Stddev	.00038	.00082	.00126	.02534	.04015	.00137	.04733	.00071
%RSD	10.257	18.387	36.178	28.035	5.5985	1.6836	10.957	8.1670
#1	.00332	.00359	.00474	.08258	.68692	.08251	.42874	.00800
#2	.00407	.00464	.00347	.06985	.76268	.08147	.38629	.00855
#3	.00359	.00521	.00222	.11869	.70177	.07980	.48078	.00940
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00723	.41507	.01409	.69703	.00568	.07383	.01422	.70007
Stddev	.00056	.04617	.00136	.04864	.00127	.00301	.00427	.04737
%RSD	7.7879	11.123	9.6615	6.9784	22.287	4.0745	30.025	6.7657
#1	.00758	.39998	.01379	.72869	.00703	.07668	.01113	.72769
#2	.00753	.46690	.01558	.72138	.00552	.07412	.01243	.72715
#3	.00658	.37834	.01291	.64103	.00451	.07068	.01909	.64538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607000301 Acquired: 7/14/2016 13:03:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.36737**	**.03935**	**.02892**	**.13781**	**.00661**	**.01544**	**.03915**
Stddev	.03417	.00040	.00233	.00842	.00120	.00148	.00064
%RSD	9.3000	1.0108	8.0718	6.1090	18.228	9.5855	1.6394
#1	.38939	.03951	.03042	.14332	.00658	.01631	.03969
#2	.38471	.03964	.03011	.14200	.00542	.01627	.03933
#3	.32801	.03889	.02623	.12812	.00782	.01373	.03844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**59900.**	**2603.5**
Stddev	59.	116.	19.3
%RSD	.58657	.19426	.73979
#1	10166.	59883.	2591.7
#2	10168.	59792.	2593.1
#3	10064.	60023.	2625.7

Approved: July 16, 2016

Sample Name: L1607000309 Acquired: 7/14/2016 13:07:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00868	.15826	.00443	.07648	.00740	.00150	.34773	.00107
Stddev	.00126	.00317	.00212	.00046	.00042	.00007	.03651	.00020
%RSD	14.498	2.0033	47.871	.60112	5.7225	4.5237	10.500	18.954
#1	.00996	.16192	.00488	.07620	.00777	.00158	.36220	.00115
#2	.00745	.15659	.00629	.07701	.00751	.00146	.37479	.00121
#3	.00863	.15627	.00212	.07622	.00694	.00146	.30620	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00373	.00314	.00357	.07231	.74241	.08067	.36064	.00745
Stddev	.00004	.00036	.00192	.03185	.13652	.00269	.04648	.00094
%RSD	.99003	11.574	53.693	44.043	18.389	3.3365	12.888	12.656
#1	.00376	.00356	.00558	.08055	.89828	.07834	.35768	.00647
#2	.00369	.00289	.00338	.03716	.64408	.08005	.31571	.00755
#3	.00373	.00297	.00176	.09923	.68486	.08361	.40853	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00735	.39509	.01308	.69376	.00719	.07399	.01335	.69759
Stddev	.00081	.02978	.00091	.04569	.00056	.00794	.00272	.04912
%RSD	10.975	7.5379	6.9624	6.5854	7.7531	10.727	20.384	7.0416
#1	.00776	.36388	.01370	.71707	.00708	.07846	.01358	.72385
#2	.00786	.42321	.01351	.72309	.00669	.07869	.01596	.72801
#3	.00642	.39819	.01204	.64112	.00779	.06483	.01053	.64092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607000309 Acquired: 7/14/2016 13:07:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.36560**	**.03879**	**.01616**	**.13563**	**.00713**	**.01530**	**.03908**
Stddev	.03537	.00054	.00409	.01173	.00013	.00133	.00024
%RSD	9.6758	1.3812	25.309	8.6510	1.8900	8.6947	.60851
#1	.38717	.03835	.01978	.14187	.00698	.01618	.03884
#2	.38485	.03939	.01173	.14293	.00722	.01595	.03909
#3	.32477	.03863	.01699	.12210	.00720	.01377	.03932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10142.**	**59652.**	**2619.1**
Stddev	46.	239.	8.3
%RSD	.45833	.40114	.31815
#1	10160.	59385.	2618.3
#2	10177.	59720.	2627.7
#3	10089.	59849.	2611.1

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 13:11:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39209	9.6626	.39114	.48329	.97702	.04869	9.7483	.04910
Stddev	.00117	.0164	.00853	.00419	.00520	.00014	.0490	.00115
%RSD	.29857	.17019	2.1810	.86735	.53235	.28145	.50212	2.3516
#1	.39143	9.6761	.39643	.48489	.97600	.04877	9.7076	.04979
#2	.39344	9.6443	.39568	.47853	.97241	.04877	9.7348	.04974
#3	.39139	9.6675	.38130	.48644	.98266	.04853	9.8026	.04777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19636	.48195	.48918	3.8704	49.159	.97872	9.6913	.49012
Stddev	.00550	.00326	.01345	.0217	.316	.00125	.1868	.00223
%RSD	2.8035	.67697	2.7488	.55988	.64225	.12764	1.9276	.45503
#1	.19966	.48533	.49738	3.8782	48.931	.97934	9.4798	.49270
#2	.19941	.48170	.49649	3.8459	49.026	.97953	9.7607	.48892
#3	.19000	.47882	.47366	3.8871	49.519	.97728	9.8336	.48875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98297	49.093	.48923	9.8316	.48878	1.1703	.39633	4.7902
Stddev	.02718	.329	.01389	.1991	.00674	.0280	.00932	.0793
%RSD	2.7652	.66928	2.8401	2.0255	1.3781	2.3934	2.3509	1.6560
#1	.99943	48.952	.49842	9.9532	.48993	1.1873	.39813	4.8379
#2	.99789	48.857	.49603	9.9399	.49486	1.1856	.40462	4.8340
#3	.95160	49.468	.47325	9.6018	.48154	1.1379	.38625	4.6986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 13:11:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.97732**	**.97928**	**.98403**	**.49246**	**.96166**	**.97770**	**.99179**
Stddev	.03254	.00666	.00644	.00304	.00129	.02521	.00506
%RSD	3.3290	.67989	.65458	.61636	.13367	2.5788	.51043
#1	.99711	.97762	.98058	.49444	.96295	.99264	.99618
#2	.99507	.97361	.98006	.49397	.96166	.99187	.98626
#3	.93977	.98661	.99147	.48897	.96038	.94859	.99294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10322.**	**60008.**	**2667.2**
Stddev	10.	181.	10.3
%RSD	.10067	.30161	.38796
#1	10311.	59931.	2656.0
#2	10331.	59879.	2676.5
#3	10325.	60215.	2669.1

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 13:14:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00198**	**.00150**	**.00266**	**-.00164**	**.00006**	**-.02969**	**.00019**
Stddev	.00056	.00466	.00337	.00239	.00071	.00007	.02380	.00021
%RSD	253.73	235.76	224.32	89.835	43.533	115.74	80.180	111.91
#1	-.00070	-.00212	-.00031	.00396	-.00101	.00015	-.02182	.00028
#2	.00039	.00704	.00539	-.00010	-.00242	.00000	-.05643	-.00005
#3	-.00035	.00101	-.00057	.00412	-.00149	.00004	-.01082	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00043**	**-.00038**	**-.00988**	**.05401**	**.00572**	**-.04989**	**.00025**
Stddev	.00061	.00032	.00131	.02973	.06948	.00241	.07690	.00167
%RSD	51970.	74.651	341.38	301.09	128.65	42.238	154.12	666.11
#1	.00069	-.00014	-.00162	-.00470	.02679	.00832	-.12192	.00167
#2	-.00046	-.00037	.00099	.01693	.13298	.00527	.03109	-.00159
#3	-.00023	-.00077	-.00052	-.04186	.00226	.00355	-.05885	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.04110**	**-.00180**	**.00246**	**-.00211**	**-.00062**	**-.00155**	**.00121**
Stddev	.00008	.01575	.00105	.00671	.00069	.00258	.00339	.00099
%RSD	40.493	38.327	58.231	272.31	32.851	414.89	218.70	81.907
#1	.00024	.05834	-.00273	-.00395	-.00172	-.00314	-.00507	.00192
#2	.00026	.02745	-.00201	.00943	-.00169	-.00073	-.00127	.00163
#3	.00011	.03752	-.00066	.00191	-.00290	.00201	.00169	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 13:14:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00009	-.00125	.00226	-.00039	.00000	.00016
Stddev	.00013	.00030	.00536	.00136	.00044	.00009	.00011
%RSD	31.290	317.77	428.84	59.920	114.40	3153.2	67.014
#1	.00035	.00001	.00030	.00363	-.00026	-.00010	.00028
#2	.00058	.00042	.00316	.00091	-.00002	.00008	.00009
#3	.00035	-.00016	-.00722	.00225	-.00088	.00003	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10445.	60838.	2680.8
Stddev	96.	168.	1.4
%RSD	.91584	.27608	.05226
#1	10374.	61030.	2682.3
#2	10408.	60716.	2680.6
#3	10554.	60769.	2679.6

Approved: July 16, 2016

Sample Name: L1607029101 Acquired: 7/14/2016 13:18:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.32642	-.00031	.01385	.02386	-.00001	51.815	.00026
Stddev	.00038	.01098	.00257	.00055	.00201	.00008	.238	.00009
%RSD	45.770	3.3653	841.18	3.9542	8.4206	859.13	.45923	33.196
#1	-.00040	.33277	.00211	.01434	.02190	-.00009	51.644	.00018
#2	-.00109	.31373	-.00301	.01326	.02592	.00008	52.086	.00024
#3	-.00103	.33275	-.00001	.01394	.02375	-.00002	51.714	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00149	.00101	.44480	1.2917	.01137	14.606	.00632
Stddev	.00011	.00051	.00079	.01679	.0693	.00113	.093	.00282
%RSD	106.14	34.599	77.857	3.7744	5.3682	9.9059	.63949	44.622
#1	.00002	.00101	.00166	.42768	1.2650	.01032	14.498	.00315
#2	-.00014	.00142	.00124	.44547	1.3704	.01124	14.670	.00726
#3	-.00018	.00203	.00014	.46124	1.2397	.01256	14.648	.00856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00149	5.1891	-.00024	.02482	-.00109	.00074	-.00359	4.3086
Stddev	.00052	.0291	.00050	.00431	.00113	.00181	.00330	.3602
%RSD	34.981	.56144	210.90	17.378	104.00	243.49	91.772	8.3590
#1	.00117	5.1714	.00033	.02814	-.00124	.00278	-.00001	4.5415
#2	.00209	5.2228	-.00061	.02636	-.00213	-.00071	-.00426	4.4904
#3	.00120	5.1732	-.00043	.01994	.00011	.00017	-.00650	3.8937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029101 Acquired: 7/14/2016 13:18:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.12122	-.00724	-.00014	-.00027	.00565	.00090
Stddev	.00008	.00080	.00438	.00150	.00062	.00069	.00009
%RSD	143.72	.66213	60.516	1045.6	230.68	12.146	9.8070
#1	-.00003	.12118	-.00634	.00010	.00033	.00600	.00081
#2	.00007	.12205	-.00338	-.00175	-.00091	.00609	.00090
#3	.00012	.12044	-.01201	.00122	-.00022	.00486	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10037.	58875.	2628.3
Stddev	49.	21.	31.5
%RSD	.49154	.03535	1.1971
#1	10051.	58852.	2624.5
#2	10078.	58882.	2598.9
#3	9982.5	58892.	2661.5

Approved: July 16, 2016

Sample Name: L1607029101S Acquired: 7/14/2016 13:22:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19676	5.1877	.19876	.96856	.52248	.02400	55.795	.02431
Stddev	.00110	.0149	.00120	.00268	.00458	.00015	.296	.00051
%RSD	.55862	.28628	.60569	.27667	.87683	.62369	.53038	2.0985
#1	.19799	5.1824	.20014	.96567	.52598	.02416	55.740	.02471
#2	.19643	5.2045	.19817	.96906	.52417	.02388	56.115	.02448
#3	.19587	5.1762	.19795	.97096	.51730	.02395	55.531	.02374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09761	.24516	.24487	2.4340	25.943	.51058	19.238	.25663
Stddev	.00209	.00059	.00523	.0358	.153	.00378	.052	.00488
%RSD	2.1411	.23975	2.1344	1.4707	.58919	.74104	.27180	1.8997
#1	.09890	.24485	.24929	2.4746	26.015	.51246	19.294	.25256
#2	.09874	.24583	.24622	2.4070	26.047	.51306	19.226	.26203
#3	.09520	.24478	.23911	2.4203	25.767	.50623	19.192	.25529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50326	29.765	.24405	4.9073	.24736	.58908	.18922	6.8713
Stddev	.00914	.194	.00463	.0615	.00907	.01086	.00306	.1047
%RSD	1.8161	.65028	1.8987	1.2541	3.6674	1.8436	1.6162	1.5238
#1	.51063	29.831	.24714	4.9572	.25292	.59997	.19220	6.9543
#2	.50612	29.917	.24629	4.9261	.25227	.58901	.18609	6.9060
#3	.49303	29.547	.23872	4.8385	.23689	.57826	.18936	6.7537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029101S Acquired: 7/14/2016 13:22:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49668	.62528	.49611	.24735	.49079	.49133	.50130
Stddev	.01014	.00395	.00277	.00343	.00177	.01043	.00287
%RSD	2.0419	.63130	.55898	1.3849	.36098	2.1223	.57327
#1	.50375	.62567	.49368	.24510	.49281	.50026	.50396
#2	.50122	.62901	.49913	.25129	.48951	.49385	.50169
#3	.48506	.62115	.49552	.24565	.49004	.47987	.49825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9986.4	58246.	2619.9
Stddev	29.6	163.	15.8
%RSD	.29604	.28057	.60173
#1	9956.3	58188.	2606.9
#2	10015.	58120.	2615.3
#3	9987.4	58431.	2637.4

Approved: July 16, 2016

Sample Name: L1607029101SD Acquired: 7/14/2016 13:26:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19520**	**5.1529**	**.19620**	**.96066**	**.51534**	**.02385**	**54.634**	**.02431**
Stddev	.00106	.0057	.00430	.00358	.00473	.00003	.358	.00039
%RSD	.54478	.11047	2.1894	.37255	.91809	.14341	.65562	1.5843
#1	.19627	5.1488	.20113	.96004	.52007	.02381	55.048	.02444
#2	.19518	5.1506	.19418	.95743	.51534	.02386	54.445	.02462
#3	.19414	5.1594	.19329	.96451	.51060	.02388	54.410	.02388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09666**	**.24347**	**.24263**	**2.4310**	**25.478**	**.50556**	**18.991**	**.25130**
Stddev	.00197	.00059	.00414	.0194	.034	.00224	.197	.00176
%RSD	2.0423	.24173	1.7076	.79819	.13175	.44221	1.0354	.70138
#1	.09780	.24335	.24426	2.4518	25.507	.50784	19.218	.24962
#2	.09780	.24295	.24572	2.4276	25.442	.50547	18.884	.25314
#3	.09438	.24411	.23792	2.4134	25.486	.50337	18.871	.25115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49742**	**29.320**	**.24128**	**4.8467**	**.24222**	**.58007**	**.18473**	**6.8037**
Stddev	.01044	.165	.00571	.0670	.00403	.01143	.00580	.0957
%RSD	2.0998	.56313	2.3661	1.3820	1.6626	1.9707	3.1404	1.4072
#1	.50316	29.508	.24583	4.8890	.24221	.58608	.18252	6.8648
#2	.50373	29.257	.24314	4.8816	.24625	.58725	.19132	6.8530
#3	.48536	29.196	.23488	4.7694	.23820	.56689	.18037	6.6934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029101SD Acquired: 7/14/2016 13:26:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49216	.61721	.48993	.24351	.48664	.48647	.49949
Stddev	.01120	.00345	.00256	.00348	.00159	.00666	.00223
%RSD	2.2756	.55907	.52285	1.4276	.32636	1.3682	.44568
#1	.49780	.62072	.48985	.24567	.48619	.48964	.50200
#2	.49942	.61709	.49253	.24537	.48532	.49094	.49875
#3	.47927	.61383	.48741	.23950	.48840	.47882	.49774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9989.9	58353.	2629.1
Stddev	18.1	77.	14.5
%RSD	.18119	.13154	.55115
#1	10010.	58436.	2613.3
#2	9974.3	58285.	2632.2
#3	9985.7	58337.	2641.7

Approved: July 16, 2016

Sample Name: L1607037601 Acquired: 7/14/2016 13:29:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00416**	**-.00100**	**.00681**	**-.00147**	**.00010**	**-.03190**	**.00034**
Stddev	.00134	.00273	.00310	.00244	.00055	.00004	.02724	.00019
%RSD	7403.4	65.522	310.63	35.835	37.306	42.751	85.379	54.191
#1	-.00057	.00537	.00211	.00707	-.00097	.00007	-.05955	.00023
#2	-.00100	.00104	-.00102	.00425	-.00138	.00015	-.03106	.00024
#3	.00151	.00608	-.00408	.00911	-.00206	.00008	-.00509	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00067**	**.00160**	**-.00147**	**.03594**	**.00114**	**.00845**	**.00079**
Stddev	.00035	.00055	.00043	.01146	.09224	.00155	.16441	.00192
%RSD	1049.3	82.795	26.996	778.30	256.67	136.37	1945.0	243.41
#1	.00003	.00108	.00121	.00081	-.06499	.00112	.14758	.00054
#2	-.00032	.00004	.00206	.00867	.05693	.00270	.05074	-.00099
#3	.00039	.00088	.00152	-.01391	.11587	-.00040	-.17297	.00282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.04769**	**-.00049**	**.00198**	**-.00140**	**.00304**	**-.00276**	**.00508**
Stddev	.00031	.01664	.00039	.00531	.00377	.00115	.00551	.00224
%RSD	1513.4	34.887	79.928	268.11	269.66	37.782	199.83	44.032
#1	-.00009	.06178	-.00083	.00787	.00251	.00373	.00146	.00559
#2	-.00029	.05197	-.00006	.00052	-.00501	.00367	-.00899	.00701
#3	.00032	.02934	-.00058	-.00245	-.00169	.00171	-.00074	.00263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607037601 Acquired: 7/14/2016 13:29:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00001	.00395	.00062	-.00046	.00239	.00003
Stddev	.00015	.00042	.00364	.00143	.00030	.00011	.00061
%RSD	58.181	3611.8	92.127	230.74	64.248	4.5360	1946.0
#1	.00009	.00038	-.00023	-.00031	-.00027	.00249	-.00035
#2	.00031	.00009	.00567	-.00010	-.00031	.00239	.00073
#3	.00039	-.00044	.00642	.00227	-.00080	.00227	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10157.	59870.	2638.2
Stddev	36.	30.	24.9
%RSD	.35834	.04975	.94494
#1	10189.	59885.	2618.4
#2	10163.	59836.	2630.0
#3	10118.	59890.	2666.2

Approved: July 16, 2016

Sample Name: L1607037602 Acquired: 7/14/2016 13:33:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00135	-.00015	-.00194	.00303	-.00098	.00006	-.00465	.00037
Stddev	.00133	.00358	.00147	.00061	.00095	.00005	.03003	.00014
%RSD	98.541	2428.3	75.826	20.173	96.491	82.678	645.56	37.857
#1	.00011	-.00421	-.00035	.00373	-.00117	.00002	-.03726	.00049
#2	-.00167	.00256	-.00326	.00269	.00004	.00012	.00144	.00039
#3	-.00249	.00121	-.00221	.00265	-.00182	.00004	.02186	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00075	.00087	-.01341	-.04036	.00222	-.03097	-.00102
Stddev	.00023	.00131	.00108	.01851	.05248	.00076	.03266	.00124
%RSD	374.90	175.00	123.66	137.97	130.05	34.089	105.46	121.71
#1	-.00014	.00099	-.00028	.00796	-.07877	.00308	-.06558	.00040
#2	.00032	-.00067	.00103	-.02420	.01944	.00163	-.00071	-.00192
#3	.00001	.00192	.00186	-.02400	-.06174	.00197	-.02661	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.05378	-.00021	.00090	-.00385	.00292	.00090	.00814
Stddev	.00015	.01097	.00037	.00696	.00323	.00235	.00226	.00247
%RSD	90.287	20.389	175.54	775.89	83.876	80.412	250.28	30.355
#1	-.00015	.05978	.00021	.00854	-.00409	.00468	-.00001	.01074
#2	-.00003	.04113	-.00050	-.00075	-.00051	.00383	.00348	.00786
#3	-.00033	.06044	-.00036	-.00510	-.00696	.00025	-.00076	.00582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607037602 Acquired: 7/14/2016 13:33:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00003**	**-.00287**	**.00020**	**.00005**	**.00150**	**-.00025**
Stddev	.00090	.00030	.00341	.00183	.00029	.00019	.00020
%RSD	1081.2	1171.7	118.60	936.22	548.67	12.644	82.153
#1	-.00090	.00027	-.00223	.00064	.00026	.00157	-.00005
#2	.00030	-.00001	-.00656	.00176	-.00028	.00163	-.00024
#3	.00085	-.00034	.00017	-.00182	.00018	.00128	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10127.**	**59766.**	**2634.1**
Stddev	39.	143.	19.9
%RSD	.38363	.23889	.75667
#1	10130.	59628.	2616.9
#2	10164.	59913.	2629.3
#3	10087.	59758.	2655.9

Approved: July 16, 2016

Sample Name: L1607037603 Acquired: 7/14/2016 13:37:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00146	-.00102	-.00058	.00353	-.00016	.00004	.03206	.00051
Stddev	.00130	.01039	.00232	.00201	.00071	.00002	.03561	.00010
%RSD	89.374	1014.9	403.17	56.770	455.86	49.604	111.06	20.003
#1	-.00281	.00303	.00021	.00122	-.00014	.00006	.04972	.00057
#2	-.00020	.00673	-.00319	.00457	-.00087	.00003	-.00892	.00055
#3	-.00137	-.01283	.00125	.00481	.00055	.00002	.05540	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00132	.00177	.00187	-.02373	.00399	-.05238	-.00120
Stddev	.00037	.00037	.00032	.01301	.05515	.00111	.05243	.00268
%RSD	162.08	27.783	17.780	694.43	232.41	27.796	100.11	222.80
#1	.00019	.00151	.00196	-.00516	-.08100	.00329	-.10212	-.00267
#2	-.00051	.00090	.00141	-.00611	-.01920	.00340	.00239	-.00284
#3	-.00037	.00155	.00194	.01689	.02901	.00526	-.05740	.00189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.02785	-.00089	.00624	-.00221	.00191	-.00283	.01222
Stddev	.00031	.02918	.00109	.00101	.00339	.00121	.00227	.00126
%RSD	680.81	104.79	122.87	16.124	153.54	63.678	80.230	10.286
#1	-.00006	-.00374	-.00148	.00544	.00030	.00276	-.00085	.01264
#2	-.00019	.05380	.00037	.00592	-.00086	.00052	-.00233	.01321
#3	.00039	.03350	-.00155	.00737	-.00606	.00244	-.00531	.01080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607037603 Acquired: 7/14/2016 13:37:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00008	.00113	.00306	-.00061	.00087	-.00036
Stddev	.00061	.00037	.00609	.00043	.00047	.00017	.00027
%RSD	71.726	477.68	540.26	14.175	76.472	19.519	76.909
#1	.00142	.00050	.00504	.00352	-.00007	.00077	-.00066
#2	.00020	-.00016	-.00589	.00301	-.00093	.00107	-.00012
#3	.00094	-.00011	.00423	.00266	-.00084	.00078	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10138.	59762.	2625.0
Stddev	34.	105.	23.6
%RSD	.33482	.17513	.89831
#1	10159.	59652.	2598.8
#2	10157.	59860.	2631.8
#3	10099.	59775.	2644.4

Approved: July 16, 2016

Sample Name: L1607020103 Acquired: 7/14/2016 13:41:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**175.05**	**.00833**	**.85524**	**.10512**	**.00019**	**249.47**
Stddev	.00073	1.23	.00356	.01361	.00189	.00004	3.00
%RSD	163.57	.70286	42.693	1.5910	1.8005	20.053	1.2032
#1	.00020	176.47	.01166	.86058	.10682	.00015	252.06
#2	-.00124	174.37	.00875	.83977	.10546	.00019	250.17
#3	-.00031	174.30	.00459	.86536	.10308	.00022	246.18
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09339**	**30.632**	**.50318**	**1.0206**	**5.1057**	**32.384**	**7.6010**
Stddev	.00578	2.073	.00423	.0683	.0388	.365	.0858
%RSD	6.1848	6.7674	.84149	6.6874	.76059	1.1267	1.1284
#1	.09715	31.919	.50801	1.0626	5.1495	32.592	7.6675
#2	.09627	31.736	.50010	1.0573	5.0919	32.597	7.6312
#3	.08674	28.241	.50143	.94182	5.0756	31.963	7.5042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**64.563**	**.95180**	**.00246**	F **910.05**	**59.165**	**166.02**	**.03448**
Stddev	.630	.01164	.00052	15.46	3.947	9.38	.00649
%RSD	.97545	1.2227	21.293	1.6989	6.6708	5.6488	18.827
#1	65.116	.95716	.00235	916.89	61.621	171.65	.03987
#2	64.695	.95978	.00304	920.91	61.261	171.22	.03628
#3	63.878	.93845	.00201	892.35	54.612	155.19	.02727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020103 Acquired: 7/14/2016 13:41:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00132**	**.01005**	**6.8387**	**-.00032**	**1.9000**	F **-.03514**	**.04196**
Stddev	.00252	.00313	.3632	.00114	.0224	.00596	.00339
%RSD	190.41	31.173	5.3112	351.39	1.1778	16.972	8.0894
#1	.00125	.00649	7.0569	.00035	1.9171	-.03945	.04557
#2	.00388	.01124	7.0398	-.00163	1.9081	-.02834	.04149
#3	-.00116	.01241	6.4194	.00032	1.8747	-.03765	.03883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00855**	**3.7754**	**.00010**
Stddev	.00013	.2525	.00028
%RSD	1.5179	6.6883	293.15
#1	.00867	3.9326	.00042
#2	.00841	3.9094	-.00003
#3	.00856	3.4841	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9639.9**	**55431.**	**2597.1**
Stddev	20.4	237.	43.2
%RSD	.21187	.42681	1.6632
#1	9618.9	55167.	2560.7
#2	9659.7	55624.	2585.8
#3	9641.2	55503.	2644.9

Approved: July 16, 2016

Sample Name: L1607020103PS Acquired: 7/14/2016 13:45:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576082-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19991**	**161.84**	**.20875**	**1.7416**	**.60272**	**.02442**	**229.20**
Stddev	.00083	.73	.00779	.0026	.00811	.00023	2.81
%RSD	.41737	.44979	3.7323	.15001	1.3453	.95902	1.2248
#1	.20088	162.63	.21354	1.7429	.61096	.02466	232.04
#2	.19941	161.69	.21296	1.7386	.60243	.02439	229.14
#3	.19945	161.20	.19976	1.7433	.59476	.02420	226.43
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10805**	**27.836**	**.68719**	**1.1612**	**6.5462**	**55.613**	**7.3345**
Stddev	.00549	1.466	.00513	.0596	.0516	.508	.0827
%RSD	5.0847	5.2678	.74619	5.1350	.78871	.91257	1.1278
#1	.11130	28.789	.69311	1.1995	6.5907	56.148	7.4157
#2	.11113	28.570	.68435	1.1917	6.5582	55.554	7.3376
#3	.10170	26.147	.68412	1.0925	6.4896	55.138	7.2503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**62.563**	**1.1076**	**.48744**	F **829.85**	**53.984**	**155.55**	**.26062**
Stddev	.442	.0140	.02510	10.82	2.788	6.61	.01339
%RSD	.70617	1.2646	5.1485	1.3041	5.1646	4.2514	5.1383
#1	63.035	1.1227	.50419	841.57	55.765	159.68	.27048
#2	62.160	1.0950	.49954	820.24	55.417	159.05	.26601
#3	62.493	1.1050	.45859	827.73	50.771	147.93	.24538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020103PS Acquired: 7/14/2016 13:45:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576082-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.58685	.20160	8.6258	.47100	2.2040	.46954	.25617
Stddev	.03107	.00376	.3451	.02758	.0236	.00407	.01077
%RSD	5.2938	1.8668	4.0008	5.8548	1.0713	.86651	4.2030
#1	.60683	.20529	8.8428	.48886	2.2287	.46490	.26068
#2	.60267	.20174	8.8067	.48490	2.2017	.47248	.26396
#3	.55106	.19777	8.2278	.43924	2.1816	.47124	.24389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.49866	3.8831	.00056
Stddev	.00120	.1971	.00049
%RSD	.24041	5.0755	89.017
#1	.50003	4.0080	.00087
#2	.49781	3.9854	-.00001
#3	.49813	3.6559	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9671.7	55553.	2620.0
Stddev	16.5	167.	35.2
%RSD	.17049	.30006	1.3442
#1	9653.0	55379.	2582.8
#2	9683.8	55568.	2624.2
#3	9678.5	55711.	2652.9

Approved: July 16, 2016

Sample Name: L1607020103SDL Acquired: 7/14/2016 13:49:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576082-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00107**	**34.629**	**.00088**	**.17909**	**.01645**	**.00004**	**46.434**	**.02004**
Stddev	.00033	.049	.00319	.00255	.00357	.00009	4.644	.00090
%RSD	30.725	.14157	361.20	1.4253	21.721	237.88	10.002	4.4784
#1	-.00088	34.582	-.00280	.17638	.01235	.00000	41.109	.02072
#2	-.00088	34.626	.00259	.18145	.01888	-.00003	48.548	.02037
#3	-.00145	34.680	.00285	.17943	.01813	.00014	49.645	.01902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.4706**	**.10186**	**.21937**	**.93639**	**5.8240**	**1.3235**	**11.836**	**.16952**
Stddev	.1554	.00092	.00564	.08422	.6556	.1315	1.120	.01998
%RSD	2.4012	.89860	2.5695	8.9941	11.257	9.9368	9.4626	11.788
#1	6.5974	.10111	.22381	.83918	5.0953	1.1730	10.548	.14710
#2	6.5173	.10158	.22127	.98728	6.0110	1.3811	12.380	.17596
#3	6.2973	.10288	.21303	.98272	6.3659	1.4164	12.581	.18548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00069**	**171.48**	**12.727**	**34.095**	**.00728**	**.00254**	**-.00050**	**1.3826**
Stddev	.00020	17.13	.304	.879	.00405	.00157	.00508	.0342
%RSD	28.523	9.9887	2.3880	2.5779	55.635	61.745	1014.3	2.4753
#1	.00047	151.81	12.975	34.806	.00615	.00083	.00312	1.4082
#2	.00085	179.58	12.819	34.365	.01178	.00287	.00169	1.3958
#3	.00075	183.06	12.388	33.112	.00392	.00391	-.00631	1.3437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020103SDL Acquired: 7/14/2016 13:49:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576082-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.34604	-.00426	.01077	.00139	.81498	.00014
Stddev	.00070	.03435	.00491	.00329	.00071	.02044	.00017
%RSD	1434.0	9.9260	115.18	30.553	50.699	2.5083	118.26
#1	.00055	.30666	.00028	.01272	.00180	.83156	.00003
#2	-.00076	.36166	-.00947	.01262	.00180	.82125	.00034
#3	.00036	.36981	-.00359	.00697	.00058	.79214	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10488.	60924.	2886.1
Stddev	33.	131.	138.7
%RSD	.31234	.21578	4.8055
#1	10521.	60995.	3045.1
#2	10487.	61005.	2822.9
#3	10455.	60773.	2790.2

Approved: July 16, 2016

Sample Name: L1607020103SDL Acquired: 7/14/2016 13:52:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576082-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**7.2353**	**.00134**	**.03956**	**.00275**	**.00005**	**10.451**	**.00433**
Stddev	.00045	.0060	.00232	.00084	.00044	.00006	.081	.00002
%RSD	56.482	.08244	173.32	2.1218	15.868	111.32	.77720	.38077
#1	-.00115	7.2421	-.00059	.03860	.00229	.00011	10.360	.00431
#2	-.00029	7.2326	.00391	.04014	.00281	.00005	10.515	.00434
#3	-.00094	7.2311	.00069	.03994	.00316	-.00000	10.478	.00433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.3551**	**.02141**	**.04651**	**.21559**	**1.2467**	**.30504**	**2.7669**	**.03496**
Stddev	.0629	.00064	.00347	.02632	.0480	.00164	.0659	.00347
%RSD	4.6402	2.9773	7.4614	12.207	3.8533	.53708	2.3798	9.9141
#1	1.3908	.02204	.04832	.23707	1.2147	.30615	2.6995	.03228
#2	1.3920	.02144	.04871	.22349	1.2235	.30581	2.7702	.03887
#3	1.2825	.02076	.04251	.18623	1.3019	.30316	2.8310	.03374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**38.448**	**2.6925**	**6.9794**	**.00051**	**-.00106**	**.00118**	**.27878**
Stddev	.00024	.063	.1248	.4866	.00142	.00226	.00367	.01875
%RSD	143.20	.16274	4.6331	6.9723	275.91	212.90	310.24	6.7272
#1	-.00010	38.469	2.7654	7.2909	-.00095	-.00205	.00155	.29160
#2	.00025	38.497	2.7636	7.2286	.00188	-.00267	-.00266	.28749
#3	.00035	38.377	2.5485	6.4186	.00061	.00153	.00466	.25726
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020103SDL Acquired: 7/14/2016 13:52:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576082-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.07845	.00236	.00489	.00061	.17472	-.00023
Stddev	.00051	.00026	.00726	.00152	.00045	.00850	.00020
%RSD	288.32	.33381	307.87	30.993	73.320	4.8626	88.947
#1	.00076	.07816	.00930	.00497	.00027	.17949	-.00007
#2	-.00018	.07864	.00297	.00334	.00044	.17977	-.00016
#3	-.00005	.07857	-.00519	.00637	.00112	.16491	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10610.	61883.	2759.7
Stddev	76.	120.	3.9
%RSD	.71451	.19442	.14149
#1	10674.	62016.	2756.9
#2	10631.	61850.	2758.0
#3	10527.	61782.	2764.2

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 13:56:43 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38616**	**9.4206**	**.38676**	**.47772**	**.94740**	**.04733**	**9.4813**	**.04840**
Stddev	.00267	.0175	.00960	.00605	.00560	.00021	.0693	.00067
%RSD	.69074	.18586	2.4833	1.2662	.59117	.44937	.73096	1.3893
#1	.38649	9.4060	.39078	.47781	.94992	.04711	9.5502	.04884
#2	.38334	9.4400	.39371	.48372	.95130	.04753	9.4821	.04874
#3	.38864	9.4159	.37580	.47162	.94098	.04736	9.4116	.04763
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19251**	**.46912**	**.48298**	**3.7785**	**47.637**	**.95100**	**9.4238**	**.47720**
Stddev	.00501	.00215	.01141	.0145	.388	.01085	.0073	.00473
%RSD	2.6008	.45910	2.3633	.38372	.81507	1.1408	.07704	.99147
#1	.19554	.46698	.49043	3.7905	47.732	.96331	9.4220	.48231
#2	.19525	.47129	.48867	3.7825	47.969	.94687	9.4318	.47630
#3	.18673	.46909	.46984	3.7624	47.210	.94282	9.4176	.47298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96285**	**47.829**	**.48195**	**9.7801**	**.48593**	**1.1610**	**.39705**	**4.7527**
Stddev	.02721	.223	.01310	.1970	.01154	.0234	.00337	.0734
%RSD	2.8260	.46558	2.7177	2.0143	2.3742	2.0201	.84921	1.5444
#1	.98277	47.941	.48805	9.8702	.49145	1.1738	.39681	4.7861
#2	.97393	47.974	.49089	9.9160	.49368	1.1752	.40053	4.8035
#3	.93185	47.573	.46692	9.5541	.47267	1.1339	.39380	4.6686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 13:56:43 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96040	.95124	.96325	.48756	.93623	.96395	.94566
Stddev	.02861	.00475	.01383	.00305	.00199	.02259	.00860
%RSD	2.9786	.49930	1.4362	.62612	.21254	2.3440	.90980
#1	.97623	.95340	.95536	.48847	.93397	.97653	.94588
#2	.97760	.95453	.97923	.48416	.93771	.97746	.95415
#3	.92738	.94579	.95517	.49006	.93700	.93787	.93694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10518.	61390.	2796.7
Stddev	30.	107.	25.2
%RSD	.28580	.17356	.89939
#1	10510.	61513.	2797.4
#2	10552.	61332.	2771.2
#3	10493.	61325.	2821.5

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 14:00:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00119**	**.00725**	**.00001**	**.00618**	**-.00314**	**.00001**	**-.05384**	**.00025**
Stddev	.00094	.00509	.00203	.00372	.00058	.00004	.03163	.00013
%RSD	78.898	70.169	21490.	60.172	18.383	390.29	58.759	50.361
#1	-.00182	.01126	-.00029	.00985	-.00268	-.00003	-.09002	.00026
#2	-.00162	.00153	-.00185	.00627	-.00379	.00000	-.04011	.00012
#3	-.00011	.00896	.00217	.00242	-.00296	.00006	-.03139	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00036**	**.00045**	**.00845**	**.11558**	**.00342**	**.01691**	**.00045**
Stddev	.00014	.00118	.00074	.01368	.07581	.00231	.11117	.00037
%RSD	150.72	330.89	162.96	161.82	65.596	67.510	657.35	81.766
#1	-.00016	-.00100	-.00031	.02240	.02804	.00093	-.05060	.00003
#2	.00007	.00092	.00116	-.00495	.15923	.00384	-.04388	.00064
#3	-.00017	.00115	.00050	.00792	.15947	.00549	.14523	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.07194**	**-.00046**	**.00154**	**-.00239**	**.00206**	**.00158**	**.00136**
Stddev	.00018	.00412	.00130	.00314	.00097	.00209	.00607	.00092
%RSD	159.22	5.7225	281.37	203.60	40.504	101.34	383.06	67.875
#1	.00020	.07536	.00104	.00415	-.00147	-.00031	.00102	.00187
#2	-.00009	.06737	-.00118	-.00195	-.00231	.00287	-.00418	.00029
#3	.00023	.07309	-.00125	.00243	-.00340	.00362	.00791	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 14:00:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	-.00023	.00812	.00260	-.00089	-.00004	-.00000
Stddev	.00063	.00020	.00150	.00125	.00025	.00012	.00058
%RSD	184.89	84.265	18.496	48.131	27.809	282.80	25045.
#1	-.00005	-.00031	.00662	.00231	-.00117	-.00011	.00063
#2	.00000	-.00037	.00963	.00397	-.00070	-.00011	-.00050
#3	.00106	-.00001	.00811	.00152	-.00080	.00009	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10292.	61823.	2785.5
Stddev	70.	386.	10.2
%RSD	.68150	.62447	.36505
#1	10356.	62027.	2793.3
#2	10217.	62065.	2789.1
#3	10302.	61378.	2774.0

Approved: July 16, 2016

Sample Name: PBW 68 Acquired: 7/14/2016 14:04:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00206**	**.01332**	**-.00061**	**.00467**	**-.00214**	**.00006**	**-.02156**	**.00037**
Stddev	.00180	.00723	.00190	.00124	.00038	.00005	.01338	.00030
%RSD	87.459	54.287	310.80	26.513	17.907	87.606	62.053	80.203
#1	-.00116	.02122	-.00235	.00427	-.00203	-.00000	-.01584	.00039
#2	-.00414	.01170	.00142	.00606	-.00256	.00009	-.01199	.00007
#3	-.00089	.00703	-.00091	.00368	-.00182	.00008	-.03685	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00038**	**-.00012**	**-.01265**	**-.02006**	**.00467**	**-.07916**	**-.00207**
Stddev	.00023	.00046	.00045	.02361	.08332	.00167	.01428	.00327
%RSD	478.10	121.27	362.68	186.74	415.31	35.787	18.045	158.11
#1	.00020	.00065	.00008	-.02335	-.06604	.00373	-.09264	-.00485
#2	-.00025	-.00015	.00019	.01442	.07612	.00660	-.08065	.00154
#3	-.00009	.00063	-.00064	-.02902	-.07026	.00368	-.06419	-.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.06208**	**-.00088**	**-.00115**	**-.00324**	**.00231**	**.00056**	**.00372**
Stddev	.00012	.00621	.00112	.00335	.00207	.00129	.00181	.00246
%RSD	51.776	10.008	127.06	290.68	63.681	55.943	325.85	66.032
#1	-.00018	.05915	.00023	-.00106	-.00122	.00108	.00244	.00265
#2	-.00014	.06921	-.00087	.00215	-.00535	.00365	.00039	.00198
#3	-.00037	.05787	-.00200	-.00454	-.00316	.00220	-.00117	.00653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: PBW 68 Acquired: 7/14/2016 14:04:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00015	.00531	.00059	-.00102	.00269	.00019
Stddev	.00040	.00019	.00671	.00337	.00032	.00045	.00060
%RSD	387.77	130.68	126.42	572.93	31.440	16.708	308.77
#1	-.00035	-.00031	.00562	.00446	-.00070	.00307	-.00020
#2	.00040	.00006	-.00155	-.00168	-.00102	.00281	.00088
#3	.00026	-.00019	.01187	-.00102	-.00135	.00220	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10215.	60573.	2679.7
Stddev	45.	267.	7.9
%RSD	.44375	.44138	.29424
#1	10240.	60306.	2674.4
#2	10242.	60573.	2676.0
#3	10162.	60841.	2688.8

Approved: July 16, 2016

Sample Name: LCSW 68 Acquired: 7/14/2016 14:08:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19572**	**4.9050**	**.20175**	**.96744**	**.50443**	**.02417**	**5.1413**	**.02485**
Stddev	.00252	.0030	.00712	.00474	.00249	.00007	.0294	.00080
%RSD	1.2874	.06141	3.5282	.49023	.49308	.29565	.57173	3.2263
#1	.19362	4.9015	.20283	.96962	.50276	.02418	5.1512	.02563
#2	.19851	4.9071	.20827	.96200	.50325	.02409	5.1083	.02490
#3	.19502	4.9063	.19416	.97071	.50729	.02423	5.1645	.02403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10012**	**.24751**	**.25348**	**2.0110**	**24.726**	**.50778**	**5.0021**	**.25217**
Stddev	.00287	.00219	.00527	.0246	.074	.00256	.0729	.00248
%RSD	2.8664	.88653	2.0805	1.2219	.29844	.50391	1.4567	.98186
#1	.10189	.24499	.25663	1.9832	24.702	.50795	5.0573	.24932
#2	.10167	.24896	.25642	2.0298	24.666	.50513	4.9195	.25340
#3	.09681	.24859	.24739	2.0200	24.808	.51024	5.0296	.25379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50945**	**25.061**	**.25446**	**4.8868**	**.24939**	**.59984**	**.19307**	**2.4912**
Stddev	.01258	.054	.00635	.0912	.00535	.01296	.00539	.0419
%RSD	2.4687	.21732	2.4940	1.8657	2.1445	2.1610	2.7893	1.6811
#1	.51800	25.037	.25927	4.9545	.25441	.60812	.19837	2.5193
#2	.51534	25.023	.25685	4.9227	.24998	.60649	.18761	2.5113
#3	.49501	25.123	.24727	4.7831	.24377	.58490	.19324	2.4430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW 68 Acquired: 7/14/2016 14:08:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50347	.51298	.51101	.25241	.49377	.50054	.00130
Stddev	.01517	.00123	.00309	.00248	.00016	.01185	.00014
%RSD	3.0122	.23891	.60418	.98237	.03340	2.3678	10.828
#1	.51360	.51222	.50993	.25300	.49379	.50821	.00144
#2	.51077	.51232	.51449	.25454	.49392	.50653	.00116
#3	.48603	.51439	.50861	.24968	.49359	.48689	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10156.	59814.	2681.8
Stddev	18.	224.	11.6
%RSD	.17564	.37439	.43130
#1	10141.	60055.	2683.7
#2	10176.	59613.	2692.4
#3	10151.	59774.	2669.5

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 14:11:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575805-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00170	.01612	.00020	.00581	-.00094	-.00001	-.01134	.00032
Stddev	.00177	.00244	.00203	.00180	.00036	.00005	.03567	.00002
%RSD	104.20	15.112	1014.4	30.970	37.776	416.22	314.54	7.4520
#1	-.00330	.01838	.00088	.00565	-.00062	-.00003	.02980	.00035
#2	-.00200	.01644	.00180	.00769	-.00132	.00004	-.03025	.00030
#3	.00020	.01354	-.00208	.00410	-.00088	-.00005	-.03357	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00110	-.00056	-.01365	.02379	.00103	-.03449	-.00097
Stddev	.00026	.00061	.00102	.03614	.06862	.00401	.08407	.00103
%RSD	150.34	55.310	180.50	264.73	288.39	388.51	243.72	105.91
#1	-.00007	.00097	-.00169	.01302	.08871	.00545	.05466	-.00005
#2	.00014	.00056	-.00030	-.05479	.03068	-.00236	-.11233	-.00208
#3	.00044	.00176	.00029	.00081	-.04801	.00000	-.04581	-.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	142.97	-.00056	.00150	-.00292	.00178	.00002	.00737
Stddev	.00037	.12	.00035	.00247	.00181	.00073	.00081	.00057
%RSD	132.05	.08527	62.170	164.68	61.807	41.115	5008.0	7.6909
#1	-.00041	143.10	-.00030	.00233	-.00288	.00250	.00076	.00779
#2	-.00056	142.95	-.00042	-.00128	-.00475	.00104	.00015	.00760
#3	.00014	142.86	-.00095	.00346	-.00114	.00178	-.00086	.00672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 14:11:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575805-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	.00009	-.00316	.00018	-.00053	.00362	.00023
Stddev	.00122	.00018	.00350	.00273	.00117	.00058	.00018
%RSD	182.03	202.82	110.84	1549.9	220.80	16.084	77.779
#1	.00201	.00012	-.00097	.00017	.00067	.00414	.00041
#2	.00038	-.00011	-.00131	-.00255	-.00167	.00373	.00005
#3	-.00038	.00025	-.00719	.00290	-.00059	.00299	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10133.	59358.	2696.6
Stddev	16.	148.	14.9
%RSD	.15573	.24969	.55433
#1	10123.	59494.	2680.1
#2	10125.	59200.	2709.2
#3	10151.	59378.	2700.6

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 14:15:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575805-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00535	.00117	.00406	-.00177	-.00001	-.01783	.00029
Stddev	.00203	.00551	.00227	.00193	.00062	.00006	.00560	.00024
%RSD	216.76	102.93	193.66	47.682	34.918	542.40	31.423	81.908
#1	.00102	.00772	.00185	.00286	-.00246	-.00004	-.02193	.00004
#2	-.00113	-.00094	.00304	.00302	-.00129	.00006	-.02013	.00052
#3	.00292	.00928	-.00136	.00629	-.00155	-.00005	-.01145	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00108	.00185	-.00508	.02480	.00344	-.06770	-.00279
Stddev	.00012	.00015	.00047	.00816	.07237	.00211	.05064	.00033
%RSD	105.98	13.872	25.343	160.67	291.86	61.523	74.801	11.861
#1	-.00024	.00116	.00145	.00431	.05482	.00560	-.02833	-.00283
#2	-.00009	.00091	.00237	-.01047	-.05776	.00138	-.04994	-.00244
#3	-.00000	.00117	.00174	-.00907	.07733	.00333	-.12482	-.00309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.66923	-.00062	.00088	-.00452	.00187	-.00123	.00560
Stddev	.00045	.01325	.00034	.00794	.00121	.00404	.00501	.00077
%RSD	517.94	1.9799	54.191	901.34	26.778	215.40	407.28	13.757
#1	.00026	.68325	-.00025	-.00579	-.00321	.00645	.00007	.00649
#2	-.00059	.66753	-.00090	.00966	-.00476	.00035	.00300	.00520
#3	.00007	.65691	-.00071	-.00123	-.00559	-.00118	-.00676	.00511
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 14:15:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575805-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00013**	**.00323**	**.00044**	**-.00003**	**.00408**	**.00022**
Stddev	.00035	.00052	.00146	.00251	.00053	.00055	.00013
%RSD	179.43	413.87	45.216	570.27	1558.7	13.430	57.269
#1	.00060	.00028	.00194	-.00169	-.00063	.00444	.00036
#2	-.00002	-.00072	.00482	-.00020	.00039	.00436	.00011
#3	.00001	.00006	.00293	.00321	.00014	.00345	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10310.**	**60905.**	**2722.5**
Stddev	12.	149.	12.0
%RSD	.11675	.24450	.44031
#1	10316.	60822.	2720.7
#2	10296.	61077.	2711.6
#3	10317.	60816.	2735.3

Approved: July 16, 2016

Sample Name: L1607039701 Acquired: 7/14/2016 14:19:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00212**	**.05238**	**-.00138**	**.01980**	**.00085**	**.00005**	**9.5331**	**.00042**
Stddev	.00111	.00492	.00092	.00390	.00040	.00004	.0580	.00013
%RSD	52.194	9.3947	66.676	19.691	47.369	67.750	.60823	30.671
#1	-.00222	.05461	-.00148	.02345	.00076	.00006	9.4990	.00045
#2	-.00097	.04674	-.00041	.02027	.00050	.00001	9.6000	.00052
#3	-.00318	.05579	-.00224	.01569	.00128	.00008	9.5003	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00148**	**.09868**	**.03441**	**.03124**	**1.1026**	**.00376**	**.51937**	**.14683**
Stddev	.00005	.00072	.00439	.00638	.0239	.00133	.05477	.00213
%RSD	3.3244	.73052	12.761	20.429	2.1672	35.472	10.545	1.4526
#1	.00147	.09919	.03637	.02466	1.0762	.00224	.46101	.14455
#2	.00154	.09785	.03748	.03740	1.1229	.00427	.56965	.14878
#3	.00144	.09899	.02938	.03166	1.1086	.00476	.52744	.14714
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**144.04**	**.00780**	**.04330**	**-.00248**	**.00101**	**-.00003**	**.27103**
Stddev	.00047	.11	.00149	.00034	.00252	.00202	.00487	.01973
%RSD	176.60	.07915	19.163	.79629	101.48	198.77	15835.	7.2804
#1	-.00049	144.04	.00868	.04353	-.00282	.00334	.00138	.28228
#2	.00027	143.93	.00864	.04347	-.00481	-.00022	.00397	.28256
#3	-.00058	144.16	.00607	.04291	.00019	-.00008	-.00545	.24824
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607039701 Acquired: 7/14/2016 14:19:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.88538	-.00530	.00116	-.00058	1.3399	.00024
Stddev	.00028	.00044	.00488	.00133	.00088	.1268	.00028
%RSD	40.337	.04953	91.916	115.06	151.42	9.4644	119.08
#1	.00101	.88585	-.01074	.00239	-.00040	1.4200	.00051
#2	.00049	.88529	-.00384	-.00025	.00019	1.4059	-.00005
#3	.00058	.88499	-.00133	.00133	-.00155	1.1937	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10109.	59195.	2732.9
Stddev	11.	81.	19.7
%RSD	.10597	.13725	.72008
#1	10098.	59191.	2732.6
#2	10120.	59115.	2752.8
#3	10109.	59278.	2713.4

Approved: July 16, 2016

Sample Name: L1607039701S Acquired: 7/14/2016 14:23:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19436**	**4.9227**	**.20109**	**.97853**	**.49861**	**.02407**	**14.067**	**.02468**
Stddev	.00122	.0163	.00547	.00255	.00168	.00002	.054	.00032
%RSD	.62640	.33053	2.7208	.26069	.33715	.08542	.38620	1.3064
#1	.19342	4.9219	.20632	.98113	.49961	.02405	14.124	.02476
#2	.19574	4.9069	.20154	.97604	.49667	.02408	14.016	.02495
#3	.19392	4.9394	.19541	.97841	.49956	.02408	14.062	.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09999**	**.33450**	**.28195**	**2.0159**	**25.932**	**.50658**	**5.4317**	**.38921**
Stddev	.00170	.00125	.00553	.0104	.084	.00221	.1546	.00352
%RSD	1.7018	.37339	1.9621	.51583	.32268	.43720	2.8463	.90375
#1	.10104	.33517	.28617	2.0146	26.004	.50403	5.4514	.38760
#2	.10090	.33306	.28398	2.0270	25.840	.50762	5.2682	.38679
#3	.09803	.33528	.27569	2.0063	25.952	.50807	5.5755	.39325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50540**	**162.31**	**.25629**	**4.9820**	**.24652**	**.58905**	**.19128**	**2.7966**
Stddev	.01009	.28	.00483	.0720	.00386	.01023	.00340	.0326
%RSD	1.9966	.17432	1.8865	1.4458	1.5676	1.7371	1.7763	1.1672
#1	.51110	162.46	.25914	5.0364	.24986	.59720	.19355	2.8164
#2	.51135	161.98	.25902	5.0092	.24740	.59238	.19290	2.8143
#3	.49375	162.49	.25070	4.9003	.24228	.57757	.18737	2.7589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607039701S Acquired: 7/14/2016 14:23:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49761	1.3421	.50305	.24041	.48973	1.8124	.00138
Stddev	.01042	.0022	.00428	.00194	.00197	.0321	.00059
%RSD	2.0946	.16423	.85075	.80529	.40310	1.7709	42.549
#1	.50396	1.3431	.50617	.24106	.49030	1.8318	.00206
#2	.50329	1.3396	.49817	.24194	.48753	1.8301	.00109
#3	.48558	1.3436	.50481	.23823	.49136	1.7754	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10112.	59489.	2725.2
Stddev	11.	249.	12.6
%RSD	.10882	.41931	.46416
#1	10100.	59407.	2710.8
#2	10122.	59769.	2734.6
#3	10115.	59291.	2730.2

Approved: July 16, 2016

Sample Name: L1607039701SD Acquired: 7/14/2016 14:27:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19129**	**4.8592**	**.20129**	**.97067**	**.49784**	**.02385**	**14.255**	**.02486**
Stddev	.00520	.1219	.00231	.02623	.00264	.00068	.136	.00064
%RSD	2.7173	2.5081	1.1461	2.7022	.53099	2.8646	.95212	2.5895
#1	.19327	4.9241	.20163	.98909	.50087	.02430	14.408	.02532
#2	.19522	4.9349	.20341	.98227	.49597	.02420	14.206	.02512
#3	.18540	4.7186	.19883	.94064	.49669	.02307	14.150	.02412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10127**	**.33542**	**.28795**	**1.9968**	**25.850**	**.50709**	**5.4125**	**.39161**
Stddev	.00311	.00892	.00715	.0276	.133	.00240	.0519	.00269
%RSD	3.0682	2.6585	2.4841	1.3832	.51268	.47246	.95962	.68564
#1	.10287	.34090	.29099	2.0280	25.988	.50982	5.4180	.39346
#2	.10324	.34022	.29307	1.9755	25.723	.50534	5.3581	.38853
#3	.09768	.32513	.27978	1.9869	25.839	.50610	5.4615	.39285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51189**	**166.67**	**.25894**	**5.0434**	**.25071**	**.59989**	**.19864**	**2.8261**
Stddev	.01155	1.04	.00559	.0825	.00702	.01360	.00443	.0424
%RSD	2.2570	.62258	2.1601	1.6369	2.7987	2.2673	2.2313	1.4991
#1	.51749	167.84	.26299	5.0773	.25650	.61154	.19899	2.8470
#2	.51957	165.88	.26127	5.1036	.25272	.60320	.20289	2.8540
#3	.49860	166.28	.25256	4.9493	.24291	.58494	.19404	2.7773
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607039701SD Acquired: 7/14/2016 14:27:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50182**	**1.3701**	**.50557**	**.24405**	**.48688**	**1.8739**	**.00155**
Stddev	.01366	.0092	.00057	.00404	.01183	.0439	.00051
%RSD	2.7224	.67324	.11312	1.6549	2.4295	2.3447	33.103
#1	.50895	1.3803	.50587	.24478	.49320	1.8943	.00096
#2	.51045	1.3624	.50491	.24768	.49421	1.9040	.00190
#3	.48607	1.3677	.50593	.23970	.47324	1.8235	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10053.**	**59698.**	**2731.2**
Stddev	42.	896.	21.6
%RSD	.42127	1.5004	.79199
#1	10040.	59078.	2706.4
#2	10019.	59291.	2741.0
#3	10101.	60725.	2746.2

Approved: July 16, 2016

Sample Name: L1607034701 Acquired: 7/14/2016 14:30:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00136	.20647	-.00059	.02106	.27600	.00004	1.1209	.00022
Stddev	.00060	.00692	.00227	.00283	.00164	.00002	.0057	.00007
%RSD	44.261	3.3521	387.81	13.459	.59366	44.500	.50866	30.091
#1	-.00201	.21124	.00051	.02093	.27450	.00003	1.1254	.00016
#2	-.00082	.20964	-.00319	.01829	.27775	.00003	1.1227	.00029
#3	-.00124	.19854	.00093	.02396	.27576	.00006	1.1145	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.00198	.00075	7.0465	.17124	.00283	.26358	.07646
Stddev	.00032	.00068	.00222	.0282	.05761	.00089	.05706	.00078
%RSD	37.945	34.399	296.51	.39961	33.645	31.493	21.650	1.0171
#1	.00109	.00241	.00255	7.0140	.22305	.00205	.27323	.07579
#2	.00094	.00234	.00143	7.0633	.10920	.00265	.20231	.07731
#3	.00048	.00120	-.00173	7.0622	.18146	.00380	.31520	.07627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	139.94	.00277	.00940	-.00060	.00054	.00084	.48387
Stddev	.00030	.27	.00118	.00523	.00135	.00193	.00233	.04228
%RSD	138.24	.19331	42.690	55.645	226.54	359.36	276.93	8.7387
#1	-.00008	139.78	.00270	.00769	.00015	.00255	-.00169	.50783
#2	-.00057	140.25	.00399	.01527	-.00216	-.00129	.00132	.50874
#3	-.00001	139.78	.00163	.00524	.00022	.00034	.00290	.43505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034701 Acquired: 7/14/2016 14:30:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.02074**	**.01225**	**-.00032**	**-.00018**	**.02831**	**-.00023**
Stddev	.00061	.00029	.00371	.00190	.00069	.00279	.00019
%RSD	185.27	1.3870	30.276	598.73	389.30	9.8441	85.624
#1	.00004	.02053	.01194	-.00169	-.00084	.02992	-.00027
#2	-.00009	.02107	.01610	.00186	.00053	.02991	-.00039
#3	.00102	.02062	.00870	-.00112	-.00023	.02509	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10218.**	**59713.**	**2719.4**
Stddev	8.	209.	7.5
%RSD	.07729	.34945	.27437
#1	10217.	59494.	2727.2
#2	10210.	59735.	2712.3
#3	10226.	59910.	2718.5

Approved: July 16, 2016

Sample Name: L1607034701PS Acquired: 7/14/2016 14:34:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576110-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19689**	**5.1294**	**.20349**	**.99499**	**.75803**	**.02446**	**6.1926**	**.02487**
Stddev	.00231	.0038	.00312	.00508	.00091	.00002	.0274	.00047
%RSD	1.1733	.07440	1.5337	.51091	.11957	.08213	.44215	1.8771
#1	.19859	5.1274	.20501	.99508	.75803	.02444	6.2184	.02534
#2	.19426	5.1269	.20556	.98986	.75713	.02447	6.1639	.02487
#3	.19781	5.1338	.19990	1.0000	.75894	.02448	6.1953	.02440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10084**	**.25098**	**.25379**	**8.3770**	**25.224**	**.51448**	**5.1382**	**.32265**
Stddev	.00206	.00152	.00646	.0079	.007	.00221	.0417	.00173
%RSD	2.0402	.60709	2.5465	.09440	.02659	.42960	.81204	.53546
#1	.10205	.25195	.25858	8.3747	25.222	.51342	5.1835	.32232
#2	.10201	.24923	.25634	8.3858	25.231	.51300	5.1014	.32110
#3	.09846	.25177	.24644	8.3705	25.218	.51702	5.1298	.32451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51208**	**151.85**	**.25530**	**4.9624**	**.25170**	**.60210**	**.19468**	**2.9419**
Stddev	.01171	.26	.00643	.0902	.00413	.01457	.00517	.0447
%RSD	2.2861	.16905	2.5173	1.8169	1.6390	2.4196	2.6558	1.5203
#1	.52021	151.56	.25971	5.0187	.25303	.61402	.20054	2.9711
#2	.51738	151.98	.25827	5.0099	.25500	.60643	.19077	2.9642
#3	.49866	152.02	.24793	4.8584	.24707	.58586	.19273	2.8904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034701PS Acquired: 7/14/2016 14:34:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576110-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50407**	**.53383**	**.51465**	**.24579**	**.49748**	**.52815**	**.00076**
Stddev	.01245	.00164	.00580	.00282	.00154	.01193	.00043
%RSD	2.4695	.30765	1.1279	1.1475	.30953	2.2592	56.241
#1	.51232	.53232	.50795	.24861	.49712	.53486	.00036
#2	.51014	.53359	.51788	.24579	.49616	.53521	.00070
#3	.48975	.53558	.51813	.24297	.49917	.51437	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10129.**	**59386.**	**2705.7**
Stddev	26.	167.	3.9
%RSD	.26152	.28159	.14478
#1	10124.	59568.	2701.4
#2	10106.	59239.	2706.7
#3	10158.	59351.	2709.0

Approved: July 16, 2016

Sample Name: L1607034701SDL Acquired: 7/14/2016 14:38:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576110-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00161	.03923	-.00117	.00889	.05412	.00005	.16897	.00016
Stddev	.00064	.00423	.00027	.00139	.00121	.00005	.03373	.00006
%RSD	39.816	10.772	22.907	15.692	2.2401	88.648	19.964	37.097
#1	-.00102	.03443	-.00115	.01003	.05464	.00011	.15142	.00009
#2	-.00229	.04090	-.00091	.00930	.05273	.00005	.20786	.00019
#3	-.00151	.04237	-.00144	.00733	.05498	.00001	.14764	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00112	-.00058	1.4335	.02615	-.00054	.03956	.01439
Stddev	.00018	.00087	.00043	.0427	.03662	.00144	.03081	.00161
%RSD	701.33	77.654	73.534	2.9779	140.05	268.29	77.891	11.190
#1	-.00017	.00037	-.00068	1.4104	.06656	.00112	.07007	.01454
#2	.00018	.00207	-.00095	1.4073	.01670	-.00132	.04014	.01592
#3	-.00009	.00091	-.00011	1.4828	-.00482	-.00142	.00846	.01271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	28.105	.00022	.00272	.00087	.00240	-.00180	.09388
Stddev	.00006	.129	.00077	.00746	.00242	.00260	.00430	.01272
%RSD	25.554	.46014	355.24	274.36	278.82	108.25	238.96	13.544
#1	-.00016	28.253	-.00030	.01085	-.00192	.00211	-.00329	.10271
#2	-.00028	28.015	-.00015	-.00382	.00229	-.00004	-.00517	.09963
#3	-.00024	28.046	.00110	.00113	.00223	.00514	.00305	.07931
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034701SDL Acquired: 7/14/2016 14:38:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576110-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00434**	**.00284**	**.00345**	**-.00094**	**.00612**	**-.00006**
Stddev	.00022	.00025	.00286	.00225	.00015	.00084	.00008
%RSD	496.48	5.7636	100.92	65.172	16.224	13.718	129.32
#1	-.00001	.00457	.00479	.00373	-.00110	.00675	-.00002
#2	.00016	.00437	.00418	.00107	-.00093	.00645	-.00002
#3	-.00027	.00408	-.00045	.00555	-.00080	.00517	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10479.**	**61148.**	**2709.8**
Stddev	8.	138.	10.5
%RSD	.07748	.22534	.38901
#1	10478.	61114.	2697.6
#2	10487.	61300.	2716.4
#3	10471.	61031.	2715.3

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 14:42:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41120**	**10.118**	**.40826**	**.51260**	**1.0143**	**.05057**	**10.112**	**.05099**
Stddev	.00201	.013	.00619	.00151	.0025	.00024	.022	.00131
%RSD	.49001	.12608	1.5171	.29421	.24330	.48067	.21888	2.5672
#1	.40889	10.131	.41331	.51355	1.0134	.05074	10.132	.05188
#2	.41207	10.117	.41012	.51339	1.0170	.05068	10.116	.05160
#3	.41263	10.106	.40135	.51086	1.0123	.05029	10.088	.04949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20304**	**.50463**	**.50760**	**4.0319**	**50.666**	**1.0137**	**10.083**	**.51068**
Stddev	.00667	.00149	.01686	.0427	.090	.0121	.034	.00183
%RSD	3.2842	.29561	3.3214	1.0592	.17687	1.1885	.33765	.35801
#1	.20764	.50495	.51715	4.0053	50.564	1.0273	10.122	.51277
#2	.20609	.50594	.51752	4.0092	50.700	1.0098	10.069	.50940
#3	.19539	.50300	.48813	4.0811	50.733	1.0041	10.059	.50987
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0092**	**51.016**	**.50730**	**10.270**	**.50596**	**1.2257**	**.41429**	**4.9915**
Stddev	.0297	.094	.01522	.238	.01197	.0283	.00769	.0835
%RSD	2.9426	.18445	3.0005	2.3133	2.3658	2.3113	1.8562	1.6739
#1	1.0277	50.977	.51616	10.425	.51182	1.2419	.41990	5.0106
#2	1.0251	51.123	.51602	10.388	.51386	1.2422	.41744	5.0638
#3	.97498	50.948	.48972	9.9966	.49219	1.1930	.40552	4.9000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 14:42:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0117**	**1.0154**	**1.0207**	**.50755**	**1.0017**	**1.0128**	**1.0106**
Stddev	.0359	.0007	.0080	.00627	.0036	.0281	.0009
%RSD	3.5447	.07085	.78097	1.2361	.35761	2.7713	.08465
#1	1.0350	1.0148	1.0200	.51327	1.0049	1.0300	1.0116
#2	1.0298	1.0162	1.0290	.50853	1.0024	1.0280	1.0100
#3	.97042	1.0153	1.0131	.50084	.99782	.98042	1.0101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10174.**	**58886.**	**2687.0**
Stddev	14.	212.	6.2
%RSD	.14175	.36012	.23092
#1	10158.	58888.	2687.3
#2	10177.	58672.	2680.7
#3	10186.	59097.	2693.1

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 14:46:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.00351**	**-.00095**	**.00454**	**-.00202**	**.00002**	**-.00794**	**.00007**
Stddev	.00026	.00246	.00223	.00055	.00036	.00004	.03471	.00007
%RSD	42.481	70.180	236.01	12.167	18.019	162.61	437.16	92.161
#1	-.00077	.00586	-.00282	.00395	-.00177	.00005	-.04754	.00008
#2	-.00073	.00371	.00152	.00462	-.00243	-.00002	.01722	.00000
#3	-.00031	.00095	-.00154	.00505	-.00185	.00005	.00650	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00004**	**-.00107**	**.00083**	**.01134**	**.00307**	**-.08953**	**-.00333**
Stddev	.00011	.00062	.00091	.02376	.07329	.00249	.07914	.00141
%RSD	182.39	1401.7	85.207	2871.9	646.52	81.223	88.400	42.300
#1	.00004	-.00045	-.00082	.01987	.01506	.00286	-.07144	-.00230
#2	-.00018	.00074	-.00031	-.02580	.08269	.00566	-.17615	-.00276
#3	-.00004	-.00015	-.00208	.00841	-.06374	.00069	-.02100	-.00494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.05458**	**-.00137**	**.00275**	**-.00045**	**-.00008**	**-.00339**	**.00216**
Stddev	.00039	.02744	.00076	.00123	.00471	.00393	.00164	.00161
%RSD	27739.	50.283	55.399	44.538	1056.8	5186.1	48.569	74.468
#1	-.00045	.07743	-.00212	.00168	-.00247	.00273	-.00254	.00399
#2	.00015	.02414	-.00061	.00409	-.00381	-.00457	-.00528	.00149
#3	.00030	.06215	-.00137	.00248	.00494	.00161	-.00234	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 14:46:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.00003	.00004	-.00018	-.00066	.00000	.00009
Stddev	.00052	.00022	.00286	.00023	.00061	.00012	.00022
%RSD	63.598	826.69	7584.3	123.98	92.692	10978.	238.15
#1	.00134	-.00021	.00209	-.00045	-.00131	.00003	.00001
#2	.00082	.00008	.00126	-.00008	-.00011	.00010	.00034
#3	.00030	.00021	-.00323	-.00003	-.00055	-.00013	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10269.	60526.	2698.2
Stddev	54.	114.	17.4
%RSD	.52151	.18897	.64645
#1	10328.	60634.	2714.5
#2	10224.	60406.	2700.2
#3	10253.	60537.	2679.8

Approved: July 16, 2016

Sample Name: L1607039702 Acquired: 7/14/2016 14:50:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00114	.04371	.00147	.02388	.00094	.00002	7.3981	.00027
Stddev	.00126	.00465	.00161	.00152	.00031	.00007	.0257	.00040
%RSD	110.89	10.638	109.71	6.3687	33.065	427.77	.34716	147.30
#1	.00010	.03851	.00014	.02472	.00102	-.00006	7.3702	-.00018
#2	-.00110	.04514	.00326	.02479	.00119	.00008	7.4207	.00058
#3	-.00242	.04748	.00100	.02212	.00059	.00003	7.4034	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.23440	.02578	.03275	.90890	.00873	.42465	.10659
Stddev	.00038	.00043	.00173	.00835	.06109	.00400	.06132	.00100
%RSD	50.030	.18470	6.6941	25.498	6.7218	45.811	14.439	.94038
#1	.00048	.23473	.02693	.02382	.97431	.00648	.49544	.10774
#2	.00119	.23391	.02662	.03405	.85330	.00637	.38822	.10613
#3	.00060	.23456	.02380	.04036	.89909	.01335	.39030	.10591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	138.32	.00551	.03545	.00002	.00011	-.00298	.20834
Stddev	.00046	.52	.00049	.00414	.00040	.00142	.00172	.01345
%RSD	228.90	.37261	8.8942	11.687	2007.2	1331.1	57.549	6.4539
#1	.00023	138.83	.00607	.03872	-.00037	.00014	-.00101	.21643
#2	-.00015	138.33	.00529	.03079	.00043	.00151	-.00415	.21577
#3	-.00069	137.80	.00517	.03683	-.00000	-.00133	-.00379	.19282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607039702 Acquired: 7/14/2016 14:50:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00119**	**.97246**	**.00274**	**-.00078**	**-.00057**	**1.1100**	**.00052**
Stddev	.00015	.00378	.00113	.00262	.00025	.0930	.00032
%RSD	12.338	.38821	41.384	336.96	44.031	8.3788	60.948
#1	.00118	.97679	.00401	.00113	-.00087	1.1682	.00016
#2	.00105	.97070	.00182	-.00376	-.00042	1.1590	.00066
#3	.00135	.96988	.00239	.00030	-.00044	1.0027	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10242.**	**59937.**	**2754.4**
Stddev	28.	328.	16.3
%RSD	.27406	.54723	.59331
#1	10212.	59560.	2741.7
#2	10268.	60157.	2748.7
#3	10245.	60094.	2772.9

Approved: July 16, 2016

Sample Name: L1607040401 Acquired: 7/14/2016 14:53:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.06170	-.00132	.01504	-.00091	.00008	.50947	.00035
Stddev	.00097	.00824	.00295	.00171	.00085	.00003	.02112	.00010
%RSD	213.90	13.353	223.68	11.388	92.576	31.900	4.1446	29.206
#1	-.00029	.07115	-.00147	.01694	-.00032	.00011	.51559	.00034
#2	.00155	.05609	-.00419	.01364	-.00188	.00006	.48598	.00046
#3	.00010	.05784	.00170	.01453	-.00054	.00006	.52686	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.00135	.00759	.07424	.08107	.00079	.06188	.00109
Stddev	.00020	.00026	.00081	.02102	.02319	.00253	.08225	.00246
%RSD	79.419	19.119	10.736	28.317	28.603	318.48	132.92	225.09
#1	-.00041	.00113	.00760	.09314	.08294	-.00201	.00552	-.00150
#2	-.00003	.00164	.00840	.07798	.05700	.00290	.02385	.00137
#3	-.00032	.00130	.00677	.05160	.10326	.00149	.15626	.00341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.16785	.00027	.01079	.00092	-.00131	-.00488	.14463
Stddev	.00029	.00614	.00088	.00380	.00055	.00159	.00389	.01211
%RSD	496.91	3.6589	330.11	35.249	60.001	121.95	79.663	8.3719
#1	.00039	.16876	.00054	.01498	.00082	-.00308	-.00758	.14937
#2	-.00017	.17348	-.00072	.00755	.00151	-.00084	-.00042	.15364
#3	-.00004	.16130	.00098	.00986	.00042	.00000	-.00663	.13086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607040401 Acquired: 7/14/2016 14:53:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00146	.00697	.00083	-.00019	.00455	.00001
Stddev	.00058	.00034	.00403	.00205	.00061	.00038	.00006
%RSD	113.99	23.428	57.858	246.58	315.31	8.3353	396.90
#1	-.00010	.00182	.00293	.00152	-.00032	.00478	.00006
#2	.00105	.00144	.00699	.00246	.00047	.00476	.00004
#3	.00056	.00113	.01100	-.00148	-.00073	.00411	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10353.	61636.	2734.1
Stddev	40.	167.	14.4
%RSD	.38292	.27039	.52505
#1	10395.	61561.	2730.1
#2	10350.	61520.	2750.0
#3	10316.	61827.	2722.1

Approved: July 16, 2016

Sample Name: L1607040402 Acquired: 7/14/2016 14:57:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00090	.07661	-.00080	.01882	-.00067	.00001	.42932	.00031
Stddev	.00200	.00148	.00294	.00103	.00063	.00004	.02358	.00011
%RSD	222.42	1.9382	367.66	5.4617	93.964	360.84	5.4917	34.206
#1	.00081	.07578	-.00345	.01948	-.00113	.00002	.40881	.00037
#2	-.00040	.07572	.00236	.01934	-.00093	.00004	.42408	.00019
#3	-.00310	.07832	-.00131	.01764	.00005	-.00003	.45508	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00029	.05945	.04715	.19542	.00515	-.00201	-.00006
Stddev	.00021	.00019	.00682	.03561	.05155	.00125	.04330	.00092
%RSD	232.28	66.193	11.481	75.527	26.381	24.231	2157.3	1662.0
#1	.00001	.00049	.06467	.03181	.15671	.00583	-.02726	.00064
#2	.00005	.00030	.06194	.08786	.17560	.00592	-.02675	-.00110
#3	-.00033	.00010	.05172	.02178	.25394	.00371	.04799	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.36485	-.00042	.02233	.00100	.00063	-.00632	.15893
Stddev	.00027	.03801	.00090	.00633	.00225	.00134	.00209	.01355
%RSD	181.41	10.419	215.42	28.340	226.29	212.19	33.163	8.5245
#1	-.00014	.38418	-.00070	.02370	.00138	-.00036	-.00442	.16795
#2	.00038	.38931	-.00114	.02786	-.00142	.00010	-.00596	.16550
#3	.00021	.32105	.00059	.01543	.00303	.00215	-.00857	.14335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607040402 Acquired: 7/14/2016 14:57:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00141	.00547	.00748	-.00062	-.00065	.01550	.00036
Stddev	.00065	.00038	.00294	.00225	.00037	.00167	.00042
%RSD	45.945	6.9370	39.259	365.10	56.339	10.799	115.19
#1	.00066	.00590	.00757	.00198	-.00067	.01630	.00084
#2	.00176	.00537	.01038	-.00209	-.00027	.01662	.00006
#3	.00180	.00516	.00451	-.00173	-.00100	.01358	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10373.	61411.	2726.0
Stddev	24.	268.	9.8
%RSD	.23397	.43711	.36069
#1	10401.	61721.	2720.7
#2	10365.	61238.	2737.3
#3	10355.	61275.	2720.0

Approved: July 16, 2016

Sample Name: L1607040403 Acquired: 7/14/2016 15:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.01070	-.00167	.01791	-.00095	.00004	.13865	.00035
Stddev	.00168	.00467	.00219	.00061	.00115	.00009	.02923	.00013
%RSD	187.48	43.628	131.38	3.4185	121.55	201.35	21.080	36.487
#1	.00064	.01334	-.00216	.01859	-.00228	.00005	.12186	.00035
#2	.00269	.01344	.00073	.01774	-.00025	.00013	.17240	.00048
#3	-.00064	.00531	-.00357	.01740	-.00032	-.00004	.12170	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00050	.00682	.02484	.12797	.00642	-.08225	-.00132
Stddev	.00017	.00105	.00068	.01723	.09987	.00193	.03690	.00178
%RSD	42.935	208.86	9.9358	69.354	78.040	30.131	44.868	135.18
#1	-.00058	.00133	.00677	.01118	.20650	.00475	-.06623	.00063
#2	-.00024	.00085	.00753	.01915	.16184	.00854	-.05606	-.00172
#3	-.00038	-.00068	.00617	.04419	.01557	.00597	-.12446	-.00287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.22354	.00041	.00681	-.00212	.00121	-.00540	.02539
Stddev	.00022	.01670	.00088	.00237	.00228	.00264	.00225	.00452
%RSD	3709.7	7.4720	213.99	34.816	107.42	219.03	41.688	17.793
#1	-.00014	.21123	.00118	.00436	-.00393	.00156	-.00650	.02760
#2	-.00010	.24255	.00060	.00699	-.00288	-.00159	-.00689	.02837
#3	.00026	.21684	-.00055	.00909	.00044	.00366	-.00281	.02019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607040403 Acquired: 7/14/2016 15:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00059	.00458	.00101	-.00063	.00476	.00005
Stddev	.00029	.00021	.00632	.00255	.00054	.00055	.00021
%RSD	30.557	35.407	138.18	252.57	86.263	11.470	430.75
#1	.00063	.00083	.00792	.00352	-.00125	.00517	-.00010
#2	.00119	.00043	.00853	-.00159	-.00034	.00497	-.00004
#3	.00101	.00051	-.00272	.00110	-.00029	.00414	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10361.	61619.	2734.4
Stddev	22.	29.	10.0
%RSD	.21098	.04782	.36488
#1	10355.	61605.	2737.9
#2	10385.	61599.	2723.2
#3	10342.	61653.	2742.2

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 15:05:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41187**	**10.159**	**.40899**	**.51126**	**1.0335**	**.05093**	**10.274**	**.05118**
Stddev	.00053	.008	.00739	.00338	.0051	.00010	.072	.00145
%RSD	.12756	.07732	1.8062	.66177	.49672	.19342	.69707	2.8305
#1	.41236	10.165	.41345	.50783	1.0376	.05102	10.283	.05180
#2	.41194	10.150	.41305	.51460	1.0351	.05083	10.340	.05220
#3	.41132	10.163	.40046	.51137	1.0277	.05096	10.198	.04952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20512**	**.50434**	**.51196**	**4.1131**	**51.600**	**1.0194**	**10.311**	**.51759**
Stddev	.00613	.00160	.01563	.0491	.254	.0053	.078	.00590
%RSD	2.9894	.31682	3.0538	1.1938	.49248	.51908	.75175	1.1397
#1	.20929	.50618	.52134	4.1624	51.680	1.0247	10.333	.52011
#2	.20800	.50357	.52063	4.1128	51.804	1.0194	10.376	.52181
#3	.19808	.50327	.49391	4.0642	51.315	1.0141	10.225	.51085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0149**	**51.890**	**.51080**	**10.335**	**.51267**	**1.2320**	**.40828**	**5.0521**
Stddev	.0286	.187	.01599	.239	.01222	.0272	.00624	.1051
%RSD	2.8140	.36075	3.1296	2.3137	2.3840	2.0274	1.5287	2.0812
#1	1.0329	52.009	.51986	10.487	.51852	1.2481	.41467	5.1144
#2	1.0298	51.987	.52020	10.458	.52087	1.2472	.40795	5.1112
#3	.98195	51.674	.49234	10.059	.49862	1.2006	.40220	4.9307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 15:05:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0213**	**1.0339**	**1.0418**	**.51478**	**1.0077**	**1.0210**	**1.0274**
Stddev	.0377	.0043	.0003	.00392	.0015	.0296	.0039
%RSD	3.6926	.42034	.03057	.76192	.14631	2.9017	.37910
#1	1.0438	1.0372	1.0421	.51760	1.0066	1.0389	1.0263
#2	1.0423	1.0356	1.0417	.51644	1.0094	1.0374	1.0317
#3	.97775	1.0290	1.0415	.51030	1.0071	.98685	1.0241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10156.**	**58861.**	**2652.0**
Stddev	4.	29.	7.1
%RSD	.03728	.04938	.26749
#1	10160.	58831.	2654.3
#2	10156.	58889.	2644.1
#3	10152.	58864.	2657.7

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 15:09:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.01156	-.00156	.00382	-.00114	.00005	-.03587	.00024
Stddev	.00155	.00575	.00231	.00275	.00075	.00008	.03480	.00013
%RSD	2633.4	49.780	148.64	72.137	65.523	181.00	97.028	53.707
#1	.00014	.00529	.00107	.00207	-.00044	.00007	.00309	.00020
#2	-.00153	.01277	-.00331	.00239	-.00105	.00012	-.06389	.00014
#3	.00156	.01660	-.00243	.00699	-.00193	-.00005	-.04681	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00099	-.00017	.00056	.09122	.00421	-.01023	-.00094
Stddev	.00032	.00056	.00046	.00714	.08203	.00382	.05538	.00406
%RSD	158.12	56.051	279.27	1270.2	89.919	90.882	541.60	433.19
#1	.00015	.00074	.00037	-.00758	.10408	.00862	.05164	-.00077
#2	-.00029	.00060	-.00038	.00351	.16607	.00216	-.05518	-.00509
#3	-.00047	.00163	-.00049	.00575	.00353	.00185	-.02714	.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.04707	-.00031	.00297	-.00194	.00055	-.00346	.00345
Stddev	.00058	.01583	.00073	.00778	.00142	.00145	.00520	.00065
%RSD	1771.1	33.637	234.16	262.07	72.883	265.81	150.30	18.825
#1	-.00055	.03035	-.00079	.00681	-.00357	.00211	-.00237	.00272
#2	.00060	.04902	.00053	-.00598	-.00096	.00029	.00111	.00395
#3	-.00015	.06184	-.00067	.00807	-.00130	-.00076	-.00913	.00370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 15:09:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00010	.00017	.00063	-.00063	-.00006	.00029
Stddev	.00084	.00022	.00040	.00280	.00034	.00024	.00042
%RSD	486.15	228.06	240.20	441.55	54.566	407.41	143.41
#1	.00044	.00002	.00027	-.00019	-.00059	.00004	-.00019
#2	-.00077	.00035	-.00027	.00375	-.00099	-.00033	.00060
#3	.00084	-.00008	.00051	-.00166	-.00031	.00011	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10219.	60159.	2663.7
Stddev	21.	106.	14.7
%RSD	.20353	.17581	.55236
#1	10197.	60086.	2646.8
#2	10238.	60110.	2670.9
#3	10223.	60280.	2673.4

Approved: July 16, 2016

Sample Name: L1607023801 Acquired: 7/14/2016 15:13:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00124	-.00037	.01139	.40499	.00003	19.608	-.00004
Stddev	.00030	.00198	.00359	.00166	.00310	.00005	.129	.00011
%RSD	234.05	160.08	969.81	14.562	.76448	184.35	.65883	295.12
#1	.00020	.00324	-.00451	.01268	.40744	-.00002	19.649	.00007
#2	-.00020	-.00072	.00197	.00952	.40601	.00003	19.712	-.00015
#3	-.00039	.00119	.00143	.01196	.40151	.00007	19.463	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01052	-.00090	-.00069	61.116	.21949	.00596	.35309	.57986
Stddev	.00052	.00063	.00902	.239	.08082	.00239	.11606	.00612
%RSD	4.9350	70.334	1306.6	.39056	36.824	40.098	32.868	1.0552
#1	.01103	-.00032	.00698	61.008	.12645	.00370	.30204	.58157
#2	.01052	-.00080	.00158	61.389	.25958	.00846	.48592	.58494
#3	.00999	-.00157	-.01063	60.950	.27243	.00572	.27131	.57307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	138.34	.03006	-.01760	.00330	-.00122	-.00487	.65822
Stddev	.00024	.52	.00285	.00635	.00308	.00063	.00345	.03478
%RSD	67.924	.37254	9.4824	36.056	93.492	51.911	70.802	5.2837
#1	-.00061	138.31	.03076	-.01157	.00466	-.00130	-.00504	.68062
#2	-.00014	138.86	.03250	-.01702	.00546	-.00055	-.00134	.67588
#3	-.00030	137.83	.02692	-.02422	-.00023	-.00181	-.00822	.61815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607023801 Acquired: 7/14/2016 15:13:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.03346**	**.01260**	**.00029**	**-.00076**	**.57445**	**-.00204**
Stddev	.00041	.00013	.01012	.00252	.00023	.03786	.00016
%RSD	403.93	.38237	80.349	879.57	30.085	6.5901	8.0158
#1	.00028	.03357	.01870	.00310	-.00102	.59765	-.00206
#2	-.00053	.03348	.00091	-.00047	-.00063	.59494	-.00219
#3	-.00006	.03332	.01817	-.00177	-.00062	.53076	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10281.**	**60255.**	**2750.7**
Stddev	5.	186.	9.0
%RSD	.05246	.30939	.32692
#1	10275.	60330.	2760.1
#2	10285.	60393.	2742.3
#3	10284.	60043.	2749.6

Approved: July 16, 2016

Sample Name: L1607034001 Acquired: 7/14/2016 15:17:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00330	-.00306	.03422	.09113	-.00004	173.84	.00041
Stddev	.00051	.00850	.00094	.00303	.00101	.00006	.82	.00019
%RSD	183.46	257.42	30.587	8.8466	1.1074	148.70	.47332	46.896
#1	.00011	-.00594	-.00406	.03247	.09054	-.00008	173.52	.00059
#2	-.00013	.00506	-.00220	.03247	.09229	.00003	174.77	.00044
#3	.00085	.01079	-.00292	.03771	.09055	-.00007	173.22	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.00171	.00104	.01416	.22471	.00869	5.0930	.62882
Stddev	.00023	.00020	.00062	.01612	.01335	.00168	.0502	.00558
%RSD	58.051	11.918	59.358	113.85	5.9388	19.348	.98590	.88768
#1	.00061	.00148	.00112	-.00335	.21644	.01061	5.0974	.62260
#2	.00015	.00187	.00161	.02838	.24010	.00751	5.1409	.63340
#3	.00043	.00177	.00038	.01745	.21758	.00794	5.0408	.63047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	3.6952	.00185	.00446	-.00203	-.00110	-.00645	.94394
Stddev	.00002	.0098	.00056	.00846	.00337	.00066	.00194	.07957
%RSD	17.871	.26507	30.191	189.71	165.83	59.840	30.046	8.4295
#1	.00009	3.7004	.00247	.01421	-.00272	-.00107	-.00860	.99740
#2	.00010	3.7013	.00138	-.00083	-.00501	-.00046	-.00485	.98191
#3	.00007	3.6839	.00171	-.00001	.00163	-.00177	-.00589	.85249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034001 Acquired: 7/14/2016 15:17:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.27148	-.02643	.00222	-.00045	.00399	-.00009
Stddev	.00031	.00031	.00611	.00240	.00011	.00031	.00038
%RSD	62.017	.11260	23.129	108.10	25.252	7.7145	395.06
#1	.00084	.27115	-.03009	.00346	-.00037	.00426	.00022
#2	.00048	.27153	-.01937	.00375	-.00040	.00406	-.00051
#3	.00021	.27176	-.02982	-.00055	-.00058	.00365	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10306.	60666.	2758.6
Stddev	17.	112.	25.2
%RSD	.16374	.18381	.91392
#1	10297.	60699.	2756.3
#2	10295.	60542.	2734.6
#3	10325.	60758.	2784.9

Approved: July 16, 2016

Sample Name: L1607045101 Acquired: 7/14/2016 15:21:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.00648	-.00229	.04687	.11420	-.00001	139.97	.00035
Stddev	.00342	.00635	.00119	.00145	.00084	.00011	.08	.00012
%RSD	407.81	98.054	51.872	3.0899	.73298	842.50	.05528	35.525
#1	-.00073	.00435	-.00354	.04796	.11412	.00010	139.88	.00021
#2	.00252	.01362	-.00214	.04743	.11341	-.00012	140.00	.00041
#3	-.00431	.00146	-.00118	.04523	.11508	-.00002	140.02	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00104	.13312	.00684	1.7352	.03119	21.782	.04463
Stddev	.00022	.00076	.01006	.02907	.0827	.00294	.235	.00099
%RSD	130.42	72.911	7.5576	425.05	4.7660	9.4120	1.0800	2.2257
#1	-.00004	.00095	.13952	.02156	1.6778	.02837	21.511	.04573
#2	.00015	.00185	.13831	.02561	1.8300	.03099	21.933	.04439
#3	.00039	.00033	.12152	-.02665	1.6979	.03423	21.903	.04378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	23.130	-.00032	.04866	-.00139	.00261	-.00421	7.7364
Stddev	.00036	.054	.00044	.00868	.00323	.00262	.00684	.4451
%RSD	178.61	.23140	137.34	17.832	232.40	100.48	162.53	5.7530
#1	.00055	23.072	-.00006	.04876	-.00512	.00501	.00165	8.0057
#2	.00023	23.177	-.00007	.05729	.00036	.00300	-.00255	7.9809
#3	-.00017	23.141	-.00082	.03994	.00059	-.00019	-.01173	7.2227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045101 Acquired: 7/14/2016 15:21:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.87757	-.01634	.00066	-.00130	.02493	-.00003
Stddev	.00080	.00121	.00234	.00193	.00025	.00166	.00016
%RSD	190.79	.13741	14.328	291.96	19.214	6.6523	590.68
#1	-.00050	.87644	-.01384	.00288	-.00120	.02591	-.00021
#2	.00096	.87743	-.01849	-.00045	-.00111	.02588	.00011
#3	.00080	.87884	-.01669	-.00046	-.00158	.02302	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10098.	59779.	2734.4
Stddev	18.	40.	8.3
%RSD	.17924	.06636	.30442
#1	10118.	59802.	2734.3
#2	10082.	59733.	2742.7
#3	10093.	59802.	2726.1

Approved: July 16, 2016

Sample Name: L1607045102 Acquired: 7/14/2016 15:24:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00216	.02623	-.00083	.01776	.05863	.00001	62.695	.00032
Stddev	.00295	.00896	.00144	.00251	.00298	.00001	1.710	.00009
%RSD	136.61	34.163	173.20	14.148	5.0842	215.82	2.7275	27.763
#1	-.00145	.01617	-.00234	.01488	.05960	.00001	62.548	.00022
#2	.00037	.03336	-.00071	.01949	.05529	-.00001	61.064	.00036
#3	-.00540	.02916	.00054	.01891	.06101	.00002	64.474	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00056	.01632	.03326	.67939	.01231	6.3568	.00200
Stddev	.00029	.00055	.00068	.00474	.03550	.00227	.2045	.00216
%RSD	93.527	96.568	4.1837	14.257	5.2260	18.430	3.2167	108.26
#1	-.00009	.00063	.01684	.03125	.71994	.01209	6.1978	.00426
#2	-.00020	-.00001	.01658	.02986	.65390	.01016	6.2852	-.00004
#3	-.00064	.00107	.01555	.03868	.66432	.01468	6.5875	.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	5.2789	.00015	.00944	-.00076	.00184	-.00701	3.5690
Stddev	.00015	.1437	.00079	.00405	.00254	.00107	.00247	.1922
%RSD	49.371	2.7220	537.91	42.929	334.63	58.426	35.163	5.3849
#1	.00014	5.2604	.00076	.01317	-.00353	.00278	-.00575	3.6735
#2	.00038	5.1454	-.00075	.01001	.00146	.00067	-.00543	3.6864
#3	.00042	5.4309	.00043	.00513	-.00021	.00208	-.00986	3.3473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045102 Acquired: 7/14/2016 15:24:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.22016	-.00790	.00119	-.00057	.01300	-.00015
Stddev	.00128	.00554	.00135	.00202	.00093	.00109	.00034
%RSD	142.71	2.5161	17.136	169.51	162.22	8.3909	218.63
#1	-.00057	.21981	-.00744	.00138	-.00164	.01346	.00014
#2	.00151	.21480	-.00683	.00312	.00005	.01378	-.00052
#3	.00174	.22586	-.00942	-.00092	-.00013	.01175	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10140.	59956.	2722.3
Stddev	23.	124.	49.0
%RSD	.22282	.20641	1.8017
#1	10152.	59824.	2714.7
#2	10114.	60070.	2774.7
#3	10154.	59973.	2677.5

Approved: July 16, 2016

Sample Name: L1607045201 Acquired: 7/14/2016 15:28:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00087**	**.06566**	**-.00220**	**.04250**	**.93272**	**.00006**	**74.906**	**.00010**
Stddev	.00040	.00289	.00233	.00206	.00513	.00005	.210	.00016
%RSD	46.652	4.4084	106.13	4.8501	.55039	83.691	.28097	161.62
#1	-.00052	.06899	-.00064	.04224	.93627	.00004	75.087	.00014
#2	-.00077	.06376	-.00107	.04058	.93505	.00003	74.956	-.00008
#3	-.00131	.06423	-.00487	.04468	.92683	.00012	74.675	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.00133**	**.08408**	**.43998**	**1.7929**	**.01472**	**12.002**	**.23157**
Stddev	.00024	.00067	.00570	.01256	.0409	.00421	.063	.00406
%RSD	103.15	50.410	6.7816	2.8547	2.2830	28.581	.52439	1.7542
#1	-.00051	.00059	.08703	.44336	1.8331	.01588	12.075	.23575
#2	-.00006	.00150	.08771	.42608	1.7944	.01823	11.972	.23132
#3	-.00013	.00190	.07751	.45051	1.7513	.01006	11.961	.22764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**29.725**	**-.00102**	**.03144**	**-.00076**	**-.00088**	**-.00329**	**6.5605**
Stddev	.00047	.025	.00064	.00121	.00033	.00400	.00253	.3725
%RSD	794.93	.08274	62.434	3.8605	44.261	454.50	76.717	5.6776
#1	-.00060	29.744	-.00155	.03116	-.00113	.00281	-.00365	6.7175
#2	.00028	29.733	-.00031	.03277	-.00064	-.00032	-.00562	6.8287
#3	.00014	29.697	-.00121	.03039	-.00050	-.00512	-.00061	6.1352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045201 Acquired: 7/14/2016 15:28:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**1.1102**	**-.01770**	**-.00115**	**-.00097**	**.02057**	**.00031**
Stddev	.00029	.0037	.00343	.00057	.00051	.00144	.00027
%RSD	2403.4	.33248	19.394	49.297	51.981	7.0008	87.345
#1	-.00006	1.1125	-.01764	-.00062	-.00045	.02147	.00039
#2	-.00028	1.1121	-.02116	-.00175	-.00146	.02132	.00052
#3	.00030	1.1059	-.01430	-.00107	-.00101	.01891	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10003.**	**59663.**	**2705.0**
Stddev	80.	161.	21.4
%RSD	.79504	.27038	.78932
#1	10087.	59645.	2686.5
#2	9928.7	59511.	2728.4
#3	9993.0	59832.	2700.3

Approved: July 16, 2016

Sample Name: L1607045202 Acquired: 7/14/2016 15:32:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.09844	.00227	.08765	.27299	.00005	22.855	.00027
Stddev	.00100	.00766	.00249	.00086	.00038	.00007	.048	.00016
%RSD	2222.4	7.7832	110.02	.98084	.13952	146.68	.20865	59.916
#1	.00119	.10432	-.00058	.08833	.27331	.00002	22.847	.00020
#2	-.00064	.08977	.00408	.08794	.27257	.00013	22.906	.00016
#3	-.00042	.10122	.00330	.08668	.27308	-.00000	22.812	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00145	.00323	.20737	.92473	.01088	4.0563	.14642
Stddev	.00005	.00067	.00032	.04061	.05819	.00340	.0630	.00163
%RSD	44.396	46.540	9.7844	19.585	6.2931	31.243	1.5534	1.1136
#1	.00017	.00072	.00359	.22120	.90509	.00816	4.0034	.14487
#2	.00011	.00157	.00312	.16165	.87890	.00978	4.0395	.14812
#3	.00007	.00206	.00298	.23927	.99021	.01468	4.1260	.14627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	111.48	.00001	.06066	-.00219	.00430	-.00212	3.7832
Stddev	.00027	.22	.00046	.00567	.00125	.00144	.00600	.2766
%RSD	52.583	.19503	3603.8	9.3447	57.151	33.594	282.54	7.3108
#1	.00021	111.61	.00039	.06101	-.00303	.00597	-.00904	3.9544
#2	.00061	111.59	-.00050	.06614	-.00279	.00342	.00153	3.9311
#3	.00072	111.23	.00014	.05482	-.00075	.00352	.00114	3.4641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045202 Acquired: 7/14/2016 15:32:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.30590	.00005	.00237	-.00015	.01446	.00030
Stddev	.00046	.00062	.00486	.00143	.00063	.00138	.00024
%RSD	67.451	.20423	9186.2	60.424	429.50	9.5182	78.565
#1	.00095	.30648	-.00433	.00073	.00058	.01532	.00016
#2	.00096	.30524	.00528	.00335	-.00052	.01518	.00058
#3	.00015	.30599	-.00079	.00302	-.00051	.01287	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9996.0	58512.	2665.0
Stddev	54.9	184.	12.9
%RSD	.54950	.31493	.48576
#1	9962.1	58720.	2659.5
#2	9966.5	58443.	2655.8
#3	10059.	58372.	2679.8

Approved: July 16, 2016

Sample Name: L1607045301 Acquired: 7/14/2016 15:36:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.01293	.00168	.01299	.05197	-.00001	39.081	.00036
Stddev	.00173	.00318	.00152	.00167	.00144	.00005	.265	.00015
%RSD	213.83	24.570	90.916	12.867	2.7708	823.43	.67934	41.023
#1	-.00190	.00927	.00068	.01139	.05116	-.00004	39.386	.00032
#2	-.00172	.01457	.00091	.01286	.05112	-.00003	38.903	.00024
#3	.00119	.01494	.00343	.01473	.05363	.00005	38.953	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00145	.00091	-.00506	.63940	.00752	3.8300	-.00088
Stddev	.00015	.00065	.00058	.01633	.08967	.00481	.0742	.00138
%RSD	325.85	45.046	63.174	322.98	14.024	64.026	1.9366	157.68
#1	-.00005	.00070	.00035	-.01128	.53616	.00201	3.7446	.00048
#2	-.00019	.00185	.00150	.01347	.69779	.00962	3.8787	-.00229
#3	.00010	.00180	.00088	-.01736	.68425	.01093	3.8667	-.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	2.2494	-.00064	.00616	-.00148	.00116	-.00600	3.8310
Stddev	.00049	.0267	.00135	.00545	.00265	.00236	.00416	.2915
%RSD	855.29	1.1881	210.27	88.341	179.23	202.94	69.391	7.6084
#1	.00057	2.2772	-.00013	.00004	.00114	-.00136	-.00391	4.0057
#2	-.00041	2.2238	-.00217	.01046	-.00415	.00153	-.01079	3.9928
#3	.00002	2.2472	.00038	.00799	-.00143	.00331	-.00329	3.4945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045301 Acquired: 7/14/2016 15:36:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.12006	-.00977	.00061	-.00063	.00124	-.00048
Stddev	.00086	.00004	.00451	.00058	.00034	.00017	.00068
%RSD	112.64	.03384	46.206	93.884	54.110	13.859	141.31
#1	-.00016	.12002	-.00512	.00020	-.00093	.00138	.00007
#2	.00154	.12011	-.01413	.00127	-.00071	.00130	-.00124
#3	.00090	.12006	-.01006	.00037	-.00026	.00105	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10126.	59759.	2669.8
Stddev	14.	183.	9.7
%RSD	.13943	.30677	.36350
#1	10110.	59716.	2678.3
#2	10132.	59601.	2659.2
#3	10136.	59960.	2671.8

Approved: July 16, 2016

Sample Name: L1607045302 Acquired: 7/14/2016 15:40:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00091	.02677	-.00295	.02743	.03881	.00004	34.085	.00048
Stddev	.00096	.00673	.00291	.00134	.00090	.00008	.115	.00020
%RSD	105.37	25.130	98.831	4.8804	2.3223	193.76	.33744	41.394
#1	-.00030	.03453	-.00105	.02677	.03800	-.00003	34.132	.00055
#2	-.00041	.02310	-.00149	.02655	.03978	.00013	33.953	.00026
#3	-.00202	.02267	-.00630	.02897	.03864	.00002	34.168	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00026	.00144	.00123	1.2934	.00259	4.8913	.14913
Stddev	.00020	.00035	.00069	.02334	.0748	.00126	.0323	.00296
%RSD	267.65	134.19	47.485	1896.5	5.7818	48.391	.66141	1.9878
#1	.00015	.00021	.00142	.01993	1.2935	.00250	4.9275	.14788
#2	-.00014	.00064	.00077	.00870	1.2186	.00139	4.8651	.14699
#3	-.00023	-.00006	.00214	-.02493	1.3682	.00390	4.8813	.15251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	9.7879	-.00000	.02585	-.00262	-.00055	-.00676	3.0061
Stddev	.00021	.0554	.00037	.00262	.00027	.00369	.00397	.1971
%RSD	218.96	.56551	8816.1	10.150	10.299	669.08	58.768	6.5584
#1	-.00008	9.8068	-.00010	.02685	-.00271	-.00221	-.01066	3.1232
#2	.00033	9.7255	-.00031	.02783	-.00232	.00368	-.00688	3.1167
#3	.00004	9.8313	.00040	.02288	-.00283	-.00312	-.00272	2.7785
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045302 Acquired: 7/14/2016 15:40:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.09017	.00218	-.00128	-.00068	.00650	-.00022
Stddev	.00044	.00030	.00214	.00350	.00087	.00043	.00021
%RSD	71.638	.33324	98.374	273.17	127.61	6.5835	92.672
#1	.00079	.09042	-.00030	.00162	.00019	.00677	-.00039
#2	.00095	.08983	.00342	-.00030	-.00155	.00672	.00001
#3	.00012	.09025	.00342	-.00517	-.00068	.00600	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10124.	59917.	2672.4
Stddev	21.	22.	14.1
%RSD	.21207	.03695	.52650
#1	10132.	59905.	2657.7
#2	10141.	59904.	2685.7
#3	10100.	59943.	2673.8

Approved: July 16, 2016

Sample Name: L1607045303 Acquired: 7/14/2016 15:44:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.11477	.00005	.02832	.04154	.00000	33.515	.00046
Stddev	.00128	.00389	.00222	.00142	.00032	.00002	.041	.00005
%RSD	461.11	3.3919	4417.9	5.0297	.76627	13967.	.12260	10.804
#1	-.00052	.11121	.00188	.02691	.04189	.00002	33.470	.00051
#2	.00111	.11893	-.00242	.02976	.04126	.00001	33.551	.00041
#3	-.00141	.11416	.00069	.02830	.04147	-.00002	33.524	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00208	.00105	.08791	.87230	.00475	4.8254	.00534
Stddev	.00022	.00080	.00137	.02794	.06321	.00202	.1170	.00212
%RSD	68.175	38.641	131.38	31.782	7.2461	42.586	2.4244	39.724
#1	-.00041	.00202	.00260	.06334	.92653	.00642	4.8420	.00388
#2	-.00007	.00131	.00054	.08208	.88750	.00532	4.9333	.00437
#3	-.00048	.00291	-.00001	.11830	.80288	.00250	4.7011	.00777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	7.9321	.00002	.03083	-.00150	.00183	-.00613	3.5489
Stddev	.00018	.0956	.00108	.00399	.00101	.00138	.00352	.2536
%RSD	42.107	1.2048	4784.9	12.959	67.054	75.292	57.407	7.1456
#1	.00031	8.0070	-.00114	.03227	-.00240	.00325	-.00373	3.7031
#2	.00064	7.8245	.00100	.03390	-.00042	.00050	-.01016	3.6873
#3	.00035	7.9650	.00021	.02631	-.00169	.00173	-.00448	3.2562
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045303 Acquired: 7/14/2016 15:44:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.08860	.00518	.00006	-.00008	.01768	-.00014
Stddev	.00040	.00084	.00549	.00068	.00035	.00149	.00014
%RSD	57.836	.95274	106.05	1124.5	461.77	8.4264	98.917
#1	.00086	.08781	.01144	-.00072	.00024	.01863	-.00028
#2	.00099	.08949	.00118	.00040	-.00001	.01845	-.00001
#3	.00024	.08851	.00291	.00050	-.00045	.01596	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10108.	59886.	2703.7
Stddev	16.	243.	18.7
%RSD	.15972	.40646	.69114
#1	10111.	59981.	2684.0
#2	10122.	59610.	2705.8
#3	10091.	60068.	2721.2

Approved: July 16, 2016

Sample Name: L1607045304 Acquired: 7/14/2016 15:48:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	.04609	-.00259	.01661	.04185	.00000	53.688	.00026
Stddev	.00143	.00554	.00254	.00136	.00052	.00015	.044	.00024
%RSD	137.87	12.025	98.311	8.1948	1.2536	5982.1	.08111	93.025
#1	.00061	.05248	-.00148	.01730	.04125	.00015	53.732	.00005
#2	-.00200	.04322	-.00549	.01750	.04224	.00001	53.644	.00021
#3	-.00173	.04257	-.00078	.01504	.04205	-.00015	53.688	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00165	.00147	.02797	.74724	.00776	7.3161	-.00091
Stddev	.00015	.00065	.00066	.01864	.08009	.00304	.0571	.00182
%RSD	87.565	39.326	44.655	66.671	10.718	39.158	.78102	198.79
#1	-.00007	.00240	.00140	.01106	.79166	.01083	7.3065	-.00220
#2	-.00009	.00134	.00215	.04797	.79527	.00476	7.3775	-.00170
#3	-.00033	.00122	.00085	.02487	.65478	.00768	7.2644	.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	6.6382	.00038	.01478	-.00045	.00121	-.00451	4.3497
Stddev	.00014	.0450	.00072	.00070	.00103	.00203	.00805	.2945
%RSD	35.268	.67731	188.13	4.7157	230.77	168.27	178.32	6.7696
#1	.00028	6.6742	.00100	.01404	.00018	.00321	-.01354	4.5394
#2	.00057	6.6528	-.00041	.01488	-.00164	-.00085	-.00190	4.4993
#3	.00038	6.5878	.00055	.01543	.00012	.00126	.00190	4.0105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045304 Acquired: 7/14/2016 15:48:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.14559	-.00979	-.00041	-.00025	.00164	.00007
Stddev	.00061	.00057	.00143	.00074	.00062	.00019	.00042
%RSD	605.68	.39359	14.616	181.98	246.67	11.510	628.41
#1	-.00028	.14493	-.00971	.00044	.00030	.00156	-.00042
#2	.00080	.14590	-.00840	-.00093	-.00012	.00186	.00028
#3	-.00022	.14594	-.01126	-.00073	-.00093	.00151	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10100.	59661.	2695.6
Stddev	21.	164.	11.4
%RSD	.20561	.27496	.42443
#1	10096.	59513.	2691.1
#2	10122.	59634.	2687.1
#3	10081.	59837.	2708.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 15:51:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40796**	**10.059**	**.40720**	**.50405**	**1.0261**	**.05046**	**10.204**	**.05088**
Stddev	.00123	.049	.01073	.00460	.0026	.00019	.059	.00088
%RSD	.30156	.48521	2.6352	.91256	.25296	.37839	.58033	1.7324
#1	.40845	10.112	.41445	.50930	1.0290	.05066	10.252	.05115
#2	.40887	10.050	.41228	.50210	1.0253	.05044	10.222	.05160
#3	.40656	10.016	.39487	.50074	1.0240	.05028	10.138	.04990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20407**	**.50149**	**.50985**	**4.0911**	**51.405**	**1.0178**	**10.148**	**.51811**
Stddev	.00538	.00201	.01185	.0117	.199	.0027	.056	.00226
%RSD	2.6363	.40007	2.3233	.28473	.38729	.26251	.54909	.43553
#1	.20741	.50370	.51732	4.0918	51.515	1.0189	10.110	.51954
#2	.20694	.50100	.51605	4.0791	51.524	1.0197	10.122	.51551
#3	.19787	.49978	.49620	4.1024	51.175	1.0147	10.212	.51928
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0150**	**51.404**	**.50795**	**10.261**	**.50797**	**1.2230**	**.40958**	**5.0096**
Stddev	.0305	.136	.01439	.188	.00381	.0281	.00727	.0755
%RSD	3.0046	.26420	2.8326	1.8359	.75047	2.2996	1.7760	1.5076
#1	1.0255	51.509	.51560	10.364	.51076	1.2404	.41143	5.0517
#2	1.0389	51.452	.51691	10.376	.50953	1.2381	.41575	5.0546
#3	.98069	51.250	.49136	10.043	.50363	1.1906	.40156	4.9224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 15:51:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0148**	**1.0275**	**1.0320**	**.50964**	**.99752**	**1.0138**	**1.0220**
Stddev	.0330	.0021	.0113	.00335	.00178	.0252	.0077
%RSD	3.2533	.20526	1.0964	.65704	.17814	2.4825	.75429
#1	1.0350	1.0298	1.0443	.50604	.99922	1.0272	1.0299
#2	1.0326	1.0256	1.0296	.51266	.99766	1.0294	1.0217
#3	.97666	1.0270	1.0221	.51023	.99567	.98473	1.0144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10173.**	**59187.**	**2657.7**
Stddev	15.	34.	7.5
%RSD	.14988	.05731	.28105
#1	10190.	59181.	2652.9
#2	10161.	59224.	2653.9
#3	10169.	59158.	2666.3

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 15:55:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00114**	**-.00042**	**-.00038**	**.00297**	**-.00154**	**.00006**	**-.03848**	**.00033**
Stddev	.00105	.00382	.00048	.00071	.00040	.00005	.03753	.00008
%RSD	92.481	918.90	126.42	23.911	26.034	74.438	97.532	23.409
#1	-.00180	-.00332	.00013	.00306	-.00163	.00007	-.00100	.00038
#2	.00008	-.00184	-.00082	.00222	-.00189	.00011	-.03838	.00035
#3	-.00169	.00391	-.00044	.00362	-.00110	.00001	-.07605	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**-.00025**	**-.00026**	**-.01626**	**.02061**	**.00330**	**.00899**	**.00020**
Stddev	.00034	.00035	.00107	.04420	.07945	.00182	.05829	.00278
%RSD	310.97	140.30	410.54	271.81	385.54	55.171	648.61	1361.1
#1	-.00048	.00011	-.00109	-.05476	.06984	.00310	-.04291	-.00278
#2	.00020	-.00059	.00095	.03201	.06303	.00521	.07206	.00272
#3	-.00005	-.00027	-.00065	-.02603	-.07105	.00159	-.00219	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.06140**	**-.00092**	**.00667**	**-.00468**	**.00168**	**-.00497**	**.00209**
Stddev	.00004	.00667	.00032	.00225	.00246	.00186	.00074	.00008
%RSD	662.70	10.858	34.509	33.770	52.490	110.83	14.915	3.6185
#1	.00005	.06909	-.00060	.00858	-.00700	.00294	-.00433	.00201
#2	-.00004	.05728	-.00123	.00418	-.00210	.00255	-.00479	.00216
#3	.00001	.05782	-.00093	.00725	-.00493	-.00046	-.00578	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 15:55:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00015**	**-.00413**	**.00146**	**-.00128**	**-.00008**	**-.00001**
Stddev	.00058	.00033	.00405	.00172	.00057	.00009	.00013
%RSD	350.98	222.31	97.914	118.39	44.240	104.34	954.04
#1	-.00060	.00023	.00049	.00158	-.00076	-.00001	.00010
#2	.00049	-.00030	-.00701	-.00033	-.00121	-.00018	.00001
#3	-.00039	-.00038	-.00589	.00311	-.00188	-.00006	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10430.**	**61440.**	**2752.3**
Stddev	73.	42.	10.2
%RSD	.70212	.06800	.37131
#1	10380.	61480.	2746.8
#2	10397.	61444.	2764.1
#3	10514.	61396.	2746.1

Approved: July 16, 2016

Sample Name: L1607045305 Acquired: 7/14/2016 15:59:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.07317	-.00055	.03477	.04226	.00001	31.067	.00038
Stddev	.00181	.00702	.00244	.00029	.00098	.00011	.154	.00005
%RSD	531.05	9.5991	443.37	.84671	2.3122	746.10	.49486	12.309
#1	-.00058	.07948	-.00060	.03462	.04250	-.00009	31.106	.00043
#2	-.00083	.07444	.00192	.03458	.04310	.00012	30.897	.00035
#3	.00243	.06560	-.00297	.03511	.04119	.00002	31.197	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00054	.00099	.76935	2.0823	.00140	4.2033	.68062
Stddev	.00032	.00052	.00006	.01931	.0578	.00111	.0170	.00249
%RSD	280.89	95.470	6.1316	2.5100	2.7781	79.095	.40554	.36513
#1	-.00010	.00042	.00095	.77097	2.0175	.00154	4.2154	.68311
#2	.00048	.00010	.00106	.78780	2.1005	.00242	4.2106	.68059
#3	-.00004	.00111	.00096	.74929	2.1289	.00023	4.1838	.67814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	7.0364	-.00051	.13532	-.00272	.00098	-.00165	4.1730
Stddev	.00026	.0644	.00026	.00644	.00154	.00065	.00251	.2649
%RSD	50.191	.91530	50.770	4.7607	56.369	66.390	152.38	6.3489
#1	.00024	7.1021	-.00041	.13717	-.00260	.00163	-.00032	4.3378
#2	.00055	7.0338	-.00080	.14064	-.00125	.00099	-.00455	4.3138
#3	.00076	6.9734	-.00031	.12816	-.00432	.00033	-.00008	3.8674
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045305 Acquired: 7/14/2016 15:59:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.08904	-.00632	.00012	.00029	.00357	.00001
Stddev	.00101	.00090	.00459	.00097	.00095	.00047	.00034
%RSD	447.42	1.0085	72.574	784.86	326.84	13.054	2698.7
#1	.00125	.08998	-.01093	.00067	.00111	.00404	-.00002
#2	.00021	.08895	-.00176	.00069	-.00075	.00356	.00037
#3	-.00078	.08819	-.00627	-.00099	.00051	.00311	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10111.	59961.	2698.0
Stddev	23.	206.	31.3
%RSD	.22901	.34322	1.1588
#1	10097.	59729.	2671.2
#2	10099.	60035.	2690.4
#3	10138.	60120.	2732.4

Approved: July 16, 2016

Sample Name: L1607045401 Acquired: 7/14/2016 16:03:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00097	1.7098	-.00018	.02342	.18371	.00011	57.052	.00034
Stddev	.00138	.0173	.00079	.00084	.00284	.00006	.417	.00023
%RSD	142.94	1.0129	443.13	3.5659	1.5441	58.280	.73157	68.027
#1	.00023	1.7173	.00070	.02427	.18558	.00009	57.271	.00016
#2	-.00065	1.6900	-.00083	.02260	.18045	.00018	56.571	.00060
#3	-.00248	1.7221	-.00041	.02339	.18511	.00006	57.314	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.00281	.01143	2.0912	1.2497	.01159	6.4373	.19742
Stddev	.00014	.00046	.00174	.0173	.1098	.00392	.0795	.00299
%RSD	22.916	16.323	15.213	.82818	8.7881	33.852	1.2356	1.5124
#1	.00061	.00313	.01261	2.0934	1.1863	.01294	6.3850	.19664
#2	.00076	.00229	.01225	2.0729	1.1863	.00717	6.5288	.19490
#3	.00047	.00303	.00944	2.1073	1.3765	.01465	6.3980	.20071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	10.858	.00694	.05840	-.00128	.00195	-.00385	6.2356
Stddev	.00046	.067	.00144	.00397	.00156	.00214	.00202	.3623
%RSD	113.66	.61678	20.780	6.7899	122.47	109.47	52.366	5.8097
#1	.00003	10.903	.00823	.05420	-.00234	.00063	-.00153	6.4608
#2	.00027	10.781	.00722	.05893	.00052	.00442	-.00489	6.4282
#3	.00092	10.890	.00538	.06208	-.00201	.00081	-.00514	5.8177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045401 Acquired: 7/14/2016 16:03:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.23216	.02416	-.00060	.00164	.01207	.00084
Stddev	.00089	.00146	.00468	.00042	.00030	.00067	.00019
%RSD	407.21	.62691	19.351	70.649	18.479	5.5177	22.509
#1	.00084	.23318	.01876	-.00094	.00197	.01248	.00063
#2	-.00080	.23049	.02684	-.00013	.00156	.01242	.00099
#3	.00062	.23279	.02689	-.00073	.00138	.01130	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10079.	59708.	2697.8
Stddev	13.	76.	22.8
%RSD	.12513	.12654	.84565
#1	10073.	59684.	2682.0
#2	10093.	59792.	2723.9
#3	10069.	59646.	2687.4

Approved: July 16, 2016

Sample Name: L1607020101 Acquired: 7/14/2016 16:07:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	39.300	.00403	.23325	.23400	.00007	50.376
Stddev	.00181	.074	.00289	.00505	.00104	.00006	.092
%RSD	215.50	.18951	71.636	2.1659	.44616	85.768	.18317
#1	-.00106	39.271	.00349	.22936	.23516	.00002	50.461
#2	-.00254	39.245	.00716	.23142	.23371	.00013	50.388
#3	.00107	39.385	.00146	.23896	.23313	.00005	50.278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01680	5.2940	.14580	.25879	5.2918	6.3355	2.6635
Stddev	.00171	.5967	.00085	.02987	.0160	.1420	.0010
%RSD	10.194	11.271	.58132	11.540	.30161	2.2407	.03901
#1	.01792	5.6844	.14509	.27829	5.2746	6.2445	2.6647
#2	.01767	5.5905	.14556	.27368	5.3061	6.2630	2.6628
#3	.01483	4.6071	.14674	.22441	5.2948	6.4991	2.6629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.044	.17370	.01376	F 424.50	13.789	42.362	.01446
Stddev	.131	.00157	.00139	3.52	1.546	4.360	.00240
%RSD	1.0049	.90620	10.103	.82951	11.215	10.292	16.576
#1	13.028	.17202	.01442	428.46	14.801	45.128	.01702
#2	13.182	.17392	.01470	423.30	14.558	44.621	.01227
#3	12.921	.17515	.01216	421.73	12.009	37.336	.01409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020101 Acquired: 7/14/2016 16:07:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	.00204	2.0004	.00062	.38129	-.00008	.00589
Stddev	.00711	.00084	.1967	.00061	.00018	.00304	.00188
%RSD	354.49	41.398	9.8317	97.782	.04791	3957.1	31.933
#1	.00473	.00258	2.1291	.00113	.38149	.00030	.00423
#2	.00734	.00107	2.0980	.00079	.38125	-.00328	.00794
#3	-.00606	.00247	1.7740	-.00005	.38113	.00275	.00552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00174	.70378	-.00007
Stddev	.00053	.07745	.00096
%RSD	30.700	11.005	1344.8
#1	.00235	.75443	-.00088
#2	.00143	.74229	-.00032
#3	.00143	.61462	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10112.	58404.	2673.0
Stddev	23.	42.	41.5
%RSD	.22486	.07116	1.5539
#1	10086.	58371.	2628.7
#2	10124.	58390.	2679.3
#3	10127.	58451.	2711.0

Approved: July 16, 2016

Sample Name: L1607020102 Acquired: 7/14/2016 16:11:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00121	39.765	.00797	.26672	.34361	.00000	53.917
Stddev	.00159	.061	.00064	.00598	.00261	.00006	.342
%RSD	131.82	.15275	8.0095	2.2425	.75983	1470.5	.63469
#1	-.00304	39.695	.00859	.26065	.34060	-.00003	53.570
#2	-.00046	39.796	.00731	.26690	.34501	-.00003	53.926
#3	-.00013	39.805	.00801	.27261	.34522	.00007	54.254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01628	5.2023	.16700	.27773	9.4615	5.9353	2.4496
Stddev	.00227	.7339	.00033	.04160	.1053	.0312	.0168
%RSD	13.948	14.107	.19717	14.978	1.1131	.52588	.68547
#1	.01780	5.7191	.16662	.30654	9.3498	5.9002	2.4304
#2	.01736	5.5256	.16725	.29663	9.4760	5.9598	2.4573
#3	.01367	4.3623	.16712	.23004	9.5589	5.9460	2.4612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.594	.17354	.03256	F 414.62	13.161	50.704	.02223
Stddev	.073	.00098	.00445	4.37	1.844	6.879	.00474
%RSD	.50303	.56307	13.670	1.0534	14.009	13.566	21.320
#1	14.511	.17328	.03564	410.03	14.457	55.490	.02636
#2	14.651	.17271	.03458	415.11	13.976	53.800	.02328
#3	14.621	.17462	.02745	418.73	11.050	42.821	.01705
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020102 Acquired: 7/14/2016 16:11:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00343	2.5250	.00180	.39746	.01041	.00638
Stddev	.00280	.00505	.3217	.00017	.00208	.00840	.00264
%RSD	657.90	147.32	12.741	9.6329	.52360	80.711	41.306
#1	-.00169	-.00086	2.7388	.00171	.39536	.00749	.00932
#2	-.00063	.00215	2.6813	.00200	.39749	.00386	.00422
#3	.00360	.00900	2.1550	.00168	.39952	.01988	.00560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00377	.67234	.00059
Stddev	.00137	.09352	.00033
%RSD	36.348	13.909	56.612
#1	.00262	.73794	.00039
#2	.00529	.71382	.00097
#3	.00341	.56526	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10298.	59464.	2796.9
Stddev	90.	217.	8.9
%RSD	.87698	.36437	.31911
#1	10238.	59706.	2805.7
#2	10254.	59397.	2797.1
#3	10402.	59288.	2787.8

Approved: July 16, 2016

Sample Name: L1607020104 Acquired: 7/14/2016 16:15:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	60.218	.00289	.41001	.12995	.00014	133.89
Stddev	.00186	.117	.00344	.00555	.00068	.00004	.34
%RSD	397.74	.19452	119.03	1.3535	.52502	30.438	.25393
#1	.00236	60.117	.00682	.40395	.13018	.00011	134.28
#2	-.00136	60.191	.00044	.41125	.13048	.00011	133.68
#3	.00040	60.347	.00140	.41483	.12918	.00019	133.71
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04705	13.940	.16845	.40258	2.2411	14.455	3.5228
Stddev	.00544	1.635	.00090	.04935	.0150	.073	.0076
%RSD	11.553	11.730	.53363	12.258	.66897	.50284	.21511
#1	.05071	15.022	.16938	.43568	2.2542	14.531	3.5236
#2	.04964	14.740	.16837	.42619	2.2247	14.450	3.5300
#3	.04080	12.059	.16759	.34586	2.2444	14.385	3.5149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.656	.44609	.00428	F 481.57	21.075	66.240	.01195
Stddev	.062	.00224	.00052	9.56	2.479	7.133	.00340
%RSD	.16827	.50124	12.219	1.9853	11.764	10.768	28.412
#1	36.598	.44417	.00466	492.58	22.715	70.859	.01584
#2	36.649	.44855	.00449	475.36	22.287	69.835	.01049
#3	36.720	.44555	.00368	476.78	18.223	58.024	.00954
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020104 Acquired: 7/14/2016 16:15:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00043	3.6836	.00054	.93720	-.01316	.01739
Stddev	.00600	.00550	.3797	.00064	.00258	.00648	.00295
%RSD	1938.0	1268.3	10.308	118.26	.27570	49.270	16.993
#1	.00624	-.00585	3.9244	.00113	.94012	-.00790	.01732
#2	-.00552	.00440	3.8805	.00065	.93629	-.01118	.02038
#3	-.00165	.00275	3.2459	-.00014	.93520	-.02040	.01447
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00392	1.7517	.00018
Stddev	.00097	.2030	.00008
%RSD	24.681	11.587	46.115
#1	.00358	1.8851	.00019
#2	.00318	1.8517	.00027
#3	.00502	1.5181	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9775.5	56260.	2611.5
Stddev	78.2	69.	12.7
%RSD	.80002	.12328	.48775
#1	9756.4	56286.	2600.9
#2	9708.5	56181.	2608.0
#3	9861.4	56312.	2625.6

Approved: July 16, 2016

Sample Name: L1607024903 Acquired: 7/14/2016 16:18:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00134	k 6.6657	k .00854	k .10522	1.0159	k .00105	^ *****	k .00092
Stddev	.00632	.1035	.00097	.00095	.3466	.00004	-----	.00036
%RSD	471.73	1.5525	11.409	.89995	34.121	3.9679	-----	38.577
#1	k -.00589	k 6.6772	k .00956	k .10523	.61857	k .00108	^ -----	k .00059
#2	.00585	6.5569	.00763	.10426	1.1729	.00100	119.98	.00130
#3	.00406	6.7629	.00842	.10616	1.2563	.00107	129.32	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .02186	k .13681	k .14198	k 24.855	1.5410	.01578	k 4.6375	^ *****
Stddev	.00389	.00558	.03724	7.997	.4875	.00225	1.6831	-----
%RSD	17.804	4.0771	26.230	32.174	31.635	14.256	36.293	-----
#1	k .02587	k .14315	k .18386	k 15.706	.98199	.01326	k 2.7043	^ -----
#2	.02161	.13264	.12947	28.351	1.7634	.01649	5.4320	23.955
#3	.01810	.13464	.11260	30.509	1.8777	.01758	5.7763	25.755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .02347	5.1991	k .16132	k 10.140	k .01925	k .00179	k .01399	8.3431
Stddev	.00155	1.8916	.01650	.734	.00459	.00255	.00860	.6433
%RSD	6.6018	36.384	10.225	7.2393	23.843	142.66	61.483	7.7106
#1	k .02507	3.0517	k .17819	k 10.806	k .02373	k -.00095	k .02376	8.9194
#2	.02337	5.9271	.16056	10.262	.01946	.00409	.00756	8.4607
#3	.02198	6.6186	.14522	9.3529	.01456	.00222	.01065	7.6491
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607024903 Acquired: 7/14/2016 16:18:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .21909	k .39945	k .15193	k .01418	k .02768	k .95855	k .00274
Stddev	.01412	.13434	.04517	.01345	.00287	.06475	.00068
%RSD	6.4470	33.631	29.733	94.896	10.383	6.7545	24.778
#1	k .23228	k .24578	k .09978	k .02958	k .02445	k 1.0209	k .00196
#2	.22080	.45800	.17712	.00824	.02865	.96304	.00318
#3	.20419	.49458	.17889	.00471	.02994	.89168	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9989.6	58927.	3108.9
Stddev	42.8	511.	581.9
%RSD	.42832	.86788	18.718
#1	9942.4	59039.	3780.1
#2	10026.	59374.	2801.1
#3	10000.	58369.	2745.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 16:22:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40141	9.8066	.40530	.49543	.99416	.04891	9.9274	.05042
Stddev	.00442	.0172	.00799	.00134	.00648	.00011	.0224	.00133
%RSD	1.1006	.17498	1.9713	.27116	.65136	.23045	.22548	2.6332
#1	.39666	9.7925	.40914	.49402	1.0005	.04902	9.9412	.05080
#2	.40540	9.8016	.41063	.49557	.98756	.04890	9.9395	.05151
#3	.40216	9.8257	.39611	.49669	.99440	.04880	9.9016	.04894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20105	.48729	.50288	3.9850	49.874	.98892	9.8808	.50244
Stddev	.00544	.00195	.01205	.0424	.435	.00464	.1062	.00142
%RSD	2.7066	.39964	2.3966	1.0640	.87281	.46898	1.0750	.28202
#1	.20396	.48511	.50843	4.0160	50.330	.99333	9.7655	.50389
#2	.20441	.48790	.51115	3.9367	49.463	.98409	9.9022	.50106
#3	.19477	.48885	.48905	4.0023	49.829	.98933	9.9747	.50237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0036	49.906	.49993	10.136	.50215	1.2085	.40683	4.9894
Stddev	.0236	.406	.01301	.188	.00615	.0197	.00534	.0821
%RSD	2.3466	.81450	2.6031	1.8505	1.2254	1.6266	1.3125	1.6453
#1	1.0106	50.307	.50612	10.229	.50671	1.2205	.40692	5.0309
#2	1.0229	49.494	.50870	10.258	.50460	1.2191	.41213	5.0425
#3	.97734	49.919	.48498	9.9196	.49515	1.1858	.40145	4.8949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 16:22:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99883	.99802	1.0041	.50208	.96914	.99781	.98634
Stddev	.03066	.00660	.0076	.00335	.00254	.02462	.00196
%RSD	3.0698	.66092	.76083	.66816	.26236	2.4674	.19870
#1	1.0153	1.0039	1.0117	.50252	.96845	1.0100	.98649
#2	1.0177	.99090	.99639	.50519	.96701	1.0140	.98431
#3	.96345	.99923	1.0042	.49852	.97195	.96948	.98822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10253.	60205.	2730.3
Stddev	27.	83.	4.8
%RSD	.26382	.13728	.17407
#1	10278.	60155.	2725.8
#2	10259.	60300.	2735.3
#3	10224.	60160.	2729.7

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 16:26:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.00693	.00004	.00329	-.00064	.00008	-.04658	.00033
Stddev	.00216	.00079	.00020	.00240	.00058	.00002	.02232	.00008
%RSD	258.05	11.321	544.76	72.957	90.922	28.177	47.916	24.640
#1	.00145	.00650	.00026	.00055	.00002	.00007	-.07187	.00026
#2	-.00285	.00784	-.00009	.00427	-.00087	.00011	-.03821	.00042
#3	-.00111	.00646	-.00006	.00504	-.00107	.00007	-.02965	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00042	-.00041	-.00320	.05261	.00130	-.04620	.00044
Stddev	.00027	.00070	.00035	.03152	.07100	.00421	.06598	.00078
%RSD	156.44	165.34	85.933	985.22	134.97	324.93	142.82	179.49
#1	-.00007	-.00038	-.00019	-.02061	.05839	-.00356	.01057	.00108
#2	.00012	.00076	-.00022	.03318	.12054	.00353	-.11858	.00067
#3	.00046	.00089	-.00081	-.02217	-.02111	.00393	-.03059	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.08500	-.00095	.00360	-.00124	.00257	-.00552	.00768
Stddev	.00030	.01715	.00028	.00317	.00304	.00333	.00209	.00069
%RSD	224.99	20.173	29.483	88.269	244.96	129.52	37.753	9.0048
#1	-.00032	.10445	-.00098	.00209	.00197	.00598	-.00404	.00763
#2	.00021	.07848	-.00121	.00146	-.00162	-.00067	-.00462	.00840
#3	-.00030	.07206	-.00065	.00724	-.00408	.00239	-.00791	.00701
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 16:26:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00010	-.00094	-.00112	-.00069	.00011	-.00000
Stddev	.00018	.00016	.00717	.00221	.00084	.00005	.00006
%RSD	98.291	152.20	766.70	198.42	121.65	44.310	2421.7
#1	.00020	.00028	.00730	-.00251	-.00135	.00009	-.00005
#2	-.00000	.00002	-.00432	.00144	-.00095	.00017	-.00001
#3	.00035	.00001	-.00578	-.00227	.00025	.00008	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9666.1	57466.	2626.1
Stddev	8.4	464.	5.4
%RSD	.08697	.80688	.20502
#1	9657.3	57700.	2631.6
#2	9674.0	57766.	2625.8
#3	9666.9	56932.	2620.8

Approved: July 16, 2016

Sample Name: L1607029102 Acquired: 7/14/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	1.1867	-.00206	.01154	.02452	.00008	17.286	.00038
Stddev	.00124	.0048	.00264	.00239	.00183	.00002	.049	.00010
%RSD	347.24	.40589	128.13	20.669	7.4462	27.829	.28632	26.278
#1	.00067	1.1822	-.00468	.01072	.02663	.00011	17.341	.00049
#2	.00000	1.1861	.00061	.01423	.02346	.00007	17.274	.00035
#3	-.00174	1.1918	-.00212	.00968	.02347	.00007	17.244	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.00213	.00289	2.0895	1.1450	.00594	2.6275	.04525
Stddev	.00034	.00024	.00030	.0270	.0376	.00223	.0701	.00391
%RSD	35.847	11.300	10.279	1.2940	3.2823	37.626	2.6674	8.6494
#1	.00133	.00187	.00272	2.1070	1.1414	.00805	2.5665	.04146
#2	.00088	.00235	.00271	2.1031	1.1093	.00360	2.6118	.04927
#3	.00065	.00217	.00323	2.0583	1.1843	.00616	2.7040	.04501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	2.5388	.00137	.06471	-.00042	-.00031	.00052	5.0057
Stddev	.00011	.0305	.00048	.00071	.00221	.00118	.00236	.3706
%RSD	11.240	1.2012	35.074	1.1030	527.10	376.76	449.67	7.4031
#1	.00100	2.5367	.00190	.06494	-.00002	-.00044	.00319	5.2064
#2	.00091	2.5093	.00095	.06529	.00156	.00093	-.00130	5.2326
#3	.00114	2.5702	.00127	.06391	-.00280	-.00143	-.00031	4.5781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029102 Acquired: 7/14/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.04893	.01795	.00062	.00192	.03617	.00078
Stddev	.00063	.00042	.00646	.00253	.00061	.00326	.00028
%RSD	92.318	.85552	35.979	407.70	31.834	9.0114	35.922
#1	.00106	.04859	.02482	.00259	.00122	.03817	.00046
#2	.00104	.04940	.01201	-.00223	.00218	.03794	.00099
#3	-.00005	.04881	.01701	.00150	.00236	.03241	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10248.	60671.	2707.4
Stddev	59.	246.	18.6
%RSD	.57913	.40483	.68686
#1	10289.	60622.	2688.9
#2	10276.	60453.	2707.3
#3	10180.	60937.	2726.1

Approved: July 16, 2016

Sample Name: L1607029103 Acquired: 7/14/2016 16:33:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	1.8695	.00195	.01468	.02602	.00017	26.738	.00037
Stddev	.00124	.0065	.00158	.00303	.00165	.00005	.190	.00014
%RSD	7025.6	.34955	81.044	20.651	6.3371	30.509	.70997	38.838
#1	-.00026	1.8695	.00343	.01743	.02679	.00013	26.876	.00021
#2	.00137	1.8761	.00028	.01143	.02714	.00015	26.817	.00049
#3	-.00105	1.8630	.00215	.01518	.02413	.00023	26.521	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.00433	.00482	3.0936	1.2736	.00561	5.2465	.05894
Stddev	.00027	.00111	.00133	.0156	.0357	.00232	.1059	.00211
%RSD	30.904	25.728	27.515	.50272	2.8011	41.395	2.0183	3.5851
#1	.00062	.00452	.00614	3.0892	1.2540	.00552	5.3391	.06121
#2	.00085	.00534	.00482	3.1109	1.2520	.00334	5.2693	.05856
#3	.00116	.00314	.00349	3.0807	1.3147	.00798	5.1310	.05704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	3.0795	.00242	.06464	-.00005	.00297	-.00155	5.6872
Stddev	.00028	.0063	.00062	.00985	.00187	.00241	.00426	.3786
%RSD	57.590	.20335	25.599	15.233	4033.1	80.986	275.03	6.6572
#1	.00068	3.0771	.00232	.07320	.00191	.00548	-.00459	5.9148
#2	.00063	3.0866	.00308	.06684	-.00182	.00278	.00332	5.8967
#3	.00017	3.0748	.00185	.05388	-.00022	.00067	-.00337	5.2502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029103 Acquired: 7/14/2016 16:33:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.06853	.01763	-.00083	.00165	.03804	.00097
Stddev	.00037	.00029	.00573	.00119	.00015	.00331	.00016
%RSD	60.794	.43013	32.475	144.06	9.3800	8.6959	16.676
#1	.00103	.06854	.02353	-.00002	.00171	.04034	.00079
#2	.00042	.06823	.01729	-.00027	.00148	.03952	.00109
#3	.00036	.06882	.01209	-.00220	.00177	.03425	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10216.	60428.	2709.6
Stddev	39.	91.	25.5
%RSD	.38120	.15037	.94223
#1	10218.	60329.	2682.2
#2	10254.	60448.	2713.9
#3	10176.	60507.	2732.7

Approved: July 16, 2016

Sample Name: L1607029104 Acquired: 7/14/2016 16:37:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	3.3244	.00180	.01960	.08210	.00028	93.243	.00060
Stddev	.00135	.0149	.00237	.00206	.00136	.00001	.445	.00032
%RSD	129.58	.44746	132.03	10.532	1.6569	2.2977	.47719	54.129
#1	-.00028	3.3355	.00353	.02054	.08084	.00028	92.865	.00083
#2	-.00261	3.3302	-.00091	.02103	.08354	.00029	93.130	.00023
#3	-.00025	3.3075	.00278	.01723	.08191	.00027	93.734	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00460	.00724	.00832	6.1093	3.0817	.01515	15.392	2.3640
Stddev	.00053	.00031	.00239	.0351	.0428	.00309	.106	.0043
%RSD	11.549	4.2686	28.737	.57466	1.3898	20.370	.69136	.18078
#1	.00519	.00707	.00910	6.0688	3.0349	.01611	15.271	2.3618
#2	.00416	.00704	.01023	6.1315	3.1190	.01766	15.470	2.3613
#3	.00445	.00759	.00564	6.1276	3.0912	.01170	15.435	2.3689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	8.5530	.01230	.17924	.00526	.00166	-.00373	7.7557
Stddev	.00017	.0857	.00125	.00966	.00432	.00061	.00150	.4323
%RSD	35.120	1.0023	10.125	5.3885	82.039	36.998	40.061	5.5739
#1	.00053	8.6517	.01236	.17999	.00318	.00218	-.00208	8.0157
#2	.00030	8.4972	.01351	.18850	.01022	.00098	-.00499	7.9946
#3	.00064	8.5102	.01102	.16923	.00238	.00183	-.00413	7.2566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029104 Acquired: 7/14/2016 16:37:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.32868	.03666	.00109	.00431	.04269	.00105
Stddev	.00035	.00244	.00621	.00397	.00044	.00300	.00005
%RSD	26.088	.74147	16.927	363.13	10.286	7.0183	5.0059
#1	.00173	.32596	.04305	.00165	.00458	.04460	.00111
#2	.00116	.32942	.03066	-.00313	.00456	.04424	.00100
#3	.00110	.33066	.03627	.00476	.00380	.03924	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10125.	59777.	2701.6
Stddev	28.	114.	10.9
%RSD	.27506	.19105	.40188
#1	10131.	59660.	2713.7
#2	10149.	59888.	2692.7
#3	10094.	59784.	2698.3

Approved: July 16, 2016

Sample Name: L1607038001 Acquired: 7/14/2016 16:41:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00134	.01853	-.00194	.01623	.12932	-.00001	42.240	.00033
Stddev	.00043	.00712	.00135	.00276	.00177	.00004	.256	.00012
%RSD	31.724	38.406	69.588	16.987	1.3698	409.40	.60614	36.884
#1	-.00152	.01031	-.00349	.01360	.12949	-.00006	41.947	.00023
#2	-.00165	.02281	-.00132	.01598	.12747	.00003	42.359	.00047
#3	-.00086	.02246	-.00101	.01910	.13100	-.00000	42.415	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00049	.03008	.87688	1.3340	.00503	4.8098	.12251
Stddev	.00002	.00122	.00181	.03156	.0978	.00264	.0856	.00127
%RSD	25.928	247.52	6.0294	3.5989	7.3307	52.428	1.7803	1.0371
#1	-.00008	-.00009	.03159	.84738	1.4408	.00775	4.7135	.12129
#2	-.00011	-.00033	.03057	.91015	1.3122	.00486	4.8387	.12383
#3	-.00007	.00190	.02807	.87311	1.2489	.00248	4.8772	.12241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	2.6953	.00056	.01908	.00745	-.00031	-.00296	2.8755
Stddev	.00017	.0308	.00060	.00973	.00052	.00340	.00430	.1834
%RSD	224.99	1.1429	107.24	50.977	6.9370	1112.5	145.45	6.3761
#1	.00026	2.6620	.00114	.03022	.00790	.00362	.00138	2.9863
#2	.00004	2.7010	-.00005	.01472	.00688	-.00245	-.00302	2.9764
#3	-.00007	2.7228	.00057	.01230	.00757	-.00208	-.00722	2.6639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038001 Acquired: 7/14/2016 16:41:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	.26267	-.00100	-.00034	-.00092	.24632	.00005
Stddev	.00074	.00149	.00446	.00093	.00041	.01932	.00035
%RSD	56.201	.56675	446.89	273.34	44.859	7.8441	649.03
#1	.00048	.26096	-.00499	.00073	-.00079	.25817	.00010
#2	.00159	.26366	-.00182	-.00098	-.00139	.25677	.00038
#3	.00189	.26340	.00381	-.00078	-.00059	.22402	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10380.	61476.	2768.1
Stddev	31.	177.	6.8
%RSD	.29934	.28819	.24500
#1	10383.	61513.	2775.1
#2	10348.	61631.	2761.5
#3	10410.	61283.	2767.8

Approved: July 16, 2016

Sample Name: L1607038002 Acquired: 7/14/2016 16:45:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	5.0204	.00218	.02584	.20975	.00044	16.452	.00041
Stddev	.00149	.0084	.00077	.00021	.00157	.00004	.117	.00038
%RSD	234.89	.16826	35.499	.79621	.74761	10.088	.71185	93.351
#1	-.00049	5.0148	.00306	.02564	.21150	.00040	16.581	.00080
#2	.00232	5.0164	.00188	.02582	.20847	.00048	16.352	.00040
#3	.00007	5.0301	.00160	.02605	.20928	.00043	16.423	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00323	.00801	.00871	13.581	2.8801	.00688	3.4753	.40424
Stddev	.00003	.00054	.00260	.137	.0456	.00093	.0725	.00394
%RSD	1.0657	6.7234	29.896	1.0106	1.5825	13.516	2.0856	.97463
#1	.00319	.00863	.01017	13.738	2.8907	.00704	3.4080	.40855
#2	.00324	.00765	.01025	13.486	2.9195	.00771	3.4658	.40083
#3	.00325	.00775	.00570	13.518	2.8302	.00588	3.5521	.40333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	58.898	.00726	.33069	.00644	.00329	-.00728	8.3754
Stddev	.00037	.337	.00123	.02578	.00296	.00022	.00147	.4880
%RSD	32.969	.57136	16.868	7.7962	45.960	6.5480	20.146	5.8266
#1	.00128	59.240	.00680	.33890	.00490	.00304	-.00603	8.6862
#2	.00070	58.567	.00866	.35137	.00985	.00344	-.00691	8.6271
#3	.00138	58.886	.00634	.30181	.00456	.00340	-.00889	7.8130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038002 Acquired: 7/14/2016 16:45:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.17198	.06567	.00276	.01099	.09259	.00088
Stddev	.00051	.00090	.00336	.00249	.00012	.00695	.00020
%RSD	104.04	.52464	5.1104	90.473	1.1287	7.5020	22.752
#1	.00001	.17299	.06676	.00194	.01102	.09684	.00076
#2	.00103	.17124	.06835	.00556	.01110	.09636	.00077
#3	.00045	.17172	.06191	.00078	.01085	.08458	.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10129.	59770.	2703.1
Stddev	25.	78.	17.9
%RSD	.24450	.13111	.66134
#1	10158.	59859.	2686.2
#2	10115.	59711.	2721.8
#3	10115.	59740.	2701.1

Approved: July 16, 2016

Sample Name: L1607038003 Acquired: 7/14/2016 16:49:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.04855	.00052	.02623	.08332	.00002	15.480	.00036
Stddev	.00060	.00369	.00282	.00251	.00009	.00008	.063	.00013
%RSD	138.53	7.5952	546.28	9.5762	.10513	466.96	.40584	36.658
#1	-.00111	.04486	-.00133	.02436	.08325	-.00005	15.545	.00028
#2	-.00021	.04856	.00376	.02908	.08329	-.00001	15.475	.00051
#3	.00003	.05223	-.00088	.02525	.08342	.00011	15.420	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00130	.00302	.07723	1.5043	.00544	2.3626	.00233
Stddev	.00010	.00033	.00140	.00817	.0599	.00102	.0476	.00258
%RSD	238.46	25.056	46.446	10.576	3.9838	18.741	2.0158	110.68
#1	.00002	.00157	.00460	.08519	1.5363	.00609	2.3676	.00436
#2	-.00005	.00139	.00192	.07764	1.5415	.00427	2.4076	-.00058
#3	.00016	.00094	.00255	.06887	1.4352	.00598	2.3127	.00322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	63.852	-.00005	.05706	-.00184	.00231	-.00132	2.5851
Stddev	.00048	.293	.00033	.00626	.00279	.00428	.00306	.1832
%RSD	63.443	.45832	664.00	10.966	151.99	185.08	232.36	7.0853
#1	.00104	64.001	.00029	.06219	-.00158	.00695	-.00022	2.6965
#2	.00105	64.040	-.00007	.05891	.00082	-.00149	.00104	2.6851
#3	.00020	63.515	-.00037	.05009	-.00475	.00147	-.00478	2.3737
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038003 Acquired: 7/14/2016 16:49:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00140	.16519	-.00167	-.00057	-.00029	.00414	.00043
Stddev	.00059	.00011	.00605	.00216	.00073	.00052	.00036
%RSD	42.344	.06932	362.80	382.64	255.38	12.577	82.485
#1	.00081	.16524	-.00567	.00003	-.00028	.00416	.00010
#2	.00200	.16528	.00529	-.00296	.00044	.00465	.00040
#3	.00141	.16506	-.00462	.00123	-.00102	.00361	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10125.	59818.	2684.1
Stddev	19.	64.	23.8
%RSD	.18560	.10675	.88785
#1	10146.	59819.	2660.7
#2	10112.	59754.	2683.2
#3	10115.	59882.	2708.4

Approved: July 16, 2016

Sample Name: L1607038004 Acquired: 7/14/2016 16:53:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00066	.03271	-.00129	.14829	.05204	-.00008	1.4588	.00027
Stddev	.00211	.01771	.00134	.00139	.00075	.00003	.0045	.00024
%RSD	319.99	54.134	103.73	.93467	1.4410	32.889	.30777	88.417
#1	.00177	.01925	-.00126	.14669	.05134	-.00005	1.4568	.00047
#2	-.00167	.02612	.00004	.14910	.05283	-.00010	1.4556	.00000
#3	-.00207	.05277	-.00263	.14909	.05195	-.00009	1.4639	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00073	.00156	-.01782	.33850	.01017	.23569	.00137
Stddev	.00019	.00070	.00080	.03203	.06408	.00091	.09170	.00086
%RSD	420.93	95.961	51.275	179.74	18.930	8.9685	38.909	63.043
#1	.00026	.00085	.00146	-.04271	.38826	.00966	.18224	.00080
#2	-.00003	-.00002	.00241	.01832	.36104	.00963	.18325	.00095
#3	-.00010	.00136	.00082	-.02908	.26620	.01123	.34158	.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	156.79	-.00101	.03392	-.00345	.00263	-.00566	2.7826
Stddev	.00018	.18	.00055	.00013	.00210	.00382	.00179	.2276
%RSD	21.550	.11415	54.403	.38554	60.848	145.14	31.619	8.1810
#1	.00092	156.79	-.00090	.03405	-.00190	.00646	-.00482	2.9236
#2	.00099	156.97	-.00052	.03394	-.00261	-.00118	-.00771	2.9042
#3	.00064	156.62	-.00161	.03379	-.00584	.00262	-.00444	2.5200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038004 Acquired: 7/14/2016 16:53:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.06588	.00301	-.00124	-.00101	.00333	.00034
Stddev	.00035	.00091	.00715	.00104	.00027	.00050	.00030
%RSD	915.54	1.3865	237.45	84.422	26.322	14.947	87.714
#1	-.00015	.06631	.00147	-.00043	-.00120	.00349	.00008
#2	.00044	.06483	-.00324	-.00087	-.00071	.00372	.00027
#3	-.00017	.06649	.01081	-.00242	-.00113	.00277	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10048.	58987.	2688.9
Stddev	20.	109.	11.8
%RSD	.20051	.18442	.43933
#1	10050.	58861.	2684.5
#2	10067.	59057.	2679.9
#3	10027.	59042.	2702.3

Approved: July 16, 2016

Sample Name: L1607038101 Acquired: 7/14/2016 16:57:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.01572	-.00170	.03053	.03562	.00005	40.029	.00044
Stddev	.00110	.01035	.00127	.00160	.00115	.00002	.077	.00013
%RSD	136.10	65.838	75.106	5.2291	3.2289	28.897	.19274	29.091
#1	.00014	.00378	-.00133	.03216	.03653	.00007	39.952	.00044
#2	-.00202	.02217	-.00311	.03047	.03601	.00004	40.028	.00031
#3	-.00056	.02122	-.00065	.02897	.03433	.00006	40.106	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.00142	.00159	.01751	1.2089	.00521	3.1514	.00197
Stddev	.00038	.00095	.00165	.02767	.0646	.00392	.0543	.00291
%RSD	2986.8	66.756	103.85	157.97	5.3452	75.206	1.7215	148.09
#1	-.00044	.00241	.00066	.03464	1.1406	.00931	3.2082	.00271
#2	.00029	.00132	.00349	.03230	1.2690	.00151	3.1459	.00443
#3	.00011	.00053	.00061	-.01440	1.2170	.00480	3.1001	-.00125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	5.7023	-.00057	.09557	-.00147	.00125	-.00717	4.1217
Stddev	.00013	.0072	.00025	.00842	.00162	.00283	.00428	.3111
%RSD	41.200	.12631	44.783	8.8068	110.49	226.27	59.640	7.5477
#1	.00018	5.6980	-.00067	.10223	.00038	.00262	-.00946	4.3113
#2	.00035	5.7106	-.00075	.09838	-.00212	.00313	-.00982	4.2911
#3	.00044	5.6982	-.00028	.08611	-.00266	-.00200	-.00224	3.7627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038101 Acquired: 7/14/2016 16:57:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.13332	-.00021	.00091	-.00088	.00753	-.00018
Stddev	.00049	.00017	.00227	.00279	.00034	.00078	.00039
%RSD	93.429	.12620	1095.9	305.84	38.541	10.322	211.50
#1	.00090	.13350	.00149	.00299	-.00049	.00794	.00025
#2	.00069	.13316	.00067	-.00226	-.00113	.00801	-.00032
#3	-.00003	.13329	-.00278	.00200	-.00103	.00663	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10157.	60473.	2709.6
Stddev	37.	180.	11.5
%RSD	.35968	.29841	.42428
#1	10146.	60458.	2697.1
#2	10198.	60300.	2711.9
#3	10128.	60660.	2719.7

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:01:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41338	10.125	.41455	.51185	1.0365	.05040	10.287	.05167
Stddev	.00120	.020	.00973	.00127	.0045	.00012	.011	.00117
%RSD	.29130	.20013	2.3479	.24887	.43519	.23840	.10426	2.2597
#1	.41304	10.126	.42041	.51068	1.0406	.05028	10.279	.05230
#2	.41472	10.144	.41993	.51167	1.0374	.05052	10.299	.05238
#3	.41239	10.104	.40332	.51321	1.0317	.05040	10.283	.05032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20684	.50089	.51728	4.1508	51.804	1.0224	10.182	.52227
Stddev	.00616	.00119	.01540	.0385	.315	.0113	.109	.00199
%RSD	2.9793	.23683	2.9771	.92773	.60900	1.1074	1.0663	.38076
#1	.21065	.50047	.52567	4.1262	52.122	1.0239	10.200	.52097
#2	.21014	.50223	.52665	4.1952	51.797	1.0329	10.065	.52456
#3	.19973	.49997	.49950	4.1311	51.492	1.0104	10.280	.52129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0333	52.061	.51703	10.437	.51981	1.2452	.41775	5.1131
Stddev	.0271	.273	.01625	.212	.00626	.0279	.00829	.1006
%RSD	2.6219	.52356	3.1429	2.0330	1.2044	2.2393	1.9842	1.9679
#1	1.0440	52.346	.52700	10.561	.52141	1.2605	.42561	5.1698
#2	1.0534	52.034	.52581	10.558	.52512	1.2620	.41855	5.1726
#3	1.0025	51.803	.49828	10.192	.51291	1.2130	.40909	4.9969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:01:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0294**	**1.0397**	**1.0539**	**.51323**	**.99797**	**1.0308**	**1.0267**
Stddev	.0351	.0054	.0060	.00509	.00324	.0283	.0004
%RSD	3.4141	.52118	.56626	.99191	.32418	2.7402	.03930
#1	1.0498	1.0448	1.0604	.51655	1.0015	1.0467	1.0271
#2	1.0495	1.0402	1.0527	.51577	.99733	1.0474	1.0263
#3	.98879	1.0340	1.0487	.50737	.99510	.99816	1.0268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10042.**	**58910.**	**2650.0**
Stddev	23.	134.	10.1
%RSD	.23090	.22826	.38042
#1	10041.	58803.	2639.6
#2	10020.	58866.	2650.6
#3	10066.	59061.	2659.7

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 17:04:43 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.00735	-.00053	.00383	-.00133	.00006	-.00283	.00043
Stddev	.00040	.00420	.00195	.00131	.00090	.00008	.01562	.00027
%RSD	45.922	57.163	370.24	34.243	68.098	134.87	551.87	62.844
#1	-.00129	.00278	-.00118	.00356	-.00053	.00006	-.02058	.00023
#2	-.00051	.00822	.00167	.00267	-.00114	.00013	.00881	.00033
#3	-.00079	.01105	-.00207	.00525	-.00231	-.00002	.00328	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00057	-.00072	-.00496	.02287	.00171	-.08680	.00013
Stddev	.00050	.00052	.00052	.04659	.06681	.00032	.08419	.00221
%RSD	809.36	91.089	71.424	939.39	292.15	18.721	97.002	1697.1
#1	.00008	.00076	-.00086	-.05296	.04171	.00134	-.18401	-.00026
#2	.00056	.00097	-.00015	.04007	-.05134	.00190	-.03746	-.00186
#3	-.00045	-.00002	-.00115	-.00198	.07823	.00188	-.03892	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.04528	-.00076	.00055	-.00356	.00495	-.00776	.00416
Stddev	.00024	.02835	.00046	.00561	.00220	.00289	.00116	.00138
%RSD	323.22	62.607	60.292	1019.4	61.775	58.256	14.940	33.130
#1	-.00000	.01380	-.00092	-.00567	-.00113	.00272	-.00744	.00441
#2	.00012	.06881	-.00024	.00208	-.00414	.00821	-.00904	.00267
#3	-.00034	.05324	-.00112	.00524	-.00542	.00392	-.00679	.00538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 17:04:43 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**-.00017**	**-.00002**	**.00032**	**-.00055**	**.00004**	**-.00013**
Stddev	.00026	.00008	.00604	.00221	.00079	.00016	.00028
%RSD	62.330	45.334	27283.	695.57	142.89	407.77	216.17
#1	.00044	-.00009	-.00374	-.00058	-.00112	-.00010	.00010
#2	.00065	-.00024	.00694	-.00130	-.00090	.00000	-.00004
#3	.00014	-.00018	-.00327	.00284	.00035	.00021	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10137.**	**59445.**	**2663.4**
Stddev	86.	339.	33.8
%RSD	.85165	.57019	1.2702
#1	10082.	59083.	2628.5
#2	10091.	59498.	2696.0
#3	10236.	59754.	2665.6

Approved: July 16, 2016

Sample Name: PBW 76 Acquired: 7/14/2016 17:08:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.01451**	**-.00095**	**.00413**	**-.00278**	**.00006**	**-.04258**	**.00023**
Stddev	.00105	.00584	.00071	.00168	.00043	.00004	.01760	.00001
%RSD	518.39	40.237	75.036	40.700	15.583	70.858	41.337	5.3576
#1	-.00088	.02100	-.00164	.00601	-.00230	.00001	-.03182	.00022
#2	-.00073	.01282	-.00022	.00360	-.00314	.00010	-.03302	.00024
#3	.00101	.00970	-.00098	.00278	-.00291	.00007	-.06289	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00078**	**.00057**	**.00268**	**-.03299**	**.00122**	**.00746**	**-.00096**
Stddev	.00030	.00117	.00059	.01188	.12353	.00385	.04260	.00046
%RSD	210.12	150.26	103.54	442.94	374.47	314.73	571.18	48.254
#1	-.00024	-.00053	.00023	-.00416	-.13556	.00553	.02821	-.00118
#2	-.00038	.00116	.00023	.01640	.10415	.00004	.03571	-.00127
#3	.00019	.00171	.00125	-.00420	-.06756	-.00189	-.04155	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.06484**	**-.00027**	**.00175**	**-.00312**	**.00227**	**-.00225**	**.02091**
Stddev	.00031	.02335	.00069	.00202	.00187	.00358	.00195	.00148
%RSD	297.81	36.005	252.77	115.33	59.800	157.59	86.386	7.0929
#1	.00014	.03808	-.00106	-.00041	-.00337	-.00105	-.00262	.01983
#2	.00000	.07540	.00020	.00208	-.00114	.00606	-.00015	.02260
#3	-.00046	.08104	.00005	.00360	-.00485	.00181	-.00399	.02029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: PBW 76 Acquired: 7/14/2016 17:08:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00023	.00044	-.00117	-.00070	.00069	-.00019
Stddev	.00019	.00035	.00313	.00101	.00069	.00032	.00057
%RSD	55.195	151.80	711.67	86.544	97.859	45.550	303.41
#1	.00042	.00025	.00096	-.00138	.00003	.00086	-.00064
#2	.00048	-.00013	.00328	-.00007	-.00134	.00089	-.00038
#3	.00013	.00057	-.00292	-.00206	-.00080	.00033	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10235.	60911.	2718.1
Stddev	35.	100.	10.9
%RSD	.34043	.16386	.39985
#1	10266.	60798.	2705.5
#2	10241.	60985.	2723.6
#3	10197.	60950.	2725.0

Approved: July 16, 2016

Sample Name: LCSW 76 Acquired: 7/14/2016 17:12:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19559**	**4.9300**	**.20044**	**.97707**	**.51179**	**.02399**	**5.1758**	**.02522**
Stddev	.00080	.0250	.00234	.00398	.00221	.00004	.0410	.00051
%RSD	.41154	.50731	1.1678	.40782	.43233	.16552	.79245	2.0114
#1	.19551	4.9159	.20062	.97338	.51418	.02394	5.2081	.02525
#2	.19644	4.9589	.20268	.97652	.50982	.02401	5.1897	.02570
#3	.19483	4.9152	.19801	.98130	.51135	.02401	5.1297	.02469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10159**	**.24814**	**.25573**	**2.0797**	**25.144**	**.51757**	**4.9823**	**.25380**
Stddev	.00246	.00085	.00551	.0218	.108	.00308	.0723	.00372
%RSD	2.4256	.34230	2.1554	1.0469	.42993	.59578	1.4517	1.4655
#1	.10317	.24905	.25858	2.0545	25.214	.51716	5.0402	.25278
#2	.10285	.24736	.25924	2.0925	25.020	.52084	4.9012	.25792
#3	.09875	.24800	.24938	2.0919	25.199	.51471	5.0054	.25070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51305**	**25.490**	**.25666**	**4.9356**	**.25380**	**.60597**	**.18871**	**2.5368**
Stddev	.01128	.099	.00596	.0799	.00260	.01127	.00267	.0367
%RSD	2.1978	.38734	2.3236	1.6194	1.0253	1.8590	1.4128	1.4452
#1	.52070	25.500	.25957	4.9886	.25605	.61136	.19104	2.5602
#2	.51835	25.584	.26061	4.9745	.25439	.61352	.18930	2.5558
#3	.50010	25.387	.24980	4.8437	.25095	.59302	.18580	2.4946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW 76 Acquired: 7/14/2016 17:12:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50673	.52174	.51681	.25277	.49056	.50164	.00078
Stddev	.01294	.00196	.00824	.00587	.00027	.01104	.00020
%RSD	2.5542	.37604	1.5949	2.3237	.05433	2.2002	25.229
#1	.51418	.52108	.50872	.25784	.49083	.50865	.00072
#2	.51423	.52395	.52520	.25413	.49029	.50736	.00100
#3	.49179	.52020	.51652	.24633	.49056	.48892	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10117.	59881.	2697.8
Stddev	6.	186.	3.9
%RSD	.06141	.31103	.14590
#1	10110.	59752.	2696.5
#2	10122.	59798.	2694.6
#3	10119.	60095.	2702.2

Approved: July 16, 2016

Sample Name: L1606145502 Acquired: 7/14/2016 17:16:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.25043	-.00066	.01942	.01622	.00006	39.573	.00066
Stddev	.00066	.00527	.00166	.00283	.00098	.00005	.193	.00015
%RSD	551.41	2.1045	251.79	14.564	6.0157	87.124	.48790	22.343
#1	.00023	.25587	.00123	.02118	.01570	.00008	39.570	.00077
#2	-.00059	.25007	-.00188	.02091	.01735	.00009	39.768	.00072
#3	.00072	.24534	-.00133	.01615	.01561	.00000	39.382	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00071	.01270	.51790	3.7198	.00727	5.9513	.01793
Stddev	.00019	.00044	.00181	.01865	.0948	.00365	.0709	.00226
%RSD	58.185	62.487	14.240	3.6004	2.5487	50.259	1.1922	12.617
#1	.00014	.00080	.01332	.49945	3.8272	.00788	5.9432	.01865
#2	.00052	.00023	.01413	.53674	3.6476	.00335	6.0260	.01540
#3	.00033	.00109	.01067	.51752	3.6847	.01057	5.8848	.01975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	1.0901	.00398	.12178	-.00033	-.00038	-.00346	2.9544
Stddev	.00030	.0334	.00025	.00726	.00190	.00199	.00446	.1976
%RSD	25.605	3.0624	6.1561	5.9635	574.56	520.60	129.06	6.6880
#1	.00084	1.0515	.00410	.12007	-.00032	-.00267	-.00837	3.0757
#2	.00136	1.1099	.00414	.12974	.00157	.00071	.00034	3.0611
#3	.00137	1.1088	.00370	.11552	-.00224	.00082	-.00235	2.7264
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145502 Acquired: 7/14/2016 17:16:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.08856	.00958	-.00068	.00013	.32531	.00041
Stddev	.00044	.00036	.00270	.00085	.00017	.02687	.00036
%RSD	180.12	.40394	28.146	125.22	130.03	8.2592	87.088
#1	.00071	.08898	.00647	-.00094	.00004	.34099	.00038
#2	-.00017	.08838	.01117	.00027	.00032	.34066	.00007
#3	.00019	.08833	.01111	-.00136	.00003	.29429	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10183.	60648.	2721.9
Stddev	17.	132.	7.5
%RSD	.16204	.21835	.27721
#1	10197.	60624.	2721.2
#2	10188.	60791.	2714.7
#3	10165.	60529.	2729.7

Approved: July 16, 2016

Sample Name: L1606145503S Acquired: 7/14/2016 17:20:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19455**	**5.2080**	**.20330**	**.97591**	**.52017**	**.02360**	**43.711**	**.02485**
Stddev	.00136	.0126	.00220	.00087	.00481	.00009	.275	.00029
%RSD	.69908	.24153	1.0844	.08929	.92384	.37234	.62911	1.1476
#1	.19517	5.1937	.20367	.97565	.52488	.02368	43.900	.02503
#2	.19299	5.2171	.20530	.97519	.52036	.02360	43.837	.02500
#3	.19550	5.2132	.20094	.97688	.51528	.02351	43.395	.02452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09991**	**.24298**	**.26234**	**2.4864**	**28.264**	**.50823**	**10.832**	**.26534**
Stddev	.00176	.00047	.00499	.0467	.211	.00059	.150	.00175
%RSD	1.7601	.19395	1.9039	1.8772	.74501	.11533	1.3856	.65814
#1	.10104	.24291	.26515	2.4622	28.461	.50859	10.908	.26655
#2	.10081	.24255	.26529	2.5402	28.290	.50854	10.929	.26612
#3	.09788	.24349	.25657	2.4568	28.042	.50755	10.659	.26334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50769**	**26.068**	**.25477**	**5.0509**	**.24922**	**.60228**	**.18627**	**5.7136**
Stddev	.01047	.170	.00649	.0741	.00190	.00835	.01108	.0683
%RSD	2.0615	.65358	2.5491	1.4667	.76280	1.3859	5.9503	1.1963
#1	.51529	26.182	.25991	5.1049	.24703	.60333	.19840	5.7639
#2	.51202	26.151	.25692	5.0812	.25045	.61006	.18377	5.7411
#3	.49575	25.872	.24747	4.9664	.25018	.59346	.17665	5.6358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145503S Acquired: 7/14/2016 17:20:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49873**	**.60220**	**.50667**	**.24600**	**.48209**	**.81803**	**.00079**
Stddev	.01192	.00168	.00995	.00188	.00120	.01355	.00018
%RSD	2.3896	.27910	1.9638	.76258	.24934	1.6565	22.459
#1	.50758	.60271	.50884	.24745	.48334	.82639	.00060
#2	.50345	.60356	.49581	.24665	.48095	.82531	.00095
#3	.48518	.60032	.51535	.24388	.48199	.80240	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10022.**	**59592.**	**2697.3**
Stddev	19.	112.	42.7
%RSD	.19384	.18782	1.5815
#1	10001.	59712.	2661.5
#2	10040.	59490.	2686.0
#3	10024.	59574.	2744.5

Approved: July 16, 2016

Sample Name: L1606145504SD Acquired: 7/14/2016 17:23:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20476**	**5.7375**	**.21015**	**1.0380**	**.55226**	**.02515**	**46.383**	**.02655**
Stddev	.00077	.0231	.00704	.0020	.00166	.00005	.286	.00029
%RSD	.37377	.40322	3.3490	.19066	.30076	.18669	.61629	1.1098
#1	.20437	5.7635	.21281	1.0385	.55367	.02520	46.683	.02681
#2	.20427	5.7302	.21546	1.0396	.55267	.02512	46.352	.02662
#3	.20564	5.7190	.20217	1.0357	.55043	.02512	46.114	.02623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10455**	**.25906**	**.27580**	**2.7842**	**29.865**	**.54213**	**11.396**	**.28495**
Stddev	.00209	.00225	.00601	.0214	.043	.00270	.106	.00170
%RSD	1.9983	.86894	2.1806	.76713	.14322	.49847	.93273	.59552
#1	.10589	.26149	.28109	2.7742	29.862	.54512	11.365	.28335
#2	.10561	.25705	.27706	2.7696	29.823	.54142	11.514	.28477
#3	.10214	.25864	.26926	2.8087	29.909	.53986	11.309	.28673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53361**	**27.613**	**.26733**	**5.3106**	**.25970**	**.62709**	**.20062**	**6.2455**
Stddev	.01001	.121	.00610	.0824	.00500	.01394	.00353	.0803
%RSD	1.8758	.43670	2.2830	1.5518	1.9270	2.2232	1.7597	1.2857
#1	.54004	27.740	.27074	5.3647	.26389	.63736	.19787	6.3002
#2	.53871	27.500	.27097	5.3513	.26105	.63269	.20460	6.2829
#3	.52208	27.598	.26029	5.2157	.25416	.61122	.19939	6.1533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145504SD Acquired: 7/14/2016 17:23:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52422	.63790	.53477	.25895	.51355	.85705	.00093
Stddev	.01199	.00186	.00831	.00353	.00222	.01603	.00031
%RSD	2.2877	.29091	1.5532	1.3639	.43151	1.8708	32.921
#1	.53232	.63980	.54391	.26078	.51582	.86812	.00074
#2	.52990	.63609	.53272	.26120	.51139	.86436	.00078
#3	.51045	.63781	.52768	.25488	.51343	.83866	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9938.6	58561.	2642.6
Stddev	38.0	121.	22.8
%RSD	.38233	.20616	.86221
#1	9898.5	58428.	2616.4
#2	9943.2	58663.	2657.6
#3	9974.1	58593.	2653.8

Approved: July 16, 2016

Sample Name: L1606145201 Acquired: 7/14/2016 17:27:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00078	.01275	-.00155	.01616	.11553	-.00001	7.2477	.00036
Stddev	.00019	.00601	.00275	.00170	.00162	.00004	.0631	.00023
%RSD	24.744	47.104	177.52	10.525	1.4059	273.50	.87038	65.407
#1	-.00070	.01961	-.00041	.01796	.11620	-.00003	7.3044	.00031
#2	-.00065	.01021	-.00469	.01595	.11367	-.00004	7.1797	.00061
#3	-.00100	.00843	.00045	.01458	.11670	.00003	7.2589	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	.00075	-.00050	.55363	13.964	.03022	5.2451	.14867
Stddev	.00029	.00083	.00111	.01652	.035	.00348	.0482	.00456
%RSD	23.833	109.36	220.06	2.9831	.25295	11.503	.91897	3.0694
#1	.00120	-.00015	-.00177	.53552	13.984	.02649	5.2796	.15345
#2	.00155	.00096	.00025	.55751	13.984	.03081	5.1900	.14436
#3	.00097	.00146	.00002	.56786	13.923	.03336	5.2656	.14820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	37.662	.00040	.00850	-.00169	-.00142	-.00431	2.0303
Stddev	.00018	.032	.00095	.00465	.00193	.00074	.00595	.1811
%RSD	48.707	.08378	236.37	54.758	113.87	52.228	138.13	8.9177
#1	-.00032	37.630	-.00037	.00955	.00051	-.00131	-.00031	2.1298
#2	-.00023	37.663	.00146	.00341	-.00254	-.00222	-.01115	2.1398
#3	-.00058	37.693	.00011	.01253	-.00305	-.00074	-.00147	1.8213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145201 Acquired: 7/14/2016 17:27:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.19323**	**-.00355**	**.00227**	**-.00101**	**.00228**	**-.00049**
Stddev	.00040	.00108	.00803	.00190	.00034	.00030	.00051
%RSD	178.28	.56019	226.41	83.579	33.741	13.054	103.10
#1	-.00056	.19199	-.01259	.00426	-.00062	.00248	-.00012
#2	.00022	.19371	-.00079	.00048	-.00120	.00242	-.00029
#3	-.00033	.19398	.00274	.00207	-.00122	.00194	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10205.**	**60612.**	**2728.5**
Stddev	63.	131.	10.8
%RSD	.61988	.21653	.39405
#1	10270.	60740.	2738.3
#2	10199.	60618.	2717.0
#3	10144.	60478.	2730.1

Approved: July 16, 2016

Sample Name: L1606145301 Acquired: 7/14/2016 17:31:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00058	.00322	-.00069	.00537	.22484	.00008	6.6978	.00032
Stddev	.00227	.00542	.00274	.00193	.00085	.00004	.0383	.00005
%RSD	388.96	168.56	395.65	35.963	.37640	55.762	.57208	15.233
#1	-.00220	.00345	-.00056	.00404	.22402	.00004	6.7176	.00026
#2	-.00156	-.00232	-.00349	.00449	.22571	.00013	6.6537	.00034
#3	.00201	.00851	.00197	.00759	.22479	.00007	6.7222	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00435	.00138	.00060	.64236	.26791	.01145	4.8324	.16966
Stddev	.00037	.00072	.00100	.03109	.07923	.00271	.0451	.00095
%RSD	8.4880	52.179	165.43	4.8404	29.575	23.716	.93313	.56120
#1	.00461	.00198	.00097	.65606	.35485	.01447	4.8500	.16991
#2	.00452	.00058	.00136	.60676	.24914	.01066	4.7812	.16861
#3	.00393	.00156	-.00052	.66424	.19975	.00921	4.8662	.17046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	18.925	.00290	.00700	-.00404	.00316	-.00054	2.7265
Stddev	.00036	.067	.00121	.00132	.00075	.00392	.00693	.2427
%RSD	210.70	.35330	41.717	18.892	18.594	124.06	1286.7	8.9023
#1	.00023	18.862	.00352	.00808	-.00390	.00671	.00466	2.8678
#2	-.00048	18.996	.00366	.00741	-.00486	-.00105	.00212	2.8655
#3	-.00027	18.918	.00150	.00552	-.00337	.00384	-.00840	2.4463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145301 Acquired: 7/14/2016 17:31:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.14108**	**.00220**	**.00173**	**-.00070**	**.00980**	**-.00018**
Stddev	.00086	.00115	.00571	.00166	.00051	.00090	.00031
%RSD	209.46	.81581	259.11	96.265	72.545	9.1468	176.40
#1	.00053	.13981	-.00208	-.00006	-.00124	.01026	.00011
#2	-.00116	.14205	.00001	.00323	-.00063	.01037	-.00050
#3	-.00060	.14138	.00868	.00201	-.00023	.00877	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10380.**	**61157.**	**2743.8**
Stddev	29.	287.	10.5
%RSD	.28166	.46966	.38261
#1	10408.	61450.	2754.7
#2	10383.	61146.	2733.8
#3	10349.	60876.	2742.8

Approved: July 16, 2016

Sample Name: L1606145303 Acquired: 7/14/2016 17:35:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00140**	**.00143**	**-.00068**	**.00417**	**.07438**	**.00004**	**2.3532**	**.00013**
Stddev	.00175	.00081	.00150	.00106	.00141	.00001	.0153	.00012
%RSD	125.48	56.790	221.82	25.427	1.8930	32.576	.64798	86.036
#1	.00036	.00092	.00082	.00346	.07295	.00005	2.3590	.00010
#2	-.00315	.00101	-.00218	.00366	.07577	.00004	2.3359	.00004
#3	-.00140	.00237	-.00067	.00538	.07443	.00003	2.3647	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00049**	**-.00009**	**4.3182**	**.39251**	**.00316**	**1.6064**	**.04862**
Stddev	.00009	.00064	.00038	.0717	.06543	.00252	.0525	.00196
%RSD	56.970	130.21	449.41	1.6603	16.670	79.833	3.2681	4.0258
#1	.00008	.00122	.00015	4.2588	.31697	.00357	1.5464	.05023
#2	.00025	.00023	.00012	4.2978	.43140	.00545	1.6442	.04918
#3	.00013	.00002	-.00053	4.3978	.42917	.00046	1.6284	.04644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**8.1561**	**-.00003**	**.01935**	**-.00053**	**.00045**	**-.00287**	**1.5654**
Stddev	.00027	.0436	.00113	.00257	.00205	.00263	.00253	.1590
%RSD	60.693	.53438	4001.8	13.292	384.61	587.93	88.106	10.160
#1	-.00014	8.1083	.00037	.02046	.00171	-.00259	-.00578	1.6707
#2	-.00066	8.1936	-.00131	.01641	-.00099	.00195	-.00124	1.6431
#3	-.00054	8.1664	.00085	.02119	-.00232	.00198	-.00158	1.3825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145303 Acquired: 7/14/2016 17:35:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.05576	.00132	.00095	-.00080	.00097	-.00020
Stddev	.00019	.00007	.00099	.00123	.00025	.00009	.00038
%RSD	8441.9	.12613	74.750	129.63	30.934	9.2769	192.82
#1	.00002	.05579	.00122	.00162	-.00104	.00104	.00016
#2	.00018	.05582	.00039	-.00047	-.00081	.00100	-.00015
#3	-.00020	.05568	.00236	.00170	-.00055	.00087	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10420.	61586.	2754.2
Stddev	62.	99.	16.8
%RSD	.59231	.16067	.61111
#1	10402.	61670.	2772.8
#2	10489.	61612.	2740.0
#3	10370.	61477.	2749.9

Approved: July 16, 2016

Sample Name: L1606145303PS Acquired: 7/14/2016 17:39:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG574839-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19182	4.8542	.20166	.97722	.56716	.02332	7.3237	.02474
Stddev	.00144	.0176	.00582	.00288	.00534	.00004	.0727	.00046
%RSD	.74869	.36370	2.8845	.29476	.94240	.17190	.99321	1.8615
#1	.19049	4.8736	.20348	.98010	.56834	.02331	7.3484	.02491
#2	.19334	4.8498	.20635	.97722	.56132	.02336	7.2419	.02509
#3	.19164	4.8391	.19515	.97434	.57181	.02328	7.3809	.02422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09886	.23774	.24962	6.1274	24.956	.50068	6.4674	.29650
Stddev	.00235	.00153	.00553	.0473	.254	.00609	.0689	.00413
%RSD	2.3738	.64288	2.2154	.77188	1.0166	1.2172	1.0654	1.3942
#1	.09982	.23904	.25237	6.0887	24.901	.50219	6.5343	.29597
#2	.10058	.23813	.25323	6.1134	24.735	.49398	6.3967	.29265
#3	.09619	.23606	.24325	6.1802	25.233	.50588	6.4713	.30087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49332	32.606	.24944	4.9727	.24819	.59728	.20122	4.0583
Stddev	.01219	.285	.00632	.1027	.00616	.01427	.00813	.0661
%RSD	2.4706	.87396	2.5337	2.0643	2.4808	2.3891	4.0413	1.6283
#1	.49921	32.611	.25280	5.0073	.25228	.60333	.20611	4.0796
#2	.50145	32.319	.25338	5.0536	.25118	.60753	.20572	4.1112
#3	.47931	32.889	.24215	4.8573	.24110	.58098	.19184	3.9842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145303PS Acquired: 7/14/2016 17:39:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG574839-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49135**	**.55563**	**.50247**	**.24787**	**.46839**	**.50359**	**.00047**
Stddev	.01612	.00397	.00941	.00465	.00345	.01181	.00042
%RSD	3.2814	.71411	1.8721	1.8780	.73642	2.3450	89.600
#1	.49983	.55697	.50973	.25284	.47235	.50946	.00095
#2	.50146	.55117	.49185	.24718	.46684	.51131	.00024
#3	.47275	.55876	.50585	.24361	.46600	.49000	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10547.**	**62217.**	**2780.4**
Stddev	20.	275.	16.5
%RSD	.19171	.44179	.59288
#1	10569.	61901.	2761.5
#2	10529.	62348.	2791.7
#3	10544.	62402.	2788.1

Approved: July 16, 2016

Sample Name: L1606145303SDL Acquired: 7/14/2016 17:42:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG574839-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.00241**	**-.00022**	**.00589**	**.01269**	**-.00002**	**.43202**	**.00018**
Stddev	.00087	.01080	.00188	.00233	.00063	.00003	.01711	.00020
%RSD	164.29	448.10	870.33	39.615	4.9380	205.51	3.9597	110.60
#1	-.00117	-.00962	-.00089	.00325	.01207	-.00003	.43852	-.00005
#2	.00046	.01128	-.00166	.00673	.01267	.00002	.41262	.00028
#3	-.00088	.00557	.00191	.00768	.01332	-.00004	.44492	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**-.00018**	**-.00055**	**.80787**	**.10209**	**.00283**	**.30322**	**.01035**
Stddev	.00027	.00074	.00021	.01933	.10235	.00247	.10069	.00201
%RSD	240.05	405.60	37.754	2.3928	100.25	87.229	33.206	19.451
#1	-.00016	-.00056	-.00072	.79382	.21552	.00537	.22544	.00971
#2	-.00036	.00067	-.00060	.79988	.01665	.00269	.41694	.01261
#3	.00018	-.00065	-.00032	.82991	.07411	.00044	.26727	.00874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**1.6643**	**-.00043**	**.00696**	**-.00212**	**.00206**	**-.00048**	**.30019**
Stddev	.00034	.0062	.00012	.00390	.00280	.00362	.00328	.03265
%RSD	220.27	.37091	27.746	56.016	132.43	175.27	688.74	10.875
#1	.00053	1.6615	-.00057	.00448	.00063	.00176	.00320	.31997
#2	.00009	1.6601	-.00040	.01145	-.00200	.00582	-.00307	.31810
#3	-.00015	1.6714	-.00033	.00495	-.00498	-.00139	-.00156	.26251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145303SDL Acquired: 7/14/2016 17:42:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG574839-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.01058	.00180	.00054	-.00084	.00053	.00020
Stddev	.00034	.00017	.00415	.00030	.00049	.00009	.00029
%RSD	159.95	1.5849	230.92	54.577	58.644	16.185	144.56
#1	.00060	.01068	.00540	.00087	-.00053	.00059	-.00005
#2	-.00003	.01039	.00274	.00029	-.00141	.00043	.00013
#3	.00006	.01068	-.00274	.00048	-.00058	.00057	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10816.	64472.	2857.3
Stddev	34.	113.	23.0
%RSD	.31429	.17477	.80585
#1	10835.	64560.	2880.7
#2	10836.	64511.	2856.7
#3	10777.	64345.	2834.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:46:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40502	9.9100	.40602	.50773	1.0142	.04883	10.127	.05081
Stddev	.00179	.0087	.00832	.00346	.0072	.00011	.022	.00091
%RSD	.44213	.08795	2.0496	.68106	.70770	.22834	.21412	1.7963
#1	.40611	9.9040	.41249	.50432	1.0220	.04890	10.125	.05116
#2	.40599	9.9059	.40894	.50762	1.0127	.04889	10.106	.05149
#3	.40295	9.9200	.39663	.51124	1.0079	.04870	10.149	.04977
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20259	.48635	.50696	4.0372	50.812	1.0067	9.9299	.50970
Stddev	.00550	.00251	.01316	.0071	.152	.0121	.0711	.00191
%RSD	2.7137	.51616	2.5965	.17562	.29878	1.2068	.71606	.37479
#1	.20577	.48924	.51317	4.0405	50.964	1.0207	9.9709	.51188
#2	.20576	.48510	.51586	4.0420	50.660	1.0007	9.8478	.50833
#3	.19624	.48470	.49184	4.0291	50.813	.99873	9.9710	.50889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0131	51.135	.50510	10.253	.50913	1.2317	.40886	5.0306
Stddev	.0238	.293	.01238	.206	.00699	.0268	.00599	.0863
%RSD	2.3440	.57276	2.4510	2.0133	1.3726	2.1754	1.4662	1.7158
#1	1.0197	51.469	.51128	10.359	.51487	1.2454	.41393	5.0743
#2	1.0329	51.016	.51317	10.386	.51116	1.2488	.41040	5.0863
#3	.98678	50.921	.49085	10.015	.50135	1.2008	.40224	4.9311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:46:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0051**	**1.0186**	**1.0339**	**.50513**	**.96878**	**1.0109**	**.99576**
Stddev	.0319	.0037	.0062	.00274	.00225	.0249	.00174
%RSD	3.1781	.36659	.60141	.54163	.23200	2.4646	.17518
#1	1.0230	1.0225	1.0406	.50694	.96646	1.0242	.99776
#2	1.0241	1.0183	1.0329	.50648	.97095	1.0263	.99454
#3	.96823	1.0150	1.0283	.50199	.96894	.98215	.99498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10100.**	**59302.**	**2691.8**
Stddev	45.	55.	9.5
%RSD	.44177	.09333	.35199
#1	10083.	59240.	2681.1
#2	10067.	59319.	2694.8
#3	10151.	59346.	2699.3

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 17:50:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.01461**	**-.00102**	**.00459**	**-.00139**	**.00011**	**-.02346**	**.00033**
Stddev	.00171	.00505	.00154	.00097	.00097	.00004	.00830	.00007
%RSD	1002.2	34.589	151.28	21.210	69.809	35.441	35.394	20.973
#1	.00148	.01939	-.00203	.00450	-.00186	.00006	-.02434	.00025
#2	-.00005	.01511	.00075	.00366	-.00205	.00012	-.01475	.00036
#3	-.00194	.00932	-.00177	.00560	-.00028	.00014	-.03128	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.00088**	**.00014**	**-.01037**	**.05229**	**.00303**	**.00649**	**-.00251**
Stddev	.00026	.00059	.00037	.01130	.06064	.00035	.08122	.00211
%RSD	11636.	66.411	273.32	108.91	115.97	11.408	1252.1	84.082
#1	-.00006	.00060	.00015	-.00887	.11443	.00294	-.06118	-.00145
#2	-.00023	.00050	.00050	.00009	-.00673	.00341	-.01592	-.00114
#3	.00029	.00156	-.00024	-.02235	.04916	.00273	.09655	-.00494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.07541**	**-.00042**	**.00229**	**-.00376**	**.00363**	**-.00589**	**.00316**
Stddev	.00017	.02750	.00132	.00195	.00199	.00549	.00616	.00037
%RSD	120.49	36.468	311.43	85.036	52.994	151.24	104.60	11.789
#1	-.00031	.10259	.00108	.00448	-.00270	.00974	-.01259	.00291
#2	-.00014	.04759	-.00137	.00073	-.00606	-.00090	-.00457	.00359
#3	.00003	.07606	-.00099	.00167	-.00252	.00206	-.00049	.00298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 17:50:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00070**	**.00020**	**.00140**	**.00232**	**-.00064**	**-.00016**	**.00030**
Stddev	.00035	.00046	.00563	.00092	.00014	.00007	.00014
%RSD	50.186	231.25	402.89	39.402	22.523	42.896	46.416
#1	.00030	.00012	-.00354	.00224	-.00051	-.00017	.00015
#2	.00094	-.00022	.00753	.00328	-.00079	-.00021	.00032
#3	.00087	.00070	.00020	.00146	-.00061	-.00008	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10128.**	**60348.**	**2685.4**
Stddev	14.	210.	10.1
%RSD	.13753	.34805	.37517
#1	10143.	60192.	2684.6
#2	10126.	60587.	2695.9
#3	10115.	60265.	2675.8

Approved: July 16, 2016

Sample Name: L1606164802 Acquired: 7/14/2016 17:54:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00107	-.00118	.00655	.01456	.00009	1.2811	.00025
Stddev	.00056	.00259	.00172	.00151	.00016	.00003	.0222	.00012
%RSD	448.55	242.47	146.10	22.963	1.1200	36.103	1.7355	47.185
#1	.00073	.00327	.00052	.00518	.01470	.00012	1.3066	.00024
#2	-.00037	.00172	-.00113	.00816	.01461	.00006	1.2657	.00037
#3	.00002	-.00178	-.00292	.00632	.01438	.00008	1.2711	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00020	-.00033	.79599	.06159	.00057	.79547	.21923
Stddev	.00023	.00059	.00093	.04095	.01674	.00049	.05959	.00435
%RSD	71.343	288.17	280.06	5.1450	27.176	85.471	7.4909	1.9828
#1	.00057	-.00047	-.00106	.83822	.04235	.00065	.83446	.22417
#2	.00029	.00058	.00071	.79330	.06962	.00005	.72687	.21751
#3	.00011	.00050	-.00065	.75645	.07279	.00101	.82506	.21600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	2.1534	.00045	.00319	-.00114	.00031	.00213	.56095
Stddev	.00019	.0089	.00053	.00484	.00194	.00337	.00101	.05192
%RSD	201.37	.41198	119.13	151.73	170.42	1105.6	47.506	9.2554
#1	.00011	2.1484	-.00008	.00080	-.00216	-.00243	.00302	.59583
#2	-.00026	2.1482	.00044	.00001	-.00236	-.00073	.00103	.58574
#3	-.00013	2.1636	.00098	.00876	.00110	.00407	.00235	.50129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606164802 Acquired: 7/14/2016 17:54:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.02537**	**.00344**	**.00157**	**-.00084**	**.00102**	**-.00008**
Stddev	.00071	.00070	.00973	.00162	.00053	.00005	.00057
%RSD	900.65	2.7611	282.73	103.42	63.616	4.7393	689.73
#1	.00073	.02616	.01228	.00104	-.00144	.00103	.00007
#2	-.00034	.02510	-.00699	.00338	-.00066	.00107	.00040
#3	-.00063	.02484	.00504	.00028	-.00042	.00097	-.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10908.**	**62915.**	**2874.0**
Stddev	95.	3111.	66.2
%RSD	.86918	4.9445	2.3047
#1	10860.	65247.	2797.6
#2	11017.	59382.	2908.8
#3	10847.	64114.	2915.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:58:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39562	9.6758	.40267	.49695	.98901	.04747	9.8552	.05005
Stddev	.00285	.0544	.00160	.00173	.00427	.00033	.0191	.00043
%RSD	.71914	.56262	.39733	.34797	.43210	.70136	.19402	.85562
#1	.39694	9.6547	.40451	.49628	.98408	.04739	9.8365	.05014
#2	.39236	9.6351	.40175	.49566	.99116	.04719	9.8545	.05043
#3	.39757	9.7377	.40174	.49892	.99178	.04784	9.8747	.04959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20001	.47608	.49898	3.9000	49.598	.98554	9.6768	.49758
Stddev	.00287	.00256	.00529	.0303	.170	.00642	.1448	.00373
%RSD	1.4340	.53725	1.0611	.77729	.34290	.65182	1.4968	.74932
#1	.20096	.47718	.50147	3.8692	49.525	.99150	9.5285	.49337
#2	.20229	.47316	.50256	3.9011	49.793	.98638	9.6841	.49889
#3	.19679	.47790	.49290	3.9298	49.477	.97874	9.8179	.50048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0015	49.870	.49802	10.094	.50206	1.2116	.40253	4.9544
Stddev	.0112	.101	.00589	.072	.00253	.0088	.00613	.0280
%RSD	1.1189	.20330	1.1824	.71091	.50384	.72549	1.5240	.56455
#1	.99906	49.760	.50088	10.118	.50131	1.2142	.40890	4.9581
#2	1.0138	49.960	.50194	10.150	.50488	1.2188	.40203	4.9804
#3	.99180	49.889	.49125	10.013	.49999	1.2018	.39666	4.9248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:58:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99351	.99395	1.0112	.49293	.94523	.99913	.97166
Stddev	.01326	.00261	.0055	.00292	.00397	.01069	.00132
%RSD	1.3343	.26284	.54753	.59227	.42009	1.0703	.13537
#1	.99937	.99094	1.0067	.49621	.94220	1.0038	.97036
#2	1.0028	.99561	1.0095	.49062	.94378	1.0067	.97162
#3	.97833	.99532	1.0174	.49197	.94973	.98689	.97299
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10226.	60388.	2744.5
Stddev	24.	191.	5.7
%RSD	.23139	.31643	.20748
#1	10246.	60540.	2749.8
#2	10233.	60450.	2738.5
#3	10200.	60173.	2745.2

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 18:01:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	.00678	-.00228	.00501	-.00142	.00008	.01111	.00027
Stddev	.00110	.00653	.00232	.00073	.00131	.00001	.02181	.00008
%RSD	213.70	96.397	101.76	14.642	92.322	14.031	196.38	29.668
#1	.00073	.01376	-.00227	.00583	-.00267	.00007	.03453	.00018
#2	-.00134	.00576	.00003	.00443	-.00006	.00009	-.00862	.00033
#3	-.00092	.00081	-.00461	.00475	-.00152	.00007	.00741	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00013	-.00058	-.00686	.06854	.00315	-.00069	-.00079
Stddev	.00024	.00088	.00090	.01367	.08042	.00242	.06290	.00207
%RSD	112.74	654.31	156.19	199.21	117.33	76.612	9161.5	261.19
#1	-.00002	-.00026	-.00043	-.02121	.16129	.00269	.07185	.00133
#2	-.00014	-.00048	-.00154	.00602	.02614	.00577	-.03363	-.00091
#3	-.00049	.00114	.00024	-.00540	.01820	.00100	-.04028	-.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.04678	.00021	.00195	-.00404	.00086	-.00164	.00299
Stddev	.00015	.00630	.00092	.00329	.00153	.00280	.00640	.00079
%RSD	545.43	13.474	449.63	168.51	37.895	325.08	389.54	26.502
#1	.00002	.04162	-.00086	-.00063	-.00249	.00038	-.00752	.00249
#2	.00010	.04492	.00081	.00083	-.00406	.00387	.00518	.00391
#3	-.00020	.05381	.00066	.00565	-.00555	-.00166	-.00258	.00258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 18:01:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**-.00003**	**.00151**	**-.00076**	**-.00078**	**.00004**	**-.00001**
Stddev	.00021	.00041	.00731	.00145	.00094	.00020	.00021
%RSD	37.609	1536.0	483.70	190.37	120.73	504.01	2002.3
#1	.00046	-.00049	-.00537	.00082	-.00111	-.00017	.00006
#2	.00041	.00028	.00072	-.00109	-.00151	.00022	.00016
#3	.00079	.00013	.00918	-.00201	.00028	.00006	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10145.**	**59750.**	**2665.9**
Stddev	97.	143.	14.4
%RSD	.95209	.23955	.54155
#1	10059.	59587.	2653.9
#2	10250.	59809.	2662.0
#3	10125.	59854.	2681.9

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 18:05:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00661	.15818	.00588	.08209	.00530	.00151	.34264	.00090
Stddev	.00063	.00248	.00364	.00104	.00007	.00005	.02019	.00012
%RSD	9.5020	1.5657	61.772	1.2626	1.3728	3.1340	5.8919	12.908
#1	.00705	.15838	.00312	.08241	.00538	.00153	.32094	.00102
#2	.00589	.15561	.01000	.08093	.00524	.00153	.34613	.00090
#3	.00689	.16055	.00454	.08292	.00527	.00145	.36086	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00367	.00490	.00403	.08175	.76390	.08624	.41759	.00875
Stddev	.00058	.00082	.00055	.02068	.12561	.00364	.03351	.00213
%RSD	15.754	16.716	13.702	25.293	16.443	4.2194	8.0239	24.320
#1	.00364	.00580	.00413	.06281	.72588	.08217	.38666	.00984
#2	.00427	.00473	.00453	.10381	.66170	.08919	.45318	.00630
#3	.00311	.00418	.00344	.07864	.90413	.08736	.41291	.01012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00735	.47173	.01492	.75012	.00788	.08177	.01238	.74304
Stddev	.00100	.01289	.00229	.06823	.00146	.00797	.00388	.06308
%RSD	13.630	2.7329	15.325	9.0955	18.545	9.7448	31.341	8.4891
#1	.00784	.48527	.01689	.78698	.00928	.08472	.01644	.77930
#2	.00800	.45961	.01546	.79199	.00799	.08785	.00871	.77961
#3	.00619	.47031	.01242	.67139	.00636	.07275	.01198	.67020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 18:05:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37878**	**.04087**	**.02946**	**.14136**	**.00680**	**.01608**	**.03982**
Stddev	.04351	.00087	.00456	.01351	.00124	.00164	.00044
%RSD	11.486	2.1186	15.486	9.5540	18.246	10.170	1.1116
#1	.40607	.04181	.02908	.14753	.00644	.01708	.03990
#2	.40165	.04012	.03421	.15068	.00577	.01696	.03935
#3	.32860	.04066	.02511	.12587	.00818	.01419	.04022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10386.**	**61504.**	**2737.8**
Stddev	25.	347.	19.0
%RSD	.24326	.56365	.69312
#1	10412.	61229.	2718.4
#2	10384.	61893.	2738.7
#3	10362.	61390.	2756.3

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 18:09:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01814	.38138	.01778	.19587	.01750	.00364	.94634	.00215
Stddev	.00115	.00823	.00148	.00171	.00055	.00006	.01361	.00018
%RSD	6.3286	2.1577	8.2993	.87082	3.1240	1.7155	1.4378	8.2170
#1	.01877	.37356	.01903	.19446	.01802	.00371	.96186	.00230
#2	.01681	.38062	.01816	.19777	.01755	.00362	.94074	.00219
#3	.01884	.38997	.01615	.19539	.01693	.00359	.93643	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00915	.00971	.00931	.19221	1.9824	.20140	.95430	.01812
Stddev	.00067	.00040	.00106	.01847	.0200	.00166	.06054	.00070
%RSD	7.3195	4.1424	11.330	9.6080	1.0098	.82529	6.3440	3.8451
#1	.00971	.00943	.01053	.21298	1.9826	.19950	.89514	.01740
#2	.00933	.00954	.00869	.18601	1.9623	.20259	.95162	.01818
#3	.00840	.01017	.00872	.17763	2.0023	.20210	1.0161	.01879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01790	1.0343	.03732	1.8220	.01595	.18992	.03523	1.8186
Stddev	.00140	.0313	.00326	.1189	.00386	.01072	.00683	.1110
%RSD	7.8195	3.0248	8.7224	6.5275	24.184	5.6425	19.385	6.1036
#1	.01889	1.0701	.03988	1.8975	.02003	.19420	.03873	1.8875
#2	.01851	1.0126	.03843	1.8835	.01545	.19783	.03960	1.8778
#3	.01630	1.0201	.03366	1.6849	.01237	.17773	.02736	1.6906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 18:09:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93307	.09982	.05820	.35162	.01804	.03870	.09683
Stddev	.08318	.00063	.00625	.02117	.00063	.00305	.00041
%RSD	8.9147	.63352	10.746	6.0213	3.5033	7.8874	.42610
#1	.98523	.10014	.05584	.36688	.01825	.04056	.09683
#2	.97683	.10022	.06529	.36052	.01733	.04037	.09724
#3	.83714	.09909	.05347	.32745	.01855	.03518	.09642
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10457.	62211.	2747.1
Stddev	3.	92.	23.7
%RSD	.03101	.14829	.86154
#1	10453.	62106.	2722.1
#2	10458.	62282.	2750.0
#3	10459.	62244.	2769.2

Approved: July 16, 2016

Sample Name: PBW AI Acquired: 7/14/2016 18:13:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.00879**	**.00152**	**.00453**	**-.00208**	**.00007**	**-.05132**	**.00006**
Stddev	.00014	.00344	.00151	.00213	.00083	.00004	.01516	.00019
%RSD	22.643	39.122	99.226	47.046	39.847	65.973	29.537	344.60
#1	-.00057	.00763	.00324	.00406	-.00151	.00002	-.05696	.00023
#2	-.00051	.00608	.00088	.00267	-.00170	.00010	-.06285	.00008
#3	-.00078	.01266	.00043	.00686	-.00303	.00009	-.03415	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**.00032**	**.00025**	**.01264**	**.00126**	**.00346**	**-.00775**	**-.00149**
Stddev	.00048	.00018	.00085	.05521	.05350	.00385	.07031	.00242
%RSD	166.92	55.845	340.06	436.66	4235.0	111.30	907.47	162.53
#1	-.00003	.00053	-.00051	.06876	.05652	-.00088	-.04806	-.00021
#2	.00001	.00023	.00117	-.04161	-.05028	.00480	-.04863	.00003
#3	-.00084	.00021	.00009	.01078	-.00245	.00645	.07344	-.00428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.08915**	**-.00066**	**.00357**	**-.00275**	**-.00083**	**-.00515**	**.00483**
Stddev	.00056	.00908	.00081	.01181	.00081	.00328	.00155	.00200
%RSD	528.28	10.181	122.62	330.92	29.335	397.63	30.110	41.359
#1	-.00070	.09434	-.00130	-.00067	-.00353	.00018	-.00338	.00255
#2	.00041	.07867	-.00092	.01692	-.00281	-.00449	-.00626	.00629
#3	-.00003	.09444	.00025	-.00554	-.00191	.00184	-.00581	.00565
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: PBW AI Acquired: 7/14/2016 18:13:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-07

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	-.00006	.00586	-.00048	-.00105	.00091	.00029
Stddev	.00037	.00030	.00193	.00208	.00029	.00007	.00004
%RSD	41.022	537.12	32.852	431.90	27.420	7.3703	13.578
#1	.00127	.00029	.00808	.00166	-.00130	.00096	.00030
#2	.00092	-.00020	.00496	-.00250	-.00111	.00094	.00025
#3	.00052	-.00025	.00455	-.00060	-.00074	.00084	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10258.	61416.	2717.9
Stddev	12.	59.	20.6
%RSD	.11587	.09588	.75849
#1	10258.	61470.	2741.7
#2	10246.	61353.	2707.0
#3	10270.	61423.	2705.1

Approved: July 16, 2016

Sample Name: LCSW AI Acquired: 7/14/2016 18:17:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19104**	**4.7905**	**.19568**	**.95041**	**.49866**	**.02300**	**5.0434**	**.02438**
Stddev	.00176	.0180	.00354	.00074	.00411	.00006	.0973	.00048
%RSD	.92174	.37537	1.8068	.07765	.82384	.25803	1.9292	1.9838
#1	.19162	4.8108	.19976	.95010	.50181	.02302	5.0832	.02443
#2	.18906	4.7766	.19386	.94989	.49401	.02305	4.9325	.02484
#3	.19243	4.7840	.19343	.95126	.50016	.02294	5.1145	.02388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09864**	**.23858**	**.24807**	**1.9994**	**24.569**	**.50440**	**4.9501**	**.24818**
Stddev	.00244	.00170	.00607	.0185	.319	.00217	.1531	.00408
%RSD	2.4704	.71445	2.4456	.92748	1.2993	.42994	3.0923	1.6422
#1	.10075	.23745	.25283	2.0209	24.833	.50297	4.9356	.25137
#2	.09919	.24054	.25013	1.9891	24.214	.50333	4.8048	.24358
#3	.09597	.23775	.24124	1.9883	24.659	.50689	5.1099	.24957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49892**	**24.891**	**.24838**	**4.7838**	**.24775**	**.59079**	**.18434**	**2.4501**
Stddev	.01134	.205	.00521	.0926	.00122	.01390	.00456	.0393
%RSD	2.2727	.82397	2.0958	1.9362	.49379	2.3526	2.4731	1.6031
#1	.50776	25.076	.25257	4.8577	.24858	.60075	.18939	2.4864
#2	.50286	24.671	.25001	4.8139	.24634	.59671	.18052	2.4555
#3	.48614	24.927	.24255	4.6799	.24832	.57491	.18311	2.4084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW Al Acquired: 7/14/2016 18:17:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49215	.50929	.50906	.24622	.47603	.48824	.00095
Stddev	.01389	.00372	.00514	.00227	.00100	.01112	.00019
%RSD	2.8220	.73007	1.0099	.92293	.20963	2.2776	19.999
#1	.50251	.51043	.51234	.24794	.47669	.49690	.00106
#2	.49758	.50513	.51170	.24708	.47652	.49211	.00073
#3	.47637	.51230	.50313	.24365	.47488	.47570	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10206.	60624.	2723.1
Stddev	36.	334.	13.2
%RSD	.35397	.55113	.48528
#1	10166.	60243.	2708.8
#2	10218.	60864.	2735.0
#3	10235.	60765.	2725.5

Approved: July 16, 2016

Sample Name: L1607022707 Acquired: 7/14/2016 18:20:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00085**	**.44765**	**-.00129**	**.00652**	**.02687**	**.00011**	**.49583**	**.00043**
Stddev	.00072	.01207	.00127	.00179	.00100	.00013	.02126	.00005
%RSD	85.434	2.6964	98.360	27.514	3.7109	111.96	4.2872	11.849
#1	-.00080	.45020	-.00009	.00680	.02736	.00020	.50379	.00044
#2	-.00159	.45825	-.00117	.00816	.02752	.00017	.51196	.00048
#3	-.00015	.43451	-.00261	.00460	.02572	-.00003	.47174	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**.00305**	**.00172**	**1.0939**	**.66243**	**.00575**	**.46543**	**.03027**
Stddev	.00030	.00112	.00051	.0179	.05846	.00200	.02786	.00030
%RSD	69.259	36.675	29.760	1.6398	8.8257	34.837	5.9860	.98112
#1	.00023	.00176	.00227	1.1093	.60799	.00635	.49539	.03055
#2	.00029	.00367	.00162	1.0984	.72422	.00739	.46061	.03031
#3	.00077	.00372	.00126	1.0742	.65507	.00352	.44030	.02996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**1.5449**	**.00146**	**.02068**	**-.00097**	**.00084**	**-.00605**	**3.3514**
Stddev	.00013	.0185	.00107	.00100	.00276	.00035	.00263	.2686
%RSD	206.18	1.1996	72.933	4.8507	283.85	41.515	43.406	8.0141
#1	-.00013	1.5620	.00242	.01953	-.00410	.00073	-.00302	3.5112
#2	.00008	1.5475	.00166	.02110	.00113	.00056	-.00747	3.5016
#3	-.00014	1.5252	.00031	.02140	.00005	.00123	-.00767	3.0413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607022707 Acquired: 7/14/2016 18:20:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.00537	.00269	.00188	-.00004	.00941	.00032
Stddev	.00069	.00003	.00161	.00073	.00054	.00087	.00022
%RSD	98.810	.52929	59.716	38.591	1212.3	9.2160	69.222
#1	.00088	.00534	.00455	.00154	-.00037	.00989	.00057
#2	.00126	.00539	.00170	.00271	.00058	.00994	.00019
#3	-.00007	.00539	.00183	.00139	-.00034	.00841	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10310.	61629.	2755.3
Stddev	28.	99.	9.0
%RSD	.27254	.16018	.32655
#1	10339.	61626.	2763.1
#2	10308.	61531.	2757.4
#3	10282.	61729.	2745.4

Approved: July 16, 2016

Sample Name: L1607022708S Acquired: 7/14/2016 18:24:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19550	5.6775	.19759	.95807	.53028	.02352	5.5452	.02480
Stddev	.00247	.0128	.00267	.00214	.00310	.00005	.0535	.00051
%RSD	1.2653	.22490	1.3535	.22297	.58483	.21530	.96417	2.0560
#1	.19287	5.6898	.19612	.95617	.53385	.02358	5.5776	.02526
#2	.19778	5.6643	.20067	.96039	.52831	.02348	5.4835	.02487
#3	.19584	5.6782	.19596	.95766	.52868	.02351	5.5745	.02425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10096	.24869	.25251	3.7351	25.213	.50997	5.4910	.29661
Stddev	.00248	.00054	.00601	.0203	.058	.00053	.0552	.00594
%RSD	2.4583	.21556	2.3818	.54270	.23011	.10314	1.0054	2.0032
#1	.10272	.24853	.25686	3.7148	25.279	.51004	5.5382	.30330
#2	.10205	.24825	.25501	3.7553	25.168	.51046	5.4303	.29194
#3	.09812	.24928	.24564	3.7351	25.193	.50942	5.5044	.29458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50600	26.600	.25456	4.8437	.24996	.59212	.18796	6.4818
Stddev	.01147	.115	.00592	.0868	.00654	.01404	.00372	.0986
%RSD	2.2666	.43283	2.3248	1.7915	2.6156	2.3705	1.9795	1.5211
#1	.51270	26.719	.25837	4.9007	.25677	.59936	.18900	6.5415
#2	.51253	26.489	.25758	4.8865	.24938	.60106	.19105	6.5359
#3	.49275	26.593	.24775	4.7438	.24373	.57594	.18383	6.3680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607022708S Acquired: 7/14/2016 18:24:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50104	.51889	.51211	.24722	.48519	.50869	.00149
Stddev	.01237	.00285	.00240	.00365	.00079	.01116	.00020
%RSD	2.4680	.55000	.46875	1.4783	.16216	2.1940	13.531
#1	.50851	.51856	.51363	.24768	.48556	.51566	.00133
#2	.50784	.51622	.51336	.25062	.48429	.51459	.00172
#3	.48677	.52190	.50934	.24335	.48573	.49582	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10113.	59854.	2703.6
Stddev	37.	73.	13.6
%RSD	.36251	.12212	.50210
#1	10078.	59790.	2688.2
#2	10111.	59838.	2713.9
#3	10151.	59933.	2708.8

Approved: July 16, 2016

Sample Name: L1607022709SD Acquired: 7/14/2016 18:28:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-10

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19031	5.5331	.19557	.94235	.51893	.02317	5.5136	.02447
Stddev	.00148	.0093	.00257	.00232	.00095	.00012	.0307	.00068
%RSD	.78030	.16840	1.3157	.24575	.18360	.53767	.55655	2.7921
#1	.18871	5.5267	.19686	.94107	.52003	.02307	5.5482	.02519
#2	.19164	5.5438	.19724	.94502	.51831	.02331	5.5029	.02438
#3	.19059	5.5288	.19261	.94095	.51845	.02314	5.4897	.02383
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09957	.24355	.24984	3.5313	24.841	.50022	5.3178	.28791
Stddev	.00223	.00097	.00549	.0119	.075	.00298	.0282	.00230
%RSD	2.2443	.39636	2.1976	.33715	.30359	.59648	.52947	.79975
#1	.10114	.24244	.25178	3.5449	24.766	.49854	5.3266	.28832
#2	.10057	.24422	.25409	3.5227	24.840	.49846	5.2863	.28543
#3	.09701	.24398	.24364	3.5264	24.917	.50367	5.3405	.28998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50008	26.068	.25175	4.7751	.24921	.58750	.18800	6.2927
Stddev	.00975	.059	.00651	.0681	.00363	.01283	.00574	.0823
%RSD	1.9500	.22512	2.5846	1.4258	1.4556	2.1832	3.0532	1.3070
#1	.50704	26.133	.25537	4.8219	.25014	.59571	.18845	6.3510
#2	.50427	26.052	.25565	4.8065	.25228	.59406	.19351	6.3284
#3	.48893	26.019	.24424	4.6970	.24521	.57272	.18205	6.1986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607022709SD Acquired: 7/14/2016 18:28:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-10

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49520	.50999	.50488	.24556	.47605	.50046	.00118
Stddev	.01218	.00125	.00775	.00389	.00016	.00984	.00059
%RSD	2.4588	.24599	1.5355	1.5858	.03330	1.9654	49.846
#1	.50303	.50956	.51259	.25005	.47623	.50613	.00051
#2	.50140	.50900	.49708	.24332	.47593	.50614	.00143
#3	.48117	.51140	.50497	.24331	.47599	.48910	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10100.	60050.	2699.3
Stddev	24.	19.	11.1
%RSD	.23650	.03132	.41284
#1	10073.	60070.	2694.1
#2	10119.	60034.	2712.1
#3	10109.	60044.	2691.7

Approved: July 16, 2016

Sample Name: L1607018402 Acquired: 7/14/2016 18:32:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00096	.02362	.00255	.03532	.19901	.00005	24.251
Stddev	.00099	.00866	.00098	.00289	.00346	.00005	.545
%RSD	103.09	36.651	38.471	8.1931	1.7390	96.051	2.2476
#1	-.00209	.01647	.00328	.03719	.19555	.00004	23.635
#2	-.00049	.02113	.00292	.03678	.19900	.00010	24.450
#3	-.00029	.03324	.00143	.03199	.20248	.00000	24.669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00277	.00380	.00127	.17941	.87256	.02255
Stddev	.00004	.00016	.00055	.00046	.00783	.05192	.00184
%RSD	11.603	5.9067	14.405	36.320	4.3634	5.9503	8.1737
#1	.00039	.00259	.00438	.00181	.17047	.84183	.02204
#2	.00036	.00283	.00370	.00103	.18507	.93251	.02459
#3	.00031	.00290	.00330	.00098	.18267	.84334	.02101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.002	.03185	.00082	F 360.94	.00612	1.5220	.00103
Stddev	.463	.00078	.00011	7.30	.00015	.0566	.00409
%RSD	1.2514	2.4476	13.777	2.0230	2.4941	3.7173	397.71
#1	36.573	.03105	.00082	352.63	.00601	1.5557	.00218
#2	36.941	.03191	.00093	363.85	.00605	1.5536	.00442
#3	37.493	.03261	.00070	366.33	.00629	1.4567	-.00352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607018402 Acquired: 7/14/2016 18:32:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**-.00133**	**14.872**	**-.00050**	**.47650**	**-.00531**	**-.00047**
Stddev	.00505	.00221	.487	.00041	.01088	.00634	.00130
%RSD	3357.9	165.92	3.2745	83.489	2.2841	119.38	279.32
#1	.00469	.00117	15.167	-.00097	.46420	-.01155	.00062
#2	-.00528	-.00214	15.139	-.00018	.48042	.00112	-.00191
#3	.00105	-.00301	14.310	-.00034	.48488	-.00549	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00063**	**.02239**	**.00003**
Stddev	.00029	.00102	.00024
%RSD	45.422	4.5751	876.89
#1	-.00090	.02303	-.00025
#2	-.00066	.02293	.00014
#3	-.00033	.02121	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9678.5**	**56910.**	**2587.2**
Stddev	11.7	54.	107.7
%RSD	.12109	.09453	4.1621
#1	9676.3	56972.	2462.9
#2	9691.2	56882.	2648.5
#3	9668.0	56875.	2650.2

Approved: July 16, 2016

Sample Name: L1607018402PS Acquired: 7/14/2016 18:35:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576077-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19966**	**5.1303**	**.21107**	**1.0392**	**.70423**	**.02484**	**27.658**
Stddev	.00103	.0270	.00116	.0068	.00037	.00013	.071
%RSD	.51770	.52706	.55086	.65250	.05199	.50579	.25640
#1	.20052	5.1609	.21112	1.0468	.70428	.02499	27.583
#2	.19851	5.1205	.21221	1.0338	.70456	.02476	27.724
#3	.19994	5.1095	.20988	1.0369	.70384	.02478	27.667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02544**	**.10331**	**.25359**	**.25401**	**2.2078**	**27.041**	**.54992**
Stddev	.00042	.00154	.00170	.00434	.0127	.142	.00036
%RSD	1.6586	1.4913	.67171	1.7082	.57425	.52529	.06534
#1	.02559	.10430	.25555	.25535	2.2083	27.201	.54998
#2	.02577	.10409	.25271	.25753	2.1949	26.992	.55025
#3	.02497	.10154	.25250	.24916	2.2202	26.930	.54953
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**39.054**	**.28985**	**.52264**	F **357.98**	**.25769**	**6.5377**	**.25096**
Stddev	.110	.00189	.00940	.85	.00425	.0792	.00291
%RSD	.28249	.65218	1.7983	.23622	1.6483	1.2113	1.1605
#1	39.058	.29203	.52827	358.46	.26050	6.5869	.25431
#2	39.162	.28867	.52785	358.47	.25977	6.5799	.24959
#3	38.942	.28884	.51179	357.00	.25281	6.4464	.24899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607018402PS Acquired: 7/14/2016 18:35:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576077-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.61751	.19988	16.125	.51681	.94395	.52659	.24609
Stddev	.01270	.00327	.190	.01133	.00264	.00971	.00234
%RSD	2.0563	1.6344	1.1808	2.1917	.27969	1.8446	.94944
#1	.62911	.20140	16.255	.52368	.94544	.53340	.24874
#2	.61946	.20211	16.213	.52302	.94550	.53090	.24435
#3	.60394	.19613	15.906	.50374	.94090	.51547	.24516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50633	.52597	.00131
Stddev	.00231	.00878	.00047
%RSD	.45531	1.6697	36.282
#1	.50899	.53105	.00076
#2	.50511	.53102	.00155
#3	.50489	.51583	.00162
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9652.2	56294.	2604.4
Stddev	17.8	154.	10.5
%RSD	.18482	.27426	.40136
#1	9632.2	56116.	2604.2
#2	9657.7	56399.	2594.0
#3	9666.6	56365.	2614.9

Approved: July 16, 2016

Sample Name: L1607018402SDL Acquired: 7/14/2016 18:39:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576077-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00715	-.00194	.01023	.04028	.00010	5.0005	.00002
Stddev	.00075	.00272	.00278	.00286	.00134	.00008	.0564	.00022
%RSD	257.81	38.019	142.88	27.968	3.3287	82.933	1.1280	1208.1
#1	-.00078	.00590	.00096	.01160	.04114	.00000	4.9626	-.00011
#2	.00057	.00528	-.00222	.00694	.03873	.00014	4.9735	.00027
#3	-.00066	.01026	-.00457	.01215	.04097	.00014	5.0653	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00087	.00079	.03530	.13346	.00710	7.7658	.00338
Stddev	.00031	.00074	.00022	.02061	.07975	.00570	.1819	.00027
%RSD	101.35	84.995	28.131	58.380	59.755	80.277	2.3426	8.0358
#1	.00060	.00170	.00094	.05085	.13427	.00426	7.5591	.00352
#2	.00034	.00030	.00053	.04313	.21280	.00338	7.8367	.00306
#3	-.00002	.00061	.00088	.01192	.05331	.01367	7.9016	.00354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	74.357	.00048	.30477	-.00365	.00135	-.00429	2.9898
Stddev	.00023	.284	.00134	.02615	.00065	.00092	.00419	.2514
%RSD	2134.0	.38197	278.93	8.5797	17.813	68.086	97.800	8.4087
#1	-.00027	74.136	.00161	.31554	-.00334	.00061	.00048	3.1349
#2	.00017	74.258	-.00100	.32381	-.00321	.00238	-.00739	3.1349
#3	.00007	74.677	.00082	.27496	-.00439	.00105	-.00594	2.6995
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607018402SDL Acquired: 7/14/2016 18:39:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576077-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.09696**	**.00086**	**-.00074**	**-.00046**	**.00502**	**.00042**
Stddev	.00017	.00107	.00140	.00310	.00014	.00067	.00005
%RSD	140.36	1.0986	163.38	419.92	30.741	13.361	11.144
#1	-.00025	.09575	.00117	-.00029	-.00030	.00535	.00045
#2	-.00018	.09740	-.00067	-.00404	-.00051	.00546	.00043
#3	.00007	.09774	.00207	.00211	-.00057	.00424	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10094.**	**59213.**	**2652.8**
Stddev	33.	128.	10.1
%RSD	.32887	.21662	.38137
#1	10059.	59337.	2641.8
#2	10098.	59081.	2661.7
#3	10125.	59221.	2654.8

Approved: July 16, 2016

Sample Name: L1607018402SDL Acquired: 7/14/2016 18:43:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576077-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00140**	**.00543**	**.00160**	**.00313**	**.00649**	**.00003**	**.94357**	**.00015**
Stddev	.00009	.00303	.00227	.00210	.00074	.00005	.05096	.00021
%RSD	6.5955	55.716	141.55	66.973	11.372	200.58	5.4009	145.05
#1	-.00149	.00340	.00188	.00233	.00703	.00006	.91001	-.00010
#2	-.00140	.00398	-.00079	.00156	.00565	-.00004	1.0022	.00023
#3	-.00131	.00891	.00372	.00552	.00680	.00006	.91850	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00003**	**-.00096**	**.00824**	**.02174**	**.00561**	**1.5096**	**-.00106**
Stddev	.00028	.00100	.00100	.02391	.04821	.00145	.0163	.00168
%RSD	147.11	3663.4	103.80	290.09	221.75	25.749	1.0825	158.93
#1	-.00002	-.00106	-.00211	.02676	.07372	.00614	1.5270	.00041
#2	.00051	.00093	-.00028	.01671	.01303	.00398	1.5072	-.00069
#3	.00009	.00005	-.00049	-.01875	-.02152	.00672	1.4946	-.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**14.665**	**-.00012**	**.05905**	**-.00143**	**.00092**	**-.00253**	**.57889**
Stddev	.00017	.120	.00046	.00472	.00244	.00347	.00611	.04408
%RSD	343.68	.81508	394.89	7.9847	170.66	377.63	241.97	7.6140
#1	-.00024	14.553	.00031	.06372	-.00143	-.00031	-.00223	.60370
#2	-.00001	14.653	-.00060	.05914	-.00387	-.00177	-.00879	.60497
#3	.00010	14.791	-.00005	.05429	.00101	.00483	.00343	.52800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607018402SDL Acquired: 7/14/2016 18:43:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576077-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.01896	.00412	.00188	-.00064	.00136	.00011
Stddev	.00066	.00030	.00868	.00401	.00066	.00014	.00041
%RSD	336.82	1.5563	210.77	214.04	103.73	10.271	381.79
#1	.00006	.01863	.01370	.00326	-.00134	.00138	.00017
#2	-.00039	.01918	-.00321	-.00265	-.00056	.00149	.00049
#3	.00091	.01907	.00187	.00501	-.00002	.00122	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10529.	62154.	2747.0
Stddev	53.	186.	14.9
%RSD	.49874	.29862	.54105
#1	10578.	62228.	2754.9
#2	10534.	62290.	2756.3
#3	10474.	61942.	2729.9

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 18:47:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41638	10.254	.41978	.51594	1.0385	.05069	10.349	.05213
Stddev	.00126	.022	.00768	.00251	.0085	.00028	.105	.00103
%RSD	.30159	.21084	1.8283	.48644	.81834	.55861	1.0116	1.9802
#1	.41668	10.268	.42604	.51793	1.0463	.05092	10.374	.05297
#2	.41745	10.265	.42210	.51312	1.0294	.05077	10.234	.05245
#3	.41500	10.229	.41122	.51676	1.0400	.05037	10.439	.05098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20949	.50819	.51993	4.1519	52.009	1.0219	10.281	.52578
Stddev	.00439	.00215	.00982	.0075	.375	.0034	.074	.00569
%RSD	2.0955	.42317	1.8889	.18001	.72159	.33698	.72375	1.0813
#1	.21271	.51067	.52603	4.1560	52.282	1.0222	10.363	.53229
#2	.21128	.50680	.52516	4.1565	51.581	1.0183	10.217	.52326
#3	.20449	.50710	.50860	4.1433	52.163	1.0251	10.264	.52179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0346	51.849	.51838	10.436	.51803	1.2533	.41942	5.1018
Stddev	.0236	.297	.01336	.190	.00759	.0263	.00928	.1121
%RSD	2.2840	.57216	2.5763	1.8175	1.4643	2.1011	2.2132	2.1966
#1	1.0500	52.103	.52725	10.558	.52082	1.2709	.42296	5.1667
#2	1.0463	51.523	.52487	10.533	.52382	1.2660	.42641	5.1662
#3	1.0074	51.920	.50302	10.218	.50945	1.2230	.40889	4.9724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 18:47:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0427**	**1.0416**	**1.0509**	**.52049**	**1.0117**	**1.0311**	**1.0331**
Stddev	.0278	.0070	.0106	.00098	.0040	.0216	.0077
%RSD	2.6644	.67006	1.0035	.18830	.39046	2.0897	.74777
#1	1.0595	1.0470	1.0594	.52161	1.0151	1.0452	1.0407
#2	1.0579	1.0337	1.0391	.52008	1.0126	1.0418	1.0253
#3	1.0106	1.0440	1.0542	.51979	1.0073	1.0063	1.0334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9841.2**	**57511.**	**2600.8**
Stddev	16.9	190.	11.7
%RSD	.17141	.33075	.44824
#1	9829.6	57365.	2588.5
#2	9860.6	57441.	2611.7
#3	9833.5	57726.	2602.1

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 18:50:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00167	.00676	-.00195	.00644	.00004	.00009	.00370	.00022
Stddev	.00139	.00289	.00161	.00164	.00084	.00004	.00683	.00024
%RSD	83.555	42.711	82.319	25.488	2374.5	44.218	184.55	108.45
#1	-.00029	.00343	-.00200	.00820	-.00028	.00006	.00688	-.00002
#2	-.00164	.00826	-.00032	.00615	-.00060	.00014	.00836	.00023
#3	-.00307	.00860	-.00353	.00496	.00098	.00008	-.00414	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.00036	-.00018	.01095	.01489	.00303	-.01140	-.00260
Stddev	.00043	.00056	.00066	.00899	.06241	.00247	.02510	.00232
%RSD	359.60	156.11	361.18	82.112	419.23	81.535	220.23	89.258
#1	-.00055	-.00029	-.00070	.01645	.06255	.00050	-.01686	-.00478
#2	.00032	.00067	.00056	.01581	-.05575	.00544	-.03332	-.00284
#3	-.00014	.00070	-.00040	.00057	.03787	.00315	.01599	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.07094	-.00117	-.00036	-.00305	.00141	-.00064	.00259
Stddev	.00014	.01016	.00068	.00480	.00368	.00420	.00347	.00230
%RSD	383.44	14.327	57.747	1316.6	120.71	296.66	542.77	88.843
#1	.00007	.06763	-.00048	-.00584	-.00234	-.00306	-.00406	.00307
#2	-.00012	.06285	-.00120	.00311	.00022	.00526	.00288	.00462
#3	.00016	.08235	-.00183	.00164	-.00704	.00204	-.00073	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 18:50:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	-.00003	-.00039	.00070	-.00021	-.00002	-.00018
Stddev	.00044	.00025	.00097	.00147	.00031	.00016	.00044
%RSD	58.080	923.19	247.76	210.95	146.50	830.62	242.17
#1	.00031	-.00031	.00048	.00237	.00010	-.00020	-.00030
#2	.00078	.00016	-.00022	-.00040	-.00022	.00006	.00031
#3	.00120	.00007	-.00144	.00013	-.00053	.00008	-.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9960.5	59240.	2614.8
Stddev	32.3	55.	20.4
%RSD	.32467	.09206	.78153
#1	9962.2	59210.	2592.4
#2	9992.0	59207.	2619.6
#3	9927.4	59303.	2632.3

Approved: July 16, 2016

Sample Name: L1607020901 Acquired: 7/14/2016 18:54:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.01289	-.00008	.01132	-.00011	.00006	15.887	.00010
Stddev	.00061	.00507	.00419	.00134	.00112	.00005	.038	.00016
%RSD	75.574	39.360	5498.5	11.870	1050.0	89.763	.23710	170.78
#1	-.00121	.01489	-.00478	.01104	-.00135	-.00000	15.907	-.00009
#2	-.00010	.01665	.00327	.01013	.00082	.00010	15.844	.00022
#3	-.00111	.00712	.00128	.01277	.00021	.00008	15.911	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00143	.00062	.06158	.27050	.00535	4.9301	-.00063
Stddev	.00015	.00030	.00045	.01176	.04396	.00311	.0764	.00327
%RSD	197.54	20.643	73.127	19.097	16.251	58.162	1.5486	521.04
#1	.00020	.00135	.00016	.07304	.22058	.00479	4.9545	.00309
#2	.00011	.00175	.00106	.04954	.28751	.00256	4.9912	-.00191
#3	-.00009	.00118	.00064	.06216	.30342	.00871	4.8445	-.00306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	5.1049	-.00085	.00824	-.00229	.00118	-.00350	2.6733
Stddev	.00016	.0091	.00068	.00438	.00177	.00214	.00437	.1843
%RSD	109.72	.17875	80.610	53.127	77.156	181.34	124.95	6.8934
#1	.00026	5.1147	-.00027	.00590	-.00092	.00338	-.00088	2.7755
#2	-.00004	5.0966	-.00160	.00553	-.00166	.00104	-.00854	2.7839
#3	.00021	5.1035	-.00067	.01330	-.00429	-.00089	-.00107	2.4606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020901 Acquired: 7/14/2016 18:54:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.02291	.00516	.00000	-.00052	.00227	.00035
Stddev	.00018	.00027	.00416	.00340	.00031	.00038	.00014
%RSD	311.43	1.1637	80.747	157240.	59.424	16.598	39.621
#1	.00016	.02284	.00878	.00348	-.00076	.00243	.00025
#2	-.00015	.02268	.00061	-.00331	-.00017	.00254	.00051
#3	.00017	.02320	.00608	-.00016	-.00064	.00184	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10038.	59832.	2662.8
Stddev	31.	235.	16.0
%RSD	.30642	.39356	.60015
#1	10063.	59590.	2668.9
#2	10047.	60060.	2674.7
#3	10004.	59845.	2644.6

Approved: July 16, 2016

Sample Name: L1607020902 Acquired: 7/14/2016 18:58:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.01216	-.00047	.02119	.02820	.00007	32.607	.00042
Stddev	.00051	.00651	.00111	.00148	.00099	.00005	.301	.00020
%RSD	73.537	53.536	237.35	6.9864	3.5267	78.355	.92439	47.888
#1	-.00123	.01832	.00061	.01970	.02932	.00006	32.779	.00063
#2	-.00064	.01280	-.00041	.02266	.02743	.00012	32.783	.00023
#3	-.00021	.00535	-.00161	.02122	.02784	.00002	32.259	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00103	.00213	.66892	.63359	.00932	12.097	.01620
Stddev	.00039	.00050	.00044	.00711	.11312	.00262	.246	.00021
%RSD	111.14	48.651	20.526	1.0622	17.855	28.065	2.0350	1.3010
#1	-.00003	.00052	.00257	.67088	.62142	.01219	12.370	.01634
#2	.00034	.00152	.00214	.67484	.52704	.00708	12.029	.01596
#3	.00075	.00106	.00169	.66104	.75230	.00868	11.892	.01629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	3.4436	-.00055	.01043	-.00360	.00025	-.00266	2.5148
Stddev	.00033	.0220	.00126	.00180	.00441	.00400	.00255	.1435
%RSD	219.40	.63881	229.90	17.243	122.33	1603.0	95.659	5.7075
#1	-.00020	3.4689	-.00080	.01205	-.00066	.00401	-.00383	2.5930
#2	.00021	3.4329	-.00167	.01073	-.00148	.00070	-.00443	2.6023
#3	.00045	3.4291	.00082	.00849	-.00867	-.00396	.00026	2.3492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020902 Acquired: 7/14/2016 18:58:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.08855	-.00634	.00318	-.00030	.00627	.00018
Stddev	.00023	.00068	.00566	.00128	.00034	.00057	.00065
%RSD	326.84	.76311	89.215	40.278	116.08	9.0130	359.84
#1	-.00015	.08832	-.00776	.00445	-.00045	.00665	.00049
#2	.00031	.08931	-.01116	.00320	-.00053	.00655	-.00056
#3	.00005	.08801	-.00011	.00189	.00010	.00562	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10036.	59631.	2653.9
Stddev	11.	142.	24.0
%RSD	.10510	.23880	.90462
#1	10047.	59476.	2646.1
#2	10033.	59757.	2634.8
#3	10027.	59660.	2680.9

Approved: July 16, 2016

Sample Name: L1607020903 Acquired: 7/14/2016 19:02:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	.00794	-.00310	.00634	.00944	.00007	5.9632	.00040
Stddev	.00187	.00442	.00091	.00237	.00090	.00006	.0182	.00023
%RSD	369.92	55.671	29.413	37.368	9.5825	81.526	.30477	58.908
#1	-.00249	.01084	-.00258	.00785	.01026	.00002	5.9449	.00020
#2	-.00024	.01014	-.00415	.00361	.00959	.00013	5.9636	.00065
#3	.00122	.00285	-.00256	.00757	.00847	.00005	5.9813	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	-.00009	-.00035	.73554	.16610	.00403	2.3587	.01060
Stddev	.00012	.00075	.00041	.04316	.06942	.00142	.0945	.00064
%RSD	32.323	861.48	118.18	5.8675	41.791	35.205	4.0076	6.0197
#1	-.00040	-.00083	-.00078	.75831	.24378	.00437	2.4670	.01108
#2	-.00023	.00067	-.00029	.76255	.14438	.00525	2.2932	.00987
#3	-.00045	-.00010	.00003	.68577	.11014	.00247	2.3157	.01084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	1.4958	-.00063	.05359	-.00279	-.00031	-.00595	2.7102
Stddev	.00047	.0351	.00028	.00738	.00305	.00390	.00297	.1656
%RSD	396.92	2.3487	44.565	13.764	109.39	1252.1	49.837	6.1117
#1	.00048	1.4996	-.00093	.05673	-.00238	.00247	-.00581	2.8017
#2	-.00041	1.5288	-.00039	.05888	.00004	.00136	-.00899	2.8100
#3	.00029	1.4589	-.00056	.04517	-.00602	-.00477	-.00306	2.5190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020903 Acquired: 7/14/2016 19:02:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.01420	.00691	-.00133	-.00035	.06076	.00024
Stddev	.00093	.00041	.00626	.00159	.00062	.00483	.00043
%RSD	728.33	2.9028	90.536	119.77	177.64	7.9438	180.72
#1	.00111	.01462	.01381	-.00053	.00030	.06370	.00060
#2	-.00000	.01380	.00162	-.00317	-.00041	.06339	-.00024
#3	-.00073	.01416	.00530	-.00030	-.00093	.05519	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10088.	59706.	2640.5
Stddev	26.	142.	24.3
%RSD	.25598	.23773	.92108
#1	10109.	59792.	2625.9
#2	10095.	59542.	2627.1
#3	10059.	59784.	2668.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 19:06:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41635	10.260	.41810	.51243	1.0390	.05072	10.353	.05196
Stddev	.00315	.007	.00346	.00142	.0062	.00003	.076	.00104
%RSD	.75659	.07078	.82749	.27758	.59143	.06326	.73188	2.0087
#1	.41876	10.259	.42167	.51227	1.0335	.05068	10.323	.05267
#2	.41751	10.253	.41787	.51392	1.0457	.05073	10.439	.05246
#3	.41279	10.268	.41476	.51109	1.0379	.05074	10.297	.05076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20944	.50920	.52058	4.1813	52.115	1.0251	10.452	.52381
Stddev	.00455	.00086	.01219	.0095	.238	.0021	.023	.00252
%RSD	2.1704	.16959	2.3412	.22607	.45764	.19971	.21735	.48180
#1	.21227	.50910	.52808	4.1824	51.965	1.0251	10.432	.52672
#2	.21185	.51011	.52713	4.1901	52.390	1.0272	10.477	.52253
#3	.20419	.50839	.50651	4.1713	51.990	1.0231	10.448	.52220
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0325	51.919	.51533	10.370	.51802	1.2377	.41236	5.0236
Stddev	.0226	.085	.01059	.182	.00315	.0175	.00144	.0391
%RSD	2.1849	.16307	2.0554	1.7534	.60801	1.4170	.34925	.77846
#1	1.0461	51.902	.52228	10.484	.52054	1.2477	.41312	5.0518
#2	1.0450	52.012	.52057	10.466	.51904	1.2480	.41327	5.0400
#3	1.0065	51.845	.50314	10.160	.51449	1.2175	.41070	4.9789
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 19:06:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0418**	**1.0442**	**1.0543**	**.51930**	**1.0144**	**1.0280**	**1.0441**
Stddev	.0286	.0027	.0078	.00139	.0008	.0225	.0049
%RSD	2.7497	.26209	.73977	.26693	.08225	2.1915	.46761
#1	1.0571	1.0437	1.0579	.52087	1.0137	1.0429	1.0428
#2	1.0595	1.0472	1.0597	.51825	1.0141	1.0389	1.0495
#3	1.0087	1.0418	1.0454	.51878	1.0153	1.0020	1.0399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9858.6**	**57806.**	**2584.0**
Stddev	11.9	62.	9.2
%RSD	.12063	.10774	.35782
#1	9845.5	57819.	2585.6
#2	9861.5	57862.	2574.0
#3	9868.7	57739.	2592.3

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 19:10:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00153**	**.00382**	**-.00077**	**.00388**	**-.00025**	**.00005**	**-.03073**	**.00023**
Stddev	.00025	.00359	.00182	.00062	.00062	.00006	.03644	.00016
%RSD	16.568	93.829	235.39	15.935	243.77	120.20	118.59	67.680
#1	-.00155	.00791	.00028	.00317	.00033	.00009	.01034	.00028
#2	-.00127	.00120	.00028	.00424	-.00089	-.00002	-.04334	.00006
#3	-.00178	.00236	-.00288	.00424	-.00020	.00008	-.05918	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00038**	**.00071**	**-.00714**	**.02700**	**.00282**	**-.06020**	**-.00177**
Stddev	.00032	.00074	.00095	.03283	.11873	.00083	.07532	.00126
%RSD	118.86	192.13	135.03	459.75	439.76	29.490	125.12	71.634
#1	-.00002	-.00041	.00179	.02898	.03190	.00235	-.14715	-.00052
#2	.00022	.00106	.00002	-.01523	.14321	.00233	-.01791	-.00173
#3	.00061	.00050	.00030	-.03517	-.09411	.00378	-.01553	-.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.03302**	**-.00115**	**.00236**	**-.00206**	**.00141**	**-.00562**	**.00232**
Stddev	.00019	.02288	.00052	.00332	.00348	.00122	.00284	.00258
%RSD	123.92	69.297	45.014	140.86	169.24	86.799	50.599	111.09
#1	-.00003	.00727	-.00151	-.00099	.00155	.00170	-.00888	.00507
#2	-.00037	.05101	-.00139	.00564	-.00232	.00246	-.00432	-.00005
#3	-.00006	.04078	-.00056	.00242	-.00540	.00007	-.00366	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 19:10:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00000	.00613	.00326	-.00044	-.00005	.00002
Stddev	.00045	.00045	.01114	.00219	.00049	.00011	.00035
%RSD	105.08	10774.	181.55	67.120	110.69	208.77	2220.7
#1	.00044	-.00049	-.00230	.00289	-.00045	-.00016	-.00000
#2	.00087	.00040	.01876	.00128	-.00092	-.00006	-.00033
#3	-.00003	.00010	.00195	.00561	.00005	.00006	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9953.5	58945.	2595.6
Stddev	51.4	240.	18.6
%RSD	.51641	.40739	.71674
#1	9979.0	58693.	2577.4
#2	9987.1	59171.	2614.6
#3	9894.3	58971.	2594.9

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 19:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00800	.17612	.00849	.08342	.00806	.00162	.33310	.00098
Stddev	.00083	.00563	.00269	.00192	.00011	.00004	.01634	.00006
%RSD	10.386	3.1972	31.669	2.3031	1.4159	2.7325	4.9057	6.2708
#1	.00883	.17242	.00564	.08135	.00794	.00157	.35074	.00097
#2	.00716	.17335	.01097	.08375	.00808	.00163	.31847	.00105
#3	.00801	.18260	.00886	.08515	.00816	.00165	.33009	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00406	.00481	.00444	.09999	.86862	.08636	.36131	.00900
Stddev	.00029	.00068	.00105	.02363	.09726	.00139	.08280	.00088
%RSD	7.2296	14.083	23.677	23.628	11.197	1.6149	22.917	9.8065
#1	.00439	.00553	.00565	.12114	.77345	.08524	.26581	.00907
#2	.00399	.00472	.00380	.10434	.86455	.08592	.40508	.00808
#3	.00381	.00418	.00386	.07449	.96784	.08793	.41304	.00984
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00755	.45754	.01546	.77270	.00756	.08063	.01474	.76140
Stddev	.00060	.00559	.00159	.06446	.00289	.00763	.00263	.05542
%RSD	7.8899	1.2226	10.315	8.3425	38.276	9.4661	17.870	7.2783
#1	.00778	.45332	.01635	.81101	.00674	.08464	.01366	.79227
#2	.00799	.46389	.01641	.80881	.01077	.08541	.01774	.79451
#3	.00687	.45542	.01362	.69827	.00516	.07182	.01282	.69742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 19:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40268	.04234	.03203	.15012	.00788	.01674	.04181
Stddev	.04075	.00054	.00561	.00954	.00065	.00162	.00047
%RSD	10.119	1.2716	17.503	6.3569	8.2625	9.6677	1.1194
#1	.42669	.04270	.03198	.15484	.00741	.01770	.04168
#2	.42572	.04261	.03766	.15638	.00862	.01766	.04142
#3	.35563	.04172	.02645	.13914	.00761	.01487	.04233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9974.4	58987.	2607.1
Stddev	23.8	75.	14.6
%RSD	.23850	.12758	.55932
#1	9976.4	59021.	2591.6
#2	9997.1	58901.	2620.5
#3	9949.6	59039.	2609.3

Approved: July 16, 2016

Sample Name: PBW 04 Acquired: 7/14/2016 19:18:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00166**	**.00137**	**-.00193**	**.00328**	**-.00020**	**.00009**	**-.04077**
Stddev	.00276	.00492	.00188	.00187	.00115	.00005	.02639
%RSD	166.27	359.86	97.386	57.002	579.40	51.469	64.718
#1	.00101	.00194	-.00400	.00470	-.00057	.00004	-.07074
#2	-.00450	-.00381	-.00145	.00396	-.00111	.00011	-.03055
#3	-.00149	.00598	-.00034	.00116	.00109	.00013	-.02103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**-.00001**	**.00063**	**.00001**	F **-.03223**	**.08562**	**.00562**
Stddev	.00016	.00016	.00071	.00052	.01993	.07847	.00408
%RSD	51.178	2504.5	112.79	7474.6	61.841	91.648	72.473
#1	.00032	.00017	.00110	-.00058	-.01849	-.00012	.00332
#2	.00047	-.00003	-.00019	.00041	-.02311	.10310	.00323
#3	.00015	-.00016	.00097	.00019	-.05509	.15387	.01033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00983**	**-.00163**	**-.00003**	**.05471**	**-.00078**	**-.00110**	**-.00143**
Stddev	.04129	.00109	.00015	.00652	.00032	.00203	.00134
%RSD	420.09	66.973	462.08	11.922	40.850	184.52	93.894
#1	.05017	-.00044	.00008	.06166	-.00113	-.00244	-.00104
#2	-.03234	-.00187	.00003	.05374	-.00051	-.00209	-.00293
#3	.01166	-.00259	-.00021	.04872	-.00069	.00123	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 16, 2016

Sample Name: PBW 04 Acquired: 7/14/2016 19:18:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00210	-.00594	.00449	.00016	.00031	-.00044	.00095
Stddev	.00128	.00566	.00073	.00102	.00031	.00559	.00199
%RSD	61.092	95.319	16.210	635.13	102.65	1270.2	210.26
#1	.00317	-.01038	.00426	.00055	.00051	-.00687	-.00106
#2	.00068	.00044	.00392	.00093	-.00006	.00226	.00292
#3	.00243	-.00789	.00531	-.00100	.00046	.00328	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00007	.00114	-.00025
Stddev	.00087	.00011	.00029
%RSD	1261.6	9.4250	115.37
#1	.00090	.00120	-.00041
#2	.00015	.00101	-.00042
#3	-.00084	.00120	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10086.	60051.	2637.9
Stddev	44.	102.	28.3
%RSD	.43237	.16937	1.0730
#1	10120.	59942.	2630.4
#2	10102.	60067.	2614.1
#3	10037.	60143.	2669.2

Approved: July 16, 2016

Sample Name: LCSW 04 Acquired: 7/14/2016 19:21:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19829	5.0217	.20442	.97799	.51468	.02449	5.1633	.02518
Stddev	.00128	.0063	.00114	.00172	.00355	.00005	.0677	.00036
%RSD	.64455	.12642	.55934	.17542	.69039	.20404	1.3103	1.4418
#1	.19812	5.0290	.20568	.97983	.51785	.02451	5.2400	.02546
#2	.19711	5.0186	.20344	.97643	.51536	.02444	5.1376	.02532
#3	.19964	5.0175	.20415	.97772	.51084	.02453	5.1122	.02477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10347	.25374	.25706	2.0871	25.342	.51890	5.3233	.25781
Stddev	.00154	.00019	.00368	.0075	.056	.00256	.0387	.00661
%RSD	1.4891	.07518	1.4334	.35789	.22288	.49344	.72726	2.5645
#1	.10469	.25352	.26022	2.0869	25.381	.52179	5.3528	.26540
#2	.10400	.25384	.25793	2.0797	25.368	.51693	5.3378	.25470
#3	.10174	.25385	.25301	2.0946	25.277	.51797	5.2795	.25333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51988	25.320	.25580	4.8866	.25260	.60154	.18929	2.5152
Stddev	.00732	.088	.00365	.0485	.00502	.00452	.00070	.0209
%RSD	1.4072	.34833	1.4259	.99343	1.9883	.75066	.37040	.83169
#1	.52523	25.421	.25868	4.9279	.25077	.60614	.19002	2.5309
#2	.52287	25.261	.25703	4.8988	.25828	.60137	.18862	2.5232
#3	.51154	25.277	.25170	4.8331	.24875	.59712	.18924	2.4914
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW 04 Acquired: 7/14/2016 19:21:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51654	.52531	.51243	.25610	.50437	.50144	.00071
Stddev	.00817	.00364	.01030	.00426	.00137	.00667	.00035
%RSD	1.5809	.69251	2.0098	1.6635	.27149	1.3303	48.964
#1	.52123	.52884	.51968	.26043	.50544	.50645	.00031
#2	.52128	.52552	.51696	.25596	.50282	.50400	.00095
#3	.50711	.52157	.50064	.25191	.50483	.49387	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9991.4	58843.	2627.3
Stddev	12.4	226.	23.4
%RSD	.12384	.38482	.88994
#1	9984.7	58590.	2600.4
#2	10006.	58913.	2642.8
#3	9983.7	59026.	2638.6

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:25:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576038-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00163**	**.00325**	**-.00014**	**.00484**	**-.00005**	**.00008**	**-.00781**	**.00012**
Stddev	.00071	.00891	.00202	.00170	.00055	.00003	.01676	.00021
%RSD	43.804	274.23	1453.0	35.151	1028.0	37.469	214.62	167.09
#1	-.00082	.01183	-.00154	.00418	-.00003	.00006	.01095	.00023
#2	-.00218	.00387	.00218	.00677	.00049	.00006	-.01307	-.00011
#3	-.00188	-.00595	-.00106	.00357	-.00062	.00011	-.02130	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00090**	**-.00012**	**.00047**	**.02151**	**.00325**	**.02516**	**-.00187**
Stddev	.00050	.00105	.00109	.04140	.07609	.00180	.06895	.00201
%RSD	685.01	117.18	892.56	8770.1	353.78	55.333	274.03	107.30
#1	.00015	.00047	-.00130	.04818	-.01279	.00389	.05670	-.00387
#2	.00052	.00013	.00083	-.02065	.10871	.00122	-.05392	.00015
#3	-.00046	.00210	.00011	-.02611	-.03140	.00464	.07269	-.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.03636**	**-.00031**	**.00220**	**-.00030**	**-.00072**	**-.00264**	**.00622**
Stddev	.00045	.00850	.00035	.00210	.00164	.00041	.00400	.00240
%RSD	630.49	23.363	112.53	95.703	556.44	57.278	151.62	38.646
#1	-.00008	.04251	-.00015	.00140	-.00083	-.00119	-.00594	.00884
#2	.00038	.03992	-.00007	.00061	-.00160	-.00050	.00181	.00573
#3	-.00051	.02667	-.00070	.00458	.00155	-.00046	-.00378	.00410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:25:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576038-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.00043	.00161	.00213	-.00081	.00205	.00009
Stddev	.00031	.00030	.00271	.00213	.00031	.00024	.00022
%RSD	39.851	70.970	168.28	99.605	38.445	11.483	256.60
#1	.00095	.00021	-.00149	.00127	-.00054	.00207	-.00011
#2	.00099	.00077	.00353	.00058	-.00115	.00228	.00004
#3	.00043	.00030	.00279	.00456	-.00073	.00181	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10184.	60070.	2643.9
Stddev	118.	42.	31.6
%RSD	1.1635	.07052	1.1945
#1	10119.	60119.	2614.0
#2	10112.	60052.	2640.8
#3	10320.	60040.	2676.9

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576038-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00112	.00875	.00007	.00575	-.00053	.00010	-.03007	-.00005
Stddev	.00165	.00781	.00356	.00125	.00071	.00002	.04818	.00017
%RSD	147.60	89.162	5107.0	21.648	134.92	25.717	160.23	344.37
#1	-.00281	.00834	-.00401	.00713	-.00128	.00011	-.00919	.00015
#2	.00049	.00116	.00170	.00471	.00014	.00007	.00415	-.00015
#3	-.00104	.01676	.00252	.00542	-.00044	.00012	-.08517	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00102	.00029	-.01442	-.02299	.00369	-.02807	-.00121
Stddev	.00034	.00059	.00085	.01043	.06879	.00263	.00995	.00171
%RSD	286.71	58.024	296.18	72.358	299.16	71.288	35.442	141.49
#1	.00041	.00101	.00063	-.00633	.01039	.00385	-.03953	-.00192
#2	-.00026	.00044	-.00068	-.01073	.02273	.00098	-.02171	-.00246
#3	.00021	.00162	.00092	-.02620	-.10210	.00623	-.02296	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	143.28	-.00120	.00339	-.00176	.00101	-.00540	.00523
Stddev	.00025	.98	.00081	.00504	.00140	.00226	.00645	.00078
%RSD	96.054	.68329	67.920	148.66	79.525	223.79	119.46	14.909
#1	-.00007	144.37	-.00056	-.00241	-.00337	.00283	-.01270	.00580
#2	-.00054	143.00	-.00211	.00668	-.00078	.00173	-.00301	.00434
#3	-.00016	142.47	-.00092	.00591	-.00115	-.00152	-.00049	.00554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576038-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	-.00001	-.00010	.00238	-.00030	.00266	.00017
Stddev	.00045	.00025	.00255	.00282	.00035	.00019	.00035
%RSD	210.63	2514.8	2474.8	118.29	115.49	7.0648	206.15
#1	.00019	-.00023	.00098	.00393	-.00053	.00279	-.00023
#2	-.00069	-.00007	.00173	-.00087	.00010	.00274	.00035
#3	-.00014	.00027	-.00302	.00410	-.00048	.00244	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9967.9	58561.	2640.4
Stddev	25.5	250.	22.3
%RSD	.25581	.42728	.84614
#1	9941.7	58284.	2615.2
#2	9992.6	58769.	2657.7
#3	9969.5	58631.	2648.3

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:33:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00113	.00784	-.00122	.00163	-.00035	.00009	.15155	.00045
Stddev	.00120	.01012	.00085	.00060	.00011	.00005	.03347	.00015
%RSD	106.17	129.13	70.196	37.088	32.191	61.114	22.084	33.070
#1	-.00202	.01952	-.00027	.00157	-.00041	.00013	.11615	.00043
#2	-.00161	.00212	-.00193	.00105	-.00043	.00003	.15584	.00031
#3	.00024	.00187	-.00146	.00225	-.00022	.00010	.18267	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00041	-.00052	-.01081	.01922	.00191	.16475	-.00076
Stddev	.00023	.00038	.00118	.03059	.01907	.00341	.06474	.00072
%RSD	190.44	94.258	227.92	283.13	99.223	178.22	39.295	94.251
#1	.00035	.00062	-.00169	.01510	.01788	.00282	.23462	-.00002
#2	.00014	.00063	.00066	-.04456	.03892	.00478	.10679	-.00145
#3	-.00012	-.00004	-.00052	-.00295	.00085	-.00186	.15283	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.14396	-.00080	-.00006	-.00176	.00031	-.00679	.00995
Stddev	.00013	.02442	.00059	.00110	.00154	.00039	.00397	.00145
%RSD	116.88	16.966	73.876	1967.9	87.171	127.65	58.466	14.538
#1	.00018	.15506	-.00037	.00077	-.00116	.00076	-.01138	.01153
#2	-.00004	.16086	-.00056	.00038	-.00062	.00004	-.00461	.00870
#3	.00020	.11596	-.00148	-.00131	-.00351	.00013	-.00439	.00961
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:33:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00109	-.00015	.00005	-.00084	.00139	-.00023
Stddev	.00021	.00028	.00675	.00197	.00042	.00038	.00049
%RSD	37.004	26.076	4478.2	3607.2	50.443	27.555	214.08
#1	.00071	.00142	-.00655	-.00071	-.00035	.00170	.00024
#2	.00069	.00094	-.00082	.00229	-.00110	.00150	-.00019
#3	.00033	.00091	.00691	-.00142	-.00107	.00096	-.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10102.	59575.	2646.2
Stddev	21.	196.	23.5
%RSD	.20935	.32837	.88696
#1	10124.	59785.	2621.3
#2	10100.	59543.	2649.3
#3	10081.	59397.	2668.0

Approved: July 16, 2016

Sample Name: L1607044901 Acquired: 7/14/2016 19:37:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00238	.14447	-.00069	.01678	.23318	.00011	1.6898	.00012
Stddev	.00224	.00714	.00138	.00275	.00115	.00009	.0068	.00008
%RSD	93.976	4.9431	198.59	16.411	.49502	78.254	.40237	67.494
#1	-.00062	.14426	-.00226	.01512	.23445	.00002	1.6948	.00016
#2	-.00490	.15172	.00033	.01526	.23290	.00019	1.6924	.00003
#3	-.00162	.13744	-.00015	.01996	.23219	.00014	1.6821	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.00346	-.00059	13.951	.12228	.00239	.16320	.21488
Stddev	.00028	.00141	.00117	.081	.05484	.00295	.10681	.00268
%RSD	24.065	40.599	197.77	.57732	44.848	123.26	65.447	1.2459
#1	.00096	.00433	.00029	14.036	.18451	-.00084	.28652	.21763
#2	.00149	.00422	-.00015	13.875	.10131	.00309	.10355	.21228
#3	.00105	.00184	-.00191	13.943	.08102	.00492	.09954	.21474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	139.53	.00209	-.00759	.00044	.00300	-.00422	.45142
Stddev	.00037	.75	.00008	.00726	.00018	.00113	.00565	.02130
%RSD	166.51	.53979	3.8763	95.694	41.637	37.732	133.96	4.7187
#1	.00019	140.39	.00211	-.00824	.00049	.00419	.00199	.46393
#2	-.00034	139.16	.00216	-.00003	.00059	.00193	-.00559	.46351
#3	-.00051	139.02	.00200	-.01451	.00023	.00289	-.00907	.42683
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044901 Acquired: 7/14/2016 19:37:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00897	.00522	.00386	.00098	.13695	-.00071
Stddev	.00005	.00028	.00669	.00127	.00112	.00909	.00030
%RSD	12.417	3.0747	128.21	33.001	113.97	6.6341	42.544
#1	.00047	.00866	.00376	.00339	.00012	.14211	-.00104
#2	.00040	.00918	.01252	.00289	.00057	.14229	-.00045
#3	.00037	.00907	-.00062	.00530	.00225	.12646	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9956.8	58108.	2626.1
Stddev	30.6	216.	21.0
%RSD	.30683	.37153	.80088
#1	9972.0	57859.	2602.9
#2	9976.8	58218.	2631.6
#3	9921.6	58246.	2643.8

Approved: July 16, 2016

Sample Name: L1607044901PS Acquired: 7/14/2016 19:41:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576493-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20019**	**5.1873**	**.20535**	**.98679**	**.71403**	**.02498**	**6.6530**	**.02531**
Stddev	.00174	.0089	.00332	.00205	.00206	.00011	.0718	.00028
%RSD	.86814	.17251	1.6173	.20807	.28784	.44490	1.0791	1.1237
#1	.20102	5.1940	.20558	.98905	.71190	.02486	6.6905	.02500
#2	.20136	5.1771	.20191	.98630	.71600	.02498	6.6982	.02557
#3	.19819	5.1908	.20854	.98503	.71421	.02509	6.5702	.02535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10440**	**.25766**	**.25765**	**14.572**	**25.304**	**.51671**	**5.2826**	**.44819**
Stddev	.00029	.00264	.00054	.132	.129	.00314	.0647	.00516
%RSD	.27561	1.0264	.20790	.90613	.50839	.60821	1.2242	1.1516
#1	.10456	.25905	.25728	14.628	25.246	.51367	5.3309	.44254
#2	.10406	.25932	.25741	14.667	25.451	.51994	5.2091	.45267
#3	.10456	.25461	.25827	14.421	25.214	.51653	5.3078	.44936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52249**	**149.41**	**.25686**	**4.9589**	**.25224**	**.60453**	**.19245**	**2.8981**
Stddev	.00130	.45	.00131	.0117	.00423	.00100	.00635	.0073
%RSD	.24907	.29999	.51067	.23579	1.6773	.16464	3.2985	.25353
#1	.52250	149.19	.25575	4.9480	.25212	.60567	.19554	2.9025
#2	.52378	149.92	.25653	4.9713	.24807	.60399	.19667	2.8896
#3	.52118	149.11	.25831	4.9575	.25653	.60391	.18515	2.9021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044901PS Acquired: 7/14/2016 19:41:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576493-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51914**	**.52103**	**.51390**	**.25130**	**.51400**	**.62875**	**.00043**
Stddev	.00054	.00083	.00481	.00214	.00056	.00175	.00020
%RSD	.10408	.15972	.93612	.85103	.10969	.27818	47.021
#1	.51975	.52089	.51899	.25303	.51419	.63049	.00022
#2	.51873	.52192	.51330	.25197	.51445	.62876	.00062
#3	.51893	.52027	.50942	.24891	.51337	.62699	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9881.7**	**57501.**	**2628.4**
Stddev	20.7	49.	11.4
%RSD	.20933	.08456	.43279
#1	9858.6	57518.	2615.3
#2	9898.5	57447.	2636.0
#3	9887.9	57539.	2633.9

Approved: July 16, 2016

Sample Name: L1607044901SDL Acquired: 7/14/2016 19:44:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576493-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.03421	-.00024	.00737	.05293	.00014	.33398	.00023
Stddev	.00146	.00114	.00160	.00220	.00167	.00010	.02660	.00008
%RSD	235.86	3.3351	659.48	29.896	3.1583	69.457	7.9656	32.834
#1	-.00203	.03527	.00123	.00947	.05469	.00019	.35307	.00018
#2	-.00072	.03300	-.00194	.00508	.05136	.00021	.30359	.00020
#3	.00089	.03434	-.00002	.00755	.05274	.00003	.34527	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.00106	.00030	3.0860	.00592	.00395	.08856	.04707
Stddev	.00023	.00073	.00041	.0075	.04174	.00147	.02209	.00144
%RSD	40.418	69.235	137.61	.24251	704.88	37.207	24.948	3.0535
#1	.00079	.00076	.00023	3.0830	-.00751	.00227	.06692	.04552
#2	.00033	.00053	.00073	3.0945	.05273	.00459	.08768	.04836
#3	.00057	.00190	-.00007	3.0804	-.02745	.00499	.11108	.04731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	30.357	-.00017	.00089	-.00382	.00230	-.00314	.10168
Stddev	.00036	.143	.00079	.00720	.00091	.00056	.00164	.00803
%RSD	108.57	.47258	456.20	811.17	23.928	24.159	52.256	7.8984
#1	-.00071	30.193	.00066	-.00679	-.00279	.00172	-.00125	.10455
#2	-.00029	30.421	-.00093	.00197	-.00454	.00283	-.00418	.10789
#3	.00000	30.459	-.00025	.00749	-.00412	.00235	-.00400	.09261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044901SDL Acquired: 7/14/2016 19:44:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576493-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00195	.00133	.00195	.00002	.03194	-.00050
Stddev	.00054	.00051	.00840	.00137	.00045	.00282	.00007
%RSD	173.05	26.203	633.04	70.335	2371.8	8.8419	13.254
#1	-.00003	.00234	-.00837	.00232	.00032	.03354	-.00042
#2	.00003	.00214	.00603	.00309	.00024	.03361	-.00055
#3	.00093	.00137	.00632	.00043	-.00050	.02868	-.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9609.1	56151.	2483.9
Stddev	18.4	108.	6.5
%RSD	.19146	.19218	.26038
#1	9629.7	56044.	2485.5
#2	9603.5	56260.	2476.7
#3	9594.2	56150.	2489.3

Approved: July 16, 2016

Sample Name: L1607044901SDL Acquired: 7/14/2016 19:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576493-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00109	.00747	-.00088	.00186	.00998	.00013	.01945	.00018
Stddev	.00151	.00752	.00195	.00196	.00106	.00007	.03764	.00031
%RSD	138.51	100.55	222.20	105.52	10.625	57.205	193.48	178.02
#1	-.00274	.01345	.00136	.00405	.00996	.00006	.04265	-.00018
#2	-.00077	.00994	-.00177	.00029	.00893	.00021	.03969	.00029
#3	.00023	-.00096	-.00223	.00123	.01105	.00011	-.02397	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00109	-.00043	.56203	.00885	-.00166	-.03350	.00664
Stddev	.00004	.00051	.00081	.01000	.12294	.00214	.06379	.00283
%RSD	65.974	46.805	191.19	1.7795	1389.0	128.88	190.44	42.615
#1	-.00002	.00119	.00037	.55757	-.13256	-.00051	.00978	.00985
#2	-.00007	.00053	-.00039	.57349	.06873	-.00414	-.10675	.00559
#3	-.00011	.00154	-.00126	.55504	.09038	-.00034	-.00351	.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	5.7110	-.00027	.00869	-.00317	.00077	-.00149	.01803
Stddev	.00037	.0676	.00072	.00455	.00208	.00233	.00409	.00234
%RSD	223.21	1.1831	262.34	52.347	65.698	301.67	275.44	12.948
#1	-.00005	5.7869	-.00056	.01275	-.00095	.00346	-.00317	.01738
#2	.00013	5.6891	.00054	.00378	-.00507	-.00066	.00318	.02063
#3	-.00058	5.6572	-.00081	.00953	-.00348	-.00048	-.00447	.01609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044901SDL Acquired: 7/14/2016 19:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576493-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00052	.00162	.00055	-.00019	.00611	-.00016
Stddev	.00054	.00041	.00424	.00109	.00026	.00040	.00028
%RSD	63.903	78.996	261.34	197.48	137.62	6.5172	176.18
#1	.00142	.00027	.00651	.00131	-.00005	.00609	-.00016
#2	.00034	.00099	-.00073	-.00070	-.00003	.00651	.00012
#3	.00079	.00029	-.00092	.00104	-.00049	.00572	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10045.	58408.	2562.8
Stddev	31.	76.	8.5
%RSD	.30924	.12937	.33200
#1	10054.	58377.	2553.4
#2	10070.	58494.	2564.9
#3	10010.	58353.	2570.1

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 19:52:49 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41922**	**10.424**	**.42150**	**.50886**	**1.0363**	**.05248**	**10.256**	**.05225**
Stddev	.00238	.034	.00450	.00594	.0071	.00024	.034	.00096
%RSD	.56787	.32579	1.0687	1.1671	.68620	.44984	.33008	1.8301
#1	.42035	10.410	.42142	.51178	1.0442	.05241	10.289	.05298
#2	.42083	10.463	.42604	.51278	1.0345	.05275	10.221	.05260
#3	.41649	10.400	.41704	.50203	1.0303	.05229	10.258	.05117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21151**	**.52164**	**.52459**	**4.2117**	**52.166**	**1.0350**	**10.514**	**.52254**
Stddev	.00384	.00275	.00879	.0305	.240	.0125	.074	.00358
%RSD	1.8136	.52749	1.6752	.72322	.46001	1.2082	.70776	.68456
#1	.21395	.52110	.53106	4.2377	52.443	1.0488	10.537	.52497
#2	.21349	.52462	.52813	4.1782	52.031	1.0318	10.574	.51843
#3	.20709	.51919	.51459	4.2192	52.024	1.0245	10.431	.52422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0475**	**51.148**	**.51714**	**10.338**	**.51836**	**1.2354**	**.41507**	**5.0199**
Stddev	.0176	.291	.01012	.142	.00606	.0162	.01320	.0514
%RSD	1.6814	.56810	1.9572	1.3733	1.6686	1.3112	3.1804	1.0229
#1	1.0642	51.483	.52265	10.414	.52131	1.2470	.42248	5.0048
#2	1.0492	50.971	.52331	10.425	.52238	1.2424	.42291	5.0771
#3	1.0291	50.988	.50546	10.174	.51139	1.2169	.39983	4.9778
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 19:52:49 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0559**	**1.0397**	**1.0454**	**.52382**	**1.0462**	**1.0267**	**1.0511**
Stddev	.0235	.0066	.0039	.00337	.0042	.0191	.0096
%RSD	2.2268	.63433	.36845	.64423	.40033	1.8609	.90925
#1	1.0709	1.0468	1.0435	.52644	1.0443	1.0391	1.0572
#2	1.0680	1.0385	1.0499	.52501	1.0510	1.0362	1.0559
#3	1.0288	1.0338	1.0430	.52002	1.0434	1.0047	1.0401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9748.8**	**56306.**	**2537.8**
Stddev	28.3	82.	14.1
%RSD	.29017	.14648	.55433
#1	9719.1	56397.	2526.6
#2	9751.8	56287.	2533.3
#3	9775.5	56236.	2553.6

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 19:56:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00278	.00459	-.00005	.00494	.00026	.00013	-.01699	.00036
Stddev	.00253	.00075	.00316	.00290	.00064	.00000	.03278	.00009
%RSD	91.020	16.337	5782.6	58.607	247.89	2.7938	192.98	25.173
#1	-.00006	.00416	.00029	.00813	.00018	.00013	-.02625	.00046
#2	-.00321	.00416	-.00338	.00422	.00094	.00013	-.04414	.00029
#3	-.00507	.00546	.00292	.00247	-.00034	.00013	.01943	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00022	.00012	-.00741	.04349	.00453	-.01273	-.00213
Stddev	.00024	.00035	.00071	.02955	.04847	.00235	.08297	.00147
%RSD	326.39	159.06	613.23	398.73	111.43	51.723	651.68	68.724
#1	.00034	.00033	-.00014	.00734	.06373	.00608	-.10458	-.00273
#2	-.00014	.00051	.00092	-.04143	.07856	.00569	.05680	-.00046
#3	.00002	-.00017	-.00043	.01186	-.01181	.00184	.00958	-.00321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00159	-.00152	.00602	-.00493	.00020	-.00205	.00279
Stddev	.00050	.01074	.00009	.00156	.00255	.00424	.00147	.00084
%RSD	230.63	676.90	6.1073	25.860	51.669	2140.5	71.772	30.056
#1	.00022	.01384	-.00156	.00575	-.00521	.00510	-.00244	.00375
#2	-.00011	-.00290	-.00158	.00769	-.00733	-.00231	-.00042	.00237
#3	-.00076	-.00618	-.00141	.00462	-.00226	-.00219	-.00329	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 19:56:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.00014	.00116	.00119	-.00062	-.00007	.00007
Stddev	.00032	.00038	.00331	.00163	.00011	.00016	.00064
%RSD	70.414	268.40	286.17	137.03	17.382	226.37	861.35
#1	.00083	.00052	-.00069	-.00048	-.00050	.00000	.00051
#2	.00028	-.00023	.00498	.00128	-.00068	.00004	.00038
#3	.00026	.00014	-.00082	.00277	-.00068	-.00025	-.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9871.4	57694.	2565.0
Stddev	6.6	86.	2.7
%RSD	.06657	.14824	.10521
#1	9874.5	57788.	2568.0
#2	9875.8	57621.	2562.7
#3	9863.8	57674.	2564.5

Approved: July 16, 2016

Sample Name: L1607052101 Acquired: 7/14/2016 20:00:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.02011	.00048	.04817	.13762	.00002	43.337	.00030
Stddev	.00174	.00328	.00285	.00082	.00049	.00004	.054	.00016
%RSD	923.09	16.307	592.86	1.7082	.35647	152.98	.12537	51.925
#1	-.00205	.01885	.00134	.04821	.13817	.00005	43.307	.00013
#2	.00008	.02384	.00279	.04898	.13724	-.00002	43.303	.00044
#3	.00141	.01766	-.00270	.04733	.13745	.00004	43.399	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00054	.05707	.00304	1.2420	.01246	19.282	-.00128
Stddev	.00035	.00076	.00338	.01811	.0474	.00141	.218	.00314
%RSD	149.38	142.31	5.9166	595.16	3.8194	11.320	1.1288	246.30
#1	-.00008	.00136	.05966	-.01784	1.1934	.01230	19.119	.00224
#2	-.00064	.00038	.05831	.01442	1.2445	.01114	19.197	-.00381
#3	.00001	-.00014	.05325	.01254	1.2881	.01395	19.529	-.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	30.682	-.00124	.02840	-.00189	.00341	-.00560	3.8460
Stddev	.00029	.106	.00009	.00295	.00217	.00289	.00326	.1685
%RSD	45.467	.34454	7.6006	10.382	115.05	84.603	58.145	4.3804
#1	.00094	30.653	-.00115	.02671	-.00305	.00160	-.00878	3.9531
#2	.00061	30.595	-.00125	.03180	.00062	.00675	-.00575	3.9331
#3	.00036	30.800	-.00133	.02668	-.00322	.00190	-.00227	3.6518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607052101 Acquired: 7/14/2016 20:00:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.74938	-.00845	.00329	-.00098	.02228	.00048
Stddev	.00050	.00329	.00333	.00138	.00076	.00151	.00027
%RSD	103.65	.43914	39.334	42.043	77.068	6.7549	55.655
#1	.00102	.74936	-.00767	.00464	-.00021	.02303	.00078
#2	.00041	.74609	-.00559	.00188	-.00173	.02326	.00037
#3	.00002	.75267	-.01210	.00336	-.00101	.02055	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9922.6	58087.	2601.0
Stddev	19.1	54.	6.9
%RSD	.19288	.09373	.26447
#1	9941.3	58083.	2608.5
#2	9903.1	58035.	2595.0
#3	9923.3	58144.	2599.4

Approved: July 16, 2016

Sample Name: L1607052102S Acquired: 7/14/2016 20:04:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19827	5.0240	.20717	1.0055	.64303	.02473	48.882	.02536
Stddev	.00214	.0148	.00626	.0037	.00333	.00012	.129	.00052
%RSD	1.0771	.29495	3.0224	.36885	.51741	.47828	.26472	2.0552
#1	.20052	5.0341	.20473	1.0088	.64617	.02482	48.935	.02512
#2	.19626	5.0070	.21429	1.0015	.64336	.02460	48.977	.02596
#3	.19803	5.0309	.20250	1.0062	.63954	.02478	48.735	.02501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10210	.25259	.31401	2.0357	26.203	.51725	24.696	.25130
Stddev	.00283	.00065	.00910	.0066	.080	.00100	.149	.00125
%RSD	2.7721	.25914	2.8987	.32278	.30343	.19401	.60401	.49595
#1	.10170	.25236	.31213	2.0393	26.141	.51609	24.817	.25016
#2	.10511	.25333	.32390	2.0281	26.292	.51791	24.742	.25263
#3	.09949	.25209	.30599	2.0397	26.174	.51774	24.530	.25112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52367	55.525	.25014	4.9992	.25151	.60632	.19120	6.4623
Stddev	.01445	.096	.00799	.1309	.00561	.01568	.00219	.1595
%RSD	2.7584	.17248	3.1929	2.6183	2.2288	2.5868	1.1448	2.4674
#1	.52141	55.520	.24904	4.9664	.24725	.60855	.19365	6.4129
#2	.53912	55.622	.25862	5.1434	.25786	.62077	.18942	6.6406
#3	.51050	55.431	.24277	4.8878	.24942	.58964	.19055	6.3335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607052102S Acquired: 7/14/2016 20:04:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52095	1.2536	.49797	.25420	.50951	.51583	.00088
Stddev	.01642	.0009	.00703	.00268	.00282	.01444	.00022
%RSD	3.1519	.07435	1.4120	1.0542	.55351	2.7987	24.541
#1	.51801	1.2539	.50535	.25490	.50983	.51324	.00080
#2	.53864	1.2544	.49135	.25646	.50655	.53139	.00113
#3	.50619	1.2526	.49720	.25123	.51216	.50287	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9739.3	57309.	2588.6
Stddev	120.8	237.	24.1
%RSD	1.2407	.41275	.92931
#1	9807.7	57073.	2590.9
#2	9599.8	57546.	2563.5
#3	9810.4	57310.	2611.4

Approved: July 16, 2016

Sample Name: L1607052103SD Acquired: 7/14/2016 20:07:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20076**	**5.1495**	**.20934**	**1.0335**	**.65804**	**.02535**	**49.970**	**.02546**
Stddev	.00019	.0097	.00487	.0037	.00701	.00011	.486	.00052
%RSD	.09354	.18806	2.3284	.35327	1.0649	.42285	.97256	2.0301
#1	.20068	5.1424	.21220	1.0349	.66242	.02525	50.303	.02582
#2	.20098	5.1605	.21211	1.0362	.66174	.02547	50.194	.02570
#3	.20064	5.1455	.20371	1.0293	.64996	.02534	49.412	.02487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10274**	**.25972**	**.31690**	**2.0860**	**26.787**	**.53171**	**25.129**	**.25321**
Stddev	.00157	.00165	.00394	.0357	.378	.00691	.093	.00165
%RSD	1.5312	.63409	1.2438	1.7140	1.4124	1.3000	.37028	.64977
#1	.10387	.26035	.32031	2.1198	27.116	.53968	25.234	.25506
#2	.10340	.26096	.31779	2.0486	26.871	.52795	25.092	.25191
#3	.10094	.25785	.31258	2.0895	26.373	.52749	25.059	.25266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52869**	**56.809**	**.25181**	**5.0308**	**.25452**	**.60813**	**.18840**	**6.5242**
Stddev	.00778	.529	.00405	.0544	.00412	.00862	.00779	.0574
%RSD	1.4709	.93153	1.6078	1.0803	1.6203	1.4169	4.1359	.87977
#1	.53316	57.229	.25364	5.0608	.25888	.61347	.19335	6.5573
#2	.53319	56.983	.25462	5.0635	.25400	.61273	.19244	6.5574
#3	.51971	56.214	.24717	4.9680	.25068	.59819	.17942	6.4580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607052103SD Acquired: 7/14/2016 20:07:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52597	1.2805	.51173	.25869	.52204	.52067	.00091
Stddev	.00592	.0128	.00474	.00124	.00147	.00704	.00038
%RSD	1.1261	1.0001	.92616	.47870	.28254	1.3530	41.947
#1	.53081	1.2895	.51343	.25729	.52299	.52490	.00122
#2	.52773	1.2861	.51539	.25917	.52279	.52457	.00049
#3	.51936	1.2658	.50638	.25962	.52034	.51254	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9798.9	57264.	2583.0
Stddev	19.3	68.	26.7
%RSD	.19646	.11940	1.0353
#1	9791.3	57296.	2584.3
#2	9820.8	57186.	2555.6
#3	9784.6	57311.	2609.1

Approved: July 16, 2016

Sample Name: L1607034801 Acquired: 7/14/2016 20:11:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00199	.00027	-.00114	.02789	.05695	.00010	61.969	.00090
Stddev	.00106	.01053	.00232	.00135	.00065	.00005	.917	.00018
%RSD	53.273	3949.6	203.80	4.8316	1.1349	51.464	1.4793	20.085
#1	-.00087	.01184	-.00311	.02925	.05754	.00016	62.974	.00082
#2	-.00211	-.00229	.00142	.02786	.05707	.00005	61.755	.00111
#3	-.00298	-.00875	-.00173	.02656	.05626	.00010	61.179	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00062	.03884	.06720	1.2414	.00680	12.418	-.00033
Stddev	.00017	.00040	.00233	.01792	.0571	.00161	.055	.00211
%RSD	387.81	64.840	6.0086	26.671	4.6001	23.733	.44561	647.65
#1	.00004	.00109	.03961	.08734	1.3053	.00780	12.479	.00090
#2	.00022	.00041	.04069	.06125	1.2232	.00494	12.403	-.00276
#3	-.00013	.00037	.03622	.05301	1.1955	.00767	12.371	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	9.0884	.00020	.01844	.00312	.00495	-.00106	4.6329
Stddev	.00031	.0251	.00177	.00394	.00241	.00291	.00342	.1788
%RSD	98.787	.27586	881.83	21.375	77.172	58.816	321.44	3.8603
#1	-.00002	9.0968	.00036	.02213	.00432	.00315	-.00500	4.7316
#2	.00059	9.1081	-.00164	.01889	.00035	.00338	.00061	4.7406
#3	.00037	9.0602	.00188	.01429	.00471	.00830	.00120	4.4265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034801 Acquired: 7/14/2016 20:11:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.10367	-.01099	-.00107	-.00048	.36515	-.00001
Stddev	.00059	.00027	.00309	.00205	.00032	.01947	.00025
%RSD	105.36	.25597	28.115	191.64	67.196	5.3318	4274.3
#1	.00029	.10395	-.01413	-.00156	-.00040	.37648	.00019
#2	.00125	.10363	-.01087	-.00284	-.00083	.37629	-.00029
#3	.00016	.10343	-.00796	.00118	-.00020	.34267	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9921.6	58090.	2590.1
Stddev	8.8	98.	21.0
%RSD	.08864	.16890	.81191
#1	9928.1	58131.	2580.8
#2	9911.6	57978.	2575.2
#3	9925.1	58161.	2614.1

Approved: July 16, 2016

Sample Name: L1607034802 Acquired: 7/14/2016 20:14:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00137	-.00222	.02324	.05629	.00003	60.903	.00099
Stddev	.00227	.00640	.00259	.00363	.00115	.00006	.896	.00016
%RSD	1209.9	467.42	116.67	15.627	2.0475	219.64	1.4705	16.404
#1	-.00173	.00875	.00077	.02278	.05751	-.00003	61.901	.00095
#2	-.00126	-.00224	-.00376	.01986	.05521	.00008	60.637	.00116
#3	.00242	-.00240	-.00368	.02708	.05617	.00002	60.170	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00117	.03574	-.00162	1.1723	.00720	12.108	.00065
Stddev	.00034	.00038	.00283	.02908	.0388	.00007	.086	.00367
%RSD	89.266	32.307	7.9201	1795.0	3.3106	1.0157	.70718	563.33
#1	-.00048	.00124	.03698	.00574	1.1321	.00719	12.014	-.00135
#2	-.00000	.00150	.03775	-.03367	1.2095	.00713	12.130	.00488
#3	-.00067	.00076	.03250	.02307	1.1753	.00727	12.181	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	8.9692	-.00096	.01610	.00195	-.00040	-.00208	4.5462
Stddev	.00014	.0633	.00119	.00371	.00378	.00201	.00496	.1758
%RSD	18.899	.70616	123.92	23.044	193.70	504.63	238.04	3.8661
#1	.00074	8.9856	-.00189	.02038	-.00147	-.00150	.00234	4.6543
#2	.00092	9.0227	-.00137	.01402	.00601	.00192	-.00115	4.6410
#3	.00063	8.8993	.00038	.01389	.00131	-.00161	-.00744	4.3434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034802 Acquired: 7/14/2016 20:14:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.10133	-.01180	.00013	-.00086	.38022	.00022
Stddev	.00048	.00039	.00716	.00272	.00051	.02027	.00027
%RSD	320.85	.38179	60.680	2071.3	59.490	5.3305	123.89
#1	.00042	.10138	-.01944	.00189	-.00091	.39251	.00031
#2	.00043	.10169	-.01070	-.00300	-.00136	.39133	.00044
#3	-.00041	.10092	-.00525	.00150	-.00033	.35683	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9903.5	57910.	2595.9
Stddev	18.1	130.	24.2
%RSD	.18313	.22519	.93377
#1	9888.8	58005.	2569.9
#2	9923.7	57964.	2600.1
#3	9897.9	57761.	2617.8

Approved: July 16, 2016

Sample Name: L1607044701 Acquired: 7/14/2016 20:18:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00184	-.00391	-.00113	.05151	.39173	.00019	177.78	.00055
Stddev	.00208	.01011	.00433	.00324	.00053	.00005	.48	.00012
%RSD	112.97	258.59	384.46	6.2813	.13631	23.848	.26946	22.426
#1	-.00234	.00227	.00179	.04821	.39222	.00016	177.88	.00065
#2	-.00362	.00158	-.00610	.05468	.39182	.00017	177.26	.00041
#3	.00044	-.01558	.00094	.05163	.39116	.00024	178.20	.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00128	.00222	.02913	.59470	.00874	6.6851	.31741
Stddev	.00060	.00075	.00099	.02998	.13601	.00192	.0461	.00278
%RSD	129.07	58.350	44.565	102.92	22.871	21.960	.69041	.87441
#1	-.00017	.00065	.00286	.05624	.74977	.00948	6.7319	.31650
#2	.00054	.00211	.00272	-.00307	.53874	.01019	6.6836	.31521
#3	.00103	.00109	.00108	.03423	.49560	.00657	6.6396	.32053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05074	4.3885	.08664	.00345	-.00310	-.00001	-.00092	.72057
Stddev	.00320	.0130	.00486	.00531	.00121	.00265	.00560	.03631
%RSD	6.3097	.29541	5.6111	153.89	38.964	21021.	607.48	5.0390
#1	.05284	4.3976	.08985	-.00158	-.00269	-.00305	.00424	.74278
#2	.05232	4.3737	.08902	.00900	-.00215	.00122	-.00014	.74026
#3	.04705	4.3943	.08105	.00293	-.00446	.00180	-.00687	.67867
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044701 Acquired: 7/14/2016 20:18:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.39930	-.02625	.00561	.14226	.00624	-.00017
Stddev	.00087	.00082	.00839	.00366	.00051	.00056	.00019
%RSD	136.21	.20504	31.965	65.154	.36059	9.0405	111.98
#1	.00034	.39909	-.02943	.00475	.14190	.00646	-.00018
#2	-.00004	.39861	-.03259	.00246	.14204	.00667	.00003
#3	.00162	.40020	-.01673	.00962	.14285	.00560	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9855.3	57607.	2589.0
Stddev	26.3	176.	15.5
%RSD	.26669	.30567	.60017
#1	9837.7	57513.	2577.3
#2	9842.6	57810.	2606.7
#3	9885.5	57498.	2583.2

Approved: July 16, 2016

Sample Name: L1607046401 Acquired: 7/14/2016 20:22:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00172**	**.01141**	**.00176**	**.02109**	**.60441**	**.00009**	F **295.18**
Stddev	.00157	.00550	.00073	.00164	.00369	.00003	1.54
%RSD	90.978	48.253	41.472	7.7516	.61040	37.967	.52036
#1	-.00329	.01772	.00092	.02233	.60850	.00005	296.89
#2	-.00016	.00885	.00226	.02171	.60341	.00010	294.73
#3	-.00172	.00765	.00209	.01924	.60133	.00011	293.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**.00039**	**.00151**	**.00283**	**-.01140**	**242.15**	**.04908**
Stddev	.00019	.00012	.00085	.00117	.01722	1.17	.00112
%RSD	30.256	30.441	56.445	41.348	151.03	.48446	2.2824
#1	.00083	.00037	.00059	.00416	.00333	243.43	.04841
#2	.00057	.00051	.00227	.00236	-.03033	241.88	.04846
#3	.00046	.00028	.00167	.00197	-.00720	241.13	.05037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03168**	**.00018**	**.00512**	**263.72**	**-.00007**	**.05699**	**.06792**
Stddev	.11410	.00058	.00077	1.31	.00101	.00818	.00418
%RSD	360.18	316.53	14.958	.49522	1548.0	14.346	6.1512
#1	-.02941	-.00045	.00548	265.10	-.00083	.06643	.07273
#2	.16331	.00067	.00564	263.56	.00108	.05222	.06586
#3	-.03887	.00033	.00424	262.51	-.00045	.05232	.06517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 16, 2016

Sample Name: L1607046401 Acquired: 7/14/2016 20:22:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00319	.01304	.15046	.00044	.33172	F -.04332	.00281
Stddev	.00353	.00592	.00794	.00028	.00053	.00634	.00468
%RSD	110.60	45.409	5.2771	64.597	.16115	14.644	166.39
#1	.00623	.00980	.15415	.00013	.33215	-.05043	-.00137
#2	.00402	.01988	.15589	.00051	.33112	-.03826	.00786
#3	-.00068	.00945	.14135	.00068	.33188	-.04125	.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00094	.01315	-.00028
Stddev	.00018	.00086	.00074
%RSD	19.066	6.5117	268.44
#1	-.00096	.01359	.00046
#2	-.00111	.01370	-.00026
#3	-.00075	.01216	-.00103
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9480.0	54918.	2555.1
Stddev	14.1	157.	16.9
%RSD	.14841	.28511	.66224
#1	9481.2	55074.	2535.8
#2	9493.4	54761.	2562.5
#3	9465.3	54920.	2567.2

Approved: July 16, 2016

Sample Name: L1607046501 Acquired: 7/14/2016 20:26:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00136	.13792	.00051	.01479	.13059	.00012	F 287.25
Stddev	.00242	.00743	.00337	.00272	.00168	.00003	1.72
%RSD	178.28	5.3857	662.50	18.383	1.2887	21.744	.59867
#1	.00009	.13073	.00415	.01425	.13249	.00016	289.13
#2	-.00415	.13746	-.00012	.01774	.12929	.00011	286.88
#3	-.00001	.14556	-.00250	.01238	.12998	.00011	285.75
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00044	.00145	.00678	.01588	228.87	.04290
Stddev	.00014	.00028	.00064	.00076	.02093	1.52	.00248
%RSD	32.711	63.985	44.309	11.208	131.81	.66520	5.7757
#1	.00036	.00016	.00097	.00757	.00226	230.51	.04004
#2	.00033	.00073	.00218	.00605	.03998	228.61	.04428
#3	.00059	.00043	.00120	.00673	.00540	227.50	.04438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02800	-.00062	.00463	251.22	-.00208	.03147	-.00123
Stddev	.07806	.00144	.00029	1.34	.00158	.00079	.00288
%RSD	278.82	231.51	6.2369	.53469	76.111	2.5134	234.70
#1	.01891	-.00051	.00484	252.67	-.00120	.03085	-.00194
#2	-.04512	-.00211	.00476	250.98	-.00390	.03236	.00194
#3	.11020	.00076	.00430	250.01	-.00113	.03120	-.00368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 16, 2016

Sample Name: L1607046501 Acquired: 7/14/2016 20:26:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00328	.08687	.26309	.00023	.41035	F -.04148	.00139
Stddev	.00352	.00207	.01399	.00082	.00164	.00469	.00226
%RSD	107.14	2.3855	5.3192	360.77	.40083	11.295	162.24
#1	.00036	.08910	.27140	.00112	.41225	-.04217	.00031
#2	.00230	.08500	.27094	.00008	.40944	-.04578	-.00013
#3	.00718	.08651	.24693	-.00051	.40937	-.03649	.00398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00033	.00324	.00029
Stddev	.00019	.00018	.00038
%RSD	58.620	5.6235	128.73
#1	-.00011	.00328	.00005
#2	-.00041	.00340	.00010
#3	-.00046	.00304	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9501.2	55026.	2592.1
Stddev	26.5	259.	29.0
%RSD	.27928	.46977	1.1195
#1	9475.9	55113.	2570.8
#2	9498.9	54735.	2580.4
#3	9528.8	55229.	2625.2

Approved: July 16, 2016

Sample Name: L1607046601 Acquired: 7/14/2016 20:30:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00055	.16968	.00042	.18816	1.0441	.00014	14.631
Stddev	.00143	.00913	.00375	.00088	.0047	.00004	.081
%RSD	261.12	5.3781	887.62	.46510	.45424	24.522	.55039
#1	-.00142	.16593	.00302	.18716	1.0495	.00018	14.723
#2	-.00132	.16302	-.00387	.18880	1.0421	.00015	14.602
#3	.00110	.18008	.00212	.18853	1.0406	.00011	14.570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00527	.00083	.00275	1.3321	358.65	.03756
Stddev	.00023	.00052	.00102	.00097	.0210	3.13	.00110
%RSD	465.35	9.8795	122.90	35.348	1.5789	.87387	2.9292
#1	.00031	.00541	-.00034	.00309	1.3562	361.57	.03790
#2	-.00002	.00570	.00128	.00351	1.3224	359.05	.03632
#3	-.00014	.00469	.00155	.00165	1.3176	355.34	.03844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.678	.85414	.00032	F 560.22	.02111	.10326	-.00326
Stddev	.201	.00280	.00024	10.41	.00217	.00858	.00111
%RSD	1.4716	.32795	75.412	1.8589	10.301	8.3135	33.901
#1	13.867	.85697	.00036	552.21	.02217	.11098	-.00218
#2	13.467	.85408	.00006	572.00	.02255	.10478	-.00321
#3	13.701	.85137	.00053	556.46	.01861	.09402	-.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607046601 Acquired: 7/14/2016 20:30:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00135	-.00524	2.3148	.00081	.85078	-.00278	-.00058
Stddev	.00245	.00844	.1116	.00097	.00461	.00586	.00201
%RSD	181.44	161.11	4.8189	119.83	.54229	210.75	349.22
#1	.00268	-.00467	2.3713	.00157	.85488	-.00617	.00145
#2	-.00148	-.01395	2.3868	.00115	.85167	.00399	-.00060
#3	.00284	.00290	2.1863	-.00029	.84578	-.00617	-.00258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00038	.17418	.00015
Stddev	.00084	.01671	.00049
%RSD	223.45	9.5911	321.26
#1	.00003	.18453	.00046
#2	-.00135	.18310	.00041
#3	.00019	.15491	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9534.3	54166.	2591.2
Stddev	11.0	151.	22.3
%RSD	.11538	.27952	.86013
#1	9546.2	54001.	2584.3
#2	9524.5	54298.	2573.1
#3	9532.1	54201.	2616.1

Approved: July 16, 2016

Sample Name: L1607046801 Acquired: 7/14/2016 20:34:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**20.735**	**.00121**	**1.0386**	**.41748**	**.00181**	**18.350**
Stddev	.00122	.057	.00299	.0056	.00091	.00006	.093
%RSD	1628.4	.27670	247.76	.53790	.21695	3.5785	.50758
#1	-.00065	20.671	-.00023	1.0353	.41850	.00175	18.271
#2	.00149	20.783	-.00080	1.0355	.41715	.00188	18.453
#3	-.00062	20.751	.00464	1.0451	.41678	.00179	18.326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.00736**	**.01740**	**.05111**	**.04952**	**267.59**	**.04274**
Stddev	.00023	.00074	.00068	.00473	.04587	.96	.00220
%RSD	46.258	10.073	3.9072	9.2503	92.629	.35778	5.1433
#1	.00027	.00779	.01792	.05389	.06822	268.29	.04466
#2	.00074	.00779	.01663	.05380	-.00275	267.97	.04034
#3	.00049	.00651	.01764	.04566	.08309	266.50	.04323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**41.284**	**3.0164**	**-.00002**	F **481.14**	**.06546**	**.03224**	**.00148**
Stddev	.194	.0284	.00028	6.16	.00549	.00393	.00077
%RSD	.46938	.94057	1532.1	1.2805	8.3855	12.180	52.088
#1	41.308	3.0238	-.00010	487.79	.06823	.03482	.00121
#2	41.080	2.9851	.00029	475.63	.06901	.03418	.00235
#3	41.465	3.0404	-.00024	479.99	.05913	.02772	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607046801 Acquired: 7/14/2016 20:34:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00451	-.00329	1.1264	.00084	.30427	.00715	-.00139
Stddev	.00278	.00119	.0570	.00110	.00024	.00318	.00072
%RSD	61.715	36.334	5.0564	131.11	.07823	44.513	51.753
#1	.00360	-.00286	1.1667	.00199	.30400	.00408	-.00177
#2	.00229	-.00464	1.1514	.00073	.30433	.00692	-.00184
#3	.00763	-.00236	1.0613	-.00020	.30446	.01043	-.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00810	1.5617	.00023
Stddev	.00045	.1163	.00009
%RSD	5.5772	7.4472	41.079
#1	.00843	1.6317	.00034
#2	.00759	1.6260	.00018
#3	.00829	1.4275	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9599.2	55202.	2597.7
Stddev	20.3	154.	17.4
%RSD	.21119	.27902	.66818
#1	9578.5	55050.	2579.2
#2	9619.0	55198.	2613.6
#3	9600.2	55358.	2600.2

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 20:38:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41606**	**10.387**	**.41723**	**.50313**	**1.0156**	**.05231**	**10.090**	**.05182**
Stddev	.00252	.032	.00298	.00346	.0014	.00008	.016	.00105
%RSD	.60594	.30473	.71370	.68854	.14295	.16086	.16043	2.0245
#1	.41315	10.380	.41817	.49974	1.0141	.05224	10.091	.05232
#2	.41764	10.421	.41963	.50666	1.0170	.05240	10.073	.05252
#3	.41738	10.359	.41390	.50300	1.0159	.05229	10.105	.05061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21093**	**.52097**	**.51862**	**4.1290**	**51.530**	**1.0126**	**10.513**	**.51014**
Stddev	.00438	.00325	.00914	.0301	.039	.0010	.043	.00812
%RSD	2.0786	.62433	1.7627	.72955	.07594	.09366	.41219	1.5920
#1	.21376	.52019	.52450	4.1293	51.512	1.0130	10.464	.50828
#2	.21316	.52454	.52326	4.1589	51.503	1.0133	10.529	.50311
#3	.20588	.51817	.50808	4.0986	51.575	1.0116	10.546	.51903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0310**	**50.126**	**.51114**	**10.203**	**.51114**	**1.2162**	**.41011**	**4.9180**
Stddev	.0191	.052	.00947	.135	.00341	.0196	.00611	.0457
%RSD	1.8531	.10347	1.8527	1.3278	.66667	1.6133	1.4891	.92929
#1	1.0426	50.180	.51730	10.283	.51231	1.2273	.40979	4.9408
#2	1.0414	50.121	.51589	10.278	.51382	1.2277	.41637	4.9477
#3	1.0089	50.076	.50024	10.046	.50731	1.1935	.40417	4.8653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 20:38:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0553**	**1.0150**	**1.0235**	**.52325**	**1.0460**	**1.0176**	**1.0522**
Stddev	.0246	.0007	.0094	.00254	.0075	.0176	.0037
%RSD	2.3307	.07058	.91615	.48473	.71372	1.7319	.34670
#1	1.0690	1.0156	1.0149	.52553	1.0397	1.0276	1.0561
#2	1.0699	1.0142	1.0335	.52051	1.0542	1.0279	1.0515
#3	1.0269	1.0151	1.0221	.52370	1.0441	.99723	1.0489
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9808.7**	**56603.**	**2537.4**
Stddev	24.3	186.	2.1
%RSD	.24736	.32883	.08214
#1	9792.1	56784.	2536.7
#2	9797.4	56412.	2539.7
#3	9836.5	56612.	2535.6

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 20:41:58 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00123	.00060	.00629	.00160	.00008	-.04145	.00016
Stddev	.00170	.00151	.00220	.00222	.00096	.00011	.03198	.00028
%RSD	590.24	123.33	366.75	35.262	59.846	130.59	77.170	175.35
#1	-.00225	.00227	.00192	.00823	.00228	.00005	-.06193	.00000
#2	.00061	-.00051	.00182	.00676	.00051	-.00001	-.05782	-.00001
#3	.00078	.00192	-.00194	.00387	.00201	.00020	-.00459	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00061	-.00050	-.00266	.06537	.00082	-.04161	-.00065
Stddev	.00048	.00025	.00112	.03015	.08211	.00220	.04629	.00119
%RSD	1750.6	40.900	225.21	1131.6	125.60	268.03	111.24	183.53
#1	-.00038	.00040	.00066	.02451	.00380	.00282	-.07625	-.00089
#2	-.00023	.00088	-.00157	.00261	.03372	.00118	.01096	-.00170
#3	.00052	.00054	-.00058	-.03511	.15860	-.00154	-.05953	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.05418	-.00081	.00204	-.00152	-.00188	-.00311	.00734
Stddev	.00009	.02493	.00070	.00599	.00153	.00577	.00522	.00090
%RSD	42.577	46.008	86.552	293.61	100.26	307.29	168.09	12.297
#1	-.00011	.08139	-.00063	.00845	-.00265	-.00837	.00233	.00698
#2	-.00029	.04868	-.00022	.00111	-.00213	.00263	-.00808	.00666
#3	-.00026	.03246	-.00158	-.00343	.00021	.00011	-.00357	.00836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 20:41:58 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00005	.00231	.00152	-.00036	-.00015	-.00028
Stddev	.00016	.00041	.00874	.00025	.00102	.00022	.00030
%RSD	96.351	801.41	379.17	16.483	280.69	141.71	109.52
#1	.00013	.00002	.01174	.00123	-.00143	-.00006	-.00014
#2	.00034	-.00035	.00069	.00167	.00062	.00000	-.00063
#3	.00003	.00047	-.00552	.00167	-.00028	-.00040	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9905.0	57758.	2543.2
Stddev	20.8	79.	3.7
%RSD	.20955	.13627	.14685
#1	9891.3	57848.	2547.4
#2	9928.9	57702.	2541.9
#3	9895.0	57723.	2540.2

Approved: July 16, 2016

Sample Name: L1607047401 Acquired: 7/14/2016 20:45:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.01530	-.00220	.03320	.21551	.00011	26.946
Stddev	.00013	.00843	.00091	.00172	.00159	.00005	.053
%RSD	94.120	55.058	41.430	5.1812	.73809	42.886	.19532
#1	-.00012	.00651	-.00302	.03121	.21369	.00017	26.888
#2	-.00028	.02330	-.00122	.03429	.21620	.00007	26.990
#3	-.00002	.01611	-.00236	.03409	.21663	.00010	26.959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00330	.00387	.00191	.14503	1.6589	.02739
Stddev	.00019	.00039	.00016	.00068	.02870	.0355	.00262
%RSD	59.509	11.708	4.0943	35.448	19.788	2.1384	9.5732
#1	.00039	.00361	.00370	.00255	.15046	1.6266	.03015
#2	.00011	.00342	.00391	.00199	.17063	1.6969	.02494
#3	.00047	.00287	.00401	.00120	.11401	1.6532	.02707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.953	.03530	.00060	F 331.66	.00495	1.4961	-.00310
Stddev	.205	.00278	.00023	.49	.00015	.0561	.00109
%RSD	.52645	7.8751	38.329	.14910	3.0111	3.7503	35.319
#1	39.185	.03482	.00035	331.14	.00490	1.5196	-.00413
#2	38.798	.03829	.00080	332.12	.00484	1.5367	-.00321
#3	38.875	.03279	.00066	331.74	.00512	1.4321	-.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607047401 Acquired: 7/14/2016 20:45:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	-.00124	15.596	.00025	.50749	-.00505	.00057
Stddev	.00305	.00038	.480	.00103	.00084	.00542	.00052
%RSD	859.53	30.951	3.0796	410.99	.16650	107.36	91.901
#1	-.00307	-.00127	15.875	.00087	.50827	-.00857	-.00001
#2	.00277	-.00160	15.872	-.00093	.50761	-.00776	.00070
#3	.00137	-.00084	15.042	.00081	.50659	.00119	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00083	.04499	.00012
Stddev	.00082	.00203	.00016
%RSD	99.563	4.5149	126.02
#1	-.00087	.04610	.00013
#2	.00002	.04621	.00028
#3	-.00163	.04264	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9686.6	55925.	2570.0
Stddev	9.8	139.	13.2
%RSD	.10140	.24923	.51368
#1	9677.6	55767.	2569.2
#2	9697.1	55980.	2557.2
#3	9685.3	56029.	2583.6

Approved: July 16, 2016

Sample Name: L1607047402 Acquired: 7/14/2016 20:49:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00197	.01575	.00055	.03497	.20856	.00010	25.966
Stddev	.00073	.00626	.00230	.00087	.00335	.00004	.247
%RSD	36.882	39.721	416.23	2.4803	1.6049	41.062	.95272
#1	-.00281	.00853	.00319	.03507	.21214	.00011	26.233
#2	-.00151	.01934	-.00044	.03406	.20803	.00013	25.920
#3	-.00159	.01940	-.00108	.03579	.20551	.00005	25.745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00348	.00368	.00234	.14803	1.5886	.02626
Stddev	.00015	.00044	.00097	.00106	.00991	.1659	.00283
%RSD	28.127	12.654	26.411	45.067	6.6972	10.441	10.761
#1	.00036	.00384	.00479	.00215	.15221	1.3991	.02819
#2	.00060	.00363	.00303	.00140	.15516	1.7073	.02302
#3	.00064	.00299	.00321	.00348	.13671	1.6594	.02758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.283	.02949	.00049	F 328.50	.00487	1.5090	-.00394
Stddev	.034	.00040	.00024	2.77	.00058	.0670	.00134
%RSD	.08890	1.3572	49.673	.84246	11.945	4.4406	34.010
#1	38.321	.02994	.00077	331.62	.00539	1.5490	-.00374
#2	38.271	.02920	.00037	327.53	.00499	1.5464	-.00537
#3	38.256	.02931	.00033	326.34	.00424	1.4316	-.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607047402 Acquired: 7/14/2016 20:49:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	-.00014	15.065	.00059	.49448	.00728	.00078
Stddev	.00342	.00423	.554	.00073	.00188	.00451	.00243
%RSD	479.54	3019.6	3.6796	122.06	.38113	61.866	312.46
#1	.00415	.00331	15.377	.00141	.49630	.00517	.00352
#2	.00067	.00114	15.393	.00003	.49460	.00422	-.00004
#3	-.00268	-.00487	14.425	.00034	.49254	.01246	-.00114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00124	.04541	-.00037
Stddev	.00105	.00231	.00025
%RSD	84.638	5.0873	68.526
#1	-.00074	.04680	-.00014
#2	-.00244	.04668	-.00034
#3	-.00053	.04274	-.00064
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9700.6	55781.	2570.7
Stddev	16.1	127.	20.6
%RSD	.16580	.22848	.80114
#1	9705.9	55879.	2548.2
#2	9682.6	55637.	2575.4
#3	9713.4	55828.	2588.5

Approved: July 16, 2016

Sample Name: L1607048501 Acquired: 7/14/2016 20:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00119	.05482	.01046	.04670	.09435	.00010	119.87	.00845
Stddev	.00035	.00635	.00347	.00053	.00048	.00003	.83	.00038
%RSD	29.183	11.590	33.185	1.1273	.51208	34.151	.69118	4.4796
#1	-.00157	.05063	.01235	.04714	.09464	.00007	120.65	.00865
#2	-.00112	.06213	.01257	.04684	.09461	.00013	119.00	.00869
#3	-.00089	.05170	.00645	.04612	.09379	.00008	119.96	.00802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00179	.83222	.03152	1.4949	.00740	2.4960	.14739
Stddev	.00026	.00093	.04108	.03170	.0517	.00131	.1060	.00110
%RSD	358.00	51.784	4.9356	100.57	3.4594	17.780	4.2478	.74895
#1	-.00023	.00139	.85525	.02896	1.5037	.00670	2.3744	.14619
#2	.00023	.00113	.85661	.00118	1.4393	.00657	2.5690	.14836
#3	.00022	.00285	.78480	.06441	1.5417	.00891	2.5445	.14762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	4.9229	.00155	.57878	.01395	.00179	-.00634	1.1176
Stddev	.00027	.0472	.00139	.02754	.00172	.00117	.00197	.0389
%RSD	917.18	.95835	89.564	4.7580	12.344	65.079	31.109	3.4784
#1	-.00004	4.9068	.00276	.59025	.01489	.00222	-.00465	1.1457
#2	.00025	4.8858	.00003	.59874	.01500	.00047	-.00851	1.1339
#3	-.00030	4.9760	.00186	.54737	.01197	.00268	-.00586	1.0732
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607048501 Acquired: 7/14/2016 20:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.42735	-.01785	-.00032	-.00106	.23372	.00025
Stddev	.00016	.00236	.00917	.00080	.00054	.01063	.00018
%RSD	31.558	.55167	51.370	246.36	51.277	4.5496	71.683
#1	.00062	.42974	-.00740	.00008	-.00060	.23966	.00020
#2	.00033	.42503	-.02455	.00019	-.00093	.24007	.00010
#3	.00062	.42729	-.02158	-.00125	-.00166	.22145	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9936.4	58126.	2630.9
Stddev	21.2	30.	12.9
%RSD	.21338	.05166	.49135
#1	9923.0	58161.	2616.2
#2	9960.8	58106.	2640.3
#3	9925.3	58112.	2636.3

Approved: July 16, 2016

Sample Name: L1607048701 Acquired: 7/14/2016 20:57:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.03413	.00117	.03260	.10328	.00010	35.715	.02190
Stddev	.00173	.00398	.00122	.00158	.00080	.00006	.138	.00081
%RSD	217.88	11.663	104.46	4.8614	.77757	63.672	.38762	3.7129
#1	.00119	.02954	.00035	.03095	.10353	.00016	35.849	.02252
#2	-.00192	.03626	.00058	.03411	.10393	.00008	35.572	.02220
#3	-.00165	.03659	.00257	.03275	.10238	.00004	35.723	.02098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00079	.00633	.03904	.98578	.00426	1.6809	.12427
Stddev	.00015	.00074	.00051	.00870	.00964	.00368	.0604	.00207
%RSD	50.463	93.452	8.1006	22.277	.97784	86.453	3.5954	1.6667
#1	.00036	.00152	.00685	.04508	.97475	.00475	1.6390	.12299
#2	.00042	.00005	.00634	.02907	.99260	.00766	1.7502	.12316
#3	.00013	.00079	.00582	.04297	.98998	.00035	1.6536	.12666
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	134.59	.00039	.11540	.00986	.00063	.00040	.66900
Stddev	.00014	.33	.00063	.00694	.00343	.00293	.00097	.02889
%RSD	48.002	.24194	162.46	6.0133	34.807	465.70	244.17	4.3184
#1	-.00043	134.97	.00054	.11901	.00833	.00033	.00143	.69024
#2	-.00016	134.38	.00093	.11978	.00746	-.00214	-.00048	.68066
#3	-.00028	134.43	-.00030	.10740	.01380	.00369	.00024	.63611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607048701 Acquired: 7/14/2016 20:57:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.09407	-.00495	.00060	-.00022	2.3880	-.00012
Stddev	.00060	.00074	.00469	.00196	.00096	.1239	.00016
%RSD	51.835	.78887	94.786	325.16	438.03	5.1899	135.29
#1	.00171	.09459	-.01000	.00019	.00049	2.4640	-.00028
#2	.00052	.09440	-.00073	-.00112	.00016	2.4550	-.00010
#3	.00125	.09322	-.00413	.00274	-.00132	2.2450	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9867.3	57188.	2622.2
Stddev	7.5	115.	1.1
%RSD	.07620	.20033	.04272
#1	9872.2	57062.	2621.8
#2	9871.0	57216.	2621.3
#3	9858.6	57286.	2623.5

Approved: July 16, 2016

Sample Name: L1607051901 Acquired: 7/14/2016 21:01:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00132	.00486	-.00016	.00940	.13702	.00012	3.7067	.00032
Stddev	.00038	.00572	.00371	.00200	.00127	.00002	.0467	.00032
%RSD	28.886	117.77	2303.0	21.291	.92503	18.634	1.2590	100.67
#1	-.00175	.00262	-.00172	.00857	.13704	.00013	3.7231	.00049
#2	-.00105	.01136	-.00284	.00795	.13827	.00012	3.7430	.00051
#3	-.00114	.00060	.00407	.01168	.13574	.00009	3.6541	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00127	.09268	-.00952	1.3099	.00544	2.3329	.01942
Stddev	.00043	.00051	.00601	.02719	.0277	.00286	.0478	.00120
%RSD	212.41	40.137	6.4804	285.74	2.1163	52.552	2.0498	6.1798
#1	.00025	.00083	.09608	-.01175	1.2791	.00873	2.3710	.01977
#2	-.00060	.00115	.09622	.01873	1.3179	.00399	2.3484	.01808
#3	-.00025	.00183	.08575	-.03552	1.3328	.00360	2.2792	.02040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	3.0346	.00038	.03538	.00182	.00307	-.00429	5.2464
Stddev	.00011	.0279	.00035	.00379	.00137	.00245	.00450	.2178
%RSD	39.904	.92092	91.270	10.705	75.355	79.731	104.80	4.1512
#1	-.00042	3.0311	.00008	.03388	.00293	.00114	.00085	5.3691
#2	-.00022	3.0086	.00031	.03257	.00226	.00582	-.00621	5.3751
#3	-.00022	3.0641	.00077	.03969	.00028	.00225	-.00751	4.9949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607051901 Acquired: 7/14/2016 21:01:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.04846	-.00480	.00064	-.00071	.03375	-.00001
Stddev	.00069	.00025	.00338	.00287	.00073	.00197	.00030
%RSD	133.81	.50798	70.406	452.09	103.96	5.8359	2199.2
#1	.00063	.04854	-.00217	.00176	-.00133	.03474	.00011
#2	.00115	.04818	-.00861	.00277	.00010	.03503	.00020
#3	-.00022	.04865	-.00362	-.00263	-.00090	.03148	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10028.	58788.	2607.1
Stddev	8.	65.	24.0
%RSD	.07920	.11088	.91975
#1	10035.	58856.	2585.0
#2	10029.	58727.	2603.8
#3	10020.	58782.	2632.6

Approved: July 16, 2016

Sample Name: L1607051902 Acquired: 7/14/2016 21:05:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00135	.00446	-.00092	.05199	.13366	.00009	82.096	.00032
Stddev	.00044	.00587	.00145	.00053	.00118	.00005	.411	.00016
%RSD	32.168	131.57	157.81	1.0254	.88231	53.380	.50028	48.525
#1	-.00162	.00975	-.00242	.05241	.13484	.00004	82.157	.00020
#2	-.00085	-.00185	-.00081	.05218	.13366	.00014	82.473	.00050
#3	-.00159	.00548	.00047	.05139	.13248	.00009	81.658	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00100	.00712	.01838	1.9293	.01105	11.284	.00226
Stddev	.00036	.00066	.00020	.01807	.0105	.00547	.043	.00194
%RSD	588.43	66.569	2.8575	98.325	.54489	49.522	.38039	86.009
#1	.00028	.00024	.00707	.02627	1.9177	.01035	11.248	.00152
#2	-.00002	.00128	.00735	-.00230	1.9382	.01683	11.331	.00446
#3	-.00043	.00147	.00696	.03115	1.9319	.00595	11.272	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	16.163	-.00076	.00997	-.00174	.00346	-.00106	5.9234
Stddev	.00028	.075	.00051	.00550	.00159	.00110	.00191	.1762
%RSD	111.98	.46206	67.284	55.203	91.177	31.913	179.10	2.9742
#1	-.00007	16.162	-.00130	.01578	-.00265	.00473	-.00099	6.0209
#2	.00035	16.238	-.00069	.00929	-.00266	.00272	.00080	6.0292
#3	.00048	16.088	-.00029	.00484	.00009	.00293	-.00301	5.7200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607051902 Acquired: 7/14/2016 21:05:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.25895	-.01195	.00148	-.00044	.42597	-.00021
Stddev	.00071	.00176	.00400	.00302	.00064	.01682	.00035
%RSD	363.96	.67866	33.447	204.40	143.52	3.9492	166.87
#1	.00093	.25854	-.01372	.00495	-.00115	.43554	-.00029
#2	-.00049	.26088	-.00737	.00002	-.00027	.43583	.00017
#3	.00014	.25744	-.01475	-.00053	.00009	.40655	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9809.7	57173.	2569.4
Stddev	9.6	163.	17.1
%RSD	.09828	.28490	.66369
#1	9799.7	57086.	2561.9
#2	9810.5	57361.	2557.4
#3	9818.9	57071.	2589.0

Approved: July 16, 2016

Sample Name: L1607052401 Acquired: 7/14/2016 21:08:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00169	.59548	-.00003	.05987	.13203	.00009	64.259	.00038
Stddev	.00259	.00897	.00177	.00101	.00073	.00003	.169	.00025
%RSD	153.46	1.5071	6237.8	1.6851	.55431	32.672	.26369	64.694
#1	-.00012	.60407	-.00192	.05960	.13285	.00009	64.086	.00041
#2	-.00027	.58617	.00159	.06099	.13182	.00013	64.269	.00061
#3	-.00468	.59621	.00025	.05903	.13143	.00007	64.424	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.00480	.01299	.95933	1.3068	.01314	12.327	.06223
Stddev	.00011	.00125	.00140	.02033	.0543	.00325	.194	.00324
%RSD	13.598	26.030	10.769	2.1191	4.1531	24.714	1.5746	5.2027
#1	.00080	.00463	.01425	.98225	1.2961	.01261	12.110	.06588
#2	.00076	.00613	.01324	.95228	1.3656	.01018	12.388	.05971
#3	.00098	.00365	.01148	.94347	1.2586	.01661	12.484	.06110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	14.177	.01328	.04592	.00064	.00119	-.00462	5.6420
Stddev	.00013	.049	.00122	.00979	.00348	.00332	.00428	.2680
%RSD	28.327	.34545	9.1778	21.310	546.05	277.59	92.616	4.7492
#1	.00037	14.122	.01468	.05698	-.00334	.00221	-.00249	5.8120
#2	.00043	14.217	.01264	.03838	.00211	-.00251	-.00955	5.7809
#3	.00062	14.192	.01251	.04241	.00313	.00388	-.00183	5.3331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607052401 Acquired: 7/14/2016 21:08:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.49699	.00213	.00030	-.00005	.01573	.00045
Stddev	.00086	.00166	.00310	.00420	.00072	.00096	.00025
%RSD	112.76	.33449	145.52	1413.9	1374.3	6.0945	54.223
#1	-.00018	.49578	.00517	.00202	.00057	.01631	.00029
#2	.00095	.49889	-.00102	.00336	-.00084	.01627	.00074
#3	.00151	.49631	.00224	-.00449	.00011	.01463	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9881.6	57638.	2580.6
Stddev	25.4	199.	8.0
%RSD	.25740	.34459	.31065
#1	9908.3	57477.	2583.6
#2	9878.9	57577.	2571.6
#3	9857.7	57860.	2586.8

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 21:12:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40867**	**10.140**	**.41183**	**.49550**	**.99292**	**.05119**	**9.8550**	**.05096**
Stddev	.00040	.025	.00052	.00172	.00941	.00012	.0686	.00066
%RSD	.09760	.25036	.12686	.34716	.94817	.23423	.69586	1.2866
#1	.40913	10.131	.41213	.49474	.99605	.05129	9.8565	.05135
#2	.40840	10.168	.41213	.49747	.98234	.05122	9.7858	.05134
#3	.40848	10.120	.41123	.49429	1.0004	.05106	9.9229	.05021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20781**	**.51064**	**.51238**	**4.0367**	**50.208**	**.98935**	**10.339**	**.51121**
Stddev	.00321	.00176	.00643	.0546	.348	.00599	.065	.00390
%RSD	1.5427	.34502	1.2558	1.3537	.69268	.60521	.62442	.76288
#1	.20976	.50864	.51693	4.0260	50.306	.98826	10.346	.51542
#2	.20955	.51133	.51519	3.9881	49.822	.98399	10.271	.50773
#3	.20411	.51196	.50502	4.0958	50.497	.99581	10.399	.51047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0197**	**49.165**	**.50748**	**10.123**	**.50586**	**1.2070**	**.40559**	**4.8816**
Stddev	.0130	.383	.00700	.104	.00393	.0139	.00542	.0742
%RSD	1.2747	.77880	1.3801	1.0302	.77770	1.1507	1.3372	1.5200
#1	1.0278	49.167	.51147	10.200	.50980	1.2089	.40938	4.9619
#2	1.0265	48.781	.51159	10.164	.50585	1.2199	.40802	4.8672
#3	1.0047	49.547	.49940	10.004	.50193	1.1923	.39938	4.8156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 21:12:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0427**	**.99398**	**1.0175**	**.51460**	**1.0184**	**1.0123**	**1.0264**
Stddev	.0187	.00667	.0039	.00607	.0018	.0120	.0088
%RSD	1.7924	.67154	.38346	1.1788	.17643	1.1817	.85683
#1	1.0511	.99528	1.0173	.51556	1.0181	1.0197	1.0283
#2	1.0556	.98675	1.0137	.52014	1.0169	1.0187	1.0167
#3	1.0212	.99991	1.0215	.50812	1.0204	.99850	1.0340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10037.**	**58018.**	**2607.0**
Stddev	8.	108.	29.7
%RSD	.08262	.18557	1.1394
#1	10042.	58099.	2601.5
#2	10028.	58059.	2639.1
#3	10042.	57895.	2580.5

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 21:16:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00227**	**.00164**	**.00078**	**.00485**	**.00130**	**.00015**	**-.01287**	**.00009**
Stddev	.00067	.00604	.00342	.00251	.00047	.00004	.03147	.00005
%RSD	29.338	368.18	439.63	51.739	35.747	29.200	244.47	52.337
#1	-.00296	-.00513	.00427	.00474	.00092	.00020	.01670	.00005
#2	-.00223	.00645	-.00257	.00741	.00182	.00014	-.04595	.00008
#3	-.00163	.00360	.00063	.00240	.00117	.00011	-.00937	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00019**	**-.00011**	**.00940**	**.04646**	**.00313**	**-.02505**	**-.00081**
Stddev	.00026	.00048	.00060	.02155	.05638	.00303	.06773	.00411
%RSD	1248.2	257.41	523.60	229.24	121.37	96.772	270.39	508.57
#1	.00005	.00072	.00052	.01306	.06200	.00393	-.04580	-.00494
#2	-.00030	-.00021	-.00067	-.01375	.09344	-.00022	.05063	-.00076
#3	.00020	.00005	-.00019	.02889	-.01607	.00567	-.07998	.00327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**.03550**	**-.00094**	**.00428**	**-.00124**	**-.00013**	**.00102**	**.00286**
Stddev	.00026	.03698	.00126	.00343	.00117	.00131	.00039	.00286
%RSD	6994.9	104.18	133.02	80.010	94.296	1004.3	38.608	99.883
#1	-.00004	.05077	-.00239	.00824	-.00251	-.00162	.00061	.00133
#2	.00028	.06239	-.00026	.00237	-.00019	.00084	.00107	.00110
#3	-.00023	-.00667	-.00018	.00224	-.00103	.00039	.00139	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 21:16:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.00008	.00132	.00160	.00012	.00006	.00041
Stddev	.00046	.00041	.00121	.00108	.00031	.00005	.00022
%RSD	47.414	496.21	91.746	67.829	266.02	79.006	53.242
#1	.00088	.00055	.00006	.00091	.00047	.00011	.00039
#2	.00056	-.00014	.00248	.00103	.00003	.00005	.00020
#3	.00146	-.00016	.00144	.00285	-.00014	.00002	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9994.5	58657.	2578.5
Stddev	74.8	30.	32.7
%RSD	.74820	.05139	1.2664
#1	10039.	58625.	2541.9
#2	10036.	58660.	2604.6
#3	9908.1	58685.	2588.9

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 21:20:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00729	.17130	.00692	.08527	.00992	.00182	.39864	.00105
Stddev	.00152	.00097	.00246	.00095	.00039	.00005	.03424	.00002
%RSD	20.857	.56341	35.594	1.1166	3.9637	2.7881	8.5897	2.3544
#1	.00878	.17214	.00542	.08635	.00951	.00178	.39029	.00105
#2	.00574	.17151	.00558	.08492	.00997	.00180	.36935	.00108
#3	.00735	.17024	.00977	.08454	.01029	.00187	.43629	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00416	.00417	.00434	.08701	.91009	.08623	.39378	.00487
Stddev	.00032	.00083	.00065	.01640	.05631	.00224	.02982	.00457
%RSD	7.6463	19.962	14.936	18.850	6.1877	2.5959	7.5738	93.752
#1	.00442	.00413	.00484	.09629	.84959	.08768	.36245	.00635
#2	.00427	.00336	.00361	.06808	.91971	.08365	.42183	.00851
#3	.00381	.00503	.00457	.09668	.96098	.08735	.39707	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00818	.41159	.01661	.81568	.00457	.08469	.01061	.80216
Stddev	.00031	.01178	.00066	.00177	.00142	.00314	.00358	.00421
%RSD	3.7438	2.8610	3.9753	.21723	31.058	3.7046	33.681	.52506
#1	.00802	.41882	.01601	.81757	.00413	.08700	.01438	.80358
#2	.00853	.39800	.01649	.81541	.00615	.08112	.01020	.80548
#3	.00799	.41794	.01732	.81406	.00342	.08595	.00726	.79742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 21:20:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43996**	**.04281**	**.02397**	**.16176**	**.00812**	**.01840**	**.04358**
Stddev	.00268	.00052	.00414	.00178	.00072	.00010	.00063
%RSD	.60974	1.2072	17.274	1.1023	8.8997	.53427	1.4532
#1	.44280	.04237	.02394	.16280	.00830	.01840	.04431
#2	.43961	.04338	.01984	.15970	.00873	.01849	.04323
#3	.43747	.04268	.02812	.16279	.00732	.01830	.04320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9808.9**	**56807.**	**2507.3**
Stddev	30.4	66.	20.3
%RSD	.30982	.11654	.81106
#1	9790.3	56807.	2483.9
#2	9792.4	56741.	2517.9
#3	9844.0	56873.	2520.2

Approved: July 16, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3015	**Prep Date:**	06/28/2016 08:58
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574824	**Analyst:**	JYH	**Run Date:**	07/01/2016 15:49
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	NI.070116.154932
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00647		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00727		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00964		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00744	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.000779	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0132	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3015	**Prep Date:**	06/28/2016 08:58
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/06/2016 09:17
Workgroup #:	WG574824	**Analyst:**	JYH	**Run Date:**	07/06/2016 18:43
Collect Date:	06/24/2016 07:50	**Dilution:**	50	**File ID:**	NI.070616.184328
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.667		0.300	0.150	0.0750
Manganese, Total	7439-96-5	0.893		0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG574419
Analyst: VC
Spike Analyst: VC
Run Date: 06/28/2016 08:58
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/28/2016 09:02

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18987
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG574419-03	BLANK	1	20 mL	50 mL	180.389 g	180.391 g		
2	WG574419-04	LCS	1	20 mL	50 mL	182.172 g	182.183 g	.25 mL	
3	L16061360-01	SAMP	2	20 mL	50 mL	182.032 g	182.031 g		07/05/16
4	L16061360-02	SAMP	2	20 mL	50 mL	182.567 g	182.564 g		07/05/16
5	L16061400-01	SAMP	1	20 mL	50 mL	181.061 g	181.059 g		07/08/16
6	L16061400-02	SAMP	1	20 mL	50 mL	181.722 g	181.713 g		07/08/16
7	L16061400-03	SAMP	1	20 mL	50 mL	184.279 g	184.279 g		07/08/16
8	L16061400-04	SAMP	1	20 mL	50 mL	182.065 g	182.038 g		07/08/16
9	L16061400-05	SAMP	1	20 mL	50 mL	182.153 g	182.136 g		07/08/16
10	WG574419-01	REF	1	20 mL	50 mL	182.509 g	182.498 g		
11	L16061400-06	RS01	1	20 mL	50 mL	182.509 g	182.498 g		07/08/16
12	WG574419-05	MS	1	20 mL	50 mL	180.405 g	180.408 g	.25 mL	
13	L16061400-07	MS01	1	20 mL	50 mL	180.405 g	180.408 g	.25 mL	07/08/16
14	WG574419-06	MSD	1	20 mL	50 mL	184.727 g	184.718 g	.25 mL	
15	L16061400-08	SD01	1	20 mL	50 mL	184.727 g	184.718 g	.25 mL	07/08/16
16	L16061400-09	SAMP	1	20 mL	50 mL	183.411 g	183.411 g		07/08/16
17	L16061400-10	SAMP	1	20 mL	50 mL	181.746 g	181.735 g		07/08/16
18	WG574419-02	REF	2	20 mL	50 mL	183.009 g	183.02 g		
19	L16061427-01	SAMP	2	20 mL	50 mL	183.009 g	183.02 g		07/06/16
20	L16061444-11	SAMP	1	20 mL	50 mL	181.662 g	181.659 g		07/08/16
21	L16061452-01	SAMP	1	20 mL	50 mL	181.538 g	181.524 g		07/08/16
22	L16061453-01	SAMP	1	20 mL	50 mL	182.609 g	182.6 g		07/08/16
23	L16061453-03	SAMP	1	20 mL	50 mL	182.794 g	182.785 g		07/08/16
24	L16061468-01	SAMP	2	20 mL	50 mL	185.027 g	185.007 g		07/01/16
25	L16061470-01	SAMP	2	20 mL	50 mL	181.721 g	181.695 g		07/01/16
26	L16061471-01	SAMP	2	20 mL	50 mL	179.446 g	179.44 g		07/01/16
27	WG574419-07	DUP	1	20 mL	50 mL	183.333 g	183.325 g		

L16061400-04	FILTERED DIGESTATE
L16061400-09	FILTERED DIGESTATE

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4828177
Report generated: 06/28/2016 10:16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.070116.102728	Blank	Blank		1		07/01/16 10:27
2	NI.070116.103040	WG575028-01	Calibration Point		1		07/01/16 10:30
3	NI.070116.103351	WG575028-02	Calibration Point		1		07/01/16 10:33
4	NI.070116.103702	WG575028-03	Calibration Point		1		07/01/16 10:37
5	NI.070116.104014	WG575028-04	Calibration Point		1		07/01/16 10:40
6	NI.070116.104327	WG575028-05	Initial Calibration Verification		1		07/01/16 10:43
7	NI.070116.104640	WG575028-06	Initial Calib Blank		1		07/01/16 10:46
8	NI.070116.104953	WG575028-07	Low Level Initial Calibration V		1		07/01/16 10:49
9	NI.070116.105304	WG575028-08	Interference Check		1		07/01/16 10:53
10	NI.070116.105616	WG575028-09	Interference Check		1		07/01/16 10:56
11	NI.070116.105929	WG575028-10	CCV		1		07/01/16 10:59
12	NI.070116.110241	WG575028-11	CCB		1		07/01/16 11:02
13	NI.070116.110553	WG574416-04	Method/Prep Blank	20/50	1		07/01/16 11:05
14	NI.070116.110904	WG574416-05	Laboratory Control S	20/50	1		07/01/16 11:09
15	NI.070116.111216	WG574416-01	Reference Sample		1	L16061417-05	07/01/16 11:12
16	NI.070116.111527	WG574416-06	Matrix Spike	20/50	1	L16061417-05	07/01/16 11:15
17	NI.070116.111839	WG574416-07	Matrix Spike Duplica	20/50	1	L16061417-05	07/01/16 11:18
18	NI.070116.112150	L16061417-01	SS007MW0B04-007	20/50	1		07/01/16 11:21
19	NI.070116.112502	L16061417-02	SS007MW0B06-007	20/50	1		07/01/16 11:25
20	NI.070116.112813	WG574808-01	Post Digestion Spike		1	L16061417-02	07/01/16 11:28
21	NI.070116.113125	WG574808-02	Serial Dilution		5	L16061417-02	07/01/16 11:31
22	NI.070116.113436	WG574808-02	Serial Dilution		25	L16061417-02	07/01/16 11:34
23	NI.070116.113750	WG575028-12	CCV		1		07/01/16 11:37
24	NI.070116.114101	WG575028-13	CCB		1		07/01/16 11:41
25	NI.070116.114414	L16061417-03	SS007MW0B06-007DUP	20/50	1		07/01/16 11:44
26	NI.070116.114726	L16061417-04	SS007MW0B13-007	20/50	1		07/01/16 11:47
27	NI.070116.115037	L16061417-08	SS007MWN748-007	20/50	1		07/01/16 11:50
28	NI.070116.115349	L16061417-09	FQC-RB06221601-CC	20/50	1		07/01/16 11:53
29	NI.070116.115701	L16061441-01	TS935TW002A	20/50	1		07/01/16 11:57
30	NI.070116.120012	L16061441-02	TS935TW005A	20/50	1		07/01/16 12:00
31	NI.070116.120324	WG574416-02	Reference Sample		1	L16061442-01	07/01/16 12:03
32	NI.070116.120635	L16061442-02	TS935TW010C	20/50	1		07/01/16 12:06
33	NI.070116.120947	WG574416-08	Matrix Spike	20/50	1	L16061442-01	07/01/16 12:09
34	NI.070116.121258	WG574416-09	Matrix Spike Duplica	20/50	1	L16061442-01	07/01/16 12:12

Page: 1 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.070116.121611	WG575028-14	CCV		1		07/01/16 12:16
36	NI.070116.121923	WG575028-15	CCB		1		07/01/16 12:19
37	NI.070116.122236	L16061446-01	GH9-HSPRING	20/50	1		07/01/16 12:22
38	NI.070116.122548	WG574416-03	Reference Sample		1	L16061447-01	07/01/16 12:25
39	NI.070116.122859	WG574416-10	Duplicate	20/50	1	L16061447-01	07/01/16 12:28
40	NI.070116.123211	L16061289-01	MW21-062216	20/50	1		07/01/16 12:32
41	NI.070116.123523	L16061289-04	18WW02F-062216	20/50	1		07/01/16 12:35
42	NI.070116.123834	L16061290-03	MW16F-062116	20/50	1		07/01/16 12:38
43	NI.070116.124145	L16061290-05	109-062216	20/50	1		07/01/16 12:41
44	NI.070116.124458	WG575028-16	CCV		1		07/01/16 12:44
45	NI.070116.124810	WG575028-17	CCB		1		07/01/16 12:48
46	NI.070116.125836	WG574419-03	Method/Prep Blank	20/50	1		07/01/16 12:58
47	NI.070116.130334	WG574419-04	Laboratory Control S	20/50	1		07/01/16 13:03
48	NI.070116.130646	WG574419-01	Reference Sample		1	L16061400-06	07/01/16 13:06
49	NI.070116.130957	WG574419-05	Matrix Spike	20/50	1	L16061400-06	07/01/16 13:09
50	NI.070116.131309	WG574419-06	Matrix Spike Duplica	20/50	1	L16061400-06	07/01/16 13:13
51	NI.070116.131620	WG574419-02	Reference Sample		1	L16061427-01	07/01/16 13:16
52	NI.070116.131932	WG574419-07	Duplicate	20/50	1	L16061427-01	07/01/16 13:19
53	NI.070116.132243	L16061468-01	H6F0605-01	20/50	1		07/01/16 13:22
54	NI.070116.132555	WG574824-01	Post Digestion Spike		1	L16061468-01	07/01/16 13:25
55	NI.070116.132906	WG574824-02	Serial Dilution		5	L16061468-01	07/01/16 13:29
56	NI.070116.133218	WG575028-18	CCV		1		07/01/16 13:32
57	NI.070116.133530	WG575028-19	CCB		1		07/01/16 13:35
58	NI.070116.133842	L16061470-01	S6F0639-01	20/50	1		07/01/16 13:38
59	NI.070116.134154	L16061471-01	S6F0244-01	20/50	1		07/01/16 13:41
60	NI.070116.134505	WG574593-01	Reference Sample		2	L16061536-01	07/01/16 13:45
61	NI.070116.134817	WG574593-04	Duplicate	20/50	2	L16061536-01	07/01/16 13:48
62	NI.070116.135128	WG574593-05	Matrix Spike	20/50	2	L16061536-01	07/01/16 13:51
63	NI.070116.135440	WG574593-06	Matrix Spike Duplica	20/50	2	L16061536-01	07/01/16 13:54
64	NI.070116.135751	L16061068-04	C01-061716	20/50	50		07/01/16 13:57
65	NI.070116.140103	L16061068-05	C01FD-061716	20/50	50		07/01/16 14:01
66	NI.070116.140414	L16061068-11	MW19F-061716	20/50	10		07/01/16 14:04
67	NI.070116.140725	WG574840-01	Post Digestion Spike		10	L16061622-02	07/01/16 14:07
68	NI.070116.141039	WG575028-20	CCV		1		07/01/16 14:10

Page: 2 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.070116.141350	WG575028-21	CCB		1		07/01/16 14:13
70	NI.070116.141703	WG574840-04	L1606106815S WG574840-0	20/50	10		07/01/16 14:17
71	NI.070116.142015	WG574840-05	L1606106817SD WG574840	20/50	10		07/01/16 14:20
72	NI.070116.142326	L16061065-02	MW-23-006	20/50	50		07/01/16 14:23
73	NI.070116.142637	L16061065-03	MW-23-008	20/50	50		07/01/16 14:26
74	NI.070116.142949	L16061065-04	MW-23-009	20/50	50		07/01/16 14:29
75	NI.070116.143302	WG575028-22	CCV		1		07/01/16 14:33
76	NI.070116.143613	WG575028-23	CCB		1		07/01/16 14:36
77	NI.070116.143926	WG575028-24	Low Level Continuing Calibra		1		07/01/16 14:39
78	NI.070116.151112	L16061360-01	NP0116-LM1	20/50	1		07/01/16 15:11
79	NI.070116.151423	L16061360-02	EB-062416	20/50	1		07/01/16 15:14
80	NI.070116.151735	L16061400-01	MW-22-008	20/50	1		07/01/16 15:17
81	NI.070116.152046	L16061400-02	MW-22-016	20/50	1		07/01/16 15:20
82	NI.070116.152358	L16061400-03	MW-22-006	20/50	1		07/01/16 15:23
83	NI.070116.152709	L16061400-04	MW-22-005	20/50	1		07/01/16 15:27
84	NI.070116.153021	L16061400-05	MW-22-001	20/50	1		07/01/16 15:30
85	NI.070116.153332	L16061400-09	MW-22-003	20/50	1		07/01/16 15:33
86	NI.070116.153643	L16061400-10	MW-22-004	20/50	1		07/01/16 15:36
87	NI.070116.153955	L16061444-11	EB03	20/50	1		07/01/16 15:39
88	NI.070116.154308	WG575028-25	CCV		1		07/01/16 15:43
89	NI.070116.154619	WG575028-26	CCB		1		07/01/16 15:46
90	NI.070116.154932	L16061452-01	18CPTMW12SW-062416	20/50	1		07/01/16 15:49
91	NI.070116.155244	L16061453-01	MW2-062416	20/50	1		07/01/16 15:52
92	NI.070116.155555	L16061453-03	18CPTMW01SW-062416	20/50	1		07/01/16 15:55
93	NI.070116.155907	WG574419-02	Reference Sample		5	L16061427-01	07/01/16 15:59
94	NI.070116.160218	WG574419-07	Duplicate	20/50	5	L16061427-01	07/01/16 16:02
95	NI.070116.160530	L16061289-01	MW21-062216	20/50	50		07/01/16 16:05
96	NI.070116.160841	L16061290-03	MW16F-062116	20/50	10		07/01/16 16:08
97	NI.070116.161155	WG575028-27	CCV		1		07/01/16 16:11
98	NI.070116.161506	WG575028-28	CCB		1		07/01/16 16:15
99	NI.070116.163708	WG574521-03	Method/Prep Blank	.25/100	1		07/01/16 16:37
100	NI.070116.164019	WG574521-04	Laboratory Control S	.25/100	1		07/01/16 16:40
101	NI.070116.164331	WG574521-01	Reference Sample		1	L16061445-04	07/01/16 16:43
102	NI.070116.164642	WG574521-05	Matrix Spike	.254/100	1	L16061445-04	07/01/16 16:46

Page: 3 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.070116.164954	WG574521-06	Matrix Spike Duplica	.25/100	1	L16061445-04	07/01/16 16:49
104	NI.070116.165305	L16061451-01	GS165SS062016S-ES	.251/100	1		07/01/16 16:53
105	NI.070116.165617	L16061451-02	GS159SS062116G-ES	.25/100	1		07/01/16 16:56
106	NI.070116.165928	WG575057-01	Post Digestion Spike		1	L16061451-02	07/01/16 16:59
107	NI.070116.170240	WG575057-02	Serial Dilution		5	L16061451-02	07/01/16 17:02
108	NI.070116.170552	WG575057-02	Serial Dilution		25	L16061451-02	07/01/16 17:05
109	NI.070116.170905	WG575028-29	CCV		1		07/01/16 17:09
110	NI.070116.171217	WG575028-30	CCB		1		07/01/16 17:12
111	NI.070116.171825	L16061451-03	GS164SS062116S-ES	.251/100	1		07/01/16 17:18
112	NI.070116.172204	L16061451-04	GS164SS062116P-ES	.253/100	1		07/01/16 17:22
113	NI.070116.172516	L16061451-05	GS154SS062316X-ES	.253/100	1		07/01/16 17:25
114	NI.070116.172827	WG574521-02	Reference Sample		1	L16061451-06	07/01/16 17:28
115	NI.070116.173139	L16061451-07	GS153SS0622316X-ES	.253/100	1		07/01/16 17:31
116	NI.070116.173450	L16061451-08	GS153SS062316X-ESD	.256/100	1		07/01/16 17:34
117	NI.070116.173802	WG574521-07	Matrix Spike	.258/100	1	L16061451-06	07/01/16 17:38
118	NI.070116.174113	WG574521-08	Matrix Spike Duplica	.256/100	1	L16061451-06	07/01/16 17:41
119	NI.070116.174425	L16061445-01	TS935DS00700A	.258/100	1		07/01/16 17:44
120	NI.070116.174736	L16061445-02	TS935DS00705A	.256/100	1		07/01/16 17:47
121	NI.070116.175049	WG575028-31	CCV		1		07/01/16 17:50
122	NI.070116.175401	WG575028-32	CCB		1		07/01/16 17:54
123	NI.070116.175714	L16061445-03	TS935DS00800A		1		07/01/16 17:57
124	NI.070116.180025	L16061445-07	TS935DS00900A		1		07/01/16 18:00
125	NI.070116.180337	L16061445-08	TS935DS00905A		1		07/01/16 18:03
126	NI.070116.180648	L16061445-09	TS935DS00905C		1		07/01/16 18:06
127	NI.070116.181000	L16061445-10	TS935DS01000A		1		07/01/16 18:10
128	NI.070116.181311	L16061445-11	TS935DS01005A		1		07/01/16 18:13
129	NI.070116.181623	L16061445-12	TS935DS01205A		1		07/01/16 18:16
130	NI.070116.181934	L16061451-01	GS165SS062016S-ES		10		07/01/16 18:19
131	NI.070116.182246	L16061451-02	GS159SS062116G-ES		10		07/01/16 18:22
132	NI.070116.182557	WG575057-01	Post Digestion Spike		10	L16061451-02	07/01/16 18:25
133	NI.070116.182910	WG575028-33	CCV		1		07/01/16 18:29
134	NI.070116.183222	WG575028-34	CCB		1		07/01/16 18:32
135	NI.070116.183535	WG575057-02	Serial Dilution		50	L16061451-02	07/01/16 18:35
136	NI.070116.183846	L16061451-03	GS164SS062116S-ES		10		07/01/16 18:38

Page: 4 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.070116.184158	L16061451-04	GS164SS062116P-ES		10		07/01/16 18:41
138	NI.070116.184509	L16061451-05	GS154SS062316X-ES		10		07/01/16 18:45
139	NI.070116.184821	WG574521-02	Reference Sample		10	L16061451-06	07/01/16 18:48
140	NI.070116.185132	L16061451-07	GS153SS0622316X-ES		10		07/01/16 18:51
141	NI.070116.185444	L16061451-08	GS153SS062316X-ESD		10		07/01/16 18:54
142	NI.070116.185755	WG574521-07	Matrix Spike		10	L16061451-06	07/01/16 18:57
143	NI.070116.190107	WG574521-08	Matrix Spike Duplica		10	L16061451-06	07/01/16 19:01
144	NI.070116.190419	WG575028-35	CCV		1		07/01/16 19:04
145	NI.070116.190731	WG575028-36	CCB		1		07/01/16 19:07
146	NI.070116.191044	WG575028-37	Low Level Continuing Calibra		1		07/01/16 19:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
67				
Seq. 67, 70-71: wrong WG numbers. JYH				

Page: 5 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.070616.090452	Blank	Blank		1		07/06/16 09:04
2	NI.070616.090803	WG575370-01	Calibration Point		1		07/06/16 09:08
3	NI.070616.091115	WG575370-02	Calibration Point		1		07/06/16 09:11
4	NI.070616.091426	WG575370-03	Calibration Point		1		07/06/16 09:14
5	NI.070616.091738	WG575370-04	Calibration Point		1		07/06/16 09:17
6	NI.070616.092051	WG575370-05	Initial Calibration Verification		1		07/06/16 09:20
7	NI.070616.092404	WG575370-06	Initial Calib Blank		1		07/06/16 09:24
8	NI.070616.092717	WG575370-07	Low Level Initial Calibration V		1		07/06/16 09:27
9	NI.070616.093029	WG575370-08	Interference Check		1		07/06/16 09:30
10	NI.070616.093340	WG575370-09	Interference Check		1		07/06/16 09:33
11	NI.070616.093653	WG575370-10	CCV		1		07/06/16 09:36
12	NI.070616.094005	WG575370-11	CCB		1		07/06/16 09:40
13	NI.070616.094317	WG574195-02	Method/Prep Blank	.25/100	1		07/06/16 09:43
14	NI.070616.094629	WG574195-03	Laboratory Control S	.25/100	1		07/06/16 09:46
15	NI.070616.094940	WG574195-01	Reference Sample		1	L16061294-11	07/06/16 09:49
16	NI.070616.095252	WG574195-04	Matrix Spike	.257/100	1	L16061294-11	07/06/16 09:52
17	NI.070616.095603	WG574195-05	Matrix Spike Duplica	.252/100	1	L16061294-11	07/06/16 09:56
18	NI.070616.095915	L16061294-01	XU936DS00700A	.255/100	1		07/06/16 09:59
19	NI.070616.100226	L16061294-02	XU936DS00705A	.251/100	1		07/06/16 10:02
20	NI.070616.100538	WG574825-01	Post Digestion Spike		1	L16061294-02	07/06/16 10:05
21	NI.070616.100849	WG574825-02	Serial Dilution		5	L16061294-02	07/06/16 10:08
22	NI.070616.101201	WG574825-02	Serial Dilution		25	L16061294-02	07/06/16 10:12
23	NI.070616.101514	WG575370-12	CCV		1		07/06/16 10:15
24	NI.070616.101825	WG575370-13	CCB		1		07/06/16 10:18
25	NI.070616.102139	L16061294-04	XU936DS01100A	.25/100	1		07/06/16 10:21
26	NI.070616.102450	L16061294-05	XU936DS01105A	.252/100	1		07/06/16 10:24
27	NI.070616.102802	L16061294-06	XU936DS01500A	.25/100	1		07/06/16 10:28
28	NI.070616.103113	L16061294-07	XU936DS01505A	.25/100	1		07/06/16 10:31
29	NI.070616.103425	L16061294-08	XU936DS01505C	.255/100	1		07/06/16 10:34
30	NI.070616.103737	L16061294-09	XU936DS01900A	.256/100	1		07/06/16 10:37
31	NI.070616.104048	L16061294-10	XU936DS01905A	.251/100	1		07/06/16 10:40
32	NI.070616.104400	L16061294-14	XU936DS00200A	.256/100	1		07/06/16 10:44
33	NI.070616.104711	L16061294-15	XU936DS00205A	.251/100	1		07/06/16 10:47
34	NI.070616.105023	L16061381-08	XU936DS00405A	.256/100	1		07/06/16 10:50

Page: 1 Approved: July 07, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.070616.105336	WG575370-14	CCV		1		07/06/16 10:53
36	NI.070616.114231	WG575370-15	CCB		1		07/06/16 11:42
37	NI.070616.114547	WG575370-16	CCV		1		07/06/16 11:45
38	NI.070616.114858	WG575370-17	CCB		1		07/06/16 11:48
39	NI.070616.115343	WG574195-01	Reference Sample		50	L16061294-11	07/06/16 11:53
40	NI.070616.115654	WG574195-04	Matrix Spike	.257/100	50	L16061294-11	07/06/16 11:56
41	NI.070616.120005	WG574195-05	Matrix Spike Duplica	.252/100	50	L16061294-11	07/06/16 12:00
42	NI.070616.120317	L16061294-01	XU936DS00700A	.255/100	50		07/06/16 12:03
43	NI.070616.120628	L16061294-02	XU936DS00705A	.251/100	50		07/06/16 12:06
44	NI.070616.120940	WG574825-01	Post Digestion Spike		50	L16061294-02	07/06/16 12:09
45	NI.070616.121251	WG574825-02	Serial Dilution		250	L16061294-02	07/06/16 12:12
46	NI.070616.121603	L16061294-04	XU936DS01100A	.25/100	50		07/06/16 12:16
47	NI.070616.121914	L16061294-05	XU936DS01105A	.252/100	50		07/06/16 12:19
48	NI.070616.122225	L16061294-06	XU936DS01500A	.25/100	50		07/06/16 12:22
49	NI.070616.122538	WG575370-18	CCV		1		07/06/16 12:25
50	NI.070616.122850	WG575370-19	CCB		1		07/06/16 12:28
51	NI.070616.123202	L16061294-07	XU936DS01505A	.25/100	50		07/06/16 12:32
52	NI.070616.123514	L16061294-08	XU936DS01505C	.255/100	50		07/06/16 12:35
53	NI.070616.123825	L16061294-09	XU936DS01900A	.256/100	50		07/06/16 12:38
54	NI.070616.124137	L16061294-10	XU936DS01905A	.251/100	50		07/06/16 12:41
55	NI.070616.124448	L16061294-14	XU936DS00200A	.256/100	50		07/06/16 12:44
56	NI.070616.124759	L16061294-15	XU936DS00205A	.251/100	50		07/06/16 12:47
57	NI.070616.125111	L16061381-08	XU936DS00405A	.256/100	50		07/06/16 12:51
58	NI.070616.125423	WG575370-20	CCV		1		07/06/16 12:54
59	NI.070616.125735	WG575370-21	CCB		1		07/06/16 12:57
60	NI.070616.130440	L16061313-06	MW-4	20/50	1		07/06/16 13:04
61	NI.070616.130752	L16061313-07	MW-4	20/50	1		07/06/16 13:07
62	NI.070616.131103	L16061313-08	MW-3	20/50	1		07/06/16 13:11
63	NI.070616.131415	L16061313-09	MW-3	20/50	1		07/06/16 13:14
64	NI.070616.131726	L16061313-10	DUPLICATE	20/50	1		07/06/16 13:17
65	NI.070616.132037	L16061313-11	DUPLICATE	20/50	1		07/06/16 13:20
66	NI.070616.132349	L16061313-12	MW-2D	20/50	1		07/06/16 13:23
67	NI.070616.132700	L16061313-13	MW-2D	20/50	1		07/06/16 13:27
68	NI.070616.133012	L16061313-14	EQ-RINSE	20/50	1		07/06/16 13:30

Page: 2 Approved: July 07, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.070616.133325	WG575370-22	CCV		1		07/06/16 13:33
70	NI.070616.133636	WG575370-23	CCB		1		07/06/16 13:36
71	NI.070616.134017	WG574881-02	Method/Prep Blank	.25/100	1		07/06/16 13:40
72	NI.070616.134329	WG574881-03	Laboratory Control S	.25/100	1		07/06/16 13:43
73	NI.070616.134640	WG574881-01	Reference Sample		1	L16061533-03	07/06/16 13:46
74	NI.070616.134951	WG574881-04	Matrix Spike	.25/100	1	L16061533-03	07/06/16 13:49
75	NI.070616.135303	WG574881-05	Matrix Spike Duplica	.254/100	1	L16061533-03	07/06/16 13:53
76	NI.070616.135614	L16061488-01	NV79-01	.25/100	1		07/06/16 13:56
77	NI.070616.135926	L16061488-02	NV79-02	.258/100	1		07/06/16 13:59
78	NI.070616.140318	WG575023-01	Post Digestion Spike		1	L16061488-02	07/06/16 14:03
79	NI.070616.140630	WG575023-02	Serial Dilution		5	L16061488-02	07/06/16 14:06
80	NI.070616.140941	WG575023-02	Serial Dilution		25	L16061488-02	07/06/16 14:09
81	NI.070616.141254	WG575370-24	CCV		1		07/06/16 14:12
82	NI.070616.141606	WG575370-25	CCB		1		07/06/16 14:16
83	NI.070616.142024	L16061488-03	NV79-03	.259/100	1		07/06/16 14:20
84	NI.070616.142336	L16061488-04	NV79-04	.257/100	1		07/06/16 14:23
85	NI.070616.142647	L16061533-01	TS935DS01100A	.253/100	1		07/06/16 14:26
86	NI.070616.142958	L16061533-02	TS935DS01100C	.255/100	1		07/06/16 14:29
87	NI.070616.143310	L16061643-01	V6F0315-01	.254/100	1		07/06/16 14:33
88	NI.070616.143621	L16061643-02	V6F0315-02	.253/100	1		07/06/16 14:36
89	NI.070616.143933	L16061687-01	TR0059	.252/100	1		07/06/16 14:39
90	NI.070616.144244	L16061296-01	OUTFALL 002/COMP		1		07/06/16 14:42
91	NI.070616.144556	L16061313-08	MW-3	20/50	10		07/06/16 14:45
92	NI.070616.144907	L16061313-10	DUPLICATE	20/50	10		07/06/16 14:49
93	NI.070616.145220	WG575370-26	CCV		1		07/06/16 14:52
94	NI.070616.145531	WG575370-27	CCB		1		07/06/16 14:55
95	NI.070616.150731	L16060907-08	MW11S-061516	20/50	100		07/06/16 15:07
96	NI.070616.151042	L16060907-10	DUP-GW-061516	20/50	100		07/06/16 15:10
97	NI.070616.151354	L16060907-11	DUP-GW-061516	20/50	100		07/06/16 15:13
98	NI.070616.151705	L16060907-12	MW31-061516	20/50	1		07/06/16 15:17
99	NI.070616.152017	L16060907-13	MW31-061516	20/50	1		07/06/16 15:20
100	NI.070616.152328	L16061026-02	18WW16F-061616		1		07/06/16 15:23
101	NI.070616.152752	L16061026-02	18WW16F-061616	20/50	200		07/06/16 15:27
102	NI.070616.153105	WG575370-28	CCV		1		07/06/16 15:31

Page: 3 Approved: July 07, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.070616.153417	WG575370-29	CCB		1		07/06/16 15:34
104	NI.070616.155033	WG574306-02	Method/Prep Blank	.25/100	1		07/06/16 15:50
105	NI.070616.155345	WG574306-03	Laboratory Control S	.25/100	1		07/06/16 15:53
106	NI.070616.155656	L16061297-01	XU936DS01805A	.259/100	1		07/06/16 15:56
107	NI.070616.160008	L16061297-02	XU936DS01800A	.25/100	1		07/06/16 16:00
108	NI.070616.160319	L16061297-03	XU936DS01405A	.256/100	1		07/06/16 16:03
109	NI.070616.160631	L16061297-04	XU936DS01405C	.258/100	1		07/06/16 16:06
110	NI.070616.160942	L16061297-05	XU936DS02005A	.25/100	1		07/06/16 16:09
111	NI.070616.161318	L16061297-06	XU936DS01605A	.258/100	1		07/06/16 16:13
112	NI.070616.161629	WG574573-03	Post Digestion Spike		1	L16061297-06	07/06/16 16:16
113	NI.070616.161940	WG574573-04	Serial Dilution		5	L16061297-06	07/06/16 16:19
114	NI.070616.162253	WG575370-30	CCV		1		07/06/16 16:22
115	NI.070616.162605	WG575370-31	CCB		1		07/06/16 16:26
116	NI.070616.162917	WG574306-01	Reference Sample		1	L16061297-07	07/06/16 16:29
117	NI.070616.163229	WG574306-04	Matrix Spike	.253/100	1	L16061297-07	07/06/16 16:32
118	NI.070616.163540	WG574306-05	Matrix Spike Duplica	.255/100	1	L16061297-07	07/06/16 16:35
119	NI.070616.163852	L16061297-10	XU936DS01705A	.254/100	1		07/06/16 16:38
120	NI.070616.164203	L16061297-11	XU936DS01305A	.253/100	1		07/06/16 16:42
121	NI.070616.164515	L16061297-12	XU936DS01205A	.251/100	1		07/06/16 16:45
122	NI.070616.164826	L16061297-13	XU936DS00800A	.252/100	1		07/06/16 16:48
123	NI.070616.165137	L16061297-14	XU936DS00805A	.25/100	1		07/06/16 16:51
124	NI.070616.165449	L16061297-15	XU936DS00900A	.259/100	1		07/06/16 16:54
125	NI.070616.165800	L16061297-16	XU936DS00905A	.256/100	1		07/06/16 16:58
126	NI.070616.170113	WG575370-32	CCV		1		07/06/16 17:01
127	NI.070616.170425	WG575370-33	CCB		1		07/06/16 17:04
128	NI.070616.170737	L16061297-17	XU936DS00905C	.25/100	1		07/06/16 17:07
129	NI.070616.171049	L16061297-18	XU936DS01005A	.255/100	1		07/06/16 17:10
130	NI.070616.171400	L16061297-19	XU936DS00600A	.258/100	1		07/06/16 17:14
131	NI.070616.171712	L16061297-20	XU936DS00605A	.259/100	1		07/06/16 17:17
132	NI.070616.172023	L16061297-01	XU936DS01805A	.259/100	50		07/06/16 17:20
133	NI.070616.172334	L16061297-02	XU936DS01800A	.25/100	50		07/06/16 17:23
134	NI.070616.172646	L16061297-03	XU936DS01405A	.256/100	50		07/06/16 17:26
135	NI.070616.172957	L16061297-04	XU936DS01405C	.258/100	50		07/06/16 17:29
136	NI.070616.173309	L16061297-05	XU936DS02005A	.25/100	50		07/06/16 17:33

Page: 4 Approved: July 07, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.070616.173620	L16061297-06	XU936DS01605A	.258/100	50		07/06/16 17:36
138	NI.070616.173934	WG575370-34	CCV		1		07/06/16 17:39
139	NI.070616.174245	WG575370-35	CCB		1		07/06/16 17:42
140	NI.070616.174559	WG574573-03	Post Digestion Spike		50	L16061297-06	07/06/16 17:45
141	NI.070616.174910	WG574573-04	Serial Dilution		250	L16061297-06	07/06/16 17:49
142	NI.070616.175222	WG574306-01	Reference Sample		50	L16061297-07	07/06/16 17:52
143	NI.070616.175533	WG574306-04	Matrix Spike	.253/100	50	L16061297-07	07/06/16 17:55
144	NI.070616.175844	WG574306-05	Matrix Spike Duplica	.255/100	50	L16061297-07	07/06/16 17:58
145	NI.070616.180156	L16061297-10	XU936DS01705A	.254/100	50		07/06/16 18:01
146	NI.070616.180507	L16061297-11	XU936DS01305A	.253/100	50		07/06/16 18:05
147	NI.070616.180818	L16061297-12	XU936DS01205A	.251/100	50		07/06/16 18:08
148	NI.070616.181130	L16061297-13	XU936DS00800A	.252/100	50		07/06/16 18:11
149	NI.070616.181441	L16061297-14	XU936DS00805A	.25/100	50		07/06/16 18:14
150	NI.070616.181755	WG575370-36	CCV		1		07/06/16 18:17
151	NI.070616.182106	WG575370-37	CCB		1		07/06/16 18:21
152	NI.070616.182419	L16061297-15	XU936DS00900A	.259/100	50		07/06/16 18:24
153	NI.070616.182731	L16061297-16	XU936DS00905A	.256/100	50		07/06/16 18:27
154	NI.070616.183042	L16061297-17	XU936DS00905C	.25/100	50		07/06/16 18:30
155	NI.070616.183353	L16061297-18	XU936DS01005A	.255/100	50		07/06/16 18:33
156	NI.070616.183705	L16061297-19	XU936DS00600A	.258/100	50		07/06/16 18:37
157	NI.070616.184016	L16061297-20	XU936DS00605A	.259/100	50		07/06/16 18:40
158	NI.070616.184328	L16061452-01	18CPTMW12SW-062416	20/50	50		07/06/16 18:43
159	NI.070616.184639	L16061453-01	MW2-062416	20/50	50		07/06/16 18:46
160	NI.070616.184952	WG575370-38	CCV		1		07/06/16 18:49
161	NI.070616.185304	WG575370-39	CCB		1		07/06/16 18:53
162	NI.070616.185616	L16061453-03	18CPTMW01SW-062416	20/50	50		07/06/16 18:56
163	NI.070616.185928	L16061296-01	OUTFALL 002/COMP	20/50	1		07/06/16 18:59
164	NI.070616.190239	L16061453-03	18CPTMW01SW-062416		500		07/06/16 19:02
165	NI.070616.190551	WG575370-40	Interference Check		1		07/06/16 19:05
166	NI.070616.190902	WG575370-41	Interference Check		1		07/06/16 19:09
167	NI.070616.191215	WG575370-42	CCV		1		07/06/16 19:12
168	NI.070616.191526	WG575370-43	CCB		1		07/06/16 19:15
169	NI.070616.191839	WG575370-44	Low Level Continuing Calibra		1		07/06/16 19:18

Page: 5 Approved: July 07, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 575028
Runlog ID: 76079
Analytical Workgroups: 574808,574849,574824,574804,575057

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1441,1442,1360,1400,1444,1445
Level 4	1289,12901417,1452,1453,1068
	1065,1451
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:

Secondary Reviewer:
05-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 15:57:13

Microbac Laboratories Inc.

Data Checklist

Date: 06-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 575370
Runlog ID: 76130
Analytical Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1294,1533,1297
Level 4	1687,907,1026,1452,1453
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
07-JUL-2016

Secondary Reviewer:
07-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-07-2016 15:29:19

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG574824

Login Number: L16061452

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW12SW-062416	01	06/24/16					06/28/2016	4	180		07/01/16	7.3	180	
18CPTMW12SW-062416	01	06/24/16					06/28/2016	4	180		07/06/16	12.5	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4837520
Report generated 07/07/2016 08:33

METHOD BLANK SUMMARY

Login Number: L16061452
Blank File ID: NI.070116.125836
Prep Date: 06/28/16 08:58
Analyzed Date: 07/01/16 12:58
Analyst: JYH

Work Group: WG574824
Blank Sample ID: WG574419-03
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574419-04	NI.070116.130334	07/01/16 13:03	01
DUP	WG574419-07	NI.070116.131932	07/01/16 13:19	01
18CPTMW12SW-062416	L16061452-01	NI.070116.154932	07/01/16 15:49	01
DUP	WG574419-07	NI.070116.160218	07/01/16 16:02	DL01
18CPTMW12SW-062416	L16061452-01	NI.070616.184328	07/06/16 18:43	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4837521
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061452 Prep Date: 06/28/16 08:58 Sample ID: WG574419-03
Instrument ID: ICP-MS2 Run Date: 07/01/16 12:58 Prep Method: 3015
File ID: NI.070116.125836 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574824 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-01-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4837522
07-JUL-2016 08:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061452 Run Date: 07/01/2016 Sample ID: WG574419-04
Instrument ID: ICP-MS2 Run Time: 13:03 Prep Method: 3015
File ID: NI.070116.130334 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574824 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-01-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.128	102	80 - 120	
Arsenic, Total	0.125	0.126	101	80 - 120	
Barium, Total	0.125	0.123	98.4	80 - 120	
Cadmium, Total	0.125	0.126	101	80 - 120	
Chromium, Total	0.125	0.127	102	80 - 120	
Cobalt, Total	0.125	0.126	101	80 - 120	
Copper, Total	0.125	0.130	104	80 - 120	
Lead, Total	0.125	0.128	102	80 - 120	
Manganese, Total	0.125	0.128	102	80 - 120	
Nickel, Total	0.125	0.127	101	80 - 120	
Silver, Total	0.125	0.128	103	80 - 120	
Thallium, Total	0.125	0.126	101	80 - 120	
Vanadium, Total	0.125	0.125	100	80 - 120	
Zinc, Total	0.125	0.129	103	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4837523
Report generated: 07/07/2016 08:33

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061452 Cal ID: ICP-MS2- Worknum: WG574824
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG574419-01 File ID: NI.070116.130646 Dil: 1 Matrix: WATER
Sample ID: WG574419-05 MS File ID: NI.070116.130957 Dil: 1 Units: mg/L
Sample ID: WG574419-06 MSD File ID: NI.070116.131309 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.0115	0.125	0.143	105	0.125	0.138	102	2.94	80 - 120	20	
Arsenic	0.000768	0.125	0.131	104	0.125	0.127	101	2.82	80 - 120	20	
Barium	0.0269	0.125	0.141	91.3	0.125	0.137	88.2	2.81	80 - 120	20	
Cadmium	0.000319	0.125	0.127	101	0.125	0.124	98.9	2.55	80 - 120	20	
Chromium	0.00350	0.125	0.131	102	0.125	0.127	99.1	3.09	80 - 120	20	
Cobalt	0.000501	0.125	0.129	102	0.125	0.123	98.2	4.27	80 - 120	20	
Copper	0.00345	0.125	0.128	99.5	0.125	0.125	97.4	2.08	80 - 120	20	
Lead	0.00571	0.125	0.135	103	0.125	0.130	99.8	3.15	80 - 120	20	
Manganese	0.111	0.125	0.241	104	0.125	0.234	99.1	2.72	80 - 120	20	
Nickel	0.00318	0.125	0.129	101	0.125	0.125	97.1	3.64	80 - 120	20	
Silver	ND	0.125	0.125	100	0.125	0.121	97.0	3.35	80 - 120	20	
Thallium	ND	0.125	0.127	102	0.125	0.124	98.9	2.94	80 - 120	20	
Vanadium	0.00127	0.125	0.131	104	0.125	0.126	99.6	4.13	80 - 120	20	
Zinc	ND	0.125	0.134	108	0.125	0.132	105	1.99	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4837524
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061452 **Worknum:** WG574824
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574824-02 **File ID:** NI.070116.132906 **Dil:** 5 **Units:** ug/L
Sample: L16061468-01 **File ID:** NI.070116.132243 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	1.53	F	5070.00	
Arsenic	0.448	F	ND	U		
Barium	23.9	X	24.9	X	4.11	
Cadmium	ND	U	ND	U		
Chromium	0.541	F	ND	U		
Cobalt	ND	U	ND	U		
Copper	2.71	X	2.81	F	3.55	
Lead	0.231	F	ND	U		
Manganese	2.29	X	2.08	F	9.36	
Nickel	1.41	F	ND	U		
Silver	ND	U	ND	U		
Thallium	0.123	F	ND	U		
Vanadium	0.268	F	ND	U		
Zinc	16.3	F	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4837518
07/07/2016 08:33

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061452 **Worknum:** WG574824
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574824-01 **File ID:** NI.070116.132555 **Dil:** 1 **Units:** ug/L
Sample ID: L16061468-01 **File ID:** NI.070116.132243 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	50.5		0	U	50	100.9	75 - 125	
ARSENIC	53.8		0.448	F	50	106.8	75 - 125	
BARIUM	74.2		23.9		50	100.7	75 - 125	
CADMIUM	51.7		0	U	50	103.5	75 - 125	
CHROMIUM	53.1		0.541	F	50	105.1	75 - 125	
COBALT	53.2		0	U	50	106.5	75 - 125	
COPPER	53.9		2.71		50	102.3	75 - 125	
LEAD	52.9		0.231	F	50	105.4	75 - 125	
MANGANESE	54.5		2.29		50	104.3	75 - 125	
NICKEL	52.7		1.41	F	50	102.6	75 - 125	
SILVER	50.0		0	U	50	100.0	75 - 125	
THALLIUM	52.5		0.123	F	50	104.8	75 - 125	
VANADIUM	54.1		0.268	F	50	107.8	75 - 125	
ZINC	68.8		16.3	F	50	105.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4837519
Report generated: 07/07/2016 08:33

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061452	Workgroup (AAB#):	WG574824
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG575028	Initial Calibration Date:	01-JUL-2016 10:40

	WG575028-01		WG575028-02		WG575028-03		WG575028-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	259	.4	428	50	250000	100	508000	.999935	
ARSENIC	0	-59.9	.4	5.90	50	61400	100	123000	.999997	
BARIUM	0	20.7	.4	146	50	107000	100	210000	.99998	
CADMIUM	0	2.60	.4	119	50	113000	100	223000	.999998	
CHROMIUM	0	7690	.4	8190	50	412000	100	812000	1	
COBALT	0	201	.4	604	50	385000	100	759000	.999986	
COPPER	0	167	.4	251	50	103000	100	201000	.999949	
LEAD	0	930	.4	2060	50	1040000	100	2040000	.999999	
MANGANESE	0	715	.4	1140	50	380000	100	751000	.999989	
NICKEL	0	335	.4	418	50	105000	100	205000	.999979	
SILVER	0	83.3	.4	447	50	352000	100	698000	1	
THALLIUM	0	7.70	.4	454	50	444000	100	872000	.999994	
VANADIUM	0	1560	.4	2030	50	413000	100	818000	.999998	
ZINC	0	240	.4	280	50	61600	100	122000	.999992	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4837527
Report generated: 07-JUL-2016 08:33

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061452	Workgroup (AAB#):	WG574824
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG575370	Initial Calibration Date:	06-JUL-2016 09:17

	WG575370-01		WG575370-02		WG575370-03		WG575370-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	280	.4	308	50	202000	100	429000	.999223	
ARSENIC	0	-74.4	.4	-50.4	50	52000	100	105000	1	
BARIUM	0	25.7	.4	66.7	50	92500	100	184000	.999984	
CADMIUM	0	4.30	.4	21.6	50	97200	100	190000	.999996	
CHROMIUM	0	6680	.4	6770	50	353000	100	705000	.999996	
COBALT	0	226	.4	269	50	306000	100	609000	.999959	
COPPER	0	110	.4	106	50	84100	100	171000	1	
LEAD	0	774	.4	923	50	894000	100	1760000	.999728	
MANGANESE	0	812	.4	892	50	312000	100	615000	.999906	
NICKEL	0	364	.4	348	50	84600	100	171000	1	
SILVER	0	71.3	.4	172	50	300000	100	609000	.99988	
THALLIUM	0	9.70	.4	134	50	381000	100	759000	.999873	
VANADIUM	0	1280	.4	1370	50	354000	100	719000	.999998	
ZINC	0	186	.4	165	50	50700	100	103000	.999997	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4837527
Report generated: 07-JUL-2016 08:33

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061452
Instrument ID: ICP-MS2
File ID: NI.070116.104640
Workgroup (AAB#): WG574824
Matrix: WATER

Run Date: 07/01/2016
Run Time: 10:46
Analyst: JYH
Cal ID: ICP-MS2 - 01-JUL-16

Sample ID: WG575028-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.2	U
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4837529
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061452
Instrument ID: ICP-MS2
File ID: NI.070616.092404
Workgroup (AAB#): WG574824
Matrix: WATER

Run Date: 07/06/2016
Run Time: 09:24
Analyst: JYH
Cal ID: ICP-MS2 - 06-JUL-16

Sample ID: WG575370-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.236	F
THALLIUM	.04	.16	.0496	F
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4837529
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-11
Instrument ID: ICP-MS2
Run Time: 11:02
Method: 6020A
File ID: NI.070116.110241
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.276	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837532
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-17
Instrument ID: ICP-MS2
Run Time: 12:48
Method: 6020A
File ID: NI.070116.124810
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837532
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-19
Instrument ID: ICP-MS2
Run Time: 13:35
Method: 6020A
File ID: NI.070116.133530
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837532
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-26
Instrument ID: ICP-MS2
Run Time: 15:46
Method: 6020A
File ID: NI.070116.154619
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837532
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-28
Instrument ID: ICP-MS2
Run Time: 16:15
Method: 6020A
File ID: NI.070116.161506
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837532
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-11
Instrument ID: ICP-MS2
Run Time: 09:40
Method: 6020A
File ID: NI.070616.094005
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.361	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0461	F
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837532
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-37
Instrument ID: ICP-MS2
Run Time: 18:21
Method: 6020A
File ID: NI.070616.182106
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0407	F
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837532
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-39
Instrument ID: ICP-MS2
Run Time: 18:53
Method: 6020A
File ID: NI.070616.185304
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0424	F
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837532
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-43
Instrument ID: ICP-MS2
Run Time: 19:15
Method: 6020A
File ID: NI.070616.191526
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.298	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0490	F
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837532
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061452 Run Date: 07/01/2016 Sample ID: WG575028-05
Instrument ID: ICP-MS2 Run Time: 10:43 Method: 6020A
File ID: NI.070116.104327 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG574824 Cal ID: ICP-MS - 01-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.5	98.9	90 - 110	
Arsenic		50	50.5	101	90 - 110	
Barium		50	49.1	98.3	90 - 110	
Cadmium		50	49.7	99.4	90 - 110	
Chromium		50	50.3	101	90 - 110	
Cobalt		50	50.9	102	90 - 110	
Copper		50	50.6	101	90 - 110	
Lead		50	50.4	101	90 - 110	
Manganese		50	51.2	102	90 - 110	
Nickel		50	50.3	101	90 - 110	
Silver		50	49.2	98.3	90 - 110	
Thallium		50	49.7	99.3	90 - 110	
Vanadium		50	50.3	101	90 - 110	
Zinc		50	51.2	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4837528
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061452 Run Date: 07/06/2016 Sample ID: WG575370-05
Instrument ID: ICP-MS2 Run Time: 09:20 Method: 6020A
File ID: NI.070616.092051 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG574824 Cal ID: ICP-MS - 06-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	51.8	104	90 - 110	
Arsenic		50	50.2	100	90 - 110	
Barium		50	51.1	102	90 - 110	
Cadmium		50	50.8	102	90 - 110	
Chromium		50	50.2	100	90 - 110	
Cobalt		50	50.7	101	90 - 110	
Copper		50	50.0	100	90 - 110	
Lead		50	50.8	102	90 - 110	
Manganese		50	50.7	101	90 - 110	
Nickel		50	49.7	99.4	90 - 110	
Silver		50	50.9	102	90 - 110	
Thallium		50	50.3	101	90 - 110	
Vanadium		50	50.7	101	90 - 110	
Zinc		50	50.3	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4837528
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-10
Instrument ID: ICP-MS2
Run Time: 10:59
Method: 6020A
File ID: NI.070116.105929
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0511	mg/L	102	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0496	mg/L	99.2	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0506	mg/L	101	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0505	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0502	mg/L	100	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0509	mg/L	102	90 - 110		
Zinc		0.0500	0.0502	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837531
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-16
Instrument ID: ICP-MS2
Run Time: 12:44
Method: 6020A
File ID: NI.070116.124458
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0495	mg/L	99.0	90 - 110		
Arsenic		0.0500	0.0496	mg/L	99.1	90 - 110		
Barium		0.0500	0.0491	mg/L	98.3	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0506	mg/L	101	90 - 110		
Lead		0.0500	0.0509	mg/L	102	90 - 110		
Manganese		0.0500	0.0503	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0498	mg/L	99.5	90 - 110		
Thallium		0.0500	0.0507	mg/L	101	90 - 110		
Vanadium		0.0500	0.0502	mg/L	100	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837531
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-18
Instrument ID: ICP-MS2
Run Time: 13:32
Method: 6020A
File ID: NI.070116.133218
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0501	mg/L	100	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.8	90 - 110		
Barium		0.0500	0.0480	mg/L	96.0	90 - 110		
Cadmium		0.0500	0.0496	mg/L	99.2	90 - 110		
Chromium		0.0500	0.0495	mg/L	99.0	90 - 110		
Cobalt		0.0500	0.0513	mg/L	103	90 - 110		
Copper		0.0500	0.0497	mg/L	99.5	90 - 110		
Lead		0.0500	0.0511	mg/L	102	90 - 110		
Manganese		0.0500	0.0499	mg/L	99.8	90 - 110		
Nickel		0.0500	0.0496	mg/L	99.3	90 - 110		
Silver		0.0500	0.0497	mg/L	99.3	90 - 110		
Thallium		0.0500	0.0503	mg/L	101	90 - 110		
Vanadium		0.0500	0.0504	mg/L	101	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837531
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-25
Instrument ID: ICP-MS2
Run Time: 15:43
Method: 6020A
File ID: NI.070116.154308
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0499	mg/L	99.9	90 - 110		
Arsenic		0.0500	0.0504	mg/L	101	90 - 110		
Barium		0.0500	0.0490	mg/L	97.9	90 - 110		
Cadmium		0.0500	0.0497	mg/L	99.4	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cobalt		0.0500	0.0515	mg/L	103	90 - 110		
Copper		0.0500	0.0508	mg/L	102	90 - 110		
Lead		0.0500	0.0513	mg/L	103	90 - 110		
Manganese		0.0500	0.0505	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0499	mg/L	99.7	90 - 110		
Thallium		0.0500	0.0502	mg/L	100	90 - 110		
Vanadium		0.0500	0.0509	mg/L	102	90 - 110		
Zinc		0.0500	0.0507	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837531
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-27
Instrument ID: ICP-MS2
Run Time: 16:11
Method: 6020A
File ID: NI.070116.161155
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0489	mg/L	97.7	90 - 110		
Arsenic		0.0500	0.0500	mg/L	100	90 - 110		
Barium		0.0500	0.0487	mg/L	97.3	90 - 110		
Cadmium		0.0500	0.0502	mg/L	100	90 - 110		
Chromium		0.0500	0.0502	mg/L	100	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0503	mg/L	101	90 - 110		
Lead		0.0500	0.0522	mg/L	104	90 - 110		
Manganese		0.0500	0.0497	mg/L	99.4	90 - 110		
Nickel		0.0500	0.0503	mg/L	101	90 - 110		
Silver		0.0500	0.0498	mg/L	99.7	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0500	mg/L	100	90 - 110		
Zinc		0.0500	0.0500	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837531
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-10
Instrument ID: ICP-MS2
Run Time: 09:36
Method: 6020A
File ID: NI.070616.093653
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0511	mg/L	102	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0490	mg/L	97.9	90 - 110		
Cadmium		0.0500	0.0493	mg/L	98.7	90 - 110		
Chromium		0.0500	0.0505	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0504	mg/L	101	90 - 110		
Lead		0.0500	0.0511	mg/L	102	90 - 110		
Manganese		0.0500	0.0513	mg/L	103	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0493	mg/L	98.6	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0507	mg/L	101	90 - 110		
Zinc		0.0500	0.0507	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837531
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-36
Instrument ID: ICP-MS2
Run Time: 18:17
Method: 6020A
File ID: NI.070616.181755
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0507	mg/L	101	90 - 110		
Arsenic		0.0500	0.0507	mg/L	101	90 - 110		
Barium		0.0500	0.0502	mg/L	100	90 - 110		
Cadmium		0.0500	0.0512	mg/L	102	90 - 110		
Chromium		0.0500	0.0518	mg/L	104	90 - 110		
Cobalt		0.0500	0.0506	mg/L	101	90 - 110		
Copper		0.0500	0.0521	mg/L	104	90 - 110		
Lead		0.0500	0.0528	mg/L	106	90 - 110		
Manganese		0.0500	0.0529	mg/L	106	90 - 110		
Nickel		0.0500	0.0521	mg/L	104	90 - 110		
Silver		0.0500	0.0504	mg/L	101	90 - 110		
Thallium		0.0500	0.0513	mg/L	103	90 - 110		
Vanadium		0.0500	0.0507	mg/L	101	90 - 110		
Zinc		0.0500	0.0516	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837531
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-38
Instrument ID: ICP-MS2
Run Time: 18:49
Method: 6020A
File ID: NI.070616.184952
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0496	mg/L	99.2	90 - 110		
Arsenic		0.0500	0.0503	mg/L	101	90 - 110		
Barium		0.0500	0.0491	mg/L	98.3	90 - 110		
Cadmium		0.0500	0.0501	mg/L	100	90 - 110		
Chromium		0.0500	0.0517	mg/L	103	90 - 110		
Cobalt		0.0500	0.0499	mg/L	99.8	90 - 110		
Copper		0.0500	0.0514	mg/L	103	90 - 110		
Lead		0.0500	0.0522	mg/L	104	90 - 110		
Manganese		0.0500	0.0527	mg/L	105	90 - 110		
Nickel		0.0500	0.0516	mg/L	103	90 - 110		
Silver		0.0500	0.0490	mg/L	98.0	90 - 110		
Thallium		0.0500	0.0508	mg/L	102	90 - 110		
Vanadium		0.0500	0.0496	mg/L	99.2	90 - 110		
Zinc		0.0500	0.0512	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837531
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-42
Instrument ID: ICP-MS2
Run Time: 19:12
Method: 6020A
File ID: NI.070616.191215
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0526	mg/L	105	90 - 110		
Arsenic		0.0500	0.0506	mg/L	101	90 - 110		
Barium		0.0500	0.0495	mg/L	99.0	90 - 110		
Cadmium		0.0500	0.0507	mg/L	101	90 - 110		
Chromium		0.0500	0.0517	mg/L	103	90 - 110		
Cobalt		0.0500	0.0513	mg/L	103	90 - 110		
Copper		0.0500	0.0513	mg/L	103	90 - 110		
Lead		0.0500	0.0521	mg/L	104	90 - 110		
Manganese		0.0500	0.0530	mg/L	106	90 - 110		
Nickel		0.0500	0.0514	mg/L	103	90 - 110		
Silver		0.0500	0.0501	mg/L	100	90 - 110		
Thallium		0.0500	0.0512	mg/L	102	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0513	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837531
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-07
Instrument ID: ICP-MS2
Run Time: 10:49
Method: 6020A
File ID: NI.070116.104953
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.364	ug/L	91.0	70 - 130		
Arsenic		0.400	0.390	ug/L	97.6	70 - 130		
Barium		0.750	0.697	ug/L	92.9	70 - 130		
Cadmium		0.240	0.238	ug/L	99.3	70 - 130		
Chromium		0.800	0.709	ug/L	88.6	70 - 130		
Cobalt		0.400	0.371	ug/L	92.7	70 - 130		
Copper		0.800	0.775	ug/L	96.9	70 - 130		
Lead		0.200	0.193	ug/L	96.3	70 - 130		
Manganese		0.500	0.457	ug/L	91.3	70 - 130		
Nickel		1.60	1.52	ug/L	95.0	70 - 130		
Silver		0.400	0.392	ug/L	98.0	70 - 130		
Thallium		0.0800	0.0815	ug/L	102	70 - 130		
Vanadium		0.400	0.339	ug/L	84.7	70 - 130		
Zinc		6.25	6.40	ug/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837533
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-24
Instrument ID: ICP-MS2
Run Time: 14:39
Method: 6020A
File ID: NI.070116.143926
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.364	ug/L	90.9	70 - 130		
Arsenic		0.400	0.415	ug/L	104	70 - 130		
Barium		0.750	0.660	ug/L	88.0	70 - 130		
Cadmium		0.240	0.234	ug/L	97.3	70 - 130		
Chromium		0.800	0.671	ug/L	83.8	70 - 130		
Cobalt		0.400	0.393	ug/L	98.3	70 - 130		
Copper		0.800	0.781	ug/L	97.7	70 - 130		
Lead		0.200	0.199	ug/L	99.6	70 - 130		
Manganese		0.500	0.428	ug/L	85.7	70 - 130		
Nickel		1.60	1.54	ug/L	96.4	70 - 130		
Silver		0.400	0.385	ug/L	96.2	70 - 130		
Thallium		0.0800	0.0813	ug/L	102	70 - 130		
Vanadium		0.400	0.360	ug/L	90.0	70 - 130		
Zinc		6.25	7.08	ug/L	113	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837533
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-37
Instrument ID: ICP-MS2
Run Time: 19:10
Method: 6020A
File ID: NI.070116.191044
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.327	ug/L	81.8	70 - 130		
Arsenic		0.400	0.408	ug/L	102	70 - 130		
Barium		0.750	0.693	ug/L	92.4	70 - 130		
Cadmium		0.240	0.228	ug/L	94.8	70 - 130		
Chromium		0.800	0.796	ug/L	99.5	70 - 130		
Cobalt		0.400	0.378	ug/L	94.5	70 - 130		
Copper		0.800	0.768	ug/L	96.0	70 - 130		
Lead		0.200	0.198	ug/L	98.9	70 - 130		
Manganese		0.500	0.461	ug/L	92.1	70 - 130		
Nickel		1.60	1.51	ug/L	94.1	70 - 130		
Silver		0.400	0.387	ug/L	96.6	70 - 130		
Thallium		0.0800	0.0773	ug/L	96.6	70 - 130		
Vanadium		0.400	0.364	ug/L	91.0	70 - 130		
Zinc		6.25	7.03	ug/L	113	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837533
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-07
Instrument ID: ICP-MS2
Run Time: 09:27
Method: 6020A
File ID: NI.070616.092717
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.435	ug/L	109	70 - 130		
Arsenic		0.400	0.418	ug/L	105	70 - 130		
Barium		0.750	0.739	ug/L	98.5	70 - 130		
Cadmium		0.240	0.274	ug/L	114	70 - 130		
Chromium		0.800	0.743	ug/L	92.9	70 - 130		
Cobalt		0.400	0.423	ug/L	106	70 - 130		
Copper		0.800	0.816	ug/L	102	70 - 130		
Lead		0.200	0.240	ug/L	120	70 - 130		
Manganese		0.500	0.495	ug/L	99.0	70 - 130		
Nickel		1.60	1.57	ug/L	98.4	70 - 130		
Silver		0.400	0.428	ug/L	107	70 - 130		
Thallium		0.0800	0.120	ug/L	150	70 - 130		*
Vanadium		0.400	0.398	ug/L	99.5	70 - 130		
Zinc		6.25	6.43	ug/L	103	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837533
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-44
Instrument ID: ICP-MS2
Run Time: 19:18
Method: 6020A
File ID: NI.070616.191839
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.451	ug/L	113	70 - 130		
Arsenic		0.400	0.437	ug/L	109	70 - 130		
Barium		0.750	0.726	ug/L	96.8	70 - 130		
Cadmium		0.240	0.283	ug/L	118	70 - 130		
Chromium		0.800	0.809	ug/L	101	70 - 130		
Cobalt		0.400	0.419	ug/L	105	70 - 130		
Copper		0.800	0.837	ug/L	105	70 - 130		
Lead		0.200	0.243	ug/L	121	70 - 130		
Manganese		0.500	0.498	ug/L	99.7	70 - 130		
Nickel		1.60	1.57	ug/L	98.0	70 - 130		
Silver		0.400	0.418	ug/L	105	70 - 130		
Thallium		0.0800	0.113	ug/L	142	70 - 130		*
Vanadium		0.400	0.395	ug/L	98.8	70 - 130		
Zinc		6.25	6.69	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837533
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061452
Instrument ID: ICP-MS2
Sol. A : WG575028-08 **File ID:** NI.070116.105304
Sol. AB : WG575028-09 **File ID:** NI.070116.105616

Workgroup (AAB#): WG574824
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.118	NS	100	96.8	96.8	
Arsenic	NS	0	NS	100	100	100	
Barium	NS	0.406	NS	100	98.7	98.7	
Cadmium	NS	-0.0920	NS	100	99.5	99.5	
Chromium	NS	0.0974	NS	100	97.8	97.8	
Cobalt	NS	0.0353	NS	100	98.4	98.4	
Copper	NS	0.287	NS	100	98.5	98.5	
Lead	NS	0.0642	NS	100	98.7	98.7	
Manganese	NS	0.0949	NS	100	99.2	99.2	
Nickel	NS	0.398	NS	100	97.1	97.1	
Silver	NS	0.0605	NS	100	87.4	87.4	
Thallium	NS	0.0383	NS	100	98.2	98.2	
Vanadium	NS	0.0180	NS	100	99.7	99.7	
Zinc	NS	1.24	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4837530
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061452
Instrument ID: ICP-MS2
Sol. A : WG575370-08 **File ID:** NI.070616.093029
Sol. AB : WG575370-09 **File ID:** NI.070616.093340

Workgroup (AAB#): WG574824
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.462	NS	100	101	101	
Arsenic	NS	0.0530	NS	100	103	103	
Barium	NS	0.0414	NS	100	101	101	
Cadmium	NS	-0.0508	NS	100	101	101	
Chromium	NS	-0.0525	NS	100	101	101	
Cobalt	NS	0.0720	NS	100	101	101	
Copper	NS	0.326	NS	100	102	102	
Lead	NS	0.0662	NS	100	103	103	
Manganese	NS	0.305	NS	100	102	102	
Nickel	NS	0.313	NS	100	100	100	
Silver	NS	0.0592	NS	100	85.4	85.4	
Thallium	NS	0.0459	NS	100	101	101	
Vanadium	NS	0.0677	NS	100	102	102	
Zinc	NS	0.776	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4837530
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061452
Workgroup (AAB#): WG574824
Instrument ID: ICP-MS2
Method: 6020A
Sol. A : WG575370-40 **File ID:** NI.070616.190551
Units: ug/L
Sol. AB : WG575370-41 **File ID:** NI.070616.190902
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.149	NS	100	99.3	99.3	
Arsenic	NS	0.108	NS	100	102	102	
Barium	NS	0.0400	NS	100	97.8	97.8	
Cadmium	NS	-0.0433	NS	100	99.9	99.9	
Chromium	NS	-0.0569	NS	100	102	102	
Cobalt	NS	0.0640	NS	100	99.4	99.4	
Copper	NS	0.309	NS	100	101	101	
Lead	NS	0.0608	NS	100	104	104	
Manganese	NS	0.299	NS	100	105	105	
Nickel	NS	0.277	NS	100	101	101	
Silver	NS	0.0582	NS	100	60.3	60.3	*
Thallium	NS	0.0420	NS	100	101	101	
Vanadium	NS	0.0998	NS	100	99.1	99.1	
Zinc	NS	0.887	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4837530
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061452 **Analytical Method:** 6020
Analytical Workgroup: WG574824 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 01-JUL-2016 10:30

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061452-01	SAMP	01-JUL-2016 15:49	94.385	99.585	97.214
WG574419-03	BLANK	01-JUL-2016 12:58	105.189	110.053	108.964
WG574419-04	LCS	01-JUL-2016 13:03	106.272	112.391	108.961
WG574824-01	PSPK	01-JUL-2016 13:25	101.728	106.622	105.038
WG574824-02	SERIAL	01-JUL-2016 13:29	99.596	101.366	99.122
WG575028-05	ICV	01-JUL-2016 10:43	99.388	100.45	101.227
WG575028-06	ICB	01-JUL-2016 10:46	99.921	101.195	100.88
WG575028-07	LLICV	01-JUL-2016 10:49	97.843	98.579	96.464
WG575028-08	ICS	01-JUL-2016 10:53	97.097	100.956	98.373
WG575028-09	ICS	01-JUL-2016 10:56	99.537	101.553	98.936
WG575028-10	CCV	01-JUL-2016 10:59	98.413	100.239	99.347
WG575028-11	CCB	01-JUL-2016 11:02	101.078	100.828	100.108
WG575028-16	CCV	01-JUL-2016 12:44	103.303	109.496	107.231
WG575028-17	CCB	01-JUL-2016 12:48	105.044	109.74	107.547
WG575028-18	CCV	01-JUL-2016 13:32	102.499	106.565	105.514
WG575028-19	CCB	01-JUL-2016 13:35	102.831	106.05	104.856
WG575028-24	LLCCV	01-JUL-2016 14:39	100.804	98.706	100.09
WG575028-25	CCV	01-JUL-2016 15:43	100.989	103.315	102.712
WG575028-26	CCB	01-JUL-2016 15:46	101.711	104.453	104.379
WG575028-27	CCV	01-JUL-2016 16:11	100.912	105.898	104.016
WG575028-28	CCB	01-JUL-2016 16:15	103.124	105.323	105.946
WG575028-37	LLCCV	01-JUL-2016 19:10	93.446	100.247	96.576

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4837526
Report generated: 07/07/2016 08:32

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061452 **Analytical Method:** 6020
Analytical Workgroup: WG574824 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 06-JUL-2016 09:08

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061452-01	SAMP	06-JUL-2016 18:43	94.475	99.476	93.914
WG575370-05	ICV	06-JUL-2016 09:20	100.585	102.463	96.381
WG575370-06	ICB	06-JUL-2016 09:24	100.788	98.692	102.109
WG575370-07	LLICV	06-JUL-2016 09:27	102.41	100.394	95.13
WG575370-08	ICS	06-JUL-2016 09:30	96.414	92.465	92.27
WG575370-09	ICS	06-JUL-2016 09:33	98.737	100.154	96.13
WG575370-10	CCV	06-JUL-2016 09:36	99.702	100.07	99.191
WG575370-11	CCB	06-JUL-2016 09:40	101.529	104.208	96.95
WG575370-36	CCV	06-JUL-2016 18:17	99.62	108.357	102.064
WG575370-37	CCB	06-JUL-2016 18:21	100.174	107.689	103.131
WG575370-38	CCV	06-JUL-2016 18:49	99.508	108.232	103.152
WG575370-39	CCB	06-JUL-2016 18:53	99.139	106.573	101.58
WG575370-40	ICS	06-JUL-2016 19:05	91.725	95.835	90.284
WG575370-41	ICS	06-JUL-2016 19:09	97.884	104.251	99.368
WG575370-42	CCV	06-JUL-2016 19:12	98.906	104.728	100.841
WG575370-43	CCB	06-JUL-2016 19:15	98.402	104.006	99.572
WG575370-44	LLCCV	06-JUL-2016 19:18	98.022	101.982	97.937

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4837526
Report generated: 07/07/2016 08:32

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061452 **Analytical Method:** 6020
Analytical Workgroup: WG574824 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 01-JUL-2016 10:30

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061468-01	SAMP	01-JUL-2016 13:22	103.02	109.235	107.57

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4837526
Report generated: 07/07/2016 08:32

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061452 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4837525
Report generated: 07/07/2016 08:33

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Friday, July 01, 2016 10:13:04

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1329	2024	0.709	
Mg	23.985	23.975	4503	2020	0.696	
Co	58.933	58.925	11692	2022	0.691	
In	114.904	114.875	22859	2028	0.686	
U	238.050	238.025	47457	2043	0.687	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	3.598
5.575	4.718
5.625	3.789
5.675	2.527
5.725	1.318
5.775	1.142
5.825	2.913
5.875	3.428
5.925	4.580
5.975	3.116
6.025	1.509
6.075	2.372
6.125	1.519
6.175	1.841
6.225	5.064
6.275	40.937
6.325	69.722
6.375	49.793
6.425	63.949
6.475	46.187
6.525	18.017
6.575	4.888
6.625	1.946
6.675	3.206
6.725	1.995
6.775	2.218
6.825	1.690

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 1

Approved: July 02, 2016

6.875	1.781
6.925	1.186
6.975	1.328
7.025	1.344
7.075	1.081
7.125	0.453
7.175	2.067
7.225	2.391
7.275	2.950
7.325	17.639
7.375	57.735
7.425	72.436
7.475	223.607
7.525	61.237
7.575	61.237
7.625	74.689
7.675	43.853
7.725	81.441
7.775	70.711
7.825	49.793
7.875	81.441
7.925	71.261
7.975	63.888
8.025	108.327
8.075	69.722
8.125	100.000
8.175	69.722
8.225	63.191
8.275	46.481
8.325	59.265
8.375	94.786
8.425	43.853
8.475	35.355
22.525	100.000
22.575	24.845
22.625	11.877
22.675	14.821
22.725	27.507
22.775	16.675
22.825	18.109
22.875	27.152
22.925	12.748
22.975	17.626
23.025	12.284
23.075	17.138
23.125	22.852
23.175	24.755

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 2

Approved: July 02, 2016

23.225	27.794
23.275	13.465
23.325	28.287
23.375	27.216
23.425	29.613
23.475	25.156
23.525	5.738
23.575	3.240
23.625	2.912
23.675	3.295
23.725	2.834
23.775	3.434
23.825	2.694
23.875	2.849
23.925	2.371
23.975	2.335
24.025	3.002
24.075	2.407
24.125	2.590
24.175	2.561
24.225	3.038
24.275	3.732
24.325	13.243
24.375	46.291
24.425	31.044
24.475	3.900
24.525	3.690
24.575	1.518
24.625	2.041
24.675	1.011
24.725	0.948
24.775	1.552
24.825	1.240
24.875	0.999
24.925	2.206
24.975	1.206
25.025	1.519
25.075	1.903
25.125	0.579
25.175	1.714
25.225	2.460
25.275	18.990
25.325	26.352
25.375	57.810
25.425	13.305
25.475	13.731
57.525	8.299

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 3

Approved: July 02, 2016

57.575	3.825
57.625	2.379
57.675	1.810
57.725	1.941
57.775	3.194
57.825	3.753
57.875	1.813
57.925	1.247
57.975	2.156
58.025	1.826
58.075	1.503
58.125	1.715
58.175	3.179
58.225	2.838
58.275	20.250
58.325	47.507
58.375	33.055
58.425	7.046
58.475	7.950
58.525	1.298
58.575	2.456
58.625	0.689
58.675	2.468
58.725	2.353
58.775	0.839
58.825	1.215
58.875	1.050
58.925	1.190
58.975	1.362
59.025	1.477
59.075	1.339
59.125	2.122
59.175	2.562
59.225	3.714
59.275	10.687
59.325	73.193
59.375	43.301
59.425	29.315
59.475	15.449
59.525	9.592
59.575	4.491
59.625	3.077
59.675	2.739
59.725	2.974
59.775	4.607
59.825	3.985
59.875	2.185

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 4

Approved: July 02, 2016

59.925	2.525
59.975	1.104
60.025	3.006
60.075	3.085
60.125	2.240
60.175	5.388
60.225	7.934
60.275	43.006
60.325	15.215
60.375	46.351
60.425	85.267
60.475	44.721
113.525	8.024
113.575	2.930
113.625	3.520
113.675	3.350
113.725	2.512
113.775	1.897
113.825	2.146
113.875	1.417
113.925	2.337
113.975	2.849
114.025	1.596
114.075	1.757
114.125	1.986
114.175	3.937
114.225	7.420
114.275	16.156
114.325	23.697
114.375	19.422
114.425	6.964
114.475	6.194
114.525	3.847
114.575	1.824
114.625	1.449
114.675	1.397
114.725	1.117
114.775	1.853
114.825	0.668
114.875	1.048
114.925	1.062
114.975	0.807
115.025	1.604
115.075	0.617
115.125	0.990
115.175	1.502
115.225	4.478

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 5

Approved: July 02, 2016

115.275	6.474
115.325	39.891
115.375	63.816
115.425	37.630
115.475	30.031
115.525	14.465
115.575	9.978
115.625	2.212
115.675	2.597
115.725	4.004
115.775	4.700
115.825	2.647
115.875	1.521
115.925	0.934
115.975	2.944
116.025	2.211
116.075	6.400
116.125	6.342
116.175	7.120
116.225	10.108
116.275	16.197
116.325	46.481
116.375	69.722
116.425	51.349
116.475	37.029
236.525	
236.575	29.186
236.625	24.495
236.675	29.186
236.725	31.126
236.775	17.430
236.825	21.320
236.875	35.016
236.925	29.487
236.975	22.480
237.025	20.328
237.075	5.167
237.125	26.770
237.175	39.033
237.225	35.209
237.275	32.070
237.325	18.731
237.375	19.628
237.425	26.854
237.475	32.050
237.525	17.891
237.575	10.999

Report Date/Time: Friday, July 01, 2016 10:16:15
Page 6

Approved: July 02, 2016

237.625	4.356
237.675	1.280
237.725	1.988
237.775	1.816
237.825	1.251
237.875	1.667
237.925	1.057
237.975	0.998
238.025	0.960
238.075	1.070
238.125	0.734
238.175	2.008
238.225	0.722
238.275	1.413
238.325	1.849
238.375	2.376
238.425	2.444
238.475	2.524
238.525	19.935
238.575	20.360
238.625	13.507
238.675	21.195
238.725	21.155
238.775	6.804
238.825	10.080
238.875	12.811
238.925	23.344
238.975	11.513
239.025	14.758
239.075	30.366
239.125	18.763
239.175	14.417
239.225	4.027
239.275	13.280
239.325	20.761
239.375	27.288
239.425	21.246
239.475	21.217

Approved: July 02, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 7/1/2016 10:17:38 AM
End Time: 7/1/2016 10:19:50 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 6753.37
        Obtained Intensity (Mg 23.985): 350422.63
        Obtained Intensity (In 114.904): 74054.21
        Obtained Intensity (U 238.05): 161864.28
        Obtained Intensity (Bkgd 220): 0.13
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4067.61 / 207928.14)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2367.92 / 207928.14)
```

Report Date/Time: Friday, July 01, 2016 10:19:50
Page 1

Approved: July 02, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 7/1/2016 10:17:38 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 6753.37
                Obtained Intensity (Mg 23.985): 350422.63
                Obtained Intensity (In 114.904): 74054.21
                Obtained Intensity (U 238.05): 161864.28
                Obtained Intensity (Bkgd 220): 0.13
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4067.61 / 207928.14)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2367.92 / 207928.14)
[Passed]  Optimum value(s): N/A

End Time: 7/1/2016 10:19:50 AM
```


Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Friday, July 01, 2016 10:27:28
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76455.8	1.4				ug/L		Standard
	Be	9	20.0	50.0				ug/L		Standard
	Al	27	1306.7	8.4				ug/L		Standard
	Sc	45	41174.2	1.3				ug/L		Standard
	Ti	47	27.3	20.1				ug/L		Standard
	V	51	1434.3	4.1				ug/L		Standard
	Cr	52	7733.0	1.4				ug/L		Standard
	Cr	53	441.7	6.2				ug/L		Standard
	Mn	55	722.7	2.8				ug/L		Standard
	Co	59	217.3	3.4				ug/L		Standard
	Ni	60	304.3	3.8				ug/L		Standard
	Cu	65	181.0	9.6				ug/L		Standard
	Zn	66	214.7	7.4				ug/L		Standard
>	Ge	72	520809.4	1.3				ug/L		Standard
	As	75	-51.8	28.3				ug/L		Standard
	Se	82	16.9	16.8				ug/L		Standard
	Se-1	77	56.0	13.9				ug/L		Standard
>	Ga	71	25.0	34.6				mg/L		Standard
	Rb	85	28.3	71.3				ug/L		Standard
	Y	89	447394.9	1.2				ug/L		Standard
>	Rh	103	15.0	0.0				ug/L		Standard
	Mo	98	112.7	27.3				ug/L		Standard
	Ag	107	108.0	3.2				ug/L		Standard
	Cd	111	3.1	49.9				mg/L		Standard
	Cd	114	19.8	49.9				ug/L		Standard
>	In	115	625727.9	1.1				ug/L		Standard
	Sn	118	568.3	11.1				ug/L		Standard
	Sb	123	611.9	31.5				ug/L		Standard
	Ba	135	21.0	20.8				ug/L		Standard
	Ce	140	245.0	41.7				ug/L		Standard
>	Tb	159	950397.3	0.8				ug/L		Standard
	Ho	165	6.7	114.6				ug/L		Standard
	Tl	203	15.0	17.6				ug/L		Standard
	Tl	205	13.3	57.3				ug/L		Standard
	Pb	206	263.7	1.3				ug/L		Standard
	Pb	207	221.7	2.3				ug/L		Standard
	Pb	208	958.7	0.3				ug/L		Standard
	U	238	9.3	30.9				ug/L		Standard
>	Bi	209	552820.8	0.2				ug/L		Standard

Sample ID: Blank
Report Date/Time: Friday, July 01, 2016 10:29:45
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	mg/L	Standard
Mg	24	55.0	15.7	mg/L	Standard
K	39	28.3	27.0	mg/L	Standard
Ca	43	26.7	47.2	mg/L	Standard
Fe	54	147.3	8.3	mg/L	Standard
Fe	57	268.3	12.1	mg/L	Standard
> **Sc-1**	45	41174.2	1.3	mg/L	Standard
Cl	35	69550.0	1.7	ug/L	Standard
Kr	83	0.7	86.6	ug/L	Standard
Br	81	1950.1	7.9	ug/L	Standard
P	31	21156.4	1.5	ug/L	Standard
S	34	3418.7	4.4	ug/L	Standard
Sr	88	71.7	49.5	ug/L	Standard
C	12	163.3	19.7	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	16.7	69.3	mg/L	Standard
Dy	164	16.3	91.8	mg/L	Standard
Ho-1	165	6.7	114.6	mg/L	Standard
Er	166	6.7	86.6	mg/L	Standard
I	127	19499.2	0.9	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Blank
Report Date/Time: Friday, July 01, 2016 10:29:45
Page 2

Approved: July 02, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Friday, July 01, 2016 10:29:45
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Friday, July 01, 2016 10:30:40
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76115.8	2.8				ug/L	76456	Standard
	Be	9	13.3	21.7				ug/L	20	Standard
	Al	27	1265.1	6.9				ug/L	1307	Standard
	Sc	45	40428.9	1.7				ug/L	41174	Standard
	Ti	47	21.7	32.4				ug/L	27	Standard
	V	51	1555.0	2.9				ug/L	1434	Standard
	Cr	52	7686.3	1.0				ug/L	7733	Standard
	Cr	53	466.7	11.8				ug/L	442	Standard
	Mn	55	715.0	5.0				ug/L	723	Standard
	Co	59	200.7	6.9				ug/L	217	Standard
	Ni	60	335.0	2.6				ug/L	304	Standard
	Cu	65	166.7	3.3				ug/L	181	Standard
	Zn	66	240.0	2.6				ug/L	215	Standard
>	**Ge**	72	524095.0	0.6				ug/L	520809	Standard
	As	75	-59.9	59.9				ug/L	-52	Standard
	Se	82	13.2	52.5				ug/L	17	Standard
	Se-1	77	54.7	18.5				ug/L	56	Standard
>	**Ga**	71	33.3	45.8				mg/L	25	Standard
	Rb	85	11.7	89.2				ug/L	28	Standard
	Y	89	451430.1	1.0				ug/L	447395	Standard
>	**Rh**	103	13.3	142.0				ug/L	15	Standard
	Mo	98	59.2	36.8				ug/L	113	Standard
	Ag	107	83.3	15.2				ug/L	108	Standard
	Cd	111	2.6	60.3				mg/L	3	Standard
	Cd	114	6.8	257.6				ug/L	20	Standard
>	**In**	115	626754.1	0.5				ug/L	625728	Standard
	Sn	118	553.3	6.0				ug/L	568	Standard
	Sb	123	259.4	31.5				ug/L	612	Standard
	Ba	135	20.7	14.8				ug/L	21	Standard
	Ce	140	71.7	8.1				ug/L	245	Standard
>	**Tb**	159	970231.2	1.1				ug/L	950397	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	7.7	32.8				ug/L	15	Standard
	Tl	205	6.7	43.3				ug/L	13	Standard
	Pb	206	273.7	9.4				ug/L	264	Standard
	Pb	207	216.3	5.9				ug/L	222	Standard
	Pb	208	930.0	2.3				ug/L	959	Standard
	U	238	2.3	24.7				ug/L	9	Standard
>	**Bi**	209	552479.9	0.9				ug/L	552821	Standard

Sample ID: Standard 1
Report Date/Time: Friday, July 01, 2016 10:32:57
Page 1

Approved: July 02, 2016

	Na	23	0.0		mg/L	2	Standard
	Mg	24	65.0	20.4	mg/L	55	Standard
	K	39	38.3	19.9	mg/L	28	Standard
	Ca	43	28.3	53.9	mg/L	27	Standard
	Fe	54	142.9	16.5	mg/L	147	Standard
	Fe	57	211.7	5.9	mg/L	268	Standard
>	**Sc-1**	45	40428.9	1.7	mg/L	41174	Standard
	Cl	35	69484.3	2.2	ug/L	69550	Standard
	Kr	83	1.0	0.0	ug/L	1	Standard
	Br	81	2066.8	4.1	ug/L	1950	Standard
	P	31	21174.8	5.7	ug/L	21156	Standard
	S	34	3378.7	3.5	ug/L	3419	Standard
	Sr	88	91.7	20.7	ug/L	72	Standard
	C	12	160.0	28.6	mg/L	163	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	16.7	91.7	mg/L	17	Standard
	Dy	164	6.3	93.2	mg/L	16	Standard
	Ho-1	165	3.3	173.2	mg/L	7	Standard
	Er	166	6.7	86.6	mg/L	7	Standard
	I	127	19828.0	1.1	mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 1
Report Date/Time: Friday, July 01, 2016 10:32:57
Page 2

Approved: July 02, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Friday, July 01, 2016 10:32:57
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Friday, July 01, 2016 10:33:51
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74986.8	1.6				ug/L	76456	Standard
	Be	9	76.7	43.4				ug/L	20	Standard
	Al	27	10110.0	3.2				ug/L	1307	Standard
	Sc	45	40704.6	1.5				ug/L	41174	Standard
	Ti	47	59.7	6.8				ug/L	27	Standard
	V	51	2028.1	3.7				ug/L	1434	Standard
	Cr	52	8189.5	1.1				ug/L	7733	Standard
	Cr	53	468.3	4.9				ug/L	442	Standard
	Mn	55	1137.0	2.8				ug/L	723	Standard
	Co	59	604.0	2.0				ug/L	217	Standard
	Ni	60	418.3	1.4				ug/L	304	Standard
	Cu	65	251.3	1.9				ug/L	181	Standard
	Zn	66	280.0	1.2				ug/L	215	Standard
>	**Ge**	72	516908.5	0.1				ug/L	520809	Standard
	As	75	5.9	557.4				ug/L	-52	Standard
	Se	82	22.1	63.4				ug/L	17	Standard
	Se-1	77	62.3	6.5				ug/L	56	Standard
>	**Ga**	71	28.3	62.0				mg/L	25	Standard
	Rb	85	13.3	142.0				ug/L	28	Standard
	Y	89	452397.3	1.6				ug/L	447395	Standard
>	**Rh**	103	8.3	91.7				ug/L	15	Standard
	Mo	98	371.2	3.3				ug/L	113	Standard
	Ag	107	447.0	1.8				ug/L	108	Standard
	Cd	111	119.4	7.1				mg/L	3	Standard
	Cd	114	282.1	4.3				ug/L	20	Standard
>	**In**	115	619630.9	0.5				ug/L	625728	Standard
	Sn	118	855.0	13.6				ug/L	568	Standard
	Sb	123	428.3	12.3				ug/L	612	Standard
	Ba	135	146.3	3.9				ug/L	21	Standard
	Ce	140	45.0	50.9				ug/L	245	Standard
>	**Tb**	159	965634.3	1.4				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	454.3	3.7				ug/L	15	Standard
	Tl	205	475.0	1.1				ug/L	13	Standard
	Pb	206	529.3	1.0				ug/L	264	Standard
	Pb	207	492.7	3.7				ug/L	222	Standard
	Pb	208	2058.4	0.9				ug/L	959	Standard
	U	238	404.0	3.6				ug/L	9	Standard
>	**Bi**	209	551272.3	0.2				ug/L	552821	Standard

Sample ID: Standard 2
Report Date/Time: Friday, July 01, 2016 10:36:08
Page 1

Approved: July 02, 2016

Na	23	0.0		mg/L	2	Standard
Mg	24	55.0	39.6	mg/L	55	Standard
K	39	35.0	51.5	mg/L	28	Standard
Ca	43	26.7	28.6	mg/L	27	Standard
Fe	54	131.1	29.5	mg/L	147	Standard
Fe	57	260.0	13.9	mg/L	268	Standard
Sc-1	45	40704.6	1.5	mg/L	41174	Standard
Cl	35	69075.1	1.1	ug/L	69550	Standard
Kr	83	2.0	50.0	ug/L	1	Standard
Br	81	2083.5	5.5	ug/L	1950	Standard
P	31	20977.8	1.6	ug/L	21156	Standard
S	34	3237.0	8.2	ug/L	3419	Standard
Sr	88	66.7	30.3	ug/L	72	Standard
C	12	120.0	16.7	mg/L	163	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	16.7	34.6	mg/L	17	Standard
Dy	164	19.5	0.0	mg/L	16	Standard
Ho-1	165	8.3	69.3	mg/L	7	Standard
Er	166	10.0		mg/L	7	Standard
I	127	19168.8	3.3	mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 2
Report Date/Time: Friday, July 01, 2016 10:36:08
Page 2

Approved: July 02, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Friday, July 01, 2016 10:36:08
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Friday, July 01, 2016 10:37:02
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74971.7	1.7				ug/L	76456	Standard
	Be	9	54860.9	3.6	**50.0000**	1.210	2.4	ug/L	20	Standard
	Al	27	8440082.6	0.7	**50.0000**	0.980	2.0	ug/L	1307	Standard
	Sc	45	40865.0	1.5				ug/L	41174	Standard
	Ti	47	32329.8	0.6	**100.0000**	0.832	0.8	ug/L	27	Standard
	V	51	412896.9	0.3	**50.0000**	0.270	0.5	ug/L	1434	Standard
	Cr	52	411678.8	0.9	**50.0000**	0.611	1.2	ug/L	7733	Standard
	Cr	53	51159.6	0.9	**50.0000**	0.580	1.2	ug/L	442	Standard
	Mn	55	380443.4	1.4	**50.0000**	0.789	1.6	ug/L	723	Standard
	Co	59	384667.7	0.9	**50.0000**	0.374	0.7	ug/L	217	Standard
	Ni	60	104566.9	0.5	**50.0000**	0.292	0.6	ug/L	304	Standard
	Cu	65	103056.3	0.1	**50.0000**	0.150	0.3	ug/L	181	Standard
	Zn	66	61622.7	0.7	**50.0000**	0.151	0.3	ug/L	215	Standard
>	**Ge**	72	520018.0	0.4				ug/L	520809	Standard
	As	75	61417.5	0.3	**50.0000**	0.279	0.6	ug/L	-52	Standard
	Se	82	6337.3	1.0	**50.0000**	0.692	1.4	ug/L	17	Standard
	Se-1	77	4335.3	1.3	**50.0000**	0.572	1.1	ug/L	56	Standard
>	**Ga**	71	61.7	40.0				mg/L	25	Standard
	Rb	85	878.4	2.6				ug/L	28	Standard
	Y	89	444837.1	3.4				ug/L	447395	Standard
>	**Rh**	103	30.0	44.1				ug/L	15	Standard
	Mo	98	294287.0	0.6	**100.0000**	0.409	0.4	ug/L	113	Standard
	Ag	107	351901.5	1.0	**50.0000**	0.404	0.8	ug/L	108	Standard
	Cd	111	112966.0	0.5	**50.0000**	0.196	0.4	mg/L	3	Standard
	Cd	114	280940.2	0.5	**50.0000**	0.110	0.2	ug/L	20	Standard
>	**In**	115	612769.1	0.4				ug/L	625728	Standard
	Sn	118	314258.0	2.0	**50.0000**	1.163	2.3	ug/L	568	Standard
	Sb	123	250330.0	0.3	**50.0000**	0.094	0.2	ug/L	612	Standard
	Ba	135	107237.2	0.5	**50.0000**	0.330	0.7	ug/L	21	Standard
	Ce	140	96.7	19.6				ug/L	245	Standard
>	**Tb**	159	945727.5	1.1				ug/L	950397	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	443860.6	0.2	**50.0000**	0.306	0.6	ug/L	15	Standard
	Tl	205	392135.3	1.5	**50.0000**	0.676	1.4	ug/L	13	Standard
	Pb	206	280519.3	0.4	**50.0000**	0.226	0.5	ug/L	264	Standard
	Pb	207	254589.8	0.6	**50.0000**	0.448	0.9	ug/L	222	Standard
	Pb	208	1037250.6	0.5	**50.0000**	0.611	1.2	ug/L	959	Standard
	U	238	392629.2	0.3	**50.0000**	0.515	1.0	ug/L	9	Standard
>	**Bi**	209	544795.2	0.7				ug/L	552821	Standard

Sample ID: Standard 3
Report Date/Time: Friday, July 01, 2016 10:39:19
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**5.0000**	4.327	86.5	mg/L	2	Standard
Mg	24	4290.6	8.9	**5.0000**	0.514	10.3	mg/L	55	Standard
K	39	1336.7	14.8	**5.0000**	0.680	13.6	mg/L	28	Standard
Ca	43	78.3	9.8	**5.0000**	0.715	14.3	mg/L	27	Standard
Fe	54	6652.7	2.6	**5.0000**	0.189	3.8	mg/L	147	Standard
Fe	57	1848.4	3.7	**5.0000**	0.193	3.9	mg/L	268	Standard
Sc-1	45	40865.0	1.5				mg/L	41174	Standard
Cl	35	67370.1	1.9				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1980.1	7.8				ug/L	1950	Standard
P	31	22366.5	1.7				ug/L	21156	Standard
S	34	3632.1	4.0				ug/L	3419	Standard
Sr	88	68.3	33.8				ug/L	72	Standard
C	12	116.7	13.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	120.2				mg/L	17	Standard
Dy	164	5.7	108.5				mg/L	16	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	24309.5	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 3
Report Date/Time: Friday, July 01, 2016 10:39:19
Page 2

Approved: July 02, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
Report Date/Time: Friday, July 01, 2016 10:39:19
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Friday, July 01, 2016 10:40:14
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74573.1	2.4				ug/L	76456	Standard
	Be	9	109282.8	1.9	100.0980	2.509	2.5	ug/L	20	Standard
	Al	27	16601431.1	0.9	99.4425	1.710	1.7	ug/L	1307	Standard
	Sc	45	41180.9	0.8				ug/L	41174	Standard
	Ti	47	65332.6	0.8	201.3970	0.318	0.2	ug/L	27	Standard
	V	51	817909.9	1.4	99.7804	1.578	1.6	ug/L	1434	Standard
	Cr	52	812246.8	1.3	99.9568	0.856	0.9	ug/L	7733	Standard
	Cr	53	100426.9	3.2	99.4382	3.780	3.8	ug/L	442	Standard
	Mn	55	750652.7	0.8	99.5323	0.364	0.4	ug/L	723	Standard
	Co	59	758624.4	0.2	99.4757	0.655	0.7	ug/L	217	Standard
	Ni	60	205495.5	0.6	99.3580	0.343	0.3	ug/L	304	Standard
	Cu	65	201186.2	0.4	98.9880	0.686	0.7	ug/L	181	Standard
	Zn	66	121678.0	0.3	99.6126	1.153	1.2	ug/L	215	Standard
>	Ge	72	518357.9	0.9				ug/L	520809	Standard
	As	75	123132.9	0.9	100.2583	0.732	0.7	ug/L	-52	Standard
	Se	82	12560.6	0.3	99.7710	0.579	0.6	ug/L	17	Standard
	Se-1	77	8548.4	1.2	99.7880	1.005	1.0	ug/L	56	Standard
>	Ga	71	40.0	45.1				mg/L	25	Standard
	Rb	85	1701.8	13.2				ug/L	28	Standard
	Y	89	451914.9	2.5				ug/L	447395	Standard
>	Rh	103	40.0	25.0				ug/L	15	Standard
	Mo	98	592109.5	0.9	201.3215	2.481	1.2	ug/L	113	Standard
	Ag	107	698129.6	0.3	99.9561	0.390	0.4	ug/L	108	Standard
	Cd	111	223398.5	0.3	99.7914	0.348	0.3	mg/L	3	Standard
	Cd	114	550589.1	2.0	99.3411	2.205	2.2	ug/L	20	Standard
>	In	115	608447.5	0.3				ug/L	625728	Standard
	Sn	118	629099.1	1.2	100.4410	1.420	1.4	ug/L	568	Standard
	Sb	123	508420.5	1.6	101.1418	1.887	1.9	ug/L	612	Standard
	Ba	135	210242.6	0.2	99.3661	0.116	0.1	ug/L	21	Standard
	Ce	140	141.7	20.7				ug/L	245	Standard
>	Tb	159	939885.9	0.8				ug/L	950397	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	872285.6	0.1	99.6647	0.211	0.2	ug/L	15	Standard
	Tl	205	778762.6	2.1	100.1937	1.912	1.9	ug/L	13	Standard
	Pb	206	549521.0	0.7	99.5257	0.453	0.5	ug/L	264	Standard
	Pb	207	499379.9	0.5	99.5919	0.286	0.3	ug/L	222	Standard
	Pb	208	2044680.9	0.3	99.8400	0.419	0.4	ug/L	959	Standard
	U	238	794936.5	0.3	101.1523	0.190	0.2	ug/L	9	Standard
>	Bi	209	538915.4	0.3				ug/L	552821	Standard

Sample ID: Standard 4
Report Date/Time: Friday, July 01, 2016 10:42:31
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8624.1	2.7	**10.0117**	0.211	2.1	mg/L	55	Standard
K	39	2628.6	4.6	**9.9475**	0.505	5.1	mg/L	28	Standard
Ca	43	143.3	11.2	**10.5644**	1.388	13.1	mg/L	27	Standard
Fe	54	12475.4	2.0	**9.6818**	0.117	1.2	mg/L	147	Standard
Fe	57	3570.4	3.6	**10.1632**	0.334	3.3	mg/L	268	Standard
Sc-1	45	41180.9	0.8				mg/L	41174	Standard
Cl	35	66505.0	1.1				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1963.5	9.6				ug/L	1950	Standard
P	31	23055.9	3.6				ug/L	21156	Standard
S	34	3625.4	3.4				ug/L	3419	Standard
Sr	88	81.7	21.5				ug/L	72	Standard
C	12	133.3	30.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	17	Standard
Dy	164	12.1	43.5				mg/L	16	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	3062.0	8.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 4
Report Date/Time: Friday, July 01, 2016 10:42:31
Page 2

Approved: July 02, 2016

	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Friday, July 01, 2016 10:42:31
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Friday, July 01, 2016 10:43:27
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73226.6	2.1				ug/L	76456	Standard
	Be	9	55138.5	1.1	**51.4232**	1.173	2.3	ug/L	20	Standard
	Al	27	8364287.3	0.8	**51.0145**	0.701	1.4	ug/L	1307	Standard
	Sc	45	42051.6	1.4				ug/L	41174	Standard
	Ti	47	32632.1	1.2	**99.6299**	0.273	0.3	ug/L	27	Standard
	V	51	416986.8	1.2	**50.3040**	0.153	0.3	ug/L	1434	Standard
	Cr	52	416377.2	0.8	**50.2986**	0.675	1.3	ug/L	7733	Standard
	Cr	53	51450.5	1.0	**50.2662**	0.513	1.0	ug/L	442	Standard
	Mn	55	390114.9	0.6	**51.2101**	0.808	1.6	ug/L	723	Standard
	Co	59	391917.0	0.9	**50.9056**	0.274	0.5	ug/L	217	Standard
	Ni	60	105069.4	0.7	**50.2680**	0.977	1.9	ug/L	304	Standard
	Cu	65	103770.8	0.9	**50.5551**	0.555	1.1	ug/L	181	Standard
	Zn	66	63280.5	0.6	**51.2430**	0.408	0.8	ug/L	215	Standard
>	Ge	72	523154.7	1.4				ug/L	520809	Standard
	As	75	62592.0	0.8	**50.5289**	1.093	2.2	ug/L	-52	Standard
	Se	82	6421.3	0.7	**50.4779**	0.451	0.9	ug/L	17	Standard
	Se-1	77	4421.6	3.1	**50.8264**	2.224	4.4	ug/L	56	Standard
>	Ga	71	38.3	30.1				mg/L	25	Standard
	Rb	85	941.7	14.7				ug/L	28	Standard
	Y	89	448213.9	1.5				ug/L	447395	Standard
>	Rh	103	35.0	49.5				ug/L	15	Standard
	Mo	98	294940.7	1.4	**96.3152**	0.728	0.8	ug/L	113	Standard
	Ag	107	357502.4	1.0	**49.1663**	0.717	1.5	ug/L	108	Standard
	Cd	111	115768.3	0.2	**49.6787**	0.607	1.2	mg/L	3	Standard
	Cd	114	281209.7	0.6	**48.7423**	0.787	1.6	ug/L	20	Standard
>	In	115	633404.9	1.1				ug/L	625728	Standard
	Sn	118	321628.0	0.8	**49.2868**	0.611	1.2	ug/L	568	Standard
	Sb	123	258956.5	0.4	**49.4694**	0.480	1.0	ug/L	612	Standard
	Ba	135	108217.8	0.6	**49.1275**	0.780	1.6	ug/L	21	Standard
	Ce	140	141.7	45.4				ug/L	245	Standard
>	Tb	159	959365.6	0.2				ug/L	950397	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	443048.1	0.6	**49.6569**	0.744	1.5	ug/L	15	Standard
	Tl	205	398039.0	0.4	**50.2306**	0.560	1.1	ug/L	13	Standard
	Pb	206	281925.4	0.1	**50.0662**	0.613	1.2	ug/L	264	Standard
	Pb	207	256662.1	1.0	**50.1891**	0.845	1.7	ug/L	222	Standard
	Pb	208	1053544.2	0.4	**50.4385**	0.548	1.1	ug/L	959	Standard
	U	238	395989.8	1.3	**49.4226**	0.077	0.2	ug/L	9	Standard
>	Bi	209	549436.2	1.2				ug/L	552821	Standard

Sample ID: QC Std 1
Report Date/Time: Friday, July 01, 2016 10:45:44
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.9322**	8.534	173.0	mg/L	2	Standard
Mg	24	4375.6	3.8	**4.9437**	0.134	2.7	mg/L	55	Standard
K	39	1525.1	4.3	**5.5930**	0.165	3.0	mg/L	28	Standard
Ca	43	100.0	13.2	**6.4519**	1.261	19.5	mg/L	27	Standard
Fe	54	6527.6	4.7	**4.9145**	0.265	5.4	mg/L	147	Standard
Fe	57	1855.1	8.5	**4.7782**	0.491	10.3	mg/L	268	Standard
> **Sc-1**	45	42051.6	1.4				mg/L	41174	Standard
Cl	35	67170.6	2.2				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1903.5	10.0				ug/L	1950	Standard
P	31	22763.8	0.6				ug/L	21156	Standard
S	34	3593.8	4.0				ug/L	3419	Standard
Sr	88	85.0	40.8				ug/L	72	Standard
C	12	133.3	15.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	132.3				mg/L	17	Standard
Dy	164	16.5	70.8				mg/L	16	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	23309.6	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.846		
Al	27	102.029		
Sc	45			
Ti	47	99.630		
V	51	100.608		
Cr	52	100.597		
Cr	53			
Mn	55	102.420		
Co	59	101.811		
Ni	60	100.536		
Cu	65	101.110		
Zn	66	102.486		
> Ge	72		100.450	
As	75	101.058		
Se	82	100.956		
Se-1	77			
> Ga	71			

Sample ID: QC Std 1
Report Date/Time: Friday, July 01, 2016 10:45:44
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	96.315		
Ag	107	98.333		
Cd	111	99.357		
Cd	114			
In	115		101.227	
Sn	118	98.574		
Sb	123	98.939		
Ba	135	98.255		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.314		
Tl	205			
Pb	206	100.132		
Pb	207	100.378		
Pb	208	100.877		
U	238	98.845		
Bi	209		99.388	
Na	23	98.644		
Mg	24	98.874		
K	39	111.859		
Ca	43	129.039		
Fe	54	98.290		
Fe	57	95.564		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

Sample ID: QC Std 1
Report Date/Time: Friday, July 01, 2016 10:45:44
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Friday, July 01, 2016 10:46:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73082.5	1.7				ug/L	76456	Standard
	Be	9	35.0	65.5	**0.0129**	0.022	168.2	ug/L	20	Standard
	Al	27	2900.3	16.4	**0.0075**	0.003	39.6	ug/L	1307	Standard
	Sc	45	41413.2	2.8				ug/L	41174	Standard
	Ti	47	35.3	18.8	**0.0225**	0.019	85.6	ug/L	27	Standard
	V	51	1420.2	5.2	**-0.0279**	0.008	27.9	ug/L	1434	Standard
	Cr	52	6961.6	2.3	**-0.1197**	0.018	14.9	ug/L	7733	Standard
	Cr	53	446.7	2.3	**0.0198**	0.006	30.4	ug/L	442	Standard
	Mn	55	849.7	3.5	**0.0096**	0.004	44.1	ug/L	723	Standard
	Co	59	304.7	6.6	**0.0099**	0.003	30.2	ug/L	217	Standard
	Ni	60	329.3	2.5	**0.0037**	0.005	136.9	ug/L	304	Standard
	Cu	65	206.0	9.7	**0.0257**	0.010	38.8	ug/L	181	Standard
	Zn	66	265.3	8.1	**0.0337**	0.016	46.4	ug/L	215	Standard
>	**Ge**	72	527031.7	1.0				ug/L	520809	Standard
	As	75	-62.3	20.0	**-0.0048**	0.010	219.6	ug/L	-52	Standard
	Se	82	14.1	36.1	**-0.0165**	0.039	235.1	ug/L	17	Standard
	Se-1	77	48.7	10.1	**-0.1219**	0.059	48.3	ug/L	56	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	26.7	84.5				ug/L	28	Standard
	Y	89	456491.7	1.0				ug/L	447395	Standard
>	**Rh**	103	26.7	57.3				ug/L	15	Standard
	Mo	98	335.9	6.6	**0.0861**	0.007	7.7	ug/L	113	Standard
	Ag	107	180.3	7.4	**0.0120**	0.002	16.2	ug/L	108	Standard
	Cd	111	27.1	26.6	**0.0093**	0.003	33.3	mg/L	3	Standard
	Cd	114	66.3	29.5	**0.0115**	0.003	29.4	ug/L	20	Standard
>	**In**	115	631231.9	0.6				ug/L	625728	Standard
	Sn	118	1070.0	25.4	**0.0807**	0.043	52.8	ug/L	568	Standard
	Sb	123	986.7	28.6	**0.1557**	0.055	35.3	ug/L	612	Standard
	Ba	135	49.3	8.4	**0.0046**	0.002	42.1	ug/L	21	Standard
	Ce	140	21.7	58.1				ug/L	245	Standard
>	**Tb**	159	958993.9	0.7				ug/L	950397	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	132.3	25.5	**0.0140**	0.004	27.2	ug/L	15	Standard
	Tl	205	123.3	29.3	**0.0057**	0.005	80.1	ug/L	13	Standard
	Pb	206	354.7	6.4	**0.0189**	0.004	22.4	ug/L	264	Standard
	Pb	207	298.7	4.5	**0.0120**	0.003	23.0	ug/L	222	Standard
	Pb	208	1215.7	2.5	**0.0096**	0.002	16.0	ug/L	959	Standard
	U	238	110.7	12.5	**0.0135**	0.002	13.1	ug/L	9	Standard
>	**Bi**	209	552384.0	0.3				ug/L	552821	Standard

Sample ID: QC Std 2
Report Date/Time: Friday, July 01, 2016 10:48:57
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.1172**	8.855	173.0	mg/L	2	Standard
Mg	24	61.7	49.5	**0.0114**	0.035	305.2	mg/L	55	Standard
K	39	43.3	29.0	**0.0349**	0.052	149.9	mg/L	28	Standard
Ca	43	15.0	66.7	**-1.1126**	0.876	78.7	mg/L	27	Standard
Fe	54	155.9	11.0	**0.0227**	0.013	57.8	mg/L	147	Standard
Fe	57	246.7	5.1	**-0.0507**	0.023	46.3	mg/L	268	Standard
> **Sc-1**	45	41413.2	2.8				mg/L	41174	Standard
Cl	35	67081.5	1.7				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1926.8	4.5				ug/L	1950	Standard
P	31	22241.3	1.7				ug/L	21156	Standard
S	34	3415.4	3.5				ug/L	3419	Standard
Sr	88	56.7	39.8				ug/L	72	Standard
C	12	120.0	30.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	12.7	43.5				mg/L	16	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	18017.4	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.195	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 2
Report Date/Time: Friday, July 01, 2016 10:48:57
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.880	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.921	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Na	23	
QC Std 2	Ca	43	

Sample ID: QC Std 2
Report Date/Time: Friday, July 01, 2016 10:48:57
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Friday, July 01, 2016 10:49:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71014.5	3.1				ug/L	76456	Standard
	Be	9	276.7	13.7	**0.2467**	0.041	16.7	ug/L	20	Standard
	Al	27	1433.4	19.2	**-0.0012**	0.001	117.3	ug/L	1307	Standard
	Sc	45	40355.3	1.3				ug/L	41174	Standard
	Ti	47	21.0	29.7	**-0.0191**	0.020	103.3	ug/L	27	Standard
	V	51	4354.1	2.4	**0.3388**	0.016	4.6	ug/L	1434	Standard
	Cr	52	13385.9	0.6	**0.7089**	0.010	1.4	ug/L	7733	Standard
	Cr	53	1290.1	5.1	**0.8778**	0.062	7.0	ug/L	442	Standard
	Mn	55	4164.2	0.5	**0.4567**	0.004	0.8	ug/L	723	Standard
	Co	59	3022.0	3.5	**0.3708**	0.015	4.0	ug/L	217	Standard
	Ni	60	3422.7	3.0	**1.5204**	0.058	3.8	ug/L	304	Standard
	Cu	65	1708.4	1.3	**0.7752**	0.014	1.9	ug/L	181	Standard
	Zn	66	7949.4	1.3	**6.4016**	0.063	1.0	ug/L	215	Standard
>	**Ge**	72	513410.3	0.5				ug/L	520809	Standard
	As	75	420.2	2.0	**0.3904**	0.006	1.5	ug/L	-52	Standard
	Se	82	57.4	15.1	**0.3348**	0.072	21.4	ug/L	17	Standard
	Se-1	77	86.3	6.6	**0.3399**	0.069	20.2	ug/L	56	Standard
>	**Ga**	71	38.3	7.5				mg/L	25	Standard
	Rb	85	15.0	115.5				ug/L	28	Standard
	Y	89	441603.6	1.2				ug/L	447395	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	125.5	7.4	**0.0191**	0.003	17.3	ug/L	113	Standard
	Ag	107	2803.6	3.0	**0.3918**	0.011	2.9	ug/L	108	Standard
	Cd	111	534.5	1.7	**0.2383**	0.004	1.8	mg/L	3	Standard
	Cd	114	1340.9	4.1	**0.2439**	0.009	3.8	ug/L	20	Standard
>	**In**	115	603601.4	0.4				ug/L	625728	Standard
	Sn	118	588.3	20.4	**0.0106**	0.020	185.6	ug/L	568	Standard
	Sb	123	1982.0	3.1	**0.3639**	0.013	3.7	ug/L	612	Standard
	Ba	135	1500.1	4.2	**0.6970**	0.033	4.7	ug/L	21	Standard
	Ce	140	13.3	57.3				ug/L	245	Standard
>	**Tb**	159	923552.7	1.3				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	722.4	6.5	**0.0815**	0.005	6.2	ug/L	15	Standard
	Tl	205	658.3	9.8	**0.0746**	0.008	10.9	ug/L	13	Standard
	Pb	206	1350.7	0.3	**0.2001**	0.002	0.8	ug/L	264	Standard
	Pb	207	1167.0	2.9	**0.1859**	0.007	3.6	ug/L	222	Standard
	Pb	208	4949.3	2.3	**0.1926**	0.005	2.7	ug/L	959	Standard
	U	238	3051.6	1.8	**0.3866**	0.007	1.9	ug/L	9	Standard
>	**Bi**	209	540899.0	0.4				ug/L	552821	Standard

Sample ID: QC Std 3
Report Date/Time: Friday, July 01, 2016 10:52:10
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**10.1911**	8.823	86.6	mg/L	2	Standard
Mg	24	73.3	17.2	**0.0273**	0.016	58.3	mg/L	55	Standard
K	39	43.3	17.6	**0.0384**	0.030	78.8	mg/L	28	Standard
Ca	43	21.7	13.3	**-0.4451**	0.256	57.4	mg/L	27	Standard
Fe	54	112.1	10.4	**-0.0092**	0.008	90.3	mg/L	147	Standard
Fe	57	220.0	10.4	**-0.1144**	0.071	61.7	mg/L	268	Standard
Sc-1	45	40355.3	1.3				mg/L	41174	Standard
Cl	35	64985.1	1.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1890.1	8.2				ug/L	1950	Standard
P	31	15399.5	2.8				ug/L	21156	Standard
S	34	3492.1	3.5				ug/L	3419	Standard
Sr	88	78.3	3.7				ug/L	72	Standard
C	12	140.0	14.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	12.9	182.9				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2308.5	15.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	123.368		
Al	27	-0.122		
Sc	45			
Ti	47			
V	51	84.694		
Cr	52	88.608		
Cr	53			
Mn	55	91.340		
Co	59	92.690		
Ni	60	95.026		
Cu	65	96.904		
Zn	66	102.426		
> Ge	72		98.579	
As	75	97.610		
Se	82	83.691		
Se-1	77			
> Ga	71			

Sample ID: QC Std 3
Report Date/Time: Friday, July 01, 2016 10:52:10
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.953		
Cd	111	99.297		
Cd	114			
> In	115			96.464
Sn	118			
Sb	123	90.972		
Ba	135	92.929		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.839		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.295		
U	238	96.660		
> Bi	209			97.843
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
Report Date/Time: Friday, July 01, 2016 10:52:10
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Friday, July 01, 2016 10:53:04
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72812.9	1.2				ug/L	76456	Standard
	Be	9	36.7	20.8	**0.0145**	0.007	47.6	ug/L	20	Standard
	Al	27	8248243.5	1.3	**50.5822**	0.139	0.3	ug/L	1307	Standard
	Sc	45	42120.1	1.9				ug/L	41174	Standard
	Ti	47	35838.7	1.4	**108.8763**	0.923	0.8	ug/L	27	Standard
	V	51	1796.6	6.7	**0.0180**	0.017	92.8	ug/L	1434	Standard
	Cr	52	8717.2	1.4	**0.0974**	0.005	5.1	ug/L	7733	Standard
	Cr	53	5294.3	3.4	**4.7714**	0.146	3.1	ug/L	442	Standard
	Mn	55	1499.1	2.5	**0.0949**	0.007	6.9	ug/L	723	Standard
	Co	59	500.3	4.2	**0.0353**	0.003	8.8	ug/L	217	Standard
	Ni	60	1153.7	2.9	**0.3978**	0.021	5.4	ug/L	304	Standard
	Cu	65	743.0	1.9	**0.2866**	0.009	3.1	ug/L	181	Standard
	Zn	66	1750.4	2.4	**1.2353**	0.049	3.9	ug/L	215	Standard
>	Ge	72	525789.4	1.1				ug/L	520809	Standard
	As	75	-56.5	78.0	**0.0000**	0.035	94213.4	ug/L	-52	Standard
	Se	82	21.9	13.2	**0.0450**	0.024	52.9	ug/L	17	Standard
	Se-1	77	369.0	3.8	**3.5902**	0.118	3.3	ug/L	56	Standard
>	Ga	71	190.0	4.6				mg/L	25	Standard
	Rb	85	1346.7	12.1				ug/L	28	Standard
	Y	89	446130.3	1.4				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	294809.8	0.7	**99.0666**	0.826	0.8	ug/L	113	Standard
	Ag	107	518.7	43.1	**0.0605**	0.032	52.1	ug/L	108	Standard
	Cd	111	-203.1	6.2	**-0.0920**	0.006	6.1	mg/L	3	Standard
	Cd	114	646.5	2.5	**0.1153**	0.003	2.6	ug/L	20	Standard
>	In	115	615550.0	0.1				ug/L	625728	Standard
	Sn	118	1126.7	15.8	**0.0937**	0.028	29.8	ug/L	568	Standard
	Sb	123	769.4	36.4	**0.1176**	0.055	46.8	ug/L	612	Standard
	Ba	135	907.7	4.8	**0.4062**	0.020	4.9	ug/L	21	Standard
	Ce	140	310.0	5.6				ug/L	245	Standard
>	Tb	159	945278.1	1.3				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	340.3	40.4	**0.0383**	0.016	41.1	ug/L	15	Standard
	Tl	205	238.3	11.6	**0.0211**	0.004	17.6	ug/L	13	Standard
	Pb	206	679.7	9.3	**0.0799**	0.011	14.4	ug/L	264	Standard
	Pb	207	580.3	10.0	**0.0701**	0.011	16.1	ug/L	222	Standard
	Pb	208	2295.1	2.9	**0.0642**	0.002	3.2	ug/L	959	Standard
	U	238	77.3	37.1	**0.0096**	0.004	37.6	ug/L	9	Standard
>	Bi	209	536774.2	1.2				ug/L	552821	Standard

Sample ID: QC Std 4
Report Date/Time: Friday, July 01, 2016 10:55:21
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.7734**	16.919	173.1	mg/L	2	Standard
Mg	24	10777.2	2.6	**12.2531**	0.537	4.4	mg/L	55	Standard
K	39	1383.4	9.9	**5.0519**	0.468	9.3	mg/L	28	Standard
Ca	43	138.3	7.5	**9.8265**	0.682	6.9	mg/L	27	Standard
Fe	54	16161.2	1.3	**12.2930**	0.303	2.5	mg/L	147	Standard
Fe	57	4369.0	2.7	**12.3260**	0.594	4.8	mg/L	268	Standard
> **Sc-1**	45	42120.1	1.9				mg/L	41174	Standard
Cl	35	65421.7	2.5				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1906.8	13.4				ug/L	1950	Standard
P	31	21114.7	2.7				ug/L	21156	Standard
S	34	3085.3	2.7				ug/L	3419	Standard
Sr	88	60.0	33.3				ug/L	72	Standard
C	12	210.0	31.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	54.9				mg/L	17	Standard
Dy	164	19.7	50.8				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	3048.6	5.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	1.012		
Sc	45			
Ti	47	108.876		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.956	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 4
Report Date/Time: Friday, July 01, 2016 10:55:21
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	99.067		
Ag	107			
Cd	111			
Cd	114			
> In	115			98.373
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			97.097
Na	23	78.187		
Mg	24	245.062		
K	39	101.039		
Ca	43	65.510		
Fe	54	98.344		
Fe	57	98.608		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Ba	135	
QC Std 4	Na	23	

Sample ID: QC Std 4
Report Date/Time: Friday, July 01, 2016 10:55:21
Page 3

Approved: July 02, 2016

QC Std 4	Mg	24
QC Std 4	Ca	43

Sample ID: QC Std 4
Report Date/Time: Friday, July 01, 2016 10:55:21
Page 4

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Friday, July 01, 2016 10:56:16
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75903.0	2.2				ug/L	76456	Standard
	Be	9	113931.8	1.0	**102.5442**	3.204	3.1	ug/L	20	Standard
	Al	27	7231990.8	1.8	**42.5454**	0.182	0.4	ug/L	1307	Standard
	Sc	45	42432.7	2.4				ug/L	41174	Standard
	Ti	47	30737.8	1.0	**92.8199**	0.734	0.8	ug/L	27	Standard
	V	51	833696.6	0.9	**99.6740**	0.237	0.2	ug/L	1434	Standard
	Cr	52	810709.3	1.6	**97.7572**	1.161	1.2	ug/L	7733	Standard
	Cr	53	105220.8	1.3	**102.1011**	1.018	1.0	ug/L	442	Standard
	Mn	55	763205.2	1.1	**99.1800**	1.093	1.1	ug/L	723	Standard
	Co	59	765446.7	1.5	**98.3652**	1.221	1.2	ug/L	217	Standard
	Ni	60	204863.4	0.8	**97.0735**	0.398	0.4	ug/L	304	Standard
	Cu	65	204176.2	1.0	**98.4523**	0.417	0.4	ug/L	181	Standard
	Zn	66	128188.4	1.6	**102.8491**	1.339	1.3	ug/L	215	Standard
>	Ge	72	528896.0	0.7				ug/L	520809	Standard
	As	75	125724.6	1.1	**100.3319**	1.466	1.5	ug/L	-52	Standard
	Se	82	12709.7	1.6	**98.9446**	1.879	1.9	ug/L	17	Standard
	Se-1	77	8838.2	1.3	**101.1222**	0.967	1.0	ug/L	56	Standard
>	Ga	71	141.7	2.0				mg/L	25	Standard
	Rb	85	858.4	8.2				ug/L	28	Standard
	Y	89	450945.0	1.6				ug/L	447395	Standard
>	Rh	103	58.3	17.8				ug/L	15	Standard
	Mo	98	252063.2	0.9	**84.2200**	0.957	1.1	ug/L	113	Standard
	Ag	107	620939.1	2.7	**87.3716**	1.954	2.2	ug/L	108	Standard
	Cd	111	226578.4	0.5	**99.4783**	0.760	0.8	mg/L	3	Standard
	Cd	114	558953.6	2.4	**99.1106**	1.789	1.8	ug/L	20	Standard
>	In	115	619069.3	0.8				ug/L	625728	Standard
	Sn	118	1101.7	13.0	**0.0889**	0.024	26.9	ug/L	568	Standard
	Sb	123	495062.3	2.0	**96.7840**	1.258	1.3	ug/L	612	Standard
	Ba	135	212436.2	0.4	**98.6825**	0.524	0.5	ug/L	21	Standard
	Ce	140	106.7	5.4				ug/L	245	Standard
>	Tb	159	965012.6	0.9				ug/L	950397	Standard
	Ho	165	11.7	89.2				ug/L	7	Standard
	Tl	203	877864.5	0.6	**98.2340**	0.597	0.6	ug/L	15	Standard
	Tl	205	786061.6	0.2	**99.0500**	0.141	0.1	ug/L	13	Standard
	Pb	206	570990.7	1.2	**101.2826**	1.116	1.1	ug/L	264	Standard
	Pb	207	499235.8	0.8	**97.5091**	0.551	0.6	ug/L	222	Standard
	Pb	208	2063776.1	0.5	**98.6933**	0.341	0.3	ug/L	959	Standard
	U	238	778595.3	0.8	**97.0297**	0.672	0.7	ug/L	9	Standard
>	Bi	209	550260.8	0.2				ug/L	552821	Standard

Sample ID: QC Std 5
Report Date/Time: Friday, July 01, 2016 10:58:33
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**14.6626**	14.607	99.6	mg/L	2	Standard
Mg	24	9379.6	3.3	**10.5777**	0.497	4.7	mg/L	55	Standard
K	39	1123.4	14.5	**4.0598**	0.702	17.3	mg/L	28	Standard
Ca	43	151.7	14.9	**10.9556**	2.287	20.9	mg/L	27	Standard
Fe	54	13756.2	0.9	**10.3738**	0.327	3.2	mg/L	147	Standard
Fe	57	3798.8	1.3	**10.5253**	0.250	2.4	mg/L	268	Standard
Sc-1	45	42432.7	2.4				mg/L	41174	Standard
Cl	35	63162.8	2.2				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2016.8	12.5				ug/L	1950	Standard
P	31	19924.8	3.7				ug/L	21156	Standard
S	34	3145.3	1.7				ug/L	3419	Standard
Sr	88	73.3	10.4				ug/L	72	Standard
C	12	216.7	17.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	29.4	59.5				mg/L	16	Standard
Ho-1	165	11.7	89.2				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	3137.0	10.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.544		
Al	27	0.851		
Sc	45			
Ti	47	92.820		
V	51	99.674		
Cr	52	97.757		
Cr	53			
Mn	55	99.180		
Co	59	98.365		
Ni	60	97.073		
Cu	65	98.452		
Zn	66	102.849		
Ge	72		101.553	
As	75	100.332		
Se	82	98.945		
Se-1	77			
Ga	71			

Sample ID: QC Std 5
Report Date/Time: Friday, July 01, 2016 10:58:33
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	84.220		
Ag	107	87.372		
Cd	111	99.478		
Cd	114			
> In	115		98.936	
Sn	118			
Sb	123	96.784		
Ba	135	98.683		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.234		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.693		
U	238	97.030		
> Bi	209		99.537	
Na	23	117.301		
Mg	24	211.554		
K	39	81.196		
Ca	43	73.037		
Fe	54	82.990		
Fe	57	84.202		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
Report Date/Time: Friday, July 01, 2016 10:58:33
Page 3

Approved: July 02, 2016

QC Std 5	Ca	43

Sample ID: QC Std 5
Report Date/Time: Friday, July 01, 2016 10:58:33
Page 4

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 10:59:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76397.1	0.4				ug/L	76456	Standard
	Be	9	56429.9	0.6	**50.4288**	0.323	0.6	ug/L	20	Standard
	Al	27	8608329.7	1.2	**50.3148**	0.658	1.3	ug/L	1307	Standard
	Sc	45	41418.2	1.5				ug/L	41174	Standard
	Ti	47	32560.9	0.4	**99.6282**	1.278	1.3	ug/L	27	Standard
	V	51	420616.9	0.3	**50.8527**	0.410	0.8	ug/L	1434	Standard
	Cr	52	416237.8	1.3	**50.3856**	0.640	1.3	ug/L	7733	Standard
	Cr	53	51529.2	2.3	**50.4433**	0.671	1.3	ug/L	442	Standard
	Mn	55	384144.6	2.2	**50.5271**	1.192	2.4	ug/L	723	Standard
	Co	59	391365.2	2.6	**50.9408**	1.337	2.6	ug/L	217	Standard
	Ni	60	104660.9	0.3	**50.1718**	0.419	0.8	ug/L	304	Standard
	Cu	65	103744.3	0.5	**50.6474**	0.422	0.8	ug/L	181	Standard
	Zn	66	61920.9	0.7	**50.2420**	0.301	0.6	ug/L	215	Standard
>	Ge	72	522053.0	1.0				ug/L	520809	Standard
	As	75	62496.7	0.9	**50.5498**	0.506	1.0	ug/L	-52	Standard
	Se	82	6394.4	1.6	**50.3673**	0.526	1.0	ug/L	17	Standard
	Se-1	77	4303.6	0.6	**49.5434**	0.744	1.5	ug/L	56	Standard
>	Ga	71	55.0	9.1				mg/L	25	Standard
	Rb	85	888.4	10.1				ug/L	28	Standard
	Y	89	456826.7	1.0				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	297194.2	1.6	**98.9144**	2.943	3.0	ug/L	113	Standard
	Ag	107	358131.2	0.8	**50.1903**	1.051	2.1	ug/L	108	Standard
	Cd	111	114353.1	0.3	**50.0023**	0.782	1.6	mg/L	3	Standard
	Cd	114	281397.0	1.0	**49.6948**	0.508	1.0	ug/L	20	Standard
>	In	115	621643.5	1.3				ug/L	625728	Standard
	Sn	118	312305.8	0.1	**48.7658**	0.722	1.5	ug/L	568	Standard
	Sb	123	262685.9	0.2	**51.1341**	0.568	1.1	ug/L	612	Standard
	Ba	135	107196.2	0.5	**49.5868**	0.878	1.8	ug/L	21	Standard
	Ce	140	91.7	19.2				ug/L	245	Standard
>	Tb	159	949369.3	0.9				ug/L	950397	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	446446.9	0.3	**50.5283**	0.234	0.5	ug/L	15	Standard
	Tl	205	397524.5	2.6	**50.6566**	1.177	2.3	ug/L	13	Standard
	Pb	206	283032.1	0.6	**50.7560**	0.110	0.2	ug/L	264	Standard
	Pb	207	256737.6	0.4	**50.6961**	0.167	0.3	ug/L	222	Standard
	Pb	208	1049117.6	0.6	**50.7200**	0.161	0.3	ug/L	959	Standard
	U	238	395685.5	0.4	**49.8743**	0.152	0.3	ug/L	9	Standard
>	Bi	209	544048.8	0.4				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:01:46
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.9687**	17.258	173.1	mg/L	2	Standard
Mg	24	4517.3	2.2	**5.1854**	0.050	1.0	mg/L	55	Standard
K	39	1296.7	2.0	**4.8131**	0.164	3.4	mg/L	28	Standard
Ca	43	80.0	16.5	**4.7867**	1.292	27.0	mg/L	27	Standard
Fe	54	6442.2	3.1	**4.9235**	0.148	3.0	mg/L	147	Standard
Fe	57	1841.8	2.1	**4.8233**	0.186	3.8	mg/L	268	Standard
Sc-1	45	41418.2	1.5				mg/L	41174	Standard
Cl	35	65714.2	0.5				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1946.8	7.2				ug/L	1950	Standard
P	31	21396.8	2.5				ug/L	21156	Standard
S	34	3327.0	3.8				ug/L	3419	Standard
Sr	88	70.0	18.9				ug/L	72	Standard
C	12	130.0	20.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	17	Standard
Dy	164	9.5	107.6				mg/L	16	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	23620.1	0.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.858		
Al	27	100.630		
Sc	45			
Ti	47	99.628		
V	51	101.705		
Cr	52	100.771		
Cr	53			
Mn	55	101.054		
Co	59	101.882		
Ni	60	100.344		
Cu	65	101.295		
Zn	66	100.484		
Ge	72		100.239	
As	75	101.100		
Se	82	100.735		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:01:46
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.914		
Ag	107	100.381		
Cd	111	100.005		
Cd	114			
In	115			99.347
Sn	118	97.532		
Sb	123	102.268		
Ba	135	99.174		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.057		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.440		
U	238	99.749		
Bi	209			98.413
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:01:46
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 11:02:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76638.3	0.9				ug/L	76456	Standard
	Be	9	45.0	69.4	**0.0201**	0.027	136.2	ug/L	20	Standard
	Al	27	2771.9	19.2	**0.0059**	0.003	49.8	ug/L	1307	Standard
	Sc	45	41874.5	1.3				ug/L	41174	Standard
	Ti	47	34.3	22.6	**0.0199**	0.023	116.0	ug/L	27	Standard
	V	51	1314.7	3.0	**-0.0400**	0.005	13.2	ug/L	1434	Standard
	Cr	52	7063.3	2.5	**-0.1041**	0.024	23.4	ug/L	7733	Standard
	Cr	53	583.3	6.1	**0.1556**	0.035	22.3	ug/L	442	Standard
	Mn	55	795.7	2.1	**0.0029**	0.003	97.4	ug/L	723	Standard
	Co	59	301.0	14.0	**0.0095**	0.006	58.4	ug/L	217	Standard
	Ni	60	322.3	4.2	**0.0009**	0.006	613.3	ug/L	304	Standard
	Cu	65	188.3	9.4	**0.0175**	0.009	51.5	ug/L	181	Standard
	Zn	66	246.3	14.0	**0.0191**	0.028	144.2	ug/L	215	Standard
>	**Ge**	72	525121.4	0.6				ug/L	520809	Standard
	As	75	-40.2	86.9	**0.0130**	0.028	214.4	ug/L	-52	Standard
	Se	82	15.7	75.3	**-0.0027**	0.093	3488.1	ug/L	17	Standard
	Se-1	77	53.7	18.4	**-0.0615**	0.118	192.4	ug/L	56	Standard
>	**Ga**	71	31.7	18.2				mg/L	25	Standard
	Rb	85	18.3	15.7				ug/L	28	Standard
	Y	89	447115.8	1.8				ug/L	447395	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	330.0	12.1	**0.0850**	0.013	15.3	ug/L	113	Standard
	Ag	107	352.0	8.7	**0.0361**	0.004	11.5	ug/L	108	Standard
	Cd	111	29.4	26.4	**0.0104**	0.003	32.2	mg/L	3	Standard
	Cd	114	71.8	39.3	**0.0126**	0.005	39.2	ug/L	20	Standard
>	**In**	115	626402.7	0.2				ug/L	625728	Standard
	Sn	118	865.0	27.7	**0.0501**	0.037	74.4	ug/L	568	Standard
	Sb	123	1603.3	32.0	**0.2763**	0.100	36.1	ug/L	612	Standard
	Ba	135	44.0	23.9	**0.0023**	0.005	210.3	ug/L	21	Standard
	Ce	140	16.7	34.6				ug/L	245	Standard
>	**Tb**	159	964218.0	1.0				ug/L	950397	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	134.0	19.6	**0.0140**	0.003	21.2	ug/L	15	Standard
	Tl	205	110.0	16.4	**0.0039**	0.002	58.2	ug/L	13	Standard
	Pb	206	338.3	8.4	**0.0154**	0.006	35.8	ug/L	264	Standard
	Pb	207	297.0	6.8	**0.0111**	0.004	39.6	ug/L	222	Standard
	Pb	208	1217.7	7.2	**0.0091**	0.005	50.4	ug/L	959	Standard
	U	238	104.0	26.4	**0.0125**	0.003	27.7	ug/L	9	Standard
>	**Bi**	209	558778.4	1.0				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:04:58
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	45.1	**-0.0142**	0.021	147.6	mg/L	55	Standard
K	39	25.0	72.1	**-0.0375**	0.066	177.3	mg/L	28	Standard
Ca	43	30.0	33.3	**0.2279**	0.902	395.6	mg/L	27	Standard
Fe	54	134.1	12.9	**0.0047**	0.015	308.3	mg/L	147	Standard
Fe	57	221.7	27.3	**-0.1357**	0.173	127.8	mg/L	268	Standard
> **Sc-1**	45	41874.5	1.3				mg/L	41174	Standard
Cl	35	67946.0	1.7				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	1943.5	9.7				ug/L	1950	Standard
P	31	20762.6	2.5				ug/L	21156	Standard
S	34	3392.0	1.6				ug/L	3419	Standard
Sr	88	48.3	36.3				ug/L	72	Standard
C	12	116.7	42.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	15.9	71.9				mg/L	16	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	17685.3	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:04:58
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.108
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.078
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:04:58
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: PBW 78 WG574416-04
Sample Date/Time: Friday, July 01, 2016 11:05:53
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76067.2	2.6				ug/L	76456	Standard
	Be	9	91.7	22.0	**0.0624**	0.018	28.1	ug/L	20	Standard
	Al	27	9900.0	18.4	**0.0479**	0.010	21.7	ug/L	1307	Standard
	Sc	45	42185.3	1.2				ug/L	41174	Standard
	Ti	47	37.3	6.7	**0.0291**	0.007	24.8	ug/L	27	Standard
	V	51	1740.2	8.5	**0.0114**	0.018	156.7	ug/L	1434	Standard
	Cr	52	8205.6	2.3	**0.0360**	0.018	50.7	ug/L	7733	Standard
	Cr	53	613.3	22.1	**0.1846**	0.130	70.5	ug/L	442	Standard
	Mn	55	2289.5	4.2	**0.1986**	0.011	5.7	ug/L	723	Standard
	Co	59	620.0	11.0	**0.0508**	0.009	16.8	ug/L	217	Standard
	Ni	60	519.3	1.9	**0.0951**	0.005	5.1	ug/L	304	Standard
	Cu	65	329.0	6.1	**0.0858**	0.009	10.4	ug/L	181	Standard
	Zn	66	3237.3	0.8	**2.4406**	0.012	0.5	ug/L	215	Standard
>	**Ge**	72	525088.2	0.5				ug/L	520809	Standard
	As	75	30.8	108.7	**0.0699**	0.027	38.5	ug/L	-52	Standard
	Se	82	25.8	16.5	**0.0760**	0.033	43.0	ug/L	17	Standard
	Se-1	77	68.3	8.1	**0.1083**	0.066	60.6	ug/L	56	Standard
>	**Ga**	71	20.0	66.1				mg/L	25	Standard
	Rb	85	38.3	7.5				ug/L	28	Standard
	Y	89	448293.9	2.2				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	197.6	7.0	**0.0411**	0.005	11.2	ug/L	113	Standard
	Ag	107	356.3	27.8	**0.0365**	0.014	37.3	ug/L	108	Standard
	Cd	111	135.0	20.3	**0.0560**	0.012	21.0	mg/L	3	Standard
	Cd	114	292.8	13.1	**0.0511**	0.007	12.9	ug/L	20	Standard
>	**In**	115	628756.6	0.3				ug/L	625728	Standard
	Sn	118	890.0	6.8	**0.0534**	0.009	17.4	ug/L	568	Standard
	Sb	123	903.8	20.1	**0.1404**	0.035	25.1	ug/L	612	Standard
	Ba	135	176.0	12.6	**0.0626**	0.010	15.9	ug/L	21	Standard
	Ce	140	53.3	61.0				ug/L	245	Standard
>	**Tb**	159	955139.7	2.0				ug/L	950397	Standard
	Ho	165	11.7	49.5				ug/L	7	Standard
	Tl	203	548.0	21.5	**0.0598**	0.012	20.5	ug/L	15	Standard
	Tl	205	510.0	24.7	**0.0537**	0.015	27.8	ug/L	13	Standard
	Pb	206	677.0	11.7	**0.0750**	0.013	16.8	ug/L	264	Standard
	Pb	207	544.7	11.6	**0.0591**	0.011	18.5	ug/L	222	Standard
	Pb	208	2290.4	8.0	**0.0601**	0.007	12.3	ug/L	959	Standard
	U	238	102.7	66.1	**0.0123**	0.008	66.3	ug/L	9	Standard
>	**Bi**	209	556043.1	1.2				ug/L	552821	Standard

Sample ID: PBW 78 WG574416-04
Report Date/Time: Friday, July 01, 2016 11:08:10
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	46.1	**0.0100**	0.032	319.9	mg/L	55	Standard
K	39	35.0	57.1	**0.0003**	0.076	23783.0	mg/L	28	Standard
Ca	43	23.3	32.7	**-0.3783**	0.697	184.3	mg/L	27	Standard
Fe	54	175.9	11.5	**0.0357**	0.014	38.5	mg/L	147	Standard
Fe	57	216.7	10.7	**-0.1545**	0.066	42.5	mg/L	268	Standard
> **Sc-1**	45	42185.3	1.2				mg/L	41174	Standard
Cl	35	67744.4	0.4				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2090.1	1.7				ug/L	1950	Standard
P	31	21226.5	2.4				ug/L	21156	Standard
S	34	3468.7	3.7				ug/L	3419	Standard
Sr	88	66.7	18.9				ug/L	72	Standard
C	12	106.7	51.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	6.2	100.1				mg/L	16	Standard
Ho-1	165	11.7	49.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2538.5	15.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.492	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.822	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 78 WG574416-04
Report Date/Time: Friday, July 01, 2016 11:08:10
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.484
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.583
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: LCSW 78 WG574416-05
Sample Date/Time: Friday, July 01, 2016 11:09:04
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76480.9	1.3				ug/L	76456	Standard
	Be	9	57299.8	1.8	**51.1515**	0.782	1.5	ug/L	20	Standard
	Al	27	13893.0	5.9	**0.0710**	0.006	8.3	ug/L	1307	Standard
	Sc	45	41525.2	3.0				ug/L	41174	Standard
	Ti	47	50.0	14.4	**0.0663**	0.021	31.6	ug/L	27	Standard
	V	51	423867.5	0.4	**50.5009**	0.287	0.6	ug/L	1434	Standard
	Cr	52	423554.6	0.4	**50.5309**	0.121	0.2	ug/L	7733	Standard
	Cr	53	51463.9	0.2	**49.6485**	0.215	0.4	ug/L	442	Standard
	Mn	55	395604.7	0.2	**51.2819**	0.431	0.8	ug/L	723	Standard
	Co	59	393078.4	0.7	**50.4221**	0.467	0.9	ug/L	217	Standard
	Ni	60	106911.2	0.9	**50.5097**	0.714	1.4	ug/L	304	Standard
	Cu	65	106870.6	0.8	**51.4201**	0.725	1.4	ug/L	181	Standard
	Zn	66	64695.2	1.1	**51.7405**	0.880	1.7	ug/L	215	Standard
>	Ge	72	529720.7	0.6				ug/L	520809	Standard
	As	75	63865.6	0.7	**50.9077**	0.332	0.7	ug/L	-52	Standard
	Se	82	6442.1	1.2	**50.0074**	0.423	0.8	ug/L	17	Standard
	Se-1	77	4460.3	1.4	**50.6149**	0.735	1.5	ug/L	56	Standard
>	Ga	71	33.3	48.2				mg/L	25	Standard
	Rb	85	51.7	53.3				ug/L	28	Standard
	Y	89	451210.1	0.7				ug/L	447395	Standard
>	Rh	103	28.3	10.2				ug/L	15	Standard
	Mo	98	211.5	58.2	**0.0455**	0.040	88.5	ug/L	113	Standard
	Ag	107	371127.1	0.8	**51.3096**	0.429	0.8	ug/L	108	Standard
	Cd	111	117429.0	0.6	**50.6559**	0.197	0.4	mg/L	3	Standard
	Cd	114	286369.4	2.1	**49.8969**	1.108	2.2	ug/L	20	Standard
>	In	115	630039.4	0.2				ug/L	625728	Standard
	Sn	118	975.0	11.8	**0.0662**	0.017	26.4	ug/L	568	Standard
	Sb	123	249155.3	2.4	**47.8470**	1.151	2.4	ug/L	612	Standard
	Ba	135	109490.5	0.6	**49.9659**	0.356	0.7	ug/L	21	Standard
	Ce	140	110.0	22.7				ug/L	245	Standard
>	Tb	159	961658.5	1.2				ug/L	950397	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	456267.9	0.6	**50.3461**	0.267	0.5	ug/L	15	Standard
	Tl	205	402501.7	1.2	**50.0083**	0.617	1.2	ug/L	13	Standard
	Pb	206	293954.8	0.6	**51.3969**	0.546	1.1	ug/L	264	Standard
	Pb	207	256579.6	0.1	**49.3966**	0.497	1.0	ug/L	222	Standard
	Pb	208	1074330.1	0.6	**50.6396**	0.527	1.0	ug/L	959	Standard
	U	238	394562.7	0.9	**48.4869**	0.395	0.8	ug/L	9	Standard
>	Bi	209	558043.6	1.1				ug/L	552821	Standard

Sample ID: LCSW 78 WG574416-05
Report Date/Time: Friday, July 01, 2016 11:11:21
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	20.4	**0.0111**	0.013	120.9	mg/L	55	Standard
K	39	35.0	37.8	**0.0010**	0.048	4646.6	mg/L	28	Standard
Ca	43	28.3	36.7	**0.0919**	0.886	964.6	mg/L	27	Standard
Fe	54	169.1	21.5	**0.0325**	0.027	81.8	mg/L	147	Standard
Fe	57	220.0	8.2	**-0.1334**	0.058	43.3	mg/L	268	Standard
> **Sc-1**	45	41525.2	3.0				mg/L	41174	Standard
Cl	35	67082.2	2.2				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	2023.5	3.3				ug/L	1950	Standard
P	31	22251.3	1.9				ug/L	21156	Standard
S	34	3218.7	6.1				ug/L	3419	Standard
Sr	88	76.7	10.0				ug/L	72	Standard
C	12	130.0	27.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	12.2	119.1				mg/L	16	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	1945.1	18.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.033	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.711	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 78 WG574416-05
Report Date/Time: Friday, July 01, 2016 11:11:21
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.689
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.945
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 78 WG574416-05
Report Date/Time: Friday, July 01, 2016 11:11:21
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141705 WG574416-01
Sample Date/Time: Friday, July 01, 2016 11:12:16
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78995.4	1.2				ug/L	76456	Standard
	Be	9	58.3	4.9	0.0306	0.003	9.8	ug/L	20	Standard
	Al	27	21381126.3	0.9	120.8920	2.463	2.0	ug/L	1307	Standard
	Sc	45	41005.4	0.8				ug/L	41174	Standard
	Ti	47	385.7	14.4	1.1313	0.162	14.4	ug/L	27	Standard
	V	51	37880.1	0.4	4.5394	0.067	1.5	ug/L	1434	Standard
	Cr	52	15651.7	0.4	1.0197	0.032	3.2	ug/L	7733	Standard
	Cr	53	6074.6	20.3	5.7629	1.265	22.0	ug/L	442	Standard
	Mn	55	15005.4	0.7	1.9367	0.029	1.5	ug/L	723	Standard
	Co	59	1426.7	2.3	0.1620	0.002	1.4	ug/L	217	Standard
	Ni	60	3377.0	1.1	1.5203	0.032	2.1	ug/L	304	Standard
	Cu	65	1905.1	1.9	0.8856	0.009	1.0	ug/L	181	Standard
	Zn	66	4588.7	1.0	3.6704	0.063	1.7	ug/L	215	Standard
>	Ge	72	506618.0	1.2				ug/L	520809	Standard
	As	75	2080.8	8.4	1.7774	0.135	7.6	ug/L	-52	Standard
	Se	82	818.2	2.3	6.5307	0.077	1.2	ug/L	17	Standard
	Se-1	77	895.7	3.3	10.0889	0.428	4.2	ug/L	56	Standard
>	Ga	71	153.3	31.3				mg/L	25	Standard
	Rb	85	3665.4	2.3				ug/L	28	Standard
	Y	89	429409.0	1.3				ug/L	447395	Standard
>	Rh	103	178.3	12.6				ug/L	15	Standard
	Mo	98	683.2	5.3	0.2157	0.014	6.4	ug/L	113	Standard
	Ag	107	300.3	34.9	0.0315	0.016	49.6	ug/L	108	Standard
	Cd	111	82.5	7.8	0.0356	0.003	8.6	mg/L	3	Standard
	Cd	114	158.8	23.9	0.0295	0.007	23.3	ug/L	20	Standard
>	In	115	590046.0	0.5				ug/L	625728	Standard
	Sn	118	975.0	8.9	0.0764	0.014	18.3	ug/L	568	Standard
	Sb	123	2972.1	30.5	0.5762	0.187	32.4	ug/L	612	Standard
	Ba	135	67195.3	0.7	32.7370	0.271	0.8	ug/L	21	Standard
	Ce	140	5165.9	1.6				ug/L	245	Standard
>	Tb	159	918152.8	1.4				ug/L	950397	Standard
	Ho	165	105.0	29.7				ug/L	7	Standard
	Tl	203	363.0	14.1	0.0439	0.007	15.0	ug/L	15	Standard
	Tl	205	258.3	37.0	0.0260	0.013	51.2	ug/L	13	Standard
	Pb	206	917.4	3.4	0.1351	0.007	5.1	ug/L	264	Standard
	Pb	207	764.4	2.1	0.1180	0.005	4.0	ug/L	222	Standard
	Pb	208	3197.8	4.0	0.1198	0.007	5.7	ug/L	959	Standard
	U	238	29042.1	0.6	3.9760	0.053	1.3	ug/L	9	Standard
>	Bi	209	500900.4	0.8				ug/L	552821	Standard

Sample ID: L1606141705 WG574416-01
Report Date/Time: Friday, July 01, 2016 11:14:33
Page 1

Approved: July 02, 2016

Na	23	6.7	43.3	**19.9855**	8.657	43.3	mg/L	2	Standard
Mg	24	126521.1	1.0	**148.3441**	0.501	0.3	mg/L	55	Standard
K	39	181.7	30.9	**0.5679**	0.214	37.7	mg/L	28	Standard
Ca	43	465.0	16.3	**40.0054**	7.184	18.0	mg/L	27	Standard
Fe	54	240.2	12.6	**0.0904**	0.025	28.1	mg/L	147	Standard
Fe	57	603.3	4.8	**1.0579**	0.102	9.7	mg/L	268	Standard
> **Sc-1**	45	41005.4	0.8				mg/L	41174	Standard
Cl	35	90433.8	0.8				ug/L	69550	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	57739.9	3.1				ug/L	1950	Standard
P	31	24640.0	1.7				ug/L	21156	Standard
S	34	3010.3	1.4				ug/L	3419	Standard
Sr	88	401.7	14.4				ug/L	72	Standard
C	12	506.7	3.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	132.3				mg/L	17	Standard
Dy	164	121.7	25.2				mg/L	16	Standard
Ho-1	165	105.0	29.7				mg/L	7	Standard
Er	166	103.3	29.6				mg/L	7	Standard
I	127	25413.0	5.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.322	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.275	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141705 WG574416-01
Report Date/Time: Friday, July 01, 2016 11:14:33
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.298
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.608
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141705 WG574416-01
Report Date/Time: Friday, July 01, 2016 11:14:33
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141706S WG574416-06
Sample Date/Time: Friday, July 01, 2016 11:15:27
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82487.3	1.1				ug/L	76456	Standard
	Be	9	59434.7	2.0	**49.1890**	0.474	1.0	ug/L	20	Standard
	Al	27	21126866.6	0.7	**114.3857**	1.245	1.1	ug/L	1307	Standard
	Sc	45	42071.7	1.5				ug/L	41174	Standard
	Ti	47	445.7	9.0	**1.3272**	0.106	8.0	ug/L	27	Standard
	V	51	448794.0	1.2	**56.1906**	0.338	0.6	ug/L	1434	Standard
	Cr	52	405302.2	0.8	**50.8030**	0.762	1.5	ug/L	7733	Standard
	Cr	53	55872.8	0.8	**56.6886**	1.157	2.0	ug/L	442	Standard
	Mn	55	376409.4	1.7	**51.2605**	1.187	2.3	ug/L	723	Standard
	Co	59	371466.0	0.9	**50.0608**	1.026	2.0	ug/L	217	Standard
	Ni	60	100340.5	1.4	**49.7984**	1.011	2.0	ug/L	304	Standard
	Cu	65	97977.1	1.5	**49.5201**	1.028	2.1	ug/L	181	Standard
	Zn	66	64249.3	1.5	**53.9822**	0.650	1.2	ug/L	215	Standard
>	Ge	72	504287.9	1.5				ug/L	520809	Standard
	As	75	64736.7	1.2	**54.2084**	0.977	1.8	ug/L	-52	Standard
	Se	82	7105.9	2.4	**57.9770**	1.906	3.3	ug/L	17	Standard
	Se-1	77	5081.5	1.0	**60.7211**	1.522	2.5	ug/L	56	Standard
>	Ga	71	93.3	21.7				mg/L	25	Standard
	Rb	85	3385.4	7.7				ug/L	28	Standard
	Y	89	437587.9	1.2				ug/L	447395	Standard
>	Rh	103	133.3	19.2				ug/L	15	Standard
	Mo	98	712.0	6.4	**0.2258**	0.015	6.5	ug/L	113	Standard
	Ag	107	254706.8	0.6	**37.6267**	0.420	1.1	ug/L	108	Standard
	Cd	111	107324.5	0.5	**49.4721**	0.054	0.1	mg/L	3	Standard
	Cd	114	266264.7	1.6	**49.5778**	1.034	2.1	ug/L	20	Standard
>	In	115	589608.9	0.6				ug/L	625728	Standard
	Sn	118	1198.4	5.9	**0.1134**	0.011	9.9	ug/L	568	Standard
	Sb	123	255276.2	0.1	**52.3884**	0.301	0.6	ug/L	612	Standard
	Ba	135	166458.1	0.3	**81.1840**	0.412	0.5	ug/L	21	Standard
	Ce	140	2188.5	3.6				ug/L	245	Standard
>	Tb	159	935892.6	1.8				ug/L	950397	Standard
	Ho	165	80.0	12.5				ug/L	7	Standard
	Tl	203	416301.7	0.5	**50.3128**	0.740	1.5	ug/L	15	Standard
	Tl	205	372797.3	0.4	**50.7287**	0.513	1.0	ug/L	13	Standard
	Pb	206	269916.3	0.3	**51.6884**	0.658	1.3	ug/L	264	Standard
	Pb	207	235694.4	0.5	**49.6950**	0.399	0.8	ug/L	222	Standard
	Pb	208	976732.6	0.6	**50.4213**	0.371	0.7	ug/L	959	Standard
	U	238	405996.3	0.5	**54.6443**	0.642	1.2	ug/L	9	Standard
>	Bi	209	509531.8	1.0				ug/L	552821	Standard

Sample ID: L1606141706S WG574416-06
Report Date/Time: Friday, July 01, 2016 11:17:44
Page 1

Approved: July 02, 2016

Na	23	6.7	86.6	**19.6383**	17.003	86.6	mg/L	2	Standard
Mg	24	124588.6	1.9	**142.3700**	0.938	0.7	mg/L	55	Standard
K	39	133.3	31.9	**0.3687**	0.159	43.1	mg/L	28	Standard
Ca	43	506.7	5.0	**42.5935**	1.641	3.9	mg/L	27	Standard
Fe	54	191.0	18.5	**0.0477**	0.027	55.6	mg/L	147	Standard
Fe	57	573.3	0.5	**0.9203**	0.025	2.7	mg/L	268	Standard
> **Sc-1**	45	42071.7	1.5				mg/L	41174	Standard
Cl	35	93134.7	1.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	57294.9	3.7				ug/L	1950	Standard
P	31	24481.4	0.9				ug/L	21156	Standard
S	34	3050.3	2.6				ug/L	3419	Standard
Sr	88	351.7	17.1				ug/L	72	Standard
C	12	470.0	15.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	66.5	44.7				mg/L	16	Standard
Ho-1	165	80.0	12.5				mg/L	7	Standard
Er	166	73.3	92.8				mg/L	7	Standard
I	127	27035.8	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.889	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141706S WG574416-06
Report Date/Time: Friday, July 01, 2016 11:17:44
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.228
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.169
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141706S WG574416-06
Report Date/Time: Friday, July 01, 2016 11:17:44
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141707SD WG574416-07
Sample Date/Time: Friday, July 01, 2016 11:18:39
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83771.0	2.5				ug/L	76456	Standard
	Be	9	60537.4	1.9	**49.3442**	0.599	1.2	ug/L	20	Standard
	Al	27	20909187.8	2.0	**111.4909**	2.320	2.1	ug/L	1307	Standard
	Sc	45	42178.7	2.5				ug/L	41174	Standard
	Ti	47	385.0	17.2	**1.1368**	0.214	18.9	ug/L	27	Standard
	V	51	446877.6	0.6	**55.9631**	0.571	1.0	ug/L	1434	Standard
	Cr	52	407703.5	1.0	**51.1164**	0.567	1.1	ug/L	7733	Standard
	Cr	53	57269.7	0.1	**58.1199**	0.209	0.4	ug/L	442	Standard
	Mn	55	373320.3	1.2	**50.8451**	0.769	1.5	ug/L	723	Standard
	Co	59	374639.0	0.7	**50.4931**	0.593	1.2	ug/L	217	Standard
	Ni	60	102269.7	0.8	**50.7649**	0.500	1.0	ug/L	304	Standard
	Cu	65	98211.9	0.3	**49.6447**	0.334	0.7	ug/L	181	Standard
	Zn	66	63211.9	0.4	**53.1189**	0.394	0.7	ug/L	215	Standard
>	Ge	72	504167.3	0.4				ug/L	520809	Standard
	As	75	65436.1	0.6	**54.8009**	0.553	1.0	ug/L	-52	Standard
	Se	82	7107.1	0.1	**57.9877**	0.247	0.4	ug/L	17	Standard
	Se-1	77	5193.9	0.7	**62.0795**	0.521	0.8	ug/L	56	Standard
>	Ga	71	93.3	56.3				mg/L	25	Standard
	Rb	85	2987.0	1.6				ug/L	28	Standard
	Y	89	428781.1	0.8				ug/L	447395	Standard
>	Rh	103	146.7	3.9				ug/L	15	Standard
	Mo	98	634.9	1.7	**0.2009**	0.001	0.6	ug/L	113	Standard
	Ag	107	261558.3	0.6	**39.0020**	0.323	0.8	ug/L	108	Standard
	Cd	111	107761.1	1.2	**50.1421**	0.734	1.5	mg/L	3	Standard
	Cd	114	265170.0	1.2	**49.8331**	0.062	0.1	ug/L	20	Standard
>	In	115	584141.3	1.3				ug/L	625728	Standard
	Sn	118	778.4	10.9	**0.0453**	0.014	30.6	ug/L	568	Standard
	Sb	123	253357.3	0.7	**52.4833**	0.432	0.8	ug/L	612	Standard
	Ba	135	164823.3	0.7	**81.1417**	0.473	0.6	ug/L	21	Standard
	Ce	140	1715.1	1.1				ug/L	245	Standard
>	Tb	159	919374.0	0.5				ug/L	950397	Standard
	Ho	165	48.3	26.0				ug/L	7	Standard
	Tl	203	415993.7	1.0	**50.5326**	0.446	0.9	ug/L	15	Standard
	Tl	205	377462.4	0.7	**51.6305**	0.656	1.3	ug/L	13	Standard
	Pb	206	269578.4	0.3	**51.8894**	0.298	0.6	ug/L	264	Standard
	Pb	207	236101.7	0.1	**50.0395**	0.358	0.7	ug/L	222	Standard
	Pb	208	981599.1	1.3	**50.9367**	0.779	1.5	ug/L	959	Standard
	U	238	408604.0	0.1	**55.2799**	0.488	0.9	ug/L	9	Standard
>	Bi	209	506896.7	0.8				ug/L	552821	Standard

Sample ID: L1606141707SD WG574416-07
Report Date/Time: Friday, July 01, 2016 11:20:56
Page 1

Approved: July 02, 2016

Na	23	6.7	86.6	**19.7141**	17.069	86.6	mg/L	2	Standard
Mg	24	123424.1	1.3	**140.7631**	4.816	3.4	mg/L	55	Standard
K	39	126.7	21.7	**0.3448**	0.114	32.9	mg/L	28	Standard
Ca	43	478.3	6.3	**39.9606**	1.868	4.7	mg/L	27	Standard
Fe	54	159.8	26.4	**0.0241**	0.035	144.2	mg/L	147	Standard
Fe	57	558.3	4.0	**0.8725**	0.108	12.4	mg/L	268	Standard
> **Sc-1**	45	42178.7	2.5				mg/L	41174	Standard
Cl	35	93263.5	1.5				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	55210.4	0.6				ug/L	1950	Standard
P	31	24391.3	2.2				ug/L	21156	Standard
S	34	2932.0	3.7				ug/L	3419	Standard
Sr	88	386.7	9.1				ug/L	72	Standard
C	12	800.0	2.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	64.1	17.0				mg/L	16	Standard
Ho-1	165	48.3	26.0				mg/L	7	Standard
Er	166	53.3	39.0				mg/L	7	Standard
I	127	27236.1	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.568	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.805	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141707SD WG574416-07
Report Date/Time: Friday, July 01, 2016 11:20:56
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.354
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.693
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141707SD WG574416-07
Report Date/Time: Friday, July 01, 2016 11:20:56
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141701
Sample Date/Time: Friday, July 01, 2016 11:21:50
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83420.7	1.6				ug/L	76456	Standard
	Be	9	53.3	21.7	**0.0237**	0.009	37.8	ug/L	20	Standard
	Al	27	31084082.3	1.3	**166.4192**	1.988	1.2	ug/L	1307	Standard
	Sc	45	42130.2	2.0				ug/L	41174	Standard
	Ti	47	170.3	8.2	**0.4375**	0.044	10.0	ug/L	27	Standard
	V	51	22939.6	1.3	**2.5877**	0.032	1.2	ug/L	1434	Standard
	Cr	52	13097.0	1.3	**0.6468**	0.025	3.9	ug/L	7733	Standard
	Cr	53	1960.1	6.9	**1.5196**	0.135	8.9	ug/L	442	Standard
	Mn	55	3766.5	0.8	**0.3954**	0.005	1.2	ug/L	723	Standard
	Co	59	709.0	6.9	**0.0630**	0.006	10.1	ug/L	217	Standard
	Ni	60	2223.2	1.0	**0.9167**	0.012	1.3	ug/L	304	Standard
	Cu	65	739.0	2.4	**0.2875**	0.008	2.9	ug/L	181	Standard
	Zn	66	2322.5	1.8	**1.7125**	0.036	2.1	ug/L	215	Standard
>	Ge	72	521624.8	0.2				ug/L	520809	Standard
	As	75	515.4	8.1	**0.4620**	0.033	7.2	ug/L	-52	Standard
	Se	82	150.1	4.3	**1.0601**	0.051	4.8	ug/L	17	Standard
	Se-1	77	163.7	3.7	**1.2270**	0.071	5.8	ug/L	56	Standard
>	Ga	71	35.0	42.9				mg/L	25	Standard
	Rb	85	1295.1	7.1				ug/L	28	Standard
	Y	89	450422.8	1.4				ug/L	447395	Standard
>	Rh	103	130.0	23.4				ug/L	15	Standard
	Mo	98	654.1	6.4	**0.1969**	0.014	7.3	ug/L	113	Standard
	Ag	107	196.0	12.7	**0.0150**	0.004	24.0	ug/L	108	Standard
	Cd	111	38.8	25.3	**0.0149**	0.004	28.8	mg/L	3	Standard
	Cd	114	102.9	24.1	**0.0184**	0.004	23.7	ug/L	20	Standard
>	In	115	612771.9	0.4				ug/L	625728	Standard
	Sn	118	700.0	1.2	**0.0268**	0.002	5.6	ug/L	568	Standard
	Sb	123	677.6	31.8	**0.1003**	0.043	43.0	ug/L	612	Standard
	Ba	135	79352.9	0.7	**37.2291**	0.386	1.0	ug/L	21	Standard
	Ce	140	398.3	12.2				ug/L	245	Standard
>	Tb	159	943156.7	0.8				ug/L	950397	Standard
	Ho	165	36.7	20.8				ug/L	7	Standard
	Tl	203	227.0	14.0	**0.0253**	0.004	14.6	ug/L	15	Standard
	Tl	205	246.7	13.8	**0.0221**	0.004	19.4	ug/L	13	Standard
	Pb	206	454.7	7.7	**0.0390**	0.006	16.7	ug/L	264	Standard
	Pb	207	363.0	3.8	**0.0266**	0.003	11.0	ug/L	222	Standard
	Pb	208	1563.4	3.8	**0.0284**	0.003	10.4	ug/L	959	Standard
	U	238	20328.0	1.2	**2.5974**	0.039	1.5	ug/L	9	Standard
>	Bi	209	536649.8	0.3				ug/L	552821	Standard

Sample ID: L1606141701
Report Date/Time: Friday, July 01, 2016 11:24:07
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	14153.3	4.2	**16.0944**	0.416	2.6	mg/L	55	Standard
K	39	73.3	50.3	**0.1418**	0.131	92.5	mg/L	28	Standard
Ca	43	301.7	14.5	**24.2946**	3.319	13.7	mg/L	27	Standard
Fe	54	192.1	16.5	**0.0481**	0.021	43.9	mg/L	147	Standard
Fe	57	448.3	3.9	**0.5433**	0.078	14.4	mg/L	268	Standard
> **Sc-1**	45	42130.2	2.0				mg/L	41174	Standard
Cl	35	78637.6	2.5				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	17710.4	7.6				ug/L	1950	Standard
P	31	24940.5	2.0				ug/L	21156	Standard
S	34	3180.3	5.3				ug/L	3419	Standard
Sr	88	363.3	6.9				ug/L	72	Standard
C	12	386.7	16.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	17	Standard
Dy	164	45.1	46.6				mg/L	16	Standard
Ho-1	165	36.7	20.8				mg/L	7	Standard
Er	166	33.3	17.3				mg/L	7	Standard
I	127	17748.8	7.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.110	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.157	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141701
Report Date/Time: Friday, July 01, 2016 11:24:07
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.929
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.075
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141701
Report Date/Time: Friday, July 01, 2016 11:24:07
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141702
Sample Date/Time: Friday, July 01, 2016 11:25:02
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84178.2	0.8				ug/L	76456	Standard
	Be	9	68.3	33.0	**0.0357**	0.019	52.5	ug/L	20	Standard
	Al	27	21395590.4	1.7	**113.5091**	1.891	1.7	ug/L	1307	Standard
	Sc	45	40557.5	1.2				ug/L	41174	Standard
	Ti	47	235.3	3.5	**0.6749**	0.030	4.5	ug/L	27	Standard
	V	51	30102.8	0.4	**3.6510**	0.042	1.2	ug/L	1434	Standard
	Cr	52	20877.7	0.2	**1.7436**	0.023	1.3	ug/L	7733	Standard
	Cr	53	13953.1	1.5	**14.0948**	0.198	1.4	ug/L	442	Standard
	Mn	55	6869.6	2.0	**0.8525**	0.013	1.6	ug/L	723	Standard
	Co	59	1049.0	2.3	**0.1145**	0.004	3.2	ug/L	217	Standard
	Ni	60	3023.6	1.9	**1.3787**	0.032	2.3	ug/L	304	Standard
	Cu	65	1353.7	2.9	**0.6232**	0.017	2.7	ug/L	181	Standard
	Zn	66	2790.6	0.7	**2.2139**	0.010	0.4	ug/L	215	Standard
>	Ge	72	495483.9	0.7				ug/L	520809	Standard
	As	75	1494.2	7.1	**1.3177**	0.098	7.4	ug/L	-52	Standard
	Se	82	1155.8	1.9	**9.4896**	0.142	1.5	ug/L	17	Standard
	Se-1	77	1366.7	2.9	**16.1232**	0.600	3.7	ug/L	56	Standard
>	Ga	71	65.0	46.8				mg/L	25	Standard
	Rb	85	1118.4	6.5				ug/L	28	Standard
	Y	89	431041.5	1.8				ug/L	447395	Standard
>	Rh	103	106.7	2.7				ug/L	15	Standard
	Mo	98	636.9	5.4	**0.2018**	0.013	6.3	ug/L	113	Standard
	Ag	107	175.7	31.4	**0.0134**	0.008	62.4	ug/L	108	Standard
	Cd	111	69.9	26.7	**0.0302**	0.009	28.8	mg/L	3	Standard
	Cd	114	141.9	41.1	**0.0267**	0.011	41.2	ug/L	20	Standard
>	In	115	583855.1	0.8				ug/L	625728	Standard
	Sn	118	985.0	7.5	**0.0798**	0.012	15.3	ug/L	568	Standard
	Sb	123	469.0	23.7	**0.0635**	0.023	35.9	ug/L	612	Standard
	Ba	135	16891.1	0.4	**8.3035**	0.096	1.2	ug/L	21	Standard
	Ce	140	950.0	9.1				ug/L	245	Standard
>	Tb	159	915987.8	1.1				ug/L	950397	Standard
	Ho	165	58.3	13.1				ug/L	7	Standard
	Tl	203	239.0	33.8	**0.0285**	0.010	35.2	ug/L	15	Standard
	Tl	205	226.7	28.0	**0.0215**	0.009	41.6	ug/L	13	Standard
	Pb	206	491.0	11.7	**0.0515**	0.012	22.7	ug/L	264	Standard
	Pb	207	417.3	7.3	**0.0430**	0.007	16.1	ug/L	222	Standard
	Pb	208	1796.4	4.5	**0.0456**	0.005	10.2	ug/L	959	Standard
	U	238	24911.1	0.1	**3.3908**	0.016	0.5	ug/L	9	Standard
>	Bi	209	503762.9	0.6				ug/L	552821	Standard

Sample ID: L1606141702
Report Date/Time: Friday, July 01, 2016 11:27:19
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**10.0444**	8.695	86.6	mg/L	2	Standard
Mg	24	132735.6	1.2	**157.3747**	3.155	2.0	mg/L	55	Standard
K	39	131.7	11.6	**0.3818**	0.065	17.1	mg/L	28	Standard
Ca	43	436.7	8.3	**37.8132**	2.966	7.8	mg/L	27	Standard
Fe	54	188.4	13.0	**0.0512**	0.020	39.7	mg/L	147	Standard
Fe	57	626.7	13.5	**1.1530**	0.288	25.0	mg/L	268	Standard
> **Sc-1**	45	40557.5	1.2				mg/L	41174	Standard
Cl	35	95111.1	2.9				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	69814.0	4.5				ug/L	1950	Standard
P	31	24122.5	3.6				ug/L	21156	Standard
S	34	3262.0	2.8				ug/L	3419	Standard
Sr	88	431.7	9.9				ug/L	72	Standard
C	12	460.0	22.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	50.5	77.6				mg/L	16	Standard
Ho-1	165	58.3	13.1				mg/L	7	Standard
Er	166	60.0	44.1				mg/L	7	Standard
I	127	37230.7	1.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.101	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.137	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141702
Report Date/Time: Friday, July 01, 2016 11:27:19
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.308
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.126
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141702
Report Date/Time: Friday, July 01, 2016 11:27:19
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141702PS WG574808-01
Sample Date/Time: Friday, July 01, 2016 11:28:13
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84706.2	1.4				ug/L	76456	Standard
	Be	9	61248.6	0.7	**49.3719**	0.771	1.6	ug/L	20	Standard
	Al	27	21521134.5	1.9	**113.4962**	3.763	3.3	ug/L	1307	Standard
	Sc	45	40794.9	2.7				ug/L	41174	Standard
	Ti	47	240.0	10.1	**0.6796**	0.085	12.5	ug/L	27	Standard
	V	51	455261.1	1.0	**57.2107**	0.562	1.0	ug/L	1434	Standard
	Cr	52	426443.6	1.0	**53.6956**	0.415	0.8	ug/L	7733	Standard
	Cr	53	63767.3	2.8	**64.9856**	1.904	2.9	ug/L	442	Standard
	Mn	55	385209.5	0.8	**52.6493**	0.868	1.6	ug/L	723	Standard
	Co	59	385929.7	0.6	**52.1919**	0.293	0.6	ug/L	217	Standard
	Ni	60	103771.2	0.7	**51.6879**	0.282	0.5	ug/L	304	Standard
	Cu	65	101476.7	1.4	**51.4688**	0.149	0.3	ug/L	181	Standard
	Zn	66	65028.6	0.8	**54.8362**	0.235	0.4	ug/L	215	Standard
>	Ge	72	502470.5	1.2				ug/L	520809	Standard
	As	75	66227.4	1.6	**55.6481**	0.524	0.9	ug/L	-52	Standard
	Se	82	7664.8	0.5	**62.7619**	0.423	0.7	ug/L	17	Standard
	Se-1	77	5635.0	2.2	**67.6351**	0.810	1.2	ug/L	56	Standard
>	Ga	71	56.7	41.7				mg/L	25	Standard
	Rb	85	1151.7	5.5				ug/L	28	Standard
	Y	89	435252.0	2.3				ug/L	447395	Standard
>	Rh	103	131.7	9.6				ug/L	15	Standard
	Mo	98	659.3	4.3	**0.2083**	0.012	5.6	ug/L	113	Standard
	Ag	107	333584.9	1.2	**49.4501**	0.303	0.6	ug/L	108	Standard
	Cd	111	111317.0	0.6	**51.4929**	0.677	1.3	mg/L	3	Standard
	Cd	114	272508.8	2.4	**50.9184**	1.531	3.0	ug/L	20	Standard
>	In	115	587582.2	0.8				ug/L	625728	Standard
	Sn	118	1173.4	7.2	**0.1100**	0.015	13.8	ug/L	568	Standard
	Sb	123	246884.2	2.4	**50.8360**	0.942	1.9	ug/L	612	Standard
	Ba	135	121048.6	0.4	**59.2388**	0.725	1.2	ug/L	21	Standard
	Ce	140	995.0	2.7				ug/L	245	Standard
>	Tb	159	924930.3	1.0				ug/L	950397	Standard
	Ho	165	51.7	39.1				ug/L	7	Standard
	Tl	203	432904.6	0.1	**52.3301**	0.247	0.5	ug/L	15	Standard
	Tl	205	391263.3	1.6	**53.2578**	1.128	2.1	ug/L	13	Standard
	Pb	206	282728.2	0.5	**54.1561**	0.449	0.8	ug/L	264	Standard
	Pb	207	246312.6	0.2	**51.9491**	0.256	0.5	ug/L	222	Standard
	Pb	208	1022028.0	0.9	**52.7764**	0.638	1.2	ug/L	959	Standard
	U	238	421958.1	0.7	**56.8072**	0.698	1.2	ug/L	9	Standard
>	Bi	209	509385.6	0.5				ug/L	552821	Standard

Sample ID: L1606141702PS WG574808-01
Report Date/Time: Friday, July 01, 2016 11:30:30
Page 1

Approved: July 02, 2016

Na	23	10.0	50.0	**29.8847**	14.237	47.6	mg/L	2	Standard
Mg	24	133593.1	0.8	**157.5206**	4.134	2.6	mg/L	55	Standard
K	39	128.3	35.1	**0.3678**	0.182	49.5	mg/L	28	Standard
Ca	43	420.0	20.7	**36.0275**	7.706	21.4	mg/L	27	Standard
Fe	54	180.1	10.8	**0.0439**	0.018	40.9	mg/L	147	Standard
Fe	57	538.3	4.2	**0.8651**	0.032	3.7	mg/L	268	Standard
> **Sc-1**	45	40794.9	2.7				mg/L	41174	Standard
Cl	35	96279.6	0.7				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	71609.1	5.3				ug/L	1950	Standard
P	31	24898.8	2.0				ug/L	21156	Standard
S	34	3225.3	2.1				ug/L	3419	Standard
Sr	88	406.7	4.3				ug/L	72	Standard
C	12	440.0	36.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	27.8	36.1				mg/L	16	Standard
Ho-1	165	51.7	39.1				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	7	Standard
I	127	36331.8	0.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.479	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141702PS WG574808-01
Report Date/Time: Friday, July 01, 2016 11:30:30
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.904
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.143
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141702PS WG574808-01
Report Date/Time: Friday, July 01, 2016 11:30:30
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141702SDL WG574808-02
Sample Date/Time: Friday, July 01, 2016 11:31:25
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79270.2	1.4				ug/L	76456	Standard
	Be	9	48.3	15.8	**0.0218**	0.006	29.8	ug/L	20	Standard
	Al	27	4222516.4	1.3	**23.7801**	0.015	0.1	ug/L	1307	Standard
	Sc	45	38916.6	1.8				ug/L	41174	Standard
	Ti	47	59.3	17.5	**0.1088**	0.035	32.6	ug/L	27	Standard
	V	51	7243.4	2.3	**0.7359**	0.026	3.5	ug/L	1434	Standard
	Cr	52	10348.9	1.0	**0.3868**	0.014	3.5	ug/L	7733	Standard
	Cr	53	3842.2	2.6	**3.6141**	0.077	2.1	ug/L	442	Standard
	Mn	55	1712.4	2.4	**0.1385**	0.004	3.2	ug/L	723	Standard
	Co	59	414.7	3.6	**0.0280**	0.003	9.0	ug/L	217	Standard
	Ni	60	921.4	5.7	**0.3179**	0.030	9.6	ug/L	304	Standard
	Cu	65	476.3	6.6	**0.1735**	0.018	10.2	ug/L	181	Standard
	Zn	66	1250.7	2.0	**0.9024**	0.030	3.3	ug/L	215	Standard
>	**Ge**	72	491133.0	0.8				ug/L	520809	Standard
	As	75	262.0	15.9	**0.2704**	0.037	13.9	ug/L	-52	Standard
	Se	82	270.1	2.3	**2.1408**	0.063	2.9	ug/L	17	Standard
	Se-1	77	339.3	3.5	**3.5247**	0.142	4.0	ug/L	56	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	250.0	13.1				ug/L	28	Standard
	Y	89	411909.2	0.7				ug/L	447395	Standard
>	**Rh**	103	60.0	30.0				ug/L	15	Standard
	Mo	98	158.0	15.1	**0.0328**	0.008	25.5	ug/L	113	Standard
	Ag	107	268.7	10.2	**0.0278**	0.004	15.6	ug/L	108	Standard
	Cd	111	28.7	19.4	**0.0112**	0.003	23.8	mg/L	3	Standard
	Cd	114	92.0	14.0	**0.0176**	0.002	14.2	ug/L	20	Standard
>	**In**	115	575454.3	0.4				ug/L	625728	Standard
	Sn	118	298.3	6.8	**-0.0338**	0.003	9.9	ug/L	568	Standard
	Sb	123	1720.4	31.0	**0.3280**	0.111	33.8	ug/L	612	Standard
	Ba	135	3347.4	3.0	**1.6553**	0.056	3.4	ug/L	21	Standard
	Ce	140	181.7	6.9				ug/L	245	Standard
>	**Tb**	159	890346.9	0.6				ug/L	950397	Standard
	Ho	165	23.3	32.7				ug/L	7	Standard
	Tl	203	214.3	9.6	**0.0249**	0.002	9.4	ug/L	15	Standard
	Tl	205	275.0	41.2	**0.0273**	0.015	55.9	ug/L	13	Standard
	Pb	206	399.7	2.6	**0.0322**	0.002	4.9	ug/L	264	Standard
	Pb	207	322.7	4.0	**0.0214**	0.002	11.0	ug/L	222	Standard
	Pb	208	1435.0	2.3	**0.0252**	0.002	7.2	ug/L	959	Standard
	U	238	5076.5	3.7	**0.6771**	0.028	4.1	ug/L	9	Standard
>	**Bi**	209	514021.2	0.5				ug/L	552821	Standard

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:33:42
Page 1

Approved: July 02, 2016

Na	23	6.7	114.6	**21.2259**	24.589	115.8	mg/L	2	Standard
Mg	24	26095.8	2.9	**32.1961**	0.941	2.9	mg/L	55	Standard
K	39	48.3	21.5	**0.0648**	0.042	64.9	mg/L	28	Standard
Ca	43	73.3	25.8	**4.5982**	1.826	39.7	mg/L	27	Standard
Fe	54	79.1	19.4	**-0.0333**	0.012	34.7	mg/L	147	Standard
Fe	57	293.3	4.3	**0.1499**	0.049	32.9	mg/L	268	Standard
Sc-1	45	38916.6	1.8				mg/L	41174	Standard
Cl	35	81436.9	1.0				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	16265.4	2.3				ug/L	1950	Standard
P	31	10428.6	1.9				ug/L	21156	Standard
S	34	3263.7	1.5				ug/L	3419	Standard
Sr	88	118.3	30.0				ug/L	72	Standard
C	12	173.3	3.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	17	Standard
Dy	164	22.2	71.3				mg/L	16	Standard
Ho-1	165	23.3	32.7				mg/L	7	Standard
Er	166	23.3	107.9				mg/L	7	Standard
I	127	34272.1	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.681	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.302	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:33:42
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.982
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141702SDL WG574808-02
Sample Date/Time: Friday, July 01, 2016 11:34:36
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75492.7	3.2				ug/L	76456	Standard
	Be	9	23.3	12.4	**0.0012**	0.002	197.6	ug/L	20	Standard
	Al	27	829607.4	2.3	**4.8996**	0.125	2.6	ug/L	1307	Standard
	Sc	45	37073.7	3.1				ug/L	41174	Standard
	Ti	47	28.0	12.9	**0.0070**	0.012	174.3	ug/L	27	Standard
	V	51	3170.1	5.9	**0.2118**	0.020	9.4	ug/L	1434	Standard
	Cr	52	8461.0	1.1	**0.1435**	0.006	4.5	ug/L	7733	Standard
	Cr	53	1218.4	12.8	**0.8668**	0.167	19.3	ug/L	442	Standard
	Mn	55	694.0	1.2	**-0.0037**	0.001	25.0	ug/L	723	Standard
	Co	59	224.0	8.2	**0.0017**	0.003	168.9	ug/L	217	Standard
	Ni	60	457.0	4.9	**0.0814**	0.014	16.9	ug/L	304	Standard
	Cu	65	221.3	9.3	**0.0415**	0.012	28.9	ug/L	181	Standard
	Zn	66	1093.0	3.6	**0.7694**	0.029	3.8	ug/L	215	Standard
>	**Ge**	72	489217.1	1.1				ug/L	520809	Standard
	As	75	21.5	96.2	**0.0638**	0.018	28.2	ug/L	-52	Standard
	Se	82	69.4	5.3	**0.4582**	0.034	7.4	ug/L	17	Standard
	Se-1	77	109.3	5.9	**0.6765**	0.067	9.8	ug/L	56	Standard
>	**Ga**	71	15.0	33.3				mg/L	25	Standard
	Rb	85	76.7	16.4				ug/L	28	Standard
	Y	89	405198.5	2.3				ug/L	447395	Standard
>	**Rh**	103	26.7	60.3				ug/L	15	Standard
	Mo	98	142.2	38.6	**0.0281**	0.020	72.6	ug/L	113	Standard
	Ag	107	112.7	10.2	**0.0045**	0.002	36.8	ug/L	108	Standard
	Cd	111	8.1	48.9	**0.0015**	0.002	126.2	mg/L	3	Standard
	Cd	114	16.9	33.2	**0.0033**	0.001	33.5	ug/L	20	Standard
>	**In**	115	566627.7	0.7				ug/L	625728	Standard
	Sn	118	178.3	10.6	**-0.0536**	0.003	6.2	ug/L	568	Standard
	Sb	123	679.8	12.9	**0.1116**	0.020	17.6	ug/L	612	Standard
	Ba	135	676.7	1.6	**0.3256**	0.006	1.8	ug/L	21	Standard
	Ce	140	45.0	61.9				ug/L	245	Standard
>	**Tb**	159	881967.0	0.2				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	116.0	4.3	**0.0131**	0.001	4.5	ug/L	15	Standard
	Tl	205	140.0	3.6	**0.0090**	0.001	6.9	ug/L	13	Standard
	Pb	206	294.0	3.6	**0.0118**	0.002	17.2	ug/L	264	Standard
	Pb	207	254.0	8.5	**0.0068**	0.004	64.3	ug/L	222	Standard
	Pb	208	1072.0	4.7	**0.0063**	0.003	41.6	ug/L	959	Standard
	U	238	957.7	4.8	**0.1269**	0.006	4.8	ug/L	9	Standard
>	**Bi**	209	516500.7	0.3				ug/L	552821	Standard

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:36:53
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4970.8	4.5	**6.3914**	0.307	4.8	mg/L	55	Standard
K	39	25.0	0.0	**-0.0247**	0.003	13.3	mg/L	28	Standard
Ca	43	50.0	34.6	**2.6288**	1.919	73.0	mg/L	27	Standard
Fe	54	54.5	0.1	**-0.0513**	0.002	3.0	mg/L	147	Standard
Fe	57	253.3	6.3	**0.0613**	0.067	109.5	mg/L	268	Standard
> **Sc-1**	45	37073.7	3.1				mg/L	41174	Standard
Cl	35	80495.3	1.6				ug/L	69550	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	5040.8	9.7				ug/L	1950	Standard
P	31	7305.1	3.6				ug/L	21156	Standard
S	34	3295.4	6.8				ug/L	3419	Standard
Sr	88	108.3	11.6				ug/L	72	Standard
C	12	146.7	3.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	17	Standard
Dy	164	-1.1	89.2				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	7	Standard
I	127	33724.2	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.740	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.934	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:36:53
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.555
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.430
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606141702SDL WG574808-02
Report Date/Time: Friday, July 01, 2016 11:36:53
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 11:37:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79886.8	2.4				ug/L	76456	Standard
	Be	9	60216.2	2.8	**51.4590**	0.417	0.8	ug/L	20	Standard
	Al	27	8658161.3	1.0	**48.4053**	0.695	1.4	ug/L	1307	Standard
	Sc	45	41946.3	1.7				ug/L	41174	Standard
	Ti	47	32783.8	1.1	**99.4934**	0.341	0.3	ug/L	27	Standard
	V	51	421947.6	0.5	**50.6006**	0.209	0.4	ug/L	1434	Standard
	Cr	52	415783.8	0.5	**49.9191**	0.677	1.4	ug/L	7733	Standard
	Cr	53	52323.5	0.7	**50.8163**	0.079	0.2	ug/L	442	Standard
	Mn	55	383488.2	0.5	**50.0327**	0.303	0.6	ug/L	723	Standard
	Co	59	396921.5	0.3	**51.2480**	0.300	0.6	ug/L	217	Standard
	Ni	60	105550.0	0.7	**50.1916**	0.654	1.3	ug/L	304	Standard
	Cu	65	104187.0	0.3	**50.4533**	0.298	0.6	ug/L	181	Standard
	Zn	66	62119.1	0.9	**49.9953**	0.242	0.5	ug/L	215	Standard
>	Ge	72	526287.7	0.8				ug/L	520809	Standard
	As	75	62653.6	0.5	**50.2687**	0.288	0.6	ug/L	-52	Standard
	Se	82	6502.0	0.1	**50.8075**	0.476	0.9	ug/L	17	Standard
	Se-1	77	4394.6	2.3	**50.1962**	1.546	3.1	ug/L	56	Standard
>	Ga	71	41.7	34.6				mg/L	25	Standard
	Rb	85	811.7	7.3				ug/L	28	Standard
	Y	89	449443.8	0.8				ug/L	447395	Standard
>	Rh	103	28.3	20.4				ug/L	15	Standard
	Mo	98	299240.3	0.5	**98.3551**	0.449	0.5	ug/L	113	Standard
	Ag	107	359054.0	0.7	**49.6967**	0.335	0.7	ug/L	108	Standard
	Cd	111	115287.0	0.4	**49.7893**	0.202	0.4	mg/L	3	Standard
	Cd	114	284203.9	0.6	**49.5756**	0.249	0.5	ug/L	20	Standard
>	In	115	629316.2	0.1				ug/L	625728	Standard
	Sn	118	316403.3	1.4	**48.7968**	0.695	1.4	ug/L	568	Standard
	Sb	123	257145.7	0.4	**49.4396**	0.256	0.5	ug/L	612	Standard
	Ba	135	107880.7	0.2	**49.2873**	0.099	0.2	ug/L	21	Standard
	Ce	140	80.0	12.5				ug/L	245	Standard
>	Tb	159	959375.1	0.6				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	446456.6	0.5	**49.7300**	0.195	0.4	ug/L	15	Standard
	Tl	205	404447.0	0.4	**50.7263**	0.364	0.7	ug/L	13	Standard
	Pb	206	281579.7	0.3	**49.6971**	0.317	0.6	ug/L	264	Standard
	Pb	207	257039.7	0.6	**49.9528**	0.358	0.7	ug/L	222	Standard
	Pb	208	1065428.7	1.4	**50.6922**	0.446	0.9	ug/L	959	Standard
	U	238	401590.9	0.5	**49.8178**	0.056	0.1	ug/L	9	Standard
>	Bi	209	552793.0	0.6				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:40:07
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4465.7	1.7	**5.0623**	0.170	3.4	mg/L	55	Standard
K	39	1175.0	4.1	**4.2914**	0.166	3.9	mg/L	28	Standard
Ca	43	80.0	12.5	**4.6810**	0.869	18.6	mg/L	27	Standard
Fe	54	6475.2	2.0	**4.8865**	0.136	2.8	mg/L	147	Standard
Fe	57	1960.1	2.3	**5.1091**	0.183	3.6	mg/L	268	Standard
> **Sc-1**	45	41946.3	1.7				mg/L	41174	Standard
Cl	35	79383.6	3.3				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2656.9	5.2				ug/L	1950	Standard
P	31	23768.6	2.4				ug/L	21156	Standard
S	34	4000.5	6.6				ug/L	3419	Standard
Sr	88	80.0	43.3				ug/L	72	Standard
C	12	120.0	25.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	12.4	100.1				mg/L	16	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	22111.1	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.918		
Al	27	96.811		
Sc	45			
Ti	47	99.493		
V	51	101.201		
Cr	52	99.838		
Cr	53			
Mn	55	100.065		
Co	59	102.496		
Ni	60	100.383		
Cu	65	100.907		
Zn	66	99.991		
> Ge	72		101.052	
As	75	100.537		
Se	82	101.615		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:40:07
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.355		
Ag	107	99.393		
Cd	111	99.579		
Cd	114			
In	115			100.573
Sn	118	97.594		
Sb	123	98.879		
Ba	135	98.575		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.460		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.384		
U	238	99.636		
Bi	209			99.995
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:40:07
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 11:41:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79854.9	1.2				ug/L	76456	Standard
	Be	9	28.3	44.4	**0.0043**	0.011	247.6	ug/L	20	Standard
	Al	27	4860.8	30.8	**0.0170**	0.009	51.0	ug/L	1307	Standard
	Sc	45	40828.3	2.4				ug/L	41174	Standard
	Ti	47	33.7	26.8	**0.0170**	0.026	153.3	ug/L	27	Standard
	V	51	1448.8	4.8	**-0.0250**	0.010	39.6	ug/L	1434	Standard
	Cr	52	7320.1	2.9	**-0.0792**	0.016	19.8	ug/L	7733	Standard
	Cr	53	573.3	8.4	**0.1415**	0.043	30.2	ug/L	442	Standard
	Mn	55	774.7	1.8	**-0.0006**	0.001	182.2	ug/L	723	Standard
	Co	59	305.0	4.6	**0.0098**	0.001	15.1	ug/L	217	Standard
	Ni	60	339.0	2.3	**0.0078**	0.005	67.4	ug/L	304	Standard
	Cu	65	197.7	11.1	**0.0212**	0.010	48.2	ug/L	181	Standard
	Zn	66	269.3	7.5	**0.0362**	0.017	46.8	ug/L	215	Standard
>	**Ge**	72	528956.5	1.1				ug/L	520809	Standard
	As	75	-45.6	52.3	**0.0087**	0.019	224.1	ug/L	-52	Standard
	Se	82	23.2	12.4	**0.0547**	0.023	42.1	ug/L	17	Standard
	Se-1	77	56.7	21.6	**-0.0309**	0.148	479.3	ug/L	56	Standard
>	**Ga**	71	35.0	62.3				mg/L	25	Standard
	Rb	85	25.0	34.6				ug/L	28	Standard
	Y	89	451349.1	0.6				ug/L	447395	Standard
>	**Rh**	103	21.7	48.0				ug/L	15	Standard
	Mo	98	237.5	8.6	**0.0541**	0.007	13.2	ug/L	113	Standard
	Ag	107	234.7	5.8	**0.0196**	0.002	10.5	ug/L	108	Standard
	Cd	111	27.2	17.4	**0.0094**	0.002	21.1	mg/L	3	Standard
	Cd	114	66.4	34.3	**0.0116**	0.004	34.4	ug/L	20	Standard
>	**In**	115	629965.8	0.8				ug/L	625728	Standard
	Sn	118	940.0	21.0	**0.0607**	0.029	48.4	ug/L	568	Standard
	Sb	123	1092.2	32.6	**0.1759**	0.067	38.2	ug/L	612	Standard
	Ba	135	59.0	17.7	**0.0090**	0.005	54.2	ug/L	21	Standard
	Ce	140	21.7	70.5				ug/L	245	Standard
>	**Tb**	159	955018.0	0.8				ug/L	950397	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	126.3	20.6	**0.0132**	0.003	22.7	ug/L	15	Standard
	Tl	205	113.3	18.4	**0.0043**	0.003	62.2	ug/L	13	Standard
	Pb	206	346.7	4.9	**0.0167**	0.003	20.4	ug/L	264	Standard
	Pb	207	322.3	7.2	**0.0158**	0.005	30.9	ug/L	222	Standard
	Pb	208	1248.7	4.5	**0.0104**	0.003	28.9	ug/L	959	Standard
	U	238	111.7	26.1	**0.0134**	0.004	27.1	ug/L	9	Standard
>	**Bi**	209	560384.3	0.8				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:43:18
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	59.6	**0.0047**	0.039	831.6	mg/L	55	Standard
K	39	35.0	37.8	**0.0039**	0.051	1305.2	mg/L	28	Standard
Ca	43	11.7	24.7	**-1.3816**	0.279	20.2	mg/L	27	Standard
Fe	54	175.9	8.8	**0.0403**	0.012	30.1	mg/L	147	Standard
Fe	57	250.0	2.0	**-0.0293**	0.009	29.6	mg/L	268	Standard
> **Sc-1**	45	40828.3	2.4				mg/L	41174	Standard
Cl	35	77022.6	1.0				ug/L	69550	Standard
Kr	83	3.3	34.6				ug/L	1	Standard
Br	81	2493.5	3.8				ug/L	1950	Standard
P	31	23044.2	2.3				ug/L	21156	Standard
S	34	3880.5	1.7				ug/L	3419	Standard
Sr	88	65.0	33.5				ug/L	72	Standard
C	12	130.0	40.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	17	Standard
Dy	164	9.0	113.3				mg/L	16	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	16675.8	0.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.564	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:43:18
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.677
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.368
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:43:18
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141703
Sample Date/Time: Friday, July 01, 2016 11:44:14
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81889.0	0.6				ug/L	76456	Standard
	Be	9	25.0	91.7	**0.0010**	0.019	1981.7	ug/L	20	Standard
	Al	27	20848394.4	0.7	**113.6982**	1.012	0.9	ug/L	1307	Standard
	Sc	45	42434.3	1.1				ug/L	41174	Standard
	Ti	47	234.7	10.2	**0.6592**	0.078	11.8	ug/L	27	Standard
	V	51	28681.8	1.4	**3.4038**	0.038	1.1	ug/L	1434	Standard
	Cr	52	19756.9	2.1	**1.5522**	0.054	3.5	ug/L	7733	Standard
	Cr	53	14119.9	6.2	**14.0078**	0.905	6.5	ug/L	442	Standard
	Mn	55	3334.7	3.0	**0.3535**	0.012	3.4	ug/L	723	Standard
	Co	59	938.4	1.3	**0.0970**	0.001	0.7	ug/L	217	Standard
	Ni	60	2864.9	3.9	**1.2722**	0.046	3.6	ug/L	304	Standard
	Cu	65	1854.4	2.7	**0.8643**	0.032	3.7	ug/L	181	Standard
	Zn	66	2610.6	1.0	**2.0198**	0.039	1.9	ug/L	215	Standard
>	**Ge**	72	504450.0	0.8				ug/L	520809	Standard
	As	75	1324.6	1.2	**1.1530**	0.022	1.9	ug/L	-52	Standard
	Se	82	1104.4	0.5	**8.8990**	0.094	1.1	ug/L	17	Standard
	Se-1	77	1261.1	5.7	**14.5449**	0.840	5.8	ug/L	56	Standard
>	**Ga**	71	50.0	43.6				mg/L	25	Standard
	Rb	85	1121.7	4.1				ug/L	28	Standard
	Y	89	436048.7	1.9				ug/L	447395	Standard
>	**Rh**	103	121.7	29.7				ug/L	15	Standard
	Mo	98	645.7	3.5	**0.2020**	0.005	2.6	ug/L	113	Standard
	Ag	107	223.7	26.2	**0.0200**	0.008	40.7	ug/L	108	Standard
	Cd	111	51.2	16.5	**0.0212**	0.004	16.8	mg/L	3	Standard
	Cd	114	113.2	6.3	**0.0210**	0.002	7.4	ug/L	20	Standard
>	**In**	115	591186.7	1.3				ug/L	625728	Standard
	Sn	118	875.0	14.2	**0.0597**	0.021	34.7	ug/L	568	Standard
	Sb	123	602.8	25.4	**0.0895**	0.030	33.5	ug/L	612	Standard
	Ba	135	16459.3	1.1	**7.9899**	0.039	0.5	ug/L	21	Standard
	Ce	140	880.0	5.0				ug/L	245	Standard
>	**Tb**	159	920155.8	2.2				ug/L	950397	Standard
	Ho	165	50.0	34.6				ug/L	7	Standard
	Tl	203	157.7	7.1	**0.0182**	0.001	6.2	ug/L	15	Standard
	Tl	205	155.0	27.9	**0.0113**	0.006	51.8	ug/L	13	Standard
	Pb	206	453.0	2.5	**0.0428**	0.002	4.5	ug/L	264	Standard
	Pb	207	378.7	4.5	**0.0335**	0.003	9.5	ug/L	222	Standard
	Pb	208	1616.4	3.0	**0.0349**	0.002	5.2	ug/L	959	Standard
	U	238	24675.7	1.0	**3.3100**	0.026	0.8	ug/L	9	Standard
>	**Bi**	209	511192.5	1.2				ug/L	552821	Standard

Sample ID: L1606141703
Report Date/Time: Friday, July 01, 2016 11:46:31
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**14.4476**	14.513	100.4	mg/L	2	Standard
Mg	24	129302.7	0.5	**146.5117**	1.623	1.1	mg/L	55	Standard
K	39	120.0	31.5	**0.3147**	0.137	43.6	mg/L	28	Standard
Ca	43	443.3	15.8	**36.6451**	6.259	17.1	mg/L	27	Standard
Fe	54	170.0	14.6	**0.0304**	0.017	57.5	mg/L	147	Standard
Fe	57	581.7	5.3	**0.9302**	0.090	9.7	mg/L	268	Standard
> **Sc-1**	45	42434.3	1.1				mg/L	41174	Standard
Cl	35	97340.4	1.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	68893.1	4.4				ug/L	1950	Standard
P	31	25483.1	3.6				ug/L	21156	Standard
S	34	3482.1	6.0				ug/L	3419	Standard
Sr	88	398.3	9.6				ug/L	72	Standard
C	12	456.7	3.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	44.0	27.1				mg/L	16	Standard
Ho-1	165	50.0	34.6				mg/L	7	Standard
Er	166	56.7	53.9				mg/L	7	Standard
I	127	49472.4	4.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.106	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.859	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141703
Report Date/Time: Friday, July 01, 2016 11:46:31
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.480
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.470
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141703
Report Date/Time: Friday, July 01, 2016 11:46:31
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141704
Sample Date/Time: Friday, July 01, 2016 11:47:26
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84196.6	0.3				ug/L	76456	Standard
	Be	9	33.3	22.9	**0.0072**	0.006	86.7	ug/L	20	Standard
	Al	27	15514677.9	3.0	**82.2819**	2.194	2.7	ug/L	1307	Standard
	Sc	45	43039.4	2.0				ug/L	41174	Standard
	Ti	47	214.3	5.1	**0.5706**	0.026	4.6	ug/L	27	Standard
	V	51	104787.8	1.3	**12.4991**	0.095	0.8	ug/L	1434	Standard
	Cr	52	15259.3	0.7	**0.9095**	0.033	3.7	ug/L	7733	Standard
	Cr	53	5951.2	3.9	**5.4474**	0.187	3.4	ug/L	442	Standard
	Mn	55	4057.5	2.5	**0.4326**	0.014	3.2	ug/L	723	Standard
	Co	59	713.7	6.2	**0.0633**	0.005	7.8	ug/L	217	Standard
	Ni	60	1861.4	2.8	**0.7406**	0.029	3.9	ug/L	304	Standard
	Cu	65	1343.1	2.6	**0.5817**	0.025	4.2	ug/L	181	Standard
	Zn	66	2743.6	1.9	**2.0501**	0.019	0.9	ug/L	215	Standard
>	Ge	72	522881.1	1.2				ug/L	520809	Standard
	As	75	2151.6	2.6	**1.7810**	0.033	1.9	ug/L	-52	Standard
	Se	82	460.2	1.1	**3.5021**	0.008	0.2	ug/L	17	Standard
	Se-1	77	457.3	2.7	**4.6435**	0.083	1.8	ug/L	56	Standard
>	Ga	71	48.3	41.8				mg/L	25	Standard
	Rb	85	1016.7	4.8				ug/L	28	Standard
	Y	89	448180.4	0.4				ug/L	447395	Standard
>	Rh	103	61.7	28.5				ug/L	15	Standard
	Mo	98	2950.5	2.8	**0.9697**	0.025	2.6	ug/L	113	Standard
	Ag	107	125.3	5.6	**0.0049**	0.001	22.3	ug/L	108	Standard
	Cd	111	47.4	9.4	**0.0186**	0.002	10.0	mg/L	3	Standard
	Cd	114	120.7	5.3	**0.0216**	0.001	5.2	ug/L	20	Standard
>	In	115	614296.5	0.6				ug/L	625728	Standard
	Sn	118	906.7	10.1	**0.0592**	0.014	23.4	ug/L	568	Standard
	Sb	123	614.0	19.1	**0.0872**	0.022	25.7	ug/L	612	Standard
	Ba	135	28748.9	0.6	**13.4426**	0.042	0.3	ug/L	21	Standard
	Ce	140	528.3	5.7				ug/L	245	Standard
>	Tb	159	947954.0	1.2				ug/L	950397	Standard
	Ho	165	23.3	12.4				ug/L	7	Standard
	Tl	203	129.3	12.8	**0.0142**	0.002	13.1	ug/L	15	Standard
	Tl	205	116.7	9.9	**0.0055**	0.002	28.8	ug/L	13	Standard
	Pb	206	445.0	3.2	**0.0379**	0.002	6.0	ug/L	264	Standard
	Pb	207	341.0	4.4	**0.0228**	0.003	12.0	ug/L	222	Standard
	Pb	208	1493.7	0.5	**0.0256**	0.000	1.6	ug/L	959	Standard
	U	238	70565.6	0.2	**9.0963**	0.034	0.4	ug/L	9	Standard
>	Bi	209	531969.0	0.4				ug/L	552821	Standard

Sample ID: L1606141704
Report Date/Time: Friday, July 01, 2016 11:49:43
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	88574.8	1.4	**98.9343**	0.707	0.7	mg/L	55	Standard
K	39	85.0	11.8	**0.1808**	0.038	21.2	mg/L	28	Standard
Ca	43	236.7	3.2	**18.1358**	1.082	6.0	mg/L	27	Standard
Fe	54	139.8	11.5	**0.0060**	0.011	187.7	mg/L	147	Standard
Fe	57	440.0	15.9	**0.4880**	0.189	38.8	mg/L	268	Standard
> **Sc-1**	45	43039.4	2.0				mg/L	41174	Standard
Cl	35	92305.0	1.1				ug/L	69550	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	47838.7	1.5				ug/L	1950	Standard
P	31	25832.0	1.0				ug/L	21156	Standard
S	34	3398.7	3.3				ug/L	3419	Standard
Sr	88	276.7	16.4				ug/L	72	Standard
C	12	396.7	10.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	28.9	100.6				mg/L	16	Standard
Ho-1	165	23.3	12.4				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	7	Standard
I	127	50935.5	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.125	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.398	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141704
Report Date/Time: Friday, July 01, 2016 11:49:43
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.173
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.228
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141708
Sample Date/Time: Friday, July 01, 2016 11:50:37
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89411.4	1.5				ug/L	76456	Standard
	Be	9	40.0	65.0	**0.0106**	0.020	184.8	ug/L	20	Standard
	Al	27	22078727.0	1.3	**110.2973**	2.573	2.3	ug/L	1307	Standard
	Sc	45	45105.4	2.6				ug/L	41174	Standard
	Ti	47	320.0	7.2	**0.8822**	0.060	6.8	ug/L	27	Standard
	V	51	99984.6	2.1	**11.7774**	0.066	0.6	ug/L	1434	Standard
	Cr	52	21104.0	1.8	**1.5998**	0.060	3.7	ug/L	7733	Standard
	Cr	53	17553.5	0.8	**16.6868**	0.266	1.6	ug/L	442	Standard
	Mn	55	6430.0	0.9	**0.7351**	0.014	1.9	ug/L	723	Standard
	Co	59	852.7	2.7	**0.0802**	0.004	4.4	ug/L	217	Standard
	Ni	60	2949.0	1.3	**1.2465**	0.031	2.4	ug/L	304	Standard
	Cu	65	1272.1	1.7	**0.5397**	0.010	1.8	ug/L	181	Standard
	Zn	66	3425.7	3.7	**2.5723**	0.060	2.3	ug/L	215	Standard
>	Ge	72	528948.8	1.6				ug/L	520809	Standard
	As	75	3475.1	1.0	**2.8171**	0.043	1.5	ug/L	-52	Standard
	Se	82	859.6	2.0	**6.5725**	0.024	0.4	ug/L	17	Standard
	Se-1	77	1345.7	4.1	**14.8113**	0.393	2.7	ug/L	56	Standard
>	Ga	71	66.7	11.5				mg/L	25	Standard
	Rb	85	4762.4	2.0				ug/L	28	Standard
	Y	89	458548.0	1.5				ug/L	447395	Standard
>	Rh	103	130.0	17.6				ug/L	15	Standard
	Mo	98	5253.1	0.6	**1.7250**	0.023	1.4	ug/L	113	Standard
	Ag	107	143.3	4.2	**0.0072**	0.001	7.4	ug/L	108	Standard
	Cd	111	26.0	42.6	**0.0090**	0.005	53.4	mg/L	3	Standard
	Cd	114	74.8	31.1	**0.0133**	0.004	31.5	ug/L	20	Standard
>	In	115	621514.7	1.7				ug/L	625728	Standard
	Sn	118	2120.1	10.2	**0.2472**	0.030	12.0	ug/L	568	Standard
	Sb	123	722.8	13.7	**0.1069**	0.018	16.5	ug/L	612	Standard
	Ba	135	16530.7	1.8	**7.6319**	0.034	0.4	ug/L	21	Standard
	Ce	140	651.7	0.4				ug/L	245	Standard
>	Tb	159	970516.7	2.5				ug/L	950397	Standard
	Ho	165	30.0	28.9				ug/L	7	Standard
	Tl	203	115.3	7.9	**0.0125**	0.001	8.0	ug/L	15	Standard
	Tl	205	93.3	21.7	**0.0024**	0.003	115.8	ug/L	13	Standard
	Pb	206	443.0	3.9	**0.0372**	0.003	8.7	ug/L	264	Standard
	Pb	207	377.3	5.1	**0.0298**	0.003	10.5	ug/L	222	Standard
	Pb	208	1645.4	1.3	**0.0327**	0.002	5.5	ug/L	959	Standard
	U	238	38430.4	2.4	**4.9290**	0.066	1.3	ug/L	9	Standard
>	Bi	209	534585.3	1.1				ug/L	552821	Standard

Sample ID: L1606141708
Report Date/Time: Friday, July 01, 2016 11:52:54
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.3062**	16.110	173.1	mg/L	2	Standard
Mg	24	132828.1	1.2	**141.6540**	4.533	3.2	mg/L	55	Standard
K	39	191.7	1.5	**0.5400**	0.021	3.8	mg/L	28	Standard
Ca	43	260.0	27.1	**19.0243**	5.272	27.7	mg/L	27	Standard
Fe	54	173.3	10.7	**0.0254**	0.016	61.2	mg/L	147	Standard
Fe	57	418.3	15.9	**0.3725**	0.215	57.6	mg/L	268	Standard
> **Sc-1**	45	45105.4	2.6				mg/L	41174	Standard
Cl	35	100939.1	0.9				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	47925.8	4.8				ug/L	1950	Standard
P	31	29869.4	2.0				ug/L	21156	Standard
S	34	3397.0	1.1				ug/L	3419	Standard
Sr	88	423.3	25.1				ug/L	72	Standard
C	12	363.3	14.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	21.9	26.4				mg/L	16	Standard
Ho-1	165	30.0	28.9				mg/L	7	Standard
Er	166	30.0	0.0				mg/L	7	Standard
I	127	41419.9	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.945	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.563	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141708
Report Date/Time: Friday, July 01, 2016 11:52:54
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.327
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.701
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141708
Report Date/Time: Friday, July 01, 2016 11:52:54
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141709
Sample Date/Time: Friday, July 01, 2016 11:53:49
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89000.7	1.7				ug/L	76456	Standard
	Be	9	21.7	53.3	**-0.0032**	0.009	283.0	ug/L	20	Standard
	Al	27	81398.6	19.6	**0.3975**	0.073	18.3	ug/L	1307	Standard
	Sc	45	44555.4	0.6				ug/L	41174	Standard
	Ti	47	68.3	11.1	**0.1083**	0.021	19.5	ug/L	27	Standard
	V	51	3436.2	9.0	**0.1857**	0.034	18.2	ug/L	1434	Standard
	Cr	52	29812.6	1.5	**2.4193**	0.055	2.3	ug/L	7733	Standard
	Cr	53	3683.8	3.4	**2.9342**	0.118	4.0	ug/L	442	Standard
	Mn	55	6681.5	2.0	**0.7101**	0.015	2.0	ug/L	723	Standard
	Co	59	555.0	20.9	**0.0372**	0.014	37.4	ug/L	217	Standard
	Ni	60	3463.7	2.0	**1.3816**	0.031	2.2	ug/L	304	Standard
	Cu	65	1056.0	4.0	**0.4017**	0.019	4.6	ug/L	181	Standard
	Zn	66	4593.4	1.7	**3.2666**	0.053	1.6	ug/L	215	Standard
>	**Ge**	72	566488.4	0.2				ug/L	520809	Standard
	As	75	-5.4	928.8	**0.0411**	0.038	91.4	ug/L	-52	Standard
	Se	82	29.8	40.3	**0.0905**	0.087	96.5	ug/L	17	Standard
	Se-1	77	89.0	15.9	**0.2724**	0.151	55.6	ug/L	56	Standard
>	**Ga**	71	38.3	15.1				mg/L	25	Standard
	Rb	85	258.3	31.9				ug/L	28	Standard
	Y	89	491649.6	0.6				ug/L	447395	Standard
>	**Rh**	103	20.0	0.0				ug/L	15	Standard
	Mo	98	1080.6	3.0	**0.3054**	0.011	3.5	ug/L	113	Standard
	Ag	107	233.3	81.3	**0.0171**	0.024	142.6	ug/L	108	Standard
	Cd	111	62.5	42.8	**0.0227**	0.011	47.4	mg/L	3	Standard
	Cd	114	173.3	77.7	**0.0281**	0.022	77.8	ug/L	20	Standard
>	**In**	115	678768.0	0.3				ug/L	625728	Standard
	Sn	118	3542.1	5.1	**0.4232**	0.027	6.3	ug/L	568	Standard
	Sb	123	458.8	15.3	**0.0481**	0.013	26.4	ug/L	612	Standard
	Ba	135	1179.0	5.3	**0.4817**	0.027	5.6	ug/L	21	Standard
	Ce	140	250.0	8.7				ug/L	245	Standard
>	**Tb**	159	1017740.7	0.9				ug/L	950397	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	186.0	120.6	**0.0185**	0.023	124.9	ug/L	15	Standard
	Tl	205	108.3	94.3	**0.0029**	0.012	410.9	ug/L	13	Standard
	Pb	206	582.3	26.2	**0.0521**	0.024	46.8	ug/L	264	Standard
	Pb	207	512.3	24.2	**0.0467**	0.022	46.6	ug/L	222	Standard
	Pb	208	1988.1	15.4	**0.0399**	0.013	32.1	ug/L	959	Standard
	U	238	126.0	91.3	**0.0142**	0.013	92.3	ug/L	9	Standard
>	**Bi**	209	592807.4	1.2				ug/L	552821	Standard

Sample ID: L1606141709
Report Date/Time: Friday, July 01, 2016 11:56:06
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	260.0	26.4	**0.2207**	0.075	34.1	mg/L	55	Standard
K	39	20.0	25.0	**-0.0603**	0.018	29.6	mg/L	28	Standard
Ca	43	25.0	40.0	**-0.3533**	0.844	239.0	mg/L	27	Standard
Fe	54	209.5	1.2	**0.0530**	0.003	4.8	mg/L	147	Standard
Fe	57	231.7	15.2	**-0.1465**	0.097	65.9	mg/L	268	Standard
Sc-1	45	44555.4	0.6				mg/L	41174	Standard
Cl	35	92666.6	2.2				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	3473.7	14.7				ug/L	1950	Standard
P	31	23892.2	1.7				ug/L	21156	Standard
S	34	3687.1	4.5				ug/L	3419	Standard
Sr	88	46.7	37.6				ug/L	72	Standard
C	12	203.3	12.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	32.1	49.0				mg/L	16	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	7	Standard
I	127	2500.2	19.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.408	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.771	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141709
Report Date/Time: Friday, July 01, 2016 11:56:06
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.477
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.233
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144101
Sample Date/Time: Friday, July 01, 2016 11:57:01
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90118.9	1.7				ug/L	76456	Standard
	Be	9	590.0	6.6	**0.4275**	0.033	7.7	ug/L	20	Standard
	Al	27	41637732.7	0.8	**206.3623**	2.003	1.0	ug/L	1307	Standard
	Sc	45	52748.3	1.3				ug/L	41174	Standard
	Ti	47	25849.4	0.9	**75.9425**	0.582	0.8	ug/L	27	Standard
	V	51	119191.4	0.7	**13.6962**	0.128	0.9	ug/L	1434	Standard
	Cr	52	206171.6	0.2	**23.4624**	0.147	0.6	ug/L	7733	Standard
	Cr	53	26030.7	3.1	**24.2644**	0.827	3.4	ug/L	442	Standard
	Mn	55	3362426.1	1.3	**425.5410**	6.574	1.5	ug/L	723	Standard
	Co	59	45394.2	0.9	**5.6490**	0.060	1.1	ug/L	217	Standard
	Ni	60	38170.7	0.8	**17.4748**	0.075	0.4	ug/L	304	Standard
	Cu	65	32375.9	0.9	**15.1289**	0.102	0.7	ug/L	181	Standard
	Zn	66	132720.1	0.4	**103.6234**	0.326	0.3	ug/L	215	Standard
>	Ge	72	543517.2	0.4				ug/L	520809	Standard
	As	75	40511.0	0.4	**31.4895**	0.240	0.8	ug/L	-52	Standard
	Se	82	271.3	7.7	**1.9305**	0.150	7.7	ug/L	17	Standard
	Se-1	77	159.7	0.7	**1.1051**	0.008	0.7	ug/L	56	Standard
>	Ga	71	10717.1	0.7				mg/L	25	Standard
	Rb	85	127736.4	2.6				ug/L	28	Standard
	Y	89	566400.0	1.2				ug/L	447395	Standard
>	Rh	103	230.0	10.0				ug/L	15	Standard
	Mo	98	19958.9	0.3	**6.3798**	0.036	0.6	ug/L	113	Standard
	Ag	107	307.3	4.7	**0.0287**	0.002	7.3	ug/L	108	Standard
	Cd	111	352.1	11.3	**0.1461**	0.017	11.5	mg/L	3	Standard
	Cd	114	941.3	14.8	**0.1602**	0.023	14.2	ug/L	20	Standard
>	In	115	644859.8	0.7				ug/L	625728	Standard
	Sn	118	2065.1	2.2	**0.2271**	0.006	2.7	ug/L	568	Standard
	Sb	123	1536.5	9.5	**0.2547**	0.026	10.2	ug/L	612	Standard
	Ba	135	755795.9	0.3	**337.0929**	2.903	0.9	ug/L	21	Standard
	Ce	140	578983.3	0.3				ug/L	245	Standard
>	Tb	159	997623.6	0.4				ug/L	950397	Standard
	Ho	165	8542.4	1.8				ug/L	7	Standard
	Tl	203	679.7	2.4	**0.0742**	0.002	2.6	ug/L	15	Standard
	Tl	205	551.7	3.8	**0.0587**	0.002	3.1	ug/L	13	Standard
	Pb	206	82465.5	0.5	**14.3726**	0.198	1.4	ug/L	264	Standard
	Pb	207	67377.8	0.6	**12.9242**	0.183	1.4	ug/L	222	Standard
	Pb	208	291536.5	0.2	**13.6926**	0.174	1.3	ug/L	959	Standard
	U	238	4078.5	1.0	**0.5004**	0.006	1.2	ug/L	9	Standard
>	Bi	209	558632.4	1.1				ug/L	552821	Standard

Sample ID: L1606144101
Report Date/Time: Friday, July 01, 2016 11:59:18
Page 1

Approved: July 02, 2016

Na	23	6.7	43.3	**15.4842**	6.494	41.9	mg/L	2	Standard
Mg	24	15246.0	1.4	**13.8434**	0.267	1.9	mg/L	55	Standard
K	39	708.3	3.5	**1.9891**	0.079	4.0	mg/L	28	Standard
Ca	43	650.0	13.5	**43.6069**	5.619	12.9	mg/L	27	Standard
Fe	54	24640.5	1.6	**14.9863**	0.360	2.4	mg/L	147	Standard
Fe	57	6984.9	0.7	**15.9501**	0.213	1.3	mg/L	268	Standard
Sc-1	45	52748.3	1.3				mg/L	41174	Standard
Cl	35	77949.4	2.2				ug/L	69550	Standard
Kr	83	4.0	50.0				ug/L	1	Standard
Br	81	47491.0	0.5				ug/L	1950	Standard
P	31	44155.9	1.6				ug/L	21156	Standard
S	34	4003.9	3.1				ug/L	3419	Standard
Sr	88	953.4	8.4				ug/L	72	Standard
C	12	680.0	10.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	17	Standard
Dy	164	14685.5	3.1				mg/L	16	Standard
Ho-1	165	8542.4	1.8				mg/L	7	Standard
Er	166	7695.3	3.1				mg/L	7	Standard
I	127	857640.2	8.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		117.871	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.360	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606144101
Report Date/Time: Friday, July 01, 2016 11:59:18
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.058
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.051
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606144101
Report Date/Time: Friday, July 01, 2016 11:59:18
Page 3

Approved: July 02, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144102
Sample Date/Time: Friday, July 01, 2016 12:00:12
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	98658.5	1.5				ug/L	76456	Standard
	Be	9	2670.2	2.5	**1.8290**	0.053	2.9	ug/L	20	Standard
	Al	27	100018655.9	1.5	**452.7643**	1.271	0.3	ug/L	1307	Standard
	Sc	45	67269.1	3.4				ug/L	41174	Standard
	Ti	47	65558.9	1.5	**191.1007**	3.376	1.8	ug/L	27	Standard
	V	51	394103.6	0.8	**45.3542**	0.603	1.3	ug/L	1434	Standard
	Cr	52	244910.5	0.4	**27.8063**	0.223	0.8	ug/L	7733	Standard
	Cr	53	30011.4	1.8	**27.7958**	0.566	2.0	ug/L	442	Standard
	Mn	55	9446087.0	0.8	**1185.4895**	15.339	1.3	ug/L	723	Standard
	Co	59	127992.0	0.5	**15.8451**	0.159	1.0	ug/L	217	Standard
	Ni	60	80262.0	0.9	**36.5997**	0.485	1.3	ug/L	304	Standard
	Cu	65	41760.1	1.2	**19.3697**	0.328	1.7	ug/L	181	Standard
	Zn	66	117095.1	0.6	**90.6239**	0.738	0.8	ug/L	215	Standard
>	Ge	72	548186.8	0.5				ug/L	520809	Standard
	As	75	12213.4	1.0	**9.4446**	0.140	1.5	ug/L	-52	Standard
	Se	82	168.5	1.4	**1.1404**	0.019	1.7	ug/L	17	Standard
	Se-1	77	183.7	6.1	**1.3567**	0.128	9.4	ug/L	56	Standard
>	Ga	71	38156.3	0.9				mg/L	25	Standard
	Rb	85	401776.2	1.3				ug/L	28	Standard
	Y	89	977933.0	0.9				ug/L	447395	Standard
>	Rh	103	285.0	6.1				ug/L	15	Standard
	Mo	98	2398.4	0.8	**0.7441**	0.003	0.4	ug/L	113	Standard
	Ag	107	404.7	5.9	**0.0417**	0.003	8.1	ug/L	108	Standard
	Cd	111	528.3	1.5	**0.2199**	0.003	1.2	mg/L	3	Standard
	Cd	114	1302.9	4.8	**0.2213**	0.008	3.8	ug/L	20	Standard
>	In	115	646109.7	1.1				ug/L	625728	Standard
	Sn	118	1073.4	7.7	**0.0773**	0.012	15.1	ug/L	568	Standard
	Sb	123	1069.4	22.8	**0.1664**	0.044	26.2	ug/L	612	Standard
	Ba	135	1753079.8	0.5	**780.4145**	5.897	0.8	ug/L	21	Standard
	Ce	140	2444826.3	0.9				ug/L	245	Standard
>	Tb	159	1048030.7	0.8				ug/L	950397	Standard
	Ho	165	43214.9	0.3				ug/L	7	Standard
	Tl	203	1815.1	1.2	**0.2022**	0.002	1.2	ug/L	15	Standard
	Tl	205	1641.8	6.8	**0.1969**	0.014	6.9	ug/L	13	Standard
	Pb	206	125036.8	0.6	**22.1250**	0.076	0.3	ug/L	264	Standard
	Pb	207	102892.9	0.5	**20.0422**	0.120	0.6	ug/L	222	Standard
	Pb	208	445404.9	0.2	**21.2431**	0.093	0.4	ug/L	959	Standard
	U	238	8589.4	1.3	**1.0692**	0.015	1.4	ug/L	9	Standard
>	Bi	209	550757.7	0.3				ug/L	552821	Standard

Sample ID: L1606144102
Report Date/Time: Friday, July 01, 2016 12:02:29
Page 1

Approved: July 02, 2016

Na	23	15.0	33.3	**27.3614**	8.722	31.9	mg/L	2	Standard
Mg	24	11512.7	3.2	**8.1734**	0.184	2.3	mg/L	55	Standard
K	39	1368.4	5.6	**3.0793**	0.098	3.2	mg/L	28	Standard
Ca	43	1295.1	4.3	**69.6682**	4.720	6.8	mg/L	27	Standard
Fe	54	38707.5	2.1	**18.4898**	0.545	2.9	mg/L	147	Standard
Fe	57	11109.1	1.4	**20.0998**	0.536	2.7	mg/L	268	Standard
> **Sc-1**	45	67269.1	3.4				mg/L	41174	Standard
Cl	35	76892.0	1.5				ug/L	69550	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	13365.9	1.5				ug/L	1950	Standard
P	31	63609.9	1.5				ug/L	21156	Standard
S	34	3752.1	6.7				ug/L	3419	Standard
Sr	88	1298.4	6.6				ug/L	72	Standard
C	12	780.0	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	20.4				mg/L	17	Standard
Dy	164	72319.7	1.0				mg/L	16	Standard
Ho-1	165	43214.9	0.3				mg/L	7	Standard
Er	166	38789.6	1.4				mg/L	7	Standard
I	127	200464.2	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.040	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144102
Report Date/Time: Friday, July 01, 2016 12:02:29
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.257	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.627	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	

Sample ID: L1606144102
Report Date/Time: Friday, July 01, 2016 12:02:29
Page 3

Approved: July 02, 2016

Mn 55 Upper, S, EEE	Mn	55
Ba 135 Upper, S, EEE	Ba	135

Sample ID: L1606144102
Report Date/Time: Friday, July 01, 2016 12:02:29
Page 4

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144201 WG574416-02
Sample Date/Time: Friday, July 01, 2016 12:03:24
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	91136.7	2.7				ug/L	76456	Standard
	Be	9	201.7	10.3	**0.1314**	0.018	13.5	ug/L	20	Standard
	Al	27	21905405.8	1.2	**107.3706**	1.869	1.7	ug/L	1307	Standard
	Sc	45	50086.0	0.8				ug/L	41174	Standard
	Ti	47	9316.5	1.4	**26.0675**	0.608	2.3	ug/L	27	Standard
	V	51	52523.0	0.3	**5.6447**	0.076	1.3	ug/L	1434	Standard
	Cr	52	28573.6	1.1	**2.2609**	0.041	1.8	ug/L	7733	Standard
	Cr	53	3023.6	5.3	**2.3192**	0.157	6.8	ug/L	442	Standard
	Mn	55	526886.3	1.1	**63.5454**	0.695	1.1	ug/L	723	Standard
	Co	59	12298.0	1.4	**1.4386**	0.020	1.4	ug/L	217	Standard
	Ni	60	9400.9	1.0	**3.9901**	0.052	1.3	ug/L	304	Standard
	Cu	65	4207.6	2.8	**1.8116**	0.065	3.6	ug/L	181	Standard
	Zn	66	23172.4	0.3	**17.1155**	0.171	1.0	ug/L	215	Standard
>	Ge	72	569574.4	1.1				ug/L	520809	Standard
	As	75	2039.6	1.1	**1.5560**	0.025	1.6	ug/L	-52	Standard
	Se	82	85.8	3.3	**0.4942**	0.015	3.0	ug/L	17	Standard
	Se-1	77	88.7	8.5	**0.2643**	0.088	33.1	ug/L	56	Standard
>	Ga	71	3267.0	3.2				mg/L	25	Standard
	Rb	85	51683.0	1.3				ug/L	28	Standard
	Y	89	529527.6	0.3				ug/L	447395	Standard
>	Rh	103	150.0	5.8				ug/L	15	Standard
	Mo	98	1541.7	1.1	**0.4475**	0.001	0.3	ug/L	113	Standard
	Ag	107	153.0	7.4	**0.0069**	0.002	23.0	ug/L	108	Standard
	Cd	111	40.7	6.3	**0.0140**	0.001	8.1	mg/L	3	Standard
	Cd	114	102.3	14.8	**0.0166**	0.003	15.4	ug/L	20	Standard
>	In	115	676532.0	0.8				ug/L	625728	Standard
	Sn	118	971.7	4.9	**0.0555**	0.008	14.3	ug/L	568	Standard
	Sb	123	639.0	14.8	**0.0807**	0.018	21.8	ug/L	612	Standard
	Ba	135	197467.2	0.8	**83.9345**	0.680	0.8	ug/L	21	Standard
	Ce	140	158462.8	1.7				ug/L	245	Standard
>	Tb	159	1025960.2	1.0				ug/L	950397	Standard
	Ho	165	2715.2	3.4				ug/L	7	Standard
	Tl	203	280.3	9.2	**0.0292**	0.003	9.9	ug/L	15	Standard
	Tl	205	271.7	10.1	**0.0229**	0.003	13.4	ug/L	13	Standard
	Pb	206	9533.7	0.7	**1.5691**	0.011	0.7	ug/L	264	Standard
	Pb	207	7883.1	1.1	**1.4223**	0.009	0.6	ug/L	222	Standard
	Pb	208	34084.4	0.9	**1.5063**	0.007	0.5	ug/L	959	Standard
	U	238	20271.2	0.7	**2.4081**	0.030	1.3	ug/L	9	Standard
>	Bi	209	577230.0	0.8				ug/L	552821	Standard

Sample ID: L1606144201 WG574416-02
Report Date/Time: Friday, July 01, 2016 12:05:41
Page 1

Approved: July 02, 2016

Na	23	10.0	86.6	**24.6403**	21.507	87.3	mg/L	2	Standard
Mg	24	4422.3	4.5	**4.1870**	0.202	4.8	mg/L	55	Standard
K	39	186.7	8.6	**0.4573**	0.052	11.3	mg/L	28	Standard
Ca	43	566.7	10.9	**39.8634**	4.346	10.9	mg/L	27	Standard
Fe	54	2666.0	2.2	**1.6199**	0.041	2.5	mg/L	147	Standard
Fe	57	1331.7	5.5	**2.5595**	0.178	6.9	mg/L	268	Standard
> **Sc-1**	45	50086.0	0.8				mg/L	41174	Standard
Cl	35	83929.2	1.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	13155.7	1.8				ug/L	1950	Standard
P	31	31337.4	1.4				ug/L	21156	Standard
S	34	3528.7	1.1				ug/L	3419	Standard
Sr	88	476.7	5.8				ug/L	72	Standard
C	12	400.0	7.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	4673.5	1.6				mg/L	16	Standard
Ho-1	165	2715.2	3.4				mg/L	7	Standard
Er	166	2656.9	8.5				mg/L	7	Standard
I	127	16687.6	14.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.202	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.363	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144201 WG574416-02
Report Date/Time: Friday, July 01, 2016 12:05:41
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.119
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.415
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606144201 WG574416-02
Report Date/Time: Friday, July 01, 2016 12:05:41
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144202
Sample Date/Time: Friday, July 01, 2016 12:06:35
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90507.9	1.9				ug/L	76456	Standard
	Be	9	248.3	5.8	**0.1675**	0.008	4.9	ug/L	20	Standard
	Al	27	22277088.2	0.8	**109.9375**	1.745	1.6	ug/L	1307	Standard
	Sc	45	50101.1	3.7				ug/L	41174	Standard
	Ti	47	12264.6	1.2	**34.7196**	0.584	1.7	ug/L	27	Standard
	V	51	62744.3	1.8	**6.8585**	0.146	2.1	ug/L	1434	Standard
	Cr	52	32463.4	1.9	**2.7415**	0.091	3.3	ug/L	7733	Standard
	Cr	53	3775.5	3.5	**3.0371**	0.138	4.6	ug/L	442	Standard
	Mn	55	731304.2	2.1	**89.2163**	2.199	2.5	ug/L	723	Standard
	Co	59	14984.4	2.2	**1.7791**	0.048	2.7	ug/L	217	Standard
	Ni	60	11028.3	1.8	**4.7605**	0.068	1.4	ug/L	304	Standard
	Cu	65	5131.2	1.5	**2.2507**	0.042	1.9	ug/L	181	Standard
	Zn	66	19672.8	1.3	**14.6652**	0.250	1.7	ug/L	215	Standard
>	**Ge**	72	563354.5	0.6				ug/L	520809	Standard
	As	75	2285.7	4.9	**1.7571**	0.090	5.1	ug/L	-52	Standard
	Se	82	78.7	24.0	**0.4498**	0.141	31.2	ug/L	17	Standard
	Se-1	77	96.3	4.2	**0.3571**	0.042	11.8	ug/L	56	Standard
>	**Ga**	71	4088.9	0.8				mg/L	25	Standard
	Rb	85	66167.5	0.6				ug/L	28	Standard
	Y	89	527047.3	1.0				ug/L	447395	Standard
>	**Rh**	103	133.3	20.7				ug/L	15	Standard
	Mo	98	1560.3	2.2	**0.4569**	0.008	1.8	ug/L	113	Standard
	Ag	107	236.0	37.0	**0.0178**	0.011	63.3	ug/L	108	Standard
	Cd	111	70.9	65.6	**0.0263**	0.019	71.1	mg/L	3	Standard
	Cd	114	182.9	70.7	**0.0299**	0.021	70.2	ug/L	20	Standard
>	**In**	115	671365.1	1.0				ug/L	625728	Standard
	Sn	118	1011.7	2.2	**0.0623**	0.004	5.8	ug/L	568	Standard
	Sb	123	671.0	17.2	**0.0874**	0.022	24.8	ug/L	612	Standard
	Ba	135	208248.7	0.6	**89.2003**	0.372	0.4	ug/L	21	Standard
	Ce	140	195369.9	1.1				ug/L	245	Standard
>	**Tb**	159	1017569.8	0.3				ug/L	950397	Standard
	Ho	165	3448.7	3.2				ug/L	7	Standard
	Tl	203	464.3	26.6	**0.0488**	0.013	26.2	ug/L	15	Standard
	Tl	205	373.3	2.0	**0.0351**	0.001	2.1	ug/L	13	Standard
	Pb	206	11404.0	0.3	**1.8871**	0.014	0.7	ug/L	264	Standard
	Pb	207	9244.8	0.8	**1.6776**	0.026	1.6	ug/L	222	Standard
	Pb	208	39660.1	0.9	**1.7621**	0.018	1.0	ug/L	959	Standard
	U	238	20504.2	1.2	**2.4376**	0.012	0.5	ug/L	9	Standard
>	**Bi**	209	576748.8	0.8				ug/L	552821	Standard

Sample ID: L1606144202
Report Date/Time: Friday, July 01, 2016 12:08:52
Page 1

Approved: July 02, 2016

Na	23	8.3	34.6	**20.5955**	7.569	36.8	mg/L	2	Standard
Mg	24	4662.4	4.9	**4.4148**	0.085	1.9	mg/L	55	Standard
K	39	218.3	22.9	**0.5540**	0.135	24.3	mg/L	28	Standard
Ca	43	601.7	7.9	**42.4925**	3.322	7.8	mg/L	27	Standard
Fe	54	3310.4	1.9	**2.0364**	0.082	4.1	mg/L	147	Standard
Fe	57	1525.1	5.8	**3.0549**	0.352	11.5	mg/L	268	Standard
> **Sc-1**	45	50101.1	3.7				mg/L	41174	Standard
Cl	35	83923.1	0.7				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	11030.7	1.9				ug/L	1950	Standard
P	31	32000.4	1.7				ug/L	21156	Standard
S	34	3522.1	3.8				ug/L	3419	Standard
Sr	88	531.7	5.7				ug/L	72	Standard
C	12	333.3	12.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	5934.4	7.8				mg/L	16	Standard
Ho-1	165	3448.7	3.2				mg/L	7	Standard
Er	166	3343.7	6.8				mg/L	7	Standard
I	127	14929.0	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.379	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.169	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144202
Report Date/Time: Friday, July 01, 2016 12:08:52
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.293
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.328
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606144202
Report Date/Time: Friday, July 01, 2016 12:08:52
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144203S WG574416-08
Sample Date/Time: Friday, July 01, 2016 12:09:47
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90030.2	2.8				ug/L	76456	Standard
	Be	9	67451.5	0.8	**51.1736**	1.267	2.5	ug/L	20	Standard
	Al	27	22083553.0	1.2	**109.5762**	1.952	1.8	ug/L	1307	Standard
	Sc	45	48706.5	1.6				ug/L	41174	Standard
	Ti	47	11744.6	3.0	**33.6397**	0.840	2.5	ug/L	27	Standard
	V	51	504596.4	0.3	**57.2364**	0.479	0.8	ug/L	1434	Standard
	Cr	52	455560.7	0.5	**51.7411**	0.108	0.2	ug/L	7733	Standard
	Cr	53	56769.5	0.3	**52.1372**	0.385	0.7	ug/L	442	Standard
	Mn	55	1036346.8	0.7	**127.9850**	0.471	0.4	ug/L	723	Standard
	Co	59	423691.1	0.7	**51.7179**	0.252	0.5	ug/L	217	Standard
	Ni	60	117301.3	0.2	**52.7412**	0.343	0.7	ug/L	304	Standard
	Cu	65	109232.0	1.3	**50.0075**	0.589	1.2	ug/L	181	Standard
	Zn	66	89717.5	1.0	**68.3316**	0.407	0.6	ug/L	215	Standard
>	Ge	72	556663.9	0.5				ug/L	520809	Standard
	As	75	68119.8	0.9	**51.6696**	0.438	0.8	ug/L	-52	Standard
	Se	82	6698.0	0.6	**49.4767**	0.038	0.1	ug/L	17	Standard
	Se-1	77	4484.0	0.7	**48.3919**	0.526	1.1	ug/L	56	Standard
>	Ga	71	4812.4	3.6				mg/L	25	Standard
	Rb	85	61444.3	0.8				ug/L	28	Standard
	Y	89	517239.3	0.8				ug/L	447395	Standard
>	Rh	103	106.7	32.9				ug/L	15	Standard
	Mo	98	1731.4	0.3	**0.5186**	0.008	1.5	ug/L	113	Standard
	Ag	107	354175.3	0.9	**46.7205**	0.584	1.2	ug/L	108	Standard
	Cd	111	119010.3	1.4	**48.9848**	0.748	1.5	mg/L	3	Standard
	Cd	114	293416.8	0.7	**48.7814**	0.554	1.1	ug/L	20	Standard
>	In	115	660339.6	1.1				ug/L	625728	Standard
	Sn	118	1475.1	6.5	**0.1329**	0.012	9.2	ug/L	568	Standard
	Sb	123	188284.4	1.5	**34.4893**	0.374	1.1	ug/L	612	Standard
	Ba	135	310505.8	0.4	**135.2331**	0.887	0.7	ug/L	21	Standard
	Ce	140	169550.1	0.7				ug/L	245	Standard
>	Tb	159	1009819.6	1.8				ug/L	950397	Standard
	Ho	165	3057.0	3.5				ug/L	7	Standard
	Tl	203	459336.1	0.3	**49.1469**	0.484	1.0	ug/L	15	Standard
	Tl	205	419582.5	1.2	**50.5538**	1.161	2.3	ug/L	13	Standard
	Pb	206	306250.8	0.1	**51.9221**	0.623	1.2	ug/L	264	Standard
	Pb	207	267507.5	0.3	**49.9387**	0.751	1.5	ug/L	222	Standard
	Pb	208	1116297.0	0.4	**51.0219**	0.722	1.4	ug/L	959	Standard
	U	238	433722.1	0.8	**51.6863**	1.022	2.0	ug/L	9	Standard
>	Bi	209	575528.3	1.2				ug/L	552821	Standard

Sample ID: L1606144203S WG574416-08
Report Date/Time: Friday, July 01, 2016 12:12:04
Page 1

Approved: July 02, 2016

Na	23	16.7	75.5	**41.7692**	31.215	74.7	mg/L	2	Standard
Mg	24	4830.8	1.7	**4.7112**	0.123	2.6	mg/L	55	Standard
K	39	223.3	5.2	**0.5924**	0.027	4.5	mg/L	28	Standard
Ca	43	666.7	3.0	**48.7692**	1.740	3.6	mg/L	27	Standard
Fe	54	3420.8	4.4	**2.1691**	0.101	4.6	mg/L	147	Standard
Fe	57	1528.4	2.8	**3.1654**	0.056	1.8	mg/L	268	Standard
Sc-1	45	48706.5	1.6				mg/L	41174	Standard
Cl	35	82992.7	2.0				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	7521.9	4.9				ug/L	1950	Standard
P	31	32994.2	3.4				ug/L	21156	Standard
S	34	3745.5	4.1				ug/L	3419	Standard
Sr	88	541.7	13.3				ug/L	72	Standard
C	12	350.0	24.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	17	Standard
Dy	164	4986.9	2.7				mg/L	16	Standard
Ho-1	165	3057.0	3.5				mg/L	7	Standard
Er	166	2656.9	3.8				mg/L	7	Standard
I	127	14203.3	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		117.755	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.884	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606144203S WG574416-08
Report Date/Time: Friday, July 01, 2016 12:12:04
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.531	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	104.108	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144203S WG574416-08
Report Date/Time: Friday, July 01, 2016 12:12:04
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144204SD WG574416-09
Sample Date/Time: Friday, July 01, 2016 12:12:58
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90070.3	0.3				ug/L	76456	Standard
	Be	9	67068.2	2.3	50.8355	1.023	2.0	ug/L	20	Standard
	Al	27	22820326.8	1.6	113.1467	1.840	1.6	ug/L	1307	Standard
	Sc	45	48614.5	1.1				ug/L	41174	Standard
	Ti	47	12429.8	0.9	35.6977	0.390	1.1	ug/L	27	Standard
	V	51	500213.8	0.9	56.8738	0.256	0.4	ug/L	1434	Standard
	Cr	52	457920.4	0.8	52.1452	0.679	1.3	ug/L	7733	Standard
	Cr	53	55433.0	3.5	51.0119	1.142	2.2	ug/L	442	Standard
	Mn	55	1032001.7	0.7	127.7596	0.851	0.7	ug/L	723	Standard
	Co	59	426181.5	0.6	52.1492	0.363	0.7	ug/L	217	Standard
	Ni	60	115745.8	0.4	52.1679	0.569	1.1	ug/L	304	Standard
	Cu	65	108435.6	0.5	49.7650	0.481	1.0	ug/L	181	Standard
	Zn	66	83122.4	0.9	63.4509	0.540	0.9	ug/L	215	Standard
>	Ge	72	555340.6	1.3				ug/L	520809	Standard
	As	75	68386.4	1.0	51.9966	0.210	0.4	ug/L	-52	Standard
	Se	82	6617.0	1.4	48.9951	0.511	1.0	ug/L	17	Standard
	Se-1	77	4553.0	1.4	49.2655	0.470	1.0	ug/L	56	Standard
>	Ga	71	4989.2	4.2				mg/L	25	Standard
	Rb	85	63782.3	0.6				ug/L	28	Standard
	Y	89	508585.3	3.2				ug/L	447395	Standard
>	Rh	103	155.0	16.8				ug/L	15	Standard
	Mo	98	1690.9	2.2	0.5065	0.021	4.1	ug/L	113	Standard
	Ag	107	359804.6	1.4	47.4968	0.270	0.6	ug/L	108	Standard
	Cd	111	119520.8	0.7	49.2344	0.563	1.1	mg/L	3	Standard
	Cd	114	293080.3	1.6	48.7653	1.035	2.1	ug/L	20	Standard
>	In	115	659870.1	1.8				ug/L	625728	Standard
	Sn	118	1175.0	5.3	0.0889	0.010	10.9	ug/L	568	Standard
	Sb	123	180927.8	2.0	33.1631	0.062	0.2	ug/L	612	Standard
	Ba	135	313663.8	0.6	136.7260	2.307	1.7	ug/L	21	Standard
	Ce	140	181386.0	0.5				ug/L	245	Standard
>	Tb	159	1008393.6	0.8				ug/L	950397	Standard
	Ho	165	2945.3	1.9				ug/L	7	Standard
	Tl	203	461671.8	0.2	49.9891	0.298	0.6	ug/L	15	Standard
	Tl	205	421242.1	0.2	51.3576	0.369	0.7	ug/L	13	Standard
	Pb	206	307820.1	0.5	52.8142	0.466	0.9	ug/L	264	Standard
	Pb	207	267725.9	1.2	50.5746	0.254	0.5	ug/L	222	Standard
	Pb	208	1118569.9	0.5	51.7383	0.472	0.9	ug/L	959	Standard
	U	238	435363.6	0.2	52.5003	0.385	0.7	ug/L	9	Standard
>	Bi	209	568683.1	0.8				ug/L	552821	Standard

Sample ID: L1606144204SD WG574416-09
Report Date/Time: Friday, July 01, 2016 12:15:15
Page 1

Approved: July 02, 2016

Na	23	10.0	50.0	**25.2590**	12.492	49.5	mg/L	2	Standard
Mg	24	4682.4	0.4	**4.5730**	0.070	1.5	mg/L	55	Standard
K	39	196.7	12.8	**0.5079**	0.086	17.0	mg/L	28	Standard
Ca	43	620.0	2.8	**45.2717**	1.537	3.4	mg/L	27	Standard
Fe	54	3578.4	8.9	**2.2770**	0.195	8.6	mg/L	147	Standard
Fe	57	1561.7	1.9	**3.2607**	0.102	3.1	mg/L	268	Standard
Sc-1	45	48614.5	1.1				mg/L	41174	Standard
Cl	35	83140.8	0.7				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	7508.5	3.6				ug/L	1950	Standard
P	31	33216.4	1.3				ug/L	21156	Standard
S	34	3633.8	2.2				ug/L	3419	Standard
Sr	88	566.7	11.0				ug/L	72	Standard
C	12	476.7	6.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	17	Standard
Dy	164	4984.3	2.5				mg/L	16	Standard
Ho-1	165	2945.3	1.9				mg/L	7	Standard
Er	166	2850.3	2.1				mg/L	7	Standard
I	127	15054.2	4.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.807	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.630	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144204SD WG574416-09
Report Date/Time: Friday, July 01, 2016 12:15:15
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.456
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.869
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144204SD WG574416-09
Report Date/Time: Friday, July 01, 2016 12:15:15
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 12:16:11
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87445.1	3.4				ug/L	76456	Standard
	Be	9	64070.2	0.9	**50.0545**	1.445	2.9	ug/L	20	Standard
	Al	27	9240352.4	0.8	**47.2275**	1.909	4.0	ug/L	1307	Standard
	Sc	45	44832.9	2.4				ug/L	41174	Standard
	Ti	47	34259.7	1.0	**97.1606**	1.714	1.8	ug/L	27	Standard
	V	51	451230.5	0.6	**50.5628**	0.294	0.6	ug/L	1434	Standard
	Cr	52	441549.7	0.7	**49.5261**	0.488	1.0	ug/L	7733	Standard
	Cr	53	54047.9	0.8	**49.0333**	0.166	0.3	ug/L	442	Standard
	Mn	55	409600.5	0.8	**49.9366**	0.757	1.5	ug/L	723	Standard
	Co	59	429332.5	1.0	**51.7968**	0.540	1.0	ug/L	217	Standard
	Ni	60	111250.6	0.3	**49.4298**	0.556	1.1	ug/L	304	Standard
	Cu	65	109537.2	0.3	**49.5637**	0.351	0.7	ug/L	181	Standard
	Zn	66	65566.2	0.7	**49.3061**	0.180	0.4	ug/L	215	Standard
>	**Ge**	72	563235.2	0.9				ug/L	520809	Standard
	As	75	66627.6	0.4	**49.9511**	0.273	0.5	ug/L	-52	Standard
	Se	82	6922.5	0.6	**50.5422**	0.157	0.3	ug/L	17	Standard
	Se-1	77	4596.0	1.5	**49.0283**	0.390	0.8	ug/L	56	Standard
>	**Ga**	71	40.0	21.7				mg/L	25	Standard
	Rb	85	993.4	8.3				ug/L	28	Standard
	Y	89	482225.9	1.1				ug/L	447395	Standard
>	**Rh**	103	20.0	66.1				ug/L	15	Standard
	Mo	98	318941.8	1.3	**98.3261**	1.568	1.6	ug/L	113	Standard
	Ag	107	382282.6	0.5	**49.6279**	0.362	0.7	ug/L	108	Standard
	Cd	111	122482.8	0.3	**49.6133**	0.042	0.1	mg/L	3	Standard
	Cd	114	296548.6	0.8	**48.5180**	0.351	0.7	ug/L	20	Standard
>	**In**	115	670966.5	0.3				ug/L	625728	Standard
	Sn	118	338852.8	1.5	**49.0149**	0.673	1.4	ug/L	568	Standard
	Sb	123	274306.5	0.2	**49.4654**	0.232	0.5	ug/L	612	Standard
	Ba	135	113482.1	0.5	**48.6277**	0.189	0.4	ug/L	21	Standard
	Ce	140	308.3	9.8				ug/L	245	Standard
>	**Tb**	159	1016008.3	2.4				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	473547.1	1.1	**49.9959**	0.041	0.1	ug/L	15	Standard
	Tl	205	428096.0	1.4	**50.8923**	0.684	1.3	ug/L	13	Standard
	Pb	206	298789.4	0.8	**49.9841**	0.126	0.3	ug/L	264	Standard
	Pb	207	271570.2	0.6	**50.0267**	0.582	1.2	ug/L	222	Standard
	Pb	208	1117926.1	0.2	**50.4203**	0.478	0.9	ug/L	959	Standard
	U	238	428309.5	0.4	**50.3630**	0.285	0.6	ug/L	9	Standard
>	**Bi**	209	583209.8	1.0				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:18:28
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4910.8	1.7	**5.2115**	0.207	4.0	mg/L	55	Standard
K	39	1366.7	7.2	**4.6780**	0.226	4.8	mg/L	28	Standard
Ca	43	96.7	13.0	**5.6017**	0.863	15.4	mg/L	27	Standard
Fe	54	7079.3	0.6	**5.0021**	0.155	3.1	mg/L	147	Standard
Fe	57	2068.5	8.1	**5.0303**	0.399	7.9	mg/L	268	Standard
Sc-1	45	44832.9	2.4				mg/L	41174	Standard
Cl	35	82615.3	1.2				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2370.2	6.2				ug/L	1950	Standard
P	31	24917.1	2.0				ug/L	21156	Standard
S	34	4207.3	4.1				ug/L	3419	Standard
Sr	88	65.0	33.5				ug/L	72	Standard
C	12	150.0	30.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	25.7	41.7				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	20977.9	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.109		
Al	27	94.455		
Sc	45			
Ti	47	97.161		
V	51	101.126		
Cr	52	99.052		
Cr	53			
Mn	55	99.873		
Co	59	103.594		
Ni	60	98.860		
Cu	65	99.127		
Zn	66	98.612		
Ge	72		108.146	
As	75	99.902		
Se	82	101.084		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:18:28
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.326		
Ag	107	99.256		
Cd	111	99.227		
Cd	114			
In	115			107.230
Sn	118	98.030		
Sb	123	98.931		
Ba	135	97.255		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.992		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.841		
U	238	100.726		
Bi	209			105.497
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:18:28
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 12:19:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86888.4	1.2				ug/L	76456	Standard
	Be	9	43.3	6.7	**0.0142**	0.002	14.4	ug/L	20	Standard
	Al	27	10504.4	54.9	**0.0440**	0.030	68.3	ug/L	1307	Standard
	Sc	45	44657.4	2.0				ug/L	41174	Standard
	Ti	47	39.3	11.5	**0.0270**	0.014	53.3	ug/L	27	Standard
	V	51	1529.0	2.6	**-0.0269**	0.007	25.9	ug/L	1434	Standard
	Cr	52	7711.0	1.1	**-0.0906**	0.015	16.9	ug/L	7733	Standard
	Cr	53	511.7	5.7	**0.0505**	0.033	65.1	ug/L	442	Standard
	Mn	55	1157.7	24.7	**0.0401**	0.037	91.8	ug/L	723	Standard
	Co	59	342.7	7.9	**0.0119**	0.004	32.6	ug/L	217	Standard
	Ni	60	345.0	7.1	**0.0004**	0.013	3536.3	ug/L	304	Standard
	Cu	65	196.7	14.8	**0.0150**	0.014	96.7	ug/L	181	Standard
	Zn	66	265.3	6.8	**0.0197**	0.016	82.6	ug/L	215	Standard
>	**Ge**	72	564532.3	1.4				ug/L	520809	Standard
	As	75	-63.0	4.9	**-0.0020**	0.003	148.8	ug/L	-52	Standard
	Se	82	13.5	49.1	**-0.0274**	0.049	178.6	ug/L	17	Standard
	Se-1	77	66.7	9.6	**0.0356**	0.080	224.7	ug/L	56	Standard
>	**Ga**	71	36.7	34.3				mg/L	25	Standard
	Rb	85	50.0	17.3				ug/L	28	Standard
	Y	89	485264.3	1.4				ug/L	447395	Standard
>	**Rh**	103	23.3	65.5				ug/L	15	Standard
	Mo	98	248.2	9.5	**0.0519**	0.007	13.4	ug/L	113	Standard
	Ag	107	217.7	28.5	**0.0151**	0.008	51.7	ug/L	108	Standard
	Cd	111	38.2	50.7	**0.0130**	0.008	59.2	mg/L	3	Standard
	Cd	114	103.6	56.8	**0.0168**	0.009	56.1	ug/L	20	Standard
>	**In**	115	676839.2	0.6				ug/L	625728	Standard
	Sn	118	985.0	18.1	**0.0572**	0.025	43.7	ug/L	568	Standard
	Sb	123	1289.0	34.6	**0.1967**	0.079	40.2	ug/L	612	Standard
	Ba	135	163.7	48.0	**0.0515**	0.033	64.0	ug/L	21	Standard
	Ce	140	190.0	43.5				ug/L	245	Standard
>	**Tb**	159	1027800.2	0.9				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	185.7	43.6	**0.0185**	0.008	45.3	ug/L	15	Standard
	Tl	205	140.0	34.4	**0.0066**	0.006	85.8	ug/L	13	Standard
	Pb	206	391.7	5.7	**0.0205**	0.004	17.4	ug/L	264	Standard
	Pb	207	348.0	8.5	**0.0168**	0.005	31.6	ug/L	222	Standard
	Pb	208	1428.4	8.6	**0.0149**	0.005	36.0	ug/L	959	Standard
	U	238	152.0	24.6	**0.0173**	0.004	24.9	ug/L	9	Standard
>	**Bi**	209	594942.4	0.2				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:21:40
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.6930**	8.120	173.0	mg/L	2	Standard
Mg	24	61.7	4.7	**0.0063**	0.004	70.3	mg/L	55	Standard
K	39	21.7	58.1	**-0.0541**	0.046	85.2	mg/L	28	Standard
Ca	43	16.7	45.8	**-1.0495**	0.670	63.8	mg/L	27	Standard
Fe	54	185.9	12.3	**0.0354**	0.014	39.9	mg/L	147	Standard
Fe	57	231.7	7.6	**-0.1482**	0.038	25.4	mg/L	268	Standard
> **Sc-1**	45	44657.4	2.0				mg/L	41174	Standard
Cl	35	83476.7	1.5				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	2133.5	9.1				ug/L	1950	Standard
P	31	25304.5	3.5				ug/L	21156	Standard
S	34	4207.3	4.6				ug/L	3419	Standard
Sr	88	80.0	16.5				ug/L	72	Standard
C	12	116.7	44.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	15.7	39.4				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	16377.2	4.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.395	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:21:40
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.168
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.619
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:21:40
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144601
Sample Date/Time: Friday, July 01, 2016 12:22:36
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85066.5	1.2				ug/L	76456	Standard
	Be	9	16.7	45.8	**-0.0065**	0.006	94.4	ug/L	20	Standard
	Al	27	9710029.6	1.9	**50.9822**	1.574	3.1	ug/L	1307	Standard
	Sc	45	45336.1	0.8				ug/L	41174	Standard
	Ti	47	130.7	11.5	**0.2865**	0.040	13.8	ug/L	27	Standard
	V	51	2965.5	17.4	**0.1358**	0.062	45.7	ug/L	1434	Standard
	Cr	52	10925.6	1.4	**0.2804**	0.032	11.4	ug/L	7733	Standard
	Cr	53	6674.8	19.2	**5.7008**	1.204	21.1	ug/L	442	Standard
	Mn	55	17608.9	0.7	**2.0519**	0.031	1.5	ug/L	723	Standard
	Co	59	843.4	6.2	**0.0725**	0.007	9.6	ug/L	217	Standard
	Ni	60	3752.8	1.2	**1.5211**	0.029	1.9	ug/L	304	Standard
	Cu	65	735.7	3.5	**0.2597**	0.015	5.9	ug/L	181	Standard
	Zn	66	4713.1	0.8	**3.3806**	0.039	1.2	ug/L	215	Standard
>	**Ge**	72	562685.3	1.1				ug/L	520809	Standard
	As	75	331.7	14.1	**0.2942**	0.038	12.9	ug/L	-52	Standard
	Se	82	169.7	3.4	**1.1168**	0.055	5.0	ug/L	17	Standard
	Se-1	77	298.3	16.2	**2.5437**	0.506	19.9	ug/L	56	Standard
>	**Ga**	71	43.3	17.6				mg/L	25	Standard
	Rb	85	1375.1	8.1				ug/L	28	Standard
	Y	89	479863.0	1.4				ug/L	447395	Standard
>	**Rh**	103	75.0	23.1				ug/L	15	Standard
	Mo	98	184.0	20.7	**0.0331**	0.012	35.3	ug/L	113	Standard
	Ag	107	187.7	22.7	**0.0116**	0.006	47.6	ug/L	108	Standard
	Cd	111	61.4	13.6	**0.0226**	0.003	14.9	mg/L	3	Standard
	Cd	114	163.1	19.9	**0.0268**	0.005	19.9	ug/L	20	Standard
>	**In**	115	667538.0	0.2				ug/L	625728	Standard
	Sn	118	1128.4	13.7	**0.0801**	0.022	27.7	ug/L	568	Standard
	Sb	123	642.2	32.3	**0.0827**	0.037	45.2	ug/L	612	Standard
	Ba	135	124733.7	0.4	**53.7257**	0.253	0.5	ug/L	21	Standard
	Ce	140	376.7	16.7				ug/L	245	Standard
>	**Tb**	159	1007994.8	2.0				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	197.3	10.9	**0.0203**	0.002	12.2	ug/L	15	Standard
	Tl	205	216.7	21.8	**0.0163**	0.006	35.8	ug/L	13	Standard
	Pb	206	891.0	6.5	**0.1071**	0.008	7.9	ug/L	264	Standard
	Pb	207	795.4	2.4	**0.1022**	0.003	2.6	ug/L	222	Standard
	Pb	208	3278.5	4.0	**0.1014**	0.007	7.1	ug/L	959	Standard
	U	238	85.3	43.4	**0.0099**	0.004	45.2	ug/L	9	Standard
>	**Bi**	209	576617.3	0.8				ug/L	552821	Standard

Sample ID: L1606144601
Report Date/Time: Friday, July 01, 2016 12:24:53
Page 1

Approved: July 02, 2016

Na	23	5.0	0.0	**13.5582**	0.108	0.8	mg/L	2	Standard
Mg	24	5319.3	4.2	**5.5837**	0.252	4.5	mg/L	55	Standard
K	39	98.3	41.1	**0.2120**	0.143	67.6	mg/L	28	Standard
Ca	43	363.3	7.8	**27.5274**	2.210	8.0	mg/L	27	Standard
Fe	54	179.0	5.5	**0.0286**	0.006	20.9	mg/L	147	Standard
Fe	57	463.3	13.0	**0.4888**	0.165	33.8	mg/L	268	Standard
> **Sc-1**	45	45336.1	0.8				mg/L	41174	Standard
Cl	35	89142.8	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	30834.8	6.1				ug/L	1950	Standard
P	31	26140.9	1.9				ug/L	21156	Standard
S	34	4027.2	2.4				ug/L	3419	Standard
Sr	88	260.0	15.3				ug/L	72	Standard
C	12	170.0	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	38.6	3.3				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	7	Standard
I	127	3538.7	10.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.262	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.041	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144601
Report Date/Time: Friday, July 01, 2016 12:24:53
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.682
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.305
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144701 WG574416-03
Sample Date/Time: Friday, July 01, 2016 12:25:48
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88482.7	2.3				ug/L	76456	Standard
	Be	9	38.3	39.8	**0.0099**	0.012	125.1	ug/L	20	Standard
	Al	27	11359959.6	1.4	**57.3517**	1.667	2.9	ug/L	1307	Standard
	Sc	45	45563.4	2.6				ug/L	41174	Standard
	Ti	47	479.3	13.4	**1.2787**	0.172	13.4	ug/L	27	Standard
	V	51	3530.4	7.8	**0.1998**	0.034	17.3	ug/L	1434	Standard
	Cr	52	12134.2	0.3	**0.4209**	0.011	2.6	ug/L	7733	Standard
	Cr	53	7648.6	5.0	**6.6019**	0.407	6.2	ug/L	442	Standard
	Mn	55	16091.5	2.0	**1.8699**	0.055	2.9	ug/L	723	Standard
	Co	59	1173.0	4.1	**0.1126**	0.006	5.8	ug/L	217	Standard
	Ni	60	3889.5	2.3	**1.5848**	0.031	1.9	ug/L	304	Standard
	Cu	65	1317.7	0.5	**0.5246**	0.003	0.5	ug/L	181	Standard
	Zn	66	3687.1	0.9	**2.6100**	0.006	0.2	ug/L	215	Standard
>	**Ge**	72	561722.8	0.8				ug/L	520809	Standard
	As	75	1392.1	5.5	**1.0905**	0.054	4.9	ug/L	-52	Standard
	Se	82	606.7	3.3	**4.3252**	0.116	2.7	ug/L	17	Standard
	Se-1	77	418.0	2.5	**3.8492**	0.119	3.1	ug/L	56	Standard
>	**Ga**	71	115.0	8.7				mg/L	25	Standard
	Rb	85	5234.2	9.4				ug/L	28	Standard
	Y	89	487944.7	1.1				ug/L	447395	Standard
>	**Rh**	103	568.3	20.1				ug/L	15	Standard
	Mo	98	1044.2	2.3	**0.3054**	0.008	2.6	ug/L	113	Standard
	Ag	107	187.3	42.9	**0.0121**	0.011	91.2	ug/L	108	Standard
	Cd	111	55.0	27.2	**0.0204**	0.006	30.3	mg/L	3	Standard
	Cd	114	135.5	6.2	**0.0227**	0.001	5.1	ug/L	20	Standard
>	**In**	115	656101.2	1.3				ug/L	625728	Standard
	Sn	118	1038.4	15.8	**0.0699**	0.026	37.7	ug/L	568	Standard
	Sb	123	573.4	30.4	**0.0724**	0.034	46.6	ug/L	612	Standard
	Ba	135	501979.0	0.4	**220.0552**	2.127	1.0	ug/L	21	Standard
	Ce	140	2408.5	3.7				ug/L	245	Standard
>	**Tb**	159	999721.2	1.2				ug/L	950397	Standard
	Ho	165	475.0	13.8				ug/L	7	Standard
	Tl	203	180.7	18.9	**0.0191**	0.004	19.9	ug/L	15	Standard
	Tl	205	181.7	18.3	**0.0127**	0.004	33.1	ug/L	13	Standard
	Pb	206	1433.1	5.5	**0.2055**	0.013	6.5	ug/L	264	Standard
	Pb	207	1269.4	7.4	**0.1971**	0.019	9.6	ug/L	222	Standard
	Pb	208	5249.0	0.8	**0.1978**	0.003	1.5	ug/L	959	Standard
	U	238	833.4	3.5	**0.1015**	0.003	3.3	ug/L	9	Standard
>	**Bi**	209	561437.9	0.5				ug/L	552821	Standard

Sample ID: L1606144701 WG574416-03
Report Date/Time: Friday, July 01, 2016 12:28:05
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.1266**	7.900	86.6	mg/L	2	Standard
Mg	24	22316.4	4.6	**23.4898**	0.474	2.0	mg/L	55	Standard
K	39	291.7	17.2	**0.8820**	0.191	21.6	mg/L	28	Standard
Ca	43	361.7	17.8	**27.2179**	4.974	18.3	mg/L	27	Standard
Fe	54	219.1	19.9	**0.0560**	0.027	47.8	mg/L	147	Standard
Fe	57	508.3	13.1	**0.6052**	0.153	25.3	mg/L	268	Standard
> **Sc-1**	45	45563.4	2.6				mg/L	41174	Standard
Cl	35	95139.1	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	117746.0	3.1				ug/L	1950	Standard
P	31	26077.4	3.3				ug/L	21156	Standard
S	34	3920.5	3.9				ug/L	3419	Standard
Sr	88	1768.4	4.8				ug/L	72	Standard
C	12	193.3	38.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	700.0	19.1				mg/L	16	Standard
Ho-1	165	475.0	13.8				mg/L	7	Standard
Er	166	486.7	19.4				mg/L	7	Standard
I	127	22775.4	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.731	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.856	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144701 WG574416-03
Report Date/Time: Friday, July 01, 2016 12:28:05
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.854
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.559
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144701 WG574416-03
Report Date/Time: Friday, July 01, 2016 12:28:05
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144701DP WG574416-10
Sample Date/Time: Friday, July 01, 2016 12:28:59
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88142.4	1.7				ug/L	76456	Standard
	Be	9	40.0	37.5	**0.0111**	0.011	101.8	ug/L	20	Standard
	Al	27	11494838.5	2.0	**58.2408**	1.266	2.2	ug/L	1307	Standard
	Sc	45	46242.2	2.8				ug/L	41174	Standard
	Ti	47	491.0	28.0	**1.3133**	0.392	29.8	ug/L	27	Standard
	V	51	4065.2	7.6	**0.2601**	0.033	12.8	ug/L	1434	Standard
	Cr	52	12264.0	1.3	**0.4365**	0.008	1.9	ug/L	7733	Standard
	Cr	53	8637.5	5.6	**7.5132**	0.490	6.5	ug/L	442	Standard
	Mn	55	16026.8	1.0	**1.8627**	0.011	0.6	ug/L	723	Standard
	Co	59	1127.4	3.0	**0.1071**	0.004	3.8	ug/L	217	Standard
	Ni	60	3889.8	1.2	**1.5861**	0.030	1.9	ug/L	304	Standard
	Cu	65	1351.4	4.3	**0.5403**	0.027	5.0	ug/L	181	Standard
	Zn	66	3072.3	1.9	**2.1459**	0.033	1.5	ug/L	215	Standard
>	Ge	72	561430.2	0.7				ug/L	520809	Standard
	As	75	1450.6	6.2	**1.1355**	0.075	6.6	ug/L	-52	Standard
	Se	82	626.4	4.3	**4.4737**	0.217	4.8	ug/L	17	Standard
	Se-1	77	446.7	4.4	**4.1629**	0.222	5.3	ug/L	56	Standard
>	Ga	71	118.3	21.3				mg/L	25	Standard
	Rb	85	5335.9	4.4				ug/L	28	Standard
	Y	89	485232.7	0.7				ug/L	447395	Standard
>	Rh	103	503.3	5.6				ug/L	15	Standard
	Mo	98	890.3	4.1	**0.2555**	0.010	3.8	ug/L	113	Standard
	Ag	107	130.0	4.8	**0.0043**	0.001	19.6	ug/L	108	Standard
	Cd	111	38.1	10.0	**0.0134**	0.002	12.3	mg/L	3	Standard
	Cd	114	93.0	28.3	**0.0155**	0.004	28.0	ug/L	20	Standard
>	In	115	659077.6	0.9				ug/L	625728	Standard
	Sn	118	881.7	14.6	**0.0459**	0.019	42.5	ug/L	568	Standard
	Sb	123	507.6	19.6	**0.0596**	0.019	31.6	ug/L	612	Standard
	Ba	135	515199.9	0.5	**224.8243**	2.217	1.0	ug/L	21	Standard
	Ce	140	2820.3	8.4				ug/L	245	Standard
>	Tb	159	1000855.8	0.8				ug/L	950397	Standard
	Ho	165	511.7	6.7				ug/L	7	Standard
	Tl	203	145.0	5.2	**0.0151**	0.001	5.3	ug/L	15	Standard
	Tl	205	140.0	29.2	**0.0075**	0.005	66.5	ug/L	13	Standard
	Pb	206	896.0	1.8	**0.1117**	0.003	2.6	ug/L	264	Standard
	Pb	207	768.4	3.7	**0.1007**	0.005	5.0	ug/L	222	Standard
	Pb	208	3189.1	0.1	**0.1009**	0.001	0.5	ug/L	959	Standard
	U	238	824.4	5.0	**0.1002**	0.005	5.0	ug/L	9	Standard
>	Bi	209	562695.6	0.4				ug/L	552821	Standard

Sample ID: L1606144701DP WG574416-10
Report Date/Time: Friday, July 01, 2016 12:31:16
Page 1

Approved: July 02, 2016

Na	23	8.3	34.6	**22.1713**	7.744	34.9	mg/L	2	Standard
Mg	24	23199.4	1.6	**24.0879**	0.996	4.1	mg/L	55	Standard
K	39	276.7	2.8	**0.8134**	0.006	0.8	mg/L	28	Standard
Ca	43	471.7	6.8	**35.7746**	3.568	10.0	mg/L	27	Standard
Fe	54	212.8	23.2	**0.0499**	0.035	69.4	mg/L	147	Standard
Fe	57	470.0	11.3	**0.4850**	0.177	36.5	mg/L	268	Standard
> **Sc-1**	45	46242.2	2.8				mg/L	41174	Standard
Cl	35	96975.4	1.3				ug/L	69550	Standard
Kr	83	2.3	137.8				ug/L	1	Standard
Br	81	120957.8	2.8				ug/L	1950	Standard
P	31	25446.4	2.8				ug/L	21156	Standard
S	34	3975.5	1.0				ug/L	3419	Standard
Sr	88	1878.4	2.6				ug/L	72	Standard
C	12	223.3	38.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	17	Standard
Dy	164	658.1	9.2				mg/L	16	Standard
Ho-1	165	511.7	6.7				mg/L	7	Standard
Er	166	526.7	11.0				mg/L	7	Standard
I	127	23127.6	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.285	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.800	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144701DP WG574416-10
Report Date/Time: Friday, July 01, 2016 12:31:16
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.330
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.786
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606128901
Sample Date/Time: Friday, July 01, 2016 12:32:11
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	100202.1	2.7				ug/L	76456	Standard
	Be	9	85.0	61.4	**0.0383**	0.036	94.9	ug/L	20	Standard
	Al	27	121494771.0	1.8	**541.6309**	8.514	1.6	ug/L	1307	Standard
	Sc	45	48803.5	2.8				ug/L	41174	Standard
	Ti	47	545.3	5.0	**1.5278**	0.038	2.5	ug/L	27	Standard
	V	51	10661.2	18.0	**1.0481**	0.197	18.8	ug/L	1434	Standard
	Cr	52	662482.0	2.6	**77.9794**	0.550	0.7	ug/L	7733	Standard
	Cr	53	138513.8	2.3	**131.6729**	2.729	2.1	ug/L	442	Standard
	Mn	55	5966787.8	1.9	**759.5704**	10.887	1.4	ug/L	723	Standard
	Co	59	181210.6	0.8	**22.7724**	0.421	1.8	ug/L	217	Standard
	Ni	60	645750.8	2.4	**299.7645**	3.348	1.1	ug/L	304	Standard
	Cu	65	22297.4	3.7	**10.4538**	0.196	1.9	ug/L	181	Standard
	Zn	66	11919.4	2.6	**9.1948**	0.114	1.2	ug/L	215	Standard
>	Ge	72	540486.8	2.6				ug/L	520809	Standard
	As	75	4102.0	1.8	**3.2473**	0.027	0.8	ug/L	-52	Standard
	Se	82	1886.5	4.1	**14.2618**	0.413	2.9	ug/L	17	Standard
	Se-1	77	4801.8	0.7	**53.4605**	1.123	2.1	ug/L	56	Standard
>	Ga	71	275.0	24.6				mg/L	25	Standard
	Rb	85	16008.5	1.9				ug/L	28	Standard
	Y	89	482574.6	0.5				ug/L	447395	Standard
>	Rh	103	891.7	13.1				ug/L	15	Standard
	Mo	98	6427.1	1.7	**2.1501**	0.036	1.7	ug/L	113	Standard
	Ag	107	215.3	42.5	**0.0178**	0.013	73.5	ug/L	108	Standard
	Cd	111	1192.8	4.2	**0.5277**	0.023	4.3	mg/L	3	Standard
	Cd	114	2955.5	4.3	**0.5305**	0.024	4.6	ug/L	20	Standard
>	In	115	611635.6	0.3				ug/L	625728	Standard
	Sn	118	1171.7	1.6	**0.1020**	0.003	2.8	ug/L	568	Standard
	Sb	123	952.5	13.3	**0.1549**	0.025	16.4	ug/L	612	Standard
	Ba	135	5659971.5	1.5	**2661.5360**	36.316	1.4	ug/L	21	Standard
	Ce	140	34602.8	2.7				ug/L	245	Standard
>	Tb	159	987729.2	0.4				ug/L	950397	Standard
	Ho	165	555.0	3.6				ug/L	7	Standard
	Tl	203	271.3	38.8	**0.0315**	0.013	40.1	ug/L	15	Standard
	Tl	205	228.3	29.2	**0.0208**	0.009	43.4	ug/L	13	Standard
	Pb	206	682.3	7.9	**0.0848**	0.010	12.2	ug/L	264	Standard
	Pb	207	562.7	4.7	**0.0706**	0.006	7.9	ug/L	222	Standard
	Pb	208	2400.7	5.1	**0.0736**	0.007	9.1	ug/L	959	Standard
	U	238	485.7	17.4	**0.0640**	0.011	17.8	ug/L	9	Standard
>	Bi	209	518402.7	0.8				ug/L	552821	Standard

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 12:34:28
Page 1

Approved: July 02, 2016

Na	23	6.7	43.3	**16.7312**	6.981	41.7	mg/L	2	Standard
Mg	24	234951.0	0.3	**231.6239**	7.038	3.0	mg/L	55	Standard
K	39	286.7	15.7	**0.7989**	0.169	21.2	mg/L	28	Standard
Ca	43	935.0	7.2	**69.1820**	3.528	5.1	mg/L	27	Standard
Fe	54	758.4	8.2	**0.4032**	0.043	10.6	mg/L	147	Standard
Fe	57	1138.4	6.9	**2.1447**	0.127	5.9	mg/L	268	Standard
> **Sc-1**	45	48803.5	2.8				mg/L	41174	Standard
Cl	35	88877.9	0.3				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	391239.0	2.6				ug/L	1950	Standard
P	31	37070.3	1.2				ug/L	21156	Standard
S	34	4178.9	3.9				ug/L	3419	Standard
Sr	88	2831.9	1.5				ug/L	72	Standard
C	12	466.7	21.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	17	Standard
Dy	164	667.5	12.4				mg/L	16	Standard
Ho-1	165	555.0	3.6				mg/L	7	Standard
Er	166	540.0	8.5				mg/L	7	Standard
I	127	188266.3	8.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.059	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 12:34:28
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.748
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.774
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 53 Upper, S, EEE	Cr	53	

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 12:34:28
Page 3

Approved: July 02, 2016

Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606128904
Sample Date/Time: Friday, July 01, 2016 12:35:23
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80174.9	0.5				ug/L	76456	Standard
	Be	9	53.3	27.1	**0.0255**	0.012	47.2	ug/L	20	Standard
	Al	27	1032791.8	1.6	**5.7430**	0.086	1.5	ug/L	1307	Standard
	Sc	45	47549.6	3.6				ug/L	41174	Standard
	Ti	47	1435.7	2.3	**3.8643**	0.058	1.5	ug/L	27	Standard
	V	51	10110.4	0.9	**0.9038**	0.025	2.8	ug/L	1434	Standard
	Cr	52	20122.7	4.1	**1.2588**	0.042	3.3	ug/L	7733	Standard
	Cr	53	3665.5	16.0	**2.8260**	0.446	15.8	ug/L	442	Standard
	Mn	55	288289.9	2.5	**34.0207**	0.139	0.4	ug/L	723	Standard
	Co	59	1477.7	1.3	**0.1434**	0.004	2.6	ug/L	217	Standard
	Ni	60	4239.3	2.2	**1.6775**	0.005	0.3	ug/L	304	Standard
	Cu	65	5707.4	2.9	**2.4318**	0.022	0.9	ug/L	181	Standard
	Zn	66	6174.6	2.5	**4.3354**	0.036	0.8	ug/L	215	Standard
>	Ge	72	581260.9	2.3				ug/L	520809	Standard
	As	75	447.8	4.7	**0.3704**	0.019	5.1	ug/L	-52	Standard
	Se	82	65.6	5.7	**0.3388**	0.024	6.9	ug/L	17	Standard
	Se-1	77	141.0	9.5	**0.7917**	0.108	13.6	ug/L	56	Standard
>	Ga	71	390.0	12.2				mg/L	25	Standard
	Rb	85	14513.6	3.3				ug/L	28	Standard
	Y	89	508182.1	0.9				ug/L	447395	Standard
>	Rh	103	35.0	14.3				ug/L	15	Standard
	Mo	98	3302.1	0.9	**0.9834**	0.006	0.6	ug/L	113	Standard
	Ag	107	192.0	6.8	**0.0118**	0.002	15.7	ug/L	108	Standard
	Cd	111	79.5	7.9	**0.0295**	0.002	7.8	mg/L	3	Standard
	Cd	114	220.0	7.1	**0.0356**	0.003	7.0	ug/L	20	Standard
>	In	115	678248.4	0.8				ug/L	625728	Standard
	Sn	118	933.4	10.8	**0.0496**	0.015	30.5	ug/L	568	Standard
	Sb	123	584.6	1.8	**0.0706**	0.002	3.0	ug/L	612	Standard
	Ba	135	45177.6	1.6	**19.1408**	0.317	1.7	ug/L	21	Standard
	Ce	140	30016.4	0.4				ug/L	245	Standard
>	Tb	159	1007751.2	0.8				ug/L	950397	Standard
	Ho	165	761.7	12.8				ug/L	7	Standard
	Tl	203	113.3	7.1	**0.0112**	0.001	7.0	ug/L	15	Standard
	Tl	205	111.7	14.4	**0.0035**	0.002	52.8	ug/L	13	Standard
	Pb	206	3404.0	3.3	**0.5260**	0.017	3.3	ug/L	264	Standard
	Pb	207	2818.6	2.1	**0.4734**	0.010	2.1	ug/L	222	Standard
	Pb	208	12328.3	2.3	**0.5080**	0.010	2.0	ug/L	959	Standard
	U	238	374.0	2.0	**0.0437**	0.001	1.8	ug/L	9	Standard
>	Bi	209	583367.9	0.5				ug/L	552821	Standard

Sample ID: L1606128904
Report Date/Time: Friday, July 01, 2016 12:37:39
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.1425**	7.166	173.0	mg/L	2	Standard
Mg	24	5377.6	1.9	**5.3817**	0.098	1.8	mg/L	55	Standard
K	39	255.0	12.2	**0.7172**	0.121	16.8	mg/L	28	Standard
Ca	43	56.7	51.7	**1.9556**	2.109	107.9	mg/L	27	Standard
Fe	54	965.3	12.0	**0.5554**	0.055	10.0	mg/L	147	Standard
Fe	57	456.7	2.8	**0.4120**	0.054	13.1	mg/L	268	Standard
Sc-1	45	47549.6	3.6				mg/L	41174	Standard
Cl	35	89186.5	3.0				ug/L	69550	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	9616.5	21.7				ug/L	1950	Standard
P	31	24750.2	1.9				ug/L	21156	Standard
S	34	3972.2	3.0				ug/L	3419	Standard
Sr	88	126.7	22.8				ug/L	72	Standard
C	12	306.7	35.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	1037.0	4.9				mg/L	16	Standard
Ho-1	165	761.7	12.8				mg/L	7	Standard
Er	166	690.0	14.7				mg/L	7	Standard
I	127	33632.4	5.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.864	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.607	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606128904
Report Date/Time: Friday, July 01, 2016 12:37:39
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.393
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.526
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606129003
Sample Date/Time: Friday, July 01, 2016 12:38:34
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84017.4	2.6				ug/L	76456	Standard
	Be	9	56.7	41.7	**0.0265**	0.020	76.1	ug/L	20	Standard
	Al	27	11410287.5	2.4	**60.6815**	2.547	4.2	ug/L	1307	Standard
	Sc	45	47460.9	2.7				ug/L	41174	Standard
	Ti	47	632.0	2.0	**1.7083**	0.053	3.1	ug/L	27	Standard
	V	51	4979.6	9.0	**0.3608**	0.043	11.9	ug/L	1434	Standard
	Cr	52	16733.9	1.7	**0.9422**	0.057	6.1	ug/L	7733	Standard
	Cr	53	16242.1	5.6	**14.4384**	0.968	6.7	ug/L	442	Standard
	Mn	55	2106790.2	0.3	**257.0785**	2.759	1.1	ug/L	723	Standard
	Co	59	32596.4	0.7	**3.9025**	0.026	0.7	ug/L	217	Standard
	Ni	60	16570.4	1.9	**7.2264**	0.135	1.9	ug/L	304	Standard
	Cu	65	821.7	5.9	**0.2979**	0.020	6.6	ug/L	181	Standard
	Zn	66	15799.9	1.0	**11.7367**	0.172	1.5	ug/L	215	Standard
>	**Ge**	72	563660.3	1.3				ug/L	520809	Standard
	As	75	8280.0	0.5	**6.2429**	0.078	1.2	ug/L	-52	Standard
	Se	82	523.6	3.6	**3.7022**	0.090	2.4	ug/L	17	Standard
	Se-1	77	661.3	8.7	**6.4700**	0.719	11.1	ug/L	56	Standard
>	**Ga**	71	153.3	26.4				mg/L	25	Standard
	Rb	85	22955.7	2.8				ug/L	28	Standard
	Y	89	481907.4	0.8				ug/L	447395	Standard
>	**Rh**	103	116.7	21.1				ug/L	15	Standard
	Mo	98	609.0	1.0	**0.1691**	0.001	0.8	ug/L	113	Standard
	Ag	107	122.3	6.1	**0.0035**	0.001	30.0	ug/L	108	Standard
	Cd	111	546.6	6.3	**0.2253**	0.014	6.3	mg/L	3	Standard
	Cd	114	1227.9	3.1	**0.2066**	0.006	2.8	ug/L	20	Standard
>	**In**	115	652572.6	0.4				ug/L	625728	Standard
	Sn	118	2255.2	0.8	**0.2518**	0.004	1.5	ug/L	568	Standard
	Sb	123	396.5	22.6	**0.0398**	0.016	41.0	ug/L	612	Standard
	Ba	135	362353.4	0.4	**159.6881**	0.037	0.0	ug/L	21	Standard
	Ce	140	11014.0	2.2				ug/L	245	Standard
>	**Tb**	159	996583.7	1.1				ug/L	950397	Standard
	Ho	165	233.3	12.4				ug/L	7	Standard
	Tl	203	149.3	13.7	**0.0157**	0.002	13.7	ug/L	15	Standard
	Tl	205	146.7	18.8	**0.0085**	0.003	39.2	ug/L	13	Standard
	Pb	206	578.7	5.4	**0.0575**	0.005	8.6	ug/L	264	Standard
	Pb	207	484.0	0.4	**0.0472**	0.000	0.8	ug/L	222	Standard
	Pb	208	2033.4	0.6	**0.0477**	0.001	2.3	ug/L	959	Standard
	U	238	110.3	15.4	**0.0133**	0.002	15.3	ug/L	9	Standard
>	**Bi**	209	557686.0	0.7				ug/L	552821	Standard

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 12:40:51
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.4332**	7.670	173.0	mg/L	2	Standard
Mg	24	51897.1	1.5	**52.5721**	2.174	4.1	mg/L	55	Standard
K	39	418.3	15.8	**1.2584**	0.193	15.3	mg/L	28	Standard
Ca	43	125.0	28.0	**7.4017**	2.760	37.3	mg/L	27	Standard
Fe	54	21570.7	2.6	**14.5894**	0.772	5.3	mg/L	147	Standard
Fe	57	5684.4	0.4	**14.3563**	0.459	3.2	mg/L	268	Standard
> **Sc-1**	45	47460.9	2.7				mg/L	41174	Standard
Cl	35	86591.4	1.7				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	106345.6	3.6				ug/L	1950	Standard
P	31	31901.9	1.3				ug/L	21156	Standard
S	34	4255.6	0.8				ug/L	3419	Standard
Sr	88	460.0	1.1				ug/L	72	Standard
C	12	313.3	22.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	343.4	18.1				mg/L	16	Standard
Ho-1	165	233.3	12.4				mg/L	7	Standard
Er	166	276.7	12.7				mg/L	7	Standard
I	127	558531.1	6.5				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.890	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		108.228	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 12:40:51
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.290
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.880
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 12:40:51
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606129005
Sample Date/Time: Friday, July 01, 2016 12:41:45
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85192.2	0.8				ug/L	76456	Standard
	Be	9	115.0	19.0	**0.0724**	0.018	24.9	ug/L	20	Standard
	Al	27	1289763.0	0.8	**6.7519**	0.110	1.6	ug/L	1307	Standard
	Sc	45	49773.3	2.8				ug/L	41174	Standard
	Ti	47	6020.5	2.3	**16.8263**	0.429	2.6	ug/L	27	Standard
	V	51	26156.2	0.5	**2.7133**	0.015	0.6	ug/L	1434	Standard
	Cr	52	22253.3	0.9	**1.5480**	0.025	1.6	ug/L	7733	Standard
	Cr	53	3922.2	9.7	**3.1342**	0.341	10.9	ug/L	442	Standard
	Mn	55	93436.0	2.3	**11.1943**	0.294	2.6	ug/L	723	Standard
	Co	59	5246.2	1.4	**0.5973**	0.011	1.8	ug/L	217	Standard
	Ni	60	3873.2	3.3	**1.5552**	0.062	4.0	ug/L	304	Standard
	Cu	65	2052.1	1.1	**0.8462**	0.011	1.3	ug/L	181	Standard
	Zn	66	6978.9	2.8	**5.0326**	0.156	3.1	ug/L	215	Standard
>	**Ge**	72	569140.4	0.4				ug/L	520809	Standard
	As	75	675.9	4.5	**0.5462**	0.024	4.5	ug/L	-52	Standard
	Se	82	122.4	11.2	**0.7599**	0.101	13.3	ug/L	17	Standard
	Se-1	77	130.3	23.7	**0.7102**	0.329	46.3	ug/L	56	Standard
>	**Ga**	71	1996.8	2.2				mg/L	25	Standard
	Rb	85	22308.1	1.4				ug/L	28	Standard
	Y	89	509803.9	1.2				ug/L	447395	Standard
>	**Rh**	103	36.7	31.5				ug/L	15	Standard
	Mo	98	326.9	4.2	**0.0762**	0.004	5.1	ug/L	113	Standard
	Ag	107	126.0	4.2	**0.0034**	0.001	17.4	ug/L	108	Standard
	Cd	111	98.1	1.5	**0.0371**	0.001	1.9	mg/L	3	Standard
	Cd	114	296.0	9.7	**0.0481**	0.005	9.6	ug/L	20	Standard
>	**In**	115	675122.4	0.6				ug/L	625728	Standard
	Sn	118	1330.1	3.9	**0.1073**	0.007	6.6	ug/L	568	Standard
	Sb	123	517.6	11.1	**0.0591**	0.010	16.6	ug/L	612	Standard
	Ba	135	76309.4	0.8	**32.4918**	0.196	0.6	ug/L	21	Standard
	Ce	140	95146.2	1.3				ug/L	245	Standard
>	**Tb**	159	1016001.4	1.3				ug/L	950397	Standard
	Ho	165	1441.7	4.0				ug/L	7	Standard
	Tl	203	251.7	11.3	**0.0262**	0.003	11.5	ug/L	15	Standard
	Tl	205	263.3	19.1	**0.0220**	0.006	26.3	ug/L	13	Standard
	Pb	206	4604.0	0.8	**0.7379**	0.007	1.0	ug/L	264	Standard
	Pb	207	3793.5	2.8	**0.6632**	0.027	4.1	ug/L	222	Standard
	Pb	208	16401.2	0.5	**0.7024**	0.005	0.7	ug/L	959	Standard
	U	238	755.4	2.7	**0.0898**	0.002	2.3	ug/L	9	Standard
>	**Bi**	209	575207.2	1.1				ug/L	552821	Standard

Sample ID: L1606129005
Report Date/Time: Friday, July 01, 2016 12:44:02
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11827.9	2.0	**11.3730**	0.250	2.2	mg/L	55	Standard
K	39	63.3	12.1	**0.0696**	0.022	31.4	mg/L	28	Standard
Ca	43	26.7	39.0	**-0.4604**	0.739	160.5	mg/L	27	Standard
Fe	54	2263.3	3.3	**1.3710**	0.089	6.5	mg/L	147	Standard
Fe	57	798.4	7.3	**1.2235**	0.092	7.5	mg/L	268	Standard
> **Sc-1**	45	49773.3	2.8				mg/L	41174	Standard
Cl	35	80793.5	1.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	20093.3	2.4				ug/L	1950	Standard
P	31	35491.5	0.9				ug/L	21156	Standard
S	34	3435.4	2.3				ug/L	3419	Standard
Sr	88	86.7	16.7				ug/L	72	Standard
C	12	120.0	16.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	17	Standard
Dy	164	2283.5	2.5				mg/L	16	Standard
Ho-1	165	1441.7	4.0				mg/L	7	Standard
Er	166	1253.4	17.9				mg/L	7	Standard
I	127	29910.2	19.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.280	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129005
Report Date/Time: Friday, July 01, 2016 12:44:02
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.894
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.049
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 12:44:58
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83031.9	1.8				ug/L	76456	Standard
	Be	9	62607.4	1.8	**51.4790**	0.092	0.2	ug/L	20	Standard
	Al	27	9205440.0	1.0	**49.5101**	0.482	1.0	ug/L	1307	Standard
	Sc	45	45279.2	0.9				ug/L	41174	Standard
	Ti	47	35616.8	0.8	**99.7569**	0.384	0.4	ug/L	27	Standard
	V	51	453381.0	1.3	**50.1773**	0.834	1.7	ug/L	1434	Standard
	Cr	52	454717.9	0.4	**50.3900**	0.329	0.7	ug/L	7733	Standard
	Cr	53	56792.9	2.0	**50.9006**	0.670	1.3	ug/L	442	Standard
	Mn	55	417865.9	1.4	**50.3140**	0.768	1.5	ug/L	723	Standard
	Co	59	427490.0	0.8	**50.9392**	0.677	1.3	ug/L	217	Standard
	Ni	60	114502.7	0.7	**50.2468**	0.055	0.1	ug/L	304	Standard
	Cu	65	113283.0	1.3	**50.6253**	0.452	0.9	ug/L	181	Standard
	Zn	66	67088.2	1.2	**49.8311**	0.666	1.3	ug/L	215	Standard
>	Ge	72	570265.5	0.7				ug/L	520809	Standard
	As	75	66940.7	0.7	**49.5659**	0.028	0.1	ug/L	-52	Standard
	Se	82	6904.8	0.9	**49.7902**	0.542	1.1	ug/L	17	Standard
	Se-1	77	4848.4	1.0	**51.1131**	0.306	0.6	ug/L	56	Standard
>	Ga	71	33.3	34.6				mg/L	25	Standard
	Rb	85	945.0	6.5				ug/L	28	Standard
	Y	89	486567.9	0.8				ug/L	447395	Standard
>	Rh	103	36.7	43.8				ug/L	15	Standard
	Mo	98	321546.8	0.2	**99.1357**	1.367	1.4	ug/L	113	Standard
	Ag	107	383263.2	0.3	**49.7591**	0.678	1.4	ug/L	108	Standard
	Cd	111	123447.9	0.3	**50.0091**	0.713	1.4	mg/L	3	Standard
	Cd	114	300381.5	2.0	**49.1538**	1.432	2.9	ug/L	20	Standard
>	In	115	670977.0	1.2				ug/L	625728	Standard
	Sn	118	339655.3	1.3	**49.1307**	0.150	0.3	ug/L	568	Standard
	Sb	123	274538.6	0.7	**49.5136**	0.951	1.9	ug/L	612	Standard
	Ba	135	114656.9	0.7	**49.1372**	0.870	1.8	ug/L	21	Standard
	Ce	140	131.7	33.2				ug/L	245	Standard
>	Tb	159	1007430.4	0.6				ug/L	950397	Standard
	Ho	165	15.0	88.2				ug/L	7	Standard
	Tl	203	470169.7	1.1	**50.6935**	0.361	0.7	ug/L	15	Standard
	Tl	205	427547.4	1.3	**51.9072**	0.778	1.5	ug/L	13	Standard
	Pb	206	295170.9	0.9	**50.4289**	0.577	1.1	ug/L	264	Standard
	Pb	207	268434.7	0.6	**50.4969**	0.171	0.3	ug/L	222	Standard
	Pb	208	1104478.8	0.4	**50.8716**	0.540	1.1	ug/L	959	Standard
	U	238	418715.2	0.4	**50.2797**	0.305	0.6	ug/L	9	Standard
>	Bi	209	571081.7	0.7				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:47:15
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4769.1	1.8	**5.0062**	0.108	2.1	mg/L	55	Standard
K	39	1336.7	4.6	**4.5306**	0.241	5.3	mg/L	28	Standard
Ca	43	75.0	17.6	**3.7457**	1.100	29.4	mg/L	27	Standard
Fe	54	7200.7	4.3	**5.0367**	0.239	4.8	mg/L	147	Standard
Fe	57	2128.5	4.4	**5.1427**	0.247	4.8	mg/L	268	Standard
Sc-1	45	45279.2	0.9				mg/L	41174	Standard
Cl	35	81839.8	0.8				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	3040.3	8.6				ug/L	1950	Standard
P	31	24877.1	2.1				ug/L	21156	Standard
S	34	3887.2	7.0				ug/L	3419	Standard
Sr	88	81.7	7.1				ug/L	72	Standard
C	12	123.3	12.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	17	Standard
Dy	164	9.4	3.0				mg/L	16	Standard
Ho-1	165	15.0	88.2				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	21875.8	2.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.958		
Al	27	99.020		
Sc	45			
Ti	47	99.757		
V	51	100.355		
Cr	52	100.780		
Cr	53			
Mn	55	100.628		
Co	59	101.878		
Ni	60	100.494		
Cu	65	101.251		
Zn	66	99.662		
Ge	72		109.496	
As	75	99.132		
Se	82	99.580		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:47:15
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	99.136		
Ag	107	99.518		
Cd	111	100.018		
Cd	114			
> In	115			107.231
Sn	118	98.261		
Sb	123	99.027		
Ba	135	98.274		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.387		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.743		
U	238	100.559		
> Bi	209			103.303
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 12:47:15
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 12:48:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79667.3	2.3				ug/L	76456	Standard
	Be	9	48.3	39.2	**0.0215**	0.016	74.4	ug/L	20	Standard
	Al	27	13667.3	103.9	**0.0663**	0.079	119.0	ug/L	1307	Standard
	Sc	45	44725.9	0.8				ug/L	41174	Standard
	Ti	47	40.3	36.1	**0.0282**	0.040	143.2	ug/L	27	Standard
	V	51	1800.6	20.7	**0.0010**	0.041	3971.4	ug/L	1434	Standard
	Cr	52	8069.5	1.6	**-0.0611**	0.005	7.9	ug/L	7733	Standard
	Cr	53	805.0	12.6	**0.3085**	0.086	27.9	ug/L	442	Standard
	Mn	55	1891.2	86.3	**0.1261**	0.196	155.3	ug/L	723	Standard
	Co	59	402.0	57.1	**0.0183**	0.027	148.1	ug/L	217	Standard
	Ni	60	380.0	16.0	**0.0137**	0.026	190.1	ug/L	304	Standard
	Cu	65	200.3	16.4	**0.0153**	0.014	94.0	ug/L	181	Standard
	Zn	66	277.3	5.9	**0.0260**	0.012	46.5	ug/L	215	Standard
>	**Ge**	72	571534.4	1.1				ug/L	520809	Standard
	As	75	-32.7	47.9	**0.0211**	0.011	53.6	ug/L	-52	Standard
	Se	82	21.0	34.3	**0.0252**	0.052	206.6	ug/L	17	Standard
	Se-1	77	64.3	8.6	**0.0008**	0.051	6596.2	ug/L	56	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	26.7	75.8				ug/L	28	Standard
	Y	89	488434.0	1.5				ug/L	447395	Standard
>	**Rh**	103	18.3	56.8				ug/L	15	Standard
	Mo	98	360.1	51.7	**0.0867**	0.057	65.8	ug/L	113	Standard
	Ag	107	301.7	75.6	**0.0262**	0.029	112.6	ug/L	108	Standard
	Cd	111	35.8	64.4	**0.0121**	0.009	76.9	mg/L	3	Standard
	Cd	114	93.7	41.3	**0.0153**	0.006	41.1	ug/L	20	Standard
>	**In**	115	672952.0	0.6				ug/L	625728	Standard
	Sn	118	2098.5	22.4	**0.2192**	0.070	31.8	ug/L	568	Standard
	Sb	123	1021.0	31.2	**0.1501**	0.058	38.5	ug/L	612	Standard
	Ba	135	296.3	92.5	**0.1088**	0.117	107.6	ug/L	21	Standard
	Ce	140	101.7	62.5				ug/L	245	Standard
>	**Tb**	159	1018483.3	2.2				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	228.7	95.2	**0.0235**	0.023	98.1	ug/L	15	Standard
	Tl	205	170.0	71.4	**0.0105**	0.014	137.1	ug/L	13	Standard
	Pb	206	473.7	49.2	**0.0358**	0.039	109.0	ug/L	264	Standard
	Pb	207	396.7	45.3	**0.0273**	0.033	121.3	ug/L	222	Standard
	Pb	208	1490.7	28.8	**0.0193**	0.019	100.6	ug/L	959	Standard
	U	238	168.7	71.3	**0.0196**	0.014	72.1	ug/L	9	Standard
>	**Bi**	209	580702.6	1.0				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:50:27
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	85.0	38.6	**0.0310**	0.035	111.2	mg/L	55	Standard
K	39	35.0	37.8	**-0.0077**	0.046	604.4	mg/L	28	Standard
Ca	43	16.7	105.4	**-1.0542**	1.482	140.5	mg/L	27	Standard
Fe	54	153.9	28.2	**0.0123**	0.031	255.3	mg/L	147	Standard
Fe	57	300.0	3.3	**0.0447**	0.032	71.4	mg/L	268	Standard
Sc-1	45	44725.9	0.8				mg/L	41174	Standard
Cl	35	82881.4	0.4				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2540.2	1.8				ug/L	1950	Standard
P	31	24578.3	4.0				ug/L	21156	Standard
S	34	4135.6	7.4				ug/L	3419	Standard
Sr	88	55.0	27.3				ug/L	72	Standard
C	12	116.7	21.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	16.5	36.7				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	16210.3	1.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.740	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:50:27
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.547
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.044
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:50:27
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: PBW 07 WG574419-03
Sample Date/Time: Friday, July 01, 2016 12:58:36
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81259.0	1.7				ug/L	76456	Standard
	Be	9	25.0	52.9	**0.0011**	0.011	980.8	ug/L	20	Standard
	Al	27	43520.8	2.0	**0.2290**	0.003	1.2	ug/L	1307	Standard
	Sc	45	45160.6	1.8				ug/L	41174	Standard
	Ti	47	37.3	12.7	**0.0196**	0.013	67.8	ug/L	27	Standard
	V	51	1890.1	0.3	**0.0103**	0.002	20.9	ug/L	1434	Standard
	Cr	52	10254.5	1.2	**0.1819**	0.016	8.6	ug/L	7733	Standard
	Cr	53	800.0	8.4	**0.3021**	0.055	18.2	ug/L	442	Standard
	Mn	55	1844.4	0.9	**0.1201**	0.001	0.9	ug/L	723	Standard
	Co	59	227.3	7.0	**-0.0025**	0.002	69.8	ug/L	217	Standard
	Ni	60	435.3	6.3	**0.0376**	0.014	36.1	ug/L	304	Standard
	Cu	65	169.0	18.5	**0.0011**	0.014	1207.4	ug/L	181	Standard
	Zn	66	2605.6	4.5	**1.7518**	0.074	4.2	ug/L	215	Standard
>	**Ge**	72	573164.6	0.8				ug/L	520809	Standard
	As	75	-74.5	34.0	**-0.0097**	0.019	192.2	ug/L	-52	Standard
	Se	82	11.5	10.8	**-0.0437**	0.008	19.0	ug/L	17	Standard
	Se-1	77	70.7	5.9	**0.0666**	0.045	68.1	ug/L	56	Standard
>	**Ga**	71	35.0	65.5				mg/L	25	Standard
	Rb	85	83.3	9.2				ug/L	28	Standard
	Y	89	497110.0	0.3				ug/L	447395	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	63.4	20.9	**-0.0047**	0.004	88.1	ug/L	113	Standard
	Ag	107	104.7	2.9	**0.0005**	0.001	97.2	ug/L	108	Standard
	Cd	111	8.9	29.5	**0.0012**	0.001	90.2	mg/L	3	Standard
	Cd	114	20.2	129.3	**0.0033**	0.004	129.2	ug/L	20	Standard
>	**In**	115	681820.3	1.0				ug/L	625728	Standard
	Sn	118	1671.8	12.8	**0.1542**	0.031	19.9	ug/L	568	Standard
	Sb	123	510.3	25.3	**0.0569**	0.023	40.1	ug/L	612	Standard
	Ba	135	135.7	5.5	**0.0393**	0.003	7.0	ug/L	21	Standard
	Ce	140	68.3	33.0				ug/L	245	Standard
>	**Tb**	159	1025294.3	0.6				ug/L	950397	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	44.0	21.7	**0.0039**	0.001	25.6	ug/L	15	Standard
	Tl	205	40.0	25.0	**-0.0050**	0.001	25.0	ug/L	13	Standard
	Pb	206	314.3	3.7	**0.0090**	0.002	26.0	ug/L	264	Standard
	Pb	207	276.7	9.5	**0.0051**	0.005	106.7	ug/L	222	Standard
	Pb	208	1132.0	1.7	**0.0030**	0.001	48.7	ug/L	959	Standard
	U	238	26.0	17.6	**0.0028**	0.001	20.4	ug/L	9	Standard
>	**Bi**	209	581506.6	1.1				ug/L	552821	Standard

Sample ID: PBW 07 WG574419-03
Report Date/Time: Friday, July 01, 2016 13:00:53
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.6090**	7.974	173.0	mg/L	2	Standard
Mg	24	81.7	9.4	**0.0269**	0.009	33.7	mg/L	55	Standard
K	39	40.0	21.7	**0.0086**	0.030	348.4	mg/L	28	Standard
Ca	43	30.0	33.3	**0.0262**	0.793	3031.4	mg/L	27	Standard
Fe	54	180.2	26.2	**0.0304**	0.036	118.2	mg/L	147	Standard
Fe	57	258.3	6.2	**-0.0804**	0.042	52.2	mg/L	268	Standard
> **Sc-1**	45	45160.6	1.8				mg/L	41174	Standard
Cl	35	85551.6	2.1				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	2493.5	7.2				ug/L	1950	Standard
P	31	25546.6	9.0				ug/L	21156	Standard
S	34	4053.9	0.5				ug/L	3419	Standard
Sr	88	75.0	13.3				ug/L	72	Standard
C	12	136.7	53.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	19.4	51.7				mg/L	16	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	10762.2	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.282	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.053	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 07 WG574419-03
Report Date/Time: Friday, July 01, 2016 13:00:53
Page 2

Approved: July 02, 2016

Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	108.964
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	105.189
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 07 WG574419-03
Report Date/Time: Friday, July 01, 2016 13:00:53
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: LCSW 07 WG574419-04
Sample Date/Time: Friday, July 01, 2016 13:03:34
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80883.7	2.2				ug/L	76456	Standard
	Be	9	63273.5	1.3	**53.4233**	1.134	2.1	ug/L	20	Standard
	Al	27	15556.3	4.2	**0.0758**	0.006	7.3	ug/L	1307	Standard
	Sc	45	46230.4	2.2				ug/L	41174	Standard
	Ti	47	48.3	18.7	**0.0475**	0.025	52.8	ug/L	27	Standard
	V	51	465592.0	1.2	**50.1984**	0.441	0.9	ug/L	1434	Standard
	Cr	52	471783.2	1.2	**50.9433**	0.486	1.0	ug/L	7733	Standard
	Cr	53	57119.2	2.3	**49.8721**	1.291	2.6	ug/L	442	Standard
	Mn	55	436781.1	0.8	**51.2372**	0.113	0.2	ug/L	723	Standard
	Co	59	434567.5	1.2	**50.4450**	0.373	0.7	ug/L	217	Standard
	Ni	60	118551.0	1.3	**50.6835**	0.443	0.9	ug/L	304	Standard
	Cu	65	119119.1	1.3	**51.8651**	0.602	1.2	ug/L	181	Standard
	Zn	66	71172.1	1.7	**51.5055**	0.595	1.2	ug/L	215	Standard
>	**Ge**	72	585340.9	0.6				ug/L	520809	Standard
	As	75	69945.5	1.2	**50.4563**	0.545	1.1	ug/L	-52	Standard
	Se	82	7094.3	1.4	**49.8362**	0.433	0.9	ug/L	17	Standard
	Se-1	77	4867.8	0.7	**49.9806**	0.170	0.3	ug/L	56	Standard
>	**Ga**	71	31.7	24.1				mg/L	25	Standard
	Rb	85	36.7	41.7				ug/L	28	Standard
	Y	89	498458.5	0.8				ug/L	447395	Standard
>	**Rh**	103	18.3	41.7				ug/L	15	Standard
	Mo	98	78.0	18.4	**-0.0003**	0.004	1563.8	ug/L	113	Standard
	Ag	107	402127.6	1.2	**51.3787**	0.778	1.5	ug/L	108	Standard
	Cd	111	126507.9	1.2	**50.4309**	0.392	0.8	mg/L	3	Standard
	Cd	114	308784.3	0.8	**49.7196**	0.327	0.7	ug/L	20	Standard
>	**In**	115	681801.9	1.3				ug/L	625728	Standard
	Sn	118	1796.8	16.1	**0.1722**	0.043	25.0	ug/L	568	Standard
	Sb	123	288724.4	0.5	**51.2448**	0.727	1.4	ug/L	612	Standard
	Ba	135	116686.9	0.7	**49.2097**	0.376	0.8	ug/L	21	Standard
	Ce	140	85.0	38.6				ug/L	245	Standard
>	**Tb**	159	1014866.4	0.7				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	482185.7	0.8	**50.5384**	0.275	0.5	ug/L	15	Standard
	Tl	205	444917.2	1.5	**52.5153**	1.373	2.6	ug/L	13	Standard
	Pb	206	312986.7	0.5	**51.9814**	0.469	0.9	ug/L	264	Standard
	Pb	207	271686.9	0.6	**49.6820**	0.381	0.8	ug/L	222	Standard
	Pb	208	1142411.3	0.4	**51.1494**	0.415	0.8	ug/L	959	Standard
	U	238	421119.4	1.0	**49.1551**	0.103	0.2	ug/L	9	Standard
>	**Bi**	209	587494.5	1.1				ug/L	552821	Standard

Sample ID: LCSW 07 WG574419-04
Report Date/Time: Friday, July 01, 2016 13:05:51
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**8.7572**	7.580	86.6	mg/L	2	Standard
Mg	24	76.7	21.0	**0.0195**	0.016	83.2	mg/L	55	Standard
K	39	21.7	26.6	**-0.0575**	0.018	32.0	mg/L	28	Standard
Ca	43	18.3	83.3	**-0.9528**	1.279	134.3	mg/L	27	Standard
Fe	54	147.9	28.9	**0.0041**	0.028	686.0	mg/L	147	Standard
Fe	57	245.0	10.8	**-0.1326**	0.084	63.2	mg/L	268	Standard
> **Sc-1**	45	46230.4	2.2				mg/L	41174	Standard
Cl	35	86090.6	2.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2420.2	0.7				ug/L	1950	Standard
P	31	25546.5	4.4				ug/L	21156	Standard
S	34	3980.5	6.3				ug/L	3419	Standard
Sr	88	56.7	20.4				ug/L	72	Standard
C	12	156.7	16.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	17	Standard
Dy	164	19.7	89.4				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	4735.7	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.391	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 07 WG574419-04
Report Date/Time: Friday, July 01, 2016 13:05:51
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.961
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.272
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 07 WG574419-04
Report Date/Time: Friday, July 01, 2016 13:05:51
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140006 WG574419-01
Sample Date/Time: Friday, July 01, 2016 13:06:46
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80758.0	0.8				ug/L	76456	Standard
	Be	9	41.7	6.9	**0.0154**	0.002	16.2	ug/L	20	Standard
	Al	27	11868534.0	1.1	**65.6266**	0.514	0.8	ug/L	1307	Standard
	Sc	45	45759.0	1.2				ug/L	41174	Standard
	Ti	47	2320.2	10.4	**6.5166**	0.703	10.8	ug/L	27	Standard
	V	51	6253.1	3.7	**0.5063**	0.022	4.3	ug/L	1434	Standard
	Cr	52	20690.1	0.7	**1.4009**	0.007	0.5	ug/L	7733	Standard
	Cr	53	7241.7	4.8	**6.2224**	0.278	4.5	ug/L	442	Standard
	Mn	55	361893.7	0.6	**44.2063**	0.556	1.3	ug/L	723	Standard
	Co	59	1899.1	4.5	**0.2003**	0.011	5.6	ug/L	217	Standard
	Ni	60	3188.7	2.0	**1.2710**	0.022	1.8	ug/L	304	Standard
	Cu	65	3204.0	1.0	**1.3811**	0.024	1.8	ug/L	181	Standard
	Zn	66	3650.1	1.8	**2.5809**	0.057	2.2	ug/L	215	Standard
>	Ge	72	561976.5	0.7				ug/L	520809	Standard
	As	75	349.0	10.2	**0.3073**	0.028	9.1	ug/L	-52	Standard
	Se	82	95.4	7.6	**0.5731**	0.052	9.1	ug/L	17	Standard
	Se-1	77	310.3	6.8	**2.6788**	0.206	7.7	ug/L	56	Standard
>	Ga	71	306.7	3.4				mg/L	25	Standard
	Rb	85	9304.5	4.6				ug/L	28	Standard
	Y	89	479158.2	2.5				ug/L	447395	Standard
>	Rh	103	63.3	19.9				ug/L	15	Standard
	Mo	98	462.6	2.2	**0.1212**	0.004	3.1	ug/L	113	Standard
	Ag	107	229.3	10.2	**0.0174**	0.003	18.1	ug/L	108	Standard
	Cd	111	314.9	4.8	**0.1274**	0.007	5.3	mg/L	3	Standard
	Cd	114	778.8	0.7	**0.1296**	0.002	1.2	ug/L	20	Standard
>	In	115	659596.7	0.4				ug/L	625728	Standard
	Sn	118	3462.1	8.7	**0.4262**	0.046	10.8	ug/L	568	Standard
	Sb	123	25160.0	1.7	**4.5846**	0.068	1.5	ug/L	612	Standard
	Ba	135	24755.2	1.0	**10.7771**	0.149	1.4	ug/L	21	Standard
	Ce	140	10733.8	0.6				ug/L	245	Standard
>	Tb	159	997525.3	0.9				ug/L	950397	Standard
	Ho	165	248.3	11.4				ug/L	7	Standard
	Tl	203	323.7	9.0	**0.0349**	0.003	8.9	ug/L	15	Standard
	Tl	205	295.0	13.5	**0.0268**	0.005	17.8	ug/L	13	Standard
	Pb	206	13733.6	1.1	**2.3523**	0.014	0.6	ug/L	264	Standard
	Pb	207	11541.7	1.2	**2.1713**	0.021	1.0	ug/L	222	Standard
	Pb	208	49582.7	0.8	**2.2840**	0.012	0.5	ug/L	959	Standard
	U	238	794.4	5.3	**0.0971**	0.005	5.3	ug/L	9	Standard
>	Bi	209	559684.2	0.5				ug/L	552821	Standard

Sample ID: L1606140006 WG574419-01
Report Date/Time: Friday, July 01, 2016 13:09:03
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**13.3851**	13.441	100.4	mg/L	2	Standard
Mg	24	23146.0	2.0	**24.2692**	0.405	1.7	mg/L	55	Standard
K	39	161.7	7.1	**0.4263**	0.034	7.9	mg/L	28	Standard
Ca	43	226.7	16.0	**16.1036**	3.136	19.5	mg/L	27	Standard
Fe	54	423.4	7.8	**0.1999**	0.022	10.8	mg/L	147	Standard
Fe	57	503.3	8.4	**0.5885**	0.131	22.2	mg/L	268	Standard
> **Sc-1**	45	45759.0	1.2				mg/L	41174	Standard
Cl	35	89790.6	1.3				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	17466.7	4.8				ug/L	1950	Standard
P	31	27324.6	2.0				ug/L	21156	Standard
S	34	4078.9	2.0				ug/L	3419	Standard
Sr	88	211.7	20.1				ug/L	72	Standard
C	12	163.3	9.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	17	Standard
Dy	164	363.3	15.2				mg/L	16	Standard
Ho-1	165	248.3	11.4				mg/L	7	Standard
Er	166	280.0	3.6				mg/L	7	Standard
I	127	49912.2	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.627	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140006 WG574419-01
Report Date/Time: Friday, July 01, 2016 13:09:03
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.413
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.242
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140007S WG574419-05
Sample Date/Time: Friday, July 01, 2016 13:09:57
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80711.1	0.9				ug/L	76456	Standard
	Be	9	64078.6	1.3	**54.2065**	0.745	1.4	ug/L	20	Standard
	Al	27	12211012.4	1.5	**67.5580**	0.517	0.8	ug/L	1307	Standard
	Sc	45	44934.9	0.8				ug/L	41174	Standard
	Ti	47	2064.8	6.8	**5.8866**	0.415	7.1	ug/L	27	Standard
	V	51	459064.1	0.1	**52.4156**	0.397	0.8	ug/L	1434	Standard
	Cr	52	459452.2	0.5	**52.5615**	0.550	1.0	ug/L	7733	Standard
	Cr	53	62920.4	1.2	**58.2380**	1.104	1.9	ug/L	442	Standard
	Mn	55	774817.1	0.6	**96.3273**	0.870	0.9	ug/L	723	Standard
	Co	59	418465.0	0.9	**51.4354**	0.672	1.3	ug/L	217	Standard
	Ni	60	114181.6	0.7	**51.6930**	0.726	1.4	ug/L	304	Standard
	Cu	65	110934.3	0.7	**51.1428**	0.660	1.3	ug/L	181	Standard
	Zn	66	70146.7	0.6	**53.7582**	0.090	0.2	ug/L	215	Standard
>	Ge	72	552840.2	0.7				ug/L	520809	Standard
	As	75	68517.6	0.7	**52.3310**	0.386	0.7	ug/L	-52	Standard
	Se	82	6918.4	0.6	**51.4649**	0.420	0.8	ug/L	17	Standard
	Se-1	77	5005.2	0.2	**54.4756**	0.506	0.9	ug/L	56	Standard
>	Ga	71	246.7	21.7				mg/L	25	Standard
	Rb	85	8369.0	3.4				ug/L	28	Standard
	Y	89	475828.1	0.8				ug/L	447395	Standard
>	Rh	103	60.0	8.3				ug/L	15	Standard
	Mo	98	444.1	3.8	**0.1178**	0.005	4.5	ug/L	113	Standard
	Ag	107	373105.8	0.7	**50.1488**	0.527	1.1	ug/L	108	Standard
	Cd	111	121300.2	0.5	**50.8704**	0.210	0.4	mg/L	3	Standard
	Cd	114	296777.5	0.3	**50.2713**	0.199	0.4	ug/L	20	Standard
>	In	115	648070.4	0.4				ug/L	625728	Standard
	Sn	118	3198.7	11.7	**0.3955**	0.054	13.6	ug/L	568	Standard
	Sb	123	305348.9	0.8	**57.0152**	0.685	1.2	ug/L	612	Standard
	Ba	135	127151.7	1.1	**56.4152**	0.853	1.5	ug/L	21	Standard
	Ce	140	10170.1	11.9				ug/L	245	Standard
>	Tb	159	984910.5	1.3				ug/L	950397	Standard
	Ho	165	243.3	11.3				ug/L	7	Standard
	Tl	203	460227.9	0.5	**50.9164**	0.584	1.1	ug/L	15	Standard
	Tl	205	419164.2	0.8	**52.2197**	1.079	2.1	ug/L	13	Standard
	Pb	206	308797.4	0.7	**54.1380**	1.001	1.8	ug/L	264	Standard
	Pb	207	269438.3	0.3	**52.0122**	0.916	1.8	ug/L	222	Standard
	Pb	208	1139591.7	0.5	**53.8600**	0.817	1.5	ug/L	959	Standard
	U	238	412122.6	0.9	**50.7770**	0.583	1.1	ug/L	9	Standard
>	Bi	209	556623.0	1.5				ug/L	552821	Standard

Sample ID: L1606140007S WG574419-05
Report Date/Time: Friday, July 01, 2016 13:12:14
Page 1

Approved: July 02, 2016

Na	23	5.0	0.0	**13.6792**	0.103	0.8	mg/L	2	Standard
Mg	24	24264.4	1.3	**25.9117**	0.145	0.6	mg/L	55	Standard
K	39	138.3	27.1	**0.3549**	0.133	37.4	mg/L	28	Standard
Ca	43	288.3	17.1	**21.5709**	4.241	19.7	mg/L	27	Standard
Fe	54	394.0	6.5	**0.1843**	0.018	9.9	mg/L	147	Standard
Fe	57	461.7	10.0	**0.4961**	0.134	27.1	mg/L	268	Standard
> **Sc-1**	45	44934.9	0.8				mg/L	41174	Standard
Cl	35	90855.7	2.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	11284.2	7.1				ug/L	1950	Standard
P	31	27506.6	4.3				ug/L	21156	Standard
S	34	4052.2	3.2				ug/L	3419	Standard
Sr	88	215.0	8.1				ug/L	72	Standard
C	12	163.3	9.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	17	Standard
Dy	164	319.9	13.5				mg/L	16	Standard
Ho-1	165	243.3	11.3				mg/L	7	Standard
Er	166	280.0	25.8				mg/L	7	Standard
I	127	66618.3	7.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.566	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.150	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140007S WG574419-05
Report Date/Time: Friday, July 01, 2016 13:12:14
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.571
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140008SD WG574419-06
Sample Date/Time: Friday, July 01, 2016 13:13:09
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79700.7	0.7				ug/L	76456	Standard
	Be	9	61700.4	1.6	**52.8560**	0.961	1.8	ug/L	20	Standard
	Al	27	12099353.2	1.1	**67.7900**	0.341	0.5	ug/L	1307	Standard
	Sc	45	46046.6	2.1				ug/L	41174	Standard
	Ti	47	1942.8	6.7	**5.5490**	0.345	6.2	ug/L	27	Standard
	V	51	439192.0	0.4	**50.2950**	0.725	1.4	ug/L	1434	Standard
	Cr	52	444362.9	0.8	**50.9606**	0.244	0.5	ug/L	7733	Standard
	Cr	53	61436.0	0.3	**57.0274**	0.463	0.8	ug/L	442	Standard
	Mn	55	751669.2	0.7	**93.7402**	1.592	1.7	ug/L	723	Standard
	Co	59	399707.3	0.9	**49.2832**	0.963	2.0	ug/L	217	Standard
	Ni	60	109770.2	0.4	**49.8430**	0.612	1.2	ug/L	304	Standard
	Cu	65	108323.5	0.5	**50.0917**	0.642	1.3	ug/L	181	Standard
	Zn	66	68554.1	0.3	**52.6985**	0.620	1.2	ug/L	215	Standard
>	Ge	72	551156.5	1.1				ug/L	520809	Standard
	As	75	66401.2	0.7	**50.8743**	0.706	1.4	ug/L	-52	Standard
	Se	82	6730.1	0.5	**50.2159**	0.522	1.0	ug/L	17	Standard
	Se-1	77	4856.1	2.0	**53.0004**	1.342	2.5	ug/L	56	Standard
>	Ga	71	258.3	16.5				mg/L	25	Standard
	Rb	85	8118.8	3.8				ug/L	28	Standard
	Y	89	478755.4	1.4				ug/L	447395	Standard
>	Rh	103	76.7	3.8				ug/L	15	Standard
	Mo	98	512.6	9.1	**0.1403**	0.015	10.9	ug/L	113	Standard
	Ag	107	359474.2	1.7	**48.4964**	0.550	1.1	ug/L	108	Standard
	Cd	111	117797.3	1.3	**49.5872**	0.214	0.4	mg/L	3	Standard
	Cd	114	286908.0	1.1	**48.7832**	0.247	0.5	ug/L	20	Standard
>	In	115	645632.6	1.1				ug/L	625728	Standard
	Sn	118	3095.3	10.7	**0.3822**	0.054	14.0	ug/L	568	Standard
	Sb	123	295379.5	0.9	**55.3607**	0.341	0.6	ug/L	612	Standard
	Ba	135	123159.2	0.4	**54.8524**	0.674	1.2	ug/L	21	Standard
	Ce	140	9327.9	2.1				ug/L	245	Standard
>	Tb	159	983378.7	0.8				ug/L	950397	Standard
	Ho	165	230.0	2.2				ug/L	7	Standard
	Tl	203	446759.8	0.8	**49.4389**	0.212	0.4	ug/L	15	Standard
	Tl	205	408461.1	0.9	**50.8970**	0.668	1.3	ug/L	13	Standard
	Pb	206	301254.5	0.8	**52.8246**	0.290	0.5	ug/L	264	Standard
	Pb	207	261947.7	0.8	**50.5743**	0.209	0.4	ug/L	222	Standard
	Pb	208	1104059.4	0.6	**52.1919**	0.419	0.8	ug/L	959	Standard
	U	238	402584.9	0.8	**49.6175**	0.619	1.2	ug/L	9	Standard
>	Bi	209	556417.0	0.4				ug/L	552821	Standard

Sample ID: L1606140008SD WG574419-06
Report Date/Time: Friday, July 01, 2016 13:15:26
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**13.3094**	13.444	101.0	mg/L	2	Standard
Mg	24	23635.1	1.3	**24.6326**	0.412	1.7	mg/L	55	Standard
K	39	136.7	2.1	**0.3374**	0.002	0.7	mg/L	28	Standard
Ca	43	218.3	2.6	**15.2980**	0.780	5.1	mg/L	27	Standard
Fe	54	402.8	5.8	**0.1835**	0.012	6.4	mg/L	147	Standard
Fe	57	453.3	11.2	**0.4438**	0.163	36.7	mg/L	268	Standard
> **Sc-1**	45	46046.6	2.1				mg/L	41174	Standard
Cl	35	91583.3	0.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	12164.9	6.2				ug/L	1950	Standard
P	31	27852.3	5.0				ug/L	21156	Standard
S	34	4047.2	6.0				ug/L	3419	Standard
Sr	88	165.0	13.2				ug/L	72	Standard
C	12	173.3	28.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	17	Standard
Dy	164	272.5	13.7				mg/L	16	Standard
Ho-1	165	230.0	2.2				mg/L	7	Standard
Er	166	296.7	5.1				mg/L	7	Standard
I	127	59372.8	2.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.244	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140008SD WG574419-06
Report Date/Time: Friday, July 01, 2016 13:15:26
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.181
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.651
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606142701 WG574419-02
Sample Date/Time: Friday, July 01, 2016 13:16:20
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	94406.8	3.4				ug/L	76456	Standard
	Be	9	85.0	35.3	**0.0412**	0.020	47.7	ug/L	20	Standard
	Al	27	56617238.2	4.0	**267.8022**	1.372	0.5	ug/L	1307	Standard
	Sc	45	46416.0	2.3				ug/L	41174	Standard
	Ti	47	884.0	4.8	**2.5428**	0.066	2.6	ug/L	27	Standard
	V	51	553940.5	2.9	**65.0728**	0.307	0.5	ug/L	1434	Standard
	Cr	52	299233.7	2.3	**34.8806**	0.725	2.1	ug/L	7733	Standard
	Cr	53	52044.3	2.2	**49.4662**	0.542	1.1	ug/L	442	Standard
	Mn	55	240351.0	1.7	**30.6595**	0.508	1.7	ug/L	723	Standard
	Co	59	198012.4	2.6	**25.0083**	0.182	0.7	ug/L	217	Standard
	Ni	60	153480.0	2.1	**71.5090**	1.345	1.9	ug/L	304	Standard
	Cu	65	58814.7	2.8	**27.8441**	0.424	1.5	ug/L	181	Standard
	Zn	66	154855.3	2.4	**122.2558**	1.271	1.0	ug/L	215	Standard
>	Ge	72	537771.5	3.3				ug/L	520809	Standard
	As	75	14927.7	4.1	**11.7537**	0.103	0.9	ug/L	-52	Standard
	Se	82	5918.7	4.3	**45.2355**	0.439	1.0	ug/L	17	Standard
	Se-1	77	1154.4	4.7	**12.3907**	0.295	2.4	ug/L	56	Standard
>	Ga	71	381.7	7.4				mg/L	25	Standard
	Rb	85	99551.2	2.9				ug/L	28	Standard
	Y	89	473605.3	2.9				ug/L	447395	Standard
>	Rh	103	343.3	14.9				ug/L	15	Standard
	Mo	98	2403599.9	3.3	**789.6820**	1.502	0.2	ug/L	113	Standard
	Ag	107	348.7	11.5	**0.0353**	0.004	11.4	ug/L	108	Standard
	Cd	111	-1248.7	2.3	**-0.5414**	0.006	1.1	mg/L	3	Standard
	Cd	114	4967.3	3.8	**0.8659**	0.009	1.0	ug/L	20	Standard
>	In	115	629706.1	3.1				ug/L	625728	Standard
	Sn	118	2805.3	14.7	**0.3479**	0.050	14.4	ug/L	568	Standard
	Sb	123	2974.2	8.0	**0.5376**	0.028	5.2	ug/L	612	Standard
	Ba	135	206845.8	2.1	**94.4794**	0.976	1.0	ug/L	21	Standard
	Ce	140	2191.8	6.3				ug/L	245	Standard
>	Tb	159	977368.8	3.8				ug/L	950397	Standard
	Ho	165	160.0	22.5				ug/L	7	Standard
	Tl	203	430.0	2.3	**0.0496**	0.002	4.9	ug/L	15	Standard
	Tl	205	390.0	8.0	**0.0417**	0.005	11.7	ug/L	13	Standard
	Pb	206	8083.8	1.9	**1.4566**	0.015	1.0	ug/L	264	Standard
	Pb	207	6744.5	3.2	**1.3320**	0.010	0.7	ug/L	222	Standard
	Pb	208	28675.7	2.4	**1.3865**	0.012	0.8	ug/L	959	Standard
	U	238	878.7	4.2	**0.1143**	0.007	5.7	ug/L	9	Standard
>	Bi	209	526224.9	2.9				ug/L	552821	Standard

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 13:18:37
Page 1

Approved: July 02, 2016

Na	23	10.0	100.0	**26.3285**	25.935	98.5	mg/L	2	Standard
Mg	24	138231.5	3.2	**143.1647**	1.819	1.3	mg/L	55	Standard
K	39	2051.8	3.6	**6.8480**	0.212	3.1	mg/L	28	Standard
Ca	43	1005.0	4.6	**78.6144**	4.822	6.1	mg/L	27	Standard
Fe	54	1298.8	6.4	**0.8054**	0.072	8.9	mg/L	147	Standard
Fe	57	1345.1	6.6	**2.8597**	0.164	5.7	mg/L	268	Standard
> **Sc-1**	45	46416.0	2.3				mg/L	41174	Standard
Cl	35	167690.5	2.1				ug/L	69550	Standard
Kr	83	3.0	66.7				ug/L	1	Standard
Br	81	1167966.9	3.9				ug/L	1950	Standard
P	31	32757.0	0.7				ug/L	21156	Standard
S	34	3867.2	4.1				ug/L	3419	Standard
Sr	88	1343.4	2.4				ug/L	72	Standard
C	12	240.0	12.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1276.7	2.5				mg/L	17	Standard
Dy	164	1123.0	11.7				mg/L	16	Standard
Ho-1	165	160.0	22.5				mg/L	7	Standard
Er	166	146.7	14.2				mg/L	7	Standard
I	127	116304.4	6.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.479	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 13:18:37
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.636	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.189	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 13:18:37
Page 3

Approved: July 02, 2016

Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606142701DP WG574419-07
Sample Date/Time: Friday, July 01, 2016 13:19:32
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	104046.1	2.0				ug/L	76456	Standard
	Be	9	46.7	34.4	**0.0108**	0.011	98.8	ug/L	20	Standard
	Al	27	58682132.6	0.8	**251.9338**	4.223	1.7	ug/L	1307	Standard
	Sc	45	49029.2	0.9				ug/L	41174	Standard
	Ti	47	887.4	3.2	**2.4062**	0.089	3.7	ug/L	27	Standard
	V	51	572508.3	0.6	**63.4877**	0.191	0.3	ug/L	1434	Standard
	Cr	52	308728.3	0.4	**33.9428**	0.266	0.8	ug/L	7733	Standard
	Cr	53	52407.2	1.8	**46.9988**	0.886	1.9	ug/L	442	Standard
	Mn	55	248854.2	1.2	**29.9599**	0.484	1.6	ug/L	723	Standard
	Co	59	205279.2	0.1	**24.4744**	0.076	0.3	ug/L	217	Standard
	Ni	60	157071.7	0.8	**69.0682**	0.457	0.7	ug/L	304	Standard
	Cu	65	60395.8	1.4	**26.9893**	0.358	1.3	ug/L	181	Standard
	Zn	66	157884.7	1.0	**117.6566**	1.110	0.9	ug/L	215	Standard
>	Ge	72	569569.1	0.4				ug/L	520809	Standard
	As	75	17073.6	1.5	**12.6909**	0.145	1.1	ug/L	-52	Standard
	Se	82	6774.5	1.0	**48.9062**	0.303	0.6	ug/L	17	Standard
	Se-1	77	1068.4	1.0	**10.7433**	0.123	1.1	ug/L	56	Standard
>	Ga	71	446.7	9.5				mg/L	25	Standard
	Rb	85	100812.6	1.2				ug/L	28	Standard
	Y	89	506159.4	0.9				ug/L	447395	Standard
>	Rh	103	378.3	6.5				ug/L	15	Standard
	Mo	98	2476607.9	0.6	**769.3094**	6.421	0.8	ug/L	113	Standard
	Ag	107	277.0	7.6	**0.0234**	0.003	11.5	ug/L	108	Standard
	Cd	111	-1309.7	3.6	**-0.5367**	0.015	2.9	mg/L	3	Standard
	Cd	114	4986.9	3.4	**0.8220**	0.028	3.4	ug/L	20	Standard
>	In	115	666048.1	0.7				ug/L	625728	Standard
	Sn	118	2695.2	8.4	**0.3091**	0.031	9.9	ug/L	568	Standard
	Sb	123	2859.3	3.8	**0.4860**	0.016	3.4	ug/L	612	Standard
	Ba	135	211685.9	0.6	**91.3948**	0.192	0.2	ug/L	21	Standard
	Ce	140	2868.6	2.4				ug/L	245	Standard
>	Tb	159	1029121.0	0.5				ug/L	950397	Standard
	Ho	165	185.0	14.3				ug/L	7	Standard
	Tl	203	334.0	8.3	**0.0363**	0.003	8.5	ug/L	15	Standard
	Tl	205	321.7	4.7	**0.0304**	0.002	6.7	ug/L	13	Standard
	Pb	206	8239.2	0.3	**1.4051**	0.008	0.6	ug/L	264	Standard
	Pb	207	6707.8	0.3	**1.2527**	0.005	0.4	ug/L	222	Standard
	Pb	208	28813.8	0.3	**1.3177**	0.005	0.4	ug/L	959	Standard
	U	238	815.7	5.7	**0.1005**	0.006	5.9	ug/L	9	Standard
>	Bi	209	555326.9	0.6				ug/L	552821	Standard

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 13:21:49
Page 1

Approved: July 02, 2016

Na	23	11.7	89.2	**29.1295**	26.033	89.4	mg/L	2	Standard
Mg	24	145830.2	1.6	**142.9963**	1.122	0.8	mg/L	55	Standard
K	39	1910.1	4.3	**6.0209**	0.304	5.1	mg/L	28	Standard
Ca	43	1011.7	3.6	**74.7713**	3.380	4.5	mg/L	27	Standard
Fe	54	1358.4	2.2	**0.7959**	0.027	3.4	mg/L	147	Standard
Fe	57	1346.7	4.5	**2.6702**	0.125	4.7	mg/L	268	Standard
> **Sc-1**	45	49029.2	0.9				mg/L	41174	Standard
Cl	35	174677.8	0.8				ug/L	69550	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1284910.2	3.2				ug/L	1950	Standard
P	31	34656.3	1.1				ug/L	21156	Standard
S	34	3823.8	7.2				ug/L	3419	Standard
Sr	88	1511.7	7.3				ug/L	72	Standard
C	12	326.7	14.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1320.1	5.5				mg/L	17	Standard
Dy	164	1289.7	16.2				mg/L	16	Standard
Ho-1	165	185.0	14.3				mg/L	7	Standard
Er	166	146.7	50.3				mg/L	7	Standard
I	127	128302.1	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.087	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.362	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 13:21:49
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.444
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.453
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 13:21:49
Page 3

Approved: July 02, 2016

Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 13:21:49
Page 4

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606146801
Sample Date/Time: Friday, July 01, 2016 13:22:43
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95246.8	1.7				ug/L	76456	Standard
	Be	9	60.0	36.3	**0.0230**	0.015	65.8	ug/L	20	Standard
	Al	27	35472226.0	0.8	**166.3429**	2.244	1.3	ug/L	1307	Standard
	Sc	45	46670.1	1.2				ug/L	41174	Standard
	Ti	47	140.0	21.5	**0.3094**	0.088	28.6	ug/L	27	Standard
	V	51	4190.3	5.3	**0.2681**	0.025	9.2	ug/L	1434	Standard
	Cr	52	13346.9	2.4	**0.5405**	0.016	3.1	ug/L	7733	Standard
	Cr	53	6873.2	1.9	**5.8101**	0.177	3.1	ug/L	442	Standard
	Mn	55	19772.6	3.3	**2.2894**	0.049	2.1	ug/L	723	Standard
	Co	59	1288.4	10.2	**0.1244**	0.014	11.2	ug/L	217	Standard
	Ni	60	3544.7	6.0	**1.4102**	0.074	5.2	ug/L	304	Standard
	Cu	65	6205.3	5.0	**2.7088**	0.103	3.8	ug/L	181	Standard
	Zn	66	22108.8	2.9	**16.3375**	0.265	1.6	ug/L	215	Standard
>	**Ge**	72	568906.9	1.3				ug/L	520809	Standard
	As	75	543.4	5.2	**0.4480**	0.017	3.7	ug/L	-52	Standard
	Se	82	262.1	5.1	**1.7720**	0.073	4.1	ug/L	17	Standard
	Se-1	77	440.0	5.3	**4.0275**	0.247	6.1	ug/L	56	Standard
>	**Ga**	71	158.3	3.6				mg/L	25	Standard
	Rb	85	31255.6	3.8				ug/L	28	Standard
	Y	89	486688.8	1.2				ug/L	447395	Standard
>	**Rh**	103	48.3	15.8				ug/L	15	Standard
	Mo	98	2311.5	33.1	**0.6846**	0.225	32.9	ug/L	113	Standard
	Ag	107	184.3	31.5	**0.0110**	0.007	66.0	ug/L	108	Standard
	Cd	111	67.6	38.4	**0.0249**	0.010	40.7	mg/L	3	Standard
	Cd	114	137.0	32.2	**0.0223**	0.007	31.3	ug/L	20	Standard
>	**In**	115	673094.9	1.4				ug/L	625728	Standard
	Sn	118	1788.4	15.0	**0.1745**	0.042	24.3	ug/L	568	Standard
	Sb	123	351.8	14.1	**0.0296**	0.010	32.6	ug/L	612	Standard
	Ba	135	56024.1	0.9	**23.9231**	0.201	0.8	ug/L	21	Standard
	Ce	140	3798.8	2.1				ug/L	245	Standard
>	**Tb**	159	1033945.4	1.1				ug/L	950397	Standard
	Ho	165	101.7	7.5				ug/L	7	Standard
	Tl	203	1144.4	9.6	**0.1229**	0.010	8.3	ug/L	15	Standard
	Tl	205	953.4	4.2	**0.1063**	0.005	4.8	ug/L	13	Standard
	Pb	206	1672.1	2.6	**0.2429**	0.007	2.7	ug/L	264	Standard
	Pb	207	1423.7	2.4	**0.2227**	0.003	1.2	ug/L	222	Standard
	Pb	208	6035.8	3.4	**0.2307**	0.005	2.3	ug/L	959	Standard
	U	238	4452.3	3.5	**0.5357**	0.011	2.0	ug/L	9	Standard
>	**Bi**	209	569516.4	1.6				ug/L	552821	Standard

Sample ID: L1606146801
Report Date/Time: Friday, July 01, 2016 13:25:00
Page 1

Approved: July 02, 2016

Na	23	8.3	34.6	**21.9971**	7.770	35.3	mg/L	2	Standard
Mg	24	21678.8	1.3	**22.2848**	0.435	2.0	mg/L	55	Standard
K	39	2645.2	6.0	**8.8196**	0.578	6.6	mg/L	28	Standard
Ca	43	443.3	15.1	**33.0787**	5.254	15.9	mg/L	27	Standard
Fe	54	243.9	19.5	**0.0697**	0.031	44.8	mg/L	147	Standard
Fe	57	548.3	7.8	**0.6829**	0.122	17.9	mg/L	268	Standard
Sc-1	45	46670.1	1.2				mg/L	41174	Standard
Cl	35	103993.1	1.8				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	45849.6	8.7				ug/L	1950	Standard
P	31	27049.2	4.2				ug/L	21156	Standard
S	34	3738.8	3.2				ug/L	3419	Standard
Sr	88	155.0	11.6				ug/L	72	Standard
C	12	323.3	23.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	17	Standard
Dy	164	114.1	9.2				mg/L	16	Standard
Ho-1	165	101.7	7.5				mg/L	7	Standard
Er	166	123.3	9.4				mg/L	7	Standard
I	127	41777.5	0.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		124.578	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.235	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606146801
Report Date/Time: Friday, July 01, 2016 13:25:00
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.570
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.020
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606146801PS WG574824-01
Sample Date/Time: Friday, July 01, 2016 13:25:55
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90108.8	0.5				ug/L	76456	Standard
	Be	9	70249.2	1.7	**53.2245**	0.671	1.3	ug/L	20	Standard
	Al	27	34044331.9	1.0	**168.7325**	2.084	1.2	ug/L	1307	Standard
	Sc	45	45399.6	0.8				ug/L	41174	Standard
	Ti	47	138.7	17.3	**0.3148**	0.070	22.1	ug/L	27	Standard
	V	51	476317.0	1.0	**54.1491**	0.294	0.5	ug/L	1434	Standard
	Cr	52	466031.0	0.5	**53.0857**	0.077	0.1	ug/L	7733	Standard
	Cr	53	63049.2	0.3	**58.0938**	0.175	0.3	ug/L	442	Standard
	Mn	55	440401.5	1.9	**54.4612**	0.687	1.3	ug/L	723	Standard
	Co	59	434977.5	1.9	**53.2245**	0.684	1.3	ug/L	217	Standard
	Ni	60	116940.2	0.8	**52.7068**	0.130	0.2	ug/L	304	Standard
	Cu	65	117328.2	0.6	**53.8548**	0.631	1.2	ug/L	181	Standard
	Zn	66	90120.9	0.2	**68.8123**	0.512	0.7	ug/L	215	Standard
>	Ge	72	555295.5	0.6				ug/L	520809	Standard
	As	75	70805.4	0.6	**53.8379**	0.372	0.7	ug/L	-52	Standard
	Se	82	7397.3	0.8	**54.7911**	0.368	0.7	ug/L	17	Standard
	Se-1	77	5164.9	2.2	**55.9837**	1.347	2.4	ug/L	56	Standard
>	Ga	71	125.0	14.4				mg/L	25	Standard
	Rb	85	30505.7	1.7				ug/L	28	Standard
	Y	89	478605.6	2.2				ug/L	447395	Standard
>	Rh	103	46.7	43.3				ug/L	15	Standard
	Mo	98	839.0	9.3	**0.2402**	0.025	10.4	ug/L	113	Standard
	Ag	107	377133.6	0.1	**49.9818**	0.291	0.6	ug/L	108	Standard
	Cd	111	125097.0	1.5	**51.7283**	0.533	1.0	mg/L	3	Standard
	Cd	114	305450.5	0.6	**51.0188**	0.497	1.0	ug/L	20	Standard
>	In	115	657251.3	0.6				ug/L	625728	Standard
	Sn	118	2133.5	27.9	**0.2313**	0.087	37.7	ug/L	568	Standard
	Sb	123	274150.2	2.6	**50.4698**	1.311	2.6	ug/L	612	Standard
	Ba	135	169708.2	1.1	**74.2483**	0.737	1.0	ug/L	21	Standard
	Ce	140	3655.4	2.8				ug/L	245	Standard
>	Tb	159	997893.3	1.3				ug/L	950397	Standard
	Ho	165	96.7	3.0				ug/L	7	Standard
	Tl	203	479768.6	1.3	**52.5300**	0.668	1.3	ug/L	15	Standard
	Tl	205	441867.2	0.2	**54.4752**	0.081	0.1	ug/L	13	Standard
	Pb	206	307910.6	0.5	**53.4209**	0.305	0.6	ug/L	264	Standard
	Pb	207	270893.2	0.6	**51.7493**	0.347	0.7	ug/L	222	Standard
	Pb	208	1132008.2	0.1	**52.9464**	0.115	0.2	ug/L	959	Standard
	U	238	437881.5	0.7	**53.3944**	0.388	0.7	ug/L	9	Standard
>	Bi	209	562372.5	0.1				ug/L	552821	Standard

Sample ID: L1606146801PS WG574824-01
Report Date/Time: Friday, July 01, 2016 13:28:12
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.0238**	15.621	173.1	mg/L	2	Standard
Mg	24	21021.2	2.0	**22.2136**	0.609	2.7	mg/L	55	Standard
K	39	2403.5	9.2	**8.2292**	0.795	9.7	mg/L	28	Standard
Ca	43	463.3	6.3	**35.7330**	2.393	6.7	mg/L	27	Standard
Fe	54	243.1	16.8	**0.0741**	0.029	39.0	mg/L	147	Standard
Fe	57	501.7	6.6	**0.5936**	0.084	14.1	mg/L	268	Standard
> **Sc-1**	45	45399.6	0.8				mg/L	41174	Standard
Cl	35	103755.4	0.3				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	34723.1	4.1				ug/L	1950	Standard
P	31	26186.0	3.6				ug/L	21156	Standard
S	34	3878.8	0.5				ug/L	3419	Standard
Sr	88	156.7	22.4				ug/L	72	Standard
C	12	250.0	6.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	17	Standard
Dy	164	122.0	12.6				mg/L	16	Standard
Ho-1	165	96.7	3.0				mg/L	7	Standard
Er	166	96.7	21.5				mg/L	7	Standard
I	127	39521.5	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.622	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606146801PS WG574824-01
Report Date/Time: Friday, July 01, 2016 13:28:12
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.038
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.728
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606146801PS WG574824-01
Report Date/Time: Friday, July 01, 2016 13:28:12
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606146801SDL WG574824-02
Sample Date/Time: Friday, July 01, 2016 13:29:06
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81934.4	2.4				ug/L	76456	Standard
	Be	9	23.3	12.4	**-0.0004**	0.002	528.6	ug/L	20	Standard
	Al	27	6372058.3	0.6	**34.7368**	0.867	2.5	ug/L	1307	Standard
	Sc	45	41202.6	2.0				ug/L	41174	Standard
	Ti	47	41.3	2.8	**0.0406**	0.003	7.7	ug/L	27	Standard
	V	51	2837.9	5.4	**0.1420**	0.017	12.0	ug/L	1434	Standard
	Cr	52	10022.3	0.9	**0.2524**	0.016	6.4	ug/L	7733	Standard
	Cr	53	2263.5	3.6	**1.7926**	0.079	4.4	ug/L	442	Standard
	Mn	55	3961.5	5.6	**0.4150**	0.030	7.3	ug/L	723	Standard
	Co	59	455.7	11.3	**0.0293**	0.007	23.1	ug/L	217	Standard
	Ni	60	945.7	5.5	**0.2966**	0.026	8.9	ug/L	304	Standard
	Cu	65	1313.7	2.7	**0.5610**	0.018	3.2	ug/L	181	Standard
	Zn	66	5244.2	0.6	**4.0427**	0.043	1.1	ug/L	215	Standard
>	**Ge**	72	527921.1	0.4				ug/L	520809	Standard
	As	75	85.0	19.3	**0.1131**	0.013	11.5	ug/L	-52	Standard
	Se	82	67.2	5.5	**0.3985**	0.027	6.7	ug/L	17	Standard
	Se-1	77	133.3	10.0	**0.8545**	0.159	18.6	ug/L	56	Standard
>	**Ga**	71	51.7	34.0				mg/L	25	Standard
	Rb	85	5692.7	3.6				ug/L	28	Standard
	Y	89	450949.6	1.2				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	345.8	14.9	**0.0912**	0.015	16.7	ug/L	113	Standard
	Ag	107	237.3	15.4	**0.0205**	0.005	24.9	ug/L	108	Standard
	Cd	111	35.8	40.8	**0.0133**	0.006	46.9	mg/L	3	Standard
	Cd	114	93.4	10.0	**0.0165**	0.001	8.4	ug/L	20	Standard
>	**In**	115	620231.7	1.6				ug/L	625728	Standard
	Sn	118	866.7	12.4	**0.0518**	0.019	35.8	ug/L	568	Standard
	Sb	123	1735.5	30.3	**0.3061**	0.107	34.9	ug/L	612	Standard
	Ba	135	10779.2	0.9	**4.9812**	0.056	1.1	ug/L	21	Standard
	Ce	140	791.7	4.9				ug/L	245	Standard
>	**Tb**	159	942729.5	1.8				ug/L	950397	Standard
	Ho	165	28.3	36.7				ug/L	7	Standard
	Tl	203	339.3	13.7	**0.0372**	0.005	12.3	ug/L	15	Standard
	Tl	205	293.3	14.5	**0.0272**	0.005	18.3	ug/L	13	Standard
	Pb	206	612.0	8.4	**0.0647**	0.008	11.7	ug/L	264	Standard
	Pb	207	519.7	9.7	**0.0553**	0.008	14.9	ug/L	222	Standard
	Pb	208	2221.7	7.6	**0.0579**	0.007	11.9	ug/L	959	Standard
	U	238	900.0	3.6	**0.1118**	0.003	3.1	ug/L	9	Standard
>	**Bi**	209	550585.9	1.6				ug/L	552821	Standard

Sample ID: L1606146801SDL WG574824-02
Report Date/Time: Friday, July 01, 2016 13:31:23
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.0521**	8.742	173.0	mg/L	2	Standard
Mg	24	4062.2	4.3	**4.6808**	0.132	2.8	mg/L	55	Standard
K	39	498.3	11.6	**1.7809**	0.252	14.1	mg/L	28	Standard
Ca	43	101.7	7.5	**6.7726**	0.507	7.5	mg/L	27	Standard
Fe	54	107.3	30.2	**-0.0145**	0.026	180.3	mg/L	147	Standard
Fe	57	291.7	13.3	**0.0919**	0.123	133.6	mg/L	268	Standard
> **Sc-1**	45	41202.6	2.0				mg/L	41174	Standard
Cl	35	96829.8	0.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	10183.4	2.4				ug/L	1950	Standard
P	31	11094.1	2.9				ug/L	21156	Standard
S	34	3683.8	0.7				ug/L	3419	Standard
Sr	88	95.0	24.1				ug/L	72	Standard
C	12	163.3	7.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	17	Standard
Dy	164	29.5	32.3				mg/L	16	Standard
Ho-1	165	28.3	36.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	35264.3	1.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.166	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.366	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606146801SDL WG574824-02
Report Date/Time: Friday, July 01, 2016 13:31:23
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.122
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.596
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 13:32:18
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83467.6	1.4				ug/L	76456	Standard
	Be	9	63718.7	0.7	**52.1231**	0.475	0.9	ug/L	20	Standard
	Al	27	9062605.1	0.9	**48.4842**	0.275	0.6	ug/L	1307	Standard
	Sc	45	44059.0	1.3				ug/L	41174	Standard
	Ti	47	34404.0	1.1	**99.0094**	0.671	0.7	ug/L	27	Standard
	V	51	443244.1	0.4	**50.4051**	0.454	0.9	ug/L	1434	Standard
	Cr	52	434951.0	1.6	**49.5050**	0.344	0.7	ug/L	7733	Standard
	Cr	53	55258.9	0.5	**50.8922**	0.303	0.6	ug/L	442	Standard
	Mn	55	403371.8	0.9	**49.9032**	0.315	0.6	ug/L	723	Standard
	Co	59	418724.4	1.0	**51.2643**	0.239	0.5	ug/L	217	Standard
	Ni	60	110119.8	2.0	**49.6473**	0.559	1.1	ug/L	304	Standard
	Cu	65	108317.9	1.6	**49.7353**	0.387	0.8	ug/L	181	Standard
	Zn	66	65643.9	0.2	**50.1012**	0.420	0.8	ug/L	215	Standard
>	**Ge**	72	555003.0	0.9				ug/L	520809	Standard
	As	75	65592.7	0.9	**49.9040**	0.350	0.7	ug/L	-52	Standard
	Se	82	6752.9	1.3	**50.0327**	0.319	0.6	ug/L	17	Standard
	Se-1	77	4634.4	1.8	**50.1857**	0.510	1.0	ug/L	56	Standard
>	**Ga**	71	43.3	43.7				mg/L	25	Standard
	Rb	85	895.0	1.7				ug/L	28	Standard
	Y	89	470300.0	1.3				ug/L	447395	Standard
>	**Rh**	103	21.7	53.3				ug/L	15	Standard
	Mo	98	316268.1	0.4	**99.0881**	0.889	0.9	ug/L	113	Standard
	Ag	107	376354.5	0.2	**49.6535**	0.293	0.6	ug/L	108	Standard
	Cd	111	120441.8	1.1	**49.5792**	0.292	0.6	mg/L	3	Standard
	Cd	114	295637.4	1.1	**49.1550**	0.340	0.7	ug/L	20	Standard
>	**In**	115	660227.7	0.5				ug/L	625728	Standard
	Sn	118	331178.7	0.6	**48.6841**	0.135	0.3	ug/L	568	Standard
	Sb	123	273404.4	0.5	**50.1048**	0.039	0.1	ug/L	612	Standard
	Ba	135	110185.5	0.7	**47.9831**	0.253	0.5	ug/L	21	Standard
	Ce	140	71.7	8.1				ug/L	245	Standard
>	**Tb**	159	984792.3	0.6				ug/L	950397	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	462531.1	0.4	**50.2621**	0.297	0.6	ug/L	15	Standard
	Tl	205	421818.4	1.3	**51.6134**	0.810	1.6	ug/L	13	Standard
	Pb	206	290494.8	0.7	**50.0181**	0.451	0.9	ug/L	264	Standard
	Pb	207	263168.3	0.9	**49.8939**	0.483	1.0	ug/L	222	Standard
	Pb	208	1101207.6	0.2	**51.1172**	0.228	0.4	ug/L	959	Standard
	U	238	418119.7	0.4	**50.6018**	0.328	0.6	ug/L	9	Standard
>	**Bi**	209	566634.4	0.3				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 13:34:35
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4939.1	6.4	**5.3310**	0.320	6.0	mg/L	55	Standard
K	39	1245.1	5.8	**4.3288**	0.211	4.9	mg/L	28	Standard
Ca	43	85.0	25.6	**4.7651**	1.854	38.9	mg/L	27	Standard
Fe	54	6867.9	1.6	**4.9353**	0.136	2.8	mg/L	147	Standard
Fe	57	2071.8	2.6	**5.1454**	0.157	3.1	mg/L	268	Standard
> **Sc-1**	45	44059.0	1.3				mg/L	41174	Standard
Cl	35	90383.1	4.1				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	4354.0	6.6				ug/L	1950	Standard
P	31	26625.0	1.6				ug/L	21156	Standard
S	34	4595.7	0.9				ug/L	3419	Standard
Sr	88	73.3	21.9				ug/L	72	Standard
C	12	80.0	25.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	9.7	105.8				mg/L	16	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	17566.9	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.246		
Al	27	96.968		
Sc	45			
Ti	47	99.009		
V	51	100.810		
Cr	52	99.010		
Cr	53			
Mn	55	99.806		
Co	59	102.529		
Ni	60	99.295		
Cu	65	99.471		
Zn	66	100.202		
> Ge	72		106.565	
As	75	99.808		
Se	82	100.065		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 13:34:35
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	99.088		
Ag	107	99.307		
Cd	111	99.158		
Cd	114			
In	115			105.514
Sn	118	97.368		
Sb	123	100.210		
Ba	135	95.966		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.524		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.234		
U	238	101.204		
Bi	209			102.499
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 13:34:35
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 13:35:30
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81907.5	2.0				ug/L	76456	Standard
	Be	9	33.3	37.7	**0.0081**	0.011	136.7	ug/L	20	Standard
	Al	27	3658.8	6.2	**0.0097**	0.001	9.1	ug/L	1307	Standard
	Sc	45	43395.4	0.6				ug/L	41174	Standard
	Ti	47	24.0	4.2	**-0.0151**	0.003	16.8	ug/L	27	Standard
	V	51	1486.9	6.2	**-0.0280**	0.012	41.3	ug/L	1434	Standard
	Cr	52	7626.6	0.2	**-0.0811**	0.008	9.6	ug/L	7733	Standard
	Cr	53	623.3	4.9	**0.1647**	0.029	17.3	ug/L	442	Standard
	Mn	55	758.4	6.6	**-0.0069**	0.006	85.9	ug/L	723	Standard
	Co	59	258.3	7.6	**0.0024**	0.003	111.1	ug/L	217	Standard
	Ni	60	313.7	6.6	**-0.0106**	0.010	91.1	ug/L	304	Standard
	Cu	65	185.7	9.2	**0.0117**	0.008	71.7	ug/L	181	Standard
	Zn	66	252.7	5.5	**0.0142**	0.012	81.1	ug/L	215	Standard
>	**Ge**	72	552319.3	0.7				ug/L	520809	Standard
	As	75	-27.0	147.4	**0.0246**	0.030	123.9	ug/L	-52	Standard
	Se	82	28.2	27.0	**0.0839**	0.058	69.1	ug/L	17	Standard
	Se-1	77	72.0	11.0	**0.1099**	0.092	83.3	ug/L	56	Standard
>	**Ga**	71	16.7	62.4				mg/L	25	Standard
	Rb	85	41.7	61.6				ug/L	28	Standard
	Y	89	471686.6	0.8				ug/L	447395	Standard
>	**Rh**	103	6.7	114.6				ug/L	15	Standard
	Mo	98	354.1	7.5	**0.0877**	0.008	9.3	ug/L	113	Standard
	Ag	107	160.0	3.9	**0.0084**	0.001	9.7	ug/L	108	Standard
	Cd	111	21.1	31.9	**0.0064**	0.003	43.8	mg/L	3	Standard
	Cd	114	42.3	49.2	**0.0071**	0.003	48.8	ug/L	20	Standard
>	**In**	115	656112.9	0.3				ug/L	625728	Standard
	Sn	118	1841.8	22.7	**0.1887**	0.062	32.7	ug/L	568	Standard
	Sb	123	1164.1	37.2	**0.1810**	0.080	44.0	ug/L	612	Standard
	Ba	135	49.7	23.3	**0.0039**	0.005	131.8	ug/L	21	Standard
	Ce	140	23.3	81.1				ug/L	245	Standard
>	**Tb**	159	980631.2	1.7				ug/L	950397	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	97.0	22.3	**0.0098**	0.002	24.1	ug/L	15	Standard
	Tl	205	98.3	10.6	**0.0022**	0.001	58.4	ug/L	13	Standard
	Pb	206	329.0	7.5	**0.0127**	0.004	31.8	ug/L	264	Standard
	Pb	207	298.7	13.9	**0.0104**	0.008	73.2	ug/L	222	Standard
	Pb	208	1210.7	3.3	**0.0078**	0.002	20.2	ug/L	959	Standard
	U	238	84.3	9.6	**0.0099**	0.001	9.3	ug/L	9	Standard
>	**Bi**	209	568472.1	0.5				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 13:37:47
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	32.8	**-0.0177**	0.014	79.8	mg/L	55	Standard
K	39	20.0	43.3	**-0.0585**	0.031	53.1	mg/L	28	Standard
Ca	43	10.0	50.0	**-1.5919**	0.429	27.0	mg/L	27	Standard
Fe	54	159.5	25.8	**0.0198**	0.030	153.3	mg/L	147	Standard
Fe	57	218.3	15.2	**-0.1678**	0.094	56.0	mg/L	268	Standard
Sc-1	45	43395.4	0.6				mg/L	41174	Standard
Cl	35	88102.1	0.5				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	3323.7	4.5				ug/L	1950	Standard
P	31	24955.5	2.9				ug/L	21156	Standard
S	34	4405.6	3.7				ug/L	3419	Standard
Sr	88	81.7	3.5				ug/L	72	Standard
C	12	120.0	8.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	-1.1	49.5				mg/L	16	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	7	Standard
I	127	13129.0	1.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.050	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 13:37:47
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.856
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.831
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 13:37:47
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606147001
Sample Date/Time: Friday, July 01, 2016 13:38:42
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81631.0	0.4				ug/L	76456	Standard
	Be	9	53.3	51.6	**0.0248**	0.023	93.4	ug/L	20	Standard
	Al	27	1267924.9	0.3	**6.9269**	0.012	0.2	ug/L	1307	Standard
	Sc	45	44398.3	2.2				ug/L	41174	Standard
	Ti	47	2584.6	3.5	**7.4850**	0.306	4.1	ug/L	27	Standard
	V	51	6589.9	3.8	**0.5661**	0.025	4.4	ug/L	1434	Standard
	Cr	52	17924.3	2.1	**1.1443**	0.040	3.5	ug/L	7733	Standard
	Cr	53	3320.4	0.9	**2.7174**	0.024	0.9	ug/L	442	Standard
	Mn	55	64462.5	1.4	**8.0226**	0.071	0.9	ug/L	723	Standard
	Co	59	2066.5	2.4	**0.2279**	0.005	2.1	ug/L	217	Standard
	Ni	60	3389.4	1.0	**1.4053**	0.013	0.9	ug/L	304	Standard
	Cu	65	36919.6	0.8	**17.1868**	0.112	0.7	ug/L	181	Standard
	Zn	66	100190.5	0.7	**77.8387**	0.507	0.7	ug/L	215	Standard
>	**Ge**	72	545904.9	0.6				ug/L	520809	Standard
	As	75	297.3	18.2	**0.2747**	0.041	14.8	ug/L	-52	Standard
	Se	82	57.3	13.9	**0.3062**	0.059	19.1	ug/L	17	Standard
	Se-1	77	123.0	8.6	**0.6885**	0.126	18.3	ug/L	56	Standard
>	**Ga**	71	431.7	8.5				mg/L	25	Standard
	Rb	85	29366.8	1.1				ug/L	28	Standard
	Y	89	475138.4	0.5				ug/L	447395	Standard
>	**Rh**	103	50.0	45.8				ug/L	15	Standard
	Mo	98	2283.8	2.0	**0.7046**	0.016	2.2	ug/L	113	Standard
	Ag	107	471.3	8.2	**0.0505**	0.006	10.9	ug/L	108	Standard
	Cd	111	442.4	4.4	**0.1831**	0.009	4.8	mg/L	3	Standard
	Cd	114	1113.8	8.0	**0.1885**	0.014	7.5	ug/L	20	Standard
>	**In**	115	648548.7	0.6				ug/L	625728	Standard
	Sn	118	6074.6	8.1	**0.8267**	0.078	9.5	ug/L	568	Standard
	Sb	123	3585.4	3.4	**0.6357**	0.026	4.1	ug/L	612	Standard
	Ba	135	28482.1	1.1	**12.6131**	0.063	0.5	ug/L	21	Standard
	Ce	140	9227.8	4.3				ug/L	245	Standard
>	**Tb**	159	980514.4	0.6				ug/L	950397	Standard
	Ho	165	175.0	22.7				ug/L	7	Standard
	Tl	203	154.0	7.9	**0.0159**	0.001	7.9	ug/L	15	Standard
	Tl	205	146.7	61.1	**0.0082**	0.011	135.5	ug/L	13	Standard
	Pb	206	300241.0	0.6	**51.5086**	0.588	1.1	ug/L	264	Standard
	Pb	207	251797.0	0.4	**47.5618**	0.476	1.0	ug/L	222	Standard
	Pb	208	1082895.4	0.4	**50.0819**	0.392	0.8	ug/L	959	Standard
	U	238	477.3	8.6	**0.0573**	0.005	9.4	ug/L	9	Standard
>	**Bi**	209	568731.4	0.7				ug/L	552821	Standard

Sample ID: L1606147001
Report Date/Time: Friday, July 01, 2016 13:40:59
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4449.0	1.5	**4.7618**	0.165	3.5	mg/L	55	Standard
K	39	216.7	12.7	**0.6389**	0.091	14.3	mg/L	28	Standard
Ca	43	100.0	13.2	**5.9773**	1.125	18.8	mg/L	27	Standard
Fe	54	785.4	6.3	**0.4720**	0.024	5.1	mg/L	147	Standard
Fe	57	430.0	12.3	**0.4211**	0.144	34.2	mg/L	268	Standard
> **Sc-1**	45	44398.3	2.2				mg/L	41174	Standard
Cl	35	84373.7	2.1				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	8569.1	5.7				ug/L	1950	Standard
P	31	27454.9	2.2				ug/L	21156	Standard
S	34	3758.8	6.0				ug/L	3419	Standard
Sr	88	151.7	5.0				ug/L	72	Standard
C	12	163.3	44.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	436.7	46.5				mg/L	17	Standard
Dy	164	239.6	2.7				mg/L	16	Standard
Ho-1	165	175.0	22.7				mg/L	7	Standard
Er	166	146.7	15.7				mg/L	7	Standard
I	127	165778.6	7.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.769	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.819	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606147001
Report Date/Time: Friday, July 01, 2016 13:40:59
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.647
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.878
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606147101
Sample Date/Time: Friday, July 01, 2016 13:41:54
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82165.6	1.5				ug/L	76456	Standard
	Be	9	25.0	60.0	**0.0010**	0.013	1235.0	ug/L	20	Standard
	Al	27	7420176.1	1.8	**40.3263**	0.745	1.8	ug/L	1307	Standard
	Sc	45	43403.8	1.8				ug/L	41174	Standard
	Ti	47	118.3	2.1	**0.2622**	0.007	2.8	ug/L	27	Standard
	V	51	2485.8	8.9	**0.0901**	0.026	28.6	ug/L	1434	Standard
	Cr	52	11852.6	4.6	**0.4290**	0.067	15.6	ug/L	7733	Standard
	Cr	53	3065.3	10.5	**2.4783**	0.300	12.1	ug/L	442	Standard
	Mn	55	13532.4	4.2	**1.6054**	0.074	4.6	ug/L	723	Standard
	Co	59	973.4	27.9	**0.0919**	0.034	37.1	ug/L	217	Standard
	Ni	60	2788.9	4.3	**1.1302**	0.057	5.1	ug/L	304	Standard
	Cu	65	167698.1	1.5	**78.3834**	1.378	1.8	ug/L	181	Standard
	Zn	66	18490.9	1.1	**14.2285**	0.192	1.3	ug/L	215	Standard
>	Ge	72	545541.7	0.2				ug/L	520809	Standard
	As	75	56.9	102.5	**0.0892**	0.045	50.6	ug/L	-52	Standard
	Se	82	46.0	7.1	**0.2215**	0.025	11.4	ug/L	17	Standard
	Se-1	77	165.0	10.0	**1.1579**	0.182	15.8	ug/L	56	Standard
>	Ga	71	40.0	45.1				mg/L	25	Standard
	Rb	85	1635.1	4.7				ug/L	28	Standard
	Y	89	467449.1	1.6				ug/L	447395	Standard
>	Rh	103	46.7	27.0				ug/L	15	Standard
	Mo	98	638.2	33.3	**0.1798**	0.068	38.0	ug/L	113	Standard
	Ag	107	803.4	8.9	**0.0950**	0.010	10.3	ug/L	108	Standard
	Cd	111	142.8	28.8	**0.0575**	0.017	29.9	mg/L	3	Standard
	Cd	114	382.8	34.4	**0.0647**	0.022	33.9	ug/L	20	Standard
>	In	115	648871.9	1.3				ug/L	625728	Standard
	Sn	118	1820.1	16.8	**0.1889**	0.050	26.3	ug/L	568	Standard
	Sb	123	517.0	31.6	**0.0630**	0.032	50.1	ug/L	612	Standard
	Ba	135	105021.4	1.0	**46.5367**	0.469	1.0	ug/L	21	Standard
	Ce	140	176.7	12.8				ug/L	245	Standard
>	Tb	159	974106.7	1.7				ug/L	950397	Standard
	Ho	165	20.0	43.3				ug/L	7	Standard
	Tl	203	182.7	61.2	**0.0196**	0.013	64.0	ug/L	15	Standard
	Tl	205	260.0	110.0	**0.0228**	0.036	157.4	ug/L	13	Standard
	Pb	206	1477.4	2.4	**0.2162**	0.008	3.6	ug/L	264	Standard
	Pb	207	1248.7	8.1	**0.1959**	0.021	10.5	ug/L	222	Standard
	Pb	208	5698.4	18.4	**0.2221**	0.051	22.9	ug/L	959	Standard
	U	238	669.4	46.7	**0.0825**	0.039	47.3	ug/L	9	Standard
>	Bi	209	555056.3	0.6				ug/L	552821	Standard

Sample ID: L1606147101
Report Date/Time: Friday, July 01, 2016 13:44:11
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8267.3	1.5	**9.1027**	0.178	2.0	mg/L	55	Standard
K	39	178.3	20.3	**0.5189**	0.142	27.4	mg/L	28	Standard
Ca	43	265.0	15.0	**20.3615**	3.046	15.0	mg/L	27	Standard
Fe	54	255.7	20.5	**0.0914**	0.039	42.6	mg/L	147	Standard
Fe	57	411.7	6.1	**0.3970**	0.095	23.9	mg/L	268	Standard
> **Sc-1**	45	43403.8	1.8				mg/L	41174	Standard
Cl	35	91879.7	0.6				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	5647.7	9.0				ug/L	1950	Standard
P	31	26070.8	4.0				ug/L	21156	Standard
S	34	4028.9	4.5				ug/L	3419	Standard
Sr	88	183.3	6.3				ug/L	72	Standard
C	12	180.0	24.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	57.3				mg/L	17	Standard
Dy	164	38.6	26.6				mg/L	16	Standard
Ho-1	165	20.0	43.3				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	7	Standard
I	127	15740.0	17.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.468	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.749	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606147101
Report Date/Time: Friday, July 01, 2016 13:44:11
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.699
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606153601 WG574593-01
Sample Date/Time: Friday, July 01, 2016 13:45:05
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	105632.1	2.8				ug/L	76456	Standard
	Be	9	31.7	39.7	**0.0005**	0.008	1597.2	ug/L	20	Standard
	Al	27	9212844.4	2.9	**38.9423**	0.330	0.8	ug/L	1307	Standard
	Sc	45	37845.6	1.8				ug/L	41174	Standard
	Ti	47	303.7	8.6	**0.9123**	0.111	12.1	ug/L	27	Standard
	V	51	24245.6	11.6	**2.9541**	0.410	13.9	ug/L	1434	Standard
	Cr	52	16917.1	2.1	**1.2643**	0.091	7.2	ug/L	7733	Standard
	Cr	53	9354.6	13.4	**9.4775**	1.472	15.5	ug/L	442	Standard
	Mn	55	60166.6	2.3	**8.3838**	0.064	0.8	ug/L	723	Standard
	Co	59	59968.5	3.2	**8.3264**	0.059	0.7	ug/L	217	Standard
	Ni	60	11329.9	3.4	**5.6751**	0.056	1.0	ug/L	304	Standard
	Cu	65	10538.7	5.5	**5.4379**	0.239	4.4	ug/L	181	Standard
	Zn	66	77341.6	1.9	**67.2161**	0.503	0.7	ug/L	215	Standard
>	Ge	72	487884.6	2.6				ug/L	520809	Standard
	As	75	3262.4	6.3	**2.8666**	0.175	6.1	ug/L	-52	Standard
	Se	82	371.0	19.1	**3.0068**	0.587	19.5	ug/L	17	Standard
	Se-1	77	623.3	8.4	**7.1096**	0.803	11.3	ug/L	56	Standard
>	Ga	71	1885.1	4.1				mg/L	25	Standard
	Rb	85	131658.3	3.5				ug/L	28	Standard
	Y	89	431897.9	2.3				ug/L	447395	Standard
>	Rh	103	143.3	38.9				ug/L	15	Standard
	Mo	98	627591.1	3.5	**227.1784**	5.050	2.2	ug/L	113	Standard
	Ag	107	276.3	2.5	**0.0293**	0.001	4.0	ug/L	108	Standard
	Cd	111	-404.3	7.2	**-0.1947**	0.015	7.6	mg/L	3	Standard
	Cd	114	1007.4	4.4	**0.1935**	0.003	1.7	ug/L	20	Standard
>	In	115	571506.3	2.8				ug/L	625728	Standard
	Sn	118	2893.6	2.8	**0.4084**	0.024	5.8	ug/L	568	Standard
	Sb	123	6941.9	4.4	**1.4365**	0.025	1.7	ug/L	612	Standard
	Ba	135	39683.6	1.8	**19.9579**	0.305	1.5	ug/L	21	Standard
	Ce	140	421.7	17.2				ug/L	245	Standard
>	Tb	159	912620.2	2.1				ug/L	950397	Standard
	Ho	165	31.7	24.1				ug/L	7	Standard
	Tl	203	8399.3	2.5	**1.0755**	0.030	2.8	ug/L	15	Standard
	Tl	205	7106.7	3.1	**1.0155**	0.022	2.2	ug/L	13	Standard
	Pb	206	2580.9	3.9	**0.4804**	0.009	1.9	ug/L	264	Standard
	Pb	207	2297.2	1.5	**0.4679**	0.011	2.3	ug/L	222	Standard
	Pb	208	9454.2	3.4	**0.4694**	0.008	1.7	ug/L	959	Standard
	U	238	1115.7	2.4	**0.1590**	0.005	3.3	ug/L	9	Standard
>	Bi	209	480711.3	2.7				ug/L	552821	Standard

Sample ID: L1606153601 WG574593-01
Report Date/Time: Friday, July 01, 2016 13:47:22
Page 1

Approved: July 02, 2016

Na	23	8.3	34.6	**27.1734**	9.738	35.8	mg/L	2	Standard
Mg	24	507921.7	2.6	**645.4329**	9.385	1.5	mg/L	55	Standard
K	39	415.0	4.8	**1.6014**	0.114	7.1	mg/L	28	Standard
Ca	43	481.7	12.6	**45.2243**	6.627	14.7	mg/L	27	Standard
Fe	54	127.9	17.8	**0.0101**	0.018	174.2	mg/L	147	Standard
Fe	57	770.0	11.3	**1.7671**	0.242	13.7	mg/L	268	Standard
Sc-1	45	37845.6	1.8				mg/L	41174	Standard
Cl	35	383189.3	2.3				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	30317.0	3.7				ug/L	1950	Standard
P	31	15528.0	3.6				ug/L	21156	Standard
S	34	3745.5	2.5				ug/L	3419	Standard
Sr	88	250.0	23.1				ug/L	72	Standard
C	12	176.7	14.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26862.7	37.9				mg/L	17	Standard
Dy	164	21.9	26.7				mg/L	16	Standard
Ho-1	165	31.7	24.1				mg/L	7	Standard
Er	166	30.0	66.7				mg/L	7	Standard
I	127	123380.9	8.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.161	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601 WG574593-01
Report Date/Time: Friday, July 01, 2016 13:47:22
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.335
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.956
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606153601 WG574593-01
Report Date/Time: Friday, July 01, 2016 13:47:22
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606153601DP WG574593-04
Sample Date/Time: Friday, July 01, 2016 13:48:17
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	113476.7	0.3				ug/L	76456	Standard
	Be	9	31.7	39.7	**-0.0008**	0.008	933.9	ug/L	20	Standard
	Al	27	9155815.3	1.0	**36.0246**	0.289	0.8	ug/L	1307	Standard
	Sc	45	38106.2	3.0				ug/L	41174	Standard
	Ti	47	317.7	11.6	**0.9598**	0.126	13.2	ug/L	27	Standard
	V	51	23799.7	13.5	**2.9030**	0.438	15.1	ug/L	1434	Standard
	Cr	52	15774.9	0.6	**1.1182**	0.010	0.9	ug/L	7733	Standard
	Cr	53	7253.4	7.9	**7.2700**	0.659	9.1	ug/L	442	Standard
	Mn	55	54277.4	0.5	**7.5755**	0.086	1.1	ug/L	723	Standard
	Co	59	56802.6	1.1	**7.9092**	0.067	0.8	ug/L	217	Standard
	Ni	60	10522.3	1.7	**5.2767**	0.120	2.3	ug/L	304	Standard
	Cu	65	10358.5	2.3	**5.3602**	0.097	1.8	ug/L	181	Standard
	Zn	66	63839.2	1.1	**55.6043**	0.258	0.5	ug/L	215	Standard
>	Ge	72	486471.3	0.9				ug/L	520809	Standard
	As	75	3361.1	6.7	**2.9591**	0.174	5.9	ug/L	-52	Standard
	Se	82	440.0	19.1	**3.5994**	0.683	19.0	ug/L	17	Standard
	Se-1	77	548.0	6.3	**6.1810**	0.486	7.9	ug/L	56	Standard
>	Ga	71	1580.1	9.0				mg/L	25	Standard
	Rb	85	128497.6	0.7				ug/L	28	Standard
	Y	89	437852.1	1.2				ug/L	447395	Standard
>	Rh	103	195.0	13.3				ug/L	15	Standard
	Mo	98	610817.8	0.2	**219.3028**	1.490	0.7	ug/L	113	Standard
	Ag	107	270.0	5.4	**0.0280**	0.002	7.9	ug/L	108	Standard
	Cd	111	-435.5	5.5	**-0.2078**	0.012	5.8	mg/L	3	Standard
	Cd	114	1008.9	7.4	**0.1923**	0.015	7.6	ug/L	20	Standard
>	In	115	576209.6	0.5				ug/L	625728	Standard
	Sn	118	2962.0	1.1	**0.4156**	0.007	1.7	ug/L	568	Standard
	Sb	123	5993.6	0.1	**1.2257**	0.006	0.5	ug/L	612	Standard
	Ba	135	37997.3	1.1	**18.9491**	0.250	1.3	ug/L	21	Standard
	Ce	140	438.3	13.3				ug/L	245	Standard
>	Tb	159	912922.8	0.6				ug/L	950397	Standard
	Ho	165	23.3	44.6				ug/L	7	Standard
	Tl	203	7035.6	2.0	**0.8846**	0.019	2.1	ug/L	15	Standard
	Tl	205	6231.3	4.9	**0.8732**	0.041	4.7	ug/L	13	Standard
	Pb	206	2197.2	4.0	**0.3947**	0.019	4.9	ug/L	264	Standard
	Pb	207	1945.1	0.8	**0.3813**	0.005	1.2	ug/L	222	Standard
	Pb	208	7974.8	0.5	**0.3808**	0.004	1.1	ug/L	959	Standard
	U	238	1110.0	6.5	**0.1553**	0.010	6.5	ug/L	9	Standard
>	Bi	209	489368.4	0.9				ug/L	552821	Standard

Sample ID: L1606153601DP WG574593-04
Report Date/Time: Friday, July 01, 2016 13:50:34
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.3506**	9.259	173.0	mg/L	2	Standard
Mg	24	497934.2	1.5	**628.6633**	12.777	2.0	mg/L	55	Standard
K	39	386.7	13.3	**1.4712**	0.210	14.3	mg/L	28	Standard
Ca	43	468.3	8.9	**43.5651**	4.343	10.0	mg/L	27	Standard
Fe	54	108.4	32.3	**-0.0071**	0.029	411.5	mg/L	147	Standard
Fe	57	688.3	12.0	**1.4795**	0.238	16.1	mg/L	268	Standard
> **Sc-1**	45	38106.2	3.0				mg/L	41174	Standard
Cl	35	369584.8	0.9				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	29598.9	3.8				ug/L	1950	Standard
P	31	15125.9	2.3				ug/L	21156	Standard
S	34	3780.5	5.9				ug/L	3419	Standard
Sr	88	230.0	13.6				ug/L	72	Standard
C	12	213.3	38.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30656.1	29.8				mg/L	17	Standard
Dy	164	16.0	70.4				mg/L	16	Standard
Ho-1	165	23.3	44.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	76869.6	2.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		148.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.407	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601DP WG574593-04
Report Date/Time: Friday, July 01, 2016 13:50:34
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	92.086	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	88.522	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606153601DP WG574593-04
Report Date/Time: Friday, July 01, 2016 13:50:34
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606153601S WG574593-05
Sample Date/Time: Friday, July 01, 2016 13:51:28
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	114783.5	3.4				ug/L	76456	Standard
	Be	9	31472.7	2.0	18.7219	0.754	4.0	ug/L	20	Standard
	Al	27	8967809.3	2.2	34.8925	0.413	1.2	ug/L	1307	Standard
	Sc	45	36838.1	2.1				ug/L	41174	Standard
	Ti	47	293.0	5.4	0.9041	0.043	4.8	ug/L	27	Standard
	V	51	144707.0	17.5	19.1390	3.192	16.7	ug/L	1434	Standard
	Cr	52	181657.1	2.0	23.7324	0.270	1.1	ug/L	7733	Standard
	Cr	53	26979.0	1.6	28.9363	0.245	0.8	ug/L	442	Standard
	Mn	55	196630.4	2.3	28.4601	0.390	1.4	ug/L	723	Standard
	Co	59	229358.7	1.0	32.8948	0.071	0.2	ug/L	217	Standard
	Ni	60	50822.4	1.0	26.7818	0.048	0.2	ug/L	304	Standard
	Cu	65	50564.2	0.8	27.1746	0.164	0.6	ug/L	181	Standard
	Zn	66	34538.3	0.8	30.8215	0.391	1.3	ug/L	215	Standard
>	Ge	72	473620.3	1.0				ug/L	520809	Standard
	As	75	32972.2	0.9	29.4152	0.246	0.8	ug/L	-52	Standard
	Se	82	3843.3	1.0	33.3303	0.606	1.8	ug/L	17	Standard
	Se-1	77	2661.6	3.4	33.5483	0.893	2.7	ug/L	56	Standard
>	Ga	71	381.7	15.1				mg/L	25	Standard
	Rb	85	125348.3	2.7				ug/L	28	Standard
	Y	89	429677.9	2.4				ug/L	447395	Standard
>	Rh	103	226.7	13.3				ug/L	15	Standard
	Mo	98	605966.7	1.3	219.9601	1.216	0.6	ug/L	113	Standard
	Ag	107	143805.9	1.0	21.9725	0.186	0.8	ug/L	108	Standard
	Cd	111	47375.9	2.4	22.5887	0.138	0.6	mg/L	3	Standard
	Cd	114	117916.6	2.4	22.7105	0.229	1.0	ug/L	20	Standard
>	In	115	569946.5	1.8				ug/L	625728	Standard
	Sn	118	2151.8	16.9	0.2836	0.068	23.8	ug/L	568	Standard
	Sb	123	117947.9	1.3	25.0246	0.247	1.0	ug/L	612	Standard
	Ba	135	80315.6	0.5	40.5194	0.565	1.4	ug/L	21	Standard
	Ce	140	525.0	16.6				ug/L	245	Standard
>	Tb	159	909446.5	2.1				ug/L	950397	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	188663.7	0.8	24.0492	0.050	0.2	ug/L	15	Standard
	Tl	205	172066.6	1.3	24.6917	0.238	1.0	ug/L	13	Standard
	Pb	206	123402.9	1.1	24.9025	0.136	0.5	ug/L	264	Standard
	Pb	207	107579.3	1.1	23.9013	0.073	0.3	ug/L	222	Standard
	Pb	208	446533.6	1.0	24.2893	0.091	0.4	ug/L	959	Standard
	U	238	179675.3	1.7	25.5069	0.325	1.3	ug/L	9	Standard
>	Bi	209	483038.3	0.9				ug/L	552821	Standard

Sample ID: L1606153601S WG574593-05
Report Date/Time: Friday, July 01, 2016 13:53:45
Page 1

Approved: July 02, 2016

Na	23	13.3	21.7	**44.4001**	9.083	20.5	mg/L	2	Standard
Mg	24	482486.9	1.9	**629.9240**	1.410	0.2	mg/L	55	Standard
K	39	456.7	2.3	**1.8260**	0.024	1.3	mg/L	28	Standard
Ca	43	443.3	6.2	**42.6201**	3.595	8.4	mg/L	27	Standard
Fe	54	107.2	30.6	**-0.0052**	0.027	515.1	mg/L	147	Standard
Fe	57	646.7	6.6	**1.4187**	0.179	12.6	mg/L	268	Standard
> **Sc-1**	45	36838.1	2.1				mg/L	41174	Standard
Cl	35	363789.4	1.4				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	29438.6	3.1				ug/L	1950	Standard
P	31	15032.5	1.4				ug/L	21156	Standard
S	34	3710.5	3.9				ug/L	3419	Standard
Sr	88	215.0	4.7				ug/L	72	Standard
C	12	186.7	18.8				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	44900.2	29.0				mg/L	17	Standard
Dy	164	12.5	117.7				mg/L	16	Standard
Ho-1	165	18.3	56.8				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	7	Standard
I	127	80914.0	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.131	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.939	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601S WG574593-05
Report Date/Time: Friday, July 01, 2016 13:53:45
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.085
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.377
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606153601S WG574593-05
Report Date/Time: Friday, July 01, 2016 13:53:45
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606153601SD WG574593-06
Sample Date/Time: Friday, July 01, 2016 13:54:40
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	112397.1	1.9				ug/L	76456	Standard
	Be	9	31070.2	1.4	**18.8667**	0.550	2.9	ug/L	20	Standard
	Al	27	8839135.1	2.6	**35.1153**	0.794	2.3	ug/L	1307	Standard
	Sc	45	36505.6	0.6				ug/L	41174	Standard
	Ti	47	313.3	8.2	**0.9879**	0.083	8.4	ug/L	27	Standard
	V	51	166809.7	7.9	**22.4386**	1.861	8.3	ug/L	1434	Standard
	Cr	52	176635.7	0.7	**23.3939**	0.040	0.2	ug/L	7733	Standard
	Cr	53	26448.1	1.1	**28.7705**	0.310	1.1	ug/L	442	Standard
	Mn	55	190612.1	1.7	**27.9819**	0.319	1.1	ug/L	723	Standard
	Co	59	229904.6	2.0	**33.4420**	0.439	1.3	ug/L	217	Standard
	Ni	60	50248.2	1.0	**26.8570**	0.085	0.3	ug/L	304	Standard
	Cu	65	50373.6	1.7	**27.4578**	0.363	1.3	ug/L	181	Standard
	Zn	66	32810.8	2.5	**29.6880**	0.646	2.2	ug/L	215	Standard
>	Ge	72	466958.0	0.7				ug/L	520809	Standard
	As	75	31818.9	1.7	**28.7902**	0.285	1.0	ug/L	-52	Standard
	Se	82	3739.0	3.2	**32.8806**	0.943	2.9	ug/L	17	Standard
	Se-1	77	2572.6	1.3	**32.8825**	0.665	2.0	ug/L	56	Standard
>	Ga	71	335.0	0.0				mg/L	25	Standard
	Rb	85	123842.4	1.0				ug/L	28	Standard
	Y	89	424204.0	1.6				ug/L	447395	Standard
>	Rh	103	250.0	19.1				ug/L	15	Standard
	Mo	98	596887.3	1.2	**220.8114**	1.891	0.9	ug/L	113	Standard
	Ag	107	140477.5	2.4	**21.8716**	0.278	1.3	ug/L	108	Standard
	Cd	111	46478.5	0.9	**22.5882**	0.134	0.6	mg/L	3	Standard
	Cd	114	114740.4	2.4	**22.5229**	0.416	1.8	ug/L	20	Standard
>	In	115	559219.9	1.1				ug/L	625728	Standard
	Sn	118	2036.8	20.6	**0.2701**	0.075	27.8	ug/L	568	Standard
	Sb	123	115612.8	1.8	**24.9963**	0.192	0.8	ug/L	612	Standard
	Ba	135	78486.8	0.7	**40.3510**	0.202	0.5	ug/L	21	Standard
	Ce	140	446.7	6.2				ug/L	245	Standard
>	Tb	159	894070.3	0.6				ug/L	950397	Standard
	Ho	165	23.3	24.7				ug/L	7	Standard
	Tl	203	185499.3	0.6	**23.8373**	0.171	0.7	ug/L	15	Standard
	Tl	205	169836.9	2.3	**24.5659**	0.283	1.2	ug/L	13	Standard
	Pb	206	121903.1	0.8	**24.7990**	0.171	0.7	ug/L	264	Standard
	Pb	207	105852.8	0.4	**23.7090**	0.262	1.1	ug/L	222	Standard
	Pb	208	438929.8	1.6	**24.0671**	0.200	0.8	ug/L	959	Standard
	U	238	177358.8	1.6	**25.3810**	0.202	0.8	ug/L	9	Standard
>	Bi	209	479179.3	1.2				ug/L	552821	Standard

Sample ID: L1606153601SD WG574593-06
Report Date/Time: Friday, July 01, 2016 13:56:57
Page 1

Approved: July 02, 2016

Na	23	6.7	86.6	**22.4621**	19.450	86.6	mg/L	2	Standard
Mg	24	471196.6	0.7	**620.7791**	4.974	0.8	mg/L	55	Standard
K	39	408.3	16.7	**1.6356**	0.302	18.5	mg/L	28	Standard
Ca	43	436.7	18.5	**42.2777**	8.047	19.0	mg/L	27	Standard
Fe	54	118.9	19.0	**0.0063**	0.019	307.7	mg/L	147	Standard
Fe	57	681.7	4.2	**1.5588**	0.115	7.4	mg/L	268	Standard
> **Sc-1**	45	36505.6	0.6				mg/L	41174	Standard
Cl	35	356982.4	1.5				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	28717.2	3.6				ug/L	1950	Standard
P	31	15301.1	0.8				ug/L	21156	Standard
S	34	3565.4	1.6				ug/L	3419	Standard
Sr	88	228.3	25.6				ug/L	72	Standard
C	12	156.7	38.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50532.6	17.8				mg/L	17	Standard
Dy	164	15.4	96.7				mg/L	16	Standard
Ho-1	165	23.3	24.7				mg/L	7	Standard
Er	166	26.7	78.1				mg/L	7	Standard
I	127	86335.9	6.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.009	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601SD WG574593-06
Report Date/Time: Friday, July 01, 2016 13:56:57
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.371
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.679
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606153601SD WG574593-06
Report Date/Time: Friday, July 01, 2016 13:56:57
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106804
Sample Date/Time: Friday, July 01, 2016 13:57:51
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92136.1	2.7				ug/L	76456	Standard
	Be	9	31.7	32.9	**0.0036**	0.008	216.5	ug/L	20	Standard
	Al	27	859023.9	1.9	**4.1545**	0.040	1.0	ug/L	1307	Standard
	Sc	45	36834.7	2.5				ug/L	41174	Standard
	Ti	47	40.0	19.5	**0.0448**	0.025	54.9	ug/L	27	Standard
	V	51	5203.8	19.0	**0.4694**	0.132	28.1	ug/L	1434	Standard
	Cr	52	6735.2	1.8	**-0.0924**	0.015	16.5	ug/L	7733	Standard
	Cr	53	918.4	10.2	**0.5415**	0.104	19.3	ug/L	442	Standard
	Mn	55	2241.8	1.6	**0.2108**	0.003	1.6	ug/L	723	Standard
	Co	59	300.7	9.6	**0.0119**	0.004	33.8	ug/L	217	Standard
	Ni	60	672.3	1.0	**0.1885**	0.006	3.2	ug/L	304	Standard
	Cu	65	1685.8	29.1	**0.7955**	0.246	31.0	ug/L	181	Standard
	Zn	66	3230.4	18.8	**2.5967**	0.499	19.2	ug/L	215	Standard
>	**Ge**	72	494044.1	0.8				ug/L	520809	Standard
	As	75	465.2	37.5	**0.4417**	0.146	33.1	ug/L	-52	Standard
	Se	82	234.7	30.5	**1.8293**	0.582	31.8	ug/L	17	Standard
	Se-1	77	90.3	10.8	**0.4300**	0.128	29.8	ug/L	56	Standard
>	**Ga**	71	38.3	39.8				mg/L	25	Standard
	Rb	85	223.3	18.1				ug/L	28	Standard
	Y	89	421894.0	1.5				ug/L	447395	Standard
>	**Rh**	103	131.7	22.3				ug/L	15	Standard
	Mo	98	5006.3	9.4	**1.7140**	0.193	11.2	ug/L	113	Standard
	Ag	107	126.3	16.6	**0.0056**	0.003	50.1	ug/L	108	Standard
	Cd	111	16.1	25.5	**0.0049**	0.002	35.5	mg/L	3	Standard
	Cd	114	61.4	11.1	**0.0113**	0.001	10.9	ug/L	20	Standard
>	**In**	115	596688.0	1.6				ug/L	625728	Standard
	Sn	118	568.3	15.2	**0.0085**	0.015	181.1	ug/L	568	Standard
	Sb	123	246.2	18.9	**0.0163**	0.010	61.8	ug/L	612	Standard
	Ba	135	7350.5	3.5	**3.5247**	0.082	2.3	ug/L	21	Standard
	Ce	140	23.3	32.7				ug/L	245	Standard
>	**Tb**	159	916453.6	1.2				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	304.7	24.9	**0.0334**	0.008	23.6	ug/L	15	Standard
	Tl	205	111.7	6.8	**0.0044**	0.001	16.4	ug/L	13	Standard
	Pb	206	327.7	8.6	**0.0145**	0.004	27.3	ug/L	264	Standard
	Pb	207	301.0	9.8	**0.0128**	0.005	36.7	ug/L	222	Standard
	Pb	208	1200.4	8.2	**0.0093**	0.004	42.0	ug/L	959	Standard
	U	238	75.7	24.1	**0.0092**	0.002	23.9	ug/L	9	Standard
>	**Bi**	209	548664.2	1.8				ug/L	552821	Standard

Sample ID: L1606106804
Report Date/Time: Friday, July 01, 2016 14:00:08
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2398.5	7.1	**3.0753**	0.279	9.1	mg/L	55	Standard
K	39	18.3	56.8	**-0.0529**	0.044	83.5	mg/L	28	Standard
Ca	43	20.0	43.3	**-0.4071**	0.939	230.7	mg/L	27	Standard
Fe	54	72.6	4.6	**-0.0352**	0.002	4.7	mg/L	147	Standard
Fe	57	226.7	6.4	**-0.0245**	0.066	267.2	mg/L	268	Standard
Sc-1	45	36834.7	2.5				mg/L	41174	Standard
Cl	35	83689.9	2.1				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	5874.5	1.4				ug/L	1950	Standard
P	31	8095.5	4.0				ug/L	21156	Standard
S	34	3318.7	0.5				ug/L	3419	Standard
Sr	88	98.3	10.6				ug/L	72	Standard
C	12	110.0	9.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	12785.7	29.7				mg/L	17	Standard
Dy	164	19.7	89.4				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	43990.5	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		120.509	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.861	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606106804
Report Date/Time: Friday, July 01, 2016 14:00:08
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.359
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.248
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106805
Sample Date/Time: Friday, July 01, 2016 14:01:03
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88670.5	2.3				ug/L	76456	Standard
	Be	9	28.3	53.9	**0.0021**	0.012	582.5	ug/L	20	Standard
	Al	27	846462.5	1.2	**4.2550**	0.126	3.0	ug/L	1307	Standard
	Sc	45	36754.5	1.7				ug/L	41174	Standard
	Ti	47	37.0	14.0	**0.0369**	0.018	47.7	ug/L	27	Standard
	V	51	2755.7	12.5	**0.1599**	0.048	29.8	ug/L	1434	Standard
	Cr	52	6950.6	2.2	**-0.0520**	0.020	37.7	ug/L	7733	Standard
	Cr	53	901.7	5.0	**0.5360**	0.035	6.6	ug/L	442	Standard
	Mn	55	2061.5	1.0	**0.1896**	0.005	2.5	ug/L	723	Standard
	Co	59	262.3	1.3	**0.0071**	0.000	6.4	ug/L	217	Standard
	Ni	60	603.3	3.0	**0.1577**	0.014	9.0	ug/L	304	Standard
	Cu	65	649.0	15.6	**0.2657**	0.052	19.6	ug/L	181	Standard
	Zn	66	1686.8	6.3	**1.2909**	0.094	7.3	ug/L	215	Standard
>	Ge	72	487470.5	1.6				ug/L	520809	Standard
	As	75	91.9	24.0	**0.1249**	0.020	16.4	ug/L	-52	Standard
	Se	82	68.6	9.5	**0.4538**	0.061	13.4	ug/L	17	Standard
	Se-1	77	88.7	15.6	**0.4255**	0.192	45.1	ug/L	56	Standard
>	Ga	71	20.0	25.0				mg/L	25	Standard
	Rb	85	151.7	6.9				ug/L	28	Standard
	Y	89	408691.1	1.5				ug/L	447395	Standard
>	Rh	103	55.0	47.2				ug/L	15	Standard
	Mo	98	2038.3	34.8	**0.7007**	0.261	37.3	ug/L	113	Standard
	Ag	107	89.7	17.4	**0.0005**	0.003	460.6	ug/L	108	Standard
	Cd	111	8.9	44.4	**0.0018**	0.002	101.9	mg/L	3	Standard
	Cd	114	22.8	93.4	**0.0043**	0.004	93.2	ug/L	20	Standard
>	In	115	583988.4	1.5				ug/L	625728	Standard
	Sn	118	641.7	21.4	**0.0228**	0.025	107.3	ug/L	568	Standard
	Sb	123	149.4	23.6	**-0.0027**	0.008	291.8	ug/L	612	Standard
	Ba	135	7693.6	5.0	**3.7701**	0.138	3.7	ug/L	21	Standard
	Ce	140	23.3	32.7				ug/L	245	Standard
>	Tb	159	893255.5	0.4				ug/L	950397	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	160.7	5.8	**0.0177**	0.001	6.5	ug/L	15	Standard
	Tl	205	106.7	47.9	**0.0040**	0.007	165.6	ug/L	13	Standard
	Pb	206	280.3	10.7	**0.0072**	0.005	74.5	ug/L	264	Standard
	Pb	207	240.3	4.9	**0.0020**	0.003	130.9	ug/L	222	Standard
	Pb	208	1064.0	7.7	**0.0038**	0.004	108.8	ug/L	959	Standard
	U	238	55.7	89.2	**0.0069**	0.006	93.0	ug/L	9	Standard
>	Bi	209	537449.2	0.6				ug/L	552821	Standard

Sample ID: L1606106805
Report Date/Time: Friday, July 01, 2016 14:03:20
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2241.8	5.9	**2.8723**	0.129	4.5	mg/L	55	Standard
K	39	31.7	48.2	**0.0047**	0.065	1378.1	mg/L	28	Standard
Ca	43	28.3	53.9	**0.4489**	1.610	358.7	mg/L	27	Standard
Fe	54	77.8	24.1	**-0.0306**	0.015	50.4	mg/L	147	Standard
Fe	57	243.3	20.8	**0.0319**	0.163	509.9	mg/L	268	Standard
> **Sc-1**	45	36754.5	1.7				mg/L	41174	Standard
Cl	35	86917.3	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	5100.9	3.4				ug/L	1950	Standard
P	31	8162.2	1.3				ug/L	21156	Standard
S	34	3385.4	1.8				ug/L	3419	Standard
Sr	88	96.7	14.9				ug/L	72	Standard
C	12	130.0	13.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	4313.9	5.0				mg/L	17	Standard
Dy	164	12.7	43.5				mg/L	16	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	41831.0	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.599	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106805
Report Date/Time: Friday, July 01, 2016 14:03:20
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.329
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.219
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106811
Sample Date/Time: Friday, July 01, 2016 14:04:14
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87384.7	2.1				ug/L	76456	Standard
	Be	9	386.7	6.4	**0.2826**	0.024	8.6	ug/L	20	Standard
	Al	27	801461.1	1.1	**4.0865**	0.037	0.9	ug/L	1307	Standard
	Sc	45	38134.6	2.7				ug/L	41174	Standard
	Ti	47	4667.1	1.1	**15.1502**	0.207	1.4	ug/L	27	Standard
	V	51	48516.8	1.5	**6.0786**	0.102	1.7	ug/L	1434	Standard
	Cr	52	40220.3	0.9	**4.3195**	0.059	1.4	ug/L	7733	Standard
	Cr	53	4720.7	0.9	**4.5507**	0.057	1.3	ug/L	442	Standard
	Mn	55	311842.6	1.0	**43.7090**	0.370	0.8	ug/L	723	Standard
	Co	59	8423.7	2.0	**1.1400**	0.022	1.9	ug/L	217	Standard
	Ni	60	8146.2	0.4	**4.0222**	0.012	0.3	ug/L	304	Standard
	Cu	65	10805.5	1.3	**5.5573**	0.061	1.1	ug/L	181	Standard
	Zn	66	50531.5	0.7	**43.6829**	0.260	0.6	ug/L	215	Standard
>	Ge	72	489720.8	0.2				ug/L	520809	Standard
	As	75	655.4	1.6	**0.6098**	0.008	1.3	ug/L	-52	Standard
	Se	82	60.2	5.5	**0.3806**	0.029	7.6	ug/L	17	Standard
	Se-1	77	67.3	4.5	**0.1530**	0.036	23.8	ug/L	56	Standard
>	Ga	71	4829.1	0.8				mg/L	25	Standard
	Rb	85	40306.9	0.9				ug/L	28	Standard
	Y	89	441421.4	0.7				ug/L	447395	Standard
>	Rh	103	40.0	54.5				ug/L	15	Standard
	Mo	98	794.4	11.9	**0.2560**	0.030	11.9	ug/L	113	Standard
	Ag	107	205.0	13.7	**0.0176**	0.004	24.9	ug/L	108	Standard
	Cd	111	469.4	3.6	**0.2151**	0.008	3.7	mg/L	3	Standard
	Cd	114	1178.5	4.6	**0.2206**	0.012	5.5	ug/L	20	Standard
>	In	115	586618.1	1.1				ug/L	625728	Standard
	Sn	118	1050.0	35.8	**0.0894**	0.061	68.0	ug/L	568	Standard
	Sb	123	166.1	12.7	**0.0005**	0.004	734.3	ug/L	612	Standard
	Ba	135	56741.7	0.9	**27.8031**	0.108	0.4	ug/L	21	Standard
	Ce	140	116496.1	0.3				ug/L	245	Standard
>	Tb	159	902035.2	0.5				ug/L	950397	Standard
	Ho	165	2190.2	5.6				ug/L	7	Standard
	Tl	203	356.0	5.6	**0.0396**	0.002	5.7	ug/L	15	Standard
	Tl	205	270.0	10.3	**0.0247**	0.004	14.6	ug/L	13	Standard
	Pb	206	16366.5	1.5	**2.8988**	0.049	1.7	ug/L	264	Standard
	Pb	207	13229.8	1.5	**2.5731**	0.042	1.6	ug/L	222	Standard
	Pb	208	57216.2	0.2	**2.7252**	0.006	0.2	ug/L	959	Standard
	U	238	2067.8	1.8	**0.2608**	0.005	1.9	ug/L	9	Standard
>	Bi	209	543128.9	0.1				ug/L	552821	Standard

Sample ID: L1606106811
Report Date/Time: Friday, July 01, 2016 14:06:31
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	836.7	5.2	**0.9955**	0.059	5.9	mg/L	55	Standard
K	39	96.7	23.3	**0.2695**	0.095	35.1	mg/L	28	Standard
Ca	43	25.0	52.9	**-0.0121**	1.244	10273.4	mg/L	27	Standard
Fe	54	3385.4	5.7	**2.7677**	0.147	5.3	mg/L	147	Standard
Fe	57	1086.7	6.1	**2.8007**	0.187	6.7	mg/L	268	Standard
Sc-1	45	38134.6	2.7				mg/L	41174	Standard
Cl	35	72343.0	2.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2266.8	11.8				ug/L	1950	Standard
P	31	15112.5	3.0				ug/L	21156	Standard
S	34	3132.0	3.9				ug/L	3419	Standard
Sr	88	90.0	11.1				ug/L	72	Standard
C	12	160.0	39.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1193.4	7.9				mg/L	17	Standard
Dy	164	3446.2	2.4				mg/L	16	Standard
Ho-1	165	2190.2	5.6				mg/L	7	Standard
Er	166	2036.8	6.1				mg/L	7	Standard
I	127	34445.8	1.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.294	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.031	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606106811
Report Date/Time: Friday, July 01, 2016 14:06:31
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.750
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.247
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106813 ~~WG574840-01~~ WG573840-01
Sample Date/Time: Friday, July 01, 2016 14:07:25
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85735.2	1.3				ug/L	76456	Standard
	Be	9	26.7	28.6	**0.0014**	0.006	443.3	ug/L	20	Standard
	Al	27	449795.7	0.8	**2.3331**	0.023	1.0	ug/L	1307	Standard
	Sc	45	35930.9	1.1				ug/L	41174	Standard
	Ti	47	472.3	1.7	**1.4707**	0.057	3.8	ug/L	27	Standard
	V	51	4534.5	3.6	**0.3927**	0.010	2.6	ug/L	1434	Standard
	Cr	52	9314.9	0.9	**0.2650**	0.027	10.0	ug/L	7733	Standard
	Cr	53	2433.5	4.4	**2.1645**	0.092	4.2	ug/L	442	Standard
	Mn	55	102294.5	0.4	**14.3920**	0.341	2.4	ug/L	723	Standard
	Co	59	3018.3	3.5	**0.3929**	0.007	1.8	ug/L	217	Standard
	Ni	60	5415.6	1.7	**2.6457**	0.041	1.6	ug/L	304	Standard
	Cu	65	743.0	9.7	**0.3169**	0.044	14.0	ug/L	181	Standard
	Zn	66	3480.1	1.7	**2.8660**	0.076	2.6	ug/L	215	Standard
>	**Ge**	72	485745.7	2.0				ug/L	520809	Standard
	As	75	242.8	9.7	**0.2563**	0.025	9.6	ug/L	-52	Standard
	Se	82	97.2	2.1	**0.6986**	0.030	4.2	ug/L	17	Standard
	Se-1	77	117.0	14.6	**0.7818**	0.201	25.7	ug/L	56	Standard
>	**Ga**	71	268.3	10.3				mg/L	25	Standard
	Rb	85	4108.9	5.5				ug/L	28	Standard
	Y	89	416309.3	1.5				ug/L	447395	Standard
>	**Rh**	103	45.0	50.9				ug/L	15	Standard
	Mo	98	680.6	19.4	**0.2163**	0.043	19.7	ug/L	113	Standard
	Ag	107	83.7	9.0	**-0.0004**	0.001	316.0	ug/L	108	Standard
	Cd	111	203.5	6.4	**0.0922**	0.005	5.5	mg/L	3	Standard
	Cd	114	545.9	14.8	**0.1025**	0.015	14.8	ug/L	20	Standard
>	**In**	115	585054.4	1.7				ug/L	625728	Standard
	Sn	118	836.7	33.0	**0.0543**	0.043	80.0	ug/L	568	Standard
	Sb	123	125.9	11.8	**-0.0077**	0.003	35.5	ug/L	612	Standard
	Ba	135	12781.1	0.9	**6.2667**	0.128	2.0	ug/L	21	Standard
	Ce	140	5152.5	0.8				ug/L	245	Standard
>	**Tb**	159	900548.7	1.5				ug/L	950397	Standard
	Ho	165	100.0	10.0				ug/L	7	Standard
	Tl	203	107.7	11.0	**0.0117**	0.001	10.8	ug/L	15	Standard
	Tl	205	76.7	10.0	**0.0002**	0.001	348.4	ug/L	13	Standard
	Pb	206	778.4	4.5	**0.0993**	0.008	7.9	ug/L	264	Standard
	Pb	207	661.0	3.8	**0.0876**	0.005	5.2	ug/L	222	Standard
	Pb	208	2799.8	2.1	**0.0904**	0.002	2.4	ug/L	959	Standard
	U	238	156.0	3.6	**0.0199**	0.000	2.4	ug/L	9	Standard
>	**Bi**	209	531551.0	1.5				ug/L	552821	Standard

Sample ID: L1606106813 ~~WG574840-01~~
Report Date/Time: Friday, July 01, 2016 14:09:42
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8015.5	3.4	**10.6709**	0.401	3.8	mg/L	55	Standard
K	39	28.3	50.9	**-0.0070**	0.062	882.4	mg/L	28	Standard
Ca	43	31.7	36.5	**0.8382**	1.170	139.6	mg/L	27	Standard
Fe	54	628.6	3.1	**0.4660**	0.014	3.0	mg/L	147	Standard
Fe	57	371.7	8.1	**0.5046**	0.104	20.5	mg/L	268	Standard
> **Sc-1**	45	35930.9	1.1				mg/L	41174	Standard
Cl	35	72947.2	1.3				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	16705.9	1.9				ug/L	1950	Standard
P	31	9869.9	4.0				ug/L	21156	Standard
S	34	3002.0	2.0				ug/L	3419	Standard
Sr	88	73.3	38.8				ug/L	72	Standard
C	12	123.3	24.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	670.0	12.2				mg/L	17	Standard
Dy	164	162.7	37.8				mg/L	16	Standard
Ho-1	165	100.0	10.0				mg/L	7	Standard
Er	166	83.3	25.0				mg/L	7	Standard
I	127	64636.1	5.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.267	
As	75			
Se	82			
Se-1	77			
> Ga	71			

WG573840-01

Sample ID: L1606106813 ~~WG574840-01~~
Report Date/Time: Friday, July 01, 2016 14:09:42
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.500
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.152
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

WG573840-01

Sample ID: L1606106813 ~~WG574840-01~~
Report Date/Time: Friday, July 01, 2016 14:09:42
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 14:10:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88849.8	2.1				ug/L	76456	Standard
	Be	9	66753.5	2.5	**51.2959**	0.926	1.8	ug/L	20	Standard
	Al	27	8854426.6	1.6	**44.5025**	0.510	1.1	ug/L	1307	Standard
	Sc	45	39063.7	3.7				ug/L	41174	Standard
	Ti	47	30764.2	0.5	**94.6692**	0.333	0.4	ug/L	27	Standard
	V	51	413476.1	0.1	**50.2774**	0.192	0.4	ug/L	1434	Standard
	Cr	52	400969.6	0.9	**48.7893**	0.334	0.7	ug/L	7733	Standard
	Cr	53	49330.2	1.0	**48.5611**	0.384	0.8	ug/L	442	Standard
	Mn	55	368164.8	0.7	**48.7020**	0.201	0.4	ug/L	723	Standard
	Co	59	403506.1	0.3	**52.8271**	0.036	0.1	ug/L	217	Standard
	Ni	60	101394.2	1.2	**48.8833**	0.523	1.1	ug/L	304	Standard
	Cu	65	100114.0	0.9	**49.1563**	0.410	0.8	ug/L	181	Standard
	Zn	66	60654.2	0.4	**49.4979**	0.106	0.2	ug/L	215	Standard
>	Ge	72	519017.5	0.3				ug/L	520809	Standard
	As	75	61466.0	0.5	**50.0055**	0.153	0.3	ug/L	-52	Standard
	Se	82	6464.5	2.4	**51.2180**	1.098	2.1	ug/L	17	Standard
	Se-1	77	4373.3	1.3	**50.6496**	0.533	1.1	ug/L	56	Standard
>	Ga	71	66.7	18.9				mg/L	25	Standard
	Rb	85	861.7	5.9				ug/L	28	Standard
	Y	89	449328.6	2.0				ug/L	447395	Standard
>	Rh	103	36.7	31.5				ug/L	15	Standard
	Mo	98	305460.5	0.7	**100.5610**	1.227	1.2	ug/L	113	Standard
	Ag	107	357889.2	0.5	**49.6167**	0.755	1.5	ug/L	108	Standard
	Cd	111	115251.7	0.3	**49.8541**	0.558	1.1	mg/L	3	Standard
	Cd	114	285891.9	1.9	**49.9459**	0.709	1.4	ug/L	20	Standard
>	In	115	628352.9	1.0				ug/L	625728	Standard
	Sn	118	322603.7	1.4	**49.8300**	0.182	0.4	ug/L	568	Standard
	Sb	123	256839.4	0.5	**49.4582**	0.316	0.6	ug/L	612	Standard
	Ba	135	105057.6	0.5	**48.0726**	0.299	0.6	ug/L	21	Standard
	Ce	140	361.7	34.4				ug/L	245	Standard
>	Tb	159	960077.3	1.9				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	452676.3	0.7	**49.9830**	0.213	0.4	ug/L	15	Standard
	Tl	205	410938.2	0.4	**51.0915**	0.351	0.7	ug/L	13	Standard
	Pb	206	286259.6	0.4	**50.0826**	0.130	0.3	ug/L	264	Standard
	Pb	207	259240.1	0.9	**49.9407**	0.356	0.7	ug/L	222	Standard
	Pb	208	1080903.3	0.1	**50.9831**	0.221	0.4	ug/L	959	Standard
	U	238	414937.8	0.7	**51.0249**	0.218	0.4	ug/L	9	Standard
>	Bi	209	557647.7	0.3				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:12:56
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4484.0	1.2	**5.4671**	0.257	4.7	mg/L	55	Standard
K	39	1023.4	3.3	**4.0066**	0.130	3.2	mg/L	28	Standard
Ca	43	43.3	53.3	**1.7517**	2.400	137.0	mg/L	27	Standard
Fe	54	6523.2	1.6	**5.2995**	0.275	5.2	mg/L	147	Standard
Fe	57	1890.1	7.4	**5.3143**	0.301	5.7	mg/L	268	Standard
> **Sc-1**	45	39063.7	3.7				mg/L	41174	Standard
Cl	35	79213.9	1.2				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2563.6	1.5				ug/L	1950	Standard
P	31	24057.4	1.2				ug/L	21156	Standard
S	34	3523.7	3.2				ug/L	3419	Standard
Sr	88	65.0	7.7				ug/L	72	Standard
C	12	140.0	57.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	940.0	34.1				mg/L	17	Standard
Dy	164	25.2	57.6				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	7	Standard
I	127	15756.5	3.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.592		
Al	27	89.005		
Sc	45			
Ti	47	94.669		
V	51	100.555		
Cr	52	97.579		
Cr	53			
Mn	55	97.404		
Co	59	105.654		
Ni	60	97.767		
Cu	65	98.313		
Zn	66	98.996		
> Ge	72		99.656	
As	75	100.011		
Se	82	102.436		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:12:56
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	100.561		
Ag	107	99.233		
Cd	111	99.708		
Cd	114			
> In	115			100.420
Sn	118	99.660		
Sb	123	98.916		
Ba	135	96.145		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.966		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.966		
U	238	102.050		
> Bi	209			100.873
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:12:56
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 14:13:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88888.4	2.2				ug/L	76456	Standard
	Be	9	38.3	52.7	**0.0094**	0.015	161.5	ug/L	20	Standard
	Al	27	2825.3	17.3	**0.0040**	0.002	53.4	ug/L	1307	Standard
	Sc	45	39005.1	1.5				ug/L	41174	Standard
	Ti	47	28.0	19.9	**0.0028**	0.016	582.3	ug/L	27	Standard
	V	51	2415.4	18.1	**0.1010**	0.058	57.8	ug/L	1434	Standard
	Cr	52	6917.2	0.7	**-0.0998**	0.014	13.7	ug/L	7733	Standard
	Cr	53	555.0	5.9	**0.1417**	0.025	17.3	ug/L	442	Standard
	Mn	55	752.7	2.2	**-0.0001**	0.003	2090.7	ug/L	723	Standard
	Co	59	252.7	11.5	**0.0041**	0.003	85.1	ug/L	217	Standard
	Ni	60	429.7	6.2	**0.0575**	0.011	18.3	ug/L	304	Standard
	Cu	65	263.0	14.8	**0.0569**	0.017	30.5	ug/L	181	Standard
	Zn	66	279.3	0.5	**0.0518**	0.003	5.0	ug/L	215	Standard
>	Ge	72	511815.0	1.6				ug/L	520809	Standard
	As	75	-18.1	92.8	**0.0301**	0.014	46.4	ug/L	-52	Standard
	Se	82	24.7	15.0	**0.0723**	0.029	39.9	ug/L	17	Standard
	Se-1	77	58.0	10.8	**0.0062**	0.079	1288.4	ug/L	56	Standard
>	Ga	71	13.3	78.1				mg/L	25	Standard
	Rb	85	38.3	7.5				ug/L	28	Standard
	Y	89	444682.5	1.8				ug/L	447395	Standard
>	Rh	103	18.3	15.7				ug/L	15	Standard
	Mo	98	598.8	12.4	**0.1734**	0.026	14.8	ug/L	113	Standard
	Ag	107	140.0	4.0	**0.0066**	0.001	12.4	ug/L	108	Standard
	Cd	111	12.3	61.1	**0.0030**	0.003	109.1	mg/L	3	Standard
	Cd	114	49.0	43.7	**0.0086**	0.004	42.9	ug/L	20	Standard
>	In	115	628245.6	0.7				ug/L	625728	Standard
	Sn	118	1961.8	30.2	**0.2198**	0.093	42.5	ug/L	568	Standard
	Sb	123	904.2	34.2	**0.1408**	0.061	43.0	ug/L	612	Standard
	Ba	135	57.3	10.7	**0.0083**	0.003	31.6	ug/L	21	Standard
	Ce	140	128.3	30.3				ug/L	245	Standard
>	Tb	159	944365.6	0.9				ug/L	950397	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	108.0	13.0	**0.0111**	0.001	13.5	ug/L	15	Standard
	Tl	205	96.7	15.8	**0.0022**	0.002	85.6	ug/L	13	Standard
	Pb	206	339.7	1.4	**0.0152**	0.001	5.3	ug/L	264	Standard
	Pb	207	305.3	7.3	**0.0122**	0.004	33.7	ug/L	222	Standard
	Pb	208	1308.0	3.7	**0.0129**	0.002	16.1	ug/L	959	Standard
	U	238	87.3	40.5	**0.0104**	0.004	41.2	ug/L	9	Standard
>	Bi	209	562720.5	0.3				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:16:07
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	75.0	23.1	**0.0324**	0.022	69.0	mg/L	55	Standard
K	39	33.3	45.8	**0.0031**	0.060	1894.0	mg/L	28	Standard
Ca	43	15.0	33.3	**-1.0175**	0.462	45.4	mg/L	27	Standard
Fe	54	165.7	9.2	**0.0385**	0.014	37.1	mg/L	147	Standard
Fe	57	250.0	12.0	**0.0061**	0.086	1418.1	mg/L	268	Standard
> **Sc-1**	45	39005.1	1.5				mg/L	41174	Standard
Cl	35	79585.8	1.1				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	2136.8	1.9				ug/L	1950	Standard
P	31	23918.9	4.5				ug/L	21156	Standard
S	34	3433.7	5.0				ug/L	3419	Standard
Sr	88	81.7	12.7				ug/L	72	Standard
C	12	130.0	20.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	723.4	38.9				mg/L	17	Standard
Dy	164	12.1	100.4				mg/L	16	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	11843.0	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.273	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:16:07
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.402
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.791
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:16:07
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

WG573840-04

Sample ID: L1606106815S ~~WG574840-04~~
Sample Date/Time: Friday, July 01, 2016 14:17:03
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83265.1	4.4				ug/L	76456	Standard
	Be	9	6339.7	3.7	**5.1828**	0.150	2.9	ug/L	20	Standard
	Al	27	349898.6	2.2	**1.8682**	0.063	3.4	ug/L	1307	Standard
	Sc	45	36113.0	0.7				ug/L	41174	Standard
	Ti	47	374.0	5.7	**1.1636**	0.064	5.5	ug/L	27	Standard
	V	51	40708.6	1.1	**5.1868**	0.031	0.6	ug/L	1434	Standard
	Cr	52	46718.3	0.7	**5.3127**	0.067	1.3	ug/L	7733	Standard
	Cr	53	6618.1	2.8	**6.7048**	0.239	3.6	ug/L	442	Standard
	Mn	55	114395.6	0.5	**16.3321**	0.067	0.4	ug/L	723	Standard
	Co	59	38195.1	1.8	**5.3924**	0.078	1.4	ug/L	217	Standard
	Ni	60	13663.5	1.3	**7.0078**	0.080	1.1	ug/L	304	Standard
	Cu	65	9944.3	1.7	**5.2251**	0.077	1.5	ug/L	181	Standard
	Zn	66	9492.0	1.6	**8.2445**	0.108	1.3	ug/L	215	Standard
>	Ge	72	478934.2	0.5				ug/L	520809	Standard
	As	75	6298.1	2.1	**5.5931**	0.137	2.4	ug/L	-52	Standard
	Se	82	745.3	1.6	**6.2890**	0.131	2.1	ug/L	17	Standard
	Se-1	77	565.0	3.4	**6.5031**	0.256	3.9	ug/L	56	Standard
>	Ga	71	210.0	14.9				mg/L	25	Standard
	Rb	85	3015.3	2.7				ug/L	28	Standard
	Y	89	406713.6	1.2				ug/L	447395	Standard
>	Rh	103	30.0	44.1				ug/L	15	Standard
	Mo	98	643.2	26.9	**0.2086**	0.062	29.9	ug/L	113	Standard
	Ag	107	33003.9	0.1	**5.0128**	0.031	0.6	ug/L	108	Standard
	Cd	111	11239.0	0.3	**5.3366**	0.046	0.9	mg/L	3	Standard
	Cd	114	27301.6	1.5	**5.2380**	0.071	1.4	ug/L	20	Standard
>	In	115	572178.3	0.7				ug/L	625728	Standard
	Sn	118	856.7	28.9	**0.0614**	0.042	68.6	ug/L	568	Standard
	Sb	123	23676.7	0.6	**4.9767**	0.063	1.3	ug/L	612	Standard
	Ba	135	19520.2	0.7	**9.7948**	0.108	1.1	ug/L	21	Standard
	Ce	140	4247.3	5.7				ug/L	245	Standard
>	Tb	159	879458.6	1.4				ug/L	950397	Standard
	Ho	165	76.7	30.1				ug/L	7	Standard
	Tl	203	41384.8	1.8	**4.8673**	0.052	1.1	ug/L	15	Standard
	Tl	205	37817.2	2.3	**4.9998**	0.080	1.6	ug/L	13	Standard
	Pb	206	27923.4	1.8	**5.1651**	0.060	1.2	ug/L	264	Standard
	Pb	207	24211.0	1.2	**4.9273**	0.030	0.6	ug/L	222	Standard
	Pb	208	101923.3	0.8	**5.0783**	0.055	1.1	ug/L	959	Standard
	U	238	37622.7	0.8	**4.9287**	0.050	1.0	ug/L	9	Standard
>	Bi	209	523442.8	0.7				ug/L	552821	Standard

Sample ID: L1606106815S ~~WG574840-04~~
Report Date/Time: Friday, July 01, 2016 14:19:20
Page 1

Approved: July 02, 2016

	Na	23	1.7	173.2	**5.6795**	9.828	173.1	mg/L	2	Standard
	Mg	24	6323.0	5.1	**8.3634**	0.482	5.8	mg/L	55	Standard
	K	39	55.0	24.1	**0.1095**	0.059	54.3	mg/L	28	Standard
	Ca	43	28.3	83.4	**0.4924**	2.471	501.8	mg/L	27	Standard
	Fe	54	574.3	6.7	**0.4148**	0.038	9.1	mg/L	147	Standard
	Fe	57	356.7	11.3	**0.4458**	0.147	32.9	mg/L	268	Standard
>	**Sc-1**	45	36113.0	0.7				mg/L	41174	Standard
	Cl	35	72434.1	0.7				ug/L	69550	Standard
	Kr	83	2.0	0.0				ug/L	1	Standard
	Br	81	13466.0	3.1				ug/L	1950	Standard
	P	31	9684.8	1.1				ug/L	21156	Standard
	S	34	3162.0	7.4				ug/L	3419	Standard
	Sr	88	88.3	6.5				ug/L	72	Standard
	C	12	126.7	19.9				mg/L	163	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	493.3	11.2				mg/L	17	Standard
	Dy	164	135.8	20.6				mg/L	16	Standard
	Ho-1	165	76.7	30.1				mg/L	7	Standard
	Er	166	86.7	40.5				mg/L	7	Standard
	I	127	53586.4	4.2				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		108.906	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		91.960	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

WG573840-04

Sample ID: L1606106815S ~~WG574840-04~~
Report Date/Time: Friday, July 01, 2016 14:19:20
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.442
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

WG573840-04

Sample ID: L1606106815S ~~WG574840-04~~
Report Date/Time: Friday, July 01, 2016 14:19:20
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

WG573840-05

Sample ID: L1606106817SD ~~WG574840-05~~
Sample Date/Time: Friday, July 01, 2016 14:20:15
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81106.5	1.7				ug/L	76456	Standard
	Be	9	6459.7	2.4	**5.4224**	0.225	4.2	ug/L	20	Standard
	Al	27	501960.4	2.3	**2.7550**	0.103	3.7	ug/L	1307	Standard
	Sc	45	36201.5	0.9				ug/L	41174	Standard
	Ti	47	1052.0	1.1	**3.4327**	0.017	0.5	ug/L	27	Standard
	V	51	46082.9	1.9	**5.9078**	0.087	1.5	ug/L	1434	Standard
	Cr	52	58550.9	1.6	**6.9166**	0.078	1.1	ug/L	7733	Standard
	Cr	53	8594.1	3.3	**8.8449**	0.268	3.0	ug/L	442	Standard
	Mn	55	145669.8	2.3	**20.8582**	0.361	1.7	ug/L	723	Standard
	Co	59	40340.0	2.3	**5.7063**	0.097	1.7	ug/L	217	Standard
	Ni	60	15750.9	2.0	**8.1157**	0.154	1.9	ug/L	304	Standard
	Cu	65	10601.7	1.3	**5.5848**	0.040	0.7	ug/L	181	Standard
	Zn	66	10298.5	1.1	**8.9757**	0.069	0.8	ug/L	215	Standard
>	Ge	72	478135.2	0.6				ug/L	520809	Standard
	As	75	6490.3	1.3	**5.7717**	0.072	1.2	ug/L	-52	Standard
	Se	82	783.8	3.6	**6.6313**	0.232	3.5	ug/L	17	Standard
	Se-1	77	575.7	8.4	**6.6484**	0.573	8.6	ug/L	56	Standard
>	Ga	71	653.3	4.4				mg/L	25	Standard
	Rb	85	7186.7	2.7				ug/L	28	Standard
	Y	89	409741.2	2.1				ug/L	447395	Standard
>	Rh	103	31.7	18.2				ug/L	15	Standard
	Mo	98	998.2	56.5	**0.3366**	0.205	60.9	ug/L	113	Standard
	Ag	107	33931.3	1.3	**5.1521**	0.034	0.7	ug/L	108	Standard
	Cd	111	11629.2	3.5	**5.5186**	0.109	2.0	mg/L	3	Standard
	Cd	114	28711.5	1.0	**5.5071**	0.084	1.5	ug/L	20	Standard
>	In	115	572419.1	1.9				ug/L	625728	Standard
	Sn	118	771.7	35.0	**0.0463**	0.043	93.9	ug/L	568	Standard
	Sb	123	22618.6	1.5	**4.7509**	0.051	1.1	ug/L	612	Standard
	Ba	135	24808.3	0.6	**12.4494**	0.172	1.4	ug/L	21	Standard
	Ce	140	9864.9	1.2				ug/L	245	Standard
>	Tb	159	882133.3	1.2				ug/L	950397	Standard
	Ho	165	175.0	13.1				ug/L	7	Standard
	Tl	203	43094.9	1.3	**5.0490**	0.012	0.2	ug/L	15	Standard
	Tl	205	38782.9	1.4	**5.1088**	0.109	2.1	ug/L	13	Standard
	Pb	206	28842.8	0.9	**5.3164**	0.076	1.4	ug/L	264	Standard
	Pb	207	24928.5	1.0	**5.0552**	0.065	1.3	ug/L	222	Standard
	Pb	208	104803.4	1.3	**5.2025**	0.040	0.8	ug/L	959	Standard
	U	238	38305.0	0.8	**4.9987**	0.028	0.6	ug/L	9	Standard
>	Bi	209	525482.1	1.1				ug/L	552821	Standard

Sample ID: L1606106817SD ~~WG574840-05~~
Report Date/Time: Friday, July 01, 2016 14:22:32
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**11.2046**	19.398	173.1	mg/L	2	Standard
Mg	24	8434.0	5.4	**11.1454**	0.594	5.3	mg/L	55	Standard
K	39	58.3	13.1	**0.1234**	0.036	28.8	mg/L	28	Standard
Ca	43	20.0	75.0	**-0.3837**	1.563	407.4	mg/L	27	Standard
Fe	54	968.4	3.8	**0.7651**	0.040	5.3	mg/L	147	Standard
Fe	57	503.3	13.7	**0.9549**	0.241	25.2	mg/L	268	Standard
> **Sc-1**	45	36201.5	0.9				mg/L	41174	Standard
Cl	35	71982.6	1.3				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18638.1	5.1				ug/L	1950	Standard
P	31	10710.5	1.0				ug/L	21156	Standard
S	34	3345.4	0.8				ug/L	3419	Standard
Sr	88	73.3	27.6				ug/L	72	Standard
C	12	120.0	57.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	436.7	13.4				mg/L	17	Standard
Dy	164	280.4	13.3				mg/L	16	Standard
Ho-1	165	175.0	13.1				mg/L	7	Standard
Er	166	200.0	13.2				mg/L	7	Standard
I	127	66018.7	4.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.083	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.806	
As	75			
Se	82			
Se-1	77			
> Ga	71	WG573840-05		

Sample ID: L1606106817SD ~~WG574840-05~~
Report Date/Time: Friday, July 01, 2016 14:22:32
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	91.481
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.055
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

WG573840-05

Sample ID: L1606106817SD ~~**WG574840-05**~~
Report Date/Time: Friday, July 01, 2016 14:22:32
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106502
Sample Date/Time: Friday, July 01, 2016 14:23:26
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80066.0	1.1				ug/L	76456	Standard
	Be	9	30.0	115.5	**0.0056**	0.029	520.4	ug/L	20	Standard
	Al	27	180778.3	4.1	**0.9982**	0.041	4.1	ug/L	1307	Standard
	Sc	45	36360.3	2.0				ug/L	41174	Standard
	Ti	47	27.3	18.4	**0.0052**	0.016	312.3	ug/L	27	Standard
	V	51	1588.1	11.5	**0.0081**	0.023	286.5	ug/L	1434	Standard
	Cr	52	81053.1	3.8	**9.7557**	0.368	3.8	ug/L	7733	Standard
	Cr	53	9971.6	2.0	**10.1419**	0.234	2.3	ug/L	442	Standard
	Mn	55	13954.4	0.7	**1.8714**	0.017	0.9	ug/L	723	Standard
	Co	59	649.0	8.3	**0.0612**	0.008	12.7	ug/L	217	Standard
	Ni	60	1447.4	0.9	**0.5934**	0.004	0.6	ug/L	304	Standard
	Cu	65	486.7	11.5	**0.1810**	0.028	15.4	ug/L	181	Standard
	Zn	66	1353.4	2.5	**1.0020**	0.034	3.4	ug/L	215	Standard
>	Ge	72	486676.1	0.5				ug/L	520809	Standard
	As	75	-22.0	245.7	**0.0260**	0.047	179.9	ug/L	-52	Standard
	Se	82	18.1	72.4	**0.0263**	0.110	418.7	ug/L	17	Standard
	Se-1	77	60.7	2.5	**0.0749**	0.022	28.9	ug/L	56	Standard
>	Ga	71	25.0	20.0				mg/L	25	Standard
	Rb	85	138.3	26.6				ug/L	28	Standard
	Y	89	406376.2	1.0				ug/L	447395	Standard
>	Rh	103	16.7	69.3				ug/L	15	Standard
	Mo	98	1770.7	17.5	**0.6016**	0.111	18.5	ug/L	113	Standard
	Ag	107	129.0	37.0	**0.0063**	0.007	112.2	ug/L	108	Standard
	Cd	111	16.9	116.6	**0.0055**	0.009	166.8	mg/L	3	Standard
	Cd	114	59.1	100.8	**0.0111**	0.011	100.7	ug/L	20	Standard
>	In	115	585828.3	0.2				ug/L	625728	Standard
	Sn	118	591.7	24.5	**0.0140**	0.024	173.1	ug/L	568	Standard
	Sb	123	173.5	26.1	**0.0021**	0.009	438.7	ug/L	612	Standard
	Ba	135	254.0	14.4	**0.1068**	0.018	16.8	ug/L	21	Standard
	Ce	140	36.7	55.1				ug/L	245	Standard
>	Tb	159	883738.0	0.6				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	137.0	50.5	**0.0151**	0.008	51.9	ug/L	15	Standard
	Tl	205	130.0	90.1	**0.0071**	0.015	211.0	ug/L	13	Standard
	Pb	206	304.3	19.3	**0.0122**	0.010	84.1	ug/L	264	Standard
	Pb	207	261.0	10.0	**0.0068**	0.005	70.4	ug/L	222	Standard
	Pb	208	1149.7	15.1	**0.0087**	0.008	92.0	ug/L	959	Standard
	U	238	112.0	113.8	**0.0141**	0.016	115.0	ug/L	9	Standard
>	Bi	209	530616.0	1.0				ug/L	552821	Standard

Sample ID: L1606106502
Report Date/Time: Friday, July 01, 2016 14:25:43
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1146.7	22.2	**1.4533**	0.307	21.1	mg/L	55	Standard
K	39	28.3	44.4	**-0.0074**	0.057	769.4	mg/L	28	Standard
Ca	43	26.7	54.1	**0.3104**	1.522	490.2	mg/L	27	Standard
Fe	54	101.6	8.0	**-0.0086**	0.008	94.5	mg/L	147	Standard
Fe	57	255.0	17.0	**0.0854**	0.166	194.4	mg/L	268	Standard
> **Sc-1**	45	36360.3	2.0				mg/L	41174	Standard
Cl	35	73712.2	1.2				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2090.1	10.3				ug/L	1950	Standard
P	31	7825.4	0.6				ug/L	21156	Standard
S	34	3022.0	4.6				ug/L	3419	Standard
Sr	88	71.7	8.1				ug/L	72	Standard
C	12	96.7	23.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1313.4	4.6				mg/L	17	Standard
Dy	164	22.1	25.6				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	7	Standard
I	127	28513.5	2.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.722	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.446	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106502
Report Date/Time: Friday, July 01, 2016 14:25:43
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.623
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.983
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106503
Sample Date/Time: Friday, July 01, 2016 14:26:37
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79132.8	1.3				ug/L	76456	Standard
	Be	9	20.0	90.1	-0.0027	0.015	566.6	ug/L	20	Standard
	Al	27	183681.8	1.0	1.0266	0.021	2.0	ug/L	1307	Standard
	Sc	45	35984.4	2.9				ug/L	41174	Standard
	Ti	47	20.7	12.2	-0.0167	0.009	53.6	ug/L	27	Standard
	V	51	1554.3	4.0	0.0034	0.007	204.4	ug/L	1434	Standard
	Cr	52	22825.5	4.8	2.0452	0.152	7.4	ug/L	7733	Standard
	Cr	53	2823.6	3.2	2.5679	0.111	4.3	ug/L	442	Standard
	Mn	55	25588.9	0.9	3.5097	0.037	1.1	ug/L	723	Standard
	Co	59	286.3	4.8	0.0105	0.002	16.3	ug/L	217	Standard
	Ni	60	1267.4	3.9	0.4993	0.024	4.9	ug/L	304	Standard
	Cu	65	240.7	4.8	0.0519	0.005	9.1	ug/L	181	Standard
	Zn	66	1398.4	2.4	1.0389	0.016	1.6	ug/L	215	Standard
>	Ge	72	487565.1	1.1				ug/L	520809	Standard
	As	75	-30.6	81.1	0.0187	0.022	115.7	ug/L	-52	Standard
	Se	82	20.5	30.4	0.0466	0.051	110.3	ug/L	17	Standard
	Se-1	77	71.3	18.1	0.2061	0.156	75.5	ug/L	56	Standard
>	Ga	71	30.0	33.3				mg/L	25	Standard
	Rb	85	90.0	53.6				ug/L	28	Standard
	Y	89	411794.3	0.5				ug/L	447395	Standard
>	Rh	103	21.7	13.3				ug/L	15	Standard
	Mo	98	702.5	37.7	0.2235	0.093	41.6	ug/L	113	Standard
	Ag	107	100.7	6.4	0.0021	0.001	44.2	ug/L	108	Standard
	Cd	111	3.1	64.7	-0.0009	0.001	98.3	mg/L	3	Standard
	Cd	114	10.2	126.7	0.0019	0.002	125.3	ug/L	20	Standard
>	In	115	587395.6	0.4				ug/L	625728	Standard
	Sn	118	551.7	28.8	0.0071	0.026	370.3	ug/L	568	Standard
	Sb	123	119.5	11.5	-0.0091	0.003	31.3	ug/L	612	Standard
	Ba	135	603.3	5.0	0.2775	0.015	5.3	ug/L	21	Standard
	Ce	140	43.3	40.5				ug/L	245	Standard
>	Tb	159	891615.0	1.6				ug/L	950397	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	80.7	10.3	0.0085	0.001	11.1	ug/L	15	Standard
	Tl	205	53.3	57.3	-0.0028	0.004	140.3	ug/L	13	Standard
	Pb	206	274.3	3.4	0.0064	0.002	26.4	ug/L	264	Standard
	Pb	207	227.0	9.3	-0.0004	0.004	980.7	ug/L	222	Standard
	Pb	208	977.7	5.7	-0.0001	0.003	2332.0	ug/L	959	Standard
	U	238	23.7	16.0	0.0028	0.000	17.0	ug/L	9	Standard
>	Bi	209	534397.5	0.8				ug/L	552821	Standard

Sample ID: L1606106503
Report Date/Time: Friday, July 01, 2016 14:28:54
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1421.7	2.1	**1.8418**	0.090	4.9	mg/L	55	Standard
K	39	28.3	40.8	**-0.0067**	0.051	756.8	mg/L	28	Standard
Ca	43	21.7	35.3	**-0.2051**	0.778	379.2	mg/L	27	Standard
Fe	54	96.5	16.4	**-0.0124**	0.012	96.4	mg/L	147	Standard
Fe	57	246.7	7.7	**0.0625**	0.044	71.0	mg/L	268	Standard
Sc-1	45	35984.4	2.9				mg/L	41174	Standard
Cl	35	75787.1	1.4				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	1940.1	11.4				ug/L	1950	Standard
P	31	7708.6	3.3				ug/L	21156	Standard
S	34	3283.7	7.0				ug/L	3419	Standard
Sr	88	81.7	3.5				ug/L	72	Standard
C	12	93.3	6.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	810.0	7.7				mg/L	17	Standard
Dy	164	19.4	51.7				mg/L	16	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	28069.3	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.617	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606106503
Report Date/Time: Friday, July 01, 2016 14:28:54
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.874
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.667
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106504
Sample Date/Time: Friday, July 01, 2016 14:29:49
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79397.5	1.7				ug/L	76456	Standard
	Be	9	16.7	45.8	**-0.0055**	0.007	119.4	ug/L	20	Standard
	Al	27	291025.7	1.9	**1.6271**	0.036	2.2	ug/L	1307	Standard
	Sc	45	36009.4	0.8				ug/L	41174	Standard
	Ti	47	26.7	15.2	**0.0019**	0.013	690.9	ug/L	27	Standard
	V	51	1704.2	12.5	**0.0204**	0.028	139.1	ug/L	1434	Standard
	Cr	52	30766.6	4.8	**3.0469**	0.189	6.2	ug/L	7733	Standard
	Cr	53	3653.8	5.4	**3.4005**	0.215	6.3	ug/L	442	Standard
	Mn	55	17036.6	2.3	**2.2748**	0.050	2.2	ug/L	723	Standard
	Co	59	958.7	6.2	**0.1027**	0.008	8.2	ug/L	217	Standard
	Ni	60	2008.1	1.5	**0.8687**	0.014	1.6	ug/L	304	Standard
	Cu	65	251.7	3.4	**0.0561**	0.005	9.3	ug/L	181	Standard
	Zn	66	1482.7	0.2	**1.0976**	0.010	0.9	ug/L	215	Standard
>	Ge	72	493269.0	0.6				ug/L	520809	Standard
	As	75	-44.8	49.5	**0.0068**	0.019	282.1	ug/L	-52	Standard
	Se	82	18.7	10.9	**0.0294**	0.017	58.4	ug/L	17	Standard
	Se-1	77	64.3	6.3	**0.1099**	0.049	45.0	ug/L	56	Standard
>	Ga	71	26.7	43.3				mg/L	25	Standard
	Rb	85	2356.8	1.6				ug/L	28	Standard
	Y	89	413880.0	0.1				ug/L	447395	Standard
>	Rh	103	25.0	0.0				ug/L	15	Standard
	Mo	98	624.4	36.8	**0.1955**	0.081	41.4	ug/L	113	Standard
	Ag	107	92.7	17.9	**0.0009**	0.003	292.7	ug/L	108	Standard
	Cd	111	11.5	37.2	**0.0030**	0.002	67.8	mg/L	3	Standard
	Cd	114	45.1	23.2	**0.0084**	0.002	22.0	ug/L	20	Standard
>	In	115	588539.3	1.1				ug/L	625728	Standard
	Sn	118	616.7	20.1	**0.0176**	0.020	114.5	ug/L	568	Standard
	Sb	123	351.6	3.8	**0.0386**	0.003	9.0	ug/L	612	Standard
	Ba	135	231.7	10.0	**0.0953**	0.011	11.7	ug/L	21	Standard
	Ce	140	43.3	88.1				ug/L	245	Standard
>	Tb	159	885756.3	0.8				ug/L	950397	Standard
	Ho	165	16.7	34.6				ug/L	7	Standard
	Tl	203	73.3	2.8	**0.0077**	0.000	3.3	ug/L	15	Standard
	Tl	205	65.0	13.3	**-0.0013**	0.001	87.3	ug/L	13	Standard
	Pb	206	322.7	5.3	**0.0151**	0.003	19.7	ug/L	264	Standard
	Pb	207	256.3	3.1	**0.0054**	0.001	26.7	ug/L	222	Standard
	Pb	208	1164.0	5.3	**0.0090**	0.003	33.0	ug/L	959	Standard
	U	238	19.0	34.5	**0.0022**	0.001	38.3	ug/L	9	Standard
>	Bi	209	534942.7	0.4				ug/L	552821	Standard

Sample ID: L1606106504
Report Date/Time: Friday, July 01, 2016 14:32:06
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**11.3879**	9.859	86.6	mg/L	2	Standard
Mg	24	1060.0	6.8	**1.3559**	0.099	7.3	mg/L	55	Standard
K	39	55.0	32.8	**0.1095**	0.077	70.3	mg/L	28	Standard
Ca	43	21.7	48.0	**-0.2024**	1.077	531.9	mg/L	27	Standard
Fe	54	98.8	37.3	**-0.0103**	0.032	312.2	mg/L	147	Standard
Fe	57	268.3	7.1	**0.1387**	0.065	46.8	mg/L	268	Standard
> **Sc-1**	45	36009.4	0.8				mg/L	41174	Standard
Cl	35	77523.2	0.3				ug/L	69550	Standard
Kr	83	2.7	114.6				ug/L	1	Standard
Br	81	2113.5	9.3				ug/L	1950	Standard
P	31	7710.3	3.6				ug/L	21156	Standard
S	34	3393.7	3.0				ug/L	3419	Standard
Sr	88	65.0	23.1				ug/L	72	Standard
C	12	106.7	28.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	623.3	9.8				mg/L	17	Standard
Dy	164	15.7	70.9				mg/L	16	Standard
Ho-1	165	16.7	34.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	28194.6	4.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.848	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.712	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106504
Report Date/Time: Friday, July 01, 2016 14:32:06
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.057
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.766
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606106504
Report Date/Time: Friday, July 01, 2016 14:32:06
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 14:33:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84479.9	0.6				ug/L	76456	Standard
	Be	9	65431.0	1.7	**52.8839**	1.234	2.3	ug/L	20	Standard
	Al	27	9107293.6	1.3	**48.1391**	0.761	1.6	ug/L	1307	Standard
	Sc	45	41221.0	1.1				ug/L	41174	Standard
	Ti	47	32532.9	2.1	**96.4064**	2.590	2.7	ug/L	27	Standard
	V	51	430170.6	0.9	**50.3648**	0.150	0.3	ug/L	1434	Standard
	Cr	52	419842.9	0.7	**49.1999**	0.629	1.3	ug/L	7733	Standard
	Cr	53	51666.3	1.8	**48.9792**	1.063	2.2	ug/L	442	Standard
	Mn	55	386049.1	1.6	**49.1731**	0.734	1.5	ug/L	723	Standard
	Co	59	420011.6	1.0	**52.9472**	0.520	1.0	ug/L	217	Standard
	Ni	60	107142.5	0.5	**49.7412**	0.431	0.9	ug/L	304	Standard
	Cu	65	106376.5	0.2	**50.2954**	0.371	0.7	ug/L	181	Standard
	Zn	66	63768.9	0.5	**50.1114**	0.441	0.9	ug/L	215	Standard
>	**Ge**	72	539029.9	0.6				ug/L	520809	Standard
	As	75	63720.4	0.2	**49.9158**	0.187	0.4	ug/L	-52	Standard
	Se	82	6616.1	1.4	**50.4720**	0.409	0.8	ug/L	17	Standard
	Se-1	77	4538.7	1.1	**50.6161**	0.744	1.5	ug/L	56	Standard
>	**Ga**	71	41.7	36.7				mg/L	25	Standard
	Rb	85	886.7	6.2				ug/L	28	Standard
	Y	89	466133.9	1.1				ug/L	447395	Standard
>	**Rh**	103	45.0	48.4				ug/L	15	Standard
	Mo	98	316079.0	1.2	**100.9623**	1.590	1.6	ug/L	113	Standard
	Ag	107	372581.7	1.1	**50.1169**	0.847	1.7	ug/L	108	Standard
	Cd	111	118352.7	0.1	**49.6717**	0.324	0.7	mg/L	3	Standard
	Cd	114	294028.3	2.4	**49.8404**	1.066	2.1	ug/L	20	Standard
>	**In**	115	647595.9	0.6				ug/L	625728	Standard
	Sn	118	333519.2	0.4	**49.9888**	0.512	1.0	ug/L	568	Standard
	Sb	123	262566.9	2.8	**49.0609**	1.554	3.2	ug/L	612	Standard
	Ba	135	108230.2	0.7	**48.0518**	0.424	0.9	ug/L	21	Standard
	Ce	140	185.0	15.0				ug/L	245	Standard
>	**Tb**	159	963986.1	0.6				ug/L	950397	Standard
	Ho	165	15.0	115.5				ug/L	7	Standard
	Tl	203	457975.8	1.0	**50.2126**	0.379	0.8	ug/L	15	Standard
	Tl	205	420042.8	0.3	**51.8564**	0.350	0.7	ug/L	13	Standard
	Pb	206	291174.6	0.8	**50.5849**	0.394	0.8	ug/L	264	Standard
	Pb	207	263877.7	0.4	**50.4775**	0.161	0.3	ug/L	222	Standard
	Pb	208	1113044.3	0.4	**52.1318**	0.466	0.9	ug/L	959	Standard
	U	238	419550.2	0.5	**51.2295**	0.115	0.2	ug/L	9	Standard
>	**Bi**	209	561599.8	0.5				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:35:18
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4695.7	3.2	**5.4185**	0.141	2.6	mg/L	55	Standard
K	39	1080.0	1.9	**4.0059**	0.102	2.5	mg/L	28	Standard
Ca	43	58.3	9.9	**2.8430**	0.540	19.0	mg/L	27	Standard
Fe	54	6681.6	1.6	**5.1353**	0.107	2.1	mg/L	147	Standard
Fe	57	1935.1	3.8	**5.1339**	0.159	3.1	mg/L	268	Standard
> **Sc-1**	45	41221.0	1.1				mg/L	41174	Standard
Cl	35	86136.9	2.1				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2180.2	1.6				ug/L	1950	Standard
P	31	25733.5	2.6				ug/L	21156	Standard
S	34	4153.9	3.6				ug/L	3419	Standard
Sr	88	75.0	13.3				ug/L	72	Standard
C	12	106.7	28.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	720.0	29.7				mg/L	17	Standard
Dy	164	22.7	24.3				mg/L	16	Standard
Ho-1	165	15.0	115.5				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	15117.5	1.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.768		
Al	27	96.278		
Sc	45			
Ti	47	96.406		
V	51	100.730		
Cr	52	98.400		
Cr	53			
Mn	55	98.346		
Co	59	105.894		
Ni	60	99.482		
Cu	65	100.591		
Zn	66	100.223		
> Ge	72		103.499	
As	75	99.832		
Se	82	100.944		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:35:18
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	100.962		
Ag	107	100.234		
Cd	111	99.343		
Cd	114			
> In	115			103.495
Sn	118	99.978		
Sb	123	98.122		
Ba	135	96.104		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.425		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.264		
U	238	102.459		
> Bi	209			101.588
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:35:18
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 14:36:13
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84748.1	2.2				ug/L	76456	Standard
	Be	9	28.3	27.0	**0.0029**	0.006	204.3	ug/L	20	Standard
	Al	27	2800.3	34.3	**0.0045**	0.005	111.4	ug/L	1307	Standard
	Sc	45	41077.3	1.7				ug/L	41174	Standard
	Ti	47	26.0	26.6	**-0.0072**	0.021	288.8	ug/L	27	Standard
	V	51	1826.7	11.6	**0.0166**	0.026	154.1	ug/L	1434	Standard
	Cr	52	7089.7	2.6	**-0.1215**	0.019	15.7	ug/L	7733	Standard
	Cr	53	518.3	19.4	**0.0795**	0.095	119.0	ug/L	442	Standard
	Mn	55	744.0	2.7	**-0.0062**	0.002	40.3	ug/L	723	Standard
	Co	59	250.7	12.3	**0.0022**	0.004	175.9	ug/L	217	Standard
	Ni	60	366.0	4.1	**0.0177**	0.007	39.1	ug/L	304	Standard
	Cu	65	215.0	5.8	**0.0279**	0.006	21.4	ug/L	181	Standard
	Zn	66	258.3	5.8	**0.0239**	0.012	50.5	ug/L	215	Standard
>	**Ge**	72	537853.0	0.3				ug/L	520809	Standard
	As	75	-50.7	30.0	**0.0054**	0.012	222.4	ug/L	-52	Standard
	Se	82	23.4	28.3	**0.0526**	0.050	95.5	ug/L	17	Standard
	Se-1	77	56.3	13.3	**-0.0464**	0.086	185.9	ug/L	56	Standard
>	**Ga**	71	38.3	66.9				mg/L	25	Standard
	Rb	85	33.3	67.6				ug/L	28	Standard
	Y	89	471394.3	0.7				ug/L	447395	Standard
>	**Rh**	103	18.3	63.0				ug/L	15	Standard
	Mo	98	398.2	17.4	**0.1019**	0.023	22.4	ug/L	113	Standard
	Ag	107	141.3	16.6	**0.0060**	0.003	53.5	ug/L	108	Standard
	Cd	111	18.0	20.7	**0.0051**	0.002	31.3	mg/L	3	Standard
	Cd	114	51.0	12.7	**0.0086**	0.001	12.0	ug/L	20	Standard
>	**In**	115	655049.2	0.7				ug/L	625728	Standard
	Sn	118	1826.8	33.6	**0.1873**	0.093	49.6	ug/L	568	Standard
	Sb	123	1005.7	35.1	**0.1525**	0.066	43.6	ug/L	612	Standard
	Ba	135	50.7	11.6	**0.0043**	0.003	59.6	ug/L	21	Standard
	Ce	140	55.0	18.2				ug/L	245	Standard
>	**Tb**	159	963692.0	2.2				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	91.3	32.5	**0.0091**	0.003	36.2	ug/L	15	Standard
	Tl	205	100.0	20.0	**0.0024**	0.003	107.2	ug/L	13	Standard
	Pb	206	358.7	4.9	**0.0174**	0.003	18.6	ug/L	264	Standard
	Pb	207	299.3	9.7	**0.0101**	0.006	57.2	ug/L	222	Standard
	Pb	208	1241.0	6.1	**0.0088**	0.004	42.7	ug/L	959	Standard
	U	238	67.3	26.7	**0.0078**	0.002	28.5	ug/L	9	Standard
>	**Bi**	209	572676.0	1.1				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:38:30
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	27.6	**0.0080**	0.018	227.2	mg/L	55	Standard
K	39	31.7	24.1	**-0.0097**	0.028	287.6	mg/L	28	Standard
Ca	43	30.0	60.1	**0.2757**	1.623	588.8	mg/L	27	Standard
Fe	54	132.3	15.7	**0.0051**	0.015	299.1	mg/L	147	Standard
Fe	57	226.7	3.4	**-0.1060**	0.019	17.5	mg/L	268	Standard
Sc-1	45	41077.3	1.7				mg/L	41174	Standard
Cl	35	85337.0	1.5				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	2146.8	7.1				ug/L	1950	Standard
P	31	24845.4	3.5				ug/L	21156	Standard
S	34	4015.5	0.7				ug/L	3419	Standard
Sr	88	58.3	27.6				ug/L	72	Standard
C	12	116.7	9.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	523.3	24.3				mg/L	17	Standard
Dy	164	6.0	187.1				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	11185.8	0.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.273	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:38:30
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.686
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.592
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:38:30
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, July 01, 2016 14:39:26
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82750.5	2.9				ug/L	76456	Standard
	Be	9	285.0	17.8	**0.2151**	0.039	18.0	ug/L	20	Standard
	Al	27	1818.4	16.8	**-0.0004**	0.002	418.1	ug/L	1307	Standard
	Sc	45	39031.9	2.5				ug/L	41174	Standard
	Ti	47	23.0	28.5	**-0.0130**	0.020	154.9	ug/L	27	Standard
	V	51	4531.3	0.6	**0.3599**	0.004	1.1	ug/L	1434	Standard
	Cr	52	13097.3	0.4	**0.6705**	0.008	1.2	ug/L	7733	Standard
	Cr	53	1321.7	4.4	**0.9081**	0.059	6.5	ug/L	442	Standard
	Mn	55	3958.5	1.2	**0.4284**	0.005	1.2	ug/L	723	Standard
	Co	59	3194.7	3.0	**0.3931**	0.014	3.5	ug/L	217	Standard
	Ni	60	3472.1	3.0	**1.5421**	0.046	3.0	ug/L	304	Standard
	Cu	65	1723.1	3.0	**0.7813**	0.023	3.0	ug/L	181	Standard
	Zn	66	8776.2	0.9	**7.0769**	0.052	0.7	ug/L	215	Standard
>	**Ge**	72	514072.5	0.3				ug/L	520809	Standard
	As	75	450.1	8.8	**0.4145**	0.032	7.7	ug/L	-52	Standard
	Se	82	70.4	7.3	**0.4383**	0.043	9.7	ug/L	17	Standard
	Se-1	77	94.3	4.8	**0.4334**	0.056	12.9	ug/L	56	Standard
>	**Ga**	71	21.7	35.3				mg/L	25	Standard
	Rb	85	21.7	53.3				ug/L	28	Standard
	Y	89	438183.2	1.3				ug/L	447395	Standard
>	**Rh**	103	16.7	105.4				ug/L	15	Standard
	Mo	98	167.4	18.5	**0.0314**	0.011	34.8	ug/L	113	Standard
	Ag	107	2856.9	3.2	**0.3846**	0.011	2.9	ug/L	108	Standard
	Cd	111	543.4	2.2	**0.2335**	0.007	3.2	mg/L	3	Standard
	Cd	114	1301.0	2.4	**0.2280**	0.003	1.3	ug/L	20	Standard
>	**In**	115	626288.8	1.2				ug/L	625728	Standard
	Sn	118	1146.7	25.4	**0.0941**	0.047	50.1	ug/L	568	Standard
	Sb	123	2055.0	1.9	**0.3637**	0.012	3.3	ug/L	612	Standard
	Ba	135	1475.7	2.5	**0.6597**	0.010	1.5	ug/L	21	Standard
	Ce	140	10.0	50.0				ug/L	245	Standard
>	**Tb**	159	937003.8	0.8				ug/L	950397	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	742.4	3.9	**0.0813**	0.003	3.9	ug/L	15	Standard
	Tl	205	635.0	7.6	**0.0693**	0.006	9.0	ug/L	13	Standard
	Pb	206	1423.4	1.3	**0.2057**	0.004	1.8	ug/L	264	Standard
	Pb	207	1222.7	2.7	**0.1898**	0.007	3.5	ug/L	222	Standard
	Pb	208	5238.4	1.7	**0.1992**	0.005	2.7	ug/L	959	Standard
	U	238	3209.7	2.1	**0.3947**	0.010	2.6	ug/L	9	Standard
>	**Bi**	209	557268.2	0.5				ug/L	552821	Standard

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 14:41:43
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.3145**	9.196	173.0	mg/L	2	Standard
Mg	24	45.0	11.1	**-0.0048**	0.005	106.0	mg/L	55	Standard
K	39	16.7	45.8	**-0.0643**	0.029	45.1	mg/L	28	Standard
Ca	43	28.3	40.8	**0.2822**	1.159	410.5	mg/L	27	Standard
Fe	54	125.5	27.9	**0.0049**	0.029	586.2	mg/L	147	Standard
Fe	57	236.7	18.2	**-0.0367**	0.142	386.3	mg/L	268	Standard
> **Sc-1**	45	39031.9	2.5				mg/L	41174	Standard
Cl	35	80966.5	1.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2093.5	4.3				ug/L	1950	Standard
P	31	17104.7	1.6				ug/L	21156	Standard
S	34	3810.5	3.5				ug/L	3419	Standard
Sr	88	53.3	51.6				ug/L	72	Standard
C	12	146.7	52.1				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	223.3	40.6				mg/L	17	Standard
Dy	164	5.7	102.5				mg/L	16	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	1610.1	16.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	107.542		
Al	27			
Sc	45			
Ti	47			
V	51	89.972		
Cr	52	83.818		
Cr	53			
Mn	55	85.687		
Co	59	98.272		
Ni	60	96.381		
Cu	65	97.667		
Zn	66	113.230		
> Ge	72		98.706	
As	75	103.620		
Se	82	109.583		
Se-1	77			
> Ga	71			

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 14:41:43
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.144		
Cd	111	97.300		
Cd	114			
> In	115			100.090
Sn	118			
Sb	123	90.914		
Ba	135	87.967		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.600		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.596		
U	238	98.687		
> Bi	209			100.804
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 14:41:43
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606136001
Sample Date/Time: Friday, July 01, 2016 15:11:12
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	102032.6	2.7				ug/L	76456	Standard
	Be	9	25.0	34.6	-0.0031	0.006	188.0	ug/L	20	Standard
	Al	27	55269386.4	1.6	242.0065	6.248	2.6	ug/L	1307	Standard
	Sc	45	42982.6	3.7				ug/L	41174	Standard
	Ti	47	671.0	5.7	1.9148	0.128	6.7	ug/L	27	Standard
	V	51	4267.5	6.4	0.3052	0.033	10.8	ug/L	1434	Standard
	Cr	52	10596.7	1.5	0.3014	0.025	8.3	ug/L	7733	Standard
	Cr	53	1925.1	6.6	1.4310	0.107	7.5	ug/L	442	Standard
	Mn	55	5430678.9	1.0	696.1378	12.327	1.8	ug/L	723	Standard
	Co	59	2218.2	2.4	0.2516	0.009	3.5	ug/L	217	Standard
	Ni	60	4312.3	3.2	1.8641	0.080	4.3	ug/L	304	Standard
	Cu	65	798.0	4.6	0.3054	0.016	5.3	ug/L	181	Standard
	Zn	66	2494.5	0.6	1.7957	0.026	1.4	ug/L	215	Standard
>	Ge	72	536693.6	0.8				ug/L	520809	Standard
	As	75	4266.7	1.8	3.3992	0.072	2.1	ug/L	-52	Standard
	Se	82	495.3	5.2	3.6793	0.225	6.1	ug/L	17	Standard
	Se-1	77	148.7	2.7	1.0032	0.054	5.4	ug/L	56	Standard
>	Ga	71	150.0	23.3				mg/L	25	Standard
	Rb	85	52107.8	0.6				ug/L	28	Standard
	Y	89	450964.8	1.0				ug/L	447395	Standard
>	Rh	103	411.7	6.2				ug/L	15	Standard
	Mo	98	1387.0	5.2	0.4385	0.030	6.9	ug/L	113	Standard
	Ag	107	200.3	32.4	0.0153	0.009	61.2	ug/L	108	Standard
	Cd	111	14.4	26.9	0.0039	0.002	40.7	mg/L	3	Standard
	Cd	114	17.5	189.3	0.0031	0.006	189.4	ug/L	20	Standard
>	In	115	620931.3	1.4				ug/L	625728	Standard
	Sn	118	1585.1	13.6	0.1643	0.037	22.3	ug/L	568	Standard
	Sb	123	1484.9	28.1	0.2566	0.085	33.0	ug/L	612	Standard
	Ba	135	185434.9	0.7	85.8822	0.643	0.7	ug/L	21	Standard
	Ce	140	220.0	14.2				ug/L	245	Standard
>	Tb	159	948217.7	1.1				ug/L	950397	Standard
	Ho	165	31.7	9.1				ug/L	7	Standard
	Tl	203	125.3	17.6	0.0138	0.003	19.7	ug/L	15	Standard
	Tl	205	88.3	14.2	0.0018	0.002	100.1	ug/L	13	Standard
	Pb	206	400.7	10.7	0.0298	0.009	29.3	ug/L	264	Standard
	Pb	207	353.0	2.8	0.0252	0.002	8.1	ug/L	222	Standard
	Pb	208	1381.0	1.8	0.0200	0.002	10.5	ug/L	959	Standard
	U	238	1004.0	3.9	0.1291	0.007	5.4	ug/L	9	Standard
>	Bi	209	532629.6	1.5				ug/L	552821	Standard

Sample ID: L1606136001
Report Date/Time: Friday, July 01, 2016 15:13:29
Page 1

Approved: July 02, 2016

Na	23	15.0	33.3	**42.5757**	12.711	29.9	mg/L	2	Standard
Mg	24	49159.6	0.3	**55.0024**	2.117	3.8	mg/L	55	Standard
K	39	1461.7	10.0	**5.2295**	0.334	6.4	mg/L	28	Standard
Ca	43	601.7	4.7	**50.0156**	4.072	8.1	mg/L	27	Standard
Fe	54	4574.4	1.8	**3.3398**	0.110	3.3	mg/L	147	Standard
Fe	57	1803.4	3.2	**4.5113**	0.320	7.1	mg/L	268	Standard
> **Sc-1**	45	42982.6	3.7				mg/L	41174	Standard
Cl	35	94962.0	0.7				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	95694.6	1.2				ug/L	1950	Standard
P	31	33902.9	0.5				ug/L	21156	Standard
S	34	4128.9	1.2				ug/L	3419	Standard
Sr	88	1591.8	1.7				ug/L	72	Standard
C	12	436.7	25.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	510.0	42.5				mg/L	17	Standard
Dy	164	37.8	54.9				mg/L	16	Standard
Ho-1	165	31.7	9.1				mg/L	7	Standard
Er	166	46.7	32.7				mg/L	7	Standard
I	127	121671837.9	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.453	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.050	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606136001
Report Date/Time: Friday, July 01, 2016 15:13:29
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.233	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.348	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606136001
Report Date/Time: Friday, July 01, 2016 15:13:29
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606136002
Sample Date/Time: Friday, July 01, 2016 15:14:23
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85581.0	1.5				ug/L	76456	Standard
	Be	9	25.0	60.0	**0.0002**	0.012	7141.4	ug/L	20	Standard
	Al	27	55900.2	24.1	**0.2811**	0.067	23.9	ug/L	1307	Standard
	Sc	45	42536.3	1.1				ug/L	41174	Standard
	Ti	47	133.7	20.6	**0.3028**	0.078	25.8	ug/L	27	Standard
	V	51	2309.2	3.2	**0.0668**	0.010	14.4	ug/L	1434	Standard
	Cr	52	10748.5	0.6	**0.2852**	0.003	0.9	ug/L	7733	Standard
	Cr	53	1006.7	5.2	**0.5242**	0.053	10.1	ug/L	442	Standard
	Mn	55	5954.9	24.0	**0.6413**	0.175	27.3	ug/L	723	Standard
	Co	59	262.0	8.2	**0.0029**	0.003	90.0	ug/L	217	Standard
	Ni	60	497.3	9.2	**0.0733**	0.022	29.6	ug/L	304	Standard
	Cu	65	2911.9	5.2	**1.2738**	0.065	5.1	ug/L	181	Standard
	Zn	66	1381.4	5.9	**0.8847**	0.058	6.6	ug/L	215	Standard
>	**Ge**	72	551341.1	0.5				ug/L	520809	Standard
	As	75	-21.8	42.5	**0.0285**	0.007	24.8	ug/L	-52	Standard
	Se	82	22.1	22.3	**0.0391**	0.037	95.8	ug/L	17	Standard
	Se-1	77	66.7	24.4	**0.0515**	0.176	341.9	ug/L	56	Standard
>	**Ga**	71	61.7	33.8				mg/L	25	Standard
	Rb	85	408.3	7.2				ug/L	28	Standard
	Y	89	470361.2	0.7				ug/L	447395	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	156.0	25.9	**0.0252**	0.013	53.1	ug/L	113	Standard
	Ag	107	109.0	5.1	**0.0016**	0.001	52.8	ug/L	108	Standard
	Cd	111	14.4	21.7	**0.0036**	0.001	37.8	mg/L	3	Standard
	Cd	114	35.6	84.3	**0.0060**	0.005	83.9	ug/L	20	Standard
>	**In**	115	658802.4	1.3				ug/L	625728	Standard
	Sn	118	3085.3	1.9	**0.3711**	0.008	2.1	ug/L	568	Standard
	Sb	123	348.5	35.2	**0.0306**	0.023	76.5	ug/L	612	Standard
	Ba	135	1852.8	5.0	**0.7908**	0.032	4.1	ug/L	21	Standard
	Ce	140	210.0	16.5				ug/L	245	Standard
>	**Tb**	159	984012.0	1.0				ug/L	950397	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	41.3	6.1	**0.0037**	0.000	7.2	ug/L	15	Standard
	Tl	205	46.7	68.9	**-0.0041**	0.004	94.4	ug/L	13	Standard
	Pb	206	460.7	0.7	**0.0345**	0.001	2.0	ug/L	264	Standard
	Pb	207	404.0	4.8	**0.0295**	0.003	11.6	ug/L	222	Standard
	Pb	208	1690.4	3.1	**0.0292**	0.002	7.9	ug/L	959	Standard
	U	238	26.3	7.9	**0.0029**	0.000	8.7	ug/L	9	Standard
>	**Bi**	209	574438.2	0.4				ug/L	552821	Standard

Sample ID: L1606136002
Report Date/Time: Friday, July 01, 2016 15:16:40
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	250.0	12.5	**0.2227**	0.038	16.8	mg/L	55	Standard
K	39	21.7	48.0	**-0.0507**	0.039	76.8	mg/L	28	Standard
Ca	43	33.3	45.8	**0.4827**	1.350	279.7	mg/L	27	Standard
Fe	54	174.0	19.0	**0.0332**	0.024	72.4	mg/L	147	Standard
Fe	57	240.0	20.1	**-0.0912**	0.137	149.9	mg/L	268	Standard
> **Sc-1**	45	42536.3	1.1				mg/L	41174	Standard
Cl	35	95107.6	2.0				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2680.2	5.4				ug/L	1950	Standard
P	31	27181.0	2.6				ug/L	21156	Standard
S	34	4080.5	2.6				ug/L	3419	Standard
Sr	88	60.0	8.3				ug/L	72	Standard
C	12	186.7	8.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	346.7	61.6				mg/L	17	Standard
Dy	164	25.7	79.6				mg/L	16	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	835274.3	37.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.935	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.862	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606136002
Report Date/Time: Friday, July 01, 2016 15:16:40
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.286
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.910
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140001
Sample Date/Time: Friday, July 01, 2016 15:17:35
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83445.8	0.6				ug/L	76456	Standard
	Be	9	45.0	29.4	**0.0170**	0.011	63.9	ug/L	20	Standard
	Al	27	7040110.3	1.1	**37.6724**	0.642	1.7	ug/L	1307	Standard
	Sc	45	41625.4	2.0				ug/L	41174	Standard
	Ti	47	4285.9	4.9	**12.7764**	0.570	4.5	ug/L	27	Standard
	V	51	7078.2	1.9	**0.6435**	0.022	3.4	ug/L	1434	Standard
	Cr	52	21057.0	0.1	**1.5759**	0.026	1.6	ug/L	7733	Standard
	Cr	53	3443.7	1.2	**2.9149**	0.056	1.9	ug/L	442	Standard
	Mn	55	883702.1	0.7	**114.0510**	1.835	1.6	ug/L	723	Standard
	Co	59	2499.5	0.8	**0.2896**	0.004	1.4	ug/L	217	Standard
	Ni	60	4161.2	2.0	**1.8082**	0.061	3.4	ug/L	304	Standard
	Cu	65	3327.7	0.9	**1.5204**	0.005	0.4	ug/L	181	Standard
	Zn	66	4188.9	1.5	**3.1626**	0.022	0.7	ug/L	215	Standard
>	Ge	72	532673.4	1.1				ug/L	520809	Standard
	As	75	1321.1	0.2	**1.0915**	0.014	1.3	ug/L	-52	Standard
	Se	82	41.1	15.2	**0.1918**	0.049	25.5	ug/L	17	Standard
	Se-1	77	114.0	7.6	**0.6197**	0.107	17.2	ug/L	56	Standard
>	Ga	71	1218.4	5.9				mg/L	25	Standard
	Rb	85	38403.6	2.5				ug/L	28	Standard
	Y	89	469727.3	1.0				ug/L	447395	Standard
>	Rh	103	41.7	25.0				ug/L	15	Standard
	Mo	98	855.3	9.6	**0.2517**	0.030	12.0	ug/L	113	Standard
	Ag	107	118.0	3.1	**0.0031**	0.000	8.0	ug/L	108	Standard
	Cd	111	168.9	5.8	**0.0690**	0.003	4.5	mg/L	3	Standard
	Cd	114	422.3	16.9	**0.0721**	0.011	15.8	ug/L	20	Standard
>	In	115	642729.5	1.7				ug/L	625728	Standard
	Sn	118	2336.8	13.7	**0.2695**	0.050	18.6	ug/L	568	Standard
	Sb	123	10092.5	4.2	**1.8672**	0.060	3.2	ug/L	612	Standard
	Ba	135	14880.6	0.5	**6.6421**	0.083	1.2	ug/L	21	Standard
	Ce	140	38117.9	1.2				ug/L	245	Standard
>	Tb	159	971949.7	2.4				ug/L	950397	Standard
	Ho	165	766.7	0.8				ug/L	7	Standard
	Tl	203	84.7	11.9	**0.0086**	0.001	13.1	ug/L	15	Standard
	Tl	205	65.0	26.6	**-0.0017**	0.002	121.5	ug/L	13	Standard
	Pb	206	5500.7	2.1	**0.9180**	0.006	0.6	ug/L	264	Standard
	Pb	207	4505.0	2.1	**0.8213**	0.015	1.9	ug/L	222	Standard
	Pb	208	19667.7	0.6	**0.8791**	0.020	2.3	ug/L	959	Standard
	U	238	150.0	6.0	**0.0182**	0.001	7.7	ug/L	9	Standard
>	Bi	209	558473.2	1.6				ug/L	552821	Standard

Sample ID: L1606140001
Report Date/Time: Friday, July 01, 2016 15:19:52
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.9489**	8.563	173.0	mg/L	2	Standard
Mg	24	2895.3	5.1	**3.2866**	0.193	5.9	mg/L	55	Standard
K	39	586.7	6.5	**2.0948**	0.159	7.6	mg/L	28	Standard
Ca	43	126.7	13.9	**8.9443**	1.703	19.0	mg/L	27	Standard
Fe	54	1267.9	7.9	**0.8860**	0.097	10.9	mg/L	147	Standard
Fe	57	600.0	6.3	**1.0204**	0.129	12.6	mg/L	268	Standard
> **Sc-1**	45	41625.4	2.0				mg/L	41174	Standard
Cl	35	87177.5	2.1				ug/L	69550	Standard
Kr	83	2.0	173.2				ug/L	1	Standard
Br	81	7248.4	5.5				ug/L	1950	Standard
P	31	28932.6	1.2				ug/L	21156	Standard
S	34	4053.9	3.3				ug/L	3419	Standard
Sr	88	248.3	11.1				ug/L	72	Standard
C	12	190.0	13.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	326.7	32.7				mg/L	17	Standard
Dy	164	1103.7	6.9				mg/L	16	Standard
Ho-1	165	766.7	0.8				mg/L	7	Standard
Er	166	690.0	9.5				mg/L	7	Standard
I	127	358932.7	7.2				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.143	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.278	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606140001
Report Date/Time: Friday, July 01, 2016 15:19:52
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.717
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.022
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140002
Sample Date/Time: Friday, July 01, 2016 15:20:46
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83243.1	1.8				ug/L	76456	Standard
	Be	9	40.0	66.1	**0.0127**	0.021	164.7	ug/L	20	Standard
	Al	27	20806325.7	1.5	**111.6281**	1.089	1.0	ug/L	1307	Standard
	Sc	45	42705.1	1.7				ug/L	41174	Standard
	Ti	47	521.0	4.2	**1.4841**	0.067	4.5	ug/L	27	Standard
	V	51	3344.5	4.3	**0.2005**	0.017	8.4	ug/L	1434	Standard
	Cr	52	11575.8	0.5	**0.4337**	0.008	1.8	ug/L	7733	Standard
	Cr	53	3380.4	6.9	**2.8639**	0.226	7.9	ug/L	442	Standard
	Mn	55	948881.0	1.2	**122.8502**	1.452	1.2	ug/L	723	Standard
	Co	59	2088.1	1.4	**0.2379**	0.004	1.7	ug/L	217	Standard
	Ni	60	3829.2	1.0	**1.6570**	0.016	1.0	ug/L	304	Standard
	Cu	65	1020.7	3.6	**0.4165**	0.018	4.3	ug/L	181	Standard
	Zn	66	1711.1	3.0	**1.1897**	0.044	3.7	ug/L	215	Standard
>	**Ge**	72	530967.7	0.1				ug/L	520809	Standard
	As	75	120.6	26.2	**0.1410**	0.025	17.8	ug/L	-52	Standard
	Se	82	48.6	18.0	**0.2506**	0.068	27.3	ug/L	17	Standard
	Se-1	77	180.0	11.7	**1.3805**	0.238	17.3	ug/L	56	Standard
>	**Ga**	71	128.3	39.0				mg/L	25	Standard
	Rb	85	2536.9	2.3				ug/L	28	Standard
	Y	89	459396.3	1.3				ug/L	447395	Standard
>	**Rh**	103	68.3	16.9				ug/L	15	Standard
	Mo	98	164.7	11.0	**0.0301**	0.006	21.2	ug/L	113	Standard
	Ag	107	87.7	14.4	**-0.0008**	0.002	218.3	ug/L	108	Standard
	Cd	111	68.1	9.8	**0.0269**	0.003	10.0	mg/L	3	Standard
	Cd	114	155.0	26.9	**0.0270**	0.007	27.3	ug/L	20	Standard
>	**In**	115	631529.9	1.1				ug/L	625728	Standard
	Sn	118	1490.1	25.7	**0.1455**	0.061	42.2	ug/L	568	Standard
	Sb	123	888.6	10.6	**0.1367**	0.019	13.9	ug/L	612	Standard
	Ba	135	26458.7	0.5	**12.0331**	0.137	1.1	ug/L	21	Standard
	Ce	140	9911.6	1.3				ug/L	245	Standard
>	**Tb**	159	958775.7	0.7				ug/L	950397	Standard
	Ho	165	208.3	2.8				ug/L	7	Standard
	Tl	203	123.7	9.6	**0.0132**	0.001	9.6	ug/L	15	Standard
	Tl	205	103.3	42.3	**0.0034**	0.005	161.1	ug/L	13	Standard
	Pb	206	646.3	4.8	**0.0721**	0.004	5.3	ug/L	264	Standard
	Pb	207	521.7	7.3	**0.0568**	0.007	11.5	ug/L	222	Standard
	Pb	208	2324.1	2.2	**0.0641**	0.003	5.2	ug/L	959	Standard
	U	238	1352.7	2.4	**0.1701**	0.003	1.9	ug/L	9	Standard
>	**Bi**	209	544667.8	1.5				ug/L	552821	Standard

Sample ID: L1606140002
Report Date/Time: Friday, July 01, 2016 15:23:03
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.5374**	16.511	173.1	mg/L	2	Standard
Mg	24	12897.2	1.9	**14.4668**	0.241	1.7	mg/L	55	Standard
K	39	143.3	40.4	**0.3966**	0.206	52.0	mg/L	28	Standard
Ca	43	550.0	11.0	**45.7421**	5.294	11.6	mg/L	27	Standard
Fe	54	409.1	1.1	**0.2106**	0.008	3.9	mg/L	147	Standard
Fe	57	643.3	9.1	**1.1039**	0.202	18.3	mg/L	268	Standard
> **Sc-1**	45	42705.1	1.7				mg/L	41174	Standard
Cl	35	94915.1	1.1				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	7108.3	0.6				ug/L	1950	Standard
P	31	28478.4	1.9				ug/L	21156	Standard
S	34	4015.5	4.7				ug/L	3419	Standard
Sr	88	310.0	10.1				ug/L	72	Standard
C	12	300.0	17.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	246.7	10.2				mg/L	17	Standard
Dy	164	399.0	15.6				mg/L	16	Standard
Ho-1	165	208.3	2.8				mg/L	7	Standard
Er	166	230.0	11.5				mg/L	7	Standard
I	127	149991.1	7.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.877	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.950	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140002
Report Date/Time: Friday, July 01, 2016 15:23:03
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.927	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.525	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140003
Sample Date/Time: Friday, July 01, 2016 15:23:58
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82504.1	1.6				ug/L	76456	Standard
	Be	9	21.7	48.0	**-0.0018**	0.009	480.2	ug/L	20	Standard
	Al	27	13452706.7	0.5	**72.8294**	1.526	2.1	ug/L	1307	Standard
	Sc	45	41709.0	1.4				ug/L	41174	Standard
	Ti	47	2378.5	5.3	**7.0809**	0.376	5.3	ug/L	27	Standard
	V	51	7214.8	5.3	**0.6629**	0.045	6.8	ug/L	1434	Standard
	Cr	52	13978.1	0.6	**0.7263**	0.017	2.4	ug/L	7733	Standard
	Cr	53	7091.7	6.1	**6.4687**	0.376	5.8	ug/L	442	Standard
	Mn	55	62406.3	0.1	**7.9906**	0.075	0.9	ug/L	723	Standard
	Co	59	1446.4	2.2	**0.1559**	0.006	3.6	ug/L	217	Standard
	Ni	60	2083.8	4.2	**0.8328**	0.047	5.6	ug/L	304	Standard
	Cu	65	965.4	1.3	**0.3903**	0.010	2.5	ug/L	181	Standard
	Zn	66	2028.5	1.9	**1.4450**	0.043	3.0	ug/L	215	Standard
>	**Ge**	72	530627.2	0.9				ug/L	520809	Standard
	As	75	140.1	24.4	**0.1567**	0.028	17.9	ug/L	-52	Standard
	Se	82	39.3	18.1	**0.1786**	0.052	29.4	ug/L	17	Standard
	Se-1	77	316.3	5.9	**2.9476**	0.217	7.4	ug/L	56	Standard
>	**Ga**	71	366.7	8.0				mg/L	25	Standard
	Rb	85	8984.3	2.4				ug/L	28	Standard
	Y	89	458813.5	0.8				ug/L	447395	Standard
>	**Rh**	103	51.7	39.1				ug/L	15	Standard
	Mo	98	313.7	15.4	**0.0798**	0.016	20.1	ug/L	113	Standard
	Ag	107	93.7	11.2	**0.0002**	0.001	781.2	ug/L	108	Standard
	Cd	111	28.1	20.3	**0.0099**	0.002	24.9	mg/L	3	Standard
	Cd	114	65.8	57.7	**0.0116**	0.007	57.4	ug/L	20	Standard
>	**In**	115	625934.2	0.5				ug/L	625728	Standard
	Sn	118	1398.4	16.4	**0.1329**	0.035	26.4	ug/L	568	Standard
	Sb	123	422.7	21.1	**0.0480**	0.017	35.9	ug/L	612	Standard
	Ba	135	6793.5	0.6	**3.1038**	0.028	0.9	ug/L	21	Standard
	Ce	140	15908.3	1.9				ug/L	245	Standard
>	**Tb**	159	944178.7	1.1				ug/L	950397	Standard
	Ho	165	355.0	16.2				ug/L	7	Standard
	Tl	203	120.3	15.9	**0.0130**	0.002	16.8	ug/L	15	Standard
	Tl	205	111.7	23.0	**0.0046**	0.003	71.8	ug/L	13	Standard
	Pb	206	1028.4	3.3	**0.1425**	0.006	4.1	ug/L	264	Standard
	Pb	207	909.0	1.6	**0.1352**	0.003	2.4	ug/L	222	Standard
	Pb	208	3805.2	1.1	**0.1376**	0.002	1.8	ug/L	959	Standard
	U	238	790.4	10.0	**0.1003**	0.010	10.2	ug/L	9	Standard
>	**Bi**	209	538993.4	0.2				ug/L	552821	Standard

Sample ID: L1606140003
Report Date/Time: Friday, July 01, 2016 15:26:15
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.8709**	8.546	86.6	mg/L	2	Standard
Mg	24	22061.0	0.3	**25.3844**	0.436	1.7	mg/L	55	Standard
K	39	113.3	9.2	**0.2976**	0.036	12.0	mg/L	28	Standard
Ca	43	235.0	16.1	**18.6613**	3.690	19.8	mg/L	27	Standard
Fe	54	444.8	12.4	**0.2457**	0.044	17.8	mg/L	147	Standard
Fe	57	475.0	1.1	**0.6368**	0.010	1.6	mg/L	268	Standard
Sc-1	45	41709.0	1.4				mg/L	41174	Standard
Cl	35	94012.8	1.3				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	5417.6	1.0				ug/L	1950	Standard
P	31	27702.0	0.2				ug/L	21156	Standard
S	34	3952.2	4.7				ug/L	3419	Standard
Sr	88	203.3	6.2				ug/L	72	Standard
C	12	180.0	5.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	206.7	46.0				mg/L	17	Standard
Dy	164	524.4	5.0				mg/L	16	Standard
Ho-1	165	355.0	16.2				mg/L	7	Standard
Er	166	326.7	23.8				mg/L	7	Standard
I	127	92501.9	4.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.885	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140003
Report Date/Time: Friday, July 01, 2016 15:26:15
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.033
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.499
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140004
Sample Date/Time: Friday, July 01, 2016 15:27:09
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81751.7	2.2				ug/L	76456	Standard
	Be	9	135.0	7.4	**0.0930**	0.010	10.5	ug/L	20	Standard
	Al	27	16409591.9	0.7	**89.6714**	2.399	2.7	ug/L	1307	Standard
	Sc	45	43657.8	2.3				ug/L	41174	Standard
	Ti	47	15858.0	1.7	**48.2292**	0.843	1.7	ug/L	27	Standard
	V	51	24903.7	1.5	**2.8088**	0.058	2.1	ug/L	1434	Standard
	Cr	52	24554.9	2.0	**2.0436**	0.044	2.1	ug/L	7733	Standard
	Cr	53	8734.2	4.6	**8.1598**	0.352	4.3	ug/L	442	Standard
	Mn	55	321581.9	1.2	**42.0644**	0.335	0.8	ug/L	723	Standard
	Co	59	9091.1	1.5	**1.1485**	0.011	1.0	ug/L	217	Standard
	Ni	60	4968.8	2.8	**2.2237**	0.057	2.6	ug/L	304	Standard
	Cu	65	4956.5	2.1	**2.3370**	0.063	2.7	ug/L	181	Standard
	Zn	66	24116.8	0.6	**19.3591**	0.218	1.1	ug/L	215	Standard
>	Ge	72	524703.9	0.5				ug/L	520809	Standard
	As	75	614.6	10.2	**0.5395**	0.053	9.9	ug/L	-52	Standard
	Se	82	60.0	7.2	**0.3447**	0.037	10.6	ug/L	17	Standard
	Se-1	77	320.0	6.3	**3.0305**	0.221	7.3	ug/L	56	Standard
>	Ga	71	2358.5	3.8				mg/L	25	Standard
	Rb	85	29106.3	0.5				ug/L	28	Standard
	Y	89	488820.8	1.3				ug/L	447395	Standard
>	Rh	103	41.7	36.7				ug/L	15	Standard
	Mo	98	207.5	20.0	**0.0449**	0.014	31.5	ug/L	113	Standard
	Ag	107	157.7	11.6	**0.0091**	0.002	27.1	ug/L	108	Standard
	Cd	111	394.0	4.6	**0.1692**	0.008	4.7	mg/L	3	Standard
	Cd	114	994.3	3.1	**0.1748**	0.005	2.7	ug/L	20	Standard
>	In	115	624414.0	0.6				ug/L	625728	Standard
	Sn	118	1828.4	12.1	**0.2006**	0.036	17.9	ug/L	568	Standard
	Sb	123	719.7	13.7	**0.1059**	0.020	18.8	ug/L	612	Standard
	Ba	135	28855.8	0.8	**13.2740**	0.137	1.0	ug/L	21	Standard
	Ce	140	181035.3	1.7				ug/L	245	Standard
>	Tb	159	950705.2	0.6				ug/L	950397	Standard
	Ho	165	3198.7	2.4				ug/L	7	Standard
	Tl	203	267.3	11.5	**0.0298**	0.004	11.9	ug/L	15	Standard
	Tl	205	255.0	10.9	**0.0230**	0.004	15.5	ug/L	13	Standard
	Pb	206	5712.7	1.8	**0.9909**	0.019	1.9	ug/L	264	Standard
	Pb	207	4766.7	1.5	**0.9045**	0.014	1.5	ug/L	222	Standard
	Pb	208	20771.3	1.3	**0.9660**	0.013	1.3	ug/L	959	Standard
	U	238	597.3	5.0	**0.0757**	0.004	5.0	ug/L	9	Standard
>	Bi	209	539160.5	0.0				ug/L	552821	Standard

Sample ID: L1606140004
Report Date/Time: Friday, July 01, 2016 15:29:26
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.3434**	8.093	86.6	mg/L	2	Standard
Mg	24	23045.8	1.2	**25.3403**	0.746	2.9	mg/L	55	Standard
K	39	200.0	16.4	**0.5941**	0.134	22.5	mg/L	28	Standard
Ca	43	263.3	19.5	**20.1662**	4.729	23.5	mg/L	27	Standard
Fe	54	2633.0	5.5	**1.8499**	0.135	7.3	mg/L	147	Standard
Fe	57	1085.0	6.4	**2.3396**	0.175	7.5	mg/L	268	Standard
Sc-1	45	43657.8	2.3				mg/L	41174	Standard
Cl	35	89531.9	3.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	8986.0	7.5				ug/L	1950	Standard
P	31	30121.6	2.2				ug/L	21156	Standard
S	34	4117.2	5.6				ug/L	3419	Standard
Sr	88	208.3	27.6				ug/L	72	Standard
C	12	203.3	12.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	336.7	30.9				mg/L	17	Standard
Dy	164	4587.9	2.0				mg/L	16	Standard
Ho-1	165	3198.7	2.4				mg/L	7	Standard
Er	166	3260.4	5.8				mg/L	7	Standard
I	127	86340.3	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.927	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.748	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606140004
Report Date/Time: Friday, July 01, 2016 15:29:26
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.790
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.529
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140005
Sample Date/Time: Friday, July 01, 2016 15:30:21
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81575.7	1.3				ug/L	76456	Standard
	Be	9	31.7	45.6	**0.0067**	0.012	182.8	ug/L	20	Standard
	Al	27	11361131.6	0.7	**62.2005**	1.160	1.9	ug/L	1307	Standard
	Sc	45	41289.5	1.9				ug/L	41174	Standard
	Ti	47	446.7	4.2	**1.2710**	0.064	5.1	ug/L	27	Standard
	V	51	6339.2	1.7	**0.5637**	0.005	0.9	ug/L	1434	Standard
	Cr	52	14053.8	0.9	**0.7478**	0.031	4.1	ug/L	7733	Standard
	Cr	53	3397.0	0.8	**2.9061**	0.060	2.1	ug/L	442	Standard
	Mn	55	91180.2	0.3	**11.8062**	0.126	1.1	ug/L	723	Standard
	Co	59	1636.1	3.3	**0.1817**	0.006	3.3	ug/L	217	Standard
	Ni	60	2420.2	3.0	**0.9998**	0.030	3.0	ug/L	304	Standard
	Cu	65	1115.7	0.8	**0.4664**	0.010	2.1	ug/L	181	Standard
	Zn	66	4102.9	4.8	**3.1313**	0.189	6.0	ug/L	215	Standard
>	**Ge**	72	526864.0	1.0				ug/L	520809	Standard
	As	75	209.1	23.9	**0.2126**	0.040	18.9	ug/L	-52	Standard
	Se	82	44.2	19.7	**0.2192**	0.067	30.8	ug/L	17	Standard
	Se-1	77	143.0	9.9	**0.9701**	0.178	18.4	ug/L	56	Standard
>	**Ga**	71	123.3	14.2				mg/L	25	Standard
	Rb	85	2268.5	7.3				ug/L	28	Standard
	Y	89	460843.6	0.6				ug/L	447395	Standard
>	**Rh**	103	38.3	7.5				ug/L	15	Standard
	Mo	98	138.6	17.2	**0.0223**	0.008	37.4	ug/L	113	Standard
	Ag	107	89.7	12.2	**-0.0003**	0.002	618.7	ug/L	108	Standard
	Cd	111	119.1	4.0	**0.0498**	0.002	3.9	mg/L	3	Standard
	Cd	114	332.6	23.3	**0.0590**	0.014	24.0	ug/L	20	Standard
>	**In**	115	620430.9	1.0				ug/L	625728	Standard
	Sn	118	1270.1	10.3	**0.1149**	0.022	19.3	ug/L	568	Standard
	Sb	123	506.5	10.9	**0.0652**	0.012	17.9	ug/L	612	Standard
	Ba	135	12723.7	1.4	**5.8806**	0.073	1.2	ug/L	21	Standard
	Ce	140	16098.5	0.3				ug/L	245	Standard
>	**Tb**	159	949690.5	1.0				ug/L	950397	Standard
	Ho	165	733.4	8.1				ug/L	7	Standard
	Tl	203	89.0	5.8	**0.0094**	0.001	6.1	ug/L	15	Standard
	Tl	205	71.7	4.0	**-0.0005**	0.000	65.6	ug/L	13	Standard
	Pb	206	791.4	4.4	**0.0994**	0.006	5.9	ug/L	264	Standard
	Pb	207	690.7	3.6	**0.0915**	0.005	5.0	ug/L	222	Standard
	Pb	208	2860.4	1.4	**0.0912**	0.002	1.7	ug/L	959	Standard
	U	238	438.0	6.5	**0.0554**	0.003	6.2	ug/L	9	Standard
>	**Bi**	209	539820.6	0.5				ug/L	552821	Standard

Sample ID: L1606140005
Report Date/Time: Friday, July 01, 2016 15:32:38
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**9.8050**	16.974	173.1	mg/L	2	Standard
Mg	24	7792.0	1.0	**9.0186**	0.177	2.0	mg/L	55	Standard
K	39	263.3	14.7	**0.8766**	0.155	17.6	mg/L	28	Standard
Ca	43	330.0	19.8	**27.4186**	5.627	20.5	mg/L	27	Standard
Fe	54	735.5	15.2	**0.4767**	0.090	18.9	mg/L	147	Standard
Fe	57	581.7	10.7	**0.9796**	0.205	21.0	mg/L	268	Standard
Sc-1	45	41289.5	1.9				mg/L	41174	Standard
Cl	35	92233.2	0.5				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	7218.4	8.8				ug/L	1950	Standard
P	31	25119.1	2.5				ug/L	21156	Standard
S	34	4015.5	4.2				ug/L	3419	Standard
Sr	88	198.3	12.9				ug/L	72	Standard
C	12	296.7	7.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	29.4				mg/L	17	Standard
Dy	164	946.6	5.7				mg/L	16	Standard
Ho-1	165	733.4	8.1				mg/L	7	Standard
Er	166	766.7	15.2				mg/L	7	Standard
I	127	70972.5	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.697	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.163	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606140005
Report Date/Time: Friday, July 01, 2016 15:32:38
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.648
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140009
Sample Date/Time: Friday, July 01, 2016 15:33:32
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81176.9	1.8				ug/L	76456	Standard
	Be	9	121.7	33.5	**0.0827**	0.035	42.4	ug/L	20	Standard
	Al	27	9588194.5	0.1	**52.7539**	0.999	1.9	ug/L	1307	Standard
	Sc	45	43500.7	0.9				ug/L	41174	Standard
	Ti	47	16231.4	1.0	**49.4700**	1.142	2.3	ug/L	27	Standard
	V	51	27177.8	1.2	**3.0895**	0.018	0.6	ug/L	1434	Standard
	Cr	52	30590.2	0.3	**2.7921**	0.043	1.5	ug/L	7733	Standard
	Cr	53	15214.3	3.9	**14.5584**	0.723	5.0	ug/L	442	Standard
	Mn	55	419736.2	0.6	**55.0489**	1.027	1.9	ug/L	723	Standard
	Co	59	9146.8	1.6	**1.1580**	0.019	1.6	ug/L	217	Standard
	Ni	60	5875.8	2.7	**2.6630**	0.065	2.4	ug/L	304	Standard
	Cu	65	6513.4	1.0	**3.1007**	0.066	2.1	ug/L	181	Standard
	Zn	66	26692.5	0.5	**21.4893**	0.375	1.7	ug/L	215	Standard
>	Ge	72	523713.8	1.4				ug/L	520809	Standard
	As	75	573.5	19.4	**0.5079**	0.095	18.7	ug/L	-52	Standard
	Se	82	88.9	5.9	**0.5739**	0.045	7.8	ug/L	17	Standard
	Se-1	77	673.7	3.9	**7.1522**	0.285	4.0	ug/L	56	Standard
>	Ga	71	2611.9	4.8				mg/L	25	Standard
	Rb	85	28024.2	1.3				ug/L	28	Standard
	Y	89	508019.1	1.4				ug/L	447395	Standard
>	Rh	103	75.0	11.5				ug/L	15	Standard
	Mo	98	440.1	11.3	**0.1259**	0.017	13.3	ug/L	113	Standard
	Ag	107	293.3	3.4	**0.0292**	0.001	4.2	ug/L	108	Standard
	Cd	111	123.6	12.9	**0.0529**	0.007	13.0	mg/L	3	Standard
	Cd	114	259.6	1.9	**0.0469**	0.001	2.3	ug/L	20	Standard
>	In	115	607695.5	0.5				ug/L	625728	Standard
	Sn	118	1815.1	15.8	**0.2060**	0.044	21.6	ug/L	568	Standard
	Sb	123	1181.5	5.3	**0.2017**	0.012	6.1	ug/L	612	Standard
	Ba	135	44851.3	1.2	**21.2102**	0.264	1.2	ug/L	21	Standard
	Ce	140	233746.2	1.6				ug/L	245	Standard
>	Tb	159	940005.0	0.9				ug/L	950397	Standard
	Ho	165	4862.4	3.3				ug/L	7	Standard
	Tl	203	294.3	3.6	**0.0336**	0.001	3.3	ug/L	15	Standard
	Tl	205	293.3	8.4	**0.0288**	0.003	10.7	ug/L	13	Standard
	Pb	206	14978.4	0.2	**2.7295**	0.019	0.7	ug/L	264	Standard
	Pb	207	12667.6	1.3	**2.5366**	0.044	1.7	ug/L	222	Standard
	Pb	208	54283.9	0.6	**2.6615**	0.029	1.1	ug/L	959	Standard
	U	238	853.7	3.9	**0.1108**	0.005	4.3	ug/L	9	Standard
>	Bi	209	527415.0	0.5				ug/L	552821	Standard

Sample ID: L1606140009
Report Date/Time: Friday, July 01, 2016 15:35:49
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58944.5	2.4	**65.1233**	1.989	3.1	mg/L	55	Standard
K	39	308.3	15.9	**0.9880**	0.180	18.2	mg/L	28	Standard
Ca	43	298.3	31.7	**23.1691**	7.979	34.4	mg/L	27	Standard
Fe	54	3472.7	3.0	**2.4787**	0.071	2.9	mg/L	147	Standard
Fe	57	1280.1	3.7	**2.9195**	0.164	5.6	mg/L	268	Standard
Sc-1	45	43500.7	0.9				mg/L	41174	Standard
Cl	35	88358.4	3.5				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	13829.7	7.0				ug/L	1950	Standard
P	31	28925.9	0.9				ug/L	21156	Standard
S	34	3962.2	5.0				ug/L	3419	Standard
Sr	88	261.7	17.1				ug/L	72	Standard
C	12	160.0	39.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	233.3	49.3				mg/L	17	Standard
Dy	164	7255.6	1.4				mg/L	16	Standard
Ho-1	165	4862.4	3.3				mg/L	7	Standard
Er	166	4654.0	5.4				mg/L	7	Standard
I	127	97026.7	3.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.175	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.558	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606140009
Report Date/Time: Friday, July 01, 2016 15:35:49
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.118
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140010
Sample Date/Time: Friday, July 01, 2016 15:36:43
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81063.0	2.2				ug/L	76456	Standard
	Be	9	45.0	40.1	**0.0179**	0.015	82.9	ug/L	20	Standard
	Al	27	11177331.1	2.6	**61.5680**	0.262	0.4	ug/L	1307	Standard
	Sc	45	42046.6	2.8				ug/L	41174	Standard
	Ti	47	3513.4	4.8	**10.6195**	0.508	4.8	ug/L	27	Standard
	V	51	6549.3	3.1	**0.5923**	0.026	4.4	ug/L	1434	Standard
	Cr	52	28159.1	0.6	**2.4863**	0.028	1.1	ug/L	7733	Standard
	Cr	53	13474.3	4.4	**12.8172**	0.601	4.7	ug/L	442	Standard
	Mn	55	64803.6	1.2	**8.3962**	0.117	1.4	ug/L	723	Standard
	Co	59	2906.3	2.0	**0.3471**	0.007	2.1	ug/L	217	Standard
	Ni	60	4725.7	1.8	**2.1076**	0.036	1.7	ug/L	304	Standard
	Cu	65	5144.9	0.4	**2.4285**	0.010	0.4	ug/L	181	Standard
	Zn	66	4108.2	1.9	**3.1482**	0.066	2.1	ug/L	215	Standard
>	Ge	72	524692.7	0.2				ug/L	520809	Standard
	As	75	145.9	6.5	**0.1625**	0.008	4.8	ug/L	-52	Standard
	Se	82	112.8	12.6	**0.7595**	0.112	14.8	ug/L	17	Standard
	Se-1	77	626.7	4.9	**6.5924**	0.373	5.7	ug/L	56	Standard
>	Ga	71	708.3	9.6				mg/L	25	Standard
	Rb	85	114385.2	1.8				ug/L	28	Standard
	Y	89	451161.9	0.3				ug/L	447395	Standard
>	Rh	103	126.7	19.5				ug/L	15	Standard
	Mo	98	337.8	3.9	**0.0889**	0.005	5.8	ug/L	113	Standard
	Ag	107	99.0	14.6	**0.0011**	0.002	190.6	ug/L	108	Standard
	Cd	111	210.4	3.4	**0.0899**	0.004	4.2	mg/L	3	Standard
	Cd	114	526.0	13.1	**0.0932**	0.013	13.7	ug/L	20	Standard
>	In	115	619724.1	0.7				ug/L	625728	Standard
	Sn	118	3008.6	5.9	**0.3878**	0.029	7.5	ug/L	568	Standard
	Sb	123	32833.7	1.0	**6.3811**	0.045	0.7	ug/L	612	Standard
	Ba	135	22694.3	1.2	**10.5145**	0.070	0.7	ug/L	21	Standard
	Ce	140	24100.8	3.3				ug/L	245	Standard
>	Tb	159	942819.0	1.4				ug/L	950397	Standard
	Ho	165	435.0	17.4				ug/L	7	Standard
	Tl	203	173.7	3.3	**0.0194**	0.001	3.9	ug/L	15	Standard
	Tl	205	150.0	13.3	**0.0098**	0.003	26.2	ug/L	13	Standard
	Pb	206	11753.6	0.5	**2.1162**	0.005	0.2	ug/L	264	Standard
	Pb	207	9878.9	1.2	**1.9529**	0.015	0.8	ug/L	222	Standard
	Pb	208	42950.0	0.3	**2.0797**	0.006	0.3	ug/L	959	Standard
	U	238	632.3	2.5	**0.0814**	0.002	2.7	ug/L	9	Standard
>	Bi	209	531366.5	0.5				ug/L	552821	Standard

Sample ID: L1606140010
Report Date/Time: Friday, July 01, 2016 15:39:00
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**10.0447**	17.389	173.1	mg/L	2	Standard
Mg	24	54402.5	1.7	**62.2231**	2.757	4.4	mg/L	55	Standard
K	39	598.3	6.5	**2.1139**	0.085	4.0	mg/L	28	Standard
Ca	43	330.0	10.9	**26.8723**	2.438	9.1	mg/L	27	Standard
Fe	54	560.8	9.0	**0.3316**	0.032	9.6	mg/L	147	Standard
Fe	57	588.3	6.5	**0.9662**	0.103	10.6	mg/L	268	Standard
Sc-1	45	42046.6	2.8				mg/L	41174	Standard
Cl	35	90806.6	0.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18608.1	1.3				ug/L	1950	Standard
P	31	26292.8	1.7				ug/L	21156	Standard
S	34	4085.6	2.8				ug/L	3419	Standard
Sr	88	385.0	14.8				ug/L	72	Standard
C	12	186.7	30.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	136.7	27.7				mg/L	17	Standard
Dy	164	734.0	6.8				mg/L	16	Standard
Ho-1	165	435.0	17.4				mg/L	7	Standard
Er	166	403.3	10.0				mg/L	7	Standard
I	127	125158.4	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.026	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.746	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606140010
Report Date/Time: Friday, July 01, 2016 15:39:00
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.041
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.119
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144411
Sample Date/Time: Friday, July 01, 2016 15:39:55
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81448.4	1.6				ug/L	76456	Standard
	Be	9	11.7	65.5	**-0.0101**	0.006	63.9	ug/L	20	Standard
	Al	27	21525.3	7.9	**0.1077**	0.007	6.9	ug/L	1307	Standard
	Sc	45	43096.2	1.6				ug/L	41174	Standard
	Ti	47	91.7	3.5	**0.1831**	0.008	4.3	ug/L	27	Standard
	V	51	5715.4	7.0	**0.4625**	0.039	8.5	ug/L	1434	Standard
	Cr	52	72666.9	1.2	**7.5774**	0.036	0.5	ug/L	7733	Standard
	Cr	53	9179.5	6.4	**8.2203**	0.500	6.1	ug/L	442	Standard
	Mn	55	17987.3	2.4	**2.1587**	0.042	2.0	ug/L	723	Standard
	Co	59	1272.7	1.0	**0.1286**	0.001	0.4	ug/L	217	Standard
	Ni	60	1771.4	2.8	**0.6589**	0.022	3.3	ug/L	304	Standard
	Cu	65	890.7	4.0	**0.3410**	0.015	4.4	ug/L	181	Standard
	Zn	66	2169.2	1.7	**1.5037**	0.020	1.3	ug/L	215	Standard
>	**Ge**	72	547560.2	1.1				ug/L	520809	Standard
	As	75	-25.7	84.9	**0.0255**	0.017	64.8	ug/L	-52	Standard
	Se	82	30.2	19.3	**0.1012**	0.046	45.5	ug/L	17	Standard
	Se-1	77	82.7	3.0	**0.2352**	0.029	12.5	ug/L	56	Standard
>	**Ga**	71	61.7	16.9				mg/L	25	Standard
	Rb	85	225.0	18.2				ug/L	28	Standard
	Y	89	463078.5	0.6				ug/L	447395	Standard
>	**Rh**	103	16.7	34.6				ug/L	15	Standard
	Mo	98	9345.0	1.0	**2.9323**	0.025	0.9	ug/L	113	Standard
	Ag	107	88.3	4.7	**-0.0011**	0.001	50.3	ug/L	108	Standard
	Cd	111	4.7	106.3	**-0.0004**	0.002	489.8	mg/L	3	Standard
	Cd	114	53.3	48.8	**0.0090**	0.004	49.5	ug/L	20	Standard
>	**In**	115	654026.5	1.0				ug/L	625728	Standard
	Sn	118	6959.9	4.7	**0.9503**	0.045	4.8	ug/L	568	Standard
	Sb	123	309.2	21.8	**0.0236**	0.013	55.3	ug/L	612	Standard
	Ba	135	560.7	1.9	**0.2287**	0.006	2.5	ug/L	21	Standard
	Ce	140	275.0	28.4				ug/L	245	Standard
>	**Tb**	159	972057.0	0.8				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	71.3	7.7	**0.0070**	0.001	9.6	ug/L	15	Standard
	Tl	205	56.7	27.0	**-0.0028**	0.002	64.9	ug/L	13	Standard
	Pb	206	408.7	2.4	**0.0268**	0.002	8.8	ug/L	264	Standard
	Pb	207	323.7	7.4	**0.0155**	0.005	32.9	ug/L	222	Standard
	Pb	208	1481.0	2.8	**0.0207**	0.002	11.3	ug/L	959	Standard
	U	238	26.3	21.6	**0.0029**	0.001	22.8	ug/L	9	Standard
>	**Bi**	209	565291.9	1.0				ug/L	552821	Standard

Sample ID: L1606144411
Report Date/Time: Friday, July 01, 2016 15:42:12
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	118.3	31.7	**0.0714**	0.040	55.7	mg/L	55	Standard
K	39	33.3	8.7	**-0.0090**	0.012	135.9	mg/L	28	Standard
Ca	43	25.0	20.0	**-0.2843**	0.417	146.5	mg/L	27	Standard
Fe	54	653.3	3.0	**0.3905**	0.007	1.8	mg/L	147	Standard
Fe	57	318.3	7.9	**0.1302**	0.066	51.0	mg/L	268	Standard
> **Sc-1**	45	43096.2	1.6				mg/L	41174	Standard
Cl	35	93637.8	1.2				ug/L	69550	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	4000.5	7.9				ug/L	1950	Standard
P	31	25331.2	1.4				ug/L	21156	Standard
S	34	4190.6	5.7				ug/L	3419	Standard
Sr	88	63.3	25.4				ug/L	72	Standard
C	12	126.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	170.0	56.1				mg/L	17	Standard
Dy	164	16.0	67.7				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	17883.9	8.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.136	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144411
Report Date/Time: Friday, July 01, 2016 15:42:12
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.523
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.256
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 15:43:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79848.2	1.4				ug/L	76456	Standard
	Be	9	61340.6	1.3	**52.4607**	1.344	2.6	ug/L	20	Standard
	Al	27	8840196.9	1.7	**49.4449**	1.243	2.5	ug/L	1307	Standard
	Sc	45	42292.3	2.5				ug/L	41174	Standard
	Ti	47	33237.8	0.4	**98.6642**	0.509	0.5	ug/L	27	Standard
	V	51	434298.1	1.3	**50.9427**	0.727	1.4	ug/L	1434	Standard
	Cr	52	424946.0	0.9	**49.8972**	0.200	0.4	ug/L	7733	Standard
	Cr	53	51918.8	0.3	**49.3069**	0.192	0.4	ug/L	442	Standard
	Mn	55	396032.4	2.3	**50.5349**	0.943	1.9	ug/L	723	Standard
	Co	59	408091.6	1.9	**51.5332**	0.754	1.5	ug/L	217	Standard
	Ni	60	107986.8	0.7	**50.2226**	0.157	0.3	ug/L	304	Standard
	Cu	65	107294.9	0.3	**50.8210**	0.440	0.9	ug/L	181	Standard
	Zn	66	64441.1	1.0	**50.7299**	0.295	0.6	ug/L	215	Standard
>	Ge	72	538072.4	0.6				ug/L	520809	Standard
	As	75	64224.3	0.8	**50.3990**	0.228	0.5	ug/L	-52	Standard
	Se	82	6653.0	0.9	**50.8468**	0.498	1.0	ug/L	17	Standard
	Se-1	77	4539.7	1.5	**50.7170**	0.744	1.5	ug/L	56	Standard
>	Ga	71	38.3	19.9				mg/L	25	Standard
	Rb	85	878.4	4.8				ug/L	28	Standard
	Y	89	464875.9	0.9				ug/L	447395	Standard
>	Rh	103	28.3	56.7				ug/L	15	Standard
	Mo	98	306641.4	1.5	**98.6937**	1.489	1.5	ug/L	113	Standard
	Ag	107	367901.9	1.4	**49.8620**	0.492	1.0	ug/L	108	Standard
	Cd	111	117489.0	1.1	**49.6867**	0.641	1.3	mg/L	3	Standard
	Cd	114	291631.0	1.7	**49.8103**	0.297	0.6	ug/L	20	Standard
>	In	115	642695.4	1.1				ug/L	625728	Standard
	Sn	118	325840.7	2.1	**49.2102**	1.100	2.2	ug/L	568	Standard
	Sb	123	265299.9	1.4	**49.9473**	0.644	1.3	ug/L	612	Standard
	Ba	135	109451.6	0.3	**48.9670**	0.439	0.9	ug/L	21	Standard
	Ce	140	91.7	17.5				ug/L	245	Standard
>	Tb	159	960139.4	0.5				ug/L	950397	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	455308.6	0.4	**50.2176**	0.333	0.7	ug/L	15	Standard
	Tl	205	418174.0	0.6	**51.9308**	0.055	0.1	ug/L	13	Standard
	Pb	206	287949.4	0.0	**50.3217**	0.263	0.5	ug/L	264	Standard
	Pb	207	261570.9	0.7	**50.3350**	0.638	1.3	ug/L	222	Standard
	Pb	208	1088813.8	0.8	**51.2998**	0.701	1.4	ug/L	959	Standard
	U	238	413789.6	1.0	**50.8288**	0.805	1.6	ug/L	9	Standard
>	Bi	209	558286.7	0.5				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 15:45:25
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4697.4	5.9	**5.2790**	0.180	3.4	mg/L	55	Standard
K	39	1176.7	4.0	**4.2662**	0.289	6.8	mg/L	28	Standard
Ca	43	75.0	40.6	**4.2243**	2.811	66.5	mg/L	27	Standard
Fe	54	6836.4	1.2	**5.1227**	0.153	3.0	mg/L	147	Standard
Fe	57	1986.8	1.5	**5.1413**	0.153	3.0	mg/L	268	Standard
> **Sc-1**	45	42292.3	2.5				mg/L	41174	Standard
Cl	35	87844.6	1.1				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2156.8	5.6				ug/L	1950	Standard
P	31	26853.8	2.9				ug/L	21156	Standard
S	34	4549.0	3.6				ug/L	3419	Standard
Sr	88	63.3	24.1				ug/L	72	Standard
C	12	106.7	10.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	173.3	43.3				mg/L	17	Standard
Dy	164	9.0	191.8				mg/L	16	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	21254.9	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.921		
Al	27	98.890		
Sc	45			
Ti	47	98.664		
V	51	101.885		
Cr	52	99.794		
Cr	53			
Mn	55	101.070		
Co	59	103.066		
Ni	60	100.445		
Cu	65	101.642		
Zn	66	101.460		
> Ge	72		103.315	
As	75	100.798		
Se	82	101.694		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 15:45:25
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.694		
Ag	107	99.724		
Cd	111	99.373		
Cd	114			
In	115			102.712
Sn	118	98.420		
Sb	123	99.895		
Ba	135	97.934		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.435		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.600		
U	238	101.658		
Bi	209			100.989
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 15:45:25
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 15:46:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79389.1	1.5				ug/L	76456	Standard
	Be	9	21.7	58.1	**-0.0012**	0.011	924.7	ug/L	20	Standard
	Al	27	2653.6	26.5	**0.0047**	0.004	80.6	ug/L	1307	Standard
	Sc	45	42380.9	4.0				ug/L	41174	Standard
	Ti	47	29.7	33.8	**0.0025**	0.028	1148.4	ug/L	27	Standard
	V	51	1542.6	6.8	**-0.0189**	0.014	72.9	ug/L	1434	Standard
	Cr	52	7249.7	1.4	**-0.1121**	0.006	5.1	ug/L	7733	Standard
	Cr	53	556.7	17.0	**0.1098**	0.084	76.1	ug/L	442	Standard
	Mn	55	781.0	5.8	**-0.0026**	0.005	178.6	ug/L	723	Standard
	Co	59	230.7	5.2	**-0.0006**	0.001	192.9	ug/L	217	Standard
	Ni	60	287.0	3.3	**-0.0207**	0.003	16.9	ug/L	304	Standard
	Cu	65	178.0	9.4	**0.0094**	0.008	88.1	ug/L	181	Standard
	Zn	66	241.3	7.8	**0.0083**	0.014	168.4	ug/L	215	Standard
>	**Ge**	72	544000.0	1.1				ug/L	520809	Standard
	As	75	-38.4	128.5	**0.0152**	0.039	254.8	ug/L	-52	Standard
	Se	82	20.0	53.3	**0.0245**	0.079	323.1	ug/L	17	Standard
	Se-1	77	71.7	19.7	**0.1170**	0.150	127.9	ug/L	56	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	31.7	9.1				ug/L	28	Standard
	Y	89	461634.5	1.4				ug/L	447395	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	249.2	9.7	**0.0550**	0.007	12.4	ug/L	113	Standard
	Ag	107	132.3	12.7	**0.0048**	0.002	45.5	ug/L	108	Standard
	Cd	111	16.9	42.6	**0.0047**	0.003	63.4	mg/L	3	Standard
	Cd	114	56.7	84.7	**0.0095**	0.008	83.3	ug/L	20	Standard
>	**In**	115	653131.6	1.3				ug/L	625728	Standard
	Sn	118	1488.4	26.0	**0.1378**	0.060	43.6	ug/L	568	Standard
	Sb	123	795.3	31.1	**0.1141**	0.047	41.5	ug/L	612	Standard
	Ba	135	49.7	33.1	**0.0039**	0.007	180.6	ug/L	21	Standard
	Ce	140	41.7	13.9				ug/L	245	Standard
>	**Tb**	159	951623.8	1.5				ug/L	950397	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	77.3	16.4	**0.0077**	0.001	17.6	ug/L	15	Standard
	Tl	205	83.3	27.7	**0.0005**	0.003	538.8	ug/L	13	Standard
	Pb	206	329.3	15.7	**0.0134**	0.008	63.3	ug/L	264	Standard
	Pb	207	295.3	8.1	**0.0104**	0.004	40.0	ug/L	222	Standard
	Pb	208	1227.0	6.3	**0.0091**	0.003	35.4	ug/L	959	Standard
	U	238	66.0	40.1	**0.0078**	0.003	40.9	ug/L	9	Standard
>	**Bi**	209	562277.6	0.8				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 15:48:36
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	16.9	**0.0099**	0.013	128.3	mg/L	55	Standard
K	39	20.0	25.0	**-0.0563**	0.020	35.8	mg/L	28	Standard
Ca	43	20.0	25.0	**-0.6925**	0.397	57.4	mg/L	27	Standard
Fe	54	164.3	3.0	**0.0265**	0.005	17.4	mg/L	147	Standard
Fe	57	226.7	11.3	**-0.1282**	0.057	44.8	mg/L	268	Standard
> **Sc-1**	45	42380.9	4.0				mg/L	41174	Standard
Cl	35	88109.5	1.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2156.8	5.0				ug/L	1950	Standard
P	31	25852.0	1.3				ug/L	21156	Standard
S	34	4487.3	2.3				ug/L	3419	Standard
Sr	88	56.7	5.1				ug/L	72	Standard
C	12	96.7	39.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	113.3	10.2				mg/L	17	Standard
Dy	164	6.2	100.1				mg/L	16	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	15996.8	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.453	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 15:48:36
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.379
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.711
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 15:48:36
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145201
Sample Date/Time: Friday, July 01, 2016 15:49:32
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	94816.0	3.6				ug/L	76456	Standard
	Be	9	25.0	40.0	**-0.0020**	0.007	332.6	ug/L	20	Standard
	Al	27	21072085.0	1.8	**99.2963**	2.302	2.3	ug/L	1307	Standard
	Sc	45	43716.3	1.4				ug/L	41174	Standard
	Ti	47	397.0	3.2	**1.1396**	0.053	4.7	ug/L	27	Standard
	V	51	4169.6	18.7	**0.3116**	0.101	32.4	ug/L	1434	Standard
	Cr	52	31233.8	0.8	**2.9091**	0.081	2.8	ug/L	7733	Standard
	Cr	53	20687.6	10.5	**20.1582**	2.403	11.9	ug/L	442	Standard
	Mn	55	2658788.2	0.4	**352.6307**	4.074	1.2	ug/L	723	Standard
	Co	59	29637.6	0.8	**3.8558**	0.023	0.6	ug/L	217	Standard
	Ni	60	6462.7	2.0	**2.9745**	0.037	1.3	ug/L	304	Standard
	Cu	65	861.0	3.9	**0.3497**	0.019	5.5	ug/L	181	Standard
	Zn	66	6645.5	1.6	**5.2668**	0.080	1.5	ug/L	215	Standard
>	Ge	72	518645.6	1.3				ug/L	520809	Standard
	As	75	3126.8	4.4	**2.5897**	0.143	5.5	ug/L	-52	Standard
	Se	82	664.6	4.5	**5.1588**	0.301	5.8	ug/L	17	Standard
	Se-1	77	930.7	11.1	**10.2587**	1.337	13.0	ug/L	56	Standard
>	Ga	71	203.3	20.9				mg/L	25	Standard
	Rb	85	1041748.9	1.1				ug/L	28	Standard
	Y	89	448254.4	0.8				ug/L	447395	Standard
>	Rh	103	201.7	17.6				ug/L	15	Standard
	Mo	98	637.0	2.3	**0.1927**	0.005	2.4	ug/L	113	Standard
	Ag	107	163.3	33.8	**0.0105**	0.008	72.2	ug/L	108	Standard
	Cd	111	106.6	9.0	**0.0453**	0.005	10.1	mg/L	3	Standard
	Cd	114	259.2	18.0	**0.0469**	0.009	19.3	ug/L	20	Standard
>	In	115	608292.3	1.4				ug/L	625728	Standard
	Sn	118	1770.1	23.1	**0.1984**	0.063	31.6	ug/L	568	Standard
	Sb	123	609.0	15.5	**0.0875**	0.018	20.6	ug/L	612	Standard
	Ba	135	570406.1	1.3	**269.6937**	1.874	0.7	ug/L	21	Standard
	Ce	140	4143.9	0.7				ug/L	245	Standard
>	Tb	159	943834.4	0.3				ug/L	950397	Standard
	Ho	165	73.3	37.6				ug/L	7	Standard
	Tl	203	318.3	4.1	**0.0368**	0.002	4.3	ug/L	15	Standard
	Tl	205	295.0	13.5	**0.0294**	0.005	17.1	ug/L	13	Standard
	Pb	206	463.0	0.4	**0.0429**	0.001	1.6	ug/L	264	Standard
	Pb	207	397.7	5.2	**0.0359**	0.005	12.9	ug/L	222	Standard
	Pb	208	1684.0	4.4	**0.0367**	0.004	11.5	ug/L	959	Standard
	U	238	1098.4	2.7	**0.1441**	0.005	3.4	ug/L	9	Standard
>	Bi	209	521779.5	0.6				ug/L	552821	Standard

Sample ID: L1606145201
Report Date/Time: Friday, July 01, 2016 15:51:49
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.7590**	8.234	173.0	mg/L	2	Standard
Mg	24	80860.2	1.3	**88.9060**	0.128	0.1	mg/L	55	Standard
K	39	8253.9	2.9	**29.6886**	1.293	4.4	mg/L	28	Standard
Ca	43	198.3	3.9	**14.5226**	0.636	4.4	mg/L	27	Standard
Fe	54	1838.9	5.0	**1.2589**	0.053	4.2	mg/L	147	Standard
Fe	57	841.7	4.0	**1.6326**	0.120	7.3	mg/L	268	Standard
> **Sc-1**	45	43716.3	1.4				mg/L	41174	Standard
Cl	35	88622.4	0.4				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	138083.1	1.2				ug/L	1950	Standard
P	31	31377.5	0.7				ug/L	21156	Standard
S	34	4085.6	4.2				ug/L	3419	Standard
Sr	88	866.7	4.6				ug/L	72	Standard
C	12	386.7	12.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	63.6				mg/L	17	Standard
Dy	164	120.3	12.9				mg/L	16	Standard
Ho-1	165	73.3	37.6				mg/L	7	Standard
Er	166	63.3	9.1				mg/L	7	Standard
I	127	189740.0	7.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.014	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.585	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145201
Report Date/Time: Friday, July 01, 2016 15:51:49
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.214
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.385
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145201
Report Date/Time: Friday, July 01, 2016 15:51:49
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145301
Sample Date/Time: Friday, July 01, 2016 15:52:44
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89907.9	3.9				ug/L	76456	Standard
	Be	9	211.7	15.2	**0.1412**	0.026	18.7	ug/L	20	Standard
	Al	27	42254036.6	2.1	**209.9919**	4.107	2.0	ug/L	1307	Standard
	Sc	45	48114.6	1.7				ug/L	41174	Standard
	Ti	47	742.0	6.1	**2.0824**	0.104	5.0	ug/L	27	Standard
	V	51	8101.4	4.4	**0.7396**	0.044	5.9	ug/L	1434	Standard
	Cr	52	57499.6	0.2	**5.7989**	0.111	1.9	ug/L	7733	Standard
	Cr	53	37860.6	3.1	**35.2327**	0.609	1.7	ug/L	442	Standard
	Mn	55	6394718.4	1.0	**803.9667**	4.505	0.6	ug/L	723	Standard
	Co	59	184000.3	2.5	**22.8310**	0.339	1.5	ug/L	217	Standard
	Ni	60	37990.6	1.7	**17.2738**	0.133	0.8	ug/L	304	Standard
	Cu	65	1519.1	2.8	**0.6345**	0.018	2.9	ug/L	181	Standard
	Zn	66	65750.7	0.3	**50.9054**	0.635	1.2	ug/L	215	Standard
>	Ge	72	547197.2	1.5				ug/L	520809	Standard
	As	75	6205.1	1.8	**4.8294**	0.085	1.7	ug/L	-52	Standard
	Se	82	411.3	4.6	**2.9717**	0.112	3.8	ug/L	17	Standard
	Se-1	77	1750.8	0.4	**18.8117**	0.357	1.9	ug/L	56	Standard
>	Ga	71	151.7	19.9				mg/L	25	Standard
	Rb	85	17248.1	1.6				ug/L	28	Standard
	Y	89	479799.4	2.3				ug/L	447395	Standard
>	Rh	103	326.7	3.2				ug/L	15	Standard
	Mo	98	555.5	3.1	**0.1551**	0.002	1.1	ug/L	113	Standard
	Ag	107	126.3	11.0	**0.0043**	0.002	53.3	ug/L	108	Standard
	Cd	111	138.7	16.3	**0.0566**	0.011	19.3	mg/L	3	Standard
	Cd	114	356.3	13.9	**0.0611**	0.010	15.7	ug/L	20	Standard
>	In	115	641727.3	2.7				ug/L	625728	Standard
	Sn	118	1815.1	14.3	**0.1914**	0.045	23.5	ug/L	568	Standard
	Sb	123	789.7	10.3	**0.1155**	0.018	15.5	ug/L	612	Standard
	Ba	135	2472744.3	1.1	**1108.6111**	20.421	1.8	ug/L	21	Standard
	Ce	140	34706.4	3.0				ug/L	245	Standard
>	Tb	159	985263.1	3.4				ug/L	950397	Standard
	Ho	165	401.7	6.3				ug/L	7	Standard
	Tl	203	117.7	8.7	**0.0126**	0.001	10.2	ug/L	15	Standard
	Tl	205	90.0	11.1	**0.0018**	0.001	56.0	ug/L	13	Standard
	Pb	206	577.0	6.7	**0.0602**	0.005	9.1	ug/L	264	Standard
	Pb	207	486.3	6.2	**0.0505**	0.006	11.6	ug/L	222	Standard
	Pb	208	2130.1	2.6	**0.0553**	0.003	5.9	ug/L	959	Standard
	U	238	158.7	10.2	**0.0198**	0.002	9.7	ug/L	9	Standard
>	Bi	209	541702.7	2.6				ug/L	552821	Standard

Sample ID: L1606145301
Report Date/Time: Friday, July 01, 2016 15:55:01
Page 1

Approved: July 02, 2016

Na	23	6.7	114.6	**17.2516**	19.854	115.1	mg/L	2	Standard
Mg	24	87429.9	0.9	**87.3596**	1.878	2.1	mg/L	55	Standard
K	39	405.0	18.3	**1.2003**	0.260	21.7	mg/L	28	Standard
Ca	43	375.0	6.7	**26.7244**	2.231	8.3	mg/L	27	Standard
Fe	54	4204.7	3.3	**2.7242**	0.135	5.0	mg/L	147	Standard
Fe	57	1598.4	2.6	**3.4000**	0.148	4.3	mg/L	268	Standard
Sc-1	45	48114.6	1.7				mg/L	41174	Standard
Cl	35	91040.7	1.1				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	68651.9	2.9				ug/L	1950	Standard
P	31	44045.6	3.3				ug/L	21156	Standard
S	34	4263.9	3.9				ug/L	3419	Standard
Sr	88	1216.7	5.1				ug/L	72	Standard
C	12	740.0	12.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	150.0	40.6				mg/L	17	Standard
Dy	164	420.2	5.3				mg/L	16	Standard
Ho-1	165	401.7	6.3				mg/L	7	Standard
Er	166	413.3	49.7				mg/L	7	Standard
I	127	1073738.4	7.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.595	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.067	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145301
Report Date/Time: Friday, July 01, 2016 15:55:01
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.557	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.989	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145303
Sample Date/Time: Friday, July 01, 2016 15:55:55
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	86373.8	1.1				ug/L	76456	Standard
	Be	9	46.7	12.4	**0.0170**	0.005	27.0	ug/L	20	Standard
	Al	27	14145040.2	0.8	**73.1395**	1.317	1.8	ug/L	1307	Standard
	Sc	45	47950.8	2.8				ug/L	41174	Standard
	Ti	47	645.7	4.6	**1.7427**	0.078	4.5	ug/L	27	Standard
	V	51	5119.6	16.2	**0.3758**	0.094	25.1	ug/L	1434	Standard
	Cr	52	15660.8	1.2	**0.8154**	0.028	3.4	ug/L	7733	Standard
	Cr	53	17461.7	5.9	**15.5162**	0.994	6.4	ug/L	442	Standard
	Mn	55	1851750.9	0.7	**225.4523**	0.893	0.4	ug/L	723	Standard
	Co	59	6079.9	0.1	**0.7024**	0.002	0.3	ug/L	217	Standard
	Ni	60	3414.1	2.2	**1.3640**	0.029	2.1	ug/L	304	Standard
	Cu	65	716.4	2.9	**0.2496**	0.010	3.9	ug/L	181	Standard
	Zn	66	5607.0	0.9	**4.0396**	0.027	0.7	ug/L	215	Standard
>	Ge	72	564834.0	0.3				ug/L	520809	Standard
	As	75	9187.6	1.4	**6.9075**	0.115	1.7	ug/L	-52	Standard
	Se	82	374.5	2.3	**2.6072**	0.072	2.8	ug/L	17	Standard
	Se-1	77	677.0	5.1	**6.6170**	0.347	5.3	ug/L	56	Standard
>	Ga	71	156.7	12.9				mg/L	25	Standard
	Rb	85	67336.0	0.8				ug/L	28	Standard
	Y	89	479624.4	2.5				ug/L	447395	Standard
>	Rh	103	165.0	24.1				ug/L	15	Standard
	Mo	98	376.6	7.3	**0.0951**	0.009	9.5	ug/L	113	Standard
	Ag	107	95.7	7.7	**-0.0001**	0.001	907.0	ug/L	108	Standard
	Cd	111	85.6	10.8	**0.0332**	0.004	11.6	mg/L	3	Standard
	Cd	114	251.0	20.4	**0.0421**	0.008	19.8	ug/L	20	Standard
>	In	115	654613.0	0.6				ug/L	625728	Standard
	Sn	118	2261.8	11.1	**0.2519**	0.039	15.5	ug/L	568	Standard
	Sb	123	469.5	25.9	**0.0532**	0.023	43.1	ug/L	612	Standard
	Ba	135	790046.7	0.9	**347.1125**	3.141	0.9	ug/L	21	Standard
	Ce	140	7066.6	1.9				ug/L	245	Standard
>	Tb	159	995476.8	2.0				ug/L	950397	Standard
	Ho	165	136.7	9.2				ug/L	7	Standard
	Tl	203	120.3	3.1	**0.0125**	0.000	3.4	ug/L	15	Standard
	Tl	205	115.0	19.9	**0.0045**	0.003	61.6	ug/L	13	Standard
	Pb	206	675.0	1.7	**0.0742**	0.002	2.8	ug/L	264	Standard
	Pb	207	573.0	0.8	**0.0642**	0.001	1.0	ug/L	222	Standard
	Pb	208	2423.1	1.0	**0.0659**	0.001	2.1	ug/L	959	Standard
	U	238	289.7	4.3	**0.0353**	0.002	5.0	ug/L	9	Standard
>	Bi	209	558695.9	0.8				ug/L	552821	Standard

Sample ID: L1606145303
Report Date/Time: Friday, July 01, 2016 15:58:12
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**12.9192**	12.771	98.9	mg/L	2	Standard
Mg	24	36766.2	0.7	**36.8431**	1.290	3.5	mg/L	55	Standard
K	39	516.7	3.4	**1.5703**	0.055	3.5	mg/L	28	Standard
Ca	43	131.7	25.3	**7.7852**	2.329	29.9	mg/L	27	Standard
Fe	54	27742.4	0.7	**18.5905**	0.497	2.7	mg/L	147	Standard
Fe	57	7620.3	4.0	**19.3167**	1.147	5.9	mg/L	268	Standard
> **Sc-1**	45	47950.8	2.8				mg/L	41174	Standard
Cl	35	87125.8	1.5				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	74331.9	2.0				ug/L	1950	Standard
P	31	38512.2	1.7				ug/L	21156	Standard
S	34	4447.3	3.4				ug/L	3419	Standard
Sr	88	553.3	7.8				ug/L	72	Standard
C	12	426.7	14.3				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	150.0	48.1				mg/L	17	Standard
Dy	164	179.8	21.5				mg/L	16	Standard
Ho-1	165	136.7	9.2				mg/L	7	Standard
Er	166	143.3	22.4				mg/L	7	Standard
I	127	215985.2	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.972	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.453	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145303
Report Date/Time: Friday, July 01, 2016 15:58:12
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.616
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.063
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145303
Report Date/Time: Friday, July 01, 2016 15:58:12
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606142701 WG574419-02
Sample Date/Time: Friday, July 01, 2016 15:59:07
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79441.0	0.3				ug/L	76456	Standard
	Be	9	21.7	96.1	-0.0013	0.018	1415.0	ug/L	20	Standard
	Al	27	10303389.4	2.0	57.9147	1.116	1.9	ug/L	1307	Standard
	Sc	45	40113.1	2.6				ug/L	41174	Standard
	Ti	47	184.0	9.4	0.4748	0.053	11.1	ug/L	27	Standard
	V	51	103393.4	0.6	12.2581	0.142	1.2	ug/L	1434	Standard
	Cr	52	60643.8	2.1	6.4579	0.232	3.6	ug/L	7733	Standard
	Cr	53	11869.6	1.2	11.2148	0.255	2.3	ug/L	442	Standard
	Mn	55	46538.0	1.1	5.9867	0.050	0.8	ug/L	723	Standard
	Co	59	37235.0	0.6	4.7844	0.072	1.5	ug/L	217	Standard
	Ni	60	30036.7	0.7	14.1841	0.259	1.8	ug/L	304	Standard
	Cu	65	12213.6	1.3	5.8539	0.146	2.5	ug/L	181	Standard
	Zn	66	33617.6	0.9	26.9954	0.533	2.0	ug/L	215	Standard
>	Ge	72	525941.0	1.1				ug/L	520809	Standard
	As	75	2649.6	1.8	2.1706	0.042	1.9	ug/L	-52	Standard
	Se	82	1059.1	1.9	8.1767	0.235	2.9	ug/L	17	Standard
	Se-1	77	280.3	4.4	2.5625	0.130	5.1	ug/L	56	Standard
>	Ga	71	101.7	18.6				mg/L	25	Standard
	Rb	85	18985.2	1.5				ug/L	28	Standard
	Y	89	446075.2	1.3				ug/L	447395	Standard
>	Rh	103	71.7	26.4				ug/L	15	Standard
	Mo	98	435588.8	0.8	147.3741	1.220	0.8	ug/L	113	Standard
	Ag	107	124.3	1.7	0.0049	0.000	10.0	ug/L	108	Standard
	Cd	111	-216.2	12.9	-0.0985	0.013	12.8	mg/L	3	Standard
	Cd	114	902.1	8.1	0.1619	0.011	7.0	ug/L	20	Standard
>	In	115	611441.0	1.1				ug/L	625728	Standard
	Sn	118	915.0	18.3	0.0613	0.027	44.2	ug/L	568	Standard
	Sb	123	652.5	5.8	0.0955	0.006	6.7	ug/L	612	Standard
	Ba	135	39982.7	1.2	18.7899	0.104	0.6	ug/L	21	Standard
	Ce	140	376.7	4.3				ug/L	245	Standard
>	Tb	159	929616.4	0.5				ug/L	950397	Standard
	Ho	165	33.3	48.2				ug/L	7	Standard
	Tl	203	136.7	9.3	0.0150	0.001	9.9	ug/L	15	Standard
	Tl	205	106.7	11.8	0.0041	0.002	39.6	ug/L	13	Standard
	Pb	206	1749.8	1.5	0.2761	0.005	1.9	ug/L	264	Standard
	Pb	207	1478.4	2.6	0.2515	0.008	3.1	ug/L	222	Standard
	Pb	208	6375.9	0.9	0.2660	0.002	0.9	ug/L	959	Standard
	U	238	161.7	12.3	0.0205	0.003	12.5	ug/L	9	Standard
>	Bi	209	534118.6	0.2				ug/L	552821	Standard

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 16:01:24
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**10.0941**	8.741	86.6	mg/L	2	Standard
Mg	24	25695.1	1.2	**30.7602**	0.665	2.2	mg/L	55	Standard
K	39	365.0	11.7	**1.3075**	0.193	14.8	mg/L	28	Standard
Ca	43	230.0	14.3	**18.9742**	2.668	14.1	mg/L	27	Standard
Fe	54	302.2	7.9	**0.1442**	0.013	8.8	mg/L	147	Standard
Fe	57	455.0	18.2	**0.6271**	0.222	35.4	mg/L	268	Standard
> **Sc-1**	45	40113.1	2.6				mg/L	41174	Standard
Cl	35	98380.0	3.9				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	216720.0	3.3				ug/L	1950	Standard
P	31	13189.1	3.4				ug/L	21156	Standard
S	34	3895.5	7.2				ug/L	3419	Standard
Sr	88	283.3	22.8				ug/L	72	Standard
C	12	173.3	27.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	316.7	12.8				mg/L	17	Standard
Dy	164	233.8	13.8				mg/L	16	Standard
Ho-1	165	33.3	48.2				mg/L	7	Standard
Er	166	60.0	33.3				mg/L	7	Standard
I	127	62818.3	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.985	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701 WG574419-02
Report Date/Time: Friday, July 01, 2016 16:01:24
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.717
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.617
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mo 98 Upper, S, EEE	Mo	98	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606142701DP WG574419-07
Sample Date/Time: Friday, July 01, 2016 16:02:18
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77749.0	1.6				ug/L	76456	Standard
	Be	9	6.7	43.3	**-0.0140**	0.002	17.3	ug/L	20	Standard
	Al	27	9817097.2	1.8	**56.3855**	0.837	1.5	ug/L	1307	Standard
	Sc	45	39810.6	1.5				ug/L	41174	Standard
	Ti	47	174.0	5.5	**0.4563**	0.027	5.9	ug/L	27	Standard
	V	51	99457.7	1.9	**12.0558**	0.214	1.8	ug/L	1434	Standard
	Cr	52	58802.6	0.7	**6.3951**	0.090	1.4	ug/L	7733	Standard
	Cr	53	11255.8	2.7	**10.8641**	0.366	3.4	ug/L	442	Standard
	Mn	55	43355.3	1.9	**5.6990**	0.079	1.4	ug/L	723	Standard
	Co	59	35792.9	1.2	**4.7027**	0.031	0.7	ug/L	217	Standard
	Ni	60	28593.6	0.6	**13.8042**	0.061	0.4	ug/L	304	Standard
	Cu	65	11425.0	1.5	**5.5962**	0.062	1.1	ug/L	181	Standard
	Zn	66	32386.6	1.1	**26.5937**	0.385	1.4	ug/L	215	Standard
>	Ge	72	514230.5	0.6				ug/L	520809	Standard
	As	75	2594.3	1.9	**2.1736**	0.050	2.3	ug/L	-52	Standard
	Se	82	1064.6	1.8	**8.4087**	0.182	2.2	ug/L	17	Standard
	Se-1	77	269.0	6.0	**2.5031**	0.207	8.3	ug/L	56	Standard
>	Ga	71	116.7	27.9				mg/L	25	Standard
	Rb	85	18095.8	1.8				ug/L	28	Standard
	Y	89	436440.0	0.3				ug/L	447395	Standard
>	Rh	103	98.3	34.6				ug/L	15	Standard
	Mo	98	417319.1	1.0	**143.2353**	2.296	1.6	ug/L	113	Standard
	Ag	107	105.3	7.0	**0.0024**	0.001	42.1	ug/L	108	Standard
	Cd	111	-221.7	8.5	**-0.1024**	0.009	8.7	mg/L	3	Standard
	Cd	114	915.2	5.7	**0.1667**	0.008	5.0	ug/L	20	Standard
>	In	115	602737.8	0.7				ug/L	625728	Standard
	Sn	118	925.0	27.3	**0.0648**	0.040	61.0	ug/L	568	Standard
	Sb	123	629.8	5.8	**0.0928**	0.007	7.1	ug/L	612	Standard
	Ba	135	37742.0	0.9	**17.9925**	0.177	1.0	ug/L	21	Standard
	Ce	140	530.0	15.0				ug/L	245	Standard
>	Tb	159	918022.5	0.6				ug/L	950397	Standard
	Ho	165	26.7	47.2				ug/L	7	Standard
	Tl	203	122.7	8.6	**0.0136**	0.001	8.7	ug/L	15	Standard
	Tl	205	120.0	23.2	**0.0061**	0.004	61.9	ug/L	13	Standard
	Pb	206	1673.8	3.7	**0.2676**	0.008	2.9	ug/L	264	Standard
	Pb	207	1385.7	3.3	**0.2377**	0.006	2.4	ug/L	222	Standard
	Pb	208	6038.1	1.4	**0.2546**	0.001	0.3	ug/L	959	Standard
	U	238	134.0	4.7	**0.0173**	0.001	3.8	ug/L	9	Standard
>	Bi	209	524841.4	1.3				ug/L	552821	Standard

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 16:04:35
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**10.3333**	8.947	86.6	mg/L	2	Standard
Mg	24	24359.6	1.9	**29.3745**	0.694	2.4	mg/L	55	Standard
K	39	391.7	23.4	**1.4257**	0.389	27.3	mg/L	28	Standard
Ca	43	220.0	19.4	**18.2274**	4.000	21.9	mg/L	27	Standard
Fe	54	293.3	15.9	**0.1391**	0.037	26.9	mg/L	147	Standard
Fe	57	398.3	15.7	**0.4602**	0.182	39.6	mg/L	268	Standard
> **Sc-1**	45	39810.6	1.5				mg/L	41174	Standard
Cl	35	101579.4	0.9				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	218312.6	3.3				ug/L	1950	Standard
P	31	12735.4	2.4				ug/L	21156	Standard
S	34	3657.1	4.9				ug/L	3419	Standard
Sr	88	253.3	24.1				ug/L	72	Standard
C	12	143.3	20.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	270.0	11.1				mg/L	17	Standard
Dy	164	258.1	16.7				mg/L	16	Standard
Ho-1	165	26.7	47.2				mg/L	7	Standard
Er	166	40.0	25.0				mg/L	7	Standard
I	127	57368.4	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.691	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.737	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701DP WG574419-07
Report Date/Time: Friday, July 01, 2016 16:04:35
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.326
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.939
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mo 98 Upper, S, EEE	Mo	98	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606128901
Sample Date/Time: Friday, July 01, 2016 16:05:30
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76109.2	3.3				ug/L	76456	Standard
	Be	9	26.7	10.8	**0.0041**	0.003	75.2	ug/L	20	Standard
	Al	27	2157263.5	1.2	**12.6549**	0.272	2.1	ug/L	1307	Standard
	Sc	45	39362.7	1.0				ug/L	41174	Standard
	Ti	47	31.0	25.6	**0.0115**	0.025	213.1	ug/L	27	Standard
	V	51	2160.8	9.2	**0.0669**	0.026	39.1	ug/L	1434	Standard
	Cr	52	18224.3	3.5	**1.3053**	0.079	6.0	ug/L	7733	Standard
	Cr	53	3937.2	3.2	**3.5166**	0.125	3.6	ug/L	442	Standard
	Mn	55	109531.5	1.1	**14.5084**	0.090	0.6	ug/L	723	Standard
	Co	59	3522.7	2.0	**0.4349**	0.006	1.3	ug/L	217	Standard
	Ni	60	12809.7	0.5	**6.0810**	0.080	1.3	ug/L	304	Standard
	Cu	65	624.3	3.1	**0.2348**	0.009	4.0	ug/L	181	Standard
	Zn	66	2829.3	0.5	**2.1516**	0.027	1.3	ug/L	215	Standard
>	Ge	72	515809.2	1.0				ug/L	520809	Standard
	As	75	48.3	6.2	**0.0847**	0.002	2.4	ug/L	-52	Standard
	Se	82	67.8	11.0	**0.4157**	0.062	15.0	ug/L	17	Standard
	Se-1	77	139.0	6.9	**0.9565**	0.097	10.1	ug/L	56	Standard
>	Ga	71	33.3	31.2				mg/L	25	Standard
	Rb	85	320.0	16.9				ug/L	28	Standard
	Y	89	425911.6	0.3				ug/L	447395	Standard
>	Rh	103	23.3	61.9				ug/L	15	Standard
	Mo	98	1200.8	19.7	**0.3848**	0.082	21.3	ug/L	113	Standard
	Ag	107	75.3	7.8	**-0.0021**	0.001	36.3	ug/L	108	Standard
	Cd	111	25.6	20.9	**0.0091**	0.002	26.3	mg/L	3	Standard
	Cd	114	59.2	25.8	**0.0107**	0.003	26.4	ug/L	20	Standard
>	In	115	608157.1	1.0				ug/L	625728	Standard
	Sn	118	525.0	20.9	**-0.0004**	0.017	4881.3	ug/L	568	Standard
	Sb	123	165.4	19.3	**-0.0007**	0.007	874.9	ug/L	612	Standard
	Ba	135	100056.7	1.7	**47.3091**	1.176	2.5	ug/L	21	Standard
	Ce	140	223.3	64.9				ug/L	245	Standard
>	Tb	159	910863.8	0.3				ug/L	950397	Standard
	Ho	165	15.0	57.7				ug/L	7	Standard
	Tl	203	83.0	10.7	**0.0087**	0.001	10.8	ug/L	15	Standard
	Tl	205	80.0	31.3	**0.0005**	0.003	626.9	ug/L	13	Standard
	Pb	206	270.7	3.7	**0.0052**	0.002	42.5	ug/L	264	Standard
	Pb	207	242.0	6.8	**0.0021**	0.003	162.6	ug/L	222	Standard
	Pb	208	1024.7	1.6	**0.0016**	0.001	40.9	ug/L	959	Standard
	U	238	10.0	43.6	**0.0010**	0.001	55.3	ug/L	9	Standard
>	Bi	209	540336.1	0.9				ug/L	552821	Standard

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 16:07:47
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4055.5	6.4	**4.8960**	0.330	6.7	mg/L	55	Standard
K	39	15.0	66.7	**-0.0710**	0.040	57.0	mg/L	28	Standard
Ca	43	48.3	26.0	**2.1421**	1.207	56.4	mg/L	27	Standard
Fe	54	63.5	15.9	**-0.0467**	0.009	18.5	mg/L	147	Standard
Fe	57	253.3	5.0	**0.0103**	0.042	410.2	mg/L	268	Standard
> **Sc-1**	45	39362.7	1.0				mg/L	41174	Standard
Cl	35	90744.3	1.5				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	11220.8	7.7				ug/L	1950	Standard
P	31	8672.5	2.6				ug/L	21156	Standard
S	34	4007.2	6.6				ug/L	3419	Standard
Sr	88	146.7	20.0				ug/L	72	Standard
C	12	96.7	36.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	436.7	13.4				mg/L	17	Standard
Dy	164	6.5	179.6				mg/L	16	Standard
Ho-1	165	15.0	57.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	40273.5	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.547	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.040	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606128901
Report Date/Time: Friday, July 01, 2016 16:07:47
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.192
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.742
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606129003
Sample Date/Time: Friday, July 01, 2016 16:08:41
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74300.1	2.3				ug/L	76456	Standard
	Be	9	33.3	70.9	**0.0108**	0.022	200.3	ug/L	20	Standard
	Al	27	1109788.9	1.6	**6.6634**	0.204	3.1	ug/L	1307	Standard
	Sc	45	38913.3	2.4				ug/L	41174	Standard
	Ti	47	72.3	13.4	**0.1384**	0.027	19.6	ug/L	27	Standard
	V	51	1833.5	12.2	**0.0257**	0.030	115.0	ug/L	1434	Standard
	Cr	52	6791.5	6.8	**-0.1263**	0.061	48.5	ug/L	7733	Standard
	Cr	53	2288.5	7.5	**1.8597**	0.192	10.3	ug/L	442	Standard
	Mn	55	199243.2	0.7	**26.3506**	0.434	1.6	ug/L	723	Standard
	Co	59	3319.7	2.1	**0.4061**	0.014	3.4	ug/L	217	Standard
	Ni	60	1865.1	2.1	**0.7502**	0.017	2.3	ug/L	304	Standard
	Cu	65	304.7	2.9	**0.0760**	0.006	7.4	ug/L	181	Standard
	Zn	66	5878.8	1.2	**4.6424**	0.117	2.5	ug/L	215	Standard
>	**Ge**	72	518291.1	1.3				ug/L	520809	Standard
	As	75	792.5	2.6	**0.6902**	0.010	1.5	ug/L	-52	Standard
	Se	82	76.5	13.2	**0.4817**	0.073	15.2	ug/L	17	Standard
	Se-1	77	129.3	15.3	**0.8357**	0.233	27.9	ug/L	56	Standard
>	**Ga**	71	50.0	26.5				mg/L	25	Standard
	Rb	85	2285.2	6.7				ug/L	28	Standard
	Y	89	427107.4	1.7				ug/L	447395	Standard
>	**Rh**	103	36.7	56.8				ug/L	15	Standard
	Mo	98	394.1	11.3	**0.1099**	0.015	13.4	ug/L	113	Standard
	Ag	107	108.3	28.6	**0.0026**	0.004	163.3	ug/L	108	Standard
	Cd	111	66.5	18.4	**0.0273**	0.005	18.9	mg/L	3	Standard
	Cd	114	176.4	7.1	**0.0318**	0.002	6.8	ug/L	20	Standard
>	**In**	115	609166.7	1.0				ug/L	625728	Standard
	Sn	118	880.0	21.8	**0.0564**	0.032	56.6	ug/L	568	Standard
	Sb	123	119.8	10.9	**-0.0099**	0.003	28.1	ug/L	612	Standard
	Ba	135	34816.0	1.5	**16.4201**	0.118	0.7	ug/L	21	Standard
	Ce	140	1188.4	1.5				ug/L	245	Standard
>	**Tb**	159	905742.5	1.6				ug/L	950397	Standard
	Ho	165	23.3	32.7				ug/L	7	Standard
	Tl	203	105.7	16.3	**0.0112**	0.002	15.9	ug/L	15	Standard
	Tl	205	100.0	22.9	**0.0030**	0.003	94.5	ug/L	13	Standard
	Pb	206	323.0	3.6	**0.0143**	0.002	17.0	ug/L	264	Standard
	Pb	207	282.3	3.6	**0.0098**	0.001	12.1	ug/L	222	Standard
	Pb	208	1225.0	3.7	**0.0111**	0.002	20.3	ug/L	959	Standard
	U	238	27.3	27.5	**0.0032**	0.001	29.6	ug/L	9	Standard
>	**Bi**	209	543356.0	1.6				ug/L	552821	Standard

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 16:10:58
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4887.5	0.8	**5.9826**	0.111	1.8	mg/L	55	Standard
K	39	70.0	31.1	**0.1543**	0.094	61.0	mg/L	28	Standard
Ca	43	26.7	78.1	**0.1318**	2.068	1569.3	mg/L	27	Standard
Fe	54	2091.2	5.6	**1.6384**	0.138	8.4	mg/L	147	Standard
Fe	57	790.0	3.5	**1.7657**	0.122	6.9	mg/L	268	Standard
Sc-1	45	38913.3	2.4				mg/L	41174	Standard
Cl	35	85357.9	2.8				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	12818.8	1.9				ug/L	1950	Standard
P	31	10578.7	2.6				ug/L	21156	Standard
S	34	4063.9	1.6				ug/L	3419	Standard
Sr	88	108.3	11.6				ug/L	72	Standard
C	12	110.0	32.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	17	Standard
Dy	164	55.7	26.3				mg/L	16	Standard
Ho-1	165	23.3	32.7				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	7	Standard
I	127	94261.3	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.181	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.516	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 16:10:58
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.353
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.288
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 16:11:55
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78995.5	2.2				ug/L	76456	Standard
	Be	9	60502.3	2.1	**52.2922**	0.491	0.9	ug/L	20	Standard
	Al	27	8989002.2	0.8	**50.8245**	0.985	1.9	ug/L	1307	Standard
	Sc	45	42305.6	0.7				ug/L	41174	Standard
	Ti	47	34061.9	1.0	**98.6488**	1.546	1.6	ug/L	27	Standard
	V	51	436960.5	1.1	**50.0001**	0.513	1.0	ug/L	1434	Standard
	Cr	52	437865.8	0.9	**50.1688**	0.753	1.5	ug/L	7733	Standard
	Cr	53	53937.5	1.4	**49.9817**	0.858	1.7	ug/L	442	Standard
	Mn	55	399271.1	0.3	**49.7080**	0.463	0.9	ug/L	723	Standard
	Co	59	415402.7	0.9	**51.1776**	0.121	0.2	ug/L	217	Standard
	Ni	60	110781.9	0.5	**50.2680**	0.560	1.1	ug/L	304	Standard
	Cu	65	108848.6	0.7	**50.2966**	0.042	0.1	ug/L	181	Standard
	Zn	66	65152.1	0.8	**50.0366**	0.239	0.5	ug/L	215	Standard
>	**Ge**	72	551526.5	0.7				ug/L	520809	Standard
	As	75	65288.4	0.5	**49.9868**	0.536	1.1	ug/L	-52	Standard
	Se	82	6767.7	1.1	**50.4635**	0.866	1.7	ug/L	17	Standard
	Se-1	77	4643.0	1.4	**50.6038**	0.550	1.1	ug/L	56	Standard
>	**Ga**	71	51.7	27.9				mg/L	25	Standard
	Rb	85	896.7	7.7				ug/L	28	Standard
	Y	89	469245.9	0.9				ug/L	447395	Standard
>	**Rh**	103	30.0	50.0				ug/L	15	Standard
	Mo	98	315176.0	0.7	**100.1655**	0.835	0.8	ug/L	113	Standard
	Ag	107	372454.9	1.5	**49.8448**	0.674	1.4	ug/L	108	Standard
	Cd	111	120309.5	0.5	**50.2390**	0.275	0.5	mg/L	3	Standard
	Cd	114	296771.3	0.4	**50.0551**	0.319	0.6	ug/L	20	Standard
>	**In**	115	650857.3	0.3				ug/L	625728	Standard
	Sn	118	332008.2	0.6	**49.5103**	0.318	0.6	ug/L	568	Standard
	Sb	123	262896.6	1.7	**48.8713**	0.775	1.6	ug/L	612	Standard
	Ba	135	110171.1	0.5	**48.6680**	0.323	0.7	ug/L	21	Standard
	Ce	140	123.3	16.9				ug/L	245	Standard
>	**Tb**	159	962981.5	0.4				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	457474.5	0.7	**50.4943**	0.334	0.7	ug/L	15	Standard
	Tl	205	418439.6	0.8	**52.0062**	0.714	1.4	ug/L	13	Standard
	Pb	206	289168.5	1.0	**50.5726**	0.399	0.8	ug/L	264	Standard
	Pb	207	263060.3	0.2	**50.6591**	0.254	0.5	ug/L	222	Standard
	Pb	208	1106275.9	0.6	**52.1627**	0.606	1.2	ug/L	959	Standard
	U	238	414349.5	1.0	**50.9359**	0.727	1.4	ug/L	9	Standard
>	**Bi**	209	557861.1	0.5				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 16:14:12
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.8874**	8.457	173.0	mg/L	2	Standard
Mg	24	4582.4	2.1	**5.1503**	0.148	2.9	mg/L	55	Standard
K	39	1161.7	7.3	**4.2028**	0.289	6.9	mg/L	28	Standard
Ca	43	63.3	9.1	**3.1474**	0.494	15.7	mg/L	27	Standard
Fe	54	6769.4	2.9	**5.0672**	0.121	2.4	mg/L	147	Standard
Fe	57	2078.5	6.0	**5.4119**	0.382	7.1	mg/L	268	Standard
> **Sc-1**	45	42305.6	0.7				mg/L	41174	Standard
Cl	35	87401.4	1.9				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	3040.3	9.5				ug/L	1950	Standard
P	31	27000.7	1.2				ug/L	21156	Standard
S	34	4354.0	2.5				ug/L	3419	Standard
Sr	88	48.3	31.6				ug/L	72	Standard
C	12	120.0	22.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	296.7	25.3				mg/L	17	Standard
Dy	164	9.4	107.0				mg/L	16	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	16158.6	6.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.584		
Al	27	101.649		
Sc	45			
Ti	47	98.649		
V	51	100.000		
Cr	52	100.338		
Cr	53			
Mn	55	99.416		
Co	59	102.355		
Ni	60	100.536		
Cu	65	100.593		
Zn	66	100.073		
> Ge	72		105.898	
As	75	99.974		
Se	82	100.927		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 16:14:12
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.165		
Ag	107	99.690		
Cd	111	100.478		
Cd	114			
In	115			104.016
Sn	118	99.021		
Sb	123	97.743		
Ba	135	97.336		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.989		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.325		
U	238	101.872		
Bi	209			100.912
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 16:14:12
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 16:15:06
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79089.3	2.9				ug/L	76456	Standard
	Be	9	15.0	57.7	**-0.0068**	0.008	113.4	ug/L	20	Standard
	Al	27	2235.2	13.9	**0.0024**	0.001	57.8	ug/L	1307	Standard
	Sc	45	43469.0	3.3				ug/L	41174	Standard
	Ti	47	28.3	17.4	**-0.0019**	0.015	796.4	ug/L	27	Standard
	V	51	1493.4	3.9	**-0.0261**	0.008	30.6	ug/L	1434	Standard
	Cr	52	7368.5	3.1	**-0.1054**	0.021	19.8	ug/L	7733	Standard
	Cr	53	613.3	6.6	**0.1595**	0.042	26.4	ug/L	442	Standard
	Mn	55	787.0	3.1	**-0.0026**	0.002	90.1	ug/L	723	Standard
	Co	59	245.7	12.9	**0.0010**	0.004	377.8	ug/L	217	Standard
	Ni	60	277.3	6.7	**-0.0262**	0.009	35.5	ug/L	304	Standard
	Cu	65	184.0	15.4	**0.0115**	0.013	111.3	ug/L	181	Standard
	Zn	66	259.7	4.8	**0.0209**	0.009	40.6	ug/L	215	Standard
>	**Ge**	72	548531.1	0.8				ug/L	520809	Standard
	As	75	-66.9	12.4	**-0.0063**	0.007	105.6	ug/L	-52	Standard
	Se	82	22.1	15.5	**0.0395**	0.025	62.6	ug/L	17	Standard
	Se-1	77	54.7	22.1	**-0.0780**	0.131	167.8	ug/L	56	Standard
>	**Ga**	71	23.3	75.3				mg/L	25	Standard
	Rb	85	18.3	56.8				ug/L	28	Standard
	Y	89	474502.6	0.9				ug/L	447395	Standard
>	**Rh**	103	10.0					ug/L	15	Standard
	Mo	98	353.6	10.5	**0.0864**	0.011	12.8	ug/L	113	Standard
	Ag	107	117.0	12.6	**0.0025**	0.002	78.3	ug/L	108	Standard
	Cd	111	11.4	37.7	**0.0023**	0.002	74.6	mg/L	3	Standard
	Cd	114	48.0	51.5	**0.0079**	0.004	50.7	ug/L	20	Standard
>	**In**	115	662932.4	0.6				ug/L	625728	Standard
	Sn	118	1505.1	27.3	**0.1367**	0.061	44.7	ug/L	568	Standard
	Sb	123	848.9	30.9	**0.1215**	0.049	40.0	ug/L	612	Standard
	Ba	135	79.0	17.7	**0.0163**	0.006	35.9	ug/L	21	Standard
	Ce	140	31.7	24.1				ug/L	245	Standard
>	**Tb**	159	977903.3	1.9				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	71.7	6.3	**0.0070**	0.000	7.1	ug/L	15	Standard
	Tl	205	66.7	28.4	**-0.0016**	0.002	147.5	ug/L	13	Standard
	Pb	206	325.0	5.7	**0.0119**	0.003	21.2	ug/L	264	Standard
	Pb	207	293.0	9.6	**0.0091**	0.005	50.3	ug/L	222	Standard
	Pb	208	1180.4	1.4	**0.0062**	0.001	14.3	ug/L	959	Standard
	U	238	63.3	11.6	**0.0074**	0.001	11.2	ug/L	9	Standard
>	**Bi**	209	570093.4	1.3				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 16:17:23
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	13.3	**-0.0123**	0.005	38.9	mg/L	55	Standard
K	39	35.0	14.3	**-0.0036**	0.022	615.4	mg/L	28	Standard
Ca	43	20.0	25.0	**-0.7333**	0.424	57.9	mg/L	27	Standard
Fe	54	187.6	24.1	**0.0414**	0.038	91.6	mg/L	147	Standard
Fe	57	236.7	10.0	**-0.1153**	0.063	54.7	mg/L	268	Standard
> **Sc-1**	45	43469.0	3.3				mg/L	41174	Standard
Cl	35	86433.8	0.2				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	2503.5	3.8				ug/L	1950	Standard
P	31	25746.9	1.4				ug/L	21156	Standard
S	34	4332.3	3.9				ug/L	3419	Standard
Sr	88	76.7	27.2				ug/L	72	Standard
C	12	100.0	65.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	49.3				mg/L	17	Standard
Dy	164	6.3	86.6				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	12004.8	4.7				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.323	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 16:17:23
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.946
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.124
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 16:17:23
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: PBS H2 WG574521-03
Sample Date/Time: Friday, July 01, 2016 16:37:08
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79271.8	0.3				ug/L	76456	Standard
	Be	9	20.0	66.1	**-0.0027**	0.011	426.9	ug/L	20	Standard
	Al	27	18129.4	51.1	**0.0920**	0.053	57.1	ug/L	1307	Standard
	Sc	45	43671.2	1.7				ug/L	41174	Standard
	Ti	47	42.0	27.0	**0.0356**	0.031	88.1	ug/L	27	Standard
	V	51	1815.5	7.2	**0.0075**	0.013	168.1	ug/L	1434	Standard
	Cr	52	9893.9	1.4	**0.1721**	0.017	10.1	ug/L	7733	Standard
	Cr	53	775.0	10.2	**0.2997**	0.080	26.8	ug/L	442	Standard
	Mn	55	2337.2	54.3	**0.1861**	0.154	82.5	ug/L	723	Standard
	Co	59	338.7	60.7	**0.0117**	0.025	210.3	ug/L	217	Standard
	Ni	60	460.3	4.6	**0.0540**	0.007	13.4	ug/L	304	Standard
	Cu	65	246.0	5.3	**0.0385**	0.005	13.8	ug/L	181	Standard
	Zn	66	1190.0	1.7	**0.7267**	0.005	0.6	ug/L	215	Standard
>	**Ge**	72	557757.5	1.2				ug/L	520809	Standard
	As	75	-45.2	46.1	**0.0109**	0.016	146.4	ug/L	-52	Standard
	Se	82	21.5	16.2	**0.0326**	0.024	74.5	ug/L	17	Standard
	Se-1	77	60.7	14.0	**-0.0215**	0.097	452.0	ug/L	56	Standard
>	**Ga**	71	30.0	33.3				mg/L	25	Standard
	Rb	85	78.3	35.2				ug/L	28	Standard
	Y	89	482555.7	1.9				ug/L	447395	Standard
>	**Rh**	103	8.3	91.7				ug/L	15	Standard
	Mo	98	332.0	91.4	**0.0799**	0.095	118.5	ug/L	113	Standard
	Ag	107	123.7	31.0	**0.0035**	0.005	145.5	ug/L	108	Standard
	Cd	111	20.3	82.0	**0.0060**	0.007	114.1	mg/L	3	Standard
	Cd	114	52.4	144.8	**0.0087**	0.013	144.6	ug/L	20	Standard
>	**In**	115	660410.5	0.4				ug/L	625728	Standard
	Sn	118	1340.1	28.5	**0.1130**	0.056	49.2	ug/L	568	Standard
	Sb	123	501.3	30.5	**0.0581**	0.028	47.8	ug/L	612	Standard
	Ba	135	141.0	74.3	**0.0434**	0.045	104.7	ug/L	21	Standard
	Ce	140	65.0	13.3				ug/L	245	Standard
>	**Tb**	159	984326.5	0.5				ug/L	950397	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	36.3	87.4	**0.0032**	0.003	108.0	ug/L	15	Standard
	Tl	205	81.7	141.4	**0.0002**	0.014	6303.1	ug/L	13	Standard
	Pb	206	357.0	4.6	**0.0175**	0.003	15.4	ug/L	264	Standard
	Pb	207	301.0	13.7	**0.0108**	0.008	73.3	ug/L	222	Standard
	Pb	208	1410.0	25.6	**0.0170**	0.017	98.8	ug/L	959	Standard
	U	238	79.0	155.7	**0.0093**	0.015	160.0	ug/L	9	Standard
>	**Bi**	209	568547.7	0.3				ug/L	552821	Standard

Sample ID: PBS H2 WG574521-03
Report Date/Time: Friday, July 01, 2016 16:39:25
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	83.3	70.3	**0.0311**	0.063	203.4	mg/L	55	Standard
K	39	26.7	47.2	**-0.0352**	0.044	125.3	mg/L	28	Standard
Ca	43	13.3	43.3	**-1.3140**	0.480	36.5	mg/L	27	Standard
Fe	54	179.3	22.8	**0.0338**	0.030	89.2	mg/L	147	Standard
Fe	57	248.3	6.5	**-0.0850**	0.036	42.0	mg/L	268	Standard
> **Sc-1**	45	43671.2	1.7				mg/L	41174	Standard
Cl	35	94694.4	1.8				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2446.9	5.5				ug/L	1950	Standard
P	31	26514.9	2.3				ug/L	21156	Standard
S	34	4310.6	3.2				ug/L	3419	Standard
Sr	88	95.0	13.9				ug/L	72	Standard
C	12	123.3	28.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	223.3	40.1				mg/L	17	Standard
Dy	164	6.2	193.4				mg/L	16	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	20320.3	3.3				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.683	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		107.094	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: PBS H2 WG574521-03
Report Date/Time: Friday, July 01, 2016 16:39:25
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.543
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.845
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: LCSS H2 WG574521-04
Sample Date/Time: Friday, July 01, 2016 16:40:19
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78206.3	1.2				ug/L	76456	Standard
	Be	9	30357.1	1.3	**26.4935**	0.412	1.6	ug/L	20	Standard
	Al	27	14527.0	3.3	**0.0727**	0.002	2.4	ug/L	1307	Standard
	Sc	45	43500.7	0.4				ug/L	41174	Standard
	Ti	47	50.0	23.1	**0.0598**	0.033	54.4	ug/L	27	Standard
	V	51	219978.8	0.3	**24.9959**	0.252	1.0	ug/L	1434	Standard
	Cr	52	227773.4	1.1	**25.5491**	0.376	1.5	ug/L	7733	Standard
	Cr	53	27710.3	2.0	**25.3978**	0.708	2.8	ug/L	442	Standard
	Mn	55	209603.4	1.5	**25.9644**	0.258	1.0	ug/L	723	Standard
	Co	59	210851.5	1.3	**25.8831**	0.352	1.4	ug/L	217	Standard
	Ni	60	56751.8	1.2	**25.5968**	0.369	1.4	ug/L	304	Standard
	Cu	65	56217.4	1.4	**25.8605**	0.261	1.0	ug/L	181	Standard
	Zn	66	34071.3	0.3	**26.0003**	0.170	0.7	ug/L	215	Standard
>	Ge	72	553234.9	0.8				ug/L	520809	Standard
	As	75	33169.4	0.5	**25.3389**	0.170	0.7	ug/L	-52	Standard
	Se	82	3351.8	0.3	**24.8507**	0.232	0.9	ug/L	17	Standard
	Se-1	77	2368.9	3.2	**25.4071**	1.040	4.1	ug/L	56	Standard
>	Ga	71	33.3	31.2				mg/L	25	Standard
	Rb	85	63.3	32.9				ug/L	28	Standard
	Y	89	471256.9	0.9				ug/L	447395	Standard
>	Rh	103	23.3	75.3				ug/L	15	Standard
	Mo	98	151.2	23.7	**0.0237**	0.012	48.5	ug/L	113	Standard
	Ag	107	190870.7	0.3	**25.3271**	0.087	0.3	ug/L	108	Standard
	Cd	111	60282.1	0.5	**24.9635**	0.019	0.1	mg/L	3	Standard
	Cd	114	147909.0	1.0	**24.7417**	0.334	1.4	ug/L	20	Standard
>	In	115	656276.3	0.4				ug/L	625728	Standard
	Sn	118	1236.7	17.5	**0.0991**	0.033	33.0	ug/L	568	Standard
	Sb	123	139998.4	0.5	**25.7951**	0.218	0.8	ug/L	612	Standard
	Ba	135	55761.4	0.2	**24.4204**	0.141	0.6	ug/L	21	Standard
	Ce	140	101.7	7.5				ug/L	245	Standard
>	Tb	159	982894.1	0.9				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	233767.2	0.4	**25.3362**	0.353	1.4	ug/L	15	Standard
	Tl	205	211866.2	1.4	**25.8487**	0.316	1.2	ug/L	13	Standard
	Pb	206	151902.3	0.4	**26.0680**	0.572	2.2	ug/L	264	Standard
	Pb	207	132458.5	0.8	**25.0234**	0.298	1.2	ug/L	222	Standard
	Pb	208	562733.9	0.2	**26.0307**	0.442	1.7	ug/L	959	Standard
	U	238	206496.7	1.0	**24.9238**	0.246	1.0	ug/L	9	Standard
>	Bi	209	568206.0	1.8				ug/L	552821	Standard

Sample ID: LCSS H2 WG574521-04
Report Date/Time: Friday, July 01, 2016 16:42:36
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	26.2	**0.0044**	0.017	394.1	mg/L	55	Standard
K	39	25.0	20.0	**-0.0405**	0.018	44.5	mg/L	28	Standard
Ca	43	28.3	10.2	**-0.0167**	0.239	1431.0	mg/L	27	Standard
Fe	54	163.4	6.9	**0.0225**	0.008	36.3	mg/L	147	Standard
Fe	57	255.0	14.8	**-0.0621**	0.113	181.2	mg/L	268	Standard
Sc-1	45	43500.7	0.4				mg/L	41174	Standard
Cl	35	91778.5	1.5				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	5150.9	3.9				ug/L	1950	Standard
P	31	26144.2	2.1				ug/L	21156	Standard
S	34	4105.6	2.0				ug/L	3419	Standard
Sr	88	88.3	25.5				ug/L	72	Standard
C	12	90.0	19.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	216.7	38.7				mg/L	17	Standard
Dy	164	12.1	119.9				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	7	Standard
I	127	5989.5	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.290	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.226	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: LCSS H2 WG574521-04
Report Date/Time: Friday, July 01, 2016 16:42:36
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.882
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.783
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS H2 WG574521-04
Report Date/Time: Friday, July 01, 2016 16:42:36
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144504 WG574521-01
Sample Date/Time: Friday, July 01, 2016 16:43:31
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82711.9	1.7				ug/L	76456	Standard
	Be	9	1393.4	1.7	**1.1308**	0.019	1.7	ug/L	20	Standard
	Al	27	12446064.6	0.4	**67.2063**	1.063	1.6	ug/L	1307	Standard
	Sc	45	49798.4	0.9				ug/L	41174	Standard
	Ti	47	3275.7	2.4	**9.3815**	0.258	2.8	ug/L	27	Standard
	V	51	187113.3	0.3	**21.2321**	0.189	0.9	ug/L	1434	Standard
	Cr	52	137212.2	0.9	**15.0050**	0.153	1.0	ug/L	7733	Standard
	Cr	53	16570.7	1.1	**15.0184**	0.113	0.8	ug/L	442	Standard
	Mn	55	3185070.4	0.3	**396.0143**	1.958	0.5	ug/L	723	Standard
	Co	59	91536.7	1.1	**11.2200**	0.101	0.9	ug/L	217	Standard
	Ni	60	45707.8	1.2	**20.5854**	0.156	0.8	ug/L	304	Standard
	Cu	65	23258.8	1.9	**10.6559**	0.153	1.4	ug/L	181	Standard
	Zn	66	46036.5	0.5	**35.1961**	0.406	1.2	ug/L	215	Standard
>	**Ge**	72	553218.9	0.6				ug/L	520809	Standard
	As	75	5739.6	2.8	**4.4216**	0.100	2.3	ug/L	-52	Standard
	Se	82	54.0	18.0	**0.2758**	0.072	26.2	ug/L	17	Standard
	Se-1	77	126.7	3.9	**0.7105**	0.061	8.6	ug/L	56	Standard
>	**Ga**	71	21134.7	1.1				mg/L	25	Standard
	Rb	85	212914.0	1.2				ug/L	28	Standard
	Y	89	733052.8	0.4				ug/L	447395	Standard
>	**Rh**	103	31.7	50.8				ug/L	15	Standard
	Mo	98	356.5	15.7	**0.0888**	0.017	19.2	ug/L	113	Standard
	Ag	107	670.0	12.8	**0.0764**	0.011	14.4	ug/L	108	Standard
	Cd	111	132.6	4.8	**0.0528**	0.002	4.3	mg/L	3	Standard
	Cd	114	355.4	28.0	**0.0597**	0.017	27.7	ug/L	20	Standard
>	**In**	115	653864.1	0.7				ug/L	625728	Standard
	Sn	118	1290.1	26.4	**0.1075**	0.050	46.3	ug/L	568	Standard
	Sb	123	594.8	48.0	**0.0762**	0.052	68.5	ug/L	612	Standard
	Ba	135	574692.3	0.9	**252.7729**	0.765	0.3	ug/L	21	Standard
	Ce	140	1393840.8	0.9				ug/L	245	Standard
>	**Tb**	159	1000230.3	1.3				ug/L	950397	Standard
	Ho	165	21410.1	1.0				ug/L	7	Standard
	Tl	203	1416.4	11.1	**0.1555**	0.018	11.5	ug/L	15	Standard
	Tl	205	1253.4	9.7	**0.1459**	0.016	10.8	ug/L	13	Standard
	Pb	206	71530.8	0.4	**12.4648**	0.067	0.5	ug/L	264	Standard
	Pb	207	58749.0	0.7	**11.2666**	0.094	0.8	ug/L	222	Standard
	Pb	208	258108.7	0.1	**12.1209**	0.070	0.6	ug/L	959	Standard
	U	238	3402.4	1.9	**0.4176**	0.009	2.1	ug/L	9	Standard
>	**Bi**	209	558413.2	0.5				ug/L	552821	Standard

Sample ID: L1606144504 WG574521-01
Report Date/Time: Friday, July 01, 2016 16:45:48
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.0919**	7.079	173.0	mg/L	2	Standard
Mg	24	115.0	19.0	**0.0509**	0.021	40.8	mg/L	55	Standard
K	39	340.0	8.9	**0.9470**	0.101	10.7	mg/L	28	Standard
Ca	43	83.3	24.2	**3.8084**	1.512	39.7	mg/L	27	Standard
Fe	54	19898.8	3.5	**12.8021**	0.403	3.1	mg/L	147	Standard
Fe	57	5240.9	4.1	**12.5122**	0.602	4.8	mg/L	268	Standard
> **Sc-1**	45	49798.4	0.9				mg/L	41174	Standard
Cl	35	83679.2	2.8				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	3150.3	10.3				ug/L	1950	Standard
P	31	25890.4	3.1				ug/L	21156	Standard
S	34	4145.6	3.5				ug/L	3419	Standard
Sr	88	115.0	15.1				ug/L	72	Standard
C	12	180.0	25.5				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	210.0	42.3				mg/L	17	Standard
Dy	164	35643.1	1.6				mg/L	16	Standard
Ho-1	165	21410.1	1.0				mg/L	7	Standard
Er	166	18878.4	2.2				mg/L	7	Standard
I	127	27002.4	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.183	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.223	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144504 WG574521-01
Report Date/Time: Friday, July 01, 2016 16:45:48
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.497
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.012
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144504 WG574521-01
Report Date/Time: Friday, July 01, 2016 16:45:48
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144505S WG574521-05
Sample Date/Time: Friday, July 01, 2016 16:46:42
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81052.9	2.1				ug/L	76456	Standard
	Be	9	30676.0	2.4	**25.8290**	0.259	1.0	ug/L	20	Standard
	Al	27	13294166.7	2.5	**73.2465**	1.294	1.8	ug/L	1307	Standard
	Sc	45	48179.8	2.6				ug/L	41174	Standard
	Ti	47	6953.9	1.9	**20.0934**	0.295	1.5	ug/L	27	Standard
	V	51	398485.1	1.1	**45.6308**	0.280	0.6	ug/L	1434	Standard
	Cr	52	346453.3	0.7	**39.5366**	0.280	0.7	ug/L	7733	Standard
	Cr	53	41902.9	1.3	**38.7788**	0.379	1.0	ug/L	442	Standard
	Mn	55	3061942.5	1.0	**382.3072**	4.386	1.1	ug/L	723	Standard
	Co	59	255934.9	0.7	**31.5572**	0.332	1.1	ug/L	217	Standard
	Ni	60	90655.7	0.5	**41.1541**	0.349	0.8	ug/L	304	Standard
	Cu	65	74619.0	0.4	**34.4964**	0.137	0.4	ug/L	181	Standard
	Zn	66	75694.3	0.6	**58.2286**	0.173	0.3	ug/L	215	Standard
>	Ge	72	550897.8	0.5				ug/L	520809	Standard
	As	75	34828.9	0.1	**26.7169**	0.137	0.5	ug/L	-52	Standard
	Se	82	2635.3	1.9	**19.5943**	0.381	1.9	ug/L	17	Standard
	Se-1	77	1869.4	1.0	**19.9893**	0.095	0.5	ug/L	56	Standard
>	Ga	71	20570.6	1.4				mg/L	25	Standard
	Rb	85	177643.7	0.9				ug/L	28	Standard
	Y	89	691746.1	1.0				ug/L	447395	Standard
>	Rh	103	35.0	37.8				ug/L	15	Standard
	Mo	98	1110.7	3.0	**0.3333**	0.010	3.0	ug/L	113	Standard
	Ag	107	178239.6	0.1	**24.1330**	0.242	1.0	ug/L	108	Standard
	Cd	111	58613.6	0.8	**24.7671**	0.188	0.8	mg/L	3	Standard
	Cd	114	143184.7	2.0	**24.4376**	0.381	1.6	ug/L	20	Standard
>	In	115	643190.5	1.0				ug/L	625728	Standard
	Sn	118	1398.4	22.6	**0.1275**	0.050	39.0	ug/L	568	Standard
	Sb	123	4282.3	1.0	**0.7725**	0.016	2.0	ug/L	612	Standard
	Ba	135	345608.0	0.5	**154.5433**	2.126	1.4	ug/L	21	Standard
	Ce	140	1299122.5	1.1				ug/L	245	Standard
>	Tb	159	990488.4	0.8				ug/L	950397	Standard
	Ho	165	18067.4	1.7				ug/L	7	Standard
	Tl	203	217125.4	0.9	**24.1291**	0.277	1.1	ug/L	15	Standard
	Tl	205	198577.9	0.6	**24.8432**	0.213	0.9	ug/L	13	Standard
	Pb	206	259935.7	1.5	**45.7680**	0.825	1.8	ug/L	264	Standard
	Pb	207	221787.2	1.0	**42.9961**	0.567	1.3	ug/L	222	Standard
	Pb	208	955436.3	0.5	**45.3507**	0.360	0.8	ug/L	959	Standard
	U	238	203540.4	0.9	**25.1914**	0.306	1.2	ug/L	9	Standard
>	Bi	209	554076.2	0.3				ug/L	552821	Standard

Sample ID: L1606144505S WG574521-05
Report Date/Time: Friday, July 01, 2016 16:48:59
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**8.7132**	15.083	173.1	mg/L	2	Standard
Mg	24	123.3	10.2	**0.0629**	0.011	18.2	mg/L	55	Standard
K	39	401.7	6.9	**1.1840**	0.057	4.8	mg/L	28	Standard
Ca	43	85.0	17.6	**4.1392**	1.063	25.7	mg/L	27	Standard
Fe	54	19135.8	0.4	**12.7297**	0.274	2.2	mg/L	147	Standard
Fe	57	5282.6	2.0	**13.0758**	0.572	4.4	mg/L	268	Standard
Sc-1	45	48179.8	2.6				mg/L	41174	Standard
Cl	35	81193.7	1.4				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3463.7	11.3				ug/L	1950	Standard
P	31	25893.8	3.3				ug/L	21156	Standard
S	34	3793.8	6.6				ug/L	3419	Standard
Sr	88	98.3	7.8				ug/L	72	Standard
C	12	150.0	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	31.6				mg/L	17	Standard
Dy	164	30043.9	1.0				mg/L	16	Standard
Ho-1	165	18067.4	1.7				mg/L	7	Standard
Er	166	16368.8	2.5				mg/L	7	Standard
I	127	31820.1	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.013	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.777	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144505S WG574521-05
Report Date/Time: Friday, July 01, 2016 16:48:59
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.791
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.227
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144505S WG574521-05
Report Date/Time: Friday, July 01, 2016 16:48:59
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144506SD WG574521-06
Sample Date/Time: Friday, July 01, 2016 16:49:54
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80097.9	2.8				ug/L	76456	Standard
	Be	9	30038.1	2.5	**25.6081**	1.007	3.9	ug/L	20	Standard
	Al	27	25838350.2	1.3	**144.1079**	2.593	1.8	ug/L	1307	Standard
	Sc	45	47559.6	2.9				ug/L	41174	Standard
	Ti	47	6556.4	1.8	**19.3875**	0.685	3.5	ug/L	27	Standard
	V	51	371950.4	0.9	**43.5770**	0.897	2.1	ug/L	1434	Standard
	Cr	52	331664.7	2.0	**38.7230**	1.629	4.2	ug/L	7733	Standard
	Cr	53	41130.8	1.7	**38.9560**	1.095	2.8	ug/L	442	Standard
	Mn	55	3596932.1	1.0	**459.6785**	15.165	3.3	ug/L	723	Standard
	Co	59	263231.1	1.3	**33.2200**	1.092	3.3	ug/L	217	Standard
	Ni	60	95938.5	1.6	**44.5917**	1.721	3.9	ug/L	304	Standard
	Cu	65	74284.7	1.9	**35.1502**	1.281	3.6	ug/L	181	Standard
	Zn	66	76677.6	1.5	**60.3810**	2.186	3.6	ug/L	215	Standard
>	Ge	72	538522.8	2.5				ug/L	520809	Standard
	As	75	31096.8	1.3	**24.4196**	0.873	3.6	ug/L	-52	Standard
	Se	82	2411.7	1.1	**18.3435**	0.519	2.8	ug/L	17	Standard
	Se-1	77	1751.1	3.2	**19.1315**	0.710	3.7	ug/L	56	Standard
>	Ga	71	19424.1	1.9				mg/L	25	Standard
	Rb	85	183661.6	1.6				ug/L	28	Standard
	Y	89	704841.2	2.1				ug/L	447395	Standard
>	Rh	103	36.7	20.8				ug/L	15	Standard
	Mo	98	611.4	5.3	**0.1763**	0.010	5.6	ug/L	113	Standard
	Ag	107	174143.9	1.6	**24.0046**	0.280	1.2	ug/L	108	Standard
	Cd	111	57620.6	0.9	**24.7920**	0.490	2.0	mg/L	3	Standard
	Cd	114	139765.7	1.6	**24.2901**	0.536	2.2	ug/L	20	Standard
>	In	115	631733.1	1.1				ug/L	625728	Standard
	Sn	118	1106.7	20.2	**0.0862**	0.035	40.7	ug/L	568	Standard
	Sb	123	5971.0	2.3	**1.1106**	0.013	1.2	ug/L	612	Standard
	Ba	135	389506.4	0.2	**177.3323**	1.766	1.0	ug/L	21	Standard
	Ce	140	1279386.9	0.6				ug/L	245	Standard
>	Tb	159	976334.8	1.3				ug/L	950397	Standard
	Ho	165	21239.9	2.3				ug/L	7	Standard
	Tl	203	212476.8	0.4	**24.3917**	0.306	1.3	ug/L	15	Standard
	Tl	205	190802.6	2.3	**24.6603**	0.758	3.1	ug/L	13	Standard
	Pb	206	194049.7	0.6	**35.2833**	0.374	1.1	ug/L	264	Standard
	Pb	207	165998.7	0.6	**33.2303**	0.156	0.5	ug/L	222	Standard
	Pb	208	711047.9	1.1	**34.8555**	0.746	2.1	ug/L	959	Standard
	U	238	196776.4	1.6	**25.1602**	0.659	2.6	ug/L	9	Standard
>	Bi	209	536411.2	1.1				ug/L	552821	Standard

Sample ID: L1606144506SD WG574521-06
Report Date/Time: Friday, July 01, 2016 16:52:11
Page 1

Approved: July 02, 2016

Na	23	5.0	0.0	**12.9314**	0.378	2.9	mg/L	2	Standard
Mg	24	121.7	21.1	**0.0630**	0.027	42.3	mg/L	55	Standard
K	39	396.7	12.8	**1.1837**	0.137	11.6	mg/L	28	Standard
Ca	43	198.3	9.5	**13.1529**	1.459	11.1	mg/L	27	Standard
Fe	54	17265.4	3.0	**11.6302**	0.519	4.5	mg/L	147	Standard
Fe	57	5002.5	1.8	**12.5110**	0.483	3.9	mg/L	268	Standard
> **Sc-1**	45	47559.6	2.9				mg/L	41174	Standard
Cl	35	82047.6	0.3				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2713.6	16.2				ug/L	1950	Standard
P	31	26575.0	0.8				ug/L	21156	Standard
S	34	4360.6	2.1				ug/L	3419	Standard
Sr	88	131.7	17.9				ug/L	72	Standard
C	12	140.0	31.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	120.0	25.0				mg/L	17	Standard
Dy	164	35523.7	1.8				mg/L	16	Standard
Ho-1	165	21239.9	2.3				mg/L	7	Standard
Er	166	19068.7	0.7				mg/L	7	Standard
I	127	21363.4	3.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.764	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.401	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144506SD WG574521-06
Report Date/Time: Friday, July 01, 2016 16:52:11
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.960
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.032
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144506SD WG574521-06
Report Date/Time: Friday, July 01, 2016 16:52:11
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Friday, July 01, 2016 16:53:05
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77083.9	1.4				ug/L	76456	Standard
	Be	9	475.0	1.1	**0.4010**	0.005	1.3	ug/L	20	Standard
	Al	27	2237415.9	0.9	**12.9552**	0.241	1.9	ug/L	1307	Standard
	Sc	45	46143.5	0.6				ug/L	41174	Standard
	Ti	47	14229.3	1.3	**40.3569**	0.503	1.2	ug/L	27	Standard
	V	51	81926.5	1.2	**9.0305**	0.138	1.5	ug/L	1434	Standard
	Cr	52	71884.8	0.5	**7.2617**	0.092	1.3	ug/L	7733	Standard
	Cr	53	8222.2	3.8	**7.1184**	0.362	5.1	ug/L	442	Standard
	Mn	55	1326114.2	0.7	**162.1111**	1.014	0.6	ug/L	723	Standard
	Co	59	18265.0	0.3	**2.1786**	0.035	1.6	ug/L	217	Standard
	Ni	60	14421.9	1.4	**6.2826**	0.026	0.4	ug/L	304	Standard
	Cu	65	20275.6	1.0	**9.1261**	0.043	0.5	ug/L	181	Standard
	Zn	66	84084.7	0.5	**63.3707**	0.506	0.8	ug/L	215	Standard
>	Ge	72	562486.4	1.3				ug/L	520809	Standard
	As	75	12273.7	0.0	**9.2515**	0.118	1.3	ug/L	-52	Standard
	Se	82	80.8	6.1	**0.4662**	0.041	8.7	ug/L	17	Standard
	Se-1	77	117.0	7.4	**0.5834**	0.109	18.6	ug/L	56	Standard
>	Ga	71	7775.3	1.7				mg/L	25	Standard
	Rb	85	53367.2	1.6				ug/L	28	Standard
	Y	89	546880.1	0.9				ug/L	447395	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	1997.9	3.1	**0.5987**	0.021	3.5	ug/L	113	Standard
	Ag	107	409.7	7.2	**0.0409**	0.004	9.7	ug/L	108	Standard
	Cd	111	850.8	2.0	**0.3460**	0.009	2.5	mg/L	3	Standard
	Cd	114	2106.8	7.8	**0.3483**	0.025	7.1	ug/L	20	Standard
>	In	115	663939.9	0.6				ug/L	625728	Standard
	Sn	118	2050.1	14.8	**0.2160**	0.045	20.8	ug/L	568	Standard
	Sb	123	671.1	9.1	**0.0887**	0.011	12.6	ug/L	612	Standard
	Ba	135	107917.7	1.0	**46.7326**	0.441	0.9	ug/L	21	Standard
	Ce	140	627825.8	0.9				ug/L	245	Standard
>	Tb	159	987128.9	0.6				ug/L	950397	Standard
	Ho	165	5104.2	2.7				ug/L	7	Standard
	Tl	203	689.0	1.9	**0.0742**	0.001	1.8	ug/L	15	Standard
	Tl	205	618.3	5.7	**0.0660**	0.005	7.0	ug/L	13	Standard
	Pb	206	276291.1	0.7	**47.6167**	0.411	0.9	ug/L	264	Standard
	Pb	207	230628.0	0.7	**43.7624**	0.472	1.1	ug/L	222	Standard
	Pb	208	1006911.8	0.1	**46.7816**	0.251	0.5	ug/L	959	Standard
	U	238	4725.7	2.3	**0.5722**	0.012	2.1	ug/L	9	Standard
>	Bi	209	566085.1	0.4				ug/L	552821	Standard

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 16:55:22
Page 1

Approved: July 02, 2016

Na	23	8.3	124.9	**22.1583**	27.707	125.0	mg/L	2	Standard
Mg	24	85.0	11.8	**0.0284**	0.010	35.7	mg/L	55	Standard
K	39	100.0	15.0	**0.2109**	0.050	23.9	mg/L	28	Standard
Ca	43	75.0	6.7	**3.6275**	0.385	10.6	mg/L	27	Standard
Fe	54	8171.7	3.6	**5.6200**	0.239	4.3	mg/L	147	Standard
Fe	57	2388.5	3.0	**5.7441**	0.167	2.9	mg/L	268	Standard
> **Sc-1**	45	46143.5	0.6				mg/L	41174	Standard
Cl	35	81155.5	2.1				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	3463.7	7.7				ug/L	1950	Standard
P	31	25539.9	4.4				ug/L	21156	Standard
S	34	3917.2	3.0				ug/L	3419	Standard
Sr	88	76.7	18.8				ug/L	72	Standard
C	12	486.7	15.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	256.7	4.5				mg/L	17	Standard
Dy	164	8760.5	4.1				mg/L	16	Standard
Ho-1	165	5104.2	2.7				mg/L	7	Standard
Er	166	4777.4	5.8				mg/L	7	Standard
I	127	36602.6	6.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.822	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.002	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 16:55:22
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.107
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.399
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Friday, July 01, 2016 16:56:17
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78477.8	2.4				ug/L	76456	Standard
	Be	9	601.7	8.2	**0.5033**	0.031	6.2	ug/L	20	Standard
	Al	27	4781763.5	1.4	**27.2109**	0.622	2.3	ug/L	1307	Standard
	Sc	45	48186.5	2.1				ug/L	41174	Standard
	Ti	47	26915.6	1.4	**75.8086**	1.495	2.0	ug/L	27	Standard
	V	51	170171.2	0.3	**18.8187**	0.180	1.0	ug/L	1434	Standard
	Cr	52	138418.5	1.4	**14.7553**	0.301	2.0	ug/L	7733	Standard
	Cr	53	16907.8	0.5	**14.9504**	0.076	0.5	ug/L	442	Standard
	Mn	55	4385050.3	0.1	**532.0225**	4.124	0.8	ug/L	723	Standard
	Co	59	55284.7	0.4	**6.6001**	0.055	0.8	ug/L	217	Standard
	Ni	60	30764.2	0.1	**13.4670**	0.097	0.7	ug/L	304	Standard
	Cu	65	65698.5	1.0	**29.5008**	0.365	1.2	ug/L	181	Standard
	Zn	66	217089.2	0.9	**162.5825**	0.761	0.5	ug/L	215	Standard
>	Ge	72	566980.9	0.7				ug/L	520809	Standard
	As	75	11103.7	0.8	**8.3069**	0.047	0.6	ug/L	-52	Standard
	Se	82	132.6	4.8	**0.8380**	0.046	5.5	ug/L	17	Standard
	Se-1	77	150.3	12.7	**0.9313**	0.212	22.8	ug/L	56	Standard
>	Ga	71	15192.6	2.9				mg/L	25	Standard
	Rb	85	155948.5	0.6				ug/L	28	Standard
	Y	89	601495.0	1.4				ug/L	447395	Standard
>	Rh	103	23.3	32.7				ug/L	15	Standard
	Mo	98	5496.7	0.9	**1.6857**	0.006	0.4	ug/L	113	Standard
	Ag	107	775.4	2.6	**0.0887**	0.002	2.3	ug/L	108	Standard
	Cd	111	1034.2	3.3	**0.4202**	0.011	2.7	mg/L	3	Standard
	Cd	114	2656.7	6.0	**0.4384**	0.024	5.5	ug/L	20	Standard
>	In	115	665198.2	0.6				ug/L	625728	Standard
	Sn	118	1311.7	13.8	**0.1076**	0.028	25.7	ug/L	568	Standard
	Sb	123	507.6	23.3	**0.0588**	0.022	37.4	ug/L	612	Standard
	Ba	135	246404.5	0.4	**106.5243**	0.535	0.5	ug/L	21	Standard
	Ce	140	708985.8	1.9				ug/L	245	Standard
>	Tb	159	1000873.3	0.7				ug/L	950397	Standard
	Ho	165	8867.6	1.0				ug/L	7	Standard
	Tl	203	1805.8	2.5	**0.1960**	0.004	2.0	ug/L	15	Standard
	Tl	205	1731.8	4.2	**0.2027**	0.009	4.2	ug/L	13	Standard
	Pb	206	179680.5	0.2	**31.0013**	0.201	0.6	ug/L	264	Standard
	Pb	207	147967.3	0.2	**28.1058**	0.174	0.6	ug/L	222	Standard
	Pb	208	649286.1	0.4	**30.1982**	0.309	1.0	ug/L	959	Standard
	U	238	11590.8	1.2	**1.4062**	0.023	1.6	ug/L	9	Standard
>	Bi	209	565178.3	0.6				ug/L	552821	Standard

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 16:58:34
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**8.3775**	14.502	173.1	mg/L	2	Standard
Mg	24	161.7	21.7	**0.1008**	0.032	31.7	mg/L	55	Standard
K	39	290.0	13.0	**0.8193**	0.124	15.2	mg/L	28	Standard
Ca	43	116.7	13.8	**6.5999**	1.152	17.5	mg/L	27	Standard
Fe	54	19162.0	2.8	**12.7406**	0.220	1.7	mg/L	147	Standard
Fe	57	5199.2	1.1	**12.8525**	0.447	3.5	mg/L	268	Standard
> **Sc-1**	45	48186.5	2.1				mg/L	41174	Standard
Cl	35	81627.3	0.9				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	4627.4	6.5				ug/L	1950	Standard
P	31	26000.6	1.2				ug/L	21156	Standard
S	34	3977.2	4.8				ug/L	3419	Standard
Sr	88	111.7	18.6				ug/L	72	Standard
C	12	856.7	2.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	230.0	17.4				mg/L	17	Standard
Dy	164	14613.4	2.0				mg/L	16	Standard
Ho-1	165	8867.6	1.0				mg/L	7	Standard
Er	166	8085.5	6.9				mg/L	7	Standard
I	127	50293.4	2.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.645	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.865	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 16:58:34
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.308
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.235
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 16:58:34
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102PS WG575057-01
Sample Date/Time: Friday, July 01, 2016 16:59:28
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79385.8	1.3				ug/L	76456	Standard
	Be	9	66132.4	2.2	**56.8900**	1.804	3.2	ug/L	20	Standard
	Al	27	4677646.6	0.6	**26.3080**	0.258	1.0	ug/L	1307	Standard
	Sc	45	48036.1	2.2				ug/L	41174	Standard
	Ti	47	26404.3	1.4	**75.0881**	1.235	1.6	ug/L	27	Standard
	V	51	638356.3	0.3	**71.8329**	0.463	0.6	ug/L	1434	Standard
	Cr	52	595924.0	0.5	**67.3875**	0.498	0.7	ug/L	7733	Standard
	Cr	53	74037.1	1.4	**67.5313**	1.159	1.7	ug/L	442	Standard
	Mn	55	4772659.1	0.6	**584.6747**	1.033	0.2	ug/L	723	Standard
	Co	59	500476.8	0.3	**60.5691**	0.409	0.7	ug/L	217	Standard
	Ni	60	148905.8	0.4	**66.4112**	0.102	0.2	ug/L	304	Standard
	Cu	65	183049.8	0.4	**83.1281**	0.455	0.5	ug/L	181	Standard
	Zn	66	287669.1	1.1	**217.6035**	2.596	1.2	ug/L	215	Standard
>	Ge	72	561514.3	0.4				ug/L	520809	Standard
	As	75	82895.8	0.4	**62.3258**	0.436	0.7	ug/L	-52	Standard
	Se	82	7441.1	0.8	**54.5039**	0.359	0.7	ug/L	17	Standard
	Se-1	77	5169.2	1.0	**55.4015**	0.590	1.1	ug/L	56	Standard
>	Ga	71	15267.7	1.1				mg/L	25	Standard
	Rb	85	154189.3	2.6				ug/L	28	Standard
	Y	89	603447.9	0.9				ug/L	447395	Standard
>	Rh	103	43.3	24.0				ug/L	15	Standard
	Mo	98	5476.6	2.0	**1.7012**	0.041	2.4	ug/L	113	Standard
	Ag	107	391731.6	0.9	**51.9492**	0.634	1.2	ug/L	108	Standard
	Cd	111	129263.1	1.2	**53.4846**	0.463	0.9	mg/L	3	Standard
	Cd	114	313124.4	0.6	**52.3315**	0.333	0.6	ug/L	20	Standard
>	In	115	656847.0	0.4				ug/L	625728	Standard
	Sn	118	1576.8	23.5	**0.1493**	0.056	37.2	ug/L	568	Standard
	Sb	123	282627.6	1.8	**52.0619**	0.839	1.6	ug/L	612	Standard
	Ba	135	360531.0	1.0	**157.8560**	2.191	1.4	ug/L	21	Standard
	Ce	140	708239.5	1.1				ug/L	245	Standard
>	Tb	159	993751.4	0.6				ug/L	950397	Standard
	Ho	165	9054.4	1.6				ug/L	7	Standard
	Tl	203	489986.8	0.9	**53.0644**	0.590	1.1	ug/L	15	Standard
	Tl	205	443077.3	1.1	**54.0276**	0.463	0.9	ug/L	13	Standard
	Pb	206	490668.3	0.8	**84.2254**	0.742	0.9	ug/L	264	Standard
	Pb	207	417558.3	0.6	**78.9219**	0.638	0.8	ug/L	222	Standard
	Pb	208	1796810.4	0.6	**83.1513**	0.452	0.5	ug/L	959	Standard
	U	238	437485.4	0.2	**52.7644**	0.211	0.4	ug/L	9	Standard
>	Bi	209	568575.4	0.3				ug/L	552821	Standard

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 17:01:45
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.3123**	7.460	173.0	mg/L	2	Standard
Mg	24	195.0	13.6	**0.1353**	0.029	21.4	mg/L	55	Standard
K	39	278.3	18.2	**0.7825**	0.157	20.1	mg/L	28	Standard
Ca	43	116.7	21.1	**6.6089**	1.697	25.7	mg/L	27	Standard
Fe	54	18988.9	2.1	**12.6650**	0.048	0.4	mg/L	147	Standard
Fe	57	5222.6	2.2	**12.9542**	0.402	3.1	mg/L	268	Standard
> **Sc-1**	45	48036.1	2.2				mg/L	41174	Standard
Cl	35	79157.6	0.9				ug/L	69550	Standard
Kr	83	3.0	88.2				ug/L	1	Standard
Br	81	4567.4	7.8				ug/L	1950	Standard
P	31	25140.8	1.9				ug/L	21156	Standard
S	34	3993.9	5.1				ug/L	3419	Standard
Sr	88	141.7	14.7				ug/L	72	Standard
C	12	916.7	5.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	220.0	20.8				mg/L	17	Standard
Dy	164	14636.5	2.9				mg/L	16	Standard
Ho-1	165	9054.4	1.6				mg/L	7	Standard
Er	166	8719.2	6.2				mg/L	7	Standard
I	127	60985.9	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.832	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.816	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 17:01:45
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.973
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.850
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 17:01:45
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 17:02:40
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72896.8	3.6				ug/L	76456	Standard
	Be	9	151.7	28.0	**0.1215**	0.035	28.7	ug/L	20	Standard
	Al	27	886084.1	1.1	**5.4244**	0.245	4.5	ug/L	1307	Standard
	Sc	45	40265.1	1.1				ug/L	41174	Standard
	Ti	47	4872.5	1.7	**14.8447**	0.431	2.9	ug/L	27	Standard
	V	51	31678.7	1.1	**3.6484**	0.093	2.5	ug/L	1434	Standard
	Cr	52	29443.9	1.3	**2.6645**	0.094	3.5	ug/L	7733	Standard
	Cr	53	3295.4	2.1	**2.8380**	0.099	3.5	ug/L	442	Standard
	Mn	55	811630.5	1.3	**106.9281**	2.799	2.6	ug/L	723	Standard
	Co	59	10016.3	0.5	**1.2757**	0.020	1.5	ug/L	217	Standard
	Ni	60	6049.9	1.8	**2.7576**	0.087	3.1	ug/L	304	Standard
	Cu	65	12638.9	1.7	**6.1089**	0.185	3.0	ug/L	181	Standard
	Zn	66	44343.1	2.3	**35.9528**	1.298	3.6	ug/L	215	Standard
>	Ge	72	521851.4	1.3				ug/L	520809	Standard
	As	75	2135.0	1.6	**1.7715**	0.050	2.8	ug/L	-52	Standard
	Se	82	32.7	15.9	**0.1321**	0.044	33.6	ug/L	17	Standard
	Se-1	77	80.0	15.4	**0.2505**	0.153	61.0	ug/L	56	Standard
>	Ga	71	2831.9	8.0				mg/L	25	Standard
	Rb	85	29441.9	2.0				ug/L	28	Standard
	Y	89	460347.3	0.7				ug/L	447395	Standard
>	Rh	103	23.3	44.6				ug/L	15	Standard
	Mo	98	1036.0	4.3	**0.3306**	0.018	5.5	ug/L	113	Standard
	Ag	107	240.3	7.9	**0.0218**	0.002	11.3	ug/L	108	Standard
	Cd	111	192.5	10.6	**0.0842**	0.009	10.8	mg/L	3	Standard
	Cd	114	501.8	24.8	**0.0913**	0.024	25.9	ug/L	20	Standard
>	In	115	604796.3	1.1				ug/L	625728	Standard
	Sn	118	678.3	14.5	**0.0250**	0.017	67.9	ug/L	568	Standard
	Sb	123	1577.0	34.7	**0.2828**	0.113	39.9	ug/L	612	Standard
	Ba	135	46358.8	0.3	**22.0307**	0.285	1.3	ug/L	21	Standard
	Ce	140	135977.5	1.1				ug/L	245	Standard
>	Tb	159	909731.4	0.9				ug/L	950397	Standard
	Ho	165	1651.8	7.4				ug/L	7	Standard
	Tl	203	404.7	3.9	**0.0462**	0.002	3.6	ug/L	15	Standard
	Tl	205	413.3	12.1	**0.0442**	0.006	14.3	ug/L	13	Standard
	Pb	206	34246.7	0.6	**6.2517**	0.027	0.4	ug/L	264	Standard
	Pb	207	28334.8	0.4	**5.6896**	0.033	0.6	ug/L	222	Standard
	Pb	208	122940.1	1.3	**6.0452**	0.111	1.8	ug/L	959	Standard
	U	238	2224.5	2.8	**0.2869**	0.007	2.3	ug/L	9	Standard
>	Bi	209	531198.7	0.5				ug/L	552821	Standard

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:04:57
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.1506**	8.913	173.0	mg/L	2	Standard
Mg	24	81.7	18.7	**0.0373**	0.018	48.0	mg/L	55	Standard
K	39	76.7	26.4	**0.1697**	0.081	47.8	mg/L	28	Standard
Ca	43	40.0	25.0	**1.2573**	0.889	70.7	mg/L	27	Standard
Fe	54	3471.8	1.5	**2.6857**	0.073	2.7	mg/L	147	Standard
Fe	57	1143.4	4.3	**2.7898**	0.194	6.9	mg/L	268	Standard
> **Sc-1**	45	40265.1	1.1				mg/L	41174	Standard
Cl	35	70995.3	1.2				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2253.5	3.8				ug/L	1950	Standard
P	31	10969.0	0.7				ug/L	21156	Standard
S	34	3750.5	0.4				ug/L	3419	Standard
Sr	88	80.0	12.5				ug/L	72	Standard
C	12	226.7	9.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	17	Standard
Dy	164	2685.5	6.0				mg/L	16	Standard
Ho-1	165	1651.8	7.4				mg/L	7	Standard
Er	166	1560.1	5.1				mg/L	7	Standard
I	127	40504.1	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.345	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.200	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:04:57
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.655
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.089
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:04:57
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 17:05:52
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70195.6	2.2				ug/L	76456	Standard
	Be	9	78.3	41.0	**0.0567**	0.033	57.8	ug/L	20	Standard
	Al	27	176403.2	5.8	**1.1130**	0.082	7.4	ug/L	1307	Standard
	Sc	45	38834.7	0.9				ug/L	41174	Standard
	Ti	47	931.7	5.0	**2.8080**	0.157	5.6	ug/L	27	Standard
	V	51	7219.8	2.6	**0.6896**	0.020	2.9	ug/L	1434	Standard
	Cr	52	9795.8	4.3	**0.2546**	0.049	19.3	ug/L	7733	Standard
	Cr	53	816.7	8.0	**0.4003**	0.064	16.0	ug/L	442	Standard
	Mn	55	156110.5	2.6	**20.7536**	0.477	2.3	ug/L	723	Standard
	Co	59	2209.5	13.5	**0.2622**	0.038	14.6	ug/L	217	Standard
	Ni	60	1399.1	2.2	**0.5287**	0.012	2.4	ug/L	304	Standard
	Cu	65	2640.2	2.1	**1.2343**	0.024	2.0	ug/L	181	Standard
	Zn	66	9656.7	1.3	**7.7908**	0.073	0.9	ug/L	215	Standard
>	**Ge**	72	514985.8	0.4				ug/L	520809	Standard
	As	75	413.0	1.8	**0.3835**	0.006	1.4	ug/L	-52	Standard
	Se	82	23.7	20.7	**0.0632**	0.039	61.2	ug/L	17	Standard
	Se-1	77	57.0	6.1	**-0.0104**	0.039	372.4	ug/L	56	Standard
>	**Ga**	71	518.3	3.7				mg/L	25	Standard
	Rb	85	5472.7	4.6				ug/L	28	Standard
	Y	89	432045.4	1.1				ug/L	447395	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	406.8	30.7	**0.1173**	0.043	37.1	ug/L	113	Standard
	Ag	107	155.3	56.4	**0.0098**	0.013	129.9	ug/L	108	Standard
	Cd	111	62.6	64.4	**0.0262**	0.018	70.2	mg/L	3	Standard
	Cd	114	167.6	61.4	**0.0309**	0.019	61.4	ug/L	20	Standard
>	**In**	115	596116.9	0.1				ug/L	625728	Standard
	Sn	118	588.3	26.0	**0.0117**	0.025	212.4	ug/L	568	Standard
	Sb	123	388.4	28.3	**0.0452**	0.022	49.6	ug/L	612	Standard
	Ba	135	8995.0	2.1	**4.3221**	0.097	2.2	ug/L	21	Standard
	Ce	140	24040.7	2.3				ug/L	245	Standard
>	**Tb**	159	895791.4	0.8				ug/L	950397	Standard
	Ho	165	243.3	11.3				ug/L	7	Standard
	Tl	203	146.7	64.0	**0.0163**	0.011	66.9	ug/L	15	Standard
	Tl	205	206.7	97.8	**0.0173**	0.026	152.8	ug/L	13	Standard
	Pb	206	6377.7	1.6	**1.1327**	0.021	1.9	ug/L	264	Standard
	Pb	207	5284.9	1.3	**1.0274**	0.015	1.5	ug/L	222	Standard
	Pb	208	23160.0	2.5	**1.1036**	0.032	2.9	ug/L	959	Standard
	U	238	525.7	30.5	**0.0678**	0.021	30.5	ug/L	9	Standard
>	**Bi**	209	529365.9	0.5				ug/L	552821	Standard

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:08:09
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	68.3	23.5	**0.0243**	0.019	79.3	mg/L	55	Standard
K	39	26.7	78.1	**-0.0227**	0.085	373.8	mg/L	28	Standard
Ca	43	28.3	36.7	**0.2726**	0.981	359.8	mg/L	27	Standard
Fe	54	762.6	6.6	**0.5352**	0.041	7.7	mg/L	147	Standard
Fe	57	421.7	1.8	**0.5696**	0.019	3.3	mg/L	268	Standard
> **Sc-1**	45	38834.7	0.9				mg/L	41174	Standard
Cl	35	69123.3	0.3				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	1883.5	2.0				ug/L	1950	Standard
P	31	7872.0	1.6				ug/L	21156	Standard
S	34	3360.4	5.9				ug/L	3419	Standard
Sr	88	80.0	32.5				ug/L	72	Standard
C	12	90.0	22.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	38.2				mg/L	17	Standard
Dy	164	420.7	27.3				mg/L	16	Standard
Ho-1	165	243.3	11.3				mg/L	7	Standard
Er	166	263.3	34.5				mg/L	7	Standard
I	127	37972.5	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.812	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.882	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 17:08:09
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.268
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.757
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 17:09:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74588.1	0.3				ug/L	76456	Standard
	Be	9	57897.1	2.0	**52.9977**	1.204	2.3	ug/L	20	Standard
	Al	27	8733198.2	1.7	**52.2835**	0.984	1.9	ug/L	1307	Standard
	Sc	45	42748.6	2.7				ug/L	41174	Standard
	Ti	47	34213.3	0.6	**98.3209**	0.421	0.4	ug/L	27	Standard
	V	51	442681.7	1.0	**50.2684**	0.638	1.3	ug/L	1434	Standard
	Cr	52	439186.0	0.4	**49.9273**	0.312	0.6	ug/L	7733	Standard
	Cr	53	53859.0	4.5	**49.5163**	2.076	4.2	ug/L	442	Standard
	Mn	55	408283.6	1.1	**50.4406**	0.633	1.3	ug/L	723	Standard
	Co	59	418347.3	1.1	**51.1465**	0.625	1.2	ug/L	217	Standard
	Ni	60	111527.3	0.5	**50.2172**	0.479	1.0	ug/L	304	Standard
	Cu	65	110380.0	1.0	**50.6153**	0.665	1.3	ug/L	181	Standard
	Zn	66	65800.9	0.7	**50.1493**	0.538	1.1	ug/L	215	Standard
>	Ge	72	555788.6	0.5				ug/L	520809	Standard
	As	75	65659.0	0.5	**49.8836**	0.337	0.7	ug/L	-52	Standard
	Se	82	6718.9	0.9	**49.7097**	0.395	0.8	ug/L	17	Standard
	Se-1	77	4636.4	0.7	**50.1376**	0.106	0.2	ug/L	56	Standard
>	Ga	71	43.3	35.3				mg/L	25	Standard
	Rb	85	1065.0	6.1				ug/L	28	Standard
	Y	89	468359.1	2.1				ug/L	447395	Standard
>	Rh	103	20.0	25.0				ug/L	15	Standard
	Mo	98	314455.9	1.0	**100.8766**	0.307	0.3	ug/L	113	Standard
	Ag	107	371694.7	0.4	**50.2132**	0.146	0.3	ug/L	108	Standard
	Cd	111	119048.0	0.9	**50.1804**	0.274	0.5	mg/L	3	Standard
	Cd	114	295369.7	1.4	**50.2861**	0.415	0.8	ug/L	20	Standard
>	In	115	644781.5	0.7				ug/L	625728	Standard
	Sn	118	326587.3	0.5	**49.1617**	0.446	0.9	ug/L	568	Standard
	Sb	123	269765.0	0.9	**50.6219**	0.112	0.2	ug/L	612	Standard
	Ba	135	109973.0	0.0	**49.0395**	0.330	0.7	ug/L	21	Standard
	Ce	140	1043.4	21.6				ug/L	245	Standard
>	Tb	159	966885.6	0.6				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	449950.1	0.5	**50.5682**	0.198	0.4	ug/L	15	Standard
	Tl	205	409109.7	0.2	**51.7709**	0.214	0.4	ug/L	13	Standard
	Pb	206	284448.3	0.6	**50.6536**	0.284	0.6	ug/L	264	Standard
	Pb	207	258444.3	0.7	**50.6761**	0.292	0.6	ug/L	222	Standard
	Pb	208	1085344.7	0.3	**52.1064**	0.244	0.5	ug/L	959	Standard
	U	238	403930.8	0.4	**50.5574**	0.115	0.2	ug/L	9	Standard
>	Bi	209	547878.4	0.3				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:11:22
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.4428**	8.174	86.6	mg/L	2	Standard
Mg	24	4510.7	2.8	**5.0184**	0.235	4.7	mg/L	55	Standard
K	39	1208.4	6.0	**4.3343**	0.305	7.0	mg/L	28	Standard
Ca	43	88.3	31.2	**5.2894**	2.418	45.7	mg/L	27	Standard
Fe	54	6821.5	2.8	**5.0554**	0.184	3.6	mg/L	147	Standard
Fe	57	2156.8	8.4	**5.5723**	0.370	6.6	mg/L	268	Standard
> **Sc-1**	45	42748.6	2.7				mg/L	41174	Standard
Cl	35	80981.2	1.3				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	2280.2	6.1				ug/L	1950	Standard
P	31	25067.4	1.4				ug/L	21156	Standard
S	34	4143.9	4.2				ug/L	3419	Standard
Sr	88	66.7	51.1				ug/L	72	Standard
C	12	116.7	24.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	173.3	61.7				mg/L	17	Standard
Dy	164	15.5	97.9				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	7	Standard
I	127	10653.7	0.8				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	105.995		
	Al	27	104.567		
	Sc	45			
	Ti	47	98.321		
	V	51	100.537		
	Cr	52	99.855		
	Cr	53			
	Mn	55	100.881		
	Co	59	102.293		
	Ni	60	100.434		
	Cu	65	101.231		
	Zn	66	100.299		
>	Ge	72		106.716	
	As	75	99.767		
	Se	82	99.419		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:11:22
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	100.877		
Ag	107	100.426		
Cd	111	100.361		
Cd	114			
> In	115			103.045
Sn	118	98.323		
Sb	123	101.244		
Ba	135	98.079		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.136		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.213		
U	238	101.115		
> Bi	209			99.106
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:11:22
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 17:12:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73740.8	2.8				ug/L	76456	Standard
	Be	9	30.0	16.7	**0.0079**	0.005	57.8	ug/L	20	Standard
	Al	27	2383.5	29.7	**0.0042**	0.004	92.9	ug/L	1307	Standard
	Sc	45	42364.1	1.1				ug/L	41174	Standard
	Ti	47	28.3	8.2	**-0.0020**	0.008	409.9	ug/L	27	Standard
	V	51	1463.8	6.3	**-0.0298**	0.010	33.6	ug/L	1434	Standard
	Cr	52	7082.7	1.2	**-0.1402**	0.009	6.6	ug/L	7733	Standard
	Cr	53	485.0	17.5	**0.0388**	0.087	223.5	ug/L	442	Standard
	Mn	55	856.7	6.3	**0.0059**	0.006	103.8	ug/L	723	Standard
	Co	59	239.7	17.2	**0.0002**	0.005	2435.9	ug/L	217	Standard
	Ni	60	264.7	3.4	**-0.0322**	0.006	18.2	ug/L	304	Standard
	Cu	65	171.0	2.0	**0.0054**	0.002	46.6	ug/L	181	Standard
	Zn	66	243.3	6.7	**0.0079**	0.011	133.5	ug/L	215	Standard
>	**Ge**	72	549483.2	1.7				ug/L	520809	Standard
	As	75	-74.2	16.4	**-0.0117**	0.009	74.0	ug/L	-52	Standard
	Se	82	18.9	27.4	**0.0161**	0.041	258.0	ug/L	17	Standard
	Se-1	77	51.3	15.1	**-0.1160**	0.081	69.5	ug/L	56	Standard
>	**Ga**	71	21.7	53.3				mg/L	25	Standard
	Rb	85	48.3	33.3				ug/L	28	Standard
	Y	89	469146.0	2.8				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	269.5	12.3	**0.0621**	0.010	15.8	ug/L	113	Standard
	Ag	107	131.3	8.8	**0.0048**	0.002	32.6	ug/L	108	Standard
	Cd	111	13.9	69.3	**0.0035**	0.004	115.1	mg/L	3	Standard
	Cd	114	67.3	28.0	**0.0114**	0.003	28.7	ug/L	20	Standard
>	**In**	115	647674.1	1.6				ug/L	625728	Standard
	Sn	118	1591.8	26.5	**0.1547**	0.062	40.2	ug/L	568	Standard
	Sb	123	1048.5	31.2	**0.1625**	0.061	37.8	ug/L	612	Standard
	Ba	135	62.3	27.9	**0.0097**	0.008	77.5	ug/L	21	Standard
	Ce	140	363.3	30.0				ug/L	245	Standard
>	**Tb**	159	949797.9	2.5				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	92.0	24.5	**0.0095**	0.002	24.5	ug/L	15	Standard
	Tl	205	60.0	22.0	**-0.0022**	0.002	85.3	ug/L	13	Standard
	Pb	206	340.0	6.2	**0.0166**	0.004	25.1	ug/L	264	Standard
	Pb	207	288.7	4.1	**0.0103**	0.002	15.3	ug/L	222	Standard
	Pb	208	1226.7	6.9	**0.0104**	0.004	37.3	ug/L	959	Standard
	U	238	77.0	45.5	**0.0093**	0.004	45.3	ug/L	9	Standard
>	**Bi**	209	550276.1	2.1				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:14:34
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	24.7	**-0.0073**	0.013	171.5	mg/L	55	Standard
K	39	21.7	48.0	**-0.0502**	0.039	78.2	mg/L	28	Standard
Ca	43	33.3	17.3	**0.4877**	0.477	97.9	mg/L	27	Standard
Fe	54	195.9	17.0	**0.0503**	0.024	47.6	mg/L	147	Standard
Fe	57	191.7	26.4	**-0.2314**	0.152	65.8	mg/L	268	Standard
> **Sc-1**	45	42364.1	1.1				mg/L	41174	Standard
Cl	35	80980.6	1.9				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2003.5	11.5				ug/L	1950	Standard
P	31	23999.0	2.6				ug/L	21156	Standard
S	34	4252.3	5.6				ug/L	3419	Standard
Sr	88	71.7	21.3				ug/L	72	Standard
C	12	100.0	34.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	36.4				mg/L	17	Standard
Dy	164	16.5	70.8				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	7548.5	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.506	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:14:34
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.507
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.540
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:14:34
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Friday, July 01, 2016 17:18:25
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77464.3	3.3				ug/L	76456	Standard
	Be	9	561.7	8.9	**0.4749**	0.032	6.7	ug/L	20	Standard
	Al	27	1784965.6	1.0	**10.2905**	0.435	4.2	ug/L	1307	Standard
	Sc	45	46648.4	2.7				ug/L	41174	Standard
	Ti	47	18184.2	0.6	**50.8412**	0.521	1.0	ug/L	27	Standard
	V	51	103032.2	1.3	**11.2383**	0.206	1.8	ug/L	1434	Standard
	Cr	52	92595.8	0.6	**9.4776**	0.042	0.4	ug/L	7733	Standard
	Cr	53	11107.4	3.1	**9.6118**	0.373	3.9	ug/L	442	Standard
	Mn	55	2019437.5	1.0	**243.2931**	1.293	0.5	ug/L	723	Standard
	Co	59	22651.9	1.2	**2.6686**	0.043	1.6	ug/L	217	Standard
	Ni	60	16329.8	0.7	**7.0275**	0.020	0.3	ug/L	304	Standard
	Cu	65	24727.8	0.3	**10.9821**	0.036	0.3	ug/L	181	Standard
	Zn	66	127705.3	0.5	**94.9239**	0.754	0.8	ug/L	215	Standard
>	Ge	72	570830.0	0.6				ug/L	520809	Standard
	As	75	6011.6	0.9	**4.4881**	0.053	1.2	ug/L	-52	Standard
	Se	82	95.5	2.7	**0.5629**	0.016	2.8	ug/L	17	Standard
	Se-1	77	101.0	4.3	**0.3932**	0.042	10.6	ug/L	56	Standard
>	Ga	71	9259.5	1.6				mg/L	25	Standard
	Rb	85	72246.9	1.1				ug/L	28	Standard
	Y	89	547009.7	0.9				ug/L	447395	Standard
>	Rh	103	31.7	24.1				ug/L	15	Standard
	Mo	98	3914.2	0.5	**1.1794**	0.014	1.2	ug/L	113	Standard
	Ag	107	483.7	3.9	**0.0498**	0.002	4.8	ug/L	108	Standard
	Cd	111	987.4	2.0	**0.3964**	0.008	2.0	mg/L	3	Standard
	Cd	114	2496.5	1.3	**0.4073**	0.007	1.6	ug/L	20	Standard
>	In	115	673007.1	0.7				ug/L	625728	Standard
	Sn	118	1876.8	14.9	**0.1869**	0.040	21.4	ug/L	568	Standard
	Sb	123	1273.6	19.1	**0.1953**	0.043	22.1	ug/L	612	Standard
	Ba	135	110926.6	0.4	**47.3888**	0.135	0.3	ug/L	21	Standard
	Ce	140	529177.4	0.3				ug/L	245	Standard
>	Tb	159	1007132.0	0.8				ug/L	950397	Standard
	Ho	165	4118.9	3.9				ug/L	7	Standard
	Tl	203	1019.0	7.4	**0.1098**	0.008	7.6	ug/L	15	Standard
	Tl	205	931.7	3.7	**0.1041**	0.004	4.2	ug/L	13	Standard
	Pb	206	349755.5	0.5	**60.1201**	0.233	0.4	ug/L	264	Standard
	Pb	207	290008.2	0.8	**54.8870**	0.434	0.8	ug/L	222	Standard
	Pb	208	1256548.1	0.6	**58.2295**	0.582	1.0	ug/L	959	Standard
	U	238	5395.3	1.0	**0.6515**	0.003	0.5	ug/L	9	Standard
>	Bi	209	567672.3	0.6				ug/L	552821	Standard

Sample ID: L1606145103
Report Date/Time: Friday, July 01, 2016 17:20:42
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	26.4	**0.0141**	0.021	150.8	mg/L	55	Standard
K	39	116.7	6.5	**0.2640**	0.032	12.1	mg/L	28	Standard
Ca	43	40.0	33.1	**0.7666**	1.123	146.5	mg/L	27	Standard
Fe	54	10538.1	0.8	**7.1995**	0.244	3.4	mg/L	147	Standard
Fe	57	2908.6	5.3	**7.0806**	0.202	2.9	mg/L	268	Standard
> **Sc-1**	45	46648.4	2.7				mg/L	41174	Standard
Cl	35	80143.5	2.5				ug/L	69550	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	3830.5	4.5				ug/L	1950	Standard
P	31	23700.2	1.3				ug/L	21156	Standard
S	34	3720.5	5.4				ug/L	3419	Standard
Sr	88	83.3	28.4				ug/L	72	Standard
C	12	560.0	12.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	286.7	34.2				mg/L	17	Standard
Dy	164	6970.4	6.6				mg/L	16	Standard
Ho-1	165	4118.9	3.9				mg/L	7	Standard
Er	166	3853.8	3.6				mg/L	7	Standard
I	127	33669.0	1.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.319	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.604	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145103
Report Date/Time: Friday, July 01, 2016 17:20:42
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.556
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Friday, July 01, 2016 17:22:04
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75591.5	2.3				ug/L	76456	Standard
	Be	9	436.7	14.5	**0.3755**	0.064	17.2	ug/L	20	Standard
	Al	27	7695752.7	1.5	**45.4726**	1.098	2.4	ug/L	1307	Standard
	Sc	45	44985.0	2.4				ug/L	41174	Standard
	Ti	47	18604.1	2.8	**52.8354**	1.232	2.3	ug/L	27	Standard
	V	51	86248.0	1.1	**9.5259**	0.091	1.0	ug/L	1434	Standard
	Cr	52	84116.5	1.2	**8.6708**	0.090	1.0	ug/L	7733	Standard
	Cr	53	9486.3	1.6	**8.2820**	0.108	1.3	ug/L	442	Standard
	Mn	55	1964825.3	2.7	**240.4380**	5.305	2.2	ug/L	723	Standard
	Co	59	30224.8	2.1	**3.6271**	0.056	1.5	ug/L	217	Standard
	Ni	60	18384.5	0.8	**8.0589**	0.068	0.8	ug/L	304	Standard
	Cu	65	28824.7	1.7	**13.0170**	0.152	1.2	ug/L	181	Standard
	Zn	66	125736.6	1.1	**94.9340**	0.526	0.6	ug/L	215	Standard
>	Ge	72	561947.7	0.6				ug/L	520809	Standard
	As	75	5595.8	2.2	**4.2465**	0.119	2.8	ug/L	-52	Standard
	Se	82	88.4	10.6	**0.5221**	0.073	13.9	ug/L	17	Standard
	Se-1	77	109.0	11.9	**0.4966**	0.134	27.0	ug/L	56	Standard
>	Ga	71	7550.2	3.3				mg/L	25	Standard
	Rb	85	65005.8	0.9				ug/L	28	Standard
	Y	89	541545.4	1.1				ug/L	447395	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	5215.9	1.9	**1.6229**	0.033	2.0	ug/L	113	Standard
	Ag	107	406.7	7.0	**0.0412**	0.004	9.1	ug/L	108	Standard
	Cd	111	829.8	3.4	**0.3418**	0.009	2.5	mg/L	3	Standard
	Cd	114	1989.6	6.7	**0.3333**	0.022	6.7	ug/L	20	Standard
>	In	115	655315.6	1.0				ug/L	625728	Standard
	Sn	118	1885.1	5.0	**0.1955**	0.016	8.1	ug/L	568	Standard
	Sb	123	963.7	16.2	**0.1445**	0.030	21.0	ug/L	612	Standard
	Ba	135	109632.3	1.8	**48.0987**	0.601	1.2	ug/L	21	Standard
	Ce	140	540393.1	1.7				ug/L	245	Standard
>	Tb	159	980324.3	0.6				ug/L	950397	Standard
	Ho	165	4750.7	4.0				ug/L	7	Standard
	Tl	203	1323.7	5.2	**0.1446**	0.008	5.6	ug/L	15	Standard
	Tl	205	1150.0	7.8	**0.1324**	0.010	7.6	ug/L	13	Standard
	Pb	206	276145.9	0.9	**48.0493**	0.456	0.9	ug/L	264	Standard
	Pb	207	230196.6	0.9	**44.1005**	0.476	1.1	ug/L	222	Standard
	Pb	208	1005008.2	0.4	**47.1436**	0.504	1.1	ug/L	959	Standard
	U	238	6299.6	1.7	**0.7703**	0.019	2.4	ug/L	9	Standard
>	Bi	209	560704.1	0.8				ug/L	552821	Standard

Sample ID: L1606145104
Report Date/Time: Friday, July 01, 2016 17:24:21
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	86.7	31.8	**0.0328**	0.031	93.1	mg/L	55	Standard
K	39	151.7	23.2	**0.4031**	0.135	33.6	mg/L	28	Standard
Ca	43	201.7	16.5	**14.3695**	3.198	22.3	mg/L	27	Standard
Fe	54	9525.1	4.7	**6.7386**	0.306	4.5	mg/L	147	Standard
Fe	57	2743.6	3.6	**6.9108**	0.154	2.2	mg/L	268	Standard
Sc-1	45	44985.0	2.4				mg/L	41174	Standard
Cl	35	83879.0	2.3				ug/L	69550	Standard
Kr	83	3.7	68.6				ug/L	1	Standard
Br	81	3460.4	7.8				ug/L	1950	Standard
P	31	24561.6	1.4				ug/L	21156	Standard
S	34	4369.0	1.4				ug/L	3419	Standard
Sr	88	116.7	25.8				ug/L	72	Standard
C	12	810.0	9.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	280.0	22.3				mg/L	17	Standard
Dy	164	8460.7	2.9				mg/L	16	Standard
Ho-1	165	4750.7	4.0				mg/L	7	Standard
Er	166	4977.5	6.3				mg/L	7	Standard
I	127	28665.4	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.870	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.899	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145104
Report Date/Time: Friday, July 01, 2016 17:24:21
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.729
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.426
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Friday, July 01, 2016 17:25:16
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76445.7	1.5				ug/L	76456	Standard
	Be	9	1478.4	3.1	**1.3014**	0.055	4.2	ug/L	20	Standard
	Al	27	1064223.2	1.9	**6.2082**	0.151	2.4	ug/L	1307	Standard
	Sc	45	47139.9	1.1				ug/L	41174	Standard
	Ti	47	53065.8	1.2	**150.6405**	1.848	1.2	ug/L	27	Standard
	V	51	112245.2	0.3	**12.4388**	0.221	1.8	ug/L	1434	Standard
	Cr	52	137183.3	1.2	**14.7291**	0.173	1.2	ug/L	7733	Standard
	Cr	53	16672.5	1.8	**14.8516**	0.459	3.1	ug/L	442	Standard
	Mn	55	332066.2	0.6	**40.4939**	0.573	1.4	ug/L	723	Standard
	Co	59	15191.9	1.6	**1.8061**	0.055	3.0	ug/L	217	Standard
	Ni	60	16308.4	0.5	**7.1212**	0.143	2.0	ug/L	304	Standard
	Cu	65	21255.2	1.0	**9.5654**	0.170	1.8	ug/L	181	Standard
	Zn	66	82188.0	0.4	**61.9044**	1.216	2.0	ug/L	215	Standard
>	Ge	72	562856.9	1.5				ug/L	520809	Standard
	As	75	14736.1	1.0	**11.0928**	0.282	2.5	ug/L	-52	Standard
	Se	82	116.4	6.1	**0.7268**	0.063	8.7	ug/L	17	Standard
	Se-1	77	132.3	7.3	**0.7485**	0.116	15.5	ug/L	56	Standard
>	Ga	71	12084.8	1.2				mg/L	25	Standard
	Rb	85	57895.4	0.4				ug/L	28	Standard
	Y	89	579341.1	3.7				ug/L	447395	Standard
>	Rh	103	25.0	52.9				ug/L	15	Standard
	Mo	98	3018.2	2.6	**0.9183**	0.011	1.2	ug/L	113	Standard
	Ag	107	450.3	2.5	**0.0464**	0.001	1.9	ug/L	108	Standard
	Cd	111	1161.6	1.5	**0.4742**	0.011	2.3	mg/L	3	Standard
	Cd	114	2894.3	3.4	**0.4797**	0.022	4.7	ug/L	20	Standard
>	In	115	662690.4	1.5				ug/L	625728	Standard
	Sn	118	2460.2	11.3	**0.2766**	0.040	14.4	ug/L	568	Standard
	Sb	123	1480.8	9.6	**0.2369**	0.027	11.6	ug/L	612	Standard
	Ba	135	103973.2	0.1	**45.1144**	0.613	1.4	ug/L	21	Standard
	Ce	140	278912.2	1.0				ug/L	245	Standard
>	Tb	159	988921.6	2.1				ug/L	950397	Standard
	Ho	165	6249.6	2.1				ug/L	7	Standard
	Tl	203	4793.4	0.3	**0.5229**	0.004	0.8	ug/L	15	Standard
	Tl	205	4507.3	1.9	**0.5447**	0.012	2.1	ug/L	13	Standard
	Pb	206	156846.0	1.0	**27.1285**	0.554	2.0	ug/L	264	Standard
	Pb	207	129940.5	0.3	**24.7412**	0.348	1.4	ug/L	222	Standard
	Pb	208	563558.5	1.1	**26.2711**	0.203	0.8	ug/L	959	Standard
	U	238	4562.4	2.7	**0.5547**	0.010	1.7	ug/L	9	Standard
>	Bi	209	563740.5	1.2				ug/L	552821	Standard

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 17:27:33
Page 1

Approved: July 02, 2016

Na	23	5.0	0.0	**13.0402**	0.148	1.1	mg/L	2	Standard
Mg	24	245.0	9.4	**0.1897**	0.021	11.0	mg/L	55	Standard
K	39	223.3	12.3	**0.6174**	0.098	15.9	mg/L	28	Standard
Ca	43	61.7	26.1	**2.4323**	1.213	49.9	mg/L	27	Standard
Fe	54	13777.8	1.0	**9.3394**	0.181	1.9	mg/L	147	Standard
Fe	57	3655.4	2.7	**9.0074**	0.309	3.4	mg/L	268	Standard
Sc-1	45	47139.9	1.1				mg/L	41174	Standard
Cl	35	79351.4	2.7				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3307.0	6.7				ug/L	1950	Standard
P	31	25337.8	0.8				ug/L	21156	Standard
S	34	3845.5	8.8				ug/L	3419	Standard
Sr	88	98.3	15.5				ug/L	72	Standard
C	12	523.3	19.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	236.7	19.1				mg/L	17	Standard
Dy	164	9446.5	2.6				mg/L	16	Standard
Ho-1	165	6249.6	2.1				mg/L	7	Standard
Er	166	6261.3	4.0				mg/L	7	Standard
I	127	33405.2	4.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.987	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.073	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 17:27:33
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 17:27:33
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145106 WG574521-02
Sample Date/Time: Friday, July 01, 2016 17:28:27
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77424.0	1.4				ug/L	76456	Standard
	Be	9	1420.1	5.3	**1.2334**	0.078	6.4	ug/L	20	Standard
	Al	27	3898597.3	2.1	**22.4779**	0.265	1.2	ug/L	1307	Standard
	Sc	45	51348.6	3.6				ug/L	41174	Standard
	Ti	47	30144.6	2.1	**85.8695**	0.856	1.0	ug/L	27	Standard
	V	51	531061.4	1.0	**59.8240**	0.037	0.1	ug/L	1434	Standard
	Cr	52	163422.1	1.8	**17.8054**	0.173	1.0	ug/L	7733	Standard
	Cr	53	19674.4	1.7	**17.6680**	0.130	0.7	ug/L	442	Standard
	Mn	55	2218244.0	2.3	**272.1177**	3.374	1.2	ug/L	723	Standard
	Co	59	32222.6	2.7	**3.8780**	0.063	1.6	ug/L	217	Standard
	Ni	60	47836.8	2.1	**21.2646**	0.223	1.0	ug/L	304	Standard
	Cu	65	112081.4	1.4	**50.9532**	0.215	0.4	ug/L	181	Standard
	Zn	66	110645.9	1.3	**83.7216**	0.252	0.3	ug/L	215	Standard
>	Ge	72	560589.7	1.1				ug/L	520809	Standard
	As	75	18364.3	1.7	**13.8646**	0.106	0.8	ug/L	-52	Standard
	Se	82	562.0	1.7	**4.0067**	0.091	2.3	ug/L	17	Standard
	Se-1	77	479.0	3.5	**4.5225**	0.226	5.0	ug/L	56	Standard
>	Ga	71	14325.1	2.5				mg/L	25	Standard
	Rb	85	53934.2	0.6				ug/L	28	Standard
	Y	89	962525.9	0.6				ug/L	447395	Standard
>	Rh	103	61.7	4.7				ug/L	15	Standard
	Mo	98	10152.0	1.8	**3.1844**	0.030	1.0	ug/L	113	Standard
	Ag	107	989.4	6.5	**0.1188**	0.009	7.5	ug/L	108	Standard
	Cd	111	5112.5	1.5	**2.1203**	0.021	1.0	mg/L	3	Standard
	Cd	114	12820.7	1.5	**2.1502**	0.050	2.3	ug/L	20	Standard
>	In	115	654652.2	1.1				ug/L	625728	Standard
	Sn	118	1108.4	23.7	**0.0806**	0.040	50.1	ug/L	568	Standard
	Sb	123	662.0	36.0	**0.0890**	0.045	50.9	ug/L	612	Standard
	Ba	135	290178.7	0.4	**127.4785**	1.030	0.8	ug/L	21	Standard
	Ce	140	1471841.9	0.9				ug/L	245	Standard
>	Tb	159	1014801.8	1.4				ug/L	950397	Standard
	Ho	165	35576.7	1.0				ug/L	7	Standard
	Tl	203	2282.2	3.2	**0.2479**	0.009	3.5	ug/L	15	Standard
	Tl	205	2125.1	5.8	**0.2510**	0.016	6.2	ug/L	13	Standard
	Pb	206	184986.8	1.0	**31.9104**	0.323	1.0	ug/L	264	Standard
	Pb	207	153794.0	1.0	**29.2069**	0.234	0.8	ug/L	222	Standard
	Pb	208	672139.8	1.3	**31.2540**	0.308	1.0	ug/L	959	Standard
	U	238	23718.9	1.7	**2.8769**	0.043	1.5	ug/L	9	Standard
>	Bi	209	565303.0	0.3				ug/L	552821	Standard

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 17:30:44
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**12.1905**	12.475	102.3	mg/L	2	Standard
Mg	24	515.0	7.3	**0.4218**	0.020	4.8	mg/L	55	Standard
K	39	145.0	15.8	**0.3133**	0.055	17.6	mg/L	28	Standard
Ca	43	251.7	14.6	**15.9361**	3.051	19.1	mg/L	27	Standard
Fe	54	21541.2	1.4	**13.4547**	0.377	2.8	mg/L	147	Standard
Fe	57	6066.2	2.9	**14.1508**	0.552	3.9	mg/L	268	Standard
Sc-1	45	51348.6	3.6				mg/L	41174	Standard
Cl	35	83904.4	2.5				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	7455.2	1.0				ug/L	1950	Standard
P	31	24167.7	6.9				ug/L	21156	Standard
S	34	4078.9	4.5				ug/L	3419	Standard
Sr	88	178.3	24.5				ug/L	72	Standard
C	12	1733.4	9.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	446.7	14.4				mg/L	17	Standard
Dy	164	52369.2	4.0				mg/L	16	Standard
Ho-1	165	35576.7	1.0				mg/L	7	Standard
Er	166	35010.4	0.8				mg/L	7	Standard
I	127	69199.4	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.266	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.638	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 17:30:44
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.623
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.258
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Friday, July 01, 2016 17:31:39
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77976.9	3.0				ug/L	76456	Standard
	Be	9	4238.9	1.2	**3.6947**	0.093	2.5	ug/L	20	Standard
	Al	27	6498898.5	1.0	**37.2377**	1.289	3.5	ug/L	1307	Standard
	Sc	45	49464.0	2.1				ug/L	41174	Standard
	Ti	47	128073.0	0.5	**363.1539**	6.490	1.8	ug/L	27	Standard
	V	51	349457.1	2.0	**39.0869**	1.161	3.0	ug/L	1434	Standard
	Cr	52	339178.2	1.4	**37.7839**	0.334	0.9	ug/L	7733	Standard
	Cr	53	41896.2	0.9	**37.8898**	0.902	2.4	ug/L	442	Standard
	Mn	55	1606512.7	1.3	**195.9725**	1.717	0.9	ug/L	723	Standard
	Co	59	54787.2	1.9	**6.5778**	0.027	0.4	ug/L	217	Standard
	Ni	60	49280.4	1.6	**21.7906**	0.290	1.3	ug/L	304	Standard
	Cu	65	58505.7	1.0	**26.4179**	0.486	1.8	ug/L	181	Standard
	Zn	66	199363.7	0.4	**150.1818**	2.763	1.8	ug/L	215	Standard
>	Ge	72	563783.0	2.2				ug/L	520809	Standard
	As	75	72841.2	1.2	**54.5595**	0.676	1.2	ug/L	-52	Standard
	Se	82	260.0	4.3	**1.7742**	0.048	2.7	ug/L	17	Standard
	Se-1	77	240.0	3.1	**1.9101**	0.113	5.9	ug/L	56	Standard
>	Ga	71	27433.2	2.3				mg/L	25	Standard
	Rb	85	214873.2	1.9				ug/L	28	Standard
	Y	89	688224.7	2.2				ug/L	447395	Standard
>	Rh	103	50.0	34.6				ug/L	15	Standard
	Mo	98	15750.9	1.3	**5.0545**	0.122	2.4	ug/L	113	Standard
	Ag	107	1137.7	4.6	**0.1417**	0.010	7.3	ug/L	108	Standard
	Cd	111	4595.8	1.9	**1.9447**	0.072	3.7	mg/L	3	Standard
	Cd	114	11753.0	1.4	**2.0112**	0.076	3.8	ug/L	20	Standard
>	In	115	641892.6	2.4				ug/L	625728	Standard
	Sn	118	2545.2	5.6	**0.3012**	0.016	5.3	ug/L	568	Standard
	Sb	123	1737.1	5.6	**0.2941**	0.021	7.1	ug/L	612	Standard
	Ba	135	236984.3	0.4	**106.2043**	2.197	2.1	ug/L	21	Standard
	Ce	140	773385.4	0.4				ug/L	245	Standard
>	Tb	159	984938.0	3.6				ug/L	950397	Standard
	Ho	165	16265.4	1.5				ug/L	7	Standard
	Tl	203	22667.3	0.8	**2.5566**	0.057	2.2	ug/L	15	Standard
	Tl	205	20584.0	2.7	**2.6047**	0.030	1.2	ug/L	13	Standard
	Pb	206	321586.0	1.4	**57.4914**	1.247	2.2	ug/L	264	Standard
	Pb	207	267373.6	0.8	**52.6407**	1.680	3.2	ug/L	222	Standard
	Pb	208	1175990.0	0.9	**56.6808**	1.299	2.3	ug/L	959	Standard
	U	238	16091.9	1.2	**2.0215**	0.038	1.9	ug/L	9	Standard
>	Bi	209	546013.7	3.1				ug/L	552821	Standard

Sample ID: L1606145107
Report Date/Time: Friday, July 01, 2016 17:33:56
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**8.3896**	14.523	173.1	mg/L	2	Standard
Mg	24	313.3	12.2	**0.2450**	0.042	17.2	mg/L	55	Standard
K	39	578.3	4.1	**1.7142**	0.039	2.3	mg/L	28	Standard
Ca	43	190.0	22.5	**11.8882**	2.994	25.2	mg/L	27	Standard
Fe	54	47361.4	0.7	**30.8245**	0.629	2.0	mg/L	147	Standard
Fe	57	12388.4	2.6	**30.8824**	0.658	2.1	mg/L	268	Standard
> **Sc-1**	45	49464.0	2.1				mg/L	41174	Standard
Cl	35	79796.9	1.5				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	3437.1	6.8				ug/L	1950	Standard
P	31	26398.0	3.4				ug/L	21156	Standard
S	34	4072.2	2.6				ug/L	3419	Standard
Sr	88	165.0	6.1				ug/L	72	Standard
C	12	630.0	4.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	340.0	26.1				mg/L	17	Standard
Dy	164	25210.3	0.7				mg/L	16	Standard
Ho-1	165	16265.4	1.5				mg/L	7	Standard
Er	166	15487.9	0.9				mg/L	7	Standard
I	127	25923.8	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.990	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.251	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145107
Report Date/Time: Friday, July 01, 2016 17:33:56
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.583
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.769
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606145107
Report Date/Time: Friday, July 01, 2016 17:33:56
Page 3

Approved: July 02, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Friday, July 01, 2016 17:34:50
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78296.8	0.6				ug/L	76456	Standard
	Be	9	5035.8	1.1	**4.3730**	0.045	1.0	ug/L	20	Standard
	Al	27	8296103.3	2.9	**47.3081**	1.104	2.3	ug/L	1307	Standard
	Sc	45	51448.9	3.1				ug/L	41174	Standard
	Ti	47	143723.1	0.7	**413.9468**	6.279	1.5	ug/L	27	Standard
	V	51	366509.9	0.1	**41.6481**	0.419	1.0	ug/L	1434	Standard
	Cr	52	544163.4	1.5	**62.1923**	1.314	2.1	ug/L	7733	Standard
	Cr	53	66433.7	1.1	**61.2720**	0.593	1.0	ug/L	442	Standard
	Mn	55	1841665.0	0.6	**228.2274**	2.393	1.0	ug/L	723	Standard
	Co	59	60732.8	1.2	**7.4113**	0.113	1.5	ug/L	217	Standard
	Ni	60	55300.1	1.5	**24.8624**	0.580	2.3	ug/L	304	Standard
	Cu	65	53837.8	1.0	**24.6886**	0.479	1.9	ug/L	181	Standard
	Zn	66	206840.0	0.6	**158.2701**	2.252	1.4	ug/L	215	Standard
>	Ge	72	554963.2	0.9				ug/L	520809	Standard
	As	75	66893.4	0.9	**50.8958**	0.201	0.4	ug/L	-52	Standard
	Se	82	248.2	6.5	**1.7168**	0.104	6.0	ug/L	17	Standard
	Se-1	77	241.0	3.2	**1.9609**	0.071	3.6	ug/L	56	Standard
>	Ga	71	28399.9	2.1				mg/L	25	Standard
	Rb	85	238607.6	1.1				ug/L	28	Standard
	Y	89	727081.9	1.3				ug/L	447395	Standard
>	Rh	103	48.3	48.9				ug/L	15	Standard
	Mo	98	16138.3	0.6	**5.1475**	0.088	1.7	ug/L	113	Standard
	Ag	107	1178.0	3.1	**0.1461**	0.006	4.0	ug/L	108	Standard
	Cd	111	4690.3	1.4	**1.9722**	0.048	2.4	mg/L	3	Standard
	Cd	114	11637.8	1.7	**1.9789**	0.055	2.8	ug/L	20	Standard
>	In	115	645732.9	1.1				ug/L	625728	Standard
	Sn	118	2240.2	14.5	**0.2530**	0.048	19.0	ug/L	568	Standard
	Sb	123	1441.2	4.7	**0.2365**	0.011	4.5	ug/L	612	Standard
	Ba	135	274841.1	0.7	**122.4109**	1.640	1.3	ug/L	21	Standard
	Ce	140	887134.9	0.7				ug/L	245	Standard
>	Tb	159	985869.5	0.8				ug/L	950397	Standard
	Ho	165	18397.8	1.0				ug/L	7	Standard
	Tl	203	22726.7	1.1	**2.5470**	0.017	0.7	ug/L	15	Standard
	Tl	205	20669.1	0.8	**2.5996**	0.009	0.3	ug/L	13	Standard
	Pb	206	304509.2	0.5	**54.0918**	0.193	0.4	ug/L	264	Standard
	Pb	207	255448.0	0.1	**49.9624**	0.361	0.7	ug/L	222	Standard
	Pb	208	1107233.4	0.4	**53.0246**	0.467	0.9	ug/L	959	Standard
	U	238	17326.6	1.5	**2.1631**	0.047	2.2	ug/L	9	Standard
>	Bi	209	549274.6	0.7				ug/L	552821	Standard

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 17:37:07
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**8.1301**	14.073	173.1	mg/L	2	Standard
Mg	24	360.0	2.4	**0.2767**	0.016	5.7	mg/L	55	Standard
K	39	590.0	10.2	**1.6839**	0.234	13.9	mg/L	28	Standard
Ca	43	221.7	16.9	**13.7026**	2.998	21.9	mg/L	27	Standard
Fe	54	51880.7	2.5	**32.4850**	1.445	4.4	mg/L	147	Standard
Fe	57	13546.1	1.6	**32.5153**	0.491	1.5	mg/L	268	Standard
> **Sc-1**	45	51448.9	3.1				mg/L	41174	Standard
Cl	35	79311.7	1.5				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	2893.6	2.1				ug/L	1950	Standard
P	31	26569.9	1.7				ug/L	21156	Standard
S	34	4178.9	3.2				ug/L	3419	Standard
Sr	88	200.0	24.6				ug/L	72	Standard
C	12	570.0	12.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	283.3	10.2				mg/L	17	Standard
Dy	164	28615.4	0.7				mg/L	16	Standard
Ho-1	165	18397.8	1.0				mg/L	7	Standard
Er	166	17950.6	1.5				mg/L	7	Standard
I	127	24543.2	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.408	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 17:37:07
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.197	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.359	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 17:37:07
Page 3

Approved: July 02, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145109S WG574521-07
Sample Date/Time: Friday, July 01, 2016 17:38:02
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77300.2	4.1				ug/L	76456	Standard
	Be	9	31013.4	0.9	**27.4058**	0.869	3.2	ug/L	20	Standard
	Al	27	4089154.1	3.2	**23.6238**	0.470	2.0	ug/L	1307	Standard
	Sc	45	51686.4	2.6				ug/L	41174	Standard
	Ti	47	34757.2	1.7	**100.2574**	1.039	1.0	ug/L	27	Standard
	V	51	798652.3	3.3	**91.1648**	1.278	1.4	ug/L	1434	Standard
	Cr	52	383358.6	3.0	**43.6124**	0.316	0.7	ug/L	7733	Standard
	Cr	53	46656.8	2.4	**42.9982**	0.311	0.7	ug/L	442	Standard
	Mn	55	2313030.1	2.9	**287.2366**	2.286	0.8	ug/L	723	Standard
	Co	59	229099.5	3.1	**28.0933**	0.227	0.8	ug/L	217	Standard
	Ni	60	103411.0	3.4	**46.7113**	0.544	1.2	ug/L	304	Standard
	Cu	65	167787.3	3.4	**77.2413**	0.870	1.1	ug/L	181	Standard
	Zn	66	148653.6	2.3	**113.9303**	0.817	0.7	ug/L	215	Standard
>	Ge	72	553789.9	2.3				ug/L	520809	Standard
	As	75	50674.7	3.7	**38.6402**	0.614	1.6	ug/L	-52	Standard
	Se	82	4006.1	3.7	**29.6916**	0.620	2.1	ug/L	17	Standard
	Se-1	77	2822.3	6.3	**30.3505**	1.406	4.6	ug/L	56	Standard
>	Ga	71	15926.7	1.8				mg/L	25	Standard
	Rb	85	61213.5	2.5				ug/L	28	Standard
	Y	89	995780.9	3.8				ug/L	447395	Standard
>	Rh	103	80.0	39.0				ug/L	15	Standard
	Mo	98	11202.2	1.3	**3.5351**	0.100	2.8	ug/L	113	Standard
	Ag	107	172476.6	3.4	**23.0491**	0.075	0.3	ug/L	108	Standard
	Cd	111	62525.5	2.9	**26.0819**	0.217	0.8	mg/L	3	Standard
	Cd	114	155090.1	3.1	**26.1298**	0.108	0.4	ug/L	20	Standard
>	In	115	651612.6	3.5				ug/L	625728	Standard
	Sn	118	1198.4	14.3	**0.0953**	0.032	33.2	ug/L	568	Standard
	Sb	123	13746.3	2.5	**2.5212**	0.035	1.4	ug/L	612	Standard
	Ba	135	355128.0	2.7	**156.7604**	1.139	0.7	ug/L	21	Standard
	Ce	140	1618154.9	2.5				ug/L	245	Standard
>	Tb	159	1001149.2	2.4				ug/L	950397	Standard
	Ho	165	38079.5	2.2				ug/L	7	Standard
	Tl	203	217506.4	3.1	**24.1924**	0.167	0.7	ug/L	15	Standard
	Tl	205	199413.9	1.5	**24.9766**	0.301	1.2	ug/L	13	Standard
	Pb	206	340199.5	1.6	**59.9805**	0.583	1.0	ug/L	264	Standard
	Pb	207	287102.8	2.6	**55.7262**	0.520	0.9	ug/L	222	Standard
	Pb	208	1239148.8	1.7	**58.8977**	0.622	1.1	ug/L	959	Standard
	U	238	215333.8	2.0	**26.6800**	0.294	1.1	ug/L	9	Standard
>	Bi	209	553529.4	2.5				ug/L	552821	Standard

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 17:40:19
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**8.0461**	6.964	86.6	mg/L	2	Standard
Mg	24	420.0	23.2	**0.3305**	0.090	27.3	mg/L	55	Standard
K	39	140.0	12.9	**0.2971**	0.061	20.5	mg/L	28	Standard
Ca	43	243.3	22.2	**15.1089**	3.441	22.8	mg/L	27	Standard
Fe	54	22645.6	2.0	**14.0499**	0.221	1.6	mg/L	147	Standard
Fe	57	6007.9	4.3	**13.9009**	0.509	3.7	mg/L	268	Standard
Sc-1	45	51686.4	2.6				mg/L	41174	Standard
Cl	35	80429.2	4.3				ug/L	69550	Standard
Kr	83	2.7	86.6				ug/L	1	Standard
Br	81	13772.9	3.0				ug/L	1950	Standard
P	31	24882.1	4.1				ug/L	21156	Standard
S	34	3928.8	5.2				ug/L	3419	Standard
Sr	88	231.7	13.2				ug/L	72	Standard
C	12	2016.8	5.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	526.7	13.7				mg/L	17	Standard
Dy	164	57272.5	3.0				mg/L	16	Standard
Ho-1	165	38079.5	2.2				mg/L	7	Standard
Er	166	36791.3	0.3				mg/L	7	Standard
I	127	68461.0	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.105	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.333	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 17:40:19
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.128
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 17:40:19
Page 3

Approved: July 02, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145110SD WG574521-08
Sample Date/Time: Friday, July 01, 2016 17:41:13
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75000.2	2.3				ug/L	76456	Standard
	Be	9	30976.6	1.7	**28.1959**	0.613	2.2	ug/L	20	Standard
	Al	27	3439220.2	1.5	**20.4763**	0.514	2.5	ug/L	1307	Standard
	Sc	45	50167.9	0.3				ug/L	41174	Standard
	Ti	47	20331.3	1.6	**60.1182**	0.386	0.6	ug/L	27	Standard
	V	51	735011.2	1.2	**86.0697**	0.811	0.9	ug/L	1434	Standard
	Cr	52	348065.1	1.5	**40.5590**	0.525	1.3	ug/L	7733	Standard
	Cr	53	41963.1	3.7	**39.6270**	0.656	1.7	ug/L	442	Standard
	Mn	55	2126490.8	1.0	**270.9327**	3.985	1.5	ug/L	723	Standard
	Co	59	224148.6	1.1	**28.2013**	0.328	1.2	ug/L	217	Standard
	Ni	60	97510.5	1.6	**45.1854**	0.391	0.9	ug/L	304	Standard
	Cu	65	159657.8	0.8	**75.4140**	0.961	1.3	ug/L	181	Standard
	Zn	66	122702.2	1.2	**96.4430**	0.853	0.9	ug/L	215	Standard
>	Ge	72	539893.8	2.0				ug/L	520809	Standard
	As	75	43731.6	1.5	**34.2188**	0.207	0.6	ug/L	-52	Standard
	Se	82	3851.1	1.9	**29.2807**	0.182	0.6	ug/L	17	Standard
	Se-1	77	2693.2	3.6	**29.7006**	0.473	1.6	ug/L	56	Standard
>	Ga	71	10877.2	4.3				mg/L	25	Standard
	Rb	85	26646.7	1.9				ug/L	28	Standard
	Y	89	984741.5	1.3				ug/L	447395	Standard
>	Rh	103	75.0	23.1				ug/L	15	Standard
	Mo	98	12396.0	1.1	**4.0096**	0.009	0.2	ug/L	113	Standard
	Ag	107	167394.8	1.6	**22.9251**	0.326	1.4	ug/L	108	Standard
	Cd	111	61689.6	0.9	**26.3685**	0.182	0.7	mg/L	3	Standard
	Cd	114	150249.5	3.1	**25.9377**	0.589	2.3	ug/L	20	Standard
>	In	115	635843.6	1.2				ug/L	625728	Standard
	Sn	118	1905.1	12.7	**0.2074**	0.041	19.5	ug/L	568	Standard
	Sb	123	35922.0	1.1	**6.8066**	0.045	0.7	ug/L	612	Standard
	Ba	135	328480.5	1.3	**148.5677**	0.342	0.2	ug/L	21	Standard
	Ce	140	1483643.4	1.0				ug/L	245	Standard
>	Tb	159	980223.1	1.4				ug/L	950397	Standard
	Ho	165	36555.7	1.5				ug/L	7	Standard
	Tl	203	214476.5	1.2	**24.1754**	0.120	0.5	ug/L	15	Standard
	Tl	205	195033.9	0.4	**24.7497**	0.108	0.4	ug/L	13	Standard
	Pb	206	331178.4	0.7	**59.1601**	0.433	0.7	ug/L	264	Standard
	Pb	207	281134.0	0.6	**55.2947**	0.155	0.3	ug/L	222	Standard
	Pb	208	1213063.3	0.7	**58.4179**	0.082	0.1	ug/L	959	Standard
	U	238	215012.5	0.4	**26.9929**	0.177	0.7	ug/L	9	Standard
>	Bi	209	546245.7	0.8				ug/L	552821	Standard

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 17:43:30
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	401.7	8.7	**0.3249**	0.034	10.5	mg/L	55	Standard
K	39	65.0	53.8	**0.0732**	0.110	149.7	mg/L	28	Standard
Ca	43	258.3	8.9	**16.8169**	1.773	10.5	mg/L	27	Standard
Fe	54	18860.0	1.9	**12.0398**	0.263	2.2	mg/L	147	Standard
Fe	57	5239.2	5.1	**12.4090**	0.703	5.7	mg/L	268	Standard
> **Sc-1**	45	50167.9	0.3				mg/L	41174	Standard
Cl	35	77473.7	3.0				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	7528.5	1.9				ug/L	1950	Standard
P	31	23025.8	3.4				ug/L	21156	Standard
S	34	3772.1	4.4				ug/L	3419	Standard
Sr	88	236.7	6.8				ug/L	72	Standard
C	12	2743.6	3.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	510.0	3.4				mg/L	17	Standard
Dy	164	54236.1	2.2				mg/L	16	Standard
Ho-1	165	36555.7	1.5				mg/L	7	Standard
Er	166	36333.5	1.9				mg/L	7	Standard
I	127	50945.5	2.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.664	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 17:43:30
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.617
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.811
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 17:43:30
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144501
Sample Date/Time: Friday, July 01, 2016 17:44:25
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75614.9	1.3				ug/L	76456	Standard
	Be	9	616.7	9.4	**0.5370**	0.050	9.3	ug/L	20	Standard
	Al	27	13167988.3	1.5	**77.7749**	1.539	2.0	ug/L	1307	Standard
	Sc	45	44936.5	0.9				ug/L	41174	Standard
	Ti	47	2539.2	1.9	**7.5419**	0.159	2.1	ug/L	27	Standard
	V	51	86547.1	1.5	**10.1041**	0.180	1.8	ug/L	1434	Standard
	Cr	52	60907.8	0.8	**6.4000**	0.028	0.4	ug/L	7733	Standard
	Cr	53	7250.1	1.9	**6.6027**	0.158	2.4	ug/L	442	Standard
	Mn	55	1905061.9	1.8	**246.1332**	2.751	1.1	ug/L	723	Standard
	Co	59	36801.3	0.6	**4.6715**	0.060	1.3	ug/L	217	Standard
	Ni	60	21869.8	1.0	**10.1605**	0.108	1.1	ug/L	304	Standard
	Cu	65	17811.5	0.6	**8.4670**	0.104	1.2	ug/L	181	Standard
	Zn	66	27607.8	0.3	**21.8690**	0.071	0.3	ug/L	215	Standard
>	Ge	72	532269.5	0.7				ug/L	520809	Standard
	As	75	3673.7	1.1	**2.9570**	0.036	1.2	ug/L	-52	Standard
	Se	82	41.1	14.0	**0.1921**	0.043	22.6	ug/L	17	Standard
	Se-1	77	92.7	12.4	**0.3761**	0.133	35.3	ug/L	56	Standard
>	Ga	71	8445.7	4.3				mg/L	25	Standard
	Rb	85	79397.5	0.6				ug/L	28	Standard
	Y	89	617711.9	0.3				ug/L	447395	Standard
>	Rh	103	20.0	50.0				ug/L	15	Standard
	Mo	98	513.2	4.5	**0.1463**	0.008	5.2	ug/L	113	Standard
	Ag	107	411.0	5.4	**0.0445**	0.003	7.0	ug/L	108	Standard
	Cd	111	224.8	17.0	**0.0956**	0.017	17.3	mg/L	3	Standard
	Cd	114	528.5	15.3	**0.0930**	0.014	15.2	ug/L	20	Standard
>	In	115	623854.0	0.2				ug/L	625728	Standard
	Sn	118	1113.4	15.3	**0.0893**	0.027	30.1	ug/L	568	Standard
	Sb	123	402.5	19.7	**0.0444**	0.016	34.9	ug/L	612	Standard
	Ba	135	200643.8	0.9	**92.4876**	1.043	1.1	ug/L	21	Standard
	Ce	140	742147.0	0.8				ug/L	245	Standard
>	Tb	159	959744.7	0.8				ug/L	950397	Standard
	Ho	165	13928.1	1.6				ug/L	7	Standard
	Tl	203	447.0	8.8	**0.0505**	0.005	9.0	ug/L	15	Standard
	Tl	205	406.7	11.9	**0.0427**	0.006	14.6	ug/L	13	Standard
	Pb	206	40310.6	0.6	**7.2786**	0.040	0.5	ug/L	264	Standard
	Pb	207	33326.3	0.4	**6.6200**	0.027	0.4	ug/L	222	Standard
	Pb	208	145576.7	0.6	**7.0813**	0.040	0.6	ug/L	959	Standard
	U	238	2828.3	0.6	**0.3605**	0.002	0.6	ug/L	9	Standard
>	Bi	209	537569.5	0.1				ug/L	552821	Standard

Sample ID: L1606144501
Report Date/Time: Friday, July 01, 2016 17:46:42
Page 1

Approved: July 02, 2016

Na	23	3.3	86.6	**9.1104**	7.886	86.6	mg/L	2	Standard
Mg	24	76.7	7.5	**0.0219**	0.006	26.1	mg/L	55	Standard
K	39	218.3	9.5	**0.6363**	0.080	12.5	mg/L	28	Standard
Ca	43	151.7	22.0	**10.1772**	2.793	27.4	mg/L	27	Standard
Fe	54	7340.4	3.8	**5.1756**	0.204	3.9	mg/L	147	Standard
Fe	57	2196.8	7.0	**5.3817**	0.451	8.4	mg/L	268	Standard
Sc-1	45	44936.5	0.9				mg/L	41174	Standard
Cl	35	75625.0	1.8				ug/L	69550	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	2456.9	6.6				ug/L	1950	Standard
P	31	22234.7	4.3				ug/L	21156	Standard
S	34	3950.5	4.3				ug/L	3419	Standard
Sr	88	111.7	18.1				ug/L	72	Standard
C	12	203.3	42.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	36.6				mg/L	17	Standard
Dy	164	23311.5	2.8				mg/L	16	Standard
Ho-1	165	13928.1	1.6				mg/L	7	Standard
Er	166	12401.8	5.5				mg/L	7	Standard
I	127	16120.2	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.900	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.200	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606144501
Report Date/Time: Friday, July 01, 2016 17:46:42
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.701
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.241
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606144501
Report Date/Time: Friday, July 01, 2016 17:46:42
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144502
Sample Date/Time: Friday, July 01, 2016 17:47:36
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80582.1	0.6				ug/L	76456	Standard
	Be	9	1050.0	6.5	**0.8699**	0.053	6.1	ug/L	20	Standard
	Al	27	10543226.3	2.9	**58.4275**	1.839	3.1	ug/L	1307	Standard
	Sc	45	50111.1	1.7				ug/L	41174	Standard
	Ti	47	7592.6	3.2	**21.5864**	0.745	3.5	ug/L	27	Standard
	V	51	232882.8	0.5	**26.1453**	0.088	0.3	ug/L	1434	Standard
	Cr	52	180590.6	0.7	**19.7971**	0.199	1.0	ug/L	7733	Standard
	Cr	53	21970.9	2.4	**19.7976**	0.515	2.6	ug/L	442	Standard
	Mn	55	4529682.0	0.5	**556.3104**	4.224	0.8	ug/L	723	Standard
	Co	59	72279.7	0.5	**8.7442**	0.060	0.7	ug/L	217	Standard
	Ni	60	42964.2	0.1	**19.1012**	0.022	0.1	ug/L	304	Standard
	Cu	65	47497.7	0.8	**21.5696**	0.226	1.0	ug/L	181	Standard
	Zn	66	105865.9	1.3	**80.1698**	1.221	1.5	ug/L	215	Standard
>	Ge	72	560104.1	0.3				ug/L	520809	Standard
	As	75	7808.3	0.8	**5.9264**	0.056	0.9	ug/L	-52	Standard
	Se	82	138.7	8.9	**0.8941**	0.089	9.9	ug/L	17	Standard
	Se-1	77	161.0	3.3	**1.0667**	0.061	5.7	ug/L	56	Standard
>	Ga	71	24149.2	0.8				mg/L	25	Standard
	Rb	85	233795.1	1.1				ug/L	28	Standard
	Y	89	725001.6	1.1				ug/L	447395	Standard
>	Rh	103	41.7	18.3				ug/L	15	Standard
	Mo	98	1317.7	5.6	**0.3993**	0.019	4.9	ug/L	113	Standard
	Ag	107	864.0	1.1	**0.1041**	0.002	2.4	ug/L	108	Standard
	Cd	111	1117.0	0.9	**0.4692**	0.009	1.8	mg/L	3	Standard
	Cd	114	2788.0	2.8	**0.4754**	0.015	3.1	ug/L	20	Standard
>	In	115	643922.1	1.0				ug/L	625728	Standard
	Sn	118	2010.1	12.1	**0.2191**	0.034	15.5	ug/L	568	Standard
	Sb	123	437.2	13.5	**0.0484**	0.010	21.4	ug/L	612	Standard
	Ba	135	1679042.7	0.5	**749.9950**	6.832	0.9	ug/L	21	Standard
	Ce	140	1471540.7	0.8				ug/L	245	Standard
>	Tb	159	984687.8	0.7				ug/L	950397	Standard
	Ho	165	20360.3	1.4				ug/L	7	Standard
	Tl	203	1212.7	2.5	**0.1370**	0.004	2.6	ug/L	15	Standard
	Tl	205	1158.4	9.0	**0.1384**	0.013	9.2	ug/L	13	Standard
	Pb	206	419173.3	0.5	**75.4515**	0.814	1.1	ug/L	264	Standard
	Pb	207	344138.4	0.6	**68.2056**	0.866	1.3	ug/L	222	Standard
	Pb	208	1506247.3	0.9	**73.0918**	0.807	1.1	ug/L	959	Standard
	U	238	5748.4	0.4	**0.7268**	0.007	1.0	ug/L	9	Standard
>	Bi	209	542199.4	0.6				ug/L	552821	Standard

Sample ID: L1606144502
Report Date/Time: Friday, July 01, 2016 17:49:53
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	146.7	3.9	**0.0806**	0.004	4.7	mg/L	55	Standard
K	39	706.7	5.1	**2.0968**	0.148	7.0	mg/L	28	Standard
Ca	43	91.7	22.0	**4.4031**	1.569	35.6	mg/L	27	Standard
Fe	54	24940.6	4.4	**15.9770**	0.842	5.3	mg/L	147	Standard
Fe	57	6641.5	3.9	**15.9699**	0.826	5.2	mg/L	268	Standard
> **Sc-1**	45	50111.1	1.7				mg/L	41174	Standard
Cl	35	76057.1	1.3				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	3847.2	5.3				ug/L	1950	Standard
P	31	23633.4	0.7				ug/L	21156	Standard
S	34	3662.1	4.5				ug/L	3419	Standard
Sr	88	171.7	11.8				ug/L	72	Standard
C	12	470.0	20.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	233.3	19.3				mg/L	17	Standard
Dy	164	34433.8	0.7				mg/L	16	Standard
Ho-1	165	20360.3	1.4				mg/L	7	Standard
Er	166	19082.0	1.0				mg/L	7	Standard
I	127	32727.0	1.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.397	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.545	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144502
Report Date/Time: Friday, July 01, 2016 17:49:53
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.908
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144502
Report Date/Time: Friday, July 01, 2016 17:49:53
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 17:50:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75660.1	1.1				ug/L	76456	Standard
	Be	9	60406.9	2.0	**54.5087**	0.731	1.3	ug/L	20	Standard
	Al	27	8901183.3	0.4	**52.5361**	0.439	0.8	ug/L	1307	Standard
	Sc	45	43571.0	4.5				ug/L	41174	Standard
	Ti	47	34622.5	2.0	**98.8044**	2.139	2.2	ug/L	27	Standard
	V	51	445398.2	1.1	**50.2213**	0.481	1.0	ug/L	1434	Standard
	Cr	52	446008.3	0.3	**50.3583**	0.638	1.3	ug/L	7733	Standard
	Cr	53	54342.3	1.8	**49.6105**	0.179	0.4	ug/L	442	Standard
	Mn	55	412872.1	1.4	**50.6530**	0.943	1.9	ug/L	723	Standard
	Co	59	423920.9	1.9	**51.4674**	1.144	2.2	ug/L	217	Standard
	Ni	60	112641.5	1.2	**50.3629**	0.567	1.1	ug/L	304	Standard
	Cu	65	112208.4	1.7	**51.0893**	0.402	0.8	ug/L	181	Standard
	Zn	66	66744.0	0.4	**50.5145**	0.608	1.2	ug/L	215	Standard
>	Ge	72	559742.9	1.5				ug/L	520809	Standard
	As	75	66794.1	0.6	**50.3914**	0.530	1.1	ug/L	-52	Standard
	Se	82	6873.9	1.4	**50.5047**	0.860	1.7	ug/L	17	Standard
	Se-1	77	4690.7	2.0	**50.3684**	0.411	0.8	ug/L	56	Standard
>	Ga	71	70.0	37.1				mg/L	25	Standard
	Rb	85	931.7	8.4				ug/L	28	Standard
	Y	89	472026.6	0.3				ug/L	447395	Standard
>	Rh	103	31.7	32.9				ug/L	15	Standard
	Mo	98	318819.4	0.9	**100.5497**	0.545	0.5	ug/L	113	Standard
	Ag	107	375898.4	1.4	**49.9218**	0.531	1.1	ug/L	108	Standard
	Cd	111	121191.8	0.6	**50.2220**	0.334	0.7	mg/L	3	Standard
	Cd	114	302196.5	1.8	**50.5816**	0.945	1.9	ug/L	20	Standard
>	In	115	655853.7	0.4				ug/L	625728	Standard
	Sn	118	335213.1	1.5	**49.6075**	0.708	1.4	ug/L	568	Standard
	Sb	123	270386.5	1.1	**49.8811**	0.362	0.7	ug/L	612	Standard
	Ba	135	111336.6	0.9	**48.8080**	0.417	0.9	ug/L	21	Standard
	Ce	140	1411.7	25.7				ug/L	245	Standard
>	Tb	159	970990.0	1.2				ug/L	950397	Standard
	Ho	165	26.7	71.0				ug/L	7	Standard
	Tl	203	450496.8	1.2	**50.6789**	0.648	1.3	ug/L	15	Standard
	Tl	205	413746.4	0.4	**52.4089**	0.448	0.9	ug/L	13	Standard
	Pb	206	283628.8	0.6	**50.5558**	0.102	0.2	ug/L	264	Standard
	Pb	207	257451.9	0.7	**50.5301**	0.341	0.7	ug/L	222	Standard
	Pb	208	1074344.6	0.3	**51.6273**	0.180	0.3	ug/L	959	Standard
	U	238	402853.9	0.7	**50.4710**	0.276	0.5	ug/L	9	Standard
>	Bi	209	547356.6	0.6				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:53:06
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4665.7	4.0	**5.1012**	0.401	7.9	mg/L	55	Standard
K	39	1318.4	2.8	**4.6563**	0.350	7.5	mg/L	28	Standard
Ca	43	68.3	16.9	**3.4315**	1.098	32.0	mg/L	27	Standard
Fe	54	7100.4	2.7	**5.1707**	0.292	5.6	mg/L	147	Standard
Fe	57	2145.2	7.2	**5.4299**	0.465	8.6	mg/L	268	Standard
> **Sc-1**	45	43571.0	4.5				mg/L	41174	Standard
Cl	35	80089.1	0.5				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2080.1	5.8				ug/L	1950	Standard
P	31	24411.3	2.1				ug/L	21156	Standard
S	34	4227.3	2.4				ug/L	3419	Standard
Sr	88	76.7	45.8				ug/L	72	Standard
C	12	110.0	45.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	56.7				mg/L	17	Standard
Dy	164	54.4	29.0				mg/L	16	Standard
Ho-1	165	26.7	71.0				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	7	Standard
I	127	7775.3	3.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.017		
Al	27	105.072		
Sc	45			
Ti	47	98.804		
V	51	100.443		
Cr	52	100.717		
Cr	53			
Mn	55	101.306		
Co	59	102.935		
Ni	60	100.726		
Cu	65	102.179		
Zn	66	101.029		
> Ge	72		107.476	
As	75	100.783		
Se	82	101.009		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:53:06
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.550		
Ag	107	99.844		
Cd	111	100.444		
Cd	114			
In	115			104.815
Sn	118	99.215		
Sb	123	99.762		
Ba	135	97.616		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.358		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.255		
U	238	100.942		
Bi	209			99.012
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 17:53:06
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 17:54:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76125.8	1.7				ug/L	76456	Standard
	Be	9	28.3	40.8	**0.0054**	0.010	184.7	ug/L	20	Standard
	Al	27	3772.2	25.1	**0.0119**	0.005	45.3	ug/L	1307	Standard
	Sc	45	44115.8	1.5				ug/L	41174	Standard
	Ti	47	36.0	36.4	**0.0190**	0.038	200.0	ug/L	27	Standard
	V	51	1432.6	3.3	**-0.0355**	0.004	12.4	ug/L	1434	Standard
	Cr	52	7275.4	1.9	**-0.1286**	0.011	8.9	ug/L	7733	Standard
	Cr	53	543.3	3.8	**0.0861**	0.017	20.2	ug/L	442	Standard
	Mn	55	1260.1	9.4	**0.0544**	0.014	25.4	ug/L	723	Standard
	Co	59	264.3	9.7	**0.0028**	0.003	106.4	ug/L	217	Standard
	Ni	60	263.3	2.3	**-0.0344**	0.002	7.2	ug/L	304	Standard
	Cu	65	186.3	1.1	**0.0113**	0.000	4.4	ug/L	181	Standard
	Zn	66	283.0	3.7	**0.0359**	0.009	24.2	ug/L	215	Standard
>	**Ge**	72	556594.5	0.6				ug/L	520809	Standard
	As	75	-80.7	20.9	**-0.0160**	0.013	82.1	ug/L	-52	Standard
	Se	82	15.4	35.3	**-0.0124**	0.040	323.4	ug/L	17	Standard
	Se-1	77	60.3	15.0	**-0.0241**	0.101	419.2	ug/L	56	Standard
>	**Ga**	71	31.7	63.8				mg/L	25	Standard
	Rb	85	60.0					ug/L	28	Standard
	Y	89	477190.1	1.0				ug/L	447395	Standard
>	**Rh**	103	8.3	124.9				ug/L	15	Standard
	Mo	98	226.0	18.3	**0.0476**	0.013	27.7	ug/L	113	Standard
	Ag	107	150.7	15.9	**0.0072**	0.003	44.5	ug/L	108	Standard
	Cd	111	16.6	57.3	**0.0046**	0.004	86.9	mg/L	3	Standard
	Cd	114	59.8	49.5	**0.0101**	0.005	49.3	ug/L	20	Standard
>	**In**	115	653461.3	0.4				ug/L	625728	Standard
	Sn	118	1496.7	19.9	**0.1384**	0.044	31.8	ug/L	568	Standard
	Sb	123	746.4	28.2	**0.1046**	0.039	37.1	ug/L	612	Standard
	Ba	135	171.7	17.2	**0.0577**	0.013	22.8	ug/L	21	Standard
	Ce	140	668.3	13.8				ug/L	245	Standard
>	**Tb**	159	971042.5	0.5				ug/L	950397	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	88.3	25.2	**0.0090**	0.002	27.2	ug/L	15	Standard
	Tl	205	80.0	16.5	**0.0002**	0.002	912.8	ug/L	13	Standard
	Pb	206	378.0	7.1	**0.0223**	0.005	20.2	ug/L	264	Standard
	Pb	207	334.0	19.5	**0.0182**	0.012	68.6	ug/L	222	Standard
	Pb	208	1457.7	7.9	**0.0204**	0.005	25.7	ug/L	959	Standard
	U	238	80.3	16.8	**0.0096**	0.002	17.0	ug/L	9	Standard
>	**Bi**	209	558602.1	0.7				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:56:18
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	25.0	**0.0053**	0.017	313.2	mg/L	55	Standard
K	39	28.3	44.4	**-0.0302**	0.044	144.5	mg/L	28	Standard
Ca	43	16.7	75.5	**-1.0452**	1.061	101.5	mg/L	27	Standard
Fe	54	162.7	23.0	**0.0200**	0.026	130.3	mg/L	147	Standard
Fe	57	228.3	8.3	**-0.1492**	0.054	36.5	mg/L	268	Standard
> **Sc-1**	45	44115.8	1.5				mg/L	41174	Standard
Cl	35	79992.6	1.1				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2276.8	13.7				ug/L	1950	Standard
P	31	23509.9	2.2				ug/L	21156	Standard
S	34	4122.2	2.6				ug/L	3419	Standard
Sr	88	61.7	24.8				ug/L	72	Standard
C	12	93.3	16.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	60.0	16.7				mg/L	17	Standard
Dy	164	41.6	40.0				mg/L	16	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	36.7	83.3				mg/L	7	Standard
I	127	5142.5	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.871	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:56:18
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.432
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.046
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:56:18
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144503
Sample Date/Time: Friday, July 01, 2016 17:57:14
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81064.6	1.5				ug/L	76456	Standard
	Be	9	923.4	4.6	**0.7579**	0.026	3.5	ug/L	20	Standard
	Al	27	9265006.3	1.5	**51.0345**	0.228	0.4	ug/L	1307	Standard
	Sc	45	49278.4	2.1				ug/L	41174	Standard
	Ti	47	6532.7	0.9	**18.1480**	0.376	2.1	ug/L	27	Standard
	V	51	196838.4	1.2	**21.5756**	0.486	2.3	ug/L	1434	Standard
	Cr	52	144221.5	0.4	**15.2461**	0.132	0.9	ug/L	7733	Standard
	Cr	53	17702.0	4.1	**15.5134**	0.839	5.4	ug/L	442	Standard
	Mn	55	4322666.6	0.8	**519.0669**	3.003	0.6	ug/L	723	Standard
	Co	59	73004.8	0.8	**8.6351**	0.046	0.5	ug/L	217	Standard
	Ni	60	37595.6	1.2	**16.3200**	0.066	0.4	ug/L	304	Standard
	Cu	65	29226.2	0.6	**12.9475**	0.087	0.7	ug/L	181	Standard
	Zn	66	73620.1	0.4	**54.4550**	0.675	1.2	ug/L	215	Standard
>	Ge	72	572863.4	1.2				ug/L	520809	Standard
	As	75	5889.9	1.0	**4.3827**	0.015	0.3	ug/L	-52	Standard
	Se	82	131.9	5.2	**0.8223**	0.038	4.7	ug/L	17	Standard
	Se-1	77	184.3	3.7	**1.2757**	0.064	5.0	ug/L	56	Standard
>	Ga	71	19340.7	1.8				mg/L	25	Standard
	Rb	85	221404.3	0.5				ug/L	28	Standard
	Y	89	706877.6	0.9				ug/L	447395	Standard
>	Rh	103	30.0	72.6				ug/L	15	Standard
	Mo	98	2018.2	3.9	**0.6082**	0.025	4.1	ug/L	113	Standard
	Ag	107	770.7	2.0	**0.0888**	0.002	2.2	ug/L	108	Standard
	Cd	111	2871.4	1.3	**1.1792**	0.015	1.3	mg/L	3	Standard
	Cd	114	6981.1	2.4	**1.1603**	0.029	2.5	ug/L	20	Standard
>	In	115	660500.6	0.1				ug/L	625728	Standard
	Sn	118	1633.4	19.7	**0.1562**	0.047	30.4	ug/L	568	Standard
	Sb	123	766.2	17.6	**0.1067**	0.025	23.2	ug/L	612	Standard
	Ba	135	509530.1	0.7	**221.8605**	1.691	0.8	ug/L	21	Standard
	Ce	140	1234713.5	0.5				ug/L	245	Standard
>	Tb	159	1007837.3	0.4				ug/L	950397	Standard
	Ho	165	17965.6	2.4				ug/L	7	Standard
	Tl	203	1067.0	3.3	**0.1181**	0.003	2.2	ug/L	15	Standard
	Tl	205	1001.7	2.4	**0.1159**	0.004	3.7	ug/L	13	Standard
	Pb	206	195840.9	0.6	**34.5471**	0.280	0.8	ug/L	264	Standard
	Pb	207	161774.1	0.6	**31.4180**	0.202	0.6	ug/L	222	Standard
	Pb	208	705256.5	0.4	**33.5368**	0.236	0.7	ug/L	959	Standard
	U	238	5486.7	0.6	**0.6803**	0.004	0.5	ug/L	9	Standard
>	Bi	209	552878.3	1.1				ug/L	552821	Standard

Sample ID: L1606144503
Report Date/Time: Friday, July 01, 2016 17:59:31
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	775.0	0.6	**0.6965**	0.018	2.6	mg/L	55	Standard
K	39	456.7	20.3	**1.3315**	0.288	21.7	mg/L	28	Standard
Ca	43	66.7	11.5	**2.6050**	0.520	20.0	mg/L	27	Standard
Fe	54	19066.0	1.2	**12.3984**	0.367	3.0	mg/L	147	Standard
Fe	57	5245.9	1.7	**12.6645**	0.072	0.6	mg/L	268	Standard
> **Sc-1**	45	49278.4	2.1				mg/L	41174	Standard
Cl	35	75533.8	1.8				ug/L	69550	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	12581.9	2.8				ug/L	1950	Standard
P	31	23234.5	1.4				ug/L	21156	Standard
S	34	3415.4	8.9				ug/L	3419	Standard
Sr	88	155.0	8.5				ug/L	72	Standard
C	12	606.7	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	183.3	45.4				mg/L	17	Standard
Dy	164	30531.0	0.8				mg/L	16	Standard
Ho-1	165	17965.6	2.4				mg/L	7	Standard
Er	166	16101.9	2.4				mg/L	7	Standard
I	127	47399.3	7.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.028	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.995	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144503
Report Date/Time: Friday, July 01, 2016 17:59:31
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.557
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.010
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144503
Report Date/Time: Friday, July 01, 2016 17:59:31
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144507
Sample Date/Time: Friday, July 01, 2016 18:00:25
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81719.8	0.5				ug/L	76456	Standard
	Be	9	1150.0	3.4	**0.9414**	0.038	4.0	ug/L	20	Standard
	Al	27	19122972.5	1.5	**104.5075**	1.996	1.9	ug/L	1307	Standard
	Sc	45	50161.3	3.1				ug/L	41174	Standard
	Ti	47	4290.6	1.9	**12.0513**	0.158	1.3	ug/L	27	Standard
	V	51	176002.8	1.5	**19.5347**	0.381	2.0	ug/L	1434	Standard
	Cr	52	202519.5	0.7	**22.1111**	0.164	0.7	ug/L	7733	Standard
	Cr	53	24688.4	0.5	**22.0962**	0.312	1.4	ug/L	442	Standard
	Mn	55	3882576.5	0.7	**472.5626**	1.691	0.4	ug/L	723	Standard
	Co	59	74015.0	0.7	**8.8755**	0.153	1.7	ug/L	217	Standard
	Ni	60	49898.7	0.5	**22.0097**	0.116	0.5	ug/L	304	Standard
	Cu	65	49732.2	0.6	**22.3872**	0.351	1.6	ug/L	181	Standard
	Zn	66	114291.8	0.2	**85.7937**	1.009	1.2	ug/L	215	Standard
>	Ge	72	565157.3	1.0				ug/L	520809	Standard
	As	75	14435.4	1.1	**10.8205**	0.032	0.3	ug/L	-52	Standard
	Se	82	92.4	6.7	**0.5475**	0.040	7.3	ug/L	17	Standard
	Se-1	77	153.7	16.6	**0.9738**	0.293	30.1	ug/L	56	Standard
>	Ga	71	20582.3	3.6				mg/L	25	Standard
	Rb	85	203311.7	0.8				ug/L	28	Standard
	Y	89	751032.3	1.4				ug/L	447395	Standard
>	Rh	103	46.7	44.6				ug/L	15	Standard
	Mo	98	590.9	4.0	**0.1610**	0.008	5.2	ug/L	113	Standard
	Ag	107	615.7	5.5	**0.0683**	0.004	5.9	ug/L	108	Standard
	Cd	111	2075.5	3.1	**0.8510**	0.024	2.8	mg/L	3	Standard
	Cd	114	5077.8	10.1	**0.8428**	0.077	9.1	ug/L	20	Standard
>	In	115	661094.1	1.5				ug/L	625728	Standard
	Sn	118	1358.4	19.5	**0.1160**	0.042	36.3	ug/L	568	Standard
	Sb	123	1552.9	6.2	**0.2509**	0.021	8.4	ug/L	612	Standard
	Ba	135	403285.7	0.6	**175.4541**	1.609	0.9	ug/L	21	Standard
	Ce	140	1308604.3	1.2				ug/L	245	Standard
>	Tb	159	1004791.8	1.1				ug/L	950397	Standard
	Ho	165	21420.1	0.2				ug/L	7	Standard
	Tl	203	1393.7	1.3	**0.1546**	0.002	1.2	ug/L	15	Standard
	Tl	205	1293.4	6.5	**0.1525**	0.010	6.7	ug/L	13	Standard
	Pb	206	576456.5	0.6	**101.8203**	0.799	0.8	ug/L	264	Standard
	Pb	207	487118.2	0.8	**94.7368**	0.502	0.5	ug/L	222	Standard
	Pb	208	2107804.8	0.1	**100.3728**	0.432	0.4	ug/L	959	Standard
	U	238	4448.0	2.0	**0.5517**	0.009	1.6	ug/L	9	Standard
>	Bi	209	552606.6	0.3				ug/L	552821	Standard

Sample ID: L1606144507
Report Date/Time: Friday, July 01, 2016 18:02:42
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**3.9605**	6.851	173.0	mg/L	2	Standard
Mg	24	146.7	22.7	**0.0801**	0.030	37.5	mg/L	55	Standard
K	39	540.0	0.9	**1.5696**	0.061	3.9	mg/L	28	Standard
Ca	43	96.7	3.0	**4.7655**	0.419	8.8	mg/L	27	Standard
Fe	54	17314.9	1.0	**11.0515**	0.258	2.3	mg/L	147	Standard
Fe	57	4700.7	3.1	**11.0529**	0.214	1.9	mg/L	268	Standard
> **Sc-1**	45	50161.3	3.1				mg/L	41174	Standard
Cl	35	76662.1	1.5				ug/L	69550	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	3767.1	7.9				ug/L	1950	Standard
P	31	23611.7	2.9				ug/L	21156	Standard
S	34	3682.1	3.0				ug/L	3419	Standard
Sr	88	63.3	31.9				ug/L	72	Standard
C	12	343.3	8.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	210.0	26.5				mg/L	17	Standard
Dy	164	35453.0	4.2				mg/L	16	Standard
Ho-1	165	21420.1	0.2				mg/L	7	Standard
Er	166	19218.8	0.6				mg/L	7	Standard
I	127	28176.2	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.515	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144507
Report Date/Time: Friday, July 01, 2016 18:02:42
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.652
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.961
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144507
Report Date/Time: Friday, July 01, 2016 18:02:42
Page 3

Approved: July 02, 2016

Pb 206 Upper, S, EEE	Pb	206
Pb 208 Upper, S, EEE	Pb	208

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144508
Sample Date/Time: Friday, July 01, 2016 18:03:37
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80067.7	0.8				ug/L	76456	Standard
	Be	9	1216.7	3.5	**1.0182**	0.042	4.1	ug/L	20	Standard
	Al	27	26828418.5	2.0	**149.6306**	1.983	1.3	ug/L	1307	Standard
	Sc	45	50947.2	1.6				ug/L	41174	Standard
	Ti	47	5410.0	2.3	**15.2604**	0.406	2.7	ug/L	27	Standard
	V	51	186134.5	1.5	**20.7252**	0.259	1.2	ug/L	1434	Standard
	Cr	52	142957.3	0.4	**15.3665**	0.097	0.6	ug/L	7733	Standard
	Cr	53	17178.1	1.5	**15.2891**	0.249	1.6	ug/L	442	Standard
	Mn	55	4606939.6	1.4	**562.2720**	9.197	1.6	ug/L	723	Standard
	Co	59	80106.5	0.8	**9.6337**	0.111	1.2	ug/L	217	Standard
	Ni	60	49331.5	0.8	**21.8172**	0.266	1.2	ug/L	304	Standard
	Cu	65	27262.5	1.2	**12.2715**	0.190	1.6	ug/L	181	Standard
	Zn	66	50487.3	0.6	**37.8990**	0.363	1.0	ug/L	215	Standard
>	Ge	72	563626.3	0.4				ug/L	520809	Standard
	As	75	5127.9	0.4	**3.8833**	0.025	0.7	ug/L	-52	Standard
	Se	82	63.4	13.7	**0.3372**	0.065	19.3	ug/L	17	Standard
	Se-1	77	127.0	8.8	**0.6885**	0.125	18.2	ug/L	56	Standard
>	Ga	71	20874.4	1.1				mg/L	25	Standard
	Rb	85	200244.6	0.8				ug/L	28	Standard
	Y	89	753887.4	1.4				ug/L	447395	Standard
>	Rh	103	23.3	24.7				ug/L	15	Standard
	Mo	98	546.6	7.3	**0.1509**	0.014	9.6	ug/L	113	Standard
	Ag	107	629.3	8.8	**0.0718**	0.007	9.6	ug/L	108	Standard
	Cd	111	214.4	9.4	**0.0877**	0.009	10.1	mg/L	3	Standard
	Cd	114	474.4	3.2	**0.0805**	0.003	3.5	ug/L	20	Standard
>	In	115	647228.9	1.0				ug/L	625728	Standard
	Sn	118	1141.7	25.6	**0.0873**	0.044	50.2	ug/L	568	Standard
	Sb	123	347.3	21.7	**0.0313**	0.014	45.5	ug/L	612	Standard
	Ba	135	428959.8	0.0	**190.6168**	1.771	0.9	ug/L	21	Standard
	Ce	140	1454827.7	0.7				ug/L	245	Standard
>	Tb	159	993072.0	0.4				ug/L	950397	Standard
	Ho	165	23219.4	1.9				ug/L	7	Standard
	Tl	203	1106.7	1.7	**0.1248**	0.002	1.9	ug/L	15	Standard
	Tl	205	985.0	10.2	**0.1162**	0.014	11.7	ug/L	13	Standard
	Pb	206	63645.1	1.2	**11.4085**	0.083	0.7	ug/L	264	Standard
	Pb	207	52266.7	0.7	**10.3105**	0.095	0.9	ug/L	222	Standard
	Pb	208	232091.9	0.7	**11.2123**	0.155	1.4	ug/L	959	Standard
	U	238	4568.7	1.3	**0.5771**	0.011	1.9	ug/L	9	Standard
>	Bi	209	542669.3	0.8				ug/L	552821	Standard

Sample ID: L1606144508
Report Date/Time: Friday, July 01, 2016 18:05:54
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.0478**	7.002	173.0	mg/L	2	Standard
Mg	24	115.0	7.5	**0.0484**	0.008	16.3	mg/L	55	Standard
K	39	411.7	8.1	**1.1441**	0.093	8.1	mg/L	28	Standard
Ca	43	256.7	13.7	**16.4263**	2.858	17.4	mg/L	27	Standard
Fe	54	19822.2	2.5	**12.4655**	0.367	2.9	mg/L	147	Standard
Fe	57	5277.6	3.2	**12.3025**	0.438	3.6	mg/L	268	Standard
> **Sc-1**	45	50947.2	1.6				mg/L	41174	Standard
Cl	35	80549.5	0.6				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	2766.9	10.3				ug/L	1950	Standard
P	31	24564.9	2.5				ug/L	21156	Standard
S	34	4093.9	1.0				ug/L	3419	Standard
Sr	88	131.7	11.6				ug/L	72	Standard
C	12	213.3	21.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	17	Standard
Dy	164	39354.5	1.1				mg/L	16	Standard
Ho-1	165	23219.4	1.9				mg/L	7	Standard
Er	166	20997.9	3.9				mg/L	7	Standard
I	127	17520.1	0.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.724	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.221	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144508
Report Date/Time: Friday, July 01, 2016 18:05:54
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.436	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.164	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144508
Report Date/Time: Friday, July 01, 2016 18:05:54
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144509
Sample Date/Time: Friday, July 01, 2016 18:06:48
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79442.8	2.3				ug/L	76456	Standard
	Be	9	943.4	17.8	**0.7923**	0.154	19.4	ug/L	20	Standard
	Al	27	24668673.1	1.9	**138.6963**	2.466	1.8	ug/L	1307	Standard
	Sc	45	50062.6	1.9				ug/L	41174	Standard
	Ti	47	4807.4	4.3	**13.5672**	0.456	3.4	ug/L	27	Standard
	V	51	136414.7	0.2	**15.1594**	0.132	0.9	ug/L	1434	Standard
	Cr	52	121344.3	1.1	**12.9168**	0.132	1.0	ug/L	7733	Standard
	Cr	53	14567.0	3.2	**12.9202**	0.381	2.9	ug/L	442	Standard
	Mn	55	3584400.6	1.7	**438.0976**	8.663	2.0	ug/L	723	Standard
	Co	59	62786.5	0.8	**7.5554**	0.042	0.6	ug/L	217	Standard
	Ni	60	42141.2	1.3	**18.6419**	0.218	1.2	ug/L	304	Standard
	Cu	65	21722.6	0.6	**9.7770**	0.072	0.7	ug/L	181	Standard
	Zn	66	42178.0	0.8	**31.6788**	0.359	1.1	ug/L	215	Standard
>	Ge	72	562814.6	1.1				ug/L	520809	Standard
	As	75	3148.0	1.0	**2.4049**	0.028	1.2	ug/L	-52	Standard
	Se	82	55.8	21.4	**0.2824**	0.087	30.8	ug/L	17	Standard
	Se-1	77	111.3	15.0	**0.5195**	0.168	32.3	ug/L	56	Standard
>	Ga	71	17067.9	0.7				mg/L	25	Standard
	Rb	85	155458.5	0.3				ug/L	28	Standard
	Y	89	728811.9	0.2				ug/L	447395	Standard
>	Rh	103	40.0	21.7				ug/L	15	Standard
	Mo	98	532.8	6.7	**0.1442**	0.009	6.6	ug/L	113	Standard
	Ag	107	508.0	7.7	**0.0547**	0.005	9.0	ug/L	108	Standard
	Cd	111	168.7	12.8	**0.0676**	0.009	13.2	mg/L	3	Standard
	Cd	114	363.5	9.1	**0.0610**	0.006	10.1	ug/L	20	Standard
>	In	115	655174.8	1.1				ug/L	625728	Standard
	Sn	118	1111.7	18.9	**0.0808**	0.031	38.4	ug/L	568	Standard
	Sb	123	305.1	22.1	**0.0226**	0.012	54.1	ug/L	612	Standard
	Ba	135	334401.7	0.7	**146.7912**	1.362	0.9	ug/L	21	Standard
	Ce	140	1157016.3	1.7				ug/L	245	Standard
>	Tb	159	995793.1	2.4				ug/L	950397	Standard
	Ho	165	19706.1	2.6				ug/L	7	Standard
	Tl	203	788.7	4.8	**0.0883**	0.005	5.9	ug/L	15	Standard
	Tl	205	705.0	5.8	**0.0799**	0.004	5.3	ug/L	13	Standard
	Pb	206	52940.3	0.9	**9.4349**	0.070	0.7	ug/L	264	Standard
	Pb	207	43455.2	0.3	**8.5217**	0.073	0.9	ug/L	222	Standard
	Pb	208	192505.6	0.3	**9.2450**	0.110	1.2	ug/L	959	Standard
	U	238	3706.1	1.6	**0.4657**	0.006	1.4	ug/L	9	Standard
>	Bi	209	545400.8	1.1				ug/L	552821	Standard

Sample ID: L1606144509
Report Date/Time: Friday, July 01, 2016 18:09:05
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	125.0	18.3	**0.0601**	0.024	39.7	mg/L	55	Standard
K	39	280.0	4.7	**0.7524**	0.056	7.4	mg/L	28	Standard
Ca	43	271.7	13.1	**17.8657**	2.769	15.5	mg/L	27	Standard
Fe	54	13853.2	3.1	**8.8410**	0.431	4.9	mg/L	147	Standard
Fe	57	3842.2	1.2	**8.9061**	0.079	0.9	mg/L	268	Standard
> **Sc-1**	45	50062.6	1.9				mg/L	41174	Standard
Cl	35	80728.5	0.4				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	3187.0	4.9				ug/L	1950	Standard
P	31	24401.3	1.1				ug/L	21156	Standard
S	34	4165.6	2.7				ug/L	3419	Standard
Sr	88	115.0	7.5				ug/L	72	Standard
C	12	200.0	13.2				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	93.3	32.7				mg/L	17	Standard
Dy	164	33342.9	1.0				mg/L	16	Standard
Ho-1	165	19706.1	2.6				mg/L	7	Standard
Er	166	17443.4	2.1				mg/L	7	Standard
I	127	18624.8	0.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.907	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.065	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144509
Report Date/Time: Friday, July 01, 2016 18:09:05
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.706	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.658	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144509
Report Date/Time: Friday, July 01, 2016 18:09:05
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144510
Sample Date/Time: Friday, July 01, 2016 18:10:00
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79271.9	1.9				ug/L	76456	Standard
	Be	9	960.0	8.0	**0.8081**	0.079	9.8	ug/L	20	Standard
	Al	27	12161180.8	1.6	**68.5142**	1.144	1.7	ug/L	1307	Standard
	Sc	45	48484.1	1.3				ug/L	41174	Standard
	Ti	47	2552.9	3.2	**7.1191**	0.297	4.2	ug/L	27	Standard
	V	51	134266.7	0.5	**14.8155**	0.217	1.5	ug/L	1434	Standard
	Cr	52	132714.7	0.2	**14.1160**	0.211	1.5	ug/L	7733	Standard
	Cr	53	15915.0	2.5	**14.0541**	0.174	1.2	ug/L	442	Standard
	Mn	55	2692161.6	0.9	**326.7761**	3.297	1.0	ug/L	723	Standard
	Co	59	60946.7	0.7	**7.2843**	0.165	2.3	ug/L	217	Standard
	Ni	60	37036.2	0.7	**16.2553**	0.354	2.2	ug/L	304	Standard
	Cu	65	25813.0	0.6	**11.5528**	0.129	1.1	ug/L	181	Standard
	Zn	66	59196.1	0.9	**44.2314**	0.719	1.6	ug/L	215	Standard
>	Ge	72	566689.9	1.6				ug/L	520809	Standard
	As	75	6333.8	0.9	**4.7613**	0.105	2.2	ug/L	-52	Standard
	Se	82	64.1	11.3	**0.3404**	0.060	17.7	ug/L	17	Standard
	Se-1	77	129.7	6.6	**0.7103**	0.107	15.1	ug/L	56	Standard
>	Ga	71	16113.6	0.3				mg/L	25	Standard
	Rb	85	159279.6	1.1				ug/L	28	Standard
	Y	89	713422.0	1.5				ug/L	447395	Standard
>	Rh	103	25.0	60.0				ug/L	15	Standard
	Mo	98	950.0	4.7	**0.2755**	0.014	5.2	ug/L	113	Standard
	Ag	107	562.7	10.8	**0.0618**	0.008	12.5	ug/L	108	Standard
	Cd	111	481.0	9.3	**0.1967**	0.017	8.8	mg/L	3	Standard
	Cd	114	1249.3	10.0	**0.2089**	0.020	9.7	ug/L	20	Standard
>	In	115	656399.0	0.7				ug/L	625728	Standard
	Sn	118	1210.0	13.0	**0.0951**	0.024	25.2	ug/L	568	Standard
	Sb	123	969.1	5.8	**0.1450**	0.010	7.1	ug/L	612	Standard
	Ba	135	317720.7	1.4	**139.1962**	1.098	0.8	ug/L	21	Standard
	Ce	140	1155794.9	1.0				ug/L	245	Standard
>	Tb	159	984841.2	0.9				ug/L	950397	Standard
	Ho	165	19197.2	4.8				ug/L	7	Standard
	Tl	203	845.0	15.2	**0.0944**	0.014	15.2	ug/L	15	Standard
	Tl	205	828.4	29.5	**0.0953**	0.031	32.1	ug/L	13	Standard
	Pb	206	243494.3	0.6	**43.4500**	0.261	0.6	ug/L	264	Standard
	Pb	207	203498.1	0.4	**39.9806**	0.200	0.5	ug/L	222	Standard
	Pb	208	891072.1	0.5	**42.8651**	0.261	0.6	ug/L	959	Standard
	U	238	4045.9	6.6	**0.5073**	0.034	6.6	ug/L	9	Standard
>	Bi	209	546682.6	0.7				ug/L	552821	Standard

Sample ID: L1606144510
Report Date/Time: Friday, July 01, 2016 18:12:17
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	171.7	38.0	**0.1098**	0.063	57.3	mg/L	55	Standard
K	39	336.7	16.4	**0.9661**	0.187	19.4	mg/L	28	Standard
Ca	43	73.3	23.9	**3.2010**	1.330	41.6	mg/L	27	Standard
Fe	54	13407.2	1.8	**8.8316**	0.255	2.9	mg/L	147	Standard
Fe	57	3832.2	1.2	**9.1972**	0.235	2.6	mg/L	268	Standard
> **Sc-1**	45	48484.1	1.3				mg/L	41174	Standard
Cl	35	75838.8	2.7				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	3700.5	4.5				ug/L	1950	Standard
P	31	23035.9	5.5				ug/L	21156	Standard
S	34	3642.1	4.8				ug/L	3419	Standard
Sr	88	118.3	23.3				ug/L	72	Standard
C	12	246.7	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	39.6				mg/L	17	Standard
Dy	164	31661.9	4.0				mg/L	16	Standard
Ho-1	165	19197.2	4.8				mg/L	7	Standard
Er	166	17109.7	2.4				mg/L	7	Standard
I	127	24686.8	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.683	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.809	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144510
Report Date/Time: Friday, July 01, 2016 18:12:17
Page 2

Approved: July 02, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.902
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.890
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144510
Report Date/Time: Friday, July 01, 2016 18:12:17
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144511
Sample Date/Time: Friday, July 01, 2016 18:13:11
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81056.3	1.5				ug/L	76456	Standard
	Be	9	1300.1	7.1	**1.0750**	0.063	5.9	ug/L	20	Standard
	Al	27	14087735.3	1.0	**77.6176**	0.555	0.7	ug/L	1307	Standard
	Sc	45	51079.3	2.3				ug/L	41174	Standard
	Ti	47	4050.2	1.8	**11.4166**	0.113	1.0	ug/L	27	Standard
	V	51	160903.7	0.9	**17.9135**	0.308	1.7	ug/L	1434	Standard
	Cr	52	157358.9	0.5	**17.0353**	0.148	0.9	ug/L	7733	Standard
	Cr	53	18739.9	2.5	**16.7418**	0.591	3.5	ug/L	442	Standard
	Mn	55	3983343.0	1.3	**486.7711**	7.837	1.6	ug/L	723	Standard
	Co	59	83282.3	0.9	**10.0291**	0.055	0.6	ug/L	217	Standard
	Ni	60	47596.6	1.1	**21.0730**	0.432	2.1	ug/L	304	Standard
	Cu	65	29877.1	1.6	**13.4740**	0.341	2.5	ug/L	181	Standard
	Zn	66	86877.7	1.2	**65.4276**	0.744	1.1	ug/L	215	Standard
>	Ge	72	562928.2	1.0				ug/L	520809	Standard
	As	75	5744.5	1.7	**4.3502**	0.061	1.4	ug/L	-52	Standard
	Se	82	56.4	20.2	**0.2867**	0.086	29.8	ug/L	17	Standard
	Se-1	77	130.3	3.1	**0.7263**	0.056	7.7	ug/L	56	Standard
>	Ga	71	21874.1	2.3				mg/L	25	Standard
	Rb	85	221462.0	1.4				ug/L	28	Standard
	Y	89	734796.1	0.6				ug/L	447395	Standard
>	Rh	103	31.7	24.1				ug/L	15	Standard
	Mo	98	474.5	3.0	**0.1270**	0.006	4.5	ug/L	113	Standard
	Ag	107	695.0	1.5	**0.0803**	0.002	2.7	ug/L	108	Standard
	Cd	111	1334.9	2.9	**0.5556**	0.015	2.7	mg/L	3	Standard
	Cd	114	3103.4	3.0	**0.5239**	0.011	2.1	ug/L	20	Standard
>	In	115	650267.1	1.0				ug/L	625728	Standard
	Sn	118	1253.4	12.9	**0.1031**	0.024	22.9	ug/L	568	Standard
	Sb	123	352.0	10.4	**0.0318**	0.006	20.1	ug/L	612	Standard
	Ba	135	635709.1	1.1	**281.1732**	3.369	1.2	ug/L	21	Standard
	Ce	140	1385894.9	1.0				ug/L	245	Standard
>	Tb	159	992786.2	1.1				ug/L	950397	Standard
	Ho	165	21371.7	1.6				ug/L	7	Standard
	Tl	203	1170.7	2.5	**0.1317**	0.002	1.8	ug/L	15	Standard
	Tl	205	1111.7	6.4	**0.1319**	0.009	7.1	ug/L	13	Standard
	Pb	206	547145.1	0.5	**98.1007**	0.480	0.5	ug/L	264	Standard
	Pb	207	460226.0	0.7	**90.8567**	0.149	0.2	ug/L	222	Standard
	Pb	208	1990544.8	1.0	**96.2154**	0.264	0.3	ug/L	959	Standard
	U	238	4825.8	2.0	**0.6077**	0.015	2.5	ug/L	9	Standard
>	Bi	209	544394.6	0.9				ug/L	552821	Standard

Sample ID: L1606144511
Report Date/Time: Friday, July 01, 2016 18:15:28
Page 1

Approved: July 02, 2016

Na	23	5.0	100.0	**11.9370**	12.019	100.7	mg/L	2	Standard
Mg	24	136.7	11.2	**0.0686**	0.016	23.2	mg/L	55	Standard
K	39	338.3	18.4	**0.9175**	0.216	23.5	mg/L	28	Standard
Ca	43	100.0	10.0	**4.8632**	0.562	11.6	mg/L	27	Standard
Fe	54	19768.1	3.7	**12.3944**	0.190	1.5	mg/L	147	Standard
Fe	57	5529.3	1.5	**12.8981**	0.490	3.8	mg/L	268	Standard
Sc-1	45	51079.3	2.3				mg/L	41174	Standard
Cl	35	74695.0	1.8				ug/L	69550	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	3833.8	5.0				ug/L	1950	Standard
P	31	23369.7	3.5				ug/L	21156	Standard
S	34	3573.8	8.7				ug/L	3419	Standard
Sr	88	135.0	7.4				ug/L	72	Standard
C	12	190.0	24.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	156.7	38.5				mg/L	17	Standard
Dy	164	36620.1	2.1				mg/L	16	Standard
Ho-1	165	21371.7	1.6				mg/L	7	Standard
Er	166	19966.5	1.7				mg/L	7	Standard
I	127	25928.9	6.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.017	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.087	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144511
Report Date/Time: Friday, July 01, 2016 18:15:28
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.922	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.476	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144511
Report Date/Time: Friday, July 01, 2016 18:15:28
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144512
Sample Date/Time: Friday, July 01, 2016 18:16:23
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80562.0	2.1				ug/L	76456	Standard
	Be	9	1056.7	6.8	**0.8755**	0.044	5.0	ug/L	20	Standard
	Al	27	20325479.9	1.3	**112.6812**	0.924	0.8	ug/L	1307	Standard
	Sc	45	51024.2	3.8				ug/L	41174	Standard
	Ti	47	4124.6	2.4	**11.6241**	0.214	1.8	ug/L	27	Standard
	V	51	179971.8	1.0	**20.0519**	0.111	0.6	ug/L	1434	Standard
	Cr	52	122094.3	0.7	**12.9955**	0.054	0.4	ug/L	7733	Standard
	Cr	53	14728.8	1.7	**13.0624**	0.219	1.7	ug/L	442	Standard
	Mn	55	2566086.0	1.4	**313.4230**	2.590	0.8	ug/L	723	Standard
	Co	59	71959.5	1.0	**8.6588**	0.038	0.4	ug/L	217	Standard
	Ni	60	44539.0	0.4	**19.7019**	0.201	1.0	ug/L	304	Standard
	Cu	65	25837.7	1.3	**11.6371**	0.150	1.3	ug/L	181	Standard
	Zn	66	46860.0	0.7	**35.1959**	0.095	0.3	ug/L	215	Standard
>	Ge	72	563090.4	0.6				ug/L	520809	Standard
	As	75	4748.6	0.5	**3.6029**	0.030	0.8	ug/L	-52	Standard
	Se	82	50.2	5.5	**0.2414**	0.021	8.8	ug/L	17	Standard
	Se-1	77	123.7	5.2	**0.6532**	0.062	9.5	ug/L	56	Standard
>	Ga	71	18362.8	1.6				mg/L	25	Standard
	Rb	85	168707.6	2.0				ug/L	28	Standard
	Y	89	736703.2	2.4				ug/L	447395	Standard
>	Rh	103	25.0	52.9				ug/L	15	Standard
	Mo	98	488.2	3.8	**0.1323**	0.005	4.0	ug/L	113	Standard
	Ag	107	511.0	3.1	**0.0560**	0.002	3.4	ug/L	108	Standard
	Cd	111	253.2	7.3	**0.1041**	0.008	7.3	mg/L	3	Standard
	Cd	114	604.4	7.2	**0.1026**	0.007	6.9	ug/L	20	Standard
>	In	115	646543.9	0.3				ug/L	625728	Standard
	Sn	118	893.4	21.7	**0.0501**	0.029	58.0	ug/L	568	Standard
	Sb	123	312.5	6.0	**0.0248**	0.004	14.8	ug/L	612	Standard
	Ba	135	248072.4	0.5	**110.3400**	0.769	0.7	ug/L	21	Standard
	Ce	140	1301357.0	1.2				ug/L	245	Standard
>	Tb	159	989062.4	0.6				ug/L	950397	Standard
	Ho	165	20744.2	1.0				ug/L	7	Standard
	Tl	203	836.4	5.3	**0.0943**	0.005	5.4	ug/L	15	Standard
	Tl	205	765.0	4.3	**0.0882**	0.004	4.8	ug/L	13	Standard
	Pb	206	112087.8	1.3	**20.1669**	0.259	1.3	ug/L	264	Standard
	Pb	207	94165.7	0.9	**18.6506**	0.174	0.9	ug/L	222	Standard
	Pb	208	412221.0	0.6	**19.9915**	0.120	0.6	ug/L	959	Standard
	U	238	4509.7	0.8	**0.5708**	0.005	0.8	ug/L	9	Standard
>	Bi	209	541556.4	0.0				ug/L	552821	Standard

Sample ID: L1606144512
Report Date/Time: Friday, July 01, 2016 18:18:40
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	148.3	8.5	**0.0799**	0.015	18.6	mg/L	55	Standard
K	39	408.3	5.1	**1.1318**	0.019	1.7	mg/L	28	Standard
Ca	43	105.0	12.6	**5.2550**	1.011	19.2	mg/L	27	Standard
Fe	54	15896.3	3.5	**9.9615**	0.123	1.2	mg/L	147	Standard
Fe	57	4270.6	7.1	**9.8107**	1.132	11.5	mg/L	268	Standard
> **Sc-1**	45	51024.2	3.8				mg/L	41174	Standard
Cl	35	77017.9	0.8				ug/L	69550	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	2873.6	4.9				ug/L	1950	Standard
P	31	23741.9	3.7				ug/L	21156	Standard
S	34	3792.1	2.1				ug/L	3419	Standard
Sr	88	118.3	26.8				ug/L	72	Standard
C	12	150.0	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	31.2				mg/L	17	Standard
Dy	164	35215.7	0.8				mg/L	16	Standard
Ho-1	165	20744.2	1.0				mg/L	7	Standard
Er	166	18591.4	0.2				mg/L	7	Standard
I	127	15219.3	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144512
Report Date/Time: Friday, July 01, 2016 18:18:40
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.327
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.962
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144512
Report Date/Time: Friday, July 01, 2016 18:18:40
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Friday, July 01, 2016 18:19:34
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70388.2	2.1				ug/L	76456	Standard
	Be	9	61.7	23.4	**0.0400**	0.014	34.9	ug/L	20	Standard
	Al	27	209415.6	0.4	**1.3190**	0.033	2.5	ug/L	1307	Standard
	Sc	45	39780.5	3.1				ug/L	41174	Standard
	Ti	47	1335.7	4.5	**4.0093**	0.186	4.6	ug/L	27	Standard
	V	51	9011.5	1.4	**0.8961**	0.016	1.8	ug/L	1434	Standard
	Cr	52	11942.0	0.5	**0.5043**	0.017	3.5	ug/L	7733	Standard
	Cr	53	965.0	9.9	**0.5365**	0.094	17.4	ug/L	442	Standard
	Mn	55	122738.2	0.8	**16.0893**	0.228	1.4	ug/L	723	Standard
	Co	59	1833.1	0.9	**0.2095**	0.004	1.9	ug/L	217	Standard
	Ni	60	1543.4	2.6	**0.5897**	0.025	4.3	ug/L	304	Standard
	Cu	65	2084.5	3.4	**0.9460**	0.041	4.4	ug/L	181	Standard
	Zn	66	9962.3	1.5	**7.9386**	0.062	0.8	ug/L	215	Standard
>	**Ge**	72	521595.8	0.8				ug/L	520809	Standard
	As	75	1195.1	0.9	**1.0118**	0.011	1.1	ug/L	-52	Standard
	Se	82	24.1	17.0	**0.0642**	0.032	49.3	ug/L	17	Standard
	Se-1	77	62.0	12.6	**0.0393**	0.087	222.5	ug/L	56	Standard
>	**Ga**	71	756.7	9.6				mg/L	25	Standard
	Rb	85	4860.8	2.7				ug/L	28	Standard
	Y	89	439023.6	1.3				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	289.5	25.4	**0.0755**	0.025	33.7	ug/L	113	Standard
	Ag	107	108.0	4.2	**0.0028**	0.001	24.8	ug/L	108	Standard
	Cd	111	86.5	15.6	**0.0367**	0.006	16.4	mg/L	3	Standard
	Cd	114	262.8	23.2	**0.0479**	0.011	23.5	ug/L	20	Standard
>	**In**	115	602493.1	0.2				ug/L	625728	Standard
	Sn	118	640.0	28.2	**0.0191**	0.029	153.5	ug/L	568	Standard
	Sb	123	159.0	14.4	**-0.0017**	0.005	267.5	ug/L	612	Standard
	Ba	135	10231.8	1.1	**4.8666**	0.057	1.2	ug/L	21	Standard
	Ce	140	59325.9	0.4				ug/L	245	Standard
>	**Tb**	159	901387.3	1.6				ug/L	950397	Standard
	Ho	165	468.3	19.0				ug/L	7	Standard
	Tl	203	67.3	15.2	**0.0072**	0.001	16.6	ug/L	15	Standard
	Tl	205	53.3	56.5	**-0.0027**	0.004	151.9	ug/L	13	Standard
	Pb	206	25545.5	0.9	**4.7304**	0.064	1.3	ug/L	264	Standard
	Pb	207	21325.3	0.3	**4.3424**	0.022	0.5	ug/L	222	Standard
	Pb	208	92265.3	0.3	**4.6006**	0.019	0.4	ug/L	959	Standard
	U	238	418.3	2.9	**0.0547**	0.002	3.4	ug/L	9	Standard
>	**Bi**	209	522518.3	0.5				ug/L	552821	Standard

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 18:21:51
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	0.0	**-0.0057**	0.002	29.9	mg/L	55	Standard
K	39	30.0	28.9	**-0.0116**	0.036	313.3	mg/L	28	Standard
Ca	43	28.3	50.9	**0.2419**	1.466	606.3	mg/L	27	Standard
Fe	54	830.6	5.4	**0.5751**	0.021	3.7	mg/L	147	Standard
Fe	57	475.0	3.8	**0.7085**	0.100	14.1	mg/L	268	Standard
Sc-1	45	39780.5	3.1				mg/L	41174	Standard
Cl	35	69290.7	0.6				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2023.5	4.8				ug/L	1950	Standard
P	31	8517.4	4.8				ug/L	21156	Standard
S	34	3302.0	4.3				ug/L	3419	Standard
Sr	88	81.7	7.1				ug/L	72	Standard
C	12	106.7	19.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	43.3				mg/L	17	Standard
Dy	164	723.4	6.0				mg/L	16	Standard
Ho-1	165	468.3	19.0				mg/L	7	Standard
Er	166	416.7	9.7				mg/L	7	Standard
I	127	33121.2	4.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.064	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.151	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145101
Report Date/Time: Friday, July 01, 2016 18:21:51
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.287
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.519
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Friday, July 01, 2016 18:22:46
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69181.0	2.1				ug/L	76456	Standard
	Be	9	58.3	32.5	**0.0378**	0.019	50.7	ug/L	20	Standard
	Al	27	441238.9	1.7	**2.8389**	0.059	2.1	ug/L	1307	Standard
	Sc	45	40783.2	1.8				ug/L	41174	Standard
	Ti	47	2459.5	1.5	**7.4205**	0.178	2.4	ug/L	27	Standard
	V	51	16925.1	1.2	**1.8483**	0.038	2.1	ug/L	1434	Standard
	Cr	52	18122.2	1.5	**1.2572**	0.011	0.8	ug/L	7733	Standard
	Cr	53	1788.4	11.0	**1.3411**	0.181	13.5	ug/L	442	Standard
	Mn	55	409161.8	0.6	**53.6291**	0.654	1.2	ug/L	723	Standard
	Co	59	5121.9	2.3	**0.6351**	0.012	1.9	ug/L	217	Standard
	Ni	60	3165.0	1.3	**1.3633**	0.033	2.4	ug/L	304	Standard
	Cu	65	6880.2	2.6	**3.2772**	0.073	2.2	ug/L	181	Standard
	Zn	66	23732.9	1.1	**19.0745**	0.015	0.1	ug/L	215	Standard
>	Ge	72	523960.3	1.1				ug/L	520809	Standard
	As	75	1016.3	2.7	**0.8637**	0.031	3.5	ug/L	-52	Standard
	Se	82	21.9	9.7	**0.0461**	0.018	39.0	ug/L	17	Standard
	Se-1	77	60.7	6.2	**0.0211**	0.052	244.3	ug/L	56	Standard
>	Ga	71	1423.4	6.3				mg/L	25	Standard
	Rb	85	14632.1	2.4				ug/L	28	Standard
	Y	89	450617.7	0.3				ug/L	447395	Standard
>	Rh	103	8.3	69.3				ug/L	15	Standard
	Mo	98	554.2	6.5	**0.1661**	0.012	7.3	ug/L	113	Standard
	Ag	107	138.0	6.6	**0.0071**	0.001	19.2	ug/L	108	Standard
	Cd	111	114.3	13.8	**0.0491**	0.007	14.2	mg/L	3	Standard
	Cd	114	241.5	19.5	**0.0440**	0.009	19.7	ug/L	20	Standard
>	In	115	603273.3	0.3				ug/L	625728	Standard
	Sn	118	566.7	21.3	**0.0071**	0.019	272.0	ug/L	568	Standard
	Sb	123	143.4	25.7	**-0.0049**	0.007	148.6	ug/L	612	Standard
	Ba	135	23042.5	1.3	**10.9682**	0.165	1.5	ug/L	21	Standard
	Ce	140	67983.9	1.1				ug/L	245	Standard
>	Tb	159	906786.3	1.4				ug/L	950397	Standard
	Ho	165	761.7	6.0				ug/L	7	Standard
	Tl	203	182.7	10.3	**0.0207**	0.002	11.4	ug/L	15	Standard
	Tl	205	140.0	10.7	**0.0088**	0.002	22.7	ug/L	13	Standard
	Pb	206	16671.2	1.2	**3.0640**	0.050	1.6	ug/L	264	Standard
	Pb	207	13875.7	1.0	**2.8020**	0.007	0.2	ug/L	222	Standard
	Pb	208	60739.5	0.7	**3.0044**	0.029	1.0	ug/L	959	Standard
	U	238	1048.7	0.5	**0.1370**	0.000	0.3	ug/L	9	Standard
>	Bi	209	523858.2	0.8				ug/L	552821	Standard

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 18:25:03
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0		**0.0047**	0.001	24.2	mg/L	55	Standard
K	39	31.7	48.2	**-0.0079**	0.061	772.0	mg/L	28	Standard
Ca	43	26.7	92.5	**0.0138**	2.317	16826.1	mg/L	27	Standard
Fe	54	1768.8	1.5	**1.3016**	0.007	0.5	mg/L	147	Standard
Fe	57	735.0	6.2	**1.4753**	0.115	7.8	mg/L	268	Standard
> **Sc-1**	45	40783.2	1.8				mg/L	41174	Standard
Cl	35	69789.0	1.4				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1950.1	1.4				ug/L	1950	Standard
P	31	8389.0	2.9				ug/L	21156	Standard
S	34	3198.7	3.3				ug/L	3419	Standard
Sr	88	73.3	17.2				ug/L	72	Standard
C	12	130.0	27.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	17	Standard
Dy	164	1484.1	12.1				mg/L	16	Standard
Ho-1	165	761.7	6.0				mg/L	7	Standard
Er	166	820.0	8.5				mg/L	7	Standard
I	127	32808.8	1.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.485	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102
Report Date/Time: Friday, July 01, 2016 18:25:03
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.411
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.761
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102PS WG575057-01
Sample Date/Time: Friday, July 01, 2016 18:25:57
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68702.1	2.1				ug/L	76456	Standard
	Be	9	54558.1	0.5	**54.2325**	1.076	2.0	ug/L	20	Standard
	Al	27	435359.5	0.4	**2.8209**	0.068	2.4	ug/L	1307	Standard
	Sc	45	39865.7	0.5				ug/L	41174	Standard
	Ti	47	2435.2	3.0	**7.3862**	0.145	2.0	ug/L	27	Standard
	V	51	420388.1	0.9	**50.9256**	0.275	0.5	ug/L	1434	Standard
	Cr	52	419034.6	1.2	**50.8325**	0.081	0.2	ug/L	7733	Standard
	Cr	53	51908.8	1.8	**50.9245**	0.712	1.4	ug/L	442	Standard
	Mn	55	776755.3	1.1	**102.4737**	0.893	0.9	ug/L	723	Standard
	Co	59	378685.6	0.4	**49.3890**	0.417	0.8	ug/L	217	Standard
	Ni	60	108298.4	0.9	**52.0251**	0.585	1.1	ug/L	304	Standard
	Cu	65	113206.4	0.7	**55.3835**	0.277	0.5	ug/L	181	Standard
	Zn	66	96400.4	0.9	**78.4751**	0.327	0.4	ug/L	215	Standard
>	Ge	72	521011.3	1.1				ug/L	520809	Standard
	As	75	67285.7	0.6	**54.5295**	0.414	0.8	ug/L	-52	Standard
	Se	82	7236.2	0.6	**57.1362**	0.906	1.6	ug/L	17	Standard
	Se-1	77	4996.5	1.7	**57.7421**	0.807	1.4	ug/L	56	Standard
>	Ga	71	1458.4	7.9				mg/L	25	Standard
	Rb	85	14268.4	1.9				ug/L	28	Standard
	Y	89	451572.6	1.0				ug/L	447395	Standard
>	Rh	103	11.7	65.5				ug/L	15	Standard
	Mo	98	552.6	6.3	**0.1658**	0.011	6.4	ug/L	113	Standard
	Ag	107	351874.8	0.5	**50.8757**	0.454	0.9	ug/L	108	Standard
	Cd	111	117424.6	1.2	**52.9718**	0.394	0.7	mg/L	3	Standard
	Cd	114	288020.9	0.5	**52.4815**	0.298	0.6	ug/L	20	Standard
>	In	115	602467.1	0.7				ug/L	625728	Standard
	Sn	118	795.0	18.9	**0.0440**	0.023	53.3	ug/L	568	Standard
	Sb	123	215335.2	6.0	**43.2556**	2.906	6.7	ug/L	612	Standard
	Ba	135	125031.8	0.4	**59.6735**	0.233	0.4	ug/L	21	Standard
	Ce	140	66756.7	0.9				ug/L	245	Standard
>	Tb	159	900882.6	0.1				ug/L	950397	Standard
	Ho	165	808.4	8.4				ug/L	7	Standard
	Tl	203	420669.9	0.3	**49.6255**	0.118	0.2	ug/L	15	Standard
	Tl	205	380791.1	1.2	**50.5823**	0.852	1.7	ug/L	13	Standard
	Pb	206	285006.3	0.5	**53.2753**	0.097	0.2	ug/L	264	Standard
	Pb	207	249618.4	0.3	**51.3775**	0.277	0.5	ug/L	222	Standard
	Pb	208	1065809.7	0.5	**53.7118**	0.481	0.9	ug/L	959	Standard
	U	238	362717.7	0.5	**47.6544**	0.373	0.8	ug/L	9	Standard
>	Bi	209	521960.5	0.5				ug/L	552821	Standard

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 18:28:14
Page 1

Approved: July 02, 2016

Na	23	3.3	173.2	**10.3171**	17.861	173.1	mg/L	2	Standard
Mg	24	45.0	11.1	**-0.0059**	0.006	106.3	mg/L	55	Standard
K	39	41.7	36.7	**0.0338**	0.061	179.3	mg/L	28	Standard
Ca	43	31.7	39.7	**0.5190**	1.184	228.2	mg/L	27	Standard
Fe	54	1881.8	1.4	**1.4253**	0.028	2.0	mg/L	147	Standard
Fe	57	691.7	14.6	**1.3919**	0.331	23.7	mg/L	268	Standard
> **Sc-1**	45	39865.7	0.5				mg/L	41174	Standard
Cl	35	69700.6	0.3				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	2040.1	6.7				ug/L	1950	Standard
P	31	8364.0	2.5				ug/L	21156	Standard
S	34	3095.3	6.1				ug/L	3419	Standard
Sr	88	78.3	13.3				ug/L	72	Standard
C	12	143.3	45.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	76.7	27.2				mg/L	17	Standard
Dy	164	1201.3	2.6				mg/L	16	Standard
Ho-1	165	808.4	8.4				mg/L	7	Standard
Er	166	740.0	7.2				mg/L	7	Standard
I	127	33642.3	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.859	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 18:28:14
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.283
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.418
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606145102PS WG575057-01
Report Date/Time: Friday, July 01, 2016 18:28:14
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 18:29:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58021.1	45.4				ug/L	76456	Standard
	Be	9	6020.3	96.8	**8.3334**	6.673	80.1	ug/L	20	Standard
	Al	27	1011614.4	93.0	**9.3377**	7.369	78.9	ug/L	1307	Standard
	Sc	45	36951.3	31.6				ug/L	41174	Standard
	Ti	47	4070.2	92.8	**14.0397**	11.313	80.6	ug/L	27	Standard
	V	51	57472.3	77.9	**8.2250**	6.608	80.3	ug/L	1434	Standard
	Cr	52	54950.0	85.4	**6.7134**	5.707	85.0	ug/L	7733	Standard
	Cr	53	6442.1	89.3	**6.7802**	5.559	82.0	ug/L	442	Standard
	Mn	55	56604.6	81.4	**8.6926**	6.701	77.1	ug/L	723	Standard
	Co	59	53000.8	82.9	**8.1234**	6.317	77.8	ug/L	217	Standard
	Ni	60	12997.1	88.3	**6.9634**	5.472	78.6	ug/L	304	Standard
	Cu	65	12947.1	88.8	**7.1426**	5.586	78.2	ug/L	181	Standard
	Zn	66	7783.4	89.0	**6.9746**	5.495	78.8	ug/L	215	Standard
>	Ge	72	483616.6	27.5				ug/L	520809	Standard
	As	75	8453.5	94.9	**7.7122**	6.230	80.8	ug/L	-52	Standard
	Se	82	939.4	85.8	**8.3049**	6.310	76.0	ug/L	17	Standard
	Se-1	77	622.0	88.3	**7.4670**	6.184	82.8	ug/L	56	Standard
>	Ga	71	31.7	18.2				mg/L	25	Standard
	Rb	85	225.0	67.8				ug/L	28	Standard
	Y	89	466261.8	17.1				ug/L	447395	Standard
>	Rh	103	20.0	25.0				ug/L	15	Standard
	Mo	98	38601.8	81.6	**16.0710**	14.394	89.6	ug/L	113	Standard
	Ag	107	46584.8	78.1	**8.1335**	7.118	87.5	ug/L	108	Standard
	Cd	111	17137.6	87.9	**9.4386**	9.351	99.1	mg/L	3	Standard
	Cd	114	41205.7	85.8	**9.1450**	8.904	97.4	ug/L	20	Standard
>	In	115	568605.0	21.6				ug/L	625728	Standard
	Sn	118	45202.2	81.7	**8.7560**	8.318	95.0	ug/L	568	Standard
	Sb	123	37304.6	74.8	**8.9935**	7.626	84.8	ug/L	612	Standard
	Ba	135	15451.6	84.3	**8.9549**	8.599	96.0	ug/L	21	Standard
	Ce	140	933.4	35.7				ug/L	245	Standard
>	Tb	159	834241.1	25.5				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	59816.1	84.3	**8.9067**	8.400	94.3	ug/L	15	Standard
	Tl	205	54932.9	85.7	**9.2244**	8.777	95.1	ug/L	13	Standard
	Pb	206	36885.4	75.9	**8.5933**	7.372	85.8	ug/L	264	Standard
	Pb	207	34161.2	77.5	**8.7804**	7.649	87.1	ug/L	222	Standard
	Pb	208	153924.2	83.6	**9.7508**	9.146	93.8	ug/L	959	Standard
	U	238	54480.0	85.8	**9.0581**	8.618	95.1	ug/L	9	Standard
>	Bi	209	483651.3	25.0				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 18:31:27
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	588.3	82.1	**0.7880**	0.634	80.5	mg/L	55	Standard
K	39	178.3	67.8	**0.7306**	0.604	82.7	mg/L	28	Standard
Ca	43	45.0	40.1	**2.8887**	3.750	129.8	mg/L	27	Standard
Fe	54	989.8	78.7	**0.8883**	0.763	85.9	mg/L	147	Standard
Fe	57	551.7	36.3	**1.2806**	1.046	81.6	mg/L	268	Standard
> **Sc-1**	45	36951.3	31.6				mg/L	41174	Standard
Cl	35	32002.2	14.3				ug/L	69550	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	793.4	7.2				ug/L	1950	Standard
P	31	12486.0	48.7				ug/L	21156	Standard
S	34	1356.7	20.0				ug/L	3419	Standard
Sr	88	81.7	21.5				ug/L	72	Standard
C	12	106.7	35.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	246.7	83.3				mg/L	17	Standard
Dy	164	12.1	44.0				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	7	Standard
I	127	4540.7	35.1				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	16.667		
	Al	27	18.675		
	Sc	45			
	Ti	47	14.040		
	V	51	16.450		
	Cr	52	13.427		
	Cr	53			
	Mn	55	17.385		
	Co	59	16.247		
	Ni	60	13.927		
	Cu	65	14.285		
	Zn	66	13.949		
>	Ge	72		92.859	
	As	75	15.424		
	Se	82	16.610		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 18:31:27
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	16.071		
Ag	107	16.267		
Cd	111	18.877		
Cd	114			
> In	115			90.871
Sn	118	17.512		
Sb	123	17.987		
Ba	135	17.910		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	17.813		
Tl	205			
Pb	206			
Pb	207			
Pb	208	19.502		
U	238	18.116		
> Bi	209			87.488
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Ti	47	

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 18:31:27
Page 3

Approved: July 02, 2016

QC Std 6	V	51
QC Std 6	Cr	52
QC Std 6	Mn	55
QC Std 6	Co	59
QC Std 6	Ni	60
QC Std 6	Cu	65
QC Std 6	Zn	66
QC Std 6	As	75
QC Std 6	Se	82
QC Std 6	Mo	98
QC Std 6	Ag	107
QC Std 6	Cd	111
QC Std 6	Sb	123
QC Std 6	Ba	135
QC Std 6	Tl	203
QC Std 6	Pb	208
QC Std 6	U	238

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 18:32:22
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73071.2	5.8				ug/L	76456	Standard
	Be	9	8.3	34.6	**-0.0120**	0.003	24.3	ug/L	20	Standard
	Al	27	2066.8	22.2	**0.0025**	0.003	126.6	ug/L	1307	Standard
	Sc	45	38902.0	12.0				ug/L	41174	Standard
	Ti	47	28.7	14.1	**0.0029**	0.006	212.7	ug/L	27	Standard
	V	51	892.2	10.9	**-0.0904**	0.007	8.2	ug/L	1434	Standard
	Cr	52	3594.8	10.0	**-0.5264**	0.046	8.8	ug/L	7733	Standard
	Cr	53	233.3	24.1	**-0.1899**	0.023	11.9	ug/L	442	Standard
	Mn	55	789.0	24.3	**0.0021**	0.023	1087.1	ug/L	723	Standard
	Co	59	303.0	15.4	**0.0101**	0.007	68.9	ug/L	217	Standard
	Ni	60	205.0	9.3	**-0.0541**	0.015	27.0	ug/L	304	Standard
	Cu	65	106.0	5.3	**-0.0215**	0.011	50.6	ug/L	181	Standard
	Zn	66	184.7	6.5	**-0.0287**	0.024	81.9	ug/L	215	Standard
>	**Ge**	72	527063.8	18.3				ug/L	520809	Standard
	As	75	45.7	91.0	**0.0818**	0.037	44.8	ug/L	-52	Standard
	Se	82	44.8	44.7	**0.2236**	0.160	71.7	ug/L	17	Standard
	Se-1	77	43.0	11.6	**-0.1831**	0.048	26.1	ug/L	56	Standard
>	**Ga**	71	36.7	7.9				mg/L	25	Standard
	Rb	85	58.3	40.5				ug/L	28	Standard
	Y	89	504597.8	24.2				ug/L	447395	Standard
>	**Rh**	103	18.3	83.3				ug/L	15	Standard
	Mo	98	262.6	10.7	**0.0552**	0.011	19.4	ug/L	113	Standard
	Ag	107	185.3	19.2	**0.0107**	0.005	48.4	ug/L	108	Standard
	Cd	111	28.5	36.7	**0.0089**	0.004	43.7	mg/L	3	Standard
	Cd	114	81.6	56.2	**0.0129**	0.006	47.4	ug/L	20	Standard
>	**In**	115	700695.8	22.4				ug/L	625728	Standard
	Sn	118	6341.5	38.7	**0.7820**	0.237	30.3	ug/L	568	Standard
	Sb	123	763.9	43.6	**0.0944**	0.040	42.0	ug/L	612	Standard
	Ba	135	62.7	16.0	**0.0082**	0.003	42.5	ug/L	21	Standard
	Ce	140	145.0	79.5				ug/L	245	Standard
>	**Tb**	159	1042763.2	15.4				ug/L	950397	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	182.0	22.0	**0.0180**	0.002	11.1	ug/L	15	Standard
	Tl	205	148.3	9.7	**0.0076**	0.002	25.0	ug/L	13	Standard
	Pb	206	414.0	16.3	**0.0241**	0.004	18.3	ug/L	264	Standard
	Pb	207	348.0	9.0	**0.0172**	0.006	37.6	ug/L	222	Standard
	Pb	208	1430.4	10.4	**0.0153**	0.006	41.0	ug/L	959	Standard
	U	238	124.7	10.8	**0.0142**	0.002	12.8	ug/L	9	Standard
>	**Bi**	209	596038.7	14.4				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 18:34:39
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	26.7	65.8	**-0.0280**	0.021	73.8	mg/L	55	Standard
K	39	30.0	60.1	**-0.0132**	0.067	507.4	mg/L	28	Standard
Ca	43	28.3	10.2	**0.2774**	0.122	44.0	mg/L	27	Standard
Fe	54	104.6	43.7	**-0.0136**	0.033	242.5	mg/L	147	Standard
Fe	57	286.7	7.0	**0.1321**	0.048	36.6	mg/L	268	Standard
> **Sc-1**	45	38902.0	12.0				mg/L	41174	Standard
Cl	35	29524.2	6.8				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	630.0	34.9				ug/L	1950	Standard
P	31	11456.4	38.3				ug/L	21156	Standard
S	34	1375.1	3.3				ug/L	3419	Standard
Sr	88	53.3	37.9				ug/L	72	Standard
C	12	66.7	48.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	77.5				mg/L	17	Standard
Dy	164	13.0	179.6				mg/L	16	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	2638.6	27.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.201	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 18:34:39
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	111.981	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.818	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sn	118	

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 18:34:39
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 18:35:35
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62174.0	2.2				ug/L	76456	Standard
	Be	9	20.0	25.0	**0.0022**	0.006	269.5	ug/L	20	Standard
	Al	27	84546.9	0.4	**0.5973**	0.011	1.9	ug/L	1307	Standard
	Sc	45	38149.7	3.1				ug/L	41174	Standard
	Ti	47	483.3	4.9	**1.4725**	0.081	5.5	ug/L	27	Standard
	V	51	4248.5	1.3	**0.3438**	0.006	1.8	ug/L	1434	Standard
	Cr	52	8109.2	1.0	**0.0820**	0.013	16.2	ug/L	7733	Standard
	Cr	53	496.7	23.7	**0.0992**	0.125	126.0	ug/L	442	Standard
	Mn	55	78567.9	0.9	**10.7900**	0.016	0.2	ug/L	723	Standard
	Co	59	1117.0	0.8	**0.1236**	0.000	0.1	ug/L	217	Standard
	Ni	60	775.4	3.9	**0.2391**	0.018	7.4	ug/L	304	Standard
	Cu	65	1369.4	4.4	**0.6302**	0.035	5.5	ug/L	181	Standard
	Zn	66	5157.9	1.7	**4.2377**	0.083	2.0	ug/L	215	Standard
>	Ge	72	496310.3	0.7				ug/L	520809	Standard
	As	75	145.9	13.8	**0.1691**	0.016	9.6	ug/L	-52	Standard
	Se	82	21.4	35.8	**0.0511**	0.064	125.1	ug/L	17	Standard
	Se-1	77	46.7	8.7	**-0.1116**	0.053	47.6	ug/L	56	Standard
>	Ga	71	255.0	16.8				mg/L	25	Standard
	Rb	85	2703.6	4.1				ug/L	28	Standard
	Y	89	417509.6	1.1				ug/L	447395	Standard
>	Rh	103	16.7	69.3				ug/L	15	Standard
	Mo	98	345.0	36.3	**0.1002**	0.045	45.1	ug/L	113	Standard
	Ag	107	125.3	22.2	**0.0061**	0.004	68.7	ug/L	108	Standard
	Cd	111	34.3	46.4	**0.0139**	0.008	54.2	mg/L	3	Standard
	Cd	114	42.7	17.1	**0.0082**	0.001	17.1	ug/L	20	Standard
>	In	115	575196.5	0.1				ug/L	625728	Standard
	Sn	118	706.7	42.9	**0.0352**	0.051	145.6	ug/L	568	Standard
	Sb	123	527.1	13.9	**0.0772**	0.015	20.0	ug/L	612	Standard
	Ba	135	4163.9	5.4	**2.0642**	0.113	5.5	ug/L	21	Standard
	Ce	140	7787.1	30.7				ug/L	245	Standard
>	Tb	159	864381.3	0.7				ug/L	950397	Standard
	Ho	165	85.0	63.6				ug/L	7	Standard
	Tl	203	83.3	41.3	**0.0096**	0.004	45.0	ug/L	15	Standard
	Tl	205	73.3	55.1	**0.0005**	0.006	1188.2	ug/L	13	Standard
	Pb	206	2545.5	9.1	**0.4551**	0.047	10.4	ug/L	264	Standard
	Pb	207	2088.8	9.3	**0.4046**	0.043	10.7	ug/L	222	Standard
	Pb	208	9232.8	9.4	**0.4395**	0.047	10.7	ug/L	959	Standard
	U	238	222.7	20.7	**0.0304**	0.006	21.2	ug/L	9	Standard
>	Bi	209	498353.7	0.7				ug/L	552821	Standard

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 18:37:52
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.2196**	9.032	173.0	mg/L	2	Standard
Mg	24	50.0	30.0	**0.0033**	0.021	637.4	mg/L	55	Standard
K	39	31.7	32.9	**-0.0007**	0.041	5467.5	mg/L	28	Standard
Ca	43	28.3	50.9	**0.3254**	1.410	433.3	mg/L	27	Standard
Fe	54	321.0	6.6	**0.1731**	0.021	12.0	mg/L	147	Standard
Fe	57	343.3	20.8	**0.3318**	0.218	65.6	mg/L	268	Standard
> **Sc-1**	45	38149.7	3.1				mg/L	41174	Standard
Cl	35	66614.8	2.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1683.4	14.0				ug/L	1950	Standard
P	31	6868.2	3.4				ug/L	21156	Standard
S	34	2993.6	2.7				ug/L	3419	Standard
Sr	88	78.3	16.1				ug/L	72	Standard
C	12	60.0					mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	190.0	34.5				mg/L	17	Standard
Dy	164	136.6	41.3				mg/L	16	Standard
Ho-1	165	85.0	63.6				mg/L	7	Standard
Er	166	140.0	70.3				mg/L	7	Standard
I	127	27162.7	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.320	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.296	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 18:37:52
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.924
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.147
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145102SDL WG575057-02
Report Date/Time: Friday, July 01, 2016 18:37:52
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Friday, July 01, 2016 18:38:46
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63245.1	2.3				ug/L	76456	Standard
	Be	9	45.0	29.4	**0.0289**	0.015	52.5	ug/L	20	Standard
	Al	27	154217.6	1.4	**1.0792**	0.028	2.6	ug/L	1307	Standard
	Sc	45	38011.0	1.7				ug/L	41174	Standard
	Ti	47	1647.1	2.7	**5.2249**	0.166	3.2	ug/L	27	Standard
	V	51	10217.6	1.1	**1.1067**	0.009	0.8	ug/L	1434	Standard
	Cr	52	13566.7	1.7	**0.7914**	0.021	2.7	ug/L	7733	Standard
	Cr	53	1203.4	4.0	**0.8334**	0.047	5.6	ug/L	442	Standard
	Mn	55	179485.2	0.5	**24.7976**	0.092	0.4	ug/L	723	Standard
	Co	59	2042.5	2.9	**0.2506**	0.009	3.7	ug/L	217	Standard
	Ni	60	1701.1	1.2	**0.7078**	0.006	0.9	ug/L	304	Standard
	Cu	65	2602.9	0.6	**1.2654**	0.012	0.9	ug/L	181	Standard
	Zn	66	13566.1	2.3	**11.4481**	0.299	2.6	ug/L	215	Standard
>	Ge	72	495954.1	0.5				ug/L	520809	Standard
	As	75	526.1	8.4	**0.4926**	0.036	7.4	ug/L	-52	Standard
	Se	82	19.2	20.2	**0.0327**	0.031	96.0	ug/L	17	Standard
	Se-1	77	60.7	19.3	**0.0602**	0.141	233.6	ug/L	56	Standard
>	Ga	71	858.4	5.0				mg/L	25	Standard
	Rb	85	6271.3	6.6				ug/L	28	Standard
	Y	89	419752.0	1.1				ug/L	447395	Standard
>	Rh	103	16.7	45.8				ug/L	15	Standard
	Mo	98	384.6	7.0	**0.1144**	0.010	8.4	ug/L	113	Standard
	Ag	107	109.3	5.4	**0.0037**	0.001	23.4	ug/L	108	Standard
	Cd	111	94.6	7.9	**0.0424**	0.003	8.2	mg/L	3	Standard
	Cd	114	251.8	5.8	**0.0481**	0.003	5.6	ug/L	20	Standard
>	In	115	575203.1	0.2				ug/L	625728	Standard
	Sn	118	680.0	22.3	**0.0307**	0.025	82.8	ug/L	568	Standard
	Sb	123	333.6	22.9	**0.0365**	0.016	43.9	ug/L	612	Standard
	Ba	135	10023.6	1.9	**4.9942**	0.091	1.8	ug/L	21	Standard
	Ce	140	48280.1	1.0				ug/L	245	Standard
>	Tb	159	860542.4	0.9				ug/L	950397	Standard
	Ho	165	373.3	17.4				ug/L	7	Standard
	Tl	203	98.7	6.5	**0.0114**	0.001	7.5	ug/L	15	Standard
	Tl	205	111.7	22.1	**0.0057**	0.003	56.6	ug/L	13	Standard
	Pb	206	31345.7	1.0	**6.0875**	0.078	1.3	ug/L	264	Standard
	Pb	207	25979.9	0.2	**5.5497**	0.058	1.0	ug/L	222	Standard
	Pb	208	113055.9	0.8	**5.9143**	0.107	1.8	ug/L	959	Standard
	U	238	480.3	2.8	**0.0657**	0.001	2.2	ug/L	9	Standard
>	Bi	209	499251.2	1.0				ug/L	552821	Standard

Sample ID: L1606145103
Report Date/Time: Friday, July 01, 2016 18:41:03
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	6.2	**-0.0011**	0.005	417.9	mg/L	55	Standard
K	39	40.0	50.0	**0.0355**	0.084	236.7	mg/L	28	Standard
Ca	43	20.0	43.3	**-0.4832**	0.857	177.3	mg/L	27	Standard
Fe	54	979.0	3.0	**0.7328**	0.021	2.8	mg/L	147	Standard
Fe	57	456.7	4.4	**0.7168**	0.091	12.6	mg/L	268	Standard
Sc-1	45	38011.0	1.7				mg/L	41174	Standard
Cl	35	67610.5	0.8				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1716.8	12.9				ug/L	1950	Standard
P	31	8008.8	5.2				ug/L	21156	Standard
S	34	2928.6	6.6				ug/L	3419	Standard
Sr	88	71.7	26.4				ug/L	72	Standard
C	12	106.7	54.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	68.6				mg/L	17	Standard
Dy	164	644.2	14.1				mg/L	16	Standard
Ho-1	165	373.3	17.4				mg/L	7	Standard
Er	166	400.0	22.2				mg/L	7	Standard
I	127	30482.3	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.721	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.228	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145103
Report Date/Time: Friday, July 01, 2016 18:41:03
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.925
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.310
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Friday, July 01, 2016 18:41:58
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63385.7	2.2				ug/L	76456	Standard
	Be	9	50.0	26.5	**0.0338**	0.013	38.3	ug/L	20	Standard
	Al	27	725235.3	1.5	**5.1021**	0.166	3.3	ug/L	1307	Standard
	Sc	45	39148.9	2.8				ug/L	41174	Standard
	Ti	47	1767.4	1.7	**5.5568**	0.163	2.9	ug/L	27	Standard
	V	51	9435.8	2.3	**0.9951**	0.038	3.8	ug/L	1434	Standard
	Cr	52	13141.4	0.9	**0.7193**	0.019	2.6	ug/L	7733	Standard
	Cr	53	1133.4	1.8	**0.7491**	0.025	3.3	ug/L	442	Standard
	Mn	55	184948.0	0.3	**25.3023**	0.378	1.5	ug/L	723	Standard
	Co	59	2891.6	3.9	**0.3629**	0.009	2.4	ug/L	217	Standard
	Ni	60	1981.8	1.1	**0.8399**	0.007	0.8	ug/L	304	Standard
	Cu	65	2972.3	0.4	**1.4404**	0.025	1.7	ug/L	181	Standard
	Zn	66	14124.9	1.1	**11.8061**	0.091	0.8	ug/L	215	Standard
>	**Ge**	72	500981.4	1.8				ug/L	520809	Standard
	As	75	525.3	4.0	**0.4878**	0.024	5.0	ug/L	-52	Standard
	Se	82	27.2	11.1	**0.0974**	0.029	29.5	ug/L	17	Standard
	Se-1	77	60.0	10.4	**0.0461**	0.088	191.5	ug/L	56	Standard
>	**Ga**	71	815.0	2.8				mg/L	25	Standard
	Rb	85	6224.6	2.3				ug/L	28	Standard
	Y	89	425374.4	1.5				ug/L	447395	Standard
>	**Rh**	103	25.0	40.0				ug/L	15	Standard
	Mo	98	520.6	8.2	**0.1605**	0.013	8.3	ug/L	113	Standard
	Ag	107	111.7	7.6	**0.0038**	0.001	37.5	ug/L	108	Standard
	Cd	111	92.7	8.2	**0.0408**	0.003	7.6	mg/L	3	Standard
	Cd	114	200.3	11.6	**0.0377**	0.005	12.6	ug/L	20	Standard
>	**In**	115	583569.6	1.1				ug/L	625728	Standard
	Sn	118	673.3	18.0	**0.0279**	0.019	69.1	ug/L	568	Standard
	Sb	123	316.8	22.4	**0.0319**	0.014	44.3	ug/L	612	Standard
	Ba	135	10430.3	1.6	**5.1226**	0.027	0.5	ug/L	21	Standard
	Ce	140	51980.7	2.3				ug/L	245	Standard
>	**Tb**	159	866344.8	1.0				ug/L	950397	Standard
	Ho	165	438.3	11.9				ug/L	7	Standard
	Tl	203	128.0	6.4	**0.0149**	0.001	5.7	ug/L	15	Standard
	Tl	205	108.3	13.3	**0.0051**	0.002	35.3	ug/L	13	Standard
	Pb	206	26433.4	1.2	**5.0710**	0.132	2.6	ug/L	264	Standard
	Pb	207	22121.5	0.6	**4.6673**	0.113	2.4	ug/L	222	Standard
	Pb	208	95760.1	0.8	**4.9468**	0.074	1.5	ug/L	959	Standard
	U	238	579.3	5.3	**0.0785**	0.005	6.6	ug/L	9	Standard
>	**Bi**	209	504799.5	1.9				ug/L	552821	Standard

Sample ID: L1606145104
Report Date/Time: Friday, July 01, 2016 18:44:14
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.2809**	9.138	173.0	mg/L	2	Standard
Mg	24	46.7	27.0	**-0.0030**	0.014	461.6	mg/L	55	Standard
K	39	46.7	6.2	**0.0571**	0.014	24.3	mg/L	28	Standard
Ca	43	46.7	16.4	**2.0216**	0.845	41.8	mg/L	27	Standard
Fe	54	948.7	5.1	**0.6833**	0.021	3.0	mg/L	147	Standard
Fe	57	496.7	2.9	**0.8012**	0.035	4.4	mg/L	268	Standard
> **Sc-1**	45	39148.9	2.8				mg/L	41174	Standard
Cl	35	69866.8	2.4				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1733.4	3.8				ug/L	1950	Standard
P	31	8088.8	1.5				ug/L	21156	Standard
S	34	3277.0	4.5				ug/L	3419	Standard
Sr	88	95.0	27.9				ug/L	72	Standard
C	12	93.3	49.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	709.7	12.9				mg/L	16	Standard
Ho-1	165	438.3	11.9				mg/L	7	Standard
Er	166	493.3	16.5				mg/L	7	Standard
I	127	31300.6	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.193	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145104
Report Date/Time: Friday, July 01, 2016 18:44:14
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.263
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.313
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Friday, July 01, 2016 18:45:09
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64614.2	2.4				ug/L	76456	Standard
	Be	9	185.0	11.8	**0.1761**	0.027	15.5	ug/L	20	Standard
	Al	27	102955.3	1.3	**0.7016**	0.016	2.3	ug/L	1307	Standard
	Sc	45	38894.9	1.6				ug/L	41174	Standard
	Ti	47	5095.2	2.9	**16.0563**	0.595	3.7	ug/L	27	Standard
	V	51	12093.5	2.4	**1.3198**	0.050	3.8	ug/L	1434	Standard
	Cr	52	18515.6	1.7	**1.3928**	0.062	4.4	ug/L	7733	Standard
	Cr	53	1865.1	14.6	**1.4862**	0.264	17.8	ug/L	442	Standard
	Mn	55	32921.4	0.8	**4.3867**	0.071	1.6	ug/L	723	Standard
	Co	59	1608.8	2.8	**0.1873**	0.008	4.3	ug/L	217	Standard
	Ni	60	1860.4	4.4	**0.7722**	0.043	5.6	ug/L	304	Standard
	Cu	65	2193.8	2.2	**1.0354**	0.028	2.7	ug/L	181	Standard
	Zn	66	9716.8	1.5	**8.0047**	0.192	2.4	ug/L	215	Standard
>	**Ge**	72	504722.0	1.0				ug/L	520809	Standard
	As	75	1470.5	3.8	**1.2746**	0.057	4.4	ug/L	-52	Standard
	Se	82	28.8	14.7	**0.1088**	0.036	32.9	ug/L	17	Standard
	Se-1	77	55.7	13.5	**-0.0132**	0.085	641.5	ug/L	56	Standard
>	**Ga**	71	1173.4	4.0				mg/L	25	Standard
	Rb	85	5657.7	5.6				ug/L	28	Standard
	Y	89	430091.6	2.7				ug/L	447395	Standard
>	**Rh**	103	10.0	100.0				ug/L	15	Standard
	Mo	98	330.9	6.7	**0.0921**	0.006	6.8	ug/L	113	Standard
	Ag	107	127.3	16.8	**0.0060**	0.003	57.0	ug/L	108	Standard
	Cd	111	132.1	1.6	**0.0585**	0.002	2.8	mg/L	3	Standard
	Cd	114	337.6	10.3	**0.0629**	0.007	11.3	ug/L	20	Standard
>	**In**	115	589920.6	1.4				ug/L	625728	Standard
	Sn	118	773.4	25.8	**0.0430**	0.031	72.7	ug/L	568	Standard
	Sb	123	374.2	12.0	**0.0430**	0.008	19.0	ug/L	612	Standard
	Ba	135	10208.8	2.5	**4.9590**	0.061	1.2	ug/L	21	Standard
	Ce	140	28101.1	3.0				ug/L	245	Standard
>	**Tb**	159	866375.5	1.2				ug/L	950397	Standard
	Ho	165	575.0	13.6				ug/L	7	Standard
	Tl	203	486.0	6.3	**0.0582**	0.003	5.7	ug/L	15	Standard
	Tl	205	386.7	8.6	**0.0431**	0.004	8.7	ug/L	13	Standard
	Pb	206	15320.4	2.2	**2.9057**	0.025	0.9	ug/L	264	Standard
	Pb	207	12702.3	2.1	**2.6467**	0.028	1.1	ug/L	222	Standard
	Pb	208	55482.0	1.8	**2.8316**	0.013	0.4	ug/L	959	Standard
	U	238	430.7	1.5	**0.0580**	0.000	0.2	ug/L	9	Standard
>	**Bi**	209	507193.8	1.5				ug/L	552821	Standard

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 18:47:26
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.2063**	9.009	173.0	mg/L	2	Standard
Mg	24	56.7	27.0	**0.0097**	0.018	185.7	mg/L	55	Standard
K	39	65.0	33.5	**0.1320**	0.085	64.4	mg/L	28	Standard
Ca	43	21.7	13.3	**-0.3705**	0.255	68.8	mg/L	27	Standard
Fe	54	1363.7	6.4	**1.0335**	0.073	7.1	mg/L	147	Standard
Fe	57	556.7	6.9	**1.0056**	0.095	9.5	mg/L	268	Standard
Sc-1	45	38894.9	1.6				mg/L	41174	Standard
Cl	35	69609.5	0.8				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	1780.1	1.7				ug/L	1950	Standard
P	31	8205.6	2.3				ug/L	21156	Standard
S	34	3335.4	2.7				ug/L	3419	Standard
Sr	88	61.7	20.4				ug/L	72	Standard
C	12	93.3	6.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	17	Standard
Dy	164	880.2	8.3				mg/L	16	Standard
Ho-1	165	575.0	13.6				mg/L	7	Standard
Er	166	553.3	3.8				mg/L	7	Standard
I	127	31464.3	3.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		84.512	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.911	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145105
Report Date/Time: Friday, July 01, 2016 18:47:26
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.277
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.747
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145106 WG574521-02
Sample Date/Time: Friday, July 01, 2016 18:48:21
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64025.1	3.2				ug/L	76456	Standard
	Be	9	150.0	10.0	**0.1401**	0.015	10.9	ug/L	20	Standard
	Al	27	373954.4	3.8	**2.6005**	0.138	5.3	ug/L	1307	Standard
	Sc	45	39992.7	0.8				ug/L	41174	Standard
	Ti	47	2911.6	0.9	**9.0743**	0.125	1.4	ug/L	27	Standard
	V	51	51458.1	1.3	**6.2169**	0.098	1.6	ug/L	1434	Standard
	Cr	52	21030.6	1.9	**1.6951**	0.060	3.5	ug/L	7733	Standard
	Cr	53	2078.5	6.6	**1.6910**	0.147	8.7	ug/L	442	Standard
	Mn	55	214722.6	3.4	**28.9695**	1.071	3.7	ug/L	723	Standard
	Co	59	3170.7	6.3	**0.3948**	0.028	7.2	ug/L	217	Standard
	Ni	60	4965.8	2.8	**2.2998**	0.080	3.5	ug/L	304	Standard
	Cu	65	11632.1	2.0	**5.7677**	0.126	2.2	ug/L	181	Standard
	Zn	66	12643.6	1.6	**10.3959**	0.197	1.9	ug/L	215	Standard
>	**Ge**	72	508214.5	0.5				ug/L	520809	Standard
	As	75	1760.7	0.9	**1.5067**	0.007	0.5	ug/L	-52	Standard
	Se	82	70.2	4.5	**0.4430**	0.026	5.8	ug/L	17	Standard
	Se-1	77	108.3	3.0	**0.6142**	0.044	7.2	ug/L	56	Standard
>	**Ga**	71	1403.4	6.8				mg/L	25	Standard
	Rb	85	5152.5	5.6				ug/L	28	Standard
	Y	89	465204.1	0.9				ug/L	447395	Standard
>	**Rh**	103	8.3	34.6				ug/L	15	Standard
	Mo	98	986.2	8.1	**0.3241**	0.024	7.4	ug/L	113	Standard
	Ag	107	197.7	29.4	**0.0165**	0.008	50.2	ug/L	108	Standard
	Cd	111	516.3	5.7	**0.2371**	0.011	4.7	mg/L	3	Standard
	Cd	114	1344.3	1.8	**0.2519**	0.006	2.5	ug/L	20	Standard
>	**In**	115	585874.6	1.3				ug/L	625728	Standard
	Sn	118	588.3	39.7	**0.0131**	0.038	286.1	ug/L	568	Standard
	Sb	123	350.0	28.7	**0.0385**	0.020	51.5	ug/L	612	Standard
	Ba	135	28617.3	1.6	**14.0306**	0.052	0.4	ug/L	21	Standard
	Ce	140	147578.6	1.0				ug/L	245	Standard
>	**Tb**	159	879044.3	0.3				ug/L	950397	Standard
	Ho	165	3460.4	5.6				ug/L	7	Standard
	Tl	203	284.7	28.0	**0.0338**	0.010	29.0	ug/L	15	Standard
	Tl	205	251.7	41.0	**0.0246**	0.014	57.8	ug/L	13	Standard
	Pb	206	17853.2	2.3	**3.3893**	0.091	2.7	ug/L	264	Standard
	Pb	207	14882.6	2.2	**3.1053**	0.081	2.6	ug/L	222	Standard
	Pb	208	65337.9	2.2	**3.3392**	0.088	2.6	ug/L	959	Standard
	U	238	2254.5	5.6	**0.3042**	0.018	6.0	ug/L	9	Standard
>	**Bi**	209	507833.7	0.4				ug/L	552821	Standard

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 18:50:37
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.0936**	8.814	173.0	mg/L	2	Standard
Mg	24	113.3	21.8	**0.0760**	0.029	37.9	mg/L	55	Standard
K	39	38.3	27.2	**0.0199**	0.040	200.6	mg/L	28	Standard
Ca	43	53.3	27.1	**2.5349**	1.339	52.8	mg/L	27	Standard
Fe	54	2059.6	7.3	**1.5638**	0.117	7.5	mg/L	147	Standard
Fe	57	870.0	4.0	**1.9479**	0.099	5.1	mg/L	268	Standard
> **Sc-1**	45	39992.7	0.8				mg/L	41174	Standard
Cl	35	70901.6	2.0				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2260.2	4.2				ug/L	1950	Standard
P	31	8212.2	3.0				ug/L	21156	Standard
S	34	3600.4	1.9				ug/L	3419	Standard
Sr	88	90.0	9.6				ug/L	72	Standard
C	12	176.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	40.0				mg/L	17	Standard
Dy	164	5100.9	5.6				mg/L	16	Standard
Ho-1	165	3460.4	5.6				mg/L	7	Standard
Er	166	3200.3	6.8				mg/L	7	Standard
I	127	34541.0	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.741	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.582	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145106 WG574521-02
Report Date/Time: Friday, July 01, 2016 18:50:37
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.631
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.862
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Friday, July 01, 2016 18:51:32
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64661.0	1.8				ug/L	76456	Standard
	Be	9	435.0	25.2	**0.4383**	0.108	24.7	ug/L	20	Standard
	Al	27	688124.2	2.3	**4.7442**	0.162	3.4	ug/L	1307	Standard
	Sc	45	39658.5	2.4				ug/L	41174	Standard
	Ti	47	13864.7	2.7	**43.2019**	1.047	2.4	ug/L	27	Standard
	V	51	37809.2	1.4	**4.4801**	0.052	1.2	ug/L	1434	Standard
	Cr	52	41323.6	2.8	**4.2278**	0.133	3.1	ug/L	7733	Standard
	Cr	53	4789.1	2.3	**4.4030**	0.102	2.3	ug/L	442	Standard
	Mn	55	173827.6	1.4	**23.2563**	0.280	1.2	ug/L	723	Standard
	Co	59	5908.8	1.9	**0.7552**	0.015	2.0	ug/L	217	Standard
	Ni	60	5550.3	1.2	**2.5679**	0.031	1.2	ug/L	304	Standard
	Cu	65	7217.7	3.4	**3.5237**	0.120	3.4	ug/L	181	Standard
	Zn	66	24798.3	1.6	**20.4085**	0.308	1.5	ug/L	215	Standard
>	Ge	72	512004.2	0.3				ug/L	520809	Standard
	As	75	8113.7	1.3	**6.7304**	0.082	1.2	ug/L	-52	Standard
	Se	82	47.8	17.9	**0.2581**	0.069	26.7	ug/L	17	Standard
	Se-1	77	78.3	7.5	**0.2474**	0.068	27.6	ug/L	56	Standard
>	Ga	71	2850.3	1.2				mg/L	25	Standard
	Rb	85	22646.9	3.8				ug/L	28	Standard
	Y	89	456860.0	1.6				ug/L	447395	Standard
>	Rh	103	15.0	57.7				ug/L	15	Standard
	Mo	98	1709.2	2.3	**0.5713**	0.010	1.8	ug/L	113	Standard
	Ag	107	176.7	8.5	**0.0131**	0.002	17.8	ug/L	108	Standard
	Cd	111	527.4	1.5	**0.2390**	0.005	2.0	mg/L	3	Standard
	Cd	114	1273.9	8.3	**0.2354**	0.018	7.7	ug/L	20	Standard
>	In	115	594063.6	0.5				ug/L	625728	Standard
	Sn	118	725.0	18.7	**0.0344**	0.022	63.4	ug/L	568	Standard
	Sb	123	399.2	21.2	**0.0476**	0.017	35.7	ug/L	612	Standard
	Ba	135	25921.5	1.4	**12.5319**	0.140	1.1	ug/L	21	Standard
	Ce	140	84609.0	2.8				ug/L	245	Standard
>	Tb	159	884122.7	1.5				ug/L	950397	Standard
	Ho	165	1811.8	3.2				ug/L	7	Standard
	Tl	203	2382.2	2.0	**0.2851**	0.004	1.5	ug/L	15	Standard
	Tl	205	2155.2	0.8	**0.2815**	0.002	0.8	ug/L	13	Standard
	Pb	206	34780.5	0.5	**6.5761**	0.037	0.6	ug/L	264	Standard
	Pb	207	29105.6	0.4	**6.0542**	0.048	0.8	ug/L	222	Standard
	Pb	208	126449.0	1.6	**6.4404**	0.086	1.3	ug/L	959	Standard
	U	238	1711.1	3.8	**0.2285**	0.010	4.3	ug/L	9	Standard
>	Bi	209	513045.7	0.5				ug/L	552821	Standard

Sample ID: L1606145107
Report Date/Time: Friday, July 01, 2016 18:53:49
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	66.7	21.7	**0.0208**	0.018	87.5	mg/L	55	Standard
K	39	66.7	33.8	**0.1333**	0.086	64.5	mg/L	28	Standard
Ca	43	33.3	8.7	**0.6944**	0.305	44.0	mg/L	27	Standard
Fe	54	5014.4	0.7	**3.9857**	0.129	3.2	mg/L	147	Standard
Fe	57	1586.7	5.6	**4.2576**	0.247	5.8	mg/L	268	Standard
> **Sc-1**	45	39658.5	2.4				mg/L	41174	Standard
Cl	35	72080.4	1.0				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	1970.1	9.5				ug/L	1950	Standard
P	31	8810.9	5.8				ug/L	21156	Standard
S	34	3717.1	6.6				ug/L	3419	Standard
Sr	88	71.7	22.4				ug/L	72	Standard
C	12	120.0	16.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	13.3				mg/L	17	Standard
Dy	164	2375.7	6.5				mg/L	16	Standard
Ho-1	165	1811.8	3.2				mg/L	7	Standard
Er	166	1693.4	3.3				mg/L	7	Standard
I	127	32022.1	0.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.573	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.309	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145107
Report Date/Time: Friday, July 01, 2016 18:53:49
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.940
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.805
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Friday, July 01, 2016 18:54:44
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65516.4	2.1				ug/L	76456	Standard
	Be	9	508.3	16.0	**0.5110**	0.092	17.9	ug/L	20	Standard
	Al	27	800380.4	1.8	**5.4489**	0.215	3.9	ug/L	1307	Standard
	Sc	45	41087.3	0.8				ug/L	41174	Standard
	Ti	47	14067.5	1.7	**43.1737**	0.244	0.6	ug/L	27	Standard
	V	51	35953.7	1.5	**4.1835**	0.016	0.4	ug/L	1434	Standard
	Cr	52	58594.1	1.0	**6.2897**	0.017	0.3	ug/L	7733	Standard
	Cr	53	6973.3	2.0	**6.4961**	0.144	2.2	ug/L	442	Standard
	Mn	55	180922.6	1.7	**23.8431**	0.175	0.7	ug/L	723	Standard
	Co	59	6047.5	0.4	**0.7616**	0.011	1.5	ug/L	217	Standard
	Ni	60	5785.8	2.5	**2.6404**	0.042	1.6	ug/L	304	Standard
	Cu	65	5630.4	0.4	**2.6905**	0.031	1.2	ug/L	181	Standard
	Zn	66	23391.7	1.5	**18.9480**	0.094	0.5	ug/L	215	Standard
>	Ge	72	519833.8	1.1				ug/L	520809	Standard
	As	75	6871.0	0.9	**5.6213**	0.013	0.2	ug/L	-52	Standard
	Se	82	36.9	12.8	**0.1662**	0.040	24.4	ug/L	17	Standard
	Se-1	77	75.7	12.8	**0.2017**	0.109	53.9	ug/L	56	Standard
>	Ga	71	2690.2	10.4				mg/L	25	Standard
	Rb	85	22987.4	0.8				ug/L	28	Standard
	Y	89	454979.6	1.6				ug/L	447395	Standard
>	Rh	103	13.3	78.1				ug/L	15	Standard
	Mo	98	1493.9	2.8	**0.4956**	0.012	2.5	ug/L	113	Standard
	Ag	107	175.0	7.7	**0.0128**	0.002	15.5	ug/L	108	Standard
	Cd	111	498.3	4.3	**0.2253**	0.011	4.8	mg/L	3	Standard
	Cd	114	1246.2	5.5	**0.2300**	0.012	5.2	ug/L	20	Standard
>	In	115	594885.0	1.0				ug/L	625728	Standard
	Sn	118	763.4	27.5	**0.0404**	0.033	82.5	ug/L	568	Standard
	Sb	123	358.6	20.7	**0.0392**	0.014	36.9	ug/L	612	Standard
	Ba	135	27274.9	0.9	**13.1693**	0.072	0.5	ug/L	21	Standard
	Ce	140	89319.2	2.1				ug/L	245	Standard
>	Tb	159	880456.6	1.2				ug/L	950397	Standard
	Ho	165	2008.5	5.9				ug/L	7	Standard
	Tl	203	2224.8	1.1	**0.2667**	0.002	0.9	ug/L	15	Standard
	Tl	205	2000.1	8.4	**0.2612**	0.026	9.8	ug/L	13	Standard
	Pb	206	30072.5	0.9	**5.6895**	0.126	2.2	ug/L	264	Standard
	Pb	207	25200.3	0.2	**5.2438**	0.069	1.3	ug/L	222	Standard
	Pb	208	108593.2	0.7	**5.5329**	0.068	1.2	ug/L	959	Standard
	U	238	1657.1	2.7	**0.2215**	0.003	1.4	ug/L	9	Standard
>	Bi	209	512295.4	1.3				ug/L	552821	Standard

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 18:57:00
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	51.4	**0.0236**	0.043	182.4	mg/L	55	Standard
K	39	88.3	14.2	**0.2082**	0.048	23.2	mg/L	28	Standard
Ca	43	35.0	42.9	**0.7276**	1.340	184.1	mg/L	27	Standard
Fe	54	5032.2	2.8	**3.8559**	0.118	3.1	mg/L	147	Standard
Fe	57	1495.1	12.3	**3.7984**	0.557	14.7	mg/L	268	Standard
> **Sc-1**	45	41087.3	0.8				mg/L	41174	Standard
Cl	35	70479.6	1.8				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1836.8	12.0				ug/L	1950	Standard
P	31	8665.8	3.6				ug/L	21156	Standard
S	34	3460.4	4.7				ug/L	3419	Standard
Sr	88	80.0	18.8				ug/L	72	Standard
C	12	90.0	22.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	17	Standard
Dy	164	2628.5	8.2				mg/L	16	Standard
Ho-1	165	2008.5	5.9				mg/L	7	Standard
Er	166	1706.8	7.3				mg/L	7	Standard
I	127	30609.2	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.692	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.813	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145108
Report Date/Time: Friday, July 01, 2016 18:57:00
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.071
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145109S WG574521-07
Sample Date/Time: Friday, July 01, 2016 18:57:55
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66169.2	2.4				ug/L	76456	Standard
	Be	9	2845.3	1.4	**2.9179**	0.070	2.4	ug/L	20	Standard
	Al	27	402052.1	1.7	**2.7039**	0.037	1.4	ug/L	1307	Standard
	Sc	45	40838.3	0.3				ug/L	41174	Standard
	Ti	47	3598.8	1.2	**10.9719**	0.146	1.3	ug/L	27	Standard
	V	51	79956.8	0.6	**9.5376**	0.034	0.4	ug/L	1434	Standard
	Cr	52	43849.7	0.5	**4.4576**	0.028	0.6	ug/L	7733	Standard
	Cr	53	4982.5	0.8	**4.5178**	0.059	1.3	ug/L	442	Standard
	Mn	55	232874.6	0.3	**30.6911**	0.183	0.6	ug/L	723	Standard
	Co	59	22573.1	0.9	**2.9200**	0.017	0.6	ug/L	217	Standard
	Ni	60	11202.5	1.2	**5.2509**	0.054	1.0	ug/L	304	Standard
	Cu	65	17763.4	0.2	**8.6391**	0.027	0.3	ug/L	181	Standard
	Zn	66	17798.8	0.5	**14.3610**	0.032	0.2	ug/L	215	Standard
>	**Ge**	72	520328.1	0.5				ug/L	520809	Standard
	As	75	5212.0	2.2	**4.2712**	0.111	2.6	ug/L	-52	Standard
	Se	82	460.7	3.7	**3.5240**	0.138	3.9	ug/L	17	Standard
	Se-1	77	349.3	2.1	**3.4060**	0.106	3.1	ug/L	56	Standard
>	**Ga**	71	1643.4	2.5				mg/L	25	Standard
	Rb	85	6298.0	3.7				ug/L	28	Standard
	Y	89	489232.3	1.4				ug/L	447395	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	1075.7	0.6	**0.3442**	0.006	1.8	ug/L	113	Standard
	Ag	107	17796.8	1.4	**2.5517**	0.014	0.5	ug/L	108	Standard
	Cd	111	6560.4	0.7	**2.9469**	0.016	0.6	mg/L	3	Standard
	Cd	114	16108.1	2.8	**2.9255**	0.113	3.9	ug/L	20	Standard
>	**In**	115	604614.2	1.1				ug/L	625728	Standard
	Sn	118	576.7	20.9	**0.0084**	0.019	221.8	ug/L	568	Standard
	Sb	123	1529.4	1.9	**0.2726**	0.009	3.4	ug/L	612	Standard
	Ba	135	36016.4	1.8	**17.1151**	0.222	1.3	ug/L	21	Standard
	Ce	140	166971.8	1.4				ug/L	245	Standard
>	**Tb**	159	893545.7	0.7				ug/L	950397	Standard
	Ho	165	3838.8	4.6				ug/L	7	Standard
	Tl	203	21813.4	0.5	**2.5793**	0.005	0.2	ug/L	15	Standard
	Tl	205	20096.7	2.1	**2.6671**	0.046	1.7	ug/L	13	Standard
	Pb	206	33592.2	0.8	**6.2573**	0.064	1.0	ug/L	264	Standard
	Pb	207	28855.8	0.9	**5.9141**	0.073	1.2	ug/L	222	Standard
	Pb	208	125010.5	0.5	**6.2737**	0.013	0.2	ug/L	959	Standard
	U	238	20841.0	0.6	**2.7450**	0.006	0.2	ug/L	9	Standard
>	**Bi**	209	520594.3	0.4				ug/L	552821	Standard

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 19:00:12
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	78.3	32.1	**0.0321**	0.030	93.3	mg/L	55	Standard
K	39	38.3	30.1	**0.0170**	0.045	263.0	mg/L	28	Standard
Ca	43	36.7	7.9	**0.9069**	0.276	30.5	mg/L	27	Standard
Fe	54	2344.4	2.1	**1.7548**	0.045	2.6	mg/L	147	Standard
Fe	57	823.4	10.1	**1.7471**	0.264	15.1	mg/L	268	Standard
Sc-1	45	40838.3	0.3				mg/L	41174	Standard
Cl	35	72934.5	2.0				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	2890.3	3.7				ug/L	1950	Standard
P	31	8855.9	3.2				ug/L	21156	Standard
S	34	3612.1	4.5				ug/L	3419	Standard
Sr	88	103.3	32.9				ug/L	72	Standard
C	12	236.7	17.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	17	Standard
Dy	164	5672.6	5.0				mg/L	16	Standard
Ho-1	165	3838.8	4.6				mg/L	7	Standard
Er	166	3727.1	2.9				mg/L	7	Standard
I	127	35476.5	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.546	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.908	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145109S WG574521-07
Report Date/Time: Friday, July 01, 2016 19:00:12
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.626
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.171
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145110SD WG574521-08
Sample Date/Time: Friday, July 01, 2016 19:01:07
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67019.7	4.1				ug/L	76456	Standard
	Be	9	2773.6	7.8	**2.8076**	0.211	7.5	ug/L	20	Standard
	Al	27	343053.6	0.5	**2.2782**	0.082	3.6	ug/L	1307	Standard
	Sc	45	40390.5	2.4				ug/L	41174	Standard
	Ti	47	2125.1	3.6	**6.3589**	0.289	4.5	ug/L	27	Standard
	V	51	73913.9	1.7	**8.6823**	0.187	2.2	ug/L	1434	Standard
	Cr	52	39647.8	1.1	**3.8723**	0.091	2.4	ug/L	7733	Standard
	Cr	53	4390.6	6.6	**3.8749**	0.313	8.1	ug/L	442	Standard
	Mn	55	211704.6	1.1	**27.5205**	0.540	2.0	ug/L	723	Standard
	Co	59	22138.2	1.1	**2.8248**	0.052	1.9	ug/L	217	Standard
	Ni	60	10229.1	2.4	**4.7164**	0.156	3.3	ug/L	304	Standard
	Cu	65	16797.3	0.8	**8.0558**	0.132	1.6	ug/L	181	Standard
	Zn	66	14601.7	0.9	**11.5899**	0.103	0.9	ug/L	215	Standard
>	Ge	72	527370.0	0.8				ug/L	520809	Standard
	As	75	4454.0	0.3	**3.6083**	0.041	1.1	ug/L	-52	Standard
	Se	82	433.6	3.6	**3.2627**	0.107	3.3	ug/L	17	Standard
	Se-1	77	342.3	4.4	**3.2706**	0.183	5.6	ug/L	56	Standard
>	Ga	71	1086.7	7.6				mg/L	25	Standard
	Rb	85	2715.2	5.0				ug/L	28	Standard
	Y	89	495479.9	0.9				ug/L	447395	Standard
>	Rh	103	16.7	45.8				ug/L	15	Standard
	Mo	98	1199.6	3.2	**0.3822**	0.017	4.5	ug/L	113	Standard
	Ag	107	16994.5	0.8	**2.4097**	0.040	1.7	ug/L	108	Standard
	Cd	111	6581.3	0.3	**2.9241**	0.026	0.9	mg/L	3	Standard
	Cd	114	16115.1	1.4	**2.8941**	0.037	1.3	ug/L	20	Standard
>	In	115	611286.5	1.2				ug/L	625728	Standard
	Sn	118	688.3	30.3	**0.0255**	0.034	134.7	ug/L	568	Standard
	Sb	123	3492.9	2.6	**0.6580**	0.010	1.5	ug/L	612	Standard
	Ba	135	33066.0	1.8	**15.5404**	0.233	1.5	ug/L	21	Standard
	Ce	140	153693.9	0.5				ug/L	245	Standard
>	Tb	159	899836.2	0.9				ug/L	950397	Standard
	Ho	165	3548.7	3.5				ug/L	7	Standard
	Tl	203	21026.9	1.7	**2.4700**	0.040	1.6	ug/L	15	Standard
	Tl	205	19092.0	1.1	**2.5170**	0.051	2.0	ug/L	13	Standard
	Pb	206	32793.8	0.3	**6.0676**	0.075	1.2	ug/L	264	Standard
	Pb	207	27703.0	0.3	**5.6387**	0.064	1.1	ug/L	222	Standard
	Pb	208	120754.5	1.4	**6.0193**	0.142	2.4	ug/L	959	Standard
	U	238	20391.4	0.6	**2.6683**	0.017	0.6	ug/L	9	Standard
>	Bi	209	524030.2	1.0				ug/L	552821	Standard

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 19:03:24
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	73.3	17.2	**0.0271**	0.015	54.1	mg/L	55	Standard
K	39	33.3	22.9	**-0.0010**	0.029	2803.3	mg/L	28	Standard
Ca	43	38.3	52.7	**1.0972**	1.891	172.3	mg/L	27	Standard
Fe	54	1833.3	6.8	**1.3677**	0.115	8.4	mg/L	147	Standard
Fe	57	725.0	5.5	**1.4696**	0.176	12.0	mg/L	268	Standard
Sc-1	45	40390.5	2.4				mg/L	41174	Standard
Cl	35	74325.2	0.8				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2540.2	14.3				ug/L	1950	Standard
P	31	8757.5	2.9				ug/L	21156	Standard
S	34	3718.8	1.1				ug/L	3419	Standard
Sr	88	85.0					ug/L	72	Standard
C	12	270.0	14.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	32.9				mg/L	17	Standard
Dy	164	5206.1	3.7				mg/L	16	Standard
Ho-1	165	3548.7	3.5				mg/L	7	Standard
Er	166	3510.4	5.0				mg/L	7	Standard
I	127	34255.4	2.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		87.658	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.260	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 19:03:24
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.692
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.792
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145110SD WG574521-08
Report Date/Time: Friday, July 01, 2016 19:03:24
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 19:04:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73296.1	8.8				ug/L	76456	Standard
	Be	9	3.3	86.6	**-0.0168**	0.003	15.9	ug/L	20	Standard
	Al	27	943.4	25.1	**-0.0045**	0.001	28.6	ug/L	1307	Standard
	Sc	45	42173.6	2.9				ug/L	41174	Standard
	Ti	47	21.7	46.5	**-0.0224**	0.026	115.7	ug/L	27	Standard
	V	51	784.0	11.8	**-0.1085**	0.008	7.8	ug/L	1434	Standard
	Cr	52	3455.1	8.0	**-0.5654**	0.042	7.4	ug/L	7733	Standard
	Cr	53	226.7	14.2	**-0.2044**	0.032	15.6	ug/L	442	Standard
	Mn	55	689.7	25.5	**-0.0155**	0.019	124.5	ug/L	723	Standard
	Co	59	203.0	2.5	**-0.0043**	0.002	53.5	ug/L	217	Standard
	Ni	60	207.7	13.9	**-0.0589**	0.005	8.9	ug/L	304	Standard
	Cu	65	99.0	11.2	**-0.0283**	0.002	6.7	ug/L	181	Standard
	Zn	66	182.3	13.6	**-0.0400**	0.008	19.1	ug/L	215	Standard
>	**Ge**	72	551871.4	10.1				ug/L	520809	Standard
	As	75	90.2	75.8	**0.1123**	0.046	40.9	ug/L	-52	Standard
	Se	82	68.2	54.7	**0.3731**	0.233	62.5	ug/L	17	Standard
	Se-1	77	38.3	14.4	**-0.2548**	0.102	40.0	ug/L	56	Standard
>	**Ga**	71	36.7	7.9				mg/L	25	Standard
	Rb	85	36.7	39.4				ug/L	28	Standard
	Y	89	441182.6	6.0				ug/L	447395	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	46.2	9.0	**-0.0083**	0.001	14.8	ug/L	113	Standard
	Ag	107	129.7	15.8	**0.0056**	0.002	35.3	ug/L	108	Standard
	Cd	111	10.6	19.3	**0.0023**	0.001	28.9	mg/L	3	Standard
	Cd	114	32.4	13.3	**0.0058**	0.001	9.2	ug/L	20	Standard
>	**In**	115	611252.6	5.3				ug/L	625728	Standard
	Sn	118	5131.0	39.9	**0.7226**	0.283	39.2	ug/L	568	Standard
	Sb	123	96.0	32.5	**-0.0149**	0.005	34.0	ug/L	612	Standard
	Ba	135	116.3	18.2	**0.0366**	0.007	20.0	ug/L	21	Standard
	Ce	140	506.7	18.4				ug/L	245	Standard
>	**Tb**	159	937034.7	2.8				ug/L	950397	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	55.7	37.9	**0.0055**	0.002	44.3	ug/L	15	Standard
	Tl	205	48.3	15.8	**-0.0037**	0.001	24.8	ug/L	13	Standard
	Pb	206	388.7	9.1	**0.0251**	0.008	30.5	ug/L	264	Standard
	Pb	207	329.7	11.1	**0.0183**	0.008	44.7	ug/L	222	Standard
	Pb	208	1314.7	9.8	**0.0144**	0.005	32.0	ug/L	959	Standard
	U	238	44.3	33.9	**0.0053**	0.002	35.7	ug/L	9	Standard
>	**Bi**	209	551718.3	2.9				ug/L	552821	Standard

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 19:06:36
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**4.9772**	8.612	173.0	mg/L	2	Standard
Mg	24	23.3	12.4	**-0.0336**	0.003	9.5	mg/L	55	Standard
K	39	23.3	12.4	**-0.0439**	0.009	21.3	mg/L	28	Standard
Ca	43	31.7	24.1	**0.3653**	0.722	197.6	mg/L	27	Standard
Fe	54	110.7	37.7	**-0.0145**	0.030	207.1	mg/L	147	Standard
Fe	57	338.3	3.4	**0.2110**	0.026	12.2	mg/L	268	Standard
Sc-1	45	42173.6	2.9				mg/L	41174	Standard
Cl	35	30776.6	3.7				ug/L	69550	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	663.3	12.3				ug/L	1950	Standard
P	31	11284.4	27.3				ug/L	21156	Standard
S	34	1555.1	2.6				ug/L	3419	Standard
Sr	88	83.3	25.0				ug/L	72	Standard
C	12	73.3	15.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	44.4				mg/L	17	Standard
Dy	164	28.9	93.2				mg/L	16	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	2166.8	15.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	-0.034		
Al	27	-0.009		
Sc	45			
Ti	47	-0.022		
V	51	-0.217		
Cr	52	-1.131		
Cr	53			
Mn	55	-0.031		
Co	59	-0.009		
Ni	60	-0.118		
Cu	65	-0.057		
Zn	66	-0.080		
Ge	72		105.964	
As	75	0.225		
Se	82	0.746		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 19:06:36
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	-0.008		
Ag	107	0.011		
Cd	111	0.005		
Cd	114			
> In	115		97.687	
Sn	118	1.445		
Sb	123	-0.030		
Ba	135	0.073		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	0.011		
Tl	205			
Pb	206			
Pb	207			
Pb	208	0.029		
U	238	0.011		
> Bi	209		99.801	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Ti	47	

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 19:06:36
Page 3

Approved: July 02, 2016

QC Std 6	V	51
QC Std 6	Cr	52
QC Std 6	Mn	55
QC Std 6	Co	59
QC Std 6	Ni	60
QC Std 6	Cu	65
QC Std 6	Zn	66
QC Std 6	As	75
QC Std 6	Se	82
QC Std 6	Mo	98
QC Std 6	Ag	107
QC Std 6	Cd	111
QC Std 6	Sb	123
QC Std 6	Ba	135
QC Std 6	Tl	203
QC Std 6	Pb	208
QC Std 6	U	238

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 19:07:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63162.0	21.4				ug/L	76456	Standard
	Be	9	3.3	86.6	**-0.0166**	0.003	17.1	ug/L	20	Standard
	Al	27	735.0	20.4	**-0.0048**	0.002	36.2	ug/L	1307	Standard
	Sc	45	35650.7	12.8				ug/L	41174	Standard
	Ti	47	25.7	17.6	**-0.0049**	0.017	351.0	ug/L	27	Standard
	V	51	759.8	6.3	**-0.1049**	0.017	16.4	ug/L	1434	Standard
	Cr	52	3500.7	6.1	**-0.5352**	0.034	6.4	ug/L	7733	Standard
	Cr	53	196.7	21.6	**-0.2204**	0.047	21.1	ug/L	442	Standard
	Mn	55	654.0	15.9	**-0.0132**	0.024	180.8	ug/L	723	Standard
	Co	59	209.0	9.3	**-0.0019**	0.004	213.5	ug/L	217	Standard
	Ni	60	214.3	6.6	**-0.0494**	0.006	12.6	ug/L	304	Standard
	Cu	65	67.0	1.5	**-0.0410**	0.004	9.4	ug/L	181	Standard
	Zn	66	162.0	9.0	**-0.0461**	0.027	57.9	ug/L	215	Standard
>	**Ge**	72	520650.3	11.0				ug/L	520809	Standard
	As	75	34.9	127.0	**0.0765**	0.042	54.6	ug/L	-52	Standard
	Se	82	46.9	39.0	**0.2593**	0.198	76.5	ug/L	17	Standard
	Se-1	77	47.0	7.4	**-0.1317**	0.051	38.8	ug/L	56	Standard
>	**Ga**	71	33.3	37.7				mg/L	25	Standard
	Rb	85	20.0	0.0				ug/L	28	Standard
	Y	89	481329.7	5.0				ug/L	447395	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	40.1	16.4	**-0.0110**	0.002	22.0	ug/L	113	Standard
	Ag	107	85.7	14.5	**-0.0013**	0.001	114.3	ug/L	108	Standard
	Cd	111	7.3	15.9	**0.0008**	0.001	101.5	mg/L	3	Standard
	Cd	114	33.4	55.5	**0.0060**	0.004	67.7	ug/L	20	Standard
>	**In**	115	646206.1	11.6				ug/L	625728	Standard
	Sn	118	4905.8	30.1	**0.6479**	0.164	25.3	ug/L	568	Standard
	Sb	123	55.7	59.6	**-0.0232**	0.006	25.1	ug/L	612	Standard
	Ba	135	35.0	22.9	**-0.0022**	0.004	171.6	ug/L	21	Standard
	Ce	140	271.7	45.9				ug/L	245	Standard
>	**Tb**	159	974497.4	20.4				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	26.0	40.2	**0.0024**	0.002	88.7	ug/L	15	Standard
	Tl	205	23.3	32.7	**-0.0066**	0.002	26.3	ug/L	13	Standard
	Pb	206	286.0	20.6	**0.0054**	0.003	50.2	ug/L	264	Standard
	Pb	207	250.0	14.9	**0.0018**	0.006	349.2	ug/L	222	Standard
	Pb	208	1018.7	14.9	**-0.0005**	0.007	1419.7	ug/L	959	Standard
	U	238	28.0	71.2	**0.0037**	0.004	102.7	ug/L	9	Standard
>	**Bi**	209	573676.7	25.6				ug/L	552821	Standard

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 19:09:48
Page 1

Approved: July 02, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	31.2	**-0.0144**	0.017	121.3	mg/L	55	Standard
K	39	30.0	44.1	**-0.0003**	0.051	19938.3	mg/L	28	Standard
Ca	43	26.7	47.2	**0.2749**	0.978	355.7	mg/L	27	Standard
Fe	54	97.7	28.6	**-0.0085**	0.033	388.9	mg/L	147	Standard
Fe	57	278.3	18.1	**0.2066**	0.281	136.1	mg/L	268	Standard
Sc-1	45	35650.7	12.8				mg/L	41174	Standard
Cl	35	30318.5	8.6				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	573.3	9.6				ug/L	1950	Standard
P	31	10907.3	13.1				ug/L	21156	Standard
S	34	1410.1	10.3				ug/L	3419	Standard
Sr	88	83.3	36.7				ug/L	72	Standard
C	12	66.7	60.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	38.5				mg/L	17	Standard
Dy	164	2.1	274.3				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	7	Standard
I	127	2056.8	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.969	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 19:09:48
Page 2

Approved: July 02, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.273	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	103.773	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sn	118	

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 19:09:48
Page 3

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, July 01, 2016 19:10:44
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61946.4	1.9				ug/L	76456	Standard
	Be	9	210.0	10.4	**0.2115**	0.020	9.6	ug/L	20	Standard
	Al	27	790.0	4.9	**-0.0045**	0.000	4.1	ug/L	1307	Standard
	Sc	45	40494.0	1.1				ug/L	41174	Standard
	Ti	47	28.3	17.8	**0.0022**	0.015	682.7	ug/L	27	Standard
	V	51	4636.0	0.9	**0.3641**	0.011	3.1	ug/L	1434	Standard
	Cr	52	14316.1	1.4	**0.7957**	0.001	0.1	ug/L	7733	Standard
	Cr	53	1240.1	3.8	**0.8075**	0.059	7.3	ug/L	442	Standard
	Mn	55	4264.3	2.5	**0.4605**	0.007	1.5	ug/L	723	Standard
	Co	59	3130.7	5.2	**0.3781**	0.017	4.5	ug/L	217	Standard
	Ni	60	3450.1	1.6	**1.5055**	0.006	0.4	ug/L	304	Standard
	Cu	65	1721.8	1.7	**0.7678**	0.026	3.4	ug/L	181	Standard
	Zn	66	8860.9	0.9	**7.0348**	0.045	0.6	ug/L	215	Standard
>	**Ge**	72	522095.7	1.4				ug/L	520809	Standard
	As	75	448.5	11.8	**0.4078**	0.044	10.9	ug/L	-52	Standard
	Se	82	67.9	14.5	**0.4100**	0.082	20.0	ug/L	17	Standard
	Se-1	77	86.0	19.1	**0.3190**	0.193	60.5	ug/L	56	Standard
>	**Ga**	71	40.0	37.5				mg/L	25	Standard
	Rb	85	30.0	28.9				ug/L	28	Standard
	Y	89	446341.0	1.0				ug/L	447395	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	31.0	24.0	**-0.0133**	0.003	19.1	ug/L	113	Standard
	Ag	107	2769.6	1.6	**0.3865**	0.006	1.6	ug/L	108	Standard
	Cd	111	511.0	7.5	**0.2275**	0.017	7.5	mg/L	3	Standard
	Cd	114	1362.0	6.3	**0.2474**	0.016	6.3	ug/L	20	Standard
>	**In**	115	604305.4	0.0				ug/L	625728	Standard
	Sn	118	1045.0	27.9	**0.0839**	0.047	56.0	ug/L	568	Standard
	Sb	123	1800.2	6.2	**0.3270**	0.022	6.8	ug/L	612	Standard
	Ba	135	1494.4	2.1	**0.6933**	0.015	2.2	ug/L	21	Standard
	Ce	140	240.0	28.9				ug/L	245	Standard
>	**Tb**	159	892072.4	1.2				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	655.0	0.9	**0.0773**	0.001	1.2	ug/L	15	Standard
	Tl	205	608.3	6.1	**0.0719**	0.005	7.4	ug/L	13	Standard
	Pb	206	1282.4	3.9	**0.1986**	0.006	3.2	ug/L	264	Standard
	Pb	207	1103.0	2.6	**0.1835**	0.003	1.7	ug/L	222	Standard
	Pb	208	4828.3	0.4	**0.1978**	0.004	2.3	ug/L	959	Standard
	U	238	2919.9	3.2	**0.3875**	0.018	4.7	ug/L	9	Standard
>	**Bi**	209	516591.6	1.5				ug/L	552821	Standard

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 19:13:01
Page 1

Approved: July 02, 2016

Na	23	1.7	173.2	**5.0546**	8.746	173.0	mg/L	2	Standard
Mg	24	45.0	50.9	**-0.0067**	0.027	406.4	mg/L	55	Standard
K	39	28.3	71.3	**-0.0210**	0.078	373.7	mg/L	28	Standard
Ca	43	15.0	33.3	**-1.0703**	0.448	41.8	mg/L	27	Standard
Fe	54	120.9	25.4	**-0.0025**	0.024	952.7	mg/L	147	Standard
Fe	57	251.7	19.1	**-0.0185**	0.145	784.6	mg/L	268	Standard
> **Sc-1**	45	40494.0	1.1				mg/L	41174	Standard
Cl	35	72851.4	0.8				ug/L	69550	Standard
Kr	83	2.3	99.0				ug/L	1	Standard
Br	81	1900.1	5.1				ug/L	1950	Standard
P	31	14266.7	2.8				ug/L	21156	Standard
S	34	3213.7	2.6				ug/L	3419	Standard
Sr	88	90.0	16.7				ug/L	72	Standard
C	12	96.7	57.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	17	Standard
Dy	164	16.2	35.8				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	1820.1	14.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.733		
Al	27			
Sc	45			
Ti	47			
V	51	91.026		
Cr	52	99.459		
Cr	53			
Mn	55	92.107		
Co	59	94.532		
Ni	60	94.095		
Cu	65	95.977		
Zn	66	112.556		
> Ge	72		100.247	
As	75	101.941		
Se	82	102.498		
Se-1	77			
> Ga	71			

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 19:13:01
Page 2

Approved: July 02, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.613		
Cd	111	94.773		
Cd	114			
> In	115			96.576
Sn	118			
Sb	123	81.741		
Ba	135	92.447		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.671		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.904		
U	238	96.884		
> Bi	209			93.446
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Friday, July 01, 2016 19:13:01
Page 3

Approved: July 02, 2016

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Wednesday, July 06, 2016 08:21:13

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1322	2024	0.699	
Mg	23.985	23.975	4499	2020	0.703	
Co	58.933	58.975	11698	2022	0.697	
In	114.904	114.925	22867	2028	0.681	
U	238.050	238.025	47456	2043	0.679	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	7.506
5.575	4.469
5.625	3.902
5.675	3.617
5.725	2.863
5.775	3.021
5.825	2.553
5.875	2.316
5.925	1.940
5.975	0.827
6.025	4.248
6.075	3.274
6.125	3.495
6.175	2.397
6.225	3.309
6.275	9.100
6.325	39.123
6.375	122.475
6.425	108.653
6.475	38.030
6.525	8.438
6.575	5.734
6.625	2.237
6.675	4.130
6.725	3.041
6.775	1.849
6.825	2.089

Report Date/Time: Wednesday, July 06, 2016 08:24:24
Page 1

Approved: July 07, 2016

6.875	1.604
6.925	1.546
6.975	1.019
7.025	1.680
7.075	1.373
7.125	1.509
7.175	0.253
7.225	2.144
7.275	3.742
7.325	4.451
7.375	14.816
7.425	136.931
7.475	70.711
7.525	81.441
7.575	136.931
7.625	70.711
7.675	63.888
7.725	136.931
7.775	81.441
7.825	0.000
7.875	106.863
7.925	91.287
7.975	149.071
8.025	94.786
8.075	94.786
8.125	69.722
8.175	91.287
8.225	71.261
8.275	149.071
8.325	94.786
8.375	69.722
8.425	83.853
8.475	91.287
22.525	55.902
22.575	66.667
22.625	43.241
22.675	34.247
22.725	34.468
22.775	17.538
22.825	28.037
22.875	26.503
22.925	31.944
22.975	34.035
23.025	38.640
23.075	42.482
23.125	22.745
23.175	17.030

Report Date/Time: Wednesday, July 06, 2016 08:24:24
Page 2

Approved: July 07, 2016

23.225	8.299
23.275	38.640
23.325	15.901
23.375	54.149
23.425	24.362
23.475	23.662
23.525	4.832
23.575	1.945
23.625	1.762
23.675	1.706
23.725	2.179
23.775	1.159
23.825	1.275
23.875	2.153
23.925	1.699
23.975	1.547
24.025	2.386
24.075	2.257
24.125	1.922
24.175	1.969
24.225	2.068
24.275	3.253
24.325	14.263
24.375	45.166
24.425	16.090
24.475	14.626
24.525	4.879
24.575	2.669
24.625	3.297
24.675	1.542
24.725	1.374
24.775	1.161
24.825	1.917
24.875	1.099
24.925	1.386
24.975	1.467
25.025	1.383
25.075	1.643
25.125	1.214
25.175	2.083
25.225	1.572
25.275	7.023
25.325	53.429
25.375	51.349
25.425	53.429
25.475	17.365
57.525	8.189

Report Date/Time: Wednesday, July 06, 2016 08:24:24
Page 3

Approved: July 07, 2016

57.575	5.482
57.625	1.288
57.675	3.060
57.725	2.372
57.775	3.546
57.825	3.557
57.875	0.921
57.925	1.535
57.975	2.136
58.025	1.988
58.075	2.269
58.125	1.198
58.175	2.819
58.225	1.616
58.275	11.771
58.325	55.902
58.375	50.000
58.425	33.756
58.475	10.537
58.525	1.691
58.575	3.576
58.625	2.704
58.675	2.648
58.725	2.851
58.775	2.040
58.825	2.525
58.875	1.600
58.925	1.367
58.975	1.255
59.025	1.984
59.075	0.805
59.125	1.290
59.175	2.562
59.225	1.649
59.275	23.116
59.325	64.359
59.375	149.071
59.425	44.605
59.475	17.497
59.525	17.371
59.575	9.220
59.625	5.948
59.675	4.790
59.725	1.831
59.775	1.473
59.825	2.719
59.875	2.952

Report Date/Time: Wednesday, July 06, 2016 08:24:24
Page 4

Approved: July 07, 2016

59.925	2.544
59.975	1.515
60.025	4.044
60.075	0.979
60.125	3.516
60.175	6.310
60.225	5.968
60.275	42.077
60.325	70.711
60.375	75.691
60.425	47.507
60.475	51.349
113.525	6.288
113.575	3.130
113.625	3.198
113.675	2.645
113.725	2.546
113.775	2.125
113.825	1.842
113.875	2.200
113.925	1.850
113.975	1.503
114.025	2.156
114.075	1.585
114.125	1.928
114.175	4.533
114.225	6.911
114.275	18.744
114.325	37.029
114.375	48.104
114.425	13.303
114.475	6.306
114.525	2.291
114.575	1.817
114.625	2.253
114.675	1.979
114.725	1.922
114.775	2.210
114.825	1.277
114.875	1.344
114.925	1.630
114.975	0.972
115.025	0.572
115.075	1.624
115.125	0.868
115.175	2.441
115.225	1.854

Report Date/Time: Wednesday, July 06, 2016 08:24:24
Page 5

Approved: July 07, 2016

115.275	5.953
115.325	30.901
115.375	61.237
115.425	59.266
115.475	15.759
115.525	11.392
115.575	9.132
115.625	8.051
115.675	3.987
115.725	6.967
115.775	3.133
115.825	4.834
115.875	2.873
115.925	2.983
115.975	3.736
116.025	2.700
116.075	2.834
116.125	4.969
116.175	5.942
116.225	7.717
116.275	28.287
116.325	58.630
116.375	22.822
116.425	67.748
116.475	37.268
236.525	
236.575	37.982
236.625	28.022
236.675	14.286
236.725	37.982
236.775	48.627
236.825	23.981
236.875	70.833
236.925	24.491
236.975	20.494
237.025	17.496
237.075	24.845
237.125	33.333
237.175	31.672
237.225	28.287
237.275	23.458
237.325	18.109
237.375	43.257
237.425	28.315
237.475	36.056
237.525	17.496
237.575	15.180

Approved: July 07, 2016

237.625	5.747
237.675	2.292
237.725	2.524
237.775	2.139
237.825	1.921
237.875	1.117
237.925	1.502
237.975	1.060
238.025	0.360
238.075	1.407
238.125	0.752
238.175	1.378
238.225	1.386
238.275	0.645
238.325	2.690
238.375	2.608
238.425	2.380
238.475	12.679
238.525	20.738
238.575	36.422
238.625	37.611
238.675	26.517
238.725	10.002
238.775	24.499
238.825	17.876
238.875	26.770
238.925	25.620
238.975	15.408
239.025	16.767
239.075	18.744
239.125	33.378
239.175	26.504
239.225	37.982
239.275	41.406
239.325	24.686
239.375	10.756
239.425	28.748
239.475	26.770

Approved: July 07, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 7/6/2016 8:26:00 AM
End Time: 7/6/2016 8:28:13 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 5151.01
        Obtained Intensity (Mg 23.985): 336885.79
        Obtained Intensity (In 114.904): 62602.53
        Obtained Intensity (U 238.05): 130540.54
        Obtained Intensity (Bkgd 220): 0.20
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=3575.29 / 184430.85)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2032.07 / 184430.85)
```


Approved: July 07, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 7/6/2016 8:26:00 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 5151.01
                Obtained Intensity (Mg 23.985): 336885.79
                Obtained Intensity (In 114.904): 62602.53
                Obtained Intensity (U 238.05): 130540.54
                Obtained Intensity (Bkgd 220): 0.20
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=3575.29 / 184430.85)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2032.07 / 184430.85)
[Passed]  Optimum value(s): N/A

End Time: 7/6/2016 8:28:13 AM
```


Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Wednesday, July 06, 2016 09:04:52
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68501.2	1.5				ug/L		Standard
	Be	9	8.3	34.6				ug/L		Standard
	Al	27	1396.7	1.3				ug/L		Standard
	Sc	45	38814.7	3.0				ug/L		Standard
	Ti	47	35.7	18.2				ug/L		Standard
	V	51	1283.9	3.1				ug/L		Standard
	Cr	52	6502.7	0.5				ug/L		Standard
	Cr	53	491.7	16.7				ug/L		Standard
	Mn	55	840.7	3.2				ug/L		Standard
	Co	59	229.3	4.0				ug/L		Standard
	Ni	60	344.0	2.2				ug/L		Standard
	Cu	65	114.7	4.1				ug/L		Standard
	Zn	66	190.0	5.0				ug/L		Standard
>	**Ge**	72	409858.0	0.8				ug/L		Standard
	As	75	-22.4	191.8				ug/L		Standard
	Se	82	17.6	39.5				ug/L		Standard
	Se-1	77	49.7	13.7				ug/L		Standard
>	**Ga**	71	96.7	43.4				mg/L		Standard
	Rb	85	25.0	40.0				ug/L		Standard
	Y	89	376763.4	2.3				ug/L		Standard
>	**Rh**	103	20.0	0.0				ug/L		Standard
	Mo	98	51.1	11.8				ug/L		Standard
	Ag	107	76.3	9.8				ug/L		Standard
	Cd	111	5.9	58.3				mg/L		Standard
	Cd	114	18.3	38.1				ug/L		Standard
>	**In**	115	507260.6	2.6				ug/L		Standard
	Sn	118	683.3	6.6				ug/L		Standard
	Sb	123	446.3	31.9				ug/L		Standard
	Ba	135	28.0	28.6				ug/L		Standard
	Ce	140	33.3	45.8				ug/L		Standard
>	**Tb**	159	800802.7	2.0				ug/L		Standard
	Ho	165	10.0	86.6				ug/L		Standard
	Tl	203	13.0	26.6				ug/L		Standard
	Tl	205	13.3	43.3				ug/L		Standard
	Pb	206	226.0	4.2				ug/L		Standard
	Pb	207	204.3	0.3				ug/L		Standard
	Pb	208	851.7	6.8				ug/L		Standard
	U	238	13.0	63.0				ug/L		Standard
>	**Bi**	209	449044.0	1.5				ug/L		Standard

Sample ID: Blank
Report Date/Time: Wednesday, July 06, 2016 09:07:09
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	mg/L	Standard
Mg	24	58.3	9.9	mg/L	Standard
K	39	26.7	39.0	mg/L	Standard
Ca	43	20.0	66.1	mg/L	Standard
Fe	54	157.5	14.3	mg/L	Standard
Fe	57	266.7	9.2	mg/L	Standard
> **Sc-1**	45	38814.7	3.0	mg/L	Standard
Cl	35	57611.3	0.9	ug/L	Standard
Kr	83	2.0	50.0	ug/L	Standard
Br	81	1616.8	9.4	ug/L	Standard
P	31	19243.9	3.3	ug/L	Standard
S	34	3557.1	1.2	ug/L	Standard
Sr	88	65.0	20.4	ug/L	Standard
C	12	63.3	24.1	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	23.3	89.2	mg/L	Standard
Dy	164	12.7	43.5	mg/L	Standard
Ho-1	165	10.0	86.6	mg/L	Standard
Er	166	13.3	86.6	mg/L	Standard
I	127	9569.7	3.0	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Blank
Report Date/Time: Wednesday, July 06, 2016 09:07:09
Page 2

Approved: July 07, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Wednesday, July 06, 2016 09:07:09
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, July 06, 2016 09:08:03
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69462.2	0.6				ug/L	68501	Standard
	Be	9	13.3	78.1				ug/L	8	Standard
	Al	27	1441.7	6.4				ug/L	1397	Standard
	Sc	45	39327.7	2.4				ug/L	38815	Standard
	Ti	47	37.3	15.2				ug/L	36	Standard
	V	51	1277.1	1.5				ug/L	1284	Standard
	Cr	52	6679.8	1.3				ug/L	6503	Standard
	Cr	53	478.3	7.9				ug/L	492	Standard
	Mn	55	811.7	3.1				ug/L	841	Standard
	Co	59	225.7	8.9				ug/L	229	Standard
	Ni	60	363.7	3.9				ug/L	344	Standard
	Cu	65	110.0	16.7				ug/L	115	Standard
	Zn	66	186.0	6.7				ug/L	190	Standard
>	Ge	72	427573.4	1.2				ug/L	409858	Standard
	As	75	-74.4	2.7				ug/L	-22	Standard
	Se	82	12.0	28.1				ug/L	18	Standard
	Se-1	77	50.7	10.9				ug/L	50	Standard
>	Ga	71	113.3	13.5				mg/L	97	Standard
	Rb	85	35.0	28.6				ug/L	25	Standard
	Y	89	359688.5	1.8				ug/L	376763	Standard
>	Rh	103	18.3	15.7				ug/L	20	Standard
	Mo	98	39.3	4.5				ug/L	51	Standard
	Ag	107	71.3	10.3				ug/L	76	Standard
	Cd	111	4.3	59.0				mg/L	6	Standard
	Cd	114	20.2	77.8				ug/L	18	Standard
>	In	115	495968.3	1.0				ug/L	507261	Standard
	Sn	118	615.0	19.2				ug/L	683	Standard
	Sb	123	280.4	35.1				ug/L	446	Standard
	Ba	135	25.7	17.6				ug/L	28	Standard
	Ce	140	23.3	68.9				ug/L	33	Standard
>	Tb	159	809139.9	1.5				ug/L	800803	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	9.7	31.6				ug/L	13	Standard
	Tl	205	5.0	100.0				ug/L	13	Standard
	Pb	206	228.0	14.1				ug/L	226	Standard
	Pb	207	184.0	4.3				ug/L	204	Standard
	Pb	208	774.0	0.5				ug/L	852	Standard
	U	238	9.3	61.9				ug/L	13	Standard
>	Bi	209	461034.0	1.4				ug/L	449044	Standard

Sample ID: Standard 1
Report Date/Time: Wednesday, July 06, 2016 09:10:20
Page 1

Approved: July 07, 2016

	Na	23	0.0		mg/L	2	Standard
	Mg	24	38.3	7.5	mg/L	58	Standard
	K	39	38.3	30.1	mg/L	27	Standard
	Ca	43	35.0	37.8	mg/L	20	Standard
	Fe	54	132.7	18.5	mg/L	158	Standard
	Fe	57	250.0	9.2	mg/L	267	Standard
>	**Sc-1**	45	39327.7	2.4	mg/L	38815	Standard
	Cl	35	57177.7	0.6	ug/L	57611	Standard
	Kr	83	2.0	86.6	ug/L	2	Standard
	Br	81	1573.4	4.2	ug/L	1617	Standard
	P	31	19260.6	0.8	ug/L	19244	Standard
	S	34	3472.1	1.0	ug/L	3557	Standard
	Sr	88	65.0	38.5	ug/L	65	Standard
	C	12	76.7	30.1	mg/L	63	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	20.0	0.0	mg/L	23	Standard
	Dy	164	19.5	50.0	mg/L	13	Standard
	Ho-1	165	13.3	21.7	mg/L	10	Standard
	Er	166	10.0	100.0	mg/L	13	Standard
	I	127	9743.1	1.2	mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 1
Report Date/Time: Wednesday, July 06, 2016 09:10:20
Page 2

Approved: July 07, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Wednesday, July 06, 2016 09:10:20
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Wednesday, July 06, 2016 09:11:15
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69986.3	1.7				ug/L	68501	Standard
	Be	9	28.3	20.4				ug/L	8	Standard
	Al	27	2175.2	56.8				ug/L	1397	Standard
	Sc	45	40447.3	0.7				ug/L	38815	Standard
	Ti	47	43.0	44.9				ug/L	36	Standard
	V	51	1366.5	10.5				ug/L	1284	Standard
	Cr	52	6767.8	1.5				ug/L	6503	Standard
	Cr	53	401.7	17.9				ug/L	492	Standard
	Mn	55	892.4	9.9				ug/L	841	Standard
	Co	59	269.0	32.5				ug/L	229	Standard
	Ni	60	348.3	2.9				ug/L	344	Standard
	Cu	65	106.0	18.0				ug/L	115	Standard
	Zn	66	164.7	5.2				ug/L	190	Standard
>	**Ge**	72	409754.2	1.2				ug/L	409858	Standard
	As	75	-50.4	62.0				ug/L	-22	Standard
	Se	82	10.7	41.8				ug/L	18	Standard
	Se-1	77	55.7	4.5				ug/L	50	Standard
>	**Ga**	71	90.0	14.7				mg/L	97	Standard
	Rb	85	25.0	40.0				ug/L	25	Standard
	Y	89	368884.0	1.8				ug/L	376763	Standard
>	**Rh**	103	28.3	36.7				ug/L	20	Standard
	Mo	98	70.2	78.1				ug/L	51	Standard
	Ag	107	171.7	101.6				ug/L	76	Standard
	Cd	111	21.6	125.9				mg/L	6	Standard
	Cd	114	62.7	126.2				ug/L	18	Standard
>	**In**	115	517968.4	0.2				ug/L	507261	Standard
	Sn	118	895.0	18.8				ug/L	683	Standard
	Sb	123	308.2	14.0				ug/L	446	Standard
	Ba	135	66.7	99.4				ug/L	28	Standard
	Ce	140	60.0	88.2				ug/L	33	Standard
>	**Tb**	159	835902.7	0.3				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	133.7	156.4				ug/L	13	Standard
	Tl	205	51.7	114.6				ug/L	13	Standard
	Pb	206	275.3	38.0				ug/L	226	Standard
	Pb	207	236.3	37.0				ug/L	204	Standard
	Pb	208	923.0	26.3				ug/L	852	Standard
	U	238	51.0	124.2				ug/L	13	Standard
>	**Bi**	209	464909.5	1.4				ug/L	449044	Standard

Sample ID: Standard 2
Report Date/Time: Wednesday, July 06, 2016 09:13:32
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	mg/L	2	Standard
Mg	24	33.3	31.2	mg/L	58	Standard
K	39	38.3	52.7	mg/L	27	Standard
Ca	43	18.3	87.7	mg/L	20	Standard
Fe	54	155.9	10.5	mg/L	158	Standard
Fe	57	213.3	22.5	mg/L	267	Standard
> **Sc-1**	45	40447.3	0.7	mg/L	38815	Standard
Cl	35	57383.8	0.6	ug/L	57611	Standard
Kr	83	4.0	25.0	ug/L	2	Standard
Br	81	1603.4	7.2	ug/L	1617	Standard
P	31	19110.4	2.4	ug/L	19244	Standard
S	34	3323.7	4.3	ug/L	3557	Standard
Sr	88	48.3	39.2	ug/L	65	Standard
C	12	66.7	56.8	mg/L	63	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	33.3	17.3	mg/L	23	Standard
Dy	164	19.5	53.7	mg/L	13	Standard
Ho-1	165	6.7	43.3	mg/L	10	Standard
Er	166	10.0	100.0	mg/L	13	Standard
I	127	9463.0	1.4	mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Standard 2
Report Date/Time: Wednesday, July 06, 2016 09:13:32
Page 2

Approved: July 07, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Wednesday, July 06, 2016 09:13:32
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Wednesday, July 06, 2016 09:14:26
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65866.4	4.4				ug/L	68501	Standard
	Be	9	43758.1	2.1	**50.0000**	2.126	4.3	ug/L	8	Standard
	Al	27	6851690.7	2.5	**50.0000**	1.133	2.3	ug/L	1397	Standard
	Sc	45	38365.2	3.2				ug/L	38815	Standard
	Ti	47	33502.0	1.0	**100.0000**	2.335	2.3	ug/L	36	Standard
	V	51	354123.4	1.5	**50.0000**	0.807	1.6	ug/L	1284	Standard
	Cr	52	353474.9	1.0	**50.0000**	1.058	2.1	ug/L	6503	Standard
	Cr	53	43696.3	2.4	**50.0000**	1.919	3.8	ug/L	492	Standard
	Mn	55	312268.8	0.3	**50.0000**	0.524	1.0	ug/L	841	Standard
	Co	59	306115.4	0.4	**50.0000**	0.635	1.3	ug/L	229	Standard
	Ni	60	84632.4	1.9	**50.0000**	1.629	3.3	ug/L	344	Standard
	Cu	65	84106.2	1.3	**50.0000**	1.315	2.6	ug/L	115	Standard
	Zn	66	50654.5	0.9	**50.0000**	1.152	2.3	ug/L	190	Standard
>	**Ge**	72	412166.9	1.4				ug/L	409858	Standard
	As	75	52045.3	0.4	**50.0000**	0.886	1.8	ug/L	-22	Standard
	Se	82	5394.9	1.2	**50.0000**	0.077	0.2	ug/L	18	Standard
	Se-1	77	3526.7	2.1	**50.0000**	1.755	3.5	ug/L	50	Standard
>	**Ga**	71	143.3	16.1				mg/L	97	Standard
	Rb	85	768.4	16.3				ug/L	25	Standard
	Y	89	372269.2	3.3				ug/L	376763	Standard
>	**Rh**	103	36.7	43.8				ug/L	20	Standard
	Mo	98	230812.3	1.4	**100.0000**	1.677	1.7	ug/L	51	Standard
	Ag	107	300268.2	0.5	**50.0000**	0.604	1.2	ug/L	76	Standard
	Cd	111	97215.6	1.2	**50.0000**	0.313	0.6	mg/L	6	Standard
	Cd	114	238532.4	1.1	**50.0000**	0.702	1.4	ug/L	18	Standard
>	**In**	115	495991.8	1.6				ug/L	507261	Standard
	Sn	118	265345.1	0.9	**50.0000**	0.957	1.9	ug/L	683	Standard
	Sb	123	201515.8	1.9	**50.0000**	0.380	0.8	ug/L	446	Standard
	Ba	135	92475.7	0.4	**50.0000**	0.633	1.3	ug/L	28	Standard
	Ce	140	98.3	15.5				ug/L	33	Standard
>	**Tb**	159	786281.1	2.6				ug/L	800803	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	380657.7	0.9	**50.0000**	0.500	1.0	ug/L	13	Standard
	Tl	205	330146.0	2.3	**50.0000**	0.875	1.7	ug/L	13	Standard
	Pb	206	242582.5	0.3	**50.0000**	0.221	0.4	ug/L	226	Standard
	Pb	207	220711.3	0.8	**50.0000**	0.034	0.1	ug/L	204	Standard
	Pb	208	894041.3	0.2	**50.0000**	0.321	0.6	ug/L	852	Standard
	U	238	326852.4	1.0	**50.0000**	0.354	0.7	ug/L	13	Standard
>	**Bi**	209	440295.0	0.7				ug/L	449044	Standard

Sample ID: Standard 3
Report Date/Time: Wednesday, July 06, 2016 09:16:43
Page 1

Approved: July 07, 2016

Na	23	3.3	173.2	**5.0000**	16.319	326.4	mg/L	2	Standard
Mg	24	3670.4	2.3	**5.0000**	0.168	3.4	mg/L	58	Standard
K	39	1323.4	3.2	**5.0000**	0.149	3.0	mg/L	27	Standard
Ca	43	88.3	11.8	**5.0000**	0.808	16.2	mg/L	20	Standard
Fe	54	6179.3	2.3	**5.0000**	0.141	2.8	mg/L	158	Standard
Fe	57	1725.1	6.9	**5.0000**	0.273	5.5	mg/L	267	Standard
> **Sc-1**	45	38365.2	3.2				mg/L	38815	Standard
Cl	35	58419.8	1.9				ug/L	57611	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1690.1	3.1				ug/L	1617	Standard
P	31	20316.9	1.2				ug/L	19244	Standard
S	34	3730.5	4.5				ug/L	3557	Standard
Sr	88	81.7	19.7				ug/L	65	Standard
C	12	70.0	37.8				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	9.8	2.8				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	17104.7	2.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Standard 3
Report Date/Time: Wednesday, July 06, 2016 09:16:43
Page 2

Approved: July 07, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
Report Date/Time: Wednesday, July 06, 2016 09:16:43
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Wednesday, July 06, 2016 09:17:38
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66884.0	0.1				ug/L	68501	Standard
	Be	9	88224.6	3.2	**99.5740**	3.306	3.3	ug/L	8	Standard
	Al	27	13788828.6	0.3	**99.4964**	0.194	0.2	ug/L	1397	Standard
	Sc	45	39158.9	0.7				ug/L	38815	Standard
	Ti	47	68919.1	0.6	**201.5379**	1.843	0.9	ug/L	36	Standard
	V	51	719296.6	1.5	**100.2019**	0.102	0.1	ug/L	1284	Standard
	Cr	52	705385.2	0.5	**99.7044**	1.740	1.7	ug/L	6503	Standard
	Cr	53	87203.6	1.1	**99.4514**	2.654	2.7	ug/L	492	Standard
	Mn	55	615004.9	1.8	**98.6300**	0.309	0.3	ug/L	841	Standard
	Co	59	609072.6	1.8	**99.0923**	0.921	0.9	ug/L	229	Standard
	Ni	60	170911.2	0.3	**99.9152**	1.711	1.7	ug/L	344	Standard
	Cu	65	170582.3	0.9	**100.0576**	0.984	1.0	ug/L	115	Standard
	Zn	66	103031.8	1.2	**100.2529**	1.311	1.3	ug/L	190	Standard
>	**Ge**	72	417484.4	1.5				ug/L	409858	Standard
	As	75	105421.3	1.9	**99.9351**	0.523	0.5	ug/L	-22	Standard
	Se	82	10609.1	1.1	**98.5413**	0.717	0.7	ug/L	18	Standard
	Se-1	77	7041.6	1.7	**99.6311**	0.902	0.9	ug/L	50	Standard
>	**Ga**	71	120.0	22.0				mg/L	97	Standard
	Rb	85	1431.7	9.1				ug/L	25	Standard
	Y	89	347235.8	1.1				ug/L	376763	Standard
>	**Rh**	103	50.0	40.0				ug/L	20	Standard
	Mo	98	472903.2	1.9	**204.0734**	7.868	3.9	ug/L	51	Standard
	Ag	107	609290.7	0.4	**101.5465**	1.842	1.8	ug/L	76	Standard
	Cd	111	190186.3	0.3	**99.7182**	2.132	2.1	mg/L	6	Standard
	Cd	114	463334.3	1.9	**99.3479**	0.949	1.0	ug/L	18	Standard
>	**In**	115	487825.7	2.0				ug/L	507261	Standard
	Sn	118	532387.4	0.9	**101.0517**	2.398	2.4	ug/L	683	Standard
	Sb	123	428675.4	0.6	**103.9403**	2.689	2.6	ug/L	446	Standard
	Ba	135	183999.9	1.0	**100.5640**	1.058	1.1	ug/L	28	Standard
	Ce	140	121.7	24.8				ug/L	33	Standard
>	**Tb**	159	797848.9	1.9				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	758741.0	0.7	**98.4092**	0.290	0.3	ug/L	13	Standard
	Tl	205	656065.4	1.0	**98.2593**	1.296	1.3	ug/L	13	Standard
	Pb	206	490776.8	0.9	**99.1731**	1.193	1.2	ug/L	226	Standard
	Pb	207	444826.7	1.6	**98.9819**	1.805	1.8	ug/L	204	Standard
	Pb	208	1755326.8	0.8	**97.6712**	0.884	0.9	ug/L	852	Standard
	U	238	658871.7	1.7	**98.9710**	1.946	2.0	ug/L	13	Standard
>	**Bi**	209	452838.5	0.5				ug/L	449044	Standard

Sample ID: Standard 4
Report Date/Time: Wednesday, July 06, 2016 09:19:55
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.1636**	15.495	9469.0	mg/L	2	Standard
Mg	24	7491.9	4.0	**10.0159**	0.397	4.0	mg/L	58	Standard
K	39	2466.9	4.5	**9.6061**	0.448	4.7	mg/L	27	Standard
Ca	43	150.0	8.8	**9.5397**	1.008	10.6	mg/L	20	Standard
Fe	54	11922.4	5.3	**9.7701**	0.472	4.8	mg/L	158	Standard
Fe	57	3127.0	4.3	**9.6894**	0.495	5.1	mg/L	267	Standard
> **Sc-1**	45	39158.9	0.7				mg/L	38815	Standard
Cl	35	56905.3	1.1				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1556.7	6.9				ug/L	1617	Standard
P	31	20498.9	2.2				ug/L	19244	Standard
S	34	3742.1	6.2				ug/L	3557	Standard
Sr	88	81.7	19.7				ug/L	65	Standard
C	12	83.3	18.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	6.0	87.0				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	1631.8	7.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Standard 4
Report Date/Time: Wednesday, July 06, 2016 09:19:55
Page 2

Approved: July 07, 2016

	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Wednesday, July 06, 2016 09:19:55
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Wednesday, July 06, 2016 09:20:51
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66356.7	1.4				ug/L	68501	Standard
	Be	9	43475.6	2.2	**49.4638**	0.458	0.9	ug/L	8	Standard
	Al	27	7054643.4	2.9	**51.3289**	1.450	2.8	ug/L	1397	Standard
	Sc	45	38495.5	1.3				ug/L	38815	Standard
	Ti	47	34184.5	1.1	**99.3657**	1.944	2.0	ug/L	36	Standard
	V	51	366676.1	1.6	**50.7082**	0.578	1.1	ug/L	1284	Standard
	Cr	52	360229.4	1.7	**50.1586**	1.359	2.7	ug/L	6503	Standard
	Cr	53	44777.8	2.1	**50.5577**	1.541	3.0	ug/L	492	Standard
	Mn	55	318282.5	2.3	**50.7079**	1.592	3.1	ug/L	841	Standard
	Co	59	313631.6	2.7	**50.7369**	1.677	3.3	ug/L	229	Standard
	Ni	60	85664.2	1.3	**49.7047**	1.124	2.3	ug/L	344	Standard
	Cu	65	85779.5	0.3	**50.0130**	0.649	1.3	ug/L	115	Standard
	Zn	66	52022.2	0.4	**50.2627**	0.310	0.6	ug/L	190	Standard
>	Ge	72	419951.3	1.0				ug/L	409858	Standard
	As	75	53198.3	0.4	**50.1862**	0.299	0.6	ug/L	-22	Standard
	Se	82	5468.0	1.7	**50.4702**	1.293	2.6	ug/L	18	Standard
	Se-1	77	3629.1	2.1	**50.6717**	0.631	1.2	ug/L	50	Standard
>	Ga	71	115.0	15.1				mg/L	97	Standard
	Rb	85	778.4	9.3				ug/L	25	Standard
	Y	89	357538.5	1.7				ug/L	376763	Standard
>	Rh	103	33.3	22.9				ug/L	20	Standard
	Mo	98	239539.0	1.4	**103.1272**	1.538	1.5	ug/L	51	Standard
	Ag	107	306299.6	0.9	**50.9387**	0.703	1.4	ug/L	76	Standard
	Cd	111	97069.3	1.3	**50.7873**	0.404	0.8	mg/L	6	Standard
	Cd	114	234626.7	1.1	**50.2178**	0.829	1.6	ug/L	18	Standard
>	In	115	488900.7	0.6				ug/L	507261	Standard
	Sn	118	263207.0	1.9	**49.7800**	1.006	2.0	ug/L	683	Standard
	Sb	123	214060.8	1.6	**51.7618**	0.833	1.6	ug/L	446	Standard
	Ba	135	93668.6	0.5	**51.0843**	0.522	1.0	ug/L	28	Standard
	Ce	140	71.7	24.5				ug/L	33	Standard
>	Tb	159	790633.0	1.4				ug/L	800803	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	386612.8	0.6	**50.2968**	0.791	1.6	ug/L	13	Standard
	Tl	205	338341.7	1.7	**50.8334**	1.347	2.7	ug/L	13	Standard
	Pb	206	249116.9	0.4	**50.4726**	0.709	1.4	ug/L	226	Standard
	Pb	207	225878.3	0.4	**50.3950**	0.604	1.2	ug/L	204	Standard
	Pb	208	910277.1	0.9	**50.7865**	0.810	1.6	ug/L	852	Standard
	U	238	332181.4	0.8	**50.0553**	1.080	2.2	ug/L	13	Standard
>	Bi	209	451671.8	1.3				ug/L	449044	Standard

Sample ID: QC Std 1
Report Date/Time: Wednesday, July 06, 2016 09:23:08
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.4126**	15.927	3859.7	mg/L	2	Standard
Mg	24	3910.5	3.2	**5.3019**	0.233	4.4	mg/L	58	Standard
K	39	1270.1	5.5	**4.9629**	0.272	5.5	mg/L	27	Standard
Ca	43	80.0	22.5	**4.5990**	1.376	29.9	mg/L	20	Standard
Fe	54	6189.1	5.7	**5.1014**	0.233	4.6	mg/L	158	Standard
Fe	57	1740.1	3.2	**5.1884**	0.136	2.6	mg/L	267	Standard
Sc-1	45	38495.5	1.3				mg/L	38815	Standard
Cl	35	57189.1	1.2				ug/L	57611	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1483.4	3.7				ug/L	1617	Standard
P	31	20629.0	2.5				ug/L	19244	Standard
S	34	3698.8	3.4				ug/L	3557	Standard
Sr	88	71.7	10.7				ug/L	65	Standard
C	12	63.3	18.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	6.0	94.2				mg/L	13	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	16258.7	1.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.928		
Al	27	102.658		
Sc	45			
Ti	47	99.366		
V	51	101.416		
Cr	52	100.317		
Cr	53			
Mn	55	101.416		
Co	59	101.474		
Ni	60	99.409		
Cu	65	100.026		
Zn	66	100.525		
Ge	72		102.463	
As	75	100.372		
Se	82	100.940		
Se-1	77			
Ga	71			

Sample ID: QC Std 1
Report Date/Time: Wednesday, July 06, 2016 09:23:08
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	103.127		
Ag	107	101.877		
Cd	111	101.575		
Cd	114			
In	115		96.381	
Sn	118	99.560		
Sb	123	103.524		
Ba	135	102.169		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.594		
Tl	205			
Pb	206	100.945		
Pb	207	100.790		
Pb	208	101.573		
U	238	100.111		
Bi	209		100.585	
Na	23	8.253		
Mg	24	106.038		
K	39	99.259		
Ca	43	91.981		
Fe	54	102.028		
Fe	57	103.769		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
Report Date/Time: Wednesday, July 06, 2016 09:23:08
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Wednesday, July 06, 2016 09:24:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67100.0	2.8				ug/L	68501	Standard
	Be	9	23.3	44.6	**0.0459**	0.012	26.8	ug/L	8	Standard
	Al	27	2183.5	5.5	**0.0508**	0.001	1.9	ug/L	1397	Standard
	Sc	45	38350.2	1.8				ug/L	38815	Standard
	Ti	47	45.0	10.2	**0.1079**	0.013	11.8	ug/L	36	Standard
	V	51	1197.9	4.5	**0.0284**	0.009	33.2	ug/L	1284	Standard
	Cr	52	6091.2	0.6	**-0.0369**	0.012	32.3	ug/L	6503	Standard
	Cr	53	483.3	2.6	**0.1526**	0.017	11.3	ug/L	492	Standard
	Mn	55	1339.7	3.7	**0.1261**	0.010	8.2	ug/L	841	Standard
	Co	59	302.7	6.8	**0.0563**	0.004	6.7	ug/L	229	Standard
	Ni	60	363.3	5.5	**0.0617**	0.010	16.0	ug/L	344	Standard
	Cu	65	140.0	3.7	**0.0715**	0.003	4.8	ug/L	115	Standard
	Zn	66	330.3	4.9	**0.2188**	0.020	8.9	ug/L	190	Standard
>	**Ge**	72	404498.0	1.0				ug/L	409858	Standard
	As	75	-54.7	81.6	**0.0457**	0.043	94.2	ug/L	-22	Standard
	Se	82	15.5	9.6	**0.0976**	0.016	16.1	ug/L	18	Standard
	Se-1	77	49.7	14.8	**-0.0288**	0.101	349.5	ug/L	50	Standard
>	**Ga**	71	81.7	23.2				mg/L	97	Standard
	Rb	85	16.7	45.8				ug/L	25	Standard
	Y	89	369622.9	1.1				ug/L	376763	Standard
>	**Rh**	103	16.7	62.4				ug/L	20	Standard
	Mo	98	227.3	14.0	**0.1640**	0.015	8.9	ug/L	51	Standard
	Ag	107	151.0	33.0	**0.0469**	0.008	17.6	ug/L	76	Standard
	Cd	111	28.2	76.8	**0.0534**	0.011	20.6	mg/L	6	Standard
	Cd	114	78.0	111.0	**0.0533**	0.018	33.5	ug/L	18	Standard
>	**In**	115	517958.4	1.8				ug/L	507261	Standard
	Sn	118	1193.4	27.5	**0.1041**	0.062	59.9	ug/L	683	Standard
	Sb	123	1119.5	34.5	**0.2362**	0.092	38.9	ug/L	446	Standard
	Ba	135	62.7	17.1	**0.0481**	0.006	12.7	ug/L	28	Standard
	Ce	140	18.3	31.5				ug/L	33	Standard
>	**Tb**	159	802322.5	1.8				ug/L	800803	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	124.7	67.7	**0.0496**	0.011	22.5	ug/L	13	Standard
	Tl	205	53.3	42.3	**0.0506**	0.003	6.9	ug/L	13	Standard
	Pb	206	298.0	8.1	**0.0563**	0.006	10.3	ug/L	226	Standard
	Pb	207	230.3	14.6	**0.0502**	0.008	15.3	ug/L	204	Standard
	Pb	208	1030.3	4.7	**0.0574**	0.003	4.4	ug/L	852	Standard
	U	238	66.0	13.5	**0.0525**	0.001	2.7	ug/L	13	Standard
>	**Bi**	209	452580.9	1.6				ug/L	449044	Standard

Sample ID: QC Std 2
Report Date/Time: Wednesday, July 06, 2016 09:26:21
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	51.7	20.1	**0.0326**	0.015	47.2	mg/L	58	Standard
K	39	26.7	28.6	**-0.0338**	0.033	97.4	mg/L	27	Standard
Ca	43	25.0	34.6	**0.5702**	0.676	118.6	mg/L	20	Standard
Fe	54	150.9	33.4	**0.0073**	0.041	560.9	mg/L	158	Standard
Fe	57	226.7	20.0	**0.0891**	0.161	181.3	mg/L	267	Standard
> **Sc-1**	45	38350.2	1.8				mg/L	38815	Standard
Cl	35	56957.5	0.7				ug/L	57611	Standard
Kr	83	2.7	94.4				ug/L	2	Standard
Br	81	1566.7	7.6				ug/L	1617	Standard
P	31	19928.1	2.3				ug/L	19244	Standard
S	34	3602.1	6.0				ug/L	3557	Standard
Sr	88	55.0	15.7				ug/L	65	Standard
C	12	60.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	23	Standard
Dy	164	13.0	89.8				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	9436.3	0.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.692	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 2
Report Date/Time: Wednesday, July 06, 2016 09:26:21
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.109
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.788
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Tl	203	
QC Std 2	Na	23	

Sample ID: QC Std 2
Report Date/Time: Wednesday, July 06, 2016 09:26:21
Page 3

Approved: July 07, 2016

QC Std 2	Ca	43

Sample ID: QC Std 2
Report Date/Time: Wednesday, July 06, 2016 09:26:21
Page 4

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Wednesday, July 06, 2016 09:27:17
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65417.6	1.3				ug/L	68501	Standard
	Be	9	186.7	5.6	**0.2348**	0.012	5.3	ug/L	8	Standard
	Al	27	2355.2	45.5	**0.0524**	0.008	14.6	ug/L	1397	Standard
	Sc	45	37294.2	0.1				ug/L	38815	Standard
	Ti	47	42.7	24.1	**0.0989**	0.031	31.6	ug/L	36	Standard
	V	51	3828.2	3.6	**0.3978**	0.022	5.6	ug/L	1284	Standard
	Cr	52	11586.1	1.6	**0.7432**	0.033	4.5	ug/L	6503	Standard
	Cr	53	1166.7	5.5	**0.9370**	0.082	8.8	ug/L	492	Standard
	Mn	55	3627.4	3.0	**0.4950**	0.021	4.2	ug/L	841	Standard
	Co	59	2526.2	0.4	**0.4225**	0.004	0.8	ug/L	229	Standard
	Ni	60	2915.6	1.9	**1.5740**	0.024	1.5	ug/L	344	Standard
	Cu	65	1393.7	0.1	**0.8162**	0.004	0.5	ug/L	115	Standard
	Zn	66	6625.1	1.8	**6.4340**	0.109	1.7	ug/L	190	Standard
>	**Ge**	72	411474.6	0.6				ug/L	409858	Standard
	As	75	332.4	3.7	**0.4184**	0.013	3.2	ug/L	-22	Standard
	Se	82	50.5	10.9	**0.4250**	0.052	12.2	ug/L	18	Standard
	Se-1	77	77.0	7.2	**0.3547**	0.078	22.0	ug/L	50	Standard
>	**Ga**	71	86.7	29.0				mg/L	97	Standard
	Rb	85	31.7	24.1				ug/L	25	Standard
	Y	89	346988.1	2.4				ug/L	376763	Standard
>	**Rh**	103	26.7	10.8				ug/L	20	Standard
	Mo	98	119.3	16.3	**0.1236**	0.010	7.7	ug/L	51	Standard
	Ag	107	2405.2	1.0	**0.4282**	0.008	1.8	ug/L	76	Standard
	Cd	111	441.8	10.7	**0.2737**	0.030	10.8	mg/L	6	Standard
	Cd	114	1119.1	2.0	**0.2799**	0.008	2.7	ug/L	18	Standard
>	**In**	115	482554.7	1.9				ug/L	507261	Standard
	Sn	118	655.0	25.2	**0.0153**	0.029	191.7	ug/L	683	Standard
	Sb	123	1858.9	4.6	**0.4351**	0.013	3.0	ug/L	446	Standard
	Ba	135	1308.4	0.6	**0.7386**	0.014	1.9	ug/L	28	Standard
	Ce	140	8.3	69.3				ug/L	33	Standard
>	**Tb**	159	783468.8	1.6				ug/L	800803	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	676.0	5.5	**0.1197**	0.006	5.2	ug/L	13	Standard
	Tl	205	601.7	15.4	**0.1314**	0.015	11.6	ug/L	13	Standard
	Pb	206	1247.7	7.0	**0.2445**	0.022	8.9	ug/L	226	Standard
	Pb	207	1033.4	4.7	**0.2255**	0.015	6.5	ug/L	204	Standard
	Pb	208	4382.9	3.6	**0.2404**	0.013	5.4	ug/L	852	Standard
	U	238	2536.5	4.5	**0.4179**	0.023	5.6	ug/L	13	Standard
>	**Bi**	209	459865.4	1.7				ug/L	449044	Standard

Sample ID: QC Std 3
Report Date/Time: Wednesday, July 06, 2016 09:29:34
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	10.0	**0.0321**	0.007	21.9	mg/L	58	Standard
K	39	20.0	50.0	**-0.0588**	0.042	70.7	mg/L	27	Standard
Ca	43	26.7	10.8	**0.7405**	0.217	29.3	mg/L	20	Standard
Fe	54	103.7	16.3	**-0.0299**	0.015	49.0	mg/L	158	Standard
Fe	57	241.7	33.6	**0.1616**	0.283	174.8	mg/L	267	Standard
Sc-1	45	37294.2	0.1				mg/L	38815	Standard
Cl	35	54505.2	0.8				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1563.4	7.1				ug/L	1617	Standard
P	31	13631.1	2.5				ug/L	19244	Standard
S	34	3488.7	2.2				ug/L	3557	Standard
Sr	88	75.0	23.1				ug/L	65	Standard
C	12	66.7	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	23	Standard
Dy	164	6.2	193.4				mg/L	13	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1130.0	12.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	117.422		
Al	27	5.237		
Sc	45			
Ti	47			
V	51	99.451		
Cr	52	92.904		
Cr	53			
Mn	55	98.996		
Co	59	105.620		
Ni	60	98.374		
Cu	65	102.028		
Zn	66	102.944		
Ge	72		100.394	
As	75	104.589		
Se	82	106.246		
Se-1	77			
Ga	71			

Sample ID: QC Std 3
Report Date/Time: Wednesday, July 06, 2016 09:29:34
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	107.059		
Cd	111	114.057		
Cd	114			
> In	115			95.130
Sn	118			
Sb	123	108.770		
Ba	135	98.481		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	149.655		
Tl	205			
Pb	206			
Pb	207			
Pb	208	120.192		
U	238	104.477		
> Bi	209			102.410
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	
QC Std 3	Tl	203	

Sample ID: QC Std 3
Report Date/Time: Wednesday, July 06, 2016 09:29:34
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, July 06, 2016 09:30:29
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61360.7	2.7				ug/L	68501	Standard
	Be	9	15.0	0.0	**0.0379**	0.000	1.3	ug/L	8	Standard
	Al	27	6080942.0	0.8	**47.8630**	0.940	2.0	ug/L	1397	Standard
	Sc	45	35434.7	2.4				ug/L	38815	Standard
	Ti	47	33819.4	1.1	**108.9282**	1.555	1.4	ug/L	36	Standard
	V	51	1377.9	9.8	**0.0677**	0.022	32.9	ug/L	1284	Standard
	Cr	52	5607.7	0.5	**-0.0525**	0.010	18.8	ug/L	6503	Standard
	Cr	53	2843.6	7.6	**3.1694**	0.297	9.4	ug/L	492	Standard
	Mn	55	2265.8	2.0	**0.3048**	0.005	1.6	ug/L	841	Standard
	Co	59	371.0	7.9	**0.0720**	0.005	7.5	ug/L	229	Standard
	Ni	60	730.4	5.2	**0.3134**	0.028	9.0	ug/L	344	Standard
	Cu	65	524.3	4.8	**0.3256**	0.018	5.6	ug/L	115	Standard
	Zn	66	828.7	1.3	**0.7759**	0.017	2.1	ug/L	190	Standard
>	**Ge**	72	378975.5	0.8				ug/L	409858	Standard
	As	75	-44.0	48.2	**0.0530**	0.022	41.2	ug/L	-22	Standard
	Se	82	14.2	49.4	**0.0934**	0.070	75.2	ug/L	18	Standard
	Se-1	77	280.7	4.8	**3.6481**	0.177	4.9	ug/L	50	Standard
>	**Ga**	71	138.3	17.8				mg/L	97	Standard
	Rb	85	721.7	0.8				ug/L	25	Standard
	Y	89	331853.6	3.0				ug/L	376763	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	199402.1	1.4	**89.6813**	1.424	1.6	ug/L	51	Standard
	Ag	107	208.0	7.5	**0.0592**	0.003	4.4	ug/L	76	Standard
	Cd	111	-165.0	5.5	**-0.0508**	0.005	10.6	mg/L	6	Standard
	Cd	114	386.9	16.9	**0.1238**	0.015	11.9	ug/L	18	Standard
>	**In**	115	468051.7	0.5				ug/L	507261	Standard
	Sn	118	676.7	22.2	**0.0239**	0.030	124.4	ug/L	683	Standard
	Sb	123	1910.7	40.1	**0.4622**	0.193	41.7	ug/L	446	Standard
	Ba	135	45.0	14.6	**0.0414**	0.004	8.9	ug/L	28	Standard
	Ce	140	46.7	22.3				ug/L	33	Standard
>	**Tb**	159	757530.1	1.7				ug/L	800803	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	92.7	26.0	**0.0459**	0.003	6.8	ug/L	13	Standard
	Tl	205	90.0	49.4	**0.0566**	0.007	12.3	ug/L	13	Standard
	Pb	206	335.3	13.1	**0.0669**	0.009	14.2	ug/L	226	Standard
	Pb	207	277.7	7.6	**0.0636**	0.005	8.5	ug/L	204	Standard
	Pb	208	1135.7	5.8	**0.0662**	0.004	6.7	ug/L	852	Standard
	U	238	21.0	79.3	**0.0459**	0.003	5.8	ug/L	13	Standard
>	**Bi**	209	432940.1	1.1				ug/L	449044	Standard

Sample ID: QC Std 4
Report Date/Time: Wednesday, July 06, 2016 09:32:46
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**10.8562**	17.008	156.7	mg/L	2	Standard
Mg	24	8482.4	1.3	**12.5439**	0.150	1.2	mg/L	58	Standard
K	39	1155.0	6.5	**4.9086**	0.447	9.1	mg/L	27	Standard
Ca	43	233.3	21.1	**17.2901**	3.698	21.4	mg/L	20	Standard
Fe	54	13645.3	0.6	**12.3970**	0.377	3.0	mg/L	158	Standard
Fe	57	3633.8	2.3	**12.6445**	0.637	5.0	mg/L	267	Standard
> **Sc-1**	45	35434.7	2.4				mg/L	38815	Standard
Cl	35	51675.3	0.7				ug/L	57611	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1330.1	8.5				ug/L	1617	Standard
P	31	6708.2	2.1				ug/L	19244	Standard
S	34	3120.3	1.5				ug/L	3557	Standard
Sr	88	66.7	33.8				ug/L	65	Standard
C	12	96.7	26.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	66.1				mg/L	23	Standard
Dy	164	12.7	119.6				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	5110.9	1.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.957		
Sc	45			
Ti	47	108.928		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.465	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 4
Report Date/Time: Wednesday, July 06, 2016 09:32:46
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	89.681		
Ag	107			
Cd	111			
Cd	114			
In	115			92.270
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			96.414
Na	23	86.849		
Mg	24	250.878		
K	39	98.171		
Ca	43	115.267		
Fe	54	99.176		
Fe	57	101.156		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Mn	55	
QC Std 4	Sb	123	

Sample ID: QC Std 4
Report Date/Time: Wednesday, July 06, 2016 09:32:46
Page 3

Approved: July 07, 2016

QC Std 4	Tl	203
QC Std 4	Mg	24

Sample ID: QC Std 4
Report Date/Time: Wednesday, July 06, 2016 09:32:46
Page 4

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, July 06, 2016 09:33:40
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64567.3	2.5				ug/L	68501	Standard
	Be	9	91125.1	3.2	**106.5212**	0.809	0.8	ug/L	8	Standard
	Al	27	5841463.6	2.0	**43.6871**	0.390	0.9	ug/L	1397	Standard
	Sc	45	37758.7	1.0				ug/L	38815	Standard
	Ti	47	31558.5	0.9	**93.8751**	2.819	3.0	ug/L	36	Standard
	V	51	722341.4	0.7	**102.3673**	1.700	1.7	ug/L	1284	Standard
	Cr	52	704068.9	1.5	**101.2574**	3.373	3.3	ug/L	6503	Standard
	Cr	53	89332.6	1.3	**103.6555**	3.522	3.4	ug/L	492	Standard
	Mn	55	628105.6	1.2	**102.4937**	2.947	2.9	ug/L	841	Standard
	Co	59	608757.5	0.2	**100.7586**	2.068	2.1	ug/L	229	Standard
	Ni	60	168811.6	0.8	**100.3826**	2.213	2.2	ug/L	344	Standard
	Cu	65	170633.5	1.2	**101.8171**	2.544	2.5	ug/L	115	Standard
	Zn	66	104159.9	1.6	**103.1127**	3.201	3.1	ug/L	190	Standard
>	Ge	72	410487.5	2.1				ug/L	409858	Standard
	As	75	106667.7	1.2	**102.8884**	3.381	3.3	ug/L	-22	Standard
	Se	82	10891.4	0.5	**102.9229**	2.705	2.6	ug/L	18	Standard
	Se-1	77	7297.8	0.3	**105.0915**	2.607	2.5	ug/L	50	Standard
>	Ga	71	166.7	16.5				mg/L	97	Standard
	Rb	85	588.3	10.8				ug/L	25	Standard
	Y	89	358285.2	0.9				ug/L	376763	Standard
>	Rh	103	51.7	34.0				ug/L	20	Standard
	Mo	98	193849.3	1.5	**83.7046**	1.699	2.0	ug/L	51	Standard
	Ag	107	512024.5	0.8	**85.3915**	2.560	3.0	ug/L	76	Standard
	Cd	111	192888.4	1.5	**101.1583**	0.926	0.9	mg/L	6	Standard
	Cd	114	469964.6	2.8	**100.8180**	2.635	2.6	ug/L	18	Standard
>	In	115	487630.1	2.2				ug/L	507261	Standard
	Sn	118	1078.4	11.5	**0.0947**	0.021	22.4	ug/L	683	Standard
	Sb	123	417338.3	2.0	**101.2012**	0.566	0.6	ug/L	446	Standard
	Ba	135	184015.1	1.0	**100.6250**	1.956	1.9	ug/L	28	Standard
	Ce	140	75.0	30.6				ug/L	33	Standard
>	Tb	159	776420.3	0.7				ug/L	800803	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	765644.3	1.1	**101.4362**	1.960	1.9	ug/L	13	Standard
	Tl	205	667667.3	1.5	**102.1249**	0.931	0.9	ug/L	13	Standard
	Pb	206	500852.9	0.2	**103.3724**	0.899	0.9	ug/L	226	Standard
	Pb	207	436808.9	0.8	**99.2777**	1.432	1.4	ug/L	204	Standard
	Pb	208	1811126.3	0.8	**102.9331**	1.386	1.3	ug/L	852	Standard
	U	238	659589.2	0.9	**101.1936**	1.228	1.2	ug/L	13	Standard
>	Bi	209	443371.5	0.9				ug/L	449044	Standard

Sample ID: QC Std 5
Report Date/Time: Wednesday, July 06, 2016 09:35:57
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**10.0106**	16.275	162.6	mg/L	2	Standard
Mg	24	7865.4	1.0	**10.9091**	0.136	1.2	mg/L	58	Standard
K	39	1000.0	5.3	**3.9554**	0.187	4.7	mg/L	27	Standard
Ca	43	148.3	19.5	**9.8082**	2.124	21.7	mg/L	20	Standard
Fe	54	12345.4	1.8	**10.5037**	0.262	2.5	mg/L	158	Standard
Fe	57	3278.7	4.2	**10.5976**	0.579	5.5	mg/L	267	Standard
Sc-1	45	37758.7	1.0				mg/L	38815	Standard
Cl	35	56009.4	2.9				ug/L	57611	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	1560.1	10.6				ug/L	1617	Standard
P	31	17989.0	3.4				ug/L	19244	Standard
S	34	3142.0	3.8				ug/L	3557	Standard
Sr	88	61.7	30.7				ug/L	65	Standard
C	12	113.3	28.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0					mg/L	23	Standard
Dy	164	16.2	33.1				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	8464.0	3.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.521		
Al	27	0.874		
Sc	45			
Ti	47	93.875		
V	51	102.367		
Cr	52	101.257		
Cr	53			
Mn	55	102.494		
Co	59	100.759		
Ni	60	100.383		
Cu	65	101.817		
Zn	66	103.113		
Ge	72		100.154	
As	75	102.888		
Se	82	102.923		
Se-1	77			
Ga	71			

Sample ID: QC Std 5
Report Date/Time: Wednesday, July 06, 2016 09:35:57
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	83.705		
Ag	107	85.392		
Cd	111	101.158		
Cd	114			
In	115		96.130	
Sn	118			
Sb	123	101.201		
Ba	135	100.625		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.436		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.933		
U	238	101.194		
Bi	209		98.737	
Na	23	80.085		
Mg	24	218.182		
K	39	79.108		
Ca	43	65.388		
Fe	54	84.030		
Fe	57	84.781		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
Report Date/Time: Wednesday, July 06, 2016 09:35:57
Page 3

Approved: July 07, 2016

QC Std 5	K	39
QC Std 5	Ca	43

Sample ID: QC Std 5
Report Date/Time: Wednesday, July 06, 2016 09:35:57
Page 4

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 09:36:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66505.7	2.0				ug/L	68501	Standard
	Be	9	44953.3	3.2	**51.0275**	0.926	1.8	ug/L	8	Standard
	Al	27	6996524.9	1.6	**50.7955**	0.749	1.5	ug/L	1397	Standard
	Sc	45	38022.7	1.7				ug/L	38815	Standard
	Ti	47	33782.0	1.4	**100.5626**	2.963	2.9	ug/L	36	Standard
	V	51	357671.8	0.9	**50.6587**	1.245	2.5	ug/L	1284	Standard
	Cr	52	354246.5	1.3	**50.5178**	1.460	2.9	ug/L	6503	Standard
	Cr	53	43226.6	2.1	**49.9696**	1.458	2.9	ug/L	492	Standard
	Mn	55	314552.6	0.4	**51.3140**	0.983	1.9	ug/L	841	Standard
	Co	59	307541.5	1.8	**50.9392**	1.094	2.1	ug/L	229	Standard
	Ni	60	84538.5	1.1	**50.2327**	1.339	2.7	ug/L	344	Standard
	Cu	65	84460.4	0.1	**50.4258**	0.835	1.7	ug/L	115	Standard
	Zn	66	51209.1	0.6	**50.6642**	0.504	1.0	ug/L	190	Standard
>	Ge	72	410145.3	1.6				ug/L	409858	Standard
	As	75	52298.5	0.3	**50.5211**	0.645	1.3	ug/L	-22	Standard
	Se	82	5387.6	0.7	**50.9166**	0.695	1.4	ug/L	18	Standard
	Se-1	77	3526.4	1.5	**50.4307**	1.547	3.1	ug/L	50	Standard
>	Ga	71	90.0	9.6				mg/L	97	Standard
	Rb	85	696.7	6.5				ug/L	25	Standard
	Y	89	365798.1	0.7				ug/L	376763	Standard
>	Rh	103	33.3	48.2				ug/L	20	Standard
	Mo	98	235366.3	0.5	**98.5044**	2.325	2.4	ug/L	51	Standard
	Ag	107	305020.7	0.3	**49.3129**	1.388	2.8	ug/L	76	Standard
	Cd	111	97013.5	1.7	**49.3321**	0.528	1.1	mg/L	6	Standard
	Cd	114	235858.1	1.3	**49.0627**	0.748	1.5	ug/L	18	Standard
>	In	115	503155.0	2.8				ug/L	507261	Standard
	Sn	118	267872.4	1.1	**49.2399**	0.827	1.7	ug/L	683	Standard
	Sb	123	217573.7	0.6	**51.1402**	1.098	2.1	ug/L	446	Standard
	Ba	135	92365.7	1.0	**48.9616**	0.896	1.8	ug/L	28	Standard
	Ce	140	65.0	48.0				ug/L	33	Standard
>	Tb	159	792588.9	2.6				ug/L	800803	Standard
	Ho	165	10.0					ug/L	10	Standard
	Tl	203	384594.0	0.3	**50.4727**	0.329	0.7	ug/L	13	Standard
	Tl	205	336187.3	0.9	**50.9472**	0.055	0.1	ug/L	13	Standard
	Pb	206	247875.6	0.9	**50.6606**	0.314	0.6	ug/L	226	Standard
	Pb	207	224269.3	0.7	**50.4752**	0.242	0.5	ug/L	204	Standard
	Pb	208	908021.7	0.7	**51.1061**	0.556	1.1	ug/L	852	Standard
	U	238	333822.0	1.2	**50.7390**	0.560	1.1	ug/L	13	Standard
>	Bi	209	447704.5	0.9				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 09:39:10
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3780.5	3.8	**5.1881**	0.227	4.4	mg/L	58	Standard
K	39	1228.4	12.1	**4.8519**	0.530	10.9	mg/L	27	Standard
Ca	43	108.3	37.3	**6.7544**	2.939	43.5	mg/L	20	Standard
Fe	54	5918.1	5.4	**4.9348**	0.198	4.0	mg/L	158	Standard
Fe	57	1796.8	5.7	**5.4534**	0.272	5.0	mg/L	267	Standard
> **Sc-1**	45	38022.7	1.7				mg/L	38815	Standard
Cl	35	56907.4	1.6				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1520.1	14.0				ug/L	1617	Standard
P	31	19652.7	3.0				ug/L	19244	Standard
S	34	3582.1	6.2				ug/L	3557	Standard
Sr	88	58.3	35.7				ug/L	65	Standard
C	12	83.3	48.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	2.5	222.5				mg/L	13	Standard
Ho-1	165	10.0					mg/L	10	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	16659.2	0.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.055		
Al	27	101.591		
Sc	45			
Ti	47	100.563		
V	51	101.317		
Cr	52	101.036		
Cr	53			
Mn	55	102.628		
Co	59	101.878		
Ni	60	100.465		
Cu	65	100.852		
Zn	66	101.328		
> Ge	72		100.070	
As	75	101.042		
Se	82	101.833		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 09:39:10
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.504		
Ag	107	98.626		
Cd	111	98.664		
Cd	114			
In	115			99.191
Sn	118	98.480		
Sb	123	102.280		
Ba	135	97.923		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.945		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.212		
U	238	101.478		
Bi	209			99.702
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 09:39:10
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 09:40:05
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66617.8	0.8				ug/L	68501	Standard
	Be	9	33.3	74.0	**0.0573**	0.028	48.9	ug/L	8	Standard
	Al	27	2161.8	25.3	**0.0507**	0.004	7.7	ug/L	1397	Standard
	Sc	45	38288.3	3.0				ug/L	38815	Standard
	Ti	47	35.7	16.4	**0.0742**	0.017	23.1	ug/L	36	Standard
	V	51	1261.9	1.4	**0.0280**	0.003	9.9	ug/L	1284	Standard
	Cr	52	6321.3	1.3	**-0.0523**	0.014	26.2	ug/L	6503	Standard
	Cr	53	518.3	8.0	**0.1616**	0.049	30.1	ug/L	492	Standard
	Mn	55	1281.1	5.7	**0.1051**	0.012	11.5	ug/L	841	Standard
	Co	59	281.7	13.9	**0.0503**	0.006	12.7	ug/L	229	Standard
	Ni	60	349.7	5.0	**0.0424**	0.011	25.7	ug/L	344	Standard
	Cu	65	134.3	2.3	**0.0637**	0.001	2.3	ug/L	115	Standard
	Zn	66	339.7	5.5	**0.2101**	0.019	9.0	ug/L	190	Standard
>	**Ge**	72	427105.9	0.4				ug/L	409858	Standard
	As	75	-33.1	67.2	**0.0683**	0.021	30.1	ug/L	-22	Standard
	Se	82	22.7	11.6	**0.1545**	0.025	15.9	ug/L	18	Standard
	Se-1	77	55.0	19.7	**0.0077**	0.152	1983.6	ug/L	50	Standard
>	**Ga**	71	78.3	13.3				mg/L	97	Standard
	Rb	85	18.3	103.3				ug/L	25	Standard
	Y	89	350460.3	0.9				ug/L	376763	Standard
>	**Rh**	103	20.0	50.0				ug/L	20	Standard
	Mo	98	275.0	5.1	**0.1892**	0.006	3.3	ug/L	51	Standard
	Ag	107	134.3	23.5	**0.0453**	0.005	11.8	ug/L	76	Standard
	Cd	111	12.2	37.2	**0.0457**	0.002	5.3	mg/L	6	Standard
	Cd	114	38.5	33.1	**0.0456**	0.003	6.2	ug/L	18	Standard
>	**In**	115	491789.1	1.5				ug/L	507261	Standard
	Sn	118	988.4	21.5	**0.0758**	0.037	48.9	ug/L	683	Standard
	Sb	123	1592.3	35.2	**0.3614**	0.130	35.9	ug/L	446	Standard
	Ba	135	53.3	21.9	**0.0447**	0.007	15.0	ug/L	28	Standard
	Ce	140	16.7	62.4				ug/L	33	Standard
>	**Tb**	159	781565.5	1.5				ug/L	800803	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	98.7	20.5	**0.0461**	0.003	6.2	ug/L	13	Standard
	Tl	205	86.7	8.8	**0.0554**	0.001	2.4	ug/L	13	Standard
	Pb	206	292.7	16.7	**0.0548**	0.011	19.9	ug/L	226	Standard
	Pb	207	246.3	10.8	**0.0535**	0.007	12.6	ug/L	204	Standard
	Pb	208	1017.0	10.2	**0.0564**	0.007	11.9	ug/L	852	Standard
	U	238	61.7	31.6	**0.0519**	0.003	6.0	ug/L	13	Standard
>	**Bi**	209	455909.4	1.7				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 09:42:22
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	17.3	**0.0301**	0.010	32.4	mg/L	58	Standard
K	39	36.7	34.3	**0.0056**	0.047	830.8	mg/L	27	Standard
Ca	43	26.7	21.7	**0.6975**	0.476	68.2	mg/L	20	Standard
Fe	54	127.9	32.7	**-0.0110**	0.038	345.5	mg/L	158	Standard
Fe	57	243.3	9.7	**0.1461**	0.086	58.8	mg/L	267	Standard
Sc-1	45	38288.3	3.0				mg/L	38815	Standard
Cl	35	57568.5	0.3				ug/L	57611	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1590.1	4.4				ug/L	1617	Standard
P	31	19429.1	3.6				ug/L	19244	Standard
S	34	3620.4	4.4				ug/L	3557	Standard
Sr	88	75.0	29.1				ug/L	65	Standard
C	12	53.3	65.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	3.2	186.4				mg/L	13	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	9119.4	0.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.208	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 09:42:22
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.950
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.529
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 09:42:22
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: PBW M1 WG574195-02
Sample Date/Time: Wednesday, July 06, 2016 09:43:17
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67511.8	3.1				ug/L	68501	Standard
	Be	9	25.0	34.6	**0.0476**	0.010	21.9	ug/L	8	Standard
	Al	27	5334.3	10.5	**0.0732**	0.004	5.8	ug/L	1397	Standard
	Sc	45	39065.3	1.5				ug/L	38815	Standard
	Ti	47	49.7	15.4	**0.1167**	0.022	18.5	ug/L	36	Standard
	V	51	1253.3	6.8	**0.0300**	0.013	44.6	ug/L	1284	Standard
	Cr	52	6631.5	2.9	**0.0081**	0.037	458.1	ug/L	6503	Standard
	Cr	53	545.0	6.4	**0.2024**	0.035	17.4	ug/L	492	Standard
	Mn	55	1151.7	3.0	**0.0881**	0.004	4.1	ug/L	841	Standard
	Co	59	268.0	15.0	**0.0489**	0.006	13.0	ug/L	229	Standard
	Ni	60	392.3	2.3	**0.0709**	0.007	9.6	ug/L	344	Standard
	Cu	65	185.3	9.7	**0.0949**	0.010	10.2	ug/L	115	Standard
	Zn	66	1260.4	3.9	**1.1090**	0.058	5.3	ug/L	190	Standard
>	**Ge**	72	419416.9	1.1				ug/L	409858	Standard
	As	75	-28.0	41.9	**0.0725**	0.011	14.9	ug/L	-22	Standard
	Se	82	14.4	17.6	**0.0816**	0.025	30.3	ug/L	18	Standard
	Se-1	77	63.0	6.3	**0.1348**	0.050	36.9	ug/L	50	Standard
>	**Ga**	71	83.3	12.5				mg/L	97	Standard
	Rb	85	50.0	26.5				ug/L	25	Standard
	Y	89	366616.6	3.0				ug/L	376763	Standard
>	**Rh**	103	25.0	0.0				ug/L	20	Standard
	Mo	98	259.4	6.9	**0.1805**	0.007	3.8	ug/L	51	Standard
	Ag	107	900.4	144.5	**0.1721**	0.216	125.8	ug/L	76	Standard
	Cd	111	19.2	57.3	**0.0491**	0.005	11.1	mg/L	6	Standard
	Cd	114	41.4	108.1	**0.0459**	0.009	20.2	ug/L	18	Standard
>	**In**	115	500661.9	2.1				ug/L	507261	Standard
	Sn	118	693.3	21.9	**0.0183**	0.028	154.4	ug/L	683	Standard
	Sb	123	868.0	28.9	**0.1846**	0.059	31.7	ug/L	446	Standard
	Ba	135	81.7	11.6	**0.0592**	0.004	7.1	ug/L	28	Standard
	Ce	140	48.3	31.6				ug/L	33	Standard
>	**Tb**	159	787550.5	1.0				ug/L	800803	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	87.3	46.5	**0.0445**	0.005	11.5	ug/L	13	Standard
	Tl	205	70.0	57.1	**0.0529**	0.006	11.1	ug/L	13	Standard
	Pb	206	294.0	2.6	**0.0548**	0.001	2.1	ug/L	226	Standard
	Pb	207	248.3	8.8	**0.0536**	0.004	8.3	ug/L	204	Standard
	Pb	208	1043.0	5.5	**0.0576**	0.003	5.1	ug/L	852	Standard
	U	238	64.3	49.6	**0.0522**	0.005	9.0	ug/L	13	Standard
>	**Bi**	209	457274.9	0.7				ug/L	449044	Standard

Sample ID: PBW M1 WG574195-02
Report Date/Time: Wednesday, July 06, 2016 09:45:34
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	54.3	**0.0135**	0.029	211.6	mg/L	58	Standard
K	39	30.0	28.9	**-0.0233**	0.032	138.1	mg/L	27	Standard
Ca	43	26.7	28.6	**0.6510**	0.565	86.9	mg/L	20	Standard
Fe	54	144.3	12.0	**-0.0003**	0.012	4299.2	mg/L	158	Standard
Fe	57	236.7	16.4	**0.1078**	0.137	126.8	mg/L	267	Standard
> **Sc-1**	45	39065.3	1.5				mg/L	38815	Standard
Cl	35	56649.7	2.0				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1773.4	8.5				ug/L	1617	Standard
P	31	19510.9	3.7				ug/L	19244	Standard
S	34	3373.7	3.5				ug/L	3557	Standard
Sr	88	70.0	37.8				ug/L	65	Standard
C	12	56.7	79.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	-0.5	173.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	13	Standard
I	127	1906.8	8.5				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		98.556	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.332	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: PBW M1 WG574195-02
Report Date/Time: Wednesday, July 06, 2016 09:45:34
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.699	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.833	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW M1 WG574195-02
Report Date/Time: Wednesday, July 06, 2016 09:45:34
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: LCSW M1 WG574195-03
Sample Date/Time: Wednesday, July 06, 2016 09:46:29
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68496.1	0.5				ug/L	68501	Standard
	Be	9	24005.7	1.0	**26.4702**	0.318	1.2	ug/L	8	Standard
	Al	27	5384.3	9.0	**0.0730**	0.004	4.9	ug/L	1397	Standard
	Sc	45	39459.6	0.3				ug/L	38815	Standard
	Ti	47	44.3	22.8	**0.0982**	0.029	29.9	ug/L	36	Standard
	V	51	191587.8	2.1	**25.8119**	0.349	1.4	ug/L	1284	Standard
	Cr	52	195533.7	0.9	**26.1567**	0.385	1.5	ug/L	6503	Standard
	Cr	53	23463.2	1.3	**25.6742**	0.534	2.1	ug/L	492	Standard
	Mn	55	166985.2	1.0	**25.9384**	0.101	0.4	ug/L	841	Standard
	Co	59	161701.1	1.7	**25.5536**	0.326	1.3	ug/L	229	Standard
	Ni	60	46464.5	0.6	**26.2616**	0.311	1.2	ug/L	344	Standard
	Cu	65	46697.9	0.8	**26.5916**	0.321	1.2	ug/L	115	Standard
	Zn	66	30683.7	0.6	**28.9142**	0.287	1.0	ug/L	190	Standard
>	**Ge**	72	429866.2	0.7				ug/L	409858	Standard
	As	75	28274.1	0.3	**26.1056**	0.217	0.8	ug/L	-22	Standard
	Se	82	2809.8	1.6	**25.3083**	0.494	2.0	ug/L	18	Standard
	Se-1	77	1919.8	1.7	**25.8234**	0.529	2.0	ug/L	50	Standard
>	**Ga**	71	70.0	14.3				mg/L	97	Standard
	Rb	85	66.7	28.4				ug/L	25	Standard
	Y	89	355323.3	0.9				ug/L	376763	Standard
>	**Rh**	103	16.7	17.3				ug/L	20	Standard
	Mo	98	139.0	24.6	**0.1292**	0.014	10.9	ug/L	51	Standard
	Ag	107	166696.7	0.8	**26.7524**	0.342	1.3	ug/L	76	Standard
	Cd	111	50998.1	0.5	**25.7594**	0.240	0.9	mg/L	6	Standard
	Cd	114	124785.9	0.5	**25.7810**	0.268	1.0	ug/L	18	Standard
>	**In**	115	506853.5	1.3				ug/L	507261	Standard
	Sn	118	908.4	17.6	**0.0558**	0.028	49.9	ug/L	683	Standard
	Sb	123	116535.5	0.8	**27.1742**	0.404	1.5	ug/L	446	Standard
	Ba	135	49242.6	0.4	**25.9131**	0.241	0.9	ug/L	28	Standard
	Ce	140	70.0	56.7				ug/L	33	Standard
>	**Tb**	159	811640.4	1.1				ug/L	800803	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	206095.2	0.4	**25.6991**	0.189	0.7	ug/L	13	Standard
	Tl	205	179392.4	0.6	**25.8371**	0.331	1.3	ug/L	13	Standard
	Pb	206	136480.6	0.7	**26.4857**	0.287	1.1	ug/L	226	Standard
	Pb	207	117386.7	1.1	**25.0888**	0.493	2.0	ug/L	204	Standard
	Pb	208	482062.4	0.4	**25.7636**	0.312	1.2	ug/L	852	Standard
	U	238	172135.6	0.5	**24.8666**	0.302	1.2	ug/L	13	Standard
>	**Bi**	209	471496.3	1.1				ug/L	449044	Standard

Sample ID: LCSW M1 WG574195-03
Report Date/Time: Wednesday, July 06, 2016 09:48:46
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.1364**	15.448	11323.2	mg/L	2	Standard
Mg	24	50.0	43.6	**0.0282**	0.029	102.6	mg/L	58	Standard
K	39	30.0	33.3	**-0.0243**	0.039	160.8	mg/L	27	Standard
Ca	43	30.0	57.7	**0.8667**	1.233	142.3	mg/L	20	Standard
Fe	54	161.8	19.7	**0.0131**	0.027	202.7	mg/L	158	Standard
Fe	57	228.3	11.2	**0.0717**	0.085	118.9	mg/L	267	Standard
> **Sc-1**	45	39459.6	0.3				mg/L	38815	Standard
Cl	35	56892.0	1.3				ug/L	57611	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1570.1	5.4				ug/L	1617	Standard
P	31	19504.2	1.8				ug/L	19244	Standard
S	34	3253.7	4.3				ug/L	3557	Standard
Sr	88	65.0	7.7				ug/L	65	Standard
C	12	66.7	45.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	137.8				mg/L	23	Standard
Dy	164	6.0	187.0				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	973.4	5.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.993	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.882	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW M1 WG574195-03
Report Date/Time: Wednesday, July 06, 2016 09:48:46
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.920
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.000
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW M1 WG574195-03
Report Date/Time: Wednesday, July 06, 2016 09:48:46
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129411 WG574195-01
Sample Date/Time: Wednesday, July 06, 2016 09:49:40
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72468.0	2.9				ug/L	68501	Standard
	Be	9	838.4	11.5	**0.8913**	0.077	8.6	ug/L	8	Standard
	Al	27	24118733.2	0.5	**160.6931**	4.688	2.9	ug/L	1397	Standard
	Sc	45	45896.2	4.1				ug/L	38815	Standard
	Ti	47	6542.7	1.3	**19.5752**	0.441	2.3	ug/L	36	Standard
	V	51	189622.3	0.5	**26.9564**	0.349	1.3	ug/L	1284	Standard
	Cr	52	105498.7	1.5	**14.4822**	0.146	1.0	ug/L	6503	Standard
	Cr	53	12621.9	2.1	**14.3841**	0.164	1.1	ug/L	492	Standard
	Mn	55	8444960.4	0.5	**1388.7517**	15.304	1.1	ug/L	841	Standard
	Co	59	76520.1	1.2	**12.7587**	0.215	1.7	ug/L	229	Standard
	Ni	60	41268.1	1.0	**24.5928**	0.389	1.6	ug/L	344	Standard
	Cu	65	22723.7	0.6	**13.6423**	0.169	1.2	ug/L	115	Standard
	Zn	66	39079.3	1.2	**38.8816**	0.541	1.4	ug/L	190	Standard
>	**Ge**	72	407547.5	1.1				ug/L	409858	Standard
	As	75	6744.2	1.2	**6.6419**	0.070	1.0	ug/L	-22	Standard
	Se	82	53.4	3.9	**0.4571**	0.019	4.2	ug/L	18	Standard
	Se-1	77	106.0	7.7	**0.7900**	0.135	17.1	ug/L	50	Standard
>	**Ga**	71	14186.6	1.1				mg/L	97	Standard
	Rb	85	143686.7	2.5				ug/L	25	Standard
	Y	89	592181.2	0.9				ug/L	376763	Standard
>	**Rh**	103	50.0	34.6				ug/L	20	Standard
	Mo	98	1134.4	17.7	**0.5416**	0.081	14.9	ug/L	51	Standard
	Ag	107	444.0	11.5	**0.0942**	0.008	8.1	ug/L	76	Standard
	Cd	111	281.0	4.9	**0.1809**	0.006	3.1	mg/L	6	Standard
	Cd	114	665.5	15.8	**0.1745**	0.021	12.1	ug/L	18	Standard
>	**In**	115	507307.4	1.0				ug/L	507261	Standard
	Sn	118	603.3	23.2	**0.0003**	0.027	9117.7	ug/L	683	Standard
	Sb	123	1266.0	41.2	**0.2753**	0.124	44.9	ug/L	446	Standard
	Ba	135	622999.9	1.6	**327.3489**	4.840	1.5	ug/L	28	Standard
	Ce	140	1075128.4	1.0				ug/L	33	Standard
>	**Tb**	159	829871.9	0.8				ug/L	800803	Standard
	Ho	165	19584.3	1.4				ug/L	10	Standard
	Tl	203	1193.7	2.0	**0.1895**	0.005	2.8	ug/L	13	Standard
	Tl	205	1121.7	20.4	**0.2119**	0.035	16.3	ug/L	13	Standard
	Pb	206	53355.4	0.7	**10.8718**	0.172	1.6	ug/L	226	Standard
	Pb	207	43593.3	0.4	**9.7833**	0.118	1.2	ug/L	204	Standard
	Pb	208	186716.4	1.0	**10.4802**	0.205	2.0	ug/L	852	Standard
	U	238	6176.3	2.7	**0.9782**	0.035	3.6	ug/L	13	Standard
>	**Bi**	209	448991.8	1.5				ug/L	449044	Standard

Sample ID: L1606129411 WG574195-01
Report Date/Time: Wednesday, July 06, 2016 09:51:57
Page 1

Approved: July 07, 2016

Na	23	8.3	69.3	**29.4738**	26.013	88.3	mg/L	2	Standard
Mg	24	170.0	5.9	**0.1564**	0.012	7.9	mg/L	58	Standard
K	39	311.7	6.7	**0.9085**	0.040	4.4	mg/L	27	Standard
Ca	43	735.0	13.0	**44.1374**	7.681	17.4	mg/L	20	Standard
Fe	54	16726.8	2.4	**11.7320**	0.498	4.2	mg/L	158	Standard
Fe	57	4742.4	1.4	**12.7487**	0.502	3.9	mg/L	267	Standard
Sc-1	45	45896.2	4.1				mg/L	38815	Standard
Cl	35	60129.7	0.7				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	2350.2	1.5				ug/L	1617	Standard
P	31	19891.4	3.5				ug/L	19244	Standard
S	34	3662.1	0.8				ug/L	3557	Standard
Sr	88	230.0	11.3				ug/L	65	Standard
C	12	83.3	18.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	23	Standard
Dy	164	32118.6	3.8				mg/L	13	Standard
Ho-1	165	19584.3	1.4				mg/L	10	Standard
Er	166	17687.0	1.6				mg/L	13	Standard
I	127	33436.9	4.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.436	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129411 WG574195-01
Report Date/Time: Wednesday, July 06, 2016 09:51:57
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.009
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.988
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129411 WG574195-01
Report Date/Time: Wednesday, July 06, 2016 09:51:57
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129412S WG574195-04
Sample Date/Time: Wednesday, July 06, 2016 09:52:52
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71379.5	2.4				ug/L	68501	Standard
	Be	9	24005.7	2.5	**25.4053**	0.572	2.3	ug/L	8	Standard
	Al	27	24844186.7	1.3	**167.9938**	2.966	1.8	ug/L	1397	Standard
	Sc	45	44933.2	1.9				ug/L	38815	Standard
	Ti	47	8623.8	2.1	**25.2583**	0.810	3.2	ug/L	36	Standard
	V	51	337850.6	1.6	**47.1062**	1.004	2.1	ug/L	1284	Standard
	Cr	52	288250.4	0.4	**40.2878**	0.627	1.6	ug/L	6503	Standard
	Cr	53	35092.3	2.3	**39.8625**	1.183	3.0	ug/L	492	Standard
	Mn	55	4458345.0	1.2	**717.4502**	15.793	2.2	ug/L	841	Standard
	Co	59	218275.5	1.1	**35.6060**	0.740	2.1	ug/L	229	Standard
	Ni	60	81696.3	0.6	**47.7891**	0.713	1.5	ug/L	344	Standard
	Cu	65	61917.9	0.2	**36.3980**	0.465	1.3	ug/L	115	Standard
	Zn	66	66485.2	0.4	**64.8054**	0.538	0.8	ug/L	190	Standard
>	**Ge**	72	416485.7	1.2				ug/L	409858	Standard
	As	75	29163.0	0.5	**27.7871**	0.422	1.5	ug/L	-22	Standard
	Se	82	2062.4	4.0	**19.1665**	0.962	5.0	ug/L	18	Standard
	Se-1	77	1420.7	4.7	**19.5403**	0.802	4.1	ug/L	50	Standard
>	**Ga**	71	16622.5	3.9				mg/L	97	Standard
	Rb	85	157231.7	1.2				ug/L	25	Standard
	Y	89	556704.4	1.6				ug/L	376763	Standard
>	**Rh**	103	53.3	19.5				ug/L	20	Standard
	Mo	98	5295.4	1.7	**2.3233**	0.055	2.4	ug/L	51	Standard
	Ag	107	149191.9	0.4	**24.5321**	0.145	0.6	ug/L	76	Standard
	Cd	111	48845.6	0.7	**25.2776**	0.073	0.3	mg/L	6	Standard
	Cd	114	119846.2	1.3	**25.3672**	0.198	0.8	ug/L	18	Standard
>	**In**	115	494691.5	0.7				ug/L	507261	Standard
	Sn	118	601.7	29.0	**0.0027**	0.033	1216.4	ug/L	683	Standard
	Sb	123	4145.4	11.6	**0.9712**	0.122	12.5	ug/L	446	Standard
	Ba	135	534743.0	0.7	**288.1358**	0.094	0.0	ug/L	28	Standard
	Ce	140	1105320.7	0.5				ug/L	33	Standard
>	**Tb**	159	810154.6	1.3				ug/L	800803	Standard
	Ho	165	17460.1	1.2				ug/L	10	Standard
	Tl	203	187358.6	0.3	**24.9354**	0.231	0.9	ug/L	13	Standard
	Tl	205	164522.0	1.9	**25.2874**	0.349	1.4	ug/L	13	Standard
	Pb	206	172133.7	1.2	**35.6536**	0.610	1.7	ug/L	226	Standard
	Pb	207	147229.9	0.8	**33.5805**	0.218	0.6	ug/L	204	Standard
	Pb	208	622593.9	0.8	**35.5101**	0.117	0.3	ug/L	852	Standard
	U	238	167263.3	1.4	**25.7841**	0.204	0.8	ug/L	13	Standard
>	**Bi**	209	441779.8	1.0				ug/L	449044	Standard

Sample ID: L1606129412S WG574195-04
Report Date/Time: Wednesday, July 06, 2016 09:55:09
Page 1

Approved: July 07, 2016

Na	23	6.7	114.6	**23.0095**	36.857	160.2	mg/L	2	Standard
Mg	24	140.0	25.0	**0.1259**	0.044	35.0	mg/L	58	Standard
K	39	343.3	8.8	**1.0395**	0.083	8.0	mg/L	27	Standard
Ca	43	513.3	4.8	**30.9870**	1.755	5.7	mg/L	20	Standard
Fe	54	16123.8	3.0	**11.5373**	0.198	1.7	mg/L	158	Standard
Fe	57	4545.7	4.6	**12.4590**	0.686	5.5	mg/L	267	Standard
> **Sc-1**	45	44933.2	1.9				mg/L	38815	Standard
Cl	35	59329.3	1.7				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2126.8	3.8				ug/L	1617	Standard
P	31	19344.0	2.4				ug/L	19244	Standard
S	34	3730.5	4.4				ug/L	3557	Standard
Sr	88	158.3	22.2				ug/L	65	Standard
C	12	136.7	23.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	29079.7	2.5				mg/L	13	Standard
Ho-1	165	17460.1	1.2				mg/L	10	Standard
Er	166	15441.2	1.2				mg/L	13	Standard
I	127	29974.6	0.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.202	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.617	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129412S WG574195-04
Report Date/Time: Wednesday, July 06, 2016 09:55:09
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.522
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.382
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129412S WG574195-04
Report Date/Time: Wednesday, July 06, 2016 09:55:09
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129413SD WG574195-05
Sample Date/Time: Wednesday, July 06, 2016 09:56:03
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72831.3	1.3				ug/L	68501	Standard
	Be	9	23353.0	2.6	**24.2164**	0.331	1.4	ug/L	8	Standard
	Al	27	26299464.7	0.5	**174.2675**	2.567	1.5	ug/L	1397	Standard
	Sc	45	46263.9	3.4				ug/L	38815	Standard
	Ti	47	9118.4	0.8	**26.3638**	0.080	0.3	ug/L	36	Standard
	V	51	363027.1	1.3	**49.9784**	0.413	0.8	ug/L	1284	Standard
	Cr	52	308874.7	0.7	**42.6748**	0.454	1.1	ug/L	6503	Standard
	Cr	53	37989.2	0.7	**42.6306**	0.345	0.8	ug/L	492	Standard
	Mn	55	3682118.5	0.5	**584.9336**	0.933	0.2	ug/L	841	Standard
	Co	59	209516.8	1.3	**33.7396**	0.279	0.8	ug/L	229	Standard
	Ni	60	82810.7	0.2	**47.8243**	0.234	0.5	ug/L	344	Standard
	Cu	65	66683.1	0.2	**38.7015**	0.257	0.7	ug/L	115	Standard
	Zn	66	72946.5	0.3	**70.2106**	0.380	0.5	ug/L	190	Standard
>	**Ge**	72	421818.9	0.5				ug/L	409858	Standard
	As	75	30008.5	1.5	**28.2255**	0.275	1.0	ug/L	-22	Standard
	Se	82	1989.7	3.1	**18.2473**	0.473	2.6	ug/L	18	Standard
	Se-1	77	1346.7	2.1	**18.2444**	0.457	2.5	ug/L	50	Standard
>	**Ga**	71	18431.2	0.1				mg/L	97	Standard
	Rb	85	169978.4	2.0				ug/L	25	Standard
	Y	89	579521.5	2.2				ug/L	376763	Standard
>	**Rh**	103	53.3	30.1				ug/L	20	Standard
	Mo	98	5343.2	0.9	**2.3481**	0.025	1.1	ug/L	51	Standard
	Ag	107	148415.0	0.2	**24.4547**	0.081	0.3	ug/L	76	Standard
	Cd	111	48146.0	0.3	**24.9682**	0.161	0.6	mg/L	6	Standard
	Cd	114	116774.8	0.1	**24.7701**	0.107	0.4	ug/L	18	Standard
>	**In**	115	493665.2	0.5				ug/L	507261	Standard
	Sn	118	630.0	13.5	**0.0081**	0.015	190.3	ug/L	683	Standard
	Sb	123	4401.6	9.3	**1.0338**	0.094	9.1	ug/L	446	Standard
	Ba	135	582527.1	0.9	**314.5430**	3.725	1.2	ug/L	28	Standard
	Ce	140	1171295.4	1.5				ug/L	33	Standard
>	**Tb**	159	825665.3	1.1				ug/L	800803	Standard
	Ho	165	18960.2	1.2				ug/L	10	Standard
	Tl	203	184321.0	0.4	**24.0012**	0.378	1.6	ug/L	13	Standard
	Tl	205	159170.0	0.3	**23.9407**	0.483	2.0	ug/L	13	Standard
	Pb	206	178149.6	0.4	**36.1008**	0.654	1.8	ug/L	226	Standard
	Pb	207	151969.3	0.3	**33.9143**	0.708	2.1	ug/L	204	Standard
	Pb	208	627878.2	0.8	**35.0419**	0.898	2.6	ug/L	852	Standard
	U	238	164029.8	0.8	**24.7449**	0.648	2.6	ug/L	13	Standard
>	**Bi**	209	451616.5	1.8				ug/L	449044	Standard

Sample ID: L1606129413SD WG574195-05
Report Date/Time: Wednesday, July 06, 2016 09:58:20
Page 1

Approved: July 07, 2016

Na	23	8.3	124.9	**28.5858**	46.635	163.1	mg/L	2	Standard
Mg	24	161.7	18.9	**0.1448**	0.030	20.8	mg/L	58	Standard
K	39	418.3	11.1	**1.2557**	0.123	9.8	mg/L	27	Standard
Ca	43	583.3	6.4	**34.3754**	3.109	9.0	mg/L	20	Standard
Fe	54	18610.4	2.0	**12.9636**	0.665	5.1	mg/L	158	Standard
Fe	57	4875.8	3.0	**13.0227**	0.874	6.7	mg/L	267	Standard
Sc-1	45	46263.9	3.4				mg/L	38815	Standard
Cl	35	57891.1	0.8				ug/L	57611	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	3103.7	7.4				ug/L	1617	Standard
P	31	19415.8	3.3				ug/L	19244	Standard
S	34	3603.8	4.8				ug/L	3557	Standard
Sr	88	181.7	16.8				ug/L	65	Standard
C	12	60.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	23	Standard
Dy	164	31854.1	2.7				mg/L	13	Standard
Ho-1	165	18960.2	1.2				mg/L	10	Standard
Er	166	17002.9	2.9				mg/L	13	Standard
I	127	35720.4	1.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.321	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.918	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129413SD WG574195-05
Report Date/Time: Wednesday, July 06, 2016 09:58:20
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.320
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.573
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129413SD WG574195-05
Report Date/Time: Wednesday, July 06, 2016 09:58:20
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129401
Sample Date/Time: Wednesday, July 06, 2016 09:59:15
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73682.1	1.2				ug/L	68501	Standard
	Be	9	1030.0	8.5	**1.0739**	0.077	7.2	ug/L	8	Standard
	Al	27	13290595.5	0.8	**87.0650**	1.191	1.4	ug/L	1397	Standard
	Sc	45	47437.5	0.7				ug/L	38815	Standard
	Ti	47	4990.5	1.4	**14.2485**	0.251	1.8	ug/L	36	Standard
	V	51	180397.8	1.0	**24.4727**	0.141	0.6	ug/L	1284	Standard
	Cr	52	242660.8	0.5	**32.9279**	0.475	1.4	ug/L	6503	Standard
	Cr	53	29079.5	1.0	**32.1489**	0.248	0.8	ug/L	492	Standard
	Mn	55	7362758.4	0.8	**1156.1744**	19.675	1.7	ug/L	841	Standard
	Co	59	69098.9	0.5	**11.0023**	0.167	1.5	ug/L	229	Standard
	Ni	60	43958.4	1.4	**25.0166**	0.492	2.0	ug/L	344	Standard
	Cu	65	51089.3	0.3	**29.3027**	0.329	1.1	ug/L	115	Standard
	Zn	66	60489.8	1.0	**57.5198**	0.337	0.6	ug/L	190	Standard
>	**Ge**	72	426820.6	1.3				ug/L	409858	Standard
	As	75	8341.5	1.9	**7.8256**	0.054	0.7	ug/L	-22	Standard
	Se	82	77.1	12.2	**0.6491**	0.084	12.9	ug/L	18	Standard
	Se-1	77	127.7	6.7	**1.0210**	0.110	10.8	ug/L	50	Standard
>	**Ga**	71	17471.7	2.2				mg/L	97	Standard
	Rb	85	185880.1	1.5				ug/L	25	Standard
	Y	89	588549.2	2.5				ug/L	376763	Standard
>	**Rh**	103	25.0	60.0				ug/L	20	Standard
	Mo	98	4483.5	0.1	**1.8887**	0.016	0.8	ug/L	51	Standard
	Ag	107	655.0	0.7	**0.1257**	0.000	0.4	ug/L	76	Standard
	Cd	111	833.4	2.1	**0.4499**	0.012	2.6	mg/L	6	Standard
	Cd	114	2033.9	4.6	**0.4472**	0.021	4.6	ug/L	18	Standard
>	**In**	115	518979.9	0.9				ug/L	507261	Standard
	Sn	118	1725.1	20.0	**0.1976**	0.059	30.0	ug/L	683	Standard
	Sb	123	1001.7	29.8	**0.2076**	0.067	32.1	ug/L	446	Standard
	Ba	135	421477.8	0.1	**216.4902**	1.764	0.8	ug/L	28	Standard
	Ce	140	1169592.3	1.9				ug/L	33	Standard
>	**Tb**	159	854236.8	1.4				ug/L	800803	Standard
	Ho	165	18486.3	1.1				ug/L	10	Standard
	Tl	203	1043.0	4.2	**0.1644**	0.005	3.0	ug/L	13	Standard
	Tl	205	993.4	12.3	**0.1868**	0.019	10.0	ug/L	13	Standard
	Pb	206	165846.1	0.2	**32.4826**	0.323	1.0	ug/L	226	Standard
	Pb	207	137795.4	0.8	**29.7211**	0.399	1.3	ug/L	204	Standard
	Pb	208	592158.9	0.5	**31.9408**	0.508	1.6	ug/L	852	Standard
	U	238	3515.1	1.0	**0.5542**	0.000	0.1	ug/L	13	Standard
>	**Bi**	209	467184.8	1.1				ug/L	449044	Standard

Sample ID: L1606129401
Report Date/Time: Wednesday, July 06, 2016 10:01:32
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.2863**	12.984	1009.4	mg/L	2	Standard
Mg	24	115.0	8.7	**0.0890**	0.011	11.8	mg/L	58	Standard
K	39	420.0	15.6	**1.2278**	0.210	17.1	mg/L	27	Standard
Ca	43	98.3	20.5	**4.5711**	1.181	25.8	mg/L	20	Standard
Fe	54	19064.5	0.9	**12.9379**	0.207	1.6	mg/L	158	Standard
Fe	57	5190.9	2.0	**13.5281**	0.322	2.4	mg/L	267	Standard
Sc-1	45	47437.5	0.7				mg/L	38815	Standard
Cl	35	56647.7	0.4				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2906.9	8.5				ug/L	1617	Standard
P	31	18855.1	1.9				ug/L	19244	Standard
S	34	3488.7	1.5				ug/L	3557	Standard
Sr	88	103.3	19.6				ug/L	65	Standard
C	12	170.0	5.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	47.9				mg/L	23	Standard
Dy	164	30420.1	1.6				mg/L	13	Standard
Ho-1	165	18486.3	1.1				mg/L	10	Standard
Er	166	16812.7	3.4				mg/L	13	Standard
I	127	22007.7	6.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.563	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.139	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129401
Report Date/Time: Wednesday, July 06, 2016 10:01:32
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.310
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.040
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129401
Report Date/Time: Wednesday, July 06, 2016 10:01:32
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129402
Sample Date/Time: Wednesday, July 06, 2016 10:02:26
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69770.3	2.7				ug/L	68501	Standard
	Be	9	603.3	12.4	**0.6715**	0.072	10.7	ug/L	8	Standard
	Al	27	18634515.4	2.1	**128.9831**	5.673	4.4	ug/L	1397	Standard
	Sc	45	45031.9	3.1				ug/L	38815	Standard
	Ti	47	5305.3	0.3	**15.4010**	0.263	1.7	ug/L	36	Standard
	V	51	102823.9	0.6	**14.1200**	0.158	1.1	ug/L	1284	Standard
	Cr	52	80459.1	0.7	**10.4790**	0.093	0.9	ug/L	6503	Standard
	Cr	53	9304.5	2.4	**10.1728**	0.095	0.9	ug/L	492	Standard
	Mn	55	3002380.4	1.6	**479.2805**	14.394	3.0	ug/L	841	Standard
	Co	59	39944.9	0.5	**6.4682**	0.131	2.0	ug/L	229	Standard
	Ni	60	26855.8	0.6	**15.4770**	0.252	1.6	ug/L	344	Standard
	Cu	65	17773.8	1.6	**10.3533**	0.060	0.6	ug/L	115	Standard
	Zn	66	28972.0	0.7	**27.9482**	0.257	0.9	ug/L	190	Standard
>	Ge	72	419879.9	1.5				ug/L	409858	Standard
	As	75	3489.5	3.3	**3.3844**	0.075	2.2	ug/L	-22	Standard
	Se	82	43.4	3.4	**0.3496**	0.009	2.6	ug/L	18	Standard
	Se-1	77	96.7	5.7	**0.6121**	0.093	15.2	ug/L	50	Standard
>	Ga	71	10525.3	2.1				mg/L	97	Standard
	Rb	85	104171.9	0.6				ug/L	25	Standard
	Y	89	559755.6	0.0				ug/L	376763	Standard
>	Rh	103	46.7	16.4				ug/L	20	Standard
	Mo	98	1814.3	7.2	**0.8132**	0.063	7.8	ug/L	51	Standard
	Ag	107	490.3	42.0	**0.1008**	0.034	33.4	ug/L	76	Standard
	Cd	111	197.3	46.2	**0.1377**	0.047	33.9	mg/L	6	Standard
	Cd	114	447.4	33.4	**0.1284**	0.032	24.5	ug/L	18	Standard
>	In	115	514913.6	1.5				ug/L	507261	Standard
	Sn	118	656.7	28.2	**0.0082**	0.034	417.1	ug/L	683	Standard
	Sb	123	698.8	47.6	**0.1409**	0.079	55.9	ug/L	446	Standard
	Ba	135	312392.7	0.7	**161.7435**	2.379	1.5	ug/L	28	Standard
	Ce	140	864888.3	1.5				ug/L	33	Standard
>	Tb	159	822173.2	1.2				ug/L	800803	Standard
	Ho	165	15349.4	4.8				ug/L	10	Standard
	Tl	203	741.0	39.5	**0.1305**	0.038	29.3	ug/L	13	Standard
	Tl	205	868.4	47.2	**0.1743**	0.063	36.1	ug/L	13	Standard
	Pb	206	39366.1	0.3	**8.0469**	0.057	0.7	ug/L	226	Standard
	Pb	207	31988.4	0.9	**7.2028**	0.097	1.4	ug/L	204	Standard
	Pb	208	138578.0	1.0	**7.8042**	0.123	1.6	ug/L	852	Standard
	U	238	3824.8	11.0	**0.6240**	0.067	10.7	ug/L	13	Standard
>	Bi	209	447448.6	0.5				ug/L	449044	Standard

Sample ID: L1606129402
Report Date/Time: Wednesday, July 06, 2016 10:04:43
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**6.6902**	13.409	200.4	mg/L	2	Standard
Mg	24	141.7	7.3	**0.1271**	0.013	10.6	mg/L	58	Standard
K	39	201.7	9.4	**0.5528**	0.084	15.2	mg/L	27	Standard
Ca	43	420.0	10.9	**25.0115**	2.030	8.1	mg/L	20	Standard
Fe	54	10150.0	4.1	**7.2017**	0.124	1.7	mg/L	158	Standard
Fe	57	2942.0	5.9	**7.8182**	0.761	9.7	mg/L	267	Standard
Sc-1	45	45031.9	3.1				mg/L	38815	Standard
Cl	35	60466.4	1.3				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2043.5	15.4				ug/L	1617	Standard
P	31	20015.0	9.4				ug/L	19244	Standard
S	34	3783.8	2.4				ug/L	3557	Standard
Sr	88	133.3	23.8				ug/L	65	Standard
C	12	100.0	0.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	45.8				mg/L	23	Standard
Dy	164	25927.1	0.7				mg/L	13	Standard
Ho-1	165	15349.4	4.8				mg/L	10	Standard
Er	166	13699.5	2.6				mg/L	13	Standard
I	127	6994.9	3.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.853	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.445	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129402
Report Date/Time: Wednesday, July 06, 2016 10:04:43
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.509	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.645	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129402
Report Date/Time: Wednesday, July 06, 2016 10:04:43
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129402PS WG574825-01
Sample Date/Time: Wednesday, July 06, 2016 10:05:38
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68660.2	1.7				ug/L	68501	Standard
	Be	9	47238.5	1.5	**51.9624**	1.650	3.2	ug/L	8	Standard
	Al	27	17645053.8	2.0	**124.0488**	3.629	2.9	ug/L	1397	Standard
	Sc	45	44393.3	1.5				ug/L	38815	Standard
	Ti	47	5174.6	1.0	**14.5192**	0.263	1.8	ug/L	36	Standard
	V	51	480583.9	0.5	**64.3037**	0.719	1.1	ug/L	1284	Standard
	Cr	52	456632.8	0.9	**61.6831**	1.025	1.7	ug/L	6503	Standard
	Cr	53	55255.6	2.0	**60.4016**	1.686	2.8	ug/L	492	Standard
	Mn	55	3239150.0	0.5	**499.7629**	6.042	1.2	ug/L	841	Standard
	Co	59	358691.1	1.1	**56.0957**	0.252	0.4	ug/L	229	Standard
	Ni	60	116099.1	1.0	**65.1802**	1.162	1.8	ug/L	344	Standard
	Cu	65	107464.1	0.7	**60.5842**	0.821	1.4	ug/L	115	Standard
	Zn	66	84653.2	0.4	**79.1485**	0.728	0.9	ug/L	190	Standard
>	Ge	72	434325.4	0.8				ug/L	409858	Standard
	As	75	60813.5	1.2	**55.4628**	0.921	1.7	ug/L	-22	Standard
	Se	82	5759.0	0.5	**51.3914**	0.208	0.4	ug/L	18	Standard
	Se-1	77	3893.8	0.5	**52.6044**	0.696	1.3	ug/L	50	Standard
>	Ga	71	10653.7	2.6				mg/L	97	Standard
	Rb	85	102591.2	1.5				ug/L	25	Standard
	Y	89	535588.1	1.5				ug/L	376763	Standard
>	Rh	103	46.7	24.7				ug/L	20	Standard
	Mo	98	1766.5	0.3	**0.8230**	0.008	0.9	ug/L	51	Standard
	Ag	107	318491.4	0.7	**52.3682**	0.640	1.2	ug/L	76	Standard
	Cd	111	100179.3	1.3	**51.8239**	0.626	1.2	mg/L	6	Standard
	Cd	114	247094.5	1.7	**52.2845**	0.780	1.5	ug/L	18	Standard
>	In	115	494482.3	0.9				ug/L	507261	Standard
	Sn	118	673.3	10.2	**0.0160**	0.012	75.5	ug/L	683	Standard
	Sb	123	214161.7	2.5	**51.2081**	1.584	3.1	ug/L	446	Standard
	Ba	135	400257.7	1.2	**215.7761**	3.076	1.4	ug/L	28	Standard
	Ce	140	853144.8	1.8				ug/L	33	Standard
>	Tb	159	808923.6	1.5				ug/L	800803	Standard
	Ho	165	14924.0	2.3				ug/L	10	Standard
	Tl	203	396573.2	1.4	**51.2178**	0.222	0.4	ug/L	13	Standard
	Tl	205	350752.1	1.1	**52.3188**	1.052	2.0	ug/L	13	Standard
	Pb	206	298080.1	1.0	**59.9592**	0.559	0.9	ug/L	226	Standard
	Pb	207	257790.9	0.5	**57.1026**	0.285	0.5	ug/L	204	Standard
	Pb	208	1062037.4	0.6	**58.8278**	0.401	0.7	ug/L	852	Standard
	U	238	335964.8	1.0	**50.2574**	0.421	0.8	ug/L	13	Standard
>	Bi	209	454901.3	1.0				ug/L	449044	Standard

Sample ID: L1606129402PS WG574825-01
Report Date/Time: Wednesday, July 06, 2016 10:07:55
Page 1

Approved: July 07, 2016

Na	23	5.0	100.0	**14.9604**	23.882	159.6	mg/L	2	Standard
Mg	24	148.3	13.6	**0.1371**	0.022	16.1	mg/L	58	Standard
K	39	255.0	38.6	**0.7487**	0.347	46.4	mg/L	27	Standard
Ca	43	421.7	2.5	**25.5491**	1.057	4.1	mg/L	20	Standard
Fe	54	9962.2	2.1	**7.1713**	0.153	2.1	mg/L	158	Standard
Fe	57	2848.6	3.1	**7.6545**	0.361	4.7	mg/L	267	Standard
Sc-1	45	44393.3	1.5				mg/L	38815	Standard
Cl	35	58795.9	1.0				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1830.1	7.2				ug/L	1617	Standard
P	31	18659.8	0.5				ug/L	19244	Standard
S	34	3737.1	4.2				ug/L	3557	Standard
Sr	88	115.0	30.4				ug/L	65	Standard
C	12	86.7	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	23	Standard
Dy	164	24731.8	2.8				mg/L	13	Standard
Ho-1	165	14924.0	2.3				mg/L	10	Standard
Er	166	13766.3	3.2				mg/L	13	Standard
I	127	6604.8	6.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.232	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.970	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129402PS WG574825-01
Report Date/Time: Wednesday, July 06, 2016 10:07:55
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.481	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.304	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129402PS WG574825-01
Report Date/Time: Wednesday, July 06, 2016 10:07:55
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129402SDL WG574825-02
Sample Date/Time: Wednesday, July 06, 2016 10:08:49
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65026.0	3.7				ug/L	68501	Standard
	Be	9	160.0	24.8	**0.2043**	0.040	19.8	ug/L	8	Standard
	Al	27	3521178.9	2.2	**26.1792**	0.963	3.7	ug/L	1397	Standard
	Sc	45	38574.1	2.0				ug/L	38815	Standard
	Ti	47	1016.4	1.0	**3.0526**	0.023	0.8	ug/L	36	Standard
	V	51	20323.7	1.2	**2.7944**	0.038	1.4	ug/L	1284	Standard
	Cr	52	19540.6	0.6	**1.9556**	0.065	3.3	ug/L	6503	Standard
	Cr	53	1953.5	10.5	**1.9018**	0.277	14.6	ug/L	492	Standard
	Mn	55	573279.4	0.2	**95.2960**	1.841	1.9	ug/L	841	Standard
	Co	59	7720.3	0.6	**1.3072**	0.015	1.2	ug/L	229	Standard
	Ni	60	5511.0	2.5	**3.1857**	0.068	2.1	ug/L	344	Standard
	Cu	65	3651.8	1.5	**2.2072**	0.064	2.9	ug/L	115	Standard
	Zn	66	6637.1	2.1	**6.5869**	0.147	2.2	ug/L	190	Standard
>	**Ge**	72	402861.2	1.7				ug/L	409858	Standard
	As	75	691.5	2.6	**0.7775**	0.011	1.5	ug/L	-22	Standard
	Se	82	21.3	32.8	**0.1535**	0.066	42.9	ug/L	18	Standard
	Se-1	77	58.7	8.6	**0.1073**	0.064	60.1	ug/L	50	Standard
>	**Ga**	71	2141.8	0.8				mg/L	97	Standard
	Rb	85	19642.7	1.5				ug/L	25	Standard
	Y	89	375531.6	2.2				ug/L	376763	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	350.4	1.1	**0.2239**	0.002	0.8	ug/L	51	Standard
	Ag	107	155.0	19.2	**0.0492**	0.005	10.4	ug/L	76	Standard
	Cd	111	46.6	26.2	**0.0640**	0.006	10.1	mg/L	6	Standard
	Cd	114	89.6	22.2	**0.0567**	0.004	7.4	ug/L	18	Standard
>	**In**	115	483847.7	1.6				ug/L	507261	Standard
	Sn	118	325.0	39.3	**-0.0480**	0.024	49.2	ug/L	683	Standard
	Sb	123	1870.5	35.4	**0.4352**	0.156	35.8	ug/L	446	Standard
	Ba	135	60714.1	0.5	**33.4657**	0.378	1.1	ug/L	28	Standard
	Ce	140	169920.8	0.4				ug/L	33	Standard
>	**Tb**	159	785790.2	0.6				ug/L	800803	Standard
	Ho	165	2823.6	6.7				ug/L	10	Standard
	Tl	203	203.3	12.3	**0.0597**	0.003	5.2	ug/L	13	Standard
	Tl	205	190.0	19.0	**0.0710**	0.005	7.5	ug/L	13	Standard
	Pb	206	7878.7	2.0	**1.5878**	0.016	1.0	ug/L	226	Standard
	Pb	207	6443.7	2.0	**1.4326**	0.025	1.7	ug/L	204	Standard
	Pb	208	27612.9	1.6	**1.5367**	0.039	2.5	ug/L	852	Standard
	U	238	730.4	5.8	**0.1523**	0.006	4.1	ug/L	13	Standard
>	**Bi**	209	452878.1	1.1				ug/L	449044	Standard

Sample ID: L1606129402SDL WG574825-02
Report Date/Time: Wednesday, July 06, 2016 10:11:06
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	10.8	**0.0342**	0.007	20.3	mg/L	58	Standard
K	39	65.0	7.7	**0.1187**	0.015	12.9	mg/L	27	Standard
Ca	43	121.7	4.7	**7.6311**	0.513	6.7	mg/L	20	Standard
Fe	54	2015.2	1.4	**1.5775**	0.034	2.2	mg/L	158	Standard
Fe	57	840.0	8.3	**2.1509**	0.284	13.2	mg/L	267	Standard
> **Sc-1**	45	38574.1	2.0				mg/L	38815	Standard
Cl	35	56866.5	2.1				ug/L	57611	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1540.1	7.2				ug/L	1617	Standard
P	31	8800.9	1.2				ug/L	19244	Standard
S	34	3415.4	3.3				ug/L	3557	Standard
Sr	88	70.0	37.8				ug/L	65	Standard
C	12	73.3	70.0				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	4905.3	1.6				mg/L	13	Standard
Ho-1	165	2823.6	6.7				mg/L	10	Standard
Er	166	2620.2	5.0				mg/L	13	Standard
I	127	8869.3	4.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.927	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.293	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129402SDL WG574825-02
Report Date/Time: Wednesday, July 06, 2016 10:11:06
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115	95.384	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209	100.854	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129402SDL WG574825-02
Report Date/Time: Wednesday, July 06, 2016 10:11:06
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129402SDL WG574825-02
Sample Date/Time: Wednesday, July 06, 2016 10:12:01
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60917.3	3.2				ug/L	68501	Standard
	Be	9	58.3	17.8	**0.0915**	0.011	11.6	ug/L	8	Standard
	Al	27	711598.7	3.1	**5.6709**	0.047	0.8	ug/L	1397	Standard
	Sc	45	36463.8	0.9				ug/L	38815	Standard
	Ti	47	207.0	2.6	**0.6014**	0.017	2.9	ug/L	36	Standard
	V	51	5032.5	7.0	**0.5856**	0.052	8.8	ug/L	1284	Standard
	Cr	52	8230.6	1.6	**0.2866**	0.019	6.7	ug/L	6503	Standard
	Cr	53	590.0	23.4	**0.2839**	0.167	58.7	ug/L	492	Standard
	Mn	55	118569.1	0.5	**19.6884**	0.105	0.5	ug/L	841	Standard
	Co	59	1799.1	8.5	**0.3097**	0.026	8.5	ug/L	229	Standard
	Ni	60	1413.4	3.6	**0.7024**	0.034	4.8	ug/L	344	Standard
	Cu	65	858.0	6.8	**0.5099**	0.037	7.2	ug/L	115	Standard
	Zn	66	1996.8	2.1	**1.9081**	0.036	1.9	ug/L	190	Standard
>	**Ge**	72	401660.3	0.4				ug/L	409858	Standard
	As	75	114.2	19.3	**0.2113**	0.021	10.0	ug/L	-22	Standard
	Se	82	11.3	54.8	**0.0580**	0.060	102.6	ug/L	18	Standard
	Se-1	77	52.0	8.8	**0.0116**	0.068	586.4	ug/L	50	Standard
>	**Ga**	71	495.0	9.0				mg/L	97	Standard
	Rb	85	3982.2	2.1				ug/L	25	Standard
	Y	89	350852.9	1.4				ug/L	376763	Standard
>	**Rh**	103	28.3	44.4				ug/L	20	Standard
	Mo	98	175.0	23.0	**0.1481**	0.018	11.8	ug/L	51	Standard
	Ag	107	212.7	91.3	**0.0591**	0.033	55.5	ug/L	76	Standard
	Cd	111	67.0	127.8	**0.0750**	0.045	60.7	mg/L	6	Standard
	Cd	114	161.8	141.0	**0.0726**	0.050	68.4	ug/L	18	Standard
>	**In**	115	480384.8	0.4				ug/L	507261	Standard
	Sn	118	306.7	18.0	**-0.0510**	0.011	20.7	ug/L	683	Standard
	Sb	123	1358.2	24.6	**0.3141**	0.083	26.4	ug/L	446	Standard
	Ba	135	12314.7	3.9	**6.8485**	0.262	3.8	ug/L	28	Standard
	Ce	140	33590.6	4.0				ug/L	33	Standard
>	**Tb**	159	756520.4	0.6				ug/L	800803	Standard
	Ho	165	583.3	9.4				ug/L	10	Standard
	Tl	203	223.0	115.4	**0.0635**	0.035	54.9	ug/L	13	Standard
	Tl	205	126.7	112.0	**0.0623**	0.022	35.6	ug/L	13	Standard
	Pb	206	1869.8	9.6	**0.3893**	0.039	10.0	ug/L	226	Standard
	Pb	207	1543.1	13.1	**0.3564**	0.048	13.4	ug/L	204	Standard
	Pb	208	6514.6	6.8	**0.3774**	0.027	7.0	ug/L	852	Standard
	U	238	235.7	51.0	**0.0795**	0.019	23.8	ug/L	13	Standard
>	**Bi**	209	435034.5	0.5				ug/L	449044	Standard

Sample ID: L1606129402SDL WG574825-02
Report Date/Time: Wednesday, July 06, 2016 10:14:18
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	44.7	**0.0504**	0.039	77.8	mg/L	58	Standard
K	39	35.0	14.3	**0.0067**	0.022	320.5	mg/L	27	Standard
Ca	43	48.3	68.9	**2.4797**	2.619	105.6	mg/L	20	Standard
Fe	54	394.3	9.9	**0.2309**	0.032	13.9	mg/L	158	Standard
Fe	57	383.3	10.0	**0.6861**	0.149	21.7	mg/L	267	Standard
> **Sc-1**	45	36463.8	0.9				mg/L	38815	Standard
Cl	35	57415.9	1.8				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1380.1	8.4				ug/L	1617	Standard
P	31	6508.1	3.2				ug/L	19244	Standard
S	34	3533.7	5.2				ug/L	3557	Standard
Sr	88	55.0	48.1				ug/L	65	Standard
C	12	73.3	75.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	906.6	11.9				mg/L	13	Standard
Ho-1	165	583.3	9.4				mg/L	10	Standard
Er	166	490.0	5.4				mg/L	13	Standard
I	127	9633.1	1.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.929	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.000	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129402SDL WG574825-02
Report Date/Time: Wednesday, July 06, 2016 10:14:18
Page 2

Approved: July 07, 2016

Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	94.702
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	96.880
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 10:15:14
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66001.9	3.1				ug/L	68501	Standard
	Be	9	45061.9	1.7	**51.5669**	1.142	2.2	ug/L	8	Standard
	Al	27	7134699.3	2.4	**52.2005**	1.042	2.0	ug/L	1397	Standard
	Sc	45	40683.0	4.5				ug/L	38815	Standard
	Ti	47	36220.6	2.3	**104.8904**	2.700	2.6	ug/L	36	Standard
	V	51	373417.3	1.4	**51.4577**	1.129	2.2	ug/L	1284	Standard
	Cr	52	378042.0	1.7	**52.4836**	1.277	2.4	ug/L	6503	Standard
	Cr	53	45578.5	1.0	**51.2685**	0.474	0.9	ug/L	492	Standard
	Mn	55	329890.2	1.6	**52.3621**	1.192	2.3	ug/L	841	Standard
	Co	59	319170.0	1.3	**51.4393**	1.091	2.1	ug/L	229	Standard
	Ni	60	89955.3	1.3	**52.0068**	1.073	2.1	ug/L	344	Standard
	Cu	65	89397.0	1.4	**51.9298**	1.024	2.0	ug/L	115	Standard
	Zn	66	53744.8	1.2	**51.7403**	0.925	1.8	ug/L	190	Standard
>	Ge	72	421512.3	0.8				ug/L	409858	Standard
	As	75	55019.2	1.7	**51.7131**	1.248	2.4	ug/L	-22	Standard
	Se	82	5625.3	2.5	**51.7261**	1.382	2.7	ug/L	18	Standard
	Se-1	77	3720.1	1.2	**51.7754**	1.031	2.0	ug/L	50	Standard
>	Ga	71	106.7	14.3				mg/L	97	Standard
	Rb	85	821.7	3.6				ug/L	25	Standard
	Y	89	380274.8	0.7				ug/L	376763	Standard
>	Rh	103	36.7	20.8				ug/L	20	Standard
	Mo	98	245508.8	0.8	**98.7047**	0.609	0.6	ug/L	51	Standard
	Ag	107	315964.3	0.6	**49.0682**	0.371	0.8	ug/L	76	Standard
	Cd	111	102381.2	0.8	**50.0236**	0.282	0.6	mg/L	6	Standard
	Cd	114	253936.6	1.4	**50.7540**	0.965	1.9	ug/L	18	Standard
>	In	115	523570.5	1.4				ug/L	507261	Standard
	Sn	118	272308.6	0.5	**48.0899**	0.442	0.9	ug/L	683	Standard
	Sb	123	220790.6	1.2	**49.8541**	0.372	0.7	ug/L	446	Standard
	Ba	135	96752.3	1.8	**49.2687**	0.234	0.5	ug/L	28	Standard
	Ce	140	778.4	25.9				ug/L	33	Standard
>	Tb	159	803102.2	1.8				ug/L	800803	Standard
	Ho	165	21.7	58.1				ug/L	10	Standard
	Tl	203	391560.5	1.3	**50.8731**	0.347	0.7	ug/L	13	Standard
	Tl	205	343478.2	1.0	**51.5364**	0.693	1.3	ug/L	13	Standard
	Pb	206	249862.7	0.4	**50.5602**	0.390	0.8	ug/L	226	Standard
	Pb	207	226415.5	0.5	**50.4529**	0.494	1.0	ug/L	204	Standard
	Pb	208	934421.6	0.6	**52.0705**	0.743	1.4	ug/L	852	Standard
	U	238	338848.7	1.0	**50.9911**	0.566	1.1	ug/L	13	Standard
>	Bi	209	452206.8	1.0				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 10:17:31
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.2847**	15.705	5516.7	mg/L	2	Standard
Mg	24	3878.8	2.1	**4.9818**	0.327	6.6	mg/L	58	Standard
K	39	1331.7	2.5	**4.9336**	0.350	7.1	mg/L	27	Standard
Ca	43	86.7	8.8	**4.7338**	0.396	8.4	mg/L	20	Standard
Fe	54	6551.9	2.8	**5.1174**	0.223	4.4	mg/L	158	Standard
Fe	57	1748.4	4.5	**4.9031**	0.224	4.6	mg/L	267	Standard
Sc-1	45	40683.0	4.5				mg/L	38815	Standard
Cl	35	64144.2	2.4				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1633.4	4.8				ug/L	1617	Standard
P	31	21161.4	1.7				ug/L	19244	Standard
S	34	4028.9	2.1				ug/L	3557	Standard
Sr	88	75.0	23.1				ug/L	65	Standard
C	12	90.0	38.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	23	Standard
Dy	164	42.5	35.8				mg/L	13	Standard
Ho-1	165	21.7	58.1				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	15686.5	2.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.134		
Al	27	104.401		
Sc	45			
Ti	47	104.890		
V	51	102.915		
Cr	52	104.967		
Cr	53			
Mn	55	104.724		
Co	59	102.879		
Ni	60	104.014		
Cu	65	103.860		
Zn	66	103.481		
Ge	72		102.843	
As	75	103.426		
Se	82	103.452		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 10:17:31
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	98.705		
Ag	107	98.136		
Cd	111	100.047		
Cd	114			
In	115			103.215
Sn	118	96.180		
Sb	123	99.708		
Ba	135	98.537		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.746		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.141		
U	238	101.982		
Bi	209			100.704
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 10:17:31
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 10:18:25
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66092.2	0.5				ug/L	68501	Standard
	Be	9	33.3	22.9	**0.0575**	0.009	15.0	ug/L	8	Standard
	Al	27	2433.5	28.1	**0.0528**	0.005	9.3	ug/L	1397	Standard
	Sc	45	39765.5	3.8				ug/L	38815	Standard
	Ti	47	34.7	8.8	**0.0699**	0.009	12.3	ug/L	36	Standard
	V	51	1342.2	6.2	**0.0363**	0.010	27.6	ug/L	1284	Standard
	Cr	52	6819.5	0.7	**0.0038**	0.011	298.6	ug/L	6503	Standard
	Cr	53	426.7	10.6	**0.0524**	0.052	99.9	ug/L	492	Standard
	Mn	55	1487.4	7.9	**0.1343**	0.019	14.5	ug/L	841	Standard
	Co	59	248.0	8.5	**0.0444**	0.004	8.0	ug/L	229	Standard
	Ni	60	317.3	4.3	**0.0213**	0.006	29.2	ug/L	344	Standard
	Cu	65	131.3	6.7	**0.0610**	0.005	8.1	ug/L	115	Standard
	Zn	66	348.0	9.0	**0.2133**	0.030	14.1	ug/L	190	Standard
>	**Ge**	72	433193.0	0.8				ug/L	409858	Standard
	As	75	-15.4	176.5	**0.0847**	0.025	29.3	ug/L	-22	Standard
	Se	82	17.5	29.8	**0.1051**	0.046	43.4	ug/L	18	Standard
	Se-1	77	52.7	18.6	**-0.0360**	0.128	356.8	ug/L	50	Standard
>	**Ga**	71	76.7	26.4				mg/L	97	Standard
	Rb	85	38.3	15.1				ug/L	25	Standard
	Y	89	375706.7	1.5				ug/L	376763	Standard
>	**Rh**	103	21.7	74.2				ug/L	20	Standard
	Mo	98	180.5	2.9	**0.1457**	0.001	1.0	ug/L	51	Standard
	Ag	107	119.3	33.3	**0.0420**	0.006	14.5	ug/L	76	Standard
	Cd	111	16.0	65.5	**0.0473**	0.005	10.9	mg/L	6	Standard
	Cd	114	58.8	46.0	**0.0494**	0.006	11.4	ug/L	18	Standard
>	**In**	115	511865.2	1.0				ug/L	507261	Standard
	Sn	118	851.7	20.2	**0.0442**	0.032	71.8	ug/L	683	Standard
	Sb	123	1054.3	34.6	**0.2237**	0.086	38.5	ug/L	446	Standard
	Ba	135	65.3	36.7	**0.0497**	0.012	24.6	ug/L	28	Standard
	Ce	140	343.3	20.8				ug/L	33	Standard
>	**Tb**	159	792368.1	0.6				ug/L	800803	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	67.3	29.7	**0.0420**	0.003	6.2	ug/L	13	Standard
	Tl	205	51.7	72.6	**0.0502**	0.006	11.1	ug/L	13	Standard
	Pb	206	273.7	16.0	**0.0508**	0.009	17.0	ug/L	226	Standard
	Pb	207	243.0	7.5	**0.0525**	0.004	7.6	ug/L	204	Standard
	Pb	208	1024.7	7.7	**0.0566**	0.004	7.7	ug/L	852	Standard
	U	238	59.3	29.6	**0.0515**	0.003	5.1	ug/L	13	Standard
>	**Bi**	209	456938.6	1.0				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 10:20:42
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.4914**	16.063	3268.8	mg/L	2	Standard
Mg	24	36.7	83.3	**0.0111**	0.043	384.8	mg/L	58	Standard
K	39	38.3	45.8	**0.0058**	0.064	1099.0	mg/L	27	Standard
Ca	43	33.3	52.7	**1.0606**	1.177	111.0	mg/L	20	Standard
Fe	54	149.4	25.3	**0.0028**	0.036	1300.5	mg/L	158	Standard
Fe	57	260.0	19.5	**0.1697**	0.163	96.1	mg/L	267	Standard
Sc-1	45	39765.5	3.8				mg/L	38815	Standard
Cl	35	61423.6	2.2				ug/L	57611	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	1656.8	1.9				ug/L	1617	Standard
P	31	19836.3	2.1				ug/L	19244	Standard
S	34	3835.5	3.2				ug/L	3557	Standard
Sr	88	55.0					ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	5.7	109.1				mg/L	13	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	8767.5	0.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.693	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 10:20:42
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.908
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.758
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 10:20:42
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129404
Sample Date/Time: Wednesday, July 06, 2016 10:21:39
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70980.9	1.6				ug/L	68501	Standard
	Be	9	941.7	5.0	**1.0213**	0.064	6.3	ug/L	8	Standard
	Al	27	15182692.6	1.8	**103.2556**	2.951	2.9	ug/L	1397	Standard
	Sc	45	45760.7	3.0				ug/L	38815	Standard
	Ti	47	5887.5	1.3	**16.7741**	0.207	1.2	ug/L	36	Standard
	V	51	191874.8	0.3	**25.9807**	0.495	1.9	ug/L	1284	Standard
	Cr	52	151639.7	0.5	**20.1776**	0.386	1.9	ug/L	6503	Standard
	Cr	53	18564.7	1.2	**20.3258**	0.407	2.0	ug/L	492	Standard
	Mn	55	4033113.1	0.2	**631.7956**	10.894	1.7	ug/L	841	Standard
	Co	59	68367.9	0.6	**10.8599**	0.118	1.1	ug/L	229	Standard
	Ni	60	42585.1	0.6	**24.1738**	0.459	1.9	ug/L	344	Standard
	Cu	65	33802.0	0.3	**19.3378**	0.287	1.5	ug/L	115	Standard
	Zn	66	65062.1	0.3	**61.7346**	0.851	1.4	ug/L	190	Standard
>	Ge	72	427844.3	1.7				ug/L	409858	Standard
	As	75	7611.4	0.2	**7.1339**	0.108	1.5	ug/L	-22	Standard
	Se	82	69.8	14.5	**0.5816**	0.088	15.2	ug/L	18	Standard
	Se-1	77	111.7	16.1	**0.7937**	0.244	30.7	ug/L	50	Standard
>	Ga	71	17678.6	1.8				mg/L	97	Standard
	Rb	85	180600.5	2.7				ug/L	25	Standard
	Y	89	603483.2	1.9				ug/L	376763	Standard
>	Rh	103	31.7	32.9				ug/L	20	Standard
	Mo	98	1109.1	5.0	**0.5244**	0.022	4.3	ug/L	51	Standard
	Ag	107	635.7	1.7	**0.1234**	0.001	1.2	ug/L	76	Standard
	Cd	111	1307.6	1.9	**0.6883**	0.013	1.9	mg/L	6	Standard
	Cd	114	3051.9	1.6	**0.6569**	0.010	1.6	ug/L	18	Standard
>	In	115	515076.3	0.5				ug/L	507261	Standard
	Sn	118	746.7	14.1	**0.0242**	0.019	77.4	ug/L	683	Standard
	Sb	123	1094.8	34.5	**0.2309**	0.086	37.3	ug/L	446	Standard
	Ba	135	326094.1	1.1	**168.7671**	2.405	1.4	ug/L	28	Standard
	Ce	140	1186847.0	1.3				ug/L	33	Standard
>	Tb	159	825489.7	1.2				ug/L	800803	Standard
	Ho	165	18656.5	3.3				ug/L	10	Standard
	Tl	203	872.0	1.0	**0.1461**	0.001	0.6	ug/L	13	Standard
	Tl	205	783.4	4.7	**0.1595**	0.006	3.6	ug/L	13	Standard
	Pb	206	246082.6	0.4	**49.5727**	0.064	0.1	ug/L	226	Standard
	Pb	207	207802.3	0.7	**46.0977**	0.241	0.5	ug/L	204	Standard
	Pb	208	892853.5	1.6	**49.5287**	0.671	1.4	ug/L	852	Standard
	U	238	3537.7	0.5	**0.5722**	0.004	0.7	ug/L	13	Standard
>	Bi	209	454213.0	0.3				ug/L	449044	Standard

Sample ID: L1606129404
Report Date/Time: Wednesday, July 06, 2016 10:23:56
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.8168**	13.797	1689.1	mg/L	2	Standard
Mg	24	141.7	12.4	**0.1247**	0.024	19.4	mg/L	58	Standard
K	39	438.3	2.4	**1.3406**	0.019	1.5	mg/L	27	Standard
Ca	43	261.7	16.7	**14.8449**	2.408	16.2	mg/L	20	Standard
Fe	54	19300.1	0.1	**13.5908**	0.404	3.0	mg/L	158	Standard
Fe	57	5104.2	4.4	**13.8164**	0.933	6.8	mg/L	267	Standard
> **Sc-1**	45	45760.7	3.0				mg/L	38815	Standard
Cl	35	60781.0	1.1				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2653.6	2.2				ug/L	1617	Standard
P	31	19624.4	2.1				ug/L	19244	Standard
S	34	3567.1	3.8				ug/L	3557	Standard
Sr	88	95.0	13.9				ug/L	65	Standard
C	12	136.7	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	100.0	17.3				mg/L	23	Standard
Dy	164	32528.3	1.4				mg/L	13	Standard
Ho-1	165	18656.5	3.3				mg/L	10	Standard
Er	166	17363.3	1.1				mg/L	13	Standard
I	127	20472.2	3.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.620	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.388	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129404
Report Date/Time: Wednesday, July 06, 2016 10:23:56
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.541
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.151
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129404
Report Date/Time: Wednesday, July 06, 2016 10:23:56
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129405
Sample Date/Time: Wednesday, July 06, 2016 10:24:50
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68867.9	1.7				ug/L	68501	Standard
	Be	9	631.7	9.2	**0.7119**	0.067	9.4	ug/L	8	Standard
	Al	27	18119901.6	2.3	**126.9628**	0.897	0.7	ug/L	1397	Standard
	Sc	45	46202.0	1.4				ug/L	38815	Standard
	Ti	47	6581.8	1.2	**18.6554**	0.304	1.6	ug/L	36	Standard
	V	51	128283.2	1.6	**17.2275**	0.351	2.0	ug/L	1284	Standard
	Cr	52	95154.5	0.9	**12.2409**	0.037	0.3	ug/L	6503	Standard
	Cr	53	11357.6	3.5	**12.2012**	0.334	2.7	ug/L	492	Standard
	Mn	55	3063159.4	0.6	**477.2229**	6.179	1.3	ug/L	841	Standard
	Co	59	44098.7	0.3	**6.9692**	0.072	1.0	ug/L	229	Standard
	Ni	60	31534.8	0.9	**17.7609**	0.056	0.3	ug/L	344	Standard
	Cu	65	16659.5	1.2	**9.4718**	0.076	0.8	ug/L	115	Standard
	Zn	66	34055.9	1.4	**32.0827**	0.219	0.7	ug/L	190	Standard
>	**Ge**	72	430125.8	0.9				ug/L	409858	Standard
	As	75	4082.9	0.7	**3.8521**	0.034	0.9	ug/L	-22	Standard
	Se	82	46.9	20.6	**0.3716**	0.089	23.9	ug/L	18	Standard
	Se-1	77	94.3	6.8	**0.5461**	0.081	14.7	ug/L	50	Standard
>	**Ga**	71	12415.1	2.0				mg/L	97	Standard
	Rb	85	110669.4	0.7				ug/L	25	Standard
	Y	89	534317.2	1.1				ug/L	376763	Standard
>	**Rh**	103	28.3	20.4				ug/L	20	Standard
	Mo	98	6324.1	1.9	**2.7032**	0.069	2.5	ug/L	51	Standard
	Ag	107	374.3	9.7	**0.0832**	0.005	6.2	ug/L	76	Standard
	Cd	111	152.6	9.1	**0.1166**	0.008	6.6	mg/L	6	Standard
	Cd	114	371.0	12.0	**0.1141**	0.009	7.9	ug/L	18	Standard
>	**In**	115	505513.3	1.1				ug/L	507261	Standard
	Sn	118	583.3	10.5	**-0.0032**	0.010	309.7	ug/L	683	Standard
	Sb	123	794.6	40.7	**0.1651**	0.074	44.8	ug/L	446	Standard
	Ba	135	227039.1	0.3	**119.7363**	1.491	1.2	ug/L	28	Standard
	Ce	140	871470.1	0.3				ug/L	33	Standard
>	**Tb**	159	829470.2	0.6				ug/L	800803	Standard
	Ho	165	14672.1	2.6				ug/L	10	Standard
	Tl	203	639.7	8.1	**0.1153**	0.007	5.7	ug/L	13	Standard
	Tl	205	520.0	16.7	**0.1195**	0.013	10.6	ug/L	13	Standard
	Pb	206	39238.4	0.8	**7.8343**	0.052	0.7	ug/L	226	Standard
	Pb	207	31985.1	0.4	**7.0346**	0.037	0.5	ug/L	204	Standard
	Pb	208	135887.5	0.7	**7.4745**	0.031	0.4	ug/L	852	Standard
	U	238	3977.2	1.1	**0.6329**	0.006	1.0	ug/L	13	Standard
>	**Bi**	209	458083.0	0.3				ug/L	449044	Standard

Sample ID: L1606129405
Report Date/Time: Wednesday, July 06, 2016 10:27:07
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	258.3	7.8	**0.2554**	0.022	8.5	mg/L	58	Standard
K	39	331.7	6.3	**0.9690**	0.070	7.2	mg/L	27	Standard
Ca	43	426.7	10.5	**24.8165**	3.005	12.1	mg/L	20	Standard
Fe	54	13735.2	0.5	**9.5401**	0.174	1.8	mg/L	158	Standard
Fe	57	3647.1	3.0	**9.5698**	0.314	3.3	mg/L	267	Standard
> **Sc-1**	45	46202.0	1.4				mg/L	38815	Standard
Cl	35	61570.9	1.0				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	3077.0	3.1				ug/L	1617	Standard
P	31	19200.5	1.6				ug/L	19244	Standard
S	34	3863.8	5.2				ug/L	3557	Standard
Sr	88	136.7	36.8				ug/L	65	Standard
C	12	116.7	34.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	23	Standard
Dy	164	25279.8	1.5				mg/L	13	Standard
Ho-1	165	14672.1	2.6				mg/L	10	Standard
Er	166	13549.4	4.5				mg/L	13	Standard
I	127	7708.6	5.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.535	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.945	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129405
Report Date/Time: Wednesday, July 06, 2016 10:27:07
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.656	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.013	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129405
Report Date/Time: Wednesday, July 06, 2016 10:27:07
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129406
Sample Date/Time: Wednesday, July 06, 2016 10:28:02
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73539.8	2.1				ug/L	68501	Standard
	Be	9	1236.7	9.5	**1.2875**	0.097	7.5	ug/L	8	Standard
	Al	27	19354398.4	0.5	**127.0365**	2.230	1.8	ug/L	1397	Standard
	Sc	45	49311.8	1.2				ug/L	38815	Standard
	Ti	47	6260.3	0.2	**17.8301**	0.279	1.6	ug/L	36	Standard
	V	51	197286.6	0.9	**26.7008**	0.334	1.3	ug/L	1284	Standard
	Cr	52	171609.2	1.4	**22.9421**	0.255	1.1	ug/L	6503	Standard
	Cr	53	21012.9	4.7	**23.0380**	0.738	3.2	ug/L	492	Standard
	Mn	55	5714579.9	0.8	**894.6958**	9.873	1.1	ug/L	841	Standard
	Co	59	85556.9	1.3	**13.5808**	0.106	0.8	ug/L	229	Standard
	Ni	60	55476.4	0.3	**31.5218**	0.503	1.6	ug/L	344	Standard
	Cu	65	46747.0	0.8	**26.7323**	0.179	0.7	ug/L	115	Standard
	Zn	66	113215.8	0.4	**107.4550**	1.729	1.6	ug/L	190	Standard
>	**Ge**	72	428063.9	1.5				ug/L	409858	Standard
	As	75	12392.8	0.8	**11.5468**	0.171	1.5	ug/L	-22	Standard
	Se	82	94.3	8.8	**0.8042**	0.088	10.9	ug/L	18	Standard
	Se-1	77	139.3	14.7	**1.1807**	0.309	26.2	ug/L	50	Standard
>	**Ga**	71	23456.5	4.0				mg/L	97	Standard
	Rb	85	264884.0	1.5				ug/L	25	Standard
	Y	89	662178.0	1.0				ug/L	376763	Standard
>	**Rh**	103	98.3	7.8				ug/L	20	Standard
	Mo	98	445.2	2.9	**0.2498**	0.006	2.6	ug/L	51	Standard
	Ag	107	3066.0	2.3	**0.4972**	0.011	2.2	ug/L	76	Standard
	Cd	111	1459.2	2.5	**0.7492**	0.021	2.8	mg/L	6	Standard
	Cd	114	3508.2	2.8	**0.7355**	0.025	3.4	ug/L	18	Standard
>	**In**	115	525518.1	1.1				ug/L	507261	Standard
	Sn	118	1388.4	7.6	**0.1349**	0.021	15.6	ug/L	683	Standard
	Sb	123	878.9	35.3	**0.1776**	0.071	39.9	ug/L	446	Standard
	Ba	135	561499.6	0.6	**284.8150**	1.354	0.5	ug/L	28	Standard
	Ce	140	1487894.8	1.2				ug/L	33	Standard
>	**Tb**	159	846767.6	0.8				ug/L	800803	Standard
	Ho	165	23945.6	0.4				ug/L	10	Standard
	Tl	203	1256.4	3.5	**0.1952**	0.004	2.0	ug/L	13	Standard
	Tl	205	1130.0	7.8	**0.2109**	0.017	8.2	ug/L	13	Standard
	Pb	206	1770271.4	0.4	**355.6542**	7.848	2.2	ug/L	226	Standard
	Pb	207	1435552.0	0.6	**317.5703**	6.461	2.0	ug/L	204	Standard
	Pb	208	6260085.1	0.5	**346.3567**	10.592	3.1	ug/L	852	Standard
	U	238	5247.9	0.1	**0.8260**	0.020	2.4	ug/L	13	Standard
>	**Bi**	209	455646.6	2.6				ug/L	449044	Standard

Sample ID: L1606129406
Report Date/Time: Wednesday, July 06, 2016 10:30:19
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.7220**	12.229	710.2	mg/L	2	Standard
Mg	24	143.3	14.5	**0.1144**	0.022	19.5	mg/L	58	Standard
K	39	646.7	10.5	**1.8867**	0.203	10.8	mg/L	27	Standard
Ca	43	151.7	18.2	**7.4176**	1.670	22.5	mg/L	20	Standard
Fe	54	24152.4	1.4	**15.7960**	0.407	2.6	mg/L	158	Standard
Fe	57	6299.6	1.7	**15.9098**	0.455	2.9	mg/L	267	Standard
> **Sc-1**	45	49311.8	1.2				mg/L	38815	Standard
Cl	35	60605.6	1.3				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	4874.1	2.4				ug/L	1617	Standard
P	31	19729.5	1.9				ug/L	19244	Standard
S	34	3847.2	5.9				ug/L	3557	Standard
Sr	88	80.0	31.3				ug/L	65	Standard
C	12	223.3	22.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	213.3	30.5				mg/L	23	Standard
Dy	164	39817.0	0.8				mg/L	13	Standard
Ho-1	165	23945.6	0.4				mg/L	10	Standard
Er	166	21181.5	1.1				mg/L	13	Standard
I	127	37849.0	6.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.355	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.442	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129406
Report Date/Time: Wednesday, July 06, 2016 10:30:19
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.599
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Approved: July 07, 2016

Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129407
Sample Date/Time: Wednesday, July 06, 2016 10:31:13
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73692.1	0.5				ug/L	68501	Standard
	Be	9	1216.7	6.2	**1.2655**	0.077	6.1	ug/L	8	Standard
	Al	27	21068113.9	0.7	**137.9685**	1.604	1.2	ug/L	1397	Standard
	Sc	45	49278.3	1.2				ug/L	38815	Standard
	Ti	47	4630.0	0.5	**12.8504**	0.202	1.6	ug/L	36	Standard
	V	51	168296.1	0.8	**22.1871**	0.442	2.0	ug/L	1284	Standard
	Cr	52	162616.0	0.1	**21.1287**	0.300	1.4	ug/L	6503	Standard
	Cr	53	19561.0	0.9	**20.8821**	0.318	1.5	ug/L	492	Standard
	Mn	55	3012326.9	1.2	**459.8828**	11.572	2.5	ug/L	841	Standard
	Co	59	80823.4	1.3	**12.5119**	0.282	2.3	ug/L	229	Standard
	Ni	60	54628.0	0.8	**30.2569**	0.181	0.6	ug/L	344	Standard
	Cu	65	31768.6	1.0	**17.7106**	0.287	1.6	ug/L	115	Standard
	Zn	66	64232.9	0.7	**59.3902**	0.606	1.0	ug/L	190	Standard
>	**Ge**	72	439001.8	1.3				ug/L	409858	Standard
	As	75	4630.0	1.3	**4.2692**	0.074	1.7	ug/L	-22	Standard
	Se	82	59.1	11.4	**0.4718**	0.064	13.6	ug/L	18	Standard
	Se-1	77	133.3	9.3	**1.0503**	0.190	18.1	ug/L	50	Standard
>	**Ga**	71	23105.9	1.6				mg/L	97	Standard
	Rb	85	235088.1	0.5				ug/L	25	Standard
	Y	89	638379.7	2.1				ug/L	376763	Standard
>	**Rh**	103	48.3	41.8				ug/L	20	Standard
	Mo	98	407.1	1.2	**0.2423**	0.006	2.4	ug/L	51	Standard
	Ag	107	561.3	1.7	**0.1141**	0.003	2.7	ug/L	76	Standard
	Cd	111	296.3	10.1	**0.1906**	0.019	9.8	mg/L	6	Standard
	Cd	114	649.1	7.9	**0.1726**	0.010	5.7	ug/L	18	Standard
>	**In**	115	501705.0	2.5				ug/L	507261	Standard
	Sn	118	5997.9	0.4	**0.9982**	0.028	2.8	ug/L	683	Standard
	Sb	123	662.1	37.4	**0.1367**	0.062	45.2	ug/L	446	Standard
	Ba	135	404621.6	0.5	**215.0734**	5.716	2.7	ug/L	28	Standard
	Ce	140	1501488.9	0.3				ug/L	33	Standard
>	**Tb**	159	823762.5	0.4				ug/L	800803	Standard
	Ho	165	22473.3	1.8				ug/L	10	Standard
	Tl	203	1153.0	0.6	**0.1835**	0.001	0.6	ug/L	13	Standard
	Tl	205	1021.7	4.8	**0.1961**	0.007	3.7	ug/L	13	Standard
	Pb	206	79343.2	0.5	**16.0985**	0.167	1.0	ug/L	226	Standard
	Pb	207	65263.3	1.2	**14.5843**	0.286	2.0	ug/L	204	Standard
	Pb	208	280672.4	0.9	**15.6850**	0.240	1.5	ug/L	852	Standard
	U	238	4937.1	2.5	**0.7871**	0.022	2.8	ug/L	13	Standard
>	**Bi**	209	450912.1	0.7				ug/L	449044	Standard

Sample ID: L1606129407
Report Date/Time: Wednesday, July 06, 2016 10:33:30
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**5.5830**	12.443	222.9	mg/L	2	Standard
Mg	24	130.0	37.1	**0.1007**	0.053	53.0	mg/L	58	Standard
K	39	498.3	2.5	**1.4228**	0.024	1.7	mg/L	27	Standard
Ca	43	138.3	7.5	**6.6525**	0.690	10.4	mg/L	20	Standard
Fe	54	23569.3	0.6	**15.4199**	0.090	0.6	mg/L	158	Standard
Fe	57	6081.2	2.7	**15.3422**	0.389	2.5	mg/L	267	Standard
Sc-1	45	49278.3	1.2				mg/L	38815	Standard
Cl	35	59773.0	1.9				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2826.9	2.9				ug/L	1617	Standard
P	31	19067.0	1.9				ug/L	19244	Standard
S	34	3487.1	4.7				ug/L	3557	Standard
Sr	88	111.7	27.4				ug/L	65	Standard
C	12	113.3	45.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	57.7				mg/L	23	Standard
Dy	164	38647.6	1.9				mg/L	13	Standard
Ho-1	165	22473.3	1.8				mg/L	10	Standard
Er	166	20056.6	4.5				mg/L	13	Standard
I	127	13512.7	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.578	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.111	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129407
Report Date/Time: Wednesday, July 06, 2016 10:33:30
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.905	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.416	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129407
Report Date/Time: Wednesday, July 06, 2016 10:33:30
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129408
Sample Date/Time: Wednesday, July 06, 2016 10:34:25
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70959.1	1.3				ug/L	68501	Standard
	Be	9	756.7	4.3	**0.8243**	0.033	4.1	ug/L	8	Standard
	Al	27	14159270.0	0.8	**96.3094**	0.910	0.9	ug/L	1397	Standard
	Sc	45	47111.5	0.8				ug/L	38815	Standard
	Ti	47	6499.7	0.7	**18.2590**	0.454	2.5	ug/L	36	Standard
	V	51	134886.9	0.7	**17.9581**	0.352	2.0	ug/L	1284	Standard
	Cr	52	147858.4	1.3	**19.3579**	0.550	2.8	ug/L	6503	Standard
	Cr	53	17798.8	1.6	**19.1853**	0.468	2.4	ug/L	492	Standard
	Mn	55	2435019.9	0.3	**375.9486**	6.829	1.8	ug/L	841	Standard
	Co	59	48552.7	1.1	**7.6035**	0.118	1.6	ug/L	229	Standard
	Ni	60	34586.8	1.2	**19.3198**	0.357	1.8	ug/L	344	Standard
	Cu	65	24621.3	1.1	**13.8825**	0.410	3.0	ug/L	115	Standard
	Zn	66	46239.5	1.2	**43.2092**	0.491	1.1	ug/L	190	Standard
>	**Ge**	72	434087.5	2.1				ug/L	409858	Standard
	As	75	9868.8	1.7	**9.0890**	0.151	1.7	ug/L	-22	Standard
	Se	82	49.3	2.7	**0.3894**	0.021	5.3	ug/L	18	Standard
	Se-1	77	92.0	6.5	**0.5020**	0.065	12.9	ug/L	50	Standard
>	**Ga**	71	15012.4	1.7				mg/L	97	Standard
	Rb	85	152672.0	0.8				ug/L	25	Standard
	Y	89	553523.8	1.3				ug/L	376763	Standard
>	**Rh**	103	20.0	66.1				ug/L	20	Standard
	Mo	98	1703.3	1.9	**0.7619**	0.024	3.2	ug/L	51	Standard
	Ag	107	394.7	6.0	**0.0849**	0.003	3.2	ug/L	76	Standard
	Cd	111	290.6	2.3	**0.1825**	0.006	3.1	mg/L	6	Standard
	Cd	114	764.2	6.2	**0.1912**	0.008	4.3	ug/L	18	Standard
>	**In**	115	519157.2	1.7				ug/L	507261	Standard
	Sn	118	405.0	28.2	**-0.0378**	0.021	54.3	ug/L	683	Standard
	Sb	123	529.8	35.5	**0.1001**	0.042	42.3	ug/L	446	Standard
	Ba	135	216547.7	1.4	**111.2307**	3.352	3.0	ug/L	28	Standard
	Ce	140	1039615.1	0.1				ug/L	33	Standard
>	**Tb**	159	843551.3	0.3				ug/L	800803	Standard
	Ho	165	16031.8	1.8				ug/L	10	Standard
	Tl	203	744.0	1.1	**0.1266**	0.003	2.1	ug/L	13	Standard
	Tl	205	701.7	2.9	**0.1441**	0.002	1.3	ug/L	13	Standard
	Pb	206	53258.1	0.9	**10.4016**	0.208	2.0	ug/L	226	Standard
	Pb	207	43508.7	1.3	**9.3600**	0.237	2.5	ug/L	204	Standard
	Pb	208	187957.8	0.8	**10.1115**	0.165	1.6	ug/L	852	Standard
	U	238	3675.4	2.9	**0.5763**	0.023	4.0	ug/L	13	Standard
>	**Bi**	209	468453.7	1.8				ug/L	449044	Standard

Sample ID: L1606129408
Report Date/Time: Wednesday, July 06, 2016 10:36:42
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.2267**	13.087	1066.9	mg/L	2	Standard
Mg	24	125.0	26.2	**0.1012**	0.037	36.5	mg/L	58	Standard
K	39	365.0	11.9	**1.0569**	0.141	13.3	mg/L	27	Standard
Ca	43	155.0	27.9	**8.0246**	2.680	33.4	mg/L	20	Standard
Fe	54	15935.4	1.6	**10.8701**	0.219	2.0	mg/L	158	Standard
Fe	57	4223.9	3.5	**10.9607**	0.389	3.5	mg/L	267	Standard
Sc-1	45	47111.5	0.8				mg/L	38815	Standard
Cl	35	59515.3	1.4				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3090.3	5.6				ug/L	1617	Standard
P	31	18973.5	2.2				ug/L	19244	Standard
S	34	3442.1	0.9				ug/L	3557	Standard
Sr	88	105.0	20.8				ug/L	65	Standard
C	12	116.7	9.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	44.1				mg/L	23	Standard
Dy	164	26399.3	4.0				mg/L	13	Standard
Ho-1	165	16031.8	1.8				mg/L	10	Standard
Er	166	14089.9	1.7				mg/L	13	Standard
I	127	8477.4	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.588	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.912	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129408
Report Date/Time: Wednesday, July 06, 2016 10:36:42
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.345
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.322
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129408
Report Date/Time: Wednesday, July 06, 2016 10:36:42
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129409
Sample Date/Time: Wednesday, July 06, 2016 10:37:37
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69708.4	2.7				ug/L	68501	Standard
	Be	9	870.0	2.0	**0.9619**	0.032	3.4	ug/L	8	Standard
	Al	27	19202159.7	1.2	**132.9728**	2.381	1.8	ug/L	1397	Standard
	Sc	45	46678.5	2.3				ug/L	38815	Standard
	Ti	47	6642.5	1.4	**19.0258**	0.085	0.4	ug/L	36	Standard
	V	51	160686.5	0.8	**21.8455**	0.248	1.1	ug/L	1284	Standard
	Cr	52	156704.6	1.0	**20.9936**	0.232	1.1	ug/L	6503	Standard
	Cr	53	18536.3	2.0	**20.3975**	0.180	0.9	ug/L	492	Standard
	Mn	55	3756081.6	0.3	**591.4032**	6.380	1.1	ug/L	841	Standard
	Co	59	59706.1	0.8	**9.5336**	0.097	1.0	ug/L	229	Standard
	Ni	60	39640.8	2.1	**22.6045**	0.292	1.3	ug/L	344	Standard
	Cu	65	29127.6	0.6	**16.7474**	0.180	1.1	ug/L	115	Standard
	Zn	66	54582.1	0.6	**52.0381**	0.301	0.6	ug/L	190	Standard
>	**Ge**	72	425619.0	1.1				ug/L	409858	Standard
	As	75	6984.3	0.1	**6.5874**	0.071	1.1	ug/L	-22	Standard
	Se	82	63.7	16.3	**0.5290**	0.094	17.8	ug/L	18	Standard
	Se-1	77	105.3	9.4	**0.7132**	0.123	17.2	ug/L	50	Standard
>	**Ga**	71	16687.5	1.5				mg/L	97	Standard
	Rb	85	168766.4	0.6				ug/L	25	Standard
	Y	89	597263.8	1.9				ug/L	376763	Standard
>	**Rh**	103	46.7	27.0				ug/L	20	Standard
	Mo	98	1999.8	2.4	**0.8916**	0.023	2.6	ug/L	51	Standard
	Ag	107	515.7	0.2	**0.1048**	0.000	0.4	ug/L	76	Standard
	Cd	111	596.6	3.7	**0.3367**	0.013	3.9	mg/L	6	Standard
	Cd	114	1494.2	1.8	**0.3419**	0.007	2.1	ug/L	18	Standard
>	**In**	115	512996.6	0.7				ug/L	507261	Standard
	Sn	118	1833.4	8.5	**0.2212**	0.030	13.8	ug/L	683	Standard
	Sb	123	606.4	28.4	**0.1195**	0.040	33.7	ug/L	446	Standard
	Ba	135	423500.0	0.9	**220.0532**	0.580	0.3	ug/L	28	Standard
	Ce	140	1120040.8	0.8				ug/L	33	Standard
>	**Tb**	159	826961.8	2.3				ug/L	800803	Standard
	Ho	165	18092.5	3.7				ug/L	10	Standard
	Tl	203	838.7	4.6	**0.1446**	0.005	3.8	ug/L	13	Standard
	Tl	205	770.0	5.6	**0.1605**	0.007	4.1	ug/L	13	Standard
	Pb	206	100483.1	0.8	**20.7696**	0.061	0.3	ug/L	226	Standard
	Pb	207	83275.9	1.1	**18.9560**	0.043	0.2	ug/L	204	Standard
	Pb	208	356830.1	0.7	**20.3142**	0.281	1.4	ug/L	852	Standard
	U	238	4663.1	1.9	**0.7589**	0.013	1.7	ug/L	13	Standard
>	**Bi**	209	442634.9	1.0				ug/L	449044	Standard

Sample ID: L1606129409
Report Date/Time: Wednesday, July 06, 2016 10:39:53
Page 1

Approved: July 07, 2016

Na	23	3.3	173.2	**6.1400**	25.847	421.0	mg/L	2	Standard
Mg	24	140.0	22.3	**0.1197**	0.038	31.7	mg/L	58	Standard
K	39	373.3	22.8	**1.0948**	0.271	24.8	mg/L	27	Standard
Ca	43	445.0	10.0	**25.6355**	2.557	10.0	mg/L	20	Standard
Fe	54	17573.1	2.3	**12.1156**	0.397	3.3	mg/L	158	Standard
Fe	57	4757.4	2.3	**12.5607**	0.567	4.5	mg/L	267	Standard
Sc-1	45	46678.5	2.3				mg/L	38815	Standard
Cl	35	62395.6	1.3				ug/L	57611	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	3323.7	5.8				ug/L	1617	Standard
P	31	20153.4	2.6				ug/L	19244	Standard
S	34	3810.5	2.1				ug/L	3557	Standard
Sr	88	126.7	20.3				ug/L	65	Standard
C	12	123.3	16.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	28.6				mg/L	23	Standard
Dy	164	30012.3	1.2				mg/L	13	Standard
Ho-1	165	18092.5	3.7				mg/L	10	Standard
Er	166	16609.1	2.2				mg/L	13	Standard
I	127	29072.9	4.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.762	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.845	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129409
Report Date/Time: Wednesday, July 06, 2016 10:39:53
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.131	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.573	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129409
Report Date/Time: Wednesday, July 06, 2016 10:39:53
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129410
Sample Date/Time: Wednesday, July 06, 2016 10:40:48
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69616.3	2.3				ug/L	68501	Standard
	Be	9	961.7	5.5	**1.0616**	0.034	3.2	ug/L	8	Standard
	Al	27	18281916.3	1.2	**126.7524**	1.430	1.1	ug/L	1397	Standard
	Sc	45	47290.4	1.8				ug/L	38815	Standard
	Ti	47	6362.0	1.3	**17.8782**	0.265	1.5	ug/L	36	Standard
	V	51	159242.7	1.1	**21.2363**	0.280	1.3	ug/L	1284	Standard
	Cr	52	141025.6	0.9	**18.4273**	0.214	1.2	ug/L	6503	Standard
	Cr	53	17441.7	0.8	**18.8006**	0.170	0.9	ug/L	492	Standard
	Mn	55	3246732.0	1.4	**501.5321**	8.138	1.6	ug/L	841	Standard
	Co	59	62555.9	1.5	**9.8001**	0.170	1.7	ug/L	229	Standard
	Ni	60	41094.7	0.2	**22.9958**	0.072	0.3	ug/L	344	Standard
	Cu	65	31150.3	1.3	**17.5726**	0.242	1.4	ug/L	115	Standard
	Zn	66	58549.2	0.6	**54.7724**	0.308	0.6	ug/L	190	Standard
>	Ge	72	433790.5	0.2				ug/L	409858	Standard
	As	75	9785.0	0.1	**9.0175**	0.026	0.3	ug/L	-22	Standard
	Se	82	60.3	4.9	**0.4878**	0.025	5.2	ug/L	18	Standard
	Se-1	77	120.7	9.5	**0.8965**	0.155	17.3	ug/L	50	Standard
>	Ga	71	18277.7	3.5				mg/L	97	Standard
	Rb	85	196232.6	0.8				ug/L	25	Standard
	Y	89	583639.1	0.9				ug/L	376763	Standard
>	Rh	103	36.7	55.1				ug/L	20	Standard
	Mo	98	443.5	1.6	**0.2589**	0.003	1.4	ug/L	51	Standard
	Ag	107	462.0	1.3	**0.0985**	0.001	1.0	ug/L	76	Standard
	Cd	111	685.9	3.7	**0.3915**	0.015	3.9	mg/L	6	Standard
	Cd	114	1702.1	8.7	**0.3949**	0.033	8.5	ug/L	18	Standard
>	In	115	497941.4	0.7				ug/L	507261	Standard
	Sn	118	670.0	12.0	**0.0147**	0.016	107.7	ug/L	683	Standard
	Sb	123	469.6	32.9	**0.0912**	0.037	40.3	ug/L	446	Standard
	Ba	135	410847.6	0.8	**219.9427**	2.300	1.0	ug/L	28	Standard
	Ce	140	1208330.0	0.4				ug/L	33	Standard
>	Tb	159	813546.8	1.1				ug/L	800803	Standard
	Ho	165	18953.5	2.7				ug/L	10	Standard
	Tl	203	963.0	4.3	**0.1584**	0.004	2.8	ug/L	13	Standard
	Tl	205	828.4	3.8	**0.1667**	0.005	2.9	ug/L	13	Standard
	Pb	206	92666.8	0.3	**18.7524**	0.223	1.2	ug/L	226	Standard
	Pb	207	77103.7	0.6	**17.1840**	0.253	1.5	ug/L	204	Standard
	Pb	208	327107.5	0.6	**18.2311**	0.267	1.5	ug/L	852	Standard
	U	238	4511.0	0.2	**0.7210**	0.005	0.7	ug/L	13	Standard
>	Bi	209	452130.4	0.9				ug/L	449044	Standard

Sample ID: L1606129410
Report Date/Time: Wednesday, July 06, 2016 10:43:05
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**6.0368**	12.838	212.7	mg/L	2	Standard
Mg	24	135.0	3.7	**0.1117**	0.006	5.2	mg/L	58	Standard
K	39	476.7	12.4	**1.4188**	0.205	14.4	mg/L	27	Standard
Ca	43	226.7	17.8	**12.2322**	2.188	17.9	mg/L	20	Standard
Fe	54	18678.3	2.4	**12.7127**	0.243	1.9	mg/L	158	Standard
Fe	57	4979.2	4.0	**12.9867**	0.314	2.4	mg/L	267	Standard
Sc-1	45	47290.4	1.8				mg/L	38815	Standard
Cl	35	60490.5	1.5				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	4444.0	5.0				ug/L	1617	Standard
P	31	19914.7	1.5				ug/L	19244	Standard
S	34	3688.8	4.4				ug/L	3557	Standard
Sr	88	118.3	10.6				ug/L	65	Standard
C	12	103.3	39.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	39.7				mg/L	23	Standard
Dy	164	30943.8	4.0				mg/L	13	Standard
Ho-1	165	18953.5	2.7				mg/L	10	Standard
Er	166	16829.3	3.2				mg/L	13	Standard
I	127	10401.9	3.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.628	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.839	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129410
Report Date/Time: Wednesday, July 06, 2016 10:43:05
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.163	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.687	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129410
Report Date/Time: Wednesday, July 06, 2016 10:43:05
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129414
Sample Date/Time: Wednesday, July 06, 2016 10:44:00
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71637.3	1.7				ug/L	68501	Standard
	Be	9	1021.7	6.3	**1.0968**	0.085	7.8	ug/L	8	Standard
	Al	27	18055854.1	2.0	**121.6784**	4.280	3.5	ug/L	1397	Standard
	Sc	45	48614.6	2.4				ug/L	38815	Standard
	Ti	47	6128.9	2.4	**17.3770**	0.672	3.9	ug/L	36	Standard
	V	51	159400.6	0.8	**21.4446**	0.369	1.7	ug/L	1284	Standard
	Cr	52	144599.1	0.6	**19.0917**	0.345	1.8	ug/L	6503	Standard
	Cr	53	16966.2	3.0	**18.4464**	0.876	4.7	ug/L	492	Standard
	Mn	55	4530173.8	0.5	**705.9322**	10.338	1.5	ug/L	841	Standard
	Co	59	69310.2	0.1	**10.9526**	0.185	1.7	ug/L	229	Standard
	Ni	60	46644.7	1.0	**26.3537**	0.542	2.1	ug/L	344	Standard
	Cu	65	36918.3	0.5	**21.0110**	0.308	1.5	ug/L	115	Standard
	Zn	66	85868.7	1.1	**81.0791**	0.514	0.6	ug/L	190	Standard
>	**Ge**	72	430095.7	1.6				ug/L	409858	Standard
	As	75	8396.3	0.2	**7.8187**	0.112	1.4	ug/L	-22	Standard
	Se	82	71.3	12.7	**0.5922**	0.083	13.9	ug/L	18	Standard
	Se-1	77	110.7	2.3	**0.7729**	0.049	6.4	ug/L	50	Standard
>	**Ga**	71	17934.0	4.5				mg/L	97	Standard
	Rb	85	189570.3	0.9				ug/L	25	Standard
	Y	89	609959.0	0.6				ug/L	376763	Standard
>	**Rh**	103	83.3	6.9				ug/L	20	Standard
	Mo	98	442.0	4.5	**0.2506**	0.007	2.9	ug/L	51	Standard
	Ag	107	670.0	5.1	**0.1281**	0.008	6.4	ug/L	76	Standard
	Cd	111	1213.9	1.2	**0.6372**	0.021	3.3	mg/L	6	Standard
	Cd	114	2971.9	12.0	**0.6347**	0.055	8.7	ug/L	18	Standard
>	**In**	115	519347.8	2.9				ug/L	507261	Standard
	Sn	118	811.7	22.8	**0.0342**	0.029	83.8	ug/L	683	Standard
	Sb	123	508.7	27.5	**0.0950**	0.029	30.5	ug/L	446	Standard
	Ba	135	407137.2	1.3	**209.0293**	3.304	1.6	ug/L	28	Standard
	Ce	140	1173511.2	0.8				ug/L	33	Standard
>	**Tb**	159	846889.3	0.9				ug/L	800803	Standard
	Ho	165	19894.7	3.2				ug/L	10	Standard
	Tl	203	874.7	4.5	**0.1445**	0.005	3.4	ug/L	13	Standard
	Tl	205	866.7	11.7	**0.1697**	0.015	8.7	ug/L	13	Standard
	Pb	206	768270.5	1.0	**152.1393**	1.787	1.2	ug/L	226	Standard
	Pb	207	586001.6	0.8	**127.7835**	1.154	0.9	ug/L	204	Standard
	Pb	208	2574173.5	0.5	**140.3658**	0.873	0.6	ug/L	852	Standard
	U	238	4434.3	1.5	**0.6951**	0.010	1.4	ug/L	13	Standard
>	**Bi**	209	462087.8	0.2				ug/L	449044	Standard

Sample ID: L1606129414
Report Date/Time: Wednesday, July 06, 2016 10:46:17
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	150.0	6.7	**0.1237**	0.009	7.3	mg/L	58	Standard
K	39	496.7	13.7	**1.4403**	0.227	15.8	mg/L	27	Standard
Ca	43	398.3	15.5	**21.8095**	3.086	14.2	mg/L	20	Standard
Fe	54	17527.3	1.2	**11.5979**	0.308	2.7	mg/L	158	Standard
Fe	57	4700.7	2.8	**11.8845**	0.644	5.4	mg/L	267	Standard
Sc-1	45	48614.6	2.4				mg/L	38815	Standard
Cl	35	61146.5	0.2				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	3377.0	5.9				ug/L	1617	Standard
P	31	19879.7	2.4				ug/L	19244	Standard
S	34	3838.8	2.6				ug/L	3557	Standard
Sr	88	200.0	11.5				ug/L	65	Standard
C	12	170.0	25.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	23	Standard
Dy	164	32365.0	1.1				mg/L	13	Standard
Ho-1	165	19894.7	3.2				mg/L	10	Standard
Er	166	17843.8	2.1				mg/L	13	Standard
I	127	16912.8	4.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		104.578	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.938	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129414
Report Date/Time: Wednesday, July 06, 2016 10:46:17
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.383
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.905
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129414
Report Date/Time: Wednesday, July 06, 2016 10:46:17
Page 3

Approved: July 07, 2016

Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129415
Sample Date/Time: Wednesday, July 06, 2016 10:47:11
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69356.8	2.8				ug/L	68501	Standard
	Be	9	655.0	2.6	**0.7323**	0.009	1.2	ug/L	8	Standard
	Al	27	18722279.1	2.0	**130.2889**	1.214	0.9	ug/L	1397	Standard
	Sc	45	46070.0	2.2				ug/L	38815	Standard
	Ti	47	6073.9	1.6	**17.2616**	0.359	2.1	ug/L	36	Standard
	V	51	127231.3	0.8	**17.1322**	0.226	1.3	ug/L	1284	Standard
	Cr	52	102182.4	1.4	**13.2537**	0.247	1.9	ug/L	6503	Standard
	Cr	53	12315.0	1.3	**13.3055**	0.220	1.7	ug/L	492	Standard
	Mn	55	3021759.4	0.7	**472.0520**	3.826	0.8	ug/L	841	Standard
	Co	59	47565.2	1.0	**7.5376**	0.131	1.7	ug/L	229	Standard
	Ni	60	32362.9	1.1	**18.2823**	0.173	0.9	ug/L	344	Standard
	Cu	65	17677.0	0.6	**10.0795**	0.120	1.2	ug/L	115	Standard
	Zn	66	34602.8	0.5	**32.6930**	0.405	1.2	ug/L	190	Standard
>	**Ge**	72	428940.5	0.7				ug/L	409858	Standard
	As	75	3941.9	1.4	**3.7324**	0.045	1.2	ug/L	-22	Standard
	Se	82	46.5	7.4	**0.3694**	0.033	8.9	ug/L	18	Standard
	Se-1	77	100.3	7.0	**0.6338**	0.107	16.9	ug/L	50	Standard
>	**Ga**	71	13047.3	4.0				mg/L	97	Standard
	Rb	85	118624.5	2.9				ug/L	25	Standard
	Y	89	560951.0	2.5				ug/L	376763	Standard
>	**Rh**	103	48.3	6.0				ug/L	20	Standard
	Mo	98	828.1	2.5	**0.4116**	0.010	2.5	ug/L	51	Standard
	Ag	107	345.0	5.2	**0.0778**	0.003	3.9	ug/L	76	Standard
	Cd	111	144.7	12.8	**0.1116**	0.010	8.7	mg/L	6	Standard
	Cd	114	424.5	6.8	**0.1240**	0.007	5.5	ug/L	18	Standard
>	**In**	115	512359.1	1.3				ug/L	507261	Standard
	Sn	118	641.7	0.4	**0.0060**	0.002	32.8	ug/L	683	Standard
	Sb	123	464.7	24.6	**0.0871**	0.028	31.9	ug/L	446	Standard
	Ba	135	304537.9	0.9	**158.4527**	1.532	1.0	ug/L	28	Standard
	Ce	140	927061.5	1.4				ug/L	33	Standard
>	**Tb**	159	815658.1	0.5				ug/L	800803	Standard
	Ho	165	15122.5	1.3				ug/L	10	Standard
	Tl	203	665.3	5.7	**0.1217**	0.004	3.6	ug/L	13	Standard
	Tl	205	626.7	3.3	**0.1387**	0.004	2.8	ug/L	13	Standard
	Pb	206	41069.9	0.7	**8.5027**	0.083	1.0	ug/L	226	Standard
	Pb	207	33682.7	0.3	**7.6813**	0.070	0.9	ug/L	204	Standard
	Pb	208	146067.2	0.1	**8.3310**	0.095	1.1	ug/L	852	Standard
	U	238	3682.8	0.5	**0.6094**	0.005	0.7	ug/L	13	Standard
>	**Bi**	209	441819.7	1.2				ug/L	449044	Standard

Sample ID: L1606129415
Report Date/Time: Wednesday, July 06, 2016 10:49:28
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	121.7	9.5	**0.1005**	0.014	13.8	mg/L	58	Standard
K	39	275.0	20.0	**0.7805**	0.172	22.0	mg/L	27	Standard
Ca	43	448.3	8.4	**26.1815**	1.967	7.5	mg/L	20	Standard
Fe	54	13969.2	1.8	**9.7320**	0.102	1.0	mg/L	158	Standard
Fe	57	3810.5	1.6	**10.0601**	0.130	1.3	mg/L	267	Standard
Sc-1	45	46070.0	2.2				mg/L	38815	Standard
Cl	35	63382.3	0.4				ug/L	57611	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2136.8	4.5				ug/L	1617	Standard
P	31	20200.1	2.8				ug/L	19244	Standard
S	34	3783.8	2.6				ug/L	3557	Standard
Sr	88	146.7	29.8				ug/L	65	Standard
C	12	96.7	11.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	23	Standard
Dy	164	25849.2	4.7				mg/L	13	Standard
Ho-1	165	15122.5	1.3				mg/L	10	Standard
Er	166	13792.9	3.2				mg/L	13	Standard
I	127	16515.7	1.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.249	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.656	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129415
Report Date/Time: Wednesday, July 06, 2016 10:49:28
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.005	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.391	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129415
Report Date/Time: Wednesday, July 06, 2016 10:49:28
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606138108
Sample Date/Time: Wednesday, July 06, 2016 10:50:23
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72486.3	0.9				ug/L	68501	Standard
	Be	9	1533.4	3.3	**1.6163**	0.062	3.8	ug/L	8	Standard
	Al	27	25400427.9	2.0	**169.1086**	4.148	2.5	ug/L	1397	Standard
	Sc	45	51156.2	0.2				ug/L	38815	Standard
	Ti	47	8899.9	0.5	**24.3466**	0.343	1.4	ug/L	36	Standard
	V	51	344234.9	1.1	**44.8316**	0.962	2.1	ug/L	1284	Standard
	Cr	52	232795.5	0.9	**30.1671**	0.645	2.1	ug/L	6503	Standard
	Cr	53	28976.0	1.1	**30.6491**	0.369	1.2	ug/L	492	Standard
	Mn	55	7977455.3	1.5	**1199.3630**	32.576	2.7	ug/L	841	Standard
	Co	59	107887.7	3.2	**16.4465**	0.723	4.4	ug/L	229	Standard
	Ni	60	66407.2	1.3	**36.2534**	0.900	2.5	ug/L	344	Standard
	Cu	65	42270.9	0.8	**23.2092**	0.454	2.0	ug/L	115	Standard
	Zn	66	75366.6	0.5	**68.6374**	1.149	1.7	ug/L	190	Standard
>	**Ge**	72	445840.4	1.3				ug/L	409858	Standard
	As	75	12308.2	0.8	**11.0147**	0.102	0.9	ug/L	-22	Standard
	Se	82	70.7	6.0	**0.5638**	0.038	6.8	ug/L	18	Standard
	Se-1	77	145.0	4.8	**1.1765**	0.081	6.9	ug/L	50	Standard
>	**Ga**	71	31280.6	2.9				mg/L	97	Standard
	Rb	85	327883.6	1.5				ug/L	25	Standard
	Y	89	719377.2	0.7				ug/L	376763	Standard
>	**Rh**	103	35.0	0.0				ug/L	20	Standard
	Mo	98	765.6	2.9	**0.3992**	0.010	2.6	ug/L	51	Standard
	Ag	107	679.3	4.1	**0.1354**	0.005	3.6	ug/L	76	Standard
	Cd	111	351.6	7.7	**0.2222**	0.013	5.9	mg/L	6	Standard
	Cd	114	823.2	4.8	**0.2125**	0.009	4.1	ug/L	18	Standard
>	**In**	115	491492.2	0.5				ug/L	507261	Standard
	Sn	118	440.0	20.8	**-0.0272**	0.017	62.7	ug/L	683	Standard
	Sb	123	423.3	31.3	**0.0814**	0.031	38.5	ug/L	446	Standard
	Ba	135	714828.5	0.3	**387.6768**	1.440	0.4	ug/L	28	Standard
	Ce	140	1832498.4	0.5				ug/L	33	Standard
>	**Tb**	159	823866.0	2.2				ug/L	800803	Standard
	Ho	165	29406.8	0.1				ug/L	10	Standard
	Tl	203	1665.8	2.3	**0.2517**	0.010	3.8	ug/L	13	Standard
	Tl	205	1446.7	2.9	**0.2613**	0.003	1.1	ug/L	13	Standard
	Pb	206	93784.4	0.6	**19.1491**	0.463	2.4	ug/L	226	Standard
	Pb	207	76969.3	0.3	**17.3077**	0.404	2.3	ug/L	204	Standard
	Pb	208	332050.1	0.7	**18.6735**	0.512	2.7	ug/L	852	Standard
	U	238	6413.7	2.1	**1.0160**	0.040	3.9	ug/L	13	Standard
>	**Bi**	209	448223.1	2.1				ug/L	449044	Standard

Sample ID: L1606138108
Report Date/Time: Wednesday, July 06, 2016 10:52:40
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**5.0083**	11.943	238.5	mg/L	2	Standard
Mg	24	171.7	13.1	**0.1380**	0.023	17.0	mg/L	58	Standard
K	39	886.7	6.3	**2.5401**	0.168	6.6	mg/L	27	Standard
Ca	43	226.7	5.6	**11.2306**	0.672	6.0	mg/L	20	Standard
Fe	54	40072.0	2.9	**25.3299**	0.732	2.9	mg/L	158	Standard
Fe	57	9864.9	1.0	**24.3568**	0.264	1.1	mg/L	267	Standard
> **Sc-1**	45	51156.2	0.2				mg/L	38815	Standard
Cl	35	59691.4	1.9				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	3077.0	6.1				ug/L	1617	Standard
P	31	20130.0	0.4				ug/L	19244	Standard
S	34	3668.8	1.0				ug/L	3557	Standard
Sr	88	105.0	8.2				ug/L	65	Standard
C	12	73.3	15.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	45.8				mg/L	23	Standard
Dy	164	48237.7	1.2				mg/L	13	Standard
Ho-1	165	29406.8	0.1				mg/L	10	Standard
Er	166	25948.9	3.5				mg/L	13	Standard
I	127	15698.1	2.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.818	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.779	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138108
Report Date/Time: Wednesday, July 06, 2016 10:52:40
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.891
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.817
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606138108
Report Date/Time: Wednesday, July 06, 2016 10:52:40
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 10:53:36
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64259.4	3.3				ug/L	68501	Standard
	Be	9	43841.7	3.1	**51.5527**	2.497	4.8	ug/L	8	Standard
	Al	27	6953353.2	1.9	**52.2651**	1.444	2.8	ug/L	1397	Standard
	Sc	45	39743.7	0.4				ug/L	38815	Standard
	Ti	47	35704.4	1.0	**101.8805**	1.285	1.3	ug/L	36	Standard
	V	51	371494.8	0.5	**50.4382**	0.543	1.1	ug/L	1284	Standard
	Cr	52	375402.7	0.3	**51.3335**	0.715	1.4	ug/L	6503	Standard
	Cr	53	45456.4	2.6	**50.3879**	1.853	3.7	ug/L	492	Standard
	Mn	55	334501.2	2.2	**52.3232**	1.695	3.2	ug/L	841	Standard
	Co	59	318609.4	1.7	**50.6018**	1.412	2.8	ug/L	229	Standard
	Ni	60	90509.5	0.4	**51.5582**	0.574	1.1	ug/L	344	Standard
	Cu	65	90191.6	0.5	**51.6222**	0.305	0.6	ug/L	115	Standard
	Zn	66	54118.1	0.1	**51.3362**	0.581	1.1	ug/L	190	Standard
>	Ge	72	427773.7	1.1				ug/L	409858	Standard
	As	75	55742.6	0.4	**51.6238**	0.555	1.1	ug/L	-22	Standard
	Se	82	5706.7	1.4	**51.7084**	0.981	1.9	ug/L	18	Standard
	Se-1	77	3670.4	2.7	**50.3081**	1.140	2.3	ug/L	50	Standard
>	Ga	71	88.3	17.3				mg/L	97	Standard
	Rb	85	1076.7	35.5				ug/L	25	Standard
	Y	89	377618.5	2.9				ug/L	376763	Standard
>	Rh	103	46.7	32.7				ug/L	20	Standard
	Mo	98	243549.3	0.8	**100.3006**	1.362	1.4	ug/L	51	Standard
	Ag	107	315759.3	0.5	**50.2284**	0.464	0.9	ug/L	76	Standard
	Cd	111	100684.0	1.0	**50.3922**	0.736	1.5	mg/L	6	Standard
	Cd	114	247087.6	1.9	**50.5807**	0.776	1.5	ug/L	18	Standard
>	In	115	511123.8	0.7				ug/L	507261	Standard
	Sn	118	271706.3	0.8	**49.1505**	0.193	0.4	ug/L	683	Standard
	Sb	123	219531.9	1.2	**50.7744**	0.262	0.5	ug/L	446	Standard
	Ba	135	95238.1	0.7	**49.6818**	0.458	0.9	ug/L	28	Standard
	Ce	140	2296.9	75.4				ug/L	33	Standard
>	Tb	159	795428.0	0.9				ug/L	800803	Standard
	Ho	165	46.7	80.4				ug/L	10	Standard
	Tl	203	386058.6	0.7	**50.5931**	0.842	1.7	ug/L	13	Standard
	Tl	205	345836.6	1.9	**52.3425**	1.620	3.1	ug/L	13	Standard
	Pb	206	245468.8	0.5	**50.0966**	0.548	1.1	ug/L	226	Standard
	Pb	207	223245.4	0.8	**50.1748**	0.874	1.7	ug/L	204	Standard
	Pb	208	926108.0	0.5	**52.0498**	0.851	1.6	ug/L	852	Standard
	U	238	330446.1	0.9	**50.1569**	0.936	1.9	ug/L	13	Standard
>	Bi	209	448378.0	1.2				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 10:55:53
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3747.1	4.1	**4.9169**	0.220	4.5	mg/L	58	Standard
K	39	1196.7	2.7	**4.5173**	0.126	2.8	mg/L	27	Standard
Ca	43	96.7	16.6	**5.5890**	1.145	20.5	mg/L	20	Standard
Fe	54	6243.1	4.3	**4.9840**	0.237	4.8	mg/L	158	Standard
Fe	57	1828.4	4.2	**5.2938**	0.264	5.0	mg/L	267	Standard
Sc-1	45	39743.7	0.4				mg/L	38815	Standard
Cl	35	62133.8	0.9				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1636.8	2.5				ug/L	1617	Standard
P	31	20235.2	4.1				ug/L	19244	Standard
S	34	3792.1	1.3				ug/L	3557	Standard
Sr	88	61.7	33.8				ug/L	65	Standard
C	12	60.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	54.9	100.7				mg/L	13	Standard
Ho-1	165	46.7	80.4				mg/L	10	Standard
Er	166	36.7	31.5				mg/L	13	Standard
I	127	14628.7	3.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.105		
Al	27	104.530		
Sc	45			
Ti	47	101.880		
V	51	100.876		
Cr	52	102.667		
Cr	53			
Mn	55	104.646		
Co	59	101.204		
Ni	60	103.116		
Cu	65	103.244		
Zn	66	102.672		
Ge	72		104.371	
As	75	103.248		
Se	82	103.417		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 10:55:53
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	100.301		
Ag	107	100.457		
Cd	111	100.784		
Cd	114			
> In	115			100.762
Sn	118	98.301		
Sb	123	101.549		
Ba	135	99.364		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.186		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.100		
U	238	100.314		
> Bi	209			99.852
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 10:55:53
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 11:42:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68099.4	1.8				ug/L	68501	Standard
	Be	9	8.3	34.6	**0.0287**	0.003	11.1	ug/L	8	Standard
	Al	27	14163.5	24.2	**0.1355**	0.025	18.2	ug/L	1397	Standard
	Sc	45	44045.6	0.7				ug/L	38815	Standard
	Ti	47	40.3	21.7	**0.0838**	0.025	29.8	ug/L	36	Standard
	V	51	1647.2	9.4	**0.0730**	0.019	26.1	ug/L	1284	Standard
	Cr	52	8280.6	0.3	**0.1828**	0.011	5.9	ug/L	6503	Standard
	Cr	53	536.7	3.8	**0.1623**	0.024	15.0	ug/L	492	Standard
	Mn	55	3121.3	36.4	**0.3770**	0.169	44.9	ug/L	841	Standard
	Co	59	314.3	17.6	**0.0538**	0.008	15.3	ug/L	229	Standard
	Ni	60	2758.9	10.6	**1.3694**	0.170	12.4	ug/L	344	Standard
	Cu	65	169.0	22.3	**0.0803**	0.020	25.2	ug/L	115	Standard
	Zn	66	390.3	4.0	**0.2459**	0.012	4.8	ug/L	190	Standard
>	**Ge**	72	441689.0	0.7				ug/L	409858	Standard
	As	75	-29.8	41.1	**0.0722**	0.011	15.1	ug/L	-22	Standard
	Se	82	23.9	27.0	**0.1591**	0.058	36.6	ug/L	18	Standard
	Se-1	77	59.0	5.1	**0.0362**	0.043	119.3	ug/L	50	Standard
>	**Ga**	71	210.0	2.4				mg/L	97	Standard
	Rb	85	41.7	42.1				ug/L	25	Standard
	Y	89	382520.5	1.2				ug/L	376763	Standard
>	**Rh**	103	40.0	12.5				ug/L	20	Standard
	Mo	98	49.0	35.4	**0.0912**	0.007	7.5	ug/L	51	Standard
	Ag	107	101.7	48.1	**0.0389**	0.007	19.3	ug/L	76	Standard
	Cd	111	8.6	82.2	**0.0436**	0.003	7.9	mg/L	6	Standard
	Cd	114	29.0	107.5	**0.0431**	0.006	14.4	ug/L	18	Standard
>	**In**	115	523091.2	1.5				ug/L	507261	Standard
	Sn	118	720.0	15.6	**0.0173**	0.018	105.5	ug/L	683	Standard
	Sb	123	259.1	31.9	**0.0381**	0.018	47.4	ug/L	446	Standard
	Ba	135	102.7	54.1	**0.0679**	0.028	41.1	ug/L	28	Standard
	Ce	140	168.3	80.9				ug/L	33	Standard
>	**Tb**	159	833236.8	0.4				ug/L	800803	Standard
	Ho	165	16.7	96.4				ug/L	10	Standard
	Tl	203	41.3	123.5	**0.0386**	0.006	16.8	ug/L	13	Standard
	Tl	205	26.7	94.4	**0.0464**	0.004	7.9	ug/L	13	Standard
	Pb	206	344.3	44.0	**0.0642**	0.030	46.5	ug/L	226	Standard
	Pb	207	291.7	32.9	**0.0626**	0.021	33.1	ug/L	204	Standard
	Pb	208	1108.0	29.9	**0.0606**	0.018	29.5	ug/L	852	Standard
	U	238	20.0	103.3	**0.0456**	0.003	6.7	ug/L	13	Standard
>	**Bi**	209	461326.7	1.1				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 11:44:48
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	39.6	**0.0272**	0.026	94.5	mg/L	58	Standard
K	39	20.0	66.1	**-0.0714**	0.047	66.1	mg/L	27	Standard
Ca	43	36.7	15.7	**1.0732**	0.378	35.3	mg/L	20	Standard
Fe	54	157.3	15.0	**-0.0043**	0.017	399.4	mg/L	158	Standard
Fe	57	200.0	21.8	**-0.0897**	0.131	146.0	mg/L	267	Standard
Sc-1	45	44045.6	0.7				mg/L	38815	Standard
Cl	35	61661.9	0.1				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1826.8	9.6				ug/L	1617	Standard
P	31	18439.5	1.1				ug/L	19244	Standard
S	34	3442.1	6.8				ug/L	3557	Standard
Sr	88	61.7	32.8				ug/L	65	Standard
C	12	60.0	33.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	23	Standard
Dy	164	15.9	77.1				mg/L	13	Standard
Ho-1	165	16.7	96.4				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	7533.5	4.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.766	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 11:44:48
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.121
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.735
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ni	60	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 11:44:48
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 11:45:47
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64830.1	1.9				ug/L	68501	Standard
	Be	9	46499.6	1.1	**54.1704**	1.537	2.8	ug/L	8	Standard
	Al	27	7388448.8	0.7	**55.0275**	0.812	1.5	ug/L	1397	Standard
	Sc	45	44033.9	0.5				ug/L	38815	Standard
	Ti	47	39812.6	1.5	**107.6904**	3.488	3.2	ug/L	36	Standard
	V	51	400075.3	1.3	**51.4790**	0.650	1.3	ug/L	1284	Standard
	Cr	52	408299.6	1.0	**52.9448**	1.233	2.3	ug/L	6503	Standard
	Cr	53	50147.9	1.3	**52.6875**	0.621	1.2	ug/L	492	Standard
	Mn	55	360204.4	0.5	**53.3920**	0.801	1.5	ug/L	841	Standard
	Co	59	341155.0	0.4	**51.3459**	0.958	1.9	ug/L	229	Standard
	Ni	60	97475.9	0.6	**52.6264**	0.719	1.4	ug/L	344	Standard
	Cu	65	95563.8	0.6	**51.8385**	0.701	1.4	ug/L	115	Standard
	Zn	66	56825.4	0.6	**51.0848**	0.696	1.4	ug/L	190	Standard
>	Ge	72	451415.0	1.8				ug/L	409858	Standard
	As	75	58322.2	1.2	**51.1856**	0.404	0.8	ug/L	-22	Standard
	Se	82	5813.6	0.9	**49.9195**	0.668	1.3	ug/L	18	Standard
	Se-1	77	3959.5	0.2	**51.4577**	0.905	1.8	ug/L	50	Standard
>	Ga	71	216.7	13.1				mg/L	97	Standard
	Rb	85	860.0	6.2				ug/L	25	Standard
	Y	89	386323.2	0.5				ug/L	376763	Standard
>	Rh	103	43.3	33.3				ug/L	20	Standard
	Mo	98	258715.6	0.8	**102.9203**	0.336	0.3	ug/L	51	Standard
	Ag	107	334664.2	1.1	**51.4249**	0.335	0.7	ug/L	76	Standard
	Cd	111	105295.3	0.9	**50.9078**	0.378	0.7	mg/L	6	Standard
	Cd	114	257697.7	1.4	**50.9614**	0.474	0.9	ug/L	18	Standard
>	In	115	529086.9	0.5				ug/L	507261	Standard
	Sn	118	288808.4	1.0	**50.4733**	0.434	0.9	ug/L	683	Standard
	Sb	123	231526.0	1.7	**51.7299**	0.605	1.2	ug/L	446	Standard
	Ba	135	102698.6	0.9	**51.7546**	0.698	1.3	ug/L	28	Standard
	Ce	140	91.7	31.0				ug/L	33	Standard
>	Tb	159	843940.5	0.4				ug/L	800803	Standard
	Ho	165	13.3	86.6				ug/L	10	Standard
	Tl	203	410176.2	0.9	**51.5014**	0.241	0.5	ug/L	13	Standard
	Tl	205	368257.4	1.7	**53.4038**	1.508	2.8	ug/L	13	Standard
	Pb	206	259254.8	1.4	**50.6945**	0.235	0.5	ug/L	226	Standard
	Pb	207	235956.1	0.7	**50.8112**	0.400	0.8	ug/L	204	Standard
	Pb	208	952282.8	0.7	**51.2827**	0.741	1.4	ug/L	852	Standard
	U	238	350690.0	0.2	**51.0014**	0.550	1.1	ug/L	13	Standard
>	Bi	209	467938.8	1.3				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 11:48:04
Page 1

Approved: July 07, 2016

Na	23	5.0	100.0	**15.2758**	24.130	158.0	mg/L	2	Standard
Mg	24	4247.3	2.7	**5.0303**	0.122	2.4	mg/L	58	Standard
K	39	1463.4	3.7	**5.0009**	0.207	4.1	mg/L	27	Standard
Ca	43	111.7	2.6	**5.8810**	0.155	2.6	mg/L	20	Standard
Fe	54	6589.6	4.9	**4.7411**	0.215	4.5	mg/L	158	Standard
Fe	57	2028.5	2.5	**5.3009**	0.131	2.5	mg/L	267	Standard
Sc-1	45	44033.9	0.5				mg/L	38815	Standard
Cl	35	63287.2	0.5				ug/L	57611	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1883.5	7.5				ug/L	1617	Standard
P	31	20448.8	4.2				ug/L	19244	Standard
S	34	4120.6	1.7				ug/L	3557	Standard
Sr	88	73.3	33.6				ug/L	65	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	23	Standard
Dy	164	16.5	68.3				mg/L	13	Standard
Ho-1	165	13.3	86.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	13826.3	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	108.341		
Al	27	110.055		
Sc	45			
Ti	47	107.690		
V	51	102.958		
Cr	52	105.890		
Cr	53			
Mn	55	106.784		
Co	59	102.692		
Ni	60	105.253		
Cu	65	103.677		
Zn	66	102.170		
Ge	72		110.139	
As	75	102.371		
Se	82	99.839		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 11:48:04
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	102.920		
Ag	107	102.850		
Cd	111	101.816		
Cd	114			
> In	115		104.303	
Sn	118	100.947		
Sb	123	103.460		
Ba	135	103.509		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.003		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.565		
U	238	102.003		
> Bi	209		104.208	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 11:48:04
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 11:48:58
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64903.7	1.0				ug/L	68501	Standard
	Be	9	28.3	36.7	**0.0525**	0.012	23.6	ug/L	8	Standard
	Al	27	7001.6	13.5	**0.0871**	0.007	7.5	ug/L	1397	Standard
	Sc	45	43998.8	0.7				ug/L	38815	Standard
	Ti	47	51.7	3.0	**0.1132**	0.004	3.4	ug/L	36	Standard
	V	51	1411.2	9.5	**0.0396**	0.017	43.4	ug/L	1284	Standard
	Cr	52	7190.0	0.5	**0.0233**	0.007	30.8	ug/L	6503	Standard
	Cr	53	545.0	0.9	**0.1637**	0.005	3.0	ug/L	492	Standard
	Mn	55	1551.1	1.7	**0.1364**	0.003	2.3	ug/L	841	Standard
	Co	59	297.0	6.7	**0.0506**	0.003	5.9	ug/L	229	Standard
	Ni	60	2058.1	4.1	**0.9665**	0.043	4.5	ug/L	344	Standard
	Cu	65	146.0	7.2	**0.0666**	0.006	8.5	ug/L	115	Standard
	Zn	66	251.0	6.0	**0.1147**	0.013	11.2	ug/L	190	Standard
>	**Ge**	72	447411.5	0.4				ug/L	409858	Standard
	As	75	-12.9	47.7	**0.0875**	0.005	6.3	ug/L	-22	Standard
	Se	82	22.1	36.9	**0.1400**	0.070	50.1	ug/L	18	Standard
	Se-1	77	60.7	5.0	**0.0480**	0.038	78.8	ug/L	50	Standard
>	**Ga**	71	171.7	25.4				mg/L	97	Standard
	Rb	85	20.0	50.0				ug/L	25	Standard
	Y	89	382893.6	1.7				ug/L	376763	Standard
>	**Rh**	103	40.0	21.7				ug/L	20	Standard
	Mo	98	207.8	17.4	**0.1541**	0.014	8.9	ug/L	51	Standard
	Ag	107	130.0	34.3	**0.0430**	0.007	15.5	ug/L	76	Standard
	Cd	111	19.9	46.2	**0.0490**	0.004	8.9	mg/L	6	Standard
	Cd	114	48.1	27.0	**0.0469**	0.003	5.5	ug/L	18	Standard
>	**In**	115	529271.7	1.2				ug/L	507261	Standard
	Sn	118	1003.4	25.2	**0.0659**	0.046	69.3	ug/L	683	Standard
	Sb	123	765.7	27.3	**0.1510**	0.048	31.7	ug/L	446	Standard
	Ba	135	54.0	26.7	**0.0429**	0.007	16.7	ug/L	28	Standard
	Ce	140	33.3	37.7				ug/L	33	Standard
>	**Tb**	159	837656.9	1.4				ug/L	800803	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	93.0	31.8	**0.0452**	0.004	8.2	ug/L	13	Standard
	Tl	205	85.0	27.0	**0.0550**	0.003	6.0	ug/L	13	Standard
	Pb	206	283.0	15.5	**0.0520**	0.008	16.1	ug/L	226	Standard
	Pb	207	240.7	10.4	**0.0514**	0.005	10.1	ug/L	204	Standard
	Pb	208	1007.7	11.0	**0.0550**	0.006	10.5	ug/L	852	Standard
	U	238	64.0	46.2	**0.0520**	0.004	8.3	ug/L	13	Standard
>	**Bi**	209	461835.8	0.6				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 11:51:15
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	28.6	**0.0035**	0.012	350.5	mg/L	58	Standard
K	39	30.0	50.0	**-0.0366**	0.052	142.4	mg/L	27	Standard
Ca	43	35.0	14.3	**0.9689**	0.334	34.4	mg/L	20	Standard
Fe	54	151.0	6.9	**-0.0087**	0.008	88.1	mg/L	158	Standard
Fe	57	270.0	6.7	**0.1168**	0.048	40.8	mg/L	267	Standard
> **Sc-1**	45	43998.8	0.7				mg/L	38815	Standard
Cl	35	62661.3	0.2				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1796.8	4.9				ug/L	1617	Standard
P	31	19843.0	5.4				ug/L	19244	Standard
S	34	3858.8	4.3				ug/L	3557	Standard
Sr	88	63.3	31.9				ug/L	65	Standard
C	12	43.3	26.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	23	Standard
Dy	164	16.3	36.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	9319.5	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.163	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 11:51:15
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.339
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.849
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ni	60	
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 11:51:15
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129411 WG574195-01
Sample Date/Time: Wednesday, July 06, 2016 11:53:43
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58019.3	3.2				ug/L	68501	Standard
	Be	9	35.0	24.7	**0.0649**	0.011	16.2	ug/L	8	Standard
	Al	27	474743.5	2.2	**3.9838**	0.068	1.7	ug/L	1397	Standard
	Sc	45	39008.5	1.4				ug/L	38815	Standard
	Ti	47	164.3	9.1	**0.4624**	0.049	10.7	ug/L	36	Standard
	V	51	4968.3	2.7	**0.5626**	0.026	4.5	ug/L	1284	Standard
	Cr	52	7215.1	1.3	**0.1154**	0.011	9.7	ug/L	6503	Standard
	Cr	53	503.3	9.5	**0.1691**	0.060	35.2	ug/L	492	Standard
	Mn	55	185079.6	0.7	**30.1945**	0.512	1.7	ug/L	841	Standard
	Co	59	1774.1	4.3	**0.2998**	0.016	5.2	ug/L	229	Standard
	Ni	60	2550.5	1.9	**1.3643**	0.017	1.2	ug/L	344	Standard
	Cu	65	594.7	3.1	**0.3424**	0.014	4.1	ug/L	115	Standard
	Zn	66	2211.8	2.7	**2.0827**	0.051	2.4	ug/L	190	Standard
>	**Ge**	72	409552.4	1.1				ug/L	409858	Standard
	As	75	79.4	41.0	**0.1757**	0.032	18.3	ug/L	-22	Standard
	Se	82	16.9	22.9	**0.1092**	0.038	34.9	ug/L	18	Standard
	Se-1	77	59.7	21.2	**0.1093**	0.192	175.9	ug/L	50	Standard
>	**Ga**	71	408.3	11.4				mg/L	97	Standard
	Rb	85	2811.9	1.6				ug/L	25	Standard
	Y	89	360686.6	1.5				ug/L	376763	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	190.8	18.3	**0.1553**	0.015	9.7	ug/L	51	Standard
	Ag	107	81.7	25.2	**0.0370**	0.004	9.9	ug/L	76	Standard
	Cd	111	12.4	33.2	**0.0460**	0.002	4.9	mg/L	6	Standard
	Cd	114	39.8	47.8	**0.0461**	0.004	9.2	ug/L	18	Standard
>	**In**	115	479231.5	1.3				ug/L	507261	Standard
	Sn	118	381.7	13.8	**-0.0364**	0.009	25.3	ug/L	683	Standard
	Sb	123	1280.6	34.2	**0.2949**	0.105	35.5	ug/L	446	Standard
	Ba	135	12423.8	2.1	**6.9252**	0.057	0.8	ug/L	28	Standard
	Ce	140	21718.9	2.2				ug/L	33	Standard
>	**Tb**	159	765153.7	1.5				ug/L	800803	Standard
	Ho	165	430.0	4.2				ug/L	10	Standard
	Tl	203	43.7	44.5	**0.0392**	0.003	6.6	ug/L	13	Standard
	Tl	205	68.3	70.3	**0.0531**	0.007	14.0	ug/L	13	Standard
	Pb	206	1332.4	11.7	**0.2741**	0.033	11.9	ug/L	226	Standard
	Pb	207	1104.4	15.9	**0.2528**	0.040	16.0	ug/L	204	Standard
	Pb	208	4566.3	9.0	**0.2626**	0.024	9.0	ug/L	852	Standard
	U	238	135.0	22.4	**0.0636**	0.005	7.4	ug/L	13	Standard
>	**Bi**	209	438315.9	0.2				ug/L	449044	Standard

Sample ID: L1606129411 WG574195-01
Report Date/Time: Wednesday, July 06, 2016 11:56:00
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	55.6	**0.0225**	0.035	153.4	mg/L	58	Standard
K	39	30.0	16.7	**-0.0230**	0.018	79.7	mg/L	27	Standard
Ca	43	43.3	37.1	**1.8646**	1.188	63.7	mg/L	20	Standard
Fe	54	366.2	11.4	**0.1848**	0.036	19.3	mg/L	158	Standard
Fe	57	350.0	13.6	**0.4863**	0.168	34.5	mg/L	267	Standard
> **Sc-1**	45	39008.5	1.4				mg/L	38815	Standard
Cl	35	57580.6	2.7				ug/L	57611	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	1560.1	16.4				ug/L	1617	Standard
P	31	6503.1	5.8				ug/L	19244	Standard
S	34	3723.8	4.7				ug/L	3557	Standard
Sr	88	90.0	16.7				ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	114.6				mg/L	23	Standard
Dy	164	602.9	11.8				mg/L	13	Standard
Ho-1	165	430.0	4.2				mg/L	10	Standard
Er	166	356.7	8.6				mg/L	13	Standard
I	127	9731.5	3.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.698	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129411 WG574195-01
Report Date/Time: Wednesday, July 06, 2016 11:56:00
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.474
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.611
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129412S WG574195-04
Sample Date/Time: Wednesday, July 06, 2016 11:56:54
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57445.4	3.1				ug/L	68501	Standard
	Be	9	450.0	8.9	**0.6107**	0.050	8.2	ug/L	8	Standard
	Al	27	489039.7	3.5	**4.1454**	0.215	5.2	ug/L	1397	Standard
	Sc	45	38891.5	1.7				ug/L	38815	Standard
	Ti	47	205.7	0.7	**0.5755**	0.003	0.5	ug/L	36	Standard
	V	51	7736.8	1.4	**0.9385**	0.011	1.2	ug/L	1284	Standard
	Cr	52	11112.1	4.1	**0.6564**	0.067	10.2	ug/L	6503	Standard
	Cr	53	923.4	3.3	**0.6419**	0.036	5.7	ug/L	492	Standard
	Mn	55	94357.0	1.7	**15.0987**	0.276	1.8	ug/L	841	Standard
	Co	59	4340.3	0.5	**0.7138**	0.006	0.8	ug/L	229	Standard
	Ni	60	3373.7	0.8	**1.8234**	0.010	0.6	ug/L	344	Standard
	Cu	65	1478.4	3.3	**0.8566**	0.027	3.1	ug/L	115	Standard
	Zn	66	2772.6	3.5	**2.5958**	0.102	3.9	ug/L	190	Standard
>	**Ge**	72	416194.8	0.3				ug/L	409858	Standard
	As	75	581.8	5.1	**0.6516**	0.029	4.4	ug/L	-22	Standard
	Se	82	62.8	11.0	**0.5338**	0.065	12.3	ug/L	18	Standard
	Se-1	77	71.3	3.2	**0.2612**	0.036	13.7	ug/L	50	Standard
>	**Ga**	71	405.0	5.7				mg/L	97	Standard
	Rb	85	3103.7	2.6				ug/L	25	Standard
	Y	89	356798.1	1.9				ug/L	376763	Standard
>	**Rh**	103	36.7	15.7				ug/L	20	Standard
	Mo	98	194.5	26.1	**0.1553**	0.021	13.8	ug/L	51	Standard
	Ag	107	3072.6	2.0	**0.5346**	0.010	1.9	ug/L	76	Standard
	Cd	111	1016.1	1.3	**0.5714**	0.009	1.6	mg/L	6	Standard
	Cd	114	2471.5	5.7	**0.5668**	0.031	5.5	ug/L	18	Standard
>	**In**	115	488176.1	0.5				ug/L	507261	Standard
	Sn	118	325.0	24.2	**-0.0484**	0.015	30.2	ug/L	683	Standard
	Sb	123	885.7	32.9	**0.1941**	0.070	36.2	ug/L	446	Standard
	Ba	135	10791.5	1.6	**5.9077**	0.080	1.4	ug/L	28	Standard
	Ce	140	21298.3	1.1				ug/L	33	Standard
>	**Tb**	159	768109.5	1.5				ug/L	800803	Standard
	Ho	165	291.7	8.1				ug/L	10	Standard
	Tl	203	3662.1	2.8	**0.5212**	0.015	2.9	ug/L	13	Standard
	Tl	205	3343.7	5.7	**0.5567**	0.029	5.1	ug/L	13	Standard
	Pb	206	3389.4	1.8	**0.6996**	0.014	2.0	ug/L	226	Standard
	Pb	207	2918.9	3.2	**0.6662**	0.023	3.5	ug/L	204	Standard
	Pb	208	12527.7	1.1	**0.7162**	0.009	1.3	ug/L	852	Standard
	U	238	3021.3	1.0	**0.5086**	0.005	1.0	ug/L	13	Standard
>	**Bi**	209	440798.1	0.3				ug/L	449044	Standard

Sample ID: L1606129412S WG574195-04
Report Date/Time: Wednesday, July 06, 2016 11:59:11
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	70.3	**0.0184**	0.041	222.1	mg/L	58	Standard
K	39	41.7	45.4	**0.0247**	0.077	313.0	mg/L	27	Standard
Ca	43	33.3	31.2	**1.1341**	0.714	62.9	mg/L	20	Standard
Fe	54	394.1	7.9	**0.2092**	0.029	13.7	mg/L	158	Standard
Fe	57	353.3	16.3	**0.5014**	0.206	41.2	mg/L	267	Standard
> **Sc-1**	45	38891.5	1.7				mg/L	38815	Standard
Cl	35	58025.6	2.4				ug/L	57611	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	1313.4	11.6				ug/L	1617	Standard
P	31	6468.0	2.6				ug/L	19244	Standard
S	34	3742.1	3.8				ug/L	3557	Standard
Sr	88	71.7	14.5				ug/L	65	Standard
C	12	23.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	23	Standard
Dy	164	608.7	0.8				mg/L	13	Standard
Ho-1	165	291.7	8.1				mg/L	10	Standard
Er	166	306.7	8.2				mg/L	13	Standard
I	127	9468.0	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.860	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.546	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129412S WG574195-04
Report Date/Time: Wednesday, July 06, 2016 11:59:11
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.238
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.164
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129413SD WG574195-05
Sample Date/Time: Wednesday, July 06, 2016 12:00:05
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56752.8	1.9				ug/L	68501	Standard
	Be	9	448.3	6.1	**0.6159**	0.040	6.5	ug/L	8	Standard
	Al	27	511667.1	1.4	**4.3864**	0.140	3.2	ug/L	1397	Standard
	Sc	45	38462.1	2.2				ug/L	38815	Standard
	Ti	47	206.3	7.1	**0.5882**	0.043	7.3	ug/L	36	Standard
	V	51	8013.4	0.7	**0.9972**	0.010	1.0	ug/L	1284	Standard
	Cr	52	11427.3	0.6	**0.7305**	0.007	0.9	ug/L	6503	Standard
	Cr	53	1048.4	8.9	**0.8067**	0.106	13.1	ug/L	492	Standard
	Mn	55	78050.9	0.3	**12.6966**	0.037	0.3	ug/L	841	Standard
	Co	59	4297.9	0.9	**0.7194**	0.005	0.7	ug/L	229	Standard
	Ni	60	3335.0	1.4	**1.8356**	0.029	1.6	ug/L	344	Standard
	Cu	65	1437.4	1.5	**0.8476**	0.012	1.4	ug/L	115	Standard
	Zn	66	2975.3	3.4	**2.8454**	0.097	3.4	ug/L	190	Standard
>	**Ge**	72	408909.0	0.3				ug/L	409858	Standard
	As	75	580.4	0.8	**0.6601**	0.006	0.8	ug/L	-22	Standard
	Se	82	59.9	9.3	**0.5172**	0.052	10.0	ug/L	18	Standard
	Se-1	77	83.7	8.4	**0.4588**	0.100	21.8	ug/L	50	Standard
>	**Ga**	71	438.3	8.7				mg/L	97	Standard
	Rb	85	3395.4	4.4				ug/L	25	Standard
	Y	89	352479.5	0.3				ug/L	376763	Standard
>	**Rh**	103	40.0	12.5				ug/L	20	Standard
	Mo	98	131.0	10.1	**0.1291**	0.006	4.7	ug/L	51	Standard
	Ag	107	2956.6	1.2	**0.5245**	0.006	1.1	ug/L	76	Standard
	Cd	111	1000.4	2.1	**0.5729**	0.006	1.1	mg/L	6	Standard
	Cd	114	2389.3	8.1	**0.5591**	0.050	9.0	ug/L	18	Standard
>	**In**	115	479271.2	1.6				ug/L	507261	Standard
	Sn	118	283.3	26.8	**-0.0552**	0.015	27.5	ug/L	683	Standard
	Sb	123	772.6	30.8	**0.1703**	0.059	34.7	ug/L	446	Standard
	Ba	135	11636.8	1.8	**6.4887**	0.171	2.6	ug/L	28	Standard
	Ce	140	22873.9	1.1				ug/L	33	Standard
>	**Tb**	159	762982.8	1.4				ug/L	800803	Standard
	Ho	165	351.7	3.0				ug/L	10	Standard
	Tl	203	3533.4	1.4	**0.5094**	0.008	1.6	ug/L	13	Standard
	Tl	205	3240.3	5.3	**0.5465**	0.026	4.8	ug/L	13	Standard
	Pb	206	3471.7	1.2	**0.7249**	0.002	0.3	ug/L	226	Standard
	Pb	207	2933.0	1.8	**0.6770**	0.010	1.4	ug/L	204	Standard
	Pb	208	12661.4	1.9	**0.7320**	0.010	1.4	ug/L	852	Standard
	U	238	3053.3	1.9	**0.5190**	0.011	2.2	ug/L	13	Standard
>	**Bi**	209	435840.4	0.9				ug/L	449044	Standard

Sample ID: L1606129413SD WG574195-05
Report Date/Time: Wednesday, July 06, 2016 12:02:22
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	17.3	**0.0299**	0.011	36.1	mg/L	58	Standard
K	39	56.7	31.0	**0.0855**	0.068	79.4	mg/L	27	Standard
Ca	43	58.3	21.6	**3.0174**	1.012	33.5	mg/L	20	Standard
Fe	54	355.6	17.8	**0.1811**	0.060	33.4	mg/L	158	Standard
Fe	57	335.0	21.7	**0.4491**	0.230	51.3	mg/L	267	Standard
Sc-1	45	38462.1	2.2				mg/L	38815	Standard
Cl	35	57937.9	1.3				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1543.4	5.5				ug/L	1617	Standard
P	31	6171.3	2.7				ug/L	19244	Standard
S	34	3643.8	4.4				ug/L	3557	Standard
Sr	88	58.3	13.1				ug/L	65	Standard
C	12	30.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	23	Standard
Dy	164	619.5	6.4				mg/L	13	Standard
Ho-1	165	351.7	3.0				mg/L	10	Standard
Er	166	290.0	17.2				mg/L	13	Standard
I	127	9638.1	1.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		82.849	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.768	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129413SD WG574195-05
Report Date/Time: Wednesday, July 06, 2016 12:02:22
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.482
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.060
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129413SD WG574195-05
Report Date/Time: Wednesday, July 06, 2016 12:02:22
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129401
Sample Date/Time: Wednesday, July 06, 2016 12:03:17
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56856.6	3.5				ug/L	68501	Standard
	Be	9	21.7	48.0	**0.0483**	0.014	29.2	ug/L	8	Standard
	Al	27	253447.2	0.5	**2.1874**	0.075	3.4	ug/L	1397	Standard
	Sc	45	38660.9	1.6				ug/L	38815	Standard
	Ti	47	129.0	7.6	**0.3545**	0.029	8.3	ug/L	36	Standard
	V	51	4706.0	3.1	**0.5213**	0.027	5.2	ug/L	1284	Standard
	Cr	52	10002.3	1.0	**0.5122**	0.018	3.4	ug/L	6503	Standard
	Cr	53	778.4	3.5	**0.4845**	0.031	6.4	ug/L	492	Standard
	Mn	55	153072.8	1.4	**24.8062**	0.265	1.1	ug/L	841	Standard
	Co	59	1522.4	4.0	**0.2564**	0.008	3.2	ug/L	229	Standard
	Ni	60	2542.5	1.5	**1.3506**	0.013	0.9	ug/L	344	Standard
	Cu	65	1174.7	1.6	**0.6850**	0.006	0.8	ug/L	115	Standard
	Zn	66	2512.2	1.7	**2.3665**	0.048	2.0	ug/L	190	Standard
>	**Ge**	72	411973.4	1.0				ug/L	409858	Standard
	As	75	130.2	39.7	**0.2239**	0.050	22.2	ug/L	-22	Standard
	Se	82	17.1	59.3	**0.1098**	0.096	87.8	ug/L	18	Standard
	Se-1	77	59.0	1.7	**0.0935**	0.015	15.6	ug/L	50	Standard
>	**Ga**	71	395.0	12.7				mg/L	97	Standard
	Rb	85	3442.1	5.5				ug/L	25	Standard
	Y	89	354531.6	0.5				ug/L	376763	Standard
>	**Rh**	103	18.3	68.6				ug/L	20	Standard
	Mo	98	119.9	20.6	**0.1232**	0.011	8.9	ug/L	51	Standard
	Ag	107	69.3	12.1	**0.0346**	0.001	4.1	ug/L	76	Standard
	Cd	111	21.4	9.8	**0.0506**	0.001	2.0	mg/L	6	Standard
	Cd	114	57.3	13.3	**0.0496**	0.002	3.5	ug/L	18	Standard
>	**In**	115	488808.1	0.8				ug/L	507261	Standard
	Sn	118	286.7	31.3	**-0.0557**	0.017	30.8	ug/L	683	Standard
	Sb	123	646.7	31.9	**0.1363**	0.051	37.3	ug/L	446	Standard
	Ba	135	8374.3	0.1	**4.5823**	0.034	0.7	ug/L	28	Standard
	Ce	140	22243.0	1.7				ug/L	33	Standard
>	**Tb**	159	773372.9	1.1				ug/L	800803	Standard
	Ho	165	331.7	11.1				ug/L	10	Standard
	Tl	203	31.7	3.6	**0.0376**	0.000	0.5	ug/L	13	Standard
	Tl	205	13.3	43.3	**0.0446**	0.001	2.0	ug/L	13	Standard
	Pb	206	3214.7	0.3	**0.6685**	0.007	1.0	ug/L	226	Standard
	Pb	207	2629.9	4.6	**0.6047**	0.025	4.1	ug/L	204	Standard
	Pb	208	11610.4	0.6	**0.6689**	0.008	1.1	ug/L	852	Standard
	U	238	65.7	4.9	**0.0528**	0.000	0.8	ug/L	13	Standard
>	**Bi**	209	437427.3	0.7				ug/L	449044	Standard

Sample ID: L1606129401
Report Date/Time: Wednesday, July 06, 2016 12:05:34
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	29.0	**0.0205**	0.017	83.1	mg/L	58	Standard
K	39	40.0	50.0	**0.0176**	0.078	440.7	mg/L	27	Standard
Ca	43	40.0	25.0	**1.6363**	0.685	41.9	mg/L	20	Standard
Fe	54	384.1	18.3	**0.2031**	0.063	31.1	mg/L	158	Standard
Fe	57	356.7	5.7	**0.5190**	0.086	16.6	mg/L	267	Standard
> **Sc-1**	45	38660.9	1.6				mg/L	38815	Standard
Cl	35	57370.4	1.2				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1486.7	8.8				ug/L	1617	Standard
P	31	6338.0	0.8				ug/L	19244	Standard
S	34	3500.4	1.6				ug/L	3557	Standard
Sr	88	70.0	24.7				ug/L	65	Standard
C	12	20.0	50.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	23	Standard
Dy	164	573.9	11.5				mg/L	13	Standard
Ho-1	165	331.7	11.1				mg/L	10	Standard
Er	166	266.7	19.2				mg/L	13	Standard
I	127	9404.6	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.001	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.516	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129401
Report Date/Time: Wednesday, July 06, 2016 12:05:34
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.362
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.413
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129401
Report Date/Time: Wednesday, July 06, 2016 12:05:34
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129402
Sample Date/Time: Wednesday, July 06, 2016 12:06:28
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55727.4	2.9				ug/L	68501	Standard
	Be	9	26.7	71.0	**0.0554**	0.025	45.6	ug/L	8	Standard
	Al	27	355208.9	0.6	**3.1116**	0.073	2.4	ug/L	1397	Standard
	Sc	45	38490.5	1.6				ug/L	38815	Standard
	Ti	47	137.0	7.2	**0.3805**	0.026	6.8	ug/L	36	Standard
	V	51	3181.2	2.4	**0.3083**	0.013	4.2	ug/L	1284	Standard
	Cr	52	7046.6	1.5	**0.0910**	0.007	8.1	ug/L	6503	Standard
	Cr	53	445.0	7.9	**0.1007**	0.038	37.9	ug/L	492	Standard
	Mn	55	62149.5	0.5	**10.0758**	0.126	1.3	ug/L	841	Standard
	Co	59	990.7	3.1	**0.1698**	0.006	3.6	ug/L	229	Standard
	Ni	60	2008.5	3.0	**1.0412**	0.045	4.3	ug/L	344	Standard
	Cu	65	501.7	4.6	**0.2868**	0.015	5.3	ug/L	115	Standard
	Zn	66	1399.4	3.9	**1.2760**	0.045	3.5	ug/L	190	Standard
>	Ge	72	409521.5	0.8				ug/L	409858	Standard
	As	75	12.5	172.1	**0.1110**	0.021	18.8	ug/L	-22	Standard
	Se	82	10.5	43.9	**0.0481**	0.043	89.6	ug/L	18	Standard
	Se-1	77	56.3	5.4	**0.0596**	0.039	65.9	ug/L	50	Standard
>	Ga	71	276.7	15.4				mg/L	97	Standard
	Rb	85	1983.5	4.3				ug/L	25	Standard
	Y	89	351546.8	1.0				ug/L	376763	Standard
>	Rh	103	28.3	66.8				ug/L	20	Standard
	Mo	98	63.3	18.4	**0.0992**	0.005	4.9	ug/L	51	Standard
	Ag	107	73.0	2.4	**0.0354**	0.000	0.5	ug/L	76	Standard
	Cd	111	9.5	59.4	**0.0444**	0.003	6.7	mg/L	6	Standard
	Cd	114	7.7	41.1	**0.0390**	0.001	1.7	ug/L	18	Standard
>	In	115	480900.1	0.8				ug/L	507261	Standard
	Sn	118	273.3	30.7	**-0.0575**	0.016	27.5	ug/L	683	Standard
	Sb	123	545.0	29.4	**0.1135**	0.038	33.9	ug/L	446	Standard
	Ba	135	6151.2	0.6	**3.4251**	0.011	0.3	ug/L	28	Standard
	Ce	140	16228.7	3.1				ug/L	33	Standard
>	Tb	159	762988.8	1.0				ug/L	800803	Standard
	Ho	165	260.0	5.8				ug/L	10	Standard
	Tl	203	21.0	21.8	**0.0362**	0.001	1.7	ug/L	13	Standard
	Tl	205	16.7	45.8	**0.0451**	0.001	2.6	ug/L	13	Standard
	Pb	206	954.4	5.5	**0.1966**	0.011	5.6	ug/L	226	Standard
	Pb	207	774.4	6.6	**0.1781**	0.012	6.6	ug/L	204	Standard
	Pb	208	3303.8	1.1	**0.1913**	0.002	1.1	ug/L	852	Standard
	U	238	67.3	16.4	**0.0531**	0.002	3.2	ug/L	13	Standard
>	Bi	209	435406.8	0.0				ug/L	449044	Standard

Sample ID: L1606129402
Report Date/Time: Wednesday, July 06, 2016 12:08:45
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	30.0	**0.0438**	0.026	59.2	mg/L	58	Standard
K	39	53.3	19.5	**0.0725**	0.042	57.3	mg/L	27	Standard
Ca	43	35.0	86.9	**1.2893**	2.236	173.4	mg/L	20	Standard
Fe	54	235.9	19.0	**0.0786**	0.036	45.3	mg/L	158	Standard
Fe	57	275.0	6.6	**0.2477**	0.053	21.5	mg/L	267	Standard
> **Sc-1**	45	38490.5	1.6				mg/L	38815	Standard
Cl	35	56979.6	1.6				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1446.7	8.9				ug/L	1617	Standard
P	31	6057.9	4.7				ug/L	19244	Standard
S	34	3533.7	1.3				ug/L	3557	Standard
Sr	88	60.0	38.2				ug/L	65	Standard
C	12	53.3	47.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	23	Standard
Dy	164	461.8	9.9				mg/L	13	Standard
Ho-1	165	260.0	5.8				mg/L	10	Standard
Er	166	240.0	15.0				mg/L	13	Standard
I	127	9427.9	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.352	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.918	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129402
Report Date/Time: Wednesday, July 06, 2016 12:08:45
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.803
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.963
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129402
Report Date/Time: Wednesday, July 06, 2016 12:08:45
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129402PS WG574825-01
Sample Date/Time: Wednesday, July 06, 2016 12:09:40
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54790.6	1.6				ug/L	68501	Standard
	Be	9	39210.7	2.1	**54.0276**	0.299	0.6	ug/L	8	Standard
	Al	27	349919.9	1.2	**3.1165**	0.040	1.3	ug/L	1397	Standard
	Sc	45	38071.1	1.5				ug/L	38815	Standard
	Ti	47	139.3	7.7	**0.3905**	0.032	8.3	ug/L	36	Standard
	V	51	357198.1	0.5	**51.0105**	0.499	1.0	ug/L	1284	Standard
	Cr	52	374242.3	0.6	**53.8691**	0.605	1.1	ug/L	6503	Standard
	Cr	53	44929.9	1.3	**52.3904**	0.872	1.7	ug/L	492	Standard
	Mn	55	385613.1	1.2	**63.4541**	1.113	1.8	ug/L	841	Standard
	Co	59	296804.1	1.8	**49.5762**	1.152	2.3	ug/L	229	Standard
	Ni	60	90550.8	1.5	**54.2626**	1.046	1.9	ug/L	344	Standard
	Cu	65	89722.9	0.9	**54.0167**	0.809	1.5	ug/L	115	Standard
	Zn	66	60871.4	1.6	**60.7556**	1.323	2.2	ug/L	190	Standard
>	Ge	72	406696.1	0.6				ug/L	409858	Standard
	As	75	57014.1	0.8	**55.5263**	0.338	0.6	ug/L	-22	Standard
	Se	82	6157.5	2.0	**58.6840**	0.934	1.6	ug/L	18	Standard
	Se-1	77	4118.6	1.0	**59.5136**	0.313	0.5	ug/L	50	Standard
>	Ga	71	278.3	7.5				mg/L	97	Standard
	Rb	85	2040.1	11.2				ug/L	25	Standard
	Y	89	353428.2	1.1				ug/L	376763	Standard
>	Rh	103	26.7	57.3				ug/L	20	Standard
	Mo	98	64.1	32.2	**0.0994**	0.009	9.5	ug/L	51	Standard
	Ag	107	307132.7	0.5	**51.4044**	1.091	2.1	ug/L	76	Standard
	Cd	111	102209.5	1.3	**53.8173**	1.067	2.0	mg/L	6	Standard
	Cd	114	247369.8	2.7	**53.2740**	1.402	2.6	ug/L	18	Standard
>	In	115	485872.2	1.6				ug/L	507261	Standard
	Sn	118	406.7	28.8	**-0.0323**	0.024	73.6	ug/L	683	Standard
	Sb	123	165974.2	9.4	**40.3528**	3.311	8.2	ug/L	446	Standard
	Ba	135	100406.3	1.0	**55.1115**	1.426	2.6	ug/L	28	Standard
	Ce	140	17148.0	2.3				ug/L	33	Standard
>	Tb	159	762062.0	1.0				ug/L	800803	Standard
	Ho	165	298.3	11.2				ug/L	10	Standard
	Tl	203	380011.9	0.5	**51.1742**	0.679	1.3	ug/L	13	Standard
	Tl	205	332491.0	1.8	**51.7103**	1.465	2.8	ug/L	13	Standard
	Pb	206	244455.9	0.3	**51.2687**	0.650	1.3	ug/L	226	Standard
	Pb	207	213518.0	0.6	**49.3099**	0.355	0.7	ug/L	204	Standard
	Pb	208	895635.4	1.1	**51.7280**	1.052	2.0	ug/L	852	Standard
	U	238	304258.0	0.7	**47.4576**	0.682	1.4	ug/L	13	Standard
>	Bi	209	436323.4	1.0				ug/L	449044	Standard

Sample ID: L1606129402PS WG574825-01
Report Date/Time: Wednesday, July 06, 2016 12:11:57
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	43.3	**0.0262**	0.029	109.0	mg/L	58	Standard
K	39	21.7	48.0	**-0.0536**	0.043	80.3	mg/L	27	Standard
Ca	43	38.3	19.9	**1.5703**	0.606	38.6	mg/L	20	Standard
Fe	54	229.0	24.0	**0.0748**	0.044	58.9	mg/L	158	Standard
Fe	57	328.3	26.3	**0.4430**	0.310	69.9	mg/L	267	Standard
Sc-1	45	38071.1	1.5				mg/L	38815	Standard
Cl	35	57080.7	0.6				ug/L	57611	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	1353.4	3.7				ug/L	1617	Standard
P	31	6239.6	1.0				ug/L	19244	Standard
S	34	3545.4	3.4				ug/L	3557	Standard
Sr	88	58.3	17.8				ug/L	65	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	23	Standard
Dy	164	519.0	13.5				mg/L	13	Standard
Ho-1	165	298.3	11.2				mg/L	10	Standard
Er	166	230.0	13.0				mg/L	13	Standard
I	127	8790.9	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.985	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.229	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129402PS WG574825-01
Report Date/Time: Wednesday, July 06, 2016 12:11:57
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.784
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.167
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129402PS WG574825-01
Report Date/Time: Wednesday, July 06, 2016 12:11:57
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129402SDL WG574825-02
Sample Date/Time: Wednesday, July 06, 2016 12:12:51
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54700.3	2.3				ug/L	68501	Standard
	Be	9	28.3	40.8	**0.0584**	0.015	26.5	ug/L	8	Standard
	Al	27	73412.6	3.4	**0.6828**	0.029	4.2	ug/L	1397	Standard
	Sc	45	38520.6	1.2				ug/L	38815	Standard
	Ti	47	44.0	15.9	**0.1062**	0.021	20.1	ug/L	36	Standard
	V	51	1855.2	4.9	**0.1254**	0.011	9.1	ug/L	1284	Standard
	Cr	52	5931.8	1.1	**-0.0525**	0.011	20.6	ug/L	6503	Standard
	Cr	53	220.0	6.0	**-0.1563**	0.014	8.9	ug/L	492	Standard
	Mn	55	13278.8	8.4	**2.1236**	0.179	8.4	ug/L	841	Standard
	Co	59	439.0	11.4	**0.0798**	0.008	10.1	ug/L	229	Standard
	Ni	60	1383.1	2.0	**0.6854**	0.014	2.0	ug/L	344	Standard
	Cu	65	176.0	2.8	**0.0942**	0.002	2.6	ug/L	115	Standard
	Zn	66	955.7	4.6	**0.8559**	0.041	4.8	ug/L	190	Standard
>	**Ge**	72	400899.4	0.7				ug/L	409858	Standard
	As	75	-14.9	238.7	**0.0840**	0.035	42.1	ug/L	-22	Standard
	Se	82	23.4	28.9	**0.1750**	0.064	36.6	ug/L	18	Standard
	Se-1	77	53.3	4.7	**0.0331**	0.043	130.4	ug/L	50	Standard
>	**Ga**	71	101.7	12.4				mg/L	97	Standard
	Rb	85	461.7	6.2				ug/L	25	Standard
	Y	89	350361.9	1.6				ug/L	376763	Standard
>	**Rh**	103	28.3	10.2				ug/L	20	Standard
	Mo	98	91.5	56.2	**0.1114**	0.022	20.1	ug/L	51	Standard
	Ag	107	144.0	18.7	**0.0473**	0.004	9.4	ug/L	76	Standard
	Cd	111	29.2	12.8	**0.0548**	0.002	3.7	mg/L	6	Standard
	Cd	114	54.0	33.8	**0.0490**	0.004	7.9	ug/L	18	Standard
>	**In**	115	483201.8	0.5				ug/L	507261	Standard
	Sn	118	223.3	32.2	**-0.0673**	0.014	20.4	ug/L	683	Standard
	Sb	123	4340.8	19.8	**1.0427**	0.214	20.6	ug/L	446	Standard
	Ba	135	1163.7	5.0	**0.6576**	0.030	4.6	ug/L	28	Standard
	Ce	140	1280.1	25.4				ug/L	33	Standard
>	**Tb**	159	755371.6	0.4				ug/L	800803	Standard
	Ho	165	23.3	12.4				ug/L	10	Standard
	Tl	203	202.3	18.7	**0.0608**	0.005	8.5	ug/L	13	Standard
	Tl	205	188.3	38.1	**0.0720**	0.011	15.7	ug/L	13	Standard
	Pb	206	349.7	10.7	**0.0698**	0.008	11.6	ug/L	226	Standard
	Pb	207	301.0	10.7	**0.0689**	0.008	11.1	ug/L	204	Standard
	Pb	208	1311.7	14.2	**0.0763**	0.011	14.4	ug/L	852	Standard
	U	238	138.3	31.6	**0.0643**	0.007	10.7	ug/L	13	Standard
>	**Bi**	209	433563.8	0.3				ug/L	449044	Standard

Sample ID: L1606129402SDL WG574825-02
Report Date/Time: Wednesday, July 06, 2016 12:15:08
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	12.5	**0.0162**	0.007	41.8	mg/L	58	Standard
K	39	35.0	14.3	**-0.0012**	0.021	1708.5	mg/L	27	Standard
Ca	43	16.7	17.3	**-0.0559**	0.217	388.7	mg/L	20	Standard
Fe	54	72.9	24.0	**-0.0586**	0.015	26.1	mg/L	158	Standard
Fe	57	255.0	9.0	**0.1794**	0.069	38.3	mg/L	267	Standard
Sc-1	45	38520.6	1.2				mg/L	38815	Standard
Cl	35	57567.2	1.3				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	1493.4	3.9				ug/L	1617	Standard
P	31	5902.8	2.7				ug/L	19244	Standard
S	34	3515.4	7.2				ug/L	3557	Standard
Sr	88	65.0	35.3				ug/L	65	Standard
C	12	53.3	54.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	64.4				mg/L	23	Standard
Dy	164	39.0	76.2				mg/L	13	Standard
Ho-1	165	23.3	12.4				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	9352.9	2.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		79.853	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.814	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129402SDL WG574825-02
Report Date/Time: Wednesday, July 06, 2016 12:15:08
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.257
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.553
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129402SDL WG574825-02
Report Date/Time: Wednesday, July 06, 2016 12:15:08
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129404
Sample Date/Time: Wednesday, July 06, 2016 12:16:03
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55356.0	2.8				ug/L	68501	Standard
	Be	9	35.0	37.8	**0.0670**	0.017	26.0	ug/L	8	Standard
	Al	27	288380.7	1.7	**2.5498**	0.086	3.4	ug/L	1397	Standard
	Sc	45	37910.7	1.6				ug/L	38815	Standard
	Ti	47	133.3	4.5	**0.3737**	0.020	5.3	ug/L	36	Standard
	V	51	4846.3	0.6	**0.5519**	0.007	1.3	ug/L	1284	Standard
	Cr	52	8450.0	0.8	**0.3072**	0.012	4.0	ug/L	6503	Standard
	Cr	53	633.3	6.4	**0.3281**	0.051	15.4	ug/L	492	Standard
	Mn	55	81458.4	0.3	**13.3665**	0.080	0.6	ug/L	841	Standard
	Co	59	1490.1	4.7	**0.2551**	0.012	4.9	ug/L	229	Standard
	Ni	60	1995.8	2.9	**1.0452**	0.038	3.7	ug/L	344	Standard
	Cu	65	792.0	2.3	**0.4650**	0.011	2.4	ug/L	115	Standard
	Zn	66	2804.3	1.6	**2.6986**	0.046	1.7	ug/L	190	Standard
>	**Ge**	72	405530.8	0.5				ug/L	409858	Standard
	As	75	91.8	10.5	**0.1884**	0.009	4.8	ug/L	-22	Standard
	Se	82	14.0	22.9	**0.0821**	0.030	36.5	ug/L	18	Standard
	Se-1	77	50.3	22.2	**-0.0198**	0.167	845.0	ug/L	50	Standard
>	**Ga**	71	443.3	8.8				mg/L	97	Standard
	Rb	85	3478.7	3.6				ug/L	25	Standard
	Y	89	346530.8	2.1				ug/L	376763	Standard
>	**Rh**	103	21.7	53.3				ug/L	20	Standard
	Mo	98	38.5	9.1	**0.0883**	0.002	1.9	ug/L	51	Standard
	Ag	107	90.7	4.5	**0.0384**	0.001	1.4	ug/L	76	Standard
	Cd	111	32.2	12.9	**0.0564**	0.002	3.6	mg/L	6	Standard
	Cd	114	56.3	46.1	**0.0496**	0.006	11.3	ug/L	18	Standard
>	**In**	115	482585.2	1.1				ug/L	507261	Standard
	Sn	118	261.7	29.4	**-0.0598**	0.015	24.8	ug/L	683	Standard
	Sb	123	1752.1	30.8	**0.4084**	0.130	31.8	ug/L	446	Standard
	Ba	135	6403.0	2.4	**3.5521**	0.068	1.9	ug/L	28	Standard
	Ce	140	22207.9	2.6				ug/L	33	Standard
>	**Tb**	159	747679.0	1.3				ug/L	800803	Standard
	Ho	165	328.3	8.4				ug/L	10	Standard
	Tl	203	70.0	40.8	**0.0429**	0.004	9.2	ug/L	13	Standard
	Tl	205	61.7	32.8	**0.0523**	0.003	6.2	ug/L	13	Standard
	Pb	206	4676.4	2.0	**0.9892**	0.018	1.8	ug/L	226	Standard
	Pb	207	3935.8	4.2	**0.9193**	0.033	3.6	ug/L	204	Standard
	Pb	208	16777.7	1.0	**0.9813**	0.004	0.4	ug/L	852	Standard
	U	238	97.3	10.3	**0.0580**	0.002	2.7	ug/L	13	Standard
>	**Bi**	209	430847.5	0.8				ug/L	449044	Standard

Sample ID: L1606129404
Report Date/Time: Wednesday, July 06, 2016 12:18:19
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**9.9759**	16.247	162.9	mg/L	2	Standard
Mg	24	53.3	21.7	**0.0357**	0.017	47.3	mg/L	58	Standard
K	39	38.3	19.9	**0.0150**	0.034	224.3	mg/L	27	Standard
Ca	43	21.7	48.0	**0.3274**	0.754	230.2	mg/L	20	Standard
Fe	54	375.8	5.4	**0.2018**	0.014	7.1	mg/L	158	Standard
Fe	57	395.0	11.0	**0.6746**	0.165	24.5	mg/L	267	Standard
> **Sc-1**	45	37910.7	1.6				mg/L	38815	Standard
Cl	35	57027.1	0.7				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1433.4	12.3				ug/L	1617	Standard
P	31	6096.2	1.4				ug/L	19244	Standard
S	34	3193.7	7.5				ug/L	3557	Standard
Sr	88	73.3	17.2				ug/L	65	Standard
C	12	46.7	32.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	120.2				mg/L	23	Standard
Dy	164	569.8	11.8				mg/L	13	Standard
Ho-1	165	328.3	8.4				mg/L	10	Standard
Er	166	283.3	8.2				mg/L	13	Standard
I	127	9558.0	0.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.810	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.944	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129404
Report Date/Time: Wednesday, July 06, 2016 12:18:19
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.136
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.948
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129405
Sample Date/Time: Wednesday, July 06, 2016 12:19:14
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55280.7	2.4				ug/L	68501	Standard
	Be	9	28.3	56.7	**0.0578**	0.021	36.8	ug/L	8	Standard
	Al	27	345100.5	2.3	**3.0477**	0.083	2.7	ug/L	1397	Standard
	Sc	45	37553.2	2.4				ug/L	38815	Standard
	Ti	47	159.0	8.7	**0.4458**	0.044	9.9	ug/L	36	Standard
	V	51	3623.9	1.5	**0.3706**	0.009	2.5	ug/L	1284	Standard
	Cr	52	7451.5	0.4	**0.1485**	0.012	7.7	ug/L	6503	Standard
	Cr	53	463.3	5.0	**0.1216**	0.030	25.1	ug/L	492	Standard
	Mn	55	63417.4	0.9	**10.2694**	0.142	1.4	ug/L	841	Standard
	Co	59	1040.7	2.7	**0.1779**	0.005	2.9	ug/L	229	Standard
	Ni	60	1672.4	3.0	**0.8389**	0.023	2.8	ug/L	344	Standard
	Cu	65	436.3	8.4	**0.2473**	0.022	8.9	ug/L	115	Standard
	Zn	66	3256.0	1.8	**3.1159**	0.080	2.6	ug/L	190	Standard
>	**Ge**	72	410064.5	0.7				ug/L	409858	Standard
	As	75	32.7	78.6	**0.1303**	0.025	18.8	ug/L	-22	Standard
	Se	82	12.7	55.9	**0.0690**	0.066	96.2	ug/L	18	Standard
	Se-1	77	48.3	10.4	**-0.0572**	0.076	132.7	ug/L	50	Standard
>	**Ga**	71	286.7	11.6				mg/L	97	Standard
	Rb	85	2041.8	2.1				ug/L	25	Standard
	Y	89	353144.0	1.9				ug/L	376763	Standard
>	**Rh**	103	23.3	24.7				ug/L	20	Standard
	Mo	98	117.0	7.9	**0.1233**	0.004	3.6	ug/L	51	Standard
	Ag	107	97.3	22.3	**0.0397**	0.004	9.1	ug/L	76	Standard
	Cd	111	7.7	46.1	**0.0435**	0.002	4.3	mg/L	6	Standard
	Cd	114	27.9	69.2	**0.0435**	0.004	9.8	ug/L	18	Standard
>	**In**	115	475836.3	0.7				ug/L	507261	Standard
	Sn	118	265.0	46.3	**-0.0586**	0.024	40.3	ug/L	683	Standard
	Sb	123	1332.7	26.2	**0.3107**	0.086	27.6	ug/L	446	Standard
	Ba	135	4395.0	1.0	**2.4776**	0.020	0.8	ug/L	28	Standard
	Ce	140	16080.2	3.1				ug/L	33	Standard
>	**Tb**	159	747297.9	2.3				ug/L	800803	Standard
	Ho	165	211.7	8.9				ug/L	10	Standard
	Tl	203	56.3	21.2	**0.0410**	0.002	3.8	ug/L	13	Standard
	Tl	205	50.0	52.9	**0.0503**	0.004	8.1	ug/L	13	Standard
	Pb	206	931.0	1.2	**0.1925**	0.004	1.9	ug/L	226	Standard
	Pb	207	757.7	5.6	**0.1750**	0.009	5.0	ug/L	204	Standard
	Pb	208	3295.8	1.2	**0.1916**	0.001	0.7	ug/L	852	Standard
	U	238	95.3	30.7	**0.0575**	0.004	7.8	ug/L	13	Standard
>	**Bi**	209	433596.0	0.9				ug/L	449044	Standard

Sample ID: L1606129405
Report Date/Time: Wednesday, July 06, 2016 12:21:31
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.4926**	16.065	3261.2	mg/L	2	Standard
Mg	24	33.3	8.7	**0.0082**	0.003	35.8	mg/L	58	Standard
K	39	46.7	16.4	**0.0504**	0.031	60.9	mg/L	27	Standard
Ca	43	40.0	21.7	**1.7196**	0.586	34.1	mg/L	20	Standard
Fe	54	261.0	22.4	**0.1060**	0.053	49.9	mg/L	158	Standard
Fe	57	340.0	11.5	**0.4952**	0.122	24.6	mg/L	267	Standard
Sc-1	45	37553.2	2.4				mg/L	38815	Standard
Cl	35	58030.3	1.0				ug/L	57611	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1506.7	7.7				ug/L	1617	Standard
P	31	5954.5	2.4				ug/L	19244	Standard
S	34	3350.4	3.7				ug/L	3557	Standard
Sr	88	71.7	35.8				ug/L	65	Standard
C	12	60.0	16.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	405.5	13.8				mg/L	13	Standard
Ho-1	165	211.7	8.9				mg/L	10	Standard
Er	166	233.3	23.6				mg/L	13	Standard
I	127	8981.0	4.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		80.700	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.050	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129405
Report Date/Time: Wednesday, July 06, 2016 12:21:31
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.805
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.560
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129405
Report Date/Time: Wednesday, July 06, 2016 12:21:31
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129406
Sample Date/Time: Wednesday, July 06, 2016 12:22:25
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54210.2	3.2				ug/L	68501	Standard
	Be	9	31.7	55.5	**0.0640**	0.026	39.9	ug/L	8	Standard
	Al	27	346229.8	1.0	**3.1189**	0.121	3.9	ug/L	1397	Standard
	Sc	45	38104.5	1.7				ug/L	38815	Standard
	Ti	47	141.3	13.3	**0.3972**	0.060	15.0	ug/L	36	Standard
	V	51	4813.8	1.8	**0.5459**	0.016	2.9	ug/L	1284	Standard
	Cr	52	8692.8	0.7	**0.3404**	0.024	6.9	ug/L	6503	Standard
	Cr	53	671.7	4.2	**0.3715**	0.031	8.3	ug/L	492	Standard
	Mn	55	113579.2	2.1	**18.6402**	0.592	3.2	ug/L	841	Standard
	Co	59	1764.8	1.1	**0.3005**	0.003	0.9	ug/L	229	Standard
	Ni	60	2134.8	3.7	**1.1263**	0.050	4.4	ug/L	344	Standard
	Cu	65	981.4	6.5	**0.5779**	0.032	5.5	ug/L	115	Standard
	Zn	66	4410.6	3.1	**4.3008**	0.155	3.6	ug/L	190	Standard
>	**Ge**	72	406370.9	1.1				ug/L	409858	Standard
	As	75	172.2	15.0	**0.2662**	0.024	9.0	ug/L	-22	Standard
	Se	82	14.0	50.3	**0.0817**	0.066	80.7	ug/L	18	Standard
	Se-1	77	54.7	22.6	**0.0405**	0.173	426.3	ug/L	50	Standard
>	**Ga**	71	473.3	14.3				mg/L	97	Standard
	Rb	85	4915.8	3.7				ug/L	25	Standard
	Y	89	347860.3	1.6				ug/L	376763	Standard
>	**Rh**	103	15.0	33.3				ug/L	20	Standard
	Mo	98	31.2	15.5	**0.0853**	0.002	2.6	ug/L	51	Standard
	Ag	107	124.7	3.2	**0.0442**	0.001	2.0	ug/L	76	Standard
	Cd	111	28.3	20.6	**0.0545**	0.003	6.0	mg/L	6	Standard
	Cd	114	49.9	18.0	**0.0482**	0.002	3.9	ug/L	18	Standard
>	**In**	115	479551.2	1.0				ug/L	507261	Standard
	Sn	118	253.3	47.1	**-0.0610**	0.024	38.7	ug/L	683	Standard
	Sb	123	1266.8	28.3	**0.2922**	0.090	30.7	ug/L	446	Standard
	Ba	135	10588.4	1.5	**5.9016**	0.132	2.2	ug/L	28	Standard
	Ce	140	27012.4	1.1				ug/L	33	Standard
>	**Tb**	159	753343.1	0.8				ug/L	800803	Standard
	Ho	165	453.3	2.3				ug/L	10	Standard
	Tl	203	43.0	12.9	**0.0392**	0.001	2.2	ug/L	13	Standard
	Tl	205	45.0	50.9	**0.0496**	0.003	7.1	ug/L	13	Standard
	Pb	206	32257.3	1.7	**6.8313**	0.126	1.8	ug/L	226	Standard
	Pb	207	26033.3	0.6	**6.0737**	0.104	1.7	ug/L	204	Standard
	Pb	208	113526.9	0.9	**6.6251**	0.168	2.5	ug/L	852	Standard
	U	238	100.0	9.2	**0.0584**	0.002	2.7	ug/L	13	Standard
>	**Bi**	209	431894.1	1.7				ug/L	449044	Standard

Sample ID: L1606129406
Report Date/Time: Wednesday, July 06, 2016 12:24:42
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.3340**	15.790	4727.5	mg/L	2	Standard
Mg	24	41.7	36.7	**0.0192**	0.021	111.2	mg/L	58	Standard
K	39	50.0	55.7	**0.0600**	0.110	182.6	mg/L	27	Standard
Ca	43	43.3	46.6	**1.9169**	1.459	76.1	mg/L	20	Standard
Fe	54	447.4	10.1	**0.2615**	0.041	15.9	mg/L	158	Standard
Fe	57	348.3	8.4	**0.5065**	0.084	16.5	mg/L	267	Standard
> **Sc-1**	45	38104.5	1.7				mg/L	38815	Standard
Cl	35	57337.6	1.4				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1443.4	10.1				ug/L	1617	Standard
P	31	6067.9	5.1				ug/L	19244	Standard
S	34	3453.7	2.9				ug/L	3557	Standard
Sr	88	78.3	18.4				ug/L	65	Standard
C	12	26.7	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	696.9	13.4				mg/L	13	Standard
Ho-1	165	453.3	2.3				mg/L	10	Standard
Er	166	413.3	7.4				mg/L	13	Standard
I	127	9544.7	1.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.149	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129406
Report Date/Time: Wednesday, July 06, 2016 12:24:42
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.537
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.181
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 12:25:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57713.1	1.9				ug/L	68501	Standard
	Be	9	40562.6	2.7	**53.0591**	0.703	1.3	ug/L	8	Standard
	Al	27	6854351.8	1.5	**57.3384**	0.709	1.2	ug/L	1397	Standard
	Sc	45	42252.2	1.6				ug/L	38815	Standard
	Ti	47	37981.5	0.7	**106.4757**	1.580	1.5	ug/L	36	Standard
	V	51	384974.2	1.1	**51.3482**	0.405	0.8	ug/L	1284	Standard
	Cr	52	390659.1	1.7	**52.4957**	0.804	1.5	ug/L	6503	Standard
	Cr	53	48342.0	1.8	**52.6513**	1.045	2.0	ug/L	492	Standard
	Mn	55	343119.1	1.5	**52.7154**	0.588	1.1	ug/L	841	Standard
	Co	59	321661.9	1.7	**50.1749**	0.347	0.7	ug/L	229	Standard
	Ni	60	94210.3	1.1	**52.7236**	0.659	1.3	ug/L	344	Standard
	Cu	65	93051.5	1.1	**52.3212**	0.523	1.0	ug/L	115	Standard
	Zn	66	55785.5	1.2	**51.9842**	0.406	0.8	ug/L	190	Standard
>	Ge	72	435468.8	1.8				ug/L	409858	Standard
	As	75	56447.7	0.8	**51.3598**	0.923	1.8	ug/L	-22	Standard
	Se	82	5642.5	0.7	**50.2241**	0.550	1.1	ug/L	18	Standard
	Se-1	77	3846.2	0.6	**51.8162**	0.606	1.2	ug/L	50	Standard
>	Ga	71	93.3	34.0				mg/L	97	Standard
	Rb	85	855.0	10.7				ug/L	25	Standard
	Y	89	372043.3	1.8				ug/L	376763	Standard
>	Rh	103	28.3	44.4				ug/L	20	Standard
	Mo	98	247417.0	1.8	**100.6981**	2.037	2.0	ug/L	51	Standard
	Ag	107	322886.9	0.5	**50.7596**	0.429	0.8	ug/L	76	Standard
	Cd	111	103380.1	1.6	**51.1323**	0.753	1.5	mg/L	6	Standard
	Cd	114	249642.6	2.1	**50.5060**	0.965	1.9	ug/L	18	Standard
>	In	115	517180.3	0.5				ug/L	507261	Standard
	Sn	118	281599.6	1.0	**50.3463**	0.451	0.9	ug/L	683	Standard
	Sb	123	224090.9	2.0	**51.2237**	1.019	2.0	ug/L	446	Standard
	Ba	135	98293.2	0.9	**50.6730**	0.371	0.7	ug/L	28	Standard
	Ce	140	388.3	61.7				ug/L	33	Standard
>	Tb	159	803119.0	1.6				ug/L	800803	Standard
	Ho	165	13.3	78.1				ug/L	10	Standard
	Tl	203	393332.7	0.4	**51.3833**	0.224	0.4	ug/L	13	Standard
	Tl	205	344323.2	2.3	**51.9430**	1.227	2.4	ug/L	13	Standard
	Pb	206	250518.2	1.0	**50.9688**	0.598	1.2	ug/L	226	Standard
	Pb	207	226786.0	0.6	**50.8099**	0.417	0.8	ug/L	204	Standard
	Pb	208	934502.9	1.1	**52.3560**	0.613	1.2	ug/L	852	Standard
	U	238	332727.2	0.8	**50.3434**	0.503	1.0	ug/L	13	Standard
>	Bi	209	449742.2	0.2				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 12:27:55
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3997.2	1.2	**4.9337**	0.066	1.3	mg/L	58	Standard
K	39	1391.7	1.8	**4.9566**	0.172	3.5	mg/L	27	Standard
Ca	43	85.0	20.4	**4.3924**	1.093	24.9	mg/L	20	Standard
Fe	54	6751.6	4.8	**5.0714**	0.234	4.6	mg/L	158	Standard
Fe	57	1835.1	3.3	**4.9621**	0.274	5.5	mg/L	267	Standard
> **Sc-1**	45	42252.2	1.6				mg/L	38815	Standard
Cl	35	66109.3	1.9				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1836.8	15.6				ug/L	1617	Standard
P	31	20357.0	3.6				ug/L	19244	Standard
S	34	4018.9	2.4				ug/L	3557	Standard
Sr	88	78.3	7.4				ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	63.0				mg/L	23	Standard
Dy	164	15.4	100.9				mg/L	13	Standard
Ho-1	165	13.3	78.1				mg/L	10	Standard
Er	166	26.7	86.6				mg/L	13	Standard
I	127	12523.5	3.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.118		
Al	27	114.677		
Sc	45			
Ti	47	106.476		
V	51	102.696		
Cr	52	104.991		
Cr	53			
Mn	55	105.431		
Co	59	100.350		
Ni	60	105.447		
Cu	65	104.642		
Zn	66	103.968		
> Ge	72		106.249	
As	75	102.720		
Se	82	100.448		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 12:27:55
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.698		
Ag	107	101.519		
Cd	111	102.265		
Cd	114			
In	115		101.956	
Sn	118	100.693		
Sb	123	102.447		
Ba	135	101.346		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.767		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.712		
U	238	100.687		
Bi	209		100.156	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 12:27:55
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 12:28:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58365.5	1.3				ug/L	68501	Standard
	Be	9	20.0	66.1	**0.0452**	0.017	37.0	ug/L	8	Standard
	Al	27	3228.7	16.1	**0.0617**	0.004	6.5	ug/L	1397	Standard
	Sc	45	41531.9	1.8				ug/L	38815	Standard
	Ti	47	37.0	11.8	**0.0760**	0.013	16.9	ug/L	36	Standard
	V	51	1351.4	2.0	**0.0367**	0.005	12.3	ug/L	1284	Standard
	Cr	52	7169.4	2.1	**0.0470**	0.012	26.2	ug/L	6503	Standard
	Cr	53	401.7	8.5	**0.0227**	0.041	182.3	ug/L	492	Standard
	Mn	55	1129.0	3.0	**0.0779**	0.004	5.1	ug/L	841	Standard
	Co	59	288.7	8.3	**0.0505**	0.003	6.6	ug/L	229	Standard
	Ni	60	1071.7	1.9	**0.4440**	0.010	2.2	ug/L	344	Standard
	Cu	65	122.7	12.6	**0.0557**	0.008	14.8	ug/L	115	Standard
	Zn	66	225.0	0.4	**0.0968**	0.003	2.8	ug/L	190	Standard
>	**Ge**	72	435313.2	0.9				ug/L	409858	Standard
	As	75	-55.3	38.4	**0.0486**	0.019	39.7	ug/L	-22	Standard
	Se	82	13.9	51.6	**0.0725**	0.064	88.6	ug/L	18	Standard
	Se-1	77	56.0	26.4	**0.0064**	0.200	3125.0	ug/L	50	Standard
>	**Ga**	71	55.0	27.3				mg/L	97	Standard
	Rb	85	13.3	43.3				ug/L	25	Standard
	Y	89	378425.9	0.5				ug/L	376763	Standard
>	**Rh**	103	18.3	110.2				ug/L	20	Standard
	Mo	98	181.0	20.1	**0.1454**	0.014	9.6	ug/L	51	Standard
	Ag	107	120.0	21.0	**0.0420**	0.004	9.1	ug/L	76	Standard
	Cd	111	18.7	38.4	**0.0486**	0.003	7.1	mg/L	6	Standard
	Cd	114	41.8	72.4	**0.0458**	0.006	13.2	ug/L	18	Standard
>	**In**	115	514592.2	1.2				ug/L	507261	Standard
	Sn	118	928.4	24.2	**0.0574**	0.043	74.2	ug/L	683	Standard
	Sb	123	912.7	31.3	**0.1899**	0.068	35.7	ug/L	446	Standard
	Ba	135	47.7	19.0	**0.0404**	0.004	10.9	ug/L	28	Standard
	Ce	140	65.0	13.3				ug/L	33	Standard
>	**Tb**	159	797771.6	1.0				ug/L	800803	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	79.0	26.2	**0.0436**	0.003	6.0	ug/L	13	Standard
	Tl	205	80.0	16.5	**0.0546**	0.002	3.6	ug/L	13	Standard
	Pb	206	267.3	21.0	**0.0502**	0.011	21.9	ug/L	226	Standard
	Pb	207	232.0	12.4	**0.0508**	0.006	12.0	ug/L	204	Standard
	Pb	208	975.0	8.5	**0.0546**	0.004	7.8	ug/L	852	Standard
	U	238	65.3	37.9	**0.0525**	0.004	7.0	ug/L	13	Standard
>	**Bi**	209	450418.1	0.7				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 12:31:07
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	17.6	**0.0166**	0.011	63.9	mg/L	58	Standard
K	39	35.0	37.8	**-0.0108**	0.052	481.1	mg/L	27	Standard
Ca	43	45.0	58.8	**1.7629**	1.770	100.4	mg/L	20	Standard
Fe	54	129.3	20.6	**-0.0188**	0.022	116.1	mg/L	158	Standard
Fe	57	218.3	7.4	**0.0034**	0.059	1711.1	mg/L	267	Standard
Sc-1	45	41531.9	1.8				mg/L	38815	Standard
Cl	35	65165.8	0.5				ug/L	57611	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	1780.1	4.4				ug/L	1617	Standard
P	31	19916.4	1.9				ug/L	19244	Standard
S	34	3963.9	7.0				ug/L	3557	Standard
Sr	88	71.7	8.1				ug/L	65	Standard
C	12	43.3	81.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	19.0	51.3				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	8842.6	1.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.211	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 12:31:07
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.445
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.306
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 12:31:07
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129407
Sample Date/Time: Wednesday, July 06, 2016 12:32:02
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54571.5	2.9				ug/L	68501	Standard
	Be	9	46.7	32.7	**0.0837**	0.019	23.3	ug/L	8	Standard
	Al	27	387342.3	1.0	**3.4619**	0.131	3.8	ug/L	1397	Standard
	Sc	45	37803.8	0.7				ug/L	38815	Standard
	Ti	47	113.3	7.3	**0.3159**	0.024	7.5	ug/L	36	Standard
	V	51	4062.2	2.2	**0.4437**	0.011	2.4	ug/L	1284	Standard
	Cr	52	8232.2	2.9	**0.2844**	0.031	10.8	ug/L	6503	Standard
	Cr	53	635.0	7.2	**0.3355**	0.052	15.5	ug/L	492	Standard
	Mn	55	59198.8	1.4	**9.7624**	0.126	1.3	ug/L	841	Standard
	Co	59	1666.4	3.6	**0.2867**	0.010	3.5	ug/L	229	Standard
	Ni	60	2062.8	3.2	**1.0951**	0.044	4.0	ug/L	344	Standard
	Cu	65	728.7	9.0	**0.4300**	0.038	8.9	ug/L	115	Standard
	Zn	66	2828.3	2.6	**2.7445**	0.082	3.0	ug/L	190	Standard
>	**Ge**	72	402452.6	0.5				ug/L	409858	Standard
	As	75	60.0	38.6	**0.1578**	0.023	14.3	ug/L	-22	Standard
	Se	82	13.7	6.1	**0.0805**	0.008	9.4	ug/L	18	Standard
	Se-1	77	48.3	10.6	**-0.0442**	0.075	170.0	ug/L	50	Standard
>	**Ga**	71	525.0	16.3				mg/L	97	Standard
	Rb	85	4585.7	1.5				ug/L	25	Standard
	Y	89	348985.7	1.6				ug/L	376763	Standard
>	**Rh**	103	23.3	12.4				ug/L	20	Standard
	Mo	98	114.4	13.2	**0.1222**	0.007	5.6	ug/L	51	Standard
	Ag	107	90.7	24.0	**0.0386**	0.004	10.0	ug/L	76	Standard
	Cd	111	16.4	22.8	**0.0482**	0.002	4.3	mg/L	6	Standard
	Cd	114	48.9	72.6	**0.0482**	0.008	16.5	ug/L	18	Standard
>	**In**	115	474745.8	0.8				ug/L	507261	Standard
	Sn	118	475.0	40.2	**-0.0173**	0.037	215.3	ug/L	683	Standard
	Sb	123	1751.0	31.8	**0.4164**	0.141	33.8	ug/L	446	Standard
	Ba	135	7868.7	1.7	**4.4335**	0.060	1.3	ug/L	28	Standard
	Ce	140	27979.1	1.8				ug/L	33	Standard
>	**Tb**	159	753238.8	1.1				ug/L	800803	Standard
	Ho	165	351.7	20.6				ug/L	10	Standard
	Tl	203	62.3	20.9	**0.0418**	0.002	4.3	ug/L	13	Standard
	Tl	205	43.3	37.1	**0.0493**	0.003	5.1	ug/L	13	Standard
	Pb	206	1664.1	6.4	**0.3491**	0.020	5.6	ug/L	226	Standard
	Pb	207	1361.1	5.1	**0.3171**	0.016	5.0	ug/L	204	Standard
	Pb	208	5716.1	0.9	**0.3342**	0.003	0.9	ug/L	852	Standard
	U	238	108.3	8.3	**0.0597**	0.002	2.6	ug/L	13	Standard
>	**Bi**	209	431049.9	0.9				ug/L	449044	Standard

Sample ID: L1606129407
Report Date/Time: Wednesday, July 06, 2016 12:34:19
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	57.3	**0.0174**	0.032	185.7	mg/L	58	Standard
K	39	36.7	43.8	**0.0080**	0.065	811.5	mg/L	27	Standard
Ca	43	28.3	44.4	**0.8400**	0.949	113.0	mg/L	20	Standard
Fe	54	487.1	6.7	**0.2984**	0.026	8.7	mg/L	158	Standard
Fe	57	365.0	6.8	**0.5742**	0.091	15.9	mg/L	267	Standard
> **Sc-1**	45	37803.8	0.7				mg/L	38815	Standard
Cl	35	58008.8	0.8				ug/L	57611	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1390.1	5.6				ug/L	1617	Standard
P	31	6723.2	3.1				ug/L	19244	Standard
S	34	3855.5	4.2				ug/L	3557	Standard
Sr	88	63.3	4.6				ug/L	65	Standard
C	12	33.3	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	604.3	2.5				mg/L	13	Standard
Ho-1	165	351.7	20.6				mg/L	10	Standard
Er	166	396.7	19.3				mg/L	13	Standard
I	127	8490.7	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.665	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.193	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129407
Report Date/Time: Wednesday, July 06, 2016 12:34:19
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.590
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.993
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129407
Report Date/Time: Wednesday, July 06, 2016 12:34:19
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129408
Sample Date/Time: Wednesday, July 06, 2016 12:35:14
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53967.6	2.0				ug/L	68501	Standard
	Be	9	36.7	90.8	**0.0713**	0.048	67.1	ug/L	8	Standard
	Al	27	260417.3	3.5	**2.3639**	0.101	4.3	ug/L	1397	Standard
	Sc	45	38027.7	2.1				ug/L	38815	Standard
	Ti	47	160.0	7.6	**0.4572**	0.036	7.8	ug/L	36	Standard
	V	51	3667.6	1.6	**0.3863**	0.010	2.7	ug/L	1284	Standard
	Cr	52	8066.5	2.2	**0.2591**	0.022	8.5	ug/L	6503	Standard
	Cr	53	521.7	6.4	**0.2007**	0.041	20.4	ug/L	492	Standard
	Mn	55	48587.5	1.9	**7.9901**	0.137	1.7	ug/L	841	Standard
	Co	59	1120.0	7.7	**0.1944**	0.014	7.2	ug/L	229	Standard
	Ni	60	1576.1	3.3	**0.7989**	0.035	4.4	ug/L	344	Standard
	Cu	65	583.7	2.0	**0.3417**	0.008	2.4	ug/L	115	Standard
	Zn	66	2526.5	2.7	**2.4378**	0.065	2.7	ug/L	190	Standard
>	**Ge**	72	402701.4	0.4				ug/L	409858	Standard
	As	75	163.7	17.4	**0.2597**	0.028	10.9	ug/L	-22	Standard
	Se	82	19.0	37.8	**0.1322**	0.070	52.7	ug/L	18	Standard
	Se-1	77	47.7	2.4	**-0.0545**	0.015	27.3	ug/L	50	Standard
>	**Ga**	71	363.3	5.2				mg/L	97	Standard
	Rb	85	2791.9	5.5				ug/L	25	Standard
	Y	89	350903.9	1.1				ug/L	376763	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	87.0	11.7	**0.1099**	0.004	4.0	ug/L	51	Standard
	Ag	107	79.7	1.9	**0.0367**	0.000	0.7	ug/L	76	Standard
	Cd	111	10.8	33.4	**0.0452**	0.002	4.3	mg/L	6	Standard
	Cd	114	19.7	33.6	**0.0417**	0.001	3.5	ug/L	18	Standard
>	**In**	115	476250.4	0.2				ug/L	507261	Standard
	Sn	118	320.0	28.2	**-0.0479**	0.017	36.3	ug/L	683	Standard
	Sb	123	1247.0	34.2	**0.2892**	0.105	36.5	ug/L	446	Standard
	Ba	135	4132.6	3.6	**2.3285**	0.078	3.3	ug/L	28	Standard
	Ce	140	19167.1	2.8				ug/L	33	Standard
>	**Tb**	159	745961.4	1.0				ug/L	800803	Standard
	Ho	165	288.3	7.0				ug/L	10	Standard
	Tl	203	28.0	25.0	**0.0372**	0.001	2.6	ug/L	13	Standard
	Tl	205	36.7	61.5	**0.0483**	0.004	7.4	ug/L	13	Standard
	Pb	206	1164.0	3.0	**0.2435**	0.008	3.2	ug/L	226	Standard
	Pb	207	928.4	2.8	**0.2163**	0.006	2.9	ug/L	204	Standard
	Pb	208	4144.6	2.1	**0.2428**	0.005	2.2	ug/L	852	Standard
	U	238	88.7	22.2	**0.0566**	0.003	5.5	ug/L	13	Standard
>	**Bi**	209	430308.6	0.2				ug/L	449044	Standard

Sample ID: L1606129408
Report Date/Time: Wednesday, July 06, 2016 12:37:31
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	60.1	**0.0029**	0.024	833.5	mg/L	58	Standard
K	39	36.7	51.6	**0.0083**	0.079	949.7	mg/L	27	Standard
Ca	43	36.7	15.7	**1.4456**	0.439	30.4	mg/L	20	Standard
Fe	54	322.3	20.3	**0.1558**	0.060	38.7	mg/L	158	Standard
Fe	57	341.7	9.5	**0.4863**	0.100	20.6	mg/L	267	Standard
> **Sc-1**	45	38027.7	2.1				mg/L	38815	Standard
Cl	35	58256.5	1.5				ug/L	57611	Standard
Kr	83	3.7	31.5				ug/L	2	Standard
Br	81	1490.1	7.9				ug/L	1617	Standard
P	31	6151.2	2.7				ug/L	19244	Standard
S	34	3462.1	4.7				ug/L	3557	Standard
Sr	88	65.0	7.7				ug/L	65	Standard
C	12	56.7	66.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	23	Standard
Dy	164	456.8	15.1				mg/L	13	Standard
Ho-1	165	288.3	7.0				mg/L	10	Standard
Er	166	276.7	11.0				mg/L	13	Standard
I	127	8354.0	1.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.784	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.254	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129408
Report Date/Time: Wednesday, July 06, 2016 12:37:31
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.887
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.828
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129408
Report Date/Time: Wednesday, July 06, 2016 12:37:31
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129409
Sample Date/Time: Wednesday, July 06, 2016 12:38:25
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54002.8	2.0				ug/L	68501	Standard
	Be	9	26.7	39.0	**0.0569**	0.015	26.3	ug/L	8	Standard
	Al	27	355774.4	1.8	**3.2137**	0.037	1.2	ug/L	1397	Standard
	Sc	45	37870.6	1.0				ug/L	38815	Standard
	Ti	47	155.3	6.4	**0.4407**	0.029	6.6	ug/L	36	Standard
	V	51	4291.3	2.7	**0.4733**	0.016	3.5	ug/L	1284	Standard
	Cr	52	8425.7	1.8	**0.3059**	0.026	8.4	ug/L	6503	Standard
	Cr	53	601.7	11.3	**0.2919**	0.080	27.6	ug/L	492	Standard
	Mn	55	74360.1	1.5	**12.2164**	0.218	1.8	ug/L	841	Standard
	Co	59	1332.1	3.0	**0.2290**	0.007	2.9	ug/L	229	Standard
	Ni	60	1608.8	1.4	**0.8136**	0.011	1.4	ug/L	344	Standard
	Cu	65	689.0	4.4	**0.4036**	0.018	4.4	ug/L	115	Standard
	Zn	66	2706.2	1.2	**2.6054**	0.035	1.3	ug/L	190	Standard
>	**Ge**	72	404779.3	0.2				ug/L	409858	Standard
	As	75	99.4	24.9	**0.1959**	0.024	12.2	ug/L	-22	Standard
	Se	82	14.7	23.1	**0.0894**	0.032	36.3	ug/L	18	Standard
	Se-1	77	47.3	8.8	**-0.0630**	0.060	95.1	ug/L	50	Standard
>	**Ga**	71	375.0	6.7				mg/L	97	Standard
	Rb	85	3093.6	2.9				ug/L	25	Standard
	Y	89	349363.7	0.6				ug/L	376763	Standard
>	**Rh**	103	21.7	74.2				ug/L	20	Standard
	Mo	98	73.5	9.1	**0.1039**	0.003	3.1	ug/L	51	Standard
	Ag	107	87.0	23.9	**0.0379**	0.004	9.8	ug/L	76	Standard
	Cd	111	24.2	46.8	**0.0523**	0.006	11.9	mg/L	6	Standard
	Cd	114	44.8	59.1	**0.0472**	0.006	12.5	ug/L	18	Standard
>	**In**	115	478695.7	1.2				ug/L	507261	Standard
	Sn	118	316.7	14.6	**-0.0487**	0.010	19.9	ug/L	683	Standard
	Sb	123	1033.1	29.1	**0.2353**	0.077	32.6	ug/L	446	Standard
	Ba	135	8158.2	1.0	**4.5590**	0.096	2.1	ug/L	28	Standard
	Ce	140	20727.5	4.7				ug/L	33	Standard
>	**Tb**	159	748176.5	0.9				ug/L	800803	Standard
	Ho	165	301.7	5.3				ug/L	10	Standard
	Tl	203	38.0	43.8	**0.0385**	0.002	5.8	ug/L	13	Standard
	Tl	205	25.0	20.0	**0.0464**	0.001	1.7	ug/L	13	Standard
	Pb	206	1980.1	3.6	**0.4139**	0.012	3.0	ug/L	226	Standard
	Pb	207	1697.4	4.2	**0.3935**	0.015	3.7	ug/L	204	Standard
	Pb	208	7219.0	0.8	**0.4197**	0.000	0.1	ug/L	852	Standard
	U	238	87.3	10.6	**0.0563**	0.002	2.8	ug/L	13	Standard
>	**Bi**	209	433469.7	0.7				ug/L	449044	Standard

Sample ID: L1606129409
Report Date/Time: Wednesday, July 06, 2016 12:40:42
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	37.8	**0.0103**	0.019	181.6	mg/L	58	Standard
K	39	28.3	62.0	**-0.0265**	0.071	267.8	mg/L	27	Standard
Ca	43	43.3	6.7	**1.9512**	0.183	9.4	mg/L	20	Standard
Fe	54	372.4	10.3	**0.1991**	0.030	15.0	mg/L	158	Standard
Fe	57	348.3	14.7	**0.5158**	0.189	36.6	mg/L	267	Standard
> **Sc-1**	45	37870.6	1.0				mg/L	38815	Standard
Cl	35	57598.0	1.7				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1430.1	3.7				ug/L	1617	Standard
P	31	6121.2	3.1				ug/L	19244	Standard
S	34	3705.5	5.3				ug/L	3557	Standard
Sr	88	80.0	6.3				ug/L	65	Standard
C	12	30.0	57.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	487.1	10.2				mg/L	13	Standard
Ho-1	165	301.7	5.3				mg/L	10	Standard
Er	166	270.0	39.0				mg/L	13	Standard
I	127	8914.3	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.761	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129409
Report Date/Time: Wednesday, July 06, 2016 12:40:42
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.369
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.532
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129410
Sample Date/Time: Wednesday, July 06, 2016 12:41:37
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52887.2	1.8				ug/L	68501	Standard
	Be	9	35.0	49.5	**0.0693**	0.024	35.3	ug/L	8	Standard
	Al	27	340518.6	2.3	**3.1422**	0.100	3.2	ug/L	1397	Standard
	Sc	45	37329.3	1.2				ug/L	38815	Standard
	Ti	47	155.7	8.7	**0.4476**	0.042	9.3	ug/L	36	Standard
	V	51	4098.4	2.5	**0.4530**	0.016	3.5	ug/L	1284	Standard
	Cr	52	8107.5	2.5	**0.2742**	0.033	12.0	ug/L	6503	Standard
	Cr	53	540.0	14.7	**0.2273**	0.096	42.4	ug/L	492	Standard
	Mn	55	64857.5	0.9	**10.7783**	0.125	1.2	ug/L	841	Standard
	Co	59	1397.1	3.7	**0.2429**	0.009	3.7	ug/L	229	Standard
	Ni	60	1640.4	2.0	**0.8452**	0.018	2.1	ug/L	344	Standard
	Cu	65	730.0	2.4	**0.4339**	0.009	2.1	ug/L	115	Standard
	Zn	66	2844.9	1.6	**2.7808**	0.051	1.8	ug/L	190	Standard
>	**Ge**	72	399739.8	0.3				ug/L	409858	Standard
	As	75	150.8	4.3	**0.2480**	0.007	2.7	ug/L	-22	Standard
	Se	82	16.8	16.3	**0.1118**	0.027	24.2	ug/L	18	Standard
	Se-1	77	46.7	10.8	**-0.0641**	0.075	117.7	ug/L	50	Standard
>	**Ga**	71	411.7	9.7				mg/L	97	Standard
	Rb	85	3715.5	3.6				ug/L	25	Standard
	Y	89	349263.3	1.1				ug/L	376763	Standard
>	**Rh**	103	33.3	45.8				ug/L	20	Standard
	Mo	98	68.3	41.2	**0.1017**	0.012	12.2	ug/L	51	Standard
	Ag	107	125.7	38.0	**0.0445**	0.008	18.3	ug/L	76	Standard
	Cd	111	35.2	63.7	**0.0582**	0.012	20.7	mg/L	6	Standard
	Cd	114	65.6	64.7	**0.0517**	0.009	18.0	ug/L	18	Standard
>	**In**	115	476516.9	0.8				ug/L	507261	Standard
	Sn	118	290.0	40.4	**-0.0538**	0.023	42.0	ug/L	683	Standard
	Sb	123	913.9	33.0	**0.2061**	0.074	35.7	ug/L	446	Standard
	Ba	135	7815.7	1.2	**4.3874**	0.031	0.7	ug/L	28	Standard
	Ce	140	22171.2	2.0				ug/L	33	Standard
>	**Tb**	159	745014.1	0.6				ug/L	800803	Standard
	Ho	165	338.3	7.0				ug/L	10	Standard
	Tl	203	93.0	73.2	**0.0459**	0.009	19.9	ug/L	13	Standard
	Tl	205	58.3	9.9	**0.0517**	0.001	1.6	ug/L	13	Standard
	Pb	206	1839.8	0.9	**0.3856**	0.008	2.0	ug/L	226	Standard
	Pb	207	1528.7	1.0	**0.3554**	0.002	0.6	ug/L	204	Standard
	Pb	208	6653.9	1.0	**0.3880**	0.007	1.7	ug/L	852	Standard
	U	238	118.7	34.7	**0.0613**	0.006	10.4	ug/L	13	Standard
>	**Bi**	209	432197.8	1.2				ug/L	449044	Standard

Sample ID: L1606129410
Report Date/Time: Wednesday, July 06, 2016 12:43:53
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	22.9	**0.0085**	0.010	120.9	mg/L	58	Standard
K	39	45.0	19.2	**0.0446**	0.035	78.7	mg/L	27	Standard
Ca	43	16.7	62.4	**-0.0167**	0.785	4697.8	mg/L	20	Standard
Fe	54	374.1	9.5	**0.2053**	0.029	14.4	mg/L	158	Standard
Fe	57	340.0	19.9	**0.5012**	0.223	44.4	mg/L	267	Standard
Sc-1	45	37329.3	1.2				mg/L	38815	Standard
Cl	35	57528.4	1.2				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1460.1	4.3				ug/L	1617	Standard
P	31	6161.3	2.2				ug/L	19244	Standard
S	34	3503.7	2.5				ug/L	3557	Standard
Sr	88	90.0	29.4				ug/L	65	Standard
C	12	40.0	25.0				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	527.1	16.0				mg/L	13	Standard
Ho-1	165	338.3	7.0				mg/L	10	Standard
Er	166	270.0	7.4				mg/L	13	Standard
I	127	8217.2	2.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		77.206	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.531	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129410
Report Date/Time: Wednesday, July 06, 2016 12:43:53
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.939
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.248
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129410
Report Date/Time: Wednesday, July 06, 2016 12:43:53
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129414
Sample Date/Time: Wednesday, July 06, 2016 12:44:48
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53690.0	2.0				ug/L	68501	Standard
	Be	9	20.0	0.0	**0.0476**	0.001	1.2	ug/L	8	Standard
	Al	27	331712.6	1.9	**3.0171**	0.105	3.5	ug/L	1397	Standard
	Sc	45	37394.4	2.5				ug/L	38815	Standard
	Ti	47	127.3	9.9	**0.3586**	0.037	10.3	ug/L	36	Standard
	V	51	4142.5	1.3	**0.4557**	0.010	2.3	ug/L	1284	Standard
	Cr	52	8322.6	1.1	**0.2984**	0.018	6.0	ug/L	6503	Standard
	Cr	53	555.0	4.1	**0.2408**	0.025	10.2	ug/L	492	Standard
	Mn	55	93280.6	0.9	**15.4453**	0.177	1.1	ug/L	841	Standard
	Co	59	1455.1	2.3	**0.2512**	0.006	2.5	ug/L	229	Standard
	Ni	60	1657.4	3.5	**0.8492**	0.031	3.6	ug/L	344	Standard
	Cu	65	862.0	3.3	**0.5115**	0.017	3.4	ug/L	115	Standard
	Zn	66	3313.7	0.9	**3.2364**	0.043	1.3	ug/L	190	Standard
>	**Ge**	72	402275.0	0.4				ug/L	409858	Standard
	As	75	118.9	36.8	**0.2157**	0.043	19.9	ug/L	-22	Standard
	Se	82	16.6	28.2	**0.1090**	0.045	41.5	ug/L	18	Standard
	Se-1	77	47.7	6.4	**-0.0538**	0.042	78.2	ug/L	50	Standard
>	**Ga**	71	391.7	11.4				mg/L	97	Standard
	Rb	85	3747.1	3.7				ug/L	25	Standard
	Y	89	345576.8	1.0				ug/L	376763	Standard
>	**Rh**	103	18.3	15.7				ug/L	20	Standard
	Mo	98	44.0	23.2	**0.0909**	0.005	5.1	ug/L	51	Standard
	Ag	107	79.0	5.5	**0.0365**	0.001	1.8	ug/L	76	Standard
	Cd	111	24.2	10.4	**0.0523**	0.001	2.6	mg/L	6	Standard
	Cd	114	73.2	46.7	**0.0534**	0.008	14.1	ug/L	18	Standard
>	**In**	115	478607.8	0.7				ug/L	507261	Standard
	Sn	118	251.7	25.3	**-0.0613**	0.013	20.5	ug/L	683	Standard
	Sb	123	792.2	33.5	**0.1757**	0.067	37.9	ug/L	446	Standard
	Ba	135	7870.7	0.5	**4.3991**	0.031	0.7	ug/L	28	Standard
	Ce	140	22131.2	0.9				ug/L	33	Standard
>	**Tb**	159	749864.4	0.1				ug/L	800803	Standard
	Ho	165	340.0	10.2				ug/L	10	Standard
	Tl	203	23.0	32.8	**0.0365**	0.001	2.8	ug/L	13	Standard
	Tl	205	30.0	33.3	**0.0472**	0.002	3.3	ug/L	13	Standard
	Pb	206	14608.4	1.3	**3.0830**	0.023	0.8	ug/L	226	Standard
	Pb	207	10978.6	2.2	**2.5535**	0.043	1.7	ug/L	204	Standard
	Pb	208	49268.3	1.0	**2.8669**	0.016	0.5	ug/L	852	Standard
	U	238	88.0	5.0	**0.0564**	0.001	1.1	ug/L	13	Standard
>	**Bi**	209	433017.9	0.5				ug/L	449044	Standard

Sample ID: L1606129414
Report Date/Time: Wednesday, July 06, 2016 12:47:05
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.9237**	16.812	1820.0	mg/L	2	Standard
Mg	24	31.7	18.2	**0.0060**	0.007	118.5	mg/L	58	Standard
K	39	35.0	14.3	**0.0034**	0.024	720.1	mg/L	27	Standard
Ca	43	16.7	17.3	**-0.0157**	0.252	1610.8	mg/L	20	Standard
Fe	54	313.9	9.8	**0.1522**	0.020	13.3	mg/L	158	Standard
Fe	57	301.7	18.8	**0.3670**	0.187	50.9	mg/L	267	Standard
Sc-1	45	37394.4	2.5				mg/L	38815	Standard
Cl	35	58101.9	0.6				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1443.4	4.6				ug/L	1617	Standard
P	31	6066.2	5.4				ug/L	19244	Standard
S	34	3347.0	3.0				ug/L	3557	Standard
Sr	88	83.3	40.8				ug/L	65	Standard
C	12	43.3	53.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	23	Standard
Dy	164	599.9	19.0				mg/L	13	Standard
Ho-1	165	340.0	10.2				mg/L	10	Standard
Er	166	350.0	10.3				mg/L	13	Standard
I	127	8285.6	5.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.378	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.150	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129414
Report Date/Time: Wednesday, July 06, 2016 12:47:05
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.351
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.431
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129415
Sample Date/Time: Wednesday, July 06, 2016 12:47:59
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54170.0	2.0				ug/L	68501	Standard
	Be	9	26.7	28.6	**0.0565**	0.010	17.6	ug/L	8	Standard
	Al	27	359573.2	2.4	**3.2386**	0.111	3.4	ug/L	1397	Standard
	Sc	45	37168.9	1.3				ug/L	38815	Standard
	Ti	47	145.3	6.2	**0.4119**	0.030	7.3	ug/L	36	Standard
	V	51	3535.1	1.8	**0.3660**	0.006	1.5	ug/L	1284	Standard
	Cr	52	7574.2	1.6	**0.1840**	0.024	12.9	ug/L	6503	Standard
	Cr	53	406.7	13.5	**0.0634**	0.069	108.4	ug/L	492	Standard
	Mn	55	61648.2	0.7	**10.1421**	0.149	1.5	ug/L	841	Standard
	Co	59	1089.0	4.5	**0.1888**	0.009	4.8	ug/L	229	Standard
	Ni	60	1346.1	2.3	**0.6575**	0.025	3.8	ug/L	344	Standard
	Cu	65	439.0	4.3	**0.2531**	0.013	5.1	ug/L	115	Standard
	Zn	66	2221.8	1.3	**2.1252**	0.014	0.7	ug/L	190	Standard
>	**Ge**	72	403591.8	0.7				ug/L	409858	Standard
	As	75	37.7	18.1	**0.1358**	0.007	4.9	ug/L	-22	Standard
	Se	82	20.1	10.3	**0.1419**	0.020	14.4	ug/L	18	Standard
	Se-1	77	48.7	17.5	**-0.0418**	0.121	288.3	ug/L	50	Standard
>	**Ga**	71	316.7	12.9				mg/L	97	Standard
	Rb	85	2226.8	3.0				ug/L	25	Standard
	Y	89	347784.9	1.1				ug/L	376763	Standard
>	**Rh**	103	25.0	40.0				ug/L	20	Standard
	Mo	98	33.3	21.8	**0.0862**	0.003	3.7	ug/L	51	Standard
	Ag	107	67.7	8.5	**0.0347**	0.001	2.9	ug/L	76	Standard
	Cd	111	6.3	51.4	**0.0427**	0.002	4.0	mg/L	6	Standard
	Cd	114	12.7	48.1	**0.0402**	0.001	3.4	ug/L	18	Standard
>	**In**	115	476216.8	0.5				ug/L	507261	Standard
	Sn	118	271.7	24.0	**-0.0573**	0.013	21.9	ug/L	683	Standard
	Sb	123	683.1	27.9	**0.1492**	0.047	31.4	ug/L	446	Standard
	Ba	135	5862.1	0.1	**3.2969**	0.020	0.6	ug/L	28	Standard
	Ce	140	16595.8	3.6				ug/L	33	Standard
>	**Tb**	159	744111.5	0.7				ug/L	800803	Standard
	Ho	165	248.3	13.1				ug/L	10	Standard
	Tl	203	19.0	9.1	**0.0359**	0.000	0.7	ug/L	13	Standard
	Tl	205	11.7	49.5	**0.0444**	0.001	2.1	ug/L	13	Standard
	Pb	206	921.0	2.0	**0.1925**	0.005	2.6	ug/L	226	Standard
	Pb	207	774.4	3.3	**0.1808**	0.005	2.9	ug/L	204	Standard
	Pb	208	3329.1	2.3	**0.1956**	0.005	2.8	ug/L	852	Standard
	U	238	55.0	25.0	**0.0513**	0.002	4.2	ug/L	13	Standard
>	**Bi**	209	429010.4	0.8				ug/L	449044	Standard

Sample ID: L1606129415
Report Date/Time: Wednesday, July 06, 2016 12:50:16
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	17.6	**0.0229**	0.010	45.8	mg/L	58	Standard
K	39	45.0	22.2	**0.0459**	0.044	95.9	mg/L	27	Standard
Ca	43	35.0	42.9	**1.3865**	1.153	83.2	mg/L	20	Standard
Fe	54	281.0	14.5	**0.1257**	0.038	30.3	mg/L	158	Standard
Fe	57	395.0	5.8	**0.7009**	0.097	13.9	mg/L	267	Standard
> **Sc-1**	45	37168.9	1.3				mg/L	38815	Standard
Cl	35	58603.8	1.1				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1436.7	1.8				ug/L	1617	Standard
P	31	7160.1	19.7				ug/L	19244	Standard
S	34	3277.0	5.3				ug/L	3557	Standard
Sr	88	80.0	6.3				ug/L	65	Standard
C	12	33.3	75.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	23	Standard
Dy	164	447.9	36.2				mg/L	13	Standard
Ho-1	165	248.3	13.1				mg/L	10	Standard
Er	166	253.3	24.1				mg/L	13	Standard
I	127	8542.4	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.079	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.471	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129415
Report Date/Time: Wednesday, July 06, 2016 12:50:16
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.880
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.539
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129415
Report Date/Time: Wednesday, July 06, 2016 12:50:16
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606138108
Sample Date/Time: Wednesday, July 06, 2016 12:51:11
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54233.6	3.5				ug/L	68501	Standard
	Be	9	30.0	28.9	**0.0612**	0.012	19.1	ug/L	8	Standard
	Al	27	458746.7	1.0	**4.1197**	0.165	4.0	ug/L	1397	Standard
	Sc	45	38214.8	1.8				ug/L	38815	Standard
	Ti	47	191.7	8.8	**0.5499**	0.046	8.4	ug/L	36	Standard
	V	51	7374.6	0.8	**0.9167**	0.006	0.6	ug/L	1284	Standard
	Cr	52	9768.5	2.0	**0.5031**	0.030	6.0	ug/L	6503	Standard
	Cr	53	703.3	8.3	**0.4117**	0.068	16.6	ug/L	492	Standard
	Mn	55	157025.5	0.1	**25.8971**	0.172	0.7	ug/L	841	Standard
	Co	59	2139.2	2.3	**0.3643**	0.008	2.2	ug/L	229	Standard
	Ni	60	2664.9	2.1	**1.4510**	0.037	2.6	ug/L	344	Standard
	Cu	65	1293.7	2.7	**0.7692**	0.019	2.5	ug/L	115	Standard
	Zn	66	3107.0	2.1	**3.0074**	0.079	2.6	ug/L	190	Standard
>	**Ge**	72	404886.3	0.7				ug/L	409858	Standard
	As	75	199.8	21.5	**0.2941**	0.043	14.5	ug/L	-22	Standard
	Se	82	16.0	51.6	**0.1025**	0.080	78.0	ug/L	18	Standard
	Se-1	77	49.0	14.3	**-0.0383**	0.106	277.2	ug/L	50	Standard
>	**Ga**	71	690.0	10.9				mg/L	97	Standard
	Rb	85	6126.2	5.8				ug/L	25	Standard
	Y	89	355822.1	1.8				ug/L	376763	Standard
>	**Rh**	103	20.0	75.0				ug/L	20	Standard
	Mo	98	37.1	35.1	**0.0878**	0.006	6.6	ug/L	51	Standard
	Ag	107	81.3	8.2	**0.0368**	0.001	2.8	ug/L	76	Standard
	Cd	111	8.9	29.5	**0.0441**	0.001	3.2	mg/L	6	Standard
	Cd	114	16.7	60.7	**0.0410**	0.002	5.4	ug/L	18	Standard
>	**In**	115	480767.7	0.8				ug/L	507261	Standard
	Sn	118	248.3	36.1	**-0.0621**	0.018	28.5	ug/L	683	Standard
	Sb	123	730.9	30.4	**0.1597**	0.056	35.0	ug/L	446	Standard
	Ba	135	13856.3	0.6	**7.6978**	0.013	0.2	ug/L	28	Standard
	Ce	140	35568.4	3.3				ug/L	33	Standard
>	**Tb**	159	750147.1	0.9				ug/L	800803	Standard
	Ho	165	496.7	9.5				ug/L	10	Standard
	Tl	203	43.3	7.4	**0.0392**	0.000	1.2	ug/L	13	Standard
	Tl	205	26.7	39.0	**0.0467**	0.002	3.5	ug/L	13	Standard
	Pb	206	1867.1	1.5	**0.3894**	0.009	2.2	ug/L	226	Standard
	Pb	207	1558.4	1.6	**0.3606**	0.008	2.1	ug/L	204	Standard
	Pb	208	6678.9	0.9	**0.3876**	0.004	1.2	ug/L	852	Standard
	U	238	113.7	2.7	**0.0604**	0.001	0.9	ug/L	13	Standard
>	**Bi**	209	434266.7	0.7				ug/L	449044	Standard

Sample ID: L1606138108
Report Date/Time: Wednesday, July 06, 2016 12:53:28
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	60.4	**0.0193**	0.035	182.4	mg/L	58	Standard
K	39	61.7	36.6	**0.1070**	0.087	81.4	mg/L	27	Standard
Ca	43	36.7	15.7	**1.4281**	0.401	28.0	mg/L	20	Standard
Fe	54	769.2	13.0	**0.5330**	0.076	14.2	mg/L	158	Standard
Fe	57	460.0	10.4	**0.8848**	0.183	20.7	mg/L	267	Standard
> **Sc-1**	45	38214.8	1.8				mg/L	38815	Standard
Cl	35	57334.9	0.4				ug/L	57611	Standard
Kr	83	3.0	145.3				ug/L	2	Standard
Br	81	1536.7	5.0				ug/L	1617	Standard
P	31	6094.6	1.6				ug/L	19244	Standard
S	34	3535.4	4.0				ug/L	3557	Standard
Sr	88	58.3	64.3				ug/L	65	Standard
C	12	26.7	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	896.4	9.8				mg/L	13	Standard
Ho-1	165	496.7	9.5				mg/L	10	Standard
Er	166	563.3	10.1				mg/L	13	Standard
I	127	8010.5	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.172	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.787	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138108
Report Date/Time: Wednesday, July 06, 2016 12:53:28
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.777
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.709
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606138108
Report Date/Time: Wednesday, July 06, 2016 12:53:28
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 12:54:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56752.8	1.7				ug/L	68501	Standard
	Be	9	41092.3	2.3	**54.6692**	1.162	2.1	ug/L	8	Standard
	Al	27	6751186.4	2.0	**57.4251**	0.440	0.8	ug/L	1397	Standard
	Sc	45	42482.8	2.4				ug/L	38815	Standard
	Ti	47	37579.6	2.3	**105.5354**	1.586	1.5	ug/L	36	Standard
	V	51	382333.4	1.2	**51.0931**	0.241	0.5	ug/L	1284	Standard
	Cr	52	391883.4	2.2	**52.7636**	0.793	1.5	ug/L	6503	Standard
	Cr	53	47835.4	0.2	**52.1976**	0.572	1.1	ug/L	492	Standard
	Mn	55	344317.1	1.3	**53.0012**	0.174	0.3	ug/L	841	Standard
	Co	59	325311.2	1.3	**50.8445**	0.267	0.5	ug/L	229	Standard
	Ni	60	93170.6	1.4	**52.2381**	0.359	0.7	ug/L	344	Standard
	Cu	65	92504.9	1.5	**52.1124**	0.483	0.9	ug/L	115	Standard
	Zn	66	55580.4	0.5	**51.8949**	0.362	0.7	ug/L	190	Standard
>	Ge	72	434601.8	1.2				ug/L	409858	Standard
	As	75	56578.8	0.7	**51.5738**	0.350	0.7	ug/L	-22	Standard
	Se	82	5647.5	1.8	**50.3603**	0.378	0.7	ug/L	18	Standard
	Se-1	77	3845.5	1.2	**51.9136**	1.176	2.3	ug/L	50	Standard
>	Ga	71	88.3	22.9				mg/L	97	Standard
	Rb	85	756.7	12.0				ug/L	25	Standard
	Y	89	367973.7	1.4				ug/L	376763	Standard
>	Rh	103	40.0	12.5				ug/L	20	Standard
	Mo	98	247770.2	0.4	**100.8550**	1.105	1.1	ug/L	51	Standard
	Ag	107	318642.7	1.1	**50.1013**	0.860	1.7	ug/L	76	Standard
	Cd	111	102680.4	0.6	**50.7935**	0.304	0.6	mg/L	6	Standard
	Cd	114	251457.4	1.9	**50.8827**	1.163	2.3	ug/L	18	Standard
>	In	115	517125.0	0.9				ug/L	507261	Standard
	Sn	118	279794.8	0.3	**50.0313**	0.520	1.0	ug/L	683	Standard
	Sb	123	221090.7	1.6	**50.5448**	0.872	1.7	ug/L	446	Standard
	Ba	135	98648.8	0.3	**50.8641**	0.342	0.7	ug/L	28	Standard
	Ce	140	283.3	6.7				ug/L	33	Standard
>	Tb	159	800642.8	0.2				ug/L	800803	Standard
	Ho	165	20.0	50.0				ug/L	10	Standard
	Tl	203	393462.9	0.9	**51.5261**	0.198	0.4	ug/L	13	Standard
	Tl	205	343273.5	0.6	**51.9120**	0.122	0.2	ug/L	13	Standard
	Pb	206	248406.7	0.2	**50.6641**	0.317	0.6	ug/L	226	Standard
	Pb	207	226320.8	0.2	**50.8305**	0.138	0.3	ug/L	204	Standard
	Pb	208	939047.0	1.1	**52.7397**	0.483	0.9	ug/L	852	Standard
	U	238	332825.8	0.4	**50.4825**	0.314	0.6	ug/L	13	Standard
>	Bi	209	448636.6	0.5				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 12:56:40
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3842.2	4.2	**4.7135**	0.114	2.4	mg/L	58	Standard
K	39	1238.4	8.3	**4.3703**	0.386	8.8	mg/L	27	Standard
Ca	43	76.7	29.4	**3.8418**	1.628	42.4	mg/L	20	Standard
Fe	54	6532.7	3.0	**4.8761**	0.107	2.2	mg/L	158	Standard
Fe	57	1771.8	2.6	**4.7386**	0.249	5.3	mg/L	267	Standard
> **Sc-1**	45	42482.8	2.4				mg/L	38815	Standard
Cl	35	66120.0	1.5				ug/L	57611	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	1616.8	14.2				ug/L	1617	Standard
P	31	20527.2	2.3				ug/L	19244	Standard
S	34	4075.5	3.0				ug/L	3557	Standard
Sr	88	65.0	23.1				ug/L	65	Standard
C	12	66.7	37.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	23	Standard
Dy	164	-0.5	0.0				mg/L	13	Standard
Ho-1	165	20.0	50.0				mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	11891.3	1.4				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	109.338		
	Al	27	114.850		
	Sc	45			
	Ti	47	105.535		
	V	51	102.186		
	Cr	52	105.527		
	Cr	53			
	Mn	55	106.002		
	Co	59	101.689		
	Ni	60	104.476		
	Cu	65	104.225		
	Zn	66	103.790		
>	Ge	72		106.037	
	As	75	103.148		
	Se	82	100.721		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 12:56:40
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.855		
Ag	107	100.203		
Cd	111	101.587		
Cd	114			
In	115		101.945	
Sn	118	100.063		
Sb	123	101.090		
Ba	135	101.728		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.052		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.479		
U	238	100.965		
Bi	209		99.909	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 12:56:40
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 12:57:35
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58173.1	0.9				ug/L	68501	Standard
	Be	9	16.7	62.4	**0.0411**	0.014	33.0	ug/L	8	Standard
	Al	27	2846.9	23.0	**0.0586**	0.005	8.9	ug/L	1397	Standard
	Sc	45	41419.9	4.2				ug/L	38815	Standard
	Ti	47	45.3	22.5	**0.1003**	0.029	28.7	ug/L	36	Standard
	V	51	1392.0	8.0	**0.0435**	0.015	35.5	ug/L	1284	Standard
	Cr	52	7010.6	2.2	**0.0324**	0.022	67.0	ug/L	6503	Standard
	Cr	53	413.3	1.4	**0.0386**	0.005	13.3	ug/L	492	Standard
	Mn	55	993.7	2.9	**0.0582**	0.005	8.5	ug/L	841	Standard
	Co	59	252.0	16.8	**0.0451**	0.007	14.5	ug/L	229	Standard
	Ni	60	638.3	0.7	**0.2033**	0.004	1.9	ug/L	344	Standard
	Cu	65	123.0	9.2	**0.0564**	0.006	11.0	ug/L	115	Standard
	Zn	66	222.3	5.3	**0.0958**	0.010	10.6	ug/L	190	Standard
>	**Ge**	72	432136.6	0.4				ug/L	409858	Standard
	As	75	-22.5	131.6	**0.0783**	0.027	34.6	ug/L	-22	Standard
	Se	82	22.9	5.7	**0.1545**	0.012	7.9	ug/L	18	Standard
	Se-1	77	53.3	16.9	**-0.0242**	0.125	515.8	ug/L	50	Standard
>	**Ga**	71	58.3	19.8				mg/L	97	Standard
	Rb	85	23.3	65.5				ug/L	25	Standard
	Y	89	371942.5	1.8				ug/L	376763	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	175.2	11.7	**0.1433**	0.007	5.1	ug/L	51	Standard
	Ag	107	108.7	20.6	**0.0403**	0.003	8.6	ug/L	76	Standard
	Cd	111	12.7	69.7	**0.0457**	0.004	9.6	mg/L	6	Standard
	Cd	114	61.2	41.0	**0.0498**	0.005	9.9	ug/L	18	Standard
>	**In**	115	513109.5	2.2				ug/L	507261	Standard
	Sn	118	888.4	17.9	**0.0506**	0.031	60.4	ug/L	683	Standard
	Sb	123	783.2	29.8	**0.1604**	0.056	34.6	ug/L	446	Standard
	Ba	135	35.7	15.4	**0.0343**	0.003	7.8	ug/L	28	Standard
	Ce	140	75.0	35.3				ug/L	33	Standard
>	**Tb**	159	797797.7	0.9				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	62.3	30.4	**0.0414**	0.002	5.9	ug/L	13	Standard
	Tl	205	41.7	38.6	**0.0488**	0.002	4.9	ug/L	13	Standard
	Pb	206	251.3	8.2	**0.0468**	0.004	8.7	ug/L	226	Standard
	Pb	207	237.7	5.0	**0.0519**	0.002	4.4	ug/L	204	Standard
	Pb	208	934.0	13.6	**0.0521**	0.007	13.0	ug/L	852	Standard
	U	238	57.0	50.8	**0.0512**	0.004	8.5	ug/L	13	Standard
>	**Bi**	209	452413.7	0.8				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 12:59:52
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.1481**	14.955	10096.3	mg/L	2	Standard
Mg	24	30.0	28.9	**-0.0002**	0.012	6433.4	mg/L	58	Standard
K	39	30.0	60.1	**-0.0297**	0.069	231.4	mg/L	27	Standard
Ca	43	23.3	12.4	**0.3104**	0.162	52.3	mg/L	20	Standard
Fe	54	169.0	5.8	**0.0125**	0.011	84.9	mg/L	158	Standard
Fe	57	230.0	13.6	**0.0408**	0.089	218.6	mg/L	267	Standard
> **Sc-1**	45	41419.9	4.2				mg/L	38815	Standard
Cl	35	64416.7	1.6				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1666.8	5.1				ug/L	1617	Standard
P	31	19791.3	3.6				ug/L	19244	Standard
S	34	3802.1	3.9				ug/L	3557	Standard
Sr	88	75.0	6.7				ug/L	65	Standard
C	12	36.7	41.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	23	Standard
Dy	164	6.0	100.4				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	8088.8	1.7				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.436	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 12:59:52
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.750
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 12:59:52
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131306
Sample Date/Time: Wednesday, July 06, 2016 13:04:40
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57723.1	2.8				ug/L	68501	Standard
	Be	9	53.3	37.9	**0.0891**	0.026	29.2	ug/L	8	Standard
	Al	27	180289.7	0.5	**1.5427**	0.041	2.7	ug/L	1397	Standard
	Sc	45	41478.4	1.2				ug/L	38815	Standard
	Ti	47	1970.8	0.7	**5.6501**	0.108	1.9	ug/L	36	Standard
	V	51	47130.6	0.5	**6.3329**	0.078	1.2	ug/L	1284	Standard
	Cr	52	13127.7	2.7	**0.9112**	0.063	6.9	ug/L	6503	Standard
	Cr	53	2163.5	13.1	**2.0244**	0.352	17.4	ug/L	492	Standard
	Mn	55	24005.0	1.8	**3.6998**	0.025	0.7	ug/L	841	Standard
	Co	59	2263.2	1.0	**0.3682**	0.006	1.6	ug/L	229	Standard
	Ni	60	2942.3	2.6	**1.5389**	0.037	2.4	ug/L	344	Standard
	Cu	65	2666.9	0.5	**1.5278**	0.021	1.4	ug/L	115	Standard
	Zn	66	24175.6	1.3	**23.0819**	0.110	0.5	ug/L	190	Standard
>	**Ge**	72	423851.7	1.6				ug/L	409858	Standard
	As	75	21610.2	1.6	**20.2585**	0.239	1.2	ug/L	-22	Standard
	Se	82	171.9	10.5	**1.5230**	0.183	12.0	ug/L	18	Standard
	Se-1	77	168.3	8.9	**1.6075**	0.250	15.6	ug/L	50	Standard
>	**Ga**	71	1233.4	11.2				mg/L	97	Standard
	Rb	85	18406.2	1.8				ug/L	25	Standard
	Y	89	373385.9	1.9				ug/L	376763	Standard
>	**Rh**	103	136.7	32.0				ug/L	20	Standard
	Mo	98	197428.1	1.3	**83.4331**	0.661	0.8	ug/L	51	Standard
	Ag	107	113.3	9.7	**0.0416**	0.002	4.6	ug/L	76	Standard
	Cd	111	101.4	12.4	**0.0914**	0.006	6.8	mg/L	6	Standard
	Cd	114	1017.6	7.1	**0.2510**	0.016	6.4	ug/L	18	Standard
>	**In**	115	498128.4	0.6				ug/L	507261	Standard
	Sn	118	2950.3	4.8	**0.4389**	0.029	6.6	ug/L	683	Standard
	Sb	123	1594.2	12.3	**0.3583**	0.049	13.6	ug/L	446	Standard
	Ba	135	34883.1	0.8	**18.6813**	0.138	0.7	ug/L	28	Standard
	Ce	140	16956.2	2.0				ug/L	33	Standard
>	**Tb**	159	784060.2	1.2				ug/L	800803	Standard
	Ho	165	340.0	7.4				ug/L	10	Standard
	Tl	203	172.0	8.2	**0.0569**	0.002	3.1	ug/L	13	Standard
	Tl	205	160.0	9.4	**0.0679**	0.003	3.7	ug/L	13	Standard
	Pb	206	2934.0	0.9	**0.6227**	0.008	1.3	ug/L	226	Standard
	Pb	207	2315.2	1.5	**0.5435**	0.010	1.9	ug/L	204	Standard
	Pb	208	10260.4	1.0	**0.6036**	0.005	0.8	ug/L	852	Standard
	U	238	3112.7	1.7	**0.5366**	0.008	1.5	ug/L	13	Standard
>	**Bi**	209	428381.7	0.9				ug/L	449044	Standard

Sample ID: L1606131306
Report Date/Time: Wednesday, July 06, 2016 13:06:57
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	60549.1	1.3	**76.6878**	1.707	2.2	mg/L	58	Standard
K	39	128.3	2.2	**0.3369**	0.012	3.7	mg/L	27	Standard
Ca	43	146.7	19.4	**8.6910**	1.829	21.0	mg/L	20	Standard
Fe	54	590.3	17.9	**0.3427**	0.087	25.3	mg/L	158	Standard
Fe	57	436.7	7.4	**0.6872**	0.100	14.6	mg/L	267	Standard
> **Sc-1**	45	41478.4	1.2				mg/L	38815	Standard
Cl	35	63464.0	2.9				ug/L	57611	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	29495.4	4.8				ug/L	1617	Standard
P	31	22338.1	1.2				ug/L	19244	Standard
S	34	3658.8	8.4				ug/L	3557	Standard
Sr	88	95.0	19.0				ug/L	65	Standard
C	12	90.0	48.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	23	Standard
Dy	164	578.4	10.6				mg/L	13	Standard
Ho-1	165	340.0	7.4				mg/L	10	Standard
Er	166	243.3	12.6				mg/L	13	Standard
I	127	234795.7	5.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.266	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.414	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131306
Report Date/Time: Wednesday, July 06, 2016 13:06:57
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.200
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.399
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606131306
Report Date/Time: Wednesday, July 06, 2016 13:06:57
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131307
Sample Date/Time: Wednesday, July 06, 2016 13:07:52
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58787.2	3.0				ug/L	68501	Standard
	Be	9	21.7	35.3	**0.0472**	0.010	20.4	ug/L	8	Standard
	Al	27	32170.8	2.3	**0.2994**	0.014	4.7	ug/L	1397	Standard
	Sc	45	40791.5	1.3				ug/L	38815	Standard
	Ti	47	455.7	9.2	**1.3061**	0.131	10.0	ug/L	36	Standard
	V	51	30069.6	2.2	**4.0535**	0.114	2.8	ug/L	1284	Standard
	Cr	52	9306.9	0.9	**0.3948**	0.031	7.9	ug/L	6503	Standard
	Cr	53	2293.5	7.2	**2.2101**	0.212	9.6	ug/L	492	Standard
	Mn	55	3385.7	0.8	**0.4479**	0.008	1.7	ug/L	841	Standard
	Co	59	676.3	3.4	**0.1156**	0.005	4.5	ug/L	229	Standard
	Ni	60	1130.4	2.9	**0.5044**	0.018	3.5	ug/L	344	Standard
	Cu	65	1215.0	4.0	**0.6996**	0.013	1.9	ug/L	115	Standard
	Zn	66	1554.4	4.0	**1.4018**	0.069	4.9	ug/L	190	Standard
>	Ge	72	417314.7	2.2				ug/L	409858	Standard
	As	75	14441.7	1.3	**13.7878**	0.455	3.3	ug/L	-22	Standard
	Se	82	149.1	1.8	**1.3351**	0.052	3.9	ug/L	18	Standard
	Se-1	77	180.3	7.9	**1.8165**	0.258	14.2	ug/L	50	Standard
>	Ga	71	601.7	10.6				mg/L	97	Standard
	Rb	85	5239.2	1.8				ug/L	25	Standard
	Y	89	358062.8	2.2				ug/L	376763	Standard
>	Rh	103	165.0	16.0				ug/L	20	Standard
	Mo	98	206408.8	1.4	**88.5714**	1.056	1.2	ug/L	51	Standard
	Ag	107	79.3	17.8	**0.0362**	0.002	6.4	ug/L	76	Standard
	Cd	111	-128.2	9.7	**-0.0275**	0.007	27.1	mg/L	6	Standard
	Cd	114	441.2	1.2	**0.1314**	0.002	1.5	ug/L	18	Standard
>	In	115	490588.1	1.5				ug/L	507261	Standard
	Sn	118	950.0	9.6	**0.0693**	0.017	24.1	ug/L	683	Standard
	Sb	123	1528.0	9.2	**0.3484**	0.039	11.2	ug/L	446	Standard
	Ba	135	7029.0	1.2	**3.8355**	0.097	2.5	ug/L	28	Standard
	Ce	140	2000.1	10.1				ug/L	33	Standard
>	Tb	159	781482.7	1.4				ug/L	800803	Standard
	Ho	165	31.7	39.7				ug/L	10	Standard
	Tl	203	103.7	18.0	**0.0476**	0.003	5.7	ug/L	13	Standard
	Tl	205	90.0	9.6	**0.0568**	0.001	1.9	ug/L	13	Standard
	Pb	206	490.7	1.2	**0.1012**	0.001	1.4	ug/L	226	Standard
	Pb	207	398.0	8.8	**0.0930**	0.010	10.2	ug/L	204	Standard
	Pb	208	1670.4	2.7	**0.0987**	0.002	1.8	ug/L	852	Standard
	U	238	2792.6	0.6	**0.4878**	0.013	2.7	ug/L	13	Standard
>	Bi	209	426654.8	2.3				ug/L	449044	Standard

Sample ID: L1606131307
Report Date/Time: Wednesday, July 06, 2016 13:10:08
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.1322**	14.983	11333.2	mg/L	2	Standard
Mg	24	62671.0	0.6	**80.7120**	1.324	1.6	mg/L	58	Standard
K	39	93.3	12.4	**0.2122**	0.044	20.7	mg/L	27	Standard
Ca	43	48.3	26.0	**2.0631**	0.852	41.3	mg/L	20	Standard
Fe	54	193.6	22.1	**0.0342**	0.035	102.9	mg/L	158	Standard
Fe	57	265.0	14.7	**0.1630**	0.116	71.3	mg/L	267	Standard
> **Sc-1**	45	40791.5	1.3				mg/L	38815	Standard
Cl	35	64717.9	0.6				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	26954.1	8.2				ug/L	1617	Standard
P	31	21436.8	2.7				ug/L	19244	Standard
S	34	3510.4	3.2				ug/L	3557	Standard
Sr	88	73.3	30.7				ug/L	65	Standard
C	12	60.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	44.6				mg/L	23	Standard
Dy	164	34.8	81.9				mg/L	13	Standard
Ho-1	165	31.7	39.7				mg/L	10	Standard
Er	166	40.0	25.0				mg/L	13	Standard
I	127	224703.9	3.8				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		85.819	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.819	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606131307
Report Date/Time: Wednesday, July 06, 2016 13:10:08
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.713
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.014
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131308
Sample Date/Time: Wednesday, July 06, 2016 13:11:03
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	98735.9	3.3				ug/L	68501	Standard
	Be	9	58.3	13.1	**0.0640**	0.004	6.9	ug/L	8	Standard
	Al	27	51788511.2	2.3	**253.1524**	3.815	1.5	ug/L	1397	Standard
	Sc	45	41498.4	1.6				ug/L	38815	Standard
	Ti	47	3931.8	1.1	**11.5935**	0.069	0.6	ug/L	36	Standard
	V	51	21071.2	0.6	**2.8272**	0.045	1.6	ug/L	1284	Standard
	Cr	52	24687.4	1.3	**2.6256**	0.034	1.3	ug/L	6503	Standard
	Cr	53	2983.6	1.1	**3.0340**	0.005	0.2	ug/L	492	Standard
	Mn	55	1699805.7	0.4	**275.7234**	3.638	1.3	ug/L	841	Standard
	Co	59	8628.5	0.7	**1.4243**	0.010	0.7	ug/L	229	Standard
	Ni	60	7274.1	0.7	**4.1465**	0.043	1.0	ug/L	344	Standard
	Cu	65	4390.6	0.8	**2.5899**	0.030	1.2	ug/L	115	Standard
	Zn	66	25222.0	1.8	**24.7202**	0.623	2.5	ug/L	190	Standard
>	Ge	72	413063.1	1.0				ug/L	409858	Standard
	As	75	638.5	11.5	**0.7099**	0.068	9.6	ug/L	-22	Standard
	Se	82	163.0	16.8	**1.4794**	0.255	17.2	ug/L	18	Standard
	Se-1	77	91.7	9.4	**0.5625**	0.134	23.8	ug/L	50	Standard
>	Ga	71	2932.0	4.6				mg/L	97	Standard
	Rb	85	15868.3	1.8				ug/L	25	Standard
	Y	89	380333.5	1.6				ug/L	376763	Standard
>	Rh	103	393.3	8.5				ug/L	20	Standard
	Mo	98	89251.1	1.2	**38.3286**	0.514	1.3	ug/L	51	Standard
	Ag	107	106.3	8.5	**0.0407**	0.001	3.4	ug/L	76	Standard
	Cd	111	94.4	11.3	**0.0885**	0.005	6.1	mg/L	6	Standard
	Cd	114	588.6	13.1	**0.1629**	0.017	10.6	ug/L	18	Standard
>	In	115	490708.4	0.7				ug/L	507261	Standard
	Sn	118	1108.4	12.3	**0.0991**	0.025	25.0	ug/L	683	Standard
	Sb	123	526.3	24.2	**0.1063**	0.030	28.1	ug/L	446	Standard
	Ba	135	56034.1	1.2	**30.4523**	0.347	1.1	ug/L	28	Standard
	Ce	140	32763.7	1.0				ug/L	33	Standard
>	Tb	159	795920.7	1.3				ug/L	800803	Standard
	Ho	165	1490.1	6.0				ug/L	10	Standard
	Tl	203	1153.0	2.9	**0.1924**	0.005	2.8	ug/L	13	Standard
	Tl	205	1041.7	17.1	**0.2084**	0.028	13.6	ug/L	13	Standard
	Pb	206	9848.9	2.0	**2.1134**	0.031	1.5	ug/L	226	Standard
	Pb	207	8248.6	1.8	**1.9517**	0.020	1.0	ug/L	204	Standard
	Pb	208	34195.5	0.8	**2.0245**	0.016	0.8	ug/L	852	Standard
	U	238	19291.3	1.0	**3.1243**	0.008	0.3	ug/L	13	Standard
>	Bi	209	425624.2	1.2				ug/L	449044	Standard

Sample ID: L1606131308
Report Date/Time: Wednesday, July 06, 2016 13:13:20
Page 1

Approved: July 07, 2016

Na	23	11.7	24.7	**50.8395**	15.486	30.5	mg/L	2	Standard
Mg	24	70599.2	2.2	**89.3675**	1.571	1.8	mg/L	58	Standard
K	39	696.7	9.4	**2.4576**	0.269	10.9	mg/L	27	Standard
Ca	43	1303.4	8.1	**87.3396**	5.961	6.8	mg/L	20	Standard
Fe	54	3302.4	5.0	**2.4661**	0.145	5.9	mg/L	158	Standard
Fe	57	1820.1	6.9	**5.0122**	0.320	6.4	mg/L	267	Standard
> **Sc-1**	45	41498.4	1.6				mg/L	38815	Standard
Cl	35	155745.8	0.9				ug/L	57611	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	21044.6	6.1				ug/L	1617	Standard
P	31	23146.0	0.9				ug/L	19244	Standard
S	34	3535.4	4.1				ug/L	3557	Standard
Sr	88	1208.4	2.4				ug/L	65	Standard
C	12	123.3	49.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	86.6				mg/L	23	Standard
Dy	164	2373.5	4.1				mg/L	13	Standard
Ho-1	165	1490.1	6.0				mg/L	10	Standard
Er	166	1113.4	3.4				mg/L	13	Standard
I	127	189431.0	7.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.782	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131308
Report Date/Time: Wednesday, July 06, 2016 13:13:20
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.737
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.785
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606131308
Report Date/Time: Wednesday, July 06, 2016 13:13:20
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131309
Sample Date/Time: Wednesday, July 06, 2016 13:14:15
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112009.2	1.2				ug/L	68501	Standard
	Be	9	11.7	89.2	**0.0273**	0.007	25.8	ug/L	8	Standard
	Al	27	60416903.1	0.9	**260.2685**	0.699	0.3	ug/L	1397	Standard
	Sc	45	40617.7	2.9				ug/L	38815	Standard
	Ti	47	233.7	12.0	**0.6551**	0.079	12.0	ug/L	36	Standard
	V	51	2902.2	5.1	**0.2606**	0.020	7.8	ug/L	1284	Standard
	Cr	52	10576.4	0.2	**0.5745**	0.006	1.0	ug/L	6503	Standard
	Cr	53	935.0	8.0	**0.6514**	0.081	12.4	ug/L	492	Standard
	Mn	55	366630.7	1.4	**58.7416**	0.775	1.3	ug/L	841	Standard
	Co	59	1672.1	6.1	**0.2774**	0.017	6.1	ug/L	229	Standard
	Ni	60	5612.4	2.4	**3.1269**	0.078	2.5	ug/L	344	Standard
	Cu	65	3260.7	3.2	**1.8987**	0.055	2.9	ug/L	115	Standard
	Zn	66	2963.3	1.2	**2.7722**	0.047	1.7	ug/L	190	Standard
>	**Ge**	72	417618.5	0.4				ug/L	409858	Standard
	As	75	338.7	3.7	**0.4195**	0.011	2.6	ug/L	-22	Standard
	Se	82	165.1	4.0	**1.4829**	0.064	4.3	ug/L	18	Standard
	Se-1	77	92.0	7.5	**0.5522**	0.098	17.7	ug/L	50	Standard
>	**Ga**	71	76.7	32.2				mg/L	97	Standard
	Rb	85	9524.7	2.8				ug/L	25	Standard
	Y	89	362464.7	1.2				ug/L	376763	Standard
>	**Rh**	103	398.3	9.4				ug/L	20	Standard
	Mo	98	52319.0	0.7	**22.4021**	0.342	1.5	ug/L	51	Standard
	Ag	107	111.0	7.0	**0.0414**	0.001	2.8	ug/L	76	Standard
	Cd	111	66.3	40.6	**0.0737**	0.014	18.5	mg/L	6	Standard
	Cd	114	308.8	11.5	**0.1029**	0.008	7.4	ug/L	18	Standard
>	**In**	115	492839.5	0.9				ug/L	507261	Standard
	Sn	118	665.0	17.0	**0.0148**	0.020	136.3	ug/L	683	Standard
	Sb	123	764.7	12.4	**0.1630**	0.021	13.0	ug/L	446	Standard
	Ba	135	9741.8	0.6	**5.2844**	0.019	0.4	ug/L	28	Standard
	Ce	140	305.0	27.4				ug/L	33	Standard
>	**Tb**	159	798779.4	1.0				ug/L	800803	Standard
	Ho	165	31.7	39.7				ug/L	10	Standard
	Tl	203	781.0	0.8	**0.1406**	0.001	0.7	ug/L	13	Standard
	Tl	205	756.7	10.9	**0.1626**	0.013	8.1	ug/L	13	Standard
	Pb	206	357.0	22.6	**0.0724**	0.017	23.9	ug/L	226	Standard
	Pb	207	331.7	30.7	**0.0771**	0.024	31.2	ug/L	204	Standard
	Pb	208	1314.7	25.2	**0.0776**	0.020	25.3	ug/L	852	Standard
	U	238	20801.9	1.6	**3.3517**	0.050	1.5	ug/L	13	Standard
>	**Bi**	209	427402.4	0.1				ug/L	449044	Standard

Sample ID: L1606131309
Report Date/Time: Wednesday, July 06, 2016 13:16:31
Page 1

Approved: July 07, 2016

Na	23	13.3	114.6	**62.0110**	82.574	133.2	mg/L	2	Standard
Mg	24	78283.4	0.8	**101.3167**	3.674	3.6	mg/L	58	Standard
K	39	796.7	7.0	**2.8989**	0.304	10.5	mg/L	27	Standard
Ca	43	1360.1	8.5	**93.1611**	5.461	5.9	mg/L	20	Standard
Fe	54	138.6	19.3	**-0.0090**	0.023	257.3	mg/L	158	Standard
Fe	57	1113.4	5.6	**2.8774**	0.101	3.5	mg/L	267	Standard
> **Sc-1**	45	40617.7	2.9				mg/L	38815	Standard
Cl	35	174591.6	1.3				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	22737.1	1.6				ug/L	1617	Standard
P	31	22062.7	1.2				ug/L	19244	Standard
S	34	3545.4	4.9				ug/L	3557	Standard
Sr	88	1375.1	2.5				ug/L	65	Standard
C	12	143.3	17.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	35.1	42.2				mg/L	13	Standard
Ho-1	165	31.7	39.7				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	13	Standard
I	127	145904.3	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		163.514	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.893	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131309
Report Date/Time: Wednesday, July 06, 2016 13:16:31
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.157
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.181
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606131309
Report Date/Time: Wednesday, July 06, 2016 13:16:31
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131310
Sample Date/Time: Wednesday, July 06, 2016 13:17:26
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	106268.1	1.4				ug/L	68501	Standard
	Be	9	63.3	38.9	**0.0644**	0.017	26.8	ug/L	8	Standard
	Al	27	52095911.6	1.1	**236.5686**	3.641	1.5	ug/L	1397	Standard
	Sc	45	39504.8	2.4				ug/L	38815	Standard
	Ti	47	3313.4	1.4	**9.7590**	0.120	1.2	ug/L	36	Standard
	V	51	18247.3	0.4	**2.4270**	0.009	0.4	ug/L	1284	Standard
	Cr	52	21880.5	1.2	**2.2188**	0.034	1.6	ug/L	6503	Standard
	Cr	53	2420.2	1.3	**2.3803**	0.041	1.7	ug/L	492	Standard
	Mn	55	1489117.7	1.3	**241.3594**	3.092	1.3	ug/L	841	Standard
	Co	59	7567.6	1.7	**1.2490**	0.022	1.8	ug/L	229	Standard
	Ni	60	6846.2	2.0	**3.8905**	0.085	2.2	ug/L	344	Standard
	Cu	65	3759.5	2.6	**2.2142**	0.059	2.6	ug/L	115	Standard
	Zn	66	21879.1	1.2	**21.4117**	0.233	1.1	ug/L	190	Standard
>	**Ge**	72	413331.3	0.2				ug/L	409858	Standard
	As	75	501.1	13.5	**0.5781**	0.064	11.1	ug/L	-22	Standard
	Se	82	133.9	9.5	**1.2055**	0.119	9.9	ug/L	18	Standard
	Se-1	77	81.7	12.7	**0.4168**	0.148	35.4	ug/L	50	Standard
>	**Ga**	71	2415.2	7.5				mg/L	97	Standard
	Rb	85	13447.6	2.0				ug/L	25	Standard
	Y	89	375082.1	2.0				ug/L	376763	Standard
>	**Rh**	103	300.0	16.9				ug/L	20	Standard
	Mo	98	77032.6	1.1	**32.9500**	0.312	0.9	ug/L	51	Standard
	Ag	107	104.0	8.3	**0.0403**	0.001	3.4	ug/L	76	Standard
	Cd	111	84.0	6.5	**0.0830**	0.003	3.8	mg/L	6	Standard
	Cd	114	521.9	11.1	**0.1480**	0.011	7.6	ug/L	18	Standard
>	**In**	115	492807.2	0.8				ug/L	507261	Standard
	Sn	118	923.4	10.2	**0.0635**	0.017	26.7	ug/L	683	Standard
	Sb	123	509.4	21.5	**0.1018**	0.026	25.1	ug/L	446	Standard
	Ba	135	49536.5	1.3	**26.8113**	0.563	2.1	ug/L	28	Standard
	Ce	140	27353.0	2.7				ug/L	33	Standard
>	**Tb**	159	798757.9	0.8				ug/L	800803	Standard
	Ho	165	1208.4	4.8				ug/L	10	Standard
	Tl	203	1080.7	2.6	**0.1803**	0.004	2.2	ug/L	13	Standard
	Tl	205	941.7	9.1	**0.1904**	0.013	7.0	ug/L	13	Standard
	Pb	206	8916.3	0.4	**1.8863**	0.006	0.3	ug/L	226	Standard
	Pb	207	7376.8	1.2	**1.7210**	0.025	1.4	ug/L	204	Standard
	Pb	208	30608.2	0.4	**1.7869**	0.009	0.5	ug/L	852	Standard
	U	238	18463.6	1.5	**2.9510**	0.048	1.6	ug/L	13	Standard
>	**Bi**	209	431634.5	0.2				ug/L	449044	Standard

Sample ID: L1606131310
Report Date/Time: Wednesday, July 06, 2016 13:19:43
Page 1

Approved: July 07, 2016

Na	23	13.3	57.3	**62.5936**	41.262	65.9	mg/L	2	Standard
Mg	24	69025.2	2.0	**91.8053**	2.126	2.3	mg/L	58	Standard
K	39	646.7	2.5	**2.3927**	0.113	4.7	mg/L	27	Standard
Ca	43	1190.0	3.7	**83.7533**	1.325	1.6	mg/L	20	Standard
Fe	54	2913.4	1.1	**2.2771**	0.083	3.6	mg/L	158	Standard
Fe	57	1741.8	2.1	**5.0459**	0.132	2.6	mg/L	267	Standard
> **Sc-1**	45	39504.8	2.4				mg/L	38815	Standard
Cl	35	159194.6	0.7				ug/L	57611	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	17703.7	0.6				ug/L	1617	Standard
P	31	21099.7	2.5				ug/L	19244	Standard
S	34	3588.8	1.7				ug/L	3557	Standard
Sr	88	1331.7	11.3				ug/L	65	Standard
C	12	116.7	9.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	13.3				mg/L	23	Standard
Dy	164	2016.1	16.6				mg/L	13	Standard
Ho-1	165	1208.4	4.8				mg/L	10	Standard
Er	166	920.0	8.6				mg/L	13	Standard
I	127	174842.2	7.9				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		155.133	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.847	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606131310
Report Date/Time: Wednesday, July 06, 2016 13:19:43
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.151	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.123	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606131310
Report Date/Time: Wednesday, July 06, 2016 13:19:43
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131311
Sample Date/Time: Wednesday, July 06, 2016 13:20:37
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	118945.1	1.5				ug/L	68501	Standard
	Be	9	20.0	75.0	**0.0321**	0.009	29.1	ug/L	8	Standard
	Al	27	59847300.9	2.0	**242.8152**	6.040	2.5	ug/L	1397	Standard
	Sc	45	40133.1	1.7				ug/L	38815	Standard
	Ti	47	250.0	3.8	**0.7024**	0.019	2.7	ug/L	36	Standard
	V	51	2763.5	2.9	**0.2410**	0.007	2.7	ug/L	1284	Standard
	Cr	52	10665.1	1.1	**0.5862**	0.006	1.1	ug/L	6503	Standard
	Cr	53	901.7	5.9	**0.6125**	0.051	8.3	ug/L	492	Standard
	Mn	55	321677.0	3.2	**51.4864**	0.989	1.9	ug/L	841	Standard
	Co	59	1652.1	4.6	**0.2739**	0.009	3.4	ug/L	229	Standard
	Ni	60	5762.4	1.4	**3.2127**	0.047	1.5	ug/L	344	Standard
	Cu	65	3074.6	2.7	**1.7884**	0.032	1.8	ug/L	115	Standard
	Zn	66	2723.6	3.0	**2.5374**	0.093	3.7	ug/L	190	Standard
>	**Ge**	72	417885.3	1.3				ug/L	409858	Standard
	As	75	346.6	6.8	**0.4267**	0.019	4.6	ug/L	-22	Standard
	Se	82	150.0	1.7	**1.3415**	0.014	1.1	ug/L	18	Standard
	Se-1	77	80.3	7.3	**0.3848**	0.073	18.9	ug/L	50	Standard
>	**Ga**	71	56.7	25.5				mg/L	97	Standard
	Rb	85	9339.5	2.6				ug/L	25	Standard
	Y	89	365791.3	0.7				ug/L	376763	Standard
>	**Rh**	103	375.0	15.0				ug/L	20	Standard
	Mo	98	48799.1	2.4	**20.6077**	0.295	1.4	ug/L	51	Standard
	Ag	107	106.3	18.5	**0.0404**	0.003	7.0	ug/L	76	Standard
	Cd	111	51.0	31.1	**0.0653**	0.008	11.7	mg/L	6	Standard
	Cd	114	304.0	25.3	**0.1009**	0.016	15.7	ug/L	18	Standard
>	**In**	115	499809.1	2.0				ug/L	507261	Standard
	Sn	118	658.3	6.1	**0.0119**	0.005	43.2	ug/L	683	Standard
	Sb	123	517.5	16.7	**0.1024**	0.023	22.2	ug/L	446	Standard
	Ba	135	9295.5	1.5	**4.9733**	0.035	0.7	ug/L	28	Standard
	Ce	140	326.7	10.2				ug/L	33	Standard
>	**Tb**	159	803773.3	0.9				ug/L	800803	Standard
	Ho	165	38.3	66.9				ug/L	10	Standard
	Tl	203	761.0	2.1	**0.1360**	0.001	1.0	ug/L	13	Standard
	Tl	205	746.7	8.7	**0.1588**	0.009	5.9	ug/L	13	Standard
	Pb	206	396.3	12.6	**0.0792**	0.010	12.4	ug/L	226	Standard
	Pb	207	324.7	4.8	**0.0741**	0.003	4.6	ug/L	204	Standard
	Pb	208	1389.7	4.7	**0.0805**	0.003	3.8	ug/L	852	Standard
	U	238	20230.2	0.9	**3.2026**	0.028	0.9	ug/L	13	Standard
>	**Bi**	209	435285.7	0.8				ug/L	449044	Standard

Sample ID: L1606131311
Report Date/Time: Wednesday, July 06, 2016 13:22:54
Page 1

Approved: July 07, 2016

Na	23	8.3	69.3	**35.2289**	30.621	86.9	mg/L	2	Standard
Mg	24	76150.9	0.8	**99.6881**	0.997	1.0	mg/L	58	Standard
K	39	673.3	8.3	**2.4572**	0.258	10.5	mg/L	27	Standard
Ca	43	1470.1	6.0	**102.1100**	5.109	5.0	mg/L	20	Standard
Fe	54	163.6	6.0	**0.0122**	0.008	61.6	mg/L	158	Standard
Fe	57	1090.0	8.3	**2.8493**	0.334	11.7	mg/L	267	Standard
> **Sc-1**	45	40133.1	1.7				mg/L	38815	Standard
Cl	35	175348.2	1.1				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	22723.7	4.9				ug/L	1617	Standard
P	31	22189.6	0.9				ug/L	19244	Standard
S	34	3623.8	1.4				ug/L	3557	Standard
Sr	88	1358.4	7.2				ug/L	65	Standard
C	12	133.3	38.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	23	Standard
Dy	164	55.7	38.2				mg/L	13	Standard
Ho-1	165	38.3	66.9				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	135084.6	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		173.640	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.959	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131311
Report Date/Time: Wednesday, July 06, 2016 13:22:54
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.531	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.936	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606131311
Report Date/Time: Wednesday, July 06, 2016 13:22:54
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131312
Sample Date/Time: Wednesday, July 06, 2016 13:23:49
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74687.0	2.1				ug/L	68501	Standard
	Be	9	21.7	58.1	**0.0412**	0.012	30.1	ug/L	8	Standard
	Al	27	121226.9	4.1	**0.8180**	0.021	2.6	ug/L	1397	Standard
	Sc	45	46195.4	5.0				ug/L	38815	Standard
	Ti	47	1765.8	3.6	**5.0716**	0.166	3.3	ug/L	36	Standard
	V	51	952242.6	1.1	**131.0501**	0.792	0.6	ug/L	1284	Standard
	Cr	52	25163.5	1.1	**2.6112**	0.016	0.6	ug/L	6503	Standard
	Cr	53	3345.4	2.9	**3.3642**	0.111	3.3	ug/L	492	Standard
	Mn	55	22524.4	1.1	**3.4752**	0.031	0.9	ug/L	841	Standard
	Co	59	1867.8	4.0	**0.3055**	0.010	3.4	ug/L	229	Standard
	Ni	60	2889.9	0.3	**1.5131**	0.005	0.3	ug/L	344	Standard
	Cu	65	15427.2	0.5	**8.9242**	0.052	0.6	ug/L	115	Standard
	Zn	66	2837.6	3.0	**2.6163**	0.082	3.1	ug/L	190	Standard
>	**Ge**	72	422725.3	0.6				ug/L	409858	Standard
	As	75	83342.9	0.8	**78.0495**	0.213	0.3	ug/L	-22	Standard
	Se	82	1406.5	2.7	**12.8586**	0.427	3.3	ug/L	18	Standard
	Se-1	77	976.4	1.2	**12.9889**	0.247	1.9	ug/L	50	Standard
>	**Ga**	71	7822.0	4.1				mg/L	97	Standard
	Rb	85	9009.3	3.0				ug/L	25	Standard
	Y	89	365311.7	1.0				ug/L	376763	Standard
>	**Rh**	103	25.0	103.9				ug/L	20	Standard
	Mo	98	102838.5	0.2	**43.0255**	0.171	0.4	ug/L	51	Standard
	Ag	107	207.7	3.4	**0.0566**	0.001	2.0	ug/L	76	Standard
	Cd	111	-42.9	18.2	**0.0176**	0.004	22.6	mg/L	6	Standard
	Cd	114	287.6	3.5	**0.0971**	0.002	2.3	ug/L	18	Standard
>	**In**	115	503572.6	0.2				ug/L	507261	Standard
	Sn	118	1271.7	5.8	**0.1239**	0.014	11.4	ug/L	683	Standard
	Sb	123	6992.3	1.3	**1.6218**	0.024	1.5	ug/L	446	Standard
	Ba	135	6974.3	1.1	**3.7072**	0.039	1.0	ug/L	28	Standard
	Ce	140	9868.2	2.8				ug/L	33	Standard
>	**Tb**	159	803443.7	0.1				ug/L	800803	Standard
	Ho	165	190.0	16.4				ug/L	10	Standard
	Tl	203	56.3	5.7	**0.0407**	0.000	1.1	ug/L	13	Standard
	Tl	205	45.0	48.4	**0.0493**	0.003	6.6	ug/L	13	Standard
	Pb	206	1400.1	2.2	**0.2825**	0.008	2.8	ug/L	226	Standard
	Pb	207	1130.4	1.0	**0.2536**	0.002	0.8	ug/L	204	Standard
	Pb	208	4754.6	0.4	**0.2680**	0.003	1.1	ug/L	852	Standard
	U	238	139.3	1.5	**0.0638**	0.000	0.3	ug/L	13	Standard
>	**Bi**	209	447272.3	0.8				ug/L	449044	Standard

Sample ID: L1606131312
Report Date/Time: Wednesday, July 06, 2016 13:26:06
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.5275**	12.566	822.6	mg/L	2	Standard
Mg	24	80273.8	0.4	**91.4367**	4.664	5.1	mg/L	58	Standard
K	39	151.7	22.0	**0.3638**	0.088	24.1	mg/L	27	Standard
Ca	43	53.3	28.6	**2.0171**	1.102	54.7	mg/L	20	Standard
Fe	54	330.9	19.8	**0.1145**	0.058	50.5	mg/L	158	Standard
Fe	57	306.7	7.4	**0.1824**	0.050	27.7	mg/L	267	Standard
> **Sc-1**	45	46195.4	5.0				mg/L	38815	Standard
Cl	35	70691.9	1.4				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	6874.9	2.4				ug/L	1617	Standard
P	31	43087.9	1.6				ug/L	19244	Standard
S	34	3130.3	1.7				ug/L	3557	Standard
Sr	88	113.3	11.1				ug/L	65	Standard
C	12	116.7	38.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	23	Standard
Dy	164	362.7	17.1				mg/L	13	Standard
Ho-1	165	190.0	16.4				mg/L	10	Standard
Er	166	153.3	7.5				mg/L	13	Standard
I	127	18636.5	0.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.030	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.139	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131312
Report Date/Time: Wednesday, July 06, 2016 13:26:06
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.605
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	

Sample ID: L1606131312
Report Date/Time: Wednesday, July 06, 2016 13:26:06
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131313
Sample Date/Time: Wednesday, July 06, 2016 13:27:00
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74881.2	0.3				ug/L	68501	Standard
	Be	9	18.3	56.8	**0.0379**	0.010	27.6	ug/L	8	Standard
	Al	27	15759.9	6.9	**0.1366**	0.007	5.1	ug/L	1397	Standard
	Sc	45	44047.3	0.7				ug/L	38815	Standard
	Ti	47	750.4	1.3	**2.1655**	0.009	0.4	ug/L	36	Standard
	V	51	807233.0	1.0	**112.4283**	1.823	1.6	ug/L	1284	Standard
	Cr	52	22355.5	1.3	**2.2538**	0.026	1.1	ug/L	6503	Standard
	Cr	53	2878.6	7.2	**2.8773**	0.265	9.2	ug/L	492	Standard
	Mn	55	2539.5	0.9	**0.3116**	0.003	1.1	ug/L	841	Standard
	Co	59	1098.0	3.2	**0.1840**	0.005	2.8	ug/L	229	Standard
	Ni	60	2191.8	3.9	**1.1252**	0.061	5.4	ug/L	344	Standard
	Cu	65	13147.4	0.4	**7.6957**	0.046	0.6	ug/L	115	Standard
	Zn	66	1622.1	3.7	**1.4659**	0.055	3.8	ug/L	190	Standard
>	**Ge**	72	417667.4	0.9				ug/L	409858	Standard
	As	75	65646.2	1.0	**62.2459**	0.908	1.5	ug/L	-22	Standard
	Se	82	1281.5	2.7	**11.8523**	0.347	2.9	ug/L	18	Standard
	Se-1	77	877.4	3.0	**11.7424**	0.290	2.5	ug/L	50	Standard
>	**Ga**	71	7043.3	2.2				mg/L	97	Standard
	Rb	85	6473.1	4.8				ug/L	25	Standard
	Y	89	361539.6	1.0				ug/L	376763	Standard
>	**Rh**	103	35.0	28.6				ug/L	20	Standard
	Mo	98	91857.5	1.2	**38.8302**	0.319	0.8	ug/L	51	Standard
	Ag	107	120.0	5.2	**0.0427**	0.001	2.5	ug/L	76	Standard
	Cd	111	-68.2	22.5	**0.0044**	0.008	181.8	mg/L	6	Standard
	Cd	114	168.6	5.8	**0.0727**	0.002	2.6	ug/L	18	Standard
>	**In**	115	498500.3	1.2				ug/L	507261	Standard
	Sn	118	985.0	10.5	**0.0729**	0.018	24.8	ug/L	683	Standard
	Sb	123	5971.7	3.5	**1.3968**	0.062	4.5	ug/L	446	Standard
	Ba	135	5602.4	1.3	**3.0115**	0.051	1.7	ug/L	28	Standard
	Ce	140	348.3	13.0				ug/L	33	Standard
>	**Tb**	159	797835.4	0.2				ug/L	800803	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	31.3	7.4	**0.0375**	0.000	0.8	ug/L	13	Standard
	Tl	205	36.7	34.3	**0.0482**	0.002	4.0	ug/L	13	Standard
	Pb	206	352.7	5.6	**0.0690**	0.004	5.6	ug/L	226	Standard
	Pb	207	319.7	1.3	**0.0718**	0.001	1.6	ug/L	204	Standard
	Pb	208	1334.7	4.5	**0.0761**	0.004	4.8	ug/L	852	Standard
	U	238	71.3	19.4	**0.0536**	0.002	4.0	ug/L	13	Standard
>	**Bi**	209	442170.6	0.3				ug/L	449044	Standard

Sample ID: L1606131313
Report Date/Time: Wednesday, July 06, 2016 13:29:17
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.8330**	13.769	1652.9	mg/L	2	Standard
Mg	24	73682.1	1.9	**87.8782**	2.088	2.4	mg/L	58	Standard
K	39	131.7	28.8	**0.3201**	0.130	40.5	mg/L	27	Standard
Ca	43	48.3	39.2	**1.8220**	1.221	67.0	mg/L	20	Standard
Fe	54	173.2	27.4	**0.0076**	0.035	465.1	mg/L	158	Standard
Fe	57	268.3	19.1	**0.1117**	0.154	137.8	mg/L	267	Standard
> **Sc-1**	45	44047.3	0.7				mg/L	38815	Standard
Cl	35	68623.1	1.0				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	6154.6	8.4				ug/L	1617	Standard
P	31	39404.5	1.6				ug/L	19244	Standard
S	34	3313.7	8.1				ug/L	3557	Standard
Sr	88	98.3	14.7				ug/L	65	Standard
C	12	103.3	59.1				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	93.3	27.0				mg/L	23	Standard
Dy	164	16.0	73.0				mg/L	13	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	16884.4	1.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.314	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.905	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131313
Report Date/Time: Wednesday, July 06, 2016 13:29:17
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.469
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	

Sample ID: L1606131313
Report Date/Time: Wednesday, July 06, 2016 13:29:17
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131314
Sample Date/Time: Wednesday, July 06, 2016 13:30:12
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75656.9	2.8				ug/L	68501	Standard
	Be	9	15.0	33.3	**0.0345**	0.005	15.6	ug/L	8	Standard
	Al	27	14080.0	14.5	**0.1247**	0.011	8.5	ug/L	1397	Standard
	Sc	45	41217.7	1.6				ug/L	38815	Standard
	Ti	47	52.3	16.0	**0.1193**	0.023	19.3	ug/L	36	Standard
	V	51	1921.9	1.9	**0.1137**	0.005	4.1	ug/L	1284	Standard
	Cr	52	10025.0	1.0	**0.4416**	0.001	0.3	ug/L	6503	Standard
	Cr	53	720.0	11.6	**0.3743**	0.092	24.7	ug/L	492	Standard
	Mn	55	2755.6	1.7	**0.3296**	0.011	3.2	ug/L	841	Standard
	Co	59	220.0	2.7	**0.0399**	0.001	3.1	ug/L	229	Standard
	Ni	60	727.0	7.2	**0.2514**	0.026	10.3	ug/L	344	Standard
	Cu	65	392.3	0.5	**0.2081**	0.003	1.5	ug/L	115	Standard
	Zn	66	1867.1	2.7	**1.6357**	0.048	2.9	ug/L	190	Standard
>	**Ge**	72	434092.3	1.0				ug/L	409858	Standard
	As	75	-44.4	23.2	**0.0584**	0.009	16.0	ug/L	-22	Standard
	Se	82	16.6	20.7	**0.0974**	0.032	32.9	ug/L	18	Standard
	Se-1	77	53.7	22.5	**-0.0223**	0.171	769.3	ug/L	50	Standard
>	**Ga**	71	60.0					mg/L	97	Standard
	Rb	85	51.7	20.1				ug/L	25	Standard
	Y	89	374010.2	1.0				ug/L	376763	Standard
>	**Rh**	103	26.7	39.0				ug/L	20	Standard
	Mo	98	123.9	8.7	**0.1214**	0.005	3.7	ug/L	51	Standard
	Ag	107	66.0	4.0	**0.0334**	0.000	1.2	ug/L	76	Standard
	Cd	111	8.1	26.0	**0.0433**	0.001	2.4	mg/L	6	Standard
	Cd	114	20.3	63.2	**0.0414**	0.003	6.3	ug/L	18	Standard
>	**In**	115	522826.6	0.6				ug/L	507261	Standard
	Sn	118	671.7	15.4	**0.0090**	0.019	209.6	ug/L	683	Standard
	Sb	123	373.8	29.8	**0.0643**	0.026	39.9	ug/L	446	Standard
	Ba	135	367.3	10.7	**0.2030**	0.020	10.1	ug/L	28	Standard
	Ce	140	70.0	24.7				ug/L	33	Standard
>	**Tb**	159	816297.7	0.4				ug/L	800803	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	12.7	43.5	**0.0349**	0.001	2.0	ug/L	13	Standard
	Tl	205	10.0	86.6	**0.0440**	0.001	2.8	ug/L	13	Standard
	Pb	206	293.7	4.0	**0.0530**	0.003	4.9	ug/L	226	Standard
	Pb	207	253.3	4.7	**0.0531**	0.003	5.5	ug/L	204	Standard
	Pb	208	1091.0	0.9	**0.0584**	0.000	0.3	ug/L	852	Standard
	U	238	6.3	39.7	**0.0435**	0.000	0.8	ug/L	13	Standard
>	**Bi**	209	471129.2	0.7				ug/L	449044	Standard

Sample ID: L1606131314
Report Date/Time: Wednesday, July 06, 2016 13:32:29
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	81.7	9.4	**0.0659**	0.011	17.4	mg/L	58	Standard
K	39	40.0	33.1	**0.0087**	0.051	587.7	mg/L	27	Standard
Ca	43	40.0	33.1	**1.4722**	0.959	65.1	mg/L	20	Standard
Fe	54	165.4	13.6	**0.0102**	0.017	169.3	mg/L	158	Standard
Fe	57	263.3	9.6	**0.1498**	0.077	51.2	mg/L	267	Standard
> **Sc-1**	45	41217.7	1.6				mg/L	38815	Standard
Cl	35	74398.3	2.1				ug/L	57611	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1870.1	8.9				ug/L	1617	Standard
P	31	20320.3	3.0				ug/L	19244	Standard
S	34	3478.7	2.9				ug/L	3557	Standard
Sr	88	58.3	13.1				ug/L	65	Standard
C	12	96.7	26.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	23	Standard
Dy	164	9.4	186.5				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	11277.5	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.446	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.913	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131314
Report Date/Time: Wednesday, July 06, 2016 13:32:29
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.069
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.918
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 13:33:25
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71032.9	3.2				ug/L	68501	Standard
	Be	9	49644.6	3.8	**52.7590**	0.376	0.7	ug/L	8	Standard
	Al	27	7276045.0	3.6	**49.4520**	0.759	1.5	ug/L	1397	Standard
	Sc	45	40617.7	1.7				ug/L	38815	Standard
	Ti	47	36592.1	1.5	**104.2643**	1.312	1.3	ug/L	36	Standard
	V	51	380028.6	1.4	**51.5285**	0.926	1.8	ug/L	1284	Standard
	Cr	52	378060.1	1.4	**51.6245**	0.410	0.8	ug/L	6503	Standard
	Cr	53	45820.9	0.9	**50.7151**	0.800	1.6	ug/L	492	Standard
	Mn	55	335783.4	1.7	**52.4367**	0.457	0.9	ug/L	841	Standard
	Co	59	330610.2	0.8	**52.4262**	0.501	1.0	ug/L	229	Standard
	Ni	60	89641.1	1.9	**50.9842**	0.470	0.9	ug/L	344	Standard
	Cu	65	88949.4	1.9	**50.8351**	0.479	0.9	ug/L	115	Standard
	Zn	66	54236.6	1.5	**51.3717**	0.389	0.8	ug/L	190	Standard
>	**Ge**	72	428368.8	1.0				ug/L	409858	Standard
	As	75	55183.0	1.9	**51.0293**	0.514	1.0	ug/L	-22	Standard
	Se	82	5609.7	2.2	**50.7497**	0.648	1.3	ug/L	18	Standard
	Se-1	77	3726.5	0.8	**51.0205**	0.660	1.3	ug/L	50	Standard
>	**Ga**	71	75.0	26.7				mg/L	97	Standard
	Rb	85	798.4	0.7				ug/L	25	Standard
	Y	89	365913.3	1.8				ug/L	376763	Standard
>	**Rh**	103	31.7	45.6				ug/L	20	Standard
	Mo	98	252415.2	0.3	**103.5648**	0.413	0.4	ug/L	51	Standard
	Ag	107	322419.8	1.3	**51.0968**	0.426	0.8	ug/L	76	Standard
	Cd	111	102425.7	0.7	**51.0729**	0.119	0.2	mg/L	6	Standard
	Cd	114	248750.6	1.3	**50.7350**	0.434	0.9	ug/L	18	Standard
>	**In**	115	512998.2	0.5				ug/L	507261	Standard
	Sn	118	281858.1	1.8	**50.8022**	0.706	1.4	ug/L	683	Standard
	Sb	123	224590.4	2.0	**51.7546**	0.851	1.6	ug/L	446	Standard
	Ba	135	96967.3	0.4	**50.3975**	0.124	0.2	ug/L	28	Standard
	Ce	140	76.7	22.9				ug/L	33	Standard
>	**Tb**	159	807610.1	1.2				ug/L	800803	Standard
	Ho	165	13.3	108.3				ug/L	10	Standard
	Tl	203	402371.9	0.7	**51.2061**	0.338	0.7	ug/L	13	Standard
	Tl	205	361232.2	0.6	**53.0904**	0.997	1.9	ug/L	13	Standard
	Pb	206	258336.1	0.4	**51.2021**	0.466	0.9	ug/L	226	Standard
	Pb	207	236173.9	1.0	**51.5463**	0.597	1.2	ug/L	204	Standard
	Pb	208	955448.1	0.9	**52.1465**	0.509	1.0	ug/L	852	Standard
	U	238	353176.6	0.8	**52.0549**	0.397	0.8	ug/L	13	Standard
>	**Bi**	209	461695.2	1.3				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 13:35:42
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.0060**	15.20	254926.2	mg/L	2	Standard
Mg	24	3982.2	7.2	**5.1131**	0.347	6.8	mg/L	58	Standard
K	39	1251.7	4.8	**4.6283**	0.271	5.8	mg/L	27	Standard
Ca	43	98.3	10.6	**5.5607**	0.773	13.9	mg/L	20	Standard
Fe	54	6182.6	4.1	**4.8281**	0.276	5.7	mg/L	158	Standard
Fe	57	1796.8	8.3	**5.0597**	0.384	7.6	mg/L	267	Standard
> **Sc-1**	45	40617.7	1.7				mg/L	38815	Standard
Cl	35	71016.7	1.7				ug/L	57611	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1816.8	11.3				ug/L	1617	Standard
P	31	20987.9	2.4				ug/L	19244	Standard
S	34	3898.8	3.0				ug/L	3557	Standard
Sr	88	63.3	88.7				ug/L	65	Standard
C	12	73.3	20.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	23	Standard
Dy	164	12.5	122.8				mg/L	13	Standard
Ho-1	165	13.3	108.3				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	9928.3	0.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.518		
Al	27	98.904		
Sc	45			
Ti	47	104.264		
V	51	103.057		
Cr	52	103.249		
Cr	53			
Mn	55	104.873		
Co	59	104.852		
Ni	60	101.968		
Cu	65	101.670		
Zn	66	102.743		
> Ge	72		104.516	
As	75	102.059		
Se	82	101.499		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 13:35:42
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	103.565		
Ag	107	102.194		
Cd	111	102.146		
Cd	114			
In	115			101.131
Sn	118	101.604		
Sb	123	103.509		
Ba	135	100.795		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.412		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.293		
U	238	104.110		
Bi	209			102.817
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 13:35:42
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 13:36:36
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70170.6	3.6				ug/L	68501	Standard
	Be	9	20.0	66.1	**0.0408**	0.014	34.6	ug/L	8	Standard
	Al	27	4097.2	22.8	**0.0631**	0.005	8.6	ug/L	1397	Standard
	Sc	45	40888.4	1.6				ug/L	38815	Standard
	Ti	47	36.7	15.0	**0.0775**	0.016	20.6	ug/L	36	Standard
	V	51	1298.2	6.1	**0.0337**	0.009	26.1	ug/L	1284	Standard
	Cr	52	6730.8	1.5	**0.0096**	0.023	239.8	ug/L	6503	Standard
	Cr	53	421.7	5.3	**0.0558**	0.029	51.7	ug/L	492	Standard
	Mn	55	951.7	0.7	**0.0542**	0.001	2.6	ug/L	841	Standard
	Co	59	222.3	4.9	**0.0410**	0.001	3.3	ug/L	229	Standard
	Ni	60	546.3	4.0	**0.1564**	0.009	5.7	ug/L	344	Standard
	Cu	65	169.3	14.7	**0.0843**	0.015	17.4	ug/L	115	Standard
	Zn	66	237.0	4.9	**0.1134**	0.013	11.2	ug/L	190	Standard
>	**Ge**	72	425017.2	1.2				ug/L	409858	Standard
	As	75	-56.5	37.0	**0.0462**	0.020	43.5	ug/L	-22	Standard
	Se	82	18.8	28.9	**0.1200**	0.050	41.3	ug/L	18	Standard
	Se-1	77	56.7	22.1	**0.0358**	0.184	513.5	ug/L	50	Standard
>	**Ga**	71	38.3	32.8				mg/L	97	Standard
	Rb	85	21.7	58.1				ug/L	25	Standard
	Y	89	373106.6	0.9				ug/L	376763	Standard
>	**Rh**	103	11.7	24.7				ug/L	20	Standard
	Mo	98	207.2	6.5	**0.1549**	0.006	3.9	ug/L	51	Standard
	Ag	107	99.7	6.4	**0.0386**	0.001	2.3	ug/L	76	Standard
	Cd	111	12.3	44.5	**0.0454**	0.003	5.9	mg/L	6	Standard
	Cd	114	43.6	27.2	**0.0461**	0.002	5.3	ug/L	18	Standard
>	**In**	115	523036.2	0.7				ug/L	507261	Standard
	Sn	118	858.4	20.1	**0.0421**	0.032	74.9	ug/L	683	Standard
	Sb	123	696.7	34.3	**0.1374**	0.055	40.1	ug/L	446	Standard
	Ba	135	33.3	29.6	**0.0327**	0.005	15.2	ug/L	28	Standard
	Ce	140	15.0	100.0				ug/L	33	Standard
>	**Tb**	159	811648.4	1.8				ug/L	800803	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	53.3	18.0	**0.0400**	0.001	3.2	ug/L	13	Standard
	Tl	205	50.0	43.6	**0.0498**	0.003	6.2	ug/L	13	Standard
	Pb	206	260.0	8.8	**0.0469**	0.005	10.7	ug/L	226	Standard
	Pb	207	224.7	4.5	**0.0473**	0.002	3.4	ug/L	204	Standard
	Pb	208	928.0	6.1	**0.0501**	0.003	6.3	ug/L	852	Standard
	U	238	46.7	34.8	**0.0494**	0.002	5.0	ug/L	13	Standard
>	**Bi**	209	467536.0	1.3				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 13:38:53
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	68.3	33.0	**0.0494**	0.029	58.3	mg/L	58	Standard
K	39	21.7	74.2	**-0.0604**	0.059	97.8	mg/L	27	Standard
Ca	43	16.7	34.6	**-0.1281**	0.396	308.9	mg/L	20	Standard
Fe	54	142.5	13.4	**-0.0070**	0.016	223.0	mg/L	158	Standard
Fe	57	210.0	13.3	**-0.0128**	0.088	687.9	mg/L	267	Standard
Sc-1	45	40888.4	1.6				mg/L	38815	Standard
Cl	35	70304.7	0.6				ug/L	57611	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1736.8	5.0				ug/L	1617	Standard
P	31	20357.0	2.1				ug/L	19244	Standard
S	34	3848.8	1.9				ug/L	3557	Standard
Sr	88	75.0	40.6				ug/L	65	Standard
C	12	76.7	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	23	Standard
Dy	164	6.5	179.6				mg/L	13	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	8040.5	0.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.699	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 13:38:53
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.110
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.118
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 13:38:53
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: PBS M3 WG574881-02
Sample Date/Time: Wednesday, July 06, 2016 13:40:17
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68772.5	2.8				ug/L	68501	Standard
	Be	9	26.7	57.3	**0.0485**	0.016	33.3	ug/L	8	Standard
	Al	27	26492.7	43.2	**0.2195**	0.074	33.7	ug/L	1397	Standard
	Sc	45	40814.9	1.9				ug/L	38815	Standard
	Ti	47	68.7	38.8	**0.1678**	0.076	45.2	ug/L	36	Standard
	V	51	1431.9	6.0	**0.0505**	0.012	23.3	ug/L	1284	Standard
	Cr	52	8678.2	2.2	**0.2724**	0.025	9.3	ug/L	6503	Standard
	Cr	53	668.3	1.7	**0.3270**	0.012	3.7	ug/L	492	Standard
	Mn	55	1096.7	5.7	**0.0756**	0.010	12.7	ug/L	841	Standard
	Co	59	218.7	2.3	**0.0401**	0.001	2.1	ug/L	229	Standard
	Ni	60	676.7	1.4	**0.2282**	0.006	2.5	ug/L	344	Standard
	Cu	65	164.7	17.5	**0.0808**	0.016	20.4	ug/L	115	Standard
	Zn	66	1225.4	4.5	**1.0496**	0.052	5.0	ug/L	190	Standard
>	**Ge**	72	428471.9	0.1				ug/L	409858	Standard
	As	75	-34.2	102.1	**0.0673**	0.032	47.9	ug/L	-22	Standard
	Se	82	14.4	31.5	**0.0792**	0.041	51.8	ug/L	18	Standard
	Se-1	77	60.7	4.8	**0.0838**	0.040	47.3	ug/L	50	Standard
>	**Ga**	71	43.3	17.6				mg/L	97	Standard
	Rb	85	50.0	36.1				ug/L	25	Standard
	Y	89	374156.8	0.0				ug/L	376763	Standard
>	**Rh**	103	23.3	32.7				ug/L	20	Standard
	Mo	98	104.8	6.5	**0.1142**	0.003	2.3	ug/L	51	Standard
	Ag	107	77.3	10.5	**0.0353**	0.001	3.5	ug/L	76	Standard
	Cd	111	15.8	51.6	**0.0472**	0.004	8.5	mg/L	6	Standard
	Cd	114	30.5	128.3	**0.0435**	0.008	18.1	ug/L	18	Standard
>	**In**	115	517117.7	0.3				ug/L	507261	Standard
	Sn	118	726.7	15.9	**0.0202**	0.021	104.7	ug/L	683	Standard
	Sb	123	449.3	32.2	**0.0824**	0.033	40.5	ug/L	446	Standard
	Ba	135	85.3	19.1	**0.0597**	0.008	13.9	ug/L	28	Standard
	Ce	140	66.7	18.9				ug/L	33	Standard
>	**Tb**	159	816139.1	1.5				ug/L	800803	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	45.0	46.2	**0.0391**	0.003	6.8	ug/L	13	Standard
	Tl	205	38.3	7.5	**0.0482**	0.000	0.8	ug/L	13	Standard
	Pb	206	268.0	2.2	**0.0490**	0.001	2.8	ug/L	226	Standard
	Pb	207	225.0	13.5	**0.0479**	0.007	14.2	ug/L	204	Standard
	Pb	208	928.3	1.6	**0.0506**	0.000	0.9	ug/L	852	Standard
	U	238	21.7	42.9	**0.0458**	0.001	3.0	ug/L	13	Standard
>	**Bi**	209	462790.3	1.0				ug/L	449044	Standard

Sample ID: PBS M3 WG574881-02
Report Date/Time: Wednesday, July 06, 2016 13:42:34
Page 1

Approved: July 07, 2016

Na	23	3.3	173.2	**8.7117**	30.301	347.8	mg/L	2	Standard
Mg	24	56.7	44.4	**0.0345**	0.033	94.3	mg/L	58	Standard
K	39	21.7	74.2	**-0.0592**	0.062	105.0	mg/L	27	Standard
Ca	43	21.7	26.6	**0.2183**	0.387	177.5	mg/L	20	Standard
Fe	54	122.4	12.5	**-0.0227**	0.013	56.3	mg/L	158	Standard
Fe	57	196.7	8.2	**-0.0536**	0.057	106.8	mg/L	267	Standard
> **Sc-1**	45	40814.9	1.9				mg/L	38815	Standard
Cl	35	70365.0	0.8				ug/L	57611	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1806.8	3.1				ug/L	1617	Standard
P	31	20176.8	1.0				ug/L	19244	Standard
S	34	3830.5	2.6				ug/L	3557	Standard
Sr	88	81.7	30.2				ug/L	65	Standard
C	12	63.3	48.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	9.2	114.0				mg/L	13	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	13672.8	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.396	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.542	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBS M3 WG574881-02
Report Date/Time: Wednesday, July 06, 2016 13:42:34
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.943
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.061
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M3 WG574881-02
Report Date/Time: Wednesday, July 06, 2016 13:42:34
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: LCSS M3 WG574881-03
Sample Date/Time: Wednesday, July 06, 2016 13:43:29
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68990.1	1.8				ug/L	68501	Standard
	Be	9	24376.3	2.4	**26.6849**	0.365	1.4	ug/L	8	Standard
	Al	27	11726.2	9.6	**0.1171**	0.008	6.9	ug/L	1397	Standard
	Sc	45	40908.5	1.7				ug/L	38815	Standard
	Ti	47	51.0	12.2	**0.1170**	0.017	14.3	ug/L	36	Standard
	V	51	192004.5	0.9	**25.8862**	0.288	1.1	ug/L	1284	Standard
	Cr	52	196880.6	0.7	**26.3586**	0.223	0.8	ug/L	6503	Standard
	Cr	53	23802.0	3.1	**26.0705**	1.067	4.1	ug/L	492	Standard
	Mn	55	172021.4	0.9	**26.7397**	0.133	0.5	ug/L	841	Standard
	Co	59	167427.5	2.0	**26.4724**	0.266	1.0	ug/L	229	Standard
	Ni	60	46631.0	1.6	**26.3691**	0.164	0.6	ug/L	344	Standard
	Cu	65	46298.6	0.5	**26.3794**	0.223	0.8	ug/L	115	Standard
	Zn	66	28692.8	0.8	**27.0456**	0.053	0.2	ug/L	190	Standard
>	**Ge**	72	429617.8	1.0				ug/L	409858	Standard
	As	75	28228.4	0.8	**26.0779**	0.089	0.3	ug/L	-22	Standard
	Se	82	2890.3	2.2	**26.0545**	0.832	3.2	ug/L	18	Standard
	Se-1	77	1885.8	3.0	**25.3705**	0.938	3.7	ug/L	50	Standard
>	**Ga**	71	55.0	24.1				mg/L	97	Standard
	Rb	85	66.7	51.1				ug/L	25	Standard
	Y	89	370054.8	1.0				ug/L	376763	Standard
>	**Rh**	103	15.0	57.7				ug/L	20	Standard
	Mo	98	60.8	28.4	**0.0961**	0.007	7.2	ug/L	51	Standard
	Ag	107	164778.6	1.2	**25.7565**	0.385	1.5	ug/L	76	Standard
	Cd	111	52128.6	0.9	**25.6456**	0.390	1.5	mg/L	6	Standard
	Cd	114	126625.7	0.7	**25.4800**	0.270	1.1	ug/L	18	Standard
>	**In**	115	520385.2	0.7				ug/L	507261	Standard
	Sn	118	611.7	22.6	**-0.0013**	0.024	1875.5	ug/L	683	Standard
	Sb	123	117175.1	0.7	**26.6109**	0.351	1.3	ug/L	446	Standard
	Ba	135	49858.9	0.6	**25.5546**	0.293	1.1	ug/L	28	Standard
	Ce	140	111.7	40.6				ug/L	33	Standard
>	**Tb**	159	817750.1	0.7				ug/L	800803	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	204537.7	0.5	**25.7502**	0.134	0.5	ug/L	13	Standard
	Tl	205	183705.4	1.0	**26.7105**	0.250	0.9	ug/L	13	Standard
	Pb	206	134972.9	1.2	**26.4449**	0.332	1.3	ug/L	226	Standard
	Pb	207	117902.7	1.0	**25.4395**	0.259	1.0	ug/L	204	Standard
	Pb	208	484818.2	0.4	**26.1594**	0.107	0.4	ug/L	852	Standard
	U	238	173966.7	0.5	**25.3714**	0.152	0.6	ug/L	13	Standard
>	**Bi**	209	466979.8	0.1				ug/L	449044	Standard

Sample ID: LCSS M3 WG574881-03
Report Date/Time: Wednesday, July 06, 2016 13:45:45
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.2919**	14.706	5037.9	mg/L	2	Standard
Mg	24	43.3	59.2	**0.0177**	0.034	191.1	mg/L	58	Standard
K	39	26.7	47.2	**-0.0406**	0.049	121.2	mg/L	27	Standard
Ca	43	23.3	81.1	**0.3327**	1.302	391.4	mg/L	20	Standard
Fe	54	183.2	34.4	**0.0249**	0.048	191.5	mg/L	158	Standard
Fe	57	246.7	15.2	**0.1047**	0.132	126.6	mg/L	267	Standard
> **Sc-1**	45	40908.5	1.7				mg/L	38815	Standard
Cl	35	71227.7	0.6				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1863.4	2.7				ug/L	1617	Standard
P	31	21552.1	8.9				ug/L	19244	Standard
S	34	3725.5	3.2				ug/L	3557	Standard
Sr	88	56.7	20.4				ug/L	65	Standard
C	12	63.3	65.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	16.2	126.5				mg/L	13	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	3618.8	4.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.714	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.821	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSS M3 WG574881-03
Report Date/Time: Wednesday, July 06, 2016 13:45:45
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.587
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.994
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M3 WG574881-03
Report Date/Time: Wednesday, July 06, 2016 13:45:45
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606153303 WG574881-01
Sample Date/Time: Wednesday, July 06, 2016 13:46:40
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71784.8	3.3				ug/L	68501	Standard
	Be	9	791.7	9.0	**0.8524**	0.078	9.2	ug/L	8	Standard
	Al	27	9689691.6	1.4	**65.1923**	1.739	2.7	ug/L	1397	Standard
	Sc	45	46471.2	2.1				ug/L	38815	Standard
	Ti	47	6104.2	0.6	**17.2565**	0.240	1.4	ug/L	36	Standard
	V	51	142596.3	1.0	**19.1176**	0.362	1.9	ug/L	1284	Standard
	Cr	52	105517.2	0.7	**13.6401**	0.218	1.6	ug/L	6503	Standard
	Cr	53	12873.8	0.5	**13.8523**	0.056	0.4	ug/L	492	Standard
	Mn	55	2385498.8	0.3	**370.6799**	2.478	0.7	ug/L	841	Standard
	Co	59	48892.4	1.4	**7.7061**	0.041	0.5	ug/L	229	Standard
	Ni	60	30595.9	0.8	**17.1852**	0.278	1.6	ug/L	344	Standard
	Cu	65	20807.6	0.9	**11.8042**	0.131	1.1	ug/L	115	Standard
	Zn	66	37430.8	0.4	**35.1878**	0.440	1.3	ug/L	190	Standard
>	**Ge**	72	431211.0	0.9				ug/L	409858	Standard
	As	75	4224.0	0.7	**3.9722**	0.059	1.5	ug/L	-22	Standard
	Se	82	51.8	22.7	**0.4155**	0.110	26.5	ug/L	18	Standard
	Se-1	77	104.0		**0.6766**	0.012	1.8	ug/L	50	Standard
>	**Ga**	71	14602.0	2.0				mg/L	97	Standard
	Rb	85	144001.5	3.2				ug/L	25	Standard
	Y	89	554219.3	0.4				ug/L	376763	Standard
>	**Rh**	103	38.3	37.7				ug/L	20	Standard
	Mo	98	491.5	7.3	**0.2735**	0.016	5.9	ug/L	51	Standard
	Ag	107	436.7	7.8	**0.0924**	0.006	6.2	ug/L	76	Standard
	Cd	111	251.4	8.5	**0.1649**	0.011	6.9	mg/L	6	Standard
	Cd	114	651.7	7.7	**0.1704**	0.010	6.0	ug/L	18	Standard
>	**In**	115	512072.0	0.7				ug/L	507261	Standard
	Sn	118	560.0	17.6	**-0.0088**	0.018	202.0	ug/L	683	Standard
	Sb	123	551.5	29.4	**0.1068**	0.037	34.4	ug/L	446	Standard
	Ba	135	204633.9	0.3	**106.5325**	0.500	0.5	ug/L	28	Standard
	Ce	140	1043824.3	0.6				ug/L	33	Standard
>	**Tb**	159	829436.7	0.5				ug/L	800803	Standard
	Ho	165	16388.9	2.6				ug/L	10	Standard
	Tl	203	873.4	3.5	**0.1439**	0.003	2.4	ug/L	13	Standard
	Tl	205	835.0	6.8	**0.1645**	0.007	4.5	ug/L	13	Standard
	Pb	206	174627.9	0.8	**34.4509**	0.503	1.5	ug/L	226	Standard
	Pb	207	146187.5	0.8	**31.7593**	0.420	1.3	ug/L	204	Standard
	Pb	208	624158.0	1.4	**33.9102**	0.683	2.0	ug/L	852	Standard
	U	238	4147.6	4.4	**0.6507**	0.030	4.6	ug/L	13	Standard
>	**Bi**	209	463820.1	0.7				ug/L	449044	Standard

Sample ID: L1606153303 WG574881-01
Report Date/Time: Wednesday, July 06, 2016 13:48:57
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	135.0	12.8	**0.1146**	0.022	19.4	mg/L	58	Standard
K	39	315.0	4.2	**0.9068**	0.031	3.4	mg/L	27	Standard
Ca	43	76.7	22.9	**3.3661**	0.968	28.8	mg/L	20	Standard
Fe	54	15252.4	1.7	**10.5440**	0.100	0.9	mg/L	158	Standard
Fe	57	4027.2	4.2	**10.5813**	0.706	6.7	mg/L	267	Standard
> **Sc-1**	45	46471.2	2.1				mg/L	38815	Standard
Cl	35	67899.1	0.4				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3187.0	8.5				ug/L	1617	Standard
P	31	19424.1	0.8				ug/L	19244	Standard
S	34	3938.8	4.5				ug/L	3557	Standard
Sr	88	103.3	18.3				ug/L	65	Standard
C	12	96.7	33.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	66.7	22.9				mg/L	23	Standard
Dy	164	27319.0	2.3				mg/L	13	Standard
Ho-1	165	16388.9	2.6				mg/L	10	Standard
Er	166	14617.0	1.4				mg/L	13	Standard
I	127	15192.6	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.793	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.210	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153303 WG574881-01
Report Date/Time: Wednesday, July 06, 2016 13:48:57
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.949
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.291
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606153303S WG574881-04
Sample Date/Time: Wednesday, July 06, 2016 13:49:51
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71635.7	2.1				ug/L	68501	Standard
	Be	9	24508.1	0.6	**25.8454**	0.409	1.6	ug/L	8	Standard
	Al	27	8935502.9	3.1	**60.2062**	0.708	1.2	ug/L	1397	Standard
	Sc	45	46611.6	1.6				ug/L	38815	Standard
	Ti	47	7709.0	2.2	**21.4214**	0.368	1.7	ug/L	36	Standard
	V	51	320903.9	2.5	**42.4517**	1.035	2.4	ug/L	1284	Standard
	Cr	52	282285.7	1.5	**37.3800**	0.540	1.4	ug/L	6503	Standard
	Cr	53	34678.0	2.7	**37.3607**	1.069	2.9	ug/L	492	Standard
	Mn	55	2822174.7	1.6	**430.9768**	6.120	1.4	ug/L	841	Standard
	Co	59	210055.8	0.7	**32.5207**	0.190	0.6	ug/L	229	Standard
	Ni	60	74054.9	1.2	**41.0920**	0.339	0.8	ug/L	344	Standard
	Cu	65	61255.9	1.3	**34.1760**	0.431	1.3	ug/L	115	Standard
	Zn	66	61088.9	0.6	**56.5039**	0.401	0.7	ug/L	190	Standard
>	**Ge**	72	438770.2	0.5				ug/L	409858	Standard
	As	75	29378.1	1.7	**26.5713**	0.390	1.5	ug/L	-22	Standard
	Se	82	2240.3	0.6	**19.7570**	0.095	0.5	ug/L	18	Standard
	Se-1	77	1512.1	2.0	**19.7511**	0.299	1.5	ug/L	50	Standard
>	**Ga**	71	14647.1	3.0				mg/L	97	Standard
	Rb	85	135624.3	1.0				ug/L	25	Standard
	Y	89	555533.5	1.1				ug/L	376763	Standard
>	**Rh**	103	46.7	65.5				ug/L	20	Standard
	Mo	98	390.1	7.1	**0.2288**	0.011	5.0	ug/L	51	Standard
	Ag	107	155710.4	1.2	**24.2735**	0.361	1.5	ug/L	76	Standard
	Cd	111	51031.4	0.2	**25.0372**	0.235	0.9	mg/L	6	Standard
	Cd	114	122987.6	0.6	**24.6803**	0.081	0.3	ug/L	18	Standard
>	**In**	115	521819.8	0.7				ug/L	507261	Standard
	Sn	118	673.3	13.7	**0.0095**	0.017	174.9	ug/L	683	Standard
	Sb	123	4402.7	3.1	**0.9775**	0.034	3.5	ug/L	446	Standard
	Ba	135	235513.0	0.9	**120.3159**	1.166	1.0	ug/L	28	Standard
	Ce	140	908964.0	1.9				ug/L	33	Standard
>	**Tb**	159	835671.6	1.8				ug/L	800803	Standard
	Ho	165	15187.6	2.1				ug/L	10	Standard
	Tl	203	194649.0	0.4	**24.6275**	0.265	1.1	ug/L	13	Standard
	Tl	205	174462.0	0.6	**25.4936**	0.299	1.2	ug/L	13	Standard
	Pb	206	271068.0	0.8	**53.3729**	0.261	0.5	ug/L	226	Standard
	Pb	207	231576.7	0.5	**50.2120**	0.216	0.4	ug/L	204	Standard
	Pb	208	974786.8	0.9	**52.8532**	0.298	0.6	ug/L	852	Standard
	U	238	172945.8	1.1	**25.3460**	0.283	1.1	ug/L	13	Standard
>	**Bi**	209	464715.4	0.8				ug/L	449044	Standard

Sample ID: L1606153303S WG574881-04
Report Date/Time: Wednesday, July 06, 2016 13:52:08
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	140.0	24.7	**0.1199**	0.042	35.0	mg/L	58	Standard
K	39	246.7	28.8	**0.6783**	0.242	35.7	mg/L	27	Standard
Ca	43	106.7	28.6	**5.2041**	1.969	37.8	mg/L	20	Standard
Fe	54	13845.9	5.5	**9.5323**	0.545	5.7	mg/L	158	Standard
Fe	57	3610.4	7.4	**9.3762**	0.715	7.6	mg/L	267	Standard
> **Sc-1**	45	46611.6	1.6				mg/L	38815	Standard
Cl	35	67005.2	1.4				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2923.6	6.4				ug/L	1617	Standard
P	31	20552.3	2.8				ug/L	19244	Standard
S	34	3690.4	4.4				ug/L	3557	Standard
Sr	88	98.3	37.5				ug/L	65	Standard
C	12	156.7	30.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	48.2				mg/L	23	Standard
Dy	164	25034.1	3.0				mg/L	13	Standard
Ho-1	165	15187.6	2.1				mg/L	10	Standard
Er	166	13729.6	2.1				mg/L	13	Standard
I	127	15666.4	3.6				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.576	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		107.054	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606153303S WG574881-04
Report Date/Time: Wednesday, July 06, 2016 13:52:08
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.870
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.490
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606153303S WG574881-04
Report Date/Time: Wednesday, July 06, 2016 13:52:08
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606153304SD WG574881-05
Sample Date/Time: Wednesday, July 06, 2016 13:53:03
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70716.4	3.2				ug/L	68501	Standard
	Be	9	24144.2	3.0	**25.7886**	0.154	0.6	ug/L	8	Standard
	Al	27	7663846.1	3.2	**52.3201**	0.024	0.0	ug/L	1397	Standard
	Sc	45	45911.1	1.9				ug/L	38815	Standard
	Ti	47	7610.9	2.1	**21.3112**	0.418	2.0	ug/L	36	Standard
	V	51	300171.5	0.6	**40.0063**	0.532	1.3	ug/L	1284	Standard
	Cr	52	273409.5	0.7	**36.4591**	0.295	0.8	ug/L	6503	Standard
	Cr	53	33261.5	0.8	**36.0945**	0.455	1.3	ug/L	492	Standard
	Mn	55	1970137.4	0.8	**303.1298**	1.288	0.4	ug/L	841	Standard
	Co	59	199356.3	0.9	**31.0997**	0.116	0.4	ug/L	229	Standard
	Ni	60	69404.3	1.6	**38.7962**	0.444	1.1	ug/L	344	Standard
	Cu	65	58317.0	0.6	**32.7842**	0.142	0.4	ug/L	115	Standard
	Zn	66	56590.2	1.5	**52.7315**	0.372	0.7	ug/L	190	Standard
>	Ge	72	435454.2	0.9				ug/L	409858	Standard
	As	75	28521.3	0.6	**25.9959**	0.102	0.4	ug/L	-22	Standard
	Se	82	2258.1	0.6	**20.0673**	0.180	0.9	ug/L	18	Standard
	Se-1	77	1570.7	5.6	**20.7187**	1.401	6.8	ug/L	50	Standard
>	Ga	71	13471.0	2.5				mg/L	97	Standard
	Rb	85	126714.4	1.6				ug/L	25	Standard
	Y	89	546387.0	2.7				ug/L	376763	Standard
>	Rh	103	26.7	28.6				ug/L	20	Standard
	Mo	98	406.5	7.2	**0.2358**	0.011	4.8	ug/L	51	Standard
	Ag	107	157043.0	0.6	**24.5389**	0.267	1.1	ug/L	76	Standard
	Cd	111	50615.0	0.7	**24.8953**	0.579	2.3	mg/L	6	Standard
	Cd	114	122865.8	1.8	**24.7200**	0.777	3.1	ug/L	18	Standard
>	In	115	520626.2	1.6				ug/L	507261	Standard
	Sn	118	831.7	9.5	**0.0379**	0.012	32.9	ug/L	683	Standard
	Sb	123	5047.0	1.4	**1.1262**	0.007	0.6	ug/L	446	Standard
	Ba	135	215146.1	0.2	**110.1816**	1.809	1.6	ug/L	28	Standard
	Ce	140	844813.7	0.2				ug/L	33	Standard
>	Tb	159	836023.1	1.3				ug/L	800803	Standard
	Ho	165	14603.7	1.6				ug/L	10	Standard
	Tl	203	192463.7	0.7	**24.2350**	0.335	1.4	ug/L	13	Standard
	Tl	205	170559.7	1.0	**24.8059**	0.448	1.8	ug/L	13	Standard
	Pb	206	218685.4	1.3	**42.8560**	0.907	2.1	ug/L	226	Standard
	Pb	207	186119.5	0.7	**40.1644**	0.622	1.5	ug/L	204	Standard
	Pb	208	790383.4	0.9	**42.6511**	0.562	1.3	ug/L	852	Standard
	U	238	169425.8	1.3	**24.7144**	0.534	2.2	ug/L	13	Standard
>	Bi	209	466956.4	0.8				ug/L	449044	Standard

Sample ID: L1606153304SD WG574881-05
Report Date/Time: Wednesday, July 06, 2016 13:55:20
Page 1

Approved: July 07, 2016

Na	23	8.3	34.6	**29.4785**	12.738	43.2	mg/L	2	Standard
Mg	24	111.7	38.1	**0.0901**	0.052	57.2	mg/L	58	Standard
K	39	305.0	19.9	**0.8870**	0.210	23.7	mg/L	27	Standard
Ca	43	85.0	36.7	**3.9473**	1.895	48.0	mg/L	20	Standard
Fe	54	12091.5	0.9	**8.4377**	0.104	1.2	mg/L	158	Standard
Fe	57	3287.0	5.2	**8.6117**	0.314	3.6	mg/L	267	Standard
> **Sc-1**	45	45911.1	1.9				mg/L	38815	Standard
Cl	35	66770.8	1.3				ug/L	57611	Standard
Kr	83	3.7	31.5				ug/L	2	Standard
Br	81	2370.2	6.7				ug/L	1617	Standard
P	31	19586.0	2.8				ug/L	19244	Standard
S	34	3682.1	1.9				ug/L	3557	Standard
Sr	88	90.0	16.7				ug/L	65	Standard
C	12	103.3	36.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	145.3				mg/L	23	Standard
Dy	164	24871.6	1.2				mg/L	13	Standard
Ho-1	165	14603.7	1.6				mg/L	10	Standard
Er	166	13219.1	1.9				mg/L	13	Standard
I	127	16539.0	1.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.234	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.245	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153304SD WG574881-05
Report Date/Time: Wednesday, July 06, 2016 13:55:20
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.635
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.989
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606153304SD WG574881-05
Report Date/Time: Wednesday, July 06, 2016 13:55:20
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606148801
Sample Date/Time: Wednesday, July 06, 2016 13:56:14
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73357.2	0.4				ug/L	68501	Standard
	Be	9	1408.4	5.6	**1.4686**	0.086	5.9	ug/L	8	Standard
	Al	27	4909182.8	0.1	**32.3215**	0.095	0.3	ug/L	1397	Standard
	Sc	45	49124.5	1.0				ug/L	38815	Standard
	Ti	47	14209.0	0.8	**39.1648**	0.336	0.9	ug/L	36	Standard
	V	51	261146.3	1.2	**34.2175**	0.380	1.1	ug/L	1284	Standard
	Cr	52	189098.4	0.5	**24.5084**	0.136	0.6	ug/L	6503	Standard
	Cr	53	22658.6	1.5	**24.0508**	0.402	1.7	ug/L	492	Standard
	Mn	55	11231230.2	1.1	**1700.4825**	20.100	1.2	ug/L	841	Standard
	Co	59	183788.7	1.1	**28.2069**	0.325	1.2	ug/L	229	Standard
	Ni	60	45196.3	0.8	**24.7984**	0.212	0.9	ug/L	344	Standard
	Cu	65	36381.0	0.5	**20.1154**	0.113	0.6	ug/L	115	Standard
	Zn	66	87683.0	0.2	**80.4422**	0.249	0.3	ug/L	190	Standard
>	**Ge**	72	442627.6	0.1				ug/L	409858	Standard
	As	75	15335.5	1.0	**13.7975**	0.156	1.1	ug/L	-22	Standard
	Se	82	128.8	8.6	**1.0772**	0.098	9.1	ug/L	18	Standard
	Se-1	77	152.7	9.5	**1.2940**	0.197	15.2	ug/L	50	Standard
>	**Ga**	71	28750.6	0.9				mg/L	97	Standard
	Rb	85	247795.0	1.2				ug/L	25	Standard
	Y	89	608680.2	2.0				ug/L	376763	Standard
>	**Rh**	103	46.7	32.7				ug/L	20	Standard
	Mo	98	4400.7	0.8	**1.8278**	0.010	0.6	ug/L	51	Standard
	Ag	107	658.3	6.4	**0.1246**	0.007	5.4	ug/L	76	Standard
	Cd	111	633.7	3.7	**0.3467**	0.011	3.1	mg/L	6	Standard
	Cd	114	1538.9	7.7	**0.3426**	0.022	6.5	ug/L	18	Standard
>	**In**	115	527046.7	0.4				ug/L	507261	Standard
	Sn	118	666.7	18.6	**0.0071**	0.022	303.7	ug/L	683	Standard
	Sb	123	511.6	32.6	**0.0943**	0.037	39.3	ug/L	446	Standard
	Ba	135	351130.5	0.5	**177.5923**	1.124	0.6	ug/L	28	Standard
	Ce	140	1219612.4	0.4				ug/L	33	Standard
>	**Tb**	159	850998.1	0.7				ug/L	800803	Standard
	Ho	165	20655.7	1.1				ug/L	10	Standard
	Tl	203	2286.5	1.5	**0.3205**	0.003	0.8	ug/L	13	Standard
	Tl	205	2111.8	1.5	**0.3488**	0.003	0.9	ug/L	13	Standard
	Pb	206	198517.4	0.6	**38.8584**	0.398	1.0	ug/L	226	Standard
	Pb	207	163761.6	0.7	**35.3001**	0.431	1.2	ug/L	204	Standard
	Pb	208	697965.4	0.2	**37.6228**	0.271	0.7	ug/L	852	Standard
	U	238	11299.5	1.2	**1.6862**	0.031	1.8	ug/L	13	Standard
>	**Bi**	209	467460.9	0.8				ug/L	449044	Standard

Sample ID: L1606148801
Report Date/Time: Wednesday, July 06, 2016 13:58:31
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	858.4	12.6	**0.8792**	0.107	12.1	mg/L	58	Standard
K	39	243.3	19.1	**0.6247**	0.147	23.5	mg/L	27	Standard
Ca	43	75.0	11.5	**3.0298**	0.465	15.4	mg/L	20	Standard
Fe	54	51419.1	3.0	**33.8886**	1.056	3.1	mg/L	158	Standard
Fe	57	12892.1	0.9	**33.3949**	0.427	1.3	mg/L	267	Standard
> **Sc-1**	45	49124.5	1.0				mg/L	38815	Standard
Cl	35	64920.1	0.4				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	4657.4	5.5				ug/L	1617	Standard
P	31	21221.5	1.2				ug/L	19244	Standard
S	34	3662.1	1.3				ug/L	3557	Standard
Sr	88	81.7	24.7				ug/L	65	Standard
C	12	186.7	15.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	32.8				mg/L	23	Standard
Dy	164	33674.7	0.9				mg/L	13	Standard
Ho-1	165	20655.7	1.1				mg/L	10	Standard
Er	166	18397.8	1.0				mg/L	13	Standard
I	127	43973.7	2.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.089	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.995	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606148801
Report Date/Time: Wednesday, July 06, 2016 13:58:31
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.101
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606148801
Report Date/Time: Wednesday, July 06, 2016 13:58:31
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606148802
Sample Date/Time: Wednesday, July 06, 2016 13:59:26
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72174.9	2.1				ug/L	68501	Standard
	Be	9	1363.4	2.0	**1.4452**	0.016	1.1	ug/L	8	Standard
	Al	27	5016443.5	2.2	**33.5756**	0.975	2.9	ug/L	1397	Standard
	Sc	45	49604.4	2.2				ug/L	38815	Standard
	Ti	47	13329.2	0.7	**36.5911**	0.221	0.6	ug/L	36	Standard
	V	51	271044.6	1.6	**35.3787**	0.645	1.8	ug/L	1284	Standard
	Cr	52	198790.4	1.2	**25.7054**	0.289	1.1	ug/L	6503	Standard
	Cr	53	24150.9	1.3	**25.5582**	0.352	1.4	ug/L	492	Standard
	Mn	55	11513450.8	0.6	**1736.2656**	13.109	0.8	ug/L	841	Standard
	Co	59	196653.4	1.0	**30.0609**	0.361	1.2	ug/L	229	Standard
	Ni	60	45854.3	1.1	**25.0607**	0.284	1.1	ug/L	344	Standard
	Cu	65	39818.3	0.9	**21.9288**	0.143	0.7	ug/L	115	Standard
	Zn	66	95918.7	0.5	**87.6568**	0.438	0.5	ug/L	190	Standard
>	Ge	72	444401.8	0.3				ug/L	409858	Standard
	As	75	16440.4	0.6	**14.7259**	0.127	0.9	ug/L	-22	Standard
	Se	82	139.3	7.0	**1.1645**	0.084	7.2	ug/L	18	Standard
	Se-1	77	176.7	9.1	**1.6071**	0.214	13.3	ug/L	50	Standard
>	Ga	71	29804.3	1.7				mg/L	97	Standard
	Rb	85	250326.1	0.9				ug/L	25	Standard
	Y	89	612201.9	0.7				ug/L	376763	Standard
>	Rh	103	30.0	16.7				ug/L	20	Standard
	Mo	98	4155.8	2.6	**1.7430**	0.057	3.3	ug/L	51	Standard
	Ag	107	726.0	6.2	**0.1359**	0.006	4.5	ug/L	76	Standard
	Cd	111	824.8	3.0	**0.4424**	0.009	2.1	mg/L	6	Standard
	Cd	114	1869.7	3.7	**0.4111**	0.011	2.6	ug/L	18	Standard
>	In	115	523048.0	0.9				ug/L	507261	Standard
	Sn	118	761.7	20.6	**0.0247**	0.027	107.5	ug/L	683	Standard
	Sb	123	582.5	17.5	**0.1112**	0.022	19.6	ug/L	446	Standard
	Ba	135	359493.1	0.4	**183.2153**	0.988	0.5	ug/L	28	Standard
	Ce	140	1224075.1	1.2				ug/L	33	Standard
>	Tb	159	837617.0	0.4				ug/L	800803	Standard
	Ho	165	19946.5	2.5				ug/L	10	Standard
	Tl	203	2243.5	3.6	**0.3187**	0.011	3.4	ug/L	13	Standard
	Tl	205	1978.5	3.9	**0.3331**	0.011	3.2	ug/L	13	Standard
	Pb	206	201103.2	0.9	**39.8610**	0.478	1.2	ug/L	226	Standard
	Pb	207	165612.9	0.9	**36.1489**	0.408	1.1	ug/L	204	Standard
	Pb	208	712328.8	0.4	**38.8804**	0.069	0.2	ug/L	852	Standard
	U	238	11780.6	2.0	**1.7777**	0.038	2.2	ug/L	13	Standard
>	Bi	209	461635.2	0.6				ug/L	449044	Standard

Sample ID: L1606148802
Report Date/Time: Wednesday, July 06, 2016 14:01:43
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**5.6198**	12.473	221.9	mg/L	2	Standard
Mg	24	811.7	6.0	**0.8224**	0.066	8.0	mg/L	58	Standard
K	39	266.7	3.9	**0.6899**	0.024	3.5	mg/L	27	Standard
Ca	43	78.3	20.5	**3.1770**	0.895	28.2	mg/L	20	Standard
Fe	54	51703.8	1.6	**33.7475**	0.264	0.8	mg/L	158	Standard
Fe	57	13155.7	2.5	**33.7514**	0.118	0.3	mg/L	267	Standard
> **Sc-1**	45	49604.4	2.2				mg/L	38815	Standard
Cl	35	64079.3	2.1				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	4820.8	8.0				ug/L	1617	Standard
P	31	20555.6	1.7				ug/L	19244	Standard
S	34	3685.4	3.7				ug/L	3557	Standard
Sr	88	80.0	12.5				ug/L	65	Standard
C	12	210.0	12.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	143.3	29.0				mg/L	23	Standard
Dy	164	33047.7	1.8				mg/L	13	Standard
Ho-1	165	19946.5	2.5				mg/L	10	Standard
Er	166	18027.4	2.6				mg/L	13	Standard
I	127	49079.4	3.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.363	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.428	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606148802
Report Date/Time: Wednesday, July 06, 2016 14:01:43
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.112
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.804
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606148802
Report Date/Time: Wednesday, July 06, 2016 14:01:43
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606148802PS WG575023-01
Sample Date/Time: Wednesday, July 06, 2016 14:03:18
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70967.5	1.3				ug/L	68501	Standard
	Be	9	50019.1	1.4	**53.2137**	0.442	0.8	ug/L	8	Standard
	Al	27	4943736.8	2.2	**33.6473**	0.870	2.6	ug/L	1397	Standard
	Sc	45	49438.9	1.5				ug/L	38815	Standard
	Ti	47	13311.2	1.7	**36.5309**	0.490	1.3	ug/L	36	Standard
	V	51	666714.3	1.8	**87.2147**	1.927	2.2	ug/L	1284	Standard
	Cr	52	595393.9	0.7	**78.8320**	0.260	0.3	ug/L	6503	Standard
	Cr	53	73718.9	1.6	**78.8501**	0.957	1.2	ug/L	492	Standard
	Mn	55	11846150.9	0.6	**1786.0047**	17.199	1.0	ug/L	841	Standard
	Co	59	539486.4	0.6	**82.4367**	0.844	1.0	ug/L	229	Standard
	Ni	60	141497.6	0.4	**77.6414**	0.318	0.4	ug/L	344	Standard
	Cu	65	136279.5	1.3	**75.0688**	1.236	1.6	ug/L	115	Standard
	Zn	66	155918.3	1.5	**142.5288**	2.656	1.9	ug/L	190	Standard
>	**Ge**	72	444516.8	0.4				ug/L	409858	Standard
	As	75	76484.3	0.4	**68.1297**	0.511	0.7	ug/L	-22	Standard
	Se	82	6120.7	0.4	**53.3679**	0.273	0.5	ug/L	18	Standard
	Se-1	77	4216.9	2.2	**55.7069**	1.453	2.6	ug/L	50	Standard
>	**Ga**	71	29956.3	2.2				mg/L	97	Standard
	Rb	85	245433.6	0.4				ug/L	25	Standard
	Y	89	607565.5	0.4				ug/L	376763	Standard
>	**Rh**	103	43.3	13.3				ug/L	20	Standard
	Mo	98	4207.7	1.7	**1.7539**	0.024	1.4	ug/L	51	Standard
	Ag	107	334603.0	0.3	**51.7151**	0.283	0.5	ug/L	76	Standard
	Cd	111	107468.9	0.8	**52.2597**	0.482	0.9	mg/L	6	Standard
	Cd	114	260778.0	1.3	**51.8721**	0.850	1.6	ug/L	18	Standard
>	**In**	115	526034.8	0.3				ug/L	507261	Standard
	Sn	118	906.7	9.2	**0.0497**	0.015	30.6	ug/L	683	Standard
	Sb	123	228637.4	2.2	**51.3808**	0.943	1.8	ug/L	446	Standard
	Ba	135	461661.6	0.5	**233.9378**	0.796	0.3	ug/L	28	Standard
	Ce	140	1241223.1	0.6				ug/L	33	Standard
>	**Tb**	159	845221.1	0.7				ug/L	800803	Standard
	Ho	165	19689.5	2.4				ug/L	10	Standard
	Tl	203	418679.3	0.7	**52.5517**	0.300	0.6	ug/L	13	Standard
	Tl	205	374864.0	0.5	**54.3340**	0.313	0.6	ug/L	13	Standard
	Pb	206	469240.7	0.1	**91.7326**	0.118	0.1	ug/L	226	Standard
	Pb	207	401720.1	1.0	**86.4784**	0.812	0.9	ug/L	204	Standard
	Pb	208	1685835.2	0.3	**90.7511**	0.393	0.4	ug/L	852	Standard
	U	238	363435.6	0.6	**52.8339**	0.348	0.7	ug/L	13	Standard
>	**Bi**	209	468069.6	0.1				ug/L	449044	Standard

Sample ID: L1606148802PS WG575023-01
Report Date/Time: Wednesday, July 06, 2016 14:05:35
Page 1

Approved: July 07, 2016

Na	23	3.3	173.2	**5.7365**	25.148	438.4	mg/L	2	Standard
Mg	24	811.7	3.2	**0.8244**	0.021	2.6	mg/L	58	Standard
K	39	260.0	10.0	**0.6728**	0.094	14.0	mg/L	27	Standard
Ca	43	73.3	27.6	**2.9214**	1.221	41.8	mg/L	20	Standard
Fe	54	53337.6	2.0	**34.9297**	0.220	0.6	mg/L	158	Standard
Fe	57	13099.0	0.8	**33.7266**	0.746	2.2	mg/L	267	Standard
Sc-1	45	49438.9	1.5				mg/L	38815	Standard
Cl	35	63709.7	1.4				ug/L	57611	Standard
Kr	83	4.0	25.0				ug/L	2	Standard
Br	81	4744.1	1.6				ug/L	1617	Standard
P	31	20497.2	1.0				ug/L	19244	Standard
S	34	3630.4	3.0				ug/L	3557	Standard
Sr	88	100.0	39.1				ug/L	65	Standard
C	12	173.3	31.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	26.7				mg/L	23	Standard
Dy	164	33116.1	1.2				mg/L	13	Standard
Ho-1	165	19689.5	2.4				mg/L	10	Standard
Er	166	17226.5	1.3				mg/L	13	Standard
I	127	48460.8	5.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.600	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.456	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606148802PS WG575023-01
Report Date/Time: Wednesday, July 06, 2016 14:05:35
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.701
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.237
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606148802PS WG575023-01
Report Date/Time: Wednesday, July 06, 2016 14:05:35
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606148802SDL WG575023-02
Sample Date/Time: Wednesday, July 06, 2016 14:06:30
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63548.1	3.0				ug/L	68501	Standard
	Be	9	288.3	10.6	**0.3615**	0.028	7.7	ug/L	8	Standard
	Al	27	982443.2	1.9	**7.5000**	0.333	4.4	ug/L	1397	Standard
	Sc	45	40199.9	2.0				ug/L	38815	Standard
	Ti	47	2527.5	2.7	**7.3731**	0.269	3.6	ug/L	36	Standard
	V	51	51751.0	0.8	**7.0830**	0.038	0.5	ug/L	1284	Standard
	Cr	52	41542.9	0.5	**4.9988**	0.076	1.5	ug/L	6503	Standard
	Cr	53	4679.1	3.2	**4.9436**	0.129	2.6	ug/L	492	Standard
	Mn	55	2192799.4	0.8	**352.2976**	2.787	0.8	ug/L	841	Standard
	Co	59	37114.1	0.7	**6.0504**	0.107	1.8	ug/L	229	Standard
	Ni	60	9289.5	1.4	**5.2864**	0.076	1.4	ug/L	344	Standard
	Cu	65	8027.8	0.9	**4.7012**	0.083	1.8	ug/L	115	Standard
	Zn	66	20879.4	1.1	**20.2468**	0.335	1.7	ug/L	190	Standard
>	Ge	72	417056.1	1.1				ug/L	409858	Standard
	As	75	3262.2	0.9	**3.1917**	0.033	1.0	ug/L	-22	Standard
	Se	82	44.0	21.0	**0.3588**	0.090	25.1	ug/L	18	Standard
	Se-1	77	65.0	4.1	**0.1687**	0.036	21.3	ug/L	50	Standard
>	Ga	71	5822.8	3.2				mg/L	97	Standard
	Rb	85	47444.2	2.6				ug/L	25	Standard
	Y	89	396491.1	1.0				ug/L	376763	Standard
>	Rh	103	18.3	15.7				ug/L	20	Standard
	Mo	98	797.0	2.4	**0.4100**	0.007	1.6	ug/L	51	Standard
	Ag	107	247.7	14.2	**0.0638**	0.006	9.4	ug/L	76	Standard
	Cd	111	188.8	16.4	**0.1369**	0.016	12.0	mg/L	6	Standard
	Cd	114	455.1	14.7	**0.1335**	0.014	10.7	ug/L	18	Standard
>	In	115	495215.4	0.6				ug/L	507261	Standard
	Sn	118	306.7	21.2	**-0.0527**	0.012	22.6	ug/L	683	Standard
	Sb	123	1584.6	32.4	**0.3576**	0.121	33.8	ug/L	446	Standard
	Ba	135	69337.3	0.6	**37.3369**	0.445	1.2	ug/L	28	Standard
	Ce	140	240398.8	0.7				ug/L	33	Standard
>	Tb	159	781869.4	2.0				ug/L	800803	Standard
	Ho	165	3793.8	3.7				ug/L	10	Standard
	Tl	203	541.0	11.5	**0.1045**	0.008	7.3	ug/L	13	Standard
	Tl	205	446.7	1.7	**0.1104**	0.001	1.2	ug/L	13	Standard
	Pb	206	39320.3	1.2	**8.0618**	0.009	0.1	ug/L	226	Standard
	Pb	207	32613.1	1.3	**7.3654**	0.019	0.3	ug/L	204	Standard
	Pb	208	139704.5	0.1	**7.8917**	0.091	1.1	ug/L	852	Standard
	U	238	2243.8	4.7	**0.3846**	0.014	3.7	ug/L	13	Standard
>	Bi	209	446092.5	1.1				ug/L	449044	Standard

Sample ID: L1606148802SDL WG575023-02
Report Date/Time: Wednesday, July 06, 2016 14:08:47
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.0852**	15.064	17690.3	mg/L	2	Standard
Mg	24	178.3	16.4	**0.1952**	0.042	21.4	mg/L	58	Standard
K	39	71.7	21.3	**0.1333**	0.054	40.3	mg/L	27	Standard
Ca	43	21.7	35.3	**0.2417**	0.521	215.7	mg/L	20	Standard
Fe	54	9922.9	1.2	**7.9026**	0.239	3.0	mg/L	158	Standard
Fe	57	2586.9	3.4	**7.6807**	0.443	5.8	mg/L	267	Standard
> **Sc-1**	45	40199.9	2.0				mg/L	38815	Standard
Cl	35	59757.0	1.6				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2373.5	8.5				ug/L	1617	Standard
P	31	8939.3	3.6				ug/L	19244	Standard
S	34	3305.4	5.9				ug/L	3557	Standard
Sr	88	70.0	12.4				ug/L	65	Standard
C	12	83.3	30.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	66.1				mg/L	23	Standard
Dy	164	6234.0	6.6				mg/L	13	Standard
Ho-1	165	3793.8	3.7				mg/L	10	Standard
Er	166	3353.7	1.4				mg/L	13	Standard
I	127	17223.1	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.769	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.756	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606148802SDL WG575023-02
Report Date/Time: Wednesday, July 06, 2016 14:08:47
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.625
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.343
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606148802SDL WG575023-02
Report Date/Time: Wednesday, July 06, 2016 14:08:47
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606148802SDL WG575023-02
Sample Date/Time: Wednesday, July 06, 2016 14:09:41
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61153.3	3.7				ug/L	68501	Standard
	Be	9	65.0	42.8	**0.1004**	0.036	36.0	ug/L	8	Standard
	Al	27	208272.0	1.9	**1.6804**	0.091	5.4	ug/L	1397	Standard
	Sc	45	38433.7	1.9				ug/L	38815	Standard
	Ti	47	530.0	5.2	**1.5456**	0.076	4.9	ug/L	36	Standard
	V	51	11816.6	2.0	**1.5294**	0.026	1.7	ug/L	1284	Standard
	Cr	52	12533.2	2.1	**0.8813**	0.029	3.3	ug/L	6503	Standard
	Cr	53	1153.4	3.5	**0.9224**	0.056	6.1	ug/L	492	Standard
	Mn	55	487303.2	1.1	**79.3278**	0.956	1.2	ug/L	841	Standard
	Co	59	8144.2	1.6	**1.3507**	0.025	1.8	ug/L	229	Standard
	Ni	60	2325.5	3.0	**1.2243**	0.032	2.6	ug/L	344	Standard
	Cu	65	1801.8	1.3	**1.0597**	0.011	1.0	ug/L	115	Standard
	Zn	66	5046.8	1.1	**4.8774**	0.028	0.6	ug/L	190	Standard
>	**Ge**	72	411214.4	0.8				ug/L	409858	Standard
	As	75	641.0	4.9	**0.7152**	0.032	4.5	ug/L	-22	Standard
	Se	82	22.5	31.9	**0.1611**	0.067	41.8	ug/L	18	Standard
	Se-1	77	60.7	21.2	**0.1202**	0.192	160.1	ug/L	50	Standard
>	**Ga**	71	1250.1	4.5				mg/L	97	Standard
	Rb	85	10276.8	2.8				ug/L	25	Standard
	Y	89	358834.8	1.2				ug/L	376763	Standard
>	**Rh**	103	21.7	93.3				ug/L	20	Standard
	Mo	98	214.8	13.2	**0.1640**	0.012	7.2	ug/L	51	Standard
	Ag	107	100.7	16.5	**0.0398**	0.003	6.9	ug/L	76	Standard
	Cd	111	42.6	17.8	**0.0617**	0.004	6.7	mg/L	6	Standard
	Cd	114	96.9	24.7	**0.0581**	0.005	9.0	ug/L	18	Standard
>	**In**	115	488527.0	0.6				ug/L	507261	Standard
	Sn	118	241.7	24.7	**-0.0643**	0.011	17.6	ug/L	683	Standard
	Sb	123	892.5	39.9	**0.1955**	0.086	43.8	ug/L	446	Standard
	Ba	135	14870.6	2.2	**8.1290**	0.162	2.0	ug/L	28	Standard
	Ce	140	51485.7	0.7				ug/L	33	Standard
>	**Tb**	159	761353.5	0.5				ug/L	800803	Standard
	Ho	165	790.0	5.5				ug/L	10	Standard
	Tl	203	118.7	1.9	**0.0491**	0.000	0.6	ug/L	13	Standard
	Tl	205	93.3	16.4	**0.0569**	0.002	4.2	ug/L	13	Standard
	Pb	206	8500.1	0.7	**1.7547**	0.014	0.8	ug/L	226	Standard
	Pb	207	6935.9	1.5	**1.5792**	0.031	2.0	ug/L	204	Standard
	Pb	208	29923.0	0.5	**1.7048**	0.006	0.3	ug/L	852	Standard
	U	238	485.7	4.5	**0.1173**	0.004	3.1	ug/L	13	Standard
>	**Bi**	209	442277.7	0.5				ug/L	449044	Standard

Sample ID: L1606148802SDL WG575023-02
Report Date/Time: Wednesday, July 06, 2016 14:11:58
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	8.3	**0.0437**	0.008	18.1	mg/L	58	Standard
K	39	36.7	20.8	**0.0061**	0.033	544.1	mg/L	27	Standard
Ca	43	10.0	50.0	**-0.5414**	0.370	68.3	mg/L	20	Standard
Fe	54	2058.4	6.6	**1.6217**	0.147	9.0	mg/L	158	Standard
Fe	57	700.0	4.7	**1.6862**	0.138	8.2	mg/L	267	Standard
> **Sc-1**	45	38433.7	1.9				mg/L	38815	Standard
Cl	35	58499.4	1.0				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1713.4	5.1				ug/L	1617	Standard
P	31	6586.4	1.7				ug/L	19244	Standard
S	34	3485.4	1.6				ug/L	3557	Standard
Sr	88	75.0	29.1				ug/L	65	Standard
C	12	86.7	54.5				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	1243.5	11.8				mg/L	13	Standard
Ho-1	165	790.0	5.5				mg/L	10	Standard
Er	166	693.3	5.5				mg/L	13	Standard
I	127	12079.8	0.8				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		89.273	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.331	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606148802SDL WG575023-02
Report Date/Time: Wednesday, July 06, 2016 14:11:58
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.307
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.493
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 14:12:54
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63738.8	1.7				ug/L	68501	Standard
	Be	9	45163.9	1.6	**53.5049**	1.125	2.1	ug/L	8	Standard
	Al	27	7084192.1	1.1	**53.6599**	0.327	0.6	ug/L	1397	Standard
	Sc	45	42454.4	2.4				ug/L	38815	Standard
	Ti	47	37910.4	1.3	**105.6465**	0.728	0.7	ug/L	36	Standard
	V	51	387318.4	1.9	**51.3574**	0.599	1.2	ug/L	1284	Standard
	Cr	52	391741.5	0.8	**52.3323**	0.346	0.7	ug/L	6503	Standard
	Cr	53	47810.3	0.9	**51.7616**	0.626	1.2	ug/L	492	Standard
	Mn	55	346050.2	2.0	**52.8532**	0.639	1.2	ug/L	841	Standard
	Co	59	335311.7	0.2	**52.0055**	0.542	1.0	ug/L	229	Standard
	Ni	60	93758.6	1.2	**52.1631**	0.630	1.2	ug/L	344	Standard
	Cu	65	93201.8	0.3	**52.1020**	0.486	0.9	ug/L	115	Standard
	Zn	66	55967.5	1.2	**51.8489**	0.246	0.5	ug/L	190	Standard
>	Ge	72	437984.2	0.8				ug/L	409858	Standard
	As	75	56734.5	0.8	**51.3146**	0.032	0.1	ug/L	-22	Standard
	Se	82	5730.9	1.4	**50.7103**	0.310	0.6	ug/L	18	Standard
	Se-1	77	3929.8	1.6	**52.6431**	0.552	1.0	ug/L	50	Standard
>	Ga	71	86.7	40.5				mg/L	97	Standard
	Rb	85	845.0	5.4				ug/L	25	Standard
	Y	89	374490.1	0.9				ug/L	376763	Standard
>	Rh	103	40.0	45.1				ug/L	20	Standard
	Mo	98	255896.5	1.3	**102.3860**	1.426	1.4	ug/L	51	Standard
	Ag	107	327414.9	0.7	**50.6019**	0.494	1.0	ug/L	76	Standard
	Cd	111	104466.1	0.8	**50.7976**	0.478	0.9	mg/L	6	Standard
	Cd	114	256849.9	0.9	**51.0868**	0.503	1.0	ug/L	18	Standard
>	In	115	526066.0	0.3				ug/L	507261	Standard
	Sn	118	288924.0	1.2	**50.7835**	0.489	1.0	ug/L	683	Standard
	Sb	123	230814.7	0.8	**51.8699**	0.499	1.0	ug/L	446	Standard
	Ba	135	99108.1	0.2	**50.2309**	0.251	0.5	ug/L	28	Standard
	Ce	140	848.4	30.5				ug/L	33	Standard
>	Tb	159	811893.2	1.1				ug/L	800803	Standard
	Ho	165	20.0	25.0				ug/L	10	Standard
	Tl	203	398961.7	0.3	**51.0576**	0.167	0.3	ug/L	13	Standard
	Tl	205	353593.5	0.8	**52.2552**	0.467	0.9	ug/L	13	Standard
	Pb	206	253241.8	0.6	**50.4734**	0.317	0.6	ug/L	226	Standard
	Pb	207	230608.0	0.3	**50.6138**	0.209	0.4	ug/L	204	Standard
	Pb	208	952060.4	0.8	**52.2535**	0.454	0.9	ug/L	852	Standard
	U	238	344272.4	0.3	**51.0286**	0.202	0.4	ug/L	13	Standard
>	Bi	209	459089.4	0.1				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 14:15:11
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.5144**	14.321	2783.9	mg/L	2	Standard
Mg	24	3913.8	1.8	**4.8089**	0.175	3.6	mg/L	58	Standard
K	39	1278.4	11.0	**4.5125**	0.420	9.3	mg/L	27	Standard
Ca	43	80.0	27.2	**4.0653**	1.588	39.1	mg/L	20	Standard
Fe	54	6825.0	1.6	**5.1062**	0.211	4.1	mg/L	158	Standard
Fe	57	1940.1	4.8	**5.2575**	0.365	6.9	mg/L	267	Standard
Sc-1	45	42454.4	2.4				mg/L	38815	Standard
Cl	35	68210.5	0.3				ug/L	57611	Standard
Kr	83	3.0	100.0				ug/L	2	Standard
Br	81	1940.1	4.2				ug/L	1617	Standard
P	31	20874.4	2.4				ug/L	19244	Standard
S	34	4085.6	5.9				ug/L	3557	Standard
Sr	88	61.7	20.4				ug/L	65	Standard
C	12	33.3	45.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	45.8				mg/L	23	Standard
Dy	164	35.5	65.8				mg/L	13	Standard
Ho-1	165	20.0	25.0				mg/L	10	Standard
Er	166	23.3	89.2				mg/L	13	Standard
I	127	9708.1	1.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.010		
Al	27	107.320		
Sc	45			
Ti	47	105.646		
V	51	102.715		
Cr	52	104.665		
Cr	53			
Mn	55	105.706		
Co	59	104.011		
Ni	60	104.326		
Cu	65	104.204		
Zn	66	103.698		
Ge	72		106.862	
As	75	102.629		
Se	82	101.421		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 14:15:11
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	102.386		
Ag	107	101.204		
Cd	111	101.595		
Cd	114			
In	115			103.707
Sn	118	101.567		
Sb	123	103.740		
Ba	135	100.462		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.115		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.507		
U	238	102.057		
Bi	209			102.237
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 14:15:11
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 14:16:06
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64190.7	0.9				ug/L	68501	Standard
	Be	9	26.7	65.8	**0.0509**	0.021	40.7	ug/L	8	Standard
	Al	27	2635.2	25.2	**0.0549**	0.005	9.3	ug/L	1397	Standard
	Sc	45	41592.0	2.0				ug/L	38815	Standard
	Ti	47	36.7	15.0	**0.0752**	0.016	21.4	ug/L	36	Standard
	V	51	1268.1	2.4	**0.0258**	0.006	23.1	ug/L	1284	Standard
	Cr	52	6579.4	1.7	**-0.0325**	0.005	16.6	ug/L	6503	Standard
	Cr	53	420.0	13.4	**0.0428**	0.057	133.5	ug/L	492	Standard
	Mn	55	1455.1	37.2	**0.1289**	0.086	66.7	ug/L	841	Standard
	Co	59	261.3	5.7	**0.0463**	0.003	5.8	ug/L	229	Standard
	Ni	60	441.3	5.5	**0.0905**	0.016	18.0	ug/L	344	Standard
	Cu	65	137.0	7.6	**0.0639**	0.007	10.5	ug/L	115	Standard
	Zn	66	238.0	11.0	**0.1094**	0.027	24.7	ug/L	190	Standard
>	**Ge**	72	434760.5	1.1				ug/L	409858	Standard
	As	75	-27.5	109.6	**0.0740**	0.027	36.9	ug/L	-22	Standard
	Se	82	16.6	21.2	**0.0970**	0.033	34.0	ug/L	18	Standard
	Se-1	77	54.7	20.1	**-0.0094**	0.159	1680.0	ug/L	50	Standard
>	**Ga**	71	66.7	31.2				mg/L	97	Standard
	Rb	85	81.7	12.7				ug/L	25	Standard
	Y	89	378186.4	2.2				ug/L	376763	Standard
>	**Rh**	103	20.0	50.0				ug/L	20	Standard
	Mo	98	153.7	3.6	**0.1334**	0.003	2.2	ug/L	51	Standard
	Ag	107	127.3	10.2	**0.0429**	0.002	5.0	ug/L	76	Standard
	Cd	111	17.1	59.0	**0.0478**	0.005	10.5	mg/L	6	Standard
	Cd	114	45.6	53.1	**0.0465**	0.005	10.6	ug/L	18	Standard
>	**In**	115	522609.3	1.2				ug/L	507261	Standard
	Sn	118	908.4	22.2	**0.0513**	0.037	72.9	ug/L	683	Standard
	Sb	123	878.6	35.9	**0.1790**	0.073	41.1	ug/L	446	Standard
	Ba	135	58.0	51.9	**0.0454**	0.016	34.5	ug/L	28	Standard
	Ce	140	331.7	19.9				ug/L	33	Standard
>	**Tb**	159	810828.6	0.2				ug/L	800803	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	80.0	40.2	**0.0435**	0.004	9.5	ug/L	13	Standard
	Tl	205	55.0	47.2	**0.0506**	0.004	7.6	ug/L	13	Standard
	Pb	206	272.3	12.8	**0.0499**	0.007	14.3	ug/L	226	Standard
	Pb	207	234.3	3.4	**0.0500**	0.002	3.4	ug/L	204	Standard
	Pb	208	1043.0	5.0	**0.0570**	0.003	5.6	ug/L	852	Standard
	U	238	68.3	34.1	**0.0527**	0.003	6.5	ug/L	13	Standard
>	**Bi**	209	461986.5	0.9				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 14:18:23
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	25.5	**0.0334**	0.019	57.4	mg/L	58	Standard
K	39	33.3	22.9	**-0.0174**	0.031	176.3	mg/L	27	Standard
Ca	43	15.0	57.7	**-0.2614**	0.582	222.6	mg/L	20	Standard
Fe	54	152.4	21.9	**-0.0009**	0.028	3226.3	mg/L	158	Standard
Fe	57	235.0	9.3	**0.0532**	0.054	101.4	mg/L	267	Standard
Sc-1	45	41592.0	2.0				mg/L	38815	Standard
Cl	35	67828.8	1.6				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1916.8	3.7				ug/L	1617	Standard
P	31	20525.6	1.1				ug/L	19244	Standard
S	34	3962.2	2.2				ug/L	3557	Standard
Sr	88	60.0	30.0				ug/L	65	Standard
C	12	70.0	65.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	23	Standard
Dy	164	19.5	52.5				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	7308.4	3.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.076	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 14:18:23
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.026
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.882
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 14:18:23
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606148803
Sample Date/Time: Wednesday, July 06, 2016 14:20:24
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68964.9	1.0				ug/L	68501	Standard
	Be	9	1430.1	4.1	**1.5844**	0.061	3.9	ug/L	8	Standard
	Al	27	4479340.7	0.7	**31.3738**	0.508	1.6	ug/L	1397	Standard
	Sc	45	50281.6	1.3				ug/L	38815	Standard
	Ti	47	12786.1	2.2	**35.4002**	0.626	1.8	ug/L	36	Standard
	V	51	245283.9	0.7	**32.2795**	0.259	0.8	ug/L	1284	Standard
	Cr	52	185195.4	1.3	**24.0973**	0.220	0.9	ug/L	6503	Standard
	Cr	53	22409.9	1.6	**23.8925**	0.264	1.1	ug/L	492	Standard
	Mn	55	13045244.9	0.7	**1984.2182**	4.943	0.2	ug/L	841	Standard
	Co	59	203887.4	1.0	**31.4350**	0.326	1.0	ug/L	229	Standard
	Ni	60	45030.8	0.2	**24.8217**	0.122	0.5	ug/L	344	Standard
	Cu	65	36415.4	1.0	**20.2279**	0.287	1.4	ug/L	115	Standard
	Zn	66	89164.3	0.6	**82.1810**	0.549	0.7	ug/L	190	Standard
>	**Ge**	72	440601.3	0.6				ug/L	409858	Standard
	As	75	13472.2	0.2	**12.1886**	0.074	0.6	ug/L	-22	Standard
	Se	82	159.2	6.3	**1.3506**	0.096	7.1	ug/L	18	Standard
	Se-1	77	180.7	12.1	**1.6818**	0.299	17.8	ug/L	50	Standard
>	**Ga**	71	27493.3	2.0				mg/L	97	Standard
	Rb	85	255486.1	0.8				ug/L	25	Standard
	Y	89	620644.7	1.4				ug/L	376763	Standard
>	**Rh**	103	36.7	41.7				ug/L	20	Standard
	Mo	98	4260.2	4.6	**1.7838**	0.088	4.9	ug/L	51	Standard
	Ag	107	692.3	11.4	**0.1306**	0.012	9.5	ug/L	76	Standard
	Cd	111	567.0	10.9	**0.3164**	0.032	10.0	mg/L	6	Standard
	Cd	114	1370.0	2.6	**0.3110**	0.006	1.8	ug/L	18	Standard
>	**In**	115	523416.4	1.0				ug/L	507261	Standard
	Sn	118	871.7	16.6	**0.0442**	0.026	57.7	ug/L	683	Standard
	Sb	123	1006.4	24.1	**0.2069**	0.054	26.1	ug/L	446	Standard
	Ba	135	368283.0	0.9	**187.5586**	0.267	0.1	ug/L	28	Standard
	Ce	140	1316437.2	1.5				ug/L	33	Standard
>	**Tb**	159	838738.9	0.8				ug/L	800803	Standard
	Ho	165	20597.3	3.2				ug/L	10	Standard
	Tl	203	2287.2	4.0	**0.3245**	0.009	2.9	ug/L	13	Standard
	Tl	205	2041.8	8.7	**0.3428**	0.028	8.2	ug/L	13	Standard
	Pb	206	194756.4	0.4	**38.6453**	0.250	0.6	ug/L	226	Standard
	Pb	207	160861.5	1.1	**35.1512**	0.495	1.4	ug/L	204	Standard
	Pb	208	691666.3	0.4	**37.7954**	0.298	0.8	ug/L	852	Standard
	U	238	13502.7	0.9	**2.0337**	0.035	1.7	ug/L	13	Standard
>	**Bi**	209	461132.8	1.0				ug/L	449044	Standard

Sample ID: L1606148803
Report Date/Time: Wednesday, July 06, 2016 14:22:41
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.7326**	12.211	704.7	mg/L	2	Standard
Mg	24	543.3	3.7	**0.5297**	0.028	5.3	mg/L	58	Standard
K	39	225.0	27.8	**0.5493**	0.186	33.8	mg/L	27	Standard
Ca	43	70.0	56.7	**2.6354**	2.167	82.2	mg/L	20	Standard
Fe	54	48868.5	1.4	**31.4625**	0.788	2.5	mg/L	158	Standard
Fe	57	12516.8	1.7	**31.6469**	0.919	2.9	mg/L	267	Standard
> **Sc-1**	45	50281.6	1.3				mg/L	38815	Standard
Cl	35	64480.9	1.3				ug/L	57611	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	5207.6	4.9				ug/L	1617	Standard
P	31	20347.0	4.2				ug/L	19244	Standard
S	34	3723.8	2.7				ug/L	3557	Standard
Sr	88	93.3	25.3				ug/L	65	Standard
C	12	180.0	25.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	126.7	24.1				mg/L	23	Standard
Dy	164	34149.5	0.7				mg/L	13	Standard
Ho-1	165	20597.3	3.2				mg/L	10	Standard
Er	166	18180.9	3.1				mg/L	13	Standard
I	127	51178.1	4.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.677	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606148803
Report Date/Time: Wednesday, July 06, 2016 14:22:41
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.185
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.692
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606148803
Report Date/Time: Wednesday, July 06, 2016 14:22:41
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606148804
Sample Date/Time: Wednesday, July 06, 2016 14:23:36
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70455.2	2.5				ug/L	68501	Standard
	Be	9	1626.8	3.8	**1.7617**	0.027	1.5	ug/L	8	Standard
	Al	27	7885247.8	2.0	**54.0384**	0.819	1.5	ug/L	1397	Standard
	Sc	45	53661.5	0.5				ug/L	38815	Standard
	Ti	47	11445.7	1.5	**31.6092**	0.269	0.9	ug/L	36	Standard
	V	51	210519.3	1.1	**27.6148**	0.047	0.2	ug/L	1284	Standard
	Cr	52	229151.0	1.1	**29.9626**	0.113	0.4	ug/L	6503	Standard
	Cr	53	28164.5	1.2	**30.0635**	0.512	1.7	ug/L	492	Standard
	Mn	55	5437614.7	1.0	**824.9869**	1.318	0.2	ug/L	841	Standard
	Co	59	122777.2	1.3	**18.8851**	0.187	1.0	ug/L	229	Standard
	Ni	60	93939.7	0.8	**51.8238**	0.133	0.3	ug/L	344	Standard
	Cu	65	81336.1	1.0	**45.0835**	0.163	0.4	ug/L	115	Standard
	Zn	66	135372.5	1.5	**124.5154**	0.758	0.6	ug/L	190	Standard
>	**Ge**	72	441688.5	1.0				ug/L	409858	Standard
	As	75	11413.4	2.1	**10.3148**	0.117	1.1	ug/L	-22	Standard
	Se	82	92.0	7.7	**0.7569**	0.057	7.6	ug/L	18	Standard
	Se-1	77	150.3	6.9	**1.2665**	0.131	10.4	ug/L	50	Standard
>	**Ga**	71	36022.8	0.3				mg/L	97	Standard
	Rb	85	260976.9	1.1				ug/L	25	Standard
	Y	89	737452.6	1.5				ug/L	376763	Standard
>	**Rh**	103	23.3	32.7				ug/L	20	Standard
	Mo	98	2377.3	0.4	**1.0254**	0.007	0.7	ug/L	51	Standard
	Ag	107	577.7	3.2	**0.1127**	0.003	2.7	ug/L	76	Standard
	Cd	111	456.4	3.3	**0.2619**	0.006	2.3	mg/L	6	Standard
	Cd	114	1138.8	4.7	**0.2645**	0.009	3.5	ug/L	18	Standard
>	**In**	115	524213.1	0.7				ug/L	507261	Standard
	Sn	118	543.3	24.0	**-0.0140**	0.023	166.6	ug/L	683	Standard
	Sb	123	503.1	37.6	**0.0932**	0.043	46.3	ug/L	446	Standard
	Ba	135	536592.0	1.6	**272.8382**	2.586	0.9	ug/L	28	Standard
	Ce	140	1270636.3	1.2				ug/L	33	Standard
>	**Tb**	159	849609.4	0.3				ug/L	800803	Standard
	Ho	165	27800.5	1.7				ug/L	10	Standard
	Tl	203	1988.8	1.5	**0.2853**	0.004	1.5	ug/L	13	Standard
	Tl	205	1725.1	5.5	**0.2949**	0.014	4.8	ug/L	13	Standard
	Pb	206	129785.5	0.5	**25.6264**	0.046	0.2	ug/L	226	Standard
	Pb	207	107864.6	0.4	**23.4549**	0.043	0.2	ug/L	204	Standard
	Pb	208	464868.0	0.1	**25.2790**	0.193	0.8	ug/L	852	Standard
	U	238	12298.7	1.6	**1.8471**	0.019	1.0	ug/L	13	Standard
>	**Bi**	209	463372.4	0.6				ug/L	449044	Standard

Sample ID: L1606148804
Report Date/Time: Wednesday, July 06, 2016 14:25:53
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	698.3	14.5	**0.6452**	0.096	14.8	mg/L	58	Standard
K	39	333.3	20.4	**0.8199**	0.200	24.4	mg/L	27	Standard
Ca	43	106.7	16.5	**4.3315**	0.899	20.8	mg/L	20	Standard
Fe	54	57795.6	2.6	**34.8751**	1.045	3.0	mg/L	158	Standard
Fe	57	14308.4	2.2	**33.9418**	0.935	2.8	mg/L	267	Standard
> **Sc-1**	45	53661.5	0.5				mg/L	38815	Standard
Cl	35	64031.0	0.5				ug/L	57611	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	4340.6	6.3				ug/L	1617	Standard
P	31	20407.1	0.3				ug/L	19244	Standard
S	34	3852.2	0.9				ug/L	3557	Standard
Sr	88	138.3	14.6				ug/L	65	Standard
C	12	113.3	18.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	40.7				mg/L	23	Standard
Dy	164	46817.8	1.5				mg/L	13	Standard
Ho-1	165	27800.5	1.7				mg/L	10	Standard
Er	166	24663.4	1.1				mg/L	13	Standard
I	127	21059.6	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.852	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.766	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606148804
Report Date/Time: Wednesday, July 06, 2016 14:25:53
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.342
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.191
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606148804
Report Date/Time: Wednesday, July 06, 2016 14:25:53
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606153301
Sample Date/Time: Wednesday, July 06, 2016 14:26:47
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68147.9	1.7				ug/L	68501	Standard
	Be	9	771.7	9.4	**0.8747**	0.088	10.0	ug/L	8	Standard
	Al	27	12416267.7	1.3	**87.9634**	2.577	2.9	ug/L	1397	Standard
	Sc	45	47710.0	1.2				ug/L	38815	Standard
	Ti	47	7376.1	1.1	**20.2551**	0.367	1.8	ug/L	36	Standard
	V	51	162623.9	0.2	**21.1879**	0.259	1.2	ug/L	1284	Standard
	Cr	52	163391.7	0.9	**20.9810**	0.252	1.2	ug/L	6503	Standard
	Cr	53	20403.7	2.8	**21.5523**	0.880	4.1	ug/L	492	Standard
	Mn	55	2250867.1	1.6	**339.6230**	1.651	0.5	ug/L	841	Standard
	Co	59	55901.3	1.7	**8.5555**	0.031	0.4	ug/L	229	Standard
	Ni	60	36823.0	1.7	**20.1135**	0.523	2.6	ug/L	344	Standard
	Cu	65	25825.3	0.5	**14.2313**	0.219	1.5	ug/L	115	Standard
	Zn	66	93990.6	0.8	**85.9661**	0.695	0.8	ug/L	190	Standard
>	Ge	72	444050.8	1.4				ug/L	409858	Standard
	As	75	4736.3	1.7	**4.3159**	0.012	0.3	ug/L	-22	Standard
	Se	82	75.0	10.7	**0.6032**	0.062	10.3	ug/L	18	Standard
	Se-1	77	104.3	17.3	**0.6382**	0.227	35.6	ug/L	50	Standard
>	Ga	71	16657.5	2.6				mg/L	97	Standard
	Rb	85	168562.8	2.3				ug/L	25	Standard
	Y	89	576458.9	1.1				ug/L	376763	Standard
>	Rh	103	53.3	23.6				ug/L	20	Standard
	Mo	98	1965.0	3.3	**0.8634**	0.018	2.1	ug/L	51	Standard
	Ag	107	631.3	4.3	**0.1214**	0.003	2.5	ug/L	76	Standard
	Cd	111	1012.4	2.3	**0.5352**	0.005	1.0	mg/L	6	Standard
	Cd	114	2475.0	2.2	**0.5334**	0.017	3.1	ug/L	18	Standard
>	In	115	521855.9	1.3				ug/L	507261	Standard
	Sn	118	2306.8	5.0	**0.2998**	0.026	8.7	ug/L	683	Standard
	Sb	123	509.0	29.8	**0.0952**	0.035	37.2	ug/L	446	Standard
	Ba	135	490095.6	1.4	**250.3317**	0.859	0.3	ug/L	28	Standard
	Ce	140	1104772.4	2.2				ug/L	33	Standard
>	Tb	159	830689.6	0.7				ug/L	800803	Standard
	Ho	165	16939.5	1.9				ug/L	10	Standard
	Tl	203	806.0	2.3	**0.1371**	0.003	2.2	ug/L	13	Standard
	Tl	205	756.7	4.5	**0.1550**	0.005	3.1	ug/L	13	Standard
	Pb	206	256607.5	1.0	**51.4795**	1.086	2.1	ug/L	226	Standard
	Pb	207	212619.8	0.6	**46.9700**	0.785	1.7	ug/L	204	Standard
	Pb	208	921038.1	0.5	**50.8782**	0.603	1.2	ug/L	852	Standard
	U	238	4276.6	4.5	**0.6802**	0.035	5.1	ug/L	13	Standard
>	Bi	209	456168.6	1.1				ug/L	449044	Standard

Sample ID: L1606153301
Report Date/Time: Wednesday, July 06, 2016 14:29:04
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	461.7	6.3	**0.4703**	0.034	7.2	mg/L	58	Standard
K	39	460.0	2.2	**1.3504**	0.049	3.6	mg/L	27	Standard
Ca	43	195.0	13.6	**10.2687**	1.651	16.1	mg/L	20	Standard
Fe	54	17929.3	3.8	**12.0874**	0.347	2.9	mg/L	158	Standard
Fe	57	4672.4	2.6	**12.0353**	0.317	2.6	mg/L	267	Standard
> **Sc-1**	45	47710.0	1.2				mg/L	38815	Standard
Cl	35	66407.9	0.5				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	5230.9	3.6				ug/L	1617	Standard
P	31	20996.2	0.8				ug/L	19244	Standard
S	34	3925.5	4.1				ug/L	3557	Standard
Sr	88	201.7	18.6				ug/L	65	Standard
C	12	120.0	0.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	28.6				mg/L	23	Standard
Dy	164	27810.2	4.4				mg/L	13	Standard
Ho-1	165	16939.5	1.9				mg/L	10	Standard
Er	166	15100.9	0.7				mg/L	13	Standard
I	127	13139.0	1.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.484	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.343	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153301
Report Date/Time: Wednesday, July 06, 2016 14:29:04
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.877
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.587
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606153301
Report Date/Time: Wednesday, July 06, 2016 14:29:04
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606153302
Sample Date/Time: Wednesday, July 06, 2016 14:29:58
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69505.8	1.9				ug/L	68501	Standard
	Be	9	856.7	3.2	**0.9501**	0.043	4.5	ug/L	8	Standard
	Al	27	18425399.3	2.6	**127.9163**	0.913	0.7	ug/L	1397	Standard
	Sc	45	48345.3	1.0				ug/L	38815	Standard
	Ti	47	8361.0	2.5	**23.2865**	0.575	2.5	ug/L	36	Standard
	V	51	163202.5	0.9	**21.5655**	0.254	1.2	ug/L	1284	Standard
	Cr	52	141504.8	1.1	**18.3140**	0.301	1.6	ug/L	6503	Standard
	Cr	53	17246.5	1.5	**18.4104**	0.344	1.9	ug/L	492	Standard
	Mn	55	3248037.2	1.4	**497.1143**	9.755	2.0	ug/L	841	Standard
	Co	59	64929.8	0.9	**10.0780**	0.141	1.4	ug/L	229	Standard
	Ni	60	40681.2	0.4	**22.5514**	0.203	0.9	ug/L	344	Standard
	Cu	65	26231.7	0.4	**14.6587**	0.056	0.4	ug/L	115	Standard
	Zn	66	59371.1	1.2	**55.0294**	0.757	1.4	ug/L	190	Standard
>	Ge	72	437841.6	0.5				ug/L	409858	Standard
	As	75	3819.1	1.3	**3.5477**	0.051	1.4	ug/L	-22	Standard
	Se	82	63.2	15.3	**0.5090**	0.087	17.2	ug/L	18	Standard
	Se-1	77	114.7	10.2	**0.7996**	0.156	19.5	ug/L	50	Standard
>	Ga	71	17126.3	2.1				mg/L	97	Standard
	Rb	85	174436.8	1.0				ug/L	25	Standard
	Y	89	589810.1	1.2				ug/L	376763	Standard
>	Rh	103	46.7	22.3				ug/L	20	Standard
	Mo	98	807.3	1.4	**0.3999**	0.004	1.0	ug/L	51	Standard
	Ag	107	589.0	14.0	**0.1156**	0.013	10.8	ug/L	76	Standard
	Cd	111	588.8	3.3	**0.3304**	0.006	2.0	mg/L	6	Standard
	Cd	114	1476.5	2.1	**0.3360**	0.010	2.9	ug/L	18	Standard
>	In	115	517084.2	1.2				ug/L	507261	Standard
	Sn	118	753.4	15.5	**0.0248**	0.019	78.5	ug/L	683	Standard
	Sb	123	464.2	27.6	**0.0856**	0.028	33.1	ug/L	446	Standard
	Ba	135	439401.4	0.4	**226.5278**	2.065	0.9	ug/L	28	Standard
	Ce	140	1185543.6	1.0				ug/L	33	Standard
>	Tb	159	826809.9	1.0				ug/L	800803	Standard
	Ho	165	18733.2	1.7				ug/L	10	Standard
	Tl	203	866.7	5.6	**0.1458**	0.007	4.6	ug/L	13	Standard
	Tl	205	758.4	2.7	**0.1562**	0.003	2.2	ug/L	13	Standard
	Pb	206	95906.3	1.6	**19.3933**	0.272	1.4	ug/L	226	Standard
	Pb	207	79499.0	1.3	**17.7046**	0.235	1.3	ug/L	204	Standard
	Pb	208	341366.3	0.2	**19.0116**	0.119	0.6	ug/L	852	Standard
	U	238	4789.8	2.5	**0.7624**	0.020	2.6	ug/L	13	Standard
>	Bi	209	452435.1	0.4				ug/L	449044	Standard

Sample ID: L1606153302
Report Date/Time: Wednesday, July 06, 2016 14:32:15
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.5685**	12.495	796.6	mg/L	2	Standard
Mg	24	160.0	16.5	**0.1354**	0.027	19.9	mg/L	58	Standard
K	39	441.7	8.0	**1.2712**	0.100	7.8	mg/L	27	Standard
Ca	43	336.7	4.5	**18.3838**	0.917	5.0	mg/L	20	Standard
Fe	54	18193.1	1.4	**12.1065**	0.180	1.5	mg/L	158	Standard
Fe	57	5070.8	1.9	**12.9392**	0.314	2.4	mg/L	267	Standard
> **Sc-1**	45	48345.3	1.0				mg/L	38815	Standard
Cl	35	67048.7	0.3				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3283.7	4.1				ug/L	1617	Standard
P	31	21121.4	2.3				ug/L	19244	Standard
S	34	4137.2	5.8				ug/L	3557	Standard
Sr	88	201.7	17.9				ug/L	65	Standard
C	12	140.0	25.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	15.7				mg/L	23	Standard
Dy	164	31095.7	1.2				mg/L	13	Standard
Ho-1	165	18733.2	1.7				mg/L	10	Standard
Er	166	16796.0	2.1				mg/L	13	Standard
I	127	12917.2	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.467	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153302
Report Date/Time: Wednesday, July 06, 2016 14:32:15
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.937
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.755
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606153302
Report Date/Time: Wednesday, July 06, 2016 14:32:15
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606164301
Sample Date/Time: Wednesday, July 06, 2016 14:33:10
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69428.8	2.6				ug/L	68501	Standard
	Be	9	1636.8	2.5	**1.7991**	0.043	2.4	ug/L	8	Standard
	Al	27	39500793.5	2.5	**274.5277**	1.455	0.5	ug/L	1397	Standard
	Sc	45	53986.0	1.4				ug/L	38815	Standard
	Ti	47	691754.6	0.6	**2204.8276**	20.610	0.9	ug/L	36	Standard
	V	51	699452.5	0.9	**106.2143**	1.985	1.9	ug/L	1284	Standard
	Cr	52	809923.1	0.9	**124.9852**	1.160	0.9	ug/L	6503	Standard
	Cr	53	99527.5	0.8	**123.7822**	1.570	1.3	ug/L	492	Standard
	Mn	55	8147594.7	0.9	**1425.4572**	14.550	1.0	ug/L	841	Standard
	Co	59	124493.7	1.1	**22.0821**	0.488	2.2	ug/L	229	Standard
	Ni	60	113209.8	1.5	**72.0728**	0.756	1.0	ug/L	344	Standard
	Cu	65	118972.0	1.6	**76.0424**	0.278	0.4	ug/L	115	Standard
	Zn	66	977529.9	1.7	**1037.5458**	5.451	0.5	ug/L	190	Standard
>	**Ge**	72	383077.6	1.4				ug/L	409858	Standard
	As	75	7978.6	0.8	**8.3342**	0.070	0.8	ug/L	-22	Standard
	Se	82	147.2	5.6	**1.4400**	0.093	6.5	ug/L	18	Standard
	Se-1	77	136.0	10.2	**1.3561**	0.241	17.8	ug/L	50	Standard
>	**Ga**	71	64701.3	2.8				mg/L	97	Standard
	Rb	85	943143.2	0.2				ug/L	25	Standard
	Y	89	702387.7	2.1				ug/L	376763	Standard
>	**Rh**	103	1626.8	7.8				ug/L	20	Standard
	Mo	98	7031.4	1.4	**3.3995**	0.013	0.4	ug/L	51	Standard
	Ag	107	4514.3	1.1	**0.8488**	0.018	2.1	ug/L	76	Standard
	Cd	111	293.3	7.2	**0.2082**	0.014	6.7	mg/L	6	Standard
	Cd	114	505.6	12.8	**0.1562**	0.013	8.4	ug/L	18	Standard
>	**In**	115	444413.1	1.7				ug/L	507261	Standard
	Sn	118	9111.1	1.5	**1.7898**	0.024	1.4	ug/L	683	Standard
	Sb	123	891.2	18.5	**0.2170**	0.046	21.2	ug/L	446	Standard
	Ba	135	515064.5	1.4	**308.9390**	0.851	0.3	ug/L	28	Standard
	Ce	140	1739811.5	1.9				ug/L	33	Standard
>	**Tb**	159	758128.4	1.9				ug/L	800803	Standard
	Ho	165	26984.0	3.1				ug/L	10	Standard
	Tl	203	51.3	14.6	**0.0413**	0.001	2.8	ug/L	13	Standard
	Tl	205	46.7	37.6	**0.0509**	0.003	6.1	ug/L	13	Standard
	Pb	206	99318.1	0.4	**24.0923**	0.176	0.7	ug/L	226	Standard
	Pb	207	82369.3	0.9	**22.0041**	0.206	0.9	ug/L	204	Standard
	Pb	208	340801.2	1.0	**22.7675**	0.282	1.2	ug/L	852	Standard
	U	238	15059.5	0.6	**2.7573**	0.009	0.3	ug/L	13	Standard
>	**Bi**	209	377183.0	0.9				ug/L	449044	Standard

Sample ID: L1606164301
Report Date/Time: Wednesday, July 06, 2016 14:35:27
Page 1

Approved: July 07, 2016

Na	23	78.3	22.4	**298.4994**	69.283	23.2	mg/L	2	Standard
Mg	24	3415.4	0.4	**3.2866**	0.036	1.1	mg/L	58	Standard
K	39	4233.9	1.4	**11.9963**	0.339	2.8	mg/L	27	Standard
Ca	43	11469.3	1.3	**598.6185**	13.178	2.2	mg/L	20	Standard
Fe	54	41027.6	1.7	**24.5701**	0.110	0.4	mg/L	158	Standard
Fe	57	17586.9	0.5	**41.6189**	0.442	1.1	mg/L	267	Standard
Sc-1	45	53986.0	1.4				mg/L	38815	Standard
Cl	35	87387.3	0.7				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	6948.3	7.7				ug/L	1617	Standard
P	31	19342.3	1.6				ug/L	19244	Standard
S	34	3842.2	3.5				ug/L	3557	Standard
Sr	88	6896.6	5.2				ug/L	65	Standard
C	12	66.7	52.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	39507.9	2.2				mg/L	13	Standard
Ho-1	165	26984.0	3.1				mg/L	10	Standard
Er	166	26867.1	2.1				mg/L	13	Standard
I	127	8078.8	2.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.354	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.466	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606164301
Report Date/Time: Wednesday, July 06, 2016 14:35:27
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.610
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.997
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

Sample ID: L1606164301
Report Date/Time: Wednesday, July 06, 2016 14:35:27
Page 3

Approved: July 07, 2016

Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606164302
Sample Date/Time: Wednesday, July 06, 2016 14:36:21
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68074.3	3.1				ug/L	68501	Standard
	Be	9	1676.8	1.0	**1.8798**	0.070	3.7	ug/L	8	Standard
	Al	27	36487885.7	1.0	**258.8300**	9.964	3.8	ug/L	1397	Standard
	Sc	45	54253.7	2.1				ug/L	38815	Standard
	Ti	47	713173.1	0.2	**2239.9907**	37.989	1.7	ug/L	36	Standard
	V	51	784062.8	1.0	**117.3418**	2.757	2.3	ug/L	1284	Standard
	Cr	52	1058816.2	0.3	**161.2792**	2.118	1.3	ug/L	6503	Standard
	Cr	53	128302.6	1.0	**157.3675**	3.831	2.4	ug/L	492	Standard
	Mn	55	9336934.6	1.6	**1610.0137**	50.338	3.1	ug/L	841	Standard
	Co	59	128111.4	1.0	**22.3925**	0.580	2.6	ug/L	229	Standard
	Ni	60	125551.8	1.3	**78.7899**	1.983	2.5	ug/L	344	Standard
	Cu	65	139849.8	0.4	**88.0931**	1.328	1.5	ug/L	115	Standard
	Zn	66	1090011.4	0.8	**1140.1019**	9.125	0.8	ug/L	190	Standard
>	Ge	72	388774.8	1.6				ug/L	409858	Standard
	As	75	7748.3	0.5	**7.9803**	0.149	1.9	ug/L	-22	Standard
	Se	82	129.2	7.5	**1.2374**	0.092	7.5	ug/L	18	Standard
	Se-1	77	141.7	10.4	**1.4093**	0.214	15.2	ug/L	50	Standard
>	Ga	71	64269.4	0.9				mg/L	97	Standard
	Rb	85	903484.1	1.4				ug/L	25	Standard
	Y	89	691327.0	0.5				ug/L	376763	Standard
>	Rh	103	1586.7	6.2				ug/L	20	Standard
	Mo	98	9576.0	1.4	**4.5403**	0.058	1.3	ug/L	51	Standard
	Ag	107	4941.8	1.4	**0.9141**	0.012	1.3	ug/L	76	Standard
	Cd	111	288.9	5.1	**0.2032**	0.008	4.0	mg/L	6	Standard
	Cd	114	581.5	10.2	**0.1723**	0.014	8.0	ug/L	18	Standard
>	In	115	450717.4	0.1				ug/L	507261	Standard
	Sn	118	12807.1	1.6	**2.5230**	0.040	1.6	ug/L	683	Standard
	Sb	123	677.8	18.9	**0.1575**	0.034	21.4	ug/L	446	Standard
	Ba	135	495414.8	0.4	**292.9882**	1.099	0.4	ug/L	28	Standard
	Ce	140	1637103.7	0.8				ug/L	33	Standard
>	Tb	159	767161.8	1.6				ug/L	800803	Standard
	Ho	165	25913.8	1.5				ug/L	10	Standard
	Tl	203	48.0	24.0	**0.0407**	0.002	4.4	ug/L	13	Standard
	Tl	205	53.3	28.6	**0.0520**	0.003	5.2	ug/L	13	Standard
	Pb	206	78980.0	0.3	**18.8920**	0.060	0.3	ug/L	226	Standard
	Pb	207	65462.4	0.2	**17.2450**	0.059	0.3	ug/L	204	Standard
	Pb	208	274937.4	1.0	**18.1124**	0.167	0.9	ug/L	852	Standard
	U	238	14384.5	2.0	**2.5996**	0.049	1.9	ug/L	13	Standard
>	Bi	209	382475.3	0.1				ug/L	449044	Standard

Sample ID: L1606164302
Report Date/Time: Wednesday, July 06, 2016 14:38:38
Page 1

Approved: July 07, 2016

Na	23	78.3	13.3	**296.5126**	36.423	12.3	mg/L	2	Standard
Mg	24	3305.4	5.9	**3.1653**	0.224	7.1	mg/L	58	Standard
K	39	4055.5	3.2	**11.4256**	0.339	3.0	mg/L	27	Standard
Ca	43	11172.5	2.0	**580.2218**	13.558	2.3	mg/L	20	Standard
Fe	54	41719.4	1.1	**24.8710**	0.620	2.5	mg/L	158	Standard
Fe	57	17573.5	0.4	**41.3869**	0.919	2.2	mg/L	267	Standard
Sc-1	45	54253.7	2.1				mg/L	38815	Standard
Cl	35	87803.0	1.0				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	6821.5	3.6				ug/L	1617	Standard
P	31	19047.0	1.8				ug/L	19244	Standard
S	34	3895.5	3.5				ug/L	3557	Standard
Sr	88	6293.0	3.0				ug/L	65	Standard
C	12	76.7	30.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	137.8				mg/L	23	Standard
Dy	164	38633.3	1.4				mg/L	13	Standard
Ho-1	165	25913.8	1.5				mg/L	10	Standard
Er	166	26426.4	1.5				mg/L	13	Standard
I	127	8060.5	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.377	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.856	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606164302
Report Date/Time: Wednesday, July 06, 2016 14:38:38
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.853
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.175
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

Sample ID: L1606164302
Report Date/Time: Wednesday, July 06, 2016 14:38:38
Page 3

Approved: July 07, 2016

Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

Sample ID: L1606164302
Report Date/Time: Wednesday, July 06, 2016 14:38:38
Page 4

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606168701
Sample Date/Time: Wednesday, July 06, 2016 14:39:33
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65198.3	0.3				ug/L	68501	Standard
	Be	9	1203.4	5.3	**1.4124**	0.070	5.0	ug/L	8	Standard
	Al	27	8002436.2	0.7	**59.2503**	0.304	0.5	ug/L	1397	Standard
	Sc	45	54516.2	1.1				ug/L	38815	Standard
	Ti	47	4355.0	3.4	**11.9055**	0.476	4.0	ug/L	36	Standard
	V	51	172515.9	1.4	**22.4049**	0.478	2.1	ug/L	1284	Standard
	Cr	52	187973.8	0.1	**24.1888**	0.362	1.5	ug/L	6503	Standard
	Cr	53	22812.2	3.1	**24.0476**	0.569	2.4	ug/L	492	Standard
	Mn	55	702950.0	1.2	**105.6433**	2.666	2.5	ug/L	841	Standard
	Co	59	51718.1	1.6	**7.8896**	0.229	2.9	ug/L	229	Standard
	Ni	60	55454.0	0.9	**30.2604**	0.655	2.2	ug/L	344	Standard
	Cu	65	88613.7	0.9	**48.6862**	0.625	1.3	ug/L	115	Standard
	Zn	66	118159.3	0.7	**107.7164**	1.479	1.4	ug/L	190	Standard
>	Ge	72	445650.1	1.4				ug/L	409858	Standard
	As	75	4148.8	2.4	**3.7802**	0.107	2.8	ug/L	-22	Standard
	Se	82	64.4	6.6	**0.5094**	0.043	8.5	ug/L	18	Standard
	Se-1	77	139.3	4.1	**1.1025**	0.091	8.3	ug/L	50	Standard
>	Ga	71	24242.7	5.2				mg/L	97	Standard
	Rb	85	141026.7	1.5				ug/L	25	Standard
	Y	89	763474.6	0.4				ug/L	376763	Standard
>	Rh	103	46.7	48.3				ug/L	20	Standard
	Mo	98	184.5	10.6	**0.1457**	0.007	4.9	ug/L	51	Standard
	Ag	107	1242.4	5.7	**0.2161**	0.011	5.3	ug/L	76	Standard
	Cd	111	699.4	2.5	**0.3810**	0.006	1.5	mg/L	6	Standard
	Cd	114	1744.0	5.9	**0.3858**	0.018	4.5	ug/L	18	Standard
>	In	115	523267.4	0.9				ug/L	507261	Standard
	Sn	118	786.7	19.9	**0.0294**	0.029	98.1	ug/L	683	Standard
	Sb	123	369.0	28.6	**0.0632**	0.025	38.8	ug/L	446	Standard
	Ba	135	302502.8	1.1	**154.1018**	0.436	0.3	ug/L	28	Standard
	Ce	140	1768629.8	1.3				ug/L	33	Standard
>	Tb	159	852268.4	0.8				ug/L	800803	Standard
	Ho	165	30797.9	0.5				ug/L	10	Standard
	Tl	203	1307.4	0.4	**0.2006**	0.001	0.5	ug/L	13	Standard
	Tl	205	1103.4	7.1	**0.2055**	0.011	5.5	ug/L	13	Standard
	Pb	206	198522.1	0.7	**39.5866**	0.197	0.5	ug/L	226	Standard
	Pb	207	158834.2	0.5	**34.8785**	0.060	0.2	ug/L	204	Standard
	Pb	208	698105.2	0.3	**38.3353**	0.192	0.5	ug/L	852	Standard
	U	238	7948.1	2.5	**1.2203**	0.026	2.1	ug/L	13	Standard
>	Bi	209	458856.3	0.6				ug/L	449044	Standard

Sample ID: L1606168701
Report Date/Time: Wednesday, July 06, 2016 14:41:50
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	120.0	16.7	**0.0774**	0.020	26.2	mg/L	58	Standard
K	39	231.7	10.9	**0.5161**	0.076	14.8	mg/L	27	Standard
Ca	43	146.7	7.1	**6.3201**	0.584	9.2	mg/L	20	Standard
Fe	54	26063.7	2.4	**15.4120**	0.269	1.7	mg/L	158	Standard
Fe	57	6638.1	2.2	**15.1289**	0.287	1.9	mg/L	267	Standard
> **Sc-1**	45	54516.2	1.1				mg/L	38815	Standard
Cl	35	64574.7	2.3				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	2150.2	3.8				ug/L	1617	Standard
P	31	19699.5	1.2				ug/L	19244	Standard
S	34	3850.5	8.7				ug/L	3557	Standard
Sr	88	93.3	41.6				ug/L	65	Standard
C	12	103.3	24.4				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	120.0	22.0				mg/L	23	Standard
Dy	164	49394.7	1.6				mg/L	13	Standard
Ho-1	165	30797.9	0.5				mg/L	10	Standard
Er	166	29024.5	3.2				mg/L	13	Standard
I	127	21525.3	2.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.178	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.733	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606168701
Report Date/Time: Wednesday, July 06, 2016 14:41:50
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.156
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.185
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606168701
Report Date/Time: Wednesday, July 06, 2016 14:41:50
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129601
Sample Date/Time: Wednesday, July 06, 2016 14:42:44
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56620.6	2.4				ug/L	68501	Standard
	Be	9	20.0	50.0	**0.0459**	0.013	27.6	ug/L	8	Standard
	Al	27	5728922.0	1.3	**48.8606**	0.848	1.7	ug/L	1397	Standard
	Sc	45	39332.7	0.5				ug/L	38815	Standard
	Ti	47	250.7	40.1	**0.7210**	0.296	41.0	ug/L	36	Standard
	V	51	5583.3	1.1	**0.6527**	0.007	1.1	ug/L	1284	Standard
	Cr	52	6924.9	7.8	**0.0771**	0.083	107.9	ug/L	6503	Standard
	Cr	53	828.4	12.4	**0.5513**	0.117	21.2	ug/L	492	Standard
	Mn	55	39639.9	5.7	**6.4122**	0.323	5.0	ug/L	841	Standard
	Co	59	636.3	9.7	**0.1113**	0.009	8.5	ug/L	229	Standard
	Ni	60	1640.1	10.3	**0.8248**	0.105	12.8	ug/L	344	Standard
	Cu	65	1729.4	1.9	**1.0246**	0.025	2.4	ug/L	115	Standard
	Zn	66	1474.4	4.9	**1.3554**	0.062	4.5	ug/L	190	Standard
>	Ge	72	408109.4	0.7				ug/L	409858	Standard
	As	75	1683.3	3.0	**1.7299**	0.056	3.2	ug/L	-22	Standard
	Se	82	50.4	6.7	**0.4278**	0.029	6.7	ug/L	18	Standard
	Se-1	77	99.0	13.7	**0.6840**	0.188	27.4	ug/L	50	Standard
>	Ga	71	166.7	27.7				mg/L	97	Standard
	Rb	85	7700.3	2.6				ug/L	25	Standard
	Y	89	351613.9	1.8				ug/L	376763	Standard
>	Rh	103	36.7	20.8				ug/L	20	Standard
	Mo	98	1713.4	1.7	**0.8237**	0.007	0.8	ug/L	51	Standard
	Ag	107	91.7	52.6	**0.0387**	0.008	21.3	ug/L	76	Standard
	Cd	111	14.1	4.0	**0.0469**	0.000	0.7	mg/L	6	Standard
	Cd	114	55.2	43.3	**0.0495**	0.005	10.8	ug/L	18	Standard
>	In	115	479114.4	0.9				ug/L	507261	Standard
	Sn	118	240.0	21.1	**-0.0637**	0.009	14.8	ug/L	683	Standard
	Sb	123	897.3	23.2	**0.2010**	0.050	25.0	ug/L	446	Standard
	Ba	135	36392.7	1.3	**20.2618**	0.198	1.0	ug/L	28	Standard
	Ce	140	1328.4	93.1				ug/L	33	Standard
>	Tb	159	753581.0	0.7				ug/L	800803	Standard
	Ho	165	46.7	83.2				ug/L	10	Standard
	Tl	203	318.0	7.7	**0.0770**	0.004	4.6	ug/L	13	Standard
	Tl	205	243.3	7.2	**0.0811**	0.003	3.7	ug/L	13	Standard
	Pb	206	459.0	35.8	**0.0943**	0.036	37.7	ug/L	226	Standard
	Pb	207	393.0	33.0	**0.0916**	0.031	33.8	ug/L	204	Standard
	Pb	208	1558.0	19.6	**0.0919**	0.018	20.0	ug/L	852	Standard
	U	238	568.7	6.1	**0.1330**	0.006	4.4	ug/L	13	Standard
>	Bi	209	427650.1	0.7				ug/L	449044	Standard

Sample ID: L1606129601
Report Date/Time: Wednesday, July 06, 2016 14:45:01
Page 1

Approved: July 07, 2016

Na	23	3.3	173.2	**9.1076**	30.987	340.2	mg/L	2	Standard
Mg	24	7790.3	1.4	**10.3704**	0.153	1.5	mg/L	58	Standard
K	39	265.0	21.3	**0.9004**	0.219	24.3	mg/L	27	Standard
Ca	43	261.7	8.0	**17.5007**	1.426	8.2	mg/L	20	Standard
Fe	54	72.7	37.5	**-0.0601**	0.023	38.1	mg/L	158	Standard
Fe	57	375.0	6.1	**0.5580**	0.070	12.6	mg/L	267	Standard
> **Sc-1**	45	39332.7	0.5				mg/L	38815	Standard
Cl	35	70004.8	3.9				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	3617.1	4.1				ug/L	1617	Standard
P	31	6836.5	0.9				ug/L	19244	Standard
S	34	3590.4	5.8				ug/L	3557	Standard
Sr	88	210.0	23.0				ug/L	65	Standard
C	12	153.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	54.4	85.8				mg/L	13	Standard
Ho-1	165	46.7	83.2				mg/L	10	Standard
Er	166	46.7	24.7				mg/L	13	Standard
I	127	20814.3	4.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.656	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.573	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129601
Report Date/Time: Wednesday, July 06, 2016 14:45:01
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.451
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.236
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131308
Sample Date/Time: Wednesday, July 06, 2016 14:45:56
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60497.3	3.0				ug/L	68501	Standard
	Be	9	15.0	88.2	**0.0379**	0.016	41.5	ug/L	8	Standard
	Al	27	5083469.3	2.6	**40.5780**	0.231	0.6	ug/L	1397	Standard
	Sc	45	38739.5	1.9				ug/L	38815	Standard
	Ti	47	412.0	7.8	**1.1968**	0.101	8.4	ug/L	36	Standard
	V	51	3464.8	0.7	**0.3471**	0.005	1.4	ug/L	1284	Standard
	Cr	52	8692.2	1.2	**0.3263**	0.023	7.2	ug/L	6503	Standard
	Cr	53	598.3	7.3	**0.2774**	0.047	17.0	ug/L	492	Standard
	Mn	55	171328.2	0.3	**27.8533**	0.134	0.5	ug/L	841	Standard
	Co	59	1006.4	6.9	**0.1718**	0.011	6.3	ug/L	229	Standard
	Ni	60	1056.4	6.2	**0.4705**	0.035	7.3	ug/L	344	Standard
	Cu	65	541.3	4.5	**0.3095**	0.017	5.4	ug/L	115	Standard
	Zn	66	3408.4	0.5	**3.2604**	0.045	1.4	ug/L	190	Standard
>	**Ge**	72	410842.2	0.8				ug/L	409858	Standard
	As	75	28.9	66.4	**0.1266**	0.018	14.5	ug/L	-22	Standard
	Se	82	24.9	24.0	**0.1836**	0.054	29.6	ug/L	18	Standard
	Se-1	77	64.7	7.6	**0.1778**	0.069	38.8	ug/L	50	Standard
>	**Ga**	71	391.7	10.7				mg/L	97	Standard
	Rb	85	1593.4	5.4				ug/L	25	Standard
	Y	89	352039.8	1.1				ug/L	376763	Standard
>	**Rh**	103	45.0	11.1				ug/L	20	Standard
	Mo	98	8222.6	1.1	**3.6505**	0.031	0.8	ug/L	51	Standard
	Ag	107	73.7	8.2	**0.0355**	0.001	2.8	ug/L	76	Standard
	Cd	111	17.4	50.3	**0.0486**	0.005	9.5	mg/L	6	Standard
	Cd	114	57.8	14.9	**0.0499**	0.002	3.7	ug/L	18	Standard
>	**In**	115	483224.8	0.3				ug/L	507261	Standard
	Sn	118	266.7	2.9	**-0.0590**	0.002	2.7	ug/L	683	Standard
	Sb	123	167.3	27.5	**0.0206**	0.011	54.5	ug/L	446	Standard
	Ba	135	5694.1	2.5	**3.1566**	0.082	2.6	ug/L	28	Standard
	Ce	140	3217.0	6.3				ug/L	33	Standard
>	**Tb**	159	754978.3	0.8				ug/L	800803	Standard
	Ho	165	158.3	9.6				ug/L	10	Standard
	Tl	203	120.0	0.8	**0.0497**	0.000	0.2	ug/L	13	Standard
	Tl	205	133.3	11.5	**0.0636**	0.002	3.9	ug/L	13	Standard
	Pb	206	1150.0	3.7	**0.2410**	0.009	3.5	ug/L	226	Standard
	Pb	207	967.0	3.1	**0.2258**	0.007	3.2	ug/L	204	Standard
	Pb	208	4211.2	0.6	**0.2471**	0.000	0.1	ug/L	852	Standard
	U	238	1898.1	1.9	**0.3431**	0.007	2.1	ug/L	13	Standard
>	**Bi**	209	429522.8	0.4				ug/L	449044	Standard

Sample ID: L1606131308
Report Date/Time: Wednesday, July 06, 2016 14:48:12
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	7080.0	1.9	**9.5693**	0.314	3.3	mg/L	58	Standard
K	39	105.0	14.3	**0.2779**	0.063	22.6	mg/L	27	Standard
Ca	43	131.7	17.9	**8.2986**	1.559	18.8	mg/L	20	Standard
Fe	54	415.2	7.8	**0.2279**	0.024	10.7	mg/L	158	Standard
Fe	57	483.3	3.2	**0.9402**	0.043	4.5	mg/L	267	Standard
> **Sc-1**	45	38739.5	1.9				mg/L	38815	Standard
Cl	35	77637.7	0.8				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	3303.7	2.7				ug/L	1617	Standard
P	31	7910.4	3.8				ug/L	19244	Standard
S	34	3723.8	0.9				ug/L	3557	Standard
Sr	88	186.7	14.8				ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	224.4	22.2				mg/L	13	Standard
Ho-1	165	158.3	9.6				mg/L	10	Standard
Er	166	116.7	17.8				mg/L	13	Standard
I	127	29163.1	5.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.316	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.240	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131308
Report Date/Time: Wednesday, July 06, 2016 14:48:12
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.262
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.653
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606131308
Report Date/Time: Wednesday, July 06, 2016 14:48:12
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131310
Sample Date/Time: Wednesday, July 06, 2016 14:49:07
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60284.7	0.7				ug/L	68501	Standard
	Be	9	16.7	96.4	**0.0402**	0.020	49.5	ug/L	8	Standard
	Al	27	4773931.6	0.4	**38.2412**	0.333	0.9	ug/L	1397	Standard
	Sc	45	38686.0	1.6				ug/L	38815	Standard
	Ti	47	382.3	5.5	**1.1093**	0.058	5.3	ug/L	36	Standard
	V	51	3331.3	3.4	**0.3285**	0.015	4.5	ug/L	1284	Standard
	Cr	52	8364.3	1.3	**0.2800**	0.022	8.0	ug/L	6503	Standard
	Cr	53	436.7	3.5	**0.0900**	0.018	19.6	ug/L	492	Standard
	Mn	55	151915.9	1.7	**24.7109**	0.509	2.1	ug/L	841	Standard
	Co	59	908.4	1.9	**0.1558**	0.002	1.3	ug/L	229	Standard
	Ni	60	1009.0	5.0	**0.4432**	0.034	7.7	ug/L	344	Standard
	Cu	65	498.0	5.2	**0.2839**	0.017	6.0	ug/L	115	Standard
	Zn	66	2894.9	3.3	**2.7552**	0.112	4.1	ug/L	190	Standard
>	**Ge**	72	410454.1	0.7				ug/L	409858	Standard
	As	75	10.9	361.4	**0.1096**	0.038	35.0	ug/L	-22	Standard
	Se	82	22.6	41.6	**0.1626**	0.091	55.7	ug/L	18	Standard
	Se-1	77	58.3	4.0	**0.0868**	0.029	33.7	ug/L	50	Standard
>	**Ga**	71	321.7	15.6				mg/L	97	Standard
	Rb	85	1441.7	6.2				ug/L	25	Standard
	Y	89	347697.6	0.5				ug/L	376763	Standard
>	**Rh**	103	43.3	24.0				ug/L	20	Standard
	Mo	98	7063.4	0.4	**3.1412**	0.026	0.8	ug/L	51	Standard
	Ag	107	62.7	8.8	**0.0336**	0.001	3.0	ug/L	76	Standard
	Cd	111	6.0	35.2	**0.0425**	0.001	2.6	mg/L	6	Standard
	Cd	114	70.1	22.4	**0.0525**	0.003	6.5	ug/L	18	Standard
>	**In**	115	484013.8	1.0				ug/L	507261	Standard
	Sn	118	245.0	7.4	**-0.0632**	0.004	5.8	ug/L	683	Standard
	Sb	123	172.0	39.0	**0.0218**	0.017	77.0	ug/L	446	Standard
	Ba	135	5035.5	0.9	**2.7890**	0.049	1.7	ug/L	28	Standard
	Ce	140	2850.3	7.9				ug/L	33	Standard
>	**Tb**	159	754149.8	0.6				ug/L	800803	Standard
	Ho	165	116.7	32.5				ug/L	10	Standard
	Tl	203	121.3	6.4	**0.0500**	0.001	2.3	ug/L	13	Standard
	Tl	205	91.7	20.7	**0.0570**	0.003	5.2	ug/L	13	Standard
	Pb	206	1035.0	3.4	**0.2170**	0.007	3.5	ug/L	226	Standard
	Pb	207	864.7	5.6	**0.2022**	0.012	5.7	ug/L	204	Standard
	Pb	208	3790.9	3.4	**0.2229**	0.007	3.1	ug/L	852	Standard
	U	238	1786.8	0.6	**0.3261**	0.002	0.6	ug/L	13	Standard
>	**Bi**	209	428583.4	0.4				ug/L	449044	Standard

Sample ID: L1606131310
Report Date/Time: Wednesday, July 06, 2016 14:51:24
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	6726.5	2.4	**9.0996**	0.200	2.2	mg/L	58	Standard
K	39	83.3	19.3	**0.1919**	0.067	34.9	mg/L	27	Standard
Ca	43	153.3	10.5	**9.9211**	1.276	12.9	mg/L	20	Standard
Fe	54	335.5	13.4	**0.1612**	0.033	20.7	mg/L	158	Standard
Fe	57	411.7	5.1	**0.7028**	0.090	12.8	mg/L	267	Standard
> **Sc-1**	45	38686.0	1.6				mg/L	38815	Standard
Cl	35	78795.0	1.3				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3103.7	2.3				ug/L	1617	Standard
P	31	7433.5	0.4				ug/L	19244	Standard
S	34	3570.4	2.2				ug/L	3557	Standard
Sr	88	160.0	21.9				ug/L	65	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	257.9	19.0				mg/L	13	Standard
Ho-1	165	116.7	32.5				mg/L	10	Standard
Er	166	113.3	41.7				mg/L	13	Standard
I	127	27441.5	5.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.005	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.145	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606131310
Report Date/Time: Wednesday, July 06, 2016 14:51:24
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.417
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.444
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606131310
Report Date/Time: Wednesday, July 06, 2016 14:51:24
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 14:52:20
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60043.8	2.8				ug/L	68501	Standard
	Be	9	43534.1	0.6	**54.7667**	1.524	2.8	ug/L	8	Standard
	Al	27	6869395.1	1.4	**55.2466**	1.005	1.8	ug/L	1397	Standard
	Sc	45	41879.5	0.9				ug/L	38815	Standard
	Ti	47	38239.2	2.0	**105.8766**	2.401	2.3	ug/L	36	Standard
	V	51	382889.2	1.6	**50.4416**	0.931	1.8	ug/L	1284	Standard
	Cr	52	391303.2	1.4	**51.9269**	0.799	1.5	ug/L	6503	Standard
	Cr	53	47750.1	2.0	**51.3561**	1.104	2.1	ug/L	492	Standard
	Mn	55	349156.6	1.1	**52.9861**	0.731	1.4	ug/L	841	Standard
	Co	59	328642.6	1.2	**50.6387**	0.762	1.5	ug/L	229	Standard
	Ni	60	93736.4	1.3	**51.8094**	0.651	1.3	ug/L	344	Standard
	Cu	65	92724.5	1.0	**51.4957**	0.451	0.9	ug/L	115	Standard
	Zn	66	55630.9	0.6	**51.2018**	0.296	0.6	ug/L	190	Standard
>	Ge	72	440847.9	0.3				ug/L	409858	Standard
	As	75	56533.3	0.5	**50.8018**	0.319	0.6	ug/L	-22	Standard
	Se	82	5695.8	1.1	**50.0727**	0.446	0.9	ug/L	18	Standard
	Se-1	77	3910.2	3.6	**52.0362**	2.090	4.0	ug/L	50	Standard
>	Ga	71	91.7	64.6				mg/L	97	Standard
	Rb	85	1126.7	27.5				ug/L	25	Standard
	Y	89	379803.2	0.9				ug/L	376763	Standard
>	Rh	103	20.0	50.0				ug/L	20	Standard
	Mo	98	249542.6	0.2	**100.9076**	1.379	1.4	ug/L	51	Standard
	Ag	107	319216.6	1.3	**49.8601**	0.930	1.9	ug/L	76	Standard
	Cd	111	103382.2	1.9	**50.8051**	1.171	2.3	mg/L	6	Standard
	Cd	114	253145.9	2.3	**50.8792**	0.856	1.7	ug/L	18	Standard
>	In	115	520581.4	1.3				ug/L	507261	Standard
	Sn	118	282841.0	1.7	**50.2425**	1.007	2.0	ug/L	683	Standard
	Sb	123	225633.6	2.0	**51.2453**	1.238	2.4	ug/L	446	Standard
	Ba	135	97427.9	0.9	**49.9049**	0.789	1.6	ug/L	28	Standard
	Ce	140	1405.1	39.8				ug/L	33	Standard
>	Tb	159	796311.9	0.5				ug/L	800803	Standard
	Ho	165	20.0	75.0				ug/L	10	Standard
	Tl	203	391045.0	0.3	**50.8324**	0.261	0.5	ug/L	13	Standard
	Tl	205	349650.5	1.2	**52.4891**	0.998	1.9	ug/L	13	Standard
	Pb	206	248507.1	0.9	**50.3121**	0.815	1.6	ug/L	226	Standard
	Pb	207	225788.4	1.2	**50.3393**	0.932	1.9	ug/L	204	Standard
	Pb	208	942000.4	0.7	**52.5165**	0.637	1.2	ug/L	852	Standard
	U	238	335311.4	0.3	**50.4845**	0.512	1.0	ug/L	13	Standard
>	Bi	209	451983.7	0.7				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 14:54:37
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.3266**	14.646	4484.3	mg/L	2	Standard
Mg	24	3847.2	3.9	**4.7894**	0.192	4.0	mg/L	58	Standard
K	39	1318.4	11.8	**4.7296**	0.581	12.3	mg/L	27	Standard
Ca	43	100.0	13.2	**5.4608**	0.861	15.8	mg/L	20	Standard
Fe	54	6717.0	2.9	**5.0904**	0.124	2.4	mg/L	158	Standard
Fe	57	1981.8	8.3	**5.4666**	0.546	10.0	mg/L	267	Standard
Sc-1	45	41879.5	0.9				mg/L	38815	Standard
Cl	35	72953.3	2.7				ug/L	57611	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	1906.8	5.6				ug/L	1617	Standard
P	31	20882.7	2.6				ug/L	19244	Standard
S	34	4390.6	2.4				ug/L	3557	Standard
Sr	88	61.7	44.7				ug/L	65	Standard
C	12	83.3	50.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	35.5	69.8				mg/L	13	Standard
Ho-1	165	20.0	75.0				mg/L	10	Standard
Er	166	23.3	137.8				mg/L	13	Standard
I	127	9009.4	6.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.533		
Al	27	110.493		
Sc	45			
Ti	47	105.877		
V	51	100.883		
Cr	52	103.854		
Cr	53			
Mn	55	105.972		
Co	59	101.277		
Ni	60	103.619		
Cu	65	102.991		
Zn	66	102.404		
Ge	72		107.561	
As	75	101.604		
Se	82	100.145		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 14:54:37
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.908		
Ag	107	99.720		
Cd	111	101.610		
Cd	114			
In	115		102.626	
Sn	118	100.485		
Sb	123	102.491		
Ba	135	99.810		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.665		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.033		
U	238	100.969		
Bi	209		100.655	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 14:54:37
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 14:55:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60231.2	2.6				ug/L	68501	Standard
	Be	9	25.0	72.1	**0.0504**	0.022	42.9	ug/L	8	Standard
	Al	27	19713.1	109.9	**0.1901**	0.168	88.3	ug/L	1397	Standard
	Sc	45	42006.5	3.8				ug/L	38815	Standard
	Ti	47	224.3	111.3	**0.5966**	0.692	116.0	ug/L	36	Standard
	V	51	1431.0	15.4	**0.0464**	0.029	61.7	ug/L	1284	Standard
	Cr	52	7221.1	7.9	**0.0495**	0.073	147.8	ug/L	6503	Standard
	Cr	53	473.3	16.7	**0.0985**	0.084	84.9	ug/L	492	Standard
	Mn	55	3357.1	60.7	**0.4180**	0.310	74.1	ug/L	841	Standard
	Co	59	281.3	22.2	**0.0492**	0.010	19.4	ug/L	229	Standard
	Ni	60	409.3	34.9	**0.0709**	0.079	111.3	ug/L	344	Standard
	Cu	65	212.7	66.8	**0.1056**	0.079	74.7	ug/L	115	Standard
	Zn	66	585.0	81.2	**0.4294**	0.438	102.1	ug/L	190	Standard
>	**Ge**	72	437279.0	0.5				ug/L	409858	Standard
	As	75	-8.2	295.3	**0.0914**	0.022	23.9	ug/L	-22	Standard
	Se	82	22.9	23.0	**0.1520**	0.046	30.1	ug/L	18	Standard
	Se-1	77	50.7	10.1	**-0.0694**	0.069	99.2	ug/L	50	Standard
>	**Ga**	71	63.3	37.3				mg/L	97	Standard
	Rb	85	270.0	77.0				ug/L	25	Standard
	Y	89	377259.1	0.6				ug/L	376763	Standard
>	**Rh**	103	11.7	89.2				ug/L	20	Standard
	Mo	98	200.5	13.9	**0.1523**	0.011	7.1	ug/L	51	Standard
	Ag	107	134.3	29.4	**0.0440**	0.006	13.7	ug/L	76	Standard
	Cd	111	21.9	94.6	**0.0501**	0.010	20.1	mg/L	6	Standard
	Cd	114	56.4	104.5	**0.0486**	0.012	24.1	ug/L	18	Standard
>	**In**	115	521770.5	0.7				ug/L	507261	Standard
	Sn	118	940.0	16.5	**0.0570**	0.029	50.1	ug/L	683	Standard
	Sb	123	649.8	29.0	**0.1271**	0.044	34.3	ug/L	446	Standard
	Ba	135	254.7	83.5	**0.1453**	0.107	73.9	ug/L	28	Standard
	Ce	140	905.0	72.4				ug/L	33	Standard
>	**Tb**	159	799280.8	1.7				ug/L	800803	Standard
	Ho	165	16.7	91.7				ug/L	10	Standard
	Tl	203	96.7	77.0	**0.0458**	0.010	21.1	ug/L	13	Standard
	Tl	205	83.3	39.0	**0.0549**	0.005	8.9	ug/L	13	Standard
	Pb	206	346.3	28.6	**0.0653**	0.020	30.9	ug/L	226	Standard
	Pb	207	300.0	24.3	**0.0650**	0.016	25.2	ug/L	204	Standard
	Pb	208	1153.4	25.6	**0.0636**	0.017	26.2	ug/L	852	Standard
	U	238	71.7	52.3	**0.0533**	0.006	10.6	ug/L	13	Standard
>	**Bi**	209	457657.2	0.6				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 14:57:48
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	30.2	**0.0135**	0.015	107.6	mg/L	58	Standard
K	39	38.3	32.8	**-0.0006**	0.046	8155.2	mg/L	27	Standard
Ca	43	23.3	101.3	**0.2596**	1.533	590.5	mg/L	20	Standard
Fe	54	159.4	14.2	**0.0035**	0.021	599.5	mg/L	158	Standard
Fe	57	215.0	16.8	**-0.0121**	0.133	1100.9	mg/L	267	Standard
Sc-1	45	42006.5	3.8				mg/L	38815	Standard
Cl	35	71083.7	1.4				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1720.1	9.7				ug/L	1617	Standard
P	31	20742.5	3.1				ug/L	19244	Standard
S	34	4203.9	4.9				ug/L	3557	Standard
Sr	88	78.3	19.5				ug/L	65	Standard
C	12	50.0	40.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	45.5	74.5				mg/L	13	Standard
Ho-1	165	16.7	91.7				mg/L	10	Standard
Er	166	23.3	107.9				mg/L	13	Standard
I	127	6801.5	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.690	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 14:57:48
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.860
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.918
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	
QC Std 7	Mn	55	
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 14:57:48
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606090708
Sample Date/Time: Wednesday, July 06, 2016 15:07:31
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56123.9	4.1				ug/L	68501	Standard
	Be	9	6.7	173.2	**0.0286**	0.016	55.2	ug/L	8	Standard
	Al	27	66942.6	2.6	**0.6112**	0.031	5.0	ug/L	1397	Standard
	Sc	45	36869.8	1.5				ug/L	38815	Standard
	Ti	47	31.0	25.2	**0.0658**	0.025	37.8	ug/L	36	Standard
	V	51	1339.2	5.0	**0.0485**	0.012	24.6	ug/L	1284	Standard
	Cr	52	5285.6	3.9	**-0.1571**	0.018	11.6	ug/L	6503	Standard
	Cr	53	546.7	13.8	**0.2255**	0.079	34.9	ug/L	492	Standard
	Mn	55	1303.4	5.1	**0.1198**	0.014	11.8	ug/L	841	Standard
	Co	59	203.3	12.1	**0.0396**	0.004	10.4	ug/L	229	Standard
	Ni	60	359.0	4.4	**0.0588**	0.010	17.7	ug/L	344	Standard
	Cu	65	113.3	13.5	**0.0553**	0.010	18.4	ug/L	115	Standard
	Zn	66	768.7	2.8	**0.6582**	0.025	3.8	ug/L	190	Standard
>	**Ge**	72	405192.6	1.5				ug/L	409858	Standard
	As	75	4918.3	2.2	**4.8977**	0.034	0.7	ug/L	-22	Standard
	Se	82	13.5	76.0	**0.0775**	0.096	124.3	ug/L	18	Standard
	Se-1	77	71.0	7.5	**0.2844**	0.084	29.4	ug/L	50	Standard
>	**Ga**	71	28.3	10.2				mg/L	97	Standard
	Rb	85	61.7	32.8				ug/L	25	Standard
	Y	89	345042.0	1.8				ug/L	376763	Standard
>	**Rh**	103	21.7	53.3				ug/L	20	Standard
	Mo	98	142.5	28.0	**0.1346**	0.017	12.8	ug/L	51	Standard
	Ag	107	76.3	5.5	**0.0362**	0.001	2.1	ug/L	76	Standard
	Cd	111	6.7	54.8	**0.0430**	0.002	4.7	mg/L	6	Standard
	Cd	114	12.5	52.3	**0.0401**	0.001	3.5	ug/L	18	Standard
>	**In**	115	474459.0	1.3				ug/L	507261	Standard
	Sn	118	216.7	17.9	**-0.0677**	0.008	11.7	ug/L	683	Standard
	Sb	123	745.2	27.2	**0.1651**	0.049	29.8	ug/L	446	Standard
	Ba	135	790.0	3.4	**0.4596**	0.016	3.5	ug/L	28	Standard
	Ce	140	65.0	78.1				ug/L	33	Standard
>	**Tb**	159	739678.8	0.7				ug/L	800803	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	93.0	10.3	**0.0460**	0.001	2.8	ug/L	13	Standard
	Tl	205	83.3	39.0	**0.0557**	0.005	9.2	ug/L	13	Standard
	Pb	206	252.3	10.6	**0.0497**	0.006	11.9	ug/L	226	Standard
	Pb	207	211.7	8.9	**0.0486**	0.005	9.5	ug/L	204	Standard
	Pb	208	860.0	6.9	**0.0505**	0.003	6.7	ug/L	852	Standard
	U	238	14.7	30.7	**0.0449**	0.001	1.6	ug/L	13	Standard
>	**Bi**	209	429750.5	0.4				ug/L	449044	Standard

Sample ID: L1606090708
Report Date/Time: Wednesday, July 06, 2016 15:09:48
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3003.6	1.6	**4.2430**	0.057	1.3	mg/L	58	Standard
K	39	36.7	43.8	**0.0119**	0.066	559.7	mg/L	27	Standard
Ca	43	21.7	35.3	**0.3805**	0.578	151.8	mg/L	20	Standard
Fe	54	55.9	13.9	**-0.0709**	0.008	10.7	mg/L	158	Standard
Fe	57	308.3	16.4	**0.4073**	0.188	46.1	mg/L	267	Standard
Sc-1	45	36869.8	1.5				mg/L	38815	Standard
Cl	35	66431.3	1.6				ug/L	57611	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	2016.8	5.6				ug/L	1617	Standard
P	31	6839.9	2.1				ug/L	19244	Standard
S	34	4038.9	3.4				ug/L	3557	Standard
Sr	88	80.0	32.5				ug/L	65	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	23	Standard
Dy	164	12.5	45.3				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	15781.6	6.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		81.931	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.862	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606090708
Report Date/Time: Wednesday, July 06, 2016 15:09:48
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.534
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.703
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606090708
Report Date/Time: Wednesday, July 06, 2016 15:09:48
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606090710
Sample Date/Time: Wednesday, July 06, 2016 15:10:42
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55767.5	3.1				ug/L	68501	Standard
	Be	9	15.0	33.3	**0.0396**	0.006	15.5	ug/L	8	Standard
	Al	27	57067.4	4.0	**0.5293**	0.032	6.0	ug/L	1397	Standard
	Sc	45	37737.0	2.8				ug/L	38815	Standard
	Ti	47	27.0	11.1	**0.0534**	0.009	16.5	ug/L	36	Standard
	V	51	1378.9	8.7	**0.0540**	0.019	35.6	ug/L	1284	Standard
	Cr	52	5384.0	1.6	**-0.1434**	0.011	7.6	ug/L	6503	Standard
	Cr	53	555.0	6.5	**0.2351**	0.036	15.1	ug/L	492	Standard
	Mn	55	1200.4	3.4	**0.1025**	0.009	8.7	ug/L	841	Standard
	Co	59	202.3	5.0	**0.0394**	0.001	3.3	ug/L	229	Standard
	Ni	60	349.3	8.9	**0.0527**	0.019	35.2	ug/L	344	Standard
	Cu	65	113.0	24.1	**0.0551**	0.017	31.4	ug/L	115	Standard
	Zn	66	816.4	3.2	**0.7051**	0.033	4.7	ug/L	190	Standard
>	**Ge**	72	405693.9	1.3				ug/L	409858	Standard
	As	75	4000.4	1.6	**3.9982**	0.091	2.3	ug/L	-22	Standard
	Se	82	17.3	50.2	**0.1136**	0.082	71.8	ug/L	18	Standard
	Se-1	77	68.7	10.9	**0.2488**	0.115	46.4	ug/L	50	Standard
>	**Ga**	71	28.3	36.7				mg/L	97	Standard
	Rb	85	40.0	45.1				ug/L	25	Standard
	Y	89	346549.0	3.0				ug/L	376763	Standard
>	**Rh**	103	16.7	17.3				ug/L	20	Standard
	Mo	98	97.7	27.5	**0.1145**	0.012	10.9	ug/L	51	Standard
	Ag	107	72.7	8.4	**0.0354**	0.001	3.2	ug/L	76	Standard
	Cd	111	4.8	40.9	**0.0420**	0.001	2.6	mg/L	6	Standard
	Cd	114	2.8	127.9	**0.0380**	0.001	2.1	ug/L	18	Standard
>	**In**	115	479824.6	1.7				ug/L	507261	Standard
	Sn	118	205.0	16.0	**-0.0705**	0.007	9.5	ug/L	683	Standard
	Sb	123	434.3	26.7	**0.0870**	0.030	34.6	ug/L	446	Standard
	Ba	135	658.3	5.7	**0.3813**	0.014	3.8	ug/L	28	Standard
	Ce	140	16.7	62.4				ug/L	33	Standard
>	**Tb**	159	748992.8	2.4				ug/L	800803	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	71.3	13.3	**0.0431**	0.001	3.4	ug/L	13	Standard
	Tl	205	60.0	65.1	**0.0521**	0.006	12.2	ug/L	13	Standard
	Pb	206	267.3	9.0	**0.0528**	0.006	11.2	ug/L	226	Standard
	Pb	207	234.3	3.4	**0.0538**	0.003	5.1	ug/L	204	Standard
	Pb	208	992.7	7.2	**0.0582**	0.004	7.5	ug/L	852	Standard
	U	238	5.7	53.9	**0.0435**	0.000	1.1	ug/L	13	Standard
>	**Bi**	209	430634.6	1.8				ug/L	449044	Standard

Sample ID: L1606090710
Report Date/Time: Wednesday, July 06, 2016 15:12:59
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	2340.2	3.7	**3.2200**	0.031	1.0	mg/L	58	Standard
K	39	35.0	37.8	**0.0008**	0.051	6246.2	mg/L	27	Standard
Ca	43	15.0	33.3	**-0.1583**	0.367	231.7	mg/L	20	Standard
Fe	54	62.8	31.4	**-0.0660**	0.018	27.6	mg/L	158	Standard
Fe	57	236.7	3.2	**0.1352**	0.041	30.0	mg/L	267	Standard
> **Sc-1**	45	37737.0	2.8				mg/L	38815	Standard
Cl	35	66671.0	0.2				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2100.1	1.6				ug/L	1617	Standard
P	31	6753.2	3.3				ug/L	19244	Standard
S	34	4090.6	7.3				ug/L	3557	Standard
Sr	88	83.3	12.5				ug/L	65	Standard
C	12	30.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	12.7	119.6				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	15177.6	3.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.411	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.984	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090710
Report Date/Time: Wednesday, July 06, 2016 15:12:59
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.591
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.900
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606090711
Sample Date/Time: Wednesday, July 06, 2016 15:13:54
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54814.1	3.8				ug/L	68501	Standard
	Be	9	16.7	62.4	**0.0422**	0.014	32.8	ug/L	8	Standard
	Al	27	52699.8	1.6	**0.4995**	0.024	4.8	ug/L	1397	Standard
	Sc	45	38356.9	3.4				ug/L	38815	Standard
	Ti	47	29.7	14.0	**0.0612**	0.013	21.0	ug/L	36	Standard
	V	51	1298.7	4.2	**0.0417**	0.008	18.1	ug/L	1284	Standard
	Cr	52	5448.0	3.0	**-0.1368**	0.021	15.5	ug/L	6503	Standard
	Cr	53	526.7	9.4	**0.1996**	0.054	27.2	ug/L	492	Standard
	Mn	55	966.0	3.4	**0.0631**	0.005	7.8	ug/L	841	Standard
	Co	59	192.7	2.3	**0.0376**	0.001	2.1	ug/L	229	Standard
	Ni	60	332.3	7.6	**0.0417**	0.014	33.8	ug/L	344	Standard
	Cu	65	107.0	4.9	**0.0511**	0.004	7.0	ug/L	115	Standard
	Zn	66	673.7	5.7	**0.5595**	0.037	6.6	ug/L	190	Standard
>	**Ge**	72	407073.7	0.6				ug/L	409858	Standard
	As	75	3936.4	1.8	**3.9222**	0.063	1.6	ug/L	-22	Standard
	Se	82	12.1	66.2	**0.0641**	0.076	118.6	ug/L	18	Standard
	Se-1	77	60.7	18.2	**0.1275**	0.157	123.2	ug/L	50	Standard
>	**Ga**	71	41.7	50.0				mg/L	97	Standard
	Rb	85	40.0	45.1				ug/L	25	Standard
	Y	89	345252.8	0.9				ug/L	376763	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	101.1	24.4	**0.1158**	0.011	9.9	ug/L	51	Standard
	Ag	107	60.3	15.9	**0.0333**	0.002	5.0	ug/L	76	Standard
	Cd	111	2.5	44.5	**0.0407**	0.001	1.5	mg/L	6	Standard
	Cd	114	12.2	59.9	**0.0400**	0.002	4.1	ug/L	18	Standard
>	**In**	115	481188.3	1.3				ug/L	507261	Standard
	Sn	118	168.3	9.5	**-0.0777**	0.003	4.4	ug/L	683	Standard
	Sb	123	324.9	34.4	**0.0597**	0.028	47.6	ug/L	446	Standard
	Ba	135	608.7	5.5	**0.3529**	0.019	5.4	ug/L	28	Standard
	Ce	140	8.3	34.6				ug/L	33	Standard
>	**Tb**	159	745199.8	0.8				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	72.3	21.5	**0.0432**	0.002	5.0	ug/L	13	Standard
	Tl	205	55.0	39.6	**0.0512**	0.003	6.8	ug/L	13	Standard
	Pb	206	221.3	7.7	**0.0430**	0.004	9.0	ug/L	226	Standard
	Pb	207	189.0	5.0	**0.0431**	0.002	5.7	ug/L	204	Standard
	Pb	208	789.3	5.2	**0.0462**	0.003	5.7	ug/L	852	Standard
	U	238	4.3	81.0	**0.0433**	0.001	1.3	ug/L	13	Standard
>	**Bi**	209	431209.2	0.7				ug/L	449044	Standard

Sample ID: L1606090711
Report Date/Time: Wednesday, July 06, 2016 15:16:10
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	2360.2	3.7	**3.2002**	0.221	6.9	mg/L	58	Standard
K	39	20.0	86.6	**-0.0601**	0.072	120.5	mg/L	27	Standard
Ca	43	25.0	20.0	**0.5647**	0.390	69.0	mg/L	20	Standard
Fe	54	59.1	42.1	**-0.0702**	0.021	30.3	mg/L	158	Standard
Fe	57	290.0	10.5	**0.3038**	0.121	40.0	mg/L	267	Standard
> **Sc-1**	45	38356.9	3.4				mg/L	38815	Standard
Cl	35	66762.1	1.2				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1850.1	7.8				ug/L	1617	Standard
P	31	6509.7	3.4				ug/L	19244	Standard
S	34	3905.5	1.3				ug/L	3557	Standard
Sr	88	58.3	4.9				ug/L	65	Standard
C	12	43.3	70.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	23	Standard
Dy	164	6.5	179.6				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	14775.5	3.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.019	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.321	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090711
Report Date/Time: Wednesday, July 06, 2016 15:16:10
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.860
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.028
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606090712
Sample Date/Time: Wednesday, July 06, 2016 15:17:05
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59136.9	1.9				ug/L	68501	Standard
	Be	9	100.0	0.0	**0.1471**	0.002	1.6	ug/L	8	Standard
	Al	27	3735465.7	0.2	**30.5168**	0.591	1.9	ug/L	1397	Standard
	Sc	45	39907.5	1.6				ug/L	38815	Standard
	Ti	47	188106.0	1.6	**592.5898**	9.341	1.6	ug/L	36	Standard
	V	51	727880.7	2.1	**109.2334**	0.828	0.8	ug/L	1284	Standard
	Cr	52	2147459.5	0.6	**329.0918**	4.735	1.4	ug/L	6503	Standard
	Cr	53	294234.5	0.7	**362.5456**	7.204	2.0	ug/L	492	Standard
	Mn	55	136764.2	1.0	**23.5558**	0.108	0.5	ug/L	841	Standard
	Co	59	7595.9	0.5	**1.3368**	0.018	1.4	ug/L	229	Standard
	Ni	60	30975.0	0.9	**19.3783**	0.287	1.5	ug/L	344	Standard
	Cu	65	63388.3	1.8	**40.0459**	0.878	2.2	ug/L	115	Standard
	Zn	66	366901.8	1.0	**384.8805**	2.395	0.6	ug/L	190	Standard
>	Ge	72	387555.3	1.4				ug/L	409858	Standard
	As	75	11510.2	1.9	**11.8429**	0.269	2.3	ug/L	-22	Standard
	Se	82	113.3	57.4	**1.0824**	0.654	60.4	ug/L	18	Standard
	Se-1	77	1337.7	1.3	**19.7866**	0.288	1.5	ug/L	50	Standard
>	Ga	71	3715.5	1.3				mg/L	97	Standard
	Rb	85	24456.4	1.2				ug/L	25	Standard
	Y	89	367766.8	1.0				ug/L	376763	Standard
>	Rh	103	636.7	41.6				ug/L	20	Standard
	Mo	98	20218.7	0.2	**9.5016**	0.081	0.9	ug/L	51	Standard
	Ag	107	1395.4	2.2	**0.2746**	0.007	2.5	ug/L	76	Standard
	Cd	111	15436.6	1.1	**8.7889**	0.145	1.6	mg/L	6	Standard
	Cd	114	36990.0	1.0	**8.6137**	0.136	1.6	ug/L	18	Standard
>	In	115	450987.5	0.7				ug/L	507261	Standard
	Sn	118	123207.3	0.8	**25.2064**	0.206	0.8	ug/L	683	Standard
	Sb	123	4061.0	3.4	**1.0445**	0.031	3.0	ug/L	446	Standard
	Ba	135	211456.5	1.1	**124.9888**	0.973	0.8	ug/L	28	Standard
	Ce	140	95684.5	0.7				ug/L	33	Standard
>	Tb	159	728548.4	1.4				ug/L	800803	Standard
	Ho	165	2620.2	2.6				ug/L	10	Standard
	Tl	203	268.7	6.6	**0.0756**	0.003	4.2	ug/L	13	Standard
	Tl	205	228.3	5.1	**0.0840**	0.002	2.8	ug/L	13	Standard
	Pb	206	246609.4	0.5	**60.3899**	0.539	0.9	ug/L	226	Standard
	Pb	207	209210.9	0.8	**56.4141**	0.211	0.4	ug/L	204	Standard
	Pb	208	889009.1	1.9	**59.9416**	0.514	0.9	ug/L	852	Standard
	U	238	12374.1	0.4	**2.2942**	0.018	0.8	ug/L	13	Standard
>	Bi	209	373680.6	1.1				ug/L	449044	Standard

Sample ID: L1606090712
Report Date/Time: Wednesday, July 06, 2016 15:19:22
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	627460.5	0.3	**826.3355**	10.138	1.2	mg/L	58	Standard
K	39	891.7	12.4	**3.3152**	0.420	12.7	mg/L	27	Standard
Ca	43	85.0	25.6	**4.7327**	1.524	32.2	mg/L	20	Standard
Fe	54	2238.8	0.7	**1.7027**	0.033	1.9	mg/L	158	Standard
Fe	57	931.7	3.2	**2.3514**	0.086	3.7	mg/L	267	Standard
> **Sc-1**	45	39907.5	1.6				mg/L	38815	Standard
Cl	35	105249.6	0.7				ug/L	57611	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	33069.4	2.9				ug/L	1617	Standard
P	31	23598.4	1.5				ug/L	19244	Standard
S	34	3327.0	1.9				ug/L	3557	Standard
Sr	88	1011.7	3.7				ug/L	65	Standard
C	12	380.0	11.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1216.7	6.6				mg/L	23	Standard
Dy	164	3819.8	3.9				mg/L	13	Standard
Ho-1	165	2620.2	2.6				mg/L	10	Standard
Er	166	2590.2	4.1				mg/L	13	Standard
I	127	159962.4	8.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.330	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090712
Report Date/Time: Wednesday, July 06, 2016 15:19:22
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	88.906	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	83.217	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	
Cr 52 Upper, S, EEE	Cr	52	

Sample ID: L1606090712
Report Date/Time: Wednesday, July 06, 2016 15:19:22
Page 3

Approved: July 07, 2016

Cr 53 Upper, S, EEE	Cr	53
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

Sample ID: L1606090712
Report Date/Time: Wednesday, July 06, 2016 15:19:22
Page 4

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606090713
Sample Date/Time: Wednesday, July 06, 2016 15:20:17
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62142.2	2.7				ug/L	68501	Standard
	Be	9	75.0	11.5	**0.1107**	0.012	10.9	ug/L	8	Standard
	Al	27	3038140.7	0.5	**23.6329**	0.622	2.6	ug/L	1397	Standard
	Sc	45	40017.8	2.7				ug/L	38815	Standard
	Ti	47	163885.9	0.8	**513.6032**	3.518	0.7	ug/L	36	Standard
	V	51	602537.0	0.8	**89.9411**	0.844	0.9	ug/L	1284	Standard
	Cr	52	1965909.2	0.6	**299.6143**	3.300	1.1	ug/L	6503	Standard
	Cr	53	263656.0	0.8	**323.1168**	4.959	1.5	ug/L	492	Standard
	Mn	55	23201.4	1.5	**3.8959**	0.074	1.9	ug/L	841	Standard
	Co	59	4269.3	1.9	**0.7498**	0.008	1.1	ug/L	229	Standard
	Ni	60	23944.9	1.0	**14.8649**	0.057	0.4	ug/L	344	Standard
	Cu	65	10740.1	1.4	**6.7382**	0.053	0.8	ug/L	115	Standard
	Zn	66	144279.7	1.0	**150.4939**	0.640	0.4	ug/L	190	Standard
>	**Ge**	72	389560.3	0.8				ug/L	409858	Standard
	As	75	11554.1	2.0	**11.8265**	0.285	2.4	ug/L	-22	Standard
	Se	82	21.7	113.6	**0.1655**	0.247	149.4	ug/L	18	Standard
	Se-1	77	1182.7	5.8	**17.3115**	1.052	6.1	ug/L	50	Standard
>	**Ga**	71	2596.9	4.5				mg/L	97	Standard
	Rb	85	17209.8	0.9				ug/L	25	Standard
	Y	89	365815.6	1.4				ug/L	376763	Standard
>	**Rh**	103	1266.7	9.5				ug/L	20	Standard
	Mo	98	37661.3	0.8	**17.4867**	0.129	0.7	ug/L	51	Standard
	Ag	107	1201.4	1.7	**0.2377**	0.003	1.5	ug/L	76	Standard
	Cd	111	8334.2	0.6	**4.7227**	0.028	0.6	mg/L	6	Standard
	Cd	114	20677.6	2.4	**4.7904**	0.113	2.4	ug/L	18	Standard
>	**In**	115	454857.0	0.1				ug/L	507261	Standard
	Sn	118	108567.6	1.5	**22.0081**	0.314	1.4	ug/L	683	Standard
	Sb	123	8996.4	2.4	**2.3188**	0.059	2.5	ug/L	446	Standard
	Ba	135	159685.7	0.2	**93.5896**	0.278	0.3	ug/L	28	Standard
	Ce	140	50972.3	0.2				ug/L	33	Standard
>	**Tb**	159	740846.9	0.5				ug/L	800803	Standard
	Ho	165	1838.4	7.4				ug/L	10	Standard
	Tl	203	115.0	7.4	**0.0513**	0.001	2.8	ug/L	13	Standard
	Tl	205	115.0	11.5	**0.0632**	0.002	3.6	ug/L	13	Standard
	Pb	206	61112.0	0.3	**14.8501**	0.069	0.5	ug/L	226	Standard
	Pb	207	52034.5	0.1	**13.9261**	0.103	0.7	ug/L	204	Standard
	Pb	208	219213.3	1.2	**14.6715**	0.162	1.1	ug/L	852	Standard
	U	238	13518.0	1.2	**2.4841**	0.046	1.9	ug/L	13	Standard
>	**Bi**	209	376481.4	0.7				ug/L	449044	Standard

Sample ID: L1606090713
Report Date/Time: Wednesday, July 06, 2016 15:22:34
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.2091**	14.850	7100.1	mg/L	2	Standard
Mg	24	652049.2	1.0	**856.5114**	15.399	1.8	mg/L	58	Standard
K	39	871.7	10.5	**3.2293**	0.355	11.0	mg/L	27	Standard
Ca	43	33.3	17.3	**1.0753**	0.417	38.8	mg/L	20	Standard
Fe	54	940.9	10.2	**0.6444**	0.085	13.1	mg/L	158	Standard
Fe	57	590.0	8.3	**1.2381**	0.210	16.9	mg/L	267	Standard
Sc-1	45	40017.8	2.7				mg/L	38815	Standard
Cl	35	107621.5	0.7				ug/L	57611	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	33026.0	3.0				ug/L	1617	Standard
P	31	22977.4	2.0				ug/L	19244	Standard
S	34	3573.8	1.9				ug/L	3557	Standard
Sr	88	981.7	8.2				ug/L	65	Standard
C	12	476.7	10.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	473.3	11.6				mg/L	23	Standard
Dy	164	2439.4	1.3				mg/L	13	Standard
Ho-1	165	1838.4	7.4				mg/L	10	Standard
Er	166	1896.8	12.1				mg/L	13	Standard
I	127	172276.0	5.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.717	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.048	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606090713
Report Date/Time: Wednesday, July 06, 2016 15:22:34
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	89.669	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	83.841	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

Sample ID: L1606090713
Report Date/Time: Wednesday, July 06, 2016 15:22:34
Page 3

Approved: July 07, 2016

Zn 66 Upper, S, EEE Zn 66

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606102602
Sample Date/Time: Wednesday, July 06, 2016 15:23:28
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59909.9	2.1				ug/L	68501	Standard
	Be	9	50.0	20.0	**0.0823**	0.012	14.0	ug/L	8	Standard
	Al	27	4054931.1	0.6	**32.6975**	0.624	1.9	ug/L	1397	Standard
	Sc	45	38943.3	1.5				ug/L	38815	Standard
	Ti	47	155.7	35.2	**0.4319**	0.159	36.8	ug/L	36	Standard
	V	51	1895.1	102.8	**0.1241**	0.276	222.3	ug/L	1284	Standard
	Cr	52	788614.2	0.5	**112.8373**	0.952	0.8	ug/L	6503	Standard
	Cr	53	99272.7	3.0	**114.5378**	3.777	3.3	ug/L	492	Standard
	Mn	55	467403.8	1.8	**75.7860**	1.140	1.5	ug/L	841	Standard
	Co	59	46321.0	0.9	**7.6267**	0.075	1.0	ug/L	229	Standard
	Ni	60	543017.8	1.4	**321.3449**	4.568	1.4	ug/L	344	Standard
	Cu	65	30865.4	1.3	**18.2968**	0.119	0.7	ug/L	115	Standard
	Zn	66	4929.8	3.6	**4.7423**	0.151	3.2	ug/L	190	Standard
>	Ge	72	412808.8	0.6				ug/L	409858	Standard
	As	75	190.7	12.5	**0.2816**	0.024	8.4	ug/L	-22	Standard
	Se	82	121.8	12.3	**1.0936**	0.147	13.4	ug/L	18	Standard
	Se-1	77	250.0	5.6	**2.8454**	0.195	6.9	ug/L	50	Standard
>	Ga	71	66.7	37.0				mg/L	97	Standard
	Rb	85	911.7	9.3				ug/L	25	Standard
	Y	89	356017.5	0.3				ug/L	376763	Standard
>	Rh	103	295.0	2.9				ug/L	20	Standard
	Mo	98	2507.9	2.1	**1.1659**	0.032	2.8	ug/L	51	Standard
	Ag	107	115.3	4.1	**0.0426**	0.001	2.3	ug/L	76	Standard
	Cd	111	280.0	2.5	**0.1878**	0.004	2.0	mg/L	6	Standard
	Cd	114	681.9	2.0	**0.1853**	0.004	2.4	ug/L	18	Standard
>	In	115	482113.9	1.0				ug/L	507261	Standard
	Sn	118	426.7	9.5	**-0.0281**	0.007	24.6	ug/L	683	Standard
	Sb	123	379.3	24.4	**0.0725**	0.022	30.2	ug/L	446	Standard
	Ba	135	7036.6	1.4	**3.9062**	0.063	1.6	ug/L	28	Standard
	Ce	140	5290.9	3.8				ug/L	33	Standard
>	Tb	159	759964.6	0.4				ug/L	800803	Standard
	Ho	165	306.7	9.6				ug/L	10	Standard
	Tl	203	71.3	11.7	**0.0430**	0.001	2.7	ug/L	13	Standard
	Tl	205	78.3	13.3	**0.0547**	0.002	3.2	ug/L	13	Standard
	Pb	206	322.0	17.6	**0.0637**	0.013	19.6	ug/L	226	Standard
	Pb	207	276.0	19.8	**0.0629**	0.013	21.1	ug/L	204	Standard
	Pb	208	1167.0	11.9	**0.0676**	0.009	12.7	ug/L	852	Standard
	U	238	240.0	4.2	**0.0801**	0.002	2.4	ug/L	13	Standard
>	Bi	209	435576.2	0.8				ug/L	449044	Standard

Sample ID: L1606102602
Report Date/Time: Wednesday, July 06, 2016 15:25:45
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.3081**	15.746	5110.4	mg/L	2	Standard
Mg	24	9246.2	5.3	**12.4378**	0.612	4.9	mg/L	58	Standard
K	39	103.3	36.6	**0.2687**	0.151	56.1	mg/L	27	Standard
Ca	43	96.7	10.8	**5.7243**	0.667	11.7	mg/L	20	Standard
Fe	54	584.2	1.4	**0.3673**	0.013	3.7	mg/L	158	Standard
Fe	57	408.3	5.7	**0.6812**	0.058	8.4	mg/L	267	Standard
> **Sc-1**	45	38943.3	1.5				mg/L	38815	Standard
Cl	35	65179.9	1.4				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	17183.1	2.9				ug/L	1617	Standard
P	31	7878.7	4.8				ug/L	19244	Standard
S	34	3810.5	4.5				ug/L	3557	Standard
Sr	88	171.7	24.8				ug/L	65	Standard
C	12	30.0	57.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	473.7	16.7				mg/L	13	Standard
Ho-1	165	306.7	9.6				mg/L	10	Standard
Er	166	270.0	23.1				mg/L	13	Standard
I	127	24579.9	4.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.458	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.720	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606102602
Report Date/Time: Wednesday, July 06, 2016 15:25:45
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.043
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.001
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Ni 60 Upper, S, EEE	Ni	60	

Sample ID: L1606102602
Report Date/Time: Wednesday, July 06, 2016 15:25:45
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606102602
Sample Date/Time: Wednesday, July 06, 2016 15:27:52
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 200
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59652.3	3.2				ug/L	68501	Standard
	Be	9	20.0	90.1	**0.0451**	0.023	51.8	ug/L	8	Standard
	Al	27	418604.7	3.4	**3.4231**	0.167	4.9	ug/L	1397	Standard
	Sc	45	38361.8	1.8				ug/L	38815	Standard
	Ti	47	48.0	17.1	**0.1155**	0.025	21.3	ug/L	36	Standard
	V	51	1557.5	16.7	**0.0776**	0.037	47.4	ug/L	1284	Standard
	Cr	52	69895.5	5.2	**9.2442**	0.610	6.6	ug/L	6503	Standard
	Cr	53	8322.3	4.2	**9.3078**	0.491	5.3	ug/L	492	Standard
	Mn	55	46163.3	3.7	**7.4663**	0.256	3.4	ug/L	841	Standard
	Co	59	4716.7	3.2	**0.7886**	0.025	3.2	ug/L	229	Standard
	Ni	60	53355.9	3.6	**31.7146**	0.955	3.0	ug/L	344	Standard
	Cu	65	2976.0	1.8	**1.7684**	0.046	2.6	ug/L	115	Standard
	Zn	66	1005.0	2.7	**0.8857**	0.031	3.5	ug/L	190	Standard
>	**Ge**	72	409101.3	0.8				ug/L	409858	Standard
	As	75	-25.1	69.7	**0.0745**	0.017	23.1	ug/L	-22	Standard
	Se	82	28.0	12.9	**0.2140**	0.032	15.1	ug/L	18	Standard
	Se-1	77	74.7	8.1	**0.3270**	0.081	24.7	ug/L	50	Standard
>	**Ga**	71	36.7	55.1				mg/L	97	Standard
	Rb	85	145.0	21.0				ug/L	25	Standard
	Y	89	351461.6	1.1				ug/L	376763	Standard
>	**Rh**	103	78.3	24.2				ug/L	20	Standard
	Mo	98	270.6	12.5	**0.1889**	0.015	7.9	ug/L	51	Standard
	Ag	107	67.0	25.1	**0.0343**	0.003	8.3	ug/L	76	Standard
	Cd	111	22.5	15.3	**0.0512**	0.002	3.6	mg/L	6	Standard
	Cd	114	64.7	40.1	**0.0513**	0.006	11.0	ug/L	18	Standard
>	**In**	115	485128.4	0.5				ug/L	507261	Standard
	Sn	118	258.3	11.7	**-0.0608**	0.006	9.1	ug/L	683	Standard
	Sb	123	528.0	32.4	**0.1083**	0.042	38.5	ug/L	446	Standard
	Ba	135	657.0	3.1	**0.3767**	0.010	2.6	ug/L	28	Standard
	Ce	140	241.7	34.1				ug/L	33	Standard
>	**Tb**	159	760299.8	0.9				ug/L	800803	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	60.0	11.7	**0.0413**	0.001	2.2	ug/L	13	Standard
	Tl	205	45.0	19.2	**0.0494**	0.001	2.7	ug/L	13	Standard
	Pb	206	227.7	7.2	**0.0431**	0.003	8.1	ug/L	226	Standard
	Pb	207	180.3	9.6	**0.0401**	0.004	9.9	ug/L	204	Standard
	Pb	208	797.0	7.7	**0.0455**	0.003	7.5	ug/L	852	Standard
	U	238	16.7	30.2	**0.0452**	0.001	1.7	ug/L	13	Standard
>	**Bi**	209	441832.6	0.2				ug/L	449044	Standard

Sample ID: L1606102602
Report Date/Time: Wednesday, July 06, 2016 15:30:09
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.3058**	15.741	5148.3	mg/L	2	Standard
Mg	24	908.4	5.6	**1.2054**	0.048	4.0	mg/L	58	Standard
K	39	36.7	39.4	**0.0054**	0.056	1043.3	mg/L	27	Standard
Ca	43	40.0	12.5	**1.6623**	0.322	19.4	mg/L	20	Standard
Fe	54	67.9	4.4	**-0.0627**	0.002	2.4	mg/L	158	Standard
Fe	57	248.3	12.1	**0.1622**	0.117	72.3	mg/L	267	Standard
Sc-1	45	38361.8	1.8				mg/L	38815	Standard
Cl	35	69584.8	2.6				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3120.3	5.7				ug/L	1617	Standard
P	31	6753.2	0.8				ug/L	19244	Standard
S	34	3768.8	1.3				ug/L	3557	Standard
Sr	88	76.7	7.5				ug/L	65	Standard
C	12	16.7	124.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	39.0	0.0				mg/L	13	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	13	Standard
I	127	14281.7	3.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		87.082	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.815	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606102602
Report Date/Time: Wednesday, July 06, 2016 15:30:09
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.637
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.394
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 15:31:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62510.4	1.5				ug/L	68501	Standard
	Be	9	45265.9	1.1	**54.6732**	0.331	0.6	ug/L	8	Standard
	Al	27	7101979.2	2.0	**54.8496**	0.969	1.8	ug/L	1397	Standard
	Sc	45	42855.5	1.1				ug/L	38815	Standard
	Ti	47	38254.6	0.4	**105.6282**	1.379	1.3	ug/L	36	Standard
	V	51	389890.4	0.9	**51.2225**	0.409	0.8	ug/L	1284	Standard
	Cr	52	394953.7	1.4	**52.2714**	0.664	1.3	ug/L	6503	Standard
	Cr	53	49295.1	1.9	**52.8778**	0.470	0.9	ug/L	492	Standard
	Mn	55	355133.0	1.5	**53.7409**	0.198	0.4	ug/L	841	Standard
	Co	59	338270.8	0.6	**51.9779**	0.514	1.0	ug/L	229	Standard
	Ni	60	95167.3	1.8	**52.4560**	0.799	1.5	ug/L	344	Standard
	Cu	65	94410.2	0.3	**52.2916**	0.811	1.6	ug/L	115	Standard
	Zn	66	56526.3	1.3	**51.8812**	0.251	0.5	ug/L	190	Standard
>	Ge	72	442099.8	1.5				ug/L	409858	Standard
	As	75	57168.4	1.7	**51.2247**	0.117	0.2	ug/L	-22	Standard
	Se	82	5880.4	1.8	**51.5509**	0.555	1.1	ug/L	18	Standard
	Se-1	77	3935.5	1.6	**52.2257**	0.689	1.3	ug/L	50	Standard
>	Ga	71	56.7	35.7				mg/L	97	Standard
	Rb	85	830.0	10.6				ug/L	25	Standard
	Y	89	383309.8	0.5				ug/L	376763	Standard
>	Rh	103	65.0	13.3				ug/L	20	Standard
	Mo	98	258034.7	0.3	**102.2558**	0.442	0.4	ug/L	51	Standard
	Ag	107	328084.2	0.8	**50.2200**	0.076	0.2	ug/L	76	Standard
	Cd	111	104954.0	1.1	**50.5459**	0.249	0.5	mg/L	6	Standard
	Cd	114	257205.6	1.2	**50.6685**	0.423	0.8	ug/L	18	Standard
>	In	115	531139.6	0.6				ug/L	507261	Standard
	Sn	118	287869.1	1.0	**50.1137**	0.324	0.6	ug/L	683	Standard
	Sb	123	226343.7	0.7	**50.3782**	0.153	0.3	ug/L	446	Standard
	Ba	135	98602.1	0.7	**49.4969**	0.088	0.2	ug/L	28	Standard
	Ce	140	105.0	29.0				ug/L	33	Standard
>	Tb	159	805440.7	1.6				ug/L	800803	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	401097.9	1.2	**51.3040**	0.273	0.5	ug/L	13	Standard
	Tl	205	355854.2	1.4	**52.5682**	1.130	2.1	ug/L	13	Standard
	Pb	206	254786.8	0.7	**50.7595**	0.728	1.4	ug/L	226	Standard
	Pb	207	230315.6	0.2	**50.5265**	0.425	0.8	ug/L	204	Standard
	Pb	208	963927.7	0.8	**52.8789**	0.356	0.7	ug/L	852	Standard
	U	238	345757.3	0.5	**51.2253**	0.548	1.1	ug/L	13	Standard
>	Bi	209	459318.8	0.8				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 15:33:22
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**7.7717**	14.337	184.5	mg/L	2	Standard
Mg	24	3975.5	6.9	**4.8346**	0.283	5.8	mg/L	58	Standard
K	39	1343.4	5.6	**4.7102**	0.312	6.6	mg/L	27	Standard
Ca	43	80.0	12.5	**3.9950**	0.686	17.2	mg/L	20	Standard
Fe	54	6635.7	2.5	**4.9103**	0.105	2.1	mg/L	158	Standard
Fe	57	1878.4	2.2	**5.0116**	0.137	2.7	mg/L	267	Standard
Sc-1	45	42855.5	1.1				mg/L	38815	Standard
Cl	35	74232.2	2.7				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2200.2	12.5				ug/L	1617	Standard
P	31	22027.7	0.8				ug/L	19244	Standard
S	34	4434.0	2.1				ug/L	3557	Standard
Sr	88	70.0	43.4				ug/L	65	Standard
C	12	53.3	60.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	23	Standard
Dy	164	6.3	86.9				mg/L	13	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	13556.1	3.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.346		
Al	27	109.699		
Sc	45			
Ti	47	105.628		
V	51	102.445		
Cr	52	104.543		
Cr	53			
Mn	55	107.482		
Co	59	103.956		
Ni	60	104.912		
Cu	65	104.583		
Zn	66	103.762		
Ge	72		107.867	
As	75	102.449		
Se	82	103.102		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 15:33:22
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	102.256		
Ag	107	100.440		
Cd	111	101.092		
Cd	114			
In	115			104.707
Sn	118	100.227		
Sb	123	100.756		
Ba	135	98.994		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.608		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.758		
U	238	102.451		
Bi	209			102.288
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 15:33:22
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 15:34:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61561.6	3.3				ug/L	68501	Standard
	Be	9	28.3	10.2	**0.0542**	0.003	6.0	ug/L	8	Standard
	Al	27	2803.6	30.9	**0.0569**	0.006	11.2	ug/L	1397	Standard
	Sc	45	42046.6	2.5				ug/L	38815	Standard
	Ti	47	62.0	4.3	**0.1464**	0.006	4.0	ug/L	36	Standard
	V	51	1620.5	26.0	**0.0735**	0.059	79.9	ug/L	1284	Standard
	Cr	52	6965.3	2.5	**0.0210**	0.012	56.9	ug/L	6503	Standard
	Cr	53	605.0	6.6	**0.2469**	0.038	15.2	ug/L	492	Standard
	Mn	55	1194.1	59.5	**0.0889**	0.112	125.6	ug/L	841	Standard
	Co	59	316.0	35.1	**0.0550**	0.018	32.3	ug/L	229	Standard
	Ni	60	524.0	11.7	**0.1368**	0.031	22.5	ug/L	344	Standard
	Cu	65	203.7	7.4	**0.1015**	0.007	7.2	ug/L	115	Standard
	Zn	66	198.3	8.9	**0.0722**	0.015	21.3	ug/L	190	Standard
>	**Ge**	72	434423.2	1.3				ug/L	409858	Standard
	As	75	6.5	179.2	**0.1047**	0.011	10.1	ug/L	-22	Standard
	Se	82	30.2	4.2	**0.2183**	0.008	3.5	ug/L	18	Standard
	Se-1	77	61.7	3.4	**0.0858**	0.019	22.0	ug/L	50	Standard
>	**Ga**	71	23.3	53.9				mg/L	97	Standard
	Rb	85	55.0	18.2				ug/L	25	Standard
	Y	89	380097.4	1.2				ug/L	376763	Standard
>	**Rh**	103	41.7	66.1				ug/L	20	Standard
	Mo	98	226.8	44.6	**0.1626**	0.040	24.7	ug/L	51	Standard
	Ag	107	177.7	32.6	**0.0506**	0.009	17.4	ug/L	76	Standard
	Cd	111	18.4	27.8	**0.0483**	0.002	5.1	mg/L	6	Standard
	Cd	114	45.5	94.0	**0.0464**	0.008	18.1	ug/L	18	Standard
>	**In**	115	523505.1	2.0				ug/L	507261	Standard
	Sn	118	850.0	23.5	**0.0404**	0.035	87.4	ug/L	683	Standard
	Sb	123	632.5	33.7	**0.1228**	0.049	39.7	ug/L	446	Standard
	Ba	135	56.0	36.1	**0.0443**	0.011	23.8	ug/L	28	Standard
	Ce	140	53.3	43.3				ug/L	33	Standard
>	**Tb**	159	800127.8	1.0				ug/L	800803	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	113.3	28.9	**0.0477**	0.004	8.6	ug/L	13	Standard
	Tl	205	96.7	62.4	**0.0567**	0.009	15.5	ug/L	13	Standard
	Pb	206	352.3	41.0	**0.0657**	0.028	43.1	ug/L	226	Standard
	Pb	207	330.3	42.9	**0.0709**	0.031	43.2	ug/L	204	Standard
	Pb	208	1337.7	38.2	**0.0729**	0.028	37.8	ug/L	852	Standard
	U	238	139.0	62.6	**0.0630**	0.013	20.1	ug/L	13	Standard
>	**Bi**	209	462113.9	1.9				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 15:36:33
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	215.0	89.1	**0.2268**	0.230	101.4	mg/L	58	Standard
K	39	25.0	20.0	**-0.0496**	0.020	40.1	mg/L	27	Standard
Ca	43	25.0	69.3	**0.3967**	1.159	292.2	mg/L	20	Standard
Fe	54	166.1	29.4	**0.0075**	0.034	454.2	mg/L	158	Standard
Fe	57	271.7	18.9	**0.1597**	0.163	102.1	mg/L	267	Standard
> **Sc-1**	45	42046.6	2.5				mg/L	38815	Standard
Cl	35	72320.2	1.4				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1920.1	8.2				ug/L	1617	Standard
P	31	21066.3	3.1				ug/L	19244	Standard
S	34	4195.6	5.6				ug/L	3557	Standard
Sr	88	68.3	11.2				ug/L	65	Standard
C	12	40.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	9.5	107.6				mg/L	13	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	10325.2	3.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.994	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 15:36:33
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.202
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.911
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 15:36:33
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: PBS M4 WG574306-02
Sample Date/Time: Wednesday, July 06, 2016 15:50:33
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60321.5	1.7				ug/L	68501	Standard
	Be	9	10.0	50.0	**0.0319**	0.006	19.1	ug/L	8	Standard
	Al	27	4340.6	5.6	**0.0698**	0.002	2.5	ug/L	1397	Standard
	Sc	45	39145.5	1.2				ug/L	38815	Standard
	Ti	47	32.0	13.6	**0.0648**	0.013	19.6	ug/L	36	Standard
	V	51	1399.3	2.8	**0.0491**	0.007	14.5	ug/L	1284	Standard
	Cr	52	6817.5	0.4	**0.0288**	0.009	30.6	ug/L	6503	Standard
	Cr	53	396.7	5.8	**0.0309**	0.026	84.0	ug/L	492	Standard
	Mn	55	677.0	5.0	**0.0117**	0.006	54.9	ug/L	841	Standard
	Co	59	186.7	9.5	**0.0355**	0.003	8.2	ug/L	229	Standard
	Ni	60	465.3	4.8	**0.1119**	0.014	12.9	ug/L	344	Standard
	Cu	65	161.3	5.2	**0.0804**	0.006	7.2	ug/L	115	Standard
	Zn	66	946.4	3.1	**0.7988**	0.024	3.0	ug/L	190	Standard
>	**Ge**	72	421846.3	1.0				ug/L	409858	Standard
	As	75	-69.8	37.3	**0.0336**	0.024	70.9	ug/L	-22	Standard
	Se	82	12.6	46.4	**0.0646**	0.055	84.5	ug/L	18	Standard
	Se-1	77	60.0	12.6	**0.0881**	0.111	126.1	ug/L	50	Standard
>	**Ga**	71	30.0	16.7				mg/L	97	Standard
	Rb	85	28.3	88.8				ug/L	25	Standard
	Y	89	365994.3	0.0				ug/L	376763	Standard
>	**Rh**	103	16.7	34.6				ug/L	20	Standard
	Mo	98	75.8	22.7	**0.1031**	0.007	6.8	ug/L	51	Standard
	Ag	107	68.0	16.4	**0.0340**	0.002	5.1	ug/L	76	Standard
	Cd	111	6.5	46.8	**0.0427**	0.002	3.6	mg/L	6	Standard
	Cd	114	7.1	121.2	**0.0388**	0.002	4.6	ug/L	18	Standard
>	**In**	115	505408.1	0.5				ug/L	507261	Standard
	Sn	118	480.0	14.7	**-0.0221**	0.013	57.1	ug/L	683	Standard
	Sb	123	394.1	24.4	**0.0718**	0.022	30.9	ug/L	446	Standard
	Ba	135	54.0	8.5	**0.0442**	0.002	5.3	ug/L	28	Standard
	Ce	140	33.3	34.6				ug/L	33	Standard
>	**Tb**	159	771411.9	1.2				ug/L	800803	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	7.7	41.9	**0.0343**	0.000	1.2	ug/L	13	Standard
	Tl	205	5.0	100.0	**0.0433**	0.001	1.7	ug/L	13	Standard
	Pb	206	241.3	5.2	**0.0451**	0.002	5.2	ug/L	226	Standard
	Pb	207	212.7	12.1	**0.0466**	0.006	12.9	ug/L	204	Standard
	Pb	208	890.0	2.3	**0.0499**	0.001	2.7	ug/L	852	Standard
	U	238	5.0	0.0	**0.0434**	0.000	0.0	ug/L	13	Standard
>	**Bi**	209	449902.0	0.5				ug/L	449044	Standard

Sample ID: PBS M4 WG574306-02
Report Date/Time: Wednesday, July 06, 2016 15:52:50
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.3470**	15.813	4556.7	mg/L	2	Standard
Mg	24	53.3	14.3	**0.0332**	0.009	28.5	mg/L	58	Standard
K	39	23.3	24.7	**-0.0497**	0.022	44.0	mg/L	27	Standard
Ca	43	35.0	14.3	**1.2473**	0.369	29.6	mg/L	20	Standard
Fe	54	97.6	24.1	**-0.0391**	0.021	52.6	mg/L	158	Standard
Fe	57	258.3	21.3	**0.1767**	0.178	100.7	mg/L	267	Standard
> **Sc-1**	45	39145.5	1.2				mg/L	38815	Standard
Cl	35	72061.6	0.7				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2043.5	4.9				ug/L	1617	Standard
P	31	12745.4	1.4				ug/L	19244	Standard
S	34	4235.6	4.4				ug/L	3557	Standard
Sr	88	66.7	48.2				ug/L	65	Standard
C	12	56.7	79.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	19.4	90.2				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	6898.2	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.059	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBS M4 WG574306-02
Report Date/Time: Wednesday, July 06, 2016 15:52:50
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.635	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.191	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M4 WG574306-02
Report Date/Time: Wednesday, July 06, 2016 15:52:50
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: LCSS M4 WG574306-03
Sample Date/Time: Wednesday, July 06, 2016 15:53:45
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61943.1	2.3				ug/L	68501	Standard
	Be	9	22788.8	2.5	**27.7900**	0.695	2.5	ug/L	8	Standard
	Al	27	9251.2	3.3	**0.1071**	0.002	1.6	ug/L	1397	Standard
	Sc	45	42504.5	0.8				ug/L	38815	Standard
	Ti	47	40.7	16.4	**0.0847**	0.019	22.5	ug/L	36	Standard
	V	51	197378.2	0.5	**25.8881**	0.107	0.4	ug/L	1284	Standard
	Cr	52	203716.1	0.7	**26.5392**	0.082	0.3	ug/L	6503	Standard
	Cr	53	24791.9	0.3	**26.4178**	0.193	0.7	ug/L	492	Standard
	Mn	55	180941.1	1.4	**27.3648**	0.262	1.0	ug/L	841	Standard
	Co	59	170099.0	1.8	**26.1669**	0.414	1.6	ug/L	229	Standard
	Ni	60	48290.2	1.5	**26.5688**	0.339	1.3	ug/L	344	Standard
	Cu	65	47767.2	0.9	**26.4765**	0.075	0.3	ug/L	115	Standard
	Zn	66	29860.1	0.4	**27.3841**	0.124	0.5	ug/L	190	Standard
>	**Ge**	72	441594.3	0.7				ug/L	409858	Standard
	As	75	28851.8	0.7	**25.9316**	0.203	0.8	ug/L	-22	Standard
	Se	82	2909.4	1.3	**25.5079**	0.168	0.7	ug/L	18	Standard
	Se-1	77	1983.1	1.3	**25.9713**	0.453	1.7	ug/L	50	Standard
>	**Ga**	71	40.0	25.0				mg/L	97	Standard
	Rb	85	45.0	22.2				ug/L	25	Standard
	Y	89	378682.1	0.2				ug/L	376763	Standard
>	**Rh**	103	58.3	17.8				ug/L	20	Standard
	Mo	98	80.9	10.8	**0.1038**	0.003	3.3	ug/L	51	Standard
	Ag	107	168208.2	0.7	**25.9425**	0.038	0.1	ug/L	76	Standard
	Cd	111	52395.3	0.4	**25.4346**	0.241	0.9	mg/L	6	Standard
	Cd	114	129575.9	0.9	**25.7262**	0.071	0.3	ug/L	18	Standard
>	**In**	115	527384.1	0.8				ug/L	507261	Standard
	Sn	118	595.0	11.9	**-0.0055**	0.012	224.7	ug/L	683	Standard
	Sb	123	110230.2	2.2	**24.6989**	0.538	2.2	ug/L	446	Standard
	Ba	135	50026.8	0.7	**25.2997**	0.128	0.5	ug/L	28	Standard
	Ce	140	40.0	25.0				ug/L	33	Standard
>	**Tb**	159	818911.5	0.3				ug/L	800803	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	202774.2	0.8	**25.6253**	0.275	1.1	ug/L	13	Standard
	Tl	205	180453.3	0.7	**26.3379**	0.254	1.0	ug/L	13	Standard
	Pb	206	132149.2	1.1	**25.9889**	0.213	0.8	ug/L	226	Standard
	Pb	207	115159.0	0.9	**24.9410**	0.164	0.7	ug/L	204	Standard
	Pb	208	485832.8	0.3	**26.3134**	0.103	0.4	ug/L	852	Standard
	U	238	171207.5	0.5	**25.0637**	0.032	0.1	ug/L	13	Standard
>	**Bi**	209	465221.6	0.3				ug/L	449044	Standard

Sample ID: LCSS M4 WG574306-03
Report Date/Time: Wednesday, July 06, 2016 15:56:02
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	73.3	19.7	**0.0522**	0.017	32.6	mg/L	58	Standard
K	39	20.0	43.3	**-0.0690**	0.032	46.1	mg/L	27	Standard
Ca	43	20.0	0.0	**0.0504**	0.011	22.1	mg/L	20	Standard
Fe	54	135.8	35.4	**-0.0166**	0.036	215.7	mg/L	158	Standard
Fe	57	223.3	9.0	**0.0024**	0.060	2457.7	mg/L	267	Standard
> **Sc-1**	45	42504.5	0.8				mg/L	38815	Standard
Cl	35	74399.6	2.0				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1826.8	5.9				ug/L	1617	Standard
P	31	21475.2	2.0				ug/L	19244	Standard
S	34	3890.5	2.7				ug/L	3557	Standard
Sr	88	60.0	28.9				ug/L	65	Standard
C	12	73.3	7.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	23	Standard
Dy	164	19.2	54.6				mg/L	13	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	986.7	12.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.426	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.743	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSS M4 WG574306-03
Report Date/Time: Wednesday, July 06, 2016 15:56:02
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.967
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.603
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M4 WG574306-03
Report Date/Time: Wednesday, July 06, 2016 15:56:02
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129701
Sample Date/Time: Wednesday, July 06, 2016 15:56:56
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63174.8	1.0				ug/L	68501	Standard
	Be	9	473.3	11.9	**0.5854**	0.073	12.4	ug/L	8	Standard
	Al	27	12963863.6	1.0	**99.0412**	1.266	1.3	ug/L	1397	Standard
	Sc	45	46787.1	1.7				ug/L	38815	Standard
	Ti	47	2854.9	1.5	**7.7964**	0.128	1.6	ug/L	36	Standard
	V	51	64534.0	0.8	**8.2932**	0.120	1.4	ug/L	1284	Standard
	Cr	52	48530.6	0.9	**5.5538**	0.041	0.7	ug/L	6503	Standard
	Cr	53	5602.7	1.4	**5.5927**	0.038	0.7	ug/L	492	Standard
	Mn	55	1656218.8	1.2	**249.0852**	4.524	1.8	ug/L	841	Standard
	Co	59	22515.4	0.2	**3.4383**	0.034	1.0	ug/L	229	Standard
	Ni	60	14536.6	0.7	**7.8173**	0.023	0.3	ug/L	344	Standard
	Cu	65	15589.0	1.3	**8.5559**	0.041	0.5	ug/L	115	Standard
	Zn	66	14797.9	0.3	**13.3947**	0.133	1.0	ug/L	190	Standard
>	**Ge**	72	445500.3	0.9				ug/L	409858	Standard
	As	75	1680.8	1.7	**1.5905**	0.019	1.2	ug/L	-22	Standard
	Se	82	44.1	2.8	**0.3324**	0.009	2.6	ug/L	18	Standard
	Se-1	77	86.7	6.8	**0.3989**	0.076	19.1	ug/L	50	Standard
>	**Ga**	71	5177.6	2.2				mg/L	97	Standard
	Rb	85	61377.4	2.5				ug/L	25	Standard
	Y	89	546818.1	1.0				ug/L	376763	Standard
>	**Rh**	103	41.7	27.7				ug/L	20	Standard
	Mo	98	385.0	8.4	**0.2247**	0.014	6.4	ug/L	51	Standard
	Ag	107	262.3	9.1	**0.0634**	0.004	6.3	ug/L	76	Standard
	Cd	111	147.3	2.4	**0.1106**	0.002	2.1	mg/L	6	Standard
	Cd	114	389.3	18.3	**0.1143**	0.014	12.0	ug/L	18	Standard
>	**In**	115	529068.3	1.1				ug/L	507261	Standard
	Sn	118	523.3	19.7	**-0.0183**	0.019	102.0	ug/L	683	Standard
	Sb	123	1234.0	36.4	**0.2562**	0.103	40.2	ug/L	446	Standard
	Ba	135	251951.3	0.7	**126.9549**	1.383	1.1	ug/L	28	Standard
	Ce	140	741746.7	2.0				ug/L	33	Standard
>	**Tb**	159	829704.7	1.4				ug/L	800803	Standard
	Ho	165	14426.9	0.8				ug/L	10	Standard
	Tl	203	395.0	2.9	**0.0846**	0.002	2.0	ug/L	13	Standard
	Tl	205	333.3	8.8	**0.0924**	0.004	4.1	ug/L	13	Standard
	Pb	206	37568.5	0.8	**7.5872**	0.046	0.6	ug/L	226	Standard
	Pb	207	30719.8	0.7	**6.8349**	0.128	1.9	ug/L	204	Standard
	Pb	208	133956.4	0.3	**7.4538**	0.109	1.5	ug/L	852	Standard
	U	238	2766.3	1.8	**0.4579**	0.009	1.9	ug/L	13	Standard
>	**Bi**	209	452887.3	1.3				ug/L	449044	Standard

Sample ID: L1606129701
Report Date/Time: Wednesday, July 06, 2016 15:59:13
Page 1

Approved: July 07, 2016

Na	23	5.0	100.0	**13.8021**	22.785	165.1	mg/L	2	Standard
Mg	24	116.7	20.3	**0.0930**	0.029	30.7	mg/L	58	Standard
K	39	146.7	20.0	**0.3435**	0.099	28.9	mg/L	27	Standard
Ca	43	471.7	5.0	**27.1766**	1.103	4.1	mg/L	20	Standard
Fe	54	4043.0	2.7	**2.6886**	0.120	4.5	mg/L	158	Standard
Fe	57	1505.1	10.2	**3.5022**	0.490	14.0	mg/L	267	Standard
> **Sc-1**	45	46787.1	1.7				mg/L	38815	Standard
Cl	35	75827.3	1.6				ug/L	57611	Standard
Kr	83	3.3	69.3				ug/L	2	Standard
Br	81	2300.2	6.3				ug/L	1617	Standard
P	31	21613.7	1.2				ug/L	19244	Standard
S	34	4237.3	7.4				ug/L	3557	Standard
Sr	88	135.0	22.2				ug/L	65	Standard
C	12	83.3	6.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	36.7				mg/L	23	Standard
Dy	164	23454.8	2.1				mg/L	13	Standard
Ho-1	165	14426.9	0.8				mg/L	10	Standard
Er	166	12475.1	2.4				mg/L	13	Standard
I	127	30869.8	6.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.224	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.696	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129701
Report Date/Time: Wednesday, July 06, 2016 15:59:13
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.299
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.856
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129702
Sample Date/Time: Wednesday, July 06, 2016 16:00:08
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62448.5	2.1				ug/L	68501	Standard
	Be	9	608.3	3.9	**0.7548**	0.029	3.8	ug/L	8	Standard
	Al	27	6425419.7	0.6	**49.6924**	1.257	2.5	ug/L	1397	Standard
	Sc	45	46516.3	2.2				ug/L	38815	Standard
	Ti	47	2114.1	0.3	**5.7561**	0.071	1.2	ug/L	36	Standard
	V	51	99038.6	0.2	**12.7815**	0.178	1.4	ug/L	1284	Standard
	Cr	52	73702.5	0.2	**8.9021**	0.153	1.7	ug/L	6503	Standard
	Cr	53	8640.8	2.1	**8.8356**	0.138	1.6	ug/L	492	Standard
	Mn	55	3399995.6	0.6	**510.5494**	9.401	1.8	ug/L	841	Standard
	Co	59	39995.4	1.5	**6.0929**	0.144	2.4	ug/L	229	Standard
	Ni	60	19123.7	0.6	**10.3160**	0.152	1.5	ug/L	344	Standard
	Cu	65	22636.2	1.2	**12.4080**	0.116	0.9	ug/L	115	Standard
	Zn	66	34261.7	0.2	**31.1072**	0.396	1.3	ug/L	190	Standard
>	**Ge**	72	446311.5	1.4				ug/L	409858	Standard
	As	75	5487.0	1.7	**4.9603**	0.106	2.1	ug/L	-22	Standard
	Se	82	64.7	18.6	**0.5105**	0.101	19.7	ug/L	18	Standard
	Se-1	77	119.3	10.5	**0.8342**	0.188	22.6	ug/L	50	Standard
>	**Ga**	71	6746.5	3.9				mg/L	97	Standard
	Rb	85	67168.6	2.7				ug/L	25	Standard
	Y	89	576416.9	0.8				ug/L	376763	Standard
>	**Rh**	103	25.0	40.0				ug/L	20	Standard
	Mo	98	316.3	8.4	**0.1968**	0.010	5.1	ug/L	51	Standard
	Ag	107	622.3	4.9	**0.1183**	0.004	3.3	ug/L	76	Standard
	Cd	111	1170.1	2.9	**0.6028**	0.021	3.6	mg/L	6	Standard
	Cd	114	2831.4	7.2	**0.5947**	0.035	5.8	ug/L	18	Standard
>	**In**	115	530969.0	0.9				ug/L	507261	Standard
	Sn	118	826.7	11.4	**0.0343**	0.017	50.9	ug/L	683	Standard
	Sb	123	887.8	24.2	**0.1772**	0.047	26.5	ug/L	446	Standard
	Ba	135	307580.0	0.5	**154.4232**	1.212	0.8	ug/L	28	Standard
	Ce	140	898326.7	0.8				ug/L	33	Standard
>	**Tb**	159	824712.1	0.3				ug/L	800803	Standard
	Ho	165	16273.7	1.2				ug/L	10	Standard
	Tl	203	381.3	11.6	**0.0815**	0.006	6.8	ug/L	13	Standard
	Tl	205	301.7	12.4	**0.0866**	0.006	6.5	ug/L	13	Standard
	Pb	206	268899.5	0.4	**52.9720**	0.278	0.5	ug/L	226	Standard
	Pb	207	225053.4	0.2	**48.8212**	0.186	0.4	ug/L	204	Standard
	Pb	208	970125.3	0.5	**52.6267**	0.336	0.6	ug/L	852	Standard
	U	238	2932.0	0.9	**0.4718**	0.005	1.0	ug/L	13	Standard
>	**Bi**	209	464484.9	0.4				ug/L	449044	Standard

Sample ID: L1606129702
Report Date/Time: Wednesday, July 06, 2016 16:02:25
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.0199**	13.445	1318.3	mg/L	2	Standard
Mg	24	86.7	23.3	**0.0599**	0.025	41.5	mg/L	58	Standard
K	39	201.7	8.7	**0.5298**	0.070	13.2	mg/L	27	Standard
Ca	43	88.3	40.9	**4.1135**	2.328	56.6	mg/L	20	Standard
Fe	54	6704.1	3.0	**4.5654**	0.231	5.1	mg/L	158	Standard
Fe	57	1951.8	5.0	**4.7665**	0.192	4.0	mg/L	267	Standard
> **Sc-1**	45	46516.3	2.2				mg/L	38815	Standard
Cl	35	72128.6	1.7				ug/L	57611	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	3473.7	2.6				ug/L	1617	Standard
P	31	21530.3	0.6				ug/L	19244	Standard
S	34	4282.3	1.4				ug/L	3557	Standard
Sr	88	103.3	19.6				ug/L	65	Standard
C	12	130.0	30.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	24.0				mg/L	23	Standard
Dy	164	26856.5	1.1				mg/L	13	Standard
Ho-1	165	16273.7	1.2				mg/L	10	Standard
Er	166	14303.4	1.1				mg/L	13	Standard
I	127	19058.7	4.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.164	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.894	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129702
Report Date/Time: Wednesday, July 06, 2016 16:02:25
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.674
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129702
Report Date/Time: Wednesday, July 06, 2016 16:02:25
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129703
Sample Date/Time: Wednesday, July 06, 2016 16:03:19
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64073.5	1.5				ug/L	68501	Standard
	Be	9	488.3	11.8	**0.5945**	0.065	10.9	ug/L	8	Standard
	Al	27	15365624.4	1.2	**115.7621**	3.069	2.7	ug/L	1397	Standard
	Sc	45	47029.6	3.1				ug/L	38815	Standard
	Ti	47	3571.8	3.3	**9.7737**	0.346	3.5	ug/L	36	Standard
	V	51	87368.0	0.8	**11.2921**	0.054	0.5	ug/L	1284	Standard
	Cr	52	51636.8	0.5	**5.9777**	0.036	0.6	ug/L	6503	Standard
	Cr	53	5932.8	2.8	**5.9551**	0.175	2.9	ug/L	492	Standard
	Mn	55	2674680.4	0.3	**402.7958**	2.485	0.6	ug/L	841	Standard
	Co	59	24903.4	0.4	**3.8070**	0.028	0.7	ug/L	229	Standard
	Ni	60	15225.3	1.5	**8.2054**	0.092	1.1	ug/L	344	Standard
	Cu	65	11942.7	0.4	**6.5600**	0.017	0.3	ug/L	115	Standard
	Zn	66	18930.8	1.4	**17.1883**	0.221	1.3	ug/L	190	Standard
>	**Ge**	72	444933.7	0.4				ug/L	409858	Standard
	As	75	2651.5	1.9	**2.4550**	0.037	1.5	ug/L	-22	Standard
	Se	82	42.3	10.6	**0.3172**	0.041	12.8	ug/L	18	Standard
	Se-1	77	92.3	10.9	**0.4762**	0.134	28.1	ug/L	50	Standard
>	**Ga**	71	5626.0	1.8				mg/L	97	Standard
	Rb	85	70065.0	0.9				ug/L	25	Standard
	Y	89	547830.0	0.7				ug/L	376763	Standard
>	**Rh**	103	41.7	66.1				ug/L	20	Standard
	Mo	98	346.8	7.1	**0.2100**	0.010	4.9	ug/L	51	Standard
	Ag	107	260.7	7.0	**0.0633**	0.003	4.6	ug/L	76	Standard
	Cd	111	151.1	5.0	**0.1127**	0.004	3.5	mg/L	6	Standard
	Cd	114	305.5	8.0	**0.0980**	0.005	4.8	ug/L	18	Standard
>	**In**	115	526795.7	0.4				ug/L	507261	Standard
	Sn	118	728.4	17.9	**0.0180**	0.023	126.5	ug/L	683	Standard
	Sb	123	456.1	40.3	**0.0819**	0.041	49.8	ug/L	446	Standard
	Ba	135	321937.8	0.9	**162.9100**	2.079	1.3	ug/L	28	Standard
	Ce	140	745612.3	0.4				ug/L	33	Standard
>	**Tb**	159	836768.9	0.5				ug/L	800803	Standard
	Ho	165	13641.1	0.6				ug/L	10	Standard
	Tl	203	454.0	2.2	**0.0918**	0.001	1.6	ug/L	13	Standard
	Tl	205	421.7	1.8	**0.1052**	0.001	0.8	ug/L	13	Standard
	Pb	206	37397.8	1.0	**7.5039**	0.094	1.3	ug/L	226	Standard
	Pb	207	30975.0	1.9	**6.8467**	0.160	2.3	ug/L	204	Standard
	Pb	208	134337.6	0.8	**7.4262**	0.090	1.2	ug/L	852	Standard
	U	238	3398.4	2.4	**0.5496**	0.015	2.7	ug/L	13	Standard
>	**Bi**	209	455822.4	0.5				ug/L	449044	Standard

Sample ID: L1606129703
Report Date/Time: Wednesday, July 06, 2016 16:05:36
Page 1

Approved: July 07, 2016

Na	23	3.3	173.2	**5.7906**	25.242	435.9	mg/L	2	Standard
Mg	24	116.7	6.5	**0.0919**	0.005	5.1	mg/L	58	Standard
K	39	116.7	13.8	**0.2413**	0.042	17.4	mg/L	27	Standard
Ca	43	616.7	11.5	**35.8509**	5.371	15.0	mg/L	20	Standard
Fe	54	6215.4	1.8	**4.1752**	0.098	2.3	mg/L	158	Standard
Fe	57	2093.5	3.0	**5.1002**	0.085	1.7	mg/L	267	Standard
> **Sc-1**	45	47029.6	3.1				mg/L	38815	Standard
Cl	35	76435.7	0.6				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2476.9	7.5				ug/L	1617	Standard
P	31	21748.9	2.3				ug/L	19244	Standard
S	34	4344.0	5.1				ug/L	3557	Standard
Sr	88	190.0	16.0				ug/L	65	Standard
C	12	80.0	50.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	24.7				mg/L	23	Standard
Dy	164	22508.9	3.2				mg/L	13	Standard
Ho-1	165	13641.1	0.6				mg/L	10	Standard
Er	166	11941.4	2.7				mg/L	13	Standard
I	127	22788.8	3.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.536	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129703
Report Date/Time: Wednesday, July 06, 2016 16:05:36
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.851
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.510
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129703
Report Date/Time: Wednesday, July 06, 2016 16:05:36
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129704
Sample Date/Time: Wednesday, July 06, 2016 16:06:31
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63111.2	1.9				ug/L	68501	Standard
	Be	9	405.0	3.3	**0.5041**	0.025	4.9	ug/L	8	Standard
	Al	27	14440748.1	0.6	**110.4469**	1.680	1.5	ug/L	1397	Standard
	Sc	45	46800.5	2.4				ug/L	38815	Standard
	Ti	47	3445.7	2.3	**9.4186**	0.270	2.9	ug/L	36	Standard
	V	51	92403.7	0.4	**11.9391**	0.031	0.3	ug/L	1284	Standard
	Cr	52	56856.5	0.5	**6.6687**	0.062	0.9	ug/L	6503	Standard
	Cr	53	6406.4	1.9	**6.4568**	0.128	2.0	ug/L	492	Standard
	Mn	55	2848070.2	1.3	**428.4666**	4.579	1.1	ug/L	841	Standard
	Co	59	25663.7	0.9	**3.9191**	0.042	1.1	ug/L	229	Standard
	Ni	60	17112.0	0.7	**9.2328**	0.115	1.2	ug/L	344	Standard
	Cu	65	13470.0	0.7	**7.3933**	0.074	1.0	ug/L	115	Standard
	Zn	66	18281.4	1.3	**16.5792**	0.322	1.9	ug/L	190	Standard
>	**Ge**	72	445391.0	0.7				ug/L	409858	Standard
	As	75	2839.7	2.5	**2.6195**	0.053	2.0	ug/L	-22	Standard
	Se	82	42.5	11.2	**0.3192**	0.042	13.2	ug/L	18	Standard
	Se-1	77	89.7	5.6	**0.4395**	0.071	16.1	ug/L	50	Standard
>	**Ga**	71	6004.5	4.9				mg/L	97	Standard
	Rb	85	64888.7	1.6				ug/L	25	Standard
	Y	89	547330.6	1.7				ug/L	376763	Standard
>	**Rh**	103	36.7	34.3				ug/L	20	Standard
	Mo	98	863.5	1.4	**0.4161**	0.007	1.6	ug/L	51	Standard
	Ag	107	246.7	2.8	**0.0611**	0.001	2.1	ug/L	76	Standard
	Cd	111	146.5	7.6	**0.1104**	0.005	4.9	mg/L	6	Standard
	Cd	114	392.6	2.3	**0.1152**	0.003	2.4	ug/L	18	Standard
>	**In**	115	527277.1	1.4				ug/L	507261	Standard
	Sn	118	525.0	11.9	**-0.0179**	0.010	53.9	ug/L	683	Standard
	Sb	123	402.9	30.5	**0.0700**	0.028	39.4	ug/L	446	Standard
	Ba	135	399609.8	0.2	**202.0498**	3.263	1.6	ug/L	28	Standard
	Ce	140	769293.1	0.4				ug/L	33	Standard
>	**Tb**	159	836566.5	0.5				ug/L	800803	Standard
	Ho	165	13921.4	3.2				ug/L	10	Standard
	Tl	203	408.0	3.2	**0.0858**	0.002	2.1	ug/L	13	Standard
	Tl	205	323.3	16.7	**0.0906**	0.008	9.2	ug/L	13	Standard
	Pb	206	37067.0	0.2	**7.4216**	0.029	0.4	ug/L	226	Standard
	Pb	207	30343.0	0.2	**6.6925**	0.054	0.8	ug/L	204	Standard
	Pb	208	133022.6	0.7	**7.3378**	0.057	0.8	ug/L	852	Standard
	U	238	3191.3	1.0	**0.5176**	0.003	0.5	ug/L	13	Standard
>	**Bi**	209	456789.9	0.6				ug/L	449044	Standard

Sample ID: L1606129704
Report Date/Time: Wednesday, July 06, 2016 16:08:47
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**6.3700**	13.132	206.2	mg/L	2	Standard
Mg	24	128.3	14.8	**0.1061**	0.025	23.5	mg/L	58	Standard
K	39	143.3	10.7	**0.3315**	0.041	12.4	mg/L	27	Standard
Ca	43	511.7	6.9	**29.5725**	1.591	5.4	mg/L	20	Standard
Fe	54	6320.5	3.8	**4.2715**	0.264	6.2	mg/L	158	Standard
Fe	57	2060.1	4.0	**5.0347**	0.146	2.9	mg/L	267	Standard
Sc-1	45	46800.5	2.4				mg/L	38815	Standard
Cl	35	76096.0	1.2				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2130.2	8.0				ug/L	1617	Standard
P	31	21824.0	1.6				ug/L	19244	Standard
S	34	4499.0	2.5				ug/L	3557	Standard
Sr	88	190.0	22.5				ug/L	65	Standard
C	12	116.7	13.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	34.3				mg/L	23	Standard
Dy	164	23701.7	2.6				mg/L	13	Standard
Ho-1	165	13921.4	3.2				mg/L	10	Standard
Er	166	12548.5	3.2				mg/L	13	Standard
I	127	21098.0	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.132	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.670	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129704
Report Date/Time: Wednesday, July 06, 2016 16:08:47
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.946
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.725
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129704
Report Date/Time: Wednesday, July 06, 2016 16:08:47
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129705
Sample Date/Time: Wednesday, July 06, 2016 16:09:42
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62980.8	4.4				ug/L	68501	Standard
	Be	9	241.7	15.3	**0.3086**	0.039	12.6	ug/L	8	Standard
	Al	27	8184375.2	3.0	**62.7980**	3.036	4.8	ug/L	1397	Standard
	Sc	45	45461.4	1.7				ug/L	38815	Standard
	Ti	47	2327.2	1.1	**6.2933**	0.241	3.8	ug/L	36	Standard
	V	51	39700.9	1.0	**4.9997**	0.179	3.6	ug/L	1284	Standard
	Cr	52	37108.7	1.5	**3.9823**	0.167	4.2	ug/L	6503	Standard
	Cr	53	4053.9	1.9	**3.8931**	0.198	5.1	ug/L	492	Standard
	Mn	55	1570873.5	1.2	**234.1318**	8.981	3.8	ug/L	841	Standard
	Co	59	16607.1	2.1	**2.5154**	0.122	4.9	ug/L	229	Standard
	Ni	60	11198.5	1.8	**5.9319**	0.267	4.5	ug/L	344	Standard
	Cu	65	5955.8	0.8	**3.2313**	0.106	3.3	ug/L	115	Standard
	Zn	66	12788.4	0.9	**11.4529**	0.260	2.3	ug/L	190	Standard
>	**Ge**	72	449788.7	2.7				ug/L	409858	Standard
	As	75	1755.0	2.5	**1.6418**	0.024	1.5	ug/L	-22	Standard
	Se	82	35.2	7.0	**0.2524**	0.026	10.5	ug/L	18	Standard
	Se-1	77	82.3	13.7	**0.3325**	0.167	50.3	ug/L	50	Standard
>	**Ga**	71	3890.5	2.5				mg/L	97	Standard
	Rb	85	35301.1	1.9				ug/L	25	Standard
	Y	89	468000.1	2.2				ug/L	376763	Standard
>	**Rh**	103	28.3	27.0				ug/L	20	Standard
	Mo	98	787.1	2.4	**0.3831**	0.014	3.6	ug/L	51	Standard
	Ag	107	180.0	4.3	**0.0506**	0.001	1.2	ug/L	76	Standard
	Cd	111	90.5	11.3	**0.0829**	0.005	5.4	mg/L	6	Standard
	Cd	114	247.4	18.0	**0.0862**	0.010	11.5	ug/L	18	Standard
>	**In**	115	531650.1	2.4				ug/L	507261	Standard
	Sn	118	468.3	13.2	**-0.0284**	0.012	41.2	ug/L	683	Standard
	Sb	123	293.4	31.1	**0.0451**	0.021	46.7	ug/L	446	Standard
	Ba	135	101024.0	0.5	**50.6871**	1.476	2.9	ug/L	28	Standard
	Ce	140	396222.3	2.3				ug/L	33	Standard
>	**Tb**	159	820450.8	2.1				ug/L	800803	Standard
	Ho	165	7663.6	3.4				ug/L	10	Standard
	Tl	203	202.0	8.6	**0.0593**	0.002	3.7	ug/L	13	Standard
	Tl	205	163.3	23.4	**0.0667**	0.005	7.8	ug/L	13	Standard
	Pb	206	15664.1	0.4	**3.1305**	0.070	2.2	ug/L	226	Standard
	Pb	207	13014.6	1.2	**2.8667**	0.073	2.6	ug/L	204	Standard
	Pb	208	56294.6	0.6	**3.1020**	0.075	2.4	ug/L	852	Standard
	U	238	1239.1	1.5	**0.2268**	0.001	0.7	ug/L	13	Standard
>	**Bi**	209	457425.1	1.9				ug/L	449044	Standard

Sample ID: L1606129705
Report Date/Time: Wednesday, July 06, 2016 16:11:59
Page 1

Approved: July 07, 2016

Na	23	5.0	0.0	**14.5008**	0.406	2.8	mg/L	2	Standard
Mg	24	86.7	3.3	**0.0619**	0.005	8.0	mg/L	58	Standard
K	39	118.3	10.6	**0.2605**	0.036	13.8	mg/L	27	Standard
Ca	43	278.3	10.5	**15.9906**	1.553	9.7	mg/L	20	Standard
Fe	54	4712.4	4.0	**3.2496**	0.185	5.7	mg/L	158	Standard
Fe	57	1498.4	9.3	**3.5981**	0.364	10.1	mg/L	267	Standard
Sc-1	45	45461.4	1.7				mg/L	38815	Standard
Cl	35	74689.7	1.1				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2046.8	4.4				ug/L	1617	Standard
P	31	21545.3	1.7				ug/L	19244	Standard
S	34	4452.3	4.6				ug/L	3557	Standard
Sr	88	106.7	7.2				ug/L	65	Standard
C	12	86.7	6.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	23	Standard
Dy	164	12824.6	3.4				mg/L	13	Standard
Ho-1	165	7663.6	3.4				mg/L	10	Standard
Er	166	6424.7	4.2				mg/L	13	Standard
I	127	6124.6	5.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		91.941	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.743	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129705
Report Date/Time: Wednesday, July 06, 2016 16:11:59
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.808
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.866
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606129705
Report Date/Time: Wednesday, July 06, 2016 16:11:59
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129706
Sample Date/Time: Wednesday, July 06, 2016 16:13:18
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64657.7	2.5				ug/L	68501	Standard
	Be	9	596.7	3.8	**0.7167**	0.043	6.1	ug/L	8	Standard
	Al	27	18962129.8	1.5	**141.5551**	2.522	1.8	ug/L	1397	Standard
	Sc	45	48390.5	1.6				ug/L	38815	Standard
	Ti	47	5454.0	2.9	**14.7696**	0.651	4.4	ug/L	36	Standard
	V	51	114915.0	1.1	**14.7253**	0.322	2.2	ug/L	1284	Standard
	Cr	52	97543.3	1.1	**11.9723**	0.286	2.4	ug/L	6503	Standard
	Cr	53	11629.5	1.9	**11.9313**	0.316	2.7	ug/L	492	Standard
	Mn	55	2838609.2	0.2	**422.5630**	7.353	1.7	ug/L	841	Standard
	Co	59	46821.9	1.5	**7.0698**	0.102	1.4	ug/L	229	Standard
	Ni	60	31539.5	0.9	**16.9679**	0.340	2.0	ug/L	344	Standard
	Cu	65	17669.0	0.7	**9.6004**	0.216	2.2	ug/L	115	Standard
	Zn	66	32520.2	0.6	**29.2655**	0.447	1.5	ug/L	190	Standard
>	**Ge**	72	450193.7	1.6				ug/L	409858	Standard
	As	75	3232.5	2.7	**2.9388**	0.110	3.7	ug/L	-22	Standard
	Se	82	40.5	15.8	**0.2979**	0.061	20.4	ug/L	18	Standard
	Se-1	77	106.0	12.3	**0.6444**	0.195	30.3	ug/L	50	Standard
>	**Ga**	71	12046.5	0.5				mg/L	97	Standard
	Rb	85	121075.3	2.3				ug/L	25	Standard
	Y	89	581582.5	1.1				ug/L	376763	Standard
>	**Rh**	103	45.0	40.1				ug/L	20	Standard
	Mo	98	459.1	2.0	**0.2547**	0.001	0.5	ug/L	51	Standard
	Ag	107	359.0	2.9	**0.0785**	0.001	1.1	ug/L	76	Standard
	Cd	111	176.8	9.6	**0.1252**	0.009	7.3	mg/L	6	Standard
	Cd	114	436.3	8.6	**0.1240**	0.008	6.8	ug/L	18	Standard
>	**In**	115	527081.5	1.5				ug/L	507261	Standard
	Sn	118	510.0	17.0	**-0.0203**	0.016	79.6	ug/L	683	Standard
	Sb	123	349.7	39.3	**0.0582**	0.031	53.2	ug/L	446	Standard
	Ba	135	303281.6	0.5	**153.4065**	2.551	1.7	ug/L	28	Standard
	Ce	140	891716.1	1.3				ug/L	33	Standard
>	**Tb**	159	842437.6	1.7				ug/L	800803	Standard
	Ho	165	15568.0	0.8				ug/L	10	Standard
	Tl	203	681.3	6.5	**0.1212**	0.007	5.6	ug/L	13	Standard
	Tl	205	580.0	11.6	**0.1289**	0.011	8.5	ug/L	13	Standard
	Pb	206	40420.2	0.2	**8.1176**	0.115	1.4	ug/L	226	Standard
	Pb	207	33350.0	1.0	**7.3771**	0.048	0.7	ug/L	204	Standard
	Pb	208	144996.6	0.8	**8.0229**	0.180	2.2	ug/L	852	Standard
	U	238	3286.4	1.0	**0.5332**	0.008	1.6	ug/L	13	Standard
>	**Bi**	209	455484.6	1.5				ug/L	449044	Standard

Sample ID: L1606129706
Report Date/Time: Wednesday, July 06, 2016 16:15:34
Page 1

Approved: July 07, 2016

Na	23	6.7	43.3	**20.4143**	12.774	62.6	mg/L	2	Standard
Mg	24	121.7	22.6	**0.0937**	0.029	31.3	mg/L	58	Standard
K	39	271.7	9.4	**0.7277**	0.094	13.0	mg/L	27	Standard
Ca	43	496.7	3.1	**27.7114**	1.278	4.6	mg/L	20	Standard
Fe	54	12166.7	5.7	**8.0532**	0.562	7.0	mg/L	158	Standard
Fe	57	3530.4	5.6	**8.7932**	0.532	6.0	mg/L	267	Standard
> **Sc-1**	45	48390.5	1.6				mg/L	38815	Standard
Cl	35	75046.1	0.8				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2516.9	8.4				ug/L	1617	Standard
P	31	22914.0	1.9				ug/L	19244	Standard
S	34	4679.1	4.3				ug/L	3557	Standard
Sr	88	175.0	11.4				ug/L	65	Standard
C	12	103.3	11.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	61.9				mg/L	23	Standard
Dy	164	26276.7	2.8				mg/L	13	Standard
Ho-1	165	15568.0	0.8				mg/L	10	Standard
Er	166	14557.0	1.8				mg/L	13	Standard
I	127	10100.0	3.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.389	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.841	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129706
Report Date/Time: Wednesday, July 06, 2016 16:15:34
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.434
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129706
Report Date/Time: Wednesday, July 06, 2016 16:15:34
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129706PS WG574306-03
Sample Date/Time: Wednesday, July 06, 2016 16:16:29
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65638.6	1.3				ug/L	68501	Standard
	Be	9	47235.2	3.7	**54.3206**	1.379	2.5	ug/L	8	Standard
	Al	27	18835675.6	1.4	**138.4866**	2.016	1.5	ug/L	1397	Standard
	Sc	45	49333.5	1.1				ug/L	38815	Standard
	Ti	47	5414.0	2.5	**14.5933**	0.391	2.7	ug/L	36	Standard
	V	51	522594.2	1.1	**67.1805**	0.866	1.3	ug/L	1284	Standard
	Cr	52	505801.0	1.2	**65.6951**	0.946	1.4	ug/L	6503	Standard
	Cr	53	61240.2	0.9	**64.3307**	0.679	1.1	ug/L	492	Standard
	Mn	55	3170347.7	0.4	**469.8912**	2.616	0.6	ug/L	841	Standard
	Co	59	390409.0	1.3	**58.6580**	0.869	1.5	ug/L	229	Standard
	Ni	60	128704.0	1.0	**69.4198**	0.572	0.8	ug/L	344	Standard
	Cu	65	114667.3	0.7	**62.1001**	0.353	0.6	ug/L	115	Standard
	Zn	66	90999.1	0.5	**81.7384**	0.460	0.6	ug/L	190	Standard
>	Ge	72	452095.1	0.2				ug/L	409858	Standard
	As	75	63497.9	0.5	**55.6305**	0.152	0.3	ug/L	-22	Standard
	Se	82	6044.8	0.4	**51.8208**	0.084	0.2	ug/L	18	Standard
	Se-1	77	4081.5	2.1	**52.9750**	1.154	2.2	ug/L	50	Standard
>	Ga	71	12565.2	1.9				mg/L	97	Standard
	Rb	85	120846.7	0.6				ug/L	25	Standard
	Y	89	582495.4	1.4				ug/L	376763	Standard
>	Rh	103	46.7	6.2				ug/L	20	Standard
	Mo	98	465.3	6.4	**0.2542**	0.012	4.5	ug/L	51	Standard
	Ag	107	334602.4	0.8	**50.7827**	0.439	0.9	ug/L	76	Standard
	Cd	111	107601.5	0.9	**51.3814**	0.550	1.1	mg/L	6	Standard
	Cd	114	265146.9	0.4	**51.7884**	0.150	0.3	ug/L	18	Standard
>	In	115	535693.2	0.2				ug/L	507261	Standard
	Sn	118	681.7	4.0	**0.0078**	0.005	61.1	ug/L	683	Standard
	Sb	123	227133.0	2.2	**50.1244**	1.130	2.3	ug/L	446	Standard
	Ba	135	404136.5	0.0	**201.0985**	0.320	0.2	ug/L	28	Standard
	Ce	140	893510.7	1.3				ug/L	33	Standard
>	Tb	159	845372.4	0.6				ug/L	800803	Standard
	Ho	165	15911.7	2.3				ug/L	10	Standard
	Tl	203	408287.9	0.2	**51.8952**	0.240	0.5	ug/L	13	Standard
	Tl	205	364142.3	0.8	**53.4457**	0.113	0.2	ug/L	13	Standard
	Pb	206	300773.2	1.0	**59.5377**	0.256	0.4	ug/L	226	Standard
	Pb	207	260929.3	0.7	**56.8780**	0.098	0.2	ug/L	204	Standard
	Pb	208	1108705.4	0.8	**60.4375**	0.635	1.1	ug/L	852	Standard
	U	238	349519.1	1.2	**51.4517**	0.353	0.7	ug/L	13	Standard
>	Bi	209	462240.9	0.6				ug/L	449044	Standard

Sample ID: L1606129706PS WG574306-03
Report Date/Time: Wednesday, July 06, 2016 16:18:46
Page 1

Approved: July 07, 2016

Na	23	5.0	173.2	**12.6704**	37.158	293.3	mg/L	2	Standard
Mg	24	160.0	0.0	**0.1321**	0.002	1.4	mg/L	58	Standard
K	39	288.3	24.0	**0.7615**	0.209	27.5	mg/L	27	Standard
Ca	43	518.3	15.0	**28.3825**	4.388	15.5	mg/L	20	Standard
Fe	54	12155.2	2.2	**7.8853**	0.184	2.3	mg/L	158	Standard
Fe	57	3485.4	4.5	**8.4918**	0.357	4.2	mg/L	267	Standard
Sc-1	45	49333.5	1.1				mg/L	38815	Standard
Cl	35	74319.2	1.8				ug/L	57611	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	2610.2	11.1				ug/L	1617	Standard
P	31	22970.8	4.6				ug/L	19244	Standard
S	34	4464.0	3.1				ug/L	3557	Standard
Sr	88	186.7	5.6				ug/L	65	Standard
C	12	90.0	0.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	23	Standard
Dy	164	26019.7	0.4				mg/L	13	Standard
Ho-1	165	15911.7	2.3				mg/L	10	Standard
Er	166	14136.6	1.7				mg/L	13	Standard
I	127	10356.9	0.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.821	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.305	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129706PS WG574306-03
Report Date/Time: Wednesday, July 06, 2016 16:18:46
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.605
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.939
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129706PS WG574306-03
Report Date/Time: Wednesday, July 06, 2016 16:18:46
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129706SDL WG574306-04
Sample Date/Time: Wednesday, July 06, 2016 16:19:40
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59394.6	4.0				ug/L	68501	Standard
	Be	9	136.7	15.2	**0.1928**	0.021	11.0	ug/L	8	Standard
	Al	27	3625047.6	2.3	**29.4976**	0.752	2.5	ug/L	1397	Standard
	Sc	45	41548.6	2.0				ug/L	38815	Standard
	Ti	47	1013.7	1.7	**2.8782**	0.035	1.2	ug/L	36	Standard
	V	51	22627.7	0.9	**2.9504**	0.021	0.7	ug/L	1284	Standard
	Cr	52	22779.8	0.8	**2.2518**	0.032	1.4	ug/L	6503	Standard
	Cr	53	2320.2	8.0	**2.1856**	0.208	9.5	ug/L	492	Standard
	Mn	55	561370.1	1.9	**88.2489**	1.740	2.0	ug/L	841	Standard
	Co	59	8994.3	1.2	**1.4399**	0.020	1.4	ug/L	229	Standard
	Ni	60	6379.0	0.4	**3.5032**	0.010	0.3	ug/L	344	Standard
	Cu	65	3582.1	2.8	**2.0468**	0.068	3.3	ug/L	115	Standard
	Zn	66	7592.9	3.0	**7.1367**	0.210	2.9	ug/L	190	Standard
>	**Ge**	72	425871.9	0.5				ug/L	409858	Standard
	As	75	602.1	4.6	**0.6579**	0.027	4.1	ug/L	-22	Standard
	Se	82	22.0	4.8	**0.1488**	0.010	7.0	ug/L	18	Standard
	Se-1	77	64.7	19.5	**0.1443**	0.172	119.0	ug/L	50	Standard
>	**Ga**	71	2455.2	8.8				mg/L	97	Standard
	Rb	85	23403.1	1.2				ug/L	25	Standard
	Y	89	404683.9	1.4				ug/L	376763	Standard
>	**Rh**	103	18.3	83.3				ug/L	20	Standard
	Mo	98	98.4	1.8	**0.1127**	0.001	0.7	ug/L	51	Standard
	Ag	107	188.3	8.0	**0.0536**	0.003	4.8	ug/L	76	Standard
	Cd	111	50.1	14.7	**0.0649**	0.004	5.9	mg/L	6	Standard
	Cd	114	129.9	32.1	**0.0644**	0.009	13.3	ug/L	18	Standard
>	**In**	115	502656.9	0.5				ug/L	507261	Standard
	Sn	118	251.7	4.1	**-0.0637**	0.002	2.7	ug/L	683	Standard
	Sb	123	1461.3	35.9	**0.3234**	0.124	38.2	ug/L	446	Standard
	Ba	135	59210.5	0.9	**31.4134**	0.327	1.0	ug/L	28	Standard
	Ce	140	176180.2	1.5				ug/L	33	Standard
>	**Tb**	159	789797.5	0.7				ug/L	800803	Standard
	Ho	165	3095.3	2.0				ug/L	10	Standard
	Tl	203	197.3	15.5	**0.0592**	0.004	6.7	ug/L	13	Standard
	Tl	205	206.7	20.6	**0.0739**	0.007	8.8	ug/L	13	Standard
	Pb	206	8175.2	1.2	**1.6680**	0.016	1.0	ug/L	226	Standard
	Pb	207	6752.8	0.9	**1.5198**	0.017	1.1	ug/L	204	Standard
	Pb	208	29344.5	0.8	**1.6527**	0.018	1.1	ug/L	852	Standard
	U	238	683.3	7.1	**0.1464**	0.007	4.8	ug/L	13	Standard
>	**Bi**	209	447412.8	0.4				ug/L	449044	Standard

Sample ID: L1606129706SDL WG574306-04
Report Date/Time: Wednesday, July 06, 2016 16:21:57
Page 1

Approved: July 07, 2016

Na	23	3.3	173.2	**8.0243**	29.110	362.8	mg/L	2	Standard
Mg	24	58.3	51.7	**0.0354**	0.038	106.4	mg/L	58	Standard
K	39	88.3	23.6	**0.1879**	0.082	43.7	mg/L	27	Standard
Ca	43	123.3	25.7	**7.1346**	2.357	33.0	mg/L	20	Standard
Fe	54	2352.8	8.6	**1.7214**	0.183	10.7	mg/L	158	Standard
Fe	57	870.0	5.7	**2.0416**	0.207	10.1	mg/L	267	Standard
> **Sc-1**	45	41548.6	2.0				mg/L	38815	Standard
Cl	35	69353.0	0.5				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1813.4	2.8				ug/L	1617	Standard
P	31	9801.5	0.5				ug/L	19244	Standard
S	34	4442.3	5.0				ug/L	3557	Standard
Sr	88	86.7	17.6				ug/L	65	Standard
C	12	30.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	5101.7	4.2				mg/L	13	Standard
Ho-1	165	3095.3	2.0				mg/L	10	Standard
Er	166	2906.9	10.0				mg/L	13	Standard
I	127	9299.5	6.4				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		86.706	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.907	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606129706SDL WG574306-04
Report Date/Time: Wednesday, July 06, 2016 16:21:57
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.092
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.637
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129706SDL WG574306-04
Report Date/Time: Wednesday, July 06, 2016 16:21:57
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 16:22:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60746.5	0.9				ug/L	68501	Standard
	Be	9	45232.5	3.1	**56.2087**	1.203	2.1	ug/L	8	Standard
	Al	27	7025646.2	1.4	**55.8398**	1.243	2.2	ug/L	1397	Standard
	Sc	45	43885.1	1.6				ug/L	38815	Standard
	Ti	47	39346.4	1.8	**105.0322**	1.452	1.4	ug/L	36	Standard
	V	51	399771.6	1.8	**50.7770**	0.685	1.3	ug/L	1284	Standard
	Cr	52	408680.4	1.5	**52.2946**	0.501	1.0	ug/L	6503	Standard
	Cr	53	49651.2	1.7	**51.4861**	0.632	1.2	ug/L	492	Standard
	Mn	55	365429.9	1.0	**53.4684**	0.344	0.6	ug/L	841	Standard
	Co	59	342619.4	1.5	**50.8981**	0.508	1.0	ug/L	229	Standard
	Ni	60	97635.3	1.3	**52.0312**	0.392	0.8	ug/L	344	Standard
	Cu	65	96633.6	1.5	**51.7429**	0.498	1.0	ug/L	115	Standard
	Zn	66	58073.1	0.4	**51.5362**	0.092	0.2	ug/L	190	Standard
>	Ge	72	457224.4	0.5				ug/L	409858	Standard
	As	75	58758.4	1.3	**50.9081**	0.396	0.8	ug/L	-22	Standard
	Se	82	5908.8	1.4	**50.0836**	0.538	1.1	ug/L	18	Standard
	Se-1	77	4046.2	1.7	**51.9099**	0.667	1.3	ug/L	50	Standard
>	Ga	71	71.7	35.8				mg/L	97	Standard
	Rb	85	925.0	5.2				ug/L	25	Standard
	Y	89	386855.1	1.1				ug/L	376763	Standard
>	Rh	103	26.7	39.0				ug/L	20	Standard
	Mo	98	260548.6	1.7	**101.5059**	1.231	1.2	ug/L	51	Standard
	Ag	107	333857.6	0.8	**50.2422**	0.230	0.5	ug/L	76	Standard
	Cd	111	106896.1	1.3	**50.6138**	0.586	1.2	mg/L	6	Standard
	Cd	114	261895.3	0.9	**50.7223**	0.238	0.5	ug/L	18	Standard
>	In	115	540248.5	0.5				ug/L	507261	Standard
	Sn	118	287622.8	1.0	**49.2241**	0.242	0.5	ug/L	683	Standard
	Sb	123	234354.1	0.2	**51.2826**	0.225	0.4	ug/L	446	Standard
	Ba	135	100660.9	0.4	**49.6785**	0.054	0.1	ug/L	28	Standard
	Ce	140	903.4	31.1				ug/L	33	Standard
>	Tb	159	825556.3	1.2				ug/L	800803	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	403211.3	0.9	**51.3846**	0.184	0.4	ug/L	13	Standard
	Tl	205	358156.0	1.6	**52.7071**	0.732	1.4	ug/L	13	Standard
	Pb	206	253695.6	0.3	**50.3526**	0.142	0.3	ug/L	226	Standard
	Pb	207	230829.7	0.2	**50.4514**	0.278	0.6	ug/L	204	Standard
	Pb	208	973141.8	0.3	**53.1876**	0.234	0.4	ug/L	852	Standard
	U	238	345863.7	0.5	**51.0501**	0.177	0.3	ug/L	13	Standard
>	Bi	209	461018.5	0.6				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 16:25:10
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3902.2	4.8	**4.6351**	0.229	4.9	mg/L	58	Standard
K	39	1138.4	5.1	**3.8705**	0.145	3.7	mg/L	27	Standard
Ca	43	88.3	21.4	**4.4183**	1.316	29.8	mg/L	20	Standard
Fe	54	6708.1	2.0	**4.8466**	0.111	2.3	mg/L	158	Standard
Fe	57	1900.1	10.0	**4.9466**	0.629	12.7	mg/L	267	Standard
Sc-1	45	43885.1	1.6				mg/L	38815	Standard
Cl	35	75193.5	0.6				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2086.8	6.4				ug/L	1617	Standard
P	31	23875.5	3.4				ug/L	19244	Standard
S	34	4587.4	2.6				ug/L	3557	Standard
Sr	88	76.7	13.6				ug/L	65	Standard
C	12	56.7	66.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	15.5	75.3				mg/L	13	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	11913.0	0.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	112.417		
Al	27	111.680		
Sc	45			
Ti	47	105.032		
V	51	101.554		
Cr	52	104.589		
Cr	53			
Mn	55	106.937		
Co	59	101.796		
Ni	60	104.062		
Cu	65	103.486		
Zn	66	103.072		
Ge	72		111.557	
As	75	101.816		
Se	82	100.167		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 16:25:10
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	101.506		
Ag	107	100.484		
Cd	111	101.228		
Cd	114			
In	115		106.503	
Sn	118	98.448		
Sb	123	102.565		
Ba	135	99.357		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.769		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.375		
U	238	102.100		
Bi	209		102.667	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 16:25:10
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 16:26:05
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59652.3	2.7				ug/L	68501	Standard
	Be	9	23.3	32.7	**0.0490**	0.010	20.4	ug/L	8	Standard
	Al	27	2736.9	29.7	**0.0571**	0.006	10.5	ug/L	1397	Standard
	Sc	45	42310.7	3.3				ug/L	38815	Standard
	Ti	47	47.7	12.8	**0.1017**	0.018	17.3	ug/L	36	Standard
	V	51	1321.9	6.0	**0.0271**	0.012	43.3	ug/L	1284	Standard
	Cr	52	7227.1	0.7	**0.0231**	0.007	30.2	ug/L	6503	Standard
	Cr	53	390.0	9.0	**-0.0040**	0.039	981.7	ug/L	492	Standard
	Mn	55	829.7	10.8	**0.0277**	0.014	49.4	ug/L	841	Standard
	Co	59	226.7	8.5	**0.0397**	0.003	7.1	ug/L	229	Standard
	Ni	60	355.7	6.2	**0.0355**	0.010	29.2	ug/L	344	Standard
	Cu	65	127.3	6.1	**0.0561**	0.005	8.3	ug/L	115	Standard
	Zn	66	147.3	6.4	**0.0198**	0.007	37.3	ug/L	190	Standard
>	**Ge**	72	449813.6	0.9				ug/L	409858	Standard
	As	75	-43.7	96.3	**0.0603**	0.037	61.7	ug/L	-22	Standard
	Se	82	20.9	21.2	**0.1285**	0.037	28.5	ug/L	18	Standard
	Se-1	77	65.3	19.3	**0.1056**	0.167	158.4	ug/L	50	Standard
>	**Ga**	71	53.3	32.9				mg/L	97	Standard
	Rb	85	36.7	31.5				ug/L	25	Standard
	Y	89	387520.9	1.9				ug/L	376763	Standard
>	**Rh**	103	31.7	36.5				ug/L	20	Standard
	Mo	98	158.1	15.1	**0.1336**	0.009	6.9	ug/L	51	Standard
	Ag	107	129.3	17.4	**0.0427**	0.003	7.9	ug/L	76	Standard
	Cd	111	12.7	34.3	**0.0454**	0.002	4.6	mg/L	6	Standard
	Cd	114	30.1	98.8	**0.0432**	0.006	13.3	ug/L	18	Standard
>	**In**	115	535496.2	0.5				ug/L	507261	Standard
	Sn	118	930.0	12.9	**0.0509**	0.021	42.1	ug/L	683	Standard
	Sb	123	953.8	32.5	**0.1905**	0.069	36.3	ug/L	446	Standard
	Ba	135	46.3	44.9	**0.0388**	0.010	26.4	ug/L	28	Standard
	Ce	140	301.7	26.9				ug/L	33	Standard
>	**Tb**	159	813211.4	0.3				ug/L	800803	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	60.0	30.9	**0.0409**	0.002	5.7	ug/L	13	Standard
	Tl	205	63.3	19.9	**0.0518**	0.002	3.6	ug/L	13	Standard
	Pb	206	249.0	7.2	**0.0449**	0.004	8.0	ug/L	226	Standard
	Pb	207	210.3	18.0	**0.0445**	0.008	18.6	ug/L	204	Standard
	Pb	208	921.7	7.5	**0.0500**	0.004	7.6	ug/L	852	Standard
	U	238	50.7	31.7	**0.0500**	0.002	4.7	ug/L	13	Standard
>	**Bi**	209	465283.4	0.2				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 16:28:22
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.1598**	14.935	9348.2	mg/L	2	Standard
Mg	24	43.3	63.5	**0.0158**	0.036	224.9	mg/L	58	Standard
K	39	35.0	28.6	**-0.0142**	0.035	248.6	mg/L	27	Standard
Ca	43	31.7	39.7	**0.8179**	0.767	93.7	mg/L	20	Standard
Fe	54	157.8	13.1	**0.0007**	0.012	1779.7	mg/L	158	Standard
Fe	57	258.3	17.6	**0.1106**	0.114	103.0	mg/L	267	Standard
> **Sc-1**	45	42310.7	3.3				mg/L	38815	Standard
Cl	35	73706.2	0.7				ug/L	57611	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1970.1	7.7				ug/L	1617	Standard
P	31	23151.0	1.4				ug/L	19244	Standard
S	34	4444.0	2.1				ug/L	3557	Standard
Sr	88	86.7	14.5				ug/L	65	Standard
C	12	40.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	9.5	105.0				mg/L	13	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	9379.6	1.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.749	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 16:28:22
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.566
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.616
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 16:28:22
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129707 WG574306-01
Sample Date/Time: Wednesday, July 06, 2016 16:29:17
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62286.1	0.5				ug/L	68501	Standard
	Be	9	590.0	8.1	**0.7344**	0.059	8.0	ug/L	8	Standard
	Al	27	5802855.8	2.1	**44.9798**	0.730	1.6	ug/L	1397	Standard
	Sc	45	47460.9	0.8				ug/L	38815	Standard
	Ti	47	2622.6	0.7	**6.9832**	0.015	0.2	ug/L	36	Standard
	V	51	118742.6	1.7	**14.9984**	0.176	1.2	ug/L	1284	Standard
	Cr	52	68916.1	1.6	**8.0526**	0.088	1.1	ug/L	6503	Standard
	Cr	53	7815.4	3.9	**7.7623**	0.350	4.5	ug/L	492	Standard
	Mn	55	3441228.5	0.4	**504.9305**	4.973	1.0	ug/L	841	Standard
	Co	59	38475.8	1.4	**5.7274**	0.052	0.9	ug/L	229	Standard
	Ni	60	19435.1	0.7	**10.2433**	0.008	0.1	ug/L	344	Standard
	Cu	65	70101.8	0.8	**37.5778**	0.219	0.6	ug/L	115	Standard
	Zn	66	89509.6	0.3	**79.5911**	0.747	0.9	ug/L	190	Standard
>	**Ge**	72	456693.8	0.8				ug/L	409858	Standard
	As	75	4972.9	0.2	**4.4043**	0.033	0.8	ug/L	-22	Standard
	Se	82	91.2	4.0	**0.7235**	0.025	3.5	ug/L	18	Standard
	Se-1	77	143.3	10.9	**1.1097**	0.212	19.1	ug/L	50	Standard
>	**Ga**	71	7243.4	0.8				mg/L	97	Standard
	Rb	85	78332.0	0.4				ug/L	25	Standard
	Y	89	577179.6	1.5				ug/L	376763	Standard
>	**Rh**	103	28.3	71.3				ug/L	20	Standard
	Mo	98	515.5	2.9	**0.2739**	0.006	2.0	ug/L	51	Standard
	Ag	107	799.7	1.9	**0.1444**	0.002	1.1	ug/L	76	Standard
	Cd	111	871.4	1.4	**0.4552**	0.009	2.0	mg/L	6	Standard
	Cd	114	2093.9	5.3	**0.4460**	0.018	4.1	ug/L	18	Standard
>	**In**	115	535671.5	0.9				ug/L	507261	Standard
	Sn	118	976.7	8.8	**0.0588**	0.014	23.2	ug/L	683	Standard
	Sb	123	802.4	23.2	**0.1566**	0.040	25.4	ug/L	446	Standard
	Ba	135	402037.3	0.8	**200.0633**	0.694	0.3	ug/L	28	Standard
	Ce	140	877863.7	0.2				ug/L	33	Standard
>	**Tb**	159	837773.6	0.3				ug/L	800803	Standard
	Ho	165	15416.2	0.4				ug/L	10	Standard
	Tl	203	410.0	8.3	**0.0849**	0.004	5.1	ug/L	13	Standard
	Tl	205	346.7	13.4	**0.0929**	0.007	7.3	ug/L	13	Standard
	Pb	206	205127.3	1.0	**40.2103**	0.531	1.3	ug/L	226	Standard
	Pb	207	170744.1	1.2	**36.8573**	0.439	1.2	ug/L	204	Standard
	Pb	208	743612.6	0.6	**40.1400**	0.046	0.1	ug/L	852	Standard
	U	238	2929.6	1.6	**0.4694**	0.010	2.0	ug/L	13	Standard
>	**Bi**	209	466785.1	0.7				ug/L	449044	Standard

Sample ID: L1606129707 WG574306-01
Report Date/Time: Wednesday, July 06, 2016 16:31:34
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	75.0	43.7	**0.0448**	0.037	81.9	mg/L	58	Standard
K	39	176.7	14.5	**0.4343**	0.086	19.8	mg/L	27	Standard
Ca	43	93.3	17.2	**4.2717**	0.936	21.9	mg/L	20	Standard
Fe	54	7751.6	1.4	**5.1861**	0.045	0.9	mg/L	158	Standard
Fe	57	2096.8	4.7	**5.0575**	0.302	6.0	mg/L	267	Standard
> **Sc-1**	45	47460.9	0.8				mg/L	38815	Standard
Cl	35	71723.4	0.6				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	3453.7	11.2				ug/L	1617	Standard
P	31	22111.1	2.8				ug/L	19244	Standard
S	34	4340.6	3.7				ug/L	3557	Standard
Sr	88	108.3	18.7				ug/L	65	Standard
C	12	240.0	42.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	66.1				mg/L	23	Standard
Dy	164	25701.8	3.3				mg/L	13	Standard
Ho-1	165	15416.2	0.4				mg/L	10	Standard
Er	166	14290.1	3.2				mg/L	13	Standard
I	127	14562.0	5.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.927	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129707 WG574306-01
Report Date/Time: Wednesday, July 06, 2016 16:31:34
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.601
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.951
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129707 WG574306-01
Report Date/Time: Wednesday, July 06, 2016 16:31:34
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129708S WG574306-04
Sample Date/Time: Wednesday, July 06, 2016 16:32:29
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65139.8	3.2				ug/L	68501	Standard
	Be	9	23027.5	2.6	**26.7153**	1.021	3.8	ug/L	8	Standard
	Al	27	19735456.9	0.7	**146.2945**	4.400	3.0	ug/L	1397	Standard
	Sc	45	50831.8	1.5				ug/L	38815	Standard
	Ti	47	7097.0	1.6	**19.2848**	0.355	1.8	ug/L	36	Standard
	V	51	396965.1	2.0	**51.3808**	0.553	1.1	ug/L	1284	Standard
	Cr	52	346805.3	1.3	**45.0983**	0.535	1.2	ug/L	6503	Standard
	Cr	53	42561.4	1.9	**44.9217**	0.536	1.2	ug/L	492	Standard
	Mn	55	6042160.1	0.9	**902.5000**	12.755	1.4	ug/L	841	Standard
	Co	59	253173.7	1.6	**38.3278**	0.245	0.6	ug/L	229	Standard
	Ni	60	99179.6	0.7	**53.8687**	0.256	0.5	ug/L	344	Standard
	Cu	65	82472.5	0.7	**45.0035**	0.499	1.1	ug/L	115	Standard
	Zn	66	93214.5	0.6	**84.3712**	0.399	0.5	ug/L	190	Standard
>	**Ge**	72	448680.5	1.0				ug/L	409858	Standard
	As	75	30784.9	0.5	**27.2279**	0.215	0.8	ug/L	-22	Standard
	Se	82	2057.5	0.8	**17.7407**	0.303	1.7	ug/L	18	Standard
	Se-1	77	1452.1	0.9	**18.5033**	0.080	0.4	ug/L	50	Standard
>	**Ga**	71	22316.4	1.0				mg/L	97	Standard
	Rb	85	222447.8	1.1				ug/L	25	Standard
	Y	89	643588.6	0.9				ug/L	376763	Standard
>	**Rh**	103	50.0	60.8				ug/L	20	Standard
	Mo	98	517.5	2.0	**0.2780**	0.005	1.8	ug/L	51	Standard
	Ag	107	156492.7	0.3	**24.1422**	0.180	0.7	ug/L	76	Standard
	Cd	111	51764.0	0.6	**25.1322**	0.102	0.4	mg/L	6	Standard
	Cd	114	125131.9	1.0	**24.8510**	0.352	1.4	ug/L	18	Standard
>	**In**	115	527283.7	0.4				ug/L	507261	Standard
	Sn	118	791.7	15.9	**0.0290**	0.022	74.9	ug/L	683	Standard
	Sb	123	3550.1	4.8	**0.7758**	0.036	4.7	ug/L	446	Standard
	Ba	135	543933.7	1.1	**274.9734**	2.917	1.1	ug/L	28	Standard
	Ce	140	1333014.6	0.2				ug/L	33	Standard
>	**Tb**	159	846765.5	0.7				ug/L	800803	Standard
	Ho	165	21213.2	1.0				ug/L	10	Standard
	Tl	203	192947.1	0.4	**24.8377**	0.074	0.3	ug/L	13	Standard
	Tl	205	170482.1	0.3	**25.3468**	0.072	0.3	ug/L	13	Standard
	Pb	206	246709.2	1.1	**49.4262**	0.596	1.2	ug/L	226	Standard
	Pb	207	210661.0	1.7	**46.4760**	0.864	1.9	ug/L	204	Standard
	Pb	208	904086.0	0.3	**49.8775**	0.217	0.4	ug/L	852	Standard
	U	238	170509.8	1.1	**25.4257**	0.301	1.2	ug/L	13	Standard
>	**Bi**	209	456722.4	0.1				ug/L	449044	Standard

Sample ID: L1606129708S WG574306-04
Report Date/Time: Wednesday, July 06, 2016 16:34:46
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	125.0	14.4	**0.0910**	0.020	22.1	mg/L	58	Standard
K	39	506.7	4.1	**1.4005**	0.060	4.3	mg/L	27	Standard
Ca	43	278.3	16.7	**14.1761**	2.506	17.7	mg/L	20	Standard
Fe	54	22365.1	4.7	**14.1739**	0.605	4.3	mg/L	158	Standard
Fe	57	5997.9	3.3	**14.6419**	0.543	3.7	mg/L	267	Standard
> **Sc-1**	45	50831.8	1.5				mg/L	38815	Standard
Cl	35	71146.0	0.3				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2550.2	3.4				ug/L	1617	Standard
P	31	21758.9	0.6				ug/L	19244	Standard
S	34	4350.6	3.0				ug/L	3557	Standard
Sr	88	115.0	13.0				ug/L	65	Standard
C	12	76.7	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	72.6				mg/L	23	Standard
Dy	164	36109.1	2.3				mg/L	13	Standard
Ho-1	165	21213.2	1.0				mg/L	10	Standard
Er	166	19612.7	2.0				mg/L	13	Standard
I	127	14929.0	5.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.093	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.472	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129708S WG574306-04
Report Date/Time: Wednesday, July 06, 2016 16:34:46
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.947
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.710
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129708S WG574306-04
Report Date/Time: Wednesday, July 06, 2016 16:34:46
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129709SD WG574306-05
Sample Date/Time: Wednesday, July 06, 2016 16:35:40
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62165.6	0.8				ug/L	68501	Standard
	Be	9	22977.4	1.3	**27.9141**	0.157	0.6	ug/L	8	Standard
	Al	27	5977445.6	0.9	**46.4267**	0.626	1.3	ug/L	1397	Standard
	Sc	45	46502.9	1.1				ug/L	38815	Standard
	Ti	47	4422.6	1.5	**11.7578**	0.201	1.7	ug/L	36	Standard
	V	51	293762.5	0.4	**37.1989**	0.125	0.3	ug/L	1284	Standard
	Cr	52	242440.6	0.2	**30.5796**	0.135	0.4	ug/L	6503	Standard
	Cr	53	29553.8	1.4	**30.4146**	0.403	1.3	ug/L	492	Standard
	Mn	55	1745341.1	1.0	**255.2154**	2.554	1.0	ug/L	841	Standard
	Co	59	200410.1	0.8	**29.7146**	0.215	0.7	ug/L	229	Standard
	Ni	60	64660.7	0.2	**34.3358**	0.159	0.5	ug/L	344	Standard
	Cu	65	77163.7	1.0	**41.2321**	0.418	1.0	ug/L	115	Standard
	Zn	66	63624.0	0.3	**56.3574**	0.253	0.4	ug/L	190	Standard
>	Ge	72	458159.9	0.2				ug/L	409858	Standard
	As	75	34584.2	0.5	**29.9440**	0.087	0.3	ug/L	-22	Standard
	Se	82	2480.9	2.2	**20.9556**	0.422	2.0	ug/L	18	Standard
	Se-1	77	1708.8	1.4	**21.4388**	0.252	1.2	ug/L	50	Standard
>	Ga	71	6708.2	4.2				mg/L	97	Standard
	Rb	85	76939.9	2.2				ug/L	25	Standard
	Y	89	570101.8	2.0				ug/L	376763	Standard
>	Rh	103	36.7	51.6				ug/L	20	Standard
	Mo	98	447.6	4.3	**0.2470**	0.005	2.1	ug/L	51	Standard
	Ag	107	160361.2	0.4	**24.3127**	0.260	1.1	ug/L	76	Standard
	Cd	111	52812.1	0.4	**25.1997**	0.264	1.0	mg/L	6	Standard
	Cd	114	128280.5	1.6	**25.0410**	0.737	2.9	ug/L	18	Standard
>	In	115	536567.6	1.4				ug/L	507261	Standard
	Sn	118	1265.1	9.3	**0.1086**	0.023	21.5	ug/L	683	Standard
	Sb	123	19496.0	0.7	**4.2771**	0.044	1.0	ug/L	446	Standard
	Ba	135	268259.3	0.0	**133.2908**	1.869	1.4	ug/L	28	Standard
	Ce	140	797112.1	1.2				ug/L	33	Standard
>	Tb	159	844790.9	0.3				ug/L	800803	Standard
	Ho	165	14488.6	0.9				ug/L	10	Standard
	Tl	203	189672.5	0.4	**23.9754**	0.103	0.4	ug/L	13	Standard
	Tl	205	168670.4	1.0	**24.6251**	0.301	1.2	ug/L	13	Standard
	Pb	206	211717.6	0.5	**41.6489**	0.491	1.2	ug/L	226	Standard
	Pb	207	180603.7	0.8	**39.1231**	0.361	0.9	ug/L	204	Standard
	Pb	208	773838.1	0.2	**41.9198**	0.337	0.8	ug/L	852	Standard
	U	238	167844.2	0.7	**24.5765**	0.189	0.8	ug/L	13	Standard
>	Bi	209	465149.6	0.7				ug/L	449044	Standard

Sample ID: L1606129709SD WG574306-05
Report Date/Time: Wednesday, July 06, 2016 16:37:57
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	81.7	7.1	**0.0539**	0.007	12.4	mg/L	58	Standard
K	39	186.7	7.7	**0.4794**	0.049	10.3	mg/L	27	Standard
Ca	43	85.0	17.6	**3.8866**	0.950	24.4	mg/L	20	Standard
Fe	54	6828.4	0.4	**4.6510**	0.070	1.5	mg/L	158	Standard
Fe	57	1968.5	1.7	**4.8161**	0.074	1.5	mg/L	267	Standard
> **Sc-1**	45	46502.9	1.1				mg/L	38815	Standard
Cl	35	69530.5	0.8				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	2346.8	1.8				ug/L	1617	Standard
P	31	22379.9	1.8				ug/L	19244	Standard
S	34	4130.6	6.2				ug/L	3557	Standard
Sr	88	100.0	13.2				ug/L	65	Standard
C	12	93.3	22.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	53.9				mg/L	23	Standard
Dy	164	23262.7	2.3				mg/L	13	Standard
Ho-1	165	14488.6	0.9				mg/L	10	Standard
Er	166	13002.2	3.7				mg/L	13	Standard
I	127	6032.9	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.751	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.785	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129709SD WG574306-05
Report Date/Time: Wednesday, July 06, 2016 16:37:57
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.778
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.587
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129709SD WG574306-05
Report Date/Time: Wednesday, July 06, 2016 16:37:57
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129710
Sample Date/Time: Wednesday, July 06, 2016 16:38:52
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61658.5	1.1				ug/L	68501	Standard
	Be	9	316.7	10.7	**0.4069**	0.038	9.5	ug/L	8	Standard
	Al	27	11438871.0	0.8	**89.5399**	0.292	0.3	ug/L	1397	Standard
	Sc	45	47305.4	2.4				ug/L	38815	Standard
	Ti	47	2888.9	1.5	**7.7475**	0.158	2.0	ug/L	36	Standard
	V	51	65037.6	1.0	**8.2058**	0.107	1.3	ug/L	1284	Standard
	Cr	52	41695.6	0.6	**4.5400**	0.052	1.1	ug/L	6503	Standard
	Cr	53	4632.4	3.3	**4.4625**	0.170	3.8	ug/L	492	Standard
	Mn	55	3373933.1	1.4	**498.3465**	6.643	1.3	ug/L	841	Standard
	Co	59	22272.7	1.1	**3.3401**	0.042	1.2	ug/L	229	Standard
	Ni	60	13505.0	1.3	**7.1185**	0.133	1.9	ug/L	344	Standard
	Cu	65	8779.5	1.7	**4.7263**	0.092	1.9	ug/L	115	Standard
	Zn	66	14455.2	1.4	**12.8447**	0.245	1.9	ug/L	190	Standard
>	**Ge**	72	453660.4	0.7				ug/L	409858	Standard
	As	75	2368.1	1.0	**2.1628**	0.015	0.7	ug/L	-22	Standard
	Se	82	36.2	24.0	**0.2586**	0.077	29.7	ug/L	18	Standard
	Se-1	77	83.0	13.0	**0.3306**	0.149	44.9	ug/L	50	Standard
>	**Ga**	71	4710.7	2.3				mg/L	97	Standard
	Rb	85	48778.4	1.7				ug/L	25	Standard
	Y	89	519310.4	2.7				ug/L	376763	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	355.6	6.9	**0.2104**	0.009	4.3	ug/L	51	Standard
	Ag	107	213.0	13.9	**0.0552**	0.004	7.9	ug/L	76	Standard
	Cd	111	153.3	5.2	**0.1121**	0.004	3.3	mg/L	6	Standard
	Cd	114	308.2	15.1	**0.0972**	0.009	9.1	ug/L	18	Standard
>	**In**	115	538651.6	0.3				ug/L	507261	Standard
	Sn	118	1185.0	5.3	**0.0938**	0.011	12.2	ug/L	683	Standard
	Sb	123	504.2	33.5	**0.0904**	0.037	41.4	ug/L	446	Standard
	Ba	135	168151.0	0.7	**83.2208**	0.364	0.4	ug/L	28	Standard
	Ce	140	555700.4	0.4				ug/L	33	Standard
>	**Tb**	159	826502.3	1.1				ug/L	800803	Standard
	Ho	165	10727.1	1.4				ug/L	10	Standard
	Tl	203	298.3	5.8	**0.0715**	0.002	3.3	ug/L	13	Standard
	Tl	205	258.3	24.5	**0.0806**	0.009	11.5	ug/L	13	Standard
	Pb	206	25876.7	1.2	**5.1492**	0.086	1.7	ug/L	226	Standard
	Pb	207	21503.6	1.1	**4.7143**	0.066	1.4	ug/L	204	Standard
	Pb	208	94054.5	0.9	**5.1574**	0.064	1.2	ug/L	852	Standard
	U	238	2598.9	1.6	**0.4272**	0.008	1.8	ug/L	13	Standard
>	**Bi**	209	459527.8	0.4				ug/L	449044	Standard

Sample ID: L1606129710
Report Date/Time: Wednesday, July 06, 2016 16:41:09
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.1163**	13.278	1189.5	mg/L	2	Standard
Mg	24	101.7	15.0	**0.0744**	0.014	19.5	mg/L	58	Standard
K	39	90.0	28.9	**0.1540**	0.093	60.5	mg/L	27	Standard
Ca	43	258.3	9.5	**14.1618**	1.744	12.3	mg/L	20	Standard
Fe	54	5464.4	2.8	**3.6325**	0.017	0.5	mg/L	158	Standard
Fe	57	1618.4	2.2	**3.7627**	0.073	1.9	mg/L	267	Standard
> **Sc-1**	45	47305.4	2.4				mg/L	38815	Standard
Cl	35	72933.2	1.9				ug/L	57611	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	2110.1	3.1				ug/L	1617	Standard
P	31	21301.6	3.6				ug/L	19244	Standard
S	34	4172.2	7.4				ug/L	3557	Standard
Sr	88	111.7	9.3				ug/L	65	Standard
C	12	113.3	51.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	43.3				mg/L	23	Standard
Dy	164	17720.6	1.8				mg/L	13	Standard
Ho-1	165	10727.1	1.4				mg/L	10	Standard
Er	166	9609.7	2.4				mg/L	13	Standard
I	127	5551.0	2.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.011	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.687	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129710
Report Date/Time: Wednesday, July 06, 2016 16:41:09
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.188
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.335
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606129710
Report Date/Time: Wednesday, July 06, 2016 16:41:09
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129711
Sample Date/Time: Wednesday, July 06, 2016 16:42:03
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61509.7	3.8				ug/L	68501	Standard
	Be	9	421.7	11.9	**0.5360**	0.044	8.3	ug/L	8	Standard
	Al	27	10093377.0	0.1	**79.2770**	2.936	3.7	ug/L	1397	Standard
	Sc	45	47273.6	1.6				ug/L	38815	Standard
	Ti	47	2244.8	4.6	**5.9961**	0.328	5.5	ug/L	36	Standard
	V	51	64690.3	3.2	**8.1339**	0.229	2.8	ug/L	1284	Standard
	Cr	52	41467.0	1.1	**4.4925**	0.049	1.1	ug/L	6503	Standard
	Cr	53	4380.6	4.0	**4.1841**	0.234	5.6	ug/L	492	Standard
	Mn	55	1967568.3	1.0	**289.6495**	0.452	0.2	ug/L	841	Standard
	Co	59	21596.7	2.2	**3.2283**	0.050	1.5	ug/L	229	Standard
	Ni	60	13599.1	0.4	**7.1457**	0.060	0.8	ug/L	344	Standard
	Cu	65	11548.7	0.5	**6.2013**	0.045	0.7	ug/L	115	Standard
	Zn	66	32738.0	1.3	**29.1384**	0.231	0.8	ug/L	190	Standard
>	**Ge**	72	455117.1	1.2				ug/L	409858	Standard
	As	75	1894.3	1.2	**1.7445**	0.001	0.1	ug/L	-22	Standard
	Se	82	34.2	19.1	**0.2399**	0.054	22.3	ug/L	18	Standard
	Se-1	77	89.7	7.9	**0.4132**	0.082	19.9	ug/L	50	Standard
>	**Ga**	71	4574.0	4.3				mg/L	97	Standard
	Rb	85	42773.6	1.6				ug/L	25	Standard
	Y	89	524642.6	2.0				ug/L	376763	Standard
>	**Rh**	103	38.3	41.9				ug/L	20	Standard
	Mo	98	280.4	4.0	**0.1822**	0.004	2.2	ug/L	51	Standard
	Ag	107	290.0	6.2	**0.0673**	0.003	3.9	ug/L	76	Standard
	Cd	111	303.1	4.7	**0.1849**	0.008	4.1	mg/L	6	Standard
	Cd	114	713.7	10.5	**0.1775**	0.016	8.7	ug/L	18	Standard
>	**In**	115	532671.1	0.6				ug/L	507261	Standard
	Sn	118	545.0	4.2	**-0.0153**	0.004	24.1	ug/L	683	Standard
	Sb	123	363.0	29.1	**0.0603**	0.024	39.6	ug/L	446	Standard
	Ba	135	135054.2	0.2	**67.5967**	0.490	0.7	ug/L	28	Standard
	Ce	140	604058.3	1.0				ug/L	33	Standard
>	**Tb**	159	835508.5	0.3				ug/L	800803	Standard
	Ho	165	11549.4	3.1				ug/L	10	Standard
	Tl	203	238.3	7.6	**0.0638**	0.002	3.4	ug/L	13	Standard
	Tl	205	201.7	7.6	**0.0723**	0.002	3.1	ug/L	13	Standard
	Pb	206	26825.1	0.3	**5.3397**	0.042	0.8	ug/L	226	Standard
	Pb	207	22029.7	1.2	**4.8311**	0.044	0.9	ug/L	204	Standard
	Pb	208	95852.2	1.1	**5.2576**	0.032	0.6	ug/L	852	Standard
	U	238	1621.4	2.0	**0.2826**	0.005	1.9	ug/L	13	Standard
>	**Bi**	209	459368.4	0.5				ug/L	449044	Standard

Sample ID: L1606129711
Report Date/Time: Wednesday, July 06, 2016 16:44:20
Page 1

Approved: July 07, 2016

Na	23	3.3	173.2	**5.9880**	25.583	427.2	mg/L	2	Standard
Mg	24	116.7	6.5	**0.0913**	0.008	8.9	mg/L	58	Standard
K	39	153.3	5.0	**0.3603**	0.032	8.8	mg/L	27	Standard
Ca	43	206.7	11.4	**11.0522**	1.238	11.2	mg/L	20	Standard
Fe	54	4403.2	3.1	**2.9074**	0.141	4.9	mg/L	158	Standard
Fe	57	1453.4	5.7	**3.3122**	0.223	6.7	mg/L	267	Standard
> **Sc-1**	45	47273.6	1.6				mg/L	38815	Standard
Cl	35	73026.9	1.1				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2326.8	3.5				ug/L	1617	Standard
P	31	21620.4	3.9				ug/L	19244	Standard
S	34	4283.9	3.4				ug/L	3557	Standard
Sr	88	91.7	25.2				ug/L	65	Standard
C	12	113.3	22.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	74.2				mg/L	23	Standard
Dy	164	18872.5	1.8				mg/L	13	Standard
Ho-1	165	11549.4	3.1				mg/L	10	Standard
Er	166	10086.7	2.7				mg/L	13	Standard
I	127	5506.0	1.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.794	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.043	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129711
Report Date/Time: Wednesday, July 06, 2016 16:44:20
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.009
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.299
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606129711
Report Date/Time: Wednesday, July 06, 2016 16:44:20
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129712
Sample Date/Time: Wednesday, July 06, 2016 16:45:15
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62284.5	2.8				ug/L	68501	Standard
	Be	9	626.7	11.2	**0.7777**	0.063	8.1	ug/L	8	Standard
	Al	27	11858606.3	0.2	**91.9349**	2.408	2.6	ug/L	1397	Standard
	Sc	45	48037.8	3.3				ug/L	38815	Standard
	Ti	47	2357.2	0.2	**6.3474**	0.073	1.2	ug/L	36	Standard
	V	51	114692.2	1.3	**14.6525**	0.138	0.9	ug/L	1284	Standard
	Cr	52	59864.0	0.2	**6.9640**	0.100	1.4	ug/L	6503	Standard
	Cr	53	6913.2	4.7	**6.8996**	0.276	4.0	ug/L	492	Standard
	Mn	55	2523368.3	1.4	**374.5058**	1.280	0.3	ug/L	841	Standard
	Co	59	39749.1	0.9	**5.9856**	0.007	0.1	ug/L	229	Standard
	Ni	60	20932.8	0.7	**11.1753**	0.077	0.7	ug/L	344	Standard
	Cu	65	16367.5	0.7	**8.8658**	0.064	0.7	ug/L	115	Standard
	Zn	66	22188.6	1.2	**19.8731**	0.049	0.2	ug/L	190	Standard
>	Ge	72	451446.6	1.0				ug/L	409858	Standard
	As	75	4917.0	1.1	**4.4055**	0.055	1.3	ug/L	-22	Standard
	Se	82	53.2	6.3	**0.4054**	0.024	6.0	ug/L	18	Standard
	Se-1	77	117.0	9.6	**0.7828**	0.135	17.2	ug/L	50	Standard
>	Ga	71	7840.4	2.3				mg/L	97	Standard
	Rb	85	81734.9	2.0				ug/L	25	Standard
	Y	89	590877.9	1.6				ug/L	376763	Standard
>	Rh	103	21.7	74.2				ug/L	20	Standard
	Mo	98	218.0	6.9	**0.1585**	0.006	3.5	ug/L	51	Standard
	Ag	107	377.3	2.6	**0.0813**	0.001	1.8	ug/L	76	Standard
	Cd	111	204.3	7.9	**0.1384**	0.008	5.9	mg/L	6	Standard
	Cd	114	447.0	7.9	**0.1260**	0.007	5.6	ug/L	18	Standard
>	In	115	527105.5	0.6				ug/L	507261	Standard
	Sn	118	735.0	14.8	**0.0192**	0.020	103.9	ug/L	683	Standard
	Sb	123	336.6	35.8	**0.0552**	0.027	49.6	ug/L	446	Standard
	Ba	135	247544.5	0.6	**125.1941**	1.145	0.9	ug/L	28	Standard
	Ce	140	1027087.5	0.1				ug/L	33	Standard
>	Tb	159	835383.6	1.9				ug/L	800803	Standard
	Ho	165	16989.5	1.8				ug/L	10	Standard
	Tl	203	540.3	4.1	**0.1026**	0.003	2.8	ug/L	13	Standard
	Tl	205	516.7	13.6	**0.1190**	0.010	8.4	ug/L	13	Standard
	Pb	206	50080.3	1.0	**10.0053**	0.065	0.7	ug/L	226	Standard
	Pb	207	41332.3	1.0	**9.0954**	0.067	0.7	ug/L	204	Standard
	Pb	208	181531.5	0.5	**9.9907**	0.076	0.8	ug/L	852	Standard
	U	238	3604.8	1.5	**0.5780**	0.011	1.8	ug/L	13	Standard
>	Bi	209	457841.6	0.5				ug/L	449044	Standard

Sample ID: L1606129712
Report Date/Time: Wednesday, July 06, 2016 16:47:31
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.4320**	12.732	889.1	mg/L	2	Standard
Mg	24	88.3	18.2	**0.0586**	0.020	33.9	mg/L	58	Standard
K	39	208.3	5.5	**0.5297**	0.044	8.2	mg/L	27	Standard
Ca	43	198.3	3.9	**10.3900**	0.688	6.6	mg/L	20	Standard
Fe	54	10183.2	1.4	**6.7705**	0.172	2.5	mg/L	158	Standard
Fe	57	2888.6	4.0	**7.1262**	0.052	0.7	mg/L	267	Standard
Sc-1	45	48037.8	3.3				mg/L	38815	Standard
Cl	35	71743.5	1.2				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2346.8	1.7				ug/L	1617	Standard
P	31	22069.4	3.2				ug/L	19244	Standard
S	34	4567.4	1.3				ug/L	3557	Standard
Sr	88	123.3	24.8				ug/L	65	Standard
C	12	66.7	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	21.7				mg/L	23	Standard
Dy	164	28481.1	1.9				mg/L	13	Standard
Ho-1	165	16989.5	1.8				mg/L	10	Standard
Er	166	15664.8	7.4				mg/L	13	Standard
I	127	16987.9	6.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		90.925	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.147	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129712
Report Date/Time: Wednesday, July 06, 2016 16:47:31
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.912
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.959
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129712
Report Date/Time: Wednesday, July 06, 2016 16:47:31
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129713
Sample Date/Time: Wednesday, July 06, 2016 16:48:26
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62081.9	1.3				ug/L	68501	Standard
	Be	9	588.3	10.8	**0.7344**	0.072	9.8	ug/L	8	Standard
	Al	27	6441179.9	0.6	**50.0948**	0.588	1.2	ug/L	1397	Standard
	Sc	45	46996.1	0.3				ug/L	38815	Standard
	Ti	47	4702.4	3.0	**12.5186**	0.330	2.6	ug/L	36	Standard
	V	51	126562.6	0.7	**15.9663**	0.222	1.4	ug/L	1284	Standard
	Cr	52	86983.0	1.8	**10.3879**	0.247	2.4	ug/L	6503	Standard
	Cr	53	10093.4	2.8	**10.1257**	0.297	2.9	ug/L	492	Standard
	Mn	55	2761878.1	1.1	**404.4912**	8.928	2.2	ug/L	841	Standard
	Co	59	32009.4	1.1	**4.7569**	0.065	1.4	ug/L	229	Standard
	Ni	60	18023.4	1.2	**9.4702**	0.190	2.0	ug/L	344	Standard
	Cu	65	36669.7	2.1	**19.6142**	0.495	2.5	ug/L	115	Standard
	Zn	66	64542.2	1.0	**57.2489**	0.809	1.4	ug/L	190	Standard
>	**Ge**	72	457586.6	1.3				ug/L	409858	Standard
	As	75	5767.8	0.7	**5.0828**	0.039	0.8	ug/L	-22	Standard
	Se	82	73.1	7.8	**0.5680**	0.044	7.8	ug/L	18	Standard
	Se-1	77	124.7	9.4	**0.8629**	0.154	17.9	ug/L	50	Standard
>	**Ga**	71	6903.2	3.8				mg/L	97	Standard
	Rb	85	75785.8	2.6				ug/L	25	Standard
	Y	89	556387.3	2.0				ug/L	376763	Standard
>	**Rh**	103	41.7	18.3				ug/L	20	Standard
	Mo	98	811.4	4.0	**0.3881**	0.011	2.9	ug/L	51	Standard
	Ag	107	1541.1	3.9	**0.2555**	0.010	4.0	ug/L	76	Standard
	Cd	111	1561.6	1.3	**0.7799**	0.014	1.8	mg/L	6	Standard
	Cd	114	3866.0	5.7	**0.7876**	0.050	6.4	ug/L	18	Standard
>	**In**	115	539012.8	1.0				ug/L	507261	Standard
	Sn	118	1225.0	9.7	**0.1005**	0.021	20.4	ug/L	683	Standard
	Sb	123	611.7	14.4	**0.1138**	0.019	16.8	ug/L	446	Standard
	Ba	135	285012.1	0.7	**140.9593**	1.156	0.8	ug/L	28	Standard
	Ce	140	825628.1	1.9				ug/L	33	Standard
>	**Tb**	159	838546.8	0.7				ug/L	800803	Standard
	Ho	165	13836.3	2.6				ug/L	10	Standard
	Tl	203	403.0	17.3	**0.0841**	0.008	9.8	ug/L	13	Standard
	Tl	205	401.7	15.2	**0.1009**	0.008	8.4	ug/L	13	Standard
	Pb	206	251264.0	0.4	**49.3384**	0.673	1.4	ug/L	226	Standard
	Pb	207	212218.9	0.6	**45.8892**	0.707	1.5	ug/L	204	Standard
	Pb	208	913725.3	0.8	**49.4054**	0.501	1.0	ug/L	852	Standard
	U	238	2752.6	2.3	**0.4442**	0.005	1.2	ug/L	13	Standard
>	**Bi**	209	466022.1	1.0				ug/L	449044	Standard

Sample ID: L1606129713
Report Date/Time: Wednesday, July 06, 2016 16:50:43
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	115.0	15.7	**0.0903**	0.020	22.6	mg/L	58	Standard
K	39	278.3	12.6	**0.7745**	0.115	14.8	mg/L	27	Standard
Ca	43	168.3	19.8	**8.8314**	1.980	22.4	mg/L	20	Standard
Fe	54	7282.0	1.6	**4.9140**	0.076	1.6	mg/L	158	Standard
Fe	57	2116.8	11.8	**5.1693**	0.700	13.5	mg/L	267	Standard
> **Sc-1**	45	46996.1	0.3				mg/L	38815	Standard
Cl	35	71568.0	0.9				ug/L	57611	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	3147.0	7.8				ug/L	1617	Standard
P	31	22919.0	2.6				ug/L	19244	Standard
S	34	4474.0	1.6				ug/L	3557	Standard
Sr	88	126.7	22.4				ug/L	65	Standard
C	12	176.7	13.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	760.0	23.3				mg/L	23	Standard
Dy	164	23022.3	1.6				mg/L	13	Standard
Ho-1	165	13836.3	2.6				mg/L	10	Standard
Er	166	12234.9	4.5				mg/L	13	Standard
I	127	16075.2	5.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.629	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.645	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129713
Report Date/Time: Wednesday, July 06, 2016 16:50:43
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.260
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.781
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129714
Sample Date/Time: Wednesday, July 06, 2016 16:51:37
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64485.3	1.7				ug/L	68501	Standard
	Be	9	643.3	12.9	**0.7736**	0.109	14.1	ug/L	8	Standard
	Al	27	16270383.4	0.8	**121.7751**	1.183	1.0	ug/L	1397	Standard
	Sc	45	49480.7	0.7				ug/L	38815	Standard
	Ti	47	7625.3	2.0	**20.4654**	0.223	1.1	ug/L	36	Standard
	V	51	152406.4	1.4	**19.3979**	0.334	1.7	ug/L	1284	Standard
	Cr	52	112572.0	1.3	**13.8245**	0.074	0.5	ug/L	6503	Standard
	Cr	53	13571.1	1.6	**13.8632**	0.302	2.2	ug/L	492	Standard
	Mn	55	3345367.4	0.6	**493.5133**	5.656	1.1	ug/L	841	Standard
	Co	59	51653.3	1.9	**7.7286**	0.128	1.7	ug/L	229	Standard
	Ni	60	34920.2	0.7	**18.6317**	0.182	1.0	ug/L	344	Standard
	Cu	65	19504.5	1.4	**10.5020**	0.112	1.1	ug/L	115	Standard
	Zn	66	37327.3	0.6	**33.3035**	0.247	0.7	ug/L	190	Standard
>	**Ge**	72	454248.1	0.9				ug/L	409858	Standard
	As	75	5161.1	0.9	**4.5913**	0.045	1.0	ug/L	-22	Standard
	Se	82	41.2	27.1	**0.3007**	0.097	32.2	ug/L	18	Standard
	Se-1	77	113.0	5.3	**0.7222**	0.092	12.7	ug/L	50	Standard
>	**Ga**	71	14894.0	0.4				mg/L	97	Standard
	Rb	85	120504.0	0.8				ug/L	25	Standard
	Y	89	585057.3	0.9				ug/L	376763	Standard
>	**Rh**	103	31.7	32.9				ug/L	20	Standard
	Mo	98	934.2	6.2	**0.4430**	0.022	5.1	ug/L	51	Standard
	Ag	107	442.7	30.5	**0.0912**	0.021	23.1	ug/L	76	Standard
	Cd	111	177.9	31.7	**0.1254**	0.028	22.0	mg/L	6	Standard
	Cd	114	466.6	45.4	**0.1297**	0.042	32.6	ug/L	18	Standard
>	**In**	115	528910.4	1.0				ug/L	507261	Standard
	Sn	118	500.0	36.8	**-0.0224**	0.033	146.1	ug/L	683	Standard
	Sb	123	298.8	51.6	**0.0464**	0.035	74.6	ug/L	446	Standard
	Ba	135	213503.8	0.4	**107.6130**	0.595	0.6	ug/L	28	Standard
	Ce	140	982054.3	1.4				ug/L	33	Standard
>	**Tb**	159	834048.4	0.7				ug/L	800803	Standard
	Ho	165	16108.6	2.7				ug/L	10	Standard
	Tl	203	791.0	23.1	**0.1346**	0.024	17.7	ug/L	13	Standard
	Tl	205	631.7	12.1	**0.1359**	0.012	8.6	ug/L	13	Standard
	Pb	206	43066.1	0.7	**8.5804**	0.077	0.9	ug/L	226	Standard
	Pb	207	35289.1	1.2	**7.7451**	0.149	1.9	ug/L	204	Standard
	Pb	208	154795.7	0.5	**8.4963**	0.061	0.7	ug/L	852	Standard
	U	238	3394.7	2.0	**0.5454**	0.012	2.2	ug/L	13	Standard
>	**Bi**	209	459082.4	0.7				ug/L	449044	Standard

Sample ID: L1606129714
Report Date/Time: Wednesday, July 06, 2016 16:53:54
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	123.3	22.3	**0.0927**	0.029	31.6	mg/L	58	Standard
K	39	355.0	20.7	**0.9694**	0.239	24.7	mg/L	27	Standard
Ca	43	303.3	12.6	**16.0400**	2.304	14.4	mg/L	20	Standard
Fe	54	17039.6	2.1	**11.0689**	0.263	2.4	mg/L	158	Standard
Fe	57	4547.3	1.5	**11.2525**	0.203	1.8	mg/L	267	Standard
Sc-1	45	49480.7	0.7				mg/L	38815	Standard
Cl	35	71902.9	0.6				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2206.8	5.3				ug/L	1617	Standard
P	31	21572.0	0.5				ug/L	19244	Standard
S	34	4592.4	3.0				ug/L	3557	Standard
Sr	88	108.3	17.5				ug/L	65	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	26618.0	1.8				mg/L	13	Standard
Ho-1	165	16108.6	2.7				mg/L	10	Standard
Er	166	14123.2	0.7				mg/L	13	Standard
I	127	4255.6	6.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		94.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.831	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129714
Report Date/Time: Wednesday, July 06, 2016 16:53:54
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.268	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.236	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129714
Report Date/Time: Wednesday, July 06, 2016 16:53:54
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129715
Sample Date/Time: Wednesday, July 06, 2016 16:54:49
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62682.8	1.8				ug/L	68501	Standard
	Be	9	538.3	13.5	**0.6670**	0.078	11.7	ug/L	8	Standard
	Al	27	8483295.7	2.3	**65.3309**	1.261	1.9	ug/L	1397	Standard
	Sc	45	48000.9	1.9				ug/L	38815	Standard
	Ti	47	2220.8	1.9	**5.8672**	0.116	2.0	ug/L	36	Standard
	V	51	95825.1	1.7	**11.9905**	0.267	2.2	ug/L	1284	Standard
	Cr	52	53975.7	1.5	**6.0545**	0.065	1.1	ug/L	6503	Standard
	Cr	53	6017.9	2.1	**5.8357**	0.149	2.6	ug/L	492	Standard
	Mn	55	1814367.2	1.0	**264.2710**	0.941	0.4	ug/L	841	Standard
	Co	59	32503.5	1.0	**4.8051**	0.055	1.1	ug/L	229	Standard
	Ni	60	18362.5	1.6	**9.5997**	0.169	1.8	ug/L	344	Standard
	Cu	65	21373.4	0.6	**11.3667**	0.082	0.7	ug/L	115	Standard
	Zn	66	29953.3	1.6	**26.3688**	0.448	1.7	ug/L	190	Standard
>	**Ge**	72	459957.3	0.6				ug/L	409858	Standard
	As	75	3998.2	0.8	**3.5358**	0.038	1.1	ug/L	-22	Standard
	Se	82	59.0	6.1	**0.4460**	0.030	6.7	ug/L	18	Standard
	Se-1	77	107.7	2.3	**0.6343**	0.031	4.9	ug/L	50	Standard
>	**Ga**	71	6808.2	1.8				mg/L	97	Standard
	Rb	85	56838.1	3.0				ug/L	25	Standard
	Y	89	574047.0	2.1				ug/L	376763	Standard
>	**Rh**	103	26.7	10.8				ug/L	20	Standard
	Mo	98	310.7	1.4	**0.1928**	0.003	1.7	ug/L	51	Standard
	Ag	107	486.0	4.2	**0.0964**	0.004	4.0	ug/L	76	Standard
	Cd	111	347.1	4.1	**0.2040**	0.007	3.5	mg/L	6	Standard
	Cd	114	922.3	3.8	**0.2163**	0.008	3.8	ug/L	18	Standard
>	**In**	115	538984.3	1.4				ug/L	507261	Standard
	Sn	118	660.0	8.6	**0.0033**	0.008	248.6	ug/L	683	Standard
	Sb	123	305.2	20.5	**0.0465**	0.013	27.9	ug/L	446	Standard
	Ba	135	215332.4	0.7	**106.5103**	0.948	0.9	ug/L	28	Standard
	Ce	140	882731.2	1.5				ug/L	33	Standard
>	**Tb**	159	841647.7	1.0				ug/L	800803	Standard
	Ho	165	15134.2	4.0				ug/L	10	Standard
	Tl	203	293.0	7.2	**0.0705**	0.003	4.2	ug/L	13	Standard
	Tl	205	273.3	21.4	**0.0825**	0.009	10.8	ug/L	13	Standard
	Pb	206	60251.9	1.3	**11.8850**	0.195	1.6	ug/L	226	Standard
	Pb	207	49982.3	0.2	**10.8591**	0.117	1.1	ug/L	204	Standard
	Pb	208	217106.5	0.8	**11.7955**	0.057	0.5	ug/L	852	Standard
	U	238	2425.2	0.7	**0.3982**	0.003	0.8	ug/L	13	Standard
>	**Bi**	209	463776.3	0.9				ug/L	449044	Standard

Sample ID: L1606129715
Report Date/Time: Wednesday, July 06, 2016 16:57:06
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.4158**	12.760	901.2	mg/L	2	Standard
Mg	24	95.0	27.9	**0.0656**	0.028	43.3	mg/L	58	Standard
K	39	300.0	6.0	**0.8260**	0.072	8.7	mg/L	27	Standard
Ca	43	156.7	22.4	**7.9262**	2.009	25.4	mg/L	20	Standard
Fe	54	6886.5	4.2	**4.5396**	0.113	2.5	mg/L	158	Standard
Fe	57	2083.5	2.4	**4.9568**	0.163	3.3	mg/L	267	Standard
> **Sc-1**	45	48000.9	1.9				mg/L	38815	Standard
Cl	35	71939.7	0.8				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2656.9	9.5				ug/L	1617	Standard
P	31	21992.6	2.8				ug/L	19244	Standard
S	34	4395.6	4.3				ug/L	3557	Standard
Sr	88	90.0	11.1				ug/L	65	Standard
C	12	133.3	15.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	57.3				mg/L	23	Standard
Dy	164	26288.0	3.3				mg/L	13	Standard
Ho-1	165	15134.2	4.0				mg/L	10	Standard
Er	166	13973.1	2.6				mg/L	13	Standard
I	127	9231.2	7.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.506	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.224	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129715
Report Date/Time: Wednesday, July 06, 2016 16:57:06
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.254
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.281
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129715
Report Date/Time: Wednesday, July 06, 2016 16:57:06
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129716
Sample Date/Time: Wednesday, July 06, 2016 16:58:00
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63096.1	1.7				ug/L	68501	Standard
	Be	9	386.7	6.4	**0.4820**	0.030	6.2	ug/L	8	Standard
	Al	27	12937858.5	0.6	**98.9797**	1.758	1.8	ug/L	1397	Standard
	Sc	45	48714.9	0.8				ug/L	38815	Standard
	Ti	47	5477.7	1.0	**14.5444**	0.163	1.1	ug/L	36	Standard
	V	51	88820.6	0.9	**11.1277**	0.088	0.8	ug/L	1284	Standard
	Cr	52	76178.4	0.5	**8.9516**	0.065	0.7	ug/L	6503	Standard
	Cr	53	8680.8	4.0	**8.6226**	0.356	4.1	ug/L	492	Standard
	Mn	55	1630364.2	1.5	**237.9886**	2.912	1.2	ug/L	841	Standard
	Co	59	33074.4	1.8	**4.9001**	0.076	1.6	ug/L	229	Standard
	Ni	60	24834.7	1.6	**13.0681**	0.216	1.7	ug/L	344	Standard
	Cu	65	11549.7	0.5	**6.1498**	0.016	0.3	ug/L	115	Standard
	Zn	66	25965.9	1.2	**22.8939**	0.212	0.9	ug/L	190	Standard
>	**Ge**	72	458933.8	0.3				ug/L	409858	Standard
	As	75	2635.7	3.3	**2.3695**	0.072	3.1	ug/L	-22	Standard
	Se	82	39.0	10.2	**0.2785**	0.034	12.2	ug/L	18	Standard
	Se-1	77	99.7	9.1	**0.5334**	0.114	21.4	ug/L	50	Standard
>	**Ga**	71	9593.0	4.0				mg/L	97	Standard
	Rb	85	78841.3	0.9				ug/L	25	Standard
	Y	89	536495.1	0.8				ug/L	376763	Standard
>	**Rh**	103	36.7	28.4				ug/L	20	Standard
	Mo	98	2152.4	3.2	**0.9206**	0.036	3.9	ug/L	51	Standard
	Ag	107	274.7	3.4	**0.0650**	0.002	3.0	ug/L	76	Standard
	Cd	111	138.7	8.4	**0.1059**	0.005	5.2	mg/L	6	Standard
	Cd	114	352.4	1.6	**0.1064**	0.001	1.1	ug/L	18	Standard
>	**In**	115	533377.1	1.3				ug/L	507261	Standard
	Sn	118	720.0	12.1	**0.0149**	0.014	92.3	ug/L	683	Standard
	Sb	123	207.4	30.5	**0.0257**	0.014	55.5	ug/L	446	Standard
	Ba	135	126797.7	0.9	**63.3864**	1.016	1.6	ug/L	28	Standard
	Ce	140	703196.5	0.5				ug/L	33	Standard
>	**Tb**	159	828490.0	1.1				ug/L	800803	Standard
	Ho	165	12056.5	2.6				ug/L	10	Standard
	Tl	203	401.7	6.8	**0.0849**	0.003	3.6	ug/L	13	Standard
	Tl	205	353.3	15.1	**0.0948**	0.007	7.8	ug/L	13	Standard
	Pb	206	26317.8	0.7	**5.2595**	0.080	1.5	ug/L	226	Standard
	Pb	207	21590.4	0.4	**4.7535**	0.039	0.8	ug/L	204	Standard
	Pb	208	95620.4	0.7	**5.2655**	0.020	0.4	ug/L	852	Standard
	U	238	2673.9	0.9	**0.4400**	0.007	1.5	ug/L	13	Standard
>	**Bi**	209	457582.5	0.9				ug/L	449044	Standard

Sample ID: L1606129716
Report Date/Time: Wednesday, July 06, 2016 17:00:17
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-1.6111**	12.421	771.0	mg/L	2	Standard
Mg	24	158.3	9.6	**0.1325**	0.017	12.8	mg/L	58	Standard
K	39	220.0	19.4	**0.5570**	0.137	24.5	mg/L	27	Standard
Ca	43	283.3	9.1	**15.1368**	1.384	9.1	mg/L	20	Standard
Fe	54	9746.1	3.5	**6.3807**	0.257	4.0	mg/L	158	Standard
Fe	57	2695.2	3.4	**6.5045**	0.279	4.3	mg/L	267	Standard
> **Sc-1**	45	48714.9	0.8				mg/L	38815	Standard
Cl	35	72318.2	1.6				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	2336.8	8.3				ug/L	1617	Standard
P	31	22189.6	1.5				ug/L	19244	Standard
S	34	4620.7	2.9				ug/L	3557	Standard
Sr	88	90.0	33.8				ug/L	65	Standard
C	12	106.7	32.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	23	Standard
Dy	164	20294.5	0.9				mg/L	13	Standard
Ho-1	165	12056.5	2.6				mg/L	10	Standard
Er	166	10990.7	3.8				mg/L	13	Standard
I	127	4535.7	3.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.110	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.974	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129716
Report Date/Time: Wednesday, July 06, 2016 17:00:17
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.149
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.901
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606129716
Report Date/Time: Wednesday, July 06, 2016 17:00:17
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 17:01:13
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60376.8	2.6				ug/L	68501	Standard
	Be	9	44512.0	1.5	**55.6704**	0.695	1.2	ug/L	8	Standard
	Al	27	7120483.4	2.5	**56.9325**	0.062	0.1	ug/L	1397	Standard
	Sc	45	43315.2	1.8				ug/L	38815	Standard
	Ti	47	39751.1	0.4	**106.1099**	0.782	0.7	ug/L	36	Standard
	V	51	401647.2	0.6	**51.0142**	0.378	0.7	ug/L	1284	Standard
	Cr	52	408076.6	1.9	**52.2101**	0.647	1.2	ug/L	6503	Standard
	Cr	53	50005.7	0.6	**51.8569**	0.658	1.3	ug/L	492	Standard
	Mn	55	369517.4	2.0	**54.0603**	0.738	1.4	ug/L	841	Standard
	Co	59	348277.1	0.6	**51.7368**	0.391	0.8	ug/L	229	Standard
	Ni	60	97436.0	1.6	**51.9218**	0.797	1.5	ug/L	344	Standard
	Cu	65	95915.0	1.3	**51.3579**	0.881	1.7	ug/L	115	Standard
	Zn	66	57969.4	1.5	**51.4363**	0.236	0.5	ug/L	190	Standard
>	Ge	72	457275.6	1.0				ug/L	409858	Standard
	As	75	58788.3	2.0	**50.9283**	0.742	1.5	ug/L	-22	Standard
	Se	82	5911.7	2.9	**50.0997**	1.103	2.2	ug/L	18	Standard
	Se-1	77	4074.2	1.9	**52.2687**	0.612	1.2	ug/L	50	Standard
>	Ga	71	96.7	23.3				mg/L	97	Standard
	Rb	85	1058.4	6.9				ug/L	25	Standard
	Y	89	392635.2	2.0				ug/L	376763	Standard
>	Rh	103	21.7	48.0				ug/L	20	Standard
	Mo	98	260641.0	0.5	**102.7583**	1.540	1.5	ug/L	51	Standard
	Ag	107	333266.2	0.9	**50.7538**	0.981	1.9	ug/L	76	Standard
	Cd	111	106013.6	0.7	**50.7968**	0.877	1.7	mg/L	6	Standard
	Cd	114	258297.0	0.9	**50.6190**	0.162	0.3	ug/L	18	Standard
>	In	115	533927.7	1.1				ug/L	507261	Standard
	Sn	118	285746.1	0.7	**49.4885**	0.793	1.6	ug/L	683	Standard
	Sb	123	232642.5	0.9	**51.5176**	1.036	2.0	ug/L	446	Standard
	Ba	135	100593.6	1.7	**50.2427**	1.379	2.7	ug/L	28	Standard
	Ce	140	2383.6	81.0				ug/L	33	Standard
>	Tb	159	816962.9	1.4				ug/L	800803	Standard
	Ho	165	35.0	93.7				ug/L	10	Standard
	Tl	203	397625.7	0.5	**51.1513**	0.555	1.1	ug/L	13	Standard
	Tl	205	354455.7	1.9	**52.6519**	0.879	1.7	ug/L	13	Standard
	Pb	206	250509.7	0.6	**50.1879**	0.498	1.0	ug/L	226	Standard
	Pb	207	228549.6	0.8	**50.4213**	0.378	0.7	ug/L	204	Standard
	Pb	208	952303.1	0.4	**52.5370**	0.233	0.4	ug/L	852	Standard
	U	238	343600.4	0.5	**51.1931**	0.467	0.9	ug/L	13	Standard
>	Bi	209	456734.7	0.7				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 17:03:30
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3950.5	6.0	**4.7562**	0.311	6.5	mg/L	58	Standard
K	39	1280.1	6.4	**4.4296**	0.249	5.6	mg/L	27	Standard
Ca	43	98.3	12.8	**5.1241**	0.729	14.2	mg/L	20	Standard
Fe	54	7039.2	1.9	**5.1600**	0.075	1.5	mg/L	158	Standard
Fe	57	2025.1	7.5	**5.3968**	0.562	10.4	mg/L	267	Standard
> **Sc-1**	45	43315.2	1.8				mg/L	38815	Standard
Cl	35	73434.9	1.8				ug/L	57611	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	2060.1	7.2				ug/L	1617	Standard
P	31	23247.8	2.5				ug/L	19244	Standard
S	34	4565.7	3.9				ug/L	3557	Standard
Sr	88	55.0	15.7				ug/L	65	Standard
C	12	40.0	86.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	23	Standard
Dy	164	91.3	86.7				mg/L	13	Standard
Ho-1	165	35.0	93.7				mg/L	10	Standard
Er	166	43.3	81.0				mg/L	13	Standard
I	127	11119.1	0.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	111.341		
Al	27	113.865		
Sc	45			
Ti	47	106.110		
V	51	102.028		
Cr	52	104.420		
Cr	53			
Mn	55	108.121		
Co	59	103.474		
Ni	60	103.844		
Cu	65	102.716		
Zn	66	102.873		
> Ge	72		111.569	
As	75	101.857		
Se	82	100.199		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 17:03:30
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	102.758		
Ag	107	101.508		
Cd	111	101.594		
Cd	114			
In	115		105.257	
Sn	118	98.977		
Sb	123	103.035		
Ba	135	100.485		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.303		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.074		
U	238	102.386		
Bi	209		101.713	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 17:03:30
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 17:04:25
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60135.8	3.0				ug/L	68501	Standard
	Be	9	20.0	25.0	**0.0445**	0.006	13.7	ug/L	8	Standard
	Al	27	4068.9	40.2	**0.0675**	0.012	17.8	ug/L	1397	Standard
	Sc	45	43684.6	2.9				ug/L	38815	Standard
	Ti	47	31.7	9.6	**0.0570**	0.008	13.6	ug/L	36	Standard
	V	51	1454.7	5.9	**0.0417**	0.010	22.9	ug/L	1284	Standard
	Cr	52	7266.7	1.7	**0.0155**	0.022	144.6	ug/L	6503	Standard
	Cr	53	398.3	22.0	**-0.0005**	0.095	18388.9	ug/L	492	Standard
	Mn	55	872.4	17.7	**0.0322**	0.022	68.2	ug/L	841	Standard
	Co	59	220.0	3.6	**0.0383**	0.001	2.7	ug/L	229	Standard
	Ni	60	339.7	0.6	**0.0243**	0.001	6.1	ug/L	344	Standard
	Cu	65	116.7	6.9	**0.0494**	0.004	7.9	ug/L	115	Standard
	Zn	66	152.0	6.7	**0.0221**	0.008	36.6	ug/L	190	Standard
>	**Ge**	72	455933.5	0.8				ug/L	409858	Standard
	As	75	-68.9	29.1	**0.0392**	0.017	43.5	ug/L	-22	Standard
	Se	82	11.7	48.5	**0.0481**	0.049	101.1	ug/L	18	Standard
	Se-1	77	57.3	9.9	**-0.0102**	0.078	766.6	ug/L	50	Standard
>	**Ga**	71	33.3	17.3				mg/L	97	Standard
	Rb	85	41.7	45.4				ug/L	25	Standard
	Y	89	385104.6	1.0				ug/L	376763	Standard
>	**Rh**	103	13.3	57.3				ug/L	20	Standard
	Mo	98	140.6	2.9	**0.1263**	0.002	1.2	ug/L	51	Standard
	Ag	107	97.3	14.0	**0.0377**	0.002	5.3	ug/L	76	Standard
	Cd	111	6.4	55.2	**0.0424**	0.002	4.0	mg/L	6	Standard
	Cd	114	30.5	14.6	**0.0433**	0.001	2.0	ug/L	18	Standard
>	**In**	115	540459.8	0.5				ug/L	507261	Standard
	Sn	118	913.4	16.4	**0.0466**	0.027	57.0	ug/L	683	Standard
	Sb	123	642.8	37.4	**0.1205**	0.053	44.1	ug/L	446	Standard
	Ba	135	50.3	16.5	**0.0406**	0.004	9.8	ug/L	28	Standard
	Ce	140	301.7	26.9				ug/L	33	Standard
>	**Tb**	159	814839.3	0.6				ug/L	800803	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	55.3	13.6	**0.0404**	0.001	2.2	ug/L	13	Standard
	Tl	205	38.3	19.9	**0.0482**	0.001	2.3	ug/L	13	Standard
	Pb	206	233.0	9.0	**0.0423**	0.004	9.3	ug/L	226	Standard
	Pb	207	226.7	5.1	**0.0486**	0.003	5.8	ug/L	204	Standard
	Pb	208	902.7	4.3	**0.0495**	0.002	4.5	ug/L	852	Standard
	U	238	45.7	27.4	**0.0494**	0.002	3.8	ug/L	13	Standard
>	**Bi**	209	459869.9	1.0				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 17:06:41
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**7.0995**	13.754	193.7	mg/L	2	Standard
Mg	24	40.0	25.0	**0.0098**	0.012	121.3	mg/L	58	Standard
K	39	30.0	28.9	**-0.0361**	0.028	77.7	mg/L	27	Standard
Ca	43	23.3	65.5	**0.2490**	1.044	419.1	mg/L	20	Standard
Fe	54	149.1	34.9	**-0.0096**	0.037	384.5	mg/L	158	Standard
Fe	57	258.3	22.4	**0.0918**	0.196	213.6	mg/L	267	Standard
> **Sc-1**	45	43684.6	2.9				mg/L	38815	Standard
Cl	35	72508.4	1.4				ug/L	57611	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1963.5	7.1				ug/L	1617	Standard
P	31	22001.0	3.1				ug/L	19244	Standard
S	34	4517.3	1.1				ug/L	3557	Standard
Sr	88	58.3	4.9				ug/L	65	Standard
C	12	60.0	60.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	86.6				mg/L	23	Standard
Dy	164	-0.6	86.6				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	8687.5	0.4				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.242	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 17:06:41
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.545
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.411
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 17:06:41
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129717
Sample Date/Time: Wednesday, July 06, 2016 17:07:37
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60512.3	2.0				ug/L	68501	Standard
	Be	9	250.0	13.9	**0.3317**	0.048	14.5	ug/L	8	Standard
	Al	27	9127879.8	0.8	**72.8313**	1.774	2.4	ug/L	1397	Standard
	Sc	45	47044.6	2.2				ug/L	38815	Standard
	Ti	47	2194.2	2.3	**5.8566**	0.188	3.2	ug/L	36	Standard
	V	51	44194.1	1.4	**5.5087**	0.044	0.8	ug/L	1284	Standard
	Cr	52	31815.4	1.1	**3.2274**	0.004	0.1	ug/L	6503	Standard
	Cr	53	3368.7	1.5	**3.1179**	0.053	1.7	ug/L	492	Standard
	Mn	55	1436494.1	1.3	**211.3511**	2.993	1.4	ug/L	841	Standard
	Co	59	14124.2	0.5	**2.1125**	0.030	1.4	ug/L	229	Standard
	Ni	60	10017.3	2.5	**5.2188**	0.093	1.8	ug/L	344	Standard
	Cu	65	5555.4	1.2	**2.9746**	0.020	0.7	ug/L	115	Standard
	Zn	66	12515.5	1.3	**11.0639**	0.068	0.6	ug/L	190	Standard
>	**Ge**	72	455331.3	1.0				ug/L	409858	Standard
	As	75	1273.2	2.2	**1.2046**	0.032	2.7	ug/L	-22	Standard
	Se	82	33.8	7.8	**0.2365**	0.025	10.6	ug/L	18	Standard
	Se-1	77	77.0	7.9	**0.2473**	0.074	30.1	ug/L	50	Standard
>	**Ga**	71	3477.1	5.3				mg/L	97	Standard
	Rb	85	29470.3	4.4				ug/L	25	Standard
	Y	89	504672.2	1.8				ug/L	376763	Standard
>	**Rh**	103	21.7	48.0				ug/L	20	Standard
	Mo	98	162.5	13.2	**0.1360**	0.008	6.2	ug/L	51	Standard
	Ag	107	184.7	11.1	**0.0514**	0.003	5.6	ug/L	76	Standard
	Cd	111	116.7	0.9	**0.0956**	0.000	0.2	mg/L	6	Standard
	Cd	114	300.7	13.5	**0.0966**	0.007	7.7	ug/L	18	Standard
>	**In**	115	530453.6	1.0				ug/L	507261	Standard
	Sn	118	595.0	16.1	**-0.0061**	0.017	280.1	ug/L	683	Standard
	Sb	123	364.2	29.0	**0.0609**	0.024	39.6	ug/L	446	Standard
	Ba	135	104851.9	0.7	**52.7028**	0.330	0.6	ug/L	28	Standard
	Ce	140	465635.4	0.9				ug/L	33	Standard
>	**Tb**	159	824090.2	0.7				ug/L	800803	Standard
	Ho	165	9299.5	0.7				ug/L	10	Standard
	Tl	203	170.7	6.7	**0.0554**	0.002	2.8	ug/L	13	Standard
	Tl	205	143.3	10.7	**0.0639**	0.002	3.6	ug/L	13	Standard
	Pb	206	18810.3	1.3	**3.7880**	0.037	1.0	ug/L	226	Standard
	Pb	207	15556.0	1.1	**3.4522**	0.034	1.0	ug/L	204	Standard
	Pb	208	67949.4	0.5	**3.7721**	0.028	0.8	ug/L	852	Standard
	U	238	1726.8	1.0	**0.3013**	0.003	0.8	ug/L	13	Standard
>	**Bi**	209	453909.1	0.3				ug/L	449044	Standard

Sample ID: L1606129717
Report Date/Time: Wednesday, July 06, 2016 17:09:54
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**6.4032**	13.152	205.4	mg/L	2	Standard
Mg	24	106.7	21.1	**0.0812**	0.028	34.1	mg/L	58	Standard
K	39	105.0	8.2	**0.2040**	0.036	17.4	mg/L	27	Standard
Ca	43	343.3	12.4	**19.3079**	2.257	11.7	mg/L	20	Standard
Fe	54	2967.9	3.2	**1.9306**	0.096	5.0	mg/L	158	Standard
Fe	57	1078.4	0.5	**2.2974**	0.071	3.1	mg/L	267	Standard
Sc-1	45	47044.6	2.2				mg/L	38815	Standard
Cl	35	74756.6	0.2				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2176.8	7.6				ug/L	1617	Standard
P	31	21623.8	0.7				ug/L	19244	Standard
S	34	4430.6	2.9				ug/L	3557	Standard
Sr	88	118.3	10.6				ug/L	65	Standard
C	12	80.0	12.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	23	Standard
Dy	164	15003.4	3.0				mg/L	13	Standard
Ho-1	165	9299.5	0.7				mg/L	10	Standard
Er	166	8652.5	3.3				mg/L	13	Standard
I	127	4919.1	6.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		88.338	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		111.095	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129717
Report Date/Time: Wednesday, July 06, 2016 17:09:54
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.572
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.083
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606129717
Report Date/Time: Wednesday, July 06, 2016 17:09:54
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129718
Sample Date/Time: Wednesday, July 06, 2016 17:10:49
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61002.6	0.7				ug/L	68501	Standard
	Be	9	386.7	8.4	**0.4980**	0.044	8.7	ug/L	8	Standard
	Al	27	11064224.1	1.9	**87.5342**	1.217	1.4	ug/L	1397	Standard
	Sc	45	47497.7	2.4				ug/L	38815	Standard
	Ti	47	2700.2	0.1	**7.2287**	0.073	1.0	ug/L	36	Standard
	V	51	75721.1	0.9	**9.5634**	0.159	1.7	ug/L	1284	Standard
	Cr	52	48504.5	0.5	**5.4244**	0.053	1.0	ug/L	6503	Standard
	Cr	53	5401.0	0.6	**5.2639**	0.061	1.2	ug/L	492	Standard
	Mn	55	2606946.8	1.3	**384.5071**	8.038	2.1	ug/L	841	Standard
	Co	59	24500.5	0.6	**3.6683**	0.045	1.2	ug/L	229	Standard
	Ni	60	16206.3	0.4	**8.5606**	0.051	0.6	ug/L	344	Standard
	Cu	65	11319.2	0.3	**6.0884**	0.078	1.3	ug/L	115	Standard
	Zn	66	16272.4	0.9	**14.4512**	0.062	0.4	ug/L	190	Standard
>	**Ge**	72	454337.4	1.0				ug/L	409858	Standard
	As	75	3766.5	1.0	**3.3768**	0.043	1.3	ug/L	-22	Standard
	Se	82	38.2	18.9	**0.2748**	0.058	21.2	ug/L	18	Standard
	Se-1	77	92.7	8.1	**0.4557**	0.110	24.0	ug/L	50	Standard
>	**Ga**	71	5367.6	4.1				mg/L	97	Standard
	Rb	85	50199.7	1.5				ug/L	25	Standard
	Y	89	528757.6	1.4				ug/L	376763	Standard
>	**Rh**	103	41.7	30.2				ug/L	20	Standard
	Mo	98	628.2	4.9	**0.3208**	0.014	4.2	ug/L	51	Standard
	Ag	107	249.3	11.6	**0.0613**	0.005	7.6	ug/L	76	Standard
	Cd	111	202.2	4.6	**0.1368**	0.004	2.9	mg/L	6	Standard
	Cd	114	542.1	7.4	**0.1443**	0.007	5.1	ug/L	18	Standard
>	**In**	115	530184.6	0.5				ug/L	507261	Standard
	Sn	118	480.0	21.8	**-0.0261**	0.019	71.3	ug/L	683	Standard
	Sb	123	306.2	37.7	**0.0480**	0.026	54.3	ug/L	446	Standard
	Ba	135	151848.5	0.9	**76.3535**	0.309	0.4	ug/L	28	Standard
	Ce	140	632673.3	1.1				ug/L	33	Standard
>	**Tb**	159	826901.6	0.1				ug/L	800803	Standard
	Ho	165	11909.7	2.7				ug/L	10	Standard
	Tl	203	275.7	6.5	**0.0692**	0.002	3.3	ug/L	13	Standard
	Tl	205	261.7	21.3	**0.0818**	0.008	10.1	ug/L	13	Standard
	Pb	206	30210.1	0.2	**6.1134**	0.033	0.5	ug/L	226	Standard
	Pb	207	25026.0	0.9	**5.5792**	0.065	1.2	ug/L	204	Standard
	Pb	208	109142.1	0.7	**6.0856**	0.048	0.8	ug/L	852	Standard
	U	238	2218.8	3.0	**0.3764**	0.010	2.5	ug/L	13	Standard
>	**Bi**	209	451902.1	0.3				ug/L	449044	Standard

Sample ID: L1606129718
Report Date/Time: Wednesday, July 06, 2016 17:13:06
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	85.0	21.2	**0.0555**	0.018	32.7	mg/L	58	Standard
K	39	141.7	2.0	**0.3200**	0.021	6.5	mg/L	27	Standard
Ca	43	346.7	12.0	**19.2981**	2.044	10.6	mg/L	20	Standard
Fe	54	6583.4	6.0	**4.3806**	0.177	4.0	mg/L	158	Standard
Fe	57	2040.1	4.5	**4.9012**	0.343	7.0	mg/L	267	Standard
> **Sc-1**	45	47497.7	2.4				mg/L	38815	Standard
Cl	35	74496.0	0.9				ug/L	57611	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	2060.1	5.8				ug/L	1617	Standard
P	31	21615.4	2.3				ug/L	19244	Standard
S	34	4407.3	3.3				ug/L	3557	Standard
Sr	88	146.7	22.2				ug/L	65	Standard
C	12	80.0	12.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	74.2				mg/L	23	Standard
Dy	164	20267.7	1.2				mg/L	13	Standard
Ho-1	165	11909.7	2.7				mg/L	10	Standard
Er	166	10853.9	1.7				mg/L	13	Standard
I	127	5491.0	3.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.053	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.852	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129718
Report Date/Time: Wednesday, July 06, 2016 17:13:06
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.519
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.637
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606129718
Report Date/Time: Wednesday, July 06, 2016 17:13:06
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129719
Sample Date/Time: Wednesday, July 06, 2016 17:14:00
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63665.1	0.4				ug/L	68501	Standard
	Be	9	740.0	0.7	**0.8967**	0.007	0.8	ug/L	8	Standard
	Al	27	10091474.2	0.2	**76.5080**	0.424	0.6	ug/L	1397	Standard
	Sc	45	49554.3	2.7				ug/L	38815	Standard
	Ti	47	4880.5	4.1	**13.0100**	0.620	4.8	ug/L	36	Standard
	V	51	140318.8	0.3	**17.7350**	0.174	1.0	ug/L	1284	Standard
	Cr	52	211034.0	1.3	**26.5622**	0.505	1.9	ug/L	6503	Standard
	Cr	53	25681.8	2.5	**26.4393**	0.783	3.0	ug/L	492	Standard
	Mn	55	2842033.0	1.3	**416.5880**	2.843	0.7	ug/L	841	Standard
	Co	59	55629.6	1.1	**8.2712**	0.092	1.1	ug/L	229	Standard
	Ni	60	34092.3	1.7	**18.0725**	0.426	2.4	ug/L	344	Standard
	Cu	65	61233.5	0.2	**32.7936**	0.273	0.8	ug/L	115	Standard
	Zn	66	88786.7	1.0	**78.8718**	0.401	0.5	ug/L	190	Standard
>	**Ge**	72	457106.3	0.6				ug/L	409858	Standard
	As	75	6665.3	1.7	**5.8642**	0.105	1.8	ug/L	-22	Standard
	Se	82	74.8	1.4	**0.5833**	0.008	1.4	ug/L	18	Standard
	Se-1	77	116.0	23.7	**0.7520**	0.363	48.2	ug/L	50	Standard
>	**Ga**	71	14478.6	1.2				mg/L	97	Standard
	Rb	85	153343.8	1.1				ug/L	25	Standard
	Y	89	584906.0	1.5				ug/L	376763	Standard
>	**Rh**	103	63.3	50.1				ug/L	20	Standard
	Mo	98	921.9	3.1	**0.4300**	0.010	2.3	ug/L	51	Standard
	Ag	107	1490.7	1.6	**0.2471**	0.003	1.4	ug/L	76	Standard
	Cd	111	12899.8	1.4	**6.1352**	0.119	1.9	mg/L	6	Standard
	Cd	114	31602.1	1.1	**6.1457**	0.066	1.1	ug/L	18	Standard
>	**In**	115	540935.6	0.6				ug/L	507261	Standard
	Sn	118	2395.2	5.4	**0.3002**	0.022	7.2	ug/L	683	Standard
	Sb	123	506.3	17.8	**0.0902**	0.019	21.2	ug/L	446	Standard
	Ba	135	402882.8	0.3	**198.5336**	0.517	0.3	ug/L	28	Standard
	Ce	140	1001355.4	1.2				ug/L	33	Standard
>	**Tb**	159	839605.9	0.3				ug/L	800803	Standard
	Ho	165	16278.7	1.4				ug/L	10	Standard
	Tl	203	762.4	2.3	**0.1303**	0.002	1.9	ug/L	13	Standard
	Tl	205	646.7	4.5	**0.1375**	0.004	3.0	ug/L	13	Standard
	Pb	206	722382.1	0.3	**143.1625**	0.699	0.5	ug/L	226	Standard
	Pb	207	605458.0	1.1	**132.1283**	1.402	1.1	ug/L	204	Standard
	Pb	208	2619914.0	0.5	**142.9705**	0.450	0.3	ug/L	852	Standard
	U	238	3167.0	3.3	**0.5090**	0.016	3.1	ug/L	13	Standard
>	**Bi**	209	461727.1	0.2				ug/L	449044	Standard

Sample ID: L1606129719
Report Date/Time: Wednesday, July 06, 2016 17:16:17
Page 1

Approved: July 07, 2016

Na	23	3.3	173.2	**5.7695**	25.205	436.9	mg/L	2	Standard
Mg	24	183.3	8.3	**0.1563**	0.019	12.4	mg/L	58	Standard
K	39	323.3	6.4	**0.8694**	0.091	10.5	mg/L	27	Standard
Ca	43	148.3	18.6	**7.1496**	1.328	18.6	mg/L	20	Standard
Fe	54	14825.9	2.7	**9.6082**	0.482	5.0	mg/L	158	Standard
Fe	57	4082.2	1.4	**10.0200**	0.287	2.9	mg/L	267	Standard
Sc-1	45	49554.3	2.7				mg/L	38815	Standard
Cl	35	70608.8	1.1				ug/L	57611	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	5050.8	4.7				ug/L	1617	Standard
P	31	22351.5	1.7				ug/L	19244	Standard
S	34	4362.3	8.2				ug/L	3557	Standard
Sr	88	115.0	13.0				ug/L	65	Standard
C	12	230.0	28.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	176.7	31.2				mg/L	23	Standard
Dy	164	26663.3	1.8				mg/L	13	Standard
Ho-1	165	16278.7	1.4				mg/L	10	Standard
Er	166	14503.6	3.7				mg/L	13	Standard
I	127	13963.1	5.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.940	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.528	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129719
Report Date/Time: Wednesday, July 06, 2016 17:16:17
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.639
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.824
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	
Pb 206 Upper, S, EEE	Pb	206	

Sample ID: L1606129719
Report Date/Time: Wednesday, July 06, 2016 17:16:17
Page 3

Approved: July 07, 2016

Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Sample ID: L1606129719
Report Date/Time: Wednesday, July 06, 2016 17:16:17
Page 4

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129720
Sample Date/Time: Wednesday, July 06, 2016 17:17:12
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62043.4	0.8				ug/L	68501	Standard
	Be	9	535.0	5.2	**0.6704**	0.036	5.4	ug/L	8	Standard
	Al	27	16466441.8	1.0	**128.0760**	0.413	0.3	ug/L	1397	Standard
	Sc	45	47537.8	1.8				ug/L	38815	Standard
	Ti	47	3601.8	1.1	**9.7028**	0.127	1.3	ug/L	36	Standard
	V	51	114496.1	0.8	**14.6114**	0.083	0.6	ug/L	1284	Standard
	Cr	52	66045.0	1.4	**7.7705**	0.194	2.5	ug/L	6503	Standard
	Cr	53	7416.8	1.1	**7.4262**	0.092	1.2	ug/L	492	Standard
	Mn	55	2745613.9	0.3	**407.0973**	4.419	1.1	ug/L	841	Standard
	Co	59	34784.6	1.7	**5.2334**	0.108	2.1	ug/L	229	Standard
	Ni	60	22063.1	1.1	**11.7754**	0.232	2.0	ug/L	344	Standard
	Cu	65	16897.4	1.0	**9.1435**	0.112	1.2	ug/L	115	Standard
	Zn	66	22892.0	2.0	**20.4833**	0.194	0.9	ug/L	190	Standard
>	Ge	72	451935.2	1.0				ug/L	409858	Standard
	As	75	3957.0	1.3	**3.5607**	0.038	1.1	ug/L	-22	Standard
	Se	82	48.3	15.3	**0.3639**	0.066	18.3	ug/L	18	Standard
	Se-1	77	89.0	3.9	**0.4130**	0.038	9.3	ug/L	50	Standard
>	Ga	71	8247.2	1.1				mg/L	97	Standard
	Rb	85	77169.4	1.5				ug/L	25	Standard
	Y	89	561968.7	0.4				ug/L	376763	Standard
>	Rh	103	36.7	41.7				ug/L	20	Standard
	Mo	98	835.4	2.8	**0.4040**	0.010	2.5	ug/L	51	Standard
	Ag	107	320.7	6.4	**0.0724**	0.003	3.8	ug/L	76	Standard
	Cd	111	190.8	4.2	**0.1316**	0.003	2.5	mg/L	6	Standard
	Cd	114	457.1	0.9	**0.1278**	0.000	0.1	ug/L	18	Standard
>	In	115	528583.4	0.8				ug/L	507261	Standard
	Sn	118	668.3	6.0	**0.0070**	0.006	88.1	ug/L	683	Standard
	Sb	123	238.4	30.1	**0.0330**	0.016	49.2	ug/L	446	Standard
	Ba	135	413766.5	1.3	**208.6575**	1.840	0.9	ug/L	28	Standard
	Ce	140	816123.1	1.5				ug/L	33	Standard
>	Tb	159	818775.6	1.8				ug/L	800803	Standard
	Ho	165	14605.4	0.2				ug/L	10	Standard
	Tl	203	529.0	5.3	**0.1022**	0.004	3.5	ug/L	13	Standard
	Tl	205	483.3	6.3	**0.1152**	0.005	4.0	ug/L	13	Standard
	Pb	206	38689.3	1.6	**7.8483**	0.117	1.5	ug/L	226	Standard
	Pb	207	31946.0	0.6	**7.1384**	0.036	0.5	ug/L	204	Standard
	Pb	208	139239.2	0.4	**7.7816**	0.049	0.6	ug/L	852	Standard
	U	238	4116.2	1.0	**0.6633**	0.006	1.0	ug/L	13	Standard
>	Bi	209	450865.9	0.2				ug/L	449044	Standard

Sample ID: L1606129720
Report Date/Time: Wednesday, July 06, 2016 17:19:29
Page 1

Approved: July 07, 2016

Na	23	5.0	100.0	**13.6788**	22.396	163.7	mg/L	2	Standard
Mg	24	173.3	26.8	**0.1527**	0.048	31.1	mg/L	58	Standard
K	39	153.3	13.6	**0.3567**	0.061	17.0	mg/L	27	Standard
Ca	43	540.0	15.4	**30.7921**	4.937	16.0	mg/L	20	Standard
Fe	54	8837.8	2.1	**5.9199**	0.065	1.1	mg/L	158	Standard
Fe	57	2686.9	4.2	**6.6633**	0.423	6.3	mg/L	267	Standard
> **Sc-1**	45	47537.8	1.8				mg/L	38815	Standard
Cl	35	73158.9	1.0				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2540.2	9.3				ug/L	1617	Standard
P	31	21500.3	3.4				ug/L	19244	Standard
S	34	4425.6	2.7				ug/L	3557	Standard
Sr	88	181.7	13.6				ug/L	65	Standard
C	12	100.0	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	25202.4	7.2				mg/L	13	Standard
Ho-1	165	14605.4	0.2				mg/L	10	Standard
Er	166	13145.7	4.6				mg/L	13	Standard
I	127	7560.2	2.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.573	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.266	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129720
Report Date/Time: Wednesday, July 06, 2016 17:19:29
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.204
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.406
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129720
Report Date/Time: Wednesday, July 06, 2016 17:19:29
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129701
Sample Date/Time: Wednesday, July 06, 2016 17:20:23
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54705.3	3.3				ug/L	68501	Standard
	Be	9	20.0	75.0	**0.0471**	0.021	44.9	ug/L	8	Standard
	Al	27	254394.6	0.7	**2.2805**	0.089	3.9	ug/L	1397	Standard
	Sc	45	38919.9	0.3				ug/L	38815	Standard
	Ti	47	76.0	1.3	**0.1928**	0.003	1.6	ug/L	36	Standard
	V	51	2687.0	2.1	**0.2280**	0.008	3.3	ug/L	1284	Standard
	Cr	52	6953.6	2.9	**0.0509**	0.028	55.7	ug/L	6503	Standard
	Cr	53	256.7	13.0	**-0.1269**	0.038	29.7	ug/L	492	Standard
	Mn	55	32697.3	3.6	**5.1146**	0.183	3.6	ug/L	841	Standard
	Co	59	591.3	9.7	**0.1010**	0.009	9.1	ug/L	229	Standard
	Ni	60	630.7	6.1	**0.2088**	0.022	10.6	ug/L	344	Standard
	Cu	65	421.7	12.1	**0.2323**	0.030	12.8	ug/L	115	Standard
	Zn	66	1478.1	4.0	**1.3158**	0.058	4.4	ug/L	190	Standard
>	**Ge**	72	420563.3	0.1				ug/L	409858	Standard
	As	75	-15.5	83.8	**0.0843**	0.012	14.5	ug/L	-22	Standard
	Se	82	13.0	43.8	**0.0690**	0.053	76.4	ug/L	18	Standard
	Se-1	77	54.7	13.5	**0.0147**	0.104	707.4	ug/L	50	Standard
>	**Ga**	71	123.3	20.8				mg/L	97	Standard
	Rb	85	1151.7	4.4				ug/L	25	Standard
	Y	89	361203.1	0.5				ug/L	376763	Standard
>	**Rh**	103	13.3	43.3				ug/L	20	Standard
	Mo	98	68.7	38.7	**0.1009**	0.011	11.2	ug/L	51	Standard
	Ag	107	80.0	25.1	**0.0363**	0.003	9.1	ug/L	76	Standard
	Cd	111	10.5	68.1	**0.0448**	0.004	8.3	mg/L	6	Standard
	Cd	114	35.2	40.1	**0.0449**	0.003	6.7	ug/L	18	Standard
>	**In**	115	492416.3	0.6				ug/L	507261	Standard
	Sn	118	241.7	18.8	**-0.0646**	0.009	13.4	ug/L	683	Standard
	Sb	123	498.9	38.1	**0.0993**	0.045	45.6	ug/L	446	Standard
	Ba	135	4886.5	2.1	**2.6610**	0.070	2.6	ug/L	28	Standard
	Ce	140	13354.2	3.4				ug/L	33	Standard
>	**Tb**	159	765708.7	0.7				ug/L	800803	Standard
	Ho	165	263.3	11.6				ug/L	10	Standard
	Tl	203	36.7	55.6	**0.0383**	0.003	7.2	ug/L	13	Standard
	Tl	205	40.0	33.1	**0.0487**	0.002	4.2	ug/L	13	Standard
	Pb	206	956.0	8.3	**0.1957**	0.017	8.7	ug/L	226	Standard
	Pb	207	823.4	8.4	**0.1883**	0.016	8.8	ug/L	204	Standard
	Pb	208	3454.8	7.4	**0.1989**	0.016	8.0	ug/L	852	Standard
	U	238	55.3	15.2	**0.0512**	0.001	2.6	ug/L	13	Standard
>	**Bi**	209	438088.3	0.6				ug/L	449044	Standard

Sample ID: L1606129701
Report Date/Time: Wednesday, July 06, 2016 17:22:40
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.2882**	15.711	5451.7	mg/L	2	Standard
Mg	24	71.7	16.1	**0.0584**	0.016	26.8	mg/L	58	Standard
K	39	21.7	35.3	**-0.0557**	0.030	54.0	mg/L	27	Standard
Ca	43	33.3	60.6	**1.1412**	1.472	128.9	mg/L	20	Standard
Fe	54	127.5	9.8	**-0.0137**	0.011	78.4	mg/L	158	Standard
Fe	57	326.7	25.5	**0.4101**	0.278	67.8	mg/L	267	Standard
> **Sc-1**	45	38919.9	0.3				mg/L	38815	Standard
Cl	35	69819.9	1.7				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1756.8	7.7				ug/L	1617	Standard
P	31	7073.3	2.3				ug/L	19244	Standard
S	34	4202.2	2.7				ug/L	3557	Standard
Sr	88	83.3	15.1				ug/L	65	Standard
C	12	36.7	31.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	23	Standard
Dy	164	443.9	18.5				mg/L	13	Standard
Ho-1	165	263.3	11.6				mg/L	10	Standard
Er	166	266.7	18.5				mg/L	13	Standard
I	127	7595.2	3.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.860	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.612	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129701
Report Date/Time: Wednesday, July 06, 2016 17:22:40
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.074
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.560
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129702
Sample Date/Time: Wednesday, July 06, 2016 17:23:34
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53813.8	3.3				ug/L	68501	Standard
	Be	9	20.0	25.0	**0.0474**	0.006	12.9	ug/L	8	Standard
	Al	27	123757.2	3.7	**1.1460**	0.073	6.3	ug/L	1397	Standard
	Sc	45	40009.4	1.7				ug/L	38815	Standard
	Ti	47	75.7	14.5	**0.1929**	0.030	15.3	ug/L	36	Standard
	V	51	3286.9	6.1	**0.3136**	0.023	7.3	ug/L	1284	Standard
	Cr	52	7502.9	1.7	**0.1350**	0.010	7.1	ug/L	6503	Standard
	Cr	53	293.3	39.6	**-0.0841**	0.129	153.1	ug/L	492	Standard
	Mn	55	65790.6	3.2	**10.4491**	0.229	2.2	ug/L	841	Standard
	Co	59	905.0	7.8	**0.1525**	0.011	7.0	ug/L	229	Standard
	Ni	60	746.0	5.8	**0.2783**	0.022	7.9	ug/L	344	Standard
	Cu	65	536.7	2.7	**0.3011**	0.007	2.5	ug/L	115	Standard
	Zn	66	1996.5	2.1	**1.8285**	0.039	2.1	ug/L	190	Standard
>	**Ge**	72	418080.4	1.1				ug/L	409858	Standard
	As	75	56.1	91.8	**0.1516**	0.048	31.6	ug/L	-22	Standard
	Se	82	15.2	60.8	**0.0892**	0.084	94.3	ug/L	18	Standard
	Se-1	77	55.0	22.3	**0.0229**	0.166	724.1	ug/L	50	Standard
>	**Ga**	71	163.3	29.4				mg/L	97	Standard
	Rb	85	1311.7	19.5				ug/L	25	Standard
	Y	89	361563.3	0.7				ug/L	376763	Standard
>	**Rh**	103	16.7	62.4				ug/L	20	Standard
	Mo	98	51.7	65.1	**0.0937**	0.014	15.4	ug/L	51	Standard
	Ag	107	124.7	52.2	**0.0437**	0.011	24.6	ug/L	76	Standard
	Cd	111	51.5	87.7	**0.0662**	0.024	35.5	mg/L	6	Standard
	Cd	114	122.3	87.7	**0.0634**	0.023	36.0	ug/L	18	Standard
>	**In**	115	491187.9	0.1				ug/L	507261	Standard
	Sn	118	286.7	14.1	**-0.0560**	0.008	13.6	ug/L	683	Standard
	Sb	123	388.5	44.1	**0.0731**	0.041	56.3	ug/L	446	Standard
	Ba	135	5842.1	6.6	**3.1859**	0.208	6.5	ug/L	28	Standard
	Ce	140	16594.1	7.9				ug/L	33	Standard
>	**Tb**	159	754328.2	0.4				ug/L	800803	Standard
	Ho	165	276.7	4.2				ug/L	10	Standard
	Tl	203	81.0	143.3	**0.0443**	0.016	35.4	ug/L	13	Standard
	Tl	205	25.0	121.7	**0.0464**	0.005	10.2	ug/L	13	Standard
	Pb	206	4919.1	2.0	**1.0313**	0.021	2.0	ug/L	226	Standard
	Pb	207	4164.2	1.0	**0.9640**	0.011	1.1	ug/L	204	Standard
	Pb	208	17566.3	0.6	**1.0181**	0.006	0.6	ug/L	852	Standard
	U	238	66.0	41.2	**0.0529**	0.004	8.1	ug/L	13	Standard
>	**Bi**	209	434793.9	0.1				ug/L	449044	Standard

Sample ID: L1606129702
Report Date/Time: Wednesday, July 06, 2016 17:25:51
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	44.1	**0.0012**	0.018	1479.1	mg/L	58	Standard
K	39	31.7	48.2	**-0.0200**	0.057	286.5	mg/L	27	Standard
Ca	43	21.7	13.3	**0.2504**	0.197	78.6	mg/L	20	Standard
Fe	54	164.3	5.3	**0.0132**	0.007	50.9	mg/L	158	Standard
Fe	57	281.7	17.2	**0.2361**	0.173	73.2	mg/L	267	Standard
> **Sc-1**	45	40009.4	1.7				mg/L	38815	Standard
Cl	35	68860.1	0.4				ug/L	57611	Standard
Kr	83	3.7	68.6				ug/L	2	Standard
Br	81	1723.4	1.5				ug/L	1617	Standard
P	31	6801.5	2.1				ug/L	19244	Standard
S	34	4285.6	1.1				ug/L	3557	Standard
Sr	88	58.3	13.1				ug/L	65	Standard
C	12	50.0	20.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	521.0	31.1				mg/L	13	Standard
Ho-1	165	276.7	4.2				mg/L	10	Standard
Er	166	256.7	18.0				mg/L	13	Standard
I	127	7405.1	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.559	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.006	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129702
Report Date/Time: Wednesday, July 06, 2016 17:25:51
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.831
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.827
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129702
Report Date/Time: Wednesday, July 06, 2016 17:25:51
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129703
Sample Date/Time: Wednesday, July 06, 2016 17:26:46
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52977.6	3.9				ug/L	68501	Standard
	Be	9	23.3	53.9	**0.0523**	0.017	32.0	ug/L	8	Standard
	Al	27	286352.9	1.9	**2.6464**	0.144	5.4	ug/L	1397	Standard
	Sc	45	39770.5	0.9				ug/L	38815	Standard
	Ti	47	84.7	11.6	**0.2173**	0.027	12.6	ug/L	36	Standard
	V	51	2934.4	1.9	**0.2613**	0.009	3.4	ug/L	1284	Standard
	Cr	52	6753.2	1.5	**0.0203**	0.012	59.4	ug/L	6503	Standard
	Cr	53	273.3	5.3	**-0.1087**	0.015	14.0	ug/L	492	Standard
	Mn	55	51194.3	0.4	**8.0434**	0.033	0.4	ug/L	841	Standard
	Co	59	633.0	5.9	**0.1075**	0.006	5.9	ug/L	229	Standard
	Ni	60	612.3	1.2	**0.1973**	0.007	3.6	ug/L	344	Standard
	Cu	65	360.0	4.6	**0.1959**	0.011	5.8	ug/L	115	Standard
	Zn	66	1592.1	2.9	**1.4225**	0.048	3.4	ug/L	190	Standard
>	**Ge**	72	421549.0	0.8				ug/L	409858	Standard
	As	75	16.0	110.0	**0.1138**	0.016	14.5	ug/L	-22	Standard
	Se	82	20.4	24.4	**0.1361**	0.045	33.3	ug/L	18	Standard
	Se-1	77	48.7	33.0	**-0.0726**	0.223	307.4	ug/L	50	Standard
>	**Ga**	71	180.0	2.8				mg/L	97	Standard
	Rb	85	1370.1	4.2				ug/L	25	Standard
	Y	89	356859.6	1.9				ug/L	376763	Standard
>	**Rh**	103	16.7	34.6				ug/L	20	Standard
	Mo	98	41.0	28.5	**0.0892**	0.005	5.8	ug/L	51	Standard
	Ag	107	61.7	14.2	**0.0333**	0.001	4.3	ug/L	76	Standard
	Cd	111	7.9	65.9	**0.0435**	0.003	6.2	mg/L	6	Standard
	Cd	114	13.8	66.1	**0.0403**	0.002	4.8	ug/L	18	Standard
>	**In**	115	489951.3	1.2				ug/L	507261	Standard
	Sn	118	230.0	17.0	**-0.0666**	0.007	10.4	ug/L	683	Standard
	Sb	123	297.8	34.1	**0.0515**	0.024	47.0	ug/L	446	Standard
	Ba	135	6056.2	1.2	**3.3108**	0.061	1.8	ug/L	28	Standard
	Ce	140	13239.1	4.5				ug/L	33	Standard
>	**Tb**	159	754124.2	0.9				ug/L	800803	Standard
	Ho	165	233.3	12.2				ug/L	10	Standard
	Tl	203	23.3	23.6	**0.0365**	0.001	2.0	ug/L	13	Standard
	Tl	205	23.3	32.7	**0.0462**	0.001	2.6	ug/L	13	Standard
	Pb	206	897.0	2.3	**0.1837**	0.002	1.3	ug/L	226	Standard
	Pb	207	712.0	3.3	**0.1630**	0.005	3.0	ug/L	204	Standard
	Pb	208	3193.5	2.8	**0.1841**	0.007	3.7	ug/L	852	Standard
	U	238	62.0	10.6	**0.0523**	0.001	2.0	ug/L	13	Standard
>	**Bi**	209	437276.0	1.1				ug/L	449044	Standard

Sample ID: L1606129703
Report Date/Time: Wednesday, July 06, 2016 17:29:03
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.0658**	15.326	23301.0	mg/L	2	Standard
Mg	24	45.0	33.3	**0.0212**	0.020	96.0	mg/L	58	Standard
K	39	33.3	37.7	**-0.0122**	0.049	398.1	mg/L	27	Standard
Ca	43	31.7	71.2	**0.9607**	1.582	164.7	mg/L	20	Standard
Fe	54	142.5	25.0	**-0.0039**	0.028	714.0	mg/L	158	Standard
Fe	57	326.7	9.8	**0.3869**	0.106	27.4	mg/L	267	Standard
> **Sc-1**	45	39770.5	0.9				mg/L	38815	Standard
Cl	35	68774.4	1.1				ug/L	57611	Standard
Kr	83	3.7	56.8				ug/L	2	Standard
Br	81	1646.8	11.9				ug/L	1617	Standard
P	31	7296.8	6.4				ug/L	19244	Standard
S	34	4085.6	2.8				ug/L	3557	Standard
Sr	88	73.3	43.8				ug/L	65	Standard
C	12	40.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	359.6	15.9				mg/L	13	Standard
Ho-1	165	233.3	12.2				mg/L	10	Standard
Er	166	216.7	41.6				mg/L	13	Standard
I	127	7513.5	3.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.338	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.852	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129703
Report Date/Time: Wednesday, July 06, 2016 17:29:03
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.588
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.379
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129703
Report Date/Time: Wednesday, July 06, 2016 17:29:03
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129704
Sample Date/Time: Wednesday, July 06, 2016 17:29:57
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53208.3	2.9				ug/L	68501	Standard
	Be	9	20.0	43.3	**0.0481**	0.013	26.7	ug/L	8	Standard
	Al	27	267589.1	1.1	**2.4624**	0.062	2.5	ug/L	1397	Standard
	Sc	45	38983.4	0.9				ug/L	38815	Standard
	Ti	47	86.3	13.4	**0.2222**	0.033	14.9	ug/L	36	Standard
	V	51	2971.7	1.5	**0.2666**	0.009	3.5	ug/L	1284	Standard
	Cr	52	6861.9	1.4	**0.0360**	0.021	57.2	ug/L	6503	Standard
	Cr	53	280.0	12.5	**-0.1010**	0.040	39.2	ug/L	492	Standard
	Mn	55	53663.9	0.6	**8.4379**	0.069	0.8	ug/L	841	Standard
	Co	59	633.0	1.9	**0.1075**	0.003	2.4	ug/L	229	Standard
	Ni	60	604.7	3.8	**0.1930**	0.015	7.6	ug/L	344	Standard
	Cu	65	1370.7	3.8	**0.7831**	0.024	3.0	ug/L	115	Standard
	Zn	66	1720.1	1.0	**1.5462**	0.005	0.3	ug/L	190	Standard
>	**Ge**	72	421463.7	0.8				ug/L	409858	Standard
	As	75	0.2	24746.5	**0.0992**	0.037	37.7	ug/L	-22	Standard
	Se	82	13.7	9.8	**0.0749**	0.012	16.5	ug/L	18	Standard
	Se-1	77	47.7	15.2	**-0.0857**	0.103	120.6	ug/L	50	Standard
>	**Ga**	71	165.0	10.9				mg/L	97	Standard
	Rb	85	1178.4	10.0				ug/L	25	Standard
	Y	89	361176.9	2.0				ug/L	376763	Standard
>	**Rh**	103	31.7	32.9				ug/L	20	Standard
	Mo	98	43.7	31.8	**0.0901**	0.006	6.7	ug/L	51	Standard
	Ag	107	67.7	0.9	**0.0342**	0.000	0.2	ug/L	76	Standard
	Cd	111	7.6	42.4	**0.0433**	0.002	3.8	mg/L	6	Standard
	Cd	114	24.9	40.0	**0.0426**	0.002	4.8	ug/L	18	Standard
>	**In**	115	496890.3	0.8				ug/L	507261	Standard
	Sn	118	191.7	25.7	**-0.0744**	0.009	12.2	ug/L	683	Standard
	Sb	123	273.9	35.3	**0.0449**	0.023	52.2	ug/L	446	Standard
	Ba	135	7247.4	1.8	**3.9038**	0.095	2.4	ug/L	28	Standard
	Ce	140	13307.5	2.3				ug/L	33	Standard
>	**Tb**	159	749231.7	0.8				ug/L	800803	Standard
	Ho	165	201.7	18.6				ug/L	10	Standard
	Tl	203	6.7	22.9	**0.0342**	0.000	0.6	ug/L	13	Standard
	Tl	205	10.0	50.0	**0.0441**	0.001	1.8	ug/L	13	Standard
	Pb	206	890.4	2.0	**0.1845**	0.003	1.6	ug/L	226	Standard
	Pb	207	785.4	5.0	**0.1821**	0.008	4.6	ug/L	204	Standard
	Pb	208	3319.8	2.1	**0.1937**	0.005	2.5	ug/L	852	Standard
	U	238	55.0	18.5	**0.0513**	0.002	3.1	ug/L	13	Standard
>	**Bi**	209	432108.8	0.5				ug/L	449044	Standard

Sample ID: L1606129704
Report Date/Time: Wednesday, July 06, 2016 17:32:14
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	28.9	**0.0020**	0.011	565.0	mg/L	58	Standard
K	39	33.3	8.7	**-0.0095**	0.013	132.2	mg/L	27	Standard
Ca	43	43.3	33.3	**1.8622**	1.056	56.7	mg/L	20	Standard
Fe	54	149.2	13.7	**0.0041**	0.017	410.4	mg/L	158	Standard
Fe	57	290.0	7.5	**0.2863**	0.075	26.2	mg/L	267	Standard
Sc-1	45	38983.4	0.9				mg/L	38815	Standard
Cl	35	68125.5	1.5				ug/L	57611	Standard
Kr	83	3.3	69.3				ug/L	2	Standard
Br	81	1650.1	13.3				ug/L	1617	Standard
P	31	6829.9	0.8				ug/L	19244	Standard
S	34	3992.2	2.3				ug/L	3557	Standard
Sr	88	71.7	49.0				ug/L	65	Standard
C	12	33.3	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	23	Standard
Dy	164	349.8	7.3				mg/L	13	Standard
Ho-1	165	201.7	18.6				mg/L	10	Standard
Er	166	213.3	15.1				mg/L	13	Standard
I	127	7331.8	5.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.675	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.832	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129704
Report Date/Time: Wednesday, July 06, 2016 17:32:14
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.956
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.229
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129705
Sample Date/Time: Wednesday, July 06, 2016 17:33:09
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52218.3	4.1				ug/L	68501	Standard
	Be	9	18.3	78.7	**0.0455**	0.020	42.9	ug/L	8	Standard
	Al	27	149022.9	2.3	**1.4135**	0.067	4.7	ug/L	1397	Standard
	Sc	45	38976.7	1.1				ug/L	38815	Standard
	Ti	47	70.7	9.6	**0.1786**	0.020	11.0	ug/L	36	Standard
	V	51	2061.2	2.6	**0.1432**	0.008	5.3	ug/L	1284	Standard
	Cr	52	6495.4	1.3	**-0.0080**	0.014	176.0	ug/L	6503	Standard
	Cr	53	245.0	15.4	**-0.1382**	0.044	31.6	ug/L	492	Standard
	Mn	55	28846.8	1.0	**4.5310**	0.050	1.1	ug/L	841	Standard
	Co	59	501.0	2.5	**0.0869**	0.002	2.6	ug/L	229	Standard
	Ni	60	539.7	1.9	**0.1579**	0.005	3.3	ug/L	344	Standard
	Cu	65	193.7	9.7	**0.1002**	0.011	10.8	ug/L	115	Standard
	Zn	66	1393.1	2.6	**1.2423**	0.034	2.7	ug/L	190	Standard
>	**Ge**	72	417845.3	0.3				ug/L	409858	Standard
	As	75	-2.6	310.6	**0.0964**	0.008	8.0	ug/L	-22	Standard
	Se	82	19.2	21.8	**0.1273**	0.039	30.3	ug/L	18	Standard
	Se-1	77	49.7	23.3	**-0.0512**	0.167	325.4	ug/L	50	Standard
>	**Ga**	71	116.7	28.5				mg/L	97	Standard
	Rb	85	655.0	8.8				ug/L	25	Standard
	Y	89	354001.3	0.9				ug/L	376763	Standard
>	**Rh**	103	11.7	137.8				ug/L	20	Standard
	Mo	98	34.3	48.2	**0.0864**	0.007	8.2	ug/L	51	Standard
	Ag	107	63.0	11.4	**0.0336**	0.001	3.7	ug/L	76	Standard
	Cd	111	4.3	26.6	**0.0416**	0.001	1.4	mg/L	6	Standard
	Cd	114	13.3	81.4	**0.0402**	0.002	5.8	ug/L	18	Standard
>	**In**	115	485890.6	0.5				ug/L	507261	Standard
	Sn	118	188.3	10.1	**-0.0742**	0.003	4.6	ug/L	683	Standard
	Sb	123	256.5	30.4	**0.0420**	0.019	44.8	ug/L	446	Standard
	Ba	135	1863.4	2.6	**1.0379**	0.025	2.4	ug/L	28	Standard
	Ce	140	6439.7	6.3				ug/L	33	Standard
>	**Tb**	159	741477.9	1.2				ug/L	800803	Standard
	Ho	165	126.7	14.9				ug/L	10	Standard
	Tl	203	7.7	27.2	**0.0344**	0.000	0.8	ug/L	13	Standard
	Tl	205	3.3	173.2	**0.0431**	0.001	2.1	ug/L	13	Standard
	Pb	206	453.0	6.6	**0.0915**	0.006	6.3	ug/L	226	Standard
	Pb	207	371.3	12.6	**0.0852**	0.011	13.3	ug/L	204	Standard
	Pb	208	1656.7	2.1	**0.0963**	0.003	2.6	ug/L	852	Standard
	U	238	22.0	35.5	**0.0461**	0.001	2.6	ug/L	13	Standard
>	**Bi**	209	433929.8	0.5				ug/L	449044	Standard

Sample ID: L1606129705
Report Date/Time: Wednesday, July 06, 2016 17:35:26
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	25.0	**0.0157**	0.014	90.0	mg/L	58	Standard
K	39	31.7	24.1	**-0.0163**	0.029	176.8	mg/L	27	Standard
Ca	43	23.3	44.6	**0.4103**	0.749	182.7	mg/L	20	Standard
Fe	54	135.9	5.4	**-0.0069**	0.007	104.0	mg/L	158	Standard
Fe	57	293.3	12.9	**0.2967**	0.118	39.6	mg/L	267	Standard
> **Sc-1**	45	38976.7	1.1				mg/L	38815	Standard
Cl	35	68355.2	0.1				ug/L	57611	Standard
Kr	83	3.0	115.5				ug/L	2	Standard
Br	81	1733.4	2.8				ug/L	1617	Standard
P	31	6756.5	5.8				ug/L	19244	Standard
S	34	3932.2	2.4				ug/L	3557	Standard
Sr	88	61.7	12.4				ug/L	65	Standard
C	12	33.3	69.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	212.0	14.5				mg/L	13	Standard
Ho-1	165	126.7	14.9				mg/L	10	Standard
Er	166	96.7	15.8				mg/L	13	Standard
I	127	7300.1	1.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.230	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.949	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129705
Report Date/Time: Wednesday, July 06, 2016 17:35:26
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.787
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.634
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129706
Sample Date/Time: Wednesday, July 06, 2016 17:36:20
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53041.1	3.6				ug/L	68501	Standard
	Be	9	13.3	114.6	**0.0381**	0.021	54.7	ug/L	8	Standard
	Al	27	347063.6	1.2	**3.1948**	0.126	4.0	ug/L	1397	Standard
	Sc	45	38433.7	1.1				ug/L	38815	Standard
	Ti	47	110.7	14.1	**0.2971**	0.045	15.1	ug/L	36	Standard
	V	51	3417.2	1.2	**0.3346**	0.008	2.5	ug/L	1284	Standard
	Cr	52	7571.6	1.1	**0.1508**	0.016	10.6	ug/L	6503	Standard
	Cr	53	368.3	9.6	**0.0050**	0.042	843.9	ug/L	492	Standard
	Mn	55	57046.2	0.1	**9.1002**	0.105	1.2	ug/L	841	Standard
	Co	59	1016.0	2.9	**0.1715**	0.006	3.6	ug/L	229	Standard
	Ni	60	913.4	2.1	**0.3792**	0.012	3.3	ug/L	344	Standard
	Cu	65	438.0	0.8	**0.2447**	0.003	1.1	ug/L	115	Standard
	Zn	66	2260.5	1.5	**2.0975**	0.023	1.1	ug/L	190	Standard
>	**Ge**	72	415785.3	1.3				ug/L	409858	Standard
	As	75	14.0	101.9	**0.1122**	0.013	12.0	ug/L	-22	Standard
	Se	82	15.4	23.0	**0.0925**	0.032	34.2	ug/L	18	Standard
	Se-1	77	54.3	4.3	**0.0192**	0.043	224.5	ug/L	50	Standard
>	**Ga**	71	248.3	18.2				mg/L	97	Standard
	Rb	85	2065.1	7.2				ug/L	25	Standard
	Y	89	358556.5	0.8				ug/L	376763	Standard
>	**Rh**	103	25.0	34.6				ug/L	20	Standard
	Mo	98	36.2	30.2	**0.0870**	0.005	5.4	ug/L	51	Standard
	Ag	107	65.3	10.2	**0.0339**	0.001	2.9	ug/L	76	Standard
	Cd	111	7.9	21.9	**0.0435**	0.001	2.0	mg/L	6	Standard
	Cd	114	31.5	18.6	**0.0440**	0.001	2.8	ug/L	18	Standard
>	**In**	115	493442.8	1.0				ug/L	507261	Standard
	Sn	118	191.7	8.0	**-0.0741**	0.003	3.6	ug/L	683	Standard
	Sb	123	249.1	35.2	**0.0392**	0.020	52.2	ug/L	446	Standard
	Ba	135	5603.4	2.9	**3.0428**	0.102	3.3	ug/L	28	Standard
	Ce	140	15599.7	2.1				ug/L	33	Standard
>	**Tb**	159	754515.5	0.5				ug/L	800803	Standard
	Ho	165	246.7	8.4				ug/L	10	Standard
	Tl	203	18.0	50.9	**0.0358**	0.001	3.5	ug/L	13	Standard
	Tl	205	16.7	34.6	**0.0451**	0.001	2.0	ug/L	13	Standard
	Pb	206	895.7	5.4	**0.1853**	0.010	5.5	ug/L	226	Standard
	Pb	207	758.4	5.5	**0.1754**	0.010	5.5	ug/L	204	Standard
	Pb	208	3314.1	2.3	**0.1929**	0.004	2.3	ug/L	852	Standard
	U	238	57.0	6.1	**0.0516**	0.001	1.0	ug/L	13	Standard
>	**Bi**	209	433029.8	0.1				ug/L	449044	Standard

Sample ID: L1606129706
Report Date/Time: Wednesday, July 06, 2016 17:38:37
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	45.8	**0.0139**	0.024	170.6	mg/L	58	Standard
K	39	25.0	34.6	**-0.0412**	0.035	84.9	mg/L	27	Standard
Ca	43	23.3	24.7	**0.4358**	0.423	97.0	mg/L	20	Standard
Fe	54	232.5	14.5	**0.0765**	0.031	40.0	mg/L	158	Standard
Fe	57	305.0	15.6	**0.3518**	0.173	49.1	mg/L	267	Standard
Sc-1	45	38433.7	1.1				mg/L	38815	Standard
Cl	35	68301.6	0.8				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1563.4	12.6				ug/L	1617	Standard
P	31	6891.6	2.4				ug/L	19244	Standard
S	34	4058.9	3.0				ug/L	3557	Standard
Sr	88	76.7	22.9				ug/L	65	Standard
C	12	50.0	87.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	43.3				mg/L	23	Standard
Dy	164	429.6	3.2				mg/L	13	Standard
Ho-1	165	246.7	8.4				mg/L	10	Standard
Er	166	216.7	43.9				mg/L	13	Standard
I	127	6868.2	5.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.431	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.446	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129706
Report Date/Time: Wednesday, July 06, 2016 17:38:37
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.276
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.434
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129706
Report Date/Time: Wednesday, July 06, 2016 17:38:37
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 17:39:34
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56184.0	1.5				ug/L	68501	Standard
	Be	9	42193.7	3.3	**56.7110**	2.227	3.9	ug/L	8	Standard
	Al	27	6758921.7	1.6	**58.0837**	1.381	2.4	ug/L	1397	Standard
	Sc	45	43373.7	1.8				ug/L	38815	Standard
	Ti	47	38978.7	1.6	**104.3602**	2.100	2.0	ug/L	36	Standard
	V	51	395536.0	0.9	**50.3846**	0.381	0.8	ug/L	1284	Standard
	Cr	52	403664.8	1.3	**51.7924**	0.179	0.3	ug/L	6503	Standard
	Cr	53	49393.7	0.7	**51.3707**	0.694	1.4	ug/L	492	Standard
	Mn	55	360638.8	1.5	**52.9155**	0.083	0.2	ug/L	841	Standard
	Co	59	340505.3	2.0	**50.7269**	0.441	0.9	ug/L	229	Standard
	Ni	60	97629.2	1.0	**52.1793**	0.372	0.7	ug/L	344	Standard
	Cu	65	97262.5	1.2	**52.2313**	0.507	1.0	ug/L	115	Standard
	Zn	66	57699.0	0.4	**51.3545**	0.692	1.3	ug/L	190	Standard
>	Ge	72	455947.2	1.7				ug/L	409858	Standard
	As	75	58327.6	1.2	**50.6820**	0.482	1.0	ug/L	-22	Standard
	Se	82	5895.0	1.3	**50.1103**	0.397	0.8	ug/L	18	Standard
	Se-1	77	4006.5	1.7	**51.5470**	0.957	1.9	ug/L	50	Standard
>	Ga	71	46.7	6.2				mg/L	97	Standard
	Rb	85	828.4	2.7				ug/L	25	Standard
	Y	89	382174.2	1.8				ug/L	376763	Standard
>	Rh	103	36.7	43.8				ug/L	20	Standard
	Mo	98	258222.6	0.8	**102.3410**	1.203	1.2	ug/L	51	Standard
	Ag	107	329212.7	1.1	**50.4028**	1.029	2.0	ug/L	76	Standard
	Cd	111	104910.2	1.3	**50.5299**	0.587	1.2	mg/L	6	Standard
	Cd	114	258679.1	1.2	**50.9671**	0.928	1.8	ug/L	18	Standard
>	In	115	531108.2	1.0				ug/L	507261	Standard
	Sn	118	291168.3	1.7	**50.6915**	0.534	1.1	ug/L	683	Standard
	Sb	123	228289.4	1.3	**50.8183**	0.854	1.7	ug/L	446	Standard
	Ba	135	99147.7	1.1	**49.7738**	0.251	0.5	ug/L	28	Standard
	Ce	140	468.3	31.0				ug/L	33	Standard
>	Tb	159	796348.2	1.9				ug/L	800803	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	393824.6	0.3	**51.5142**	0.264	0.5	ug/L	13	Standard
	Tl	205	351893.0	1.0	**53.1532**	0.636	1.2	ug/L	13	Standard
	Pb	206	246206.3	0.6	**50.1555**	0.275	0.5	ug/L	226	Standard
	Pb	207	224054.8	0.7	**50.2623**	0.350	0.7	ug/L	204	Standard
	Pb	208	951155.7	0.9	**53.3579**	0.526	1.0	ug/L	852	Standard
	U	238	334629.8	1.0	**50.6959**	0.518	1.0	ug/L	13	Standard
>	Bi	209	449162.8	0.3				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 17:41:51
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3925.5	6.4	**4.7180**	0.298	6.3	mg/L	58	Standard
K	39	1286.7	7.2	**4.4497**	0.350	7.9	mg/L	27	Standard
Ca	43	105.0	20.8	**5.5423**	1.295	23.4	mg/L	20	Standard
Fe	54	6872.9	4.1	**5.0279**	0.184	3.7	mg/L	158	Standard
Fe	57	2058.5	4.5	**5.4851**	0.346	6.3	mg/L	267	Standard
Sc-1	45	43373.7	1.8				mg/L	38815	Standard
Cl	35	75336.2	1.2				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1873.4	7.7				ug/L	1617	Standard
P	31	23039.2	2.9				ug/L	19244	Standard
S	34	4664.1	1.7				ug/L	3557	Standard
Sr	88	71.7	10.7				ug/L	65	Standard
C	12	43.3	26.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	57.7				mg/L	23	Standard
Dy	164	19.4	52.9				mg/L	13	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	9819.8	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	113.422		
Al	27	116.167		
Sc	45			
Ti	47	104.360		
V	51	100.769		
Cr	52	103.585		
Cr	53			
Mn	55	105.831		
Co	59	101.454		
Ni	60	104.359		
Cu	65	104.463		
Zn	66	102.709		
Ge	72		111.245	
As	75	101.364		
Se	82	100.221		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 17:41:51
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	102.341		
Ag	107	100.806		
Cd	111	101.060		
Cd	114			
In	115		104.701	
Sn	118	101.383		
Sb	123	101.637		
Ba	135	99.548		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.028		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.716		
U	238	101.392		
Bi	209		100.026	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 17:41:51
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 17:42:45
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56496.8	1.6				ug/L	68501	Standard
	Be	9	30.0	33.3	**0.0595**	0.013	22.5	ug/L	8	Standard
	Al	27	2731.9	35.8	**0.0583**	0.008	13.6	ug/L	1397	Standard
	Sc	45	43056.1	0.8				ug/L	38815	Standard
	Ti	47	37.3	11.2	**0.0731**	0.011	14.7	ug/L	36	Standard
	V	51	1366.4	11.2	**0.0320**	0.018	57.7	ug/L	1284	Standard
	Cr	52	7206.4	0.8	**0.0165**	0.004	24.9	ug/L	6503	Standard
	Cr	53	368.3	21.1	**-0.0286**	0.083	288.7	ug/L	492	Standard
	Mn	55	773.7	9.9	**0.0188**	0.010	55.7	ug/L	841	Standard
	Co	59	257.7	14.0	**0.0442**	0.005	11.6	ug/L	229	Standard
	Ni	60	301.3	5.7	**0.0053**	0.008	154.5	ug/L	344	Standard
	Cu	65	113.7	8.1	**0.0484**	0.005	10.4	ug/L	115	Standard
	Zn	66	152.3	7.9	**0.0237**	0.010	43.4	ug/L	190	Standard
>	**Ge**	72	451631.1	0.7				ug/L	409858	Standard
	As	75	-25.4	107.4	**0.0766**	0.024	31.2	ug/L	-22	Standard
	Se	82	21.4	50.9	**0.1323**	0.094	70.7	ug/L	18	Standard
	Se-1	77	52.0	6.9	**-0.0734**	0.052	71.2	ug/L	50	Standard
>	**Ga**	71	55.0	55.3				mg/L	97	Standard
	Rb	85	26.7	71.0				ug/L	25	Standard
	Y	89	391397.9	1.1				ug/L	376763	Standard
>	**Rh**	103	21.7	26.6				ug/L	20	Standard
	Mo	98	187.7	19.7	**0.1465**	0.015	10.1	ug/L	51	Standard
	Ag	107	145.3	17.2	**0.0455**	0.004	8.7	ug/L	76	Standard
	Cd	111	26.0	68.7	**0.0520**	0.009	16.8	mg/L	6	Standard
	Cd	114	76.7	36.2	**0.0526**	0.006	10.6	ug/L	18	Standard
>	**In**	115	527013.5	0.4				ug/L	507261	Standard
	Sn	118	870.0	8.1	**0.0429**	0.012	27.7	ug/L	683	Standard
	Sb	123	613.8	28.1	**0.1173**	0.038	32.6	ug/L	446	Standard
	Ba	135	45.3	19.0	**0.0387**	0.004	11.5	ug/L	28	Standard
	Ce	140	195.0	30.8				ug/L	33	Standard
>	**Tb**	159	800215.4	0.9				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	88.7	35.2	**0.0448**	0.004	8.8	ug/L	13	Standard
	Tl	205	81.7	78.7	**0.0547**	0.009	17.3	ug/L	13	Standard
	Pb	206	256.3	10.8	**0.0475**	0.005	10.8	ug/L	226	Standard
	Pb	207	223.0	12.5	**0.0483**	0.006	11.9	ug/L	204	Standard
	Pb	208	989.0	13.1	**0.0548**	0.007	12.3	ug/L	852	Standard
	U	238	68.3	61.3	**0.0528**	0.006	11.7	ug/L	13	Standard
>	**Bi**	209	454884.7	0.8				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 17:45:02
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	63.3	37.3	**0.0388**	0.028	72.5	mg/L	58	Standard
K	39	23.3	44.6	**-0.0579**	0.038	65.5	mg/L	27	Standard
Ca	43	15.0	66.7	**-0.2912**	0.662	227.5	mg/L	20	Standard
Fe	54	129.2	8.0	**-0.0227**	0.007	31.7	mg/L	158	Standard
Fe	57	245.0	9.4	**0.0588**	0.063	107.5	mg/L	267	Standard
Sc-1	45	43056.1	0.8				mg/L	38815	Standard
Cl	35	74182.5	1.6				ug/L	57611	Standard
Kr	83	3.7	41.7				ug/L	2	Standard
Br	81	2006.8	7.6				ug/L	1617	Standard
P	31	22273.0	1.7				ug/L	19244	Standard
S	34	4494.0	2.4				ug/L	3557	Standard
Sr	88	88.3	14.2				ug/L	65	Standard
C	12	43.3	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	16.2	74.0				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	13	Standard
I	127	7897.1	3.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.192	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 17:45:02
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.894
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.301
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 17:45:02
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129706PS WG574306-03
Sample Date/Time: Wednesday, July 06, 2016 17:45:59
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52061.0	2.5				ug/L	68501	Standard
	Be	9	39322.6	1.8	**57.0313**	0.436	0.8	ug/L	8	Standard
	Al	27	346882.7	0.8	**3.2506**	0.058	1.8	ug/L	1397	Standard
	Sc	45	38510.6	2.1				ug/L	38815	Standard
	Ti	47	121.3	8.1	**0.3306**	0.030	9.1	ug/L	36	Standard
	V	51	352822.0	0.3	**49.5734**	0.278	0.6	ug/L	1284	Standard
	Cr	52	363360.0	0.0	**51.4224**	0.353	0.7	ug/L	6503	Standard
	Cr	53	45331.1	2.6	**52.0070**	1.381	2.7	ug/L	492	Standard
	Mn	55	374762.9	0.5	**60.6733**	0.366	0.6	ug/L	841	Standard
	Co	59	297322.9	0.4	**48.8649**	0.481	1.0	ug/L	229	Standard
	Ni	60	88030.0	0.4	**51.8970**	0.116	0.2	ug/L	344	Standard
	Cu	65	89235.3	0.1	**52.8603**	0.282	0.5	ug/L	115	Standard
	Zn	66	60863.7	0.8	**59.7714**	0.851	1.4	ug/L	190	Standard
>	Ge	72	413319.4	0.6				ug/L	409858	Standard
	As	75	56179.5	0.5	**53.8413**	0.457	0.8	ug/L	-22	Standard
	Se	82	6037.9	1.1	**56.6258**	0.899	1.6	ug/L	18	Standard
	Se-1	77	4065.5	1.4	**57.7863**	0.843	1.5	ug/L	50	Standard
>	Ga	71	251.7	12.0				mg/L	97	Standard
	Rb	85	2095.1	9.1				ug/L	25	Standard
	Y	89	352123.4	1.2				ug/L	376763	Standard
>	Rh	103	28.3	20.4				ug/L	20	Standard
	Mo	98	95.7	30.9	**0.1128**	0.013	11.3	ug/L	51	Standard
	Ag	107	302025.2	0.4	**50.3381**	0.232	0.5	ug/L	76	Standard
	Cd	111	100050.8	1.2	**52.4626**	0.368	0.7	mg/L	6	Standard
	Cd	114	244946.2	1.7	**52.5392**	0.964	1.8	ug/L	18	Standard
>	In	115	487818.7	0.7				ug/L	507261	Standard
	Sn	118	375.0	20.8	**-0.0389**	0.014	36.6	ug/L	683	Standard
	Sb	123	169126.9	9.0	**40.9955**	3.876	9.5	ug/L	446	Standard
	Ba	135	96142.1	0.9	**52.5481**	0.525	1.0	ug/L	28	Standard
	Ce	140	16108.6	1.5				ug/L	33	Standard
>	Tb	159	748604.8	0.6				ug/L	800803	Standard
	Ho	165	316.7	22.1				ug/L	10	Standard
	Tl	203	370203.1	1.1	**50.1188**	0.294	0.6	ug/L	13	Standard
	Tl	205	328523.9	1.5	**51.3627**	0.905	1.8	ug/L	13	Standard
	Pb	206	239461.5	0.5	**50.4918**	0.662	1.3	ug/L	226	Standard
	Pb	207	209364.6	0.7	**48.6110**	0.316	0.6	ug/L	204	Standard
	Pb	208	876451.2	0.8	**50.8881**	0.419	0.8	ug/L	852	Standard
	U	238	298587.8	0.7	**46.8254**	0.729	1.6	ug/L	13	Standard
>	Bi	209	433980.1	0.9				ug/L	449044	Standard

Sample ID: L1606129706PS WG574306-03
Report Date/Time: Wednesday, July 06, 2016 17:48:15
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.5802**	16.217	2794.9	mg/L	2	Standard
Mg	24	35.0	51.5	**0.0091**	0.024	262.2	mg/L	58	Standard
K	39	45.0	33.3	**0.0382**	0.056	148.0	mg/L	27	Standard
Ca	43	38.3	30.1	**1.5431**	0.889	57.6	mg/L	20	Standard
Fe	54	291.6	10.8	**0.1255**	0.022	17.4	mg/L	158	Standard
Fe	57	300.0	13.2	**0.3303**	0.113	34.2	mg/L	267	Standard
Sc-1	45	38510.6	2.1				mg/L	38815	Standard
Cl	35	65285.7	1.5				ug/L	57611	Standard
Kr	83	4.0	25.0				ug/L	2	Standard
Br	81	1633.4	20.9				ug/L	1617	Standard
P	31	7273.4	2.6				ug/L	19244	Standard
S	34	4210.6	2.8				ug/L	3557	Standard
Sr	88	91.7	25.8				ug/L	65	Standard
C	12	33.3	69.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	23	Standard
Dy	164	472.9	17.3				mg/L	13	Standard
Ho-1	165	316.7	22.1				mg/L	10	Standard
Er	166	286.7	16.5				mg/L	13	Standard
I	127	6766.5	5.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		76.000	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.845	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129706PS WG574306-03
Report Date/Time: Wednesday, July 06, 2016 17:48:15
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.167
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.645
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129706SDL WG574306-04
Sample Date/Time: Wednesday, July 06, 2016 17:49:10
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51079.4	3.4				ug/L	68501	Standard
	Be	9	31.7	39.7	**0.0660**	0.017	25.9	ug/L	8	Standard
	Al	27	69767.0	1.7	**0.6945**	0.024	3.4	ug/L	1397	Standard
	Sc	45	38154.7	3.2				ug/L	38815	Standard
	Ti	47	41.3	10.1	**0.0953**	0.013	13.3	ug/L	36	Standard
	V	51	1741.8	2.9	**0.1034**	0.007	6.6	ug/L	1284	Standard
	Cr	52	5536.7	1.4	**-0.1292**	0.008	6.3	ug/L	6503	Standard
	Cr	53	206.7	14.8	**-0.1774**	0.037	20.7	ug/L	492	Standard
	Mn	55	11490.7	2.8	**1.7831**	0.047	2.7	ug/L	841	Standard
	Co	59	425.0	3.3	**0.0759**	0.002	2.7	ug/L	229	Standard
	Ni	60	431.7	6.7	**0.0997**	0.016	16.5	ug/L	344	Standard
	Cu	65	174.3	11.2	**0.0909**	0.011	12.5	ug/L	115	Standard
	Zn	66	890.4	7.9	**0.7699**	0.066	8.6	ug/L	190	Standard
>	**Ge**	72	409835.0	0.5				ug/L	409858	Standard
	As	75	-30.4	24.5	**0.0696**	0.007	10.1	ug/L	-22	Standard
	Se	82	18.9	10.9	**0.1272**	0.019	14.6	ug/L	18	Standard
	Se-1	77	53.0	16.8	**0.0104**	0.126	1205.9	ug/L	50	Standard
>	**Ga**	71	66.7	45.8				mg/L	97	Standard
	Rb	85	433.3	9.3				ug/L	25	Standard
	Y	89	346927.3	1.3				ug/L	376763	Standard
>	**Rh**	103	11.7	49.5				ug/L	20	Standard
	Mo	98	94.2	43.0	**0.1127**	0.017	15.4	ug/L	51	Standard
	Ag	107	153.7	12.9	**0.0491**	0.003	7.1	ug/L	76	Standard
	Cd	111	33.5	14.8	**0.0572**	0.002	4.3	mg/L	6	Standard
	Cd	114	58.8	25.2	**0.0502**	0.003	6.3	ug/L	18	Standard
>	**In**	115	479890.1	1.0				ug/L	507261	Standard
	Sn	118	170.0	10.6	**-0.0773**	0.003	4.3	ug/L	683	Standard
	Sb	123	3081.4	22.4	**0.7379**	0.163	22.1	ug/L	446	Standard
	Ba	135	1088.4	1.0	**0.6203**	0.005	0.8	ug/L	28	Standard
	Ce	140	1321.7	27.0				ug/L	33	Standard
>	**Tb**	159	738085.9	0.9				ug/L	800803	Standard
	Ho	165	26.7	39.0				ug/L	10	Standard
	Tl	203	221.3	14.1	**0.0633**	0.004	6.7	ug/L	13	Standard
	Tl	205	156.7	43.3	**0.0670**	0.011	15.8	ug/L	13	Standard
	Pb	206	350.0	3.9	**0.0698**	0.003	4.2	ug/L	226	Standard
	Pb	207	313.7	4.7	**0.0718**	0.003	4.7	ug/L	204	Standard
	Pb	208	1331.7	5.9	**0.0774**	0.005	6.0	ug/L	852	Standard
	U	238	140.0	38.9	**0.0646**	0.009	13.3	ug/L	13	Standard
>	**Bi**	209	433783.9	0.1				ug/L	449044	Standard

Sample ID: L1606129706SDL WG574306-04
Report Date/Time: Wednesday, July 06, 2016 17:51:27
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	12.5	**0.0167**	0.006	38.2	mg/L	58	Standard
K	39	35.0	14.3	**0.0005**	0.024	5012.0	mg/L	27	Standard
Ca	43	15.0	120.2	**-0.1387**	1.386	999.3	mg/L	20	Standard
Fe	54	70.8	18.4	**-0.0600**	0.010	17.1	mg/L	158	Standard
Fe	57	256.7	14.4	**0.1917**	0.099	51.9	mg/L	267	Standard
> **Sc-1**	45	38154.7	3.2				mg/L	38815	Standard
Cl	35	65026.6	1.2				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1630.1	9.5				ug/L	1617	Standard
P	31	6834.9	2.7				ug/L	19244	Standard
S	34	4033.9	3.6				ug/L	3557	Standard
Sr	88	63.3	4.6				ug/L	65	Standard
C	12	43.3	48.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	23	Standard
Dy	164	60.9	17.6				mg/L	13	Standard
Ho-1	165	26.7	39.0				mg/L	10	Standard
Er	166	50.0	40.0				mg/L	13	Standard
I	127	7083.3	2.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.567	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.994	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129706SDL WG574306-04
Report Date/Time: Wednesday, July 06, 2016 17:51:27
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.604
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.602
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129706SDL WG574306-04
Report Date/Time: Wednesday, July 06, 2016 17:51:27
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129707 WG574306-01
Sample Date/Time: Wednesday, July 06, 2016 17:52:22
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51248.2	2.7				ug/L	68501	Standard
	Be	9	23.3	89.2	**0.0533**	0.030	56.3	ug/L	8	Standard
	Al	27	111147.5	7.0	**1.0806**	0.044	4.1	ug/L	1397	Standard
	Sc	45	38983.5	3.6				ug/L	38815	Standard
	Ti	47	82.7	39.8	**0.2157**	0.100	46.2	ug/L	36	Standard
	V	51	3332.5	0.9	**0.3229**	0.010	3.0	ug/L	1284	Standard
	Cr	52	6723.5	1.3	**0.0297**	0.023	76.2	ug/L	6503	Standard
	Cr	53	306.7	17.6	**-0.0659**	0.063	95.1	ug/L	492	Standard
	Mn	55	63863.7	1.1	**10.2010**	0.042	0.4	ug/L	841	Standard
	Co	59	882.0	4.7	**0.1496**	0.008	5.0	ug/L	229	Standard
	Ni	60	685.7	6.3	**0.2455**	0.028	11.5	ug/L	344	Standard
	Cu	65	1373.7	4.0	**0.7963**	0.041	5.1	ug/L	115	Standard
	Zn	66	3122.3	2.6	**2.9407**	0.042	1.4	ug/L	190	Standard
>	**Ge**	72	415681.5	1.2				ug/L	409858	Standard
	As	75	58.1	52.9	**0.1541**	0.029	18.8	ug/L	-22	Standard
	Se	82	16.9	11.8	**0.1058**	0.017	15.9	ug/L	18	Standard
	Se-1	77	56.7	10.3	**0.0523**	0.082	156.6	ug/L	50	Standard
>	**Ga**	71	146.7	7.9				mg/L	97	Standard
	Rb	85	1408.4	7.1				ug/L	25	Standard
	Y	89	353972.1	0.5				ug/L	376763	Standard
>	**Rh**	103	18.3	41.7				ug/L	20	Standard
	Mo	98	33.9	22.9	**0.0862**	0.004	4.1	ug/L	51	Standard
	Ag	107	107.3	11.7	**0.0409**	0.002	4.7	ug/L	76	Standard
	Cd	111	26.3	31.1	**0.0531**	0.004	7.8	mg/L	6	Standard
	Cd	114	65.6	39.2	**0.0514**	0.005	10.4	ug/L	18	Standard
>	**In**	115	488687.7	1.4				ug/L	507261	Standard
	Sn	118	226.7	19.0	**-0.0671**	0.008	12.4	ug/L	683	Standard
	Sb	123	1265.3	27.9	**0.2867**	0.089	31.2	ug/L	446	Standard
	Ba	135	7176.7	1.4	**3.9306**	0.084	2.1	ug/L	28	Standard
	Ce	140	15084.2	4.7				ug/L	33	Standard
>	**Tb**	159	743253.1	1.0				ug/L	800803	Standard
	Ho	165	210.0	6.3				ug/L	10	Standard
	Tl	203	75.0	26.3	**0.0436**	0.003	6.2	ug/L	13	Standard
	Tl	205	78.3	16.1	**0.0549**	0.002	3.7	ug/L	13	Standard
	Pb	206	3721.1	3.6	**0.7888**	0.029	3.7	ug/L	226	Standard
	Pb	207	3091.0	2.2	**0.7241**	0.015	2.1	ug/L	204	Standard
	Pb	208	13585.7	0.7	**0.7971**	0.007	0.9	ug/L	852	Standard
	U	238	98.0	3.7	**0.0581**	0.001	0.9	ug/L	13	Standard
>	**Bi**	209	429509.1	0.3				ug/L	449044	Standard

Sample ID: L1606129707 WG574306-01
Report Date/Time: Wednesday, July 06, 2016 17:54:38
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.6077**	16.264	2676.3	mg/L	2	Standard
Mg	24	46.7	16.4	**0.0248**	0.013	50.9	mg/L	58	Standard
K	39	26.7	78.1	**-0.0373**	0.078	209.9	mg/L	27	Standard
Ca	43	31.7	50.8	**0.9958**	1.079	108.3	mg/L	20	Standard
Fe	54	169.2	19.3	**0.0214**	0.030	140.6	mg/L	158	Standard
Fe	57	311.7	19.4	**0.3547**	0.164	46.2	mg/L	267	Standard
> **Sc-1**	45	38983.5	3.6				mg/L	38815	Standard
Cl	35	65585.6	0.8				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1850.1	11.7				ug/L	1617	Standard
P	31	6584.8	4.1				ug/L	19244	Standard
S	34	3993.9	4.2				ug/L	3557	Standard
Sr	88	60.0	38.2				ug/L	65	Standard
C	12	63.3	50.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	407.2	18.9				mg/L	13	Standard
Ho-1	165	210.0	6.3				mg/L	10	Standard
Er	166	266.7	14.2				mg/L	13	Standard
I	127	6713.2	3.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.421	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129707 WG574306-01
Report Date/Time: Wednesday, July 06, 2016 17:54:38
Page 2

Approved: July 07, 2016

Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	96.339
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	95.650
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129708S WG574306-04
Sample Date/Time: Wednesday, July 06, 2016 17:55:33
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51191.4	2.1				ug/L	68501	Standard
	Be	9	456.7	14.9	**0.6931**	0.104	14.9	ug/L	8	Standard
	Al	27	368531.9	1.3	**3.5098**	0.114	3.2	ug/L	1397	Standard
	Sc	45	38654.3	2.0				ug/L	38815	Standard
	Ti	47	150.0	13.3	**0.4155**	0.059	14.1	ug/L	36	Standard
	V	51	8279.9	2.7	**1.0233**	0.024	2.3	ug/L	1284	Standard
	Cr	52	11886.0	0.7	**0.7800**	0.019	2.4	ug/L	6503	Standard
	Cr	53	971.7	9.1	**0.7058**	0.100	14.2	ug/L	492	Standard
	Mn	55	116648.0	0.9	**18.8323**	0.300	1.6	ug/L	841	Standard
	Co	59	4758.4	1.0	**0.7880**	0.011	1.5	ug/L	229	Standard
	Ni	60	2198.5	3.1	**1.1434**	0.051	4.4	ug/L	344	Standard
	Cu	65	1677.8	2.9	**0.9813**	0.022	2.2	ug/L	115	Standard
	Zn	66	3428.7	2.7	**3.2624**	0.100	3.1	ug/L	190	Standard
>	**Ge**	72	413053.1	0.8				ug/L	409858	Standard
	As	75	557.0	5.7	**0.6320**	0.027	4.2	ug/L	-22	Standard
	Se	82	59.8	8.9	**0.5102**	0.047	9.1	ug/L	18	Standard
	Se-1	77	79.3	14.3	**0.3834**	0.155	40.3	ug/L	50	Standard
>	**Ga**	71	475.0	14.8				mg/L	97	Standard
	Rb	85	4023.9	0.7				ug/L	25	Standard
	Y	89	354538.7	1.1				ug/L	376763	Standard
>	**Rh**	103	16.7	34.6				ug/L	20	Standard
	Mo	98	38.8	30.7	**0.0883**	0.005	6.1	ug/L	51	Standard
	Ag	107	3068.3	0.7	**0.5322**	0.005	1.0	ug/L	76	Standard
	Cd	111	1011.0	4.4	**0.5671**	0.029	5.1	mg/L	6	Standard
	Cd	114	2379.9	1.4	**0.5454**	0.011	2.0	ug/L	18	Standard
>	**In**	115	489876.3	1.6				ug/L	507261	Standard
	Sn	118	198.3	31.3	**-0.0724**	0.012	17.2	ug/L	683	Standard
	Sb	123	1135.1	32.9	**0.2543**	0.093	36.6	ug/L	446	Standard
	Ba	135	10341.9	0.8	**5.6440**	0.127	2.3	ug/L	28	Standard
	Ce	140	25015.6	2.1				ug/L	33	Standard
>	**Tb**	159	748391.4	0.7				ug/L	800803	Standard
	Ho	165	353.3	14.3				ug/L	10	Standard
	Tl	203	3619.4	1.4	**0.5242**	0.010	1.8	ug/L	13	Standard
	Tl	205	3225.3	2.9	**0.5476**	0.017	3.2	ug/L	13	Standard
	Pb	206	4699.4	4.3	**0.9890**	0.036	3.7	ug/L	226	Standard
	Pb	207	3997.5	2.3	**0.9292**	0.017	1.9	ug/L	204	Standard
	Pb	208	17494.3	1.6	**1.0181**	0.011	1.1	ug/L	852	Standard
	U	238	3047.3	0.6	**0.5211**	0.002	0.4	ug/L	13	Standard
>	**Bi**	209	432971.0	0.6				ug/L	449044	Standard

Sample ID: L1606129708S WG574306-04
Report Date/Time: Wednesday, July 06, 2016 17:57:50
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.4512**	15.993	3544.3	mg/L	2	Standard
Mg	24	48.3	39.2	**0.0276**	0.027	96.6	mg/L	58	Standard
K	39	61.7	41.6	**0.1038**	0.097	93.7	mg/L	27	Standard
Ca	43	36.7	15.7	**1.3979**	0.400	28.6	mg/L	20	Standard
Fe	54	485.5	18.9	**0.2870**	0.069	23.9	mg/L	158	Standard
Fe	57	386.7	11.0	**0.6194**	0.147	23.7	mg/L	267	Standard
Sc-1	45	38654.3	2.0				mg/L	38815	Standard
Cl	35	66229.1	0.6				ug/L	57611	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1640.1	1.1				ug/L	1617	Standard
P	31	7413.5	5.4				ug/L	19244	Standard
S	34	4038.9	0.8				ug/L	3557	Standard
Sr	88	83.3	9.2				ug/L	65	Standard
C	12	26.7	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	99.0				mg/L	23	Standard
Dy	164	691.3	10.8				mg/L	13	Standard
Ho-1	165	353.3	14.3				mg/L	10	Standard
Er	166	390.0	13.6				mg/L	13	Standard
I	127	6844.9	3.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		74.731	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.780	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606129708S WG574306-04
Report Date/Time: Wednesday, July 06, 2016 17:57:50
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.573
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.421
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129708S WG574306-04
Report Date/Time: Wednesday, July 06, 2016 17:57:50
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129709SD WG574306-05
Sample Date/Time: Wednesday, July 06, 2016 17:58:44
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50474.0	3.7				ug/L	68501	Standard
	Be	9	410.0	12.7	**0.6334**	0.085	13.4	ug/L	8	Standard
	Al	27	110523.8	4.2	**1.0928**	0.068	6.2	ug/L	1397	Standard
	Sc	45	38594.1	2.2				ug/L	38815	Standard
	Ti	47	104.0	5.4	**0.2765**	0.018	6.6	ug/L	36	Standard
	V	51	6697.0	1.6	**0.7904**	0.016	2.1	ug/L	1284	Standard
	Cr	52	9874.2	1.2	**0.4752**	0.026	5.4	ug/L	6503	Standard
	Cr	53	716.7	5.9	**0.4021**	0.047	11.6	ug/L	492	Standard
	Mn	55	32613.7	2.7	**5.1415**	0.174	3.4	ug/L	841	Standard
	Co	59	3776.8	1.7	**0.6201**	0.014	2.3	ug/L	229	Standard
	Ni	60	1462.1	1.1	**0.6984**	0.005	0.8	ug/L	344	Standard
	Cu	65	1586.7	1.5	**0.9177**	0.017	1.8	ug/L	115	Standard
	Zn	66	2979.0	1.6	**2.7891**	0.060	2.2	ug/L	190	Standard
>	**Ge**	72	417395.3	0.7				ug/L	409858	Standard
	As	75	608.0	6.0	**0.6750**	0.037	5.5	ug/L	-22	Standard
	Se	82	67.3	11.2	**0.5741**	0.074	12.9	ug/L	18	Standard
	Se-1	77	82.7	9.8	**0.4197**	0.112	26.7	ug/L	50	Standard
>	**Ga**	71	180.0	12.1				mg/L	97	Standard
	Rb	85	1421.7	5.1				ug/L	25	Standard
	Y	89	354281.1	1.0				ug/L	376763	Standard
>	**Rh**	103	13.3	43.3				ug/L	20	Standard
	Mo	98	40.9	50.3	**0.0891**	0.009	9.8	ug/L	51	Standard
	Ag	107	3037.6	5.9	**0.5279**	0.026	4.9	ug/L	76	Standard
	Cd	111	1061.0	6.0	**0.5939**	0.029	4.8	mg/L	6	Standard
	Cd	114	2592.4	5.7	**0.5917**	0.027	4.6	ug/L	18	Standard
>	**In**	115	488883.1	0.9				ug/L	507261	Standard
	Sn	118	291.7	30.7	**-0.0549**	0.017	30.3	ug/L	683	Standard
	Sb	123	1181.2	24.2	**0.2650**	0.067	25.2	ug/L	446	Standard
	Ba	135	5083.9	4.4	**2.7871**	0.107	3.8	ug/L	28	Standard
	Ce	140	14129.9	2.8				ug/L	33	Standard
>	**Tb**	159	743713.8	1.2				ug/L	800803	Standard
	Ho	165	243.3	11.3				ug/L	10	Standard
	Tl	203	3550.1	4.9	**0.5153**	0.021	4.0	ug/L	13	Standard
	Tl	205	3118.7	2.7	**0.5315**	0.016	3.1	ug/L	13	Standard
	Pb	206	4004.2	1.4	**0.8433**	0.006	0.7	ug/L	226	Standard
	Pb	207	3411.7	1.3	**0.7940**	0.016	2.0	ug/L	204	Standard
	Pb	208	14769.9	0.5	**0.8607**	0.008	0.9	ug/L	852	Standard
	U	238	2870.9	1.4	**0.4941**	0.010	2.0	ug/L	13	Standard
>	**Bi**	209	432422.4	0.8				ug/L	449044	Standard

Sample ID: L1606129709SD WG574306-05
Report Date/Time: Wednesday, July 06, 2016 18:01:01
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.5319**	16.133	3033.1	mg/L	2	Standard
Mg	24	38.3	19.9	**0.0138**	0.010	71.2	mg/L	58	Standard
K	39	35.0	57.1	**-0.0026**	0.077	2940.7	mg/L	27	Standard
Ca	43	30.0	50.0	**0.9064**	1.056	116.5	mg/L	20	Standard
Fe	54	176.0	9.1	**0.0280**	0.015	53.5	mg/L	158	Standard
Fe	57	306.7	10.5	**0.3522**	0.110	31.3	mg/L	267	Standard
> **Sc-1**	45	38594.1	2.2				mg/L	38815	Standard
Cl	35	65870.2	1.0				ug/L	57611	Standard
Kr	83	3.7	41.7				ug/L	2	Standard
Br	81	1676.8	6.4				ug/L	1617	Standard
P	31	6811.5	4.4				ug/L	19244	Standard
S	34	3892.2	5.0				ug/L	3557	Standard
Sr	88	63.3	35.6				ug/L	65	Standard
C	12	40.0	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	23	Standard
Dy	164	400.9	15.7				mg/L	13	Standard
Ho-1	165	243.3	11.3				mg/L	10	Standard
Er	166	190.0	32.0				mg/L	13	Standard
I	127	6444.7	3.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		73.683	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.839	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129709SD WG574306-05
Report Date/Time: Wednesday, July 06, 2016 18:01:01
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.377
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.298
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129709SD WG574306-05
Report Date/Time: Wednesday, July 06, 2016 18:01:01
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129710
Sample Date/Time: Wednesday, July 06, 2016 18:01:56
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50694.8	5.0				ug/L	68501	Standard
	Be	9	23.3	44.6	**0.0544**	0.017	30.4	ug/L	8	Standard
	Al	27	211106.2	2.8	**2.0456**	0.049	2.4	ug/L	1397	Standard
	Sc	45	38264.9	1.5				ug/L	38815	Standard
	Ti	47	83.7	9.1	**0.2178**	0.022	10.1	ug/L	36	Standard
	V	51	2417.0	1.9	**0.1944**	0.007	3.8	ug/L	1284	Standard
	Cr	52	6348.3	0.6	**-0.0247**	0.006	22.6	ug/L	6503	Standard
	Cr	53	258.3	17.5	**-0.1216**	0.053	43.2	ug/L	492	Standard
	Mn	55	63628.7	0.8	**10.1580**	0.084	0.8	ug/L	841	Standard
	Co	59	574.3	2.6	**0.0993**	0.002	2.3	ug/L	229	Standard
	Ni	60	527.7	5.4	**0.1523**	0.016	10.8	ug/L	344	Standard
	Cu	65	252.3	5.2	**0.1353**	0.008	6.0	ug/L	115	Standard
	Zn	66	1691.8	2.2	**1.5409**	0.039	2.5	ug/L	190	Standard
>	**Ge**	72	415881.7	0.3				ug/L	409858	Standard
	As	75	-24.7	122.3	**0.0754**	0.029	38.2	ug/L	-22	Standard
	Se	82	17.5	32.4	**0.1117**	0.053	47.4	ug/L	18	Standard
	Se-1	77	56.7	18.9	**0.0522**	0.155	295.9	ug/L	50	Standard
>	**Ga**	71	123.3	10.2				mg/L	97	Standard
	Rb	85	903.4	10.2				ug/L	25	Standard
	Y	89	349426.8	0.6				ug/L	376763	Standard
>	**Rh**	103	15.0	57.7				ug/L	20	Standard
	Mo	98	37.0	15.6	**0.0875**	0.002	2.8	ug/L	51	Standard
	Ag	107	85.3	14.5	**0.0373**	0.002	5.5	ug/L	76	Standard
	Cd	111	9.9	46.2	**0.0446**	0.002	5.4	mg/L	6	Standard
	Cd	114	20.2	56.9	**0.0417**	0.002	5.9	ug/L	18	Standard
>	**In**	115	488396.8	0.4				ug/L	507261	Standard
	Sn	118	241.7	16.7	**-0.0643**	0.008	11.8	ug/L	683	Standard
	Sb	123	676.4	23.5	**0.1434**	0.038	26.8	ug/L	446	Standard
	Ba	135	3064.6	1.1	**1.6882**	0.015	0.9	ug/L	28	Standard
	Ce	140	9409.6	3.5				ug/L	33	Standard
>	**Tb**	159	744362.4	1.0				ug/L	800803	Standard
	Ho	165	175.0	9.9				ug/L	10	Standard
	Tl	203	42.7	34.8	**0.0392**	0.002	5.1	ug/L	13	Standard
	Tl	205	30.0	33.3	**0.0473**	0.002	3.3	ug/L	13	Standard
	Pb	206	661.3	6.5	**0.1366**	0.008	6.0	ug/L	226	Standard
	Pb	207	567.7	4.1	**0.1319**	0.005	3.6	ug/L	204	Standard
	Pb	208	2453.4	2.1	**0.1438**	0.002	1.6	ug/L	852	Standard
	U	238	68.7	7.3	**0.0535**	0.001	1.6	ug/L	13	Standard
>	**Bi**	209	430131.5	0.6				ug/L	449044	Standard

Sample ID: L1606129710
Report Date/Time: Wednesday, July 06, 2016 18:04:13
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	65.0	33.5	**0.0511**	0.031	60.0	mg/L	58	Standard
K	39	28.3	27.0	**-0.0270**	0.032	120.1	mg/L	27	Standard
Ca	43	20.0	75.0	**0.2066**	1.119	541.6	mg/L	20	Standard
Fe	54	127.8	19.6	**-0.0119**	0.020	165.0	mg/L	158	Standard
Fe	57	263.3	4.4	**0.2137**	0.033	15.5	mg/L	267	Standard
> **Sc-1**	45	38264.9	1.5				mg/L	38815	Standard
Cl	35	65564.9	1.1				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1613.4	6.0				ug/L	1617	Standard
P	31	6929.9	2.6				ug/L	19244	Standard
S	34	3928.8	1.5				ug/L	3557	Standard
Sr	88	76.7	22.9				ug/L	65	Standard
C	12	36.7	15.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	23	Standard
Dy	164	234.6	36.6				mg/L	13	Standard
Ho-1	165	175.0	9.9				mg/L	10	Standard
Er	166	183.3	35.1				mg/L	13	Standard
I	127	6321.3	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.006	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.470	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129710
Report Date/Time: Wednesday, July 06, 2016 18:04:13
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.281
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.788
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129710
Report Date/Time: Wednesday, July 06, 2016 18:04:13
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129711
Sample Date/Time: Wednesday, July 06, 2016 18:05:07
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50754.9	2.2				ug/L	68501	Standard
	Be	9	15.0	33.3	**0.0419**	0.008	18.8	ug/L	8	Standard
	Al	27	183332.5	0.4	**1.7784**	0.046	2.6	ug/L	1397	Standard
	Sc	45	37919.1	1.8				ug/L	38815	Standard
	Ti	47	69.7	10.1	**0.1784**	0.021	11.6	ug/L	36	Standard
	V	51	2453.4	3.6	**0.2024**	0.014	6.8	ug/L	1284	Standard
	Cr	52	6402.0	1.2	**-0.0091**	0.014	151.7	ug/L	6503	Standard
	Cr	53	266.7	6.6	**-0.1094**	0.021	19.0	ug/L	492	Standard
	Mn	55	36825.0	0.9	**5.8894**	0.074	1.2	ug/L	841	Standard
	Co	59	582.3	7.8	**0.1014**	0.008	7.6	ug/L	229	Standard
	Ni	60	536.3	5.0	**0.1602**	0.017	10.5	ug/L	344	Standard
	Cu	65	306.7	13.1	**0.1689**	0.024	14.4	ug/L	115	Standard
	Zn	66	2348.8	3.0	**2.2031**	0.076	3.5	ug/L	190	Standard
>	**Ge**	72	412357.7	0.3				ug/L	409858	Standard
	As	75	-25.4	36.6	**0.0746**	0.009	11.8	ug/L	-22	Standard
	Se	82	13.4	35.5	**0.0744**	0.045	60.1	ug/L	18	Standard
	Se-1	77	51.3	15.7	**-0.0182**	0.115	632.7	ug/L	50	Standard
>	**Ga**	71	115.0	30.1				mg/L	97	Standard
	Rb	85	766.7	3.1				ug/L	25	Standard
	Y	89	352987.1	1.9				ug/L	376763	Standard
>	**Rh**	103	11.7	49.5				ug/L	20	Standard
	Mo	98	33.6	40.7	**0.0860**	0.006	6.8	ug/L	51	Standard
	Ag	107	103.0	24.8	**0.0402**	0.004	10.5	ug/L	76	Standard
	Cd	111	15.3	49.9	**0.0474**	0.004	8.3	mg/L	6	Standard
	Cd	114	50.3	53.6	**0.0481**	0.006	11.9	ug/L	18	Standard
>	**In**	115	488095.7	0.6				ug/L	507261	Standard
	Sn	118	175.0	20.6	**-0.0769**	0.007	8.8	ug/L	683	Standard
	Sb	123	600.2	31.8	**0.1249**	0.045	36.4	ug/L	446	Standard
	Ba	135	2511.9	2.3	**1.3873**	0.023	1.6	ug/L	28	Standard
	Ce	140	10036.7	3.1				ug/L	33	Standard
>	**Tb**	159	743862.7	0.4				ug/L	800803	Standard
	Ho	165	233.3	12.2				ug/L	10	Standard
	Tl	203	53.3	68.4	**0.0405**	0.005	12.1	ug/L	13	Standard
	Tl	205	48.3	110.6	**0.0501**	0.008	16.7	ug/L	13	Standard
	Pb	206	710.4	11.0	**0.1459**	0.016	11.2	ug/L	226	Standard
	Pb	207	563.0	9.3	**0.1298**	0.012	9.0	ug/L	204	Standard
	Pb	208	2506.1	5.9	**0.1457**	0.008	5.7	ug/L	852	Standard
	U	238	57.0	28.2	**0.0516**	0.002	4.8	ug/L	13	Standard
>	**Bi**	209	433560.5	0.7				ug/L	449044	Standard

Sample ID: L1606129711
Report Date/Time: Wednesday, July 06, 2016 18:07:24
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	36.7	15.7	**0.0124**	0.007	59.7	mg/L	58	Standard
K	39	40.0	25.0	**0.0209**	0.038	181.0	mg/L	27	Standard
Ca	43	31.7	24.1	**1.0837**	0.598	55.2	mg/L	20	Standard
Fe	54	129.3	10.3	**-0.0095**	0.010	101.4	mg/L	158	Standard
Fe	57	325.0	11.6	**0.4318**	0.109	25.3	mg/L	267	Standard
> **Sc-1**	45	37919.1	1.8				mg/L	38815	Standard
Cl	35	65636.5	0.4				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1646.8	7.3				ug/L	1617	Standard
P	31	6866.6	2.8				ug/L	19244	Standard
S	34	4128.9	4.7				ug/L	3557	Standard
Sr	88	71.7	35.8				ug/L	65	Standard
C	12	33.3	17.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	276.8	15.7				mg/L	13	Standard
Ho-1	165	233.3	12.2				mg/L	10	Standard
Er	166	206.7	34.0				mg/L	13	Standard
I	127	6129.6	0.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.093	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.610	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129711
Report Date/Time: Wednesday, July 06, 2016 18:07:24
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.222
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.552
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129712
Sample Date/Time: Wednesday, July 06, 2016 18:08:18
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50335.2	2.7				ug/L	68501	Standard
	Be	9	18.3	15.7	**0.0470**	0.005	10.6	ug/L	8	Standard
	Al	27	215415.6	1.0	**2.1004**	0.037	1.7	ug/L	1397	Standard
	Sc	45	38381.9	1.8				ug/L	38815	Standard
	Ti	47	60.3	5.3	**0.1507**	0.008	5.4	ug/L	36	Standard
	V	51	3357.9	2.5	**0.3301**	0.014	4.2	ug/L	1284	Standard
	Cr	52	6864.9	1.2	**0.0575**	0.017	30.3	ug/L	6503	Standard
	Cr	53	286.7	22.8	**-0.0866**	0.075	86.1	ug/L	492	Standard
	Mn	55	47490.3	1.4	**7.6213**	0.154	2.0	ug/L	841	Standard
	Co	59	909.0	0.9	**0.1552**	0.001	0.4	ug/L	229	Standard
	Ni	60	721.0	3.8	**0.2695**	0.016	5.9	ug/L	344	Standard
	Cu	65	403.0	1.3	**0.2260**	0.005	2.4	ug/L	115	Standard
	Zn	66	1975.8	1.6	**1.8347**	0.040	2.2	ug/L	190	Standard
>	**Ge**	72	412470.3	1.0				ug/L	409858	Standard
	As	75	31.9	13.5	**0.1295**	0.004	3.3	ug/L	-22	Standard
	Se	82	17.4	8.7	**0.1126**	0.015	13.5	ug/L	18	Standard
	Se-1	77	45.0	25.6	**-0.1084**	0.173	159.5	ug/L	50	Standard
>	**Ga**	71	148.3	15.9				mg/L	97	Standard
	Rb	85	1413.4	1.1				ug/L	25	Standard
	Y	89	355079.6	1.3				ug/L	376763	Standard
>	**Rh**	103	21.7	35.3				ug/L	20	Standard
	Mo	98	20.8	25.7	**0.0806**	0.002	2.8	ug/L	51	Standard
	Ag	107	73.0	9.6	**0.0354**	0.001	3.2	ug/L	76	Standard
	Cd	111	6.6	8.6	**0.0429**	0.000	0.7	mg/L	6	Standard
	Cd	114	20.9	33.3	**0.0419**	0.002	3.6	ug/L	18	Standard
>	**In**	115	483721.6	0.7				ug/L	507261	Standard
	Sn	118	213.3	19.9	**-0.0693**	0.008	11.5	ug/L	683	Standard
	Sb	123	539.2	27.8	**0.1113**	0.036	32.3	ug/L	446	Standard
	Ba	135	4478.0	0.8	**2.4832**	0.009	0.3	ug/L	28	Standard
	Ce	140	17977.3	3.2				ug/L	33	Standard
>	**Tb**	159	746978.8	0.4				ug/L	800803	Standard
	Ho	165	251.7	13.5				ug/L	10	Standard
	Tl	203	17.3	17.6	**0.0357**	0.000	1.2	ug/L	13	Standard
	Tl	205	23.3	61.9	**0.0462**	0.002	5.0	ug/L	13	Standard
	Pb	206	1045.0	1.4	**0.2194**	0.003	1.4	ug/L	226	Standard
	Pb	207	882.0	2.6	**0.2066**	0.005	2.6	ug/L	204	Standard
	Pb	208	3909.9	0.4	**0.2303**	0.000	0.1	ug/L	852	Standard
	U	238	73.3	9.1	**0.0543**	0.001	2.0	ug/L	13	Standard
>	**Bi**	209	427989.3	0.3				ug/L	449044	Standard

Sample ID: L1606129712
Report Date/Time: Wednesday, July 06, 2016 18:10:35
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	30.2	**0.0188**	0.018	96.0	mg/L	58	Standard
K	39	33.3	70.9	**-0.0063**	0.098	1546.5	mg/L	27	Standard
Ca	43	15.0	66.7	**-0.1831**	0.717	391.6	mg/L	20	Standard
Fe	54	209.2	17.9	**0.0570**	0.033	57.1	mg/L	158	Standard
Fe	57	285.0	7.6	**0.2853**	0.087	30.4	mg/L	267	Standard
> **Sc-1**	45	38381.9	1.8				mg/L	38815	Standard
Cl	35	64770.8	1.6				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	1600.1	5.6				ug/L	1617	Standard
P	31	6721.5	5.0				ug/L	19244	Standard
S	34	3827.2	4.3				ug/L	3557	Standard
Sr	88	76.7	13.6				ug/L	65	Standard
C	12	23.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	426.8	9.3				mg/L	13	Standard
Ho-1	165	251.7	13.5				mg/L	10	Standard
Er	166	276.7	32.6				mg/L	13	Standard
I	127	6603.1	2.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		73.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.637	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129712
Report Date/Time: Wednesday, July 06, 2016 18:10:35
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.360
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.311
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129712
Report Date/Time: Wednesday, July 06, 2016 18:10:35
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129713
Sample Date/Time: Wednesday, July 06, 2016 18:11:30
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49761.6	2.9				ug/L	68501	Standard
	Be	9	16.7	17.3	**0.0447**	0.004	8.0	ug/L	8	Standard
	Al	27	115065.3	0.5	**1.1513**	0.034	2.9	ug/L	1397	Standard
	Sc	45	37810.5	0.3				ug/L	38815	Standard
	Ti	47	105.3	4.9	**0.2866**	0.015	5.4	ug/L	36	Standard
	V	51	3530.3	1.5	**0.3586**	0.009	2.5	ug/L	1284	Standard
	Cr	52	7133.3	2.4	**0.1049**	0.027	25.4	ug/L	6503	Standard
	Cr	53	420.0	21.7	**0.0724**	0.107	148.4	ug/L	492	Standard
	Mn	55	50677.6	0.5	**8.2081**	0.064	0.8	ug/L	841	Standard
	Co	59	768.4	0.7	**0.1331**	0.001	0.7	ug/L	229	Standard
	Ni	60	628.0	4.0	**0.2175**	0.015	6.7	ug/L	344	Standard
	Cu	65	765.7	2.5	**0.4451**	0.010	2.2	ug/L	115	Standard
	Zn	66	3143.0	1.5	**3.0116**	0.058	1.9	ug/L	190	Standard
>	**Ge**	72	409013.8	0.4				ug/L	409858	Standard
	As	75	56.6	69.8	**0.1536**	0.038	24.9	ug/L	-22	Standard
	Se	82	14.1	32.3	**0.0827**	0.043	52.2	ug/L	18	Standard
	Se-1	77	48.7	8.3	**-0.0506**	0.061	121.0	ug/L	50	Standard
>	**Ga**	71	178.3	9.0				mg/L	97	Standard
	Rb	85	1400.1	8.4				ug/L	25	Standard
	Y	89	346257.1	1.1				ug/L	376763	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	39.5	18.5	**0.0886**	0.003	3.5	ug/L	51	Standard
	Ag	107	102.3	20.3	**0.0402**	0.004	8.7	ug/L	76	Standard
	Cd	111	61.3	15.2	**0.0716**	0.005	7.0	mg/L	6	Standard
	Cd	114	112.7	18.4	**0.0616**	0.004	7.2	ug/L	18	Standard
>	**In**	115	485884.7	0.3				ug/L	507261	Standard
	Sn	118	211.7	20.1	**-0.0697**	0.008	11.5	ug/L	683	Standard
	Sb	123	494.9	23.2	**0.1000**	0.028	27.5	ug/L	446	Standard
	Ba	135	5100.2	1.4	**2.8135**	0.039	1.4	ug/L	28	Standard
	Ce	140	13969.8	3.7				ug/L	33	Standard
>	**Tb**	159	740578.5	1.6				ug/L	800803	Standard
	Ho	165	228.3	7.0				ug/L	10	Standard
	Tl	203	33.3	49.9	**0.0379**	0.002	6.1	ug/L	13	Standard
	Tl	205	23.3	81.1	**0.0462**	0.003	6.5	ug/L	13	Standard
	Pb	206	4522.7	3.0	**0.9547**	0.035	3.7	ug/L	226	Standard
	Pb	207	3741.1	1.9	**0.8721**	0.023	2.7	ug/L	204	Standard
	Pb	208	16474.8	2.1	**0.9616**	0.028	2.9	ug/L	852	Standard
	U	238	62.0	21.8	**0.0524**	0.002	4.1	ug/L	13	Standard
>	**Bi**	209	431770.2	0.8				ug/L	449044	Standard

Sample ID: L1606129713
Report Date/Time: Wednesday, July 06, 2016 18:13:47
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	9.1	**0.0381**	0.007	18.2	mg/L	58	Standard
K	39	51.7	14.8	**0.0696**	0.031	44.3	mg/L	27	Standard
Ca	43	35.0	14.3	**1.3352**	0.372	27.8	mg/L	20	Standard
Fe	54	132.7	26.7	**-0.0061**	0.031	500.8	mg/L	158	Standard
Fe	57	271.7	4.6	**0.2533**	0.046	18.1	mg/L	267	Standard
> **Sc-1**	45	37810.5	0.3				mg/L	38815	Standard
Cl	35	65102.2	0.6				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1543.4	1.0				ug/L	1617	Standard
P	31	6598.1	0.9				ug/L	19244	Standard
S	34	3738.8	4.5				ug/L	3557	Standard
Sr	88	60.0	28.9				ug/L	65	Standard
C	12	40.0	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	23	Standard
Dy	164	348.0	17.2				mg/L	13	Standard
Ho-1	165	228.3	7.0				mg/L	10	Standard
Er	166	180.0	41.9				mg/L	13	Standard
I	127	6603.1	2.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.643	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.794	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129713
Report Date/Time: Wednesday, July 06, 2016 18:13:47
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.786
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.153
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129713
Report Date/Time: Wednesday, July 06, 2016 18:13:47
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129714
Sample Date/Time: Wednesday, July 06, 2016 18:14:41
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50039.2	2.4				ug/L	68501	Standard
	Be	9	13.3	94.4	**0.0397**	0.019	48.8	ug/L	8	Standard
	Al	27	298991.3	0.5	**2.9188**	0.070	2.4	ug/L	1397	Standard
	Sc	45	38122.9	0.7				ug/L	38815	Standard
	Ti	47	166.7	6.2	**0.4716**	0.032	6.7	ug/L	36	Standard
	V	51	3977.0	4.8	**0.4242**	0.024	5.7	ug/L	1284	Standard
	Cr	52	7631.6	1.3	**0.1818**	0.022	12.3	ug/L	6503	Standard
	Cr	53	421.7	6.1	**0.0761**	0.031	40.8	ug/L	492	Standard
	Mn	55	62384.2	1.3	**10.1648**	0.070	0.7	ug/L	841	Standard
	Co	59	1085.4	5.6	**0.1864**	0.009	4.9	ug/L	229	Standard
	Ni	60	966.4	3.8	**0.4220**	0.026	6.2	ug/L	344	Standard
	Cu	65	440.0	5.6	**0.2511**	0.013	5.2	ug/L	115	Standard
	Zn	66	2042.1	4.2	**1.9247**	0.087	4.5	ug/L	190	Standard
>	**Ge**	72	407467.1	0.7				ug/L	409858	Standard
	As	75	39.9	63.0	**0.1377**	0.025	17.9	ug/L	-22	Standard
	Se	82	20.6	24.9	**0.1454**	0.050	34.3	ug/L	18	Standard
	Se-1	77	51.0	9.8	**-0.0143**	0.068	476.2	ug/L	50	Standard
>	**Ga**	71	275.0	4.8				mg/L	97	Standard
	Rb	85	2116.8	7.7				ug/L	25	Standard
	Y	89	347005.1	2.4				ug/L	376763	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	39.7	31.0	**0.0889**	0.005	5.9	ug/L	51	Standard
	Ag	107	79.3	14.1	**0.0365**	0.002	5.0	ug/L	76	Standard
	Cd	111	3.3	35.1	**0.0411**	0.001	1.5	mg/L	6	Standard
	Cd	114	13.4	19.7	**0.0403**	0.001	1.4	ug/L	18	Standard
>	**In**	115	481126.5	1.0				ug/L	507261	Standard
	Sn	118	183.3	26.9	**-0.0748**	0.009	12.4	ug/L	683	Standard
	Sb	123	489.1	28.0	**0.0996**	0.033	32.8	ug/L	446	Standard
	Ba	135	3839.5	1.3	**2.1428**	0.020	0.9	ug/L	28	Standard
	Ce	140	17111.3	4.6				ug/L	33	Standard
>	**Tb**	159	731912.0	0.9				ug/L	800803	Standard
	Ho	165	248.3	22.6				ug/L	10	Standard
	Tl	203	18.0	20.0	**0.0358**	0.000	1.3	ug/L	13	Standard
	Tl	205	36.7	92.8	**0.0483**	0.005	10.9	ug/L	13	Standard
	Pb	206	988.0	8.2	**0.2061**	0.015	7.2	ug/L	226	Standard
	Pb	207	789.4	4.2	**0.1839**	0.006	3.4	ug/L	204	Standard
	Pb	208	3493.2	5.0	**0.2047**	0.008	3.9	ug/L	852	Standard
	U	238	71.0	33.8	**0.0538**	0.004	6.8	ug/L	13	Standard
>	**Bi**	209	429968.6	1.1				ug/L	449044	Standard

Sample ID: L1606129714
Report Date/Time: Wednesday, July 06, 2016 18:16:58
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.3994**	15.904	3981.5	mg/L	2	Standard
Mg	24	36.7	56.8	**0.0121**	0.028	234.3	mg/L	58	Standard
K	39	36.7	7.9	**0.0069**	0.011	154.1	mg/L	27	Standard
Ca	43	26.7	47.2	**0.6938**	0.919	132.4	mg/L	20	Standard
Fe	54	318.9	15.1	**0.1514**	0.039	25.9	mg/L	158	Standard
Fe	57	351.7	13.5	**0.5176**	0.156	30.2	mg/L	267	Standard
> **Sc-1**	45	38122.9	0.7				mg/L	38815	Standard
Cl	35	64778.2	1.0				ug/L	57611	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1553.4	14.8				ug/L	1617	Standard
P	31	6536.4	3.0				ug/L	19244	Standard
S	34	3808.8	6.3				ug/L	3557	Standard
Sr	88	81.7	40.8				ug/L	65	Standard
C	12	40.0	90.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	398.3	4.1				mg/L	13	Standard
Ho-1	165	248.3	22.6				mg/L	10	Standard
Er	166	313.3	13.3				mg/L	13	Standard
I	127	6079.6	3.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		73.049	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.417	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129714
Report Date/Time: Wednesday, July 06, 2016 18:16:58
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.848
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.752
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129714
Report Date/Time: Wednesday, July 06, 2016 18:16:58
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 18:17:55
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54024.5	1.3				ug/L	68501	Standard
	Be	9	40169.9	2.9	**56.1283**	0.922	1.6	ug/L	8	Standard
	Al	27	6551308.5	0.6	**58.5425**	0.397	0.7	ug/L	1397	Standard
	Sc	45	42979.2	3.3				ug/L	38815	Standard
	Ti	47	38471.8	2.2	**105.7272**	1.558	1.5	ug/L	36	Standard
	V	51	387365.7	0.3	**50.6573**	0.316	0.6	ug/L	1284	Standard
	Cr	52	393336.6	1.6	**51.8098**	0.574	1.1	ug/L	6503	Standard
	Cr	53	48883.7	0.9	**52.1960**	0.426	0.8	ug/L	492	Standard
	Mn	55	351248.3	1.5	**52.9139**	0.978	1.8	ug/L	841	Standard
	Co	59	330751.7	0.9	**50.5900**	0.617	1.2	ug/L	229	Standard
	Ni	60	94988.8	0.8	**52.1212**	0.782	1.5	ug/L	344	Standard
	Cu	65	94496.8	0.9	**52.0968**	0.601	1.2	ug/L	115	Standard
	Zn	66	56465.0	1.0	**51.5913**	0.693	1.3	ug/L	190	Standard
>	Ge	72	444111.1	0.9				ug/L	409858	Standard
	As	75	56881.0	0.2	**50.7406**	0.409	0.8	ug/L	-22	Standard
	Se	82	5659.7	1.3	**49.3953**	1.039	2.1	ug/L	18	Standard
	Se-1	77	3934.8	1.9	**51.9754**	0.965	1.9	ug/L	50	Standard
>	Ga	71	63.3	12.1				mg/L	97	Standard
	Rb	85	791.7	16.0				ug/L	25	Standard
	Y	89	378356.6	1.6				ug/L	376763	Standard
>	Rh	103	31.7	9.1				ug/L	20	Standard
	Mo	98	250588.8	1.2	**101.8789**	1.315	1.3	ug/L	51	Standard
	Ag	107	320660.5	1.6	**50.3603**	1.102	2.2	ug/L	76	Standard
	Cd	111	103525.7	0.4	**51.1518**	0.364	0.7	mg/L	6	Standard
	Cd	114	252584.7	0.9	**51.0493**	0.583	1.1	ug/L	18	Standard
>	In	115	517728.7	0.8				ug/L	507261	Standard
	Sn	118	283510.6	2.4	**50.6309**	0.871	1.7	ug/L	683	Standard
	Sb	123	222186.6	0.8	**50.7357**	0.494	1.0	ug/L	446	Standard
	Ba	135	97423.9	1.0	**50.1717**	0.147	0.3	ug/L	28	Standard
	Ce	140	245.0	5.4				ug/L	33	Standard
>	Tb	159	787196.4	1.1				ug/L	800803	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	390883.9	0.5	**51.3380**	0.249	0.5	ug/L	13	Standard
	Tl	205	344356.0	0.7	**52.2281**	0.549	1.1	ug/L	13	Standard
	Pb	206	242793.9	0.2	**49.6623**	0.143	0.3	ug/L	226	Standard
	Pb	207	219389.0	1.0	**49.4158**	0.332	0.7	ug/L	204	Standard
	Pb	208	936979.2	0.8	**52.7777**	0.597	1.1	ug/L	852	Standard
	U	238	329537.5	0.4	**50.1290**	0.317	0.6	ug/L	13	Standard
>	Bi	209	447337.3	0.3				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 18:20:12
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.2714**	14.742	5432.3	mg/L	2	Standard
Mg	24	3770.5	0.9	**4.5762**	0.194	4.2	mg/L	58	Standard
K	39	1251.7	8.8	**4.3649**	0.370	8.5	mg/L	27	Standard
Ca	43	105.0	26.5	**5.6632**	2.047	36.2	mg/L	20	Standard
Fe	54	6656.7	3.8	**4.9191**	0.344	7.0	mg/L	158	Standard
Fe	57	1763.4	5.5	**4.6571**	0.458	9.8	mg/L	267	Standard
> **Sc-1**	45	42979.2	3.3				mg/L	38815	Standard
Cl	35	73216.5	0.1				ug/L	57611	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1880.1	6.8				ug/L	1617	Standard
P	31	22333.1	1.9				ug/L	19244	Standard
S	34	4467.3	1.5				ug/L	3557	Standard
Sr	88	61.7	20.4				ug/L	65	Standard
C	12	36.7	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	86.6				mg/L	23	Standard
Dy	164	9.4	3.0				mg/L	13	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	9071.0	1.0				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	112.257		
	Al	27	117.085		
	Sc	45			
	Ti	47	105.727		
	V	51	101.315		
	Cr	52	103.620		
	Cr	53			
	Mn	55	105.828		
	Co	59	101.180		
	Ni	60	104.242		
	Cu	65	104.194		
	Zn	66	103.183		
>	Ge	72		108.357	
	As	75	101.481		
	Se	82	98.791		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 18:20:12
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	101.879		
Ag	107	100.721		
Cd	111	102.304		
Cd	114			
> In	115		102.064	
Sn	118	101.262		
Sb	123	101.471		
Ba	135	100.343		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.676		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.555		
U	238	100.258		
> Bi	209		99.620	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 18:20:12
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 18:21:06
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53853.9	2.1				ug/L	68501	Standard
	Be	9	15.0	33.3	**0.0404**	0.007	16.8	ug/L	8	Standard
	Al	27	1768.4	11.1	**0.0509**	0.002	3.4	ug/L	1397	Standard
	Sc	45	40911.9	2.8				ug/L	38815	Standard
	Ti	47	37.3	10.1	**0.0755**	0.011	15.1	ug/L	36	Standard
	V	51	1313.5	5.0	**0.0293**	0.011	37.3	ug/L	1284	Standard
	Cr	52	7003.6	1.7	**0.0114**	0.018	158.3	ug/L	6503	Standard
	Cr	53	368.3	10.2	**-0.0194**	0.043	223.1	ug/L	492	Standard
	Mn	55	702.7	6.6	**0.0108**	0.006	59.0	ug/L	841	Standard
	Co	59	223.7	10.0	**0.0399**	0.004	9.9	ug/L	229	Standard
	Ni	60	302.0	2.3	**0.0095**	0.002	20.4	ug/L	344	Standard
	Cu	65	109.0	1.8	**0.0472**	0.001	3.1	ug/L	115	Standard
	Zn	66	139.3	9.0	**0.0149**	0.010	66.2	ug/L	190	Standard
>	**Ge**	72	441370.6	1.5				ug/L	409858	Standard
	As	75	-46.1	48.3	**0.0575**	0.020	35.0	ug/L	-22	Standard
	Se	82	9.6	47.9	**0.0324**	0.039	121.7	ug/L	18	Standard
	Se-1	77	57.0	0.0	**0.0098**	0.011	116.4	ug/L	50	Standard
>	**Ga**	71	38.3	27.2				mg/L	97	Standard
	Rb	85	30.0	28.9				ug/L	25	Standard
	Y	89	377601.0	1.0				ug/L	376763	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	144.9	13.3	**0.1298**	0.007	5.7	ug/L	51	Standard
	Ag	107	94.0	11.1	**0.0377**	0.002	4.1	ug/L	76	Standard
	Cd	111	11.7	44.9	**0.0451**	0.003	5.7	mg/L	6	Standard
	Cd	114	44.2	78.5	**0.0462**	0.007	15.0	ug/L	18	Standard
>	**In**	115	523143.8	0.8				ug/L	507261	Standard
	Sn	118	836.7	10.2	**0.0382**	0.016	41.2	ug/L	683	Standard
	Sb	123	689.1	33.4	**0.1356**	0.053	39.0	ug/L	446	Standard
	Ba	135	32.0	12.5	**0.0321**	0.002	6.4	ug/L	28	Standard
	Ce	140	78.3	25.8				ug/L	33	Standard
>	**Tb**	159	783160.6	1.3				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	56.7	8.9	**0.0407**	0.001	1.5	ug/L	13	Standard
	Tl	205	43.3	33.3	**0.0491**	0.002	4.4	ug/L	13	Standard
	Pb	206	250.3	3.1	**0.0469**	0.002	3.3	ug/L	226	Standard
	Pb	207	202.3	12.0	**0.0442**	0.005	11.8	ug/L	204	Standard
	Pb	208	864.7	5.7	**0.0485**	0.003	5.2	ug/L	852	Standard
	U	238	41.7	42.1	**0.0489**	0.003	5.4	ug/L	13	Standard
>	**Bi**	209	449825.1	0.5				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 18:23:23
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	44.4	**0.0195**	0.025	130.1	mg/L	58	Standard
K	39	28.3	20.4	**-0.0342**	0.025	73.9	mg/L	27	Standard
Ca	43	18.3	68.6	**0.0010**	0.903	88278.4	mg/L	20	Standard
Fe	54	179.1	16.9	**0.0223**	0.027	118.7	mg/L	158	Standard
Fe	57	268.3	2.2	**0.1727**	0.043	24.9	mg/L	267	Standard
> **Sc-1**	45	40911.9	2.8				mg/L	38815	Standard
Cl	35	71267.2	1.2				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1836.8	5.5				ug/L	1617	Standard
P	31	21515.3	2.4				ug/L	19244	Standard
S	34	4337.3	1.0				ug/L	3557	Standard
Sr	88	85.0	17.6				ug/L	65	Standard
C	12	46.7	61.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	19.4	88.0				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	7335.1	3.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.689	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 18:23:23
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.131
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.174
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 18:23:23
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129715
Sample Date/Time: Wednesday, July 06, 2016 18:24:19
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51096.1	3.4				ug/L	68501	Standard
	Be	9	26.7	39.0	**0.0592**	0.016	27.6	ug/L	8	Standard
	Al	27	148208.1	1.5	**1.4356**	0.057	3.9	ug/L	1397	Standard
	Sc	45	37817.2	2.3				ug/L	38815	Standard
	Ti	47	67.3	15.5	**0.1741**	0.030	17.0	ug/L	36	Standard
	V	51	2738.4	3.5	**0.2479**	0.012	4.9	ug/L	1284	Standard
	Cr	52	5883.1	4.0	**-0.0725**	0.032	44.2	ug/L	6503	Standard
	Cr	53	275.0	16.2	**-0.0957**	0.050	51.8	ug/L	492	Standard
	Mn	55	31313.0	0.6	**5.0634**	0.058	1.2	ug/L	841	Standard
	Co	59	696.0	7.5	**0.1217**	0.009	7.3	ug/L	229	Standard
	Ni	60	595.3	3.5	**0.2000**	0.014	7.1	ug/L	344	Standard
	Cu	65	462.0	6.3	**0.2649**	0.019	7.3	ug/L	115	Standard
	Zn	66	1771.8	2.4	**1.6578**	0.039	2.4	ug/L	190	Standard
>	**Ge**	72	406781.1	0.8				ug/L	409858	Standard
	As	75	-2.5	307.1	**0.0964**	0.008	7.9	ug/L	-22	Standard
	Se	82	14.4	23.6	**0.0856**	0.032	37.8	ug/L	18	Standard
	Se-1	77	49.7	10.1	**-0.0320**	0.077	241.4	ug/L	50	Standard
>	**Ga**	71	133.3	15.2				mg/L	97	Standard
	Rb	85	1070.0	12.2				ug/L	25	Standard
	Y	89	342977.7	1.9				ug/L	376763	Standard
>	**Rh**	103	10.0	86.6				ug/L	20	Standard
	Mo	98	69.0	6.1	**0.1021**	0.002	1.8	ug/L	51	Standard
	Ag	107	75.0	15.1	**0.0359**	0.002	5.1	ug/L	76	Standard
	Cd	111	10.5	22.1	**0.0450**	0.001	2.9	mg/L	6	Standard
	Cd	114	30.6	59.6	**0.0441**	0.004	9.2	ug/L	18	Standard
>	**In**	115	475398.0	0.9				ug/L	507261	Standard
	Sn	118	288.3	20.8	**-0.0540**	0.011	20.7	ug/L	683	Standard
	Sb	123	904.8	33.4	**0.2044**	0.074	36.3	ug/L	446	Standard
	Ba	135	3854.2	0.5	**2.1767**	0.015	0.7	ug/L	28	Standard
	Ce	140	14745.5	3.6				ug/L	33	Standard
>	**Tb**	159	732486.7	1.4				ug/L	800803	Standard
	Ho	165	231.7	6.6				ug/L	10	Standard
	Tl	203	26.3	32.7	**0.0370**	0.001	3.2	ug/L	13	Standard
	Tl	205	26.7	75.8	**0.0468**	0.003	6.8	ug/L	13	Standard
	Pb	206	1241.1	6.3	**0.2624**	0.017	6.3	ug/L	226	Standard
	Pb	207	1051.0	1.6	**0.2474**	0.003	1.0	ug/L	204	Standard
	Pb	208	4456.3	3.3	**0.2635**	0.008	2.9	ug/L	852	Standard
	U	238	51.3	13.8	**0.0508**	0.001	2.1	ug/L	13	Standard
>	**Bi**	209	426274.4	0.6				ug/L	449044	Standard

Sample ID: L1606129715
Report Date/Time: Wednesday, July 06, 2016 18:26:36
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	37.7	**0.0152**	0.021	140.9	mg/L	58	Standard
K	39	41.7	42.1	**0.0281**	0.069	245.2	mg/L	27	Standard
Ca	43	38.3	27.2	**1.5938**	0.839	52.6	mg/L	20	Standard
Fe	54	157.6	18.0	**0.0155**	0.027	174.3	mg/L	158	Standard
Fe	57	308.3	20.9	**0.3760**	0.197	52.3	mg/L	267	Standard
> **Sc-1**	45	37817.2	2.3				mg/L	38815	Standard
Cl	35	64603.4	0.9				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1573.4	6.8				ug/L	1617	Standard
P	31	6883.2	4.2				ug/L	19244	Standard
S	34	4027.2	3.2				ug/L	3557	Standard
Sr	88	95.0	13.9				ug/L	65	Standard
C	12	16.7	69.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	23	Standard
Dy	164	343.9	15.8				mg/L	13	Standard
Ho-1	165	231.7	6.6				mg/L	10	Standard
Er	166	266.7	12.1				mg/L	13	Standard
I	127	5834.5	3.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.592	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.249	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129715
Report Date/Time: Wednesday, July 06, 2016 18:26:36
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.719
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.929
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129716
Sample Date/Time: Wednesday, July 06, 2016 18:27:31
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49923.8	3.3				ug/L	68501	Standard
	Be	9	18.3	56.8	**0.0475**	0.017	35.4	ug/L	8	Standard
	Al	27	230733.6	0.6	**2.2666**	0.081	3.6	ug/L	1397	Standard
	Sc	45	37661.8	1.0				ug/L	38815	Standard
	Ti	47	113.7	12.5	**0.3124**	0.041	13.3	ug/L	36	Standard
	V	51	2650.5	1.4	**0.2344**	0.006	2.6	ug/L	1284	Standard
	Cr	52	6503.1	1.7	**0.0160**	0.013	79.2	ug/L	6503	Standard
	Cr	53	336.7	7.6	**-0.0240**	0.029	120.3	ug/L	492	Standard
	Mn	55	28933.6	2.8	**4.6595**	0.134	2.9	ug/L	841	Standard
	Co	59	727.0	2.8	**0.1266**	0.004	3.0	ug/L	229	Standard
	Ni	60	734.0	4.0	**0.2822**	0.019	6.7	ug/L	344	Standard
	Cu	65	281.7	2.1	**0.1559**	0.003	2.0	ug/L	115	Standard
	Zn	66	1718.8	0.7	**1.6006**	0.010	0.6	ug/L	190	Standard
>	**Ge**	72	407782.6	0.3				ug/L	409858	Standard
	As	75	29.7	102.1	**0.1278**	0.030	23.1	ug/L	-22	Standard
	Se	82	15.2	18.7	**0.0932**	0.027	29.3	ug/L	18	Standard
	Se-1	77	49.3	15.5	**-0.0391**	0.109	279.2	ug/L	50	Standard
>	**Ga**	71	208.3	25.2				mg/L	97	Standard
	Rb	85	1360.1	2.6				ug/L	25	Standard
	Y	89	349773.2	1.1				ug/L	376763	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	77.6	13.8	**0.1054**	0.005	4.4	ug/L	51	Standard
	Ag	107	74.3	11.2	**0.0356**	0.001	3.8	ug/L	76	Standard
	Cd	111	4.9	41.3	**0.0419**	0.001	2.5	mg/L	6	Standard
	Cd	114	14.6	85.5	**0.0405**	0.003	6.7	ug/L	18	Standard
>	**In**	115	482015.0	1.1				ug/L	507261	Standard
	Sn	118	201.7	20.8	**-0.0713**	0.008	11.8	ug/L	683	Standard
	Sb	123	673.6	33.4	**0.1453**	0.057	39.1	ug/L	446	Standard
	Ba	135	2231.8	3.5	**1.2502**	0.051	4.1	ug/L	28	Standard
	Ce	140	11809.6	4.9				ug/L	33	Standard
>	**Tb**	159	735033.6	0.2				ug/L	800803	Standard
	Ho	165	191.7	30.5				ug/L	10	Standard
	Tl	203	24.3	43.6	**0.0367**	0.001	4.0	ug/L	13	Standard
	Tl	205	21.7	35.3	**0.0460**	0.001	2.7	ug/L	13	Standard
	Pb	206	652.0	1.7	**0.1367**	0.003	2.2	ug/L	226	Standard
	Pb	207	554.0	8.6	**0.1306**	0.011	8.3	ug/L	204	Standard
	Pb	208	2402.7	3.9	**0.1429**	0.006	4.1	ug/L	852	Standard
	U	238	57.7	18.7	**0.0519**	0.002	3.4	ug/L	13	Standard
>	**Bi**	209	424036.1	0.4				ug/L	449044	Standard

Sample ID: L1606129716
Report Date/Time: Wednesday, July 06, 2016 18:29:48
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	22.3	**0.0268**	0.015	55.3	mg/L	58	Standard
K	39	35.0	37.8	**0.0023**	0.056	2456.1	mg/L	27	Standard
Ca	43	26.7	57.3	**0.7245**	1.158	159.8	mg/L	20	Standard
Fe	54	184.2	20.5	**0.0385**	0.032	82.0	mg/L	158	Standard
Fe	57	346.7	0.8	**0.5155**	0.007	1.4	mg/L	267	Standard
> **Sc-1**	45	37661.8	1.0				mg/L	38815	Standard
Cl	35	64539.9	1.7				ug/L	57611	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	1656.8	7.8				ug/L	1617	Standard
P	31	6881.6	2.3				ug/L	19244	Standard
S	34	4020.5	2.0				ug/L	3557	Standard
Sr	88	70.0	18.9				ug/L	65	Standard
C	12	23.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	23	Standard
Dy	164	317.2	20.1				mg/L	13	Standard
Ho-1	165	191.7	30.5				mg/L	10	Standard
Er	166	196.7	29.8				mg/L	13	Standard
I	127	5742.8	1.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.880	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.494	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129716
Report Date/Time: Wednesday, July 06, 2016 18:29:48
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.023
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.431
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129716
Report Date/Time: Wednesday, July 06, 2016 18:29:48
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129717
Sample Date/Time: Wednesday, July 06, 2016 18:30:42
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49927.2	4.0				ug/L	68501	Standard
	Be	9	6.7	86.6	**0.0295**	0.009	29.5	ug/L	8	Standard
	Al	27	176079.0	1.1	**1.7381**	0.061	3.5	ug/L	1397	Standard
	Sc	45	37752.0	1.9				ug/L	38815	Standard
	Ti	47	66.7	17.6	**0.1708**	0.035	20.7	ug/L	36	Standard
	V	51	2034.0	1.8	**0.1449**	0.004	2.4	ug/L	1284	Standard
	Cr	52	5892.5	3.0	**-0.0777**	0.022	28.4	ug/L	6503	Standard
	Cr	53	233.3	5.4	**-0.1465**	0.014	9.9	ug/L	492	Standard
	Mn	55	27870.3	0.4	**4.4613**	0.044	1.0	ug/L	841	Standard
	Co	59	460.7	4.3	**0.0818**	0.004	4.5	ug/L	229	Standard
	Ni	60	475.3	4.0	**0.1257**	0.013	10.3	ug/L	344	Standard
	Cu	65	199.0	7.8	**0.1056**	0.009	8.7	ug/L	115	Standard
	Zn	66	1356.7	2.9	**1.2325**	0.031	2.5	ug/L	190	Standard
>	**Ge**	72	409883.6	0.6				ug/L	409858	Standard
	As	75	-13.7	138.1	**0.0856**	0.018	21.4	ug/L	-22	Standard
	Se	82	18.9	14.6	**0.1275**	0.025	19.9	ug/L	18	Standard
	Se-1	77	45.7	12.6	**-0.0955**	0.087	91.6	ug/L	50	Standard
>	**Ga**	71	91.7	39.5				mg/L	97	Standard
	Rb	85	566.7	12.2				ug/L	25	Standard
	Y	89	345220.3	0.5				ug/L	376763	Standard
>	**Rh**	103	25.0	40.0				ug/L	20	Standard
	Mo	98	35.3	42.3	**0.0869**	0.007	7.5	ug/L	51	Standard
	Ag	107	78.7	26.0	**0.0364**	0.003	9.5	ug/L	76	Standard
	Cd	111	6.3	97.1	**0.0427**	0.003	7.6	mg/L	6	Standard
	Cd	114	16.3	120.1	**0.0409**	0.004	10.4	ug/L	18	Standard
>	**In**	115	482875.6	0.6				ug/L	507261	Standard
	Sn	118	201.7	24.1	**-0.0714**	0.009	13.1	ug/L	683	Standard
	Sb	123	493.0	35.1	**0.1003**	0.042	42.1	ug/L	446	Standard
	Ba	135	2040.1	1.5	**1.1419**	0.022	1.9	ug/L	28	Standard
	Ce	140	8042.1	7.0				ug/L	33	Standard
>	**Tb**	159	739223.8	0.5				ug/L	800803	Standard
	Ho	165	156.7	24.8				ug/L	10	Standard
	Tl	203	24.3	80.8	**0.0367**	0.003	7.4	ug/L	13	Standard
	Tl	205	16.7	124.9	**0.0452**	0.003	7.3	ug/L	13	Standard
	Pb	206	573.0	3.0	**0.1186**	0.004	3.5	ug/L	226	Standard
	Pb	207	492.3	5.0	**0.1149**	0.006	5.4	ug/L	204	Standard
	Pb	208	2010.1	6.7	**0.1185**	0.008	7.0	ug/L	852	Standard
	U	238	45.0	35.3	**0.0498**	0.003	5.1	ug/L	13	Standard
>	**Bi**	209	427779.3	0.6				ug/L	449044	Standard

Sample ID: L1606129717
Report Date/Time: Wednesday, July 06, 2016 18:32:59
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	52.0	**0.0221**	0.031	142.3	mg/L	58	Standard
K	39	25.0	52.9	**-0.0397**	0.053	132.2	mg/L	27	Standard
Ca	43	40.0	33.1	**1.7146**	0.988	57.6	mg/L	20	Standard
Fe	54	87.6	38.5	**-0.0445**	0.030	67.3	mg/L	158	Standard
Fe	57	243.3	8.3	**0.1569**	0.062	39.5	mg/L	267	Standard
> **Sc-1**	45	37752.0	1.9				mg/L	38815	Standard
Cl	35	64779.5	1.0				ug/L	57611	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	1533.4	1.5				ug/L	1617	Standard
P	31	7010.0	1.3				ug/L	19244	Standard
S	34	4125.6	2.1				ug/L	3557	Standard
Sr	88	75.0	41.6				ug/L	65	Standard
C	12	30.0	57.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	23	Standard
Dy	164	253.9	13.7				mg/L	13	Standard
Ho-1	165	156.7	24.8				mg/L	10	Standard
Er	166	126.7	27.7				mg/L	13	Standard
I	127	5844.5	1.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.006	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129717
Report Date/Time: Wednesday, July 06, 2016 18:32:59
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.193
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.264
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129717
Report Date/Time: Wednesday, July 06, 2016 18:32:59
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129718
Sample Date/Time: Wednesday, July 06, 2016 18:33:53
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49219.9	3.6				ug/L	68501	Standard
	Be	9	21.7	48.0	**0.0524**	0.015	29.0	ug/L	8	Standard
	Al	27	198461.6	1.9	**1.9826**	0.097	4.9	ug/L	1397	Standard
	Sc	45	37516.4	1.7				ug/L	38815	Standard
	Ti	47	71.3	2.1	**0.1863**	0.005	2.7	ug/L	36	Standard
	V	51	2505.0	3.4	**0.2146**	0.013	6.0	ug/L	1284	Standard
	Cr	52	6002.2	1.2	**-0.0548**	0.018	32.5	ug/L	6503	Standard
	Cr	53	295.0	2.9	**-0.0719**	0.012	17.2	ug/L	492	Standard
	Mn	55	48746.3	0.9	**7.9365**	0.123	1.6	ug/L	841	Standard
	Co	59	629.0	5.7	**0.1105**	0.005	4.7	ug/L	229	Standard
	Ni	60	634.3	3.6	**0.2235**	0.015	6.7	ug/L	344	Standard
	Cu	65	303.3	2.5	**0.1694**	0.006	3.6	ug/L	115	Standard
	Zn	66	1702.4	1.3	**1.5886**	0.017	1.1	ug/L	190	Standard
>	**Ge**	72	406757.2	0.8				ug/L	409858	Standard
	As	75	26.9	60.5	**0.1251**	0.016	12.8	ug/L	-22	Standard
	Se	82	15.2	34.0	**0.0937**	0.050	53.0	ug/L	18	Standard
	Se-1	77	48.0	21.8	**-0.0562**	0.155	275.7	ug/L	50	Standard
>	**Ga**	71	121.7	29.7				mg/L	97	Standard
	Rb	85	888.4	3.7				ug/L	25	Standard
	Y	89	349047.3	1.9				ug/L	376763	Standard
>	**Rh**	103	21.7	26.6				ug/L	20	Standard
	Mo	98	40.6	35.4	**0.0894**	0.006	7.0	ug/L	51	Standard
	Ag	107	68.3	1.7	**0.0347**	0.000	0.5	ug/L	76	Standard
	Cd	111	7.6	27.3	**0.0434**	0.001	2.6	mg/L	6	Standard
	Cd	114	11.2	115.1	**0.0398**	0.003	7.0	ug/L	18	Standard
>	**In**	115	477932.0	0.3				ug/L	507261	Standard
	Sn	118	205.0	16.0	**-0.0704**	0.006	9.0	ug/L	683	Standard
	Sb	123	472.3	24.8	**0.0965**	0.029	29.8	ug/L	446	Standard
	Ba	135	2835.6	3.8	**1.5971**	0.059	3.7	ug/L	28	Standard
	Ce	140	10725.5	3.5				ug/L	33	Standard
>	**Tb**	159	732266.0	0.3				ug/L	800803	Standard
	Ho	165	195.0	10.3				ug/L	10	Standard
	Tl	203	22.7	26.6	**0.0365**	0.001	2.3	ug/L	13	Standard
	Tl	205	18.3	31.5	**0.0455**	0.001	2.0	ug/L	13	Standard
	Pb	206	728.7	6.0	**0.1531**	0.010	6.5	ug/L	226	Standard
	Pb	207	589.7	3.5	**0.1389**	0.005	3.8	ug/L	204	Standard
	Pb	208	2571.8	4.1	**0.1528**	0.006	4.0	ug/L	852	Standard
	U	238	45.7	19.9	**0.0499**	0.001	3.0	ug/L	13	Standard
>	**Bi**	209	424407.0	0.4				ug/L	449044	Standard

Sample ID: L1606129718
Report Date/Time: Wednesday, July 06, 2016 18:36:10
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**0.5085**	16.093	3164.5	mg/L	2	Standard
Mg	24	58.3	32.5	**0.0436**	0.028	64.4	mg/L	58	Standard
K	39	28.3	10.2	**-0.0249**	0.013	52.9	mg/L	27	Standard
Ca	43	46.7	16.4	**2.2408**	0.637	28.4	mg/L	20	Standard
Fe	54	164.4	5.2	**0.0222**	0.006	27.5	mg/L	158	Standard
Fe	57	271.7	12.0	**0.2595**	0.099	38.0	mg/L	267	Standard
> **Sc-1**	45	37516.4	1.7				mg/L	38815	Standard
Cl	35	64231.2	0.9				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	1653.4	10.1				ug/L	1617	Standard
P	31	6803.2	2.7				ug/L	19244	Standard
S	34	4030.5	4.2				ug/L	3557	Standard
Sr	88	73.3	20.8				ug/L	65	Standard
C	12	36.7	83.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	291.2	29.4				mg/L	13	Standard
Ho-1	165	195.0	10.3				mg/L	10	Standard
Er	166	183.3	13.7				mg/L	13	Standard
I	127	5851.1	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		71.853	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.243	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129718
Report Date/Time: Wednesday, July 06, 2016 18:36:10
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.218
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.513
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129718
Report Date/Time: Wednesday, July 06, 2016 18:36:10
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129719
Sample Date/Time: Wednesday, July 06, 2016 18:37:05
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49597.7	1.7				ug/L	68501	Standard
	Be	9	20.0	50.0	**0.0498**	0.015	29.6	ug/L	8	Standard
	Al	27	178365.5	1.1	**1.7702**	0.019	1.1	ug/L	1397	Standard
	Sc	45	38361.8	1.5				ug/L	38815	Standard
	Ti	47	106.3	3.9	**0.2933**	0.013	4.4	ug/L	36	Standard
	V	51	3584.6	1.2	**0.3723**	0.006	1.7	ug/L	1284	Standard
	Cr	52	8956.0	2.3	**0.3854**	0.023	6.0	ug/L	6503	Standard
	Cr	53	613.3	13.7	**0.3062**	0.095	31.0	ug/L	492	Standard
	Mn	55	52415.2	1.1	**8.5929**	0.076	0.9	ug/L	841	Standard
	Co	59	1118.7	2.1	**0.1934**	0.005	2.8	ug/L	229	Standard
	Ni	60	857.4	3.9	**0.3605**	0.017	4.8	ug/L	344	Standard
	Cu	65	1218.0	1.7	**0.7246**	0.017	2.4	ug/L	115	Standard
	Zn	66	2914.9	3.0	**2.8183**	0.075	2.7	ug/L	190	Standard
>	**Ge**	72	404299.3	0.7				ug/L	409858	Standard
	As	75	83.7	20.3	**0.1808**	0.017	9.4	ug/L	-22	Standard
	Se	82	20.3	22.4	**0.1438**	0.044	30.9	ug/L	18	Standard
	Se-1	77	47.7	20.2	**-0.0567**	0.146	256.9	ug/L	50	Standard
>	**Ga**	71	268.3	13.5				mg/L	97	Standard
	Rb	85	2543.5	5.6				ug/L	25	Standard
	Y	89	349884.6	1.8				ug/L	376763	Standard
>	**Rh**	103	15.0	57.7				ug/L	20	Standard
	Mo	98	40.2	17.9	**0.0892**	0.003	3.4	ug/L	51	Standard
	Ag	107	86.0	9.5	**0.0377**	0.001	3.4	ug/L	76	Standard
	Cd	111	242.6	4.4	**0.1687**	0.007	3.9	mg/L	6	Standard
	Cd	114	556.3	15.0	**0.1587**	0.018	11.6	ug/L	18	Standard
>	**In**	115	479494.0	0.9				ug/L	507261	Standard
	Sn	118	201.7	12.5	**-0.0711**	0.005	7.3	ug/L	683	Standard
	Sb	123	449.3	33.4	**0.0905**	0.037	41.0	ug/L	446	Standard
	Ba	135	7131.3	1.5	**3.9802**	0.073	1.8	ug/L	28	Standard
	Ce	140	17274.8	3.3				ug/L	33	Standard
>	**Tb**	159	731573.9	0.5				ug/L	800803	Standard
	Ho	165	271.7	13.3				ug/L	10	Standard
	Tl	203	22.0	4.5	**0.0364**	0.000	0.4	ug/L	13	Standard
	Tl	205	21.7	26.6	**0.0460**	0.001	2.0	ug/L	13	Standard
	Pb	206	12640.9	1.7	**2.7274**	0.067	2.5	ug/L	226	Standard
	Pb	207	10629.1	0.7	**2.5278**	0.032	1.3	ug/L	204	Standard
	Pb	208	45996.3	0.4	**2.7365**	0.011	0.4	ug/L	852	Standard
	U	238	52.7	14.3	**0.0511**	0.001	2.2	ug/L	13	Standard
>	**Bi**	209	423536.2	0.7				ug/L	449044	Standard

Sample ID: L1606129719
Report Date/Time: Wednesday, July 06, 2016 18:39:22
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	16.7	**0.0028**	0.007	265.9	mg/L	58	Standard
K	39	33.3	60.6	**-0.0076**	0.080	1062.8	mg/L	27	Standard
Ca	43	35.0	24.7	**1.2944**	0.612	47.3	mg/L	20	Standard
Fe	54	275.8	22.7	**0.1135**	0.054	47.1	mg/L	158	Standard
Fe	57	321.7	11.9	**0.4080**	0.116	28.3	mg/L	267	Standard
Sc-1	45	38361.8	1.5				mg/L	38815	Standard
Cl	35	63609.3	1.6				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1613.4	3.4				ug/L	1617	Standard
P	31	6818.2	1.7				ug/L	19244	Standard
S	34	3835.5	3.1				ug/L	3557	Standard
Sr	88	88.3	18.2				ug/L	65	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	23	Standard
Dy	164	365.0	17.7				mg/L	13	Standard
Ho-1	165	271.7	13.3				mg/L	10	Standard
Er	166	243.3	16.6				mg/L	13	Standard
I	127	5821.1	6.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.404	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.644	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129719
Report Date/Time: Wednesday, July 06, 2016 18:39:22
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.320
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129719
Report Date/Time: Wednesday, July 06, 2016 18:39:22
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129720
Sample Date/Time: Wednesday, July 06, 2016 18:40:16
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49808.5	3.5				ug/L	68501	Standard
	Be	9	18.3	31.5	**0.0471**	0.008	16.3	ug/L	8	Standard
	Al	27	322343.2	1.3	**3.1588**	0.066	2.1	ug/L	1397	Standard
	Sc	45	38503.9	1.9				ug/L	38815	Standard
	Ti	47	85.7	8.8	**0.2272**	0.020	8.8	ug/L	36	Standard
	V	51	3356.6	1.5	**0.3328**	0.012	3.6	ug/L	1284	Standard
	Cr	52	6512.4	1.2	**0.0124**	0.010	83.1	ug/L	6503	Standard
	Cr	53	368.3	14.5	**0.0105**	0.058	554.5	ug/L	492	Standard
	Mn	55	54600.9	0.9	**8.8309**	0.108	1.2	ug/L	841	Standard
	Co	59	857.4	4.2	**0.1475**	0.006	4.2	ug/L	229	Standard
	Ni	60	713.4	0.7	**0.2676**	0.004	1.6	ug/L	344	Standard
	Cu	65	474.0	6.3	**0.2699**	0.018	6.8	ug/L	115	Standard
	Zn	66	1859.8	2.3	**1.7316**	0.052	3.0	ug/L	190	Standard
>	**Ge**	72	409950.0	1.0				ug/L	409858	Standard
	As	75	28.0	87.6	**0.1258**	0.023	18.6	ug/L	-22	Standard
	Se	82	16.9	34.9	**0.1084**	0.055	50.7	ug/L	18	Standard
	Se-1	77	47.3	10.8	**-0.0712**	0.082	115.0	ug/L	50	Standard
>	**Ga**	71	210.0	13.3				mg/L	97	Standard
	Rb	85	1438.4	5.3				ug/L	25	Standard
	Y	89	348052.6	1.2				ug/L	376763	Standard
>	**Rh**	103	11.7	24.7				ug/L	20	Standard
	Mo	98	34.6	40.8	**0.0867**	0.006	7.3	ug/L	51	Standard
	Ag	107	66.7	5.7	**0.0343**	0.001	2.1	ug/L	76	Standard
	Cd	111	11.6	17.9	**0.0455**	0.001	2.5	mg/L	6	Standard
	Cd	114	40.9	25.9	**0.0462**	0.002	5.2	ug/L	18	Standard
>	**In**	115	482584.0	1.5				ug/L	507261	Standard
	Sn	118	216.7	34.6	**-0.0684**	0.015	21.8	ug/L	683	Standard
	Sb	123	404.8	28.3	**0.0791**	0.029	37.1	ug/L	446	Standard
	Ba	135	8081.8	0.6	**4.4800**	0.057	1.3	ug/L	28	Standard
	Ce	140	15314.4	4.4				ug/L	33	Standard
>	**Tb**	159	724958.7	0.5				ug/L	800803	Standard
	Ho	165	230.0	12.1				ug/L	10	Standard
	Tl	203	18.3	34.6	**0.0359**	0.001	2.4	ug/L	13	Standard
	Tl	205	25.0	34.6	**0.0465**	0.001	2.9	ug/L	13	Standard
	Pb	206	948.7	3.6	**0.1994**	0.007	3.4	ug/L	226	Standard
	Pb	207	786.0	2.5	**0.1846**	0.005	2.6	ug/L	204	Standard
	Pb	208	3433.5	2.8	**0.2028**	0.005	2.5	ug/L	852	Standard
	U	238	79.0	5.1	**0.0552**	0.001	1.1	ug/L	13	Standard
>	**Bi**	209	426681.8	0.3				ug/L	449044	Standard

Sample ID: L1606129720
Report Date/Time: Wednesday, July 06, 2016 18:42:33
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	37.8	**0.0096**	0.019	193.4	mg/L	58	Standard
K	39	35.0	37.8	**-0.0016**	0.051	3125.7	mg/L	27	Standard
Ca	43	36.7	43.8	**1.3977**	1.125	80.5	mg/L	20	Standard
Fe	54	200.7	14.4	**0.0489**	0.022	45.4	mg/L	158	Standard
Fe	57	295.0	12.2	**0.3148**	0.117	37.0	mg/L	267	Standard
Sc-1	45	38503.9	1.9				mg/L	38815	Standard
Cl	35	64110.0	0.9				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1486.7	6.9				ug/L	1617	Standard
P	31	6881.6	0.9				ug/L	19244	Standard
S	34	3978.9	4.5				ug/L	3557	Standard
Sr	88	86.7	27.3				ug/L	65	Standard
C	12	50.0	60.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	457.7	22.7				mg/L	13	Standard
Ho-1	165	230.0	12.1				mg/L	10	Standard
Er	166	256.7	25.9				mg/L	13	Standard
I	127	5424.3	2.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.712	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.022	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129720
Report Date/Time: Wednesday, July 06, 2016 18:42:33
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.135
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.020
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606145201
Sample Date/Time: Wednesday, July 06, 2016 18:43:28
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49942.2	2.4				ug/L	68501	Standard
	Be	9	13.3	21.7	**0.0396**	0.004	10.5	ug/L	8	Standard
	Al	27	301632.8	0.2	**2.9500**	0.071	2.4	ug/L	1397	Standard
	Sc	45	37337.6	0.6				ug/L	38815	Standard
	Ti	47	30.0	25.2	**0.0620**	0.022	36.3	ug/L	36	Standard
	V	51	1297.4	5.0	**0.0413**	0.011	25.7	ug/L	1284	Standard
	Cr	52	5952.5	2.6	**-0.0642**	0.028	43.2	ug/L	6503	Standard
	Cr	53	440.0	7.1	**0.0973**	0.038	38.6	ug/L	492	Standard
	Mn	55	44039.2	0.4	**7.1434**	0.022	0.3	ug/L	841	Standard
	Co	59	640.3	1.6	**0.1122**	0.002	1.7	ug/L	229	Standard
	Ni	60	375.0	10.2	**0.0671**	0.024	35.3	ug/L	344	Standard
	Cu	65	91.7	13.2	**0.0417**	0.007	16.5	ug/L	115	Standard
	Zn	66	1720.1	1.2	**1.6022**	0.016	1.0	ug/L	190	Standard
>	**Ge**	72	407710.2	0.7				ug/L	409858	Standard
	As	75	-3.9	410.5	**0.0951**	0.015	16.3	ug/L	-22	Standard
	Se	82	21.0	19.7	**0.1485**	0.041	27.6	ug/L	18	Standard
	Se-1	77	56.0	7.1	**0.0584**	0.054	92.0	ug/L	50	Standard
>	**Ga**	71	38.3	15.1				mg/L	97	Standard
	Rb	85	16589.1	3.8				ug/L	25	Standard
	Y	89	346930.8	1.5				ug/L	376763	Standard
>	**Rh**	103	26.7	75.8				ug/L	20	Standard
	Mo	98	27.0	22.1	**0.0835**	0.003	3.3	ug/L	51	Standard
	Ag	107	65.0	10.1	**0.0342**	0.001	3.1	ug/L	76	Standard
	Cd	111	5.9	60.9	**0.0426**	0.002	4.5	mg/L	6	Standard
	Cd	114	14.7	56.1	**0.0406**	0.002	4.5	ug/L	18	Standard
>	**In**	115	476390.2	0.6				ug/L	507261	Standard
	Sn	118	196.7	16.1	**-0.0718**	0.006	8.8	ug/L	683	Standard
	Sb	123	314.0	20.5	**0.0577**	0.016	28.4	ug/L	446	Standard
	Ba	135	9508.6	1.0	**5.3362**	0.084	1.6	ug/L	28	Standard
	Ce	140	66.7	30.3				ug/L	33	Standard
>	**Tb**	159	730152.5	1.3				ug/L	800803	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	59.7	25.7	**0.0416**	0.002	5.1	ug/L	13	Standard
	Tl	205	63.3	40.5	**0.0527**	0.004	7.8	ug/L	13	Standard
	Pb	206	213.0	1.4	**0.0419**	0.001	1.5	ug/L	226	Standard
	Pb	207	186.7	5.2	**0.0433**	0.002	5.4	ug/L	204	Standard
	Pb	208	800.0	4.8	**0.0476**	0.002	4.7	ug/L	852	Standard
	U	238	11.0	32.8	**0.0444**	0.001	1.3	ug/L	13	Standard
>	**Bi**	209	424235.5	0.1				ug/L	449044	Standard

Sample ID: L1606145201
Report Date/Time: Wednesday, July 06, 2016 18:45:45
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	1208.4	11.8	**1.6626**	0.203	12.2	mg/L	58	Standard
K	39	188.3	4.1	**0.6388**	0.037	5.7	mg/L	27	Standard
Ca	43	23.3	32.7	**0.4852**	0.572	117.8	mg/L	20	Standard
Fe	54	82.1	2.7	**-0.0488**	0.002	3.8	mg/L	158	Standard
Fe	57	270.0	10.3	**0.2595**	0.101	38.9	mg/L	267	Standard
> **Sc-1**	45	37337.6	0.6				mg/L	38815	Standard
Cl	35	64590.7	1.0				ug/L	57611	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	3110.3	5.6				ug/L	1617	Standard
P	31	6779.9	4.1				ug/L	19244	Standard
S	34	3923.8	3.9				ug/L	3557	Standard
Sr	88	75.0	17.6				ug/L	65	Standard
C	12	33.3	62.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	23	Standard
Dy	164	22.5	71.0				mg/L	13	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	9886.6	5.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.907	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.476	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145201
Report Date/Time: Wednesday, July 06, 2016 18:45:45
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.914
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.475
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145201
Report Date/Time: Wednesday, July 06, 2016 18:45:45
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606145301
Sample Date/Time: Wednesday, July 06, 2016 18:46:39
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49236.5	1.5				ug/L	68501	Standard
	Be	9	10.0	50.0	**0.0348**	0.008	21.9	ug/L	8	Standard
	Al	27	563111.7	0.5	**5.5538**	0.103	1.8	ug/L	1397	Standard
	Sc	45	37698.5	2.4				ug/L	38815	Standard
	Ti	47	34.3	24.8	**0.0744**	0.025	33.3	ug/L	36	Standard
	V	51	1482.7	2.4	**0.0667**	0.006	9.1	ug/L	1284	Standard
	Cr	52	6641.8	2.5	**0.0318**	0.030	94.7	ug/L	6503	Standard
	Cr	53	711.7	9.4	**0.4118**	0.079	19.3	ug/L	492	Standard
	Mn	55	100193.2	1.3	**16.2941**	0.290	1.8	ug/L	841	Standard
	Co	59	2670.6	2.7	**0.4482**	0.011	2.6	ug/L	229	Standard
	Ni	60	847.0	5.6	**0.3476**	0.029	8.5	ug/L	344	Standard
	Cu	65	98.3	6.5	**0.0455**	0.004	9.1	ug/L	115	Standard
	Zn	66	2172.5	1.8	**2.0427**	0.029	1.4	ug/L	190	Standard
>	**Ge**	72	409724.8	0.7				ug/L	409858	Standard
	As	75	27.9	65.5	**0.1259**	0.018	14.1	ug/L	-22	Standard
	Se	82	13.4	6.0	**0.0753**	0.008	11.1	ug/L	18	Standard
	Se-1	77	77.7	0.7	**0.3694**	0.016	4.2	ug/L	50	Standard
>	**Ga**	71	48.3	26.0				mg/L	97	Standard
	Rb	85	333.3	17.9				ug/L	25	Standard
	Y	89	346517.9	0.9				ug/L	376763	Standard
>	**Rh**	103	30.0	16.7				ug/L	20	Standard
	Mo	98	26.6	22.6	**0.0831**	0.003	3.1	ug/L	51	Standard
	Ag	107	75.3	9.3	**0.0358**	0.001	3.4	ug/L	76	Standard
	Cd	111	9.9	79.8	**0.0446**	0.004	9.4	mg/L	6	Standard
	Cd	114	11.8	57.5	**0.0399**	0.001	3.7	ug/L	18	Standard
>	**In**	115	483775.2	0.4				ug/L	507261	Standard
	Sn	118	181.7	20.8	**-0.0753**	0.007	9.4	ug/L	683	Standard
	Sb	123	311.7	20.4	**0.0558**	0.015	27.5	ug/L	446	Standard
	Ba	135	38280.0	1.1	**21.1061**	0.144	0.7	ug/L	28	Standard
	Ce	140	506.7	16.0				ug/L	33	Standard
>	**Tb**	159	726142.8	1.1				ug/L	800803	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	87.3	10.6	**0.0454**	0.001	2.7	ug/L	13	Standard
	Tl	205	61.7	12.4	**0.0524**	0.001	2.4	ug/L	13	Standard
	Pb	206	228.3	5.6	**0.0453**	0.003	6.1	ug/L	226	Standard
	Pb	207	166.7	4.4	**0.0385**	0.002	3.9	ug/L	204	Standard
	Pb	208	789.0	2.6	**0.0470**	0.001	3.1	ug/L	852	Standard
	U	238	3.0	0.0	**0.0431**	0.000	0.0	ug/L	13	Standard
>	**Bi**	209	423989.3	0.6				ug/L	449044	Standard

Sample ID: L1606145301
Report Date/Time: Wednesday, July 06, 2016 18:48:56
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	1283.4	3.1	**1.7513**	0.066	3.8	mg/L	58	Standard
K	39	31.7	36.5	**-0.0116**	0.049	419.3	mg/L	27	Standard
Ca	43	35.0	49.5	**1.3299**	1.268	95.4	mg/L	20	Standard
Fe	54	124.2	10.3	**-0.0133**	0.009	68.8	mg/L	158	Standard
Fe	57	296.7	5.1	**0.3432**	0.074	21.6	mg/L	267	Standard
> **Sc-1**	45	37698.5	2.4				mg/L	38815	Standard
Cl	35	64298.8	0.9				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2353.5	6.6				ug/L	1617	Standard
P	31	7038.3	3.1				ug/L	19244	Standard
S	34	3735.5	4.2				ug/L	3557	Standard
Sr	88	108.3	21.8				ug/L	65	Standard
C	12	20.0	132.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	23	Standard
Dy	164	15.7	34.1				mg/L	13	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	25099.2	7.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		71.877	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.967	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145301
Report Date/Time: Wednesday, July 06, 2016 18:48:56
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.370
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.420
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145301
Report Date/Time: Wednesday, July 06, 2016 18:48:56
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 18:49:52
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52878.8	1.7				ug/L	68501	Standard
	Be	9	38918.3	1.6	**55.5825**	1.619	2.9	ug/L	8	Standard
	Al	27	6450514.7	0.4	**58.8972**	0.887	1.5	ug/L	1397	Standard
	Sc	45	41904.5	0.1				ug/L	38815	Standard
	Ti	47	37711.9	1.5	**103.7687**	1.613	1.6	ug/L	36	Standard
	V	51	378872.4	1.5	**49.6055**	1.127	2.3	ug/L	1284	Standard
	Cr	52	391857.7	0.8	**51.6770**	0.688	1.3	ug/L	6503	Standard
	Cr	53	48258.4	3.2	**51.5823**	1.577	3.1	ug/L	492	Standard
	Mn	55	349488.5	0.5	**52.7116**	0.800	1.5	ug/L	841	Standard
	Co	59	325919.6	1.0	**49.9129**	0.956	1.9	ug/L	229	Standard
	Ni	60	93953.1	0.7	**51.6102**	0.592	1.1	ug/L	344	Standard
	Cu	65	93092.5	0.7	**51.3818**	0.426	0.8	ug/L	115	Standard
	Zn	66	55991.6	1.2	**51.2143**	0.257	0.5	ug/L	190	Standard
>	Ge	72	443597.8	1.1				ug/L	409858	Standard
	As	75	56348.9	1.0	**50.3269**	0.784	1.6	ug/L	-22	Standard
	Se	82	5647.5	1.0	**49.3431**	0.684	1.4	ug/L	18	Standard
	Se-1	77	3836.5	3.0	**50.7225**	1.760	3.5	ug/L	50	Standard
>	Ga	71	73.3	37.6				mg/L	97	Standard
	Rb	85	758.4	7.1				ug/L	25	Standard
	Y	89	378699.5	0.9				ug/L	376763	Standard
>	Rh	103	25.0	34.6				ug/L	20	Standard
	Mo	98	248808.2	0.6	**100.1033**	1.976	2.0	ug/L	51	Standard
	Ag	107	315179.5	0.6	**48.9768**	0.482	1.0	ug/L	76	Standard
	Cd	111	102466.1	0.8	**50.0968**	0.522	1.0	mg/L	6	Standard
	Cd	114	249854.1	0.9	**49.9651**	0.245	0.5	ug/L	18	Standard
>	In	115	523251.4	1.3				ug/L	507261	Standard
	Sn	118	278121.1	0.6	**49.1520**	0.859	1.7	ug/L	683	Standard
	Sb	123	219592.2	1.7	**49.6144**	0.799	1.6	ug/L	446	Standard
	Ba	135	96411.8	0.1	**49.1334**	0.712	1.4	ug/L	28	Standard
	Ce	140	196.7	54.3				ug/L	33	Standard
>	Tb	159	777653.8	1.1				ug/L	800803	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	386233.1	0.9	**50.7844**	0.429	0.8	ug/L	13	Standard
	Tl	205	341495.9	1.1	**51.8522**	0.626	1.2	ug/L	13	Standard
	Pb	206	240491.9	0.2	**49.2471**	0.244	0.5	ug/L	226	Standard
	Pb	207	217886.1	0.3	**49.1333**	0.157	0.3	ug/L	204	Standard
	Pb	208	926190.9	0.5	**52.2285**	0.416	0.8	ug/L	852	Standard
	U	238	325513.2	0.6	**49.5735**	0.460	0.9	ug/L	13	Standard
>	Bi	209	446834.5	0.4				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 18:52:09
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3653.8	1.5	**4.5438**	0.069	1.5	mg/L	58	Standard
K	39	1298.4	0.6	**4.6524**	0.027	0.6	mg/L	27	Standard
Ca	43	101.7	11.4	**5.5715**	0.778	14.0	mg/L	20	Standard
Fe	54	6427.7	3.3	**4.8634**	0.168	3.5	mg/L	158	Standard
Fe	57	1803.4	4.2	**4.9080**	0.240	4.9	mg/L	267	Standard
> **Sc-1**	45	41904.5	0.1				mg/L	38815	Standard
Cl	35	72444.1	0.6				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1936.8	7.3				ug/L	1617	Standard
P	31	22136.2	2.7				ug/L	19244	Standard
S	34	4570.7	1.6				ug/L	3557	Standard
Sr	88	60.0	8.3				ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	40.0				mg/L	23	Standard
Dy	164	19.4	92.4				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	13	Standard
I	127	8907.6	4.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	111.165		
Al	27	117.794		
Sc	45			
Ti	47	103.769		
V	51	99.211		
Cr	52	103.354		
Cr	53			
Mn	55	105.423		
Co	59	99.826		
Ni	60	103.220		
Cu	65	102.764		
Zn	66	102.429		
> Ge	72		108.232	
As	75	100.654		
Se	82	98.686		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 18:52:09
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	100.103		
Ag	107	97.954		
Cd	111	100.194		
Cd	114			
In	115		103.152	
Sn	118	98.304		
Sb	123	99.229		
Ba	135	98.267		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.569		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.457		
U	238	99.147		
Bi	209		99.508	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 18:52:09
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 18:53:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53059.4	1.6				ug/L	68501	Standard
	Be	9	26.7	71.0	**0.0575**	0.027	47.3	ug/L	8	Standard
	Al	27	2088.5	29.0	**0.0540**	0.005	9.8	ug/L	1397	Standard
	Sc	45	42618.2	0.4				ug/L	38815	Standard
	Ti	47	37.3	8.2	**0.0766**	0.009	12.0	ug/L	36	Standard
	V	51	1299.1	5.0	**0.0291**	0.009	31.1	ug/L	1284	Standard
	Cr	52	6942.9	2.8	**0.0128**	0.010	76.9	ug/L	6503	Standard
	Cr	53	380.0	9.5	**-0.0026**	0.042	1611.2	ug/L	492	Standard
	Mn	55	723.4	5.7	**0.0151**	0.007	43.4	ug/L	841	Standard
	Co	59	245.0	10.0	**0.0436**	0.003	7.4	ug/L	229	Standard
	Ni	60	278.7	11.0	**-0.0020**	0.014	725.8	ug/L	344	Standard
	Cu	65	100.3	5.7	**0.0429**	0.002	5.4	ug/L	115	Standard
	Zn	66	141.0	3.8	**0.0179**	0.003	17.3	ug/L	190	Standard
>	**Ge**	72	436796.5	1.7				ug/L	409858	Standard
	As	75	-37.4	66.6	**0.0652**	0.022	33.9	ug/L	-22	Standard
	Se	82	18.8	25.6	**0.1159**	0.045	39.0	ug/L	18	Standard
	Se-1	77	56.0	6.2	**0.0042**	0.048	1131.8	ug/L	50	Standard
>	**Ga**	71	40.0	33.1				mg/L	97	Standard
	Rb	85	26.7	21.7				ug/L	25	Standard
	Y	89	376465.2	1.4				ug/L	376763	Standard
>	**Rh**	103	13.3	57.3				ug/L	20	Standard
	Mo	98	184.3	20.1	**0.1468**	0.015	10.1	ug/L	51	Standard
	Ag	107	117.3	17.5	**0.0416**	0.003	7.7	ug/L	76	Standard
	Cd	111	17.7	40.5	**0.0481**	0.004	7.3	mg/L	6	Standard
	Cd	114	55.7	53.6	**0.0487**	0.006	12.4	ug/L	18	Standard
>	**In**	115	515275.6	0.4				ug/L	507261	Standard
	Sn	118	845.0	18.4	**0.0419**	0.028	67.9	ug/L	683	Standard
	Sb	123	650.4	23.7	**0.1290**	0.036	27.9	ug/L	446	Standard
	Ba	135	44.7	20.1	**0.0388**	0.005	11.8	ug/L	28	Standard
	Ce	140	48.3	23.9				ug/L	33	Standard
>	**Tb**	159	772663.9	0.8				ug/L	800803	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	68.7	35.0	**0.0424**	0.003	7.6	ug/L	13	Standard
	Tl	205	53.3	19.5	**0.0507**	0.002	3.2	ug/L	13	Standard
	Pb	206	240.3	15.2	**0.0454**	0.008	16.8	ug/L	226	Standard
	Pb	207	202.0	9.9	**0.0447**	0.004	10.0	ug/L	204	Standard
	Pb	208	909.3	5.6	**0.0516**	0.003	6.0	ug/L	852	Standard
	U	238	47.7	45.2	**0.0499**	0.003	6.7	ug/L	13	Standard
>	**Bi**	209	445177.1	0.5				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 18:55:20
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.5415**	14.274	2635.8	mg/L	2	Standard
Mg	24	30.0	28.9	**-0.0014**	0.011	783.2	mg/L	58	Standard
K	39	25.0	34.6	**-0.0511**	0.031	61.4	mg/L	27	Standard
Ca	43	30.0	33.3	**0.7081**	0.656	92.7	mg/L	20	Standard
Fe	54	142.5	14.4	**-0.0116**	0.015	132.3	mg/L	158	Standard
Fe	57	271.7	19.7	**0.1479**	0.162	109.7	mg/L	267	Standard
> **Sc-1**	45	42618.2	0.4				mg/L	38815	Standard
Cl	35	70856.0	1.2				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1870.1	16.2				ug/L	1617	Standard
P	31	21663.8	0.6				ug/L	19244	Standard
S	34	4233.9	6.1				ug/L	3557	Standard
Sr	88	65.0	23.1				ug/L	65	Standard
C	12	56.7	44.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	33.3				mg/L	23	Standard
Dy	164	4.9	129.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	36.7	41.7				mg/L	13	Standard
I	127	6878.2	1.9				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		106.573	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 18:55:20
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.580	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.139	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 18:55:20
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606145303
Sample Date/Time: Wednesday, July 06, 2016 18:56:16
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50022.5	3.7				ug/L	68501	Standard
	Be	9	18.3	41.7	**0.0469**	0.011	22.7	ug/L	8	Standard
	Al	27	192424.3	1.2	**1.8923**	0.056	3.0	ug/L	1397	Standard
	Sc	45	37018.5	2.6				ug/L	38815	Standard
	Ti	47	106.3	105.8	**0.2939**	0.339	115.2	ug/L	36	Standard
	V	51	1360.1	13.7	**0.0532**	0.028	52.4	ug/L	1284	Standard
	Cr	52	5062.5	2.5	**-0.1831**	0.020	10.7	ug/L	6503	Standard
	Cr	53	318.3	8.9	**-0.0399**	0.031	78.4	ug/L	492	Standard
	Mn	55	28813.0	2.0	**4.7119**	0.100	2.1	ug/L	841	Standard
	Co	59	362.0	33.1	**0.0668**	0.021	30.8	ug/L	229	Standard
	Ni	60	329.0	9.1	**0.0425**	0.018	43.4	ug/L	344	Standard
	Cu	65	104.7	14.9	**0.0506**	0.010	19.4	ug/L	115	Standard
	Zn	66	1040.4	1.6	**0.9400**	0.022	2.3	ug/L	190	Standard
>	**Ge**	72	401656.7	0.7				ug/L	409858	Standard
	As	75	102.1	29.0	**0.1995**	0.030	14.9	ug/L	-22	Standard
	Se	82	22.0	21.0	**0.1618**	0.046	28.3	ug/L	18	Standard
	Se-1	77	58.0	7.9	**0.1003**	0.062	62.1	ug/L	50	Standard
>	**Ga**	71	36.7	7.9				mg/L	97	Standard
	Rb	85	1030.0	7.3				ug/L	25	Standard
	Y	89	344398.5	0.4				ug/L	376763	Standard
>	**Rh**	103	16.7	45.8				ug/L	20	Standard
	Mo	98	141.0	55.3	**0.1337**	0.034	25.4	ug/L	51	Standard
	Ag	107	118.7	35.0	**0.0433**	0.007	15.9	ug/L	76	Standard
	Cd	111	15.5	16.2	**0.0477**	0.001	2.7	mg/L	6	Standard
	Cd	114	35.3	65.1	**0.0451**	0.005	11.0	ug/L	18	Standard
>	**In**	115	476321.1	1.0				ug/L	507261	Standard
	Sn	118	363.3	12.5	**-0.0394**	0.009	22.9	ug/L	683	Standard
	Sb	123	965.8	23.1	**0.2197**	0.057	26.1	ug/L	446	Standard
	Ba	135	12744.7	0.5	**7.1481**	0.108	1.5	ug/L	28	Standard
	Ce	140	156.7	18.7				ug/L	33	Standard
>	**Tb**	159	727969.7	0.5				ug/L	800803	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	101.7	19.3	**0.0475**	0.003	5.7	ug/L	13	Standard
	Tl	205	131.7	61.7	**0.0637**	0.013	20.4	ug/L	13	Standard
	Pb	206	310.7	47.9	**0.0633**	0.032	50.8	ug/L	226	Standard
	Pb	207	272.7	44.1	**0.0640**	0.029	44.6	ug/L	204	Standard
	Pb	208	1044.7	27.1	**0.0624**	0.017	26.8	ug/L	852	Standard
	U	238	87.0	107.3	**0.0566**	0.015	26.5	ug/L	13	Standard
>	**Bi**	209	422240.6	0.2				ug/L	449044	Standard

Sample ID: L1606145303
Report Date/Time: Wednesday, July 06, 2016 18:58:33
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	511.7	4.4	**0.6878**	0.013	1.9	mg/L	58	Standard
K	39	38.3	54.3	**0.0182**	0.086	471.7	mg/L	27	Standard
Ca	43	26.7	54.1	**0.7577**	1.106	145.9	mg/L	20	Standard
Fe	54	417.6	4.7	**0.2468**	0.027	10.9	mg/L	158	Standard
Fe	57	390.0	22.4	**0.6933**	0.341	49.2	mg/L	267	Standard
> **Sc-1**	45	37018.5	2.6				mg/L	38815	Standard
Cl	35	62864.2	1.3				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2226.8	14.5				ug/L	1617	Standard
P	31	7123.3	3.9				ug/L	19244	Standard
S	34	4055.5	5.8				ug/L	3557	Standard
Sr	88	70.0	18.9				ug/L	65	Standard
C	12	20.0	86.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	34.6				mg/L	23	Standard
Dy	164	19.4	1.4				mg/L	13	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	8815.9	10.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		73.024	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.999	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145303
Report Date/Time: Wednesday, July 06, 2016 18:58:33
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.031
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145303
Report Date/Time: Wednesday, July 06, 2016 18:58:33
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129601
Sample Date/Time: Wednesday, July 06, 2016 18:59:28
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54200.1	1.0				ug/L	68501	Standard
	Be	9	18.3	41.7	**0.0451**	0.011	24.0	ug/L	8	Standard
	Al	27	5857472.0	1.8	**52.1721**	0.567	1.1	ug/L	1397	Standard
	Sc	45	41752.5	1.3				ug/L	38815	Standard
	Ti	47	188.3	12.3	**0.4941**	0.065	13.1	ug/L	36	Standard
	V	51	5597.3	1.8	**0.5958**	0.017	2.9	ug/L	1284	Standard
	Cr	52	10278.8	4.1	**0.4558**	0.064	14.0	ug/L	6503	Standard
	Cr	53	1303.4	22.2	**0.9965**	0.321	32.2	ug/L	492	Standard
	Mn	55	40819.6	0.2	**6.1131**	0.025	0.4	ug/L	841	Standard
	Co	59	685.3	1.4	**0.1111**	0.002	1.7	ug/L	229	Standard
	Ni	60	1914.1	2.2	**0.9041**	0.028	3.1	ug/L	344	Standard
	Cu	65	1543.4	2.5	**0.8445**	0.017	2.0	ug/L	115	Standard
	Zn	66	2332.2	1.7	**2.0391**	0.041	2.0	ug/L	190	Standard
>	**Ge**	72	440615.0	0.5				ug/L	409858	Standard
	As	75	1763.0	4.5	**1.6810**	0.077	4.6	ug/L	-22	Standard
	Se	82	71.3	8.5	**0.5761**	0.052	9.1	ug/L	18	Standard
	Se-1	77	95.7	7.1	**0.5337**	0.098	18.4	ug/L	50	Standard
>	**Ga**	71	226.7	25.4				mg/L	97	Standard
	Rb	85	8287.3	3.3				ug/L	25	Standard
	Y	89	371654.7	0.3				ug/L	376763	Standard
>	**Rh**	103	51.7	11.2				ug/L	20	Standard
	Mo	98	2079.3	2.8	**0.9217**	0.019	2.1	ug/L	51	Standard
	Ag	107	84.3	10.7	**0.0364**	0.001	3.8	ug/L	76	Standard
	Cd	111	17.6	21.2	**0.0481**	0.002	3.9	mg/L	6	Standard
	Cd	114	47.7	27.6	**0.0471**	0.003	5.8	ug/L	18	Standard
>	**In**	115	514374.2	0.8				ug/L	507261	Standard
	Sn	118	583.3	13.2	**-0.0050**	0.014	280.1	ug/L	683	Standard
	Sb	123	620.8	8.9	**0.1224**	0.013	11.0	ug/L	446	Standard
	Ba	135	37233.0	0.6	**19.3102**	0.212	1.1	ug/L	28	Standard
	Ce	140	788.4	3.0				ug/L	33	Standard
>	**Tb**	159	776406.0	1.3				ug/L	800803	Standard
	Ho	165	36.7	7.9				ug/L	10	Standard
	Tl	203	275.0	8.4	**0.0703**	0.003	4.3	ug/L	13	Standard
	Tl	205	258.3	22.0	**0.0827**	0.009	10.8	ug/L	13	Standard
	Pb	206	392.7	8.6	**0.0783**	0.007	8.7	ug/L	226	Standard
	Pb	207	321.0	5.6	**0.0730**	0.004	5.5	ug/L	204	Standard
	Pb	208	1419.7	2.7	**0.0820**	0.002	2.4	ug/L	852	Standard
	U	238	725.7	4.2	**0.1557**	0.005	2.9	ug/L	13	Standard
>	**Bi**	209	436491.8	0.4				ug/L	449044	Standard

Sample ID: L1606129601
Report Date/Time: Wednesday, July 06, 2016 19:01:45
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	7728.6	0.1	**9.6904**	0.119	1.2	mg/L	58	Standard
K	39	243.3	9.5	**0.7593**	0.074	9.7	mg/L	27	Standard
Ca	43	238.3	12.8	**14.8303**	1.960	13.2	mg/L	20	Standard
Fe	54	205.9	12.2	**0.0401**	0.020	50.5	mg/L	158	Standard
Fe	57	403.3	6.4	**0.5753**	0.093	16.2	mg/L	267	Standard
> **Sc-1**	45	41752.5	1.3				mg/L	38815	Standard
Cl	35	80815.0	2.6				ug/L	57611	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	8709.2	1.9				ug/L	1617	Standard
P	31	20899.4	2.9				ug/L	19244	Standard
S	34	3923.8	3.6				ug/L	3557	Standard
Sr	88	181.7	25.6				ug/L	65	Standard
C	12	66.7	37.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	52.9				mg/L	23	Standard
Dy	164	54.4	29.0				mg/L	13	Standard
Ho-1	165	36.7	7.9				mg/L	10	Standard
Er	166	46.7	24.7				mg/L	13	Standard
I	127	22747.1	6.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.123	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.504	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129601
Report Date/Time: Wednesday, July 06, 2016 19:01:45
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.402	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.205	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606145303
Sample Date/Time: Wednesday, July 06, 2016 19:02:39
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54932.8	2.5				ug/L	68501	Standard
	Be	9	16.7	34.6	**0.0423**	0.008	18.4	ug/L	8	Standard
	Al	27	25593.4	8.7	**0.2596**	0.014	5.4	ug/L	1397	Standard
	Sc	45	41463.3	1.5				ug/L	38815	Standard
	Ti	47	35.0	2.9	**0.0701**	0.002	3.4	ug/L	36	Standard
	V	51	1967.8	3.8	**0.1185**	0.012	9.8	ug/L	1284	Standard
	Cr	52	9177.1	2.0	**0.3186**	0.035	11.0	ug/L	6503	Standard
	Cr	53	426.7	14.0	**0.0491**	0.069	141.4	ug/L	492	Standard
	Mn	55	3966.2	3.7	**0.5132**	0.026	5.1	ug/L	841	Standard
	Co	59	221.7	8.5	**0.0400**	0.003	8.1	ug/L	229	Standard
	Ni	60	278.7	5.0	**-0.0017**	0.009	557.7	ug/L	344	Standard
	Cu	65	121.7	21.6	**0.0551**	0.015	27.9	ug/L	115	Standard
	Zn	66	1492.4	2.4	**1.2770**	0.032	2.5	ug/L	190	Standard
>	**Ge**	72	436481.1	0.9				ug/L	409858	Standard
	As	75	-38.2	37.5	**0.0644**	0.013	19.7	ug/L	-22	Standard
	Se	82	15.9	48.3	**0.0903**	0.069	75.9	ug/L	18	Standard
	Se-1	77	53.0	21.4	**-0.0353**	0.160	454.4	ug/L	50	Standard
>	**Ga**	71	30.0	16.7				mg/L	97	Standard
	Rb	85	160.0	13.6				ug/L	25	Standard
	Y	89	379621.3	1.9				ug/L	376763	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	41.5	24.0	**0.0884**	0.004	4.4	ug/L	51	Standard
	Ag	107	87.7	27.9	**0.0369**	0.004	10.1	ug/L	76	Standard
	Cd	111	10.3	66.1	**0.0444**	0.003	7.4	mg/L	6	Standard
	Cd	114	24.7	126.4	**0.0423**	0.006	14.8	ug/L	18	Standard
>	**In**	115	515985.1	0.9				ug/L	507261	Standard
	Sn	118	508.3	20.2	**-0.0188**	0.019	100.1	ug/L	683	Standard
	Sb	123	235.4	13.7	**0.0336**	0.008	23.5	ug/L	446	Standard
	Ba	135	1419.4	6.6	**0.7487**	0.042	5.6	ug/L	28	Standard
	Ce	140	46.7	22.3				ug/L	33	Standard
>	**Tb**	159	782731.4	0.8				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	38.7	73.8	**0.0384**	0.004	9.8	ug/L	13	Standard
	Tl	205	28.3	36.7	**0.0469**	0.002	3.4	ug/L	13	Standard
	Pb	206	226.7	4.3	**0.0426**	0.002	4.3	ug/L	226	Standard
	Pb	207	202.3	12.6	**0.0447**	0.006	12.5	ug/L	204	Standard
	Pb	208	847.0	1.7	**0.0480**	0.001	1.3	ug/L	852	Standard
	U	238	34.3	65.1	**0.0479**	0.003	7.1	ug/L	13	Standard
>	**Bi**	209	445218.2	0.4				ug/L	449044	Standard

Sample ID: L1606145303
Report Date/Time: Wednesday, July 06, 2016 19:04:56
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.2487**	14.781	5944.3	mg/L	2	Standard
Mg	24	75.0	13.3	**0.0566**	0.012	20.7	mg/L	58	Standard
K	39	33.3	67.6	**-0.0172**	0.085	496.8	mg/L	27	Standard
Ca	43	20.0	50.0	**0.0907**	0.700	772.0	mg/L	20	Standard
Fe	54	202.2	8.8	**0.0382**	0.013	33.1	mg/L	158	Standard
Fe	57	280.0	17.0	**0.1987**	0.161	81.0	mg/L	267	Standard
> **Sc-1**	45	41463.3	1.5				mg/L	38815	Standard
Cl	35	79616.6	0.3				ug/L	57611	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1973.5	13.7				ug/L	1617	Standard
P	31	20081.6	2.2				ug/L	19244	Standard
S	34	4032.2	1.1				ug/L	3557	Standard
Sr	88	75.0	13.3				ug/L	65	Standard
C	12	33.3	17.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	23	Standard
Dy	164	3.0	200.7				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	6319.7	6.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.192	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.496	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145303
Report Date/Time: Wednesday, July 06, 2016 19:04:56
Page 2

Approved: July 07, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.720	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.148	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, July 06, 2016 19:05:51
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49574.4	3.4				ug/L	68501	Standard
	Be	9	8.3	91.7	**0.0319**	0.012	36.0	ug/L	8	Standard
	Al	27	5564328.9	0.3	**54.2268**	1.817	3.4	ug/L	1397	Standard
	Sc	45	35692.0	2.4				ug/L	38815	Standard
	Ti	47	36104.0	1.5	**112.1954**	1.361	1.2	ug/L	36	Standard
	V	51	1644.2	9.1	**0.0998**	0.025	24.6	ug/L	1284	Standard
	Cr	52	5783.1	2.0	**-0.0569**	0.013	23.5	ug/L	6503	Standard
	Cr	53	3715.5	10.2	**4.1060**	0.499	12.2	ug/L	492	Standard
	Mn	55	2312.2	2.1	**0.2987**	0.012	4.0	ug/L	841	Standard
	Co	59	338.3	2.8	**0.0640**	0.002	2.4	ug/L	229	Standard
	Ni	60	699.0	3.7	**0.2774**	0.021	7.6	ug/L	344	Standard
	Cu	65	516.7	2.9	**0.3089**	0.012	4.0	ug/L	115	Standard
	Zn	66	966.4	1.2	**0.8872**	0.018	2.1	ug/L	190	Standard
>	Ge	72	392789.0	1.2				ug/L	409858	Standard
	As	75	8.9	378.2	**0.1077**	0.034	31.7	ug/L	-22	Standard
	Se	82	9.6	1.0	**0.0433**	0.001	1.2	ug/L	18	Standard
	Se-1	77	298.3	4.0	**3.7633**	0.228	6.0	ug/L	50	Standard
>	Ga	71	140.0	3.6				mg/L	97	Standard
	Rb	85	681.7	11.0				ug/L	25	Standard
	Y	89	328443.5	0.8				ug/L	376763	Standard
>	Rh	103	10.0	50.0				ug/L	20	Standard
	Mo	98	206890.0	0.3	**95.0894**	0.233	0.2	ug/L	51	Standard
	Ag	107	198.0	5.6	**0.0582**	0.002	3.5	ug/L	76	Standard
	Cd	111	-148.1	17.9	**-0.0433**	0.015	34.5	mg/L	6	Standard
	Cd	114	374.7	10.7	**0.1229**	0.009	7.4	ug/L	18	Standard
>	In	115	457975.9	0.3				ug/L	507261	Standard
	Sn	118	506.7	15.7	**-0.0076**	0.016	214.4	ug/L	683	Standard
	Sb	123	654.2	44.4	**0.1485**	0.075	50.3	ug/L	446	Standard
	Ba	135	41.7	8.4	**0.0400**	0.002	5.2	ug/L	28	Standard
	Ce	140	56.7	18.4				ug/L	33	Standard
>	Tb	159	724034.0	1.2				ug/L	800803	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	61.0	16.4	**0.0420**	0.001	3.4	ug/L	13	Standard
	Tl	205	80.0	22.5	**0.0557**	0.003	5.3	ug/L	13	Standard
	Pb	206	274.7	5.6	**0.0570**	0.003	6.1	ug/L	226	Standard
	Pb	207	244.0	2.6	**0.0586**	0.002	2.6	ug/L	204	Standard
	Pb	208	992.0	1.0	**0.0608**	0.000	0.8	ug/L	852	Standard
	U	238	3.3	17.3	**0.0432**	0.000	0.2	ug/L	13	Standard
>	Bi	209	411885.0	0.3				ug/L	449044	Standard

Sample ID: QC Std 4
Report Date/Time: Wednesday, July 06, 2016 19:08:08
Page 1

Approved: July 07, 2016

Na	23	3.3	86.6	**10.9828**	17.131	156.0	mg/L	2	Standard
Mg	24	8128.8	1.7	**11.9344**	0.323	2.7	mg/L	58	Standard
K	39	1198.4	13.9	**5.0665**	0.841	16.6	mg/L	27	Standard
Ca	43	223.3	20.8	**16.4476**	4.028	24.5	mg/L	20	Standard
Fe	54	13775.4	2.0	**12.4240**	0.399	3.2	mg/L	158	Standard
Fe	57	3787.1	3.0	**13.1073**	0.728	5.6	mg/L	267	Standard
Sc-1	45	35692.0	2.4				mg/L	38815	Standard
Cl	35	64987.8	1.8				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1570.1	6.7				ug/L	1617	Standard
P	31	7198.4	1.3				ug/L	19244	Standard
S	34	3923.8	4.6				ug/L	3557	Standard
Sr	88	86.7	29.6				ug/L	65	Standard
C	12	60.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	23	Standard
Dy	164	9.8	99.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	1970.1	5.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	1.085		
Sc	45			
Ti	47	112.195		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.835	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 4
Report Date/Time: Wednesday, July 06, 2016 19:08:08
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	95.089		
Ag	107			
Cd	111			
Cd	114			
In	115			90.284
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			91.725
Na	23	87.862		
Mg	24	238.688		
K	39	101.331		
Ca	43	109.651		
Fe	54	99.392		
Fe	57	104.859		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Mn	55	
QC Std 4	Tl	203	

Sample ID: QC Std 4
Report Date/Time: Wednesday, July 06, 2016 19:08:08
Page 3

Approved: July 07, 2016

QC Std 4	Mg	24

Sample ID: QC Std 4
Report Date/Time: Wednesday, July 06, 2016 19:08:08
Page 4

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, July 06, 2016 19:09:02
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53800.4	2.4				ug/L	68501	Standard
	Be	9	80136.4	0.3	**112.4788**	2.820	2.5	ug/L	8	Standard
	Al	27	5345078.2	1.5	**47.9732**	0.520	1.1	ug/L	1397	Standard
	Sc	45	40047.9	2.3				ug/L	38815	Standard
	Ti	47	33763.2	0.9	**96.4504**	1.307	1.4	ug/L	36	Standard
	V	51	728137.8	0.7	**99.1068**	0.604	0.6	ug/L	1284	Standard
	Cr	52	735138.4	0.1	**101.5294**	0.486	0.5	ug/L	6503	Standard
	Cr	53	93405.4	1.5	**104.0804**	2.037	2.0	ug/L	492	Standard
	Mn	55	670391.6	0.5	**105.0574**	0.041	0.0	ug/L	841	Standard
	Co	59	625211.3	0.7	**99.3861**	0.375	0.4	ug/L	229	Standard
	Ni	60	177152.0	0.7	**101.1772**	1.070	1.1	ug/L	344	Standard
	Cu	65	176839.4	0.8	**101.3457**	1.271	1.3	ug/L	115	Standard
	Zn	66	108752.9	0.7	**103.3905**	1.002	1.0	ug/L	190	Standard
>	**Ge**	72	427279.4	0.5				ug/L	409858	Standard
	As	75	110602.5	0.2	**102.4449**	0.341	0.3	ug/L	-22	Standard
	Se	82	10923.0	1.3	**99.1236**	0.756	0.8	ug/L	18	Standard
	Se-1	77	7617.9	1.9	**105.3511**	1.540	1.5	ug/L	50	Standard
>	**Ga**	71	150.0	20.3				mg/L	97	Standard
	Rb	85	640.0	9.0				ug/L	25	Standard
	Y	89	365147.7	0.6				ug/L	376763	Standard
>	**Rh**	103	38.3	27.2				ug/L	20	Standard
	Mo	98	200476.5	0.5	**83.7342**	0.804	1.0	ug/L	51	Standard
	Ag	107	373410.5	4.9	**60.2577**	3.748	6.2	ug/L	76	Standard
	Cd	111	196845.2	0.6	**99.8684**	1.157	1.2	mg/L	6	Standard
	Cd	114	474901.6	0.3	**98.5610**	1.581	1.6	ug/L	18	Standard
>	**In**	115	504053.2	1.4				ug/L	507261	Standard
	Sn	118	878.4	8.3	**0.0514**	0.013	25.9	ug/L	683	Standard
	Sb	123	423194.9	2.3	**99.2653**	0.897	0.9	ug/L	446	Standard
	Ba	135	184944.3	0.6	**97.8210**	0.904	0.9	ug/L	28	Standard
	Ce	140	98.3	26.1				ug/L	33	Standard
>	**Tb**	159	781877.2	0.7				ug/L	800803	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	756201.8	0.3	**101.0466**	0.150	0.1	ug/L	13	Standard
	Tl	205	668626.3	1.4	**103.1658**	1.578	1.5	ug/L	13	Standard
	Pb	206	486910.7	0.4	**101.3655**	0.440	0.4	ug/L	226	Standard
	Pb	207	424759.6	0.9	**97.3740**	1.059	1.1	ug/L	204	Standard
	Pb	208	1806310.1	0.5	**103.5475**	0.667	0.6	ug/L	852	Standard
	U	238	638520.7	0.1	**98.8114**	0.143	0.1	ug/L	13	Standard
>	**Bi**	209	439542.4	0.2				ug/L	449044	Standard

Sample ID: QC Std 5
Report Date/Time: Wednesday, July 06, 2016 19:11:19
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	7566.9	1.1	**9.8964**	0.338	3.4	mg/L	58	Standard
K	39	965.0	7.5	**3.5840**	0.202	5.6	mg/L	27	Standard
Ca	43	173.3	4.4	**10.9529**	0.788	7.2	mg/L	20	Standard
Fe	54	13008.8	3.3	**10.4391**	0.487	4.7	mg/L	158	Standard
Fe	57	3495.4	1.2	**10.6564**	0.312	2.9	mg/L	267	Standard
Sc-1	45	40047.9	2.3				mg/L	38815	Standard
Cl	35	68148.9	1.5				ug/L	57611	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1856.8	10.6				ug/L	1617	Standard
P	31	18643.1	3.8				ug/L	19244	Standard
S	34	3855.5	1.5				ug/L	3557	Standard
Sr	88	75.0	11.5				ug/L	65	Standard
C	12	76.7	32.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	12.5	45.0				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	2608.6	3.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	112.479		
Al	27	0.959		
Sc	45			
Ti	47	96.450		
V	51	99.107		
Cr	52	101.529		
Cr	53			
Mn	55	105.057		
Co	59	99.386		
Ni	60	101.177		
Cu	65	101.346		
Zn	66	103.390		
Ge	72		104.251	
As	75	102.445		
Se	82	99.124		
Se-1	77			
Ga	71			

Sample ID: QC Std 5
Report Date/Time: Wednesday, July 06, 2016 19:11:19
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	83.734		
Ag	107	60.258		
Cd	111	99.868		
Cd	114			
In	115		99.368	
Sn	118			
Sb	123	99.265		
Ba	135	97.821		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.047		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.548		
U	238	98.811		
Bi	209		97.884	
Na	23	-70.261		
Mg	24	197.928		
K	39	71.680		
Ca	43	73.019		
Fe	54	83.513		
Fe	57	85.251		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Ag	107	
QC Std 5	Na	23	

Sample ID: QC Std 5
Report Date/Time: Wednesday, July 06, 2016 19:11:19
Page 3

Approved: July 07, 2016

QC Std 5	Mg	24
QC Std 5	K	39
QC Std 5	Ca	43

Sample ID: QC Std 5
Report Date/Time: Wednesday, July 06, 2016 19:11:19
Page 4

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 19:12:15
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56160.6	1.8				ug/L	68501	Standard
	Be	9	40845.0	2.6	**54.9047**	0.516	0.9	ug/L	8	Standard
	Al	27	6551970.4	1.3	**56.3392**	1.670	3.0	ug/L	1397	Standard
	Sc	45	41572.0	1.7				ug/L	38815	Standard
	Ti	47	36365.9	0.5	**103.4324**	2.154	2.1	ug/L	36	Standard
	V	51	373639.8	1.0	**50.5673**	1.295	2.6	ug/L	1284	Standard
	Cr	52	379248.9	0.8	**51.6976**	1.271	2.5	ug/L	6503	Standard
	Cr	53	46753.7	2.6	**51.6544**	1.526	3.0	ug/L	492	Standard
	Mn	55	339745.6	0.4	**52.9632**	1.088	2.1	ug/L	841	Standard
	Co	59	324073.7	1.0	**51.2920**	0.893	1.7	ug/L	229	Standard
	Ni	60	90518.2	0.2	**51.3924**	0.862	1.7	ug/L	344	Standard
	Cu	65	89968.0	0.9	**51.3303**	1.278	2.5	ug/L	115	Standard
	Zn	66	54219.2	0.3	**51.2630**	0.968	1.9	ug/L	190	Standard
>	Ge	72	429235.1	1.6				ug/L	409858	Standard
	As	75	54773.7	0.3	**50.5602**	0.755	1.5	ug/L	-22	Standard
	Se	82	5564.8	1.1	**50.2523**	0.837	1.7	ug/L	18	Standard
	Se-1	77	3822.5	2.6	**52.2437**	1.024	2.0	ug/L	50	Standard
>	Ga	71	50.0	43.6				mg/L	97	Standard
	Rb	85	710.0	7.8				ug/L	25	Standard
	Y	89	370978.9	2.7				ug/L	376763	Standard
>	Rh	103	28.3	27.0				ug/L	20	Standard
	Mo	98	248182.1	1.3	**102.1495**	2.550	2.5	ug/L	51	Standard
	Ag	107	315228.1	1.3	**50.1230**	1.611	3.2	ug/L	76	Standard
	Cd	111	101311.6	0.8	**50.6817**	1.416	2.8	mg/L	6	Standard
	Cd	114	244330.1	1.0	**49.9947**	1.328	2.7	ug/L	18	Standard
>	In	115	511526.4	1.9				ug/L	507261	Standard
	Sn	118	274865.9	1.0	**49.7021**	1.424	2.9	ug/L	683	Standard
	Sb	123	227715.3	0.9	**52.6442**	1.349	2.6	ug/L	446	Standard
	Ba	135	94984.1	0.2	**49.5208**	0.934	1.9	ug/L	28	Standard
	Ce	140	70.0	32.7				ug/L	33	Standard
>	Tb	159	779844.1	2.6				ug/L	800803	Standard
	Ho	165	8.3	124.9				ug/L	10	Standard
	Tl	203	387182.7	1.1	**51.2437**	1.689	3.3	ug/L	13	Standard
	Tl	205	339494.8	2.7	**51.8947**	2.431	4.7	ug/L	13	Standard
	Pb	206	244515.0	0.9	**50.3913**	1.162	2.3	ug/L	226	Standard
	Pb	207	222226.5	0.3	**50.4333**	1.116	2.2	ug/L	204	Standard
	Pb	208	917872.5	1.1	**52.0981**	1.678	3.2	ug/L	852	Standard
	U	238	329693.9	0.7	**50.5295**	1.103	2.2	ug/L	13	Standard
>	Bi	209	444129.6	2.2				ug/L	449044	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 19:14:32
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3783.8	2.4	**4.7446**	0.059	1.2	mg/L	58	Standard
K	39	1246.7	9.1	**4.5032**	0.493	10.9	mg/L	27	Standard
Ca	43	88.3	21.4	**4.7358**	1.393	29.4	mg/L	20	Standard
Fe	54	6374.5	1.5	**4.8625**	0.107	2.2	mg/L	158	Standard
Fe	57	1813.4	8.2	**4.9797**	0.369	7.4	mg/L	267	Standard
Sc-1	45	41572.0	1.7				mg/L	38815	Standard
Cl	35	68583.5	0.6				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1763.4	8.9				ug/L	1617	Standard
P	31	20635.7	1.1				ug/L	19244	Standard
S	34	4107.2	3.8				ug/L	3557	Standard
Sr	88	65.0	23.1				ug/L	65	Standard
C	12	40.0	66.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	99.0				mg/L	23	Standard
Dy	164	2.4	243.1				mg/L	13	Standard
Ho-1	165	8.3	124.9				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	13	Standard
I	127	7728.6	2.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.809		
Al	27	112.678		
Sc	45			
Ti	47	103.432		
V	51	101.135		
Cr	52	103.395		
Cr	53			
Mn	55	105.926		
Co	59	102.584		
Ni	60	102.785		
Cu	65	102.661		
Zn	66	102.526		
Ge	72		104.728	
As	75	101.120		
Se	82	100.505		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 19:14:32
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	102.150		
Ag	107	100.246		
Cd	111	101.363		
Cd	114			
In	115		100.841	
Sn	118	99.404		
Sb	123	105.288		
Ba	135	99.042		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.487		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.196		
U	238	101.059		
Bi	209		98.906	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, July 06, 2016 19:14:32
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 19:15:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54942.8	0.8				ug/L	68501	Standard
	Be	9	45.0	58.8	**0.0811**	0.036	44.1	ug/L	8	Standard
	Al	27	2566.9	14.5	**0.0576**	0.003	5.7	ug/L	1397	Standard
	Sc	45	40367.0	1.9				ug/L	38815	Standard
	Ti	47	43.7	19.1	**0.0971**	0.023	23.6	ug/L	36	Standard
	V	51	1287.9	1.2	**0.0318**	0.001	4.5	ug/L	1284	Standard
	Cr	52	6591.1	1.2	**-0.0129**	0.006	47.5	ug/L	6503	Standard
	Cr	53	453.3	8.3	**0.0900**	0.045	50.2	ug/L	492	Standard
	Mn	55	728.4	5.6	**0.0186**	0.006	32.9	ug/L	841	Standard
	Co	59	301.7	1.7	**0.0536**	0.001	2.0	ug/L	229	Standard
	Ni	60	268.7	8.4	**-0.0036**	0.014	384.2	ug/L	344	Standard
	Cu	65	137.7	7.5	**0.0658**	0.006	8.9	ug/L	115	Standard
	Zn	66	149.7	3.3	**0.0294**	0.004	14.0	ug/L	190	Standard
>	**Ge**	72	426278.5	0.7				ug/L	409858	Standard
	As	75	-60.6	31.8	**0.0426**	0.018	42.7	ug/L	-22	Standard
	Se	82	12.3	13.8	**0.0602**	0.015	25.5	ug/L	18	Standard
	Se-1	77	61.3	12.3	**0.0978**	0.110	112.6	ug/L	50	Standard
>	**Ga**	71	30.0	76.4				mg/L	97	Standard
	Rb	85	28.3	81.5				ug/L	25	Standard
	Y	89	363777.1	0.9				ug/L	376763	Standard
>	**Rh**	103	21.7	35.3				ug/L	20	Standard
	Mo	98	237.6	7.5	**0.1704**	0.006	3.3	ug/L	51	Standard
	Ag	107	180.0	7.3	**0.0521**	0.002	3.0	ug/L	76	Standard
	Cd	111	26.5	12.9	**0.0528**	0.002	2.9	mg/L	6	Standard
	Cd	114	73.9	24.0	**0.0526**	0.003	6.3	ug/L	18	Standard
>	**In**	115	505090.7	2.8				ug/L	507261	Standard
	Sn	118	850.0	27.6	**0.0452**	0.040	87.7	ug/L	683	Standard
	Sb	123	1365.7	35.3	**0.2977**	0.106	35.6	ug/L	446	Standard
	Ba	135	52.7	11.0	**0.0436**	0.003	8.0	ug/L	28	Standard
	Ce	140	15.0	33.3				ug/L	33	Standard
>	**Tb**	159	772979.8	1.0				ug/L	800803	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	117.7	17.4	**0.0490**	0.003	5.3	ug/L	13	Standard
	Tl	205	106.7	25.8	**0.0589**	0.004	7.1	ug/L	13	Standard
	Pb	206	279.7	3.0	**0.0539**	0.002	4.1	ug/L	226	Standard
	Pb	207	242.7	5.0	**0.0543**	0.002	3.8	ug/L	204	Standard
	Pb	208	992.3	1.7	**0.0567**	0.001	1.3	ug/L	852	Standard
	U	238	100.3	19.8	**0.0580**	0.003	5.0	ug/L	13	Standard
>	**Bi**	209	441868.4	1.5				ug/L	449044	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 19:17:43
Page 1

Approved: July 07, 2016

Na	23	1.7	173.2	**-0.2018**	14.862	7363.8	mg/L	2	Standard
Mg	24	58.3	21.6	**0.0377**	0.017	45.5	mg/L	58	Standard
K	39	43.3	17.6	**0.0241**	0.028	114.8	mg/L	27	Standard
Ca	43	16.7	45.8	**-0.1077**	0.555	515.1	mg/L	20	Standard
Fe	54	119.4	36.2	**-0.0244**	0.033	134.8	mg/L	158	Standard
Fe	57	231.7	10.2	**0.0663**	0.086	129.4	mg/L	267	Standard
> **Sc-1**	45	40367.0	1.9				mg/L	38815	Standard
Cl	35	68330.4	0.6				ug/L	57611	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	1713.4	13.1				ug/L	1617	Standard
P	31	20178.4	0.4				ug/L	19244	Standard
S	34	4103.9	3.9				ug/L	3557	Standard
Sr	88	90.0	25.5				ug/L	65	Standard
C	12	50.0	52.9				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0					mg/L	23	Standard
Dy	164	3.3	173.2				mg/L	13	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	0.0					mg/L	13	Standard
I	127	6669.8	2.1				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.006	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 19:17:43
Page 2

Approved: July 07, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.572
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.402
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Wednesday, July 06, 2016 19:17:43
Page 3

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, July 06, 2016 19:18:39
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54098.1	3.3				ug/L	68501	Standard
	Be	9	163.3	29.7	**0.2472**	0.068	27.4	ug/L	8	Standard
	Al	27	1381.7	7.5	**0.0474**	0.001	1.4	ug/L	1397	Standard
	Sc	45	39292.6	1.5				ug/L	38815	Standard
	Ti	47	34.0	18.4	**0.0714**	0.018	24.9	ug/L	36	Standard
	V	51	3870.1	3.3	**0.3951**	0.013	3.3	ug/L	1284	Standard
	Cr	52	12230.6	2.3	**0.8091**	0.053	6.6	ug/L	6503	Standard
	Cr	53	1161.7	5.5	**0.9103**	0.080	8.8	ug/L	492	Standard
	Mn	55	3706.1	1.4	**0.4983**	0.003	0.6	ug/L	841	Standard
	Co	59	2545.5	1.1	**0.4192**	0.008	2.0	ug/L	229	Standard
	Ni	60	2951.0	3.0	**1.5680**	0.059	3.8	ug/L	344	Standard
	Cu	65	1450.1	4.3	**0.8366**	0.044	5.2	ug/L	115	Standard
	Zn	66	6995.9	1.6	**6.6934**	0.141	2.1	ug/L	190	Standard
>	**Ge**	72	417981.6	0.9				ug/L	409858	Standard
	As	75	357.8	10.2	**0.4371**	0.031	7.2	ug/L	-22	Standard
	Se	82	58.2	14.0	**0.4880**	0.071	14.6	ug/L	18	Standard
	Se-1	77	83.3	10.3	**0.4273**	0.117	27.3	ug/L	50	Standard
>	**Ga**	71	23.3	12.4				mg/L	97	Standard
	Rb	85	20.0	25.0				ug/L	25	Standard
	Y	89	356946.8	2.1				ug/L	376763	Standard
>	**Rh**	103	18.3	56.8				ug/L	20	Standard
	Mo	98	97.8	17.1	**0.1129**	0.007	6.1	ug/L	51	Standard
	Ag	107	2415.2	3.0	**0.4182**	0.014	3.2	ug/L	76	Standard
	Cd	111	473.5	8.0	**0.2829**	0.018	6.5	mg/L	6	Standard
	Cd	114	1005.4	9.2	**0.2490**	0.020	8.2	ug/L	18	Standard
>	**In**	115	496796.7	0.5				ug/L	507261	Standard
	Sn	118	420.0	26.1	**-0.0318**	0.020	63.4	ug/L	683	Standard
	Sb	123	1980.8	7.1	**0.4511**	0.032	7.0	ug/L	446	Standard
	Ba	135	1323.4	2.0	**0.7257**	0.012	1.7	ug/L	28	Standard
	Ce	140	11.7	49.5				ug/L	33	Standard
>	**Tb**	159	765291.8	0.8				ug/L	800803	Standard
	Ho	165	0.0					ug/L	10	Standard
	Tl	203	599.7	3.3	**0.1133**	0.003	2.3	ug/L	13	Standard
	Tl	205	568.3	2.8	**0.1301**	0.002	1.9	ug/L	13	Standard
	Pb	206	1184.7	1.2	**0.2423**	0.003	1.1	ug/L	226	Standard
	Pb	207	965.7	3.9	**0.2200**	0.009	4.0	ug/L	204	Standard
	Pb	208	4239.9	0.9	**0.2428**	0.002	0.9	ug/L	852	Standard
	U	238	2448.2	1.2	**0.4208**	0.005	1.2	ug/L	13	Standard
>	**Bi**	209	440163.0	0.1				ug/L	449044	Standard

Sample ID: QC Std 8
Report Date/Time: Wednesday, July 06, 2016 19:20:56
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	38.6	**0.0174**	0.022	123.7	mg/L	58	Standard
K	39	18.3	31.5	**-0.0697**	0.023	32.5	mg/L	27	Standard
Ca	43	33.3	8.7	**1.1191**	0.237	21.2	mg/L	20	Standard
Fe	54	95.2	14.9	**-0.0415**	0.012	28.6	mg/L	158	Standard
Fe	57	223.3	9.0	**0.0577**	0.056	96.4	mg/L	267	Standard
Sc-1	45	39292.6	1.5				mg/L	38815	Standard
Cl	35	66674.4	1.3				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1723.4	3.8				ug/L	1617	Standard
P	31	15454.6	10.5				ug/L	19244	Standard
S	34	4087.2	4.8				ug/L	3557	Standard
Sr	88	58.3	17.8				ug/L	65	Standard
C	12	66.7	17.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	12.9	48.2				mg/L	13	Standard
Ho-1	165	0.0					mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	761.7	2.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	123.590		
Al	27			
Sc	45			
Ti	47			
V	51	98.765		
Cr	52	101.142		
Cr	53			
Mn	55	99.663		
Co	59	104.792		
Ni	60	97.997		
Cu	65	104.570		
Zn	66	107.094		
> Ge	72		101.982	
As	75	109.275		
Se	82	122.008		
Se-1	77			
> Ga	71			

Sample ID: QC Std 8
Report Date/Time: Wednesday, July 06, 2016 19:20:56
Page 2

Approved: July 07, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	104.554		
Cd	111	117.890		
Cd	114			
> In	115			97.937
Sn	118			
Sb	123	112.777		
Ba	135	96.767		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	141.665		
Tl	205			
Pb	206			
Pb	207			
Pb	208	121.398		
U	238	105.196		
> Bi	209			98.022
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Tl	203	

Sample ID: QC Std 8
Report Date/Time: Wednesday, July 06, 2016 19:20:56
Page 3

Approved: July 07, 2016

2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW12SW-062416	**Prep Method:**	7470A	**Prep Date:**	06/28/2016 13:03
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 13:34
Workgroup #:	WG574982	**Analyst:**	AMA	**Run Date:**	07/01/2016 14:38
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	M7.070116.143807
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

TCLP Non-Volatile

Analyst(s): AMA
Date: 06/27/2016
Filter Lot #: 94 816030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
AMA 6/27/16		AMA 6/28/16	
Time On	Temp On °C	Time Off	Temp Off °C
1509	24.2	0810	22.4

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-1396-02	ME	1311	F1-182	S	100	10.84	2.57	100.79	2015	5.26
D	-06	ME					7.98	2.00	100.45	2009	5.08
13	-08	ME, ~~Hero~~ AMA 6/27 SV					7.34	2.06	100.35	2007	5.19
D	06-1398-01	ME	1311	F2-380	S	100	12.74	12.56	25.40	508	12.60
NA	FIBK1	ME, SV	1311	F1-182	NA	NA	NA	NA	100.0	100.0	4.92
NA	F2 Blk	ME	1311	F2-380							2.84

AMA 06/28/2016

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: NA

Peer Review By: [signature]

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG574502
Analyst: ERP
Spike Analyst: ERP
Method: 7470A
Run Date: 06/28/2016 13:03
Hotblock Start Temp: 95.4 @ 09:50
Hotblock End Temp: 95.5 @ 11:50
Instrument: HB6

SOP: ME404 Revison 17
Spike Solution: STD76858
Spike Witness: VC
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
KMnO4 1:1 Lot #: RGT37128
H2SO4 Lot #: COA18359
K2S2O8 1:1 Lot #: RGT37142
Mercury Water ICV Lot #: STD76860
HG H2O STDS 10PPM Lot #: STD76866

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG574502-03	BLANK	1	40 mL	40 mL		
2	WG574277-01	FBLK1	17	4 mL	40 mL		
3	WG574277-02	FBLK2	17	4 mL	40 mL		
4	WG574502-04	LCS	1	40 mL	40 mL	4 mL	
5	L16061396-02	SAMP	17	4 mL	40 mL		07/01/16
6	L16061396-06	SAMP	17	4 mL	40 mL		07/01/16
7	L16061396-08	SAMP	17	4 mL	40 mL		07/01/16
8	WG574502-01	REF	17	4 mL	40 mL		
9	L16061398-01	SAMP	17	4 mL	40 mL		07/01/16
10	WG574502-02	REF	2	40 mL	40 mL		
11	L16061419-01	SAMP	2	40 mL	40 mL		07/05/16
12	L16061419-02	SAMP	2	40 mL	40 mL		07/05/16
13	L16061419-03	SAMP	2	40 mL	40 mL		07/05/16
14	L16061419-04	SAMP	2	40 mL	40 mL		07/05/16
15	L16061426-01	SAMP	2	40 mL	40 mL		07/01/16
16	L16061426-03	SAMP	2	40 mL	40 mL		07/01/16
17	L16061452-01	SAMP	1	40 mL	40 mL		07/08/16
18	L16061453-01	SAMP	1	40 mL	40 mL		07/08/16
19	L16061453-03	SAMP	1	40 mL	40 mL		07/08/16
20	L16061458-02	SAMP	1	40 mL	40 mL		07/05/16
21	L16061468-01	SAMP	2	40 mL	40 mL		07/01/16
22	WG574502-05	MS	1	4 mL	40 mL	4 mL	
23	WG574502-06	MSD	1	4 mL	40 mL	4 mL	
24	WG574502-07	DUP	1	40 mL	40 mL		

Analyst: Erin Potter

Reviewer: Vicki Collins

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4828616
Report generated: 06/28/2016 14:58

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 070116C.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76866 ICV Std: STD76860 Post Spike: STD76866

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 574982

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.070116.132206	WG575077-01	Calibration Point		1		07/01/16 13:22
2	M7.070116.132437	WG575077-02	Calibration Point		1		07/01/16 13:24
3	M7.070116.132709	WG575077-03	Calibration Point		1		07/01/16 13:27
4	M7.070116.132941	WG575077-04	Calibration Point		1		07/01/16 13:29
5	M7.070116.133215	WG575077-05	Calibration Point		1		07/01/16 13:32
6	M7.070116.133448	WG575077-06	Calibration Point		1		07/01/16 13:34
7	M7.070116.133722	WG575077-07	Initial Calibration Verification		1		07/01/16 13:37
8	M7.070116.133953	WG575077-08	Initial Calib Blank		1		07/01/16 13:39
9	M7.070116.134226	WG575077-09	CCV		1		07/01/16 13:42
10	M7.070116.134457	WG575077-10	CCB		1		07/01/16 13:44
11	M7.070116.134727	WG574502-03	Method/Prep Blank	40/40	1		07/01/16 13:47
12	M7.070116.134959	WG574502-04	Laboratory Control S	40/40	1		07/01/16 13:49
13	M7.070116.135230	WG574277-01	Fluid Blank 1		1		07/01/16 13:52
14	M7.070116.135502	WG574277-02	Fluid Blank 2		1		07/01/16 13:55
15	M7.070116.135734	L16061396-02	062316-FA	4/40	1		07/01/16 13:57
16	M7.070116.140006	WG574982-01	Post Digestion Spike		1	L16061396-02	07/01/16 14:00
17	M7.070116.140238	L16061396-06	062316-BA	4/40	1		07/01/16 14:02
18	M7.070116.140511	L16061396-08	062316-WWC	4/40	1		07/01/16 14:05
19	M7.070116.140744	WG574502-01	Reference Sample	4/40	1	L16061398-01	07/01/16 14:07
20	M7.070116.141018	WG574502-05	Matrix Spike	4/40	1	L16061398-01	07/01/16 14:10
21	M7.070116.141250	WG575077-11	CCV		1		07/01/16 14:12
22	M7.070116.141521	WG575077-12	CCB		1		07/01/16 14:15
23	M7.070116.141755	WG574502-06	Matrix Spike Duplica	4/40	1	L16061398-01	07/01/16 14:17
24	M7.070116.142029	WG574502-02	Reference Sample	40/40	1	L16061419-01	07/01/16 14:20
25	M7.070116.142259	WG574502-07	Duplicate	40/40	1	L16061419-01	07/01/16 14:22
26	M7.070116.142530	L16061419-02	WEST RETENTION POND	40/40	1		07/01/16 14:25
27	M7.070116.142801	L16061419-03	OUTFALL 001	40/40	1		07/01/16 14:28
28	M7.070116.143032	L16061419-04	CATCH BASIN 29	40/40	1		07/01/16 14:30
29	M7.070116.143303	L16061426-01	16F1590-01	40/40	1		07/01/16 14:33
30	M7.070116.143535	L16061426-03	16F1590-03	40/40	1		07/01/16 14:35
31	M7.070116.143807	L16061452-01	18CPTMW12SW-062416	40/40	1		07/01/16 14:38
32	M7.070116.144039	WG574982-02	Post Digestion Spike		1	L16061452-01	07/01/16 14:40
33	M7.070116.144311	WG575077-13	CCV		1		07/01/16 14:43
34	M7.070116.144542	WG575077-14	CCB		1		07/01/16 14:45

Page: 1 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 070116C.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76866 ICV Std: STD76860 Post Spike: STD76866

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 574982

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.070116.144815	L16061453-01	MW2-062416	40/40	1		07/01/16 14:48
36	M7.070116.145048	L16061453-03	18CPTMW01SW-062416	40/40	1		07/01/16 14:50
37	M7.070116.145321	L16061458-02	SCF-WL01-062416	40/40	1		07/01/16 14:53
38	M7.070116.145554	L16061468-01	H6F0605-01	40/40	1		07/01/16 14:55
39	M7.070116.145827	WG575077-15	CCV		1		07/01/16 14:58
40	M7.070116.150057	WG575077-16	CCB		1		07/01/16 15:00

Page: 2 Approved: July 05, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 575077
Runlog ID: 76088
Analytical Workgroups: 574982

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1426, 1452, 1453, 1458
Client Forms	X
Level X	
Level 3	1458
Level 4	1452, 1453
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
05-JUL-2016
Alexandra M. Alfred

Secondary Reviewer:
05-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 12:48:21

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG574982

Login Number: L16061452

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW12SW-062416	01	06/24/16					06/28/2016	4.2	28		07/01/16	7.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4837378
Report generated 07/01/2016 16:59

METHOD BLANK SUMMARY

Login Number: L16061452
Blank File ID: M7.070116.134727
Prep Date: 06/28/16 13:03
Analyzed Date: 07/01/16 13:47
Analyst: AMA

Work Group: WG574982
Blank Sample ID: WG574502-03
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574502-04	M7.070116.134959	07/01/16 13:49	01
DUP	WG574502-07	M7.070116.142259	07/01/16 14:22	01
18CPTMW12SW-062416	L16061452-01	M7.070116.143807	07/01/16 14:38	01

Report Name: BLANK_SUMMARY
PDF File ID: 4837379
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061452 Prep Date: 06/28/16 13:03 Sample ID: WG574502-03
Instrument ID: CVAA1 Run Date: 07/01/16 13:47 Prep Method: 7470A
File ID: M7.070116.134727 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG574982 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-01-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4837380
01-JUL-2016 16:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061452 Run Date: 07/01/2016 Sample ID: WG574502-04
Instrument ID: CVAA1 Run Time: 13:49 Prep Method: 7470A
File ID: M7.070116.134959 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG574982 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76858 Cal ID: CVAA1-01-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00386	96.5	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4837381
Report generated: 07/01/2016 16:59

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061452 Cal ID: CVAA1 - Worknum: WG574982
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG574502-01 File ID: M7.070116.140744 Dil: 1 Matrix: WATER
Sample ID: WG574502-05 MS File ID: M7.070116.141018 Dil: 1 Units: mg/L
Sample ID: WG574502-06 MSD File ID: M7.070116.141755 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.0400	0.0416	104	0.0400	0.0414	103	0.530	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4837382
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061452 **Worknum:** WG574982
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG574982-02 **File ID:** M7.070116.144039 **Dil:** 1 **Units:** ug/L
Sample ID: L16061452-01 **File ID:** M7.070116.143807 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	0.959		0	U	1	95.9	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4837377
Report generated: 07/01/2016 16:59

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061452
Analytical Method: 7470A
ICAL Worknum: WG575077

Workgroup (AAB#): WG574982
Instrument ID: CVAA1
Initial Calibration Date: 07/01/2016 13:34

Analyte	WG575077-01		WG575077-02		WG575077-03		WG575077-04		WG575077-05		WG575077-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	15.62	0.200	2292	1.00	11940	2.00	23310	5.00	58060	10.0	111600

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4837383
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061452
Analytical Method: 7470A
ICAL Worknum: WG575077

Workgroup (AAB#): WG574982
Instrument ID: CVAA1
Initial Calibration Date: 07/01/2016 13:34

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4837383
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061452
Instrument ID: CVAA1
File ID: M7.070116.133953
Workgroup (AAB#): WG574982
Matrix: WATER

Run Date: 07/01/2016
Run Time: 13:39
Analyst: AMA
Cal ID: CVAA1 - 01-JUL-16

Sample ID: WG575077-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4837385
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575077-10
Instrument ID: CVAA1
Run Time: 13:44
Method: 7470A
File ID: M7.070116.134457
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574982
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837387
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575077-12
Instrument ID: CVAA1
Run Time: 14:15
Method: 7470A
File ID: M7.070116.141521
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574982
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837387
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575077-14
Instrument ID: CVAA1
Run Time: 14:45
Method: 7470A
File ID: M7.070116.144542
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574982
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837387
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575077-07
Instrument ID: CVAA1
Run Time: 13:37
Method: 7470A
File ID: M7.070116.133722
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574982
Cal ID: CVAA1 - 01-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	1.96	97.9	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4837384
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575077-09
Instrument ID: CVAA1
Run Time: 13:42
Method: 7470A
File ID: M7.070116.134226
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574982
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00206	mg/L	103	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837386
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575077-11
Instrument ID: CVAA1
Run Time: 14:12
Method: 7470A
File ID: M7.070116.141250
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574982
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00209	mg/L	104	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837386
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575077-13
Instrument ID: CVAA1
Run Time: 14:43
Method: 7470A
File ID: M7.070116.144311
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574982
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00212	mg/L	106	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837386
Report generated 07/01/2016 16:59

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\070116C.wsz
Date Started: 7/1/2016 1:19:02 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	07/01/16 01:22:06 pm	0.0000	16	76.67		1.00
Replicates	25.0	14.3	24.0	-0.8							
Standard #1 (0.2 ug/L)					STD	07/01/16 01:24:37 pm	0.2000	2292	0.69		1.00
Replicates	2291.5	2270.6	2299.3	2307.6							
Standard #2 (1.0 ug/L)					STD	07/01/16 01:27:09 pm	1.0000	11940	0.20		1.00
Replicates	11904.3	11950.5	11948.2	11958.5							
Standard #3 (2.0 ug/L)					STD	07/01/16 01:29:41 pm	2.0000	23309	0.14		1.00
Replicates	23265.2	23303.1	23326.1	23340.4							
Standard #4 (5.0 ug/L)					STD	07/01/16 01:32:15 pm	5.0000	58060	0.11		1.00
Replicates	57964.6	58090.8	58095.6	58091.0							
Standard #5 (10.0 ug/L)					STD	07/01/16 01:34:48 pm	10.0000	111631	0.05		1.00
Replicates	111556.2	111686.9	111638.9	111643.0							

Calibration

Equation: A = 615.011 + 11184.540C
R2: 0.99959
SEE: 975.2013
Flags:

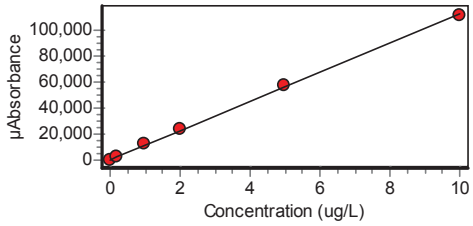

ICV					ICV	07/01/16 01:37:22 pm	1.9580	22511	0.10		1.00
Replicates	22520.8	22530.1	22512.9	22479.6							
% Recovery	97.88										

Approved: July 05, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	07/01/16 01:39:53 pm	-0.0571	-24	28.76		1.00
Replicates	-27.0	-31.7	-18.7	-17.4							
CCV					CCV	07/01/16 01:42:26 pm	2.0620	23677	0.25		1.00
Replicates	23729.3	23710.7	23669.3	23596.8							
% Recovery	103.10										
CCB					CCB	07/01/16 01:44:57 pm	-0.0566	-18	121.41		1.00
Replicates	-13.5	10.7	-40.3	-30.3							
WG574502-03					MB	07/01/16 01:47:27 pm	-0.0515	40	23.51		1.00
Replicates	26.7	45.3	47.3	39.0							
WG574502-04					LCS	07/01/16 01:49:59 pm	3.8580	43770	0.67		1.00
Replicates	43396.9	43695.1	43906.3	44083.5							
% Recovery	96.46										
WG574277-01					UNK	07/01/16 01:52:30 pm	-0.0530	23	80.67		1.00
Replicates	37.4	16.0	-0.2	37.1							
WG574277-02					UNK	07/01/16 01:55:02 pm	-0.0524	29	43.97		1.00
Replicates	39.7	19.6	39.1	16.0							
L1606139602					UNK	07/01/16 01:57:34 pm	-0.0514	40	36.40		1.00
Replicates	19.7	40.4	52.1	49.4							
WG574982-01					SPK	07/01/16 02:00:06 pm	0.9742	11512	0.37		1.00
Replicates	11460.7	11500.7	11521.7	11563.0							
% Recovery	102.56										
L1606139606					UNK	07/01/16 02:02:38 pm	-0.0522	32	20.10		1.00
Replicates	24.8	28.1	34.4	38.9							
L1606139608					UNK	07/01/16 02:05:11 pm	0.2547	3464	0.72		1.00
Replicates	3427.4	3481.1	3478.1	3470.2							
L1606139801					UNK	07/01/16 02:07:44 pm	-0.0553	-3	376.08		1.00
Replicates	-11.6	10.6	-12.6	1.7							

Approved: July 05, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
WG574502-05					UNK	07/01/16 02:10:18 pm	4.1590	47133	0.22		1.00
Replicates	46975.9	47179.6	47188.1	47189.3							
CCV					CCV	07/01/16 02:12:50 pm	2.0890	23977	0.28		1.00
Replicates	23885.5	23974.1	24007.9	24039.7							
% Recovery	104.44										
CCB					CCB	07/01/16 02:15:21 pm	-0.0561	-12	35.78		1.00
Replicates	-16.6	-8.6	-8.4	-15.6							
WG574502-06					UNK	07/01/16 02:17:55 pm	4.1370	46884	0.28		1.00
Replicates	46695.5	46902.6	46957.4	46981.1							
L1606141901					UNK	07/01/16 02:20:29 pm	-0.0498	58	36.93		1.00
Replicates	37.2	67.7	83.7	44.0							
WG574502-07					UNK	07/01/16 02:22:59 pm	-0.0446	116	6.83		1.00
Replicates	117.4	104.8	122.9	119.6							
L1606141902					UNK	07/01/16 02:25:30 pm	-0.0510	44	33.00		1.00
Replicates	55.9	55.3	24.7	42.0							
L1606141903					UNK	07/01/16 02:28:01 pm	-0.0532	21	81.88		1.00
Replicates	21.6	17.6	1.1	42.1							
L1606141904					UNK	07/01/16 02:30:32 pm	-0.0507	48	39.49		1.00
Replicates	63.6	62.9	43.4	23.4							
L1606142601					UNK	07/01/16 02:33:03 pm	-0.0169	426	3.64		1.00
Replicates	422.5	428.3	408.1	445.6							
L1606142603					UNK	07/01/16 02:35:35 pm	-0.0323	254	5.48		1.00
Replicates	249.8	235.9	262.6	266.7							
L1606145201					UNK	07/01/16 02:38:07 pm	-0.0528	24	23.67		1.00
Replicates	16.8	23.7	30.7	25.5							

Approved: July 05, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
WG574982-02					SPK	07/01/16 02:40:39 pm	0.9588	11339	0.96		1.00
Replicates	11197.8	11311.9	11398.6	11446.6							
% Recovery	101.16										
CCV					CCV	07/01/16 02:43:11 pm	2.1190	24317	0.31		1.00
Replicates	24219.6	24301.8	24391.9	24355.9							
% Recovery	105.96										
CCB					CCB	07/01/16 02:45:42 pm	-0.0580	-34	47.09		1.00
Replicates	-47.2	-21.0	-19.0	-47.6							
L1606145301					UNK	07/01/16 02:48:15 pm	-0.0395	174	3.79		1.00
Replicates	176.2	178.3	163.8	175.8							
L1606145303					UNK	07/01/16 02:50:48 pm	-0.0496	60	26.85		1.00
Replicates	47.1	56.2	83.4	53.1							
L1606145802					UNK	07/01/16 02:53:21 pm	0.4068	5165	0.57		1.00
Replicates	5122.4	5168.9	5180.7	5188.4							
L1606146801					UNK	07/01/16 02:55:54 pm	-0.0429	135	11.20		1.00
Replicates	138.9	154.2	125.7	120.4							
CCV					CCV	07/01/16 02:58:27 pm	2.1490	24649	0.13		1.00
Replicates	24603.7	24655.7	24682.5	24655.0							
% Recovery	107.44										
CCB					CCB	07/01/16 03:00:57 pm	-0.0556	-6	123.17		1.00
Replicates	-7.5	-8.8	-14.0	4.7							

Approved: July 05, 2016

Alexandra M. Alpred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 19, 2016

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - HANAH D. COE
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RNP - RICK N. PETTY
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 19, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 19, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18CPTmw12SW-062416			6/24/16	0750		✓	W	7	✓	✓	✓	✓					
	18CPTmw12DW-062416			6/24/16	0855		✓	W	2				✓					
	MW7-062416			6/24/16	0955		✓	W	6	✓	✓		✓					
	Trip Blank			6/24/16			✓	W	2	✓								

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 6/24/16	Time 1530	R	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	R (S		Time	Remarks:

Microbac OVD
Received: 06/25/2016 10:39
By: BRENDA GREENWALT
221000087727

Brenda Greenwalt

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00729608

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061452
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 08-JUL-2016

Samplenum	Container ID	Products
L16061452-01	766908	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-JUN-2016 11:44	CLS		
2	ANALYZ	V1	ORG4	27-JUN-2016 16:45	JST	CLS	
3	STORE	ORG4	A1	11-JUL-2016 07:33	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-JUN-2016 11:44	CLS		
2	ANALYZ	V1	ORG4	27-JUN-2016 16:45	JST	CLS	
3	STORE	ORG4	A1	11-JUL-2016 07:33	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-JUN-2016 11:44	CLS		
2	ANALYZ	V1	ORG4	27-JUN-2016 16:45	JST	CLS	
3	STORE	ORG4	A1	11-JUL-2016 07:33	CLS	AWE	

Samplenum	Container ID	Products
L16061452-01	766909	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-JUN-2016 11:44	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		27-JUN-2016 11:44	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061452-01	766910	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-JUN-2016 11:44	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:24	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061452
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 08-JUL-2016

Samplenum	Container ID	Products
L16061452-01	766911	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-JUN-2016 11:44	CLS		
2	PREP	W1	DIG	27-JUN-2016 12:37	ERP	CLS	
3	STORE	DIG	A1	29-JUN-2016 14:52	CLS	ERP	
4	ANALYZ*	DIG	METALS	30-JUN-2016 14:56	JYH	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061452-02	766912	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-JUN-2016 11:44	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		27-JUN-2016 11:44	CLS		

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061452
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 08-JUL-2016

Samplenum	Container ID	Products
L16061452-03	766913	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-JUN-2016 11:44	CLS		
2	ANALYZ	V1	ORG4	27-JUN-2016 16:45	JST	CLS	
3	STORE	ORG4	A1	11-JUL-2016 07:33	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-JUN-2016 11:44	CLS		
2	ANALYZ	V1	ORG4	27-JUN-2016 16:45	JST	CLS	
3	STORE	ORG4	A1	11-JUL-2016 07:33	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-JUN-2016 11:44	CLS		
2	ANALYZ	V1	ORG4	27-JUN-2016 16:45	JST	CLS	
3	STORE	ORG4	A1	11-JUL-2016 07:33	CLS	AWE	

Samplenum	Container ID	Products
L16061452-03	766914	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-JUN-2016 11:44	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		27-JUN-2016 11:44	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061452-03	766915	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-JUN-2016 11:44	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:24	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061452
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 08-JUL-2016

Samplenum	Container ID	Products
L16061452-04	766916	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-JUN-2016 11:44	CLS		
2	ANALYZ	V1	ORG4	27-JUN-2016 16:45	JST	CLS	
3	STORE	ORG4	A1	11-JUL-2016 07:33	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-JUN-2016 11:44	CLS		
2	ANALYZ	V1	ORG4	27-JUN-2016 16:45	JST	CLS	
3	STORE	ORG4	A1	11-JUL-2016 07:33	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16061593

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 13 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113719	H	3.0		J2317164859	X
0019185	H	3.0		J2317164840	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18WW25(3.5-4)(270616)	L16061593-01	06/27/2016 13:35	06/29/2016 09:34
18WW25(9.5-10)270616	L16061593-02	06/27/2016 14:12	06/29/2016 09:34
18WW25(14.5-15)270616	L16061593-03	06/27/2016 14:45	06/29/2016 09:34
18WW25(19.5-20)270616	L16061593-04	06/27/2016 15:50	06/29/2016 09:34
18WW25(22-22.5)270616	L16061593-05	06/27/2016 16:12	06/29/2016 09:34
18WW25(22-22.5)270616 DUP	L16061593-06	06/27/2016 16:12	06/29/2016 09:34

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16061593
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 25
2.0 Full Sample Data Package 53
2.1 Volatiles Data 54
2.1.1 Volatiles GCMS Data (8260) 55
2.1.1.1 Summary Data 56
2.1.1.2 QC Summary Data 77
2.1.1.3 Sample Data 120
2.1.1.4 Standards Data 184
2.1.1.5 Raw QC Data 267
2.2 General Chromatography Data 299
2.2.1 6850 LC/MS Data 300
2.2.1.1 Summary Data 301
2.2.1.2 QC Summary Data 309
2.2.1.3 Sample Data 364
2.2.1.4 Standards Data 377
2.2.1.5 Raw QC Data 420
2.3 General Chemistry Data 427
2.3.1 Percent Solids Data 428
2.3.1.1 Raw Data 429
3.0 Attachments 432

1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574993, WG575227	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-13 14:47:01

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574993, WG575227	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				3
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574993, WG575227	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574993, WG575227	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?		X			1
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574993, WG575227	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574993, WG575227	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Internal Standard 1,4-Dichlorobenzene-d4 was above the upper control limit in the initial analysis of Sample 05.

2. Dichlorodifluoromethane was above the upper control limit in the Alternate Source standard WG573367-11 analyzed 06/21/2016 on HPMS9.

3. Naphthalene was detected above the DL in the Method Blank WG575227-01 analyzed 07/06/2016 on HPMS9.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575409	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-07-11 13:33:23

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575409	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575409	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575409	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575409	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575409	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-11 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG574798	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-07-01 14:14:16

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG574798	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG574798	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG574798	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG574798	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG574798	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-07-01 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(3.5-4)(270616)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/01/2016 22:05
Collect Date:	06/27/2016 13:35	**Dilution:**	1	**File ID:**	9M975227
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.6	U	23.2	11.6	5.80
Benzene	71-43-2	1.16	U	5.80	1.16	0.580
Bromobenzene	108-86-1	1.16	U	5.80	1.16	0.580
Bromochloromethane	74-97-5	2.32	U	5.80	2.32	1.16
Bromodichloromethane	75-27-4	1.16	U	5.80	1.16	0.580
Bromoform	75-25-2	1.16	U	5.80	1.16	0.580
Bromomethane	74-83-9	2.32	U	5.80	2.32	1.16
2-Butanone	78-93-3	5.80	U	11.6	5.80	2.90
n-Butylbenzene	104-51-8	1.16	U	5.80	1.16	0.580
sec-Butylbenzene	135-98-8	1.16	U	5.80	1.16	0.580
tert-Butylbenzene	98-06-6	1.16	U	5.80	1.16	0.580
Carbon disulfide	75-15-0	1.16	U	5.80	1.16	0.580
Carbon tetrachloride	56-23-5	1.16	U	5.80	1.16	0.580
Chlorobenzene	108-90-7	1.16	U	5.80	1.16	0.580
Chlorodibromomethane	124-48-1	1.16	U	5.80	1.16	0.580
Chloroethane	75-00-3	2.32	U	5.80	2.32	1.16
Chloroform	67-66-3	1.16	U	5.80	1.16	0.580
Chloromethane	74-87-3	4.64	U	11.6	4.64	2.32
2-Chlorotoluene	95-49-8	1.16	U	5.80	1.16	0.580
4-Chlorotoluene	106-43-4	1.16	U	5.80	1.16	0.580
1,2-Dibromo-3-chloropropane	96-12-8	4.64	U	11.6	4.64	2.32
1,2-Dibromoethane	106-93-4	1.16	U	5.80	1.16	0.580
Dibromomethane	74-95-3	1.16	U	5.80	1.16	0.580
1,2-Dichlorobenzene	95-50-1	1.16	U	5.80	1.16	0.580
1,3-Dichlorobenzene	541-73-1	1.16	U	5.80	1.16	0.580
1,4-Dichlorobenzene	106-46-7	1.16	U	5.80	1.16	0.580
Dichlorodifluoromethane	75-71-8	2.32	U	5.80	2.32	1.16
1,1-Dichloroethane	75-34-3	2.32	U	5.80	2.32	1.16
1,2-Dichloroethane	107-06-2	1.16	U	5.80	1.16	0.580
1,1-Dichloroethene	75-35-4	1.16	U	5.80	1.16	0.580
cis-1,2-Dichloroethene	156-59-2	1.16	U	5.80	1.16	0.580
trans-1,2-Dichloroethene	156-60-5	1.16	U	5.80	1.16	0.580

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.16	U	5.80	1.16	0.580
1,3-Dichloropropane	142-28-9	1.16	U	5.80	1.16	0.580
2,2-Dichloropropane	594-20-7	1.16	U	5.80	1.16	0.580
cis-1,3-Dichloropropene	10061-01-5	1.16	U	5.80	1.16	0.580
trans-1,3-Dichloropropene	10061-02-6	1.16	U	5.80	1.16	0.580
1,1-Dichloropropene	563-58-6	1.16	U	5.80	1.16	0.580
Ethylbenzene	100-41-4	1.16	U	5.80	1.16	0.580
2-Hexanone	591-78-6	5.80	U	11.6	5.80	2.90
Hexachlorobutadiene	87-68-3	1.16	U	5.80	1.16	0.580
Isopropylbenzene	98-82-8	1.16	U	5.80	1.16	0.580
p-Isopropyltoluene	99-87-6	1.16	U	5.80	1.16	0.580
4-Methyl-2-pentanone	108-10-1	5.80	U	11.6	5.80	2.90
Methylene chloride	75-09-2	2.32	U	5.80	2.32	1.16
n-Propylbenzene	103-65-1	1.16	U	5.80	1.16	0.580
Styrene	100-42-5	1.16	U	5.80	1.16	0.580
1,1,1,2-Tetrachloroethane	630-20-6	1.16	U	5.80	1.16	0.580
1,1,2,2-Tetrachloroethane	79-34-5	1.16	U	5.80	1.16	0.580
Tetrachloroethene	127-18-4	1.16	U	5.80	1.16	0.580
Toluene	108-88-3	1.16	U	5.80	1.16	0.580
1,2,3-Trichlorobenzene	87-61-6	1.16	U	5.80	1.16	0.580
1,2,4-Trichlorobenzene	120-82-1	1.16	U	5.80	1.16	0.580
1,1,1-Trichloroethane	71-55-6	1.16	U	5.80	1.16	0.580
1,1,2-Trichloroethane	79-00-5	1.16	U	5.80	1.16	0.580
Trichloroethene	79-01-6	1.16	U	5.80	1.16	0.580
Trichlorofluoromethane	75-69-4	2.32	U	5.80	2.32	1.16
1,2,3-Trichloropropane	96-18-4	2.32	U	5.80	2.32	1.16
1,2,4-Trimethylbenzene	95-63-6	1.16	U	5.80	1.16	0.580
1,3,5-Trimethylbenzene	108-67-8	1.16	U	5.80	1.16	0.580
Vinyl chloride	75-01-4	2.32	U	5.80	2.32	1.16
o-Xylene	95-47-6	1.16	U	5.80	1.16	0.580
m-,p-Xylene	179601-23-1	1.16	U	5.80	1.16	0.580

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.6	80	120	
1,2-Dichloroethane-d4	88.6	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(3.5-4)(270616)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:33
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 18:11
Collect Date:	06/27/2016 13:35	**Dilution:**	1	**File ID:**	9M975257
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	85.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	0.612	J	5.99	1.20	0.599

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.2	80	120	
1,2-Dichloroethane-d4	90.6	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(3.5-4)(270616)	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 14:53
Collect Date:	06/27/2016 13:35	**Dilution:**	1	**File ID:**	1LM.LM35648
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.28	U	4.57	2.28	1.14

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(9.5-10)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:27
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/01/2016 22:35
Collect Date:	06/27/2016 14:12	**Dilution:**	1	**File ID:**	9M975228
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.6	U	25.3	12.6	6.32
Benzene	71-43-2	1.26	U	6.32	1.26	0.632
Bromobenzene	108-86-1	1.26	U	6.32	1.26	0.632
Bromochloromethane	74-97-5	2.52	U	6.32	2.52	1.26
Bromodichloromethane	75-27-4	1.26	U	6.32	1.26	0.632
Bromoform	75-25-2	1.26	U	6.32	1.26	0.632
Bromomethane	74-83-9	2.52	U	6.32	2.52	1.26
2-Butanone	78-93-3	6.32	U	12.6	6.32	3.16
n-Butylbenzene	104-51-8	1.26	U	6.32	1.26	0.632
sec-Butylbenzene	135-98-8	1.26	U	6.32	1.26	0.632
tert-Butylbenzene	98-06-6	1.26	U	6.32	1.26	0.632
Carbon disulfide	75-15-0	1.26	U	6.32	1.26	0.632
Carbon tetrachloride	56-23-5	1.26	U	6.32	1.26	0.632
Chlorobenzene	108-90-7	1.26	U	6.32	1.26	0.632
Chlorodibromomethane	124-48-1	1.26	U	6.32	1.26	0.632
Chloroethane	75-00-3	2.52	U	6.32	2.52	1.26
Chloroform	67-66-3	1.26	U	6.32	1.26	0.632
Chloromethane	74-87-3	5.06	U	12.6	5.06	2.53
2-Chlorotoluene	95-49-8	1.26	U	6.32	1.26	0.632
4-Chlorotoluene	106-43-4	1.26	U	6.32	1.26	0.632
1,2-Dibromo-3-chloropropane	96-12-8	5.06	U	12.6	5.06	2.53
1,2-Dibromoethane	106-93-4	1.26	U	6.32	1.26	0.632
Dibromomethane	74-95-3	1.26	U	6.32	1.26	0.632
1,2-Dichlorobenzene	95-50-1	1.26	U	6.32	1.26	0.632
1,3-Dichlorobenzene	541-73-1	1.26	U	6.32	1.26	0.632
1,4-Dichlorobenzene	106-46-7	1.26	U	6.32	1.26	0.632
Dichlorodifluoromethane	75-71-8	2.52	U	6.32	2.52	1.26
1,1-Dichloroethane	75-34-3	2.52	U	6.32	2.52	1.26
1,2-Dichloroethane	107-06-2	1.26	U	6.32	1.26	0.632
1,1-Dichloroethene	75-35-4	1.26	U	6.32	1.26	0.632
cis-1,2-Dichloroethene	156-59-2	1.26	U	6.32	1.26	0.632

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.26	U	6.32	1.26	0.632
1,2-Dichloropropane	78-87-5	1.26	U	6.32	1.26	0.632
1,3-Dichloropropane	142-28-9	1.26	U	6.32	1.26	0.632
2,2-Dichloropropane	594-20-7	1.26	U	6.32	1.26	0.632
cis-1,3-Dichloropropene	10061-01-5	1.26	U	6.32	1.26	0.632
trans-1,3-Dichloropropene	10061-02-6	1.26	U	6.32	1.26	0.632
1,1-Dichloropropene	563-58-6	1.26	U	6.32	1.26	0.632
Ethylbenzene	100-41-4	1.26	U	6.32	1.26	0.632
2-Hexanone	591-78-6	6.32	U	12.6	6.32	3.16
Hexachlorobutadiene	87-68-3	1.26	U	6.32	1.26	0.632
Isopropylbenzene	98-82-8	1.26	U	6.32	1.26	0.632
p-Isopropyltoluene	99-87-6	1.26	U	6.32	1.26	0.632
4-Methyl-2-pentanone	108-10-1	6.32	U	12.6	6.32	3.16
Methylene chloride	75-09-2	2.52	U	6.32	2.52	1.26
n-Propylbenzene	103-65-1	1.26	U	6.32	1.26	0.632
Styrene	100-42-5	1.26	U	6.32	1.26	0.632
1,1,1,2-Tetrachloroethane	630-20-6	1.26	U	6.32	1.26	0.632
1,1,2,2-Tetrachloroethane	79-34-5	1.26	U	6.32	1.26	0.632
Tetrachloroethene	127-18-4	1.26	U	6.32	1.26	0.632
Toluene	108-88-3	1.26	U	6.32	1.26	0.632
1,2,3-Trichlorobenzene	87-61-6	1.26	U	6.32	1.26	0.632
1,2,4-Trichlorobenzene	120-82-1	1.26	U	6.32	1.26	0.632
1,1,1-Trichloroethane	71-55-6	1.26	U	6.32	1.26	0.632
1,1,2-Trichloroethane	79-00-5	1.26	U	6.32	1.26	0.632
Trichloroethene	79-01-6	1.26	U	6.32	1.26	0.632
Trichlorofluoromethane	75-69-4	2.52	U	6.32	2.52	1.26
1,2,3-Trichloropropane	96-18-4	2.52	U	6.32	2.52	1.26
1,2,4-Trimethylbenzene	95-63-6	1.26	U	6.32	1.26	0.632
1,3,5-Trimethylbenzene	108-67-8	1.26	U	6.32	1.26	0.632
Vinyl chloride	75-01-4	2.52	U	6.32	2.52	1.26
o-Xylene	95-47-6	1.26	U	6.32	1.26	0.632
m-,p-Xylene	179601-23-1	1.26	U	6.32	1.26	0.632

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.9	80	120	
1,2-Dichloroethane-d4	89.8	80	120	
Toluene-d8	98.7	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(9.5-10)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:34
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 18:41
Collect Date:	06/27/2016 14:12	**Dilution:**	1	**File ID:**	9M975258
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	77.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.24	U	6.18	1.24	0.618

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.5	80	120	
1,2-Dichloroethane-d4	87.4	80	120	
Toluene-d8	98.3	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(9.5-10)270616	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 15:12
Collect Date:	06/27/2016 14:12	**Dilution:**	1	**File ID:**	1LM.LM35649
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.52	U	5.05	2.52	1.26

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(14.5-15)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:28
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/01/2016 23:06
Collect Date:	06/27/2016 14:45	**Dilution:**	1	**File ID:**	9M975229
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	J	24.9	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	1.25	U	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	4.98	U	12.5	4.98	2.49
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.5	4.98	2.49
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	1.25	U	6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.9	80	120	
1,2-Dichloroethane-d4	87.5	80	120	
Toluene-d8	99.1	85	115	
4-Bromofluorobenzene	98.4	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(14.5-15)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:34
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 19:11
Collect Date:	06/27/2016 14:45	**Dilution:**	1	**File ID:**	9M975259
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	81.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.17	U	5.87	1.17	0.587

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.0	80	120	
1,2-Dichloroethane-d4	89.5	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(14.5-15)270616	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 15:31
Collect Date:	06/27/2016 14:45	**Dilution:**	1	**File ID:**	1LM.LM35650
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.40	U	4.81	2.40	1.20

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(19.5-20)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:35
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 19:42
Collect Date:	06/27/2016 15:50	**Dilution:**	1	**File ID:**	9M975260
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.31	U	6.55	1.31	0.655

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.9	80	120	
1,2-Dichloroethane-d4	91.7	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(19.5-20)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:30
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/01/2016 23:36
Collect Date:	06/27/2016 15:50	**Dilution:**	1	**File ID:**	9M975230
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.7	J	24.5	12.2	6.12
Benzene	71-43-2	1.22	U	6.12	1.22	0.612
Bromobenzene	108-86-1	1.22	U	6.12	1.22	0.612
Bromochloromethane	74-97-5	2.44	U	6.12	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.12	1.22	0.612
Bromoform	75-25-2	1.22	U	6.12	1.22	0.612
Bromomethane	74-83-9	2.44	U	6.12	2.44	1.22
2-Butanone	78-93-3	6.12	U	12.2	6.12	3.06
n-Butylbenzene	104-51-8	1.22	U	6.12	1.22	0.612
sec-Butylbenzene	135-98-8	1.22	U	6.12	1.22	0.612
tert-Butylbenzene	98-06-6	1.22	U	6.12	1.22	0.612
Carbon disulfide	75-15-0	1.22	U	6.12	1.22	0.612
Carbon tetrachloride	56-23-5	1.22	U	6.12	1.22	0.612
Chlorobenzene	108-90-7	1.22	U	6.12	1.22	0.612
Chlorodibromomethane	124-48-1	1.22	U	6.12	1.22	0.612
Chloroethane	75-00-3	2.44	U	6.12	2.44	1.22
Chloroform	67-66-3	1.22	U	6.12	1.22	0.612
Chloromethane	74-87-3	4.90	U	12.2	4.90	2.45
2-Chlorotoluene	95-49-8	1.22	U	6.12	1.22	0.612
4-Chlorotoluene	106-43-4	1.22	U	6.12	1.22	0.612
1,2-Dibromo-3-chloropropane	96-12-8	4.90	U	12.2	4.90	2.45
1,2-Dibromoethane	106-93-4	1.22	U	6.12	1.22	0.612
Dibromomethane	74-95-3	1.22	U	6.12	1.22	0.612
1,2-Dichlorobenzene	95-50-1	1.22	U	6.12	1.22	0.612
1,3-Dichlorobenzene	541-73-1	1.22	U	6.12	1.22	0.612
1,4-Dichlorobenzene	106-46-7	1.22	U	6.12	1.22	0.612
Dichlorodifluoromethane	75-71-8	2.44	U	6.12	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.12	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.12	1.22	0.612
1,1-Dichloroethene	75-35-4	1.22	U	6.12	1.22	0.612
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.12	1.22	0.612

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.12	1.22	0.612
1,2-Dichloropropane	78-87-5	1.22	U	6.12	1.22	0.612
1,3-Dichloropropane	142-28-9	1.22	U	6.12	1.22	0.612
2,2-Dichloropropane	594-20-7	1.22	U	6.12	1.22	0.612
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.12	1.22	0.612
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.12	1.22	0.612
1,1-Dichloropropene	563-58-6	1.22	U	6.12	1.22	0.612
Ethylbenzene	100-41-4	1.22	U	6.12	1.22	0.612
2-Hexanone	591-78-6	6.12	U	12.2	6.12	3.06
Hexachlorobutadiene	87-68-3	1.22	U	6.12	1.22	0.612
Isopropylbenzene	98-82-8	1.22	U	6.12	1.22	0.612
p-Isopropyltoluene	99-87-6	1.22	U	6.12	1.22	0.612
4-Methyl-2-pentanone	108-10-1	6.12	U	12.2	6.12	3.06
Methylene chloride	75-09-2	2.44	U	6.12	2.44	1.22
n-Propylbenzene	103-65-1	1.22	U	6.12	1.22	0.612
Styrene	100-42-5	1.22	U	6.12	1.22	0.612
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.12	1.22	0.612
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.12	1.22	0.612
Tetrachloroethene	127-18-4	1.22	U	6.12	1.22	0.612
Toluene	108-88-3	1.22	U	6.12	1.22	0.612
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.12	1.22	0.612
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.12	1.22	0.612
1,1,1-Trichloroethane	71-55-6	1.22	U	6.12	1.22	0.612
1,1,2-Trichloroethane	79-00-5	1.22	U	6.12	1.22	0.612
Trichloroethene	79-01-6	1.22	U	6.12	1.22	0.612
Trichlorofluoromethane	75-69-4	2.44	U	6.12	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.12	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.12	1.22	0.612
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.12	1.22	0.612
Vinyl chloride	75-01-4	2.44	U	6.12	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.12	1.22	0.612
m-,p-Xylene	179601-23-1	1.22	U	6.12	1.22	0.612

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.7	80	120	
1,2-Dichloroethane-d4	88.0	80	120	
Toluene-d8	99.9	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(19.5-20)270616	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 15:50
Collect Date:	06/27/2016 15:50	**Dilution:**	1	**File ID:**	1LM.LM35651
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.93	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(22-22.5)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:35
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 20:12
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	9M975261
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.23	U	6.14	1.23	0.614

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.3	80	120	
1,2-Dichloroethane-d4	89.6	80	120	
Toluene-d8	99.8	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(22-22.5)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:31
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/02/2016 00:06
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	9M975231
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.8	J	24.0	12.0	6.01
Benzene	71-43-2	1.20	U	6.01	1.20	0.601
Bromobenzene	108-86-1	1.20	U	6.01	1.20	0.601
Bromochloromethane	74-97-5	2.40	U	6.01	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	6.01	1.20	0.601
Bromoform	75-25-2	1.20	U	6.01	1.20	0.601
Bromomethane	74-83-9	2.40	U	6.01	2.40	1.20
2-Butanone	78-93-3	6.00	U	12.0	6.00	3.00
n-Butylbenzene	104-51-8	1.20	U	6.01	1.20	0.601
sec-Butylbenzene	135-98-8	1.20	U	6.01	1.20	0.601
tert-Butylbenzene	98-06-6	1.20	U	6.01	1.20	0.601
Carbon disulfide	75-15-0	1.20	U	6.01	1.20	0.601
Carbon tetrachloride	56-23-5	1.20	U	6.01	1.20	0.601
Chlorobenzene	108-90-7	1.20	U	6.01	1.20	0.601
Chlorodibromomethane	124-48-1	1.20	U	6.01	1.20	0.601
Chloroethane	75-00-3	2.40	U	6.01	2.40	1.20
Chloroform	67-66-3	1.20	U	6.01	1.20	0.601
Chloromethane	74-87-3	4.80	U	12.0	4.80	2.40
2-Chlorotoluene	95-49-8	1.20	U	6.01	1.20	0.601
4-Chlorotoluene	106-43-4	1.20	U	6.01	1.20	0.601
1,2-Dibromo-3-chloropropane	96-12-8	4.80	U	12.0	4.80	2.40
1,2-Dibromoethane	106-93-4	1.20	U	6.01	1.20	0.601
Dibromomethane	74-95-3	1.20	U	6.01	1.20	0.601
1,2-Dichlorobenzene	95-50-1	1.20	U	6.01	1.20	0.601
1,3-Dichlorobenzene	541-73-1	1.20	U	6.01	1.20	0.601
1,4-Dichlorobenzene	106-46-7	1.20	U	6.01	1.20	0.601
Dichlorodifluoromethane	75-71-8	2.40	U	6.01	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	6.01	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	6.01	1.20	0.601
1,1-Dichloroethene	75-35-4	1.20	U	6.01	1.20	0.601
cis-1,2-Dichloroethene	156-59-2	1.20	U	6.01	1.20	0.601

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.20	U	6.01	1.20	0.601
1,2-Dichloropropane	78-87-5	1.20	U	6.01	1.20	0.601
1,3-Dichloropropane	142-28-9	1.20	U	6.01	1.20	0.601
2,2-Dichloropropane	594-20-7	1.20	U	6.01	1.20	0.601
cis-1,3-Dichloropropene	10061-01-5	1.20	U	6.01	1.20	0.601
trans-1,3-Dichloropropene	10061-02-6	1.20	U	6.01	1.20	0.601
1,1-Dichloropropene	563-58-6	1.20	U	6.01	1.20	0.601
Ethylbenzene	100-41-4	1.20	U	6.01	1.20	0.601
2-Hexanone	591-78-6	6.00	U	12.0	6.00	3.00
Hexachlorobutadiene	87-68-3	1.20	U	6.01	1.20	0.601
Isopropylbenzene	98-82-8	1.20	U	6.01	1.20	0.601
p-Isopropyltoluene	99-87-6	1.20	U	6.01	1.20	0.601
4-Methyl-2-pentanone	108-10-1	6.00	U	12.0	6.00	3.00
Methylene chloride	75-09-2	2.40	U	6.01	2.40	1.20
n-Propylbenzene	103-65-1	1.20	U	6.01	1.20	0.601
Styrene	100-42-5	1.20	U	6.01	1.20	0.601
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	6.01	1.20	0.601
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	6.01	1.20	0.601
Tetrachloroethene	127-18-4	1.20	U	6.01	1.20	0.601
Toluene	108-88-3	1.20	U	6.01	1.20	0.601
1,2,3-Trichlorobenzene	87-61-6	1.20	U	6.01	1.20	0.601
1,2,4-Trichlorobenzene	120-82-1	1.20	U	6.01	1.20	0.601
1,1,1-Trichloroethane	71-55-6	1.20	U	6.01	1.20	0.601
1,1,2-Trichloroethane	79-00-5	1.20	U	6.01	1.20	0.601
Trichloroethene	79-01-6	1.20	U	6.01	1.20	0.601
Trichlorofluoromethane	75-69-4	2.40	U	6.01	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	U	6.01	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	6.01	1.20	0.601
1,3,5-Trimethylbenzene	108-67-8	1.20	U	6.01	1.20	0.601
Vinyl chloride	75-01-4	2.40	U	6.01	2.40	1.20
o-Xylene	95-47-6	1.20	U	6.01	1.20	0.601
m-,p-Xylene	179601-23-1	1.20	U	6.01	1.20	0.601

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.2	80	120	
1,2-Dichloroethane-d4	89.5	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	106	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(22-22.5)270616	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 16:09
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	1LM.LM35652
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.76	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(22-22.5)270616 DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:36
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 20:42
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	9M975262
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.17	U	5.87	1.17	0.587

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.7	80	120	
1,2-Dichloroethane-d4	92.3	80	120	
Toluene-d8	98.1	85	115	
4-Bromofluorobenzene	99.7	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(22-22.5)270616 DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:33
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/02/2016 00:37
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	9M975232
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.9	J	23.1	11.5	5.77
Benzene	71-43-2	1.15	U	5.77	1.15	0.577
Bromobenzene	108-86-1	1.15	U	5.77	1.15	0.577
Bromochloromethane	74-97-5	2.30	U	5.77	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.77	1.15	0.577
Bromoform	75-25-2	1.15	U	5.77	1.15	0.577
Bromomethane	74-83-9	2.30	U	5.77	2.30	1.15
2-Butanone	78-93-3	5.76	U	11.5	5.76	2.88
n-Butylbenzene	104-51-8	1.15	U	5.77	1.15	0.577
sec-Butylbenzene	135-98-8	1.15	U	5.77	1.15	0.577
tert-Butylbenzene	98-06-6	1.15	U	5.77	1.15	0.577
Carbon disulfide	75-15-0	1.15	U	5.77	1.15	0.577
Carbon tetrachloride	56-23-5	1.15	U	5.77	1.15	0.577
Chlorobenzene	108-90-7	1.15	U	5.77	1.15	0.577
Chlorodibromomethane	124-48-1	1.15	U	5.77	1.15	0.577
Chloroethane	75-00-3	2.30	U	5.77	2.30	1.15
Chloroform	67-66-3	1.15	U	5.77	1.15	0.577
Chloromethane	74-87-3	4.62	U	11.5	4.62	2.31
2-Chlorotoluene	95-49-8	1.15	U	5.77	1.15	0.577
4-Chlorotoluene	106-43-4	1.15	U	5.77	1.15	0.577
1,2-Dibromo-3-chloropropane	96-12-8	4.62	U	11.5	4.62	2.31
1,2-Dibromoethane	106-93-4	1.15	U	5.77	1.15	0.577
Dibromomethane	74-95-3	1.15	U	5.77	1.15	0.577
1,2-Dichlorobenzene	95-50-1	1.15	U	5.77	1.15	0.577
1,3-Dichlorobenzene	541-73-1	1.15	U	5.77	1.15	0.577
1,4-Dichlorobenzene	106-46-7	1.15	U	5.77	1.15	0.577
Dichlorodifluoromethane	75-71-8	2.30	U	5.77	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.77	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.77	1.15	0.577
1,1-Dichloroethene	75-35-4	1.15	U	5.77	1.15	0.577

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.15	U	5.77	1.15	0.577
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.77	1.15	0.577
1,2-Dichloropropane	78-87-5	1.15	U	5.77	1.15	0.577
1,3-Dichloropropane	142-28-9	1.15	U	5.77	1.15	0.577
2,2-Dichloropropane	594-20-7	1.15	U	5.77	1.15	0.577
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.77	1.15	0.577
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.77	1.15	0.577
1,1-Dichloropropene	563-58-6	1.15	U	5.77	1.15	0.577
Ethylbenzene	100-41-4	1.15	U	5.77	1.15	0.577
2-Hexanone	591-78-6	5.76	U	11.5	5.76	2.88
Hexachlorobutadiene	87-68-3	1.15	U	5.77	1.15	0.577
Isopropylbenzene	98-82-8	1.15	U	5.77	1.15	0.577
p-Isopropyltoluene	99-87-6	1.15	U	5.77	1.15	0.577
4-Methyl-2-pentanone	108-10-1	5.76	U	11.5	5.76	2.88
Methylene chloride	75-09-2	2.30	U	5.77	2.30	1.15
n-Propylbenzene	103-65-1	1.15	U	5.77	1.15	0.577
Styrene	100-42-5	1.15	U	5.77	1.15	0.577
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.77	1.15	0.577
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.77	1.15	0.577
Tetrachloroethene	127-18-4	1.15	U	5.77	1.15	0.577
Toluene	108-88-3	1.15	U	5.77	1.15	0.577
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.77	1.15	0.577
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.77	1.15	0.577
1,1,1-Trichloroethane	71-55-6	1.15	U	5.77	1.15	0.577
1,1,2-Trichloroethane	79-00-5	1.15	U	5.77	1.15	0.577
Trichloroethene	79-01-6	1.15	U	5.77	1.15	0.577
Trichlorofluoromethane	75-69-4	2.30	U	5.77	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.77	2.30	1.15
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.77	1.15	0.577
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.77	1.15	0.577
Vinyl chloride	75-01-4	2.30	U	5.77	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.77	1.15	0.577
m-,p-Xylene	179601-23-1	1.15	U	5.77	1.15	0.577

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.8	80	120	
1,2-Dichloroethane-d4	88.6	80	120	
Toluene-d8	104	85	115	
4-Bromofluorobenzene	109	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(22-22.5)270616 DUP	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 16:28
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	1LM.LM35653
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.70	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #: L16061593-01 **Client ID:** 18WW25(3.5-4)(270616) **Matrix:** Soil **Collect Date:** 06/27/2016 13:35

Analyte	Result	Units	Qualifier
Percent Solids	85.7	weight %	

Sample #: L16061593-02 **Client ID:** 18WW25(9.5-10)270616 **Matrix:** Soil **Collect Date:** 06/27/2016 14:12

Analyte	Result	Units	Qualifier
Percent Solids	77.1	weight %	

Sample #: L16061593-03 **Client ID:** 18WW25(14.5-15)270616 **Matrix:** Soil **Collect Date:** 06/27/2016 14:45

Analyte	Result	Units	Qualifier
Percent Solids	81.1	weight %	

Sample #: L16061593-04 **Client ID:** 18WW25(19.5-20)270616 **Matrix:** Soil **Collect Date:** 06/27/2016 15:50

Analyte	Result	Units	Qualifier
Percent Solids	79.2	weight %	

Sample #: L16061593-05 **Client ID:** 18WW25(22-22.5)270616 **Matrix:** Soil **Collect Date:** 06/27/2016 16:12

Analyte	Result	Units	Qualifier
Percent Solids	81.9	weight %	

Sample #: L16061593-06 **Client ID:** 18WW25(22-22.5)270616 DUP **Matrix:** Soil **Collect Date:** 06/27/2016 16:12

Analyte	Result	Units	Qualifier
Percent Solids	83.0	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(3.5-4)(270616)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/01/2016 22:05
Collect Date:	06/27/2016 13:35	**Dilution:**	1	**File ID:**	9M975227
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.6	U	23.2	11.6	5.80
Benzene	71-43-2	1.16	U	5.80	1.16	0.580
Bromobenzene	108-86-1	1.16	U	5.80	1.16	0.580
Bromochloromethane	74-97-5	2.32	U	5.80	2.32	1.16
Bromodichloromethane	75-27-4	1.16	U	5.80	1.16	0.580
Bromoform	75-25-2	1.16	U	5.80	1.16	0.580
Bromomethane	74-83-9	2.32	U	5.80	2.32	1.16
2-Butanone	78-93-3	5.80	U	11.6	5.80	2.90
n-Butylbenzene	104-51-8	1.16	U	5.80	1.16	0.580
sec-Butylbenzene	135-98-8	1.16	U	5.80	1.16	0.580
tert-Butylbenzene	98-06-6	1.16	U	5.80	1.16	0.580
Carbon disulfide	75-15-0	1.16	U	5.80	1.16	0.580
Carbon tetrachloride	56-23-5	1.16	U	5.80	1.16	0.580
Chlorobenzene	108-90-7	1.16	U	5.80	1.16	0.580
Chlorodibromomethane	124-48-1	1.16	U	5.80	1.16	0.580
Chloroethane	75-00-3	2.32	U	5.80	2.32	1.16
Chloroform	67-66-3	1.16	U	5.80	1.16	0.580
Chloromethane	74-87-3	4.64	U	11.6	4.64	2.32
2-Chlorotoluene	95-49-8	1.16	U	5.80	1.16	0.580
4-Chlorotoluene	106-43-4	1.16	U	5.80	1.16	0.580
1,2-Dibromo-3-chloropropane	96-12-8	4.64	U	11.6	4.64	2.32
1,2-Dibromoethane	106-93-4	1.16	U	5.80	1.16	0.580
Dibromomethane	74-95-3	1.16	U	5.80	1.16	0.580
1,2-Dichlorobenzene	95-50-1	1.16	U	5.80	1.16	0.580
1,3-Dichlorobenzene	541-73-1	1.16	U	5.80	1.16	0.580
1,4-Dichlorobenzene	106-46-7	1.16	U	5.80	1.16	0.580
Dichlorodifluoromethane	75-71-8	2.32	U	5.80	2.32	1.16
1,1-Dichloroethane	75-34-3	2.32	U	5.80	2.32	1.16
1,2-Dichloroethane	107-06-2	1.16	U	5.80	1.16	0.580
1,1-Dichloroethene	75-35-4	1.16	U	5.80	1.16	0.580
cis-1,2-Dichloroethene	156-59-2	1.16	U	5.80	1.16	0.580
trans-1,2-Dichloroethene	156-60-5	1.16	U	5.80	1.16	0.580

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.16	U	5.80	1.16	0.580
1,3-Dichloropropane	142-28-9	1.16	U	5.80	1.16	0.580
2,2-Dichloropropane	594-20-7	1.16	U	5.80	1.16	0.580
cis-1,3-Dichloropropene	10061-01-5	1.16	U	5.80	1.16	0.580
trans-1,3-Dichloropropene	10061-02-6	1.16	U	5.80	1.16	0.580
1,1-Dichloropropene	563-58-6	1.16	U	5.80	1.16	0.580
Ethylbenzene	100-41-4	1.16	U	5.80	1.16	0.580
2-Hexanone	591-78-6	5.80	U	11.6	5.80	2.90
Hexachlorobutadiene	87-68-3	1.16	U	5.80	1.16	0.580
Isopropylbenzene	98-82-8	1.16	U	5.80	1.16	0.580
p-Isopropyltoluene	99-87-6	1.16	U	5.80	1.16	0.580
4-Methyl-2-pentanone	108-10-1	5.80	U	11.6	5.80	2.90
Methylene chloride	75-09-2	2.32	U	5.80	2.32	1.16
n-Propylbenzene	103-65-1	1.16	U	5.80	1.16	0.580
Styrene	100-42-5	1.16	U	5.80	1.16	0.580
1,1,1,2-Tetrachloroethane	630-20-6	1.16	U	5.80	1.16	0.580
1,1,2,2-Tetrachloroethane	79-34-5	1.16	U	5.80	1.16	0.580
Tetrachloroethene	127-18-4	1.16	U	5.80	1.16	0.580
Toluene	108-88-3	1.16	U	5.80	1.16	0.580
1,2,3-Trichlorobenzene	87-61-6	1.16	U	5.80	1.16	0.580
1,2,4-Trichlorobenzene	120-82-1	1.16	U	5.80	1.16	0.580
1,1,1-Trichloroethane	71-55-6	1.16	U	5.80	1.16	0.580
1,1,2-Trichloroethane	79-00-5	1.16	U	5.80	1.16	0.580
Trichloroethene	79-01-6	1.16	U	5.80	1.16	0.580
Trichlorofluoromethane	75-69-4	2.32	U	5.80	2.32	1.16
1,2,3-Trichloropropane	96-18-4	2.32	U	5.80	2.32	1.16
1,2,4-Trimethylbenzene	95-63-6	1.16	U	5.80	1.16	0.580
1,3,5-Trimethylbenzene	108-67-8	1.16	U	5.80	1.16	0.580
Vinyl chloride	75-01-4	2.32	U	5.80	2.32	1.16
o-Xylene	95-47-6	1.16	U	5.80	1.16	0.580
m-,p-Xylene	179601-23-1	1.16	U	5.80	1.16	0.580

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.6	80	120	
1,2-Dichloroethane-d4	88.6	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #:	L16061593
Lab Project #:	2551.096
Project Name:	Longhorn Army Ammunition
Lab Contact:	Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(3.5-4)(270616)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:33
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 18:11
Collect Date:	06/27/2016 13:35	**Dilution:**	1	**File ID:**	9M975257
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	85.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	0.612	J	5.99	1.20	0.599

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.2	80	120	
1,2-Dichloroethane-d4	90.6	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(9.5-10)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:34
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 18:41
Collect Date:	06/27/2016 14:12	**Dilution:**	1	**File ID:**	9M975258
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	77.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.24	U	6.18	1.24	0.618

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.5	80	120	
1,2-Dichloroethane-d4	87.4	80	120	
Toluene-d8	98.3	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(9.5-10)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:27
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/01/2016 22:35
Collect Date:	06/27/2016 14:12	**Dilution:**	1	**File ID:**	9M975228
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.6	U	25.3	12.6	6.32
Benzene	71-43-2	1.26	U	6.32	1.26	0.632
Bromobenzene	108-86-1	1.26	U	6.32	1.26	0.632
Bromochloromethane	74-97-5	2.52	U	6.32	2.52	1.26
Bromodichloromethane	75-27-4	1.26	U	6.32	1.26	0.632
Bromoform	75-25-2	1.26	U	6.32	1.26	0.632
Bromomethane	74-83-9	2.52	U	6.32	2.52	1.26
2-Butanone	78-93-3	6.32	U	12.6	6.32	3.16
n-Butylbenzene	104-51-8	1.26	U	6.32	1.26	0.632
sec-Butylbenzene	135-98-8	1.26	U	6.32	1.26	0.632
tert-Butylbenzene	98-06-6	1.26	U	6.32	1.26	0.632
Carbon disulfide	75-15-0	1.26	U	6.32	1.26	0.632
Carbon tetrachloride	56-23-5	1.26	U	6.32	1.26	0.632
Chlorobenzene	108-90-7	1.26	U	6.32	1.26	0.632
Chlorodibromomethane	124-48-1	1.26	U	6.32	1.26	0.632
Chloroethane	75-00-3	2.52	U	6.32	2.52	1.26
Chloroform	67-66-3	1.26	U	6.32	1.26	0.632
Chloromethane	74-87-3	5.06	U	12.6	5.06	2.53
2-Chlorotoluene	95-49-8	1.26	U	6.32	1.26	0.632
4-Chlorotoluene	106-43-4	1.26	U	6.32	1.26	0.632
1,2-Dibromo-3-chloropropane	96-12-8	5.06	U	12.6	5.06	2.53
1,2-Dibromoethane	106-93-4	1.26	U	6.32	1.26	0.632
Dibromomethane	74-95-3	1.26	U	6.32	1.26	0.632
1,2-Dichlorobenzene	95-50-1	1.26	U	6.32	1.26	0.632
1,3-Dichlorobenzene	541-73-1	1.26	U	6.32	1.26	0.632
1,4-Dichlorobenzene	106-46-7	1.26	U	6.32	1.26	0.632
Dichlorodifluoromethane	75-71-8	2.52	U	6.32	2.52	1.26
1,1-Dichloroethane	75-34-3	2.52	U	6.32	2.52	1.26
1,2-Dichloroethane	107-06-2	1.26	U	6.32	1.26	0.632
1,1-Dichloroethene	75-35-4	1.26	U	6.32	1.26	0.632
cis-1,2-Dichloroethene	156-59-2	1.26	U	6.32	1.26	0.632

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.26	U	6.32	1.26	0.632
1,2-Dichloropropane	78-87-5	1.26	U	6.32	1.26	0.632
1,3-Dichloropropane	142-28-9	1.26	U	6.32	1.26	0.632
2,2-Dichloropropane	594-20-7	1.26	U	6.32	1.26	0.632
cis-1,3-Dichloropropene	10061-01-5	1.26	U	6.32	1.26	0.632
trans-1,3-Dichloropropene	10061-02-6	1.26	U	6.32	1.26	0.632
1,1-Dichloropropene	563-58-6	1.26	U	6.32	1.26	0.632
Ethylbenzene	100-41-4	1.26	U	6.32	1.26	0.632
2-Hexanone	591-78-6	6.32	U	12.6	6.32	3.16
Hexachlorobutadiene	87-68-3	1.26	U	6.32	1.26	0.632
Isopropylbenzene	98-82-8	1.26	U	6.32	1.26	0.632
p-Isopropyltoluene	99-87-6	1.26	U	6.32	1.26	0.632
4-Methyl-2-pentanone	108-10-1	6.32	U	12.6	6.32	3.16
Methylene chloride	75-09-2	2.52	U	6.32	2.52	1.26
n-Propylbenzene	103-65-1	1.26	U	6.32	1.26	0.632
Styrene	100-42-5	1.26	U	6.32	1.26	0.632
1,1,1,2-Tetrachloroethane	630-20-6	1.26	U	6.32	1.26	0.632
1,1,2,2-Tetrachloroethane	79-34-5	1.26	U	6.32	1.26	0.632
Tetrachloroethene	127-18-4	1.26	U	6.32	1.26	0.632
Toluene	108-88-3	1.26	U	6.32	1.26	0.632
1,2,3-Trichlorobenzene	87-61-6	1.26	U	6.32	1.26	0.632
1,2,4-Trichlorobenzene	120-82-1	1.26	U	6.32	1.26	0.632
1,1,1-Trichloroethane	71-55-6	1.26	U	6.32	1.26	0.632
1,1,2-Trichloroethane	79-00-5	1.26	U	6.32	1.26	0.632
Trichloroethene	79-01-6	1.26	U	6.32	1.26	0.632
Trichlorofluoromethane	75-69-4	2.52	U	6.32	2.52	1.26
1,2,3-Trichloropropane	96-18-4	2.52	U	6.32	2.52	1.26
1,2,4-Trimethylbenzene	95-63-6	1.26	U	6.32	1.26	0.632
1,3,5-Trimethylbenzene	108-67-8	1.26	U	6.32	1.26	0.632
Vinyl chloride	75-01-4	2.52	U	6.32	2.52	1.26
o-Xylene	95-47-6	1.26	U	6.32	1.26	0.632
m-,p-Xylene	179601-23-1	1.26	U	6.32	1.26	0.632

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.9	80	120	
1,2-Dichloroethane-d4	89.8	80	120	
Toluene-d8	98.7	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(14.5-15)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:34
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 19:11
Collect Date:	06/27/2016 14:45	**Dilution:**	1	**File ID:**	9M975259
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	81.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.17	U	5.87	1.17	0.587

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.0	80	120	
1,2-Dichloroethane-d4	89.5	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(14.5-15)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:28
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/01/2016 23:06
Collect Date:	06/27/2016 14:45	**Dilution:**	1	**File ID:**	9M975229
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	J	24.9	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	1.25	U	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	4.98	U	12.5	4.98	2.49
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.5	4.98	2.49
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	1.25	U	6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.9	80	120	
1,2-Dichloroethane-d4	87.5	80	120	
Toluene-d8	99.1	85	115	
4-Bromofluorobenzene	98.4	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(19.5-20)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:30
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/01/2016 23:36
Collect Date:	06/27/2016 15:50	**Dilution:**	1	**File ID:**	9M975230
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.7	J	24.5	12.2	6.12
Benzene	71-43-2	1.22	U	6.12	1.22	0.612
Bromobenzene	108-86-1	1.22	U	6.12	1.22	0.612
Bromochloromethane	74-97-5	2.44	U	6.12	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.12	1.22	0.612
Bromoform	75-25-2	1.22	U	6.12	1.22	0.612
Bromomethane	74-83-9	2.44	U	6.12	2.44	1.22
2-Butanone	78-93-3	6.12	U	12.2	6.12	3.06
n-Butylbenzene	104-51-8	1.22	U	6.12	1.22	0.612
sec-Butylbenzene	135-98-8	1.22	U	6.12	1.22	0.612
tert-Butylbenzene	98-06-6	1.22	U	6.12	1.22	0.612
Carbon disulfide	75-15-0	1.22	U	6.12	1.22	0.612
Carbon tetrachloride	56-23-5	1.22	U	6.12	1.22	0.612
Chlorobenzene	108-90-7	1.22	U	6.12	1.22	0.612
Chlorodibromomethane	124-48-1	1.22	U	6.12	1.22	0.612
Chloroethane	75-00-3	2.44	U	6.12	2.44	1.22
Chloroform	67-66-3	1.22	U	6.12	1.22	0.612
Chloromethane	74-87-3	4.90	U	12.2	4.90	2.45
2-Chlorotoluene	95-49-8	1.22	U	6.12	1.22	0.612
4-Chlorotoluene	106-43-4	1.22	U	6.12	1.22	0.612
1,2-Dibromo-3-chloropropane	96-12-8	4.90	U	12.2	4.90	2.45
1,2-Dibromoethane	106-93-4	1.22	U	6.12	1.22	0.612
Dibromomethane	74-95-3	1.22	U	6.12	1.22	0.612
1,2-Dichlorobenzene	95-50-1	1.22	U	6.12	1.22	0.612
1,3-Dichlorobenzene	541-73-1	1.22	U	6.12	1.22	0.612
1,4-Dichlorobenzene	106-46-7	1.22	U	6.12	1.22	0.612
Dichlorodifluoromethane	75-71-8	2.44	U	6.12	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.12	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.12	1.22	0.612
1,1-Dichloroethene	75-35-4	1.22	U	6.12	1.22	0.612
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.12	1.22	0.612

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.12	1.22	0.612
1,2-Dichloropropane	78-87-5	1.22	U	6.12	1.22	0.612
1,3-Dichloropropane	142-28-9	1.22	U	6.12	1.22	0.612
2,2-Dichloropropane	594-20-7	1.22	U	6.12	1.22	0.612
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.12	1.22	0.612
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.12	1.22	0.612
1,1-Dichloropropene	563-58-6	1.22	U	6.12	1.22	0.612
Ethylbenzene	100-41-4	1.22	U	6.12	1.22	0.612
2-Hexanone	591-78-6	6.12	U	12.2	6.12	3.06
Hexachlorobutadiene	87-68-3	1.22	U	6.12	1.22	0.612
Isopropylbenzene	98-82-8	1.22	U	6.12	1.22	0.612
p-Isopropyltoluene	99-87-6	1.22	U	6.12	1.22	0.612
4-Methyl-2-pentanone	108-10-1	6.12	U	12.2	6.12	3.06
Methylene chloride	75-09-2	2.44	U	6.12	2.44	1.22
n-Propylbenzene	103-65-1	1.22	U	6.12	1.22	0.612
Styrene	100-42-5	1.22	U	6.12	1.22	0.612
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.12	1.22	0.612
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.12	1.22	0.612
Tetrachloroethene	127-18-4	1.22	U	6.12	1.22	0.612
Toluene	108-88-3	1.22	U	6.12	1.22	0.612
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.12	1.22	0.612
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.12	1.22	0.612
1,1,1-Trichloroethane	71-55-6	1.22	U	6.12	1.22	0.612
1,1,2-Trichloroethane	79-00-5	1.22	U	6.12	1.22	0.612
Trichloroethene	79-01-6	1.22	U	6.12	1.22	0.612
Trichlorofluoromethane	75-69-4	2.44	U	6.12	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.12	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.12	1.22	0.612
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.12	1.22	0.612
Vinyl chloride	75-01-4	2.44	U	6.12	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.12	1.22	0.612
m-,p-Xylene	179601-23-1	1.22	U	6.12	1.22	0.612

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.7	80	120	
1,2-Dichloroethane-d4	88.0	80	120	
Toluene-d8	99.9	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(19.5-20)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:35
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 19:42
Collect Date:	06/27/2016 15:50	**Dilution:**	1	**File ID:**	9M975260
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.31	U	6.55	1.31	0.655

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.9	80	120	
1,2-Dichloroethane-d4	91.7	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(22-22.5)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:35
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 20:12
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	9M975261
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.23	U	6.14	1.23	0.614

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.3	80	120	
1,2-Dichloroethane-d4	89.6	80	120	
Toluene-d8	99.8	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(22-22.5)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:31
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/02/2016 00:06
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	9M975231
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.8	J	24.0	12.0	6.01
Benzene	71-43-2	1.20	U	6.01	1.20	0.601
Bromobenzene	108-86-1	1.20	U	6.01	1.20	0.601
Bromochloromethane	74-97-5	2.40	U	6.01	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	6.01	1.20	0.601
Bromoform	75-25-2	1.20	U	6.01	1.20	0.601
Bromomethane	74-83-9	2.40	U	6.01	2.40	1.20
2-Butanone	78-93-3	6.00	U	12.0	6.00	3.00
n-Butylbenzene	104-51-8	1.20	U	6.01	1.20	0.601
sec-Butylbenzene	135-98-8	1.20	U	6.01	1.20	0.601
tert-Butylbenzene	98-06-6	1.20	U	6.01	1.20	0.601
Carbon disulfide	75-15-0	1.20	U	6.01	1.20	0.601
Carbon tetrachloride	56-23-5	1.20	U	6.01	1.20	0.601
Chlorobenzene	108-90-7	1.20	U	6.01	1.20	0.601
Chlorodibromomethane	124-48-1	1.20	U	6.01	1.20	0.601
Chloroethane	75-00-3	2.40	U	6.01	2.40	1.20
Chloroform	67-66-3	1.20	U	6.01	1.20	0.601
Chloromethane	74-87-3	4.80	U	12.0	4.80	2.40
2-Chlorotoluene	95-49-8	1.20	U	6.01	1.20	0.601
4-Chlorotoluene	106-43-4	1.20	U	6.01	1.20	0.601
1,2-Dibromo-3-chloropropane	96-12-8	4.80	U	12.0	4.80	2.40
1,2-Dibromoethane	106-93-4	1.20	U	6.01	1.20	0.601
Dibromomethane	74-95-3	1.20	U	6.01	1.20	0.601
1,2-Dichlorobenzene	95-50-1	1.20	U	6.01	1.20	0.601
1,3-Dichlorobenzene	541-73-1	1.20	U	6.01	1.20	0.601
1,4-Dichlorobenzene	106-46-7	1.20	U	6.01	1.20	0.601
Dichlorodifluoromethane	75-71-8	2.40	U	6.01	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	6.01	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	6.01	1.20	0.601
1,1-Dichloroethene	75-35-4	1.20	U	6.01	1.20	0.601
cis-1,2-Dichloroethene	156-59-2	1.20	U	6.01	1.20	0.601

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.20	U	6.01	1.20	0.601
1,2-Dichloropropane	78-87-5	1.20	U	6.01	1.20	0.601
1,3-Dichloropropane	142-28-9	1.20	U	6.01	1.20	0.601
2,2-Dichloropropane	594-20-7	1.20	U	6.01	1.20	0.601
cis-1,3-Dichloropropene	10061-01-5	1.20	U	6.01	1.20	0.601
trans-1,3-Dichloropropene	10061-02-6	1.20	U	6.01	1.20	0.601
1,1-Dichloropropene	563-58-6	1.20	U	6.01	1.20	0.601
Ethylbenzene	100-41-4	1.20	U	6.01	1.20	0.601
2-Hexanone	591-78-6	6.00	U	12.0	6.00	3.00
Hexachlorobutadiene	87-68-3	1.20	U	6.01	1.20	0.601
Isopropylbenzene	98-82-8	1.20	U	6.01	1.20	0.601
p-Isopropyltoluene	99-87-6	1.20	U	6.01	1.20	0.601
4-Methyl-2-pentanone	108-10-1	6.00	U	12.0	6.00	3.00
Methylene chloride	75-09-2	2.40	U	6.01	2.40	1.20
n-Propylbenzene	103-65-1	1.20	U	6.01	1.20	0.601
Styrene	100-42-5	1.20	U	6.01	1.20	0.601
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	6.01	1.20	0.601
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	6.01	1.20	0.601
Tetrachloroethene	127-18-4	1.20	U	6.01	1.20	0.601
Toluene	108-88-3	1.20	U	6.01	1.20	0.601
1,2,3-Trichlorobenzene	87-61-6	1.20	U	6.01	1.20	0.601
1,2,4-Trichlorobenzene	120-82-1	1.20	U	6.01	1.20	0.601
1,1,1-Trichloroethane	71-55-6	1.20	U	6.01	1.20	0.601
1,1,2-Trichloroethane	79-00-5	1.20	U	6.01	1.20	0.601
Trichloroethene	79-01-6	1.20	U	6.01	1.20	0.601
Trichlorofluoromethane	75-69-4	2.40	U	6.01	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	U	6.01	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	6.01	1.20	0.601
1,3,5-Trimethylbenzene	108-67-8	1.20	U	6.01	1.20	0.601
Vinyl chloride	75-01-4	2.40	U	6.01	2.40	1.20
o-Xylene	95-47-6	1.20	U	6.01	1.20	0.601
m-,p-Xylene	179601-23-1	1.20	U	6.01	1.20	0.601

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.2	80	120	
1,2-Dichloroethane-d4	89.5	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	106	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(22-22.5)270616 DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:33
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/02/2016 00:37
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	9M975232
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.9	J	23.1	11.5	5.77
Benzene	71-43-2	1.15	U	5.77	1.15	0.577
Bromobenzene	108-86-1	1.15	U	5.77	1.15	0.577
Bromochloromethane	74-97-5	2.30	U	5.77	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.77	1.15	0.577
Bromoform	75-25-2	1.15	U	5.77	1.15	0.577
Bromomethane	74-83-9	2.30	U	5.77	2.30	1.15
2-Butanone	78-93-3	5.76	U	11.5	5.76	2.88
n-Butylbenzene	104-51-8	1.15	U	5.77	1.15	0.577
sec-Butylbenzene	135-98-8	1.15	U	5.77	1.15	0.577
tert-Butylbenzene	98-06-6	1.15	U	5.77	1.15	0.577
Carbon disulfide	75-15-0	1.15	U	5.77	1.15	0.577
Carbon tetrachloride	56-23-5	1.15	U	5.77	1.15	0.577
Chlorobenzene	108-90-7	1.15	U	5.77	1.15	0.577
Chlorodibromomethane	124-48-1	1.15	U	5.77	1.15	0.577
Chloroethane	75-00-3	2.30	U	5.77	2.30	1.15
Chloroform	67-66-3	1.15	U	5.77	1.15	0.577
Chloromethane	74-87-3	4.62	U	11.5	4.62	2.31
2-Chlorotoluene	95-49-8	1.15	U	5.77	1.15	0.577
4-Chlorotoluene	106-43-4	1.15	U	5.77	1.15	0.577
1,2-Dibromo-3-chloropropane	96-12-8	4.62	U	11.5	4.62	2.31
1,2-Dibromoethane	106-93-4	1.15	U	5.77	1.15	0.577
Dibromomethane	74-95-3	1.15	U	5.77	1.15	0.577
1,2-Dichlorobenzene	95-50-1	1.15	U	5.77	1.15	0.577
1,3-Dichlorobenzene	541-73-1	1.15	U	5.77	1.15	0.577
1,4-Dichlorobenzene	106-46-7	1.15	U	5.77	1.15	0.577
Dichlorodifluoromethane	75-71-8	2.30	U	5.77	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.77	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.77	1.15	0.577
1,1-Dichloroethene	75-35-4	1.15	U	5.77	1.15	0.577

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.15	U	5.77	1.15	0.577
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.77	1.15	0.577
1,2-Dichloropropane	78-87-5	1.15	U	5.77	1.15	0.577
1,3-Dichloropropane	142-28-9	1.15	U	5.77	1.15	0.577
2,2-Dichloropropane	594-20-7	1.15	U	5.77	1.15	0.577
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.77	1.15	0.577
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.77	1.15	0.577
1,1-Dichloropropene	563-58-6	1.15	U	5.77	1.15	0.577
Ethylbenzene	100-41-4	1.15	U	5.77	1.15	0.577
2-Hexanone	591-78-6	5.76	U	11.5	5.76	2.88
Hexachlorobutadiene	87-68-3	1.15	U	5.77	1.15	0.577
Isopropylbenzene	98-82-8	1.15	U	5.77	1.15	0.577
p-Isopropyltoluene	99-87-6	1.15	U	5.77	1.15	0.577
4-Methyl-2-pentanone	108-10-1	5.76	U	11.5	5.76	2.88
Methylene chloride	75-09-2	2.30	U	5.77	2.30	1.15
n-Propylbenzene	103-65-1	1.15	U	5.77	1.15	0.577
Styrene	100-42-5	1.15	U	5.77	1.15	0.577
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.77	1.15	0.577
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.77	1.15	0.577
Tetrachloroethene	127-18-4	1.15	U	5.77	1.15	0.577
Toluene	108-88-3	1.15	U	5.77	1.15	0.577
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.77	1.15	0.577
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.77	1.15	0.577
1,1,1-Trichloroethane	71-55-6	1.15	U	5.77	1.15	0.577
1,1,2-Trichloroethane	79-00-5	1.15	U	5.77	1.15	0.577
Trichloroethene	79-01-6	1.15	U	5.77	1.15	0.577
Trichlorofluoromethane	75-69-4	2.30	U	5.77	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.77	2.30	1.15
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.77	1.15	0.577
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.77	1.15	0.577
Vinyl chloride	75-01-4	2.30	U	5.77	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.77	1.15	0.577
m-,p-Xylene	179601-23-1	1.15	U	5.77	1.15	0.577

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.8	80	120	
1,2-Dichloroethane-d4	88.6	80	120	
Toluene-d8	104	85	115	
4-Bromofluorobenzene	109	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(22-22.5)270616 DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:36
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 20:42
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	9M975262
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.17	U	5.87	1.17	0.587

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.7	80	120	
1,2-Dichloroethane-d4	92.3	80	120	
Toluene-d8	98.1	85	115	
4-Bromofluorobenzene	99.7	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG575025 **Analyst:** ADC

Method: 5030B/5030C/5035 **Run Date:** 07/01/2016 14:23

Product: 8260

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16061593-01	A	06/27/16 13:35	07/01/16 14:23	85.7			5.03	5		5	
L16061593-02	A	06/27/16 14:12	07/01/16 14:27	77.1			5.13	5		5	
L16061593-03	A	06/27/16 14:45	07/01/16 14:28	81.1			4.94	5		5	
L16061593-04	A	06/27/16 15:50	07/01/16 14:30	79.2			5.16	5		5	
L16061593-05	A	06/27/16 16:12	07/01/16 14:31	81.9			5.08	5		5	
L16061593-06	A	06/27/16 16:12	07/01/16 14:33	83.0			5.22	5		5	
L16061634-01	A	06/29/16 15:15	07/01/16 14:34	38.9			4.98	5		5	
WG575025-01	A		07/01/16 14:24	85.7			5.03	5		5	
WG575025-02	A		07/01/16 14:25	85.7			5.04	5		5	
WG575025-03	A		07/01/16 14:26	85.7			5.01	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Cathy Carter

VOA_EXT - Modified 05/22/2008
PDF ID: 4836874
Report generated: 07/01/2016 14:35

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG575216
Method: 5030B/5030C/5035
Product: 826-BETX

Analyst: AWE
Run Date: 07/05/2016 15:33
Purge and trap methanol COA18846
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16061593-01	A	06/27/16 13:35	07/05/16 15:33	85.7			4.87	5		5	
L16061593-02	A	06/27/16 14:12	07/05/16 15:34	77.1			5.25	5		5	
L16061593-03	A	06/27/16 14:45	07/05/16 15:34	81.1			5.25	5		5	
L16061593-04	A	06/27/16 15:50	07/05/16 15:35	79.2			4.82	5		5	
L16061593-05	A	06/27/16 16:12	07/05/16 15:35	81.9			4.97	5		5	
L16061593-06	A	06/27/16 16:12	07/05/16 15:36	83.0			5.13	5		5	
L16061634-01	A	06/29/16 15:15	07/05/16 15:37	38.9			4.51	5		5	
WG575216-01	A		07/05/16 16:36	83.0			5.13	5		5	
WG575216-02	A		07/05/16 17:06	83.0			5.02	5		5	
WG575216-03	A		07/05/16 17:07	83.0			4.89	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Baeg

VOA_EXT - Modified 05/22/2008
PDF ID: 4839587
Report generated: 07/05/2016 17:17

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 062116
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76704 Surrogate Standard: STD76703
CCV: STD76781 LCS: STD76624 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573559, WG5783367 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M974885	WG573367-01 BFB 50ng 8260	NA	7	1	STD76496	06/21/16 06:43
9M974887	WG573367-02 STD 0.5ug/L 8260	NA	7	1	STD76405	06/21/16 07:39
9M974888	WG573367-03 1.0ug/L 8260	NA	7	1	STD76405	06/21/16 08:10
9M974889	WG573367-04 2.0ug/L 8260	NA	7	1	STD76405	06/21/16 08:40
9M974890	WG573367-05 5.0ug/L 8260	NA	7	1	STD76405	06/21/16 09:10
9M974891	WG573367-06 20.0ug/L 8260	NA	7	1	STD76405	06/21/16 09:40
9M974892	WG573367-07 50.0ug/L 8260	NA	7	1	STD76405	06/21/16 10:11
9M974893	WG573367-08 100.0ug/L 8260	NA	7	1	STD76405	06/21/16 10:41
9M974894	WG573367-09 200.0ug/L 8260	NA	7	1	STD76405	06/21/16 11:11
9M974895	WG573367-10 300.0ug/L 8260	NA	7	1	STD76405	06/21/16 11:41
9M974896	RINSE	NA	7	1		06/21/16 12:11
9M974897	RINSE	NA	7	1	STD76624	06/21/16 12:42
9M974898	WG573367-02 0.5ug/L 8260	NA	7	1	STD76624	06/21/16 13:12
9M974899	WG573367-03 1.0ug/L 8260	NA	7	1	STD76624	06/21/16 13:42
9M974900	WG573367-11 50.0ug/L 8260	NA	7	1	STD76624	06/21/16 14:12
9M974901	WG573558-01 50ng BFB	NA	7	1	STD76496	06/21/16 14:38
9M974902	WG573558-02 50ug/kg CCV	NA	7	1	STD76715	06/21/16 15:04
9M974903	WG573367-11 50.0ug/L 8260	NA	7	1		06/21/16 15:35
9M974904	RINSE	NA	7	1		06/21/16 16:04
9M974905	WG573559-01 BLK 8260	NA	7	1		06/21/16 16:35
9M974906	WG573559-02 20ug/L LCS 8260	NA	7	1	STD76744	06/21/16 17:06
9M974907	L16060661-02 A MS 826-SPE	NA	7	1	STD76744	06/21/16 17:36
9M974908	L16060661-03 A MSD 826-SPE	NA	7	1	STD76744	06/21/16 18:06
9M974909	L16060656-01 B 826-BETX	NA	7	1		06/21/16 18:36
9M974910	L16060669-05 A 826-VAP2 0.00G	NA	7	1		06/21/16 19:06

Approved: June 24, 2016

Sarah Vandenberg

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 070116
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76704 Surrogate Standard: STD76703
CCV: STD76781 LCS: STD76624 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574993, WG574994

Comments: L16061362-04, -10, 1458-01 require dilution analysis for naphthalene.

L16061593s requrie reanalysis for Naphthalene carry over.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M975213	WG574992-01 50ng BFB	NA	7	1	STD76715	07/01/16 14:53
9M975215	WG574992-02 50ug/kg CCV	NA	7	1	STD76781	07/01/16 15:50
9M975216	WGXXXXXX-01 100ug/kg A9FOO	NA	7	1	STDXXXXX	07/01/16 16:29
9M975217	WG574993-01 BLANK 8260	NA	7	1		07/01/16 17:00
9M975218	WG574994-01 EXTBLK 07/01 8260	NA	7	50		07/01/16 17:30
9M975219	WG574994-02 20ug/Kg EXTLCS 07/01 826	NA	7	50		07/01/16 18:01
9M975220	WG574993-02 20ug/Kg LCS 8260	NA	7	1	STD76744	07/01/16 18:32
9M975221	L16061362-08 B 826-SPE	NA	7	1		07/01/16 19:03
9M975222	L16061362-04 C 1000X 826-SPE	NA	7	500		07/01/16 19:33
9M975223	L16061362-10 C 1000X 826-SPE	NA	7	500		07/01/16 20:04
9M975224	L16061458-01 A 200X 826-SPE 5.17g	NA	7	100		07/01/16 20:34
9M975225	WG574929-01 L16061625-01 A 2000X 5.14	NA	7	1000		07/01/16 21:04
9M975226	L16061634-01 A 826-BETX 4.98g	NA	7	1		07/01/16 21:34
9M975227	WG575025-01 L16061593-01 A 826-SPE 5.	NA	7	1		07/01/16 22:05
9M975228	L16061593-02 A 826-SPE 5.13g	NA	7	1		07/01/16 22:35
9M975229	L16061593-03 A 826-SPE 4.94g	NA	7	1		07/01/16 23:06
9M975230	L16061593-04 A 826-SPE 5.16g	NA	7	1		07/01/16 23:36
9M975231	L16061593-05 A 826-SPE 5.08g	NA	7	1		07/02/16 00:06
9M975232	L16061593-06 A 826-SPE 5.22g	NA	7	1		07/02/16 00:37
9M975233	WG575025-02 MS 8260 5.04g	NA	7	1	STD76744	07/02/16 01:07
9M975234	WG575025-03 MSD 8260 5.04g	NA	7	1	STD76744	07/02/16 01:37
9M975235	WG574929-02 MS 8260 5.09g	NA	7	1000		07/02/16 02:07
9M975236	WG574929-03 MSD 8260 5.10g	NA	7	1000		07/02/16 02:37
9M975237	RINSE	NA	7	1		07/02/16 03:08
9M975238	RINSE	NA	7	1		07/02/16 03:38

Comments

Seq.	Rerun	Dil.	Reason	Analytes
27	X	20000	Over Calibration Range	TOL
File ID: 9M975225				
	L16061625-01			
13	X		Surrogate standard failure	

Approved: July 12, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS9	Dataset:	070116		
Analyst1:	ADC	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:					

Internal Standard: STD76704 Surrogate Standard: STD76703

CCV: STD76781 LCS: STD76624 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG574993, WG574994

Comments: L16061362-04, -10, 1458-01 require dilution analysis for naphthalene.

L16061593s requrie reanalysis for Naphthalene carry over.

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 9M975226				
L16061634-01				

Approved: July 12, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 070616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76704 Surrogate Standard: STD76703
CCV: STD76781 LCS: STD76624 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG575227, WG575228

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M975249	WG575226-01 BFB 50ng 8260	NA	7	1	STD76496	07/06/16 13:53
9M975250	WG575226-02 50ug/Kg CCV 8260	NA	7	1	STD76496	07/06/16 14:19
9M975251	WGXXXXXX-01 100ug/KgA9CCV 8260	NA	7	1	STDXXXXX	07/06/16 15:09
9M975252	WG575227-01 BLK 8260	NA	7	1		07/06/16 15:40
9M975253	WG575228-01 EXTBLK 8260	NA	7	50		07/06/16 16:10
9M975254	WG575228-02 EXTLCS 20ug/kg 8260	NA	7	50		07/06/16 16:41
9M975255	WG575227-02 LCS 20ug/kg 8260	NA	7	1	STD76744	07/06/16 17:11
9M975256	L16061634-01 A 826-BETX 4.51g	NA	7	1		07/06/16 17:41
9M975257	L16061593-01 A 826-SPE 4.87g	NA	7	1		07/06/16 18:11
9M975258	L16061593-02 A 826-SPE 5.25g	NA	7	1		07/06/16 18:41
9M975259	L16061593-03 A 826-SPE 5.25g	NA	7	1		07/06/16 19:11
9M975260	L16061593-04 A 826-SPE 4.82g	NA	7	1		07/06/16 19:42
9M975261	L16061593-05 A 826-SPE 4.97g	NA	7	1		07/06/16 20:12
9M975262	WG575216-01 L16061593-06 A 826-SPE 5.	NA	7	1		07/06/16 20:42
9M975263	L16061362-04 C 20,000X 826-SPE	NA	7	10000		07/06/16 21:12
9M975264	L16061362-10 C 20,000X 826-SPE	NA	7	10000		07/06/16 21:42
9M975265	L16061458-01 C 2,000X 826-SPE	NA	7	1000		07/06/16 22:13
9M975266	L16061625-01 C 20,000X 826-SPE	NA	7	10000		07/06/16 22:43
9M975267	WG575216-02 A MS 826-SPE	NA	7	1	STD76744	07/06/16 23:13
9M975268	WG575216-03 A MSD 826-SPE	NA	7	1	STD76744	07/06/16 23:44
9M975269	CCV	NA	7	1	STD76744	07/07/16 00:14
9M975270	RINSE	NA	7	1	STD76744	07/07/16 00:45
9M975271	RINSE	NA	7	1		07/07/16 16:02
9M975272	SCREEN 049-02 100X	NA	7	1		07/07/16 16:33
9M975273	SCREEN 187-01 100X	NA	7	1		07/07/16 17:04
9M975274	RINSE	NA	7	1		07/07/16 17:34
9M975275	RINSE	NA	7	1		07/07/16 18:04
9M975276	RINSE	NA	7	1		07/07/16 18:34

Approved: July 12, 2016

Page: 1

Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: WG573367
Runlog ID: 75892
Analytical Workgroups: WG573559

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-JUN-2016

Secondary Reviewer:
24-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 13:01:08

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 76245
Analytical Workgroups: WG574993, WG574994

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
12-JUL-2016

Secondary Reviewer:
12-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-12-2016 15:44:22

Microbac Laboratories Inc.

Data Checklist

Date: 06-JUL-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 76261
Analytical Workgroups: WG575227, WG575228

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 12-JUL-2016

Secondary Reviewer: 12-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-12-2016 16:43:22

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG574993

Login Number: L16061593

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW25(3.5-4)(270616)	01	06/27/16					07/01/2016	4	14		07/01/16	4.4	14	
18WW25(9.5-10)270616	02	06/27/16					07/01/2016	4	14		07/01/16	4.3	14	
18WW25(14.5-15)270616	03	06/27/16					07/01/2016	4	14		07/01/16	4.3	14	
18WW25(19.5-20)270616	04	06/27/16					07/01/2016	3.9	14		07/01/16	4.3	14	
18WW25(22-22.5)270616	05	06/27/16					07/01/2016	3.9	14		07/02/16	4.3	14	
18WW25(22-22.5)270616 DU	06	06/27/16					07/01/2016	3.9	14		07/02/16	4.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4850424
Report generated 07/13/2016 10:45

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG575227

Login Number: L16061593

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW25(3.5-4)(270616)	01	06/27/16					07/05/2016	8.1	14		07/06/16	9.2	14	
18WW25(9.5-10)270616	02	06/27/16					07/05/2016	8.1	14		07/06/16	9.2	14	
18WW25(14.5-15)270616	03	06/27/16					07/05/2016	8	14		07/06/16	9.2	14	
18WW25(19.5-20)270616	04	06/27/16					07/05/2016	8	14		07/06/16	9.2	14	
18WW25(22-22.5)270616	05	06/27/16					07/05/2016	8	14		07/06/16	9.2	14	
18WW25(22-22.5)270616 DU	06	06/27/16					07/05/2016	8	14		07/06/16	9.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4850424
Report generated 07/13/2016 10:45

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061593
Instrument Id: HPMS9
Workgroup (AAB#): WG575227

Method: 8260
CAL ID: HPMS9-21-JUN-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16061593-01	1.00	02	90.6	93.2	102	100
L16061593-02	1.00	02	87.4	91.5	102	98.3
L16061593-03	1.00	02	89.5	95.0	102	100
L16061593-04	1.00	02	91.7	94.9	105	100
L16061593-05	1.00	02	89.6	94.3	105	99.8
L16061593-06	1.00	02	92.3	94.7	99.7	98.1
WG575227-01	1.00	01	91.1	92.7	102	98.9
WG575227-02	1.00	01	90.9	98.1	103	101

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4850432
Report generated: 07/13/2016 10:46

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061593
Instrument Id: HPMS9
Workgroup (AAB#): WG574993

Method: 8260
CAL ID: HPMS9-21-JUN-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16061593-01	1.00	01	88.6	92.6	102	100
L16061593-02	1.00	01	89.8	90.9	102	98.7
L16061593-03	1.00	01	87.5	91.9	98.4	99.1
L16061593-04	1.00	01	88.0	91.7	105	99.9
L16061593-05	1.00	01	89.5	91.2	106	101
L16061593-06	1.00	01	88.6	93.8	109	104
WG574993-01	1.00	01	92.3	96.8	102	99.8
WG574993-02	1.00	01	92.8	96.9	99.1	99.1

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4850432
Report generated: 07/13/2016 10:46

METHOD BLANK SUMMARY

Login Number: L16061593
Blank File ID: 9M975217
Prep Date: 07/01/16 17:00
Analyzed Date: 07/01/16 17:00
Analyst: ADC

Work Group: WG574993
Blank Sample ID: WG574993-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574993-02	9M975220	07/01/16 18:32	01
18WW25(3.5-4)(270616)	L16061593-01	9M975227	07/01/16 22:05	01
18WW25(9.5-10)270616	L16061593-02	9M975228	07/01/16 22:35	01
18WW25(14.5-15)270616	L16061593-03	9M975229	07/01/16 23:06	01
18WW25(19.5-20)270616	L16061593-04	9M975230	07/01/16 23:36	01
18WW25(22-22.5)270616	L16061593-05	9M975231	07/02/16 00:06	01
18WW25(22-22.5)270616 DUP	L16061593-06	9M975232	07/02/16 00:37	01

Report Name: BLANK_SUMMARY
PDF File ID: 4850425
Report generated 07/13/2016 10:45

METHOD BLANK SUMMARY

Login Number: L16061593
Blank File ID: 9M975252
Prep Date: 07/06/16 15:40
Analyzed Date: 07/06/16 15:40
Analyst: ADC

Work Group: WG575227
Blank Sample ID: WG575227-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG575227-02	9M975255	07/06/16 17:11	01
18WW25(3.5-4)(270616)	L16061593-01	9M975257	07/06/16 18:11	02
18WW25(9.5-10)270616	L16061593-02	9M975258	07/06/16 18:41	02
18WW25(14.5-15)270616	L16061593-03	9M975259	07/06/16 19:11	02
18WW25(19.5-20)270616	L16061593-04	9M975260	07/06/16 19:42	02
18WW25(22-22.5)270616	L16061593-05	9M975261	07/06/16 20:12	02
18WW25(22-22.5)270616 DUP	L16061593-06	9M975262	07/06/16 20:42	02

Report Name: BLANK_SUMMARY
PDF File ID: 4850425
Report generated 07/13/2016 10:45

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061593 Prep Date: 07/01/16 17:00 Sample ID: WG574993-01
Instrument ID: HPMS9 Run Date: 07/01/16 17:00 Prep Method: 5030B/5030C/503
File ID: 9M975217 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG574993 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name: BLANK
PDF ID: 4850426
13-JUL-2016 10:45

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061593 Prep Date: 07/01/16 17:00 Sample ID: WG574993-01
Instrument ID: HPMS9 Run Date: 07/01/16 17:00 Prep Method: 5030B/5030C/503
File ID: 9M975217 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG574993 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	96.8	80 - 120	PASS
1,2-Dichloroethane-d4	92.3	80 - 120	PASS
Toluene-d8	99.8	85 - 115	PASS
4-Bromofluorobenzene	102	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4850426
13-JUL-2016 10:45

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061593 Prep Date: 07/06/16 15:40 Sample ID: WG575227-01
Instrument ID: HPMS9 Run Date: 07/06/16 15:40 Prep Method: 5030B/5030C/503
File ID: 9M975252 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG575227 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Naphthalene	0.500	5.00	0.599	1	J

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	92.7	80 - 120	PASS
1,2-Dichloroethane-d4	91.1	80 - 120	PASS
Toluene-d8	98.9	85 - 115	PASS
4-Bromofluorobenzene	102	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4850426
13-JUL-2016 10:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061593 | Run Date: 07/01/2016 | Sample ID: WG574993-02
Instrument ID: HPMS9 | Run Time: 18:32 | Prep Method: 5030B/5030C/503
File ID: 9M975220 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG574993 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS9-21-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	19.2	96.0	20 - 160	
Benzene	20.0	18.1	90.5	75 - 125	
Bromobenzene	20.0	18.6	93.2	65 - 120	
Bromochloromethane	20.0	18.3	91.5	70 - 125	
Bromodichloromethane	20.0	17.8	88.9	70 - 130	
Bromoform	20.0	17.7	88.6	55 - 135	
Bromomethane	20.0	19.5	97.6	30 - 160	
2-Butanone	20.0	19.1	95.3	30 - 160	
n-Butylbenzene	20.0	17.6	87.8	65 - 140	
sec-Butylbenzene	20.0	18.9	94.5	65 - 130	
tert-Butylbenzene	20.0	20.2	101	65 - 130	
Carbon disulfide	20.0	17.4	86.9	45 - 160	
Carbon tetrachloride	20.0	17.0	84.8	65 - 135	
Chlorobenzene	20.0	19.6	98.1	75 - 125	
Chlorodibromomethane	20.0	18.5	92.6	65 - 130	
Chloroethane	20.0	20.3	102	40 - 155	
Chloroform	20.0	18.6	92.8	70 - 125	
Chloromethane	20.0	15.8	78.8	50 - 130	
2-Chlorotoluene	20.0	19.1	95.7	70 - 130	
4-Chlorotoluene	20.0	19.4	97.0	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	17.7	88.3	40 - 135	
1,2-Dibromoethane	20.0	18.1	90.6	70 - 125	
Dibromomethane	20.0	18.5	92.6	75 - 130	
1,2-Dichlorobenzene	20.0	18.8	94.0	75 - 120	
1,3-Dichlorobenzene	20.0	18.3	91.3	70 - 125	
1,4-Dichlorobenzene	20.0	18.4	92.0	70 - 125	
Dichlorodifluoromethane	20.0	14.4	72.0	35 - 135	
1,1-Dichloroethane	20.0	17.5	87.6	75 - 125	
1,2-Dichloroethane	20.0	18.8	93.9	70 - 135	
1,1-Dichloroethene	20.0	15.6	77.8	65 - 135	
cis-1,2-Dichloroethene	20.0	18.4	92.1	65 - 125	
trans-1,2-Dichloroethene	20.0	17.3	86.7	65 - 135	
1,2-Dichloropropane	20.0	19.3	96.6	70 - 120	
1,3-Dichloropropane	20.0	20.1	100	75 - 125	
2,2-Dichloropropane	20.0	17.5	87.7	65 - 135	
cis-1,3-Dichloropropene	20.0	19.6	98.1	70 - 125	
trans-1,3-Dichloropropene	20.0	18.5	92.7	65 - 125	
1,1-Dichloropropene	20.0	17.4	87.1	70 - 135	
Ethylbenzene	20.0	19.1	95.4	75 - 125	
2-Hexanone	20.0	19.0	95.1	45 - 145	
Hexachlorobutadiene	20.0	18.5	92.5	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4850427
Report generated: 07/13/2016 10:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061593 | Run Date: 07/01/2016 | Sample ID: WG574993-02
Instrument ID: HPMS9 | Run Time: 18:32 | Prep Method: 5030B/5030C/503
File ID: 9M975220 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG574993 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS9-21-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	19.5	97.3	75 - 130	
p-Isopropyltoluene	20.0	19.0	94.8	75 - 135	
4-Methyl-2-pentanone	20.0	20.2	101	45 - 145	
Methylene chloride	20.0	17.4	86.9	55 - 140	
n-Propylbenzene	20.0	19.1	95.6	65 - 135	
Styrene	20.0	19.3	96.3	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	19.5	97.5	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	17.6	87.8	55 - 130	
Tetrachloroethene	20.0	18.0	89.8	65 - 140	
Toluene	20.0	18.7	93.3	70 - 125	
1,2,3-Trichlorobenzene	20.0	18.9	94.5	60 - 135	
1,2,4-Trichlorobenzene	20.0	18.2	91.2	65 - 130	
1,1,1-Trichloroethane	20.0	17.9	89.7	70 - 135	
1,1,2-Trichloroethane	20.0	19.5	97.3	60 - 125	
Trichloroethene	20.0	19.0	95.0	75 - 125	
Trichlorofluoromethane	20.0	18.9	94.3	25 - 185	
1,2,3-Trichloropropane	20.0	19.5	97.7	65 - 130	
1,2,4-Trimethylbenzene	20.0	19.2	96.1	65 - 135	
1,3,5-Trimethylbenzene	20.0	19.8	98.8	65 - 135	
Vinyl chloride	20.0	19.8	99.0	60 - 125	
o-Xylene	20.0	19.5	97.6	75 - 125	
m-,p-Xylene	40.0	38.4	96.0	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	96.9	80 - 120	PASS
1,2-Dichloroethane-d4	92.8	80 - 120	PASS
Toluene-d8	99.1	85 - 115	PASS
4-Bromofluorobenzene	99.1	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4850427
Report generated: 07/13/2016 10:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061593 Run Date: 07/06/2016 Sample ID: WG575227-02
Instrument ID: HPMS9 Run Time: 17:11 Prep Method: 5030B/5030C/503
File ID: 9M975255 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG575227 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD76744 Cal ID: HPMS9-21-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Naphthalene	20.0	18.7	93.6	40 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	98.1	80 - 120	PASS
1,2-Dichloroethane-d4	90.9	80 - 120	PASS
Toluene-d8	101	85 - 115	PASS
4-Bromofluorobenzene	103	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4850427
Report generated: 07/13/2016 10:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061593
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4850429
Report generated 07/13/2016 10:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061593
Instrument: HPMS9
Analyst: ADC
Workgroup: WG573367

Tune ID: WG573367-01
Run Date: 06/21/2016
Run Time: 06:43
File ID: 9M974885
Cal ID: HPMS9 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.4	7829	PASS
75.0	95.0	30.0	60.0	46.0	17648	PASS
95.0	95.0	100	100	100	38392	PASS
96.0	95.0	5.00	9.00	6.76	2596	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	89.8	34464	PASS
175	174	5.00	9.00	7.38	2544	PASS
176	174	95.0	101	95.5	32922	PASS
177	176	5.00	9.00	6.30	2073	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573367-04	STD-S	01	06/21/2016 08:40	
WG573367-05	STD-S	01	06/21/2016 09:10	
WG573367-06	STD-S	01	06/21/2016 09:40	
WG573367-07	STD-CCV-S	01	06/21/2016 10:11	
WG573367-08	STD-S	01	06/21/2016 10:41	
WG573367-09	STD-S	01	06/21/2016 11:11	
WG573367-10	STD-S	01	06/21/2016 11:41	
WG573367-02	STD-S	01	06/21/2016 13:12	
WG573367-03	STD-S	01	06/21/2016 13:42	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4850429
Report generated 07/13/2016 10:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061593
Instrument: HPMS9
Analyst: ADC
Workgroup: WG573558

Tune ID: WG573558-01
Run Date: 06/21/2016
Run Time: 14:38
File ID: 9M974901
Cal ID: HPMS9 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.4	4617	PASS
75.0	95.0	30.0	60.0	44.8	11214	PASS
95.0	95.0	100	100	100	25029	PASS
96.0	95.0	5.00	9.00	6.96	1743	PASS
173	174	0	2.00	0.481	112	PASS
174	95.0	50.0	100	93.1	23302	PASS
175	174	5.00	9.00	7.77	1810	PASS
176	174	95.0	101	98.8	23026	PASS
177	176	5.00	9.00	6.34	1460	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573367-11	SSCV-S	01	06/21/2016 15:35	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4850429
Report generated 07/13/2016 10:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061593
Instrument: HPMS9
Analyst: ADC
Workgroup: WG574992

Tune ID: WG574992-01
Run Date: 07/01/2016
Run Time: 14:53
File ID: 9M975213
Cal ID: HPMS9 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.2	4799	PASS
75.0	95.0	30.0	60.0	42.3	10593	PASS
95.0	95.0	100	100	100	25036	PASS
96.0	95.0	5.00	9.00	6.92	1733	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	92.2	23080	PASS
175	174	5.00	9.00	7.88	1818	PASS
176	174	95.0	101	98.6	22757	PASS
177	176	5.00	9.00	6.91	1572	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574992-02	CCV-S	01	07/01/2016 15:50	
WG574993-01	BLANK	01	07/01/2016 17:00	
WG574993-02	LCS	01	07/01/2016 18:32	
L16061593-01	18WW25(3.5-4)(270616)	01	07/01/2016 22:05	
L16061593-02	18WW25(9.5-10)270616	01	07/01/2016 22:35	
L16061593-03	18WW25(14.5-15)270616	01	07/01/2016 23:06	
L16061593-04	18WW25(19.5-20)270616	01	07/01/2016 23:36	
L16061593-05	18WW25(22-22.5)270616	01	07/02/2016 00:06	
L16061593-06	18WW25(22-22.5)270616 DUP	01	07/02/2016 00:37	
WG575025-02	MS	01	07/02/2016 01:07	
WG575025-03	MSD	01	07/02/2016 01:37	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4850429
Report generated 07/13/2016 10:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061593
Instrument: HPMS9
Analyst: ADC
Workgroup: WG575226

Tune ID: WG575226-01
Run Date: 07/06/2016
Run Time: 13:53
File ID: 9M975249
Cal ID: HPMS9 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.9	4982	PASS
75.0	95.0	30.0	60.0	45.2	11346	PASS
95.0	95.0	100	100	100	25093	PASS
96.0	95.0	5.00	9.00	6.84	1717	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	83.3	20901	PASS
175	174	5.00	9.00	7.50	1567	PASS
176	174	95.0	101	96.8	20228	PASS
177	176	5.00	9.00	7.25	1467	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575226-02	CCV-S	01	07/06/2016 14:19	
WG575227-01	BLANK	01	07/06/2016 15:40	
WG575227-02	LCS	01	07/06/2016 17:11	
L16061593-01	18WW25(3.5-4)(270616)	02	07/06/2016 18:11	
L16061593-02	18WW25(9.5-10)270616	02	07/06/2016 18:41	
L16061593-03	18WW25(14.5-15)270616	02	07/06/2016 19:11	
L16061593-04	18WW25(19.5-20)270616	02	07/06/2016 19:42	
L16061593-05	18WW25(22-22.5)270616	02	07/06/2016 20:12	
L16061593-06	18WW25(22-22.5)270616 DUP	02	07/06/2016 20:42	
WG575216-02	MS	01	07/06/2016 23:13	
WG575216-03	MSD	01	07/06/2016 23:44	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4850429
Report generated 07/13/2016 10:46

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260S.M
Title: 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Calibration: Thu Jun 23 11:41:07 2016
Curve: WG573367
Calibration Files

Compound	0.5 9M974898.D	1 9M974899.D	2 9M974889.D	5 9M974890.D	20 9M974891.D	50 9M974892.D	100 9M974893.D	200 9M974894.D	300 9M974895.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane		0.339	0.342	0.348	0.395	0.433	0.437	0.422	0.418	0.392	10.820		
Chloromethane		0.456	0.357	0.338	0.343	0.350	0.308	0.296	0.322	0.346	14.160		
Vinyl Chloride		0.263	0.229	0.244	0.254	0.251	0.256	0.233	0.215	0.243	6.619		
1,3-Butadiene		0.116	0.126	0.124	0.125	0.118	0.128	0.113	0.113	0.120	5.065		
Bromomethane		0.280	0.210	0.207	0.193	0.212	0.216	0.216	0.224	0.220	11.802		
Chloroethane			0.189	0.191	0.185	0.209	0.208	0.205	0.211	0.200	5.552		
Trichlorofluoromethane		0.396	0.441	0.446	0.428	0.481	0.477	0.463	0.476	0.451	6.508		
Diethyl ether		0.231	0.240	0.251	0.217	0.245	0.248		0.257	0.241	5.676		
Isoprene			0.310	0.306	0.280	0.332	0.328	0.326	0.344	0.318	6.653		
Acrolein			0.018	0.018	0.016	0.018	0.018		0.022	0.018	10.142		
1,1,2-Trichloro-1,2,2-Trifluoroe			0.252	0.261	0.254	0.289	0.283	0.275	0.282	0.271	5.557		
Acetone				0.173	0.093	0.097	0.095	0.090	0.096	0.107	30.178	0.998	
1,1-Dichloroethene			0.413	0.423	0.399	0.458	0.448	0.438	0.453	0.433	5.060		
Tert-Butyl Alcohol			0.040	0.044	0.044	0.043	0.048		0.046	0.044	6.223		
Dimethyl Sulfide		0.164	0.165	0.185	0.154	0.188	0.193	0.192	0.206	0.181	9.781		
Iodomethane			0.103	0.126	0.134	0.175	0.180	0.184	0.193	0.157	22.244	0.997	
Methyl acetate			0.252	0.268	0.231	0.256	0.258	0.251	0.269	0.255	5.068		
Methylene Chloride				0.350	0.256	0.288	0.291	0.282	0.290	0.293	10.653		
Carbon Disulfide			0.866	0.827	0.726	0.829	0.830	0.807	0.843	0.818	5.443		
Acrylonitrile		0.109	0.111	0.117	0.115	0.126	0.128			0.118	6.461		
Methyl Tert Butyl Ether		0.677	0.729	0.735	0.699	0.780	0.798	0.777	0.804	0.750	6.256		
trans-1,2-Dichloroethene		0.366	0.399	0.414	0.387	0.437	0.438	0.420	0.434	0.412	6.348		
n-Hexane			0.516	0.447	0.406	0.470	0.469	0.453	0.457	0.460	7.184		
Diisopropyl ether		0.920	0.957	0.992	0.839	0.957	0.970		0.995	0.947	5.702		
Vinyl Acetate			0.495	0.468	0.479	0.522	0.519	0.544	0.550	0.511	6.124		
1,1-Dichloroethane		0.478	0.524	0.499	0.476	0.542	0.542	0.523	0.538	0.515	5.326		
Ethyl-Tert-Butyl ether		0.852	0.888	0.920	0.782	0.895	0.912		0.944	0.885	6.074		
2-Butanone				0.145	0.131	0.147	0.149	0.146	0.157	0.146	5.841		
Propionitrile		0.035	0.043	0.044	0.045	0.046	0.048		0.050	0.044	10.947		
2,2-Dichloropropane			0.372	0.371	0.349	0.399	0.402	0.388	0.401	0.383	5.215		
cis-1,2-Dichloroethene		0.280	0.287	0.287	0.275	0.311	0.312	0.301	0.311	0.296	5.149		
Chloroform		0.385	0.437	0.438	0.418	0.469	0.476	0.458	0.472	0.444	7.047		
1-Bromopropane			0.039	0.042	0.041	0.050	0.050	0.049	0.052	0.046	11.753		
Bromochloromethane		0.153	0.198	0.194	0.182	0.206	0.207	0.205	0.210	0.194	9.828		
Tetrahydrofuran			0.099	0.103	0.094	0.101	0.101		0.105	0.101	3.609		
Dibromofluoromethane		0.289	0.275	0.284	0.246	0.278	0.278	0.280		0.276	5.036		
1,1,1-Trichloroethane		0.373	0.395	0.403	0.372	0.417	0.420	0.407	0.423	0.401	4.990		
Cyclohexane		0.478	0.502	0.511	0.452	0.532	0.524	0.517	0.541	0.507	5.801		
1,1-Dichloropropene		0.332	0.353	0.343	0.328	0.364	0.363	0.352	0.361	0.349	3.976		
Tert-Amyl-Methyl ether		0.689	0.708	0.727	0.630	0.709	0.722		0.749	0.705	5.386		
Carbon Tetrachloride			0.3749	0.37574	0.35309	0.40878	0.40616	0.39732	0.40862	0.38923	5.55363		
1,2-Dichloroethane-d4		0.33195	0.29139	0.29111	0.25703	0.2939	0.29222	0.29417		0.29311	7.39624		
Heptane										0	0		
1,2-Dichloroethane		0.34436	0.33876	0.36123	0.34008	0.38126	0.38481	0.37439	0.38535	0.36378	5.59181		
Benzene		1.07224	1.13377	1.05846	0.9693	1.08465	1.07771	1.03359	1.04146	1.0589	4.48311		
Trichloroethene		0.31928	0.29512	0.30471	0.2881	0.31791	0.32498	0.31144	0.31985	0.31017	4.22344		
Methylcyclohexane		0.42704	0.41507	0.43483	0.39249	0.46037	0.45431	0.4467	0.46212	0.43662	5.56678		
1,2-Dichloropropane		0.25678	0.27372	0.28809	0.27174	0.30223	0.31096	0.3001	0.31145	0.28938	6.97669		
1,4-Dioxane			0.00337	0.00437	0.00442	0.00453	0.00518		0.00464	0.00442	13.3782		
Bromodichloromethane			0.32434	0.32752	0.31999	0.36525	0.37358	0.36625	0.38117	0.35116	7.42468		
Dibromomethane		0.15645	0.17405	0.17269	0.17806	0.19634	0.19781	0.19213	0.19743	0.18312	8.26792		
2-Chloroethyl Vinyl Ether			0.12071	0.14517	0.14497	0.17988	0.18129	0.18513	0.19969	0.16526	17.2056	0.997	
4-Methyl-2-Pentanone				0.09743	0.10271	0.12382	0.12551	0.12886	0.14029	0.11977	13.6843		
cis-1,3-Dichloropropene			0.3745	0.39678	0.37991	0.4361	0.45034	0.43468	0.45326	0.41794	7.98856		
Dimethyl Disulfide			0.35608	0.36562	0.37386	0.46166	0.48845	0.49307	0.52325	0.43743	16.0208	0.997	
Chlorobenzene-d5	ISTD												
Toluene-d8		1.45693	1.2883	1.28298	1.06891	1.22158	1.19037	1.15966		1.23839	9.87591		
Toluene		1.40211	1.55481	1.47597	1.32428	1.47281	1.4504	1.3588	1.36824	1.42593	5.34381		
Ethyl Methacrylate				0.34755	0.34928	0.42417	0.43488	0.4274	0.45731	0.40676	11.4703		
trans-1,3-Dichloropropene			0.41005	0.46067	0.45733	0.52301	0.52154	0.49951	0.51752	0.48424	8.85031		
1,1,2-Trichloroethane		0.26161	0.27414	0.29258	0.28096	0.31882	0.31562	0.30073	0.31398	0.29481	7.18222		
2-Hexanone				0.20149	0.2324	0.28011	0.28638	0.28907	0.31324	0.26712	15.5814	0.998	
1,3-Dichloropropane		0.47331	0.46904	0.49449	0.46681	0.5194	0.51429	0.49355	0.51225	0.49289	4.31834		
Tetrachloroethene		0.29136	0.29905	0.31415	0.2861	0.32232	0.31622	0.30251	0.30766	0.30492	4.11398		
Dibromochloromethane			0.35573	0.35162	0.35727	0.41205	0.41811	0.40477	0.42512	0.38924	8.41824		
1,2-Dibromoethane				0.30956	0.30616	0.34347	0.34581	0.33274	0.34932	0.33118	5.71384		
1-Chlorohexane		0.4127	0.4407	0.43365	0.40013	0.47672	0.46984	0.45352	0.47047	0.44472	6.33029		
Chlorobenzene		1.01916	1.06603	1.0277	0.93832	1.0597	1.04243	0.98033	0.98572	1.01492	4.32253		
1,1,1,2-Tetrachloroethane			0.34704	0.35517	0.33199	0.38396	0.38756	0.36926	0.38075	0.3651	5.7489		
Ethylbenzene		0.51465	0.54323	0.54915	0.49908	0.56451	0.56365	0.53191	0.53525	0.53768	4.22741		
m-,p-Xylene	0.75209	0.67404	0.6825	0.66681	0.60746	0.68216	0.66973	0.62558	0.61753	0.66421	6.60655		
o-Xylene		0.64089	0.63241	0.65125	0.58358	0.66892	0.66982	0.64256	0.65493	0.64304	4.25846		
Styrene		1.02161	1.03238	1.03785	0.98822	1.14647	1.14649	1.09743	1.11428	1.07309	5.659		
Bromoform			0.23161	0.23621	0.24496	0.28755	0.29096	0.29353		0.26414	11.1512		
Isopropylbenzene		1.75832	1.62544	1.65461	1.51259	1.71304	1.69482	1.62051	1.62292	1.65028	4.51285		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.70517	0.7804	0.7795	0.75645	0.85695	0.8484	0.83803	0.88273	0.80596	7.45735		
p-Bromofluorobenzene				1.00205	0.84147	0.93135	0.90821	0.882		0.91302	6.56414		
1,2,3-Trichloropropane			0.22604	0.22658	0.2362	0.26799	0.26399	0.25718	0.27147	0.24992	7.90956		

trans-1,4-Dichloro-2-Butene		0.18699	0.22612	0.22122	0.2623	0.27201	0.27474		0.24056	14.4985	
n-Propylbenzene	3.81675	3.95	3.66116	3.31196	3.75581	3.62931	3.34107	3.32263	3.59859	6.84951	
Bromobenzene	0.89537	0.85897	0.86404	0.80168	0.91366	0.89727	0.83709	0.87565	0.86797	4.17683	
1,3,5-Trimethylbenzene			2.90208	2.53851	2.86856	2.81679	2.64592	2.62575	2.73293	5.44938	
2-Chlorotoluene		2.24795	2.24412	2.0107	2.26462	2.29685	2.08265	2.07913	2.17515	5.23148	
4-Chlorotoluene	2.33756	2.35228	2.20645	2.07443	2.32372	2.18675	2.0805	2.09682	2.20731	5.35775	
a-Methylstyrene			1.17912	1.08406	1.33993	1.33898	1.32155	1.35138	1.26917	8.75665	
tert-Butylbenzene			0.585	0.54978	0.62703	0.61414	0.58098	0.58606	0.5905	4.6019	
1,2,4-Trimethylbenzene	3.14164	4.10231	3.24302	2.54829	2.88271	2.85769	2.67958	2.61271	3.00849	16.7819	0.998
sec-Butylbenzene	4.0489	3.68258	3.65692	3.27009	3.72373	3.61008	3.39941	3.29503	3.58584	7.2066	
p-Isopropyltoluene			3.00165	2.7423	3.09267	3.06877	2.88302	2.76036	2.9248	5.22798	
1,3-Dichlorobenzene	1.87081	1.72334	1.66067	1.52132	1.70093	1.71811	1.61919	1.60823	1.67782	6.15039	
1,4-Dichlorobenzene	2.10654	1.75821	1.6939	1.50453	1.69485	1.70843	1.62457	1.60823	1.71241	10.3501	
n-Butylbenzene	3.09454	2.7309	2.62614	2.43848	2.72682	2.74857	2.58033	2.43918	2.67312	7.87389	
1,2-Dichlorobenzene	1.82146	1.58935	1.52586	1.41033	1.63044	1.66278	1.59512	1.58325	1.60233	7.29945	
1,2-Dibromo-3-Chloropropane		0.16774	0.16871	0.18383	0.22331	0.25116	0.23507	0.22849	0.20833	16.3925	0.998
1,2,4-Trichlorobenzene		1.23546	1.0965	1.04214	1.2028	1.30092	1.20333	1.10126	1.16892	7.8157	
Hexachlorobutadiene	0.71055	0.6241	0.52889	0.53037	0.59467	0.62114	0.57777	0.55668	0.59302	10.1105	
Naphthalene		3.10088	2.84483	2.78855	3.22343	3.56162	3.09221	2.76033	3.05312	9.36481	
1,2,3-Trichlorobenzene		1.17958	1.07987	1.02021	1.17108	1.3118	1.17706	1.06884	1.14406	8.46944	

Thu Jun 23 11:58:08 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061593 Run Date: 06/21/2016 Sample ID: WG573367-11
Instrument ID: HPMS9 Run Time: 15:35 Method: 8260B
File ID: 9M974903 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG573367 Cal ID: HPMS9 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.5	ug/kg	0.467	5.00	20	
1,1-Dichloroethene	CCC	50.0	52.9	ug/kg	0.458	5.70	20	
1,2-Dichloropropane	CCC	50.0	54.7	ug/kg	0.317	9.40	20	
Ethylbenzene	CCC	50.0	56.1	ug/kg	0.603	12.2	20	
Toluene	CCC	50.0	54.0	ug/kg	1.54	8.10	20	
Vinyl Chloride	CCC	50.0	55.1	ug/kg	0.268	10.2	20	
Bromoform	SPCC	50.0	48.5	ug/kg	0.257	2.90	20	
Chlorobenzene	SPCC	50.0	54.9	ug/kg	1.11	9.70	20	
Chloromethane	SPCC	50.0	52.7	ug/kg	0.365	5.50	20	
1,1-Dichloroethane	SPCC	50.0	51.3	ug/kg	0.529	2.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.2	ug/kg	0.826	2.50	20	
Acetone		50.0	52.5	ug/kg	0.103	5.10	20	
Benzene		50.0	52.2	ug/kg	1.11	4.40	20	
Bromobenzene		50.0	52.4	ug/kg	0.909	4.70	20	
Bromochloromethane		50.0	51.2	ug/kg	0.199	2.40	20	
Bromodichloromethane		50.0	51.3	ug/kg	0.361	2.70	20	
Bromomethane		50.0	57.1	ug/kg	0.251	14.3	20	
2-Butanone		50.0	52.1	ug/kg	0.152	4.10	20	
n-Butylbenzene		50.0	54.9	ug/kg	2.93	9.70	20	
sec-Butylbenzene		50.0	56.6	ug/kg	4.06	13.2	20	
tert-Butylbenzene		50.0	58.4	ug/kg	0.689	16.7	20	
Carbon Disulfide		50.0	58.1	ug/kg	0.951	16.2	20	
Carbon Tetrachloride		50.0	53.4	ug/kg	0.416	6.90	20	
Dibromochloromethane		50.0	51.3	ug/kg	0.400	2.60	20	
Chloroethane		50.0	58.4	ug/kg	0.233	16.8	20	
2-Chlorotoluene		50.0	56.3	ug/kg	2.45	12.5	20	
4-Chlorotoluene		50.0	55.3	ug/kg	2.44	10.5	20	
1,2-Dibromo-3-Chloropropane		50.0	48.9	ug/kg	0.224	2.10	20	
1,2-Dibromoethane		50.0	50.5	ug/kg	0.335	1.10	20	
Dibromomethane		50.0	49.7	ug/kg	0.182	0.700	20	
1,2-Dichlorobenzene		50.0	53.0	ug/kg	1.70	6.00	20	
1,3-Dichlorobenzene		50.0	53.3	ug/kg	1.79	6.60	20	
1,4-Dichlorobenzene		50.0	53.2	ug/kg	1.82	6.50	20	
Dichlorodifluoromethane		50.0	64.2	ug/kg	0.503	28.4	20	*
1,2-Dichloroethane		50.0	51.3	ug/kg	0.373	2.60	20	
cis-1,2-Dichloroethene		50.0	54.3	ug/kg	0.321	8.60	20	
trans-1,2-Dichloroethene		50.0	55.3	ug/kg	0.456	10.7	20	
1,3-Dichloropropane		50.0	54.8	ug/kg	0.540	9.50	20	
2,2-Dichloropropane		50.0	56.5	ug/kg	0.433	13.1	20	
cis-1,3-Dichloropropene		50.0	57.0	ug/kg	0.476	13.9	20	
trans-1,3-Dichloropropene		50.0	53.6	ug/kg	0.519	7.20	20	
1,1-Dichloropropene		50.0	53.8	ug/kg	0.376	7.70	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4850428
Report generated 07/13/2016 10:45

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061593 Run Date: 06/21/2016 Sample ID: WG573367-11
Instrument ID: HPMS9 Run Time: 15:35 Method: 8260B
File ID: 9M974903 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG573367 Cal ID: HPMS9 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	50.0	ug/kg	0.288	0.100	20	
Hexachlorobutadiene		50.0	58.3	ug/kg	0.691	16.5	20	
Isopropylbenzene		50.0	56.4	ug/kg	1.86	12.9	20	
p-Isopropyltoluene		50.0	56.6	ug/kg	3.31	13.1	20	
4-Methyl-2-Pentanone		50.0	54.1	ug/kg	0.130	8.30	20	
Methylene Chloride		50.0	48.9	ug/kg	0.286	2.20	20	
Naphthalene		50.0	48.8	ug/kg	2.98	2.40	20	
n-Propylbenzene		50.0	57.0	ug/kg	4.10	14.0	20	
Styrene		50.0	55.0	ug/kg	1.18	10.0	20	
1,1,1,2-Tetrachloroethane		50.0	53.1	ug/kg	0.388	6.30	20	
Tetrachloroethene		50.0	55.0	ug/kg	0.336	10.0	20	
1,2,3-Trichlorobenzene		50.0	55.1	ug/kg	1.26	10.2	20	
1,2,4-Trichlorobenzene		50.0	56.6	ug/kg	1.32	13.3	20	
1,1,1-Trichloroethane		50.0	54.1	ug/kg	0.434	8.20	20	
1,1,2-Trichloroethane		50.0	52.6	ug/kg	0.310	5.30	20	
Trichloroethene		50.0	54.9	ug/kg	0.341	9.90	20	
Trichlorofluoromethane		50.0	57.4	ug/kg	0.518	14.9	20	
1,2,3-Trichloropropane		50.0	51.7	ug/kg	0.259	3.50	20	
1,2,4-Trimethylbenzene		50.0	56.9	ug/kg	3.08	13.8	20	
1,3,5-Trimethylbenzene		50.0	58.0	ug/kg	3.17	16.1	20	
o-Xylene		50.0	56.1	ug/kg	0.721	12.1	20	
m-,p-Xylene		100	110	ug/kg	0.729	9.70	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4850428
Report generated 07/13/2016 10:45

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061593 Run Date: 07/01/2016 Sample ID: WG574992-02
Instrument ID: HPMS9 Run Time: 15:50 Method: 8260B
File ID: 9M975215 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG574993 Cal ID: HPMS9 - 21-JUN-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	53.2	ug/kg	0.472	6.31	20	
1,1-Dichloroethene	CCC	50.0	51.9	ug/kg	0.450	3.82	20	
1,2-Dichloropropane	CCC	50.0	51.7	ug/kg	0.299	3.42	20	
Ethylbenzene	CCC	50.0	53.3	ug/kg	0.573	6.60	20	
Toluene	CCC	50.0	51.5	ug/kg	1.47	2.97	20	
Vinyl Chloride	CCC	50.0	58.8	ug/kg	0.286	17.6	20	
Bromoform	SPCC	50.0	57.8	ug/kg	0.306	15.7	20	
Chlorobenzene	SPCC	50.0	52.9	ug/kg	1.07	5.89	20	
Chloromethane	SPCC	50.0	53.0	ug/kg	0.367	6.00	20	
1,1-Dichloroethane	SPCC	50.0	51.9	ug/kg	0.535	3.76	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	53.6	ug/kg	0.864	7.21	20	
Xylenes		150	157	ug/kg	0.688	4.94	20	
Acetone		50.0	45.4	ug/kg	0.0898	9.22	20	
Benzene		50.0	51.2	ug/kg	1.08	2.43	20	
Bromobenzene		50.0	53.7	ug/kg	0.932	7.41	20	
Bromochloromethane		50.0	53.2	ug/kg	0.207	6.46	20	
Bromodichloromethane		50.0	51.9	ug/kg	0.364	3.76	20	
Bromomethane		50.0	54.1	ug/kg	0.238	8.26	20	
2-Butanone		50.0	47.6	ug/kg	0.139	4.88	20	
n-Butylbenzene		50.0	52.3	ug/kg	2.79	4.56	20	
sec-Butylbenzene		50.0	52.2	ug/kg	3.74	4.33	20	
tert-Butylbenzene		50.0	53.7	ug/kg	0.634	7.34	20	
Carbon Disulfide		50.0	54.2	ug/kg	0.888	8.48	20	
Carbon Tetrachloride		50.0	52.5	ug/kg	0.409	5.02	20	
Dibromochloromethane		50.0	54.2	ug/kg	0.422	8.31	20	
Chloroethane		50.0	53.5	ug/kg	0.214	6.97	20	
2-Chlorotoluene		50.0	53.7	ug/kg	2.34	7.45	20	
4-Chlorotoluene		50.0	51.4	ug/kg	2.27	2.77	20	
1,2-Dibromo-3-Chloropropane		50.0	50.2	ug/kg	0.230	0.430	20	
1,2-Dibromoethane		50.0	52.4	ug/kg	0.347	4.74	20	
Dibromomethane		50.0	54.9	ug/kg	0.201	9.74	20	
1,2-Dichlorobenzene		50.0	52.5	ug/kg	1.68	5.09	20	
1,3-Dichlorobenzene		50.0	52.4	ug/kg	1.76	4.74	20	
1,4-Dichlorobenzene		50.0	52.0	ug/kg	1.78	4.09	20	
Dichlorodifluoromethane		50.0	55.0	ug/kg	0.431	9.95	20	
1,2-Dichloroethane		50.0	51.8	ug/kg	0.377	3.67	20	
cis-1,2-Dichloroethene		50.0	52.5	ug/kg	0.310	4.98	20	
trans-1,2-Dichloroethene		50.0	52.6	ug/kg	0.433	5.20	20	
1,3-Dichloropropane		50.0	52.5	ug/kg	0.518	5.03	20	
2,2-Dichloropropane		50.0	52.7	ug/kg	0.404	5.33	20	
cis-1,3-Dichloropropene		50.0	52.1	ug/kg	0.435	4.13	20	
trans-1,3-Dichloropropene		50.0	53.2	ug/kg	0.516	6.46	20	

CCV - Modified 03/05/2008
PDF File ID: 4850430
Report generated 07/13/2016 10:46

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061593 Run Date: 07/01/2016 Sample ID: WG574992-02
Instrument ID: HPMS9 Run Time: 15:50 Method: 8260B
File ID: 9M975215 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG574993 Cal ID: HPMS9 - 21-JUN-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.8	ug/kg	0.369	5.58	20	
2-Hexanone		50.0	44.7	ug/kg	0.256	10.6	20	
Hexachlorobutadiene		50.0	53.9	ug/kg	0.639	7.73	20	
Isopropylbenzene		50.0	52.9	ug/kg	1.75	5.84	20	
p-Isopropyltoluene		50.0	54.2	ug/kg	3.17	8.46	20	
4-Methyl-2-Pentanone		50.0	48.9	ug/kg	0.117	2.11	20	
Methylene Chloride		50.0	49.1	ug/kg	0.287	1.86	20	
n-Propylbenzene		50.0	52.3	ug/kg	3.77	4.65	20	
Styrene		50.0	54.1	ug/kg	1.16	8.15	20	
1,1,1,2-Tetrachloroethane		50.0	54.6	ug/kg	0.399	9.14	20	
Tetrachloroethene		50.0	54.2	ug/kg	0.331	8.40	20	
1,2,3-Trichlorobenzene		50.0	54.9	ug/kg	1.26	9.79	20	
1,2,4-Trichlorobenzene		50.0	55.2	ug/kg	1.29	10.4	20	
1,1,1-Trichloroethane		50.0	52.9	ug/kg	0.424	5.73	20	
1,1,2-Trichloroethane		50.0	54.5	ug/kg	0.321	8.97	20	
Trichloroethene		50.0	53.9	ug/kg	0.334	7.78	20	
Trichlorofluoromethane		50.0	54.0	ug/kg	0.487	7.98	20	
1,2,3-Trichloropropane		50.0	54.3	ug/kg	0.272	8.64	20	
1,2,4-Trimethylbenzene		50.0	55.5	ug/kg	3.00	10.9	20	
1,3,5-Trimethylbenzene		50.0	53.7	ug/kg	2.94	7.47	20	
o-Xylene		50.0	53.1	ug/kg	0.683	6.21	20	
m-,p-Xylene		100	104	ug/kg	0.693	4.30	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4850430
Report generated 07/13/2016 10:46

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061593 Run Date: 07/06/2016 Sample ID: WG575226-02
Instrument ID: HPMS9 Run Time: 14:19 Method: 8260B
File ID: 9M975250 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG575227 Cal ID: HPMS9 - 21-JUN-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	53.9	ug/kg	0.479	7.85	20	
1,1-Dichloroethene	CCC	50.0	53.4	ug/kg	0.462	6.79	20	
1,2-Dichloropropane	CCC	50.0	52.6	ug/kg	0.305	5.23	20	
Ethylbenzene	CCC	50.0	52.6	ug/kg	0.566	5.25	20	
Toluene	CCC	50.0	51.9	ug/kg	1.48	3.72	20	
Vinyl Chloride	CCC	50.0	58.2	ug/kg	0.283	16.4	20	
Bromoform	SPCC	50.0	54.4	ug/kg	0.287	8.77	20	
Chlorobenzene	SPCC	50.0	51.7	ug/kg	1.05	3.34	20	
Chloromethane	SPCC	50.0	42.3	ug/kg	0.293	15.4	20	
1,1-Dichloroethane	SPCC	50.0	53.1	ug/kg	0.547	6.14	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	50.8	ug/kg	0.819	1.61	20	
Naphthalene		50.0	51.0	ug/kg	3.11	1.99	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4850430
Report generated 07/13/2016 10:46

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061593
Instrument ID: HPMS9
Workgroup (AAB#): WG574993

ICAL CCV Number: WG573367-07
CAL ID: HPMS9-21-JUN-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG573367-07	NA	NA	247695	491380	632115
Upper Limit	NA	NA	495390	982760	1264230
Lower Limit	NA	NA	123848	245690	316058
L16061593-01	1.00	01	205370	403772	520871
L16061593-02	1.00	01	227995	449565	573846
L16061593-03	1.00	01	254536	493393	630912
L16061593-04	1.00	01	207760	432778	560755
L16061593-05	1.00	01	122503	257213	337440
L16061593-06	1.00	01	193331	416519	550975
WG574993-01	1.00	01	220505	425232	545183
WG574993-02	1.00	01	223983	428113	543112

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4850431
Report generated 07/13/2016 10:46

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061593
Instrument ID: HPMS9
Workgroup (AAB#): WG575227

ICAL CCV Number: WG573367-07
CAL ID: HPMS9-21-JUN-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG573367-07	NA	NA	247695	491380	632115
Upper Limit	NA	NA	495390	982760	1264230
Lower Limit	NA	NA	123848	245690	316058
L16061593-01	1.00	02	202761	398128	515477
L16061593-02	1.00	02	268816	534761	686475
L16061593-03	1.00	02	224968	441467	568089
L16061593-04	1.00	02	234590	485161	625495
L16061593-05	1.00	02	234109	498016	647644
L16061593-06	1.00	02	251481	491919	629455
WG575227-01	1.00	01	213050	416755	535820
WG575227-02	1.00	01	271776	529498	680246

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4850431
Report generated 07/13/2016 10:46

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061593
Instrument ID: HPMS9
Workgroup (AAB#): WG574993

ICAL CCV Number: WG573367-07
CAL ID: HPMS9 - 21-JUN-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG573367-07	NA	NA	17.69	14.68	10.81
Upper Limit	NA	NA	18.19	15.18	11.31
Lower Limit	NA	NA	17.19	14.18	10.31
L16061593-01	1.00	01	17.7	14.68	10.81
L16061593-02	1.00	01	17.71	14.68	10.8
L16061593-03	1.00	01	17.71	14.68	10.8
L16061593-04	1.00	01	17.7	14.68	10.81
L16061593-05	1.00	01	17.71	14.68	10.81
L16061593-06	1.00	01	17.71	14.68	10.81
WG574993-01	1.00	01	17.71	14.68	10.81
WG574993-02	1.00	01	17.71	14.68	10.81

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4850433
Report generated: 07/13/2016 10:46

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061593
Instrument ID: HPMS9
Workgroup (AAB#): WG575227

ICAL CCV Number: WG573367-07
CAL ID: HPMS9-21-JUN-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG573367-07	NA	NA	17.69	14.68	10.81
Upper Limit	NA	NA	18.19	15.18	11.31
Lower Limit	NA	NA	17.19	14.18	10.31
L16061593-01	1.00	02	17.7	14.67	10.81
L16061593-02	1.00	02	17.7	14.68	10.8
L16061593-03	1.00	02	17.7	14.68	10.81
L16061593-04	1.00	02	17.69	14.68	10.8
L16061593-05	1.00	02	17.7	14.67	10.8
L16061593-06	1.00	02	17.7	14.67	10.8
WG575227-01	1.00	01	17.7	14.68	10.81
WG575227-02	1.00	01	17.7	14.68	10.8

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4850433
Report generated: 07/13/2016 10:46

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975227.D Vial: 15
Acq On : 1 Jul 2016 22:05 Operator: ADC
Sample : WG575025-01 L16061593-01 A 826-SPE 5.03g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01:24 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	520871	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	403772	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	205370	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	132935	46.2841 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.56%		
43) 1,2-Dichloroethane-d4	10.40	65	135335	44.3218 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.64%		
58) Toluene-d8	12.78	98	501436	50.1409 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.28%		
79) p-Bromofluorobenzene	16.18	95	190423	50.7778 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.56%		

Target Compounds					Qvalue
13) Acetone	6.37	43	2105	Below Cal	80
19) Methylene Chloride	7.37	84	1617	0.5303 ug/kg	94
36) Tetrahydrofuran	9.75	42	2226	2.1261 ug/kg#	54
56) Dimethyl Disulfide	12.78	94	13513	3.7543 ug/kg#	29
84) 1,3,5-Trimethylbenzene	16.45	105	7241	0.6451 ug/kg#	65
99) Naphthalene	20.75	128	57240	4.5644 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M975227.D 8260S.M Tue Jul 12 11:01:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975227.D Vial: 15
Acq On : 1 Jul 2016 22:05 Operator: ADC
Sample : WG575025-01 L16061593-01 A 826-SPE 5.03g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

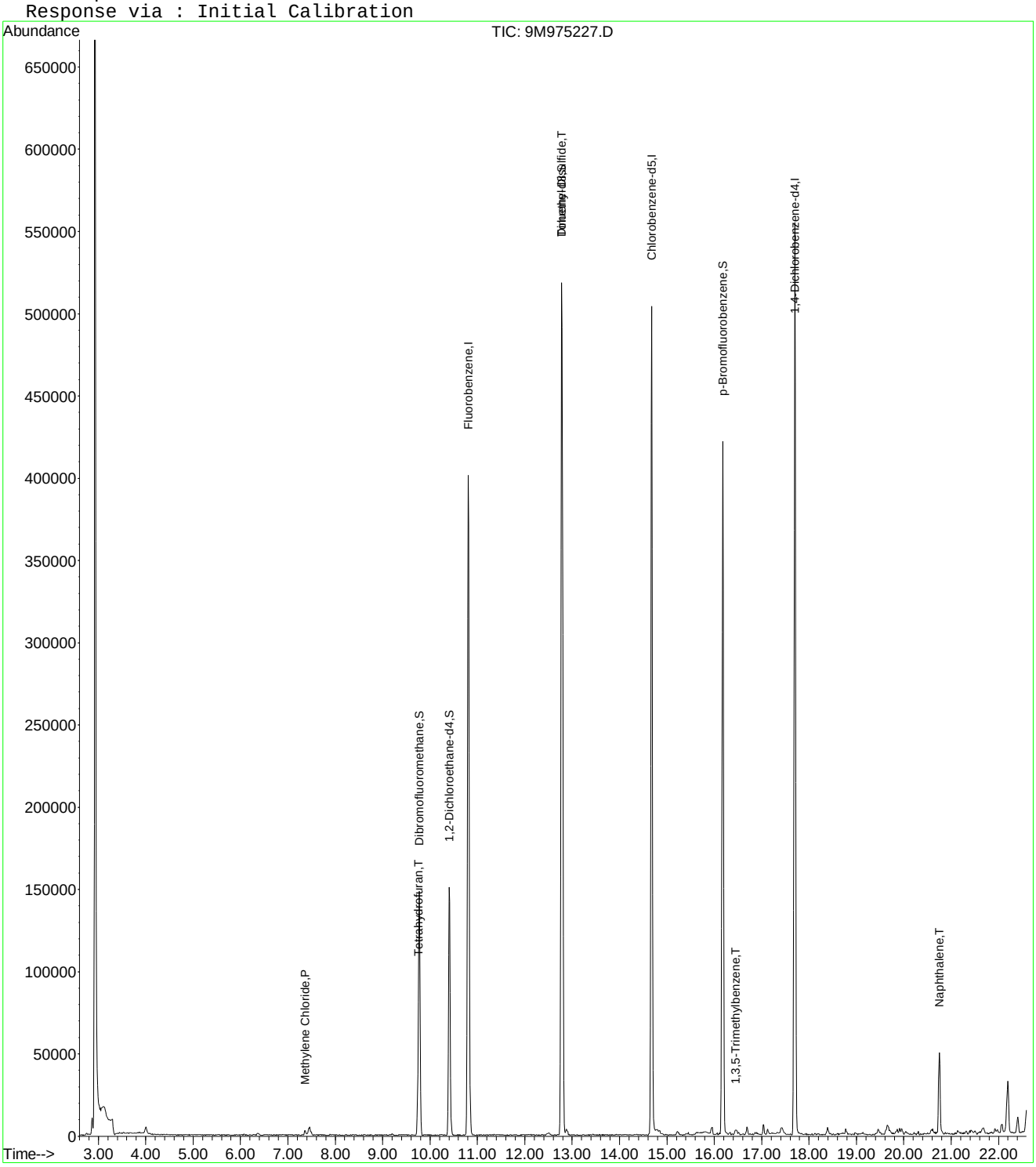

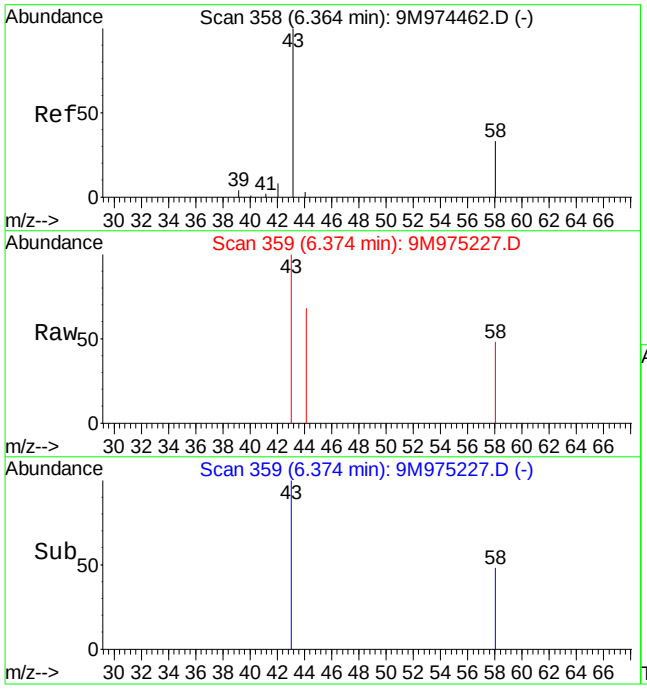

#13
Acetone
Concen: Below Cal
RT: 6.37 min Scan# 359
Delta R.T. 0.01 min
Lab File: 9M975227.D
Acq: 1 Jul 2016 22:05

Tgt Ion: 43 Resp: 2105

Ion	Ratio	Lower	Upper
43	100		
58	21.9	19.9	46.3

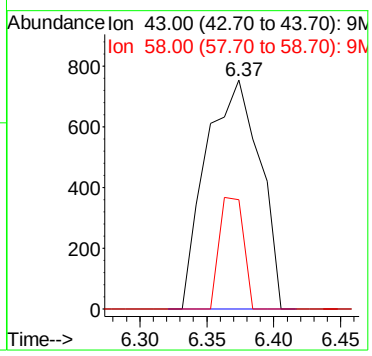

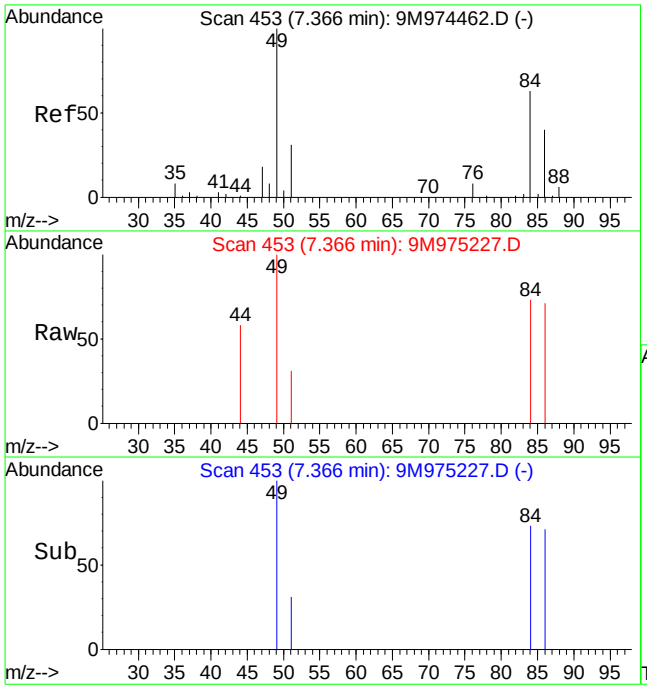

#19
Methylene Chloride
Concen: 0.53 ug/kg
RT: 7.37 min Scan# 453
Delta R.T. 0.00 min
Lab File: 9M975227.D
Acq: 1 Jul 2016 22:05

Tgt Ion: 84 Resp: 1617

Ion	Ratio	Lower	Upper
84	100		
49	147.4	93.2	217.4

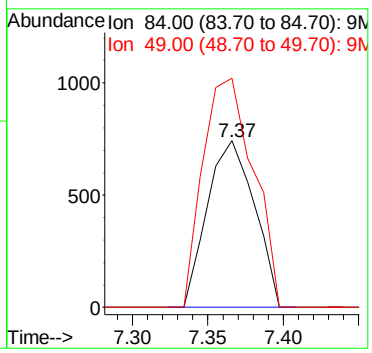

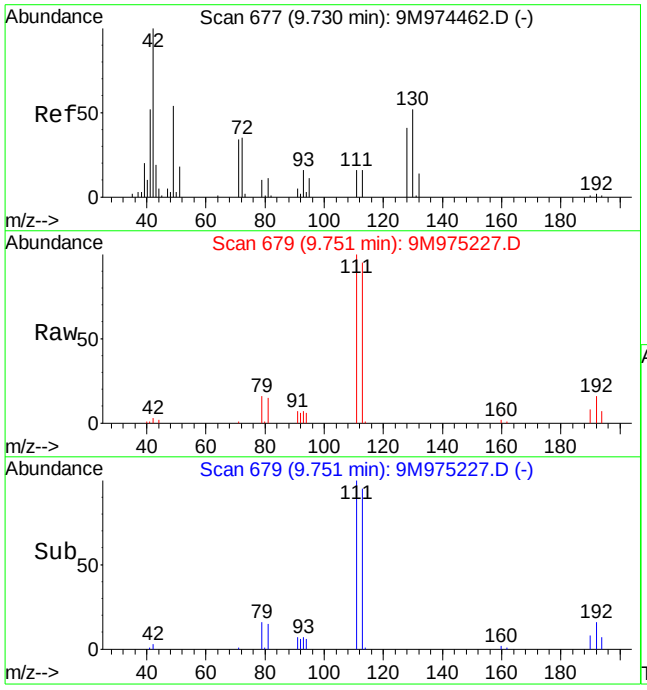

#36
Tetrahydrofuran
Concen: 2.13 ug/kg
RT: 9.75 min Scan# 679
Delta R.T. 0.01 min
Lab File: 9M975227.D
Acq: 1 Jul 2016 22:05

Tgt Ion: 42 Resp: 2226

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.8	50.8#
71	17.8	20.7	48.3#

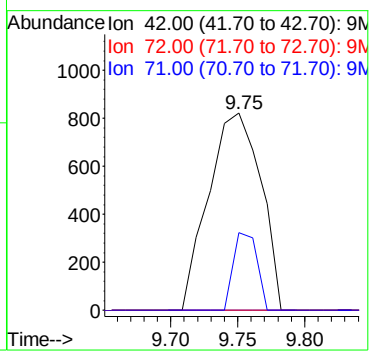

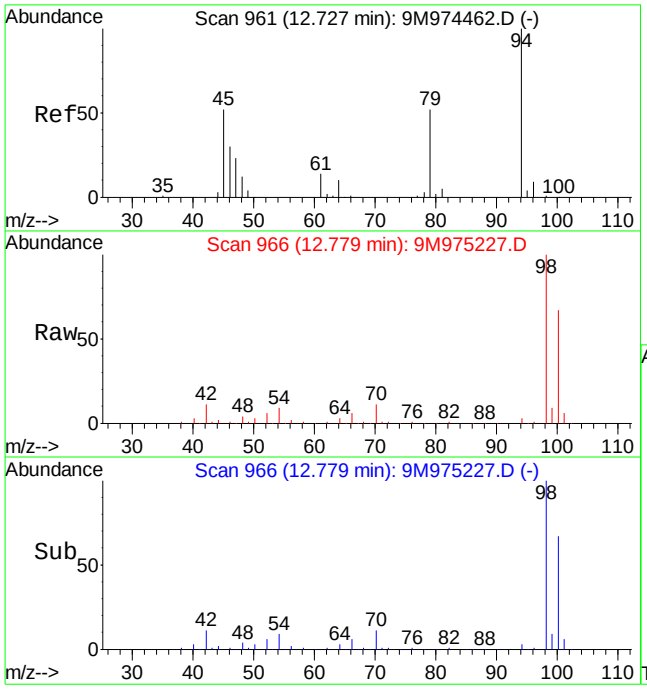

#56
Dimethyl Disulfide
Concen: 3.75 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.06 min
Lab File: 9M975227.D
Acq: 1 Jul 2016 22:05

Tgt Ion: 94 Resp: 13513

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

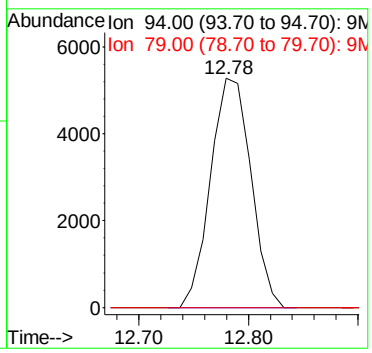

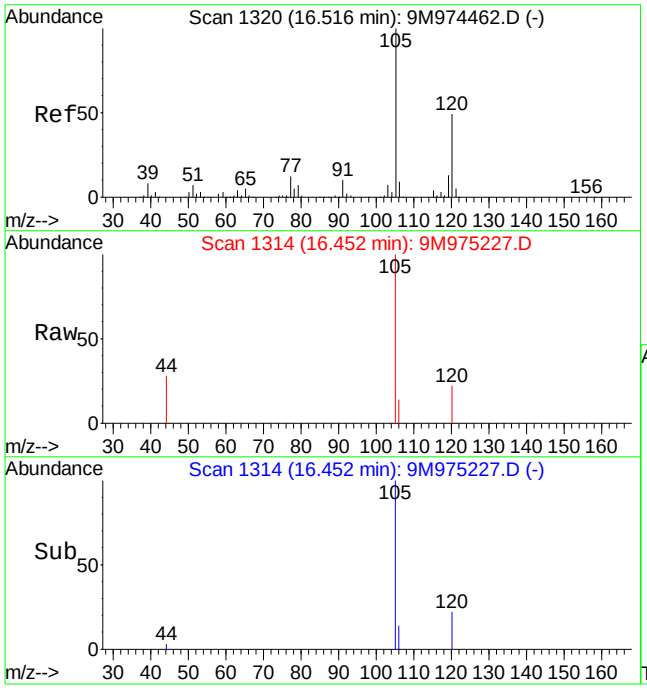

#84
1,3,5-Trimethylbenzene
Concen: 0.65 ug/kg
RT: 16.45 min Scan# 1314
Delta R.T. -0.07 min
Lab File: 9M975227.D
Acq: 1 Jul 2016 22:05

Tgt Ion:105 Resp: 7241

Ion	Ratio	Lower	Upper
105	100		
120	25.9	30.0	70.0#

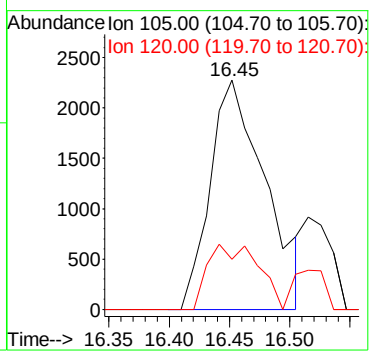

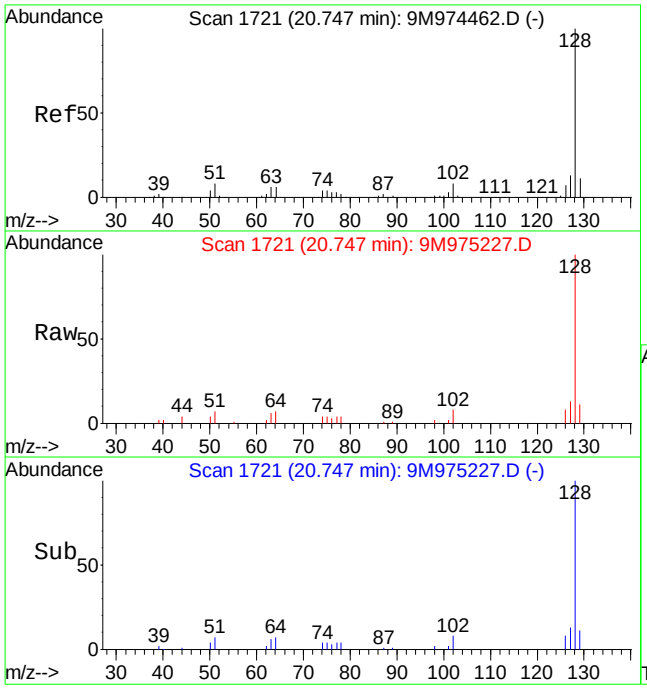

#99
Naphthalene
Concen: 4.56 ug/kg
RT: 20.75 min Scan# 1721
Delta R.T. 0.00 min
Lab File: 9M975227.D
Acq: 1 Jul 2016 22:05

Tgt Ion:128 Resp: 57240

Ion	Ratio	Lower	Upper
128	100		
127	12.3	7.6	17.8

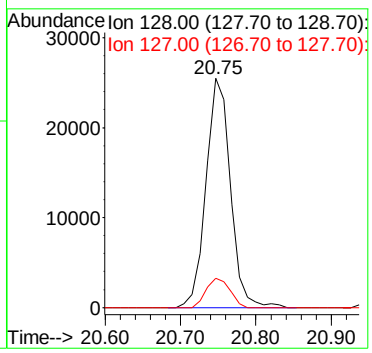

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975257.D Vial: 10
Acq On : 6 Jul 2016 18:11 Operator: ADC
Sample : L16061593-01 A 826-SPE 4.87g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03:08 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	515477	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.67	117	398128	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	202761	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	132426	46.5894 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.18%		
43) 1,2-Dichloroethane-d4	10.40	65	136951	45.3204 ug/kg	-0.02
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.64%		
58) Toluene-d8	12.78	98	494687	50.1672 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.34%		
79) p-Bromofluorobenzene	16.18	95	189350	51.1414 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.28%		

Target Compounds

					Qvalue
13) Acetone	6.36	43	2912	Below Cal #	66
19) Methylene Chloride	7.36	84	4213	1.3961 ug/kg	96
36) Tetrahydrofuran	9.73	42	1737	1.6764 ug/kg#	62
56) Dimethyl Disulfide	12.78	94	12826	3.6492 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.03	105	10882	0.4515 ug/kg	88
99) Naphthalene	20.76	128	6326	0.5109 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M975257.D 8260S.M Tue Jul 12 15:03:08 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975257.D Vial: 10
Acq On : 6 Jul 2016 18:11 Operator: ADC
Sample : L16061593-01 A 826-SPE 4.87g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

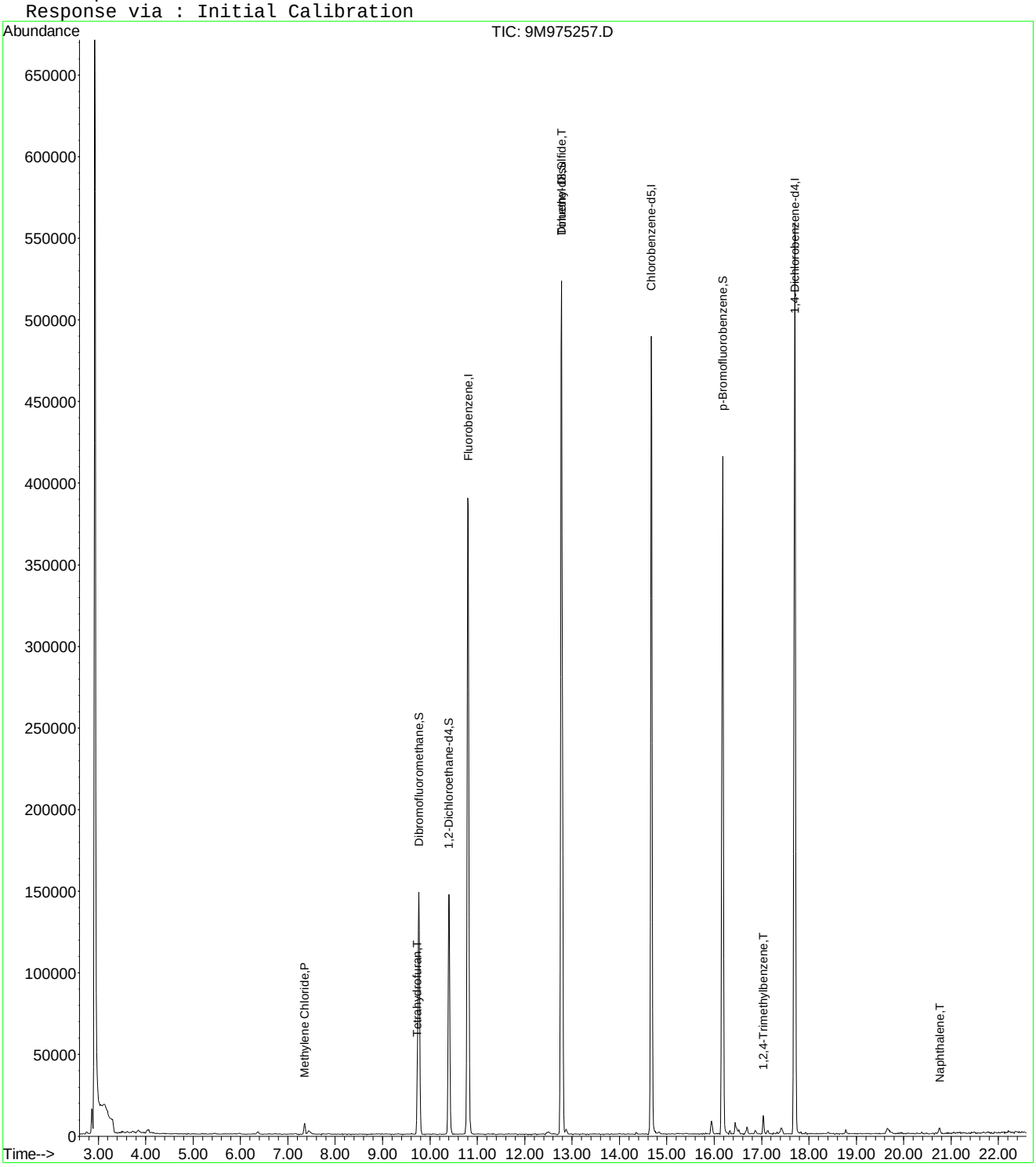

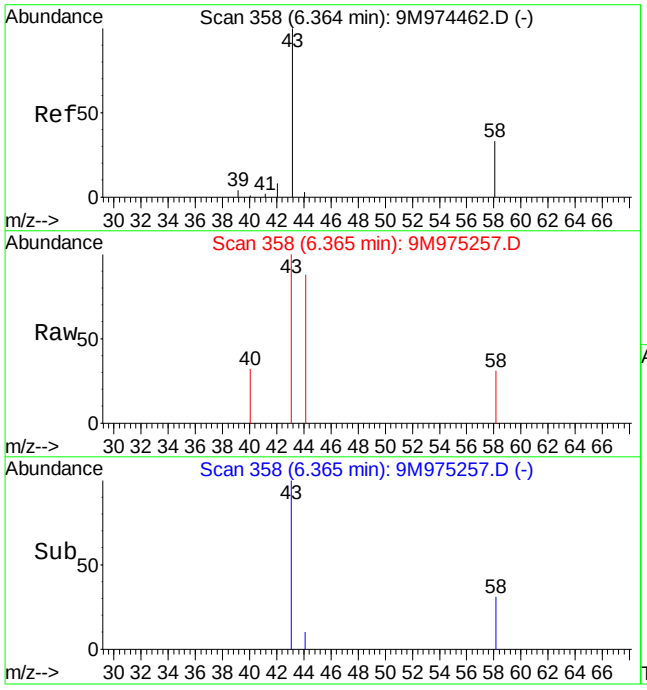

#13
Acetone
Concen: Below Cal
RT: 6.36 min Scan# 358
Delta R.T. 0.00 min
Lab File: 9M975257.D
Acq: 6 Jul 2016 18:11

Tgt Ion: 43 Resp: 2912

Ion	Ratio	Lower	Upper
43	100		
58	14.0	19.9	46.3#

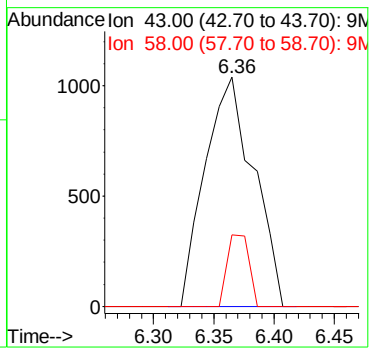

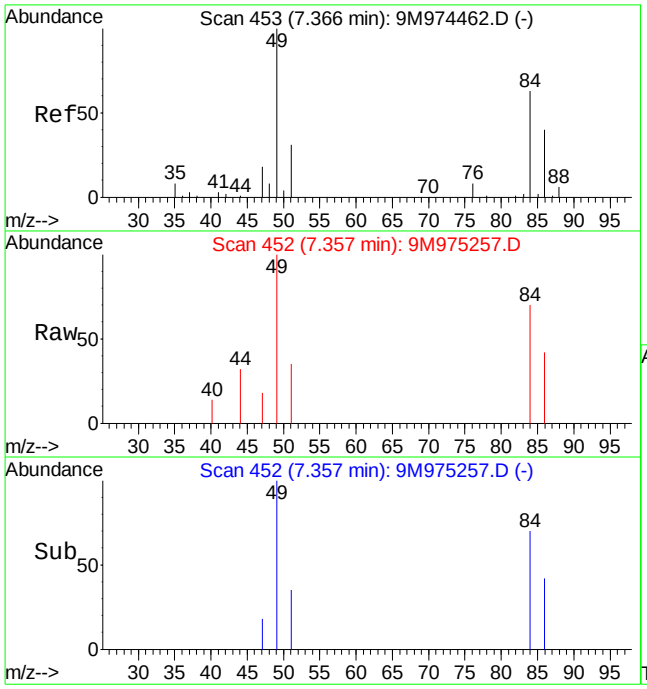

#19
Methylene Chloride
Concen: 1.40 ug/kg
RT: 7.36 min Scan# 452
Delta R.T. -0.01 min
Lab File: 9M975257.D
Acq: 6 Jul 2016 18:11

Tgt Ion: 84 Resp: 4213

Ion	Ratio	Lower	Upper
84	100		
49	149.8	93.2	217.4

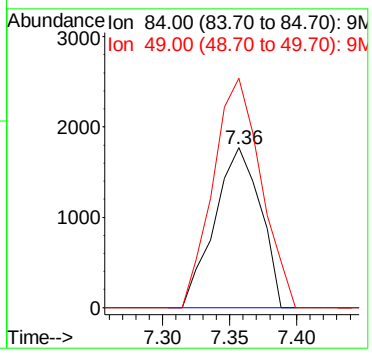

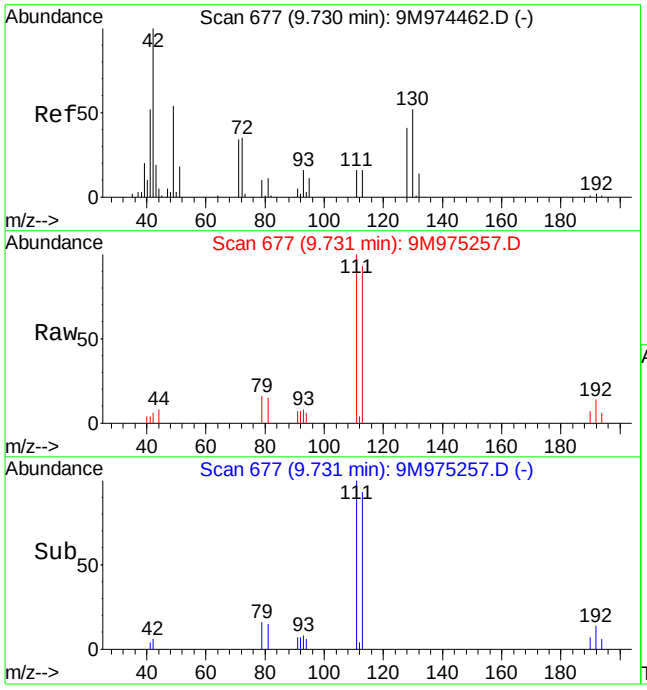

#36
Tetrahydrofuran
Concen: 1.68 ug/kg
RT: 9.73 min Scan# 677
Delta R.T. -0.01 min
Lab File: 9M975257.D
Acq: 6 Jul 2016 18:11

Tgt Ion: 42 Resp: 1737

Ion	Ratio	Lower	Upper
42	100		
72	13.6	21.8	50.8#
71	12.7	20.7	48.3#

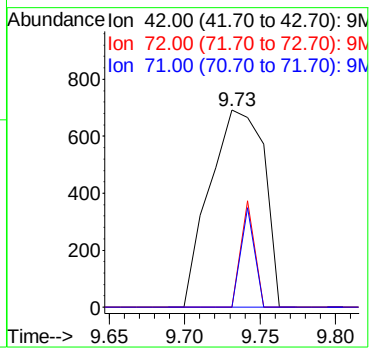

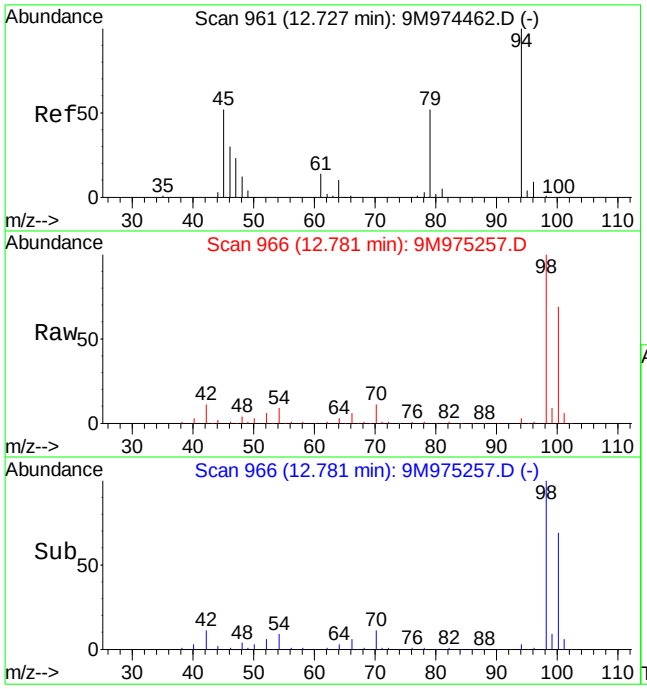

#56
Dimethyl Disulfide
Concen: 3.65 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.06 min
Lab File: 9M975257.D
Acq: 6 Jul 2016 18:11

Tgt Ion: 94 Resp: 12826

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

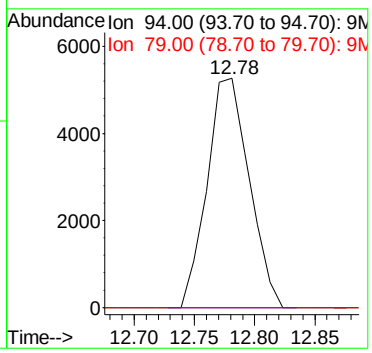

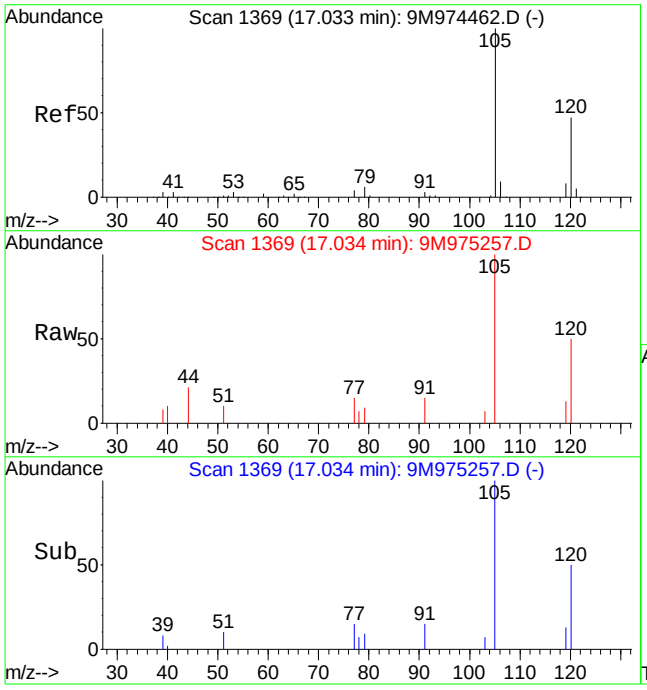

#89
1,2,4-Trimethylbenzene
Concen: 0.45 ug/kg
RT: 17.03 min Scan# 1369
Delta R.T. -0.01 min
Lab File: 9M975257.D
Acq: 6 Jul 2016 18:11

Tgt Ion:105 Resp: 10882

Ion	Ratio	Lower	Upper
105	100		
120	47.2	33.4	78.0

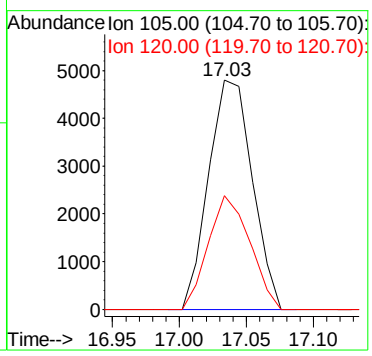

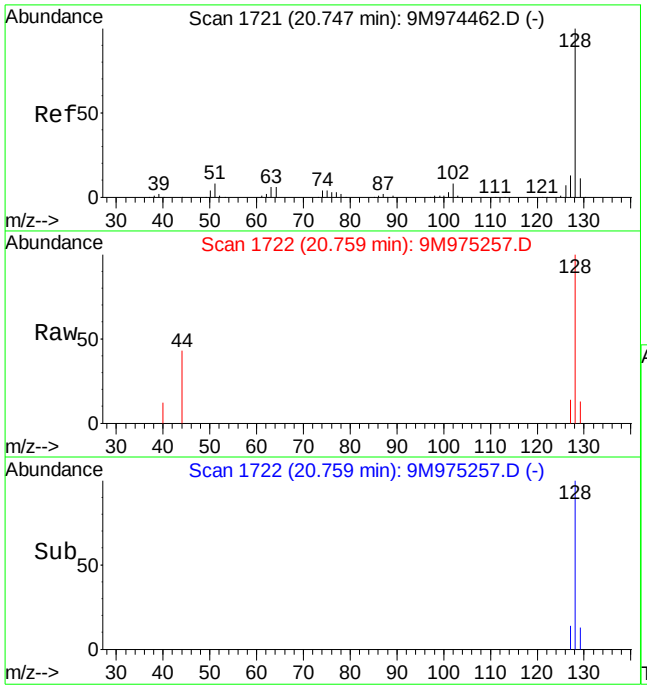

#99
Naphthalene
Concen: 0.51 ug/kg
RT: 20.76 min Scan# 1722
Delta R.T. 0.01 min
Lab File: 9M975257.D
Acq: 6 Jul 2016 18:11

Tgt Ion:128 Resp: 6326

Ion	Ratio	Lower	Upper
128	100		
127	7.0	7.6	17.8#

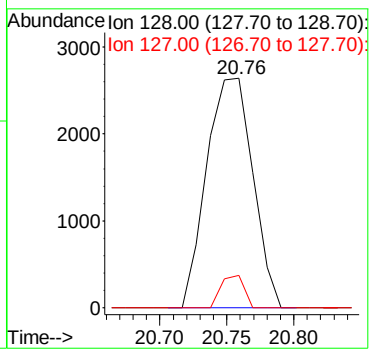

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975228.D Vial: 16
Acq On : 1 Jul 2016 22:35 Operator: ADC
Sample : L16061593-02 A 826-SPE 5.13g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01:25 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	573846	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	449565	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.71	152	227995	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	143864	45.4653 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.94%		
43) 1,2-Dichloroethane-d4	10.40	65	151053	44.9026 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.80%		
58) Toluene-d8	12.79	98	549526	49.3524 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.70%		
79) p-Bromofluorobenzene	16.18	95	213000	51.1618 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.32%		

Target Compounds

					Qvalue
13) Acetone	6.37	43	6560	2.6481 ug/kg	95
19) Methylene Chloride	7.38	84	1361	0.4051 ug/kg	85
36) Tetrahydrofuran	9.75	42	1791	1.5527 ug/kg#	39
56) Dimethyl Disulfide	12.78	94	14762	3.7327 ug/kg#	29
99) Naphthalene	20.75	128	36217	2.6014 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M975228.D 8260S.M Tue Jul 12 11:01:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975228.D Vial: 16
Acq On : 1 Jul 2016 22:35 Operator: ADC
Sample : L16061593-02 A 826-SPE 5.13g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

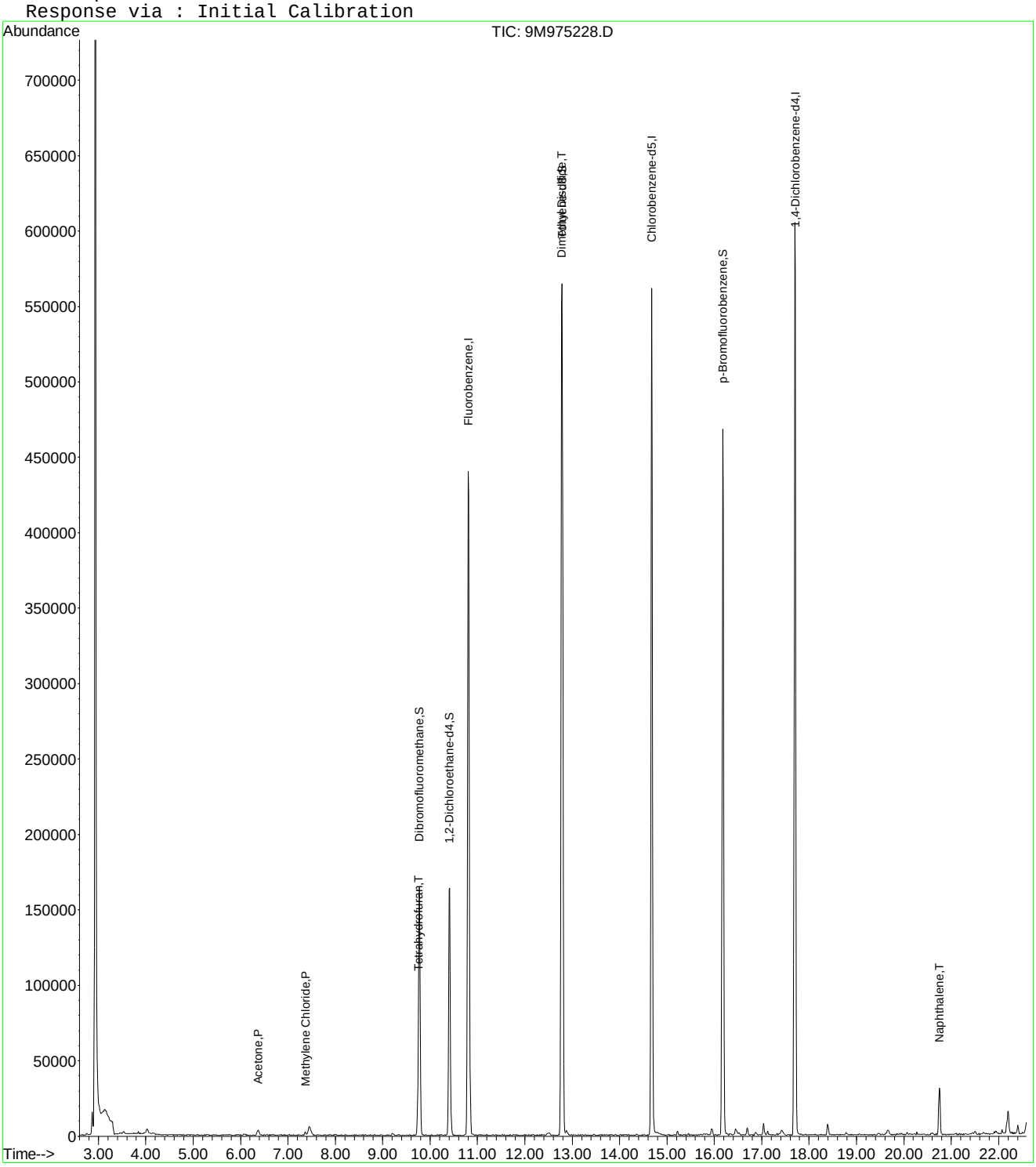

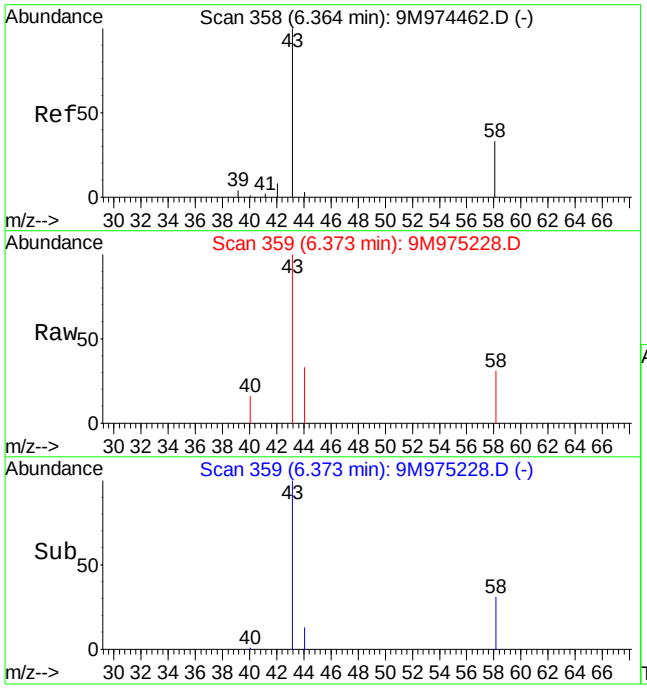

#13
Acetone
Concen: 2.65 ug/kg
RT: 6.37 min Scan# 359
Delta R.T. 0.01 min
Lab File: 9M975228.D
Acq: 1 Jul 2016 22:35

Tgt Ion: 43 Resp: 6560

Ion	Ratio	Lower	Upper
43	100		
58	30.4	19.9	46.3

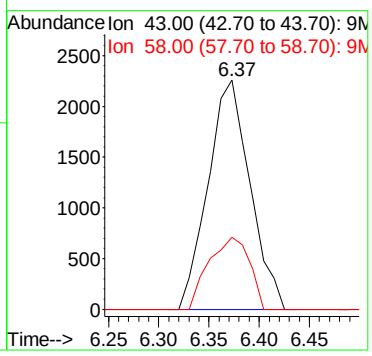

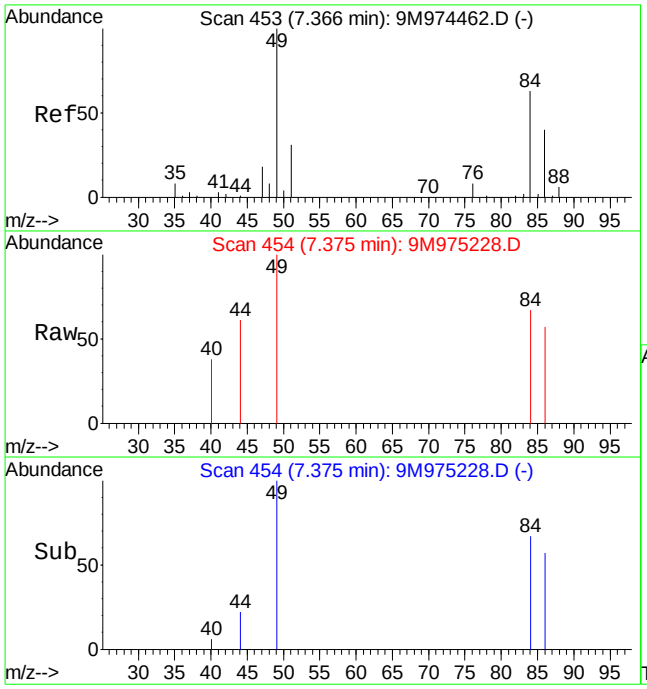

#19
Methylene Chloride
Concen: 0.41 ug/kg
RT: 7.38 min Scan# 454
Delta R.T. 0.01 min
Lab File: 9M975228.D
Acq: 1 Jul 2016 22:35

Tgt Ion: 84 Resp: 1361

Ion	Ratio	Lower	Upper
84	100		
49	174.9	93.2	217.4

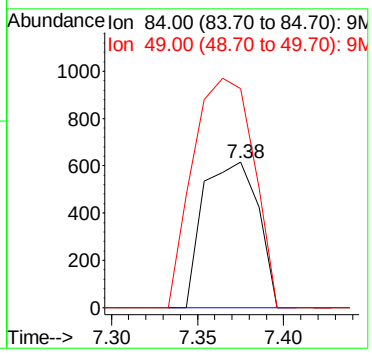

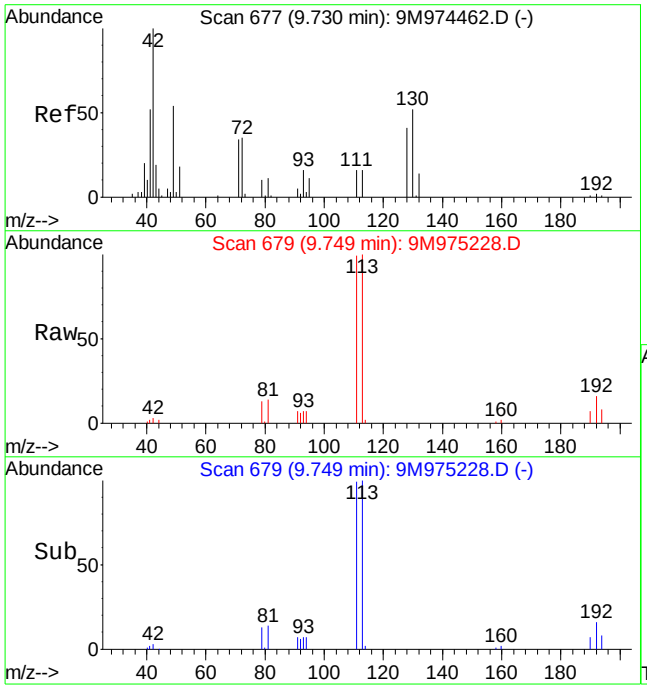

#36
Tetrahydrofuran
Concen: 1.55 ug/kg
RT: 9.75 min Scan# 679
Delta R.T. 0.01 min
Lab File: 9M975228.D
Acq: 1 Jul 2016 22:35

Tgt Ion: 42 Resp: 1791

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.8	50.8#
71	0.0	20.7	48.3#

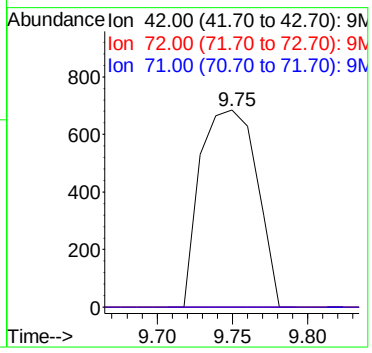

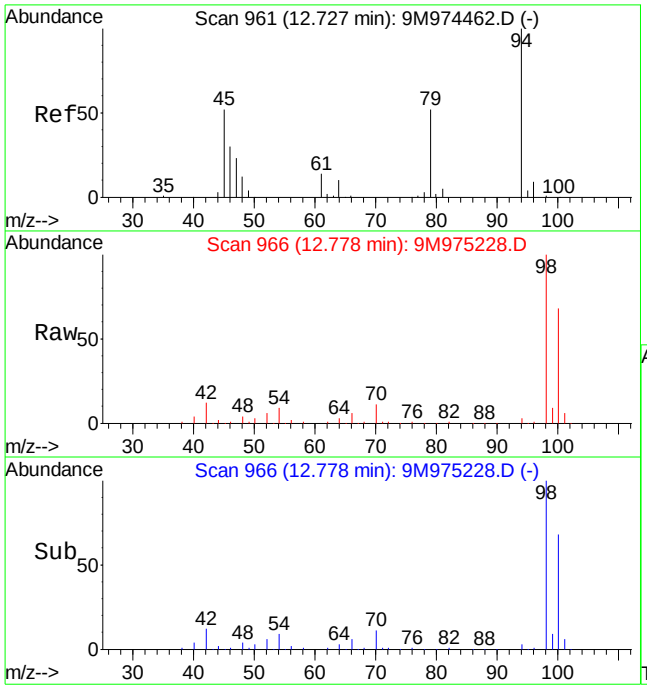

#56
Dimethyl Disulfide
Concen: 3.73 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.05 min
Lab File: 9M975228.D
Acq: 1 Jul 2016 22:35

Tgt Ion: 94 Resp: 14762

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

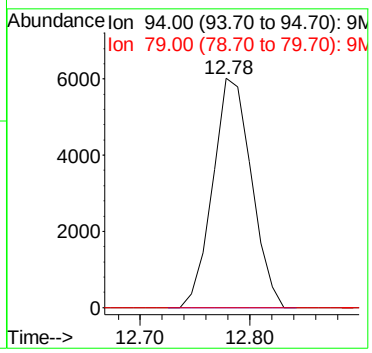

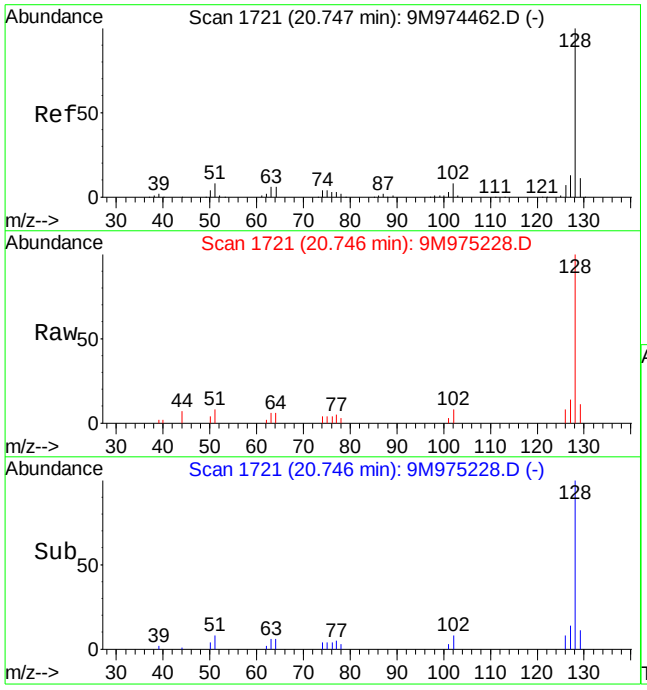

#99
Naphthalene
Concen: 2.60 ug/kg
RT: 20.75 min Scan# 1721
Delta R.T. 0.00 min
Lab File: 9M975228.D
Acq: 1 Jul 2016 22:35

Tgt Ion:128 Resp: 36217

Ion	Ratio	Lower	Upper
128	100		
127	12.9	7.6	17.8

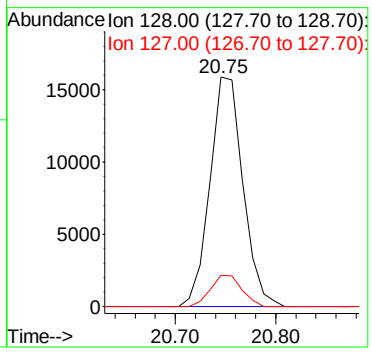

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975258.D Vial: 11
Acq On : 6 Jul 2016 18:41 Operator: ADC
Sample : L16061593-02 A 826-SPE 5.25g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03:09 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	686475	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	534761	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	268816	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	173231	45.7640 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.52%		
43) 1,2-Dichloroethane-d4	10.40	65	175799	43.6847 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.36%		
58) Toluene-d8	12.78	98	650969	49.1488 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.30%		
79) p-Bromofluorobenzene	16.18	95	251338	51.2029 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.40%		

Target Compounds

					Qvalue
13) Acetone	6.35	43	6533	1.6036 ug/kg	88
19) Methylene Chloride	7.35	84	5818	1.4477 ug/kg	92
36) Tetrahydrofuran	9.73	42	2308	1.6726 ug/kg#	39
56) Dimethyl Disulfide	12.78	94	18020	3.7847 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M975258.D 8260S.M Tue Jul 12 15:03:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975258.D Vial: 11
Acq On : 6 Jul 2016 18:41 Operator: ADC
Sample : L16061593-02 A 826-SPE 5.25g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

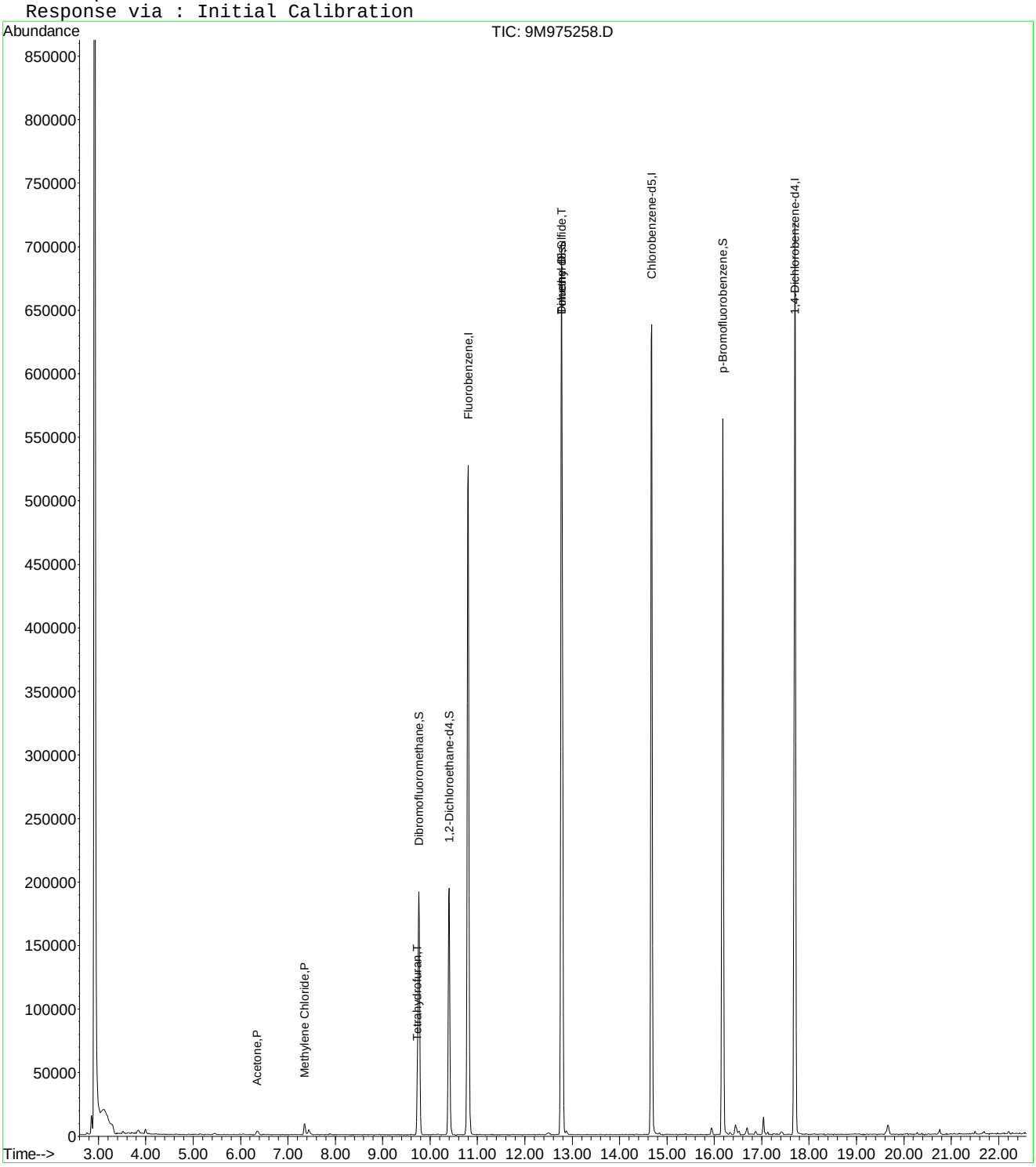

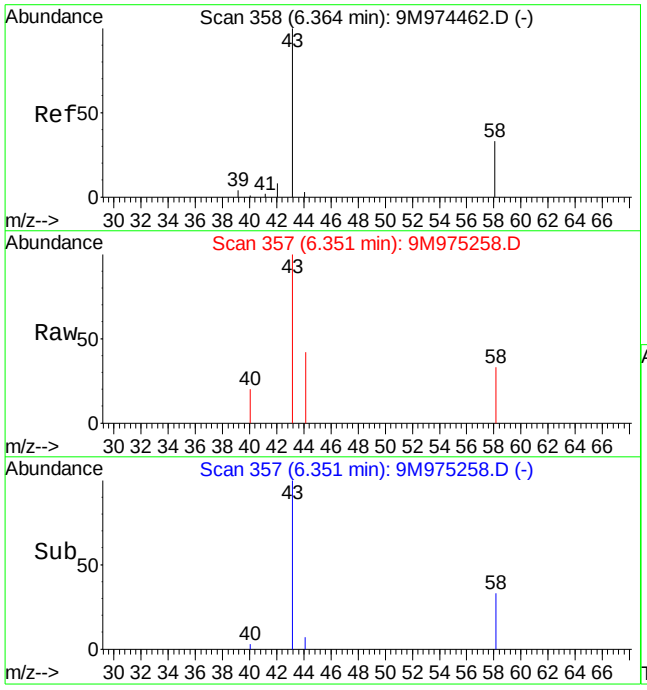

#13
Acetone
Concen: 1.60 ug/kg
RT: 6.35 min Scan# 357
Delta R.T. -0.01 min
Lab File: 9M975258.D
Acq: 6 Jul 2016 18:41

Tgt Ion: 43 Resp: 6533

Ion	Ratio	Lower	Upper
43	100		
58	26.6	19.9	46.3

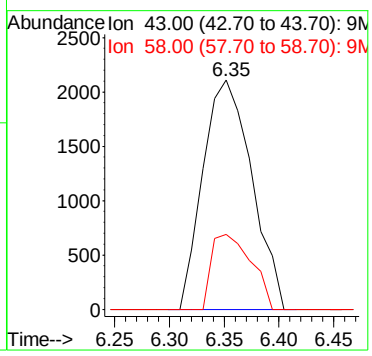

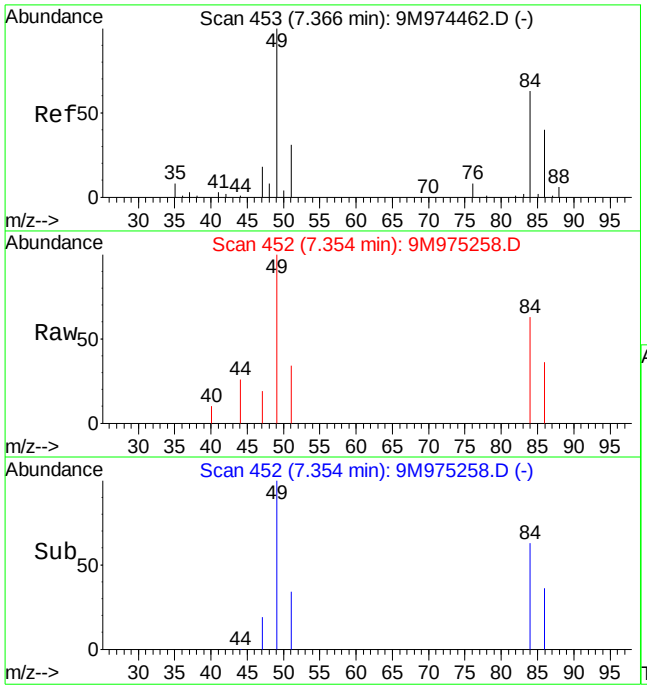

#19
Methylene Chloride
Concen: 1.45 ug/kg
RT: 7.35 min Scan# 452
Delta R.T. -0.01 min
Lab File: 9M975258.D
Acq: 6 Jul 2016 18:41

Tgt Ion: 84 Resp: 5818

Ion	Ratio	Lower	Upper
84	100		
49	145.2	93.2	217.4

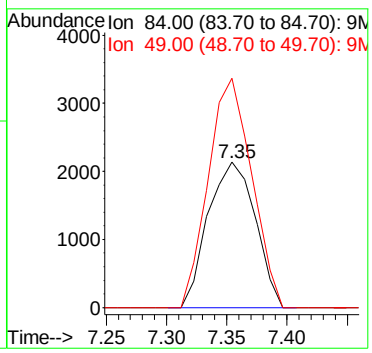

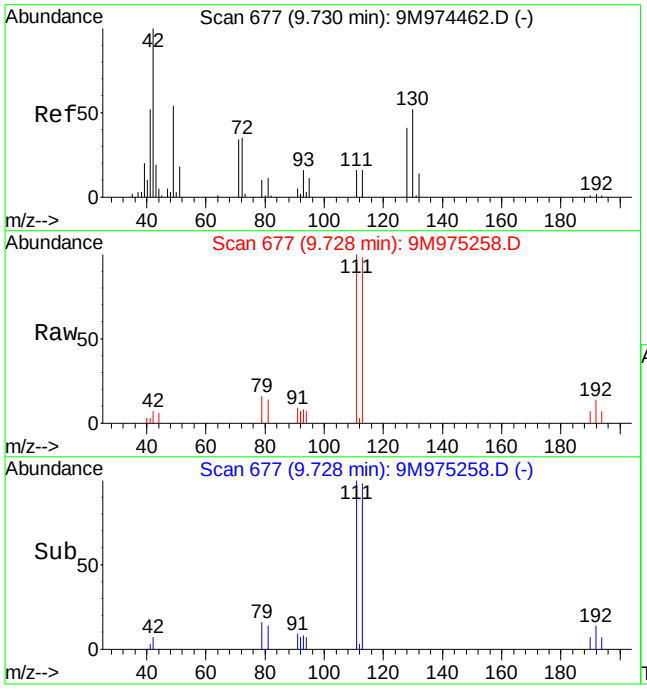

#36
Tetrahydrofuran
Concen: 1.67 ug/kg
RT: 9.73 min Scan# 677
Delta R.T. -0.01 min
Lab File: 9M975258.D
Acq: 6 Jul 2016 18:41

Tgt Ion: 42 Resp: 2308

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.8	50.8#
71	0.0	20.7	48.3#

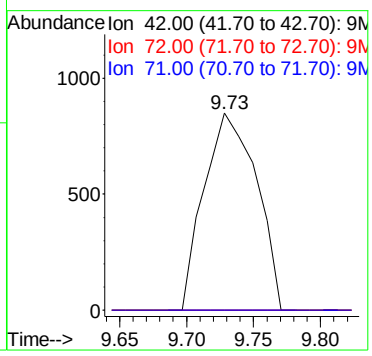

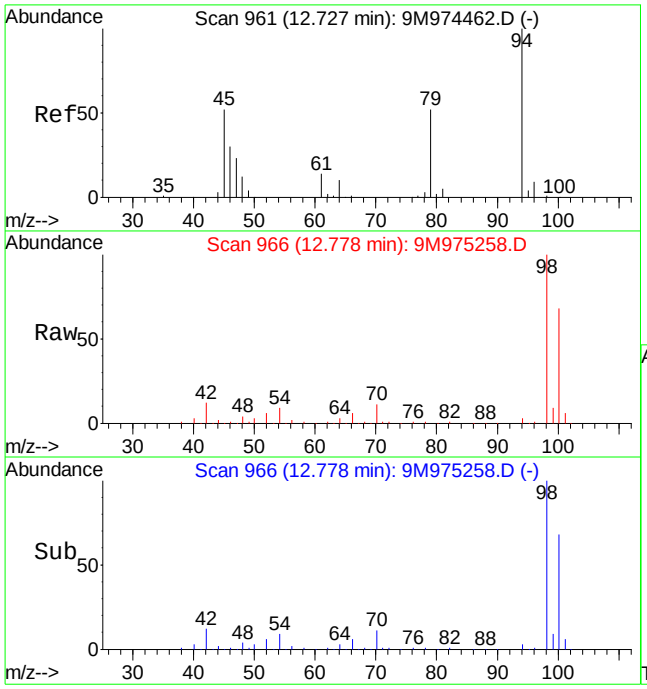

#56
Dimethyl Disulfide
Concen: 3.78 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.05 min
Lab File: 9M975258.D
Acq: 6 Jul 2016 18:41

Tgt Ion: 94 Resp: 18020

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

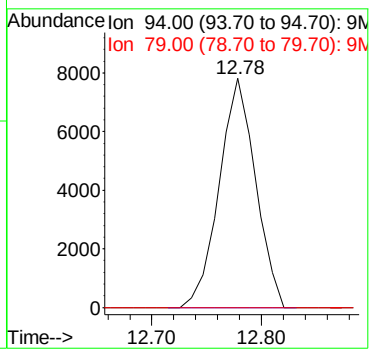

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975229.D Vial: 17
Acq On : 1 Jul 2016 23:06 Operator: ADC
Sample : L16061593-03 A 826-SPE 4.94g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01:26 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	630912	50.00 ug/kg	-0.01
57) Chlorobenzene-d5	14.68	117	493393	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.71	152	254536	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	159829	45.9420 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.88%		
43) 1,2-Dichloroethane-d4	10.40	65	161748	43.7329 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.46%		
58) Toluene-d8	12.79	98	605739	49.5684 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.14%		
79) p-Bromofluorobenzene	16.18	95	228704	49.2058 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.42%		

Target Compounds

					Qvalue
13) Acetone	6.37	43	14771	9.1831 ug/kg	85
19) Methylene Chloride	7.36	84	1854	0.5020 ug/kg	96
29) 2-Butanone	9.00	43	819	0.4446 ug/kg#	55
36) Tetrahydrofuran	9.74	42	1762	1.3894 ug/kg#	61
56) Dimethyl Disulfide	12.79	94	16149	3.7199 ug/kg#	29
84) 1,3,5-Trimethylbenzene	16.45	105	9307	0.6690 ug/kg#	62
99) Naphthalene	20.74	128	27806	1.7890 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M975229.D 8260S.M Tue Jul 12 11:01:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975229.D Vial: 17
Acq On : 1 Jul 2016 23:06 Operator: ADC
Sample : L16061593-03 A 826-SPE 4.94g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

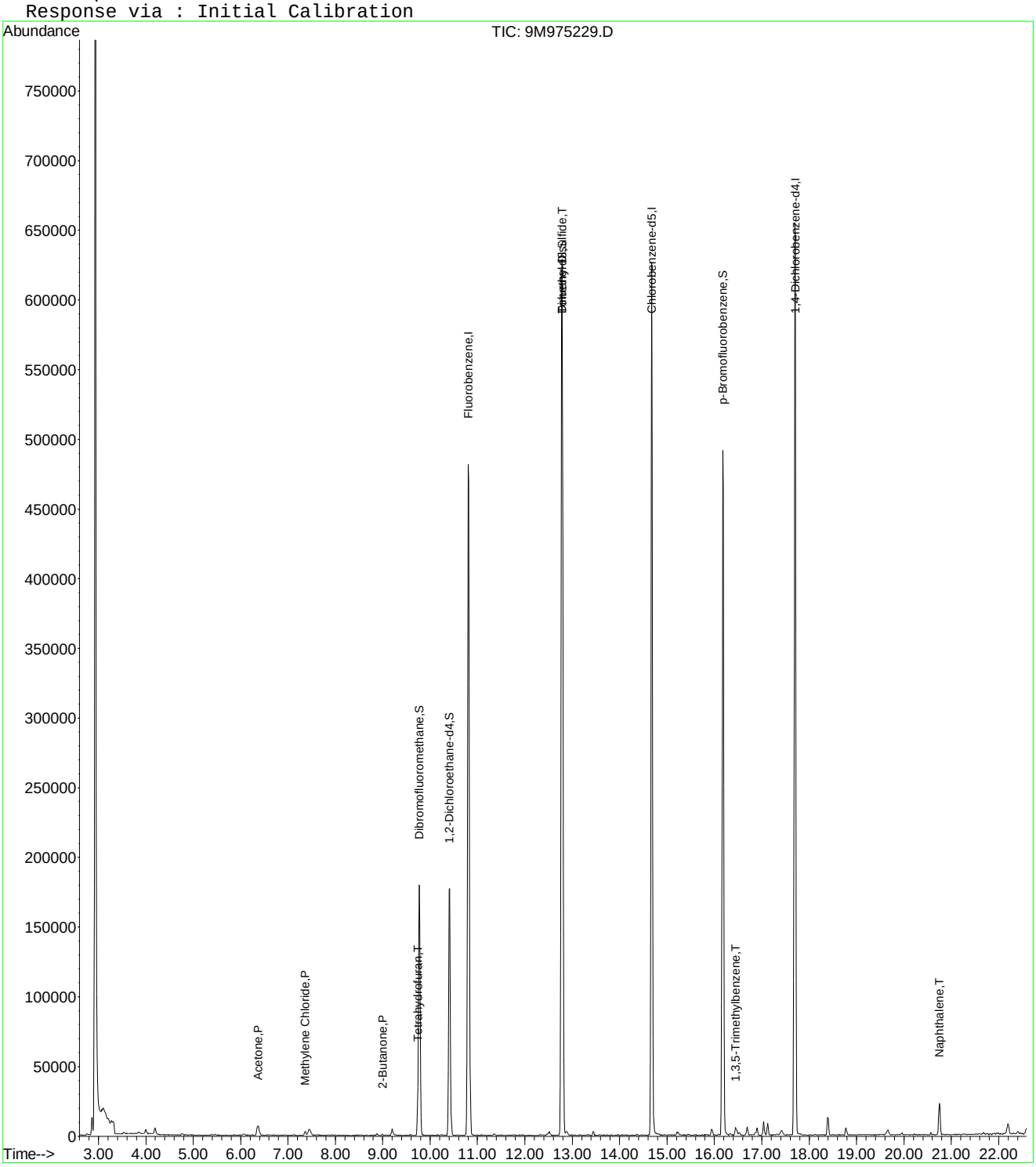

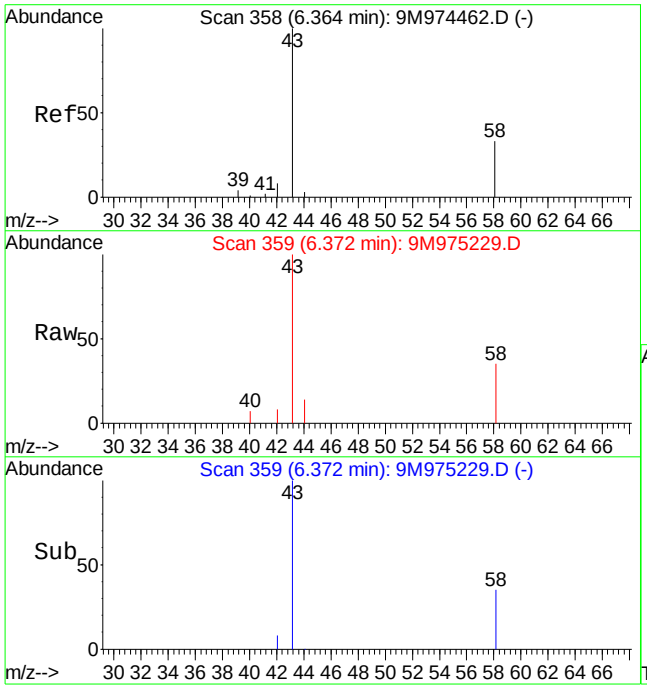

#13
Acetone
Concen: 9.18 ug/kg
RT: 6.37 min Scan# 359
Delta R.T. 0.01 min
Lab File: 9M975229.D
Acq: 1 Jul 2016 23:06

Tgt Ion: 43 Resp: 14771

Ion	Ratio	Lower	Upper
43	100		
58	41.4	19.9	46.3

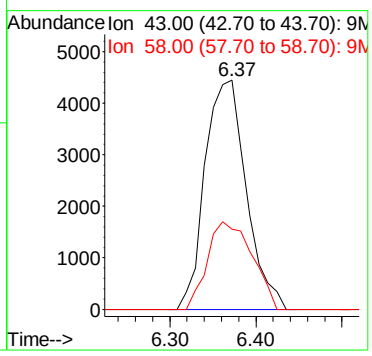

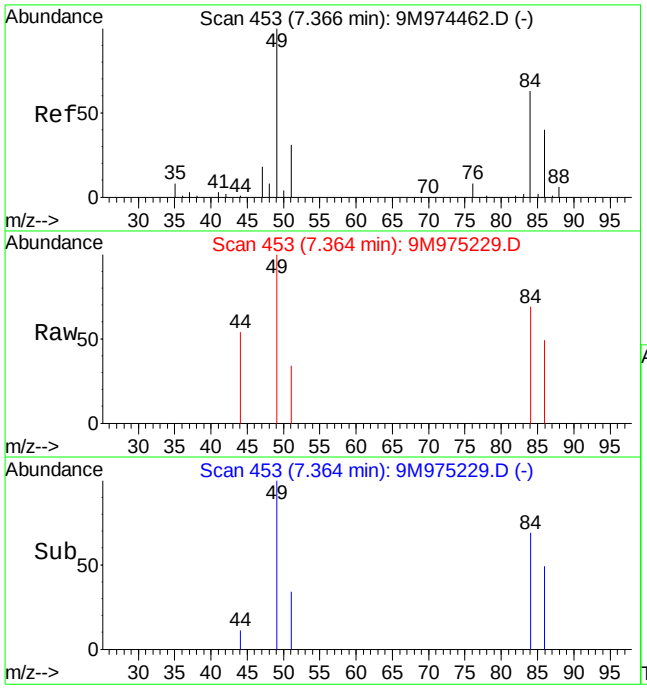

#19
Methylene Chloride
Concen: 0.50 ug/kg
RT: 7.36 min Scan# 453
Delta R.T. 0.00 min
Lab File: 9M975229.D
Acq: 1 Jul 2016 23:06

Tgt Ion: 84 Resp: 1854

Ion	Ratio	Lower	Upper
84	100		
49	150.6	93.2	217.4

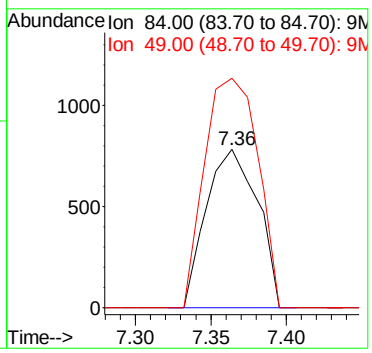

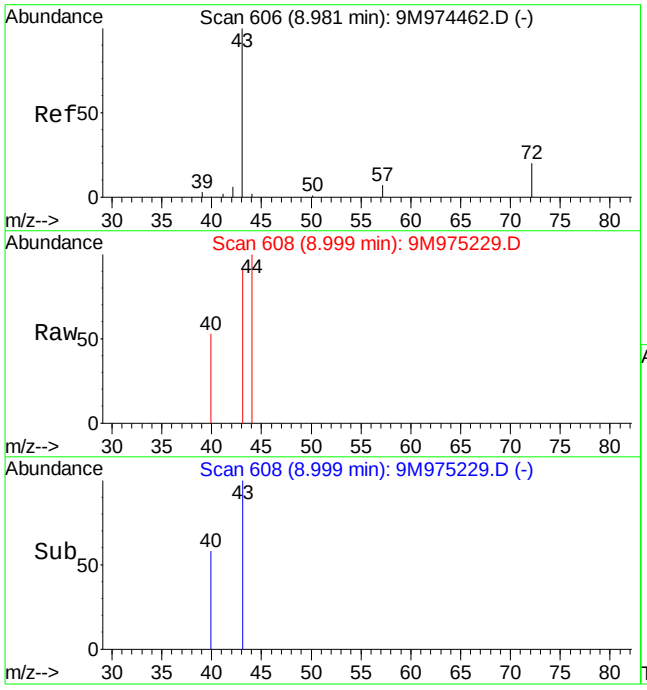

#29
2-Butanone
Concen: 0.44 ug/kg
RT: 9.00 min Scan# 608
Delta R.T. 0.01 min
Lab File: 9M975229.D
Acq: 1 Jul 2016 23:06

Tgt Ion: 43 Resp: 819

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.5	29.3#

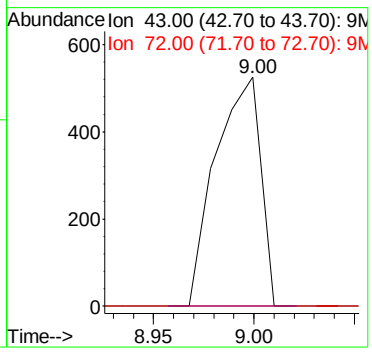

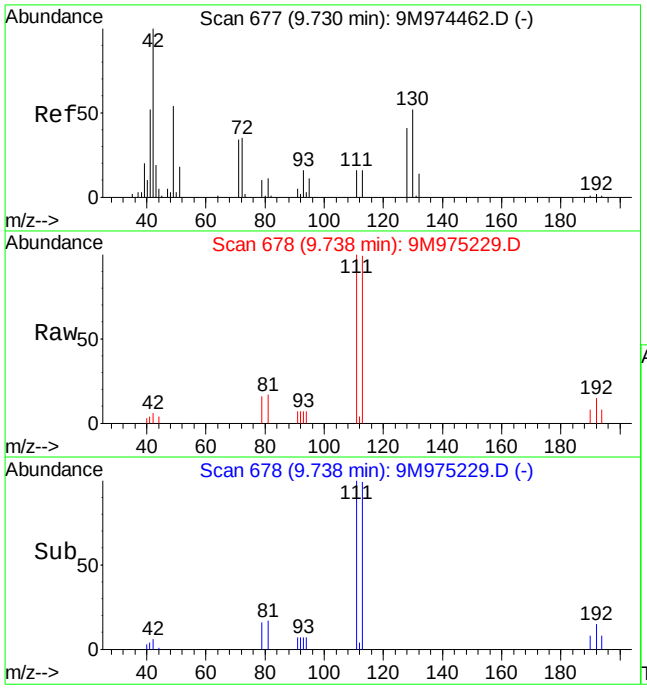

#36
Tetrahydrofuran
Concen: 1.39 ug/kg
RT: 9.74 min Scan# 678
Delta R.T. 0.00 min
Lab File: 9M975229.D
Acq: 1 Jul 2016 23:06

Tgt Ion: 42 Resp: 1762

Ion	Ratio	Lower	Upper
42	100		
72	24.5	21.8	50.8
71	0.0	20.7	48.3#

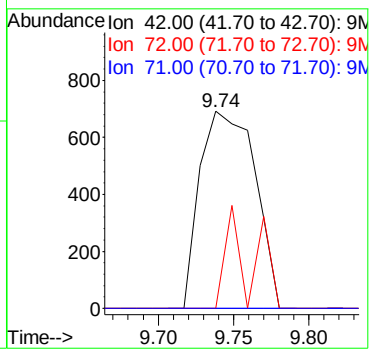

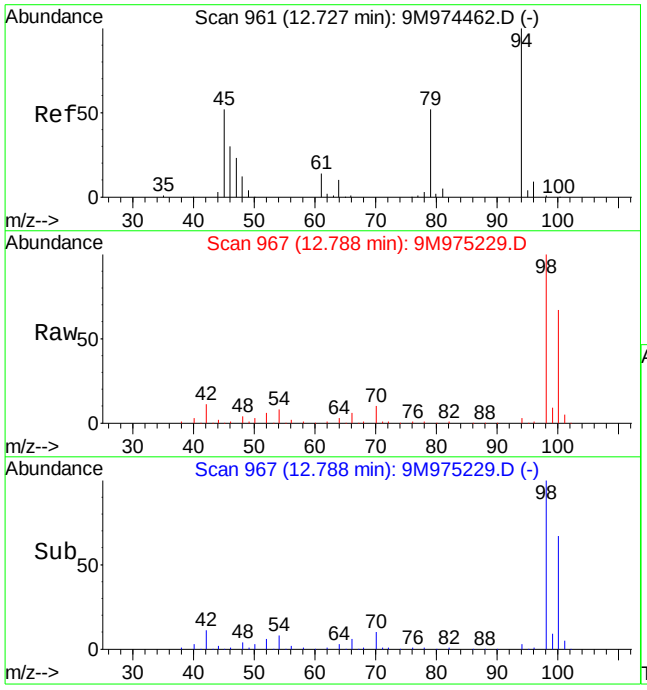

#56
Dimethyl Disulfide
Concen: 3.72 ug/kg
RT: 12.79 min Scan# 967
Delta R.T. 0.06 min
Lab File: 9M975229.D
Acq: 1 Jul 2016 23:06

Tgt Ion: 94 Resp: 16149

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

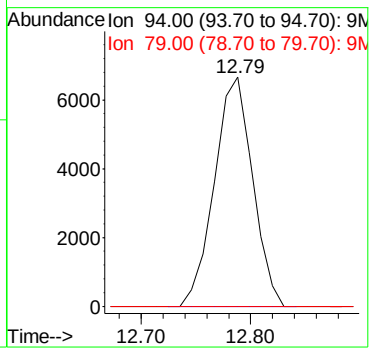

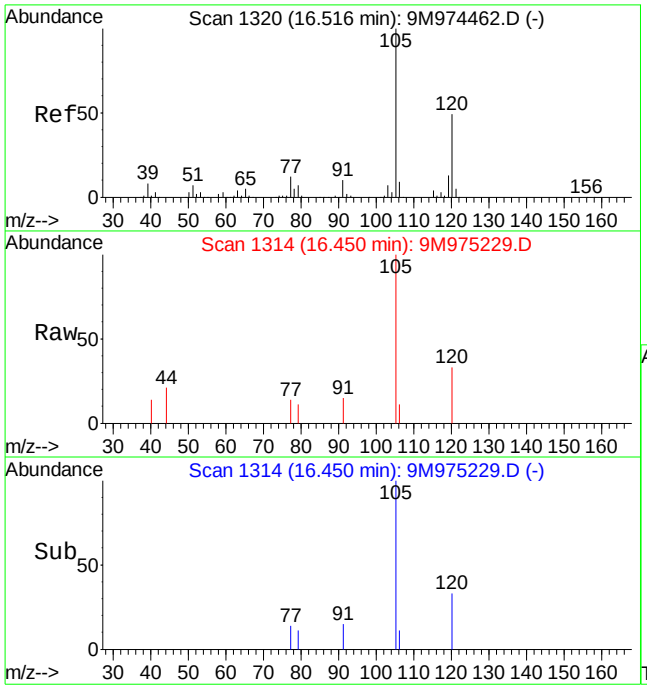

#84
1,3,5-Trimethylbenzene
Concen: 0.67 ug/kg
RT: 16.45 min Scan# 1314
Delta R.T. -0.07 min
Lab File: 9M975229.D
Acq: 1 Jul 2016 23:06

Tgt Ion:105 Resp: 9307

Ion	Ratio	Lower	Upper
105	100		
120	23.9	30.0	70.0#

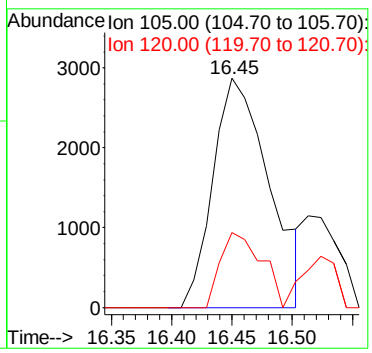

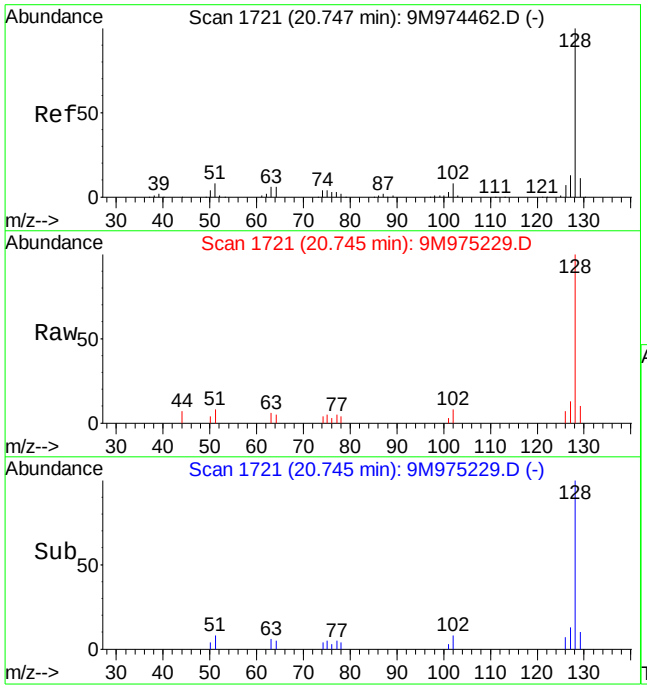

#99
Naphthalene
Concen: 1.79 ug/kg
RT: 20.74 min Scan# 1721
Delta R.T. 0.00 min
Lab File: 9M975229.D
Acq: 1 Jul 2016 23:06

Tgt Ion:128 Resp: 27806

Ion	Ratio	Lower	Upper
128	100		
127	12.9	7.6	17.8

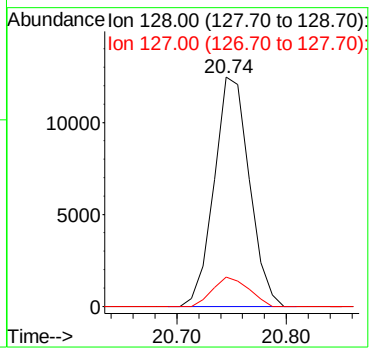

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975259.D Vial: 12
Acq On : 6 Jul 2016 19:11 Operator: ADC
Sample : L16061593-03 A 826-SPE 5.25g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03:10 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	568089	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	441467	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	224968	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	148720	47.4762 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.96%		
43) 1,2-Dichloroethane-d4	10.41	65	149070	44.7622 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.52%		
58) Toluene-d8	12.78	98	546667	49.9962 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.00%		
79) p-Bromofluorobenzene	16.18	95	209979	51.1148 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.22%		

Target Compounds

					Qvalue
13) Acetone	6.35	43	9979	5.9942 ug/kg	93
19) Methylene Chloride	7.36	84	4800	1.4433 ug/kg	94
36) Tetrahydrofuran	9.74	42	1633	1.4301 ug/kg#	49
56) Dimethyl Disulfide	12.78	94	13932	3.6138 ug/kg#	29
84) 1,3,5-Trimethylbenzene	16.45	105	7694	0.6257 ug/kg	73

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975259.D Vial: 12
Acq On : 6 Jul 2016 19:11 Operator: ADC
Sample : L16061593-03 A 826-SPE 5.25g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

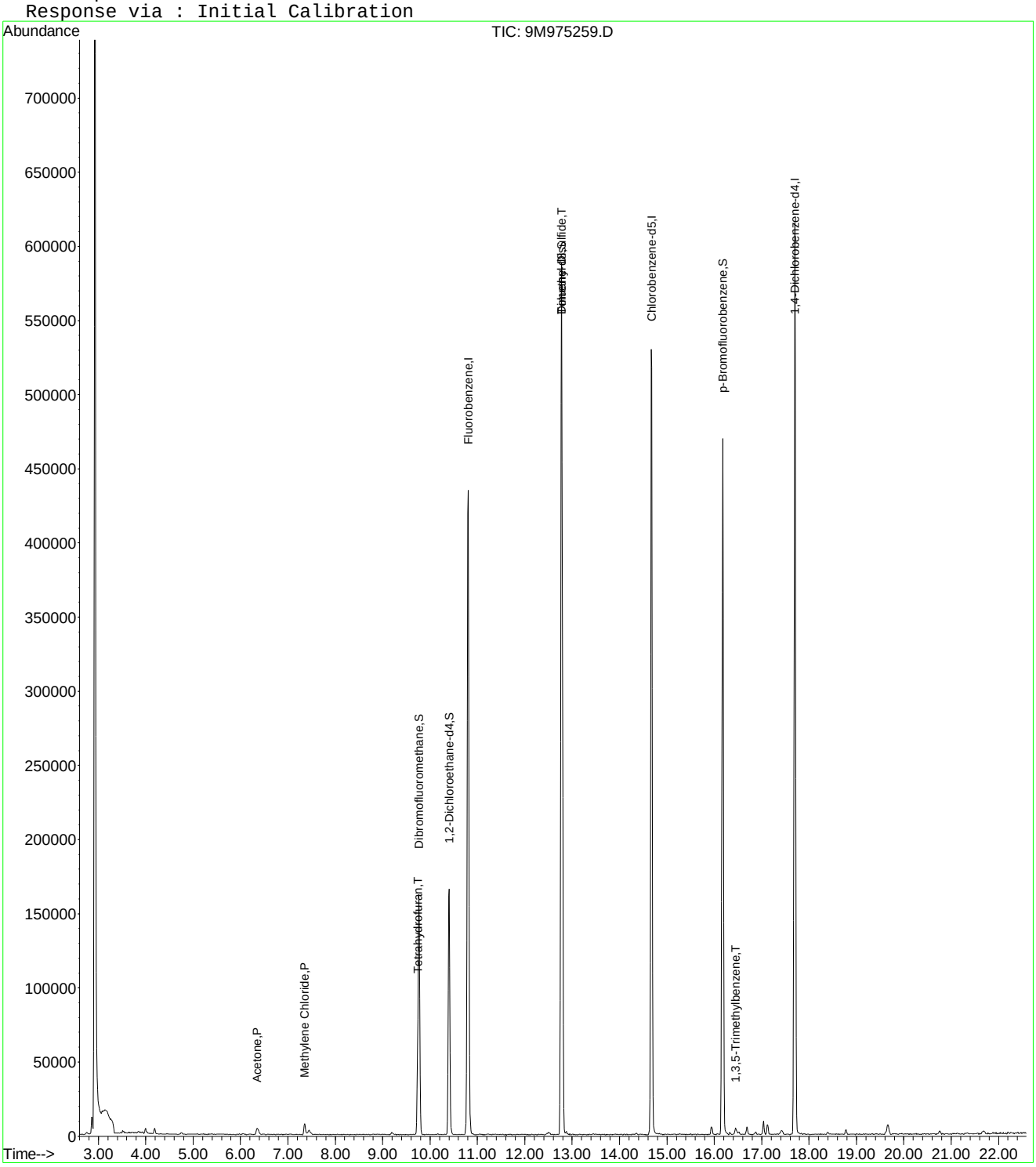

9M975259.D 8260S.M Tue Jul 12 15:03:10 2016 Page 2

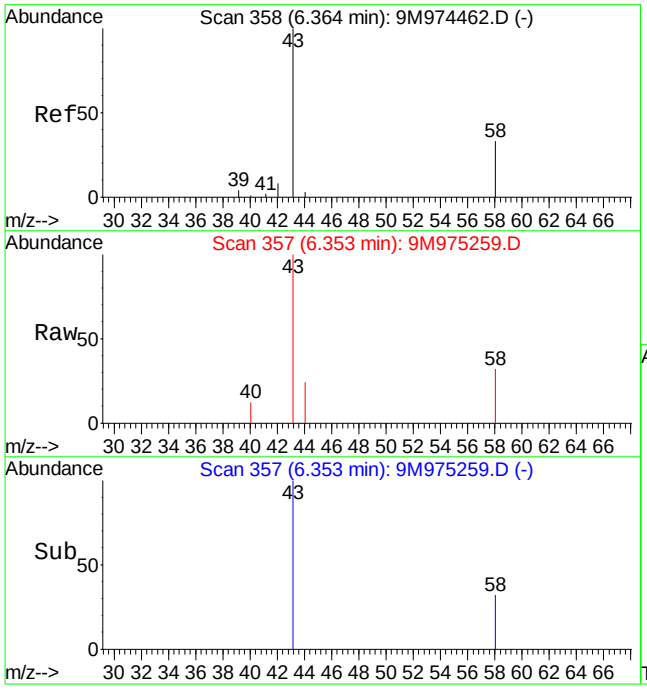

#13
Acetone
Concen: 5.99 ug/kg
RT: 6.35 min Scan# 357
Delta R.T. -0.01 min
Lab File: 9M975259.D
Acq: 6 Jul 2016 19:11

Tgt Ion: 43 Resp: 9979

Ion	Ratio	Lower	Upper
43	100		
58	37.2	19.9	46.3

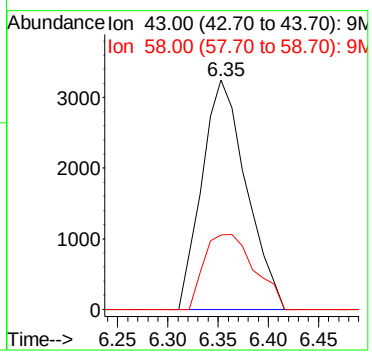

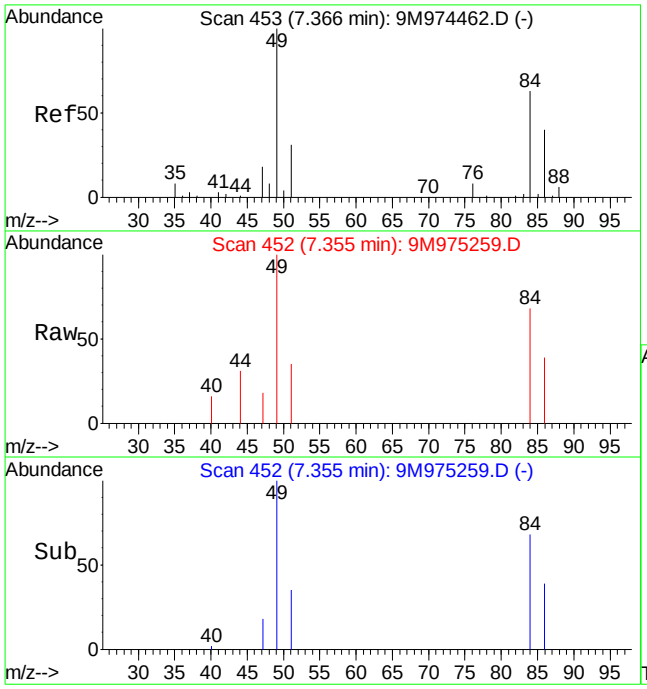

#19
Methylene Chloride
Concen: 1.44 ug/kg
RT: 7.36 min Scan# 452
Delta R.T. -0.01 min
Lab File: 9M975259.D
Acq: 6 Jul 2016 19:11

Tgt Ion: 84 Resp: 4800

Ion	Ratio	Lower	Upper
84	100		
49	147.1	93.2	217.4

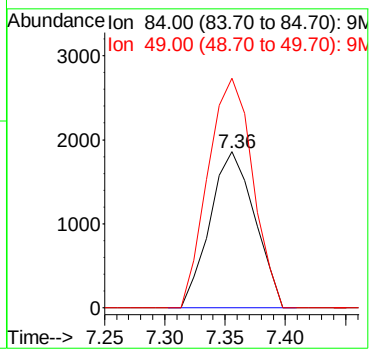

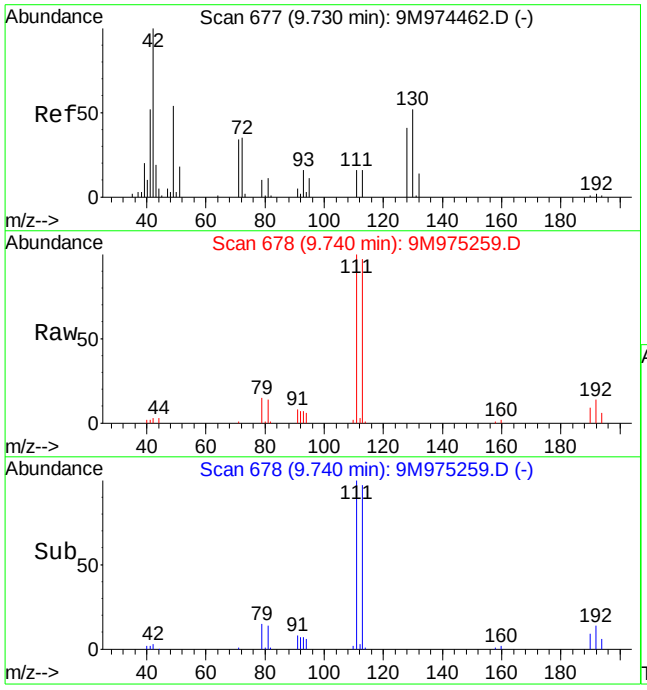

#36
Tetrahydrofuran
Concen: 1.43 ug/kg
RT: 9.74 min Scan# 678
Delta R.T. 0.00 min
Lab File: 9M975259.D
Acq: 6 Jul 2016 19:11

Tgt Ion: 42 Resp: 1633

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.8	50.8#
71	11.7	20.7	48.3#

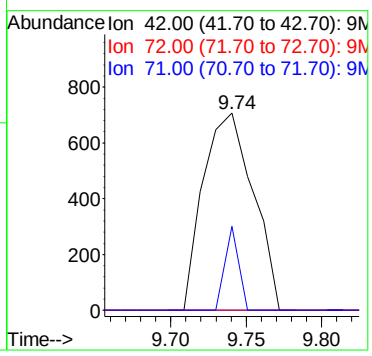

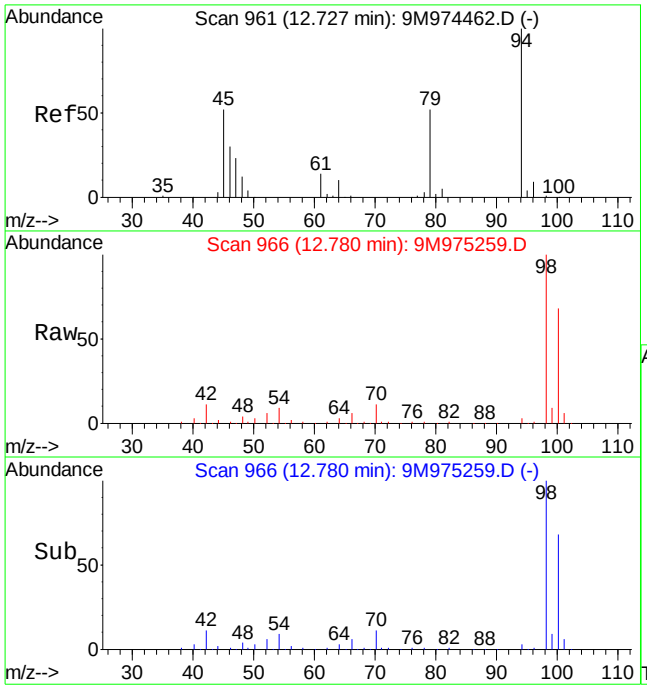

#56
Dimethyl Disulfide
Concen: 3.61 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.06 min
Lab File: 9M975259.D
Acq: 6 Jul 2016 19:11

Tgt Ion: 94 Resp: 13932

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

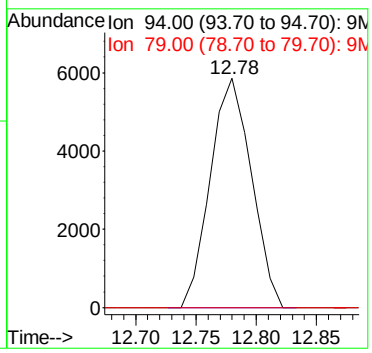

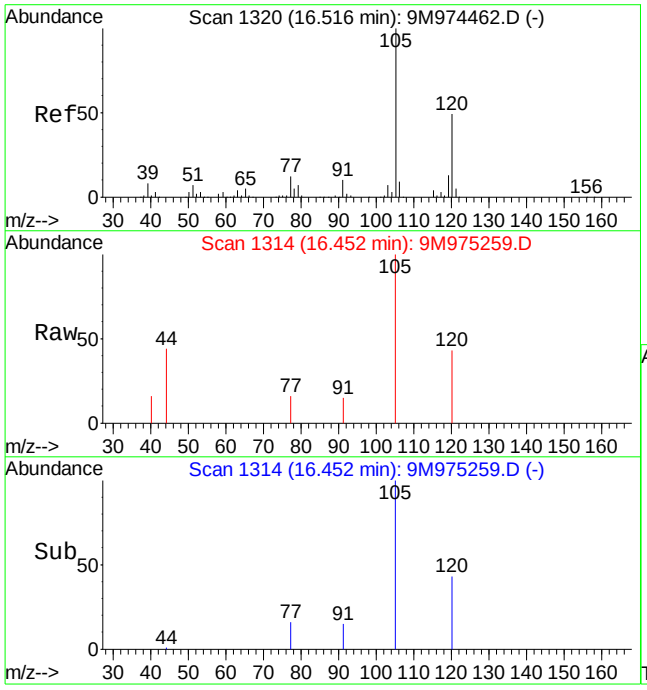

#84
1,3,5-Trimethylbenzene
Concen: 0.63 ug/kg
RT: 16.45 min Scan# 1314
Delta R.T. -0.07 min
Lab File: 9M975259.D
Acq: 6 Jul 2016 19:11

Tgt Ion:105 Resp: 7694

Ion	Ratio	Lower	Upper
105	100		
120	31.6	30.0	70.0

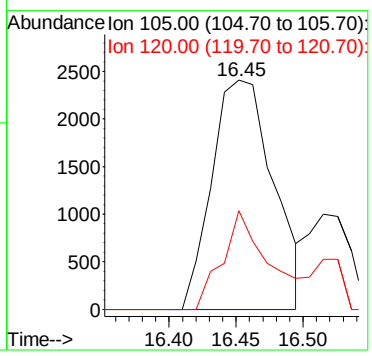

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975230.D Vial: 18
Acq On : 1 Jul 2016 23:36 Operator: ADC
Sample : L16061593-04 A 826-SPE 5.16g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01:27 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	560755	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	432778	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	207760	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	141761	45.8466 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.70%		
43) 1,2-Dichloroethane-d4	10.40	65	144605	43.9894 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.98%		
58) Toluene-d8	12.79	98	535395	49.9484 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.90%		
79) p-Bromofluorobenzene	16.18	95	200046	52.7302 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 105.46%		

Target Compounds					Qvalue
13) Acetone	6.36	43	16862	12.8148 ug/kg	83
19) Methylene Chloride	7.38	84	1359	0.4140 ug/kg	72
20) Carbon Disulfide	7.41	76	4529	0.4934 ug/kg#	74
29) 2-Butanone	9.00	43	2496	1.5246 ug/kg#	55
36) Tetrahydrofuran	9.75	42	2061	1.8285 ug/kg#	50
56) Dimethyl Disulfide	12.79	94	14712	3.7833 ug/kg#	29
84) 1,3,5-Trimethylbenzene	16.45	105	7779	0.6850 ug/kg#	68
99) Naphthalene	20.75	128	19213	1.5145 ug/kg	95

(#) = qualifier out of range (m) = manual integration
9M975230.D 8260S.M Tue Jul 12 11:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975230.D Vial: 18
Acq On : 1 Jul 2016 23:36 Operator: ADC
Sample : L16061593-04 A 826-SPE 5.16g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

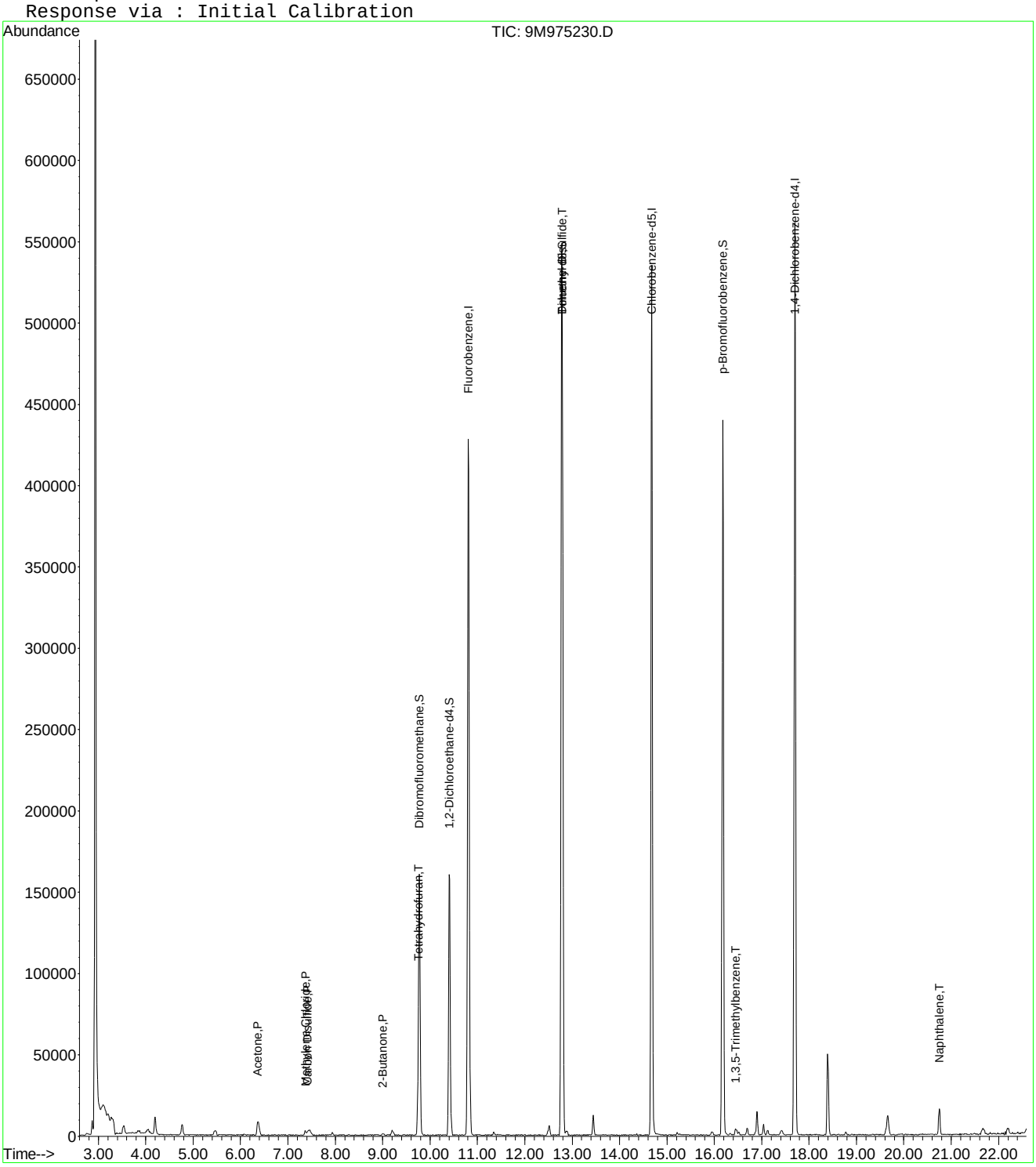

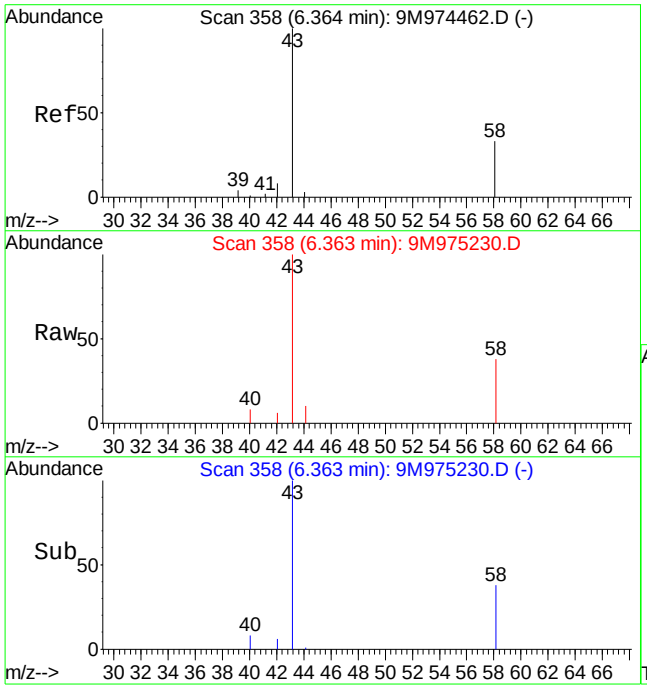

#13
Acetone
Concen: 12.81 ug/kg
RT: 6.36 min Scan# 358
Delta R.T. 0.00 min
Lab File: 9M975230.D
Acq: 1 Jul 2016 23:36

Tgt Ion: 43 Resp: 16862

Ion	Ratio	Lower	Upper
43	100		
58	42.7	19.9	46.3

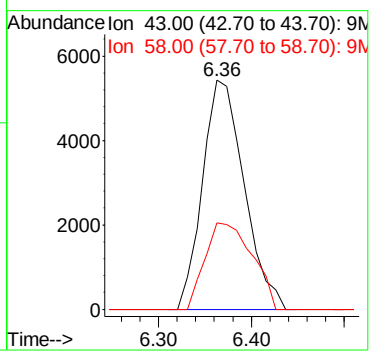

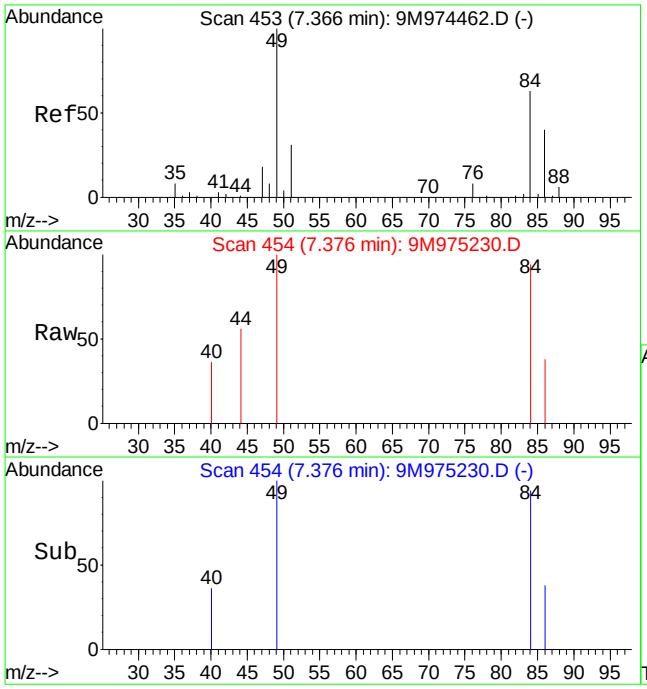

#19
Methylene Chloride
Concen: 0.41 ug/kg
RT: 7.38 min Scan# 454
Delta R.T. 0.01 min
Lab File: 9M975230.D
Acq: 1 Jul 2016 23:36

Tgt Ion: 84 Resp: 1359

Ion	Ratio	Lower	Upper
84	100		
49	192.2	93.2	217.4

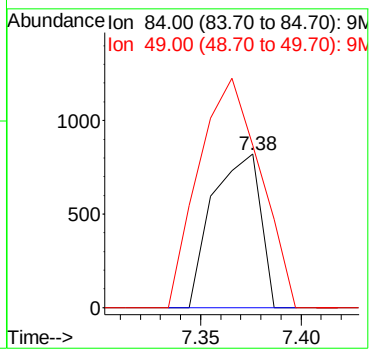

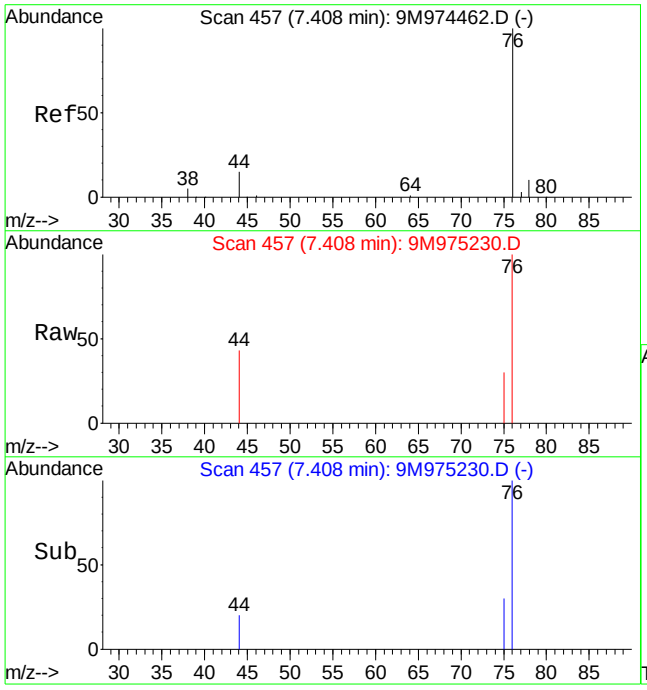

#20
Carbon Disulfide
Concen: 0.49 ug/kg
RT: 7.41 min Scan# 457
Delta R.T. -0.01 min
Lab File: 9M975230.D
Acq: 1 Jul 2016 23:36

Tgt Ion: 76 Resp: 4529

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

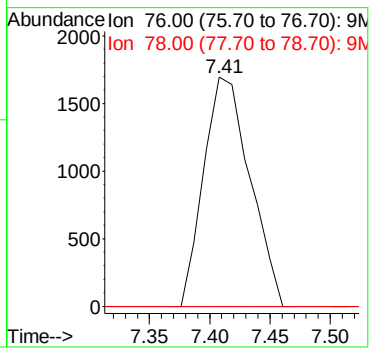

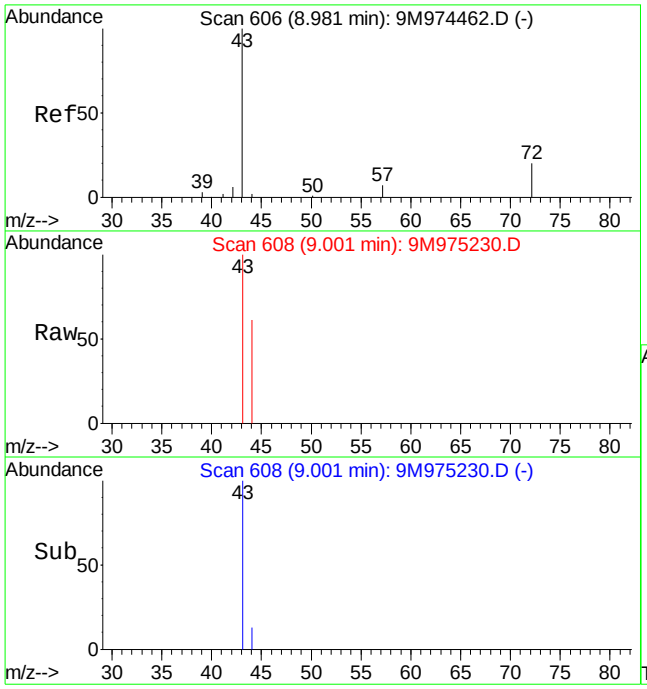

#29
2-Butanone
Concen: 1.52 ug/kg
RT: 9.00 min Scan# 608
Delta R.T. 0.01 min
Lab File: 9M975230.D
Acq: 1 Jul 2016 23:36

Tgt Ion: 43 Resp: 2496

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.5	29.3#

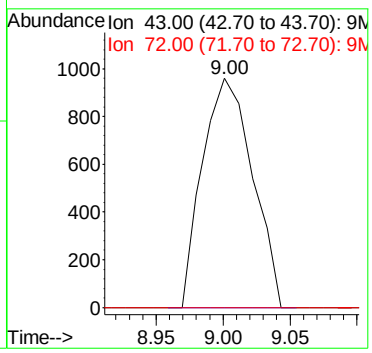

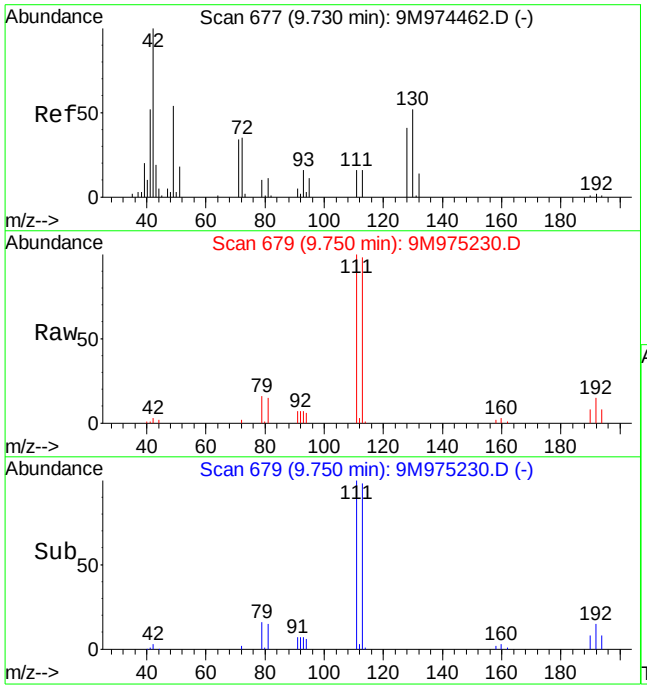

#36
Tetrahydrofuran
Concen: 1.83 ug/kg
RT: 9.75 min Scan# 679
Delta R.T. 0.01 min
Lab File: 9M975230.D
Acq: 1 Jul 2016 23:36

Tgt Ion: 42 Resp: 2061

Ion	Ratio	Lower	Upper
42	100		
72	12.2	21.8	50.8#
71	0.0	20.7	48.3#

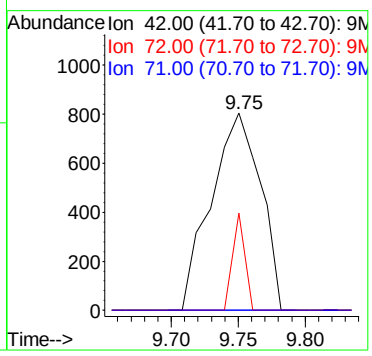

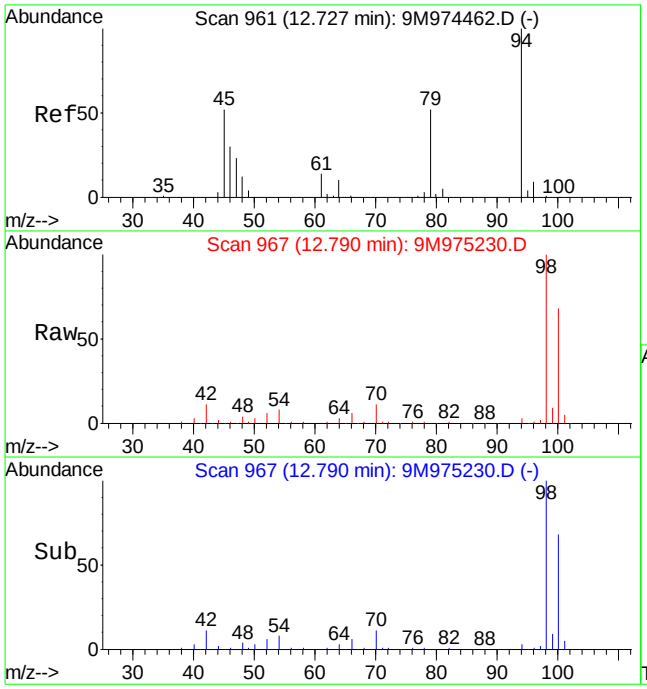

#56
Dimethyl Disulfide
Concen: 3.78 ug/kg
RT: 12.79 min Scan# 967
Delta R.T. 0.07 min
Lab File: 9M975230.D
Acq: 1 Jul 2016 23:36

Tgt Ion: 94 Resp: 14712

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

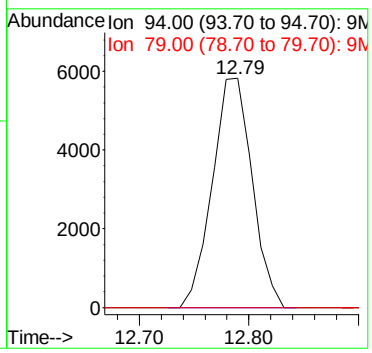

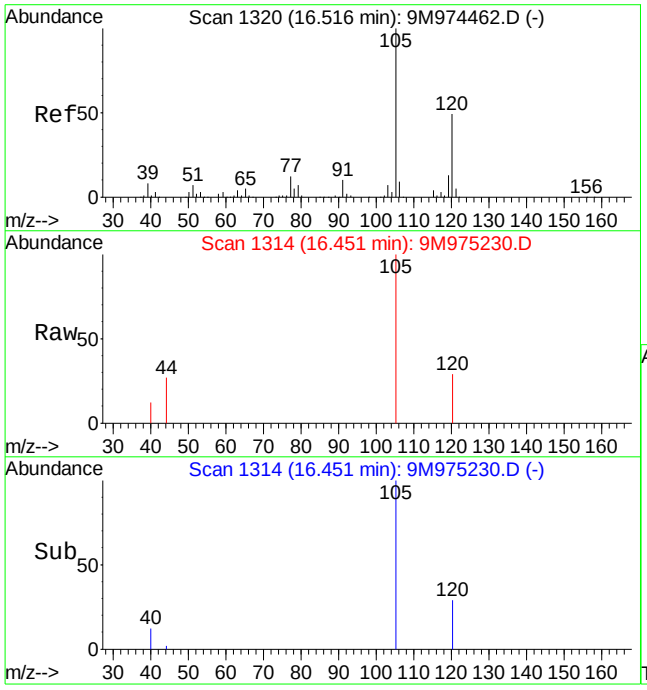

#84
1,3,5-Trimethylbenzene
Concen: 0.69 ug/kg
RT: 16.45 min Scan# 1314
Delta R.T. -0.07 min
Lab File: 9M975230.D
Acq: 1 Jul 2016 23:36

Tgt Ion:105 Resp: 7779

Ion	Ratio	Lower	Upper
105	100		
120	28.0	30.0	70.0#

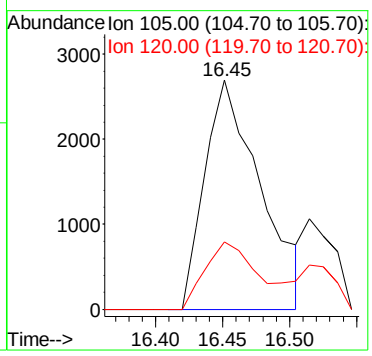

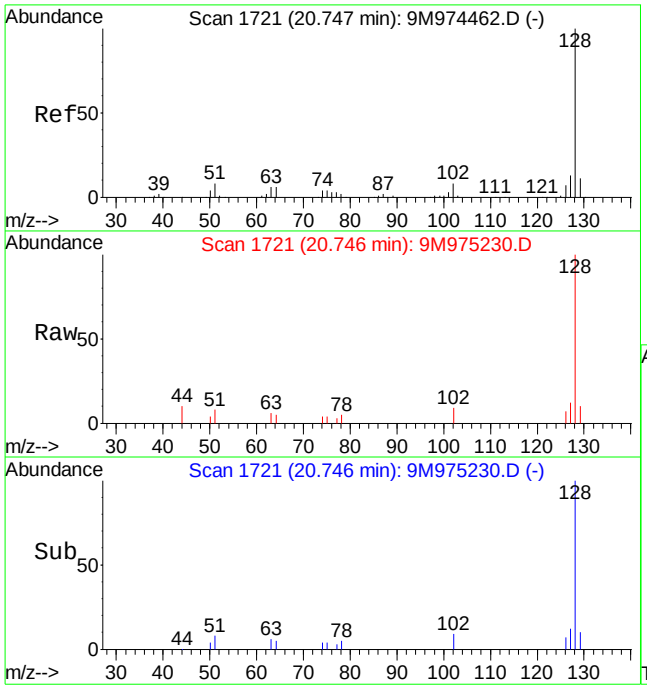

#99
Naphthalene
Concen: 1.51 ug/kg
RT: 20.75 min Scan# 1721
Delta R.T. 0.00 min
Lab File: 9M975230.D
Acq: 1 Jul 2016 23:36

Tgt Ion:128 Resp: 19213

Ion	Ratio	Lower	Upper
128	100		
127	10.8	7.6	17.8

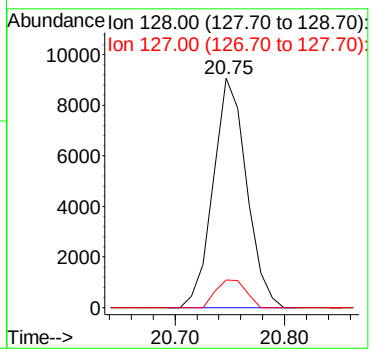

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975260.D Vial: 13
Acq On : 6 Jul 2016 19:42 Operator: ADC
Sample : L16061593-04 A 826-SPE 4.82g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03:11 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	625495	50.00 ug/kg	-0.01
57) Chlorobenzene-d5	14.68	117	485161	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.69	152	234590	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	163651	47.4480 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.90%		
43) 1,2-Dichloroethane-d4	10.40	65	168130	45.8521 ug/kg	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.70%		
58) Toluene-d8	12.78	98	603085	50.1886 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.38%		
79) p-Bromofluorobenzene	16.18	95	225859	52.7254 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 105.46%		

Target Compounds

					Qvalue
13) Acetone	6.35	43	15371	9.8169 ug/kg	84
19) Methylene Chloride	7.35	84	4967	1.3565 ug/kg	99
20) Carbon Disulfide	7.40	76	5154	0.5034 ug/kg#	74
29) 2-Butanone	8.98	43	2362	1.2934 ug/kg#	55
36) Tetrahydrofuran	9.74	42	1869	1.4865 ug/kg#	49
56) Dimethyl Disulfide	12.78	94	16254	3.7585 ug/kg#	29
84) 1,3,5-Trimethylbenzene	16.45	105	8451	0.6591 ug/kg#	69

(#) = qualifier out of range (m) = manual integration
9M975260.D 8260S.M Tue Jul 12 15:03:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975260.D Vial: 13
Acq On : 6 Jul 2016 19:42 Operator: ADC
Sample : L16061593-04 A 826-SPE 4.82g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

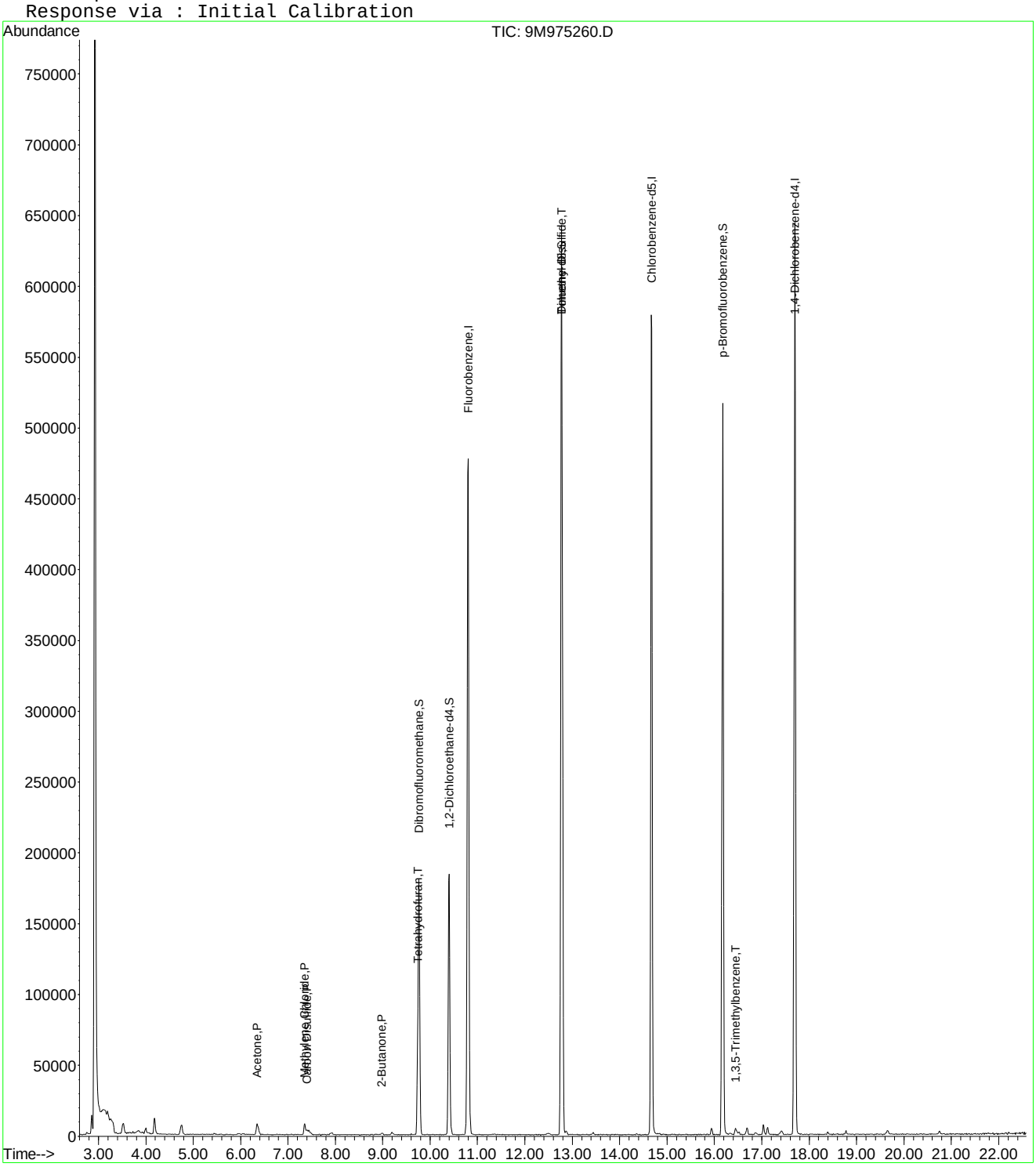

9M975260.D 8260S.M Tue Jul 12 15:03:12 2016 Page 2

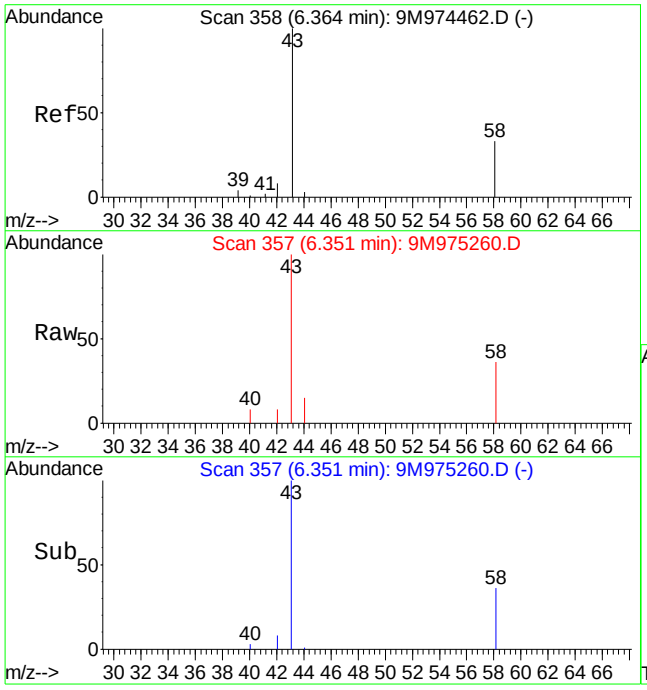

#13
Acetone
Concen: 9.82 ug/kg
RT: 6.35 min Scan# 357
Delta R.T. -0.01 min
Lab File: 9M975260.D
Acq: 6 Jul 2016 19:42

Tgt Ion: 43 Resp: 15371

Ion	Ratio	Lower	Upper
43	100		
58	42.2	19.9	46.3

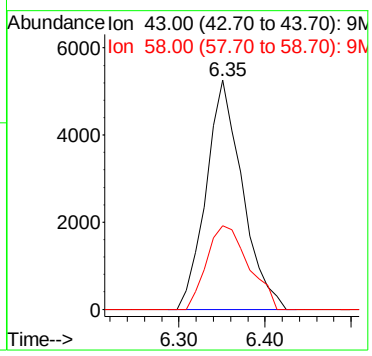

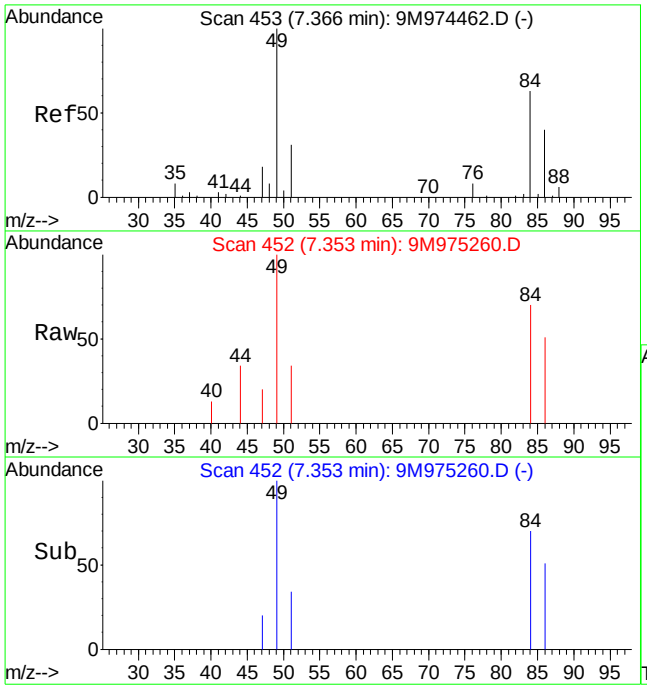

#19
Methylene Chloride
Concen: 1.36 ug/kg
RT: 7.35 min Scan# 452
Delta R.T. -0.01 min
Lab File: 9M975260.D
Acq: 6 Jul 2016 19:42

Tgt Ion: 84 Resp: 4967

Ion	Ratio	Lower	Upper
84	100		
49	154.0	93.2	217.4

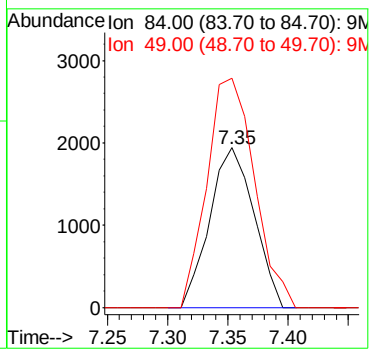

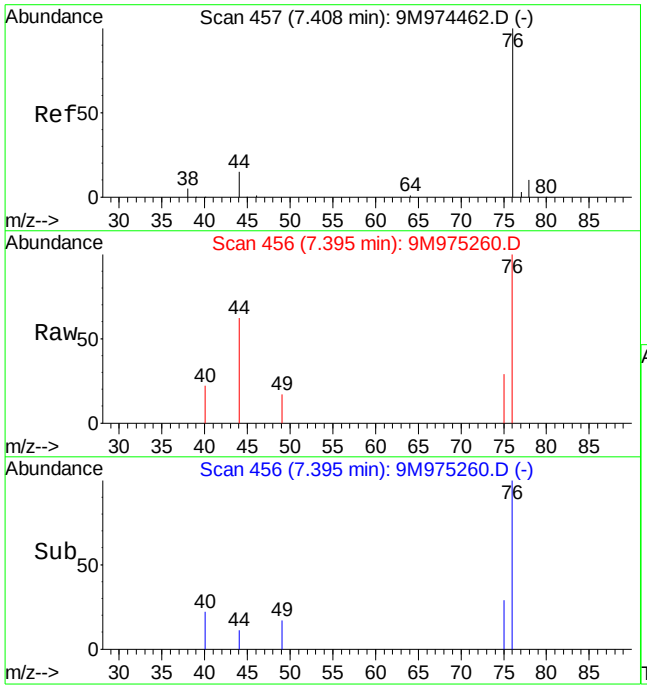

#20
Carbon Disulfide
Concen: 0.50 ug/kg
RT: 7.40 min Scan# 456
Delta R.T. -0.02 min
Lab File: 9M975260.D
Acq: 6 Jul 2016 19:42

Tgt Ion: 76 Resp: 5154

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

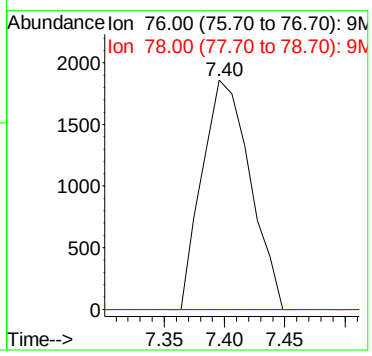

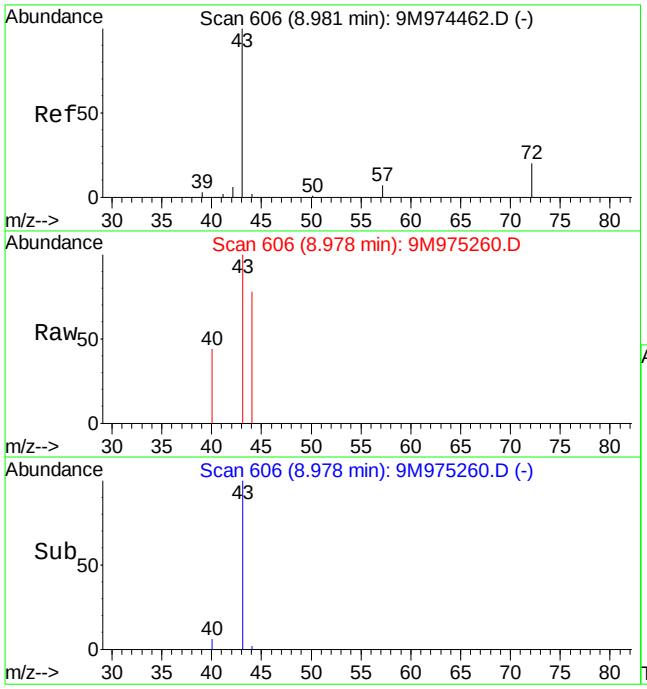

#29
2-Butanone
Concen: 1.29 ug/kg
RT: 8.98 min Scan# 606
Delta R.T. -0.01 min
Lab File: 9M975260.D
Acq: 6 Jul 2016 19:42

Tgt Ion: 43 Resp: 2362

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.5	29.3#

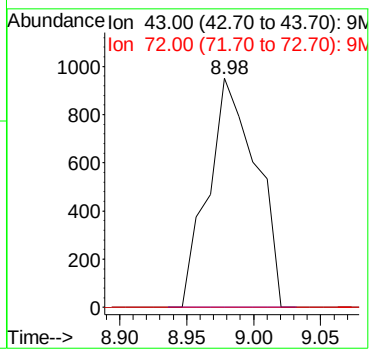

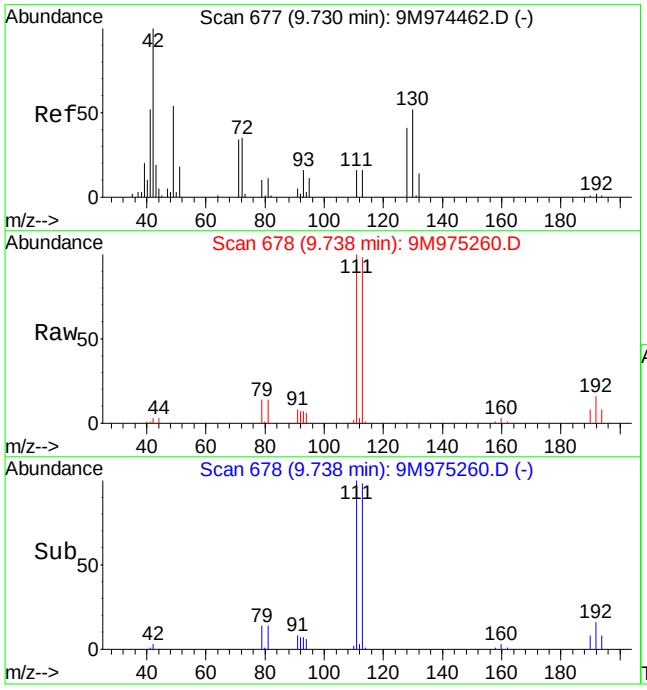

#36
Tetrahydrofuran
Concen: 1.49 ug/kg
RT: 9.74 min Scan# 678
Delta R.T. 0.00 min
Lab File: 9M975260.D
Acq: 6 Jul 2016 19:42

Tgt Ion: 42 Resp: 1869

Ion	Ratio	Lower	Upper
42	100		
72	11.4	21.8	50.8#
71	0.0	20.7	48.3#

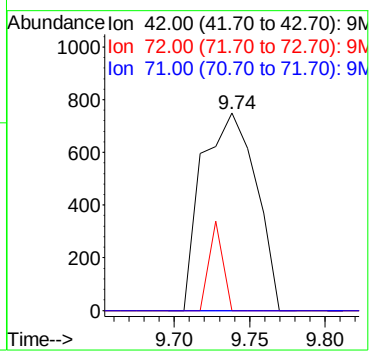

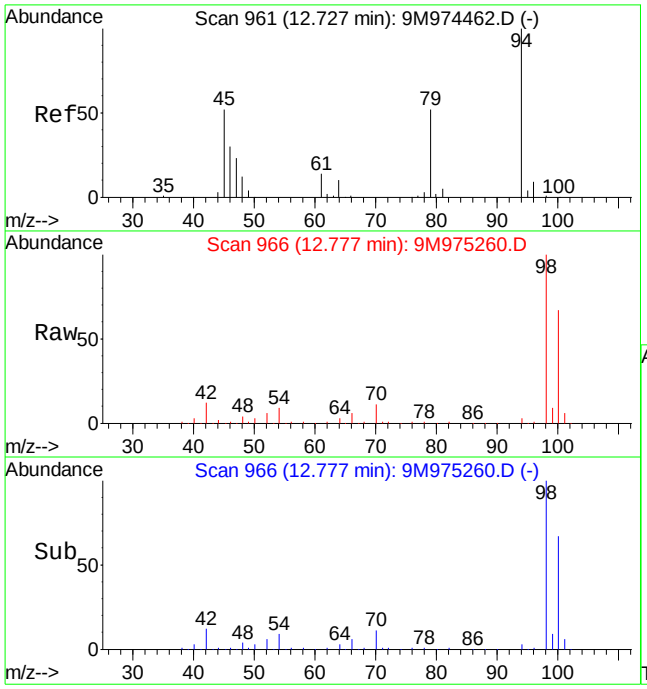

#56
Dimethyl Disulfide
Concen: 3.76 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.05 min
Lab File: 9M975260.D
Acq: 6 Jul 2016 19:42

Tgt Ion: 94 Resp: 16254

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

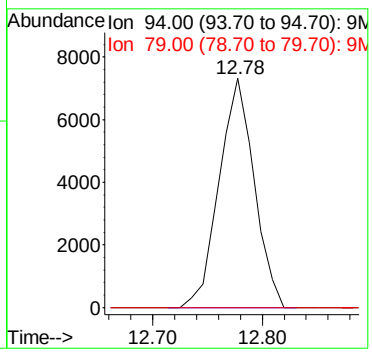

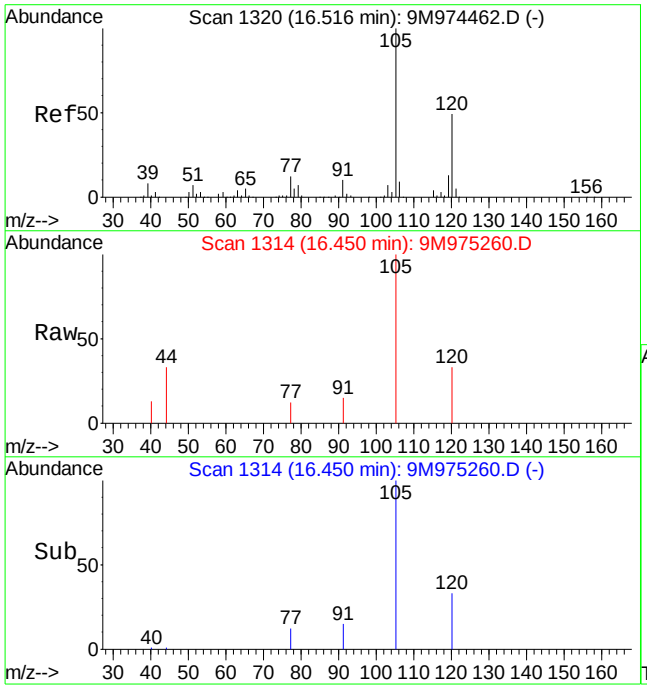

#84
1,3,5-Trimethylbenzene
Concen: 0.66 ug/kg
RT: 16.45 min Scan# 1314
Delta R.T. -0.07 min
Lab File: 9M975260.D
Acq: 6 Jul 2016 19:42

Tgt Ion:105 Resp: 8451

Ion	Ratio	Lower	Upper
105	100		
120	28.4	30.0	70.0#

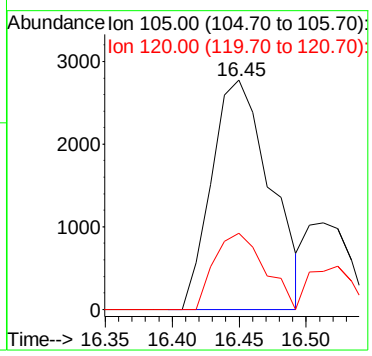

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975231.D Vial: 19
Acq On : 2 Jul 2016 00:06 Operator: ADC
Sample : L16061593-05 A 826-SPE 5.08g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01:29 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	337440	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	257213	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.71	152	122503	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	84881	45.6181 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.24%		
43) 1,2-Dichloroethane-d4	10.41	65	88544	44.7611 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.52%		
58) Toluene-d8	12.79	98	322532	50.6282 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.26%		
79) p-Bromofluorobenzene	16.18	95	118165	52.8243 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 105.64%		

Target Compounds

					Qvalue
13) Acetone	6.36	43	11876	15.6099 ug/kg	90
19) Methylene Chloride	7.36	84	1946	0.9851 ug/kg	85
29) 2-Butanone	8.99	43	1545	1.5682 ug/kg#	55
36) Tetrahydrofuran	9.75	42	1159	1.7088 ug/kg#	39
56) Dimethyl Disulfide	12.79	94	8606	3.7108 ug/kg#	29
84) 1,3,5-Trimethylbenzene	16.45	105	3442	0.5140 ug/kg#	37
89) 1,2,4-Trimethylbenzene	17.04	105	3156	Below Cal	89
99) Naphthalene	20.76	128	16768	2.2416 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M975231.D 8260S.M Tue Jul 12 11:01:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975231.D Vial: 19
Acq On : 2 Jul 2016 00:06 Operator: ADC
Sample : L16061593-05 A 826-SPE 5.08g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

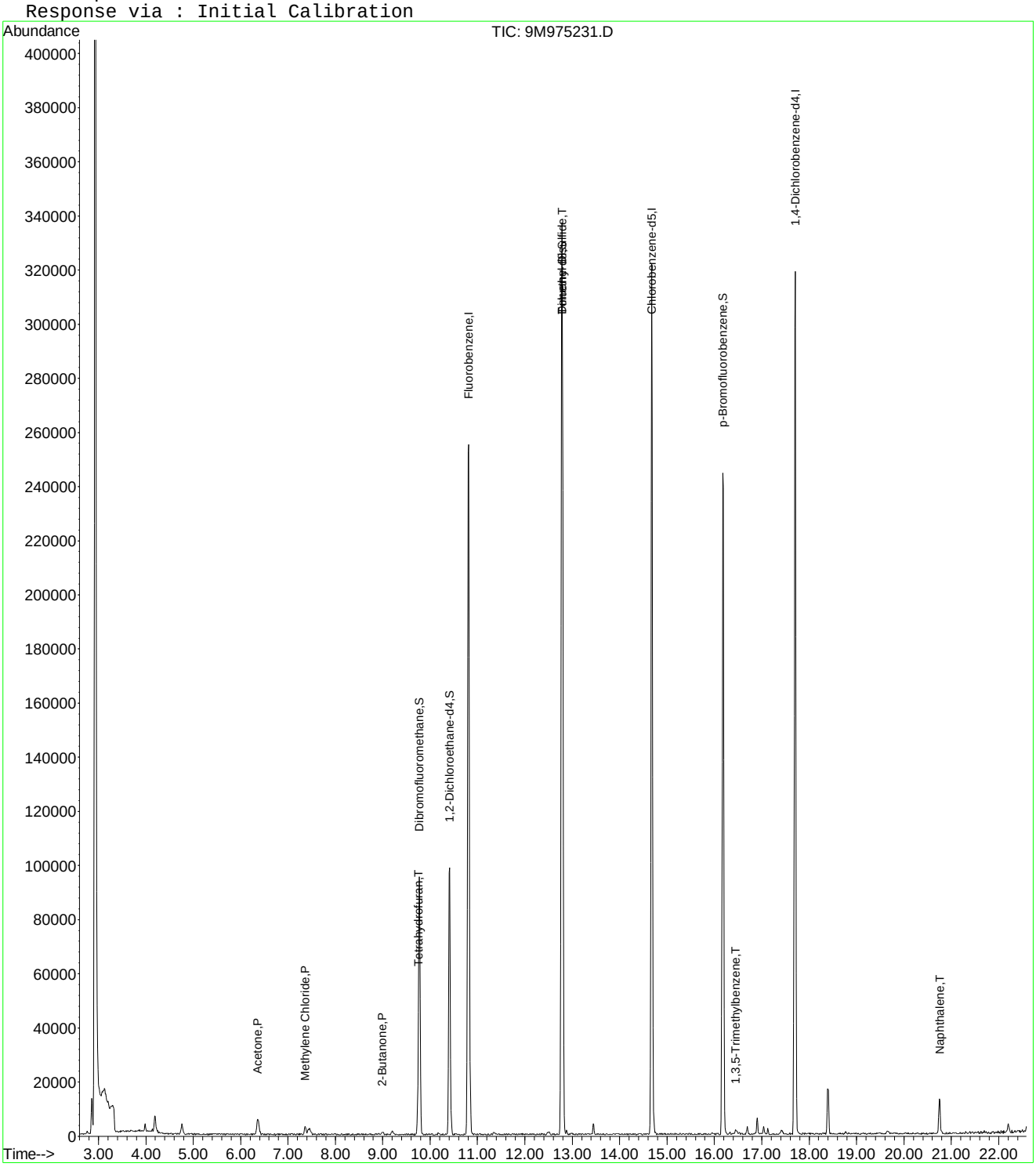

9M975231.D 8260S.M Tue Jul 12 11:01:29 2016 Page 2

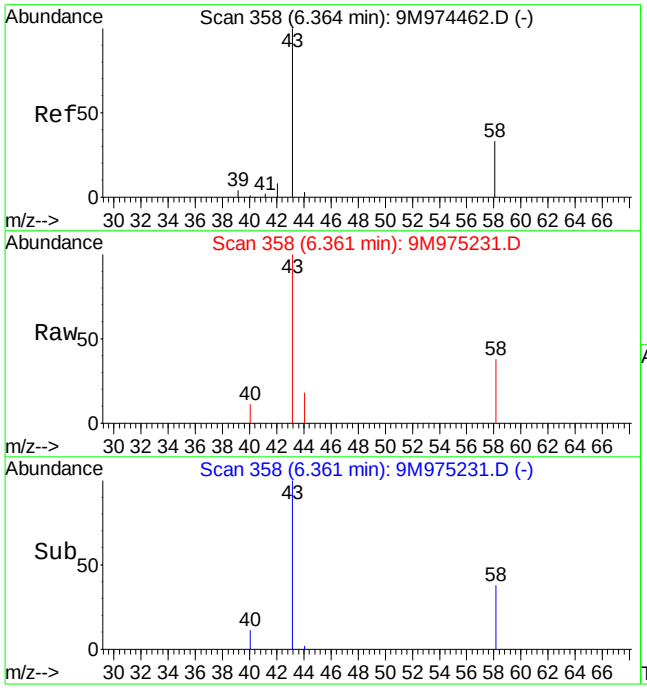

#13
Acetone
Concen: 15.61 ug/kg
RT: 6.36 min Scan# 358
Delta R.T. 0.00 min
Lab File: 9M975231.D
Acq: 2 Jul 2016 00:06

Tgt Ion: 43 Resp: 11876

Ion	Ratio	Lower	Upper
43	100		
58	38.5	19.9	46.3

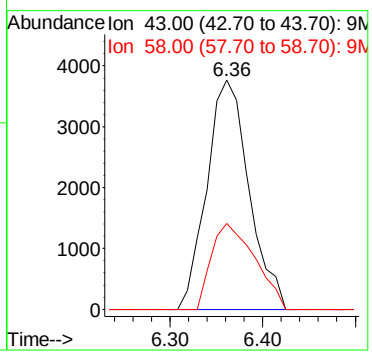

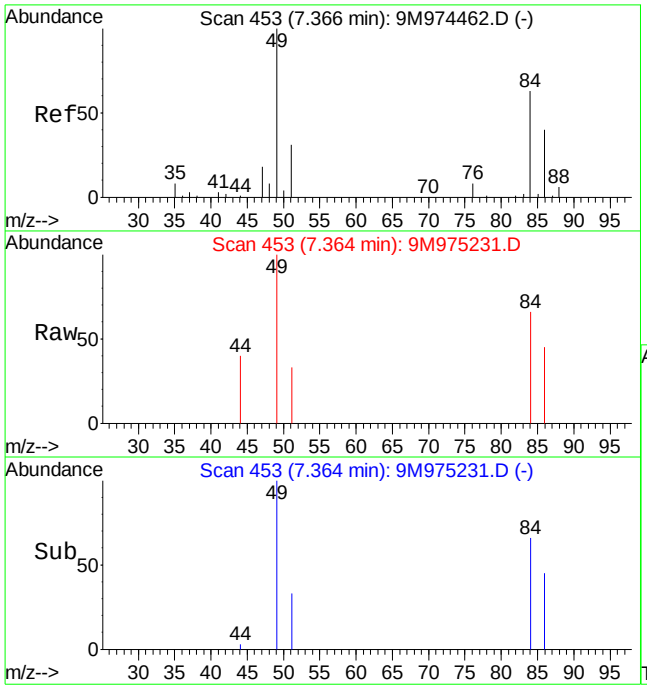

#19
Methylene Chloride
Concen: 0.99 ug/kg
RT: 7.36 min Scan# 453
Delta R.T. 0.00 min
Lab File: 9M975231.D
Acq: 2 Jul 2016 00:06

Tgt Ion: 84 Resp: 1946

Ion	Ratio	Lower	Upper
84	100		
49	175.4	93.2	217.4

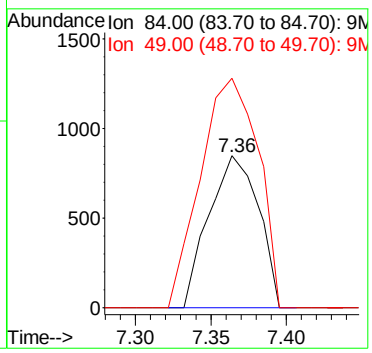

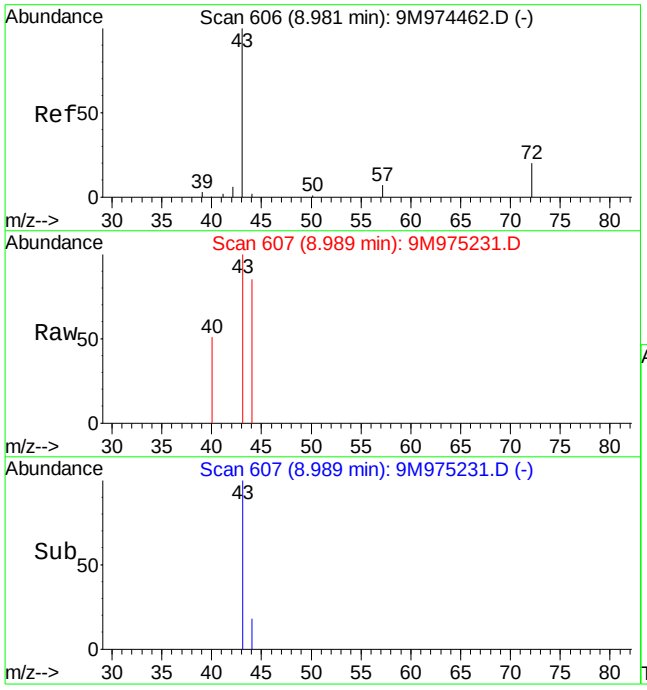

#29
2-Butanone
Concen: 1.57 ug/kg
RT: 8.99 min Scan# 607
Delta R.T. 0.00 min
Lab File: 9M975231.D
Acq: 2 Jul 2016 00:06

Tgt Ion: 43 Resp: 1545

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.5	29.3#

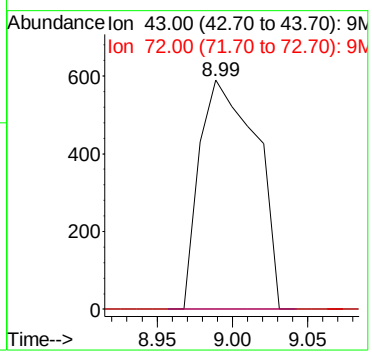

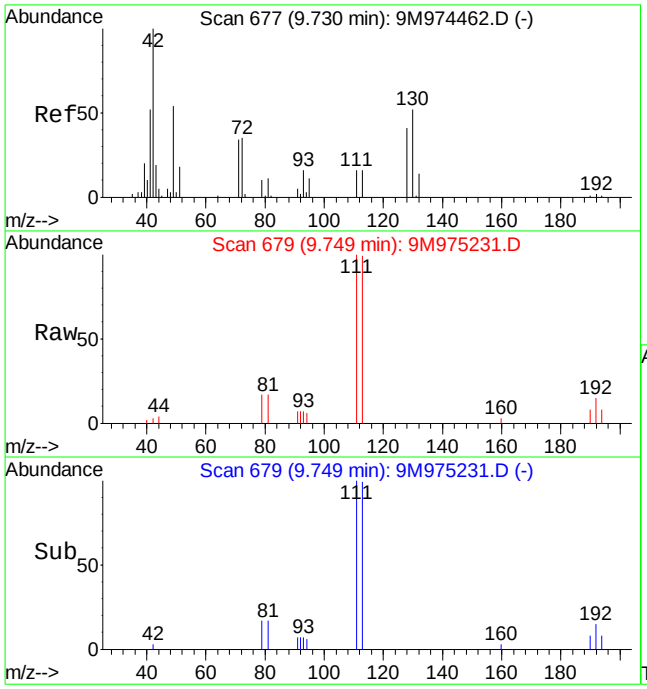

#36
Tetrahydrofuran
Concen: 1.71 ug/kg
RT: 9.75 min Scan# 679
Delta R.T. 0.01 min
Lab File: 9M975231.D
Acq: 2 Jul 2016 00:06

Tgt Ion: 42 Resp: 1159

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.8	50.8#
71	0.0	20.7	48.3#

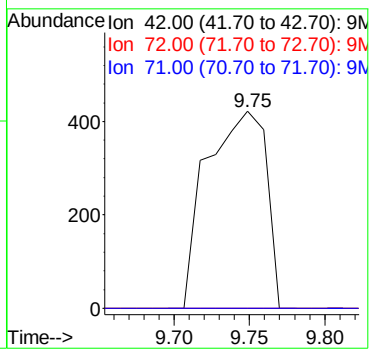

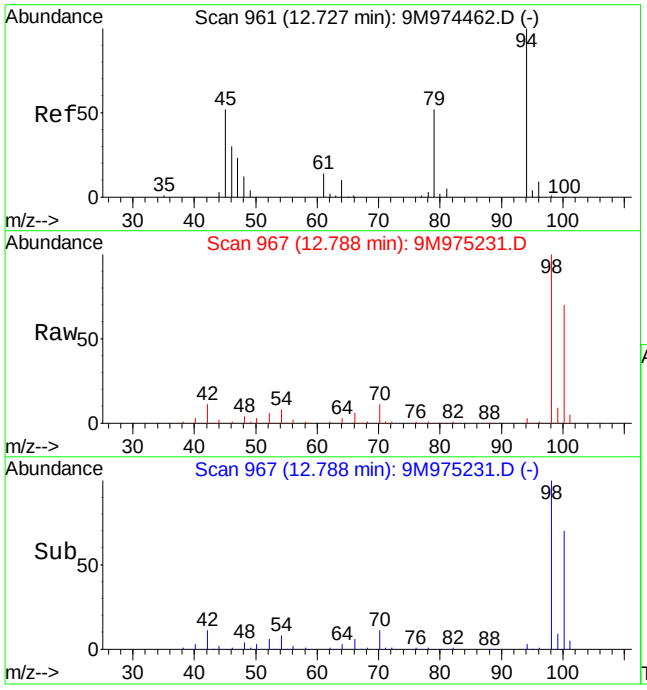

#56
Dimethyl Disulfide
Concen: 3.71 ug/kg
RT: 12.79 min Scan# 967
Delta R.T. 0.06 min
Lab File: 9M975231.D
Acq: 2 Jul 2016 00:06

Tgt Ion: 94 Resp: 8606

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

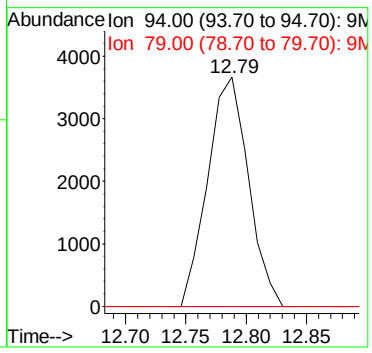

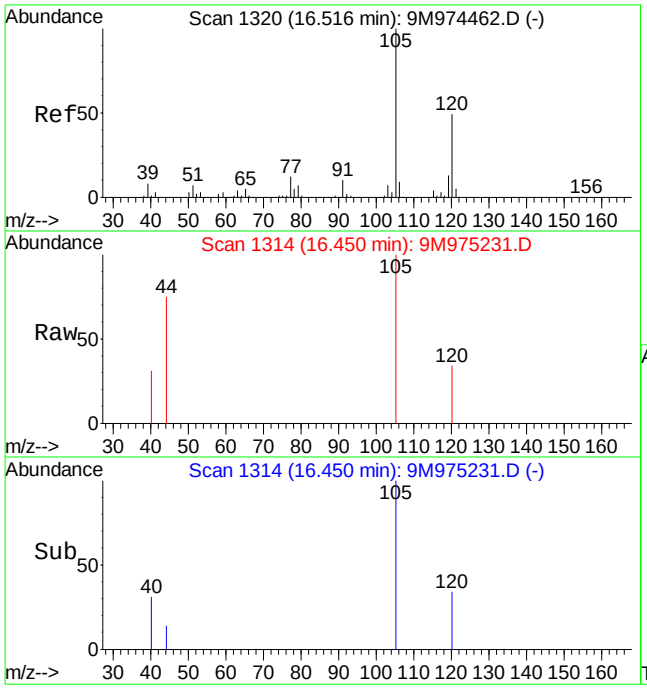

#84
1,3,5-Trimethylbenzene
Concen: 0.51 ug/kg
RT: 16.45 min Scan# 1314
Delta R.T. -0.07 min
Lab File: 9M975231.D
Acq: 2 Jul 2016 00:06

Tgt Ion:105 Resp: 3442

Ion	Ratio	Lower	Upper
105	100		
120	6.4	30.0	70.0#

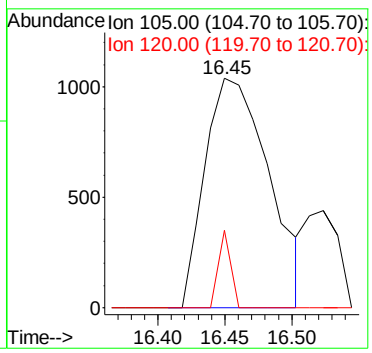

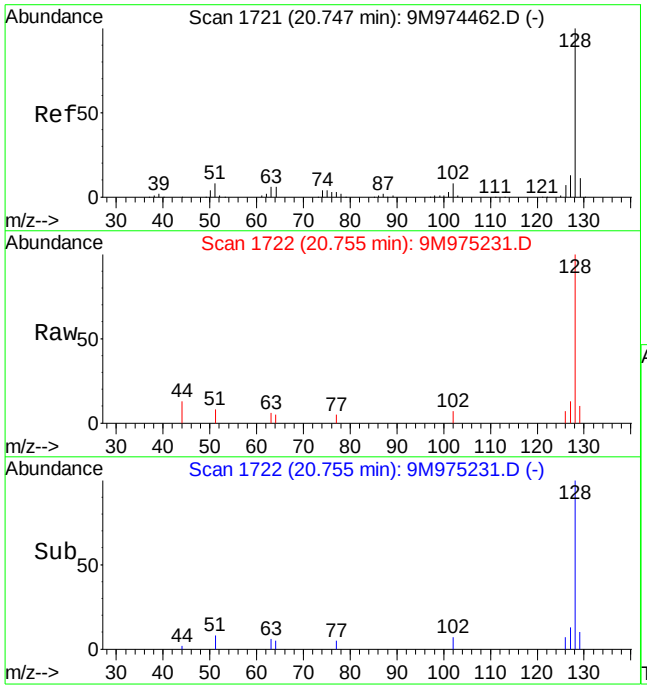

#99
Naphthalene
Concen: 2.24 ug/kg
RT: 20.76 min Scan# 1722
Delta R.T. 0.01 min
Lab File: 9M975231.D
Acq: 2 Jul 2016 00:06

Tgt Ion:128 Resp: 16768

Ion	Ratio	Lower	Upper
128	100		
127	11.2	7.6	17.8

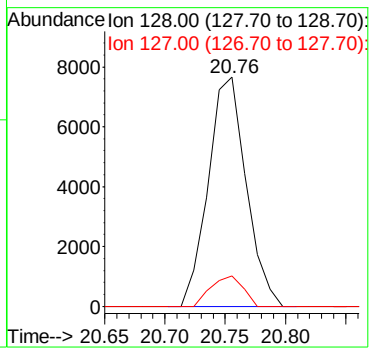

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975261.D Vial: 14
Acq On : 6 Jul 2016 20:12 Operator: ADC
Sample : L16061593-05 A 826-SPE 4.97g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03:12 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	647644	50.00 ug/kg	-0.01
57) Chlorobenzene-d5	14.67	117	498016	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.70	152	234109	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	168456	47.1708 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.34%		
43) 1,2-Dichloroethane-d4	10.39	65	170162	44.8192 ug/kg	-0.02
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.64%		
58) Toluene-d8	12.78	98	615486	49.8985 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.80%		
79) p-Bromofluorobenzene	16.18	95	223718	52.3329 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 104.66%		

Target Compounds

					Qvalue
13) Acetone	6.35	43	27054	19.1982 ug/kg	81
19) Methylene Chloride	7.34	84	6083	1.6044 ug/kg	96
29) 2-Butanone	8.98	43	4944	2.6147 ug/kg#	81
36) Tetrahydrofuran	9.74	42	2300	1.7668 ug/kg#	62
56) Dimethyl Disulfide	12.78	94	16248	3.6696 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M975261.D 8260S.M Tue Jul 12 15:03:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975261.D Vial: 14
Acq On : 6 Jul 2016 20:12 Operator: ADC
Sample : L16061593-05 A 826-SPE 4.97g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

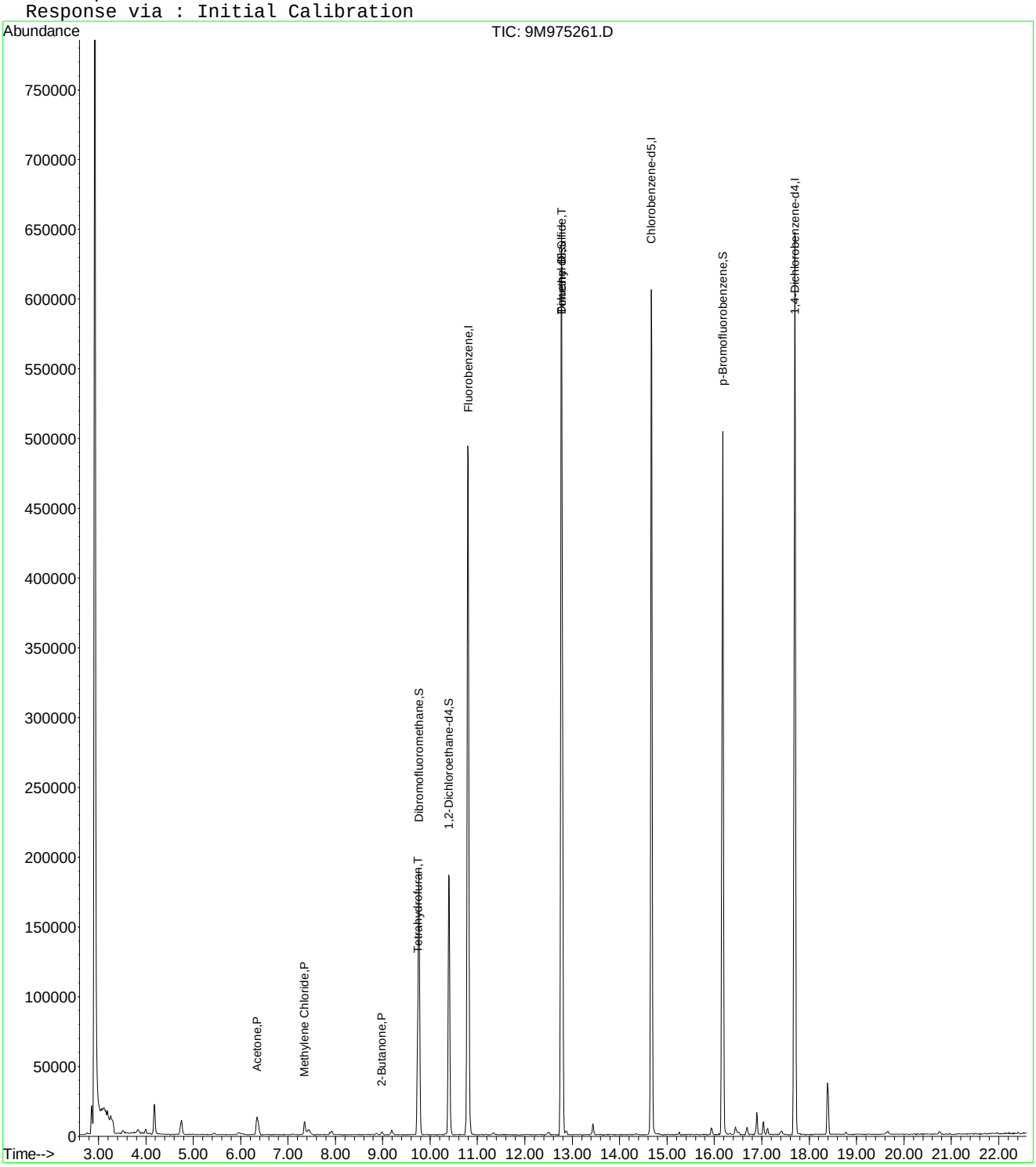

9M975261.D 8260S.M Tue Jul 12 15:03:13 2016 Page 2

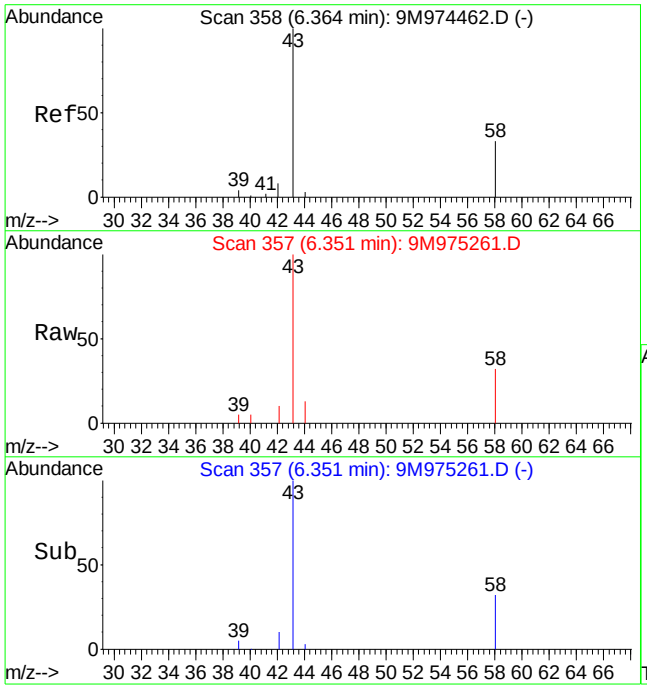

#13
Acetone
Concen: 19.20 ug/kg
RT: 6.35 min Scan# 357
Delta R.T. -0.01 min
Lab File: 9M975261.D
Acq: 6 Jul 2016 20:12

Tgt Ion: 43 Resp: 27054

Ion	Ratio	Lower	Upper
43	100		
58	44.1	19.9	46.3

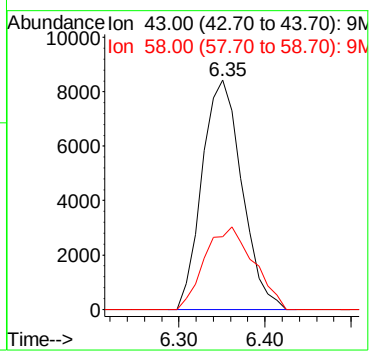

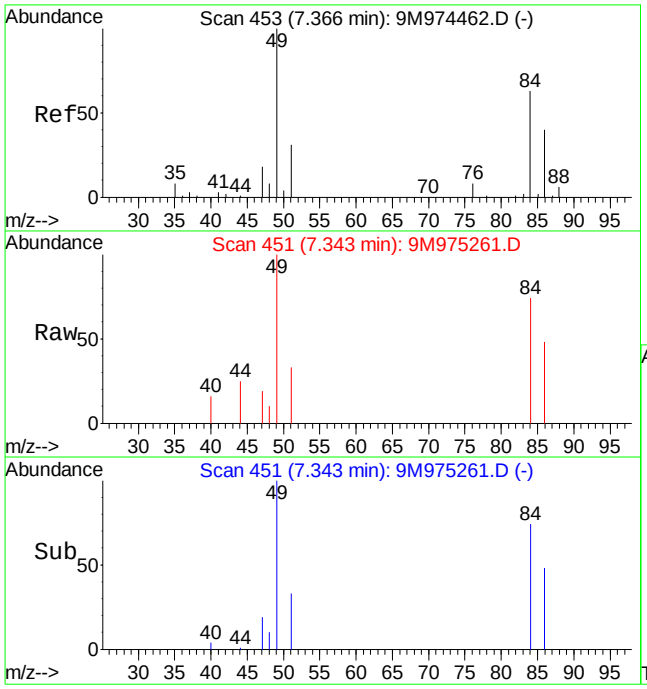

#19
Methylene Chloride
Concen: 1.60 ug/kg
RT: 7.34 min Scan# 451
Delta R.T. -0.02 min
Lab File: 9M975261.D
Acq: 6 Jul 2016 20:12

Tgt Ion: 84 Resp: 6083

Ion	Ratio	Lower	Upper
84	100		
49	160.4	93.2	217.4

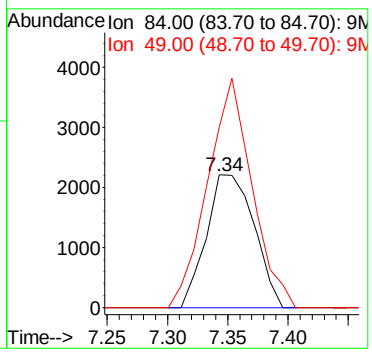

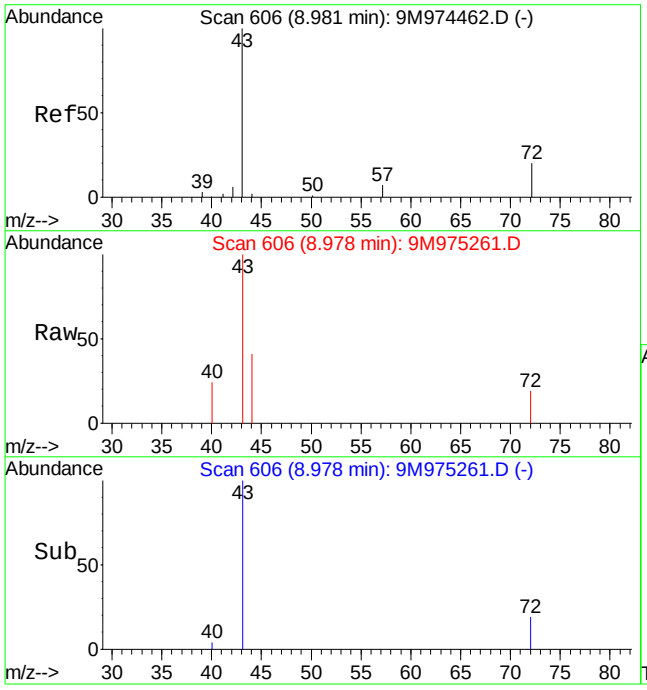

#29
2-Butanone
Concen: 2.61 ug/kg
RT: 8.98 min Scan# 606
Delta R.T. -0.01 min
Lab File: 9M975261.D
Acq: 6 Jul 2016 20:12

Tgt Ion: 43 Resp: 4944

Ion	Ratio	Lower	Upper
43	100		
72	11.9	12.5	29.3#

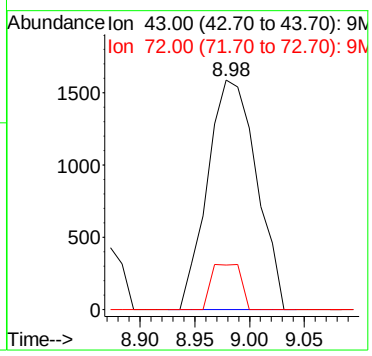

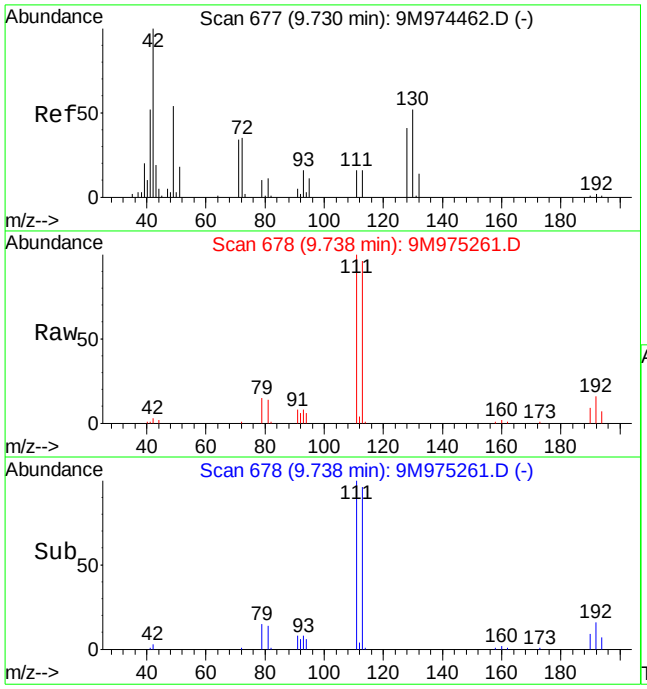

#36
Tetrahydrofuran
Concen: 1.77 ug/kg
RT: 9.74 min Scan# 678
Delta R.T. 0.00 min
Lab File: 9M975261.D
Acq: 6 Jul 2016 20:12

Tgt Ion: 42 Resp: 2300

Ion	Ratio	Lower	Upper
42	100		
72	17.7	21.8	50.8#
71	8.3	20.7	48.3#

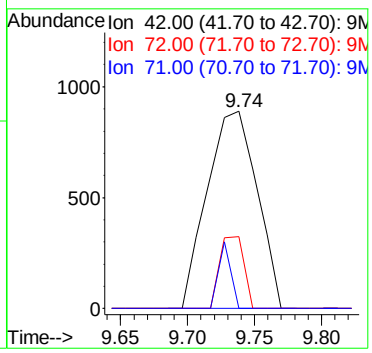

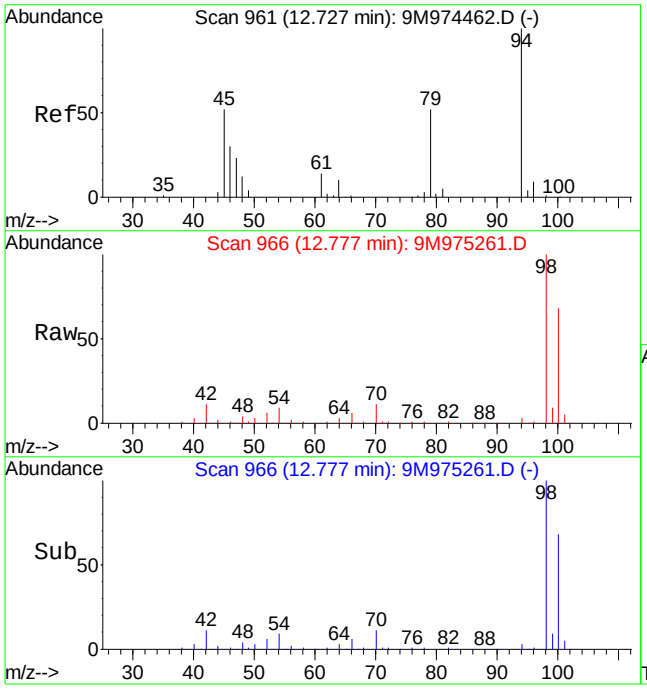

#56
Dimethyl Disulfide
Concen: 3.67 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.05 min
Lab File: 9M975261.D
Acq: 6 Jul 2016 20:12

Tgt Ion: 94 Resp: 16248

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

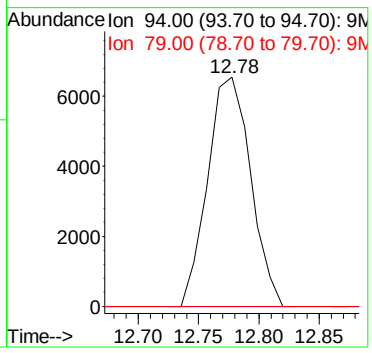

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975232.D Vial: 20
Acq On : 2 Jul 2016 00:37 Operator: ADC
Sample : L16061593-06 A 826-SPE 5.22g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01:30 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	550975	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	416519	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.71	152	193331	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	142475	46.8954 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.80%		
43) 1,2-Dichloroethane-d4	10.41	65	143059	44.2916 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.58%		
58) Toluene-d8	12.79	98	534254	51.7876 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 103.58%		
79) p-Bromofluorobenzene	16.17	95	191681	54.2962 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 108.60%		

Target Compounds

					Qvalue
13) Acetone	6.37	43	17566	13.8029 ug/kg	81
19) Methylene Chloride	7.37	84	1923	0.5962 ug/kg	97
29) 2-Butanone	9.00	43	2741	1.7040 ug/kg#	55
36) Tetrahydrofuran	9.75	42	1761	1.5901 ug/kg#	39
56) Dimethyl Disulfide	12.79	94	13876	3.6791 ug/kg#	29
99) Naphthalene	20.75	128	13531	1.1462 ug/kg	94

(#) = qualifier out of range (m) = manual integration
9M975232.D 8260S.M Tue Jul 12 11:01:30 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975232.D Vial: 20
Acq On : 2 Jul 2016 00:37 Operator: ADC
Sample : L16061593-06 A 826-SPE 5.22g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

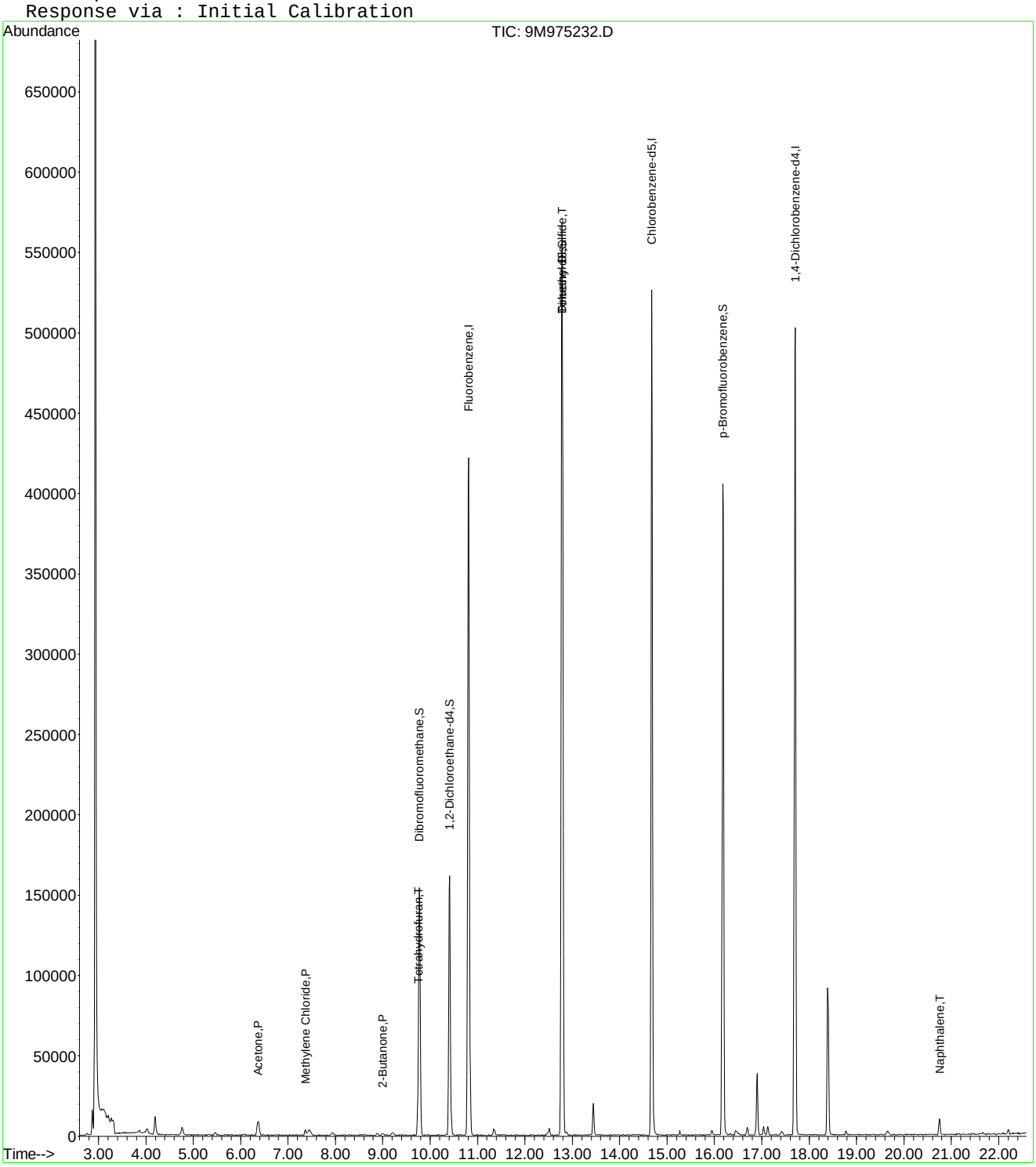

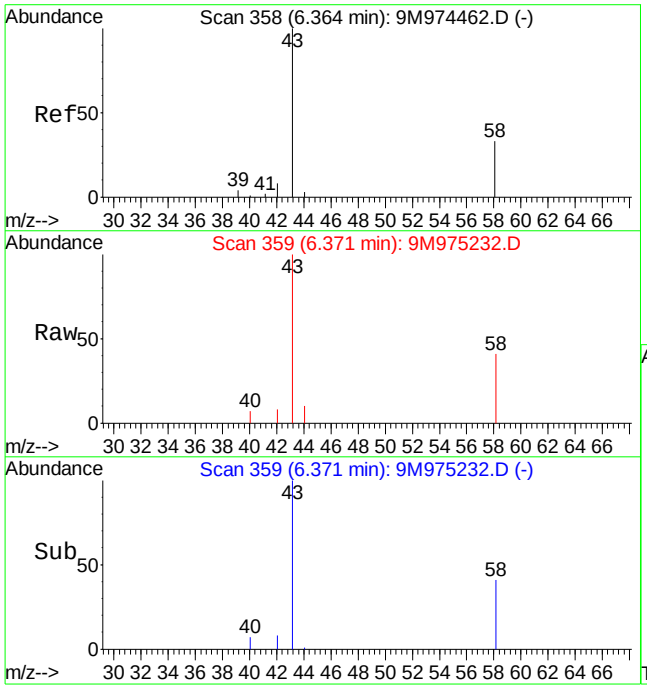

#13
Acetone
Concen: 13.80 ug/kg
RT: 6.37 min Scan# 359
Delta R.T. 0.01 min
Lab File: 9M975232.D
Acq: 2 Jul 2016 00:37

Tgt Ion: 43 Resp: 17566

Ion	Ratio	Lower	Upper
43	100		
58	43.6	19.9	46.3

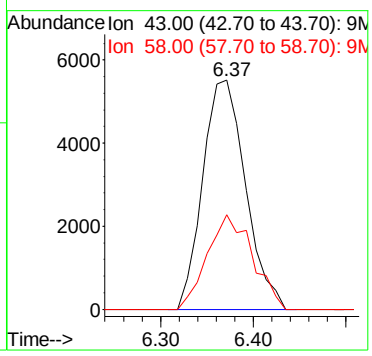

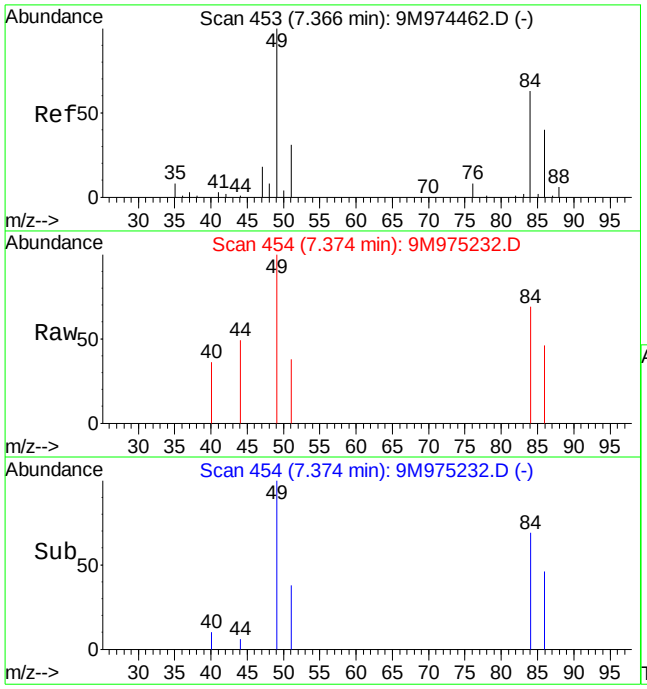

#19
Methylene Chloride
Concen: 0.60 ug/kg
RT: 7.37 min Scan# 454
Delta R.T. 0.01 min
Lab File: 9M975232.D
Acq: 2 Jul 2016 00:37

Tgt Ion: 84 Resp: 1923

Ion	Ratio	Lower	Upper
84	100		
49	159.2	93.2	217.4

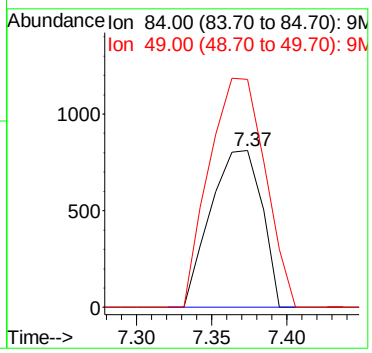

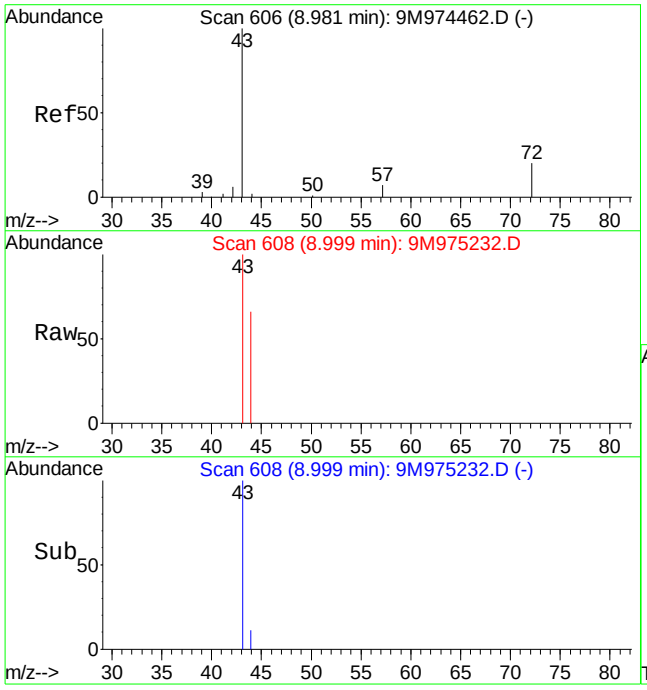

#29
2-Butanone
Concen: 1.70 ug/kg
RT: 9.00 min Scan# 608
Delta R.T. 0.01 min
Lab File: 9M975232.D
Acq: 2 Jul 2016 00:37

Tgt Ion: 43 Resp: 2741

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.5	29.3#

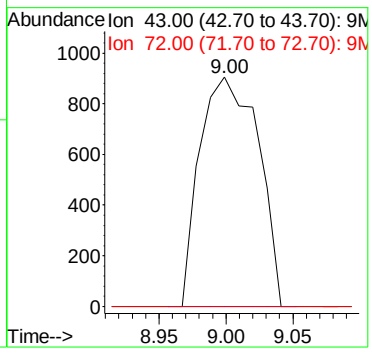

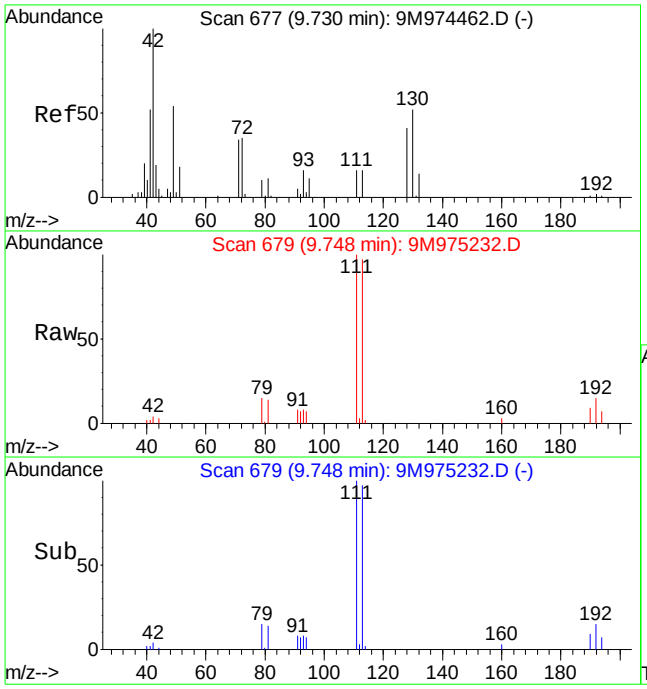

#36
Tetrahydrofuran
Concen: 1.59 ug/kg
RT: 9.75 min Scan# 679
Delta R.T. 0.01 min
Lab File: 9M975232.D
Acq: 2 Jul 2016 00:37

Tgt Ion: 42 Resp: 1761

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.8	50.8#
71	0.0	20.7	48.3#

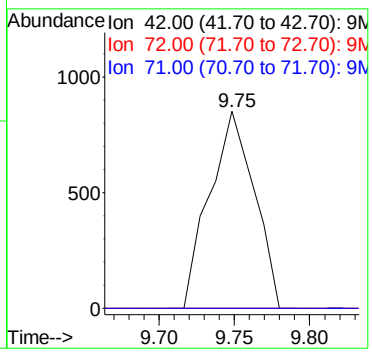

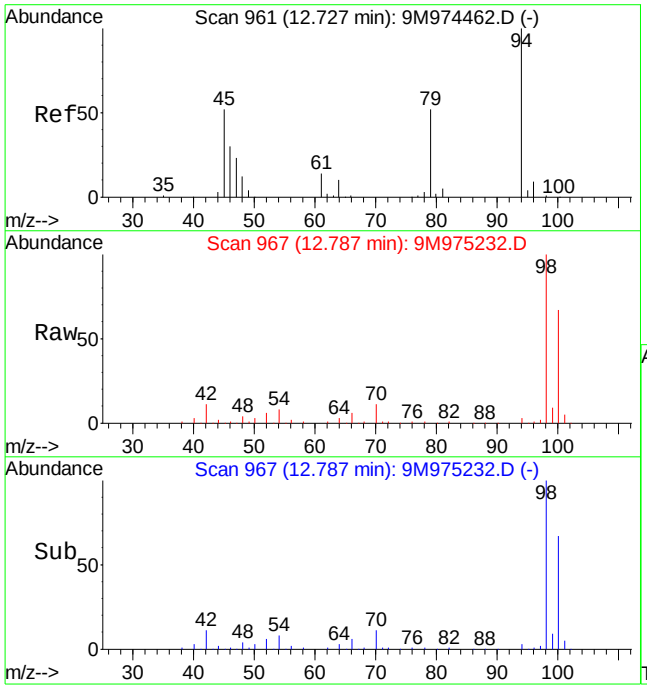

#56
Dimethyl Disulfide
Concen: 3.68 ug/kg
RT: 12.79 min Scan# 967
Delta R.T. 0.06 min
Lab File: 9M975232.D
Acq: 2 Jul 2016 00:37

Tgt Ion: 94 Resp: 13876

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

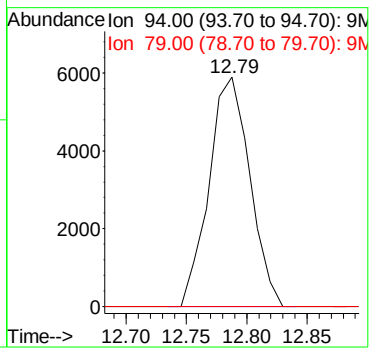

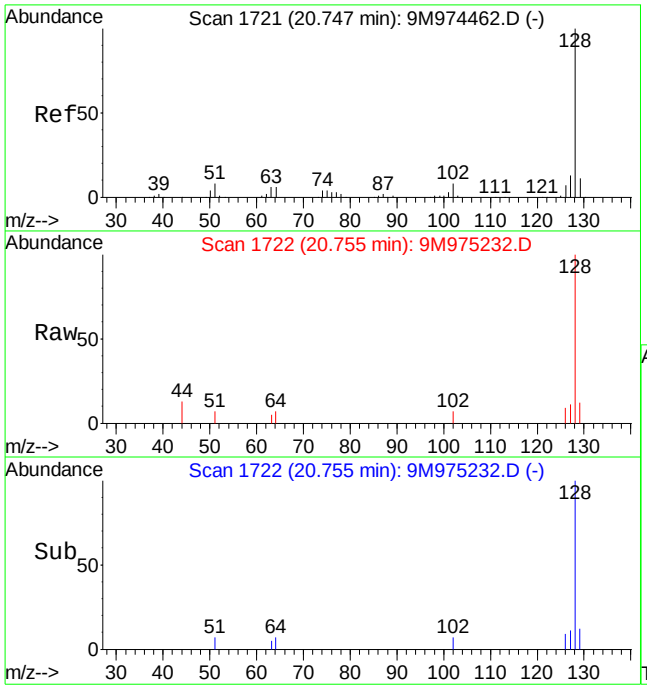

#99
Naphthalene
Concen: 1.15 ug/kg
RT: 20.75 min Scan# 1722
Delta R.T. 0.01 min
Lab File: 9M975232.D
Acq: 2 Jul 2016 00:37

Tgt Ion:128 Resp: 13531

Ion	Ratio	Lower	Upper
128	100		
127	10.3	7.6	17.8

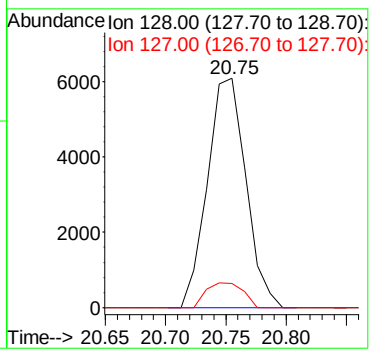

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975262.D Vial: 15
Acq On : 6 Jul 2016 20:42 Operator: ADC
Sample : WG575216-01 L16061593-06 A 826-SPE 5.13g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03:13 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	629455	50.00 ug/kg	-0.02
57) Chlorobenzene-d5	14.67	117	491919	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	251481	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	164418	47.3705 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.74%		
43) 1,2-Dichloroethane-d4	10.40	65	170205	46.1260 ug/kg	-0.02
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.26%		
58) Toluene-d8	12.78	98	597395	49.0321 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.06%		
79) p-Bromofluorobenzene	16.18	95	228851	49.8356 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.68%		

Target Compounds

					Qvalue
13) Acetone	6.35	43	20343	14.0411 ug/kg	85
19) Methylene Chloride	7.36	84	4236	1.1496 ug/kg	97
29) 2-Butanone	8.99	43	2991	1.6275 ug/kg#	55
36) Tetrahydrofuran	9.72	42	1824	1.4416 ug/kg#	58
56) Dimethyl Disulfide	12.78	94	16240	3.7401 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M975262.D 8260S.M Tue Jul 12 15:03:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975262.D Vial: 15
Acq On : 6 Jul 2016 20:42 Operator: ADC
Sample : WG575216-01 L16061593-06 A 826-SPE 5.13g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

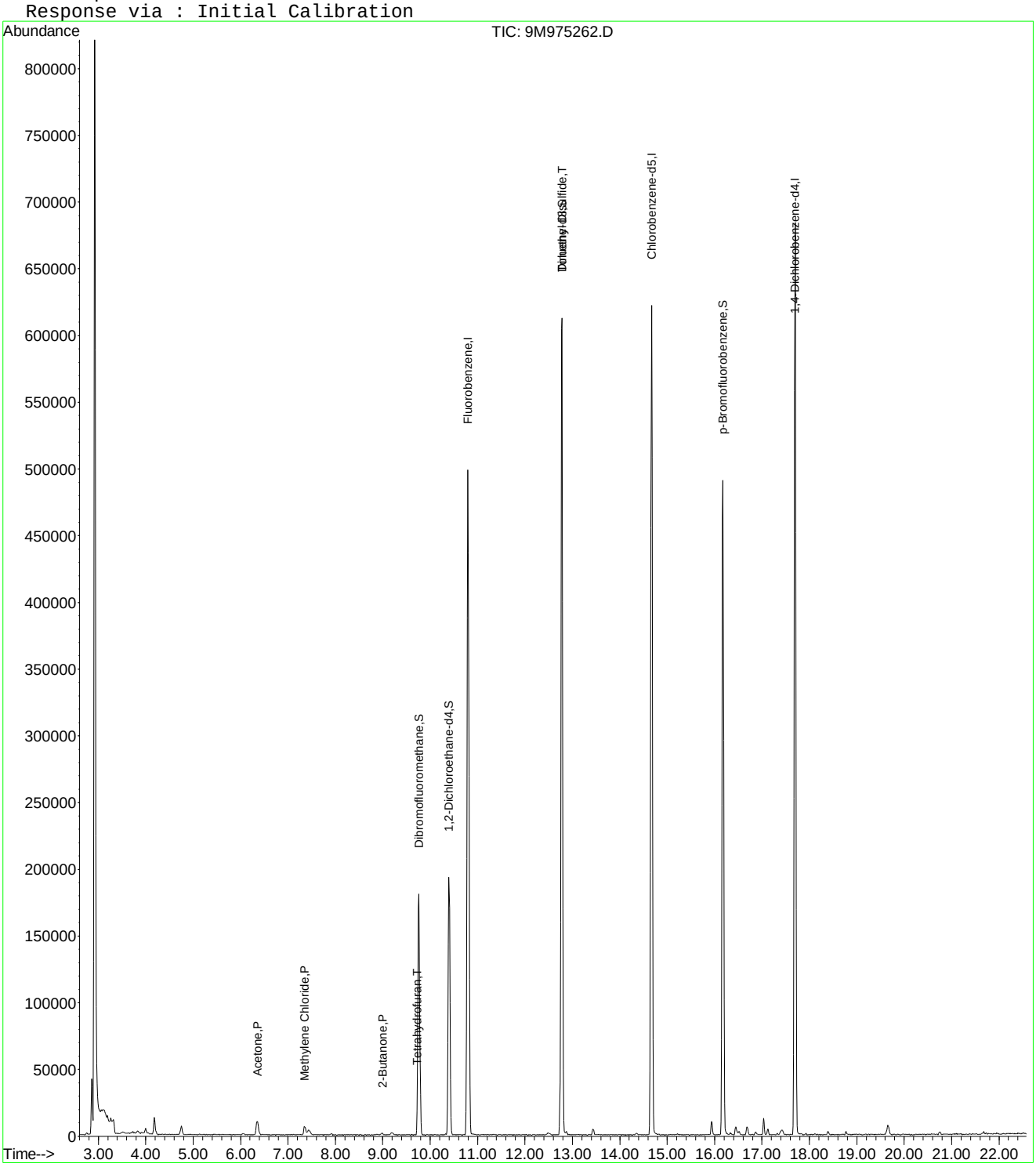

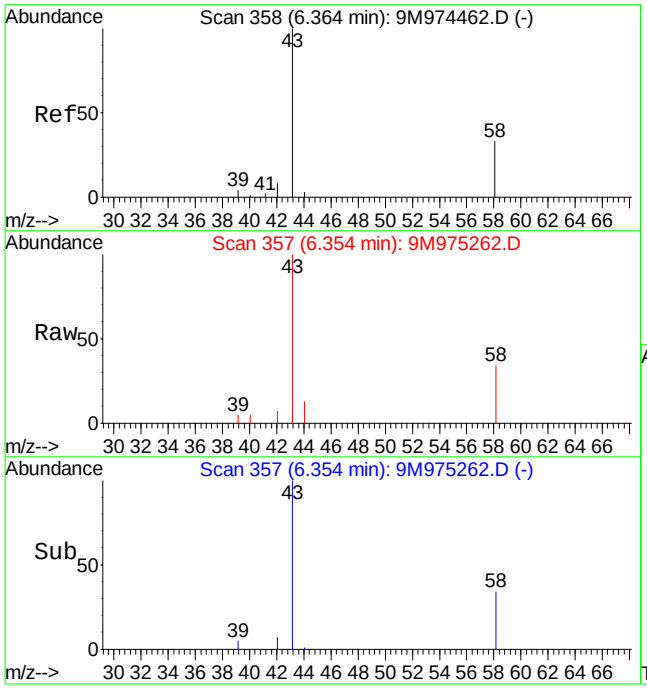

#13
Acetone
Concen: 14.04 ug/kg
RT: 6.35 min Scan# 357
Delta R.T. -0.01 min
Lab File: 9M975262.D
Acq: 6 Jul 2016 20:42

Tgt Ion: 43 Resp: 20343

Ion	Ratio	Lower	Upper
43	100		
58	41.4	19.9	46.3

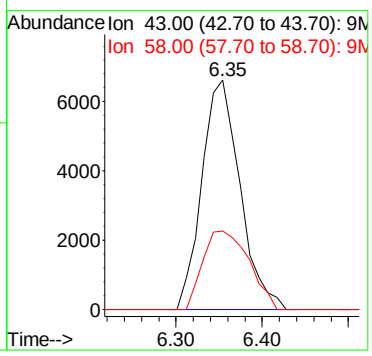

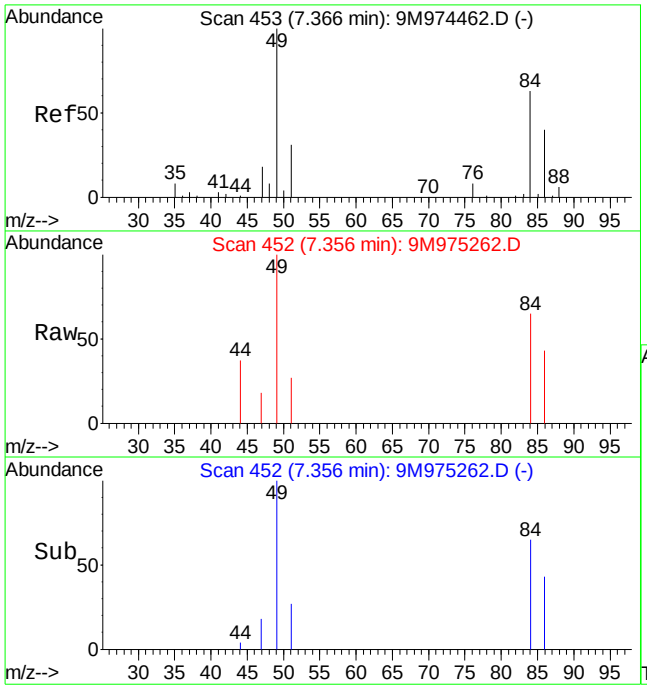

#19
Methylene Chloride
Concen: 1.15 ug/kg
RT: 7.36 min Scan# 452
Delta R.T. -0.01 min
Lab File: 9M975262.D
Acq: 6 Jul 2016 20:42

Tgt Ion: 84 Resp: 4236

Ion	Ratio	Lower	Upper
84	100		
49	158.8	93.2	217.4

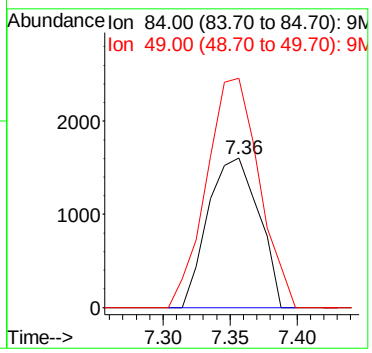

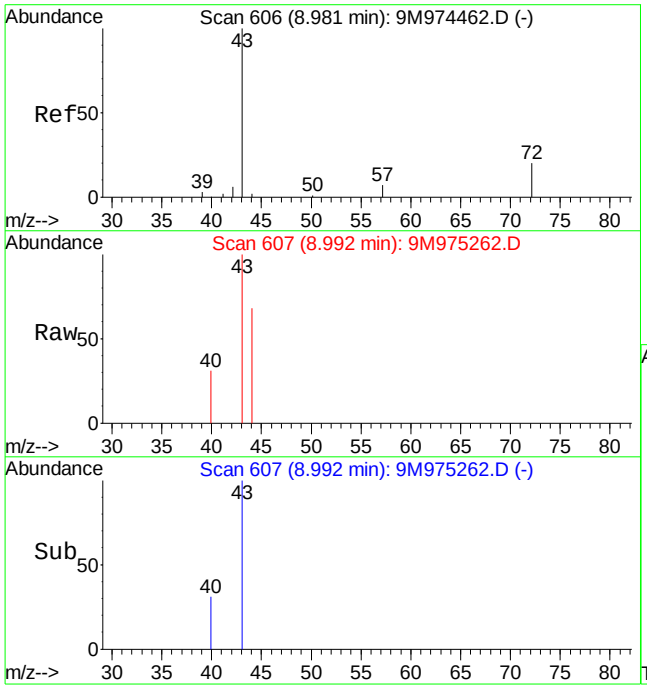

#29
2-Butanone
Concen: 1.63 ug/kg
RT: 8.99 min Scan# 607
Delta R.T. 0.00 min
Lab File: 9M975262.D
Acq: 6 Jul 2016 20:42

Tgt Ion: 43 Resp: 2991

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.5	29.3#

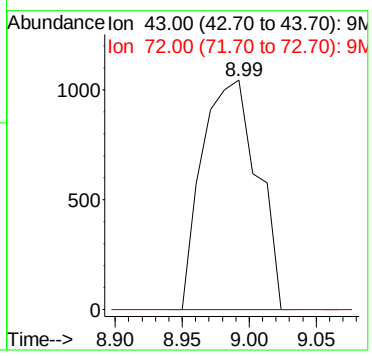

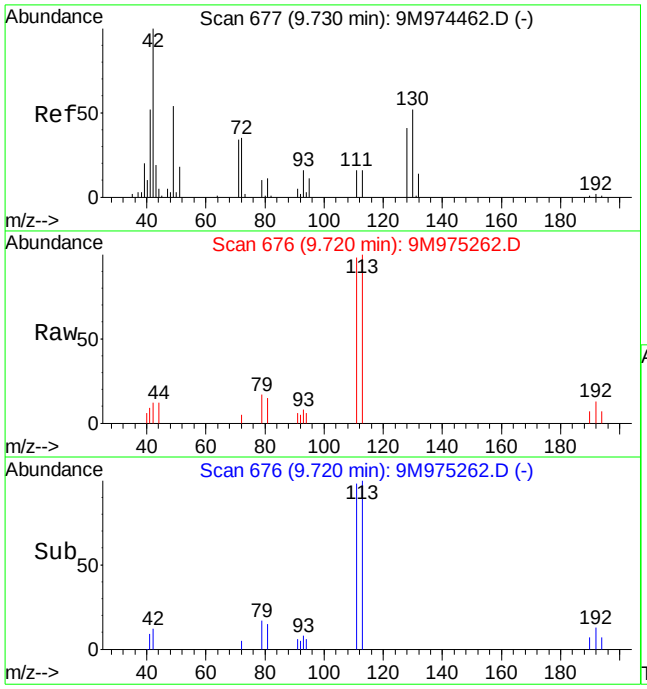

#36
Tetrahydrofuran
Concen: 1.44 ug/kg
RT: 9.72 min Scan# 676
Delta R.T. -0.02 min
Lab File: 9M975262.D
Acq: 6 Jul 2016 20:42

Tgt Ion: 42 Resp: 1824

Ion	Ratio	Lower	Upper
42	100		
72	10.6	21.8	50.8#
71	11.3	20.7	48.3#

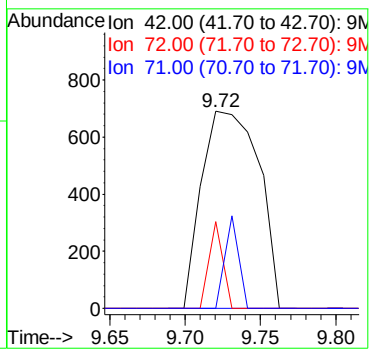

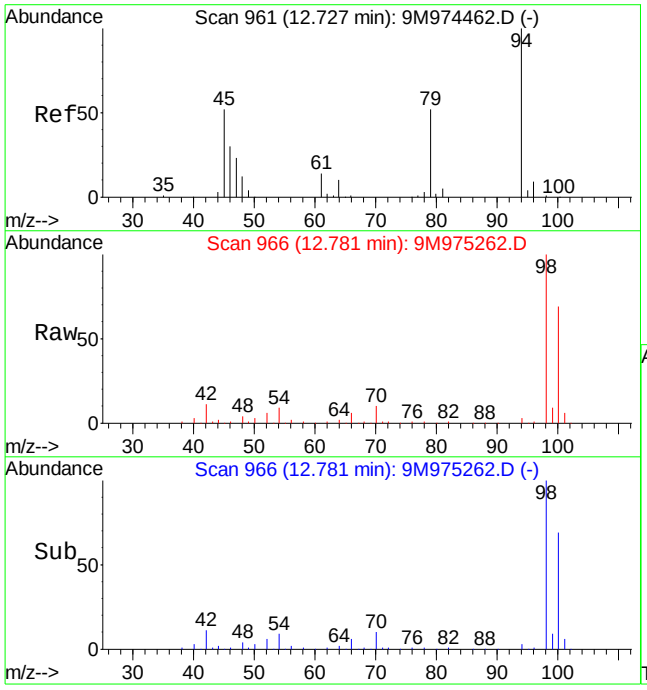

#56
Dimethyl Disulfide
Concen: 3.74 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.06 min
Lab File: 9M975262.D
Acq: 6 Jul 2016 20:42

Tgt Ion: 94 Resp: 16240

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

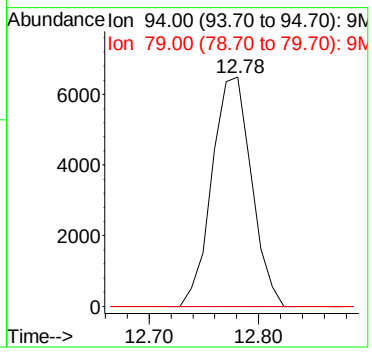

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

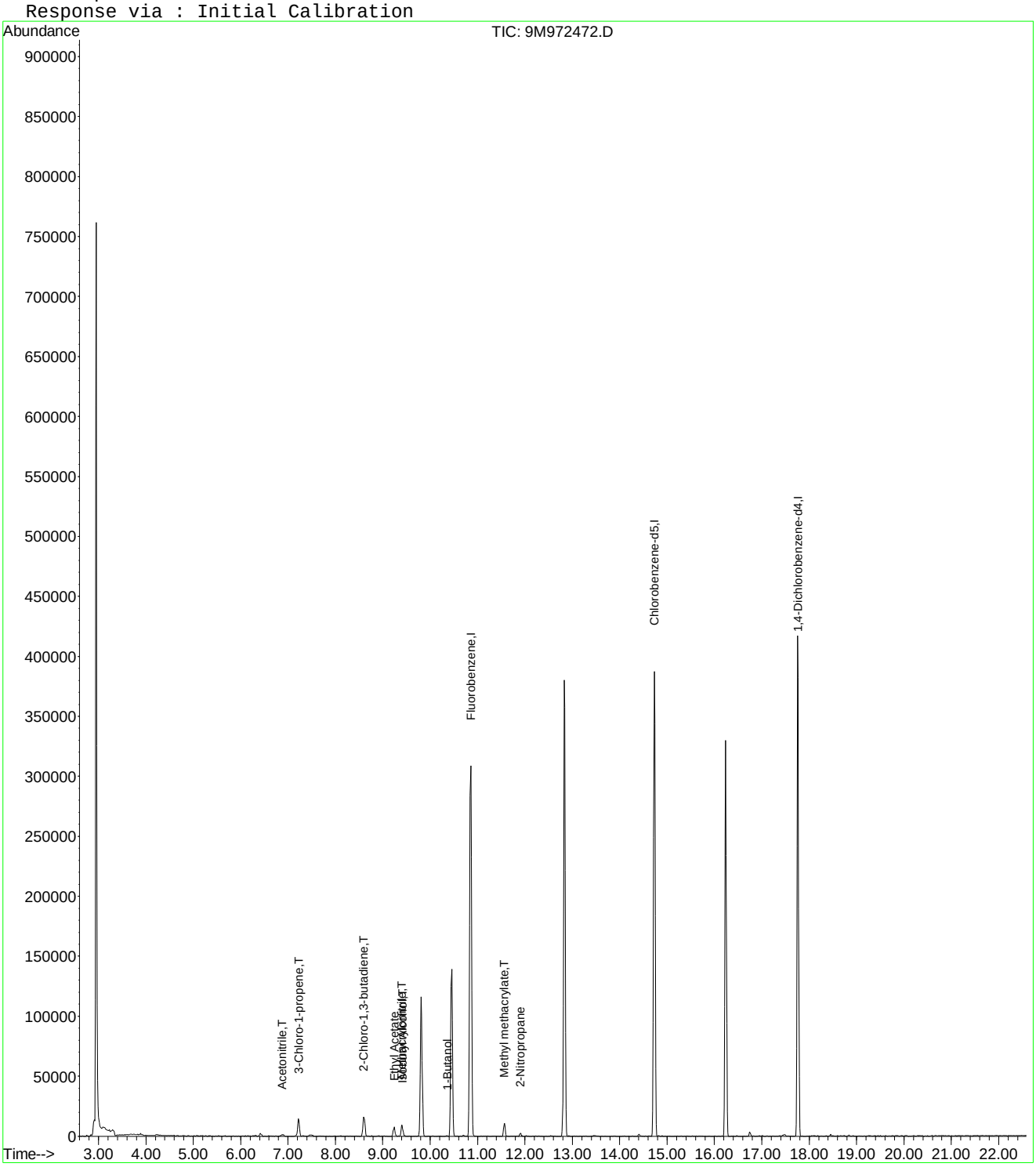

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

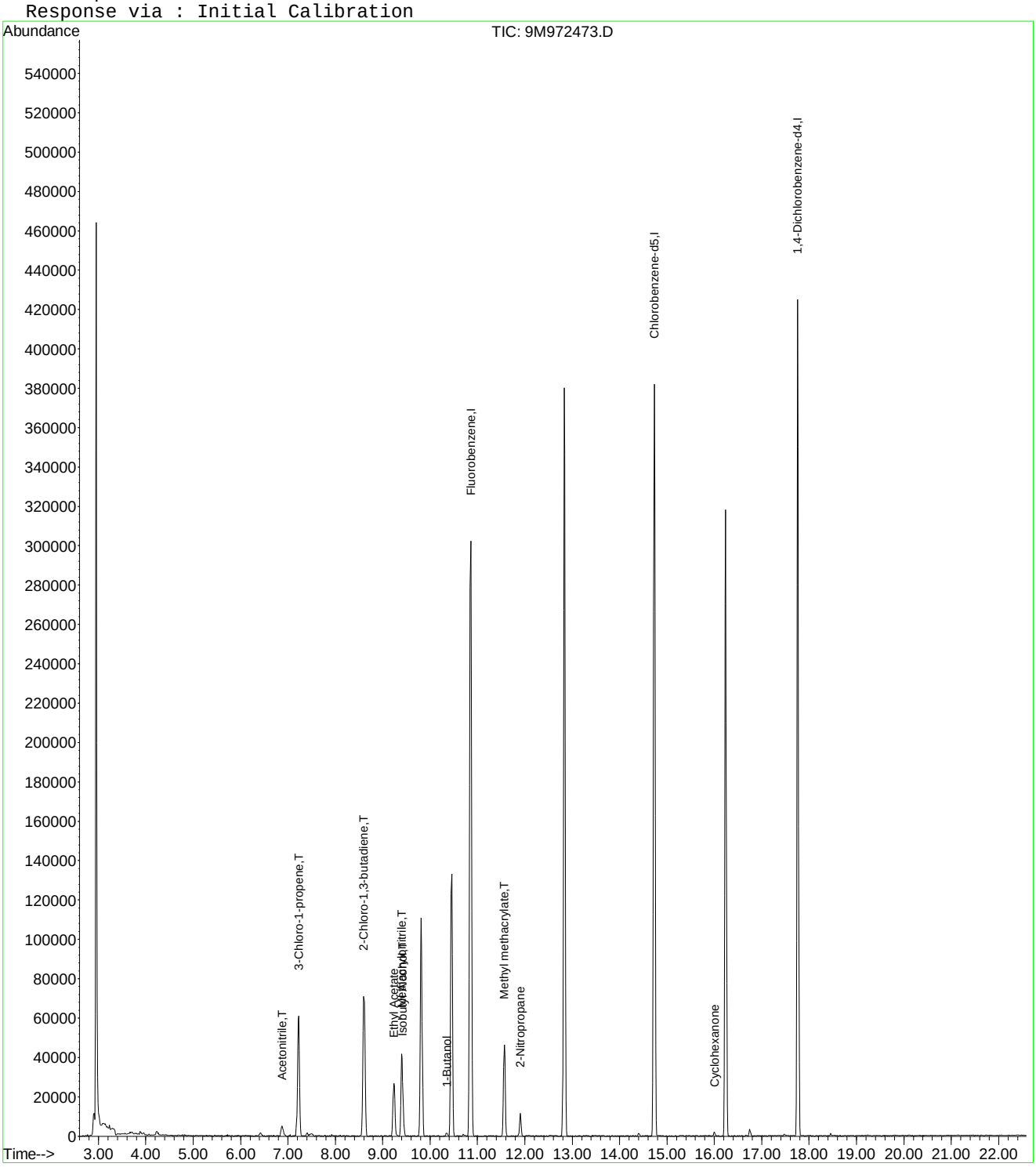

9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

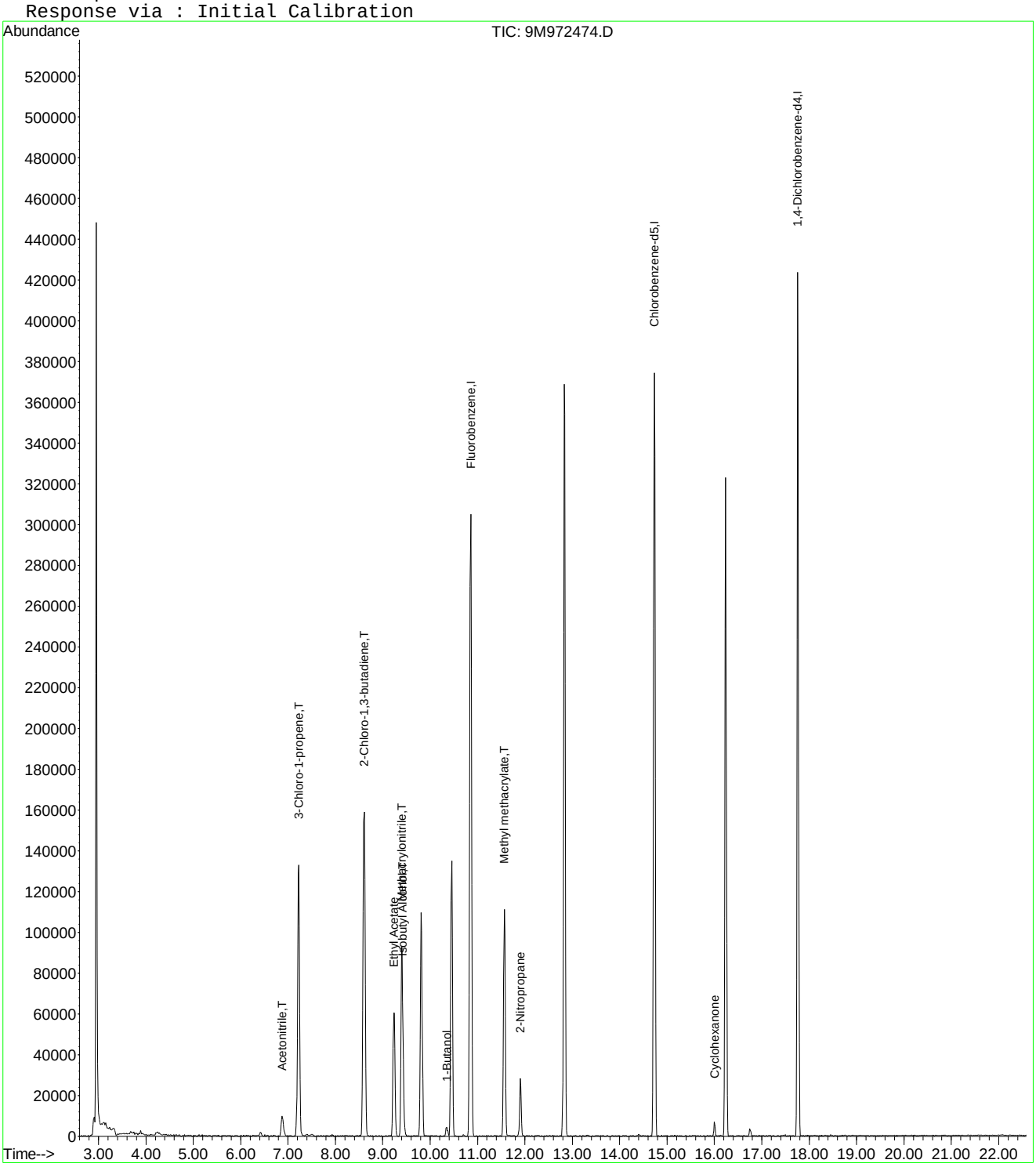

9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

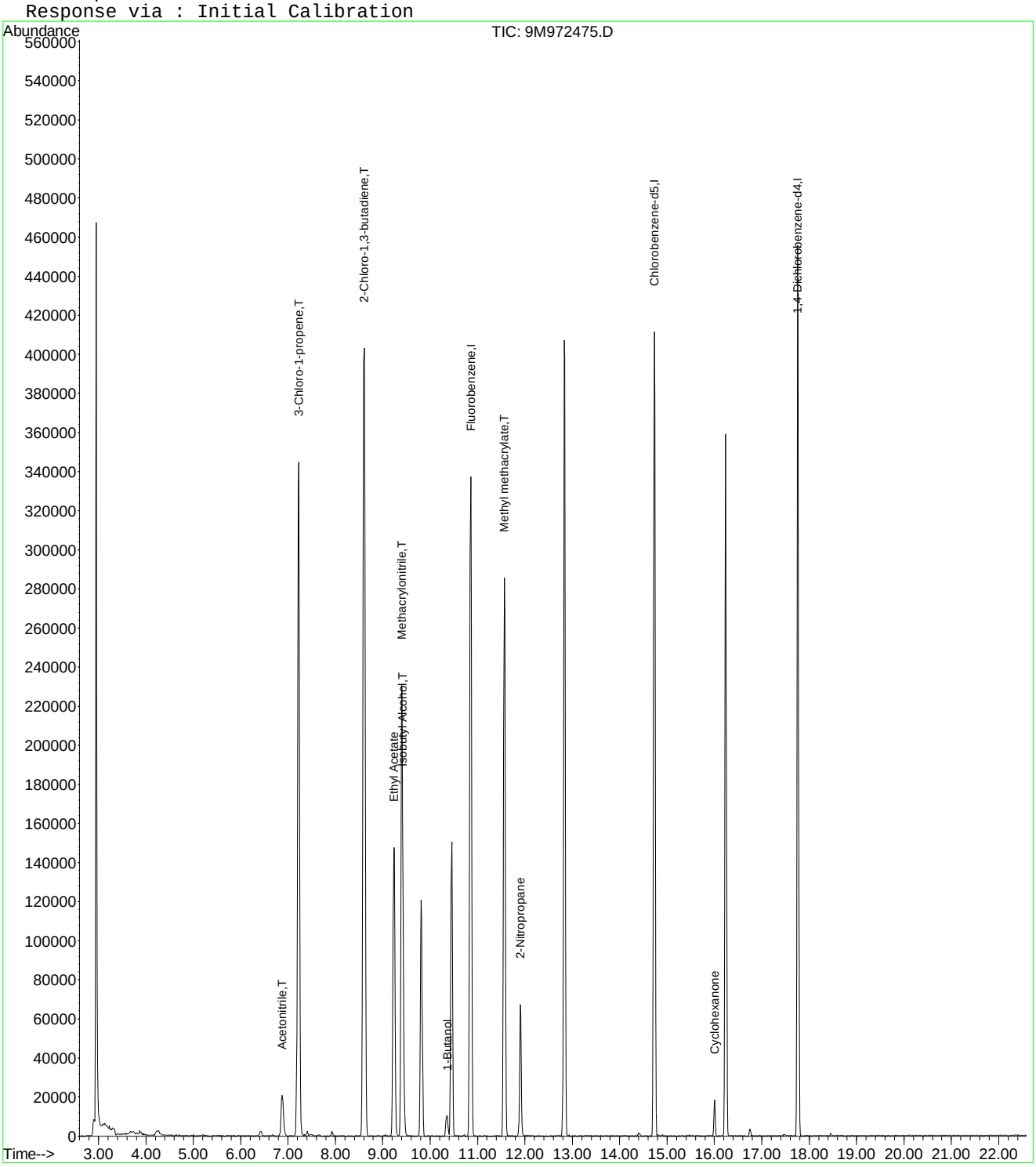

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

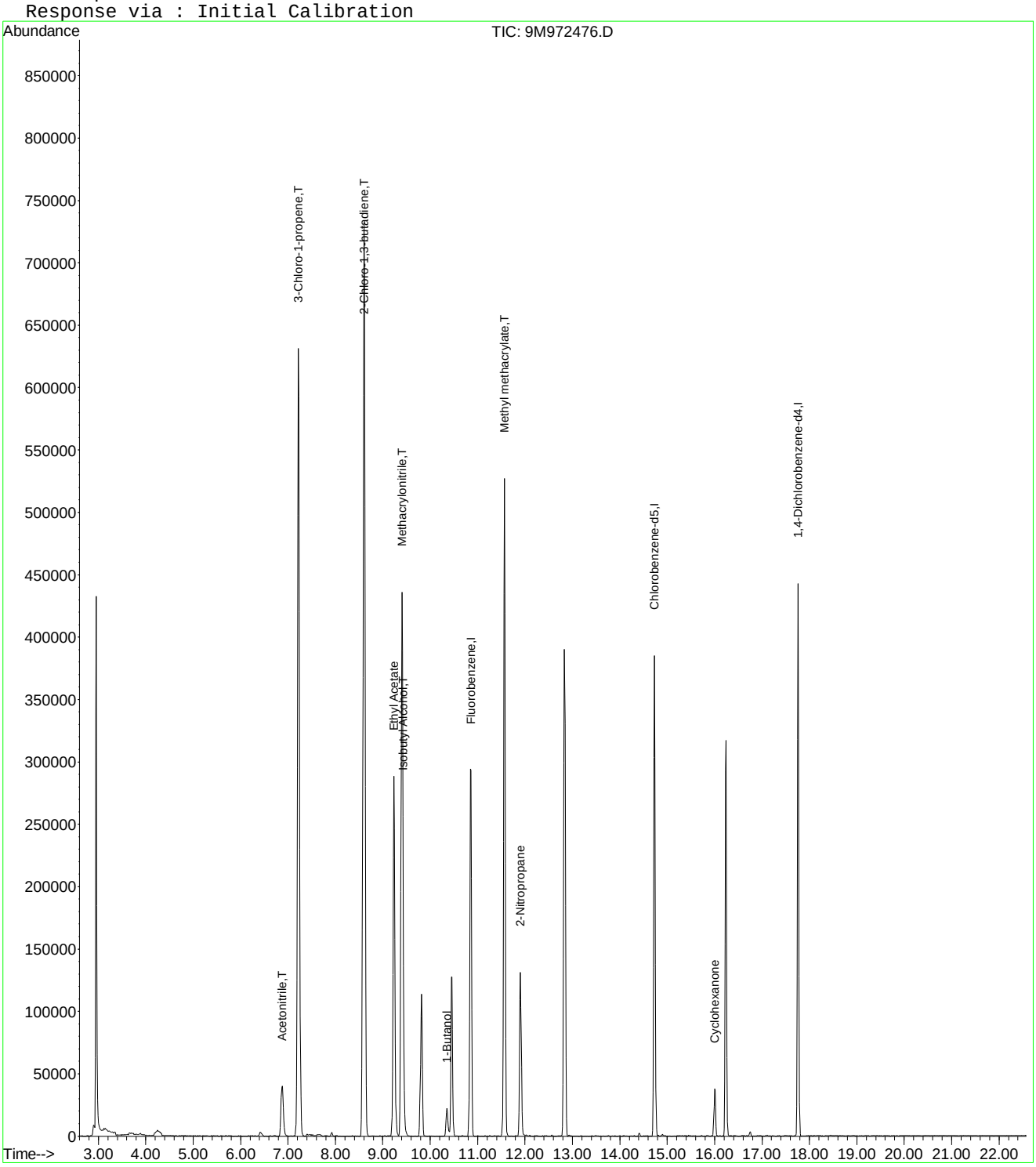

9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

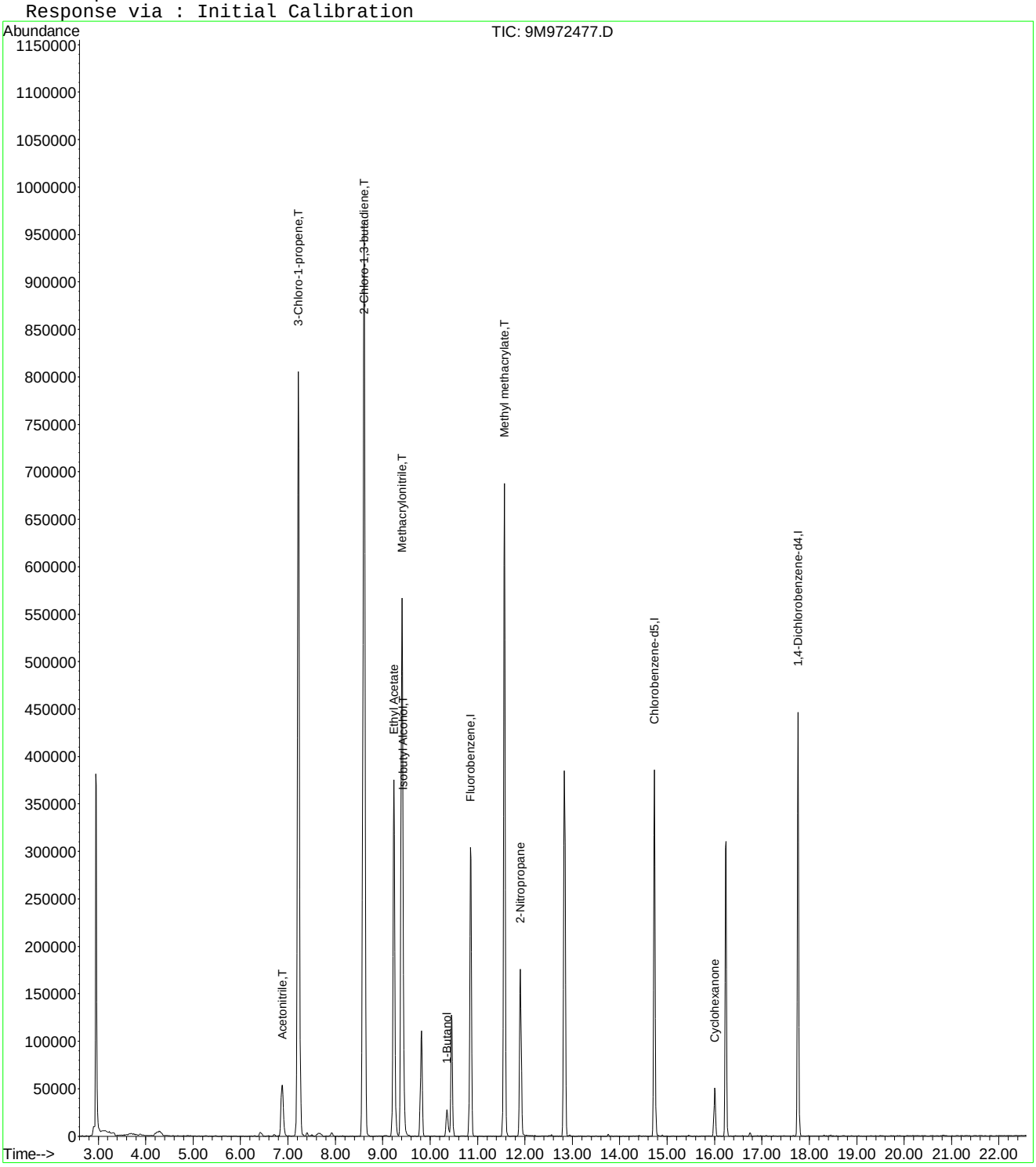

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

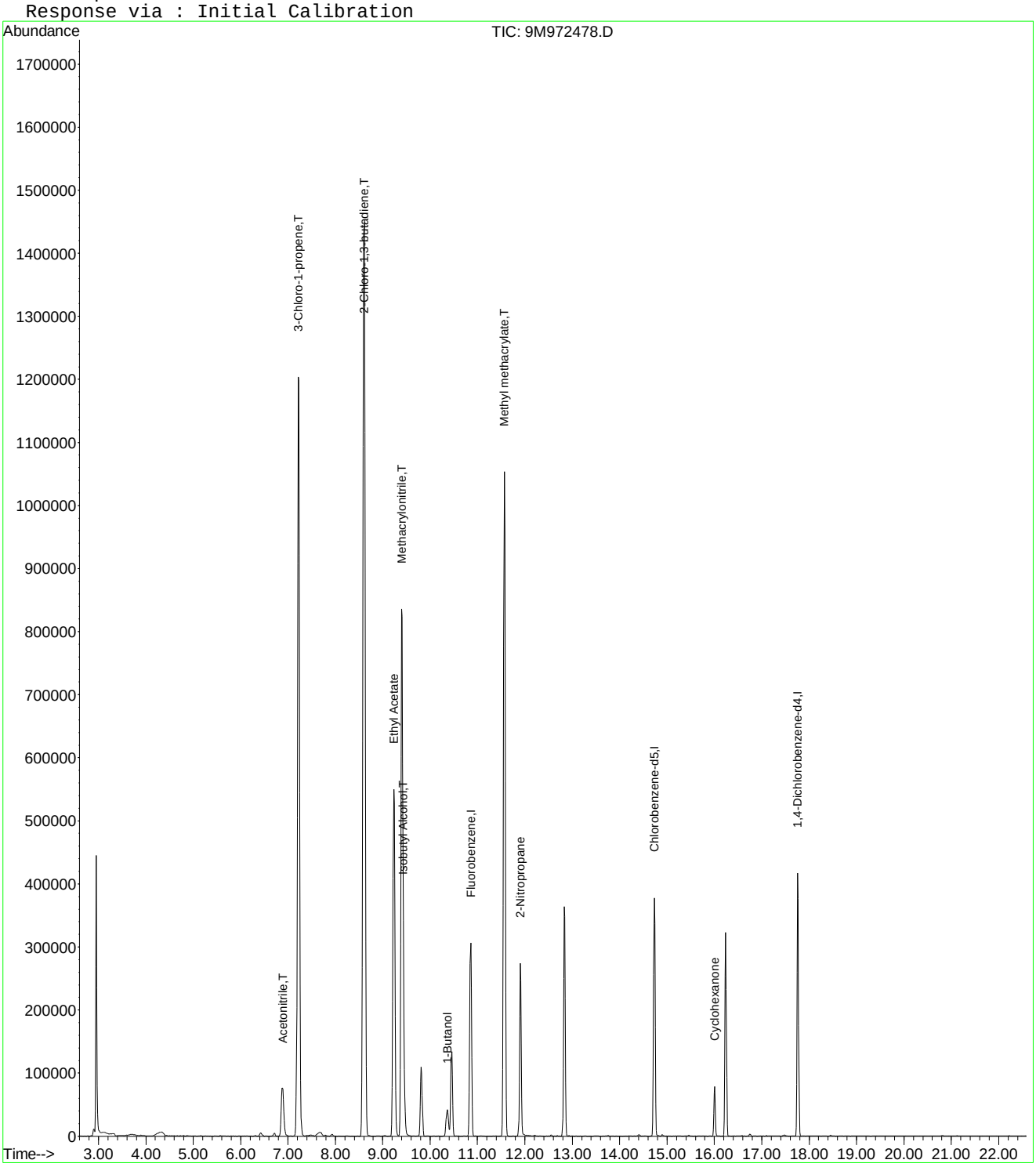

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

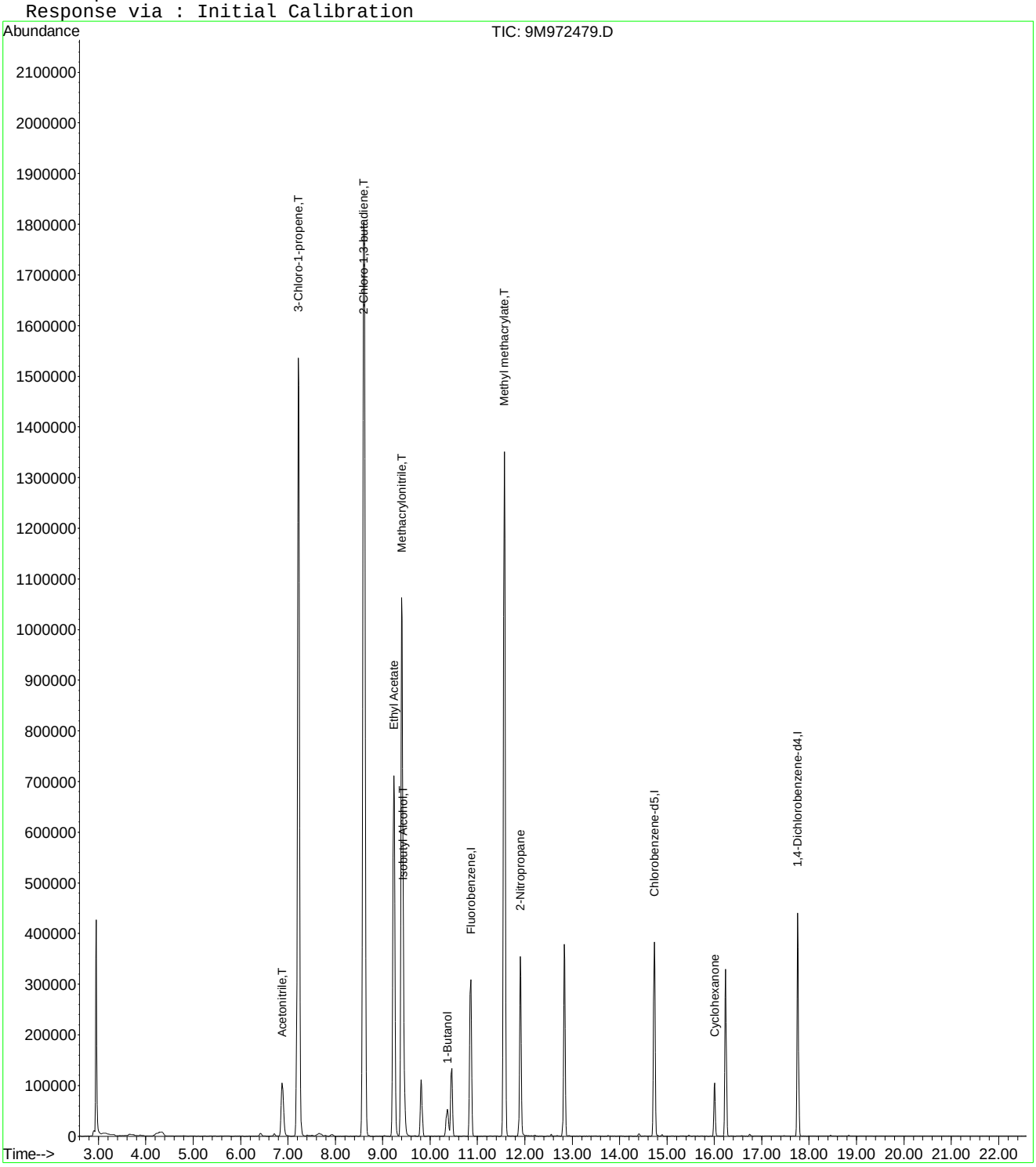

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

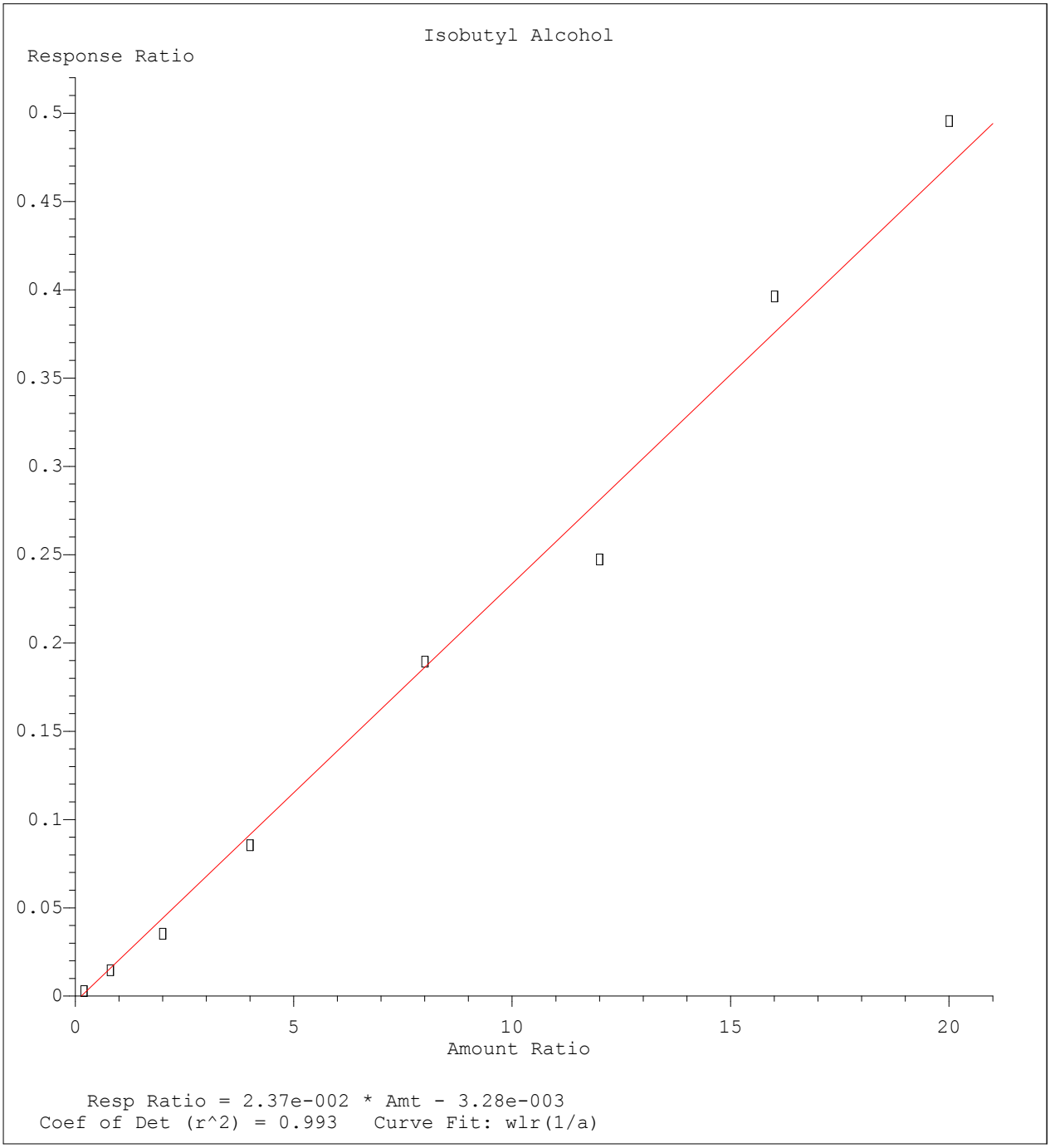

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

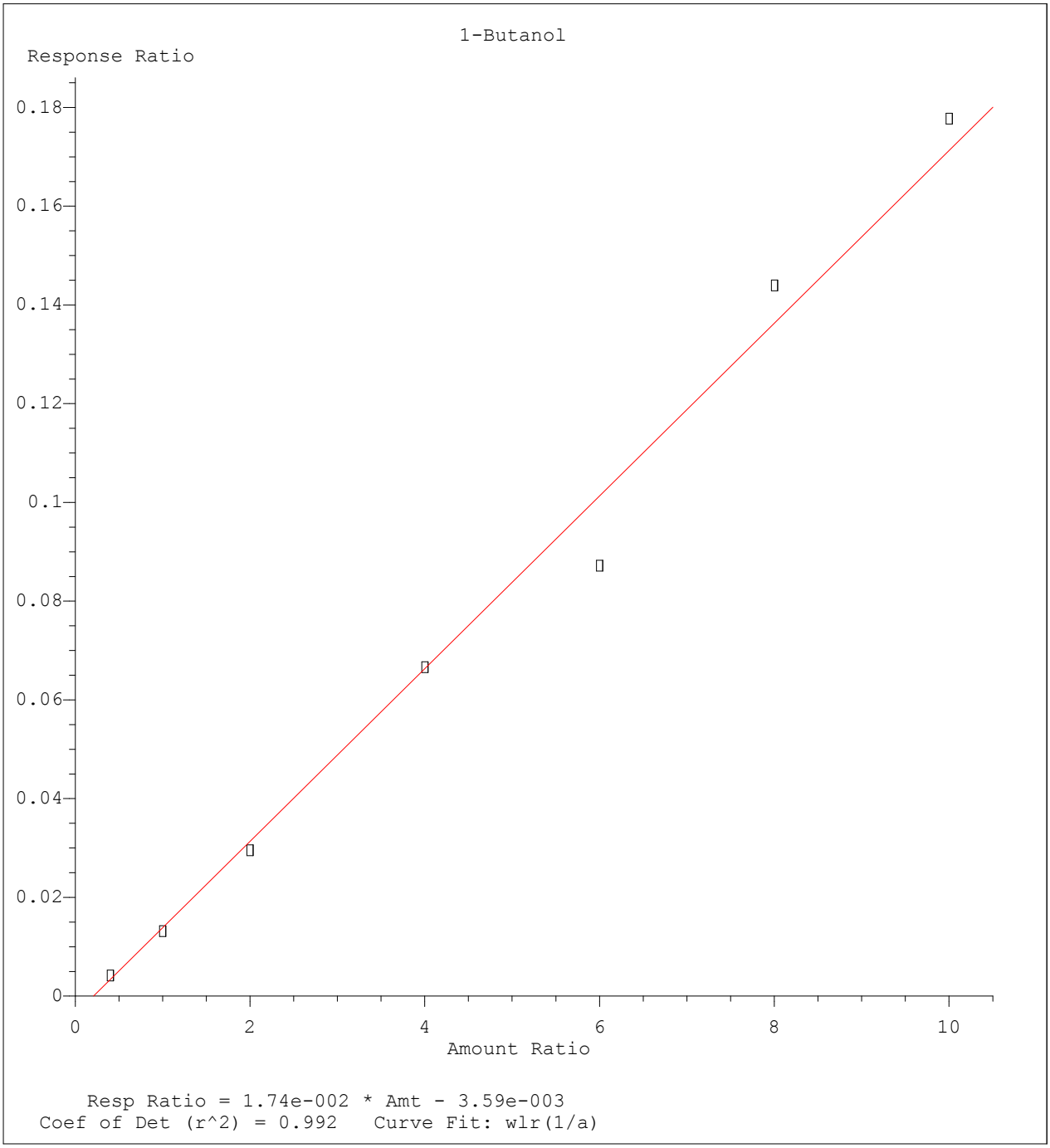

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	40054	101.2745 ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764 ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028 ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354 ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895 ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072 ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163 ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554 ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934 ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

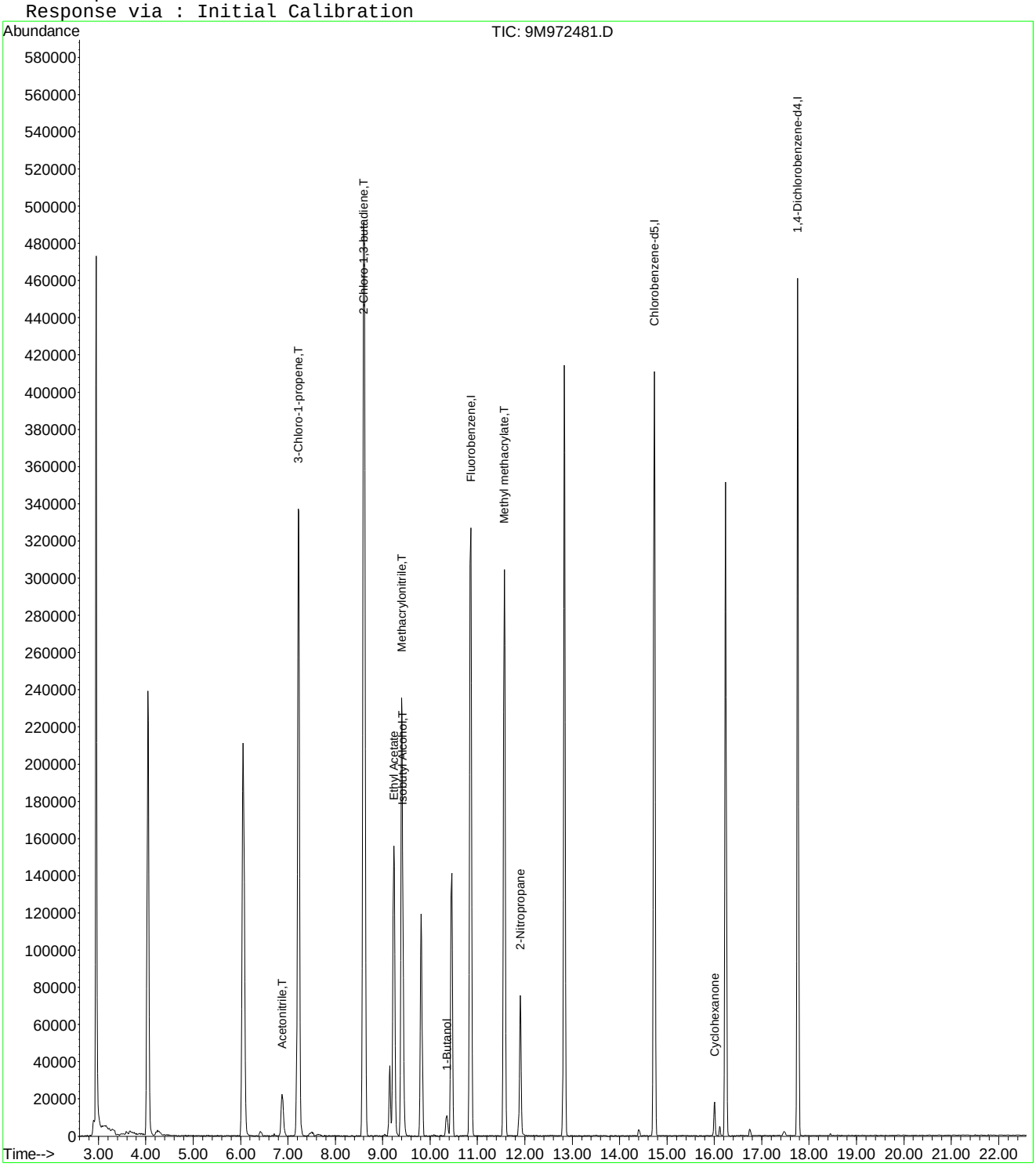

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974889.D Vial: 4
Acq On : 21 Jun 2016 8:40 Operator: ADC
Sample : WG573367-04 2.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:44:44 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	698795	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	540791	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	268867	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.77	111	7681	1.9934 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	3.98%#	
43) 1,2-Dichloroethane-d4	10.40	65	8145	1.9883 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	3.98%#	
58) Toluene-d8	12.79	98	27868	2.0806 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	4.16%#	
79) p-Bromofluorobenzene	16.18	95	11958	2.4356 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	4.88%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	9565	1.7469 ug/kg	96
3) Chloromethane	3.72	50	9979	2.0623 ug/kg	93
4) Vinyl Chloride	3.96	62	6403	1.8844 ug/kg	95
5) 1,3-Butadiene	4.01	54	3508	2.0879 ug/kg	84
6) Bromomethane	4.85	94	5879	1.9137 ug/kg	97
7) Chloroethane	5.01	64	5270	1.8886 ug/kg	84
8) Trichlorofluoromethane	5.50	101	12323	1.9543 ug/kg#	92
9) Diethyl ether	6.02	59	83903	24.8751 ug/kg	99
10) Isoprene	6.06	67	8672	1.9505 ug/kg	98
11) Acrolein	6.26	56	3147	12.4474 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	7035	1.8594 ug/kg	99
13) Acetone	6.36	43	8274	2.8711 ug/kg	86
14) 1,1-Dichloroethene	6.58	61	11530	1.9052 ug/kg	98
15) Tert-Butyl Alcohol	6.69	59	27926	45.2732 ug/kg	98
16) Dimethyl Sulfide	6.84	62	4613	1.8265 ug/kg	99
17) Iodomethane	7.10	142	2884	2.5668 ug/kg	81
18) Methyl acetate	7.11	43	7046	1.9768 ug/kg#	84
19) Methylene Chloride	7.36	84	8456	2.0671 ug/kg	90
20) Carbon Disulfide	7.41	76	24208	2.1165 ug/kg	99
21) Acrylonitrile	7.55	53	19451	11.8230 ug/kg	94
22) Methyl Tert Butyl Ether	7.58	73	20381	1.9449 ug/kg	96
23) trans-1,2-Dichloroethene	7.82	61	11149	1.9373 ug/kg	94
24) n-Hexane	7.89	57	14436	2.2458 ug/kg	97
25) Diisopropyl ether	8.23	45	334451	25.2643 ug/kg	99
26) Vinyl Acetate	8.40	43	13845	1.9381 ug/kg	91
27) 1,1-Dichloroethane	8.43	63	14641	2.0326 ug/kg	96
28) Ethyl-Tert-Butyl ether	8.80	59	310140	25.0822 ug/kg	99
29) 2-Butanone	8.99	43	3677	1.8023 ug/kg#	68
30) Propionitrile	9.10	54	14862	24.0566 ug/kg	90
31) 2,2-Dichloropropane	9.20	77	10406	1.9436 ug/kg	94
32) cis-1,2-Dichloroethene	9.27	96	8020	1.9415 ug/kg	88
33) Chloroform	9.47	83	12219	1.9683 ug/kg	96
34) 1-Bromopropane	9.62	122	1080	1.6744 ug/kg	94
35) Bromochloromethane	9.72	130	5541	2.0390 ug/kg	89
36) Tetrahydrofuran	9.74	42	34602	24.6345 ug/kg	99
38) 1,1,1-Trichloroethane	10.01	97	11031	1.9671 ug/kg	97
39) Cyclohexane	10.03	56	14031	1.9790 ug/kg	93
40) 1,1-Dichloropropene	10.20	75	9872	2.0222 ug/kg	99
41) Tert-Amyl-Methyl ether	10.31	73	247437	25.1178 ug/kg	99
42) Carbon Tetrachloride	10.35	117	10479	1.9263 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M974889.D 8260S.M Thu Jun 23 11:44:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974889.D Vial: 4
Acq On : 21 Jun 2016 8:40 Operator: ADC
Sample : WG573367-04 2.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:44:44 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.53	62	9469	1.8625 ug/kg	96
46)	Benzene	10.56	78	31691	2.1414 ug/kg	98
47)	Trichloroethene	11.31	130	8249	1.9029 ug/kg	93
48)	Methylcyclohexane	11.38	83	11602	1.9013 ug/kg	99
49)	1,2-Dichloropropane	11.53	63	7651	1.8918 ug/kg	95
50)	1,4-Dioxane	11.83	88	2353	38.0985 ug/kg	97
51)	Bromodichloromethane	11.83	83	9066	1.8473 ug/kg#	94
52)	Dibromomethane	11.92	174	4865	1.9009 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.12	63	3374	2.4722 ug/kg	86
54)	4-Methyl-2-Pentanone	12.16	58	2496	1.4911 ug/kg#	71
55)	cis-1,3-Dichloropropene	12.46	75	10468	1.7921 ug/kg	94
56)	Dimethyl Disulfide	12.73	94	9953	2.5953 ug/kg	99
59)	Toluene	12.88	91	33633	2.1808 ug/kg	99
60)	Ethyl Methacrylate	12.98	69	7147	1.6245 ug/kg	89
61)	trans-1,3-Dichloropropene	13.05	75	8870	1.6936 ug/kg	98
62)	1,1,2-Trichloroethane	13.27	97	5930	1.8598 ug/kg	86
63)	2-Hexanone	13.21	43	4156	3.7368 ug/kg#	74
64)	1,3-Dichloropropane	13.58	76	10146	1.9032 ug/kg	97
65)	Tetrachloroethene	13.70	164	6469	1.9615 ug/kg	95
66)	Dibromochloromethane	13.97	129	7695	1.8278 ug/kg	96
67)	1,2-Dibromoethane	14.22	107	6501	1.8149 ug/kg	94
68)	1-Chlorohexane	14.31	91	9533	1.9819 ug/kg	97
69)	Chlorobenzene	14.73	112	23060	2.1007 ug/kg	78
70)	1,1,1,2-Tetrachloroethane	14.76	131	7507	1.9010 ug/kg	97
71)	Ethylbenzene	14.75	106	11751	2.0207 ug/kg	95
72)	m-,p-Xylene	14.84	106	29527	4.1101 ug/kg	99
73)	o-Xylene	15.41	106	13680	1.9669 ug/kg	98
74)	Styrene	15.45	104	22332	1.9241 ug/kg	98
75)	Bromoform	15.94	173	5010	1.7537 ug/kg	91
76)	Isopropylbenzene	15.83	105	35161	1.9699 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.05	83	8393	1.9366 ug/kg	98
80)	1,2,3-Trichloropropane	16.24	110	2431	1.8089 ug/kg#	12
81)	trans-1,4-Dichloro-2-Buten	16.28	53	2011	1.5546 ug/kg#	1
82)	n-Propylbenzene	16.33	91	42481	2.1953 ug/kg	100
83)	Bromobenzene	16.47	156	9238	1.9793 ug/kg	55
84)	1,3,5-Trimethylbenzene	16.52	105	34571	2.3524 ug/kg	97
85)	2-Chlorotoluene	16.61	91	24176	2.0669 ug/kg	88
86)	4-Chlorotoluene	16.66	91	25298	2.1313 ug/kg	82
87)	a-Methylstyrene	16.93	118	12736	1.8661 ug/kg	79
88)	tert-Butylbenzene	16.99	134	6448	2.0307 ug/kg	92
89)	1,2,4-Trimethylbenzene	17.04	105	44119	2.5124 ug/kg	94
90)	sec-Butylbenzene	17.25	105	39605	2.0540 ug/kg	97
91)	p-Isopropyltoluene	17.41	119	32589	2.0721 ug/kg	98
92)	1,3-Dichlorobenzene	17.61	146	18534	2.0543 ug/kg	97
93)	1,4-Dichlorobenzene	17.74	146	18909	2.0535 ug/kg	77
94)	n-Butylbenzene	17.94	91	29370	2.0432 ug/kg	99
95)	1,2-Dichlorobenzene	18.23	146	17093	1.9838 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.24	157	1804	2.4022 ug/kg	93
97)	1,2,4-Trichlorobenzene	20.38	180	13287	2.1139 ug/kg	100
98)	Hexachlorobutadiene	20.52	225	6712	2.1048 ug/kg	93
99)	Naphthalene	20.75	128	33349	2.0313 ug/kg	97
100)	1,2,3-Trichlorobenzene	21.05	180	12686	2.0621 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M974889.D 8260S.M Thu Jun 23 11:44:45 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974889.D Vial: 4
Acq On : 21 Jun 2016 8:40 Operator: ADC
Sample : WG573367-04 2.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:44 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

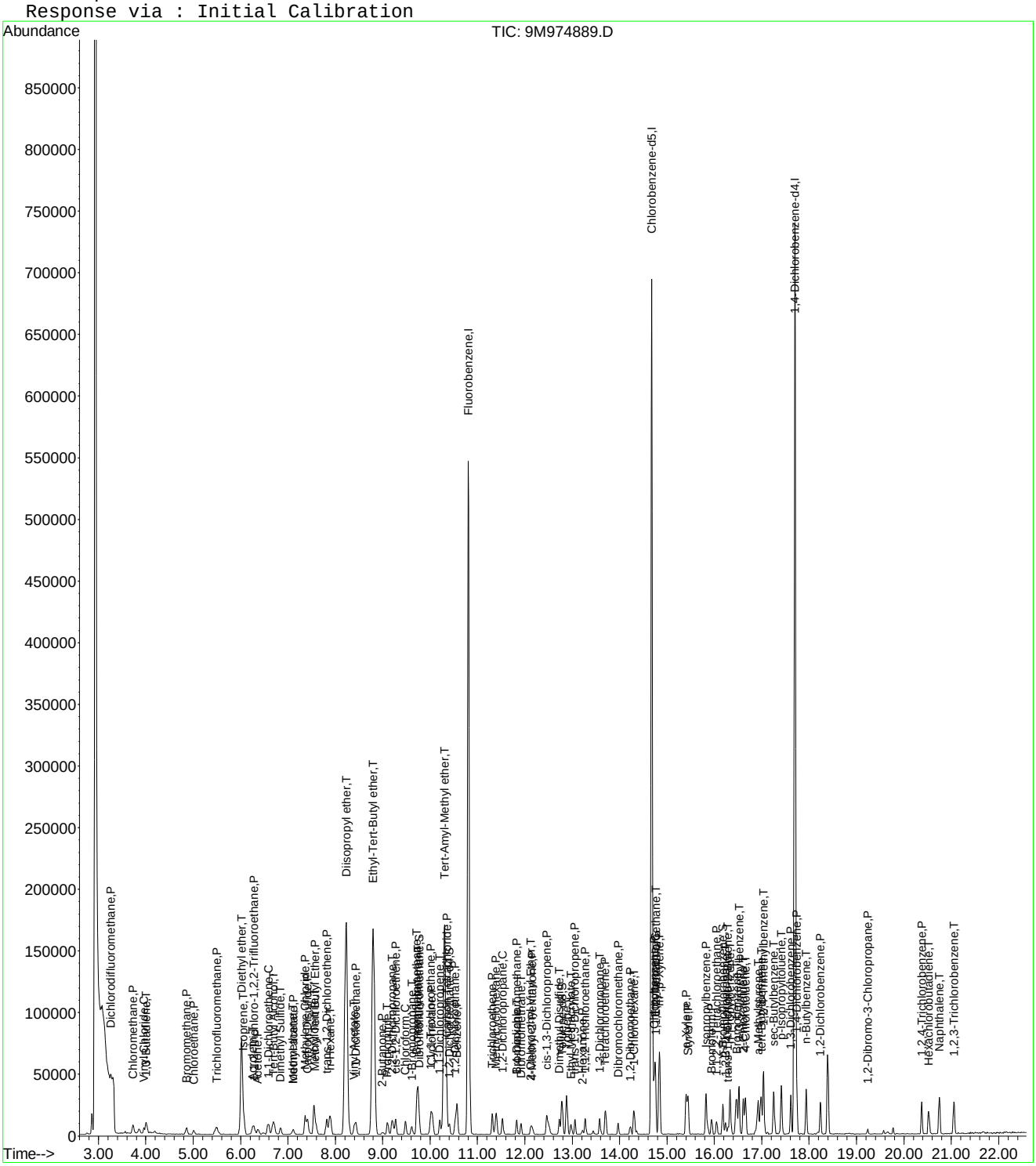

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974889.D Vial: 4
Acq On : 21 Jun 2016 8:40 Operator: ADC
Sample : WG573367-04 2.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	2.0000	1.7469	12.7	100	0.00
3	P	Chloromethane	2.0000	2.0623	-3.1	100	0.00
4	C	Vinyl Chloride	2.0000	1.8844	5.8	100	0.00
5	T	1,3-Butadiene	2.0000	2.0879	-4.4	100	0.01
6	P	Bromomethane	2.0000	1.9137	4.3	100	0.00
7	P	Chloroethane	2.0000	1.8886	5.6	100	0.00
8	P	Trichlorofluoromethane	2.0000	1.9543	2.3	100	0.00
9	T	Diethyl ether	25.0000	24.8751	0.5	100	0.00
10	T	Isoprene	2.0000	1.9505	2.5	100	0.00
11	T	Acrolein	12.5000	12.4474	0.4	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.8594	7.0	100	0.00
13	P	Acetone	-1.0000	2.8711	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	1.9052	4.7	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	45.2732	9.5	100	0.00
16	T	Dimethyl Sulfide	2.0000	1.8265	8.7	100	0.00
17	T	Iodomethane	2.0000	2.5668	-28.3#	100	0.00
18	P	Methyl acetate	2.0000	1.9768	1.2	100	0.00
19	P	Methylene Chloride	-1.0000	2.0671	0.0	100	0.00
20	P	Carbon Disulfide	2.0000	2.1165	-5.8	100	0.00
21	T	Acrylonitrile	12.5000	11.8230	5.4	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	1.9450	2.8	100	0.00
23	P	trans-1,2-Dichloroethene	2.0000	1.9373	3.1	100	0.00
24	T	n-Hexane	2.0000	2.2458	-12.3	100	0.00
25	T	Diisopropyl ether	25.0000	25.2643	-1.1	100	0.00
26	T	Vinyl Acetate	2.0000	1.9381	3.1	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0326	-1.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.0822	-0.3	100	0.00
29	P	2-Butanone	-1.0000	1.8023	0.0	100	0.00
30	T	Propionitrile	25.0000	24.0566	3.8	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.9436	2.8	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	1.9415	2.9	100	0.00
33	C	Chloroform	2.0000	1.9683	1.6	100	0.00
34	T	1-Bromopropane	2.0000	1.6744	16.3	100	0.00
35	T	Bromochloromethane	2.0000	2.0390	-2.0	100	0.00
36	T	Tetrahydrofuran	25.0000	24.6345	1.5	100	0.00
37	S	Dibromofluoromethane	2.0000	1.9934	0.3	100	0.00
38	P	1,1,1-Trichloroethane	2.0000	1.9671	1.6	100	0.00
39	P	Cyclohexane	2.0000	1.9790	1.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0222	-1.1	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	25.1179	-0.5	100	0.00
42	P	Carbon Tetrachloride	2.0000	1.9263	3.7	100	0.00
43	S	1,2-Dichloroethane-d4	2.0000	1.9883	0.6	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	1.8624	6.9	100	0.00
46	P	Benzene	2.0000	2.1414	-7.1	100	0.00
47	P	Trichloroethene	2.0000	1.9029	4.9	100	0.00
48	P	Methylcyclohexane	2.0000	1.9013	4.9	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.8918	5.4	100	0.00
50	T	1,4-Dioxane	50.0000	38.0985	23.8	100	0.01
51	P	Bromodichloromethane	2.0000	1.8473	7.6	100	0.00
52	T	Dibromomethane	2.0000	1.9009	5.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.4722	-23.6	100	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.4911	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974889.D Vial: 4
Acq On : 21 Jun 2016 8:40 Operator: ADC
Sample : WG573367-04 2.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	1.7921	10.4	100	0.00
56	T	Dimethyl Disulfide	2.0000	2.5953	-29.8#	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	2.0000	2.0806	-4.0	100	0.00
59	C	Toluene	2.0000	2.1808	-9.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.6245	0.0	100	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.6936	15.3	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.8598	7.0	100	0.00
63	P	2-Hexanone	-1.0000	3.7368	0.0	0	0.00
64	T	1,3-Dichloropropane	2.0000	1.9032	4.8	100	0.00
65	P	Tetrachloroethene	2.0000	1.9615	1.9	100	0.00
66	P	Dibromochloromethane	2.0000	1.8278	8.6	100	0.00
67	P	1,2-Dibromoethane	-1.0000	1.8149	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	1.9819	0.9	100	0.00
69	P	Chlorobenzene	2.0000	2.1007	-5.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.9010	4.9	100	0.00
71	C	Ethylbenzene	2.0000	2.0207	-1.0	100	0.00
72	P	m-,p-Xylene	4.0000	4.1101	-2.8	100	0.00
73	P	o-Xylene	2.0000	1.9669	1.7	100	0.00
74	P	Styrene	2.0000	1.9241	3.8	100	0.00
75	P	Bromoform	2.0000	1.7537	12.3	100	0.00
76	P	Isopropylbenzene	2.0000	1.9699	1.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	1.9366	3.2	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	2.4356	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	1.8089	9.6	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.5546	22.3	100	0.00
82	T	n-Propylbenzene	2.0000	2.1953	-9.8	100	0.00
83	T	Bromobenzene	2.0000	1.9793	1.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	2.3524	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	2.0669	-3.3	100	0.00
86	T	4-Chlorotoluene	2.0000	2.1313	-6.6	100	0.00
87	T	a-Methylstyrene	-1.0000	1.8661	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	2.0307	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	2.5124	-25.6#	100	0.00
90	T	sec-Butylbenzene	2.0000	2.0540	-2.7	100	0.00
91	T	p-Isopropyltoluene	-1.0000	2.0721	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	2.0543	-2.7	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.0535	-2.7	100	0.00
94	T	n-Butylbenzene	2.0000	2.0432	-2.2	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	1.9838	0.8	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	2.0000	2.4022	-20.1	100	0.00
97	P	1,2,4-Trichlorobenzene	2.0000	2.1139	-5.7	100	0.00
98	T	Hexachlorobutadiene	2.0000	2.1048	-5.2	100	0.00
99	T	Naphthalene	2.0000	2.0313	-1.6	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	2.0621	-3.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974889.D 8260S.M Thu Jun 23 11:44:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974890.D Vial: 5
Acq On : 21 Jun 2016 9:10 Operator: ADC
Sample : WG573367-05 5.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:44:56 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	621273	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	476649	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	238102	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	17624	5.1445 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 10.28%#		
43) 1,2-Dichloroethane-d4	10.41	65	18086	4.9659 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 9.94%#		
58) Toluene-d8	12.78	98	61153	5.1800 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 10.36%#		
79) p-Bromofluorobenzene	16.18	95	23859	5.4876 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 10.98%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	21594	4.4359 ug/kg	94
3) Chloromethane	3.73	50	21011	4.8841 ug/kg	100
4) Vinyl Chloride	3.97	62	15168	5.0209 ug/kg	97
5) 1,3-Butadiene	4.01	54	7691	5.1488 ug/kg	92
6) Bromomethane	4.85	94	12872	4.7128 ug/kg	98
7) Chloroethane	5.01	64	11880	4.7886 ug/kg	97
8) Trichlorofluoromethane	5.50	101	27736	4.9475 ug/kg	98
9) Diethyl ether	6.02	59	155909	51.9907 ug/kg	99
10) Isoprene	6.07	67	19009	4.8090 ug/kg	97
11) Acrolein	6.26	56	5495	24.4465 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	16184	4.8112 ug/kg	98
13) Acetone	6.36	43	10776	5.8737 ug/kg	89
14) 1,1-Dichloroethene	6.58	61	26296	4.8872 ug/kg	99
15) Tert-Butyl Alcohol	6.69	59	54206	98.8432 ug/kg	99
16) Dimethyl Sulfide	6.85	62	11473	5.1096 ug/kg	92
17) Iodomethane	7.10	142	7827	4.8250 ug/kg	98
18) Methyl acetate	7.11	43	16629	5.2474 ug/kg	94
19) Methylene Chloride	7.36	84	21775	5.9871 ug/kg	100
20) Carbon Disulfide	7.41	76	51399	5.0546 ug/kg	99
21) Acrylonitrile	7.54	53	36378	24.8710 ug/kg	95
22) Methyl Tert Butyl Ether	7.58	73	45644	4.8993 ug/kg	99
23) trans-1,2-Dichloroethene	7.82	61	25704	5.0237 ug/kg	99
24) n-Hexane	7.88	57	27791	4.8630 ug/kg	98
25) Diisopropyl ether	8.23	45	616305	52.3646 ug/kg	99
26) Vinyl Acetate	8.40	43	29104	4.5826 ug/kg	97
27) 1,1-Dichloroethane	8.43	63	31023	4.8444 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.80	59	571355	51.9733 ug/kg	100
29) 2-Butanone	8.99	43	9007	4.9657 ug/kg	91
30) Propionitrile	9.10	54	27041	49.2319 ug/kg	93
31) 2,2-Dichloropropane	9.21	77	23048	4.8421 ug/kg	99
32) cis-1,2-Dichloroethene	9.27	96	17825	4.8536 ug/kg	87
33) Chloroform	9.49	83	27202	4.9285 ug/kg	96
34) 1-Bromopropane	9.61	122	2601	4.5356 ug/kg	97
35) Bromochloromethane	9.72	130	12068	4.9950 ug/kg	98
36) Tetrahydrofuran	9.74	42	63725	51.0293 ug/kg	99
38) 1,1,1-Trichloroethane	10.01	97	25048	5.0241 ug/kg	98
39) Cyclohexane	10.03	56	31744	5.0361 ug/kg	99
40) 1,1-Dichloropropene	10.20	75	21297	4.9068 ug/kg	99
41) Tert-Amyl-Methyl ether	10.31	73	451913	51.5988 ug/kg	99
42) Carbon Tetrachloride	10.35	117	23344	4.8268 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M974890.D 8260S.M Thu Jun 23 11:44:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974890.D Vial: 5
Acq On : 21 Jun 2016 9:10 Operator: ADC
Sample : WG573367-05 5.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:44:56 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.53	62	22442	4.9649	ug/kg	97
46)	Benzene	10.56	78	65759	4.9979	ug/kg	99
47)	Trichloroethene	11.31	130	18931	4.9120	ug/kg	97
48)	Methylcyclohexane	11.40	83	27015	4.9796	ug/kg	99
49)	1,2-Dichloropropane	11.52	63	17898	4.9776	ug/kg	96
50)	1,4-Dioxane	11.83	88	5432	98.9266	ug/kg	88
51)	Bromodichloromethane	11.83	83	20348	4.6634	ug/kg	96
52)	Dibromomethane	11.92	174	10729	4.7153	ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.12	63	9019	5.0039	ug/kg	99
54)	4-Methyl-2-Pentanone	12.16	58	6053	4.0673	ug/kg	95
55)	cis-1,3-Dichloropropene	12.46	75	24651	4.7469	ug/kg	98
56)	Dimethyl Disulfide	12.73	94	22715	4.8062	ug/kg	99
59)	Toluene	12.88	91	70352	5.1755	ug/kg	100
60)	Ethyl Methacrylate	12.98	69	16566	4.2721	ug/kg	97
61)	trans-1,3-Dichloropropene	13.06	75	21958	4.7567	ug/kg	98
62)	1,1,2-Trichloroethane	13.27	97	13946	4.9623	ug/kg	99
63)	2-Hexanone	13.21	43	9604	5.7931	ug/kg#	76
64)	1,3-Dichloropropane	13.58	76	23570	5.0162	ug/kg	99
65)	Tetrachloroethene	13.70	164	14974	5.1513	ug/kg	95
66)	Dibromochloromethane	13.97	129	16760	4.5168	ug/kg	99
67)	1,2-Dibromoethane	14.22	107	14755	4.6736	ug/kg	98
68)	1-Chlorohexane	14.30	91	20670	4.8756	ug/kg	98
69)	Chlorobenzene	14.73	112	48985	5.0629	ug/kg	92
70)	1,1,1,2-Tetrachloroethane	14.76	131	16929	4.8639	ug/kg	98
71)	Ethylbenzene	14.75	106	26175	5.1066	ug/kg	93
72)	m-,p-Xylene	14.84	106	63567	10.0392	ug/kg	100
73)	o-Xylene	15.41	106	31042	5.0638	ug/kg	98
74)	Styrene	15.44	104	49469	4.8358	ug/kg	98
75)	Bromoform	15.94	173	11259	4.4714	ug/kg	99
76)	Isopropylbenzene	15.83	105	78867	5.0131	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.05	83	18560	4.8359	ug/kg	97
80)	1,2,3-Trichloropropane	16.24	110	5395	4.5331	ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.28	53	5384	4.6998	ug/kg	87
82)	n-Propylbenzene	16.33	91	87173	5.0869	ug/kg	100
83)	Bromobenzene	16.47	156	20573	4.9774	ug/kg	70
84)	1,3,5-Trimethylbenzene	16.52	105	69099	5.3095	ug/kg	99
85)	2-Chlorotoluene	16.61	91	53433	5.1586	ug/kg	100
86)	4-Chlorotoluene	16.65	91	52536	4.9980	ug/kg	98
87)	a-Methylstyrene	16.93	118	28075	4.6452	ug/kg	97
88)	tert-Butylbenzene	16.99	134	13929	4.9535	ug/kg	84
89)	1,2,4-Trimethylbenzene	17.04	105	77217	5.5025	ug/kg	98
90)	sec-Butylbenzene	17.25	105	87072	5.0991	ug/kg	99
91)	p-Isopropyltoluene	17.41	119	71470	5.1314	ug/kg	98
92)	1,3-Dichlorobenzene	17.61	146	39541	4.9489	ug/kg	99
93)	1,4-Dichlorobenzene	17.74	146	40332	4.9460	ug/kg	92
94)	n-Butylbenzene	17.94	91	62529	4.9121	ug/kg	98
95)	1,2-Dichlorobenzene	18.23	146	36331	4.7614	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.24	157	4017	4.5753	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.38	180	26108	4.6903	ug/kg	99
98)	Hexachlorobutadiene	20.52	225	12593	4.4593	ug/kg	99
99)	Naphthalene	20.75	128	67736	4.6589	ug/kg	98
100)	1,2,3-Trichlorobenzene	21.06	180	25712	4.7195	ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M974890.D 8260S.M Thu Jun 23 11:44:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974890.D Vial: 5
Acq On : 21 Jun 2016 9:10 Operator: ADC
Sample : WG573367-05 5.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:44 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

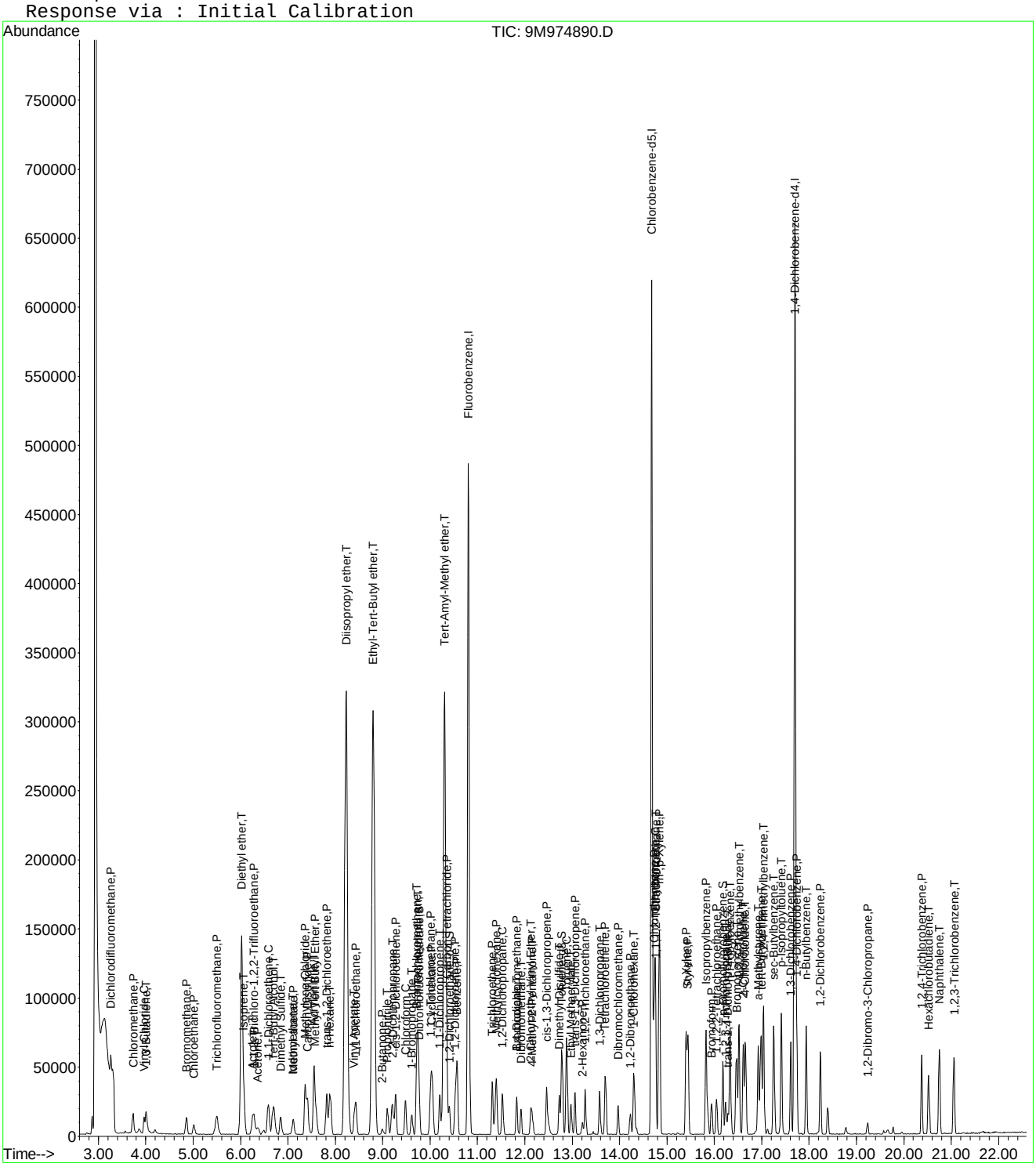

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974890.D Vial: 5
Acq On : 21 Jun 2016 9:10 Operator: ADC
Sample : WG573367-05 5.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	4.4359	11.3	100	0.00
3	P	Chloromethane	5.0000	4.8841	2.3	100	0.00
4	C	Vinyl Chloride	5.0000	5.0209	-0.4	100	0.01
5	T	1,3-Butadiene	5.0000	5.1488	-3.0	100	0.01
6	P	Bromomethane	5.0000	4.7127	5.7	100	0.00
7	P	Chloroethane	5.0000	4.7886	4.2	100	0.00
8	P	Trichlorofluoromethane	5.0000	4.9475	1.0	100	0.00
9	T	Diethyl ether	50.0000	51.9907	-4.0	100	0.00
10	T	Isoprene	5.0000	4.8090	3.8	100	0.00
11	T	Acrolein	25.0000	24.4465	2.2	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.8112	3.8	100	0.00
13	P	Acetone	5.0000	5.8737	-17.5	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.8872	2.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	98.8432	1.2	100	0.00
16	T	Dimethyl Sulfide	5.0000	5.1096	-2.2	100	0.00
17	T	Iodomethane	5.0000	4.8250	3.5	100	0.00
18	P	Methyl acetate	5.0000	5.2474	-4.9	100	0.00
19	P	Methylene Chloride	5.0000	5.9871	-19.7	100	0.00
20	P	Carbon Disulfide	5.0000	5.0546	-1.1	100	0.00
21	T	Acrylonitrile	25.0000	24.8710	0.5	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	4.8993	2.0	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	5.0237	-0.5	100	0.00
24	T	n-Hexane	5.0000	4.8630	2.7	100	0.00
25	T	Diisopropyl ether	50.0000	52.3646	-4.7	100	0.00
26	T	Vinyl Acetate	5.0000	4.5826	8.3	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.8444	3.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.9733	-3.9	100	0.00
29	P	2-Butanone	5.0000	4.9657	0.7	100	0.00
30	T	Propionitrile	50.0000	49.2319	1.5	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8421	3.2	100	0.00
32	P	cis-1,2-Dichloroethene	5.0000	4.8536	2.9	100	0.00
33	C	Chloroform	5.0000	4.9285	1.4	100	0.00
34	T	1-Bromopropane	5.0000	4.5356	9.3	100	0.00
35	T	Bromochloromethane	5.0000	4.9950	0.1	100	0.00
36	T	Tetrahydrofuran	50.0000	51.0294	-2.1	100	0.00
37	S	Dibromofluoromethane	5.0000	5.1445	-2.9	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	5.0241	-0.5	100	0.00
39	P	Cyclohexane	5.0000	5.0361	-0.7	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.9069	1.9	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	51.5988	-3.2	100	0.00
42	P	Carbon Tetrachloride	5.0000	4.8268	3.5	100	0.00
43	S	1,2-Dichloroethane-d4	5.0000	4.9659	0.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	4.9649	0.7	100	0.00
46	P	Benzene	5.0000	4.9979	0.0	100	0.00
47	P	Trichloroethene	5.0000	4.9120	1.8	100	0.00
48	P	Methylcyclohexane	5.0000	4.9796	0.4	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9776	0.4	100	0.00
50	T	1,4-Dioxane	100.0000	98.9266	1.1	100	0.01
51	P	Bromodichloromethane	5.0000	4.6634	6.7	100	0.00
52	T	Dibromomethane	5.0000	4.7153	5.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.0039	-0.1	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	4.0673	18.7	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974890.D Vial: 5
Acq On : 21 Jun 2016 9:10 Operator: ADC
Sample : WG573367-05 5.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	4.7469	5.1	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.8062	3.9	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	5.0000	5.1800	-3.6	100	0.00
59	C	Toluene	5.0000	5.1755	-3.5	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.2721	14.6	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.7567	4.9	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.9623	0.8	100	0.00
63	P	2-Hexanone	5.0000	5.7931	-15.9	100	0.00
64	T	1,3-Dichloropropane	5.0000	5.0162	-0.3	100	0.00
65	P	Tetrachloroethene	5.0000	5.1513	-3.0	100	0.00
66	P	Dibromochloromethane	5.0000	4.5168	9.7	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.6736	6.5	100	0.00
68	T	1-Chlorohexane	5.0000	4.8756	2.5	100	0.00
69	P	Chlorobenzene	5.0000	5.0629	-1.3	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.8639	2.7	100	0.00
71	C	Ethylbenzene	5.0000	5.1067	-2.1	100	0.00
72	P	m-,p-Xylene	10.0000	10.0392	-0.4	100	0.00
73	P	o-Xylene	5.0000	5.0639	-1.3	100	0.00
74	P	Styrene	5.0000	4.8358	3.3	100	0.00
75	P	Bromoform	5.0000	4.4714	10.6	100	0.00
76	P	Isopropylbenzene	5.0000	5.0131	-0.3	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.8359	3.3	100	0.00
79	S	p-Bromofluorobenzene	5.0000	5.4876	-9.8	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.5331	9.3	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.6998	6.0	100	0.00
82	T	n-Propylbenzene	5.0000	5.0869	-1.7	100	0.00
83	T	Bromobenzene	5.0000	4.9774	0.5	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	5.3095	-6.2	100	0.00
85	T	2-Chlorotoluene	5.0000	5.1586	-3.2	100	0.00
86	T	4-Chlorotoluene	5.0000	4.9980	0.0	100	0.00
87	T	a-Methylstyrene	5.0000	4.6452	7.1	100	0.00
88	T	tert-Butylbenzene	5.0000	4.9535	0.9	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	5.5025	-10.0	100	0.00
90	T	sec-Butylbenzene	5.0000	5.0991	-2.0	100	0.00
91	T	p-Isopropyltoluene	5.0000	5.1314	-2.6	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.9489	1.0	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.9460	1.1	100	0.00
94	T	n-Butylbenzene	5.0000	4.9121	1.8	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.7614	4.8	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	4.5753	8.5	100	0.00
97	P	1,2,4-Trichlorobenzene	5.0000	4.6903	6.2	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.4593	10.8	100	0.00
99	T	Naphthalene	5.0000	4.6589	6.8	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.7195	5.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974890.D 8260S.M Thu Jun 23 11:45:23 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974891.D Vial: 6
Acq On : 21 Jun 2016 9:40 Operator: ADC
Sample : WG573367-06 20.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:45:59 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	590655	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	460341	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	233395	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	58138	17.8505 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 35.70%#		
43) 1,2-Dichloroethane-d4	10.41	65	60726	17.5379 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 35.08%#		
58) Toluene-d8	12.79	98	196826	17.2630 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 34.52%#		
79) p-Bromofluorobenzene	16.17	95	78558	18.4328 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 36.86%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	93369	20.1745 ug/kg	99
3) Chloromethane	3.73	50	81137	19.8385 ug/kg	99
4) Vinyl Chloride	3.96	62	60060	20.9114 ug/kg	99
5) 1,3-Butadiene	4.02	54	29519	20.7861 ug/kg	97
6) Bromomethane	4.86	94	45650	17.5800 ug/kg	99
7) Chloroethane	5.01	64	43610	18.4897 ug/kg	97
8) Trichlorofluoromethane	5.50	101	101184	18.9847 ug/kg	100
9) Diethyl ether	6.02	59	204689	71.7955 ug/kg	100
10) Isoprene	6.06	67	66149	17.6022 ug/kg	98
11) Acrolein	6.25	56	7538	35.2739 ug/kg	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	60066	18.7821 ug/kg	99
13) Acetone	6.37	43	22042	16.7681 ug/kg	97
14) 1,1-Dichloroethene	6.58	61	94365	18.4472 ug/kg	99
15) Tert-Butyl Alcohol	6.70	59	83479	160.1126 ug/kg	99
16) Dimethyl Sulfide	6.85	62	36494	17.0954 ug/kg	99
17) Iodomethane	7.10	142	31744	15.7933 ug/kg	97
18) Methyl acetate	7.11	43	54481	18.0832 ug/kg	99
19) Methylene Chloride	7.36	84	60433	17.4776 ug/kg	98
20) Carbon Disulfide	7.42	76	171470	17.7364 ug/kg	99
21) Acrylonitrile	7.55	53	54272	39.0282 ug/kg	98
22) Methyl Tert Butyl Ether	7.57	73	165234	18.6551 ug/kg	100
23) trans-1,2-Dichloroethene	7.82	61	91351	18.7796 ug/kg	99
24) n-Hexane	7.89	57	95831	17.6381 ug/kg	99
25) Diisopropyl ether	8.23	45	792514	70.8268 ug/kg	100
26) Vinyl Acetate	8.40	43	113140	18.7380 ug/kg	99
27) 1,1-Dichloroethane	8.44	63	112562	18.4883 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.80	59	738827	70.6913 ug/kg	99
29) 2-Butanone	8.99	43	30960	17.9535 ug/kg	99
30) Propionitrile	9.10	54	42151	80.7198 ug/kg	94
31) 2,2-Dichloropropane	9.21	77	82383	18.2048 ug/kg	100
32) cis-1,2-Dichloroethene	9.27	96	64966	18.6068 ug/kg	97
33) Chloroform	9.48	83	98839	18.8360 ug/kg	99
34) 1-Bromopropane	9.62	122	9725	17.8376 ug/kg	97
35) Bromochloromethane	9.72	130	43061	18.7469 ug/kg	100
36) Tetrahydrofuran	9.74	42	88969	74.9372 ug/kg	98
38) 1,1,1-Trichloroethane	10.01	97	87852	18.5347 ug/kg	98
39) Cyclohexane	10.04	56	106891	17.8369 ug/kg	98
40) 1,1-Dichloropropene	10.20	75	77485	18.7780 ug/kg	99
41) Tert-Amyl-Methyl ether	10.31	73	595220	71.4844 ug/kg	100
42) Carbon Tetrachloride	10.35	117	83422	18.1430 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M974891.D 8260S.M Thu Jun 23 11:45:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974891.D Vial: 6
Acq On : 21 Jun 2016 9:40 Operator: ADC
Sample : WG573367-06 20.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:45:59 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.53	62	80349	18.6972 ug/kg	99
46)	Benzene	10.57	78	229008	18.3077 ug/kg	100
47)	Trichloroethene	11.32	130	68066	18.5764 ug/kg	99
48)	Methylcyclohexane	11.39	83	92731	17.9788 ug/kg	99
49)	1,2-Dichloropropane	11.53	63	64201	18.7804 ug/kg	99
50)	1,4-Dioxane	11.83	88	8361	160.1622 ug/kg	92
51)	Bromodichloromethane	11.83	83	75602	18.2250 ug/kg	97
52)	Dibromomethane	11.92	174	42069	19.4474 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.12	63	34251	16.3630 ug/kg	96
54)	4-Methyl-2-Pentanone	12.15	58	24267	17.1515 ug/kg	98
55)	cis-1,3-Dichloropropene	12.46	75	89759	18.1802 ug/kg	98
56)	Dimethyl Disulfide	12.72	94	88330	15.9981 ug/kg	97
59)	Toluene	12.88	91	243848	18.5743 ug/kg	100
60)	Ethyl Methacrylate	12.98	69	64315	17.1735 ug/kg	99
61)	trans-1,3-Dichloropropene	13.06	75	84211	18.8888 ug/kg	99
62)	1,1,2-Trichloroethane	13.27	97	51735	19.0607 ug/kg	99
63)	2-Hexanone	13.21	43	42794	17.8054 ug/kg#	76
64)	1,3-Dichloropropane	13.58	76	85957	18.9417 ug/kg	99
65)	Tetrachloroethene	13.71	164	52681	18.7653 ug/kg	99
66)	Dibromochloromethane	13.97	129	65787	18.3576 ug/kg	99
67)	1,2-Dibromoethane	14.22	107	56375	18.4892 ug/kg	98
68)	1-Chlorohexane	14.31	91	73679	17.9949 ug/kg	100
69)	Chlorobenzene	14.73	112	172779	18.4905 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.76	131	61132	18.1862 ug/kg	99
71)	Ethylbenzene	14.75	106	91898	18.5641 ug/kg	99
72)	m-,p-Xylene	14.84	106	223710	36.5823 ug/kg	99
73)	o-Xylene	15.40	106	107458	18.1505 ug/kg	100
74)	Styrene	15.45	104	181967	18.4182 ug/kg	99
75)	Bromoform	15.94	173	45106	18.5479 ug/kg	98
76)	Isopropylbenzene	15.83	105	278522	18.3312 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.05	83	70621	18.7716 ug/kg	99
80)	1,2,3-Trichloropropane	16.24	110	22051	18.9018 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.28	53	20653	18.3921 ug/kg	89
82)	n-Propylbenzene	16.33	91	309198	18.4070 ug/kg	99
83)	Bromobenzene	16.47	156	74843	18.4725 ug/kg	98
84)	1,3,5-Trimethylbenzene	16.52	105	236990	18.5772 ug/kg	100
85)	2-Chlorotoluene	16.61	91	187715	18.4879 ug/kg	90
86)	4-Chlorotoluene	16.66	91	193665	18.7960 ug/kg	90
87)	a-Methylstyrene	16.92	118	101206	17.0830 ug/kg	99
88)	tert-Butylbenzene	16.99	134	51326	18.6208 ug/kg	91
89)	1,2,4-Trimethylbenzene	17.04	105	237903	18.4739 ug/kg	99
90)	sec-Butylbenzene	17.25	105	305289	18.2389 ug/kg	100
91)	p-Isopropyltoluene	17.41	119	256016	18.7521 ug/kg	100
92)	1,3-Dichlorobenzene	17.61	146	142027	18.1344 ug/kg	100
93)	1,4-Dichlorobenzene	17.75	146	140460	17.5721 ug/kg	97
94)	n-Butylbenzene	17.94	91	227652	18.2445 ug/kg	99
95)	1,2-Dichlorobenzene	18.24	146	131666	17.6036 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.23	157	17162	16.6928 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.37	180	97292	17.8309 ug/kg	99
98)	Hexachlorobutadiene	20.52	225	49514	17.8869 ug/kg	97
99)	Naphthalene	20.74	128	260333	18.2668 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.06	180	95245	17.8349 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M974891.D 8260S.M Thu Jun 23 11:45:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974891.D Vial: 6
Acq On : 21 Jun 2016 9:40 Operator: ADC
Sample : WG573367-06 20.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:45 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

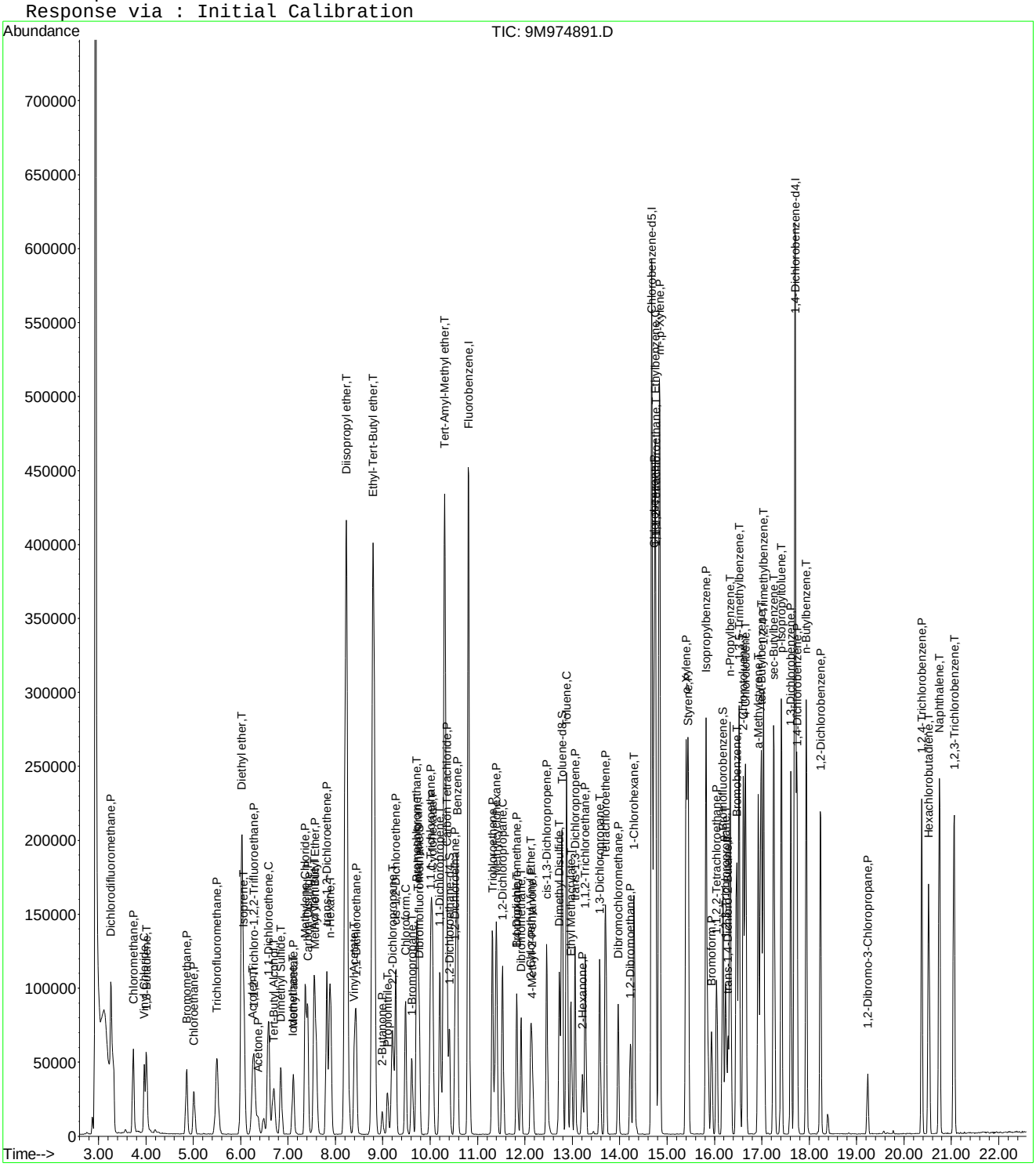

9M974891.D 8260S.M Thu Jun 23 11:45:59 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974892.D Vial: 7
Acq On : 21 Jun 2016 10:11 Operator: ADC
Sample : WG573367-07 50.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:45:59 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	632115	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	491380	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.69	152	247695	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	175579	50.3732 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.74%		
43) 1,2-Dichloroethane-d4	10.41	65	185776	50.1339 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.26%		
58) Toluene-d8	12.79	98	600260	49.3213 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.64%		
79) p-Bromofluorobenzene	16.17	95	230691	51.0041 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	273524	55.2248 ug/kg	99
3) Chloromethane	3.73	50	221213	50.5403 ug/kg	99
4) Vinyl Chloride	3.95	62	158497	51.5652 ug/kg	98
5) 1,3-Butadiene	4.00	54	74622	49.0995 ug/kg	99
6) Bromomethane	4.85	94	134074	48.2458 ug/kg	98
7) Chloroethane	5.01	64	132141	52.3504 ug/kg	98
8) Trichlorofluoromethane	5.49	101	303998	53.2967 ug/kg	100
9) Diethyl ether	6.02	59	309933	101.5800 ug/kg	99
10) Isoprene	6.06	67	210138	52.2498 ug/kg	99
11) Acrolein	6.27	56	11165	48.8196 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	182514	53.3274 ug/kg	100
13) Acetone	6.36	43	61551	49.5261 ug/kg	99
14) 1,1-Dichloroethene	6.58	61	289291	52.8435 ug/kg	99
15) Tert-Butyl Alcohol	6.69	59	108422	194.3137 ug/kg	98
16) Dimethyl Sulfide	6.85	62	118656	51.9379 ug/kg	100
17) Iodomethane	7.10	142	110747	48.1705 ug/kg	99
18) Methyl acetate	7.11	43	162073	50.2665 ug/kg	99
19) Methylene Chloride	7.36	84	181770	49.1212 ug/kg	99
20) Carbon Disulfide	7.42	76	523970	50.6433 ug/kg	99
21) Acrylonitrile	7.55	53	79795	53.6186 ug/kg	99
22) Methyl Tert Butyl Ether	7.57	73	492858	51.9945 ug/kg	99
23) trans-1,2-Dichloroethene	7.82	61	276271	53.0696 ug/kg	100
24) n-Hexane	7.89	57	297208	51.1144 ug/kg	99
25) Diisopropyl ether	8.23	45	1210421	101.0800 ug/kg	99
26) Vinyl Acetate	8.40	43	329902	51.0541 ug/kg	100
27) 1,1-Dichloroethane	8.44	63	342901	52.6273 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.80	59	1131450	101.1571 ug/kg	100
29) 2-Butanone	8.99	43	93230	50.5175 ug/kg	99
30) Propionitrile	9.09	54	58188	104.1223 ug/kg	96
31) 2,2-Dichloropropane	9.21	77	252442	52.1251 ug/kg	100
32) cis-1,2-Dichloroethene	9.27	96	196762	52.6580 ug/kg	96
33) Chloroform	9.48	83	296653	52.8260 ug/kg	100
34) 1-Bromopropane	9.62	122	31487	53.9653 ug/kg	100
35) Bromochloromethane	9.72	130	130048	52.9037 ug/kg	98
36) Tetrahydrofuran	9.74	42	128206	100.9032 ug/kg	100
38) 1,1,1-Trichloroethane	10.01	97	263724	51.9902 ug/kg	99
39) Cyclohexane	10.04	56	336264	52.4321 ug/kg	99
40) 1,1-Dichloropropene	10.20	75	230105	52.1070 ug/kg	100
41) Tert-Amyl-Methyl ether	10.31	73	896061	100.5562 ug/kg	99
42) Carbon Tetrachloride	10.35	117	258397	52.5115 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974892.D Vial: 7
Acq On : 21 Jun 2016 10:11 Operator: ADC
Sample : WG573367-07 50.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:45:59 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.53	62	241003	52.4032	ug/kg	100
46)	Benzene	10.57	78	685623	51.2160	ug/kg	100
47)	Trichloroethene	11.32	130	200958	51.2477	ug/kg	98
48)	Methylcyclohexane	11.39	83	291009	52.7205	ug/kg	99
49)	1,2-Dichloropropane	11.53	63	191043	52.2194	ug/kg	99
50)	1,4-Dioxane	11.82	88	11453	205.0024	ug/kg	92
51)	Bromodichloromethane	11.83	83	230883	52.0072	ug/kg	98
52)	Dibromomethane	11.92	174	124109	53.6092	ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.12	63	113706	48.2140	ug/kg	100
54)	4-Methyl-2-Pentanone	12.15	58	78270	51.6914	ug/kg	98
55)	cis-1,3-Dichloropropene	12.46	75	275664	52.1722	ug/kg	99
56)	Dimethyl Disulfide	12.72	94	291823	46.9155	ug/kg	100
59)	Toluene	12.88	91	723708	51.6438	ug/kg	100
60)	Ethyl Methacrylate	12.98	69	208429	52.1396	ug/kg	98
61)	trans-1,3-Dichloropropene	13.06	75	256999	54.0043	ug/kg	99
62)	1,1,2-Trichloroethane	13.27	97	156664	54.0737	ug/kg	99
63)	2-Hexanone	13.21	43	137640	48.6802	ug/kg	98
64)	1,3-Dichloropropane	13.58	76	255225	52.6893	ug/kg	99
65)	Tetrachloroethene	13.70	164	158383	52.8533	ug/kg	100
66)	Dibromochloromethane	13.97	129	202472	52.9300	ug/kg	100
67)	1,2-Dibromoethane	14.22	107	168773	51.8556	ug/kg	99
68)	1-Chlorohexane	14.31	91	234253	53.5987	ug/kg	99
69)	Chlorobenzene	14.73	112	520717	52.2060	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.76	131	188670	52.5823	ug/kg	99
71)	Ethylbenzene	14.75	106	277388	52.4950	ug/kg	100
72)	m-,p-Xylene	14.84	106	670401	102.7027	ug/kg	99
73)	o-Xylene	15.40	106	328692	52.0117	ug/kg	99
74)	Styrene	15.44	104	563352	53.4190	ug/kg	99
75)	Bromoform	15.94	173	141296	54.4318	ug/kg	99
76)	Isopropylbenzene	15.83	105	841754	51.9015	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.05	83	212261	53.1633	ug/kg	100
80)	1,2,3-Trichloropropane	16.24	110	66381	53.6159	ug/kg	99
81)	trans-1,4-Dichloro-2-Buten	16.28	53	64970	54.5173	ug/kg	92
82)	n-Propylbenzene	16.33	91	930296	52.1845	ug/kg	100
83)	Bromobenzene	16.47	156	226308	52.6319	ug/kg	96
84)	1,3,5-Trimethylbenzene	16.52	105	710529	52.4814	ug/kg	99
85)	2-Chlorotoluene	16.61	91	560935	52.0567	ug/kg	100
86)	4-Chlorotoluene	16.66	91	575574	52.6369	ug/kg	99
87)	a-Methylstyrene	16.92	118	331895	52.7878	ug/kg	100
88)	tert-Butylbenzene	16.99	134	155311	53.0929	ug/kg	96
89)	1,2,4-Trimethylbenzene	17.04	105	714034	53.2517	ug/kg	99
90)	sec-Butylbenzene	17.25	105	922349	51.9226	ug/kg	100
91)	p-Isopropyltoluene	17.41	119	766039	52.8698	ug/kg	100
92)	1,3-Dichlorobenzene	17.61	146	421311	50.6884	ug/kg	100
93)	1,4-Dichlorobenzene	17.75	146	419805	49.4873	ug/kg	99
94)	n-Butylbenzene	17.94	91	675419	51.0044	ug/kg	100
95)	1,2-Dichlorobenzene	18.24	146	403851	50.8772	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.23	157	55314	48.7254	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.37	180	297928	51.4494	ug/kg	100
98)	Hexachlorobutadiene	20.52	225	147297	50.1391	ug/kg	98
99)	Naphthalene	20.74	128	798428	52.7891	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.06	180	290071	51.1808	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M974892.D 8260S.M Thu Jun 23 11:46:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974892.D Vial: 7
Acq On : 21 Jun 2016 10:11 Operator: ADC
Sample : WG573367-07 50.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

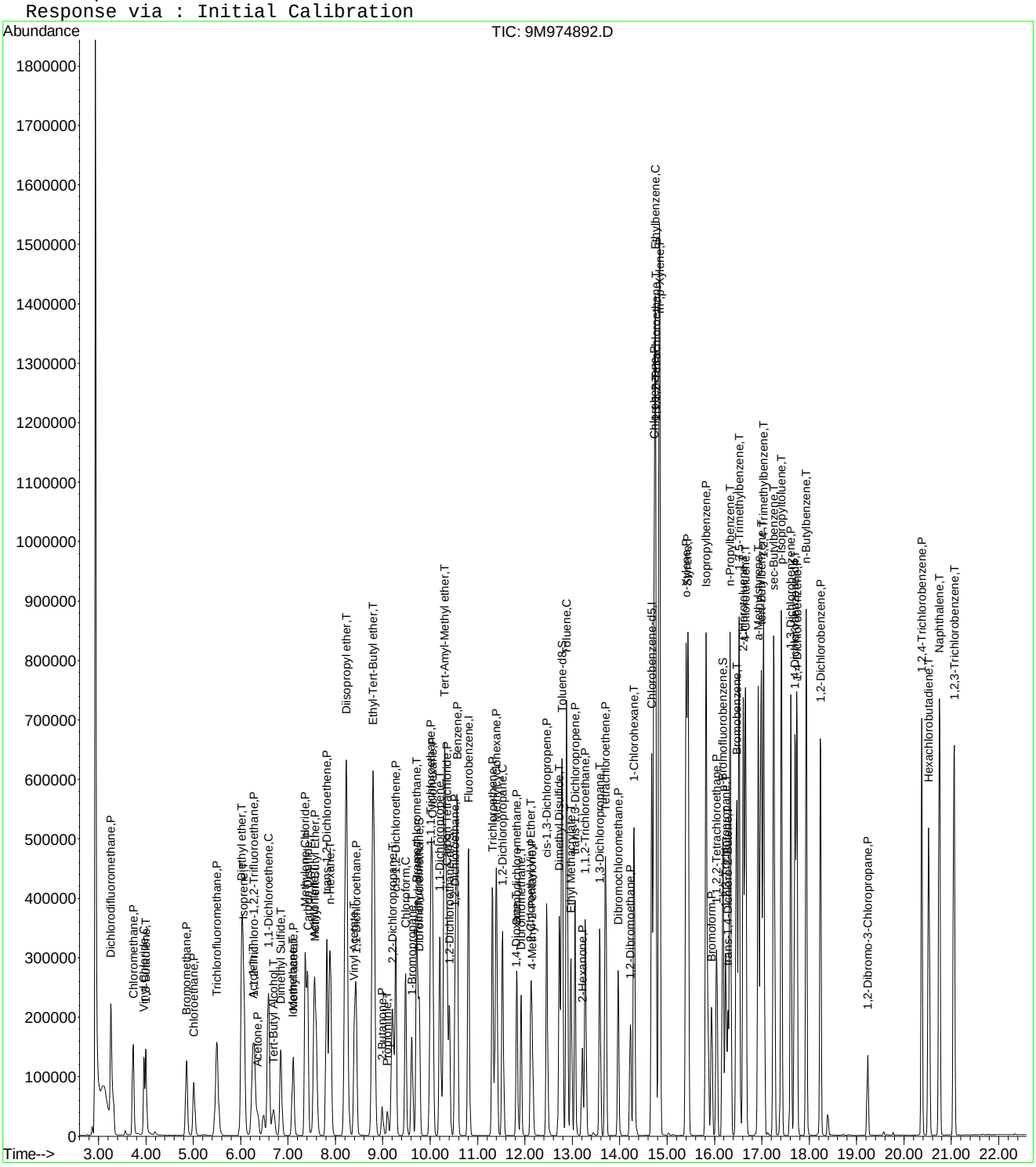

9M974892.D 8260S.M Thu Jun 23 11:46:00 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974893.D Vial: 8
Acq On : 21 Jun 2016 10:41 Operator: ADC
Sample : WG573367-08 100.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46:00 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	567049	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	449590	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	232425	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	315279	100.8318 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 201.66%#		
43) 1,2-Dichloroethane-d4	10.41	65	331408	99.6966 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 199.40%#		
58) Toluene-d8	12.78	98	1070358	96.1225 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 192.24%#		
79) p-Bromofluorobenzene	16.18	95	422182	99.4738 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 198.94%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	495794	111.5874 ug/kg	99
3) Chloromethane	3.73	50	349124	88.9165 ug/kg	99
4) Vinyl Chloride	3.96	62	290501	105.3559 ug/kg	99
5) 1,3-Butadiene	4.00	54	145280	106.5593 ug/kg	99
6) Bromomethane	4.85	94	244835	98.2119 ug/kg	98
7) Chloroethane	5.01	64	235983	104.2171 ug/kg	100
8) Trichlorofluoromethane	5.50	101	541027	105.7363 ug/kg	100
9) Diethyl ether	6.03	59	563106	205.7341 ug/kg	99
10) Isoprene	6.06	67	372164	103.1550 ug/kg	100
11) Acrolein	6.26	56	20075	97.8513 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	320916	104.5252 ug/kg	100
13) Acetone	6.36	43	107667	99.9811 ug/kg	100
14) 1,1-Dichloroethene	6.59	61	508007	103.4432 ug/kg	100
15) Tert-Butyl Alcohol	6.70	59	216860	433.2524 ug/kg	97
16) Dimethyl Sulfide	6.85	62	219012	106.8656 ug/kg	99
17) Iodomethane	7.10	142	204532	97.6186 ug/kg	100
18) Methyl acetate	7.11	43	292767	101.2198 ug/kg	99
19) Methylene Chloride	7.37	84	329734	99.3312 ug/kg	99
20) Carbon Disulfide	7.41	76	941617	101.4532 ug/kg	99
21) Acrylonitrile	7.55	53	144601	108.3146 ug/kg	100
22) Methyl Tert Butyl Ether	7.57	73	904919	106.4195 ug/kg	99
23) trans-1,2-Dichloroethene	7.81	61	496558	106.3301 ug/kg	99
24) n-Hexane	7.88	57	532368	102.0635 ug/kg	99
25) Diisopropyl ether	8.23	45	2200423	204.8379 ug/kg	100
26) Vinyl Acetate	8.40	43	589100	101.6272 ug/kg	100
27) 1,1-Dichloroethane	8.43	63	615113	105.2379 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.80	59	2069657	206.2694 ug/kg	99
29) 2-Butanone	8.99	43	169138	102.1651 ug/kg	99
30) Propionitrile	9.10	54	108744	216.9157 ug/kg	96
31) 2,2-Dichloropropane	9.20	77	455772	104.9079 ug/kg	99
32) cis-1,2-Dichloroethene	9.28	96	354045	105.6227 ug/kg	98
33) Chloroform	9.48	83	539671	107.1282 ug/kg	99
34) 1-Bromopropane	9.61	122	56852	108.6187 ug/kg	99
35) Bromochloromethane	9.72	130	235267	106.6888 ug/kg	100
36) Tetrahydrofuran	9.74	42	229441	201.2997 ug/kg	99
38) 1,1,1-Trichloroethane	10.01	97	475952	104.5949 ug/kg	99
39) Cyclohexane	10.04	56	594668	103.3635 ug/kg	99
40) 1,1-Dichloropropene	10.20	75	411294	103.8241 ug/kg	100
41) Tert-Amyl-Methyl ether	10.31	73	1637917	204.8985 ug/kg	100
42) Carbon Tetrachloride	10.35	117	460621	104.3485 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M974893.D 8260S.M Thu Jun 23 11:46:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974893.D Vial: 8
Acq On : 21 Jun 2016 10:41 Operator: ADC
Sample : WG573367-08 100.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46:00 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.52	62	436407	105.7797 ug/kg	100
46)	Benzene	10.56	78	1222234	101.7771 ug/kg	100
47)	Trichloroethene	11.31	130	368556	104.7727 ug/kg	100
48)	Methylcyclohexane	11.40	83	515230	104.0519 ug/kg	99
49)	1,2-Dichloropropane	11.52	63	352659	107.4561 ug/kg	99
50)	1,4-Dioxane	11.82	88	23489	468.6835 ug/kg	93
51)	Bromodichloromethane	11.83	83	423673	106.3843 ug/kg	99
52)	Dibromomethane	11.91	174	224341	108.0240 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.13	63	205602	95.9539 ug/kg	98
54)	4-Methyl-2-Pentanone	12.15	58	142343	104.7935 ug/kg	99
55)	cis-1,3-Dichloropropene	12.46	75	510732	107.7526 ug/kg	99
56)	Dimethyl Disulfide	12.73	94	553945	97.9530 ug/kg	100
59)	Toluene	12.89	91	1304172	101.7164 ug/kg	100
60)	Ethyl Methacrylate	12.97	69	391036	106.9122 ug/kg	100
61)	trans-1,3-Dichloropropene	13.05	75	468960	107.7044 ug/kg	100
62)	1,1,2-Trichloroethane	13.28	97	283799	107.0604 ug/kg	100
63)	2-Hexanone	13.21	43	257503	96.9590 ug/kg	99
64)	1,3-Dichloropropane	13.58	76	462439	104.3409 ug/kg	100
65)	Tetrachloroethene	13.70	164	284337	103.7045 ug/kg	100
66)	Dibromochloromethane	13.97	129	375957	107.4177 ug/kg	99
67)	1,2-Dibromoethane	14.23	107	310949	104.4198 ug/kg	99
68)	1-Chlorohexane	14.30	91	422470	105.6491 ug/kg	100
69)	Chlorobenzene	14.72	112	937334	102.7103 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.75	131	348489	106.1516 ug/kg	98
71)	Ethylbenzene	14.75	106	506825	104.8309 ug/kg	98
72)	m-,p-Xylene	14.84	106	1204416	201.6622 ug/kg	99
73)	o-Xylene	15.41	106	602285	104.1633 ug/kg	100
74)	Styrene	15.44	104	1030900	106.8399 ug/kg	99
75)	Bromoform	15.95	173	261629	110.1564 ug/kg	99
76)	Isopropylbenzene	15.83	105	1523946	102.6987 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.05	83	394380	105.2668 ug/kg	100
80)	1,2,3-Trichloropropane	16.24	110	122714	105.6279 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.28	53	126445	113.0727 ug/kg	98
82)	n-Propylbenzene	16.34	91	1687085	100.8537 ug/kg	100
83)	Bromobenzene	16.47	156	417098	103.3766 ug/kg	99
84)	1,3,5-Trimethylbenzene	16.52	105	1309383	103.0682 ug/kg	99
85)	2-Chlorotoluene	16.61	91	1067693	105.5953 ug/kg	99
86)	4-Chlorotoluene	16.65	91	1016513	99.0686 ug/kg	99
87)	a-Methylstyrene	16.93	118	622423	105.5001 ug/kg	97
88)	tert-Butylbenzene	16.99	134	285485	104.0045 ug/kg	89
89)	1,2,4-Trimethylbenzene	17.04	105	1328397	106.1194 ug/kg	99
90)	sec-Butylbenzene	17.25	105	1678148	100.6760 ug/kg	99
91)	p-Isopropyltoluene	17.41	119	1426517	104.9224 ug/kg	99
92)	1,3-Dichlorobenzene	17.61	146	798662	102.4008 ug/kg	99
93)	1,4-Dichlorobenzene	17.74	146	794162	99.7676 ug/kg	99
94)	n-Butylbenzene	17.94	91	1277673	102.8225 ug/kg	100
95)	1,2-Dichlorobenzene	18.24	146	772945	103.7731 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.24	157	116750	108.3919 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.38	180	604733	111.2929 ug/kg	100
98)	Hexachlorobutadiene	20.53	225	288735	104.7409 ug/kg	99
99)	Naphthalene	20.75	128	1655620	116.6551 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.05	180	609790	114.6614 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M974893.D 8260S.M Thu Jun 23 11:46:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974893.D Vial: 8
Acq On : 21 Jun 2016 10:41 Operator: ADC
Sample : WG573367-08 100.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

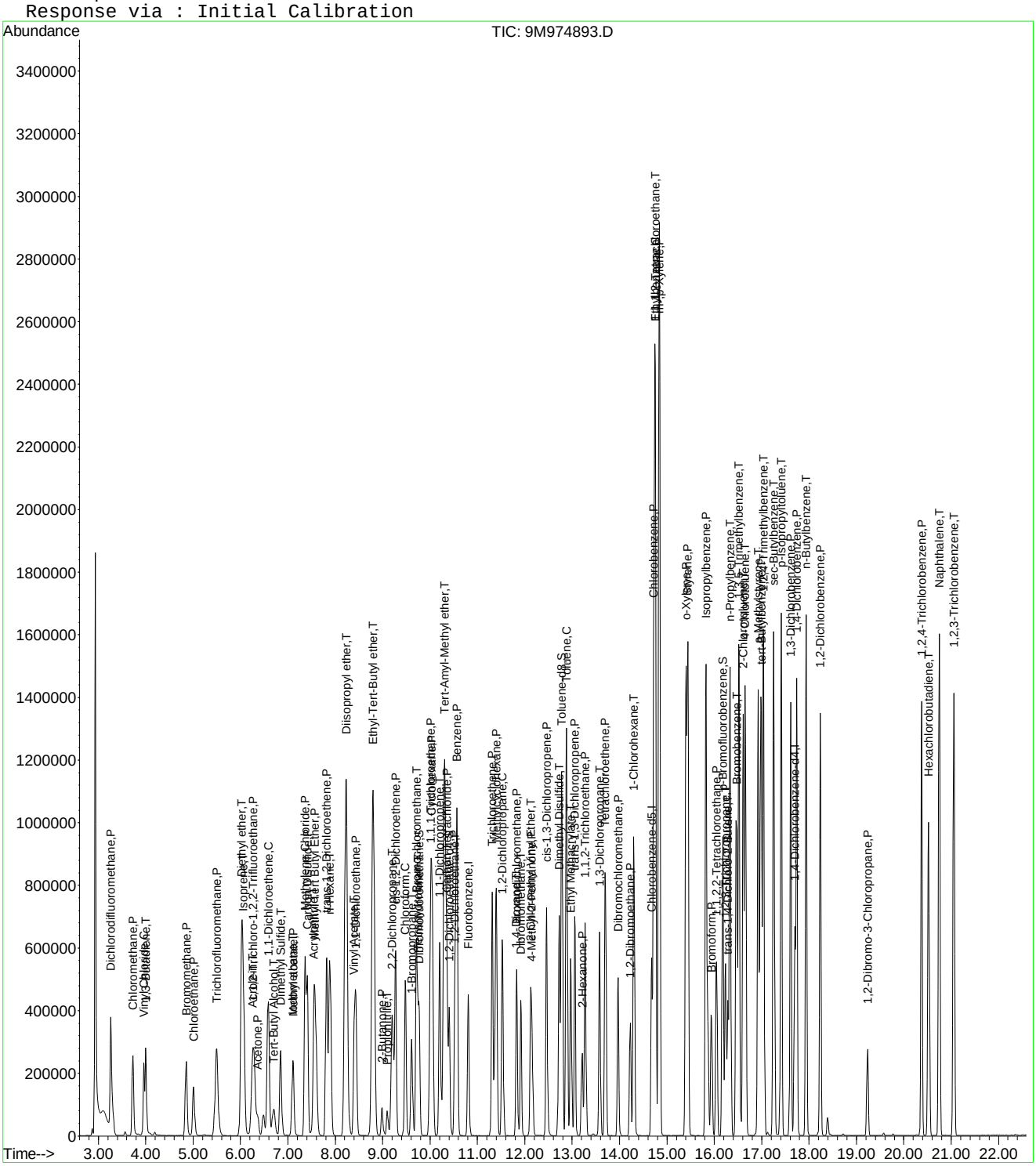

9M974893.D 8260S.M Thu Jun 23 11:46:01 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974894.D Vial: 9
Acq On : 21 Jun 2016 11:11 Operator: ADC
Sample : WG573367-09 200.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46:01 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	610597	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	491665	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	265337	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	684909	203.4236 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 406.84%#		
43) 1,2-Dichloroethane-d4	10.40	65	718489	200.7259 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 401.46%#		
58) Toluene-d8	12.78	98	2280659	187.2852 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 374.58%#		
79) p-Bromofluorobenzene	16.18	95	936105	193.2051 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 386.42%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	1031784	215.6595 ug/kg	99
3) Chloromethane	3.72	50	722519	170.8904 ug/kg	99
4) Vinyl Chloride	3.96	62	569236	191.7209 ug/kg	99
5) 1,3-Butadiene	4.00	54	276326	188.2231 ug/kg	98
6) Bromomethane	4.85	94	527130	196.3696 ug/kg	98
7) Chloroethane	5.00	64	501677	205.7540 ug/kg	99
8) Trichlorofluoromethane	5.50	101	1131983	205.4522 ug/kg	100
10) Isoprene	6.06	67	797406	205.2585 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	671497	203.1139 ug/kg	99
13) Acetone	6.36	43	219180	192.2122 ug/kg	99
14) 1,1-Dichloroethene	6.58	61	1069581	202.2609 ug/kg	100
15) Tert-Butyl Alcohol	6.70	59	458	0.8498 ug/kg#	61
16) Dimethyl Sulfide	6.85	62	467706	211.9379 ug/kg	100
17) Iodomethane	7.10	142	448716	197.3666 ug/kg	98
18) Methyl acetate	7.11	43	612825	196.7641 ug/kg	98
19) Methylene Chloride	7.36	84	687948	192.4614 ug/kg	98
20) Carbon Disulfide	7.41	76	1972057	197.3226 ug/kg	99
21) Acrylonitrile	7.57	53	19717	13.7158 ug/kg#	30
22) Methyl Tert Butyl Ether	7.58	73	1897414	207.2237 ug/kg	100
23) trans-1,2-Dichloroethene	7.81	61	1025217	203.8769 ug/kg	99
24) n-Hexane	7.88	57	1107338	197.1536 ug/kg	100
26) Vinyl Acetate	8.40	43	1328908	212.9030 ug/kg	99
27) 1,1-Dichloroethane	8.43	63	1277025	202.9003 ug/kg	99
29) 2-Butanone	8.99	43	356521	199.9920 ug/kg	98
31) 2,2-Dichloropropane	9.20	77	946895	202.4083 ug/kg	100
32) cis-1,2-Dichloroethene	9.27	96	736042	203.9234 ug/kg	98
33) Chloroform	9.48	83	1117634	206.0346 ug/kg	100
34) 1-Bromopropane	9.61	122	119775	212.5158 ug/kg	98
35) Bromochloromethane	9.72	130	500178	210.6436 ug/kg	99
36) Tetrahydrofuran	9.75	42	2858	2.3286 ug/kg#	76
38) 1,1,1-Trichloroethane	10.01	97	994732	203.0108 ug/kg	100
39) Cyclohexane	10.03	56	1262759	203.8352 ug/kg	100
40) 1,1-Dichloropropene	10.20	75	858618	201.2852 ug/kg	100
42) Carbon Tetrachloride	10.35	117	970419	204.1587 ug/kg	99
45) 1,2-Dichloroethane	10.53	62	914402	205.8324 ug/kg	99
46) Benzene	10.56	78	2524423	195.2198 ug/kg	99
47) Trichloroethene	11.31	130	760661	200.8177 ug/kg	99
48) Methylcyclohexane	11.40	83	1091006	204.6171 ug/kg	99
49) 1,2-Dichloropropane	11.52	63	732964	207.4077 ug/kg	100
50) 1,4-Dioxane	11.83	88	916	16.9737 ug/kg#	10

(#) = qualifier out of range (m) = manual integration
9M974894.D 8260S.M Thu Jun 23 11:46:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974894.D Vial: 9
Acq On : 21 Jun 2016 11:11 Operator: ADC
Sample : WG573367-09 200.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46:01 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
51)	Bromodichloromethane	11.83	83	894531	208.5970 ug/kg	99
52)	Dibromomethane	11.92	174	469253	209.8383 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.12	63	452158	194.7090 ug/kg	99
54)	4-Methyl-2-Pentanone	12.15	58	314728	215.1789 ug/kg	99
55)	cis-1,3-Dichloropropene	12.46	75	1061668	208.0125 ug/kg	100
56)	Dimethyl Disulfide	12.73	94	1204264	196.5533 ug/kg	100
59)	Toluene	12.88	91	2672298	190.5848 ug/kg	99
60)	Ethyl Methacrylate	12.97	69	840546	210.1451 ug/kg	100
61)	trans-1,3-Dichloropropene	13.06	75	982367	206.3092 ug/kg	100
62)	1,1,2-Trichloroethane	13.27	97	591430	204.0181 ug/kg	99
63)	2-Hexanone	13.21	43	568503	193.2273 ug/kg	99
64)	1,3-Dichloropropane	13.58	76	970641	200.2655 ug/kg	99
65)	Tetrachloroethene	13.71	164	594933	198.4173 ug/kg	100
66)	Dibromochloromethane	13.97	129	796041	207.9796 ug/kg	99
67)	1,2-Dibromoethane	14.22	107	654383	200.9431 ug/kg	99
68)	1-Chlorohexane	14.31	91	891919	203.9588 ug/kg	100
69)	Chlorobenzene	14.73	112	1927980	193.1833 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.75	131	726205	202.2758 ug/kg	99
71)	Ethylbenzene	14.75	106	1046081	197.8535 ug/kg	96
72)	m-,p-Xylene	14.84	106	2460606	376.7363 ug/kg	98
73)	o-Xylene	15.41	106	1263689	199.8482 ug/kg	99
74)	Styrene	15.44	104	2158266	204.5358 ug/kg	98
75)	Bromoform	15.94	173	577279	222.2578 ug/kg	99
76)	Isopropylbenzene	15.83	105	3186997	196.3922 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.05	83	889445	207.9603 ug/kg	100
80)	1,2,3-Trichloropropane	16.24	110	272953	205.8057 ug/kg	99
81)	trans-1,4-Dichloro-2-Buten	16.28	53	291596	228.4139 ug/kg	99
82)	n-Propylbenzene	16.33	91	3546042	185.6880 ug/kg	98
83)	Bromobenzene	16.47	156	888445	192.8855 ug/kg	98
84)	1,3,5-Trimethylbenzene	16.52	105	2808244	193.6324 ug/kg	99
85)	2-Chlorotoluene	16.61	91	2210421	191.4954 ug/kg	99
86)	4-Chlorotoluene	16.65	91	2208130	188.5093 ug/kg	100
87)	a-Methylstyrene	16.93	118	1402628	208.2547 ug/kg	99
88)	tert-Butylbenzene	16.99	134	616621	196.7761 ug/kg	95
89)	1,2,4-Trimethylbenzene	17.04	105	2843963	199.4920 ug/kg	99
90)	sec-Butylbenzene	17.25	105	3607956	189.6017 ug/kg	99
91)	p-Isopropyltoluene	17.41	119	3059889	197.1434 ug/kg	99
92)	1,3-Dichlorobenzene	17.61	146	1718529	193.0112 ug/kg	98
93)	1,4-Dichlorobenzene	17.74	146	1724231	189.7410 ug/kg	100
94)	n-Butylbenzene	17.94	91	2738624	193.0572 ug/kg	100
95)	1,2-Dichlorobenzene	18.23	146	1692978	199.1006 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.24	157	249489	202.0540 ug/kg	99
97)	1,2,4-Trichlorobenzene	20.38	180	1277147	205.8873 ug/kg	100
98)	Hexachlorobutadiene	20.52	225	613219	194.8577 ug/kg	99
99)	Naphthalene	20.75	128	3281916	202.5608 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.05	180	1249266	205.7676 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M974894.D 8260S.M Thu Jun 23 11:46:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974894.D Vial: 9
Acq On : 21 Jun 2016 11:11 Operator: ADC
Sample : WG573367-09 200.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

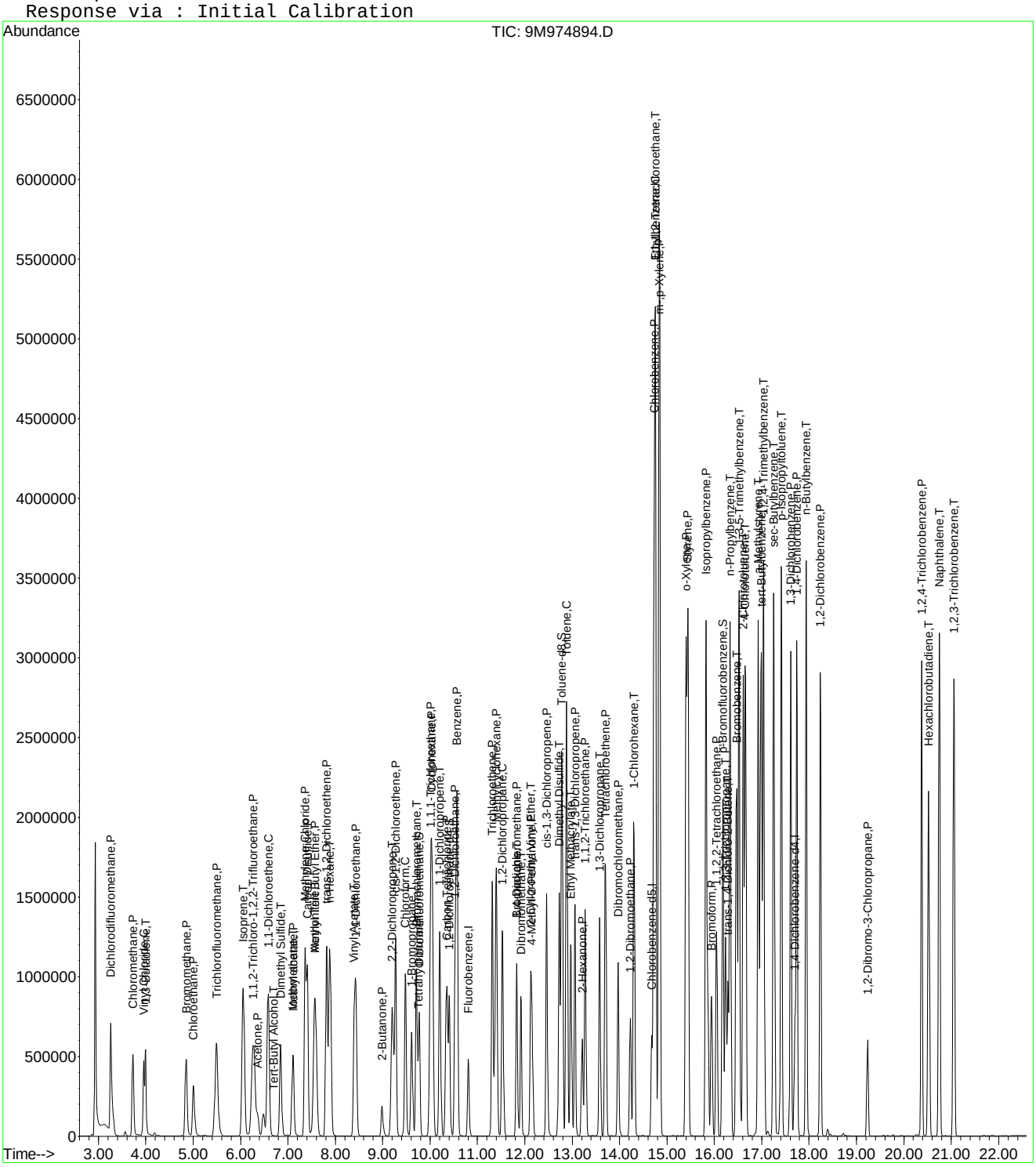

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974895.D Vial: 10
Acq On : 21 Jun 2016 11:41 Operator: ADC
Sample : WG573367-10 300.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46:02 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	693797	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	559670	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	298130	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	1181794	308.9103 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 617.82%#		
43) 1,2-Dichloroethane-d4	10.40	65	1229242	302.2337 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 604.46%#		
58) Toluene-d8	12.78	98	3841067	277.0973 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 554.20%#		
79) p-Bromofluorobenzene	16.18	95	1607970	295.3684 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 590.74%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	1739842	320.0456 ug/kg	99
3) Chloromethane	3.72	50	1339104	278.7436 ug/kg	100
4) Vinyl Chloride	3.95	62	895419	265.4152 ug/kg	98
5) 1,3-Butadiene	3.99	54	468611	280.9222 ug/kg	99
6) Bromomethane	4.83	94	931511	305.3984 ug/kg	97
7) Chloroethane	4.99	64	877300	316.6609 ug/kg	99
8) Trichlorofluoromethane	5.49	101	1982960	316.7431 ug/kg	99
9) Diethyl ether	6.01	59	1070715	319.7261 ug/kg	99
10) Isoprene	6.05	67	1430224	324.0022 ug/kg	99
11) Acrolein	6.26	56	44791	178.4391 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	1173829	312.4803 ug/kg	100
13) Acetone	6.36	43	399677	310.6388 ug/kg	99
14) 1,1-Dichloroethene	6.57	61	1883747	313.5039 ug/kg	100
15) Tert-Butyl Alcohol	6.72	59	386083	630.4205 ug/kg	98
16) Dimethyl Sulfide	6.84	62	856086	341.4094 ug/kg	99
17) Iodomethane	7.10	142	804719	310.6594 ug/kg	98
18) Methyl acetate	7.11	43	1121778	316.9849 ug/kg	99
19) Methylene Chloride	7.36	84	1207066	297.1949 ug/kg	98
20) Carbon Disulfide	7.41	76	3508953	308.9990 ug/kg	99
21) Acrylonitrile	7.54	53	294097	180.0505 ug/kg	96
22) Methyl Tert Butyl Ether	7.56	73	3346311	321.6369 ug/kg	99
23) trans-1,2-Dichloroethene	7.81	61	1807803	316.3920 ug/kg	100
24) n-Hexane	7.88	57	1902899	298.1691 ug/kg	100
25) Diisopropyl ether	8.23	45	4140592	315.0321 ug/kg	99
26) Vinyl Acetate	8.40	43	2288653	322.6926 ug/kg	99
27) 1,1-Dichloroethane	8.43	63	2239146	313.1036 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.80	59	3931567	320.2509 ug/kg	99
29) 2-Butanone	8.99	43	654603	323.1675 ug/kg	98
30) Propionitrile	9.09	54	207822	338.8172 ug/kg	97
31) 2,2-Dichloropropane	9.20	77	1667883	313.7720 ug/kg	99
32) cis-1,2-Dichloroethene	9.27	96	1295080	315.7791 ug/kg	98
33) Chloroform	9.47	83	1966436	319.0382 ug/kg	99
34) 1-Bromopropane	9.61	122	218198	340.7203 ug/kg	100
35) Bromochloromethane	9.71	130	874757	324.2152 ug/kg	99
36) Tetrahydrofuran	9.74	42	435853	312.5361 ug/kg	100
38) 1,1,1-Trichloroethane	10.01	97	1760733	316.2488 ug/kg	100
39) Cyclohexane	10.03	56	2254003	320.2104 ug/kg	100
40) 1,1-Dichloropropene	10.20	75	1500982	309.6774 ug/kg	99
41) Tert-Amyl-Methyl ether	10.31	73	3117109	318.7037 ug/kg	99
42) Carbon Tetrachloride	10.35	117	1700997	314.9447 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974895.D Vial: 10
Acq On : 21 Jun 2016 11:41 Operator: ADC
Sample : WG573367-10 300.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46:02 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.53	62	1604123	317.7872 ug/kg	99
46)	Benzene	10.56	78	4335362	295.0593 ug/kg	98
47)	Trichloroethene	11.31	130	1331484	309.3634 ug/kg	99
48)	Methylcyclohexane	11.40	83	1923698	317.5220 ug/kg	99
49)	1,2-Dichloropropane	11.52	63	1296486	322.8734 ug/kg	100
50)	1,4-Dioxane	11.82	88	38669	630.6178 ug/kg	93
51)	Bromodichloromethane	11.83	83	1586708	325.6356 ug/kg	99
52)	Dibromomethane	11.92	174	821863	323.4442 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.12	63	831260	314.2841 ug/kg	99
54)	4-Methyl-2-Pentanone	12.16	58	583990	351.3921 ug/kg	98
55)	cis-1,3-Dichloropropene	12.46	75	1886838	325.3550 ug/kg	100
56)	Dimethyl Disulfide	12.73	94	2178193	312.1786 ug/kg	98
59)	Toluene	12.88	91	4594585	287.8637 ug/kg	99
60)	Ethyl Methacrylate	12.97	69	1535644	337.2762 ug/kg	99
61)	trans-1,3-Dichloropropene	13.06	75	1737856	320.6239 ug/kg	100
62)	1,1,2-Trichloroethane	13.27	97	1054336	319.5080 ug/kg	100
63)	2-Hexanone	13.21	43	1051880	312.5351 ug/kg	98
64)	1,3-Dichloropropane	13.58	76	1720156	311.7832 ug/kg	100
65)	Tetrachloroethene	13.71	164	1033137	302.6960 ug/kg	100
66)	Dibromochloromethane	13.97	129	1427553	327.6534 ug/kg	99
67)	1,2-Dibromoethane	14.22	107	1173037	316.4391 ug/kg	100
68)	1-Chlorohexane	14.31	91	1579844	317.3720 ug/kg	99
69)	Chlorobenzene	14.73	112	3310074	291.3680 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.76	131	1278554	312.8535 ug/kg	99
71)	Ethylbenzene	14.75	106	1797388	298.6466 ug/kg	94
72)	m-,p-Xylene	14.84	106	4147365	557.8339 ug/kg	95
73)	o-Xylene	15.41	106	2199283	305.5473 ug/kg	98
74)	Styrene	15.44	104	3741782	311.5158 ug/kg	97
75)	Bromoform	15.94	173	1055744	357.0814 ug/kg	99
76)	Isopropylbenzene	15.83	105	5449808	295.0265 ug/kg	97
78)	1,1,2,2-Tetrachloroethane	16.05	83	1579015	328.5790 ug/kg	99
80)	1,2,3-Trichloropropane	16.24	110	485595	325.8635 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.28	53	522975	364.5979 ug/kg	99
82)	n-Propylbenzene	16.33	91	5943461	276.9948 ug/kg	97
83)	Bromobenzene	16.47	156	1566350	302.6564 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.52	105	4696882	288.2338 ug/kg	97
85)	2-Chlorotoluene	16.61	91	3719113	286.7575 ug/kg	88
86)	4-Chlorotoluene	16.66	91	3750741	284.9820 ug/kg	90
87)	a-Methylstyrene	16.93	118	2417321	319.4322 ug/kg	97
88)	tert-Butylbenzene	16.99	134	1048333	297.7456 ug/kg	95
89)	1,2,4-Trimethylbenzene	17.04	105	4673567	292.0256 ug/kg	98
90)	sec-Butylbenzene	17.25	105	5894090	275.6702 ug/kg	97
91)	p-Isopropyltoluene	17.41	119	4937681	283.1338 ug/kg	98
92)	1,3-Dichlorobenzene	17.61	146	2876768	287.5561 ug/kg	98
93)	1,4-Dichlorobenzene	17.74	146	2876761	281.7485 ug/kg	100
94)	n-Butylbenzene	17.94	91	4363156	273.7452 ug/kg	99
95)	1,2-Dichlorobenzene	18.24	146	2832093	296.4292 ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.24	157	408721	294.1585 ug/kg	99
97)	1,2,4-Trichlorobenzene	20.38	180	1969915	282.6365 ug/kg	99
98)	Hexachlorobutadiene	20.52	225	995776	281.6149 ug/kg	99
99)	Naphthalene	20.75	128	4937627	271.2304 ug/kg	97
100)	1,2,3-Trichlorobenzene	21.06	180	1911925	280.2754 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M974895.D 8260S.M Thu Jun 23 11:46:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974895.D Vial: 10
Acq On : 21 Jun 2016 11:41 Operator: ADC
Sample : WG573367-10 300.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

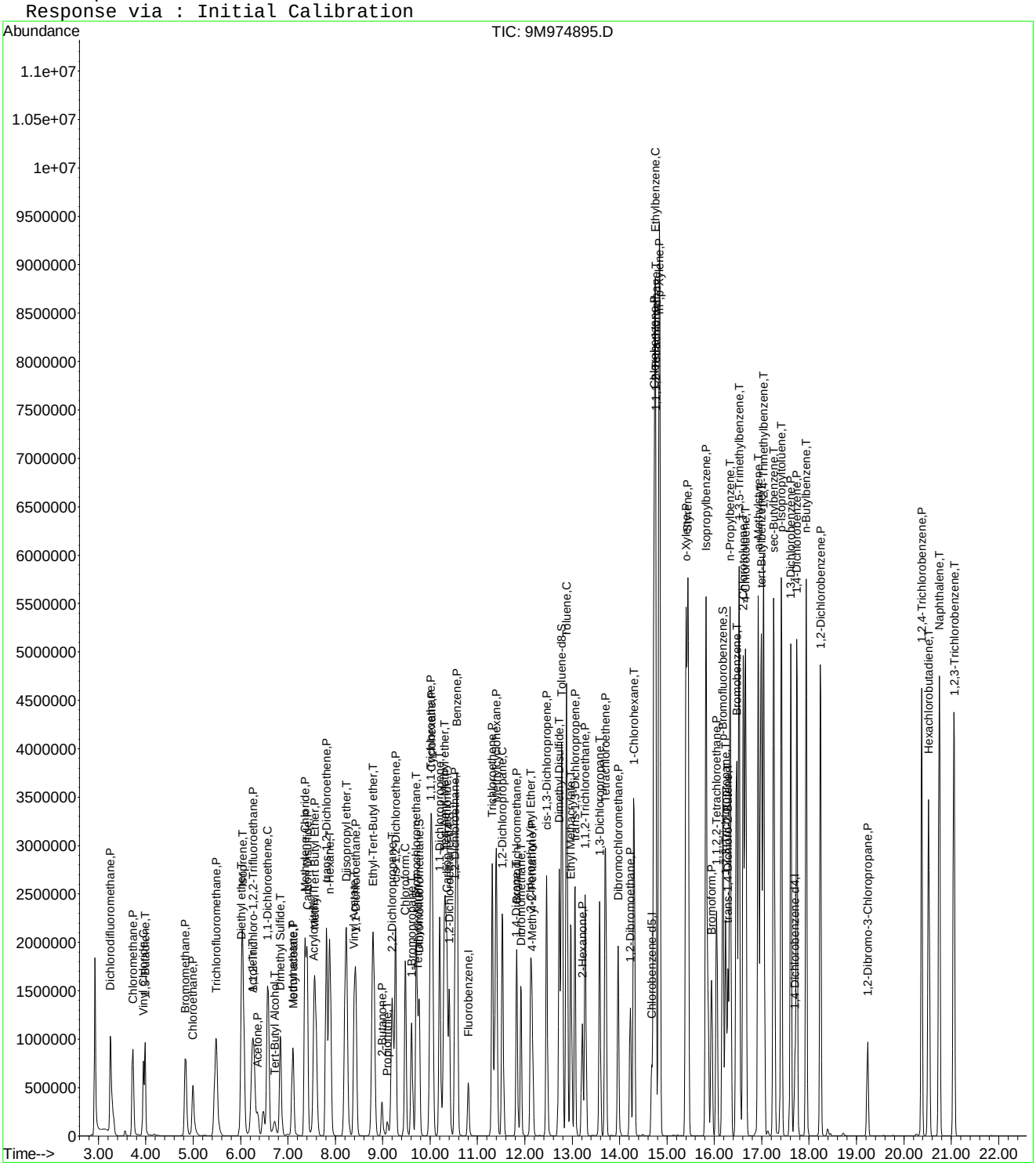

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974898.D Vial: 13
Acq On : 21 Jun 2016 13:12 Operator: ADC
Sample : WG573367-02 0.5ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:41:23 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	586697	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	460054	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	227703	50.00 ug/kg	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.77	111	214	0.0661 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.14%#	
43) 1,2-Dichloroethane-d4	10.41	65	605	0.1759 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.36%#	
58) Toluene-d8	12.79	98	4626	0.4060 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.82%#	
79) p-Bromofluorobenzene	16.18	95	4337	1.0431 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.08%#	

Target Compounds					Qvalue
3) Chloromethane	3.72	50	2941	0.7239 ug/kg	95
4) Vinyl Chloride	3.96	62	1189	0.4168 ug/kg#	44
5) 1,3-Butadiene	4.01	54	778	0.5515 ug/kg#	24
6) Bromomethane	4.85	94	1530	0.5932 ug/kg	83
13) Acetone	6.37	43	6464	2.4223 ug/kg	99
17) Iodomethane	7.10	142	384	1.6411 ug/kg#	36
19) Methylene Chloride	7.36	84	2629	0.7655 ug/kg	91
20) Carbon Disulfide	7.42	76	6195	0.6451 ug/kg#	74
22) Methyl Tert Butyl Ether	7.59	73	3560	0.4046 ug/kg#	59
24) n-Hexane	7.88	57	3726	0.6904 ug/kg	90
26) Vinyl Acetate	8.41	43	2777	0.4630 ug/kg#	76
27) 1,1-Dichloroethane	8.43	63	2500	0.4134 ug/kg#	51
33) Chloroform	9.47	83	2340	0.4489 ug/kg	89
36) Tetrahydrofuran	9.74	42	2452	2.0792 ug/kg#	84
46) Benzene	10.57	78	6833	0.5499 ug/kg#	86
47) Trichloroethene	11.31	130	1860	0.5111 ug/kg	92
48) Methylcyclohexane	11.40	83	2058	0.4017 ug/kg	86
56) Dimethyl Disulfide	12.72	94	1910	1.5069 ug/kg	87
59) Toluene	12.88	91	14706	1.1209 ug/kg	100
63) 2-Hexanone	13.22	43	244	2.5565 ug/kg#	30
64) 1,3-Dichloropropane	13.58	76	1917	0.4227 ug/kg	84
66) Dibromochloromethane	13.97	129	1490	0.4160 ug/kg	84
67) 1,2-Dibromoethane	14.22	107	1237	0.4059 ug/kg	89
68) 1-Chlorohexane	14.31	91	1976	0.4829 ug/kg	98
69) Chlorobenzene	14.73	112	5450	0.5836 ug/kg	99
70) 1,1,1,2-Tetrachloroethane	14.76	131	1437	0.4278 ug/kg	82
71) Ethylbenzene	14.75	106	2661	0.5379 ug/kg	90
72) m-,p-Xylene	14.84	106	6920	1.1323 ug/kg	93
73) o-Xylene	15.41	106	3517	0.5944 ug/kg	94
74) Styrene	15.45	104	5558	0.5629 ug/kg	96
76) Isopropylbenzene	15.83	105	9278	0.6110 ug/kg	98
78) 1,1,2,2-Tetrachloroethane	16.05	83	1839	0.5010 ug/kg#	77
82) n-Propylbenzene	16.33	91	14509	0.8853 ug/kg	99
83) Bromobenzene	16.47	156	2506	0.6340 ug/kg#	28
84) 1,3,5-Trimethylbenzene	16.52	105	14129	1.1352 ug/kg	95
85) 2-Chlorotoluene	16.61	91	6101	0.6159 ug/kg	96
86) 4-Chlorotoluene	16.66	91	7260	0.7222 ug/kg	85
87) a-Methylstyrene	16.92	118	2947	0.5099 ug/kg	98
88) tert-Butylbenzene	16.98	134	1564	0.5816 ug/kg	90
89) 1,2,4-Trimethylbenzene	17.04	105	29563	1.8729 ug/kg	89

(#) = qualifier out of range (m) = manual integration
9M974898.D 8260S.M Thu Jun 23 11:41:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974898.D Vial: 13
Acq On : 21 Jun 2016 13:12 Operator: ADC
Sample : WG573367-02 0.5ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:41:23 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
90)	sec-Butylbenzene	17.25	105	12082	0.7399 ug/kg	97
91)	p-Isopropyltoluene	17.41	119	10627	0.7978 ug/kg	95
92)	1,3-Dichlorobenzene	17.61	146	6148	0.8046 ug/kg	92
93)	1,4-Dichlorobenzene	17.74	146	6472	0.8299 ug/kg	85
94)	n-Butylbenzene	17.94	91	9656	0.7932 ug/kg	93
95)	1,2-Dichlorobenzene	18.23	146	5287	0.7245 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.38	180	7212	1.3548 ug/kg	93
98)	Hexachlorobutadiene	20.52	225	2755	1.0201 ug/kg	85
99)	Naphthalene	20.75	128	20254	1.4567 ug/kg	97
100)	1,2,3-Trichlorobenzene	21.06	180	7874	1.5113 ug/kg	92

(#) = qualifier out of range (m) = manual integration
9M974898.D 8260S.M Thu Jun 23 11:41:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974898.D Vial: 13
Acq On : 21 Jun 2016 13:12 Operator: ADC
Sample : WG573367-02 0.5ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:41 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

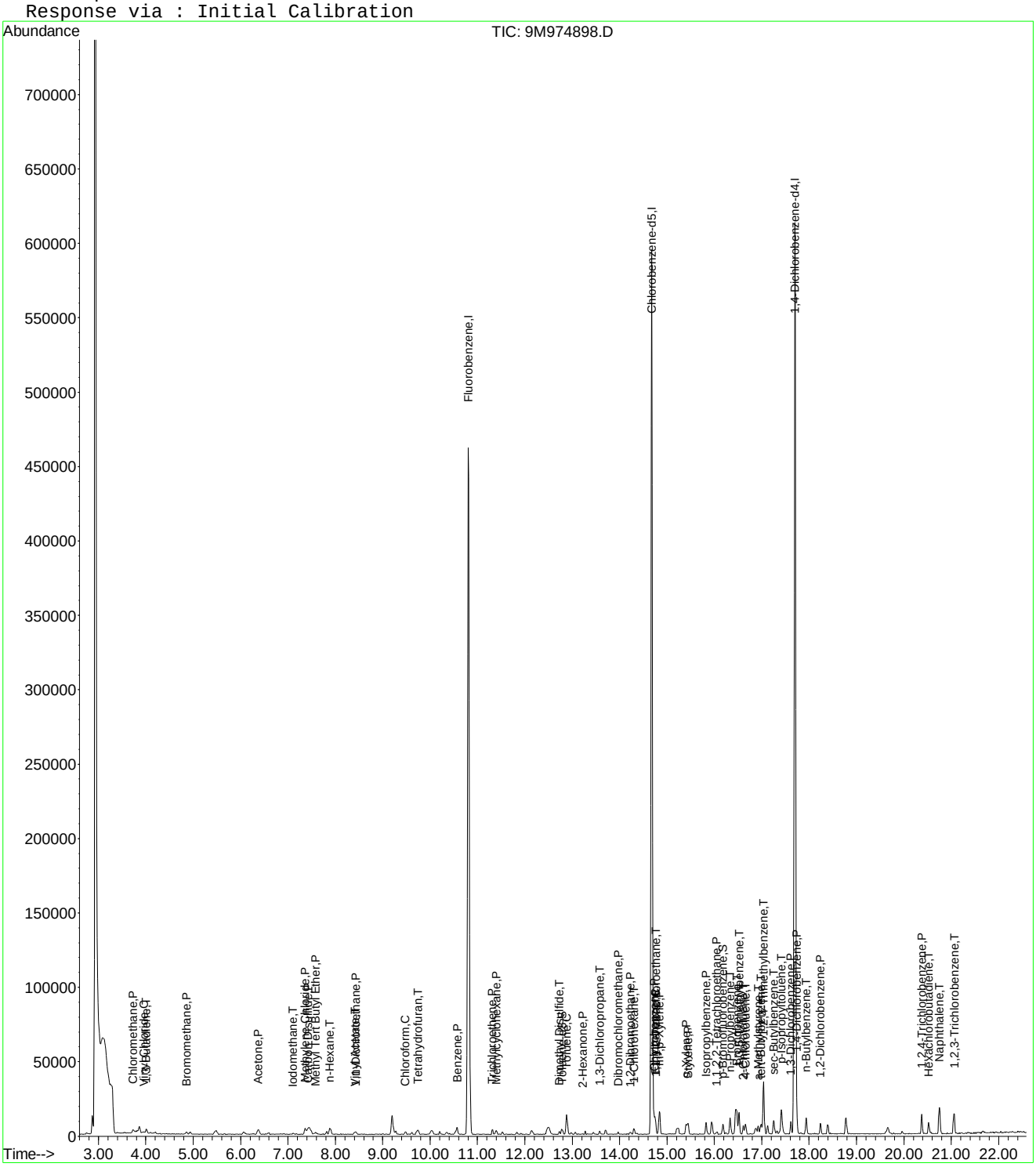

9M974898.D 8260S.M Thu Jun 23 11:41:24 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974898.D Vial: 13
Acq On : 21 Jun 2016 13:12 Operator: ADC
Sample : WG573367-02 0.5ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.3198	0.0	100	0.01
3	P	Chloromethane	-1.0000	0.7239	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.4168	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.5515	0.0	100	0.01
6	P	Bromomethane	-1.0000	0.5932	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.0824	0.0	100	0.00
8	P	Trichlorofluoromethane	-1.0000	0.3593	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.02#
10	T	Isoprene	-1.0000	0.3496	0.0	100	0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.27#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.1284	0.0	100	-0.02
13	P	Acetone	-1.0000	2.4223	0.0	100	0.01
14	C	1,1-Dichloroethene	-1.0000	0.3379	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.70#
16	T	Dimethyl Sulfide	-1.0000	0.0948	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.6411	0.0	100	0.00
18	P	Methyl acetate	-1.0000	0.3769	0.0	100	0.00
19	P	Methylene Chloride	-1.0000	0.7655	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.6451	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.55#
22	P	Methyl Tert Butyl Ether	-1.0000	0.4046	0.0	100	0.01
23	P	trans-1,2-Dichloroethene	-1.0000	0.3808	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.6904	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.23#
26	T	Vinyl Acetate	-1.0000	0.4630	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.4134	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.80#
29	P	2-Butanone	-1.0000	0.2925	0.0	100	0.01
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.09#
31	T	2,2-Dichloropropane	-1.0000	0.3898	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.3792	0.0	100	0.01
33	C	Chloroform	-1.0000	0.4489	0.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.62#
35	T	Bromochloromethane	-1.0000	0.3581	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0792	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0661	0.0	100	0.00
38	P	1,1,1-Trichloroethane	-1.0000	0.3449	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.3765	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3848	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.31#
42	P	Carbon Tetrachloride	-1.0000	0.3199	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.1759	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.3341	0.0	100	0.00
46	P	Benzene	-1.0000	0.5499	0.0	100	0.00
47	P	Trichloroethene	-1.0000	0.5111	0.0	100	0.00
48	P	Methylcyclohexane	-1.0000	0.4017	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3637	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.82#
51	P	Bromodichloromethane	-1.0000	0.3548	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.3560	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-12.12#
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.15#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974898.D Vial: 13
Acq On : 21 Jun 2016 13:12 Operator: ADC
Sample : WG573367-02 0.5ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.3897	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.5069	0.0	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.4060	0.0	100	0.00
59	C	Toluene	-1.0000	1.1209	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2298	0.0	100	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.3670	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.3521	0.0	100	0.00
63	P	2-Hexanone	-1.0000	2.5565	0.0	100	0.01
64	T	1,3-Dichloropropane	-1.0000	0.4227	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.3657	0.0	100	0.00
66	P	Dibromochloromethane	-1.0000	0.4160	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.4059	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.4829	0.0	100	0.00
69	P	Chlorobenzene	-1.0000	0.5836	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4278	0.0	100	0.00
71	C	Ethylbenzene	-1.0000	0.5379	0.0	100	0.00
72	P	m-,p-Xylene	1.0000	1.1323	-13.2	100	0.00
73	P	o-Xylene	-1.0000	0.5944	0.0	100	0.00
74	P	Styrene	-1.0000	0.5629	0.0	100	0.00
75	P	Bromoform	-1.0000	0.3897	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.6110	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	-0.01
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5010	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	1.0431	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.3409	0.0	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.28#
82	T	n-Propylbenzene	-1.0000	0.8853	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.6340	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.1352	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.6159	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.7222	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.5099	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	0.5816	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	1.8729	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.7399	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.7978	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.8046	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.8299	0.0	100	-0.01
94	T	n-Butylbenzene	-1.0000	0.7932	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.7245	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.23#
97	P	1,2,4-Trichlorobenzene	-1.0000	1.3548	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	1.0201	0.0	100	0.00
99	T	Naphthalene	-1.0000	1.4567	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	1.5113	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974898.D 8260S.M Thu Jun 23 11:41:45 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974899.D Vial: 14
Acq On : 21 Jun 2016 13:42 Operator: ADC
Sample : WG573367-03 1.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:43:46 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	572074	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	448752	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	222925	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.77	111	3309	1.0490 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.10%#	
43) 1,2-Dichloroethane-d4	10.41	65	3798	1.1325 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.26%#	
58) Toluene-d8	12.78	98	13076	1.1765 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	2.36%#	
79) p-Bromofluorobenzene	16.18	95	6600	1.6214 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	3.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	3878	0.8651 ug/kg#	68
3) Chloromethane	3.74	50	5215	1.3165 ug/kg	98
4) Vinyl Chloride	3.96	62	3004	1.0799 ug/kg	91
5) 1,3-Butadiene	4.00	54	1323	0.9619 ug/kg#	56
6) Bromomethane	4.86	94	3206	1.2747 ug/kg	86
7) Chloroethane	5.01	64	1710	0.7486 ug/kg#	45
8) Trichlorofluoromethane	5.50	101	4531	0.8777 ug/kg#	95
9) Diethyl ether	6.02	59	13220	4.7876 ug/kg	97
10) Isoprene	6.07	67	3144	0.8638 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	2423	0.7823 ug/kg	88
14) 1,1-Dichloroethene	6.59	61	4356	0.8792 ug/kg	99
15) Tert-Butyl Alcohol	6.69	59	5098	10.0955 ug/kg#	79
16) Dimethyl Sulfide	6.85	62	1871	0.9049 ug/kg	79
17) Iodomethane	7.11	142	1442	2.1385 ug/kg#	36
18) Methyl acetate	7.12	43	2603	0.8920 ug/kg#	64
19) Methylene Chloride	7.37	84	3632	1.0845 ug/kg	99
20) Carbon Disulfide	7.41	76	10620	1.1342 ug/kg	99
21) Acrylonitrile	7.55	53	3125	2.3202 ug/kg	97
22) Methyl Tert Butyl Ether	7.57	73	7743	0.9026 ug/kg	87
23) trans-1,2-Dichloroethene	7.81	61	4188	0.8889 ug/kg	91
24) n-Hexane	7.89	57	4708	0.8947 ug/kg	95
25) Diisopropyl ether	8.23	45	52654	4.8585 ug/kg	98
26) Vinyl Acetate	8.40	43	4674	0.7992 ug/kg#	76
27) 1,1-Dichloroethane	8.43	63	5468	0.9273 ug/kg#	81
28) Ethyl-Tert-Butyl ether	8.80	59	48750	4.8159 ug/kg	99
29) 2-Butanone	8.99	43	1791	1.0723 ug/kg#	55
30) Propionitrile	9.10	54	1995	3.9445 ug/kg#	58
31) 2,2-Dichloropropane	9.19	77	3656	0.8341 ug/kg	77
32) cis-1,2-Dichloroethene	9.28	96	3201	0.9466 ug/kg	77
33) Chloroform	9.48	83	4406	0.8669 ug/kg	89
35) Bromochloromethane	9.71	130	1747	0.7853 ug/kg	83
36) Tetrahydrofuran	9.74	42	8069	7.0171 ug/kg	94
38) 1,1,1-Trichloroethane	10.01	97	4269	0.9299 ug/kg	100
39) Cyclohexane	10.04	56	5471	0.9426 ug/kg	92
40) 1,1-Dichloropropene	10.21	75	3795	0.9496 ug/kg	83
41) Tert-Amyl-Methyl ether	10.31	73	39410	4.8868 ug/kg	98
42) Carbon Tetrachloride	10.35	117	3850	0.8645 ug/kg#	91
45) 1,2-Dichloroethane	10.52	62	3940	0.9466 ug/kg	81
46) Benzene	10.56	78	12268	1.0126 ug/kg	96
47) Trichloroethene	11.31	130	3653	1.0293 ug/kg	89

(#) = qualifier out of range (m) = manual integration
9M974899.D 8260S.M Thu Jun 23 11:43:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974899.D Vial: 14
Acq On : 21 Jun 2016 13:42 Operator: ADC
Sample : WG573367-03 1.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:43:46 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methylcyclohexane	11.39	83	4886	0.9781 ug/kg	99
49)	1,2-Dichloropropane	11.53	63	2938	0.8874 ug/kg	85
51)	Bromodichloromethane	11.83	83	3411	0.8490 ug/kg#	92
52)	Dibromomethane	11.93	174	1790	0.8543 ug/kg	95
53)	2-Chloroethyl Vinyl Ether	12.12	63	1247	1.7801 ug/kg#	48
54)	4-Methyl-2-Pentanone	12.16	58	732	0.5342 ug/kg#	38
55)	cis-1,3-Dichloropropene	12.46	75	3889	0.8133 ug/kg#	75
56)	Dimethyl Disulfide	12.72	94	3570	1.8026 ug/kg	97
59)	Toluene	12.89	91	12584	0.9833 ug/kg	99
60)	Ethyl Methacrylate	12.98	69	2086	0.5714 ug/kg#	56
61)	trans-1,3-Dichloropropene	13.07	75	3556	0.8182 ug/kg	86
62)	1,1,2-Trichloroethane	13.28	97	2348	0.8874 ug/kg	96
63)	2-Hexanone	13.21	43	1380	2.9763 ug/kg#	27
64)	1,3-Dichloropropane	13.58	76	4248	0.9603 ug/kg	95
65)	Tetrachloroethene	13.70	164	2615	0.9555 ug/kg	92
66)	Dibromochloromethane	13.97	129	3037	0.8693 ug/kg	94
67)	1,2-Dibromoethane	14.23	107	2404	0.8088 ug/kg	94
68)	1-Chlorohexane	14.30	91	3704	0.9280 ug/kg	99
69)	Chlorobenzene	14.72	112	9147	1.0042 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.75	131	2708	0.8264 ug/kg	82
71)	Ethylbenzene	14.74	106	4619	0.9572 ug/kg	86
72)	m-,p-Xylene	14.84	106	12099	2.0296 ug/kg	97
73)	o-Xylene	15.41	106	5752	0.9966 ug/kg	95
74)	Styrene	15.44	104	9169	0.9520 ug/kg	100
75)	Bromoform	15.94	173	1839	0.7757 ug/kg	83
76)	Isopropylbenzene	15.83	105	15781	1.0655 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.04	83	3144	0.8749 ug/kg#	90
80)	1,2,3-Trichloropropane	16.24	110	929	0.8337 ug/kg#	1
81)	trans-1,4-Dichloro-2-Buten	16.28	53	761	0.7095 ug/kg#	1
82)	n-Propylbenzene	16.33	91	17017	1.0606 ug/kg	96
83)	Bromobenzene	16.47	156	3992	1.0316 ug/kg	70
84)	1,3,5-Trimethylbenzene	16.52	105	12950	1.0628 ug/kg	97
85)	2-Chlorotoluene	16.61	91	11345	1.1698 ug/kg	99
86)	4-Chlorotoluene	16.65	91	10422	1.0590 ug/kg	99
87)	a-Methylstyrene	16.93	118	5046	0.8917 ug/kg	95
88)	tert-Butylbenzene	16.98	134	3100	1.1775 ug/kg	87
89)	1,2,4-Trimethylbenzene	17.03	105	14007	0.6225 ug/kg	95
90)	sec-Butylbenzene	17.26	105	18052	1.1291 ug/kg	97
91)	p-Isopropyltoluene	17.41	119	15149	1.1617 ug/kg	96
92)	1,3-Dichlorobenzene	17.61	146	8341	1.1150 ug/kg	99
93)	1,4-Dichlorobenzene	17.74	146	9392	1.2302 ug/kg	88
94)	n-Butylbenzene	17.94	91	13797	1.1577 ug/kg	94
95)	1,2-Dichlorobenzene	18.24	146	8121	1.1368 ug/kg	97
96)	1,2-Dibromo-3-Chloropropan	19.23	157	747	1.6839 ug/kg	76
97)	1,2,4-Trichlorobenzene	20.38	180	7995	1.5341 ug/kg	94
98)	Hexachlorobutadiene	20.53	225	3168	1.1982 ug/kg	93
99)	Naphthalene	20.75	128	20590	1.5126 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.05	180	8358	1.6386 ug/kg	95

(#) = qualifier out of range (m) = manual integration
9M974899.D 8260S.M Thu Jun 23 11:43:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974899.D Vial: 14
Acq On : 21 Jun 2016 13:42 Operator: ADC
Sample : WG573367-03 1.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:43 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

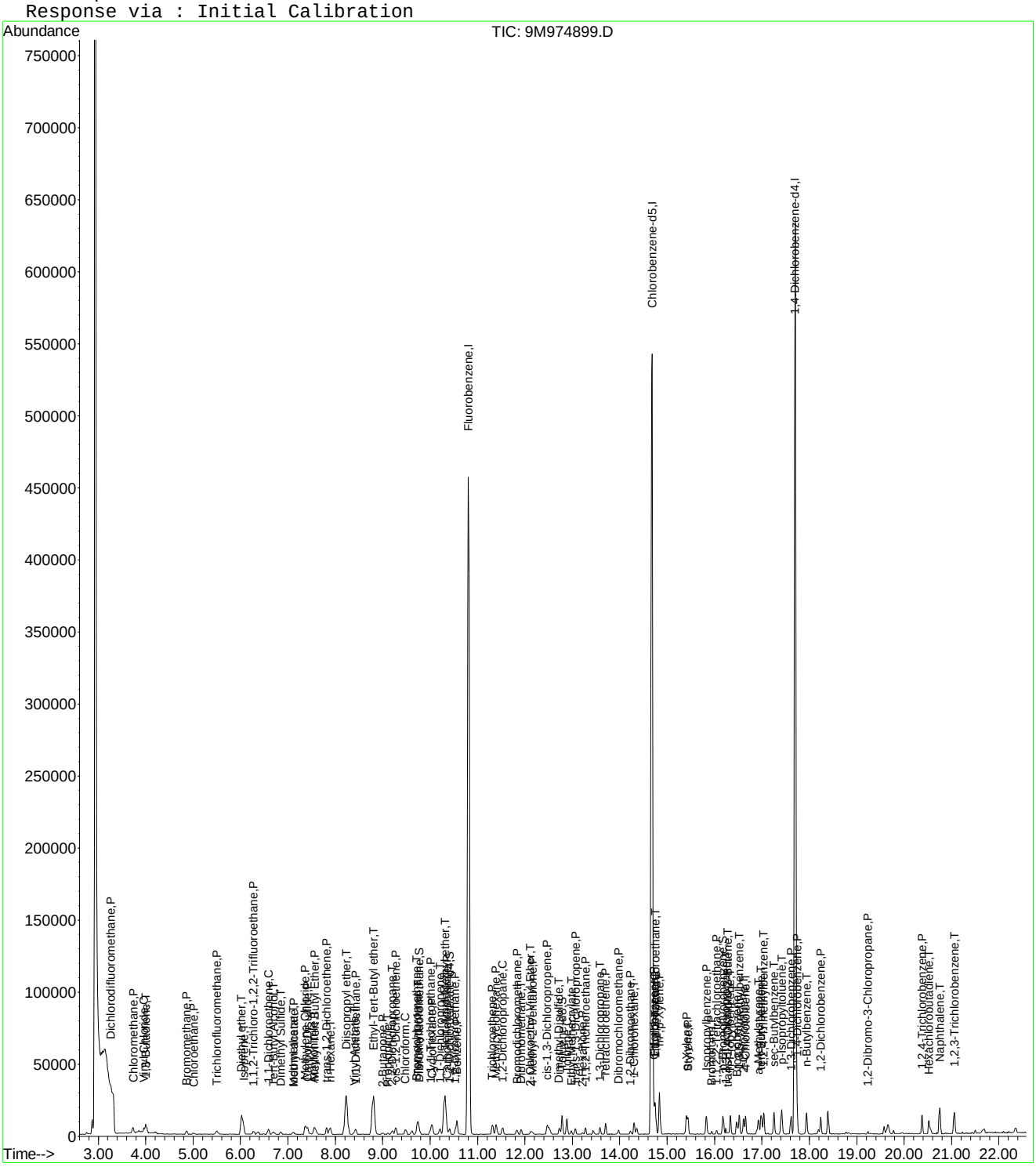

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974899.D Vial: 14
Acq On : 21 Jun 2016 13:42 Operator: ADC
Sample : WG573367-03 1.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	1.0000	0.8651	13.5	100	0.00
3	P	Chloromethane	1.0000	1.3165	-31.7#	100	0.00
4	C	Vinyl Chloride	1.0000	1.0799	-8.0	100	0.00
5	T	1,3-Butadiene	1.0000	0.9619	3.8	100	0.00
6	P	Bromomethane	1.0000	1.2747	-27.5#	100	0.00
7	P	Chloroethane	-1.0000	0.7486	0.0	0	0.00
8	P	Trichlorofluoromethane	1.0000	0.8777	12.2	100	0.00
9	T	Diethyl ether	5.0000	4.7876	4.2	100	0.00
10	T	Isoprene	-1.0000	0.8638	0.0	100	0.00
11	T	Acrolein	2.5000	0.0000	100.0#	0	-6.27#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7823	0.0	100	0.00
13	P	Acetone	-1.0000	0.0187	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.8792	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.0955	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.9049	9.5	100	0.00
17	T	Iodomethane	-1.0000	2.1385	0.0	100	0.00
18	P	Methyl acetate	-1.0000	0.8920	0.0	100	0.01
19	P	Methylene Chloride	-1.0000	1.0845	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.1342	0.0	100	0.00
21	T	Acrylonitrile	2.5000	2.3203	7.2	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9026	9.7	100	0.00
23	P	trans-1,2-Dichloroethene	1.0000	0.8889	11.1	100	0.00
24	T	n-Hexane	-1.0000	0.8947	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.8585	2.8	100	0.00
26	T	Vinyl Acetate	-1.0000	0.7992	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9273	7.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.8159	3.7	100	0.00
29	P	2-Butanone	-1.0000	1.0723	0.0	100	0.00
30	T	Propionitrile	5.0000	3.9446	21.1	100	0.00
31	T	2,2-Dichloropropane	-1.0000	0.8341	0.0	100	-0.02
32	P	cis-1,2-Dichloroethene	1.0000	0.9466	5.3	100	0.00
33	C	Chloroform	1.0000	0.8669	13.3	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.62#
35	T	Bromochloromethane	1.0000	0.7853	21.5	100	0.00
36	T	Tetrahydrofuran	-1.0000	7.0171	0.0	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0490	-4.9	100	0.00
38	P	1,1,1-Trichloroethane	1.0000	0.9299	7.0	100	0.00
39	P	Cyclohexane	1.0000	0.9426	5.7	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9496	5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.8868	2.3	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.8645	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.1325	-13.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.9466	5.3	100	0.00
46	P	Benzene	1.0000	1.0126	-1.3	100	0.00
47	P	Trichloroethene	1.0000	1.0294	-2.9	100	0.00
48	P	Methylcyclohexane	1.0000	0.9781	2.2	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.8873	11.3	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.82#
51	P	Bromodichloromethane	-1.0000	0.8490	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8543	14.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.7801	0.0	100	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.5342	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974899.D Vial: 14
Acq On : 21 Jun 2016 13:42 Operator: ADC
Sample : WG573367-03 1.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8133	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.8026	0.0	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.1765	-17.6	100	0.00
59	C	Toluene	1.0000	0.9833	1.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.5714	0.0	100	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.8182	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.8874	11.3	100	0.00
63	P	2-Hexanone	-1.0000	2.9763	0.0	0	0.00
64	T	1,3-Dichloropropane	1.0000	0.9603	4.0	100	0.00
65	P	Tetrachloroethene	1.0000	0.9555	4.4	100	0.00
66	P	Dibromochloromethane	-1.0000	0.8693	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.8088	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9280	7.2	100	0.00
69	P	Chlorobenzene	1.0000	1.0042	-0.4	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8264	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9572	4.3	100	0.00
72	P	m-,p-Xylene	2.0000	2.0296	-1.5	100	0.00
73	P	o-Xylene	1.0000	0.9967	0.3	100	0.00
74	P	Styrene	1.0000	0.9520	4.8	100	0.00
75	P	Bromoform	-1.0000	0.7757	0.0	100	0.00
76	P	Isopropylbenzene	1.0000	1.0655	-6.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.8750	12.5	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	1.6214	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.8337	0.0	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.7095	0.0	0	0.00
82	T	n-Propylbenzene	1.0000	1.0606	-6.1	100	0.00
83	T	Bromobenzene	1.0000	1.0316	-3.2	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0628	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	1.1698	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0590	-5.9	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8917	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	1.1775	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	0.6225	37.7#	100	0.00
90	T	sec-Butylbenzene	1.0000	1.1291	-12.9	100	0.00
91	T	p-Isopropyltoluene	-1.0000	1.1617	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	1.1150	-11.5	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.2302	-23.0	100	0.00
94	T	n-Butylbenzene	1.0000	1.1577	-15.8	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.1368	-13.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.6839	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	-1.0000	1.5341	0.0	0	0.00
98	T	Hexachlorobutadiene	1.0000	1.1982	-19.8	100	0.00
99	T	Naphthalene	-1.0000	1.5126	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	1.6386	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974899.D 8260S.M Thu Jun 23 11:43:48 2016 Page 2

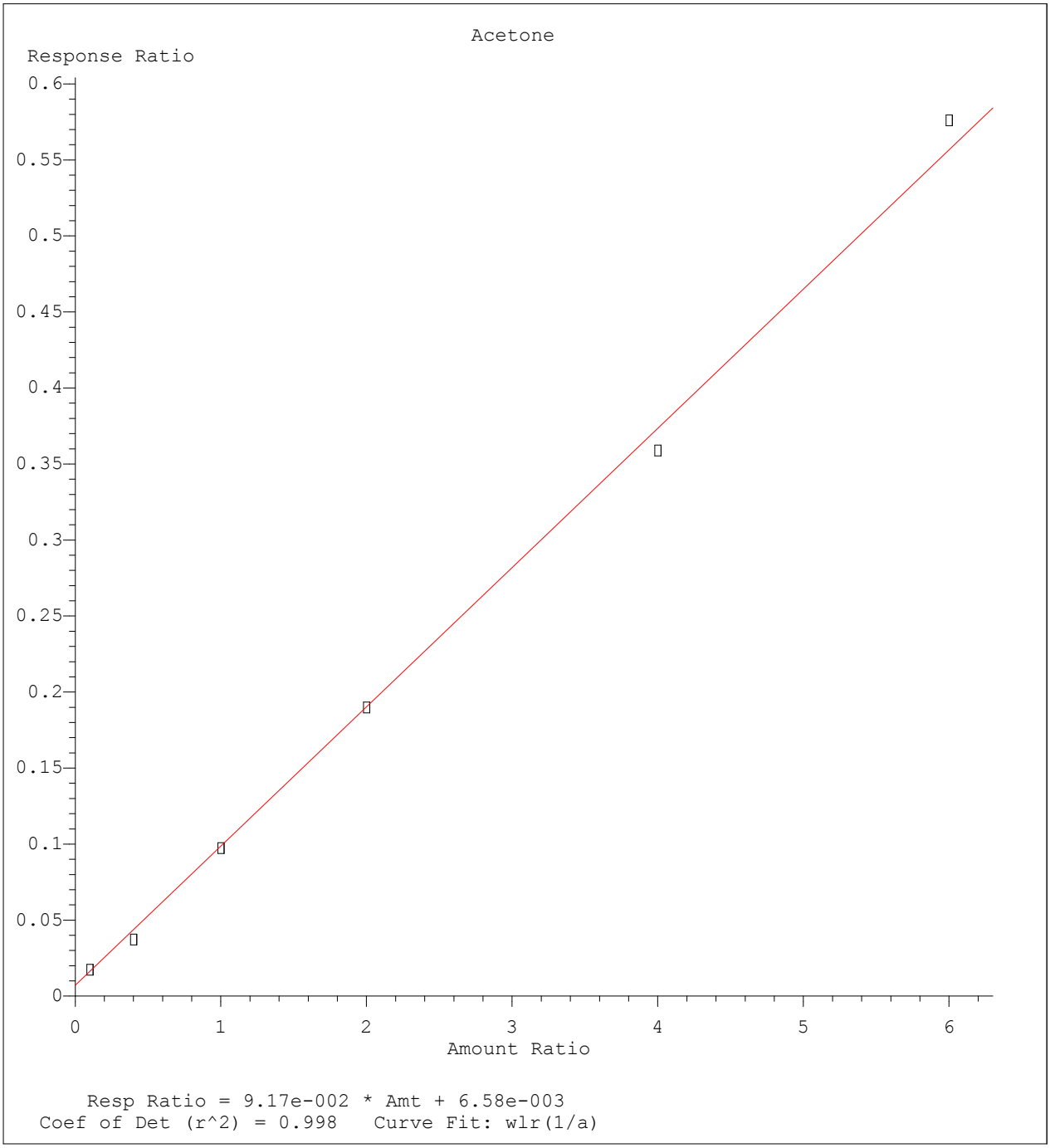

Method Name: C:\MSDCHEM\1\METHODS\8260S.M
Calibration Table Last Updated: Thu Jun 23 11:41:07 2016

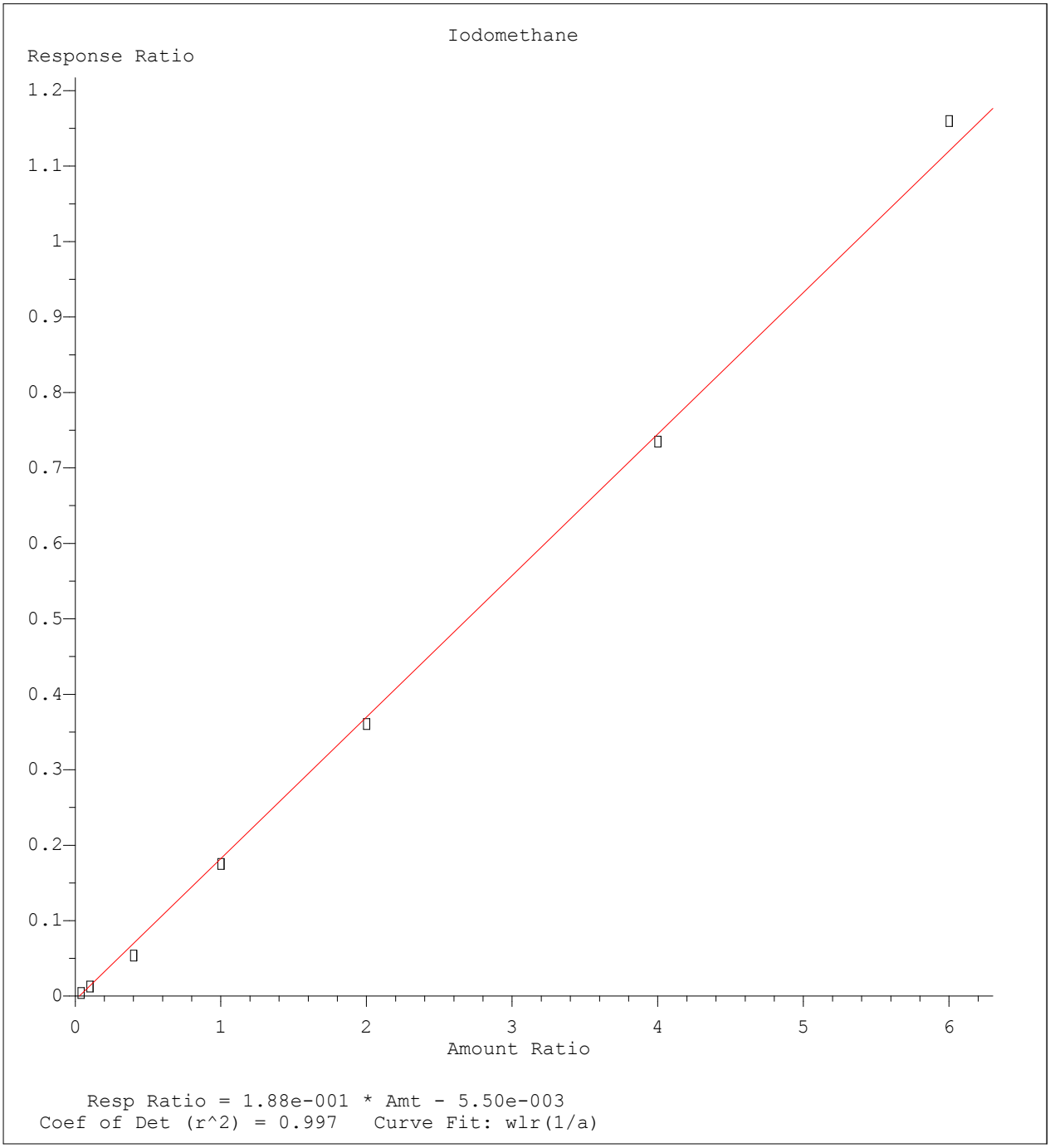

Method Name: C:\MSDCHEM\1\METHODS\8260S.M
Calibration Table Last Updated: Thu Jun 23 11:41:07 2016

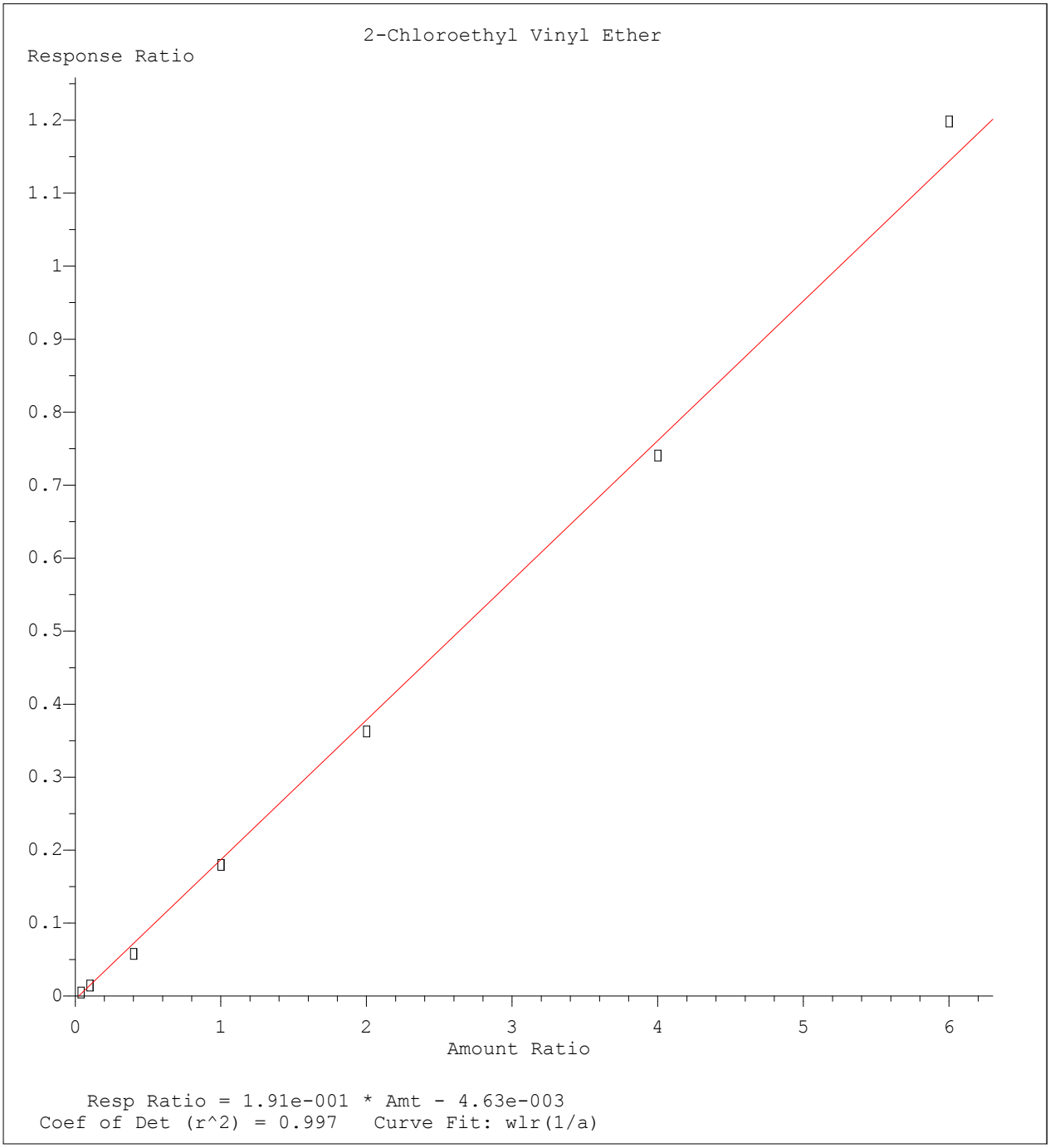

Method Name: C:\MSDCHEM\1\METHODS\8260S.M
Calibration Table Last Updated: Thu Jun 23 11:41:07 2016

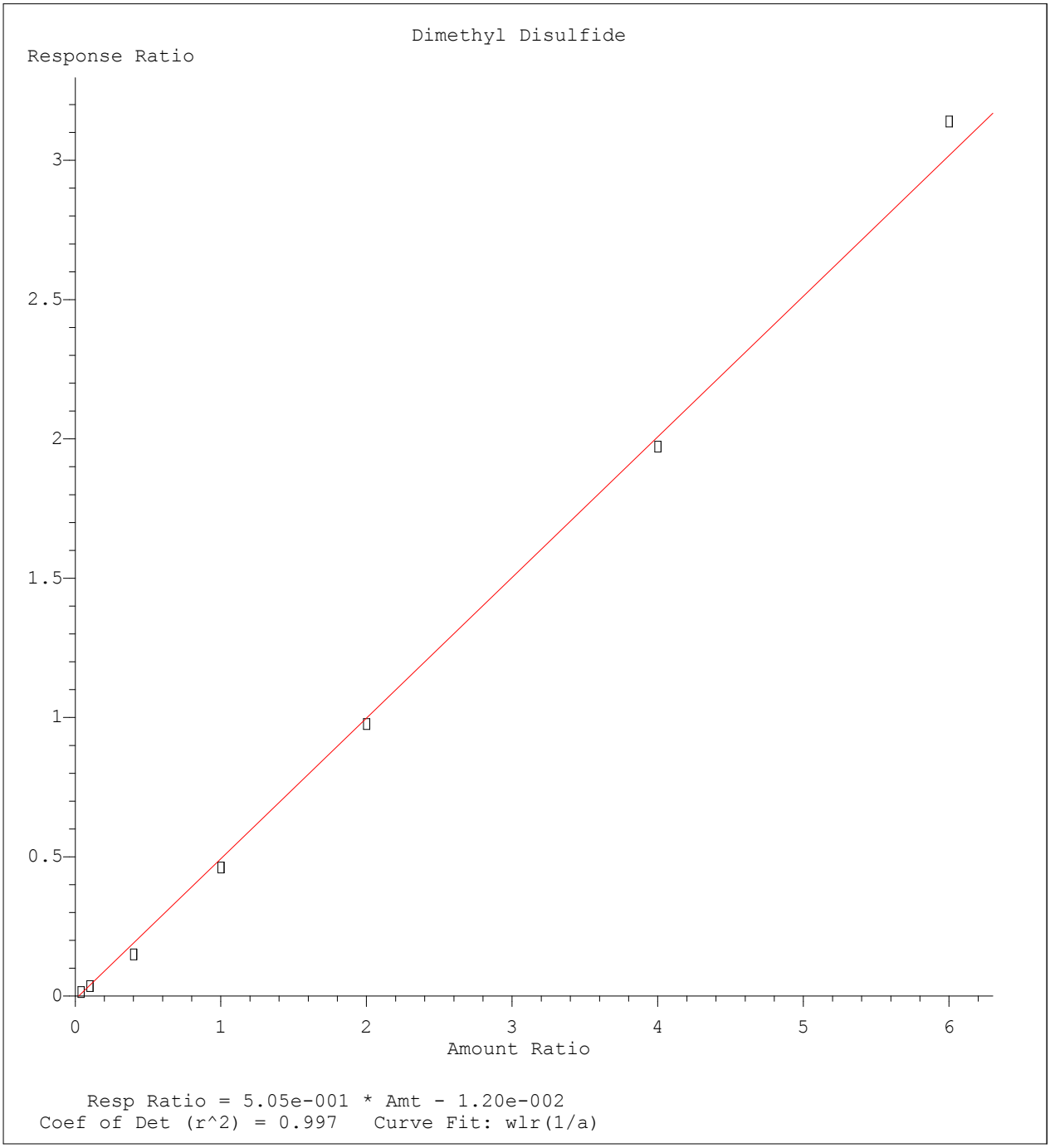

Method Name: C:\MSDCHEM\1\METHODS\8260S.M
Calibration Table Last Updated: Thu Jun 23 11:41:07 2016

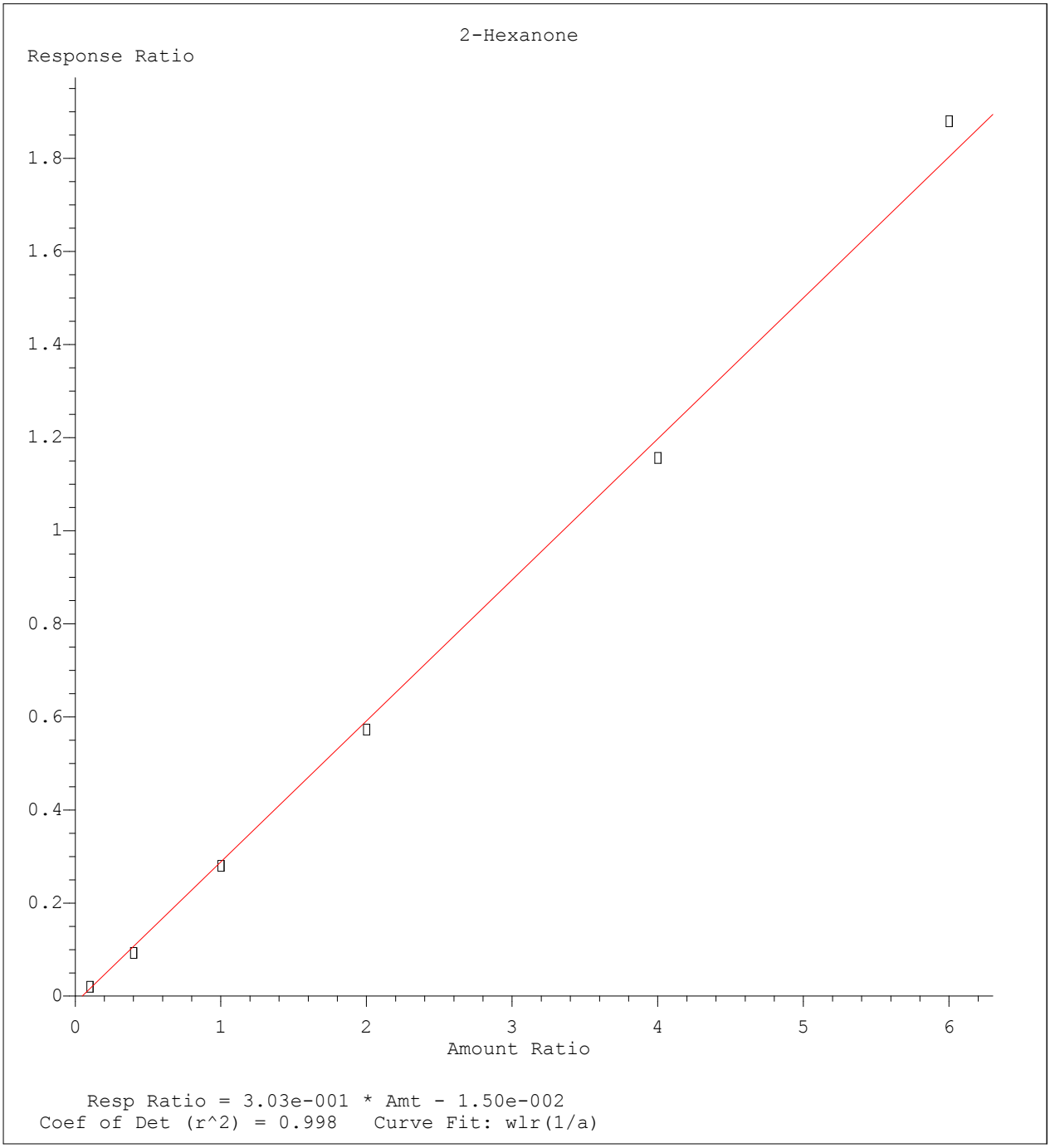

Method Name: C:\MSDCHEM\1\METHODS\8260S.M
Calibration Table Last Updated: Thu Jun 23 11:41:07 2016

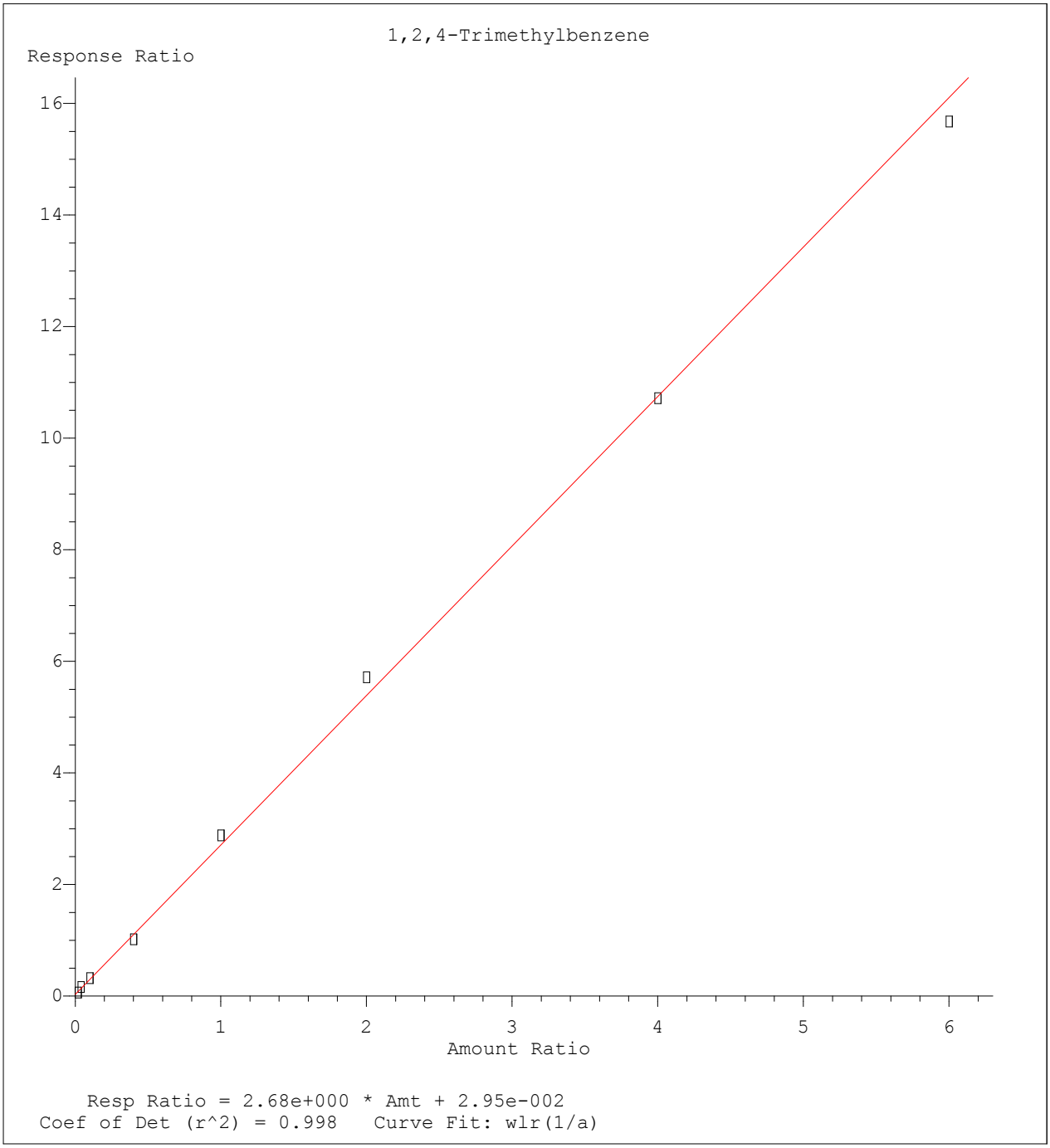

Method Name: C:\MSDCHEM\1\METHODS\8260S.M
Calibration Table Last Updated: Thu Jun 23 11:41:07 2016

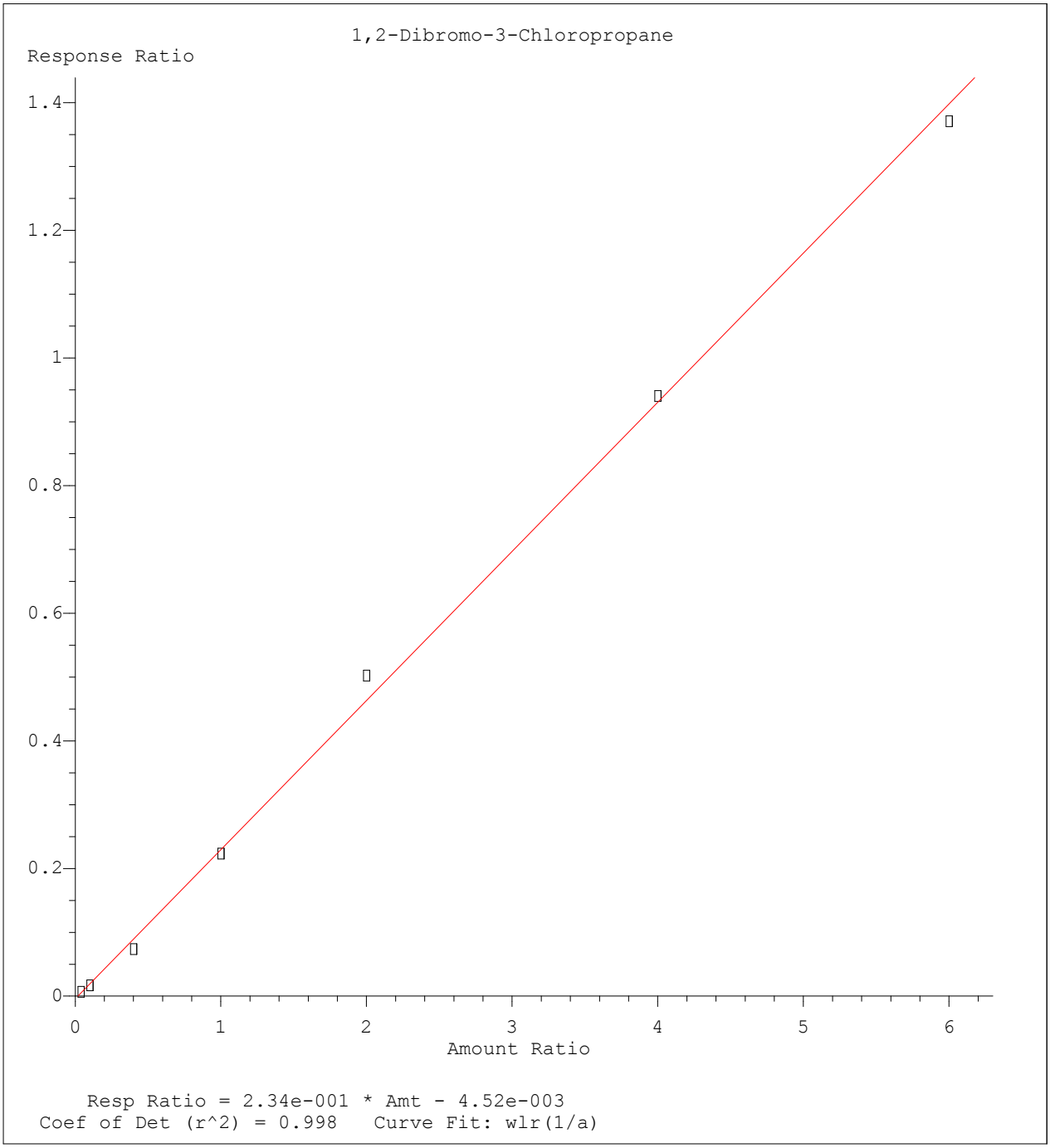

Method Name: C:\MSDCHEM\1\METHODS\8260S.M
Calibration Table Last Updated: Thu Jun 23 11:41:07 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974903.D Vial: 18
Acq On : 21 Jun 2016 15:35 Operator: ADC
Sample : WG573367-11 50.0ug/L 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46:06 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	679207	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	526666	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	267813	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	187113	49.9603 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.92%		
43) 1,2-Dichloroethane-d4	10.40	65	187716	47.1451 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.30%		
58) Toluene-d8	12.78	98	664453	50.9380 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.88%		
79) p-Bromofluorobenzene	16.18	95	252283	51.5879 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.18%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	341770	64.2194 ug/kg	100
3) Chloromethane	3.72	50	247991	52.7299 ug/kg	99
4) Vinyl Chloride	3.95	62	181911	55.0793 ug/kg	99
5) 1,3-Butadiene	3.99	54	72765	44.5581 ug/kg	98
6) Bromomethane	4.83	94	170650	57.1499 ug/kg	96
7) Chloroethane	4.99	64	158342	58.3811 ug/kg	99
8) Trichlorofluoromethane	5.48	101	352079	57.4465 ug/kg	99
9) Diethyl ether	6.01	59	340042	103.7211 ug/kg	99
10) Isoprene	6.05	67	324065	74.9905 ug/kg	98
11) Acrolein	6.26	56	36698	149.3385 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	221823	60.3191 ug/kg	100
13) Acetone	6.36	43	69891	52.5413 ug/kg	99
14) 1,1-Dichloroethene	6.57	61	310986	52.8678 ug/kg	99
15) Tert-Butyl Alcohol	6.71	59	111546	186.0518 ug/kg	99
16) Dimethyl Sulfide	6.85	62	272626	111.0595 ug/kg	98
17) Iodomethane	7.10	142	221586	88.4342 ug/kg	100
18) Methyl acetate	7.11	43	165521	47.7766 ug/kg	99
19) Methylene Chloride	7.35	84	194460	48.9070 ug/kg	99
20) Carbon Disulfide	7.41	76	646138	58.1213 ug/kg	100
21) Acrylonitrile	7.54	53	88536	55.3674 ug/kg	100
22) Methyl Tert Butyl Ether	7.57	73	551963	54.1926 ug/kg	100
23) trans-1,2-Dichloroethene	7.81	61	309479	55.3268 ug/kg	100
24) n-Hexane	7.88	57	379646	60.7653 ug/kg	99
25) Diisopropyl ether	8.23	45	1366177	106.1768 ug/kg	99
26) Vinyl Acetate	8.40	43	450901	64.9412 ug/kg	99
27) 1,1-Dichloroethane	8.43	63	359230	51.3108 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.80	59	1186704	98.7410 ug/kg	99
29) 2-Butanone	8.99	43	103236	52.0608 ug/kg	98
30) Propionitrile	9.10	54	60637	100.9815 ug/kg	95
31) 2,2-Dichloropropane	9.20	77	294233	56.5419 ug/kg	99
32) cis-1,2-Dichloroethene	9.28	96	217936	54.2808 ug/kg	99
33) Chloroform	9.48	83	316916	52.5215 ug/kg	99
34) 1-Bromopropane	9.61	122	51441	82.0516 ug/kg	98
35) Bromochloromethane	9.71	130	135230	51.1976 ug/kg	97
36) Tetrahydrofuran	9.74	42	122537	89.7548 ug/kg	98
38) 1,1,1-Trichloroethane	10.01	97	294905	54.1063 ug/kg	100
39) Cyclohexane	10.04	56	433626	62.9255 ug/kg	99
40) 1,1-Dichloropropene	10.20	75	255481	53.8422 ug/kg	99
41) Tert-Amyl-Methyl ether	10.31	73	986369	103.0160 ug/kg	99
42) Carbon Tetrachloride	10.35	117	282579	53.4442 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M974903.D 8260S.M Thu Jun 23 11:46:06 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974903.D Vial: 18
Acq On : 21 Jun 2016 15:35 Operator: ADC
Sample : WG573367-11 50.0ug/L 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46:06 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.52	62	253409	51.2804 ug/kg	99
46)	Benzene	10.56	78	750805	52.1965 ug/kg	99
47)	Trichloroethene	11.31	130	231517	54.9473 ug/kg	99
48)	Methylcyclohexane	11.40	83	379618	64.0050 ug/kg	99
49)	1,2-Dichloropropane	11.52	63	214956	54.6820 ug/kg	100
50)	1,4-Dioxane	11.82	88	10832	180.4439 ug/kg	89
51)	Bromodichloromethane	11.83	83	244839	51.3270 ug/kg	99
52)	Dibromomethane	11.92	174	123563	49.6728 ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.12	63	130503	51.4171 ug/kg	98
54)	4-Methyl-2-Pentanone	12.15	58	88065	54.1278 ug/kg	97
55)	cis-1,3-Dichloropropene	12.46	75	323333	56.9512 ug/kg	99
56)	Dimethyl Disulfide	12.73	94	368559	54.9362 ug/kg	99
59)	Toluene	12.88	91	811591	54.0349 ug/kg	100
60)	Ethyl Methacrylate	12.97	69	248788	58.0659 ug/kg	99
61)	trans-1,3-Dichloropropene	13.06	75	273281	53.5782 ug/kg	99
62)	1,1,2-Trichloroethane	13.27	97	163462	52.6400 ug/kg	99
63)	2-Hexanone	13.21	43	151650	49.9727 ug/kg	100
64)	1,3-Dichloropropane	13.58	76	284325	54.7642 ug/kg	99
65)	Tetrachloroethene	13.71	164	176711	55.0185 ug/kg	99
66)	Dibromochloromethane	13.97	129	210428	51.3243 ug/kg	100
67)	1,2-Dibromoethane	14.22	107	176287	50.5354 ug/kg	100
68)	1-Chlorohexane	14.30	91	297204	63.4462 ug/kg	99
69)	Chlorobenzene	14.73	112	586485	54.8603 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.75	131	204311	53.1264 ug/kg	99
71)	Ethylbenzene	14.75	106	317585	56.0754 ug/kg	99
72)	m-,p-Xylene	14.84	106	767410	109.6874 ug/kg	100
73)	o-Xylene	15.41	106	379776	56.0688 ug/kg	99
74)	Styrene	15.44	104	621629	54.9958 ug/kg	99
75)	Bromoform	15.94	173	135071	48.5476 ug/kg	99
76)	Isopropylbenzene	15.83	105	980978	56.4333 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.05	83	221183	51.2365 ug/kg	100
80)	1,2,3-Trichloropropane	16.24	110	69270	51.7465 ug/kg	96
81)	trans-1,4-Dichloro-2-Buten	16.28	53	69808	54.1767 ug/kg	95
82)	n-Propylbenzene	16.34	91	1098772	57.0051 ug/kg	100
83)	Bromobenzene	16.47	156	243476	52.3710 ug/kg	99
84)	1,3,5-Trimethylbenzene	16.53	105	849739	58.0490 ug/kg	100
85)	2-Chlorotoluene	16.61	91	655601	56.2716 ug/kg	99
86)	4-Chlorotoluene	16.65	91	653346	55.2609 ug/kg	99
87)	a-Methylstyrene	16.93	118	461434	67.8778 ug/kg	99
88)	tert-Butylbenzene	16.99	134	184562	58.3529 ug/kg	94
89)	1,2,4-Trimethylbenzene	17.04	105	824462	56.9057 ug/kg	99
90)	sec-Butylbenzene	17.25	105	1087121	56.6011 ug/kg	100
91)	p-Isopropyltoluene	17.41	119	886229	56.5703 ug/kg	100
92)	1,3-Dichlorobenzene	17.61	146	479076	53.3085 ug/kg	99
93)	1,4-Dichlorobenzene	17.74	146	488311	53.2388 ug/kg	98
94)	n-Butylbenzene	17.94	91	785427	54.8562 ug/kg	100
95)	1,2-Dichlorobenzene	18.23	146	454977	53.0123 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.24	157	60069	48.9349 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.38	180	354628	56.6406 ug/kg	99
98)	Hexachlorobutadiene	20.52	225	185099	58.2736 ug/kg	100
99)	Naphthalene	20.75	128	798279	48.8145 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.06	180	337729	55.1133 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M974903.D 8260S.M Thu Jun 23 11:46:06 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974903.D Vial: 18
Acq On : 21 Jun 2016 15:35 Operator: ADC
Sample : WG573367-11 50.0ug/L 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

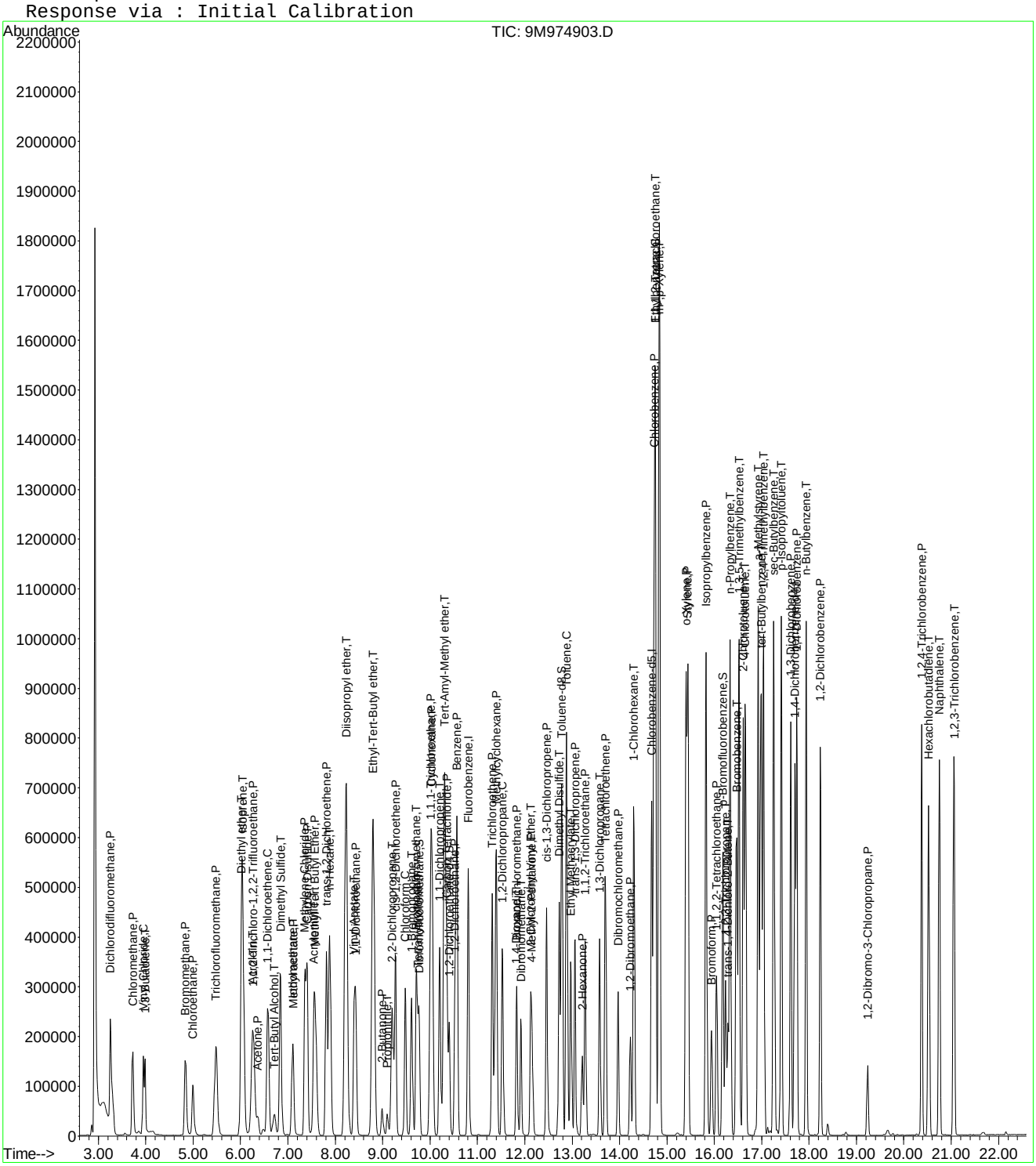

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974903.D Vial: 18
Acq On : 21 Jun 2016 15:35 Operator: ADC
Sample : WG573367-11 50.0ug/L 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	107	0.00
2	P	Dichlorodifluoromethane	50.0000	64.2194	-28.4#	125	0.00
3	P	Chloromethane	50.0000	52.7299	-5.5	112	0.00
4	C	Vinyl Chloride	50.0000	55.0793	-10.2	115	0.00
5	T	1,3-Butadiene	50.0000	44.5581	10.9	98	0.00
6	P	Bromomethane	50.0000	57.1499	-14.3	127	-0.02
7	P	Chloroethane	50.0000	58.3811	-16.8	120	-0.02
8	P	Trichlorofluoromethane	50.0000	57.4465	-14.9	116	-0.02
9	T	Diethyl ether	100.0000	103.7211	-3.7	110	0.00
10	T	Isoprene	50.0000	74.9905	-50.0#	154	-0.02
11	T	Acrolein	50.0000	149.3385	-198.7#	329	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	60.3191	-20.6	122	0.00
13	P	Acetone	50.0000	52.5413	-5.1	114	0.00
14	C	1,1-Dichloroethene	50.0000	52.8678	-5.7	107	0.00
15	T	Tert-Butyl Alcohol	200.0000	186.0518	7.0	103	0.01
16	T	Dimethyl Sulfide	50.0000	111.0595	-122.1#	230	0.00
17	T	Iodomethane	50.0000	88.4342	-76.9#	200	0.00
18	P	Methyl acetate	50.0000	47.7766	4.4	102	0.00
19	P	Methylene Chloride	50.0000	48.9070	2.2	107	0.00
20	P	Carbon Disulfide	50.0000	58.1213	-16.2	123	0.00
21	T	Acrylonitrile	50.0000	55.3674	-10.7	111	0.00
22	P	Methyl Tert Butyl Ether	50.0000	54.1926	-8.4	112	0.00
23	P	trans-1,2-Dichloroethene	50.0000	55.3268	-10.7	112	0.00
24	T	n-Hexane	50.0000	60.7653	-21.5	128	0.00
25	T	Diisopropyl ether	100.0000	106.1768	-6.2	113	0.00
26	T	Vinyl Acetate	50.0000	64.9412	-29.9#	137	0.00
27	P	1,1-Dichloroethane	50.0000	51.3108	-2.6	105	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.7409	1.3	105	0.00
29	P	2-Butanone	50.0000	52.0608	-4.1	111	0.00
30	T	Propionitrile	100.0000	100.9815	-1.0	104	0.00
31	T	2,2-Dichloropropane	50.0000	56.5419	-13.1	117	0.00
32	P	cis-1,2-Dichloroethene	50.0000	54.2808	-8.6	111	0.00
33	C	Chloroform	50.0000	52.5215	-5.0	107	0.00
34	T	1-Bromopropane	50.0000	82.0516	-64.1#	163	0.00
35	T	Bromochloromethane	50.0000	51.1976	-2.4	104	0.00
36	T	Tetrahydrofuran	100.0000	89.7548	10.2	96	0.00
37	S	Dibromofluoromethane	50.0000	49.9603	0.1	107	0.00
38	P	1,1,1-Trichloroethane	50.0000	54.1063	-8.2	112	0.00
39	P	Cyclohexane	50.0000	62.9255	-25.9#	129	0.00
40	T	1,1-Dichloropropene	50.0000	53.8422	-7.7	111	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.0160	-3.0	110	0.00
42	P	Carbon Tetrachloride	50.0000	53.4442	-6.9	109	0.00
43	S	1,2-Dichloroethane-d4	50.0000	47.1452	5.7	101	0.00
44		Heptane	-1.0000	0.0000	0.0	104	0.00
45	P	1,2-Dichloroethane	50.0000	51.2804	-2.6	105	0.00
46	P	Benzene	50.0000	52.1965	-4.4	110	0.00
47	P	Trichloroethene	50.0000	54.9473	-9.9	115	0.00
48	P	Methylcyclohexane	50.0000	64.0050	-28.0#	130	0.00
49	C	1,2-Dichloropropane	50.0000	54.6820	-9.4	113	0.00
50	T	1,4-Dioxane	200.0000	180.4439	9.8	95	0.00
51	P	Bromodichloromethane	50.0000	51.3270	-2.7	106	0.00
52	T	Dibromomethane	50.0000	49.6728	0.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.4171	-2.8	115	0.00
54	P	4-Methyl-2-Pentanone	50.0000	54.1278	-8.3	113	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974903.D Vial: 18
Acq On : 21 Jun 2016 15:35 Operator: ADC
Sample : WG573367-11 50.0ug/L 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	56.9512	-13.9	117	0.00
56	T	Dimethyl Disulfide	50.0000	54.9363	-9.9	126	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	107	0.00
58	S	Toluene-d8	50.0000	50.9380	-1.9	111	0.00
59	C	Toluene	50.0000	54.0349	-8.1	112	0.00
60	T	Ethyl Methacrylate	50.0000	58.0659	-16.1	119	0.00
61	P	trans-1,3-Dichloropropene	50.0000	53.5782	-7.2	106	0.00
62	P	1,1,2-Trichloroethane	50.0000	52.6401	-5.3	104	0.00
63	P	2-Hexanone	50.0000	49.9727	0.1	110	0.00
64	T	1,3-Dichloropropane	50.0000	54.7642	-9.5	111	0.00
65	P	Tetrachloroethene	50.0000	55.0185	-10.0	112	0.00
66	P	Dibromochloromethane	50.0000	51.3243	-2.6	104	0.00
67	P	1,2-Dibromoethane	50.0000	50.5354	-1.1	104	0.00
68	T	1-Chlorohexane	50.0000	63.4462	-26.9#	127	0.00
69	P	Chlorobenzene	50.0000	54.8603	-9.7	113	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	53.1264	-6.3	108	0.00
71	C	Ethylbenzene	50.0000	56.0754	-12.2	114	0.00
72	P	m-,p-Xylene	100.0000	109.6874	-9.7	114	0.00
73	P	o-Xylene	50.0000	56.0688	-12.1	116	0.00
74	P	Styrene	50.0000	54.9958	-10.0	110	0.00
75	P	Bromoform	50.0000	48.5476	2.9	96	0.00
76	P	Isopropylbenzene	50.0000	56.4333	-12.9	117	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	108	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	51.2365	-2.5	104	0.00
79	S	p-Bromofluorobenzene	50.0000	51.5879	-3.2	109	0.00
80	T	1,2,3-Trichloropropane	50.0000	51.7465	-3.5	104	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	54.1767	-8.4	107	0.00
82	T	n-Propylbenzene	50.0000	57.0051	-14.0	118	0.00
83	T	Bromobenzene	50.0000	52.3710	-4.7	108	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	58.0490	-16.1	120	0.00
85	T	2-Chlorotoluene	50.0000	56.2716	-12.5	117	0.00
86	T	4-Chlorotoluene	50.0000	55.2609	-10.5	114	0.00
87	T	a-Methylstyrene	50.0000	67.8778	-35.8#	139	0.00
88	T	tert-Butylbenzene	50.0000	58.3529	-16.7	119	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	56.9057	-13.8	115	0.00
90	T	sec-Butylbenzene	50.0000	56.6011	-13.2	118	0.00
91	T	p-Isopropyltoluene	50.0000	56.5703	-13.1	116	0.00
92	P	1,3-Dichlorobenzene	50.0000	53.3085	-6.6	114	0.00
93	P	1,4-Dichlorobenzene	50.0000	53.2388	-6.5	116	0.00
94	T	n-Butylbenzene	50.0000	54.8562	-9.7	116	0.00
95	P	1,2-Dichlorobenzene	50.0000	53.0123	-6.0	113	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	48.9349	2.1	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	56.6406	-13.3	119	0.00
98	T	Hexachlorobutadiene	50.0000	58.2736	-16.5	126	0.00
99	T	Naphthalene	50.0000	48.8145	2.4	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	55.1133	-10.2	116	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974903.D 8260S.M Thu Jun 23 11:49:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975215.D Vial: 4
Acq On : 1 Jul 2016 15:50 Operator: ADC
Sample : WG574992-02 50ug/kg CCV Inst : hpms9
Misc : 7,1 STD76781 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 16:27:46 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	557847	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	441275	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	228800	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	150420	48.9005 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.80%		
43) 1,2-Dichloroethane-d4	10.41	65	150613	46.0559 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.12%		
58) Toluene-d8	12.78	98	541311	49.5279 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.06%		
79) p-Bromofluorobenzene	16.18	95	213091	51.0036 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	240296	54.9751 ug/kg	100
3) Chloromethane	3.73	50	204715	52.9978 ug/kg	98
4) Vinyl Chloride	3.96	62	159467	58.7878 ug/kg	99
5) 1,3-Butadiene	4.01	54	87356	65.1304 ug/kg	98
6) Bromomethane	4.86	94	132756	54.1315 ug/kg	96
7) Chloroethane	5.01	64	119138	53.4828 ug/kg	99
8) Trichlorofluoromethane	5.49	101	271778	53.9914 ug/kg	100
9) Diethyl ether	6.02	59	278470	103.4189 ug/kg	98
10) Isoprene	6.06	67	198356	55.8865 ug/kg	99
11) Acrolein	6.26	56	24819	122.9705 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	163934	54.2755 ug/kg	99
13) Acetone	6.36	43	50088	45.3887 ug/kg	98
14) 1,1-Dichloroethene	6.59	61	250803	51.9123 ug/kg	100
15) Tert-Butyl Alcohol	6.69	59	99898	202.8728 ug/kg	97
16) Dimethyl Sulfide	6.85	62	104289	51.7266 ug/kg	97
17) Iodomethane	7.10	142	84107	41.6581 ug/kg	99
18) Methyl acetate	7.11	43	134285	47.1929 ug/kg	98
19) Methylene Chloride	7.37	84	160248	49.0705 ug/kg	96
20) Carbon Disulfide	7.41	76	495233	54.2383 ug/kg	100
21) Acrylonitrile	7.55	53	72237	55.0023 ug/kg	98
22) Methyl Tert Butyl Ether	7.57	73	436454	52.1741 ug/kg	98
23) trans-1,2-Dichloroethene	7.81	61	241654	52.6000 ug/kg	99
24) n-Hexane	7.88	57	279859	54.5385 ug/kg	99
25) Diisopropyl ether	8.22	45	1072221	101.4598 ug/kg	99
26) Vinyl Acetate	8.40	43	347325	60.9063 ug/kg	99
27) 1,1-Dichloroethane	8.43	63	298320	51.8806 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.80	59	1022967	103.6343 ug/kg	99
29) 2-Butanone	8.99	43	77456	47.5578 ug/kg	99
30) Propionitrile	9.10	54	52712	106.8810 ug/kg	94
31) 2,2-Dichloropropane	9.20	77	225085	52.6638 ug/kg	100
32) cis-1,2-Dichloroethene	9.28	96	173098	52.4924 ug/kg	97
33) Chloroform	9.48	83	263431	53.1554 ug/kg	100
34) 1-Bromopropane	9.61	122	29499	57.2891 ug/kg	98
35) Bromochloromethane	9.71	130	115471	53.2275 ug/kg	96
36) Tetrahydrofuran	9.74	42	114936	102.5023 ug/kg	99
38) 1,1,1-Trichloroethane	10.01	97	236656	52.8652 ug/kg	98
39) Cyclohexane	10.04	56	309399	54.6660 ug/kg	98
40) 1,1-Dichloropropene	10.21	75	205728	52.7892 ug/kg	99
41) Tert-Amyl-Methyl ether	10.30	73	822156	104.5458 ug/kg	100
42) Carbon Tetrachloride	10.35	117	228023	52.5082 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975215.D Vial: 4
Acq On : 1 Jul 2016 15:50 Operator: ADC
Sample : WG574992-02 50ug/kg CCV Inst : hpms9
Misc : 7,1 STD76781 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 16:27:46 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.52	62	210388	51.8367 ug/kg	99
46)	Benzene	10.56	78	605077	51.2167 ug/kg	99
47)	Trichloroethene	11.31	130	186488	53.8891 ug/kg	99
48)	Methylcyclohexane	11.40	83	275224	56.4990 ug/kg	98
49)	1,2-Dichloropropane	11.52	63	166953	51.7102 ug/kg	98
50)	1,4-Dioxane	11.82	88	11071	224.5471 ug/kg	89
51)	Bromodichloromethane	11.83	83	203250	51.8779 ug/kg	99
52)	Dibromomethane	11.92	174	112103	54.8699 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.13	63	88983	42.8912 ug/kg	99
54)	4-Methyl-2-Pentanone	12.15	58	65404	48.9450 ug/kg	98
55)	cis-1,3-Dichloropropene	12.46	75	242768	52.0633 ug/kg	99
56)	Dimethyl Disulfide	12.73	94	270176	49.1600 ug/kg	100
59)	Toluene	12.89	91	647913	51.4849 ug/kg	99
60)	Ethyl Methacrylate	12.97	69	191054	53.2199 ug/kg	99
61)	trans-1,3-Dichloropropene	13.07	75	227478	53.2285 ug/kg	99
62)	1,1,2-Trichloroethane	13.28	97	141763	54.4864 ug/kg	100
63)	2-Hexanone	13.21	43	112925	44.6873 ug/kg	100
64)	1,3-Dichloropropane	13.58	76	228452	52.5173 ug/kg	97
65)	Tetrachloroethene	13.70	164	145863	54.2022 ug/kg	99
66)	Dibromochloromethane	13.97	129	186038	54.1560 ug/kg	100
67)	1,2-Dibromoethane	14.23	107	153071	52.3714 ug/kg	99
68)	1-Chlorohexane	14.30	91	218768	55.7392 ug/kg	99
69)	Chlorobenzene	14.72	112	474235	52.9445 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.75	131	175836	54.5698 ug/kg	99
71)	Ethylbenzene	14.75	106	252923	53.2999 ug/kg	99
72)	m-,p-Xylene	14.84	106	611411	104.3010 ug/kg	100
73)	o-Xylene	15.41	106	301391	53.1068 ug/kg	100
74)	Styrene	15.44	104	512102	54.0730 ug/kg	99
75)	Bromoform	15.95	173	134855	57.8493 ug/kg	99
76)	Isopropylbenzene	15.83	105	770742	52.9190 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.05	83	197698	53.6050 ug/kg	100
80)	1,2,3-Trichloropropane	16.24	110	62124	54.3214 ug/kg	99
81)	trans-1,4-Dichloro-2-Buten	16.28	53	59244	53.8180 ug/kg	89
82)	n-Propylbenzene	16.34	91	861644	52.3250 ug/kg	99
83)	Bromobenzene	16.47	156	213309	53.7056 ug/kg	97
84)	1,3,5-Trimethylbenzene	16.53	105	671975	53.7326 ug/kg	99
85)	2-Chlorotoluene	16.61	91	534754	53.7253 ug/kg	99
86)	4-Chlorotoluene	16.65	91	519022	51.3849 ug/kg	100
87)	a-Methylstyrene	16.93	118	318653	54.8671 ug/kg	99
88)	tert-Butylbenzene	16.99	134	145021	53.6694 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.04	105	686739	55.4683 ug/kg	100
90)	sec-Butylbenzene	17.25	105	855951	52.1641 ug/kg	99
91)	p-Isopropyltoluene	17.41	119	725793	54.2289 ug/kg	100
92)	1,3-Dichlorobenzene	17.61	146	402068	52.3681 ug/kg	100
93)	1,4-Dichlorobenzene	17.74	146	407827	52.0455 ug/kg	98
94)	n-Butylbenzene	17.94	91	639476	52.2781 ug/kg	99
95)	1,2-Dichlorobenzene	18.24	146	385288	52.5471 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.24	157	52688	50.2149 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.38	180	295235	55.1948 ug/kg	100
98)	Hexachlorobutadiene	20.53	225	146172	53.8651 ug/kg	98
99)	Naphthalene	20.75	128	786858	56.3204 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.05	180	287375	54.8925 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M975215.D 8260S.M Fri Jul 01 16:27:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975215.D Vial: 4
Acq On : 1 Jul 2016 15:50 Operator: ADC
Sample : WG574992-02 50ug/kg CCV Inst : hpms9
Misc : 7,1 STD76781 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 16:27 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

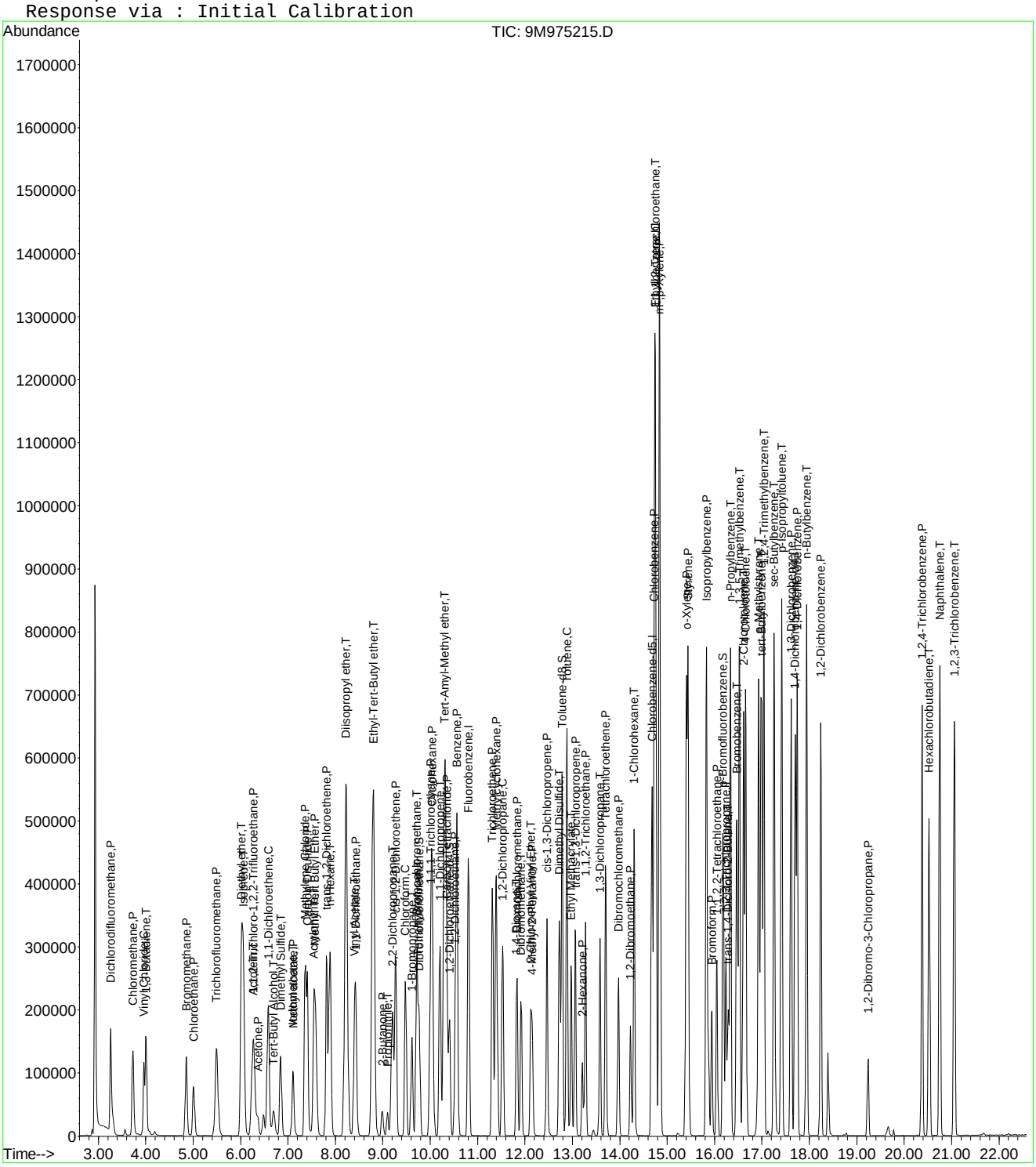

9M975215.D 8260S.M Fri Jul 01 16:27:46 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070116\9M975215.D Vial: 4
Acq On : 1 Jul 2016 15:50 Operator: ADC
Sample : WG574992-02 50ug/kg CCV Inst : hpms9
Misc : 7,1 STD76781 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	88	0.00
2	P	Dichlorodifluoromethane	0.3918	0.4308	-10.0	88	0.00
3	P	Chloromethane	0.3462	0.3670	-6.0	93	0.00
4	C	Vinyl Chloride	0.2431	0.2859	-17.6	101	0.00
5	T	1,3-Butadiene	0.1202	0.1566	-30.3#	117	0.01
6	P	Bromomethane	0.2198	0.2380	-8.3	99	0.00
7	P	Chloroethane	0.1997	0.2136	-7.0	90	0.00
8	P	Trichlorofluoromethane	0.4512	0.4872	-8.0	89	0.00
9	T	Diethyl ether	0.2413	0.2496	-3.4	90	0.00
10	T	Isoprene	0.3181	0.3556	-11.8	94	0.00
11	T	Acrolein	0.0181	0.0445	-145.9#	222#	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2707	0.2939	-8.6	90	0.00
13	P	Acetone	0.1075	0.0898#	16.5	81	0.00
14	C	1,1-Dichloroethene	0.4330	0.4496	-3.8	87	0.00
15	T	Tert-Butyl Alcohol	0.0441	0.0448	-1.4	92	0.00
16	T	Dimethyl Sulfide	0.1807	0.1870	-3.5	88	0.00
17	T	Iodomethane	0.1566	0.1508	3.7	76	0.00
18	P	Methyl acetate	0.2550	0.2407	5.6	83	0.00
19	P	Methylene Chloride	0.2927	0.2873	1.9	88	0.00
20	P	Carbon Disulfide	0.8184	0.8878	-8.5	95	0.00
21	T	Acrylonitrile	0.1177	0.1295	-10.0	91	0.00
22	P	Methyl Tert Butyl Ether	0.7498	0.7824	-4.3	89	0.00
23	P	trans-1,2-Dichloroethene	0.4118	0.4332	-5.2	87	0.00
24	T	n-Hexane	0.4599	0.5017	-9.1	94	0.00
25	T	Diisopropyl ether	0.9472	0.9610	-1.5	89	0.00
26	T	Vinyl Acetate	0.5111	0.6226	-21.8	105	0.00
27	P	1,1-Dichloroethane	0.5154	0.5348	-3.8	87	0.00
28	T	Ethyl-Tert-Butyl ether	0.8847	0.9169	-3.6	90	0.00
29	P	2-Butanone	0.1460	0.1389	4.9	83	0.00
30	T	Propionitrile	0.0442	0.0473	-6.9	91	0.00
31	T	2,2-Dichloropropane	0.3831	0.4035	-5.3	89	0.00
32	P	cis-1,2-Dichloroethene	0.2956	0.3103	-5.0	88	0.00
33	C	Chloroform	0.4442	0.4722	-6.3	89	0.00
34	T	1-Bromopropane	0.0461	0.0529	-14.6	94	0.00
35	T	Bromochloromethane	0.1944	0.2070	-6.5	89	0.00
36	T	Tetrahydrofuran	0.1005	0.1030	-2.5	90	0.00
37	S	Dibromofluoromethane	0.2757	0.2696	2.2	86	0.00
38	P	1,1,1-Trichloroethane	0.4012	0.4242	-5.7	90	0.00
39	P	Cyclohexane	0.5073	0.5546	-9.3	92	0.00
40	T	1,1-Dichloropropene	0.3493	0.3688	-5.6	89	0.00
41	T	Tert-Amyl-Methyl ether	0.7049	0.7369	-4.5	92	0.00
42	P	Carbon Tetrachloride	0.3892	0.4088	-5.0	88	0.00
43	S	1,2-Dichloroethane-d4	0.2931	0.2700	7.9	81	0.00
44		Heptane	0.0000	0.0000	0.0	88	0.00
45	P	1,2-Dichloroethane	0.3638	0.3771	-3.7	87	0.00
46	P	Benzene	1.0589	1.0847	-2.4	88	0.00
47	P	Trichloroethene	0.3102	0.3343	-7.8	93	0.00
48	P	Methylcyclohexane	0.4366	0.4934	-13.0	95	0.00
49	C	1,2-Dichloropropane	0.2894	0.2993	-3.4	87	0.00
50	T	1,4-Dioxane	0.0044	0.0050	-12.2	97	0.00
51	P	Bromodichloromethane	0.3512	0.3644	-3.8	88	0.00
52	T	Dibromomethane	0.1831	0.2010	-9.7	90	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1653	0.1595	3.5	78	0.00
54	P	4-Methyl-2-Pentanone	0.1198	0.1172	2.1	84	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070116\9M975215.D Vial: 4
Acq On : 1 Jul 2016 15:50 Operator: ADC
Sample : WG574992-02 50ug/kg CCV Inst : hpms9
Misc : 7,1 STD76781 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.4179	0.4352	-4.1	88	0.00
56	T	Dimethyl Disulfide	0.4374	0.4843	-10.7	93	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	90	0.00
58	S	Toluene-d8	1.2384	1.2267	0.9	90	0.00
59	C	Toluene	1.4259	1.4683	-3.0	90	0.00
60	T	Ethyl Methacrylate	0.4068	0.4330	-6.4	92	0.00
61	P	trans-1,3-Dichloropropene	0.4842	0.5155	-6.5	89	0.00
62	P	1,1,2-Trichloroethane	0.2948	0.3213	-9.0	90	0.00
63	P	2-Hexanone	0.2671	0.2559	4.2	82	0.00
64	T	1,3-Dichloropropane	0.4929	0.5177	-5.0	90	0.00
65	P	Tetrachloroethene	0.3049	0.3306	-8.4	92	0.00
66	P	Dibromochloromethane	0.3892	0.4216	-8.3	92	0.00
67	P	1,2-Dibromoethane	0.3312	0.3469	-4.7	91	0.00
68	T	1-Chlorohexane	0.4447	0.4958	-11.5	93	0.00
69	P	Chlorobenzene	1.0149	1.0747	-5.9	91	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3651	0.3985	-9.1	93	0.00
71	C	Ethylbenzene	0.5377	0.5732	-6.6	91	0.00
72	P	m-,p-Xylene	0.6642	0.6928	-4.3	91	0.00
73	P	o-Xylene	0.6430	0.6830	-6.2	92	0.00
74	P	Styrene	1.0731	1.1605	-8.1	91	0.00
75	P	Bromoform	0.2641	0.3056	-15.7	95	0.00
76	P	Isopropylbenzene	1.6503	1.7466	-5.8	92	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	92	0.00
78	P	1,1,2,2-Tetrachloroethane	0.8060	0.8641	-7.2	93	0.00
79	S	p-Bromofluorobenzene	0.9130	0.9313	-2.0	92	0.00
80	T	1,2,3-Trichloropropane	0.2499	0.2715	-8.6	94	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2406	0.2589	-7.6	91	0.00
82	T	n-Propylbenzene	3.5986	3.7659	-4.7	93	0.00
83	T	Bromobenzene	0.8680	0.9323	-7.4	94	0.00
84	T	1,3,5-Trimethylbenzene	2.7329	2.9369	-7.5	95	0.00
85	T	2-Chlorotoluene	2.1751	2.3372	-7.5	95	0.00
86	T	4-Chlorotoluene	2.2073	2.2685	-2.8	90	0.00
87	T	a-Methylstyrene	1.2692	1.3927	-9.7	96	0.00
88	T	tert-Butylbenzene	0.5905	0.6338	-7.3	93	0.00
89	T	1,2,4-Trimethylbenzene	3.0085	3.0015	0.2	96	0.00
90	T	sec-Butylbenzene	3.5858	3.7410	-4.3	93	0.00
91	T	p-Isopropyltoluene	2.9248	3.1722	-8.5	95	0.00
92	P	1,3-Dichlorobenzene	1.6778	1.7573	-4.7	95	0.00
93	P	1,4-Dichlorobenzene	1.7124	1.7825	-4.1	97	0.00
94	T	n-Butylbenzene	2.6731	2.7949	-4.6	95	0.00
95	P	1,2-Dichlorobenzene	1.6023	1.6840	-5.1	95	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2083	0.2303	-10.5	95	0.00
97	P	1,2,4-Trichlorobenzene	1.1689	1.2904	-10.4	99	0.00
98	T	Hexachlorobutadiene	0.5930	0.6389	-7.7	99	0.00
99	T	Naphthalene	3.0531	3.4391	-12.6	99	0.00
100	T	1,2,3-Trichlorobenzene	1.1441	1.2560	-9.8	99	0.00

(#) = Out of Range SPCC's out = 1 CCC's out = 0
9M975215.D 8260S.M Fri Jul 01 16:27:53 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070116\9M975215.D Vial: 4
Acq On : 1 Jul 2016 15:50 Operator: ADC
Sample : WG574992-02 50ug/kg CCV Inst : hpms9
Misc : 7,1 STD76781 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	88	0.00
2	P	Dichlorodifluoromethane	50.0000	54.9751	-10.0	88	0.00
3	P	Chloromethane	50.0000	52.9978	-6.0	93	0.00
4	C	Vinyl Chloride	50.0000	58.7878	-17.6	101	0.00
5	T	1,3-Butadiene	50.0000	65.1304	-30.3#	117	0.01
6	P	Bromomethane	50.0000	54.1315	-8.3	99	0.00
7	P	Chloroethane	50.0000	53.4828	-7.0	90	0.00
8	P	Trichlorofluoromethane	50.0000	53.9914	-8.0	89	0.00
9	T	Diethyl ether	100.0000	103.4189	-3.4	90	0.00
10	T	Isoprene	50.0000	55.8865	-11.8	94	0.00
11	T	Acrolein	50.0000	122.9705	-145.9#	222	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.2755	-8.6	90	0.00
13	P	Acetone	50.0000	45.3887	9.2	81	0.00
14	C	1,1-Dichloroethene	50.0000	51.9123	-3.8	87	0.00
15	T	Tert-Butyl Alcohol	200.0000	202.8728	-1.4	92	0.00
16	T	Dimethyl Sulfide	50.0000	51.7266	-3.5	88	0.00
17	T	Iodomethane	50.0000	41.6581	16.7	76	0.00
18	P	Methyl acetate	50.0000	47.1929	5.6	83	0.00
19	P	Methylene Chloride	50.0000	49.0705	1.9	88	0.00
20	P	Carbon Disulfide	50.0000	54.2383	-8.5	95	0.00
21	T	Acrylonitrile	50.0000	55.0023	-10.0	91	0.00
22	P	Methyl Tert Butyl Ether	50.0000	52.1741	-4.3	89	0.00
23	P	trans-1,2-Dichloroethene	50.0000	52.6000	-5.2	87	0.00
24	T	n-Hexane	50.0000	54.5385	-9.1	94	0.00
25	T	Diisopropyl ether	100.0000	101.4598	-1.5	89	0.00
26	T	Vinyl Acetate	50.0000	60.9063	-21.8	105	0.00
27	P	1,1-Dichloroethane	50.0000	51.8806	-3.8	87	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	103.6343	-3.6	90	0.00
29	P	2-Butanone	50.0000	47.5578	4.9	83	0.00
30	T	Propionitrile	100.0000	106.8811	-6.9	91	0.00
31	T	2,2-Dichloropropane	50.0000	52.6638	-5.3	89	0.00
32	P	cis-1,2-Dichloroethene	50.0000	52.4924	-5.0	88	0.00
33	C	Chloroform	50.0000	53.1554	-6.3	89	0.00
34	T	1-Bromopropane	50.0000	57.2891	-14.6	94	0.00
35	T	Bromochloromethane	50.0000	53.2275	-6.5	89	0.00
36	T	Tetrahydrofuran	100.0000	102.5023	-2.5	90	0.00
37	S	Dibromofluoromethane	50.0000	48.9005	2.2	86	0.00
38	P	1,1,1-Trichloroethane	50.0000	52.8652	-5.7	90	0.00
39	P	Cyclohexane	50.0000	54.6660	-9.3	92	0.00
40	T	1,1-Dichloropropene	50.0000	52.7892	-5.6	89	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	104.5458	-4.5	92	0.00
42	P	Carbon Tetrachloride	50.0000	52.5082	-5.0	88	0.00
43	S	1,2-Dichloroethane-d4	50.0000	46.0559	7.9	81	0.00
44		Heptane	-1.0000	0.0000	0.0	88	0.00
45	P	1,2-Dichloroethane	50.0000	51.8367	-3.7	87	0.00
46	P	Benzene	50.0000	51.2167	-2.4	88	0.00
47	P	Trichloroethene	50.0000	53.8891	-7.8	93	0.00
48	P	Methylcyclohexane	50.0000	56.4990	-13.0	95	0.00
49	C	1,2-Dichloropropane	50.0000	51.7102	-3.4	87	0.00
50	T	1,4-Dioxane	200.0000	224.5471	-12.3	97	0.00
51	P	Bromodichloromethane	50.0000	51.8779	-3.8	88	0.00
52	T	Dibromomethane	50.0000	54.8699	-9.7	90	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	42.8912	14.2	78	0.00
54	P	4-Methyl-2-Pentanone	50.0000	48.9450	2.1	84	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070116\9M975215.D Vial: 4
Acq On : 1 Jul 2016 15:50 Operator: ADC
Sample : WG574992-02 50ug/kg CCV Inst : hpms9
Misc : 7,1 STD76781 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.0633	-4.1	88	0.00
56	T	Dimethyl Disulfide	50.0000	49.1600	1.7	93	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	90	0.00
58	S	Toluene-d8	50.0000	49.5279	0.9	90	0.00
59	C	Toluene	50.0000	51.4849	-3.0	90	0.00
60	T	Ethyl Methacrylate	50.0000	53.2199	-6.4	92	0.00
61	P	trans-1,3-Dichloropropene	50.0000	53.2285	-6.5	89	0.00
62	P	1,1,2-Trichloroethane	50.0000	54.4864	-9.0	90	0.00
63	P	2-Hexanone	50.0000	44.6873	10.6	82	0.00
64	T	1,3-Dichloropropane	50.0000	52.5173	-5.0	90	0.00
65	P	Tetrachloroethene	50.0000	54.2022	-8.4	92	0.00
66	P	Dibromochloromethane	50.0000	54.1560	-8.3	92	0.00
67	P	1,2-Dibromoethane	50.0000	52.3714	-4.7	91	0.00
68	T	1-Chlorohexane	50.0000	55.7392	-11.5	93	0.00
69	P	Chlorobenzene	50.0000	52.9445	-5.9	91	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	54.5698	-9.1	93	0.00
71	C	Ethylbenzene	50.0000	53.3000	-6.6	91	0.00
72	P	m-,p-Xylene	100.0000	104.3010	-4.3	91	0.00
73	P	o-Xylene	50.0000	53.1068	-6.2	92	0.00
74	P	Styrene	50.0000	54.0731	-8.1	91	0.00
75	P	Bromoform	50.0000	57.8493	-15.7	95	0.00
76	P	Isopropylbenzene	50.0000	52.9190	-5.8	92	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	92	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	53.6050	-7.2	93	0.00
79	S	p-Bromofluorobenzene	50.0000	51.0036	-2.0	92	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.3214	-8.6	94	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	53.8180	-7.6	91	0.00
82	T	n-Propylbenzene	50.0000	52.3250	-4.7	93	0.00
83	T	Bromobenzene	50.0000	53.7056	-7.4	94	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	53.7326	-7.5	95	0.00
85	T	2-Chlorotoluene	50.0000	53.7253	-7.5	95	0.00
86	T	4-Chlorotoluene	50.0000	51.3849	-2.8	90	0.00
87	T	a-Methylstyrene	50.0000	54.8671	-9.7	96	0.00
88	T	tert-Butylbenzene	50.0000	53.6694	-7.3	93	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	55.4683	-10.9	96	0.00
90	T	sec-Butylbenzene	50.0000	52.1641	-4.3	93	0.00
91	T	p-Isopropyltoluene	50.0000	54.2289	-8.5	95	0.00
92	P	1,3-Dichlorobenzene	50.0000	52.3681	-4.7	95	0.00
93	P	1,4-Dichlorobenzene	50.0000	52.0455	-4.1	97	0.00
94	T	n-Butylbenzene	50.0000	52.2781	-4.6	95	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.5471	-5.1	95	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	50.2149	-0.4	95	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	55.1948	-10.4	99	0.00
98	T	Hexachlorobutadiene	50.0000	53.8652	-7.7	99	0.00
99	T	Naphthalene	50.0000	56.3204	-12.6	99	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	54.8925	-9.8	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M975215.D 8260S.M Fri Jul 01 16:27:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975250.D Vial: 3
Acq On : 6 Jul 2016 14:19 Operator: ADC
Sample : WG575226-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 06 16:43:18 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	679984	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	538735	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.71	152	265507	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	180366	48.1038 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.20%		
43) 1,2-Dichloroethane-d4	10.40	65	183187	45.9551 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.92%		
58) Toluene-d8	12.78	98	638348	47.8404 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 95.68%		
79) p-Bromofluorobenzene	16.18	95	253873	52.3639 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 104.72%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	290556	54.5338 ug/kg	99
3) Chloromethane	3.71	50	199052	42.2757 ug/kg	100
4) Vinyl Chloride	3.95	62	192426	58.1965 ug/kg	99
5) 1,3-Butadiene	3.99	54	128178	78.4008 ug/kg	98
6) Bromomethane	4.83	94	162640	54.4051 ug/kg	98
7) Chloroethane	4.99	64	148277	54.6077 ug/kg	99
8) Trichlorofluoromethane	5.48	101	345946	56.3813 ug/kg	100
9) Diethyl ether	6.00	59	334670	101.9658 ug/kg	98
10) Isoprene	6.05	67	243254	56.2261 ug/kg	99
11) Acrolein	6.25	56	27549	111.9796 ug/kg	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	205704	55.8720 ug/kg	99
13) Acetone	6.35	43	62799	46.7881 ug/kg	99
14) 1,1-Dichloroethene	6.56	61	314436	53.3933 ug/kg	99
15) Tert-Butyl Alcohol	6.68	59	112658	187.6919 ug/kg	98
16) Dimethyl Sulfide	6.83	62	129478	52.6851 ug/kg	98
17) Iodomethane	7.09	142	106084	43.0547 ug/kg	100
18) Methyl acetate	7.10	43	166677	48.0553 ug/kg	99
19) Methylene Chloride	7.35	84	195543	49.1232 ug/kg	97
20) Carbon Disulfide	7.40	76	617978	55.5247 ug/kg	100
21) Acrylonitrile	7.53	53	85510	53.4139 ug/kg	99
22) Methyl Tert Butyl Ether	7.55	73	532465	52.2185 ug/kg	99
23) trans-1,2-Dichloroethene	7.80	61	300588	53.6760 ug/kg	99
24) n-Hexane	7.87	57	331260	52.9602 ug/kg	97
25) Diisopropyl ether	8.22	45	1309806	101.6794 ug/kg	99
26) Vinyl Acetate	8.39	43	398539	57.3342 ug/kg	99
27) 1,1-Dichloroethane	8.42	63	371978	53.0709 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.79	59	1236872	102.7976 ug/kg	99
29) 2-Butanone	8.98	43	97243	48.9826 ug/kg	98
30) Propionitrile	9.08	54	61133	101.6912 ug/kg	95
31) 2,2-Dichloropropane	9.19	77	285658	54.8313 ug/kg	100
32) cis-1,2-Dichloroethene	9.26	96	213432	53.0982 ug/kg	97
33) Chloroform	9.46	83	325752	53.9242 ug/kg	100
34) 1-Bromopropane	9.60	122	37426	59.6286 ug/kg	98
35) Bromochloromethane	9.71	130	140662	53.1932 ug/kg	97
36) Tetrahydrofuran	9.73	42	133583	97.7339 ug/kg	98
38) 1,1,1-Trichloroethane	10.00	97	296910	54.4119 ug/kg	99
39) Cyclohexane	10.03	56	378179	54.8166 ug/kg	98
40) 1,1-Dichloropropene	10.19	75	256643	54.0253 ug/kg	99
41) Tert-Amyl-Methyl ether	10.30	73	990799	103.3605 ug/kg	99
42) Carbon Tetrachloride	10.34	117	284330	53.7140 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M975250.D 8260S.M Wed Jul 06 16:43:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975250.D Vial: 3
Acq On : 6 Jul 2016 14:19 Operator: ADC
Sample : WG575226-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 06 16:43:18 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.52	62	256914	51.9302	ug/kg	99
46)	Benzene	10.56	78	745444	51.7646	ug/kg	99
47)	Trichloroethene	11.31	130	232866	55.2043	ug/kg	100
48)	Methylcyclohexane	11.39	83	332366	55.9741	ug/kg	97
49)	1,2-Dichloropropane	11.52	63	207076	52.6172	ug/kg	99
50)	1,4-Dioxane	11.82	88	10358	172.3507	ug/kg	98
51)	Bromodichloromethane	11.82	83	250948	52.5475	ug/kg	98
52)	Dibromomethane	11.91	174	135943	54.5872	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.11	63	111976	44.2402	ug/kg	98
54)	4-Methyl-2-Pentanone	12.14	58	84862	52.0995	ug/kg	98
55)	cis-1,3-Dichloropropene	12.46	75	299889	52.7615	ug/kg	99
56)	Dimethyl Disulfide	12.73	94	337863	50.4031	ug/kg	100
59)	Toluene	12.88	91	796769	51.8597	ug/kg	100
60)	Ethyl Methacrylate	12.97	69	231094	52.7279	ug/kg	98
61)	trans-1,3-Dichloropropene	13.05	75	272537	52.2353	ug/kg	99
62)	1,1,2-Trichloroethane	13.27	97	165850	52.2126	ug/kg	100
63)	2-Hexanone	13.21	43	143793	46.5024	ug/kg	99
64)	1,3-Dichloropropane	13.58	76	272305	51.2740	ug/kg	96
65)	Tetrachloroethene	13.70	164	179471	54.6261	ug/kg	99
66)	Dibromochloromethane	13.97	129	219978	52.4516	ug/kg	100
67)	1,2-Dibromoethane	14.22	107	183797	51.5079	ug/kg	99
68)	1-Chlorohexane	14.30	91	267143	55.7513	ug/kg	98
69)	Chlorobenzene	14.72	112	565037	51.6699	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.75	131	207439	52.7314	ug/kg	99
71)	Ethylbenzene	14.75	106	304881	52.6263	ug/kg	100
72)	m-,p-Xylene	14.84	106	734266	102.5989	ug/kg	99
73)	o-Xylene	15.41	106	358303	51.7136	ug/kg	100
74)	Styrene	15.44	104	605283	52.3500	ug/kg	99
75)	Bromoform	15.94	173	154783	54.3862	ug/kg	99
76)	Isopropylbenzene	15.83	105	922274	51.8677	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.05	83	217435	50.8057	ug/kg	100
80)	1,2,3-Trichloropropane	16.24	110	71887	54.1679	ug/kg	97
81)	trans-1,4-Dichloro-2-Buten	16.28	53	72267	56.5722	ug/kg	97
82)	n-Propylbenzene	16.33	91	1013124	53.0181	ug/kg	99
83)	Bromobenzene	16.47	156	248277	53.8676	ug/kg	96
84)	1,3,5-Trimethylbenzene	16.52	105	787600	54.2714	ug/kg	99
85)	2-Chlorotoluene	16.61	91	618132	53.5163	ug/kg	99
86)	4-Chlorotoluene	16.65	91	619061	52.8158	ug/kg	99
87)	a-Methylstyrene	16.93	118	378250	56.1246	ug/kg	99
88)	tert-Butylbenzene	16.99	134	169300	53.9924	ug/kg	96
89)	1,2,4-Trimethylbenzene	17.04	105	790278	55.0018	ug/kg	99
90)	sec-Butylbenzene	17.25	105	999304	52.4808	ug/kg	99
91)	p-Isopropyltoluene	17.41	119	836522	53.8612	ug/kg	99
92)	1,3-Dichlorobenzene	17.61	146	463762	52.0526	ug/kg	100
93)	1,4-Dichlorobenzene	17.75	146	461448	50.7470	ug/kg	100
94)	n-Butylbenzene	17.94	91	732832	51.6274	ug/kg	99
95)	1,2-Dichlorobenzene	18.24	146	438736	51.5640	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.24	157	58272	47.9041	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.38	180	324122	52.2179	ug/kg	99
98)	Hexachlorobutadiene	20.53	225	162395	51.5699	ug/kg	97
99)	Naphthalene	20.76	128	826716	50.9925	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.06	180	309034	50.8686	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975250.D Vial: 3
Acq On : 6 Jul 2016 14:19 Operator: ADC
Sample : WG575226-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 6 16:43 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

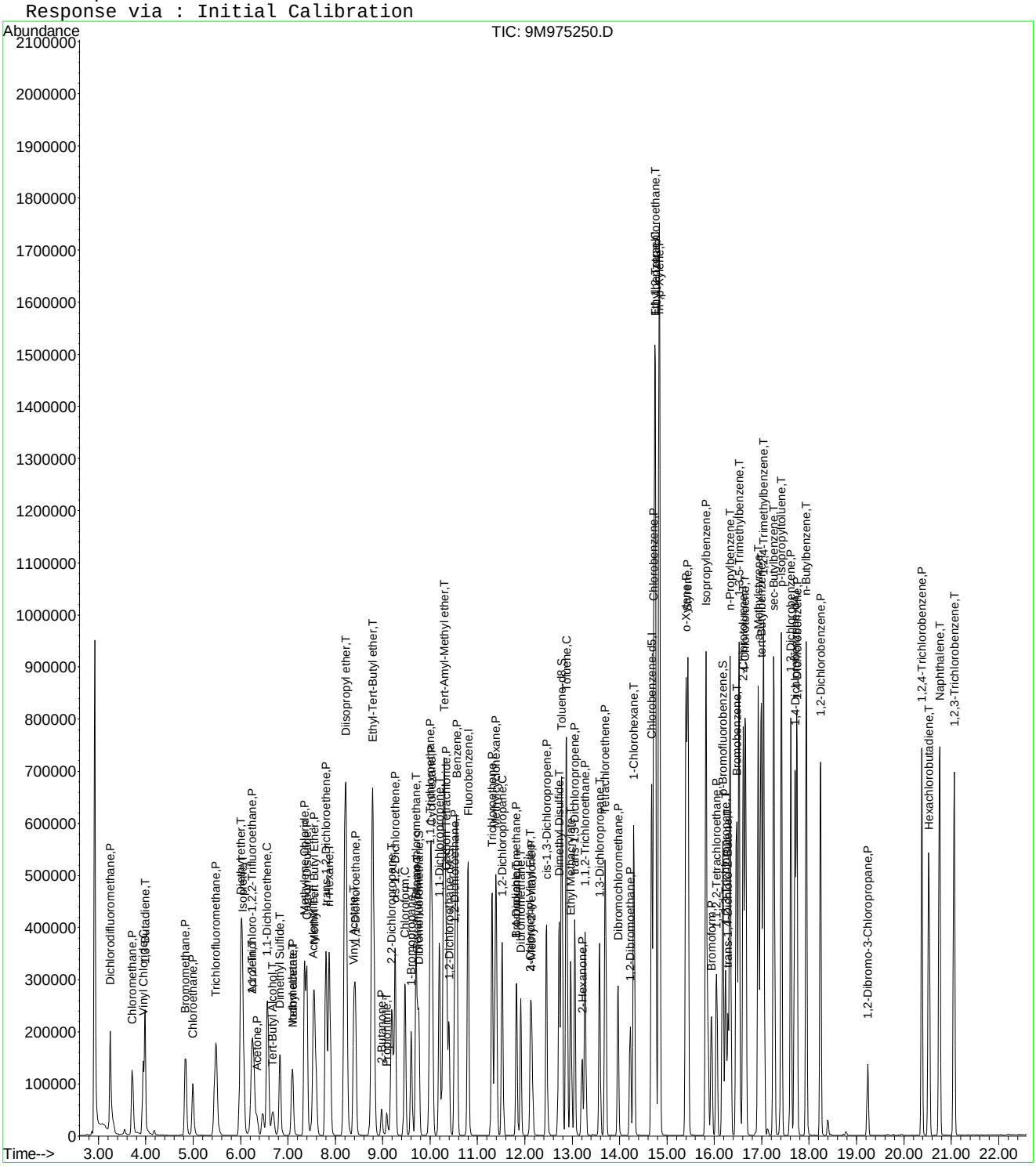

9M975250.D 8260S.M Wed Jul 06 16:43:19 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070616\9M975250.D Vial: 3
Acq On : 6 Jul 2016 14:19 Operator: ADC
Sample : WG575226-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	108	0.00
2	P	Dichlorodifluoromethane	0.3918	0.4273	-9.1	106	0.00
3	P	Chloromethane	0.3462	0.2927	15.4	90	-0.02
4	C	Vinyl Chloride	0.2431	0.2830	-16.4	121	0.00
5	T	1,3-Butadiene	0.1202	0.1885	-56.8#	172	0.00
6	P	Bromomethane	0.2198	0.2392	-8.8	121	-0.02
7	P	Chloroethane	0.1997	0.2181	-9.2	112	-0.02
8	P	Trichlorofluoromethane	0.4512	0.5088	-12.8	114	-0.02
9	T	Diethyl ether	0.2413	0.2461	-2.0	108	-0.02
10	T	Isoprene	0.3181	0.3577	-12.5	116	-0.02
11	T	Acrolein	0.0181	0.0405	-123.9#	247#	-0.02
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2707	0.3025	-11.7	113	-0.03
13	P	Acetone	0.1075	0.0924#	14.1	102	0.00
14	C	1,1-Dichloroethene	0.4330	0.4624	-6.8	109	-0.02
15	T	Tert-Butyl Alcohol	0.0441	0.0414	6.2	104	-0.02
16	T	Dimethyl Sulfide	0.1807	0.1904	-5.4	109	-0.02
17	T	Iodomethane	0.1566	0.1560	0.4	96	-0.02
18	P	Methyl acetate	0.2550	0.2451	3.9	103	0.00
19	P	Methylene Chloride	0.2927	0.2876	1.8	108	0.00
20	P	Carbon Disulfide	0.8184	0.9088	-11.0	118	-0.02
21	T	Acrylonitrile	0.1177	0.1258	-6.8	107	-0.02
22	P	Methyl Tert Butyl Ether	0.7498	0.7831	-4.4	108	-0.02
23	P	trans-1,2-Dichloroethene	0.4118	0.4421	-7.4	109	-0.02
24	T	n-Hexane	0.4599	0.4872	-5.9	111	-0.02
25	T	Diisopropyl ether	0.9472	0.9631	-1.7	108	0.00
26	T	Vinyl Acetate	0.5111	0.5861	-14.7	121	0.00
27	P	1,1-Dichloroethane	0.5154	0.5470	-6.1	108	0.00
28	T	Ethyl-Tert-Butyl ether	0.8847	0.9095	-2.8	109	0.00
29	P	2-Butanone	0.1460	0.1430	2.0	104	0.00
30	T	Propionitrile	0.0442	0.0449	-1.7	105	0.00
31	T	2,2-Dichloropropane	0.3831	0.4201	-9.7	113	-0.02
32	P	cis-1,2-Dichloroethene	0.2956	0.3139	-6.2	108	0.00
33	C	Chloroform	0.4442	0.4791	-7.8	110	-0.02
34	T	1-Bromopropane	0.0461	0.0550	-19.3	119	-0.02
35	T	Bromochloromethane	0.1944	0.2069	-6.4	108	0.00
36	T	Tetrahydrofuran	0.1005	0.0982	2.3	104	0.00
37	S	Dibromofluoromethane	0.2757	0.2652	3.8	103	0.00
38	P	1,1,1-Trichloroethane	0.4012	0.4366	-8.8	113	0.00
39	P	Cyclohexane	0.5073	0.5562	-9.6	112	0.00
40	T	1,1-Dichloropropene	0.3493	0.3774	-8.1	112	-0.02
41	T	Tert-Amyl-Methyl ether	0.7049	0.7286	-3.4	111	0.00
42	P	Carbon Tetrachloride	0.3892	0.4181	-7.4	110	0.00
43	S	1,2-Dichloroethane-d4	0.2931	0.2694	8.1	99	0.00
44		Heptane	0.0000	0.0000	0.0	108	0.00
45	P	1,2-Dichloroethane	0.3638	0.3778	-3.9	107	0.00
46	P	Benzene	1.0589	1.0963	-3.5	109	0.00
47	P	Trichloroethene	0.3102	0.3425	-10.4	116	0.00
48	P	Methylcyclohexane	0.4366	0.4888	-11.9	114	0.00
49	C	1,2-Dichloropropane	0.2894	0.3045	-5.2	108	0.00
50	T	1,4-Dioxane	0.0044	0.0038	13.8	90	0.00
51	P	Bromodichloromethane	0.3512	0.3690	-5.1	109	0.00
52	T	Dibromomethane	0.1831	0.1999	-9.2	110	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1653	0.1647	0.4	98	0.00
54	P	4-Methyl-2-Pentanone	0.1198	0.1248	-4.2	108	0.00

(#) = Out of Range
9M975250.D 8260S.M Wed Jul 06 16:43:23 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070616\9M975250.D Vial: 3
Acq On : 6 Jul 2016 14:19 Operator: ADC
Sample : WG575226-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.4179	0.4410	-5.5	109	0.00
56	T	Dimethyl Disulfide	0.4374	0.4969	-13.6	116	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	110	0.00
58	S	Toluene-d8	1.2384	1.1849	4.3	106	0.00
59	C	Toluene	1.4259	1.4790	-3.7	110	0.00
60	T	Ethyl Methacrylate	0.4068	0.4290	-5.5	111	0.00
61	P	trans-1,3-Dichloropropene	0.4842	0.5059	-4.5	106	0.00
62	P	1,1,2-Trichloroethane	0.2948	0.3079	-4.4	106	0.00
63	P	2-Hexanone	0.2671	0.2669	0.1	104	0.00
64	T	1,3-Dichloropropane	0.4929	0.5054	-2.5	107	0.00
65	P	Tetrachloroethene	0.3049	0.3331	-9.3	113	0.00
66	P	Dibromochloromethane	0.3892	0.4083	-4.9	109	0.00
67	P	1,2-Dibromoethane	0.3312	0.3412	-3.0	109	0.00
68	T	1-Chlorohexane	0.4447	0.4959	-11.5	114	0.00
69	P	Chlorobenzene	1.0149	1.0488	-3.3	109	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3651	0.3851	-5.5	110	0.00
71	C	Ethylbenzene	0.5377	0.5659	-5.3	110	0.00
72	P	m-,p-Xylene	0.6642	0.6815	-2.6	110	0.00
73	P	o-Xylene	0.6430	0.6651	-3.4	109	0.00
74	P	Styrene	1.0731	1.1235	-4.7	107	0.00
75	P	Bromoform	0.2641	0.2873	-8.8	110	0.00
76	P	Isopropylbenzene	1.6503	1.7119	-3.7	110	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	107	0.00
78	P	1,1,2,2-Tetrachloroethane	0.8060	0.8189	-1.6	102	0.00
79	S	p-Bromofluorobenzene	0.9130	0.9562	-4.7	110	0.00
80	T	1,2,3-Trichloropropane	0.2499	0.2707	-8.3	108	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2406	0.2722	-13.1	111	0.00
82	T	n-Propylbenzene	3.5986	3.8158	-6.0	109	0.00
83	T	Bromobenzene	0.8680	0.9351	-7.7	110	0.00
84	T	1,3,5-Trimethylbenzene	2.7329	2.9664	-8.5	111	0.00
85	T	2-Chlorotoluene	2.1751	2.3281	-7.0	110	0.00
86	T	4-Chlorotoluene	2.2073	2.3316	-5.6	108	0.00
87	T	a-Methylstyrene	1.2692	1.4246	-12.2	114	0.00
88	T	tert-Butylbenzene	0.5905	0.6377	-8.0	109	0.00
89	T	1,2,4-Trimethylbenzene	3.0085	2.9765	1.1	111	0.00
90	T	sec-Butylbenzene	3.5858	3.7638	-5.0	108	0.00
91	T	p-Isopropyltoluene	2.9248	3.1507	-7.7	109	0.00
92	P	1,3-Dichlorobenzene	1.6778	1.7467	-4.1	110	0.00
93	P	1,4-Dichlorobenzene	1.7124	1.7380	-1.5	110	0.00
94	T	n-Butylbenzene	2.6731	2.7601	-3.3	109	0.00
95	P	1,2-Dichlorobenzene	1.6023	1.6525	-3.1	109	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2083	0.2195	-5.3	105	0.00
97	P	1,2,4-Trichlorobenzene	1.1689	1.2208	-4.4	109	0.00
98	T	Hexachlorobutadiene	0.5930	0.6116	-3.1	110	0.01
99	T	Naphthalene	3.0531	3.1137	-2.0	104	0.01
100	T	1,2,3-Trichlorobenzene	1.1441	1.1639	-1.7	107	0.00

(#) = Out of Range SPCC's out = 1 CCC's out = 0
9M975250.D 8260S.M Wed Jul 06 16:43:23 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070616\9M975250.D Vial: 3
Acq On : 6 Jul 2016 14:19 Operator: ADC
Sample : WG575226-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	108	0.00
2	P	Dichlorodifluoromethane	50.0000	54.5338	-9.1	106	0.00
3	P	Chloromethane	50.0000	42.2757	15.4	90	-0.02
4	C	Vinyl Chloride	50.0000	58.1965	-16.4	121	0.00
5	T	1,3-Butadiene	50.0000	78.4008	-56.8#	172	0.00
6	P	Bromomethane	50.0000	54.4051	-8.8	121	-0.02
7	P	Chloroethane	50.0000	54.6077	-9.2	112	-0.02
8	P	Trichlorofluoromethane	50.0000	56.3813	-12.8	114	-0.02
9	T	Diethyl ether	100.0000	101.9659	-2.0	108	-0.02
10	T	Isoprene	50.0000	56.2261	-12.5	116	-0.02
11	T	Acrolein	50.0000	111.9796	-124.0#	247	-0.02
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.8720	-11.7	113	-0.03
13	P	Acetone	50.0000	46.7881	6.4	102	0.00
14	C	1,1-Dichloroethene	50.0000	53.3933	-6.8	109	-0.02
15	T	Tert-Butyl Alcohol	200.0000	187.6919	6.2	104	-0.02
16	T	Dimethyl Sulfide	50.0000	52.6851	-5.4	109	-0.02
17	T	Iodomethane	50.0000	43.0547	13.9	96	-0.02
18	P	Methyl acetate	50.0000	48.0553	3.9	103	0.00
19	P	Methylene Chloride	50.0000	49.1232	1.8	108	0.00
20	P	Carbon Disulfide	50.0000	55.5247	-11.0	118	-0.02
21	T	Acrylonitrile	50.0000	53.4139	-6.8	107	-0.02
22	P	Methyl Tert Butyl Ether	50.0000	52.2185	-4.4	108	-0.02
23	P	trans-1,2-Dichloroethene	50.0000	53.6760	-7.4	109	-0.02
24	T	n-Hexane	50.0000	52.9602	-5.9	111	-0.02
25	T	Diisopropyl ether	100.0000	101.6794	-1.7	108	0.00
26	T	Vinyl Acetate	50.0000	57.3342	-14.7	121	0.00
27	P	1,1-Dichloroethane	50.0000	53.0709	-6.1	108	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.7976	-2.8	109	0.00
29	P	2-Butanone	50.0000	48.9826	2.0	104	0.00
30	T	Propionitrile	100.0000	101.6912	-1.7	105	0.00
31	T	2,2-Dichloropropane	50.0000	54.8313	-9.7	113	-0.02
32	P	cis-1,2-Dichloroethene	50.0000	53.0982	-6.2	108	0.00
33	C	Chloroform	50.0000	53.9242	-7.8	110	-0.02
34	T	1-Bromopropane	50.0000	59.6286	-19.3	119	-0.02
35	T	Bromochloromethane	50.0000	53.1932	-6.4	108	0.00
36	T	Tetrahydrofuran	100.0000	97.7339	2.3	104	0.00
37	S	Dibromofluoromethane	50.0000	48.1038	3.8	103	0.00
38	P	1,1,1-Trichloroethane	50.0000	54.4119	-8.8	113	0.00
39	P	Cyclohexane	50.0000	54.8166	-9.6	112	0.00
40	T	1,1-Dichloropropene	50.0000	54.0253	-8.1	112	-0.02
41	T	Tert-Amyl-Methyl ether	100.0000	103.3605	-3.4	111	0.00
42	P	Carbon Tetrachloride	50.0000	53.7140	-7.4	110	0.00
43	S	1,2-Dichloroethane-d4	50.0000	45.9551	8.1	99	0.00
44		Heptane	-1.0000	0.0000	0.0	108	0.00
45	P	1,2-Dichloroethane	50.0000	51.9302	-3.9	107	0.00
46	P	Benzene	50.0000	51.7646	-3.5	109	0.00
47	P	Trichloroethene	50.0000	55.2043	-10.4	116	0.00
48	P	Methylcyclohexane	50.0000	55.9741	-11.9	114	0.00
49	C	1,2-Dichloropropane	50.0000	52.6172	-5.2	108	0.00
50	T	1,4-Dioxane	200.0000	172.3507	13.8	90	0.00
51	P	Bromodichloromethane	50.0000	52.5475	-5.1	109	0.00
52	T	Dibromomethane	50.0000	54.5872	-9.2	110	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	44.2403	11.5	98	0.00
54	P	4-Methyl-2-Pentanone	50.0000	52.0995	-4.2	108	0.00

(#) = Out of Range
9M975250.D 8260S.M Wed Jul 06 16:43:22 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070616\9M975250.D Vial: 3
Acq On : 6 Jul 2016 14:19 Operator: ADC
Sample : WG575226-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.7615	-5.5	109	0.00
56	T	Dimethyl Disulfide	50.0000	50.4031	-0.8	116	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	110	0.00
58	S	Toluene-d8	50.0000	47.8404	4.3	106	0.00
59	C	Toluene	50.0000	51.8597	-3.7	110	0.00
60	T	Ethyl Methacrylate	50.0000	52.7279	-5.5	111	0.00
61	P	trans-1,3-Dichloropropene	50.0000	52.2353	-4.5	106	0.00
62	P	1,1,2-Trichloroethane	50.0000	52.2126	-4.4	106	0.00
63	P	2-Hexanone	50.0000	46.5024	7.0	104	0.00
64	T	1,3-Dichloropropane	50.0000	51.2740	-2.5	107	0.00
65	P	Tetrachloroethene	50.0000	54.6261	-9.3	113	0.00
66	P	Dibromochloromethane	50.0000	52.4516	-4.9	109	0.00
67	P	1,2-Dibromoethane	50.0000	51.5079	-3.0	109	0.00
68	T	1-Chlorohexane	50.0000	55.7513	-11.5	114	0.00
69	P	Chlorobenzene	50.0000	51.6699	-3.3	109	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	52.7314	-5.5	110	0.00
71	C	Ethylbenzene	50.0000	52.6263	-5.3	110	0.00
72	P	m-,p-Xylene	100.0000	102.5990	-2.6	110	0.00
73	P	o-Xylene	50.0000	51.7136	-3.4	109	0.00
74	P	Styrene	50.0000	52.3500	-4.7	107	0.00
75	P	Bromoform	50.0000	54.3862	-8.8	110	0.00
76	P	Isopropylbenzene	50.0000	51.8676	-3.7	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	107	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	50.8057	-1.6	102	0.00
79	S	p-Bromofluorobenzene	50.0000	52.3639	-4.7	110	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.1679	-8.3	108	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	56.5722	-13.1	111	0.00
82	T	n-Propylbenzene	50.0000	53.0181	-6.0	109	0.00
83	T	Bromobenzene	50.0000	53.8676	-7.7	110	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	54.2713	-8.5	111	0.00
85	T	2-Chlorotoluene	50.0000	53.5163	-7.0	110	0.00
86	T	4-Chlorotoluene	50.0000	52.8158	-5.6	108	0.00
87	T	a-Methylstyrene	50.0000	56.1246	-12.2	114	0.00
88	T	tert-Butylbenzene	50.0000	53.9924	-8.0	109	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	55.0018	-10.0	111	0.00
90	T	sec-Butylbenzene	50.0000	52.4808	-5.0	108	0.00
91	T	p-Isopropyltoluene	50.0000	53.8612	-7.7	109	0.00
92	P	1,3-Dichlorobenzene	50.0000	52.0526	-4.1	110	0.00
93	P	1,4-Dichlorobenzene	50.0000	50.7470	-1.5	110	0.00
94	T	n-Butylbenzene	50.0000	51.6274	-3.3	109	0.00
95	P	1,2-Dichlorobenzene	50.0000	51.5640	-3.1	109	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	47.9041	4.2	105	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	52.2179	-4.4	109	0.00
98	T	Hexachlorobutadiene	50.0000	51.5699	-3.1	110	0.01
99	T	Naphthalene	50.0000	50.9925	-2.0	104	0.01
100	T	1,2,3-Trichlorobenzene	50.0000	50.8686	-1.7	107	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M975250.D 8260S.M Wed Jul 06 16:43:22 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\062116\9M974885.D          Vial: 1
Acq On    : 21 Jun 2016   6:43                        Operator: ADC
Sample    : WG573367-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 06/21/16  HPMS9
```

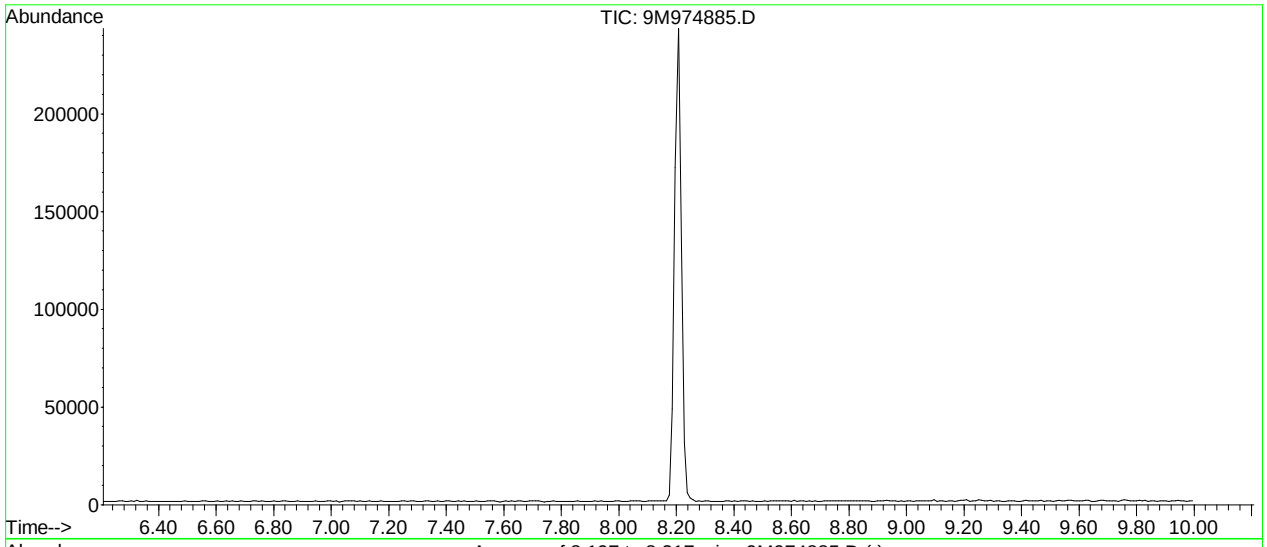

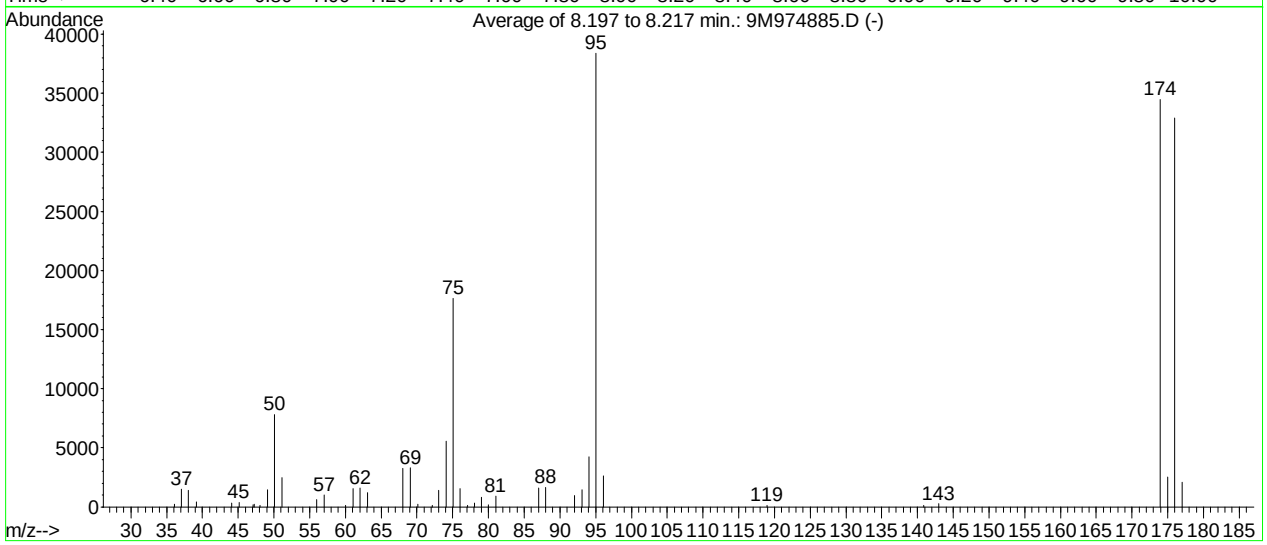

AutoFind: Scans 301, 302, 303; Background Corrected with Scan 296

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.4	7829	PASS
75	95	30	60	46.0	17648	PASS
95	95	100	100	100.0	38392	PASS
96	95	5	9	6.8	2596	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	89.8	34464	PASS
175	174	5	9	7.4	2544	PASS
176	174	95	101	95.5	32922	PASS
177	176	5	9	6.3	2073	PASS

9M974885.D 8260S.M Thu Jun 23 11:48:01 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\070116\9M975213.D          Vial: 2
Acq On    :  1 Jul 2016  14:53                       Operator: ADC
Sample    : WG574992-01 50ng BFB                     Inst    : hpms9
Misc      : 7,1 STD76715                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 06/21/16  HPMS9
```

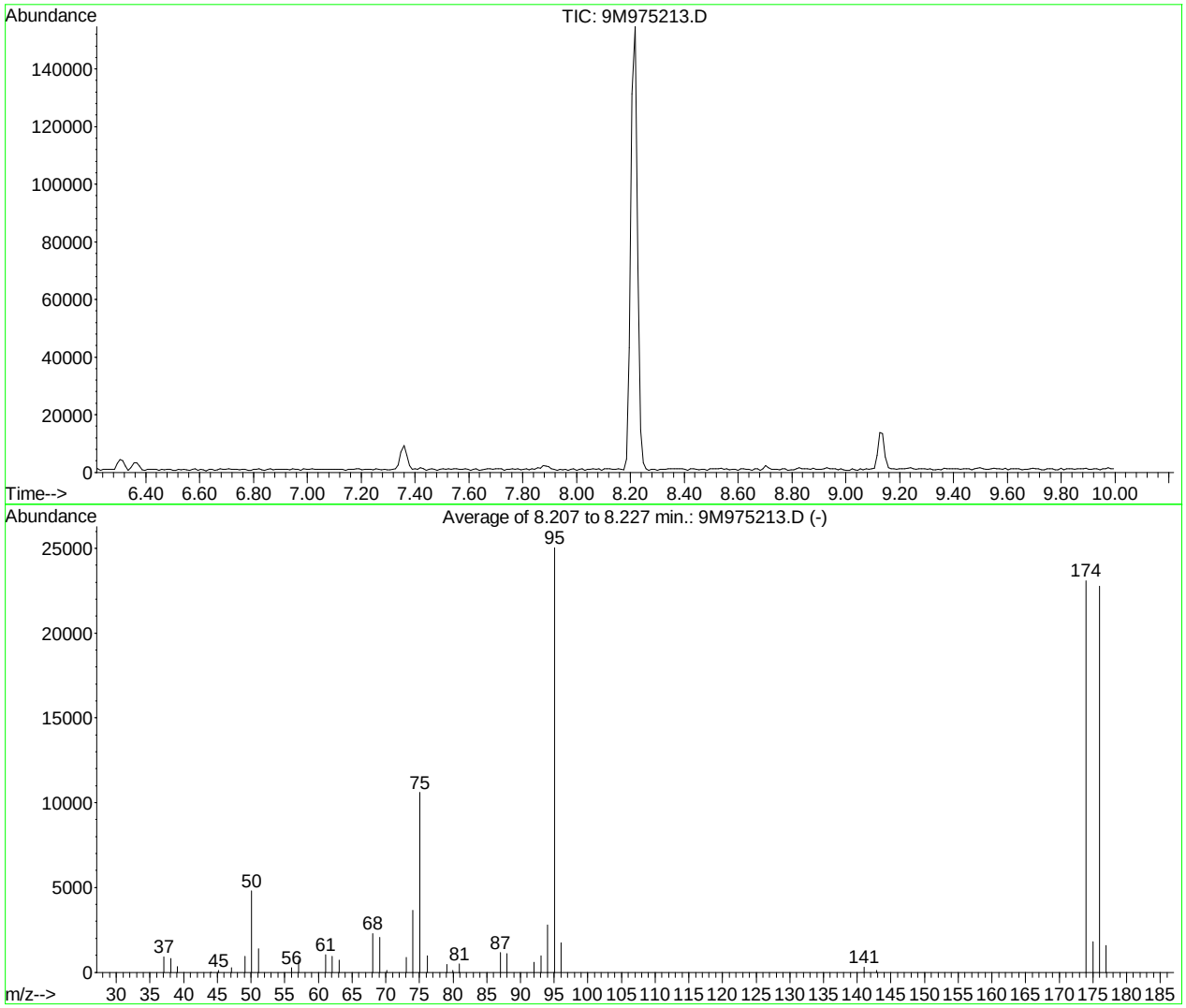

AutoFind: Scans 302, 303, 304; Background Corrected with Scan 297

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.2	4799	PASS
75	95	30	60	42.3	10593	PASS
95	95	100	100	100.0	25036	PASS
96	95	5	9	6.9	1733	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	92.2	23080	PASS
175	174	5	9	7.9	1818	PASS
176	174	95	101	98.6	22757	PASS
177	176	5	9	6.9	1572	PASS

9M975213.D 8260S.M Fri Jul 01 16:28:00 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\070616\9M975249.D          Vial: 2
Acq On    :  6 Jul 2016  13:53                        Operator: ADC
Sample    : WG575226-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 06/21/16  HPMS9
```

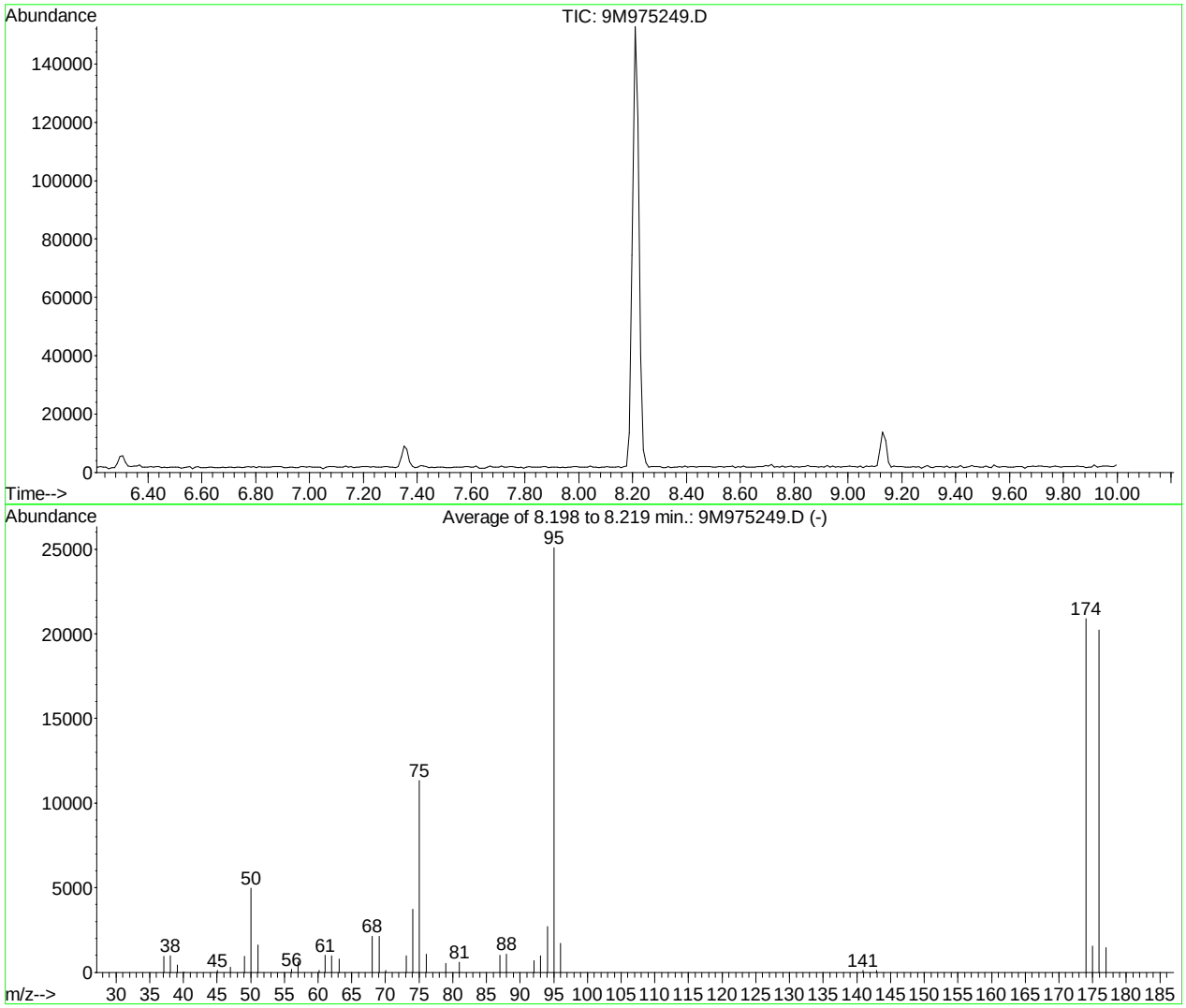

AutoFind: Scans 301, 302, 303; Background Corrected with Scan 296

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.9	4982	PASS
75	95	30	60	45.2	11346	PASS
95	95	100	100	100.0	25093	PASS
96	95	5	9	6.8	1717	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	83.3	20901	PASS
175	174	5	9	7.5	1567	PASS
176	174	95	101	96.8	20228	PASS
177	176	5	9	7.3	1467	PASS

9M975249.D 8260S.M Wed Jul 06 16:43:05 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975217.D Vial: 5
Acq On : 1 Jul 2016 17:00 Operator: ADC
Sample : WG574993-01 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01:07 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	545183	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	425232	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.71	152	220505	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	145570	48.4231 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.84%		
43) 1,2-Dichloroethane-d4	10.41	65	147496	46.1504 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.30%		
58) Toluene-d8	12.79	98	525378	49.8837 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.76%		
79) p-Bromofluorobenzene	16.18	95	205708	51.0887 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.18%		

Target Compounds					Qvalue
13) Acetone	6.36	43	2917	Below Cal #	75
19) Methylene Chloride	7.36	84	1626	0.5095 ug/kg	94
36) Tetrahydrofuran	9.75	42	1678	1.5312 ug/kg#	49
56) Dimethyl Disulfide	12.78	94	13744	3.6817 ug/kg#	29
99) Naphthalene	20.76	128	11222	0.8334 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M975217.D 8260S.M Tue Jul 12 11:01:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975217.D Vial: 5
Acq On : 1 Jul 2016 17:00 Operator: ADC
Sample : WG574993-01 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

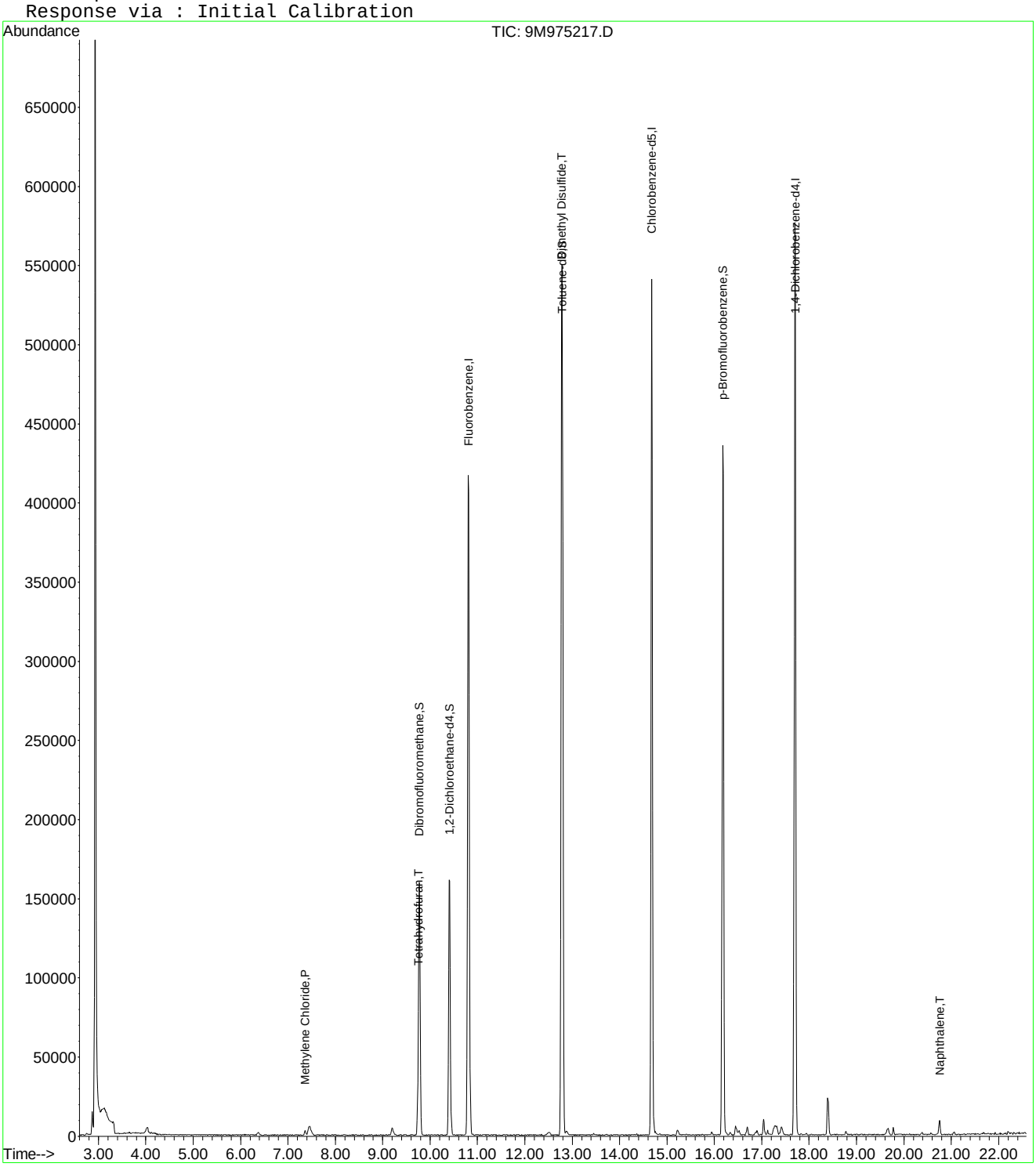

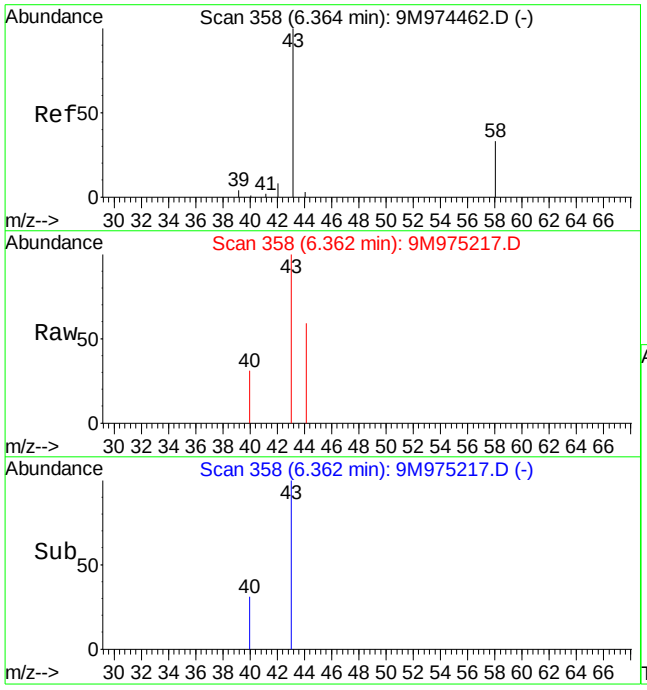

#13
Acetone
Concen: Below Cal
RT: 6.36 min Scan# 358
Delta R.T. 0.00 min
Lab File: 9M975217.D
Acq: 1 Jul 2016 17:00

Tgt Ion: 43 Resp: 2917

Ion	Ratio	Lower	Upper
43	100		
58	19.2	19.9	46.3#

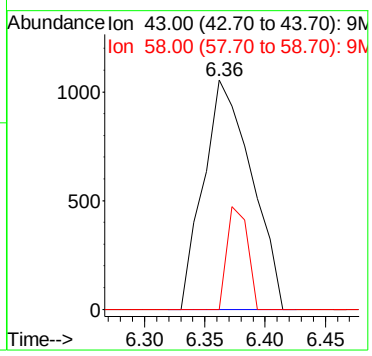

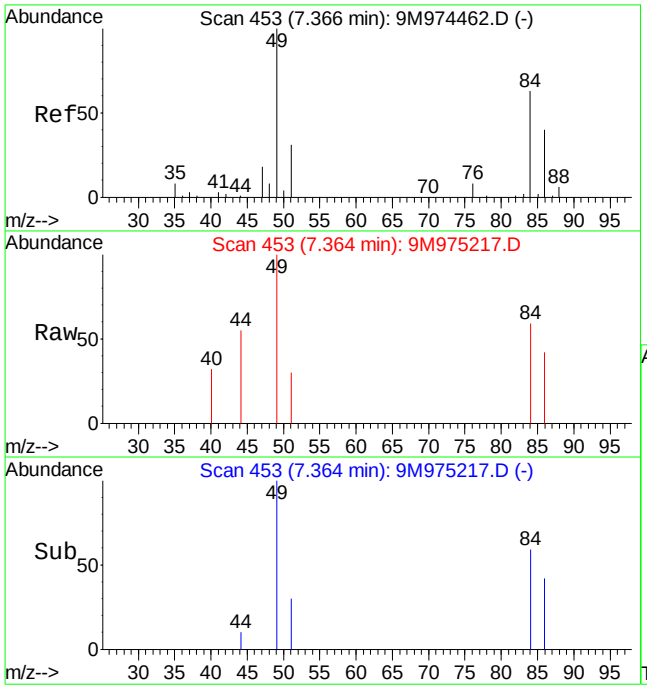

#19
Methylene Chloride
Concen: 0.51 ug/kg
RT: 7.36 min Scan# 453
Delta R.T. 0.00 min
Lab File: 9M975217.D
Acq: 1 Jul 2016 17:00

Tgt Ion: 84 Resp: 1626

Ion	Ratio	Lower	Upper
84	100		
49	148.1	93.2	217.4

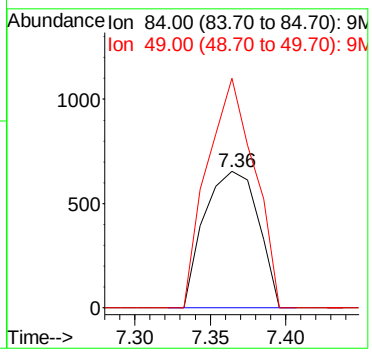

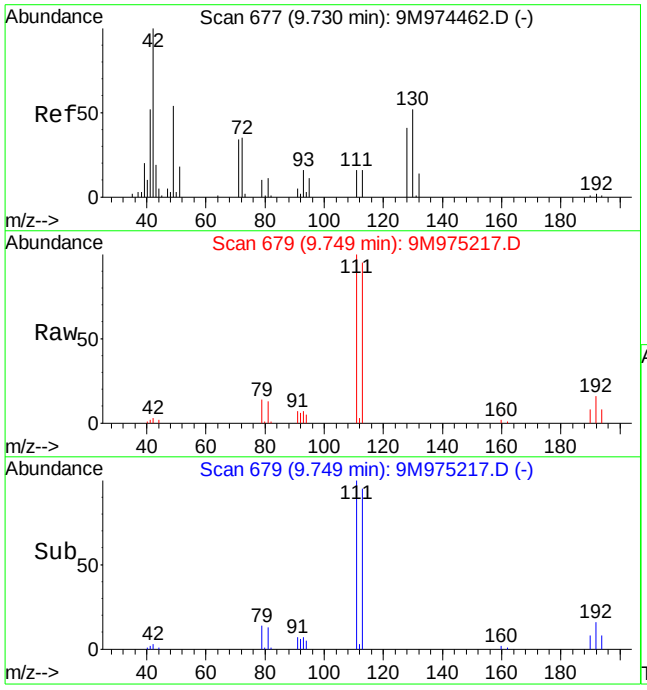

#36
Tetrahydrofuran
Concen: 1.53 ug/kg
RT: 9.75 min Scan# 679
Delta R.T. 0.01 min
Lab File: 9M975217.D
Acq: 1 Jul 2016 17:00

Tgt Ion: 42 Resp: 1678

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.8	50.8#
71	11.6	20.7	48.3#

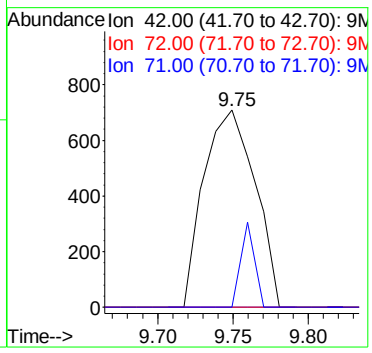

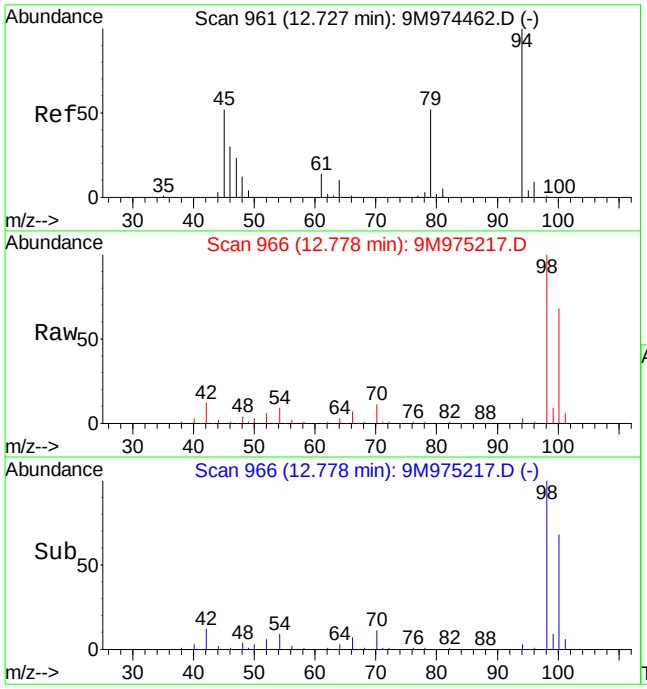

#56
Dimethyl Disulfide
Concen: 3.68 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.05 min
Lab File: 9M975217.D
Acq: 1 Jul 2016 17:00

Tgt Ion: 94 Resp: 13744

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

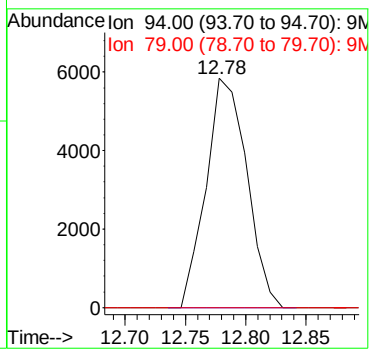

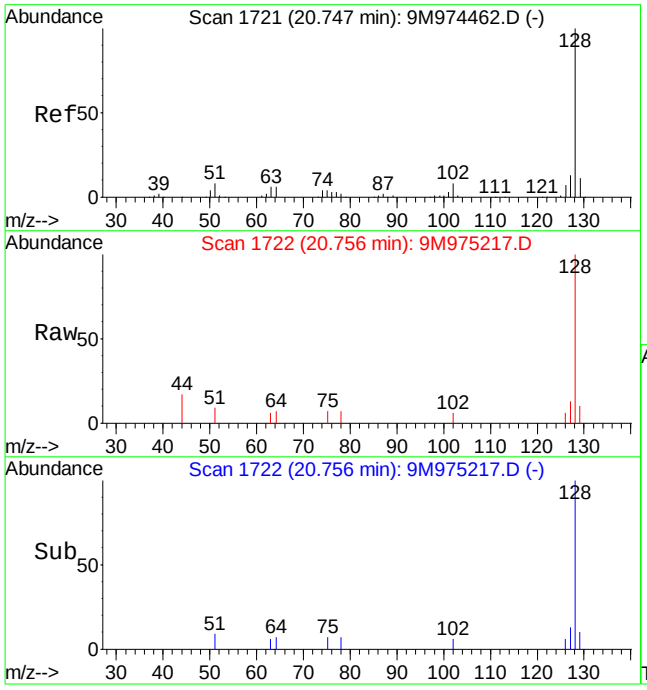

#99
Naphthalene
Concen: 0.83 ug/kg
RT: 20.76 min Scan# 1722
Delta R.T. 0.01 min
Lab File: 9M975217.D
Acq: 1 Jul 2016 17:00

Tgt Ion:128 Resp: 11222

Ion	Ratio	Lower	Upper
128	100		
127	12.0	7.6	17.8

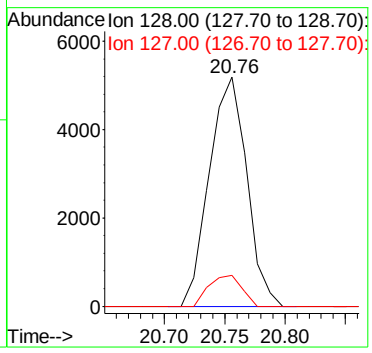

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975252.D Vial: 5
Acq On : 6 Jul 2016 15:40 Operator: ADC
Sample : WG575227-01 BLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03:02 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	535820	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	416755	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	213050	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	137016	46.3741 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.74%		
43) 1,2-Dichloroethane-d4	10.40	65	143029	45.5348 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.06%		
58) Toluene-d8	12.78	98	510273	49.4350 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.86%		
79) p-Bromofluorobenzene	16.18	95	198005	50.8963 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.80%		

Target Compounds					Qvalue
19) Methylene Chloride	7.35	84	1731	0.5518 ug/kg	96
36) Tetrahydrofuran	9.73	42	1932	1.7938 ug/kg#	75
56) Dimethyl Disulfide	12.78	94	13765	3.7292 ug/kg#	29
84) 1,3,5-Trimethylbenzene	16.45	105	7986	0.6858 ug/kg	72
99) Naphthalene	20.76	128	7791	0.5989 ug/kg	88

(#) = qualifier out of range (m) = manual integration
9M975252.D 8260S.M Tue Jul 12 15:03:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975252.D Vial: 5
Acq On : 6 Jul 2016 15:40 Operator: ADC
Sample : WG575227-01 BLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

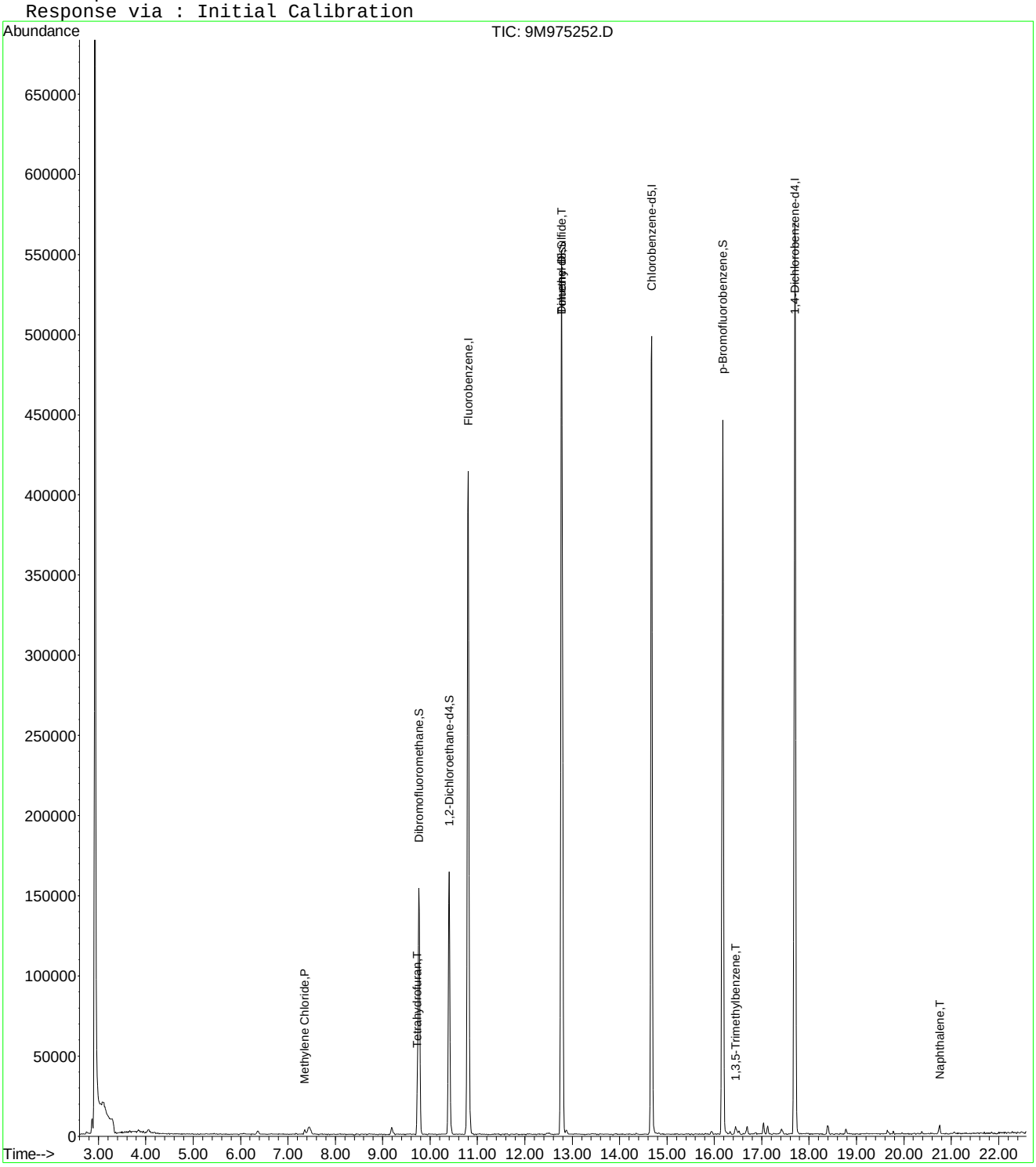

9M975252.D 8260S.M Tue Jul 12 15:03:03 2016 Page 2

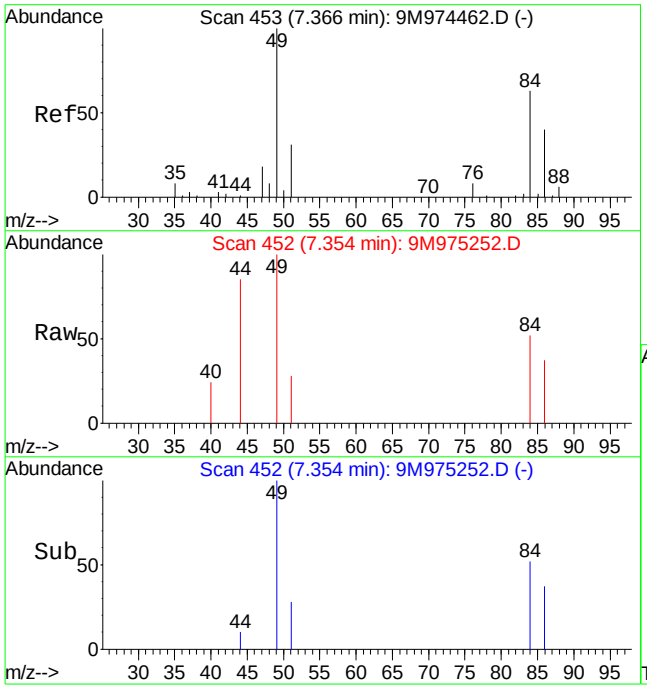

#19
Methylene Chloride
Concen: 0.55 ug/kg
RT: 7.35 min Scan# 452
Delta R.T. -0.01 min
Lab File: 9M975252.D
Acq: 6 Jul 2016 15:40

Tgt Ion: 84 Resp: 1731

Ion	Ratio	Lower	Upper
84	100		
49	160.8	93.2	217.4

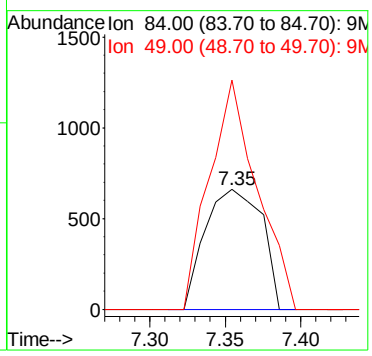

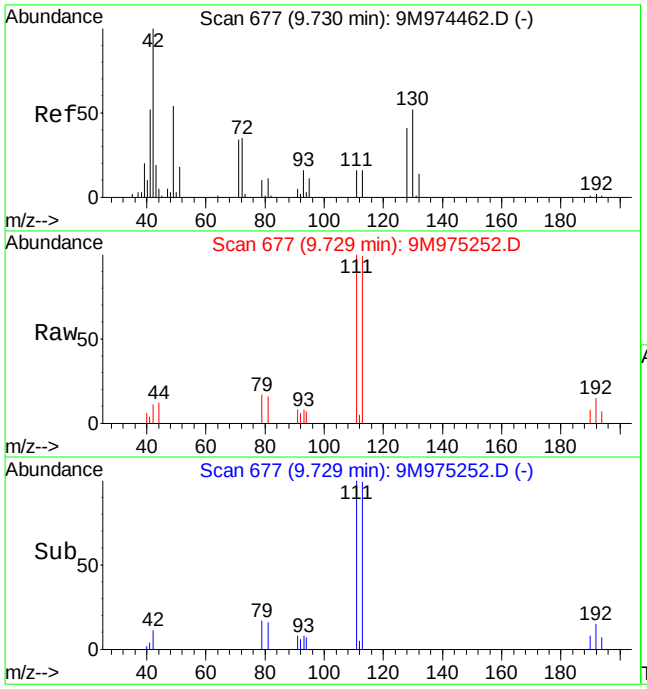

#36
Tetrahydrofuran
Concen: 1.79 ug/kg
RT: 9.73 min Scan# 677
Delta R.T. -0.01 min
Lab File: 9M975252.D
Acq: 6 Jul 2016 15:40

Tgt Ion: 42 Resp: 1932

Ion	Ratio	Lower	Upper
42	100		
72	21.1	21.8	50.8#
71	20.2	20.7	48.3#

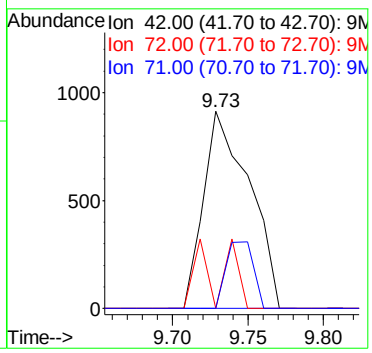

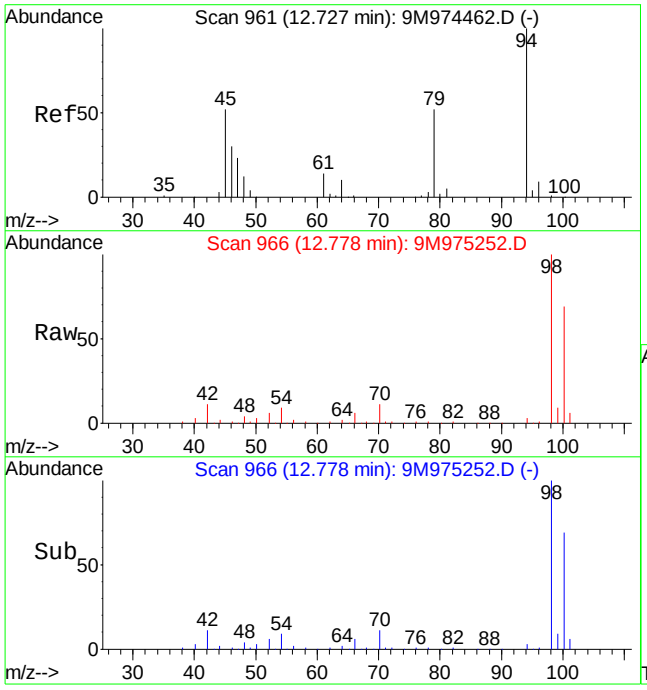

#56
Dimethyl Disulfide
Concen: 3.73 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.05 min
Lab File: 9M975252.D
Acq: 6 Jul 2016 15:40

Tgt Ion: 94 Resp: 13765

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

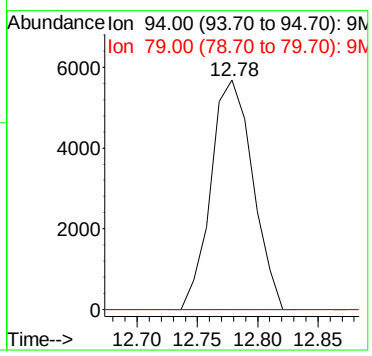

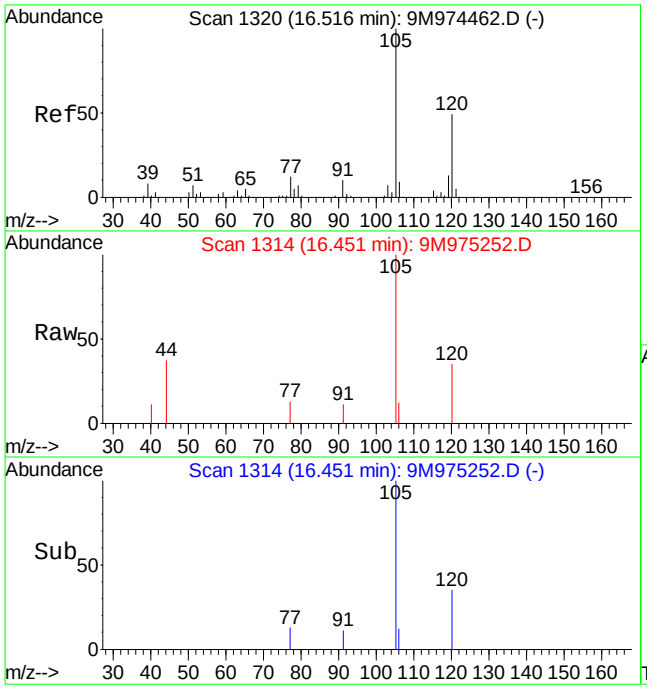

#84
1,3,5-Trimethylbenzene
Concen: 0.69 ug/kg
RT: 16.45 min Scan# 1314
Delta R.T. -0.07 min
Lab File: 9M975252.D
Acq: 6 Jul 2016 15:40

Tgt Ion:105 Resp: 7986

Ion	Ratio	Lower	Upper
105	100		
120	30.8	30.0	70.0

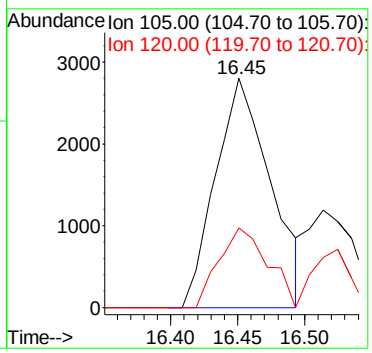

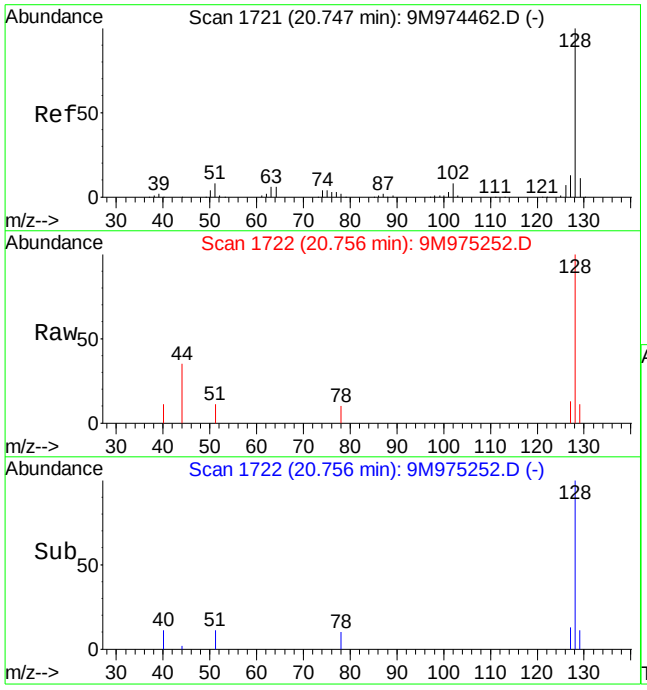

#99
Naphthalene
Concen: 0.60 ug/kg
RT: 20.76 min Scan# 1722
Delta R.T. 0.01 min
Lab File: 9M975252.D
Acq: 6 Jul 2016 15:40

Tgt Ion:128 Resp: 7791

Ion	Ratio	Lower	Upper
128	100		
127	7.9	7.6	17.8

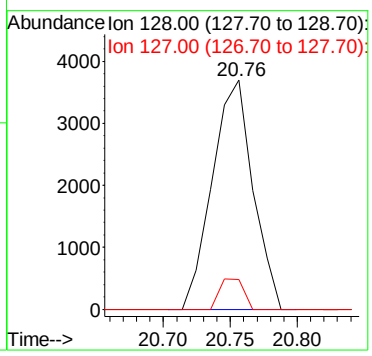

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975220.D Vial: 8
Acq On : 1 Jul 2016 18:32 Operator: ADC
Sample : WG574993-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 15:02:41 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	543112	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	428113	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.71	152	223983	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	145169	48.4739 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.94%		
43) 1,2-Dichloroethane-d4	10.40	65	147710	46.3936 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.78%		
58) Toluene-d8	12.78	98	525201	49.5313 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.06%		
79) p-Bromofluorobenzene	16.18	95	202720	49.5648 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	61261	14.3956 ug/kg	99
3) Chloromethane	3.72	50	59297	15.7676 ug/kg	98
4) Vinyl Chloride	3.96	62	52280	19.7960 ug/kg	100
5) 1,3-Butadiene	4.00	54	22270	17.0544 ug/kg	95
6) Bromomethane	4.85	94	46625	19.5272 ug/kg	97
7) Chloroethane	5.00	64	44092	20.3305 ug/kg	98
8) Trichlorofluoromethane	5.50	101	92426	18.8595 ug/kg	100
9) Diethyl ether	6.02	59	250189	95.4367 ug/kg	98
10) Isoprene	6.06	67	76080	22.0170 ug/kg	97
11) Acrolein	6.26	56	41537	211.3866 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	58831	20.0063 ug/kg	98
13) Acetone	6.37	43	22694	19.2049 ug/kg	100
14) 1,1-Dichloroethene	6.58	61	73236	15.5700 ug/kg	100
15) Tert-Butyl Alcohol	6.71	59	100709	210.0685 ug/kg	99
16) Dimethyl Sulfide	6.85	62	73246	37.3151 ug/kg	96
17) Iodomethane	7.10	142	42087	22.1240 ug/kg	100
18) Methyl acetate	7.11	43	53956	19.4767 ug/kg	98
19) Methylene Chloride	7.36	84	55246	17.3762 ug/kg	96
20) Carbon Disulfide	7.41	76	154539	17.3844 ug/kg	100
21) Acrylonitrile	7.54	53	25751	20.1391 ug/kg	99
22) Methyl Tert Butyl Ether	7.58	73	165682	20.3431 ug/kg	97
23) trans-1,2-Dichloroethene	7.82	61	77599	17.3490 ug/kg	99
24) n-Hexane	7.88	57	87414	17.4973 ug/kg	97
25) Diisopropyl ether	8.23	45	1019225	99.0616 ug/kg	99
26) Vinyl Acetate	8.40	43	104054	18.7418 ug/kg	99
27) 1,1-Dichloroethane	8.43	63	98036	17.5119 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.80	59	897901	93.4321 ug/kg	99
29) 2-Butanone	8.99	43	30216	19.0559 ug/kg	99
30) Propionitrile	9.10	54	48343	100.6817 ug/kg	94
31) 2,2-Dichloropropane	9.20	77	72980	17.5386 ug/kg	100
32) cis-1,2-Dichloroethene	9.28	96	59106	18.4103 ug/kg	99
33) Chloroform	9.49	83	89543	18.5583 ug/kg	99
34) 1-Bromopropane	9.61	122	13617	27.1626 ug/kg	96
35) Bromochloromethane	9.72	130	38664	18.3061 ug/kg	95
36) Tetrahydrofuran	9.74	42	99211	90.8789 ug/kg	99
38) 1,1,1-Trichloroethane	10.01	97	78199	17.9424 ug/kg	99
39) Cyclohexane	10.05	56	110382	20.0319 ug/kg	99
40) 1,1-Dichloropropene	10.20	75	66090	17.4186 ug/kg	100
41) Tert-Amyl-Methyl ether	10.31	73	773817	101.0686 ug/kg	99
42) Carbon Tetrachloride	10.35	117	71694	16.9573 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M975220.D 8260S.M Tue Jul 05 15:02:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975220.D Vial: 8
Acq On : 1 Jul 2016 18:32 Operator: ADC
Sample : WG574993-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 15:02:41 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.53	62	74189	18.7751 ug/kg	98
46)	Benzene	10.56	78	208166	18.0983 ug/kg	99
47)	Trichloroethene	11.31	130	63988	18.9922 ug/kg	99
48)	Methylcyclohexane	11.40	83	97228	20.5008 ug/kg	99
49)	1,2-Dichloropropane	11.53	63	60744	19.3246 ug/kg	98
50)	1,4-Dioxane	11.83	88	10578	220.3687 ug/kg	97
51)	Bromodichloromethane	11.83	83	67844	17.7865 ug/kg	99
52)	Dibromomethane	11.92	174	36858	18.5300 ug/kg	96
53)	2-Chloroethyl Vinyl Ether	12.12	63	34215	17.6720 ug/kg	99
54)	4-Methyl-2-Pentanone	12.16	58	26311	20.2240 ug/kg	98
55)	cis-1,3-Dichloropropene	12.46	75	89060	19.6177 ug/kg	99
56)	Dimethyl Disulfide	12.73	94	108396	20.9547 ug/kg	96
59)	Toluene	12.88	91	227780	18.6565 ug/kg	99
60)	Ethyl Methacrylate	12.98	69	71508	20.5316 ug/kg	99
61)	trans-1,3-Dichloropropene	13.06	75	76866	18.5392 ug/kg	100
62)	1,1,2-Trichloroethane	13.27	97	49123	19.4608 ug/kg	99
63)	2-Hexanone	13.21	43	42935	19.0142 ug/kg#	79
64)	1,3-Dichloropropane	13.58	76	84818	20.0977 ug/kg	97
65)	Tetrachloroethene	13.71	164	46907	17.9664 ug/kg	97
66)	Dibromochloromethane	13.97	129	61753	18.5291 ug/kg	99
67)	1,2-Dibromoethane	14.22	107	51383	18.1206 ug/kg	98
68)	1-Chlorohexane	14.31	91	78417	20.5939 ug/kg	98
69)	Chlorobenzene	14.73	112	170450	19.6144 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.76	131	60960	19.5003 ug/kg	98
71)	Ethylbenzene	14.75	106	87804	19.0723 ug/kg	99
72)	m-,p-Xylene	14.84	106	218311	38.3868 ug/kg	100
73)	o-Xylene	15.41	106	107481	19.5210 ug/kg	99
74)	Styrene	15.45	104	176941	19.2577 ug/kg	99
75)	Bromoform	15.94	173	40086	17.7245 ug/kg	99
76)	Isopropylbenzene	15.83	105	274951	19.4585 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.05	83	63374	17.5532 ug/kg	98
80)	1,2,3-Trichloropropane	16.24	110	21873	19.5371 ug/kg	80
81)	trans-1,4-Dichloro-2-Buten	16.28	53	18692	17.3452 ug/kg	97
82)	n-Propylbenzene	16.33	91	308373	19.1293 ug/kg	100
83)	Bromobenzene	16.47	156	72482	18.6415 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.52	105	241875	19.7568 ug/kg	99
85)	2-Chlorotoluene	16.61	91	186411	19.1310 ug/kg	100
86)	4-Chlorotoluene	16.66	91	191809	19.3981 ug/kg	99
87)	a-Methylstyrene	16.93	118	128373	22.5792 ug/kg	99
88)	tert-Butylbenzene	16.99	134	53523	20.2338 ug/kg	93
89)	1,2,4-Trimethylbenzene	17.04	105	237286	19.2219 ug/kg	99
90)	sec-Butylbenzene	17.25	105	303538	18.8963 ug/kg	99
91)	p-Isopropyltoluene	17.41	119	248339	18.9541 ug/kg	99
92)	1,3-Dichlorobenzene	17.61	146	137226	18.2576 ug/kg	100
93)	1,4-Dichlorobenzene	17.75	146	141152	18.4007 ug/kg	100
94)	n-Butylbenzene	17.94	91	210352	17.5664 ug/kg	99
95)	1,2-Dichlorobenzene	18.24	146	134978	18.8047 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.24	157	17485	17.6620 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.38	180	95490	18.2360 ug/kg	98
98)	Hexachlorobutadiene	20.52	225	49144	18.4993 ug/kg	97
99)	Naphthalene	20.75	128	264693	19.3532 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.06	180	96818	18.8913 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975220.D Vial: 8
Acq On : 1 Jul 2016 18:32 Operator: ADC
Sample : WG574993-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 5 15:02 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

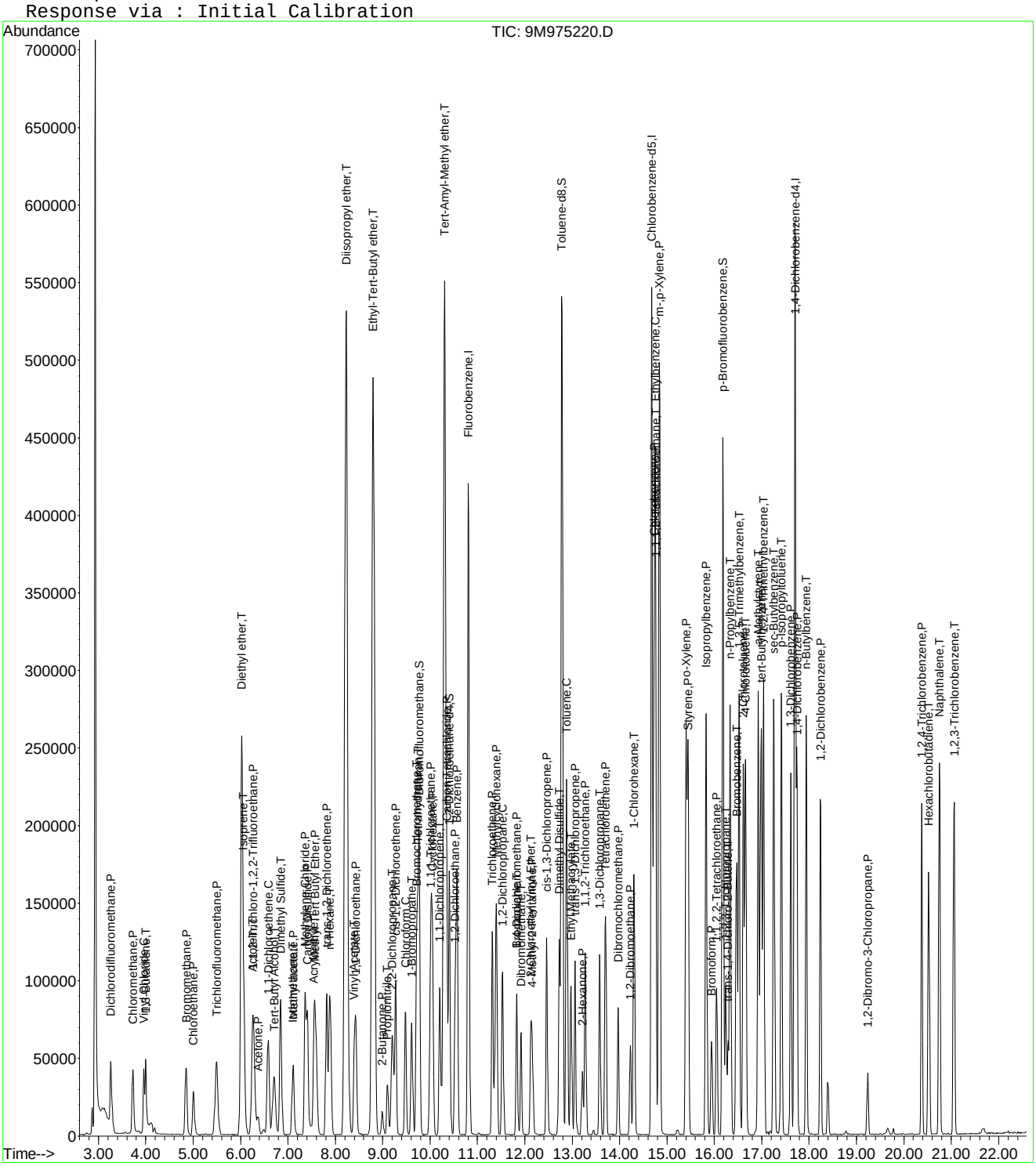

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975255.D Vial: 8
Acq On : 6 Jul 2016 17:11 Operator: ADC
Sample : WG575227-02 LCS 20ug/kg 8260 Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 08 09:59:24 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	680246	50.00 ug/kg	-0.01
57) Chlorobenzene-d5	14.68	117	529498	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	271776	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	184035	49.0634 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.12%		
43) 1,2-Dichloroethane-d4	10.40	65	181307	45.4660 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.94%		
58) Toluene-d8	12.78	98	659460	50.2848 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.56%		
79) p-Bromofluorobenzene	16.18	95	256626	51.7108 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.42%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	6524	1.2240 ug/kg#	84
3) Chloromethane	3.71	50	25568	5.4282 ug/kg	95
4) Vinyl Chloride	3.93	62	25451	7.6943 ug/kg	96
5) 1,3-Butadiene	3.98	54	21092	12.8961 ug/kg	96
6) Bromomethane	4.83	94	41435	13.8552 ug/kg	96
7) Chloroethane	4.99	64	36617	13.4802 ug/kg	99
8) Trichlorofluoromethane	5.47	101	87021	14.1770 ug/kg	99
9) Diethyl ether	6.00	59	311280	94.8030 ug/kg	98
10) Isoprene	6.04	67	74125	17.1268 ug/kg	98
11) Acrolein	6.25	56	52286	212.4472 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	63942	17.3608 ug/kg	99
13) Acetone	6.35	43	23625	15.3566 ug/kg	99
14) 1,1-Dichloroethene	6.56	61	56471	9.5854 ug/kg	99
15) Tert-Butyl Alcohol	6.69	59	107365	178.8047 ug/kg	100
16) Dimethyl Sulfide	6.83	62	75725	30.8009 ug/kg	96
17) Iodomethane	7.09	142	36140	15.6291 ug/kg	96
18) Methyl acetate	7.10	43	64335	18.5415 ug/kg	99
19) Methylene Chloride	7.35	84	57732	14.4975 ug/kg	94
20) Carbon Disulfide	7.40	76	141915	12.7460 ug/kg	100
21) Acrylonitrile	7.53	53	30202	18.8584 ug/kg	98
22) Methyl Tert Butyl Ether	7.55	73	189710	18.5976 ug/kg	98
23) trans-1,2-Dichloroethene	7.80	61	80635	14.3934 ug/kg	100
24) n-Hexane	7.87	57	91334	14.5964 ug/kg	99
25) Diisopropyl ether	8.21	45	1280226	99.3449 ug/kg	99
26) Vinyl Acetate	8.39	43	115016	16.5399 ug/kg	100
27) 1,1-Dichloroethane	8.42	63	107008	15.2612 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.79	59	1118539	92.9271 ug/kg	99
29) 2-Butanone	8.98	43	35798	18.0250 ug/kg	98
30) Propionitrile	9.08	54	55512	92.3054 ug/kg	96
31) 2,2-Dichloropropane	9.19	77	86027	16.5063 ug/kg	98
32) cis-1,2-Dichloroethene	9.26	96	68484	17.0311 ug/kg	97
33) Chloroform	9.47	83	106201	17.5735 ug/kg	98
34) 1-Bromopropane	9.61	122	14919	23.7604 ug/kg	97
35) Bromochloromethane	9.71	130	44656	16.8808 ug/kg	95
36) Tetrahydrofuran	9.73	42	119838	87.6438 ug/kg	98
38) 1,1,1-Trichloroethane	10.00	97	91251	16.7163 ug/kg	98
39) Cyclohexane	10.03	56	122520	17.7523 ug/kg	98
40) 1,1-Dichloropropene	10.19	75	75112	15.8056 ug/kg	99
41) Tert-Amyl-Methyl ether	10.30	73	968847	101.0315 ug/kg	99
42) Carbon Tetrachloride	10.34	117	84533	15.9633 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M975255.D 8260S.M Fri Jul 08 09:59:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975255.D Vial: 8
Acq On : 6 Jul 2016 17:11 Operator: ADC
Sample : WG575227-02 LCS 20ug/kg 8260 Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 08 09:59:24 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.52	62	85470	17.2695 ug/kg	99
46)	Benzene	10.56	78	238730	16.5713 ug/kg	99
47)	Trichloroethene	11.31	130	78876	18.6915 ug/kg	98
48)	Methylcyclohexane	11.38	83	118556	19.9585 ug/kg	98
49)	1,2-Dichloropropane	11.52	63	74189	18.8439 ug/kg	100
50)	1,4-Dioxane	11.81	88	10623	176.6920 ug/kg	94
51)	Bromodichloromethane	11.82	83	89529	18.7398 ug/kg	99
52)	Dibromomethane	11.91	174	44803	17.9835 ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.11	63	41568	17.1780 ug/kg	98
54)	4-Methyl-2-Pentanone	12.14	58	31650	19.4235 ug/kg	98
55)	cis-1,3-Dichloropropene	12.46	75	112902	19.8560 ug/kg	99
56)	Dimethyl Disulfide	12.72	94	138705	21.3827 ug/kg	95
59)	Toluene	12.87	91	281776	18.6600 ug/kg	99
60)	Ethyl Methacrylate	12.97	69	89886	20.8668 ug/kg	99
61)	trans-1,3-Dichloropropene	13.05	75	100837	19.6639 ug/kg	99
62)	1,1,2-Trichloroethane	13.27	97	63429	20.3169 ug/kg	100
63)	2-Hexanone	13.21	43	51365	18.4728 ug/kg	98
64)	1,3-Dichloropropane	13.58	76	107161	20.5300 ug/kg	96
65)	Tetrachloroethene	13.70	164	61881	19.1635 ug/kg	99
66)	Dibromochloromethane	13.97	129	80168	19.4487 ug/kg	99
67)	1,2-Dibromoethane	14.22	107	65351	18.6337 ug/kg	96
68)	1-Chlorohexane	14.30	91	102895	21.8482 ug/kg	98
69)	Chlorobenzene	14.72	112	218148	20.2966 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.75	131	78943	20.4175 ug/kg	99
71)	Ethylbenzene	14.75	106	115050	20.2055 ug/kg	99
72)	m-,p-Xylene	14.84	106	282554	40.1700 ug/kg	100
73)	o-Xylene	15.41	106	140651	20.6542 ug/kg	100
74)	Styrene	15.44	104	231438	20.3659 ug/kg	98
75)	Bromoform	15.93	173	53859	19.2546 ug/kg	99
76)	Isopropylbenzene	15.83	105	363110	20.7771 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.05	83	86356	19.7125 ug/kg	99
80)	1,2,3-Trichloropropane	16.24	110	27502	20.2451 ug/kg	84
81)	trans-1,4-Dichloro-2-Buten	16.28	53	24891	19.0358 ug/kg	98
82)	n-Propylbenzene	16.33	91	411322	21.0285 ug/kg	100
83)	Bromobenzene	16.47	156	93866	19.8959 ug/kg	99
84)	1,3,5-Trimethylbenzene	16.52	105	321093	21.6153 ug/kg	99
85)	2-Chlorotoluene	16.61	91	249294	21.0854 ug/kg	100
86)	4-Chlorotoluene	16.65	91	249163	20.7672 ug/kg	99
87)	a-Methylstyrene	16.92	118	167474	24.2765 ug/kg	100
88)	tert-Butylbenzene	16.99	134	68571	21.3639 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.04	105	314908	21.0754 ug/kg	100
90)	sec-Butylbenzene	17.25	105	407096	20.8864 ug/kg	100
91)	p-Isopropyltoluene	17.41	119	335827	21.1241 ug/kg	99
92)	1,3-Dichlorobenzene	17.61	146	186297	20.4276 ug/kg	99
93)	1,4-Dichlorobenzene	17.74	146	187434	20.1373 ug/kg	99
94)	n-Butylbenzene	17.94	91	289212	19.9047 ug/kg	100
95)	1,2-Dichlorobenzene	18.24	146	178099	20.4489 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.24	157	21942	18.2334 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.38	180	130223	20.4957 ug/kg	98
98)	Hexachlorobutadiene	20.52	225	67271	20.8697 ug/kg	99
99)	Naphthalene	20.76	128	310804	18.7284 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.06	180	124157	19.9655 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M975255.D 8260S.M Fri Jul 08 09:59:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975255.D Vial: 8
Acq On : 6 Jul 2016 17:11 Operator: ADC
Sample : WG575227-02 LCS 20ug/kg 8260 Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 8 9:59 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

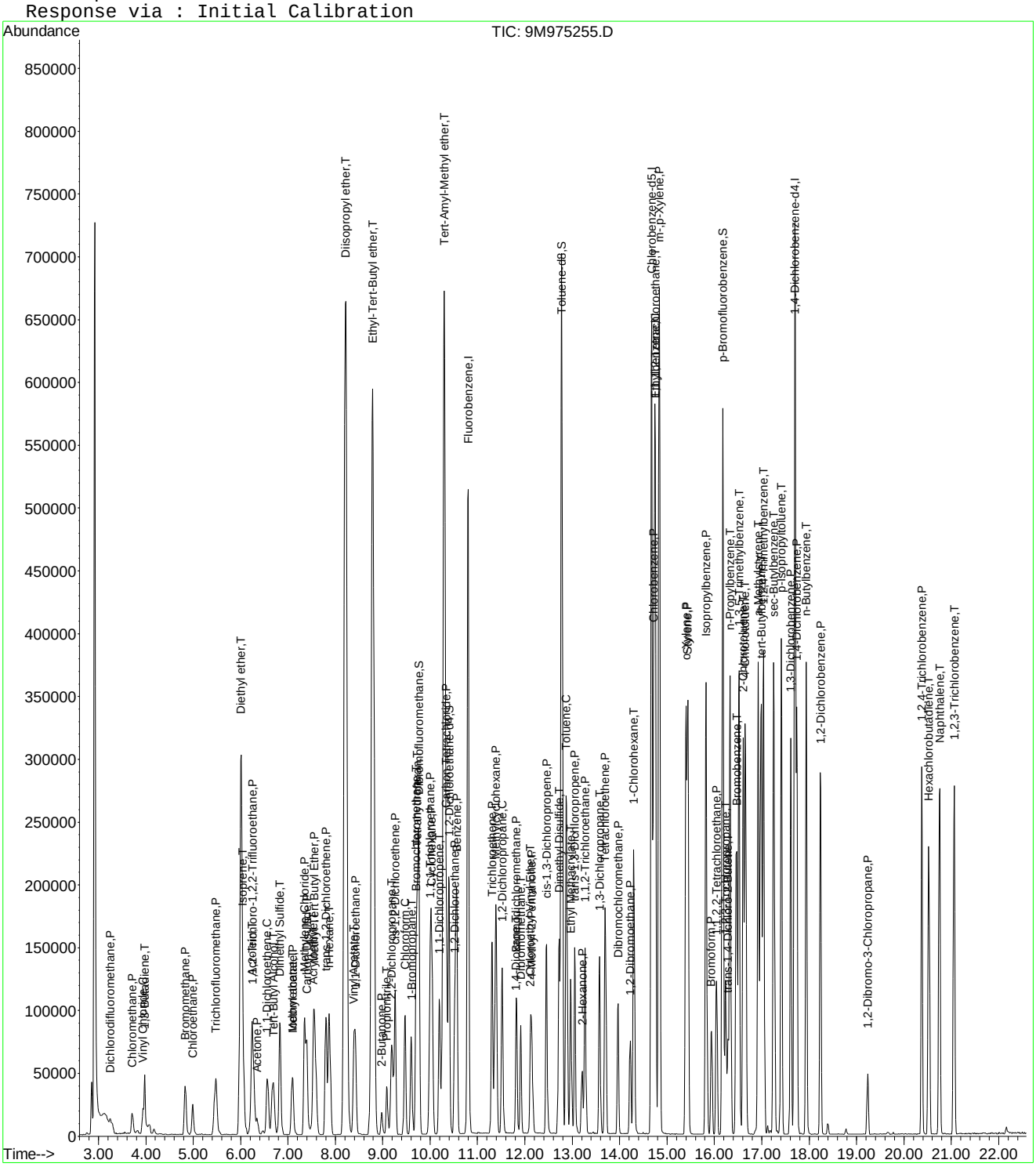

9M975255.D 8260S.M Fri Jul 08 09:59:25 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975233.D Vial: 21
Acq On : 2 Jul 2016 1:07 Operator: ADC
Sample : WG575025-02 MS 8260 5.04g Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 15:02:51 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	574751	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	448551	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	229173	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	150641	47.5320 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.06%		
43) 1,2-Dichloroethane-d4	10.41	65	150939	44.7981 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.60%		
58) Toluene-d8	12.79	98	563318	50.7054 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.42%		
79) p-Bromofluorobenzene	16.17	95	212747	50.8384 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.68%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	62605	13.9016 ug/kg	97
3) Chloromethane	3.73	50	64785	16.2786 ug/kg	99
4) Vinyl Chloride	3.97	62	59214	21.1873 ug/kg	99
6) Bromomethane	4.85	94	48835	19.3269 ug/kg	97
7) Chloroethane	5.01	64	44732	19.4902 ug/kg	99
8) Trichlorofluoromethane	5.50	101	97938	18.8841 ug/kg	99
10) Isoprene	6.07	67	76349	20.8785 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	62891	20.2097 ug/kg	97
13) Acetone	6.36	43	21955	17.2488 ug/kg	97
14) 1,1-Dichloroethene	6.58	61	86593	17.3963 ug/kg	100
16) Dimethyl Sulfide	6.85	62	61881	29.7898 ug/kg	95
17) Iodomethane	7.10	142	23323	12.2840 ug/kg	99
18) Methyl acetate	7.11	43	39480	13.4667 ug/kg	98
19) Methylene Chloride	7.36	84	63036	18.7349 ug/kg	92
20) Carbon Disulfide	7.42	76	112065	11.9125 ug/kg	100
21) Acrylonitrile	7.55	53	22757	16.8179 ug/kg	100
22) Methyl Tert Butyl Ether	7.57	73	165081	19.1536 ug/kg	97
23) trans-1,2-Dichloroethene	7.82	61	88243	18.6426 ug/kg	99
24) n-Hexane	7.89	57	96567	18.2654 ug/kg	97
27) 1,1-Dichloroethane	8.43	63	110489	18.6499 ug/kg	99
29) 2-Butanone	8.99	43	25582	15.2453 ug/kg	99
31) 2,2-Dichloropropane	9.21	77	77931	17.6975 ug/kg	100
32) cis-1,2-Dichloroethene	9.27	96	67691	19.9237 ug/kg	94
33) Chloroform	9.48	83	102484	20.0711 ug/kg	100
34) 1-Bromopropane	9.61	122	15945	30.0555 ug/kg	97
35) Bromochloromethane	9.72	130	42793	19.1457 ug/kg	95
36) Tetrahydrofuran	9.75	42	1872	1.6204 ug/kg#	68
38) 1,1,1-Trichloroethane	10.01	97	91163	19.7654 ug/kg	98
39) Cyclohexane	10.04	56	113575	19.4767 ug/kg	99
40) 1,1-Dichloropropene	10.20	75	73832	18.3879 ug/kg	99
42) Carbon Tetrachloride	10.35	117	84456	18.8762 ug/kg	99
45) 1,2-Dichloroethane	10.53	62	80038	19.1403 ug/kg	98
46) Benzene	10.57	78	235344	19.3348 ug/kg	98
47) Trichloroethene	11.31	130	70157	19.6769 ug/kg	97
48) Methylcyclohexane	11.39	83	101439	20.2113 ug/kg	99
49) 1,2-Dichloropropane	11.53	63	68926	20.7205 ug/kg	100
51) Bromodichloromethane	11.83	83	77210	19.1276 ug/kg	98
52) Dibromomethane	11.92	174	40628	19.3009 ug/kg	97
53) 2-Chloroethyl Vinyl Ether	12.12	63	31880	15.7043 ug/kg	97
54) 4-Methyl-2-Pentanone	12.15	58	24405	17.7263 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M975233.D 8260S.M Tue Jul 05 15:02:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975233.D Vial: 21
Acq On : 2 Jul 2016 1:07 Operator: ADC
Sample : WG575025-02 MS 8260 5.04g Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 15:02:51 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55)	cis-1,3-Dichloropropene	12.46	75	91747	19.0971	ug/kg	98
56)	Dimethyl Disulfide	12.72	94	103685	19.0544	ug/kg	94
59)	Toluene	12.88	91	246631	19.2801	ug/kg	100
60)	Ethyl Methacrylate	12.98	69	24269	6.6507	ug/kg	99
61)	trans-1,3-Dichloropropene	13.06	75	76978	17.7202	ug/kg	100
62)	1,1,2-Trichloroethane	13.27	97	53226	20.1255	ug/kg	100
63)	2-Hexanone	13.21	43	35108	15.3816	ug/kg#	72
64)	1,3-Dichloropropane	13.58	76	89989	20.3514	ug/kg	97
65)	Tetrachloroethene	13.71	164	51264	18.7405	ug/kg	98
66)	Dibromochloromethane	13.97	129	66138	18.9406	ug/kg	99
67)	1,2-Dibromoethane	14.22	107	54819	18.4514	ug/kg	99
68)	1-Chlorohexane	14.31	91	66924	16.7748	ug/kg	99
69)	Chlorobenzene	14.73	112	170780	18.7569	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.76	131	65732	20.0687	ug/kg	98
71)	Ethylbenzene	14.75	106	87535	18.1475	ug/kg	100
72)	m-,p-Xylene	14.85	106	214223	35.9517	ug/kg	99
73)	o-Xylene	15.40	106	108276	18.7694	ug/kg	99
74)	Styrene	15.45	104	152017	15.7912	ug/kg	97
75)	Bromoform	15.94	173	41051	17.3242	ug/kg	99
76)	Isopropylbenzene	15.83	105	265357	17.9238	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.05	83	66434	17.9840	ug/kg	98
80)	1,2,3-Trichloropropane	16.24	110	22632	19.7573	ug/kg#	27
81)	trans-1,4-Dichloro-2-Buten	16.29	53	14477	13.1297	ug/kg#	1
82)	n-Propylbenzene	16.33	91	278893	16.9088	ug/kg	99
83)	Bromobenzene	16.47	156	69529	17.4771	ug/kg	81
84)	1,3,5-Trimethylbenzene	16.52	105	226043	18.0455	ug/kg	99
85)	2-Chlorotoluene	16.61	91	168110	16.8621	ug/kg	90
86)	4-Chlorotoluene	16.66	91	173550	17.1541	ug/kg	89
87)	a-Methylstyrene	16.92	118	96216	16.5399	ug/kg	98
88)	tert-Butylbenzene	16.99	134	49059	18.1262	ug/kg	90
89)	1,2,4-Trimethylbenzene	17.04	105	216998	17.1219	ug/kg	100
90)	sec-Butylbenzene	17.25	105	272263	16.5655	ug/kg	100
91)	p-Isopropyltoluene	17.41	119	212594	15.8585	ug/kg	100
92)	1,3-Dichlorobenzene	17.61	146	123236	16.0250	ug/kg	98
93)	1,4-Dichlorobenzene	17.75	146	121730	15.5095	ug/kg	100
94)	n-Butylbenzene	17.94	91	171905	14.0306	ug/kg	100
95)	1,2-Dichlorobenzene	18.24	146	119877	16.3227	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.24	157	16823	16.6662	ug/kg	97
97)	1,2,4-Trichlorobenzene	20.37	180	75964	14.1785	ug/kg	99
98)	Hexachlorobutadiene	20.52	225	37757	13.8910	ug/kg	98
99)	Naphthalene	20.75	128	212967	15.2186	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.06	180	73441	14.0054	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975233.D Vial: 21
Acq On : 2 Jul 2016 1:07 Operator: ADC
Sample : WG575025-02 MS 8260 5.04g Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 5 15:02 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

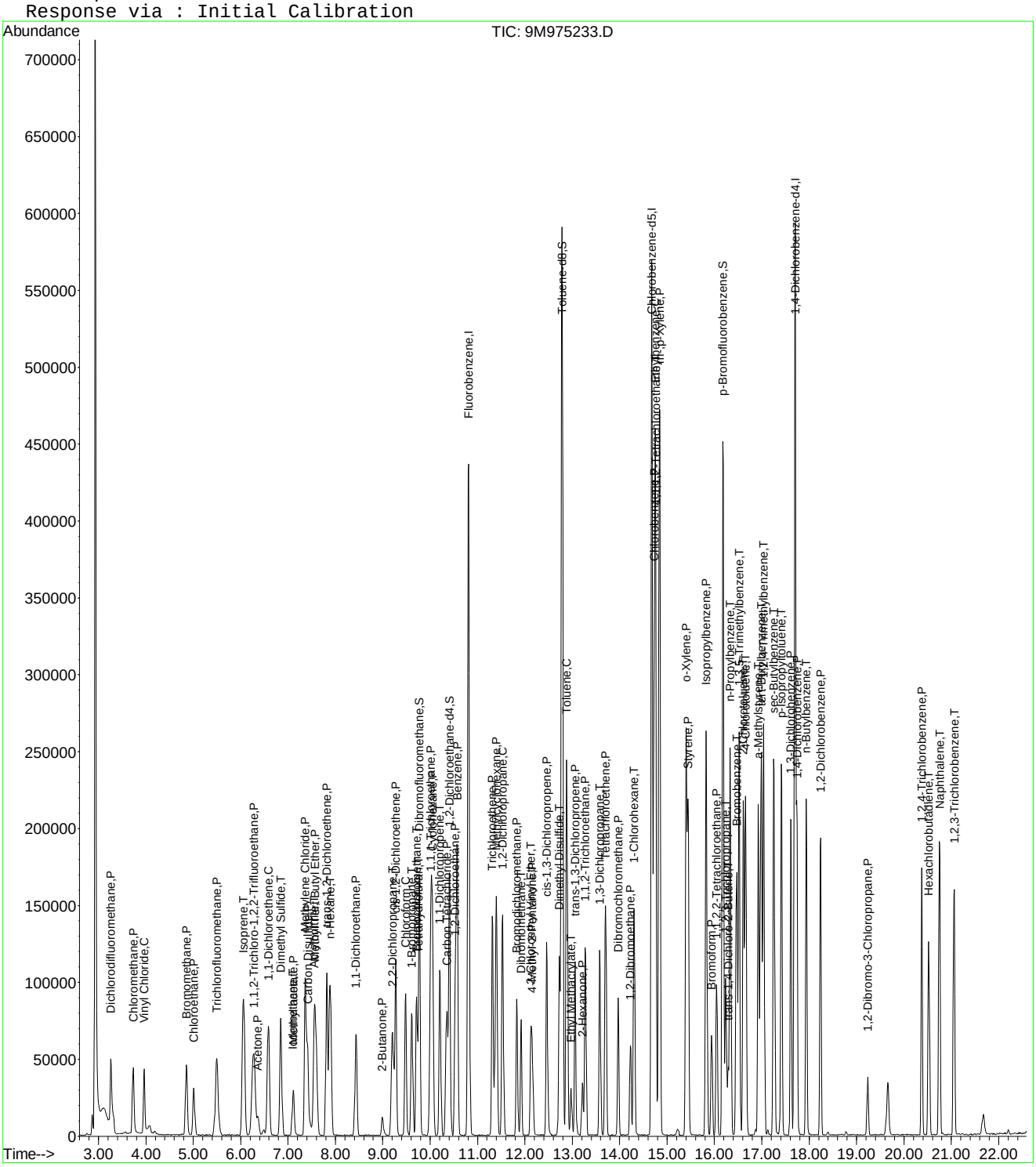

9M975233.D 8260S.M Tue Jul 05 15:02:51 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975267.D Vial: 20
Acq On : 6 Jul 2016 23:13 Operator: ADC
Sample : WG575216-02 A MS 826-SPE Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 08 09:59:34 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.79	96	635404	50.00 ug/kg	-0.02
57) Chlorobenzene-d5	14.67	117	498239	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	236363	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	170959	48.7938 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.58%		
43) 1,2-Dichloroethane-d4	10.39	65	168777	45.3107 ug/kg	-0.02
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.62%		
58) Toluene-d8	12.78	98	624884	50.6377 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.28%		
79) p-Bromofluorobenzene	16.18	95	230076	53.3069 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 106.62%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	5889	1.1828 ug/kg#	76
3) Chloromethane	3.71	50	22001	5.0005 ug/kg	95
4) Vinyl Chloride	3.95	62	27179	8.7966 ug/kg	97
6) Bromomethane	4.84	94	41207	14.7514 ug/kg	98
7) Chloroethane	5.00	64	35933	14.1619 ug/kg	97
8) Trichlorofluoromethane	5.48	101	85033	14.8308 ug/kg	99
10) Isoprene	6.05	67	47188	11.6723 ug/kg	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	61605	17.9067 ug/kg	99
13) Acetone	6.35	43	36434	27.6894 ug/kg	93
14) 1,1-Dichloroethene	6.57	61	56868	10.3341 ug/kg	98
16) Dimethyl Sulfide	6.84	62	69001	30.0466 ug/kg	94
17) Iodomethane	7.09	142	16859	8.5395 ug/kg	94
18) Methyl acetate	7.10	43	48169	14.8622 ug/kg	99
19) Methylene Chloride	7.35	84	56328	15.1432 ug/kg	96
20) Carbon Disulfide	7.40	76	135709	13.0488 ug/kg	99
21) Acrylonitrile	7.53	53	26830	17.9352 ug/kg	96
22) Methyl Tert Butyl Ether	7.55	73	180330	18.9256 ug/kg	98
23) trans-1,2-Dichloroethene	7.80	61	76283	14.5776 ug/kg	98
24) n-Hexane	7.87	57	83112	14.2198 ug/kg	98
27) 1,1-Dichloroethane	8.42	63	105622	16.1266 ug/kg	99
29) 2-Butanone	8.98	43	33607	18.1160 ug/kg	99
31) 2,2-Dichloropropane	9.19	77	79442	16.3185 ug/kg	98
32) cis-1,2-Dichloroethene	9.26	96	65424	17.4183 ug/kg	98
33) Chloroform	9.47	83	108427	19.2080 ug/kg	98
34) 1-Bromopropane	9.61	122	15925	27.1525 ug/kg	97
35) Bromochloromethane	9.71	130	43800	17.7257 ug/kg	95
36) Tetrahydrofuran	9.74	42	2084	1.6317 ug/kg#	74
38) 1,1,1-Trichloroethane	10.00	97	90491	17.7469 ug/kg	97
39) Cyclohexane	10.02	56	115495	17.9154 ug/kg	99
40) 1,1-Dichloropropene	10.19	75	70818	15.9537 ug/kg	99
42) Carbon Tetrachloride	10.34	117	76127	15.3905 ug/kg	99
45) 1,2-Dichloroethane	10.52	62	85067	18.4010 ug/kg	97
46) Benzene	10.55	78	232241	17.2586 ug/kg	99
47) Trichloroethene	11.30	130	75302	19.1039 ug/kg	98
48) Methylcyclohexane	11.38	83	106435	19.1824 ug/kg	96
49) 1,2-Dichloropropane	11.52	63	72766	19.7868 ug/kg	98
51) Bromodichloromethane	11.82	83	84321	18.8953 ug/kg	99
52) Dibromomethane	11.91	174	42974	18.4667 ug/kg	99
53) 2-Chloroethyl Vinyl Ether	12.11	63	22867	10.6143 ug/kg	98
54) 4-Methyl-2-Pentanone	12.14	58	27427	18.0197 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M975267.D 8260S.M Fri Jul 08 09:59:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975267.D Vial: 20
Acq On : 6 Jul 2016 23:13 Operator: ADC
Sample : WG575216-02 A MS 826-SPE Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 08 09:59:34 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55)	cis-1,3-Dichloropropene	12.45	75	100442	18.9113	ug/kg	100
56)	Dimethyl Disulfide	12.71	94	119586	19.8276	ug/kg	94
59)	Toluene	12.87	91	271812	19.1295	ug/kg	100
60)	Ethyl Methacrylate	12.97	69	77197	19.0454	ug/kg	99
61)	trans-1,3-Dichloropropene	13.05	75	86454	17.9168	ug/kg	99
62)	1,1,2-Trichloroethane	13.26	97	60029	20.4342	ug/kg	99
63)	2-Hexanone	13.21	43	43831	16.9822	ug/kg	98
64)	1,3-Dichloropropane	13.57	76	100777	20.5183	ug/kg	96
65)	Tetrachloroethene	13.70	164	56971	18.7498	ug/kg	99
66)	Dibromochloromethane	13.96	129	73319	18.9031	ug/kg	97
67)	1,2-Dibromoethane	14.22	107	62360	18.8964	ug/kg	96
68)	1-Chlorohexane	14.30	91	87324	19.7053	ug/kg	100
69)	Chlorobenzene	14.72	112	199361	19.7124	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.75	131	74971	20.6068	ug/kg	100
71)	Ethylbenzene	14.75	106	106200	19.8214	ug/kg	97
72)	m-,p-Xylene	14.84	106	262217	39.6176	ug/kg	98
73)	o-Xylene	15.40	106	129117	20.1500	ug/kg	99
74)	Styrene	15.44	104	172606	16.1418	ug/kg	97
75)	Bromoform	15.93	173	47197	17.9315	ug/kg	98
76)	Isopropylbenzene	15.83	105	333207	20.2623	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.04	83	74101	19.4493	ug/kg	100
80)	1,2,3-Trichloropropane	16.24	110	24555	20.7839	ug/kg#	38
81)	trans-1,4-Dichloro-2-Buten	16.28	53	14626	12.8613	ug/kg#	1
82)	n-Propylbenzene	16.33	91	358964	21.1013	ug/kg	100
83)	Bromobenzene	16.46	156	82757	20.1694	ug/kg	99
84)	1,3,5-Trimethylbenzene	16.51	105	277734	21.4976	ug/kg	100
85)	2-Chlorotoluene	16.61	91	226191	21.9977	ug/kg	99
86)	4-Chlorotoluene	16.65	91	197220	18.9007	ug/kg	99
87)	a-Methylstyrene	16.93	118	97632	16.2728	ug/kg	99
88)	tert-Butylbenzene	16.98	134	63255	22.6604	ug/kg	91
89)	1,2,4-Trimethylbenzene	17.03	105	268705	20.6672	ug/kg	99
90)	sec-Butylbenzene	17.25	105	345446	20.3788	ug/kg	99
91)	p-Isopropyltoluene	17.41	119	277191	20.0481	ug/kg	100
92)	1,3-Dichlorobenzene	17.61	146	142088	17.9144	ug/kg	99
93)	1,4-Dichlorobenzene	17.74	146	144715	17.8771	ug/kg	100
94)	n-Butylbenzene	17.94	91	219769	17.3916	ug/kg	99
95)	1,2-Dichlorobenzene	18.23	146	133927	17.6810	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.24	157	16402	15.8077	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.38	180	60704	10.9856	ug/kg	99
98)	Hexachlorobutadiene	20.52	225	42576	15.1875	ug/kg	99
99)	Naphthalene	20.75	128	157384	10.9045	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.06	180	54426	10.0634	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975267.D Vial: 20
Acq On : 6 Jul 2016 23:13 Operator: ADC
Sample : WG575216-02 A MS 826-SPE Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 8 9:59 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

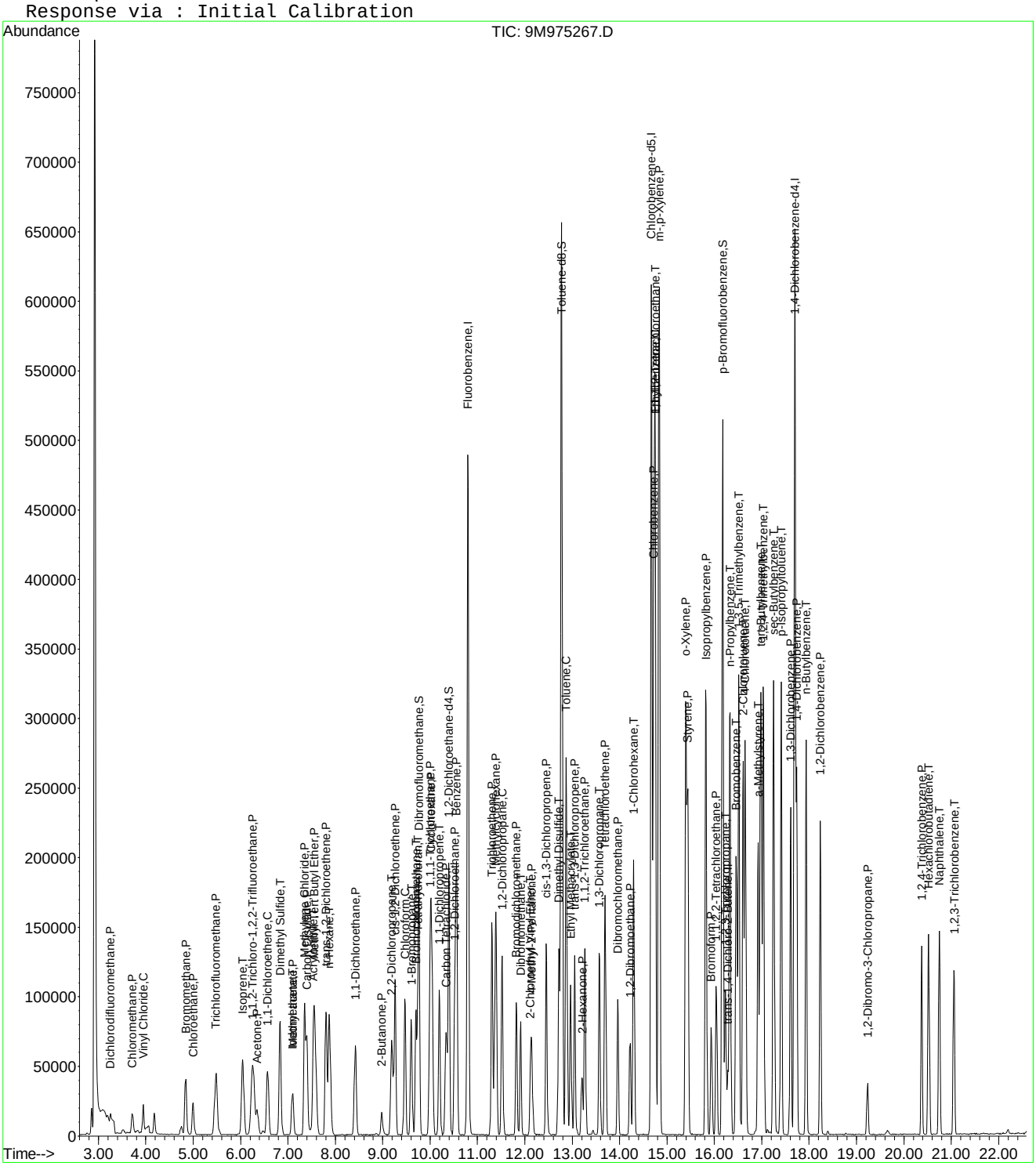

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975234.D Vial: 22
Acq On : 2 Jul 2016 1:37 Operator: ADC
Sample : WG575025-03 MSD 8260 5.04g Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 15:02:51 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	512853	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	393759	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.71	152	200160	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	134329	47.5007 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.00%		
43) 1,2-Dichloroethane-d4	10.40	65	136852	45.5194 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.04%		
58) Toluene-d8	12.79	98	496564	50.9163 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.84%		
79) p-Bromofluorobenzene	16.18	95	188890	51.6801 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.36%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	59026	14.6888 ug/kg	98
3) Chloromethane	3.73	50	60753	17.1079 ug/kg	99
4) Vinyl Chloride	3.97	62	55645	22.3134 ug/kg	100
6) Bromomethane	4.85	94	40283	17.8665 ug/kg	96
7) Chloroethane	5.01	64	41104	20.0710 ug/kg	98
8) Trichlorofluoromethane	5.50	101	91926	19.8642 ug/kg	98
10) Isoprene	6.06	67	70416	21.5802 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	58588	21.0992 ug/kg	100
13) Acetone	6.37	43	18729	16.3325 ug/kg	100
14) 1,1-Dichloroethene	6.58	61	71448	16.0861 ug/kg	97
16) Dimethyl Sulfide	6.85	62	48635	26.2390 ug/kg	97
17) Iodomethane	7.11	142	24180	14.0350 ug/kg	100
18) Methyl acetate	7.11	43	32230	12.3206 ug/kg	98
19) Methylene Chloride	7.36	84	51408	17.1230 ug/kg	96
20) Carbon Disulfide	7.42	76	112743	13.4310 ug/kg	99
21) Acrylonitrile	7.55	53	18525	15.3427 ug/kg	97
22) Methyl Tert Butyl Ether	7.57	73	145685	18.9432 ug/kg	96
23) trans-1,2-Dichloroethene	7.82	61	71258	16.8713 ug/kg	99
24) n-Hexane	7.89	57	83863	17.7769 ug/kg	97
27) 1,1-Dichloroethane	8.44	63	90571	17.1330 ug/kg	99
29) 2-Butanone	8.99	43	20049	13.3900 ug/kg	95
31) 2,2-Dichloropropane	9.21	77	68181	17.3521 ug/kg	99
32) cis-1,2-Dichloroethene	9.27	96	53206	17.5504 ug/kg	96
33) Chloroform	9.48	83	81653	17.9215 ug/kg	99
34) 1-Bromopropane	9.62	122	12025	25.4022 ug/kg	95
35) Bromochloromethane	9.72	130	34548	17.3224 ug/kg	94
36) Tetrahydrofuran	9.75	42	1814	1.7597 ug/kg#	59
38) 1,1,1-Trichloroethane	10.01	97	73616	17.8874 ug/kg	99
39) Cyclohexane	10.04	56	93658	17.9997 ug/kg	97
40) 1,1-Dichloropropene	10.21	75	56266	15.7043 ug/kg	99
42) Carbon Tetrachloride	10.35	117	66420	16.6368 ug/kg	99
45) 1,2-Dichloroethane	10.53	62	64937	17.4033 ug/kg	98
46) Benzene	10.57	78	181537	16.7143 ug/kg	99
47) Trichloroethene	11.32	130	52200	16.4075 ug/kg	97
48) Methylcyclohexane	11.39	83	80336	17.9385 ug/kg	98
49) 1,2-Dichloropropane	11.53	63	53172	17.9138 ug/kg	99
51) Bromodichloromethane	11.83	83	60378	16.7631 ug/kg	98
52) Dibromomethane	11.92	174	33029	17.5847 ug/kg	96
53) 2-Chloroethyl Vinyl Ether	12.12	63	25931	14.4226 ug/kg	98
54) 4-Methyl-2-Pentanone	12.15	58	18861	15.3529 ug/kg	95

(#) = qualifier out of range (m) = manual integration
9M975234.D 8260S.M Tue Jul 05 15:02:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975234.D Vial: 22
Acq On : 2 Jul 2016 1:37 Operator: ADC
Sample : WG575025-03 MSD 8260 5.04g Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 15:02:51 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55)	cis-1,3-Dichloropropene	12.46	75	60771	14.1762	ug/kg	97
56)	Dimethyl Disulfide	12.72	94	79370	16.5148	ug/kg	90
59)	Toluene	12.88	91	171515	15.2737	ug/kg	99
60)	Ethyl Methacrylate	12.98	69	6748	2.1065	ug/kg#	82
61)	trans-1,3-Dichloropropene	13.06	75	52394	13.7393	ug/kg	99
62)	1,1,2-Trichloroethane	13.27	97	42231	18.1901	ug/kg	99
63)	2-Hexanone	13.21	43	22244	11.7887	ug/kg#	66
64)	1,3-Dichloropropane	13.58	76	71189	18.3400	ug/kg	95
65)	Tetrachloroethene	13.71	164	33155	13.8070	ug/kg	100
66)	Dibromochloromethane	13.97	129	50541	16.4880	ug/kg	99
67)	1,2-Dibromoethane	14.22	107	41013	15.7254	ug/kg	99
68)	1-Chlorohexane	14.31	91	37782	10.7880	ug/kg	96
69)	Chlorobenzene	14.73	112	111575	13.9596	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.76	131	46443	16.1526	ug/kg	97
71)	Ethylbenzene	14.75	106	52655	12.4353	ug/kg	99
72)	m-,p-Xylene	14.85	106	126658	24.2140	ug/kg	99
73)	o-Xylene	15.41	106	63740	12.5867	ug/kg	95
74)	Styrene	15.45	104	81660	9.6630	ug/kg	93
75)	Bromoform	15.94	173	31628	15.2048	ug/kg	99
76)	Isopropylbenzene	15.83	105	143738	11.0599	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.05	83	52669	16.3244	ug/kg	99
80)	1,2,3-Trichloropropane	16.24	110	18193	18.1842	ug/kg#	40
81)	trans-1,4-Dichloro-2-Buten	16.28	53	8615	8.9458	ug/kg#	1
82)	n-Propylbenzene	16.33	91	137185	9.5229	ug/kg	99
83)	Bromobenzene	16.47	156	43347	12.4752	ug/kg	83
84)	1,3,5-Trimethylbenzene	16.52	105	112672	10.2986	ug/kg	99
85)	2-Chlorotoluene	16.61	91	91589	10.5183	ug/kg	89
86)	4-Chlorotoluene	16.66	91	76556	8.6638	ug/kg	98
87)	a-Methylstyrene	16.92	118	46916	9.2341	ug/kg	98
88)	tert-Butylbenzene	16.99	134	24602	10.4075	ug/kg	91
89)	1,2,4-Trimethylbenzene	17.04	105	116495	10.3122	ug/kg	99
90)	sec-Butylbenzene	17.25	105	123664	8.6148	ug/kg	100
91)	p-Isopropyltoluene	17.42	119	85541	7.3059	ug/kg	100
92)	1,3-Dichlorobenzene	17.61	146	66436	9.8912	ug/kg	99
93)	1,4-Dichlorobenzene	17.75	146	65945	9.6198	ug/kg	96
94)	n-Butylbenzene	17.94	91	62447	5.8356	ug/kg	98
95)	1,2-Dichlorobenzene	18.24	146	69873	10.8931	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.24	157	13172	15.0408	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.38	180	38667	8.2632	ug/kg	99
98)	Hexachlorobutadiene	20.52	225	12116	5.1037	ug/kg	96
99)	Naphthalene	20.76	128	141274	11.5587	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.06	180	40342	8.8085	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975234.D Vial: 22
Acq On : 2 Jul 2016 1:37 Operator: ADC
Sample : WG575025-03 MSD 8260 5.04g Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 5 15:02 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

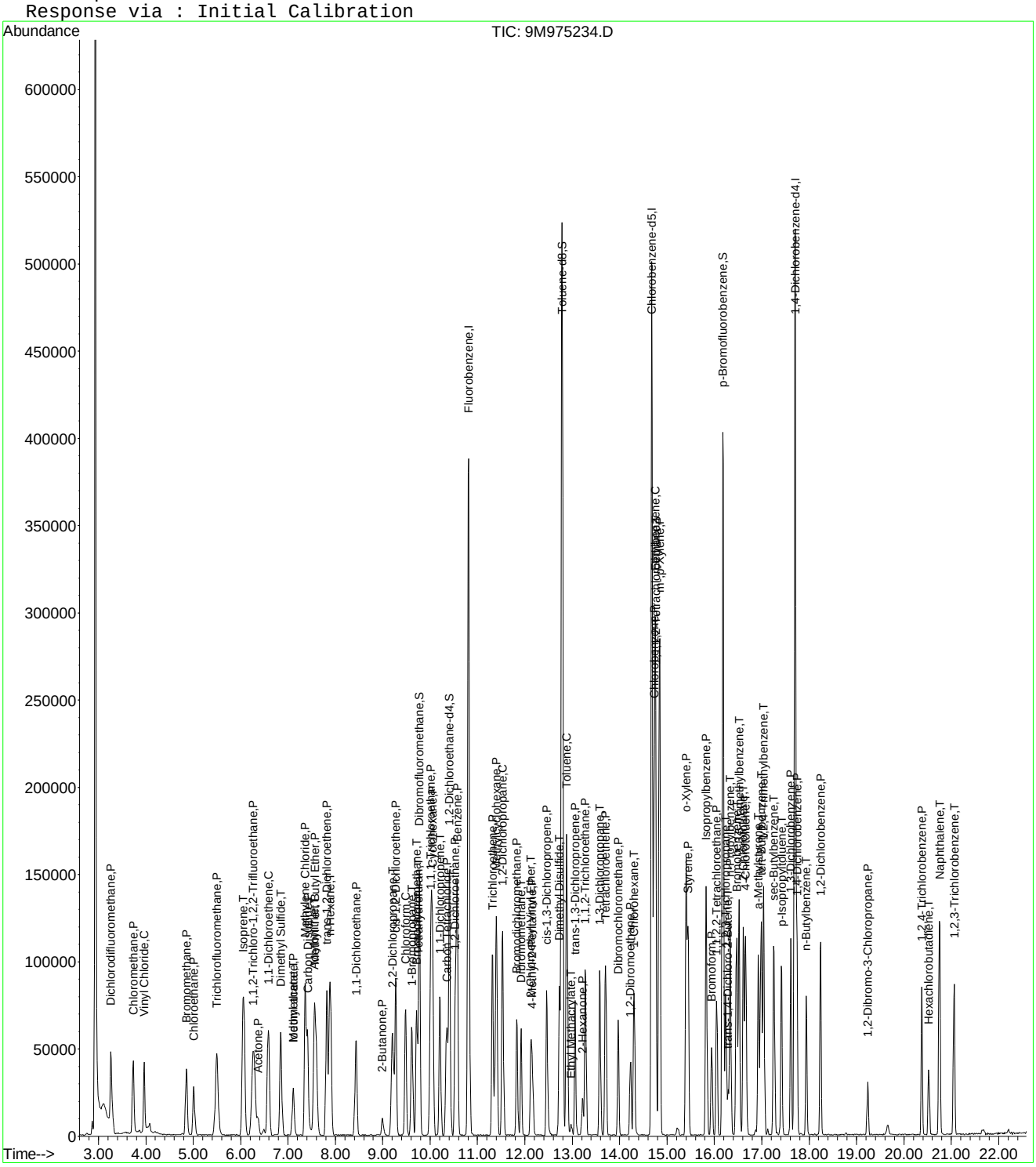

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975268.D Vial: 21
Acq On : 6 Jul 2016 23:44 Operator: ADC
Sample : WG575216-03 A MSD 826-SPE Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 08 09:59:34 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	578229	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.67	117	440272	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	216039	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	152110	47.7069 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.42%		
43) 1,2-Dichloroethane-d4	10.40	65	152914	45.1113 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.22%		
58) Toluene-d8	12.78	98	561398	51.4828 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 102.96%		
79) p-Bromofluorobenzene	16.18	95	207628	52.6315 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 105.26%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	5124	1.1310 ug/kg#	78
3) Chloromethane	3.71	50	18626	4.6520 ug/kg	96
4) Vinyl Chloride	3.96	62	31050	11.0432 ug/kg	96
6) Bromomethane	4.84	94	33727	13.2675 ug/kg	96
7) Chloroethane	5.00	64	28691	12.4258 ug/kg	98
8) Trichlorofluoromethane	5.49	101	69571	13.3338 ug/kg	99
10) Isoprene	6.05	67	48505	13.1845 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	50615	16.1670 ug/kg	98
13) Acetone	6.35	43	32411	26.9870 ug/kg	91
14) 1,1-Dichloroethene	6.57	61	48306	9.6462 ug/kg	97
16) Dimethyl Sulfide	6.84	62	56552	27.0607 ug/kg	95
17) Iodomethane	7.09	142	17619	9.5893 ug/kg	99
18) Methyl acetate	7.10	43	40328	13.6732 ug/kg	96
19) Methylene Chloride	7.35	84	48564	14.3469 ug/kg	95
20) Carbon Disulfide	7.40	76	109385	11.5577 ug/kg	100
21) Acrylonitrile	7.54	53	21623	15.8837 ug/kg	97
22) Methyl Tert Butyl Ether	7.56	73	149522	17.2440 ug/kg	97
23) trans-1,2-Dichloroethene	7.81	61	66926	14.0541 ug/kg	99
24) n-Hexane	7.87	57	74379	13.9839 ug/kg	98
27) 1,1-Dichloroethane	8.42	63	91071	15.2798 ug/kg	99
29) 2-Butanone	8.98	43	26645	15.7833 ug/kg	98
31) 2,2-Dichloropropane	9.20	77	71678	16.1796 ug/kg	99
32) cis-1,2-Dichloroethene	9.26	96	57893	16.9373 ug/kg	94
33) Chloroform	9.46	83	92815	18.0681 ug/kg	99
34) 1-Bromopropane	9.60	122	13489	25.2732 ug/kg	95
35) Bromochloromethane	9.71	130	37508	16.6802 ug/kg	96
36) Tetrahydrofuran	9.74	42	1728	1.4867 ug/kg#	49
38) 1,1,1-Trichloroethane	10.00	97	77721	16.7497 ug/kg	98
39) Cyclohexane	10.03	56	94190	16.0553 ug/kg	97
40) 1,1-Dichloropropene	10.19	75	62860	15.5611 ug/kg	99
42) Carbon Tetrachloride	10.34	117	69284	15.3920 ug/kg	99
45) 1,2-Dichloroethane	10.52	62	71522	17.0009 ug/kg	98
46) Benzene	10.56	78	200278	16.3550 ug/kg	99
47) Trichloroethene	11.31	130	64320	17.9313 ug/kg	99
48) Methylcyclohexane	11.38	83	90560	17.9352 ug/kg	98
49) 1,2-Dichloropropane	11.52	63	61561	18.3951 ug/kg	99
51) Bromodichloromethane	11.82	83	71886	17.7016 ug/kg	98
52) Dibromomethane	11.91	174	37867	17.8811 ug/kg	95
53) 2-Chloroethyl Vinyl Ether	12.11	63	17085	8.9313 ug/kg	100
54) 4-Methyl-2-Pentanone	12.14	58	22283	16.0877 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M975268.D 8260S.M Fri Jul 08 09:59:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975268.D Vial: 21
Acq On : 6 Jul 2016 23:44 Operator: ADC
Sample : WG575216-03 A MSD 826-SPE Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 08 09:59:34 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55)	cis-1,3-Dichloropropene	12.45	75	85914	17.7754	ug/kg	99
56)	Dimethyl Disulfide	12.73	94	95659	17.5720	ug/kg	91
59)	Toluene	12.87	91	231807	18.4620	ug/kg	100
60)	Ethyl Methacrylate	12.97	69	61455	17.1579	ug/kg	99
61)	trans-1,3-Dichloropropene	13.05	75	72761	17.0644	ug/kg	98
62)	1,1,2-Trichloroethane	13.27	97	52061	20.0552	ug/kg	99
63)	2-Hexanone	13.21	43	35511	15.7754	ug/kg#	74
64)	1,3-Dichloropropane	13.58	76	86096	19.8371	ug/kg	96
65)	Tetrachloroethene	13.70	164	48195	17.9499	ug/kg	99
66)	Dibromochloromethane	13.96	129	61333	17.8948	ug/kg	96
67)	1,2-Dibromoethane	14.22	107	52431	17.9795	ug/kg	98
68)	1-Chlorohexane	14.30	91	70475	17.9970	ug/kg	99
69)	Chlorobenzene	14.72	112	167714	18.7666	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.75	131	64410	20.0349	ug/kg	99
71)	Ethylbenzene	14.75	106	90254	19.0631	ug/kg	99
72)	m-,p-Xylene	14.84	106	215002	36.7609	ug/kg	100
73)	o-Xylene	15.39	106	106037	18.7269	ug/kg	98
74)	Styrene	15.44	104	143949	15.2343	ug/kg	97
75)	Bromoform	15.93	173	39729	17.0815	ug/kg	98
76)	Isopropylbenzene	15.83	105	278098	19.1377	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.04	83	63380	18.2003	ug/kg	99
80)	1,2,3-Trichloropropane	16.24	110	21574	19.9786	ug/kg#	42
81)	trans-1,4-Dichloro-2-Buten	16.28	53	12245	11.7805	ug/kg#	1
82)	n-Propylbenzene	16.33	91	296917	19.0959	ug/kg	100
83)	Bromobenzene	16.47	156	68775	18.3386	ug/kg	97
84)	1,3,5-Trimethylbenzene	16.51	105	226640	19.1931	ug/kg	100
85)	2-Chlorotoluene	16.61	91	185559	19.7438	ug/kg	100
86)	4-Chlorotoluene	16.65	91	165696	17.3734	ug/kg	100
87)	a-Methylstyrene	16.93	118	73355	13.3767	ug/kg	98
88)	tert-Butylbenzene	16.99	134	51963	20.3664	ug/kg	91
89)	1,2,4-Trimethylbenzene	17.03	105	220210	18.4738	ug/kg	99
90)	sec-Butylbenzene	17.25	105	293422	18.9382	ug/kg	100
91)	p-Isopropyltoluene	17.41	119	234809	18.5805	ug/kg	100
92)	1,3-Dichlorobenzene	17.61	146	116868	16.1208	ug/kg	98
93)	1,4-Dichlorobenzene	17.74	146	120670	16.3091	ug/kg	98
94)	n-Butylbenzene	17.94	91	186755	16.1693	ug/kg	99
95)	1,2-Dichlorobenzene	18.23	146	111061	16.0416	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.24	157	14844	15.6615	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.38	180	54570	10.8046	ug/kg	99
98)	Hexachlorobutadiene	20.52	225	40084	15.6437	ug/kg	96
99)	Naphthalene	20.75	128	139415	10.5682	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.06	180	50233	10.1619	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975268.D Vial: 21
Acq On : 6 Jul 2016 23:44 Operator: ADC
Sample : WG575216-03 A MSD 826-SPE Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 8 9:59 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

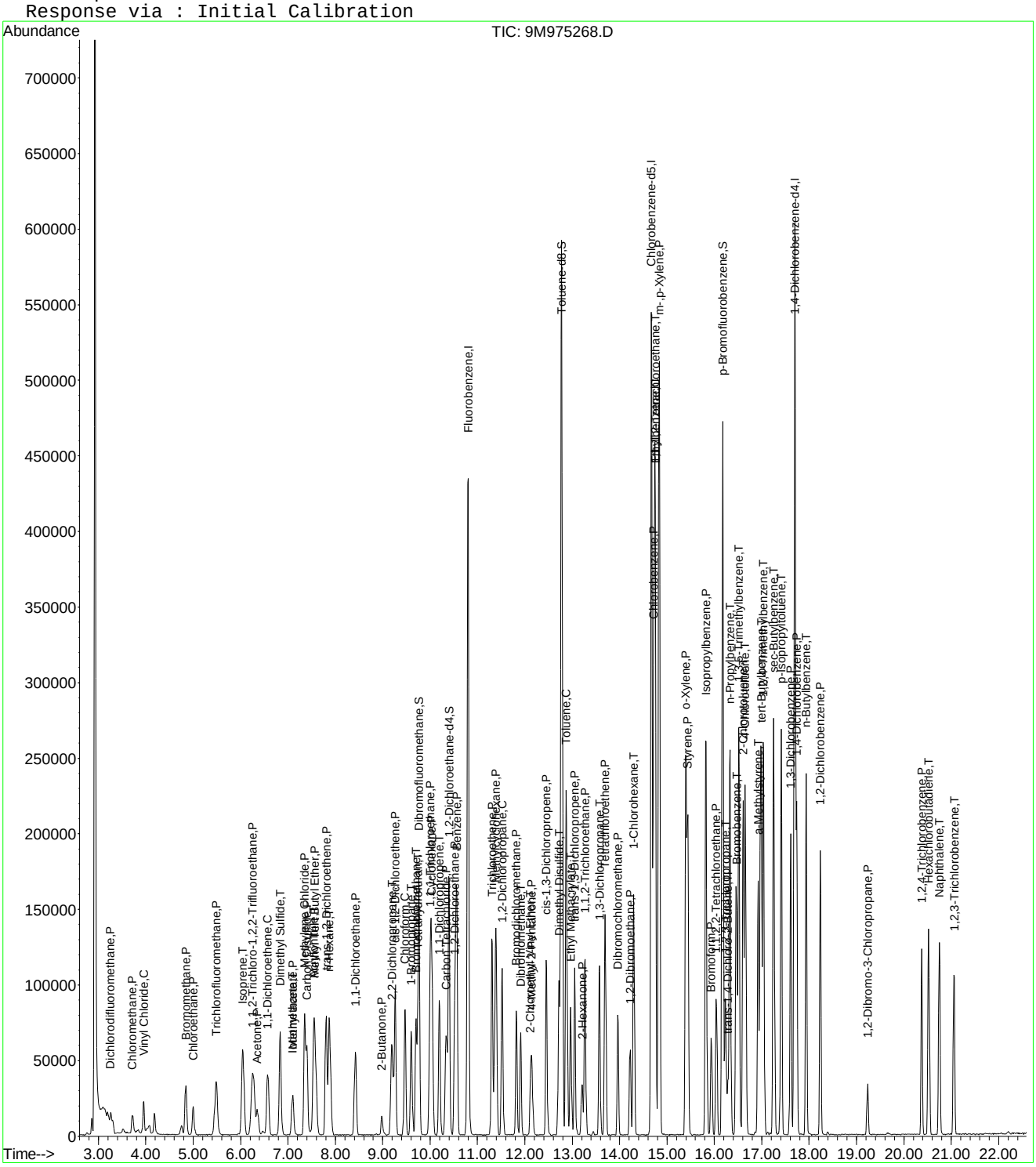

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(3.5-4)(270616)	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 14:53
Collect Date:	06/27/2016 13:35	**Dilution:**	1	**File ID:**	1LM.LM35648
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.28	U	4.57	2.28	1.14

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(9.5-10)270616	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 15:12
Collect Date:	06/27/2016 14:12	**Dilution:**	1	**File ID:**	1LM.LM35649
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.52	U	5.05	2.52	1.26

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(14.5-15)270616	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 15:31
Collect Date:	06/27/2016 14:45	**Dilution:**	1	**File ID:**	1LM.LM35650
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.40	U	4.81	2.40	1.20

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(19.5-20)270616	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 15:50
Collect Date:	06/27/2016 15:50	**Dilution:**	1	**File ID:**	1LM.LM35651
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.93	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(22-22.5)270616	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 16:09
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	1LM.LM35652
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.76	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(22-22.5)270616 DUP	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 16:28
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	1LM.LM35653
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.70	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD75513
Ext Solvent: DI-H_2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 08
Date/Time Extracted: 07/06/16/1600
Witness: WTD

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG575388
Analytical Work Group: WG575409
Run ID: R4656253

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL017
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA18813
Other: IS Lot #: COA13071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ Amount IS	Amount Spike	Final Volume	Extract Color	Comments
1	WG575388-01	6850		5.005g	0.250ml	1.0ml	.50ml		MCT (10,000 µs) (2 µg/kg)
2	WG575388-02	↓		5.020g	↓	NA	↓		Blank
3	WG575388-03	↓		5.014g	↓	1.0ml	↓		LCS (2 µg/kg)
4	WG575388-04	↓		5.010g	↓	1.0ml	↓		LCS2 (2 µg/kg)
5	L16061593-01	↓		5.107g	↓	NA	↓		
6	-02	↓		5.139g	↓	NA	↓		
7	-03	↓		5.128g	↓	NA	↓		
8	-04	↓		5.120g	↓	NA	↓		
9	-05	↓		5.131g	↓	NA	↓		
10	-06	↓		5.122g	↓	NA	↓		
11	L16070002-01	↓		5.009g	↓	0.5ml	↓		LOD (1 µg/kg)
12	L16070004-01	↓		5.006g	↓	1.0ml	↓		LOQ (2 µg/kg)
13	-10	↓		5.014g	↓	1.0ml	↓		LOQ (2 µg/kg)
14									
15									
16									
17									
18									
19					JWR 07/06/16				
20									
21									
22									
23									
24									

Reviewed by: Wadell T. Do 7-6-16

Analytical WG 575409 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1435 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG575388-01 MCT	9,990.	
-02 Blank	0.86	
-03 LCS	1.62	
-04 LCS2	1.73	
L16061593-01	18.71	
-02	14.97	
-03	8.76	
-04	8.97	
-05	9.87	
-06	9.37	
L16070002-01 LOD	1.33	
L16070004-01 LOQ	1.44	
-10 LOQ	1.54	

Analyst: John Richards

Date/Time: 07/07/16 / 1500

DCN#119521

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070716_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575409 (soils)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35641	WG575499-01 CCB	1	1		07/07/16 12:41
2	1LM.LM35642	WG575499-02 CCV (1.0ug/L)	1	1	STD75510	07/07/16 13:00
3	1LM.LM35643	WG575409-05 MRL (2.0ug/kg)	7	1	STD75510	07/07/16 13:19
4	1LM.LM35644	WG575409-01 MCT (2.0ug/kg)	7	1	STD75512	07/07/16 13:38
5	1LM.LM35645	WG575409-02 BLANK	7	1		07/07/16 13:56
6	1LM.LM35646	WG575409-03 LCS (2.0ug/kg)	7	1	STD75512	07/07/16 14:15
7	1LM.LM35647	WG575409-04 LCS2 (2.0ug/kg)	7	1	STD75512	07/07/16 14:34
8	1LM.LM35648	L16061593-01	7	1		07/07/16 14:53
9	1LM.LM35649	L16061593-02	7	1		07/07/16 15:12
10	1LM.LM35650	L16061593-03	7	1		07/07/16 15:31
11	1LM.LM35651	L16061593-04	7	1		07/07/16 15:50
12	1LM.LM35652	L16061593-05	7	1		07/07/16 16:09
13	1LM.LM35653	L16061593-06	7	1		07/07/16 16:28
14	1LM.LM35654	WG575499-03 CCV (1.0ug/L)	1	1	STD75510	07/07/16 16:47
15	1LM.LM35655	WG575409-06 MRL (2.0ug/kg)	7	1	STD75510	07/07/16 17:06
16	1LM.LM35656	WG575499-04 CCB	1	1		07/07/16 17:25
17	1LM.LM35657	L16070002-01 LOD (1.0ug/kg)	7	1	STD75512	07/07/16 17:44
18	1LM.LM35658	L16070004-01 LOQ (2.0ug/kg)	7	1	STD75512	07/07/16 18:03
19	1LM.LM35659	L16070004-10 LOQ (2.0ug/kg)	7	1	STD75512	07/07/16 18:22
20	1LM.LM35660	WG575499-05 CCV (1.0ug/L)	1	1	STD75510	07/07/16 18:40
21	1LM.LM35661	WG575409-07 MRL (2.0ug/kg)	7	1	STD75510	07/07/16 18:59
22	1LM.LM35662	WG575499-06 CCB	1	1		07/07/16 19:18

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 08-JUL-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 07-JUL-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 76185
Analytical Workgroups: L16061593 L16070002(LOD), 0004(LOQ) SOILS

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 08-JUL-2016
John Richards

Secondary Reviewer: 08-JUL-2016
Mary Schilling

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-08-2016 14:10:21

Microbac Laboratories Inc.

00729933

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG575409

Login Number: L16061593

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW25(3.5-4)(270616)	01	06/27/16					07/06/2016	9.1	28		07/07/16	1	28	
18WW25(9.5-10)270616	02	06/27/16					07/06/2016	9.1	28		07/07/16	1	28	
18WW25(14.5-15)270616	03	06/27/16					07/06/2016	9.1	28		07/07/16	1	28	
18WW25(19.5-20)270616	04	06/27/16					07/06/2016	9	28		07/07/16	1	28	
18WW25(22-22.5)270616	05	06/27/16					07/06/2016	9	28		07/07/16	1	28	
18WW25(22-22.5)270616 DU	06	06/27/16					07/06/2016	9	28		07/07/16	1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4845230
Report generated 07/08/2016 16:21

METHOD BLANK SUMMARY

Login Number: L16061593
Blank File ID: 1LM.LM35645
Prep Date: 07/06/16 16:00
Analyzed Date: 07/07/16 13:56
Analyst: JWR

Work Group: WG575409
Blank Sample ID: WG575409-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG575409-05	1LM.LM35643	07/07/16 13:19	01
MCT	WG575409-01	1LM.LM35644	07/07/16 13:38	01
LCS	WG575409-03	1LM.LM35646	07/07/16 14:15	01
LCS2	WG575409-04	1LM.LM35647	07/07/16 14:34	01
18WW25(3.5-4)(270616)	L16061593-01	1LM.LM35648	07/07/16 14:53	01
18WW25(9.5-10)270616	L16061593-02	1LM.LM35649	07/07/16 15:12	01
18WW25(14.5-15)270616	L16061593-03	1LM.LM35650	07/07/16 15:31	01
18WW25(19.5-20)270616	L16061593-04	1LM.LM35651	07/07/16 15:50	01
18WW25(22-22.5)270616	L16061593-05	1LM.LM35652	07/07/16 16:09	01
18WW25(22-22.5)270616 DUP	L16061593-06	1LM.LM35653	07/07/16 16:28	01
QCMRL	WG575409-06	1LM.LM35655	07/07/16 17:06	01
QCMRL	WG575409-07	1LM.LM35661	07/07/16 18:59	01

Report Name: BLANK_SUMMARY
PDF File ID: 4845231
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061593 Prep Date: 07/06/16 16:00 Sample ID: WG575409-02
Instrument ID: LCMS1 Run Date: 07/07/16 13:56 Prep Method: 6850
File ID: 1LM.LM35645 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575409 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.996	3.98	0.996	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4845232
08-JUL-2016 16:21

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061593 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Soil Method: 6850
Workgroup (AAB#): WG575409 Units: ug/kg
QC Key: DOD4 Lot #: STD75512

Sample ID: WG575409-03 LCS File ID: 1LM.LM35646 Run Date: 07/07/2016 14:15
Sample ID: WG575409-04 LCS2 File ID: 1LM.LM35647 Run Date: 07/07/2016 14:34

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	1.99	2.12	107	2.00	2.11	106	0.864	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4845233
Report generated: 07/08/2016 16:21

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061593
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4845298
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061593

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4845298
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061593

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4845298
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061593

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4845298

Report generated 07/08/2016 16:21

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061593 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4845299
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061593
Run Date: 07/07/2016
Sample ID: WG575499-01
Instrument ID: LCMS1
Run Time: 12:41
Method: 6850
File ID: 1LM.LM35641
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575409
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4845236
Report generated 07/08/2016 16:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061593
Run Date: 07/07/2016
Sample ID: WG575499-04
Instrument ID: LCMS1
Run Time: 17:25
Method: 6850
File ID: 1LM.LM35656
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575409
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4845236
Report generated 07/08/2016 16:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061593
Run Date: 07/07/2016
Sample ID: WG575499-06
Instrument ID: LCMS1
Run Time: 19:18
Method: 6850
File ID: 1LM.LM35662
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575409
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4845236
Report generated 07/08/2016 16:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061593
Run Date: 07/07/2016
Sample ID: WG575499-02
Instrument ID: LCMS1
Run Time: 13:00
Method: 6850
File ID: 1LM.LM35642
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575409
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.981	ug/kg	1.66	1.90	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4845235
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061593
Run Date: 07/07/2016
Sample ID: WG575499-03
Instrument ID: LCMS1
Run Time: 16:47
Method: 6850
File ID: 1LM.LM35654
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575409
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/kg	1.75	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4845235
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061593
Run Date: 07/07/2016
Sample ID: WG575499-05
Instrument ID: LCMS1
Run Time: 18:40
Method: 6850
File ID: 1LM.LM35660
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575409
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.992	ug/kg	1.68	0.800	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4845235
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061593 Run Date: 07/07/2016 Sample ID: WG575409-05
Instrument ID: LCMS1 Run Time: 13:19 Prep Method: 6850
File ID: 1LM.LM35643 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575409 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.94	97.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4845234
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061593 Run Date: 07/07/2016 Sample ID: WG575409-06

Instrument ID: LCMS1 Run Time: 17:06 Prep Method: 6850

File ID: 1LM.LM35655 Analyst: JWR Method: 6850

Workgroup (AAB#): WG575409 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.03	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4845234
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061593 Run Date: 07/07/2016 Sample ID: WG575409-07

Instrument ID: LCMS1 Run Time: 18:59 Prep Method: 6850

File ID: 1LM.LM35661 Analyst: JWR Method: 6850

Workgroup (AAB#): WG575409 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.97	98.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4845234
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061593
Instrument ID: LCMS1
Workgroup (AAB#): WG575409

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061593-01	1.00	01	425000
L16061593-02	1.00	01	421000
L16061593-03	1.00	01	428000
L16061593-04	1.00	01	424000
L16061593-05	1.00	01	433000
L16061593-06	1.00	01	442000
WG575409-02	1.00	01	414000
WG575409-03	1.00	01	407000
WG575409-04	1.00	01	411000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4845237
Report generated 07/08/2016 16:22

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	L16061593-01
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35648
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 14:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	L16061593-02
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35649
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 15:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	L16061593-03
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35650
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 15:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	L16061593-04
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35651
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 15:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	L16061593-05
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35652
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 16:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	391	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	L16061593-06
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35653
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 16:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	137	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	WG575409-01
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35644
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 13:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	27300	10100	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	WG575409-02
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35645
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 13:56	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	WG575409-03
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35646
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 14:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	29600	10600	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	WG575409-04
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35647
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 14:34	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	29700	10600	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	WG575409-05
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35643
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 13:19	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	27800	9840	2.83	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	WG575409-06
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35655
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 17:06	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	11100	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	WG575409-07
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35661
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 18:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31500	10700	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG575499-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35641
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	07/07/2016 12:41	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	326	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG575499-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35642
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	07/07/2016 13:00	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	138000	48700	2.83	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG575499-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35654
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	07/07/2016 16:47	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	160000	55900	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG575499-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35656
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	07/07/2016 17:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG575499-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35660
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	07/07/2016 18:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	161000	55700	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG575499-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35662
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	07/07/2016 19:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.1.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:01 AM

Data File	LM35648.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 2:53:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061593-01	**Injection Vial**	8.00
Data File	LM35648.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 2:53:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	L16061593-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.250e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

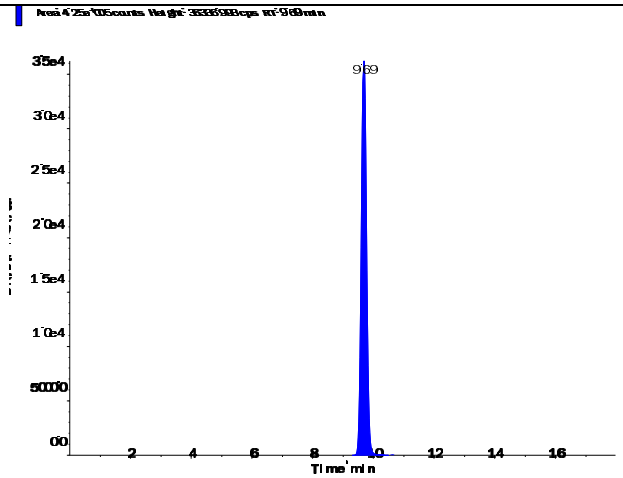

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

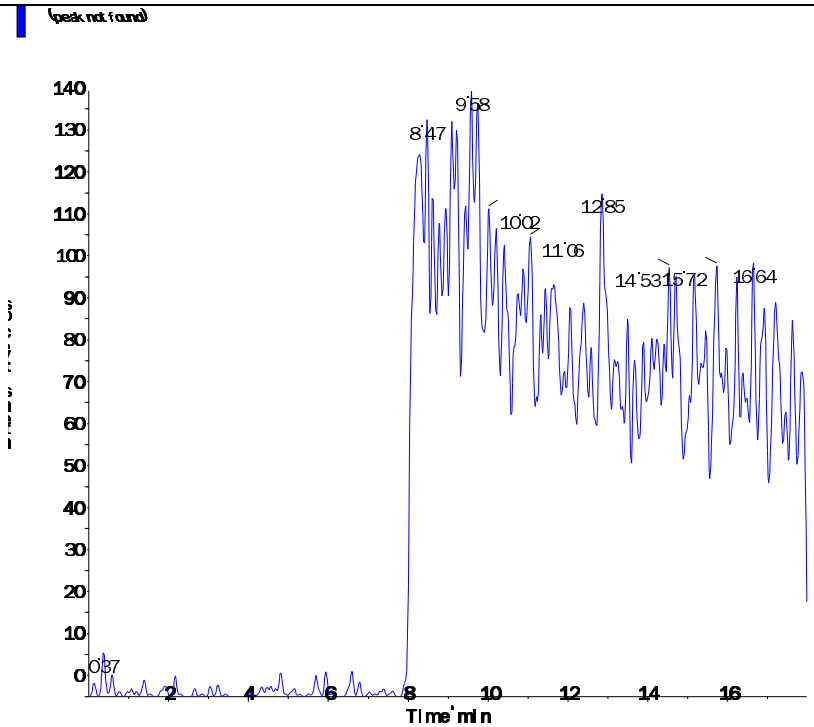

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

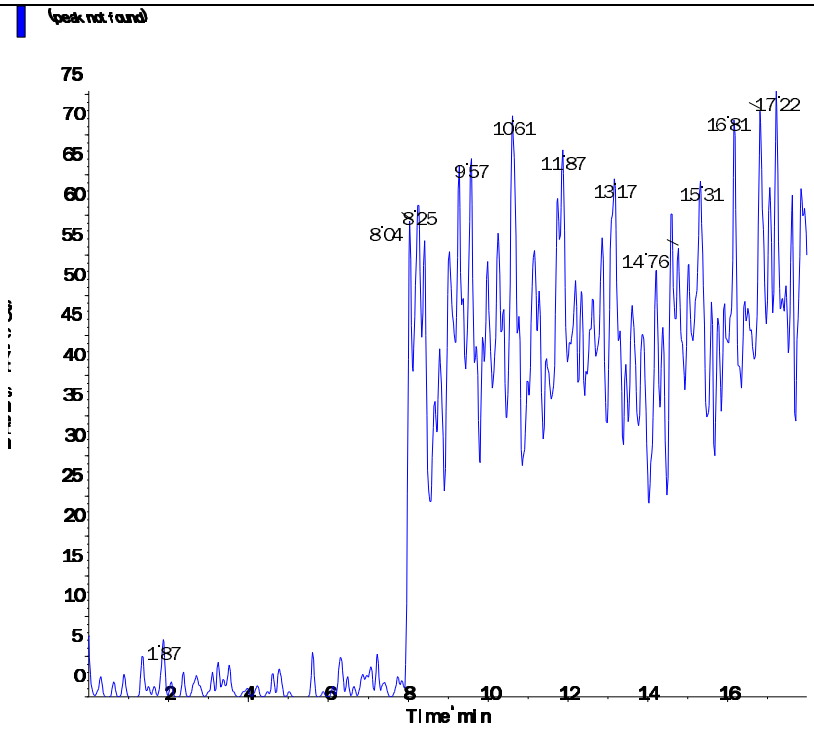

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:01 AM

Data File	LM35649.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 3:12:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061593-02	**Injection Vial**	9.00
Data File	LM35649.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 3:12:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	L16061593-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.210e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

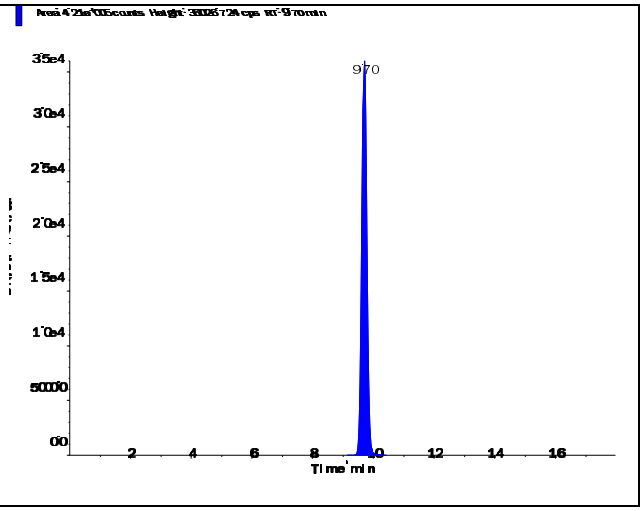

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:01 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

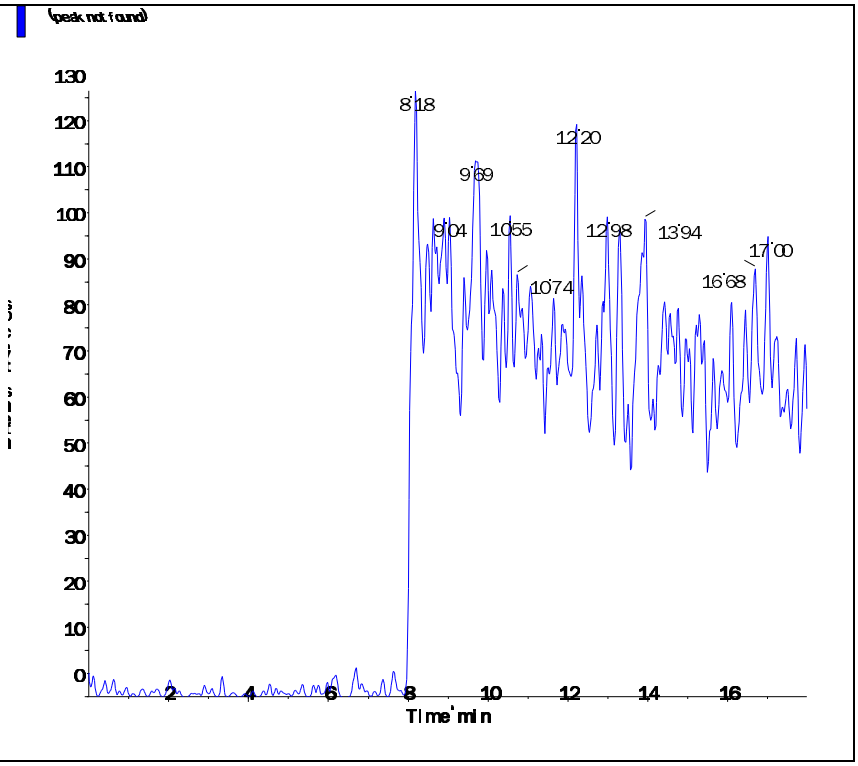

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

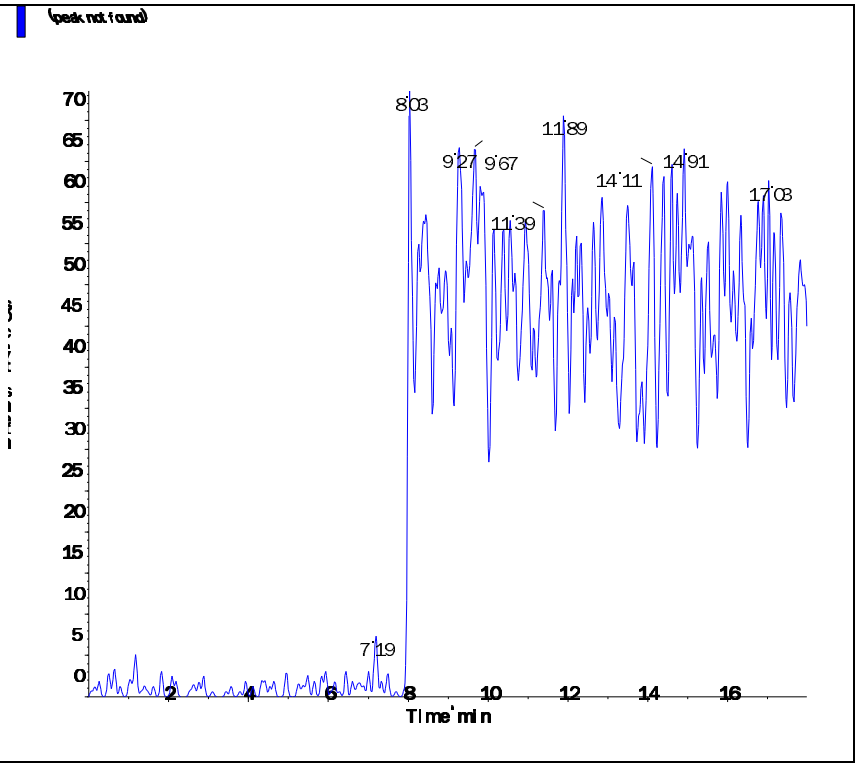

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:01 AM

Data File	LM35650.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 3:31:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061593-03	**Injection Vial**	10.00
Data File	LM35650.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 3:31:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	L16061593-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.280e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

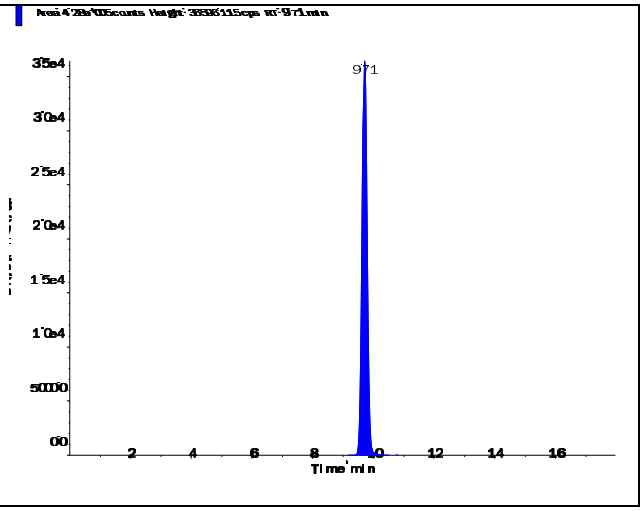

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:01 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

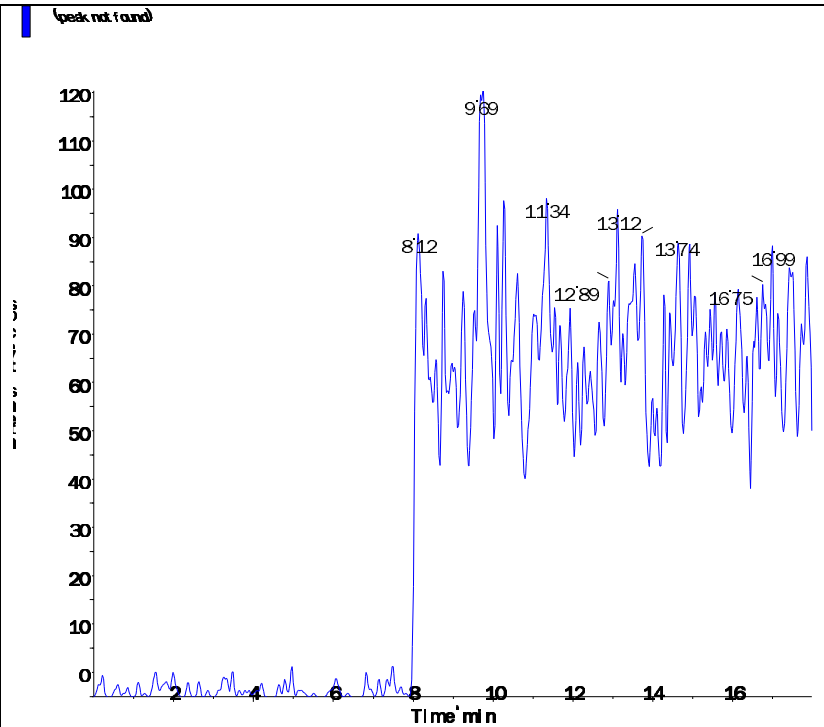

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

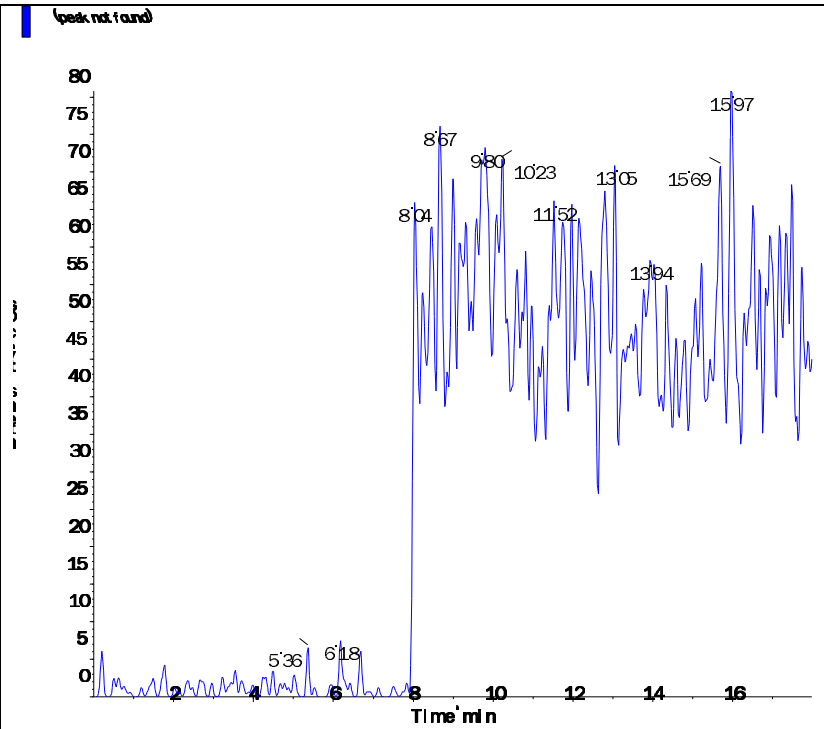

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:02 AM

Data File	LM35651.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 3:50:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061593-04	**Injection Vial**	11.00
Data File	LM35651.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 3:50:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	L16061593-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.240e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

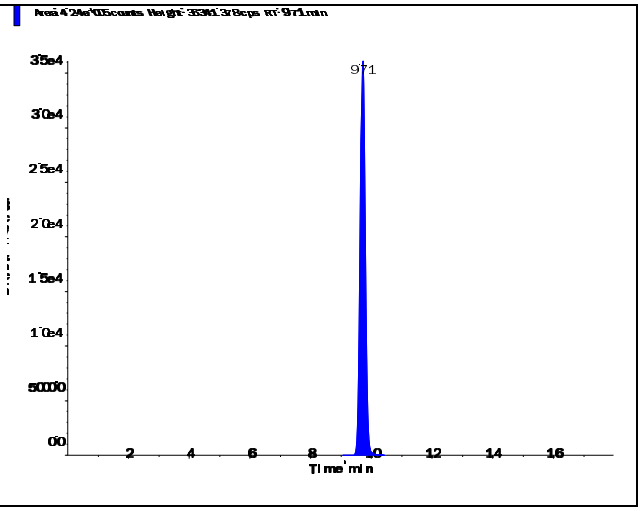

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:02 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

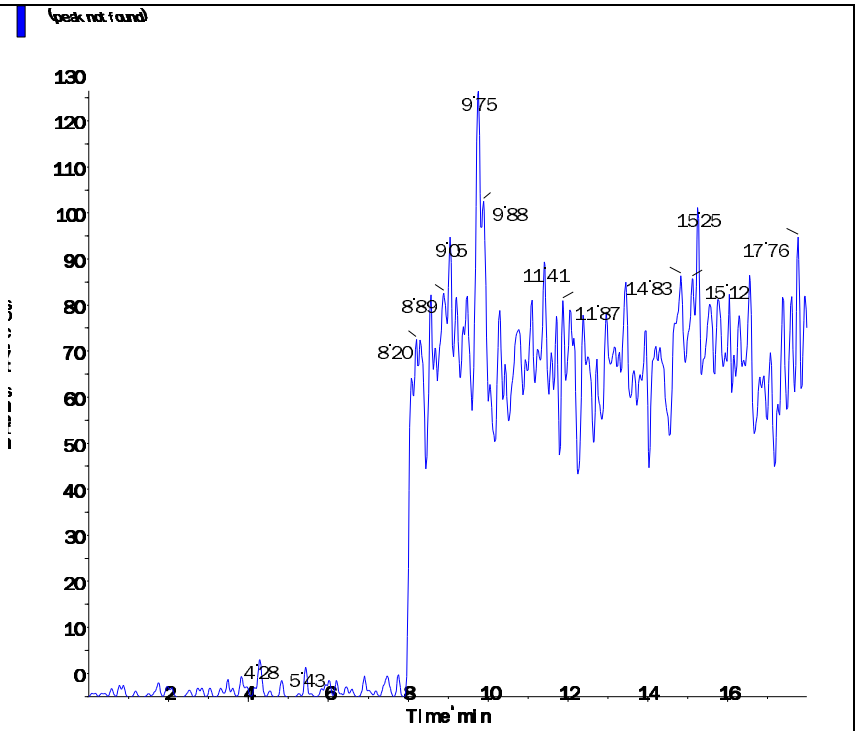

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

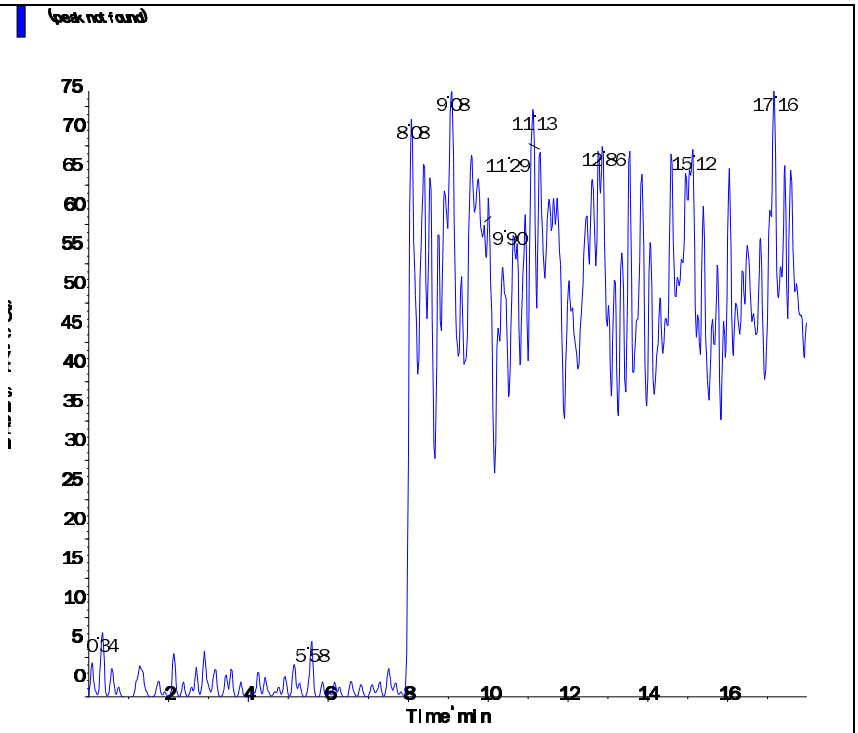

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:02 AM

Data File	LM35652.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 4:09:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061593-05	**Injection Vial**	12.00
Data File	LM35652.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 4:09:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	L16061593-05	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.330e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.910e+02	9.69	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

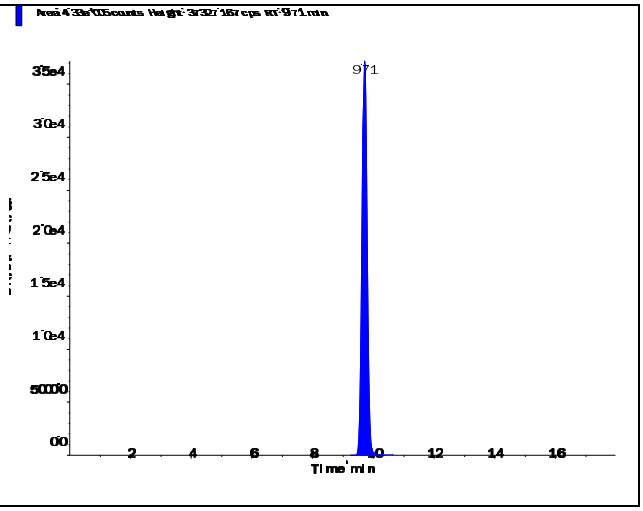

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

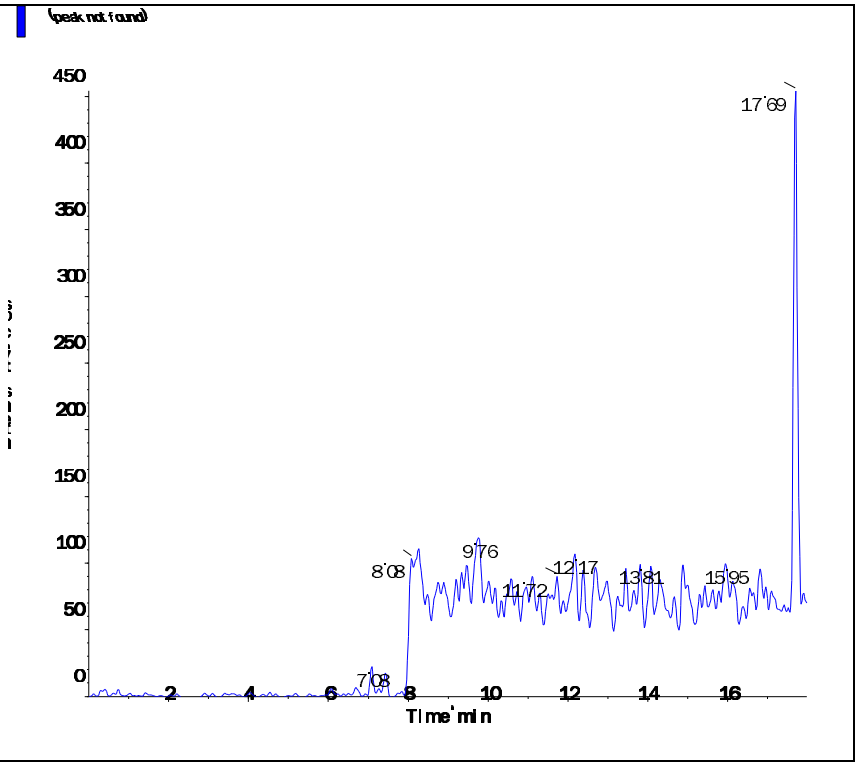

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

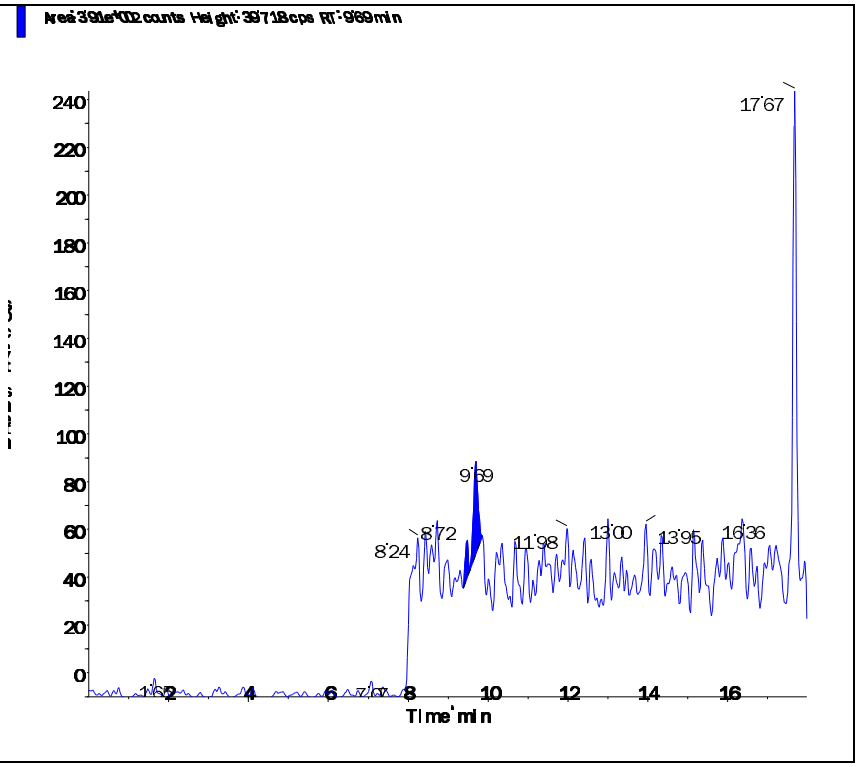

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:03 AM

Data File	LM35653.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 4:28:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061593-06	**Injection Vial**	13.00
Data File	LM35653.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 4:28:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	L16061593-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	1.370e+02	9.75	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

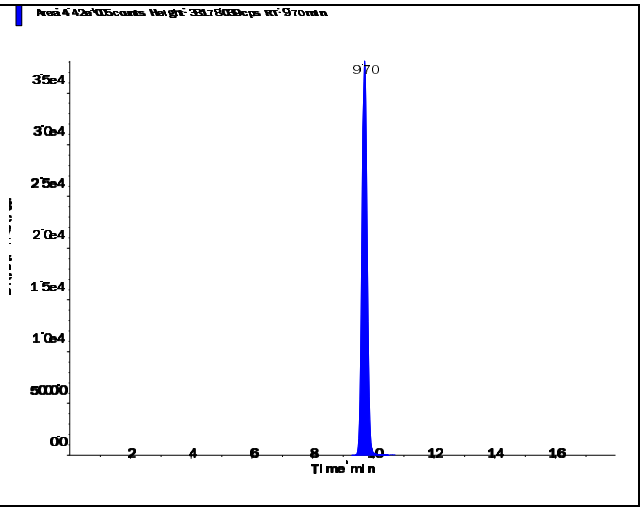

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	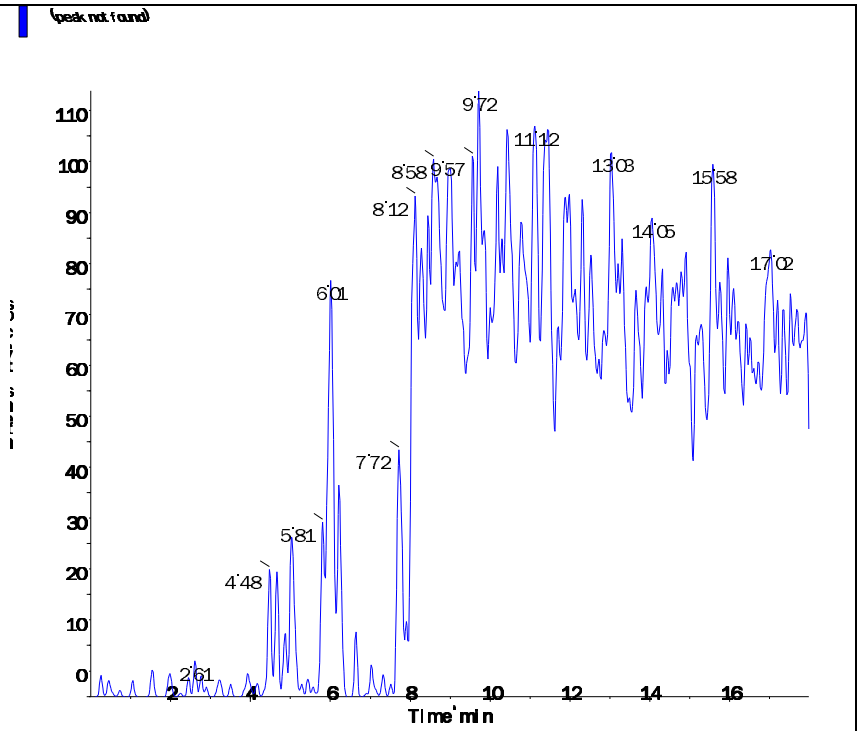
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.75 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	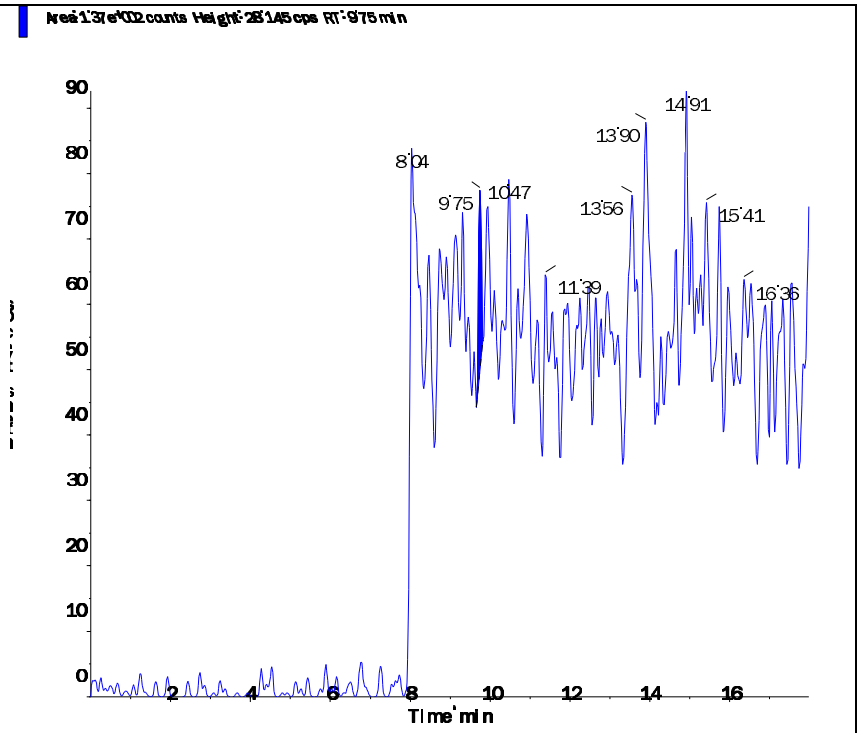

s.dataFile Page 2 of 2

2.2.1.4 Standards Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:56 AM

Data File	LM34686.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

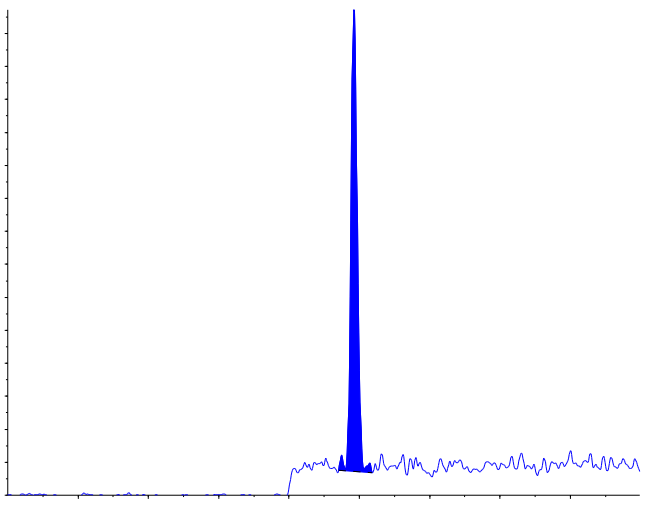

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:56 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

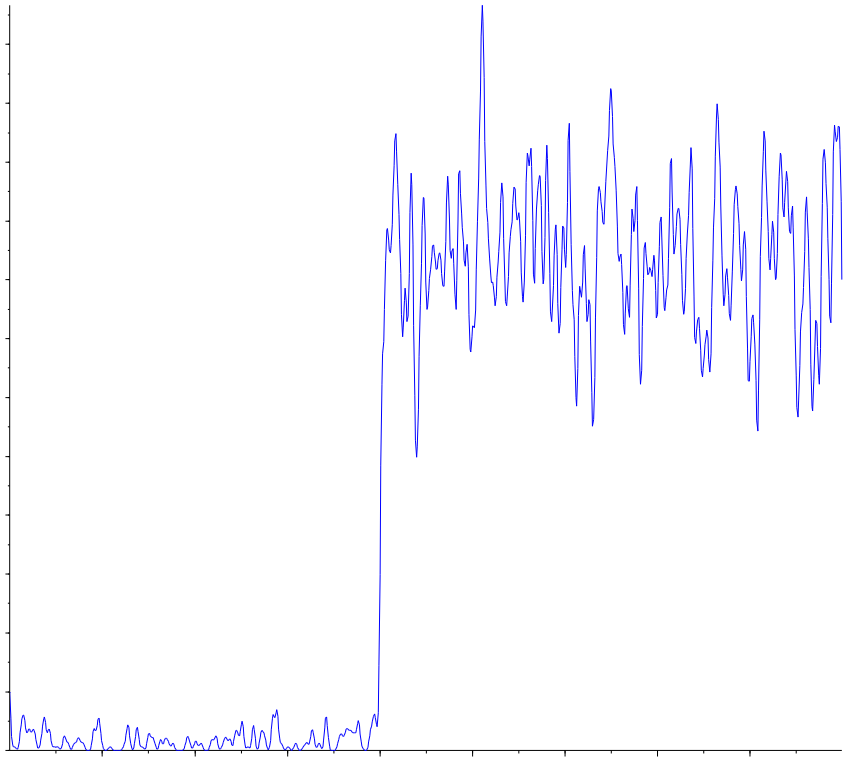

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

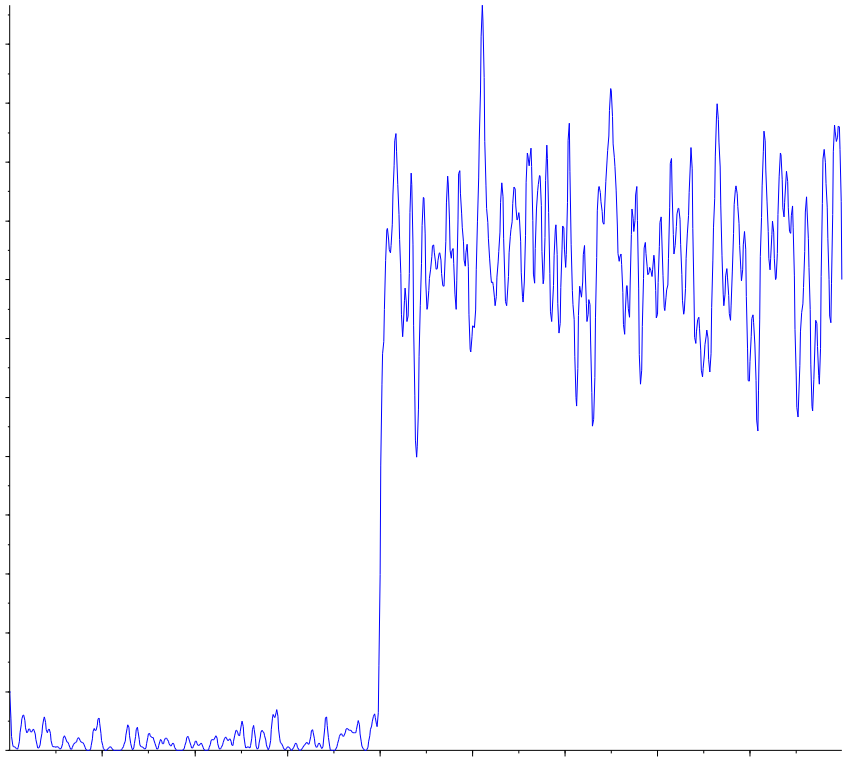

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

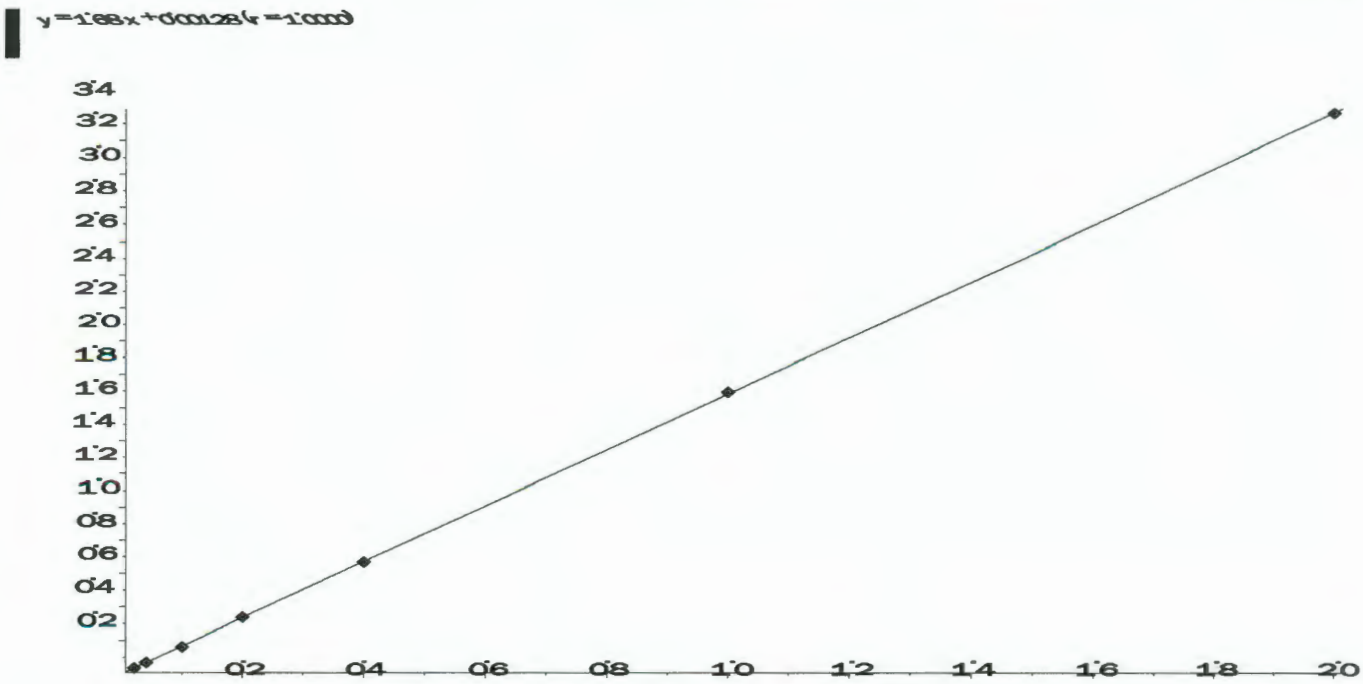

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

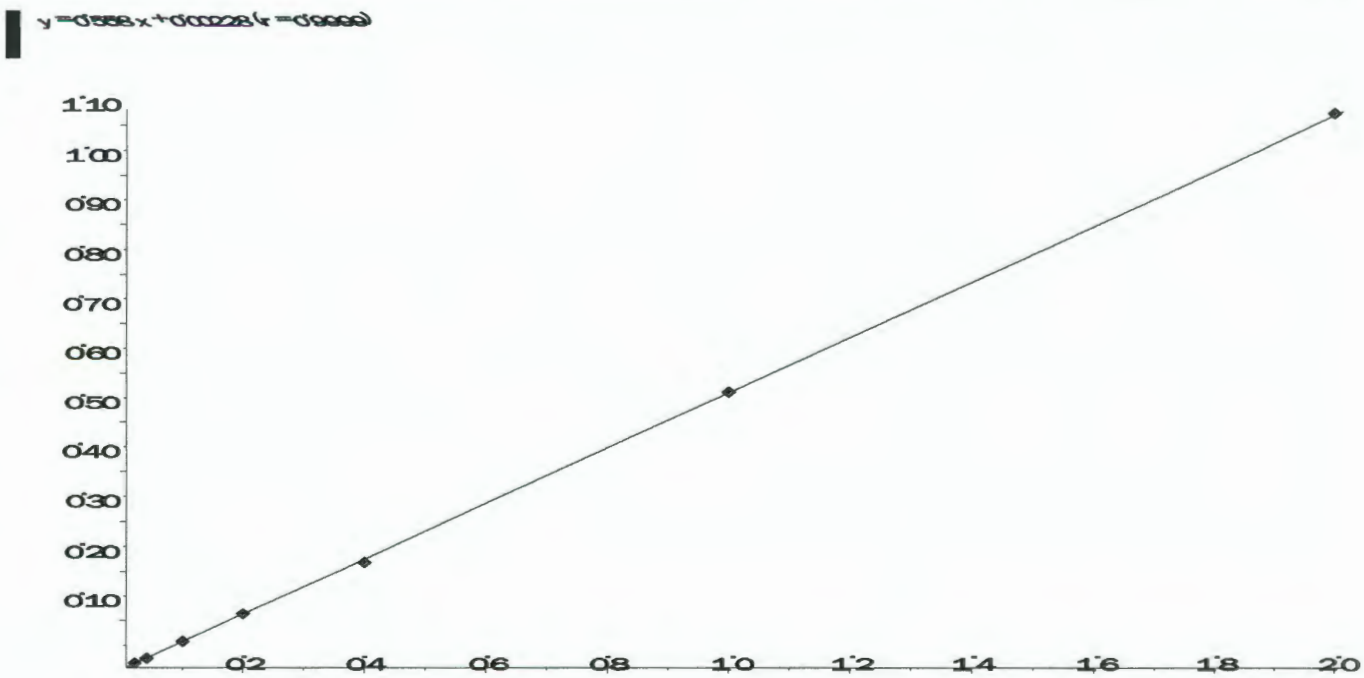

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:56 AM

Data File	LM34687.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

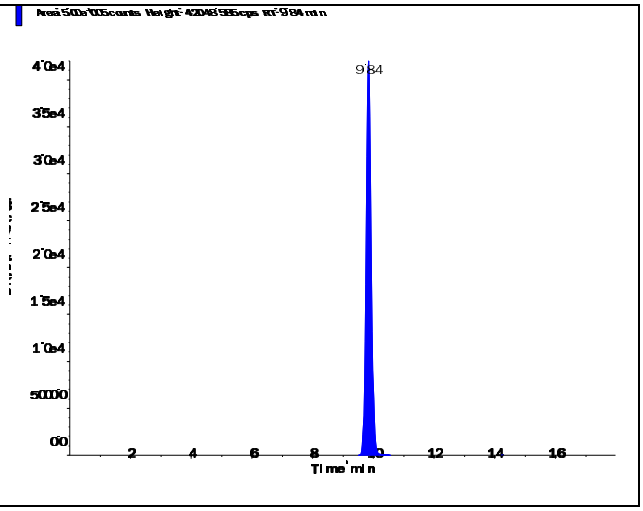

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:56 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

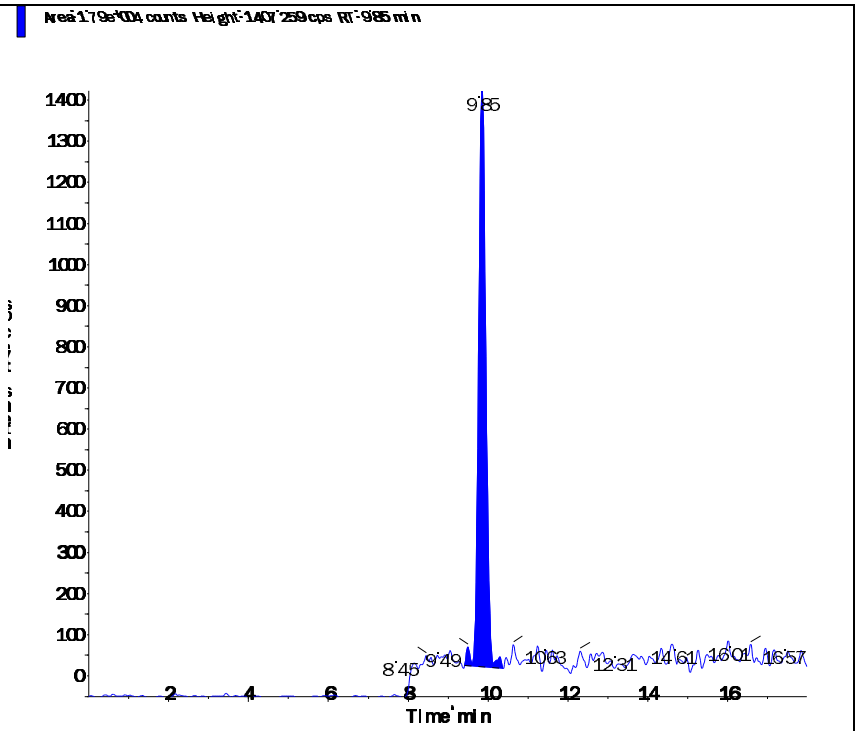

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

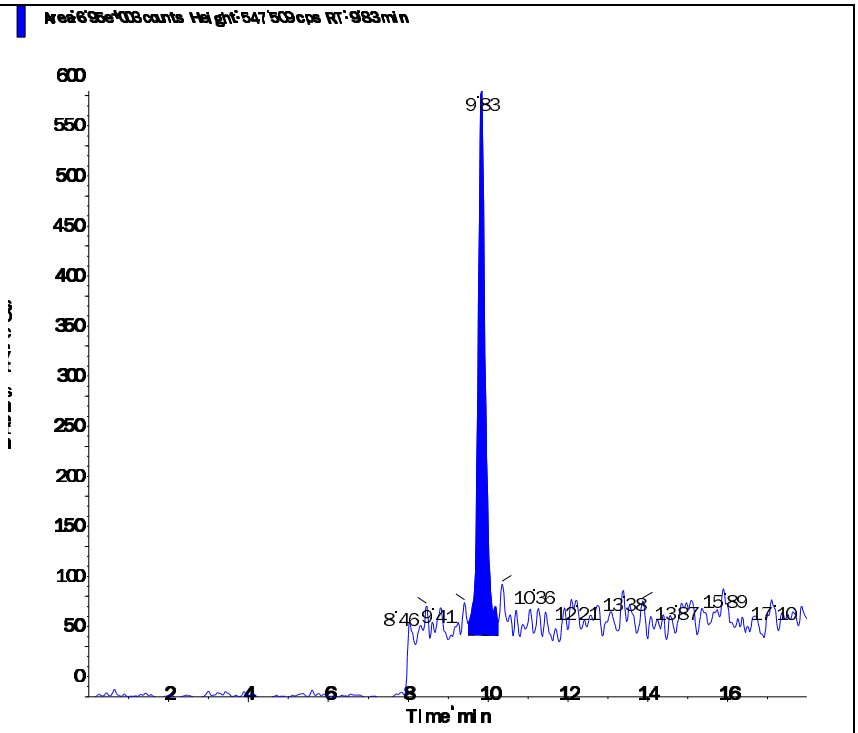

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:56 AM

Data File	LM34688.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

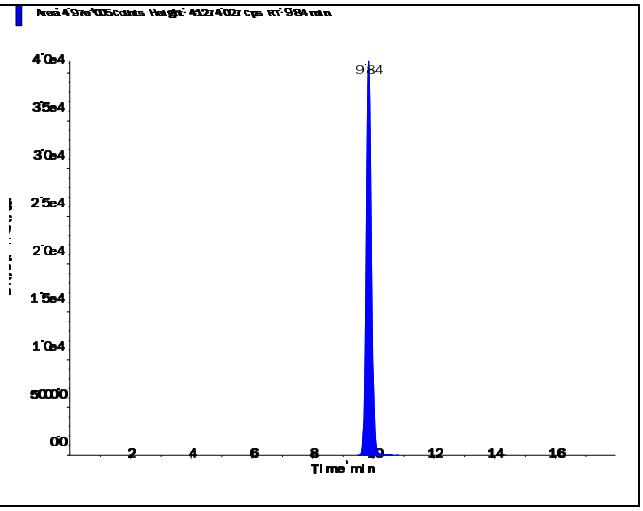

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:56 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

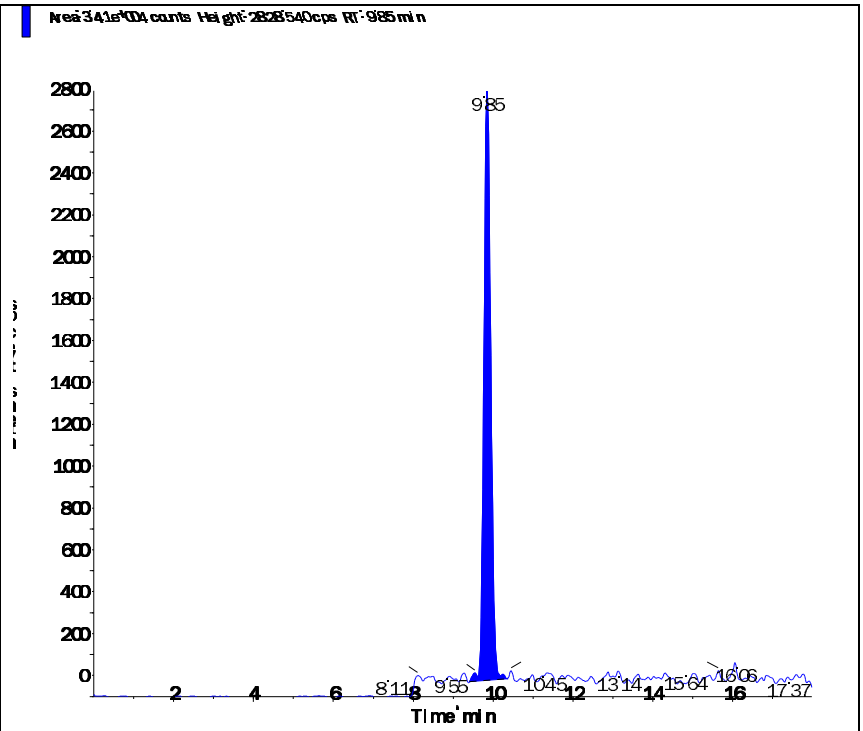

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

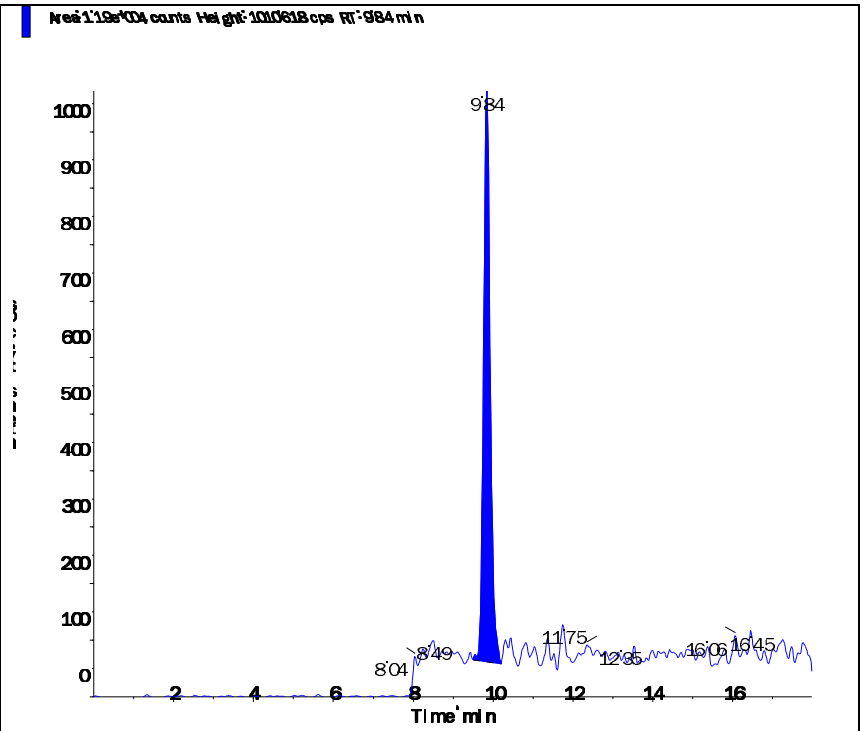

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:57 AM

Data File	LM34689.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

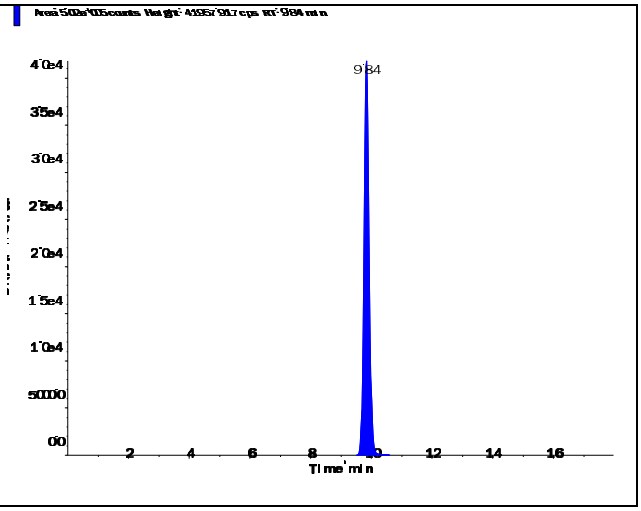

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

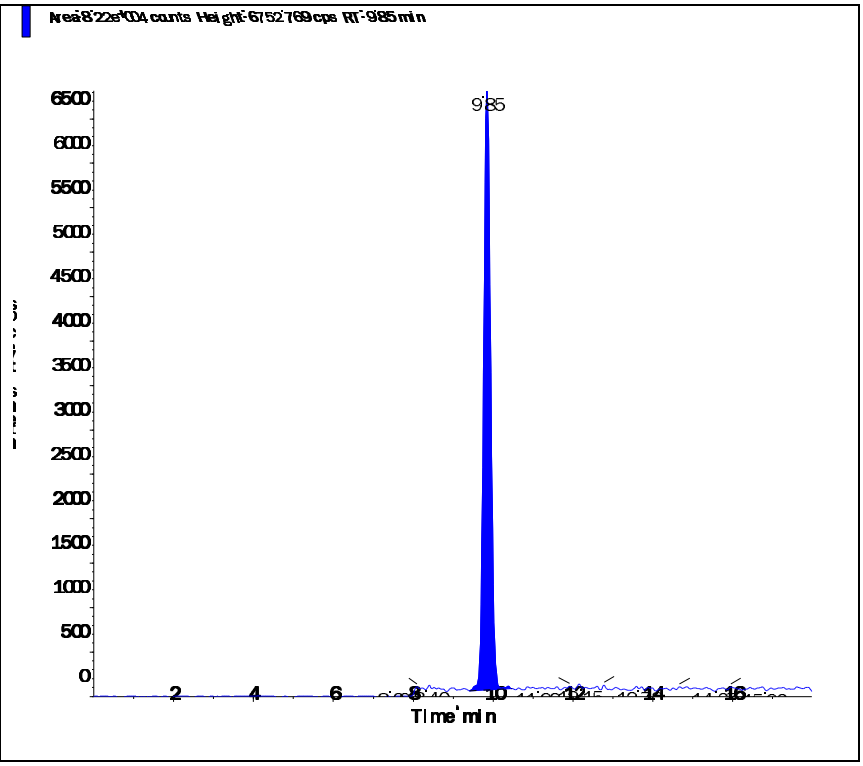

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

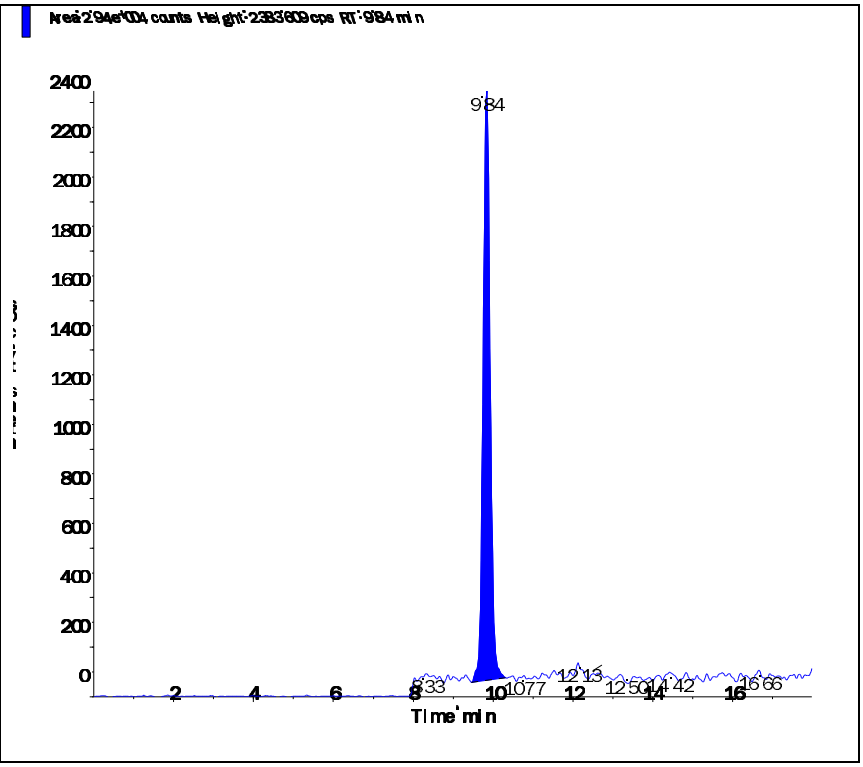

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:57 AM

Data File	LM34690.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

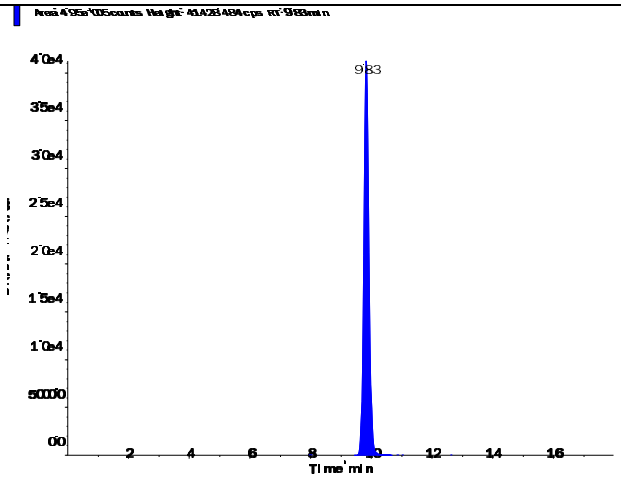

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:57 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

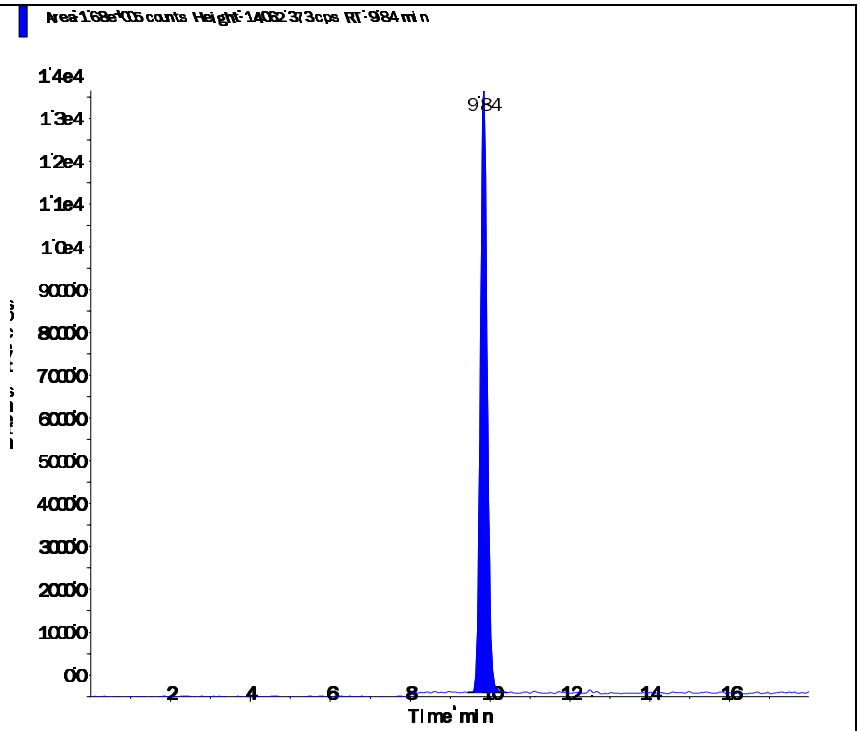

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

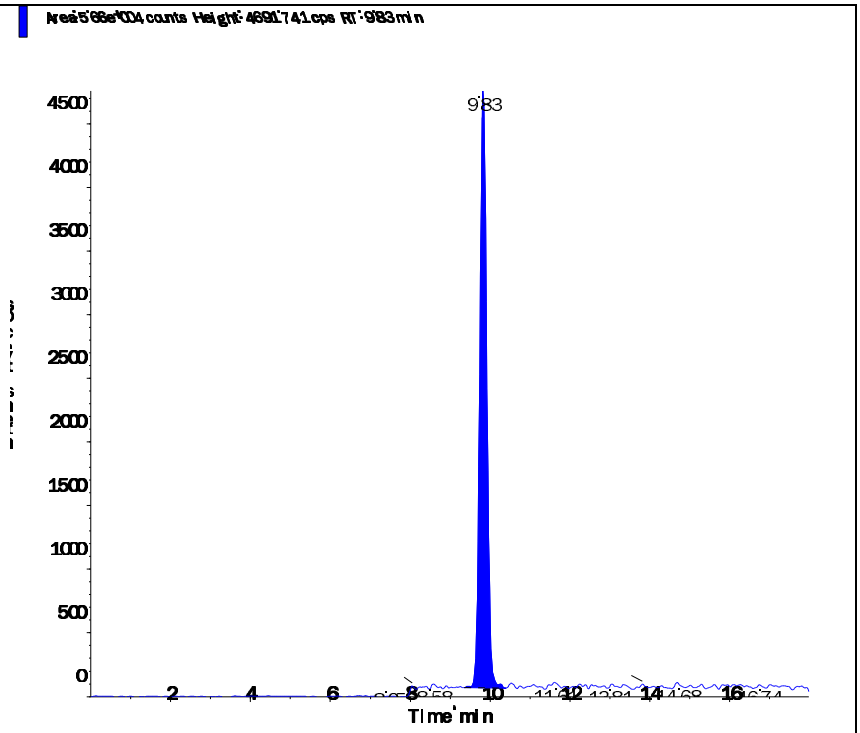

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:58 AM

Data File	LM34691.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

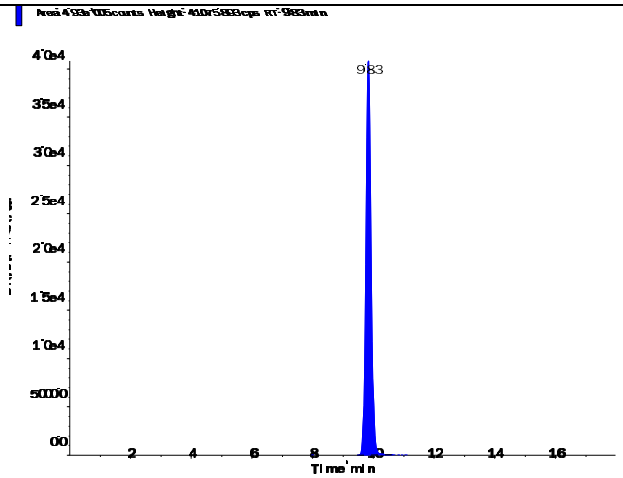

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

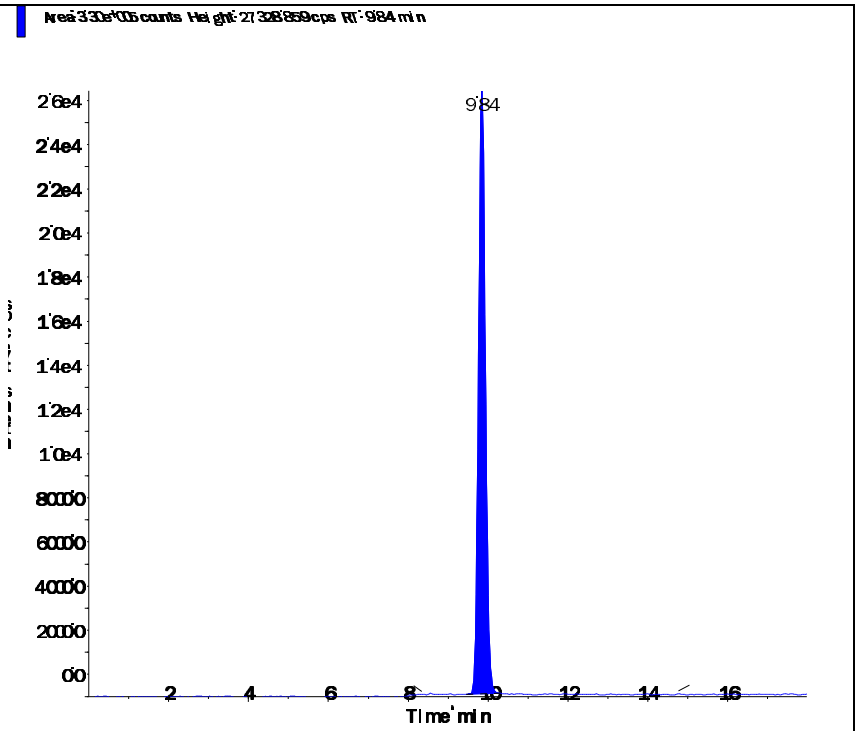

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

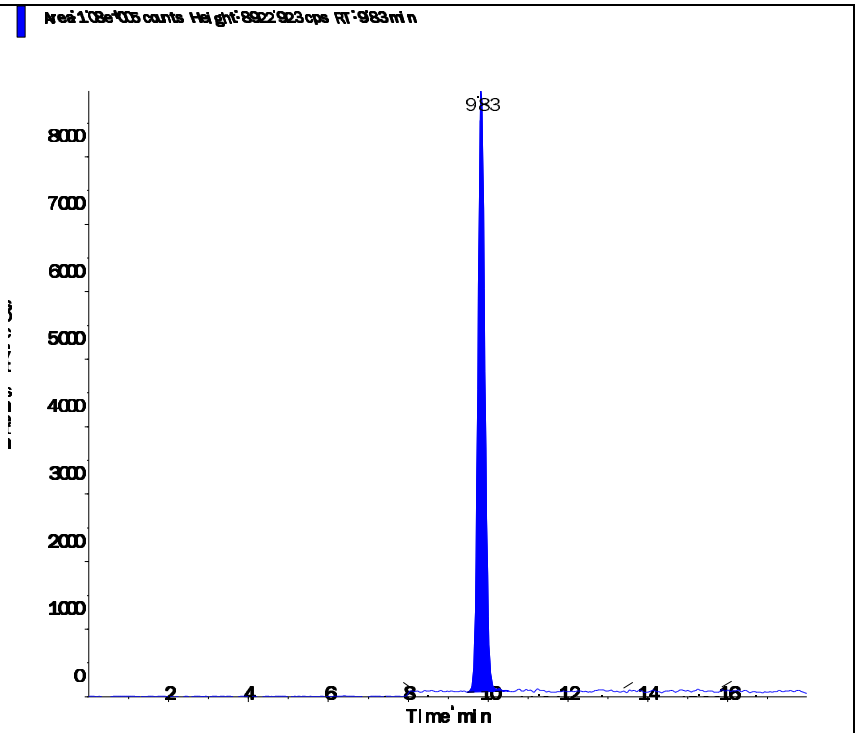

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:58 AM

Data File	LM34692.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

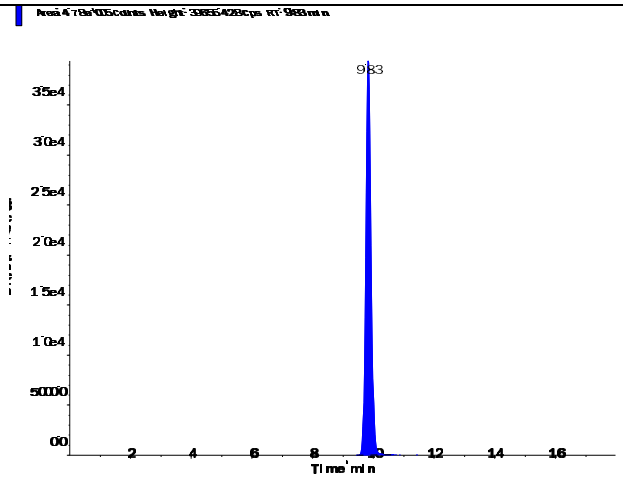

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:58 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

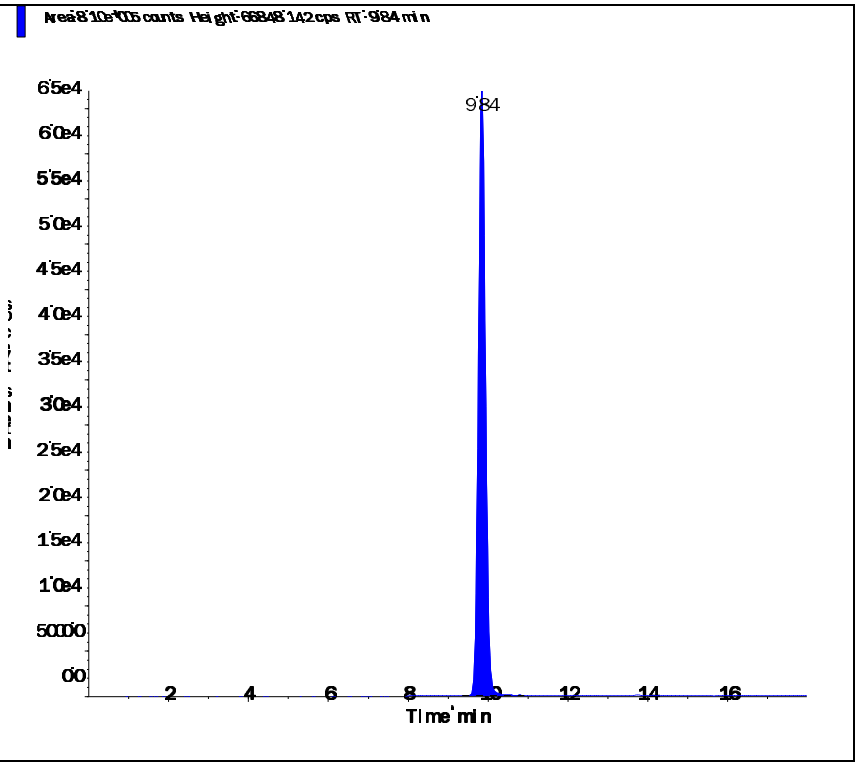

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

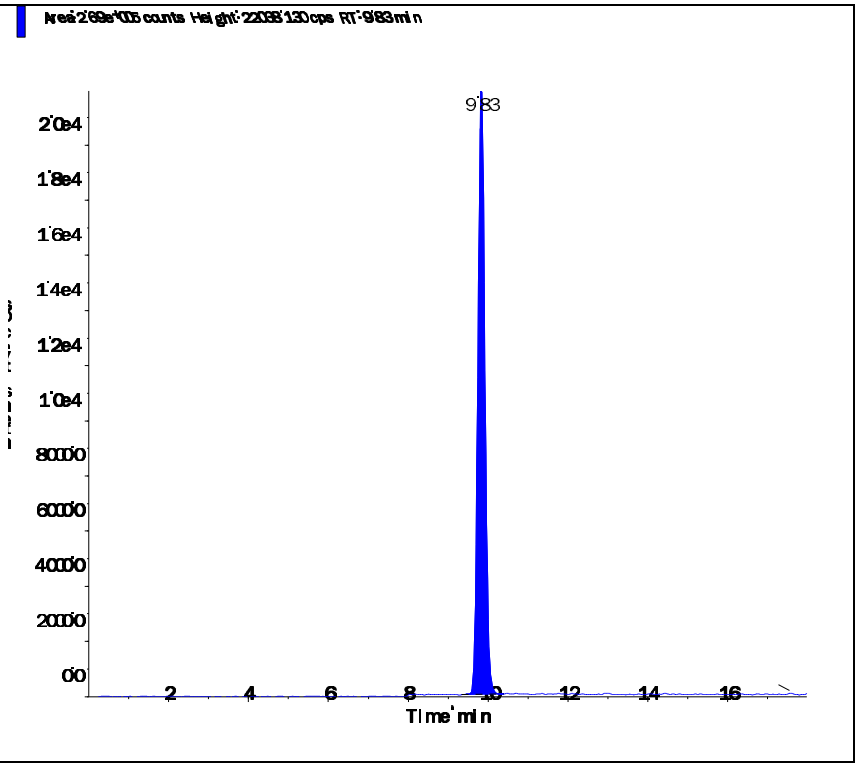

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:58 AM

Data File	LM34693.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

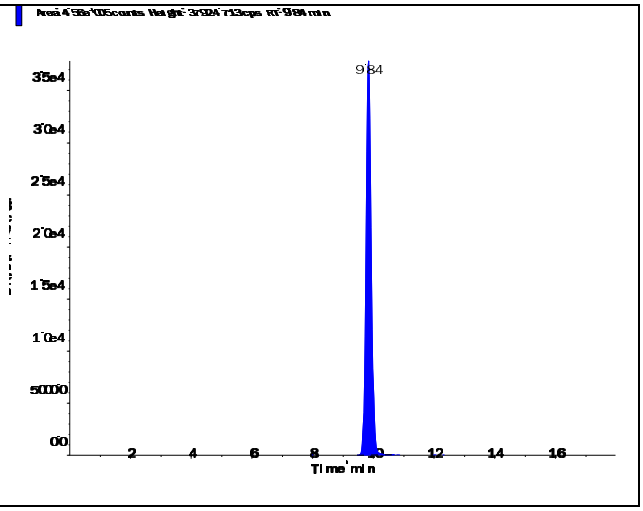

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:58 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

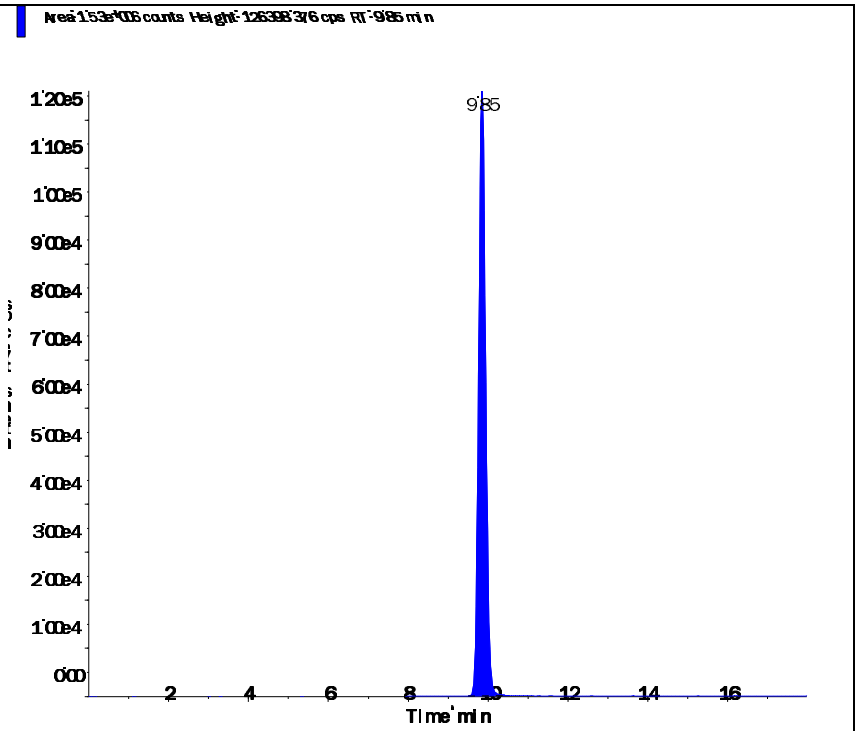

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

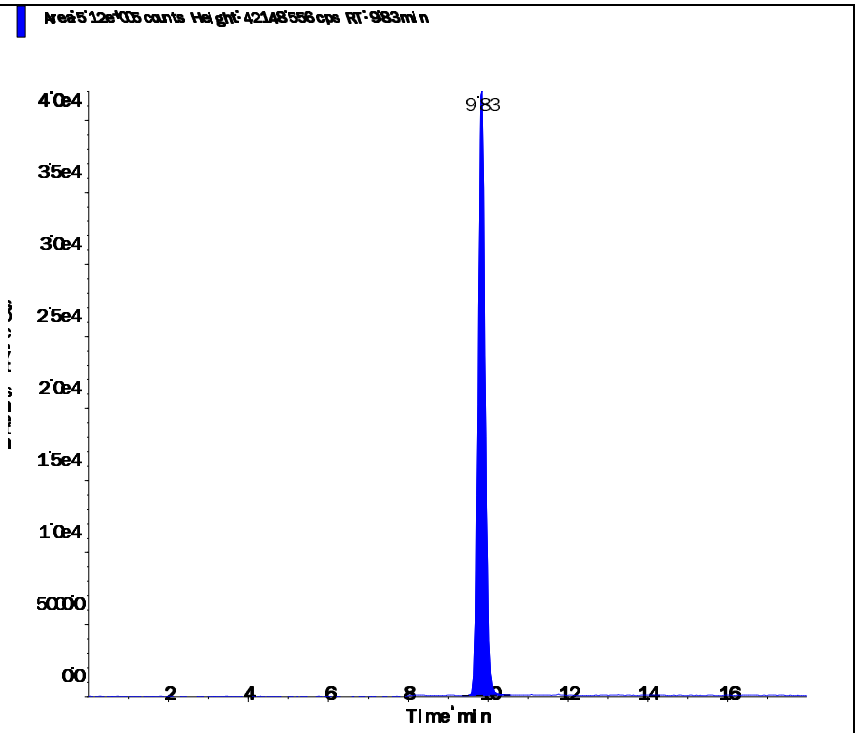

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

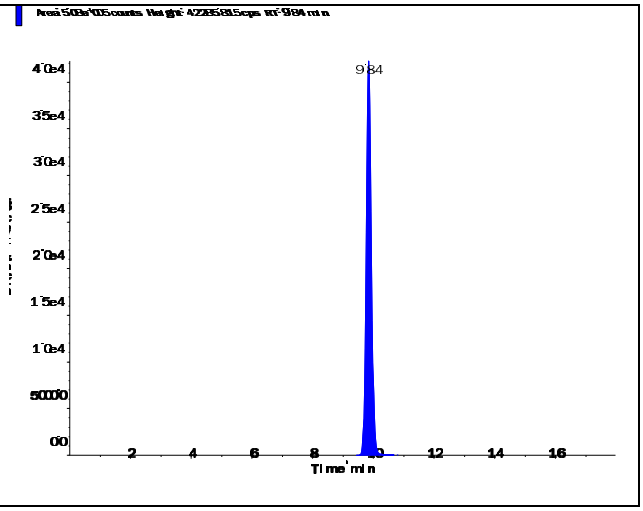

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

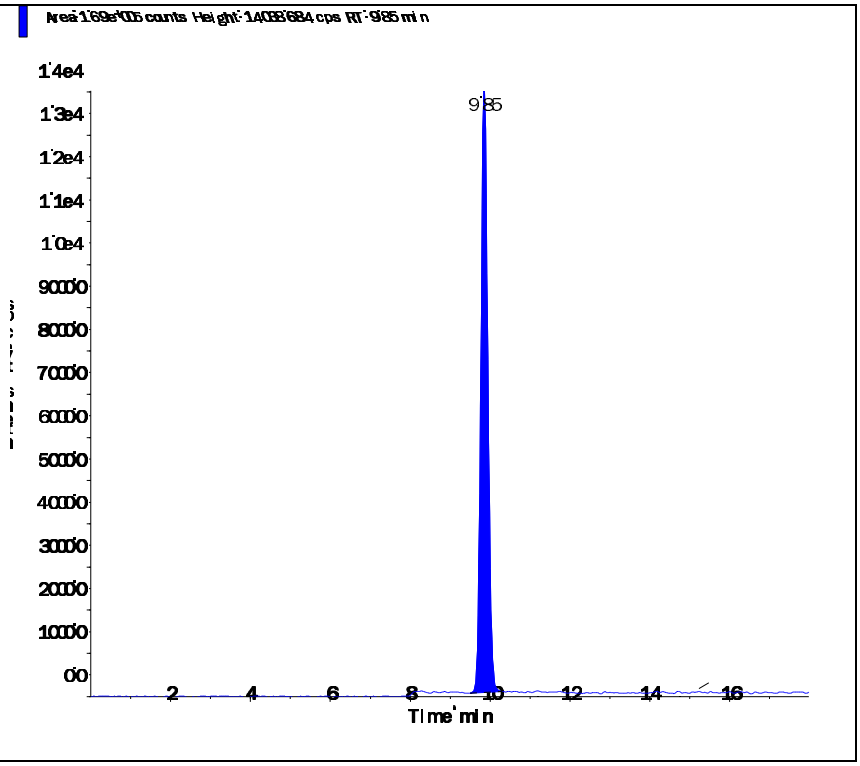

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

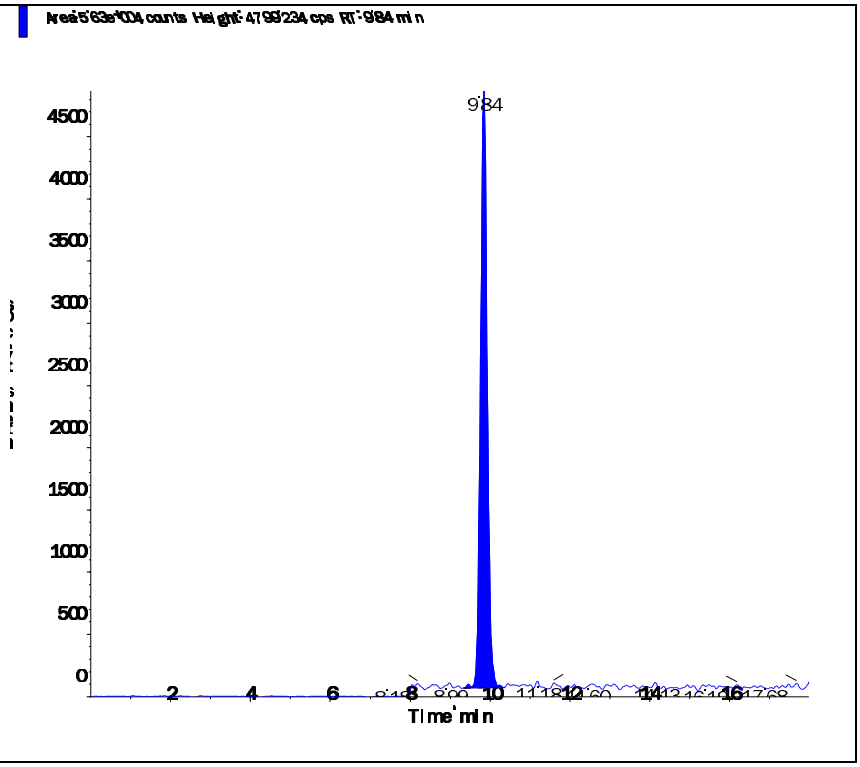

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:59 AM

Data File	LM35642.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 1:00:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575499-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35642.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 1:00:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575499-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.160e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.380e+05	9.51	1.00	0.981
Perchlorate conf	4.870e+04	9.50	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

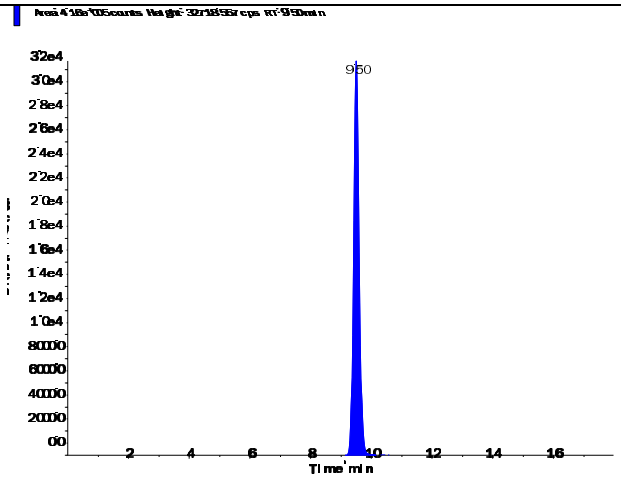

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:59 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.51 (9.84) min
Calculated conc:	0.981 ng/ml
Area Ratio:	0.331
Sample Type:	(Quality Control)

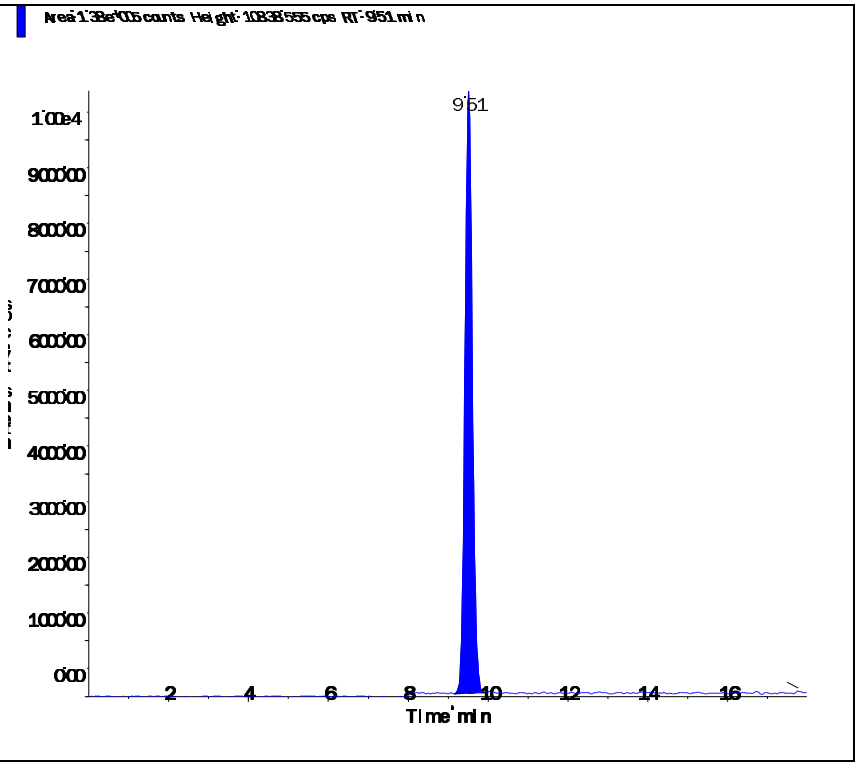

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.50 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

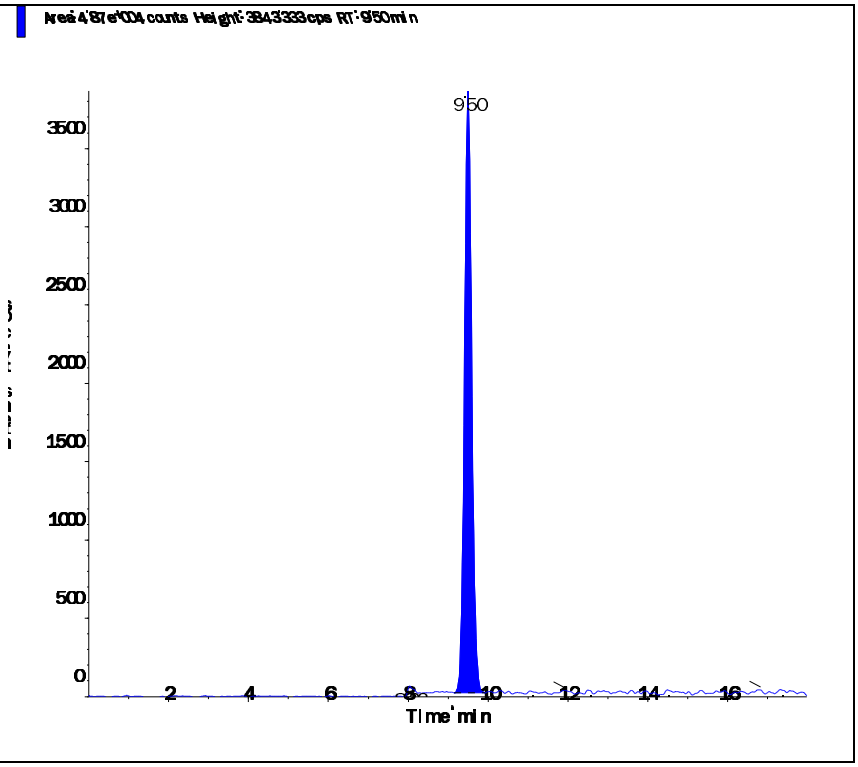

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:03 AM

Data File	LM35654.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 4:47:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575499-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35654.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 4:47:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575499-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+05	9.51	1.00	1.03
Perchlorate conf	5.590e+04	9.50	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

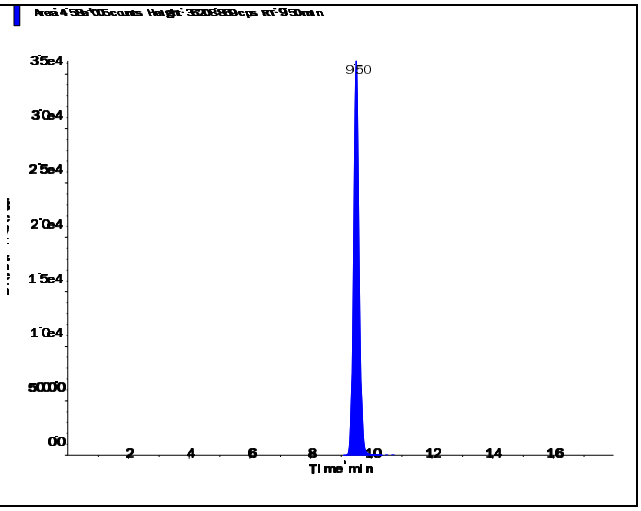

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:03 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.51 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.349
Sample Type:	(Quality Control)

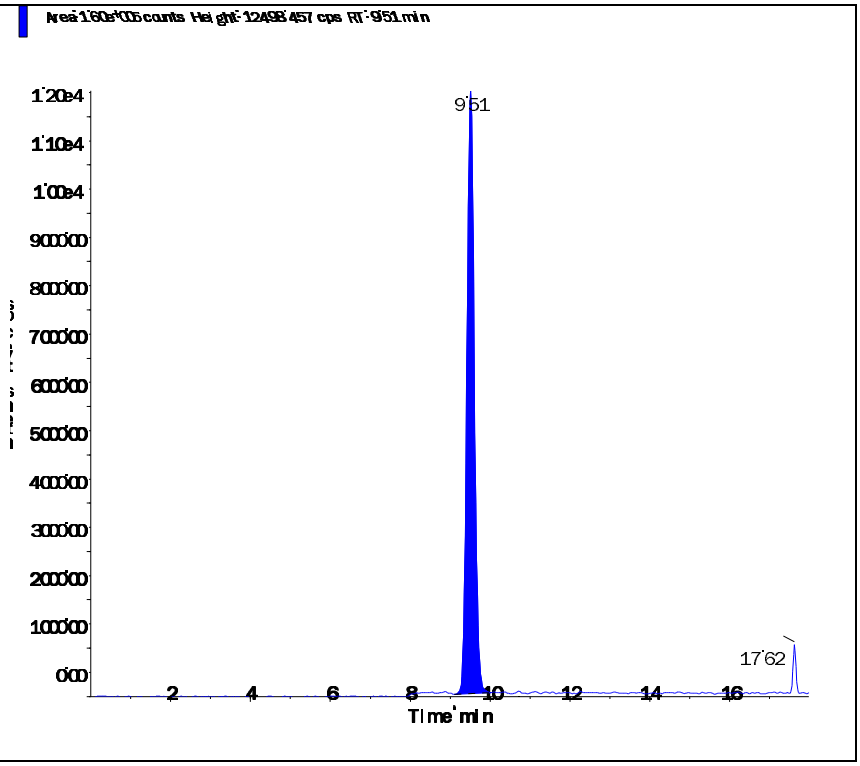

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.50 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.122
Sample Type:	(Quality Control)

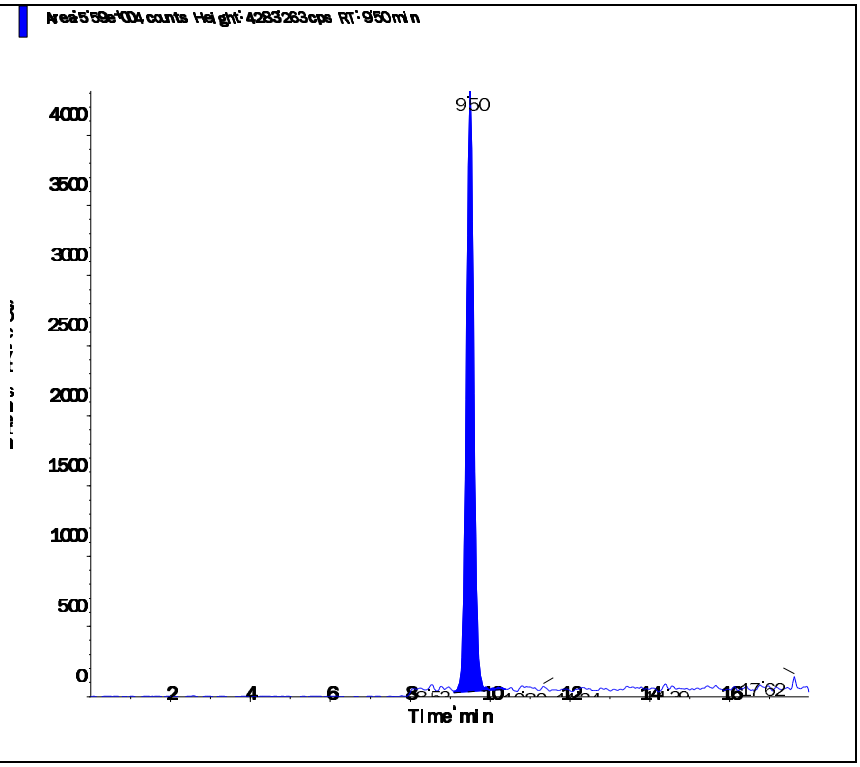

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:05 AM

Data File	LM35660.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 6:40:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575499-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35660.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 6:40:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575499-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.810e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.610e+05	9.51	1.00	0.992
Perchlorate conf	5.570e+04	9.50	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

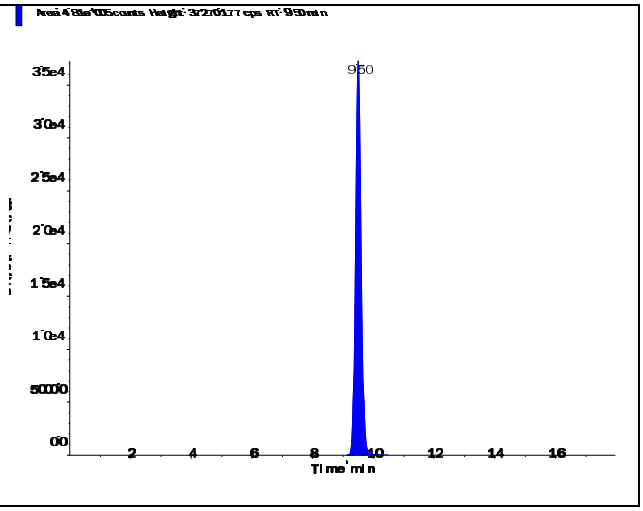

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:05 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.51 (9.84) min
Calculated conc:	0.992 ng/ml
Area Ratio:	0.335
Sample Type:	(Quality Control)

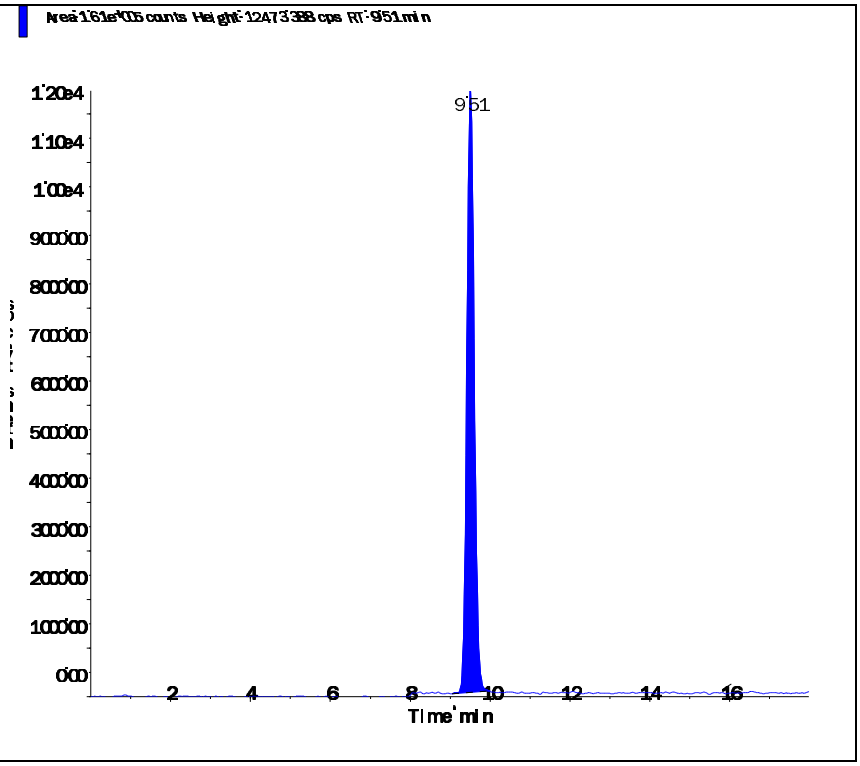

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.50 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.116
Sample Type:	(Quality Control)

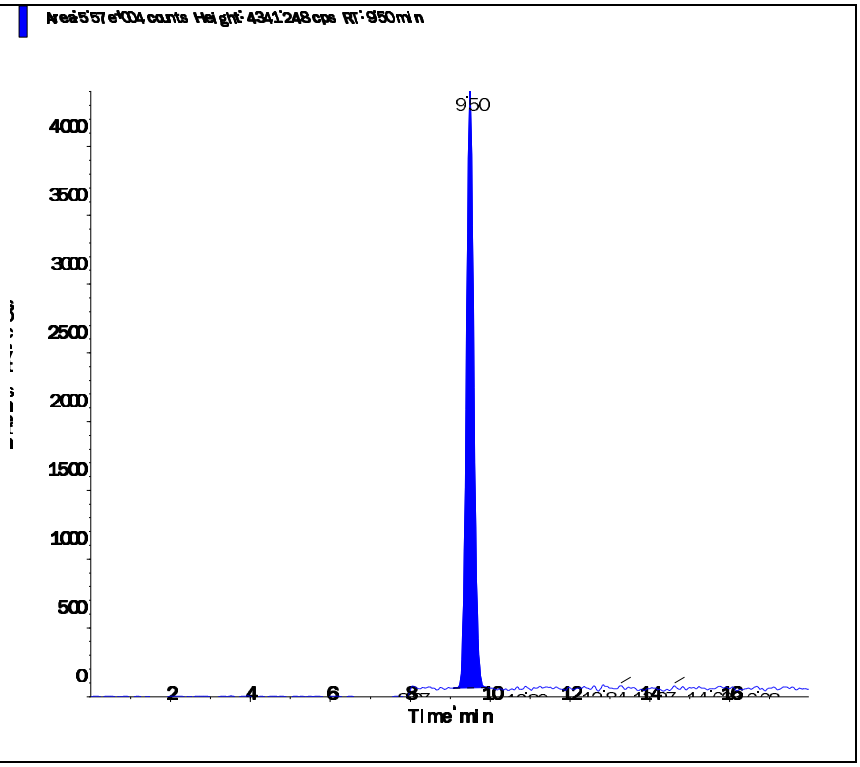

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:59 AM

Data File	LM35643.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 1:19:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575409-05 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM35643.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 1:19:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575409-05	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.780e+04	9.54	N/A	0.194
Perchlorate conf	9.840e+03	9.54	N/A	0.191

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

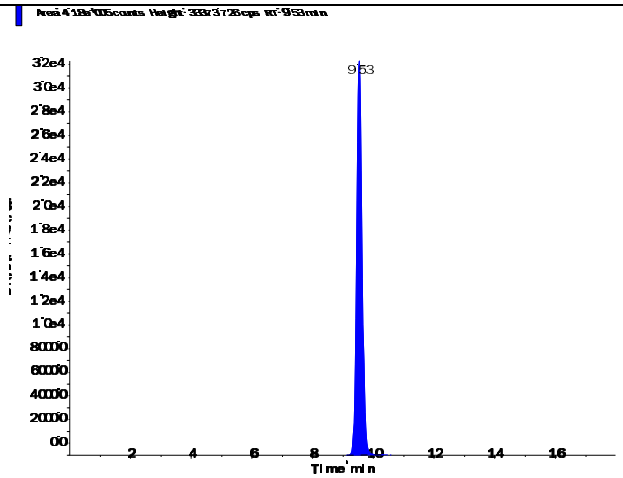

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:59 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.54 (9.84) min Calculated conc: 0.194 ng/ml Area Ratio: 0.066 Sample Type: (Unknown)	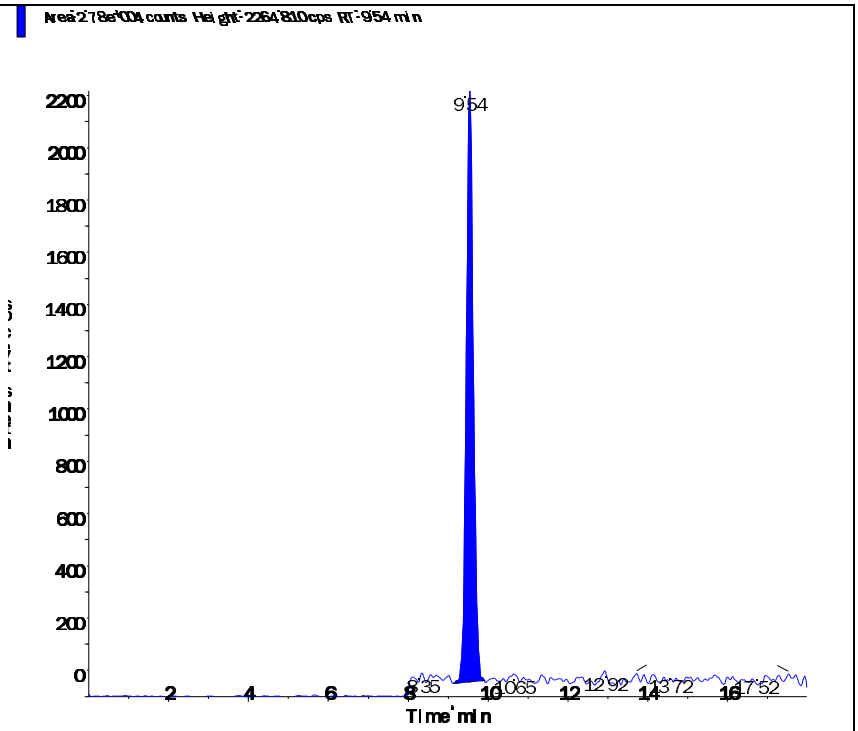
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.54 (9.84) min Calculated conc: 0.191 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	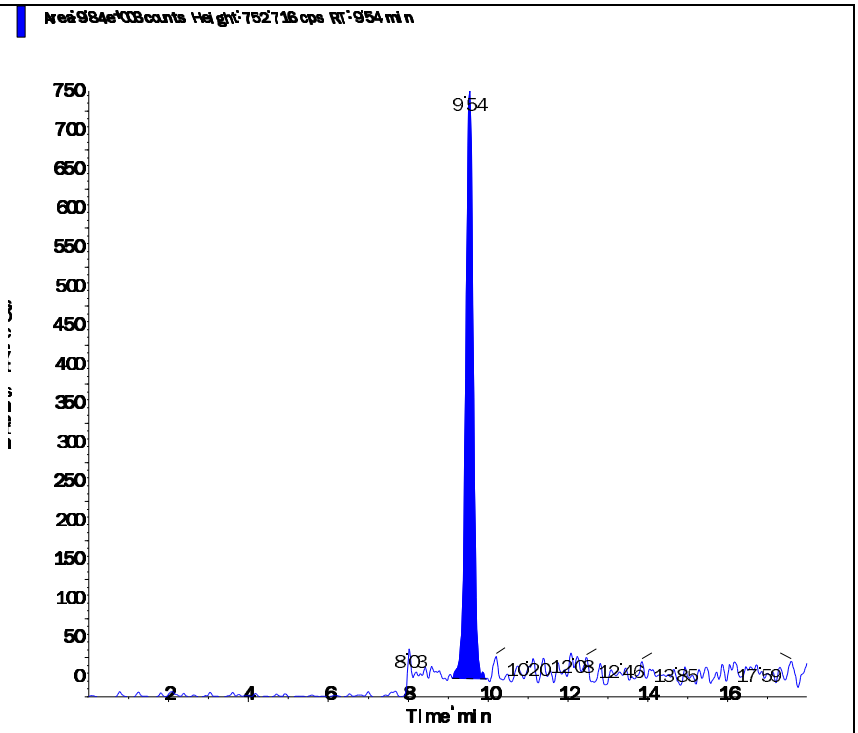

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:03 AM

Data File	LM35655.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 5:06:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575409-06 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM35655.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 5:06:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575409-06	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.540e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.54	N/A	0.203
Perchlorate conf	1.110e+04	9.52	N/A	0.199

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

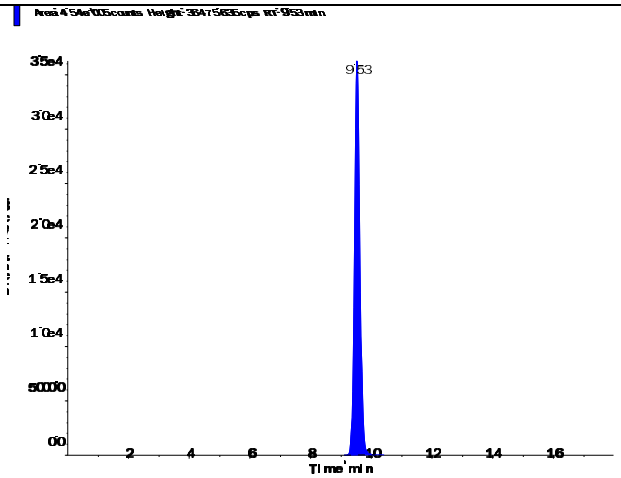

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:03 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

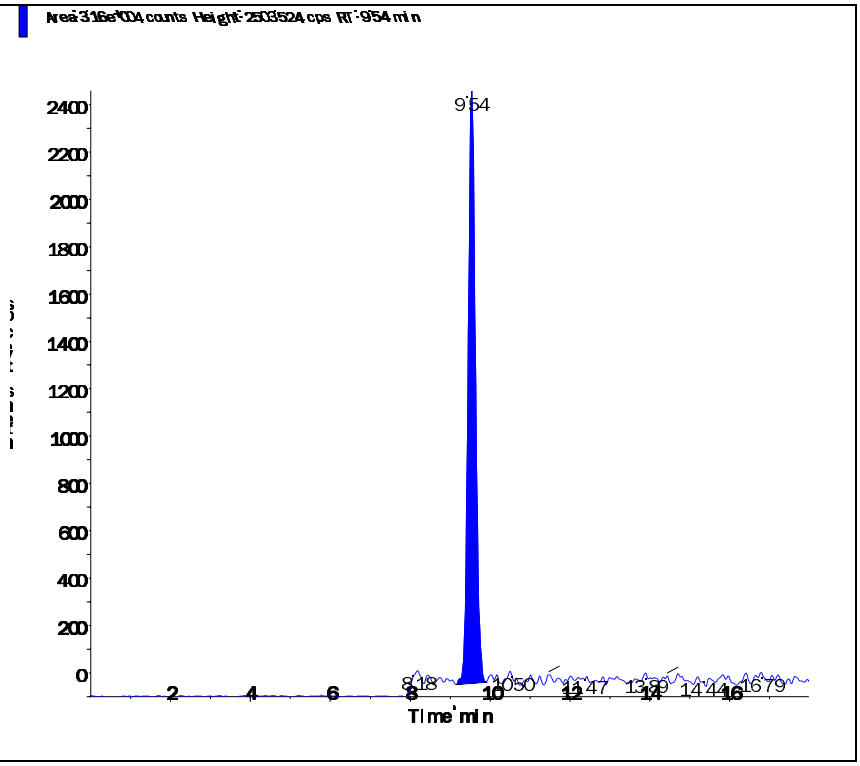

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.52 (9.84) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

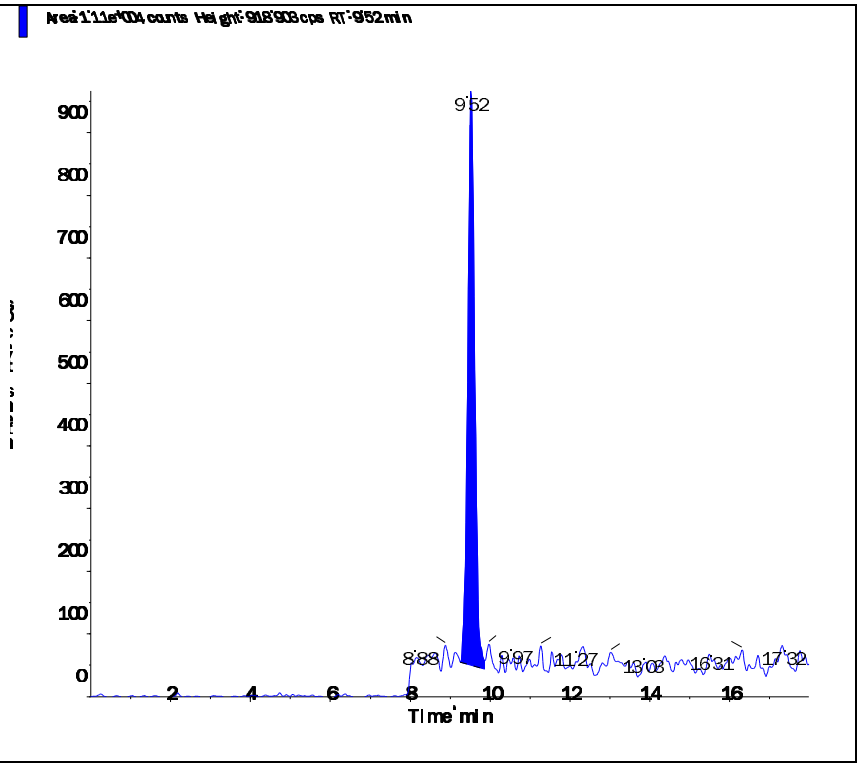

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:05 AM

Data File	LM35661.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 6:59:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575409-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM35661.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 6:59:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575409-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.150e+04	9.54	N/A	0.197
Perchlorate conf	1.070e+04	9.52	N/A	0.185

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

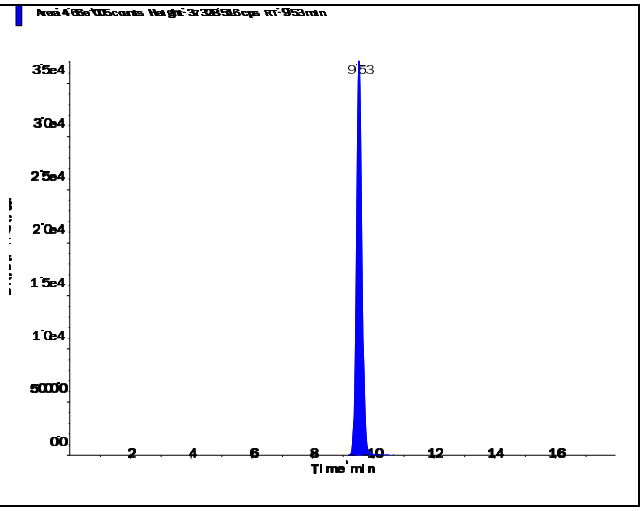

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:05 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

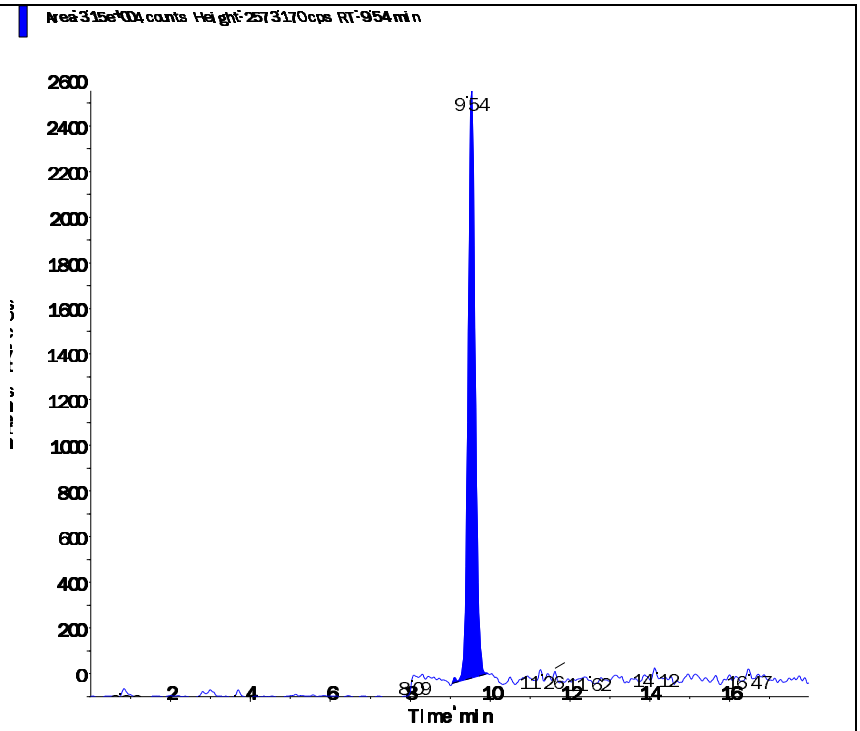

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.52 (9.84) min
Calculated conc:	0.185 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

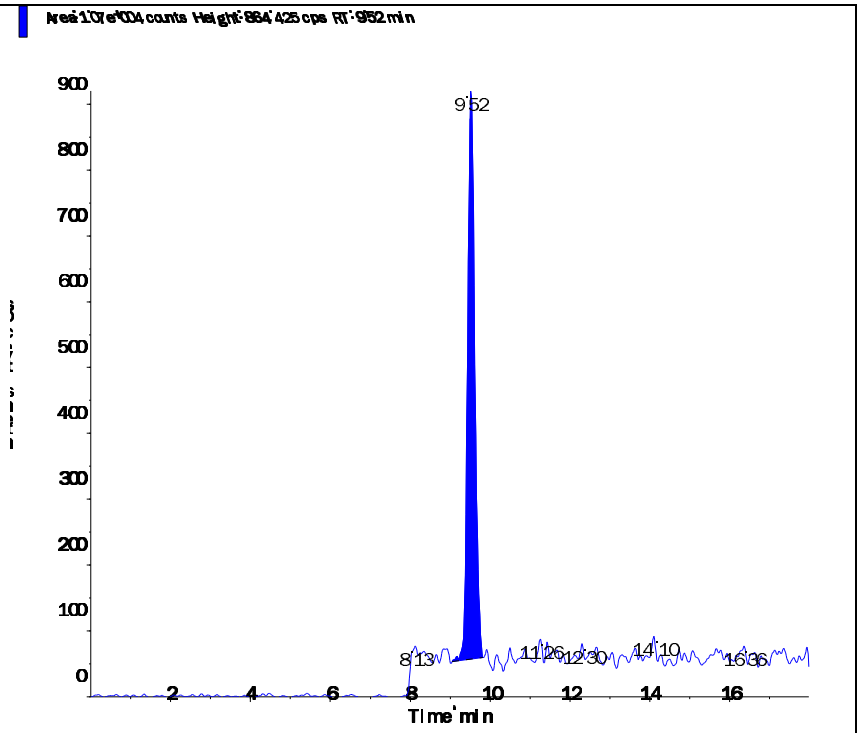

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:59 AM

Data File	LM35641.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 12:41:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575499-01 CCB	**Injection Vial**	1.00
Data File	LM35641.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 12:41:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575499-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.070e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.260e+02	9.63	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

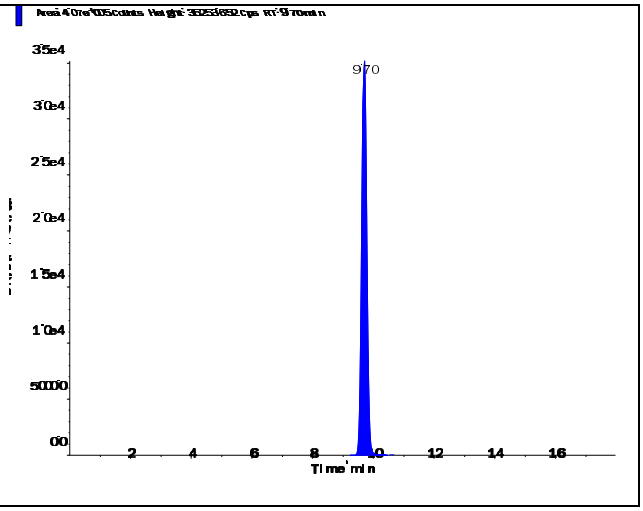

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 10:59 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	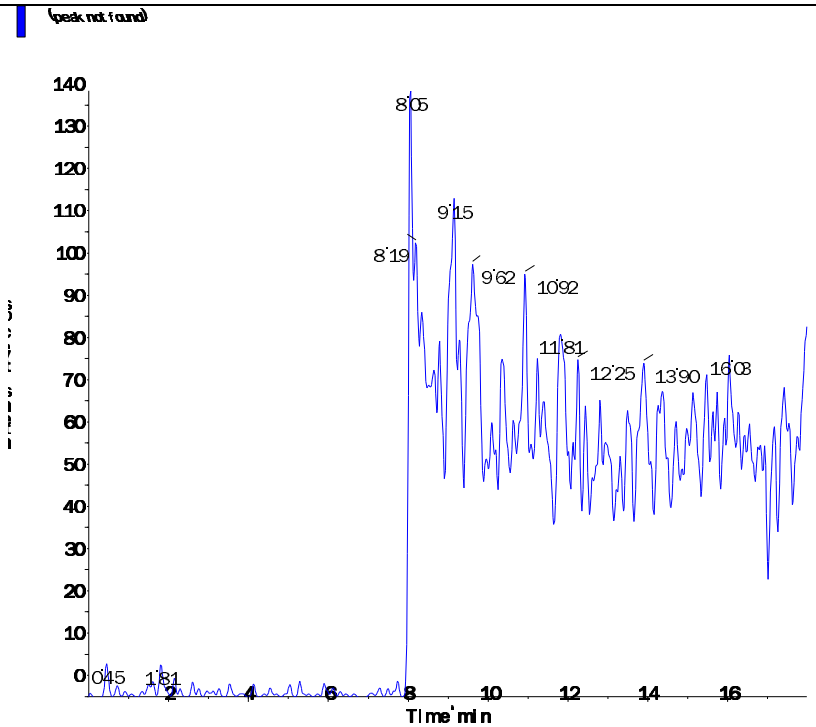
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.63 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	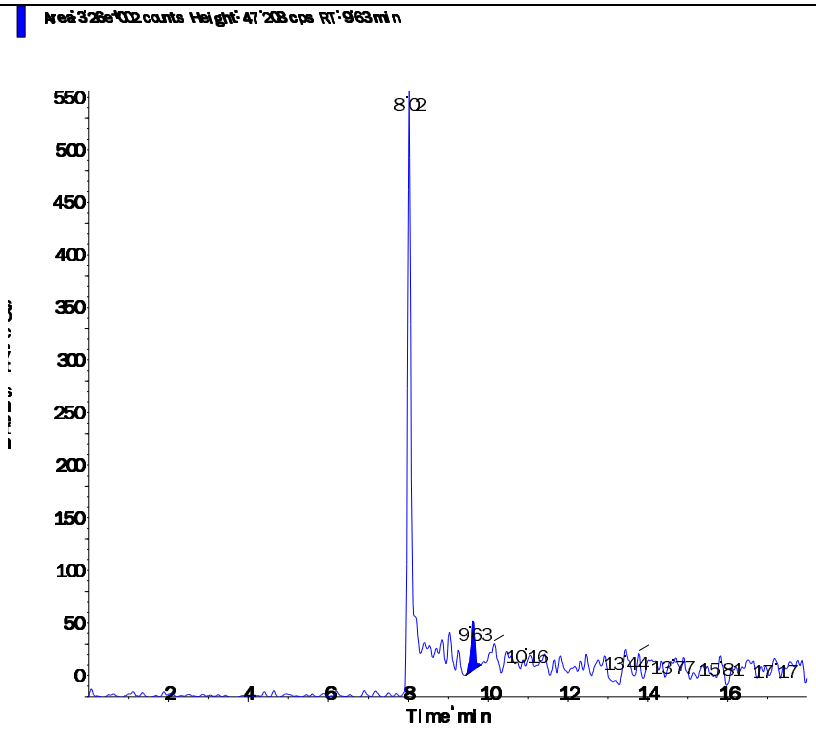

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:03 AM

Data File	LM35656.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 5:25:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575499-04 CCB	**Injection Vial**	1.00
Data File	LM35656.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 5:25:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575499-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

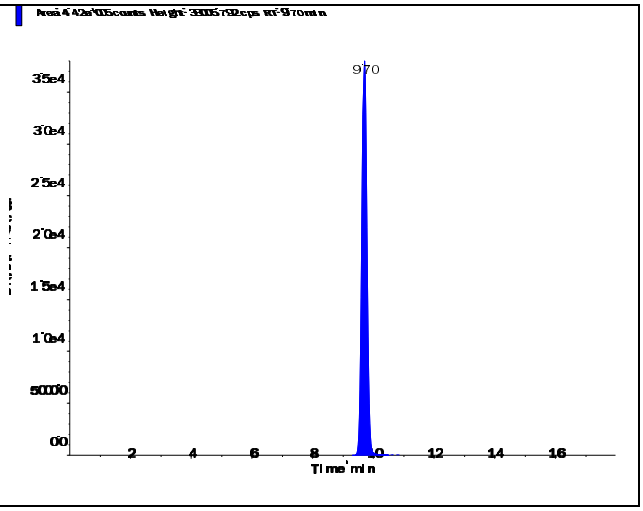

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:03 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

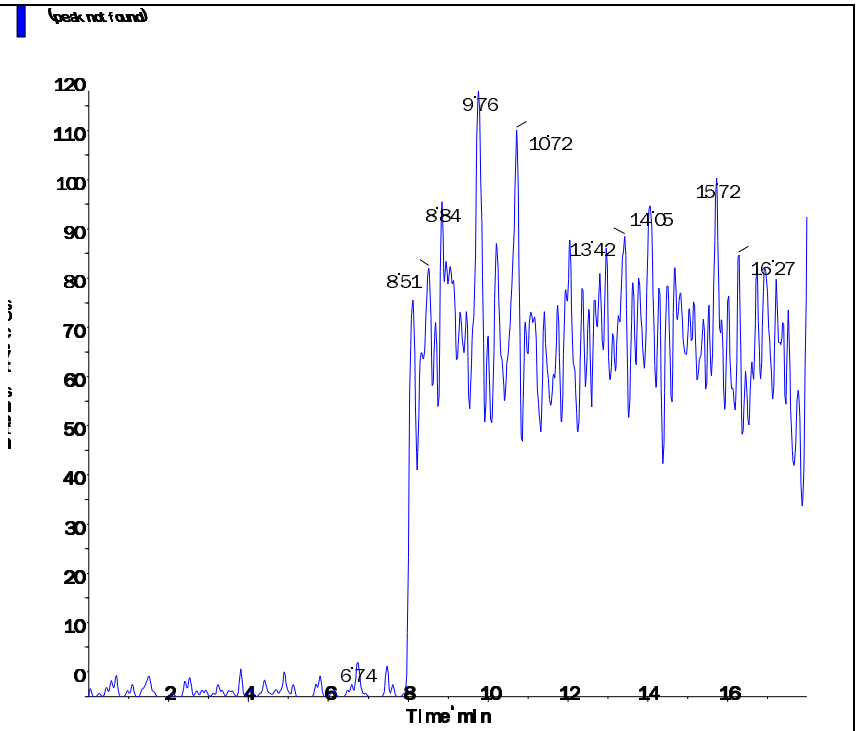

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

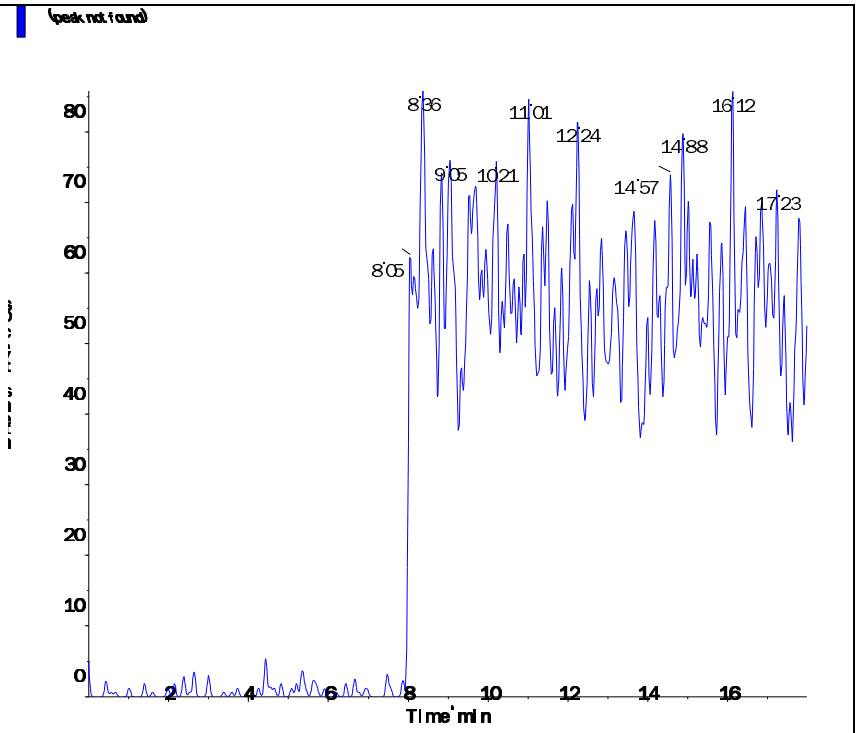

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:06 AM

Data File	LM35662.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 7:18:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575499-06 CCB	**Injection Vial**	1.00
Data File	LM35662.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 7:18:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575499-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

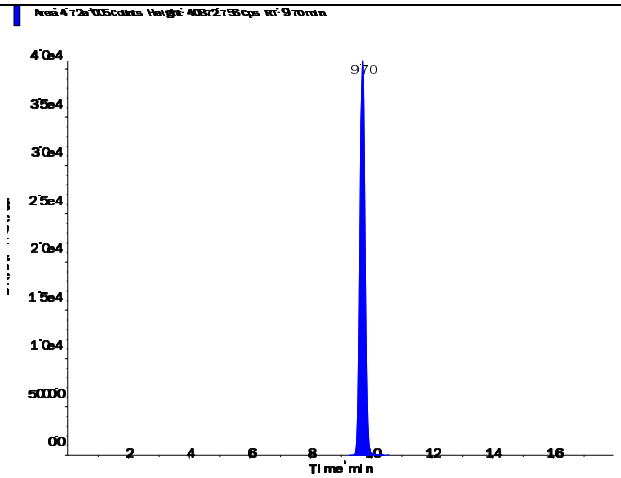

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:06 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

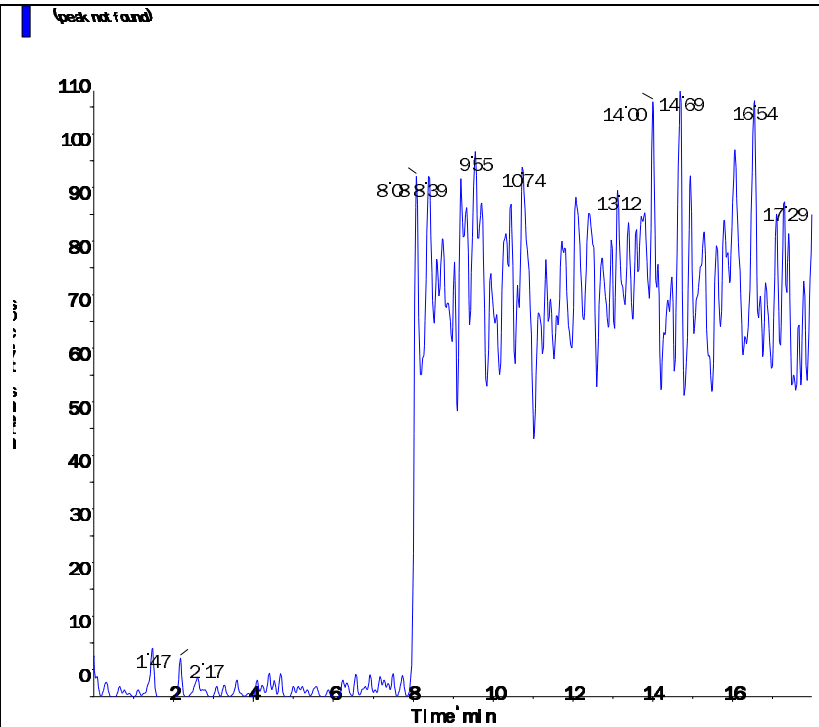

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

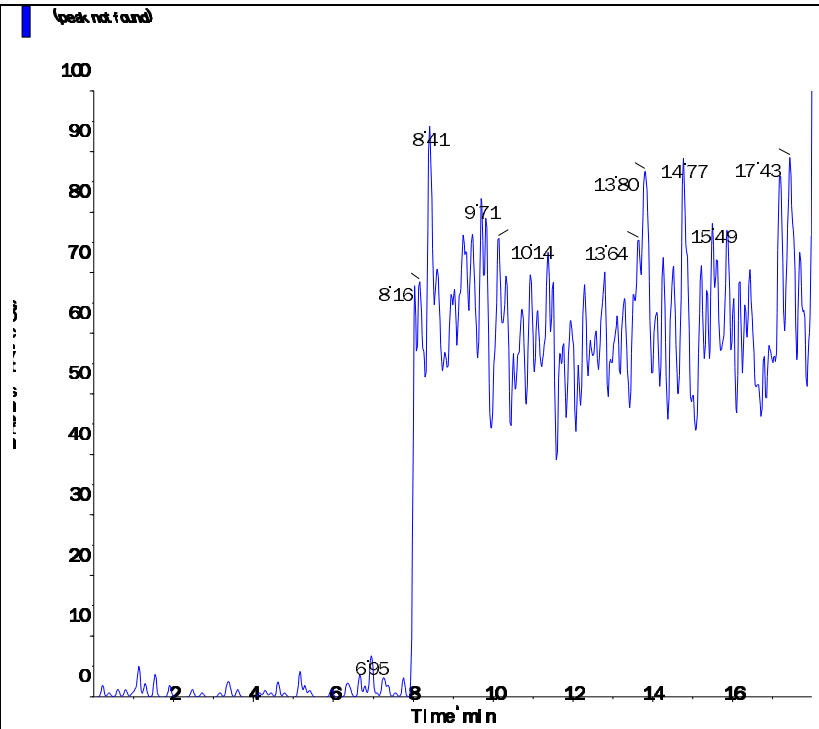

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:00 AM

Data File	LM35644.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 1:38:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575409-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM35644.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 1:38:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575409-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.970e+05	9.05	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.730e+04	9.06	N/A	0.201
Perchlorate conf	1.010e+04	9.03	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.05(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

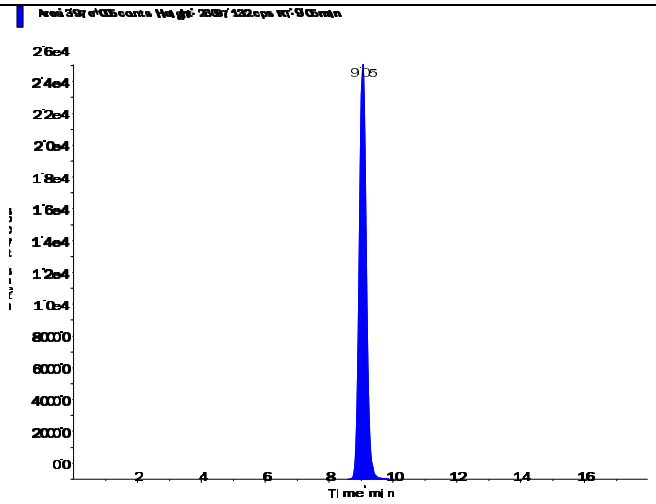

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:00 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.06 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

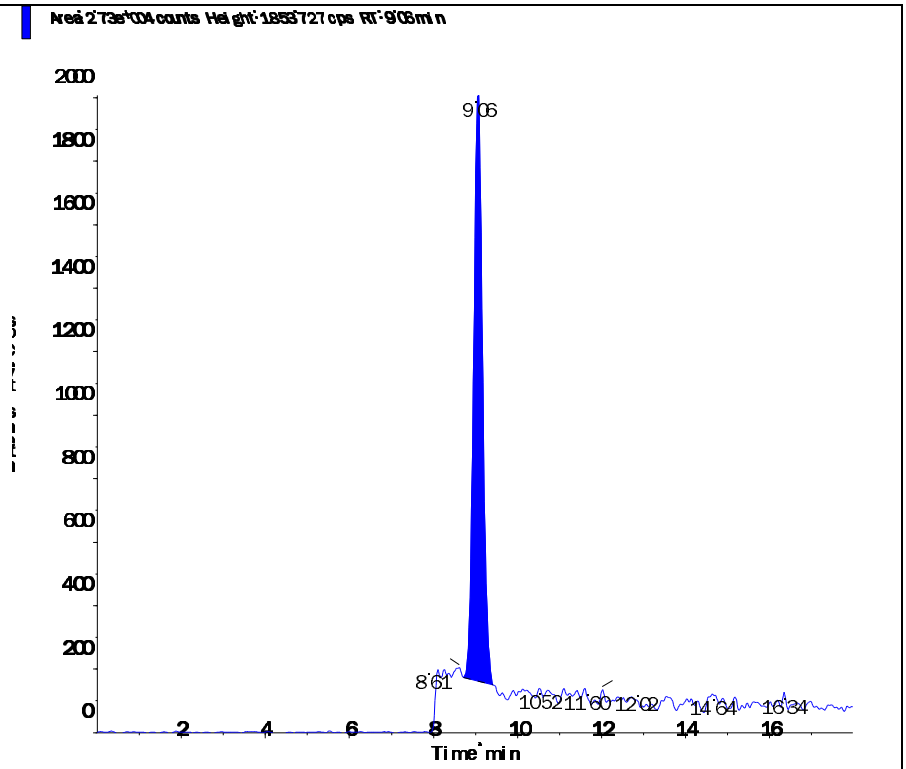

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.03 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

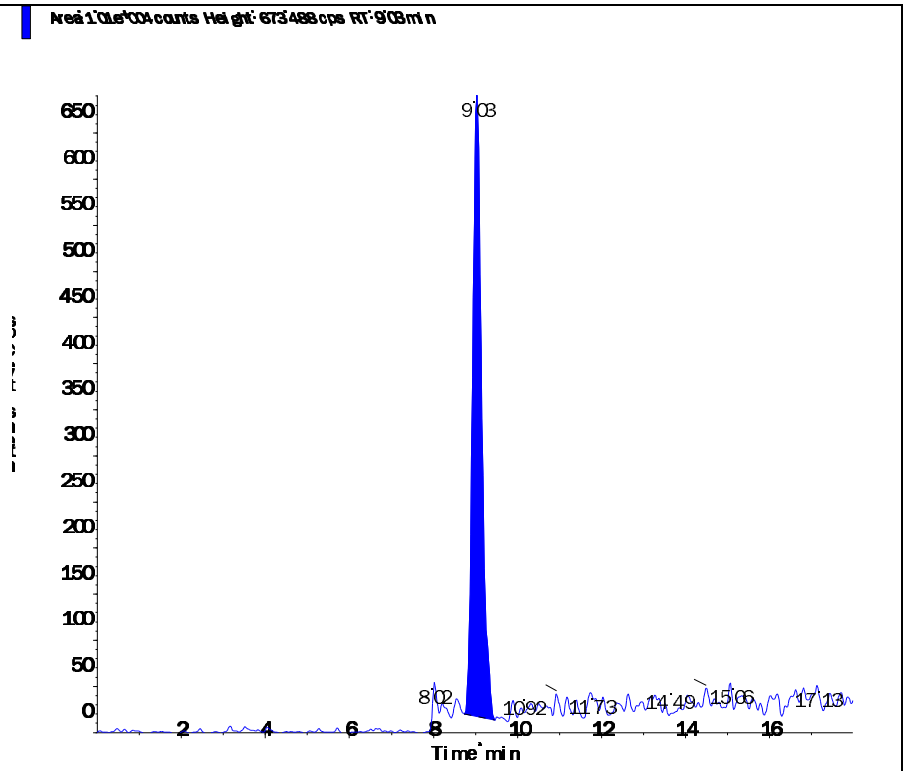

Printing Time: 2:11:06 PM
Printing Date: Thursday, July 07, 2016

Sample Name: "WG575409-01 MCT (2.0ug/kg)" Sample ID: "WG575409-01" File: "LM35644.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD75512" Annotation: ""

Sample Index:	1	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.222	ug/L
Acq. Date:	7/7/2016	
Acq. Time:	1:38:03 PM	
Modified:	No	
Proc. Algorithm:	Analyst Classic	
Bunching Factor:	2	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Sep. Width:	0.20	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.84	min
Use Relative RT:	Yes	
Int. Type:	Valley	
Retention Time:	9.06	min
Area:	3.01e+004	counts
Height:	1918.027	cps
Start Time:	8.708	min
End Time:	9.498	min

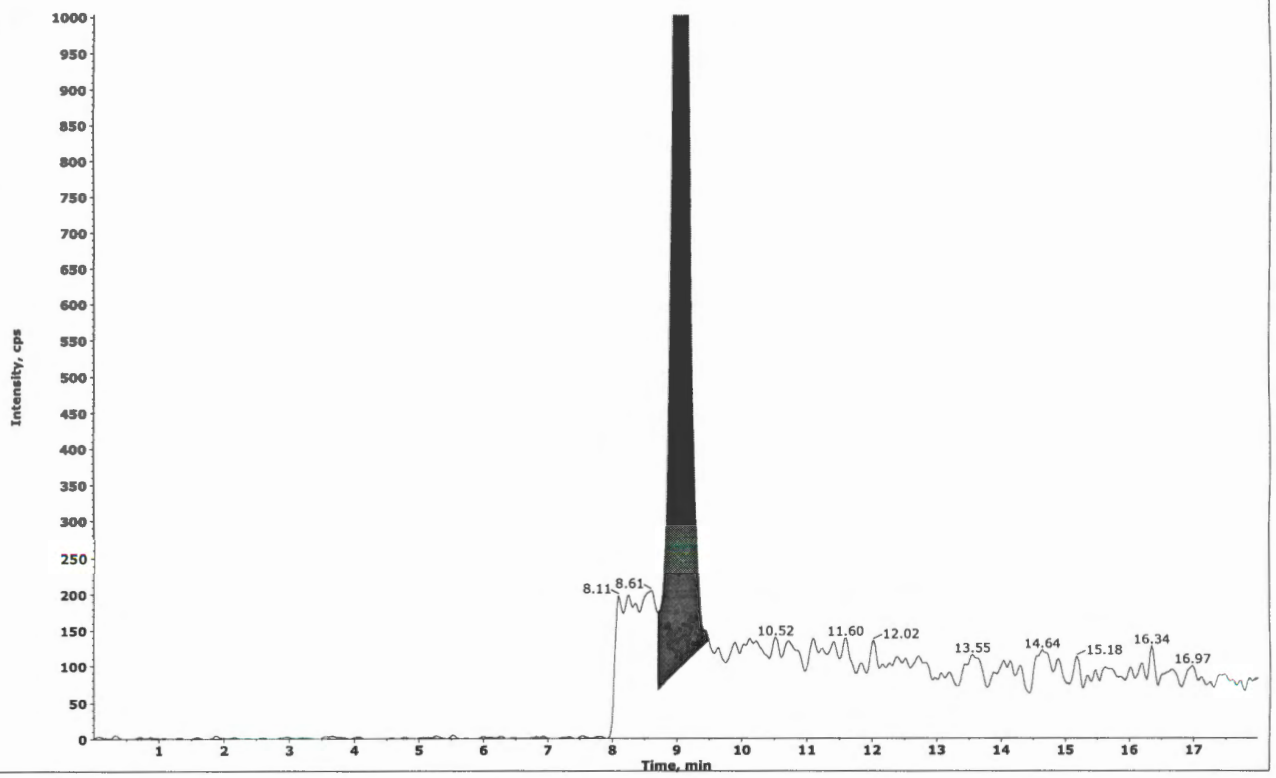

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 2:12:23 PM
Printing Date: Thursday, July 07, 2016

Sample Name: "WG575409-01 MCT (2.0ug/kg)" Sample ID: "WG575409-01" File: "LM35644.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.201 ug/L
Acq. Date: 7/7/2016
Acq. Time: 1:38:03 PM

Modified: Yes
Proc. Algorithm: Analyst Classic
Smoothing Factor: 1
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Base To Base
Retention Time: 9.06 min
Area: 2.73e+004 counts
Height: 1853.727 cps
Start Time: 8.708 min
End Time: 9.417 min

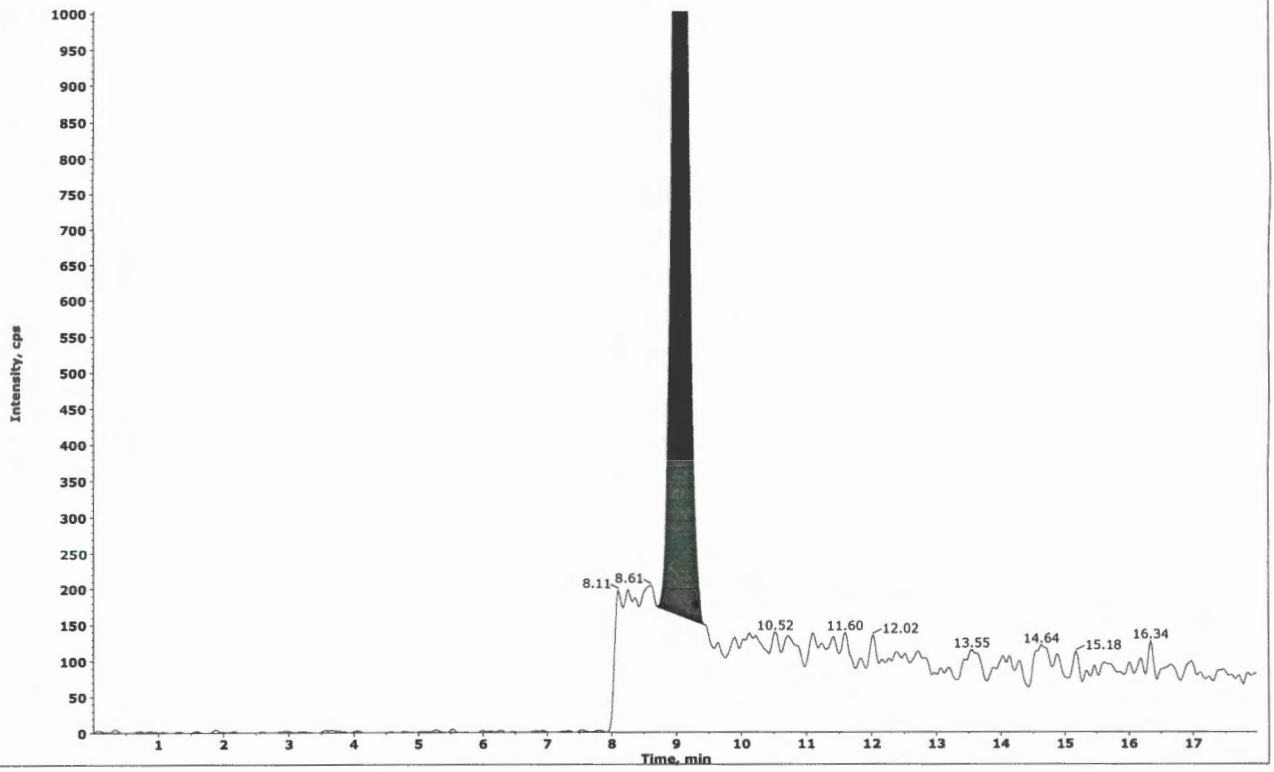

#4
JWR 07/07/16
7.8.16

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

2.2.1.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:00 AM

Data File	LM35645.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 1:56:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575409-02 BLANK	**Injection Vial**	5.00
Data File	LM35645.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 1:56:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575409-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.140e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

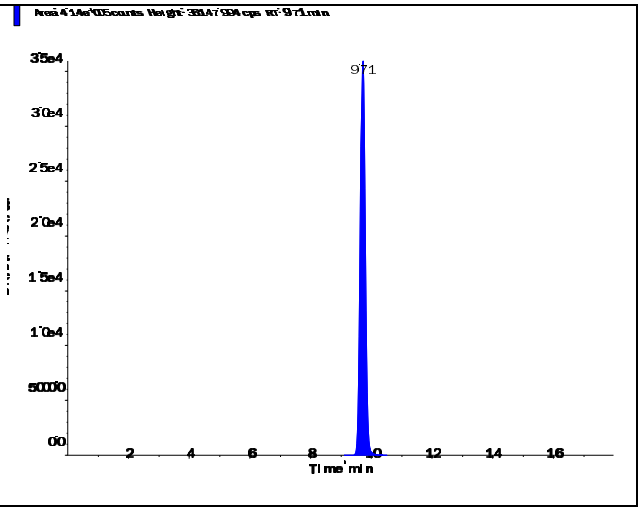

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:00 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

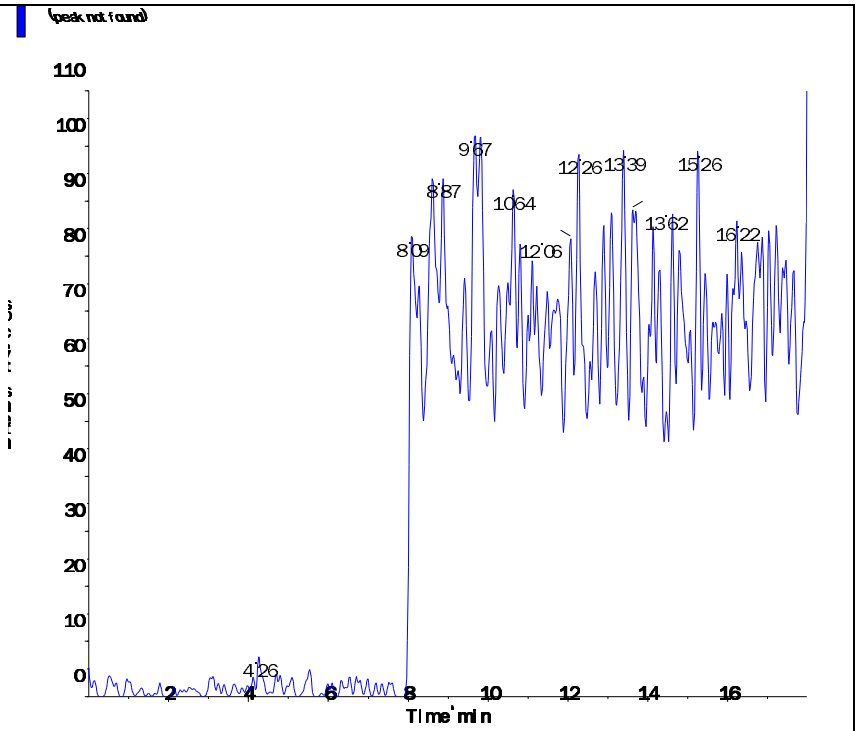

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

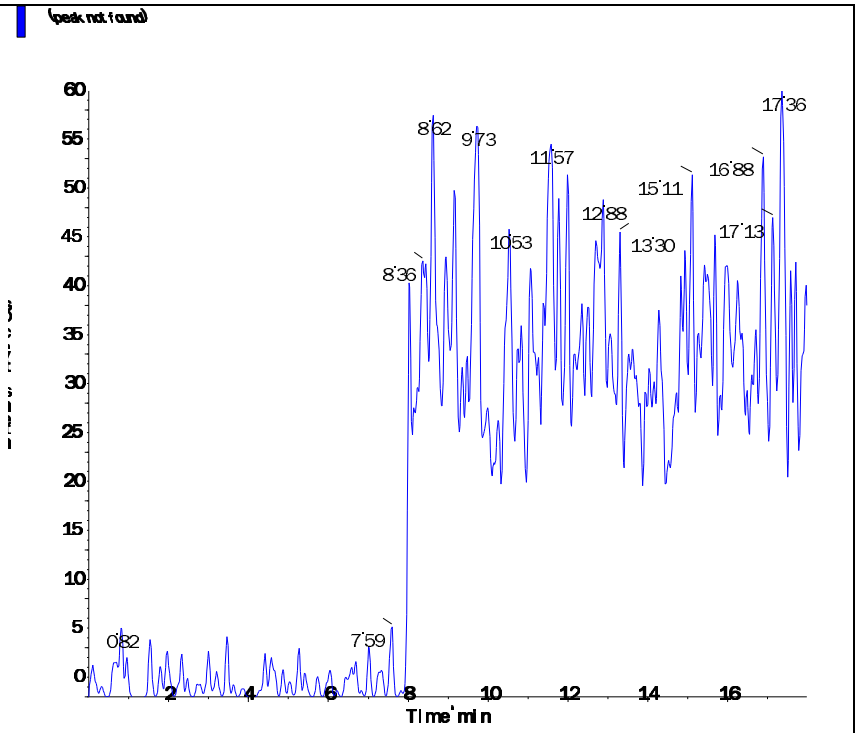

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:00 AM

Data File	LM35646.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 2:15:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575409-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM35646.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 2:15:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575409-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.070e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.960e+04	9.72	N/A	0.213
Perchlorate conf	1.060e+04	9.71	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

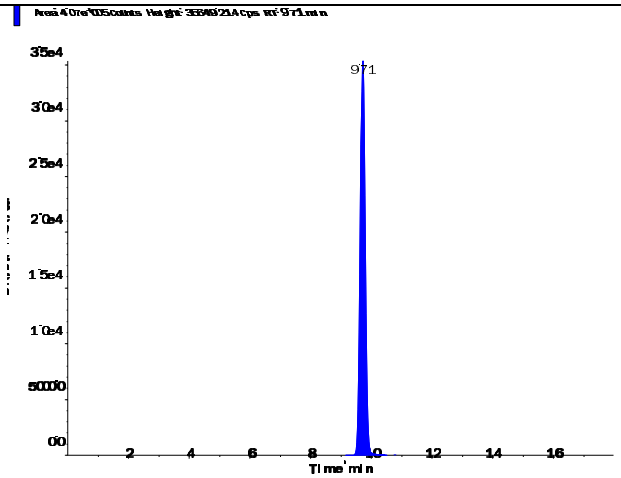

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:00 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.72 (9.84) min Calculated conc: 0.213 ng/ml Area Ratio: 0.073 Sample Type: (Unknown)	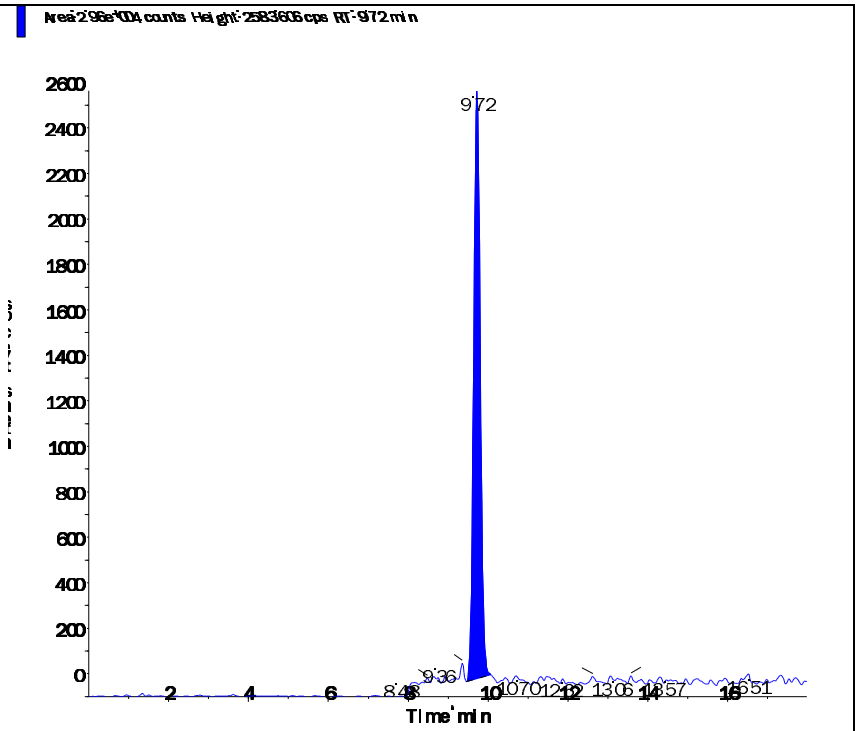
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.71 (9.84) min Calculated conc: 0.213 ng/ml Area Ratio: 0.026 Sample Type: (Unknown)	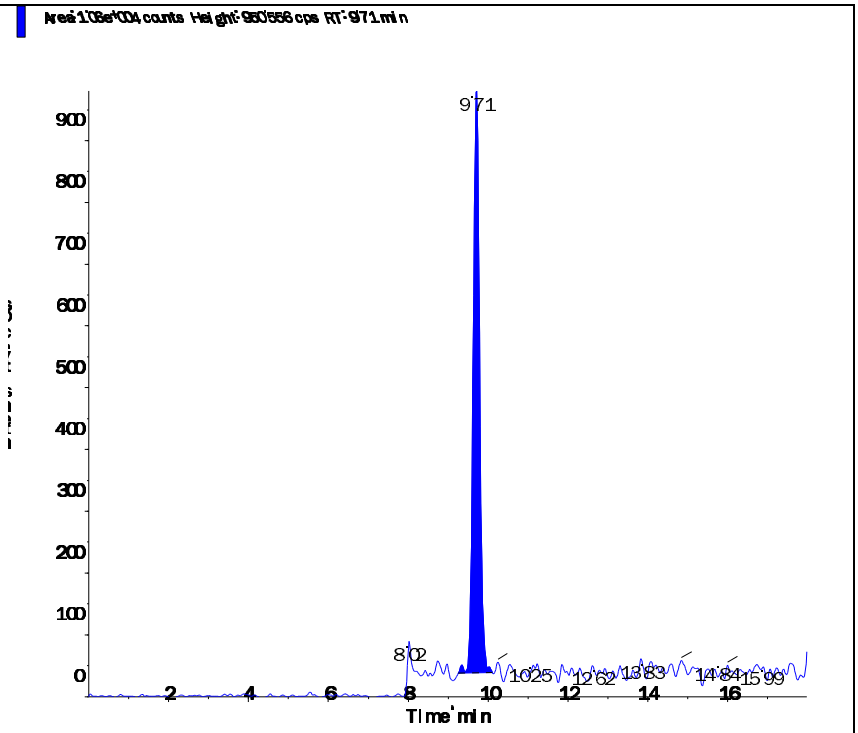

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:01 AM

Data File	LM35647.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 2:34:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575409-04 LCS2 (2.0ug/kg)	**Injection Vial**	7.00
Data File	LM35647.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 2:34:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575409-04	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.110e+05	9.72	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.970e+04	9.73	N/A	0.211
Perchlorate conf	1.060e+04	9.72	N/A	0.211

O18LP (Internal Standard)

RT (Exp. RT): 9.72(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

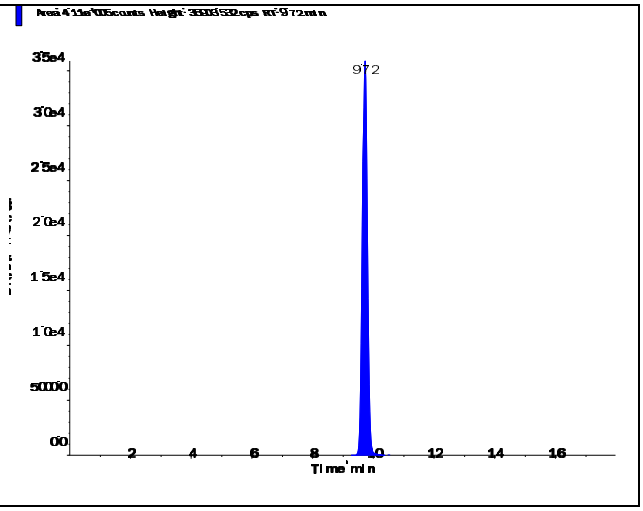

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:01 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.73 (9.84) min Calculated conc: 0.211 ng/ml Area Ratio: 0.072 Sample Type: (Unknown)	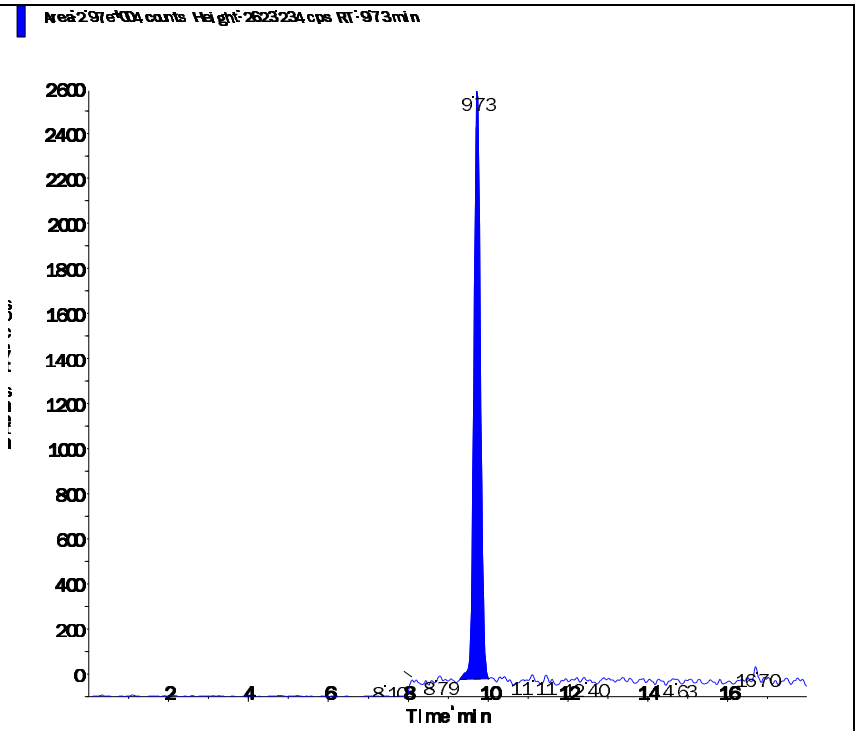
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.72 (9.84) min Calculated conc: 0.211 ng/ml Area Ratio: 0.026 Sample Type: (Unknown)	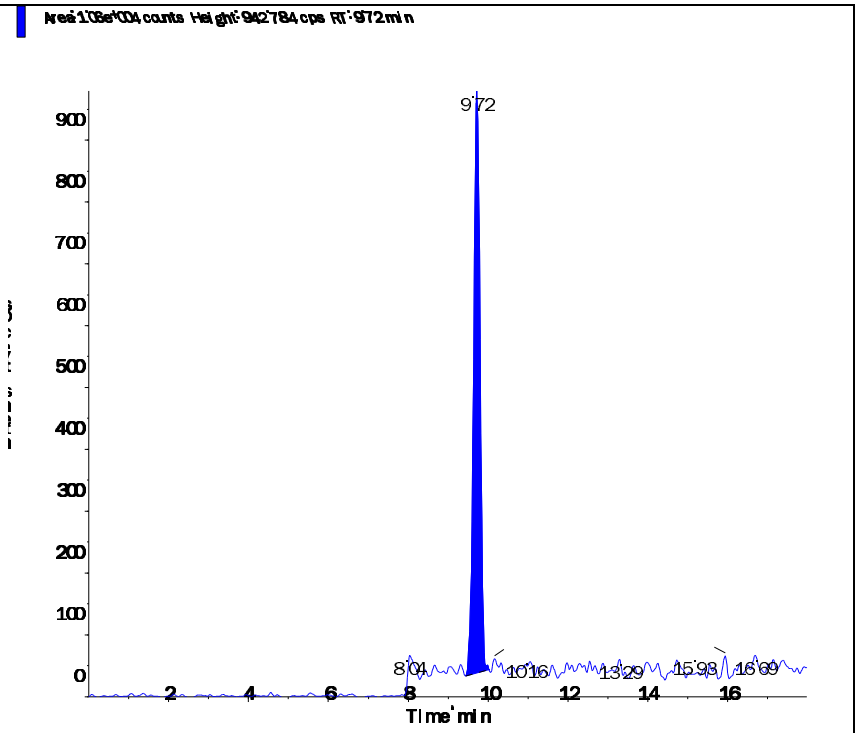

s.dataFile Page 2 of 2

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG574798 Analyst: ERP ADT(on): 06/30/2016 12:43
Method: D2216-90 Instrument: BAL017 ADT(off): 07/01/2016 06:57
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16061593-01	1.283	28.403	24.526			85.70	
L16061593-02	1.295	24.102	18.868			77.05	
L16061593-03	1.281	24.482	20.108			81.15	
L16061593-04	1.282	20.429	16.439			79.16	
L16061593-05	1.28	27.07	22.408			81.92	
L16061593-06	1.273	25.979	21.789			83.04	
L16061626-01	1.277	6.877	4.773			62.43	
L16061634-01	1.288	12.426	5.625			38.94	
L16061641-01	1.285	25.236	20.61			80.69	
L16061641-02	1.288	28.819	24.063			82.72	
L16061641-03	1.277	21.135	18.014			84.28	
L16061641-04	1.283	27.691	23.693			84.86	
L16061641-05	1.277	45.645	37.65			81.98	
L16061643-01	1.275	23.547	23.406			99.37	
L16061643-02	1.285	21.634	21.476			99.22	
WG574798-01	1.273	25.979	21.789			83.04	16.96
WG574798-02	1.279	24.457	20.501			82.93	17.07

Analyst: Erin Potter

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4834375
Report generated: 07/01/2016 06:59

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 13, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - Hanah D. Coe
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 13, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 13, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

COC No. A49367

158 Starlite Drive
Marietta, OH 45750

MICROBAC®

CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071
Toll Free: 800-373-4071

Company Name: AECOM

Project Contact: LINDA RAABE | Contact Phone #: 210-296-2000

Turn Around Requirements: STANDARD | Location: LHAAP 18/24

Project ID: 60274185

Sampler (print): Holly McCuistion | Signature: [signature]

Program: ☐ CWA ☐ RCRA ☐ DOD ☐ AFCEE ☐ Other _____

Sample I.D. No.	Comp	Grab	Date	Time	Matrix*	NUMBER OF CONTAINERS	Hold	PERCHLORATE	VOCs-8260	TOTAL # (LAB USE)	ADDITIONAL REQUIREMENTS
18WW25(3.5-4)270616		X	06/27/16	13:35	SOIL	2		X	X		
18WW25(9.5-10)270616		X	06/27/16	14:12	SOIL	2		X	X		
18WW25(14.5-15)270616		X	06/27/16	14:45	SOIL	2		X	X		
18WW25(19.5-20)270616		X	06/27/16	15:50	SOIL	2		X	X		
18WW25(22-22.5)270616		X	06/27/16	16:12	SOIL	2		X	X		
18WW25(22-22.5)270616 DUP		X	06/27/16	16:12	SOIL	2		X	X		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	6/27/16	1500			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)		

Remarks:

Microbac OVD
Received: 06/29/2016 09:34
By: BRENDA GREENWALT 221000087809

Brenda Greenwalt

*Water (W), Soil (S), Solid Waste (SD), Unknown (X)

Page _____ of _____

00730052

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061593
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 08-JUL-2016

Samplenum	Container ID	Products
L16061593-01	768001	8260

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	A1	29-JUN-2016 15:36	CLS		
2	ANALYZ	A1	ORG4	30-JUN-2016 14:55	JST	CLS	
3	STORE	ORG4	A1	13-JUL-2016 07:27	CLS	AWE	

Samplenum	Container ID	Products
L16061593-01	768002	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-JUN-2016 15:36	CLS		
2	ANALYZ	W1	SEM	06-JUL-2016 15:05	JWR	BRG	
3	STORE	SEM	A1	11-JUL-2016 11:21	CLS	JWR	

Samplenum	Container ID	Products
L16061593-02	768003	8260

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	A1	29-JUN-2016 15:36	CLS		
2	ANALYZ	A1	ORG4	30-JUN-2016 14:55	JST	CLS	
3	STORE	ORG4	A1	13-JUL-2016 07:28	CLS	AWE	

Samplenum	Container ID	Products
L16061593-02	768004	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-JUN-2016 15:36	CLS		
2	ANALYZ	W1	SEM	06-JUL-2016 15:05	JWR	BRG	
3	STORE	SEM	A1	11-JUL-2016 11:22	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061593
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 08-JUL-2016

Samplenum	Container ID	Products
L16061593-03	768005	8260

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	A1	29-JUN-2016 15:36	CLS		
2	ANALYZ	A1	ORG4	30-JUN-2016 14:55	JST	CLS	
3	STORE	ORG4	A1	13-JUL-2016 07:28	CLS	AWE	

Samplenum	Container ID	Products
L16061593-03	768006	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-JUN-2016 15:36	CLS		
2	ANALYZ	W1	SEM	06-JUL-2016 15:05	JWR	BRG	
3	STORE	SEM	A1	11-JUL-2016 11:22	CLS	JWR	

Samplenum	Container ID	Products
L16061593-04	768007	8260

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	A1	29-JUN-2016 15:36	CLS		
2	ANALYZ	A1	ORG4	30-JUN-2016 14:55	JST	CLS	
3	STORE	ORG4	A1	13-JUL-2016 07:27	CLS	AWE	

Samplenum	Container ID	Products
L16061593-04	768008	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-JUN-2016 15:36	CLS		
2	ANALYZ	W1	SEM	06-JUL-2016 15:05	JWR	BRG	
3	STORE	SEM	A1	11-JUL-2016 11:22	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061593
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 08-JUL-2016

Samplenum	Container ID	Products
L16061593-05	768009	8260

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	A1	29-JUN-2016 15:36	CLS		
2	ANALYZ	A1	ORG4	30-JUN-2016 14:55	JST	CLS	
3	STORE	ORG4	A1	13-JUL-2016 07:27	CLS	AWE	

Samplenum	Container ID	Products
L16061593-05	768010	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-JUN-2016 15:36	CLS		
2	ANALYZ	W1	SEM	06-JUL-2016 15:05	JWR	BRG	
3	STORE	SEM	A1	11-JUL-2016 11:22	CLS	JWR	

Samplenum	Container ID	Products
L16061593-06	768011	8260

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	A1	29-JUN-2016 15:36	CLS		
2	ANALYZ	A1	ORG4	30-JUN-2016 14:55	JST	CLS	
3	STORE	ORG4	A1	13-JUL-2016 07:27	CLS	AWE	

Samplenum	Container ID	Products
L16061593-06	768012	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-JUN-2016 15:36	CLS		
2	ANALYZ	W1	SEM	06-JUL-2016 15:06	JWR	BRG	
3	STORE	SEM	A1	11-JUL-2016 11:22	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16061648

Kayla Teague
AECOM Technical Services, Inc.
1950 N Stemmons FWY
Dallas, TX 75207

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 20 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113794	I	3.0		J2317164831	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18WW25-062916	L16061648-01	06/29/2016 08:05	06/30/2016 09:36
18WW25F-062916	L16061648-02	06/29/2016 08:05	06/30/2016 09:36
TRIP BLANK	L16061648-03	06/29/2016 00:01	06/30/2016 09:36

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16061648
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 43
2.0 Full Sample Data Package 61
2.1 Volatiles Data 62
2.1.1 Volatiles GCMS Data (8260) 63
2.1.1.1 Summary Data 64
2.1.1.2 QC Summary Data 72
2.1.1.3 Sample Data 101
2.1.1.4 Standards Data 110
2.1.1.5 Raw QC Data 224
2.2 Semivolatiles Data 312
2.2.1 Semivolatiles GC/MS Data (Dioxane) 243
2.2.1.1 Summary Data 244
2.2.1.2 QC Summary Data 247
2.2.1.3 Sample Data 272
2.2.1.4 Standards Data 275
2.2.1.5 Raw QC Data 297
2.2 General Chromatography Data 312
2.2.2 6850 LC/MS Data 313
2.2.2.1 Summary Data 314
2.2.2.2 QC Summary Data 317
2.2.2.3 Sample Data 373
2.2.2.4 Standards Data 376
2.2.2.5 Raw QC Data 425
2.3 Metals Data 432
2.3.1 Metals I C P Data 433
2.3.1.1 Summary Data 434
2.3.1.2 QC Summary Data 440
2.3.1.3 Raw Data 518
2.3.2 Metals ICP-MS Data 1031
2.3.2.1 Summary Data 1032
2.3.2.2 QC Summary Data 1037
2.3.2.3 Raw Data 1095
2.3.3 Metals CVAA Data (Mercury) 1578
2.3.3.1 Summary Data 1579
2.3.3.2 QC Summary 1583
2.3.3.3 Raw Data 1605
3.0 Attachments 1610

1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575666	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-12 16:44:42

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575666	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575666	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575666	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575666	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575666	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Bromomethane was below the lower control limit, Carbon Tetrachloride and Trichlorofluoromethane were above the upper control limit in the CCV WG575663-02 analyzed 07/08/2016 on HPMS6. Chloromethane was below the lower control limit in the Alternate Source standard WG574723-12 analyzed 06/30/2016 on HPMS6.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-07-12 12:30:52

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-06 18:44:41

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574940	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-20 13:58:08

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574940	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#2
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574940	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574940	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574940	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574940	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The low level initial calibration verification analyzed on 01-JUL-2016 at 14:37 yielded a noncompliant recovery for iron. All batch QA/QC and client sample were reanalyzed on a later calibration for iron.

ER#2 - Client sample 02 required dilution analysis in order to obtain results for calcium and iron within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG575246	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-20 13:55:25

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG575246	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#2
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			ER#1
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG575246	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG575246	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG575246	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG575246	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The method blank analyzed on 07-JUL-2016 at 10:22 yielded a result for antimony of 0.00115 mg/L which exceeded the LOD. All QA/QC and client sample 02 were reanalyzed for antimony later on 07-JUL-2016 with a compliant method blank.

ER#2 - Client sample 02 required dilution analysis in order to obtain results for barium and manganese within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG575094	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-20 13:54:46

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG575094	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG575094	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG575094	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG575094	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG575094	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW25-062916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575666	**Analyst:**	TMB	**Run Date:**	07/08/2016 22:36
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	6M140525
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.89	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.450	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	97.9	85	120	
4-Bromofluorobenzene	95.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW25-062916	**Prep Method:**	3520C	**Prep Date:**	06/30/2016 16:00
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG575045	**Analyst:**	MES	**Run Date:**	07/05/2016 21:39
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	15M18735
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25-062916	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/02/2016 02:01
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	1LM.LM35600
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/01/2016 10:16
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	07/01/2016 14:26
Workgroup #:	WG574995	**Analyst:**	JYH	**Run Date:**	07/01/2016 16:01
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	T3.070116.160122
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.120	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Magnesium, Total	7439-95-4	19.6		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.44		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	44.0		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/01/2016 10:16
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	07/19/2016 09:10
Workgroup #:	WG574995	**Analyst:**	JYH	**Run Date:**	07/19/2016 10:06
Collect Date:	06/29/2016 08:05	**Dilution:**	20	**File ID:**	T3.071916.100624
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	19.6		4.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/01/2016 10:16
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	07/14/2016 12:14
Workgroup #:	WG574995	**Analyst:**	JYH	**Run Date:**	07/14/2016 17:54
Collect Date:	06/29/2016 08:05	**Dilution:**	20	**File ID:**	T3.071416.175404
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	32.0		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/06/2016 08:44
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/07/2016 09:57
Workgroup #:	WG575345	**Analyst:**	JYH	**Run Date:**	07/07/2016 10:29
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	NI.070716.102920
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00243		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00200	U	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0135		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00596	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/06/2016 08:44
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/07/2016 09:57
Workgroup #:	WG575345	**Analyst:**	JYH	**Run Date:**	07/07/2016 15:10
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	NI.070716.151016
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/06/2016 08:44
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/07/2016 09:57
Workgroup #:	WG575345	**Analyst:**	JYH	**Run Date:**	07/07/2016 13:03
Collect Date:	06/29/2016 08:05	**Dilution:**	50	**File ID:**	NI.070716.130338
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.391		0.300	0.150	0.0750
Manganese, Total	7439-96-5	5.29		0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW25F-062916	**Prep Method:**	7470A	**Prep Date:**	07/05/2016 07:18
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/07/2016 13:11
Workgroup #:	WG575509	**Analyst:**	PDM	**Run Date:**	07/07/2016 13:54
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	M7.070716.135434
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575666	**Analyst:**	TMB	**Run Date:**	07/08/2016 22:03
Collect Date:	06/29/2016 00:01	**Dilution:**	1	**File ID:**	6M140524
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	97.4	85	120	
4-Bromofluorobenzene	95.3	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW25-062916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575666	**Analyst:**	TMB	**Run Date:**	07/08/2016 22:36
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	6M140525
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.89	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.450	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	97.9	85	120	
4-Bromofluorobenzene	95.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575666	**Analyst:**	TMB	**Run Date:**	07/08/2016 22:03
Collect Date:	06/29/2016 00:01	**Dilution:**	1	**File ID:**	6M140524
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	97.4	85	120	
4-Bromofluorobenzene	95.3	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 042416
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75498 Surrogate Standard: STD75498
CCV: STD75791 LCS: STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566155

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M138749	RINSE	NA	1	1		04/24/16 16:05
6M138750	WG566155-01 50ng BFB 826-A9	NA	1	1	STD75485	04/24/16 16:33
6M138751	WG566155-02 5ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 16:59
6M138752	WG566155-03 20ug/L STD 826-A	NA	1	1	STD75791	04/24/16 17:31
6M138753	WG566155-04 50ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 18:03
6M138754	WG566155-05 100ug/L STD 826-A	NA	1	1	STD75791	04/24/16 18:36
6M138755	WG566155-06 200ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:08
6M138756	WG566155-07 300ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:40
6M138757	WG566155-08 400ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:12
6M138758	WG566155-09 500ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:44
6M138759	RINSE	NA	1	1		04/24/16 21:16
6M138760	RINSE	NA	1	1		04/24/16 21:49
6M138761	WG566155-10 100ug/L ALT SRC	NA	1	1	STD75801	04/24/16 22:21
6M138762	RINSE	NA	1	1		04/24/16 22:53
6M138763	RINSE	NA	1	1		04/24/16 23:25

Approved: April 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 063016
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53798

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76744 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574723

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140313	WG574723-01 50ng BFB STD 8260	NA	1	1	STD76496	06/30/16 11:36
6M140314	WG574723-02 0.3ug/L STD 8260	NA	1	1	STD76892	06/30/16 12:03
6M140315	WG574723-03 0.4ug/L STD 8260	NA	1	1	STD76892	06/30/16 12:35
6M140316	WG574723-04 1ug/L STD 8260	NA	1	1	STD76892	06/30/16 13:08
6M140317	WG574723-05 2ug/L STD 8260	NA	1	1	STD76892	06/30/16 13:40
6M140318	WG574723-06 5ug/L STD 8260	NA	1	1	STD76892	06/30/16 14:12
6M140319	WG574723-07 20ug/L STD 8260	NA	1	1	STD76892	06/30/16 14:44
6M140320	WG574723-08 50ug/L STD 8260	NA	1	1	STD76892	06/30/16 15:16
6M140321	WG574723-09 100ug/L STD 8260	NA	1	1	STD76892	06/30/16 15:48
6M140322	WG574723-10 200ug/L STD 8260	NA	1	1	STD76892	06/30/16 16:21
6M140323	WG574723-11 300ug/L STD 8260	NA	1	1	STD76892	06/30/16 16:53
6M140324	RINSE	NA	1	1		06/30/16 17:27
6M140325	RINSE	NA	1	1		06/30/16 17:59
6M140326	WG574723-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76744	06/30/16 18:31
6M140327	RINSE	NA	1	1		06/30/16 19:04

Approved: July 07, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 070816
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 14
Maintenance Log ID: 53808

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD77015 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG575666

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140506	WG575663-01 50ng BFB STD 8260	NA	1	1	STD77013	07/08/16 11:42
6M140507	WG575663-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/08/16 12:09
6M140508	WG575663-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/08/16 12:44
6M140509	WG575663-01 50ng BFB STD 8260	NA	1	1	STD77013	07/08/16 14:07
6M140510	WG575663-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/08/16 14:33
6M140511	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76943	07/08/16 15:06
6M140512	WG575666-01 VBLK0708 BLANK STD 826	NA	1	1		07/08/16 15:38
6M140513	L16061458-02 B 826-SPE	NA	1	1		07/08/16 16:11
6M140514	WG575666-02 20ug/L LCS STD 8260	NA	1	1	STD77015	07/08/16 16:43
6M140515	WG575666-03 20ug/L LCS2 STD 8260	NA	1	1	STD77015	07/08/16 17:15
6M140516	L16070079-09 B 5X 826-SPE D1	<2	1	5		07/08/16 17:47
6M140517	L16061337-01 A 826-REF-BLK	<2	1	1		07/08/16 18:18
6M140518	L16061337-02 A 826-REF-BLK	<2	1	1		07/08/16 18:51
6M140519	L16061337-03 A 826-REF-BLK	<2	1	1		07/08/16 19:23
6M140520	L16061337-04 B 826-REF-BLK	<2	1	1		07/08/16 19:55
6M140521	L16061337-05 A 826-REF-BLK	<2	1	1		07/08/16 20:27
6M140522	L16061537-02 A TB 826-SPE	<2	1	1		07/08/16 20:59
6M140523	L16061572-05 A TB 8260	<2	1	1		07/08/16 21:31
6M140524	L16061648-03 A TB 826-LOW	<2	1	1		07/08/16 22:03
6M140525	L16061648-01 A 826-LOW	<2	1	1		07/08/16 22:36
6M140526	L16061537-01 A 200X 826-SPE	<2	1	200		07/08/16 23:08
6M140527	L16061572-04 A 8260	<2	1	1		07/08/16 23:40
6M140528	L16061572-03 A 100X 8260	<2	1	100		07/09/16 00:12
6M140529	L16061572-02 A 250X 8260	<2	1	250		07/09/16 00:44
6M140530	L16061572-01 A 2500X 8260	<2	1	2500		07/09/16 01:16
6M140531	L16070295-01 A 826-BETX	<2	1	1		07/09/16 01:48
6M140532	RINSE	NA	1	1		07/09/16 02:20
6M140533	WG575666-04 VBLK0708 BLANK STD 624	NA	2	1		07/09/16 02:53
6M140534	L16070239-04 A 624-SPE1	<2	2	1		07/09/16 03:25
6M140535	L16070239-06 A 624-SPE	<2	2	1		07/09/16 03:57
6M140536	L16070239-07 A 624-SPE1	<2	2	1		07/09/16 04:29
6M140537	L16070185-01 B 25X 624-SPE D1	<2	2	25		07/09/16 05:01
6M140538	L16070185-02 B 10X 624-SPE D1	<2	2	10		07/09/16 05:33
6M140539	CCV	NA	1	1		07/09/16 06:05

Approved: July 12, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 070816
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 14
Maintenance Log ID: 53808

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD77015 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG575666

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140540	RINSE	NA	1	1		07/09/16 06:37
6M140541	RINSE	NA	1	1		07/09/16 07:09

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M140507				
	Bromomethane was low, DNR.			
3	X			
File ID: 6M140508				
	VC was high, DNR. Increased the voltage by 10.			
6				
File ID: 6M140511				
	Not needed. DNR.			
23	X	2500	Over Calibration Range	CB
File ID: 6M140528				
25	X	50	Analyzed too dilute	
File ID: 6M140530				
30	X	50	Over Calibration Range	TCFM
File ID: 6M140535				

Approved: July 12, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 24-APR-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74754
Analytical Workgroups: WG566155

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-APR-2016
Tiffany Bailey

Secondary Reviewer:
29-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-29-2016 12:29:57

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76082
Analytical Workgroups: WG574723

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-JUL-2016
Tiffany Bailey

Secondary Reviewer:
07-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-07-2016 13:59:59

Microbac Laboratories Inc.

Data Checklist

Date: 08-JUL-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76220
Analytical Workgroups: WG575666

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
11-JUL-2016
Tiffany Bailey

Secondary Reviewer:
12-JUL-2016
Wadei Dg

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-12-2016 12:12:09

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG575666

Login Number: L16061648

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW25-062916	01	06/29/16					07/08/2016	9.6	14		07/08/16	9.6	14	
TRIP BLANK	03	06/29/16					07/08/2016	9.9	14		07/08/16	9.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4847492
Report generated 07/12/2016 12:23

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061648
Instrument Id: HPMS6
Workgroup (AAB#): WG575666

Method: 8260
CAL ID: HPMS6-30-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061648-01	1.00	01	103	106	95.7	97.9
L16061648-03	1.00	01	105	108	95.3	97.4
WG575666-01	1.00	01	103	105	98.4	97.6
WG575666-02	1.00	01	103	106	92.8	97.6
WG575666-03	1.00	01	102	104	94.3	98.9
WG575666-04	1.00	01	104	106	95.4	96.3

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4847498
Report generated: 07/12/2016 12:24

METHOD BLANK SUMMARY

Login Number: L16061648
Blank File ID: 6M140512
Prep Date: 07/08/16 15:38
Analyzed Date: 07/08/16 15:38
Analyst: TMB

Work Group: WG575666
Blank Sample ID: WG575666-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG575666-02	6M140514	07/08/16 16:43	01
LCS2	WG575666-03	6M140515	07/08/16 17:15	01
TRIP BLANK	L16061648-03	6M140524	07/08/16 22:03	01
18WW25-062916	L16061648-01	6M140525	07/08/16 22:36	01

Report Name: BLANK_SUMMARY
PDF File ID: 4849698
Report generated 07/12/2016 12:23

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061648 Prep Date: 07/08/16 15:38 Sample ID: WG575666-01
Instrument ID: HPMS6 Run Date: 07/08/16 15:38 Prep Method: 5030B/5030C/503
File ID: 6M140512 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575666 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4847493
12-JUL-2016 12:23

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061648 Prep Date: 07/08/16 15:38 Sample ID: WG575666-01
Instrument ID: HPMS6 Run Date: 07/08/16 15:38 Prep Method: 5030B/5030C/503
File ID: 6M140512 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575666 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	105	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	97.6	85 - 120	PASS
4-Bromofluorobenzene	98.4	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4847493
12-JUL-2016 12:23

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061648 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575666 Units: ug/L
QC Key: DOD4 Lot #: STD76972

Sample ID: WG575666-02 LCS File ID: 6M140514 Run Date: 07/08/2016 16:43
Sample ID: WG575666-03 LCS2 File ID: 6M140515 Run Date: 07/08/2016 17:15

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.9	110	20.0	22.0	110	0.530	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.4	112	20.0	22.4	112	0.0699	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	20.4	102	20.0	21.0	105	2.93	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.8	104	20.0	20.9	105	0.284	75 - 125	30	
1,1-Dichloroethane	20.0	20.3	102	20.0	20.3	101	0.191	70 - 135	30	
1,1-Dichloroethene	20.0	20.9	104	20.0	20.9	105	0.338	70 - 130	30	
1,1-Dichloropropene	20.0	20.7	103	20.0	20.7	104	0.0957	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	20.6	103	20.0	20.5	102	0.670	55 - 140	30	
1,2,3-Trichloropropane	20.0	21.2	106	20.0	21.2	106	0.146	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	20.8	104	20.0	20.8	104	0.162	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.0	100	20.0	20.5	103	2.45	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	23.0	115	20.0	22.7	114	1.23	50 - 130	30	
1,2-Dibromoethane	20.0	20.9	105	20.0	21.0	105	0.412	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.8	104	20.0	21.2	106	1.64	70 - 120	30	
1,2-Dichloroethane	20.0	22.6	113	20.0	22.4	112	0.665	70 - 130	30	
1,2-Dichloropropane	20.0	21.4	107	20.0	21.4	107	0.167	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.1	101	20.0	20.5	102	1.59	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.1	101	20.0	20.8	104	3.12	75 - 125	30	
1,3-Dichloropropane	20.0	21.3	106	20.0	21.4	107	0.622	75 - 125	30	
1,4-Dichlorobenzene	20.0	20.5	102	20.0	20.7	104	1.24	75 - 125	30	
2,2-Dichloropropane	20.0	20.8	104	20.0	22.3	112	7.20	70 - 135	30	
2-Butanone	20.0	22.3	112	20.0	22.0	110	1.42	30 - 150	30	
2-Chlorotoluene	20.0	20.2	101	20.0	19.1	95.7	5.59	75 - 125	30	
2-Hexanone	20.0	19.5	97.3	20.0	19.6	98.0	0.774	55 - 130	30	
4-Chlorotoluene	20.0	19.2	96.0	20.0	21.4	107	11.0	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.9	99.3	20.0	20.4	102	2.54	60 - 135	30	
Acetone	20.0	23.3	116	20.0	22.6	113	2.76	40 - 140	30	
Benzene	20.0	21.0	105	20.0	21.0	105	0.115	80 - 120	30	
Bromobenzene	20.0	19.6	98.2	20.0	20.0	99.9	1.70	75 - 125	30	
Bromochloromethane	20.0	22.0	110	20.0	21.7	108	1.58	65 - 130	30	
Bromodichloromethane	20.0	22.5	113	20.0	22.3	112	0.857	75 - 120	30	
Bromoform	20.0	20.7	103	20.0	20.8	104	0.680	70 - 130	30	
Bromomethane	20.0	16.3	81.3	20.0	16.2	81.1	0.160	30 - 145	30	
Carbon disulfide	20.0	18.0	90.0	20.0	17.7	88.7	1.47	35 - 160	30	
Carbon tetrachloride	20.0	24.2	121	20.0	24.1	121	0.211	65 - 140	30	
Chlorobenzene	20.0	21.0	105	20.0	21.3	107	1.66	80 - 120	30	
Chloroethane	20.0	23.9	120	20.0	23.1	115	3.56	60 - 135	30	
Chloroform	20.0	21.3	107	20.0	21.3	106	0.212	65 - 135	30	
Chloromethane	20.0	18.3	91.4	20.0	18.5	92.3	0.984	40 - 125	30	
cis-1,2-Dichloroethene	20.0	21.6	108	20.0	21.7	109	0.645	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4847494
Report generated: 07/12/2016 12:23

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061648 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575666 Units: ug/L
QC Key: DOD4 Lot #: STD76972

Sample ID: WG575666-02 LCS File ID: 6M140514 Run Date: 07/08/2016 16:43
Sample ID: WG575666-03 LCS2 File ID: 6M140515 Run Date: 07/08/2016 17:15

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	23.2	116	20.0	23.3	116	0.361	70 - 130	30	
Chlorodibromomethane	20.0	21.8	109	20.0	22.3	112	2.37	60 - 135	30	
Dibromomethane	20.0	21.5	108	20.0	21.8	109	1.26	75 - 125	30	
Dichlorodifluoromethane	20.0	24.4	122	20.0	24.5	122	0.176	30 - 155	30	
Ethylbenzene	20.0	20.8	104	20.0	21.3	106	2.32	75 - 125	30	
Hexachlorobutadiene	20.0	21.2	106	20.0	21.3	107	0.755	50 - 140	30	
Isopropylbenzene	20.0	21.3	106	20.0	21.6	108	1.54	75 - 125	30	
m-,p-Xylene	40.0	42.5	106	40.0	42.9	107	0.921	75 - 130	30	
Methylene chloride	20.0	20.6	103	20.0	20.9	105	1.50	55 - 140	30	
n-Butylbenzene	20.0	20.1	101	20.0	20.5	103	2.15	70 - 135	30	
n-Propylbenzene	20.0	20.4	102	20.0	21.0	105	2.86	70 - 130	30	
Naphthalene	20.0	19.3	96.3	20.0	18.9	94.5	1.90	55 - 140	30	
o-Xylene	20.0	22.1	110	20.0	21.9	110	0.620	80 - 120	30	
p-Isopropyltoluene	20.0	20.2	101	20.0	20.6	103	2.09	75 - 130	30	
sec-Butylbenzene	20.0	20.3	101	20.0	20.7	104	2.32	70 - 125	30	
Styrene	20.0	21.5	108	20.0	21.7	109	0.816	65 - 135	30	
tert-Butylbenzene	20.0	20.7	103	20.0	21.1	105	2.13	70 - 130	30	
Tetrachloroethene	20.0	20.7	103	20.0	20.8	104	0.544	45 - 150	30	
Toluene	20.0	20.2	101	20.0	20.3	102	0.859	75 - 120	30	
trans-1,2-Dichloroethene	20.0	21.3	107	20.0	21.4	107	0.223	60 - 140	30	
trans-1,3-Dichloropropene	20.0	20.6	103	20.0	21.5	108	4.43	55 - 140	30	
Trichloroethene	20.0	21.9	110	20.0	21.3	106	2.87	70 - 125	30	
Trichlorofluoromethane	20.0	23.7	118	20.0	26.9	134	12.7	60 - 145	30	
Vinyl chloride	20.0	24.9	125	20.0	24.4	122	1.94	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	103	102	70 - 120	PASS
Dibromofluoromethane	106	104	85 - 115	PASS
4-Bromofluorobenzene	92.8	94.3	75 - 120	PASS
Toluene-d8	97.6	98.9	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4847494
Report generated: 07/12/2016 12:23

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061648
Instrument: HPMS6
Analyst: JDS
Workgroup: WG566155

Tune ID: WG566155-01
Run Date: 04/24/2016
Run Time: 16:33
File ID: 6M138750
Cal ID: HPMS6 - 24-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	10010	PASS
75.0	95.0	30.0	60.0	52.0	23152	PASS
95.0	95.0	100	100	100	44552	PASS
96.0	95.0	5.00	9.00	6.92	3085	PASS
173	174	0	2.00	0.346	113	PASS
174	95.0	50.0	100	73.2	32632	PASS
175	174	5.00	9.00	7.16	2336	PASS
176	174	95.0	101	99.2	32384	PASS
177	176	5.00	9.00	6.95	2251	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566155-02	STD	01	04/24/2016 16:59	
WG566155-03	STD	01	04/24/2016 17:31	
WG566155-04	STD	01	04/24/2016 18:03	
WG566155-05	STD-CCV	01	04/24/2016 18:36	
WG566155-06	STD	01	04/24/2016 19:08	
WG566155-07	STD	01	04/24/2016 19:40	
WG566155-08	STD	01	04/24/2016 20:12	
WG566155-09	STD	01	04/24/2016 20:44	
WG566155-10	SSCV	01	04/24/2016 22:21	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4847496
Report generated 07/12/2016 12:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061648
Instrument: HPMS6
Analyst: TMB
Workgroup: WG574723

Tune ID: WG574723-01
Run Date: 06/30/2016
Run Time: 11:36
File ID: 6M140313
Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.0	8707	PASS
75.0	95.0	30.0	60.0	49.7	19699	PASS
95.0	95.0	100	100	100	39664	PASS
96.0	95.0	5.00	9.00	6.69	2652	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.8	29282	PASS
175	174	5.00	9.00	7.28	2131	PASS
176	174	95.0	101	99.6	29157	PASS
177	176	5.00	9.00	6.75	1969	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574723-02	STD	01	06/30/2016 12:03	
WG574723-03	STD	01	06/30/2016 12:35	
WG574723-04	STD	01	06/30/2016 13:08	
WG574723-05	STD	01	06/30/2016 13:40	
WG574723-06	STD	01	06/30/2016 14:12	
WG574723-07	STD	01	06/30/2016 14:44	
WG574723-08	STD-CCV	01	06/30/2016 15:16	
WG574723-09	STD	01	06/30/2016 15:48	
WG574723-10	STD	01	06/30/2016 16:21	
WG574723-11	STD	01	06/30/2016 16:53	
WG574723-12	SSCV	01	06/30/2016 18:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4847496
Report generated 07/12/2016 12:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061648
Instrument: HPMS6
Analyst: TMB
Workgroup: WG575663

Tune ID: WG575663-01
Run Date: 07/08/2016
Run Time: 14:07
File ID: 6M140509
Cal ID: HPMS6 - 30-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.5	10048	PASS
75.0	95.0	30.0	60.0	51.9	22171	PASS
95.0	95.0	100	100	100	42754	PASS
96.0	95.0	5.00	9.00	7.04	3011	PASS
173	174	0	2.00	0.432	140	PASS
174	95.0	50.0	100	75.7	32386	PASS
175	174	5.00	9.00	7.01	2270	PASS
176	174	95.0	101	98.9	32032	PASS
177	176	5.00	9.00	6.75	2162	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575663-02	CCV	01	07/08/2016 14:33	
WG575666-01	BLANK	01	07/08/2016 15:38	
WG575666-02	LCS	01	07/08/2016 16:43	
WG575666-03	LCS2	01	07/08/2016 17:15	
L16061648-03	TRIP BLANK	01	07/08/2016 22:03	
L16061648-01	18WW25-062916	01	07/08/2016 22:36	
WG575666-04	BLANK2	01	07/09/2016 02:53	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4847496
Report generated 07/12/2016 12:24

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 042416 - HPMS6
Last Calibration: Wed Apr 27 16:03:33 2016
Curve: WG566155
Calibration Files

	Compound	5 6M138751.D	20 6M138752.D	50 6M138753.D	100 6M138754.D	200 6M138755.D	300 6M138756.D	400 6M138757.D	500 6M138758.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.036	0.037	0.039	0.038	0.038	0.038	0.038	0.036	0.037	2.606
T	3-Chloro-1-propene	0.567	0.621	0.656	0.672	0.635	0.622	0.617	0.603	0.624	5.157
T	2-Chloro-1,3-butadiene	0.415	0.507	0.558	0.590	0.558	0.553	0.556	0.548	0.535	10.001
T	Ethyl Acetate	0.229	0.259	0.279	0.281	0.277	0.272	0.279	0.268	0.268	6.419
T	Methacrylonitrile	0.071	0.089	0.099	0.099	0.097	0.095	0.096	0.093	0.092	9.852
T	Isobutyl Alcohol		0.008	0.008	0.007	0.007	0.008	0.010	0.010	0.009	13.654
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.159	0.200	0.231	0.244	0.244	0.241	0.246	0.236	0.225	13.591
T	2-Nitropropane			0.079	0.082	0.085	0.085	0.088	0.084	0.084	3.643
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.026	0.027	0.032	0.034	0.035	0.033	0.031	12.127

Wed Apr 27 16:05:59 2016

Calibration Table Report
Method: 8260WTR.M
Title: 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Calibration: Fri Jul 01 09:28:30 2016
Curve: WG574723
Calibration Files

	Compound	0.3 6M140314.D	0.4 6M140315.D	1 6M140316.D	2 6M140317.D	5 6M140318.D	20 6M140319.D	50 6M140320.D	100 6M140321.D	200 6M140322.D	300 6M140323.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.401	0.398	0.362	0.449	0.438	0.462	0.444	0.391	0.418	8.327		
P	Chloromethane			0.564	0.519	0.446	0.512	0.463	0.436	0.411	0.381	0.467	13.089		
C	Vinyl Chloride		0.237	0.280	0.277	0.251	0.252	0.260	0.267	0.257	0.225	0.256	6.911		
T	1,3-Butadiene					0.175	0.204	0.154	0.154	0.147	0.132	0.161	15.792	0.991	
T	Bromomethane			0.179	0.184	0.166	0.178	0.161	0.164	0.170	0.160	0.170	5.344		
T	Chloroethane			0.158	0.158	0.155	0.170	0.162	0.163	0.168	0.162	0.162	3.146		
T	Trichlorofluoromethane		0.448	0.383	0.389	0.372	0.394	0.373	0.402	0.383	0.374	0.391	6.074		
T	Diethyl ether			0.240	0.244	0.238	0.231	0.237	0.234		0.190	0.231	7.911		
T	Isoprene					0.332	0.374	0.357	0.358	0.361	0.310	0.349	6.639		
T	Acrolein				0.039	0.038	0.038	0.038	0.039		0.039	0.038	1.589		
T	1,1,2-Trichloro-1,2,2-Trifluoroet			0.245	0.246	0.231	0.246	0.239	0.249	0.248	0.242	0.243	2.486		
T	Acetone					0.086	0.083	0.080	0.078	0.078	0.075	0.080	4.861		
C	1,1-Dichloroethene		0.475	0.488	0.483	0.447	0.475	0.469	0.477	0.473	0.459	0.472	2.614		
T	Tert-Butyl Alcohol			0.023	0.024	0.024	0.024	0.024	0.026		0.028	0.024	7.165		
T	Dimethyl Sulfide					0.197	0.217	0.208	0.206	0.206	0.201	0.206	3.230		
T	Iodomethane			0.076	0.076	0.099	0.149	0.180	0.188	0.180	0.164	0.139	34.268	0.996	
T	Methyl acetate					0.218	0.224	0.214	0.217	0.211	0.216	0.217	2.077		
T	Methylene Chloride			0.310	0.299	0.265	0.271	0.261	0.263	0.254	0.240	0.271	8.561		
T	Carbon Disulfide			0.926	0.900	0.839	0.925	0.868	0.856	0.834	0.768	0.864	6.148		
T	Acrylonitrile			0.090	0.096	0.098	0.098	0.102	0.104		0.108	0.099	5.795		
T	Methyl Tert Butyl Ether			0.716	0.725	0.704	0.737	0.716	0.729	0.714	0.694	0.717	1.916		
T	trans-1,2-Dichloroethene		0.263	0.254	0.262	0.245	0.253	0.250	0.255	0.251	0.241	0.253	2.748		
T	n-Hexane					0.432	0.456	0.424	0.426	0.424	0.412	0.429	3.449		
T	Diisopropyl ether			1.208	1.209	1.172	1.157	1.153	1.123		1.058	1.154	4.538		
T	Vinyl Acetate					0.458	0.448	0.486	0.493	0.523	0.482	0.482	5.502		
P	1,1-Dichloroethane		0.561	0.556	0.569	0.531	0.553	0.540	0.544	0.533	0.509	0.544	3.330		
T	Ethyl-Tert-Butyl ether			0.953	0.955	0.939	0.931	0.928	0.916		0.878	0.929	2.832		
T	2-Butanone					0.118	0.124	0.125	0.127	0.123	0.118	0.123	3.167		
T	Propionitrile			0.032	0.033	0.033	0.033	0.034	0.035		0.032	0.033	3.279		
T	2,2-Dichloropropane		0.396	0.421	0.439	0.414	0.411	0.401	0.411	0.407	0.393	0.410	3.381		
T	cis-1,2-Dichloroethene		0.295	0.285	0.269	0.267	0.280	0.277	0.280	0.274	0.262	0.277	3.558		
C	Chloroform	0.615	0.457	0.478	0.484	0.466	0.487	0.476	0.482	0.474	0.454	0.487	9.510		
T	1-Bromopropane			0.024	0.033	0.038	0.044	0.045	0.044	0.045	0.043	0.039	19.340	1.000	
T	Bromochloromethane		0.141	0.141	0.148	0.149	0.155	0.153	0.155	0.152	0.145	0.149	3.658		
T	Tetrahydrofuran			0.104	0.087	0.084	0.081	0.081	0.083		0.078	0.086	9.999		
S	Dibromofluoromethane				0.254	0.258	0.262	0.257	0.250	0.249	0.245	0.254	2.416		
T	1,1,1-Trichloroethane		0.395	0.436	0.430	0.412	0.430	0.430	0.438	0.432	0.414	0.424	3.334		
T	Cyclohexane			0.589	0.567	0.521	0.577	0.543	0.550	0.543	0.524	0.552	4.390		
T	1,1-Dichloropropene			0.377	0.376	0.356	0.370	0.367	0.375	0.373	0.362	0.370	2.060		
T	Tert-Amyl-Methyl ether			0.710	0.726	0.713	0.703	0.708	0.705		0.671	0.705	2.388		
T	Carbon Tetrachloride		0.271	0.305	0.33	0.33	0.37	0.377	0.39	0.391	0.371	0.3484	11.955		
S	1,2-Dichloroethane-d4				0.33	0.331	0.333	0.318	0.316	0.31	0.304	0.3202	3.5321		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.391	0.394	0.406	0.375	0.399	0.393	0.397	0.39	0.373	0.3907	2.7505		
T	Benzene		1.155	1.094	1.109	1.038	1.052	1.035	1.03	0.983	0.89	1.043	7.3599		
T	Trichloroethene		0.277	0.267	0.265	0.253	0.263	0.256	0.255	0.246	0.234	0.2574	4.9066		
T	Methylcyclohexane					0.396	0.428	0.4	0.409	0.404	0.387	0.404	3.4238		
C	1,2-Dichloropropane		0.311	0.293	0.305	0.293	0.306	0.302	0.305	0.3	0.288	0.3004	2.5217		
T	1,4-Dioxane					0.002	0.002	0.002	0.002		0.002	0.002	6.9968		
T	Bromodichloromethane		0.323	0.353	0.365	0.351	0.371	0.375	0.386	0.378	0.359	0.3624	5.1801		
T	Dibromomethane		0.125	0.137	0.148	0.143	0.153	0.151	0.156	0.151	0.145	0.1453	6.6336		
T	2-Chloroethyl Vinyl Ether				0.138	0.135	0.158	0.161	0.16	0.155	0.146	0.1506	7.0765		
T	4-Methyl-2-Pentanone					0.085	0.094	0.095	0.098	0.096	0.089	0.0927	5.3799		
T	cis-1,3-Dichloropropene		0.415	0.394	0.426	0.409	0.431	0.433	0.443	0.433	0.404	0.4208	3.888		
T	Dimethyl Disulfide					0.199	0.239	0.242	0.246	0.245	0.233	0.2342	7.589		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8				1.304	1.297	1.272	1.226	1.166	1.162	1.19	1.2311	4.9151		
C	Toluene		1.699	1.583	1.601	1.454	1.503	1.467	1.44	1.369	1.294	1.49	8.2924		
T	Ethyl Methacrylate			0.37	0.406	0.396	0.455	0.443	0.443	0.439	0.44	0.4239	6.9571		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.49	0.514	0.506	0.547	0.548	0.551	0.543	0.539	0.5298	4.3368		
T	1,1,2-Trichloroethane		0.262	0.278	0.282	0.27	0.285	0.28	0.281	0.274	0.269	0.2757	2.687		
T	2-Hexanone					0.237	0.266	0.269	0.271	0.267	0.261	0.2618	4.9035		
T	1,3-Dichloropropane		0.55	0.526	0.539	0.51	0.52	0.519	0.517	0.503	0.493	0.5197	3.397		
T	Tetrachloroethene		0.362	0.364	0.373	0.351	0.354	0.353	0.352	0.344	0.343	0.3551	2.7537		
T	Dibromochloromethane		0.278	0.3	0.318	0.322	0.353	0.36	0.37	0.36	0.352	0.3348	9.4942		
T	1,2-Dibromoethane		0.238	0.259	0.265	0.259	0.277	0.274	0.281	0.274	0.268	0.2662	4.8464		
T	1-Chlorohexane		0.507	0.497	0.506	0.475	0.52	0.501	0.495	0.488	0.474	0.4959	3.0436		
P	Chlorobenzene		1.087	1.01	1.026	0.933	0.963	0.947	0.932	0.878	0.824	0.9556	8.2302		
T	1,1,1,2-Tetrachloroethane		0.327	0.335	0.343	0.328	0.352	0.354	0.356	0.342	0.323	0.34	3.6316		
C	Ethylbenzene		0.509	0.503	0.522	0.5	0.517	0.508	0.509	0.481	0.452	0.5002	4.2933		
T	m-,p-Xylene		0.651	0.636	0.652	0.606	0.626	0.612	0.603	0.553	0.501	0.6045	8.1404		
T	o-Xylene			0.61	0.633	0.59	0.625	0.619	0.618	0.585	0.544	0.6029	4.778		
T	Styrene		0.992	0.978	1.025	0.988	1.072	1.065	1.072	1.013	0.924	1.0143	4.9363		
P	Bromoform			0.172	0.184	0.183	0.215	0.22	0.234	0.231	0.222	0.2076	11.743		
T	Isopropylbenzene		1.684	1.642	1.648	1.582	1.619	1.599	1.602	1.477	1.304	1.5731	7.3897		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.542	0.561	0.589	0.589	0.619	0.616	0.651	0.654	0.639	0.6067	6.4625		
S	p-Bromofluorobenzene				1.007	1.02	1.012	0.972	0.933	0.96	0.949	0.9791	3.484		

T	1,2,3-Trichloropropane		0.131	0.176	0.189	0.19	0.187	0.19	0.191	0.185	0.1799	11.385
T	trans-1,4-Dichloro-2-Butene		0.158	0.209	0.218	0.244	0.244	0.253	0.256	0.254	0.2294	14.64
T	n-Propylbenzene	4.147	3.945	3.827	3.612	3.693	3.558	3.522	3.223	2.802	3.5921	11.066
T	Bromobenzene	0.822	0.753	0.776	0.753	0.761	0.736	0.737	0.723	0.695	0.7506	4.7215
T	1,3,5-Trimethylbenzene	2.687	2.633	2.638	2.51	2.587	2.52	2.523	2.394	2.166	2.5177	6.2882
T	2-Chlorotoluene	2.919	2.675	2.482	2.32	2.324	2.405	2.382	2.249	2.107	2.4293	9.9295
T	4-Chlorotoluene	2.561	2.355	2.535	2.399	2.452	2.211	2.223	2.179	1.93	2.316	8.6649
T	a-Methylstyrene				1.171	1.369	1.303	1.3	1.265	1.19	1.2663	5.9075
T	tert-Butylbenzene		0.522	0.53	0.496	0.527	0.502	0.507	0.492	0.47	0.5058	3.9858
T	1,2,4-Trimethylbenzene		2.731	2.759	2.607	2.688	2.607	2.616	2.454	2.207	2.5836	6.9171
T	sec-Butylbenzene		3.3	3.29	3.02	3.128	3.02	3.014	2.818	2.521	3.0139	8.4375
T	p-Isopropyltoluene		2.762	2.734	2.57	2.677	2.59	2.601	2.425	2.188	2.5685	7.2625
T	1,3-Dichlorobenzene	1.666	1.555	1.538	1.459	1.494	1.448	1.455	1.387	1.293	1.4773	7.1422
T	1,4-Dichlorobenzene	1.73	1.6	1.574	1.462	1.495	1.451	1.46	1.383	1.287	1.4936	8.6114
T	n-Butylbenzene		2.725	2.645	2.516	2.61	2.545	2.566	2.387	2.156	2.5188	7.0194
T	1,2-Dichlorobenzene	1.544	1.461	1.436	1.375	1.404	1.371	1.382	1.297	1.212	1.387	6.8449
T	1,2-Dibromo-3-Chloropropane			0.093	0.097	0.122	0.122	0.134	0.134	0.13	0.1188	14.398
T	1,2,4-Trichlorobenzene	1.156	0.963	0.98	0.936	0.999	0.975	0.988	0.944	0.882	0.9804	7.5963
T	Hexachlorobutadiene	0.47	0.405	0.413	0.39	0.407	0.402	0.408	0.395	0.377	0.4076	6.3393
T	Naphthalene	1.978	1.873	1.94	1.955	2.174	2.126	2.159	2.015	1.813	2.0036	6.3217
T	1,2,3-Trichlorobenzene	0.987	0.959	0.905	0.88	0.936	0.904	0.915	0.87	0.813	0.9078	5.6179

Fri Jul 01 14:48:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061648 Run Date: 06/30/2016 Sample ID: WG574723-12
Instrument ID: HPMS6 Run Time: 18:31 Method: 8260B
File ID: 6M140326 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG574723 Cal ID: HPMS6 - 30-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.9	ug/L	0.467	4.30	20	
1,1-Dichloroethene	CCC	50.0	44.2	ug/L	0.417	11.7	20	
1,2-Dichloropropane	CCC	50.0	52.0	ug/L	0.313	4.10	20	
Ethylbenzene	CCC	50.0	51.7	ug/L	0.517	3.40	20	
Toluene	CCC	50.0	50.2	ug/L	1.50	0.400	20	
Vinyl Chloride	CCC	50.0	46.1	ug/L	0.237	7.70	20	
Bromoform	SPCC	50.0	49.4	ug/L	0.205	1.20	20	
Chlorobenzene	SPCC	50.0	51.0	ug/L	0.974	1.90	20	
Chloromethane	SPCC	50.0	39.1	ug/L	0.365	21.7	20	*
1,1-Dichloroethane	SPCC	50.0	46.5	ug/L	0.506	7.10	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.5	ug/L	0.673	11.0	20	
Acetone		50.0	46.9	ug/L	0.0752	6.10	20	
Benzene		50.0	48.8	ug/L	1.02	2.40	20	
Bromobenzene		50.0	50.7	ug/L	0.761	1.40	20	
Bromochloromethane		50.0	48.9	ug/L	0.145	2.20	20	
Bromodichloromethane		50.0	51.3	ug/L	0.372	2.60	20	
Bromomethane		50.0	48.4	ug/L	0.165	3.20	20	
2-Butanone		50.0	50.7	ug/L	0.124	1.50	20	
n-Butylbenzene		50.0	51.3	ug/L	2.59	2.70	20	
sec-Butylbenzene		50.0	52.6	ug/L	3.17	5.10	20	
tert-Butylbenzene		50.0	53.2	ug/L	0.538	6.40	20	
Carbon Disulfide		50.0	43.6	ug/L	0.755	12.7	20	
Carbon Tetrachloride		50.0	51.4	ug/L	0.358	2.90	20	
Dibromochloromethane		50.0	53.8	ug/L	0.360	7.60	20	
Chloroethane		50.0	51.7	ug/L	0.168	3.50	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.57	5.70	20	
4-Chlorotoluene		50.0	50.9	ug/L	2.36	1.80	20	
1,2-Dibromo-3-Chloropropane		50.0	55.7	ug/L	0.132	11.3	20	
1,2-Dibromoethane		50.0	52.4	ug/L	0.279	4.90	20	
Dibromomethane		50.0	49.0	ug/L	0.142	2.00	20	
1,2-Dichlorobenzene		50.0	52.5	ug/L	1.46	4.90	20	
1,3-Dichlorobenzene		50.0	51.3	ug/L	1.52	2.60	20	
1,4-Dichlorobenzene		50.0	51.8	ug/L	1.55	3.60	20	
Dichlorodifluoromethane		50.0	40.7	ug/L	0.340	18.6	20	
1,2-Dichloroethane		50.0	49.4	ug/L	0.386	1.20	20	
cis-1,2-Dichloroethene		50.0	49.8	ug/L	0.275	0.500	20	
trans-1,2-Dichloroethene		50.0	47.1	ug/L	0.238	5.90	20	
1,3-Dichloropropane		50.0	53.2	ug/L	0.553	6.30	20	
2,2-Dichloropropane		50.0	50.7	ug/L	0.416	1.40	20	
cis-1,3-Dichloropropene		50.0	56.3	ug/L	0.474	12.6	20	
trans-1,3-Dichloropropene		50.0	53.4	ug/L	0.565	6.70	20	
1,1-Dichloropropene		50.0	48.1	ug/L	0.356	3.80	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4847495
Report generated 07/12/2016 12:23

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061648 Run Date: 06/30/2016 Sample ID: WG574723-12
Instrument ID: HPMS6 Run Time: 18:31 Method: 8260B
File ID: 6M140326 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG574723 Cal ID: HPMS6 - 30-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	49.7	ug/L	0.260	0.600	20	
Hexachlorobutadiene		50.0	52.6	ug/L	0.429	5.20	20	
Isopropylbenzene		50.0	51.7	ug/L	1.63	3.30	20	
p-Isopropyltoluene		50.0	51.7	ug/L	2.65	3.40	20	
4-Methyl-2-Pentanone		50.0	50.7	ug/L	0.0939	1.40	20	
Methylene Chloride		50.0	46.6	ug/L	0.252	6.80	20	
Naphthalene		50.0	49.3	ug/L	1.98	1.40	20	
n-Propylbenzene		50.0	53.7	ug/L	3.86	7.40	20	
Styrene		50.0	52.9	ug/L	1.07	5.90	20	
1,1,1,2-Tetrachloroethane		50.0	52.6	ug/L	0.358	5.20	20	
Tetrachloroethene		50.0	48.7	ug/L	0.346	2.50	20	
1,2,3-Trichlorobenzene		50.0	51.1	ug/L	0.928	2.20	20	
1,2,4-Trichlorobenzene		50.0	51.4	ug/L	1.01	2.90	20	
1,1,1-Trichloroethane		50.0	49.4	ug/L	0.419	1.20	20	
1,1,2-Trichloroethane		50.0	52.1	ug/L	0.287	4.10	20	
Trichloroethene		50.0	49.0	ug/L	0.252	2.10	20	
Trichlorofluoromethane		50.0	47.1	ug/L	0.368	5.70	20	
1,2,3-Trichloropropane		50.0	54.9	ug/L	0.197	9.80	20	
1,2,4-Trimethylbenzene		50.0	51.6	ug/L	2.66	3.10	20	
1,3,5-Trimethylbenzene		50.0	52.6	ug/L	2.65	5.10	20	
o-Xylene		50.0	53.4	ug/L	0.644	6.80	20	
m-,p-Xylene		100	104	ug/L	0.627	3.70	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4847495
Report generated 07/12/2016 12:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648 Run Date: 07/08/2016 Sample ID: WG575663-02
Instrument ID: HPMS6 Run Time: 14:33 Method: 8260B
File ID: 6M140510 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG575666 Cal ID: HPMS6 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.7	ug/L	0.504	3.35	20	
1,1-Dichloroethene	CCC	50.0	53.7	ug/L	0.507	7.37	20	
1,2-Dichloropropane	CCC	50.0	49.9	ug/L	0.300	0.259	20	
Ethylbenzene	CCC	50.0	51.0	ug/L	0.510	1.95	20	
Toluene	CCC	50.0	49.0	ug/L	1.46	2.09	20	
Vinyl Chloride	CCC	50.0	57.2	ug/L	0.293	14.3	20	
Bromoform	SPCC	50.0	49.9	ug/L	0.207	0.250	20	
Chlorobenzene	SPCC	50.0	49.3	ug/L	0.942	1.44	20	
Chloromethane	SPCC	50.0	48.5	ug/L	0.453	2.98	20	
1,1-Dichloroethane	SPCC	50.0	51.1	ug/L	0.556	2.12	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.5	ug/L	0.564	7.01	20	
Xylenes		150	152	ug/L	0.610	1.08	20	
Acetone		50.0	46.4	ug/L	0.0743	7.29	20	
Benzene		50.0	50.2	ug/L	1.05	0.366	20	
Bromobenzene		50.0	47.6	ug/L	0.714	4.81	20	
Bromochloromethane		50.0	52.6	ug/L	0.156	5.22	20	
Bromodichloromethane		50.0	53.4	ug/L	0.387	6.75	20	
Bromomethane		50.0	39.5	ug/L	0.135	20.9	20	*
2-Butanone		50.0	45.3	ug/L	0.111	9.37	20	
n-Butylbenzene		50.0	50.9	ug/L	2.57	1.87	20	
sec-Butylbenzene		50.0	49.7	ug/L	2.99	0.631	20	
tert-Butylbenzene		50.0	49.4	ug/L	0.500	1.22	20	
Carbon Disulfide		50.0	50.8	ug/L	0.879	1.63	20	
Carbon Tetrachloride		50.0	61.0	ug/L	0.425	22.0	20	*
Dibromochloromethane		50.0	52.5	ug/L	0.351	4.92	20	
Chloroethane		50.0	52.5	ug/L	0.170	4.95	20	
2-Chlorotoluene		50.0	45.1	ug/L	2.19	9.72	20	
4-Chlorotoluene		50.0	50.0	ug/L	2.32	0.0246	20	
1,2-Dibromo-3-Chloropropane		50.0	47.3	ug/L	0.112	5.43	20	
1,2-Dibromoethane		50.0	47.5	ug/L	0.253	5.05	20	
Dibromomethane		50.0	51.5	ug/L	0.150	2.99	20	
1,2-Dichlorobenzene		50.0	47.6	ug/L	1.32	4.74	20	
1,3-Dichlorobenzene		50.0	48.6	ug/L	1.44	2.83	20	
1,4-Dichlorobenzene		50.0	47.9	ug/L	1.43	4.27	20	
Dichlorodifluoromethane		50.0	59.6	ug/L	0.498	19.2	20	
1,2-Dichloroethane		50.0	50.8	ug/L	0.397	1.61	20	
cis-1,2-Dichloroethene		50.0	51.9	ug/L	0.287	3.86	20	
trans-1,2-Dichloroethene		50.0	52.3	ug/L	0.264	4.65	20	
1,3-Dichloropropane		50.0	45.3	ug/L	0.471	9.37	20	
2,2-Dichloropropane		50.0	56.3	ug/L	0.462	12.7	20	
cis-1,3-Dichloropropene		50.0	51.4	ug/L	0.433	2.85	20	
trans-1,3-Dichloropropene		50.0	49.8	ug/L	0.528	0.392	20	

CCV - Modified 03/05/2008
PDF File ID: 4847497
Report generated 07/12/2016 12:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648 Run Date: 07/08/2016 Sample ID: WG575663-02
Instrument ID: HPMS6 Run Time: 14:33 Method: 8260B
File ID: 6M140510 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG575666 Cal ID: HPMS6 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.0	ug/L	0.385	4.10	20	
2-Hexanone		50.0	40.7	ug/L	0.213	18.6	20	
Hexachlorobutadiene		50.0	50.3	ug/L	0.410	0.510	20	
Isopropylbenzene		50.0	50.7	ug/L	1.59	1.34	20	
p-Isopropyltoluene		50.0	50.5	ug/L	2.59	0.908	20	
4-Methyl-2-Pentanone		50.0	42.0	ug/L	0.0779	16.0	20	
Methylene Chloride		50.0	49.7	ug/L	0.269	0.674	20	
Naphthalene		50.0	45.9	ug/L	1.84	8.10	20	
n-Propylbenzene		50.0	49.1	ug/L	3.52	1.88	20	
Styrene		50.0	51.2	ug/L	1.04	2.30	20	
1,1,1,2-Tetrachloroethane		50.0	52.7	ug/L	0.359	5.50	20	
Tetrachloroethene		50.0	51.1	ug/L	0.363	2.26	20	
1,2,3-Trichlorobenzene		50.0	47.6	ug/L	0.864	4.87	20	
1,2,4-Trichlorobenzene		50.0	48.6	ug/L	0.952	2.89	20	
1,1,1-Trichloroethane		50.0	55.0	ug/L	0.467	9.99	20	
1,1,2-Trichloroethane		50.0	47.4	ug/L	0.262	5.14	20	
Trichloroethene		50.0	50.4	ug/L	0.259	0.736	20	
Trichlorofluoromethane		50.0	66.9	ug/L	0.523	33.8	20	*
1,2,3-Trichloropropane		50.0	45.2	ug/L	0.163	9.52	20	
1,2,4-Trimethylbenzene		50.0	49.6	ug/L	2.56	0.892	20	
1,3,5-Trimethylbenzene		50.0	49.2	ug/L	2.48	1.67	20	
o-Xylene		50.0	50.5	ug/L	0.609	0.984	20	
m-,p-Xylene		100	101	ug/L	0.611	1.12	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4847497
Report generated 07/12/2016 12:24

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061648
Instrument ID: HPMS6
Workgroup (AAB#): WG575666

ICAL CCV Number: WG574723-08
CAL ID: HPMS6-30-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG574723-08	NA	NA	264882	476977	665194
Upper Limit	NA	NA	529764	953954	1330388
Lower Limit	NA	NA	132441	238489	332597
L16061648-01	1.00	01	256077	477680	655419
L16061648-03	1.00	01	261095	489553	659607
WG575666-01	1.00	01	272771	521746	711313
WG575666-02	1.00	01	301291	519319	691171
WG575666-03	1.00	01	301252	524392	710086

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4849699
Report generated 07/12/2016 12:24

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061648
Instrument ID: HPMS6
Workgroup (AAB#): WG575666

ICAL CCV Number: WG574723-08
CAL ID: HPMS6-30-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG574723-08	NA	NA	18.81	15.25	10.77
Upper Limit	NA	NA	19.31	15.75	11.27
Lower Limit	NA	NA	18.31	14.75	10.27
L16061648-01	1.00	01	18.81	15.25	10.77
L16061648-03	1.00	01	18.8	15.25	10.77
WG575666-01	1.00	01	18.81	15.25	10.77
WG575666-02	1.00	01	18.81	15.25	10.76
WG575666-03	1.00	01	18.8	15.25	10.76

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4849700
Report generated: 07/12/2016 12:24

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140525.D Vial: 17
Acq On : 8 Jul 2016 22:36 Operator: TMB
Sample : L16061648-01 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 08:41:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	655419	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	477680	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	256077	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	176543	26.5496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.20%		
43) 1,2-Dichloroethane-d4	10.31	65	217003	25.8512 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.40%		
58) Toluene-d8	13.04	98	575809	24.4792 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.92%		
80) p-Bromofluorobenzene	17.02	95	240005	23.9313 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.72%		

Target Compounds

					Qvalue
3) Chloromethane	3.36	50	1844	0.1507 ug/L #	64
13) Acetone	5.90	43	6066	2.8888 ug/L	93
29) 2-Butanone	8.72	43	435	0.1353 ug/L #	57
33) Chloroform	9.26	83	5751	0.4501 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140525.D 8260WTR.M Mon Jul 11 08:42:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140525.D Vial: 17
Acq On : 8 Jul 2016 22:36 Operator: TMB
Sample : L16061648-01 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 8:41 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

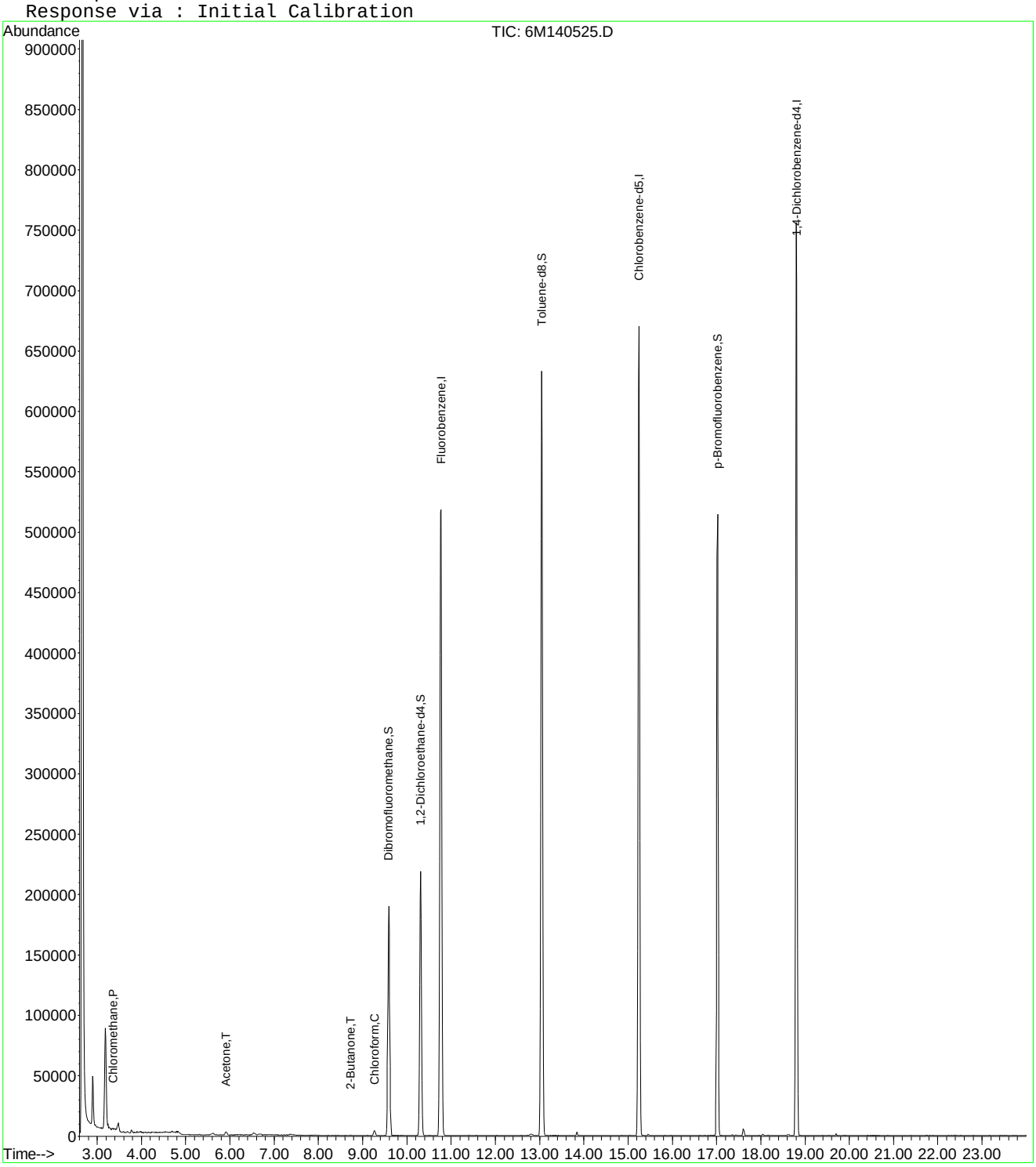

6M140525.D 8260WTR.M Mon Jul 11 08:42:02 2016 Page 2

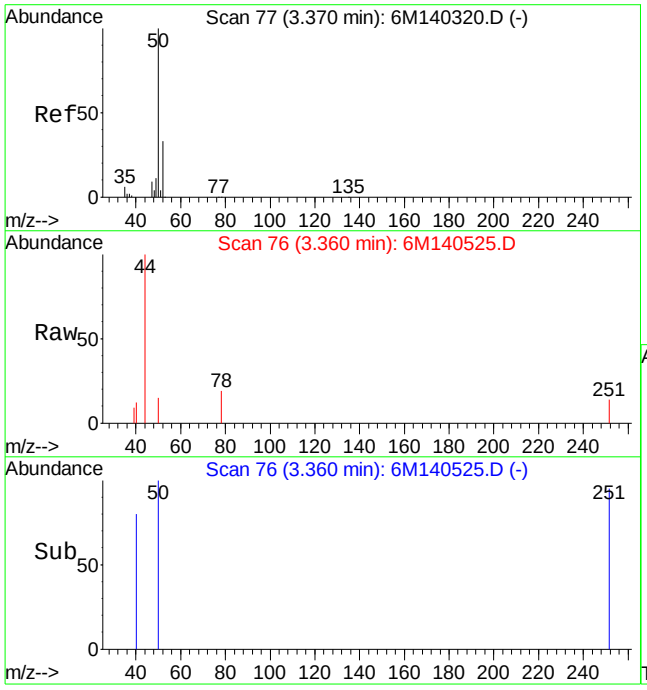

#3
Chloromethane
Concen: 0.15 ug/L
RT: 3.36 min Scan# 76
Delta R.T. -0.00 min
Lab File: 6M140525.D
Acq: 8 Jul 2016 22:36

Tgt Ion: 50 Resp: 1844

Ion	Ratio	Lower	Upper
50	100		
52	12.7	19.8	46.2#

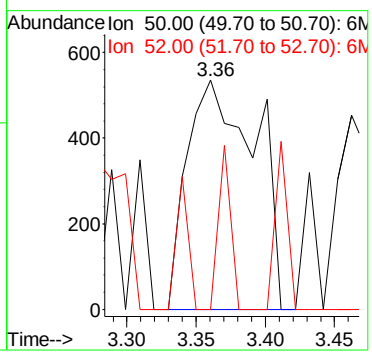

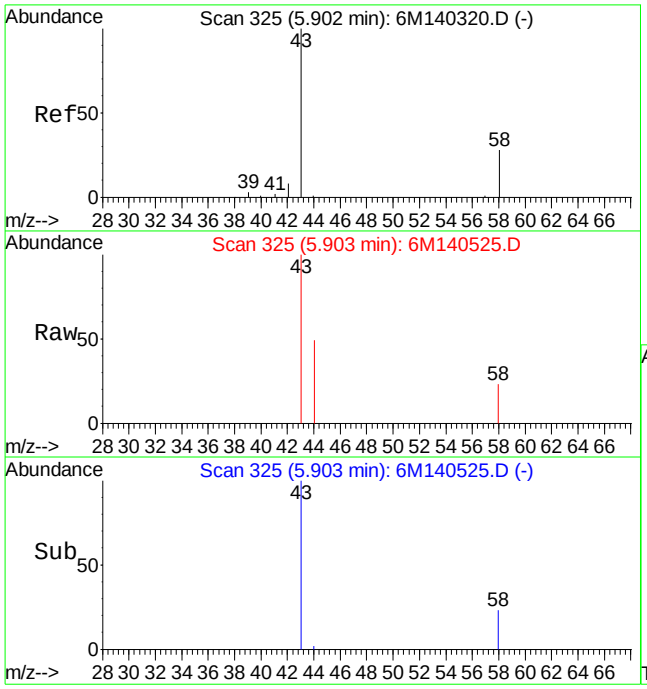

#13
Acetone
Concen: 2.89 ug/L
RT: 5.90 min Scan# 325
Delta R.T. -0.00 min
Lab File: 6M140525.D
Acq: 8 Jul 2016 22:36

Tgt Ion: 43 Resp: 6066

Ion	Ratio	Lower	Upper
43	100		
58	23.8	16.4	38.2

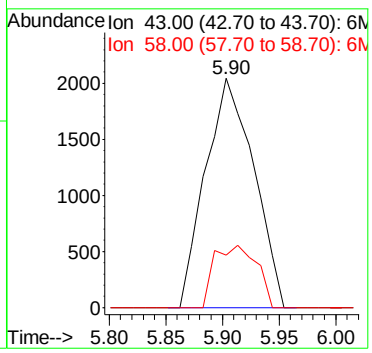

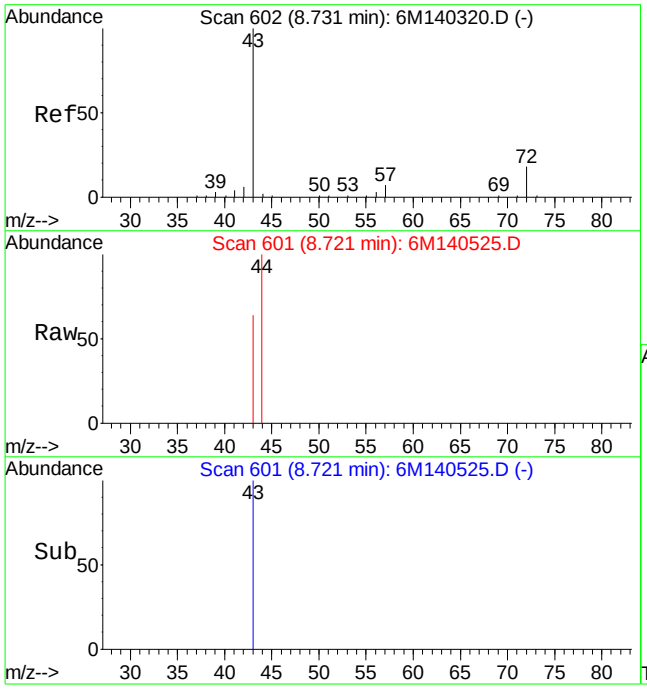

#29
2-Butanone
Concen: 0.14 ug/L
RT: 8.72 min Scan# 601
Delta R.T. -0.01 min
Lab File: 6M140525.D
Acq: 8 Jul 2016 22:36

Tgt Ion: 43 Resp: 435

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.9	27.9#

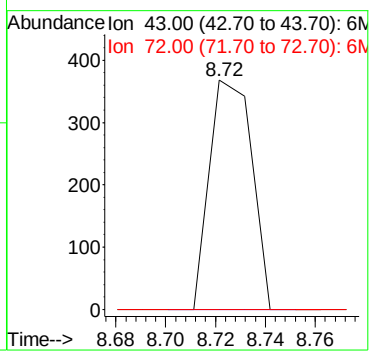

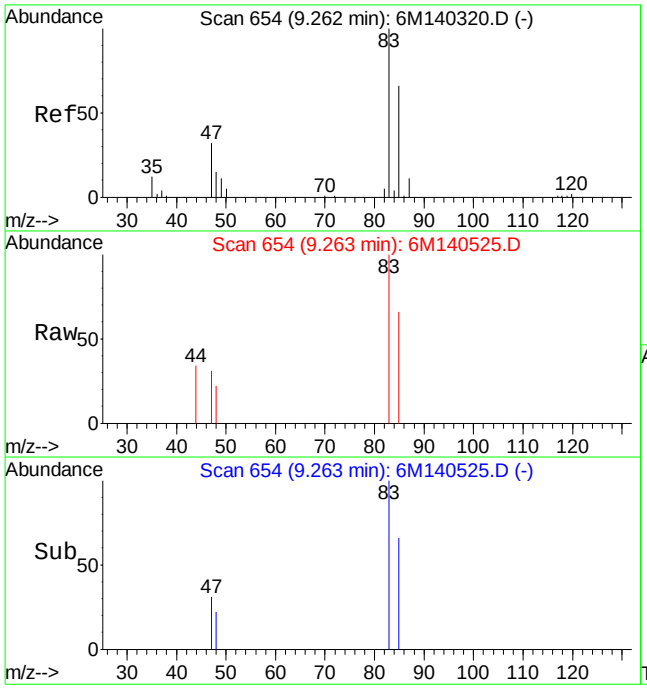

#33
Chloroform
Concen: 0.45 ug/L
RT: 9.26 min Scan# 654
Delta R.T. -0.00 min
Lab File: 6M140525.D
Acq: 8 Jul 2016 22:36

Tgt Ion: 83 Resp: 5751

Ion	Ratio	Lower	Upper
83	100		
85	63.8	39.0	91.0
47	29.0	18.5	43.1

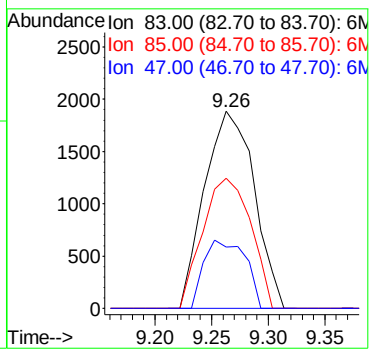

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140524.D Vial: 16
Acq On : 8 Jul 2016 22:03 Operator: TMB
Sample : L16061648-03 A TB 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 08:41:51 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	659607	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	489553	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	261095	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.58	111	180287	26.9405 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.76%		
43) 1,2-Dichloroethane-d4	10.31	65	220729	26.1281 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.52%		
58) Toluene-d8	13.04	98	587157	24.3563 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.44%		
80) p-Bromofluorobenzene	17.02	95	243660	23.8288 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.32%		
Target Compounds					Qvalue
3) Chloromethane	3.35	50	2690	0.2185 ug/L #	54
13) Acetone	5.90	43	1981	0.9374 ug/L #	48
36) Tetrahydrofuran	9.56	42	4321	1.9150 ug/L #	63

(#) = qualifier out of range (m) = manual integration
6M140524.D 8260WTR.M Mon Jul 11 08:41:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140524.D Vial: 16
Acq On : 8 Jul 2016 22:03 Operator: TMB
Sample : L16061648-03 A TB 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 8:41 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

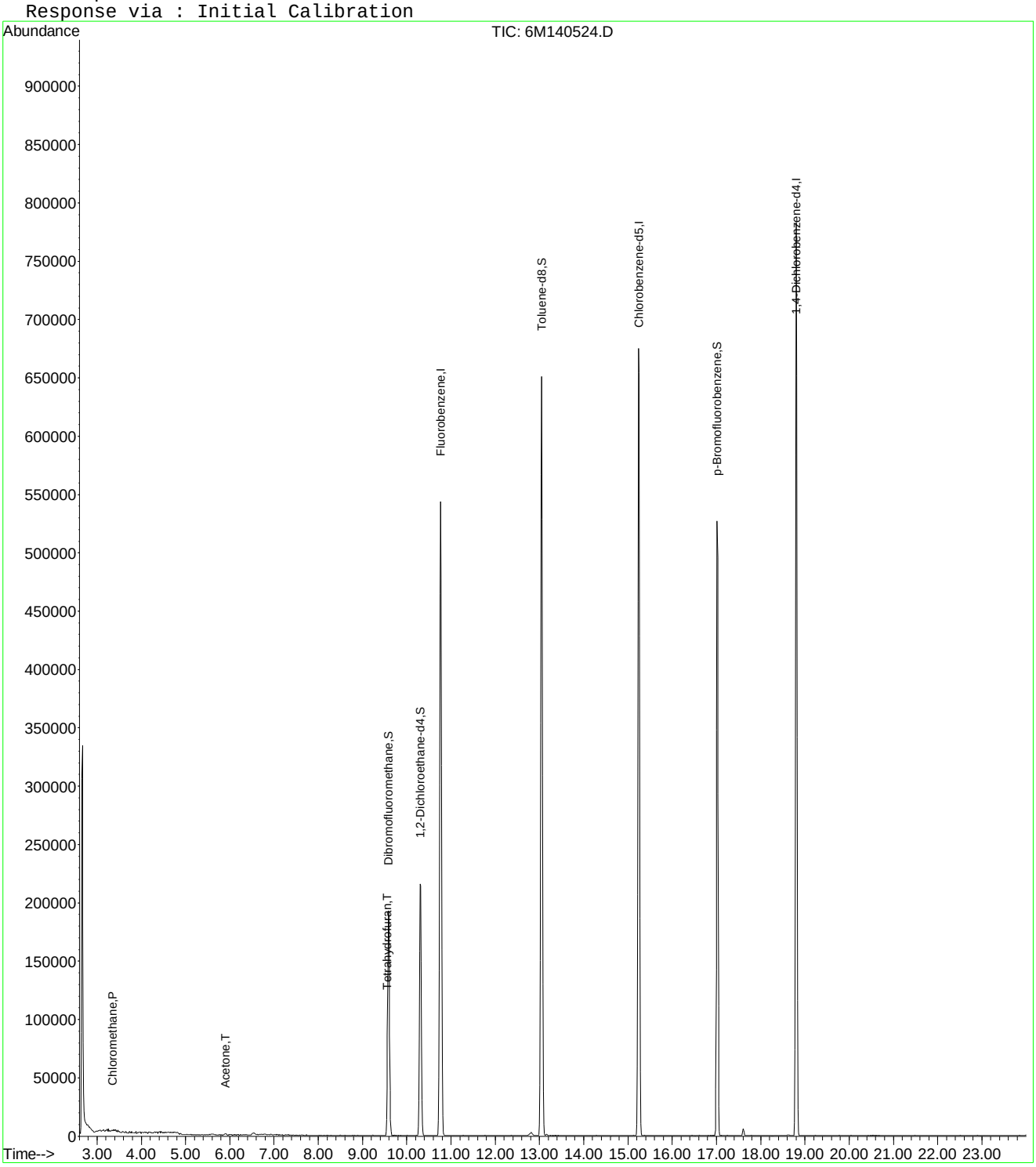

6M140524.D 8260WTR.M Mon Jul 11 08:41:55 2016 Page 2

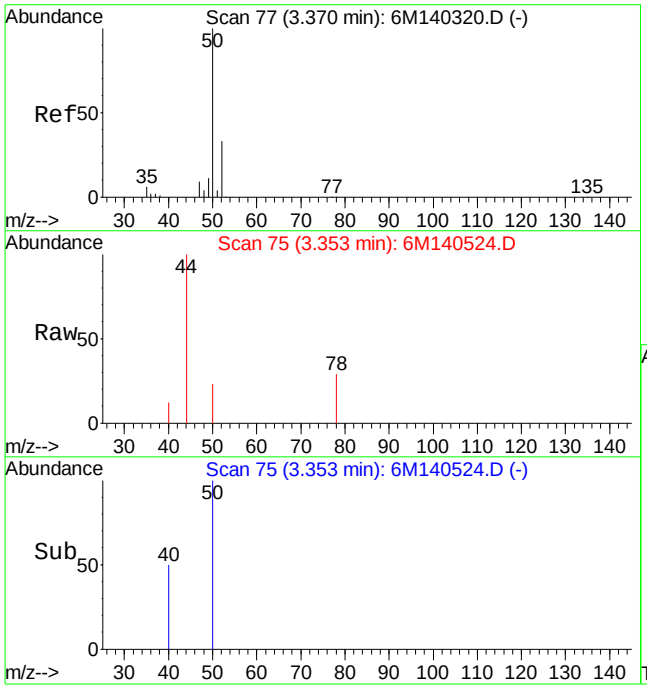

#3
Chloromethane
Concen: 0.22 ug/L
RT: 3.35 min Scan# 75
Delta R.T. -0.01 min
Lab File: 6M140524.D
Acq: 8 Jul 2016 22:03

Tgt Ion: 50 Resp: 2690

Ion	Ratio	Lower	Upper
50	100		
52	7.2	19.8	46.2#

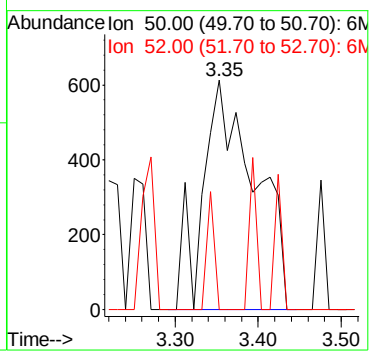

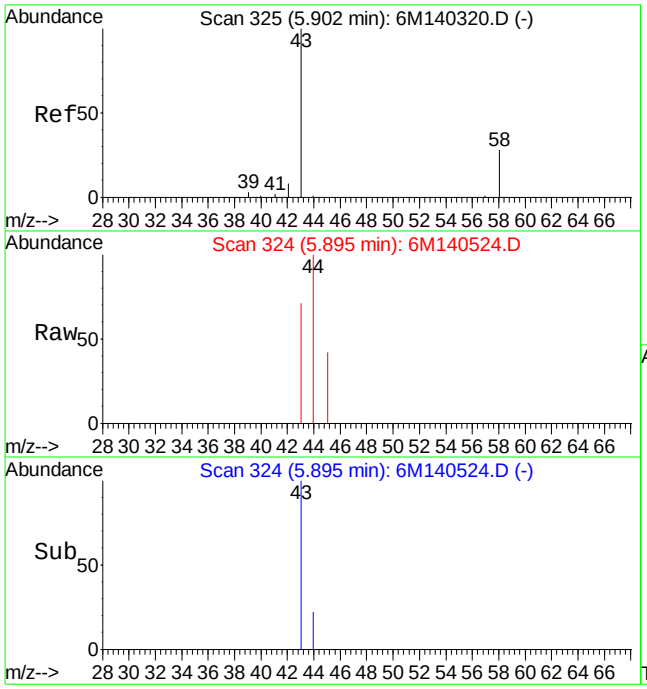

#13
Acetone
Concen: 0.94 ug/L
RT: 5.90 min Scan# 324
Delta R.T. -0.01 min
Lab File: 6M140524.D
Acq: 8 Jul 2016 22:03

Tgt Ion: 43 Resp: 1981

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

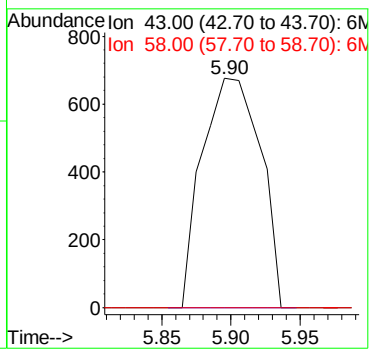

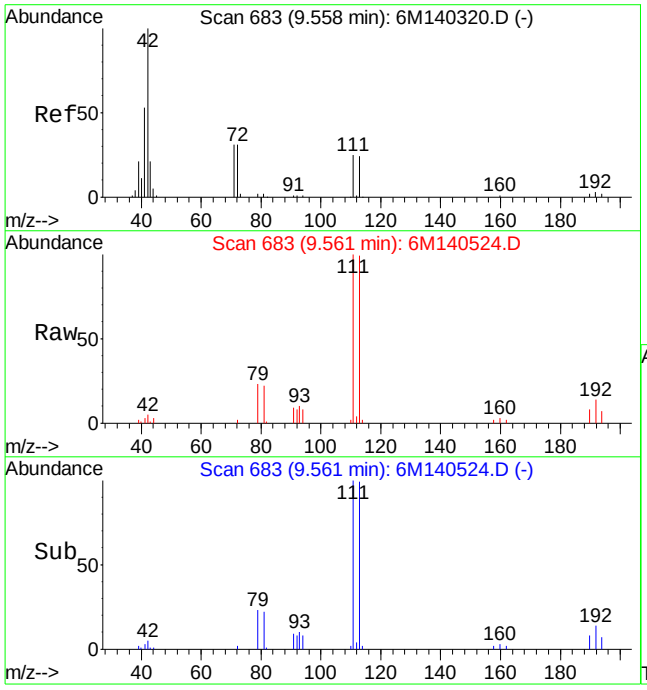

#36
Tetrahydrofuran
Concen: 1.92 ug/L
RT: 9.56 min Scan# 683
Delta R.T. 0.00 min
Lab File: 6M140524.D
Acq: 8 Jul 2016 22:03

Tgt Ion: 42 Resp: 4321

Ion	Ratio	Lower	Upper
42	100		
72	15.8	20.8	48.4#
71	10.0	19.9	46.5#

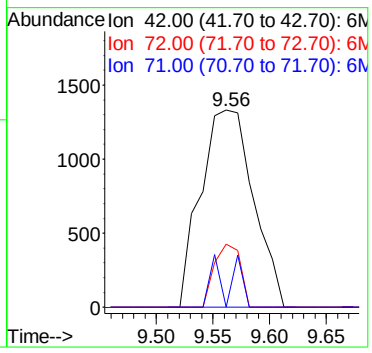

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:46 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	173671	27.7488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.00%		
43) 1,2-Dichloroethane-d4	11.12	65	203570	26.8000 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.20%		
58) Toluene-d8	13.86	98	554047	26.0139 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.04%		
80) p-Bromofluorobenzene	17.85	95	229998	27.1525 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.60%		

Target Compounds					Qvalue
13) Acetone	6.67	43	1325	0.6992 ug/L #	46
20) Carbon Disulfide	7.54	76	18747	0.9622 ug/L #	39
29) 2-Butanone	9.31	43	1188	0.4247 ug/L #	1
36) Tetrahydrofuran	10.36	42	2769	1.5196 ug/L #	58
60) Ethyl Methacrylate	13.87	69	899	0.1270 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

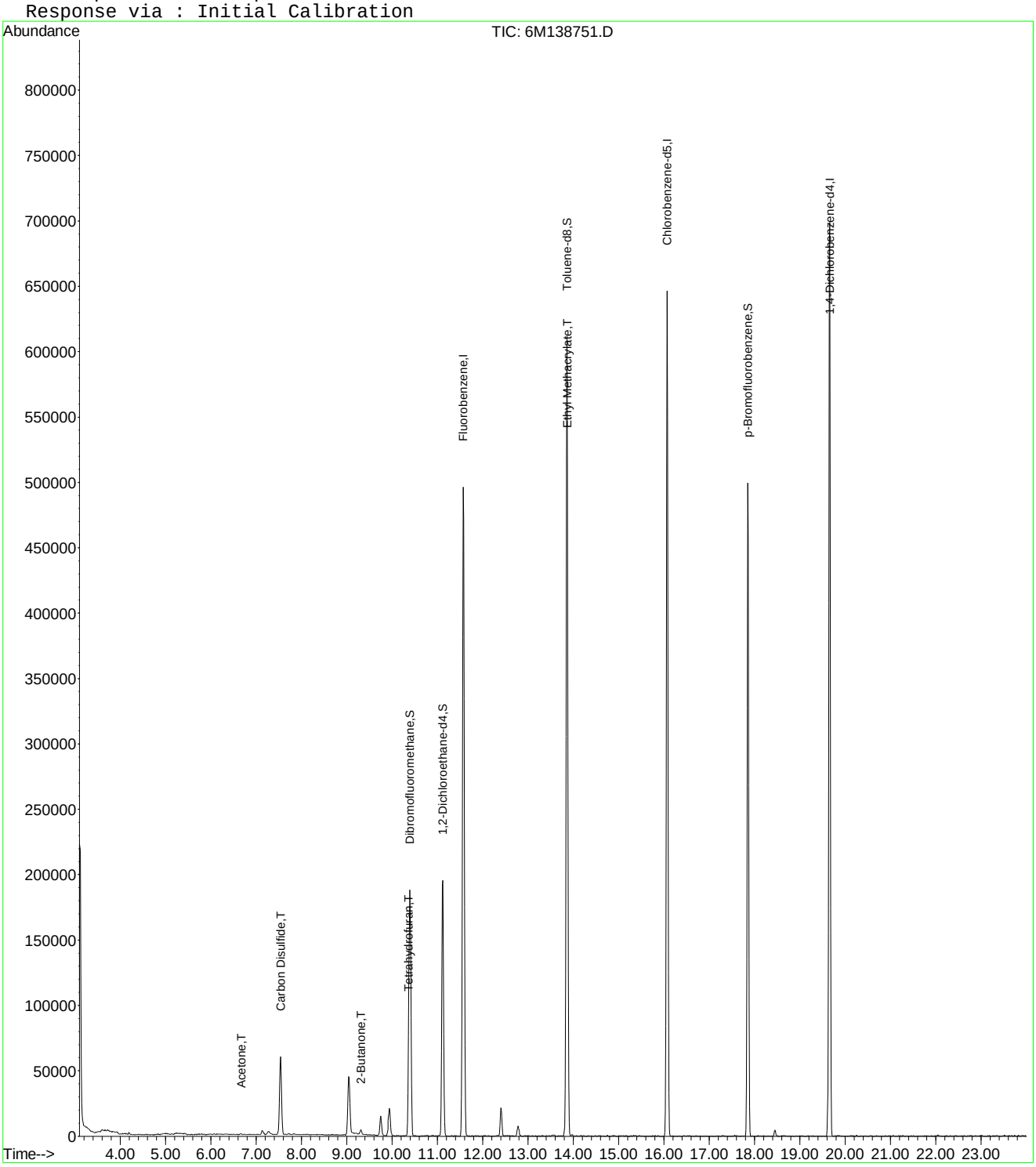

6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:52 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	3.7209 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.2301 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.6002 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.3499 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.5173 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	3.4767 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.0338 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.7392 ug/L	93
13) Cyclohexanone	17.57	55	447	0.5159 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Mon Apr 25 15:45:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

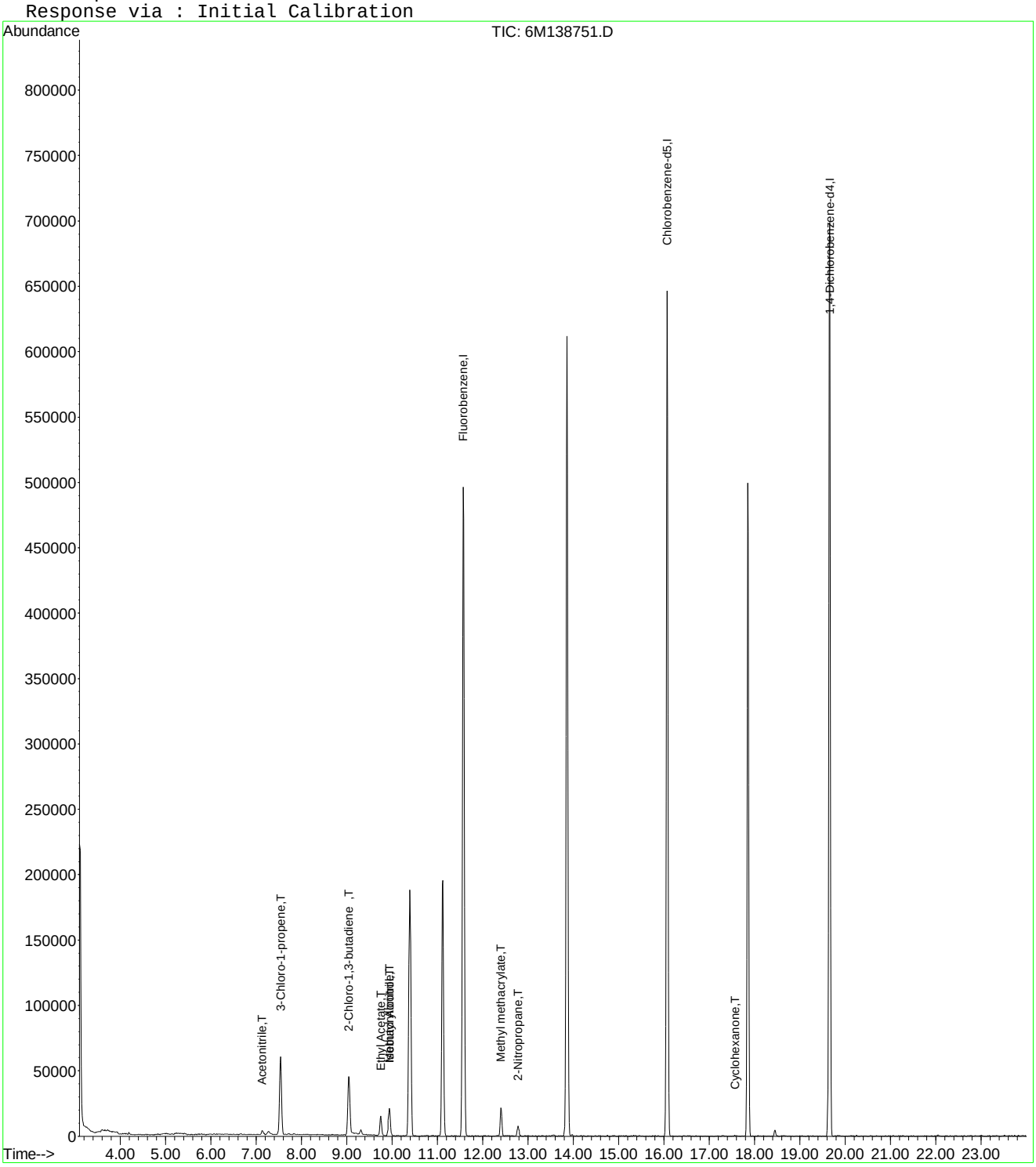

6M138751.D A9FOOWT.M Mon Apr 25 15:45:53 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:56 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	4.7698 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.5408 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.8775 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.2792 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.8601 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	5.9076 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.5356 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.4543 ug/L	93
13) Cyclohexanone	17.57	55	447	1.4133 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Wed Apr 27 16:04:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

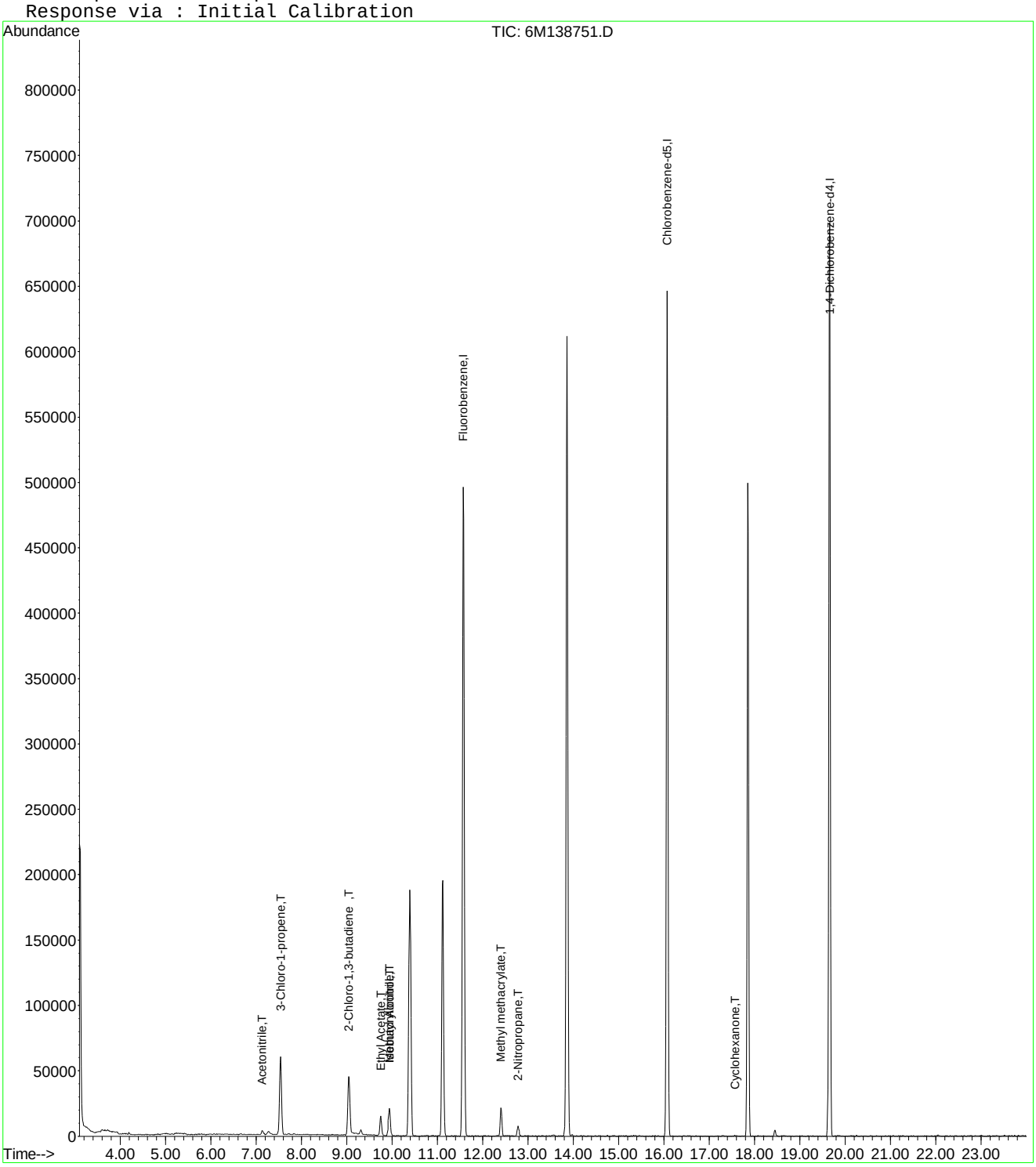

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	4.7698	4.6	100	0.00
3	T	3-Chloro-1-propene	5.0000	4.5408	9.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	3.8775	22.5	100	0.00
5	T	Ethyl Acetate	5.0000	4.2792	14.4	100	0.00
6	T	Methacrylonitrile	5.0000	3.8601	22.8	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.9076	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.99#
9	T	Methyl methacrylate	5.0000	3.5356	29.3	100	0.00
10	T	2-Nitropropane	-1.0000	3.4543	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	1.4133	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138751.D A9FOOWT.M Wed Apr 27 16:04:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	171577	27.9669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.88%		
43) 1,2-Dichloroethane-d4	11.12	65	207390	27.8532 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.40%		
58) Toluene-d8	13.86	98	547786	26.2796 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.12%		
80) p-Bromofluorobenzene	17.85	95	228171	27.5052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.04%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	2739	1.4745 ug/L #	59
20) Carbon Disulfide	7.54	76	81493	4.2668 ug/L #	36
27) 1,1-Dichloroethane	9.05	63	3411	0.2688 ug/L #	42
29) 2-Butanone	9.31	43	3879	1.4148 ug/L #	1
36) Tetrahydrofuran	10.37	42	3350	1.8754 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1183	0.1708 ug/L #	27

(#) = qualifier out of range (m) = manual integration
6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

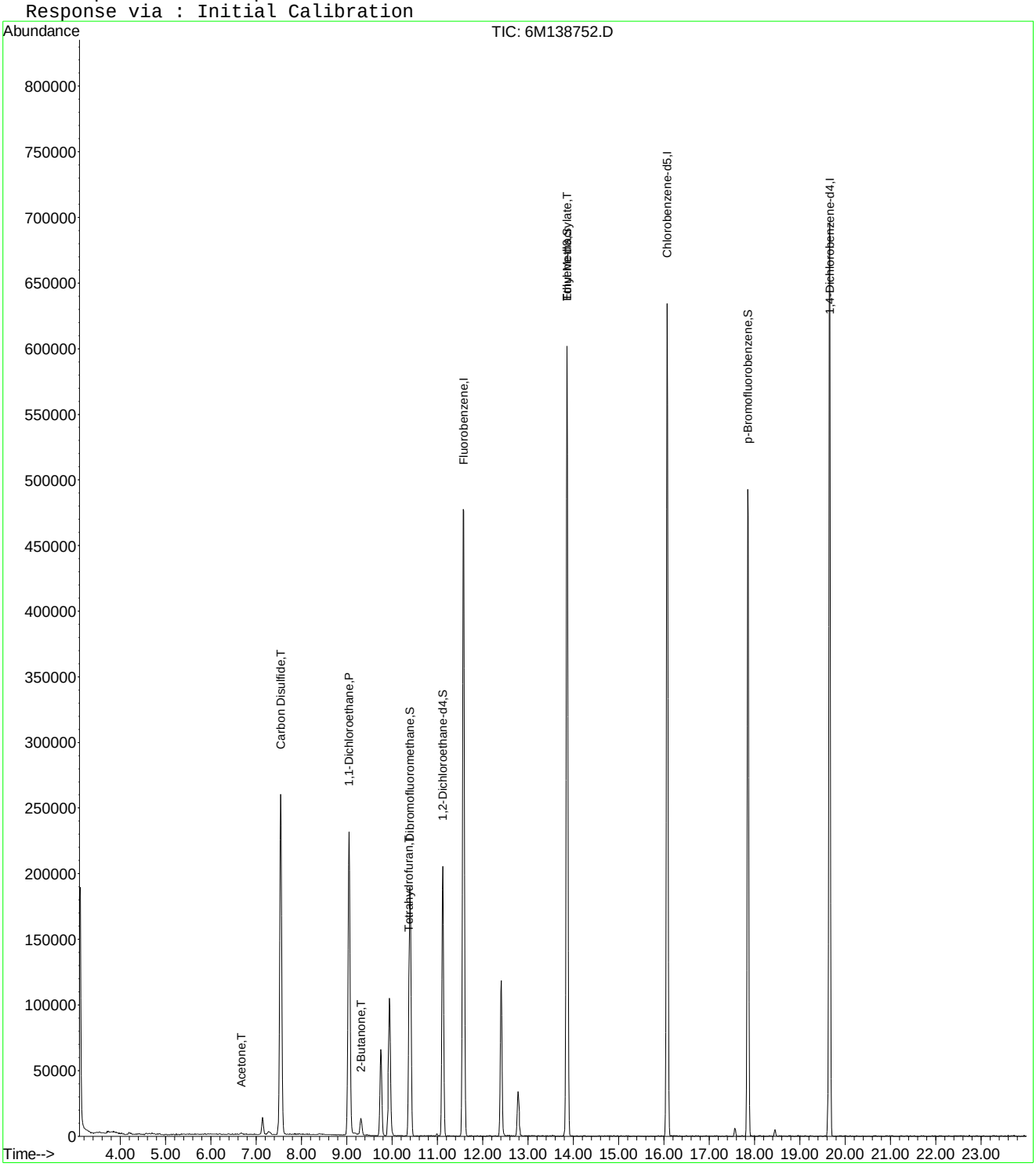

6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:54 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	15.4242 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	18.5457 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	17.5823 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.6403 ug/L	93
6) Methacrylonitrile	9.93	67	42708	17.5719 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	22.9203 ug/L #	85
8) 1-Butanol	10.98	41	982	6.5662 ug/L #	52
9) Methyl methacrylate	12.41	41	95824	15.2291 ug/L	81
10) 2-Nitropropane	12.78	43	34207	18.4403 ug/L	92
13) Cyclohexanone	17.57	55	4053	4.7763 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Mon Apr 25 15:45:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

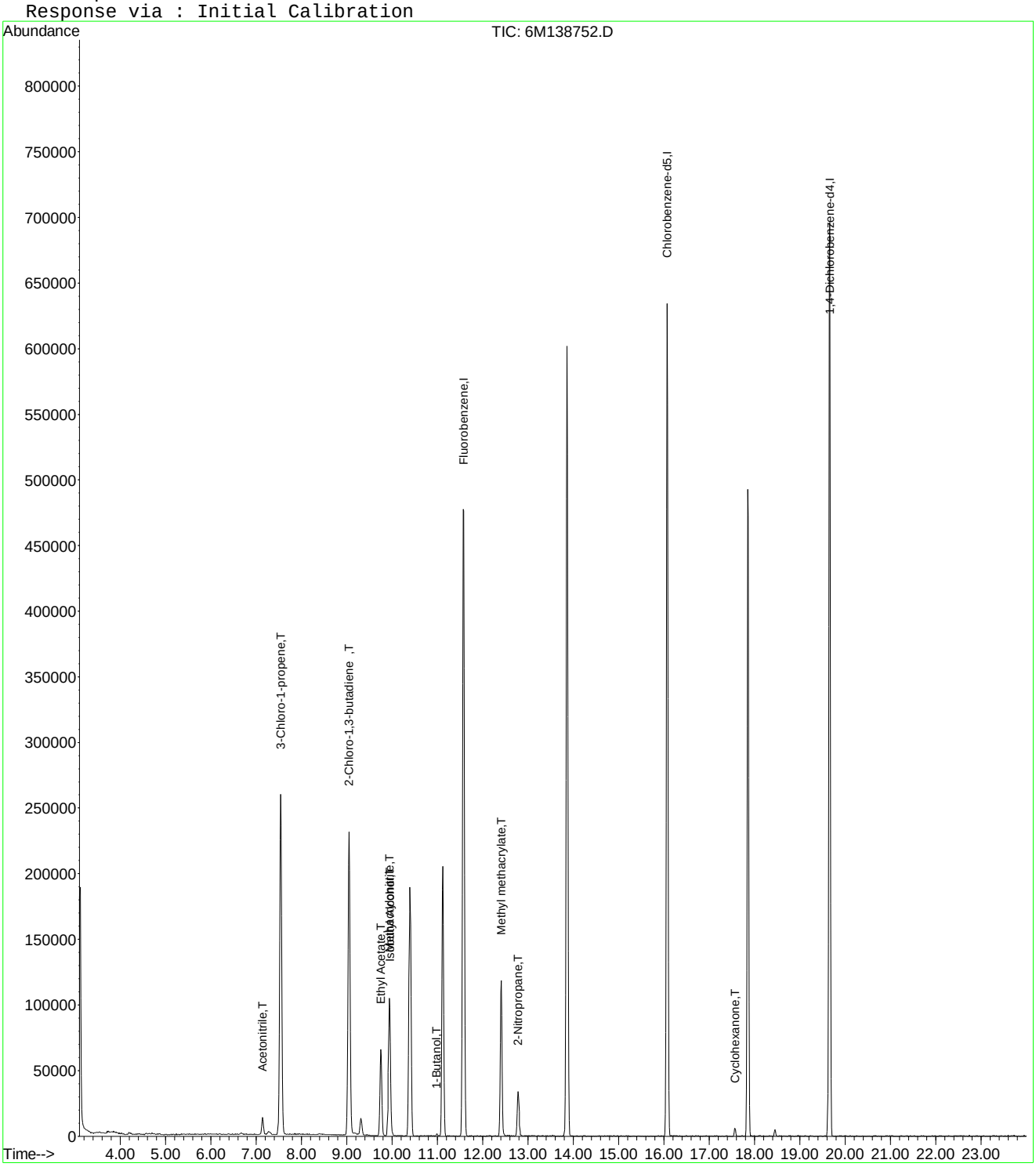

6M138752.D A9FOOWT.M Mon Apr 25 15:45:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	19.7725 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	19.9080 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	18.9362 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.3209 ug/L	93
6) Methacrylonitrile	9.93	67	42708	19.2846 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	38.9462 ug/L #	85
9) Methyl methacrylate	12.41	41	95824	17.7480 ug/L	81
10) 2-Nitropropane	12.78	43	34207	17.0355 ug/L	92
13) Cyclohexanone	17.57	55	4053	13.0852 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

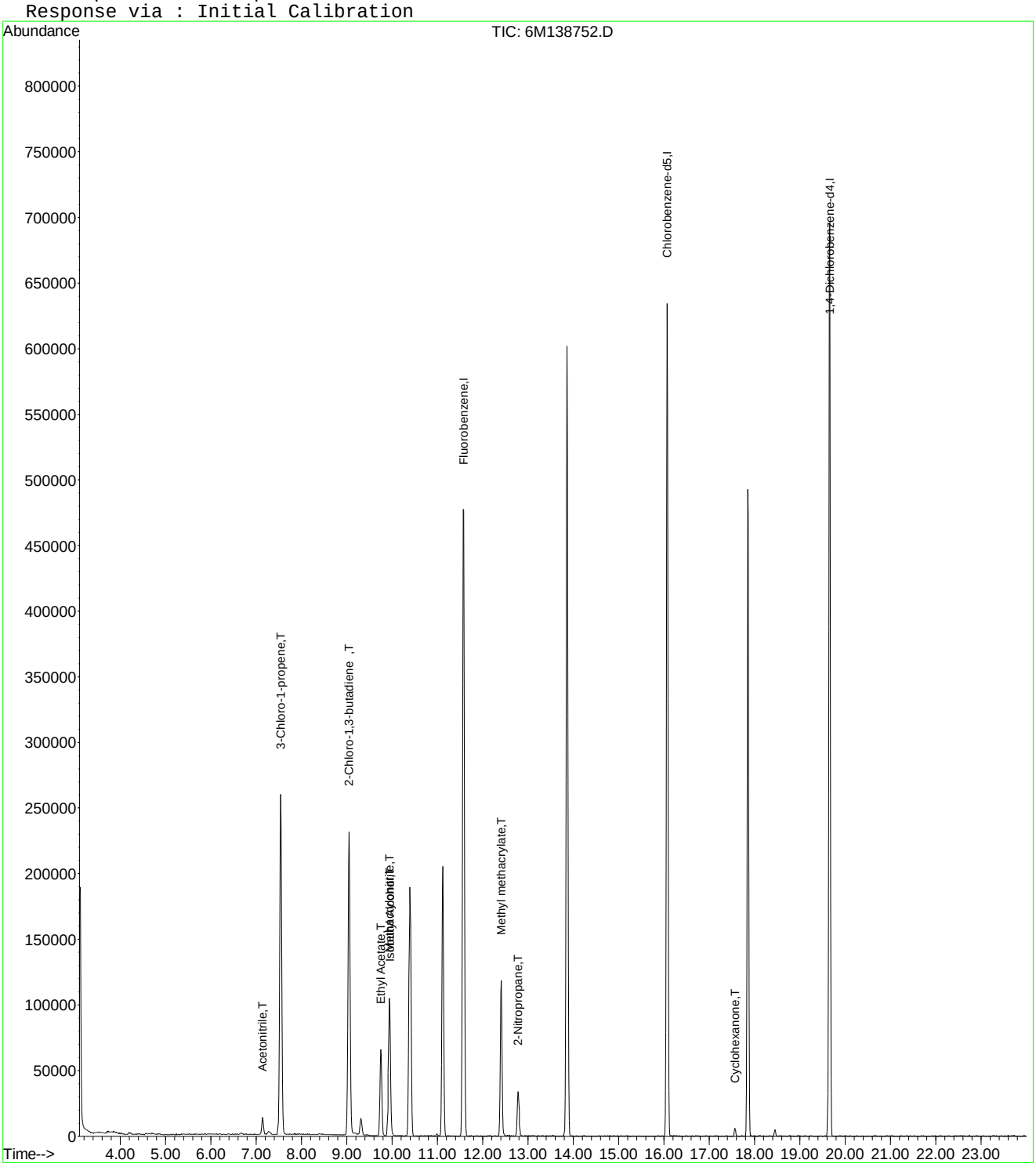

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.7724	1.1	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.9080	0.5	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.9362	5.3	100	0.00
5	T	Ethyl Acetate	20.0000	19.3209	3.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.2846	3.6	100	0.00
7	T	Isobutyl Alcohol	40.0000	38.9462	2.6	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	20.0000	17.7480	11.3	100	0.00
10	T	2-Nitropropane	-1.0000	17.0355	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	13.0852	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138752.D A9FOOWT.M Wed Apr 27 16:04:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172256	27.8132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	208744	27.7711 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.08%		
58) Toluene-d8	13.86	98	553191	26.2235 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	17.85	95	239542	28.1954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.80%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	3732	1.9901 ug/L #	57
20) Carbon Disulfide	7.54	76	220780	11.4508 ug/L #	36
26) Vinyl Acetate	9.04	43	2704	0.2791 ug/L #	8
27) 1,1-Dichloroethane	9.05	63	9803	0.7652 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	152978	7.3579 ug/L #	39
29) 2-Butanone	9.53	43	660	0.2385 ug/L #	52
36) Tetrahydrofuran	10.37	42	3746	2.0774 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1423	0.2030 ug/L #	9

(#) = qualifier out of range (m) = manual integration
6M138753.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

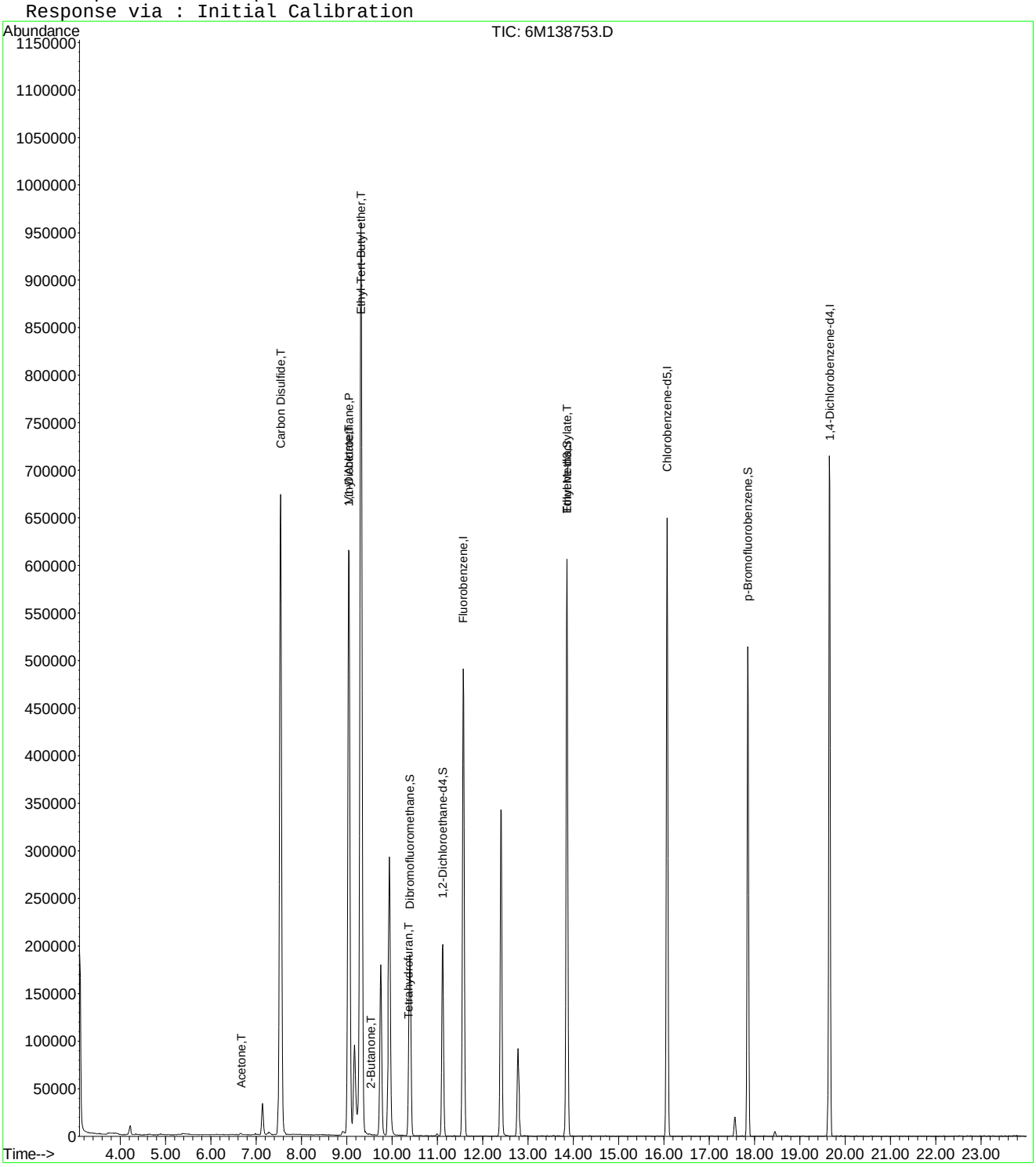

6M138753.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:55 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	40.3072 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	48.9454 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	48.3496 ug/L	83
5) Ethyl Acetate	9.75	43	336975	52.8234 ug/L	93
6) Methacrylonitrile	9.94	67	119267	48.6097 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	57.3741 ug/L #	99
8) 1-Butanol	10.98	41	1474	9.7632 ug/L	77
9) Methyl methacrylate	12.40	41	279157	43.9482 ug/L	81
10) 2-Nitropropane	12.79	43	95327	50.9052 ug/L	94
13) Cyclohexanone	17.56	55	13241	15.2363 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Mon Apr 25 15:45:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

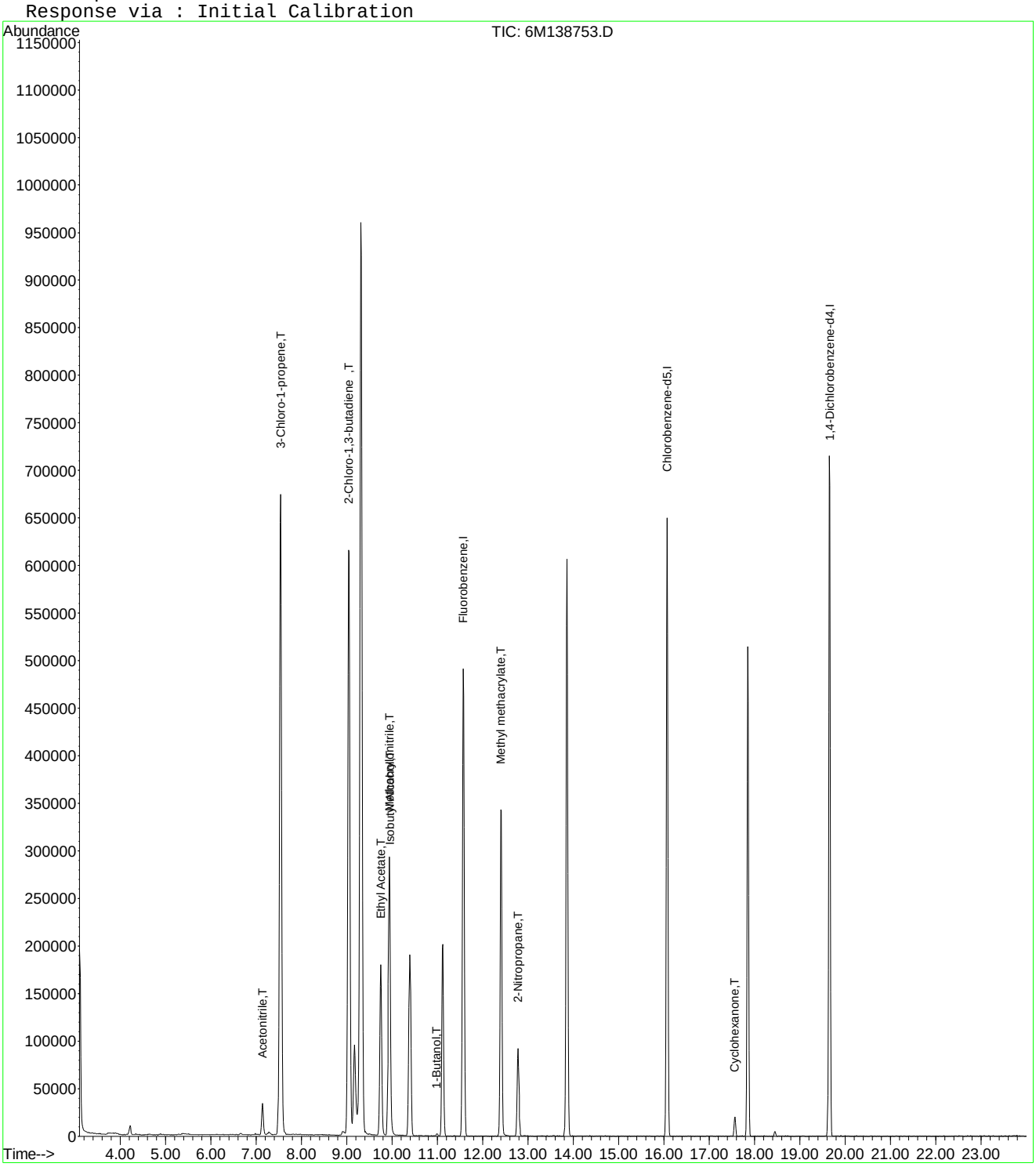

6M138753.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	51.6701 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	52.5409 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	52.0726 ug/L	83
5) Ethyl Acetate	9.75	43	336975	51.9646 ug/L	93
6) Methacrylonitrile	9.94	67	119267	53.3476 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	97.4900 ug/L #	99
9) Methyl methacrylate	12.40	41	279157	51.2171 ug/L	81
10) 2-Nitropropane	12.79	43	95327	47.0270 ug/L	94
13) Cyclohexanone	17.56	55	13241	41.7415 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

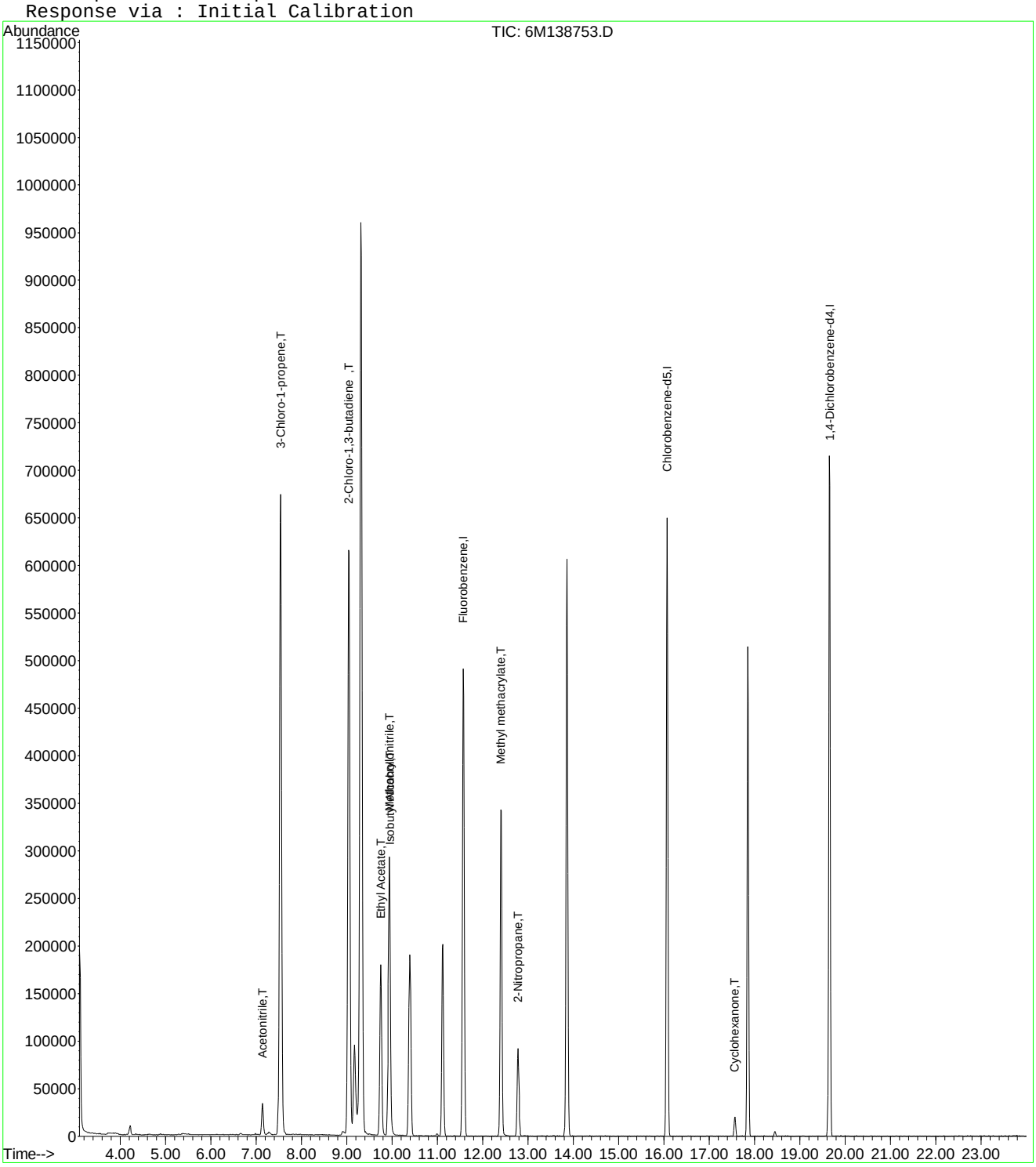

6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.6701	-3.3	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.5409	-5.1	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.0726	-4.1	100	0.00
5	T	Ethyl Acetate	50.0000	51.9646	-3.9	100	0.00
6	T	Methacrylonitrile	50.0000	53.3476	-6.7	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.4900	2.5	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	50.0000	51.2171	-2.4	100	0.00
10	T	2-Nitropropane	50.0000	47.0270	5.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	41.7415	16.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138753.D A9FOOWT.M Wed Apr 27 16:04:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:49 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169577	27.6373 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.56%		
43) 1,2-Dichloroethane-d4	11.12	65	210119	28.2161 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.88%		
58) Toluene-d8	13.86	98	550953	26.1877 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.76%		
80) p-Bromofluorobenzene	17.85	95	239480	28.0420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.16%		

Target Compounds					Qvalue
13) Acetone	6.66	43	6960	3.7463 ug/L	82
16) Dimethyl Sulfide	7.15	62	732	0.1448 ug/L #	1
18) Methyl acetate	7.53	43	1419	0.2750 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	2141	0.1320 ug/L #	72
27) 1,1-Dichloroethane	9.05	63	20725	1.6328 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	76666	3.7220 ug/L #	39
29) 2-Butanone	9.53	43	1176	0.4289 ug/L #	52
34) 1-Bromopropane	10.00	122	702	0.6817 ug/L #	1
36) Tetrahydrofuran	10.35	42	4425	2.4769 ug/L #	60
48) Methylcyclohexane	12.41	83	1461	0.1681 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1083	0.1549 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1910	0.3066 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138754.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

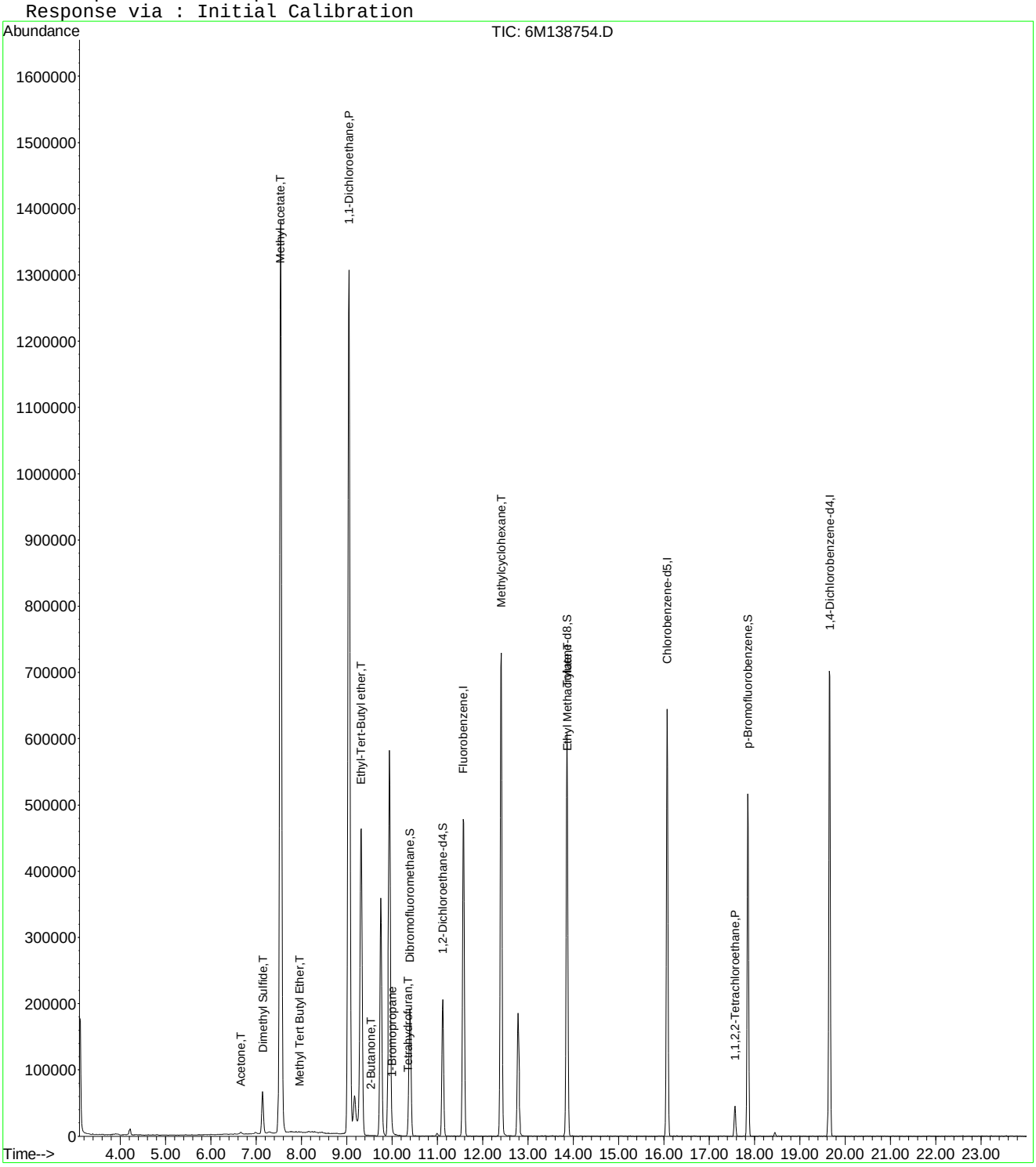

6M138754.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:57 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	467316	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	90880	79.0019	ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	100.3335	ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	102.2884	ug/L	83
5) Ethyl Acetate	9.75	43	673221	106.5217	ug/L	93
6) Methacrylonitrile	9.94	67	237219	97.5895	ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	97.4937	ug/L #	85
8) 1-Butanol	11.00	41	2978	19.9099	ug/L #	64
9) Methyl methacrylate	12.41	41	585839	93.0942	ug/L	80
10) 2-Nitropropane	12.78	43	197598	106.5074	ug/L	97
13) Cyclohexanone	17.57	55	27547	31.5338	ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

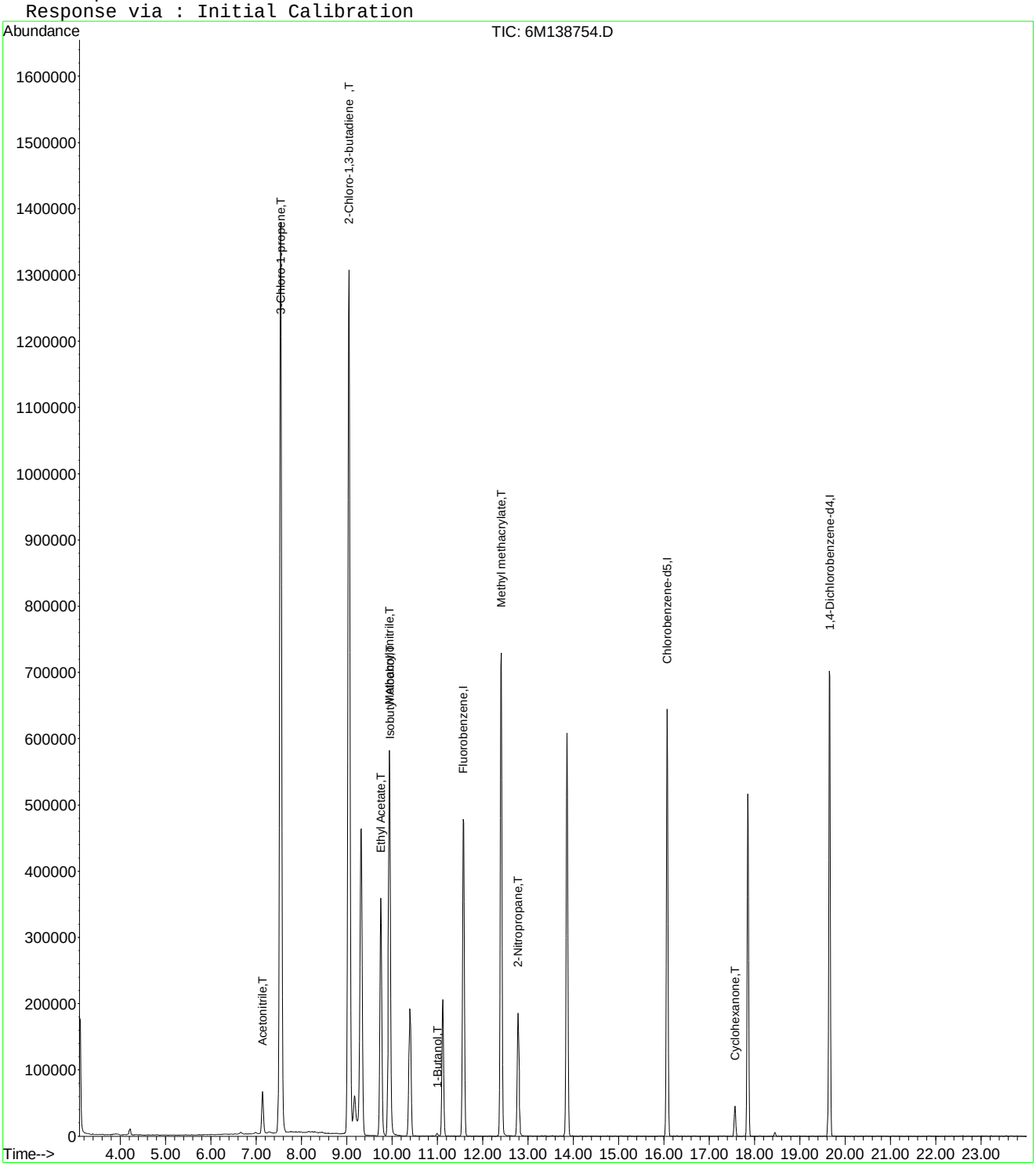

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	101.2731 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	107.7041 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	110.1648 ug/L	83
5) Ethyl Acetate	9.75	43	673221	104.7898 ug/L	93
6) Methacrylonitrile	9.94	67	237219	107.1014 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	165.6613 ug/L #	85
9) Methyl methacrylate	12.41	41	585839	108.4917 ug/L	80
10) 2-Nitropropane	12.78	43	197598	98.3932 ug/L	97
13) Cyclohexanone	17.57	55	27547	86.3902 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

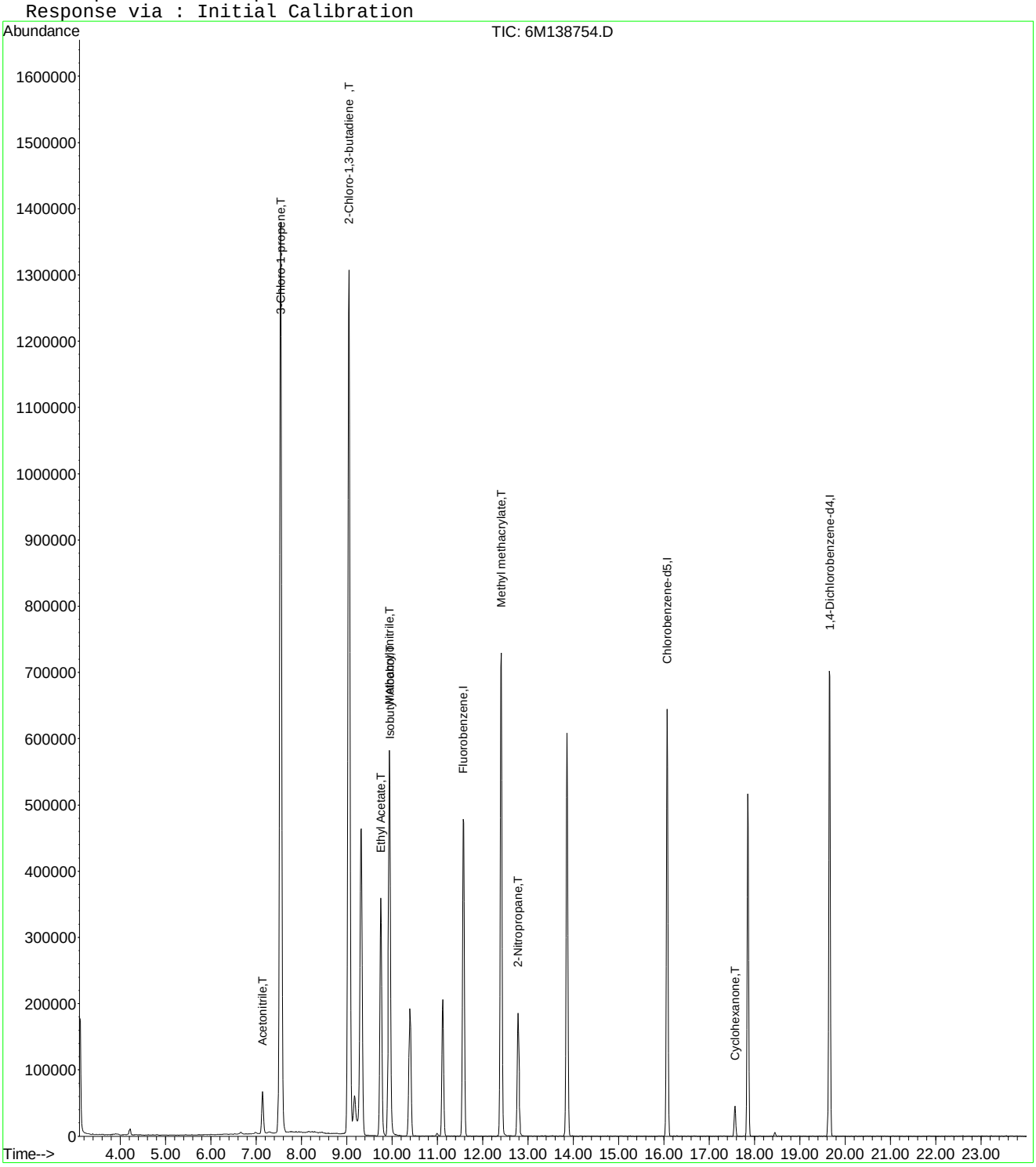

6M138754.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473187	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172341	27.7160 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.88%		
43) 1,2-Dichloroethane-d4	11.12	65	211249	27.9923 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.96%		
58) Toluene-d8	13.86	98	552831	25.9510 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.80%		
80) p-Bromofluorobenzene	17.85	95	247709	28.6419 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 114.56%		

Target Compounds

					Qvalue
9) Diethyl ether	6.31	59	653	0.1225 ug/L #	12
13) Acetone	6.66	43	9406	4.9959 ug/L #	64
15) Tert-Butyl Alcohol	6.98	59	449	0.8301 ug/L #	1
16) Dimethyl Sulfide	7.16	62	680	0.1328 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	3926	0.2388 ug/L	83
24) n-Hexane	8.30	57	1777	0.2040 ug/L	87
27) 1,1-Dichloroethane	9.05	63	41640	3.2372 ug/L #	47
28) Ethyl-Tert-Butyl ether	9.31	59	272648	13.0615 ug/L #	38
29) 2-Butanone	9.51	43	2992	1.0767 ug/L #	67
30) Propionitrile	9.93	54	258	0.3232 ug/L #	57
34) 1-Bromopropane	9.99	122	1417	1.3579 ug/L #	1
36) Tetrahydrofuran	10.37	42	4839	2.6728 ug/L #	62
48) Methylcyclohexane	12.40	83	2976	0.3378 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1202	0.1698 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	5192	0.8231 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138755.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

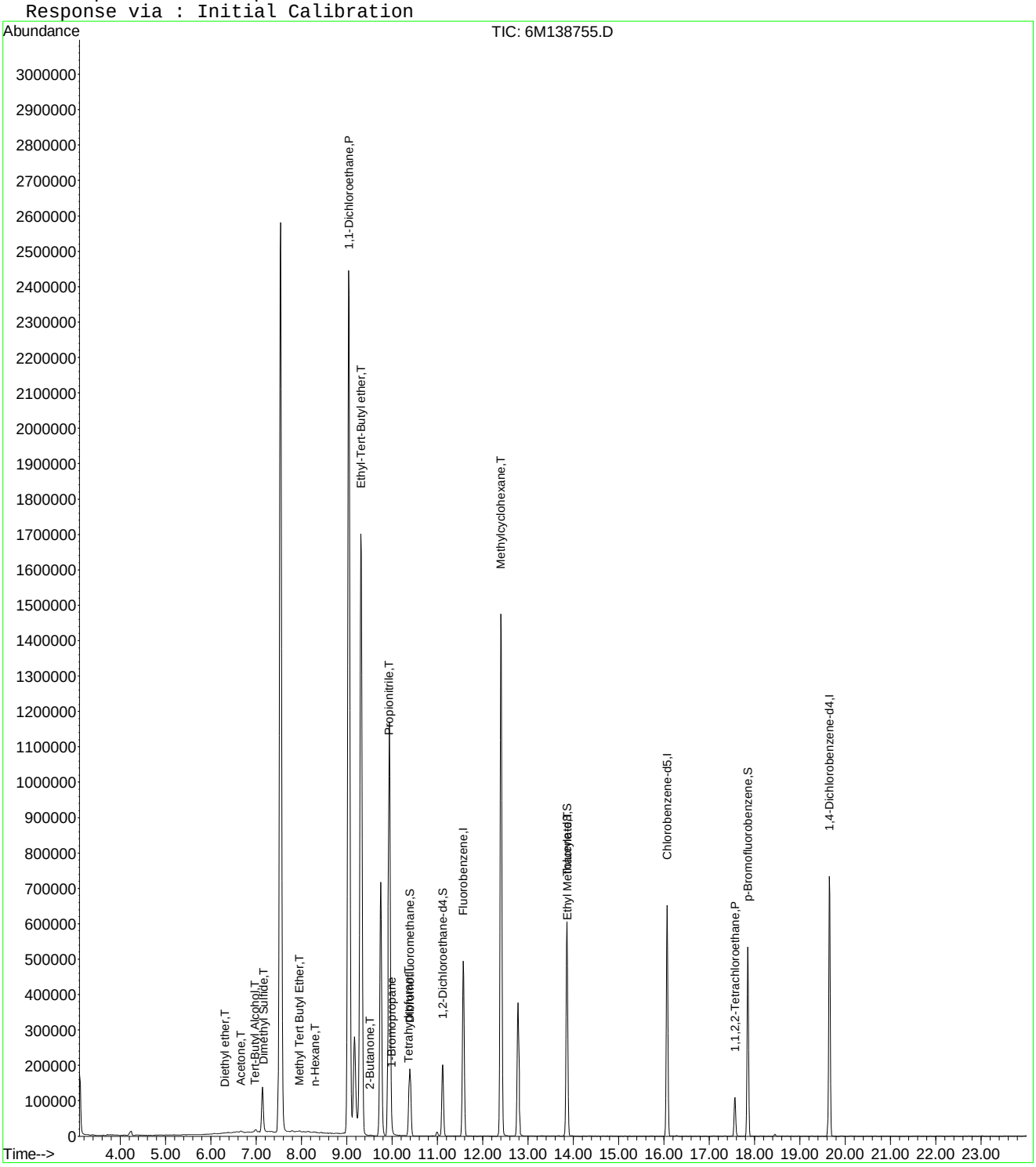

6M138755.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	157.5150	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	189.6828	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	193.4336	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	210.2391	ug/L	94
6) Methacrylonitrile	9.94	67	471538	191.4186	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	206.4864	ug/L #	92
8) 1-Butanol	10.99	41	8815	58.1542	ug/L #	64
9) Methyl methacrylate	12.40	41	1186381	186.0295	ug/L	80
10) 2-Nitropropane	12.79	43	410702	218.4428	ug/L	99
13) Cyclohexanone	17.57	55	67080	75.8254	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

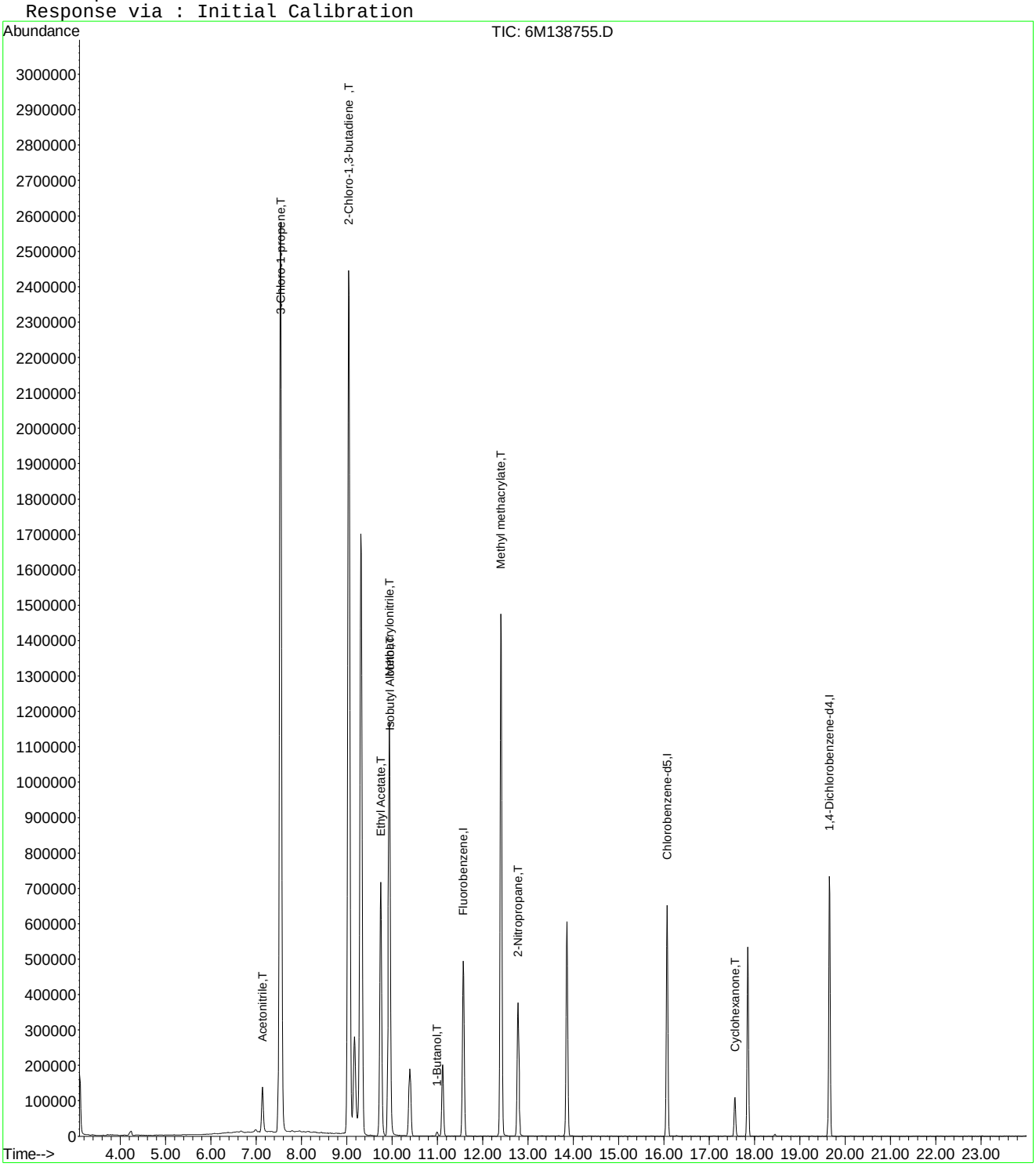

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	201.9195	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	203.6170	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	208.3284	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	206.8209	ug/L	94
6) Methacrylonitrile	9.94	67	471538	210.0757	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	350.8618	ug/L #	92
9) Methyl methacrylate	12.40	41	1186381	216.7982	ug/L	80
10) 2-Nitropropane	12.79	43	410702	201.8008	ug/L	99
13) Cyclohexanone	17.57	55	67080	207.7320	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

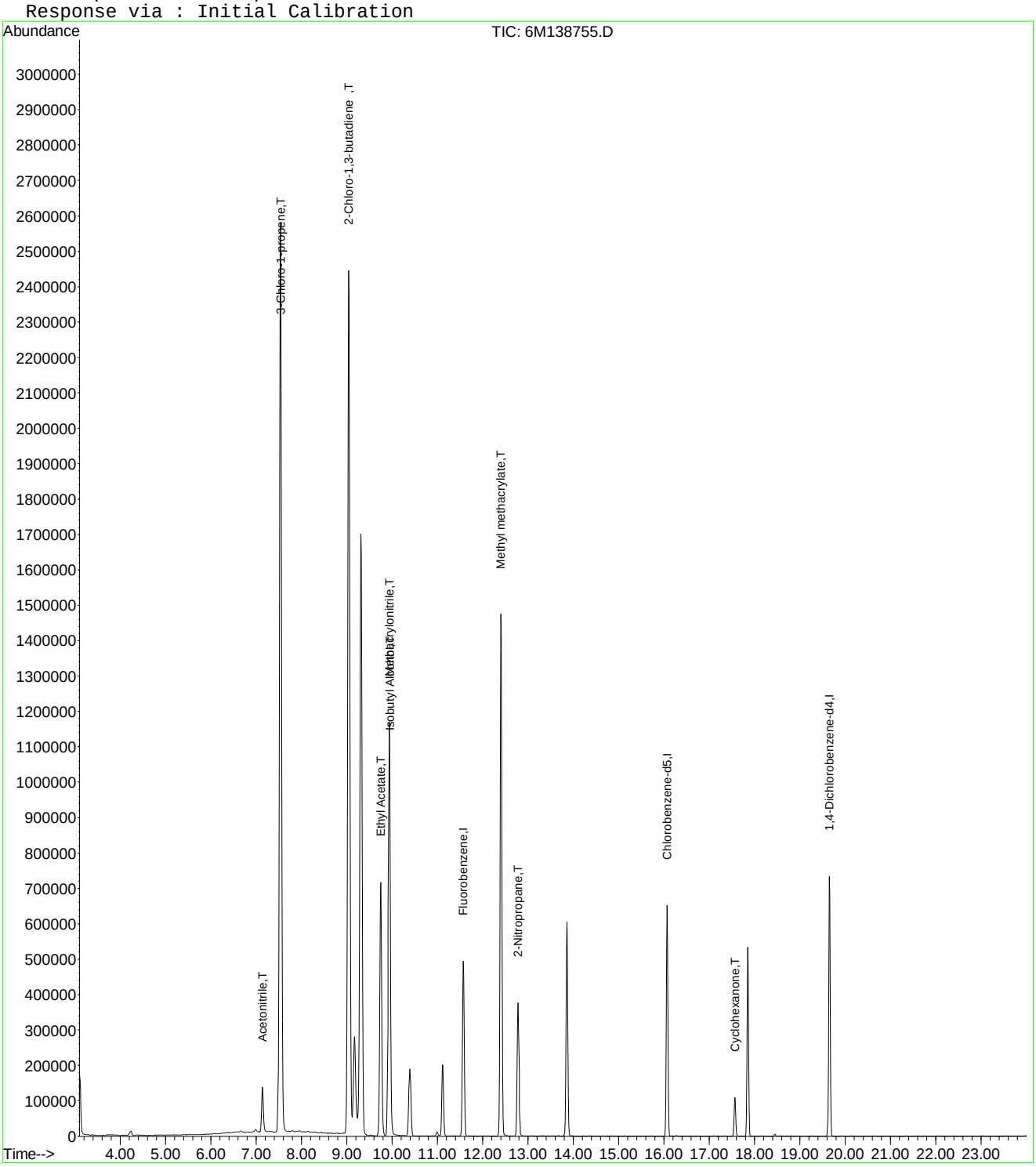

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169983	27.5546 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.20%		
43) 1,2-Dichloroethane-d4	11.12	65	207199	27.6745 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.68%		
58) Toluene-d8	13.86	98	553023	25.9875 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	17.85	95	247939	28.0615 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.24%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	13666	7.3164 ug/L #	77
15) Tert-Butyl Alcohol	7.06	59	467	0.8703 ug/L #	59
16) Dimethyl Sulfide	7.14	62	668	0.1315 ug/L #	1
18) Methyl acetate	7.54	43	3262	0.6289 ug/L #	1
22) Methyl Tert Butyl Ether	7.97	73	10591	0.6492 ug/L #	53
24) n-Hexane	8.28	57	3576	0.4138 ug/L #	56
27) 1,1-Dichloroethane	9.04	63	60743	4.7600 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	155796	7.5231 ug/L #	39
29) 2-Butanone	9.52	43	4002	1.4516 ug/L	97
30) Propionitrile	9.95	54	1113	1.4052 ug/L #	1
34) 1-Bromopropane	9.99	122	1450	1.4006 ug/L #	1
36) Tetrahydrofuran	10.36	42	4902	2.7292 ug/L #	61
48) Methylcyclohexane	12.41	83	4626	0.5293 ug/L #	1
60) Ethyl Methacrylate	13.88	69	1599	0.2261 ug/L #	1
72) Ethylbenzene	16.28	106	1349	0.1427 ug/L	56
73) m-,p-Xylene	16.28	106	1349	0.1203 ug/L	81
79) 1,1,2,2-Tetrachloroethane	17.57	83	8744	1.3569 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

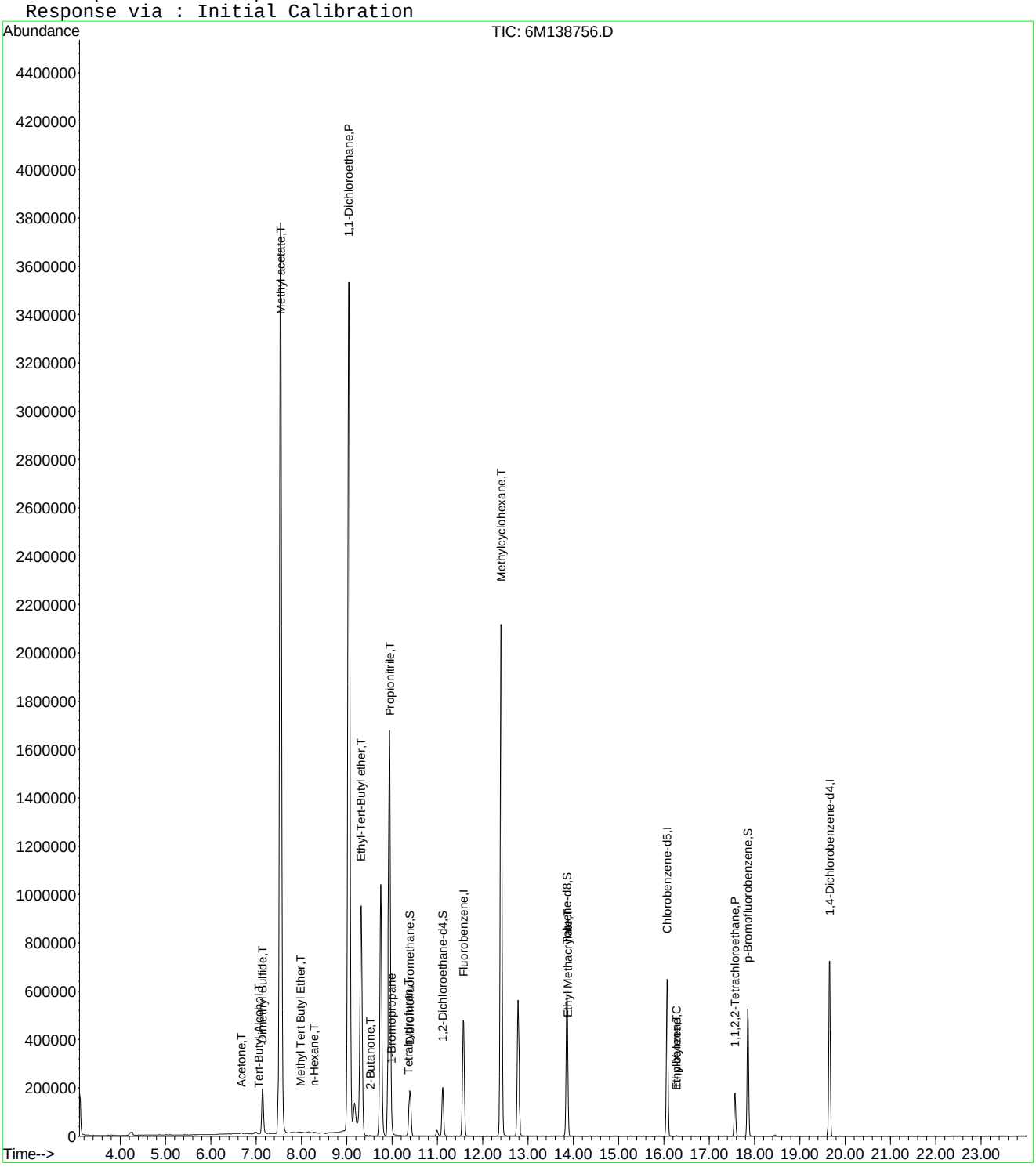

6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	273003	236.0468 ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	278.3729 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	287.5093 ug/L	83
5) Ethyl Acetate	9.75	43	1967613	309.6573 ug/L	94
6) Methacrylonitrile	9.94	67	686612	280.9484 ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	347.5212 ug/L #	90
8) 1-Butanol	10.99	41	18116	120.4672 ug/L	69
9) Methyl methacrylate	12.40	41	1742413	275.3954 ug/L	81
10) 2-Nitropropane	12.78	43	613081	328.6824 ug/L	99
13) Cyclohexanone	17.57	55	106618	117.9661 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

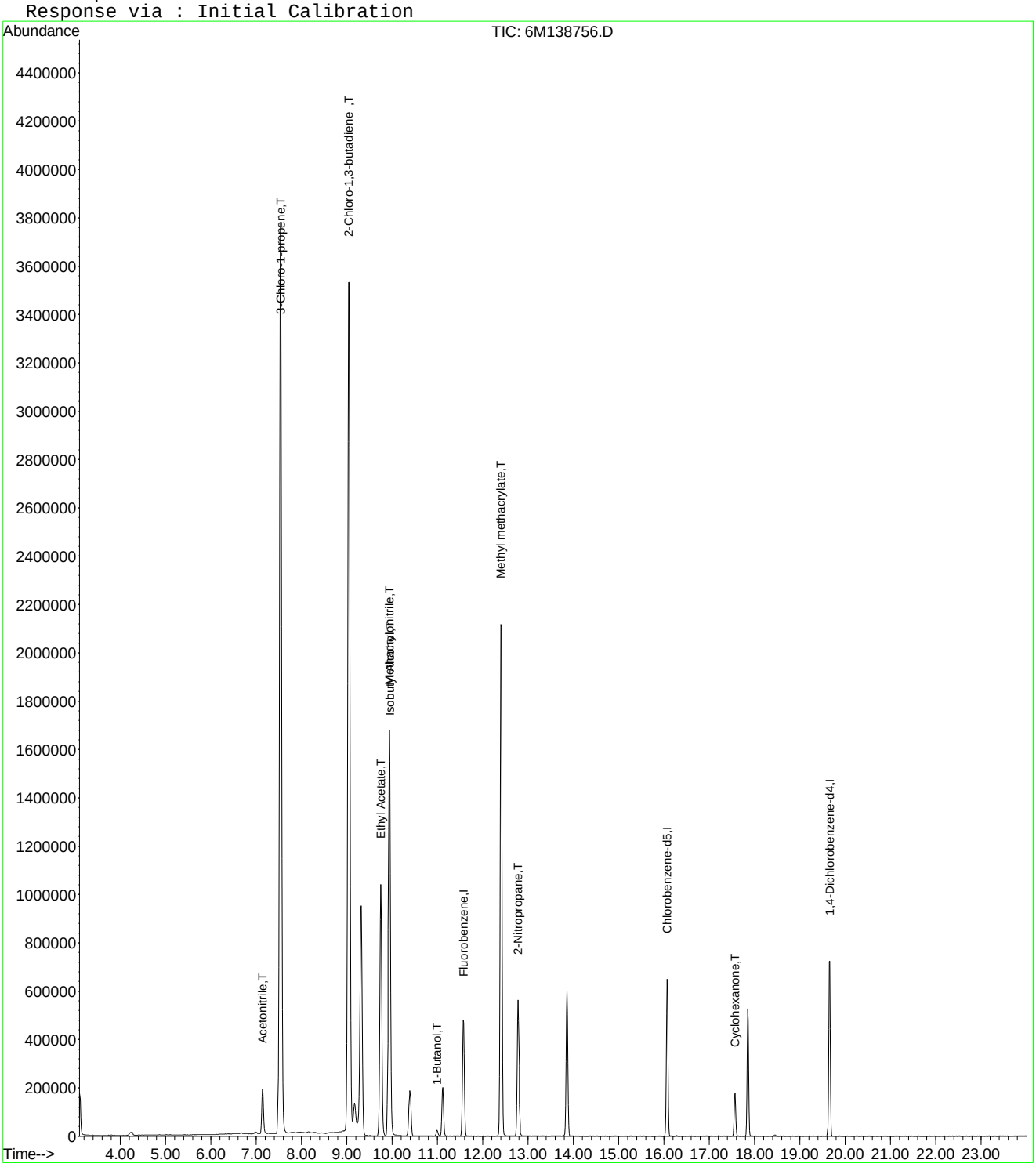

6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00	ug/L	0.01
11) Chlorobenzene-d5	16.07	117	472685	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	273003	302.5900	ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	298.8224	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	309.6481	ug/L	83
5) Ethyl Acetate	9.75	43	1967613	304.6228	ug/L	94
6) Methacrylonitrile	9.94	67	686612	308.3318	ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	590.5081	ug/L #	90
9) Methyl methacrylate	12.40	41	1742413	320.9449	ug/L	81
10) 2-Nitropropane	12.78	43	613081	303.6419	ug/L	99
13) Cyclohexanone	17.57	55	106618	323.1811	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

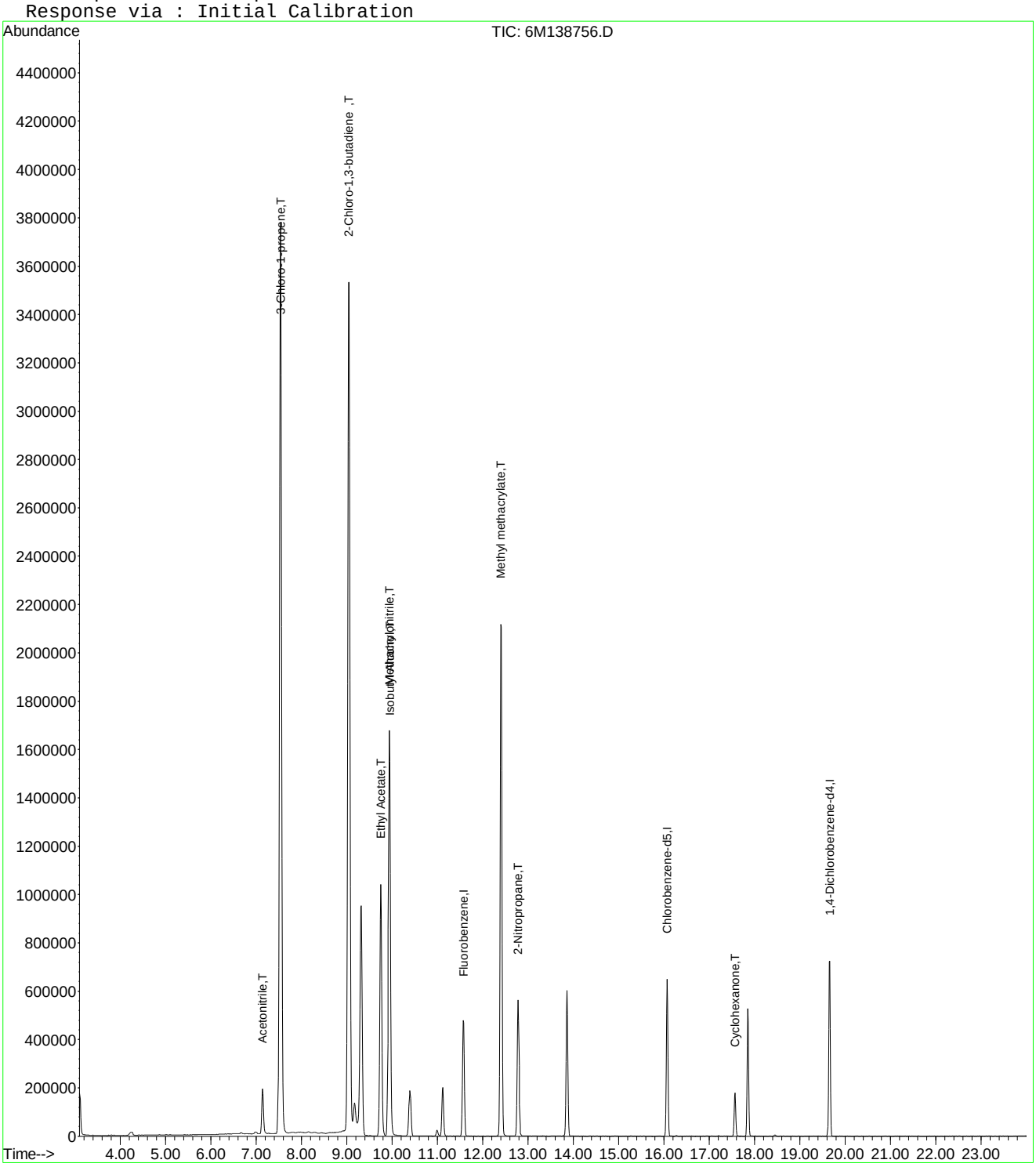

6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:51 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	170708	27.6598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.64%		
43) 1,2-Dichloroethane-d4	11.11	65	208757	27.8702 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.48%		
58) Toluene-d8	13.86	98	554316	25.9150 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	17.85	95	246698	27.9116 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.64%		

Target Compounds					Qvalue
13) Acetone	6.66	43	14063	7.5256 ug/L	99
15) Tert-Butyl Alcohol	7.05	59	807	1.5033 ug/L #	59
16) Dimethyl Sulfide	7.16	62	1034	0.2034 ug/L #	1
18) Methyl acetate	7.48	43	1103	0.2125 ug/L #	60
19) Methylene Chloride	7.73	84	1123	0.1699 ug/L #	40
22) Methyl Tert Butyl Ether	7.97	73	18318	1.1224 ug/L #	53
24) n-Hexane	8.28	57	5609	0.6488 ug/L	75
27) 1,1-Dichloroethane	9.04	63	82912	6.4943 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.32	59	139043	6.7111 ug/L #	38
29) 2-Butanone	9.53	43	4129	1.4970 ug/L	86
30) Propionitrile	9.72	54	202	0.2549 ug/L #	1
34) 1-Bromopropane	9.99	122	1978	1.9098 ug/L #	1
36) Tetrahydrofuran	10.37	42	5444	3.0296 ug/L #	63
48) Methylcyclohexane	12.40	83	6593	0.7540 ug/L #	1
60) Ethyl Methacrylate	13.85	69	1165	0.1639 ug/L #	1
73) m-,p-Xylene	16.28	106	1795	0.1593 ug/L	72
79) 1,1,2,2-Tetrachloroethane	17.57	83	12875	1.9973 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138757.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

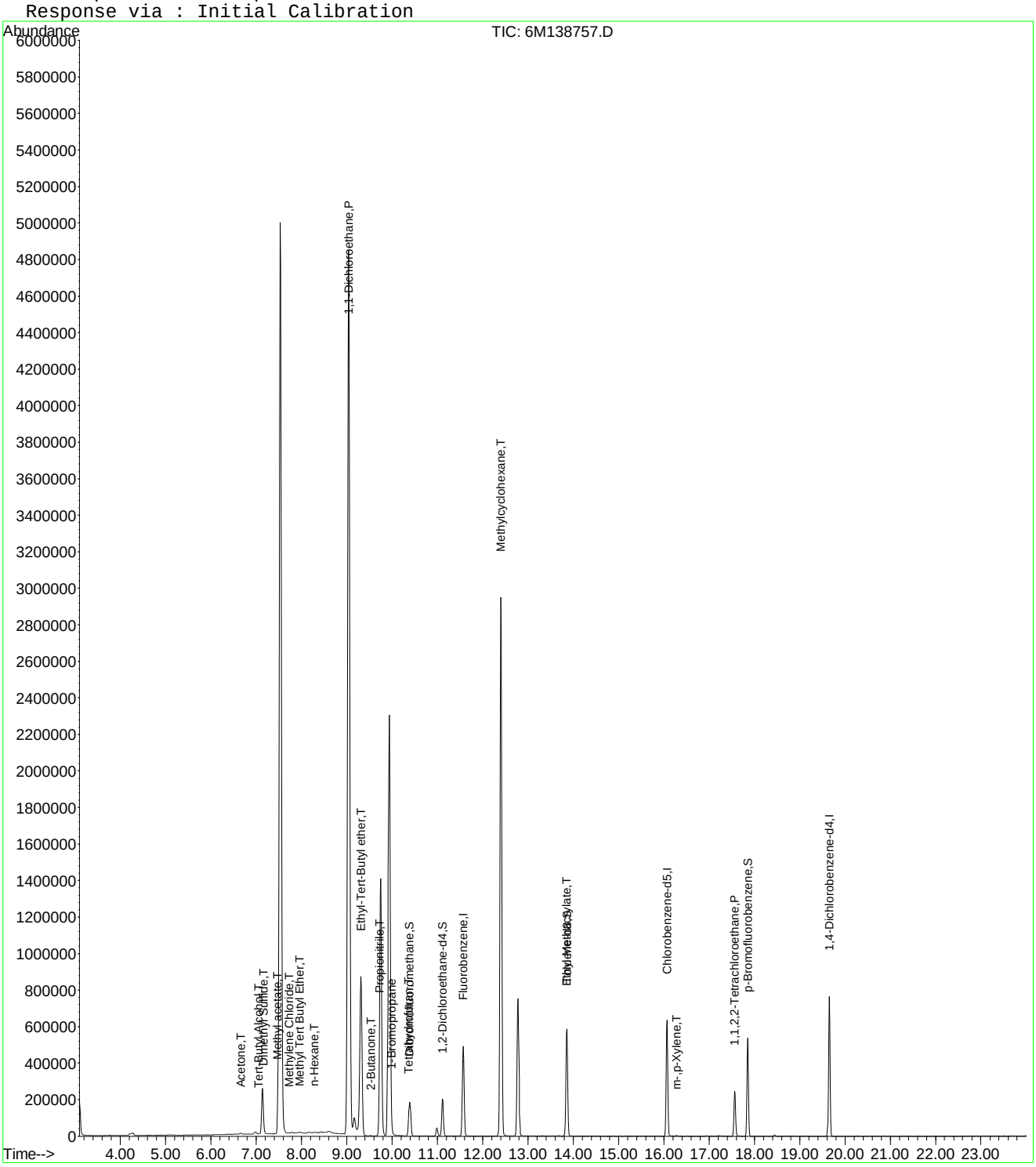

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	318.0524 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	368.4088 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	385.5211 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	423.1975 ug/L	94
6) Methacrylonitrile	9.94	67	929265	380.0675 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	550.6158 ug/L #	89
8) 1-Butanol	10.99	41	29815	198.1744 ug/L	75
9) Methyl methacrylate	12.40	41	2375132	375.2316 ug/L	81
10) 2-Nitropropane	12.79	43	849210	455.0717 ug/L	98
13) Cyclohexanone	17.57	55	149420	165.2683 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Mon Apr 25 15:46:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

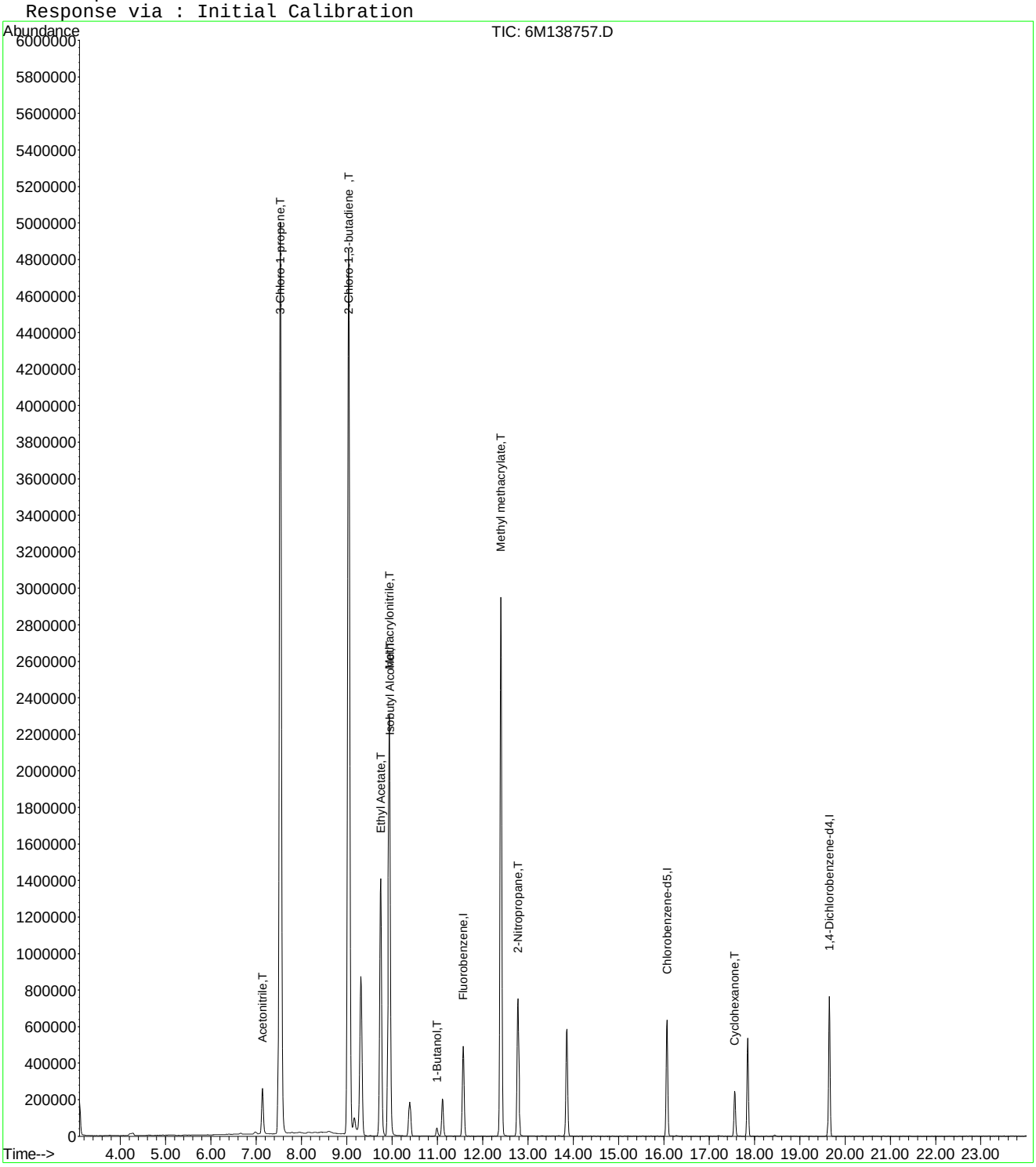

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.08	117	475117	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	368012	407.7137	ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	395.4723	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	415.2070	ug/L	83
5) Ethyl Acetate	9.76	43	2690267	416.3170	ug/L	94
6) Methacrylonitrile	9.94	67	929265	417.1119	ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	935.6065	ug/L #	89
9) Methyl methacrylate	12.40	41	2375132	437.2937	ug/L	81
10) 2-Nitropropane	12.79	43	849210	420.4022	ug/L	98
13) Cyclohexanone	17.57	55	149420	452.7705	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

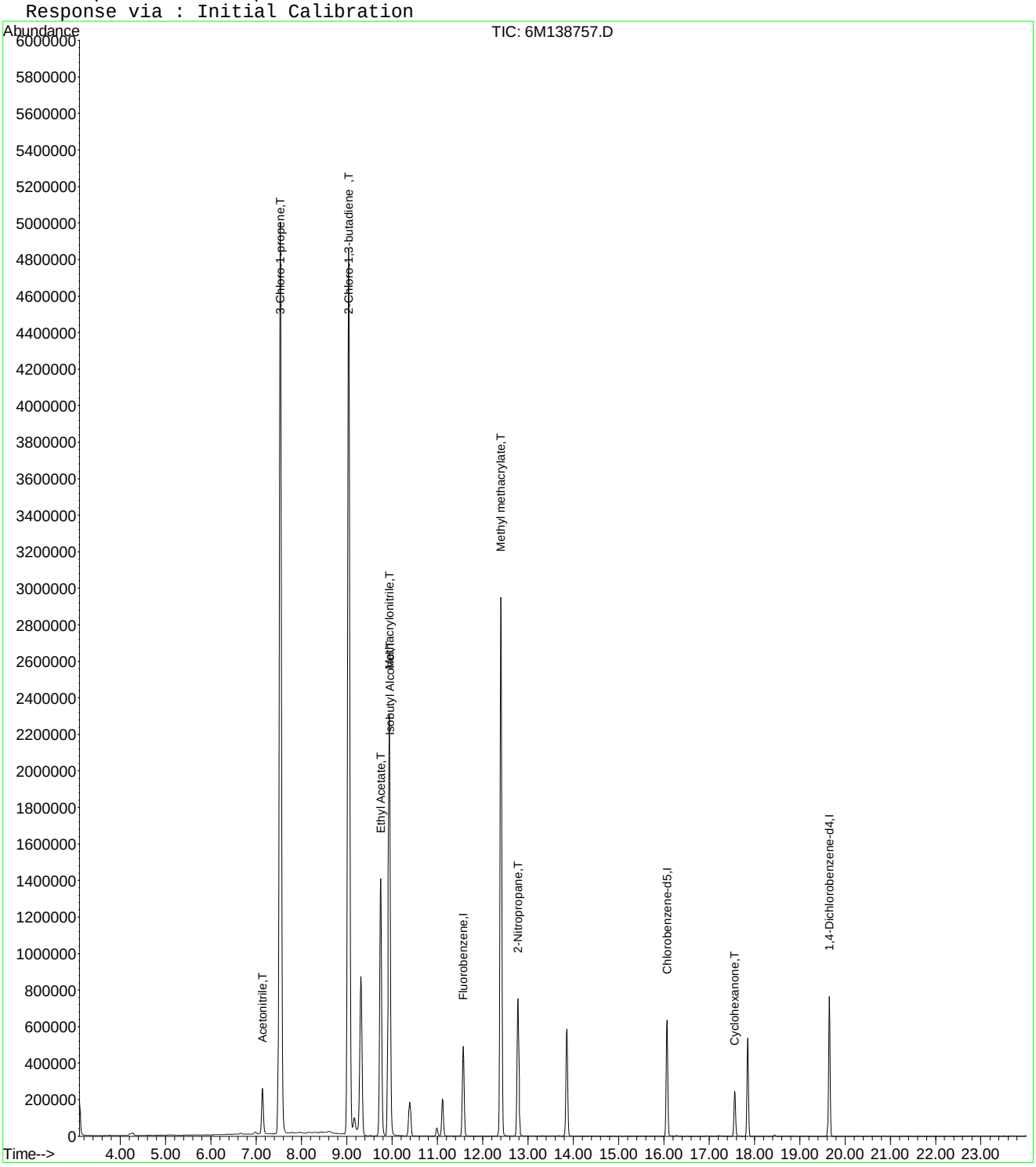

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:52 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	485048	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	175239	27.7556 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.04%		
43) 1,2-Dichloroethane-d4	11.12	65	210644	27.4898 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.96%		
58) Toluene-d8	13.86	98	563297	25.7957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	17.85	95	249406	27.7824 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.12%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	15233	7.9684 ug/L	89
15) Tert-Butyl Alcohol	7.06	59	370	0.6737 ug/L #	59
18) Methyl acetate	7.46	43	1079	0.2032 ug/L #	34
19) Methylene Chloride	7.73	84	1471	0.2176 ug/L	66
20) Carbon Disulfide	7.78	76	2765	0.1407 ug/L #	74
22) Methyl Tert Butyl Ether	7.96	73	25284	1.5144 ug/L #	53
24) n-Hexane	8.28	57	5266	0.5954 ug/L	97
27) 1,1-Dichloroethane	9.05	63	105121	8.0488 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	124099	5.8551 ug/L #	39
29) 2-Butanone	9.52	43	4475	1.5860 ug/L #	72
30) Propionitrile	9.71	54	473	0.5835 ug/L #	1
34) 1-Bromopropane	10.00	122	2117	1.9980 ug/L #	1
36) Tetrahydrofuran	10.36	42	5652	3.0747 ug/L #	54
48) Methylcyclohexane	12.40	83	8011	0.8956 ug/L #	1
59) Toluene	13.98	91	3373	0.1249 ug/L	84
60) Ethyl Methacrylate	13.87	69	1585	0.2184 ug/L #	1
73) m-,p-Xylene	16.28	106	2521	0.2191 ug/L	79
79) 1,1,2,2-Tetrachloroethane	17.57	83	14350	2.1917 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

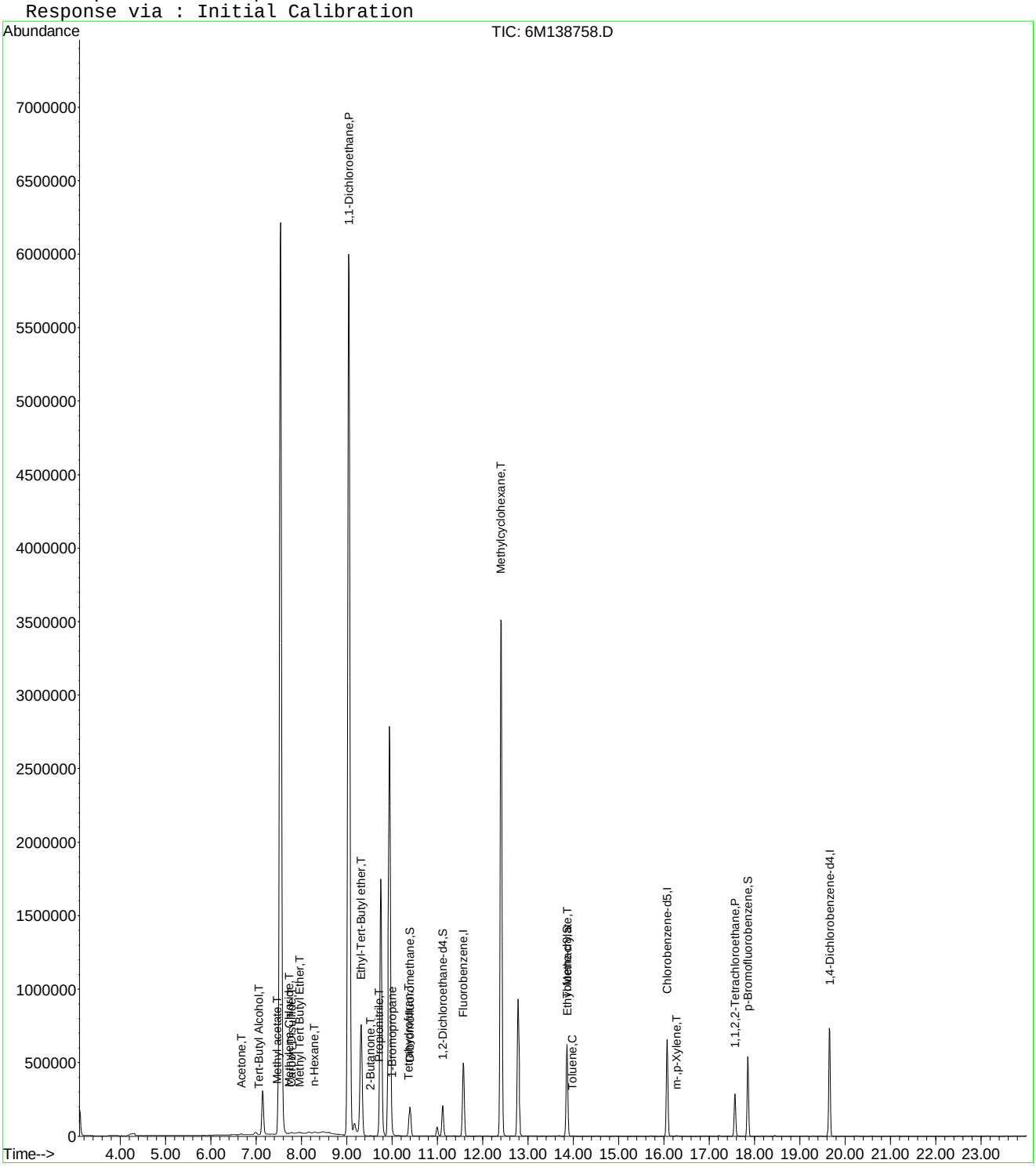

6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	379.8136	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	449.8223	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	474.8265	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	508.5794	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	457.8027	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	701.6799	ug/L #	90
8) 1-Butanol	10.99	41	42236	274.4224	ug/L	75
9) Methyl methacrylate	12.40	41	2914815	450.1389	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	543.0629	ug/L	99
13) Cyclohexanone	17.57	55	176545	192.2558	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

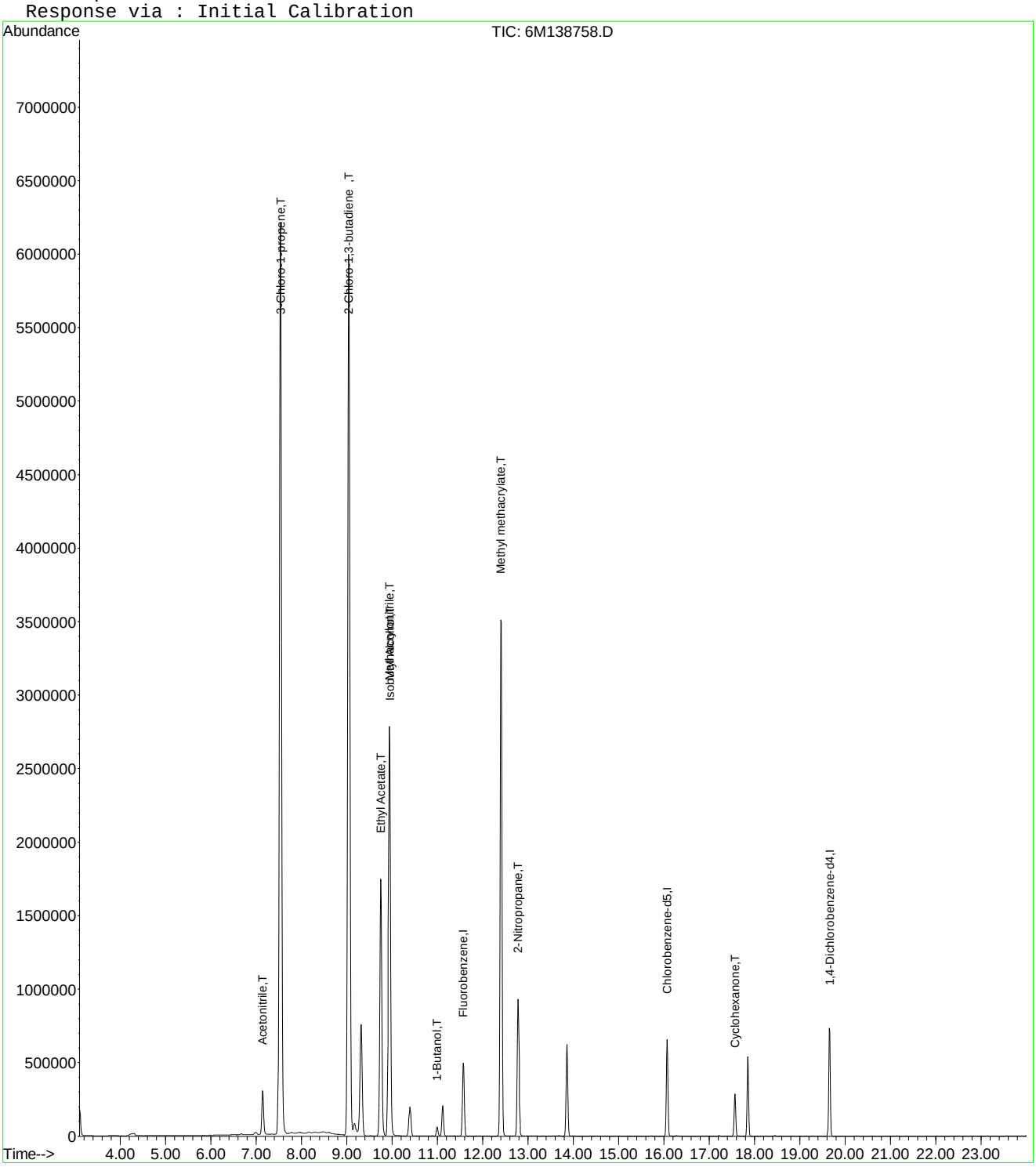

6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	486.8858	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	482.8665	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	511.3891	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	500.3107	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	502.4237	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	1192.2947	ug/L #	90
9) Methyl methacrylate	12.40	41	2914815	524.5904	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	501.6898	ug/L	99
13) Cyclohexanone	17.57	55	176545	526.7057	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

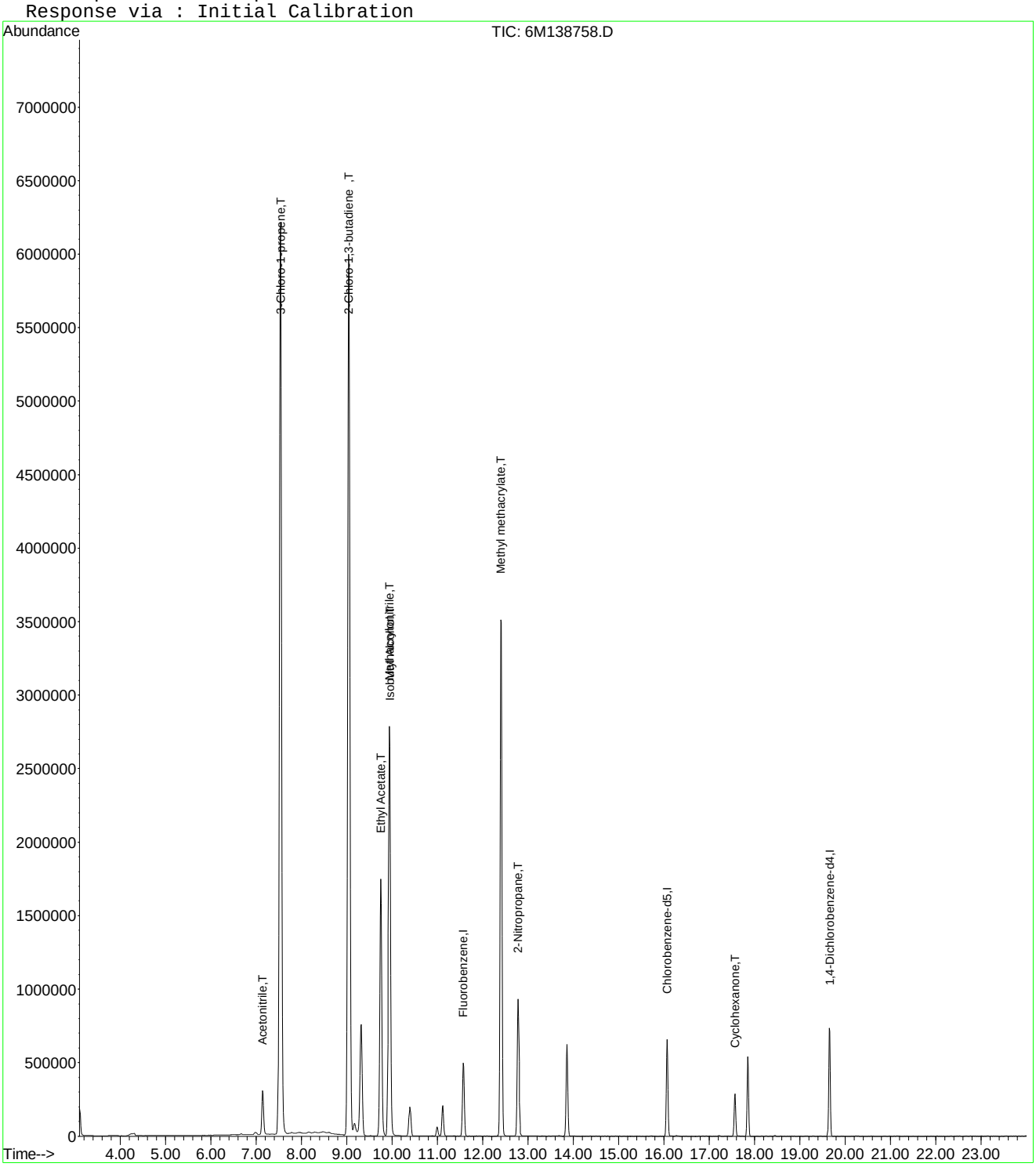

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:54 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.40	111	171708	27.8099 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	210067	28.0330 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.12%		
58) Toluene-d8	13.86	98	553825	26.0829 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.32%		
80) p-Bromofluorobenzene	17.85	95	243088	28.3441 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 113.36%		

Target Compounds					Qvalue
5) 1,3-Butadiene	4.21	54	367749	92.2302 ug/L	88
9) Diethyl ether	6.30	59	700386	132.3612 ug/L	92
13) Acetone	6.67	43	6570	3.5143 ug/L	81
16) Dimethyl Sulfide	7.14	62	2726	0.5361 ug/L #	1
20) Carbon Disulfide	7.54	76	432674	22.5096 ug/L #	36
22) Methyl Tert Butyl Ether	7.97	73	2916	0.1786 ug/L #	53
26) Vinyl Acetate	9.05	43	5230	0.5414 ug/L #	1
27) 1,1-Dichloroethane	9.04	63	22472	1.7594 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.32	59	4063	0.1960 ug/L #	35
29) 2-Butanone	9.52	43	6076	2.2019 ug/L #	66
30) Propionitrile	9.64	54	91341	115.2239 ug/L	96
36) Tetrahydrofuran	10.36	42	4030	2.2418 ug/L #	52
39) Cyclohexane	10.69	56	2387	0.2138 ug/L	79
48) Methylcyclohexane	12.40	83	1353	0.1547 ug/L #	1
50) 1,4-Dioxane	12.73	88	9231	177.0935 ug/L	71
60) Ethyl Methacrylate	13.86	69	1222	0.1732 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1146	0.1832 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

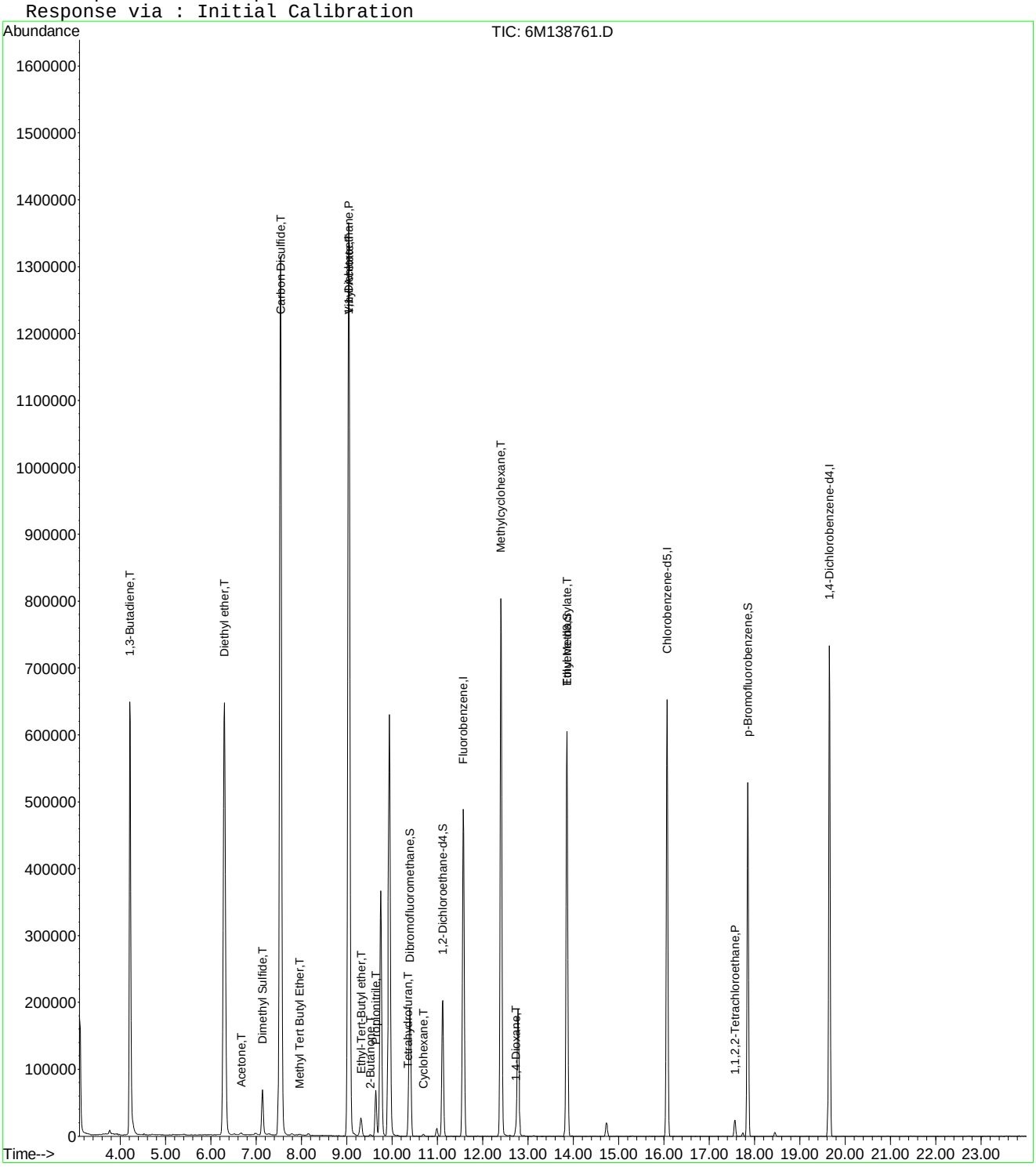

6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	96564	83.4191 ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	96.0797 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	108.7756 ug/L	83
5) Ethyl Acetate	9.75	43	691566	108.7414 ug/L	93
6) Methacrylonitrile	9.94	67	252030	103.0355 ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	146.2409 ug/L #	93
8) 1-Butanol	10.99	41	7584	50.3877 ug/L	72
9) Methyl methacrylate	12.40	41	635574	100.3670 ug/L	81
10) 2-Nitropropane	12.79	43	211020	113.0321 ug/L	98
13) Cyclohexanone	17.57	55	15491	17.6579 ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Mon Apr 25 15:46:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

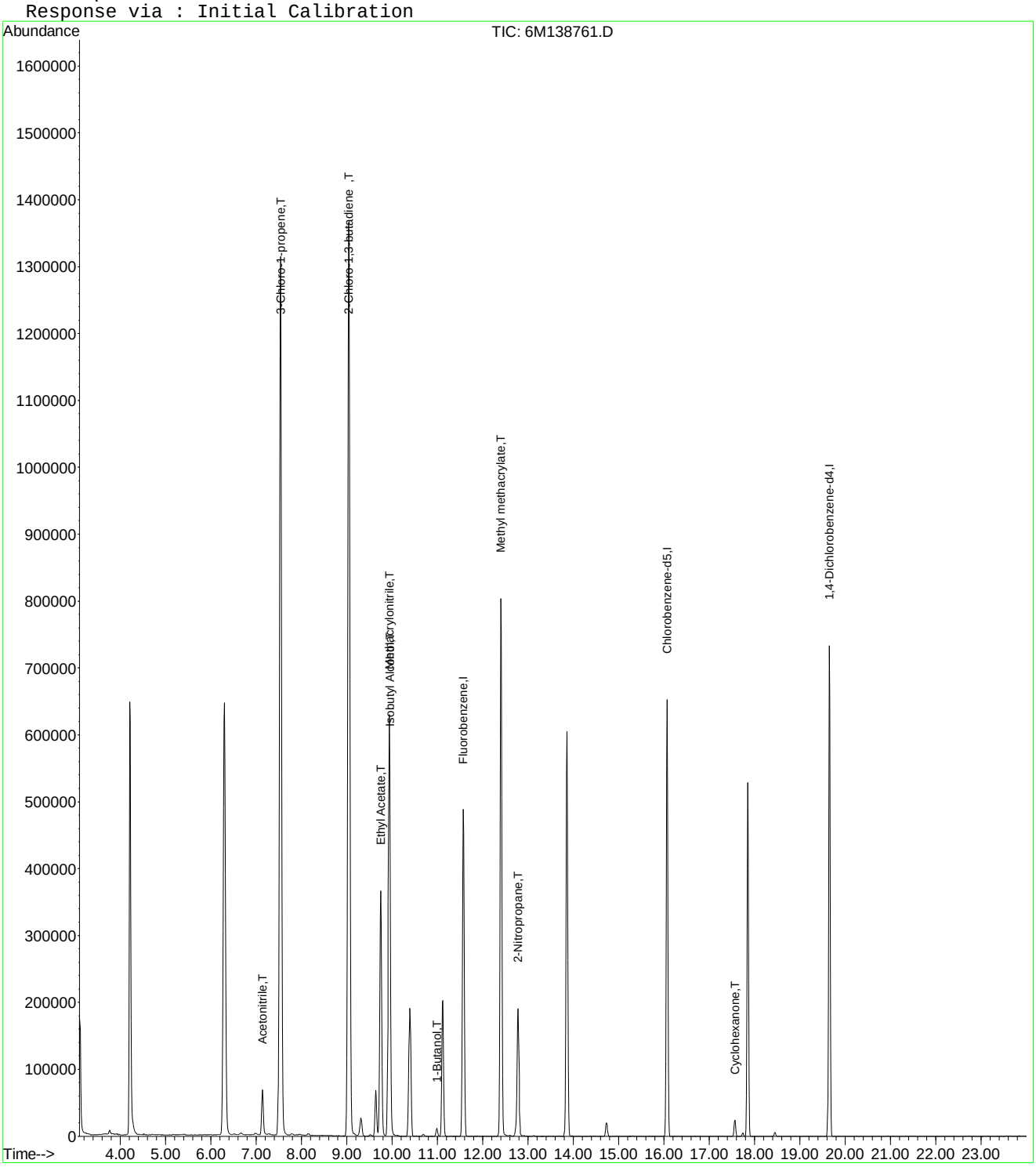

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:02 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	106.9355	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	103.1378	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	117.1516	ug/L	83
5) Ethyl Acetate	9.75	43	691566	106.9734	ug/L	93
6) Methacrylonitrile	9.94	67	252030	113.0781	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	248.4926	ug/L #	93
9) Methyl methacrylate	12.40	41	635574	116.9674	ug/L	81
10) 2-Nitropropane	12.79	43	211020	104.4208	ug/L	98
13) Cyclohexanone	17.57	55	15491	48.3758	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

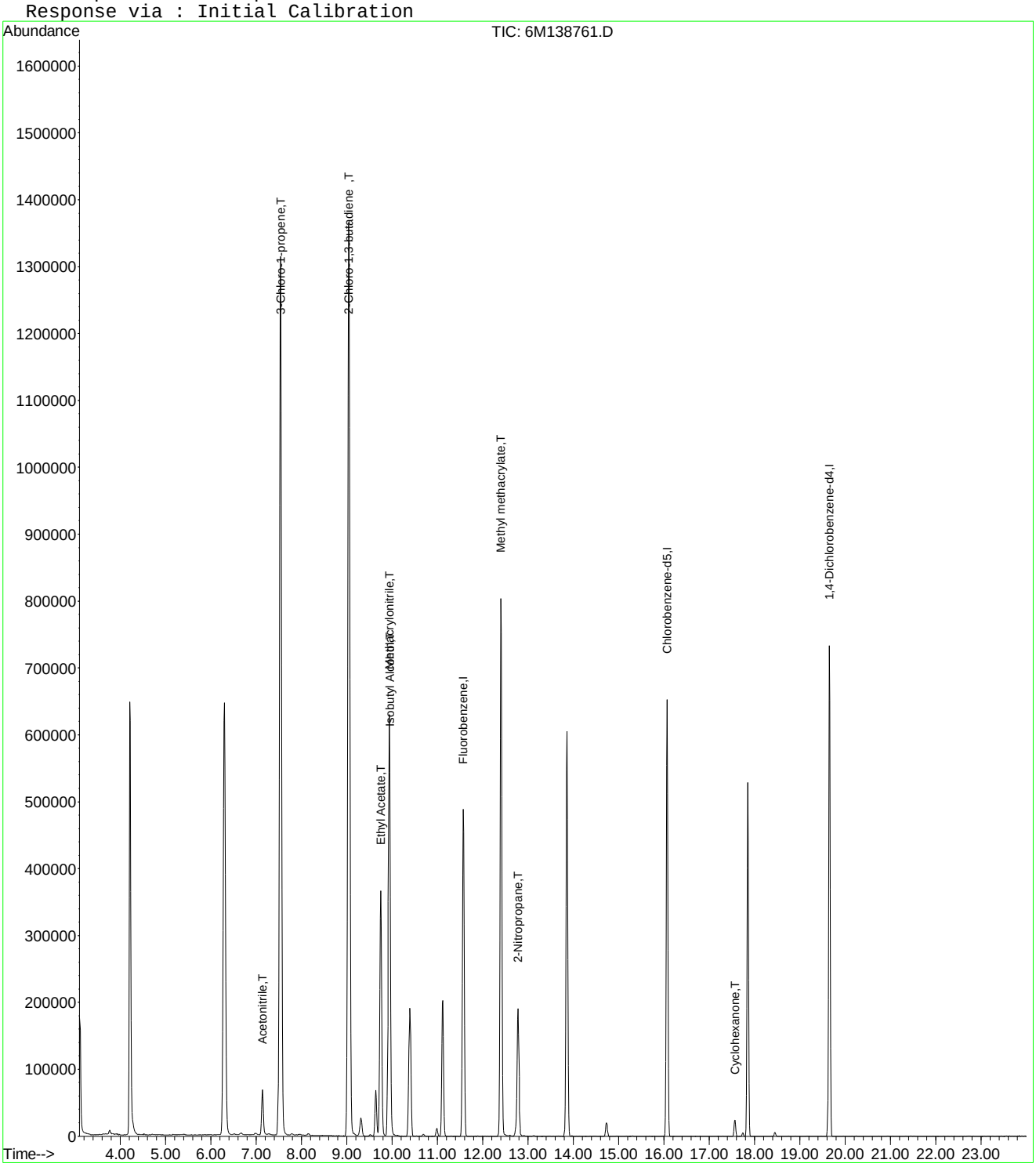

6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	101	0.00
2	T	Acetonitrile	100.0000	106.9355	-6.9	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.1378	-3.1	96	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	117.1516	-17.2	107	0.00
5	T	Ethyl Acetate	100.0000	106.9734	-7.0	103	0.00
6	T	Methacrylonitrile	100.0000	113.0781	-13.1	106	0.00
7	T	Isobutyl Alcohol	200.0000	248.4926	-24.2	151	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	116.9674	-17.0	108	0.00
10	T	2-Nitropropane	100.0000	104.4208	-4.4	107	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	48.3758	51.6	56	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138761.D A9FOOWT.M Wed Apr 27 16:05:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:28 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	782166	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	545154	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	278489	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	4426	0.5577 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.24%#	
43) 1,2-Dichloroethane-d4	10.31	65	6633	0.6621 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.64%#	
58) Toluene-d8	13.04	98	14915	0.5556 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.24%#	
80) p-Bromofluorobenzene	17.02	95	6529	0.5986 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.40%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	7859	0.6011 ug/L #	80
3) Chloromethane	3.36	50	10543	0.7222 ug/L	88
4) Vinyl Chloride	3.57	62	6524	0.8138 ug/L	85
5) 1,3-Butadiene	3.62	54	5236	Below Cal #	53
6) Bromomethane	4.39	94	2681	0.5033 ug/L	75
7) Chloroethane	4.55	64	2218	0.4379 ug/L #	74
8) Trichlorofluoromethane	5.01	101	7455	0.6097 ug/L #	89
10) Isoprene	5.58	67	5099	0.4673 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.81	101	3458	0.4546 ug/L	87
13) Acetone	5.90	43	5483	2.1880 ug/L	88
14) 1,1-Dichloroethene	6.11	61	8367	0.5669 ug/L	89
16) Dimethyl Sulfide	6.39	62	2618	0.4067 ug/L	92
17) Iodomethane	6.65	142	580	1.0028 ug/L #	32
18) Methyl acetate	6.68	43	2212	0.3262 ug/L #	66
19) Methylene Chloride	6.95	84	4491	0.5306 ug/L	87
20) Carbon Disulfide	6.97	76	28617	1.0581 ug/L	97
22) Methyl Tert Butyl Ether	7.17	73	6219	0.2772 ug/L #	56
23) trans-1,2-Dichloroethene	7.42	96	5255	0.6648 ug/L	83
24) n-Hexane	7.50	57	14948	1.1142 ug/L	95
26) Vinyl Acetate	8.09	43	2544	0.1688 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	6467	0.3800 ug/L	91
29) 2-Butanone	8.74	43	738	0.1924 ug/L #	57
31) 2,2-Dichloropropane	8.96	77	4273	0.3328 ug/L	92
32) cis-1,2-Dichloroethene	9.04	96	4541	0.5248 ug/L	70
33) Chloroform	9.26	83	5775	0.3788 ug/L	94
35) Bromochloromethane	9.52	130	2012	0.4327 ug/L	92
36) Tetrahydrofuran	9.55	42	2953	1.1037 ug/L #	55
38) 1,1,1-Trichloroethane	9.86	97	4483	0.3377 ug/L	92
39) Cyclohexane	9.87	56	8253	0.4779 ug/L	90
40) 1,1-Dichloropropene	10.08	75	6696	0.5791 ug/L	91
42) Carbon Tetrachloride	10.23	117	3257	0.2988 ug/L #	92
45) 1,2-Dichloroethane	10.45	62	5310	0.4344 ug/L #	89
46) Benzene	10.48	78	15173	0.4650 ug/L	96
47) Trichloroethene	11.35	130	5387	0.6690 ug/L	99
48) Methylcyclohexane	11.43	83	7364	0.5825 ug/L	88
49) 1,2-Dichloropropane	11.58	63	3158	0.3361 ug/L	79
51) Bromodichloromethane	11.94	83	4017	0.3543 ug/L	95
52) Dibromomethane	12.03	93	2564	0.5639 ug/L	85
53) 2-Chloroethyl Vinyl Ether	12.31	63	1255	0.2664 ug/L #	41
55) cis-1,3-Dichloropropene	12.69	75	6354	0.4827 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M140314.D 8260WTR.M Fri Jul 01 14:20:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:28 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.96	79	2244	0.3062 ug/L #	47
59)	Toluene	13.16	91	16171	0.4977 ug/L	100
60)	Ethyl Methacrylate	13.33	69	2168	0.2345 ug/L	77
62)	trans-1,3-Dichloropropene	13.39	75	6685	0.5786 ug/L	82
63)	1,1,2-Trichloroethane	13.62	97	2098	0.3489 ug/L	91
64)	2-Hexanone	13.58	43	1202	0.2105 ug/L #	54
65)	1,3-Dichloropropane	13.99	76	4378	0.3863 ug/L	85
66)	Tetrachloroethene	14.10	166	4661	0.6020 ug/L	99
67)	Dibromochloromethane	14.41	129	2599	0.3560 ug/L	98
68)	1,2-Dibromoethane	14.71	107	3093	0.5329 ug/L	98
69)	1-Chlorohexane	14.85	91	5951	0.5504 ug/L	88
70)	Chlorobenzene	15.30	112	13354	0.6409 ug/L	99
71)	1,1,1,2-Tetrachloroethane	15.35	131	2310	0.3116 ug/L	94
72)	Ethylbenzene	15.35	106	5305	0.4864 ug/L	85
73)	m-,p-Xylene	15.45	106	13647	1.0353 ug/L	91
74)	o-Xylene	16.11	106	5438	0.4136 ug/L	85
75)	Styrene	16.16	104	10471	0.4734 ug/L	91
76)	Bromoform	16.71	173	1433	0.3165 ug/L #	50
77)	Isopropylbenzene	16.63	105	15560	0.4536 ug/L	92
79)	1,1,2,2-Tetrachloroethane	16.88	83	1987	0.2940 ug/L	77
81)	1,2,3-Trichloropropane	17.10	110	241	0.1203 ug/L #	1
82)	trans-1,4-Dichloro-2-Buten	17.19	53	903	0.3534 ug/L	88
83)	n-Propylbenzene	17.22	91	21456	0.5362 ug/L #	94
84)	Bromobenzene	17.34	156	5484	0.6559 ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	12453	0.4440 ug/L	96
86)	2-Chlorotoluene	17.52	91	13840	0.5114 ug/L	95
87)	4-Chlorotoluene	17.59	91	17422	0.6753 ug/L	95
88)	a-Methylstyrene	17.92	118	6165	0.4370 ug/L	93
89)	tert-Butylbenzene	17.98	134	2101	0.3729 ug/L #	24
90)	1,2,4-Trimethylbenzene	18.05	105	13753	0.4779 ug/L	100
91)	sec-Butylbenzene	18.30	105	18042	0.5374 ug/L	92
92)	p-Isopropyltoluene	18.51	119	14633	0.5114 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	11689	0.7103 ug/L	99
94)	1,4-Dichlorobenzene	18.85	146	12500	0.7513 ug/L	97
95)	n-Butylbenzene	19.12	91	17799	0.6344 ug/L	93
96)	1,2-Dichlorobenzene	19.43	146	9545	0.6178 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	20.62	75	229	0.1730 ug/L #	1
98)	1,2,4-Trichlorobenzene	21.96	180	8749	0.8011 ug/L	91
99)	Hexachlorobutadiene	22.15	225	2944	0.6484 ug/L	95
100)	Naphthalene	22.39	128	14249	0.6384 ug/L	95
101)	1,2,3-Trichlorobenzene	22.76	180	7092	0.7013 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140314.D 8260WTR.M Fri Jul 01 14:20:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:20 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

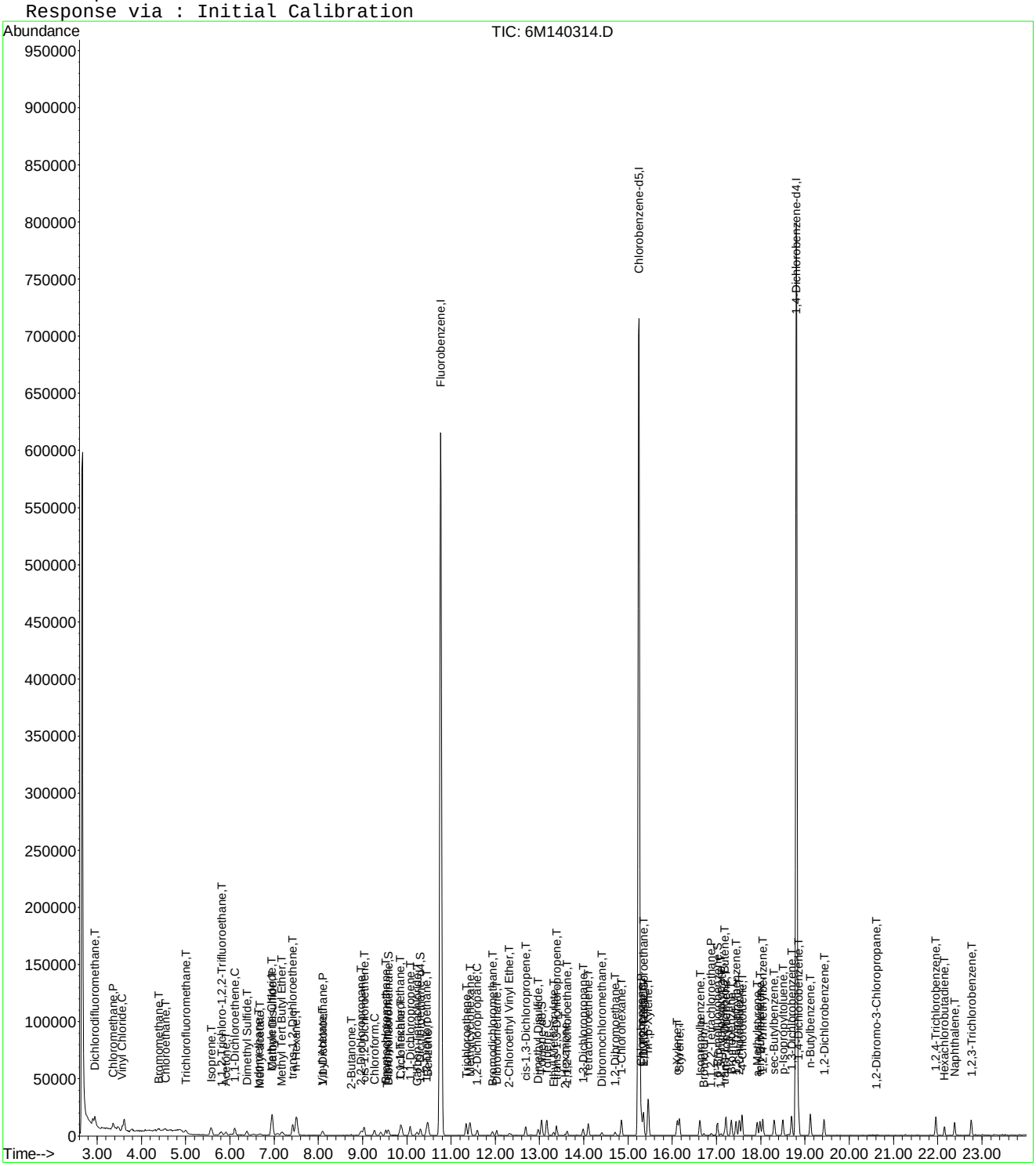

6M140314.D 8260WTR.M Fri Jul 01 14:20:34 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.6011	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.7222	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.8138	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.9896	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.5033	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.4379	0.0	100	0.02
8	T	Trichlorofluoromethane	-1.0000	0.6097	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0280	0.0	100	0.00
10	T	Isoprene	-1.0000	0.4673	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.4546	0.0	100	0.03
13	T	Acetone	-1.0000	2.1880	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5669	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.4067	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.0028	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.3262	0.0	100	-0.01
19	T	Methylene Chloride	-1.0000	0.5306	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	1.0581	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.15#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2772	0.0	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.6648	0.0	100	0.00
24	T	n-Hexane	-1.0000	1.1142	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.90#
26	T	Vinyl Acetate	-1.0000	0.1688	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3800	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.53#
29	T	2-Butanone	-1.0000	0.1924	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.86#
31	T	2,2-Dichloropropane	-1.0000	0.3328	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.5248	0.0	100	0.00
33	C	Chloroform	0.3000	0.3788	-26.3#	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.41#
35	T	Bromochloromethane	-1.0000	0.4327	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.1037	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.5577	0.0	100	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.3377	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.4779	0.0	100	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.5791	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0293	0.0	100	-0.13
42	T	Carbon Tetrachloride	-1.0000	0.2988	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.6621	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	-1.0000	0.4344	0.0	100	0.00
46	T	Benzene	-1.0000	0.4650	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.6690	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.5825	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3361	0.0	100	-0.01
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	-1.0000	0.3543	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.5639	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2664	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0645	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.4827	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.3062	0.0	100	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5556	0.0	100	0.00
59	C	Toluene	-1.0000	0.4977	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2345	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	-1.0000	0.5786	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.3489	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.2105	0.0	100	0.00
65	T	1,3-Dichloropropane	-1.0000	0.3863	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.6020	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.3560	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.5329	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.5504	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.6409	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3116	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.4864	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	1.0353	0.0	100	-0.01
74	T	o-Xylene	-1.0000	0.4136	0.0	100	-0.01
75	T	Styrene	-1.0000	0.4734	0.0	100	0.00
76	P	Bromoform	-1.0000	0.3165	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.4536	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2940	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5986	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1203	0.0	100	-0.01
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.3534	0.0	100	0.00
83	T	n-Propylbenzene	-1.0000	0.5362	0.0	100	0.00
84	T	Bromobenzene	-1.0000	0.6559	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.4440	0.0	100	-0.01
86	T	2-Chlorotoluene	-1.0000	0.5114	0.0	79	-0.01
87	T	4-Chlorotoluene	-1.0000	0.6753	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.4370	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3729	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.4779	0.0	100	-0.01
91	T	sec-Butylbenzene	-1.0000	0.5374	0.0	100	-0.01
92	T	p-Isopropyltoluene	-1.0000	0.5114	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.7103	0.0	100	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.7513	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.6344	0.0	100	0.00
96	T	1,2-Dichlorobenzene	-1.0000	0.6178	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.1730	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	0.8011	0.0	100	-0.01
99	T	Hexachlorobutadiene	-1.0000	0.6484	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.6384	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	0.7013	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
6M140314.D 8260WTR.M Fri Jul 01 14:34:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:36 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	711040	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	496934	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	254758	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	13.04	98	1118	0.0457 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.20%#	
80) p-Bromofluorobenzene	17.01	95	723	0.0725 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	4029	0.3390 ug/L #	64
3) Chloromethane	3.37	50	7908	0.5959 ug/L	82
4) Vinyl Chloride	3.56	62	2700	0.3705 ug/L	78
5) 1,3-Butadiene	3.62	54	3035	Below Cal #	51
6) Bromomethane	4.39	94	1885	0.3892 ug/L	95
7) Chloroethane	4.55	64	1384	0.3006 ug/L #	43
8) Trichlorofluoromethane	5.00	101	5096	0.4585 ug/L #	91
10) Isoprene	5.57	67	4197	0.4231 ug/L	86
12) 1,1,2-Trichloro-1,2,2-Trif	5.82	101	2196	0.3176 ug/L	83
13) Acetone	5.90	43	1650	0.7243 ug/L #	48
14) 1,1-Dichloroethene	6.11	61	5407	0.4030 ug/L	90
16) Dimethyl Sulfide	6.38	62	2288	0.3910 ug/L	87
18) Methyl acetate	6.69	43	1819	0.2951 ug/L #	66
19) Methylene Chloride	6.93	84	3320	0.4315 ug/L	82
20) Carbon Disulfide	6.97	76	11427	0.4648 ug/L	99
22) Methyl Tert Butyl Ether	7.18	73	8255	0.4048 ug/L #	75
23) trans-1,2-Dichloroethene	7.42	96	2988	0.4158 ug/L	82
24) n-Hexane	7.51	57	5670	0.4649 ug/L	92
26) Vinyl Acetate	8.09	43	2906	0.2121 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	6380	0.4124 ug/L	89
29) 2-Butanone	8.74	43	1046	0.3000 ug/L #	57
31) 2,2-Dichloropropane	8.95	77	4509	0.3863 ug/L	96
32) cis-1,2-Dichloroethene	9.03	96	3353	0.4263 ug/L	94
33) Chloroform	9.27	83	5194	0.3747 ug/L	99
35) Bromochloromethane	9.53	130	1601	0.3788 ug/L	83
36) Tetrahydrofuran	9.56	42	3379	1.3892 ug/L #	67
38) 1,1,1-Trichloroethane	9.87	97	4496	0.3726 ug/L	93
39) Cyclohexane	9.89	56	6498	0.4139 ug/L	94
40) 1,1-Dichloropropene	10.08	75	4389	0.4176 ug/L	94
42) Carbon Tetrachloride	10.24	117	3081	0.3110 ug/L #	88
45) 1,2-Dichloroethane	10.45	62	4443	0.3998 ug/L #	81
46) Benzene	10.48	78	13145	0.4431 ug/L	97
47) Trichloroethene	11.34	130	3154	0.4309 ug/L	93
48) Methylcyclohexane	11.42	83	4969	0.4324 ug/L	87
49) 1,2-Dichloropropane	11.59	63	3543	0.4147 ug/L	87
51) Bromodichloromethane	11.93	83	3676	0.3566 ug/L	92
52) Dibromomethane	12.03	93	1420	0.3436 ug/L	100
53) 2-Chloroethyl Vinyl Ether	12.31	63	1186	0.2769 ug/L #	41
54) 4-Methyl-2-Pentanone	12.35	58	422	0.1601 ug/L #	38
55) cis-1,3-Dichloropropene	12.67	75	4716	0.3941 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140315.D 8260WTR.M Fri Jul 01 14:20:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:36 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.97	79	1919	0.2881 ug/L #	68
59)	Toluene	13.16	91	13506	0.4560 ug/L	97
60)	Ethyl Methacrylate	13.32	69	2728	0.3238 ug/L	91
62)	trans-1,3-Dichloropropene	13.39	75	3780	0.3589 ug/L	86
63)	1,1,2-Trichloroethane	13.63	97	2086	0.3806 ug/L	93
64)	2-Hexanone	13.58	43	1538	0.2955 ug/L	72
65)	1,3-Dichloropropane	13.98	76	4376	0.4236 ug/L	95
66)	Tetrachloroethene	14.10	166	2876	0.4075 ug/L	95
67)	Dibromochloromethane	14.41	129	2210	0.3321 ug/L	93
68)	1,2-Dibromoethane	14.72	107	1896	0.3584 ug/L	87
69)	1-Chlorohexane	14.86	91	4030	0.4089 ug/L	91
70)	Chlorobenzene	15.30	112	8640	0.4549 ug/L	96
71)	1,1,1,2-Tetrachloroethane	15.35	131	2601	0.3848 ug/L	92
72)	Ethylbenzene	15.35	106	4049	0.4073 ug/L	76
73)	m-,p-Xylene	15.45	106	10358	0.8620 ug/L	87
74)	o-Xylene	16.10	106	5184	0.4326 ug/L	96
75)	Styrene	16.16	104	7888	0.3912 ug/L	83
76)	Bromoform	16.72	173	1146	0.2777 ug/L #	68
77)	Isopropylbenzene	16.62	105	13388	0.4282 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.88	83	2211	0.3576 ug/L	95
81)	1,2,3-Trichloropropane	17.11	110	427	0.2329 ug/L #	1
83)	n-Propylbenzene	17.22	91	16903	0.4618 ug/L #	94
84)	Bromobenzene	17.34	156	3349	0.4379 ug/L	93
85)	1,3,5-Trimethylbenzene	17.44	105	10954	0.4269 ug/L	99
86)	2-Chlorotoluene	17.51	91	11900	0.4807 ug/L	93
87)	4-Chlorotoluene	17.57	91	10437	0.4422 ug/L	94
88)	a-Methylstyrene	17.92	118	4645	0.3600 ug/L	98
89)	tert-Butylbenzene	17.98	134	2361	0.4580 ug/L	87
90)	1,2,4-Trimethylbenzene	18.04	105	11026	0.4188 ug/L	95
91)	sec-Butylbenzene	18.31	105	13954	0.4543 ug/L	95
92)	p-Isopropyltoluene	18.50	119	11850	0.4527 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	6789	0.4510 ug/L	100
94)	1,4-Dichlorobenzene	18.85	146	7052	0.4633 ug/L	99
95)	n-Butylbenzene	19.12	91	11908	0.4639 ug/L	90
96)	1,2-Dichlorobenzene	19.42	146	6295	0.4454 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	20.62	75	204	0.1685 ug/L #	1
98)	1,2,4-Trichlorobenzene	21.96	180	4710	0.4715 ug/L	93
99)	Hexachlorobutadiene	22.15	225	1916	0.4613 ug/L	98
100)	Naphthalene	22.38	128	8061	0.3948 ug/L	90
101)	1,2,3-Trichlorobenzene	22.75	180	4023	0.4349 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140315.D 8260WTR.M Fri Jul 01 14:20:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:20 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

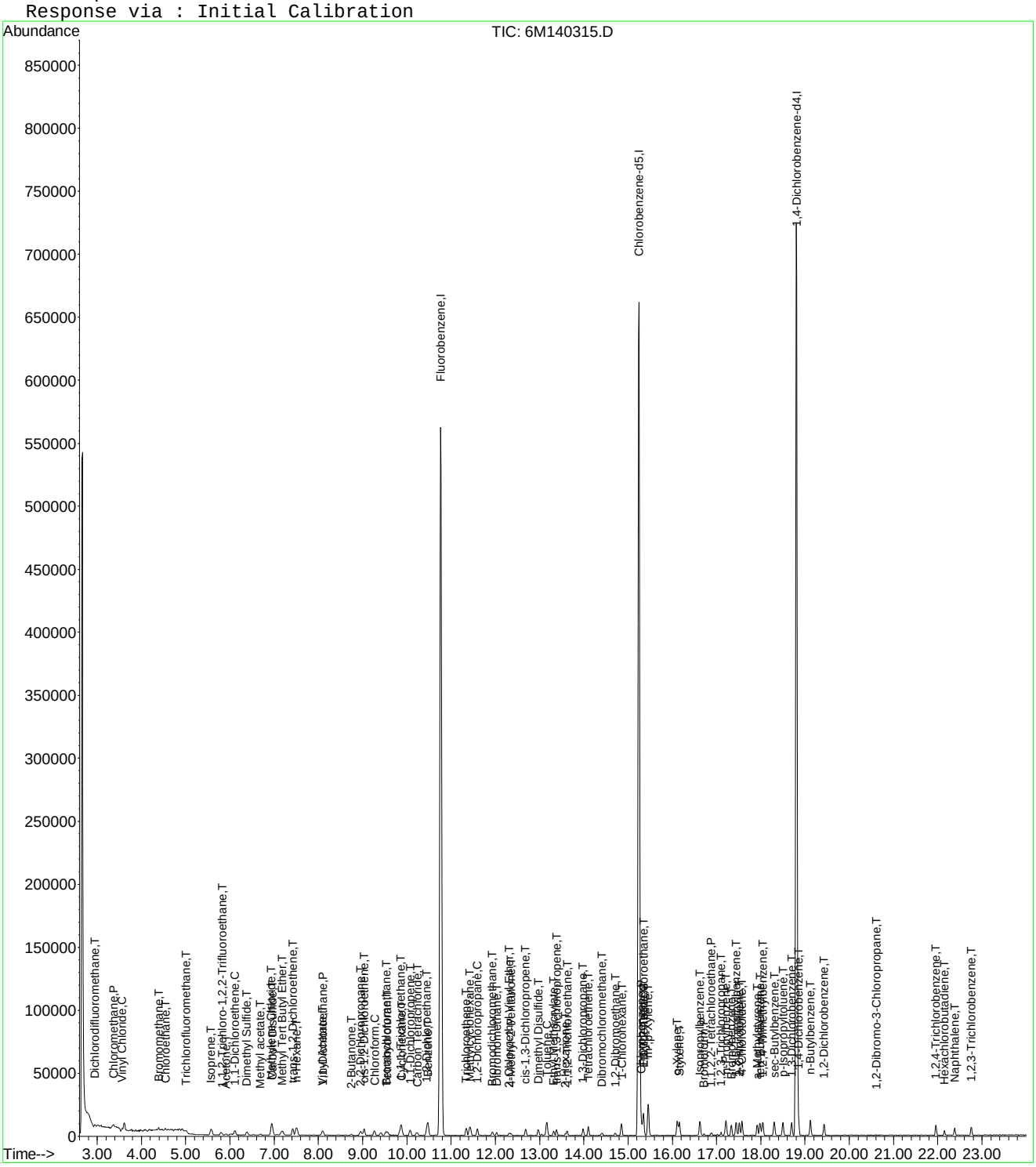

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3390	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5959	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3705	7.4	100	0.00
5	T	1,3-Butadiene	-1.0000	-2.4246	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.3892	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.3006	0.0	100	0.02
8	T	Trichlorofluoromethane	0.4000	0.4585	-14.6	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.55#
10	T	Isoprene	-1.0000	0.4231	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3176	0.0	100	0.04
13	T	Acetone	-1.0000	0.7243	0.0	100	0.00
14	C	1,1-Dichloroethene	0.4000	0.4030	-0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.3910	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.64#
18	T	Methyl acetate	-1.0000	0.2951	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4315	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4648	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.15#
22	T	Methyl Tert Butyl Ether	-1.0000	0.4048	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4158	-4.0	100	0.00
24	T	n-Hexane	-1.0000	0.4649	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.90#
26	T	Vinyl Acetate	-1.0000	0.2121	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.4124	-3.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.53#
29	T	2-Butanone	-1.0000	0.3000	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.86#
31	T	2,2-Dichloropropane	0.4000	0.3863	3.4	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4263	-6.6	100	0.00
33	C	Chloroform	0.4000	0.3747	6.3	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.41#
35	T	Bromochloromethane	0.4000	0.3787	5.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.3892	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.59#
38	T	1,1,1-Trichloroethane	0.4000	0.3726	6.9	100	0.02
39	T	Cyclohexane	-1.0000	0.4139	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4176	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3110	22.3#	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	0.4000	0.3998	0.1	100	0.00
46	T	Benzene	0.4000	0.4431	-10.8	100	0.00
47	T	Trichloroethene	0.4000	0.4309	-7.7	100	0.00
48	T	Methylcyclohexane	-1.0000	0.4324	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4147	-3.7	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	0.4000	0.3566	10.8	100	0.00
52	T	Dibromomethane	0.4000	0.3436	14.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2769	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.1601	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3941	1.5	100	-0.01
56	T	Dimethyl Disulfide	-1.0000	0.2881	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0457	0.0	100	0.00
59	C	Toluene	0.4000	0.4560	-14.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3238	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.16#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3589	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3806	4.9	100	0.00
64	T	2-Hexanone	-1.0000	0.2955	0.0	100	0.00
65	T	1,3-Dichloropropane	0.4000	0.4236	-5.9	100	-0.01
66	T	Tetrachloroethene	0.4000	0.4075	-1.9	100	0.00
67	T	Dibromochloromethane	0.4000	0.3321	17.0	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3584	10.4	100	0.00
69	T	1-Chlorohexane	0.4000	0.4089	-2.2	100	0.00
70	P	Chlorobenzene	0.4000	0.4549	-13.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3848	3.8	100	0.00
72	C	Ethylbenzene	0.4000	0.4073	-1.8	100	0.00
73	T	m-,p-Xylene	0.8000	0.8620	-7.8	100	-0.01
74	T	o-Xylene	-1.0000	0.4326	0.0	100	-0.01
75	T	Styrene	0.4000	0.3912	2.2	100	0.00
76	P	Bromoform	-1.0000	0.2777	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4282	-7.0	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3576	10.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0725	0.0	100	-0.01
81	T	1,2,3-Trichloropropane	-1.0000	0.2329	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1005	0.0	100	0.00
83	T	n-Propylbenzene	0.4000	0.4618	-15.4	100	0.00
84	T	Bromobenzene	0.4000	0.4379	-9.5	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4270	-6.7	100	-0.01
86	T	2-Chlorotoluene	0.4000	0.4807	-20.2#	100	-0.01
87	T	4-Chlorotoluene	0.4000	0.4422	-10.6	100	-0.01
88	T	a-Methylstyrene	-1.0000	0.3600	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.4580	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.4188	0.0	100	-0.01
91	T	sec-Butylbenzene	-1.0000	0.4543	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4527	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4510	-12.7	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4633	-15.8	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4639	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4454	-11.4	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.1685	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	0.4000	0.4714	-17.9	100	-0.01
99	T	Hexachlorobutadiene	0.4000	0.4613	-15.3	100	0.00
100	T	Naphthalene	0.4000	0.3948	1.3	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4349	-8.7	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140315.D 8260WTR.M Fri Jul 01 14:35:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	687429	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	485381	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	251587	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	3444	0.4938 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.96%#	
43) 1,2-Dichloroethane-d4	10.31	65	4418	0.5018 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.00%#	
58) Toluene-d8	13.04	98	12734	0.5328 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.12%#	
80) p-Bromofluorobenzene	17.01	95	5390	0.5470 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.20%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	11016	0.9586 ug/L #	84
3) Chloromethane	3.37	50	15509	1.2088 ug/L	95
4) Vinyl Chloride	3.56	62	7694	1.0920 ug/L	94
5) 1,3-Butadiene	3.62	54	7756	Below Cal #	68
6) Bromomethane	4.39	94	4929	1.0528 ug/L	86
7) Chloroethane	4.53	64	4342	0.9753 ug/L	93
8) Trichlorofluoromethane	5.01	101	10531	0.9800 ug/L	96
9) Diethyl ether	5.55	59	32999	5.2047 ug/L	95
10) Isoprene	5.57	67	9716	1.0131 ug/L	99
11) Acrolein	5.79	56	2538	2.4066 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	6731	1.0068 ug/L	91
13) Acetone	5.90	43	3178	1.4430 ug/L #	76
14) 1,1-Dichloroethene	6.12	61	13411	1.0339 ug/L	87
15) Tert-Butyl Alcohol	6.25	59	6206	9.2151 ug/L #	84
16) Dimethyl Sulfide	6.38	62	5231	0.9246 ug/L	96
17) Iodomethane	6.65	142	2100	1.3352 ug/L	82
18) Methyl acetate	6.69	43	5561	0.9331 ug/L #	66
19) Methylene Chloride	6.94	84	8529	1.1466 ug/L	84
20) Carbon Disulfide	6.97	76	25467	1.0714 ug/L	99
21) Acrylonitrile	7.16	53	6206	2.2695 ug/L	94
22) Methyl Tert Butyl Ether	7.18	73	19700	0.9991 ug/L	95
23) trans-1,2-Dichloroethene	7.42	96	6984	1.0053 ug/L	82
24) n-Hexane	7.51	57	13051	1.1069 ug/L	96
25) Diisopropyl ether	7.90	45	166032	5.2317 ug/L	96
26) Vinyl Acetate	8.09	43	9104	0.6872 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	15277	1.0213 ug/L	96
28) Ethyl-Tert-Butyl ether	8.53	59	131034	5.1323 ug/L	97
29) 2-Butanone	8.73	43	3268	0.9693 ug/L #	57
30) Propionitrile	8.85	54	4333	4.7359 ug/L	96
31) 2,2-Dichloropropane	8.95	77	11579	1.0261 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	7838	1.0307 ug/L	88
33) Chloroform	9.26	83	13154	0.9816 ug/L	99
34) 1-Bromopropane	9.41	122	659	1.0190 ug/L	80
35) Bromochloromethane	9.52	130	3868	0.9465 ug/L	100
36) Tetrahydrofuran	9.55	42	14306	6.0837 ug/L	89
38) 1,1,1-Trichloroethane	9.84	97	11995	1.0282 ug/L	99
39) Cyclohexane	9.89	56	16203	1.0675 ug/L	92
40) 1,1-Dichloropropene	10.08	75	10372	1.0207 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	97548	5.0317 ug/L	97
42) Carbon Tetrachloride	10.22	117	8394	0.8763 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M140316.D 8260WTR.M Fri Jul 01 14:21:13 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	10834	1.0084 ug/L #	94
46)	Benzene	10.48	78	30089	1.0492 ug/L	98
47)	Trichloroethene	11.35	130	7344	1.0378 ug/L	95
48)	Methylcyclohexane	11.43	83	11566	1.0410 ug/L	92
49)	1,2-Dichloropropane	11.59	63	8057	0.9755 ug/L	94
51)	Bromodichloromethane	11.93	83	9704	0.9738 ug/L	95
52)	Dibromomethane	12.02	93	3754	0.9395 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	3750	0.9056 ug/L	89
54)	4-Methyl-2-Pentanone	12.35	58	1943	0.7624 ug/L #	38
55)	cis-1,3-Dichloropropene	12.68	75	10823	0.9354 ug/L	99
56)	Dimethyl Disulfide	12.97	79	5005	0.7771 ug/L	92
59)	Toluene	13.16	91	30726	1.0622 ug/L	99
60)	Ethyl Methacrylate	13.32	69	7189	0.8735 ug/L	94
62)	trans-1,3-Dichloropropene	13.39	75	9521	0.9256 ug/L	92
63)	1,1,2-Trichloroethane	13.63	97	5389	1.0066 ug/L	99
64)	2-Hexanone	13.58	43	4641	0.9130 ug/L	84
65)	1,3-Dichloropropane	13.99	76	10212	1.0121 ug/L	95
66)	Tetrachloroethene	14.10	166	7069	1.0254 ug/L	90
67)	Dibromochloromethane	14.41	129	5818	0.8951 ug/L	98
68)	1,2-Dibromoethane	14.71	107	5034	0.9742 ug/L	100
69)	1-Chlorohexane	14.85	91	9657	1.0031 ug/L	86
70)	Chlorobenzene	15.30	112	19612	1.0571 ug/L	95
71)	1,1,1,2-Tetrachloroethane	15.35	131	6511	0.9863 ug/L	95
72)	Ethylbenzene	15.35	106	9761	1.0051 ug/L	83
73)	m-,p-Xylene	15.45	106	24695	2.1041 ug/L	92
74)	o-Xylene	16.11	106	11834	1.0110 ug/L	92
75)	Styrene	16.16	104	18993	0.9644 ug/L	88
76)	Bromoform	16.72	173	3330	0.8262 ug/L #	88
77)	Isopropylbenzene	16.61	105	31878	1.0438 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.88	83	5647	0.9248 ug/L	93
81)	1,2,3-Trichloropropane	17.11	110	1314	0.7259 ug/L #	16
82)	trans-1,4-Dichloro-2-Buten	17.18	53	1593	0.6900 ug/L	82
83)	n-Propylbenzene	17.22	91	39699	1.0982 ug/L	95
84)	Bromobenzene	17.34	156	7581	1.0037 ug/L	87
85)	1,3,5-Trimethylbenzene	17.44	105	26502	1.0460 ug/L	94
86)	2-Chlorotoluene	17.51	91	26919	1.1011 ug/L	97
87)	4-Chlorotoluene	17.58	91	23704	1.0170 ug/L	96
88)	a-Methylstyrene	17.92	118	11597	0.9100 ug/L	97
89)	tert-Butylbenzene	17.98	134	5253	1.0319 ug/L	63
90)	1,2,4-Trimethylbenzene	18.04	105	27482	1.0570 ug/L	95
91)	sec-Butylbenzene	18.30	105	33207	1.0949 ug/L	94
92)	p-Isopropyltoluene	18.50	119	27800	1.0755 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	15649	1.0526 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	16097	1.0710 ug/L #	64
95)	n-Butylbenzene	19.12	91	27428	1.0821 ug/L	93
96)	1,2-Dichlorobenzene	19.43	146	14706	1.0536 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	20.62	75	1058	0.8847 ug/L	65
98)	1,2,4-Trichlorobenzene	21.97	180	9695	0.9827 ug/L	98
99)	Hexachlorobutadiene	22.15	225	4079	0.9944 ug/L	93
100)	Naphthalene	22.38	128	18851	0.9349 ug/L	92
101)	1,2,3-Trichlorobenzene	22.75	180	9647	1.0560 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M140316.D 8260WTR.M Fri Jul 01 14:21:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

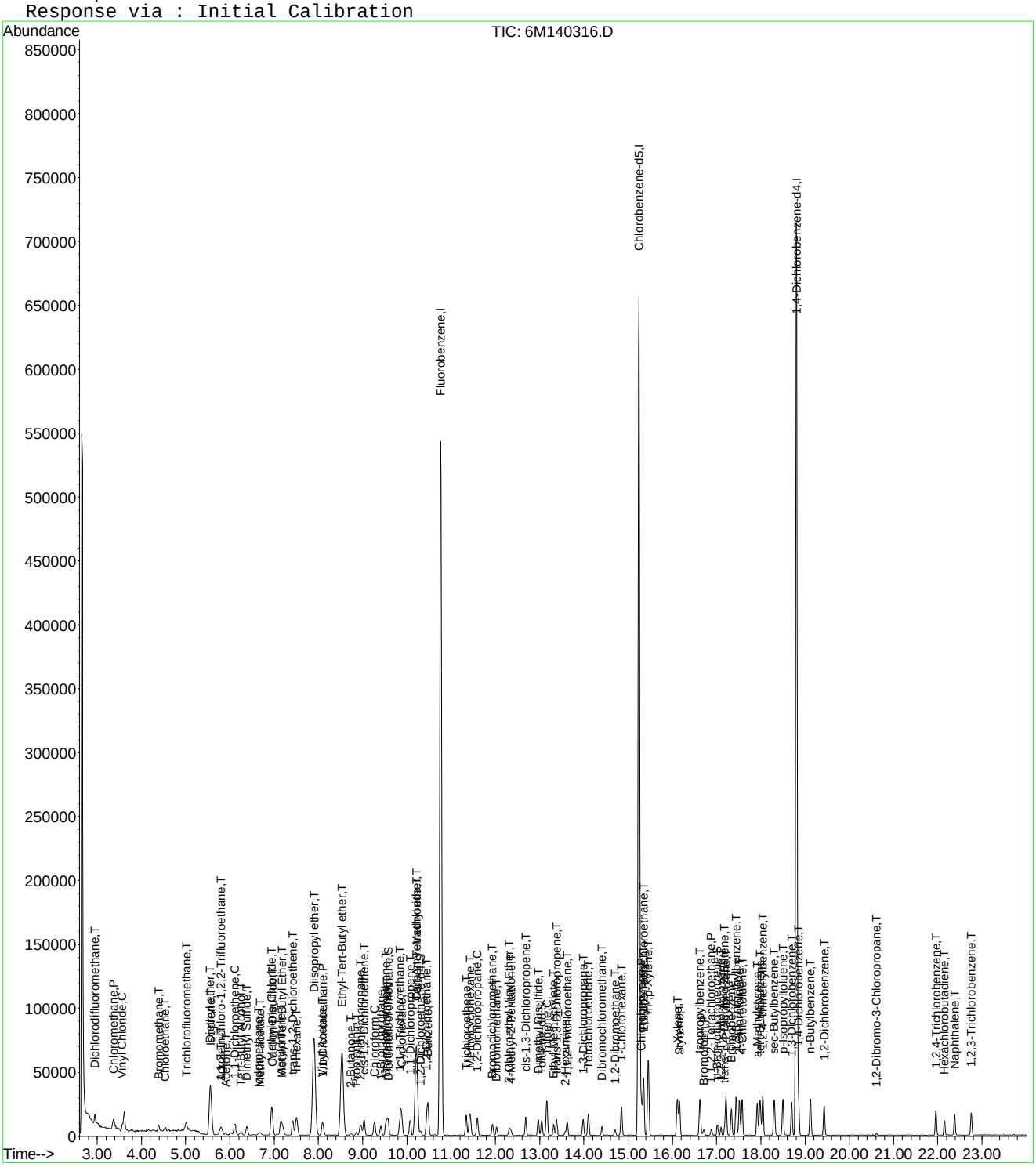

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9586	4.1	100	0.00
3	P	Chloromethane	1.0000	1.2088	-20.9#	100	0.00
4	C	Vinyl Chloride	1.0000	1.0920	-9.2	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.1669	0.0	0	0.03
6	T	Bromomethane	1.0000	1.0528	-5.3	100	0.02
7	T	Chloroethane	1.0000	0.9753	2.5	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9800	2.0	100	0.02
9	T	Diethyl ether	5.0000	5.2047	-4.1	100	0.00
10	T	Isoprene	-1.0000	1.0131	0.0	100	0.00
11	T	Acrolein	-1.0000	2.4066	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0068	-0.7	100	0.00
13	T	Acetone	-1.0000	1.4430	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0338	-3.4	100	0.02
15	T	Tert-Butyl Alcohol	10.0000	9.2151	7.8	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	0.9246	0.0	100	0.00
17	T	Iodomethane	1.0000	1.3352	-33.5#	100	0.00
18	T	Methyl acetate	-1.0000	0.9331	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.1466	-14.7	100	0.00
20	T	Carbon Disulfide	1.0000	1.0714	-7.1	100	0.00
21	T	Acrylonitrile	2.5000	2.2695	9.2	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9991	0.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0053	-0.5	100	0.00
24	T	n-Hexane	-1.0000	1.1069	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.2317	-4.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.6872	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0213	-2.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.1323	-2.6	100	0.00
29	T	2-Butanone	-1.0000	0.9693	0.0	100	0.00
30	T	Propionitrile	5.0000	4.7359	5.3	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0261	-2.6	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0307	-3.1	100	0.00
33	C	Chloroform	1.0000	0.9816	1.8	100	0.00
34		1-Bromopropane	1.0000	1.0190	-1.9	100	0.00
35	T	Bromochloromethane	1.0000	0.9465	5.3	100	0.00
36	T	Tetrahydrofuran	5.0000	6.0837	-21.7#	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.4938	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	1.0282	-2.8	100	0.00
39	T	Cyclohexane	1.0000	1.0675	-6.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0207	-2.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0317	-0.6	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.8763	12.4	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.5018	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	-0.01
45	T	1,2-Dichloroethane	1.0000	1.0084	-0.8	100	0.00
46	T	Benzene	1.0000	1.0492	-4.9	100	0.00
47	T	Trichloroethene	1.0000	1.0378	-3.8	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0410	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9756	2.4	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	1.0000	0.9738	2.6	100	0.00
52	T	Dibromomethane	1.0000	0.9395	6.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.9056	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.7624	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9355	6.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7771	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5328	0.0	100	0.00
59	C	Toluene	1.0000	1.0621	-6.2	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8735	12.7	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	1.0000	0.9256	7.4	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	1.0066	-0.7	100	0.00
64	T	2-Hexanone	-1.0000	0.9130	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	1.0121	-1.2	100	0.00
66	T	Tetrachloroethene	1.0000	1.0254	-2.5	100	0.00
67	T	Dibromochloromethane	1.0000	0.8951	10.5	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9742	2.6	100	0.00
69	T	1-Chlorohexane	1.0000	1.0031	-0.3	100	0.00
70	P	Chlorobenzene	1.0000	1.0571	-5.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9863	1.4	100	0.00
72	C	Ethylbenzene	1.0000	1.0051	-0.5	100	0.00
73	T	m-,p-Xylene	2.0000	2.1041	-5.2	100	-0.01
74	T	o-Xylene	1.0000	1.0110	-1.1	100	0.00
75	T	Styrene	1.0000	0.9645	3.6	100	0.00
76	P	Bromoform	1.0000	0.8262	17.4	100	0.00
77	T	Isopropylbenzene	1.0000	1.0438	-4.4	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9248	7.5	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5470	0.0	100	-0.01
81	T	1,2,3-Trichloropropane	1.0000	0.7259	27.4#	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.6900	31.0#	100	0.00
83	T	n-Propylbenzene	1.0000	1.0982	-9.8	100	0.00
84	T	Bromobenzene	1.0000	1.0037	-0.4	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0460	-4.6	100	-0.01
86	T	2-Chlorotoluene	1.0000	1.1011	-10.1	100	-0.01
87	T	4-Chlorotoluene	1.0000	1.0171	-1.7	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9100	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0319	-3.2	100	-0.01
90	T	1,2,4-Trimethylbenzene	1.0000	1.0570	-5.7	100	-0.01
91	T	sec-Butylbenzene	1.0000	1.0949	-9.5	100	-0.01
92	T	p-Isopropyltoluene	1.0000	1.0755	-7.6	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0526	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0710	-7.1	100	0.00
95	T	n-Butylbenzene	1.0000	1.0821	-8.2	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0536	-5.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.8847	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9827	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9944	0.6	100	0.00
100	T	Naphthalene	1.0000	0.9349	6.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0560	-5.6	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140316.D 8260WTR.M Fri Jul 01 14:35:27 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	681288	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	479716	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	253621	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	6933	1.0030 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.00%#	
43) 1,2-Dichloroethane-d4	10.32	65	9000	1.0314 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.12%#	
58) Toluene-d8	13.04	98	25015	1.0589 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.24%#	
80) p-Bromofluorobenzene	17.02	95	10214	1.0283 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	21693	1.9048 ug/L	92
3) Chloromethane	3.37	50	28294	2.2252 ug/L	99
4) Vinyl Chloride	3.57	62	15095	2.1618 ug/L	90
5) 1,3-Butadiene	3.61	54	14228	0.5548 ug/L	81
6) Bromomethane	4.39	94	10021	2.1597 ug/L	92
7) Chloroethane	4.54	64	8637	1.9576 ug/L	99
8) Trichlorofluoromethane	5.01	101	21198	1.9905 ug/L	99
9) Diethyl ether	5.55	59	166163	26.4440 ug/L	96
10) Isoprene	5.58	67	20113	2.1161 ug/L	98
11) Acrolein	5.79	56	13232	12.6601 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	13403	2.0228 ug/L	98
13) Acetone	5.90	43	5431	2.4882 ug/L	86
14) 1,1-Dichloroethene	6.11	61	26310	2.0465 ug/L	95
15) Tert-Butyl Alcohol	6.25	59	32448	48.6151 ug/L	96
16) Dimethyl Sulfide	6.39	62	10884	1.9412 ug/L	92
17) Iodomethane	6.64	142	4160	1.7736 ug/L	99
18) Methyl acetate	6.68	43	11835	2.0038 ug/L #	83
19) Methylene Chloride	6.94	84	16307	2.2119 ug/L	88
20) Carbon Disulfide	6.96	76	49030	2.0813 ug/L	98
21) Acrylonitrile	7.14	53	32708	12.0688 ug/L	93
22) Methyl Tert Butyl Ether	7.17	73	39510	2.0219 ug/L	98
23) trans-1,2-Dichloroethene	7.43	96	14262	2.0714 ug/L	91
24) n-Hexane	7.51	57	25227	2.1588 ug/L	95
25) Diisopropyl ether	7.90	45	823711	26.1894 ug/L	97
26) Vinyl Acetate	8.09	43	22167	1.6883 ug/L	93
27) 1,1-Dichloroethane	8.10	63	31011	2.0919 ug/L	96
28) Ethyl-Tert-Butyl ether	8.53	59	650758	25.7185 ug/L	98
29) 2-Butanone	8.72	43	6560	1.9633 ug/L #	79
30) Propionitrile	8.86	54	22752	25.0916 ug/L	98
31) 2,2-Dichloropropane	8.95	77	23903	2.1372 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	14680	1.9478 ug/L	78
33) Chloroform	9.27	83	26391	1.9872 ug/L	98
34) 1-Bromopropane	9.42	122	1777	1.9534 ug/L	97
35) Bromochloromethane	9.52	130	8058	1.9896 ug/L	93
36) Tetrahydrofuran	9.55	42	58983	25.3089 ug/L	92
38) 1,1,1-Trichloroethane	9.86	97	23448	2.0280 ug/L	99
39) Cyclohexane	9.88	56	30890	2.0535 ug/L	95
40) 1,1-Dichloropropene	10.08	75	20511	2.0367 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	494429	25.7332 ug/L	97
42) Carbon Tetrachloride	10.23	117	18006	1.8966 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140317.D 8260WTR.M Fri Jul 01 14:21:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	22120	2.0774 ug/L	98
46)	Benzene	10.48	78	60457	2.1271 ug/L	100
47)	Trichloroethene	11.35	130	14433	2.0579 ug/L	92
48)	Methylcyclohexane	11.43	83	23167	2.1040 ug/L	93
49)	1,2-Dichloropropane	11.59	63	16607	2.0289 ug/L	96
50)	1,4-Dioxane	11.94	88	2503	45.1726 ug/L	97
51)	Bromodichloromethane	11.93	83	19917	2.0166 ug/L	98
52)	Dibromomethane	12.02	93	8051	2.0330 ug/L	95
53)	2-Chloroethyl Vinyl Ether	12.31	63	7544	1.8383 ug/L	94
54)	4-Methyl-2-Pentanone	12.35	58	4674	1.8506 ug/L	83
55)	cis-1,3-Dichloropropene	12.69	75	23212	2.0243 ug/L	98
56)	Dimethyl Disulfide	12.97	79	10618	1.6635 ug/L	98
59)	Toluene	13.16	91	61452	2.1494 ug/L	98
60)	Ethyl Methacrylate	13.32	69	15594	1.9171 ug/L	93
62)	trans-1,3-Dichloropropene	13.38	75	19722	1.9399 ug/L	94
63)	1,1,2-Trichloroethane	13.63	97	10814	2.0438 ug/L	96
64)	2-Hexanone	13.59	43	9516	1.8942 ug/L	94
65)	1,3-Dichloropropane	13.98	76	20700	2.0758 ug/L	97
66)	Tetrachloroethene	14.11	166	14321	2.1019 ug/L	97
67)	Dibromochloromethane	14.41	129	12204	1.8998 ug/L	99
68)	1,2-Dibromoethane	14.71	107	10178	1.9929 ug/L	98
69)	1-Chlorohexane	14.85	91	19403	2.0392 ug/L	87
70)	Chlorobenzene	15.30	112	39367	2.1469 ug/L	81
71)	1,1,1,2-Tetrachloroethane	15.35	131	13145	2.0147 ug/L	96
72)	Ethylbenzene	15.35	106	20014	2.0853 ug/L	88
73)	m-,p-Xylene	15.45	106	50059	4.3155 ug/L	94
74)	o-Xylene	16.11	106	24284	2.0991 ug/L	92
75)	Styrene	16.16	104	39349	2.0217 ug/L	93
76)	Bromoform	16.71	173	7051	1.7700 ug/L	91
77)	Isopropylbenzene	16.62	105	63245	2.0952 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.87	83	11943	1.9403 ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	3577	1.9601 ug/L	70
82)	trans-1,4-Dichloro-2-Buten	17.18	53	4235	1.8198 ug/L	92
83)	n-Propylbenzene	17.22	91	77640	2.1306 ug/L	97
84)	Bromobenzene	17.34	156	15737	2.0668 ug/L	90
85)	1,3,5-Trimethylbenzene	17.45	105	53524	2.0955 ug/L	96
86)	2-Chlorotoluene	17.52	91	50361	2.0435 ug/L	96
87)	4-Chlorotoluene	17.58	91	51425	2.1888 ug/L	96
88)	a-Methylstyrene	17.91	118	23705	1.8452 ug/L	90
89)	tert-Butylbenzene	17.99	134	10746	2.0941 ug/L	69
90)	1,2,4-Trimethylbenzene	18.05	105	55973	2.1356 ug/L	97
91)	sec-Butylbenzene	18.30	105	66761	2.1835 ug/L	94
92)	p-Isopropyltoluene	18.50	119	55466	2.1287 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	31212	2.0827 ug/L	98
94)	1,4-Dichlorobenzene	18.85	146	31934	2.1076 ug/L	79
95)	n-Butylbenzene	19.12	91	53671	2.1004 ug/L	95
96)	1,2-Dichlorobenzene	19.44	146	29144	2.0713 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	20.61	75	1880	1.5595 ug/L	96
98)	1,2,4-Trichlorobenzene	21.96	180	19883	1.9991 ug/L	99
99)	Hexachlorobutadiene	22.15	225	8377	2.0258 ug/L	98
100)	Naphthalene	22.38	128	39370	1.9369 ug/L	98
101)	1,2,3-Trichlorobenzene	22.75	180	18357	1.9933 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140317.D 8260WTR.M Fri Jul 01 14:21:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

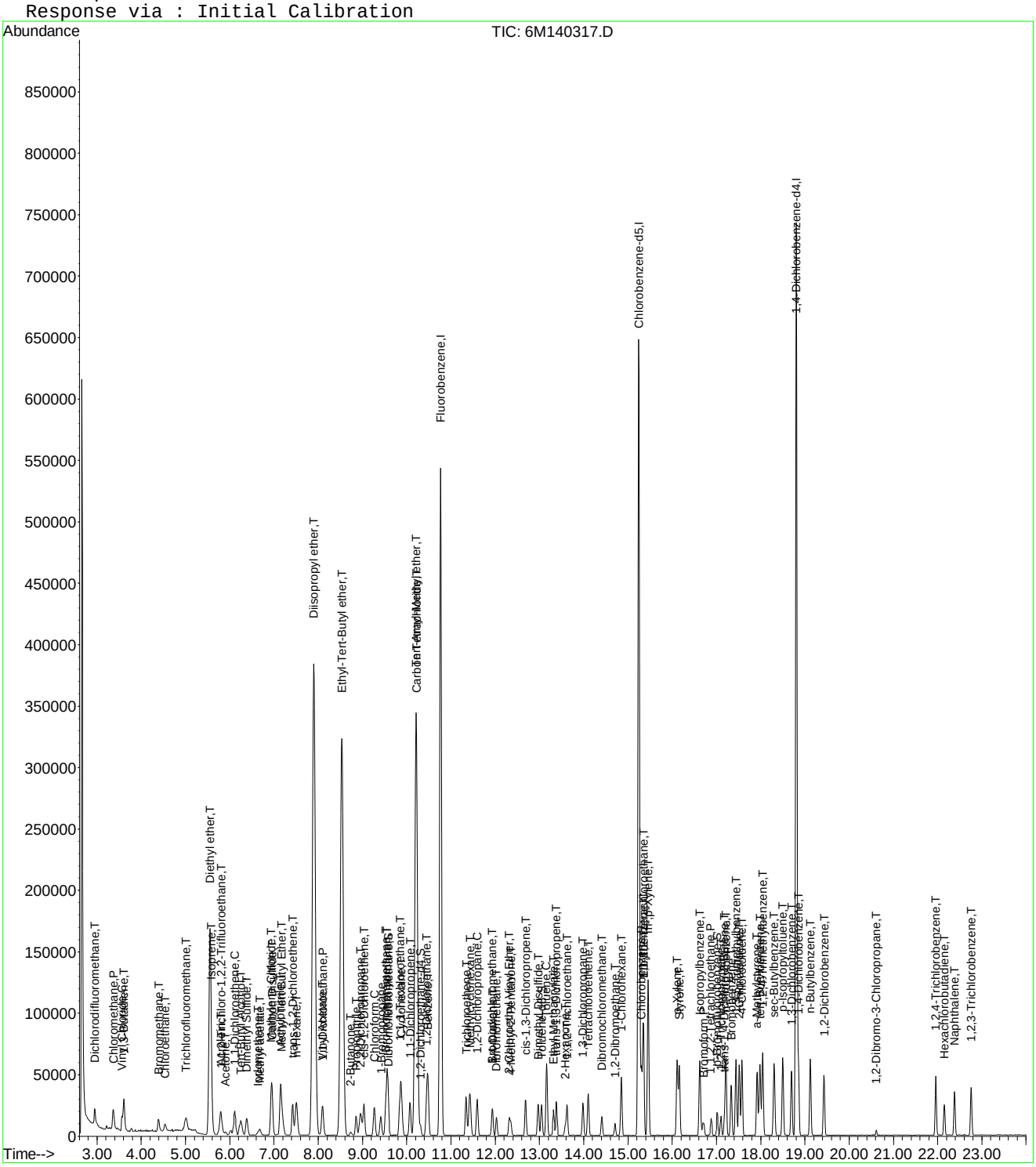

6M140317.D 8260WTR.M Fri Jul 01 14:21:24 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.9048	4.8	100	0.01
3	P	Chloromethane	2.0000	2.2252	-11.3	100	0.01
4	C	Vinyl Chloride	2.0000	2.1618	-8.1	100	0.01
5	T	1,3-Butadiene	-1.0000	0.5548	0.0	0	0.02
6	T	Bromomethane	2.0000	2.1597	-8.0	100	0.02
7	T	Chloroethane	2.0000	1.9576	2.1	100	0.01
8	T	Trichlorofluoromethane	2.0000	1.9905	0.5	100	0.01
9	T	Diethyl ether	25.0000	26.4441	-5.8	100	0.00
10	T	Isoprene	-1.0000	2.1161	0.0	100	0.01
11	T	Acrolein	12.5000	12.6601	-1.3	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.0228	-1.1	100	0.02
13	T	Acetone	-1.0000	2.4882	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0465	-2.3	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	48.6152	2.8	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	1.9412	0.0	100	0.00
17	T	Iodomethane	2.0000	1.7736	11.3	100	0.00
18	T	Methyl acetate	-1.0000	2.0038	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.2119	-10.6	100	0.00
20	T	Carbon Disulfide	2.0000	2.0813	-4.1	100	0.00
21	T	Acrylonitrile	12.5000	12.0688	3.4	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0219	-1.1	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0714	-3.6	100	0.01
24	T	n-Hexane	-1.0000	2.1588	0.0	100	0.01
25	T	Diisopropyl ether	25.0000	26.1894	-4.8	100	0.00
26	T	Vinyl Acetate	-1.0000	1.6883	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0919	-4.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.7185	-2.9	100	0.00
29	T	2-Butanone	-1.0000	1.9633	0.0	100	0.00
30	T	Propionitrile	25.0000	25.0916	-0.4	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1372	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9478	2.6	100	0.00
33	C	Chloroform	2.0000	1.9872	0.6	100	0.00
34		1-Bromopropane	2.0000	1.9534	2.3	100	0.01
35	T	Bromochloromethane	2.0000	1.9896	0.5	100	0.00
36	T	Tetrahydrofuran	25.0000	25.3089	-1.2	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0030	-0.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0280	-1.4	100	0.01
39	T	Cyclohexane	2.0000	2.0535	-2.7	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0367	-1.8	100	0.01
41	T	Tert-Amyl-Methyl ether	25.0000	25.7333	-2.9	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.8966	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0314	-3.1	100	0.01
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	2.0000	2.0774	-3.9	100	0.00
46	T	Benzene	2.0000	2.1271	-6.4	100	0.00
47	T	Trichloroethene	2.0000	2.0579	-2.9	100	0.01
48	T	Methylcyclohexane	-1.0000	2.1040	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0289	-1.4	100	0.00
50	T	1,4-Dioxane	-1.0000	45.1726	0.0	100	0.00
51	T	Bromodichloromethane	2.0000	2.0166	-0.8	100	0.00
52	T	Dibromomethane	2.0000	2.0330	-1.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.8383	8.1	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.8506	0.0	100	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	2.0243	-1.2	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.6635	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0589	-5.9	100	0.00
59	C	Toluene	2.0000	2.1494	-7.5	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9171	4.1	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	2.0000	1.9399	3.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	2.0438	-2.2	100	0.00
64	T	2-Hexanone	-1.0000	1.8942	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0758	-3.8	100	0.00
66	T	Tetrachloroethene	2.0000	2.1019	-5.1	100	0.00
67	T	Dibromochloromethane	2.0000	1.8998	5.0	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9929	0.4	100	0.00
69	T	1-Chlorohexane	2.0000	2.0392	-2.0	100	0.00
70	P	Chlorobenzene	2.0000	2.1469	-7.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	2.0147	-0.7	100	0.00
72	C	Ethylbenzene	2.0000	2.0853	-4.3	100	0.00
73	T	m-,p-Xylene	4.0000	4.3156	-7.9	100	0.00
74	T	o-Xylene	2.0000	2.0991	-5.0	100	0.00
75	T	Styrene	2.0000	2.0217	-1.1	100	0.00
76	P	Bromoform	2.0000	1.7700	11.5	100	0.00
77	T	Isopropylbenzene	2.0000	2.0952	-4.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9403	3.0	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0283	-2.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.9601	2.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.8198	9.0	100	0.00
83	T	n-Propylbenzene	2.0000	2.1306	-6.5	100	0.00
84	T	Bromobenzene	2.0000	2.0668	-3.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0955	-4.8	100	0.00
86	T	2-Chlorotoluene	2.0000	2.0435	-2.2	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1888	-9.4	100	0.00
88	T	a-Methylstyrene	-1.0000	1.8452	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0941	-4.7	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1356	-6.8	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1835	-9.2	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1287	-6.4	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.0827	-4.1	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1076	-5.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1004	-5.0	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0713	-3.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.5595	22.0#	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.9991	0.0	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0258	-1.3	100	0.00
100	T	Naphthalene	2.0000	1.9369	3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9933	0.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140317.D 8260WTR.M Fri Jul 01 14:35:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	665911	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	475530	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	251113	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	17208	2.5471 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.20%#		
43) 1,2-Dichloroethane-d4	10.32	65	22015	2.5813 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.32%#		
58) Toluene-d8	13.04	98	61675	2.6338 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.52%#		
80) p-Bromofluorobenzene	17.01	95	25621	2.6052 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.44%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	48247	4.3342 ug/L	98
3) Chloromethane	3.37	50	59455	4.7839 ug/L	98
4) Vinyl Chloride	3.57	62	33485	4.9063 ug/L	98
5) 1,3-Butadiene	3.60	54	23338	3.0943 ug/L	87
6) Bromomethane	4.39	94	22163	4.8867 ug/L	97
7) Chloroethane	4.54	64	20579	4.7720 ug/L	97
8) Trichlorofluoromethane	5.02	101	49493	4.7547 ug/L	100
9) Diethyl ether	5.55	59	316870	51.5928 ug/L	96
10) Isoprene	5.58	67	44245	4.7626 ug/L	95
11) Acrolein	5.79	56	25354	24.8183 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	30711	4.7419 ug/L	96
13) Acetone	5.90	43	11460	5.3716 ug/L	98
14) 1,1-Dichloroethene	6.11	61	59549	4.7390 ug/L	93
15) Tert-Butyl Alcohol	6.26	59	62697	96.1048 ug/L	99
16) Dimethyl Sulfide	6.39	62	26287	4.7966 ug/L	98
17) Iodomethane	6.65	142	13226	3.7502 ug/L	97
18) Methyl acetate	6.69	43	29044	5.0309 ug/L	94
19) Methylene Chloride	6.95	84	35243	4.8909 ug/L	87
20) Carbon Disulfide	6.97	76	111679	4.8502 ug/L	99
21) Acrylonitrile	7.15	53	65252	24.6331 ug/L	96
22) Methyl Tert Butyl Ether	7.18	73	93809	4.9114 ug/L	100
23) trans-1,2-Dichloroethene	7.43	96	32653	4.8519 ug/L	90
24) n-Hexane	7.51	57	57537	5.0375 ug/L	99
25) Diisopropyl ether	7.91	45	1560840	50.7720 ug/L	98
26) Vinyl Acetate	8.09	43	61001	4.7533 ug/L	96
27) 1,1-Dichloroethane	8.10	63	70715	4.8804 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	1249973	50.5407 ug/L	98
29) 2-Butanone	8.73	43	15743	4.8205 ug/L	90
30) Propionitrile	8.86	54	44610	50.3332 ug/L	100
31) 2,2-Dichloropropane	8.96	77	55177	5.0475 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	35623	4.8356 ug/L	87
33) Chloroform	9.26	83	62050	4.7802 ug/L	99
34) 1-Bromopropane	9.42	122	5012	4.7391 ug/L	100
35) Bromochloromethane	9.52	130	19897	5.0261 ug/L	99
36) Tetrahydrofuran	9.56	42	111306	48.8630 ug/L	94
38) 1,1,1-Trichloroethane	9.86	97	54902	4.8581 ug/L	98
39) Cyclohexane	9.88	56	69439	4.7228 ug/L	96
40) 1,1-Dichloropropene	10.08	75	47385	4.8139 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	949512	50.5598 ug/L	97
42) Carbon Tetrachloride	10.23	117	43932	4.7343 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140318.D 8260WTR.M Fri Jul 01 14:21:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	49969	4.8012 ug/L	99
46)	Benzene	10.48	78	138207	4.9748 ug/L	98
47)	Trichloroethene	11.35	130	33708	4.9171 ug/L	90
48)	Methylcyclohexane	11.43	83	52733	4.8997 ug/L	94
49)	1,2-Dichloropropane	11.59	63	39044	4.8802 ug/L	100
50)	1,4-Dioxane	11.94	88	4972	91.8036 ug/L	77
51)	Bromodichloromethane	11.93	83	46783	4.8462 ug/L	100
52)	Dibromomethane	12.02	93	19034	4.9173 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	18004	4.4884 ug/L	97
54)	4-Methyl-2-Pentanone	12.35	58	11300	4.5774 ug/L	94
55)	cis-1,3-Dichloropropene	12.69	75	54408	4.8545 ug/L	99
56)	Dimethyl Disulfide	12.97	79	26532	4.2526 ug/L	100
59)	Toluene	13.15	91	138309	4.8802 ug/L	99
60)	Ethyl Methacrylate	13.32	69	37662	4.6708 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	48146	4.7775 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	25707	4.9014 ug/L	99
64)	2-Hexanone	13.58	43	22497	4.5176 ug/L	99
65)	1,3-Dichloropropane	13.99	76	48531	4.9096 ug/L	95
66)	Tetrachloroethene	14.10	166	33388	4.9436 ug/L	96
67)	Dibromochloromethane	14.41	129	30609	4.8067 ug/L	100
68)	1,2-Dibromoethane	14.71	107	24604	4.8600 ug/L	99
69)	1-Chlorohexane	14.85	91	45159	4.7879 ug/L	91
70)	Chlorobenzene	15.30	112	88763	4.8834 ug/L	87
71)	1,1,1,2-Tetrachloroethane	15.35	131	31237	4.8298 ug/L	97
72)	Ethylbenzene	15.35	106	47581	5.0011 ug/L	93
73)	m-,p-Xylene	15.45	106	115328	10.0299 ug/L	93
74)	o-Xylene	16.11	106	56158	4.8969 ug/L	90
75)	Styrene	16.16	104	93922	4.8681 ug/L	93
76)	Bromoform	16.71	173	17414	4.4099 ug/L	98
77)	Isopropylbenzene	16.62	105	150490	5.0295 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.88	83	29598	4.8565 ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	9483	5.2483 ug/L	91
82)	trans-1,4-Dichloro-2-Buten	17.18	53	10928	4.7426 ug/L	99
83)	n-Propylbenzene	17.22	91	181410	5.0279 ug/L	97
84)	Bromobenzene	17.34	156	37810	5.0153 ug/L	91
85)	1,3,5-Trimethylbenzene	17.44	105	126034	4.9837 ug/L	97
86)	2-Chlorotoluene	17.52	91	116508	4.7747 ug/L	100
87)	4-Chlorotoluene	17.58	91	120486	5.1793 ug/L	93
88)	a-Methylstyrene	17.92	118	58815	4.6239 ug/L	99
89)	tert-Butylbenzene	17.98	134	24935	4.9076 ug/L	64
90)	1,2,4-Trimethylbenzene	18.05	105	130919	5.0449 ug/L	98
91)	sec-Butylbenzene	18.30	105	151691	5.0108 ug/L	98
92)	p-Isopropyltoluene	18.50	119	129076	5.0032 ug/L	96
93)	1,3-Dichlorobenzene	18.70	146	73279	4.9385 ug/L	97
94)	1,4-Dichlorobenzene	18.85	146	73402	4.8928 ug/L	89
95)	n-Butylbenzene	19.12	91	126335	4.9935 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	69034	4.9553 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	4890	4.0969 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	46999	4.7727 ug/L	99
99)	Hexachlorobutadiene	22.15	225	19578	4.7818 ug/L	97
100)	Naphthalene	22.39	128	98169	4.8780 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	44211	4.8487 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140318.D 8260WTR.M Fri Jul 01 14:21:30 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

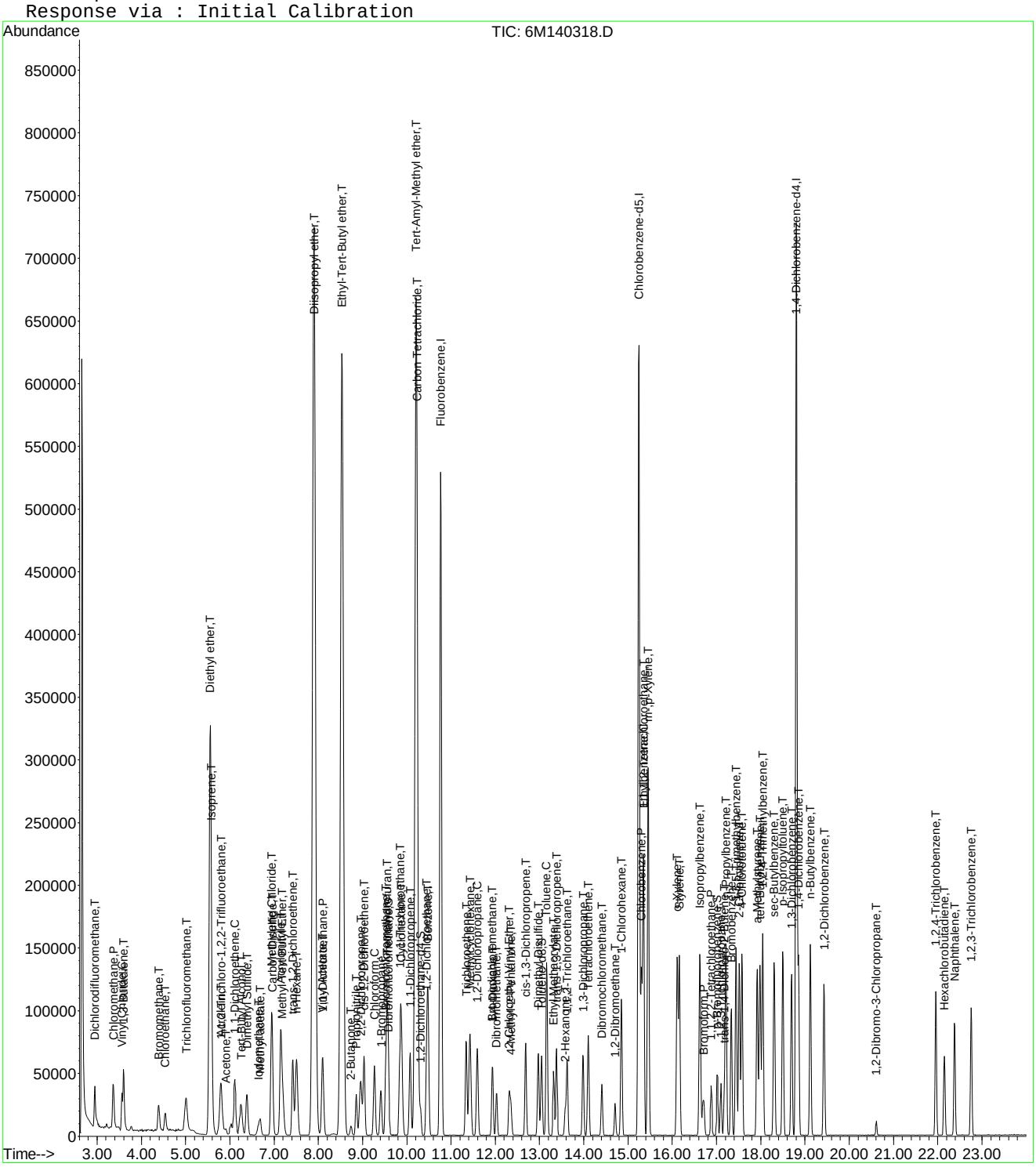

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3342	13.3	100	0.00
3	P	Chloromethane	5.0000	4.7839	4.3	100	0.00
4	C	Vinyl Chloride	5.0000	4.9063	1.9	100	0.00
5	T	1,3-Butadiene	5.0000	3.0943	38.1#	100	0.00
6	T	Bromomethane	5.0000	4.8868	2.3	100	0.02
7	T	Chloroethane	5.0000	4.7720	4.6	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7547	4.9	100	0.02
9	T	Diethyl ether	50.0000	51.5928	-3.2	100	0.00
10	T	Isoprene	5.0000	4.7626	4.7	100	0.00
11	T	Acrolein	25.0000	24.8183	0.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7420	5.2	100	0.02
13	T	Acetone	5.0000	5.3716	-7.4	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7390	5.2	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	96.1048	3.9	100	-0.03
16	T	Dimethyl Sulfide	5.0000	4.7966	4.1	100	0.00
17	T	Iodomethane	5.0000	3.7502	25.0#	100	0.01
18	T	Methyl acetate	5.0000	5.0309	-0.6	100	0.00
19	T	Methylene Chloride	5.0000	4.8909	2.2	100	0.00
20	T	Carbon Disulfide	5.0000	4.8502	3.0	100	0.00
21	T	Acrylonitrile	25.0000	24.6331	1.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.9113	1.8	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.8519	3.0	100	0.00
24	T	n-Hexane	5.0000	5.0375	-0.7	100	0.00
25	T	Diisopropyl ether	50.0000	50.7719	-1.5	100	0.00
26	T	Vinyl Acetate	5.0000	4.7533	4.9	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.8804	2.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	50.5407	-1.1	100	0.00
29	T	2-Butanone	5.0000	4.8205	3.6	100	0.00
30	T	Propionitrile	50.0000	50.3332	-0.7	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.0475	-0.9	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8356	3.3	100	0.00
33	C	Chloroform	5.0000	4.7802	4.4	100	0.00
34		1-Bromopropane	5.0000	4.7391	5.2	100	0.01
35	T	Bromochloromethane	5.0000	5.0261	-0.5	100	0.00
36	T	Tetrahydrofuran	50.0000	48.8630	2.3	100	0.00
37	S	Dibromofluoromethane	2.5000	2.5471	-1.9	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8581	2.8	100	0.00
39	T	Cyclohexane	5.0000	4.7228	5.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.8139	3.7	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	50.5598	-1.1	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.7344	5.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5813	-3.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	5.0000	4.8012	4.0	100	0.00
46	T	Benzene	5.0000	4.9748	0.5	100	0.00
47	T	Trichloroethene	5.0000	4.9171	1.7	100	0.00
48	T	Methylcyclohexane	5.0000	4.8997	2.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.8802	2.4	100	0.00
50	T	1,4-Dioxane	100.0000	91.8036	8.2	100	0.00
51	T	Bromodichloromethane	5.0000	4.8463	3.1	100	0.00
52	T	Dibromomethane	5.0000	4.9173	1.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.4884	10.2	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.5774	8.5	100	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8545	2.9	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2526	14.9	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6338	-5.4	100	0.00
59	C	Toluene	5.0000	4.8802	2.4	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.6708	6.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	5.0000	4.7775	4.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.9014	2.0	100	0.00
64	T	2-Hexanone	5.0000	4.5176	9.6	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9096	1.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.9436	1.1	100	0.00
67	T	Dibromochloromethane	5.0000	4.8067	3.9	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.8600	2.8	100	0.00
69	T	1-Chlorohexane	5.0000	4.7880	4.2	100	0.00
70	P	Chlorobenzene	5.0000	4.8834	2.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.8298	3.4	100	0.00
72	C	Ethylbenzene	5.0000	5.0011	-0.0	100	0.00
73	T	m-,p-Xylene	10.0000	10.0299	-0.3	100	-0.01
74	T	o-Xylene	5.0000	4.8970	2.1	100	-0.01
75	T	Styrene	5.0000	4.8681	2.6	100	0.00
76	P	Bromoform	5.0000	4.4099	11.8	100	0.00
77	T	Isopropylbenzene	5.0000	5.0295	-0.6	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8565	2.9	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6052	-4.2	100	-0.01
81	T	1,2,3-Trichloropropane	5.0000	5.2483	-5.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.7426	5.1	100	0.00
83	T	n-Propylbenzene	5.0000	5.0279	-0.6	100	0.00
84	T	Bromobenzene	5.0000	5.0153	-0.3	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9837	0.3	100	-0.01
86	T	2-Chlorotoluene	5.0000	4.7747	4.5	100	-0.01
87	T	4-Chlorotoluene	5.0000	5.1794	-3.6	100	-0.01
88	T	a-Methylstyrene	5.0000	4.6239	7.5	100	0.00
89	T	tert-Butylbenzene	5.0000	4.9076	1.8	100	-0.01
90	T	1,2,4-Trimethylbenzene	5.0000	5.0449	-0.9	100	-0.01
91	T	sec-Butylbenzene	5.0000	5.0108	-0.2	100	-0.01
92	T	p-Isopropyltoluene	5.0000	5.0032	-0.1	100	-0.01
93	T	1,3-Dichlorobenzene	5.0000	4.9385	1.2	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8928	2.1	100	0.00
95	T	n-Butylbenzene	5.0000	4.9935	0.1	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.9553	0.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.0969	18.1	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7727	4.5	100	-0.01
99	T	Hexachlorobutadiene	5.0000	4.7818	4.4	100	0.00
100	T	Naphthalene	5.0000	4.8780	2.4	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.8487	3.0	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140318.D 8260WTR.M Fri Jul 01 14:36:23 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:33 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	668919	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	478690	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	258443	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	70098	10.3290 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.32%#		
43) 1,2-Dichloroethane-d4	10.31	65	89020	10.3908 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.56%#		
58) Toluene-d8	13.04	98	243575	10.3332 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.32%#		
80) p-Bromofluorobenzene	17.01	95	104612	10.3355 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	240030	21.4659 ug/L	100
3) Chloromethane	3.37	50	274164	21.9607 ug/L	99
4) Vinyl Chloride	3.56	62	134656	19.6412 ug/L	99
5) 1,3-Butadiene	3.60	54	109113	26.0590 ug/L	94
6) Bromomethane	4.39	94	95323	20.9234 ug/L	99
7) Chloroethane	4.54	64	90881	20.9793 ug/L	97
8) Trichlorofluoromethane	5.00	101	210753	20.1557 ug/L	99
9) Diethyl ether	5.55	59	494080	80.0844 ug/L	96
10) Isoprene	5.58	67	199958	21.4269 ug/L	96
11) Acrolein	5.79	56	40308	39.2789 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	131653	20.2365 ug/L	96
13) Acetone	5.89	43	44542	20.7841 ug/L	99
14) 1,1-Dichloroethene	6.11	61	254255	20.1429 ug/L	95
15) Tert-Butyl Alcohol	6.25	59	101804	155.3480 ug/L	98
16) Dimethyl Sulfide	6.39	62	115970	21.0658 ug/L	96
17) Iodomethane	6.65	142	79774	18.0326 ug/L	94
18) Methyl acetate	6.69	43	119945	20.6831 ug/L	98
19) Methylene Chloride	6.93	84	145226	20.0632 ug/L	90
20) Carbon Disulfide	6.97	76	495098	21.4053 ug/L	100
21) Acrylonitrile	7.15	53	104807	39.3874 ug/L	95
22) Methyl Tert Butyl Ether	7.18	73	394607	20.5667 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	135387	20.0268 ug/L	87
24) n-Hexane	7.51	57	243963	21.2635 ug/L	99
25) Diisopropyl ether	7.89	45	2475744	80.1704 ug/L	98
26) Vinyl Acetate	8.09	43	239974	18.6153 ug/L	97
27) 1,1-Dichloroethane	8.10	63	295851	20.3263 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	1992124	80.1862 ug/L	98
29) 2-Butanone	8.73	43	66102	20.1493 ug/L	96
30) Propionitrile	8.85	54	71515	80.3272 ug/L	99
31) 2,2-Dichloropropane	8.96	77	220142	20.0476 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	149673	20.2260 ug/L	73
33) Chloroform	9.26	83	260745	19.9968 ug/L	99
34) 1-Bromopropane	9.42	122	23773	20.6056 ug/L	99
35) Bromochloromethane	9.52	130	82689	20.7938 ug/L	100
36) Tetrahydrofuran	9.56	42	173501	75.8239 ug/L	94
38) 1,1,1-Trichloroethane	9.86	97	230314	20.2881 ug/L	98
39) Cyclohexane	9.88	56	309021	20.9230 ug/L	96
40) 1,1-Dichloropropene	10.08	75	198240	20.0489 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1504867	79.7712 ug/L	98
42) Carbon Tetrachloride	10.23	117	197807	21.2209 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140319.D 8260WTR.M Fri Jul 01 14:21:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:33 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	213475	20.4192 ug/L	98
46)	Benzene	10.48	78	563224	20.1824 ug/L	97
47)	Trichloroethene	11.35	130	140565	20.4123 ug/L	91
48)	Methylcyclohexane	11.43	83	229029	21.1847 ug/L	95
49)	1,2-Dichloropropane	11.59	63	163803	20.3822 ug/L	99
50)	1,4-Dioxane	11.94	88	8245	151.5521 ug/L	87
51)	Bromodichloromethane	11.94	83	198529	20.4731 ug/L	99
52)	Dibromomethane	12.02	93	81976	21.0826 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.31	63	84440	20.9563 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	50113	20.2084 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	230873	20.5069 ug/L	99
56)	Dimethyl Disulfide	12.97	79	127875	20.4039 ug/L	99
59)	Toluene	13.15	91	575595	20.1756 ug/L	100
60)	Ethyl Methacrylate	13.32	69	174096	21.4487 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	209635	20.6648 ug/L	96
63)	1,1,2-Trichloroethane	13.62	97	109279	20.6980 ug/L	99
64)	2-Hexanone	13.58	43	101714	20.2903 ug/L	96
65)	1,3-Dichloropropane	13.99	76	199227	20.0217 ug/L	94
66)	Tetrachloroethene	14.10	166	135754	19.9678 ug/L	93
67)	Dibromochloromethane	14.41	129	135289	21.1051 ug/L	100
68)	1,2-Dibromoethane	14.71	107	105892	20.7786 ug/L	100
69)	1-Chlorohexane	14.85	91	199253	20.9862 ug/L	90
70)	Chlorobenzene	15.30	112	368915	20.1622 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	134691	20.6882 ug/L	97
72)	Ethylbenzene	15.35	106	198149	20.6895 ug/L	94
73)	m-,p-Xylene	15.45	106	479614	41.4358 ug/L	94
74)	o-Xylene	16.10	106	239170	20.7178 ug/L	94
75)	Styrene	16.16	104	410666	21.1448 ug/L	94
76)	Bromoform	16.71	173	82284	20.7000 ug/L	97
77)	Isopropylbenzene	16.62	105	620142	20.5887 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	128022	20.4105 ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	39329	21.1491 ug/L	80
82)	trans-1,4-Dichloro-2-Buten	17.18	53	50449	21.2733 ug/L	99
83)	n-Propylbenzene	17.22	91	763535	20.5616 ug/L	97
84)	Bromobenzene	17.34	156	157241	20.2655 ug/L	90
85)	1,3,5-Trimethylbenzene	17.44	105	534922	20.5522 ug/L	97
86)	2-Chlorotoluene	17.52	91	480540	19.1348 ug/L	100
87)	4-Chlorotoluene	17.58	91	506904	21.1723 ug/L	93
88)	a-Methylstyrene	17.92	118	283013	21.6190 ug/L	99
89)	tert-Butylbenzene	17.98	134	108977	20.8400 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	555658	20.8047 ug/L	98
91)	sec-Butylbenzene	18.30	105	646673	20.7557 ug/L	97
92)	p-Isopropyltoluene	18.50	119	553560	20.8482 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	308829	20.2225 ug/L	96
94)	1,4-Dichlorobenzene	18.85	146	309174	20.0243 ug/L	95
95)	n-Butylbenzene	19.12	91	539602	20.7232 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	290193	20.2396 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	25172	20.4911 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	206634	20.3883 ug/L	99
99)	Hexachlorobutadiene	22.15	225	84200	19.9820 ug/L	100
100)	Naphthalene	22.38	128	449397	21.6970 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	193555	20.6254 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140319.D 8260WTR.M Fri Jul 01 14:21:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

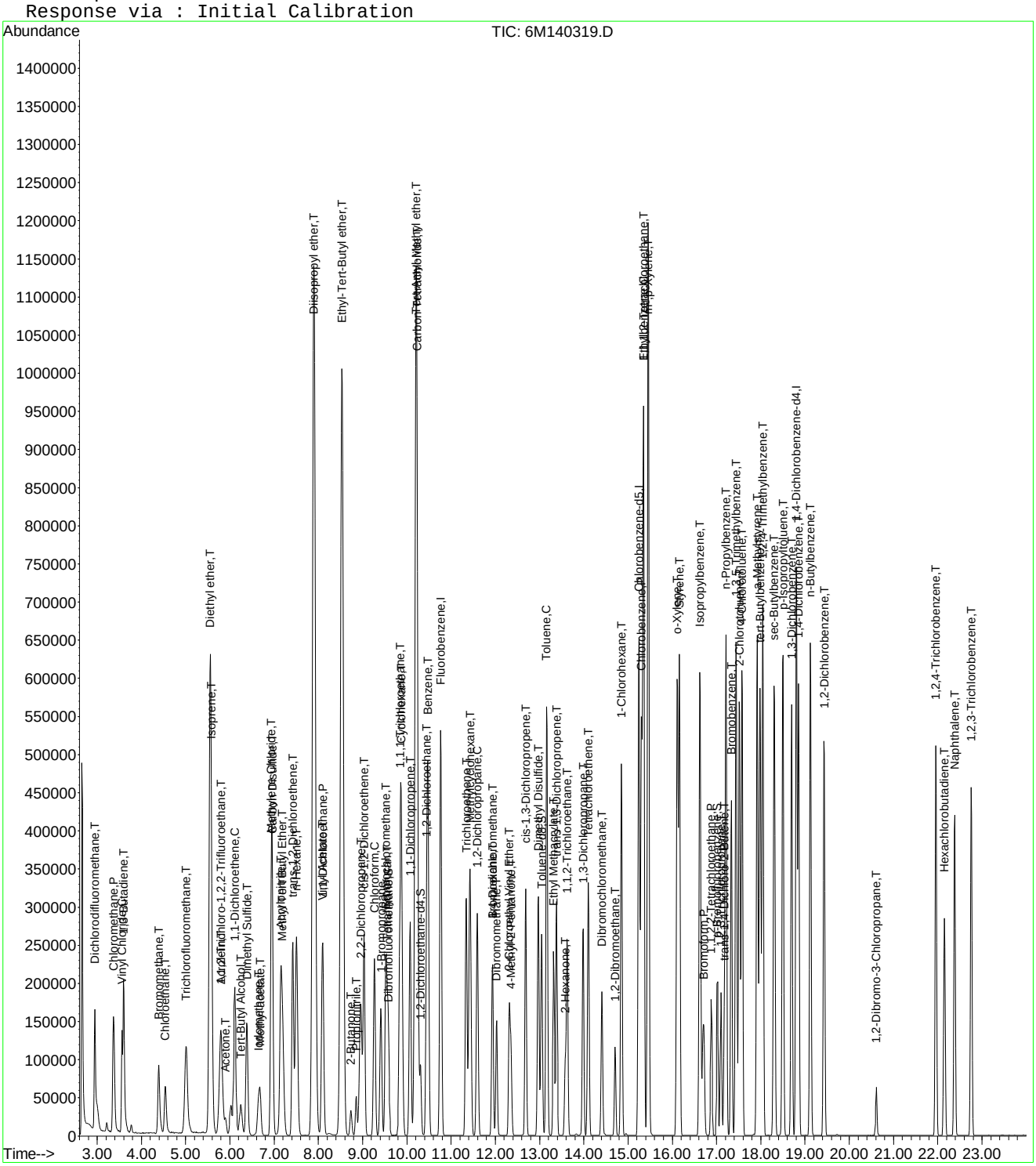

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:42 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	665194	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	476977	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	264882	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	171183	25.3652 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.48%		
43) 1,2-Dichloroethane-d4	10.31	65	211795	24.8600 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.44%		
58) Toluene-d8	13.04	98	584965	24.9051 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.64%		
80) p-Bromofluorobenzene	17.02	95	257496	24.8219 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.28%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	582153	52.3535 ug/L	99
3) Chloromethane	3.37	50	615809	49.6030 ug/L	100
4) Vinyl Chloride	3.56	62	346419	50.8123 ug/L	99
5) 1,3-Butadiene	3.59	54	204917	52.0480 ug/L	96
6) Bromomethane	4.39	94	214126	47.2638 ug/L	99
7) Chloroethane	4.53	64	215766	50.0871 ug/L	96
8) Trichlorofluoromethane	5.00	101	495602	47.6630 ug/L	100
9) Diethyl ether	5.56	59	630517	102.7715 ug/L	96
10) Isoprene	5.58	67	475494	51.2378 ug/L	96
11) Acrolein	5.79	56	50160	49.1531 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	318041	49.1602 ug/L	97
13) Acetone	5.90	43	105863	49.6741 ug/L	100
14) 1,1-Dichloroethene	6.11	61	623813	49.6972 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	129177	198.2217 ug/L	99
16) Dimethyl Sulfide	6.39	62	276319	50.4741 ug/L	95
17) Iodomethane	6.65	142	239373	52.6044 ug/L	93
18) Methyl acetate	6.69	43	285035	49.4262 ug/L	98
19) Methylene Chloride	6.94	84	347634	48.2950 ug/L	88
20) Carbon Disulfide	6.96	76	1155252	50.2265 ug/L	100
21) Acrylonitrile	7.15	53	135608	51.2481 ug/L	98
22) Methyl Tert Butyl Ether	7.18	73	953213	49.9591 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	333111	49.5507 ug/L	89
24) n-Hexane	7.51	57	564061	49.4381 ug/L	98
25) Diisopropyl ether	7.90	45	3068443	99.9198 ug/L	98
26) Vinyl Acetate	8.09	43	646413	50.4243 ug/L	98
27) 1,1-Dichloroethane	8.10	63	718876	49.6666 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2470202	99.9864 ug/L	98
29) 2-Butanone	8.73	43	166904	51.1609 ug/L	95
30) Propionitrile	8.85	54	90037	101.6978 ug/L	100
31) 2,2-Dichloropropane	8.96	77	533000	48.8104 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	368400	50.0623 ug/L	73
33) Chloroform	9.26	83	633467	48.8534 ug/L	99
34) 1-Bromopropane	9.42	122	59330	50.9944 ug/L	99
35) Bromochloromethane	9.52	130	203288	51.4071 ug/L	99
36) Tetrahydrofuran	9.56	42	216772	95.2648 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	572724	50.7331 ug/L	99
39) Cyclohexane	9.87	56	723056	49.2305 ug/L	96
40) 1,1-Dichloropropene	10.08	75	488493	49.6802 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	1883625	100.4078 ug/L	98
42) Carbon Tetrachloride	10.23	117	502186	54.1766 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140320.D 8260WTR.M Fri Jul 01 14:21:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:42 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	522936	50.2998 ug/L	99
46)	Benzene	10.48	78	1376892	49.6154 ug/L	97
47)	Trichloroethene	11.35	130	341168	49.8206 ug/L	91
48)	Methylcyclohexane	11.43	83	532584	49.5388 ug/L	95
49)	1,2-Dichloropropane	11.59	63	402187	50.3249 ug/L	99
50)	1,4-Dioxane	11.94	88	11316	209.1652 ug/L	91
51)	Bromodichloromethane	11.94	83	499306	51.7788 ug/L	99
52)	Dibromomethane	12.03	93	200679	51.8998 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	214371	53.5004 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	126993	51.4974 ug/L	97
55)	cis-1,3-Dichloropropene	12.68	75	576590	51.5014 ug/L	99
56)	Dimethyl Disulfide	12.97	79	322099	51.6823 ug/L	98
59)	Toluene	13.15	91	1399906	49.2452 ug/L	99
60)	Ethyl Methacrylate	13.32	69	422208	52.2030 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	522454	51.6858 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	267159	50.7830 ug/L	98
64)	2-Hexanone	13.58	43	256820	51.4155 ug/L	96
65)	1,3-Dichloropropane	13.99	76	494920	49.9167 ug/L	94
66)	Tetrachloroethene	14.10	166	336402	49.6585 ug/L	94
67)	Dibromochloromethane	14.41	129	343402	53.7632 ug/L	100
68)	1,2-Dibromoethane	14.70	107	261585	51.5137 ug/L	100
69)	1-Chlorohexane	14.85	91	477655	50.4894 ug/L	92
70)	Chlorobenzene	15.30	112	903124	49.5353 ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.35	131	337691	52.0547 ug/L	98
72)	Ethylbenzene	15.35	106	484831	50.8048 ug/L	94
73)	m-,p-Xylene	15.46	106	1167250	101.2056 ug/L	95
74)	o-Xylene	16.11	106	590057	51.2966 ug/L	94
75)	Styrene	16.15	104	1015963	52.4987 ug/L	92
76)	Bromoform	16.72	173	210299	53.0943 ug/L	98
77)	Isopropylbenzene	16.62	105	1525364	50.8239 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	326482	50.7855 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	98816	51.8463 ug/L	83
82)	trans-1,4-Dichloro-2-Buten	17.18	53	129320	53.2061 ug/L	97
83)	n-Propylbenzene	17.22	91	1885010	49.5285 ug/L	98
84)	Bromobenzene	17.34	156	390005	49.0426 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	1335066	50.0475 ug/L	97
86)	2-Chlorotoluene	17.52	91	1274044	49.4983 ug/L	96
87)	4-Chlorotoluene	17.58	91	1171374	47.7365 ug/L	96
88)	a-Methylstyrene	17.92	118	690404	51.4571 ug/L	95
89)	tert-Butylbenzene	17.98	134	265842	49.6018 ug/L	70
90)	1,2,4-Trimethylbenzene	18.04	105	1381292	50.4604 ug/L	98
91)	sec-Butylbenzene	18.31	105	1599719	50.0966 ug/L	98
92)	p-Isopropyltoluene	18.50	119	1372031	50.4173 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	767298	49.0222 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	768779	48.5813 ug/L	95
95)	n-Butylbenzene	19.12	91	1348420	50.5266 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	726470	49.4362 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.62	75	64455	51.1937 ug/L	86
98)	1,2,4-Trichlorobenzene	21.97	180	516677	49.7405 ug/L	99
99)	Hexachlorobutadiene	22.16	225	213166	49.3581 ug/L	100
100)	Naphthalene	22.38	128	1126213	53.0520 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	479054	49.8076 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

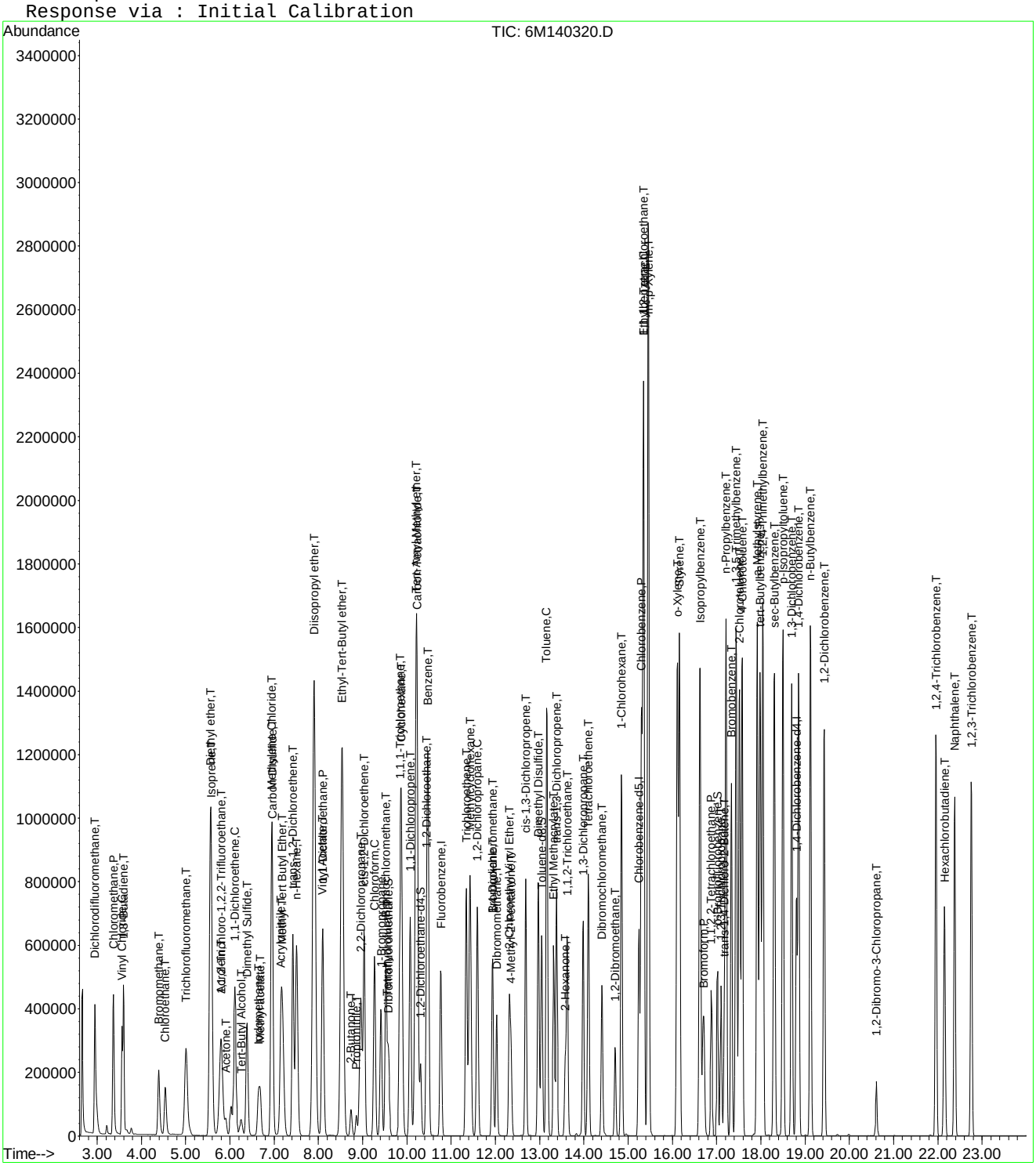

6M140320.D 8260WTR.M Fri Jul 01 14:21:49 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:51 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	646485	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	471613	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	268377	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	322733	49.2052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 196.84%#		
43) 1,2-Dichloroethane-d4	10.31	65	408267	49.3082 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 197.24%#		
58) Toluene-d8	13.04	98	1099687	47.3521 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 189.40%#		
80) p-Bromofluorobenzene	17.02	95	500608	47.6287 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 190.52%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	1195098	110.5865 ug/L	100
3) Chloromethane	3.37	50	1126306	93.3487 ug/L	100
4) Vinyl Chloride	3.56	62	690730	104.2475 ug/L	100
5) 1,3-Butadiene	3.59	54	397047	106.9364 ug/L	97
6) Bromomethane	4.38	94	423232	96.1231 ug/L	100
7) Chloroethane	4.53	64	421078	100.5763 ug/L	96
8) Trichlorofluoromethane	5.00	101	1039911	102.9045 ug/L	99
9) Diethyl ether	5.56	59	1210825	203.0707 ug/L	96
10) Isoprene	5.57	67	926995	102.7810 ug/L	96
11) Acrolein	5.79	56	100610	101.4435 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	644973	102.5798 ug/L	97
13) Acetone	5.90	43	202374	97.7080 ug/L	98
14) 1,1-Dichloroethene	6.11	61	1233915	101.1469 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	264298	417.3014 ug/L	98
16) Dimethyl Sulfide	6.39	62	533770	100.3234 ug/L	95
17) Iodomethane	6.65	142	485581	108.8245 ug/L	92
18) Methyl acetate	6.69	43	562111	100.2930 ug/L	98
19) Methylene Chloride	6.94	84	680086	97.2151 ug/L	90
20) Carbon Disulfide	6.96	76	2214357	99.0589 ug/L	100
21) Acrylonitrile	7.15	53	269273	104.7069 ug/L	97
22) Methyl Tert Butyl Ether	7.18	73	1885141	101.6619 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	659412	100.9269 ug/L	89
24) n-Hexane	7.51	57	1100352	99.2333 ug/L	97
25) Diisopropyl ether	7.90	45	5806079	194.5388 ug/L	99
26) Vinyl Acetate	8.09	43	1275603	102.3848 ug/L	98
27) 1,1-Dichloroethane	8.10	63	1407131	100.0311 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	4736533	197.2691 ug/L	99
29) 2-Butanone	8.73	43	329619	103.9617 ug/L	96
30) Propionitrile	8.85	54	180672	209.9768 ug/L	99
31) 2,2-Dichloropropane	8.96	77	1063724	100.2315 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	723748	101.1973 ug/L	73
33) Chloroform	9.26	83	1245839	98.8604 ug/L	99
34) 1-Bromopropane	9.42	122	114449	100.7473 ug/L	100
35) Bromochloromethane	9.52	130	399705	104.0018 ug/L	100
36) Tetrahydrofuran	9.56	42	431461	195.1016 ug/L	95
38) 1,1,1-Trichloroethane	9.85	97	1132312	103.2053 ug/L	98
39) Cyclohexane	9.87	56	1422141	99.6310 ug/L	96
40) 1,1-Dichloropropene	10.08	75	970489	101.5559 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	3648605	200.1197 ug/L	98
42) Carbon Tetrachloride	10.23	117	1008047	111.8968 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140321.D 8260WTR.M Fri Jul 01 14:21:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:51 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	1026377	101.5814 ug/L	99
46)	Benzene	10.48	78	2663898	98.7698 ug/L	96
47)	Trichloroethene	11.35	130	659415	99.0807 ug/L	89
48)	Methylcyclohexane	11.43	83	1057163	101.1788 ug/L	95
49)	1,2-Dichloropropane	11.59	63	787420	101.3798 ug/L	97
50)	1,4-Dioxane	11.94	88	22910	435.7239 ug/L	83
51)	Bromodichloromethane	11.94	83	998026	106.4921 ug/L	100
52)	Dibromomethane	12.03	93	402229	107.0352 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	414426	106.4211 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	253505	105.7748 ug/L	99
55)	cis-1,3-Dichloropropene	12.68	75	1145435	105.2719 ug/L	99
56)	Dimethyl Disulfide	12.97	79	637376	105.2297 ug/L	98
59)	Toluene	13.16	91	2716275	96.6387 ug/L	99
60)	Ethyl Methacrylate	13.32	69	835175	104.4378 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	1039244	103.9807 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	530894	102.0629 ug/L	98
64)	2-Hexanone	13.58	43	511940	103.6564 ug/L	98
65)	1,3-Dichloropropane	13.99	76	975019	99.4570 ug/L	94
66)	Tetrachloroethene	14.10	166	663843	99.1087 ug/L	93
67)	Dibromochloromethane	14.41	129	698275	110.5657 ug/L	100
68)	1,2-Dibromoethane	14.70	107	530245	105.6082 ug/L	100
69)	1-Chlorohexane	14.86	91	934249	99.8757 ug/L	91
70)	Chlorobenzene	15.30	112	1757753	97.5073 ug/L	90
71)	1,1,1,2-Tetrachloroethane	15.35	131	672232	104.8024 ug/L	97
72)	Ethylbenzene	15.35	106	960737	101.8195 ug/L	96
73)	m-,p-Xylene	15.46	106	2273350	199.3511 ug/L	96
74)	o-Xylene	16.11	106	1166695	102.5802 ug/L	94
75)	Styrene	16.15	104	2021937	105.6696 ug/L	91
76)	Bromoform	16.72	173	442224	112.9184 ug/L	98
77)	Isopropylbenzene	16.62	105	3022582	101.8554 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	699051	107.3240 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	204344	105.8180 ug/L	81
82)	trans-1,4-Dichloro-2-Buten	17.18	53	271253	110.1481 ug/L	96
83)	n-Propylbenzene	17.22	91	3780776	98.0459 ug/L	98
84)	Bromobenzene	17.34	156	791175	98.1936 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	2708977	100.2286 ug/L	97
86)	2-Chlorotoluene	17.52	91	2557008	98.0494 ug/L	97
87)	4-Chlorotoluene	17.58	91	2386130	95.9746 ug/L	97
88)	a-Methylstyrene	17.92	118	1396050	102.6951 ug/L	95
89)	tert-Butylbenzene	17.99	134	544776	100.3227 ug/L	72
90)	1,2,4-Trimethylbenzene	18.04	105	2808112	101.2481 ug/L	99
91)	sec-Butylbenzene	18.31	105	3235910	100.0157 ug/L	98
92)	p-Isopropyltoluene	18.50	119	2792332	101.2720 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	1561532	98.4661 ug/L	94
94)	1,4-Dichlorobenzene	18.86	146	1567098	97.7396 ug/L	94
95)	n-Butylbenzene	19.12	91	2754111	101.8553 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	1483394	99.6302 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	20.62	75	143837	112.7555 ug/L	86
98)	1,2,4-Trichlorobenzene	21.97	180	1060844	100.7975 ug/L	98
99)	Hexachlorobutadiene	22.15	225	438054	100.1094 ug/L	100
100)	Naphthalene	22.38	128	2317282	107.7376 ug/L	99
101)	1,2,3-Trichlorobenzene	22.76	180	982434	100.8141 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140321.D 8260WTR.M Fri Jul 01 14:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

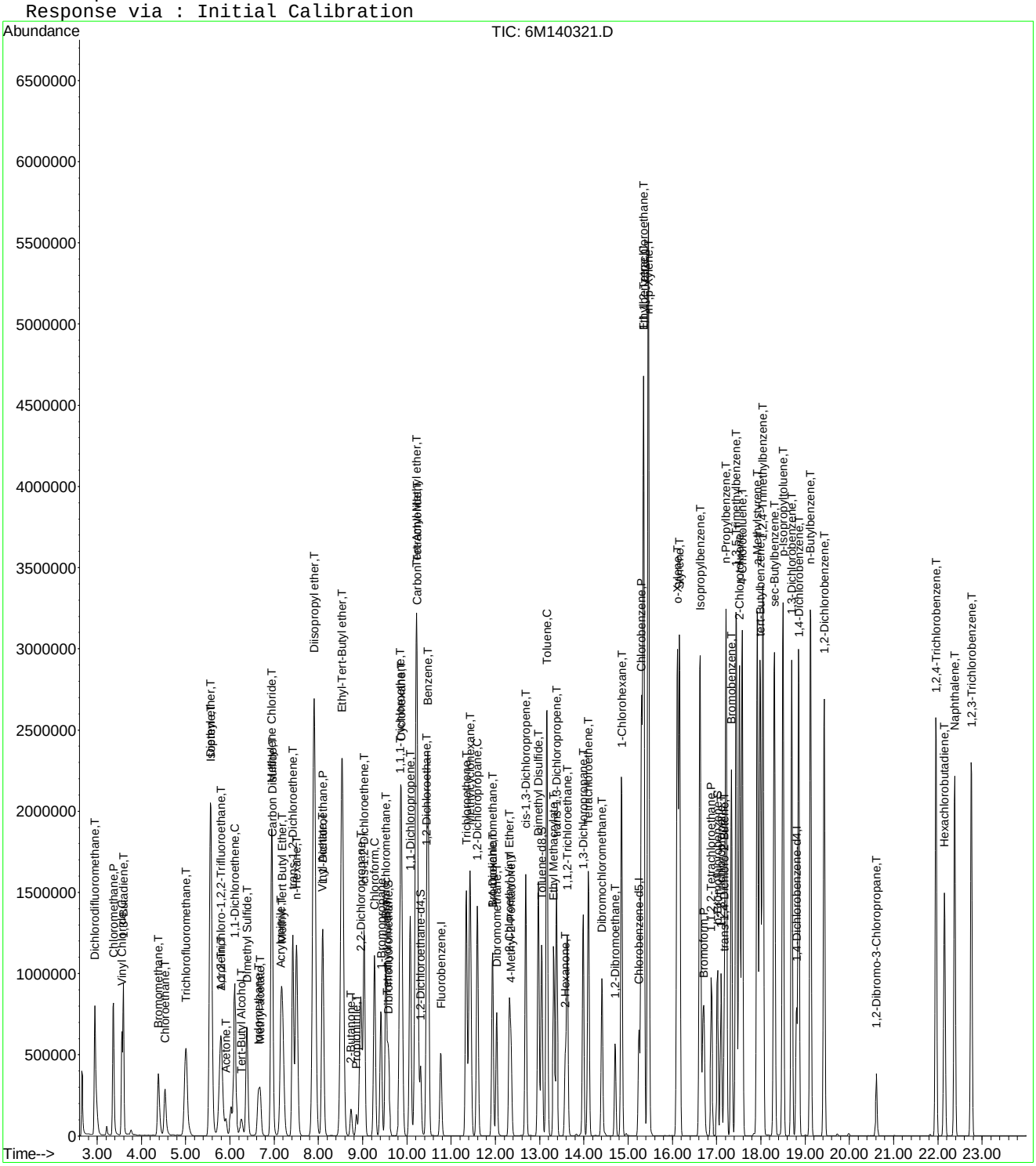

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:59 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	674210	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	486785	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	271900	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	671839	98.2191 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 392.88%#		
43) 1,2-Dichloroethane-d4	10.31	65	835948	96.8094 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 387.24%#		
58) Toluene-d8	13.04	98	2262915	94.4033 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 377.60%#		
80) p-Bromofluorobenzene	17.02	95	1044558	98.0934 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 392.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	2392226	212.2580 ug/L	100
3) Chloromethane	3.37	50	2218722	176.3266 ug/L	100
4) Vinyl Chloride	3.56	62	1383750	200.2527 ug/L	99
5) 1,3-Butadiene	3.59	54	790286	206.9928 ug/L	97
6) Bromomethane	4.38	94	916596	199.6138 ug/L	100
7) Chloroethane	4.53	64	905382	207.3615 ug/L	96
8) Trichlorofluoromethane	5.00	101	2065931	196.0277 ug/L	99
10) Isoprene	5.57	67	1944884	206.7723 ug/L	96
11) Acrolein	5.78	56	1541	1.4899 ug/L	69
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	1336247	203.7841 ug/L	97
13) Acetone	5.90	43	421648	195.2041 ug/L	99
14) 1,1-Dichloroethene	6.11	61	2551648	200.5632 ug/L	94
15) Tert-Butyl Alcohol	6.28	59	3198	4.8417 ug/L #	57
16) Dimethyl Sulfide	6.38	62	1109294	199.9208 ug/L	95
17) Iodomethane	6.65	142	972879	208.2422 ug/L	92
18) Methyl acetate	6.69	43	1135963	194.3462 ug/L	99
19) Methylene Chloride	6.94	84	1372201	188.0837 ug/L	89
20) Carbon Disulfide	6.96	76	4495945	192.8546 ug/L	99
21) Acrylonitrile	7.18	53	44700	16.6668 ug/L #	33
22) Methyl Tert Butyl Ether	7.18	73	3851369	199.1557 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	1353415	198.6299 ug/L	88
24) n-Hexane	7.51	57	2284673	197.5664 ug/L	97
26) Vinyl Acetate	8.09	43	2820141	217.0472 ug/L	98
27) 1,1-Dichloroethane	8.10	63	2873257	195.8566 ug/L	99
28) Ethyl-Tert-Butyl ether	8.56	59	6764	0.2701 ug/L #	47
29) 2-Butanone	8.73	43	664492	200.9620 ug/L	97
30) Propionitrile	8.74	54	1576	1.7563 ug/L #	81
31) 2,2-Dichloropropane	8.96	77	2196313	198.4415 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	1477699	198.1211 ug/L	88
33) Chloroform	9.26	83	2557143	194.5712 ug/L	99
34) 1-Bromopropane	9.41	122	241562	203.4107 ug/L	99
35) Bromochloromethane	9.52	130	819022	204.3432 ug/L	99
36) Tetrahydrofuran	9.56	42	4224	1.8315 ug/L #	75
38) 1,1,1-Trichloroethane	9.85	97	2330454	203.6760 ug/L	98
39) Cyclohexane	9.87	56	2930205	196.8399 ug/L	96
40) 1,1-Dichloropropene	10.08	75	2009314	201.6162 ug/L	98
42) Carbon Tetrachloride	10.23	117	2106944	224.2607 ug/L	99
45) 1,2-Dichloroethane	10.45	62	2101049	199.3915 ug/L	99
46) Benzene	10.48	78	5301493	188.4813 ug/L	94
47) Trichloroethene	11.34	130	1327069	191.1997 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M140322.D 8260WTR.M Fri Jul 01 14:22:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:59 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methylcyclohexane	11.43	83	2178870	199.9595 ug/L	95
49)	1,2-Dichloropropane	11.59	63	1619228	199.9016 ug/L	98
50)	1,4-Dioxane	11.93	88	2818	51.3914 ug/L #	14
51)	Bromodichloromethane	11.94	83	2039115	208.6317 ug/L	99
52)	Dibromomethane	12.03	93	816650	208.3783 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	836577	205.9918 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	515506	206.2494 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	2333363	205.6305 ug/L	99
56)	Dimethyl Disulfide	12.97	79	1322167	209.3111 ug/L	97
59)	Toluene	13.16	91	5329560	183.7033 ug/L	98
60)	Ethyl Methacrylate	13.32	69	1710374	207.2144 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	2115027	205.0216 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	1065320	198.4215 ug/L	98
64)	2-Hexanone	13.58	43	1038924	203.8025 ug/L	98
65)	1,3-Dichloropropane	13.99	76	1956962	193.3985 ug/L	94
66)	Tetrachloroethene	14.11	166	1338320	193.5775 ug/L	92
67)	Dibromochloromethane	14.41	129	1402954	215.2216 ug/L	99
68)	1,2-Dibromoethane	14.70	107	1067268	205.9412 ug/L	100
69)	1-Chlorohexane	14.86	91	1899241	196.7097 ug/L	91
70)	Chlorobenzene	15.31	112	3420251	183.8172 ug/L	87
71)	1,1,1,2-Tetrachloroethane	15.35	131	1330581	200.9750 ug/L	97
72)	Ethylbenzene	15.35	106	1873240	192.3394 ug/L	99
73)	m-,p-Xylene	15.46	106	4310843	366.2377 ug/L	95
74)	o-Xylene	16.11	106	2276447	193.9154 ug/L	96
75)	Styrene	16.16	104	3942983	199.6439 ug/L	88
76)	Bromoform	16.72	173	900340	222.7294 ug/L	97
77)	Isopropylbenzene	16.62	105	5752842	187.8178 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.88	83	1421698	215.4425 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	415115	212.1790 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	17.19	53	555836	222.7847 ug/L	92
83)	n-Propylbenzene	17.22	91	7011461	179.4705 ug/L	99
84)	Bromobenzene	17.34	156	1573131	192.7133 ug/L	88
85)	1,3,5-Trimethylbenzene	17.45	105	5208297	190.2034 ug/L	98
86)	2-Chlorotoluene	17.52	91	4893039	185.1943 ug/L	96
87)	4-Chlorotoluene	17.58	91	4739568	188.1643 ug/L	97
88)	a-Methylstyrene	17.92	118	2750894	199.7372 ug/L	94
89)	tert-Butylbenzene	17.99	134	1070344	194.5543 ug/L	74
90)	1,2,4-Trimethylbenzene	18.05	105	5338361	189.9838 ug/L	98
91)	sec-Butylbenzene	18.31	105	6128752	186.9735 ug/L	99
92)	p-Isopropyltoluene	18.50	119	5274399	188.8129 ug/L	100
93)	1,3-Dichlorobenzene	18.70	146	3017581	187.8153 ug/L	92
94)	1,4-Dichlorobenzene	18.86	146	3009321	185.2589 ug/L	92
95)	n-Butylbenzene	19.13	91	5193206	189.5718 ug/L	98
96)	1,2-Dichlorobenzene	19.43	146	2821487	187.0461 ug/L	91
97)	1,2-Dibromo-3-Chloropropan	20.62	75	291664	225.6764 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	2052522	192.4961 ug/L	98
99)	Hexachlorobutadiene	22.16	225	860118	194.0178 ug/L	100
100)	Naphthalene	22.38	128	4383238	201.1498 ug/L	99
101)	1,2,3-Trichlorobenzene	22.76	180	1893203	191.7570 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140322.D 8260WTR.M Fri Jul 01 14:22:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

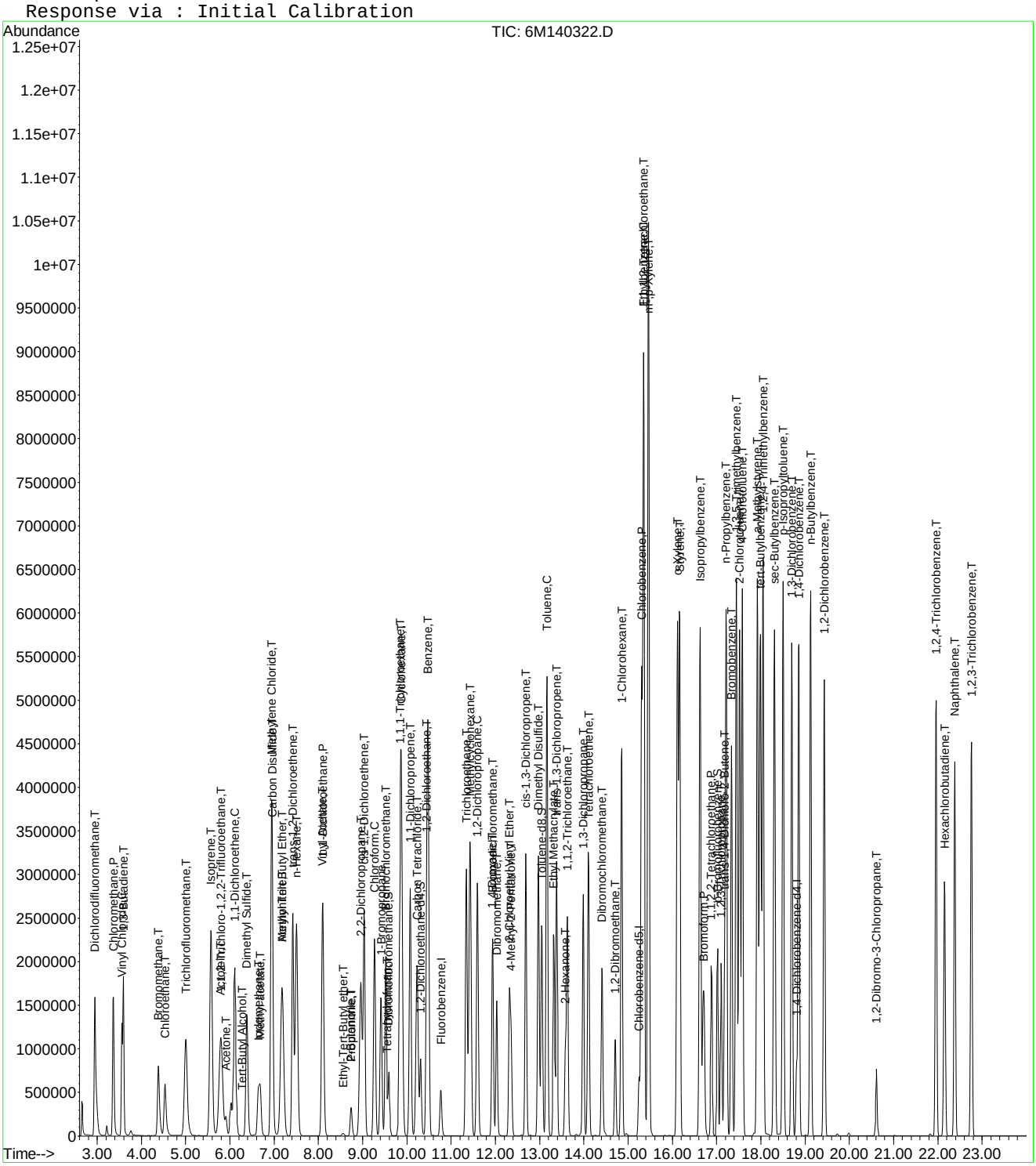

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:07 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	768752	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	513418	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	277427	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	1128188	144.6508 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 578.60%#		
43) 1,2-Dichloroethane-d4	10.31	65	1400537	142.2465 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 569.00%#		
58) Toluene-d8	13.04	98	3666921	145.0395 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 580.16%#		
80) p-Bromofluorobenzene	17.03	95	1580313	145.4490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 581.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.94	85	3603130	280.3824 ug/L	99
3) Chloromethane	3.36	50	3514669	244.9674 ug/L	99
4) Vinyl Chloride	3.56	62	2074164	263.2526 ug/L	98
5) 1,3-Butadiene	3.59	54	1213545	279.8694 ug/L	97
6) Bromomethane	4.37	94	1474577	281.6365 ug/L	100
7) Chloroethane	4.53	64	1490836	299.4574 ug/L	96
8) Trichlorofluoromethane	5.00	101	3451196	287.1972 ug/L	99
9) Diethyl ether	5.55	59	1755505	247.5940 ug/L	97
10) Isoprene	5.57	67	2862617	266.9137 ug/L	94
11) Acrolein	5.79	56	179556	152.2492 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	2228863	298.1095 ug/L	97
13) Acetone	5.91	43	694471	281.9693 ug/L	98
14) 1,1-Dichloroethene	6.10	61	4231203	291.6778 ug/L	94
15) Tert-Butyl Alcohol	6.29	59	515078	683.9134 ug/L	92
16) Dimethyl Sulfide	6.39	62	1850710	292.5220 ug/L	96
17) Iodomethane	6.64	142	1511597	283.4374 ug/L	92
18) Methyl acetate	6.69	43	1992359	298.9430 ug/L	99
19) Methylene Chloride	6.94	84	2215285	266.3004 ug/L	89
20) Carbon Disulfide	6.96	76	7083320	266.4739 ug/L	98
21) Acrylonitrile	7.15	53	497546	162.7001 ug/L	96
22) Methyl Tert Butyl Ether	7.18	73	6401984	290.3361 ug/L	98
23) trans-1,2-Dichloroethene	7.42	96	2224367	286.3050 ug/L	87
24) n-Hexane	7.50	57	3799046	288.1194 ug/L	96
25) Diisopropyl ether	7.90	45	9759184	274.9849 ug/L	99
26) Vinyl Acetate	8.09	43	4448993	300.2991 ug/L	99
27) 1,1-Dichloroethane	8.10	63	4699381	280.9398 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	8098177	283.6338 ug/L	99
29) 2-Butanone	8.73	43	1086721	288.2380 ug/L	98
30) Propionitrile	8.86	54	298217	291.4641 ug/L	98
31) 2,2-Dichloropropane	8.95	77	3622985	287.0872 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	2417494	284.2622 ug/L	71
33) Chloroform	9.26	83	4185224	279.2874 ug/L	99
34) 1-Bromopropane	9.41	122	399109	294.5307 ug/L	100
35) Bromochloromethane	9.52	130	1339573	293.1163 ug/L	99
36) Tetrahydrofuran	9.56	42	723977	275.3063 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3817009	292.5710 ug/L	97
39) Cyclohexane	9.88	56	4836948	284.9676 ug/L	96
40) 1,1-Dichloropropene	10.07	75	3335607	293.5361 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	6187488	285.3971 ug/L	98
42) Carbon Tetrachloride	10.23	117	3426898	319.8971 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140323.D 8260WTR.M Fri Jul 01 14:22:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:07 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	3436626	286.0301 ug/L	99
46)	Benzene	10.48	78	8206846	255.8911 ug/L	92
47)	Trichloroethene	11.34	130	2157856	272.6623 ug/L	85
48)	Methylcyclohexane	11.43	83	3572510	287.5366 ug/L	94
49)	1,2-Dichloropropane	11.59	63	2654885	287.4504 ug/L	98
50)	1,4-Dioxane	11.94	88	37500	599.7769 ug/L	90
51)	Bromodichloromethane	11.93	83	3309122	296.9343 ug/L	99
52)	Dibromomethane	12.02	93	1336996	299.1959 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	1349189	291.3572 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	816641	286.5491 ug/L	98
55)	cis-1,3-Dichloropropene	12.69	75	3726475	288.0131 ug/L	98
56)	Dimethyl Disulfide	12.97	79	2153813	299.0355 ug/L	97
59)	Toluene	13.16	91	7972275	260.5398 ug/L	94
60)	Ethyl Methacrylate	13.32	69	2708040	311.0642 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	3319850	305.1184 ug/L	96
63)	1,1,2-Trichloroethane	13.62	97	1658699	292.9155 ug/L	98
64)	2-Hexanone	13.58	43	1609874	299.4219 ug/L	99
65)	1,3-Dichloropropane	13.99	76	3035134	284.3902 ug/L	93
66)	Tetrachloroethene	14.10	166	2112313	289.6805 ug/L	90
67)	Dibromochloromethane	14.41	129	2168054	315.3397 ug/L	99
68)	1,2-Dibromoethane	14.71	107	1650327	301.9297 ug/L	99
69)	1-Chlorohexane	14.85	91	2920904	286.8330 ug/L	90
70)	Chlorobenzene	15.30	112	5078928	258.8012 ug/L	85
71)	1,1,1,2-Tetrachloroethane	15.35	131	1989897	284.9688 ug/L	97
72)	Ethylbenzene	15.35	106	2784005	271.0260 ug/L	89
73)	m-,p-Xylene	15.46	106	6169523	496.9567 ug/L	82
74)	o-Xylene	16.12	106	3353804	270.8685 ug/L	99
75)	Styrene	16.16	104	5692194	273.2606 ug/L	85
76)	Bromoform	16.71	173	1364903	320.1393 ug/L	96
77)	Isopropylbenzene	16.63	105	8032217	248.6314 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.88	83	2127089	315.9149 ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	617415	309.2940 ug/L	88
82)	trans-1,4-Dichloro-2-Buten	17.18	53	846450	332.5067 ug/L	93
83)	n-Propylbenzene	17.22	91	9328034	234.0103 ug/L	95
84)	Bromobenzene	17.34	156	2312758	277.6754 ug/L	88
85)	1,3,5-Trimethylbenzene	17.45	105	7210752	258.0855 ug/L	99
86)	2-Chlorotoluene	17.53	91	7014220	260.1890 ug/L	97
87)	4-Chlorotoluene	17.59	91	6424073	249.9594 ug/L	98
88)	a-Methylstyrene	17.92	118	3960625	281.8443 ug/L	93
89)	tert-Butylbenzene	18.00	134	1565290	278.8513 ug/L	79
90)	1,2,4-Trimethylbenzene	18.06	105	7348747	256.3200 ug/L	97
91)	sec-Butylbenzene	18.31	105	8392860	250.9449 ug/L	98
92)	p-Isopropyltoluene	18.51	119	7284847	255.5874 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	4306096	262.6735 ug/L	90
94)	1,4-Dichlorobenzene	18.85	146	4284929	258.5323 ug/L	90
95)	n-Butylbenzene	19.12	91	7177388	256.7823 ug/L	99
96)	1,2-Dichlorobenzene	19.44	146	4035185	262.1770 ug/L	90
97)	1,2-Dibromo-3-Chloropropan	20.61	75	433780	328.9526 ug/L	84
98)	1,2,4-Trichlorobenzene	21.97	180	2937231	269.9807 ug/L	97
99)	Hexachlorobutadiene	22.15	225	1256182	277.7132 ug/L	99
100)	Naphthalene	22.39	128	6036194	271.4865 ug/L	97
101)	1,2,3-Trichlorobenzene	22.76	180	2707781	268.7993 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140323.D 8260WTR.M Fri Jul 01 14:22:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

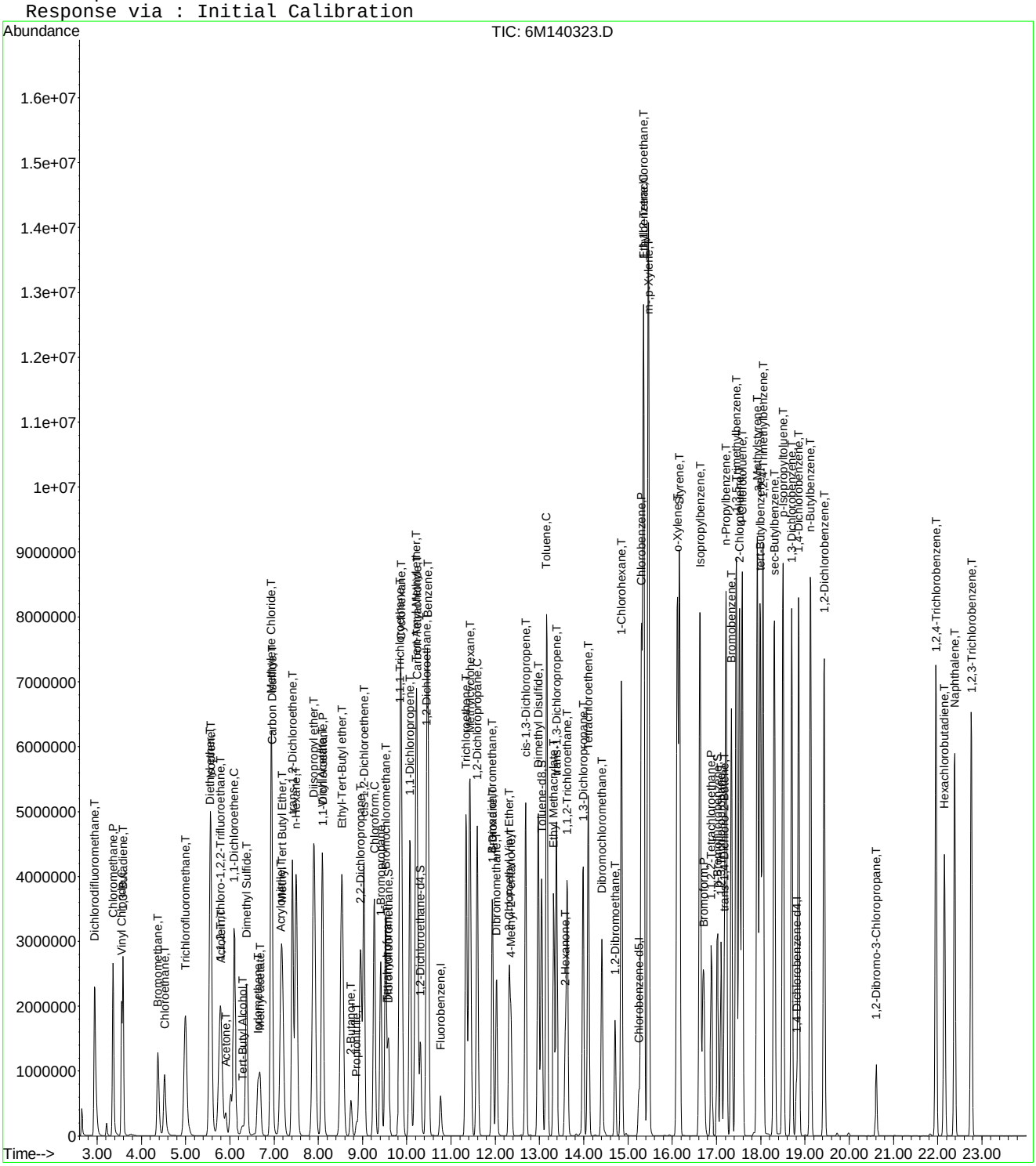

6M140323.D 8260WTR.M Fri Jul 01 14:22:13 2016 Page 3

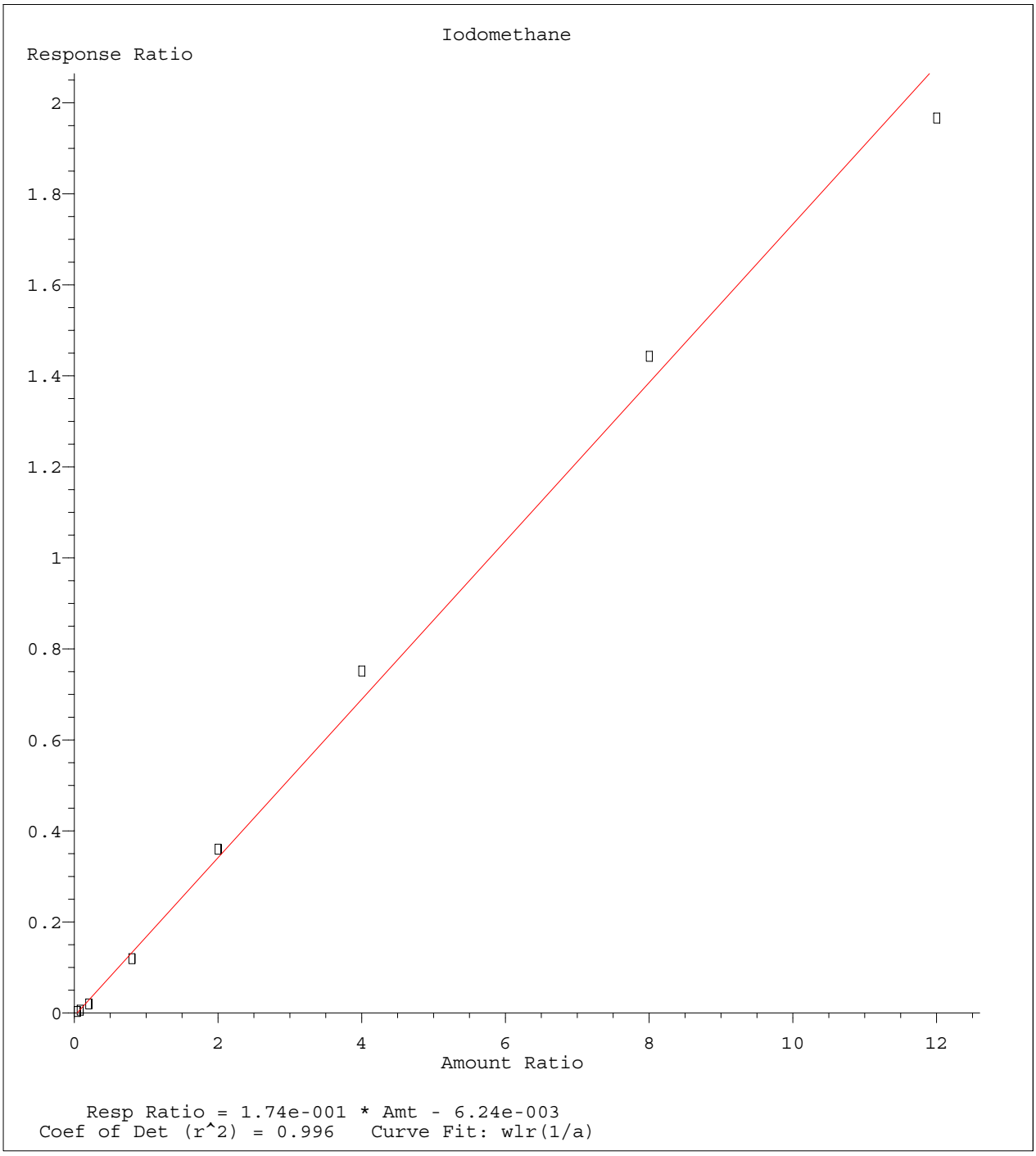

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

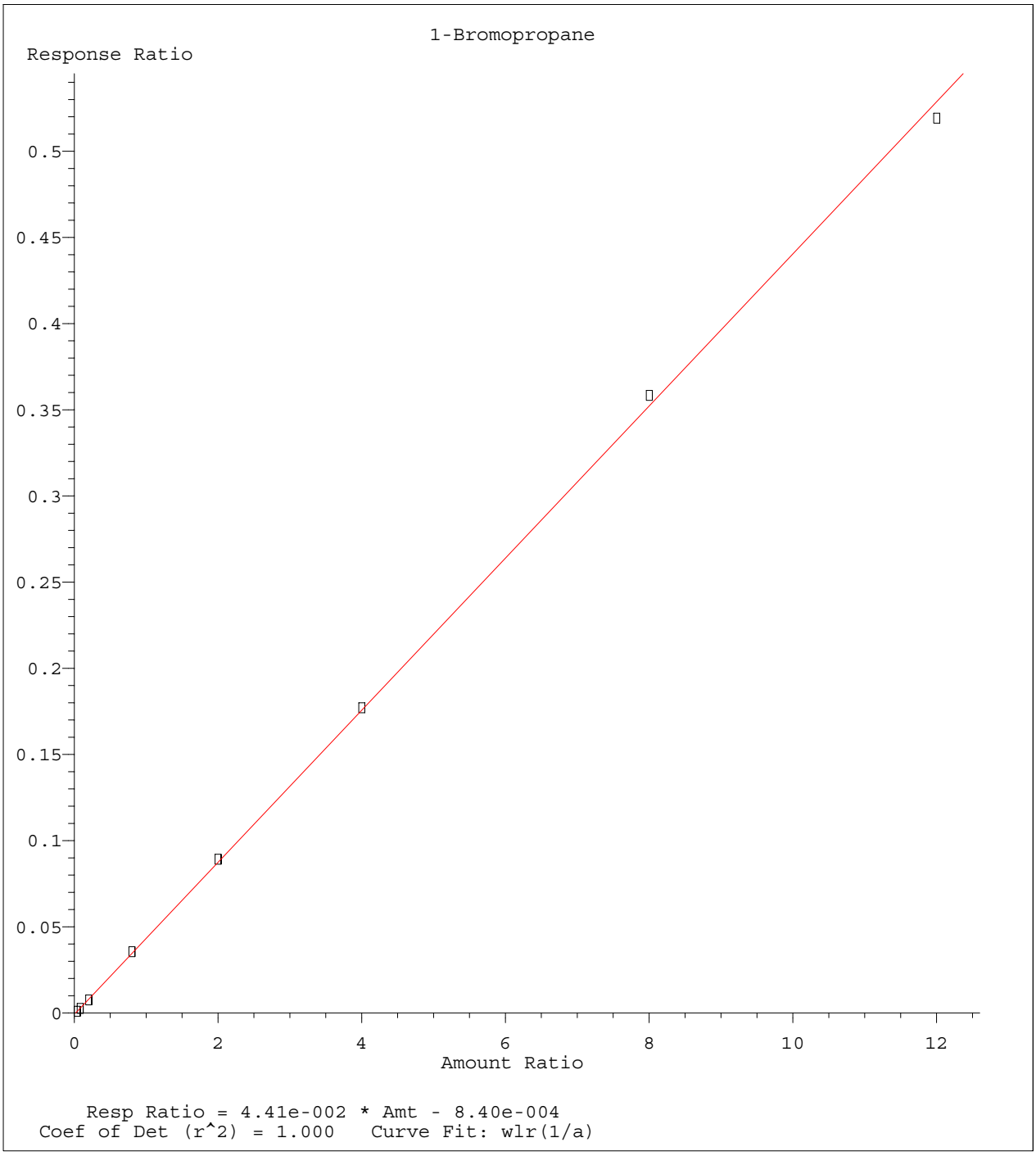

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

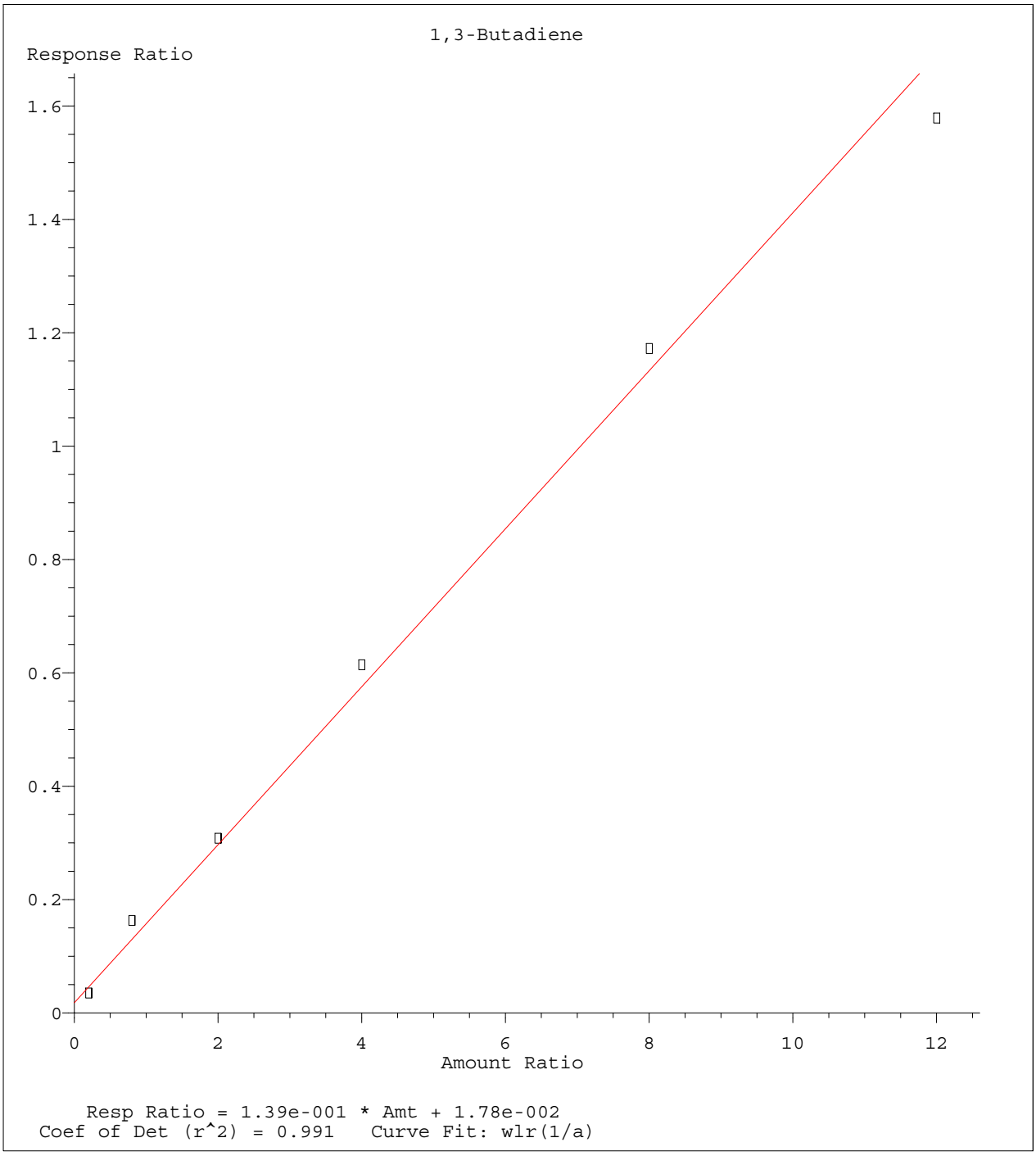

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:31 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	713701	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	500221	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	261664	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	181470	25.0619 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.24%		
43) 1,2-Dichloroethane-d4	10.31	65	220889	24.1652 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.68%		
58) Toluene-d8	13.04	98	608395	24.6990 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.80%		
80) p-Bromofluorobenzene	17.02	95	256905	25.0695 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	485701	40.7108 ug/L	100
3) Chloromethane	3.37	50	521316	39.1377 ug/L	100
4) Vinyl Chloride	3.55	62	337528	46.1434 ug/L	100
5) 1,3-Butadiene	3.60	54	155736	35.9374 ug/L	97
6) Bromomethane	4.37	94	235295	48.4066 ug/L	100
7) Chloroethane	4.52	64	239156	51.7436 ug/L	97
8) Trichlorofluoromethane	4.99	101	525851	47.1350 ug/L	100
9) Diethyl ether	5.56	59	680169	103.3296 ug/L	97
10) Isoprene	5.57	67	555397	55.7803 ug/L	96
11) Acrolein	5.79	56	131596	120.1899 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	356202	51.3167 ug/L	97
13) Acetone	5.91	43	107340	46.9439 ug/L	98
14) 1,1-Dichloroethene	6.11	61	594692	44.1572 ug/L	95
15) Tert-Butyl Alcohol	6.28	59	140341	200.7163 ug/L	98
16) Dimethyl Sulfide	6.38	62	515949	87.8409 ug/L	96
17) Iodomethane	6.64	142	294876	60.2646 ug/L	92
18) Methyl acetate	6.69	43	338698	54.7398 ug/L	99
19) Methylene Chloride	6.93	84	359823	46.5909 ug/L	90
20) Carbon Disulfide	6.95	76	1077126	43.6470 ug/L	100
21) Acrylonitrile	7.15	53	146978	51.7699 ug/L	100
22) Methyl Tert Butyl Ether	7.18	73	1049922	51.2877 ug/L	100
23) trans-1,2-Dichloroethene	7.41	96	339388	47.0532 ug/L	88
24) n-Hexane	7.51	57	547762	44.7466 ug/L	97
25) Diisopropyl ether	7.90	45	3459050	104.9838 ug/L	98
26) Vinyl Acetate	8.09	43	697771	50.7312 ug/L	98
27) 1,1-Dichloroethane	8.10	63	721539	46.4625 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2578321	97.2697 ug/L	98
29) 2-Butanone	8.73	43	177594	50.7378 ug/L	96
30) Propionitrile	8.85	54	95623	100.6665 ug/L	96
31) 2,2-Dichloropropane	8.96	77	593953	50.6955 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	392808	49.7512 ug/L	72
33) Chloroform	9.26	83	665890	47.8636 ug/L	100
34) 1-Bromopropane	9.41	122	83509	66.7495 ug/L	100
35) Bromochloromethane	9.52	130	207412	48.8852 ug/L	100
36) Tetrahydrofuran	9.56	42	224799	92.0780 ug/L	95
38) 1,1,1-Trichloroethane	9.85	97	598191	49.3876 ug/L	99
39) Cyclohexane	9.88	56	748359	47.4902 ug/L	96
40) 1,1-Dichloropropene	10.08	75	507584	48.1132 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	2097011	104.1851 ug/L	98
42) Carbon Tetrachloride	10.23	117	511641	51.4451 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140326.D 8260WTR.M Fri Jul 01 14:22:35 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:31 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	551012	49.3981 ug/L	98
46)	Benzene	10.48	78	1452601	48.7860 ug/L	97
47)	Trichloroethene	11.35	130	359806	48.9712 ug/L	90
48)	Methylcyclohexane	11.43	83	563704	48.8698 ug/L	95
49)	1,2-Dichloropropane	11.59	63	446228	52.0408 ug/L	99
50)	1,4-Dioxane	11.94	88	11529	198.6187 ug/L	84
51)	Bromodichloromethane	11.94	83	530754	51.2992 ug/L	100
52)	Dibromomethane	12.03	93	203238	48.9892 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	227435	52.9030 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	134103	50.6846 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	676117	56.2867 ug/L	100
56)	Dimethyl Disulfide	12.97	79	359470	53.7585 ug/L	98
59)	Toluene	13.15	91	1496307	50.1905 ug/L	99
60)	Ethyl Methacrylate	13.32	69	454272	53.5575 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	565632	53.3572 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	287265	52.0675 ug/L	98
64)	2-Hexanone	13.58	43	260461	49.7214 ug/L	97
65)	1,3-Dichloropropane	13.99	76	552828	53.1662 ug/L	94
66)	Tetrachloroethene	14.10	166	346278	48.7411 ug/L	93
67)	Dibromochloromethane	14.41	129	360309	53.7889 ug/L	99
68)	1,2-Dibromoethane	14.71	107	279233	52.4339 ug/L	100
69)	1-Chlorohexane	14.85	91	508330	51.2350 ug/L	92
70)	Chlorobenzene	15.30	112	974362	50.9593 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	357715	52.5791 ug/L	98
72)	Ethylbenzene	15.35	106	517345	51.6928 ug/L	93
73)	m-,p-Xylene	15.46	106	1254856	103.7457 ug/L	95
74)	o-Xylene	16.11	106	643998	53.3844 ug/L	94
75)	Styrene	16.16	104	1074202	52.9288 ug/L	92
76)	Bromoform	16.72	173	205149	49.3874 ug/L	98
77)	Isopropylbenzene	16.62	105	1626117	51.6632 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	352344	55.4825 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	103329	54.8809 ug/L	79
82)	trans-1,4-Dichloro-2-Buten	17.18	53	121642	50.6626 ug/L	96
83)	n-Propylbenzene	17.22	91	2019179	53.7062 ug/L	98
84)	Bromobenzene	17.34	156	398353	50.7084 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	1384872	52.5530 ug/L	97
86)	2-Chlorotoluene	17.52	91	1343673	52.8455 ug/L	96
87)	4-Chlorotoluene	17.58	91	1234147	50.9132 ug/L	97
88)	a-Methylstyrene	17.92	118	769488	58.0567 ug/L	95
89)	tert-Butylbenzene	17.98	134	281622	53.1924 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	1394233	51.5596 ug/L	98
91)	sec-Butylbenzene	18.30	105	1658086	52.5630 ug/L	97
92)	p-Isopropyltoluene	18.50	119	1389218	51.6766 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	793356	51.3104 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	809665	51.7942 ug/L	94
95)	n-Butylbenzene	19.12	91	1353617	51.3451 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	761556	52.4611 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.62	75	69221	55.6553 ug/L	83
98)	1,2,4-Trichlorobenzene	21.97	180	527905	51.4464 ug/L	99
99)	Hexachlorobutadiene	22.15	225	224309	52.5770 ug/L	99
100)	Naphthalene	22.38	128	1033625	49.2893 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	485666	51.1160 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140326.D 8260WTR.M Fri Jul 01 14:22:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

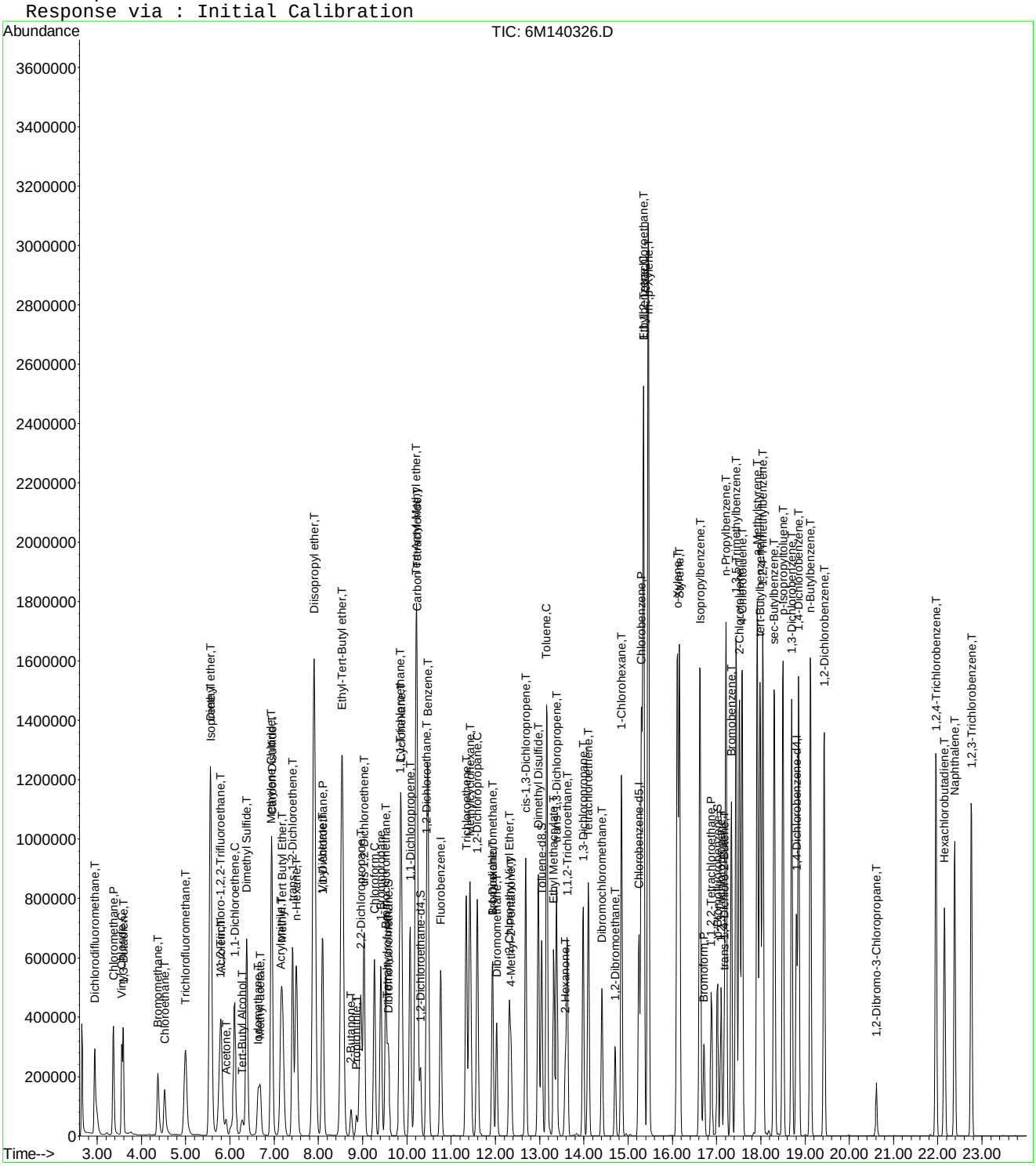

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	40.7108	18.6	83	0.00
3	P	Chloromethane	50.0000	39.1377	21.7#	85	0.00
4	C	Vinyl Chloride	50.0000	46.1434	7.7	97	0.00
5	T	1,3-Butadiene	50.0000	35.9374	28.1#	76	0.00
6	T	Bromomethane	50.0000	48.4066	3.2	110	0.00
7	T	Chloroethane	50.0000	51.7436	-3.5	111	0.00
8	T	Trichlorofluoromethane	50.0000	47.1350	5.7	106	0.00
9	T	Diethyl ether	100.0000	103.3296	-3.3	108	0.00
10	T	Isoprene	50.0000	55.7803	-11.6	117	0.00
11	T	Acrolein	50.0000	120.1899	-140.4#	262	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3167	-2.6	112	0.00
13	T	Acetone	50.0000	46.9439	6.1	101	0.00
14	C	1,1-Dichloroethene	50.0000	44.1572	11.7	95	0.00
15	T	Tert-Butyl Alcohol	200.0000	200.7163	-0.4	109	-0.01
16	T	Dimethyl Sulfide	50.0000	87.8409	-75.7#	187	0.00
17	T	Iodomethane	50.0000	60.2646	-20.5#	123	0.00
18	T	Methyl acetate	50.0000	54.7398	-9.5	119	0.00
19	T	Methylene Chloride	50.0000	46.5909	6.8	104	0.00
20	T	Carbon Disulfide	50.0000	43.6470	12.7	93	0.00
21	T	Acrylonitrile	50.0000	51.7698	-3.5	108	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.2877	-2.6	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	47.0532	5.9	102	0.00
24	T	n-Hexane	50.0000	44.7466	10.5	97	0.00
25	T	Diisopropyl ether	100.0000	104.9838	-5.0	113	0.00
26	T	Vinyl Acetate	50.0000	50.7312	-1.5	108	0.00
27	P	1,1-Dichloroethane	50.0000	46.4625	7.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	97.2697	2.7	104	0.00
29	T	2-Butanone	50.0000	50.7378	-1.5	106	0.00
30	T	Propionitrile	100.0000	100.6665	-0.7	106	0.00
31	T	2,2-Dichloropropane	50.0000	50.6955	-1.4	111	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.7512	0.5	107	0.00
33	C	Chloroform	50.0000	47.8636	4.3	105	0.00
34		1-Bromopropane	50.0000	66.7495	-33.5#	141	0.00
35	T	Bromochloromethane	50.0000	48.8852	2.2	102	0.00
36	T	Tetrahydrofuran	100.0000	92.0780	7.9	104	0.00
37	S	Dibromofluoromethane	25.0000	25.0619	-0.2	106	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.3876	1.2	104	0.00
39	T	Cyclohexane	50.0000	47.4902	5.0	103	0.00
40	T	1,1-Dichloropropene	50.0000	48.1132	3.8	104	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	104.1851	-4.2	111	0.00
42	T	Carbon Tetrachloride	50.0000	51.4451	-2.9	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.1652	3.3	104	0.00
44		Heptane	-1.0000	0.0000	0.0	111	0.00
45	T	1,2-Dichloroethane	50.0000	49.3981	1.2	105	0.00
46	T	Benzene	50.0000	48.7860	2.4	105	0.00
47	T	Trichloroethene	50.0000	48.9712	2.1	105	0.00
48	T	Methylcyclohexane	50.0000	48.8698	2.3	106	0.00
49	C	1,2-Dichloropropane	50.0000	52.0408	-4.1	111	0.00
50	T	1,4-Dioxane	200.0000	198.6187	0.7	102	0.00
51	T	Bromodichloromethane	50.0000	51.2992	-2.6	106	0.00
52	T	Dibromomethane	50.0000	48.9892	2.0	101	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.9030	-5.8	106	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.6846	-1.4	106	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.2867	-12.6	117	0.00
56	T	Dimethyl Disulfide	50.0000	53.7585	-7.5	112	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
58	S	Toluene-d8	25.0000	24.6990	1.2	104	0.00
59	C	Toluene	50.0000	50.1905	-0.4	107	0.00
60	T	Ethyl Methacrylate	50.0000	53.5575	-7.1	108	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	107	0.00
62	T	trans-1,3-Dichloropropene	50.0000	53.3572	-6.7	108	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.0675	-4.1	108	0.00
64	T	2-Hexanone	50.0000	49.7214	0.6	101	0.00
65	T	1,3-Dichloropropane	50.0000	53.1662	-6.3	112	0.00
66	T	Tetrachloroethene	50.0000	48.7411	2.5	103	0.00
67	T	Dibromochloromethane	50.0000	53.7889	-7.6	105	0.00
68	T	1,2-Dibromoethane	50.0000	52.4339	-4.9	107	0.00
69	T	1-Chlorohexane	50.0000	51.2350	-2.5	106	0.00
70	P	Chlorobenzene	50.0000	50.9593	-1.9	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.5791	-5.2	106	0.00
72	C	Ethylbenzene	50.0000	51.6928	-3.4	107	0.00
73	T	m-,p-Xylene	100.0000	103.7457	-3.7	108	0.00
74	T	o-Xylene	50.0000	53.3844	-6.8	109	0.00
75	T	Styrene	50.0000	52.9288	-5.9	106	0.00
76	P	Bromoform	50.0000	49.3873	1.2	98	0.00
77	T	Isopropylbenzene	50.0000	51.6632	-3.3	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	99	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.4825	-11.0	108	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0695	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	50.0000	54.8809	-9.8	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	50.6626	-1.3	94	0.00
83	T	n-Propylbenzene	50.0000	53.7062	-7.4	107	0.00
84	T	Bromobenzene	50.0000	50.7084	-1.4	102	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.5530	-5.1	104	-0.01
86	T	2-Chlorotoluene	50.0000	52.8455	-5.7	105	0.00
87	T	4-Chlorotoluene	50.0000	50.9132	-1.8	105	0.00
88	T	a-Methylstyrene	50.0000	58.0567	-16.1	111	0.00
89	T	tert-Butylbenzene	50.0000	53.1924	-6.4	106	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	51.5596	-3.1	101	-0.01
91	T	sec-Butylbenzene	50.0000	52.5630	-5.1	104	-0.01
92	T	p-Isopropyltoluene	50.0000	51.6766	-3.4	101	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.3104	-2.6	103	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7942	-3.6	105	0.00
95	T	n-Butylbenzene	50.0000	51.3451	-2.7	100	0.00
96	T	1,2-Dichlorobenzene	50.0000	52.4611	-4.9	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	55.6553	-11.3	107	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.4464	-2.9	102	0.00
99	T	Hexachlorobutadiene	50.0000	52.5770	-5.2	105	0.00
100	T	Naphthalene	50.0000	49.2893	1.4	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	51.1160	-2.2	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140326.D 8260WTR.M Fri Jul 01 14:37:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140510.D Vial: 2
Acq On : 8 Jul 2016 14:33 Operator: TMB
Sample : WG575663-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 08 17:03:40 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	773147	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	570941	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	322831	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	204069	26.0160 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.08%		
43) 1,2-Dichloroethane-d4	10.32	65	240996	24.3378 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.36%		
58) Toluene-d8	13.04	98	692750	24.6400 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.56%		
80) p-Bromofluorobenzene	17.02	95	301494	23.8462 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.40%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	770372	59.6068 ug/L	99
3) Chloromethane	3.36	50	700003	48.5119 ug/L	99
4) Vinyl Chloride	3.57	62	452968	57.1638 ug/L	100
5) 1,3-Butadiene	3.60	54	305260	67.6072 ug/L	96
6) Bromomethane	4.38	94	208181	39.5355 ug/L	100
7) Chloroethane	4.54	64	262741	52.4756 ug/L	91
8) Trichlorofluoromethane	5.01	101	808323	66.8836 ug/L	100
9) Diethyl ether	5.55	59	667883	93.6618 ug/L	95
10) Isoprene	5.57	67	553120	51.2804 ug/L	93
11) Acrolein	5.79	56	50279	42.3902 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	422989	56.2530 ug/L	97
13) Acetone	5.89	43	114818	46.3534 ug/L	97
14) 1,1-Dichloroethene	6.11	61	783215	53.6840 ug/L	93
15) Tert-Butyl Alcohol	6.25	59	125694	165.9460 ug/L	95
16) Dimethyl Sulfide	6.38	62	301279	47.3493 ug/L	91
17) Iodomethane	6.64	142	264020	49.9652 ug/L	90
18) Methyl acetate	6.68	43	317699	47.3981 ug/L	97
19) Methylene Chloride	6.94	84	415495	49.6629 ug/L	88
20) Carbon Disulfide	6.96	76	1358422	50.8132 ug/L	100
21) Acrylonitrile	7.15	53	142034	46.1818 ug/L	98
22) Methyl Tert Butyl Ether	7.18	73	1027442	46.3306 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	408867	52.3273 ug/L	89
24) n-Hexane	7.51	57	707895	53.3815 ug/L	95
25) Diisopropyl ether	7.90	45	3537772	99.1173 ug/L	98
26) Vinyl Acetate	8.09	43	807593	54.2012 ug/L	97
27) 1,1-Dichloroethane	8.10	63	858958	51.0586 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2694157	93.8248 ug/L	98
29) 2-Butanone	8.73	43	171823	45.3146 ug/L	94
30) Propionitrile	8.86	54	92132	89.5339 ug/L	97
31) 2,2-Dichloropropane	8.96	77	714921	56.3287 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	444155	51.9293 ug/L	71
33) Chloroform	9.26	83	778807	51.6757 ug/L	99
34) 1-Bromopropane	9.42	122	70242	51.9346 ug/L	99
35) Bromochloromethane	9.52	130	241819	52.6124 ug/L	100
36) Tetrahydrofuran	9.55	42	215022	81.3015 ug/L	93
38) 1,1,1-Trichloroethane	9.86	97	721596	54.9954 ug/L	99
39) Cyclohexane	9.88	56	845573	49.5335 ug/L	95
40) 1,1-Dichloropropene	10.08	75	594847	52.0494 ug/L	95
41) Tert-Amyl-Methyl ether	10.21	73	1990807	91.3037 ug/L	97
42) Carbon Tetrachloride	10.23	117	657218	61.0018 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140510.D 8260WTR.M Fri Jul 08 17:03:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140510.D Vial: 2
Acq On : 8 Jul 2016 14:33 Operator: TMB
Sample : WG575663-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 08 17:03:40 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	613904	50.8047 ug/L	98
46)	Benzene	10.48	78	1618649	50.1829 ug/L	95
47)	Trichloroethene	11.34	130	400893	50.3681 ug/L	88
48)	Methylcyclohexane	11.43	83	631459	50.5346 ug/L	94
49)	1,2-Dichloropropane	11.59	63	463234	49.8703 ug/L	95
50)	1,4-Dioxane	11.93	88	11571	184.0151 ug/L	91
51)	Bromodichloromethane	11.93	83	598231	53.3753 ug/L	99
52)	Dibromomethane	12.02	93	231422	51.4937 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	205339	44.0909 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	120394	42.0046 ug/L	98
55)	cis-1,3-Dichloropropene	12.69	75	669154	51.4238 ug/L	98
56)	Dimethyl Disulfide	12.96	79	342028	47.2172 ug/L	99
59)	Toluene	13.16	91	1665801	48.9547 ug/L	100
60)	Ethyl Methacrylate	13.32	69	421360	43.5239 ug/L	92
62)	trans-1,3-Dichloropropene	13.39	75	602605	49.8038 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	298687	47.4320 ug/L	99
64)	2-Hexanone	13.58	43	243428	40.7138 ug/L	94
65)	1,3-Dichloropropane	13.98	76	537808	45.3152 ug/L	90
66)	Tetrachloroethene	14.10	166	414619	51.1317 ug/L	92
67)	Dibromochloromethane	14.41	129	401069	52.4575 ug/L	99
68)	1,2-Dibromoethane	14.71	107	288555	47.4727 ug/L	99
69)	1-Chlorohexane	14.85	91	554059	48.9269 ug/L	90
70)	Chlorobenzene	15.30	112	1075430	49.2783 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	409599	52.7479 ug/L	97
72)	Ethylbenzene	15.35	106	582308	50.9769 ug/L	95
73)	m-,p-Xylene	15.45	106	1396057	101.1230 ug/L	94
74)	o-Xylene	16.11	106	695221	50.4921 ug/L	93
75)	Styrene	16.16	104	1184880	51.1507 ug/L	92
76)	Bromoform	16.71	173	236465	49.8751 ug/L	98
77)	Isopropylbenzene	16.62	105	1820330	50.6699 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	364272	46.4926 ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	105090	45.2407 ug/L	92
82)	trans-1,4-Dichloro-2-Buten	17.18	53	139738	47.1723 ug/L	98
83)	n-Propylbenzene	17.22	91	2275716	49.0610 ug/L	98
84)	Bromobenzene	17.34	156	461277	47.5929 ug/L	91
85)	1,3,5-Trimethylbenzene	17.44	105	1598480	49.1659 ug/L	97
86)	2-Chlorotoluene	17.52	91	1415997	45.1383 ug/L	97
87)	4-Chlorotoluene	17.58	91	1495699	50.0123 ug/L	96
88)	a-Methylstyrene	17.92	118	778163	47.5871 ug/L	100
89)	tert-Butylbenzene	17.99	134	322632	49.3923 ug/L	71
90)	1,2,4-Trimethylbenzene	18.05	105	1653238	49.5539 ug/L	98
91)	sec-Butylbenzene	18.30	105	1933646	49.6843 ug/L	98
92)	p-Isopropyltoluene	18.50	119	1673420	50.4542 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	926818	48.5848 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	923117	47.8632 ug/L	95
95)	n-Butylbenzene	19.12	91	1656779	50.9374 ug/L	97
96)	1,2-Dichlorobenzene	19.42	146	853074	47.6312 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	72560	47.2862 ug/L	87
98)	1,2,4-Trichlorobenzene	21.96	180	614705	48.5551 ug/L	99
99)	Hexachlorobutadiene	22.15	225	264523	50.2552 ug/L	99
100)	Naphthalene	22.38	128	1188841	45.9497 ug/L	100
101)	1,2,3-Trichlorobenzene	22.75	180	557592	47.5669 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140510.D Vial: 2
Acq On : 8 Jul 2016 14:33 Operator: TMB
Sample : WG575663-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 8 17:03 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

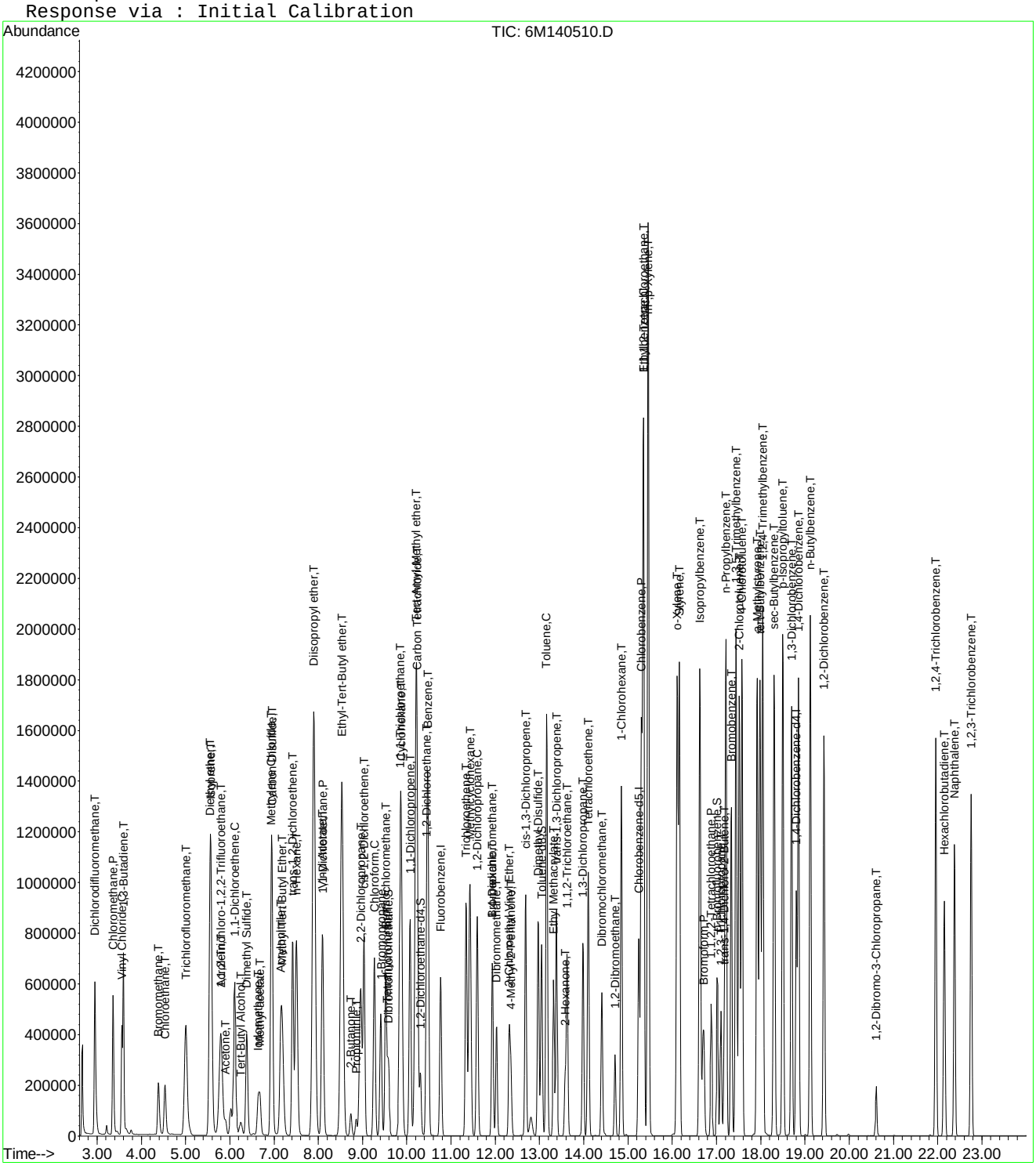

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140510.D Vial: 2
Acq On : 8 Jul 2016 14:33 Operator: TMB
Sample : WG575663-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	116	0.00
2	T	Dichlorodifluoromethane	0.4179	0.4982	-19.2	132	0.01
3	P	Chloromethane	0.4666	0.4527	3.0	114	0.00
4	C	Vinyl Chloride	0.2562	0.2929	-14.3	131	0.01
5	T	1,3-Butadiene	0.1608	0.1974	-22.8#	149	0.01
6	T	Bromomethane	0.1703	0.1346	20.9#	97	0.01
7	T	Chloroethane	0.1619	0.1699	-5.0	122	0.01
8	T	Trichlorofluoromethane	0.3908	0.5228	-33.8#	163	0.01
9	T	Diethyl ether	0.2306	0.2160	6.3	106	0.00
10	T	Isoprene	0.3488	0.3577	-2.6	116	0.00
11	T	Acrolein	0.0384	0.0325	15.2	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2431	0.2736	-12.5	133	0.01
13	T	Acetone	0.0801	0.0742	7.3	108	-0.01
14	C	1,1-Dichloroethene	0.4718	0.5065	-7.4	126	0.01
15	T	Tert-Butyl Alcohol	0.0245	0.0203	17.0	97	-0.04
16	T	Dimethyl Sulfide	0.2057	0.1948	5.3	109	0.00
17	T	Iodomethane	0.1391	0.1707	-22.7#	110	0.00
18	T	Methyl acetate	0.2167	0.2055	5.2	111	-0.01
19	T	Methylene Chloride	0.2705	0.2687	0.7	120	0.00
20	T	Carbon Disulfide	0.8644	0.8785	-1.6	118	0.00
21	T	Acrylonitrile	0.0994	0.0919	7.6	105	0.00
22	T	Methyl Tert Butyl Ether	0.7171	0.6644	7.3	108	0.00
23	T	trans-1,2-Dichloroethene	0.2527	0.2644	-4.7	123	0.00
24	T	n-Hexane	0.4288	0.4578	-6.8	125	0.01
25	T	Diisopropyl ether	1.1541	1.1440	0.9	115	0.00
26	T	Vinyl Acetate	0.4818	0.5223	-8.4	125	0.00
27	P	1,1-Dichloroethane	0.5440	0.5555	-2.1	119	0.00
28	T	Ethyl-Tert-Butyl ether	0.9285	0.8712	6.2	109	0.00
29	T	2-Butanone	0.1226	0.1111	9.4	103	0.00
30	T	Propionitrile	0.0333	0.0298	10.5	102	0.00
31	T	2,2-Dichloropropane	0.4104	0.4623	-12.7	134	0.01
32	T	cis-1,2-Dichloroethene	0.2766	0.2872	-3.9	121	0.00
33	C	Chloroform	0.4873	0.5037	-3.4	123	0.00
34		1-Bromopropane	0.0394	0.0454	-15.2	118	0.01
35	T	Bromochloromethane	0.1486	0.1564	-5.2	119	0.00
36	T	Tetrahydrofuran	0.0855	0.0695	18.7	99	-0.01
37	S	Dibromofluoromethane	0.2536	0.2640	-4.1	119	0.00
38	T	1,1,1-Trichloroethane	0.4243	0.4667	-10.0	126	0.01
39	T	Cyclohexane	0.5520	0.5468	0.9	117	0.00
40	T	1,1-Dichloropropene	0.3695	0.3847	-4.1	122	0.01
41	T	Tert-Amyl-Methyl ether	0.7050	0.6437	8.7	106	0.00
42	T	Carbon Tetrachloride	0.3484	0.4250	-22.0#	131	0.00
43	S	1,2-Dichloroethane-d4	0.3202	0.3117	2.6	114	0.01
44		Heptane	0.0000	0.0000	0.0	108	0.00
45	T	1,2-Dichloroethane	0.3907	0.3970	-1.6	117	0.00
46	T	Benzene	1.0430	1.0468	-0.4	118	0.00
47	T	Trichloroethene	0.2574	0.2593	-0.7	118	0.00
48	T	Methylcyclohexane	0.4041	0.4084	-1.1	119	0.00
49	C	1,2-Dichloropropane	0.3004	0.2996	0.3	115	0.00
50	T	1,4-Dioxane	0.0020	0.0019	7.9	102	-0.01
51	T	Bromodichloromethane	0.3624	0.3869	-6.7	120	0.00
52	T	Dibromomethane	0.1453	0.1497	-3.0	115	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1506	0.1328	11.8	96	0.00
54	T	4-Methyl-2-Pentanone	0.0927	0.0779	16.0	95	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140510.D Vial: 2
Acq On : 8 Jul 2016 14:33 Operator: TMB
Sample : WG575663-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4208	0.4328	-2.8	116	0.00
56	T	Dimethyl Disulfide	0.2342	0.2212	5.6	106	-0.01
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	120	0.00
58	S	Toluene-d8	1.2311	1.2133	1.4	118	0.00
59	C	Toluene	1.4900	1.4588	2.1	119	0.00
60	T	Ethyl Methacrylate	0.4239	0.3690	13.0	100	0.00
61		Paraldehyde	0.0000	0.0000	0.0	121	0.00
62	T	trans-1,3-Dichloropropene	0.5298	0.5277	0.4	115	0.00
63	T	1,1,2-Trichloroethane	0.2757	0.2616	5.1	112	0.00
64	T	2-Hexanone	0.2618	0.2132	18.6	95	0.00
65	T	1,3-Dichloropropane	0.5197	0.4710	9.4	109	-0.01
66	T	Tetrachloroethene	0.3551	0.3631	-2.3	123	0.00
67	T	Dibromochloromethane	0.3348	0.3512	-4.9	117	0.00
68	T	1,2-Dibromoethane	0.2662	0.2527	5.1	110	0.00
69	T	1-Chlorohexane	0.4959	0.4852	2.1	116	0.00
70	P	Chlorobenzene	0.9556	0.9418	1.4	119	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3400	0.3587	-5.5	121	0.00
72	C	Ethylbenzene	0.5002	0.5100	-2.0	120	0.00
73	T	m-,p-Xylene	0.6045	0.6113	-1.1	120	-0.01
74	T	o-Xylene	0.6029	0.6088	-1.0	118	-0.01
75	T	Styrene	1.0143	1.0377	-2.3	117	0.00
76	P	Bromoform	0.2076	0.2071	0.3	112	0.00
77	T	Isopropylbenzene	1.5731	1.5942	-1.3	119	-0.01
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	122	-0.01
79	P	1,1,2,2-Tetrachloroethane	0.6068	0.5642	7.0	112	0.00
80	S	p-Bromofluorobenzene	0.9791	0.9339	4.6	117	-0.01
81	T	1,2,3-Trichloropropane	0.1799	0.1628	9.5	106	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2294	0.2164	5.7	108	0.00
83	T	n-Propylbenzene	3.5921	3.5246	1.9	121	0.00
84	T	Bromobenzene	0.7506	0.7144	4.8	118	0.00
85	T	1,3,5-Trimethylbenzene	2.5177	2.4757	1.7	120	-0.01
86	T	2-Chlorotoluene	2.4293	2.1931	9.7	111	-0.01
87	T	4-Chlorotoluene	2.3160	2.3165	-0.0	128	-0.01
88	T	a-Methylstyrene	1.2663	1.2052	4.8	113	0.00
89	T	tert-Butylbenzene	0.5058	0.4997	1.2	121	-0.01
90	T	1,2,4-Trimethylbenzene	2.5836	2.5605	0.9	120	-0.01
91	T	sec-Butylbenzene	3.0139	2.9948	0.6	121	-0.01
92	T	p-Isopropyltoluene	2.5685	2.5918	-0.9	122	-0.01
93	T	1,3-Dichlorobenzene	1.4773	1.4354	2.8	121	0.00
94	T	1,4-Dichlorobenzene	1.4935	1.4297	4.3	120	0.00
95	T	n-Butylbenzene	2.5188	2.5660	-1.9	123	0.00
96	T	1,2-Dichlorobenzene	1.3869	1.3212	4.7	117	-0.01
97	T	1,2-Dibromo-3-Chloropropane	0.1188	0.1124	5.4	113	0.00
98	T	1,2,4-Trichlorobenzene	0.9804	0.9520	2.9	119	-0.01
99	T	Hexachlorobutadiene	0.4076	0.4097	-0.5	124	0.00
100	T	Naphthalene	2.0036	1.8413	8.1	106	-0.01
101	T	1,2,3-Trichlorobenzene	0.9078	0.8636	4.9	116	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140510.D 8260WTR.M Fri Jul 08 17:04:35 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140510.D Vial: 2
Acq On : 8 Jul 2016 14:33 Operator: TMB
Sample : WG575663-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	116	0.00
2	T	Dichlorodifluoromethane	50.0000	59.6068	-19.2	132	0.01
3	P	Chloromethane	50.0000	48.5119	3.0	114	0.00
4	C	Vinyl Chloride	50.0000	57.1638	-14.3	131	0.01
5	T	1,3-Butadiene	50.0000	67.6072	-35.2#	149	0.01
6	T	Bromomethane	50.0000	39.5355	20.9#	97	0.01
7	T	Chloroethane	50.0000	52.4756	-5.0	122	0.01
8	T	Trichlorofluoromethane	50.0000	66.8836	-33.8#	163	0.01
9	T	Diethyl ether	100.0000	93.6618	6.3	106	0.00
10	T	Isoprene	50.0000	51.2804	-2.6	116	0.00
11	T	Acrolein	50.0000	42.3903	15.2	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	56.2530	-12.5	133	0.01
13	T	Acetone	50.0000	46.3534	7.3	108	-0.01
14	C	1,1-Dichloroethene	50.0000	53.6840	-7.4	126	0.01
15	T	Tert-Butyl Alcohol	200.0000	165.9460	17.0	97	-0.04
16	T	Dimethyl Sulfide	50.0000	47.3493	5.3	109	0.00
17	T	Iodomethane	50.0000	49.9652	0.1	110	0.00
18	T	Methyl acetate	50.0000	47.3981	5.2	111	-0.01
19	T	Methylene Chloride	50.0000	49.6629	0.7	120	0.00
20	T	Carbon Disulfide	50.0000	50.8132	-1.6	118	0.00
21	T	Acrylonitrile	50.0000	46.1818	7.6	105	0.00
22	T	Methyl Tert Butyl Ether	50.0000	46.3306	7.3	108	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.3274	-4.7	123	0.00
24	T	n-Hexane	50.0000	53.3815	-6.8	125	0.01
25	T	Diisopropyl ether	100.0000	99.1173	0.9	115	0.00
26	T	Vinyl Acetate	50.0000	54.2012	-8.4	125	0.00
27	P	1,1-Dichloroethane	50.0000	51.0586	-2.1	119	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	93.8248	6.2	109	0.00
29	T	2-Butanone	50.0000	45.3147	9.4	103	0.00
30	T	Propionitrile	100.0000	89.5339	10.5	102	0.00
31	T	2,2-Dichloropropane	50.0000	56.3287	-12.7	134	0.01
32	T	cis-1,2-Dichloroethene	50.0000	51.9293	-3.9	121	0.00
33	C	Chloroform	50.0000	51.6757	-3.4	123	0.00
34		1-Bromopropane	50.0000	51.9346	-3.9	118	0.01
35	T	Bromochloromethane	50.0000	52.6124	-5.2	119	0.00
36	T	Tetrahydrofuran	100.0000	81.3015	18.7	99	-0.01
37	S	Dibromofluoromethane	25.0000	26.0160	-4.1	119	0.00
38	T	1,1,1-Trichloroethane	50.0000	54.9954	-10.0	126	0.01
39	T	Cyclohexane	50.0000	49.5335	0.9	117	0.00
40	T	1,1-Dichloropropene	50.0000	52.0495	-4.1	122	0.01
41	T	Tert-Amyl-Methyl ether	100.0000	91.3037	8.7	106	0.00
42	T	Carbon Tetrachloride	50.0000	61.0018	-22.0#	131	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.3378	2.6	114	0.01
44		Heptane	-1.0000	0.0000	0.0	108	0.00
45	T	1,2-Dichloroethane	50.0000	50.8047	-1.6	117	0.00
46	T	Benzene	50.0000	50.1829	-0.4	118	0.00
47	T	Trichloroethene	50.0000	50.3681	-0.7	118	0.00
48	T	Methylcyclohexane	50.0000	50.5346	-1.1	119	0.00
49	C	1,2-Dichloropropane	50.0000	49.8703	0.3	115	0.00
50	T	1,4-Dioxane	200.0000	184.0151	8.0	102	-0.01
51	T	Bromodichloromethane	50.0000	53.3753	-6.8	120	0.00
52	T	Dibromomethane	50.0000	51.4937	-3.0	115	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	44.0909	11.8	96	0.00
54	T	4-Methyl-2-Pentanone	50.0000	42.0046	16.0	95	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140510.D Vial: 2
Acq On : 8 Jul 2016 14:33 Operator: TMB
Sample : WG575663-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.4238	-2.8	116	0.00
56	T	Dimethyl Disulfide	50.0000	47.2173	5.6	106	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	120	0.00
58	S	Toluene-d8	25.0000	24.6400	1.4	118	0.00
59	C	Toluene	50.0000	48.9547	2.1	119	0.00
60	T	Ethyl Methacrylate	50.0000	43.5239	13.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	121	0.00
62	T	trans-1,3-Dichloropropene	50.0000	49.8038	0.4	115	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.4320	5.1	112	0.00
64	T	2-Hexanone	50.0000	40.7138	18.6	95	0.00
65	T	1,3-Dichloropropane	50.0000	45.3152	9.4	109	-0.01
66	T	Tetrachloroethene	50.0000	51.1317	-2.3	123	0.00
67	T	Dibromochloromethane	50.0000	52.4575	-4.9	117	0.00
68	T	1,2-Dibromoethane	50.0000	47.4727	5.1	110	0.00
69	T	1-Chlorohexane	50.0000	48.9269	2.1	116	0.00
70	P	Chlorobenzene	50.0000	49.2784	1.4	119	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.7479	-5.5	121	0.00
72	C	Ethylbenzene	50.0000	50.9769	-2.0	120	0.00
73	T	m-,p-Xylene	100.0000	101.1230	-1.1	120	-0.01
74	T	o-Xylene	50.0000	50.4921	-1.0	118	-0.01
75	T	Styrene	50.0000	51.1507	-2.3	117	0.00
76	P	Bromoform	50.0000	49.8751	0.2	112	0.00
77	T	Isopropylbenzene	50.0000	50.6700	-1.3	119	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	122	-0.01
79	P	1,1,2,2-Tetrachloroethane	50.0000	46.4926	7.0	112	0.00
80	S	p-Bromofluorobenzene	25.0000	23.8462	4.6	117	-0.01
81	T	1,2,3-Trichloropropane	50.0000	45.2407	9.5	106	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	47.1723	5.7	108	0.00
83	T	n-Propylbenzene	50.0000	49.0610	1.9	121	0.00
84	T	Bromobenzene	50.0000	47.5929	4.8	118	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	49.1659	1.7	120	-0.01
86	T	2-Chlorotoluene	50.0000	45.1383	9.7	111	-0.01
87	T	4-Chlorotoluene	50.0000	50.0123	-0.0	128	-0.01
88	T	a-Methylstyrene	50.0000	47.5871	4.8	113	0.00
89	T	tert-Butylbenzene	50.0000	49.3923	1.2	121	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	49.5539	0.9	120	-0.01
91	T	sec-Butylbenzene	50.0000	49.6843	0.6	121	-0.01
92	T	p-Isopropyltoluene	50.0000	50.4542	-0.9	122	-0.01
93	T	1,3-Dichlorobenzene	50.0000	48.5848	2.8	121	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.8632	4.3	120	0.00
95	T	n-Butylbenzene	50.0000	50.9374	-1.9	123	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.6312	4.7	117	-0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	47.2862	5.4	113	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.5551	2.9	119	-0.01
99	T	Hexachlorobutadiene	50.0000	50.2552	-0.5	124	0.00
100	T	Naphthalene	50.0000	45.9497	8.1	106	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	47.5669	4.9	116	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140510.D 8260WTR.M Fri Jul 08 17:04:39 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\042416\6M138750.D          Vial: 1
Acq On    : 24 Apr 2016  16:33                       Operator: JDS
Sample    : WG566155-01 50ng BFB 826-A9              Inst    : HPMS6
Misc      : 1,1 STD75485                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

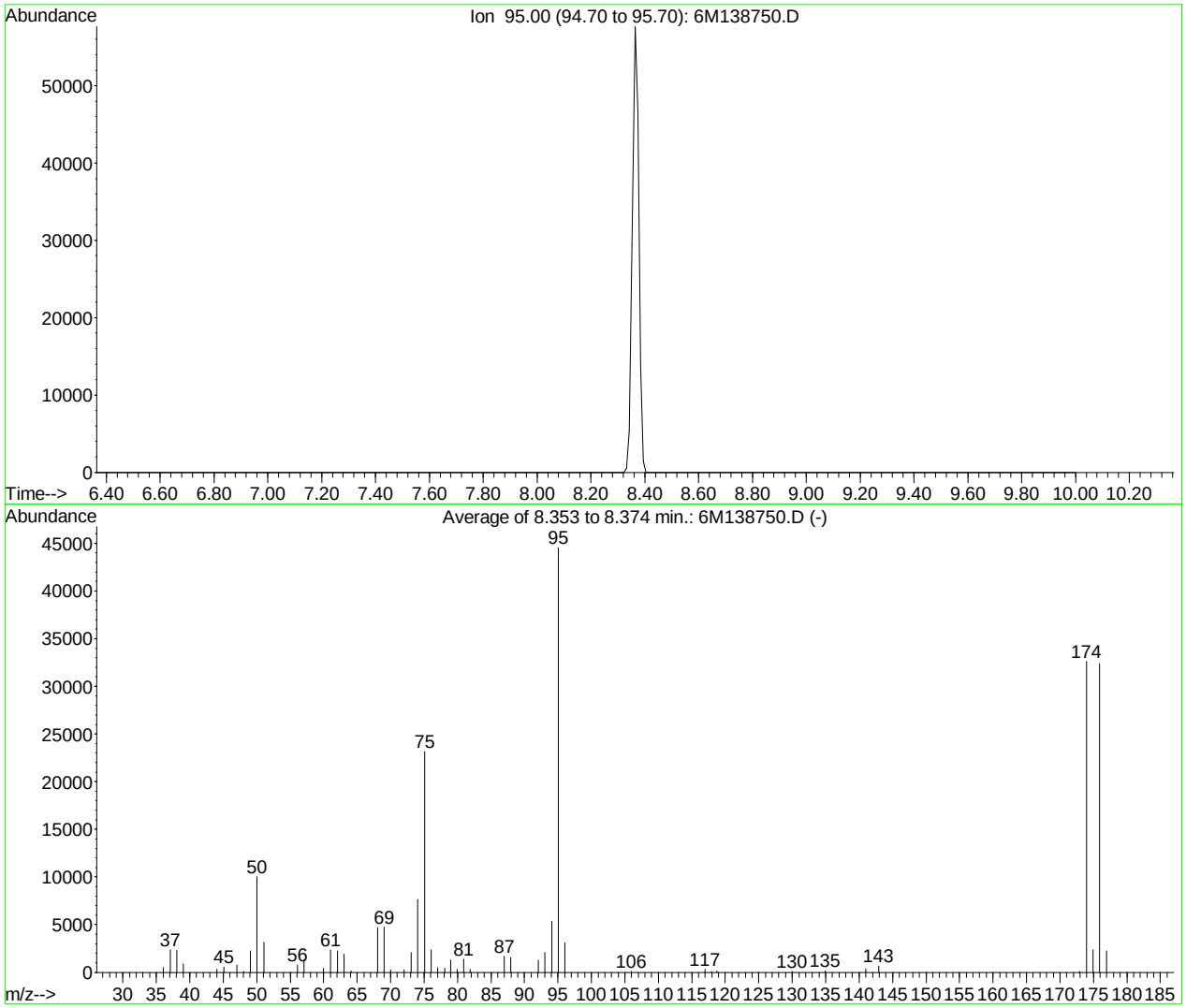

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	10010	PASS
75	95	30	60	52.0	23152	PASS
95	95	100	100	100.0	44552	PASS
96	95	5	9	6.9	3085	PASS
173	174	0.00	2	0.3	113	PASS
174	95	50	100	73.2	32632	PASS
175	174	5	9	7.2	2336	PASS
176	174	95	101	99.2	32384	PASS
177	176	5	9	7.0	2251	PASS

6M138750.D BFB.M Mon Apr 25 09:21:54 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140313.D Vial: 1
Acq On    : 30 Jun 2016  11:36                        Operator: TMB
Sample    : WG574723-01 50ng BFB STD 8260             Inst    : HPMS6
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:MSV01  06-30-16 - HPMS6
```

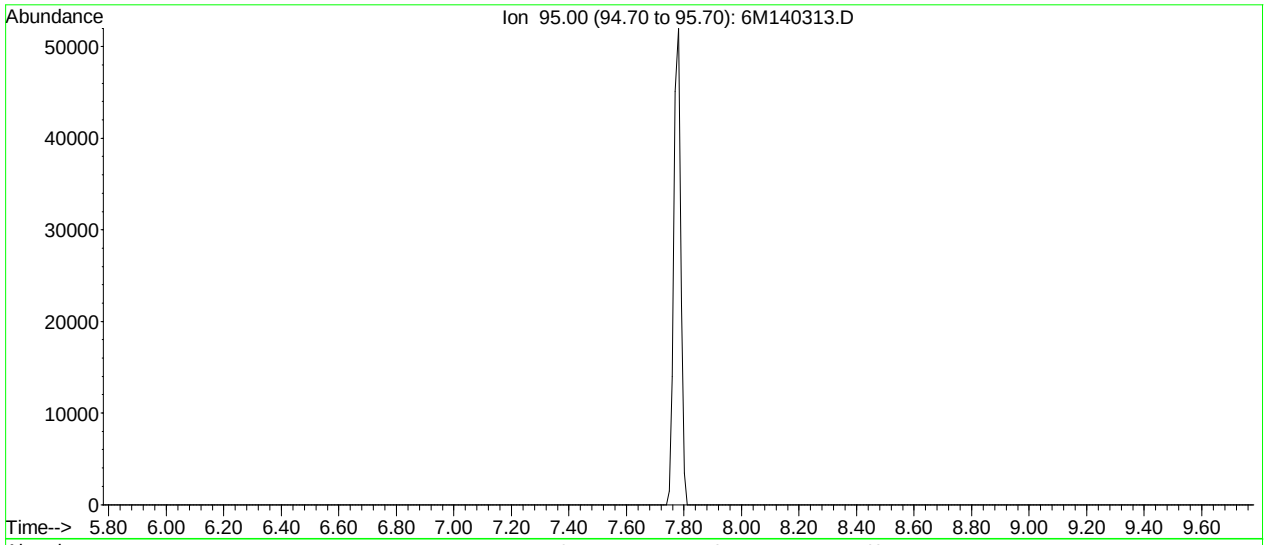

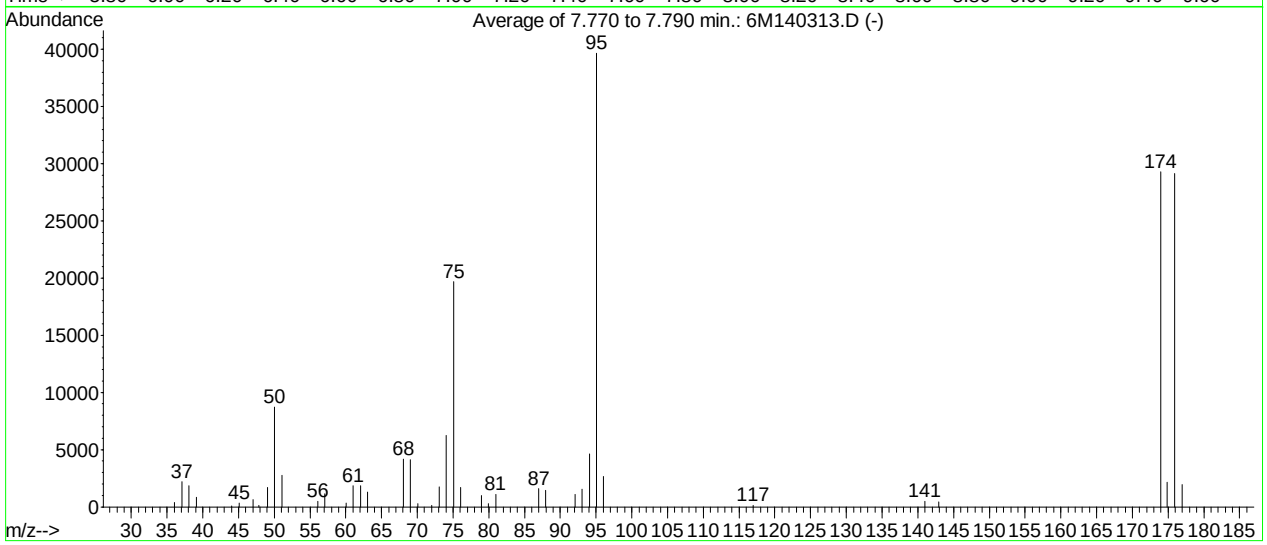

AutoFind: Scans 263, 264, 265; Background Corrected with Scan 258

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.0	8707	PASS
75	95	30	60	49.7	19699	PASS
95	95	100	100	100.0	39664	PASS
96	95	5	9	6.7	2652	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.8	29282	PASS
175	174	5	9	7.3	2131	PASS
176	174	95	101	99.6	29157	PASS
177	176	5	9	6.8	1969	PASS

6M140313.D 8260WTR.M Fri Jul 01 14:33:49 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140509.D Vial: 1
Acq On    :  8 Jul 2016  14:07                        Operator: TMB
Sample    : WG575663-01 50ng BFB STD 8260             Inst    : HPMS6
Misc      : 1,1 STD77013                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:MSV01  06-30-16 - HPMS6
```

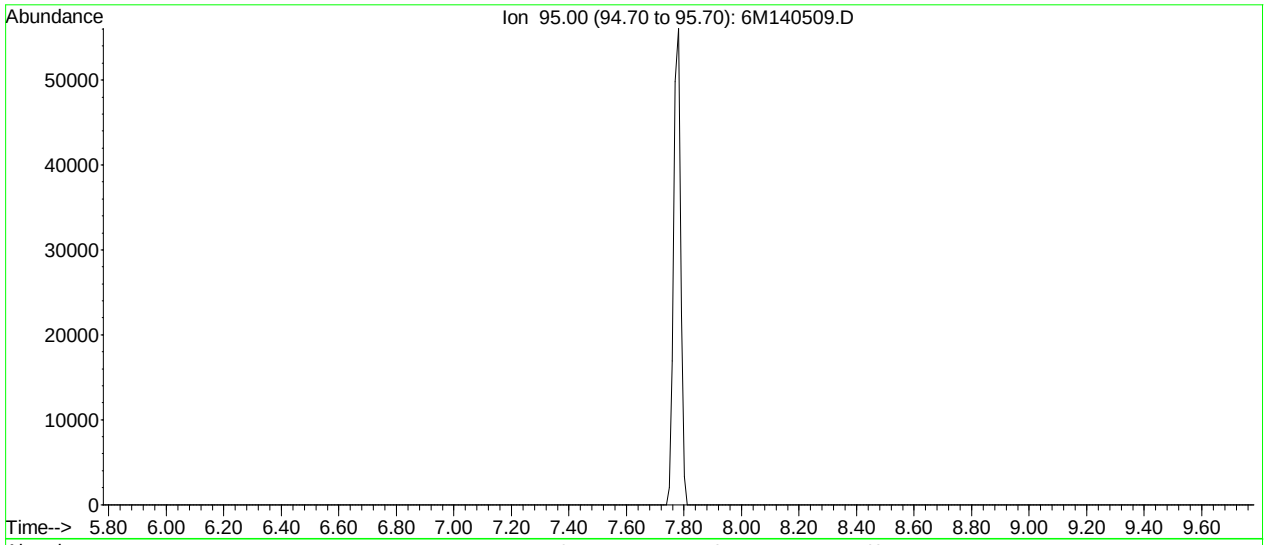

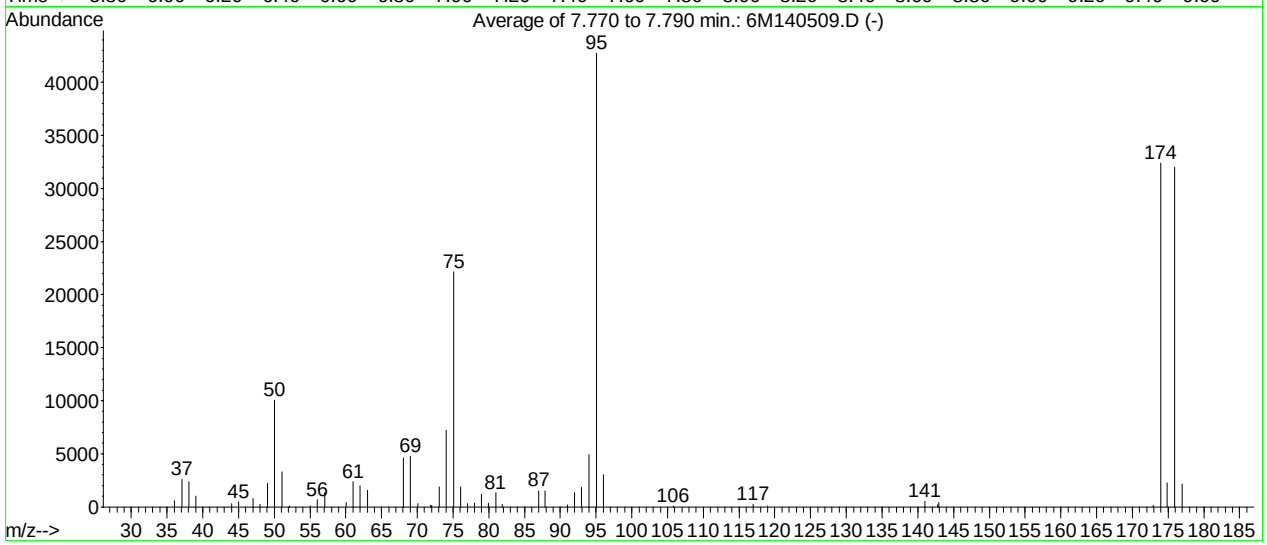

AutoFind: Scans 263, 264, 265; Background Corrected with Scan 258

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.5	10048	PASS
75	95	30	60	51.9	22171	PASS
95	95	100	100	100.0	42754	PASS
96	95	5	9	7.0	3011	PASS
173	174	0.00	2	0.4	140	PASS
174	95	50	100	75.7	32386	PASS
175	174	5	9	7.0	2270	PASS
176	174	95	101	98.9	32032	PASS
177	176	5	9	6.7	2162	PASS

6M140509.D 8260WTR.M Fri Jul 08 17:03:05 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140512.D Vial: 4
Acq On : 8 Jul 2016 15:38 Operator: TMB
Sample : WG575666-01 VBLK0708 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 08:40:30 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	711313	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	521746	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	272771	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	189175	26.2137 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.84%		
43) 1,2-Dichloroethane-d4	10.31	65	234808	25.7742 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.08%		
58) Toluene-d8	13.04	98	626601	24.3887 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.56%		
80) p-Bromofluorobenzene	17.02	95	262750	24.5958 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.40%		

Target Compounds					Qvalue
3) Chloromethane	3.37	50	1868	0.1407 ug/L	84
13) Acetone	5.89	43	1187	0.5209 ug/L #	48
29) 2-Butanone	8.99	43	4339	1.2438 ug/L #	57
36) Tetrahydrofuran	9.57	42	2490	1.0233 ug/L #	49

(#) = qualifier out of range (m) = manual integration
6M140512.D 8260WTR.M Mon Jul 11 08:40:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140512.D Vial: 4
Acq On : 8 Jul 2016 15:38 Operator: TMB
Sample : WG575666-01 VBLK0708 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 8:40 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

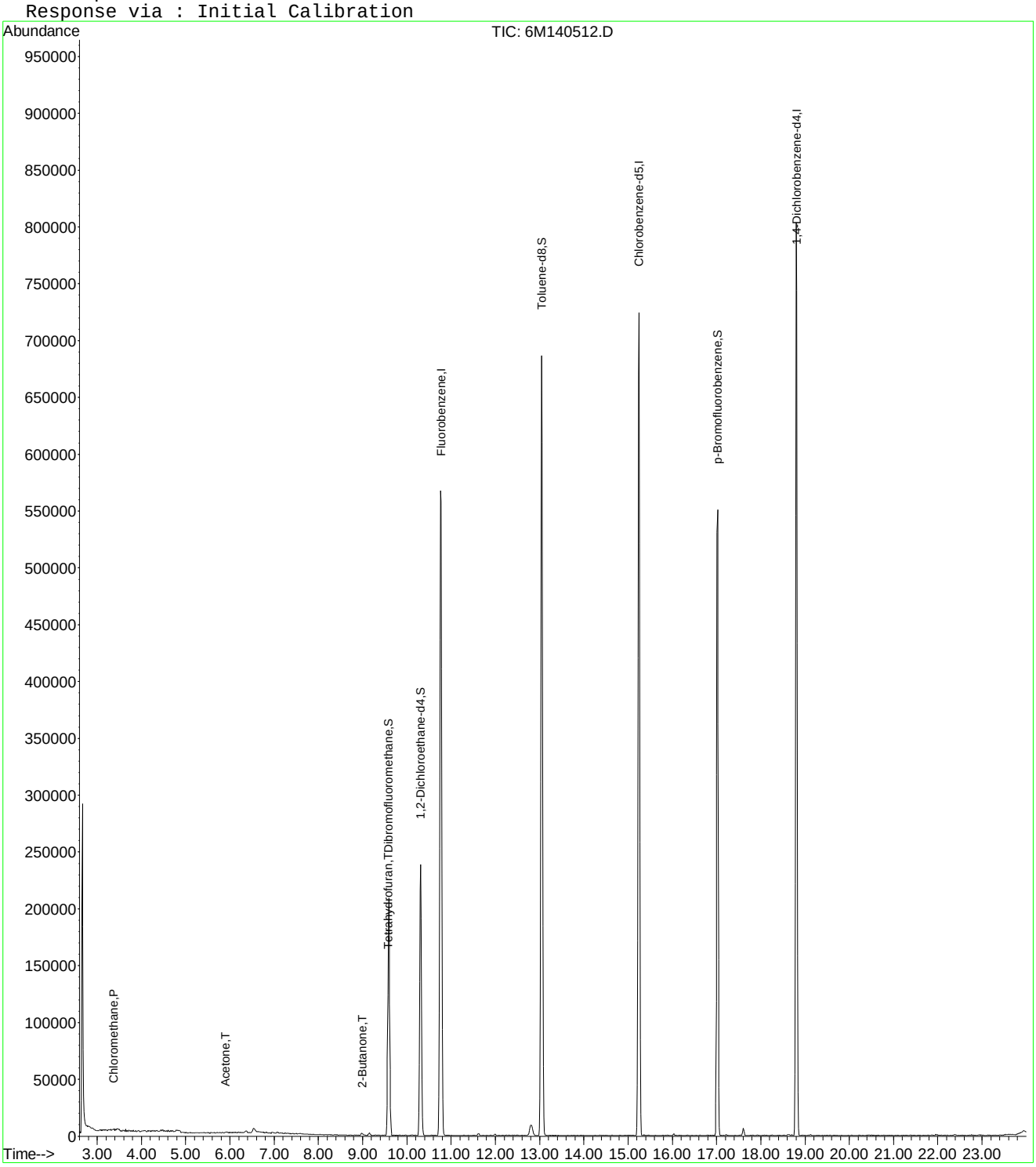

6M140512.D 8260WTR.M Mon Jul 11 08:40:33 2016 Page 2

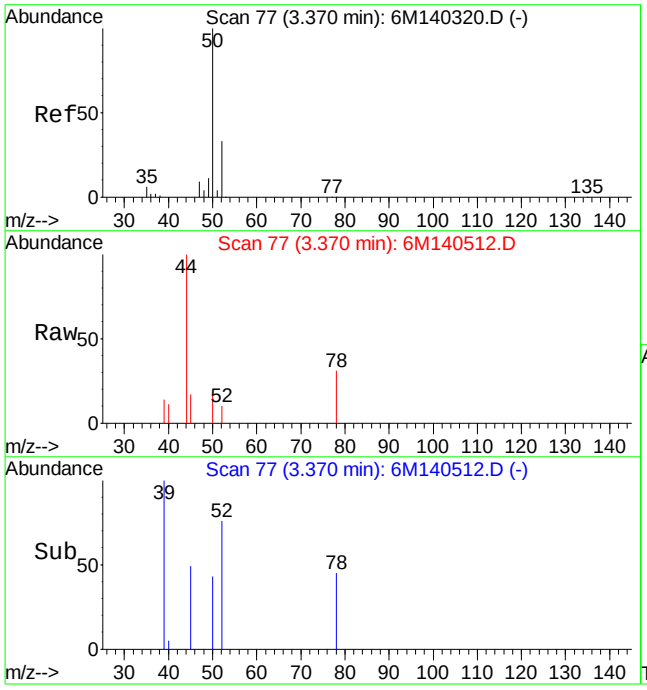

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.37 min Scan# 77
Delta R.T. 0.01 min
Lab File: 6M140512.D
Acq: 8 Jul 2016 15:38

Tgt Ion: 50 Resp: 1868

Ion	Ratio	Lower	Upper
50	100		
52	42.2	19.8	46.2

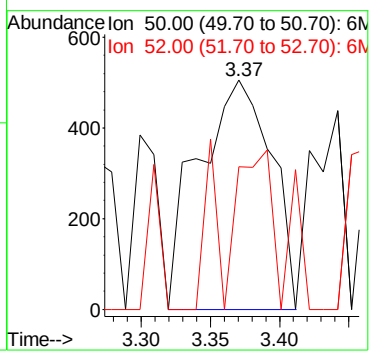

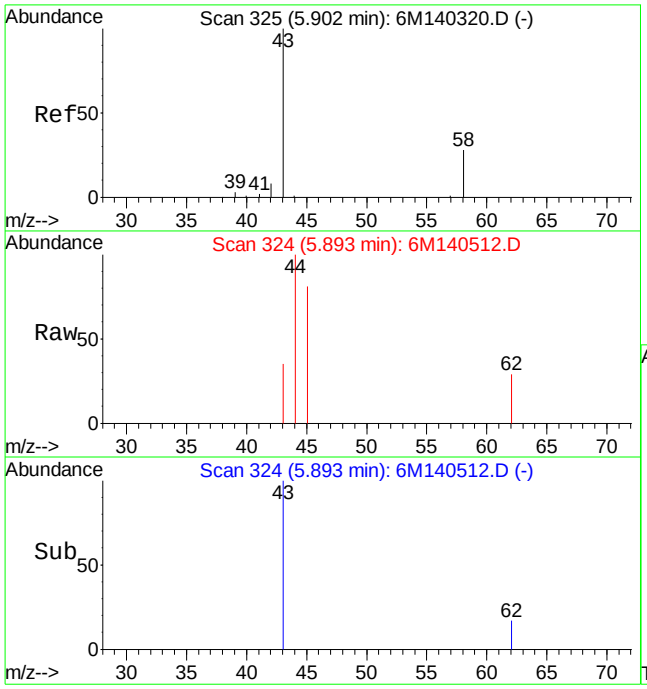

#13
Acetone
Concen: 0.52 ug/L
RT: 5.89 min Scan# 324
Delta R.T. -0.01 min
Lab File: 6M140512.D
Acq: 8 Jul 2016 15:38

Tgt Ion: 43 Resp: 1187

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

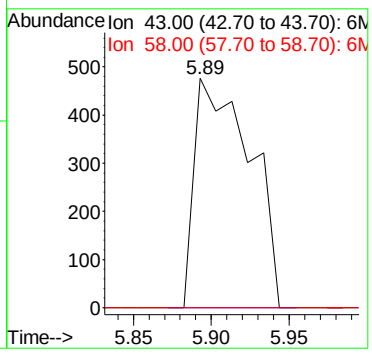

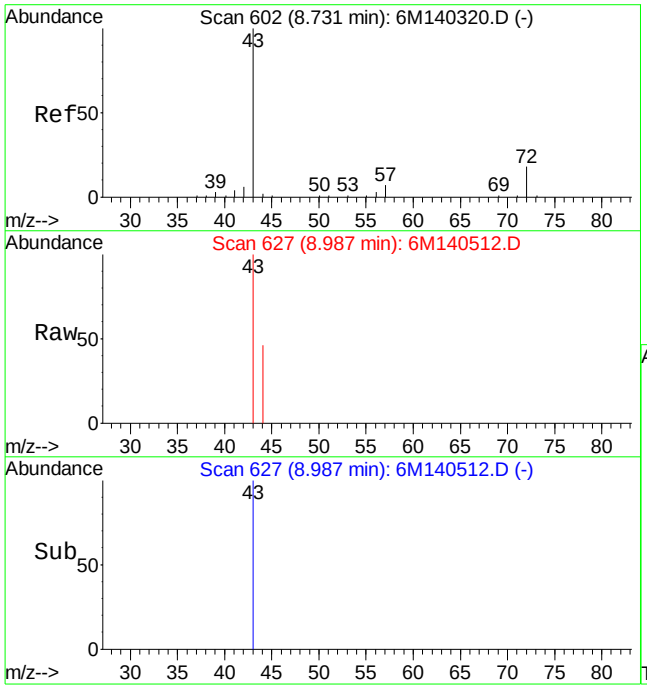

#29
2-Butanone
Concen: 1.24 ug/L
RT: 8.99 min Scan# 627
Delta R.T. 0.25 min
Lab File: 6M140512.D
Acq: 8 Jul 2016 15:38

Tgt Ion: 43 Resp: 4339

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.9	27.9#

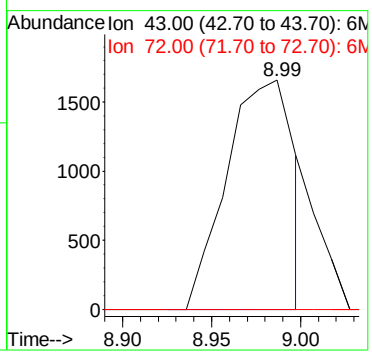

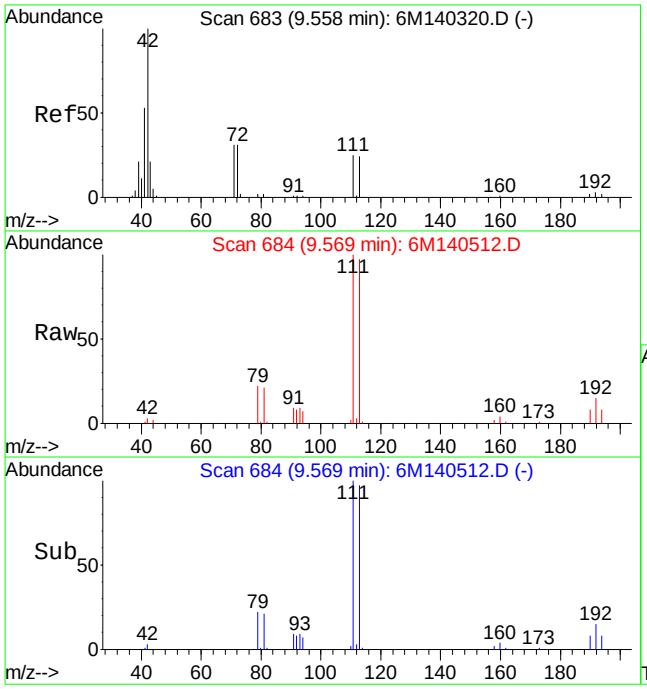

#36
Tetrahydrofuran
Concen: 1.02 ug/L
RT: 9.57 min Scan# 684
Delta R.T. 0.01 min
Lab File: 6M140512.D
Acq: 8 Jul 2016 15:38

Tgt Ion: 42 Resp: 2490

Ion	Ratio	Lower	Upper
42	100		
72	9.5	20.8	48.4#
71	0.0	19.9	46.5#

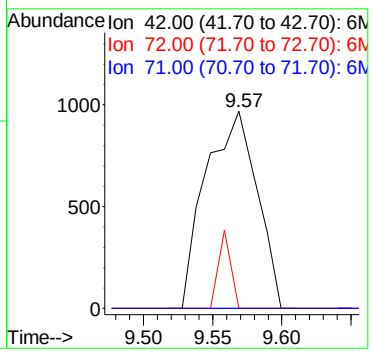

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140533.D Vial: 25
Acq On : 9 Jul 2016 2:53 Operator: TMB
Sample : WG575666-04 VBLK0708 BLANK STD 624 Inst : HPMS6
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 08:43:02 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	635698	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	479157	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	254778	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	171143	26.5359 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.16%		
43) 1,2-Dichloroethane-d4	10.31	65	211466	25.9731 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.88%		
58) Toluene-d8	13.04	98	568287	24.0850 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.32%		
80) p-Bromofluorobenzene	17.02	95	237949	23.8473 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.40%		

Target Compounds

					Qvalue
13) Acetone	5.90	43	436	0.2141 ug/L #	48
36) Tetrahydrofuran	9.56	42	2511	1.1547 ug/L #	55
60) Ethyl Methacrylate	13.07	69	1194	0.1470 ug/L #	7
70) Chlorobenzene	15.30	112	4501	0.2458 ug/L	76

(#) = qualifier out of range (m) = manual integration
6M140533.D 8260WTR.M Mon Jul 11 08:43:06 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140533.D Vial: 25
Acq On : 9 Jul 2016 2:53 Operator: TMB
Sample : WG575666-04 VBLK0708 BLANK STD 624 Inst : HPMS6
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 8:42 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

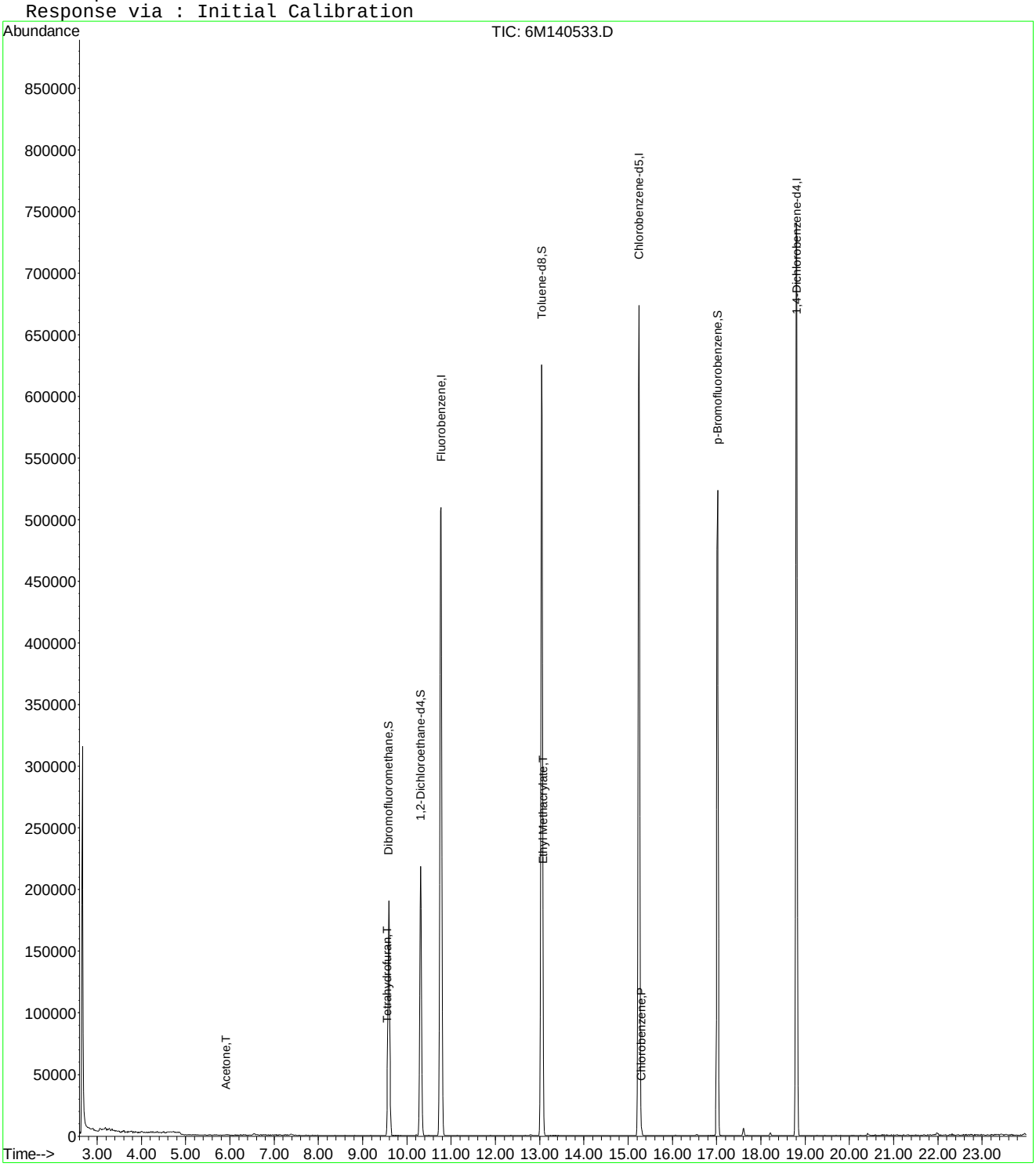

6M140533.D 8260WTR.M Mon Jul 11 08:43:06 2016 Page 2

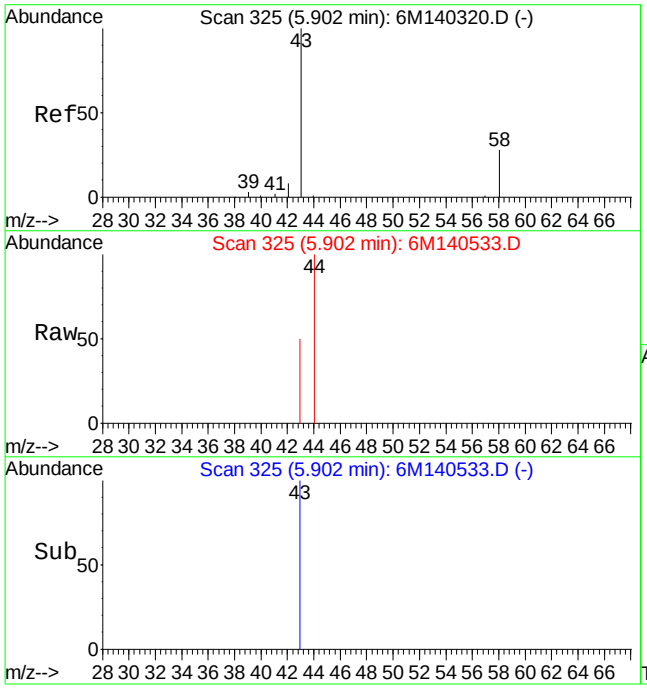

#13
Acetone
Concen: 0.21 ug/L
RT: 5.90 min Scan# 325
Delta R.T. -0.00 min
Lab File: 6M140533.D
Acq: 9 Jul 2016 2:53

Tgt Ion: 43 Resp: 436

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

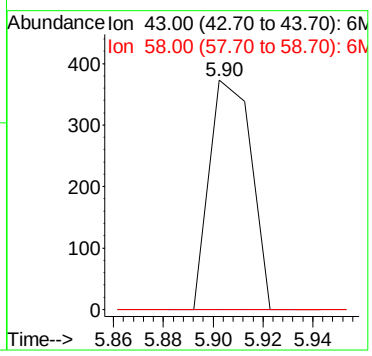

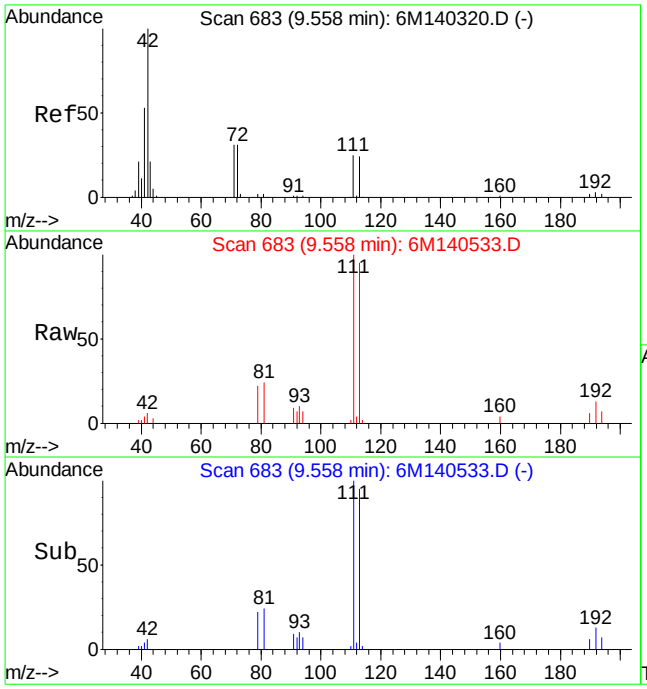

#36
Tetrahydrofuran
Concen: 1.15 ug/L
RT: 9.56 min Scan# 683
Delta R.T. -0.00 min
Lab File: 6M140533.D
Acq: 9 Jul 2016 2:53

Tgt Ion: 42 Resp: 2511

Ion	Ratio	Lower	Upper
42	100		
72	15.7	20.8	48.4#
71	0.0	19.9	46.5#

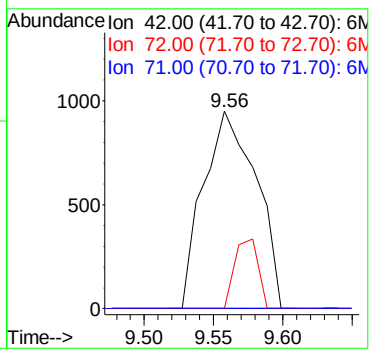

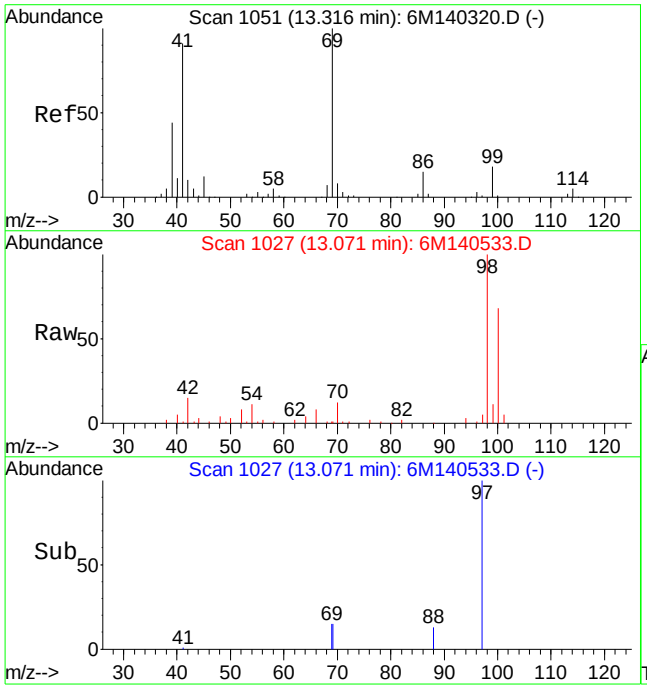

#60
Ethyl Methacrylate
Concen: 0.15 ug/L
RT: 13.07 min Scan# 1027
Delta R.T. -0.25 min
Lab File: 6M140533.D
Acq: 9 Jul 2016 2:53

Tgt Ion: 69 Resp: 1194

Ion	Ratio	Lower	Upper
69	100		
41	0.0	51.4	120.0#

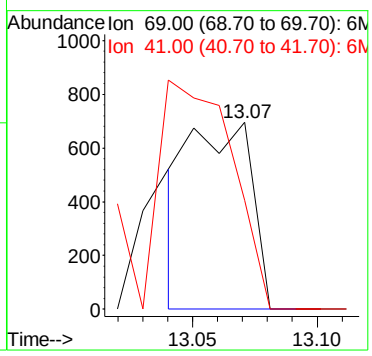

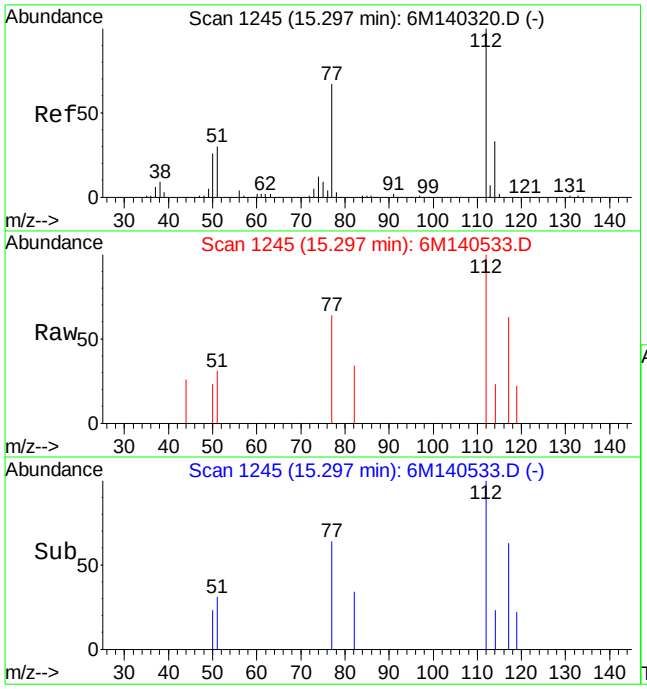

#70
Chlorobenzene
Concen: 0.25 ug/L
RT: 15.30 min Scan# 1245
Delta R.T. -0.00 min
Lab File: 6M140533.D
Acq: 9 Jul 2016 2:53

Tgt Ion:112 Resp: 4501

Ion	Ratio	Lower	Upper
112	100		
77	56.5	46.1	107.7

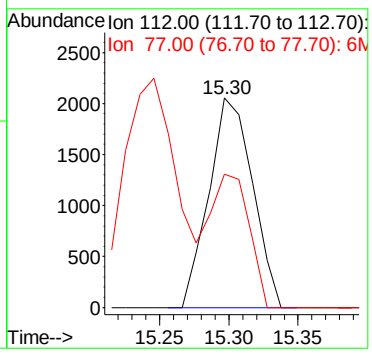

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140514.D Vial: 6
Acq On : 8 Jul 2016 16:43 Operator: TMB
Sample : WG575666-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 08:19:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	691171	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	519319	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	301291	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	185729	26.4862 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.96%		
43) 1,2-Dichloroethane-d4	10.31	65	228630	25.8274 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.32%		
58) Toluene-d8	13.04	98	623750	24.3911 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.56%		
80) p-Bromofluorobenzene	17.01	95	273780	23.2024 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	282180	24.4229 ug/L	99
3) Chloromethane	3.36	50	235853	18.2838 ug/L	98
4) Vinyl Chloride	3.56	62	176506	24.9167 ug/L	99
5) 1,3-Butadiene	3.59	54	105400	24.1541 ug/L	96
6) Bromomethane	4.38	94	76497	16.2505 ug/L	99
7) Chloroethane	4.53	64	106978	23.9001 ug/L	92
8) Trichlorofluoromethane	5.00	101	255871	23.6828 ug/L	99
9) Diethyl ether	5.55	59	676623	106.1416 ug/L	95
10) Isoprene	5.57	67	221391	22.9598 ug/L	93
11) Acrolein	5.79	56	109964	103.7066 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	152627	22.7052 ug/L	98
13) Acetone	5.90	43	51544	23.2770 ug/L	95
14) 1,1-Dichloroethene	6.11	61	272113	20.8636 ug/L	91
15) Tert-Butyl Alcohol	6.26	59	136627	201.7741 ug/L	96
16) Dimethyl Sulfide	6.38	62	208098	36.5838 ug/L	91
17) Iodomethane	6.64	142	113958	24.5877 ug/L	88
18) Methyl acetate	6.69	43	127176	21.2240 ug/L	97
19) Methylene Chloride	6.93	84	154246	20.6232 ug/L	84
20) Carbon Disulfide	6.95	76	430256	18.0030 ug/L	99
21) Acrylonitrile	7.15	53	59378	21.5964 ug/L	98
22) Methyl Tert Butyl Ether	7.18	73	418118	21.0905 ug/L	100
23) trans-1,2-Dichloroethene	7.41	96	149048	21.3378 ug/L	87
24) n-Hexane	7.51	57	211938	17.8775 ug/L	94
25) Diisopropyl ether	7.90	45	3511344	110.0448 ug/L	98
26) Vinyl Acetate	8.09	43	288664	21.6713 ug/L	96
27) 1,1-Dichloroethane	8.10	63	305811	20.3342 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2699010	105.1419 ug/L	95
29) 2-Butanone	8.73	43	75598	22.3020 ug/L	95
30) Propionitrile	8.85	54	97035	105.4828 ug/L	98
31) 2,2-Dichloropropane	8.96	77	235567	20.7617 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	165146	21.5984 ug/L	71
33) Chloroform	9.26	83	287284	21.3228 ug/L	99
34) 1-Bromopropane	9.42	122	34866	29.0480 ug/L	99
35) Bromochloromethane	9.52	130	90569	22.0421 ug/L	98
36) Tetrahydrofuran	9.56	42	226553	95.8213 ug/L	93
38) 1,1,1-Trichloroethane	9.85	97	262241	22.3568 ug/L	98
39) Cyclohexane	9.87	56	301672	19.7679 ug/L	93
40) 1,1-Dichloropropene	10.08	75	211287	20.6805 ug/L	94
41) Tert-Amyl-Methyl ether	10.21	73	2044634	104.8942 ug/L	97
42) Carbon Tetrachloride	10.23	117	233000	24.1917 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140514.D 8260WTR.M Mon Jul 11 08:20:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140514.D Vial: 6
Acq On : 8 Jul 2016 16:43 Operator: TMB
Sample : WG575666-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 08:19:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	243658	22.5559 ug/L	97
46)	Benzene	10.48	78	605480	20.9981 ug/L	96
47)	Trichloroethene	11.35	130	155872	21.9064 ug/L	86
48)	Methylcyclohexane	11.43	83	223088	19.9709 ug/L	93
49)	1,2-Dichloropropane	11.59	63	177368	21.3596 ug/L	94
50)	1,4-Dioxane	11.94	88	11242	199.9875 ug/L	72
51)	Bromodichloromethane	11.94	83	225496	22.5054 ug/L	100
52)	Dibromomethane	12.03	93	86488	21.5269 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.32	63	83403	20.0325 ug/L	97
54)	4-Methyl-2-Pentanone	12.35	58	50911	19.8692 ug/L	99
55)	cis-1,3-Dichloropropene	12.68	75	269915	23.2029 ug/L	98
56)	Dimethyl Disulfide	12.97	79	138187	21.3394 ug/L	99
59)	Toluene	13.15	91	623873	20.1570 ug/L	100
60)	Ethyl Methacrylate	13.32	69	174912	19.8633 ug/L	90
62)	trans-1,3-Dichloropropene	13.39	75	226505	20.5809 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	119372	20.8408 ug/L	98
64)	2-Hexanone	13.58	43	105799	19.4541 ug/L	94
65)	1,3-Dichloropropane	13.99	76	229529	21.2623 ug/L	90
66)	Tetrachloroethene	14.10	166	152416	20.6647 ug/L	93
67)	Dibromochloromethane	14.41	129	151651	21.8067 ug/L	99
68)	1,2-Dibromoethane	14.70	107	115730	20.9324 ug/L	99
69)	1-Chlorohexane	14.85	91	201305	19.5435 ug/L	87
70)	Chlorobenzene	15.30	112	416538	20.9839 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	154838	21.9220 ug/L	97
72)	Ethylbenzene	15.35	106	216158	20.8041 ug/L	92
73)	m-,p-Xylene	15.45	106	533847	42.5129 ug/L	94
74)	o-Xylene	16.11	106	276291	22.0610 ug/L	94
75)	Styrene	16.15	104	453714	21.5336 ug/L	92
76)	Bromoform	16.72	173	89125	20.6668 ug/L	98
77)	Isopropylbenzene	16.62	105	695896	21.2962 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	149136	20.3953 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	46031	21.2328 ug/L	88
82)	trans-1,4-Dichloro-2-Buten	17.18	53	50859	18.3963 ug/L	95
83)	n-Propylbenzene	17.22	91	882550	20.3867 ug/L	97
84)	Bromobenzene	17.34	156	177656	19.6404 ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	610877	20.1326 ug/L	96
86)	2-Chlorotoluene	17.52	91	592740	20.2459 ug/L	96
87)	4-Chlorotoluene	17.57	91	535947	19.2019 ug/L	95
88)	a-Methylstyrene	17.92	118	333071	21.8245 ug/L	96
89)	tert-Butylbenzene	17.98	134	125896	20.6515 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	624171	20.0464 ug/L	98
91)	sec-Butylbenzene	18.31	105	735950	20.2619 ug/L	97
92)	p-Isopropyltoluene	18.50	119	624051	20.1605 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	358350	20.1281 ug/L	94
94)	1,4-Dichlorobenzene	18.85	146	368259	20.4591 ug/L	94
95)	n-Butylbenzene	19.12	91	610300	20.1050 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	348275	20.8361 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	20.62	75	32971	23.0228 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	245514	20.7794 ug/L	99
99)	Hexachlorobutadiene	22.15	225	104059	21.1829 ug/L	99
100)	Naphthalene	22.38	128	464900	19.2534 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	225716	20.6319 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140514.D 8260WTR.M Mon Jul 11 08:20:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140514.D Vial: 6
Acq On : 8 Jul 2016 16:43 Operator: TMB
Sample : WG575666-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 8:19 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

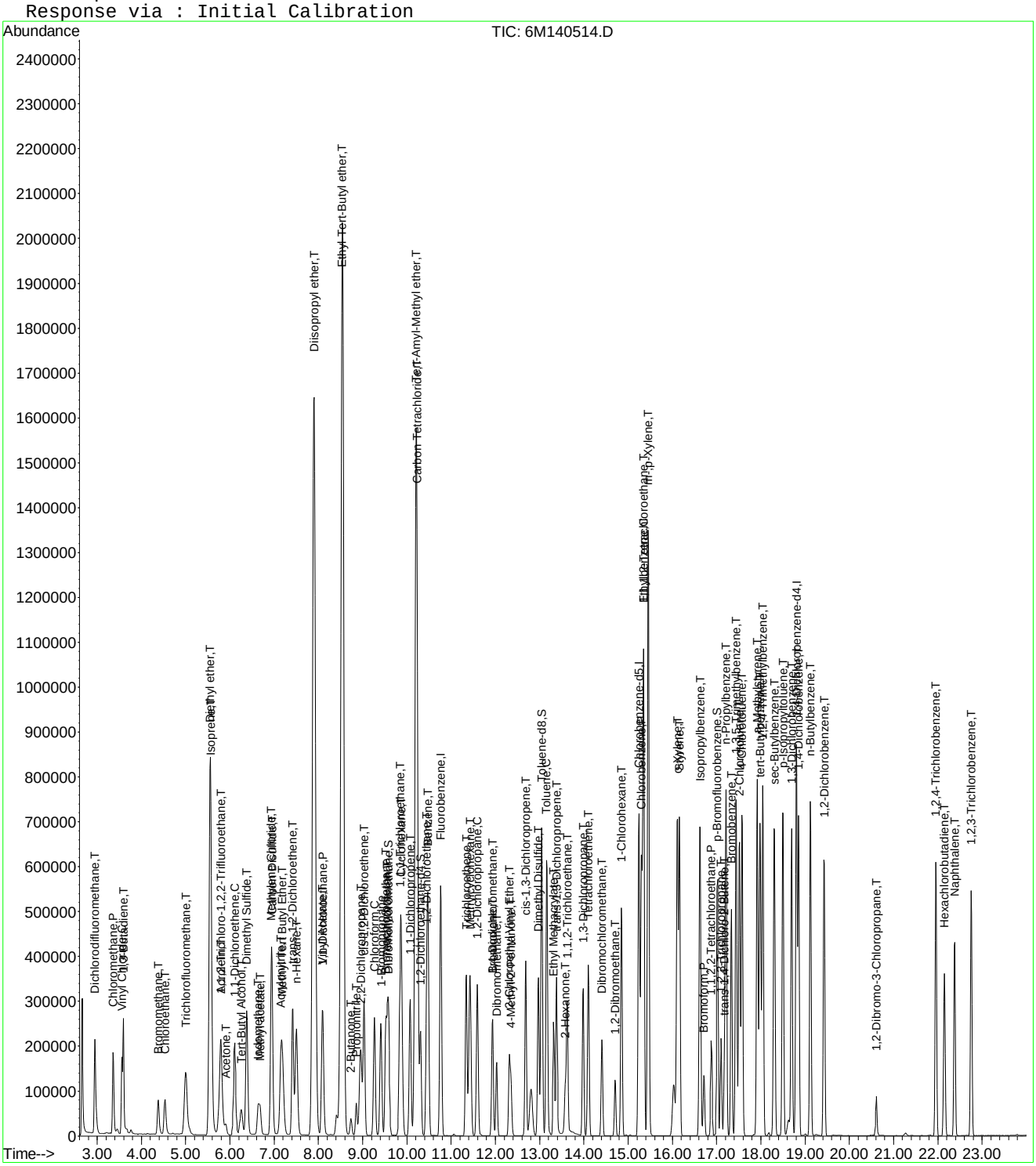

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140515.D Vial: 7
Acq On : 8 Jul 2016 17:15 Operator: TMB
Sample : WG575666-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 08:20:05 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	710086	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	524392	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	301252	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	187912	26.0837 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.32%		
43) 1,2-Dichloroethane-d4	10.32	65	231327	25.4360 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.76%		
58) Toluene-d8	13.04	98	638179	24.7140 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.84%		
80) p-Bromofluorobenzene	17.01	95	278149	23.5757 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.32%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	290412	24.4659 ug/L	99
3) Chloromethane	3.36	50	244703	18.4645 ug/L	99
4) Vinyl Chloride	3.56	62	177852	24.4379 ug/L	99
5) 1,3-Butadiene	3.60	54	105006	23.3262 ug/L	97
6) Bromomethane	4.38	94	78465	16.2246 ug/L	99
7) Chloroethane	4.53	64	106060	23.0639 ug/L	91
8) Trichlorofluoromethane	4.99	101	298560	26.8978 ug/L	99
9) Diethyl ether	5.56	59	693475	105.8874 ug/L	94
10) Isoprene	5.57	67	225595	22.7726 ug/L	92
11) Acrolein	5.79	56	116699	107.1267 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	158567	22.9605 ug/L	97
13) Acetone	5.90	43	51512	22.6429 ug/L	97
14) 1,1-Dichloroethene	6.11	61	280506	20.9342 ug/L	92
15) Tert-Butyl Alcohol	6.26	59	141090	202.8148 ug/L	97
16) Dimethyl Sulfide	6.38	62	208436	35.6671 ug/L	91
17) Iodomethane	6.64	142	121308	25.4439 ug/L	88
18) Methyl acetate	6.69	43	131251	21.3206 ug/L	96
19) Methylene Chloride	6.94	84	160862	20.9349 ug/L	87
20) Carbon Disulfide	6.96	76	435576	17.7401 ug/L	99
21) Acrylonitrile	7.15	53	60644	21.4693 ug/L	97
22) Methyl Tert Butyl Ether	7.18	73	428674	21.0469 ug/L	99
23) trans-1,2-Dichloroethene	7.43	96	153469	21.3855 ug/L	87
24) n-Hexane	7.51	57	229909	18.8768 ug/L	94
25) Diisopropyl ether	7.91	45	3622227	110.4960 ug/L	98
26) Vinyl Acetate	8.09	43	355791	25.9994 ug/L	96
27) 1,1-Dichloroethane	8.10	63	313579	20.2953 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2614057	99.1199 ug/L	98
29) 2-Butanone	8.73	43	76575	21.9885 ug/L	92
30) Propionitrile	8.85	54	100974	106.8409 ug/L	97
31) 2,2-Dichloropropane	8.96	77	260090	22.3124 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	170763	21.7382 ug/L	70
33) Chloroform	9.26	83	294520	21.2776 ug/L	99
34) 1-Bromopropane	9.41	122	36240	29.3828 ug/L	97
35) Bromochloromethane	9.52	130	91586	21.6959 ug/L	98
36) Tetrahydrofuran	9.56	42	232832	95.8538 ug/L	92
38) 1,1,1-Trichloroethane	9.86	97	269606	22.3724 ug/L	97
39) Cyclohexane	9.88	56	308049	19.6480 ug/L	94
40) 1,1-Dichloropropene	10.08	75	217277	20.7003 ug/L	94
41) Tert-Amyl-Methyl ether	10.21	73	2107708	105.2497 ug/L	97
42) Carbon Tetrachloride	10.23	117	238872	24.1407 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140515.D 8260WTR.M Mon Jul 11 08:20:08 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140515.D Vial: 7
Acq On : 8 Jul 2016 17:15 Operator: TMB
Sample : WG575666-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 08:20:05 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	248667	22.4064 ug/L	98
46)	Benzene	10.48	78	621333	20.9739 ug/L	96
47)	Trichloroethene	11.35	130	155606	21.2865 ug/L	87
48)	Methylcyclohexane	11.43	83	232945	20.2978 ug/L	93
49)	1,2-Dichloropropane	11.59	63	182527	21.3954 ug/L	94
50)	1,4-Dioxane	11.94	88	11855	205.2747 ug/L	76
51)	Bromodichloromethane	11.94	83	229689	22.3133 ug/L	100
52)	Dibromomethane	12.02	93	89986	21.8010 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.31	63	84186	19.6820 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	53648	20.3797 ug/L	96
55)	cis-1,3-Dichloropropene	12.68	75	278305	23.2868 ug/L	97
56)	Dimethyl Disulfide	12.97	79	141115	21.2111 ug/L	100
59)	Toluene	13.15	91	635405	20.3309 ug/L	100
60)	Ethyl Methacrylate	13.32	69	180518	20.3016 ug/L	90
62)	trans-1,3-Dichloropropene	13.39	75	239074	21.5128 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	120881	20.9001 ug/L	98
64)	2-Hexanone	13.58	43	107663	19.6053 ug/L	93
65)	1,3-Dichloropropane	13.99	76	233218	21.3951 ug/L	90
66)	Tetrachloroethene	14.10	166	154745	20.7775 ug/L	93
67)	Dibromochloromethane	14.41	129	156810	22.3304 ug/L	100
68)	1,2-Dibromoethane	14.71	107	117343	21.0188 ug/L	99
69)	1-Chlorohexane	14.85	91	206867	19.8892 ug/L	88
70)	Chlorobenzene	15.30	112	427633	21.3344 ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.35	131	157181	22.0385 ug/L	97
72)	Ethylbenzene	15.35	106	223394	21.2925 ug/L	93
73)	m-,p-Xylene	15.45	106	544049	42.9062 ug/L	92
74)	o-Xylene	16.11	106	277265	21.9246 ug/L	92
75)	Styrene	16.16	104	461900	21.7100 ug/L	92
76)	Bromoform	16.71	173	90610	20.8079 ug/L	98
77)	Isopropylbenzene	16.62	105	713633	21.6277 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	153557	21.0026 ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	45958	21.2019 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	17.18	53	51545	18.6468 ug/L	97
83)	n-Propylbenzene	17.22	91	908048	20.9784 ug/L	97
84)	Bromobenzene	17.34	156	180684	19.9777 ug/L	91
85)	1,3,5-Trimethylbenzene	17.44	105	620586	20.4552 ug/L	98
86)	2-Chlorotoluene	17.51	91	560423	19.1445 ug/L	99
87)	4-Chlorotoluene	17.58	91	598057	21.4299 ug/L	93
88)	a-Methylstyrene	17.92	118	335658	21.9969 ug/L	100
89)	tert-Butylbenzene	17.98	134	128596	21.0972 ug/L	72
90)	1,2,4-Trimethylbenzene	18.05	105	639567	20.5435 ug/L	98
91)	sec-Butylbenzene	18.30	105	753105	20.7368 ug/L	98
92)	p-Isopropyltoluene	18.49	119	637175	20.5872 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	369644	20.7651 ug/L	96
94)	1,4-Dichlorobenzene	18.85	146	372823	20.7154 ug/L	94
95)	n-Butylbenzene	19.12	91	623457	20.5411 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	353999	21.1813 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	32565	22.7423 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	245881	20.8132 ug/L	98
99)	Hexachlorobutadiene	22.15	225	104834	21.3435 ug/L	99
100)	Naphthalene	22.39	128	456081	18.8906 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	224180	20.4942 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140515.D Vial: 7
Acq On : 8 Jul 2016 17:15 Operator: TMB
Sample : WG575666-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 8:19 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

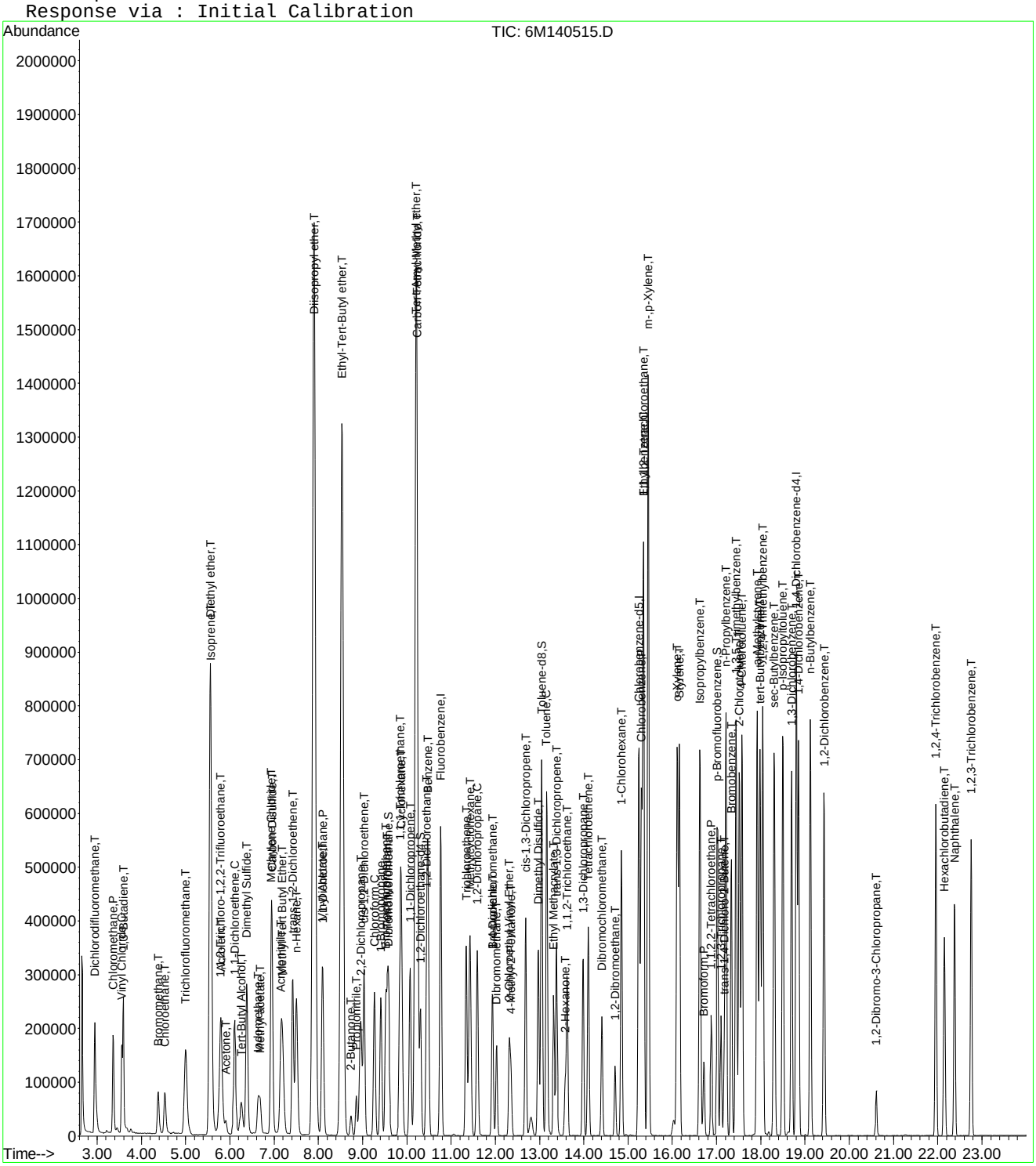

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW25-062916	**Prep Method:**	3520C	**Prep Date:**	06/30/2016 16:00
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG575045	**Analyst:**	MES	**Run Date:**	07/05/2016 21:39
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	15M18735
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG574706
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/30/2016 16:00
SOP: EXB01 Revison 20
Spike Witness: JDH
Surr Solution: STD76628

TIME ON: 16:45 OFF: 10:25 ON: _____ OFF: _____

CH2CL2 Lot #: COA18982
Sodium Sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16061227-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16061560-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
3	L16061648-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
4	WG574706-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	WG574706-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
6	WG574706-03	LCS2		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent

Due to insufficient sample volume, this preparation batch failed to include the method prescribed MS and MSD.

L16061227-01	RE-EXT OUT OF HOLD
WG574706-02	TURBO VAP 1 CELL CELL 5
WG574706-03	TURBO VAP 1 CELL CELL 6

Analyst: Chelsie Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4837079
Report generated: 07/01/2016 15:12

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

Page: 1 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments: File 15M18715 does not exist.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18708	BAKEOUT	1	1		07/05/16 10:31
2	15M18709	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 10:51
3	15M18710	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 11:11
4	15M18711	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 11:33
5	15M18712	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 12:30
6	15M18713	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 12:47
7	15M18714	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 14:14
8	15M18716	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 14:33
9	15M18717	WG575159-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	07/05/16 14:51
10	15M18718	WG574706-01 BLANK 6/30	1	1		07/05/16 15:14
11	15M18719	WG574706-02 LCS 6/30	1	1		07/05/16 15:38
12	15M18720	WG574706-03 LCSDUP 6/30	1	1		07/05/16 16:01
13	15M18721	WG574873-01 BLANK 7/1	7	1	SOIL	07/05/16 16:23
14	15M18722	WG574873-02 LCS 7/1	7	1	SOIL	07/05/16 16:45
15	15M18723	WG574873-03 LCSDUP 7/1	7	1	SOIL	07/05/16 17:07
16	15M18724	L16061290-02 5X 827-DIOX	1	5		07/05/16 17:29
17	15M18725	L16061289-01 10X 827-DIOX	1	10		07/05/16 17:52
18	15M18726	L16061227-01 RE 827-DIOX	1	10		07/05/16 18:15
19	15M18727	L16061290-06 827-DIOX	1	1		07/05/16 18:37
20	15M18728	L16061345-08 827-DIOX	1	1		07/05/16 19:00
21	15M18729	L16061345-04 REF 827-DIOX	1	1		07/05/16 19:23
22	15M18730	L16061345-05 MS 827-DIOX	1	1		07/05/16 19:45
23	15M18731	L16061345-06 MSD 827-DIOX	1	1		07/05/16 20:08
24	15M18732	L16061345-03 RE 827-DIOX	7	1	SOIL	07/05/16 20:31
25	15M18733	L16061345-01 RE 827-DIOX	7	1	SOIL	07/05/16 20:54
26	15M18734	L16061560-01 827-DIOX	1	1		07/05/16 21:16
27	15M18735	L16061648-01 827-DIOX	1	1		07/05/16 21:39
28	15M18736	L16061452-01 827-DIOX	1	1		07/05/16 22:02
29	15M18737	L16061452-02 827-DIOX	1	1		07/05/16 22:24
30	15M18738	L16061452-03 827-DIOX	1	1		07/05/16 22:46
31	15M18739	L16061453-01 827-DIOX	1	1		07/05/16 23:09
32	15M18740	L16061453-02 827-DIOX	1	1		07/05/16 23:32
33	15M18741	L16061453-03 827-DIOX	1	1		07/05/16 23:54

Page: 1 Approved: 11-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18742	L16061450-04 827-DIOX	1	1		07/06/16 00:17
35	15M18743	L16061450-05 827-DIOX	1	1		07/06/16 00:39
36	15M18744	BAKEOUT	1	1		07/06/16 01:02
37	15M18745	BAKEOUT	1	1		07/06/16 01:25
38	15M18746	BAKEOUT	1	1		07/06/16 01:47
39	15M18747	BAKEOUT	1	1		07/06/16 02:10
40	15M18748	BAKEOUT	1	1		07/06/16 02:32
41	15M18749	BAKEOUT	1	1		07/06/16 02:55
42	15M18750	BAKEOUT	1	1		07/06/16 03:17
43	15M18751	BAKEOUT	1	1		07/06/16 03:40
44	15M18752	BAKEOUT	1	1		07/06/16 04:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	Rerun DFTPP, ion ratio fails.			
3				
	Rerun DFTPP, ion ratio fails. Performed a quicktune.			
4				
	Rerun DFTPP, ion ratio fails. Changed the liner.			
5				
	Rerun DFTPP, ion ratio fails. Retuned.			
6				
	Rerun DFTPP, PCP tailing >2.			
7				
	Rerun DFTPP, PCP tailing >2. Clipping the column.			
13				
	WG574873-01 BLANK 7/1 surrogate is low.			
17				
	L16061289-01 10X 827-DIOX confirms high surrogate recovery; DNR. Surrogate is high due to SMI. Sample is not being re-extracted.			
18				
	L16061227-01 RE 827-DIOX surrogate recovery is good; does not confirm original extraction.			
21	X	20	Over Calibration Range	
	L16061345-04 REF			
22				
	L16061345-05 MS 827-DIOX DNR-sample is spiked for 827-SPE-DIOX			

Page: 2 Approved: 11-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
23				
	L16061345-06 MSD 827-DIOX DNR-sample is spiked for 827-SPE-DIOX			
24				
	L16061345-03 RE 827-DIOX confirms low surrogate recovery.			
25				
	L16061345-01 RE 827-DIOX confirms low surrogate recovery.			
26	X	5	Over Calibration Range	
	L16061560-01 827-DIOX			
30	X	2	Over Calibration Range	
	L16061452-03 827-DIOX			
31	X	10	Surrogate standard failure	
	L16061453-01 surrogate high due to SMI. Not re-extracting.			

Page: 3 Approved: 11-JUL-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 76120
Analytical Workgroups: L16061345, 061227, 1560, 1648, 1290, 1450, 1452, 1453

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 06-JUL-2016

Secondary Reviewer: 11-JUL-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUL-11-2016 11:01:30

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG575045

Login Number: L16061648

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW25-062916	01	06/29/16					06/30/2016	1.3	7		07/05/16	5.2	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4840600
Report generated 07/06/2016 11:12

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061648
Instrument Id: HPMS15
Workgroup (AAB#): WG575045

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16061648-01	1.00	01	35.6
WG574706-01	1.00	01	28.3
WG574706-02	1.00	01	29.8
WG574706-03	1.00	01	35.9

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4840608
Report generated: 07/06/2016 11:12

METHOD BLANK SUMMARY

Login Number: L16061648
Blank File ID: 15M18718
Prep Date: 06/30/16 16:00
Analyzed Date: 07/05/16 15:14
Analyst: MES

Work Group: WG575045
Blank Sample ID: WG574706-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574706-02	15M18719	07/05/16 15:38	01
LCS2	WG574706-03	15M18720	07/05/16 16:01	01
18WW25-062916	L16061648-01	15M18735	07/05/16 21:39	01

Report Name: BLANK_SUMMARY
PDF File ID: 4848504
Report generated 07/12/2016 08:30

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061648 Prep Date: 06/30/16 16:00 Sample ID: WG574706-01
Instrument ID: HPMS15 Run Date: 07/05/16 15:14 Prep Method: 3520C
File ID: 15M18718 Analyst: MES Method: 8270D
Workgroup (AAB#): WG575045 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	28.3	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4840601
06-JUL-2016 11:12

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061648 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG575045 Units: ug/L
QC Key: DOD4 Lot #: STD75256

Sample ID: WG574706-02 LCS File ID: 15M18719 Run Date: 07/05/2016 15:38
Sample ID: WG574706-03 LCS2 File ID: 15M18720 Run Date: 07/05/2016 16:01

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	1.55	31.0	5.00	2.07	41.3	28.5	30 - 104	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	29.8	35.9	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4840602
Report generated: 07/06/2016 11:12

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061648
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4840605
Report generated 07/06/2016 11:12

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061648
Instrument: HPMS15
Analyst: MES
Workgroup: WG575159

Tune ID: WG575159-01
Run Date: 07/05/2016
Run Time: 14:33
File ID: 15M18716
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	46.2	37745	PASS
68.0	69.0	0	2.00	1.95	734	PASS
69.0	198	0	100	46.2	37667	PASS
70.0	69.0	0	2.00	0.337	127	PASS
127	198	40.0	60.0	57.5	46941	PASS
197	198	0	1.00	0.380	310	PASS
198	198	100	100	100	81613	PASS
199	198	5.00	9.00	7.55	6162	PASS
275	198	10.0	30.0	24.6	20072	PASS
365	198	1.00	100	2.93	2392	PASS
441	443	0.0100	100	70.8	8479	PASS
442	198	40.0	100	73.3	59805	PASS
443	442	17.0	23.0	20.0	11980	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575159-02	CCV	01	07/05/2016 14:51	
WG574706-01	BLANK	01	07/05/2016 15:14	
WG574706-02	LCS	01	07/05/2016 15:38	
WG574706-03	LCS2	01	07/05/2016 16:01	
L16061648-01	18WW25-062916	01	07/05/2016 21:39	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4840605
Report generated 07/06/2016 11:12

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061648
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4840603
Report generated 07/06/2016 11:12

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061648

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4840603
Report generated 07/06/2016 11:12

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061648

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4840603
Report generated 07/06/2016 11:12

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061648 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4840604
Report generated 07/06/2016 11:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/05/2016
Sample ID: WG575159-02
Instrument ID: HPMS15
Run Time: 14:51
Method: 8270D
File ID: 15M18717
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG575045
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5230	ug/L	0.320	4.63	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4840606
Report generated 07/06/2016 11:12

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061648
Instrument ID: HPMS15
Workgroup (AAB#): WG575045

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16061648-01	1.00	01	33697
WG574706-01	1.00	01	36576
WG574706-02	1.00	01	36960
WG574706-03	1.00	01	37076

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4840607
Report generated 07/06/2016 11:12

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18735.D
Acq On : 5 Jul 2016 21:39
Operator : MES
Sample : L16061648-01 827-DIOX
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jul 06 08:13:22 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.867	152	33697	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	24661	1.7786	ug/L	0.00
Spiked Amount 5.000			Recovery	=	35.60%	
4) Nitrobenzene-d5	7.372	82	3895	0.1094	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.20%	
5) 2-Fluorobiphenyl	8.853	172	263	0.0029	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.081	244	949	0.0110	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18735.D
Acq On : 5 Jul 2016 21:39
Operator : MES
Sample : L16061648-01 827-DIOX
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jul 06 08:13:22 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

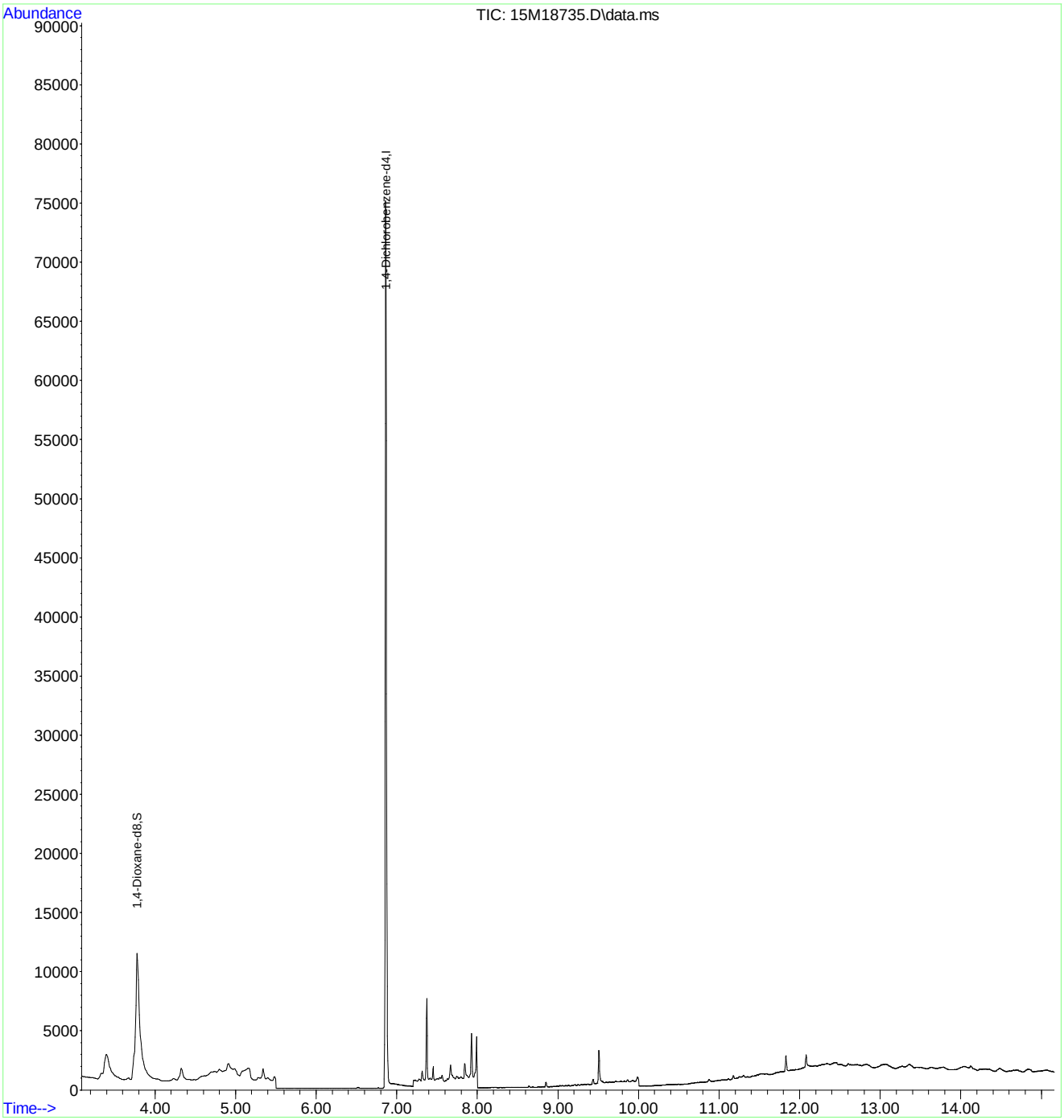

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 10:23:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	60	0.00
2	1,4-Dioxane	0.325	0.307	5.5	57	-0.03
3 S	1,4-Dioxane-d8	0.419	0.417	0.5	60	-0.04
4 S	Nitrobenzene-d5	0.904	1.128	-24.8	69	0.00
5 S	2-Fluorobiphenyl	2.613	2.691	-3.0	63	0.00
6 S	p-Terphenyl-d14	2.562	2.622	-2.3	61	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 10:23:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	60	0.00
2	1,4-Dioxane	5.000	4.721	5.6	57	-0.03
3 S	1,4-Dioxane-d8	5.000	4.979	0.4	60	-0.04
4 S	Nitrobenzene-d5	5.000	5.474	-9.5	69	0.00
5 S	2-Fluorobiphenyl	5.000	5.150	-3.0	63	0.00
6 S	p-Terphenyl-d14	5.000	5.115	-2.3	61	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

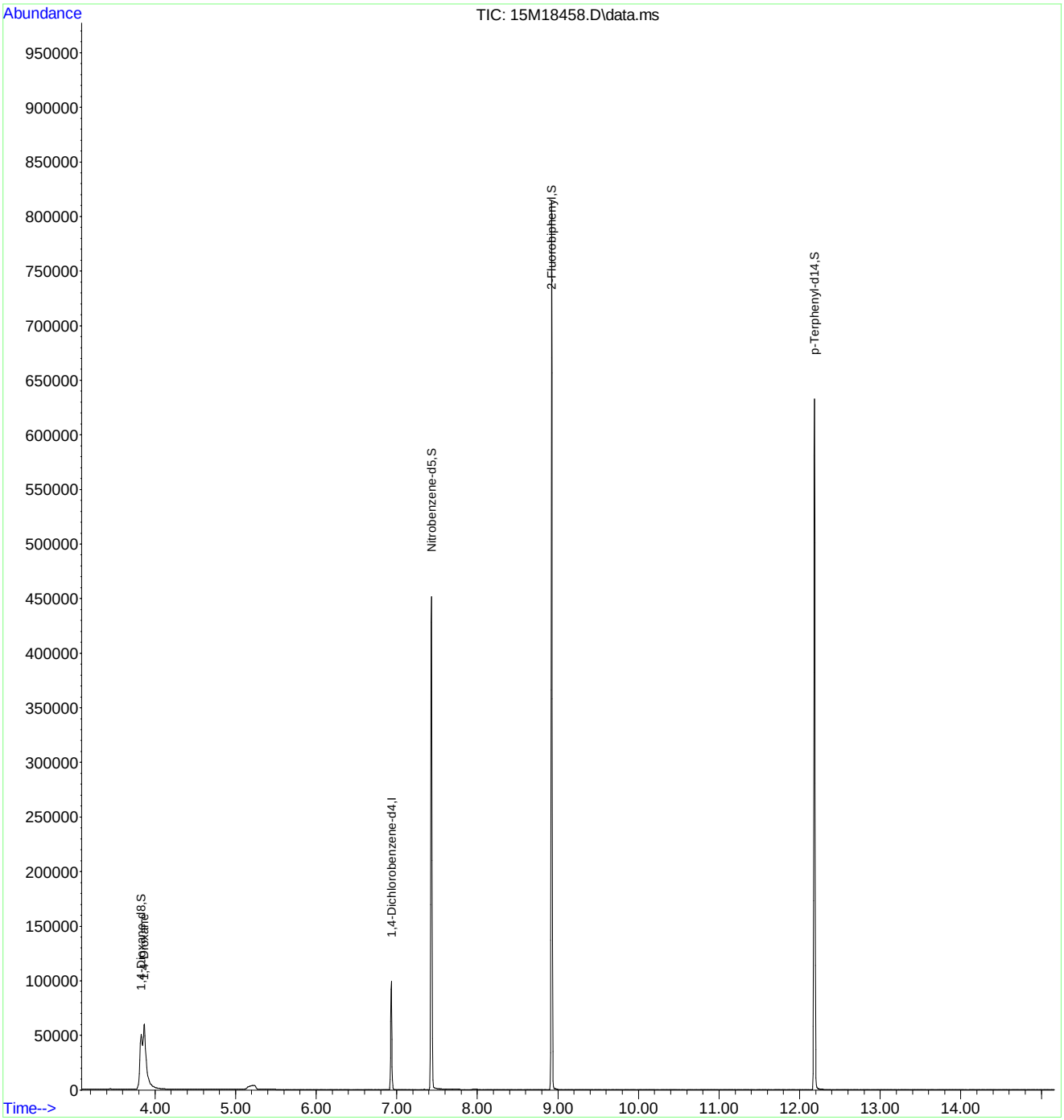

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

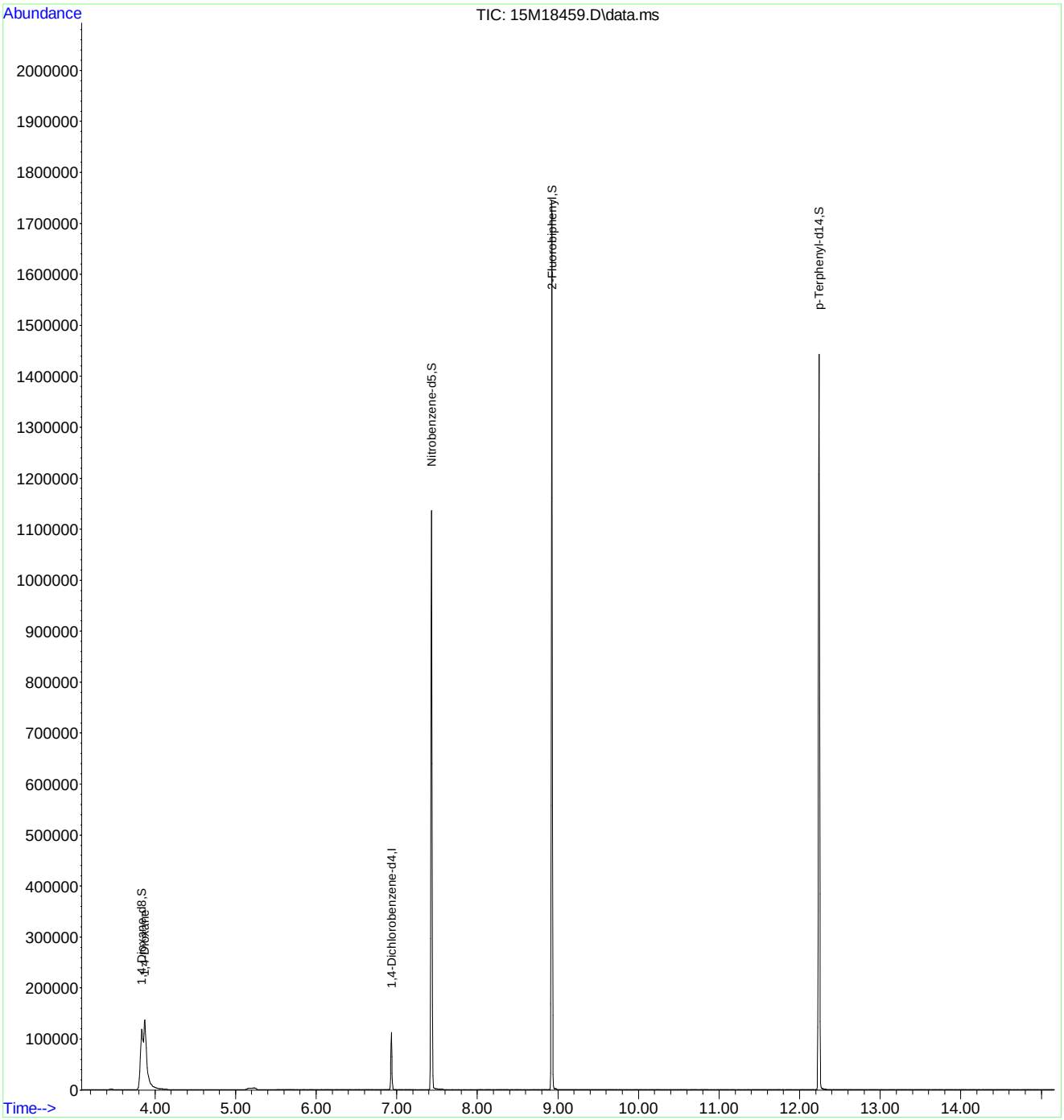

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

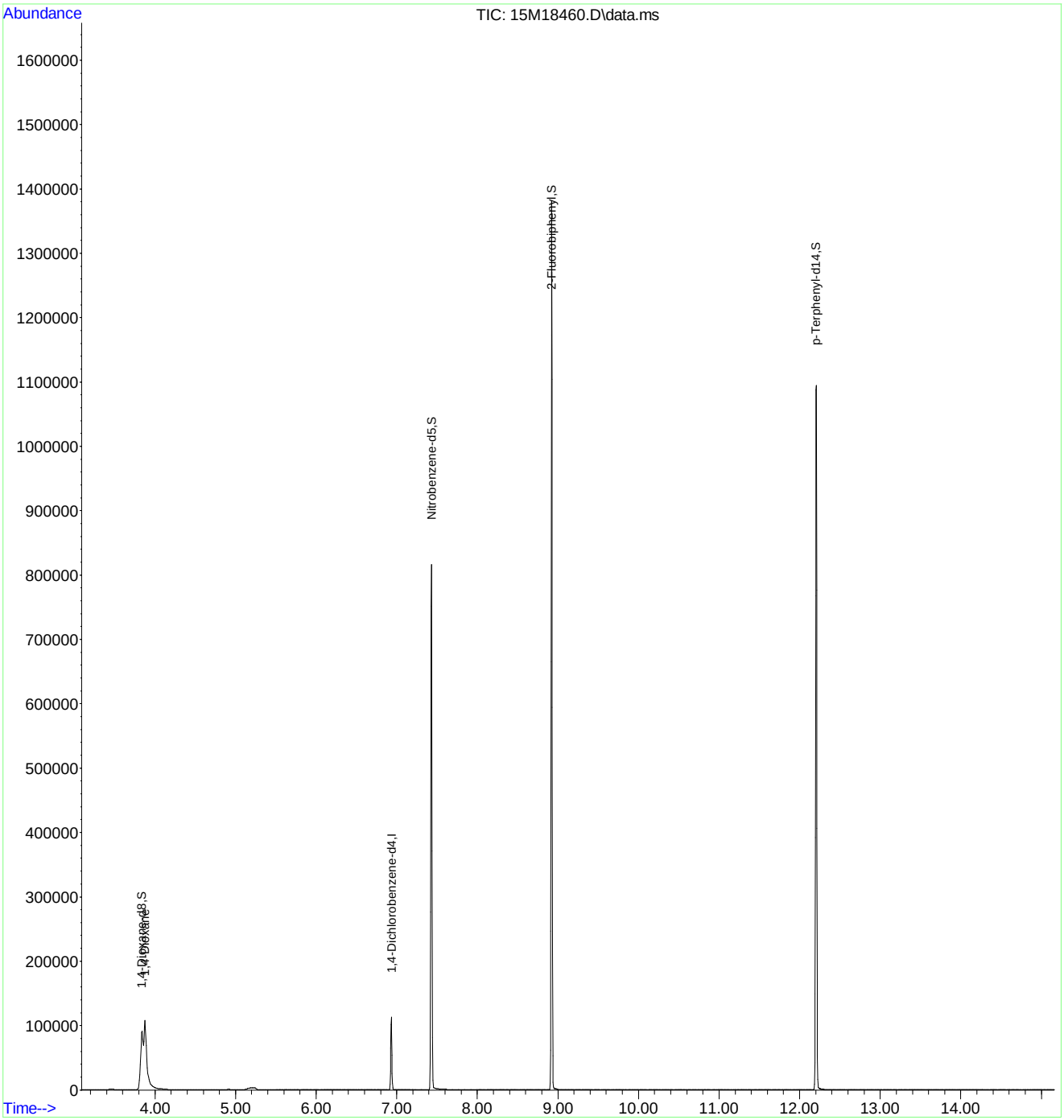

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406	ug/L	0.00
Spiked Amount 5.000			Recovery = 48.80%			
4) Nitrobenzene-d5	7.431	82	88869	2.3714	ug/L	0.00
Spiked Amount 5.000			Recovery = 47.40%			
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.20%			
6) p-Terphenyl-d14	12.199	244	218191	2.3930	ug/L	0.02
Spiked Amount 5.000			Recovery = 47.80%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

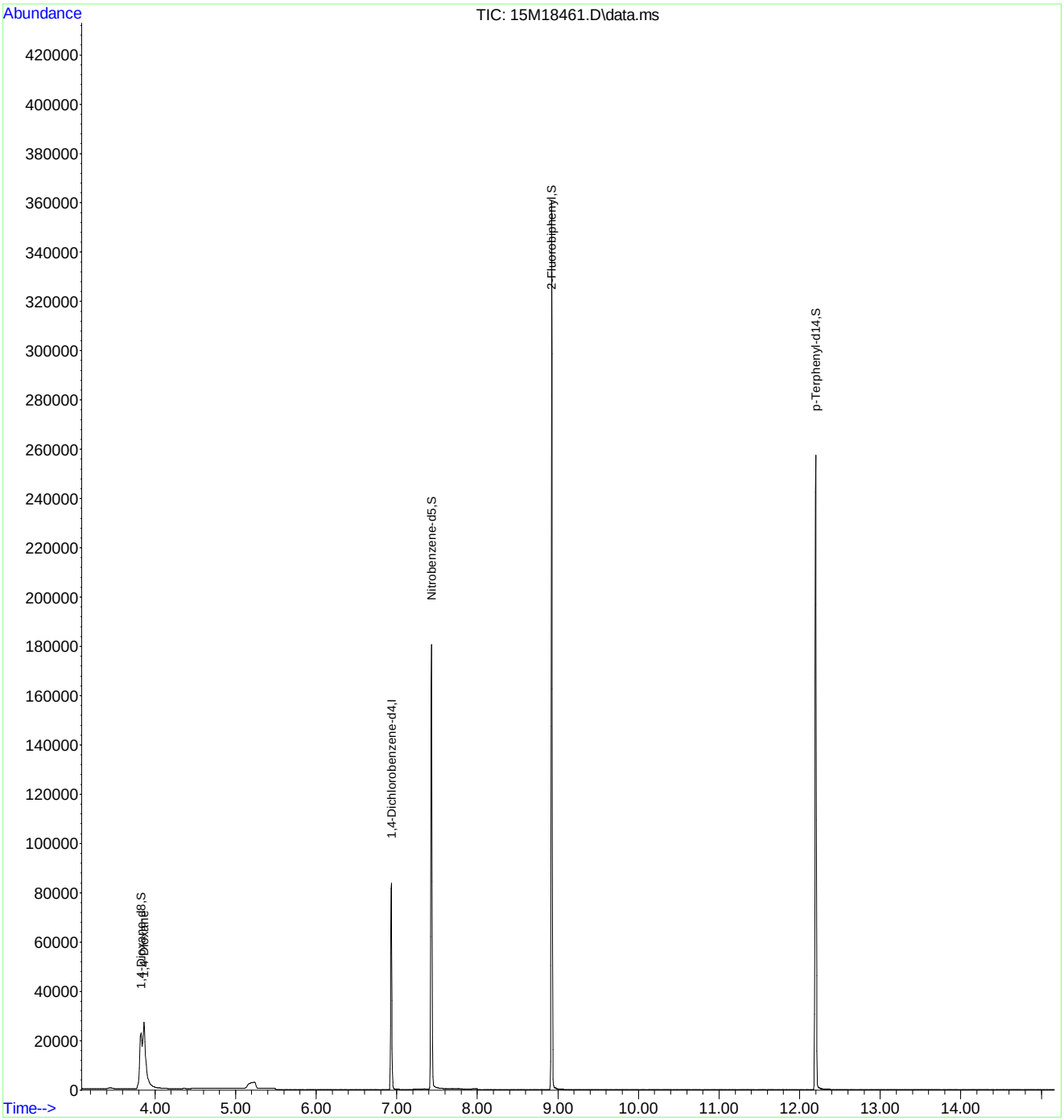

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607 ug/L	0.01
Spiked Amount 5.000			Recovery	= 19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776 ug/L	0.00
Spiked Amount 5.000			Recovery	= 17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612 ug/L	0.00
Spiked Amount 5.000			Recovery	= 19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208 ug/L	0.02
Spiked Amount 5.000			Recovery	= 18.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694 ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

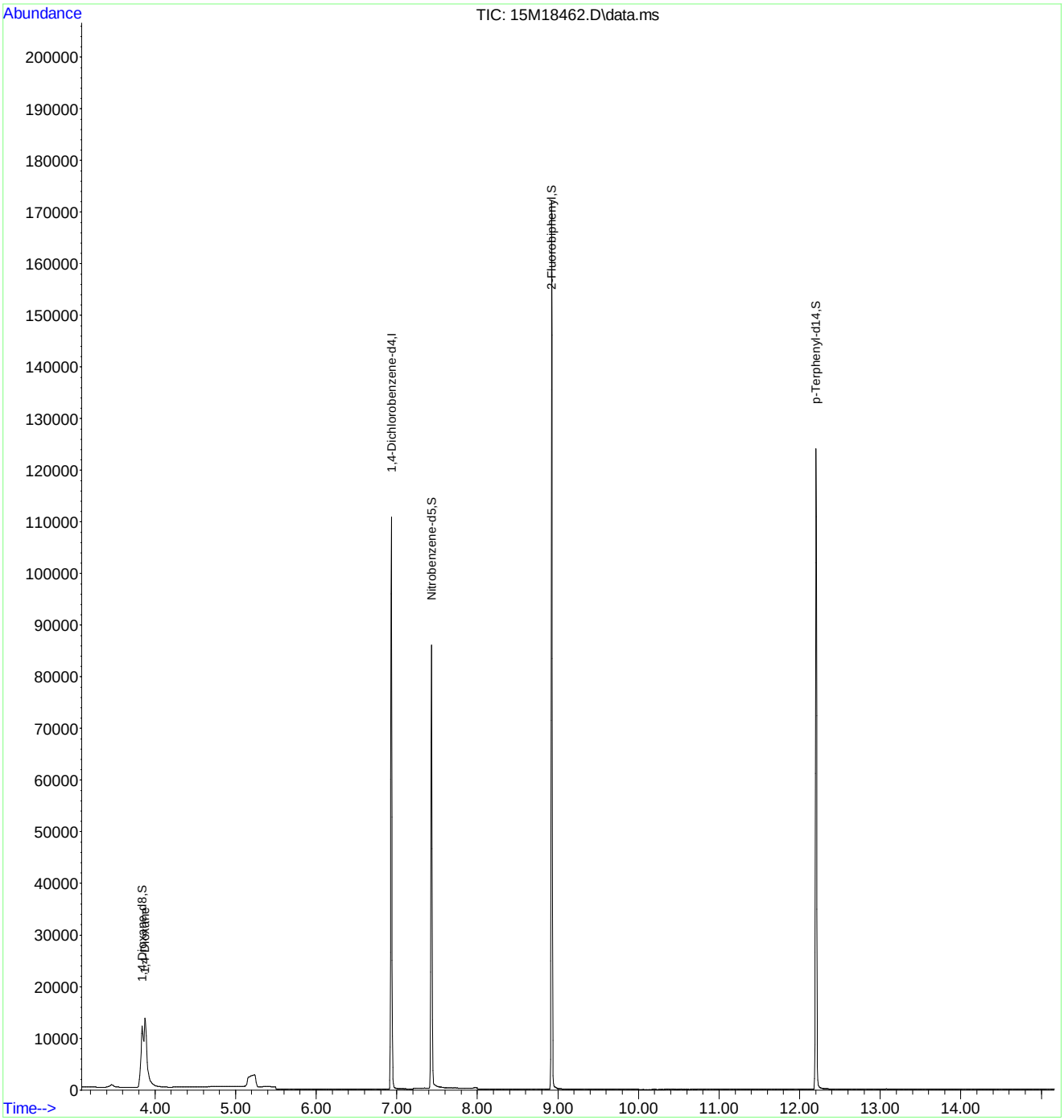

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

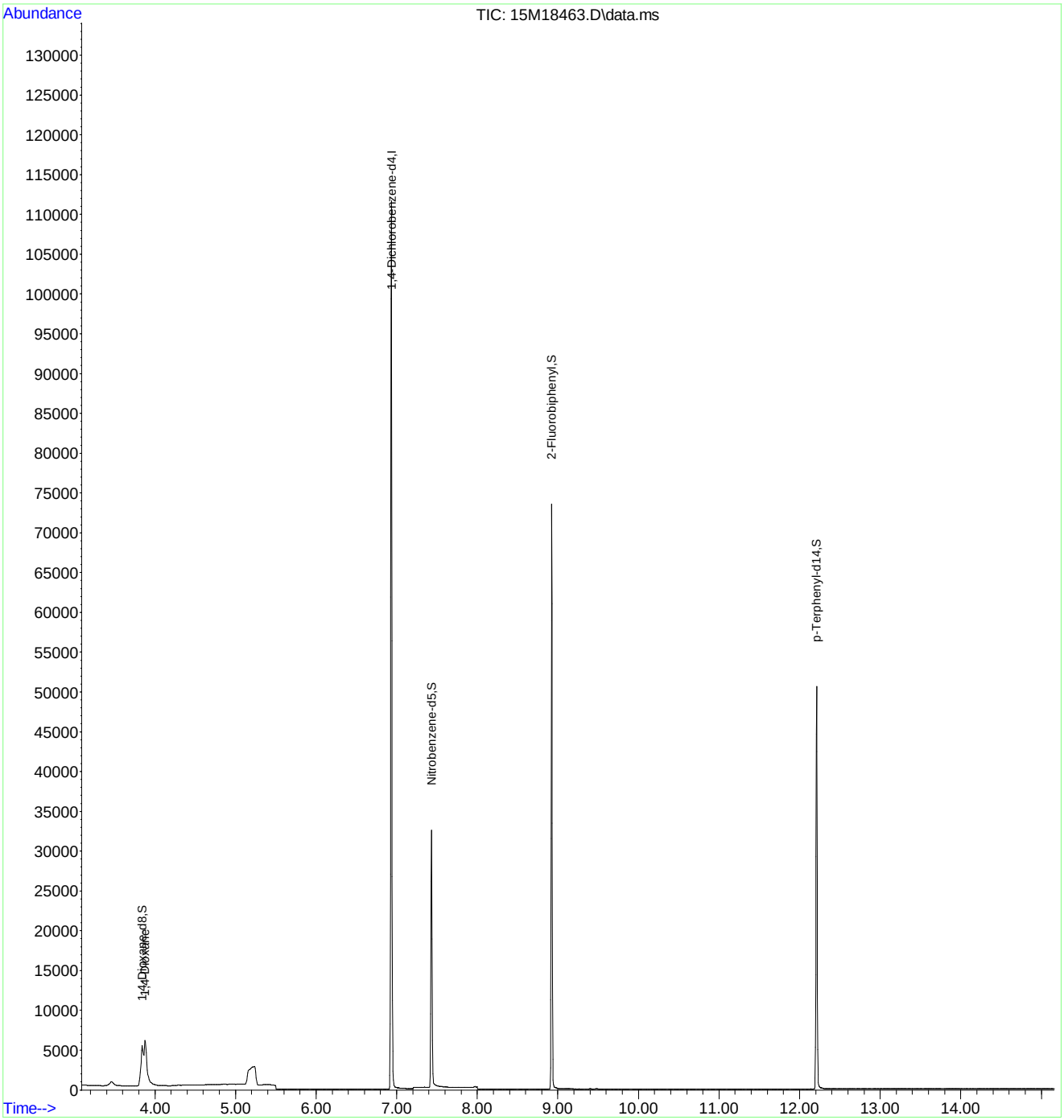

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2	1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3 S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4 S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

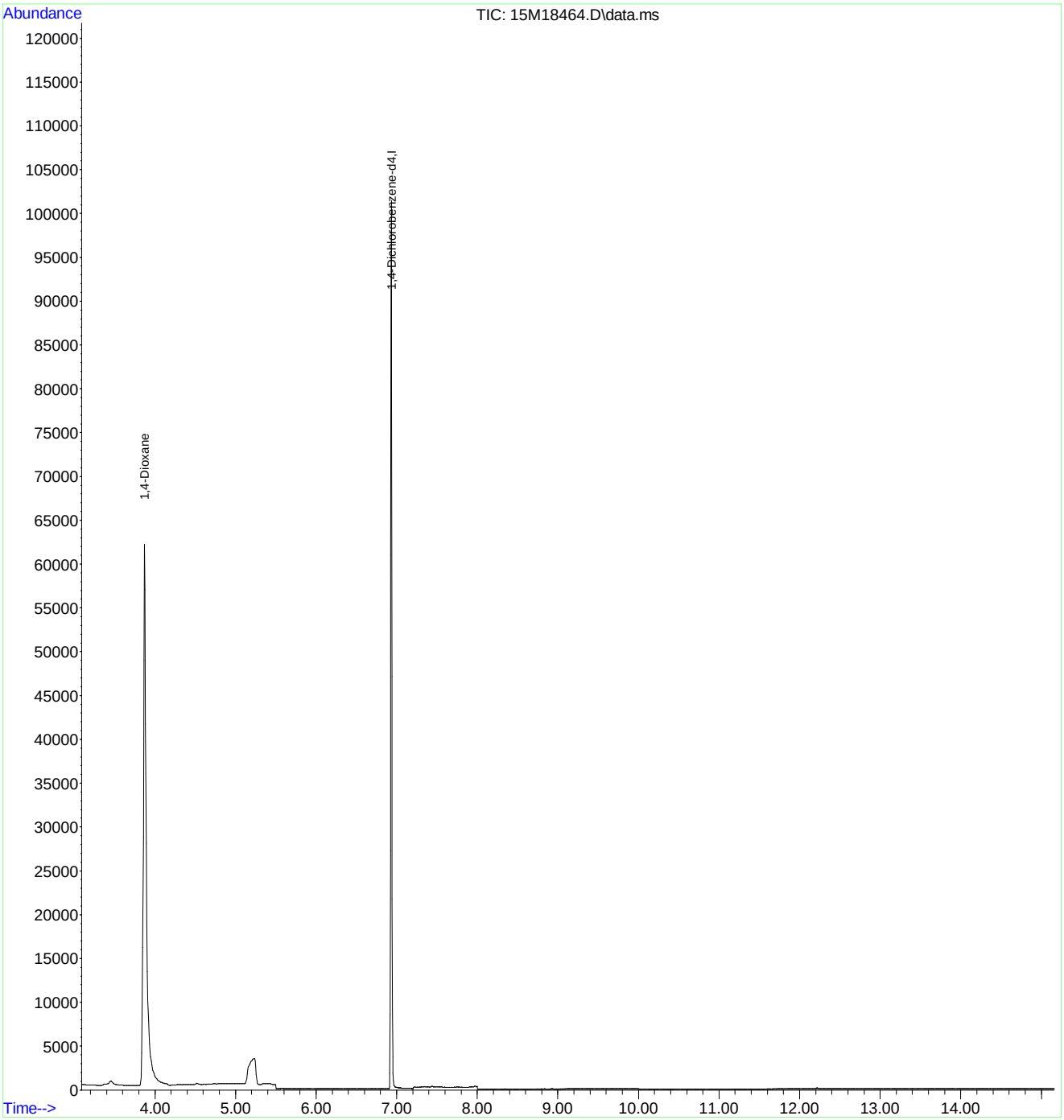

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.867	152	50685	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.778	96	100564	4.8218 ug/L	0.00
Spiked Amount 5.000			Recovery	= 96.40%	
4) Nitrobenzene-d5	7.367	82	310249	5.7949 ug/L	0.00
Spiked Amount 5.000			Recovery	= 115.80%	
5) 2-Fluorobiphenyl	8.853	172	677739	5.0151 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.40%	
6) p-Terphenyl-d14	12.122	244	688752	5.2876 ug/L	0.03
Spiked Amount 5.000			Recovery	= 105.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.813	58	81128	5.2314 ug/L	78

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Continuing Calibration Area and RT check

Instrument: HPMS15
Initial cal date: 06/21/16
CCV date: 07/05/16
CCV Filename: 15M18717

1,4-Dichlorobenzene-d4

	Amount	RT
InitCal	39637	6.93
CCV	50685	6.87

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	128	0.00
2	1,4-Dioxane	5.000	5.231	-4.6	133	0.00
3 S	1,4-Dioxane-d8	5.000	4.822	3.6	122	0.00
4 S	Nitrobenzene-d5	5.000	5.795	-15.9	139	0.00
5 S	2-Fluorobiphenyl	5.000	5.015	-0.3	127	0.00
6 S	p-Terphenyl-d14	5.000	5.288	-5.8	133	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

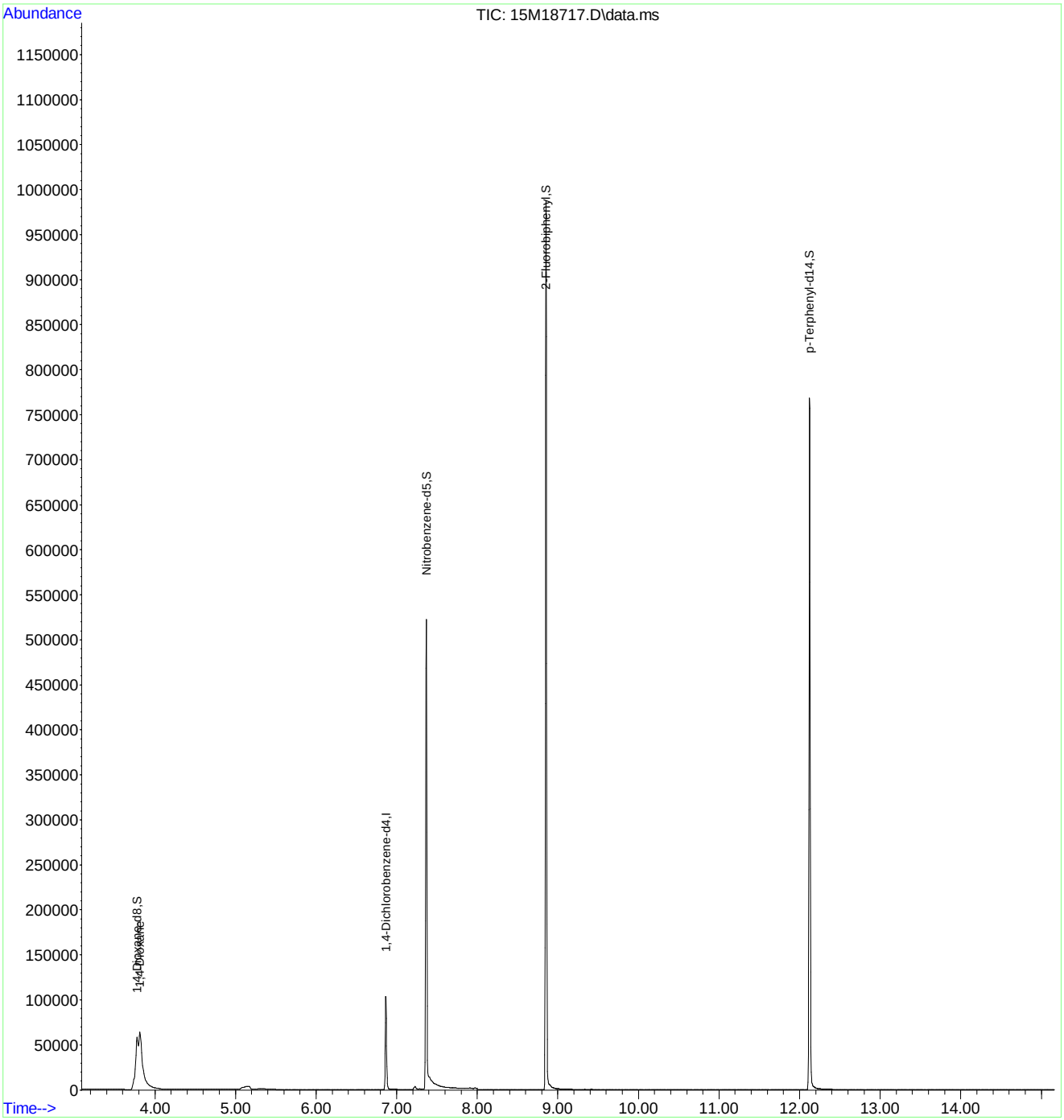

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

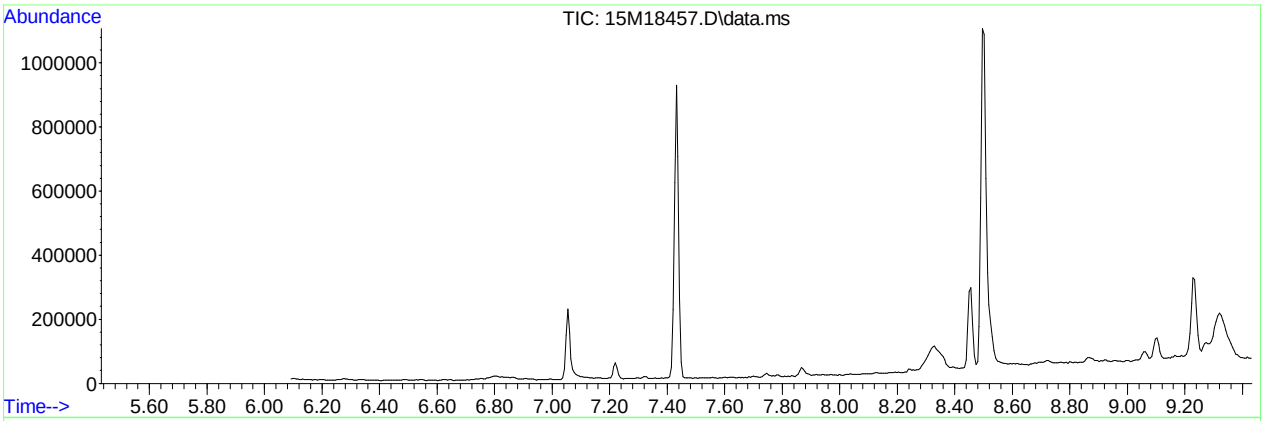

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

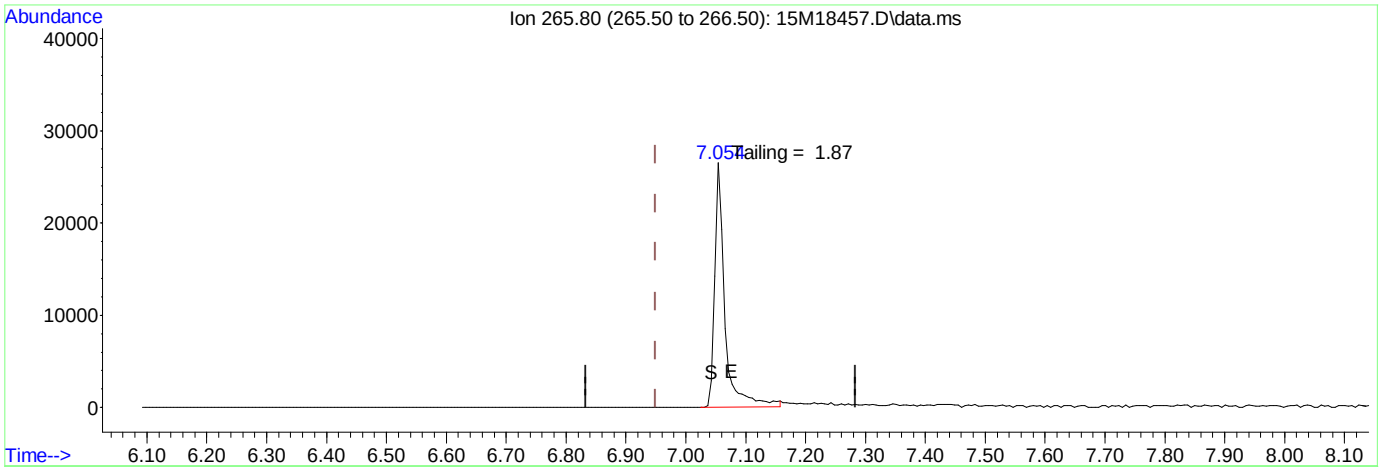

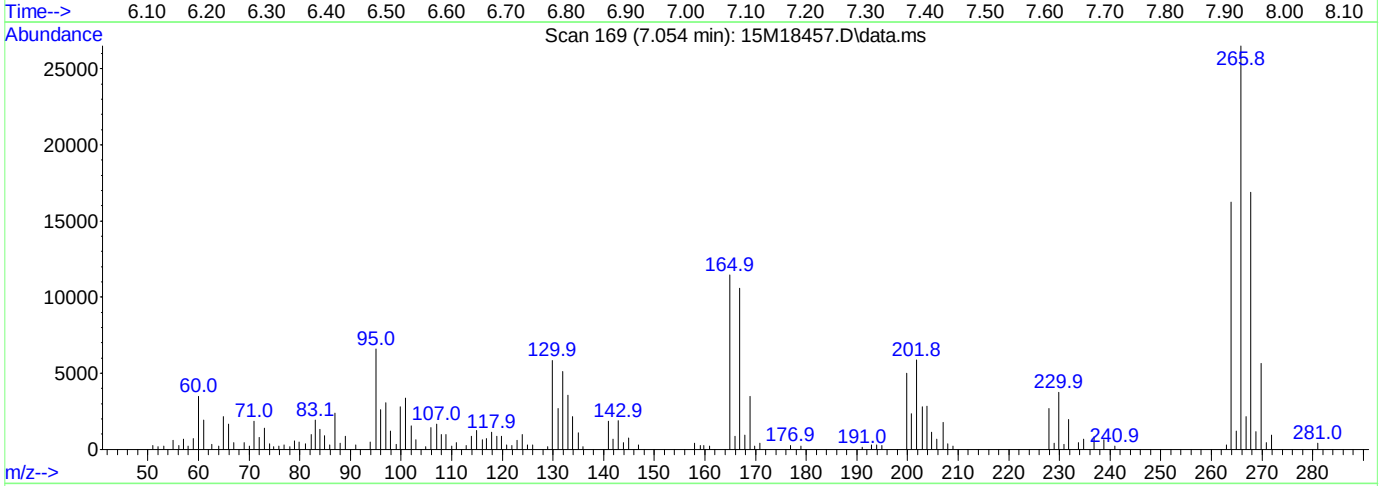

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

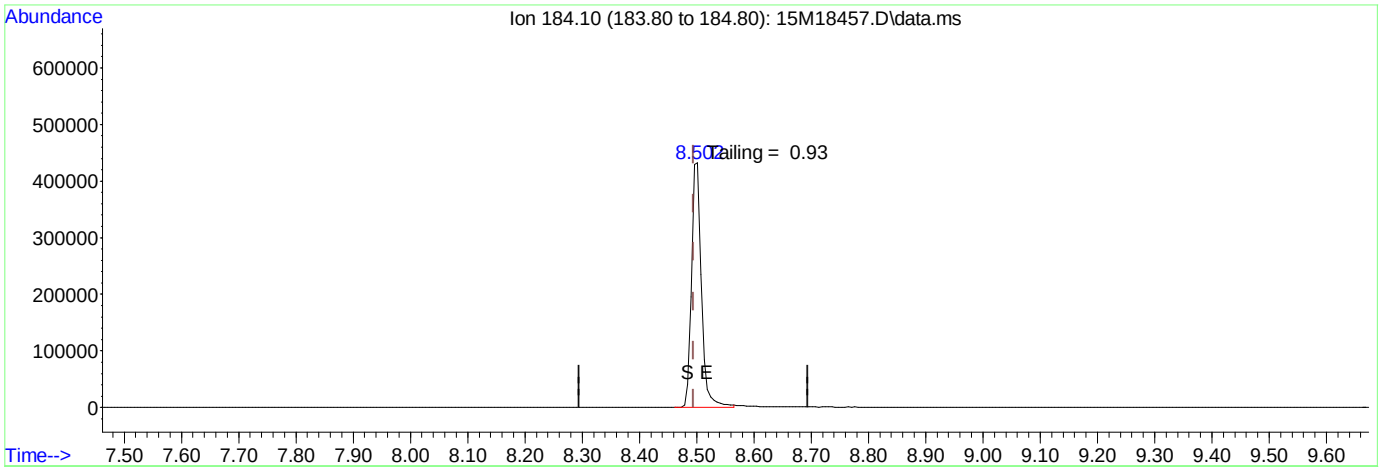

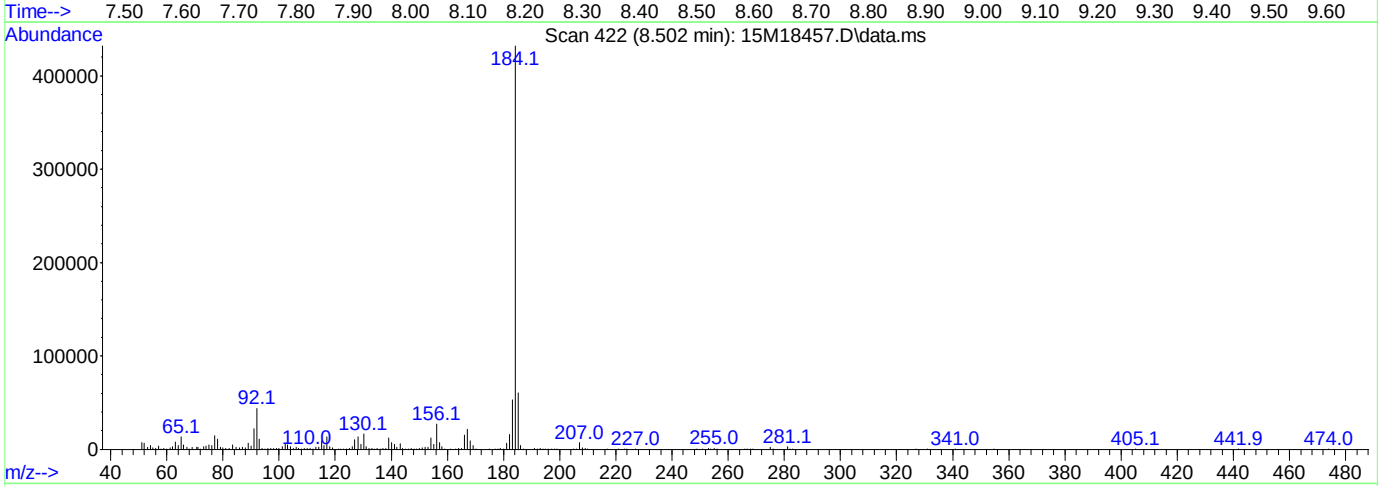

TIC: 15M18457.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

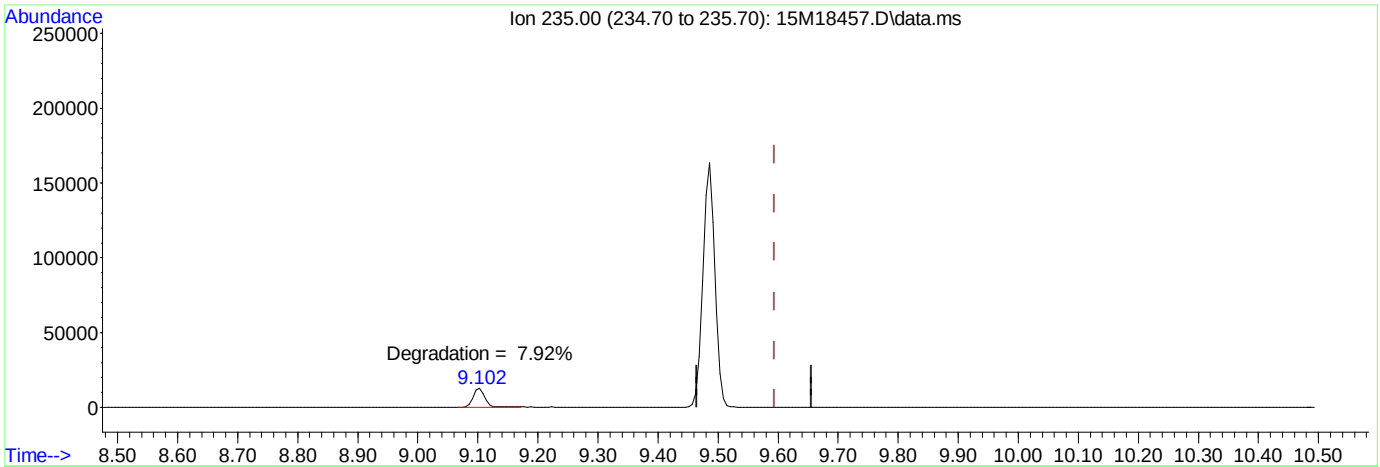

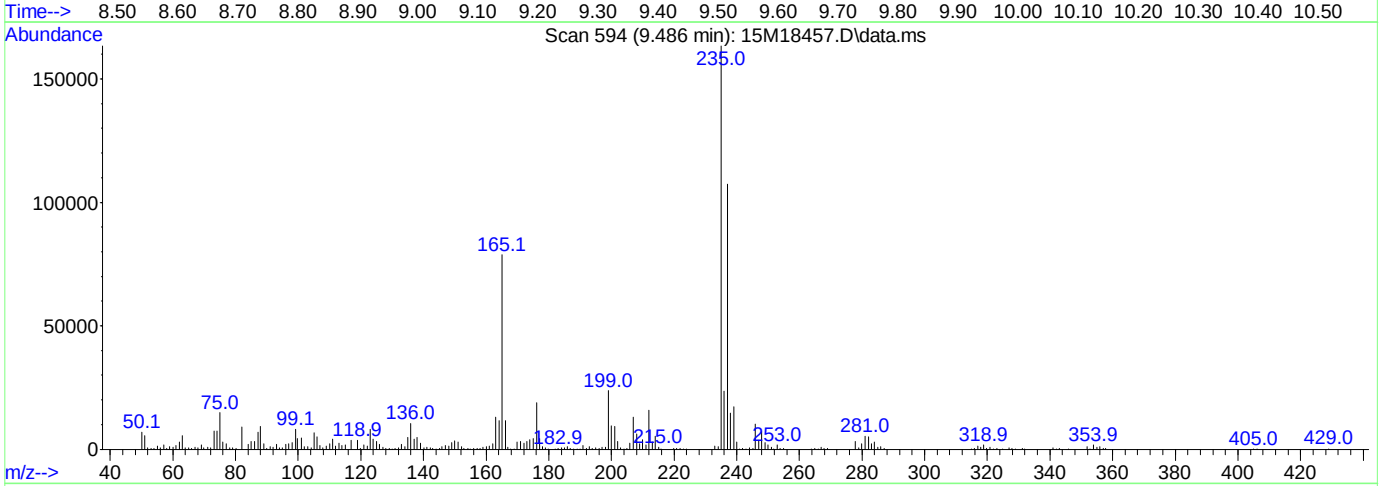

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

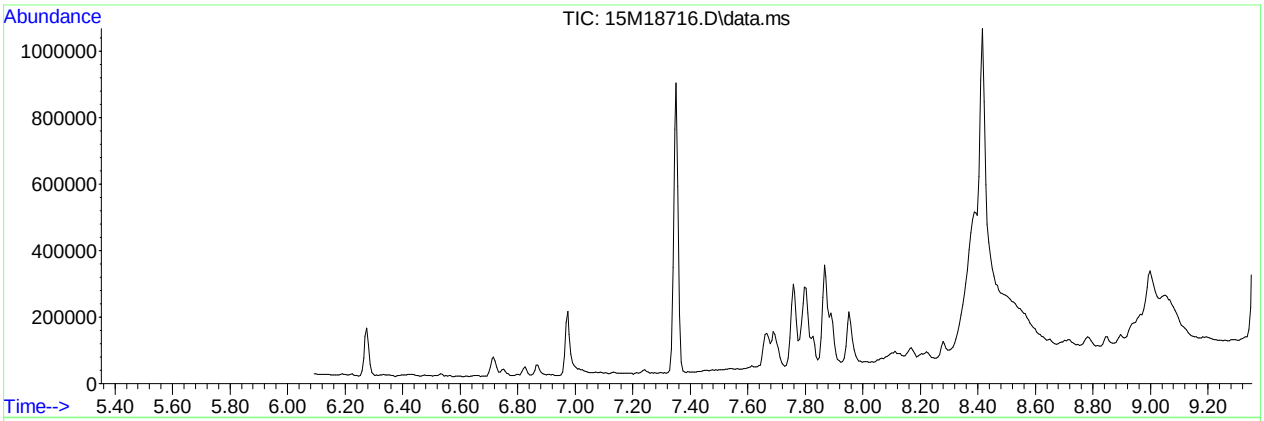

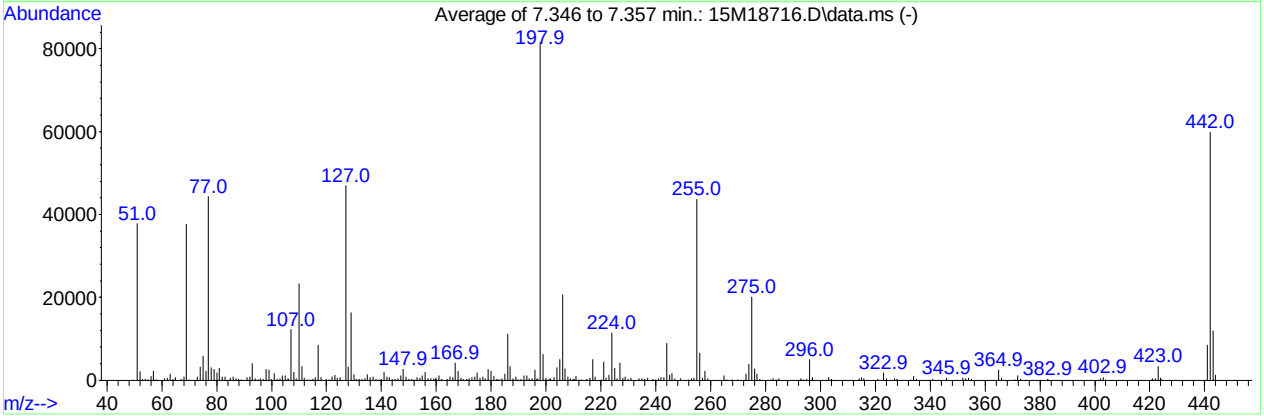

AutoFind: Scans 220, 221, 222; Background Corrected with Scan 214

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	46.2	37745	PASS
68	69	0.00	2	1.9	734	PASS
69	198	0.00	100	46.2	37667	PASS
70	69	0.00	2	0.3	127	PASS
127	198	40	60	57.5	46941	PASS
197	198	0.00	1	0.4	310	PASS
198	198	100	100	100.0	81613	PASS
199	198	5	9	7.6	6162	PASS
275	198	10	30	24.6	20072	PASS
365	198	1	100	2.9	2392	PASS
441	443	0.01	100	70.8	8479	PASS
442	198	40	100	73.3	59805	PASS
443	442	17	23	20.0	11980	PASS

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

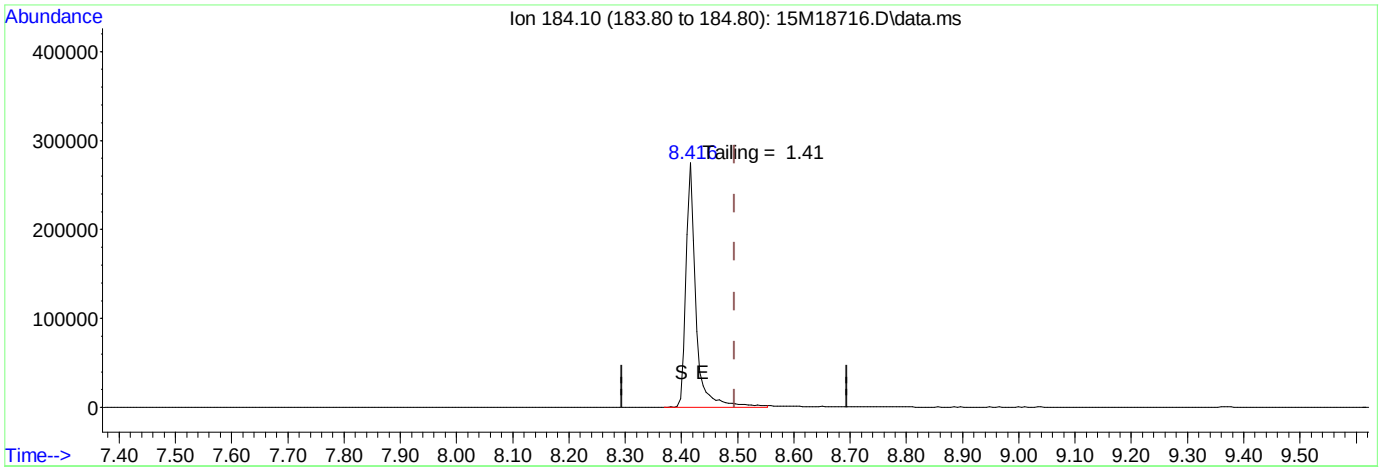

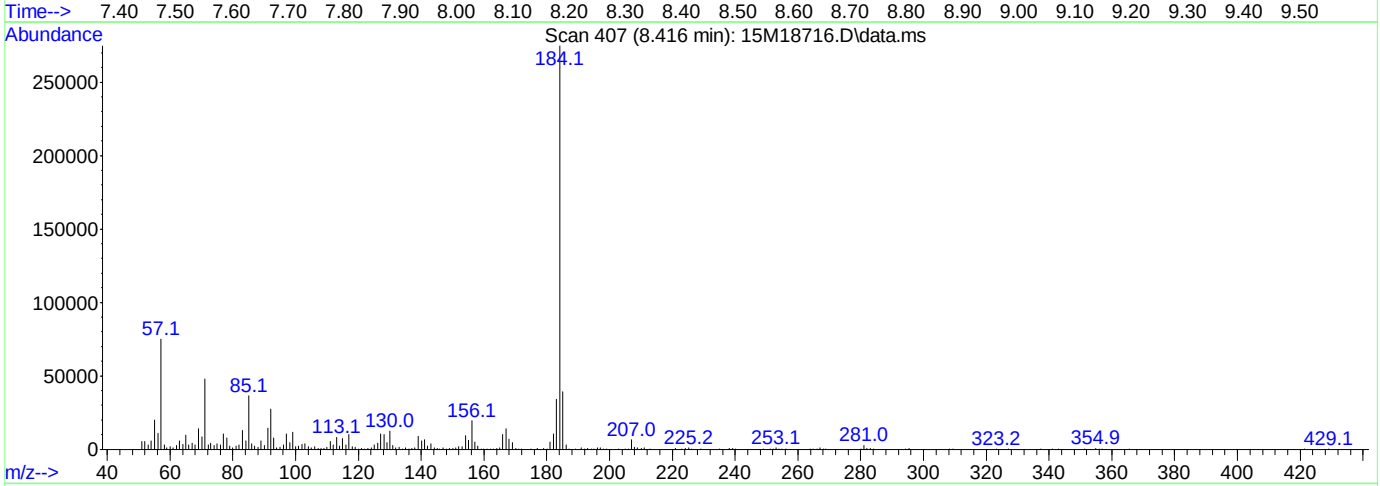

TIC: 15M18716.D\data.ms

(2) Benzidine

8.416min (-0.078) 0.00 ug/ml

response 340801

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

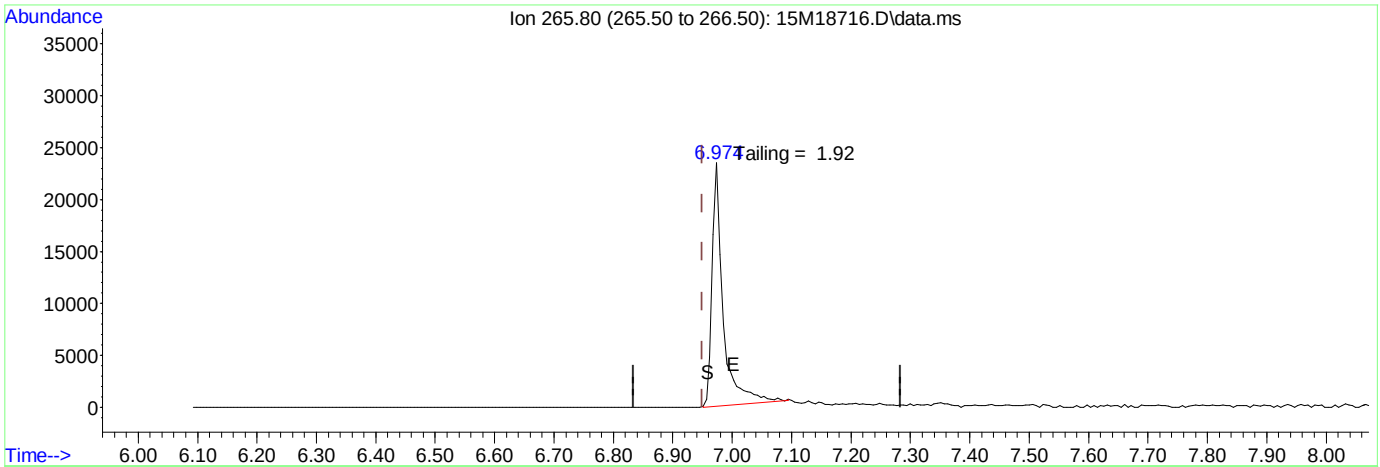

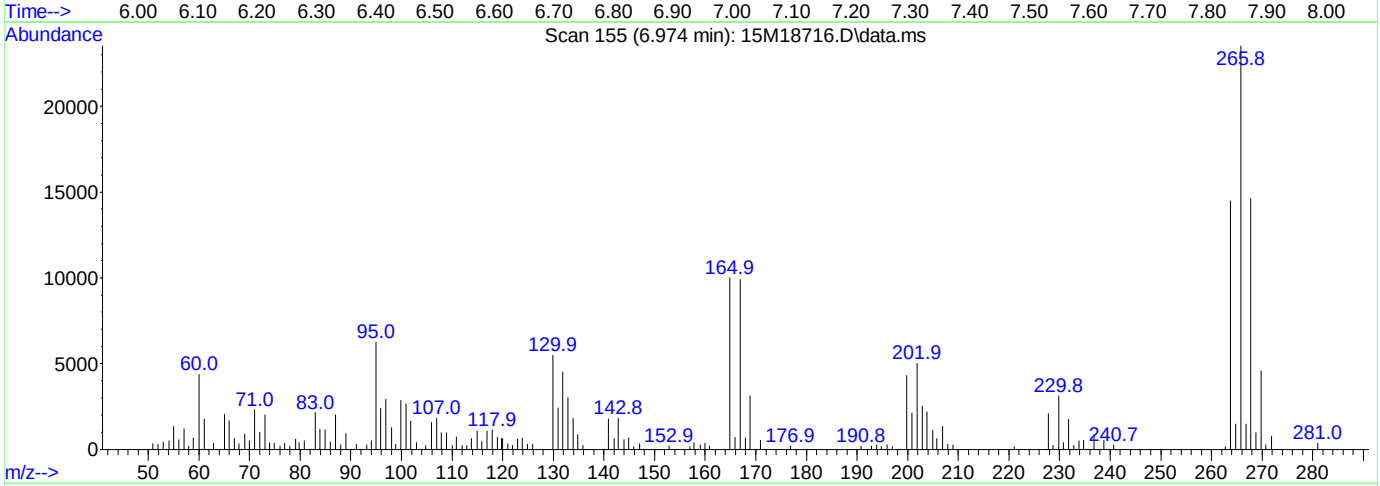

(1) Pentachlorophenol

6.974min (+ 0.025) 0.00 ug/ml

response 32364

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

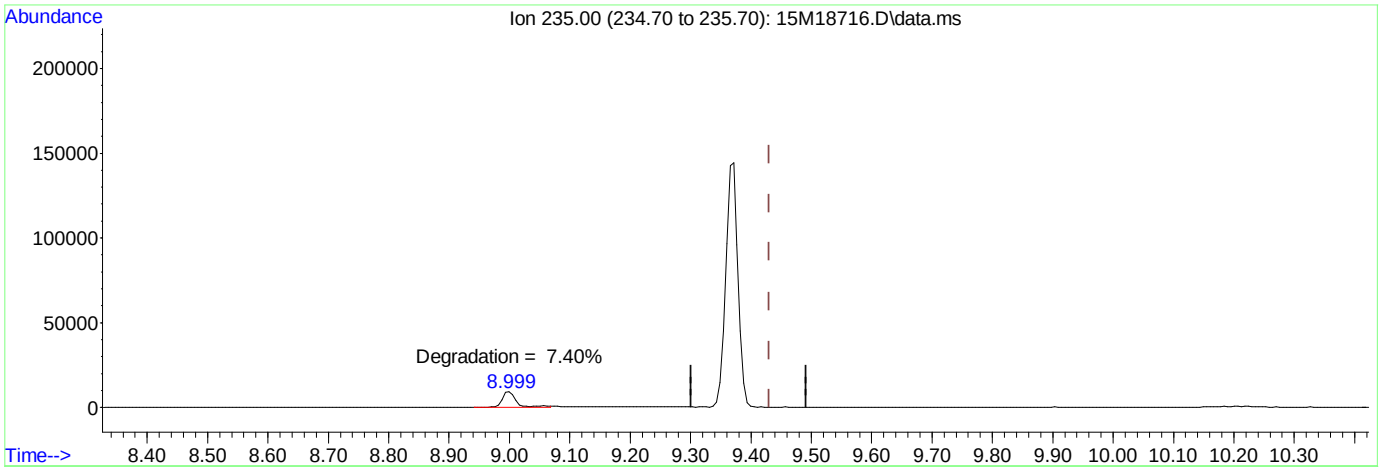

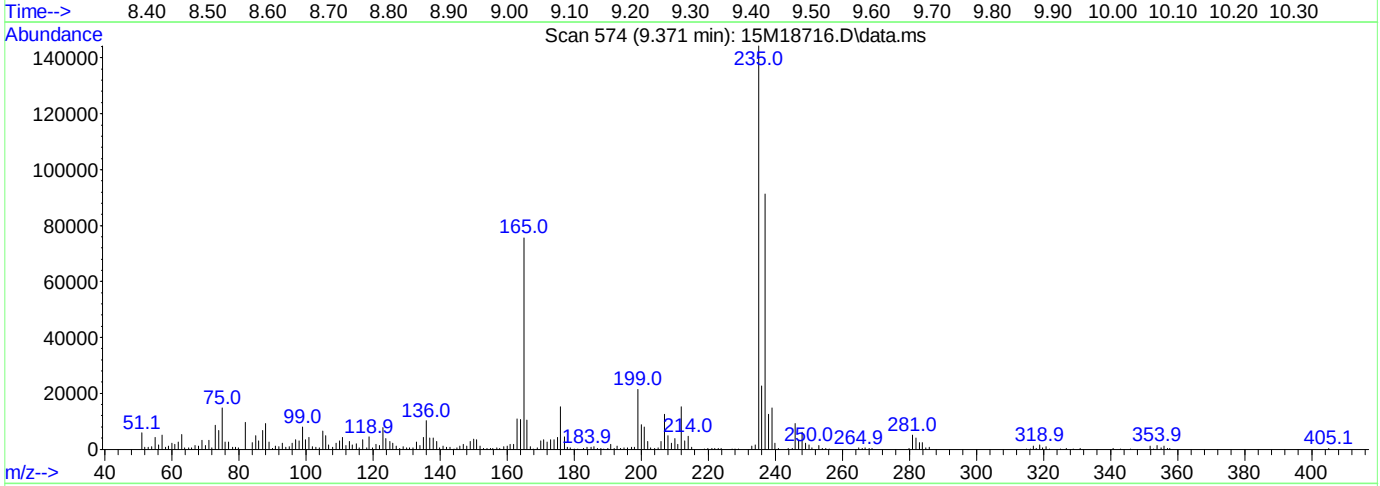

(3) DDT

9.371min (-0.059) 0.00 ug/ml

response 208755

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18718.D
Acq On : 5 Jul 2016 15:14
Operator : MES
Sample : WG574706-01 BLANK 6/30
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 05 16:37:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.867	152	36576	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.785	96	21271	1.4133	ug/L	0.00
Spiked Amount 5.000			Recovery	=	28.20%	
4) Nitrobenzene-d5	7.372	82	1968	0.0509	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.853	172	65	0.0007	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.114	244	1088	0.0116	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18718.D
Acq On : 5 Jul 2016 15:14
Operator : MES
Sample : WG574706-01 BLANK 6/30
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 05 16:37:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

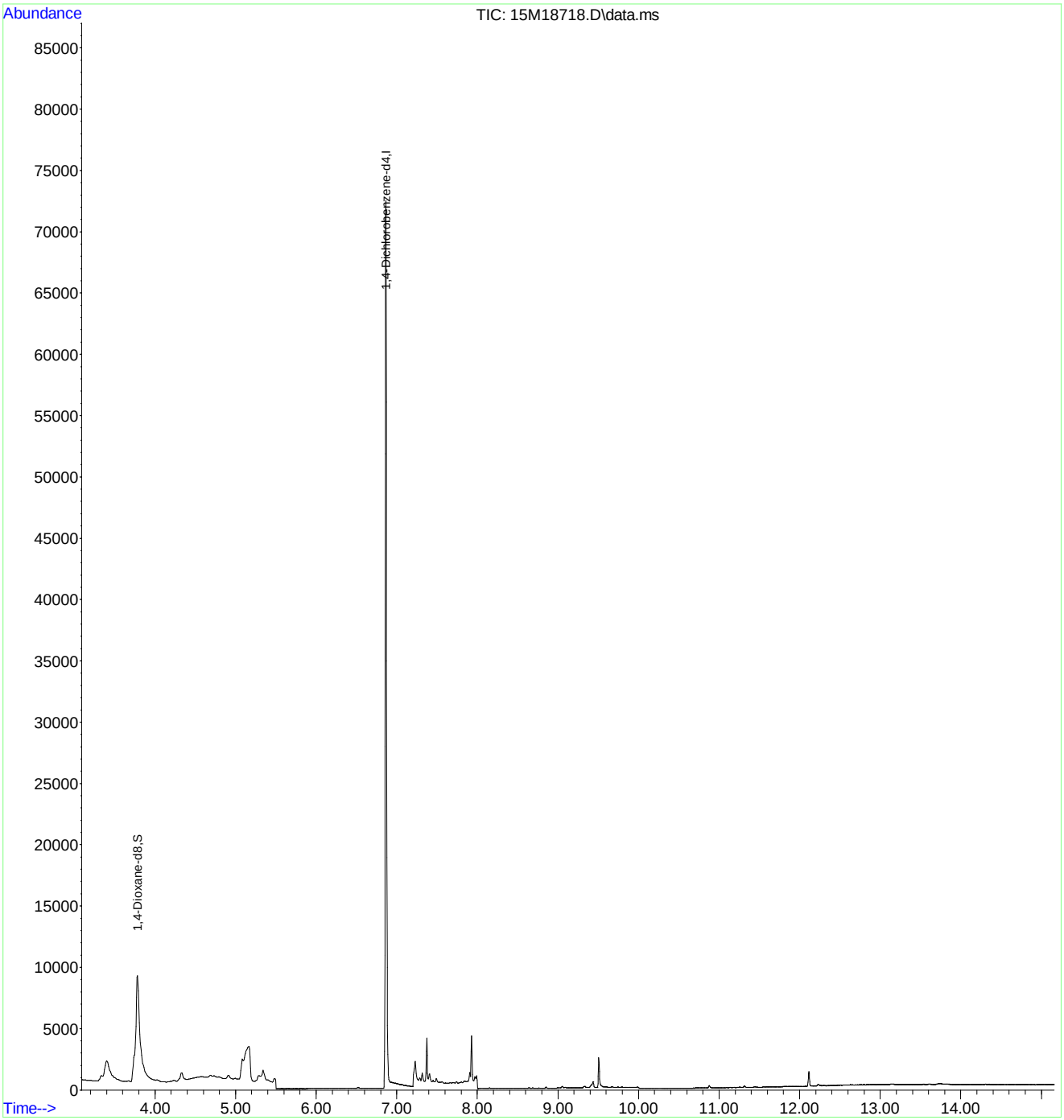

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18719.D
Acq On : 5 Jul 2016 15:38
Operator : MES
Sample : WG574706-02 LCS 6/30
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 05 16:37:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.867	152	36960	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	22635	1.4883	ug/L	0.00
Spiked Amount 5.000			Recovery	=	29.80%	
4) Nitrobenzene-d5	7.372	82	1139	0.0292	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.853	172	78	0.0008	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.122	244	1819	0.0192	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.813	58	17552	1.5521	ug/L	77

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18719.D
Acq On : 5 Jul 2016 15:38
Operator : MES
Sample : WG574706-02 LCS 6/30
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 05 16:37:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

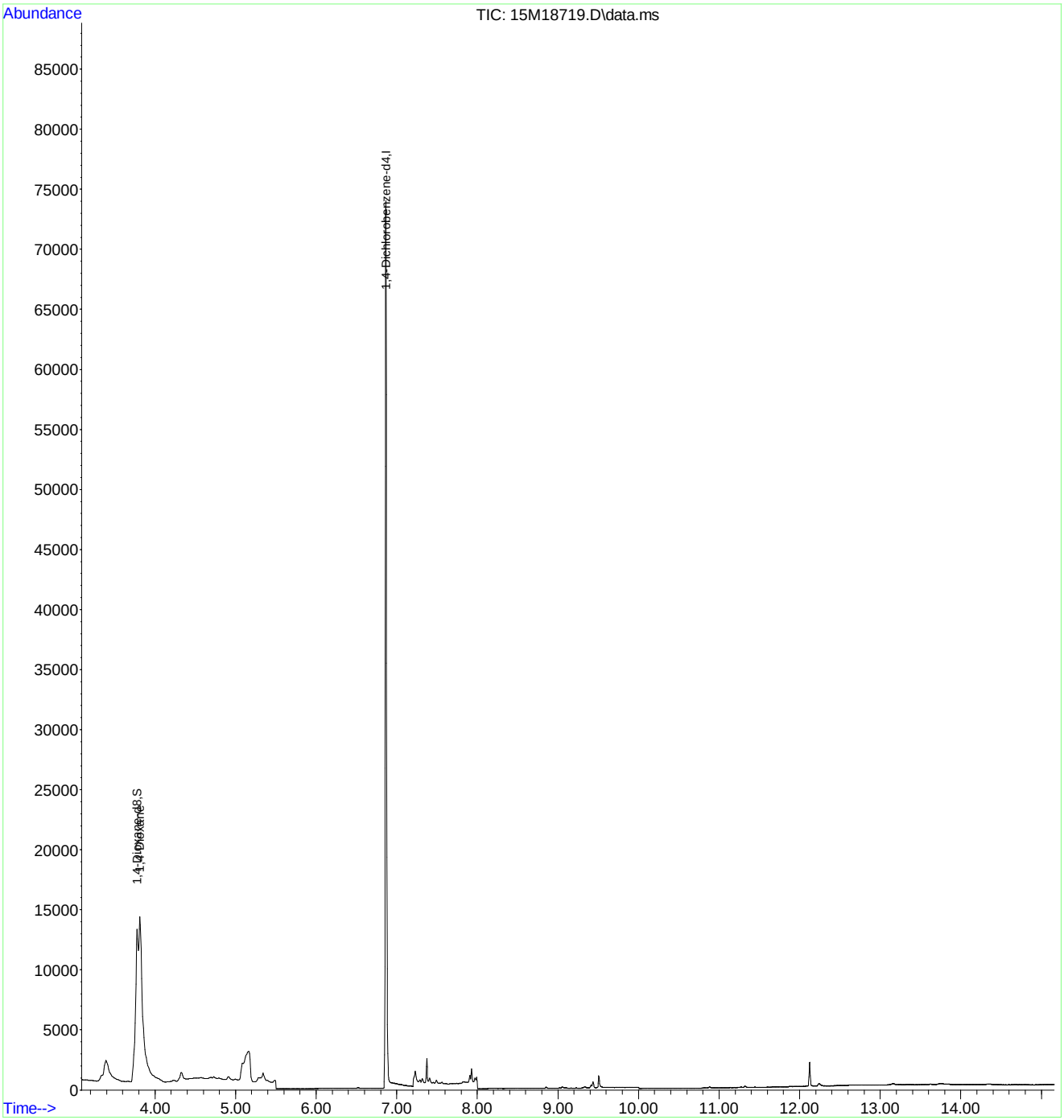

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18720.D
Acq On : 5 Jul 2016 16:01
Operator : MES
Sample : WG574706-03 LCSDUP 6/30
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 05 16:37:24 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.866	152	37076	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.777	96	27386	1.7951	ug/L	0.00
Spiked Amount 5.000			Recovery	=	36.00%	
4) Nitrobenzene-d5	7.371	82	1899	0.0485	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.852	172	144	0.0015	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.129	244	334	0.0035	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.813	58	23450	2.0672	ug/L	78

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18720.D
Acq On : 5 Jul 2016 16:01
Operator : MES
Sample : WG574706-03 LCSDUP 6/30
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 05 16:37:24 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

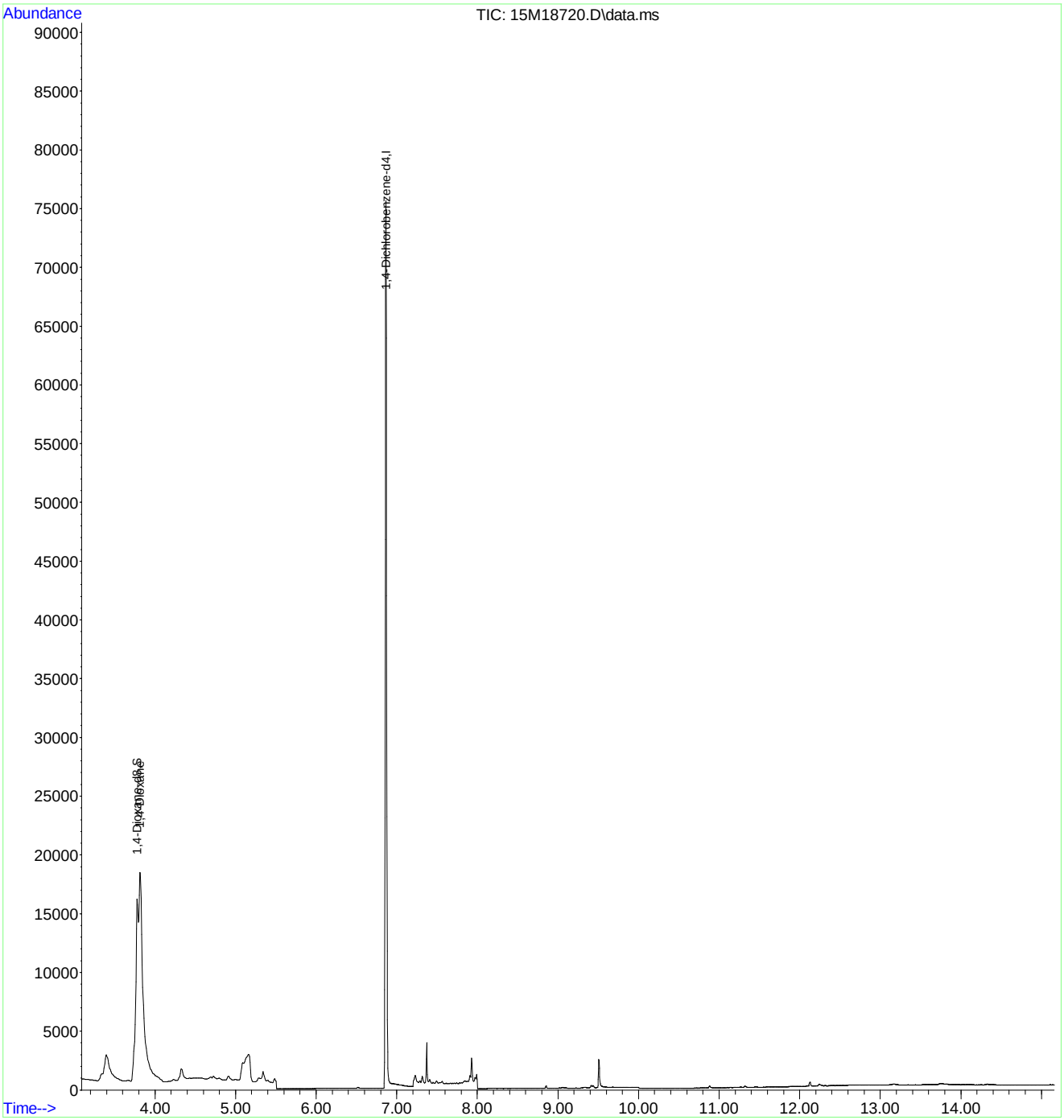

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25-062916	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/02/2016 02:01
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	1LM.LM35600
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1415 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG575005-01 MCT	10,020.	
-02 Blank	0.31	
-03 LCS	0.44	
-04 LCS2	0.41	
L16070001-01 LOD	0.38	
L16070003-01 LOQ	0.43	
-09 LOQ	0.45	
L16061289-01	6,210.	
-02	147.9	
-03	105.2	
-05	1,381.	
L16061290-01	594.	
-02	1,157.	
-04	219.	
-05	172.8	
-06	826.	
L16061452-01	1,890.	
-03	1,179.	
L16061453-01	2,610.	
-02	1,188.	
-03	1,101.	
L16061559-01	3,040.	
-02	3,140.	
L16061648-01	669.	

Analyst: John Richards

Date/Time: 07/01/16 19:50

DCN#119454

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070116_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575005 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples L16061289(-01,-02), L16061290-05 and L16061452-03 were analyzed at dilutions based on their historical results.
Samples L16061290-04 and L16061453-01 had inconsistent historical results. These samples were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35568	WG575015-01 CCB	1	1		07/01/16 15:55
2	1LM.LM35569	WG575015-02 CCV (1.0ug/L)	1	1	STD75510	07/01/16 16:14
3	1LM.LM35570	WG575005-05 MRL (0.2ug/L)	1	1	STD75510	07/01/16 16:33
4	1LM.LM35571	WG575005-01 MCT (0.2ug/L)	1	1	STD75512	07/01/16 16:52
5	1LM.LM35572	WG575005-02 BLANK	1	1		07/01/16 17:11
6	1LM.LM35573	WG575005-03 LCS (0.2ug/L)	1	1	STD75512	07/01/16 17:30
7	1LM.LM35574	WG575005-04 LCS2 (0.2ug/L)	1	1	STD75512	07/01/16 17:49
8	1LM.LM35575	L16070001-01 LOD (0.1ug/L)	1	1	STD75512	07/01/16 18:08
9	1LM.LM35576	L16070003-01 LOQ (0.2ug/L)	1	1	STD75512	07/01/16 18:27
10	1LM.LM35577	L16070003-09 LOQ (0.2ug/L)	1	1	STD75512	07/01/16 18:46
11	1LM.LM35578	L16061289-01 (10,000x)	1	10000		07/01/16 19:05
12	1LM.LM35579	L16061289-02 (100x)	1	100		07/01/16 19:24
13	1LM.LM35580	L16061289-03	1	1		07/01/16 19:43
14	1LM.LM35581	WG575015-03 CCV (1.0ug/L)	1	1	STD75510	07/01/16 20:02
15	1LM.LM35582	WG575005-06 MRL (0.2ug/L)	1	1	STD75510	07/01/16 20:21
16	1LM.LM35583	WG575015-04 CCB	1	1		07/01/16 20:39
17	1LM.LM35584	L16061289-05	1	1		07/01/16 20:58
18	1LM.LM35585	L16061290-01	1	1		07/01/16 21:17
19	1LM.LM35586	L16061290-02	1	1		07/01/16 21:36
20	1LM.LM35587	L16061290-04 (500x)	1	500		07/01/16 21:55
21	1LM.LM35588	L16061290-05 (10,000x) (NR)	1	10000		07/01/16 22:14
22	1LM.LM35589	L16061290-06	1	1		07/01/16 22:33
23	1LM.LM35590	L16061452-01	1	1		07/01/16 22:52
24	1LM.LM35591	L16061452-03 (10,000x)	1	10000		07/01/16 23:11
25	1LM.LM35592	L16061453-01 (10x)	1	10		07/01/16 23:30
26	1LM.LM35593	L16061453-02	1	1		07/01/16 23:49
27	1LM.LM35594	WG575015-05 CCV (1.0ug/L)	1	1	STD75510	07/02/16 00:08
28	1LM.LM35595	WG575005-07 MRL (0.2ug/L)	1	1	STD75510	07/02/16 00:27
29	1LM.LM35596	WG575015-06 CCB	1	1		07/02/16 00:46
30	1LM.LM35597	L16061453-03	1	1		07/02/16 01:05
31	1LM.LM35598	L16061559-01	1	1		07/02/16 01:23
32	1LM.LM35599	L16061559-02	1	1		07/02/16 01:42

Page: 1 Approved: 06-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070116_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575005 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
33	1LM.LM35600	L16061648-01	1	1		07/02/16 02:01
34	1LM.LM35601	WG575015-07 CCV (1.0ug/L)	1	1	STD75510	07/02/16 02:20
35	1LM.LM35602	WG575005-08 MRL (0.2ug/L)	1	1	STD75510	07/02/16 02:39
36	1LM.LM35603	WG575015-08 CCB	1	1		07/02/16 02:58

Comments

Seq.	Rerun	Dil.	Reason	Analytes
21	X	1000	Analyzed too dilute	
	L16061290-05 (10,000x) (NR) : This sample did not conform to its historical results and was analyzed too dilute at 10,000x dilution. This sample will be ungrouped from this analytical batch and reanalyzed at a 1000x dilution on another day.			

Page: 2 Approved: 06-JUL-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 76123
Analytical Workgroups: L16061289,1290,1452,1453,1559,1648 L16070001(LOD), 0003(LOQ)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
06-JUL-2016
John Richards

Secondary Reviewer:
06-JUL-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-06-2016 14:48:43

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG575005

Login Number: L16061648

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW25-062916	01	06/29/16					07/01/2016	2.2	28		07/02/16	.5	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4841067
Report generated 07/07/2016 09:05

METHOD BLANK SUMMARY

Login Number: L16061648
Blank File ID: 1LM.LM35572
Prep Date: 07/01/16 13:30
Analyzed Date: 07/01/16 17:11
Analyst: JWR

Work Group: WG575005
Blank Sample ID: WG575005-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG575005-05	1LM.LM35570	07/01/16 16:33	01
MCT	WG575005-01	1LM.LM35571	07/01/16 16:52	01
LCS	WG575005-03	1LM.LM35573	07/01/16 17:30	01
LCS2	WG575005-04	1LM.LM35574	07/01/16 17:49	01
QCMRL	WG575005-06	1LM.LM35582	07/01/16 20:21	01
QCMRL	WG575005-07	1LM.LM35595	07/02/16 00:27	01
18WW25-062916	L16061648-01	1LM.LM35600	07/02/16 02:01	01
QCMRL	WG575005-08	1LM.LM35602	07/02/16 02:39	01

Report Name: BLANK_SUMMARY
PDF File ID: 4841068
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061648 Prep Date: 07/01/16 13:30 Sample ID: WG575005-02
Instrument ID: LCMS1 Run Date: 07/01/16 17:11 Prep Method: 6850
File ID: 1LM.LM35572 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4841069
07-JUL-2016 09:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061648 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG575005 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG575005-03 LCS File ID: 1LM.LM35573 Run Date: 07/01/2016 17:30
Sample ID: WG575005-04 LCS2 File ID: 1LM.LM35574 Run Date: 07/01/2016 17:49

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.201	101	0.200	0.211	106	4.85	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4841070
Report generated: 07/07/2016 09:05

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061648
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4841532
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061648

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4841532
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061648

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4841532
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061648

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4841532

Report generated 07/07/2016 09:05

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061648 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4841533
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575015-01
Instrument ID: LCMS1
Run Time: 15:55
Method: 6850
File ID: 1LM.LM35568
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841073
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575015-04
Instrument ID: LCMS1
Run Time: 20:39
Method: 6850
File ID: 1LM.LM35583
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841073
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/02/2016
Sample ID: WG575015-06
Instrument ID: LCMS1
Run Time: 00:46
Method: 6850
File ID: 1LM.LM35596
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841073
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/02/2016
Sample ID: WG575015-08
Instrument ID: LCMS1
Run Time: 02:58
Method: 6850
File ID: 1LM.LM35603
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841073
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575015-02
Instrument ID: LCMS1
Run Time: 16:14
Method: 6850
File ID: 1LM.LM35569
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841072
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575015-03
Instrument ID: LCMS1
Run Time: 20:02
Method: 6850
File ID: 1LM.LM35581
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841072
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/02/2016
Sample ID: WG575015-05
Instrument ID: LCMS1
Run Time: 00:08
Method: 6850
File ID: 1LM.LM35594
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841072
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/02/2016
Sample ID: WG575015-07
Instrument ID: LCMS1
Run Time: 02:20
Method: 6850
File ID: 1LM.LM35601
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841072
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061648 Run Date: 07/01/2016 Sample ID: WG575005-05
Instrument ID: LCMS1 Run Time: 16:33 Prep Method: 6850
File ID: 1LM.LM35570 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841071
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061648 Run Date: 07/01/2016 Sample ID: WG575005-06
Instrument ID: LCMS1 Run Time: 20:21 Prep Method: 6850
File ID: 1LM.LM35582 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841071
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061648 Run Date: 07/02/2016 Sample ID: WG575005-07
Instrument ID: LCMS1 Run Time: 00:27 Prep Method: 6850
File ID: 1LM.LM35595 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841071
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061648 Run Date: 07/02/2016 Sample ID: WG575005-08
Instrument ID: LCMS1 Run Time: 02:39 Prep Method: 6850
File ID: 1LM.LM35602 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841071
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061648
Instrument ID: LCMS1
Workgroup (AAB#): WG575005

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061648-01	1.00	01	369000
WG575005-02	1.00	01	451000
WG575005-03	1.00	01	451000
WG575005-04	1.00	01	450000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4841074
Report generated 07/07/2016 09:05

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**	6850	**Samplenum:**	L16061648-01
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35600
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:01	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3310	1370	2.42	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**	6850	**Samplenum:**	WG575005-01
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35571
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30200	9940	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**	6850	**Samplenum:**	WG575005-02
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35572
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**	6850	**Samplenum:**	WG575005-03
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35573
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:30	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31100	11300	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**	6850	**Samplenum:**	WG575005-04
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35574
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32500	11800	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**	6850	**Samplenum:**	WG575005-05
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35570
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33000	11700	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**	6850	**Samplenum:**	WG575005-06
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35582
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32800	11400	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**	6850	**Samplenum:**	WG575005-07
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35595
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35700	12900	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**	6850	**Samplenum:**	WG575005-08
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35602
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	12300	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG575015-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35568
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 15:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG575015-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35569
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	163000	56900	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG575015-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35581
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	167000	58000	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG575015-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35583
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG575015-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35594
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	57200	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG575015-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35596
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG575015-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35601
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	58500	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG575015-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35603
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:36 PM

Data File	LM35600.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:01:51 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061648-01	**Injection Vial**	27.00
Data File	LM35600.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:01:51 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061648-01	**Dilution Factor**	1.00
Sample Comment	1,1 (screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.690e+05	9.32	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.310e+03	9.35	N/A	0.0229
Perchlorate conf	1.370e+03	9.34	N/A	0.0128

O18LP (Internal Standard)

RT (Exp. RT): 9.32(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

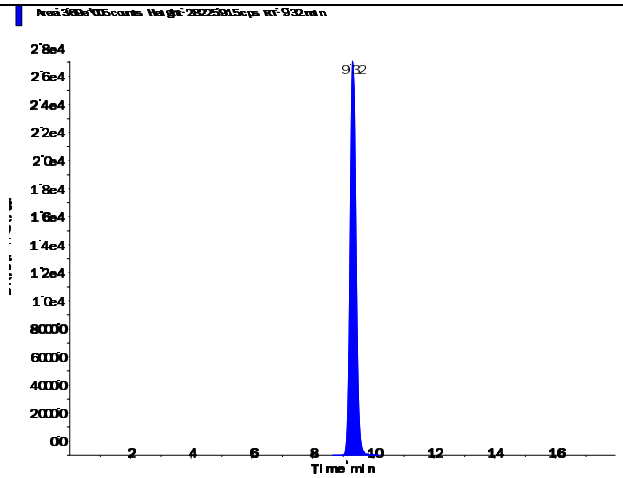

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:36 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.0229 ng/ml
Area Ratio:	0.009
Sample Type:	(Unknown)

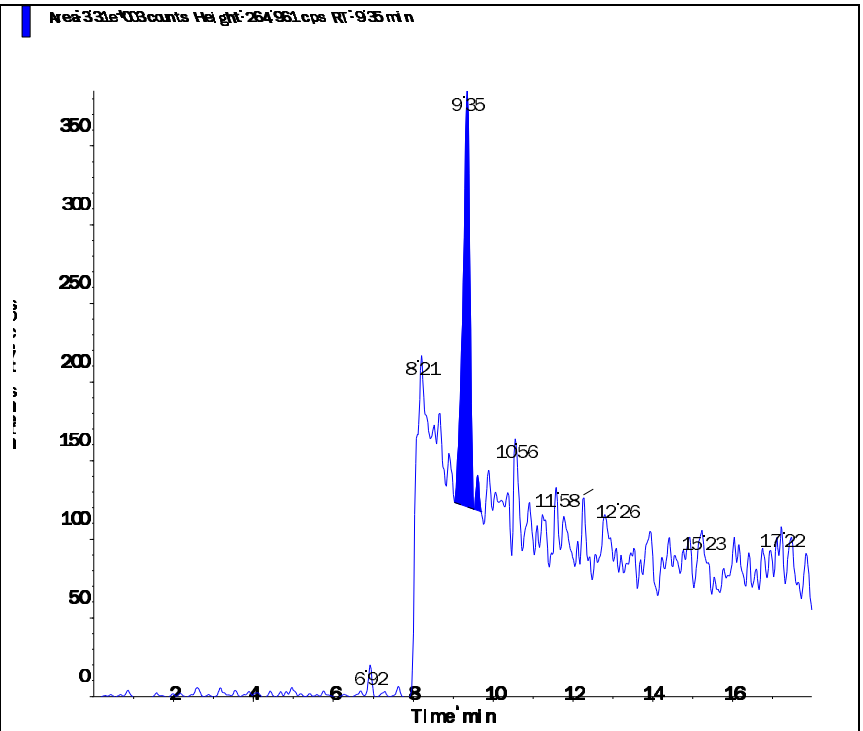

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	0.0128 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

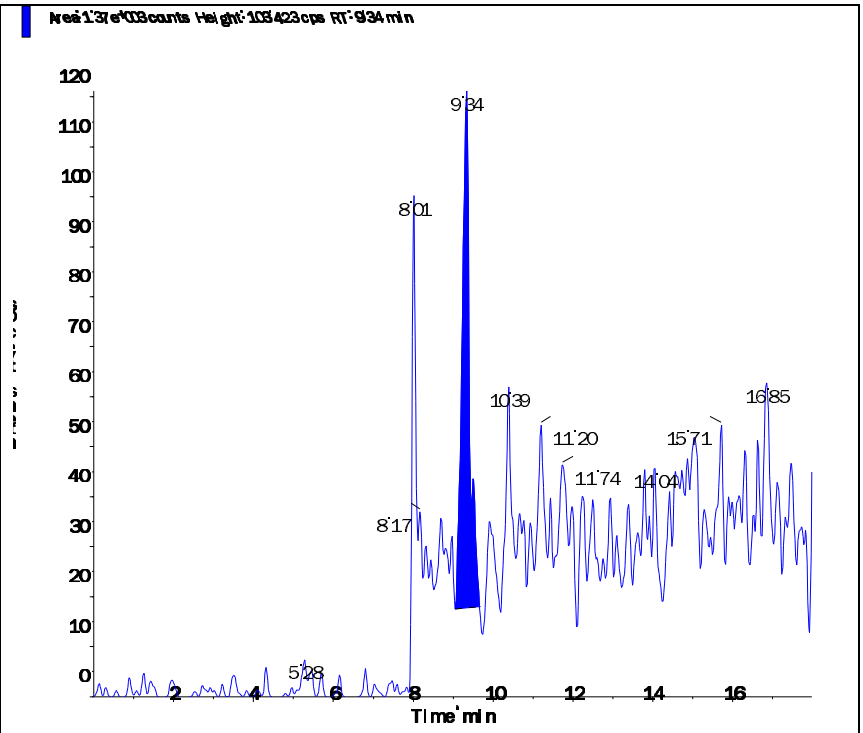

s.dataFile Page 2 of 2

2.2.2.4 Standards Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:53 AM

Data File	LM34686.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

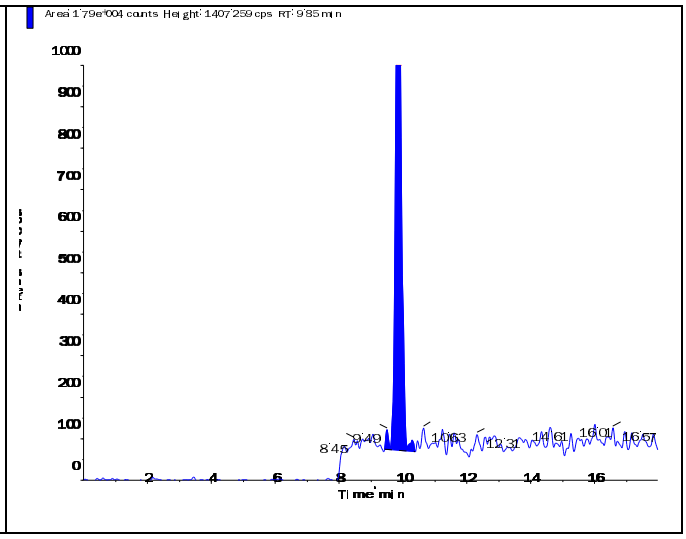

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:53 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

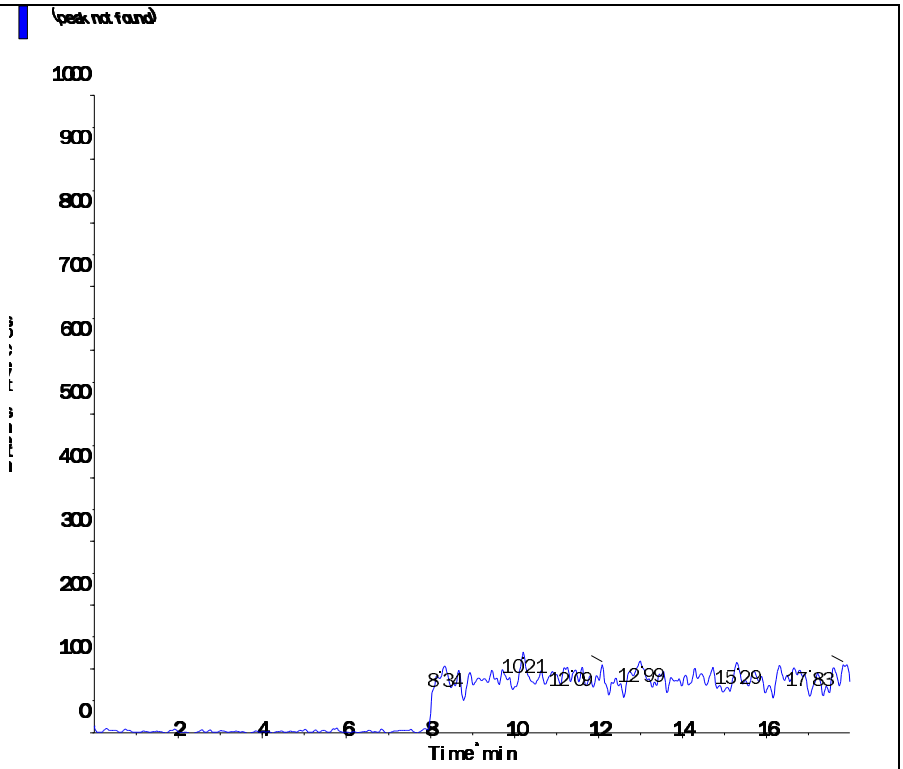

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

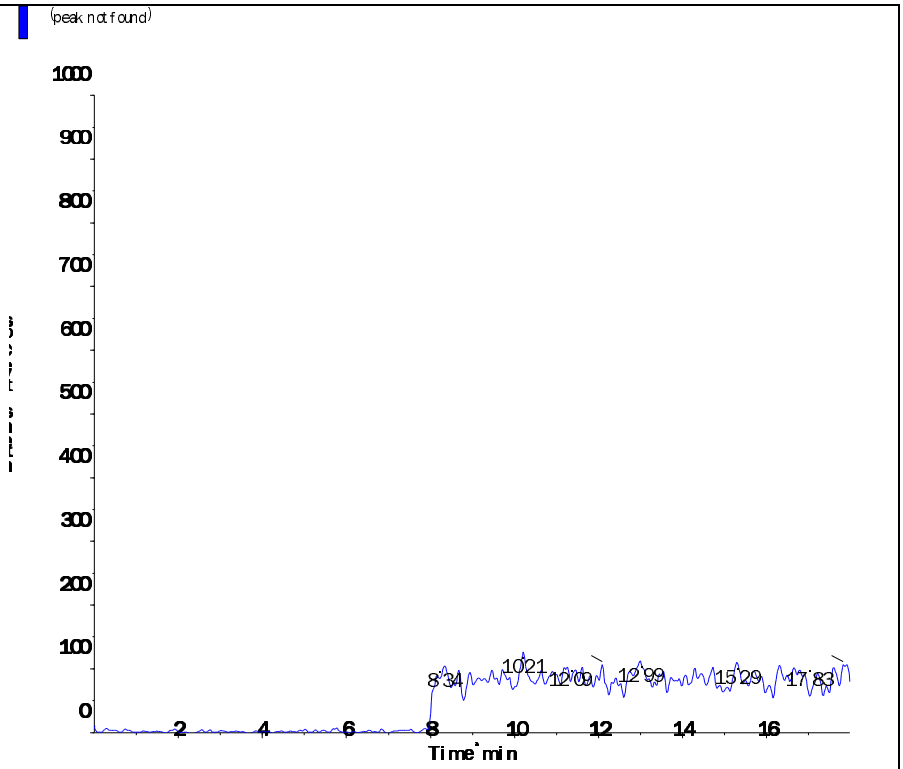

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

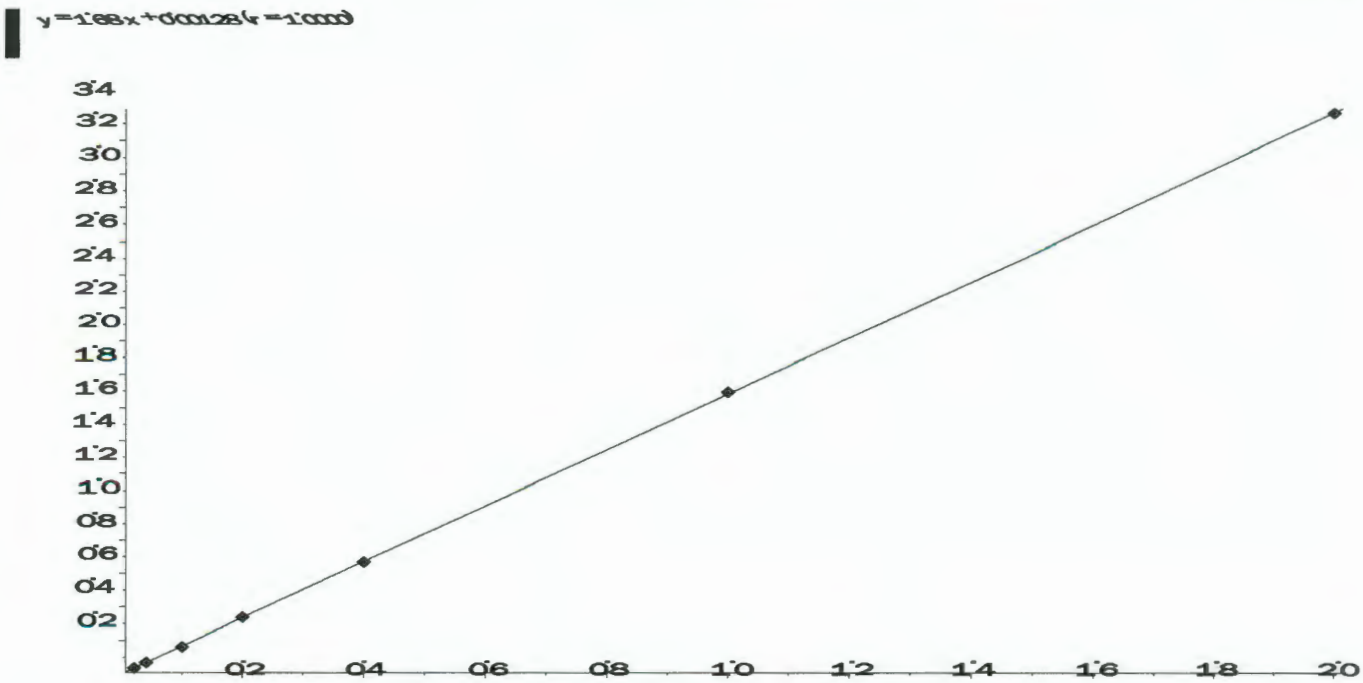

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

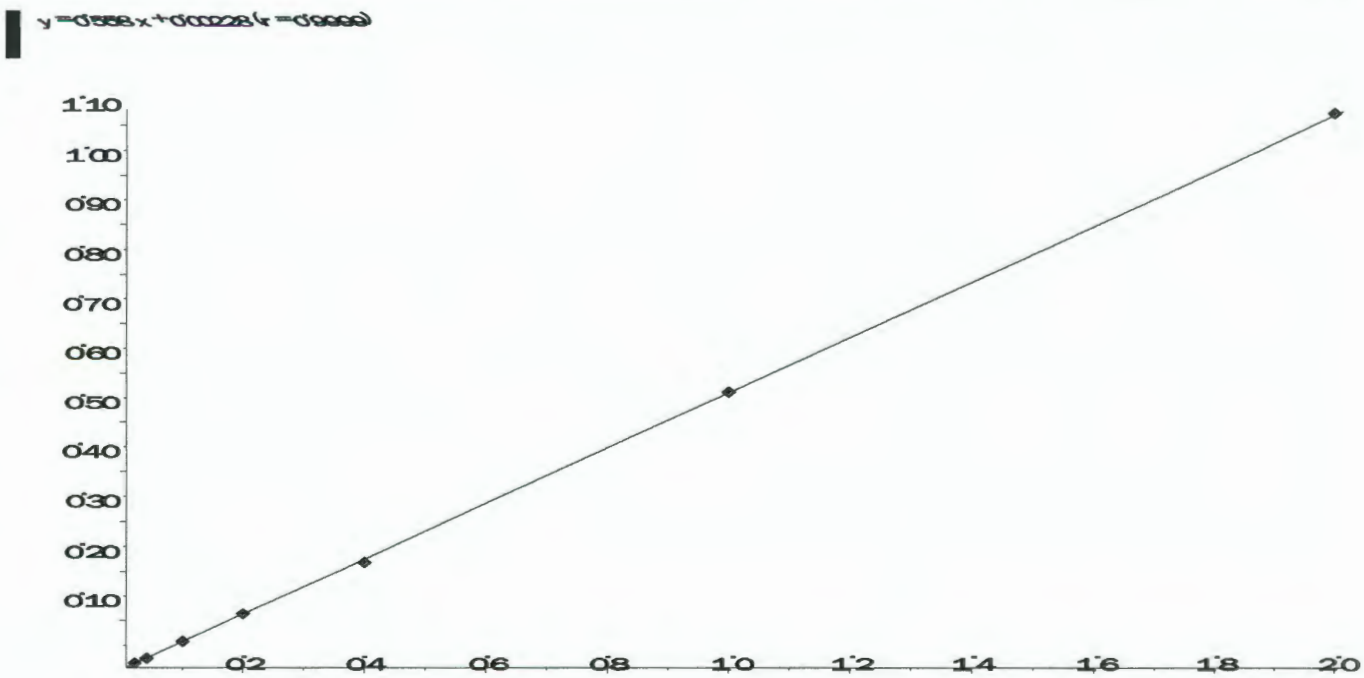

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:54 AM

Data File	LM34687.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

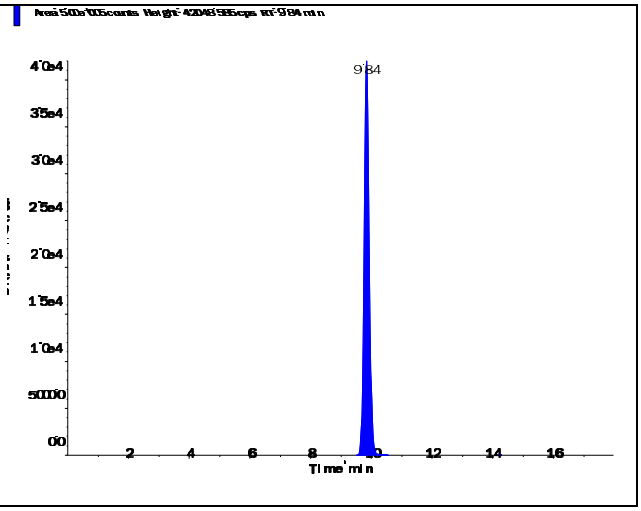

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:54 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

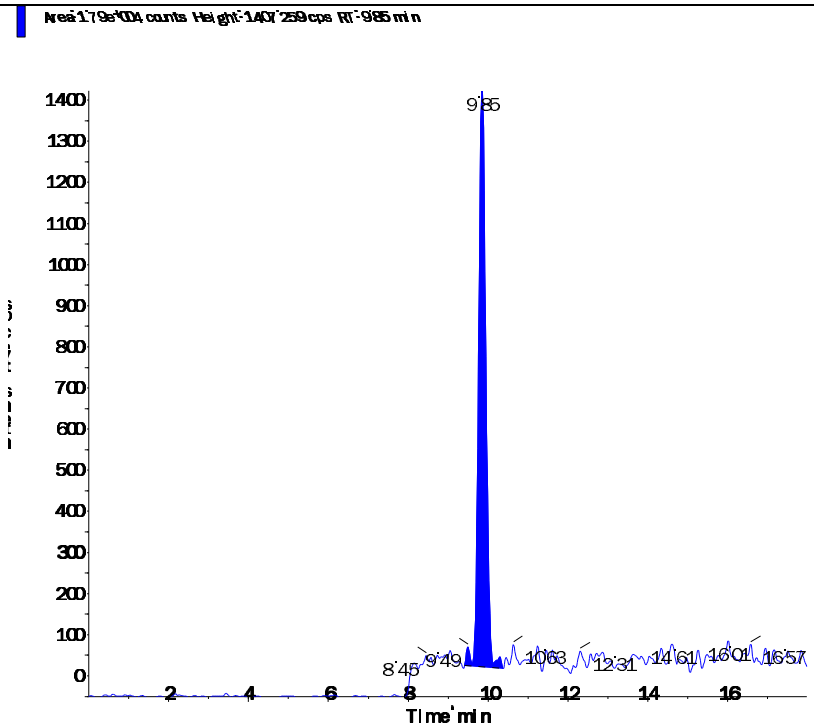

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

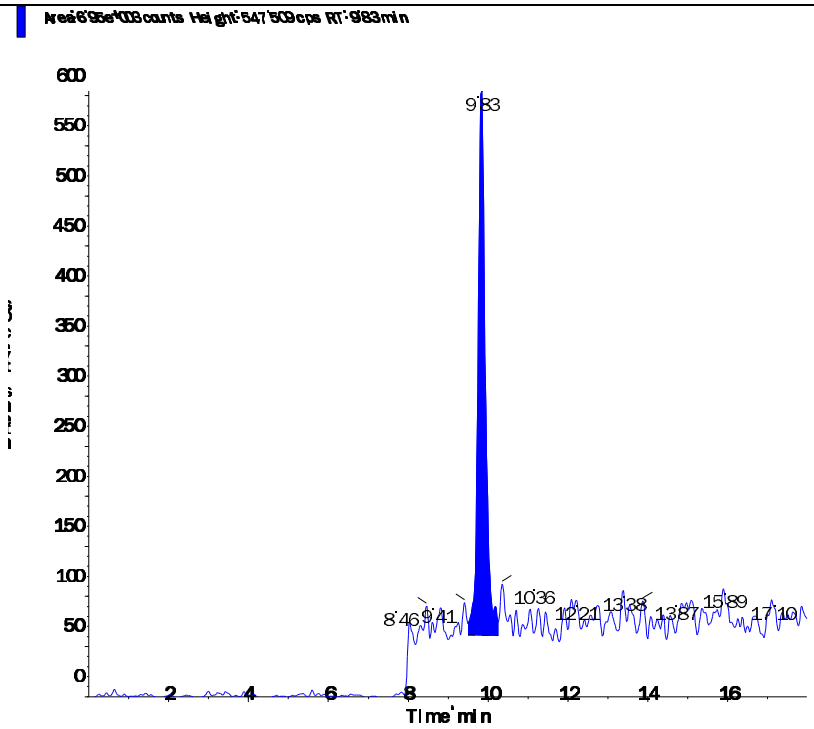

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:54 AM

Data File	LM34688.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

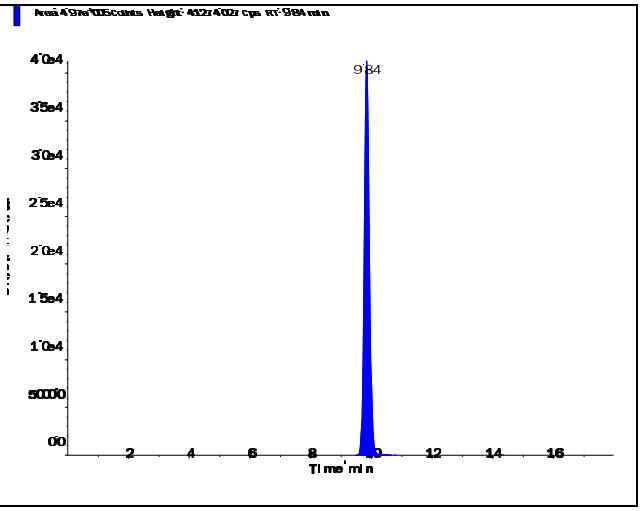

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:54 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

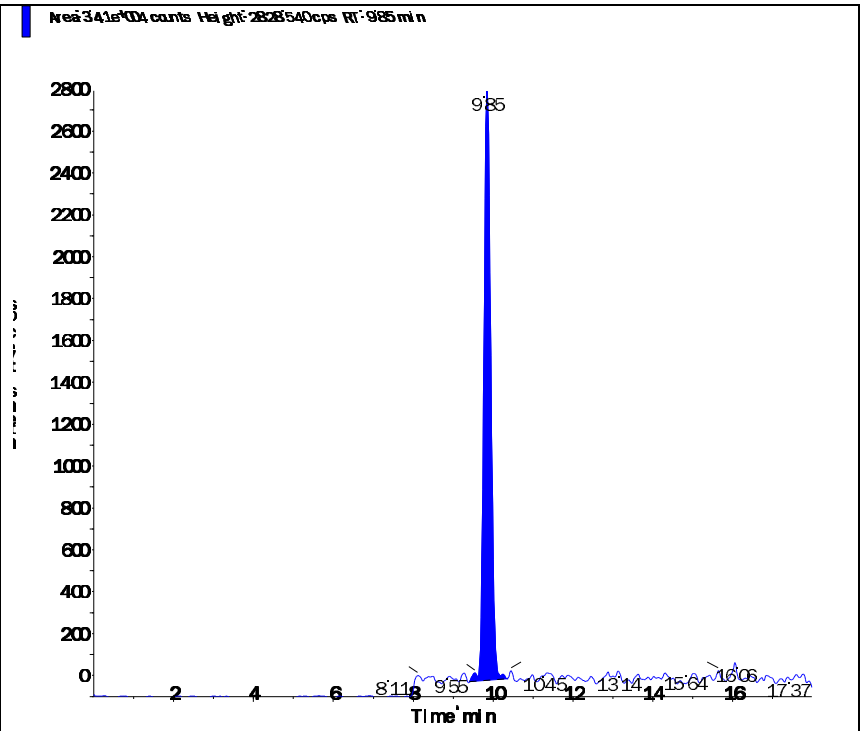

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

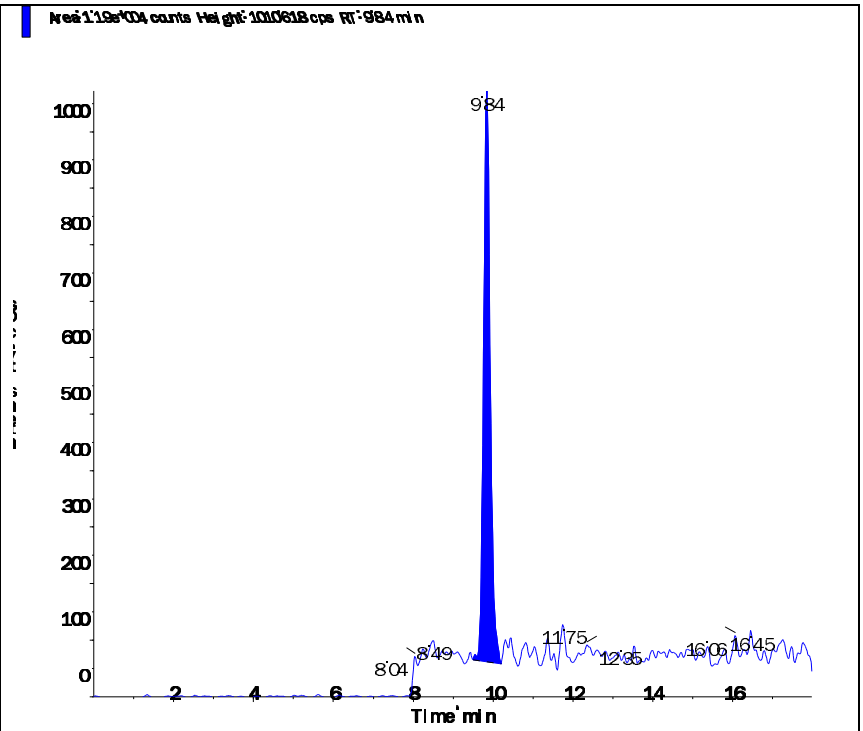

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Data File	LM34689.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

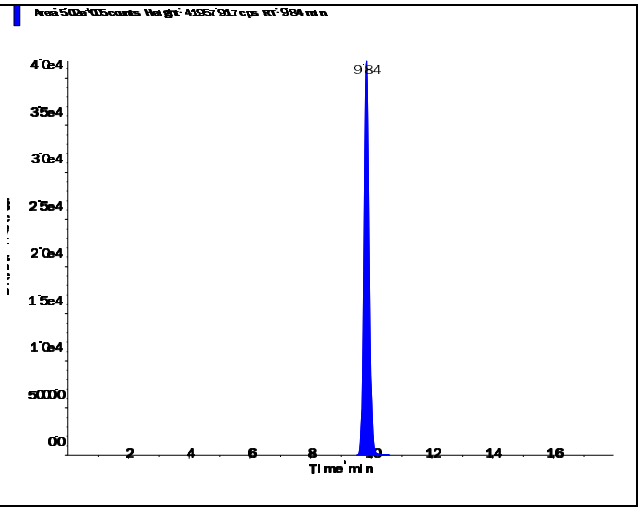

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.483 ng/ml Area Ratio: 0.164 Sample Type: (Standard)	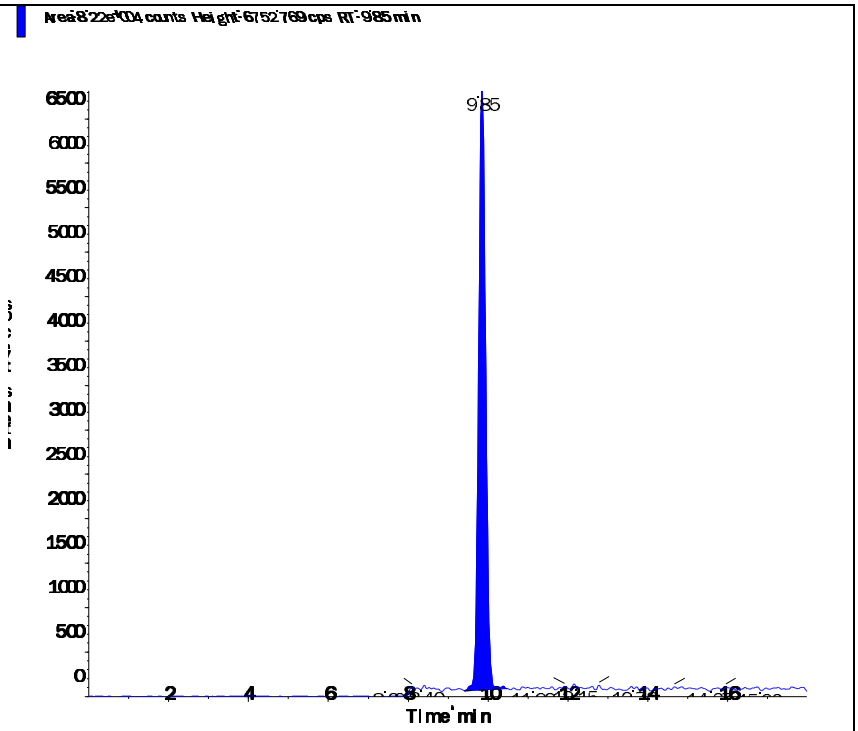
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.503 ng/ml Area Ratio: 0.058 Sample Type: (Standard)	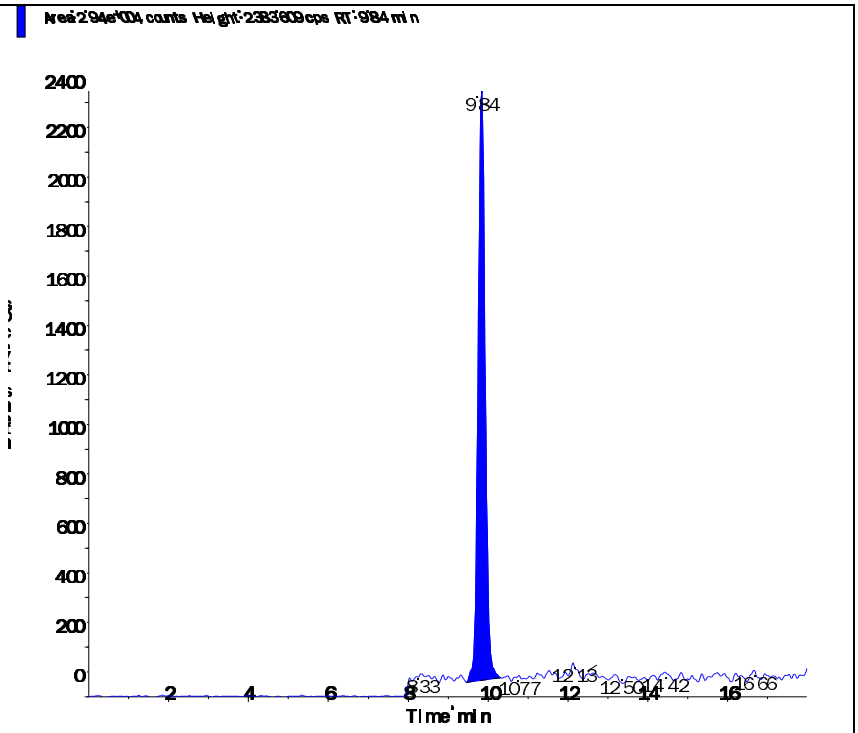

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Data File	LM34690.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

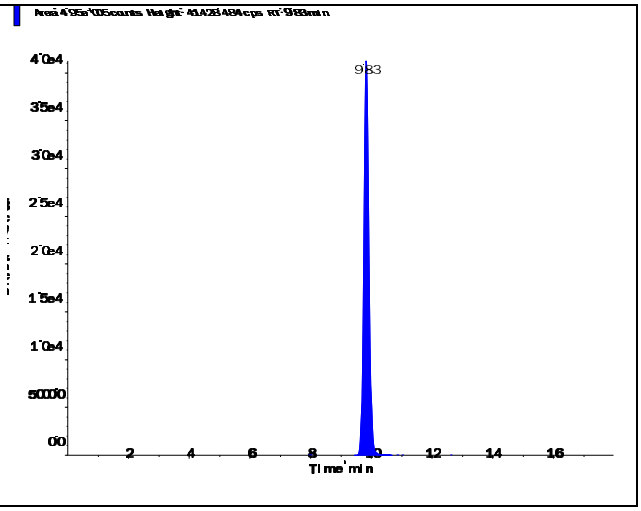

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

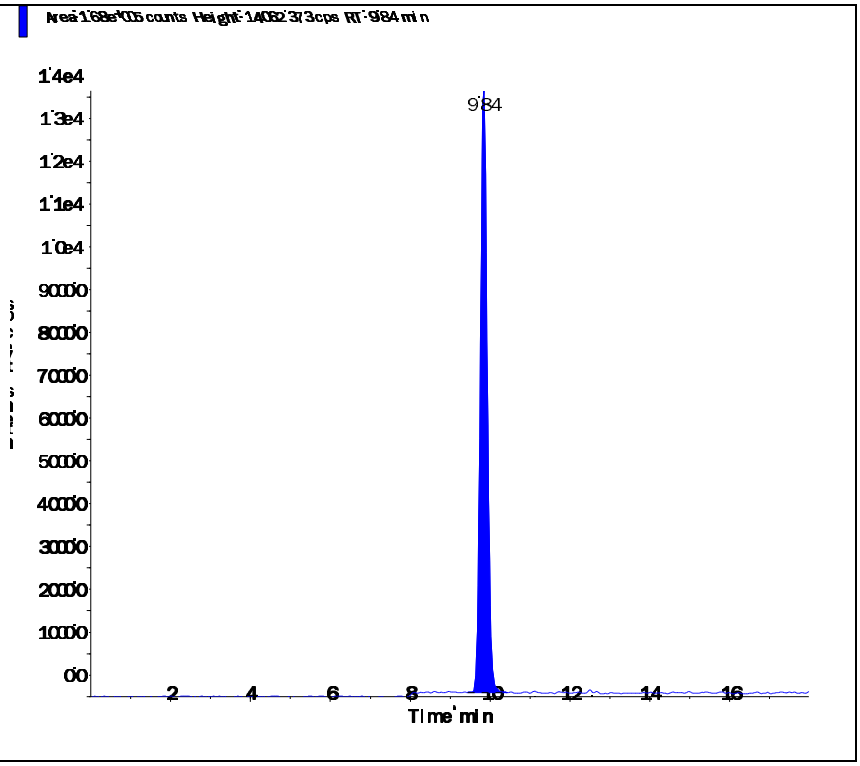

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

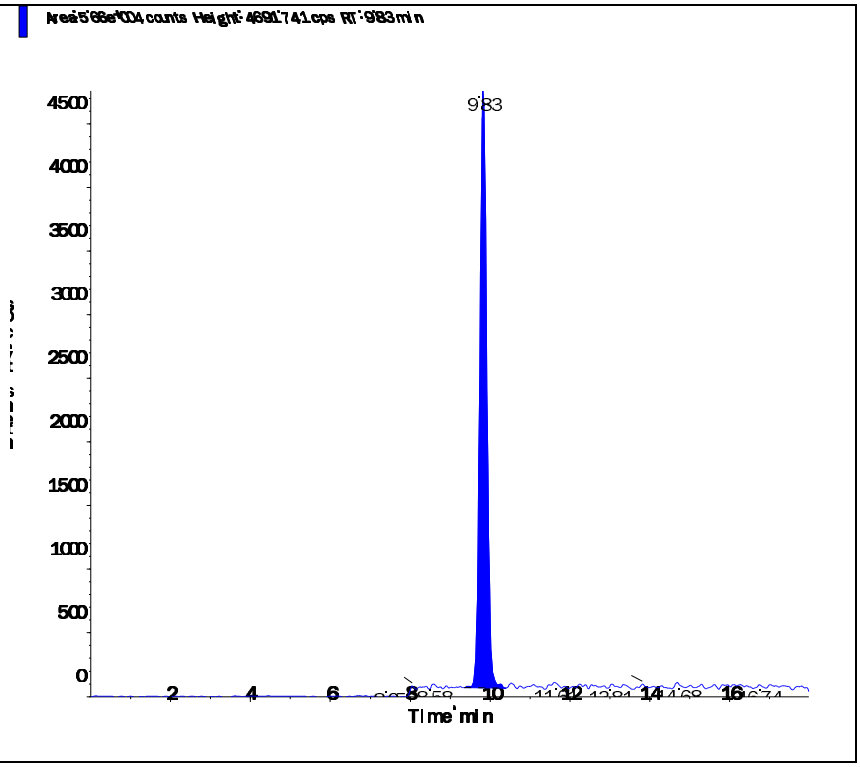

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Data File	LM34691.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

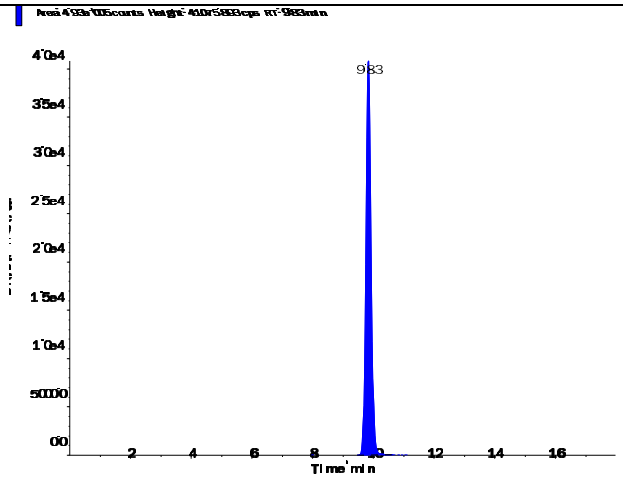

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	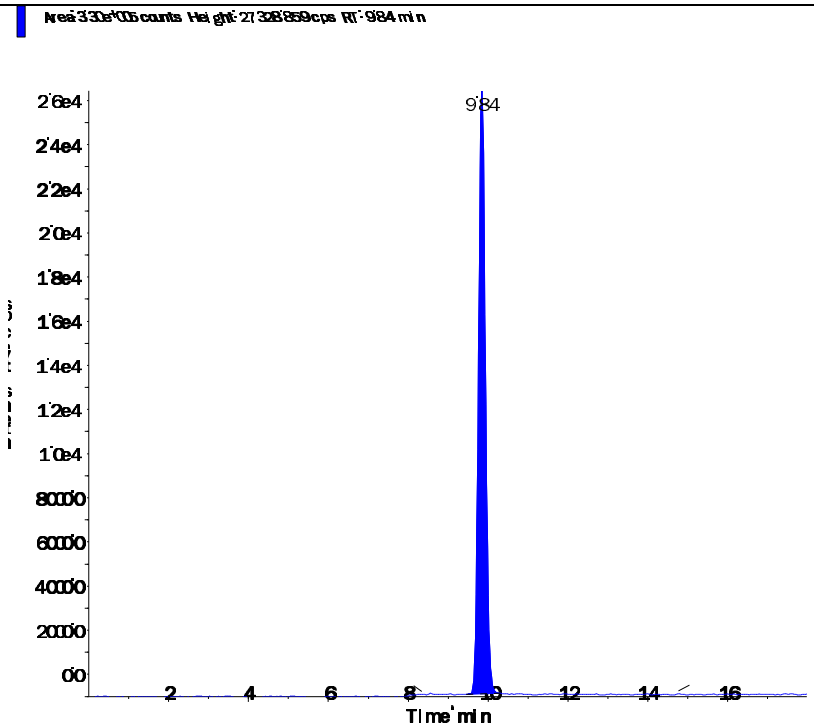
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	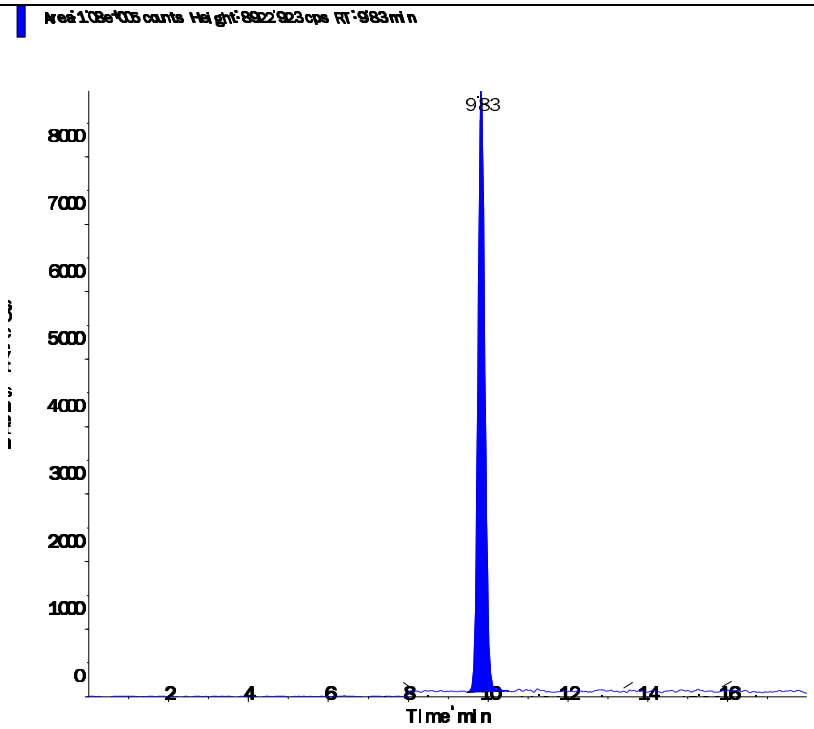

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Data File	LM34692.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

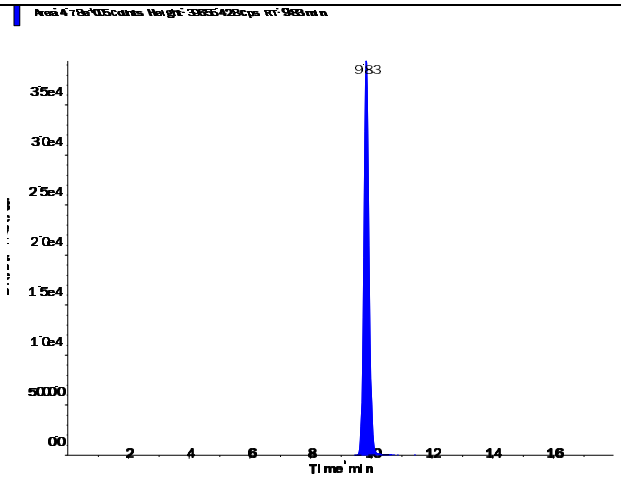

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:55 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

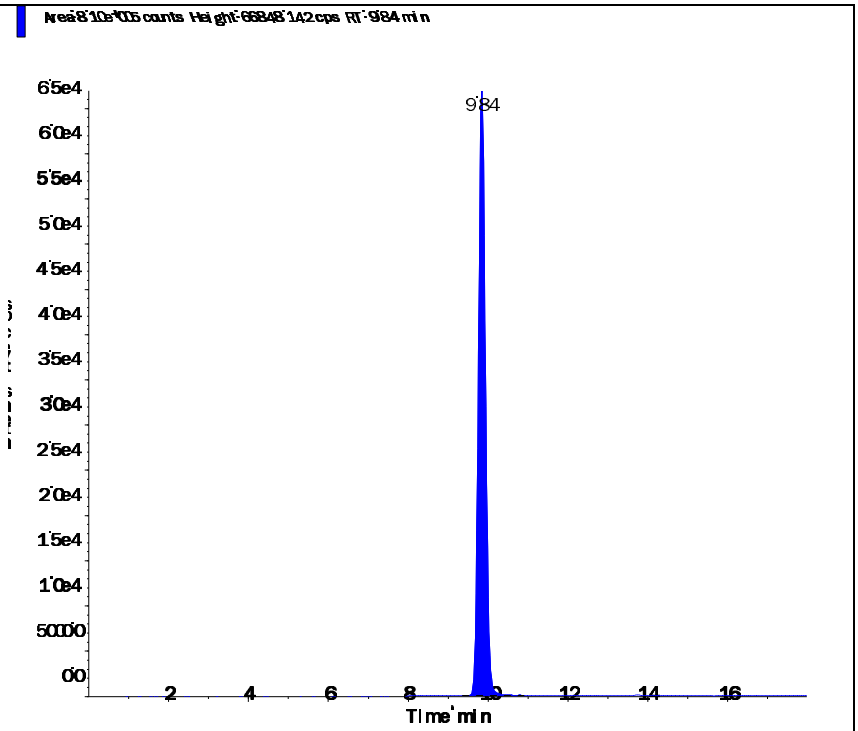

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

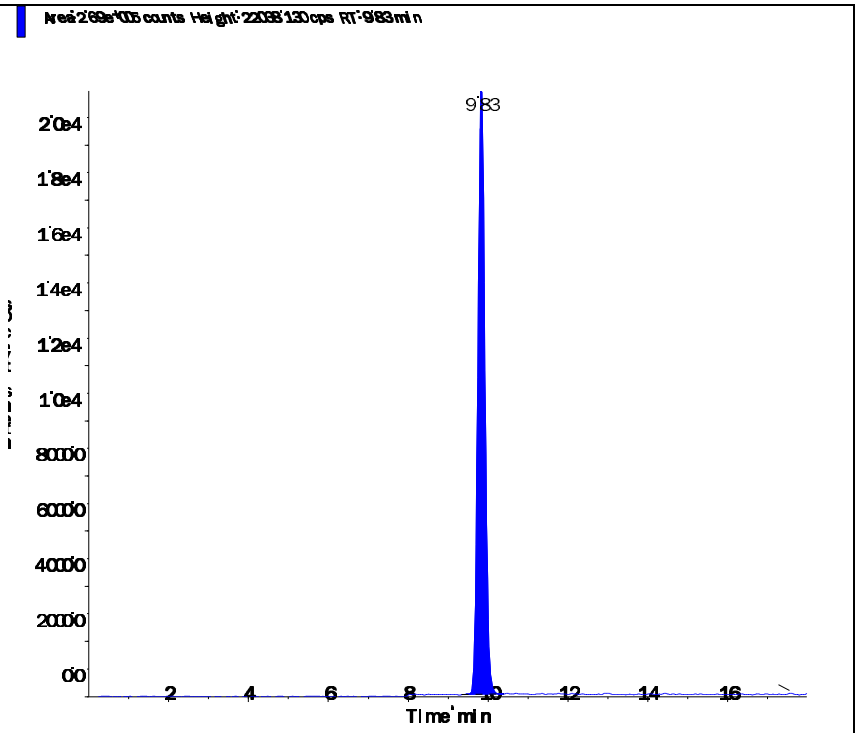

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:56 AM

Data File	LM34693.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

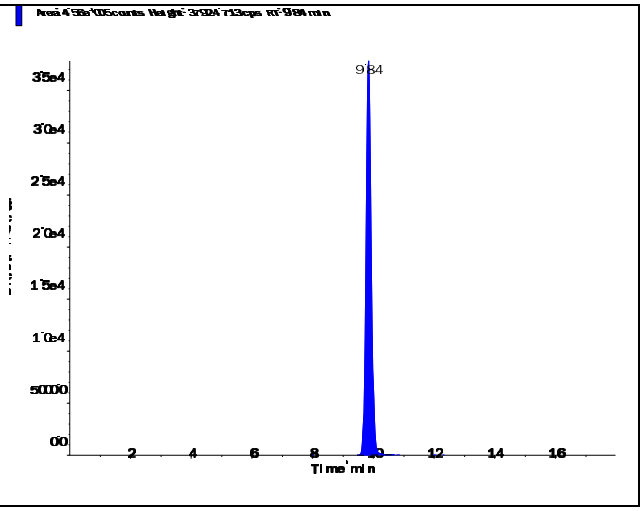

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:56 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

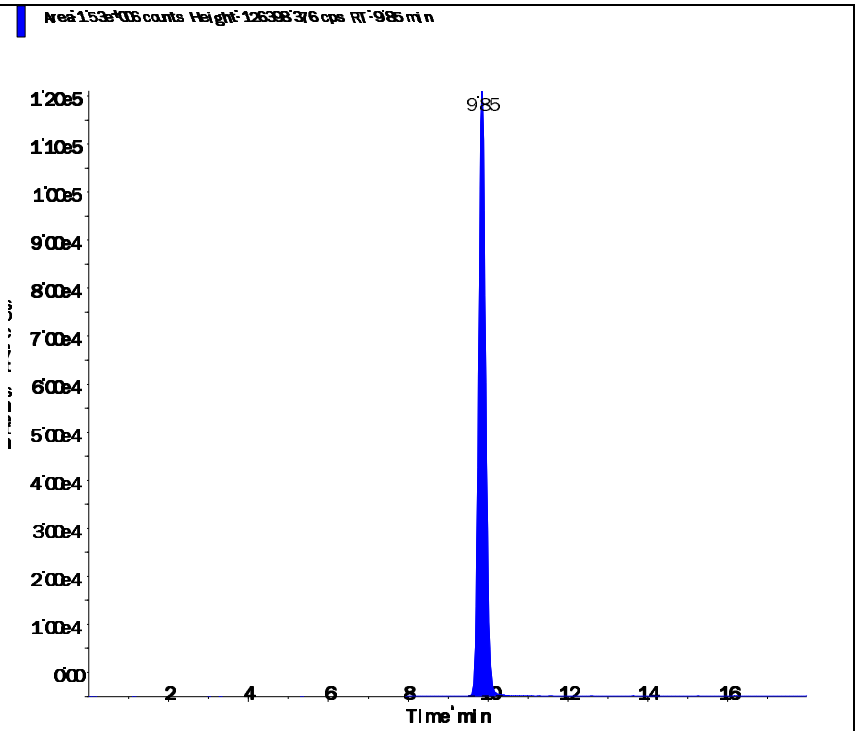

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

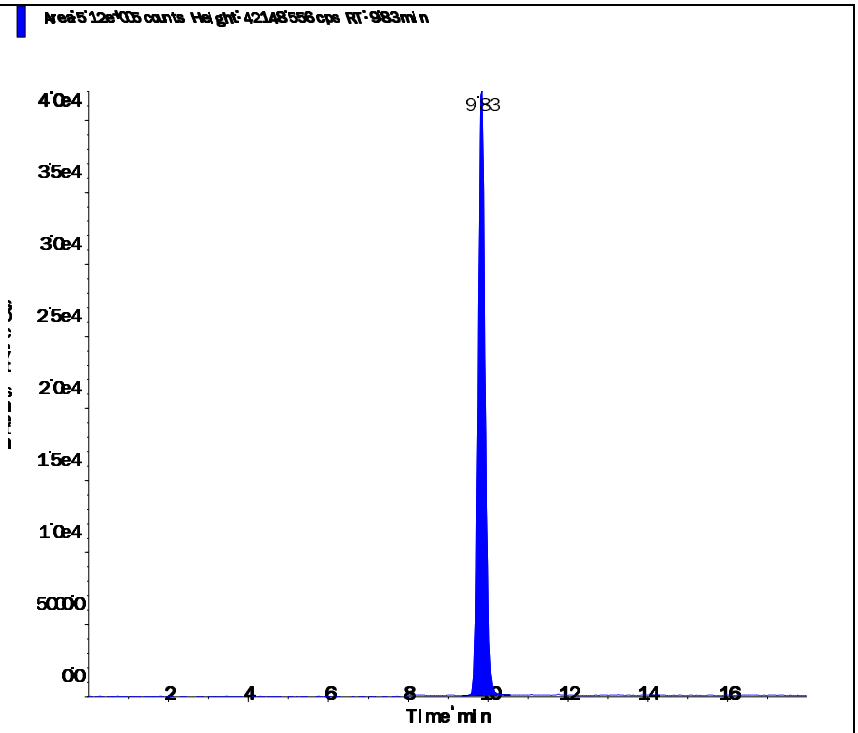

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

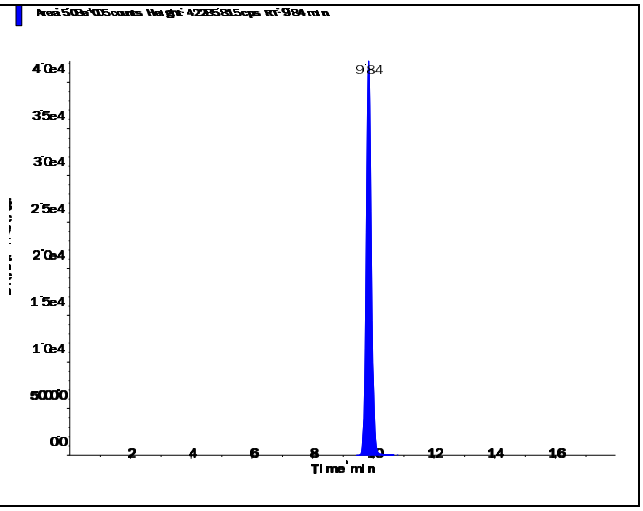

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

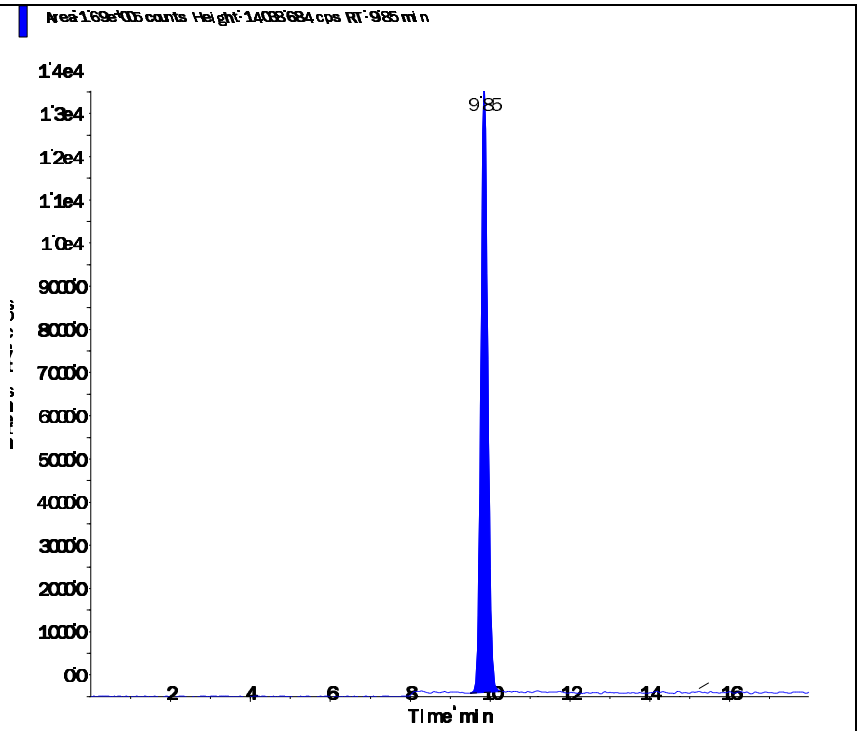

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

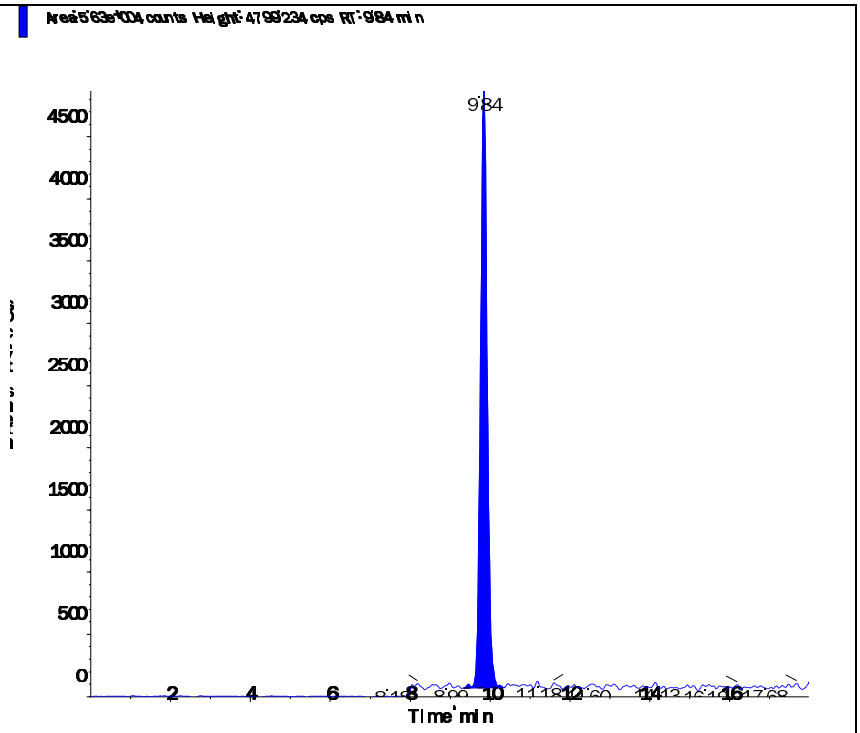

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Data File	LM35569.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35569.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.630e+05	9.40	1.00	1.03
Perchlorate conf	5.690e+04	9.38	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

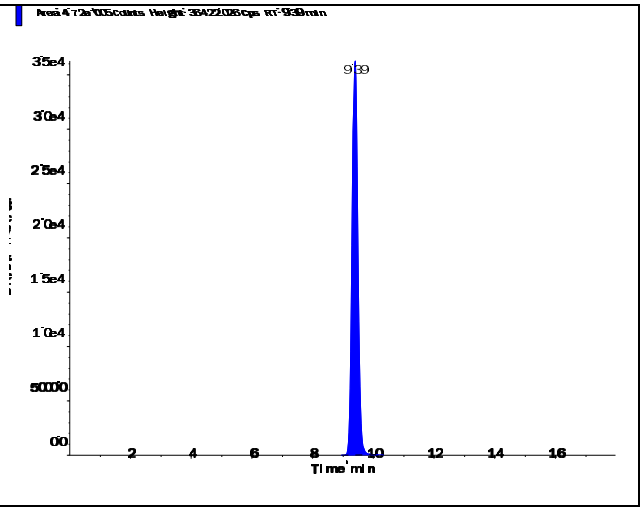

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

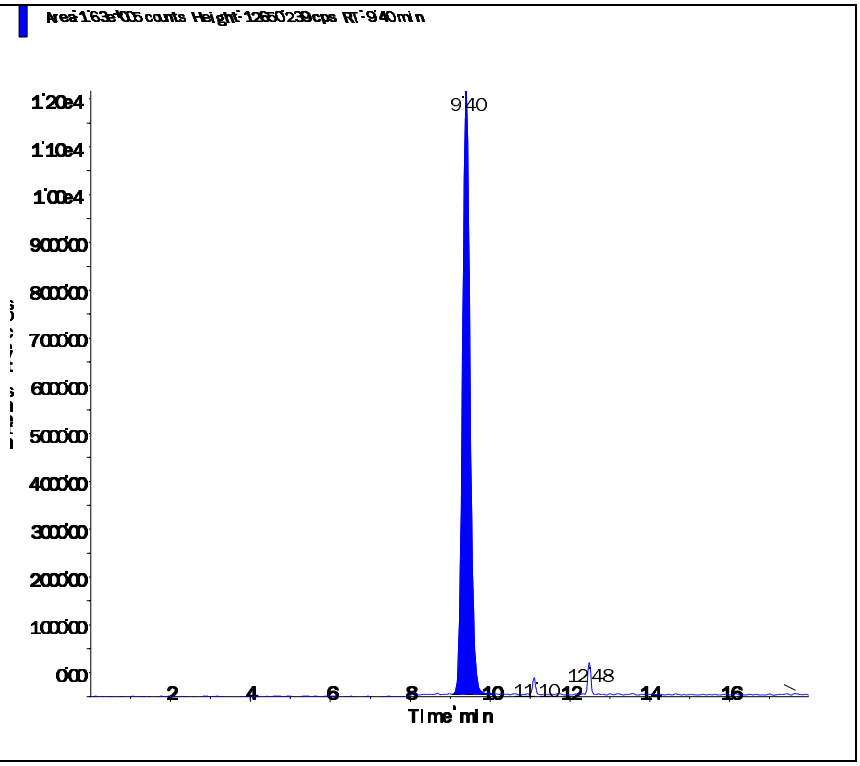

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

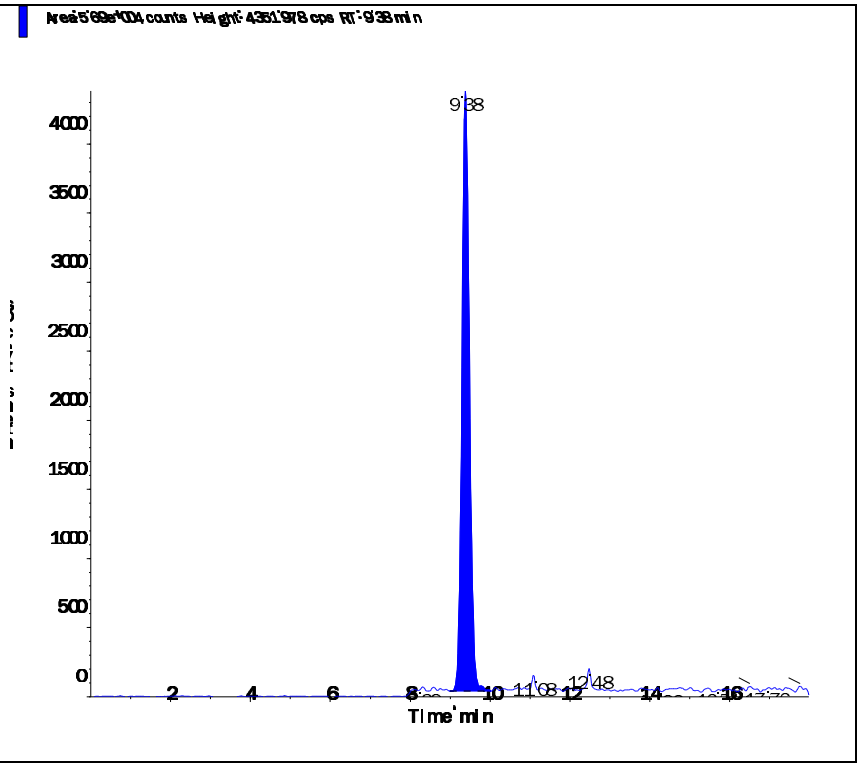

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:30 PM

Data File	LM35581.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:02:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35581.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:02:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.670e+05	9.40	1.00	1.02
Perchlorate conf	5.800e+04	9.39	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

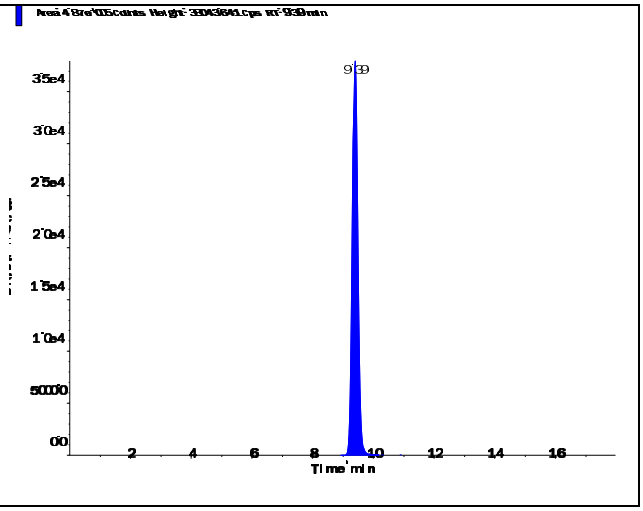

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:30 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.343
Sample Type:	(Quality Control)

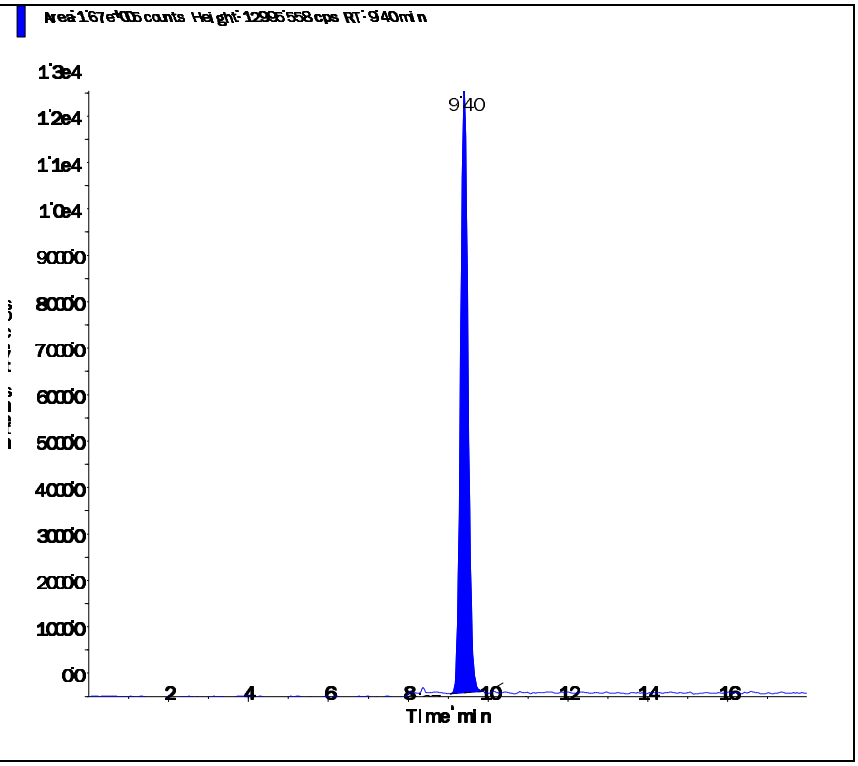

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

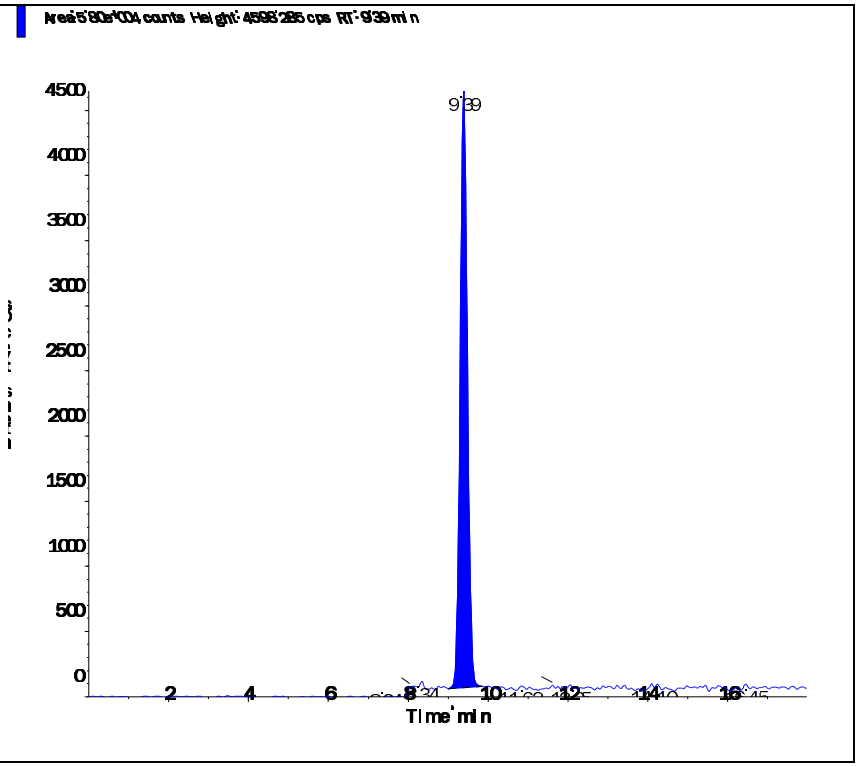

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:34 PM

Data File	LM35594.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:08:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35594.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:08:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.40	1.00	1.03
Perchlorate conf	5.720e+04	9.39	1.00	0.997

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

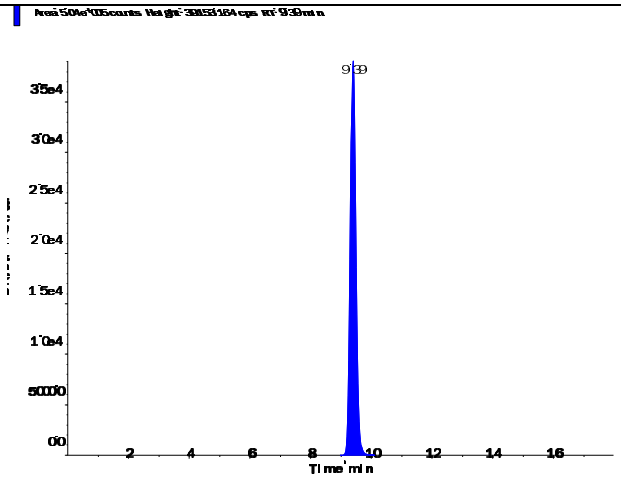

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:34 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

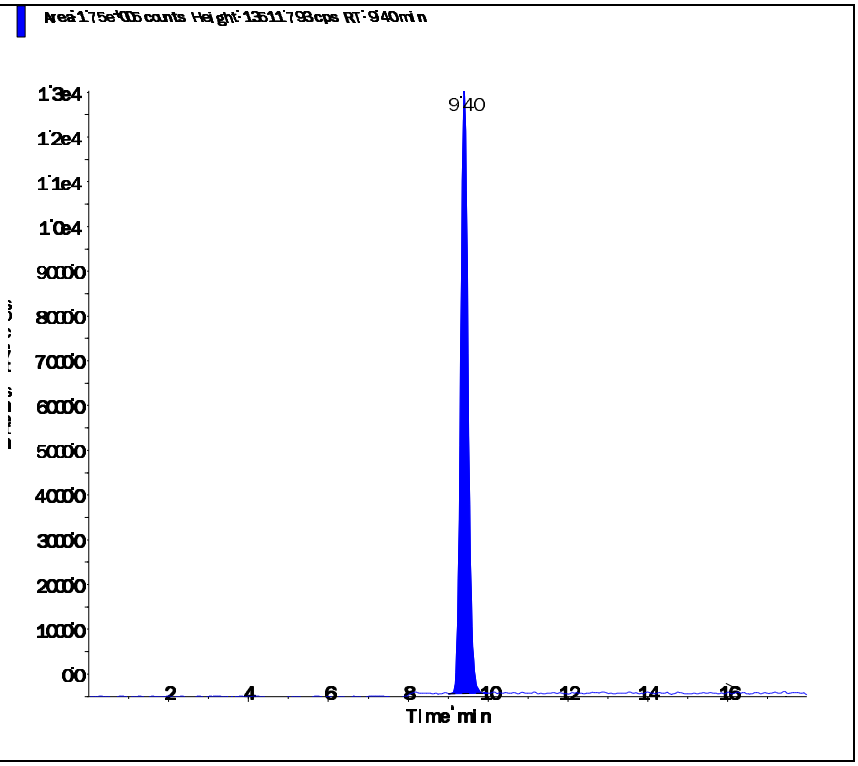

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.997 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

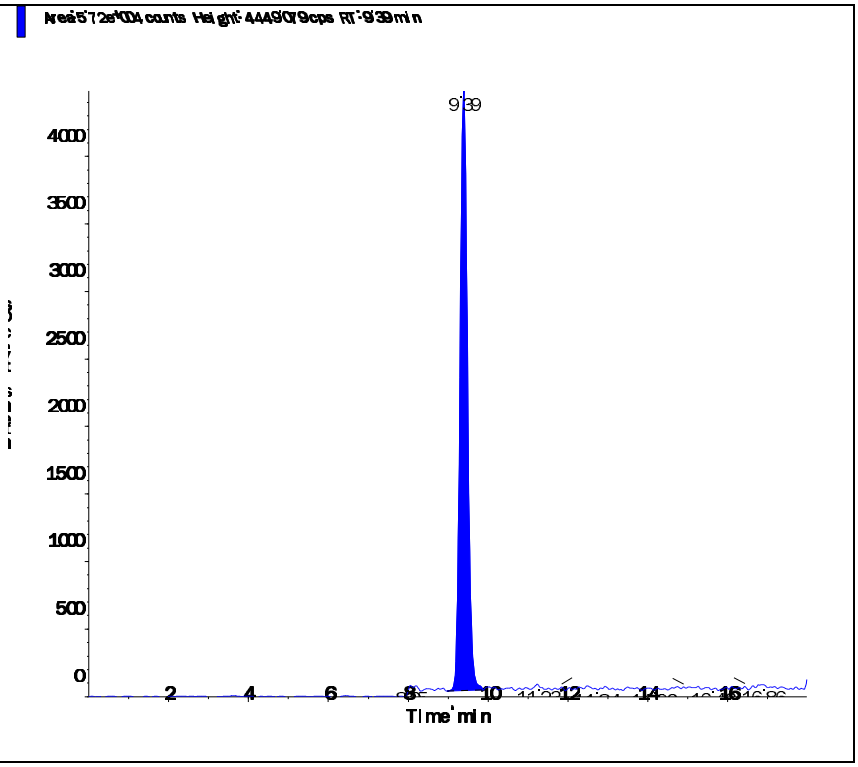

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:36 PM

Data File	LM35601.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:20:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35601.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:20:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.40	1.00	1.01
Perchlorate conf	5.850e+04	9.38	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

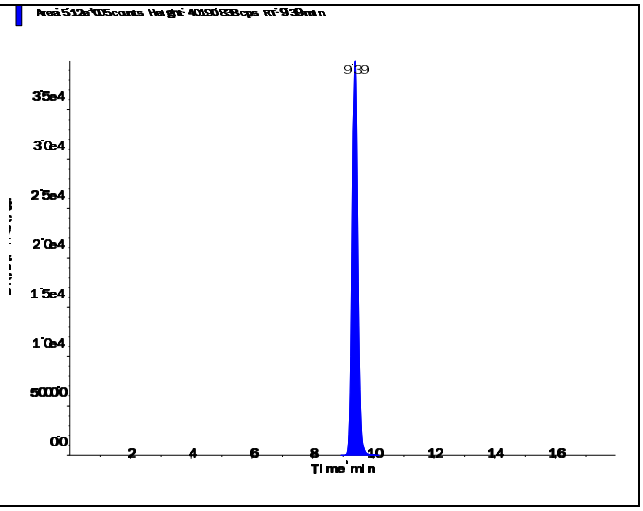

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:36 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

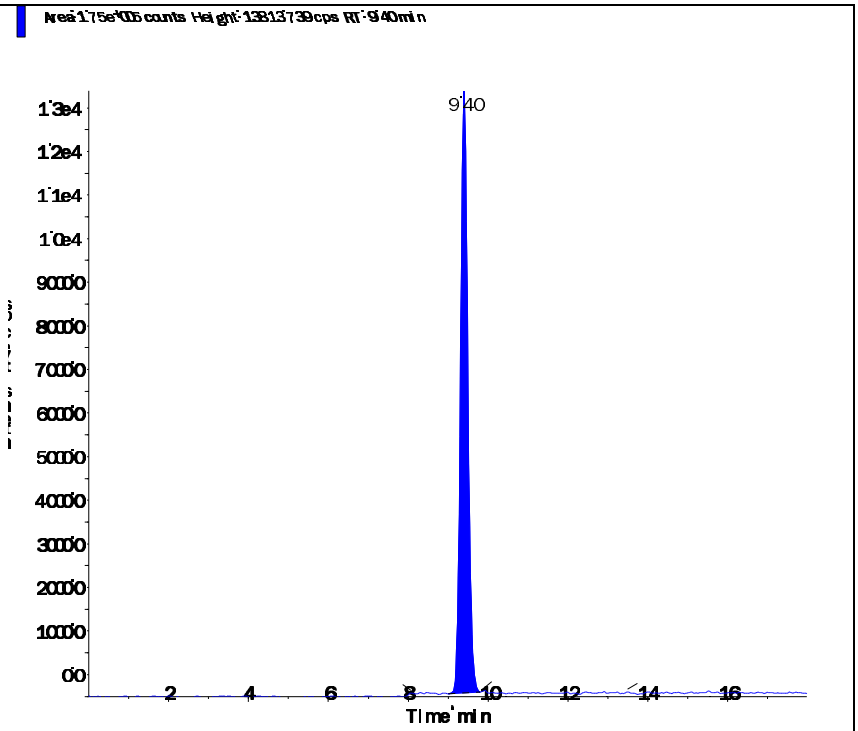

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

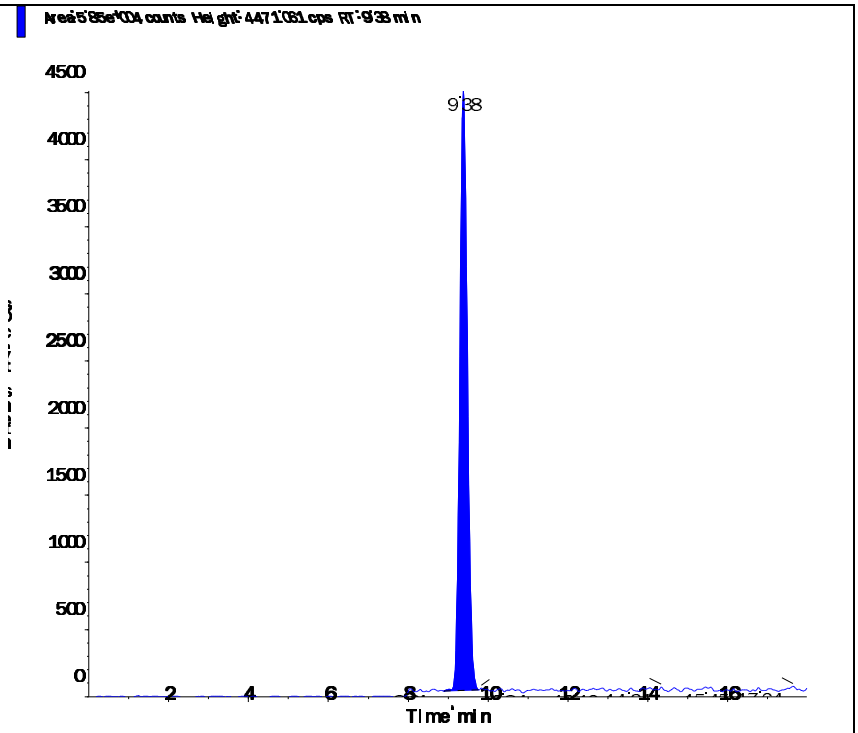

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Data File	LM35570.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:33:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35570.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:33:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+04	9.44	N/A	0.207
Perchlorate conf	1.170e+04	9.44	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

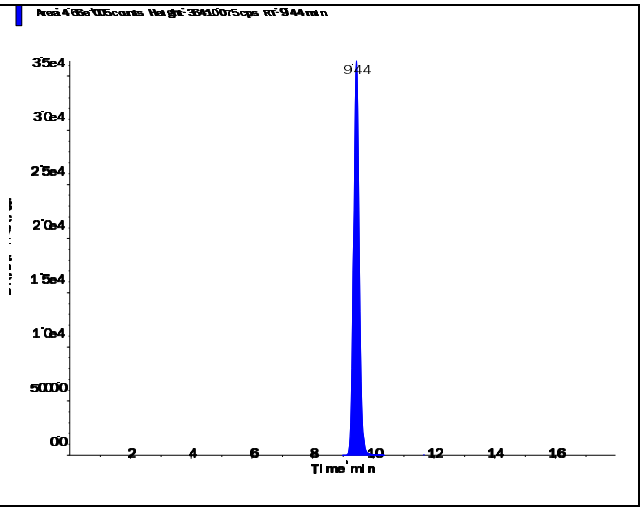

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.44 (9.84) min Calculated conc: 0.207 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	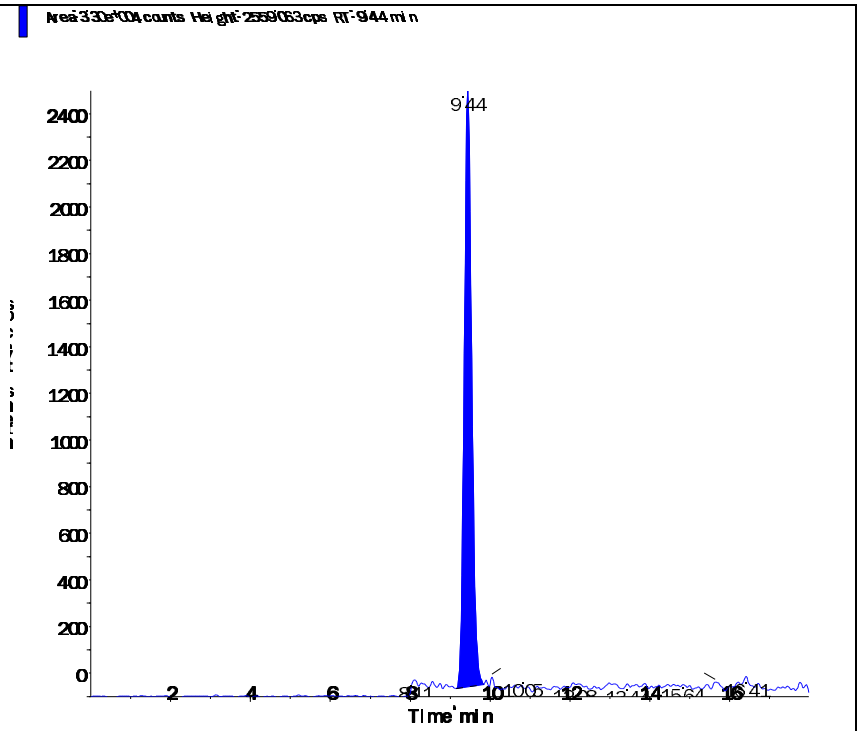
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.44 (9.84) min Calculated conc: 0.204 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	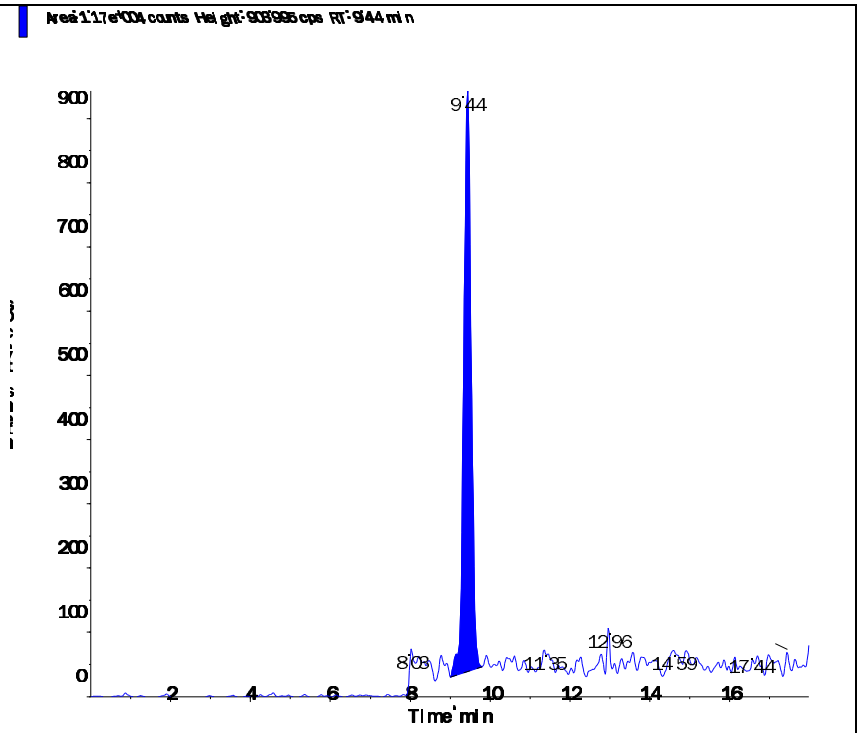

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:30 PM

Data File	LM35582.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:21:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35582.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:21:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.280e+04	9.44	N/A	0.206
Perchlorate conf	1.140e+04	9.43	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

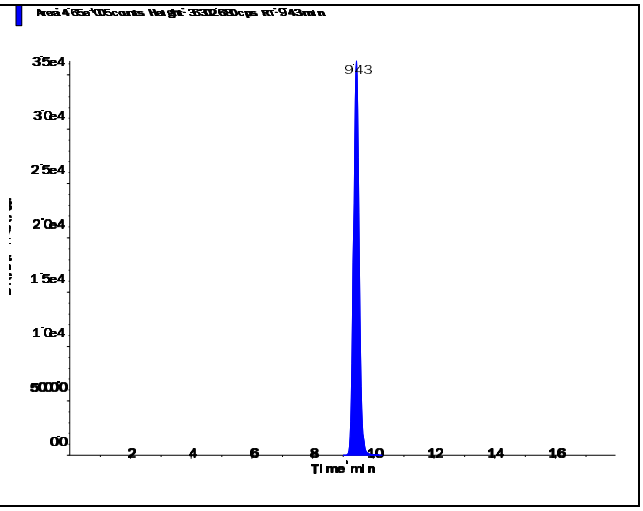

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

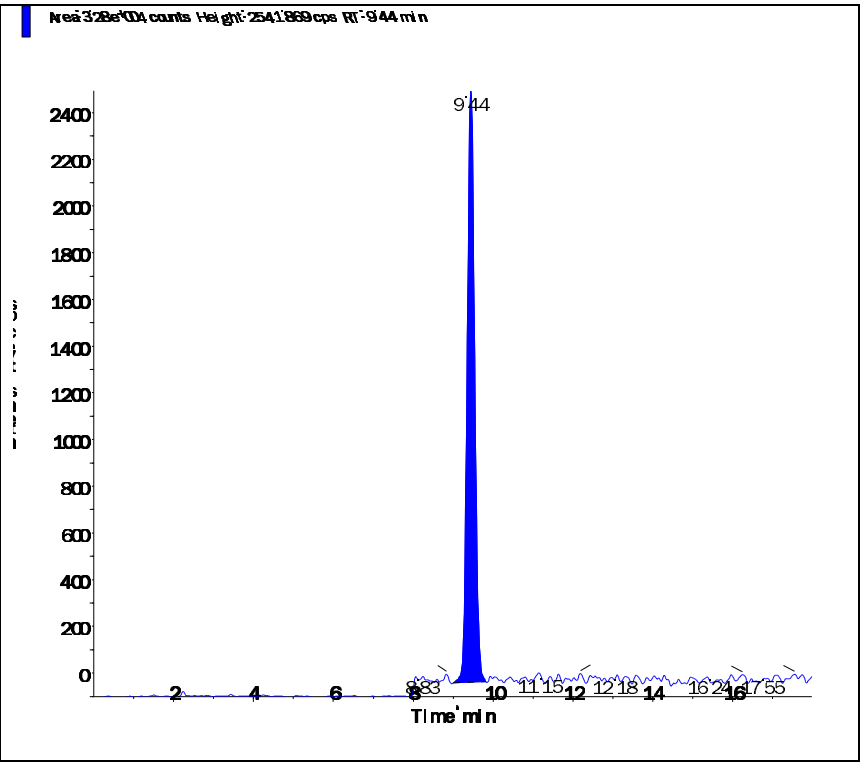

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

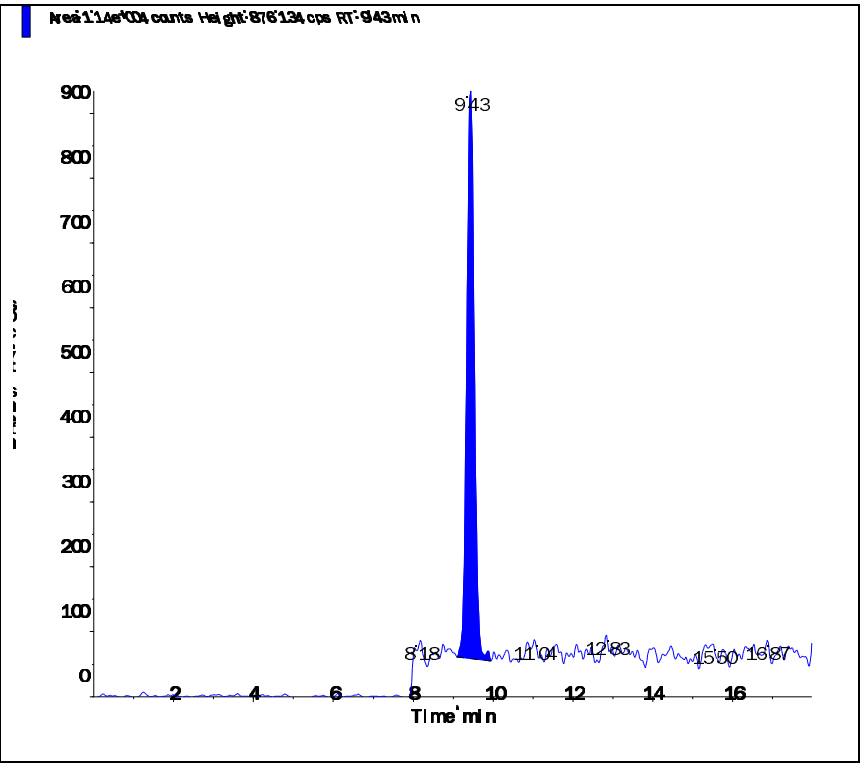

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:34 PM

Data File	LM35595.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:27:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35595.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:27:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.570e+04	9.45	N/A	0.207
Perchlorate conf	1.290e+04	9.44	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

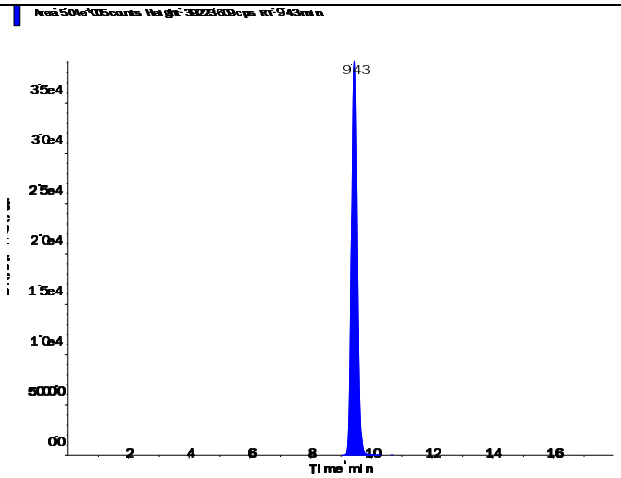

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:34 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

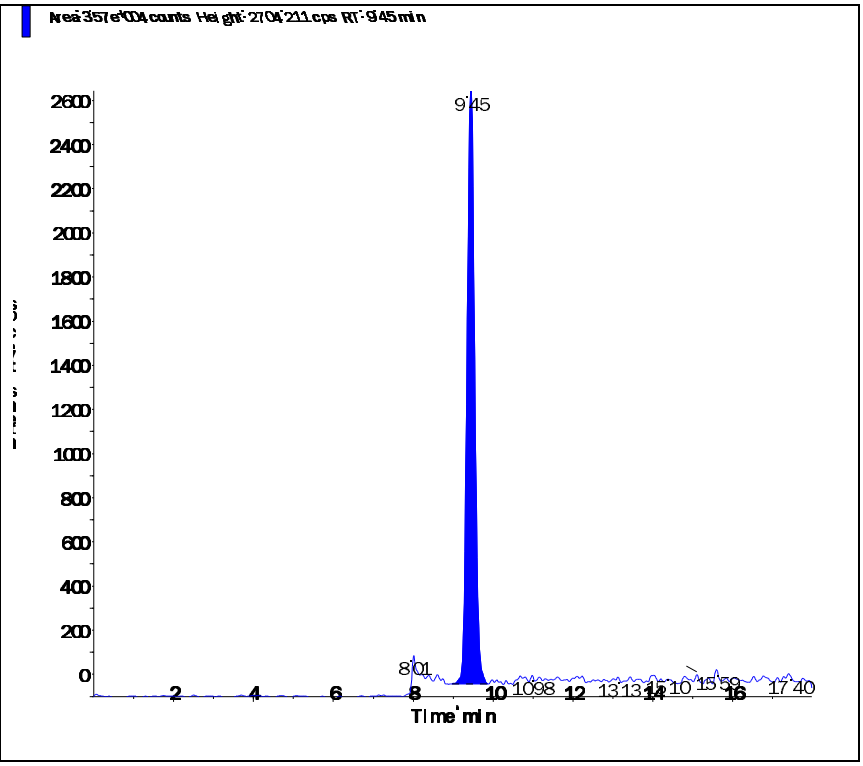

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

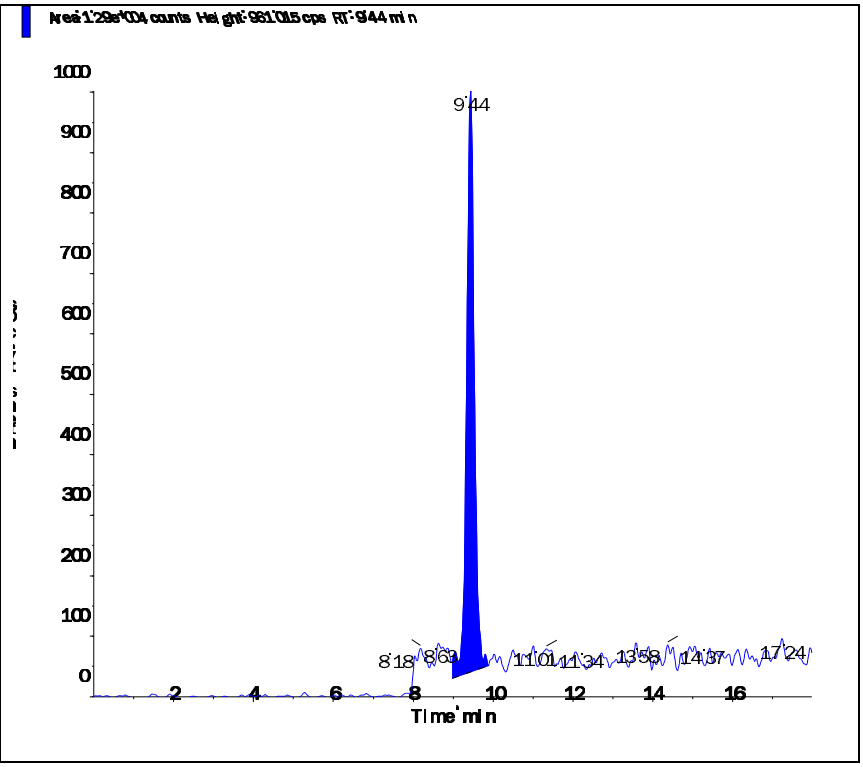

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Data File	LM35602.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:39:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35602.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:39:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.44	N/A	0.209
Perchlorate conf	1.230e+04	9.42	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

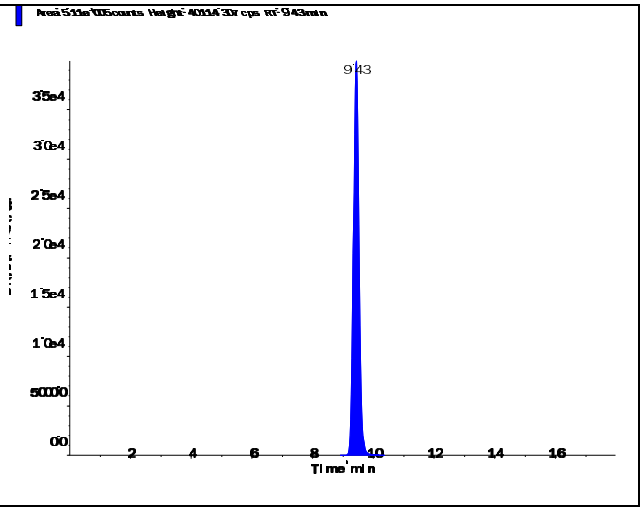

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

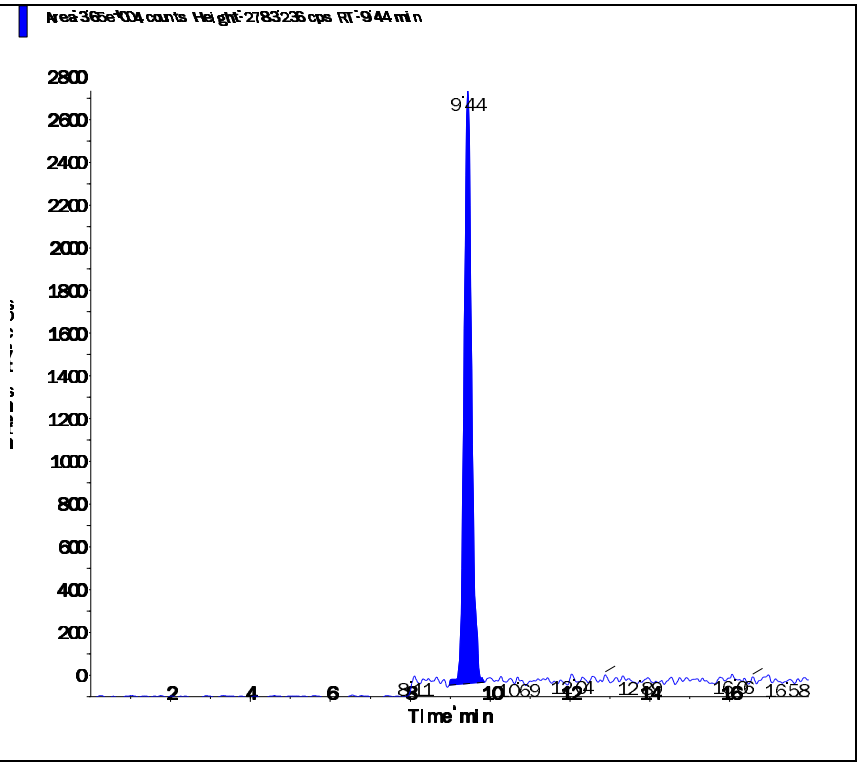

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

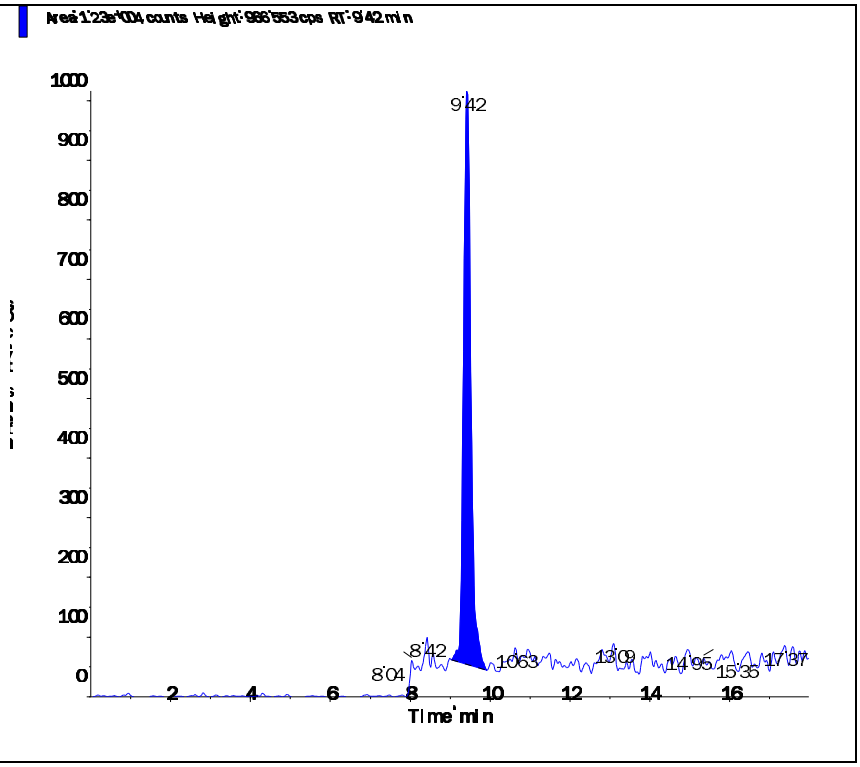

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Data File	LM35568.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 3:55:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-01 CCB	**Injection Vial**	1.00
Data File	LM35568.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 3:55:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.68	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.68(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

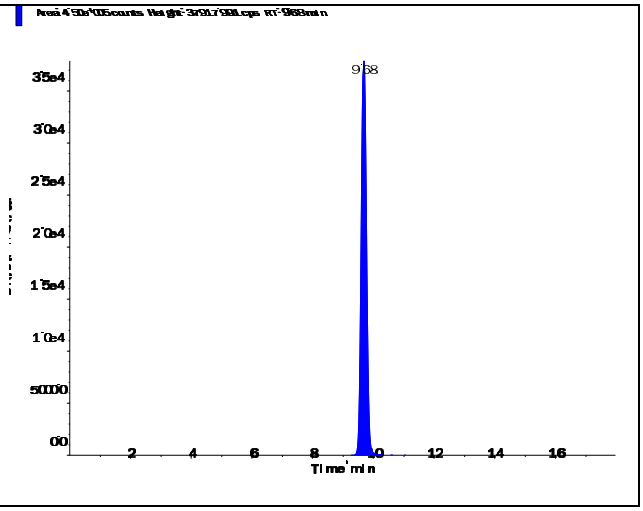

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:26 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

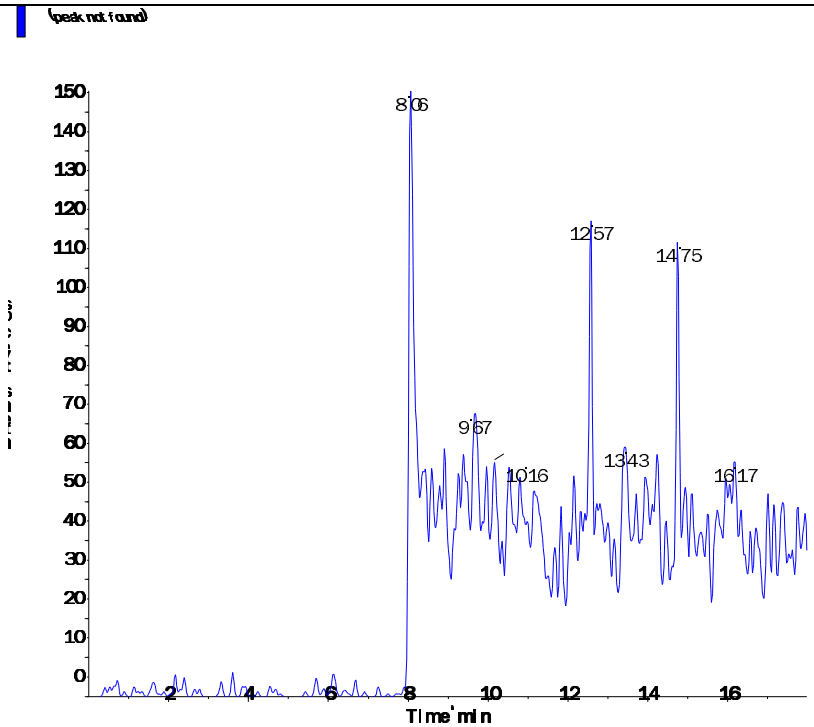

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

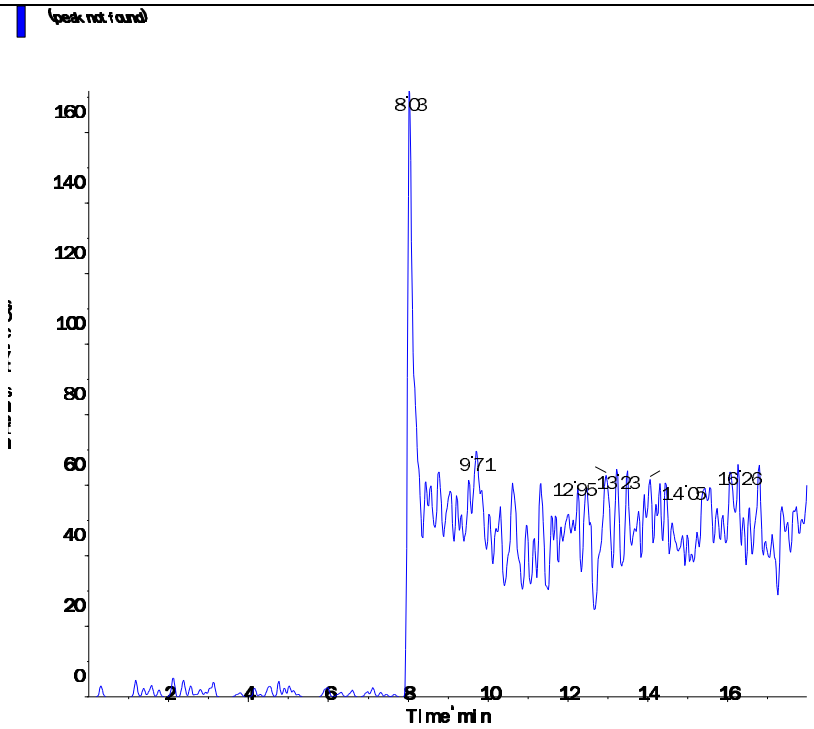

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:31 PM

Data File	LM35583.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:39:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-04 CCB	**Injection Vial**	1.00
Data File	LM35583.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:39:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

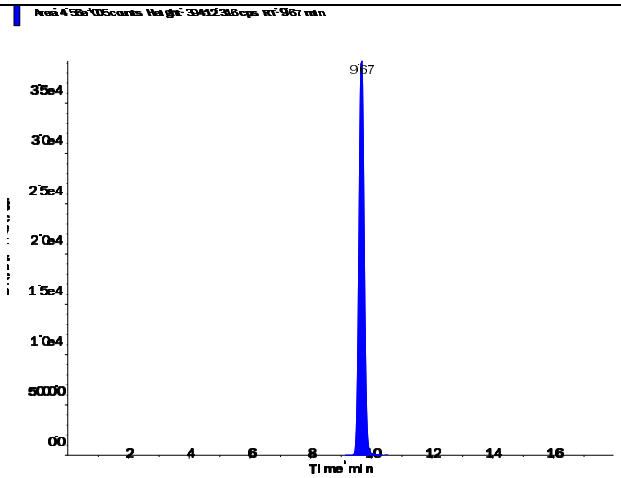

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:31 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

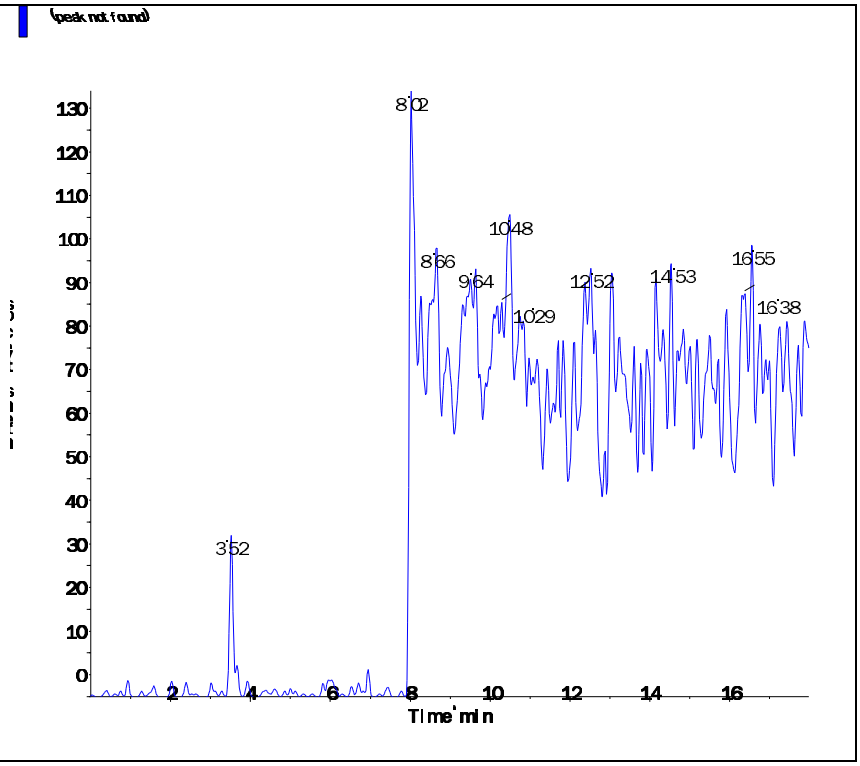

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

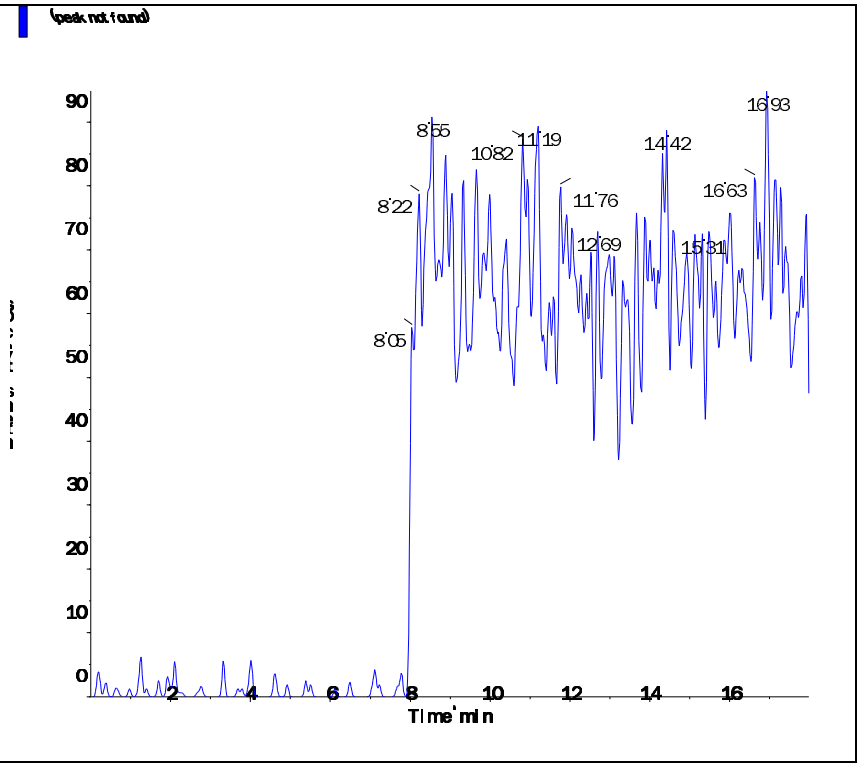

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:35 PM

Data File	LM35596.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:46:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-06 CCB	**Injection Vial**	1.00
Data File	LM35596.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:46:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

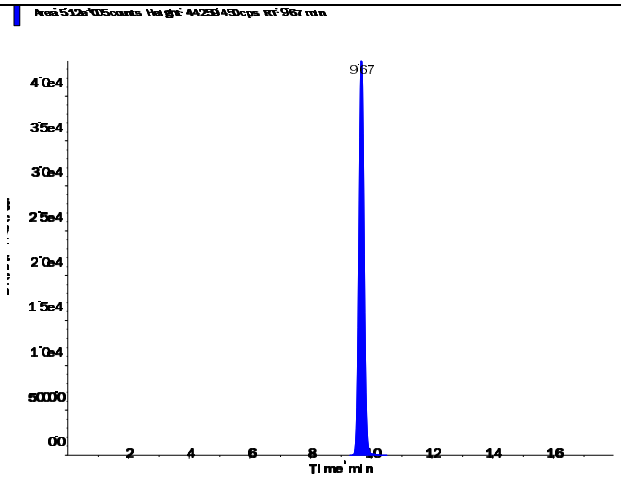

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

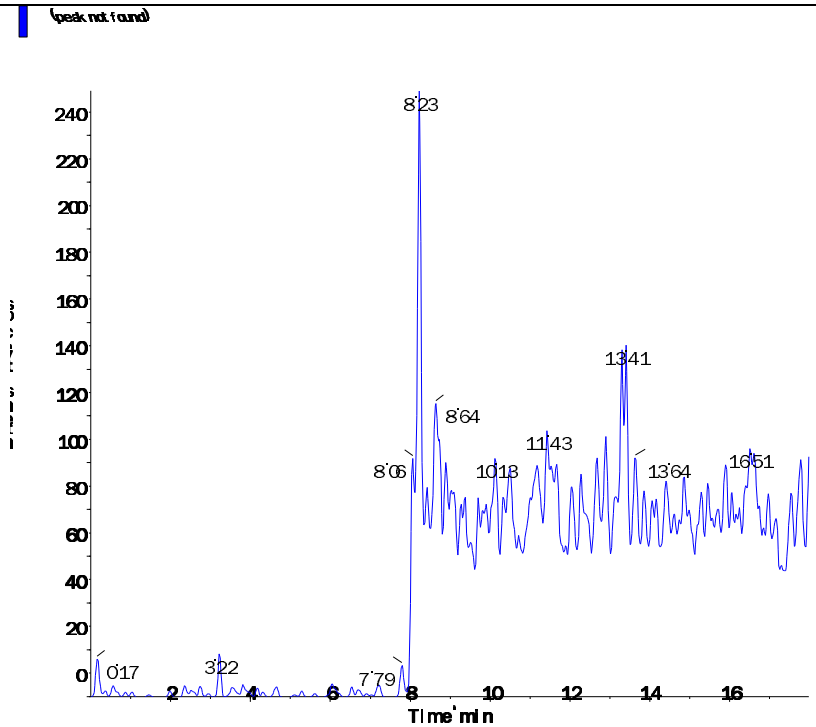

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

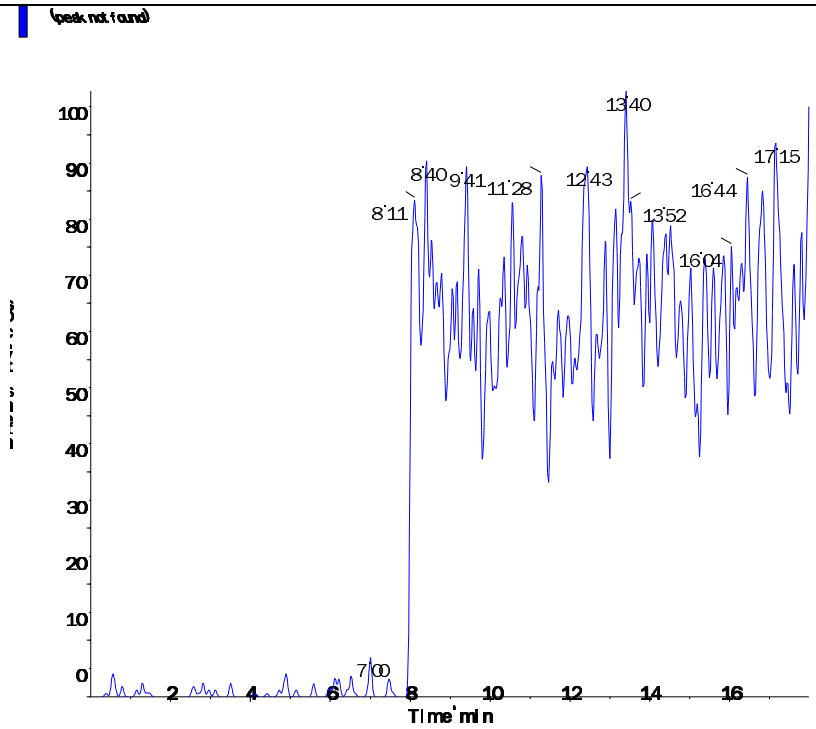

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Data File	LM35603.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:58:39 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-08 CCB	**Injection Vial**	1.00
Data File	LM35603.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:58:39 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.250e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

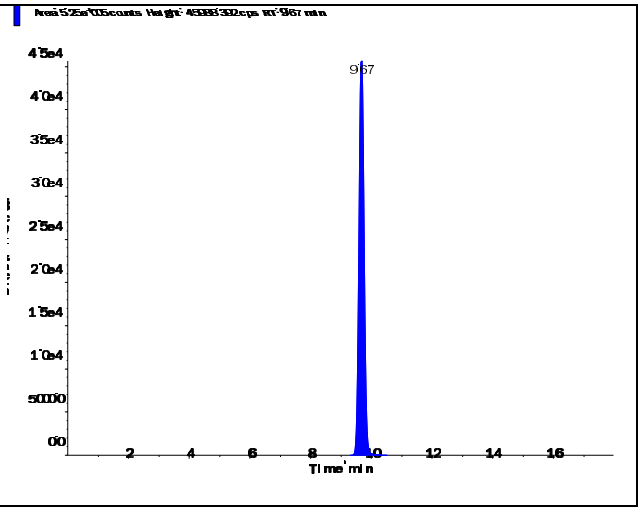

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

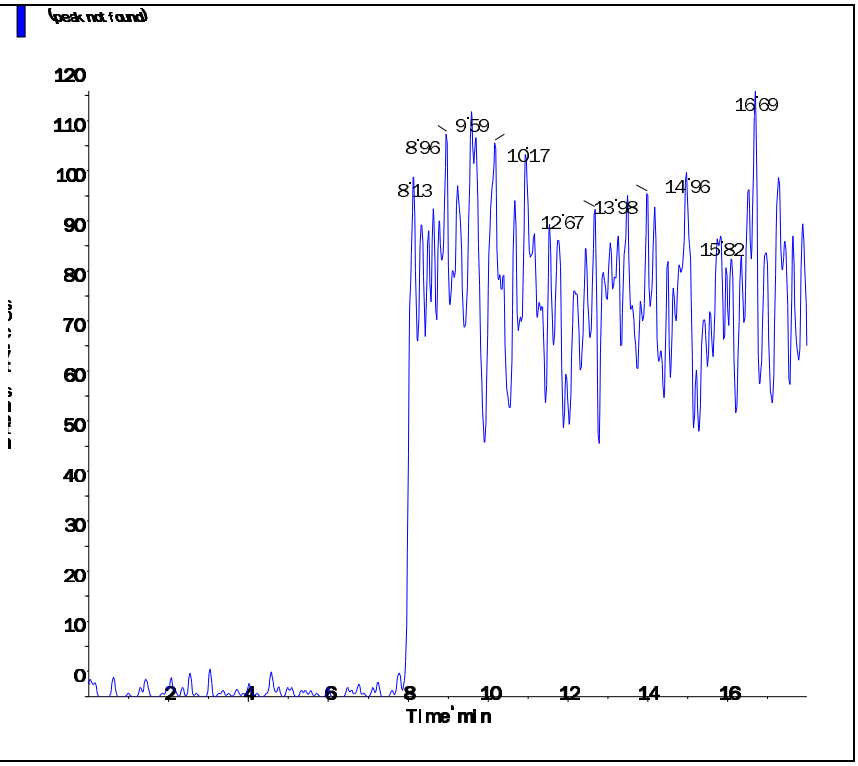

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

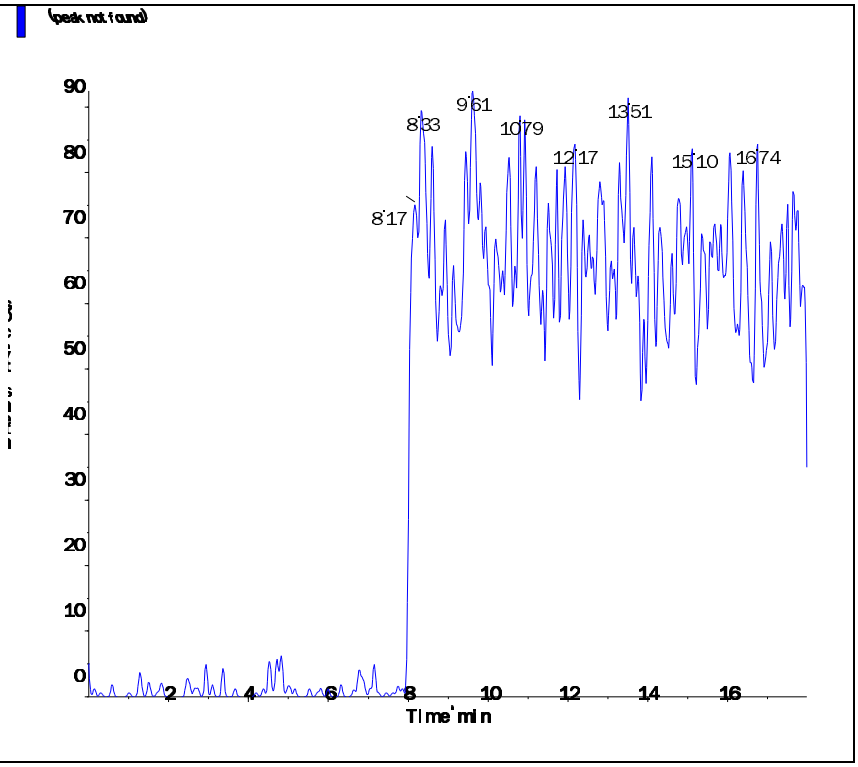

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35571.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:52:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35571.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:52:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.330e+05	9.04	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.020e+04	9.05	N/A	0.204
Perchlorate conf	9.940e+03	9.05	N/A	0.185

O18LP (Internal Standard)

RT (Exp. RT): 9.04(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

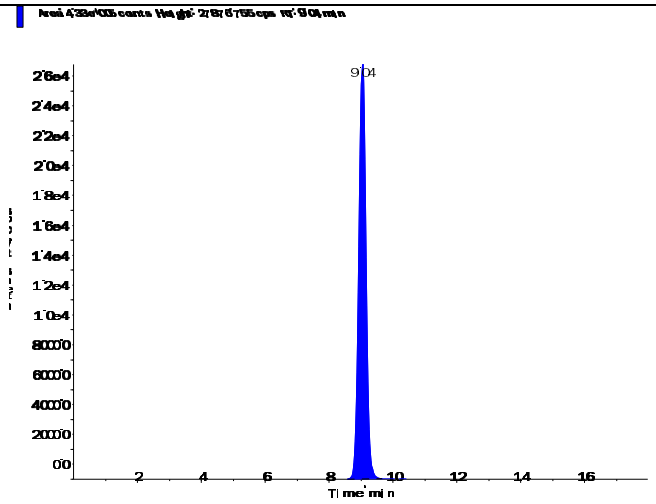

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.05 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

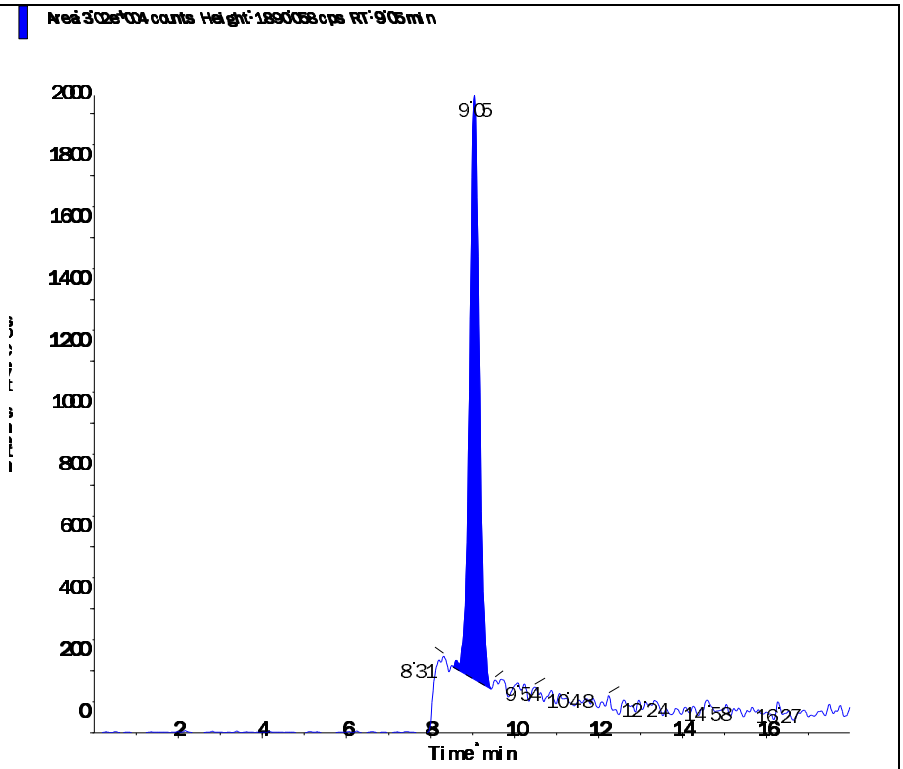

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.05 (9.84) min
Calculated conc:	0.185 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

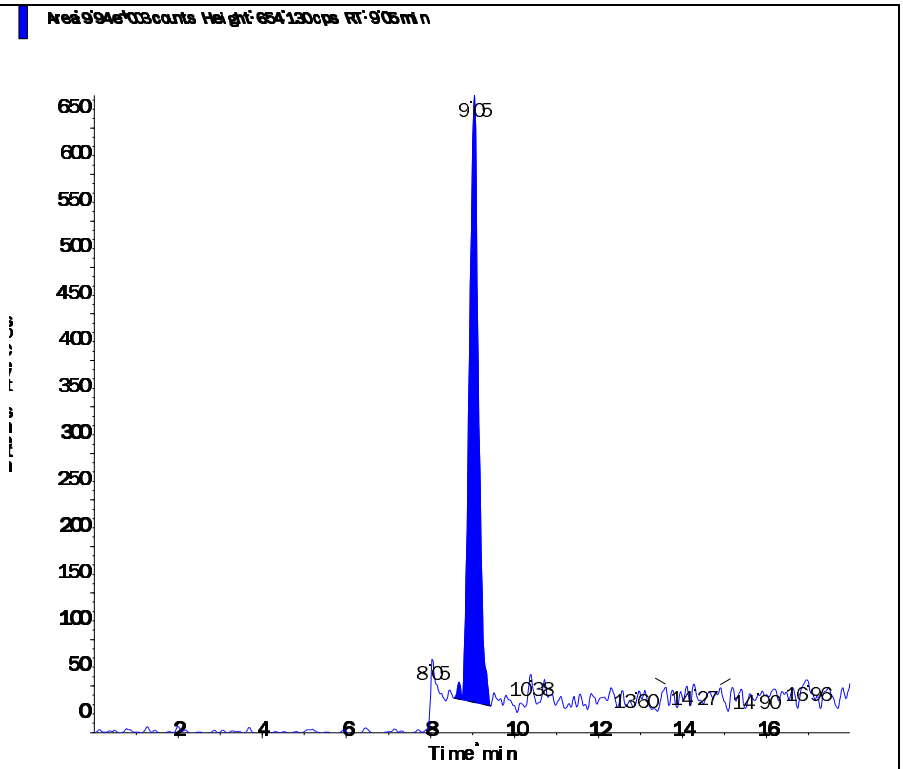

Printing Time: 6:47:51 PM
Printing Date: Friday, July 01, 2016

Sample Name: "WG575005-01 MCT (0.2ug/L)" Sample ID: "WG575005-01" File: "LM35571.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.231 ug/L
Acq. Date:	7/1/2016
Acq. Time:	4:52:43 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.05 min
Area:	3.42e+004 counts
Height:	1959.447 cps
Start Time:	8.566 min
End Time:	9.457 min

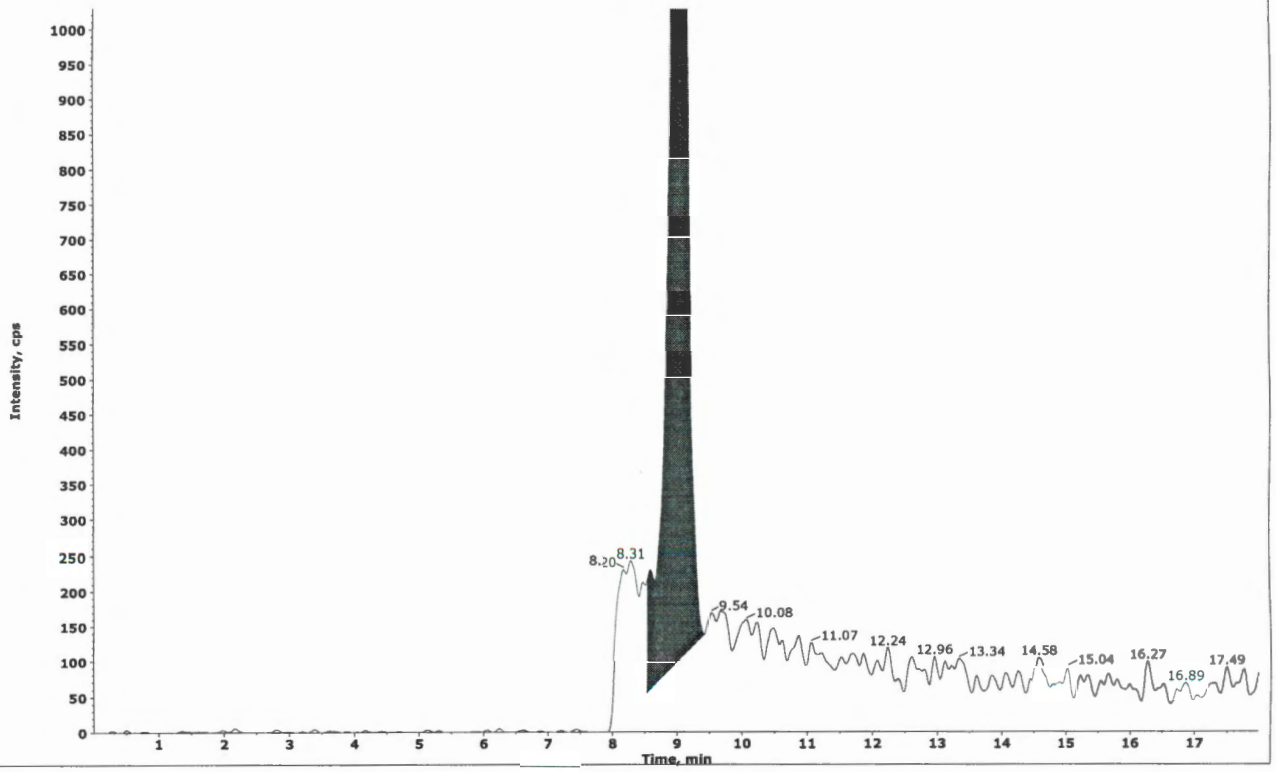

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 6:51:20 PM
Printing Date: Friday, July 01, 2016

Sample Name: "WG575005-01 HCT (0.2ug/L)" Sample ID: "WG575005-01" File: "LM35571.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.204 ug/L
Acq. Date:	7/1/2016
Acq. Time:	4:52:43 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	9.05 min
Area:	3.02e+004 counts
Height:	1890.058 cps
Start Time:	8.546 min
End Time:	9.437 min

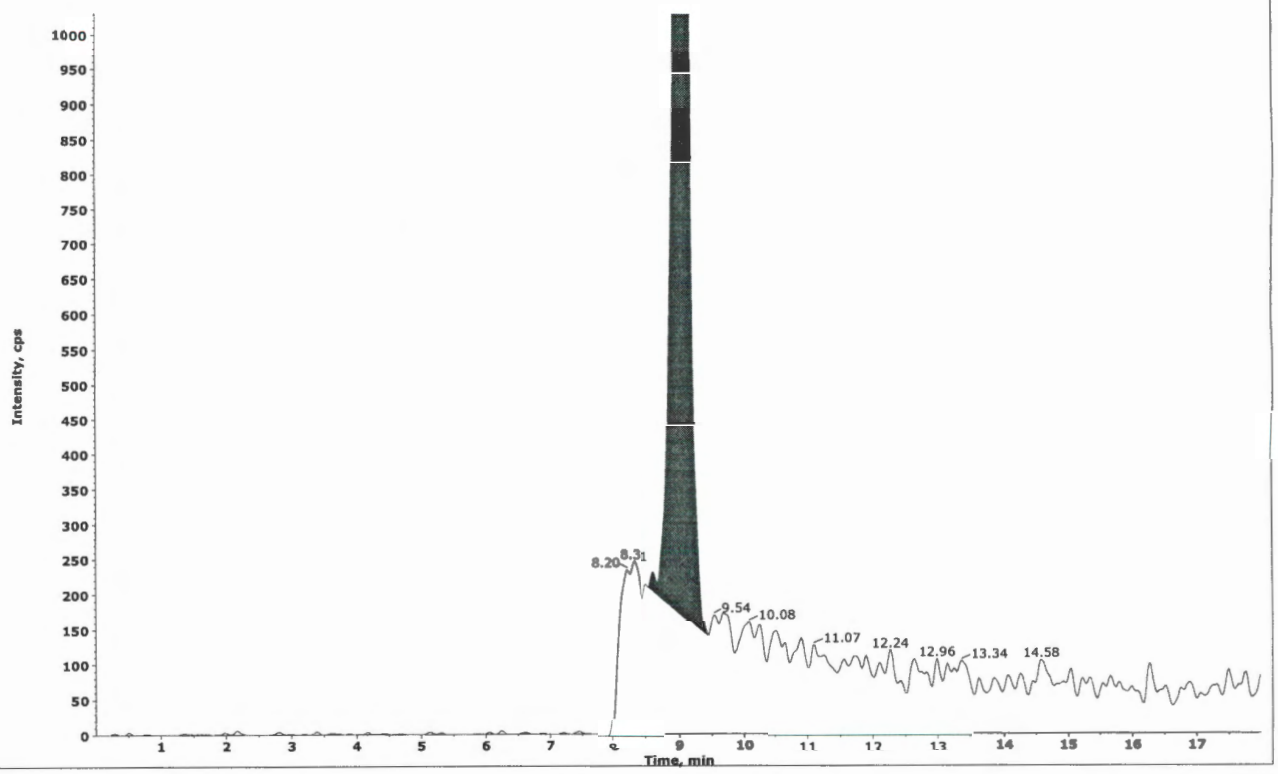

#4
JWR/07/01/16

✓ WED
7-6-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35572.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-02 BLANK	**Injection Vial**	5.00
Data File	LM35572.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

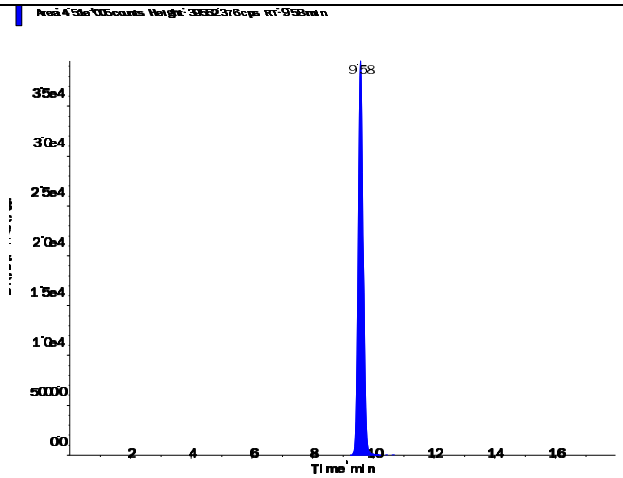

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

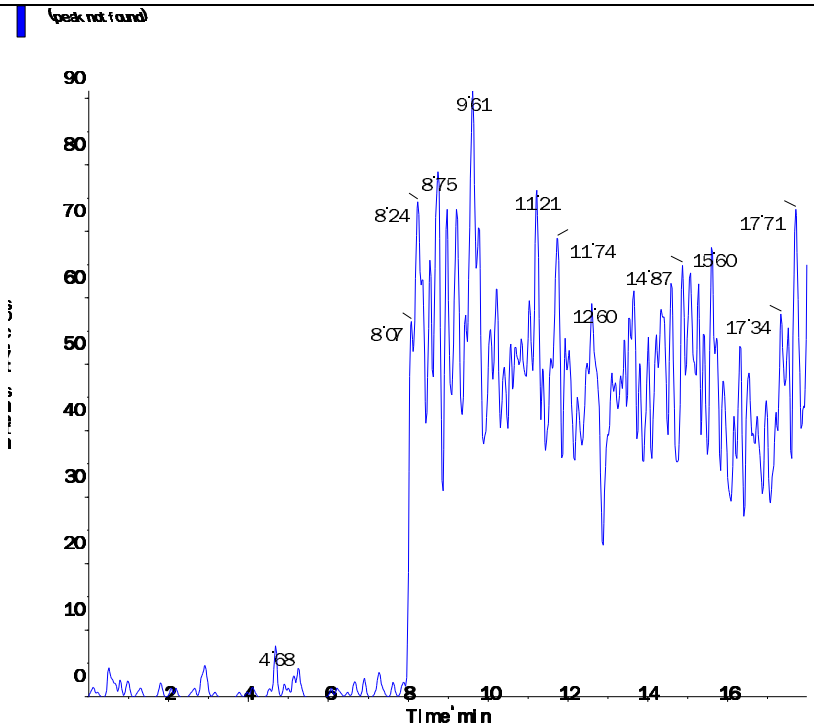

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

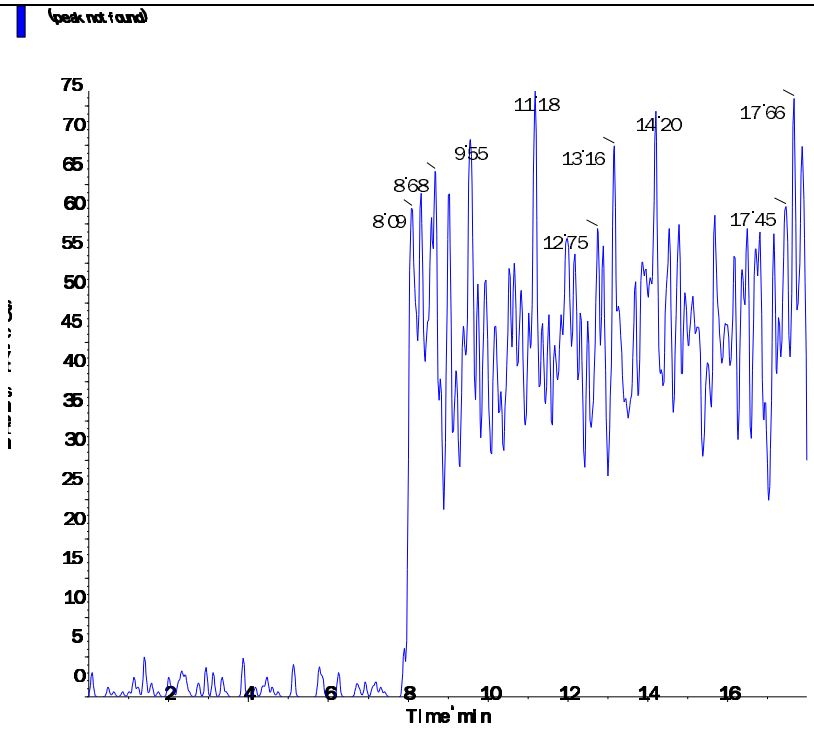

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35573.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:30:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35573.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:30:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.110e+04	9.61	N/A	0.201
Perchlorate conf	1.130e+04	9.60	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

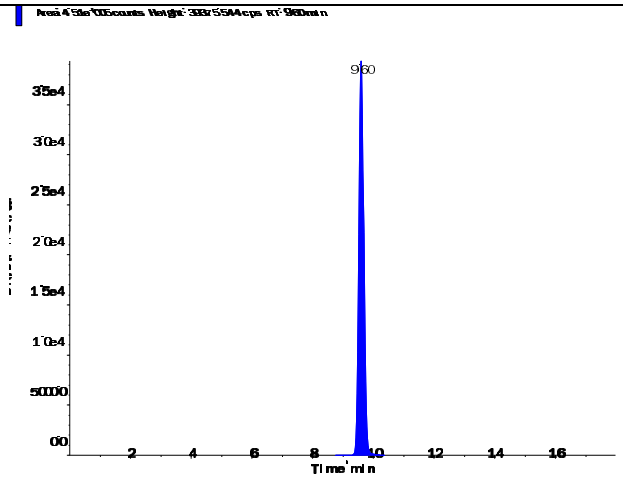

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.61 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

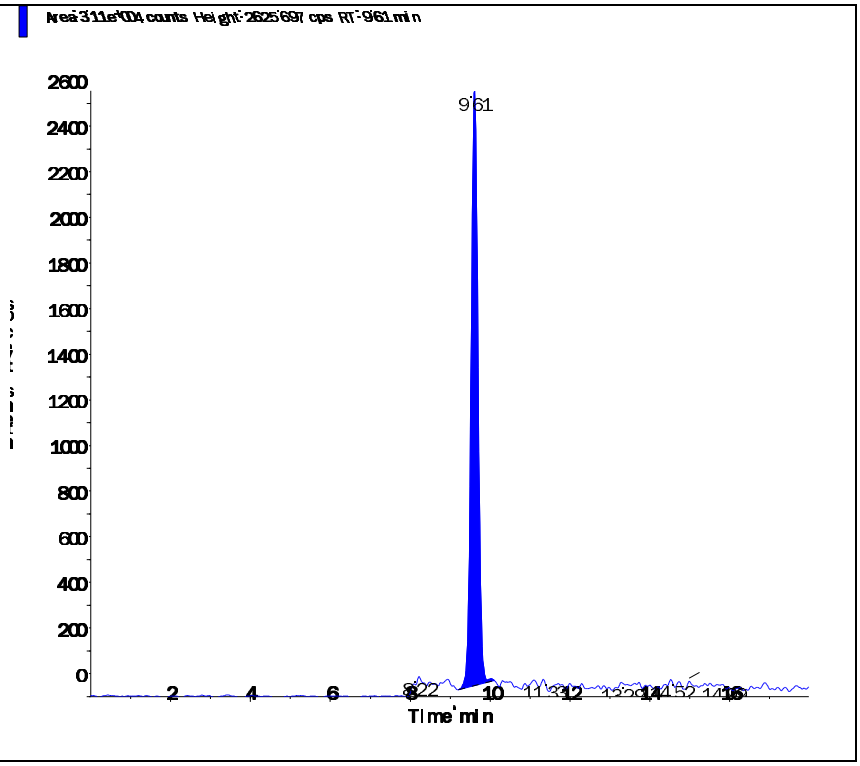

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

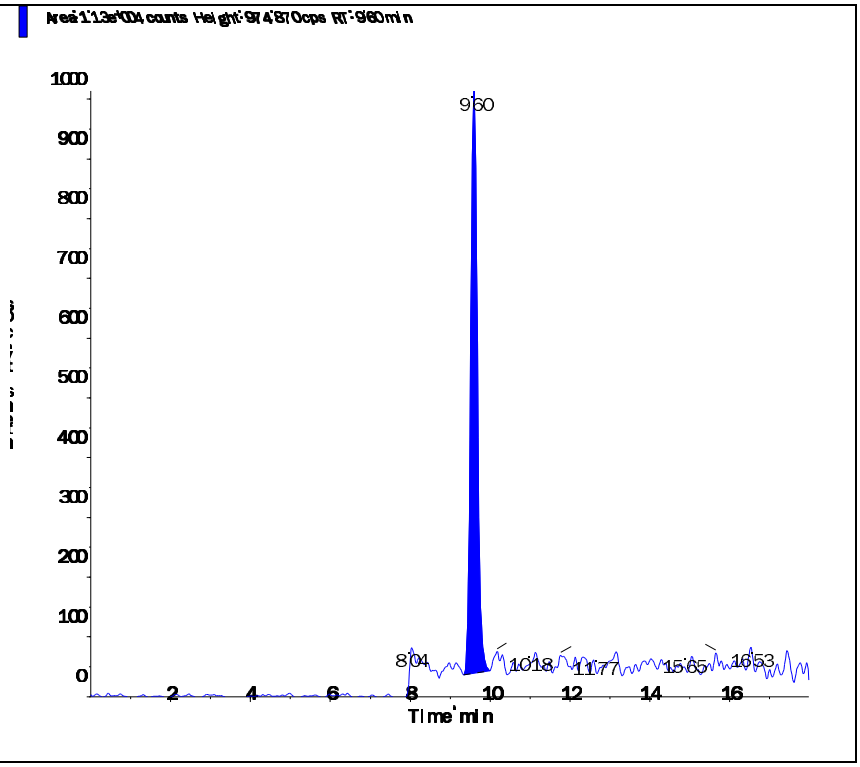

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:28 PM

Data File	LM35574.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:49:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35574.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:49:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.250e+04	9.66	N/A	0.211
Perchlorate conf	1.180e+04	9.65	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

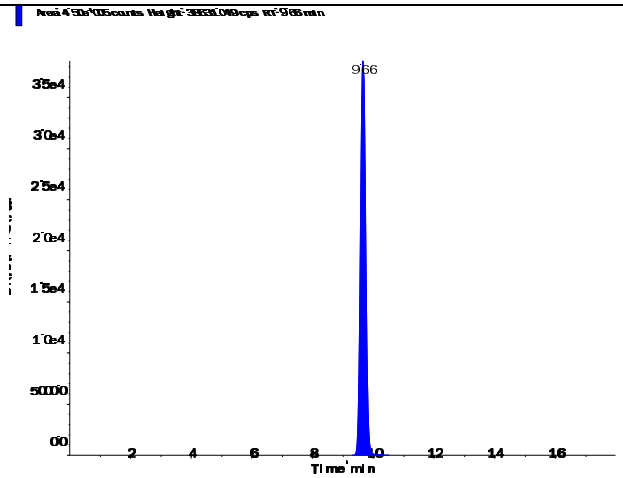

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:28 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

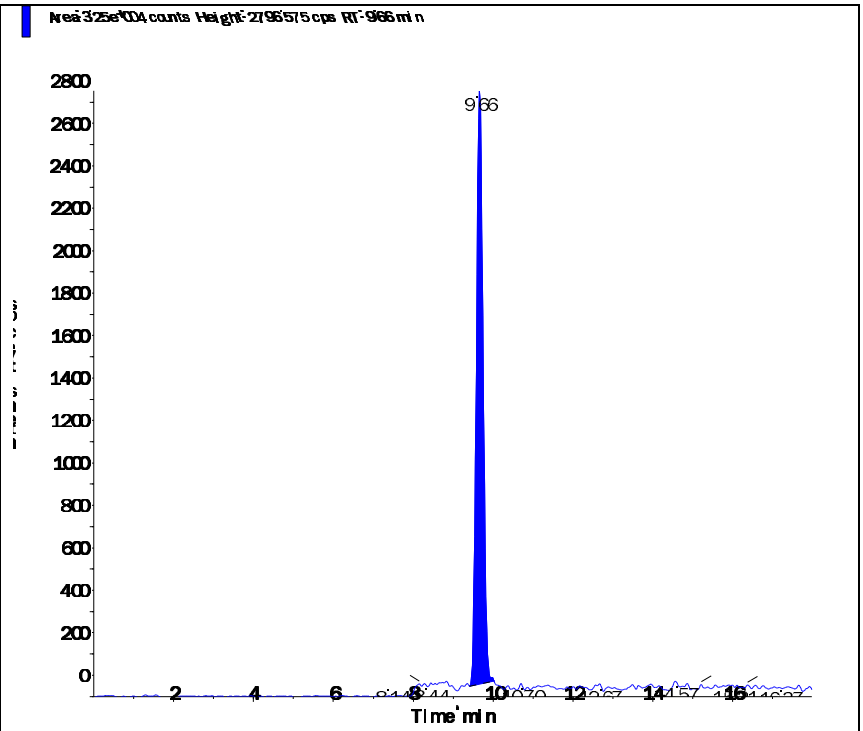

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

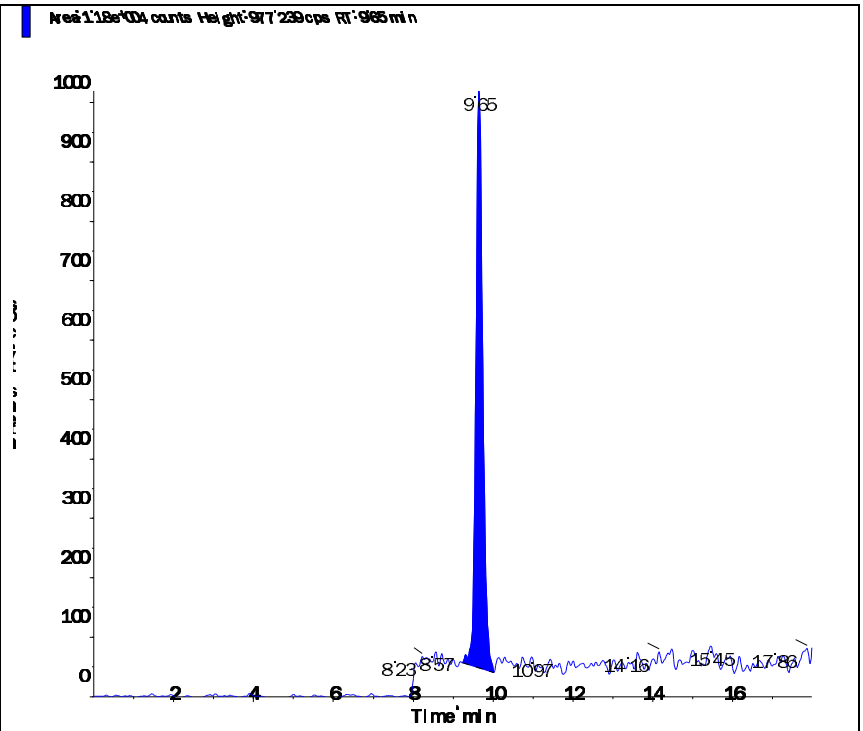

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/01/2016 10:16
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	07/01/2016 14:26
Workgroup #:	WG574995	**Analyst:**	JYH	**Run Date:**	07/01/2016 16:01
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	T3.070116.160122
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.120	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Magnesium, Total	7439-95-4	19.6		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.44		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	44.0		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/01/2016 10:16
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	07/19/2016 09:10
Workgroup #:	WG574995	**Analyst:**	JYH	**Run Date:**	07/19/2016 10:06
Collect Date:	06/29/2016 08:05	**Dilution:**	20	**File ID:**	T3.071916.100624
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	19.6		4.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/01/2016 10:16
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	07/14/2016 12:14
Workgroup #:	WG574995	**Analyst:**	JYH	**Run Date:**	07/14/2016 17:54
Collect Date:	06/29/2016 08:05	**Dilution:**	20	**File ID:**	T3.071416.175404
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	32.0		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG574940
Analyst: REK
Spike Analyst: REK
Run Date: 07/01/2016 10:16
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 07/01/2016 10:21

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: ERP
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
HCL Lot #: COA19029
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG574940-02	BLANK	1	40 mL	50 mL	206.327 g	206.31 g		
2	WG574809-01	FBLK1	17	5 mL	50 mL	202.973 g	202.948 g		
3	WG574940-03	LCS	1	40 mL	50 mL	209.614 g	209.589 g	5 mL	
4	L16061591-01	SAMP	17	5 mL	50 mL	205.685 g	205.671 g		07/07/16
5	WG574940-01	REF	17	5 mL	50 mL	206.394 g	206.373 g		
6	L16061591-02	SAMP	17	5 mL	50 mL	206.394 g	206.373 g		07/07/16
7	L16061591-03	SAMP	17	5 mL	50 mL	206.995 g	206.97 g		07/07/16
8	L16061642-01	SAMP	1	40 mL	50 mL	204.415 g	204.384 g		07/05/16
9	L16061642-02	SAMP	1	40 mL	50 mL	207.198 g	207.176 g		07/05/16
10	L16061648-02	SAMP	1	40 mL	50 mL	206.216 g	206.178 g		07/11/16
11	L16061652-36	SAMP	1	40 mL	50 mL	206.704 g	206.68 g		07/14/16
12	L16061652-38	SAMP	1	40 mL	50 mL	205.348 g	205.327 g		07/14/16
13	L16061660-01	SAMP	1	40 mL	50 mL	205.583 g	205.555 g		07/06/16
14	L16061660-02	SAMP	1	40 mL	50 mL	208.072 g	208.043 g		07/06/16
15	L16061660-03	SAMP	1	40 mL	50 mL	204.075 g	204.048 g		07/06/16
16	L16061660-04	SAMP	1	40 mL	50 mL	208.683 g	208.636 g		07/06/16
17	L16061660-05	SAMP	1	40 mL	50 mL	205.099 g	205.082 g		07/06/16
18	L16061660-06	SAMP	1	40 mL	50 mL	209.69 g	209.659 g		07/06/16
19	L16061660-07	SAMP	1	40 mL	50 mL	206.846 g	206.809 g		07/06/16
20	L16061660-08	SAMP	1	40 mL	50 mL	206.253 g	206.215 g		07/06/16
21	WG574940-04	MS	1	5 mL	50 mL	212.286 g	212.266 g	5 mL	
22	WG574940-05	MSD	1	5 mL	50 mL	210.673 g	210.644 g	5 mL	

L16061642-01	FILTERED DIGESTATE
L16061642-02	FILTERED DIGESTATE

Analyst: _____

Reviewer: _____

MW_DIG - Modified 09/30/2009
PDF ID: 4836155
Report generated: 07/01/2016 11:45

MICROBAC®

TCLP Non-Volatile

Analyst(s): AMA, CPD, BNB
Date: 6/30/16
Filter Lot #: 94860030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
AMA	6/30/16	CPD	7/1/16
Time On	Temp On °C	Time Off	Temp Off °C
1529	23.4	0818	22.1

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
G-8	6-1591-01	ME, SV	1311	F2-380	S	100	8.81	6.61	50.47	1009	6.24
G-10	-02						8.78	6.70	50.77	1015	6.32
G15	-03						8.59	5.70	50.30	1006	5.00
NA	FBLK 2	ME, SV	1311	F2-380	NA	NA	NA	NA	100	100	2.85

BNB 06/30/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: NA

Peer Review By: [signature]

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 070116T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574995,574645

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.070116.141024	WG575089-01	Calibration Point		1		07/01/16 14:10
2	T3.070116.141423	WG575089-02	Calibration Point		1		07/01/16 14:14
3	T3.070116.141823	WG575089-03	Calibration Point		1		07/01/16 14:18
4	T3.070116.142222	WG575089-04	Calibration Point		1		07/01/16 14:22
5	T3.070116.142600	WG575089-05	Calibration Point		1		07/01/16 14:26
6	T3.070116.142937	WG575089-06	Initial Calibration Verification		1		07/01/16 14:29
7	T3.070116.143317	WG575089-07	Initial Calib Blank		1		07/01/16 14:33
8	T3.070116.143717	WG575089-08	Low Level Initial Calibration V		1		07/01/16 14:37
9	T3.070116.144112	WG575089-09	Interference Check		1		07/01/16 14:41
10	T3.070116.144503	WG575089-10	Interference Check		1		07/01/16 14:45
11	T3.070116.144846	WG575089-11	CCV		1		07/01/16 14:48
12	T3.070116.145226	WG575089-12	CCB		1		07/01/16 14:52
13	T3.070116.151527	WG574940-02	Method/Prep Blank	40/50	1		07/01/16 15:15
14	T3.070116.151926	WG574940-03	Laboratory Control S	40/50	1		07/01/16 15:19
15	T3.070116.152307	WG574809-01	Fluid Blank 1		1		07/01/16 15:23
16	T3.070116.152705	L16061591-01	062316-11	5/50	1		07/01/16 15:27
17	T3.070116.153102	WG574940-01	Reference Sample		1	L16061591-02	07/01/16 15:31
18	T3.070116.153500	WG574940-04	Matrix Spike	5/50	1	L16061591-02	07/01/16 15:35
19	T3.070116.153839	WG574940-05	Matrix Spike Duplica	5/50	1	L16061591-02	07/01/16 15:38
20	T3.070116.154219	L16061591-03	062316-13	5/50	1		07/01/16 15:42
21	T3.070116.154612	L16061642-01	FQC-WW03-W0001	40/50	1		07/01/16 15:46
22	T3.070116.155002	WG575089-13	CCV		1		07/01/16 15:50
23	T3.070116.155341	WG575089-14	CCB		1		07/01/16 15:53
24	T3.070116.155739	L16061642-02	FQC-WW04-W0002	40/50	1		07/01/16 15:57
25	T3.070116.160122	L16061648-02	18WW25F-062916	40/50	1		07/01/16 16:01
26	T3.070116.160514	L16061652-36	ORG-S01-322-14	40/50	1		07/01/16 16:05
27	T3.070116.160910	L16061652-38	ORG-S02-322-14	40/50	1		07/01/16 16:09
28	T3.070116.161308	L16061660-01	11002-D01-WQ-W0002	40/50	1		07/01/16 16:13
29	T3.070116.161708	L16061660-02	11002-D18-WQ-W0036	40/50	1		07/01/16 16:17
30	T3.070116.162104	L16061660-03	11101-G001-WQ-W0036	40/50	1		07/01/16 16:21
31	T3.070116.162503	L16061660-04	11101-G041-WQ-W0088	40/50	1		07/01/16 16:25
32	T3.070116.162901	L16061660-05	11101-G080-WQ-W0132	40/50	1		07/01/16 16:29
33	T3.070116.163301	L16061660-06	11101-G121-WQ-W0228	40/50	1		07/01/16 16:33
34	T3.070116.163658	WG575089-15	CCV		1		07/01/16 16:36

Page: 1 Approved: July 06, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 070116T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574995,574645

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.070116.164037	WG575089-16	CCB		1		07/01/16 16:40
36	T3.070116.164435	L16061660-07	11101-G132-WQ-W0280	40/50	1		07/01/16 16:44
37	T3.070116.164835	L16061660-08	11101-G144-WQ-W324	40/50	1		07/01/16 16:48
38	T3.070116.165233	WG574995-01	Post Digestion Spike		1	L16061660-08	07/01/16 16:52
39	T3.070116.165614	WG574995-02	Serial Dilution		5	L16061660-08	07/01/16 16:56
40	T3.070116.170012	WG574995-02	Serial Dilution		25	L16061660-08	07/01/16 17:00
41	T3.070116.170408	L16061452-01	18CPTMW12SW-062416		20		07/01/16 17:04
42	T3.070116.170805	L16061453-01	MW2-062416		20		07/01/16 17:08
43	T3.070116.171200	L16061453-03	18CPTMW01SW-062416		20		07/01/16 17:12
44	T3.070116.171556	WG575089-17	CCV		1		07/01/16 17:15
45	T3.070116.171934	WG575089-18	CCB		1		07/01/16 17:19
46	T3.070116.172333	WG574597-07	Method/Prep Blank	40/50	1		07/01/16 17:23
47	T3.070116.172731	WG574597-08	Laboratory Control S	40/50	1		07/01/16 17:27
48	T3.070116.173113	WG574597-06	Reference Sample		1	L16061496-01	07/01/16 17:31
49	T3.070116.173453	WG574597-09	Matrix Spike	5/50	1	L16061496-01	07/01/16 17:34
50	T3.070116.173832	WG574597-10	Matrix Spike Duplica	5/50	1	L16061496-01	07/01/16 17:38
51	T3.070116.174211	L16061458-02	SCF-WL01-062416	40/50	1		07/01/16 17:42
52	T3.070116.174605	WG574645-03	Post Digestion Spike		1	L16061458-02	07/01/16 17:46
53	T3.070116.174944	WG574645-04	Serial Dilution		5	L16061458-02	07/01/16 17:49
54	T3.070116.175330	WG574645-04	Serial Dilution		25	L16061458-02	07/01/16 17:53
55	T3.070116.175728	WG575089-19	CCV		1		07/01/16 17:57
56	T3.070116.180106	WG575089-20	CCB		1		07/01/16 18:01
57	T3.070116.180504	WG575089-21	Interference Check		1		07/01/16 18:05
58	T3.070116.180855	WG575089-22	Interference Check		1		07/01/16 18:08
59	T3.070116.181238	WG575089-23	CCV		1		07/01/16 18:12
60	T3.070116.181617	WG575089-24	CCB		1		07/01/16 18:16
61	T3.070116.182016	WG575089-25	Low Level Continuing Calibra		1		07/01/16 18:20

Comments

Seq.	Rerun	Dil.	Reason	Analytes
51			Wrong sample label. JYH	

Page: 2 Approved: July 06, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.071416.115859	WG576454-01	Calibration Point		1		07/14/16 11:58
2	T3.071416.120258	WG576454-02	Calibration Point		1		07/14/16 12:02
3	T3.071416.120656	WG576454-03	Calibration Point		1		07/14/16 12:06
4	T3.071416.121043	WG576454-04	Calibration Point		1		07/14/16 12:10
5	T3.071416.121419	WG576454-05	Calibration Point		1		07/14/16 12:14
6	T3.071416.121756	WG576454-06	Initial Calibration Verification		1		07/14/16 12:17
7	T3.071416.122133	WG576454-07	Initial Calib Blank		1		07/14/16 12:21
8	T3.071416.122530	WG576454-08	Low Level Initial Calibration V		1		07/14/16 12:25
9	T3.071416.122922	WG576454-09	Low Level Initial Calibration V		1		07/14/16 12:29
10	T3.071416.123313	WG576454-10	Interference Check		1		07/14/16 12:33
11	T3.071416.123702	WG576454-11	Interference Check		1		07/14/16 12:37
12	T3.071416.124032	WG576454-12	CCV		1		07/14/16 12:40
13	T3.071416.124410	WG576454-13	CCB		1		07/14/16 12:44
14	T3.071416.124809	WG575851-02	Method/Prep Blank	40/50	1		07/14/16 12:48
15	T3.071416.125537	WG575851-03	Laboratory Control S	40/50	1		07/14/16 12:55
16	T3.071416.125915	L16070001-01	MDL-1	40/50	1		07/14/16 12:59
17	T3.071416.130312	L16070003-01	LOQ-1	40/50	1		07/14/16 13:03
18	T3.071416.130705	L16070003-09	LOQ-9	40/50	1		07/14/16 13:07
19	T3.071416.131101	WG576454-14	CCV		1		07/14/16 13:11
20	T3.071416.131436	WG576454-15	CCB		1		07/14/16 13:14
21	T3.071416.131836	WG575851-01	Reference Sample		1	L16070291-01	07/14/16 13:18
22	T3.071416.132229	WG575851-04	Matrix Spike	40/50	1	L16070291-01	07/14/16 13:22
23	T3.071416.132606	WG575851-05	Matrix Spike Duplica	40/50	1	L16070291-01	07/14/16 13:26
24	T3.071416.132943	L16070376-01	1260-B01-WQ-W0002	40/50	1		07/14/16 13:29
25	T3.071416.133339	L16070376-02	1261-F01-WQ-W0012	40/50	1		07/14/16 13:33
26	T3.071416.133736	L16070376-03	5334-B02-WQ-W0008	40/50	1		07/14/16 13:37
27	T3.071416.134133	L16070201-03	T1363	40/50	1		07/14/16 13:41
28	T3.071416.134523	WG576082-01	Post Digestion Spike		1	L16070201-03	07/14/16 13:45
29	T3.071416.134907	WG576082-02	Serial Dilution		5	L16070201-03	07/14/16 13:49
30	T3.071416.135252	WG576082-02	Serial Dilution		25	L16070201-03	07/14/16 13:52
31	T3.071416.135643	WG576454-16	CCV		1		07/14/16 13:56
32	T3.071416.140020	WG576454-17	CCB		1		07/14/16 14:00
33	T3.071416.140419	WG576011-02	Method/Prep Blank	40/50	1		07/14/16 14:04
34	T3.071416.140817	WG576011-03	Laboratory Control S	40/50	1		07/14/16 14:08

Page: 1 Approved: July 14, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.071416.141154	WG575805-01	Fluid Blank 1		1		07/14/16 14:11
36	T3.071416.141552	WG575805-02	Fluid Blank 2		1		07/14/16 14:15
37	T3.071416.141949	WG576011-01	Reference Sample		1	L16070397-01	07/14/16 14:19
38	T3.071416.142344	WG576011-04	Matrix Spike	5/50	1	L16070397-01	07/14/16 14:23
39	T3.071416.142721	WG576011-05	Matrix Spike Duplica	5/50	1	L16070397-01	07/14/16 14:27
40	T3.071416.143058	L16070347-01	TANK 001/INTERIOR	5/50	1		07/14/16 14:30
41	T3.071416.143452	WG576110-01	Post Digestion Spike		1	L16070347-01	07/14/16 14:34
42	T3.071416.143828	WG576110-02	Serial Dilution		5	L16070347-01	07/14/16 14:38
43	T3.071416.144225	WG576454-18	CCV		1		07/14/16 14:42
44	T3.071416.144601	WG576454-19	CCB		1		07/14/16 14:46
45	T3.071416.145001	L16070397-02	S6G0190-02	5/50	1		07/14/16 14:50
46	T3.071416.145355	L16070404-01	18502-G05-WQ-W0025	40/50	1		07/14/16 14:53
47	T3.071416.145752	L16070404-02	18502-G10-WQ-W0049	40/50	1		07/14/16 14:57
48	T3.071416.150148	L16070404-03	19124-G02-WQ-W7	40/50	1		07/14/16 15:01
49	T3.071416.150547	WG576454-20	CCV		1		07/14/16 15:05
50	T3.071416.150924	WG576454-21	CCB		1		07/14/16 15:09
51	T3.071416.151324	L16070238-01	WT-WL-02	5/50	1		07/14/16 15:13
52	T3.071416.151714	L16070340-01	DYNEGY	5/50	1		07/14/16 15:17
53	T3.071416.152107	L16070451-01	59-10-1.02 W1	40/50	1		07/14/16 15:21
54	T3.071416.152459	L16070451-02	59-10-1.02 S1	40/50	1		07/14/16 15:24
55	T3.071416.152852	L16070452-01	1804-105 W1	40/50	1		07/14/16 15:28
56	T3.071416.153244	L16070452-02	1804-105-A W1/S1	40/50	1		07/14/16 15:32
57	T3.071416.153637	L16070453-01	15-13-22 S1	40/50	1		07/14/16 15:36
58	T3.071416.154033	L16070453-02	2212-112 S1	40/50	1		07/14/16 15:40
59	T3.071416.154416	L16070453-03	2212-112 W1	40/50	1		07/14/16 15:44
60	T3.071416.154810	L16070453-04	2212-112 S2	40/50	1		07/14/16 15:48
61	T3.071416.155155	WG576454-22	CCV		1		07/14/16 15:51
62	T3.071416.155532	WG576454-23	CCB		1		07/14/16 15:55
63	T3.071416.155931	L16070453-05	2212-112 P1	40/50	1		07/14/16 15:59
64	T3.071416.160324	L16070454-01	1802-138 W1	40/50	1		07/14/16 16:03
65	T3.071416.160716	L16070201-01	T1360	40/50	2		07/14/16 16:07
66	T3.071416.161109	L16070201-02	T1362	40/50	2		07/14/16 16:11
67	T3.071416.161502	L16070201-04	T1365	40/50	2		07/14/16 16:15
68	T3.071416.161853	L16070249-03	25034-S		1		07/14/16 16:18

Page: 2 Approved: July 14, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.071416.162238	WG576454-24	CCV		1		07/14/16 16:22
70	T3.071416.162613	WG576454-25	CCB		1		07/14/16 16:26
71	T3.071416.163012	L16070291-02	MOR9 MW2	40/50	1		07/14/16 16:30
72	T3.071416.163355	L16070291-03	MOR9 MW3	40/50	1		07/14/16 16:33
73	T3.071416.163748	L16070291-04	MOR9 MW4	40/50	1		07/14/16 16:37
74	T3.071416.164139	L16070380-01	2208-127 W1	40/50	1		07/14/16 16:41
75	T3.071416.164530	L16070380-02	15-13-12 W1	40/50	1		07/14/16 16:45
76	T3.071416.164921	L16070380-03	15-13-12 W1	40/50	1		07/14/16 16:49
77	T3.071416.165314	L16070380-04	15-13-23.2 W1	40/50	1		07/14/16 16:53
78	T3.071416.165709	L16070381-01	WATER	40/50	1		07/14/16 16:57
79	T3.071416.170107	WG576454-26	CCV		1		07/14/16 17:01
80	T3.071416.170443	WG576454-27	CCB		1		07/14/16 17:04
81	T3.071416.170841	WG574636-02	Method/Prep Blank	40/50	1		07/14/16 17:08
82	T3.071416.171237	WG574636-03	Laboratory Control S	40/50	1		07/14/16 17:12
83	T3.071416.171614	WG574636-01	Reference Sample		1	L16061455-02	07/14/16 17:16
84	T3.071416.172007	WG574636-04	Matrix Spike	40/50	1	L16061455-02	07/14/16 17:20
85	T3.071416.172342	WG574636-05	Matrix Spike Duplica	40/50	1	L16061455-02	07/14/16 17:23
86	T3.071416.172719	L16061452-01	18CPTMW12SW-062416	40/50	1		07/14/16 17:27
87	T3.071416.173113	L16061453-01	MW2-062416	40/50	5		07/14/16 17:31
88	T3.071416.173506	L16061453-03	18CPTMW01SW-062416	40/50	10		07/14/16 17:35
89	T3.071416.173901	WG574839-03	Post Digestion Spike		10	L16061453-03	07/14/16 17:39
90	T3.071416.174238	WG574839-04	Serial Dilution		50	L16061453-03	07/14/16 17:42
91	T3.071416.174637	WG576454-28	CCV		1		07/14/16 17:46
92	T3.071416.175004	WG576454-29	CCB		1		07/14/16 17:50
93	T3.071416.175404	L16061648-02	18WW25F-062916	40/50	20		07/14/16 17:54
94	T3.071416.175800	WG576454-30	CCV		1		07/14/16 17:58
95	T3.071416.180136	WG576454-31	CCB		1		07/14/16 18:01
96	T3.071416.180534	WG576454-32	Low Level Continuing Calibra		1		07/14/16 18:05
97	T3.071416.180927	WG576454-33	Low Level Continuing Calibra		1		07/14/16 18:09
98	T3.071416.181316	WG575642-07	Method/Prep Blank	40/50	1		07/14/16 18:13
99	T3.071416.181713	WG575642-08	Laboratory Control S	40/50	1		07/14/16 18:17
100	T3.071416.182051	WG575642-06	Reference Sample		1	L16070227-07	07/14/16 18:20
101	T3.071416.182445	WG575642-09	Matrix Spike	40/50	1	L16070227-07	07/14/16 18:24
102	T3.071416.182823	WG575642-10	Matrix Spike Duplica	40/50	1	L16070227-07	07/14/16 18:28

Page: 3 Approved: July 14, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.071416.183200	L16070184-02	LH18/24-SP650-6376-GRAB	40/50	1		07/14/16 18:32
104	T3.071416.183551	WG576077-03	Post Digestion Spike		1	L16070184-02	07/14/16 18:35
105	T3.071416.183929	WG576077-04	Serial Dilution		5	L16070184-02	07/14/16 18:39
106	T3.071416.184322	WG576077-04	Serial Dilution		25	L16070184-02	07/14/16 18:43
107	T3.071416.184717	WG576454-34	CCV		1		07/14/16 18:47
108	T3.071416.185053	WG576454-35	CCB		1		07/14/16 18:50
109	T3.071416.185451	L16070209-01	T6F1104-05	40/50	1		07/14/16 18:54
110	T3.071416.185846	L16070209-02	T6F1104-06	40/50	1		07/14/16 18:58
111	T3.071416.190239	L16070209-03	T6F1104-07	40/50	1		07/14/16 19:02
112	T3.071416.190634	WG576454-36	CCV		1		07/14/16 19:06
113	T3.071416.191010	WG576454-37	CCB		1		07/14/16 19:10
114	T3.071416.191407	WG576454-38	Low Level Continuing Calibra		1		07/14/16 19:14
115	T3.071416.191801	WG576227-02	Method/Prep Blank	40/50	1		07/14/16 19:18
116	T3.071416.192158	WG576227-03	Laboratory Control S	40/50	1		07/14/16 19:21
117	T3.071416.192535	WG576038-02	Fluid Blank 1		1		07/14/16 19:25
118	T3.071416.192933	WG576038-01	Fluid Blank 2		1		07/14/16 19:29
119	T3.071416.193330	WG576227-04	Filter Blank		1		07/14/16 19:33
120	T3.071416.193729	L16070449-01	VTR 850	5/50	1		07/14/16 19:37
121	T3.071416.194121	WG576493-01	Post Digestion Spike		1	L16070449-01	07/14/16 19:41
122	T3.071416.194458	WG576493-02	Serial Dilution		5	L16070449-01	07/14/16 19:44
123	T3.071416.194853	WG576493-02	Serial Dilution		25	L16070449-01	07/14/16 19:48
124	T3.071416.195249	WG576454-39	CCV		1		07/14/16 19:52
125	T3.071416.195625	WG576454-40	CCB		1		07/14/16 19:56
126	T3.071416.200022	WG576227-01	Reference Sample		1	L16070521-01	07/14/16 20:00
127	T3.071416.200403	WG576227-05	Matrix Spike	40/50	1	L16070521-01	07/14/16 20:04
128	T3.071416.200739	WG576227-06	Matrix Spike Duplica	40/50	1	L16070521-01	07/14/16 20:07
129	T3.071416.201104	L16070348-01	350067872000_W1_070820	40/50	1		07/14/16 20:11
130	T3.071416.201454	L16070348-02	350067872000_W1_070820	40/50	1		07/14/16 20:14
131	T3.071416.201844	L16070447-01	REVAN FINES/EXP\#4888	5/50	1		07/14/16 20:18
132	T3.071416.202236	L16070464-01	SAPA 20 BAGS	5/50	1		07/14/16 20:22
133	T3.071416.202631	L16070465-01	ALAN 22 BAGS	5/50	1		07/14/16 20:26
134	T3.071416.203026	L16070466-01	380 SALTCAKE SCREW 10	5/50	1		07/14/16 20:30
135	T3.071416.203424	L16070468-01	URV	5/50	1		07/14/16 20:34
136	T3.071416.203822	WG576454-41	CCV		1		07/14/16 20:38

Page: 4 Approved: July 14, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838

ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD77089 LLCCV: STD77092 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.071416.204158	WG576454-42	CCB		1		07/14/16 20:41
138	T3.071416.204555	L16070474-01	LH18/24-SP650-6378-GRAB	40/50	1		07/14/16 20:45
139	T3.071416.204944	L16070474-02	LH18/24-SP650-6378-COMP	40/50	1		07/14/16 20:49
140	T3.071416.205335	L16070485-01	60500-SSP0045-SSP0045	5/50	1		07/14/16 20:53
141	T3.071416.205723	L16070487-01	13837-SSP0552	5/50	1		07/14/16 20:57
142	T3.071416.210115	L16070519-01	2016PRE-42230BROOKSRD	40/50	1		07/14/16 21:01
143	T3.071416.210507	L16070519-02	2016PRE-2616BEACHDR	40/50	1		07/14/16 21:05
144	T3.071416.210859	L16070524-01	59-8-2.02 W1	40/50	1		07/14/16 21:08
145	T3.071416.211252	WG576454-43	CCV		1		07/14/16 21:12
146	T3.071416.211629	WG576454-44	CCB		1		07/14/16 21:16
147	T3.071416.212025	WG576454-45	Low Level Continuing Calibra		1		07/14/16 21:20

Page: 5 Approved: July 14, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071916T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574995,576859

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.071916.085545	WG577035-01	Calibration Point		1		07/19/16 08:55
2	T3.071916.085938	WG577035-02	Calibration Point		1		07/19/16 08:59
3	T3.071916.090331	WG577035-03	Calibration Point		1		07/19/16 09:03
4	T3.071916.090724	WG577035-04	Calibration Point		1		07/19/16 09:07
5	T3.071916.091057	WG577035-05	Calibration Point		1		07/19/16 09:10
6	T3.071916.091417	WG577035-06	Initial Calibration Verification		1		07/19/16 09:14
7	T3.071916.091750	WG577035-07	Initial Calib Blank		1		07/19/16 09:17
8	T3.071916.092143	WG577035-08	Low Level Initial Calibration V		1		07/19/16 09:21
9	T3.071916.092533	WG577035-09	Low Level Initial Calibration V		1		07/19/16 09:25
10	T3.071916.092920	WG577035-10	Interference Check		1		07/19/16 09:29
11	T3.071916.093304	WG577035-11	Interference Check		1		07/19/16 09:33
12	T3.071916.093641	WG577035-12	CCV		1		07/19/16 09:36
13	T3.071916.094014	WG577035-13	CCB		1		07/19/16 09:40
14	T3.071916.094407	WG574940-02	Method/Prep Blank	40/50	1		07/19/16 09:44
15	T3.071916.095150	WG574940-03	Laboratory Control S	40/50	1		07/19/16 09:51
16	T3.071916.095524	WG574940-01	Reference Sample		1	L16061591-02	07/19/16 09:55
17	T3.071916.095917	WG574940-04	Matrix Spike	5/50	1	L16061591-02	07/19/16 09:59
18	T3.071916.100249	WG574940-05	Matrix Spike Duplica	5/50	1	L16061591-02	07/19/16 10:02
19	T3.071916.100624	L16061648-02	18WW25F-062916	40/50	20		07/19/16 10:06
20	T3.071916.101016	WG574995-03	Post Digestion Spike		20	L16061648-02	07/19/16 10:10
21	T3.071916.101349	WG574995-04	Serial Dilution		100	L16061648-02	07/19/16 10:13
22	T3.071916.101743	WG577035-14	CCV		1		07/19/16 10:17
23	T3.071916.102115	WG577035-15	CCB		1		07/19/16 10:21
24	T3.071916.102510	WG577035-16	Low Level Continuing Calibra		1		07/19/16 10:25
25	T3.071916.102900	WG577035-17	Low Level Continuing Calibra		1		07/19/16 10:29
26	T3.071916.103249	WG576596-02	Method/Prep Blank	40/50	1		07/19/16 10:32
27	T3.071916.103642	WG576596-03	Laboratory Control S	40/50	1		07/19/16 10:36
28	T3.071916.104016	WG576479-01	Fluid Blank 1		1		07/19/16 10:40
29	T3.071916.104409	L16070558-01	FTSL-MW570-021Q		100	WG576596-01	07/19/16 10:44
30	T3.071916.104803	WG576596-04	Matrix Spike	40/50	100	L16070558-01	07/19/16 10:48
31	T3.071916.105155	WG576596-05	Matrix Spike Duplica	40/50	100	L16070558-01	07/19/16 10:51
32	T3.071916.105549	L16070605-05	16932-BV01-070716-ER	40/50	1		07/19/16 10:55
33	T3.071916.105942	WG576859-01	Post Digestion Spike		1	L16070605-05	07/19/16 10:59
34	T3.071916.110316	WG576859-02	Serial Dilution		5	L16070605-05	07/19/16 11:03

Page: 1 Approved: July 19, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071916T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574995,576859

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.071916.110709	WG576859-02	Serial Dilution		25	L16070605-05	07/19/16 11:07
36	T3.071916.111104	WG577035-18	CCV		1		07/19/16 11:11
37	T3.071916.111437	WG577035-19	CCB		1		07/19/16 11:14
38	T3.071916.111831	L16070562-02	16F2425-02	5/50	2		07/19/16 11:18
39	T3.071916.112223	+1 PPM CR	+1 PPM CR		2		07/19/16 11:22
40	T3.071916.112616	+1.5 PPM CR	+1.5 PPM CR		2		07/19/16 11:26
41	T3.071916.113009	+2 PPM CR	+2 PPM CR		2		07/19/16 11:30
42	T3.071916.113402	L16070611-01	16G1299-01	40/50	1		07/19/16 11:34
43	T3.071916.113752	L16070647-01	IWWT-SUMP	1/50	1		07/19/16 11:37
44	T3.071916.114143	L16070627-01	GH9-SPRING	40/50	100		07/19/16 11:41
45	T3.071916.114536	L16070627-02	GH9-SALT DRYER	40/50	100		07/19/16 11:45
46	T3.071916.114928	L16070627-03	GH9-BRINE TANK	40/50	100		07/19/16 11:49
47	T3.071916.115320	WG577035-20	CCV		1		07/19/16 11:53
48	T3.071916.115653	WG577035-21	CCB		1		07/19/16 11:56
49	T3.071916.120046	WG576736-01	Method/Prep Blank		1		07/19/16 12:00
50	T3.071916.120437	WG576736-02	Laboratory Control S		1		07/19/16 12:04
51	T3.071916.120824	WG576736-03	Laboratory Control S		1		07/19/16 12:08
52	T3.071916.121211	L16070681-41	16752-WP01-WP005		1		07/19/16 12:12
53	T3.071916.121602	L16070681-42	16752-WP01-WP006		1		07/19/16 12:16
54	T3.071916.121944	L16070681-43	16752-WP01-WP007		1		07/19/16 12:19
55	T3.071916.122331	L16070681-44	16752-WP01-WP008		1		07/19/16 12:23
56	T3.071916.122720	L16070681-45	16752-WP01-WP009		1		07/19/16 12:27
57	T3.071916.123108	L16070681-46	16752-WP01-WP010		1		07/19/16 12:31
58	T3.071916.123500	WG577035-22	CCV		1		07/19/16 12:35
59	T3.071916.123833	WG577035-23	CCB		1		07/19/16 12:38
60	T3.071916.124225	L16070681-47	16752-WP01-WP011		1		07/19/16 12:42
61	T3.071916.124612	L16070681-48	16752-WP01-WP012		1		07/19/16 12:46
62	T3.071916.125003	WG576964-01	Post Digestion Spike		1	L16070681-48	07/19/16 12:50
63	T3.071916.125335	WG576964-02	Serial Dilution		5	L16070681-48	07/19/16 12:53
64	T3.071916.125727	WG577035-24	CCV		1		07/19/16 12:57
65	T3.071916.130059	WG577035-25	CCB		1		07/19/16 13:00

Page: 2 Approved: July 19, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 575089
Runlog ID: 76090
Analytical Workgroups: 574995,574645

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1458
Level 4	1642,1648,1660
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
06-JUL-2016

Secondary Reviewer:
06-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-06-2016 15:24:52

Microbac Laboratories Inc.

Data Checklist

Date: 14-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 576454
Runlog ID: 76318
Analytical Workgroups: 576082,576110

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	0001,376,404
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer: 14-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-14-2016 15:54:24

Microbac Laboratories Inc.

Data Checklist

Date: 19-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 577035
Runlog ID: 76393
Analytical Workgroups: 574995,576859

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	1648,558,605
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer: 19-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-19-2016 16:00:34

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG574995

Login Number: L16061648

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW25F-062916	02	06/29/16					07/01/2016	2.1	180		07/01/16	2.3	180	
18WW25F-062916	02	06/29/16					07/01/2016	2.1	180		07/14/16	15.4	180	
18WW25F-062916	02	06/29/16					07/01/2016	2.1	180		07/19/16	20.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4837629
Report generated 07/19/2016 14:42

METHOD BLANK SUMMARY

Login Number: L16061648
Blank File ID: T3.070116.151527
Prep Date: 07/01/16 10:16
Analyzed Date: 07/01/16 15:15
Analyst: JYH

Work Group: WG574995
Blank Sample ID: WG574940-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574940-03	T3.070116.151926	07/01/16 15:19	01
18WW25F-062916	L16061648-02	T3.070116.160122	07/01/16 16:01	01
18WW25F-062916	L16061648-02	T3.071416.175404	07/14/16 17:54	DL01
LCS	WG574940-03	T3.071916.095150	07/19/16 09:51	02
18WW25F-062916	L16061648-02	T3.071916.100624	07/19/16 10:06	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4837630
Report generated 07/19/2016 14:42

METHOD BLANK SUMMARY

Login Number: L16061648
Blank File ID: T3.071916.094407
Prep Date: 07/01/16 10:16
Analyzed Date: 07/19/16 09:44
Analyst: JYH

Work Group: WG574995
Blank Sample ID: WG574940-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574940-03	T3.070116.151926	07/01/16 15:19	01
18WW25F-062916	L16061648-02	T3.070116.160122	07/01/16 16:01	01
18WW25F-062916	L16061648-02	T3.071416.175404	07/14/16 17:54	DL01
LCS	WG574940-03	T3.071916.095150	07/19/16 09:51	02
18WW25F-062916	L16061648-02	T3.071916.100624	07/19/16 10:06	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4837630
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061648 Prep Date: 07/01/16 10:16 Sample ID: WG574940-02
Instrument ID: ICP-THERMO3 Run Date: 07/01/16 15:15 Prep Method: 3015
File ID: T3.070116.151527 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574995 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-01-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00549	1	J
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4837631
19-JUL-2016 15:11

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061648 Prep Date: 07/01/16 10:16 Sample ID: WG574940-02
Instrument ID: ICP-THERMO3 Run Date: 07/19/16 09:44 Prep Method: 3015
File ID: T3.071916.094407 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574995 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-19-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Total	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4837631
19-JUL-2016 15:11

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061648 Run Date: 07/01/2016 Sample ID: WG574940-03
Instrument ID: ICP-THERMO3 Run Time: 15:19 Prep Method: 3015
File ID: T3.070116.151926 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574995 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-01-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	5.91	94.5	80 - 120	
Beryllium, Total	0.0313	0.0292	93.4	80 - 120	
Calcium, Total	6.25	6.11	97.7	80 - 120	
Magnesium, Total	6.25	5.95	95.3	80 - 120	
Potassium, Total	31.3	29.6	94.7	80 - 120	
Selenium, Total	0.250	0.225	89.9	80 - 120	
Sodium, Total	31.3	30.2	96.6	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4837632
Report generated: 07/19/2016 15:11

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061648 Run Date: 07/19/2016 Sample ID: WG574940-03
Instrument ID: ICP-THERMO3 Run Time: 09:51 Prep Method: 3015
File ID: T3.071916.095150 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574995 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-19-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Total	2.50	2.52	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4837632
Report generated: 07/19/2016 15:11

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061648 Cal ID: ICP-THERMO3 - Worknum: WG574995
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG574940-01 File ID: T3.070116.153102 Dil: 1 Matrix: WATER
Sample ID: WG574940-04 MS File ID: T3.070116.153500 Dil: 1 Units: mg/L
Sample ID: WG574940-05 MSD File ID: T3.070116.153839 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	ND	50.0	47.7	95.4	50.0	48.0	96.0	0.656	80 - 120	20	
Beryllium	ND	0.250	0.235	94.0	0.250	0.235	94.2	0.128	80 - 120	20	
Calcium	1940	50.0	2020	156	50.0	2040	198	1.03	80 - 120	20	*
Magnesium	23.0	50.0	69.5	93.0	50.0	70.1	94.2	0.879	80 - 120	20	
Potassium	ND	250	243	97.0	250	246	98.4	1.46	80 - 120	20	
Selenium	ND	2.00	1.85	92.6	2.00	1.87	93.4	0.882	80 - 120	20	
Sodium	24.0	250	267	97.3	250	268	97.6	0.336	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4837633
Report generated 07/19/2016 15:11

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061648 Cal ID: ICP-THERMO3 - Worknum: WG574995
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG574940-01 File ID: T3.071916.095524 Dil: 1 Matrix: WATER
Sample ID: WG574940-04 MS File ID: T3.071916.095917 Dil: 1 Units: mg/L
Sample ID: WG574940-05 MSD File ID: T3.071916.100249 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron	ND	20.0	19.3	96.6	20.0	19.7	98.6	2.06	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4837633
Report generated 07/19/2016 15:11

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061648 **Worknum:** WG574995
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574995-02 **File ID:** T3.070116.165614 **Dil:** 5 **Units:** ug/L
Sample: L16061660-08 **File ID:** T3.070116.164835 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	35.6		40.0		12.30	E
Beryllium	0.0700	X	0.500		614.00	
Calcium	531		612		15.20	E
Iron	124		51.6		58.20	E
Magnesium	75.3		157		108.00	E
Potassium	263		916		249.00	E
Selenium	ND	U	21.1		548.00	
Sodium	249		341		37.10	E

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4837627
07/19/2016 14:42

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061648 **Worknum:** WG574995
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574995-04 **File ID:** T3.071916.101349 **Dil:** 100 **Units:** ug/L
Sample: L16061648-02 **File ID:** T3.071916.100624 **Dil:** 20

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	ND	U	ND	U		
Beryllium	ND	U	ND	U		
Calcium	25700		24500		4.63	
Iron	15700		13600		13.50	E
Magnesium	13100		12400		5.27	
Potassium	4130		8260		100.00	E
Selenium	79.2		ND	U		
Sodium	35600		33800		5.06	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4837627
07/19/2016 14:42

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061648 **Worknum:** WG574995
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574995-01 **File ID:** T3.070116.165233 **Dil:** 1 **Units:** ug/L
Sample ID: L16061660-08 **File ID:** T3.070116.164835 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	4750		0	U	5000	95.0	75 - 125	
BERYLLIUM	23.4		0	U	25	93.6	75 - 125	
CALCIUM	5270		531		5000	95.8	75 - 125	
IRON	2060		124	F	2000	97.5	75 - 125	
MAGNESIUM	4970		0	U	5000	99.4	75 - 125	
POTASSIUM	23800		0	U	25000	95.2	75 - 125	
SELENIUM	176		0	U	200	87.9	75 - 125	
SODIUM	23800		249	F	25000	94.4	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4837628
Report generated: 07/19/2016 14:42

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061648 **Worknum:** WG574995
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574995-03 **File ID:** T3.071916.101016 **Dil:** 20 **Units:** ug/L
Sample ID: L16061648-02 **File ID:** T3.071916.100624 **Dil:** 20 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	4710		0	U	5000	94.2	75 - 125	
BERYLLIUM	23.2		0	U	25	92.8	75 - 125	
CALCIUM	5950		1290		5000	93.4	75 - 125	
IRON	2660		783		2000	94.0	75 - 125	
MAGNESIUM	5510		654	F	5000	97.2	75 - 125	
POTASSIUM	23700		0	U	25000	94.7	75 - 125	
SELENIUM	198		0	U	200	99.2	75 - 125	
SODIUM	24900		1780		25000	92.3	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4837628
Report generated: 07/19/2016 14:42

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061648	Workgroup (AAB#):	WG574995
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG575089	Initial Calibration Date:	01-JUL-2016 14:26

	WG575089-01		WG575089-02		WG575089-03		WG575089-04		WG575089-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000690	.1	0.00148	.2	0.00223	10	0.0867	20	0.173	.999937	
BERYLLIUM	0	0.000670	.0005	0.00113	.001	0.00150	.05	0.0507	.1	0.100	.999962	
CALCIUM	0	0.000270	.1	0.00440	.2	0.00923	10	0.484	20	0.966	.999927	
IRON	0	0.000170	.04	0.000100	.08	0.00108	4	0.0901	8	0.181	.998048	
MAGNESIUM	0	-0.000640	NA	NA	.2	0.00158	10	0.0877	20	0.179	.999173	
POTASSIUM	0	-0.0239	.5	0.0103	1	0.0271	50	3.12	100	6.29	.999831	
SELENIUM	0	-0.000450	NA	NA	.008	-0.000430	.4	0.00650	.8	0.0135	.998399	
SODIUM	0	-0.0619	.5	0.0198	1	0.0961	50	10.0	100	20.3	.99999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4837636
Report generated: 19-JUL-2016 14:42

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061648	Workgroup (AAB#):	WG574995
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG576454	Initial Calibration Date:	14-JUL-2016 12:14

	WG576454-01		WG576454-02		WG576454-03		WG576454-04		WG576454-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000730	.1	0.00145	.2	0.00229	10	0.0875	20	0.176	.999953	
BERYLLIUM	0	0.000470	.0005	0.000870	.001	0.00149	.05	0.0553	.1	0.110	.999925	
CALCIUM	0	0.00307	.1	0.00539	.2	0.0101	10	0.447	20	0.906	.999805	
IRON	0	-0.000210	.04	0.0000300	.08	0.000830	4	0.0895	8	0.178	.999221	
MAGNESIUM	0	-0.000220	NA	NA	.2	0.00130	10	0.0877	20	0.174	.999966	
POTASSIUM	0	-0.0139	.5	0.0110	1	0.0388	50	3.64	100	7.33	.99994	
SELENIUM	0	-0.000340	NA	NA	.008	-0.000300	.4	0.00698	.8	0.0142	.998889	
SODIUM	0	-0.0611	.5	0.0269	1	0.0997	50	9.63	100	19.5	.999971	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4837636
Report generated: 19-JUL-2016 14:42

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L16061648**	Workgroup (AAB#):	**WG574995**
Analytical Method:	**6010C**	Instrument ID:	**ICP-THERMO3**
ICAL Worknum:	**WG577035**	Initial Calibration Date:	**19-JUL-2016 09:10**

	WG577035-01		WG577035-02		WG577035-03		WG577035-04		WG577035-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
CALCIUM	0	0.00344	.1	0.00496	.2	0.00868	10	0.460	20	0.942	.999231	
IRON	0	0.0000300	.04	0.000330	.08	0.00127	4	0.0889	8	0.180	.999496	
SELENIUM	0	-0.000390	NA	NA	.008	-0.000240	.4	0.00715	.8	0.0148	.999773	
SODIUM	0	0.00899	.5	0.0812	1	0.153	50	9.47	100	19.2	.999962	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4837636
Report generated: 19-JUL-2016 14:42

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-07
Instrument ID: ICP-THERMO3
Run Time: 14:33
Method: 6010C
File ID: T3.070116.143317
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-THERI - 01-JUL-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4837638
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-07
Instrument ID: ICP-THERMO3
Run Time: 12:21
Method: 6010C
File ID: T3.071416.122133
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-THERI - 14-JUL-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4837638
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061648
Instrument ID: ICP-THERMO3
File ID: T3.071916.091750
Workgroup (AAB#): WG574995
Matrix: WATER

Run Date: 07/19/2016
Run Time: 09:17
Analyst: JYH
Cal ID: ICP-THERI - 19-JUL-16

Sample ID: WG577035-07
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4837638
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-12
Instrument ID: ICP-THERMO3
Run Time: 14:52
Method: 6010C
File ID: T3.070116.145226
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837641
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-14
Instrument ID: ICP-THERMO3
Run Time: 15:53
Method: 6010C
File ID: T3.070116.155341
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837641
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-16
Instrument ID: ICP-THERMO3
Run Time: 16:40
Method: 6010C
File ID: T3.070116.164037
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00419	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837641
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-18
Instrument ID: ICP-THERMO3
Run Time: 17:19
Method: 6010C
File ID: T3.070116.171934
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837641
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-20
Instrument ID: ICP-THERMO3
Run Time: 18:01
Method: 6010C
File ID: T3.070116.180106
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	-0.0502	F
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837641
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-24
Instrument ID: ICP-THERMO3
Run Time: 18:16
Method: 6010C
File ID: T3.070116.181617
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837641
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-13
Instrument ID: ICP-THERMO3
Run Time: 12:44
Method: 6010C
File ID: T3.071416.124410
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837641
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-29
Instrument ID: ICP-THERMO3
Run Time: 17:50
Method: 6010C
File ID: T3.071416.175004
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00589	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837641
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-31
Instrument ID: ICP-THERMO3
Run Time: 18:01
Method: 6010C
File ID: T3.071416.180136
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837641
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/19/2016
Sample ID: WG577035-13
Instrument ID: ICP-THERMO3
Run Time: 09:40
Method: 6010C
File ID: T3.071916.094014
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 19-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837641
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/19/2016
Sample ID: WG577035-15
Instrument ID: ICP-THERMO3
Run Time: 10:21
Method: 6010C
File ID: T3.071916.102115
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 19-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837641
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-06
Instrument ID: ICP-THERMO3
Run Time: 14:29
Method: 6010C
File ID: T3.070116.142937
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0499	99.8	90 - 110	
Calcium		10	9.96	99.6	90 - 110	
Iron		4	4.05	101	90 - 110	
Magnesium		10	10.3	103	90 - 110	
Potassium		50	49.2	98.3	90 - 110	
Selenium		.4	0.403	101	90 - 110	
Sodium		50	49.5	98.9	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4837637
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061648
Run Date: 07/19/2016
Sample ID: WG577035-06
Instrument ID: ICP-THERMO3
Run Time: 09:14
Method: 6010C
File ID: T3.071916.091417
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 19-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.89	98.9	90 - 110	
Beryllium		.05	0.0502	100	90 - 110	
Calcium		10	9.85	98.5	90 - 110	
Iron		4	4.00	100	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.6	101	90 - 110	
Selenium		.4	0.403	101	90 - 110	
Sodium		50	50.2	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4837637
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-06
Instrument ID: ICP-THERMO3
Run Time: 12:17
Method: 6010C
File ID: T3.071416.121756
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 14-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.90	99.0	90 - 110	
Beryllium		.05	0.0501	100	90 - 110	
Calcium		10	9.84	98.4	90 - 110	
Iron		4	3.96	99.0	90 - 110	
Magnesium		10	9.78	97.8	90 - 110	
Potassium		50	49.7	99.3	90 - 110	
Selenium		.4	0.405	101	90 - 110	
Sodium		50	49.4	98.8	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4837637
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-11
Instrument ID: ICP-THERMO3
Run Time: 14:48
Method: 6010C
File ID: T3.070116.144846
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.88	mg/L	98.8	90 - 110		
Beryllium		0.0500	0.0492	mg/L	98.4	90 - 110		
Calcium		10.0	9.78	mg/L	97.8	90 - 110		
Iron		4.00	3.99	mg/L	99.9	90 - 110		
Magnesium		10.0	10.0	mg/L	100	90 - 110		
Potassium		50.0	49.0	mg/L	98.1	90 - 110		
Selenium		0.400	0.399	mg/L	99.8	90 - 110		
Sodium		50.0	48.9	mg/L	97.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837640
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-13
Instrument ID: ICP-THERMO3
Run Time: 15:50
Method: 6010C
File ID: T3.070116.155002
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.65	mg/L	96.5	90 - 110		
Beryllium		0.0500	0.0482	mg/L	96.4	90 - 110		
Calcium		10.0	9.58	mg/L	95.8	90 - 110		
Iron		4.00	3.90	mg/L	97.6	90 - 110		
Magnesium		10.0	9.80	mg/L	98.0	90 - 110		
Potassium		50.0	48.2	mg/L	96.4	90 - 110		
Selenium		0.400	0.389	mg/L	97.3	90 - 110		
Sodium		50.0	48.0	mg/L	95.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837640
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-15
Instrument ID: ICP-THERMO3
Run Time: 16:36
Method: 6010C
File ID: T3.070116.163658
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.63	mg/L	96.3	90 - 110		
Beryllium		0.0500	0.0479	mg/L	95.9	90 - 110		
Calcium		10.0	9.56	mg/L	95.6	90 - 110		
Iron		4.00	3.91	mg/L	97.8	90 - 110		
Magnesium		10.0	9.78	mg/L	97.8	90 - 110		
Potassium		50.0	48.1	mg/L	96.2	90 - 110		
Selenium		0.400	0.386	mg/L	96.6	90 - 110		
Sodium		50.0	48.0	mg/L	96.1	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837640
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-17
Instrument ID: ICP-THERMO3
Run Time: 17:15
Method: 6010C
File ID: T3.070116.171556
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.55	mg/L	95.5	90 - 110		
Beryllium		0.0500	0.0472	mg/L	94.4	90 - 110		
Calcium		10.0	9.45	mg/L	94.5	90 - 110		
Iron		4.00	3.86	mg/L	96.4	90 - 110		
Magnesium		10.0	9.63	mg/L	96.3	90 - 110		
Potassium		50.0	47.8	mg/L	95.6	90 - 110		
Selenium		0.400	0.385	mg/L	96.3	90 - 110		
Sodium		50.0	47.9	mg/L	95.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837640
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-19
Instrument ID: ICP-THERMO3
Run Time: 17:57
Method: 6010C
File ID: T3.070116.175728
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0509	mg/L	102	90 - 110		
Calcium		10.0	10.3	mg/L	103	90 - 110		
Iron		4.00	4.22	mg/L	106	90 - 110		
Magnesium		10.0	10.5	mg/L	105	90 - 110		
Potassium		50.0	51.7	mg/L	103	90 - 110		
Selenium		0.400	0.395	mg/L	98.8	90 - 110		
Sodium		50.0	51.5	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837640
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-23
Instrument ID: ICP-THERMO3
Run Time: 18:12
Method: 6010C
File ID: T3.070116.181238
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.40	mg/L	94.0	90 - 110		
Beryllium		0.0500	0.0466	mg/L	93.2	90 - 110		
Calcium		10.0	9.30	mg/L	93.0	90 - 110		
Iron		4.00	3.80	mg/L	95.0	90 - 110		
Magnesium		10.0	9.47	mg/L	94.7	90 - 110		
Potassium		50.0	47.0	mg/L	94.0	90 - 110		
Selenium		0.400	0.378	mg/L	94.4	90 - 110		
Sodium		50.0	46.4	mg/L	92.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837640
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-12
Instrument ID: ICP-THERMO3
Run Time: 12:40
Method: 6010C
File ID: T3.071416.124032
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.89	mg/L	98.9	90 - 110		
Beryllium		0.0500	0.0498	mg/L	99.6	90 - 110		
Calcium		10.0	9.93	mg/L	99.3	90 - 110		
Iron		4.00	3.97	mg/L	99.2	90 - 110		
Magnesium		10.0	9.98	mg/L	99.8	90 - 110		
Potassium		50.0	49.9	mg/L	99.7	90 - 110		
Selenium		0.400	0.406	mg/L	101	90 - 110		
Sodium		50.0	49.5	mg/L	99.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837640
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-28
Instrument ID: ICP-THERMO3
Run Time: 17:46
Method: 6010C
File ID: T3.071416.174637
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.91	mg/L	99.1	90 - 110		
Beryllium		0.0500	0.0488	mg/L	97.7	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.04	mg/L	101	90 - 110		
Magnesium		10.0	9.93	mg/L	99.3	90 - 110		
Potassium		50.0	50.8	mg/L	102	90 - 110		
Selenium		0.400	0.409	mg/L	102	90 - 110		
Sodium		50.0	51.1	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837640
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-30
Instrument ID: ICP-THERMO3
Run Time: 17:58
Method: 6010C
File ID: T3.071416.175800
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.68	mg/L	96.8	90 - 110		
Beryllium		0.0500	0.0475	mg/L	94.9	90 - 110		
Calcium		10.0	9.86	mg/L	98.6	90 - 110		
Iron		4.00	3.90	mg/L	97.5	90 - 110		
Magnesium		10.0	9.68	mg/L	96.8	90 - 110		
Potassium		50.0	49.6	mg/L	99.2	90 - 110		
Selenium		0.400	0.403	mg/L	101	90 - 110		
Sodium		50.0	49.9	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837640
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/19/2016
Sample ID: WG577035-12
Instrument ID: ICP-THERMO3
Run Time: 09:36
Method: 6010C
File ID: T3.071916.093641
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 19-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.80	mg/L	98.0	90 - 110		
Beryllium		0.0500	0.0500	mg/L	100	90 - 110		
Calcium		10.0	9.86	mg/L	98.6	90 - 110		
Iron		4.00	3.97	mg/L	99.3	90 - 110		
Magnesium		10.0	9.98	mg/L	99.8	90 - 110		
Potassium		50.0	50.4	mg/L	101	90 - 110		
Selenium		0.400	0.399	mg/L	99.8	90 - 110		
Sodium		50.0	50.1	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837640
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/19/2016
Sample ID: WG577035-14
Instrument ID: ICP-THERMO3
Run Time: 10:17
Method: 6010C
File ID: T3.071916.101743
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 19-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.90	mg/L	99.0	90 - 110		
Beryllium		0.0500	0.0501	mg/L	100	90 - 110		
Calcium		10.0	9.88	mg/L	98.8	90 - 110		
Iron		4.00	4.03	mg/L	101	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Potassium		50.0	50.3	mg/L	101	90 - 110		
Selenium		0.400	0.404	mg/L	101	90 - 110		
Sodium		50.0	49.9	mg/L	99.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837640
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-08
Instrument ID: ICP-THERMO3
Run Time: 14:37
Method: 6010C
File ID: T3.070116.143717
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.172	mg/L	108	70 - 130		
Beryllium		0.00160	0.00162	mg/L	101	70 - 130		
Calcium		0.400	0.403	mg/L	101	70 - 130		
Iron		0.0800	0.0301	mg/L	37.6	70 - 130		*
Magnesium		0.400	0.460	mg/L	115	70 - 130		
Potassium		0.800	0.889	mg/L	111	70 - 130		
Selenium		0.0160	0.0130	mg/L	81.2	70 - 130		
Sodium		0.400	0.419	mg/L	105	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837642
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-25
Instrument ID: ICP-THERMO3
Run Time: 18:20
Method: 6010C
File ID: T3.070116.182016
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.156	mg/L	97.7	70 - 130		
Beryllium		0.00160	0.00153	mg/L	95.6	70 - 130		
Calcium		0.400	0.432	mg/L	108	70 - 130		
Iron		0.0800	0.0622	mg/L	77.8	70 - 130		
Magnesium		0.400	0.392	mg/L	98.1	70 - 130		
Potassium		0.800	1.04	mg/L	130	70 - 130		
Selenium		0.0160	0.0122	mg/L	76.3	70 - 130		
Sodium		0.400	0.409	mg/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837642
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-08
Instrument ID: ICP-THERMO3
Run Time: 12:25
Method: 6010C
File ID: T3.071416.122530
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Calcium		0.400	0.383	mg/L	95.7	70 - 130		
Iron		0.0800	0.0902	mg/L	113	70 - 130		
Magnesium		0.400	0.334	mg/L	83.6	70 - 130		
Selenium		0.0160	0.0166	mg/L	104	70 - 130		
Sodium		0.400	0.430	mg/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837642
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-32
Instrument ID: ICP-THERMO3
Run Time: 18:05
Method: 6010C
File ID: T3.071416.180534
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Calcium		0.400	0.343	mg/L	85.7	70 - 130		
Iron		0.0800	0.0818	mg/L	102	70 - 130		
Magnesium		0.400	0.418	mg/L	104	70 - 130		
Selenium		0.0160	0.0124	mg/L	77.4	70 - 130		
Sodium		0.400	0.472	mg/L	118	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837642
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061648
Run Date: 07/19/2016
Sample ID: WG577035-09
Instrument ID: ICP-THERMO3
Run Time: 09:25
Method: 6010C
File ID: T3.071916.092533
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 19-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.118	mg/L	74.0	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837642
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061648
Run Date: 07/19/2016
Sample ID: WG577035-17
Instrument ID: ICP-THERMO3
Run Time: 10:29
Method: 6010C
File ID: T3.071916.102900
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 19-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.141	mg/L	88.4	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837642
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061648
Instrument ID: ICP-THERMO3
Sol. A : WG575089-09 **File ID:** T3.070116.144112
Sol. AB : WG575089-10 **File ID:** T3.070116.144503

Workgroup (AAB#): WG574995
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	249	99.6	250	252	101	
Beryllium	NS	-0.0000200	NS	0.250	0.228	91.2	
Calcium	250	232	92.8	250	235	94.0	
Iron	100	93.3	93.3	100	93.5	93.5	
Magnesium	250	236	94.4	250	237	94.8	
Potassium	NS	0.143	NS	5.00	5.14	103	
Selenium	NS	-0.00179	NS	0.250	0.233	93.2	
Sodium	NS	0.0257	NS	5.00	5.01	100	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4837639
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061648
Instrument ID: ICP-THERMO3
Sol. A : WG575089-21 **File ID:** T3.070116.180504
Sol. AB : WG575089-22 **File ID:** T3.070116.180855

Workgroup (AAB#): WG574995
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	239	95.6	250	246	98.4	
Beryllium	NS	0.0000100	NS	0.250	0.222	88.8	
Calcium	250	222	88.8	250	227	90.8	
Iron	100	89.9	89.9	100	90.6	90.6	
Magnesium	250	228	91.2	250	230	92.0	
Potassium	NS	0.166	NS	5.00	4.93	98.6	
Selenium	NS	-0.00286	NS	0.250	0.230	92.0	
Sodium	NS	0.0137	NS	5.00	4.87	97.4	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4837639
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061648
Instrument ID: ICP-THERMO3
Sol. A : WG576454-10 **File ID:** T3.071416.123313
Sol. AB : WG576454-11 **File ID:** T3.071416.123702

Workgroup (AAB#): WG574995
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	268	107	250	266	106	
Beryllium	NS	-0.0000100	NS	0.250	0.246	98.4	
Calcium	250	251	100	250	249	99.6	
Iron	100	99.1	99.1	100	96.8	96.8	
Magnesium	250	255	102	250	249	99.6	
Potassium	NS	-0.0266	NS	5.00	5.17	103	
Selenium	NS	0.00789	NS	0.250	0.259	104	
Sodium	NS	0.0552	NS	5.00	5.32	106	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4837639
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061648
Instrument ID: ICP-THERMO3
Sol. A : WG577035-10 **File ID:** T3.071916.092920
Sol. AB : WG577035-11 **File ID:** T3.071916.093304

Workgroup (AAB#): WG574995
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	269	108	250	264	106	
Beryllium	NS	-0.0000500	NS	0.250	0.247	98.8	
Calcium	250	250	100	250	247	98.8	
Iron	100	100	100	100	97.6	97.6	
Magnesium	250	259	104	250	252	101	
Potassium	NS	0.0519	NS	5.00	5.31	106	
Selenium	NS	0.00626	NS	0.250	0.258	103	
Sodium	NS	0.0313	NS	5.00	5.31	106	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4837639
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061648 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4837635
Report generated: 07/19/2016 14:42

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061648 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4837635
Report generated: 07/19/2016 14:42

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061648 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4837635
Report generated: 07/19/2016 14:42

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061648 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4837635
Report generated: 07/19/2016 14:42

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061648 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4837635
Report generated: 07/19/2016 14:42

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061648 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4837635
Report generated: 07/19/2016 14:42

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061648 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4837635
Report generated: 07/19/2016 14:42

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061648 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4837634
Report generated: 07/19/2016 14:42

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000211	0.049006	0.000000	1.000000
Al 308.215 {109}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000691	0.008531	0.000000	1.000000
As 189.042 {478}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000020	0.025181	0.000000	1.000000
B 249.678 {135}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000029	0.024023	0.000000	1.000000
Ba 455.403 { 74}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.064121	2.304090	0.000000	1.000000
Be 313.107 {108}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000670	0.978990	0.000000	1.000000
Ca 422.673 { 80}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000276	0.048350	0.000000	1.000000
Cd 228.802 {447}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000101	0.594987	0.000000	1.000000
Co 228.616 {447}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000165	0.376738	0.000000	1.000000
Cr 267.716 {126}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000293	0.062216	0.000000	1.000000
Cu 224.700 {450}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000052	0.132790	0.000000	1.000000
Fe 261.187 {129}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000169	0.022439	0.000000	1.000000
K 766.490 { 44}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.023890	0.063074	0.000000	1.000000
Li 670.784 { 50}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.010484	1.799060	0.000000	1.000000
Mg 279.079 {121}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000638	0.008983	0.000000	1.000000
Mn 257.610 {131}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000116	0.286099	0.000000	1.000000
Mo 202.030 {467}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000035	0.191045	0.000000	1.000000
Na 589.592 { 57}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.061913	0.202991	0.000000	1.000000
Ni 231.604 {446}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000907	0.140228	0.000000	1.000000
P 214.914 {457}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000138	0.014309	0.000000	1.000000
Pb 220.353 {453}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.001137	0.065670	0.000000	1.000000
Sb 206.833 {463}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000279	0.031384	0.000000	1.000000
Se 196.090 {472}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000451	0.017377	0.000000	1.000000
Si 212.412 {459}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000807	0.039766	0.000000	1.000000
Sn 189.989 {477}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000003	0.073670	0.000000	1.000000
Sr 407.771 { 83}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.003330	3.771166	0.000000	1.000000
Ti 337.280 {100}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.002585	0.125302	0.000000	1.000000
Tl 190.856 {477}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000342	0.029934	0.000000	1.000000
V 292.402 {115}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000024	0.072795	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000089	0.440835	0.000000	1.000000
Zr 339.198 { 99}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.005935	0.057032	0.000000	1.000000

Approved: July 02, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.998329	0.000007	0.002558	0.008526	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999937	0.000006	0.010132	0.033775	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999899	0.000001	0.003343	0.011144	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999908	0.000002	0.003098	0.010326	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999959	0.000133	0.001195	0.003982	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999962	0.000003	0.000103	0.000343	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999927	0.000037	0.047071	0.156905	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999878	0.000003	0.000285	0.000950	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999995	0.000002	0.000432	0.001440	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999757	0.000004	0.001279	0.004262	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999886	0.000006	0.001441	0.004805	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.998048	0.000036	0.032402	0.108007	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999831	0.000367	0.128717	0.429056	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999979	0.000116	0.004190	0.013968	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999173	0.000036	0.091375	0.304585	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999918	0.000012	0.002998	0.009993	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999993	0.000004	0.000453	0.001510	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999990	0.000287	0.034439	0.114796	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999937	0.000005	0.001234	0.004112	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999990	0.000004	0.007517	0.025056	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999989	0.000001	0.003832	0.012772	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999792	0.000005	0.004716	0.015721	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.998399	0.000004	0.007031	0.023438	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999791	0.000026	0.002557	0.008522	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999978	0.000003	0.000934	0.003115	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999998	0.000049	0.000500	0.001666	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999767	0.000017	0.008123	0.027076	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999657	0.000004	0.003301	0.011002	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999995	0.000001	0.001059	0.003530	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999996	0.000008	0.000211	0.000705	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.971571	0.000088	0.039978	0.133260	OK.	1.000000	0.000000	1	0

Approved: July 02, 2016

Sample Name: S0 Acquired: 7/1/2016 14:10:24 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00021**	**.00069**	**-.00002**	**-.00003**	**.06412**	**.00067**	**.00027**
Stddev	.00005	.00005	.00008	.00004	.00221	.00011	.00128
%RSD	22.064	7.0769	375.18	134.51	3.4475	16.922	466.07
#1	-.00022	.00075	-.00001	.00000	.06210	.00057	-.00110
#2	-.00016	.00065	.00005	-.00007	.06379	.00065	.00048
#3	-.00025	.00067	-.00010	-.00002	.06648	.00079	.00144

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00010**	**-.00016**	**.00029**	**.00005**	**.00017**	**-.02390**	**-.01049**
Stddev	.00019	.00013	.00003	.00007	.00110	.00656	.00352
%RSD	193.88	80.512	9.9708	137.05	649.45	27.456	33.601
#1	-.00032	-.00008	.00031	-.00003	.00005	-.01676	-.01386
#2	-.00002	-.00032	.00026	.00007	-.00087	-.02967	-.00683
#3	.00004	-.00010	.00031	.00011	.00133	-.02527	-.01076

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00064**	**.00012**	**-.00003**	**-.06191**	**-.00091**	**-.00014**	**-.00114**
Stddev	.00086	.00039	.00010	.00410	.00018	.00005	.00009
%RSD	134.20	336.78	295.60	6.6163	20.301	37.417	8.2037
#1	-.00042	.00024	-.00004	-.06555	-.00106	-.00010	-.00121
#2	-.00158	-.00032	.00007	-.06271	-.00070	-.00011	-.00117
#3	.00009	.00043	-.00014	-.05747	-.00096	-.00020	-.00103

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00028**	**-.00045**	**.00081**	**.00000**	**.00333**	**-.00259**	**-.00034**
Stddev	.00002	.00016	.00002	.00004	.00065	.00035	.00005
%RSD	6.0741	35.124	2.2393	1539.7	19.409	13.397	14.461
#1	.00029	-.00062	.00079	-.00004	.00367	-.00263	-.00035
#2	.00029	-.00042	.00083	.00000	.00374	-.00222	-.00029
#3	.00026	-.00031	.00080	.00004	.00258	-.00290	-.00039

Approved: July 02, 2016

Sample Name: S0 Acquired: 7/1/2016 14:10:24 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**-.00002**	**.00009**	**-.00593**
Stddev	.00007	.00003	.00191
%RSD	293.90	34.881	32.106
#1	-.00001	.00007	-.00812
#2	-.00010	.00012	-.00504
#3	.00004	.00007	-.00464
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9206.1**	**55597.**	**2489.2**
Stddev	28.9	156.	12.6
%RSD	.31350	.28045	.50612
#1	9180.0	55687.	2476.9
#2	9237.1	55687.	2488.5
#3	9201.1	55417.	2502.1

Approved: July 02, 2016

Sample Name: S1 Acquired: 7/1/2016 14:14:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00014	.00148	.07947	.00113	.00440	.00011	.00040
Stddev	.00012	.00003	.00174	.00009	.00197	.00006	.00011
%RSD	85.909	2.2356	2.1848	7.9212	44.791	57.259	27.040
#1	-.00008	.00144	.08081	.00121	.00666	.00013	.00039
#2	-.00028	.00150	.07751	.00103	.00310	.00004	.00051
#3	-.00007	.00149	.08008	.00114	.00343	.00016	.00030

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00064	.00044	.00010	.01028	.00153	.00147	.01979
Stddev	.00005	.00012	.00031	.00719	.00070	.00007	.00420
%RSD	7.1400	27.078	310.39	69.922	45.634	4.5243	21.230
#1	.00060	.00056	-.00001	.01771	.00157	.00139	.02461
#2	.00064	.00042	-.00014	.00977	.00221	.00152	.01685
#3	.00069	.00032	.00044	.00336	.00081	.00149	.01793

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00034	.00100	-.00089	.00052	.00236	.00061	.03400
Stddev	.00002	.00009	.00004	.00006	.00004	.00001	.00143
%RSD	4.8315	8.8150	4.8162	11.367	1.7470	1.7594	4.2181
#1	-.00033	.00109	-.00084	.00055	.00240	.00061	.03449
#2	-.00036	.00092	-.00091	.00045	.00237	.00060	.03239
#3	-.00033	.00100	-.00092	.00055	.00232	.00062	.03513

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00132	.00053	.00368	-.00590
Stddev	.00071	.00004	.00004	.00228
%RSD	54.069	7.7869	1.1941	38.701
#1	-.00195	.00054	.00371	-.00517
#2	-.00054	.00057	.00363	-.00846
#3	-.00148	.00048	.00370	-.00407

Approved: July 02, 2016

Sample Name: S1 Acquired: 7/1/2016 14:14:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9142.5**	**55312.**	**2479.4**
Stddev	28.4	181.	16.4
%RSD	.31064	.32795	.66023
#1	9175.1	55410.	2466.2
#2	9123.0	55103.	2474.3
#3	9129.4	55423.	2497.7

Approved: July 02, 2016

Sample Name: S2 Acquired: 7/1/2016 14:18:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00003**	**.00223**	**.00012**	**.00013**	**.09965**	**.00150**	**.00923**
Stddev	.00011	.00004	.00004	.00004	.00151	.00003	.00130
%RSD	354.81	1.8080	36.958	30.926	1.5174	2.2215	14.068
#1	.00005	.00222	.00011	.00012	.10048	.00152	.00934
#2	.00013	.00227	.00008	.00010	.09791	.00152	.00789
#3	-.00009	.00219	.00016	.00018	.10057	.00146	.01048

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00032**	**.00105**	**.00084**	**.00107**	**.00108**	**.02705**	**.02046**
Stddev	.00013	.00020	.00004	.00014	.00039	.01275	.00387
%RSD	41.949	18.908	4.7312	13.435	36.241	47.123	18.940
#1	.00045	.00109	.00087	.00100	.00064	.04019	.02160
#2	.00033	.00123	.00080	.00124	.00140	.02624	.01614
#3	.00018	.00083	.00084	.00098	.00121	.01473	.02363

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00158**	**.00252**	**.00297**	**.09614**	**.00039**	**.00202**	**-.00059**
Stddev	.00038	.00063	.00020	.00414	.00009	.00011	.00023
%RSD	23.777	25.086	6.7130	4.3069	21.996	5.4864	38.340
#1	.00120	.00260	.00314	.09671	.00048	.00211	-.00046
#2	.00195	.00186	.00303	.09174	.00036	.00206	-.00085
#3	.00160	.00311	.00275	.09996	.00032	.00190	-.00046

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00075**	**-.00043**	**.00394**	**.00116**	**.06413**	**-.00100**	**-.00020**
Stddev	.00007	.00008	.00033	.00014	.00242	.00110	.00002
%RSD	9.4602	19.552	8.4986	11.683	3.7716	110.64	9.7378
#1	.00075	-.00048	.00416	.00123	.06519	.00009	-.00021
#2	.00068	-.00046	.00410	.00125	.06136	-.00211	-.00018
#3	.00082	-.00033	.00356	.00101	.06583	-.00097	-.00021

Approved: July 02, 2016

Sample Name: S2 Acquired: 7/1/2016 14:18:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00111	.00700	-.00632
Stddev	.00004	.00051	.00211
%RSD	3.8503	7.3383	33.395
#1	.00114	.00736	-.00585
#2	.00106	.00724	-.00448
#3	.00111	.00641	-.00863
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9097.9	54960.	2456.6
Stddev	11.3	266.	25.7
%RSD	.12463	.48386	1.0468
#1	9086.6	54846.	2486.2
#2	9109.3	55264.	2443.3
#3	9097.9	54770.	2440.2

Approved: July 02, 2016

Sample Name: S3 Acquired: 7/1/2016 14:22:22 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02065	.08668	.00986	.01183	2.3657	.05074	.48405	.03225
Stddev	.00000	.00016	.00013	.00005	.0084	.00029	.00198	.00035
%RSD	.01645	.18191	1.3309	.44637	.35570	.58122	.40954	1.1006
#1	.02064	.08659	.00993	.01180	2.3738	.05084	.48418	.03258
#2	.02065	.08658	.00994	.01180	2.3665	.05041	.48597	.03229
#3	.02065	.08686	.00971	.01189	2.3570	.05097	.48201	.03187

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07501	.03149	.06691	.09011	3.1187	1.7787	.08774	.14342
Stddev	.00151	.00002	.00087	.00067	.0101	.0084	.00095	.00073
%RSD	2.0087	.07917	1.3005	.73863	.32502	.47525	1.0874	.50778
#1	.07590	.03151	.06731	.09087	3.1238	1.7864	.08733	.14421
#2	.07587	.03146	.06750	.08982	3.1253	1.7799	.08707	.14278
#3	.07327	.03151	.06591	.08963	3.1071	1.7697	.08884	.14325

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.19010	10.031	.06912	.14015	.03198	.03679	.00650	.19465
Stddev	.00320	.031	.00122	.00166	.00039	.00044	.00006	.00189
%RSD	1.6820	.30525	1.7673	1.1877	1.2138	1.2060	.93201	.97168
#1	.19198	10.065	.06958	.14102	.03217	.03714	.00648	.19548
#2	.19192	10.023	.07004	.14120	.03223	.03694	.00645	.19599
#3	.18641	10.006	.06773	.13823	.03153	.03629	.00657	.19249

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07287	3.7649	.12124	.01349	.07263	.43918	.03425
Stddev	.00149	.0133	.00157	.00007	.00007	.00628	.00334
%RSD	2.0404	.35227	1.2970	.49638	.09332	1.4298	9.7640
#1	.07370	3.7784	.12301	.01344	.07262	.44288	.03321
#2	.07376	3.7642	.12068	.01357	.07257	.44273	.03156
#3	.07115	3.7519	.12001	.01347	.07270	.43193	.03800

Approved: July 02, 2016

Sample Name: S3 Acquired: 7/1/2016 14:22:22 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9050.1**	**54163.**	**2481.6**
Stddev	7.2	31.	5.3
%RSD	.07942	.05689	.21174
#1	9042.8	54138.	2485.2
#2	9050.3	54198.	2475.6
#3	9057.2	54155.	2484.0

Approved: July 02, 2016

Sample Name: S4 Acquired: 7/1/2016 14:26:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03753**	**.17262**	**.02016**	**.02406**	**4.6792**	**.10024**	**.96553**	**.06522**
Stddev	.00005	.00020	.00004	.00001	.0214	.00011	.00321	.00022
%RSD	.14118	.11680	.20428	.05130	.45777	.10689	.33207	.33731
#1	.03751	.17285	.02020	.02407	4.7029	.10033	.96914	.06515
#2	.03759	.17255	.02014	.02407	4.6732	.10028	.96301	.06505
#3	.03749	.17247	.02013	.02405	4.6614	.10012	.96445	.06547

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.15035**	**.06234**	**.13427**	**.18077**	**6.2852**	**3.5954**	**.17894**	**.28571**
Stddev	.00025	.00012	.00045	.00058	.0264	.0192	.00128	.00209
%RSD	.16302	.19429	.33746	.32343	.41973	.53330	.71547	.73262
#1	.15057	.06221	.13464	.18142	6.2860	3.6132	.17889	.28787
#2	.15009	.06245	.13441	.18060	6.3112	3.5979	.18024	.28369
#3	.15040	.06237	.13377	.18029	6.2584	3.5751	.17768	.28557

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.38297**	**20.297**	**.13923**	**.28229**	**.06481**	**.07489**	**.01353**	**.40579**
Stddev	.00038	.080	.00018	.00048	.00027	.00029	.00011	.00039
%RSD	.09847	.39658	.12626	.16978	.42390	.39213	.81617	.09576
#1	.38310	20.383	.13934	.28178	.06501	.07492	.01354	.40564
#2	.38326	20.285	.13932	.28274	.06449	.07458	.01364	.40623
#3	.38254	20.224	.13903	.28235	.06492	.07516	.01342	.40550

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.14772**	**7.5549**	**.24915**	**.02703**	**.14520**	**.88286**	**.12668**
Stddev	.00018	.0372	.00096	.00008	.00024	.00085	.00550
%RSD	.12244	.49265	.38471	.27756	.16791	.09664	4.3433
#1	.14789	7.5953	.25012	.02709	.14547	.88342	.12532
#2	.14774	7.5471	.24911	.02695	.14514	.88328	.13273
#3	.14753	7.5221	.24821	.02705	.14500	.88188	.12198

Approved: July 02, 2016

Sample Name: S4 Acquired: 7/1/2016 14:26:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9046.4**	**53932.**	**2486.7**
Stddev	35.9	125.	13.7
%RSD	.39671	.23222	.55163
#1	9019.7	53787.	2483.1
#2	9032.4	54008.	2475.1
#3	9087.2	54000.	2501.8

Approved: July 02, 2016

Sample Name: ICV Acquired: 7/1/2016 14:29:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .42234	10.148	.40396	.49964	1.0160	.04989	9.9560
Stddev	.00172	.022	.00214	.00117	.0019	.00016	.0658
%RSD	.40750	.21426	.52888	.23366	.18452	.32229	.66102
#1	.42398	10.171	.40159	.50077	1.0166	.04974	9.9729
#2	.42249	10.147	.40574	.49844	1.0139	.05006	9.8834
#3	.42054	10.127	.40455	.49973	1.0175	.04987	10.012
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.40000						
Range	5.0000%						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05006	.19959	.50305	.50591	4.0464	49.164	.99098
Stddev	.00014	.00090	.00371	.00119	.0208	.427	.00453
%RSD	.27832	.45104	.73791	.23467	.51368	.86867	.45759
#1	.05020	.19892	.50115	.50458	4.0231	48.969	.98739
#2	.04992	.19923	.50733	.50625	4.0630	48.870	.98947
#3	.05008	.20061	.50068	.50688	4.0530	49.654	.99607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.293	.50187	.95524	49.457	.50208	10.086	.50437
Stddev	.042	.00400	.00170	.214	.00089	.015	.00232
%RSD	.40898	.79625	.17757	.43315	.17768	.14995	.45972
#1	10.255	.49758	.95655	49.532	.50310	10.097	.50568
#2	10.286	.50255	.95332	49.216	.50141	10.093	.50575
#3	10.338	.50548	.95583	49.624	.50175	10.069	.50170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: July 02, 2016

Sample Name: ICV Acquired: 7/1/2016 14:29:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2227**	**.40281**	**4.8693**	**1.0343**	**.98730**	**.99995**	**.50636**
Stddev	.0071	.01015	.0151	.0021	.00359	.00610	.00187
%RSD	.58413	2.5204	.31027	.20568	.36320	.61026	.36875
#1	1.2297	.39387	4.8853	1.0367	.98827	.99691	.50503
#2	1.2154	.40071	4.8553	1.0336	.98333	1.0070	.50849
#3	1.2230	.41384	4.8673	1.0326	.99030	.99597	.50555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99040**	**1.0076**	F **.04491**
Stddev	.00101	.0006	.01823
%RSD	.10244	.06386	40.596
#1	.99011	1.0073	.06411
#2	.99153	1.0083	.04278
#3	.98957	1.0071	.02783
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9123.2**	**54593.**	**2498.0**
Stddev	29.4	207.	15.2
%RSD	.32277	.37880	.60949
#1	9104.7	54667.	2504.1
#2	9157.1	54360.	2509.2
#3	9107.7	54753.	2480.6

Approved: July 02, 2016

Sample Name: ICB Acquired: 7/1/2016 14:33:17 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00252**	**.00167**	**-.00060**	**.00211**	**-.00164**	**.00007**	**.01452**	**.00007**
Stddev	.00044	.00980	.00179	.00205	.00092	.00005	.01916	.00009
%RSD	17.568	587.99	299.82	96.718	55.829	82.234	131.96	129.14
#1	-.00201	-.00956	.00142	.00053	-.00087	.00013	.03560	.00005
#2	-.00284	.00607	-.00123	.00139	-.00266	.00003	-.00183	-.00001
#3	-.00269	.00849	-.00198	.00442	-.00141	.00004	.00978	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00025**	**-.00096**	**.00304**	**.21120**	**-.00108**	**.03675**	**-.00040**
Stddev	.00036	.00049	.00029	.00730	.05752	.00674	.10142	.00314
%RSD	6238.5	194.95	29.760	239.90	27.233	622.96	275.94	783.63
#1	-.00036	-.00030	-.00091	-.00245	.25398	.00669	-.07079	.00322
#2	.00037	.00043	-.00071	.00026	.23382	-.00476	.13068	-.00235
#3	.00001	.00064	-.00127	.01133	.14582	-.00518	.05038	-.00208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.04731**	**-.00011**	**.00097**	**.00072**	**.00059**	**-.00226**	**.00642**
Stddev	.00025	.03367	.00057	.00171	.00420	.00119	.00418	.00092
%RSD	486.89	71.162	541.52	177.23	580.87	202.64	184.93	14.292
#1	-.00011	.04682	-.00007	-.00088	.00205	.00078	-.00162	.00561
#2	-.00027	.08122	-.00069	.00249	.00410	.00167	.00156	.00622
#3	.00022	.01389	.00045	.00129	-.00398	-.00069	-.00672	.00742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: ICB Acquired: 7/1/2016 14:33:17 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00029**	**.00199**	**-.00075**	**.00051**	**.00044**	**-.03190**
Stddev	.00091	.00055	.00276	.00155	.00073	.00008	.03063
%RSD	782.97	190.36	139.07	206.23	141.97	17.073	96.005
#1	.00106	-.00064	-.00120	.00093	-.00033	.00038	-.04981
#2	-.00077	.00035	.00363	-.00105	.00094	.00042	.00346
#3	.00006	-.00058	.00354	-.00212	.00092	.00053	-.04936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9440.9**	**56917.**	**2578.4**
Stddev	10.9	201.	6.6
%RSD	.11514	.35291	.25663
#1	9432.9	56858.	2570.8
#2	9436.6	56753.	2581.5
#3	9453.3	57141.	2582.9

Approved: July 02, 2016

Sample Name: LLICV Acquired: 7/1/2016 14:37:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00822**	**.17236**	**.00508**	**.08057**	**.00719**	**.00162**	**.40323**	**.00094**
Stddev	.00091	.00084	.00206	.00211	.00075	.00006	.01889	.00015
%RSD	11.094	.48781	40.490	2.6185	10.476	3.9099	4.6851	15.686
#1	.00878	.17241	.00499	.07925	.00702	.00166	.42332	.00105
#2	.00871	.17150	.00307	.08300	.00654	.00166	.40054	.00100
#3	.00717	.17318	.00718	.07946	.00801	.00155	.38582	.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00402**	**.00480**	**.00346**	**.03006**	**.88917**	**.07859**	**.46048**	**.00902**
Stddev	.00026	.00106	.00046	.01248	.11088	.00157	.03649	.00199
%RSD	6.5668	22.107	13.281	41.502	12.470	1.9961	7.9252	22.094
#1	.00426	.00368	.00293	.03654	.78385	.07679	.42070	.00974
#2	.00374	.00579	.00370	.03797	.87880	.07961	.46831	.01056
#3	.00407	.00493	.00375	.01568	1.0049	.07938	.49242	.00677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00786**	**.41946**	**.01709**	**.78557**	**.00829**	**.07986**	**.01299**	**.76733**
Stddev	.00009	.01656	.00163	.00438	.00286	.00177	.00631	.00155
%RSD	1.1119	3.9474	9.5659	.55696	34.461	2.2120	48.629	.20233
#1	.00786	.40083	.01845	.79052	.00636	.07926	.00581	.76707
#2	.00794	.42508	.01755	.78400	.00694	.07846	.01771	.76900
#3	.00777	.43249	.01527	.78220	.01157	.08184	.01543	.76593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: LLICV Acquired: 7/1/2016 14:37:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40757**	**.04103**	**.02795**	**.15042**	**.00776**	**.01708**	**2.9792**
Stddev	.00039	.00046	.00260	.00268	.00084	.00026	.0418
%RSD	.09649	1.1147	9.3159	1.7833	10.867	1.5321	1.4024
#1	.40713	.04059	.03014	.14778	.00821	.01697	3.0266
#2	.40769	.04100	.02507	.15315	.00679	.01688	2.9476
#3	.40789	.04150	.02865	.15032	.00828	.01737	2.9635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9191.4**	**55703.**	**2489.6**
Stddev	15.2	161.	15.5
%RSD	.16563	.28945	.62339
#1	9192.0	55879.	2478.7
#2	9175.9	55667.	2507.4
#3	9206.4	55562.	2482.8

Approved: July 02, 2016

Sample Name: ICSA Acquired: 7/1/2016 14:41:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**248.93**	**-.00276**	**-.01645**	**-.00185**	**-.00002**	**231.94**
Stddev	.00124	.24	.00031	.00328	.00092	.00006	.98
%RSD	4938.8	.09498	11.291	19.958	49.924	357.00	.42136
#1	-.00013	249.08	-.00268	-.01519	-.00223	-.00008	233.00
#2	.00133	249.04	-.00311	-.02017	-.00253	.00003	231.75
#3	-.00113	248.66	-.00250	-.01398	-.00080	.00000	231.08
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**-.00121**	**-.00133**	**.00218**	**93.296**	**.14313**	**.00236**
Stddev	.00023	.00022	.00090	.00279	.539	.09512	.00417
%RSD	49.301	18.447	68.142	128.14	.57775	66.456	176.55
#1	-.00067	-.00106	-.00064	.00446	93.583	.25235	.00394
#2	-.00050	-.00147	-.00099	.00301	93.631	.09864	-.00237
#3	-.00022	-.00111	-.00235	-.00093	92.674	.07841	.00551
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**235.67**	**.00084**	**-.00038**	**.02567**	**.00089**	**.01318**	**-.00065**
Stddev	1.26	.00207	.00010	.01843	.00062	.00174	.00378
%RSD	.53356	246.63	26.229	71.773	69.333	13.184	584.62
#1	236.60	-.00151	-.00026	.03608	.00018	.01121	.00342
#2	236.18	.00165	-.00045	.00440	.00125	.01388	-.00129
#3	234.24	.00238	-.00042	.03654	.00125	.01447	-.00407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: ICSA Acquired: 7/1/2016 14:41:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	-.00179	.00949	.00053	.00019	-.00529	-.00375
Stddev	.00166	.00611	.00310	.00082	.00011	.00883	.00099
%RSD	167.27	341.99	32.723	156.23	58.049	167.01	26.309
#1	.00114	.00496	.01092	.00147	.00032	-.01503	-.00290
#2	.00257	-.00336	.01161	-.00003	.00014	.00217	-.00351
#3	-.00074	-.00696	.00592	.00014	.00012	-.00300	-.00483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00315	-.00549	F -.43618
Stddev	.00022	.00015	.02334
%RSD	7.0178	2.7938	5.3508
#1	-.00324	-.00533	-.42827
#2	-.00289	-.00549	-.46245
#3	-.00330	-.00564	-.41782
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8964.0	53413.	2521.8
Stddev	13.7	179.	26.6
%RSD	.15236	.33448	1.0557
#1	8979.1	53362.	2491.8
#2	8952.4	53612.	2531.1
#3	8960.6	53266.	2542.5

Approved: July 02, 2016

Sample Name: ICSAB Acquired: 7/1/2016 14:45:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52785**	**251.76**	**.24203**	**-.01582**	**.23433**	**.22752**	**235.20**
Stddev	.00328	.34	.00360	.00265	.00294	.00069	1.55
%RSD	.62094	.13380	1.4861	16.739	1.2547	.30513	.65990
#1	.52432	251.71	.24346	-.01496	.23520	.22753	234.06
#2	.52844	252.12	.24469	-.01879	.23675	.22821	236.97
#3	.53079	251.46	.23794	-.01371	.23106	.22682	234.56
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.46325**	**.22370**	**.23331**	**.23580**	**93.520**	**5.1425**	**.00524**
Stddev	.00270	.00154	.00074	.00362	.674	.1464	.00185
%RSD	.58178	.68867	.31761	1.5345	.72037	2.8468	35.298
#1	.46439	.22497	.23246	.23752	92.881	5.3063	.00519
#2	.46520	.22413	.23364	.23823	94.224	5.0968	.00712
#3	.46018	.22199	.23382	.23164	93.454	5.0244	.00342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**236.94**	**.22799**	**-.00030**	**5.0128**	**.44793**	**.08092**	**.45632**
Stddev	1.73	.00263	.00022	.0111	.00390	.00510	.00515
%RSD	.72876	1.1546	74.105	.22117	.87016	6.3004	1.1293
#1	235.09	.22913	-.00028	5.0075	.44881	.08678	.45765
#2	238.50	.22986	-.00009	5.0255	.45132	.07752	.46068
#3	237.24	.22498	-.00053	5.0054	.44367	.07846	.45063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: ICSAB Acquired: 7/1/2016 14:45:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.46649**	**.23334**	**.00917**	**.00061**	**-.00004**	**-.00797**	**.43527**
Stddev	.00534	.00258	.00127	.00080	.00032	.00616	.00277
%RSD	1.1437	1.1064	13.818	131.89	799.99	77.258	.63641
#1	.46758	.23085	.00908	-.00031	-.00041	-.00086	.43844
#2	.46070	.23601	.01048	.00097	.00012	-.01167	.43333
#3	.47120	.23317	.00795	.00117	.00017	-.01137	.43403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.23446**	**.44998**	F **-.45635**
Stddev	.00152	.00321	.02747
%RSD	.64659	.71318	6.0191
#1	.23478	.45219	-.42677
#2	.23579	.45146	-.48106
#3	.23281	.44630	-.46122
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8988.8**	**53603.**	**2521.0**
Stddev	9.1	119.	19.4
%RSD	.10136	.22217	.76792
#1	8986.4	53632.	2530.2
#2	8981.2	53471.	2498.8
#3	8998.9	53704.	2534.1

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 14:48:46 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42435	9.8789	.39848	.49150	.97659	.04922	9.7822
Stddev	.00314	.0147	.00274	.00254	.00495	.00007	.1129
%RSD	.73954	.14930	.68749	.51691	.50734	.14904	1.1547
#1	.42183	9.8633	.40164	.48874	.97921	.04914	9.7157
#2	.42787	9.8809	.39705	.49201	.97088	.04929	9.7182
#3	.42335	9.8926	.39675	.49375	.97968	.04924	9.9126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04969	.19853	.49248	.49722	3.9946	49.031	.97437
Stddev	.00046	.00105	.00061	.00259	.0146	.263	.00719
%RSD	.92341	.52642	.12356	.52078	.36638	.53727	.73760
#1	.05001	.19919	.49289	.49510	4.0001	48.873	.96739
#2	.04989	.19908	.49178	.50010	3.9780	48.886	.97395
#3	.04917	.19733	.49277	.49645	4.0056	49.335	.98175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.013	.49211	.98909	48.900	.49394	9.8868	.49596
Stddev	.151	.00586	.00455	.344	.00212	.0232	.00391
%RSD	1.5108	1.1915	.45995	.70422	.42889	.23506	.78808
#1	10.071	.49630	.99202	48.957	.49541	9.8939	.49227
#2	9.8417	.48541	.99140	48.531	.49490	9.9056	.49555
#3	10.127	.49461	.98385	49.212	.49151	9.8608	.50006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 14:48:46 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1812**	**.39917**	**4.8148**	**.98846**	**.98106**	**.98830**	**.49616**
Stddev	.0029	.00292	.0135	.00686	.00769	.00399	.00119
%RSD	.24531	.73224	.28073	.69374	.78362	.40414	.24062
#1	1.1826	.39723	4.8223	.99061	.98258	.99022	.49577
#2	1.1831	.40253	4.8229	.99399	.97272	.99098	.49750
#3	1.1779	.39775	4.7992	.98079	.98787	.98371	.49521
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.98572**	**.98854**	F **.69752**
Stddev	.00178	.00354	.03125
%RSD	.18020	.35845	4.4796
#1	.98729	.99106	.72260
#2	.98607	.99008	.66252
#3	.98379	.98449	.70745
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9158.4**	**54773.**	**2506.9**
Stddev	30.9	76.	17.3
%RSD	.33706	.13932	.69176
#1	9123.0	54728.	2503.2
#2	9179.5	54729.	2525.8
#3	9172.7	54861.	2491.7

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 14:52:26 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00180**	**.00503**	**-.00160**	**.00360**	**-.00046**	**.00002**	**.02034**	**-.00024**
Stddev	.00171	.00458	.00162	.00290	.00056	.00004	.03660	.00020
%RSD	94.920	90.906	101.13	80.480	121.67	241.89	179.96	83.162
#1	-.00307	-.00021	-.00010	.00270	-.00092	-.00002	-.00930	-.00047
#2	.00014	.00820	-.00332	.00684	-.00063	.00001	.06125	-.00010
#3	-.00246	.00711	-.00139	.00126	.00017	.00007	.00907	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00048**	**-.00007**	**-.00889**	**.23249**	**-.00758**	**.03410**	**-.00248**
Stddev	.00019	.00095	.00073	.04954	.15777	.00346	.08653	.00194
%RSD	370.91	197.11	1069.9	556.96	67.863	45.671	253.73	78.309
#1	-.00005	-.00029	-.00021	.03774	.08487	-.00857	-.06157	-.00120
#2	.00014	.00020	.00072	-.00352	.21384	-.01044	.05699	-.00472
#3	-.00024	.00155	-.00071	-.06090	.39876	-.00373	.10689	-.00153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.02024**	**.00158**	**-.00460**	**.00308**	**.00418**	**-.00300**	**.00169**
Stddev	.00024	.03536	.00052	.01408	.00151	.00150	.00455	.00190
%RSD	128.02	174.69	32.892	305.96	49.096	35.935	151.62	112.45
#1	-.00009	.02467	.00150	-.00506	.00469	.00468	.00188	.00331
#2	.00036	.05317	.00214	.00970	.00168	.00249	-.00375	-.00041
#3	.00030	-.01712	.00111	-.01845	.00288	.00538	-.00714	.00218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 14:52:26 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00002	.00468	-.00428	.00013	.00019	-.02062
Stddev	.00093	.00021	.00493	.00294	.00091	.00009	.03398
%RSD	137.07	865.44	105.29	68.730	681.65	44.560	164.77
#1	.00175	.00012	.01005	-.00560	-.00092	.00026	-.00359
#2	.00003	.00017	.00035	-.00632	.00068	.00022	-.05976
#3	.00026	-.00021	.00365	-.00091	.00065	.00010	.00147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9232.6	55878.	2498.8
Stddev	24.2	181.	12.8
%RSD	.26214	.32400	.51314
#1	9222.2	55670.	2486.9
#2	9215.3	55999.	2512.4
#3	9260.2	55966.	2497.1

Approved: July 02, 2016

Sample Name: PBW 9P Acquired: 7/1/2016 15:15:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.01597	-.00239	.00112	-.00224	-.00004	.04465	.00016
Stddev	.00155	.00186	.00338	.00227	.00071	.00007	.04747	.00012
%RSD	942.84	11.646	141.16	203.41	31.614	158.32	106.31	75.219
#1	.00127	.01459	.00024	.00099	-.00236	.00003	.08752	.00012
#2	-.00181	.01808	-.00620	.00345	-.00148	-.00006	.05280	.00007
#3	.00005	.01523	-.00121	-.00109	-.00288	-.00010	-.00637	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00020	.00152	-.01519	.15899	-.00227	.03059	-.00014
Stddev	.00013	.00104	.00043	.02082	.11387	.00192	.03067	.00079
%RSD	57.888	529.36	28.276	137.05	71.621	84.491	100.29	583.69
#1	.00034	.00139	.00115	-.00938	.28716	-.00447	.02074	-.00095
#2	.00024	-.00026	.00142	-.03830	.06948	-.00138	.00605	-.00009
#3	.00008	-.00054	.00200	.00210	.12034	-.00096	.06497	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.01864	.00024	.00553	.00004	.00005	.00439	.00282
Stddev	.00025	.02346	.00065	.00358	.00224	.00056	.00295	.00230
%RSD	138.10	125.84	265.81	64.870	5113.6	1046.4	67.243	81.487
#1	-.00008	.03559	.00099	.00312	.00238	.00035	.00601	.00176
#2	.00020	.02846	-.00017	.00965	-.00016	-.00059	.00098	.00125
#3	.00042	-.00813	-.00009	.00382	-.00209	.00040	.00619	.00547
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: PBW 9P Acquired: 7/1/2016 15:15:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00099**	**.00066**	**.00218**	**-.00112**	**-.00005**	**.00105**	**-.03138**
Stddev	.00012	.00062	.01159	.00184	.00070	.00016	.03708
%RSD	11.920	94.373	532.09	164.96	1408.1	15.692	118.19
#1	.00100	.00068	-.01082	-.00205	.00004	.00121	-.01773
#2	.00086	.00127	.00592	.00100	.00060	.00106	-.07335
#3	.00110	.00003	.01143	-.00230	-.00079	.00088	-.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9272.6**	**56792.**	**2580.6**
Stddev	22.9	360.	10.1
%RSD	.24733	.63429	.39041
#1	9280.7	57147.	2584.6
#2	9290.4	56801.	2569.1
#3	9246.7	56427.	2588.0

Approved: July 02, 2016

Sample Name: LCSW 9P Acquired: 7/1/2016 15:19:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20464**	**4.7270**	**.18934**	**.92545**	**.48172**	**.02335**	**4.8859**	**.02386**
Stddev	.00234	.0068	.00094	.00150	.00207	.00010	.0015	.00041
%RSD	1.1427	.14300	.49720	.16259	.42993	.41572	.03131	1.7232
#1	.20286	4.7207	.19040	.92460	.48151	.02331	4.8875	.02426
#2	.20729	4.7261	.18859	.92719	.47976	.02328	4.8859	.02344
#3	.20378	4.7341	.18902	.92456	.48389	.02346	4.8844	.02387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09696**	**.23684**	**.24208**	**1.9466**	**23.667**	**.48452**	**4.7635**	**.23952**
Stddev	.00046	.00103	.00025	.0059	.210	.00172	.1017	.00054
%RSD	.46975	.43630	.10494	.30067	.88806	.35514	2.1343	.22637
#1	.09722	.23741	.24231	1.9460	23.612	.48291	4.7646	.23890
#2	.09721	.23565	.24181	1.9527	23.490	.48430	4.6613	.23993
#3	.09643	.23747	.24212	1.9410	23.899	.48634	4.8646	.23973
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48422**	**24.143**	**.24205**	**4.6329**	**.24229**	**.56717**	**.17970**	**2.3487**
Stddev	.00220	.118	.00103	.0104	.00269	.00093	.00784	.0036
%RSD	.45369	.49063	.42353	.22508	1.1086	.16463	4.3602	.15266
#1	.48651	24.047	.24323	4.6439	.24539	.56738	.17159	2.3482
#2	.48404	24.106	.24139	4.6316	.24070	.56799	.18723	2.3525
#3	.48213	24.275	.24154	4.6232	.24077	.56615	.18029	2.3454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: LCSW 9P Acquired: 7/1/2016 15:19:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48030**	**.48581**	**.48252**	**.23950**	**.47451**	**.47896**	**.01388**
Stddev	.00234	.00184	.00747	.00164	.00129	.00112	.04190
%RSD	.48646	.37780	1.5484	.68564	.27265	.23430	301.80
#1	.48216	.48420	.47448	.23823	.47377	.47979	-.02827
#2	.48106	.48542	.48384	.24135	.47600	.47941	.05552
#3	.47767	.48781	.48924	.23890	.47375	.47769	.01441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9160.4**	**55821.**	**2511.2**
Stddev	21.8	89.	7.8
%RSD	.23846	.15946	.31214
#1	9135.3	55760.	2515.0
#2	9170.8	55923.	2516.4
#3	9175.0	55780.	2502.2

Approved: July 02, 2016

Sample Name: F BLANK Acquired: 7/1/2016 15:23:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574809-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.02042**	**-.00050**	**.00413**	**-.00084**	**-.00003**	**.04822**	**.00012**
Stddev	.00104	.00546	.00052	.00138	.00045	.00001	.03125	.00017
%RSD	287.66	26.723	104.13	33.425	53.395	39.838	64.809	138.14
#1	-.00110	.02667	-.00109	.00522	-.00101	-.00003	.04837	.00001
#2	.00083	.01660	-.00022	.00460	-.00033	-.00002	.07941	.00004
#3	-.00083	.01799	-.00018	.00258	-.00117	-.00004	.01690	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00026**	**.00029**	**-.00512**	**.20653**	**-.00224**	**.04626**	**.00129**
Stddev	.00026	.00037	.00076	.00521	.20381	.00381	.02394	.00068
%RSD	298.21	142.95	262.74	101.67	98.682	169.66	51.752	52.210
#1	.00038	.00011	.00108	-.00371	-.01485	-.00657	.05918	.00166
#2	-.00004	.00069	-.00043	-.00076	.24807	-.00075	.06096	.00051
#3	-.00009	-.00002	.00021	-.01088	.38638	.00059	.01864	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**127.01**	**.00047**	**-.00310**	**-.00267**	**-.00258**	**-.00433**	**.00827**
Stddev	.00036	.40	.00112	.00352	.00124	.00192	.00346	.00243
%RSD	80.960	.31650	239.06	113.65	46.418	74.467	79.932	29.351
#1	.00086	126.96	-.00050	-.00715	-.00147	-.00463	-.00168	.01046
#2	.00023	127.43	.00021	-.00079	-.00260	-.00231	-.00824	.00868
#3	.00024	126.63	.00170	-.00136	-.00394	-.00081	-.00305	.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: F BLANK Acquired: 7/1/2016 15:23:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574809-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**-.00031**	**-.00077**	**-.00165**	**-.00013**	**.00323**	**.00158**
Stddev	.00028	.00014	.00459	.00178	.00108	.00011	.02150
%RSD	70.745	45.921	599.45	107.89	849.27	3.5467	1363.0
#1	.00010	-.00043	-.00455	-.00351	.00107	.00335	.00483
#2	.00066	-.00015	.00434	.00004	-.00043	.00322	.02127
#3	.00044	-.00036	-.00209	-.00148	-.00102	.00312	-.02136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9181.4**	**55349.**	**2532.4**
Stddev	7.8	135.	10.7
%RSD	.08476	.24414	.42287
#1	9190.3	55203.	2543.7
#2	9175.9	55375.	2522.4
#3	9178.0	55470.	2531.1

Approved: July 02, 2016

Sample Name: L1606159101 Acquired: 7/1/2016 15:27:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.03467	-.00141	.01734	.03057	-.00009	193.75	.00019
Stddev	.00167	.00731	.00139	.00293	.00024	.00011	.52	.00029
%RSD	931.20	21.083	98.285	16.871	.78657	126.62	.27032	151.69
#1	.00085	.03807	-.00288	.01647	.03072	.00001	193.65	.00049
#2	.00141	.02628	-.00125	.02061	.03030	-.00021	194.31	.00019
#3	-.00173	.03966	-.00011	.01495	.03071	-.00006	193.28	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00203	.00061	.00171	.01402	.26671	.00434	2.0506	.44456
Stddev	.00053	.00038	.00129	.01890	.05264	.00184	.0068	.00273
%RSD	25.959	62.353	75.481	134.78	19.737	42.361	.33046	.61382
#1	.00150	.00104	.00320	.01875	.25015	.00514	2.0439	.44611
#2	.00255	.00039	.00107	.03011	.32564	.00565	2.0504	.44616
#3	.00204	.00038	.00087	-.00679	.22433	.00224	2.0575	.44141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	1.7945	.00419	.00824	.00434	.00254	-.00311	.17382
Stddev	.00065	.0341	.00048	.00473	.00142	.00284	.00680	.00899
%RSD	93.965	1.9028	11.522	57.353	32.757	111.90	218.70	5.1742
#1	.00107	1.8297	.00373	.00329	.00456	.00124	-.00432	.18110
#2	.00106	1.7922	.00470	.00873	.00563	.00058	.00422	.17659
#3	-.00006	1.7615	.00415	.01270	.00282	.00579	-.00922	.16376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606159101 Acquired: 7/1/2016 15:27:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**.84364**	**-.02997**	**-.00171**	**-.00019**	**.02103**	**-.02854**
Stddev	.00129	.00470	.00345	.00068	.00089	.00165	.00595
%RSD	425.33	.55728	11.519	39.885	478.50	7.8249	20.838
#1	-.00074	.84354	-.03345	-.00094	-.00106	.02183	-.02319
#2	.00174	.84839	-.02655	-.00223	-.00022	.02212	-.02748
#3	-.00009	.83899	-.02991	-.00196	.00072	.01914	-.03494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9130.3**	**55329.**	**2558.6**
Stddev	12.2	237.	12.3
%RSD	.13332	.42827	.48259
#1	9117.2	55071.	2550.4
#2	9132.3	55380.	2552.6
#3	9141.3	55537.	2572.8

Approved: July 02, 2016

Sample Name: L1606159102 Acquired: 7/1/2016 15:31:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.01480**	**-.00060**	**.01734**	**.03284**	**-.00002**	**194.34**
Stddev	.00203	.00096	.00474	.00300	.00058	.00013	.07
%RSD	1176.9	6.5000	784.73	17.289	1.7707	577.10	.03760
#1	.00217	.01563	.00482	.02000	.03305	-.00015	194.31
#2	-.00143	.01374	-.00269	.01409	.03329	-.00002	194.29
#3	-.00126	.01504	-.00394	.01794	.03219	.00010	194.42
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**.00220**	**.00144**	**.00121**	**-.00901**	**.39265**	**.00400**
Stddev	.00031	.00026	.00145	.00067	.02373	.15545	.00320
%RSD	64.784	11.643	100.75	55.532	263.45	39.590	79.936
#1	.00051	.00228	-.00007	.00123	-.03641	.51044	.00452
#2	.00016	.00240	.00283	.00053	.00515	.21646	.00058
#3	.00079	.00191	.00156	.00187	.00423	.45106	.00692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.3044**	**.82882**	**.00031**	**2.4009**	**.00359**	**.00060**	**.00390**
Stddev	.0897	.00357	.00016	.0269	.00101	.00436	.00215
%RSD	3.8910	.43104	52.676	1.1193	28.263	721.82	55.204
#1	2.2828	.82490	.00014	2.3825	.00444	.00507	.00328
#2	2.4030	.83190	.00034	2.4317	.00386	.00037	.00629
#3	2.2276	.82967	.00046	2.3884	.00247	-.00363	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: L1606159102 Acquired: 7/1/2016 15:31:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00160**	**-.00802**	**.32530**	**-.00022**	**.80693**	F **-.03740**	**-.00095**
Stddev	.00187	.00416	.01808	.00033	.00155	.00856	.00100
%RSD	116.97	51.847	5.5566	148.25	.19172	22.903	105.32
#1	-.00036	-.01098	.33606	-.00054	.80552	-.04546	-.00190
#2	-.00069	-.00982	.33540	-.00023	.80668	-.03832	-.00106
#3	-.00376	-.00327	.30443	.00011	.80859	-.02840	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00010**	**.00681**	**-.00550**
Stddev	.00045	.00051	.04219
%RSD	461.18	7.5459	767.30
#1	-.00027	.00721	.04257
#2	-.00003	.00700	-.03639
#3	.00060	.00623	-.02268
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9145.5**	**55568.**	**2554.1**
Stddev	12.0	114.	6.1
%RSD	.13170	.20445	.23989
#1	9138.8	55437.	2560.8
#2	9138.3	55630.	2548.8
#3	9159.4	55637.	2552.7

Approved: July 02, 2016

Sample Name: L1606159102S Acquired: 7/1/2016 15:35:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20795**	**4.7676**	**.19564**	**.95505**	**.51313**	**.02351**	**202.16**	**.02419**
Stddev	.00116	.0259	.00190	.00052	.00429	.00009	.58	.00029
%RSD	.55825	.54398	.97319	.05409	.83624	.37293	.28729	1.2033
#1	.20919	4.7973	.19476	.95553	.51400	.02341	202.10	.02423
#2	.20778	4.7562	.19782	.95450	.50847	.02359	201.62	.02445
#3	.20689	4.7493	.19433	.95510	.51692	.02354	202.77	.02387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09576**	**.23436**	**.23396**	**1.8995**	**24.253**	**.49439**	**6.9526**	**1.0749**
Stddev	.00148	.00114	.00208	.0289	.155	.00292	.0467	.0042
%RSD	1.5438	.48601	.88822	1.5223	.63936	.59116	.67223	.38933
#1	.09666	.23441	.23517	1.9071	24.128	.49199	6.9037	1.0704
#2	.09657	.23320	.23515	1.8675	24.427	.49764	6.9574	1.0757
#3	.09406	.23547	.23156	1.9238	24.203	.49352	6.9968	1.0786
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48353**	**26.717**	**.23530**	**4.7943**	**.23404**	**.57505**	**.18511**	**2.7161**
Stddev	.00586	.100	.00228	.0425	.00411	.01196	.00755	.0210
%RSD	1.2128	.37299	.96896	.88626	1.7544	2.0798	4.0805	.77291
#1	.48589	26.703	.23529	4.8184	.23054	.58135	.19280	2.7258
#2	.48785	26.625	.23758	4.8192	.23856	.58255	.17770	2.7304
#3	.47686	26.823	.23302	4.7453	.23302	.56126	.18483	2.6920
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606159102S Acquired: 7/1/2016 15:35:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47590	1.2958	.44755	.23368	.47717	.46754	.02079
Stddev	.00717	.0032	.00591	.00150	.00245	.00466	.02524
%RSD	1.5075	.24491	1.3208	.64179	.51270	.99631	121.36
#1	.47868	1.2947	.45373	.23540	.47538	.47036	.04133
#2	.48128	1.2932	.44699	.23299	.47995	.47010	-.00738
#3	.46776	1.2993	.44194	.23264	.47617	.46216	.02842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9025.1	54998.	2532.2
Stddev	7.6	153.	2.5
%RSD	.08449	.27905	.09820
#1	9019.7	54829.	2529.6
#2	9033.8	55128.	2532.3
#3	9021.8	55038.	2534.6

Approved: July 02, 2016

Sample Name: L1606159102SD Acquired: 7/1/2016 15:38:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20859**	**4.7990**	**.19794**	**.96237**	**.51618**	**.02354**	**204.26**	**.02443**
Stddev	.00132	.0105	.00153	.00229	.00056	.00004	.06	.00008
%RSD	.63170	.21817	.77523	.23803	.10848	.16151	.03084	.32643
#1	.20737	4.7889	.19795	.96172	.51554	.02356	204.22	.02449
#2	.20999	4.7984	.19947	.96047	.51639	.02349	204.23	.02446
#3	.20840	4.8098	.19640	.96491	.51660	.02356	204.33	.02434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09716**	**.23660**	**.23789**	**1.9090**	**24.610**	**.49846**	**7.0140**	**1.0836**
Stddev	.00024	.00076	.00183	.0087	.077	.00276	.0480	.0023
%RSD	.24208	.32014	.76900	.45535	.31286	.55456	.68397	.20862
#1	.09696	.23687	.23907	1.9011	24.547	.49544	6.9632	1.0820
#2	.09708	.23574	.23578	1.9074	24.585	.50088	7.0585	1.0862
#3	.09742	.23719	.23882	1.9183	24.696	.49906	7.0204	1.0825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49064**	**26.807**	**.23673**	**4.8353**	**.24086**	**.58167**	**.18675**	**2.7435**
Stddev	.00075	.010	.00075	.0070	.00248	.00276	.00345	.0023
%RSD	.15221	.03699	.31713	.14413	1.0286	.47375	1.8469	.08424
#1	.49127	26.812	.23588	4.8404	.23914	.58134	.19066	2.7459
#2	.48982	26.796	.23728	4.8273	.23973	.57909	.18542	2.7433
#3	.49085	26.814	.23704	4.8381	.24370	.58457	.18416	2.7413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606159102SD Acquired: 7/1/2016 15:38:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48075**	**1.3078**	**.45673**	**.23754**	**.48020**	**.47378**	**.02200**
Stddev	.00019	.0027	.00589	.00237	.00079	.00032	.02225
%RSD	.03905	.20625	1.2894	.99583	.16366	.06804	101.11
#1	.48055	1.3066	.45557	.23487	.48103	.47386	-.00214
#2	.48077	1.3059	.46311	.23838	.48012	.47342	.04167
#3	.48092	1.3109	.45151	.23937	.47946	.47405	.02648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9079.5**	**55002.**	**2533.4**
Stddev	17.0	218.	9.6
%RSD	.18689	.39643	.37981
#1	9083.4	55202.	2539.4
#2	9094.1	54770.	2538.6
#3	9060.9	55035.	2522.3

Approved: July 02, 2016

Sample Name: L1606159103 Acquired: 7/1/2016 15:42:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	.40908	.00145	.03094	.02869	.00021	139.72	.00070
Stddev	.00224	.00640	.00251	.00266	.00034	.00004	.56	.00017
%RSD	452.01	1.5654	172.74	8.6014	1.1884	17.190	.39885	24.553
#1	-.00093	.41637	.00427	.03354	.02901	.00023	139.23	.00079
#2	.00193	.40650	-.00056	.03105	.02833	.00022	139.61	.00050
#3	-.00248	.40437	.00065	.02822	.02873	.00017	140.32	.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00394	.00162	.00364	.06076	.56025	.00514	13.420	1.0976
Stddev	.00019	.00118	.00073	.01994	.03445	.00135	.119	.0065
%RSD	4.9212	72.893	20.180	32.813	6.1491	26.348	.88337	.59480
#1	.00416	.00102	.00448	.03930	.56008	.00538	13.460	1.0977
#2	.00387	.00085	.00334	.07871	.52588	.00368	13.286	1.0911
#3	.00379	.00297	.00310	.06427	.59478	.00636	13.513	1.1041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	2.0624	.00932	.01228	.00646	-.00002	-.00328	3.2548
Stddev	.00013	.0263	.00111	.00327	.00182	.00182	.00168	.1075
%RSD	37.802	1.2750	11.892	26.639	28.133	9789.8	51.248	3.3034
#1	.00021	2.0928	.00955	.01553	.00470	-.00069	-.00517	3.3198
#2	.00047	2.0467	.01030	.00898	.00833	-.00141	-.00197	3.3138
#3	.00036	2.0478	.00812	.01233	.00634	.00204	-.00269	3.1306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606159103 Acquired: 7/1/2016 15:42:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00060**	**.53480**	**-.01948**	**-.00435**	**-.00013**	**.04375**	**-.00479**
Stddev	.00031	.00329	.00559	.00131	.00106	.00186	.01009
%RSD	50.859	.61539	28.703	30.192	840.36	4.2490	210.75
#1	.00093	.53382	-.01341	-.00586	-.00045	.04501	-.01165
#2	.00056	.53211	-.02062	-.00349	.00106	.04464	-.00951
#3	.00032	.53847	-.02442	-.00370	-.00098	.04162	.00680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9253.2**	**56197.**	**2564.7**
Stddev	23.4	163.	14.6
%RSD	.25243	.29087	.57039
#1	9240.5	56027.	2550.6
#2	9280.1	56210.	2579.8
#3	9238.9	56353.	2563.7

Approved: July 02, 2016

Sample Name: L1606164201 Acquired: 7/1/2016 15:46:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	7.2377	.00866	.01037	.14169	.00038	47.773	.00385
Stddev	.00244	.0302	.00174	.00102	.00086	.00013	.122	.00024
%RSD	287.28	.41766	20.147	9.7901	.60996	35.281	.25482	6.3563
#1	-.00058	7.2214	.00674	.01071	.14106	.00053	47.900	.00403
#2	.00367	7.2190	.01016	.01118	.14267	.00032	47.761	.00394
#3	-.00054	7.2725	.00907	.00923	.14133	.00028	47.658	.00357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01290	.01734	.42994	23.662	10.703	.00544	10.012	.55910
Stddev	.00026	.00150	.01957	.084	.135	.00318	.151	.00205
%RSD	2.0372	8.6739	4.5517	.35495	1.2650	58.537	1.5044	.36665
#1	.01272	.01731	.44180	23.739	10.841	.00894	9.8467	.55695
#2	.01320	.01886	.44067	23.673	10.570	.00272	10.142	.56104
#3	.01279	.01585	.40736	23.572	10.696	.00465	10.046	.55930
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	21.103	.03122	.66240	.05369	-.00344	-.00492	14.026
Stddev	.00002	.031	.00165	.02662	.00305	.00322	.00666	.386
%RSD	1.3307	.14639	5.2745	4.0185	5.6861	93.616	135.28	2.7528
#1	.00169	21.138	.03141	.67765	.05668	-.00451	.00272	14.269
#2	.00174	21.088	.03277	.67789	.05382	-.00599	-.00802	14.229
#3	.00170	21.082	.02949	.63167	.05058	.00018	-.00948	13.581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606164201 Acquired: 7/1/2016 15:46:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01023	.19653	.16777	-.00141	.01328	.37582	.61659
Stddev	.00010	.00020	.00316	.00361	.00048	.01567	.01822
%RSD	.93818	.09964	1.8826	256.96	3.5998	4.1704	2.9554
#1	.01012	.19656	.16560	-.00112	.01371	.38539	.59557
#2	.01028	.19632	.16633	-.00515	.01336	.38433	.62625
#3	.01029	.19671	.17140	.00206	.01277	.35773	.62795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9241.4	55795.	2558.3
Stddev	25.0	40.	11.4
%RSD	.27043	.07090	.44548
#1	9222.6	55833.	2570.5
#2	9231.9	55798.	2556.5
#3	9269.8	55754.	2547.9

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 15:50:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41674	9.6451	.38939	.47746	.96077	.04818	9.5764
Stddev	.00166	.0182	.00481	.00217	.00113	.00020	.0410
%RSD	.39876	.18920	1.2358	.45428	.11757	.41627	.42812
#1	.41864	9.6577	.38393	.47546	.96088	.04841	9.6031
#2	.41554	9.6534	.39123	.47715	.96184	.04811	9.5968
#3	.41605	9.6242	.39301	.47976	.95959	.04803	9.5292
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04865	.19566	.48241	.48740	3.9032	48.213	.96180
Stddev	.00019	.00064	.00252	.00050	.0399	.302	.00344
%RSD	.38581	.32848	.52182	.10350	1.0219	.62537	.35771
#1	.04885	.19634	.48530	.48785	3.9112	48.257	.96577
#2	.04848	.19557	.48129	.48685	3.9384	48.490	.95992
#3	.04862	.19507	.48065	.48748	3.8598	47.892	.95972
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.7995	.48287	.97012	47.960	.48356	9.6360	.48570
Stddev	.1668	.00144	.00156	.031	.00012	.0192	.00332
%RSD	1.7018	.29766	.16107	.06375	.02409	.19963	.68382
#1	9.7774	.48124	.97130	47.987	.48343	9.6455	.48437
#2	9.9761	.48343	.97071	47.965	.48366	9.6485	.48324
#3	9.6448	.48395	.96835	47.927	.48358	9.6138	.48948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 15:50:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1544**	**.38909**	**4.7028**	**.96986**	**.96218**	**.95980**	**.48881**
Stddev	.0018	.00429	.0034	.00144	.00136	.01348	.00268
%RSD	.15922	1.1029	.07249	.14828	.14156	1.4048	.54769
#1	1.1557	.38426	4.7065	.97140	.96361	.94745	.48599
#2	1.1551	.39055	4.6997	.96963	.96090	.97418	.49132
#3	1.1523	.39246	4.7022	.96855	.96204	.95776	.48911
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.96618**	**.96735**	F **.66445**
Stddev	.00282	.00093	.02093
%RSD	.29201	.09564	3.1499
#1	.96941	.96842	.67865
#2	.96419	.96682	.67428
#3	.96495	.96682	.64041
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9346.8**	**56280.**	**2564.6**
Stddev	26.6	36.	18.4
%RSD	.28480	.06457	.71616
#1	9377.0	56259.	2548.1
#2	9327.0	56322.	2561.3
#3	9336.3	56258.	2584.4

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 15:53:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00596**	**-.00171**	**.00290**	**-.00096**	**-.00000**	**.00592**	**-.00006**
Stddev	.00243	.00499	.00170	.00258	.00082	.00003	.01342	.00020
%RSD	19012.	83.778	99.077	89.065	85.393	634.72	226.60	335.04
#1	.00181	.00696	-.00085	.00374	-.00158	.00003	.02032	-.00026
#2	.00098	.00054	-.00062	.00495	-.00003	-.00002	-.00624	.00015
#3	-.00275	.01037	-.00366	.00000	-.00127	-.00003	.00369	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.00003**	**-.00022**	**-.01913**	**.20038**	**-.00400**	**.07507**	**-.00025**
Stddev	.00018	.00061	.00018	.00947	.05038	.00035	.01041	.00396
%RSD	577.38	1751.0	80.960	49.527	25.141	8.8285	13.869	1601.2
#1	.00009	-.00073	-.00004	-.02073	.22229	-.00362	.07046	-.00369
#2	-.00017	.00029	-.00023	-.02770	.14275	-.00406	.08700	-.00114
#3	.00018	.00035	-.00039	-.00895	.23609	-.00432	.06776	.00408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.03431**	**.00043**	**-.00256**	**.00362**	**.00010**	**-.00277**	**.00288**
Stddev	.00025	.03529	.00096	.00273	.00102	.00514	.00269	.00172
%RSD	112.22	102.85	222.31	106.82	28.194	4907.6	97.326	59.819
#1	-.00014	.00231	.00153	-.00425	.00449	-.00546	-.00078	.00105
#2	-.00002	.02847	-.00005	-.00402	.00386	.00467	-.00170	.00447
#3	-.00050	.07217	-.00019	.00059	.00250	.00110	-.00583	.00312
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 15:53:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00051**	**-.00012**	**-.00056**	**.00034**	**.00006**	**-.00819**
Stddev	.00039	.00041	.00447	.00064	.00094	.00010	.02534
%RSD	131.38	80.443	3707.0	114.01	272.39	155.98	309.26
#1	.00027	-.00063	-.00081	-.00120	-.00014	.00005	.00550
#2	-.00008	-.00084	.00465	.00008	-.00025	-.00003	-.03743
#3	.00070	-.00005	-.00421	-.00057	.00142	.00017	.00736
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9419.0**	**56855.**	**2561.6**
Stddev	20.0	158.	7.9
%RSD	.21256	.27796	.30834
#1	9411.7	56825.	2556.8
#2	9441.6	56714.	2557.3
#3	9403.7	57026.	2570.7

Approved: July 02, 2016

Sample Name: L1606164202 Acquired: 7/1/2016 15:57:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00221**	**64.189**	**.10156**	**.06281**	**1.4325**	**.00421**	F **591.15**
Stddev	.00037	.087	.00275	.00297	.0105	.00001	4.70
%RSD	16.788	.13578	2.7068	4.7354	.73310	.22624	.79540
#1	.00256	64.286	.10081	.06219	1.4425	.00420	595.93
#2	.00182	64.163	.10460	.06605	1.4332	.00420	590.98
#3	.00225	64.118	.09926	.06020	1.4216	.00422	586.53
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01552**	**.03991**	**.15669**	**4.8344**	**83.363**	**32.399**	**.08247**
Stddev	.00028	.00037	.00080	.0627	.551	.367	.00533
%RSD	1.8095	.93046	.51265	1.2976	.66051	1.1317	6.4635
#1	.01584	.04011	.15601	4.8727	83.796	32.722	.08862
#2	.01538	.04015	.15650	4.8685	83.550	32.474	.07952
#3	.01533	.03948	.15758	4.7620	82.744	32.000	.07927
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**113.75**	**1.8749**	**.00516**	**35.658**	**.19639**	**9.2684**	**.45090**
Stddev	.75	.0170	.00042	.238	.00231	.0822	.00394
%RSD	.66140	.90743	8.1696	.66628	1.1780	.88726	.87387
#1	114.61	1.8944	.00485	35.876	.19645	9.3151	.45454
#2	113.44	1.8670	.00498	35.693	.19868	9.3165	.45146
#3	113.20	1.8632	.00564	35.405	.19406	9.1734	.44672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: L1606164202 Acquired: 7/1/2016 15:57:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00370**	F **-.01156**	F **68.964**	**.04965**	**1.3454**	**.94868**	**-.00279**
Stddev	.00357	.00675	.329	.00067	.0117	.00495	.00204
%RSD	96.350	58.359	.47650	1.3481	.86930	.52176	73.271
#1	.00511	-.01505	69.142	.05032	1.3554	.95047	-.00113
#2	.00635	-.01585	69.166	.04965	1.3482	.95249	-.00216
#3	-.00035	-.00378	68.585	.04898	1.3326	.94308	-.00507
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000	36.000				
Low Limit		-.01000	-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.13611**	**2.0000**	**3.9773**
Stddev	.00051	.0259	.0163
%RSD	.37112	1.2955	.40916
#1	.13576	2.0159	3.9688
#2	.13669	2.0141	3.9961
#3	.13587	1.9701	3.9670
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8368.7**	**49534.**	**2253.7**
Stddev	108.1	196.	14.1
%RSD	1.2920	.39579	.62532
#1	8283.5	49469.	2237.9
#2	8332.2	49378.	2258.3
#3	8490.3	49754.	2265.0

Approved: July 02, 2016

Sample Name: L1606164802 Acquired: 7/1/2016 16:01:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00121**	**.09622**	**.00039**	**.01487**	**.31891**	**.00009**	**25.607**
Stddev	.00118	.01192	.00179	.00116	.00187	.00002	.096
%RSD	98.208	12.389	461.67	7.7825	.58557	24.814	.37309
#1	-.00128	.09992	.00099	.01377	.31832	.00011	25.513
#2	.00001	.10585	.00180	.01476	.32100	.00009	25.704
#3	-.00235	.08288	-.00163	.01607	.31741	.00006	25.604
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00972**	**.00011**	**.00171**	**15.647**	**1.9496**	**.00404**
Stddev	.00010	.00075	.00050	.00244	.098	.1913	.00333
%RSD	41.923	7.7513	465.85	142.59	.62935	9.8134	82.470
#1	.00016	.01057	.00067	.00360	15.586	1.9201	.00192
#2	.00036	.00942	-.00030	.00259	15.761	2.1539	.00232
#3	.00022	.00916	-.00005	-.00105	15.594	1.7747	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**15.654**	**4.1404**	**.00068**	**35.203**	**.00405**	**-.00148**	**-.00012**
Stddev	.133	.0236	.00016	.196	.00022	.00525	.00058
%RSD	.84992	.57103	23.200	.55659	5.3167	354.54	477.75
#1	15.685	4.1179	.00082	35.004	.00430	.00316	.00021
#2	15.768	4.1650	.00051	35.396	.00395	-.00717	.00022
#3	15.508	4.1384	.00070	35.210	.00391	-.00043	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: L1606164802 Acquired: 7/1/2016 16:01:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**-.00417**	**10.989**	**.00018**	**.49490**	**-.00134**	**-.00161**
Stddev	.00281	.00620	.362	.00016	.00180	.00691	.00083
%RSD	974.00	148.64	3.2914	89.334	.36273	513.86	51.459
#1	-.00351	.00216	11.177	.00028	.49300	-.00928	-.00151
#2	.00164	-.01025	11.219	.00027	.49513	.00334	-.00249
#3	.00100	-.00443	10.572	-.00001	.49656	.00190	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00045**	**.00680**	F **-.11992**
Stddev	.00040	.00036	.03894
%RSD	88.682	5.3187	32.473
#1	.00089	.00708	-.16454
#2	.00013	.00692	-.10242
#3	.00032	.00639	-.09280
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8983.4**	**53865.**	**2394.7**
Stddev	107.8	399.	5.9
%RSD	1.1997	.74037	.24490
#1	8913.6	53452.	2397.6
#2	8929.1	54248.	2388.0
#3	9107.6	53897.	2398.6

Approved: July 02, 2016

Sample Name: L1606165236 Acquired: 7/1/2016 16:05:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.00946**	**-.00055**	**.00117**	**-.00030**	**.00007**	**.06859**
Stddev	.00025	.00584	.00153	.00207	.00070	.00005	.01379
%RSD	69.622	61.747	280.17	176.42	233.70	74.208	20.099
#1	-.00061	.00287	-.00087	-.00086	-.00020	.00005	.05584
#2	-.00010	.01401	.00112	.00327	-.00104	.00003	.06672
#3	-.00038	.01148	-.00188	.00111	.00034	.00013	.08322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.00006**	**.00089**	**.00084**	F **-.02645**	**.10393**	**-.00306**
Stddev	.00001	.00019	.00077	.00092	.00560	.06729	.00086
%RSD	2.4362	309.14	86.786	109.56	21.163	64.743	28.251
#1	.00023	.00027	.00147	-.00021	-.02015	.05541	-.00406
#2	.00022	-.00012	.00117	.00152	-.02837	.18075	-.00259
#3	.00022	.00004	.00001	.00121	-.03083	.07564	-.00253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.06144**	**-.00090**	**-.00001**	**1.4892**	**.00087**	**.00279**	**.00192**
Stddev	.01395	.00077	.00027	.0213	.00031	.00249	.00389
%RSD	22.708	85.551	2943.0	1.4311	35.335	89.042	202.65
#1	.05023	-.00115	.00016	1.4714	.00105	.00121	.00094
#2	.07707	-.00151	-.00032	1.4835	.00105	.00566	.00620
#3	.05703	-.00004	.00013	1.5128	.00052	.00151	-.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: L1606165236 Acquired: 7/1/2016 16:05:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00060**	**.00056**	**.51849**	**.00036**	**.00003**	**.00202**	**-.00097**
Stddev	.00211	.00233	.01581	.00038	.00021	.00199	.00170
%RSD	350.91	419.31	3.0500	106.15	760.30	98.471	175.96
#1	-.00036	.00253	.53096	.00045	.00022	.00199	-.00130
#2	.00302	-.00201	.52380	-.00006	.00006	.00005	-.00247
#3	-.00085	.00115	.50070	.00068	-.00020	.00402	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00033**	**.00174**	**-.03443**
Stddev	.00040	.00021	.04605
%RSD	122.58	12.097	133.74
#1	-.00005	.00155	-.06352
#2	.00028	.00196	.01866
#3	.00075	.00169	-.05843
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9266.3**	**56670.**	**2513.8**
Stddev	29.3	31.	14.8
%RSD	.31624	.05481	.58735
#1	9297.8	56706.	2498.2
#2	9261.5	56648.	2527.5
#3	9239.8	56656.	2515.8

Approved: July 02, 2016

Sample Name: L1606165238 Acquired: 7/1/2016 16:09:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**.00750**	**-.00193**	**.00223**	**.00025**	**.00002**	**.02395**
Stddev	.00110	.00897	.00268	.00312	.00094	.00007	.01047
%RSD	366.61	119.66	138.76	139.57	379.32	290.12	43.732
#1	-.00095	.01779	-.00012	.00140	-.00028	.00004	.03019
#2	.00097	.00129	-.00502	-.00039	-.00031	-.00005	.01186
#3	-.00092	.00342	-.00067	.00569	.00134	.00008	.02980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00006**	**.00031**	**.00031**	F **-.02473**	**.06401**	**-.00591**
Stddev	.00031	.00033	.00044	.00125	.02390	.12137	.00243
%RSD	463.87	511.33	143.77	397.38	96.636	189.61	41.159
#1	.00007	.00042	.00063	-.00103	-.03966	-.07574	-.00731
#2	.00038	-.00022	-.00019	.00145	.00283	.14303	-.00731
#3	-.00024	-.00001	.00048	.00053	-.03737	.12475	-.00310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.07426**	**-.00180**	**.00006**	**1.4417**	**.00114**	**.00104**	**.00059**
Stddev	.05138	.00090	.00020	.0300	.00146	.00735	.00177
%RSD	69.192	49.844	341.40	2.0837	127.52	704.75	301.25
#1	.07085	-.00161	.00028	1.4115	.00282	.00708	.00136
#2	.02467	-.00277	-.00000	1.4418	.00038	-.00714	.00185
#3	.12727	-.00101	-.00010	1.4716	.00023	.00318	-.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: L1606165238 Acquired: 7/1/2016 16:09:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00272**	**-.00539**	**.48900**	**.00004**	**-.00024**	**.00287**	**-.00399**
Stddev	.00650	.00413	.01711	.00044	.00058	.00802	.00250
%RSD	238.74	76.631	3.4983	1089.1	239.67	279.80	62.732
#1	-.00262	-.00148	.49953	.00017	-.00022	.00284	-.00597
#2	-.00928	-.00497	.49820	-.00044	-.00084	-.00514	-.00118
#3	.00373	-.00971	.46926	.00040	.00033	.01090	-.00482
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00007**	**.00115**	F **-.05102**
Stddev	.00031	.00018	.04428
%RSD	410.52	15.565	86.796
#1	-.00013	.00116	-.06854
#2	.00043	.00097	-.00066
#3	-.00007	.00133	-.08386
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9256.8**	**56515.**	**2514.9**
Stddev	37.2	132.	9.0
%RSD	.40226	.23443	.35887
#1	9263.8	56380.	2507.0
#2	9290.1	56645.	2513.1
#3	9216.6	56519.	2524.7

Approved: July 02, 2016

Sample Name: L1606166001 Acquired: 7/1/2016 16:13:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00107**	**.07501**	**-.00233**	**.00613**	**.00111**	**.00004**	**.48936**	**.00019**
Stddev	.00218	.01100	.00308	.00204	.00075	.00006	.00456	.00002
%RSD	204.20	14.668	131.91	33.213	67.622	161.92	.93218	10.556
#1	-.00108	.06461	-.00158	.00848	.00145	-.00001	.48415	.00020
#2	.00100	.08653	.00029	.00508	.00164	.00011	.49130	.00020
#3	.00328	.07389	-.00572	.00484	.00025	.00001	.49263	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00094**	**.01942**	**.03120**	**.19410**	**-.00281**	**.07566**	**.00097**
Stddev	.00010	.00088	.00307	.03390	.09072	.00354	.04337	.00299
%RSD	66.350	94.087	15.784	108.65	46.738	125.85	57.316	309.04
#1	-.00005	.00034	.02119	.02946	.14056	.00127	.08160	.00321
#2	-.00014	.00053	.02119	-.00179	.29885	-.00467	.02963	-.00243
#3	-.00025	.00196	.01588	.06594	.14290	-.00503	.11575	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.37028**	**.00145**	**.01126**	**-.00048**	**.00081**	**-.00231**	**.16351**
Stddev	.00086	.02544	.00047	.00192	.00147	.00370	.00519	.01858
%RSD	623.30	6.8709	32.175	17.083	305.18	459.85	224.94	11.361
#1	.00059	.36849	.00188	.00964	.00119	.00142	.00068	.17988
#2	-.00108	.34578	.00095	.01339	-.00160	.00416	.00070	.16733
#3	.00007	.39657	.00152	.01076	-.00104	-.00317	-.00831	.14332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166001 Acquired: 7/1/2016 16:13:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00729	.01130	-.00530	.00032	.00559	-.02678
Stddev	.00109	.00055	.00238	.00099	.00110	.00038	.00801
%RSD	161.25	7.5385	21.020	18.746	342.88	6.7671	29.900
#1	-.00037	.00718	.01031	-.00479	.00155	.00592	-.01867
#2	.00059	.00789	.00958	-.00644	-.00059	.00567	-.03468
#3	.00182	.00680	.01401	-.00466	.00001	.00518	-.02700
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9284.1	56451.	2525.8
Stddev	14.7	36.	12.4
%RSD	.15857	.06460	.49150
#1	9267.2	56419.	2511.5
#2	9294.3	56444.	2532.9
#3	9290.8	56491.	2533.1

Approved: July 02, 2016

Sample Name: L1606166002 Acquired: 7/1/2016 16:17:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00074**	**.32978**	**-.00096**	**.00742**	**.00302**	**.00006**	**1.6268**	**.00022**
Stddev	.00239	.00980	.00543	.00266	.00056	.00006	.0163	.00016
%RSD	323.03	2.9706	567.36	35.870	18.372	98.665	1.0004	73.074
#1	-.00290	.33003	-.00285	.00929	.00285	.00005	1.6414	.00040
#2	.00183	.31987	-.00520	.00437	.00364	.00001	1.6093	.00017
#3	-.00115	.33945	.00517	.00860	.00257	.00013	1.6296	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**.00019**	**.05649**	**.24449**	**.51285**	**-.00316**	**.21380**	**.00587**
Stddev	.00030	.00058	.00381	.01246	.03169	.00207	.01789	.00484
%RSD	87.757	296.18	6.7473	5.0982	6.1801	65.674	8.3677	82.359
#1	.00029	.00077	.05949	.24380	.48065	-.00510	.23441	.00043
#2	.00007	.00021	.05778	.25729	.51387	-.00341	.20465	.00968
#3	.00067	-.00039	.05220	.23239	.54401	-.00097	.20233	.00752
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.48423**	**.00127**	**.04705**	**.00686**	**.00104**	**-.00199**	**.68979**
Stddev	.00019	.00954	.00087	.01363	.00267	.00238	.00757	.06854
%RSD	64.146	1.9697	68.433	28.975	38.953	228.39	379.80	9.9359
#1	.00048	.49487	.00027	.04581	.00511	.00197	.00329	.73545
#2	.00029	.48141	.00187	.06127	.00994	-.00166	.00139	.72294
#3	.00011	.47643	.00167	.03408	.00553	.00281	-.01066	.61098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166002 Acquired: 7/1/2016 16:17:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00742	.02467	-.00255	.00089	.01421	.02069
Stddev	.00064	.00051	.00727	.00176	.00031	.00106	.00094
%RSD	158.07	6.8424	29.471	69.109	34.925	7.4279	4.5361
#1	-.00002	.00683	.01628	-.00133	.00077	.01491	.02174
#2	.00009	.00768	.02866	-.00175	.00065	.01471	.02042
#3	.00114	.00774	.02907	-.00458	.00124	.01299	.01992
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9274.2	56638.	2518.2
Stddev	22.5	126.	10.1
%RSD	.24224	.22279	.40207
#1	9296.7	56564.	2507.8
#2	9274.2	56566.	2518.9
#3	9251.7	56784.	2528.0

Approved: July 02, 2016

Sample Name: L1606166003 Acquired: 7/1/2016 16:21:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	.16904	-.00126	.01320	.00051	.00003	.98553	-.00003
Stddev	.00102	.01036	.00156	.00308	.00081	.00001	.04261	.00006
%RSD	98.034	6.1269	123.60	23.306	158.03	47.183	4.3232	201.30
#1	-.00050	.15903	-.00136	.01007	.00060	.00004	.94017	-.00001
#2	-.00040	.16839	.00034	.01622	-.00034	.00003	.99169	.00002
#3	-.00222	.17971	-.00277	.01331	.00127	.00002	1.0247	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00378	.02672	.60770	.37129	-.00325	.11726	.00957
Stddev	.00017	.00120	.00198	.01628	.03115	.00537	.05418	.00036
%RSD	53.506	31.686	7.4276	2.6791	8.3886	164.93	46.200	3.7730
#1	.00052	.00411	.02861	.59190	.34860	-.00749	.06218	.00964
#2	.00028	.00478	.02688	.60678	.35846	.00278	.11912	.00918
#3	.00018	.00246	.02466	.62442	.40680	-.00505	.17048	.00990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.19191	.00202	.01587	.00545	-.00047	-.00371	.29811
Stddev	.00015	.03815	.00027	.00661	.00266	.00193	.00209	.03155
%RSD	16.635	19.876	13.507	41.663	48.867	408.98	56.422	10.584
#1	.00083	.22464	.00191	.01320	.00673	-.00269	-.00138	.32050
#2	.00107	.15002	.00183	.01100	.00239	.00081	-.00543	.31181
#3	.00080	.20108	.00234	.02339	.00724	.00046	-.00432	.26203
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166003 Acquired: 7/1/2016 16:21:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.00169	.00473	.00007	.00019	.01117	-.03797
Stddev	.00152	.00011	.00944	.00093	.00068	.00086	.02158
%RSD	143.59	6.2620	199.52	1429.9	359.23	7.7164	56.849
#1	.00232	.00165	-.00193	.00086	.00072	.01175	-.01985
#2	-.00063	.00162	.00059	-.00096	.00042	.01159	-.06185
#3	.00149	.00182	.01554	.00030	-.00057	.01018	-.03220
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9272.0	56862.	2529.8
Stddev	18.1	248.	20.6
%RSD	.19512	.43559	.81498
#1	9280.3	56608.	2506.2
#2	9284.4	57103.	2539.2
#3	9251.2	56875.	2544.1

Approved: July 02, 2016

Sample Name: L1606166004 Acquired: 7/1/2016 16:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**.06544**	**-.00137**	**.00736**	**.00081**	**.00006**	**.53105**	**.00021**
Stddev	.00170	.00759	.00141	.00162	.00086	.00008	.00837	.00012
%RSD	255.58	11.600	103.26	21.977	105.42	151.50	1.5753	55.558
#1	-.00251	.05667	.00015	.00635	-.00012	-.00002	.52452	.00018
#2	-.00032	.06984	-.00265	.00651	.00101	.00015	.52815	.00034
#3	.00084	.06981	-.00160	.00923	.00155	.00003	.54048	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00028**	**.01484**	**.05190**	**.24570**	**-.00397**	**.11525**	**.00134**
Stddev	.00017	.00028	.00081	.00497	.03560	.00160	.01983	.00156
%RSD	61.639	99.087	5.4282	9.5851	14.489	40.382	17.208	116.54
#1	.00017	.00057	.01451	.05604	.23127	-.00489	.13813	-.00041
#2	.00018	.00027	.01576	.04638	.28625	-.00212	.10322	.00260
#3	.00047	.00001	.01425	.05328	.21958	-.00489	.10438	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.25271**	**.00043**	**.01163**	**.00231**	**.00126**	**-.00543**	**.10446**
Stddev	.00060	.03023	.00061	.00130	.00212	.00199	.00506	.00875
%RSD	1213.0	11.962	142.83	11.154	91.750	158.29	93.233	8.3740
#1	.00069	.25869	.00021	.01057	.00475	.00336	-.00353	.11078
#2	-.00049	.21994	.00112	.01307	.00120	-.00059	-.00159	.10812
#3	-.00005	.27950	-.00005	.01124	.00098	.00100	-.01116	.09448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166004 Acquired: 7/1/2016 16:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.00499	.00728	-.00414	.00071	.00611	-.00440
Stddev	.00055	.00026	.00199	.00007	.00078	.00037	.02403
%RSD	55.098	5.1098	27.381	1.5805	111.24	6.0195	546.56
#1	.00109	.00504	.00958	-.00422	.00146	.00644	-.03076
#2	.00149	.00522	.00622	-.00410	.00076	.00619	.00127
#3	.00041	.00472	.00604	-.00411	-.00011	.00571	.01630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9249.8	56673.	2517.1
Stddev	39.5	104.	10.6
%RSD	.42690	.18333	.42289
#1	9283.8	56662.	2524.4
#2	9259.2	56575.	2522.1
#3	9206.5	56782.	2504.9

Approved: July 02, 2016

Sample Name: L1606166005 Acquired: 7/1/2016 16:29:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.03463**	**.00004**	**.00555**	**.00055**	**.00009**	**.19548**	**.00016**
Stddev	.00124	.00354	.00071	.00078	.00028	.00005	.03423	.00008
%RSD	231.33	10.209	1824.1	13.990	51.176	57.249	17.509	50.656
#1	-.00134	.03809	.00058	.00473	.00030	.00015	.19834	.00021
#2	.00089	.03103	.00030	.00627	.00049	.00004	.15992	.00007
#3	-.00115	.03478	-.00077	.00567	.00086	.00009	.22819	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.00061**	**.01684**	**.02027**	**.10795**	**-.00382**	**.04350**	**.00146**
Stddev	.00004	.00157	.00142	.04096	.18187	.00247	.02634	.00257
%RSD	76.572	256.72	8.4122	202.06	168.48	64.572	60.553	175.49
#1	.00001	.00216	.01654	-.01318	.01901	-.00647	.06617	.00231
#2	.00008	.00065	.01839	.00804	-.01233	-.00339	.01460	.00350
#3	.00007	-.00098	.01560	.06596	.31718	-.00160	.04974	-.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.32298**	**.00094**	**.01043**	**.00139**	**-.00391**	**.00110**	**.05444**
Stddev	.00048	.04349	.00080	.00120	.00124	.00390	.00776	.00455
%RSD	480.88	13.464	84.876	11.542	89.547	99.873	706.81	8.3652
#1	-.00010	.36617	.00063	.00926	.00033	-.00753	.00023	.05333
#2	-.00058	.27921	.00034	.01167	.00108	.00022	-.00619	.05945
#3	.00038	.32355	.00184	.01036	.00276	-.00440	.00926	.05055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166005 Acquired: 7/1/2016 16:29:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00007	-.00216	-.00337	.00056	.00493	.00073
Stddev	.00040	.00023	.00256	.00061	.00085	.00039	.03556
%RSD	618.95	320.34	118.51	18.113	150.80	7.9453	4882.8
#1	.00005	-.00017	-.00436	-.00370	.00073	.00512	-.01883
#2	.00047	.00009	-.00278	-.00374	.00132	.00520	-.02077
#3	-.00032	.00029	.00065	-.00267	-.00036	.00448	.04178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9258.5	56291.	2508.0
Stddev	19.8	63.	19.5
%RSD	.21353	.11174	.77826
#1	9252.5	56233.	2488.5
#2	9280.6	56283.	2508.0
#3	9242.5	56358.	2527.5

Approved: July 02, 2016

Sample Name: L1606166006 Acquired: 7/1/2016 16:33:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**.14543**	**-.00270**	**.01413**	**.00264**	**.00000**	**.81864**	**.00009**
Stddev	.00060	.00337	.00017	.00145	.00009	.00004	.01810	.00011
%RSD	46.430	2.3191	6.3285	10.244	3.3150	1040.6	2.2113	120.13
#1	-.00060	.14300	-.00257	.01266	.00272	.00004	.80622	-.00003
#2	-.00166	.14928	-.00263	.01556	.00264	-.00004	.83941	.00012
#3	-.00164	.14402	-.00289	.01416	.00255	.00001	.81028	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.00085**	**.09971**	**.20937**	**.28868**	**-.00218**	**.16039**	**.00328**
Stddev	.00018	.00063	.00551	.01956	.08916	.00158	.06476	.00345
%RSD	74.981	74.344	5.5243	9.3413	30.887	72.396	40.378	105.27
#1	-.00035	.00158	.10364	.22935	.37473	-.00382	.17974	.00604
#2	-.00032	.00042	.10208	.20849	.19670	-.00206	.08816	.00439
#3	-.00003	.00056	.09342	.19027	.29460	-.00066	.21328	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.18699**	**.00116**	**.04278**	**.00472**	**-.00163**	**.00467**	**.29162**
Stddev	.00063	.03443	.00057	.00641	.00101	.00456	.00410	.02522
%RSD	499.20	18.415	48.865	14.978	21.394	279.94	87.709	8.6476
#1	.00085	.16394	.00051	.03780	.00570	.00202	.00531	.30929
#2	-.00032	.22657	.00144	.04055	.00479	-.00674	.00842	.30283
#3	-.00015	.17045	.00154	.05001	.00368	-.00017	.00029	.26274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166006 Acquired: 7/1/2016 16:33:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.00168	.00942	-.00332	.00073	.01823	.02219
Stddev	.00042	.00030	.00446	.00185	.00051	.00111	.01335
%RSD	55.458	17.714	47.340	55.599	69.577	6.1125	60.149
#1	.00124	.00191	.00509	-.00420	.00027	.01877	.03388
#2	.00047	.00179	.01400	-.00120	.00128	.01897	.00765
#3	.00057	.00134	.00916	-.00456	.00065	.01695	.02505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9288.8	56485.	2514.8
Stddev	23.1	173.	19.0
%RSD	.24841	.30624	.75499
#1	9262.8	56497.	2493.0
#2	9307.1	56306.	2524.0
#3	9296.4	56651.	2527.5

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 16:36:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41314**	**9.6290**	**.38678**	**.47517**	**.96347**	**.04793**	**9.5603**
Stddev	.00200	.0245	.00328	.00169	.00096	.00028	.0083
%RSD	.48339	.25451	.84868	.35635	.09951	.58346	.08646
#1	.41258	9.6559	.38999	.47539	.96243	.04770	9.5632
#2	.41535	9.6080	.38692	.47675	.96432	.04785	9.5668
#3	.41148	9.6230	.38343	.47338	.96366	.04825	9.5510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04852**	**.19508**	**.48033**	**.48598**	**3.9120**	**48.082**	**.95548**
Stddev	.00026	.00128	.00120	.00192	.0650	.133	.00275
%RSD	.54611	.65591	.24958	.39573	1.6611	.27624	.28797
#1	.04882	.19604	.47947	.48790	3.9253	48.164	.95291
#2	.04831	.19558	.47983	.48598	3.8414	47.929	.95838
#3	.04844	.19363	.48170	.48405	3.9693	48.154	.95516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7822**	**.48152**	**.96692**	**48.049**	**.48191**	**9.6091**	**.48066**
Stddev	.0938	.00168	.00499	.111	.00327	.0384	.00186
%RSD	.95839	.34901	.51589	.23046	.67882	.40015	.38643
#1	9.7580	.48011	.97105	48.101	.48356	9.6435	.48014
#2	9.8856	.48338	.96833	47.922	.48402	9.6161	.47912
#3	9.7029	.48107	.96137	48.124	.47814	9.5676	.48272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 16:36:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1446**	**.38647**	**4.6867**	**.96847**	**.96506**	**.96022**	**.48786**
Stddev	.0047	.00346	.0111	.00580	.00372	.01575	.00321
%RSD	.40710	.89572	.23777	.59874	.38554	1.6401	.65782
#1	1.1479	.38265	4.6973	.97290	.96867	.94207	.48436
#2	1.1466	.38940	4.6877	.97060	.96124	.97026	.48855
#3	1.1393	.38737	4.6751	.96191	.96526	.96833	.49067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.95894**	**.96301**	F **.66661**
Stddev	.00105	.00535	.00635
%RSD	.10932	.55509	.95276
#1	.95822	.96427	.66396
#2	.95847	.96762	.66200
#3	.96015	.95715	.67385
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9289.9**	**56082.**	**2533.1**
Stddev	18.7	227.	13.2
%RSD	.20117	.40452	.52266
#1	9291.3	56330.	2518.1
#2	9270.5	56030.	2538.0
#3	9307.8	55886.	2543.1

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 16:40:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00516**	**-.00037**	**.00409**	**-.00050**	**.00009**	**.01313**	**.00012**
Stddev	.00231	.00732	.00062	.00276	.00084	.00009	.04206	.00008
%RSD	1180.4	141.80	168.62	67.388	167.93	95.293	320.40	61.036
#1	-.00133	.01304	.00028	.00716	.00039	.00016	.05969	.00006
#2	-.00172	.00390	-.00043	.00331	-.00127	.00011	-.02210	.00010
#3	.00247	-.00145	-.00095	.00181	-.00062	-.00000	.00179	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00000**	**.00029**	**-.03719**	**.14568**	**-.00510**	**.06031**	**.00117**
Stddev	.00031	.00032	.00011	.00970	.07211	.00159	.07369	.00049
%RSD	218.83	8385.5	36.921	26.086	49.501	31.213	122.18	41.829
#1	.00042	-.00036	.00023	-.04794	.12643	-.00680	.08588	.00146
#2	.00019	.00017	.00042	-.03453	.22546	-.00484	-.02276	.00060
#3	-.00019	.00020	.00023	-.02909	.08514	-.00365	.11781	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00418**	**.00150**	**.00306**	**-.00130**	**.00173**	**-.00419**	**.00137**
Stddev	.00010	.00445	.00091	.00311	.00185	.00108	.00299	.00127
%RSD	120.49	106.35	60.769	101.71	142.46	62.457	71.346	92.362
#1	-.00000	.00844	.00059	-.00040	-.00239	.00094	-.00757	-.00006
#2	.00018	.00455	.00150	.00563	.00084	.00128	-.00312	.00182
#3	.00006	-.00044	.00241	.00395	-.00235	.00296	-.00188	.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 16:40:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**-.00013**	**.00124**	**-.00392**	**-.00010**	**.00007**	**.02486**
Stddev	.00012	.00024	.00557	.00272	.00049	.00006	.05120
%RSD	44.272	180.93	448.11	69.446	498.71	74.808	205.98
#1	-.00023	.00008	-.00012	-.00191	-.00040	.00004	.00147
#2	-.00039	-.00040	-.00352	-.00702	.00047	.00014	-.01048
#3	-.00017	-.00008	.00737	-.00284	-.00035	.00004	.08358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9397.3**	**56747.**	**2523.6**
Stddev	15.5	147.	22.6
%RSD	.16478	.25854	.89467
#1	9412.6	56869.	2498.6
#2	9381.6	56584.	2542.5
#3	9397.6	56788.	2529.8

Approved: July 02, 2016

Sample Name: L1606166007 Acquired: 7/1/2016 16:44:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00087	.04814	-.00055	.01444	.00056	.00008	.32678	.00002
Stddev	.00034	.00784	.00288	.00072	.00018	.00002	.03264	.00021
%RSD	38.948	16.280	522.71	5.0136	31.727	26.253	9.9892	842.14
#1	-.00049	.05001	-.00369	.01447	.00038	.00008	.32523	-.00000
#2	-.00113	.05488	.00196	.01515	.00056	.00009	.36018	-.00017
#3	-.00098	.03954	.00008	.01370	.00073	.00005	.29494	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00093	.04384	.01919	.26363	-.00648	.06716	.00286
Stddev	.00031	.00029	.00180	.01420	.11853	.00014	.01061	.00077
%RSD	168.46	31.514	4.1005	73.988	44.961	2.1394	15.800	26.914
#1	.00054	.00099	.04529	.02446	.34495	-.00664	.05494	.00369
#2	-.00005	.00061	.04440	.03000	.12763	-.00639	.07253	.00216
#3	.00006	.00119	.04183	.00311	.31831	-.00641	.07401	.00274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.21701	.00060	.01957	.00491	.00184	-.00360	.08616
Stddev	.00061	.01289	.00016	.00887	.00189	.00330	.00096	.00839
%RSD	180.93	5.9405	25.906	45.317	38.480	179.33	26.792	9.7371
#1	-.00004	.23176	.00062	.02379	.00708	.00237	-.00279	.09401
#2	.00001	.21137	.00074	.00938	.00360	-.00169	-.00467	.08714
#3	.00103	.20789	.00043	.02553	.00406	.00484	-.00334	.07732
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166007 Acquired: 7/1/2016 16:44:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	.00165	.00466	-.00226	.00059	.00980	.00122
Stddev	.00038	.00034	.00260	.00053	.00044	.00072	.00745
%RSD	31.730	20.685	55.715	23.388	73.731	7.3833	611.54
#1	.00153	.00127	.00764	-.00267	.00014	.01002	-.00560
#2	.00128	.00175	.00353	-.00167	.00064	.01039	.00009
#3	.00078	.00194	.00283	-.00245	.00101	.00899	.00917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9230.5	56449.	2514.9
Stddev	20.0	230.	18.9
%RSD	.21704	.40775	.75038
#1	9252.6	56354.	2532.2
#2	9225.5	56282.	2494.8
#3	9213.5	56712.	2517.8

Approved: July 02, 2016

Sample Name: L1606166008 Acquired: 7/1/2016 16:48:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.03556	-.00062	.00769	.00076	.00007	.53110	.00011
Stddev	.00148	.00619	.00109	.00103	.00099	.00013	.05117	.00015
%RSD	264.01	17.412	174.78	13.326	129.77	189.71	9.6350	131.78
#1	.00227	.04199	-.00041	.00693	.00190	-.00007	.58533	.00009
#2	-.00033	.02964	-.00181	.00886	.00020	.00019	.52429	-.00002
#3	-.00026	.03505	.00035	.00729	.00018	.00009	.48367	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00126	.02969	.12355	.26271	-.00250	.07534	.00168
Stddev	.00032	.00093	.00291	.02671	.04814	.00280	.11670	.00208
%RSD	686.54	73.952	9.8085	21.623	18.325	111.93	154.89	123.93
#1	-.00024	.00018	.03230	.10397	.23102	-.00563	.19488	.00178
#2	.00032	.00176	.03022	.11269	.23901	-.00026	-.03829	.00370
#3	-.00022	.00182	.02655	.15398	.31811	-.00160	.06943	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.24896	.00071	.01142	.00239	-.00119	-.00470	.07402
Stddev	.00025	.04121	.00054	.00449	.00144	.00079	.00339	.00678
%RSD	66.044	16.553	75.807	39.306	60.273	66.460	72.172	9.1577
#1	.00031	.22052	.00009	.01338	.00403	-.00146	-.00831	.07852
#2	.00016	.29622	.00102	.01460	.00176	-.00181	-.00159	.07731
#3	.00064	.23014	.00101	.00629	.00137	-.00030	-.00420	.06622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166008 Acquired: 7/1/2016 16:48:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.00129	.00963	-.00301	-.00011	.00802	-.02613
Stddev	.00007	.00055	.00768	.00247	.00048	.00070	.05045
%RSD	7.8452	42.485	79.756	81.866	427.69	8.7532	193.08
#1	.00099	.00181	.00557	-.00260	.00034	.00831	.03157
#2	.00090	.00133	.00483	-.00566	-.00061	.00853	-.04803
#3	.00085	.00072	.01849	-.00078	-.00006	.00722	-.06193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9225.9	56399.	2513.6
Stddev	9.7	153.	13.4
%RSD	.10465	.27207	.53367
#1	9221.4	56286.	2498.6
#2	9219.2	56337.	2524.2
#3	9236.9	56574.	2518.2

Approved: July 02, 2016

Sample Name: L1606166008PS Acquired: 7/1/2016 16:52:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574995-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20746**	**4.7500**	**.19042**	**.91558**	**.47669**	**.02341**	**5.2671**	**.02349**
Stddev	.00288	.0143	.00263	.00427	.00212	.00012	.0766	.00007
%RSD	1.3895	.30027	1.3820	.46588	.44502	.51972	1.4542	.30154
#1	.20470	4.7664	.19196	.91203	.47425	.02349	5.1818	.02352
#2	.21045	4.7432	.19192	.92031	.47814	.02347	5.3299	.02355
#3	.20721	4.7404	.18738	.91441	.47767	.02327	5.2897	.02342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09633**	**.23889**	**.26478**	**2.0611**	**23.801**	**.47993**	**4.9715**	**.24193**
Stddev	.00159	.00046	.00336	.0219	.264	.00457	.0244	.00418
%RSD	1.6498	.19248	1.2686	1.0645	1.1096	.95214	.49127	1.7295
#1	.09705	.23929	.26736	2.0433	23.513	.47553	4.9695	.23971
#2	.09743	.23900	.26599	2.0856	24.031	.47960	4.9481	.24676
#3	.09451	.23839	.26098	2.0545	23.858	.48465	4.9968	.23933
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47705**	**23.827**	**.23723**	**4.5755**	**.23957**	**.55790**	**.17575**	**2.3474**
Stddev	.00638	.168	.00349	.0542	.00408	.00956	.00764	.0180
%RSD	1.3370	.70376	1.4698	1.1840	1.7051	1.7134	4.3475	.76862
#1	.48091	23.636	.23993	4.6109	.23955	.56004	.18414	2.3567
#2	.48056	23.949	.23846	4.6024	.24366	.56620	.16920	2.3590
#3	.46969	23.895	.23329	4.5131	.23549	.54745	.17391	2.3267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166008PS Acquired: 7/1/2016 16:52:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574995-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47515**	**.48274**	**.48742**	**.23635**	**.47651**	**.47573**	**.02517**
Stddev	.00843	.00266	.00922	.00015	.00106	.00721	.03059
%RSD	1.7750	.55077	1.8910	.06374	.22182	1.5163	121.54
#1	.48104	.47998	.48352	.23652	.47772	.47967	-.00099
#2	.47891	.48297	.48081	.23630	.47604	.48012	.01769
#3	.46549	.48528	.49795	.23623	.47578	.46741	.05880
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9168.8**	**55626.**	**2517.1**
Stddev	17.5	195.	5.6
%RSD	.19051	.34987	.22067
#1	9151.7	55605.	2522.2
#2	9168.2	55442.	2511.2
#3	9186.6	55830.	2517.8

Approved: July 02, 2016

Sample Name: L1606166008DL Acquired: 7/1/2016 16:56:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574995-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00799**	**-.00018**	**.00476**	**.00243**	**.00010**	**.12239**	**.00013**
Stddev	.00199	.00890	.00315	.00278	.00120	.00000	.02070	.00011
%RSD	518.61	111.35	1757.0	58.425	49.461	5.0183	16.915	84.997
#1	-.00259	.01722	-.00200	.00294	.00104	.00009	.14612	.00023
#2	.00127	.00728	-.00200	.00796	.00309	.00010	.10796	.00002
#3	.00017	-.00053	.00346	.00337	.00317	.00010	.11311	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**-.00027**	**.00616**	**.01032**	**.18312**	**-.00701**	**.03141**	**.00048**
Stddev	.00024	.00054	.00102	.01729	.02384	.00103	.02217	.00153
%RSD	83.020	201.35	16.552	167.62	13.019	14.728	70.586	319.29
#1	.00035	-.00022	.00694	-.00676	.20457	-.00806	.04999	.00025
#2	.00050	-.00083	.00653	.02782	.15745	-.00600	.00687	-.00093
#3	.00003	.00025	.00501	.00989	.18735	-.00698	.03737	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.06827**	**.00050**	**.00518**	**-.00086**	**-.00019**	**.00421**	**.01508**
Stddev	.00039	.02073	.00088	.00143	.00306	.00410	.00150	.00156
%RSD	827.69	30.371	176.20	27.535	356.48	2207.8	35.664	10.353
#1	.00003	.04439	.00039	.00364	-.00182	-.00050	.00589	.01329
#2	-.00034	.08172	.00143	.00543	.00257	-.00412	.00298	.01582
#3	.00044	.07870	-.00032	.00646	-.00333	.00406	.00378	.01614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166008DL Acquired: 7/1/2016 16:56:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574995-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00001**	**-.00438**	**-.00228**	**-.00037**	**.00297**	**-.01499**
Stddev	.00087	.00043	.00911	.00433	.00034	.00022	.01676
%RSD	597.05	3250.1	207.91	190.18	93.238	7.4057	111.81
#1	-.00106	.00019	.00605	-.00018	-.00033	.00307	-.03128
#2	-.00004	-.00047	-.00843	-.00726	-.00004	.00312	.00220
#3	.00066	.00033	-.01077	.00061	-.00073	.00272	-.01589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9119.2**	**55216.**	**2460.7**
Stddev	30.2	79.	6.9
%RSD	.33080	.14377	.27948
#1	9149.0	55279.	2468.1
#2	9120.1	55243.	2459.6
#3	9088.7	55127.	2454.5

Approved: July 02, 2016

Sample Name: L1606166008DL Acquired: 7/1/2016 17:00:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574995-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00104**	**.00215**	**.00403**	**-.00078**	**.00008**	**.00401**
Stddev	.00096	.00727	.00112	.00155	.00017	.00007	.03991
%RSD	687.33	699.55	52.049	38.519	21.704	79.394	994.91
#1	.00068	.00287	.00109	.00416	-.00066	.00001	.04874
#2	.00010	-.00697	.00332	.00551	-.00072	.00010	-.02797
#3	-.00120	.00722	.00205	.00241	-.00098	.00013	-.00873
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.00010**	**.00067**	**.00054**	F **-.02224**	**.22954**	**-.00487**
Stddev	.00036	.00043	.00062	.00093	.01162	.10331	.00087
%RSD	816.26	445.89	92.889	172.89	52.254	45.006	17.823
#1	-.00003	-.00039	.00102	.00005	-.00886	.11065	-.00451
#2	-.00027	.00039	-.00005	-.00005	-.02808	.29743	-.00586
#3	.00044	.00029	.00103	.00162	-.02980	.28055	-.00425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09892**	**.00113**	**-.00017**	**.03021**	**.00120**	**.00422**	**-.00002**
Stddev	.02637	.00258	.00004	.00703	.00094	.00210	.00071
%RSD	26.658	228.73	26.098	23.271	78.402	49.820	3122.8
#1	.09166	.00388	-.00012	.02274	.00167	.00564	.00080
#2	.12815	-.00125	-.00018	.03670	.00181	.00521	-.00043
#3	.07693	.00076	-.00020	.03117	.00012	.00180	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: L1606166008DL Acquired: 7/1/2016 17:00:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574995-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00200**	**-.00199**	**.00383**	**-.00012**	**-.00025**	**-.00196**	**-.00113**
Stddev	.00312	.00270	.00177	.00028	.00059	.00914	.00148
%RSD	156.20	135.31	46.130	229.51	240.12	466.29	131.17
#1	-.00542	.00088	.00529	-.00028	-.00093	.00798	-.00184
#2	-.00122	-.00447	.00187	-.00029	.00012	-.00385	.00057
#3	.00066	-.00238	.00432	.00020	.00007	-.01000	-.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00013**	**.00105**	**-.02628**
Stddev	.00020	.00009	.00591
%RSD	149.03	8.3037	22.481
#1	-.00007	.00097	-.02281
#2	.00033	.00114	-.03310
#3	.00013	.00105	-.02292
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9245.9**	**55904.**	**2489.0**
Stddev	25.6	135.	12.1
%RSD	.27704	.24132	.48689
#1	9268.7	56031.	2475.7
#2	9250.9	55919.	2491.9
#3	9218.2	55762.	2499.5

Approved: July 02, 2016

Sample Name: L1606145201 Acquired: 7/1/2016 17:04:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00193	.00663	-.00098	.00271	.02908	.00007	1.7692	.00006
Stddev	.00221	.00600	.00321	.00432	.00072	.00003	.0075	.00008
%RSD	114.74	90.504	328.01	159.27	2.4685	45.420	.42196	121.80
#1	.00320	.00527	-.00378	-.00028	.02900	.00011	1.7665	.00001
#2	-.00063	.01320	.00253	.00076	.02984	.00004	1.7776	.00003
#3	.00321	.00143	-.00169	.00767	.02841	.00007	1.7634	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00039	.00032	.10387	3.4292	.00249	1.3291	.03663
Stddev	.00021	.00030	.00026	.01792	.0391	.00169	.0788	.00239
%RSD	53.676	75.572	82.316	17.252	1.1392	68.009	5.9318	6.5278
#1	.00052	.00031	.00041	.11298	3.3870	.00161	1.3890	.03417
#2	.00051	.00073	.00002	.11540	3.4642	.00142	1.3584	.03894
#3	.00015	.00015	.00052	.08322	3.4362	.00444	1.2398	.03678
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	9.0921	.00038	.00149	.00104	.00134	.00119	.52237
Stddev	.00023	.0484	.00109	.00548	.00332	.00508	.00425	.01090
%RSD	6107.3	.53242	284.66	367.04	318.58	379.88	356.90	2.0860
#1	-.00006	9.0372	.00087	-.00467	.00349	-.00440	.00350	.51254
#2	.00025	9.1104	.00114	.00333	-.00274	.00315	.00379	.52048
#3	-.00020	9.1286	-.00087	.00581	.00238	.00527	-.00372	.53408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606145201 Acquired: 7/1/2016 17:04:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.04599**	**.00346**	**-.00095**	**-.00006**	**.00100**	**-.01086**
Stddev	.00088	.00072	.00370	.00172	.00035	.00014	.03063
%RSD	691.14	1.5743	106.87	181.23	618.99	13.545	282.12
#1	-.00082	.04551	.00515	-.00151	.00031	.00108	-.00198
#2	.00029	.04564	-.00078	.00098	-.00040	.00107	.01436
#3	.00091	.04682	.00602	-.00233	-.00008	.00084	-.04495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9188.8**	**55433.**	**2480.1**
Stddev	2.6	66.	10.1
%RSD	.02881	.11927	.40620
#1	9186.7	55507.	2491.7
#2	9191.7	55381.	2475.2
#3	9187.8	55410.	2473.4

Approved: July 02, 2016

Sample Name: L1606145301 Acquired: 7/1/2016 17:08:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00179**	**.01288**	**-.00118**	**.00201**	**.10647**	**.00010**	**3.1701**	**-.00006**
Stddev	.00192	.00136	.00329	.00149	.00287	.00002	.0494	.00019
%RSD	106.95	10.584	277.99	74.169	2.6926	21.666	1.5582	336.10
#1	-.00116	.01350	.00003	.00344	.10420	.00012	3.1791	-.00009
#2	-.00395	.01131	.00133	.00214	.10552	.00008	3.1168	-.00023
#3	-.00027	.01382	-.00491	.00046	.10969	.00010	3.2144	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00243**	**.00169**	**-.00122**	**.27672**	**.25436**	**.00072**	**2.3309**	**.08073**
Stddev	.00032	.00053	.00015	.03069	.13726	.00094	.0542	.00226
%RSD	13.172	31.560	12.307	11.089	53.962	130.90	2.3270	2.8033
#1	.00219	.00229	-.00139	.30882	.29545	.00101	2.3180	.08288
#2	.00279	.00127	-.00119	.24767	.36639	-.00033	2.3905	.07837
#3	.00229	.00151	-.00109	.27368	.10125	.00148	2.2844	.08094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**8.8148**	**.00239**	**.00610**	**.00134**	**-.00167**	**-.00584**	**1.3445**
Stddev	.00042	.0716	.00045	.00305	.00143	.00157	.00151	.0098
%RSD	525850.	.81226	19.012	50.051	106.93	94.132	25.863	.72775
#1	.00043	8.7684	.00219	.00568	.00281	-.00189	-.00410	1.3337
#2	-.00001	8.7787	.00291	.00327	.00126	-.00312	-.00669	1.3527
#3	-.00041	8.8972	.00207	.00933	-.00005	.00000	-.00674	1.3470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606145301 Acquired: 7/1/2016 17:08:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.06509**	**-.00557**	**-.00061**	**.00019**	**.00540**	**.01548**
Stddev	.00065	.00079	.00143	.00312	.00076	.00021	.01312
%RSD	172.69	1.2083	25.753	513.76	401.81	3.8474	84.740
#1	.00081	.06442	-.00680	.00279	.00103	.00519	.02861
#2	-.00037	.06490	-.00399	-.00335	-.00001	.00540	.01548
#3	.00070	.06596	-.00592	-.00126	-.00045	.00560	.00237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9159.3**	**55462.**	**2477.1**
Stddev	3.0	28.	17.3
%RSD	.03318	.04968	.69661
#1	9162.1	55432.	2485.1
#2	9156.1	55467.	2488.9
#3	9159.6	55486.	2457.3

Approved: July 02, 2016

Sample Name: L1606145302 Acquired: 7/1/2016 17:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00180**	**.00554**	**-.00002**	**.00149**	**.03667**	**.00007**	**1.1265**
Stddev	.00126	.01049	.00303	.00183	.00118	.00002	.0302
%RSD	70.254	189.33	13241.	122.55	3.2311	35.178	2.6819
#1	-.00226	.01547	-.00338	.00054	.03632	.00004	1.1533
#2	-.00276	-.00543	.00081	.00034	.03571	.00007	1.0938
#3	-.00037	.00657	.00251	.00360	.03800	.00009	1.1324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**-.00010**	**-.00011**	**.00007**	**2.0649**	**.29502**	**.00007**
Stddev	.00038	.00015	.00092	.00073	.0691	.09394	.00230
%RSD	147.41	155.76	851.06	1101.9	3.3471	31.840	3272.5
#1	-.00068	-.00019	-.00007	-.00073	2.0673	.27317	.00249
#2	.00005	.00008	-.00105	.00023	1.9946	.21393	-.00019
#3	-.00015	-.00018	.00079	.00069	2.1328	.39796	-.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.82842**	**.02471**	**-.00012**	**3.8862**	**.00015**	**.00951**	**-.00024**
Stddev	.03326	.00135	.00049	.0403	.00083	.00205	.00568
%RSD	4.0147	5.4540	414.14	1.0379	570.51	21.571	2376.7
#1	.83375	.02504	-.00064	3.9044	-.00056	.01055	.00387
#2	.79282	.02587	.00033	3.8400	.00106	.00714	.00213
#3	.85869	.02323	-.00004	3.9142	-.00006	.01083	-.00672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: L1606145302 Acquired: 7/1/2016 17:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00110**	**.00086**	**.79673**	**.00009**	**.02559**	**-.00516**	**-.00091**
Stddev	.00446	.00318	.01334	.00018	.00027	.00708	.00076
%RSD	406.07	368.55	1.6738	196.00	1.0581	137.08	83.572
#1	-.00167	.00420	.78147	.00013	.02546	-.00219	-.00020
#2	.00624	.00050	.80611	.00025	.02540	-.01324	-.00081
#3	-.00128	-.00212	.80262	-.00010	.02590	-.00006	-.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00025**	**.00074**	F **-.04761**
Stddev	.00087	.00005	.04410
%RSD	354.29	6.9689	92.626
#1	.00125	.00079	-.00551
#2	-.00021	.00068	-.09347
#3	-.00030	.00075	-.04385
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9179.3**	**55486.**	**2466.6**
Stddev	6.2	126.	6.1
%RSD	.06707	.22769	.24905
#1	9186.3	55473.	2462.6
#2	9176.3	55618.	2473.7
#3	9175.1	55366.	2463.6

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 17:15:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41220**	**9.5485**	**.38752**	**.47473**	**.95893**	**.04721**	**9.4520**
Stddev	.00280	.0021	.00066	.00116	.00356	.00010	.0881
%RSD	.67983	.02200	.17028	.24369	.37102	.20415	.93192
#1	.41026	9.5476	.38805	.47455	.95489	.04732	9.5067
#2	.41093	9.5509	.38678	.47368	.96162	.04719	9.4988
#3	.41541	9.5469	.38772	.47597	.96026	.04713	9.3504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04825**	**.19524**	**.47580**	**.48705**	**3.8557**	**47.785**	**.94865**
Stddev	.00038	.00061	.00055	.00081	.0233	.284	.00607
%RSD	.78937	.31290	.11587	.16642	.60485	.59347	.64031
#1	.04851	.19454	.47533	.48759	3.8289	47.527	.94393
#2	.04782	.19564	.47566	.48612	3.8673	48.089	.95550
#3	.04844	.19554	.47641	.48745	3.8709	47.739	.94652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.6303**	**.48438**	**.96789**	**47.900**	**.48222**	**9.6239**	**.48385**
Stddev	.0343	.00370	.00232	.188	.00174	.0147	.00254
%RSD	.35577	.76377	.23943	.39197	.36111	.15266	.52507
#1	9.6691	.48019	.96769	47.687	.48265	9.6302	.48327
#2	9.6176	.48575	.96568	47.972	.48030	9.6071	.48663
#3	9.6042	.48719	.97030	48.041	.48371	9.6343	.48165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 17:15:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1478**	**.38502**	**4.6810**	**.96907**	**.96365**	**.96447**	**.48800**
Stddev	.0024	.00297	.0128	.00221	.00382	.00556	.00198
%RSD	.20719	.77121	.27327	.22774	.39619	.57698	.40565
#1	1.1455	.38688	4.6798	.96751	.95987	.96034	.48833
#2	1.1478	.38159	4.6689	.96811	.96357	.96227	.48980
#3	1.1503	.38658	4.6944	.97159	.96751	.97080	.48588
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.95140**	**.96337**	F **.71116**
Stddev	.00079	.00084	.03116
%RSD	.08342	.08678	4.3823
#1	.95074	.96350	.67519
#2	.95228	.96413	.73007
#3	.95118	.96247	.72822
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9252.7**	**55784.**	**2538.8**
Stddev	8.7	59.	9.1
%RSD	.09358	.10512	.35852
#1	9251.4	55717.	2543.3
#2	9244.8	55811.	2528.3
#3	9262.0	55825.	2544.7

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 17:19:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00181**	**.00791**	**-.00280**	**.00036**	**-.00048**	**.00003**	**.01309**	**.00012**
Stddev	.00096	.00464	.00132	.00128	.00108	.00007	.04195	.00018
%RSD	52.773	58.611	47.271	356.60	223.56	287.64	320.55	146.19
#1	.00086	.00997	-.00345	-.00051	-.00066	-.00004	.05669	-.00008
#2	.00277	.00260	-.00367	.00183	-.00147	.00001	.00955	.00019
#3	.00180	.01116	-.00128	-.00024	.00067	.00010	-.02698	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**-.00086**	**-.00039**	**-.03555**	**.11871**	**-.00067**	**.05778**	**.00080**
Stddev	.00021	.00055	.00140	.01374	.10400	.00330	.07415	.00065
%RSD	227.52	63.473	361.11	38.640	87.602	491.78	128.33	81.199
#1	-.00004	-.00136	-.00052	-.03431	.00050	-.00063	-.00892	.00010
#2	.00034	-.00094	.00107	-.02247	.19612	-.00399	.04463	.00139
#3	-.00002	-.00028	-.00172	-.04986	.15951	.00261	.13763	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.03317**	**.00040**	**.00113**	**.00095**	**-.00100**	**-.00359**	**.00029**
Stddev	.00033	.00923	.00127	.00750	.00421	.00106	.00279	.00304
%RSD	1860.7	27.826	313.17	664.21	442.00	106.07	77.681	1033.6
#1	-.00001	.04342	-.00104	.00797	.00480	-.00143	-.00104	-.00308
#2	-.00035	.02550	.00130	.00230	.00160	.00021	-.00657	.00116
#3	.00030	.03060	.00096	-.00689	-.00354	-.00177	-.00317	.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 17:19:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**-.00009**	**.00123**	**-.00318**	**.00090**	**.00017**	**-.01943**
Stddev	.00059	.00014	.00482	.00398	.00050	.00008	.02759
%RSD	121.38	157.54	391.40	125.01	55.934	48.064	141.98
#1	-.00019	-.00012	-.00117	-.00183	.00138	.00008	-.04732
#2	.00073	-.00020	-.00191	-.00005	.00094	.00018	.00784
#3	.00092	.00006	.00678	-.00766	.00038	.00025	-.01881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9334.0**	**56493.**	**2536.9**
Stddev	21.2	178.	5.6
%RSD	.22692	.31590	.22269
#1	9355.7	56585.	2535.8
#2	9333.0	56607.	2531.9
#3	9313.4	56288.	2543.0

Approved: July 02, 2016

Sample Name: PBW 9A Acquired: 7/1/2016 17:23:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00660**	**-.00111**	**.00406**	**-.00086**	**.00007**	**.05277**	**.00020**
Stddev	.00150	.00955	.00096	.00180	.00169	.00007	.02072	.00017
%RSD	871.88	144.83	86.387	44.268	194.88	102.80	39.274	87.382
#1	.00138	-.00137	-.00001	.00603	-.00279	.00007	.03016	.00006
#2	-.00027	.01719	-.00159	.00250	.00033	-.00000	.07086	.00014
#3	-.00163	.00397	-.00173	.00365	-.00013	.00014	.05729	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**-.00005**	**.00006**	**-.01750**	**.05930**	**-.00246**	**.02757**	**-.00006**
Stddev	.00015	.00080	.00066	.02627	.05809	.00073	.04562	.00112
%RSD	290.24	1712.7	1170.3	150.16	97.958	29.724	165.47	1910.0
#1	.00009	-.00087	-.00071	.00301	.09801	-.00327	-.02452	.00120
#2	-.00011	.00073	.00038	-.04711	-.00749	-.00228	.04679	-.00097
#3	.00018	.00000	.00049	-.00839	.08738	-.00184	.06044	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**-.01450**	**.00134**	**.00040**	**.00122**	**-.00009**	**-.00526**	**.00415**
Stddev	.00011	.03578	.00099	.00345	.00240	.00263	.00366	.00043
%RSD	29.797	246.74	74.355	860.07	197.13	2967.4	69.675	10.446
#1	.00027	-.01160	.00242	-.00345	-.00080	-.00272	-.00908	.00465
#2	.00037	-.05165	.00113	.00144	.00058	-.00009	-.00177	.00390
#3	.00049	.01974	.00046	.00321	.00388	.00255	-.00493	.00389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: PBW 9A Acquired: 7/1/2016 17:23:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00082**	**-.00012**	**.00734**	**-.00408**	**.00023**	**.00176**	**.00769**
Stddev	.00092	.00011	.00245	.00226	.00069	.00009	.03951
%RSD	112.64	92.732	33.341	55.334	293.80	4.8379	514.02
#1	.00151	-.00025	.00453	-.00663	-.00054	.00174	-.03046
#2	.00116	-.00003	.00847	-.00329	.00046	.00185	.00509
#3	-.00023	-.00009	.00903	-.00233	.00078	.00169	.04843
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9150.2**	**55854.**	**2496.6**
Stddev	3.5	178.	33.0
%RSD	.03793	.31860	1.3222
#1	9153.5	55982.	2470.6
#2	9146.6	55651.	2485.4
#3	9150.7	55929.	2533.7

Approved: July 02, 2016

Sample Name: LCSW 9A Acquired: 7/1/2016 17:27:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20318**	**4.6956**	**.18969**	**.90922**	**.47628**	**.02329**	**4.8499**	**.02347**
Stddev	.00453	.0141	.00222	.00411	.00276	.00016	.0209	.00055
%RSD	2.2305	.30065	1.1718	.45212	.57995	.70299	.43089	2.3518
#1	.20712	4.7020	.18726	.91397	.47898	.02343	4.8696	.02386
#2	.19823	4.6794	.19163	.90688	.47346	.02311	4.8280	.02371
#3	.20420	4.7054	.19017	.90681	.47639	.02332	4.8521	.02284
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09563**	**.23822**	**.23983**	**1.9373**	**23.730**	**.47757**	**4.8010**	**.23593**
Stddev	.00096	.00159	.00229	.0227	.071	.00310	.0691	.00262
%RSD	1.0064	.66879	.95466	1.1728	.29989	.64840	1.4388	1.1121
#1	.09607	.23863	.24173	1.9596	23.812	.48067	4.8400	.23535
#2	.09629	.23646	.24047	1.9382	23.696	.47757	4.8416	.23364
#3	.09452	.23957	.23728	1.9142	23.682	.47448	4.7212	.23879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47978**	**23.810**	**.23736**	**4.5585**	**.23890**	**.55949**	**.17439**	**2.3106**
Stddev	.00418	.100	.00211	.0283	.00225	.00355	.00287	.0089
%RSD	.87213	.42029	.88798	.61984	.94146	.63538	1.6480	.38305
#1	.48154	23.848	.23915	4.5730	.24145	.56211	.17219	2.3116
#2	.48280	23.697	.23790	4.5765	.23721	.56091	.17334	2.3189
#3	.47501	23.886	.23504	4.5259	.23804	.55544	.17764	2.3013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: LCSW 9A Acquired: 7/1/2016 17:27:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47674**	**.48246**	**.48100**	**.23650**	**.47155**	**.47082**	**-.01548**
Stddev	.00663	.00269	.00217	.00143	.00292	.00403	.03913
%RSD	1.3900	.55685	.45177	.60633	.61987	.85561	252.79
#1	.47943	.48459	.47932	.23600	.47284	.47362	-.04955
#2	.48160	.47944	.48345	.23811	.46820	.47265	-.02415
#3	.46919	.48334	.48022	.23538	.47361	.46620	.02726
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9106.7**	**55409.**	**2480.8**
Stddev	20.2	222.	14.4
%RSD	.22203	.39977	.57973
#1	9086.4	55204.	2464.3
#2	9106.8	55644.	2487.7
#3	9126.9	55379.	2490.5

Approved: July 02, 2016

Sample Name: L1606149601 Acquired: 7/1/2016 17:31:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.03252	.00155	.04281	.08095	.00004	149.76	.00388
Stddev	.00111	.00219	.00361	.00095	.00084	.00008	.86	.00019
%RSD	144.98	6.7420	232.22	2.2137	1.0366	193.81	.57423	4.9608
#1	.00156	.03000	.00357	.04302	.08175	-.00003	149.89	.00369
#2	-.00050	.03357	.00371	.04177	.08007	.00003	150.55	.00407
#3	.00122	.03398	-.00261	.04363	.08102	.00013	148.84	.00389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00139	.08315	-.00533	2.4937	.00305	2.1412	.13764
Stddev	.00037	.00068	.00274	.00269	.0303	.00456	.0577	.00076
%RSD	103.02	48.874	3.2961	50.467	1.2152	149.65	2.6953	.55300
#1	-.00007	.00135	.08417	-.00795	2.5110	.00010	2.1733	.13729
#2	.00054	.00073	.08523	-.00545	2.4587	.00075	2.0746	.13712
#3	.00059	.00209	.08004	-.00258	2.5113	.00830	2.1758	.13852
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	3.7838	.00176	.48657	.04050	.00220	-.00445	.67690
Stddev	.00023	.0208	.00061	.00723	.00254	.00230	.00878	.01385
%RSD	280.24	.55090	34.655	1.4859	6.2808	104.64	197.17	2.0468
#1	-.00018	3.7869	.00244	.48959	.04283	.00473	-.01079	.68446
#2	.00021	3.8029	.00126	.49180	.04089	.00024	-.00814	.68534
#3	.00021	3.7616	.00158	.47832	.03779	.00162	.00557	.66091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606149601 Acquired: 7/1/2016 17:31:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.33249	-.01835	-.00434	-.00009	.15147	-.02552
Stddev	.00029	.00188	.00756	.00096	.00047	.00547	.01284
%RSD	87.680	.56572	41.232	22.046	492.72	3.6098	50.297
#1	.00000	.33159	-.01687	-.00360	-.00031	.15444	-.01070
#2	.00045	.33465	-.01163	-.00542	-.00041	.15480	-.03320
#3	.00055	.33122	-.02654	-.00399	.00044	.14516	-.03266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9105.0	55191.	2528.8
Stddev	12.9	133.	21.5
%RSD	.14216	.24054	.85064
#1	9113.1	55061.	2515.4
#2	9111.9	55326.	2517.3
#3	9090.1	55187.	2553.6

Approved: July 02, 2016

Sample Name: L1606149601S Acquired: 7/1/2016 17:34:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20686**	**4.8373**	**.19895**	**.97881**	**.56398**	**.02376**	**147.13**	**.02794**
Stddev	.00261	.0108	.00170	.00245	.00295	.00008	.81	.00008
%RSD	1.2620	.22269	.85437	.25014	.52226	.34212	.54928	.27810
#1	.20781	4.8250	.20091	.98130	.56715	.02368	148.06	.02785
#2	.20391	4.8420	.19803	.97640	.56132	.02384	146.58	.02800
#3	.20887	4.8450	.19790	.97872	.56347	.02375	146.76	.02796
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09682**	**.24004**	**.31828**	**1.9683**	**26.553**	**.50241**	**6.7234**	**.37480**
Stddev	.00029	.00131	.00074	.0516	.092	.00324	.0831	.00342
%RSD	.29731	.54650	.23183	2.6212	.34479	.64395	1.2365	.91181
#1	.09661	.23918	.31904	2.0264	26.502	.50506	6.8126	.37659
#2	.09715	.24155	.31824	1.9279	26.499	.50337	6.7095	.37086
#3	.09670	.23940	.31756	1.9506	26.659	.49880	6.6480	.37695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49720**	**27.980**	**.23957**	**5.3539**	**.27585**	**.58002**	**.18023**	**3.0819**
Stddev	.00166	.139	.00068	.0038	.00228	.00474	.00621	.0058
%RSD	.33378	.49838	.28484	.07102	.82476	.81748	3.4459	.18790
#1	.49775	28.141	.23880	5.3571	.27652	.58013	.17315	3.0865
#2	.49852	27.888	.24012	5.3548	.27772	.58470	.18478	3.0837
#3	.49534	27.911	.23978	5.3497	.27332	.57522	.18275	3.0754
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606149601S Acquired: 7/1/2016 17:34:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48856**	**.79403**	**.46807**	**.24112**	**.48492**	**.61223**	**.00787**
Stddev	.00292	.00350	.00135	.00282	.00154	.00208	.03340
%RSD	.59762	.44072	.28902	1.1701	.31655	.33964	424.13
#1	.48823	.79804	.46867	.24003	.48405	.61344	-.03031
#2	.49164	.79163	.46902	.24433	.48401	.61343	.03165
#3	.48583	.79241	.46652	.23901	.48669	.60983	.02228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8984.8**	**54766.**	**2503.0**
Stddev	25.2	85.	22.0
%RSD	.28022	.15446	.88081
#1	8956.7	54682.	2477.9
#2	8992.2	54851.	2519.5
#3	9005.4	54765.	2511.5

Approved: July 02, 2016

Sample Name: L1606149601SD Acquired: 7/1/2016 17:38:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-10

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21148**	**4.9339**	**.20189**	**.99761**	**.57725**	**.02436**	**156.35**	**.02872**
Stddev	.00055	.0043	.00083	.00153	.00191	.00012	.76	.00008
%RSD	.26241	.08765	.41300	.15294	.33020	.51217	.48406	.27202
#1	.21085	4.9298	.20093	.99595	.57943	.02429	157.14	.02862
#2	.21191	4.9334	.20240	.99895	.57647	.02450	155.63	.02876
#3	.21166	4.9384	.20235	.99793	.57586	.02428	156.30	.02876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09808**	**.24519**	**.32637**	**1.9939**	**27.214**	**.50814**	**7.0502**	**.38428**
Stddev	.00056	.00084	.00024	.0222	.287	.00204	.1154	.00308
%RSD	.56829	.34207	.07329	1.1132	1.0558	.40169	1.6373	.80228
#1	.09870	.24497	.32618	2.0044	27.491	.50915	6.9774	.38776
#2	.09762	.24612	.32664	2.0089	26.917	.50579	6.9900	.38320
#3	.09791	.24449	.32629	1.9684	27.234	.50948	7.1833	.38189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50346**	**28.477**	**.24217**	**5.4426**	**.28213**	**.59074**	**.18477**	**3.1558**
Stddev	.00041	.103	.00085	.0021	.00346	.00229	.00512	.0048
%RSD	.08114	.36275	.34895	.03938	1.2257	.38795	2.7692	.15122
#1	.50393	28.545	.24142	5.4451	.28577	.58867	.18017	3.1613
#2	.50330	28.358	.24200	5.4414	.28174	.59036	.18387	3.1532
#3	.50317	28.528	.24308	5.4414	.27889	.59321	.19028	3.1529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606149601SD Acquired: 7/1/2016 17:38:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-10

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49523**	**.82102**	**.47153**	**.24252**	**.49533**	**.62474**	**.00228**
Stddev	.00052	.00456	.01409	.00394	.00173	.00096	.00688
%RSD	.10589	.55552	2.9881	1.6239	.34991	.15304	302.04
#1	.49572	.82357	.46350	.24100	.49504	.62575	.00983
#2	.49530	.81576	.46330	.24699	.49376	.62385	.00062
#3	.49467	.82374	.48780	.23956	.49718	.62461	-.00362
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8977.8**	**54556.**	**2497.0**
Stddev	9.6	153.	8.8
%RSD	.10640	.28054	.35373
#1	8986.9	54455.	2488.0
#2	8967.8	54482.	2505.7
#3	8978.7	54732.	2497.3

Approved: July 02, 2016

L1606145802

Sample Name: L1606145801 Acquired: 7/1/2016 17:42:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**1.1397**	**.00124**	**.03295**	**.27286**	**.00011**	**24.822**	**.00018**
Stddev	.00071	.0058	.00099	.00271	.00263	.00005	.113	.00015
%RSD	68.985	.50496	79.787	8.2132	.96461	43.608	.45625	82.063
#1	-.00159	1.1446	.00012	.03294	.27579	.00008	24.944	.00002
#2	-.00126	1.1334	.00199	.03567	.27069	.00016	24.802	.00019
#3	-.00023	1.1412	.00161	.03025	.27210	.00008	24.720	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00057**	**.00440**	**.00828**	**1.5386**	**2.6048**	**.00143**	**5.7402**	**.08550**
Stddev	.00035	.00069	.00090	.0578	.0843	.00672	.1267	.00056
%RSD	61.736	15.584	10.909	3.7547	3.2381	468.68	2.2071	.65403
#1	.00047	.00413	.00868	1.5883	2.6969	-.00585	5.7711	.08599
#2	.00028	.00389	.00725	1.5522	2.5313	.00740	5.6009	.08489
#3	.00096	.00518	.00892	1.4752	2.5863	.00275	5.8485	.08562
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03706**	**12.184**	**.00441**	**.03049**	**.01439**	**-.00001**	**-.00841**	**2.4626**
Stddev	.00207	.063	.00075	.00356	.00173	.00486	.00362	.1076
%RSD	5.5821	.51576	17.010	11.681	11.992	56414.	43.040	4.3706
#1	.03847	12.231	.00393	.02761	.01269	.00558	-.00424	2.5265
#2	.03801	12.210	.00528	.02939	.01614	-.00319	-.01021	2.5230
#3	.03468	12.113	.00403	.03447	.01433	-.00242	-.01077	2.3384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

L1606145802

Sample Name: L~~1606145801~~ Acquired: 7/1/2016 17:42:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00302**	**.12081**	**.01990**	**-.00120**	**.00253**	**.01635**	**.02868**
Stddev	.00034	.00062	.00789	.00092	.00037	.00086	.01415
%RSD	11.201	.51318	39.628	76.985	14.727	5.2725	49.340
#1	.00264	.12118	.02442	-.00050	.00295	.01675	.01710
#2	.00330	.12115	.01080	-.00085	.00244	.01694	.04446
#3	.00311	.12009	.02450	-.00224	.00222	.01536	.02449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9185.7**	**55621.**	**2507.0**
Stddev	11.1	20.	14.8
%RSD	.12073	.03607	.59204
#1	9197.2	55634.	2495.5
#2	9184.7	55598.	2501.9
#3	9175.1	55631.	2523.8

Approved: July 02, 2016

L1606145802PS

Sample Name: ~~L1606145801PS~~ Acquired: 7/1/2016 17:46:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574645-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20844	5.8628	.19870	.97024	.73434	.02404	27.371	.02438
Stddev	.00068	.0163	.00101	.00446	.00399	.00005	.125	.00032
%RSD	.32854	.27849	.50820	.45936	.54308	.22384	.45771	1.3212
#1	.20897	5.8468	.19890	.96565	.73856	.02409	27.474	.02469
#2	.20766	5.8621	.19960	.97455	.73064	.02404	27.232	.02439
#3	.20868	5.8794	.19761	.97051	.73383	.02398	27.408	.02405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09979	.24733	.25133	3.4051	26.671	.49493	10.119	.31907
Stddev	.00035	.00182	.00118	.0241	.072	.00263	.070	.00062
%RSD	.35482	.73655	.46834	.70839	.27125	.53064	.69405	.19303
#1	.10016	.24752	.25139	3.4293	26.721	.49327	10.055	.31841
#2	.09974	.24905	.25012	3.4051	26.705	.49356	10.195	.31962
#3	.09946	.24542	.25248	3.3810	26.588	.49796	10.108	.31917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53195	35.352	.24695	4.8438	.25699	.58699	.18044	4.7007
Stddev	.00043	.200	.00161	.0080	.00087	.00736	.00404	.0051
%RSD	.08143	.56682	.65321	.16538	.33967	1.2532	2.2414	.10872
#1	.53244	35.577	.24599	4.8345	.25786	.59431	.17734	4.7006
#2	.53183	35.193	.24882	4.8488	.25612	.57959	.17897	4.7060
#3	.53160	35.285	.24605	4.8480	.25699	.58709	.18502	4.6957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: ~~L1606145801PS~~ Acquired: 7/1/2016 17:46:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574645-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49876**	**.60466**	**.50193**	**.24197**	**.49068**	**.49530**	**.08028**
Stddev	.00061	.00157	.00958	.00282	.00057	.00380	.04289
%RSD	.12317	.25983	1.9086	1.1652	.11687	.76639	53.431
#1	.49849	.60635	.51065	.23877	.49133	.49956	.09093
#2	.49947	.60437	.50347	.24407	.49046	.49228	.11685
#3	.49834	.60324	.49167	.24308	.49025	.49407	.03307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9058.1**	**54864.**	**2494.5**
Stddev	24.1	175.	12.9
%RSD	.26563	.31972	.51637
#1	9030.8	55014.	2482.7
#2	9076.3	54671.	2508.3
#3	9067.1	54907.	2492.4

Approved: July 02, 2016

L1606145802SDL

Sample Name: ~~L1606145801SDL~~ Acquired: 7/1/2016 17:49:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574645-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.27892**	**-.00121**	**.01102**	**.05826**	**.00004**	**5.3379**	**.00018**
Stddev	.00147	.00085	.00307	.00309	.00153	.00003	.1456	.00041
%RSD	417.77	.30354	253.85	28.028	2.6234	74.068	2.7282	221.49
#1	-.00205	.27941	-.00442	.00876	.05663	.00003	5.2162	.00049
#2	.00044	.27794	.00169	.00976	.05850	.00008	5.2984	.00033
#3	.00055	.27940	-.00089	.01454	.05966	.00002	5.4992	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00102**	**.00229**	**.30678**	**.76509**	**-.00097**	**1.2314**	**.01956**
Stddev	.00024	.00028	.00070	.00518	.06807	.00108	.0615	.00076
%RSD	56.783	27.510	30.652	1.6883	8.8966	111.03	4.9929	3.9062
#1	.00067	.00134	.00211	.31239	.83028	-.00153	1.1630	.02012
#2	.00021	.00079	.00169	.30219	.69447	.00027	1.2821	.01869
#3	.00037	.00094	.00306	.30575	.77050	-.00164	1.2491	.01987
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00966**	**2.6503**	**.00146**	**.00487**	**.00412**	**-.00085**	**-.00352**	**.64184**
Stddev	.00067	.0661	.00039	.00218	.00110	.00482	.01010	.00921
%RSD	6.9495	2.4926	26.769	44.696	26.777	569.51	287.26	1.4351
#1	.01029	2.5809	.00174	.00701	.00301	-.00439	-.00029	.64094
#2	.00975	2.6574	.00162	.00493	.00414	-.00278	-.01484	.65147
#3	.00895	2.7125	.00101	.00266	.00522	.00464	.00458	.63312
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: ~~L1606145801SDL~~ Acquired: 7/1/2016 17:49:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574645-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.02547**	**.00418**	**-.00420**	**.00037**	**.00464**	**-.00021**
Stddev	.00065	.00103	.00621	.00186	.00039	.00017	.05844
%RSD	146.02	4.0316	148.58	44.386	106.90	3.6220	28077.
#1	.00004	.02429	-.00029	-.00216	.00076	.00466	.06599
#2	.00010	.02614	.01128	-.00581	.00038	.00447	-.04465
#3	.00119	.02599	.00156	-.00462	-.00003	.00480	-.02197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8979.3**	**54453.**	**2415.6**
Stddev	6.8	51.	10.4
%RSD	.07548	.09416	.43179
#1	8971.5	54428.	2427.5
#2	8982.4	54512.	2407.9
#3	8983.9	54419.	2411.4

Approved: July 02, 2016

L1606145802SDL

Sample Name: ~~L1606145801SD~~L Acquired: 7/1/2016 17:53:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574645-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00217**	**.05026**	**.00214**	**.00204**	**.00944**	**.00007**	**.87112**
Stddev	.00234	.00189	.00100	.00106	.00072	.00002	.00451
%RSD	108.10	3.7599	46.551	52.010	7.6479	33.051	.51817
#1	-.00356	.05105	.00100	.00126	.00956	.00005	.86751
#2	.00054	.05162	.00261	.00324	.00866	.00009	.86967
#3	-.00347	.04810	.00282	.00161	.01009	.00007	.87618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00010**	**.00014**	**.00036**	**.01323**	**.23028**	**-.00338**
Stddev	.00024	.00045	.00047	.00068	.05115	.11643	.00069
%RSD	309.95	464.19	326.38	189.06	386.69	50.560	20.398
#1	-.00032	.00023	-.00009	.00038	-.04238	.13364	-.00262
#2	.00016	-.00041	.00068	-.00033	.02378	.35954	-.00354
#3	-.00008	.00047	-.00016	.00103	.05828	.19765	-.00397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.25089**	**.00594**	**.00165**	**.44320**	**.00044**	**.00460**	**.00287**
Stddev	.06873	.00305	.00008	.02907	.00108	.00529	.00229
%RSD	27.394	51.309	4.5992	6.5592	244.11	114.98	79.742
#1	.17335	.00262	.00160	.41170	-.00058	.01003	.00426
#2	.30428	.00658	.00174	.46900	.00157	-.00055	.00023
#3	.27505	.00860	.00162	.44891	.00033	.00433	.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: ~~L1606145801SDL~~ Acquired: 7/1/2016 17:53:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574645-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00250**	**-.00334**	**.09023**	**-.00013**	**.00397**	**.00071**	**-.00270**
Stddev	.00229	.00120	.00360	.00010	.00016	.00512	.00149
%RSD	91.597	35.998	3.9927	77.955	3.9708	721.61	55.187
#1	.00435	-.00305	.09274	-.00025	.00415	-.00444	-.00214
#2	.00322	-.00465	.09184	-.00006	.00386	.00076	-.00438
#3	-.00006	-.00230	.08610	-.00008	.00391	.00580	-.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00017**	**.00112**	F **-.04240**
Stddev	.00038	.00007	.01724
%RSD	222.20	6.2064	40.653
#1	.00056	.00107	-.03801
#2	.00017	.00120	-.06141
#3	-.00021	.00109	-.02778
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9298.3**	**56448.**	**2504.8**
Stddev	58.7	81.	10.8
%RSD	.63154	.14301	.42948
#1	9343.2	56356.	2503.2
#2	9319.8	56505.	2516.3
#3	9231.8	56484.	2495.0

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 17:57:28 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .44084	10.256	.40115	.50587	1.0387	.05092	10.312
Stddev	.00351	.037	.00459	.00145	.0043	.00006	.130
%RSD	.79691	.36184	1.1443	.28667	.40986	.10979	1.2593
#1	.44373	10.295	.40468	.50736	1.0396	.05098	10.267
#2	.44185	10.253	.40282	.50578	1.0341	.05091	10.210
#3	.43693	10.221	.39596	.50446	1.0425	.05087	10.458
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.40000						
Range	10.000%						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05029	.20202	.51320	.50335	4.2247	51.663	1.0266
Stddev	.00087	.00250	.00210	.00563	.0398	.064	.0029
%RSD	1.7277	1.2398	.40970	1.1188	.94282	.12433	.28255
#1	.05115	.20446	.51411	.50898	4.1813	51.726	1.0235
#2	.05030	.20213	.51470	.50334	4.2596	51.667	1.0292
#3	.04941	.19946	.51080	.49772	4.2332	51.597	1.0271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.475	.52036	1.0006	51.500	.49778	9.9034	.49930
Stddev	.015	.00504	.0129	.175	.00585	.1185	.00972
%RSD	.14751	.96763	1.2903	.33970	1.1756	1.1962	1.9464
#1	10.458	.51808	1.0130	51.483	.50314	10.017	.51043
#2	10.480	.51687	1.0014	51.334	.49866	9.9133	.49496
#3	10.487	.52613	.98726	51.682	.49154	9.7803	.49250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 17:57:28 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1855**	**.39528**	**4.8274**	**1.0043**	**1.0367**	**1.0389**	**.50372**
Stddev	.0119	.00713	.0604	.0138	.0048	.0136	.00611
%RSD	1.0057	1.8039	1.2519	1.3769	.46697	1.3074	1.2128
#1	1.1942	.40119	4.8862	1.0165	1.0375	1.0276	.51058
#2	1.1904	.39729	4.8307	1.0073	1.0315	1.0353	.50172
#3	1.1719	.38736	4.7655	.98928	1.0411	1.0540	.49887
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0255**	**.99372**	F **.71618**
Stddev	.0048	.01271	.04537
%RSD	.46928	1.2790	6.3346
#1	1.0292	1.0061	.69510
#2	1.0273	.99438	.76825
#3	1.0201	.98070	.68518
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9020.3**	**52924.**	**2376.0**
Stddev	95.5	308.	9.3
%RSD	1.0586	.58144	.39046
#1	8933.8	52750.	2369.9
#2	9004.3	52743.	2386.7
#3	9122.7	53280.	2371.4

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 18:01:06 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00193**	**.00429**	**.00087**	**.00337**	**-.00012**	**.00001**	**.00137**	**.00007**
Stddev	.00362	.00485	.00381	.00342	.00113	.00007	.02493	.00025
%RSD	187.44	113.18	435.51	101.47	939.23	863.65	1819.1	341.72
#1	-.00103	-.00120	-.00212	-.00050	-.00030	-.00005	-.02443	.00031
#2	-.00591	.00800	.00516	.00598	-.00115	-.00001	.02533	-.00019
#3	.00115	.00607	-.00042	.00465	.00109	.00009	.00322	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00007**	**.00002**	**-.05015**	**.28608**	**-.00179**	**.01225**	**-.00032**
Stddev	.00012	.00053	.00029	.02485	.08211	.00211	.01314	.00175
%RSD	85.111	711.98	1494.8	49.540	28.703	117.53	107.32	549.83
#1	.00027	.00021	-.00023	-.04046	.37833	.00014	.00135	-.00031
#2	.00013	-.00051	.00033	-.03162	.22101	-.00404	.02685	-.00208
#3	.00003	.00053	-.00005	-.07839	.25888	-.00148	.00854	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.01597**	**.00097**	**.00113**	**.00068**	**.00138**	**-.00293**	**-.00009**
Stddev	.00028	.01732	.00080	.00531	.00137	.00406	.00621	.00159
%RSD	232.28	108.43	82.529	470.50	200.62	294.92	212.10	1739.1
#1	.00041	.01391	.00024	.00648	-.00072	.00296	-.00947	.00167
#2	.00010	.03423	.00183	-.00413	.00075	.00440	-.00220	-.00140
#3	-.00015	-.00022	.00085	.00103	.00202	-.00324	.00288	-.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 18:01:06 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00006**	**-.00344**	**-.00125**	**-.00020**	**.00027**	**-.02152**
Stddev	.00051	.00025	.00791	.00023	.00115	.00009	.00844
%RSD	740.06	418.16	230.11	18.748	569.77	31.027	39.234
#1	.00065	.00031	.00568	-.00098	-.00006	.00033	-.02816
#2	-.00026	.00004	-.00759	-.00136	-.00141	.00032	-.02436
#3	-.00019	-.00018	-.00841	-.00142	.00087	.00018	-.01202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9362.7**	**56084.**	**2495.5**
Stddev	56.8	99.	19.8
%RSD	.60687	.17639	.79479
#1	9305.4	55975.	2502.5
#2	9363.7	56109.	2511.0
#3	9419.0	56168.	2473.2

Approved: July 02, 2016

Sample Name: ICSA Acquired: 7/1/2016 18:05:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00335**	**239.45**	**.00014**	**-.01758**	**-.00142**	**.00001**	**221.90**
Stddev	.00236	.28	.00137	.00096	.00108	.00004	2.71
%RSD	70.495	.11515	991.88	5.4603	76.368	681.89	1.2202
#1	-.00202	239.19	-.00032	-.01716	-.00140	-.00002	220.17
#2	-.00608	239.43	-.00094	-.01690	-.00251	-.00001	220.50
#3	-.00195	239.74	.00168	-.01868	-.00034	.00005	225.02
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**-.00091**	**-.00024**	F **.00639**	**89.946**	**.16604**	**.00470**
Stddev	.00045	.00052	.00056	.00141	.841	.08603	.00365
%RSD	127.33	57.108	234.88	22.010	.93528	51.813	77.595
#1	-.00053	-.00034	-.00064	.00607	89.373	.08459	.00856
#2	.00016	-.00137	.00040	.00793	89.553	.15751	.00424
#3	-.00069	-.00102	-.00049	.00517	90.912	.25601	.00131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**227.68**	**.00049**	**-.00050**	**.01370**	**.00146**	**.01227**	**-.00072**
Stddev	2.44	.00223	.00051	.02194	.00139	.00699	.00237
%RSD	1.0695	451.70	101.56	160.12	95.837	57.010	327.77
#1	226.08	.00249	-.00082	-.00476	-.00013	.00514	-.00299
#2	226.48	.00092	.00009	.00790	.00200	.01912	-.00092
#3	230.48	-.00192	-.00078	.03796	.00249	.01254	.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: ICSA Acquired: 7/1/2016 18:05:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	-.00286	.00857	.00025	.00004	-.00426	-.00219
Stddev	.00277	.00754	.00207	.00087	.00057	.00246	.00213
%RSD	724.03	263.27	24.205	342.09	1381.2	57.836	97.118
#1	.00214	.00573	.01090	-.00050	-.00013	-.00663	-.00209
#2	.00182	-.00594	.00786	.00005	-.00043	-.00442	-.00012
#3	-.00281	-.00837	.00694	.00120	.00068	-.00172	-.00438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00258	-.00164	F -.43250
Stddev	.00071	.00029	.00609
%RSD	27.340	17.815	1.4070
#1	-.00271	-.00130	-.43188
#2	-.00322	-.00181	-.42674
#3	-.00182	-.00182	-.43887
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9119.1	54776.	2557.8
Stddev	4.8	280.	41.9
%RSD	.05290	.51137	1.6385
#1	9122.6	54666.	2570.8
#2	9121.1	55095.	2591.6
#3	9113.6	54568.	2510.9

Approved: July 02, 2016

Sample Name: ICSAB Acquired: 7/1/2016 18:08:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51287**	**246.43**	**.23909**	**-.01797**	**.22807**	**.22203**	**227.27**
Stddev	.00111	.41	.00121	.00231	.00029	.00025	.74
%RSD	.21683	.16669	.50651	12.865	.12803	.11112	.32616
#1	.51408	246.62	.23828	-.01563	.22839	.22195	226.99
#2	.51264	246.71	.24048	-.01804	.22782	.22231	226.70
#3	.51189	245.96	.23851	-.02025	.22802	.22184	228.11
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.45761**	**.22185**	**.22941**	**.23693**	**90.559**	**4.9313**	**.00535**
Stddev	.00014	.00046	.00074	.00152	.368	.1313	.00253
%RSD	.03150	.20624	.32326	.64153	.40627	2.6626	47.248
#1	.45746	.22145	.23024	.23754	90.135	4.8345	.00778
#2	.45762	.22235	.22880	.23805	90.754	5.0807	.00274
#3	.45774	.22174	.22920	.23520	90.788	4.8786	.00554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**229.50**	**.22230**	**-.00074**	**4.8694**	**.44179**	**.07748**	**.45248**
Stddev	.63	.00397	.00059	.0492	.00162	.00409	.00125
%RSD	.27494	1.7853	80.489	1.0100	.36712	5.2800	.27610
#1	229.52	.22630	-.00141	4.8520	.43998	.07651	.45278
#2	228.86	.21836	-.00050	4.8313	.44312	.08197	.45110
#3	230.12	.22226	-.00030	4.9249	.44226	.07396	.45355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: ICSAB Acquired: 7/1/2016 18:08:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.46320**	**.22998**	**.00915**	**.00078**	**-.00031**	**-.00717**	**.42695**
Stddev	.00194	.00403	.00041	.00057	.00035	.00170	.00315
%RSD	.41911	1.7513	4.5186	72.438	112.95	23.682	.73724
#1	.46476	.23325	.00946	.00120	-.00071	-.00755	.43041
#2	.46381	.22548	.00930	.00014	-.00008	-.00866	.42425
#3	.46102	.23121	.00868	.00102	-.00014	-.00532	.42620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.23004**	**.44293**	F **-.43796**
Stddev	.00101	.00145	.03934
%RSD	.43841	.32748	8.9821
#1	.22941	.44145	-.44438
#2	.23120	.44435	-.39581
#3	.22951	.44297	-.47369
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9115.7**	**54719.**	**2577.8**
Stddev	4.0	262.	7.2
%RSD	.04350	.47930	.27824
#1	9116.5	54573.	2571.7
#2	9119.2	54562.	2585.7
#3	9111.4	55022.	2575.9

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 18:12:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40233**	**9.3965**	**.37797**	**.46588**	**.93013**	**.04662**	**9.2956**
Stddev	.00224	.0112	.00358	.00172	.00124	.00012	.0456
%RSD	.55669	.11956	.94706	.36922	.13330	.26684	.49045
#1	.40364	9.3937	.37385	.46601	.93120	.04649	9.3475
#2	.39974	9.3869	.37968	.46753	.93042	.04663	9.2772
#3	.40361	9.4089	.38037	.46410	.92877	.04674	9.2621
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04744**	**.19115**	**.46863**	**.47690**	**3.8017**	**46.982**	**.92688**
Stddev	.00018	.00052	.00259	.00061	.0554	.158	.00509
%RSD	.37000	.27143	.55164	.12707	1.4585	.33573	.54873
#1	.04725	.19149	.46917	.47760	3.8312	46.854	.93116
#2	.04759	.19055	.47090	.47655	3.7377	47.158	.92824
#3	.04747	.19141	.46582	.47655	3.8361	46.933	.92126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.4712**	**.46675**	**.94593**	**46.403**	**.47271**	**9.3993**	**.47014**
Stddev	.1030	.00409	.00215	.159	.00060	.0277	.00193
%RSD	1.0873	.87616	.22746	.34369	.12628	.29506	.40979
#1	9.5685	.47127	.94448	46.545	.47208	9.3837	.46796
#2	9.4819	.46332	.94841	46.432	.47279	9.4313	.47087
#3	9.3633	.46564	.94491	46.231	.47326	9.3828	.47160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 18:12:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1238**	**.37761**	**4.5799**	**.94757**	**.92993**	**.92690**	**.47784**
Stddev	.0023	.00418	.0031	.00110	.00288	.00790	.00189
%RSD	.20217	1.1078	.06655	.11628	.31001	.85245	.39528
#1	1.1214	.37418	4.5827	.94707	.93274	.93602	.47995
#2	1.1259	.37638	4.5805	.94883	.93006	.92236	.47727
#3	1.1242	.38227	4.5766	.94681	.92698	.92231	.47631
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.93611**	**.94000**	F **.65188**
Stddev	.00228	.00124	.00751
%RSD	.24353	.13191	1.1525
#1	.93492	.93952	.65205
#2	.93466	.94141	.64428
#3	.93873	.93908	.65931
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9405.0**	**56624.**	**2561.0**
Stddev	13.8	26.	11.7
%RSD	.14652	.04626	.45665
#1	9404.1	56603.	2547.5
#2	9391.7	56616.	2568.2
#3	9419.2	56653.	2567.2

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 18:16:17 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00101**	**.01015**	**-.00041**	**.00326**	**-.00002**	**.00008**	**-.05279**	**-.00005**
Stddev	.00076	.00770	.00226	.00030	.00102	.00005	.00923	.00017
%RSD	76.073	75.834	557.61	9.2040	4251.5	59.525	17.475	309.96
#1	-.00115	.00482	.00067	.00352	.00105	.00012	-.05266	-.00017
#2	-.00169	.01897	.00112	.00334	-.00013	.00010	-.04364	.00014
#3	-.00018	.00665	-.00300	.00293	-.00099	.00003	-.06209	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00090**	**.00013**	**.00380**	**.19971**	**-.00502**	**.02397**	**-.00095**
Stddev	.00008	.00035	.00135	.02518	.06932	.00229	.11357	.00040
%RSD	77.491	39.209	1068.1	662.44	34.711	45.697	473.88	41.458
#1	-.00003	.00122	.00097	.02188	.21365	-.00676	-.08752	-.00073
#2	-.00018	.00096	.00085	-.02496	.12448	-.00242	.13952	-.00141
#3	-.00008	.00052	-.00143	.01449	.26100	-.00587	.01990	-.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00613**	**.00039**	**-.00034**	**-.00042**	**.00134**	**-.00141**	**-.00068**
Stddev	.00011	.02851	.00026	.00311	.00269	.00340	.00505	.00211
%RSD	99.271	465.24	67.624	909.98	634.26	252.82	357.53	309.86
#1	.00020	-.02538	.00067	.00263	.00240	-.00244	.00116	-.00047
#2	.00016	-.01963	.00016	-.00007	-.00297	.00414	.00184	-.00289
#3	-.00001	.02662	.00032	-.00358	-.00070	.00233	-.00723	.00131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 18:16:17 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**-.00026**	**-.00040**	**-.00285**	**-.00023**	**.00007**	**-.01412**
Stddev	.00035	.00017	.00563	.00147	.00094	.00011	.03372
%RSD	53.252	65.926	1402.1	51.635	410.22	157.79	238.84
#1	.00106	-.00011	-.00675	-.00122	-.00056	.00019	-.03131
#2	.00042	-.00023	.00156	-.00325	-.00096	.00004	-.03578
#3	.00050	-.00045	.00399	-.00407	.00083	-.00002	.02474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9463.7**	**57398.**	**2547.4**
Stddev	5.2	153.	6.9
%RSD	.05520	.26642	.26956
#1	9467.6	57245.	2539.8
#2	9465.7	57400.	2553.2
#3	9457.7	57550.	2549.2

Approved: July 02, 2016

Sample Name: LLCCV Acquired: 7/1/2016 18:20:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00729**	**.15634**	**.00768**	**.07424**	**.00656**	**.00153**	**.43190**	**.00093**
Stddev	.00206	.00251	.00097	.00099	.00054	.00008	.04897	.00021
%RSD	28.242	1.6074	12.648	1.3277	8.2637	5.5197	11.338	22.122
#1	.00727	.15897	.00810	.07332	.00669	.00145	.44936	.00078
#2	.00524	.15608	.00837	.07412	.00703	.00162	.46975	.00084
#3	.00936	.15396	.00657	.07528	.00597	.00151	.37660	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00367**	**.00408**	**.00449**	**.06223**	**1.0425**	**.07185**	**.39225**	**.00761**
Stddev	.00019	.00050	.00075	.03086	.0829	.00260	.07813	.00200
%RSD	5.0644	12.323	16.686	49.591	7.9486	3.6140	19.919	26.290
#1	.00386	.00461	.00363	.09774	1.1178	.06891	.30371	.00561
#2	.00367	.00362	.00497	.04716	.95374	.07383	.45152	.00962
#3	.00349	.00401	.00488	.04181	1.0560	.07282	.42152	.00760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00742**	**.40898**	**.01571**	**.73063**	**.00971**	**.07409**	**.01220**	**.71563**
Stddev	.00059	.00928	.00130	.01986	.00588	.00101	.00420	.01394
%RSD	7.9360	2.2698	8.2570	2.7181	60.500	1.3692	34.422	1.9485
#1	.00768	.41122	.01487	.74210	.01561	.07428	.01697	.72373
#2	.00784	.39878	.01720	.74209	.00386	.07299	.01053	.72365
#3	.00675	.41693	.01505	.70770	.00967	.07499	.00908	.69953
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: LLCCV Acquired: 7/1/2016 18:20:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38189**	**.03769**	**.02189**	**.14592**	**.00682**	**.01559**	**2.8235**
Stddev	.01277	.00022	.00169	.00374	.00088	.00070	.0055
%RSD	3.3449	.57212	7.7350	2.5664	12.910	4.4943	.19412
#1	.38966	.03769	.02115	.14798	.00768	.01581	2.8248
#2	.38887	.03748	.02070	.14818	.00685	.01615	2.8174
#3	.36715	.03791	.02383	.14160	.00592	.01481	2.8282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9489.1**	**57497.**	**2562.0**
Stddev	29.7	211.	14.5
%RSD	.31348	.36740	.56572
#1	9522.7	57358.	2572.4
#2	9478.3	57740.	2568.0
#3	9466.2	57393.	2545.4

Approved: July 02, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000090	0.054978	0.000000	1.000000
Al 308.215 {109}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000726	0.008658	0.000000	1.000000
As 189.042 {478}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000011	0.025290	0.000000	1.000000
B 249.678 {135}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000097	0.025088	0.000000	1.000000
Ba 455.403 { 74}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.056022	2.203041	0.000000	1.000000
Be 313.107 {108}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000475	1.073722	0.000000	1.000000
Ca 422.673 { 80}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.003067	0.044871	0.000000	1.000000
Cd 228.802 {447}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000159	0.598146	0.000000	1.000000
Co 228.616 {447}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000119	0.373840	0.000000	1.000000
Cr 267.716 {126}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000216	0.065586	0.000000	1.000000
Cu 224.700 {450}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000146	0.132310	0.000000	1.000000
Fe 261.187 {129}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000215	0.022272	0.000000	1.000000
K 766.490 { 44}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.013881	0.073290	0.000000	1.000000
Li 670.784 { 50}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.022514	1.830799	0.000000	1.000000
Mg 279.079 {121}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000222	0.008751	0.000000	1.000000
Mn 257.610 {131}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000374	0.274882	0.000000	1.000000
Mo 202.030 {467}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000008	0.189442	0.000000	1.000000
Na 589.592 { 57}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.061070	0.194853	0.000000	1.000000
Ni 231.604 {446}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000582	0.139018	0.000000	1.000000
P 214.914 {457}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000163	0.014579	0.000000	1.000000
Pb 220.353 {453}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000812	0.064848	0.000000	1.000000
Sb 206.833 {463}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000190	0.031630	0.000000	1.000000
Se 196.090 {472}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000338	0.018191	0.000000	1.000000
Si 212.412 {459}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000649	0.039906	0.000000	1.000000
Sn 189.989 {477}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000015	0.073602	0.000000	1.000000
Sr 407.771 { 83}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.002405	3.565105	0.000000	1.000000
Ti 337.280 {100}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.002239	0.118308	0.000000	1.000000
Tl 190.856 {477}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000380	0.030488	0.000000	1.000000
V 292.402 {115}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000019	0.077582	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000174	0.431759	0.000000	1.000000
Zr 339.198 { 99}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.006027	4.377591	0.000000	1.000000

Approved: July 16, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999635	0.000004	0.002083	0.006943	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999953	0.000005	0.009238	0.030795	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999836	0.000002	0.002994	0.009980	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999733	0.000003	0.002739	0.009131	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999972	0.000105	0.001135	0.003785	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999925	0.000004	0.000090	0.000299	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999805	0.000056	0.045625	0.152082	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999434	0.000007	0.000255	0.000850	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999934	0.000005	0.000392	0.001306	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999962	0.000002	0.001142	0.003806	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999904	0.000006	0.001299	0.004330	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999221	0.000022	0.030236	0.100786	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999940	0.000254	0.095451	0.318171	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999709	0.000433	0.003821	0.012737	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999966	0.000007	0.086381	0.287938	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999259	0.000034	0.002854	0.009512	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999985	0.000007	0.000412	0.001374	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999971	0.000474	0.033509	0.111696	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999978	0.000003	0.001116	0.003719	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999983	0.000005	0.006652	0.022173	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.998838	0.000010	0.003486	0.011619	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999850	0.000004	0.004214	0.014046	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.998889	0.000003	0.006099	0.020330	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999822	0.000024	0.002292	0.007639	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999970	0.000004	0.000849	0.002831	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999992	0.000090	0.000477	0.001589	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999887	0.000011	0.007758	0.025861	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999852	0.000002	0.002951	0.009837	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999971	0.000004	0.000932	0.003107	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999976	0.000019	0.000194	0.000647	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999897	0.000399	0.000497	0.001657	OK.	1.000000	0.000000	1	0

Approved: July 16, 2016

Sample Name: S0 Acquired: 7/14/2016 11:58:59 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00009	.00073	-.00001	-.00010	.05602	.00047	.00307
Stddev	.00019	.00008	.00002	.00005	.00161	.00007	.00067
%RSD	210.06	10.455	185.29	49.405	2.8812	14.035	21.784
#1	.00013	.00072	-.00001	-.00009	.05433	.00040	.00230
#2	-.00021	.00081	-.00003	-.00015	.05621	.00049	.00348
#3	-.00018	.00066	.00001	-.00005	.05754	.00053	.00342

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00016	-.00012	.00022	.00015	-.00021	-.01387	-.02252
Stddev	.00012	.00012	.00005	.00005	.00056	.00297	.00367
%RSD	74.910	104.04	22.993	35.021	263.02	21.374	16.288
#1	-.00002	-.00026	.00016	.00010	-.00068	-.01088	-.02668
#2	-.00023	-.00009	.00024	.00013	-.00037	-.01681	-.01973
#3	-.00023	-.00002	.00025	.00020	.00041	-.01393	-.02116

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00022	.00038	.00001	-.06108	-.00058	-.00016	-.00081
Stddev	.00034	.00060	.00003	.00244	.00009	.00005	.00019
%RSD	151.73	160.15	321.53	3.9966	15.819	30.351	23.858
#1	.00012	-.00022	-.00000	-.06037	-.00057	-.00013	-.00061
#2	-.00023	.00036	.00004	-.05908	-.00068	-.00014	-.00100
#3	-.00055	.00099	-.00001	-.06380	-.00050	-.00022	-.00083

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00019	-.00034	.00065	.00001	.00240	-.00224	-.00038
Stddev	.00010	.00001	.00003	.00005	.00098	.00102	.00002
%RSD	52.529	4.3798	5.3665	347.08	40.865	45.623	5.5830
#1	.00008	-.00033	.00069	.00006	.00130	-.00235	-.00039
#2	.00027	-.00033	.00062	.00002	.00275	-.00320	-.00039
#3	.00022	-.00035	.00064	-.00004	.00317	-.00116	-.00036

Approved: July 16, 2016

Sample Name: S0 Acquired: 7/14/2016 11:58:59 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00002	.00017	-.00603
Stddev	.00010	.00005	.00159
%RSD	532.23	31.191	26.374
#1	.00013	.00014	-.00659
#2	-.00006	.00024	-.00423
#3	-.00001	.00015	-.00726
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10146.	59083.	2608.1
Stddev	33.	133.	3.5
%RSD	.32073	.22459	.13291
#1	10184.	59033.	2612.1
#2	10131.	59233.	2606.8
#3	10124.	58982.	2605.5

Approved: July 16, 2016

Sample Name: S1 Acquired: 7/14/2016 12:02:58 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00002	.00145	.07175	.00087	.00539	.00019	.00037
Stddev	.00002	.00001	.00036	.00005	.00151	.00018	.00013
%RSD	67.067	.78603	.49677	6.0419	28.072	93.785	35.479
#1	.00001	.00145	.07186	.00081	.00713	.00023	.00052
#2	.00004	.00144	.07136	.00090	.00470	.00035	.00032
#3	.00001	.00146	.07204	.00090	.00435	-.00000	.00027

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00047	.00057	.00003	.01104	.00103	.00139	.02687
Stddev	.00003	.00011	.00039	.00275	.00109	.00018	.00365
%RSD	7.0748	19.705	1561.4	24.872	105.86	12.664	13.586
#1	.00048	.00064	-.00042	.00920	.00000	.00154	.02869
#2	.00043	.00063	.00018	.00974	.00092	.00144	.02267
#3	.00050	.00044	.00032	.01420	.00217	.00120	.02925

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00009	.00089	-.00079	.00056	.00212	.00060	.03198
Stddev	.00014	.00010	.00009	.00010	.00015	.00007	.00195
%RSD	150.39	11.662	11.639	18.121	6.9890	12.404	6.1090
#1	-.00001	.00099	-.00080	.00065	.00225	.00066	.02999
#2	-.00002	.00088	-.00069	.00059	.00215	.00062	.03390
#3	-.00025	.00078	-.00087	.00045	.00196	.00052	.03205

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00152	.00058	.00340	.02671
Stddev	.00153	.00002	.00045	.00078
%RSD	100.50	3.9098	13.189	2.9187
#1	-.00260	.00056	.00369	.02647
#2	.00023	.00060	.00364	.02758
#3	-.00220	.00059	.00289	.02608

Approved: July 16, 2016

Sample Name: S1 Acquired: 7/14/2016 12:02:58 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10199.**	**59583.**	**2616.4**
Stddev	3.	113.	4.9
%RSD	.03154	.18926	.18723
#1	10198.	59453.	2615.1
#2	10202.	59656.	2612.2
#3	10196.	59640.	2621.8

Approved: July 16, 2016

Sample Name: S2 Acquired: 7/14/2016 12:06:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00017**	**.00229**	**.00011**	**.00016**	**.08980**	**.00149**	**.01014**
Stddev	.00003	.00003	.00007	.00004	.00737	.00005	.00118
%RSD	20.364	1.2987	60.531	26.923	8.2097	3.3393	11.618
#1	.00014	.00231	.00006	.00017	.08218	.00144	.00976
#2	.00020	.00226	.00009	.00020	.09033	.00148	.00919
#3	.00015	.00231	.00019	.00012	.09690	.00154	.01145

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00054**	**.00118**	**.00080**	**.00135**	**.00083**	**.03879**	**.01623**
Stddev	.00012	.00008	.00006	.00014	.00097	.00757	.00311
%RSD	23.164	6.9444	7.5106	10.193	116.76	19.514	19.162
#1	.00042	.00127	.00083	.00135	-.00028	.03008	.01266
#2	.00067	.00113	.00084	.00120	.00147	.04253	.01766
#3	.00053	.00113	.00073	.00148	.00129	.04377	.01836

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00130**	**.00160**	**.00315**	**.09973**	**.00051**	**.00225**	**-.00035**
Stddev	.00047	.00051	.00009	.00708	.00009	.00006	.00021
%RSD	35.945	31.748	2.9835	7.0966	16.941	2.6594	60.528
#1	.00144	.00212	.00318	.09207	.00058	.00223	-.00059
#2	.00167	.00110	.00305	.10110	.00041	.00232	-.00030
#3	.00077	.00158	.00323	.10602	.00054	.00220	-.00017

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00088**	**-.00030**	**.00401**	**.00131**	**.06045**	**-.00055**	**-.00011**
Stddev	.00007	.00002	.00008	.00001	.00636	.00072	.00003
%RSD	8.0754	5.8068	2.0733	.72540	10.520	131.79	25.280
#1	.00080	-.00031	.00407	.00132	.05314	-.00002	-.00009
#2	.00090	-.00028	.00392	.00131	.06470	-.00137	-.00014
#3	.00093	-.00031	.00406	.00131	.06352	-.00026	-.00009

Approved: July 16, 2016

Sample Name: S2 Acquired: 7/14/2016 12:06:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00133	.00762	.06496
Stddev	.00003	.00006	.00491
%RSD	2.3176	.76689	7.5621
#1	.00134	.00767	.05942
#2	.00129	.00764	.06671
#3	.00135	.00756	.06876
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9665.5	56421.	2606.9
Stddev	9.5	142.	145.0
%RSD	.09835	.25179	5.5635
#1	9676.5	56431.	2767.4
#2	9660.5	56274.	2568.1
#3	9659.6	56557.	2485.2

Approved: July 16, 2016

Sample Name: S3 Acquired: 7/14/2016 12:10:43 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02184	.08752	.01000	.01228	2.2476	.05532	.44737	.03249
Stddev	.00003	.00025	.00022	.00008	.0142	.00014	.00350	.00081
%RSD	.13782	.28009	2.1521	.68206	.63198	.25076	.78215	2.4809
#1	.02182	.08770	.01013	.01236	2.2449	.05531	.44714	.03297
#2	.02188	.08724	.01011	.01219	2.2629	.05519	.45097	.03295
#3	.02182	.08763	.00975	.01228	2.2349	.05546	.44399	.03156

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07472	.03290	.06683	.08945	3.6435	1.7919	.08765	.13775
Stddev	.00227	.00003	.00190	.00089	.0170	.0228	.00059	.00085
%RSD	3.0394	.10324	2.8463	.99201	.46579	1.2751	.67187	.62010
#1	.07591	.03293	.06806	.09047	3.6371	1.8168	.08833	.13794
#2	.07614	.03286	.06778	.08903	3.6627	1.7869	.08729	.13849
#3	.07210	.03290	.06464	.08885	3.6306	1.7720	.08734	.13681

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18984	9.6336	.06871	.14355	.03167	.03718	.00698	.19579
Stddev	.00672	.0287	.00204	.00313	.00062	.00094	.00009	.00361
%RSD	3.5404	.29796	2.9671	2.1783	1.9728	2.5286	1.2817	1.8418
#1	.19390	9.6233	.06981	.14574	.03226	.03778	.00703	.19808
#2	.19353	9.6661	.06996	.14494	.03173	.03766	.00703	.19766
#3	.18208	9.6115	.06636	.13997	.03101	.03610	.00688	.19163

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07354	3.5504	.11661	.01372	.07692	.43032	4.4581
Stddev	.00250	.0129	.00157	.00008	.00018	.01199	.0460
%RSD	3.4003	.36214	1.3473	.59054	.22773	2.7869	1.0308
#1	.07509	3.5474	.11568	.01375	.07692	.43740	4.4608
#2	.07487	3.5646	.11842	.01378	.07674	.43709	4.5027
#3	.07066	3.5394	.11572	.01362	.07709	.41648	4.4109

Approved: July 16, 2016

Sample Name: S3 Acquired: 7/14/2016 12:10:43 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10113.**	**58678.**	**2612.5**
Stddev	16.	202.	21.5
%RSD	.15673	.34362	.82166
#1	10104.	58732.	2614.6
#2	10105.	58847.	2590.0
#3	10131.	58455.	2632.8

Approved: July 16, 2016

Sample Name: S4 Acquired: 7/14/2016 12:14:19 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04375	.17576	.02018	.02498	4.4769	.10976	.90627	.06497
Stddev	.00009	.00020	.00045	.00013	.0129	.00044	.00342	.00119
%RSD	.19555	.11328	2.2250	.51044	.28897	.39755	.37726	1.8257
#1	.04376	.17559	.02046	.02501	4.4637	.10945	.90283	.06549
#2	.04382	.17598	.02042	.02509	4.4896	.11026	.90966	.06581
#3	.04365	.17570	.01966	.02484	4.4776	.10958	.90633	.06362

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14898	.06594	.13367	.17820	7.3325	3.6460	.17360	.27671
Stddev	.00375	.00017	.00320	.00045	.0190	.0073	.00162	.00178
%RSD	2.5186	.25861	2.3926	.25381	.25849	.20165	.93277	.64154
#1	.15095	.06589	.13537	.17772	7.3110	3.6375	.17178	.27502
#2	.15134	.06613	.13565	.17862	7.3396	3.6507	.17414	.27856
#3	.14465	.06580	.12998	.17826	7.3469	3.6498	.17489	.27656

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.37846	19.457	.13874	.28670	.06482	.07486	.01423	.40630
Stddev	.00977	.034	.00371	.00507	.00116	.00153	.00023	.00607
%RSD	2.5813	.17451	2.6752	1.7673	1.7893	2.0460	1.5926	1.4942
#1	.38387	19.419	.14065	.28913	.06511	.07563	.01434	.40918
#2	.38433	19.484	.14110	.29010	.06580	.07585	.01438	.41039
#3	.36718	19.469	.13446	.28088	.06354	.07309	.01397	.39932

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14675	7.1481	.23379	.02737	.15525	.86428	8.6624
Stddev	.00417	.0196	.00207	.00030	.00050	.02107	.0311
%RSD	2.8434	.27344	.88575	1.0955	.32249	2.4384	.35911
#1	.14920	7.1257	.23144	.02740	.15505	.87643	8.6443
#2	.14913	7.1575	.23458	.02765	.15582	.87646	8.6983
#3	.14193	7.1612	.23534	.02705	.15488	.83994	8.6445

Approved: July 16, 2016

Sample Name: S4 Acquired: 7/14/2016 12:14:19 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9985.8**	**57666.**	**2610.5**
Stddev	22.9	256.	9.5
%RSD	.22950	.44447	.36475
#1	9962.1	57790.	2618.9
#2	9987.5	57836.	2612.3
#3	10008.	57371.	2600.1

Approved: July 16, 2016

Sample Name: ICV Acquired: 7/14/2016 12:17:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39916**	**9.9044**	**.39875**	**.49582**	**.98580**	**.05007**	**9.8368**	**.04976**
Stddev	.00127	.0242	.00904	.00044	.00643	.00012	.0162	.00139
%RSD	.31728	.24394	2.2680	.08819	.65218	.24106	.16430	2.7861
#1	.39821	9.9001	.40308	.49573	.97900	.05002	9.8249	.05082
#2	.39868	9.8826	.40482	.49544	.99178	.04998	9.8552	.05027
#3	.40060	9.9304	.38836	.49630	.98662	.05021	9.8303	.04819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19958**	**.49555**	**.49704**	**3.9586**	**49.667**	**.99011**	**9.7795**	**.49668**
Stddev	.00643	.00030	.01443	.0300	.356	.00497	.0902	.00349
%RSD	3.2195	.06027	2.9035	.75670	.71716	.50204	.92213	.70201
#1	.20353	.49584	.50622	3.9931	49.297	.99403	9.7031	.49462
#2	.20305	.49557	.50449	3.9431	50.008	.99179	9.7563	.50071
#3	.19217	.49524	.48041	3.9395	49.695	.98452	9.8790	.49472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99290**	**49.381**	**.49609**	**9.9800**	**.49510**	**1.1836**	**.40536**	**4.8641**
Stddev	.03309	.220	.01429	.2341	.00930	.0243	.00631	.0871
%RSD	3.3323	.44492	2.8807	2.3461	1.8794	2.0493	1.5557	1.7899
#1	1.0176	49.153	.50463	10.119	.50095	1.1975	.41264	4.9207
#2	1.0058	49.591	.50405	10.111	.49999	1.1978	.40150	4.9077
#3	.95531	49.400	.47959	9.7097	.48437	1.1556	.40194	4.7638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: ICV Acquired: 7/14/2016 12:17:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99483**	**.98365**	**.98155**	**.50149**	**.99145**	**.99250**	**1.0046**
Stddev	.03487	.00508	.00899	.00315	.00235	.02760	.0065
%RSD	3.5050	.51612	.91561	.62741	.23697	2.7806	.64434
#1	1.0178	.97781	.97466	.50436	.99003	1.0093	.99709
#2	1.0120	.98700	.97827	.50197	.99015	1.0076	1.0083
#3	.95470	.98614	.99171	.49812	.99416	.96065	1.0083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10144.**	**58592.**	**2633.8**
Stddev	33.	28.	18.2
%RSD	.32593	.04817	.69189
#1	10108.	58625.	2652.9
#2	10152.	58572.	2616.6
#3	10173.	58580.	2631.8

Approved: July 16, 2016

Sample Name: ICB Acquired: 7/14/2016 12:21:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.00069**	**-.00000**	**.00415**	**.00002**	**.00002**	**-.03169**	**.00003**
Stddev	.00066	.00496	.00111	.00100	.00071	.00002	.06486	.00008
%RSD	145.05	715.58	243600.	24.205	3121.0	92.313	204.70	277.67
#1	-.00121	.00102	-.00124	.00522	.00060	.00000	.02395	.00008
#2	-.00018	.00548	.00090	.00401	.00023	.00005	-.01607	-.00006
#3	.00002	-.00442	.00034	.00322	-.00077	.00003	-.10293	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00007**	**.00044**	**-.00341**	**.04719**	**.00442**	**-.03448**	**-.00333**
Stddev	.00038	.00098	.00074	.04090	.07336	.00355	.04733	.00325
%RSD	120.24	1493.8	168.50	1198.2	155.47	80.160	137.27	97.634
#1	-.00024	-.00101	-.00000	-.04100	.10796	.00845	.01722	-.00035
#2	.00002	.00090	.00129	.04015	.06791	.00179	-.07566	-.00679
#3	-.00073	.00031	.00002	-.00939	-.03431	.00303	-.04499	-.00284
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.01951**	**-.00052**	**.00204**	**-.00209**	**.00255**	**-.00186**	**.00541**
Stddev	.00030	.02134	.00063	.00329	.00130	.00313	.00380	.00090
%RSD	324.08	109.37	120.99	160.93	62.541	122.71	203.87	16.580
#1	.00007	.00462	-.00064	-.00134	-.00058	.00558	-.00520	.00605
#2	-.00020	.00995	.00016	.00522	-.00289	-.00067	.00227	.00580
#3	.00040	.04396	-.00108	.00224	-.00279	.00274	-.00265	.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: ICB Acquired: 7/14/2016 12:21:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00077**	**.00021**	**-.00229**	**-.00010**	**-.00112**	**.00052**	**-.00018**
Stddev	.00044	.00025	.01066	.00054	.00021	.00006	.00005
%RSD	56.829	120.30	465.46	554.79	18.848	12.036	29.794
#1	.00053	-.00007	-.01459	.00018	-.00098	.00045	-.00015
#2	.00128	.00041	.00366	.00025	-.00137	.00057	-.00016
#3	.00051	.00029	.00406	-.00072	-.00103	.00055	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10208.**	**59408.**	**2627.4**
Stddev	29.	39.	10.9
%RSD	.28794	.06596	.41658
#1	10178.	59376.	2636.2
#2	10209.	59396.	2615.1
#3	10237.	59451.	2630.9

Approved: July 16, 2016

Sample Name: LLICV Acquired: 7/14/2016 12:25:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00801	.16056	.00772	.08082	.00812	.00155	.38268	.00092
Stddev	.00066	.01078	.00524	.00145	.00079	.00004	.01020	.00022
%RSD	8.2398	6.7169	67.856	1.7927	9.6814	2.8252	2.6662	23.566
#1	.00729	.14830	.01255	.08078	.00849	.00150	.37215	.00078
#2	.00818	.16480	.00846	.08229	.00722	.00158	.38337	.00117
#3	.00857	.16858	.00215	.07939	.00866	.00157	.39252	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00381	.00457	.00345	.09019	.79243	.08368	.33444	.00637
Stddev	.00075	.00086	.00079	.00663	.04807	.00018	.11231	.00150
%RSD	19.646	18.893	22.965	7.3476	6.0662	.21416	33.583	23.619
#1	.00439	.00544	.00397	.08533	.80460	.08348	.29771	.00793
#2	.00408	.00455	.00254	.09774	.83325	.08374	.24508	.00493
#3	.00297	.00371	.00385	.08750	.73944	.08382	.46052	.00625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00754	.43034	.01420	.74129	.00660	.07662	.01656	.72803
Stddev	.00080	.03411	.00205	.07234	.00062	.00597	.00108	.06547
%RSD	10.637	7.9253	14.468	9.7581	9.3569	7.7881	6.5210	8.9926
#1	.00830	.46884	.01613	.78449	.00700	.07852	.01742	.76990
#2	.00762	.41825	.01443	.78159	.00589	.08141	.01691	.76160
#3	.00670	.40393	.01204	.65778	.00692	.06994	.01535	.65258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLICV Acquired: 7/14/2016 12:25:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38028**	**.04070**	**.03122**	**.14703**	**.00766**	**.01561**	**.04051**
Stddev	.04668	.00043	.00350	.01334	.00058	.00176	.00028
%RSD	12.276	1.0617	11.208	9.0757	7.6051	11.306	.68933
#1	.40961	.04096	.02868	.15251	.00735	.01662	.04032
#2	.40479	.04020	.03521	.15676	.00833	.01663	.04083
#3	.32644	.04094	.02977	.13181	.00730	.01357	.04037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10236.**	**59493.**	**2629.1**
Stddev	36.	53.	7.3
%RSD	.35109	.08833	.27667
#1	10227.	59544.	2635.9
#2	10205.	59439.	2621.5
#3	10275.	59495.	2629.8

Approved: July 16, 2016

Sample Name: LLICV Acquired: 7/14/2016 12:29:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02046	.40440	.02096	.19597	.02076	.00389	.97486	.00218
Stddev	.00178	.00540	.00321	.00085	.00152	.00012	.03214	.00007
%RSD	8.7191	1.3354	15.312	.43158	7.3225	3.1173	3.2967	3.1653
#1	.02248	.39925	.02466	.19587	.02248	.00394	.98402	.00224
#2	.01909	.40391	.01907	.19518	.02019	.00376	1.0014	.00210
#3	.01982	.41002	.01914	.19686	.01961	.00399	.93914	.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01022	.01029	.00962	.19185	1.9260	.19907	.95467	.01798
Stddev	.00031	.00044	.00102	.01498	.0506	.00178	.07069	.00254
%RSD	3.0614	4.3176	10.614	7.8072	2.6283	.89590	7.4047	14.097
#1	.01027	.01004	.01054	.20819	1.9476	.19956	.95071	.01952
#2	.00989	.01002	.00979	.18856	1.8681	.19709	1.0273	.01937
#3	.01051	.01080	.00852	.17878	1.9622	.20056	.88604	.01506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01943	1.0251	.03988	1.9258	.01796	.20123	.03731	1.8975
Stddev	.00049	.0081	.00006	.0058	.00259	.00304	.00288	.0032
%RSD	2.5261	.78639	.15862	.30336	14.422	1.5085	7.7275	.17045
#1	.01895	1.0341	.03996	1.9227	.01956	.20473	.03826	1.9007
#2	.01942	1.0186	.03984	1.9326	.01934	.19956	.03961	1.8976
#3	.01993	1.0226	.03985	1.9222	.01497	.19939	.03408	1.8942
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLICV Acquired: 7/14/2016 12:29:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0143**	**.10031**	**.06148**	**.37673**	**.01872**	**.04161**	**.10056**
Stddev	.0026	.00064	.00479	.00086	.00017	.00006	.00083
%RSD	.25134	.63916	7.7960	.22701	.92152	.15197	.82242
#1	1.0170	.10092	.06640	.37579	.01884	.04167	.10080
#2	1.0140	.09964	.06122	.37746	.01852	.04161	.09964
#3	1.0119	.10036	.05682	.37695	.01879	.04155	.10124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10246.**	**59854.**	**2639.7**
Stddev	25.	162.	9.7
%RSD	.23981	.27063	.36661
#1	10231.	60029.	2631.3
#2	10232.	59824.	2650.2
#3	10274.	59710.	2637.5

Approved: July 16, 2016

Sample Name: ICSA Acquired: 7/14/2016 12:33:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00352**	**268.21**	**.00132**	**-.01430**	**-.00014**	**-.00001**	**250.51**	**-.00027**
Stddev	.00171	.39	.00147	.00270	.00030	.00013	.97	.00017
%RSD	48.671	.14382	111.78	18.904	211.85	1475.1	.38717	64.091
#1	-.00273	267.82	.00277	-.01118	.00009	.00014	249.42	-.00015
#2	-.00234	268.22	.00135	-.01586	-.00003	-.00011	250.82	-.00046
#3	-.00548	268.59	-.00017	-.01587	-.00047	-.00007	251.29	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00131**	**-.00145**	**-.00251**	**99.133**	**-.02663**	**.00787**	**254.82**	**.00226**
Stddev	.00034	.00054	.01112	.349	.06423	.00149	.81	.00458
%RSD	25.893	37.260	443.61	.35175	241.20	18.981	.31849	202.37
#1	-.00104	-.00208	.00432	98.767	-.03428	.00759	253.89	.00029
#2	-.00119	-.00111	.00350	99.462	-.08669	.00949	255.26	.00750
#3	-.00169	-.00117	-.01534	99.170	.04108	.00654	255.33	-.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.05520**	**-.00048**	**.00498**	**-.00036**	**-.00125**	**.00789**	**.03566**
Stddev	.00048	.01144	.00085	.00913	.00672	.00721	.00164	.00322
%RSD	77.513	20.720	175.28	183.40	1889.6	576.41	20.743	9.0419
#1	-.00101	.06840	-.00067	.01425	.00354	.00089	.00632	.03936
#2	-.00008	.04895	.00044	.00471	.00351	.00464	.00775	.03412
#3	-.00076	.04825	-.00122	-.00401	-.00812	-.00929	.00958	.03350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: ICSA Acquired: 7/14/2016 12:33:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.00079**	**-.01204**	**-.00145**	**-.00330**	**-.00618**	**-.00334**
Stddev	.00094	.00062	.00619	.00307	.00081	.00026	.00026
%RSD	76.416	78.625	51.412	211.95	24.461	4.1417	7.8886
#1	.00015	.00070	-.01646	-.00485	-.00273	-.00595	-.00360
#2	.00173	.00144	-.00497	.00113	-.00294	-.00614	-.00334
#3	.00183	.00022	-.01469	-.00063	-.00422	-.00646	-.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9564.1**	**55032.**	**2578.1**
Stddev	8.0	57.	10.1
%RSD	.08404	.10400	.39196
#1	9573.3	55094.	2568.1
#2	9560.8	55022.	2588.3
#3	9558.3	54981.	2577.9

Approved: July 16, 2016

Sample Name: ICSAB Acquired: 7/14/2016 12:37:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51935	266.20	.25555	-.01844	.25489	.24607	249.00	.48809
Stddev	.00146	.04	.00540	.00081	.00174	.00013	.54	.01531
%RSD	.28065	.01371	2.1146	4.4042	.68219	.05127	.21847	3.1361
#1	.52024	266.16	.25582	-.01751	.25377	.24614	248.71	.49669
#2	.51767	266.22	.26082	-.01901	.25400	.24614	248.67	.49716
#3	.52015	266.23	.25002	-.01879	.25689	.24593	249.63	.47041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23850	.25126	.25015	96.758	5.1663	.01221	248.97	.25158
Stddev	.00921	.00041	.01719	.198	.0803	.00405	1.14	.00060
%RSD	3.8619	.16289	6.8711	.20451	1.5547	33.190	.45597	.23775
#1	.24396	.25113	.26001	96.788	5.1507	.00759	248.75	.25156
#2	.24368	.25171	.26013	96.547	5.0949	.01515	247.96	.25098
#3	.22787	.25092	.23030	96.939	5.2533	.01389	250.20	.25218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00078	5.3224	.48019	.08706	.49141	.49782	.25896	.01272
Stddev	.00042	.0112	.01851	.00797	.01542	.02690	.00595	.00154
%RSD	53.575	.21119	3.8542	9.1580	3.1382	5.4034	2.2991	12.143
#1	-.00126	5.3300	.49059	.09580	.50374	.50659	.25989	.01236
#2	-.00059	5.3095	.49116	.08519	.49637	.51924	.26439	.01441
#3	-.00049	5.3277	.45882	.08019	.47412	.46763	.25259	.01138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: ICSAB Acquired: 7/14/2016 12:37:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00059	-.01474	.45777	.25278	.47104	-.00342
Stddev	.00024	.00037	.00230	.01005	.00015	.01736	.00041
%RSD	25.813	62.694	15.615	2.1962	.05870	3.6855	12.087
#1	.00085	.00069	-.01684	.46101	.25261	.48084	-.00294
#2	.00076	.00018	-.01511	.46581	.25286	.48128	-.00371
#3	.00122	.00091	-.01228	.44650	.25287	.45099	-.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9533.9	55010.	2550.3
Stddev	21.7	89.	2.0
%RSD	.22774	.16160	.07801
#1	9512.3	54952.	2548.5
#2	9533.7	55112.	2552.4
#3	9555.7	54966.	2549.9

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 12:40:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40238**	**9.8867**	**.40036**	**.49049**	**.99013**	**.04980**	**9.9286**	**.05000**
Stddev	.00148	.0081	.00874	.00168	.00465	.00010	.1044	.00113
%RSD	.36685	.08214	2.1832	.34260	.46945	.19665	1.0517	2.2636
#1	.40077	9.8812	.40304	.48920	.99204	.04975	9.9140	.05020
#2	.40367	9.8829	.40745	.48987	.99352	.04992	10.040	.05101
#3	.40270	9.8960	.39059	.49239	.98483	.04974	9.8322	.04878
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20108**	**.49572**	**.50095**	**3.9683**	**49.867**	**.99106**	**9.9766**	**.50269**
Stddev	.00629	.00154	.01284	.0290	.172	.00752	.0535	.00376
%RSD	3.1270	.30972	2.5637	.73039	.34559	.75891	.53662	.74729
#1	.20316	.49681	.50503	4.0017	49.951	.99884	9.9213	.49899
#2	.20606	.49637	.51126	3.9510	49.981	.99049	10.028	.50650
#3	.19401	.49396	.48656	3.9520	49.669	.98383	9.9804	.50258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99796**	**49.503**	**.49773**	**10.015**	**.49955**	**1.1926**	**.40587**	**4.8726**
Stddev	.02275	.223	.01406	.204	.00908	.0266	.00592	.0851
%RSD	2.2794	.45040	2.8238	2.0344	1.8183	2.2276	1.4596	1.7466
#1	1.0027	49.640	.50153	10.054	.50243	1.2005	.40344	4.8797
#2	1.0180	49.623	.50949	10.197	.50684	1.2143	.41262	4.9540
#3	.97321	49.246	.48216	9.7950	.48937	1.1629	.40154	4.7842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 12:40:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0005**	**.99100**	**.99102**	**.50480**	**.98756**	**.99587**	**1.0041**
Stddev	.0306	.00467	.00048	.00314	.00318	.02535	.0047
%RSD	3.0533	.47110	.04893	.62136	.32230	2.5457	.46601
#1	1.0120	.99267	.99158	.50466	.98820	1.0031	1.0094
#2	1.0237	.99460	.99076	.50801	.98411	1.0168	1.0024
#3	.96591	.98573	.99071	.50174	.99038	.96769	1.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10101.**	**58744.**	**2633.3**
Stddev	58.	89.	11.2
%RSD	.57499	.15080	.42587
#1	10167.	58762.	2620.5
#2	10078.	58822.	2637.9
#3	10058.	58647.	2641.5

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 12:44:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00378	-.00158	.00512	.00056	.00002	-.02572	.00022
Stddev	.00126	.00318	.00125	.00197	.00002	.00002	.01927	.00018
%RSD	1011.4	84.314	78.639	38.402	4.4181	86.513	74.934	81.598
#1	-.00120	.00280	-.00284	.00290	.00054	.00003	-.02358	.00041
#2	.00028	.00733	-.00156	.00582	.00057	.00004	-.04597	.00017
#3	.00130	.00119	-.00035	.00665	.00058	.00000	-.00761	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00132	-.00067	.01076	-.03728	.00303	-.01580	-.00042
Stddev	.00022	.00035	.00163	.02779	.06295	.00069	.10846	.00069
%RSD	104.52	26.753	244.12	258.26	168.84	22.805	686.61	163.49
#1	.00037	.00123	-.00030	-.01309	-.10766	.00288	.02300	-.00006
#2	.00030	.00171	.00075	.04127	-.01783	.00243	-.13832	.00001
#3	-.00004	.00103	-.00245	.00410	.01364	.00379	.06793	-.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.02743	-.00095	.00601	-.00340	.00104	-.00278	.00333
Stddev	.00043	.03496	.00127	.00109	.00147	.00092	.00286	.00024
%RSD	546.43	127.48	134.28	18.126	43.056	88.048	103.18	7.3358
#1	.00000	.04430	.00045	.00476	-.00479	.00153	-.00043	.00359
#2	.00031	-.01277	-.00204	.00671	-.00355	.00161	-.00597	.00330
#3	-.00054	.05075	-.00126	.00657	-.00187	-.00002	-.00193	.00310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 12:44:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00019	-.00234	.00087	-.00097	-.00025	-.00001
Stddev	.00084	.00032	.00663	.00116	.00048	.00009	.00011
%RSD	266.28	168.80	283.33	132.65	49.744	38.367	1063.7
#1	.00006	.00006	-.00811	.00085	-.00061	-.00016	.00005
#2	.00125	-.00005	.00490	.00204	-.00152	-.00035	-.00014
#3	-.00037	.00055	-.00381	-.00027	-.00078	-.00024	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10161.	59298.	2623.8
Stddev	52.	195.	14.5
%RSD	.51553	.32854	.55092
#1	10137.	59080.	2613.6
#2	10125.	59455.	2640.4
#3	10221.	59358.	2617.6

Approved: July 16, 2016

Sample Name: PBW 96 Acquired: 7/14/2016 12:48:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00101**	**.02118**	**-.00173**	**.00664**	**-.00063**	**.00005**	**.02058**	**.00034**
Stddev	.00124	.01222	.00184	.00134	.00159	.00009	.01848	.00022
%RSD	122.28	57.695	106.41	20.126	251.86	176.10	89.799	65.325
#1	-.00226	.03501	-.00275	.00818	.00118	-.00005	.00270	.00008
#2	-.00098	.01184	-.00283	.00575	-.00178	.00011	.03960	.00046
#3	.00021	.01669	.00039	.00600	-.00129	.00008	.01943	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00095**	**.00052**	**.03112**	**-.04723**	**.00148**	**-.01572**	**-.00029**
Stddev	.00020	.00046	.00075	.00728	.06974	.00180	.05242	.00445
%RSD	69.586	48.379	143.88	23.383	147.65	121.57	333.47	1552.0
#1	-.00020	.00081	.00115	.03907	-.12744	.00268	-.04647	.00356
#2	-.00014	.00058	.00073	.02480	-.01338	-.00059	.04481	-.00515
#3	-.00051	.00146	-.00031	.02948	-.00088	.00234	-.04550	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**-.00094**	**-.00032**	**.00552**	**-.00104**	**.00014**	**-.00642**	**.00416**
Stddev	.00020	.00881	.00086	.00329	.00232	.00290	.00342	.00028
%RSD	82.567	935.35	271.65	59.505	223.25	2034.3	53.297	6.8324
#1	.00043	-.01014	-.00112	.00633	.00100	.00054	-.01005	.00446
#2	.00003	-.00012	.00059	.00833	-.00357	-.00293	-.00325	.00413
#3	.00029	.00743	-.00041	.00191	-.00055	.00282	-.00596	.00390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: PBW 96 Acquired: 7/14/2016 12:48:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00116**	**-.00151**	**-.00126**	**-.00013**	**.00179**	**.00036**
Stddev	.00052	.00041	.00824	.00228	.00092	.00025	.00065
%RSD	571.98	35.251	545.70	181.06	694.31	14.205	181.67
#1	-.00069	.00070	.00552	-.00264	-.00119	.00187	.00059
#2	.00020	.00147	.00053	-.00251	.00053	.00199	.00087
#3	.00022	.00132	-.01058	.00137	.00026	.00150	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10099.**	**59711.**	**2612.6**
Stddev	91.	229.	8.2
%RSD	.89987	.38396	.31568
#1	10146.	59561.	2609.0
#2	10157.	59598.	2622.0
#3	9994.6	59975.	2606.7

Approved: July 16, 2016

Sample Name: LCSW 96 Acquired: 7/14/2016 12:55:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19901**	**4.9118**	**.19676**	**.95271**	**.50121**	**.02418**	**5.1433**	**.02451**
Stddev	.00070	.0213	.00187	.00514	.00368	.00011	.0819	.00034
%RSD	.35148	.43319	.94827	.54001	.73371	.45747	1.5920	1.3726
#1	.19910	4.9253	.19761	.95756	.50321	.02430	5.0874	.02481
#2	.19828	4.9228	.19805	.95325	.50345	.02418	5.2373	.02457
#3	.19967	4.8873	.19462	.94731	.49697	.02408	5.1052	.02414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09928**	**.24602**	**.24915**	**1.9977**	**24.597**	**.50418**	**4.9673**	**.25253**
Stddev	.00287	.00203	.00600	.0334	.115	.00280	.0931	.00570
%RSD	2.8920	.82342	2.4069	1.6738	.46897	.55517	1.8753	2.2579
#1	.10073	.24636	.25379	2.0197	24.637	.50627	5.0686	.24888
#2	.10114	.24785	.25128	1.9592	24.467	.50527	4.8854	.24960
#3	.09597	.24384	.24238	2.0141	24.687	.50100	4.9480	.25910
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50146**	**24.812**	**.24914**	**4.7840**	**.24748**	**.58682**	**.18364**	**2.4233**
Stddev	.01118	.101	.00643	.0903	.00300	.01558	.00353	.0295
%RSD	2.2296	.40523	2.5807	1.8867	1.2110	2.6548	1.9205	1.2165
#1	.50790	24.911	.25356	4.8339	.25081	.59773	.18228	2.4432
#2	.50794	24.814	.25210	4.8384	.24499	.59375	.18764	2.4373
#3	.48855	24.710	.24177	4.6799	.24664	.56898	.18099	2.3894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW 96 Acquired: 7/14/2016 12:55:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49639	.50926	.49701	.24847	.49343	.49269	.52077
Stddev	.01104	.00139	.01620	.00025	.00073	.01058	.00534
%RSD	2.2247	.27241	3.2596	.09945	.14801	2.1478	1.0251
#1	.50341	.51070	.50549	.24875	.49406	.49849	.52650
#2	.50210	.50793	.50721	.24837	.49263	.49911	.51593
#3	.48366	.50914	.47833	.24828	.49359	.48048	.51990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10033.	58482.	2596.2
Stddev	17.	224.	25.4
%RSD	.16614	.38323	.97644
#1	10020.	58368.	2567.8
#2	10026.	58337.	2616.5
#3	10051.	58740.	2604.2

Approved: July 16, 2016

Sample Name: L1607000101 Acquired: 7/14/2016 12:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00362	.08134	.00334	.04281	.00297	.00084	.19444	.00062
Stddev	.00163	.01069	.00072	.00142	.00076	.00001	.03650	.00004
%RSD	45.144	13.141	21.568	3.3277	25.614	.87250	18.769	7.1566
#1	.00346	.08525	.00378	.04348	.00358	.00083	.16630	.00060
#2	.00207	.08952	.00374	.04117	.00212	.00085	.23568	.00059
#3	.00533	.06924	.00251	.04376	.00322	.00085	.18135	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00177	.00173	.00141	.02885	.41855	.04169	.16030	.00436
Stddev	.00057	.00082	.00112	.00578	.08108	.00472	.06384	.00079
%RSD	32.534	47.098	79.188	20.024	19.372	11.322	39.823	18.135
#1	.00229	.00084	.00094	.03549	.36110	.03624	.23048	.00364
#2	.00186	.00191	.00269	.02609	.38325	.04462	.14472	.00521
#3	.00115	.00244	.00061	.02497	.51130	.04420	.10569	.00424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00382	.23448	.00688	.35769	.00040	.03771	.00204	.35876
Stddev	.00064	.00508	.00118	.03491	.00384	.00200	.00218	.03179
%RSD	16.789	2.1647	17.213	9.7585	959.30	5.2947	106.95	8.8619
#1	.00415	.23676	.00811	.37682	.00362	.03777	.00075	.38030
#2	.00423	.23802	.00679	.37885	-.00385	.03968	.00456	.37374
#3	.00308	.22867	.00574	.31740	.00143	.03568	.00081	.32224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607000101 Acquired: 7/14/2016 12:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18708	.02058	.00645	.06881	.00338	.00853	.02042
Stddev	.02211	.00038	.00483	.00544	.00041	.00090	.00034
%RSD	11.819	1.8236	74.856	7.9060	12.030	10.604	1.6690
#1	.20186	.02088	.00142	.07187	.00336	.00910	.02061
#2	.19773	.02016	.01106	.07204	.00380	.00900	.02062
#3	.16166	.02071	.00688	.06253	.00298	.00749	.02002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10107.	59785.	2611.1
Stddev	66.	310.	14.4
%RSD	.65080	.51823	.55174
#1	10147.	59448.	2594.5
#2	10144.	59852.	2620.6
#3	10031.	60056.	2618.1

Approved: July 16, 2016

Sample Name: L1607000301 Acquired: 7/14/2016 13:03:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00707**	**.15479**	**.00656**	**.07574**	**.00715**	**.00154**	**.37229**	**.00094**
Stddev	.00119	.00291	.00112	.00155	.00056	.00008	.02330	.00014
%RSD	16.777	1.8829	17.106	2.0478	7.7978	5.2224	6.2594	15.006
#1	.00679	.15640	.00527	.07722	.00742	.00162	.34685	.00078
#2	.00605	.15143	.00727	.07413	.00651	.00155	.39261	.00103
#3	.00838	.15655	.00715	.07588	.00752	.00146	.37740	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00366**	**.00448**	**.00347**	**.09037**	**.71712**	**.08126**	**.43194**	**.00865**
Stddev	.00038	.00082	.00126	.02534	.04015	.00137	.04733	.00071
%RSD	10.257	18.387	36.178	28.035	5.5985	1.6836	10.957	8.1670
#1	.00332	.00359	.00474	.08258	.68692	.08251	.42874	.00800
#2	.00407	.00464	.00347	.06985	.76268	.08147	.38629	.00855
#3	.00359	.00521	.00222	.11869	.70177	.07980	.48078	.00940
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00723**	**.41507**	**.01409**	**.69703**	**.00568**	**.07383**	**.01422**	**.70007**
Stddev	.00056	.04617	.00136	.04864	.00127	.00301	.00427	.04737
%RSD	7.7879	11.123	9.6615	6.9784	22.287	4.0745	30.025	6.7657
#1	.00758	.39998	.01379	.72869	.00703	.07668	.01113	.72769
#2	.00753	.46690	.01558	.72138	.00552	.07412	.01243	.72715
#3	.00658	.37834	.01291	.64103	.00451	.07068	.01909	.64538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607000301 Acquired: 7/14/2016 13:03:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.36737**	**.03935**	**.02892**	**.13781**	**.00661**	**.01544**	**.03915**
Stddev	.03417	.00040	.00233	.00842	.00120	.00148	.00064
%RSD	9.3000	1.0108	8.0718	6.1090	18.228	9.5855	1.6394
#1	.38939	.03951	.03042	.14332	.00658	.01631	.03969
#2	.38471	.03964	.03011	.14200	.00542	.01627	.03933
#3	.32801	.03889	.02623	.12812	.00782	.01373	.03844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**59900.**	**2603.5**
Stddev	59.	116.	19.3
%RSD	.58657	.19426	.73979
#1	10166.	59883.	2591.7
#2	10168.	59792.	2593.1
#3	10064.	60023.	2625.7

Approved: July 16, 2016

Sample Name: L1607000309 Acquired: 7/14/2016 13:07:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00868**	**.15826**	**.00443**	**.07648**	**.00740**	**.00150**	**.34773**	**.00107**
Stddev	.00126	.00317	.00212	.00046	.00042	.00007	.03651	.00020
%RSD	14.498	2.0033	47.871	.60112	5.7225	4.5237	10.500	18.954
#1	.00996	.16192	.00488	.07620	.00777	.00158	.36220	.00115
#2	.00745	.15659	.00629	.07701	.00751	.00146	.37479	.00121
#3	.00863	.15627	.00212	.07622	.00694	.00146	.30620	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00373**	**.00314**	**.00357**	**.07231**	**.74241**	**.08067**	**.36064**	**.00745**
Stddev	.00004	.00036	.00192	.03185	.13652	.00269	.04648	.00094
%RSD	.99003	11.574	53.693	44.043	18.389	3.3365	12.888	12.656
#1	.00376	.00356	.00558	.08055	.89828	.07834	.35768	.00647
#2	.00369	.00289	.00338	.03716	.64408	.08005	.31571	.00755
#3	.00373	.00297	.00176	.09923	.68486	.08361	.40853	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00735**	**.39509**	**.01308**	**.69376**	**.00719**	**.07399**	**.01335**	**.69759**
Stddev	.00081	.02978	.00091	.04569	.00056	.00794	.00272	.04912
%RSD	10.975	7.5379	6.9624	6.5854	7.7531	10.727	20.384	7.0416
#1	.00776	.36388	.01370	.71707	.00708	.07846	.01358	.72385
#2	.00786	.42321	.01351	.72309	.00669	.07869	.01596	.72801
#3	.00642	.39819	.01204	.64112	.00779	.06483	.01053	.64092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607000309 Acquired: 7/14/2016 13:07:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.36560**	**.03879**	**.01616**	**.13563**	**.00713**	**.01530**	**.03908**
Stddev	.03537	.00054	.00409	.01173	.00013	.00133	.00024
%RSD	9.6758	1.3812	25.309	8.6510	1.8900	8.6947	.60851
#1	.38717	.03835	.01978	.14187	.00698	.01618	.03884
#2	.38485	.03939	.01173	.14293	.00722	.01595	.03909
#3	.32477	.03863	.01699	.12210	.00720	.01377	.03932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10142.**	**59652.**	**2619.1**
Stddev	46.	239.	8.3
%RSD	.45833	.40114	.31815
#1	10160.	59385.	2618.3
#2	10177.	59720.	2627.7
#3	10089.	59849.	2611.1

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 13:11:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39209**	**9.6626**	**.39114**	**.48329**	**.97702**	**.04869**	**9.7483**	**.04910**
Stddev	.00117	.0164	.00853	.00419	.00520	.00014	.0490	.00115
%RSD	.29857	.17019	2.1810	.86735	.53235	.28145	.50212	2.3516
#1	.39143	9.6761	.39643	.48489	.97600	.04877	9.7076	.04979
#2	.39344	9.6443	.39568	.47853	.97241	.04877	9.7348	.04974
#3	.39139	9.6675	.38130	.48644	.98266	.04853	9.8026	.04777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19636**	**.48195**	**.48918**	**3.8704**	**49.159**	**.97872**	**9.6913**	**.49012**
Stddev	.00550	.00326	.01345	.0217	.316	.00125	.1868	.00223
%RSD	2.8035	.67697	2.7488	.55988	.64225	.12764	1.9276	.45503
#1	.19966	.48533	.49738	3.8782	48.931	.97934	9.4798	.49270
#2	.19941	.48170	.49649	3.8459	49.026	.97953	9.7607	.48892
#3	.19000	.47882	.47366	3.8871	49.519	.97728	9.8336	.48875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98297**	**49.093**	**.48923**	**9.8316**	**.48878**	**1.1703**	**.39633**	**4.7902**
Stddev	.02718	.329	.01389	.1991	.00674	.0280	.00932	.0793
%RSD	2.7652	.66928	2.8401	2.0255	1.3781	2.3934	2.3509	1.6560
#1	.99943	48.952	.49842	9.9532	.48993	1.1873	.39813	4.8379
#2	.99789	48.857	.49603	9.9399	.49486	1.1856	.40462	4.8340
#3	.95160	49.468	.47325	9.6018	.48154	1.1379	.38625	4.6986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 13:11:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97732	.97928	.98403	.49246	.96166	.97770	.99179
Stddev	.03254	.00666	.00644	.00304	.00129	.02521	.00506
%RSD	3.3290	.67989	.65458	.61636	.13367	2.5788	.51043
#1	.99711	.97762	.98058	.49444	.96295	.99264	.99618
#2	.99507	.97361	.98006	.49397	.96166	.99187	.98626
#3	.93977	.98661	.99147	.48897	.96038	.94859	.99294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10322.	60008.	2667.2
Stddev	10.	181.	10.3
%RSD	.10067	.30161	.38796
#1	10311.	59931.	2656.0
#2	10331.	59879.	2676.5
#3	10325.	60215.	2669.1

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 13:14:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00198**	**.00150**	**.00266**	**-.00164**	**.00006**	**-.02969**	**.00019**
Stddev	.00056	.00466	.00337	.00239	.00071	.00007	.02380	.00021
%RSD	253.73	235.76	224.32	89.835	43.533	115.74	80.180	111.91
#1	-.00070	-.00212	-.00031	.00396	-.00101	.00015	-.02182	.00028
#2	.00039	.00704	.00539	-.00010	-.00242	.00000	-.05643	-.00005
#3	-.00035	.00101	-.00057	.00412	-.00149	.00004	-.01082	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00043**	**-.00038**	**-.00988**	**.05401**	**.00572**	**-.04989**	**.00025**
Stddev	.00061	.00032	.00131	.02973	.06948	.00241	.07690	.00167
%RSD	51970.	74.651	341.38	301.09	128.65	42.238	154.12	666.11
#1	.00069	-.00014	-.00162	-.00470	.02679	.00832	-.12192	.00167
#2	-.00046	-.00037	.00099	.01693	.13298	.00527	.03109	-.00159
#3	-.00023	-.00077	-.00052	-.04186	.00226	.00355	-.05885	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.04110**	**-.00180**	**.00246**	**-.00211**	**-.00062**	**-.00155**	**.00121**
Stddev	.00008	.01575	.00105	.00671	.00069	.00258	.00339	.00099
%RSD	40.493	38.327	58.231	272.31	32.851	414.89	218.70	81.907
#1	.00024	.05834	-.00273	-.00395	-.00172	-.00314	-.00507	.00192
#2	.00026	.02745	-.00201	.00943	-.00169	-.00073	-.00127	.00163
#3	.00011	.03752	-.00066	.00191	-.00290	.00201	.00169	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 13:14:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00009	-.00125	.00226	-.00039	.00000	.00016
Stddev	.00013	.00030	.00536	.00136	.00044	.00009	.00011
%RSD	31.290	317.77	428.84	59.920	114.40	3153.2	67.014
#1	.00035	.00001	.00030	.00363	-.00026	-.00010	.00028
#2	.00058	.00042	.00316	.00091	-.00002	.00008	.00009
#3	.00035	-.00016	-.00722	.00225	-.00088	.00003	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10445.	60838.	2680.8
Stddev	96.	168.	1.4
%RSD	.91584	.27608	.05226
#1	10374.	61030.	2682.3
#2	10408.	60716.	2680.6
#3	10554.	60769.	2679.6

Approved: July 16, 2016

Sample Name: L1607029101 Acquired: 7/14/2016 13:18:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**.32642**	**-.00031**	**.01385**	**.02386**	**-.00001**	**51.815**	**.00026**
Stddev	.00038	.01098	.00257	.00055	.00201	.00008	.238	.00009
%RSD	45.770	3.3653	841.18	3.9542	8.4206	859.13	.45923	33.196
#1	-.00040	.33277	.00211	.01434	.02190	-.00009	51.644	.00018
#2	-.00109	.31373	-.00301	.01326	.02592	.00008	52.086	.00024
#3	-.00103	.33275	-.00001	.01394	.02375	-.00002	51.714	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00149**	**.00101**	**.44480**	**1.2917**	**.01137**	**14.606**	**.00632**
Stddev	.00011	.00051	.00079	.01679	.0693	.00113	.093	.00282
%RSD	106.14	34.599	77.857	3.7744	5.3682	9.9059	.63949	44.622
#1	.00002	.00101	.00166	.42768	1.2650	.01032	14.498	.00315
#2	-.00014	.00142	.00124	.44547	1.3704	.01124	14.670	.00726
#3	-.00018	.00203	.00014	.46124	1.2397	.01256	14.648	.00856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00149**	**5.1891**	**-.00024**	**.02482**	**-.00109**	**.00074**	**-.00359**	**4.3086**
Stddev	.00052	.0291	.00050	.00431	.00113	.00181	.00330	.3602
%RSD	34.981	.56144	210.90	17.378	104.00	243.49	91.772	8.3590
#1	.00117	5.1714	.00033	.02814	-.00124	.00278	-.00001	4.5415
#2	.00209	5.2228	-.00061	.02636	-.00213	-.00071	-.00426	4.4904
#3	.00120	5.1732	-.00043	.01994	.00011	.00017	-.00650	3.8937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029101 Acquired: 7/14/2016 13:18:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.12122	-.00724	-.00014	-.00027	.00565	.00090
Stddev	.00008	.00080	.00438	.00150	.00062	.00069	.00009
%RSD	143.72	.66213	60.516	1045.6	230.68	12.146	9.8070
#1	-.00003	.12118	-.00634	.00010	.00033	.00600	.00081
#2	.00007	.12205	-.00338	-.00175	-.00091	.00609	.00090
#3	.00012	.12044	-.01201	.00122	-.00022	.00486	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10037.	58875.	2628.3
Stddev	49.	21.	31.5
%RSD	.49154	.03535	1.1971
#1	10051.	58852.	2624.5
#2	10078.	58882.	2598.9
#3	9982.5	58892.	2661.5

Approved: July 16, 2016

Sample Name: L1607029101S Acquired: 7/14/2016 13:22:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19676**	**5.1877**	**.19876**	**.96856**	**.52248**	**.02400**	**55.795**	**.02431**
Stddev	.00110	.0149	.00120	.00268	.00458	.00015	.296	.00051
%RSD	.55862	.28628	.60569	.27667	.87683	.62369	.53038	2.0985
#1	.19799	5.1824	.20014	.96567	.52598	.02416	55.740	.02471
#2	.19643	5.2045	.19817	.96906	.52417	.02388	56.115	.02448
#3	.19587	5.1762	.19795	.97096	.51730	.02395	55.531	.02374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09761**	**.24516**	**.24487**	**2.4340**	**25.943**	**.51058**	**19.238**	**.25663**
Stddev	.00209	.00059	.00523	.0358	.153	.00378	.052	.00488
%RSD	2.1411	.23975	2.1344	1.4707	.58919	.74104	.27180	1.8997
#1	.09890	.24485	.24929	2.4746	26.015	.51246	19.294	.25256
#2	.09874	.24583	.24622	2.4070	26.047	.51306	19.226	.26203
#3	.09520	.24478	.23911	2.4203	25.767	.50623	19.192	.25529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50326**	**29.765**	**.24405**	**4.9073**	**.24736**	**.58908**	**.18922**	**6.8713**
Stddev	.00914	.194	.00463	.0615	.00907	.01086	.00306	.1047
%RSD	1.8161	.65028	1.8987	1.2541	3.6674	1.8436	1.6162	1.5238
#1	.51063	29.831	.24714	4.9572	.25292	.59997	.19220	6.9543
#2	.50612	29.917	.24629	4.9261	.25227	.58901	.18609	6.9060
#3	.49303	29.547	.23872	4.8385	.23689	.57826	.18936	6.7537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029101S Acquired: 7/14/2016 13:22:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49668	.62528	.49611	.24735	.49079	.49133	.50130
Stddev	.01014	.00395	.00277	.00343	.00177	.01043	.00287
%RSD	2.0419	.63130	.55898	1.3849	.36098	2.1223	.57327
#1	.50375	.62567	.49368	.24510	.49281	.50026	.50396
#2	.50122	.62901	.49913	.25129	.48951	.49385	.50169
#3	.48506	.62115	.49552	.24565	.49004	.47987	.49825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9986.4	58246.	2619.9
Stddev	29.6	163.	15.8
%RSD	.29604	.28057	.60173
#1	9956.3	58188.	2606.9
#2	10015.	58120.	2615.3
#3	9987.4	58431.	2637.4

Approved: July 16, 2016

Sample Name: L1607029101SD Acquired: 7/14/2016 13:26:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19520**	**5.1529**	**.19620**	**.96066**	**.51534**	**.02385**	**54.634**	**.02431**
Stddev	.00106	.0057	.00430	.00358	.00473	.00003	.358	.00039
%RSD	.54478	.11047	2.1894	.37255	.91809	.14341	.65562	1.5843
#1	.19627	5.1488	.20113	.96004	.52007	.02381	55.048	.02444
#2	.19518	5.1506	.19418	.95743	.51534	.02386	54.445	.02462
#3	.19414	5.1594	.19329	.96451	.51060	.02388	54.410	.02388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09666**	**.24347**	**.24263**	**2.4310**	**25.478**	**.50556**	**18.991**	**.25130**
Stddev	.00197	.00059	.00414	.0194	.034	.00224	.197	.00176
%RSD	2.0423	.24173	1.7076	.79819	.13175	.44221	1.0354	.70138
#1	.09780	.24335	.24426	2.4518	25.507	.50784	19.218	.24962
#2	.09780	.24295	.24572	2.4276	25.442	.50547	18.884	.25314
#3	.09438	.24411	.23792	2.4134	25.486	.50337	18.871	.25115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49742**	**29.320**	**.24128**	**4.8467**	**.24222**	**.58007**	**.18473**	**6.8037**
Stddev	.01044	.165	.00571	.0670	.00403	.01143	.00580	.0957
%RSD	2.0998	.56313	2.3661	1.3820	1.6626	1.9707	3.1404	1.4072
#1	.50316	29.508	.24583	4.8890	.24221	.58608	.18252	6.8648
#2	.50373	29.257	.24314	4.8816	.24625	.58725	.19132	6.8530
#3	.48536	29.196	.23488	4.7694	.23820	.56689	.18037	6.6934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029101SD Acquired: 7/14/2016 13:26:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49216	.61721	.48993	.24351	.48664	.48647	.49949
Stddev	.01120	.00345	.00256	.00348	.00159	.00666	.00223
%RSD	2.2756	.55907	.52285	1.4276	.32636	1.3682	.44568
#1	.49780	.62072	.48985	.24567	.48619	.48964	.50200
#2	.49942	.61709	.49253	.24537	.48532	.49094	.49875
#3	.47927	.61383	.48741	.23950	.48840	.47882	.49774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9989.9	58353.	2629.1
Stddev	18.1	77.	14.5
%RSD	.18119	.13154	.55115
#1	10010.	58436.	2613.3
#2	9974.3	58285.	2632.2
#3	9985.7	58337.	2641.7

Approved: July 16, 2016

Sample Name: L1607037601 Acquired: 7/14/2016 13:29:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00416**	**-.00100**	**.00681**	**-.00147**	**.00010**	**-.03190**	**.00034**
Stddev	.00134	.00273	.00310	.00244	.00055	.00004	.02724	.00019
%RSD	7403.4	65.522	310.63	35.835	37.306	42.751	85.379	54.191
#1	-.00057	.00537	.00211	.00707	-.00097	.00007	-.05955	.00023
#2	-.00100	.00104	-.00102	.00425	-.00138	.00015	-.03106	.00024
#3	.00151	.00608	-.00408	.00911	-.00206	.00008	-.00509	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00067**	**.00160**	**-.00147**	**.03594**	**.00114**	**.00845**	**.00079**
Stddev	.00035	.00055	.00043	.01146	.09224	.00155	.16441	.00192
%RSD	1049.3	82.795	26.996	778.30	256.67	136.37	1945.0	243.41
#1	.00003	.00108	.00121	.00081	-.06499	.00112	.14758	.00054
#2	-.00032	.00004	.00206	.00867	.05693	.00270	.05074	-.00099
#3	.00039	.00088	.00152	-.01391	.11587	-.00040	-.17297	.00282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.04769**	**-.00049**	**.00198**	**-.00140**	**.00304**	**-.00276**	**.00508**
Stddev	.00031	.01664	.00039	.00531	.00377	.00115	.00551	.00224
%RSD	1513.4	34.887	79.928	268.11	269.66	37.782	199.83	44.032
#1	-.00009	.06178	-.00083	.00787	.00251	.00373	.00146	.00559
#2	-.00029	.05197	-.00006	.00052	-.00501	.00367	-.00899	.00701
#3	.00032	.02934	-.00058	-.00245	-.00169	.00171	-.00074	.00263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607037601 Acquired: 7/14/2016 13:29:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00001	.00395	.00062	-.00046	.00239	.00003
Stddev	.00015	.00042	.00364	.00143	.00030	.00011	.00061
%RSD	58.181	3611.8	92.127	230.74	64.248	4.5360	1946.0
#1	.00009	.00038	-.00023	-.00031	-.00027	.00249	-.00035
#2	.00031	.00009	.00567	-.00010	-.00031	.00239	.00073
#3	.00039	-.00044	.00642	.00227	-.00080	.00227	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10157.	59870.	2638.2
Stddev	36.	30.	24.9
%RSD	.35834	.04975	.94494
#1	10189.	59885.	2618.4
#2	10163.	59836.	2630.0
#3	10118.	59890.	2666.2

Approved: July 16, 2016

Sample Name: L1607037602 Acquired: 7/14/2016 13:33:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00135	-.00015	-.00194	.00303	-.00098	.00006	-.00465	.00037
Stddev	.00133	.00358	.00147	.00061	.00095	.00005	.03003	.00014
%RSD	98.541	2428.3	75.826	20.173	96.491	82.678	645.56	37.857
#1	.00011	-.00421	-.00035	.00373	-.00117	.00002	-.03726	.00049
#2	-.00167	.00256	-.00326	.00269	.00004	.00012	.00144	.00039
#3	-.00249	.00121	-.00221	.00265	-.00182	.00004	.02186	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00075	.00087	-.01341	-.04036	.00222	-.03097	-.00102
Stddev	.00023	.00131	.00108	.01851	.05248	.00076	.03266	.00124
%RSD	374.90	175.00	123.66	137.97	130.05	34.089	105.46	121.71
#1	-.00014	.00099	-.00028	.00796	-.07877	.00308	-.06558	.00040
#2	.00032	-.00067	.00103	-.02420	.01944	.00163	-.00071	-.00192
#3	.00001	.00192	.00186	-.02400	-.06174	.00197	-.02661	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.05378	-.00021	.00090	-.00385	.00292	.00090	.00814
Stddev	.00015	.01097	.00037	.00696	.00323	.00235	.00226	.00247
%RSD	90.287	20.389	175.54	775.89	83.876	80.412	250.28	30.355
#1	-.00015	.05978	.00021	.00854	-.00409	.00468	-.00001	.01074
#2	-.00003	.04113	-.00050	-.00075	-.00051	.00383	.00348	.00786
#3	-.00033	.06044	-.00036	-.00510	-.00696	.00025	-.00076	.00582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607037602 Acquired: 7/14/2016 13:33:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00003	-.00287	.00020	.00005	.00150	-.00025
Stddev	.00090	.00030	.00341	.00183	.00029	.00019	.00020
%RSD	1081.2	1171.7	118.60	936.22	548.67	12.644	82.153
#1	-.00090	.00027	-.00223	.00064	.00026	.00157	-.00005
#2	.00030	-.00001	-.00656	.00176	-.00028	.00163	-.00024
#3	.00085	-.00034	.00017	-.00182	.00018	.00128	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10127.	59766.	2634.1
Stddev	39.	143.	19.9
%RSD	.38363	.23889	.75667
#1	10130.	59628.	2616.9
#2	10164.	59913.	2629.3
#3	10087.	59758.	2655.9

Approved: July 16, 2016

Sample Name: L1607037603 Acquired: 7/14/2016 13:37:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00146	-.00102	-.00058	.00353	-.00016	.00004	.03206	.00051
Stddev	.00130	.01039	.00232	.00201	.00071	.00002	.03561	.00010
%RSD	89.374	1014.9	403.17	56.770	455.86	49.604	111.06	20.003
#1	-.00281	.00303	.00021	.00122	-.00014	.00006	.04972	.00057
#2	-.00020	.00673	-.00319	.00457	-.00087	.00003	-.00892	.00055
#3	-.00137	-.01283	.00125	.00481	.00055	.00002	.05540	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00132	.00177	.00187	-.02373	.00399	-.05238	-.00120
Stddev	.00037	.00037	.00032	.01301	.05515	.00111	.05243	.00268
%RSD	162.08	27.783	17.780	694.43	232.41	27.796	100.11	222.80
#1	.00019	.00151	.00196	-.00516	-.08100	.00329	-.10212	-.00267
#2	-.00051	.00090	.00141	-.00611	-.01920	.00340	.00239	-.00284
#3	-.00037	.00155	.00194	.01689	.02901	.00526	-.05740	.00189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.02785	-.00089	.00624	-.00221	.00191	-.00283	.01222
Stddev	.00031	.02918	.00109	.00101	.00339	.00121	.00227	.00126
%RSD	680.81	104.79	122.87	16.124	153.54	63.678	80.230	10.286
#1	-.00006	-.00374	-.00148	.00544	.00030	.00276	-.00085	.01264
#2	-.00019	.05380	.00037	.00592	-.00086	.00052	-.00233	.01321
#3	.00039	.03350	-.00155	.00737	-.00606	.00244	-.00531	.01080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607037603 Acquired: 7/14/2016 13:37:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00008	.00113	.00306	-.00061	.00087	-.00036
Stddev	.00061	.00037	.00609	.00043	.00047	.00017	.00027
%RSD	71.726	477.68	540.26	14.175	76.472	19.519	76.909
#1	.00142	.00050	.00504	.00352	-.00007	.00077	-.00066
#2	.00020	-.00016	-.00589	.00301	-.00093	.00107	-.00012
#3	.00094	-.00011	.00423	.00266	-.00084	.00078	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10138.	59762.	2625.0
Stddev	34.	105.	23.6
%RSD	.33482	.17513	.89831
#1	10159.	59652.	2598.8
#2	10157.	59860.	2631.8
#3	10099.	59775.	2644.4

Approved: July 16, 2016

Sample Name: L1607020103 Acquired: 7/14/2016 13:41:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**175.05**	**.00833**	**.85524**	**.10512**	**.00019**	**249.47**
Stddev	.00073	1.23	.00356	.01361	.00189	.00004	3.00
%RSD	163.57	.70286	42.693	1.5910	1.8005	20.053	1.2032
#1	.00020	176.47	.01166	.86058	.10682	.00015	252.06
#2	-.00124	174.37	.00875	.83977	.10546	.00019	250.17
#3	-.00031	174.30	.00459	.86536	.10308	.00022	246.18
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09339**	**30.632**	**.50318**	**1.0206**	**5.1057**	**32.384**	**7.6010**
Stddev	.00578	2.073	.00423	.0683	.0388	.365	.0858
%RSD	6.1848	6.7674	.84149	6.6874	.76059	1.1267	1.1284
#1	.09715	31.919	.50801	1.0626	5.1495	32.592	7.6675
#2	.09627	31.736	.50010	1.0573	5.0919	32.597	7.6312
#3	.08674	28.241	.50143	.94182	5.0756	31.963	7.5042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**64.563**	**.95180**	**.00246**	F **910.05**	**59.165**	**166.02**	**.03448**
Stddev	.630	.01164	.00052	15.46	3.947	9.38	.00649
%RSD	.97545	1.2227	21.293	1.6989	6.6708	5.6488	18.827
#1	65.116	.95716	.00235	916.89	61.621	171.65	.03987
#2	64.695	.95978	.00304	920.91	61.261	171.22	.03628
#3	63.878	.93845	.00201	892.35	54.612	155.19	.02727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020103 Acquired: 7/14/2016 13:41:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00132**	**.01005**	**6.8387**	**-.00032**	**1.9000**	F **-.03514**	**.04196**
Stddev	.00252	.00313	.3632	.00114	.0224	.00596	.00339
%RSD	190.41	31.173	5.3112	351.39	1.1778	16.972	8.0894
#1	.00125	.00649	7.0569	.00035	1.9171	-.03945	.04557
#2	.00388	.01124	7.0398	-.00163	1.9081	-.02834	.04149
#3	-.00116	.01241	6.4194	.00032	1.8747	-.03765	.03883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00855**	**3.7754**	**.00010**
Stddev	.00013	.2525	.00028
%RSD	1.5179	6.6883	293.15
#1	.00867	3.9326	.00042
#2	.00841	3.9094	-.00003
#3	.00856	3.4841	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9639.9**	**55431.**	**2597.1**
Stddev	20.4	237.	43.2
%RSD	.21187	.42681	1.6632
#1	9618.9	55167.	2560.7
#2	9659.7	55624.	2585.8
#3	9641.2	55503.	2644.9

Approved: July 16, 2016

Sample Name: L1607020103PS Acquired: 7/14/2016 13:45:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576082-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19991	161.84	.20875	1.7416	.60272	.02442	229.20
Stddev	.00083	.73	.00779	.0026	.00811	.00023	2.81
%RSD	.41737	.44979	3.7323	.15001	1.3453	.95902	1.2248
#1	.20088	162.63	.21354	1.7429	.61096	.02466	232.04
#2	.19941	161.69	.21296	1.7386	.60243	.02439	229.14
#3	.19945	161.20	.19976	1.7433	.59476	.02420	226.43
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10805	27.836	.68719	1.1612	6.5462	55.613	7.3345
Stddev	.00549	1.466	.00513	.0596	.0516	.508	.0827
%RSD	5.0847	5.2678	.74619	5.1350	.78871	.91257	1.1278
#1	.11130	28.789	.69311	1.1995	6.5907	56.148	7.4157
#2	.11113	28.570	.68435	1.1917	6.5582	55.554	7.3376
#3	.10170	26.147	.68412	1.0925	6.4896	55.138	7.2503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	62.563	1.1076	.48744	F 829.85	53.984	155.55	.26062
Stddev	.442	.0140	.02510	10.82	2.788	6.61	.01339
%RSD	.70617	1.2646	5.1485	1.3041	5.1646	4.2514	5.1383
#1	63.035	1.1227	.50419	841.57	55.765	159.68	.27048
#2	62.160	1.0950	.49954	820.24	55.417	159.05	.26601
#3	62.493	1.1050	.45859	827.73	50.771	147.93	.24538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020103PS Acquired: 7/14/2016 13:45:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576082-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.58685	.20160	8.6258	.47100	2.2040	.46954	.25617
Stddev	.03107	.00376	.3451	.02758	.0236	.00407	.01077
%RSD	5.2938	1.8668	4.0008	5.8548	1.0713	.86651	4.2030
#1	.60683	.20529	8.8428	.48886	2.2287	.46490	.26068
#2	.60267	.20174	8.8067	.48490	2.2017	.47248	.26396
#3	.55106	.19777	8.2278	.43924	2.1816	.47124	.24389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.49866	3.8831	.00056
Stddev	.00120	.1971	.00049
%RSD	.24041	5.0755	89.017
#1	.50003	4.0080	.00087
#2	.49781	3.9854	-.00001
#3	.49813	3.6559	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9671.7	55553.	2620.0
Stddev	16.5	167.	35.2
%RSD	.17049	.30006	1.3442
#1	9653.0	55379.	2582.8
#2	9683.8	55568.	2624.2
#3	9678.5	55711.	2652.9

Approved: July 16, 2016

Sample Name: L1607020103SDL Acquired: 7/14/2016 13:49:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576082-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00107**	**34.629**	**.00088**	**.17909**	**.01645**	**.00004**	**46.434**	**.02004**
Stddev	.00033	.049	.00319	.00255	.00357	.00009	4.644	.00090
%RSD	30.725	.14157	361.20	1.4253	21.721	237.88	10.002	4.4784
#1	-.00088	34.582	-.00280	.17638	.01235	.00000	41.109	.02072
#2	-.00088	34.626	.00259	.18145	.01888	-.00003	48.548	.02037
#3	-.00145	34.680	.00285	.17943	.01813	.00014	49.645	.01902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.4706**	**.10186**	**.21937**	**.93639**	**5.8240**	**1.3235**	**11.836**	**.16952**
Stddev	.1554	.00092	.00564	.08422	.6556	.1315	1.120	.01998
%RSD	2.4012	.89860	2.5695	8.9941	11.257	9.9368	9.4626	11.788
#1	6.5974	.10111	.22381	.83918	5.0953	1.1730	10.548	.14710
#2	6.5173	.10158	.22127	.98728	6.0110	1.3811	12.380	.17596
#3	6.2973	.10288	.21303	.98272	6.3659	1.4164	12.581	.18548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00069**	**171.48**	**12.727**	**34.095**	**.00728**	**.00254**	**-.00050**	**1.3826**
Stddev	.00020	17.13	.304	.879	.00405	.00157	.00508	.0342
%RSD	28.523	9.9887	2.3880	2.5779	55.635	61.745	1014.3	2.4753
#1	.00047	151.81	12.975	34.806	.00615	.00083	.00312	1.4082
#2	.00085	179.58	12.819	34.365	.01178	.00287	.00169	1.3958
#3	.00075	183.06	12.388	33.112	.00392	.00391	-.00631	1.3437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020103SDL Acquired: 7/14/2016 13:49:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576082-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.34604	-.00426	.01077	.00139	.81498	.00014
Stddev	.00070	.03435	.00491	.00329	.00071	.02044	.00017
%RSD	1434.0	9.9260	115.18	30.553	50.699	2.5083	118.26
#1	.00055	.30666	.00028	.01272	.00180	.83156	.00003
#2	-.00076	.36166	-.00947	.01262	.00180	.82125	.00034
#3	.00036	.36981	-.00359	.00697	.00058	.79214	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10488.	60924.	2886.1
Stddev	33.	131.	138.7
%RSD	.31234	.21578	4.8055
#1	10521.	60995.	3045.1
#2	10487.	61005.	2822.9
#3	10455.	60773.	2790.2

Approved: July 16, 2016

Sample Name: L1607020103SDL Acquired: 7/14/2016 13:52:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576082-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**7.2353**	**.00134**	**.03956**	**.00275**	**.00005**	**10.451**	**.00433**
Stddev	.00045	.0060	.00232	.00084	.00044	.00006	.081	.00002
%RSD	56.482	.08244	173.32	2.1218	15.868	111.32	.77720	.38077
#1	-.00115	7.2421	-.00059	.03860	.00229	.00011	10.360	.00431
#2	-.00029	7.2326	.00391	.04014	.00281	.00005	10.515	.00434
#3	-.00094	7.2311	.00069	.03994	.00316	-.00000	10.478	.00433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.3551**	**.02141**	**.04651**	**.21559**	**1.2467**	**.30504**	**2.7669**	**.03496**
Stddev	.0629	.00064	.00347	.02632	.0480	.00164	.0659	.00347
%RSD	4.6402	2.9773	7.4614	12.207	3.8533	.53708	2.3798	9.9141
#1	1.3908	.02204	.04832	.23707	1.2147	.30615	2.6995	.03228
#2	1.3920	.02144	.04871	.22349	1.2235	.30581	2.7702	.03887
#3	1.2825	.02076	.04251	.18623	1.3019	.30316	2.8310	.03374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**38.448**	**2.6925**	**6.9794**	**.00051**	**-.00106**	**.00118**	**.27878**
Stddev	.00024	.063	.1248	.4866	.00142	.00226	.00367	.01875
%RSD	143.20	.16274	4.6331	6.9723	275.91	212.90	310.24	6.7272
#1	-.00010	38.469	2.7654	7.2909	-.00095	-.00205	.00155	.29160
#2	.00025	38.497	2.7636	7.2286	.00188	-.00267	-.00266	.28749
#3	.00035	38.377	2.5485	6.4186	.00061	.00153	.00466	.25726
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020103SDL Acquired: 7/14/2016 13:52:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576082-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.07845	.00236	.00489	.00061	.17472	-.00023
Stddev	.00051	.00026	.00726	.00152	.00045	.00850	.00020
%RSD	288.32	.33381	307.87	30.993	73.320	4.8626	88.947
#1	.00076	.07816	.00930	.00497	.00027	.17949	-.00007
#2	-.00018	.07864	.00297	.00334	.00044	.17977	-.00016
#3	-.00005	.07857	-.00519	.00637	.00112	.16491	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10610.	61883.	2759.7
Stddev	76.	120.	3.9
%RSD	.71451	.19442	.14149
#1	10674.	62016.	2756.9
#2	10631.	61850.	2758.0
#3	10527.	61782.	2764.2

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 13:56:43 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38616**	**9.4206**	**.38676**	**.47772**	**.94740**	**.04733**	**9.4813**	**.04840**
Stddev	.00267	.0175	.00960	.00605	.00560	.00021	.0693	.00067
%RSD	.69074	.18586	2.4833	1.2662	.59117	.44937	.73096	1.3893
#1	.38649	9.4060	.39078	.47781	.94992	.04711	9.5502	.04884
#2	.38334	9.4400	.39371	.48372	.95130	.04753	9.4821	.04874
#3	.38864	9.4159	.37580	.47162	.94098	.04736	9.4116	.04763
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19251**	**.46912**	**.48298**	**3.7785**	**47.637**	**.95100**	**9.4238**	**.47720**
Stddev	.00501	.00215	.01141	.0145	.388	.01085	.0073	.00473
%RSD	2.6008	.45910	2.3633	.38372	.81507	1.1408	.07704	.99147
#1	.19554	.46698	.49043	3.7905	47.732	.96331	9.4220	.48231
#2	.19525	.47129	.48867	3.7825	47.969	.94687	9.4318	.47630
#3	.18673	.46909	.46984	3.7624	47.210	.94282	9.4176	.47298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96285**	**47.829**	**.48195**	**9.7801**	**.48593**	**1.1610**	**.39705**	**4.7527**
Stddev	.02721	.223	.01310	.1970	.01154	.0234	.00337	.0734
%RSD	2.8260	.46558	2.7177	2.0143	2.3742	2.0201	.84921	1.5444
#1	.98277	47.941	.48805	9.8702	.49145	1.1738	.39681	4.7861
#2	.97393	47.974	.49089	9.9160	.49368	1.1752	.40053	4.8035
#3	.93185	47.573	.46692	9.5541	.47267	1.1339	.39380	4.6686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 13:56:43 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96040	.95124	.96325	.48756	.93623	.96395	.94566
Stddev	.02861	.00475	.01383	.00305	.00199	.02259	.00860
%RSD	2.9786	.49930	1.4362	.62612	.21254	2.3440	.90980
#1	.97623	.95340	.95536	.48847	.93397	.97653	.94588
#2	.97760	.95453	.97923	.48416	.93771	.97746	.95415
#3	.92738	.94579	.95517	.49006	.93700	.93787	.93694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10518.	61390.	2796.7
Stddev	30.	107.	25.2
%RSD	.28580	.17356	.89939
#1	10510.	61513.	2797.4
#2	10552.	61332.	2771.2
#3	10493.	61325.	2821.5

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 14:00:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00119	.00725	.00001	.00618	-.00314	.00001	-.05384	.00025
Stddev	.00094	.00509	.00203	.00372	.00058	.00004	.03163	.00013
%RSD	78.898	70.169	21490.	60.172	18.383	390.29	58.759	50.361
#1	-.00182	.01126	-.00029	.00985	-.00268	-.00003	-.09002	.00026
#2	-.00162	.00153	-.00185	.00627	-.00379	.00000	-.04011	.00012
#3	-.00011	.00896	.00217	.00242	-.00296	.00006	-.03139	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00036	.00045	.00845	.11558	.00342	.01691	.00045
Stddev	.00014	.00118	.00074	.01368	.07581	.00231	.11117	.00037
%RSD	150.72	330.89	162.96	161.82	65.596	67.510	657.35	81.766
#1	-.00016	-.00100	-.00031	.02240	.02804	.00093	-.05060	.00003
#2	.00007	.00092	.00116	-.00495	.15923	.00384	-.04388	.00064
#3	-.00017	.00115	.00050	.00792	.15947	.00549	.14523	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.07194	-.00046	.00154	-.00239	.00206	.00158	.00136
Stddev	.00018	.00412	.00130	.00314	.00097	.00209	.00607	.00092
%RSD	159.22	5.7225	281.37	203.60	40.504	101.34	383.06	67.875
#1	.00020	.07536	.00104	.00415	-.00147	-.00031	.00102	.00187
#2	-.00009	.06737	-.00118	-.00195	-.00231	.00287	-.00418	.00029
#3	.00023	.07309	-.00125	.00243	-.00340	.00362	.00791	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 14:00:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	-.00023	.00812	.00260	-.00089	-.00004	-.00000
Stddev	.00063	.00020	.00150	.00125	.00025	.00012	.00058
%RSD	184.89	84.265	18.496	48.131	27.809	282.80	25045.
#1	-.00005	-.00031	.00662	.00231	-.00117	-.00011	.00063
#2	.00000	-.00037	.00963	.00397	-.00070	-.00011	-.00050
#3	.00106	-.00001	.00811	.00152	-.00080	.00009	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10292.	61823.	2785.5
Stddev	70.	386.	10.2
%RSD	.68150	.62447	.36505
#1	10356.	62027.	2793.3
#2	10217.	62065.	2789.1
#3	10302.	61378.	2774.0

Approved: July 16, 2016

Sample Name: PBW 68 Acquired: 7/14/2016 14:04:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00206**	**.01332**	**-.00061**	**.00467**	**-.00214**	**.00006**	**-.02156**	**.00037**
Stddev	.00180	.00723	.00190	.00124	.00038	.00005	.01338	.00030
%RSD	87.459	54.287	310.80	26.513	17.907	87.606	62.053	80.203
#1	-.00116	.02122	-.00235	.00427	-.00203	-.00000	-.01584	.00039
#2	-.00414	.01170	.00142	.00606	-.00256	.00009	-.01199	.00007
#3	-.00089	.00703	-.00091	.00368	-.00182	.00008	-.03685	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00038**	**-.00012**	**-.01265**	**-.02006**	**.00467**	**-.07916**	**-.00207**
Stddev	.00023	.00046	.00045	.02361	.08332	.00167	.01428	.00327
%RSD	478.10	121.27	362.68	186.74	415.31	35.787	18.045	158.11
#1	.00020	.00065	.00008	-.02335	-.06604	.00373	-.09264	-.00485
#2	-.00025	-.00015	.00019	.01442	.07612	.00660	-.08065	.00154
#3	-.00009	.00063	-.00064	-.02902	-.07026	.00368	-.06419	-.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.06208**	**-.00088**	**-.00115**	**-.00324**	**.00231**	**.00056**	**.00372**
Stddev	.00012	.00621	.00112	.00335	.00207	.00129	.00181	.00246
%RSD	51.776	10.008	127.06	290.68	63.681	55.943	325.85	66.032
#1	-.00018	.05915	.00023	-.00106	-.00122	.00108	.00244	.00265
#2	-.00014	.06921	-.00087	.00215	-.00535	.00365	.00039	.00198
#3	-.00037	.05787	-.00200	-.00454	-.00316	.00220	-.00117	.00653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: PBW 68 Acquired: 7/14/2016 14:04:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00015	.00531	.00059	-.00102	.00269	.00019
Stddev	.00040	.00019	.00671	.00337	.00032	.00045	.00060
%RSD	387.77	130.68	126.42	572.93	31.440	16.708	308.77
#1	-.00035	-.00031	.00562	.00446	-.00070	.00307	-.00020
#2	.00040	.00006	-.00155	-.00168	-.00102	.00281	.00088
#3	.00026	-.00019	.01187	-.00102	-.00135	.00220	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10215.	60573.	2679.7
Stddev	45.	267.	7.9
%RSD	.44375	.44138	.29424
#1	10240.	60306.	2674.4
#2	10242.	60573.	2676.0
#3	10162.	60841.	2688.8

Approved: July 16, 2016

Sample Name: LCSW 68 Acquired: 7/14/2016 14:08:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19572**	**4.9050**	**.20175**	**.96744**	**.50443**	**.02417**	**5.1413**	**.02485**
Stddev	.00252	.0030	.00712	.00474	.00249	.00007	.0294	.00080
%RSD	1.2874	.06141	3.5282	.49023	.49308	.29565	.57173	3.2263
#1	.19362	4.9015	.20283	.96962	.50276	.02418	5.1512	.02563
#2	.19851	4.9071	.20827	.96200	.50325	.02409	5.1083	.02490
#3	.19502	4.9063	.19416	.97071	.50729	.02423	5.1645	.02403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10012**	**.24751**	**.25348**	**2.0110**	**24.726**	**.50778**	**5.0021**	**.25217**
Stddev	.00287	.00219	.00527	.0246	.074	.00256	.0729	.00248
%RSD	2.8664	.88653	2.0805	1.2219	.29844	.50391	1.4567	.98186
#1	.10189	.24499	.25663	1.9832	24.702	.50795	5.0573	.24932
#2	.10167	.24896	.25642	2.0298	24.666	.50513	4.9195	.25340
#3	.09681	.24859	.24739	2.0200	24.808	.51024	5.0296	.25379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50945**	**25.061**	**.25446**	**4.8868**	**.24939**	**.59984**	**.19307**	**2.4912**
Stddev	.01258	.054	.00635	.0912	.00535	.01296	.00539	.0419
%RSD	2.4687	.21732	2.4940	1.8657	2.1445	2.1610	2.7893	1.6811
#1	.51800	25.037	.25927	4.9545	.25441	.60812	.19837	2.5193
#2	.51534	25.023	.25685	4.9227	.24998	.60649	.18761	2.5113
#3	.49501	25.123	.24727	4.7831	.24377	.58490	.19324	2.4430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW 68 Acquired: 7/14/2016 14:08:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50347	.51298	.51101	.25241	.49377	.50054	.00130
Stddev	.01517	.00123	.00309	.00248	.00016	.01185	.00014
%RSD	3.0122	.23891	.60418	.98237	.03340	2.3678	10.828
#1	.51360	.51222	.50993	.25300	.49379	.50821	.00144
#2	.51077	.51232	.51449	.25454	.49392	.50653	.00116
#3	.48603	.51439	.50861	.24968	.49359	.48689	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10156.	59814.	2681.8
Stddev	18.	224.	11.6
%RSD	.17564	.37439	.43130
#1	10141.	60055.	2683.7
#2	10176.	59613.	2692.4
#3	10151.	59774.	2669.5

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 14:11:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575805-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00170	.01612	.00020	.00581	-.00094	-.00001	-.01134	.00032
Stddev	.00177	.00244	.00203	.00180	.00036	.00005	.03567	.00002
%RSD	104.20	15.112	1014.4	30.970	37.776	416.22	314.54	7.4520
#1	-.00330	.01838	.00088	.00565	-.00062	-.00003	.02980	.00035
#2	-.00200	.01644	.00180	.00769	-.00132	.00004	-.03025	.00030
#3	.00020	.01354	-.00208	.00410	-.00088	-.00005	-.03357	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00110	-.00056	-.01365	.02379	.00103	-.03449	-.00097
Stddev	.00026	.00061	.00102	.03614	.06862	.00401	.08407	.00103
%RSD	150.34	55.310	180.50	264.73	288.39	388.51	243.72	105.91
#1	-.00007	.00097	-.00169	.01302	.08871	.00545	.05466	-.00005
#2	.00014	.00056	-.00030	-.05479	.03068	-.00236	-.11233	-.00208
#3	.00044	.00176	.00029	.00081	-.04801	.00000	-.04581	-.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	142.97	-.00056	.00150	-.00292	.00178	.00002	.00737
Stddev	.00037	.12	.00035	.00247	.00181	.00073	.00081	.00057
%RSD	132.05	.08527	62.170	164.68	61.807	41.115	5008.0	7.6909
#1	-.00041	143.10	-.00030	.00233	-.00288	.00250	.00076	.00779
#2	-.00056	142.95	-.00042	-.00128	-.00475	.00104	.00015	.00760
#3	.00014	142.86	-.00095	.00346	-.00114	.00178	-.00086	.00672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 14:11:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575805-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	.00009	-.00316	.00018	-.00053	.00362	.00023
Stddev	.00122	.00018	.00350	.00273	.00117	.00058	.00018
%RSD	182.03	202.82	110.84	1549.9	220.80	16.084	77.779
#1	.00201	.00012	-.00097	.00017	.00067	.00414	.00041
#2	.00038	-.00011	-.00131	-.00255	-.00167	.00373	.00005
#3	-.00038	.00025	-.00719	.00290	-.00059	.00299	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10133.	59358.	2696.6
Stddev	16.	148.	14.9
%RSD	.15573	.24969	.55433
#1	10123.	59494.	2680.1
#2	10125.	59200.	2709.2
#3	10151.	59378.	2700.6

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 14:15:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575805-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00535	.00117	.00406	-.00177	-.00001	-.01783	.00029
Stddev	.00203	.00551	.00227	.00193	.00062	.00006	.00560	.00024
%RSD	216.76	102.93	193.66	47.682	34.918	542.40	31.423	81.908
#1	.00102	.00772	.00185	.00286	-.00246	-.00004	-.02193	.00004
#2	-.00113	-.00094	.00304	.00302	-.00129	.00006	-.02013	.00052
#3	.00292	.00928	-.00136	.00629	-.00155	-.00005	-.01145	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00108	.00185	-.00508	.02480	.00344	-.06770	-.00279
Stddev	.00012	.00015	.00047	.00816	.07237	.00211	.05064	.00033
%RSD	105.98	13.872	25.343	160.67	291.86	61.523	74.801	11.861
#1	-.00024	.00116	.00145	.00431	.05482	.00560	-.02833	-.00283
#2	-.00009	.00091	.00237	-.01047	-.05776	.00138	-.04994	-.00244
#3	-.00000	.00117	.00174	-.00907	.07733	.00333	-.12482	-.00309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.66923	-.00062	.00088	-.00452	.00187	-.00123	.00560
Stddev	.00045	.01325	.00034	.00794	.00121	.00404	.00501	.00077
%RSD	517.94	1.9799	54.191	901.34	26.778	215.40	407.28	13.757
#1	.00026	.68325	-.00025	-.00579	-.00321	.00645	.00007	.00649
#2	-.00059	.66753	-.00090	.00966	-.00476	.00035	.00300	.00520
#3	.00007	.65691	-.00071	-.00123	-.00559	-.00118	-.00676	.00511
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 14:15:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575805-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00013**	**.00323**	**.00044**	**-.00003**	**.00408**	**.00022**
Stddev	.00035	.00052	.00146	.00251	.00053	.00055	.00013
%RSD	179.43	413.87	45.216	570.27	1558.7	13.430	57.269
#1	.00060	.00028	.00194	-.00169	-.00063	.00444	.00036
#2	-.00002	-.00072	.00482	-.00020	.00039	.00436	.00011
#3	.00001	.00006	.00293	.00321	.00014	.00345	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10310.**	**60905.**	**2722.5**
Stddev	12.	149.	12.0
%RSD	.11675	.24450	.44031
#1	10316.	60822.	2720.7
#2	10296.	61077.	2711.6
#3	10317.	60816.	2735.3

Approved: July 16, 2016

Sample Name: L1607039701 Acquired: 7/14/2016 14:19:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00212**	**.05238**	**-.00138**	**.01980**	**.00085**	**.00005**	**9.5331**	**.00042**
Stddev	.00111	.00492	.00092	.00390	.00040	.00004	.0580	.00013
%RSD	52.194	9.3947	66.676	19.691	47.369	67.750	.60823	30.671
#1	-.00222	.05461	-.00148	.02345	.00076	.00006	9.4990	.00045
#2	-.00097	.04674	-.00041	.02027	.00050	.00001	9.6000	.00052
#3	-.00318	.05579	-.00224	.01569	.00128	.00008	9.5003	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00148**	**.09868**	**.03441**	**.03124**	**1.1026**	**.00376**	**.51937**	**.14683**
Stddev	.00005	.00072	.00439	.00638	.0239	.00133	.05477	.00213
%RSD	3.3244	.73052	12.761	20.429	2.1672	35.472	10.545	1.4526
#1	.00147	.09919	.03637	.02466	1.0762	.00224	.46101	.14455
#2	.00154	.09785	.03748	.03740	1.1229	.00427	.56965	.14878
#3	.00144	.09899	.02938	.03166	1.1086	.00476	.52744	.14714
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**144.04**	**.00780**	**.04330**	**-.00248**	**.00101**	**-.00003**	**.27103**
Stddev	.00047	.11	.00149	.00034	.00252	.00202	.00487	.01973
%RSD	176.60	.07915	19.163	.79629	101.48	198.77	15835.	7.2804
#1	-.00049	144.04	.00868	.04353	-.00282	.00334	.00138	.28228
#2	.00027	143.93	.00864	.04347	-.00481	-.00022	.00397	.28256
#3	-.00058	144.16	.00607	.04291	.00019	-.00008	-.00545	.24824
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607039701 Acquired: 7/14/2016 14:19:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.88538	-.00530	.00116	-.00058	1.3399	.00024
Stddev	.00028	.00044	.00488	.00133	.00088	.1268	.00028
%RSD	40.337	.04953	91.916	115.06	151.42	9.4644	119.08
#1	.00101	.88585	-.01074	.00239	-.00040	1.4200	.00051
#2	.00049	.88529	-.00384	-.00025	.00019	1.4059	-.00005
#3	.00058	.88499	-.00133	.00133	-.00155	1.1937	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10109.	59195.	2732.9
Stddev	11.	81.	19.7
%RSD	.10597	.13725	.72008
#1	10098.	59191.	2732.6
#2	10120.	59115.	2752.8
#3	10109.	59278.	2713.4

Approved: July 16, 2016

Sample Name: L1607039701S Acquired: 7/14/2016 14:23:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19436**	**4.9227**	**.20109**	**.97853**	**.49861**	**.02407**	**14.067**	**.02468**
Stddev	.00122	.0163	.00547	.00255	.00168	.00002	.054	.00032
%RSD	.62640	.33053	2.7208	.26069	.33715	.08542	.38620	1.3064
#1	.19342	4.9219	.20632	.98113	.49961	.02405	14.124	.02476
#2	.19574	4.9069	.20154	.97604	.49667	.02408	14.016	.02495
#3	.19392	4.9394	.19541	.97841	.49956	.02408	14.062	.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09999**	**.33450**	**.28195**	**2.0159**	**25.932**	**.50658**	**5.4317**	**.38921**
Stddev	.00170	.00125	.00553	.0104	.084	.00221	.1546	.00352
%RSD	1.7018	.37339	1.9621	.51583	.32268	.43720	2.8463	.90375
#1	.10104	.33517	.28617	2.0146	26.004	.50403	5.4514	.38760
#2	.10090	.33306	.28398	2.0270	25.840	.50762	5.2682	.38679
#3	.09803	.33528	.27569	2.0063	25.952	.50807	5.5755	.39325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50540**	**162.31**	**.25629**	**4.9820**	**.24652**	**.58905**	**.19128**	**2.7966**
Stddev	.01009	.28	.00483	.0720	.00386	.01023	.00340	.0326
%RSD	1.9966	.17432	1.8865	1.4458	1.5676	1.7371	1.7763	1.1672
#1	.51110	162.46	.25914	5.0364	.24986	.59720	.19355	2.8164
#2	.51135	161.98	.25902	5.0092	.24740	.59238	.19290	2.8143
#3	.49375	162.49	.25070	4.9003	.24228	.57757	.18737	2.7589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607039701S Acquired: 7/14/2016 14:23:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49761**	**1.3421**	**.50305**	**.24041**	**.48973**	**1.8124**	**.00138**
Stddev	.01042	.0022	.00428	.00194	.00197	.0321	.00059
%RSD	2.0946	.16423	.85075	.80529	.40310	1.7709	42.549
#1	.50396	1.3431	.50617	.24106	.49030	1.8318	.00206
#2	.50329	1.3396	.49817	.24194	.48753	1.8301	.00109
#3	.48558	1.3436	.50481	.23823	.49136	1.7754	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10112.**	**59489.**	**2725.2**
Stddev	11.	249.	12.6
%RSD	.10882	.41931	.46416
#1	10100.	59407.	2710.8
#2	10122.	59769.	2734.6
#3	10115.	59291.	2730.2

Approved: July 16, 2016

Sample Name: L1607039701SD Acquired: 7/14/2016 14:27:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19129**	**4.8592**	**.20129**	**.97067**	**.49784**	**.02385**	**14.255**	**.02486**
Stddev	.00520	.1219	.00231	.02623	.00264	.00068	.136	.00064
%RSD	2.7173	2.5081	1.1461	2.7022	.53099	2.8646	.95212	2.5895
#1	.19327	4.9241	.20163	.98909	.50087	.02430	14.408	.02532
#2	.19522	4.9349	.20341	.98227	.49597	.02420	14.206	.02512
#3	.18540	4.7186	.19883	.94064	.49669	.02307	14.150	.02412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10127**	**.33542**	**.28795**	**1.9968**	**25.850**	**.50709**	**5.4125**	**.39161**
Stddev	.00311	.00892	.00715	.0276	.133	.00240	.0519	.00269
%RSD	3.0682	2.6585	2.4841	1.3832	.51268	.47246	.95962	.68564
#1	.10287	.34090	.29099	2.0280	25.988	.50982	5.4180	.39346
#2	.10324	.34022	.29307	1.9755	25.723	.50534	5.3581	.38853
#3	.09768	.32513	.27978	1.9869	25.839	.50610	5.4615	.39285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51189**	**166.67**	**.25894**	**5.0434**	**.25071**	**.59989**	**.19864**	**2.8261**
Stddev	.01155	1.04	.00559	.0825	.00702	.01360	.00443	.0424
%RSD	2.2570	.62258	2.1601	1.6369	2.7987	2.2673	2.2313	1.4991
#1	.51749	167.84	.26299	5.0773	.25650	.61154	.19899	2.8470
#2	.51957	165.88	.26127	5.1036	.25272	.60320	.20289	2.8540
#3	.49860	166.28	.25256	4.9493	.24291	.58494	.19404	2.7773
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607039701SD Acquired: 7/14/2016 14:27:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50182**	**1.3701**	**.50557**	**.24405**	**.48688**	**1.8739**	**.00155**
Stddev	.01366	.0092	.00057	.00404	.01183	.0439	.00051
%RSD	2.7224	.67324	.11312	1.6549	2.4295	2.3447	33.103
#1	.50895	1.3803	.50587	.24478	.49320	1.8943	.00096
#2	.51045	1.3624	.50491	.24768	.49421	1.9040	.00190
#3	.48607	1.3677	.50593	.23970	.47324	1.8235	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10053.**	**59698.**	**2731.2**
Stddev	42.	896.	21.6
%RSD	.42127	1.5004	.79199
#1	10040.	59078.	2706.4
#2	10019.	59291.	2741.0
#3	10101.	60725.	2746.2

Approved: July 16, 2016

Sample Name: L1607034701 Acquired: 7/14/2016 14:30:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00136	.20647	-.00059	.02106	.27600	.00004	1.1209	.00022
Stddev	.00060	.00692	.00227	.00283	.00164	.00002	.0057	.00007
%RSD	44.261	3.3521	387.81	13.459	.59366	44.500	.50866	30.091
#1	-.00201	.21124	.00051	.02093	.27450	.00003	1.1254	.00016
#2	-.00082	.20964	-.00319	.01829	.27775	.00003	1.1227	.00029
#3	-.00124	.19854	.00093	.02396	.27576	.00006	1.1145	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.00198	.00075	7.0465	.17124	.00283	.26358	.07646
Stddev	.00032	.00068	.00222	.0282	.05761	.00089	.05706	.00078
%RSD	37.945	34.399	296.51	.39961	33.645	31.493	21.650	1.0171
#1	.00109	.00241	.00255	7.0140	.22305	.00205	.27323	.07579
#2	.00094	.00234	.00143	7.0633	.10920	.00265	.20231	.07731
#3	.00048	.00120	-.00173	7.0622	.18146	.00380	.31520	.07627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	139.94	.00277	.00940	-.00060	.00054	.00084	.48387
Stddev	.00030	.27	.00118	.00523	.00135	.00193	.00233	.04228
%RSD	138.24	.19331	42.690	55.645	226.54	359.36	276.93	8.7387
#1	-.00008	139.78	.00270	.00769	.00015	.00255	-.00169	.50783
#2	-.00057	140.25	.00399	.01527	-.00216	-.00129	.00132	.50874
#3	-.00001	139.78	.00163	.00524	.00022	.00034	.00290	.43505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034701 Acquired: 7/14/2016 14:30:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.02074**	**.01225**	**-.00032**	**-.00018**	**.02831**	**-.00023**
Stddev	.00061	.00029	.00371	.00190	.00069	.00279	.00019
%RSD	185.27	1.3870	30.276	598.73	389.30	9.8441	85.624
#1	.00004	.02053	.01194	-.00169	-.00084	.02992	-.00027
#2	-.00009	.02107	.01610	.00186	.00053	.02991	-.00039
#3	.00102	.02062	.00870	-.00112	-.00023	.02509	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10218.**	**59713.**	**2719.4**
Stddev	8.	209.	7.5
%RSD	.07729	.34945	.27437
#1	10217.	59494.	2727.2
#2	10210.	59735.	2712.3
#3	10226.	59910.	2718.5

Approved: July 16, 2016

Sample Name: L1607034701PS Acquired: 7/14/2016 14:34:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576110-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19689**	**5.1294**	**.20349**	**.99499**	**.75803**	**.02446**	**6.1926**	**.02487**
Stddev	.00231	.0038	.00312	.00508	.00091	.00002	.0274	.00047
%RSD	1.1733	.07440	1.5337	.51091	.11957	.08213	.44215	1.8771
#1	.19859	5.1274	.20501	.99508	.75803	.02444	6.2184	.02534
#2	.19426	5.1269	.20556	.98986	.75713	.02447	6.1639	.02487
#3	.19781	5.1338	.19990	1.0000	.75894	.02448	6.1953	.02440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10084**	**.25098**	**.25379**	**8.3770**	**25.224**	**.51448**	**5.1382**	**.32265**
Stddev	.00206	.00152	.00646	.0079	.007	.00221	.0417	.00173
%RSD	2.0402	.60709	2.5465	.09440	.02659	.42960	.81204	.53546
#1	.10205	.25195	.25858	8.3747	25.222	.51342	5.1835	.32232
#2	.10201	.24923	.25634	8.3858	25.231	.51300	5.1014	.32110
#3	.09846	.25177	.24644	8.3705	25.218	.51702	5.1298	.32451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51208**	**151.85**	**.25530**	**4.9624**	**.25170**	**.60210**	**.19468**	**2.9419**
Stddev	.01171	.26	.00643	.0902	.00413	.01457	.00517	.0447
%RSD	2.2861	.16905	2.5173	1.8169	1.6390	2.4196	2.6558	1.5203
#1	.52021	151.56	.25971	5.0187	.25303	.61402	.20054	2.9711
#2	.51738	151.98	.25827	5.0099	.25500	.60643	.19077	2.9642
#3	.49866	152.02	.24793	4.8584	.24707	.58586	.19273	2.8904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034701PS Acquired: 7/14/2016 14:34:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576110-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50407**	**.53383**	**.51465**	**.24579**	**.49748**	**.52815**	**.00076**
Stddev	.01245	.00164	.00580	.00282	.00154	.01193	.00043
%RSD	2.4695	.30765	1.1279	1.1475	.30953	2.2592	56.241
#1	.51232	.53232	.50795	.24861	.49712	.53486	.00036
#2	.51014	.53359	.51788	.24579	.49616	.53521	.00070
#3	.48975	.53558	.51813	.24297	.49917	.51437	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10129.**	**59386.**	**2705.7**
Stddev	26.	167.	3.9
%RSD	.26152	.28159	.14478
#1	10124.	59568.	2701.4
#2	10106.	59239.	2706.7
#3	10158.	59351.	2709.0

Approved: July 16, 2016

Sample Name: L1607034701SDL Acquired: 7/14/2016 14:38:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576110-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00161**	**.03923**	**-.00117**	**.00889**	**.05412**	**.00005**	**.16897**	**.00016**
Stddev	.00064	.00423	.00027	.00139	.00121	.00005	.03373	.00006
%RSD	39.816	10.772	22.907	15.692	2.2401	88.648	19.964	37.097
#1	-.00102	.03443	-.00115	.01003	.05464	.00011	.15142	.00009
#2	-.00229	.04090	-.00091	.00930	.05273	.00005	.20786	.00019
#3	-.00151	.04237	-.00144	.00733	.05498	.00001	.14764	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00112**	**-.00058**	**1.4335**	**.02615**	**-.00054**	**.03956**	**.01439**
Stddev	.00018	.00087	.00043	.0427	.03662	.00144	.03081	.00161
%RSD	701.33	77.654	73.534	2.9779	140.05	268.29	77.891	11.190
#1	-.00017	.00037	-.00068	1.4104	.06656	.00112	.07007	.01454
#2	.00018	.00207	-.00095	1.4073	.01670	-.00132	.04014	.01592
#3	-.00009	.00091	-.00011	1.4828	-.00482	-.00142	.00846	.01271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**28.105**	**.00022**	**.00272**	**.00087**	**.00240**	**-.00180**	**.09388**
Stddev	.00006	.129	.00077	.00746	.00242	.00260	.00430	.01272
%RSD	25.554	.46014	355.24	274.36	278.82	108.25	238.96	13.544
#1	-.00016	28.253	-.00030	.01085	-.00192	.00211	-.00329	.10271
#2	-.00028	28.015	-.00015	-.00382	.00229	-.00004	-.00517	.09963
#3	-.00024	28.046	.00110	.00113	.00223	.00514	.00305	.07931
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034701SDL Acquired: 7/14/2016 14:38:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576110-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00434**	**.00284**	**.00345**	**-.00094**	**.00612**	**-.00006**
Stddev	.00022	.00025	.00286	.00225	.00015	.00084	.00008
%RSD	496.48	5.7636	100.92	65.172	16.224	13.718	129.32
#1	-.00001	.00457	.00479	.00373	-.00110	.00675	-.00002
#2	.00016	.00437	.00418	.00107	-.00093	.00645	-.00002
#3	-.00027	.00408	-.00045	.00555	-.00080	.00517	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10479.**	**61148.**	**2709.8**
Stddev	8.	138.	10.5
%RSD	.07748	.22534	.38901
#1	10478.	61114.	2697.6
#2	10487.	61300.	2716.4
#3	10471.	61031.	2715.3

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 14:42:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41120**	**10.118**	**.40826**	**.51260**	**1.0143**	**.05057**	**10.112**	**.05099**
Stddev	.00201	.013	.00619	.00151	.0025	.00024	.022	.00131
%RSD	.49001	.12608	1.5171	.29421	.24330	.48067	.21888	2.5672
#1	.40889	10.131	.41331	.51355	1.0134	.05074	10.132	.05188
#2	.41207	10.117	.41012	.51339	1.0170	.05068	10.116	.05160
#3	.41263	10.106	.40135	.51086	1.0123	.05029	10.088	.04949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20304**	**.50463**	**.50760**	**4.0319**	**50.666**	**1.0137**	**10.083**	**.51068**
Stddev	.00667	.00149	.01686	.0427	.090	.0121	.034	.00183
%RSD	3.2842	.29561	3.3214	1.0592	.17687	1.1885	.33765	.35801
#1	.20764	.50495	.51715	4.0053	50.564	1.0273	10.122	.51277
#2	.20609	.50594	.51752	4.0092	50.700	1.0098	10.069	.50940
#3	.19539	.50300	.48813	4.0811	50.733	1.0041	10.059	.50987
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0092**	**51.016**	**.50730**	**10.270**	**.50596**	**1.2257**	**.41429**	**4.9915**
Stddev	.0297	.094	.01522	.238	.01197	.0283	.00769	.0835
%RSD	2.9426	.18445	3.0005	2.3133	2.3658	2.3113	1.8562	1.6739
#1	1.0277	50.977	.51616	10.425	.51182	1.2419	.41990	5.0106
#2	1.0251	51.123	.51602	10.388	.51386	1.2422	.41744	5.0638
#3	.97498	50.948	.48972	9.9966	.49219	1.1930	.40552	4.9000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 14:42:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0117**	**1.0154**	**1.0207**	**.50755**	**1.0017**	**1.0128**	**1.0106**
Stddev	.0359	.0007	.0080	.00627	.0036	.0281	.0009
%RSD	3.5447	.07085	.78097	1.2361	.35761	2.7713	.08465
#1	1.0350	1.0148	1.0200	.51327	1.0049	1.0300	1.0116
#2	1.0298	1.0162	1.0290	.50853	1.0024	1.0280	1.0100
#3	.97042	1.0153	1.0131	.50084	.99782	.98042	1.0101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10174.**	**58886.**	**2687.0**
Stddev	14.	212.	6.2
%RSD	.14175	.36012	.23092
#1	10158.	58888.	2687.3
#2	10177.	58672.	2680.7
#3	10186.	59097.	2693.1

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 14:46:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.00351**	**-.00095**	**.00454**	**-.00202**	**.00002**	**-.00794**	**.00007**
Stddev	.00026	.00246	.00223	.00055	.00036	.00004	.03471	.00007
%RSD	42.481	70.180	236.01	12.167	18.019	162.61	437.16	92.161
#1	-.00077	.00586	-.00282	.00395	-.00177	.00005	-.04754	.00008
#2	-.00073	.00371	.00152	.00462	-.00243	-.00002	.01722	.00000
#3	-.00031	.00095	-.00154	.00505	-.00185	.00005	.00650	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00004**	**-.00107**	**.00083**	**.01134**	**.00307**	**-.08953**	**-.00333**
Stddev	.00011	.00062	.00091	.02376	.07329	.00249	.07914	.00141
%RSD	182.39	1401.7	85.207	2871.9	646.52	81.223	88.400	42.300
#1	.00004	-.00045	-.00082	.01987	.01506	.00286	-.07144	-.00230
#2	-.00018	.00074	-.00031	-.02580	.08269	.00566	-.17615	-.00276
#3	-.00004	-.00015	-.00208	.00841	-.06374	.00069	-.02100	-.00494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.05458**	**-.00137**	**.00275**	**-.00045**	**-.00008**	**-.00339**	**.00216**
Stddev	.00039	.02744	.00076	.00123	.00471	.00393	.00164	.00161
%RSD	27739.	50.283	55.399	44.538	1056.8	5186.1	48.569	74.468
#1	-.00045	.07743	-.00212	.00168	-.00247	.00273	-.00254	.00399
#2	.00015	.02414	-.00061	.00409	-.00381	-.00457	-.00528	.00149
#3	.00030	.06215	-.00137	.00248	.00494	.00161	-.00234	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 14:46:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.00003	.00004	-.00018	-.00066	.00000	.00009
Stddev	.00052	.00022	.00286	.00023	.00061	.00012	.00022
%RSD	63.598	826.69	7584.3	123.98	92.692	10978.	238.15
#1	.00134	-.00021	.00209	-.00045	-.00131	.00003	.00001
#2	.00082	.00008	.00126	-.00008	-.00011	.00010	.00034
#3	.00030	.00021	-.00323	-.00003	-.00055	-.00013	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10269.	60526.	2698.2
Stddev	54.	114.	17.4
%RSD	.52151	.18897	.64645
#1	10328.	60634.	2714.5
#2	10224.	60406.	2700.2
#3	10253.	60537.	2679.8

Approved: July 16, 2016

Sample Name: L1607039702 Acquired: 7/14/2016 14:50:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00114	.04371	.00147	.02388	.00094	.00002	7.3981	.00027
Stddev	.00126	.00465	.00161	.00152	.00031	.00007	.0257	.00040
%RSD	110.89	10.638	109.71	6.3687	33.065	427.77	.34716	147.30
#1	.00010	.03851	.00014	.02472	.00102	-.00006	7.3702	-.00018
#2	-.00110	.04514	.00326	.02479	.00119	.00008	7.4207	.00058
#3	-.00242	.04748	.00100	.02212	.00059	.00003	7.4034	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.23440	.02578	.03275	.90890	.00873	.42465	.10659
Stddev	.00038	.00043	.00173	.00835	.06109	.00400	.06132	.00100
%RSD	50.030	.18470	6.6941	25.498	6.7218	45.811	14.439	.94038
#1	.00048	.23473	.02693	.02382	.97431	.00648	.49544	.10774
#2	.00119	.23391	.02662	.03405	.85330	.00637	.38822	.10613
#3	.00060	.23456	.02380	.04036	.89909	.01335	.39030	.10591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	138.32	.00551	.03545	.00002	.00011	-.00298	.20834
Stddev	.00046	.52	.00049	.00414	.00040	.00142	.00172	.01345
%RSD	228.90	.37261	8.8942	11.687	2007.2	1331.1	57.549	6.4539
#1	.00023	138.83	.00607	.03872	-.00037	.00014	-.00101	.21643
#2	-.00015	138.33	.00529	.03079	.00043	.00151	-.00415	.21577
#3	-.00069	137.80	.00517	.03683	-.00000	-.00133	-.00379	.19282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607039702 Acquired: 7/14/2016 14:50:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	.97246	.00274	-.00078	-.00057	1.1100	.00052
Stddev	.00015	.00378	.00113	.00262	.00025	.0930	.00032
%RSD	12.338	.38821	41.384	336.96	44.031	8.3788	60.948
#1	.00118	.97679	.00401	.00113	-.00087	1.1682	.00016
#2	.00105	.97070	.00182	-.00376	-.00042	1.1590	.00066
#3	.00135	.96988	.00239	.00030	-.00044	1.0027	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10242.	59937.	2754.4
Stddev	28.	328.	16.3
%RSD	.27406	.54723	.59331
#1	10212.	59560.	2741.7
#2	10268.	60157.	2748.7
#3	10245.	60094.	2772.9

Approved: July 16, 2016

Sample Name: L1607040401 Acquired: 7/14/2016 14:53:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.06170	-.00132	.01504	-.00091	.00008	.50947	.00035
Stddev	.00097	.00824	.00295	.00171	.00085	.00003	.02112	.00010
%RSD	213.90	13.353	223.68	11.388	92.576	31.900	4.1446	29.206
#1	-.00029	.07115	-.00147	.01694	-.00032	.00011	.51559	.00034
#2	.00155	.05609	-.00419	.01364	-.00188	.00006	.48598	.00046
#3	.00010	.05784	.00170	.01453	-.00054	.00006	.52686	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.00135	.00759	.07424	.08107	.00079	.06188	.00109
Stddev	.00020	.00026	.00081	.02102	.02319	.00253	.08225	.00246
%RSD	79.419	19.119	10.736	28.317	28.603	318.48	132.92	225.09
#1	-.00041	.00113	.00760	.09314	.08294	-.00201	.00552	-.00150
#2	-.00003	.00164	.00840	.07798	.05700	.00290	.02385	.00137
#3	-.00032	.00130	.00677	.05160	.10326	.00149	.15626	.00341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.16785	.00027	.01079	.00092	-.00131	-.00488	.14463
Stddev	.00029	.00614	.00088	.00380	.00055	.00159	.00389	.01211
%RSD	496.91	3.6589	330.11	35.249	60.001	121.95	79.663	8.3719
#1	.00039	.16876	.00054	.01498	.00082	-.00308	-.00758	.14937
#2	-.00017	.17348	-.00072	.00755	.00151	-.00084	-.00042	.15364
#3	-.00004	.16130	.00098	.00986	.00042	.00000	-.00663	.13086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607040401 Acquired: 7/14/2016 14:53:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00146	.00697	.00083	-.00019	.00455	.00001
Stddev	.00058	.00034	.00403	.00205	.00061	.00038	.00006
%RSD	113.99	23.428	57.858	246.58	315.31	8.3353	396.90
#1	-.00010	.00182	.00293	.00152	-.00032	.00478	.00006
#2	.00105	.00144	.00699	.00246	.00047	.00476	.00004
#3	.00056	.00113	.01100	-.00148	-.00073	.00411	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10353.	61636.	2734.1
Stddev	40.	167.	14.4
%RSD	.38292	.27039	.52505
#1	10395.	61561.	2730.1
#2	10350.	61520.	2750.0
#3	10316.	61827.	2722.1

Approved: July 16, 2016

Sample Name: L1607040402 Acquired: 7/14/2016 14:57:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00090	.07661	-.00080	.01882	-.00067	.00001	.42932	.00031
Stddev	.00200	.00148	.00294	.00103	.00063	.00004	.02358	.00011
%RSD	222.42	1.9382	367.66	5.4617	93.964	360.84	5.4917	34.206
#1	.00081	.07578	-.00345	.01948	-.00113	.00002	.40881	.00037
#2	-.00040	.07572	.00236	.01934	-.00093	.00004	.42408	.00019
#3	-.00310	.07832	-.00131	.01764	.00005	-.00003	.45508	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00029	.05945	.04715	.19542	.00515	-.00201	-.00006
Stddev	.00021	.00019	.00682	.03561	.05155	.00125	.04330	.00092
%RSD	232.28	66.193	11.481	75.527	26.381	24.231	2157.3	1662.0
#1	.00001	.00049	.06467	.03181	.15671	.00583	-.02726	.00064
#2	.00005	.00030	.06194	.08786	.17560	.00592	-.02675	-.00110
#3	-.00033	.00010	.05172	.02178	.25394	.00371	.04799	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.36485	-.00042	.02233	.00100	.00063	-.00632	.15893
Stddev	.00027	.03801	.00090	.00633	.00225	.00134	.00209	.01355
%RSD	181.41	10.419	215.42	28.340	226.29	212.19	33.163	8.5245
#1	-.00014	.38418	-.00070	.02370	.00138	-.00036	-.00442	.16795
#2	.00038	.38931	-.00114	.02786	-.00142	.00010	-.00596	.16550
#3	.00021	.32105	.00059	.01543	.00303	.00215	-.00857	.14335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607040402 Acquired: 7/14/2016 14:57:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00141	.00547	.00748	-.00062	-.00065	.01550	.00036
Stddev	.00065	.00038	.00294	.00225	.00037	.00167	.00042
%RSD	45.945	6.9370	39.259	365.10	56.339	10.799	115.19
#1	.00066	.00590	.00757	.00198	-.00067	.01630	.00084
#2	.00176	.00537	.01038	-.00209	-.00027	.01662	.00006
#3	.00180	.00516	.00451	-.00173	-.00100	.01358	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10373.	61411.	2726.0
Stddev	24.	268.	9.8
%RSD	.23397	.43711	.36069
#1	10401.	61721.	2720.7
#2	10365.	61238.	2737.3
#3	10355.	61275.	2720.0

Approved: July 16, 2016

Sample Name: L1607040403 Acquired: 7/14/2016 15:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.01070	-.00167	.01791	-.00095	.00004	.13865	.00035
Stddev	.00168	.00467	.00219	.00061	.00115	.00009	.02923	.00013
%RSD	187.48	43.628	131.38	3.4185	121.55	201.35	21.080	36.487
#1	.00064	.01334	-.00216	.01859	-.00228	.00005	.12186	.00035
#2	.00269	.01344	.00073	.01774	-.00025	.00013	.17240	.00048
#3	-.00064	.00531	-.00357	.01740	-.00032	-.00004	.12170	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00050	.00682	.02484	.12797	.00642	-.08225	-.00132
Stddev	.00017	.00105	.00068	.01723	.09987	.00193	.03690	.00178
%RSD	42.935	208.86	9.9358	69.354	78.040	30.131	44.868	135.18
#1	-.00058	.00133	.00677	.01118	.20650	.00475	-.06623	.00063
#2	-.00024	.00085	.00753	.01915	.16184	.00854	-.05606	-.00172
#3	-.00038	-.00068	.00617	.04419	.01557	.00597	-.12446	-.00287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.22354	.00041	.00681	-.00212	.00121	-.00540	.02539
Stddev	.00022	.01670	.00088	.00237	.00228	.00264	.00225	.00452
%RSD	3709.7	7.4720	213.99	34.816	107.42	219.03	41.688	17.793
#1	-.00014	.21123	.00118	.00436	-.00393	.00156	-.00650	.02760
#2	-.00010	.24255	.00060	.00699	-.00288	-.00159	-.00689	.02837
#3	.00026	.21684	-.00055	.00909	.00044	.00366	-.00281	.02019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607040403 Acquired: 7/14/2016 15:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00059	.00458	.00101	-.00063	.00476	.00005
Stddev	.00029	.00021	.00632	.00255	.00054	.00055	.00021
%RSD	30.557	35.407	138.18	252.57	86.263	11.470	430.75
#1	.00063	.00083	.00792	.00352	-.00125	.00517	-.00010
#2	.00119	.00043	.00853	-.00159	-.00034	.00497	-.00004
#3	.00101	.00051	-.00272	.00110	-.00029	.00414	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10361.	61619.	2734.4
Stddev	22.	29.	10.0
%RSD	.21098	.04782	.36488
#1	10355.	61605.	2737.9
#2	10385.	61599.	2723.2
#3	10342.	61653.	2742.2

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 15:05:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41187**	**10.159**	**.40899**	**.51126**	**1.0335**	**.05093**	**10.274**	**.05118**
Stddev	.00053	.008	.00739	.00338	.0051	.00010	.072	.00145
%RSD	.12756	.07732	1.8062	.66177	.49672	.19342	.69707	2.8305
#1	.41236	10.165	.41345	.50783	1.0376	.05102	10.283	.05180
#2	.41194	10.150	.41305	.51460	1.0351	.05083	10.340	.05220
#3	.41132	10.163	.40046	.51137	1.0277	.05096	10.198	.04952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20512**	**.50434**	**.51196**	**4.1131**	**51.600**	**1.0194**	**10.311**	**.51759**
Stddev	.00613	.00160	.01563	.0491	.254	.0053	.078	.00590
%RSD	2.9894	.31682	3.0538	1.1938	.49248	.51908	.75175	1.1397
#1	.20929	.50618	.52134	4.1624	51.680	1.0247	10.333	.52011
#2	.20800	.50357	.52063	4.1128	51.804	1.0194	10.376	.52181
#3	.19808	.50327	.49391	4.0642	51.315	1.0141	10.225	.51085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0149**	**51.890**	**.51080**	**10.335**	**.51267**	**1.2320**	**.40828**	**5.0521**
Stddev	.0286	.187	.01599	.239	.01222	.0272	.00624	.1051
%RSD	2.8140	.36075	3.1296	2.3137	2.3840	2.0274	1.5287	2.0812
#1	1.0329	52.009	.51986	10.487	.51852	1.2481	.41467	5.1144
#2	1.0298	51.987	.52020	10.458	.52087	1.2472	.40795	5.1112
#3	.98195	51.674	.49234	10.059	.49862	1.2006	.40220	4.9307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 15:05:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0213**	**1.0339**	**1.0418**	**.51478**	**1.0077**	**1.0210**	**1.0274**
Stddev	.0377	.0043	.0003	.00392	.0015	.0296	.0039
%RSD	3.6926	.42034	.03057	.76192	.14631	2.9017	.37910
#1	1.0438	1.0372	1.0421	.51760	1.0066	1.0389	1.0263
#2	1.0423	1.0356	1.0417	.51644	1.0094	1.0374	1.0317
#3	.97775	1.0290	1.0415	.51030	1.0071	.98685	1.0241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10156.**	**58861.**	**2652.0**
Stddev	4.	29.	7.1
%RSD	.03728	.04938	.26749
#1	10160.	58831.	2654.3
#2	10156.	58889.	2644.1
#3	10152.	58864.	2657.7

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 15:09:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.01156	-.00156	.00382	-.00114	.00005	-.03587	.00024
Stddev	.00155	.00575	.00231	.00275	.00075	.00008	.03480	.00013
%RSD	2633.4	49.780	148.64	72.137	65.523	181.00	97.028	53.707
#1	.00014	.00529	.00107	.00207	-.00044	.00007	.00309	.00020
#2	-.00153	.01277	-.00331	.00239	-.00105	.00012	-.06389	.00014
#3	.00156	.01660	-.00243	.00699	-.00193	-.00005	-.04681	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00099	-.00017	.00056	.09122	.00421	-.01023	-.00094
Stddev	.00032	.00056	.00046	.00714	.08203	.00382	.05538	.00406
%RSD	158.12	56.051	279.27	1270.2	89.919	90.882	541.60	433.19
#1	.00015	.00074	.00037	-.00758	.10408	.00862	.05164	-.00077
#2	-.00029	.00060	-.00038	.00351	.16607	.00216	-.05518	-.00509
#3	-.00047	.00163	-.00049	.00575	.00353	.00185	-.02714	.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.04707	-.00031	.00297	-.00194	.00055	-.00346	.00345
Stddev	.00058	.01583	.00073	.00778	.00142	.00145	.00520	.00065
%RSD	1771.1	33.637	234.16	262.07	72.883	265.81	150.30	18.825
#1	-.00055	.03035	-.00079	.00681	-.00357	.00211	-.00237	.00272
#2	.00060	.04902	.00053	-.00598	-.00096	.00029	.00111	.00395
#3	-.00015	.06184	-.00067	.00807	-.00130	-.00076	-.00913	.00370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 15:09:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.00010**	**.00017**	**.00063**	**-.00063**	**-.00006**	**.00029**
Stddev	.00084	.00022	.00040	.00280	.00034	.00024	.00042
%RSD	486.15	228.06	240.20	441.55	54.566	407.41	143.41
#1	.00044	.00002	.00027	-.00019	-.00059	.00004	-.00019
#2	-.00077	.00035	-.00027	.00375	-.00099	-.00033	.00060
#3	.00084	-.00008	.00051	-.00166	-.00031	.00011	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10219.**	**60159.**	**2663.7**
Stddev	21.	106.	14.7
%RSD	.20353	.17581	.55236
#1	10197.	60086.	2646.8
#2	10238.	60110.	2670.9
#3	10223.	60280.	2673.4

Approved: July 16, 2016

Sample Name: L1607023801 Acquired: 7/14/2016 15:13:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00124	-.00037	.01139	.40499	.00003	19.608	-.00004
Stddev	.00030	.00198	.00359	.00166	.00310	.00005	.129	.00011
%RSD	234.05	160.08	969.81	14.562	.76448	184.35	.65883	295.12
#1	.00020	.00324	-.00451	.01268	.40744	-.00002	19.649	.00007
#2	-.00020	-.00072	.00197	.00952	.40601	.00003	19.712	-.00015
#3	-.00039	.00119	.00143	.01196	.40151	.00007	19.463	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01052	-.00090	-.00069	61.116	.21949	.00596	.35309	.57986
Stddev	.00052	.00063	.00902	.239	.08082	.00239	.11606	.00612
%RSD	4.9350	70.334	1306.6	.39056	36.824	40.098	32.868	1.0552
#1	.01103	-.00032	.00698	61.008	.12645	.00370	.30204	.58157
#2	.01052	-.00080	.00158	61.389	.25958	.00846	.48592	.58494
#3	.00999	-.00157	-.01063	60.950	.27243	.00572	.27131	.57307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	138.34	.03006	-.01760	.00330	-.00122	-.00487	.65822
Stddev	.00024	.52	.00285	.00635	.00308	.00063	.00345	.03478
%RSD	67.924	.37254	9.4824	36.056	93.492	51.911	70.802	5.2837
#1	-.00061	138.31	.03076	-.01157	.00466	-.00130	-.00504	.68062
#2	-.00014	138.86	.03250	-.01702	.00546	-.00055	-.00134	.67588
#3	-.00030	137.83	.02692	-.02422	-.00023	-.00181	-.00822	.61815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607023801 Acquired: 7/14/2016 15:13:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.03346**	**.01260**	**.00029**	**-.00076**	**.57445**	**-.00204**
Stddev	.00041	.00013	.01012	.00252	.00023	.03786	.00016
%RSD	403.93	.38237	80.349	879.57	30.085	6.5901	8.0158
#1	.00028	.03357	.01870	.00310	-.00102	.59765	-.00206
#2	-.00053	.03348	.00091	-.00047	-.00063	.59494	-.00219
#3	-.00006	.03332	.01817	-.00177	-.00062	.53076	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10281.**	**60255.**	**2750.7**
Stddev	5.	186.	9.0
%RSD	.05246	.30939	.32692
#1	10275.	60330.	2760.1
#2	10285.	60393.	2742.3
#3	10284.	60043.	2749.6

Approved: July 16, 2016

Sample Name: L1607034001 Acquired: 7/14/2016 15:17:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00330	-.00306	.03422	.09113	-.00004	173.84	.00041
Stddev	.00051	.00850	.00094	.00303	.00101	.00006	.82	.00019
%RSD	183.46	257.42	30.587	8.8466	1.1074	148.70	.47332	46.896
#1	.00011	-.00594	-.00406	.03247	.09054	-.00008	173.52	.00059
#2	-.00013	.00506	-.00220	.03247	.09229	.00003	174.77	.00044
#3	.00085	.01079	-.00292	.03771	.09055	-.00007	173.22	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.00171	.00104	.01416	.22471	.00869	5.0930	.62882
Stddev	.00023	.00020	.00062	.01612	.01335	.00168	.0502	.00558
%RSD	58.051	11.918	59.358	113.85	5.9388	19.348	.98590	.88768
#1	.00061	.00148	.00112	-.00335	.21644	.01061	5.0974	.62260
#2	.00015	.00187	.00161	.02838	.24010	.00751	5.1409	.63340
#3	.00043	.00177	.00038	.01745	.21758	.00794	5.0408	.63047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	3.6952	.00185	.00446	-.00203	-.00110	-.00645	.94394
Stddev	.00002	.0098	.00056	.00846	.00337	.00066	.00194	.07957
%RSD	17.871	.26507	30.191	189.71	165.83	59.840	30.046	8.4295
#1	.00009	3.7004	.00247	.01421	-.00272	-.00107	-.00860	.99740
#2	.00010	3.7013	.00138	-.00083	-.00501	-.00046	-.00485	.98191
#3	.00007	3.6839	.00171	-.00001	.00163	-.00177	-.00589	.85249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034001 Acquired: 7/14/2016 15:17:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.27148	-.02643	.00222	-.00045	.00399	-.00009
Stddev	.00031	.00031	.00611	.00240	.00011	.00031	.00038
%RSD	62.017	.11260	23.129	108.10	25.252	7.7145	395.06
#1	.00084	.27115	-.03009	.00346	-.00037	.00426	.00022
#2	.00048	.27153	-.01937	.00375	-.00040	.00406	-.00051
#3	.00021	.27176	-.02982	-.00055	-.00058	.00365	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10306.	60666.	2758.6
Stddev	17.	112.	25.2
%RSD	.16374	.18381	.91392
#1	10297.	60699.	2756.3
#2	10295.	60542.	2734.6
#3	10325.	60758.	2784.9

Approved: July 16, 2016

Sample Name: L1607045101 Acquired: 7/14/2016 15:21:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.00648	-.00229	.04687	.11420	-.00001	139.97	.00035
Stddev	.00342	.00635	.00119	.00145	.00084	.00011	.08	.00012
%RSD	407.81	98.054	51.872	3.0899	.73298	842.50	.05528	35.525
#1	-.00073	.00435	-.00354	.04796	.11412	.00010	139.88	.00021
#2	.00252	.01362	-.00214	.04743	.11341	-.00012	140.00	.00041
#3	-.00431	.00146	-.00118	.04523	.11508	-.00002	140.02	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00104	.13312	.00684	1.7352	.03119	21.782	.04463
Stddev	.00022	.00076	.01006	.02907	.0827	.00294	.235	.00099
%RSD	130.42	72.911	7.5576	425.05	4.7660	9.4120	1.0800	2.2257
#1	-.00004	.00095	.13952	.02156	1.6778	.02837	21.511	.04573
#2	.00015	.00185	.13831	.02561	1.8300	.03099	21.933	.04439
#3	.00039	.00033	.12152	-.02665	1.6979	.03423	21.903	.04378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	23.130	-.00032	.04866	-.00139	.00261	-.00421	7.7364
Stddev	.00036	.054	.00044	.00868	.00323	.00262	.00684	.4451
%RSD	178.61	.23140	137.34	17.832	232.40	100.48	162.53	5.7530
#1	.00055	23.072	-.00006	.04876	-.00512	.00501	.00165	8.0057
#2	.00023	23.177	-.00007	.05729	.00036	.00300	-.00255	7.9809
#3	-.00017	23.141	-.00082	.03994	.00059	-.00019	-.01173	7.2227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045101 Acquired: 7/14/2016 15:21:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.87757	-.01634	.00066	-.00130	.02493	-.00003
Stddev	.00080	.00121	.00234	.00193	.00025	.00166	.00016
%RSD	190.79	.13741	14.328	291.96	19.214	6.6523	590.68
#1	-.00050	.87644	-.01384	.00288	-.00120	.02591	-.00021
#2	.00096	.87743	-.01849	-.00045	-.00111	.02588	.00011
#3	.00080	.87884	-.01669	-.00046	-.00158	.02302	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10098.	59779.	2734.4
Stddev	18.	40.	8.3
%RSD	.17924	.06636	.30442
#1	10118.	59802.	2734.3
#2	10082.	59733.	2742.7
#3	10093.	59802.	2726.1

Approved: July 16, 2016

Sample Name: L1607045102 Acquired: 7/14/2016 15:24:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00216	.02623	-.00083	.01776	.05863	.00001	62.695	.00032
Stddev	.00295	.00896	.00144	.00251	.00298	.00001	1.710	.00009
%RSD	136.61	34.163	173.20	14.148	5.0842	215.82	2.7275	27.763
#1	-.00145	.01617	-.00234	.01488	.05960	.00001	62.548	.00022
#2	.00037	.03336	-.00071	.01949	.05529	-.00001	61.064	.00036
#3	-.00540	.02916	.00054	.01891	.06101	.00002	64.474	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00056	.01632	.03326	.67939	.01231	6.3568	.00200
Stddev	.00029	.00055	.00068	.00474	.03550	.00227	.2045	.00216
%RSD	93.527	96.568	4.1837	14.257	5.2260	18.430	3.2167	108.26
#1	-.00009	.00063	.01684	.03125	.71994	.01209	6.1978	.00426
#2	-.00020	-.00001	.01658	.02986	.65390	.01016	6.2852	-.00004
#3	-.00064	.00107	.01555	.03868	.66432	.01468	6.5875	.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	5.2789	.00015	.00944	-.00076	.00184	-.00701	3.5690
Stddev	.00015	.1437	.00079	.00405	.00254	.00107	.00247	.1922
%RSD	49.371	2.7220	537.91	42.929	334.63	58.426	35.163	5.3849
#1	.00014	5.2604	.00076	.01317	-.00353	.00278	-.00575	3.6735
#2	.00038	5.1454	-.00075	.01001	.00146	.00067	-.00543	3.6864
#3	.00042	5.4309	.00043	.00513	-.00021	.00208	-.00986	3.3473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045102 Acquired: 7/14/2016 15:24:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.22016	-.00790	.00119	-.00057	.01300	-.00015
Stddev	.00128	.00554	.00135	.00202	.00093	.00109	.00034
%RSD	142.71	2.5161	17.136	169.51	162.22	8.3909	218.63
#1	-.00057	.21981	-.00744	.00138	-.00164	.01346	.00014
#2	.00151	.21480	-.00683	.00312	.00005	.01378	-.00052
#3	.00174	.22586	-.00942	-.00092	-.00013	.01175	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10140.	59956.	2722.3
Stddev	23.	124.	49.0
%RSD	.22282	.20641	1.8017
#1	10152.	59824.	2714.7
#2	10114.	60070.	2774.7
#3	10154.	59973.	2677.5

Approved: July 16, 2016

Sample Name: L1607045201 Acquired: 7/14/2016 15:28:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00087**	**.06566**	**-.00220**	**.04250**	**.93272**	**.00006**	**74.906**	**.00010**
Stddev	.00040	.00289	.00233	.00206	.00513	.00005	.210	.00016
%RSD	46.652	4.4084	106.13	4.8501	.55039	83.691	.28097	161.62
#1	-.00052	.06899	-.00064	.04224	.93627	.00004	75.087	.00014
#2	-.00077	.06376	-.00107	.04058	.93505	.00003	74.956	-.00008
#3	-.00131	.06423	-.00487	.04468	.92683	.00012	74.675	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.00133**	**.08408**	**.43998**	**1.7929**	**.01472**	**12.002**	**.23157**
Stddev	.00024	.00067	.00570	.01256	.0409	.00421	.063	.00406
%RSD	103.15	50.410	6.7816	2.8547	2.2830	28.581	.52439	1.7542
#1	-.00051	.00059	.08703	.44336	1.8331	.01588	12.075	.23575
#2	-.00006	.00150	.08771	.42608	1.7944	.01823	11.972	.23132
#3	-.00013	.00190	.07751	.45051	1.7513	.01006	11.961	.22764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**29.725**	**-.00102**	**.03144**	**-.00076**	**-.00088**	**-.00329**	**6.5605**
Stddev	.00047	.025	.00064	.00121	.00033	.00400	.00253	.3725
%RSD	794.93	.08274	62.434	3.8605	44.261	454.50	76.717	5.6776
#1	-.00060	29.744	-.00155	.03116	-.00113	.00281	-.00365	6.7175
#2	.00028	29.733	-.00031	.03277	-.00064	-.00032	-.00562	6.8287
#3	.00014	29.697	-.00121	.03039	-.00050	-.00512	-.00061	6.1352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045201 Acquired: 7/14/2016 15:28:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	1.1102	-.01770	-.00115	-.00097	.02057	.00031
Stddev	.00029	.0037	.00343	.00057	.00051	.00144	.00027
%RSD	2403.4	.33248	19.394	49.297	51.981	7.0008	87.345
#1	-.00006	1.1125	-.01764	-.00062	-.00045	.02147	.00039
#2	-.00028	1.1121	-.02116	-.00175	-.00146	.02132	.00052
#3	.00030	1.1059	-.01430	-.00107	-.00101	.01891	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10003.	59663.	2705.0
Stddev	80.	161.	21.4
%RSD	.79504	.27038	.78932
#1	10087.	59645.	2686.5
#2	9928.7	59511.	2728.4
#3	9993.0	59832.	2700.3

Approved: July 16, 2016

Sample Name: L1607045202 Acquired: 7/14/2016 15:32:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.09844	.00227	.08765	.27299	.00005	22.855	.00027
Stddev	.00100	.00766	.00249	.00086	.00038	.00007	.048	.00016
%RSD	2222.4	7.7832	110.02	.98084	.13952	146.68	.20865	59.916
#1	.00119	.10432	-.00058	.08833	.27331	.00002	22.847	.00020
#2	-.00064	.08977	.00408	.08794	.27257	.00013	22.906	.00016
#3	-.00042	.10122	.00330	.08668	.27308	-.00000	22.812	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00145	.00323	.20737	.92473	.01088	4.0563	.14642
Stddev	.00005	.00067	.00032	.04061	.05819	.00340	.0630	.00163
%RSD	44.396	46.540	9.7844	19.585	6.2931	31.243	1.5534	1.1136
#1	.00017	.00072	.00359	.22120	.90509	.00816	4.0034	.14487
#2	.00011	.00157	.00312	.16165	.87890	.00978	4.0395	.14812
#3	.00007	.00206	.00298	.23927	.99021	.01468	4.1260	.14627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	111.48	.00001	.06066	-.00219	.00430	-.00212	3.7832
Stddev	.00027	.22	.00046	.00567	.00125	.00144	.00600	.2766
%RSD	52.583	.19503	3603.8	9.3447	57.151	33.594	282.54	7.3108
#1	.00021	111.61	.00039	.06101	-.00303	.00597	-.00904	3.9544
#2	.00061	111.59	-.00050	.06614	-.00279	.00342	.00153	3.9311
#3	.00072	111.23	.00014	.05482	-.00075	.00352	.00114	3.4641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045202 Acquired: 7/14/2016 15:32:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.30590	.00005	.00237	-.00015	.01446	.00030
Stddev	.00046	.00062	.00486	.00143	.00063	.00138	.00024
%RSD	67.451	.20423	9186.2	60.424	429.50	9.5182	78.565
#1	.00095	.30648	-.00433	.00073	.00058	.01532	.00016
#2	.00096	.30524	.00528	.00335	-.00052	.01518	.00058
#3	.00015	.30599	-.00079	.00302	-.00051	.01287	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9996.0	58512.	2665.0
Stddev	54.9	184.	12.9
%RSD	.54950	.31493	.48576
#1	9962.1	58720.	2659.5
#2	9966.5	58443.	2655.8
#3	10059.	58372.	2679.8

Approved: July 16, 2016

Sample Name: L1607045301 Acquired: 7/14/2016 15:36:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.01293	.00168	.01299	.05197	-.00001	39.081	.00036
Stddev	.00173	.00318	.00152	.00167	.00144	.00005	.265	.00015
%RSD	213.83	24.570	90.916	12.867	2.7708	823.43	.67934	41.023
#1	-.00190	.00927	.00068	.01139	.05116	-.00004	39.386	.00032
#2	-.00172	.01457	.00091	.01286	.05112	-.00003	38.903	.00024
#3	.00119	.01494	.00343	.01473	.05363	.00005	38.953	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00145	.00091	-.00506	.63940	.00752	3.8300	-.00088
Stddev	.00015	.00065	.00058	.01633	.08967	.00481	.0742	.00138
%RSD	325.85	45.046	63.174	322.98	14.024	64.026	1.9366	157.68
#1	-.00005	.00070	.00035	-.01128	.53616	.00201	3.7446	.00048
#2	-.00019	.00185	.00150	.01347	.69779	.00962	3.8787	-.00229
#3	.00010	.00180	.00088	-.01736	.68425	.01093	3.8667	-.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	2.2494	-.00064	.00616	-.00148	.00116	-.00600	3.8310
Stddev	.00049	.0267	.00135	.00545	.00265	.00236	.00416	.2915
%RSD	855.29	1.1881	210.27	88.341	179.23	202.94	69.391	7.6084
#1	.00057	2.2772	-.00013	.00004	.00114	-.00136	-.00391	4.0057
#2	-.00041	2.2238	-.00217	.01046	-.00415	.00153	-.01079	3.9928
#3	.00002	2.2472	.00038	.00799	-.00143	.00331	-.00329	3.4945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045301 Acquired: 7/14/2016 15:36:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00076**	**.12006**	**-.00977**	**.00061**	**-.00063**	**.00124**	**-.00048**
Stddev	.00086	.00004	.00451	.00058	.00034	.00017	.00068
%RSD	112.64	.03384	46.206	93.884	54.110	13.859	141.31
#1	-.00016	.12002	-.00512	.00020	-.00093	.00138	.00007
#2	.00154	.12011	-.01413	.00127	-.00071	.00130	-.00124
#3	.00090	.12006	-.01006	.00037	-.00026	.00105	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10126.**	**59759.**	**2669.8**
Stddev	14.	183.	9.7
%RSD	.13943	.30677	.36350
#1	10110.	59716.	2678.3
#2	10132.	59601.	2659.2
#3	10136.	59960.	2671.8

Approved: July 16, 2016

Sample Name: L1607045302 Acquired: 7/14/2016 15:40:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00091	.02677	-.00295	.02743	.03881	.00004	34.085	.00048
Stddev	.00096	.00673	.00291	.00134	.00090	.00008	.115	.00020
%RSD	105.37	25.130	98.831	4.8804	2.3223	193.76	.33744	41.394
#1	-.00030	.03453	-.00105	.02677	.03800	-.00003	34.132	.00055
#2	-.00041	.02310	-.00149	.02655	.03978	.00013	33.953	.00026
#3	-.00202	.02267	-.00630	.02897	.03864	.00002	34.168	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00026	.00144	.00123	1.2934	.00259	4.8913	.14913
Stddev	.00020	.00035	.00069	.02334	.0748	.00126	.0323	.00296
%RSD	267.65	134.19	47.485	1896.5	5.7818	48.391	.66141	1.9878
#1	.00015	.00021	.00142	.01993	1.2935	.00250	4.9275	.14788
#2	-.00014	.00064	.00077	.00870	1.2186	.00139	4.8651	.14699
#3	-.00023	-.00006	.00214	-.02493	1.3682	.00390	4.8813	.15251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	9.7879	-.00000	.02585	-.00262	-.00055	-.00676	3.0061
Stddev	.00021	.0554	.00037	.00262	.00027	.00369	.00397	.1971
%RSD	218.96	.56551	8816.1	10.150	10.299	669.08	58.768	6.5584
#1	-.00008	9.8068	-.00010	.02685	-.00271	-.00221	-.01066	3.1232
#2	.00033	9.7255	-.00031	.02783	-.00232	.00368	-.00688	3.1167
#3	.00004	9.8313	.00040	.02288	-.00283	-.00312	-.00272	2.7785
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045302 Acquired: 7/14/2016 15:40:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.09017	.00218	-.00128	-.00068	.00650	-.00022
Stddev	.00044	.00030	.00214	.00350	.00087	.00043	.00021
%RSD	71.638	.33324	98.374	273.17	127.61	6.5835	92.672
#1	.00079	.09042	-.00030	.00162	.00019	.00677	-.00039
#2	.00095	.08983	.00342	-.00030	-.00155	.00672	.00001
#3	.00012	.09025	.00342	-.00517	-.00068	.00600	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10124.	59917.	2672.4
Stddev	21.	22.	14.1
%RSD	.21207	.03695	.52650
#1	10132.	59905.	2657.7
#2	10141.	59904.	2685.7
#3	10100.	59943.	2673.8

Approved: July 16, 2016

Sample Name: L1607045303 Acquired: 7/14/2016 15:44:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.11477**	**.00005**	**.02832**	**.04154**	**.00000**	**33.515**	**.00046**
Stddev	.00128	.00389	.00222	.00142	.00032	.00002	.041	.00005
%RSD	461.11	3.3919	4417.9	5.0297	.76627	13967.	.12260	10.804
#1	-.00052	.11121	.00188	.02691	.04189	.00002	33.470	.00051
#2	.00111	.11893	-.00242	.02976	.04126	.00001	33.551	.00041
#3	-.00141	.11416	.00069	.02830	.04147	-.00002	33.524	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00208**	**.00105**	**.08791**	**.87230**	**.00475**	**4.8254**	**.00534**
Stddev	.00022	.00080	.00137	.02794	.06321	.00202	.1170	.00212
%RSD	68.175	38.641	131.38	31.782	7.2461	42.586	2.4244	39.724
#1	-.00041	.00202	.00260	.06334	.92653	.00642	4.8420	.00388
#2	-.00007	.00131	.00054	.08208	.88750	.00532	4.9333	.00437
#3	-.00048	.00291	-.00001	.11830	.80288	.00250	4.7011	.00777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**7.9321**	**.00002**	**.03083**	**-.00150**	**.00183**	**-.00613**	**3.5489**
Stddev	.00018	.0956	.00108	.00399	.00101	.00138	.00352	.2536
%RSD	42.107	1.2048	4784.9	12.959	67.054	75.292	57.407	7.1456
#1	.00031	8.0070	-.00114	.03227	-.00240	.00325	-.00373	3.7031
#2	.00064	7.8245	.00100	.03390	-.00042	.00050	-.01016	3.6873
#3	.00035	7.9650	.00021	.02631	-.00169	.00173	-.00448	3.2562
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045303 Acquired: 7/14/2016 15:44:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.08860	.00518	.00006	-.00008	.01768	-.00014
Stddev	.00040	.00084	.00549	.00068	.00035	.00149	.00014
%RSD	57.836	.95274	106.05	1124.5	461.77	8.4264	98.917
#1	.00086	.08781	.01144	-.00072	.00024	.01863	-.00028
#2	.00099	.08949	.00118	.00040	-.00001	.01845	-.00001
#3	.00024	.08851	.00291	.00050	-.00045	.01596	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10108.	59886.	2703.7
Stddev	16.	243.	18.7
%RSD	.15972	.40646	.69114
#1	10111.	59981.	2684.0
#2	10122.	59610.	2705.8
#3	10091.	60068.	2721.2

Approved: July 16, 2016

Sample Name: L1607045304 Acquired: 7/14/2016 15:48:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	.04609	-.00259	.01661	.04185	.00000	53.688	.00026
Stddev	.00143	.00554	.00254	.00136	.00052	.00015	.044	.00024
%RSD	137.87	12.025	98.311	8.1948	1.2536	5982.1	.08111	93.025
#1	.00061	.05248	-.00148	.01730	.04125	.00015	53.732	.00005
#2	-.00200	.04322	-.00549	.01750	.04224	.00001	53.644	.00021
#3	-.00173	.04257	-.00078	.01504	.04205	-.00015	53.688	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00165	.00147	.02797	.74724	.00776	7.3161	-.00091
Stddev	.00015	.00065	.00066	.01864	.08009	.00304	.0571	.00182
%RSD	87.565	39.326	44.655	66.671	10.718	39.158	.78102	198.79
#1	-.00007	.00240	.00140	.01106	.79166	.01083	7.3065	-.00220
#2	-.00009	.00134	.00215	.04797	.79527	.00476	7.3775	-.00170
#3	-.00033	.00122	.00085	.02487	.65478	.00768	7.2644	.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	6.6382	.00038	.01478	-.00045	.00121	-.00451	4.3497
Stddev	.00014	.0450	.00072	.00070	.00103	.00203	.00805	.2945
%RSD	35.268	.67731	188.13	4.7157	230.77	168.27	178.32	6.7696
#1	.00028	6.6742	.00100	.01404	.00018	.00321	-.01354	4.5394
#2	.00057	6.6528	-.00041	.01488	-.00164	-.00085	-.00190	4.4993
#3	.00038	6.5878	.00055	.01543	.00012	.00126	.00190	4.0105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045304 Acquired: 7/14/2016 15:48:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.14559	-.00979	-.00041	-.00025	.00164	.00007
Stddev	.00061	.00057	.00143	.00074	.00062	.00019	.00042
%RSD	605.68	.39359	14.616	181.98	246.67	11.510	628.41
#1	-.00028	.14493	-.00971	.00044	.00030	.00156	-.00042
#2	.00080	.14590	-.00840	-.00093	-.00012	.00186	.00028
#3	-.00022	.14594	-.01126	-.00073	-.00093	.00151	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10100.	59661.	2695.6
Stddev	21.	164.	11.4
%RSD	.20561	.27496	.42443
#1	10096.	59513.	2691.1
#2	10122.	59634.	2687.1
#3	10081.	59837.	2708.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 15:51:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40796**	**10.059**	**.40720**	**.50405**	**1.0261**	**.05046**	**10.204**	**.05088**
Stddev	.00123	.049	.01073	.00460	.0026	.00019	.059	.00088
%RSD	.30156	.48521	2.6352	.91256	.25296	.37839	.58033	1.7324
#1	.40845	10.112	.41445	.50930	1.0290	.05066	10.252	.05115
#2	.40887	10.050	.41228	.50210	1.0253	.05044	10.222	.05160
#3	.40656	10.016	.39487	.50074	1.0240	.05028	10.138	.04990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20407**	**.50149**	**.50985**	**4.0911**	**51.405**	**1.0178**	**10.148**	**.51811**
Stddev	.00538	.00201	.01185	.0117	.199	.0027	.056	.00226
%RSD	2.6363	.40007	2.3233	.28473	.38729	.26251	.54909	.43553
#1	.20741	.50370	.51732	4.0918	51.515	1.0189	10.110	.51954
#2	.20694	.50100	.51605	4.0791	51.524	1.0197	10.122	.51551
#3	.19787	.49978	.49620	4.1024	51.175	1.0147	10.212	.51928
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0150**	**51.404**	**.50795**	**10.261**	**.50797**	**1.2230**	**.40958**	**5.0096**
Stddev	.0305	.136	.01439	.188	.00381	.0281	.00727	.0755
%RSD	3.0046	.26420	2.8326	1.8359	.75047	2.2996	1.7760	1.5076
#1	1.0255	51.509	.51560	10.364	.51076	1.2404	.41143	5.0517
#2	1.0389	51.452	.51691	10.376	.50953	1.2381	.41575	5.0546
#3	.98069	51.250	.49136	10.043	.50363	1.1906	.40156	4.9224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 15:51:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0148**	**1.0275**	**1.0320**	**.50964**	**.99752**	**1.0138**	**1.0220**
Stddev	.0330	.0021	.0113	.00335	.00178	.0252	.0077
%RSD	3.2533	.20526	1.0964	.65704	.17814	2.4825	.75429
#1	1.0350	1.0298	1.0443	.50604	.99922	1.0272	1.0299
#2	1.0326	1.0256	1.0296	.51266	.99766	1.0294	1.0217
#3	.97666	1.0270	1.0221	.51023	.99567	.98473	1.0144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10173.**	**59187.**	**2657.7**
Stddev	15.	34.	7.5
%RSD	.14988	.05731	.28105
#1	10190.	59181.	2652.9
#2	10161.	59224.	2653.9
#3	10169.	59158.	2666.3

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 15:55:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00114**	**-.00042**	**-.00038**	**.00297**	**-.00154**	**.00006**	**-.03848**	**.00033**
Stddev	.00105	.00382	.00048	.00071	.00040	.00005	.03753	.00008
%RSD	92.481	918.90	126.42	23.911	26.034	74.438	97.532	23.409
#1	-.00180	-.00332	.00013	.00306	-.00163	.00007	-.00100	.00038
#2	.00008	-.00184	-.00082	.00222	-.00189	.00011	-.03838	.00035
#3	-.00169	.00391	-.00044	.00362	-.00110	.00001	-.07605	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**-.00025**	**-.00026**	**-.01626**	**.02061**	**.00330**	**.00899**	**.00020**
Stddev	.00034	.00035	.00107	.04420	.07945	.00182	.05829	.00278
%RSD	310.97	140.30	410.54	271.81	385.54	55.171	648.61	1361.1
#1	-.00048	.00011	-.00109	-.05476	.06984	.00310	-.04291	-.00278
#2	.00020	-.00059	.00095	.03201	.06303	.00521	.07206	.00272
#3	-.00005	-.00027	-.00065	-.02603	-.07105	.00159	-.00219	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.06140**	**-.00092**	**.00667**	**-.00468**	**.00168**	**-.00497**	**.00209**
Stddev	.00004	.00667	.00032	.00225	.00246	.00186	.00074	.00008
%RSD	662.70	10.858	34.509	33.770	52.490	110.83	14.915	3.6185
#1	.00005	.06909	-.00060	.00858	-.00700	.00294	-.00433	.00201
#2	-.00004	.05728	-.00123	.00418	-.00210	.00255	-.00479	.00216
#3	.00001	.05782	-.00093	.00725	-.00493	-.00046	-.00578	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 15:55:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00015**	**-.00413**	**.00146**	**-.00128**	**-.00008**	**-.00001**
Stddev	.00058	.00033	.00405	.00172	.00057	.00009	.00013
%RSD	350.98	222.31	97.914	118.39	44.240	104.34	954.04
#1	-.00060	.00023	.00049	.00158	-.00076	-.00001	.00010
#2	.00049	-.00030	-.00701	-.00033	-.00121	-.00018	.00001
#3	-.00039	-.00038	-.00589	.00311	-.00188	-.00006	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10430.**	**61440.**	**2752.3**
Stddev	73.	42.	10.2
%RSD	.70212	.06800	.37131
#1	10380.	61480.	2746.8
#2	10397.	61444.	2764.1
#3	10514.	61396.	2746.1

Approved: July 16, 2016

Sample Name: L1607045305 Acquired: 7/14/2016 15:59:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.07317	-.00055	.03477	.04226	.00001	31.067	.00038
Stddev	.00181	.00702	.00244	.00029	.00098	.00011	.154	.00005
%RSD	531.05	9.5991	443.37	.84671	2.3122	746.10	.49486	12.309
#1	-.00058	.07948	-.00060	.03462	.04250	-.00009	31.106	.00043
#2	-.00083	.07444	.00192	.03458	.04310	.00012	30.897	.00035
#3	.00243	.06560	-.00297	.03511	.04119	.00002	31.197	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00054	.00099	.76935	2.0823	.00140	4.2033	.68062
Stddev	.00032	.00052	.00006	.01931	.0578	.00111	.0170	.00249
%RSD	280.89	95.470	6.1316	2.5100	2.7781	79.095	.40554	.36513
#1	-.00010	.00042	.00095	.77097	2.0175	.00154	4.2154	.68311
#2	.00048	.00010	.00106	.78780	2.1005	.00242	4.2106	.68059
#3	-.00004	.00111	.00096	.74929	2.1289	.00023	4.1838	.67814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	7.0364	-.00051	.13532	-.00272	.00098	-.00165	4.1730
Stddev	.00026	.0644	.00026	.00644	.00154	.00065	.00251	.2649
%RSD	50.191	.91530	50.770	4.7607	56.369	66.390	152.38	6.3489
#1	.00024	7.1021	-.00041	.13717	-.00260	.00163	-.00032	4.3378
#2	.00055	7.0338	-.00080	.14064	-.00125	.00099	-.00455	4.3138
#3	.00076	6.9734	-.00031	.12816	-.00432	.00033	-.00008	3.8674
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045305 Acquired: 7/14/2016 15:59:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.08904	-.00632	.00012	.00029	.00357	.00001
Stddev	.00101	.00090	.00459	.00097	.00095	.00047	.00034
%RSD	447.42	1.0085	72.574	784.86	326.84	13.054	2698.7
#1	.00125	.08998	-.01093	.00067	.00111	.00404	-.00002
#2	.00021	.08895	-.00176	.00069	-.00075	.00356	.00037
#3	-.00078	.08819	-.00627	-.00099	.00051	.00311	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10111.	59961.	2698.0
Stddev	23.	206.	31.3
%RSD	.22901	.34322	1.1588
#1	10097.	59729.	2671.2
#2	10099.	60035.	2690.4
#3	10138.	60120.	2732.4

Approved: July 16, 2016

Sample Name: L1607045401 Acquired: 7/14/2016 16:03:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00097	1.7098	-.00018	.02342	.18371	.00011	57.052	.00034
Stddev	.00138	.0173	.00079	.00084	.00284	.00006	.417	.00023
%RSD	142.94	1.0129	443.13	3.5659	1.5441	58.280	.73157	68.027
#1	.00023	1.7173	.00070	.02427	.18558	.00009	57.271	.00016
#2	-.00065	1.6900	-.00083	.02260	.18045	.00018	56.571	.00060
#3	-.00248	1.7221	-.00041	.02339	.18511	.00006	57.314	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.00281	.01143	2.0912	1.2497	.01159	6.4373	.19742
Stddev	.00014	.00046	.00174	.0173	.1098	.00392	.0795	.00299
%RSD	22.916	16.323	15.213	.82818	8.7881	33.852	1.2356	1.5124
#1	.00061	.00313	.01261	2.0934	1.1863	.01294	6.3850	.19664
#2	.00076	.00229	.01225	2.0729	1.1863	.00717	6.5288	.19490
#3	.00047	.00303	.00944	2.1073	1.3765	.01465	6.3980	.20071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	10.858	.00694	.05840	-.00128	.00195	-.00385	6.2356
Stddev	.00046	.067	.00144	.00397	.00156	.00214	.00202	.3623
%RSD	113.66	.61678	20.780	6.7899	122.47	109.47	52.366	5.8097
#1	.00003	10.903	.00823	.05420	-.00234	.00063	-.00153	6.4608
#2	.00027	10.781	.00722	.05893	.00052	.00442	-.00489	6.4282
#3	.00092	10.890	.00538	.06208	-.00201	.00081	-.00514	5.8177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045401 Acquired: 7/14/2016 16:03:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.23216	.02416	-.00060	.00164	.01207	.00084
Stddev	.00089	.00146	.00468	.00042	.00030	.00067	.00019
%RSD	407.21	.62691	19.351	70.649	18.479	5.5177	22.509
#1	.00084	.23318	.01876	-.00094	.00197	.01248	.00063
#2	-.00080	.23049	.02684	-.00013	.00156	.01242	.00099
#3	.00062	.23279	.02689	-.00073	.00138	.01130	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10079.	59708.	2697.8
Stddev	13.	76.	22.8
%RSD	.12513	.12654	.84565
#1	10073.	59684.	2682.0
#2	10093.	59792.	2723.9
#3	10069.	59646.	2687.4

Approved: July 16, 2016

Sample Name: L1607020101 Acquired: 7/14/2016 16:07:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	39.300	.00403	.23325	.23400	.00007	50.376
Stddev	.00181	.074	.00289	.00505	.00104	.00006	.092
%RSD	215.50	.18951	71.636	2.1659	.44616	85.768	.18317
#1	-.00106	39.271	.00349	.22936	.23516	.00002	50.461
#2	-.00254	39.245	.00716	.23142	.23371	.00013	50.388
#3	.00107	39.385	.00146	.23896	.23313	.00005	50.278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01680	5.2940	.14580	.25879	5.2918	6.3355	2.6635
Stddev	.00171	.5967	.00085	.02987	.0160	.1420	.0010
%RSD	10.194	11.271	.58132	11.540	.30161	2.2407	.03901
#1	.01792	5.6844	.14509	.27829	5.2746	6.2445	2.6647
#2	.01767	5.5905	.14556	.27368	5.3061	6.2630	2.6628
#3	.01483	4.6071	.14674	.22441	5.2948	6.4991	2.6629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.044	.17370	.01376	F 424.50	13.789	42.362	.01446
Stddev	.131	.00157	.00139	3.52	1.546	4.360	.00240
%RSD	1.0049	.90620	10.103	.82951	11.215	10.292	16.576
#1	13.028	.17202	.01442	428.46	14.801	45.128	.01702
#2	13.182	.17392	.01470	423.30	14.558	44.621	.01227
#3	12.921	.17515	.01216	421.73	12.009	37.336	.01409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020101 Acquired: 7/14/2016 16:07:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	.00204	2.0004	.00062	.38129	-.00008	.00589
Stddev	.00711	.00084	.1967	.00061	.00018	.00304	.00188
%RSD	354.49	41.398	9.8317	97.782	.04791	3957.1	31.933
#1	.00473	.00258	2.1291	.00113	.38149	.00030	.00423
#2	.00734	.00107	2.0980	.00079	.38125	-.00328	.00794
#3	-.00606	.00247	1.7740	-.00005	.38113	.00275	.00552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00174	.70378	-.00007
Stddev	.00053	.07745	.00096
%RSD	30.700	11.005	1344.8
#1	.00235	.75443	-.00088
#2	.00143	.74229	-.00032
#3	.00143	.61462	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10112.	58404.	2673.0
Stddev	23.	42.	41.5
%RSD	.22486	.07116	1.5539
#1	10086.	58371.	2628.7
#2	10124.	58390.	2679.3
#3	10127.	58451.	2711.0

Approved: July 16, 2016

Sample Name: L1607020102 Acquired: 7/14/2016 16:11:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00121	39.765	.00797	.26672	.34361	.00000	53.917
Stddev	.00159	.061	.00064	.00598	.00261	.00006	.342
%RSD	131.82	.15275	8.0095	2.2425	.75983	1470.5	.63469
#1	-.00304	39.695	.00859	.26065	.34060	-.00003	53.570
#2	-.00046	39.796	.00731	.26690	.34501	-.00003	53.926
#3	-.00013	39.805	.00801	.27261	.34522	.00007	54.254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01628	5.2023	.16700	.27773	9.4615	5.9353	2.4496
Stddev	.00227	.7339	.00033	.04160	.1053	.0312	.0168
%RSD	13.948	14.107	.19717	14.978	1.1131	.52588	.68547
#1	.01780	5.7191	.16662	.30654	9.3498	5.9002	2.4304
#2	.01736	5.5256	.16725	.29663	9.4760	5.9598	2.4573
#3	.01367	4.3623	.16712	.23004	9.5589	5.9460	2.4612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.594	.17354	.03256	F 414.62	13.161	50.704	.02223
Stddev	.073	.00098	.00445	4.37	1.844	6.879	.00474
%RSD	.50303	.56307	13.670	1.0534	14.009	13.566	21.320
#1	14.511	.17328	.03564	410.03	14.457	55.490	.02636
#2	14.651	.17271	.03458	415.11	13.976	53.800	.02328
#3	14.621	.17462	.02745	418.73	11.050	42.821	.01705
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020102 Acquired: 7/14/2016 16:11:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00343	2.5250	.00180	.39746	.01041	.00638
Stddev	.00280	.00505	.3217	.00017	.00208	.00840	.00264
%RSD	657.90	147.32	12.741	9.6329	.52360	80.711	41.306
#1	-.00169	-.00086	2.7388	.00171	.39536	.00749	.00932
#2	-.00063	.00215	2.6813	.00200	.39749	.00386	.00422
#3	.00360	.00900	2.1550	.00168	.39952	.01988	.00560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00377	.67234	.00059
Stddev	.00137	.09352	.00033
%RSD	36.348	13.909	56.612
#1	.00262	.73794	.00039
#2	.00529	.71382	.00097
#3	.00341	.56526	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10298.	59464.	2796.9
Stddev	90.	217.	8.9
%RSD	.87698	.36437	.31911
#1	10238.	59706.	2805.7
#2	10254.	59397.	2797.1
#3	10402.	59288.	2787.8

Approved: July 16, 2016

Sample Name: L1607020104 Acquired: 7/14/2016 16:15:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	60.218	.00289	.41001	.12995	.00014	133.89
Stddev	.00186	.117	.00344	.00555	.00068	.00004	.34
%RSD	397.74	.19452	119.03	1.3535	.52502	30.438	.25393
#1	.00236	60.117	.00682	.40395	.13018	.00011	134.28
#2	-.00136	60.191	.00044	.41125	.13048	.00011	133.68
#3	.00040	60.347	.00140	.41483	.12918	.00019	133.71
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04705	13.940	.16845	.40258	2.2411	14.455	3.5228
Stddev	.00544	1.635	.00090	.04935	.0150	.073	.0076
%RSD	11.553	11.730	.53363	12.258	.66897	.50284	.21511
#1	.05071	15.022	.16938	.43568	2.2542	14.531	3.5236
#2	.04964	14.740	.16837	.42619	2.2247	14.450	3.5300
#3	.04080	12.059	.16759	.34586	2.2444	14.385	3.5149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.656	.44609	.00428	F 481.57	21.075	66.240	.01195
Stddev	.062	.00224	.00052	9.56	2.479	7.133	.00340
%RSD	.16827	.50124	12.219	1.9853	11.764	10.768	28.412
#1	36.598	.44417	.00466	492.58	22.715	70.859	.01584
#2	36.649	.44855	.00449	475.36	22.287	69.835	.01049
#3	36.720	.44555	.00368	476.78	18.223	58.024	.00954
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020104 Acquired: 7/14/2016 16:15:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00043	3.6836	.00054	.93720	-.01316	.01739
Stddev	.00600	.00550	.3797	.00064	.00258	.00648	.00295
%RSD	1938.0	1268.3	10.308	118.26	.27570	49.270	16.993
#1	.00624	-.00585	3.9244	.00113	.94012	-.00790	.01732
#2	-.00552	.00440	3.8805	.00065	.93629	-.01118	.02038
#3	-.00165	.00275	3.2459	-.00014	.93520	-.02040	.01447
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00392	1.7517	.00018
Stddev	.00097	.2030	.00008
%RSD	24.681	11.587	46.115
#1	.00358	1.8851	.00019
#2	.00318	1.8517	.00027
#3	.00502	1.5181	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9775.5	56260.	2611.5
Stddev	78.2	69.	12.7
%RSD	.80002	.12328	.48775
#1	9756.4	56286.	2600.9
#2	9708.5	56181.	2608.0
#3	9861.4	56312.	2625.6

Approved: July 16, 2016

Sample Name: L1607024903 Acquired: 7/14/2016 16:18:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00134	k 6.6657	k .00854	k .10522	1.0159	k .00105	^ *****	k .00092
Stddev	.00632	.1035	.00097	.00095	.3466	.00004	-----	.00036
%RSD	471.73	1.5525	11.409	.89995	34.121	3.9679	-----	38.577
#1	k -.00589	k 6.6772	k .00956	k .10523	.61857	k .00108	^ -----	k .00059
#2	.00585	6.5569	.00763	.10426	1.1729	.00100	119.98	.00130
#3	.00406	6.7629	.00842	.10616	1.2563	.00107	129.32	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .02186	k .13681	k .14198	k 24.855	1.5410	.01578	k 4.6375	^ *****
Stddev	.00389	.00558	.03724	7.997	.4875	.00225	1.6831	-----
%RSD	17.804	4.0771	26.230	32.174	31.635	14.256	36.293	-----
#1	k .02587	k .14315	k .18386	k 15.706	.98199	.01326	k 2.7043	^ -----
#2	.02161	.13264	.12947	28.351	1.7634	.01649	5.4320	23.955
#3	.01810	.13464	.11260	30.509	1.8777	.01758	5.7763	25.755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .02347	5.1991	k .16132	k 10.140	k .01925	k .00179	k .01399	8.3431
Stddev	.00155	1.8916	.01650	.734	.00459	.00255	.00860	.6433
%RSD	6.6018	36.384	10.225	7.2393	23.843	142.66	61.483	7.7106
#1	k .02507	3.0517	k .17819	k 10.806	k .02373	k -.00095	k .02376	8.9194
#2	.02337	5.9271	.16056	10.262	.01946	.00409	.00756	8.4607
#3	.02198	6.6186	.14522	9.3529	.01456	.00222	.01065	7.6491
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607024903 Acquired: 7/14/2016 16:18:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .21909	k .39945	k .15193	k .01418	k .02768	k .95855	k .00274
Stddev	.01412	.13434	.04517	.01345	.00287	.06475	.00068
%RSD	6.4470	33.631	29.733	94.896	10.383	6.7545	24.778
#1	k .23228	k .24578	k .09978	k .02958	k .02445	k 1.0209	k .00196
#2	.22080	.45800	.17712	.00824	.02865	.96304	.00318
#3	.20419	.49458	.17889	.00471	.02994	.89168	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9989.6	58927.	3108.9
Stddev	42.8	511.	581.9
%RSD	.42832	.86788	18.718
#1	9942.4	59039.	3780.1
#2	10026.	59374.	2801.1
#3	10000.	58369.	2745.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 16:22:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40141	9.8066	.40530	.49543	.99416	.04891	9.9274	.05042
Stddev	.00442	.0172	.00799	.00134	.00648	.00011	.0224	.00133
%RSD	1.1006	.17498	1.9713	.27116	.65136	.23045	.22548	2.6332
#1	.39666	9.7925	.40914	.49402	1.0005	.04902	9.9412	.05080
#2	.40540	9.8016	.41063	.49557	.98756	.04890	9.9395	.05151
#3	.40216	9.8257	.39611	.49669	.99440	.04880	9.9016	.04894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20105	.48729	.50288	3.9850	49.874	.98892	9.8808	.50244
Stddev	.00544	.00195	.01205	.0424	.435	.00464	.1062	.00142
%RSD	2.7066	.39964	2.3966	1.0640	.87281	.46898	1.0750	.28202
#1	.20396	.48511	.50843	4.0160	50.330	.99333	9.7655	.50389
#2	.20441	.48790	.51115	3.9367	49.463	.98409	9.9022	.50106
#3	.19477	.48885	.48905	4.0023	49.829	.98933	9.9747	.50237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0036	49.906	.49993	10.136	.50215	1.2085	.40683	4.9894
Stddev	.0236	.406	.01301	.188	.00615	.0197	.00534	.0821
%RSD	2.3466	.81450	2.6031	1.8505	1.2254	1.6266	1.3125	1.6453
#1	1.0106	50.307	.50612	10.229	.50671	1.2205	.40692	5.0309
#2	1.0229	49.494	.50870	10.258	.50460	1.2191	.41213	5.0425
#3	.97734	49.919	.48498	9.9196	.49515	1.1858	.40145	4.8949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 16:22:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99883	.99802	1.0041	.50208	.96914	.99781	.98634
Stddev	.03066	.00660	.0076	.00335	.00254	.02462	.00196
%RSD	3.0698	.66092	.76083	.66816	.26236	2.4674	.19870
#1	1.0153	1.0039	1.0117	.50252	.96845	1.0100	.98649
#2	1.0177	.99090	.99639	.50519	.96701	1.0140	.98431
#3	.96345	.99923	1.0042	.49852	.97195	.96948	.98822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10253.	60205.	2730.3
Stddev	27.	83.	4.8
%RSD	.26382	.13728	.17407
#1	10278.	60155.	2725.8
#2	10259.	60300.	2735.3
#3	10224.	60160.	2729.7

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 16:26:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.00693	.00004	.00329	-.00064	.00008	-.04658	.00033
Stddev	.00216	.00079	.00020	.00240	.00058	.00002	.02232	.00008
%RSD	258.05	11.321	544.76	72.957	90.922	28.177	47.916	24.640
#1	.00145	.00650	.00026	.00055	.00002	.00007	-.07187	.00026
#2	-.00285	.00784	-.00009	.00427	-.00087	.00011	-.03821	.00042
#3	-.00111	.00646	-.00006	.00504	-.00107	.00007	-.02965	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00042	-.00041	-.00320	.05261	.00130	-.04620	.00044
Stddev	.00027	.00070	.00035	.03152	.07100	.00421	.06598	.00078
%RSD	156.44	165.34	85.933	985.22	134.97	324.93	142.82	179.49
#1	-.00007	-.00038	-.00019	-.02061	.05839	-.00356	.01057	.00108
#2	.00012	.00076	-.00022	.03318	.12054	.00353	-.11858	.00067
#3	.00046	.00089	-.00081	-.02217	-.02111	.00393	-.03059	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.08500	-.00095	.00360	-.00124	.00257	-.00552	.00768
Stddev	.00030	.01715	.00028	.00317	.00304	.00333	.00209	.00069
%RSD	224.99	20.173	29.483	88.269	244.96	129.52	37.753	9.0048
#1	-.00032	.10445	-.00098	.00209	.00197	.00598	-.00404	.00763
#2	.00021	.07848	-.00121	.00146	-.00162	-.00067	-.00462	.00840
#3	-.00030	.07206	-.00065	.00724	-.00408	.00239	-.00791	.00701
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 16:26:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00010	-.00094	-.00112	-.00069	.00011	-.00000
Stddev	.00018	.00016	.00717	.00221	.00084	.00005	.00006
%RSD	98.291	152.20	766.70	198.42	121.65	44.310	2421.7
#1	.00020	.00028	.00730	-.00251	-.00135	.00009	-.00005
#2	-.00000	.00002	-.00432	.00144	-.00095	.00017	-.00001
#3	.00035	.00001	-.00578	-.00227	.00025	.00008	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9666.1	57466.	2626.1
Stddev	8.4	464.	5.4
%RSD	.08697	.80688	.20502
#1	9657.3	57700.	2631.6
#2	9674.0	57766.	2625.8
#3	9666.9	56932.	2620.8

Approved: July 16, 2016

Sample Name: L1607029102 Acquired: 7/14/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	1.1867	-.00206	.01154	.02452	.00008	17.286	.00038
Stddev	.00124	.0048	.00264	.00239	.00183	.00002	.049	.00010
%RSD	347.24	.40589	128.13	20.669	7.4462	27.829	.28632	26.278
#1	.00067	1.1822	-.00468	.01072	.02663	.00011	17.341	.00049
#2	.00000	1.1861	.00061	.01423	.02346	.00007	17.274	.00035
#3	-.00174	1.1918	-.00212	.00968	.02347	.00007	17.244	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.00213	.00289	2.0895	1.1450	.00594	2.6275	.04525
Stddev	.00034	.00024	.00030	.0270	.0376	.00223	.0701	.00391
%RSD	35.847	11.300	10.279	1.2940	3.2823	37.626	2.6674	8.6494
#1	.00133	.00187	.00272	2.1070	1.1414	.00805	2.5665	.04146
#2	.00088	.00235	.00271	2.1031	1.1093	.00360	2.6118	.04927
#3	.00065	.00217	.00323	2.0583	1.1843	.00616	2.7040	.04501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	2.5388	.00137	.06471	-.00042	-.00031	.00052	5.0057
Stddev	.00011	.0305	.00048	.00071	.00221	.00118	.00236	.3706
%RSD	11.240	1.2012	35.074	1.1030	527.10	376.76	449.67	7.4031
#1	.00100	2.5367	.00190	.06494	-.00002	-.00044	.00319	5.2064
#2	.00091	2.5093	.00095	.06529	.00156	.00093	-.00130	5.2326
#3	.00114	2.5702	.00127	.06391	-.00280	-.00143	-.00031	4.5781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029102 Acquired: 7/14/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.04893	.01795	.00062	.00192	.03617	.00078
Stddev	.00063	.00042	.00646	.00253	.00061	.00326	.00028
%RSD	92.318	.85552	35.979	407.70	31.834	9.0114	35.922
#1	.00106	.04859	.02482	.00259	.00122	.03817	.00046
#2	.00104	.04940	.01201	-.00223	.00218	.03794	.00099
#3	-.00005	.04881	.01701	.00150	.00236	.03241	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10248.	60671.	2707.4
Stddev	59.	246.	18.6
%RSD	.57913	.40483	.68686
#1	10289.	60622.	2688.9
#2	10276.	60453.	2707.3
#3	10180.	60937.	2726.1

Approved: July 16, 2016

Sample Name: L1607029103 Acquired: 7/14/2016 16:33:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	1.8695	.00195	.01468	.02602	.00017	26.738	.00037
Stddev	.00124	.0065	.00158	.00303	.00165	.00005	.190	.00014
%RSD	7025.6	.34955	81.044	20.651	6.3371	30.509	.70997	38.838
#1	-.00026	1.8695	.00343	.01743	.02679	.00013	26.876	.00021
#2	.00137	1.8761	.00028	.01143	.02714	.00015	26.817	.00049
#3	-.00105	1.8630	.00215	.01518	.02413	.00023	26.521	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.00433	.00482	3.0936	1.2736	.00561	5.2465	.05894
Stddev	.00027	.00111	.00133	.0156	.0357	.00232	.1059	.00211
%RSD	30.904	25.728	27.515	.50272	2.8011	41.395	2.0183	3.5851
#1	.00062	.00452	.00614	3.0892	1.2540	.00552	5.3391	.06121
#2	.00085	.00534	.00482	3.1109	1.2520	.00334	5.2693	.05856
#3	.00116	.00314	.00349	3.0807	1.3147	.00798	5.1310	.05704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	3.0795	.00242	.06464	-.00005	.00297	-.00155	5.6872
Stddev	.00028	.0063	.00062	.00985	.00187	.00241	.00426	.3786
%RSD	57.590	.20335	25.599	15.233	4033.1	80.986	275.03	6.6572
#1	.00068	3.0771	.00232	.07320	.00191	.00548	-.00459	5.9148
#2	.00063	3.0866	.00308	.06684	-.00182	.00278	.00332	5.8967
#3	.00017	3.0748	.00185	.05388	-.00022	.00067	-.00337	5.2502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029103 Acquired: 7/14/2016 16:33:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.06853	.01763	-.00083	.00165	.03804	.00097
Stddev	.00037	.00029	.00573	.00119	.00015	.00331	.00016
%RSD	60.794	.43013	32.475	144.06	9.3800	8.6959	16.676
#1	.00103	.06854	.02353	-.00002	.00171	.04034	.00079
#2	.00042	.06823	.01729	-.00027	.00148	.03952	.00109
#3	.00036	.06882	.01209	-.00220	.00177	.03425	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10216.	60428.	2709.6
Stddev	39.	91.	25.5
%RSD	.38120	.15037	.94223
#1	10218.	60329.	2682.2
#2	10254.	60448.	2713.9
#3	10176.	60507.	2732.7

Approved: July 16, 2016

Sample Name: L1607029104 Acquired: 7/14/2016 16:37:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	3.3244	.00180	.01960	.08210	.00028	93.243	.00060
Stddev	.00135	.0149	.00237	.00206	.00136	.00001	.445	.00032
%RSD	129.58	.44746	132.03	10.532	1.6569	2.2977	.47719	54.129
#1	-.00028	3.3355	.00353	.02054	.08084	.00028	92.865	.00083
#2	-.00261	3.3302	-.00091	.02103	.08354	.00029	93.130	.00023
#3	-.00025	3.3075	.00278	.01723	.08191	.00027	93.734	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00460	.00724	.00832	6.1093	3.0817	.01515	15.392	2.3640
Stddev	.00053	.00031	.00239	.0351	.0428	.00309	.106	.0043
%RSD	11.549	4.2686	28.737	.57466	1.3898	20.370	.69136	.18078
#1	.00519	.00707	.00910	6.0688	3.0349	.01611	15.271	2.3618
#2	.00416	.00704	.01023	6.1315	3.1190	.01766	15.470	2.3613
#3	.00445	.00759	.00564	6.1276	3.0912	.01170	15.435	2.3689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	8.5530	.01230	.17924	.00526	.00166	-.00373	7.7557
Stddev	.00017	.0857	.00125	.00966	.00432	.00061	.00150	.4323
%RSD	35.120	1.0023	10.125	5.3885	82.039	36.998	40.061	5.5739
#1	.00053	8.6517	.01236	.17999	.00318	.00218	-.00208	8.0157
#2	.00030	8.4972	.01351	.18850	.01022	.00098	-.00499	7.9946
#3	.00064	8.5102	.01102	.16923	.00238	.00183	-.00413	7.2566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029104 Acquired: 7/14/2016 16:37:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.32868	.03666	.00109	.00431	.04269	.00105
Stddev	.00035	.00244	.00621	.00397	.00044	.00300	.00005
%RSD	26.088	.74147	16.927	363.13	10.286	7.0183	5.0059
#1	.00173	.32596	.04305	.00165	.00458	.04460	.00111
#2	.00116	.32942	.03066	-.00313	.00456	.04424	.00100
#3	.00110	.33066	.03627	.00476	.00380	.03924	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10125.	59777.	2701.6
Stddev	28.	114.	10.9
%RSD	.27506	.19105	.40188
#1	10131.	59660.	2713.7
#2	10149.	59888.	2692.7
#3	10094.	59784.	2698.3

Approved: July 16, 2016

Sample Name: L1607038001 Acquired: 7/14/2016 16:41:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00134**	**.01853**	**-.00194**	**.01623**	**.12932**	**-.00001**	**42.240**	**.00033**
Stddev	.00043	.00712	.00135	.00276	.00177	.00004	.256	.00012
%RSD	31.724	38.406	69.588	16.987	1.3698	409.40	.60614	36.884
#1	-.00152	.01031	-.00349	.01360	.12949	-.00006	41.947	.00023
#2	-.00165	.02281	-.00132	.01598	.12747	.00003	42.359	.00047
#3	-.00086	.02246	-.00101	.01910	.13100	-.00000	42.415	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00049**	**.03008**	**.87688**	**1.3340**	**.00503**	**4.8098**	**.12251**
Stddev	.00002	.00122	.00181	.03156	.0978	.00264	.0856	.00127
%RSD	25.928	247.52	6.0294	3.5989	7.3307	52.428	1.7803	1.0371
#1	-.00008	-.00009	.03159	.84738	1.4408	.00775	4.7135	.12129
#2	-.00011	-.00033	.03057	.91015	1.3122	.00486	4.8387	.12383
#3	-.00007	.00190	.02807	.87311	1.2489	.00248	4.8772	.12241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**2.6953**	**.00056**	**.01908**	**.00745**	**-.00031**	**-.00296**	**2.8755**
Stddev	.00017	.0308	.00060	.00973	.00052	.00340	.00430	.1834
%RSD	224.99	1.1429	107.24	50.977	6.9370	1112.5	145.45	6.3761
#1	.00026	2.6620	.00114	.03022	.00790	.00362	.00138	2.9863
#2	.00004	2.7010	-.00005	.01472	.00688	-.00245	-.00302	2.9764
#3	-.00007	2.7228	.00057	.01230	.00757	-.00208	-.00722	2.6639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038001 Acquired: 7/14/2016 16:41:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	.26267	-.00100	-.00034	-.00092	.24632	.00005
Stddev	.00074	.00149	.00446	.00093	.00041	.01932	.00035
%RSD	56.201	.56675	446.89	273.34	44.859	7.8441	649.03
#1	.00048	.26096	-.00499	.00073	-.00079	.25817	.00010
#2	.00159	.26366	-.00182	-.00098	-.00139	.25677	.00038
#3	.00189	.26340	.00381	-.00078	-.00059	.22402	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10380.	61476.	2768.1
Stddev	31.	177.	6.8
%RSD	.29934	.28819	.24500
#1	10383.	61513.	2775.1
#2	10348.	61631.	2761.5
#3	10410.	61283.	2767.8

Approved: July 16, 2016

Sample Name: L1607038002 Acquired: 7/14/2016 16:45:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	5.0204	.00218	.02584	.20975	.00044	16.452	.00041
Stddev	.00149	.0084	.00077	.00021	.00157	.00004	.117	.00038
%RSD	234.89	.16826	35.499	.79621	.74761	10.088	.71185	93.351
#1	-.00049	5.0148	.00306	.02564	.21150	.00040	16.581	.00080
#2	.00232	5.0164	.00188	.02582	.20847	.00048	16.352	.00040
#3	.00007	5.0301	.00160	.02605	.20928	.00043	16.423	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00323	.00801	.00871	13.581	2.8801	.00688	3.4753	.40424
Stddev	.00003	.00054	.00260	.137	.0456	.00093	.0725	.00394
%RSD	1.0657	6.7234	29.896	1.0106	1.5825	13.516	2.0856	.97463
#1	.00319	.00863	.01017	13.738	2.8907	.00704	3.4080	.40855
#2	.00324	.00765	.01025	13.486	2.9195	.00771	3.4658	.40083
#3	.00325	.00775	.00570	13.518	2.8302	.00588	3.5521	.40333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	58.898	.00726	.33069	.00644	.00329	-.00728	8.3754
Stddev	.00037	.337	.00123	.02578	.00296	.00022	.00147	.4880
%RSD	32.969	.57136	16.868	7.7962	45.960	6.5480	20.146	5.8266
#1	.00128	59.240	.00680	.33890	.00490	.00304	-.00603	8.6862
#2	.00070	58.567	.00866	.35137	.00985	.00344	-.00691	8.6271
#3	.00138	58.886	.00634	.30181	.00456	.00340	-.00889	7.8130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038002 Acquired: 7/14/2016 16:45:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.17198	.06567	.00276	.01099	.09259	.00088
Stddev	.00051	.00090	.00336	.00249	.00012	.00695	.00020
%RSD	104.04	.52464	5.1104	90.473	1.1287	7.5020	22.752
#1	.00001	.17299	.06676	.00194	.01102	.09684	.00076
#2	.00103	.17124	.06835	.00556	.01110	.09636	.00077
#3	.00045	.17172	.06191	.00078	.01085	.08458	.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10129.	59770.	2703.1
Stddev	25.	78.	17.9
%RSD	.24450	.13111	.66134
#1	10158.	59859.	2686.2
#2	10115.	59711.	2721.8
#3	10115.	59740.	2701.1

Approved: July 16, 2016

Sample Name: L1607038003 Acquired: 7/14/2016 16:49:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.04855	.00052	.02623	.08332	.00002	15.480	.00036
Stddev	.00060	.00369	.00282	.00251	.00009	.00008	.063	.00013
%RSD	138.53	7.5952	546.28	9.5762	.10513	466.96	.40584	36.658
#1	-.00111	.04486	-.00133	.02436	.08325	-.00005	15.545	.00028
#2	-.00021	.04856	.00376	.02908	.08329	-.00001	15.475	.00051
#3	.00003	.05223	-.00088	.02525	.08342	.00011	15.420	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00130	.00302	.07723	1.5043	.00544	2.3626	.00233
Stddev	.00010	.00033	.00140	.00817	.0599	.00102	.0476	.00258
%RSD	238.46	25.056	46.446	10.576	3.9838	18.741	2.0158	110.68
#1	.00002	.00157	.00460	.08519	1.5363	.00609	2.3676	.00436
#2	-.00005	.00139	.00192	.07764	1.5415	.00427	2.4076	-.00058
#3	.00016	.00094	.00255	.06887	1.4352	.00598	2.3127	.00322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	63.852	-.00005	.05706	-.00184	.00231	-.00132	2.5851
Stddev	.00048	.293	.00033	.00626	.00279	.00428	.00306	.1832
%RSD	63.443	.45832	664.00	10.966	151.99	185.08	232.36	7.0853
#1	.00104	64.001	.00029	.06219	-.00158	.00695	-.00022	2.6965
#2	.00105	64.040	-.00007	.05891	.00082	-.00149	.00104	2.6851
#3	.00020	63.515	-.00037	.05009	-.00475	.00147	-.00478	2.3737
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038003 Acquired: 7/14/2016 16:49:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00140	.16519	-.00167	-.00057	-.00029	.00414	.00043
Stddev	.00059	.00011	.00605	.00216	.00073	.00052	.00036
%RSD	42.344	.06932	362.80	382.64	255.38	12.577	82.485
#1	.00081	.16524	-.00567	.00003	-.00028	.00416	.00010
#2	.00200	.16528	.00529	-.00296	.00044	.00465	.00040
#3	.00141	.16506	-.00462	.00123	-.00102	.00361	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10125.	59818.	2684.1
Stddev	19.	64.	23.8
%RSD	.18560	.10675	.88785
#1	10146.	59819.	2660.7
#2	10112.	59754.	2683.2
#3	10115.	59882.	2708.4

Approved: July 16, 2016

Sample Name: L1607038004 Acquired: 7/14/2016 16:53:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00066	.03271	-.00129	.14829	.05204	-.00008	1.4588	.00027
Stddev	.00211	.01771	.00134	.00139	.00075	.00003	.0045	.00024
%RSD	319.99	54.134	103.73	.93467	1.4410	32.889	.30777	88.417
#1	.00177	.01925	-.00126	.14669	.05134	-.00005	1.4568	.00047
#2	-.00167	.02612	.00004	.14910	.05283	-.00010	1.4556	.00000
#3	-.00207	.05277	-.00263	.14909	.05195	-.00009	1.4639	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00073	.00156	-.01782	.33850	.01017	.23569	.00137
Stddev	.00019	.00070	.00080	.03203	.06408	.00091	.09170	.00086
%RSD	420.93	95.961	51.275	179.74	18.930	8.9685	38.909	63.043
#1	.00026	.00085	.00146	-.04271	.38826	.00966	.18224	.00080
#2	-.00003	-.00002	.00241	.01832	.36104	.00963	.18325	.00095
#3	-.00010	.00136	.00082	-.02908	.26620	.01123	.34158	.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	156.79	-.00101	.03392	-.00345	.00263	-.00566	2.7826
Stddev	.00018	.18	.00055	.00013	.00210	.00382	.00179	.2276
%RSD	21.550	.11415	54.403	.38554	60.848	145.14	31.619	8.1810
#1	.00092	156.79	-.00090	.03405	-.00190	.00646	-.00482	2.9236
#2	.00099	156.97	-.00052	.03394	-.00261	-.00118	-.00771	2.9042
#3	.00064	156.62	-.00161	.03379	-.00584	.00262	-.00444	2.5200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038004 Acquired: 7/14/2016 16:53:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.06588	.00301	-.00124	-.00101	.00333	.00034
Stddev	.00035	.00091	.00715	.00104	.00027	.00050	.00030
%RSD	915.54	1.3865	237.45	84.422	26.322	14.947	87.714
#1	-.00015	.06631	.00147	-.00043	-.00120	.00349	.00008
#2	.00044	.06483	-.00324	-.00087	-.00071	.00372	.00027
#3	-.00017	.06649	.01081	-.00242	-.00113	.00277	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10048.	58987.	2688.9
Stddev	20.	109.	11.8
%RSD	.20051	.18442	.43933
#1	10050.	58861.	2684.5
#2	10067.	59057.	2679.9
#3	10027.	59042.	2702.3

Approved: July 16, 2016

Sample Name: L1607038101 Acquired: 7/14/2016 16:57:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.01572	-.00170	.03053	.03562	.00005	40.029	.00044
Stddev	.00110	.01035	.00127	.00160	.00115	.00002	.077	.00013
%RSD	136.10	65.838	75.106	5.2291	3.2289	28.897	.19274	29.091
#1	.00014	.00378	-.00133	.03216	.03653	.00007	39.952	.00044
#2	-.00202	.02217	-.00311	.03047	.03601	.00004	40.028	.00031
#3	-.00056	.02122	-.00065	.02897	.03433	.00006	40.106	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.00142	.00159	.01751	1.2089	.00521	3.1514	.00197
Stddev	.00038	.00095	.00165	.02767	.0646	.00392	.0543	.00291
%RSD	2986.8	66.756	103.85	157.97	5.3452	75.206	1.7215	148.09
#1	-.00044	.00241	.00066	.03464	1.1406	.00931	3.2082	.00271
#2	.00029	.00132	.00349	.03230	1.2690	.00151	3.1459	.00443
#3	.00011	.00053	.00061	-.01440	1.2170	.00480	3.1001	-.00125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	5.7023	-.00057	.09557	-.00147	.00125	-.00717	4.1217
Stddev	.00013	.0072	.00025	.00842	.00162	.00283	.00428	.3111
%RSD	41.200	.12631	44.783	8.8068	110.49	226.27	59.640	7.5477
#1	.00018	5.6980	-.00067	.10223	.00038	.00262	-.00946	4.3113
#2	.00035	5.7106	-.00075	.09838	-.00212	.00313	-.00982	4.2911
#3	.00044	5.6982	-.00028	.08611	-.00266	-.00200	-.00224	3.7627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038101 Acquired: 7/14/2016 16:57:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.13332	-.00021	.00091	-.00088	.00753	-.00018
Stddev	.00049	.00017	.00227	.00279	.00034	.00078	.00039
%RSD	93.429	.12620	1095.9	305.84	38.541	10.322	211.50
#1	.00090	.13350	.00149	.00299	-.00049	.00794	.00025
#2	.00069	.13316	.00067	-.00226	-.00113	.00801	-.00032
#3	-.00003	.13329	-.00278	.00200	-.00103	.00663	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10157.	60473.	2709.6
Stddev	37.	180.	11.5
%RSD	.35968	.29841	.42428
#1	10146.	60458.	2697.1
#2	10198.	60300.	2711.9
#3	10128.	60660.	2719.7

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:01:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41338	10.125	.41455	.51185	1.0365	.05040	10.287	.05167
Stddev	.00120	.020	.00973	.00127	.0045	.00012	.011	.00117
%RSD	.29130	.20013	2.3479	.24887	.43519	.23840	.10426	2.2597
#1	.41304	10.126	.42041	.51068	1.0406	.05028	10.279	.05230
#2	.41472	10.144	.41993	.51167	1.0374	.05052	10.299	.05238
#3	.41239	10.104	.40332	.51321	1.0317	.05040	10.283	.05032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20684	.50089	.51728	4.1508	51.804	1.0224	10.182	.52227
Stddev	.00616	.00119	.01540	.0385	.315	.0113	.109	.00199
%RSD	2.9793	.23683	2.9771	.92773	.60900	1.1074	1.0663	.38076
#1	.21065	.50047	.52567	4.1262	52.122	1.0239	10.200	.52097
#2	.21014	.50223	.52665	4.1952	51.797	1.0329	10.065	.52456
#3	.19973	.49997	.49950	4.1311	51.492	1.0104	10.280	.52129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0333	52.061	.51703	10.437	.51981	1.2452	.41775	5.1131
Stddev	.0271	.273	.01625	.212	.00626	.0279	.00829	.1006
%RSD	2.6219	.52356	3.1429	2.0330	1.2044	2.2393	1.9842	1.9679
#1	1.0440	52.346	.52700	10.561	.52141	1.2605	.42561	5.1698
#2	1.0534	52.034	.52581	10.558	.52512	1.2620	.41855	5.1726
#3	1.0025	51.803	.49828	10.192	.51291	1.2130	.40909	4.9969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:01:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0294**	**1.0397**	**1.0539**	**.51323**	**.99797**	**1.0308**	**1.0267**
Stddev	.0351	.0054	.0060	.00509	.00324	.0283	.0004
%RSD	3.4141	.52118	.56626	.99191	.32418	2.7402	.03930
#1	1.0498	1.0448	1.0604	.51655	1.0015	1.0467	1.0271
#2	1.0495	1.0402	1.0527	.51577	.99733	1.0474	1.0263
#3	.98879	1.0340	1.0487	.50737	.99510	.99816	1.0268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10042.**	**58910.**	**2650.0**
Stddev	23.	134.	10.1
%RSD	.23090	.22826	.38042
#1	10041.	58803.	2639.6
#2	10020.	58866.	2650.6
#3	10066.	59061.	2659.7

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 17:04:43 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00086**	**.00735**	**-.00053**	**.00383**	**-.00133**	**.00006**	**-.00283**	**.00043**
Stddev	.00040	.00420	.00195	.00131	.00090	.00008	.01562	.00027
%RSD	45.922	57.163	370.24	34.243	68.098	134.87	551.87	62.844
#1	-.00129	.00278	-.00118	.00356	-.00053	.00006	-.02058	.00023
#2	-.00051	.00822	.00167	.00267	-.00114	.00013	.00881	.00033
#3	-.00079	.01105	-.00207	.00525	-.00231	-.00002	.00328	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00057**	**-.00072**	**-.00496**	**.02287**	**.00171**	**-.08680**	**.00013**
Stddev	.00050	.00052	.00052	.04659	.06681	.00032	.08419	.00221
%RSD	809.36	91.089	71.424	939.39	292.15	18.721	97.002	1697.1
#1	.00008	.00076	-.00086	-.05296	.04171	.00134	-.18401	-.00026
#2	.00056	.00097	-.00015	.04007	-.05134	.00190	-.03746	-.00186
#3	-.00045	-.00002	-.00115	-.00198	.07823	.00188	-.03892	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.04528**	**-.00076**	**.00055**	**-.00356**	**.00495**	**-.00776**	**.00416**
Stddev	.00024	.02835	.00046	.00561	.00220	.00289	.00116	.00138
%RSD	323.22	62.607	60.292	1019.4	61.775	58.256	14.940	33.130
#1	-.00000	.01380	-.00092	-.00567	-.00113	.00272	-.00744	.00441
#2	.00012	.06881	-.00024	.00208	-.00414	.00821	-.00904	.00267
#3	-.00034	.05324	-.00112	.00524	-.00542	.00392	-.00679	.00538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 17:04:43 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	-.00017	-.00002	.00032	-.00055	.00004	-.00013
Stddev	.00026	.00008	.00604	.00221	.00079	.00016	.00028
%RSD	62.330	45.334	27283.	695.57	142.89	407.77	216.17
#1	.00044	-.00009	-.00374	-.00058	-.00112	-.00010	.00010
#2	.00065	-.00024	.00694	-.00130	-.00090	.00000	-.00004
#3	.00014	-.00018	-.00327	.00284	.00035	.00021	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10137.	59445.	2663.4
Stddev	86.	339.	33.8
%RSD	.85165	.57019	1.2702
#1	10082.	59083.	2628.5
#2	10091.	59498.	2696.0
#3	10236.	59754.	2665.6

Approved: July 16, 2016

Sample Name: PBW 76 Acquired: 7/14/2016 17:08:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.01451**	**-.00095**	**.00413**	**-.00278**	**.00006**	**-.04258**	**.00023**
Stddev	.00105	.00584	.00071	.00168	.00043	.00004	.01760	.00001
%RSD	518.39	40.237	75.036	40.700	15.583	70.858	41.337	5.3576
#1	-.00088	.02100	-.00164	.00601	-.00230	.00001	-.03182	.00022
#2	-.00073	.01282	-.00022	.00360	-.00314	.00010	-.03302	.00024
#3	.00101	.00970	-.00098	.00278	-.00291	.00007	-.06289	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00078**	**.00057**	**.00268**	**-.03299**	**.00122**	**.00746**	**-.00096**
Stddev	.00030	.00117	.00059	.01188	.12353	.00385	.04260	.00046
%RSD	210.12	150.26	103.54	442.94	374.47	314.73	571.18	48.254
#1	-.00024	-.00053	.00023	-.00416	-.13556	.00553	.02821	-.00118
#2	-.00038	.00116	.00023	.01640	.10415	.00004	.03571	-.00127
#3	.00019	.00171	.00125	-.00420	-.06756	-.00189	-.04155	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.06484**	**-.00027**	**.00175**	**-.00312**	**.00227**	**-.00225**	**.02091**
Stddev	.00031	.02335	.00069	.00202	.00187	.00358	.00195	.00148
%RSD	297.81	36.005	252.77	115.33	59.800	157.59	86.386	7.0929
#1	.00014	.03808	-.00106	-.00041	-.00337	-.00105	-.00262	.01983
#2	.00000	.07540	.00020	.00208	-.00114	.00606	-.00015	.02260
#3	-.00046	.08104	.00005	.00360	-.00485	.00181	-.00399	.02029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: PBW 76 Acquired: 7/14/2016 17:08:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00023	.00044	-.00117	-.00070	.00069	-.00019
Stddev	.00019	.00035	.00313	.00101	.00069	.00032	.00057
%RSD	55.195	151.80	711.67	86.544	97.859	45.550	303.41
#1	.00042	.00025	.00096	-.00138	.00003	.00086	-.00064
#2	.00048	-.00013	.00328	-.00007	-.00134	.00089	-.00038
#3	.00013	.00057	-.00292	-.00206	-.00080	.00033	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10235.	60911.	2718.1
Stddev	35.	100.	10.9
%RSD	.34043	.16386	.39985
#1	10266.	60798.	2705.5
#2	10241.	60985.	2723.6
#3	10197.	60950.	2725.0

Approved: July 16, 2016

Sample Name: LCSW 76 Acquired: 7/14/2016 17:12:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19559**	**4.9300**	**.20044**	**.97707**	**.51179**	**.02399**	**5.1758**	**.02522**
Stddev	.00080	.0250	.00234	.00398	.00221	.00004	.0410	.00051
%RSD	.41154	.50731	1.1678	.40782	.43233	.16552	.79245	2.0114
#1	.19551	4.9159	.20062	.97338	.51418	.02394	5.2081	.02525
#2	.19644	4.9589	.20268	.97652	.50982	.02401	5.1897	.02570
#3	.19483	4.9152	.19801	.98130	.51135	.02401	5.1297	.02469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10159**	**.24814**	**.25573**	**2.0797**	**25.144**	**.51757**	**4.9823**	**.25380**
Stddev	.00246	.00085	.00551	.0218	.108	.00308	.0723	.00372
%RSD	2.4256	.34230	2.1554	1.0469	.42993	.59578	1.4517	1.4655
#1	.10317	.24905	.25858	2.0545	25.214	.51716	5.0402	.25278
#2	.10285	.24736	.25924	2.0925	25.020	.52084	4.9012	.25792
#3	.09875	.24800	.24938	2.0919	25.199	.51471	5.0054	.25070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51305**	**25.490**	**.25666**	**4.9356**	**.25380**	**.60597**	**.18871**	**2.5368**
Stddev	.01128	.099	.00596	.0799	.00260	.01127	.00267	.0367
%RSD	2.1978	.38734	2.3236	1.6194	1.0253	1.8590	1.4128	1.4452
#1	.52070	25.500	.25957	4.9886	.25605	.61136	.19104	2.5602
#2	.51835	25.584	.26061	4.9745	.25439	.61352	.18930	2.5558
#3	.50010	25.387	.24980	4.8437	.25095	.59302	.18580	2.4946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW 76 Acquired: 7/14/2016 17:12:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50673	.52174	.51681	.25277	.49056	.50164	.00078
Stddev	.01294	.00196	.00824	.00587	.00027	.01104	.00020
%RSD	2.5542	.37604	1.5949	2.3237	.05433	2.2002	25.229
#1	.51418	.52108	.50872	.25784	.49083	.50865	.00072
#2	.51423	.52395	.52520	.25413	.49029	.50736	.00100
#3	.49179	.52020	.51652	.24633	.49056	.48892	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10117.	59881.	2697.8
Stddev	6.	186.	3.9
%RSD	.06141	.31103	.14590
#1	10110.	59752.	2696.5
#2	10122.	59798.	2694.6
#3	10119.	60095.	2702.2

Approved: July 16, 2016

Sample Name: L1606145502 Acquired: 7/14/2016 17:16:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.25043	-.00066	.01942	.01622	.00006	39.573	.00066
Stddev	.00066	.00527	.00166	.00283	.00098	.00005	.193	.00015
%RSD	551.41	2.1045	251.79	14.564	6.0157	87.124	.48790	22.343
#1	.00023	.25587	.00123	.02118	.01570	.00008	39.570	.00077
#2	-.00059	.25007	-.00188	.02091	.01735	.00009	39.768	.00072
#3	.00072	.24534	-.00133	.01615	.01561	.00000	39.382	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00071	.01270	.51790	3.7198	.00727	5.9513	.01793
Stddev	.00019	.00044	.00181	.01865	.0948	.00365	.0709	.00226
%RSD	58.185	62.487	14.240	3.6004	2.5487	50.259	1.1922	12.617
#1	.00014	.00080	.01332	.49945	3.8272	.00788	5.9432	.01865
#2	.00052	.00023	.01413	.53674	3.6476	.00335	6.0260	.01540
#3	.00033	.00109	.01067	.51752	3.6847	.01057	5.8848	.01975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	1.0901	.00398	.12178	-.00033	-.00038	-.00346	2.9544
Stddev	.00030	.0334	.00025	.00726	.00190	.00199	.00446	.1976
%RSD	25.605	3.0624	6.1561	5.9635	574.56	520.60	129.06	6.6880
#1	.00084	1.0515	.00410	.12007	-.00032	-.00267	-.00837	3.0757
#2	.00136	1.1099	.00414	.12974	.00157	.00071	.00034	3.0611
#3	.00137	1.1088	.00370	.11552	-.00224	.00082	-.00235	2.7264
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145502 Acquired: 7/14/2016 17:16:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.08856	.00958	-.00068	.00013	.32531	.00041
Stddev	.00044	.00036	.00270	.00085	.00017	.02687	.00036
%RSD	180.12	.40394	28.146	125.22	130.03	8.2592	87.088
#1	.00071	.08898	.00647	-.00094	.00004	.34099	.00038
#2	-.00017	.08838	.01117	.00027	.00032	.34066	.00007
#3	.00019	.08833	.01111	-.00136	.00003	.29429	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10183.	60648.	2721.9
Stddev	17.	132.	7.5
%RSD	.16204	.21835	.27721
#1	10197.	60624.	2721.2
#2	10188.	60791.	2714.7
#3	10165.	60529.	2729.7

Approved: July 16, 2016

Sample Name: L1606145503S Acquired: 7/14/2016 17:20:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19455	5.2080	.20330	.97591	.52017	.02360	43.711	.02485
Stddev	.00136	.0126	.00220	.00087	.00481	.00009	.275	.00029
%RSD	.69908	.24153	1.0844	.08929	.92384	.37234	.62911	1.1476
#1	.19517	5.1937	.20367	.97565	.52488	.02368	43.900	.02503
#2	.19299	5.2171	.20530	.97519	.52036	.02360	43.837	.02500
#3	.19550	5.2132	.20094	.97688	.51528	.02351	43.395	.02452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09991	.24298	.26234	2.4864	28.264	.50823	10.832	.26534
Stddev	.00176	.00047	.00499	.0467	.211	.00059	.150	.00175
%RSD	1.7601	.19395	1.9039	1.8772	.74501	.11533	1.3856	.65814
#1	.10104	.24291	.26515	2.4622	28.461	.50859	10.908	.26655
#2	.10081	.24255	.26529	2.5402	28.290	.50854	10.929	.26612
#3	.09788	.24349	.25657	2.4568	28.042	.50755	10.659	.26334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50769	26.068	.25477	5.0509	.24922	.60228	.18627	5.7136
Stddev	.01047	.170	.00649	.0741	.00190	.00835	.01108	.0683
%RSD	2.0615	.65358	2.5491	1.4667	.76280	1.3859	5.9503	1.1963
#1	.51529	26.182	.25991	5.1049	.24703	.60333	.19840	5.7639
#2	.51202	26.151	.25692	5.0812	.25045	.61006	.18377	5.7411
#3	.49575	25.872	.24747	4.9664	.25018	.59346	.17665	5.6358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145503S Acquired: 7/14/2016 17:20:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49873	.60220	.50667	.24600	.48209	.81803	.00079
Stddev	.01192	.00168	.00995	.00188	.00120	.01355	.00018
%RSD	2.3896	.27910	1.9638	.76258	.24934	1.6565	22.459
#1	.50758	.60271	.50884	.24745	.48334	.82639	.00060
#2	.50345	.60356	.49581	.24665	.48095	.82531	.00095
#3	.48518	.60032	.51535	.24388	.48199	.80240	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10022.	59592.	2697.3
Stddev	19.	112.	42.7
%RSD	.19384	.18782	1.5815
#1	10001.	59712.	2661.5
#2	10040.	59490.	2686.0
#3	10024.	59574.	2744.5

Approved: July 16, 2016

Sample Name: L1606145504SD Acquired: 7/14/2016 17:23:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20476**	**5.7375**	**.21015**	**1.0380**	**.55226**	**.02515**	**46.383**	**.02655**
Stddev	.00077	.0231	.00704	.0020	.00166	.00005	.286	.00029
%RSD	.37377	.40322	3.3490	.19066	.30076	.18669	.61629	1.1098
#1	.20437	5.7635	.21281	1.0385	.55367	.02520	46.683	.02681
#2	.20427	5.7302	.21546	1.0396	.55267	.02512	46.352	.02662
#3	.20564	5.7190	.20217	1.0357	.55043	.02512	46.114	.02623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10455**	**.25906**	**.27580**	**2.7842**	**29.865**	**.54213**	**11.396**	**.28495**
Stddev	.00209	.00225	.00601	.0214	.043	.00270	.106	.00170
%RSD	1.9983	.86894	2.1806	.76713	.14322	.49847	.93273	.59552
#1	.10589	.26149	.28109	2.7742	29.862	.54512	11.365	.28335
#2	.10561	.25705	.27706	2.7696	29.823	.54142	11.514	.28477
#3	.10214	.25864	.26926	2.8087	29.909	.53986	11.309	.28673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53361**	**27.613**	**.26733**	**5.3106**	**.25970**	**.62709**	**.20062**	**6.2455**
Stddev	.01001	.121	.00610	.0824	.00500	.01394	.00353	.0803
%RSD	1.8758	.43670	2.2830	1.5518	1.9270	2.2232	1.7597	1.2857
#1	.54004	27.740	.27074	5.3647	.26389	.63736	.19787	6.3002
#2	.53871	27.500	.27097	5.3513	.26105	.63269	.20460	6.2829
#3	.52208	27.598	.26029	5.2157	.25416	.61122	.19939	6.1533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145504SD Acquired: 7/14/2016 17:23:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52422	.63790	.53477	.25895	.51355	.85705	.00093
Stddev	.01199	.00186	.00831	.00353	.00222	.01603	.00031
%RSD	2.2877	.29091	1.5532	1.3639	.43151	1.8708	32.921
#1	.53232	.63980	.54391	.26078	.51582	.86812	.00074
#2	.52990	.63609	.53272	.26120	.51139	.86436	.00078
#3	.51045	.63781	.52768	.25488	.51343	.83866	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9938.6	58561.	2642.6
Stddev	38.0	121.	22.8
%RSD	.38233	.20616	.86221
#1	9898.5	58428.	2616.4
#2	9943.2	58663.	2657.6
#3	9974.1	58593.	2653.8

Approved: July 16, 2016

Sample Name: L1606145201 Acquired: 7/14/2016 17:27:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00078	.01275	-.00155	.01616	.11553	-.00001	7.2477	.00036
Stddev	.00019	.00601	.00275	.00170	.00162	.00004	.0631	.00023
%RSD	24.744	47.104	177.52	10.525	1.4059	273.50	.87038	65.407
#1	-.00070	.01961	-.00041	.01796	.11620	-.00003	7.3044	.00031
#2	-.00065	.01021	-.00469	.01595	.11367	-.00004	7.1797	.00061
#3	-.00100	.00843	.00045	.01458	.11670	.00003	7.2589	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	.00075	-.00050	.55363	13.964	.03022	5.2451	.14867
Stddev	.00029	.00083	.00111	.01652	.035	.00348	.0482	.00456
%RSD	23.833	109.36	220.06	2.9831	.25295	11.503	.91897	3.0694
#1	.00120	-.00015	-.00177	.53552	13.984	.02649	5.2796	.15345
#2	.00155	.00096	.00025	.55751	13.984	.03081	5.1900	.14436
#3	.00097	.00146	.00002	.56786	13.923	.03336	5.2656	.14820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	37.662	.00040	.00850	-.00169	-.00142	-.00431	2.0303
Stddev	.00018	.032	.00095	.00465	.00193	.00074	.00595	.1811
%RSD	48.707	.08378	236.37	54.758	113.87	52.228	138.13	8.9177
#1	-.00032	37.630	-.00037	.00955	.00051	-.00131	-.00031	2.1298
#2	-.00023	37.663	.00146	.00341	-.00254	-.00222	-.01115	2.1398
#3	-.00058	37.693	.00011	.01253	-.00305	-.00074	-.00147	1.8213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145201 Acquired: 7/14/2016 17:27:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.19323**	**-.00355**	**.00227**	**-.00101**	**.00228**	**-.00049**
Stddev	.00040	.00108	.00803	.00190	.00034	.00030	.00051
%RSD	178.28	.56019	226.41	83.579	33.741	13.054	103.10
#1	-.00056	.19199	-.01259	.00426	-.00062	.00248	-.00012
#2	.00022	.19371	-.00079	.00048	-.00120	.00242	-.00029
#3	-.00033	.19398	.00274	.00207	-.00122	.00194	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10205.**	**60612.**	**2728.5**
Stddev	63.	131.	10.8
%RSD	.61988	.21653	.39405
#1	10270.	60740.	2738.3
#2	10199.	60618.	2717.0
#3	10144.	60478.	2730.1

Approved: July 16, 2016

Sample Name: L1606145301 Acquired: 7/14/2016 17:31:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00058	.00322	-.00069	.00537	.22484	.00008	6.6978	.00032
Stddev	.00227	.00542	.00274	.00193	.00085	.00004	.0383	.00005
%RSD	388.96	168.56	395.65	35.963	.37640	55.762	.57208	15.233
#1	-.00220	.00345	-.00056	.00404	.22402	.00004	6.7176	.00026
#2	-.00156	-.00232	-.00349	.00449	.22571	.00013	6.6537	.00034
#3	.00201	.00851	.00197	.00759	.22479	.00007	6.7222	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00435	.00138	.00060	.64236	.26791	.01145	4.8324	.16966
Stddev	.00037	.00072	.00100	.03109	.07923	.00271	.0451	.00095
%RSD	8.4880	52.179	165.43	4.8404	29.575	23.716	.93313	.56120
#1	.00461	.00198	.00097	.65606	.35485	.01447	4.8500	.16991
#2	.00452	.00058	.00136	.60676	.24914	.01066	4.7812	.16861
#3	.00393	.00156	-.00052	.66424	.19975	.00921	4.8662	.17046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	18.925	.00290	.00700	-.00404	.00316	-.00054	2.7265
Stddev	.00036	.067	.00121	.00132	.00075	.00392	.00693	.2427
%RSD	210.70	.35330	41.717	18.892	18.594	124.06	1286.7	8.9023
#1	.00023	18.862	.00352	.00808	-.00390	.00671	.00466	2.8678
#2	-.00048	18.996	.00366	.00741	-.00486	-.00105	.00212	2.8655
#3	-.00027	18.918	.00150	.00552	-.00337	.00384	-.00840	2.4463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145301 Acquired: 7/14/2016 17:31:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.14108	.00220	.00173	-.00070	.00980	-.00018
Stddev	.00086	.00115	.00571	.00166	.00051	.00090	.00031
%RSD	209.46	.81581	259.11	96.265	72.545	9.1468	176.40
#1	.00053	.13981	-.00208	-.00006	-.00124	.01026	.00011
#2	-.00116	.14205	.00001	.00323	-.00063	.01037	-.00050
#3	-.00060	.14138	.00868	.00201	-.00023	.00877	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10380.	61157.	2743.8
Stddev	29.	287.	10.5
%RSD	.28166	.46966	.38261
#1	10408.	61450.	2754.7
#2	10383.	61146.	2733.8
#3	10349.	60876.	2742.8

Approved: July 16, 2016

Sample Name: L1606145303 Acquired: 7/14/2016 17:35:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00140	.00143	-.00068	.00417	.07438	.00004	2.3532	.00013
Stddev	.00175	.00081	.00150	.00106	.00141	.00001	.0153	.00012
%RSD	125.48	56.790	221.82	25.427	1.8930	32.576	.64798	86.036
#1	.00036	.00092	.00082	.00346	.07295	.00005	2.3590	.00010
#2	-.00315	.00101	-.00218	.00366	.07577	.00004	2.3359	.00004
#3	-.00140	.00237	-.00067	.00538	.07443	.00003	2.3647	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00049	-.00009	4.3182	.39251	.00316	1.6064	.04862
Stddev	.00009	.00064	.00038	.0717	.06543	.00252	.0525	.00196
%RSD	56.970	130.21	449.41	1.6603	16.670	79.833	3.2681	4.0258
#1	.00008	.00122	.00015	4.2588	.31697	.00357	1.5464	.05023
#2	.00025	.00023	.00012	4.2978	.43140	.00545	1.6442	.04918
#3	.00013	.00002	-.00053	4.3978	.42917	.00046	1.6284	.04644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	8.1561	-.00003	.01935	-.00053	.00045	-.00287	1.5654
Stddev	.00027	.0436	.00113	.00257	.00205	.00263	.00253	.1590
%RSD	60.693	.53438	4001.8	13.292	384.61	587.93	88.106	10.160
#1	-.00014	8.1083	.00037	.02046	.00171	-.00259	-.00578	1.6707
#2	-.00066	8.1936	-.00131	.01641	-.00099	.00195	-.00124	1.6431
#3	-.00054	8.1664	.00085	.02119	-.00232	.00198	-.00158	1.3825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145303 Acquired: 7/14/2016 17:35:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.05576	.00132	.00095	-.00080	.00097	-.00020
Stddev	.00019	.00007	.00099	.00123	.00025	.00009	.00038
%RSD	8441.9	.12613	74.750	129.63	30.934	9.2769	192.82
#1	.00002	.05579	.00122	.00162	-.00104	.00104	.00016
#2	.00018	.05582	.00039	-.00047	-.00081	.00100	-.00015
#3	-.00020	.05568	.00236	.00170	-.00055	.00087	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10420.	61586.	2754.2
Stddev	62.	99.	16.8
%RSD	.59231	.16067	.61111
#1	10402.	61670.	2772.8
#2	10489.	61612.	2740.0
#3	10370.	61477.	2749.9

Approved: July 16, 2016

Sample Name: L1606145303PS Acquired: 7/14/2016 17:39:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG574839-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19182	4.8542	.20166	.97722	.56716	.02332	7.3237	.02474
Stddev	.00144	.0176	.00582	.00288	.00534	.00004	.0727	.00046
%RSD	.74869	.36370	2.8845	.29476	.94240	.17190	.99321	1.8615
#1	.19049	4.8736	.20348	.98010	.56834	.02331	7.3484	.02491
#2	.19334	4.8498	.20635	.97722	.56132	.02336	7.2419	.02509
#3	.19164	4.8391	.19515	.97434	.57181	.02328	7.3809	.02422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09886	.23774	.24962	6.1274	24.956	.50068	6.4674	.29650
Stddev	.00235	.00153	.00553	.0473	.254	.00609	.0689	.00413
%RSD	2.3738	.64288	2.2154	.77188	1.0166	1.2172	1.0654	1.3942
#1	.09982	.23904	.25237	6.0887	24.901	.50219	6.5343	.29597
#2	.10058	.23813	.25323	6.1134	24.735	.49398	6.3967	.29265
#3	.09619	.23606	.24325	6.1802	25.233	.50588	6.4713	.30087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49332	32.606	.24944	4.9727	.24819	.59728	.20122	4.0583
Stddev	.01219	.285	.00632	.1027	.00616	.01427	.00813	.0661
%RSD	2.4706	.87396	2.5337	2.0643	2.4808	2.3891	4.0413	1.6283
#1	.49921	32.611	.25280	5.0073	.25228	.60333	.20611	4.0796
#2	.50145	32.319	.25338	5.0536	.25118	.60753	.20572	4.1112
#3	.47931	32.889	.24215	4.8573	.24110	.58098	.19184	3.9842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145303PS Acquired: 7/14/2016 17:39:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG574839-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49135**	**.55563**	**.50247**	**.24787**	**.46839**	**.50359**	**.00047**
Stddev	.01612	.00397	.00941	.00465	.00345	.01181	.00042
%RSD	3.2814	.71411	1.8721	1.8780	.73642	2.3450	89.600
#1	.49983	.55697	.50973	.25284	.47235	.50946	.00095
#2	.50146	.55117	.49185	.24718	.46684	.51131	.00024
#3	.47275	.55876	.50585	.24361	.46600	.49000	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10547.**	**62217.**	**2780.4**
Stddev	20.	275.	16.5
%RSD	.19171	.44179	.59288
#1	10569.	61901.	2761.5
#2	10529.	62348.	2791.7
#3	10544.	62402.	2788.1

Approved: July 16, 2016

Sample Name: L1606145303SDL Acquired: 7/14/2016 17:42:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG574839-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.00241**	**-.00022**	**.00589**	**.01269**	**-.00002**	**.43202**	**.00018**
Stddev	.00087	.01080	.00188	.00233	.00063	.00003	.01711	.00020
%RSD	164.29	448.10	870.33	39.615	4.9380	205.51	3.9597	110.60
#1	-.00117	-.00962	-.00089	.00325	.01207	-.00003	.43852	-.00005
#2	.00046	.01128	-.00166	.00673	.01267	.00002	.41262	.00028
#3	-.00088	.00557	.00191	.00768	.01332	-.00004	.44492	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**-.00018**	**-.00055**	**.80787**	**.10209**	**.00283**	**.30322**	**.01035**
Stddev	.00027	.00074	.00021	.01933	.10235	.00247	.10069	.00201
%RSD	240.05	405.60	37.754	2.3928	100.25	87.229	33.206	19.451
#1	-.00016	-.00056	-.00072	.79382	.21552	.00537	.22544	.00971
#2	-.00036	.00067	-.00060	.79988	.01665	.00269	.41694	.01261
#3	.00018	-.00065	-.00032	.82991	.07411	.00044	.26727	.00874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**1.6643**	**-.00043**	**.00696**	**-.00212**	**.00206**	**-.00048**	**.30019**
Stddev	.00034	.0062	.00012	.00390	.00280	.00362	.00328	.03265
%RSD	220.27	.37091	27.746	56.016	132.43	175.27	688.74	10.875
#1	.00053	1.6615	-.00057	.00448	.00063	.00176	.00320	.31997
#2	.00009	1.6601	-.00040	.01145	-.00200	.00582	-.00307	.31810
#3	-.00015	1.6714	-.00033	.00495	-.00498	-.00139	-.00156	.26251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145303SDL Acquired: 7/14/2016 17:42:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG574839-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.01058	.00180	.00054	-.00084	.00053	.00020
Stddev	.00034	.00017	.00415	.00030	.00049	.00009	.00029
%RSD	159.95	1.5849	230.92	54.577	58.644	16.185	144.56
#1	.00060	.01068	.00540	.00087	-.00053	.00059	-.00005
#2	-.00003	.01039	.00274	.00029	-.00141	.00043	.00013
#3	.00006	.01068	-.00274	.00048	-.00058	.00057	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10816.	64472.	2857.3
Stddev	34.	113.	23.0
%RSD	.31429	.17477	.80585
#1	10835.	64560.	2880.7
#2	10836.	64511.	2856.7
#3	10777.	64345.	2834.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:46:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40502	9.9100	.40602	.50773	1.0142	.04883	10.127	.05081
Stddev	.00179	.0087	.00832	.00346	.0072	.00011	.022	.00091
%RSD	.44213	.08795	2.0496	.68106	.70770	.22834	.21412	1.7963
#1	.40611	9.9040	.41249	.50432	1.0220	.04890	10.125	.05116
#2	.40599	9.9059	.40894	.50762	1.0127	.04889	10.106	.05149
#3	.40295	9.9200	.39663	.51124	1.0079	.04870	10.149	.04977
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20259	.48635	.50696	4.0372	50.812	1.0067	9.9299	.50970
Stddev	.00550	.00251	.01316	.0071	.152	.0121	.0711	.00191
%RSD	2.7137	.51616	2.5965	.17562	.29878	1.2068	.71606	.37479
#1	.20577	.48924	.51317	4.0405	50.964	1.0207	9.9709	.51188
#2	.20576	.48510	.51586	4.0420	50.660	1.0007	9.8478	.50833
#3	.19624	.48470	.49184	4.0291	50.813	.99873	9.9710	.50889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0131	51.135	.50510	10.253	.50913	1.2317	.40886	5.0306
Stddev	.0238	.293	.01238	.206	.00699	.0268	.00599	.0863
%RSD	2.3440	.57276	2.4510	2.0133	1.3726	2.1754	1.4662	1.7158
#1	1.0197	51.469	.51128	10.359	.51487	1.2454	.41393	5.0743
#2	1.0329	51.016	.51317	10.386	.51116	1.2488	.41040	5.0863
#3	.98678	50.921	.49085	10.015	.50135	1.2008	.40224	4.9311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:46:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0051**	**1.0186**	**1.0339**	**.50513**	**.96878**	**1.0109**	**.99576**
Stddev	.0319	.0037	.0062	.00274	.00225	.0249	.00174
%RSD	3.1781	.36659	.60141	.54163	.23200	2.4646	.17518
#1	1.0230	1.0225	1.0406	.50694	.96646	1.0242	.99776
#2	1.0241	1.0183	1.0329	.50648	.97095	1.0263	.99454
#3	.96823	1.0150	1.0283	.50199	.96894	.98215	.99498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10100.**	**59302.**	**2691.8**
Stddev	45.	55.	9.5
%RSD	.44177	.09333	.35199
#1	10083.	59240.	2681.1
#2	10067.	59319.	2694.8
#3	10151.	59346.	2699.3

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 17:50:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.01461**	**-.00102**	**.00459**	**-.00139**	**.00011**	**-.02346**	**.00033**
Stddev	.00171	.00505	.00154	.00097	.00097	.00004	.00830	.00007
%RSD	1002.2	34.589	151.28	21.210	69.809	35.441	35.394	20.973
#1	.00148	.01939	-.00203	.00450	-.00186	.00006	-.02434	.00025
#2	-.00005	.01511	.00075	.00366	-.00205	.00012	-.01475	.00036
#3	-.00194	.00932	-.00177	.00560	-.00028	.00014	-.03128	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.00088**	**.00014**	**-.01037**	**.05229**	**.00303**	**.00649**	**-.00251**
Stddev	.00026	.00059	.00037	.01130	.06064	.00035	.08122	.00211
%RSD	11636.	66.411	273.32	108.91	115.97	11.408	1252.1	84.082
#1	-.00006	.00060	.00015	-.00887	.11443	.00294	-.06118	-.00145
#2	-.00023	.00050	.00050	.00009	-.00673	.00341	-.01592	-.00114
#3	.00029	.00156	-.00024	-.02235	.04916	.00273	.09655	-.00494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.07541**	**-.00042**	**.00229**	**-.00376**	**.00363**	**-.00589**	**.00316**
Stddev	.00017	.02750	.00132	.00195	.00199	.00549	.00616	.00037
%RSD	120.49	36.468	311.43	85.036	52.994	151.24	104.60	11.789
#1	-.00031	.10259	.00108	.00448	-.00270	.00974	-.01259	.00291
#2	-.00014	.04759	-.00137	.00073	-.00606	-.00090	-.00457	.00359
#3	.00003	.07606	-.00099	.00167	-.00252	.00206	-.00049	.00298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 17:50:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.00020	.00140	.00232	-.00064	-.00016	.00030
Stddev	.00035	.00046	.00563	.00092	.00014	.00007	.00014
%RSD	50.186	231.25	402.89	39.402	22.523	42.896	46.416
#1	.00030	.00012	-.00354	.00224	-.00051	-.00017	.00015
#2	.00094	-.00022	.00753	.00328	-.00079	-.00021	.00032
#3	.00087	.00070	.00020	.00146	-.00061	-.00008	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10128.	60348.	2685.4
Stddev	14.	210.	10.1
%RSD	.13753	.34805	.37517
#1	10143.	60192.	2684.6
#2	10126.	60587.	2695.9
#3	10115.	60265.	2675.8

Approved: July 16, 2016

Sample Name: L1606164802 Acquired: 7/14/2016 17:54:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00107	-.00118	.00655	.01456	.00009	1.2811	.00025
Stddev	.00056	.00259	.00172	.00151	.00016	.00003	.0222	.00012
%RSD	448.55	242.47	146.10	22.963	1.1200	36.103	1.7355	47.185
#1	.00073	.00327	.00052	.00518	.01470	.00012	1.3066	.00024
#2	-.00037	.00172	-.00113	.00816	.01461	.00006	1.2657	.00037
#3	.00002	-.00178	-.00292	.00632	.01438	.00008	1.2711	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00020	-.00033	.79599	.06159	.00057	.79547	.21923
Stddev	.00023	.00059	.00093	.04095	.01674	.00049	.05959	.00435
%RSD	71.343	288.17	280.06	5.1450	27.176	85.471	7.4909	1.9828
#1	.00057	-.00047	-.00106	.83822	.04235	.00065	.83446	.22417
#2	.00029	.00058	.00071	.79330	.06962	.00005	.72687	.21751
#3	.00011	.00050	-.00065	.75645	.07279	.00101	.82506	.21600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	2.1534	.00045	.00319	-.00114	.00031	.00213	.56095
Stddev	.00019	.0089	.00053	.00484	.00194	.00337	.00101	.05192
%RSD	201.37	.41198	119.13	151.73	170.42	1105.6	47.506	9.2554
#1	.00011	2.1484	-.00008	.00080	-.00216	-.00243	.00302	.59583
#2	-.00026	2.1482	.00044	.00001	-.00236	-.00073	.00103	.58574
#3	-.00013	2.1636	.00098	.00876	.00110	.00407	.00235	.50129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606164802 Acquired: 7/14/2016 17:54:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.02537	.00344	.00157	-.00084	.00102	-.00008
Stddev	.00071	.00070	.00973	.00162	.00053	.00005	.00057
%RSD	900.65	2.7611	282.73	103.42	63.616	4.7393	689.73
#1	.00073	.02616	.01228	.00104	-.00144	.00103	.00007
#2	-.00034	.02510	-.00699	.00338	-.00066	.00107	.00040
#3	-.00063	.02484	.00504	.00028	-.00042	.00097	-.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10908.	62915.	2874.0
Stddev	95.	3111.	66.2
%RSD	.86918	4.9445	2.3047
#1	10860.	65247.	2797.6
#2	11017.	59382.	2908.8
#3	10847.	64114.	2915.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:58:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39562	9.6758	.40267	.49695	.98901	.04747	9.8552	.05005
Stddev	.00285	.0544	.00160	.00173	.00427	.00033	.0191	.00043
%RSD	.71914	.56262	.39733	.34797	.43210	.70136	.19402	.85562
#1	.39694	9.6547	.40451	.49628	.98408	.04739	9.8365	.05014
#2	.39236	9.6351	.40175	.49566	.99116	.04719	9.8545	.05043
#3	.39757	9.7377	.40174	.49892	.99178	.04784	9.8747	.04959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20001	.47608	.49898	3.9000	49.598	.98554	9.6768	.49758
Stddev	.00287	.00256	.00529	.0303	.170	.00642	.1448	.00373
%RSD	1.4340	.53725	1.0611	.77729	.34290	.65182	1.4968	.74932
#1	.20096	.47718	.50147	3.8692	49.525	.99150	9.5285	.49337
#2	.20229	.47316	.50256	3.9011	49.793	.98638	9.6841	.49889
#3	.19679	.47790	.49290	3.9298	49.477	.97874	9.8179	.50048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0015	49.870	.49802	10.094	.50206	1.2116	.40253	4.9544
Stddev	.0112	.101	.00589	.072	.00253	.0088	.00613	.0280
%RSD	1.1189	.20330	1.1824	.71091	.50384	.72549	1.5240	.56455
#1	.99906	49.760	.50088	10.118	.50131	1.2142	.40890	4.9581
#2	1.0138	49.960	.50194	10.150	.50488	1.2188	.40203	4.9804
#3	.99180	49.889	.49125	10.013	.49999	1.2018	.39666	4.9248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:58:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99351	.99395	1.0112	.49293	.94523	.99913	.97166
Stddev	.01326	.00261	.0055	.00292	.00397	.01069	.00132
%RSD	1.3343	.26284	.54753	.59227	.42009	1.0703	.13537
#1	.99937	.99094	1.0067	.49621	.94220	1.0038	.97036
#2	1.0028	.99561	1.0095	.49062	.94378	1.0067	.97162
#3	.97833	.99532	1.0174	.49197	.94973	.98689	.97299
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10226.	60388.	2744.5
Stddev	24.	191.	5.7
%RSD	.23139	.31643	.20748
#1	10246.	60540.	2749.8
#2	10233.	60450.	2738.5
#3	10200.	60173.	2745.2

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 18:01:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	.00678	-.00228	.00501	-.00142	.00008	.01111	.00027
Stddev	.00110	.00653	.00232	.00073	.00131	.00001	.02181	.00008
%RSD	213.70	96.397	101.76	14.642	92.322	14.031	196.38	29.668
#1	.00073	.01376	-.00227	.00583	-.00267	.00007	.03453	.00018
#2	-.00134	.00576	.00003	.00443	-.00006	.00009	-.00862	.00033
#3	-.00092	.00081	-.00461	.00475	-.00152	.00007	.00741	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00013	-.00058	-.00686	.06854	.00315	-.00069	-.00079
Stddev	.00024	.00088	.00090	.01367	.08042	.00242	.06290	.00207
%RSD	112.74	654.31	156.19	199.21	117.33	76.612	9161.5	261.19
#1	-.00002	-.00026	-.00043	-.02121	.16129	.00269	.07185	.00133
#2	-.00014	-.00048	-.00154	.00602	.02614	.00577	-.03363	-.00091
#3	-.00049	.00114	.00024	-.00540	.01820	.00100	-.04028	-.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.04678	.00021	.00195	-.00404	.00086	-.00164	.00299
Stddev	.00015	.00630	.00092	.00329	.00153	.00280	.00640	.00079
%RSD	545.43	13.474	449.63	168.51	37.895	325.08	389.54	26.502
#1	.00002	.04162	-.00086	-.00063	-.00249	.00038	-.00752	.00249
#2	.00010	.04492	.00081	.00083	-.00406	.00387	.00518	.00391
#3	-.00020	.05381	.00066	.00565	-.00555	-.00166	-.00258	.00258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 18:01:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**-.00003**	**.00151**	**-.00076**	**-.00078**	**.00004**	**-.00001**
Stddev	.00021	.00041	.00731	.00145	.00094	.00020	.00021
%RSD	37.609	1536.0	483.70	190.37	120.73	504.01	2002.3
#1	.00046	-.00049	-.00537	.00082	-.00111	-.00017	.00006
#2	.00041	.00028	.00072	-.00109	-.00151	.00022	.00016
#3	.00079	.00013	.00918	-.00201	.00028	.00006	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10145.**	**59750.**	**2665.9**
Stddev	97.	143.	14.4
%RSD	.95209	.23955	.54155
#1	10059.	59587.	2653.9
#2	10250.	59809.	2662.0
#3	10125.	59854.	2681.9

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 18:05:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00661	.15818	.00588	.08209	.00530	.00151	.34264	.00090
Stddev	.00063	.00248	.00364	.00104	.00007	.00005	.02019	.00012
%RSD	9.5020	1.5657	61.772	1.2626	1.3728	3.1340	5.8919	12.908
#1	.00705	.15838	.00312	.08241	.00538	.00153	.32094	.00102
#2	.00589	.15561	.01000	.08093	.00524	.00153	.34613	.00090
#3	.00689	.16055	.00454	.08292	.00527	.00145	.36086	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00367	.00490	.00403	.08175	.76390	.08624	.41759	.00875
Stddev	.00058	.00082	.00055	.02068	.12561	.00364	.03351	.00213
%RSD	15.754	16.716	13.702	25.293	16.443	4.2194	8.0239	24.320
#1	.00364	.00580	.00413	.06281	.72588	.08217	.38666	.00984
#2	.00427	.00473	.00453	.10381	.66170	.08919	.45318	.00630
#3	.00311	.00418	.00344	.07864	.90413	.08736	.41291	.01012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00735	.47173	.01492	.75012	.00788	.08177	.01238	.74304
Stddev	.00100	.01289	.00229	.06823	.00146	.00797	.00388	.06308
%RSD	13.630	2.7329	15.325	9.0955	18.545	9.7448	31.341	8.4891
#1	.00784	.48527	.01689	.78698	.00928	.08472	.01644	.77930
#2	.00800	.45961	.01546	.79199	.00799	.08785	.00871	.77961
#3	.00619	.47031	.01242	.67139	.00636	.07275	.01198	.67020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 18:05:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37878**	**.04087**	**.02946**	**.14136**	**.00680**	**.01608**	**.03982**
Stddev	.04351	.00087	.00456	.01351	.00124	.00164	.00044
%RSD	11.486	2.1186	15.486	9.5540	18.246	10.170	1.1116
#1	.40607	.04181	.02908	.14753	.00644	.01708	.03990
#2	.40165	.04012	.03421	.15068	.00577	.01696	.03935
#3	.32860	.04066	.02511	.12587	.00818	.01419	.04022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10386.**	**61504.**	**2737.8**
Stddev	25.	347.	19.0
%RSD	.24326	.56365	.69312
#1	10412.	61229.	2718.4
#2	10384.	61893.	2738.7
#3	10362.	61390.	2756.3

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 18:09:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01814	.38138	.01778	.19587	.01750	.00364	.94634	.00215
Stddev	.00115	.00823	.00148	.00171	.00055	.00006	.01361	.00018
%RSD	6.3286	2.1577	8.2993	.87082	3.1240	1.7155	1.4378	8.2170
#1	.01877	.37356	.01903	.19446	.01802	.00371	.96186	.00230
#2	.01681	.38062	.01816	.19777	.01755	.00362	.94074	.00219
#3	.01884	.38997	.01615	.19539	.01693	.00359	.93643	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00915	.00971	.00931	.19221	1.9824	.20140	.95430	.01812
Stddev	.00067	.00040	.00106	.01847	.0200	.00166	.06054	.00070
%RSD	7.3195	4.1424	11.330	9.6080	1.0098	.82529	6.3440	3.8451
#1	.00971	.00943	.01053	.21298	1.9826	.19950	.89514	.01740
#2	.00933	.00954	.00869	.18601	1.9623	.20259	.95162	.01818
#3	.00840	.01017	.00872	.17763	2.0023	.20210	1.0161	.01879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01790	1.0343	.03732	1.8220	.01595	.18992	.03523	1.8186
Stddev	.00140	.0313	.00326	.1189	.00386	.01072	.00683	.1110
%RSD	7.8195	3.0248	8.7224	6.5275	24.184	5.6425	19.385	6.1036
#1	.01889	1.0701	.03988	1.8975	.02003	.19420	.03873	1.8875
#2	.01851	1.0126	.03843	1.8835	.01545	.19783	.03960	1.8778
#3	.01630	1.0201	.03366	1.6849	.01237	.17773	.02736	1.6906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 18:09:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93307	.09982	.05820	.35162	.01804	.03870	.09683
Stddev	.08318	.00063	.00625	.02117	.00063	.00305	.00041
%RSD	8.9147	.63352	10.746	6.0213	3.5033	7.8874	.42610
#1	.98523	.10014	.05584	.36688	.01825	.04056	.09683
#2	.97683	.10022	.06529	.36052	.01733	.04037	.09724
#3	.83714	.09909	.05347	.32745	.01855	.03518	.09642
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10457.	62211.	2747.1
Stddev	3.	92.	23.7
%RSD	.03101	.14829	.86154
#1	10453.	62106.	2722.1
#2	10458.	62282.	2750.0
#3	10459.	62244.	2769.2

Approved: July 16, 2016

Sample Name: PBW AI Acquired: 7/14/2016 18:13:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.00879**	**.00152**	**.00453**	**-.00208**	**.00007**	**-.05132**	**.00006**
Stddev	.00014	.00344	.00151	.00213	.00083	.00004	.01516	.00019
%RSD	22.643	39.122	99.226	47.046	39.847	65.973	29.537	344.60
#1	-.00057	.00763	.00324	.00406	-.00151	.00002	-.05696	.00023
#2	-.00051	.00608	.00088	.00267	-.00170	.00010	-.06285	.00008
#3	-.00078	.01266	.00043	.00686	-.00303	.00009	-.03415	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**.00032**	**.00025**	**.01264**	**.00126**	**.00346**	**-.00775**	**-.00149**
Stddev	.00048	.00018	.00085	.05521	.05350	.00385	.07031	.00242
%RSD	166.92	55.845	340.06	436.66	4235.0	111.30	907.47	162.53
#1	-.00003	.00053	-.00051	.06876	.05652	-.00088	-.04806	-.00021
#2	.00001	.00023	.00117	-.04161	-.05028	.00480	-.04863	.00003
#3	-.00084	.00021	.00009	.01078	-.00245	.00645	.07344	-.00428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.08915**	**-.00066**	**.00357**	**-.00275**	**-.00083**	**-.00515**	**.00483**
Stddev	.00056	.00908	.00081	.01181	.00081	.00328	.00155	.00200
%RSD	528.28	10.181	122.62	330.92	29.335	397.63	30.110	41.359
#1	-.00070	.09434	-.00130	-.00067	-.00353	.00018	-.00338	.00255
#2	.00041	.07867	-.00092	.01692	-.00281	-.00449	-.00626	.00629
#3	-.00003	.09444	.00025	-.00554	-.00191	.00184	-.00581	.00565
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: PBW AI Acquired: 7/14/2016 18:13:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00091**	**-.00006**	**.00586**	**-.00048**	**-.00105**	**.00091**	**.00029**
Stddev	.00037	.00030	.00193	.00208	.00029	.00007	.00004
%RSD	41.022	537.12	32.852	431.90	27.420	7.3703	13.578
#1	.00127	.00029	.00808	.00166	-.00130	.00096	.00030
#2	.00092	-.00020	.00496	-.00250	-.00111	.00094	.00025
#3	.00052	-.00025	.00455	-.00060	-.00074	.00084	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10258.**	**61416.**	**2717.9**
Stddev	12.	59.	20.6
%RSD	.11587	.09588	.75849
#1	10258.	61470.	2741.7
#2	10246.	61353.	2707.0
#3	10270.	61423.	2705.1

Approved: July 16, 2016

Sample Name: LCSW Al Acquired: 7/14/2016 18:17:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19104**	**4.7905**	**.19568**	**.95041**	**.49866**	**.02300**	**5.0434**	**.02438**
Stddev	.00176	.0180	.00354	.00074	.00411	.00006	.0973	.00048
%RSD	.92174	.37537	1.8068	.07765	.82384	.25803	1.9292	1.9838
#1	.19162	4.8108	.19976	.95010	.50181	.02302	5.0832	.02443
#2	.18906	4.7766	.19386	.94989	.49401	.02305	4.9325	.02484
#3	.19243	4.7840	.19343	.95126	.50016	.02294	5.1145	.02388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09864**	**.23858**	**.24807**	**1.9994**	**24.569**	**.50440**	**4.9501**	**.24818**
Stddev	.00244	.00170	.00607	.0185	.319	.00217	.1531	.00408
%RSD	2.4704	.71445	2.4456	.92748	1.2993	.42994	3.0923	1.6422
#1	.10075	.23745	.25283	2.0209	24.833	.50297	4.9356	.25137
#2	.09919	.24054	.25013	1.9891	24.214	.50333	4.8048	.24358
#3	.09597	.23775	.24124	1.9883	24.659	.50689	5.1099	.24957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49892**	**24.891**	**.24838**	**4.7838**	**.24775**	**.59079**	**.18434**	**2.4501**
Stddev	.01134	.205	.00521	.0926	.00122	.01390	.00456	.0393
%RSD	2.2727	.82397	2.0958	1.9362	.49379	2.3526	2.4731	1.6031
#1	.50776	25.076	.25257	4.8577	.24858	.60075	.18939	2.4864
#2	.50286	24.671	.25001	4.8139	.24634	.59671	.18052	2.4555
#3	.48614	24.927	.24255	4.6799	.24832	.57491	.18311	2.4084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW Al Acquired: 7/14/2016 18:17:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49215**	**.50929**	**.50906**	**.24622**	**.47603**	**.48824**	**.00095**
Stddev	.01389	.00372	.00514	.00227	.00100	.01112	.00019
%RSD	2.8220	.73007	1.0099	.92293	.20963	2.2776	19.999
#1	.50251	.51043	.51234	.24794	.47669	.49690	.00106
#2	.49758	.50513	.51170	.24708	.47652	.49211	.00073
#3	.47637	.51230	.50313	.24365	.47488	.47570	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10206.**	**60624.**	**2723.1**
Stddev	36.	334.	13.2
%RSD	.35397	.55113	.48528
#1	10166.	60243.	2708.8
#2	10218.	60864.	2735.0
#3	10235.	60765.	2725.5

Approved: July 16, 2016

Sample Name: L1607022707 Acquired: 7/14/2016 18:20:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00085**	**.44765**	**-.00129**	**.00652**	**.02687**	**.00011**	**.49583**	**.00043**
Stddev	.00072	.01207	.00127	.00179	.00100	.00013	.02126	.00005
%RSD	85.434	2.6964	98.360	27.514	3.7109	111.96	4.2872	11.849
#1	-.00080	.45020	-.00009	.00680	.02736	.00020	.50379	.00044
#2	-.00159	.45825	-.00117	.00816	.02752	.00017	.51196	.00048
#3	-.00015	.43451	-.00261	.00460	.02572	-.00003	.47174	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**.00305**	**.00172**	**1.0939**	**.66243**	**.00575**	**.46543**	**.03027**
Stddev	.00030	.00112	.00051	.0179	.05846	.00200	.02786	.00030
%RSD	69.259	36.675	29.760	1.6398	8.8257	34.837	5.9860	.98112
#1	.00023	.00176	.00227	1.1093	.60799	.00635	.49539	.03055
#2	.00029	.00367	.00162	1.0984	.72422	.00739	.46061	.03031
#3	.00077	.00372	.00126	1.0742	.65507	.00352	.44030	.02996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**1.5449**	**.00146**	**.02068**	**-.00097**	**.00084**	**-.00605**	**3.3514**
Stddev	.00013	.0185	.00107	.00100	.00276	.00035	.00263	.2686
%RSD	206.18	1.1996	72.933	4.8507	283.85	41.515	43.406	8.0141
#1	-.00013	1.5620	.00242	.01953	-.00410	.00073	-.00302	3.5112
#2	.00008	1.5475	.00166	.02110	.00113	.00056	-.00747	3.5016
#3	-.00014	1.5252	.00031	.02140	.00005	.00123	-.00767	3.0413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607022707 Acquired: 7/14/2016 18:20:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.00537	.00269	.00188	-.00004	.00941	.00032
Stddev	.00069	.00003	.00161	.00073	.00054	.00087	.00022
%RSD	98.810	.52929	59.716	38.591	1212.3	9.2160	69.222
#1	.00088	.00534	.00455	.00154	-.00037	.00989	.00057
#2	.00126	.00539	.00170	.00271	.00058	.00994	.00019
#3	-.00007	.00539	.00183	.00139	-.00034	.00841	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10310.	61629.	2755.3
Stddev	28.	99.	9.0
%RSD	.27254	.16018	.32655
#1	10339.	61626.	2763.1
#2	10308.	61531.	2757.4
#3	10282.	61729.	2745.4

Approved: July 16, 2016

Sample Name: L1607022708S Acquired: 7/14/2016 18:24:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19550	5.6775	.19759	.95807	.53028	.02352	5.5452	.02480
Stddev	.00247	.0128	.00267	.00214	.00310	.00005	.0535	.00051
%RSD	1.2653	.22490	1.3535	.22297	.58483	.21530	.96417	2.0560
#1	.19287	5.6898	.19612	.95617	.53385	.02358	5.5776	.02526
#2	.19778	5.6643	.20067	.96039	.52831	.02348	5.4835	.02487
#3	.19584	5.6782	.19596	.95766	.52868	.02351	5.5745	.02425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10096	.24869	.25251	3.7351	25.213	.50997	5.4910	.29661
Stddev	.00248	.00054	.00601	.0203	.058	.00053	.0552	.00594
%RSD	2.4583	.21556	2.3818	.54270	.23011	.10314	1.0054	2.0032
#1	.10272	.24853	.25686	3.7148	25.279	.51004	5.5382	.30330
#2	.10205	.24825	.25501	3.7553	25.168	.51046	5.4303	.29194
#3	.09812	.24928	.24564	3.7351	25.193	.50942	5.5044	.29458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50600	26.600	.25456	4.8437	.24996	.59212	.18796	6.4818
Stddev	.01147	.115	.00592	.0868	.00654	.01404	.00372	.0986
%RSD	2.2666	.43283	2.3248	1.7915	2.6156	2.3705	1.9795	1.5211
#1	.51270	26.719	.25837	4.9007	.25677	.59936	.18900	6.5415
#2	.51253	26.489	.25758	4.8865	.24938	.60106	.19105	6.5359
#3	.49275	26.593	.24775	4.7438	.24373	.57594	.18383	6.3680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607022708S Acquired: 7/14/2016 18:24:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50104	.51889	.51211	.24722	.48519	.50869	.00149
Stddev	.01237	.00285	.00240	.00365	.00079	.01116	.00020
%RSD	2.4680	.55000	.46875	1.4783	.16216	2.1940	13.531
#1	.50851	.51856	.51363	.24768	.48556	.51566	.00133
#2	.50784	.51622	.51336	.25062	.48429	.51459	.00172
#3	.48677	.52190	.50934	.24335	.48573	.49582	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10113.	59854.	2703.6
Stddev	37.	73.	13.6
%RSD	.36251	.12212	.50210
#1	10078.	59790.	2688.2
#2	10111.	59838.	2713.9
#3	10151.	59933.	2708.8

Approved: July 16, 2016

Sample Name: L1607022709SD Acquired: 7/14/2016 18:28:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-10

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19031	5.5331	.19557	.94235	.51893	.02317	5.5136	.02447
Stddev	.00148	.0093	.00257	.00232	.00095	.00012	.0307	.00068
%RSD	.78030	.16840	1.3157	.24575	.18360	.53767	.55655	2.7921
#1	.18871	5.5267	.19686	.94107	.52003	.02307	5.5482	.02519
#2	.19164	5.5438	.19724	.94502	.51831	.02331	5.5029	.02438
#3	.19059	5.5288	.19261	.94095	.51845	.02314	5.4897	.02383
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09957	.24355	.24984	3.5313	24.841	.50022	5.3178	.28791
Stddev	.00223	.00097	.00549	.0119	.075	.00298	.0282	.00230
%RSD	2.2443	.39636	2.1976	.33715	.30359	.59648	.52947	.79975
#1	.10114	.24244	.25178	3.5449	24.766	.49854	5.3266	.28832
#2	.10057	.24422	.25409	3.5227	24.840	.49846	5.2863	.28543
#3	.09701	.24398	.24364	3.5264	24.917	.50367	5.3405	.28998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50008	26.068	.25175	4.7751	.24921	.58750	.18800	6.2927
Stddev	.00975	.059	.00651	.0681	.00363	.01283	.00574	.0823
%RSD	1.9500	.22512	2.5846	1.4258	1.4556	2.1832	3.0532	1.3070
#1	.50704	26.133	.25537	4.8219	.25014	.59571	.18845	6.3510
#2	.50427	26.052	.25565	4.8065	.25228	.59406	.19351	6.3284
#3	.48893	26.019	.24424	4.6970	.24521	.57272	.18205	6.1986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607022709SD Acquired: 7/14/2016 18:28:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-10

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49520**	**.50999**	**.50488**	**.24556**	**.47605**	**.50046**	**.00118**
Stddev	.01218	.00125	.00775	.00389	.00016	.00984	.00059
%RSD	2.4588	.24599	1.5355	1.5858	.03330	1.9654	49.846
#1	.50303	.50956	.51259	.25005	.47623	.50613	.00051
#2	.50140	.50900	.49708	.24332	.47593	.50614	.00143
#3	.48117	.51140	.50497	.24331	.47599	.48910	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10100.**	**60050.**	**2699.3**
Stddev	24.	19.	11.1
%RSD	.23650	.03132	.41284
#1	10073.	60070.	2694.1
#2	10119.	60034.	2712.1
#3	10109.	60044.	2691.7

Approved: July 16, 2016

Sample Name: L1607018402 Acquired: 7/14/2016 18:32:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00096	.02362	.00255	.03532	.19901	.00005	24.251
Stddev	.00099	.00866	.00098	.00289	.00346	.00005	.545
%RSD	103.09	36.651	38.471	8.1931	1.7390	96.051	2.2476
#1	-.00209	.01647	.00328	.03719	.19555	.00004	23.635
#2	-.00049	.02113	.00292	.03678	.19900	.00010	24.450
#3	-.00029	.03324	.00143	.03199	.20248	.00000	24.669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00277	.00380	.00127	.17941	.87256	.02255
Stddev	.00004	.00016	.00055	.00046	.00783	.05192	.00184
%RSD	11.603	5.9067	14.405	36.320	4.3634	5.9503	8.1737
#1	.00039	.00259	.00438	.00181	.17047	.84183	.02204
#2	.00036	.00283	.00370	.00103	.18507	.93251	.02459
#3	.00031	.00290	.00330	.00098	.18267	.84334	.02101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.002	.03185	.00082	F 360.94	.00612	1.5220	.00103
Stddev	.463	.00078	.00011	7.30	.00015	.0566	.00409
%RSD	1.2514	2.4476	13.777	2.0230	2.4941	3.7173	397.71
#1	36.573	.03105	.00082	352.63	.00601	1.5557	.00218
#2	36.941	.03191	.00093	363.85	.00605	1.5536	.00442
#3	37.493	.03261	.00070	366.33	.00629	1.4567	-.00352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607018402 Acquired: 7/14/2016 18:32:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**-.00133**	**14.872**	**-.00050**	**.47650**	**-.00531**	**-.00047**
Stddev	.00505	.00221	.487	.00041	.01088	.00634	.00130
%RSD	3357.9	165.92	3.2745	83.489	2.2841	119.38	279.32
#1	.00469	.00117	15.167	-.00097	.46420	-.01155	.00062
#2	-.00528	-.00214	15.139	-.00018	.48042	.00112	-.00191
#3	.00105	-.00301	14.310	-.00034	.48488	-.00549	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00063**	**.02239**	**.00003**
Stddev	.00029	.00102	.00024
%RSD	45.422	4.5751	876.89
#1	-.00090	.02303	-.00025
#2	-.00066	.02293	.00014
#3	-.00033	.02121	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9678.5**	**56910.**	**2587.2**
Stddev	11.7	54.	107.7
%RSD	.12109	.09453	4.1621
#1	9676.3	56972.	2462.9
#2	9691.2	56882.	2648.5
#3	9668.0	56875.	2650.2

Approved: July 16, 2016

Sample Name: L1607018402PS Acquired: 7/14/2016 18:35:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576077-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19966**	**5.1303**	**.21107**	**1.0392**	**.70423**	**.02484**	**27.658**
Stddev	.00103	.0270	.00116	.0068	.00037	.00013	.071
%RSD	.51770	.52706	.55086	.65250	.05199	.50579	.25640
#1	.20052	5.1609	.21112	1.0468	.70428	.02499	27.583
#2	.19851	5.1205	.21221	1.0338	.70456	.02476	27.724
#3	.19994	5.1095	.20988	1.0369	.70384	.02478	27.667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02544**	**.10331**	**.25359**	**.25401**	**2.2078**	**27.041**	**.54992**
Stddev	.00042	.00154	.00170	.00434	.0127	.142	.00036
%RSD	1.6586	1.4913	.67171	1.7082	.57425	.52529	.06534
#1	.02559	.10430	.25555	.25535	2.2083	27.201	.54998
#2	.02577	.10409	.25271	.25753	2.1949	26.992	.55025
#3	.02497	.10154	.25250	.24916	2.2202	26.930	.54953
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**39.054**	**.28985**	**.52264**	F **357.98**	**.25769**	**6.5377**	**.25096**
Stddev	.110	.00189	.00940	.85	.00425	.0792	.00291
%RSD	.28249	.65218	1.7983	.23622	1.6483	1.2113	1.1605
#1	39.058	.29203	.52827	358.46	.26050	6.5869	.25431
#2	39.162	.28867	.52785	358.47	.25977	6.5799	.24959
#3	38.942	.28884	.51179	357.00	.25281	6.4464	.24899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607018402PS Acquired: 7/14/2016 18:35:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576077-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.61751	.19988	16.125	.51681	.94395	.52659	.24609
Stddev	.01270	.00327	.190	.01133	.00264	.00971	.00234
%RSD	2.0563	1.6344	1.1808	2.1917	.27969	1.8446	.94944
#1	.62911	.20140	16.255	.52368	.94544	.53340	.24874
#2	.61946	.20211	16.213	.52302	.94550	.53090	.24435
#3	.60394	.19613	15.906	.50374	.94090	.51547	.24516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50633	.52597	.00131
Stddev	.00231	.00878	.00047
%RSD	.45531	1.6697	36.282
#1	.50899	.53105	.00076
#2	.50511	.53102	.00155
#3	.50489	.51583	.00162
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9652.2	56294.	2604.4
Stddev	17.8	154.	10.5
%RSD	.18482	.27426	.40136
#1	9632.2	56116.	2604.2
#2	9657.7	56399.	2594.0
#3	9666.6	56365.	2614.9

Approved: July 16, 2016

Sample Name: L1607018402SDL Acquired: 7/14/2016 18:39:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576077-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00715	-.00194	.01023	.04028	.00010	5.0005	.00002
Stddev	.00075	.00272	.00278	.00286	.00134	.00008	.0564	.00022
%RSD	257.81	38.019	142.88	27.968	3.3287	82.933	1.1280	1208.1
#1	-.00078	.00590	.00096	.01160	.04114	.00000	4.9626	-.00011
#2	.00057	.00528	-.00222	.00694	.03873	.00014	4.9735	.00027
#3	-.00066	.01026	-.00457	.01215	.04097	.00014	5.0653	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00087	.00079	.03530	.13346	.00710	7.7658	.00338
Stddev	.00031	.00074	.00022	.02061	.07975	.00570	.1819	.00027
%RSD	101.35	84.995	28.131	58.380	59.755	80.277	2.3426	8.0358
#1	.00060	.00170	.00094	.05085	.13427	.00426	7.5591	.00352
#2	.00034	.00030	.00053	.04313	.21280	.00338	7.8367	.00306
#3	-.00002	.00061	.00088	.01192	.05331	.01367	7.9016	.00354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	74.357	.00048	.30477	-.00365	.00135	-.00429	2.9898
Stddev	.00023	.284	.00134	.02615	.00065	.00092	.00419	.2514
%RSD	2134.0	.38197	278.93	8.5797	17.813	68.086	97.800	8.4087
#1	-.00027	74.136	.00161	.31554	-.00334	.00061	.00048	3.1349
#2	.00017	74.258	-.00100	.32381	-.00321	.00238	-.00739	3.1349
#3	.00007	74.677	.00082	.27496	-.00439	.00105	-.00594	2.6995
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607018402SDL Acquired: 7/14/2016 18:39:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576077-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.09696**	**.00086**	**-.00074**	**-.00046**	**.00502**	**.00042**
Stddev	.00017	.00107	.00140	.00310	.00014	.00067	.00005
%RSD	140.36	1.0986	163.38	419.92	30.741	13.361	11.144
#1	-.00025	.09575	.00117	-.00029	-.00030	.00535	.00045
#2	-.00018	.09740	-.00067	-.00404	-.00051	.00546	.00043
#3	.00007	.09774	.00207	.00211	-.00057	.00424	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10094.**	**59213.**	**2652.8**
Stddev	33.	128.	10.1
%RSD	.32887	.21662	.38137
#1	10059.	59337.	2641.8
#2	10098.	59081.	2661.7
#3	10125.	59221.	2654.8

Approved: July 16, 2016

Sample Name: L1607018402SDL Acquired: 7/14/2016 18:43:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576077-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00140**	**.00543**	**.00160**	**.00313**	**.00649**	**.00003**	**.94357**	**.00015**
Stddev	.00009	.00303	.00227	.00210	.00074	.00005	.05096	.00021
%RSD	6.5955	55.716	141.55	66.973	11.372	200.58	5.4009	145.05
#1	-.00149	.00340	.00188	.00233	.00703	.00006	.91001	-.00010
#2	-.00140	.00398	-.00079	.00156	.00565	-.00004	1.0022	.00023
#3	-.00131	.00891	.00372	.00552	.00680	.00006	.91850	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00003**	**-.00096**	**.00824**	**.02174**	**.00561**	**1.5096**	**-.00106**
Stddev	.00028	.00100	.00100	.02391	.04821	.00145	.0163	.00168
%RSD	147.11	3663.4	103.80	290.09	221.75	25.749	1.0825	158.93
#1	-.00002	-.00106	-.00211	.02676	.07372	.00614	1.5270	.00041
#2	.00051	.00093	-.00028	.01671	.01303	.00398	1.5072	-.00069
#3	.00009	.00005	-.00049	-.01875	-.02152	.00672	1.4946	-.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**14.665**	**-.00012**	**.05905**	**-.00143**	**.00092**	**-.00253**	**.57889**
Stddev	.00017	.120	.00046	.00472	.00244	.00347	.00611	.04408
%RSD	343.68	.81508	394.89	7.9847	170.66	377.63	241.97	7.6140
#1	-.00024	14.553	.00031	.06372	-.00143	-.00031	-.00223	.60370
#2	-.00001	14.653	-.00060	.05914	-.00387	-.00177	-.00879	.60497
#3	.00010	14.791	-.00005	.05429	.00101	.00483	.00343	.52800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607018402SDL Acquired: 7/14/2016 18:43:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576077-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.01896	.00412	.00188	-.00064	.00136	.00011
Stddev	.00066	.00030	.00868	.00401	.00066	.00014	.00041
%RSD	336.82	1.5563	210.77	214.04	103.73	10.271	381.79
#1	.00006	.01863	.01370	.00326	-.00134	.00138	.00017
#2	-.00039	.01918	-.00321	-.00265	-.00056	.00149	.00049
#3	.00091	.01907	.00187	.00501	-.00002	.00122	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10529.	62154.	2747.0
Stddev	53.	186.	14.9
%RSD	.49874	.29862	.54105
#1	10578.	62228.	2754.9
#2	10534.	62290.	2756.3
#3	10474.	61942.	2729.9

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 18:47:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41638	10.254	.41978	.51594	1.0385	.05069	10.349	.05213
Stddev	.00126	.022	.00768	.00251	.0085	.00028	.105	.00103
%RSD	.30159	.21084	1.8283	.48644	.81834	.55861	1.0116	1.9802
#1	.41668	10.268	.42604	.51793	1.0463	.05092	10.374	.05297
#2	.41745	10.265	.42210	.51312	1.0294	.05077	10.234	.05245
#3	.41500	10.229	.41122	.51676	1.0400	.05037	10.439	.05098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20949	.50819	.51993	4.1519	52.009	1.0219	10.281	.52578
Stddev	.00439	.00215	.00982	.0075	.375	.0034	.074	.00569
%RSD	2.0955	.42317	1.8889	.18001	.72159	.33698	.72375	1.0813
#1	.21271	.51067	.52603	4.1560	52.282	1.0222	10.363	.53229
#2	.21128	.50680	.52516	4.1565	51.581	1.0183	10.217	.52326
#3	.20449	.50710	.50860	4.1433	52.163	1.0251	10.264	.52179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0346	51.849	.51838	10.436	.51803	1.2533	.41942	5.1018
Stddev	.0236	.297	.01336	.190	.00759	.0263	.00928	.1121
%RSD	2.2840	.57216	2.5763	1.8175	1.4643	2.1011	2.2132	2.1966
#1	1.0500	52.103	.52725	10.558	.52082	1.2709	.42296	5.1667
#2	1.0463	51.523	.52487	10.533	.52382	1.2660	.42641	5.1662
#3	1.0074	51.920	.50302	10.218	.50945	1.2230	.40889	4.9724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 18:47:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0427**	**1.0416**	**1.0509**	**.52049**	**1.0117**	**1.0311**	**1.0331**
Stddev	.0278	.0070	.0106	.00098	.0040	.0216	.0077
%RSD	2.6644	.67006	1.0035	.18830	.39046	2.0897	.74777
#1	1.0595	1.0470	1.0594	.52161	1.0151	1.0452	1.0407
#2	1.0579	1.0337	1.0391	.52008	1.0126	1.0418	1.0253
#3	1.0106	1.0440	1.0542	.51979	1.0073	1.0063	1.0334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9841.2**	**57511.**	**2600.8**
Stddev	16.9	190.	11.7
%RSD	.17141	.33075	.44824
#1	9829.6	57365.	2588.5
#2	9860.6	57441.	2611.7
#3	9833.5	57726.	2602.1

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 18:50:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00167	.00676	-.00195	.00644	.00004	.00009	.00370	.00022
Stddev	.00139	.00289	.00161	.00164	.00084	.00004	.00683	.00024
%RSD	83.555	42.711	82.319	25.488	2374.5	44.218	184.55	108.45
#1	-.00029	.00343	-.00200	.00820	-.00028	.00006	.00688	-.00002
#2	-.00164	.00826	-.00032	.00615	-.00060	.00014	.00836	.00023
#3	-.00307	.00860	-.00353	.00496	.00098	.00008	-.00414	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.00036	-.00018	.01095	.01489	.00303	-.01140	-.00260
Stddev	.00043	.00056	.00066	.00899	.06241	.00247	.02510	.00232
%RSD	359.60	156.11	361.18	82.112	419.23	81.535	220.23	89.258
#1	-.00055	-.00029	-.00070	.01645	.06255	.00050	-.01686	-.00478
#2	.00032	.00067	.00056	.01581	-.05575	.00544	-.03332	-.00284
#3	-.00014	.00070	-.00040	.00057	.03787	.00315	.01599	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.07094	-.00117	-.00036	-.00305	.00141	-.00064	.00259
Stddev	.00014	.01016	.00068	.00480	.00368	.00420	.00347	.00230
%RSD	383.44	14.327	57.747	1316.6	120.71	296.66	542.77	88.843
#1	.00007	.06763	-.00048	-.00584	-.00234	-.00306	-.00406	.00307
#2	-.00012	.06285	-.00120	.00311	.00022	.00526	.00288	.00462
#3	.00016	.08235	-.00183	.00164	-.00704	.00204	-.00073	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 18:50:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	-.00003	-.00039	.00070	-.00021	-.00002	-.00018
Stddev	.00044	.00025	.00097	.00147	.00031	.00016	.00044
%RSD	58.080	923.19	247.76	210.95	146.50	830.62	242.17
#1	.00031	-.00031	.00048	.00237	.00010	-.00020	-.00030
#2	.00078	.00016	-.00022	-.00040	-.00022	.00006	.00031
#3	.00120	.00007	-.00144	.00013	-.00053	.00008	-.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9960.5	59240.	2614.8
Stddev	32.3	55.	20.4
%RSD	.32467	.09206	.78153
#1	9962.2	59210.	2592.4
#2	9992.0	59207.	2619.6
#3	9927.4	59303.	2632.3

Approved: July 16, 2016

Sample Name: L1607020901 Acquired: 7/14/2016 18:54:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.01289	-.00008	.01132	-.00011	.00006	15.887	.00010
Stddev	.00061	.00507	.00419	.00134	.00112	.00005	.038	.00016
%RSD	75.574	39.360	5498.5	11.870	1050.0	89.763	.23710	170.78
#1	-.00121	.01489	-.00478	.01104	-.00135	-.00000	15.907	-.00009
#2	-.00010	.01665	.00327	.01013	.00082	.00010	15.844	.00022
#3	-.00111	.00712	.00128	.01277	.00021	.00008	15.911	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00143	.00062	.06158	.27050	.00535	4.9301	-.00063
Stddev	.00015	.00030	.00045	.01176	.04396	.00311	.0764	.00327
%RSD	197.54	20.643	73.127	19.097	16.251	58.162	1.5486	521.04
#1	.00020	.00135	.00016	.07304	.22058	.00479	4.9545	.00309
#2	.00011	.00175	.00106	.04954	.28751	.00256	4.9912	-.00191
#3	-.00009	.00118	.00064	.06216	.30342	.00871	4.8445	-.00306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	5.1049	-.00085	.00824	-.00229	.00118	-.00350	2.6733
Stddev	.00016	.0091	.00068	.00438	.00177	.00214	.00437	.1843
%RSD	109.72	.17875	80.610	53.127	77.156	181.34	124.95	6.8934
#1	.00026	5.1147	-.00027	.00590	-.00092	.00338	-.00088	2.7755
#2	-.00004	5.0966	-.00160	.00553	-.00166	.00104	-.00854	2.7839
#3	.00021	5.1035	-.00067	.01330	-.00429	-.00089	-.00107	2.4606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020901 Acquired: 7/14/2016 18:54:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.02291	.00516	.00000	-.00052	.00227	.00035
Stddev	.00018	.00027	.00416	.00340	.00031	.00038	.00014
%RSD	311.43	1.1637	80.747	157240.	59.424	16.598	39.621
#1	.00016	.02284	.00878	.00348	-.00076	.00243	.00025
#2	-.00015	.02268	.00061	-.00331	-.00017	.00254	.00051
#3	.00017	.02320	.00608	-.00016	-.00064	.00184	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10038.	59832.	2662.8
Stddev	31.	235.	16.0
%RSD	.30642	.39356	.60015
#1	10063.	59590.	2668.9
#2	10047.	60060.	2674.7
#3	10004.	59845.	2644.6

Approved: July 16, 2016

Sample Name: L1607020902 Acquired: 7/14/2016 18:58:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.01216	-.00047	.02119	.02820	.00007	32.607	.00042
Stddev	.00051	.00651	.00111	.00148	.00099	.00005	.301	.00020
%RSD	73.537	53.536	237.35	6.9864	3.5267	78.355	.92439	47.888
#1	-.00123	.01832	.00061	.01970	.02932	.00006	32.779	.00063
#2	-.00064	.01280	-.00041	.02266	.02743	.00012	32.783	.00023
#3	-.00021	.00535	-.00161	.02122	.02784	.00002	32.259	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00103	.00213	.66892	.63359	.00932	12.097	.01620
Stddev	.00039	.00050	.00044	.00711	.11312	.00262	.246	.00021
%RSD	111.14	48.651	20.526	1.0622	17.855	28.065	2.0350	1.3010
#1	-.00003	.00052	.00257	.67088	.62142	.01219	12.370	.01634
#2	.00034	.00152	.00214	.67484	.52704	.00708	12.029	.01596
#3	.00075	.00106	.00169	.66104	.75230	.00868	11.892	.01629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	3.4436	-.00055	.01043	-.00360	.00025	-.00266	2.5148
Stddev	.00033	.0220	.00126	.00180	.00441	.00400	.00255	.1435
%RSD	219.40	.63881	229.90	17.243	122.33	1603.0	95.659	5.7075
#1	-.00020	3.4689	-.00080	.01205	-.00066	.00401	-.00383	2.5930
#2	.00021	3.4329	-.00167	.01073	-.00148	.00070	-.00443	2.6023
#3	.00045	3.4291	.00082	.00849	-.00867	-.00396	.00026	2.3492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020902 Acquired: 7/14/2016 18:58:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.08855	-.00634	.00318	-.00030	.00627	.00018
Stddev	.00023	.00068	.00566	.00128	.00034	.00057	.00065
%RSD	326.84	.76311	89.215	40.278	116.08	9.0130	359.84
#1	-.00015	.08832	-.00776	.00445	-.00045	.00665	.00049
#2	.00031	.08931	-.01116	.00320	-.00053	.00655	-.00056
#3	.00005	.08801	-.00011	.00189	.00010	.00562	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10036.	59631.	2653.9
Stddev	11.	142.	24.0
%RSD	.10510	.23880	.90462
#1	10047.	59476.	2646.1
#2	10033.	59757.	2634.8
#3	10027.	59660.	2680.9

Approved: July 16, 2016

Sample Name: L1607020903 Acquired: 7/14/2016 19:02:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	.00794	-.00310	.00634	.00944	.00007	5.9632	.00040
Stddev	.00187	.00442	.00091	.00237	.00090	.00006	.0182	.00023
%RSD	369.92	55.671	29.413	37.368	9.5825	81.526	.30477	58.908
#1	-.00249	.01084	-.00258	.00785	.01026	.00002	5.9449	.00020
#2	-.00024	.01014	-.00415	.00361	.00959	.00013	5.9636	.00065
#3	.00122	.00285	-.00256	.00757	.00847	.00005	5.9813	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	-.00009	-.00035	.73554	.16610	.00403	2.3587	.01060
Stddev	.00012	.00075	.00041	.04316	.06942	.00142	.0945	.00064
%RSD	32.323	861.48	118.18	5.8675	41.791	35.205	4.0076	6.0197
#1	-.00040	-.00083	-.00078	.75831	.24378	.00437	2.4670	.01108
#2	-.00023	.00067	-.00029	.76255	.14438	.00525	2.2932	.00987
#3	-.00045	-.00010	.00003	.68577	.11014	.00247	2.3157	.01084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	1.4958	-.00063	.05359	-.00279	-.00031	-.00595	2.7102
Stddev	.00047	.0351	.00028	.00738	.00305	.00390	.00297	.1656
%RSD	396.92	2.3487	44.565	13.764	109.39	1252.1	49.837	6.1117
#1	.00048	1.4996	-.00093	.05673	-.00238	.00247	-.00581	2.8017
#2	-.00041	1.5288	-.00039	.05888	.00004	.00136	-.00899	2.8100
#3	.00029	1.4589	-.00056	.04517	-.00602	-.00477	-.00306	2.5190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020903 Acquired: 7/14/2016 19:02:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.01420	.00691	-.00133	-.00035	.06076	.00024
Stddev	.00093	.00041	.00626	.00159	.00062	.00483	.00043
%RSD	728.33	2.9028	90.536	119.77	177.64	7.9438	180.72
#1	.00111	.01462	.01381	-.00053	.00030	.06370	.00060
#2	-.00000	.01380	.00162	-.00317	-.00041	.06339	-.00024
#3	-.00073	.01416	.00530	-.00030	-.00093	.05519	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10088.	59706.	2640.5
Stddev	26.	142.	24.3
%RSD	.25598	.23773	.92108
#1	10109.	59792.	2625.9
#2	10095.	59542.	2627.1
#3	10059.	59784.	2668.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 19:06:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41635**	**10.260**	**.41810**	**.51243**	**1.0390**	**.05072**	**10.353**	**.05196**
Stddev	.00315	.007	.00346	.00142	.0062	.00003	.076	.00104
%RSD	.75659	.07078	.82749	.27758	.59143	.06326	.73188	2.0087
#1	.41876	10.259	.42167	.51227	1.0335	.05068	10.323	.05267
#2	.41751	10.253	.41787	.51392	1.0457	.05073	10.439	.05246
#3	.41279	10.268	.41476	.51109	1.0379	.05074	10.297	.05076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20944**	**.50920**	**.52058**	**4.1813**	**52.115**	**1.0251**	**10.452**	**.52381**
Stddev	.00455	.00086	.01219	.0095	.238	.0021	.023	.00252
%RSD	2.1704	.16959	2.3412	.22607	.45764	.19971	.21735	.48180
#1	.21227	.50910	.52808	4.1824	51.965	1.0251	10.432	.52672
#2	.21185	.51011	.52713	4.1901	52.390	1.0272	10.477	.52253
#3	.20419	.50839	.50651	4.1713	51.990	1.0231	10.448	.52220
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0325**	**51.919**	**.51533**	**10.370**	**.51802**	**1.2377**	**.41236**	**5.0236**
Stddev	.0226	.085	.01059	.182	.00315	.0175	.00144	.0391
%RSD	2.1849	.16307	2.0554	1.7534	.60801	1.4170	.34925	.77846
#1	1.0461	51.902	.52228	10.484	.52054	1.2477	.41312	5.0518
#2	1.0450	52.012	.52057	10.466	.51904	1.2480	.41327	5.0400
#3	1.0065	51.845	.50314	10.160	.51449	1.2175	.41070	4.9789
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 19:06:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0418**	**1.0442**	**1.0543**	**.51930**	**1.0144**	**1.0280**	**1.0441**
Stddev	.0286	.0027	.0078	.00139	.0008	.0225	.0049
%RSD	2.7497	.26209	.73977	.26693	.08225	2.1915	.46761
#1	1.0571	1.0437	1.0579	.52087	1.0137	1.0429	1.0428
#2	1.0595	1.0472	1.0597	.51825	1.0141	1.0389	1.0495
#3	1.0087	1.0418	1.0454	.51878	1.0153	1.0020	1.0399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9858.6**	**57806.**	**2584.0**
Stddev	11.9	62.	9.2
%RSD	.12063	.10774	.35782
#1	9845.5	57819.	2585.6
#2	9861.5	57862.	2574.0
#3	9868.7	57739.	2592.3

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 19:10:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00153**	**.00382**	**-.00077**	**.00388**	**-.00025**	**.00005**	**-.03073**	**.00023**
Stddev	.00025	.00359	.00182	.00062	.00062	.00006	.03644	.00016
%RSD	16.568	93.829	235.39	15.935	243.77	120.20	118.59	67.680
#1	-.00155	.00791	.00028	.00317	.00033	.00009	.01034	.00028
#2	-.00127	.00120	.00028	.00424	-.00089	-.00002	-.04334	.00006
#3	-.00178	.00236	-.00288	.00424	-.00020	.00008	-.05918	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00038**	**.00071**	**-.00714**	**.02700**	**.00282**	**-.06020**	**-.00177**
Stddev	.00032	.00074	.00095	.03283	.11873	.00083	.07532	.00126
%RSD	118.86	192.13	135.03	459.75	439.76	29.490	125.12	71.634
#1	-.00002	-.00041	.00179	.02898	.03190	.00235	-.14715	-.00052
#2	.00022	.00106	.00002	-.01523	.14321	.00233	-.01791	-.00173
#3	.00061	.00050	.00030	-.03517	-.09411	.00378	-.01553	-.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.03302**	**-.00115**	**.00236**	**-.00206**	**.00141**	**-.00562**	**.00232**
Stddev	.00019	.02288	.00052	.00332	.00348	.00122	.00284	.00258
%RSD	123.92	69.297	45.014	140.86	169.24	86.799	50.599	111.09
#1	-.00003	.00727	-.00151	-.00099	.00155	.00170	-.00888	.00507
#2	-.00037	.05101	-.00139	.00564	-.00232	.00246	-.00432	-.00005
#3	-.00006	.04078	-.00056	.00242	-.00540	.00007	-.00366	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 19:10:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00000	.00613	.00326	-.00044	-.00005	.00002
Stddev	.00045	.00045	.01114	.00219	.00049	.00011	.00035
%RSD	105.08	10774.	181.55	67.120	110.69	208.77	2220.7
#1	.00044	-.00049	-.00230	.00289	-.00045	-.00016	-.00000
#2	.00087	.00040	.01876	.00128	-.00092	-.00006	-.00033
#3	-.00003	.00010	.00195	.00561	.00005	.00006	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9953.5	58945.	2595.6
Stddev	51.4	240.	18.6
%RSD	.51641	.40739	.71674
#1	9979.0	58693.	2577.4
#2	9987.1	59171.	2614.6
#3	9894.3	58971.	2594.9

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 19:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00800	.17612	.00849	.08342	.00806	.00162	.33310	.00098
Stddev	.00083	.00563	.00269	.00192	.00011	.00004	.01634	.00006
%RSD	10.386	3.1972	31.669	2.3031	1.4159	2.7325	4.9057	6.2708
#1	.00883	.17242	.00564	.08135	.00794	.00157	.35074	.00097
#2	.00716	.17335	.01097	.08375	.00808	.00163	.31847	.00105
#3	.00801	.18260	.00886	.08515	.00816	.00165	.33009	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00406	.00481	.00444	.09999	.86862	.08636	.36131	.00900
Stddev	.00029	.00068	.00105	.02363	.09726	.00139	.08280	.00088
%RSD	7.2296	14.083	23.677	23.628	11.197	1.6149	22.917	9.8065
#1	.00439	.00553	.00565	.12114	.77345	.08524	.26581	.00907
#2	.00399	.00472	.00380	.10434	.86455	.08592	.40508	.00808
#3	.00381	.00418	.00386	.07449	.96784	.08793	.41304	.00984
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00755	.45754	.01546	.77270	.00756	.08063	.01474	.76140
Stddev	.00060	.00559	.00159	.06446	.00289	.00763	.00263	.05542
%RSD	7.8899	1.2226	10.315	8.3425	38.276	9.4661	17.870	7.2783
#1	.00778	.45332	.01635	.81101	.00674	.08464	.01366	.79227
#2	.00799	.46389	.01641	.80881	.01077	.08541	.01774	.79451
#3	.00687	.45542	.01362	.69827	.00516	.07182	.01282	.69742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 19:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40268	.04234	.03203	.15012	.00788	.01674	.04181
Stddev	.04075	.00054	.00561	.00954	.00065	.00162	.00047
%RSD	10.119	1.2716	17.503	6.3569	8.2625	9.6677	1.1194
#1	.42669	.04270	.03198	.15484	.00741	.01770	.04168
#2	.42572	.04261	.03766	.15638	.00862	.01766	.04142
#3	.35563	.04172	.02645	.13914	.00761	.01487	.04233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9974.4	58987.	2607.1
Stddev	23.8	75.	14.6
%RSD	.23850	.12758	.55932
#1	9976.4	59021.	2591.6
#2	9997.1	58901.	2620.5
#3	9949.6	59039.	2609.3

Approved: July 16, 2016

Sample Name: PBW 04 Acquired: 7/14/2016 19:18:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00166**	**.00137**	**-.00193**	**.00328**	**-.00020**	**.00009**	**-.04077**
Stddev	.00276	.00492	.00188	.00187	.00115	.00005	.02639
%RSD	166.27	359.86	97.386	57.002	579.40	51.469	64.718
#1	.00101	.00194	-.00400	.00470	-.00057	.00004	-.07074
#2	-.00450	-.00381	-.00145	.00396	-.00111	.00011	-.03055
#3	-.00149	.00598	-.00034	.00116	.00109	.00013	-.02103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**-.00001**	**.00063**	**.00001**	F **-.03223**	**.08562**	**.00562**
Stddev	.00016	.00016	.00071	.00052	.01993	.07847	.00408
%RSD	51.178	2504.5	112.79	7474.6	61.841	91.648	72.473
#1	.00032	.00017	.00110	-.00058	-.01849	-.00012	.00332
#2	.00047	-.00003	-.00019	.00041	-.02311	.10310	.00323
#3	.00015	-.00016	.00097	.00019	-.05509	.15387	.01033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00983**	**-.00163**	**-.00003**	**.05471**	**-.00078**	**-.00110**	**-.00143**
Stddev	.04129	.00109	.00015	.00652	.00032	.00203	.00134
%RSD	420.09	66.973	462.08	11.922	40.850	184.52	93.894
#1	.05017	-.00044	.00008	.06166	-.00113	-.00244	-.00104
#2	-.03234	-.00187	.00003	.05374	-.00051	-.00209	-.00293
#3	.01166	-.00259	-.00021	.04872	-.00069	.00123	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 16, 2016

Sample Name: PBW 04 Acquired: 7/14/2016 19:18:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00210	-.00594	.00449	.00016	.00031	-.00044	.00095
Stddev	.00128	.00566	.00073	.00102	.00031	.00559	.00199
%RSD	61.092	95.319	16.210	635.13	102.65	1270.2	210.26
#1	.00317	-.01038	.00426	.00055	.00051	-.00687	-.00106
#2	.00068	.00044	.00392	.00093	-.00006	.00226	.00292
#3	.00243	-.00789	.00531	-.00100	.00046	.00328	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00007	.00114	-.00025
Stddev	.00087	.00011	.00029
%RSD	1261.6	9.4250	115.37
#1	.00090	.00120	-.00041
#2	.00015	.00101	-.00042
#3	-.00084	.00120	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10086.	60051.	2637.9
Stddev	44.	102.	28.3
%RSD	.43237	.16937	1.0730
#1	10120.	59942.	2630.4
#2	10102.	60067.	2614.1
#3	10037.	60143.	2669.2

Approved: July 16, 2016

Sample Name: LCSW 04 Acquired: 7/14/2016 19:21:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19829**	**5.0217**	**.20442**	**.97799**	**.51468**	**.02449**	**5.1633**	**.02518**
Stddev	.00128	.0063	.00114	.00172	.00355	.00005	.0677	.00036
%RSD	.64455	.12642	.55934	.17542	.69039	.20404	1.3103	1.4418
#1	.19812	5.0290	.20568	.97983	.51785	.02451	5.2400	.02546
#2	.19711	5.0186	.20344	.97643	.51536	.02444	5.1376	.02532
#3	.19964	5.0175	.20415	.97772	.51084	.02453	5.1122	.02477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10347**	**.25374**	**.25706**	**2.0871**	**25.342**	**.51890**	**5.3233**	**.25781**
Stddev	.00154	.00019	.00368	.0075	.056	.00256	.0387	.00661
%RSD	1.4891	.07518	1.4334	.35789	.22288	.49344	.72726	2.5645
#1	.10469	.25352	.26022	2.0869	25.381	.52179	5.3528	.26540
#2	.10400	.25384	.25793	2.0797	25.368	.51693	5.3378	.25470
#3	.10174	.25385	.25301	2.0946	25.277	.51797	5.2795	.25333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51988**	**25.320**	**.25580**	**4.8866**	**.25260**	**.60154**	**.18929**	**2.5152**
Stddev	.00732	.088	.00365	.0485	.00502	.00452	.00070	.0209
%RSD	1.4072	.34833	1.4259	.99343	1.9883	.75066	.37040	.83169
#1	.52523	25.421	.25868	4.9279	.25077	.60614	.19002	2.5309
#2	.52287	25.261	.25703	4.8988	.25828	.60137	.18862	2.5232
#3	.51154	25.277	.25170	4.8331	.24875	.59712	.18924	2.4914
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW 04 Acquired: 7/14/2016 19:21:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51654	.52531	.51243	.25610	.50437	.50144	.00071
Stddev	.00817	.00364	.01030	.00426	.00137	.00667	.00035
%RSD	1.5809	.69251	2.0098	1.6635	.27149	1.3303	48.964
#1	.52123	.52884	.51968	.26043	.50544	.50645	.00031
#2	.52128	.52552	.51696	.25596	.50282	.50400	.00095
#3	.50711	.52157	.50064	.25191	.50483	.49387	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9991.4	58843.	2627.3
Stddev	12.4	226.	23.4
%RSD	.12384	.38482	.88994
#1	9984.7	58590.	2600.4
#2	10006.	58913.	2642.8
#3	9983.7	59026.	2638.6

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:25:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576038-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00163**	**.00325**	**-.00014**	**.00484**	**-.00005**	**.00008**	**-.00781**	**.00012**
Stddev	.00071	.00891	.00202	.00170	.00055	.00003	.01676	.00021
%RSD	43.804	274.23	1453.0	35.151	1028.0	37.469	214.62	167.09
#1	-.00082	.01183	-.00154	.00418	-.00003	.00006	.01095	.00023
#2	-.00218	.00387	.00218	.00677	.00049	.00006	-.01307	-.00011
#3	-.00188	-.00595	-.00106	.00357	-.00062	.00011	-.02130	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00090**	**-.00012**	**.00047**	**.02151**	**.00325**	**.02516**	**-.00187**
Stddev	.00050	.00105	.00109	.04140	.07609	.00180	.06895	.00201
%RSD	685.01	117.18	892.56	8770.1	353.78	55.333	274.03	107.30
#1	.00015	.00047	-.00130	.04818	-.01279	.00389	.05670	-.00387
#2	.00052	.00013	.00083	-.02065	.10871	.00122	-.05392	.00015
#3	-.00046	.00210	.00011	-.02611	-.03140	.00464	.07269	-.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.03636**	**-.00031**	**.00220**	**-.00030**	**-.00072**	**-.00264**	**.00622**
Stddev	.00045	.00850	.00035	.00210	.00164	.00041	.00400	.00240
%RSD	630.49	23.363	112.53	95.703	556.44	57.278	151.62	38.646
#1	-.00008	.04251	-.00015	.00140	-.00083	-.00119	-.00594	.00884
#2	.00038	.03992	-.00007	.00061	-.00160	-.00050	.00181	.00573
#3	-.00051	.02667	-.00070	.00458	.00155	-.00046	-.00378	.00410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:25:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576038-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.00043	.00161	.00213	-.00081	.00205	.00009
Stddev	.00031	.00030	.00271	.00213	.00031	.00024	.00022
%RSD	39.851	70.970	168.28	99.605	38.445	11.483	256.60
#1	.00095	.00021	-.00149	.00127	-.00054	.00207	-.00011
#2	.00099	.00077	.00353	.00058	-.00115	.00228	.00004
#3	.00043	.00030	.00279	.00456	-.00073	.00181	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10184.	60070.	2643.9
Stddev	118.	42.	31.6
%RSD	1.1635	.07052	1.1945
#1	10119.	60119.	2614.0
#2	10112.	60052.	2640.8
#3	10320.	60040.	2676.9

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576038-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00112	.00875	.00007	.00575	-.00053	.00010	-.03007	-.00005
Stddev	.00165	.00781	.00356	.00125	.00071	.00002	.04818	.00017
%RSD	147.60	89.162	5107.0	21.648	134.92	25.717	160.23	344.37
#1	-.00281	.00834	-.00401	.00713	-.00128	.00011	-.00919	.00015
#2	.00049	.00116	.00170	.00471	.00014	.00007	.00415	-.00015
#3	-.00104	.01676	.00252	.00542	-.00044	.00012	-.08517	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00102	.00029	-.01442	-.02299	.00369	-.02807	-.00121
Stddev	.00034	.00059	.00085	.01043	.06879	.00263	.00995	.00171
%RSD	286.71	58.024	296.18	72.358	299.16	71.288	35.442	141.49
#1	.00041	.00101	.00063	-.00633	.01039	.00385	-.03953	-.00192
#2	-.00026	.00044	-.00068	-.01073	.02273	.00098	-.02171	-.00246
#3	.00021	.00162	.00092	-.02620	-.10210	.00623	-.02296	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	143.28	-.00120	.00339	-.00176	.00101	-.00540	.00523
Stddev	.00025	.98	.00081	.00504	.00140	.00226	.00645	.00078
%RSD	96.054	.68329	67.920	148.66	79.525	223.79	119.46	14.909
#1	-.00007	144.37	-.00056	-.00241	-.00337	.00283	-.01270	.00580
#2	-.00054	143.00	-.00211	.00668	-.00078	.00173	-.00301	.00434
#3	-.00016	142.47	-.00092	.00591	-.00115	-.00152	-.00049	.00554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576038-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	-.00001	-.00010	.00238	-.00030	.00266	.00017
Stddev	.00045	.00025	.00255	.00282	.00035	.00019	.00035
%RSD	210.63	2514.8	2474.8	118.29	115.49	7.0648	206.15
#1	.00019	-.00023	.00098	.00393	-.00053	.00279	-.00023
#2	-.00069	-.00007	.00173	-.00087	.00010	.00274	.00035
#3	-.00014	.00027	-.00302	.00410	-.00048	.00244	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9967.9	58561.	2640.4
Stddev	25.5	250.	22.3
%RSD	.25581	.42728	.84614
#1	9941.7	58284.	2615.2
#2	9992.6	58769.	2657.7
#3	9969.5	58631.	2648.3

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:33:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00113	.00784	-.00122	.00163	-.00035	.00009	.15155	.00045
Stddev	.00120	.01012	.00085	.00060	.00011	.00005	.03347	.00015
%RSD	106.17	129.13	70.196	37.088	32.191	61.114	22.084	33.070
#1	-.00202	.01952	-.00027	.00157	-.00041	.00013	.11615	.00043
#2	-.00161	.00212	-.00193	.00105	-.00043	.00003	.15584	.00031
#3	.00024	.00187	-.00146	.00225	-.00022	.00010	.18267	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00041	-.00052	-.01081	.01922	.00191	.16475	-.00076
Stddev	.00023	.00038	.00118	.03059	.01907	.00341	.06474	.00072
%RSD	190.44	94.258	227.92	283.13	99.223	178.22	39.295	94.251
#1	.00035	.00062	-.00169	.01510	.01788	.00282	.23462	-.00002
#2	.00014	.00063	.00066	-.04456	.03892	.00478	.10679	-.00145
#3	-.00012	-.00004	-.00052	-.00295	.00085	-.00186	.15283	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.14396	-.00080	-.00006	-.00176	.00031	-.00679	.00995
Stddev	.00013	.02442	.00059	.00110	.00154	.00039	.00397	.00145
%RSD	116.88	16.966	73.876	1967.9	87.171	127.65	58.466	14.538
#1	.00018	.15506	-.00037	.00077	-.00116	.00076	-.01138	.01153
#2	-.00004	.16086	-.00056	.00038	-.00062	.00004	-.00461	.00870
#3	.00020	.11596	-.00148	-.00131	-.00351	.00013	-.00439	.00961
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:33:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00109	-.00015	.00005	-.00084	.00139	-.00023
Stddev	.00021	.00028	.00675	.00197	.00042	.00038	.00049
%RSD	37.004	26.076	4478.2	3607.2	50.443	27.555	214.08
#1	.00071	.00142	-.00655	-.00071	-.00035	.00170	.00024
#2	.00069	.00094	-.00082	.00229	-.00110	.00150	-.00019
#3	.00033	.00091	.00691	-.00142	-.00107	.00096	-.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10102.	59575.	2646.2
Stddev	21.	196.	23.5
%RSD	.20935	.32837	.88696
#1	10124.	59785.	2621.3
#2	10100.	59543.	2649.3
#3	10081.	59397.	2668.0

Approved: July 16, 2016

Sample Name: L1607044901 Acquired: 7/14/2016 19:37:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00238	.14447	-.00069	.01678	.23318	.00011	1.6898	.00012
Stddev	.00224	.00714	.00138	.00275	.00115	.00009	.0068	.00008
%RSD	93.976	4.9431	198.59	16.411	.49502	78.254	.40237	67.494
#1	-.00062	.14426	-.00226	.01512	.23445	.00002	1.6948	.00016
#2	-.00490	.15172	.00033	.01526	.23290	.00019	1.6924	.00003
#3	-.00162	.13744	-.00015	.01996	.23219	.00014	1.6821	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.00346	-.00059	13.951	.12228	.00239	.16320	.21488
Stddev	.00028	.00141	.00117	.081	.05484	.00295	.10681	.00268
%RSD	24.065	40.599	197.77	.57732	44.848	123.26	65.447	1.2459
#1	.00096	.00433	.00029	14.036	.18451	-.00084	.28652	.21763
#2	.00149	.00422	-.00015	13.875	.10131	.00309	.10355	.21228
#3	.00105	.00184	-.00191	13.943	.08102	.00492	.09954	.21474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	139.53	.00209	-.00759	.00044	.00300	-.00422	.45142
Stddev	.00037	.75	.00008	.00726	.00018	.00113	.00565	.02130
%RSD	166.51	.53979	3.8763	95.694	41.637	37.732	133.96	4.7187
#1	.00019	140.39	.00211	-.00824	.00049	.00419	.00199	.46393
#2	-.00034	139.16	.00216	-.00003	.00059	.00193	-.00559	.46351
#3	-.00051	139.02	.00200	-.01451	.00023	.00289	-.00907	.42683
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044901 Acquired: 7/14/2016 19:37:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00897	.00522	.00386	.00098	.13695	-.00071
Stddev	.00005	.00028	.00669	.00127	.00112	.00909	.00030
%RSD	12.417	3.0747	128.21	33.001	113.97	6.6341	42.544
#1	.00047	.00866	.00376	.00339	.00012	.14211	-.00104
#2	.00040	.00918	.01252	.00289	.00057	.14229	-.00045
#3	.00037	.00907	-.00062	.00530	.00225	.12646	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9956.8	58108.	2626.1
Stddev	30.6	216.	21.0
%RSD	.30683	.37153	.80088
#1	9972.0	57859.	2602.9
#2	9976.8	58218.	2631.6
#3	9921.6	58246.	2643.8

Approved: July 16, 2016

Sample Name: L1607044901PS Acquired: 7/14/2016 19:41:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576493-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20019**	**5.1873**	**.20535**	**.98679**	**.71403**	**.02498**	**6.6530**	**.02531**
Stddev	.00174	.0089	.00332	.00205	.00206	.00011	.0718	.00028
%RSD	.86814	.17251	1.6173	.20807	.28784	.44490	1.0791	1.1237
#1	.20102	5.1940	.20558	.98905	.71190	.02486	6.6905	.02500
#2	.20136	5.1771	.20191	.98630	.71600	.02498	6.6982	.02557
#3	.19819	5.1908	.20854	.98503	.71421	.02509	6.5702	.02535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10440**	**.25766**	**.25765**	**14.572**	**25.304**	**.51671**	**5.2826**	**.44819**
Stddev	.00029	.00264	.00054	.132	.129	.00314	.0647	.00516
%RSD	.27561	1.0264	.20790	.90613	.50839	.60821	1.2242	1.1516
#1	.10456	.25905	.25728	14.628	25.246	.51367	5.3309	.44254
#2	.10406	.25932	.25741	14.667	25.451	.51994	5.2091	.45267
#3	.10456	.25461	.25827	14.421	25.214	.51653	5.3078	.44936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52249**	**149.41**	**.25686**	**4.9589**	**.25224**	**.60453**	**.19245**	**2.8981**
Stddev	.00130	.45	.00131	.0117	.00423	.00100	.00635	.0073
%RSD	.24907	.29999	.51067	.23579	1.6773	.16464	3.2985	.25353
#1	.52250	149.19	.25575	4.9480	.25212	.60567	.19554	2.9025
#2	.52378	149.92	.25653	4.9713	.24807	.60399	.19667	2.8896
#3	.52118	149.11	.25831	4.9575	.25653	.60391	.18515	2.9021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044901PS Acquired: 7/14/2016 19:41:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576493-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51914**	**.52103**	**.51390**	**.25130**	**.51400**	**.62875**	**.00043**
Stddev	.00054	.00083	.00481	.00214	.00056	.00175	.00020
%RSD	.10408	.15972	.93612	.85103	.10969	.27818	47.021
#1	.51975	.52089	.51899	.25303	.51419	.63049	.00022
#2	.51873	.52192	.51330	.25197	.51445	.62876	.00062
#3	.51893	.52027	.50942	.24891	.51337	.62699	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9881.7**	**57501.**	**2628.4**
Stddev	20.7	49.	11.4
%RSD	.20933	.08456	.43279
#1	9858.6	57518.	2615.3
#2	9898.5	57447.	2636.0
#3	9887.9	57539.	2633.9

Approved: July 16, 2016

Sample Name: L1607044901SDL Acquired: 7/14/2016 19:44:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576493-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.03421**	**-.00024**	**.00737**	**.05293**	**.00014**	**.33398**	**.00023**
Stddev	.00146	.00114	.00160	.00220	.00167	.00010	.02660	.00008
%RSD	235.86	3.3351	659.48	29.896	3.1583	69.457	7.9656	32.834
#1	-.00203	.03527	.00123	.00947	.05469	.00019	.35307	.00018
#2	-.00072	.03300	-.00194	.00508	.05136	.00021	.30359	.00020
#3	.00089	.03434	-.00002	.00755	.05274	.00003	.34527	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**.00106**	**.00030**	**3.0860**	**.00592**	**.00395**	**.08856**	**.04707**
Stddev	.00023	.00073	.00041	.0075	.04174	.00147	.02209	.00144
%RSD	40.418	69.235	137.61	.24251	704.88	37.207	24.948	3.0535
#1	.00079	.00076	.00023	3.0830	-.00751	.00227	.06692	.04552
#2	.00033	.00053	.00073	3.0945	.05273	.00459	.08768	.04836
#3	.00057	.00190	-.00007	3.0804	-.02745	.00499	.11108	.04731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**30.357**	**-.00017**	**.00089**	**-.00382**	**.00230**	**-.00314**	**.10168**
Stddev	.00036	.143	.00079	.00720	.00091	.00056	.00164	.00803
%RSD	108.57	.47258	456.20	811.17	23.928	24.159	52.256	7.8984
#1	-.00071	30.193	.00066	-.00679	-.00279	.00172	-.00125	.10455
#2	-.00029	30.421	-.00093	.00197	-.00454	.00283	-.00418	.10789
#3	.00000	30.459	-.00025	.00749	-.00412	.00235	-.00400	.09261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044901SDL Acquired: 7/14/2016 19:44:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576493-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00195	.00133	.00195	.00002	.03194	-.00050
Stddev	.00054	.00051	.00840	.00137	.00045	.00282	.00007
%RSD	173.05	26.203	633.04	70.335	2371.8	8.8419	13.254
#1	-.00003	.00234	-.00837	.00232	.00032	.03354	-.00042
#2	.00003	.00214	.00603	.00309	.00024	.03361	-.00055
#3	.00093	.00137	.00632	.00043	-.00050	.02868	-.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9609.1	56151.	2483.9
Stddev	18.4	108.	6.5
%RSD	.19146	.19218	.26038
#1	9629.7	56044.	2485.5
#2	9603.5	56260.	2476.7
#3	9594.2	56150.	2489.3

Approved: July 16, 2016

Sample Name: L1607044901SDL Acquired: 7/14/2016 19:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576493-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00109**	**.00747**	**-.00088**	**.00186**	**.00998**	**.00013**	**.01945**	**.00018**
Stddev	.00151	.00752	.00195	.00196	.00106	.00007	.03764	.00031
%RSD	138.51	100.55	222.20	105.52	10.625	57.205	193.48	178.02
#1	-.00274	.01345	.00136	.00405	.00996	.00006	.04265	-.00018
#2	-.00077	.00994	-.00177	.00029	.00893	.00021	.03969	.00029
#3	.00023	-.00096	-.00223	.00123	.01105	.00011	-.02397	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00109**	**-.00043**	**.56203**	**.00885**	**-.00166**	**-.03350**	**.00664**
Stddev	.00004	.00051	.00081	.01000	.12294	.00214	.06379	.00283
%RSD	65.974	46.805	191.19	1.7795	1389.0	128.88	190.44	42.615
#1	-.00002	.00119	.00037	.55757	-.13256	-.00051	.00978	.00985
#2	-.00007	.00053	-.00039	.57349	.06873	-.00414	-.10675	.00559
#3	-.00011	.00154	-.00126	.55504	.09038	-.00034	-.00351	.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**5.7110**	**-.00027**	**.00869**	**-.00317**	**.00077**	**-.00149**	**.01803**
Stddev	.00037	.0676	.00072	.00455	.00208	.00233	.00409	.00234
%RSD	223.21	1.1831	262.34	52.347	65.698	301.67	275.44	12.948
#1	-.00005	5.7869	-.00056	.01275	-.00095	.00346	-.00317	.01738
#2	.00013	5.6891	.00054	.00378	-.00507	-.00066	.00318	.02063
#3	-.00058	5.6572	-.00081	.00953	-.00348	-.00048	-.00447	.01609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044901SDL Acquired: 7/14/2016 19:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576493-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00052	.00162	.00055	-.00019	.00611	-.00016
Stddev	.00054	.00041	.00424	.00109	.00026	.00040	.00028
%RSD	63.903	78.996	261.34	197.48	137.62	6.5172	176.18
#1	.00142	.00027	.00651	.00131	-.00005	.00609	-.00016
#2	.00034	.00099	-.00073	-.00070	-.00003	.00651	.00012
#3	.00079	.00029	-.00092	.00104	-.00049	.00572	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10045.	58408.	2562.8
Stddev	31.	76.	8.5
%RSD	.30924	.12937	.33200
#1	10054.	58377.	2553.4
#2	10070.	58494.	2564.9
#3	10010.	58353.	2570.1

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 19:52:49 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41922**	**10.424**	**.42150**	**.50886**	**1.0363**	**.05248**	**10.256**	**.05225**
Stddev	.00238	.034	.00450	.00594	.0071	.00024	.034	.00096
%RSD	.56787	.32579	1.0687	1.1671	.68620	.44984	.33008	1.8301
#1	.42035	10.410	.42142	.51178	1.0442	.05241	10.289	.05298
#2	.42083	10.463	.42604	.51278	1.0345	.05275	10.221	.05260
#3	.41649	10.400	.41704	.50203	1.0303	.05229	10.258	.05117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21151**	**.52164**	**.52459**	**4.2117**	**52.166**	**1.0350**	**10.514**	**.52254**
Stddev	.00384	.00275	.00879	.0305	.240	.0125	.074	.00358
%RSD	1.8136	.52749	1.6752	.72322	.46001	1.2082	.70776	.68456
#1	.21395	.52110	.53106	4.2377	52.443	1.0488	10.537	.52497
#2	.21349	.52462	.52813	4.1782	52.031	1.0318	10.574	.51843
#3	.20709	.51919	.51459	4.2192	52.024	1.0245	10.431	.52422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0475**	**51.148**	**.51714**	**10.338**	**.51836**	**1.2354**	**.41507**	**5.0199**
Stddev	.0176	.291	.01012	.142	.00606	.0162	.01320	.0514
%RSD	1.6814	.56810	1.9572	1.3733	1.6686	1.3112	3.1804	1.0229
#1	1.0642	51.483	.52265	10.414	.52131	1.2470	.42248	5.0048
#2	1.0492	50.971	.52331	10.425	.52238	1.2424	.42291	5.0771
#3	1.0291	50.988	.50546	10.174	.51139	1.2169	.39983	4.9778
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 19:52:49 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0559**	**1.0397**	**1.0454**	**.52382**	**1.0462**	**1.0267**	**1.0511**
Stddev	.0235	.0066	.0039	.00337	.0042	.0191	.0096
%RSD	2.2268	.63433	.36845	.64423	.40033	1.8609	.90925
#1	1.0709	1.0468	1.0435	.52644	1.0443	1.0391	1.0572
#2	1.0680	1.0385	1.0499	.52501	1.0510	1.0362	1.0559
#3	1.0288	1.0338	1.0430	.52002	1.0434	1.0047	1.0401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9748.8**	**56306.**	**2537.8**
Stddev	28.3	82.	14.1
%RSD	.29017	.14648	.55433
#1	9719.1	56397.	2526.6
#2	9751.8	56287.	2533.3
#3	9775.5	56236.	2553.6

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 19:56:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00278	.00459	-.00005	.00494	.00026	.00013	-.01699	.00036
Stddev	.00253	.00075	.00316	.00290	.00064	.00000	.03278	.00009
%RSD	91.020	16.337	5782.6	58.607	247.89	2.7938	192.98	25.173
#1	-.00006	.00416	.00029	.00813	.00018	.00013	-.02625	.00046
#2	-.00321	.00416	-.00338	.00422	.00094	.00013	-.04414	.00029
#3	-.00507	.00546	.00292	.00247	-.00034	.00013	.01943	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00022	.00012	-.00741	.04349	.00453	-.01273	-.00213
Stddev	.00024	.00035	.00071	.02955	.04847	.00235	.08297	.00147
%RSD	326.39	159.06	613.23	398.73	111.43	51.723	651.68	68.724
#1	.00034	.00033	-.00014	.00734	.06373	.00608	-.10458	-.00273
#2	-.00014	.00051	.00092	-.04143	.07856	.00569	.05680	-.00046
#3	.00002	-.00017	-.00043	.01186	-.01181	.00184	.00958	-.00321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00159	-.00152	.00602	-.00493	.00020	-.00205	.00279
Stddev	.00050	.01074	.00009	.00156	.00255	.00424	.00147	.00084
%RSD	230.63	676.90	6.1073	25.860	51.669	2140.5	71.772	30.056
#1	.00022	.01384	-.00156	.00575	-.00521	.00510	-.00244	.00375
#2	-.00011	-.00290	-.00158	.00769	-.00733	-.00231	-.00042	.00237
#3	-.00076	-.00618	-.00141	.00462	-.00226	-.00219	-.00329	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 19:56:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.00014	.00116	.00119	-.00062	-.00007	.00007
Stddev	.00032	.00038	.00331	.00163	.00011	.00016	.00064
%RSD	70.414	268.40	286.17	137.03	17.382	226.37	861.35
#1	.00083	.00052	-.00069	-.00048	-.00050	.00000	.00051
#2	.00028	-.00023	.00498	.00128	-.00068	.00004	.00038
#3	.00026	.00014	-.00082	.00277	-.00068	-.00025	-.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9871.4	57694.	2565.0
Stddev	6.6	86.	2.7
%RSD	.06657	.14824	.10521
#1	9874.5	57788.	2568.0
#2	9875.8	57621.	2562.7
#3	9863.8	57674.	2564.5

Approved: July 16, 2016

Sample Name: L1607052101 Acquired: 7/14/2016 20:00:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.02011**	**.00048**	**.04817**	**.13762**	**.00002**	**43.337**	**.00030**
Stddev	.00174	.00328	.00285	.00082	.00049	.00004	.054	.00016
%RSD	923.09	16.307	592.86	1.7082	.35647	152.98	.12537	51.925
#1	-.00205	.01885	.00134	.04821	.13817	.00005	43.307	.00013
#2	.00008	.02384	.00279	.04898	.13724	-.00002	43.303	.00044
#3	.00141	.01766	-.00270	.04733	.13745	.00004	43.399	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.00054**	**.05707**	**.00304**	**1.2420**	**.01246**	**19.282**	**-.00128**
Stddev	.00035	.00076	.00338	.01811	.0474	.00141	.218	.00314
%RSD	149.38	142.31	5.9166	595.16	3.8194	11.320	1.1288	246.30
#1	-.00008	.00136	.05966	-.01784	1.1934	.01230	19.119	.00224
#2	-.00064	.00038	.05831	.01442	1.2445	.01114	19.197	-.00381
#3	.00001	-.00014	.05325	.01254	1.2881	.01395	19.529	-.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00064**	**30.682**	**-.00124**	**.02840**	**-.00189**	**.00341**	**-.00560**	**3.8460**
Stddev	.00029	.106	.00009	.00295	.00217	.00289	.00326	.1685
%RSD	45.467	.34454	7.6006	10.382	115.05	84.603	58.145	4.3804
#1	.00094	30.653	-.00115	.02671	-.00305	.00160	-.00878	3.9531
#2	.00061	30.595	-.00125	.03180	.00062	.00675	-.00575	3.9331
#3	.00036	30.800	-.00133	.02668	-.00322	.00190	-.00227	3.6518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607052101 Acquired: 7/14/2016 20:00:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.74938	-.00845	.00329	-.00098	.02228	.00048
Stddev	.00050	.00329	.00333	.00138	.00076	.00151	.00027
%RSD	103.65	.43914	39.334	42.043	77.068	6.7549	55.655
#1	.00102	.74936	-.00767	.00464	-.00021	.02303	.00078
#2	.00041	.74609	-.00559	.00188	-.00173	.02326	.00037
#3	.00002	.75267	-.01210	.00336	-.00101	.02055	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9922.6	58087.	2601.0
Stddev	19.1	54.	6.9
%RSD	.19288	.09373	.26447
#1	9941.3	58083.	2608.5
#2	9903.1	58035.	2595.0
#3	9923.3	58144.	2599.4

Approved: July 16, 2016

Sample Name: L1607052102S Acquired: 7/14/2016 20:04:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19827	5.0240	.20717	1.0055	.64303	.02473	48.882	.02536
Stddev	.00214	.0148	.00626	.0037	.00333	.00012	.129	.00052
%RSD	1.0771	.29495	3.0224	.36885	.51741	.47828	.26472	2.0552
#1	.20052	5.0341	.20473	1.0088	.64617	.02482	48.935	.02512
#2	.19626	5.0070	.21429	1.0015	.64336	.02460	48.977	.02596
#3	.19803	5.0309	.20250	1.0062	.63954	.02478	48.735	.02501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10210	.25259	.31401	2.0357	26.203	.51725	24.696	.25130
Stddev	.00283	.00065	.00910	.0066	.080	.00100	.149	.00125
%RSD	2.7721	.25914	2.8987	.32278	.30343	.19401	.60401	.49595
#1	.10170	.25236	.31213	2.0393	26.141	.51609	24.817	.25016
#2	.10511	.25333	.32390	2.0281	26.292	.51791	24.742	.25263
#3	.09949	.25209	.30599	2.0397	26.174	.51774	24.530	.25112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52367	55.525	.25014	4.9992	.25151	.60632	.19120	6.4623
Stddev	.01445	.096	.00799	.1309	.00561	.01568	.00219	.1595
%RSD	2.7584	.17248	3.1929	2.6183	2.2288	2.5868	1.1448	2.4674
#1	.52141	55.520	.24904	4.9664	.24725	.60855	.19365	6.4129
#2	.53912	55.622	.25862	5.1434	.25786	.62077	.18942	6.6406
#3	.51050	55.431	.24277	4.8878	.24942	.58964	.19055	6.3335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607052102S Acquired: 7/14/2016 20:04:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52095**	**1.2536**	**.49797**	**.25420**	**.50951**	**.51583**	**.00088**
Stddev	.01642	.0009	.00703	.00268	.00282	.01444	.00022
%RSD	3.1519	.07435	1.4120	1.0542	.55351	2.7987	24.541
#1	.51801	1.2539	.50535	.25490	.50983	.51324	.00080
#2	.53864	1.2544	.49135	.25646	.50655	.53139	.00113
#3	.50619	1.2526	.49720	.25123	.51216	.50287	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9739.3**	**57309.**	**2588.6**
Stddev	120.8	237.	24.1
%RSD	1.2407	.41275	.92931
#1	9807.7	57073.	2590.9
#2	9599.8	57546.	2563.5
#3	9810.4	57310.	2611.4

Approved: July 16, 2016

Sample Name: L1607052103SD Acquired: 7/14/2016 20:07:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20076	5.1495	.20934	1.0335	.65804	.02535	49.970	.02546
Stddev	.00019	.0097	.00487	.0037	.00701	.00011	.486	.00052
%RSD	.09354	.18806	2.3284	.35327	1.0649	.42285	.97256	2.0301
#1	.20068	5.1424	.21220	1.0349	.66242	.02525	50.303	.02582
#2	.20098	5.1605	.21211	1.0362	.66174	.02547	50.194	.02570
#3	.20064	5.1455	.20371	1.0293	.64996	.02534	49.412	.02487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10274	.25972	.31690	2.0860	26.787	.53171	25.129	.25321
Stddev	.00157	.00165	.00394	.0357	.378	.00691	.093	.00165
%RSD	1.5312	.63409	1.2438	1.7140	1.4124	1.3000	.37028	.64977
#1	.10387	.26035	.32031	2.1198	27.116	.53968	25.234	.25506
#2	.10340	.26096	.31779	2.0486	26.871	.52795	25.092	.25191
#3	.10094	.25785	.31258	2.0895	26.373	.52749	25.059	.25266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52869	56.809	.25181	5.0308	.25452	.60813	.18840	6.5242
Stddev	.00778	.529	.00405	.0544	.00412	.00862	.00779	.0574
%RSD	1.4709	.93153	1.6078	1.0803	1.6203	1.4169	4.1359	.87977
#1	.53316	57.229	.25364	5.0608	.25888	.61347	.19335	6.5573
#2	.53319	56.983	.25462	5.0635	.25400	.61273	.19244	6.5574
#3	.51971	56.214	.24717	4.9680	.25068	.59819	.17942	6.4580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607052103SD Acquired: 7/14/2016 20:07:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52597	1.2805	.51173	.25869	.52204	.52067	.00091
Stddev	.00592	.0128	.00474	.00124	.00147	.00704	.00038
%RSD	1.1261	1.0001	.92616	.47870	.28254	1.3530	41.947
#1	.53081	1.2895	.51343	.25729	.52299	.52490	.00122
#2	.52773	1.2861	.51539	.25917	.52279	.52457	.00049
#3	.51936	1.2658	.50638	.25962	.52034	.51254	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9798.9	57264.	2583.0
Stddev	19.3	68.	26.7
%RSD	.19646	.11940	1.0353
#1	9791.3	57296.	2584.3
#2	9820.8	57186.	2555.6
#3	9784.6	57311.	2609.1

Approved: July 16, 2016

Sample Name: L1607034801 Acquired: 7/14/2016 20:11:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00199	.00027	-.00114	.02789	.05695	.00010	61.969	.00090
Stddev	.00106	.01053	.00232	.00135	.00065	.00005	.917	.00018
%RSD	53.273	3949.6	203.80	4.8316	1.1349	51.464	1.4793	20.085
#1	-.00087	.01184	-.00311	.02925	.05754	.00016	62.974	.00082
#2	-.00211	-.00229	.00142	.02786	.05707	.00005	61.755	.00111
#3	-.00298	-.00875	-.00173	.02656	.05626	.00010	61.179	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00062	.03884	.06720	1.2414	.00680	12.418	-.00033
Stddev	.00017	.00040	.00233	.01792	.0571	.00161	.055	.00211
%RSD	387.81	64.840	6.0086	26.671	4.6001	23.733	.44561	647.65
#1	.00004	.00109	.03961	.08734	1.3053	.00780	12.479	.00090
#2	.00022	.00041	.04069	.06125	1.2232	.00494	12.403	-.00276
#3	-.00013	.00037	.03622	.05301	1.1955	.00767	12.371	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	9.0884	.00020	.01844	.00312	.00495	-.00106	4.6329
Stddev	.00031	.0251	.00177	.00394	.00241	.00291	.00342	.1788
%RSD	98.787	.27586	881.83	21.375	77.172	58.816	321.44	3.8603
#1	-.00002	9.0968	.00036	.02213	.00432	.00315	-.00500	4.7316
#2	.00059	9.1081	-.00164	.01889	.00035	.00338	.00061	4.7406
#3	.00037	9.0602	.00188	.01429	.00471	.00830	.00120	4.4265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034801 Acquired: 7/14/2016 20:11:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.10367	-.01099	-.00107	-.00048	.36515	-.00001
Stddev	.00059	.00027	.00309	.00205	.00032	.01947	.00025
%RSD	105.36	.25597	28.115	191.64	67.196	5.3318	4274.3
#1	.00029	.10395	-.01413	-.00156	-.00040	.37648	.00019
#2	.00125	.10363	-.01087	-.00284	-.00083	.37629	-.00029
#3	.00016	.10343	-.00796	.00118	-.00020	.34267	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9921.6	58090.	2590.1
Stddev	8.8	98.	21.0
%RSD	.08864	.16890	.81191
#1	9928.1	58131.	2580.8
#2	9911.6	57978.	2575.2
#3	9925.1	58161.	2614.1

Approved: July 16, 2016

Sample Name: L1607034802 Acquired: 7/14/2016 20:14:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.00137**	**-.00222**	**.02324**	**.05629**	**.00003**	**60.903**	**.00099**
Stddev	.00227	.00640	.00259	.00363	.00115	.00006	.896	.00016
%RSD	1209.9	467.42	116.67	15.627	2.0475	219.64	1.4705	16.404
#1	-.00173	.00875	.00077	.02278	.05751	-.00003	61.901	.00095
#2	-.00126	-.00224	-.00376	.01986	.05521	.00008	60.637	.00116
#3	.00242	-.00240	-.00368	.02708	.05617	.00002	60.170	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00117**	**.03574**	**-.00162**	**1.1723**	**.00720**	**12.108**	**.00065**
Stddev	.00034	.00038	.00283	.02908	.0388	.00007	.086	.00367
%RSD	89.266	32.307	7.9201	1795.0	3.3106	1.0157	.70718	563.33
#1	-.00048	.00124	.03698	.00574	1.1321	.00719	12.014	-.00135
#2	-.00000	.00150	.03775	-.03367	1.2095	.00713	12.130	.00488
#3	-.00067	.00076	.03250	.02307	1.1753	.00727	12.181	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00076**	**8.9692**	**-.00096**	**.01610**	**.00195**	**-.00040**	**-.00208**	**4.5462**
Stddev	.00014	.0633	.00119	.00371	.00378	.00201	.00496	.1758
%RSD	18.899	.70616	123.92	23.044	193.70	504.63	238.04	3.8661
#1	.00074	8.9856	-.00189	.02038	-.00147	-.00150	.00234	4.6543
#2	.00092	9.0227	-.00137	.01402	.00601	.00192	-.00115	4.6410
#3	.00063	8.8993	.00038	.01389	.00131	-.00161	-.00744	4.3434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034802 Acquired: 7/14/2016 20:14:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.10133	-.01180	.00013	-.00086	.38022	.00022
Stddev	.00048	.00039	.00716	.00272	.00051	.02027	.00027
%RSD	320.85	.38179	60.680	2071.3	59.490	5.3305	123.89
#1	.00042	.10138	-.01944	.00189	-.00091	.39251	.00031
#2	.00043	.10169	-.01070	-.00300	-.00136	.39133	.00044
#3	-.00041	.10092	-.00525	.00150	-.00033	.35683	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9903.5	57910.	2595.9
Stddev	18.1	130.	24.2
%RSD	.18313	.22519	.93377
#1	9888.8	58005.	2569.9
#2	9923.7	57964.	2600.1
#3	9897.9	57761.	2617.8

Approved: July 16, 2016

Sample Name: L1607044701 Acquired: 7/14/2016 20:18:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00184	-.00391	-.00113	.05151	.39173	.00019	177.78	.00055
Stddev	.00208	.01011	.00433	.00324	.00053	.00005	.48	.00012
%RSD	112.97	258.59	384.46	6.2813	.13631	23.848	.26946	22.426
#1	-.00234	.00227	.00179	.04821	.39222	.00016	177.88	.00065
#2	-.00362	.00158	-.00610	.05468	.39182	.00017	177.26	.00041
#3	.00044	-.01558	.00094	.05163	.39116	.00024	178.20	.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00128	.00222	.02913	.59470	.00874	6.6851	.31741
Stddev	.00060	.00075	.00099	.02998	.13601	.00192	.0461	.00278
%RSD	129.07	58.350	44.565	102.92	22.871	21.960	.69041	.87441
#1	-.00017	.00065	.00286	.05624	.74977	.00948	6.7319	.31650
#2	.00054	.00211	.00272	-.00307	.53874	.01019	6.6836	.31521
#3	.00103	.00109	.00108	.03423	.49560	.00657	6.6396	.32053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05074	4.3885	.08664	.00345	-.00310	-.00001	-.00092	.72057
Stddev	.00320	.0130	.00486	.00531	.00121	.00265	.00560	.03631
%RSD	6.3097	.29541	5.6111	153.89	38.964	21021.	607.48	5.0390
#1	.05284	4.3976	.08985	-.00158	-.00269	-.00305	.00424	.74278
#2	.05232	4.3737	.08902	.00900	-.00215	.00122	-.00014	.74026
#3	.04705	4.3943	.08105	.00293	-.00446	.00180	-.00687	.67867
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044701 Acquired: 7/14/2016 20:18:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.39930	-.02625	.00561	.14226	.00624	-.00017
Stddev	.00087	.00082	.00839	.00366	.00051	.00056	.00019
%RSD	136.21	.20504	31.965	65.154	.36059	9.0405	111.98
#1	.00034	.39909	-.02943	.00475	.14190	.00646	-.00018
#2	-.00004	.39861	-.03259	.00246	.14204	.00667	.00003
#3	.00162	.40020	-.01673	.00962	.14285	.00560	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9855.3	57607.	2589.0
Stddev	26.3	176.	15.5
%RSD	.26669	.30567	.60017
#1	9837.7	57513.	2577.3
#2	9842.6	57810.	2606.7
#3	9885.5	57498.	2583.2

Approved: July 16, 2016

Sample Name: L1607046401 Acquired: 7/14/2016 20:22:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00172**	**.01141**	**.00176**	**.02109**	**.60441**	**.00009**	F **295.18**
Stddev	.00157	.00550	.00073	.00164	.00369	.00003	1.54
%RSD	90.978	48.253	41.472	7.7516	.61040	37.967	.52036
#1	-.00329	.01772	.00092	.02233	.60850	.00005	296.89
#2	-.00016	.00885	.00226	.02171	.60341	.00010	294.73
#3	-.00172	.00765	.00209	.01924	.60133	.00011	293.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**.00039**	**.00151**	**.00283**	**-.01140**	**242.15**	**.04908**
Stddev	.00019	.00012	.00085	.00117	.01722	1.17	.00112
%RSD	30.256	30.441	56.445	41.348	151.03	.48446	2.2824
#1	.00083	.00037	.00059	.00416	.00333	243.43	.04841
#2	.00057	.00051	.00227	.00236	-.03033	241.88	.04846
#3	.00046	.00028	.00167	.00197	-.00720	241.13	.05037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03168**	**.00018**	**.00512**	**263.72**	**-.00007**	**.05699**	**.06792**
Stddev	.11410	.00058	.00077	1.31	.00101	.00818	.00418
%RSD	360.18	316.53	14.958	.49522	1548.0	14.346	6.1512
#1	-.02941	-.00045	.00548	265.10	-.00083	.06643	.07273
#2	.16331	.00067	.00564	263.56	.00108	.05222	.06586
#3	-.03887	.00033	.00424	262.51	-.00045	.05232	.06517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 16, 2016

Sample Name: L1607046401 Acquired: 7/14/2016 20:22:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00319	.01304	.15046	.00044	.33172	F -.04332	.00281
Stddev	.00353	.00592	.00794	.00028	.00053	.00634	.00468
%RSD	110.60	45.409	5.2771	64.597	.16115	14.644	166.39
#1	.00623	.00980	.15415	.00013	.33215	-.05043	-.00137
#2	.00402	.01988	.15589	.00051	.33112	-.03826	.00786
#3	-.00068	.00945	.14135	.00068	.33188	-.04125	.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00094	.01315	-.00028
Stddev	.00018	.00086	.00074
%RSD	19.066	6.5117	268.44
#1	-.00096	.01359	.00046
#2	-.00111	.01370	-.00026
#3	-.00075	.01216	-.00103
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9480.0	54918.	2555.1
Stddev	14.1	157.	16.9
%RSD	.14841	.28511	.66224
#1	9481.2	55074.	2535.8
#2	9493.4	54761.	2562.5
#3	9465.3	54920.	2567.2

Approved: July 16, 2016

Sample Name: L1607046501 Acquired: 7/14/2016 20:26:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00136	.13792	.00051	.01479	.13059	.00012	F 287.25
Stddev	.00242	.00743	.00337	.00272	.00168	.00003	1.72
%RSD	178.28	5.3857	662.50	18.383	1.2887	21.744	.59867
#1	.00009	.13073	.00415	.01425	.13249	.00016	289.13
#2	-.00415	.13746	-.00012	.01774	.12929	.00011	286.88
#3	-.00001	.14556	-.00250	.01238	.12998	.00011	285.75
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00044	.00145	.00678	.01588	228.87	.04290
Stddev	.00014	.00028	.00064	.00076	.02093	1.52	.00248
%RSD	32.711	63.985	44.309	11.208	131.81	.66520	5.7757
#1	.00036	.00016	.00097	.00757	.00226	230.51	.04004
#2	.00033	.00073	.00218	.00605	.03998	228.61	.04428
#3	.00059	.00043	.00120	.00673	.00540	227.50	.04438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02800	-.00062	.00463	251.22	-.00208	.03147	-.00123
Stddev	.07806	.00144	.00029	1.34	.00158	.00079	.00288
%RSD	278.82	231.51	6.2369	.53469	76.111	2.5134	234.70
#1	.01891	-.00051	.00484	252.67	-.00120	.03085	-.00194
#2	-.04512	-.00211	.00476	250.98	-.00390	.03236	.00194
#3	.11020	.00076	.00430	250.01	-.00113	.03120	-.00368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 16, 2016

Sample Name: L1607046501 Acquired: 7/14/2016 20:26:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00328	.08687	.26309	.00023	.41035	F -.04148	.00139
Stddev	.00352	.00207	.01399	.00082	.00164	.00469	.00226
%RSD	107.14	2.3855	5.3192	360.77	.40083	11.295	162.24
#1	.00036	.08910	.27140	.00112	.41225	-.04217	.00031
#2	.00230	.08500	.27094	.00008	.40944	-.04578	-.00013
#3	.00718	.08651	.24693	-.00051	.40937	-.03649	.00398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00033	.00324	.00029
Stddev	.00019	.00018	.00038
%RSD	58.620	5.6235	128.73
#1	-.00011	.00328	.00005
#2	-.00041	.00340	.00010
#3	-.00046	.00304	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9501.2	55026.	2592.1
Stddev	26.5	259.	29.0
%RSD	.27928	.46977	1.1195
#1	9475.9	55113.	2570.8
#2	9498.9	54735.	2580.4
#3	9528.8	55229.	2625.2

Approved: July 16, 2016

Sample Name: L1607046601 Acquired: 7/14/2016 20:30:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**.16968**	**.00042**	**.18816**	**1.0441**	**.00014**	**14.631**
Stddev	.00143	.00913	.00375	.00088	.0047	.00004	.081
%RSD	261.12	5.3781	887.62	.46510	.45424	24.522	.55039
#1	-.00142	.16593	.00302	.18716	1.0495	.00018	14.723
#2	-.00132	.16302	-.00387	.18880	1.0421	.00015	14.602
#3	.00110	.18008	.00212	.18853	1.0406	.00011	14.570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.00527**	**.00083**	**.00275**	**1.3321**	**358.65**	**.03756**
Stddev	.00023	.00052	.00102	.00097	.0210	3.13	.00110
%RSD	465.35	9.8795	122.90	35.348	1.5789	.87387	2.9292
#1	.00031	.00541	-.00034	.00309	1.3562	361.57	.03790
#2	-.00002	.00570	.00128	.00351	1.3224	359.05	.03632
#3	-.00014	.00469	.00155	.00165	1.3176	355.34	.03844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**13.678**	**.85414**	**.00032**	F **560.22**	**.02111**	**.10326**	**-.00326**
Stddev	.201	.00280	.00024	10.41	.00217	.00858	.00111
%RSD	1.4716	.32795	75.412	1.8589	10.301	8.3135	33.901
#1	13.867	.85697	.00036	552.21	.02217	.11098	-.00218
#2	13.467	.85408	.00006	572.00	.02255	.10478	-.00321
#3	13.701	.85137	.00053	556.46	.01861	.09402	-.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607046601 Acquired: 7/14/2016 20:30:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00135	-.00524	2.3148	.00081	.85078	-.00278	-.00058
Stddev	.00245	.00844	.1116	.00097	.00461	.00586	.00201
%RSD	181.44	161.11	4.8189	119.83	.54229	210.75	349.22
#1	.00268	-.00467	2.3713	.00157	.85488	-.00617	.00145
#2	-.00148	-.01395	2.3868	.00115	.85167	.00399	-.00060
#3	.00284	.00290	2.1863	-.00029	.84578	-.00617	-.00258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00038	.17418	.00015
Stddev	.00084	.01671	.00049
%RSD	223.45	9.5911	321.26
#1	.00003	.18453	.00046
#2	-.00135	.18310	.00041
#3	.00019	.15491	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9534.3	54166.	2591.2
Stddev	11.0	151.	22.3
%RSD	.11538	.27952	.86013
#1	9546.2	54001.	2584.3
#2	9524.5	54298.	2573.1
#3	9532.1	54201.	2616.1

Approved: July 16, 2016

Sample Name: L1607046801 Acquired: 7/14/2016 20:34:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	20.735	.00121	1.0386	.41748	.00181	18.350
Stddev	.00122	.057	.00299	.0056	.00091	.00006	.093
%RSD	1628.4	.27670	247.76	.53790	.21695	3.5785	.50758
#1	-.00065	20.671	-.00023	1.0353	.41850	.00175	18.271
#2	.00149	20.783	-.00080	1.0355	.41715	.00188	18.453
#3	-.00062	20.751	.00464	1.0451	.41678	.00179	18.326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00736	.01740	.05111	.04952	267.59	.04274
Stddev	.00023	.00074	.00068	.00473	.04587	.96	.00220
%RSD	46.258	10.073	3.9072	9.2503	92.629	.35778	5.1433
#1	.00027	.00779	.01792	.05389	.06822	268.29	.04466
#2	.00074	.00779	.01663	.05380	-.00275	267.97	.04034
#3	.00049	.00651	.01764	.04566	.08309	266.50	.04323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	41.284	3.0164	-.00002	F 481.14	.06546	.03224	.00148
Stddev	.194	.0284	.00028	6.16	.00549	.00393	.00077
%RSD	.46938	.94057	1532.1	1.2805	8.3855	12.180	52.088
#1	41.308	3.0238	-.00010	487.79	.06823	.03482	.00121
#2	41.080	2.9851	.00029	475.63	.06901	.03418	.00235
#3	41.465	3.0404	-.00024	479.99	.05913	.02772	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607046801 Acquired: 7/14/2016 20:34:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00451	-.00329	1.1264	.00084	.30427	.00715	-.00139
Stddev	.00278	.00119	.0570	.00110	.00024	.00318	.00072
%RSD	61.715	36.334	5.0564	131.11	.07823	44.513	51.753
#1	.00360	-.00286	1.1667	.00199	.30400	.00408	-.00177
#2	.00229	-.00464	1.1514	.00073	.30433	.00692	-.00184
#3	.00763	-.00236	1.0613	-.00020	.30446	.01043	-.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00810	1.5617	.00023
Stddev	.00045	.1163	.00009
%RSD	5.5772	7.4472	41.079
#1	.00843	1.6317	.00034
#2	.00759	1.6260	.00018
#3	.00829	1.4275	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9599.2	55202.	2597.7
Stddev	20.3	154.	17.4
%RSD	.21119	.27902	.66818
#1	9578.5	55050.	2579.2
#2	9619.0	55198.	2613.6
#3	9600.2	55358.	2600.2

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 20:38:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41606**	**10.387**	**.41723**	**.50313**	**1.0156**	**.05231**	**10.090**	**.05182**
Stddev	.00252	.032	.00298	.00346	.0014	.00008	.016	.00105
%RSD	.60594	.30473	.71370	.68854	.14295	.16086	.16043	2.0245
#1	.41315	10.380	.41817	.49974	1.0141	.05224	10.091	.05232
#2	.41764	10.421	.41963	.50666	1.0170	.05240	10.073	.05252
#3	.41738	10.359	.41390	.50300	1.0159	.05229	10.105	.05061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21093**	**.52097**	**.51862**	**4.1290**	**51.530**	**1.0126**	**10.513**	**.51014**
Stddev	.00438	.00325	.00914	.0301	.039	.0010	.043	.00812
%RSD	2.0786	.62433	1.7627	.72955	.07594	.09366	.41219	1.5920
#1	.21376	.52019	.52450	4.1293	51.512	1.0130	10.464	.50828
#2	.21316	.52454	.52326	4.1589	51.503	1.0133	10.529	.50311
#3	.20588	.51817	.50808	4.0986	51.575	1.0116	10.546	.51903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0310**	**50.126**	**.51114**	**10.203**	**.51114**	**1.2162**	**.41011**	**4.9180**
Stddev	.0191	.052	.00947	.135	.00341	.0196	.00611	.0457
%RSD	1.8531	.10347	1.8527	1.3278	.66667	1.6133	1.4891	.92929
#1	1.0426	50.180	.51730	10.283	.51231	1.2273	.40979	4.9408
#2	1.0414	50.121	.51589	10.278	.51382	1.2277	.41637	4.9477
#3	1.0089	50.076	.50024	10.046	.50731	1.1935	.40417	4.8653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 20:38:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0553**	**1.0150**	**1.0235**	**.52325**	**1.0460**	**1.0176**	**1.0522**
Stddev	.0246	.0007	.0094	.00254	.0075	.0176	.0037
%RSD	2.3307	.07058	.91615	.48473	.71372	1.7319	.34670
#1	1.0690	1.0156	1.0149	.52553	1.0397	1.0276	1.0561
#2	1.0699	1.0142	1.0335	.52051	1.0542	1.0279	1.0515
#3	1.0269	1.0151	1.0221	.52370	1.0441	.99723	1.0489
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9808.7**	**56603.**	**2537.4**
Stddev	24.3	186.	2.1
%RSD	.24736	.32883	.08214
#1	9792.1	56784.	2536.7
#2	9797.4	56412.	2539.7
#3	9836.5	56612.	2535.6

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 20:41:58 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00123	.00060	.00629	.00160	.00008	-.04145	.00016
Stddev	.00170	.00151	.00220	.00222	.00096	.00011	.03198	.00028
%RSD	590.24	123.33	366.75	35.262	59.846	130.59	77.170	175.35
#1	-.00225	.00227	.00192	.00823	.00228	.00005	-.06193	.00000
#2	.00061	-.00051	.00182	.00676	.00051	-.00001	-.05782	-.00001
#3	.00078	.00192	-.00194	.00387	.00201	.00020	-.00459	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00061	-.00050	-.00266	.06537	.00082	-.04161	-.00065
Stddev	.00048	.00025	.00112	.03015	.08211	.00220	.04629	.00119
%RSD	1750.6	40.900	225.21	1131.6	125.60	268.03	111.24	183.53
#1	-.00038	.00040	.00066	.02451	.00380	.00282	-.07625	-.00089
#2	-.00023	.00088	-.00157	.00261	.03372	.00118	.01096	-.00170
#3	.00052	.00054	-.00058	-.03511	.15860	-.00154	-.05953	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.05418	-.00081	.00204	-.00152	-.00188	-.00311	.00734
Stddev	.00009	.02493	.00070	.00599	.00153	.00577	.00522	.00090
%RSD	42.577	46.008	86.552	293.61	100.26	307.29	168.09	12.297
#1	-.00011	.08139	-.00063	.00845	-.00265	-.00837	.00233	.00698
#2	-.00029	.04868	-.00022	.00111	-.00213	.00263	-.00808	.00666
#3	-.00026	.03246	-.00158	-.00343	.00021	.00011	-.00357	.00836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 20:41:58 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00005	.00231	.00152	-.00036	-.00015	-.00028
Stddev	.00016	.00041	.00874	.00025	.00102	.00022	.00030
%RSD	96.351	801.41	379.17	16.483	280.69	141.71	109.52
#1	.00013	.00002	.01174	.00123	-.00143	-.00006	-.00014
#2	.00034	-.00035	.00069	.00167	.00062	.00000	-.00063
#3	.00003	.00047	-.00552	.00167	-.00028	-.00040	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9905.0	57758.	2543.2
Stddev	20.8	79.	3.7
%RSD	.20955	.13627	.14685
#1	9891.3	57848.	2547.4
#2	9928.9	57702.	2541.9
#3	9895.0	57723.	2540.2

Approved: July 16, 2016

Sample Name: L1607047401 Acquired: 7/14/2016 20:45:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.01530	-.00220	.03320	.21551	.00011	26.946
Stddev	.00013	.00843	.00091	.00172	.00159	.00005	.053
%RSD	94.120	55.058	41.430	5.1812	.73809	42.886	.19532
#1	-.00012	.00651	-.00302	.03121	.21369	.00017	26.888
#2	-.00028	.02330	-.00122	.03429	.21620	.00007	26.990
#3	-.00002	.01611	-.00236	.03409	.21663	.00010	26.959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00330	.00387	.00191	.14503	1.6589	.02739
Stddev	.00019	.00039	.00016	.00068	.02870	.0355	.00262
%RSD	59.509	11.708	4.0943	35.448	19.788	2.1384	9.5732
#1	.00039	.00361	.00370	.00255	.15046	1.6266	.03015
#2	.00011	.00342	.00391	.00199	.17063	1.6969	.02494
#3	.00047	.00287	.00401	.00120	.11401	1.6532	.02707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.953	.03530	.00060	F 331.66	.00495	1.4961	-.00310
Stddev	.205	.00278	.00023	.49	.00015	.0561	.00109
%RSD	.52645	7.8751	38.329	.14910	3.0111	3.7503	35.319
#1	39.185	.03482	.00035	331.14	.00490	1.5196	-.00413
#2	38.798	.03829	.00080	332.12	.00484	1.5367	-.00321
#3	38.875	.03279	.00066	331.74	.00512	1.4321	-.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607047401 Acquired: 7/14/2016 20:45:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	-.00124	15.596	.00025	.50749	-.00505	.00057
Stddev	.00305	.00038	.480	.00103	.00084	.00542	.00052
%RSD	859.53	30.951	3.0796	410.99	.16650	107.36	91.901
#1	-.00307	-.00127	15.875	.00087	.50827	-.00857	-.00001
#2	.00277	-.00160	15.872	-.00093	.50761	-.00776	.00070
#3	.00137	-.00084	15.042	.00081	.50659	.00119	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00083	.04499	.00012
Stddev	.00082	.00203	.00016
%RSD	99.563	4.5149	126.02
#1	-.00087	.04610	.00013
#2	.00002	.04621	.00028
#3	-.00163	.04264	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9686.6	55925.	2570.0
Stddev	9.8	139.	13.2
%RSD	.10140	.24923	.51368
#1	9677.6	55767.	2569.2
#2	9697.1	55980.	2557.2
#3	9685.3	56029.	2583.6

Approved: July 16, 2016

Sample Name: L1607047402 Acquired: 7/14/2016 20:49:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00197	.01575	.00055	.03497	.20856	.00010	25.966
Stddev	.00073	.00626	.00230	.00087	.00335	.00004	.247
%RSD	36.882	39.721	416.23	2.4803	1.6049	41.062	.95272
#1	-.00281	.00853	.00319	.03507	.21214	.00011	26.233
#2	-.00151	.01934	-.00044	.03406	.20803	.00013	25.920
#3	-.00159	.01940	-.00108	.03579	.20551	.00005	25.745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00348	.00368	.00234	.14803	1.5886	.02626
Stddev	.00015	.00044	.00097	.00106	.00991	.1659	.00283
%RSD	28.127	12.654	26.411	45.067	6.6972	10.441	10.761
#1	.00036	.00384	.00479	.00215	.15221	1.3991	.02819
#2	.00060	.00363	.00303	.00140	.15516	1.7073	.02302
#3	.00064	.00299	.00321	.00348	.13671	1.6594	.02758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.283	.02949	.00049	F 328.50	.00487	1.5090	-.00394
Stddev	.034	.00040	.00024	2.77	.00058	.0670	.00134
%RSD	.08890	1.3572	49.673	.84246	11.945	4.4406	34.010
#1	38.321	.02994	.00077	331.62	.00539	1.5490	-.00374
#2	38.271	.02920	.00037	327.53	.00499	1.5464	-.00537
#3	38.256	.02931	.00033	326.34	.00424	1.4316	-.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607047402 Acquired: 7/14/2016 20:49:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	-.00014	15.065	.00059	.49448	.00728	.00078
Stddev	.00342	.00423	.554	.00073	.00188	.00451	.00243
%RSD	479.54	3019.6	3.6796	122.06	.38113	61.866	312.46
#1	.00415	.00331	15.377	.00141	.49630	.00517	.00352
#2	.00067	.00114	15.393	.00003	.49460	.00422	-.00004
#3	-.00268	-.00487	14.425	.00034	.49254	.01246	-.00114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00124	.04541	-.00037
Stddev	.00105	.00231	.00025
%RSD	84.638	5.0873	68.526
#1	-.00074	.04680	-.00014
#2	-.00244	.04668	-.00034
#3	-.00053	.04274	-.00064
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9700.6	55781.	2570.7
Stddev	16.1	127.	20.6
%RSD	.16580	.22848	.80114
#1	9705.9	55879.	2548.2
#2	9682.6	55637.	2575.4
#3	9713.4	55828.	2588.5

Approved: July 16, 2016

Sample Name: L1607048501 Acquired: 7/14/2016 20:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00119	.05482	.01046	.04670	.09435	.00010	119.87	.00845
Stddev	.00035	.00635	.00347	.00053	.00048	.00003	.83	.00038
%RSD	29.183	11.590	33.185	1.1273	.51208	34.151	.69118	4.4796
#1	-.00157	.05063	.01235	.04714	.09464	.00007	120.65	.00865
#2	-.00112	.06213	.01257	.04684	.09461	.00013	119.00	.00869
#3	-.00089	.05170	.00645	.04612	.09379	.00008	119.96	.00802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00179	.83222	.03152	1.4949	.00740	2.4960	.14739
Stddev	.00026	.00093	.04108	.03170	.0517	.00131	.1060	.00110
%RSD	358.00	51.784	4.9356	100.57	3.4594	17.780	4.2478	.74895
#1	-.00023	.00139	.85525	.02896	1.5037	.00670	2.3744	.14619
#2	.00023	.00113	.85661	.00118	1.4393	.00657	2.5690	.14836
#3	.00022	.00285	.78480	.06441	1.5417	.00891	2.5445	.14762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	4.9229	.00155	.57878	.01395	.00179	-.00634	1.1176
Stddev	.00027	.0472	.00139	.02754	.00172	.00117	.00197	.0389
%RSD	917.18	.95835	89.564	4.7580	12.344	65.079	31.109	3.4784
#1	-.00004	4.9068	.00276	.59025	.01489	.00222	-.00465	1.1457
#2	.00025	4.8858	.00003	.59874	.01500	.00047	-.00851	1.1339
#3	-.00030	4.9760	.00186	.54737	.01197	.00268	-.00586	1.0732
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607048501 Acquired: 7/14/2016 20:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.42735	-.01785	-.00032	-.00106	.23372	.00025
Stddev	.00016	.00236	.00917	.00080	.00054	.01063	.00018
%RSD	31.558	.55167	51.370	246.36	51.277	4.5496	71.683
#1	.00062	.42974	-.00740	.00008	-.00060	.23966	.00020
#2	.00033	.42503	-.02455	.00019	-.00093	.24007	.00010
#3	.00062	.42729	-.02158	-.00125	-.00166	.22145	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9936.4	58126.	2630.9
Stddev	21.2	30.	12.9
%RSD	.21338	.05166	.49135
#1	9923.0	58161.	2616.2
#2	9960.8	58106.	2640.3
#3	9925.3	58112.	2636.3

Approved: July 16, 2016

Sample Name: L1607048701 Acquired: 7/14/2016 20:57:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.03413	.00117	.03260	.10328	.00010	35.715	.02190
Stddev	.00173	.00398	.00122	.00158	.00080	.00006	.138	.00081
%RSD	217.88	11.663	104.46	4.8614	.77757	63.672	.38762	3.7129
#1	.00119	.02954	.00035	.03095	.10353	.00016	35.849	.02252
#2	-.00192	.03626	.00058	.03411	.10393	.00008	35.572	.02220
#3	-.00165	.03659	.00257	.03275	.10238	.00004	35.723	.02098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00079	.00633	.03904	.98578	.00426	1.6809	.12427
Stddev	.00015	.00074	.00051	.00870	.00964	.00368	.0604	.00207
%RSD	50.463	93.452	8.1006	22.277	.97784	86.453	3.5954	1.6667
#1	.00036	.00152	.00685	.04508	.97475	.00475	1.6390	.12299
#2	.00042	.00005	.00634	.02907	.99260	.00766	1.7502	.12316
#3	.00013	.00079	.00582	.04297	.98998	.00035	1.6536	.12666
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	134.59	.00039	.11540	.00986	.00063	.00040	.66900
Stddev	.00014	.33	.00063	.00694	.00343	.00293	.00097	.02889
%RSD	48.002	.24194	162.46	6.0133	34.807	465.70	244.17	4.3184
#1	-.00043	134.97	.00054	.11901	.00833	.00033	.00143	.69024
#2	-.00016	134.38	.00093	.11978	.00746	-.00214	-.00048	.68066
#3	-.00028	134.43	-.00030	.10740	.01380	.00369	.00024	.63611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607048701 Acquired: 7/14/2016 20:57:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.09407	-.00495	.00060	-.00022	2.3880	-.00012
Stddev	.00060	.00074	.00469	.00196	.00096	.1239	.00016
%RSD	51.835	.78887	94.786	325.16	438.03	5.1899	135.29
#1	.00171	.09459	-.01000	.00019	.00049	2.4640	-.00028
#2	.00052	.09440	-.00073	-.00112	.00016	2.4550	-.00010
#3	.00125	.09322	-.00413	.00274	-.00132	2.2450	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9867.3	57188.	2622.2
Stddev	7.5	115.	1.1
%RSD	.07620	.20033	.04272
#1	9872.2	57062.	2621.8
#2	9871.0	57216.	2621.3
#3	9858.6	57286.	2623.5

Approved: July 16, 2016

Sample Name: L1607051901 Acquired: 7/14/2016 21:01:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00132**	**.00486**	**-.00016**	**.00940**	**.13702**	**.00012**	**3.7067**	**.00032**
Stddev	.00038	.00572	.00371	.00200	.00127	.00002	.0467	.00032
%RSD	28.886	117.77	2303.0	21.291	.92503	18.634	1.2590	100.67
#1	-.00175	.00262	-.00172	.00857	.13704	.00013	3.7231	.00049
#2	-.00105	.01136	-.00284	.00795	.13827	.00012	3.7430	.00051
#3	-.00114	.00060	.00407	.01168	.13574	.00009	3.6541	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00127**	**.09268**	**-.00952**	**1.3099**	**.00544**	**2.3329**	**.01942**
Stddev	.00043	.00051	.00601	.02719	.0277	.00286	.0478	.00120
%RSD	212.41	40.137	6.4804	285.74	2.1163	52.552	2.0498	6.1798
#1	.00025	.00083	.09608	-.01175	1.2791	.00873	2.3710	.01977
#2	-.00060	.00115	.09622	.01873	1.3179	.00399	2.3484	.01808
#3	-.00025	.00183	.08575	-.03552	1.3328	.00360	2.2792	.02040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**3.0346**	**.00038**	**.03538**	**.00182**	**.00307**	**-.00429**	**5.2464**
Stddev	.00011	.0279	.00035	.00379	.00137	.00245	.00450	.2178
%RSD	39.904	.92092	91.270	10.705	75.355	79.731	104.80	4.1512
#1	-.00042	3.0311	.00008	.03388	.00293	.00114	.00085	5.3691
#2	-.00022	3.0086	.00031	.03257	.00226	.00582	-.00621	5.3751
#3	-.00022	3.0641	.00077	.03969	.00028	.00225	-.00751	4.9949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607051901 Acquired: 7/14/2016 21:01:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00052**	**.04846**	**-.00480**	**.00064**	**-.00071**	**.03375**	**-.00001**
Stddev	.00069	.00025	.00338	.00287	.00073	.00197	.00030
%RSD	133.81	.50798	70.406	452.09	103.96	5.8359	2199.2
#1	.00063	.04854	-.00217	.00176	-.00133	.03474	.00011
#2	.00115	.04818	-.00861	.00277	.00010	.03503	.00020
#3	-.00022	.04865	-.00362	-.00263	-.00090	.03148	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10028.**	**58788.**	**2607.1**
Stddev	8.	65.	24.0
%RSD	.07920	.11088	.91975
#1	10035.	58856.	2585.0
#2	10029.	58727.	2603.8
#3	10020.	58782.	2632.6

Approved: July 16, 2016

Sample Name: L1607051902 Acquired: 7/14/2016 21:05:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00135	.00446	-.00092	.05199	.13366	.00009	82.096	.00032
Stddev	.00044	.00587	.00145	.00053	.00118	.00005	.411	.00016
%RSD	32.168	131.57	157.81	1.0254	.88231	53.380	.50028	48.525
#1	-.00162	.00975	-.00242	.05241	.13484	.00004	82.157	.00020
#2	-.00085	-.00185	-.00081	.05218	.13366	.00014	82.473	.00050
#3	-.00159	.00548	.00047	.05139	.13248	.00009	81.658	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00100	.00712	.01838	1.9293	.01105	11.284	.00226
Stddev	.00036	.00066	.00020	.01807	.0105	.00547	.043	.00194
%RSD	588.43	66.569	2.8575	98.325	.54489	49.522	.38039	86.009
#1	.00028	.00024	.00707	.02627	1.9177	.01035	11.248	.00152
#2	-.00002	.00128	.00735	-.00230	1.9382	.01683	11.331	.00446
#3	-.00043	.00147	.00696	.03115	1.9319	.00595	11.272	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	16.163	-.00076	.00997	-.00174	.00346	-.00106	5.9234
Stddev	.00028	.075	.00051	.00550	.00159	.00110	.00191	.1762
%RSD	111.98	.46206	67.284	55.203	91.177	31.913	179.10	2.9742
#1	-.00007	16.162	-.00130	.01578	-.00265	.00473	-.00099	6.0209
#2	.00035	16.238	-.00069	.00929	-.00266	.00272	.00080	6.0292
#3	.00048	16.088	-.00029	.00484	.00009	.00293	-.00301	5.7200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607051902 Acquired: 7/14/2016 21:05:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.25895	-.01195	.00148	-.00044	.42597	-.00021
Stddev	.00071	.00176	.00400	.00302	.00064	.01682	.00035
%RSD	363.96	.67866	33.447	204.40	143.52	3.9492	166.87
#1	.00093	.25854	-.01372	.00495	-.00115	.43554	-.00029
#2	-.00049	.26088	-.00737	.00002	-.00027	.43583	.00017
#3	.00014	.25744	-.01475	-.00053	.00009	.40655	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9809.7	57173.	2569.4
Stddev	9.6	163.	17.1
%RSD	.09828	.28490	.66369
#1	9799.7	57086.	2561.9
#2	9810.5	57361.	2557.4
#3	9818.9	57071.	2589.0

Approved: July 16, 2016

Sample Name: L1607052401 Acquired: 7/14/2016 21:08:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00169	.59548	-.00003	.05987	.13203	.00009	64.259	.00038
Stddev	.00259	.00897	.00177	.00101	.00073	.00003	.169	.00025
%RSD	153.46	1.5071	6237.8	1.6851	.55431	32.672	.26369	64.694
#1	-.00012	.60407	-.00192	.05960	.13285	.00009	64.086	.00041
#2	-.00027	.58617	.00159	.06099	.13182	.00013	64.269	.00061
#3	-.00468	.59621	.00025	.05903	.13143	.00007	64.424	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.00480	.01299	.95933	1.3068	.01314	12.327	.06223
Stddev	.00011	.00125	.00140	.02033	.0543	.00325	.194	.00324
%RSD	13.598	26.030	10.769	2.1191	4.1531	24.714	1.5746	5.2027
#1	.00080	.00463	.01425	.98225	1.2961	.01261	12.110	.06588
#2	.00076	.00613	.01324	.95228	1.3656	.01018	12.388	.05971
#3	.00098	.00365	.01148	.94347	1.2586	.01661	12.484	.06110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	14.177	.01328	.04592	.00064	.00119	-.00462	5.6420
Stddev	.00013	.049	.00122	.00979	.00348	.00332	.00428	.2680
%RSD	28.327	.34545	9.1778	21.310	546.05	277.59	92.616	4.7492
#1	.00037	14.122	.01468	.05698	-.00334	.00221	-.00249	5.8120
#2	.00043	14.217	.01264	.03838	.00211	-.00251	-.00955	5.7809
#3	.00062	14.192	.01251	.04241	.00313	.00388	-.00183	5.3331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607052401 Acquired: 7/14/2016 21:08:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.49699	.00213	.00030	-.00005	.01573	.00045
Stddev	.00086	.00166	.00310	.00420	.00072	.00096	.00025
%RSD	112.76	.33449	145.52	1413.9	1374.3	6.0945	54.223
#1	-.00018	.49578	.00517	.00202	.00057	.01631	.00029
#2	.00095	.49889	-.00102	.00336	-.00084	.01627	.00074
#3	.00151	.49631	.00224	-.00449	.00011	.01463	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9881.6	57638.	2580.6
Stddev	25.4	199.	8.0
%RSD	.25740	.34459	.31065
#1	9908.3	57477.	2583.6
#2	9878.9	57577.	2571.6
#3	9857.7	57860.	2586.8

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 21:12:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40867**	**10.140**	**.41183**	**.49550**	**.99292**	**.05119**	**9.8550**	**.05096**
Stddev	.00040	.025	.00052	.00172	.00941	.00012	.0686	.00066
%RSD	.09760	.25036	.12686	.34716	.94817	.23423	.69586	1.2866
#1	.40913	10.131	.41213	.49474	.99605	.05129	9.8565	.05135
#2	.40840	10.168	.41213	.49747	.98234	.05122	9.7858	.05134
#3	.40848	10.120	.41123	.49429	1.0004	.05106	9.9229	.05021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20781**	**.51064**	**.51238**	**4.0367**	**50.208**	**.98935**	**10.339**	**.51121**
Stddev	.00321	.00176	.00643	.0546	.348	.00599	.065	.00390
%RSD	1.5427	.34502	1.2558	1.3537	.69268	.60521	.62442	.76288
#1	.20976	.50864	.51693	4.0260	50.306	.98826	10.346	.51542
#2	.20955	.51133	.51519	3.9881	49.822	.98399	10.271	.50773
#3	.20411	.51196	.50502	4.0958	50.497	.99581	10.399	.51047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0197**	**49.165**	**.50748**	**10.123**	**.50586**	**1.2070**	**.40559**	**4.8816**
Stddev	.0130	.383	.00700	.104	.00393	.0139	.00542	.0742
%RSD	1.2747	.77880	1.3801	1.0302	.77770	1.1507	1.3372	1.5200
#1	1.0278	49.167	.51147	10.200	.50980	1.2089	.40938	4.9619
#2	1.0265	48.781	.51159	10.164	.50585	1.2199	.40802	4.8672
#3	1.0047	49.547	.49940	10.004	.50193	1.1923	.39938	4.8156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 21:12:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0427**	**.99398**	**1.0175**	**.51460**	**1.0184**	**1.0123**	**1.0264**
Stddev	.0187	.00667	.0039	.00607	.0018	.0120	.0088
%RSD	1.7924	.67154	.38346	1.1788	.17643	1.1817	.85683
#1	1.0511	.99528	1.0173	.51556	1.0181	1.0197	1.0283
#2	1.0556	.98675	1.0137	.52014	1.0169	1.0187	1.0167
#3	1.0212	.99991	1.0215	.50812	1.0204	.99850	1.0340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10037.**	**58018.**	**2607.0**
Stddev	8.	108.	29.7
%RSD	.08262	.18557	1.1394
#1	10042.	58099.	2601.5
#2	10028.	58059.	2639.1
#3	10042.	57895.	2580.5

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 21:16:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00227	.00164	.00078	.00485	.00130	.00015	-.01287	.00009
Stddev	.00067	.00604	.00342	.00251	.00047	.00004	.03147	.00005
%RSD	29.338	368.18	439.63	51.739	35.747	29.200	244.47	52.337
#1	-.00296	-.00513	.00427	.00474	.00092	.00020	.01670	.00005
#2	-.00223	.00645	-.00257	.00741	.00182	.00014	-.04595	.00008
#3	-.00163	.00360	.00063	.00240	.00117	.00011	-.00937	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00019	-.00011	.00940	.04646	.00313	-.02505	-.00081
Stddev	.00026	.00048	.00060	.02155	.05638	.00303	.06773	.00411
%RSD	1248.2	257.41	523.60	229.24	121.37	96.772	270.39	508.57
#1	.00005	.00072	.00052	.01306	.06200	.00393	-.04580	-.00494
#2	-.00030	-.00021	-.00067	-.01375	.09344	-.00022	.05063	-.00076
#3	.00020	.00005	-.00019	.02889	-.01607	.00567	-.07998	.00327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.03550	-.00094	.00428	-.00124	-.00013	.00102	.00286
Stddev	.00026	.03698	.00126	.00343	.00117	.00131	.00039	.00286
%RSD	6994.9	104.18	133.02	80.010	94.296	1004.3	38.608	99.883
#1	-.00004	.05077	-.00239	.00824	-.00251	-.00162	.00061	.00133
#2	.00028	.06239	-.00026	.00237	-.00019	.00084	.00107	.00110
#3	-.00023	-.00667	-.00018	.00224	-.00103	.00039	.00139	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 21:16:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.00008	.00132	.00160	.00012	.00006	.00041
Stddev	.00046	.00041	.00121	.00108	.00031	.00005	.00022
%RSD	47.414	496.21	91.746	67.829	266.02	79.006	53.242
#1	.00088	.00055	.00006	.00091	.00047	.00011	.00039
#2	.00056	-.00014	.00248	.00103	.00003	.00005	.00020
#3	.00146	-.00016	.00144	.00285	-.00014	.00002	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9994.5	58657.	2578.5
Stddev	74.8	30.	32.7
%RSD	.74820	.05139	1.2664
#1	10039.	58625.	2541.9
#2	10036.	58660.	2604.6
#3	9908.1	58685.	2588.9

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 21:20:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00729	.17130	.00692	.08527	.00992	.00182	.39864	.00105
Stddev	.00152	.00097	.00246	.00095	.00039	.00005	.03424	.00002
%RSD	20.857	.56341	35.594	1.1166	3.9637	2.7881	8.5897	2.3544
#1	.00878	.17214	.00542	.08635	.00951	.00178	.39029	.00105
#2	.00574	.17151	.00558	.08492	.00997	.00180	.36935	.00108
#3	.00735	.17024	.00977	.08454	.01029	.00187	.43629	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00416	.00417	.00434	.08701	.91009	.08623	.39378	.00487
Stddev	.00032	.00083	.00065	.01640	.05631	.00224	.02982	.00457
%RSD	7.6463	19.962	14.936	18.850	6.1877	2.5959	7.5738	93.752
#1	.00442	.00413	.00484	.09629	.84959	.08768	.36245	.00635
#2	.00427	.00336	.00361	.06808	.91971	.08365	.42183	.00851
#3	.00381	.00503	.00457	.09668	.96098	.08735	.39707	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00818	.41159	.01661	.81568	.00457	.08469	.01061	.80216
Stddev	.00031	.01178	.00066	.00177	.00142	.00314	.00358	.00421
%RSD	3.7438	2.8610	3.9753	.21723	31.058	3.7046	33.681	.52506
#1	.00802	.41882	.01601	.81757	.00413	.08700	.01438	.80358
#2	.00853	.39800	.01649	.81541	.00615	.08112	.01020	.80548
#3	.00799	.41794	.01732	.81406	.00342	.08595	.00726	.79742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 21:20:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43996**	**.04281**	**.02397**	**.16176**	**.00812**	**.01840**	**.04358**
Stddev	.00268	.00052	.00414	.00178	.00072	.00010	.00063
%RSD	.60974	1.2072	17.274	1.1023	8.8997	.53427	1.4532
#1	.44280	.04237	.02394	.16280	.00830	.01840	.04431
#2	.43961	.04338	.01984	.15970	.00873	.01849	.04323
#3	.43747	.04268	.02812	.16279	.00732	.01830	.04320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9808.9**	**56807.**	**2507.3**
Stddev	30.4	66.	20.3
%RSD	.30982	.11654	.81106
#1	9790.3	56807.	2483.9
#2	9792.4	56741.	2517.9
#3	9844.0	56873.	2520.2

Approved: July 16, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	7/19/2016 9:14:16	7/19/2016 9:14:16	Linear	1/Conc	-0.000170	0.069143	0.000000	1.000000
Al 308.215 {109}	7/19/2016 9:14:16	7/19/2016 9:14:16	Linear	1/Conc	0.000995	0.010746	0.000000	1.000000
As 189.042 {478}	7/19/2016 9:14:16	7/19/2016 9:14:16	Linear	1/Conc	-0.000070	0.025580	0.000000	1.000000
B 249.678 {135}	7/19/2016 9:14:16	7/19/2016 9:14:16	Linear	1/Conc	-0.000036	0.032398	0.000000	1.000000
Ba 455.403 { 74}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.048691	2.266092	0.000000	1.000000
Be 313.107 {108}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000581	1.308734	0.000000	1.000000
Ca 422.673 { 80}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.003433	0.046368	0.000000	1.000000
Cd 228.802 {447}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000095	0.609144	0.000000	1.000000
Co 228.616 {447}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.000199	0.377527	0.000000	1.000000
Cr 267.716 {126}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000307	0.080385	0.000000	1.000000
Cu 224.700 {450}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000048	0.136877	0.000000	1.000000
Fe 261.187 {129}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000028	0.022352	0.000000	1.000000
K 766.490 { 44}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.016470	0.067157	0.000000	1.000000
Li 670.784 { 50}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.020933	1.884755	0.000000	1.000000
Mg 279.079 {121}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000331	0.008646	0.000000	1.000000
Mn 257.610 {131}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.000246	0.288480	0.000000	1.000000
Mo 202.030 {467}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000047	0.194847	0.000000	1.000000
Na 589.592 { 57}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.008983	0.191192	0.000000	1.000000
Ni 231.604 {446}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.000775	0.146546	0.000000	1.000000
P 214.914 {457}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.000134	0.015346	0.000000	1.000000
Pb 220.353 {453}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.000914	0.068498	0.000000	1.000000
Sb 206.833 {463}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000218	0.033326	0.000000	1.000000
Se 196.090 {472}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.000393	0.018962	0.000000	1.000000
Si 212.412 {459}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000719	0.042096	0.000000	1.000000
Sn 189.989 {477}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000012	0.073893	0.000000	1.000000
Sr 407.771 { 83}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.003834	3.674096	0.000000	1.000000
Ti 337.280 {100}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.001583	0.107273	0.000000	1.000000
Tl 190.856 {477}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.000324	0.030706	0.000000	1.000000
V 292.402 {115}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000027	0.094193	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000093	0.455702	0.000000	1.000000
Zr 339.198 { 99}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.006015	4.494391	0.000000	1.000000

Approved: July 19, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999994	0.000001	0.001938	0.006461	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999974	0.000005	0.008608	0.028693	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999373	0.000004	0.002865	0.009550	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999951	0.000002	0.002473	0.008243	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999982	0.000087	0.001069	0.003565	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999924	0.000005	0.000085	0.000282	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999231	0.000115	0.042887	0.142958	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.998873	0.000010	0.000241	0.000805	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999993	0.000002	0.000375	0.001249	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999959	0.000002	0.001083	0.003611	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999880	0.000007	0.001216	0.004052	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999496	0.000018	0.029177	0.097256	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999951	0.000210	0.108718	0.362394	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999968	0.000149	0.003621	0.012071	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.998757	0.000042	0.084751	0.282503	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999335	0.000033	0.002669	0.008896	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999926	0.000015	0.000386	0.001287	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999962	0.000531	0.031344	0.104481	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999944	0.000005	0.001024	0.003415	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999934	0.000011	0.006100	0.020332	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999834	0.000004	0.003193	0.010645	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999655	0.000007	0.003859	0.012862	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999773	0.000002	0.005636	0.018788	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999800	0.000027	0.002098	0.006993	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999969	0.000004	0.000814	0.002714	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999975	0.000163	0.000450	0.001499	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999591	0.000019	0.007910	0.026367	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999941	0.000001	0.002813	0.009378	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999910	0.000008	0.000888	0.002959	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999965	0.000024	0.000178	0.000593	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999981	0.000175	0.000474	0.001579	OK.	1.000000	0.000000	1	0

Approved: July 19, 2016

Sample Name: S0 Acquired: 7/19/2016 8:55:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00017	.00099	-.00007	-.00004	.04869	.00058	.00344
Stddev	.00009	.00010	.00007	.00004	.00297	.00005	.00117
%RSD	51.868	9.6622	93.225	97.150	6.1085	8.2613	34.076
#1	-.00014	.00109	-.00000	-.00001	.05131	.00064	.00478
#2	-.00027	.00090	-.00007	-.00008	.04931	.00055	.00263
#3	-.00010	.00100	-.00013	-.00002	.04546	.00055	.00290

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00010	-.00020	.00031	.00005	.00003	-.01647	-.02093
Stddev	.00015	.00007	.00004	.00002	.00058	.01072	.00900
%RSD	157.90	34.160	13.303	33.709	2047.4	65.087	43.015
#1	-.00002	-.00019	.00035	.00004	.00050	-.00644	-.01205
#2	.00005	-.00014	.00030	.00007	-.00062	-.02776	-.03006
#3	.00026	-.00027	.00027	.00004	.00020	-.01519	-.02069

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00033	-.00025	.00005	.00899	-.00077	-.00013	-.00091
Stddev	.00016	.00040	.00001	.00646	.00002	.00006	.00007
%RSD	49.060	160.67	22.388	71.797	2.9553	48.592	7.7284
#1	.00050	.00010	.00004	.00327	-.00077	-.00006	-.00089
#2	.00018	-.00068	.00006	.01599	-.00080	-.00019	-.00099
#3	.00032	-.00016	.00004	.00772	-.00075	-.00015	-.00086

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00022	-.00039	.00072	.00001	.00384	-.00158	-.00032
Stddev	.00002	.00001	.00006	.00004	.00150	.00019	.00006
%RSD	7.2264	2.3261	8.9291	321.09	39.183	11.717	19.175
#1	.00020	-.00038	.00079	.00005	.00357	-.00173	-.00037
#2	.00023	-.00040	.00070	.00001	.00546	-.00137	-.00035
#3	.00023	-.00040	.00066	-.00002	.00248	-.00164	-.00025

Approved: July 19, 2016

Sample Name: S0 Acquired: 7/19/2016 8:55:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00003	.00009	-.00601
Stddev	.00004	.00001	.00140
%RSD	135.92	14.708	23.295
#1	.00007	.00011	-.00721
#2	.00002	.00009	-.00636
#3	-.00001	.00008	-.00447
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10594.	51142.	2697.9
Stddev	72.	54.	10.8
%RSD	.67864	.10556	.40031
#1	10566.	51165.	2692.3
#2	10541.	51081.	2691.1
#3	10676.	51181.	2710.4

Approved: July 19, 2016

Sample Name: S4 Acquired: 7/19/2016 9:10:57 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.05473	.21876	.02030	.03241	4.5985	.13444	.94199	.06718
Stddev	.00011	.00017	.00023	.00007	.0444	.00012	.01021	.00105
%RSD	.19231	.07850	1.1155	.22677	.96460	.09191	1.0843	1.5677
#1	.05484	.21858	.02042	.03238	4.5954	.13430	.94366	.06772
#2	.05471	.21876	.02044	.03235	4.6443	.13448	.95127	.06786
#3	.05464	.21893	.02004	.03249	4.5557	.13454	.93105	.06597

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.15085	.08108	.13849	.17996	6.7334	3.7694	.17413	.28836
Stddev	.00319	.00019	.00266	.00220	.0574	.0393	.00035	.00213
%RSD	2.1143	.23519	1.9173	1.2214	.85290	1.0414	.19999	.73981
#1	.15246	.08116	.14023	.18007	6.7335	3.7558	.17446	.28644
#2	.15291	.08122	.13980	.18211	6.7907	3.8137	.17415	.29066
#3	.14717	.08087	.13543	.17771	6.6759	3.7388	.17377	.28798

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.39128	19.235	.14639	.30275	.06843	.07931	.01478	.42892
Stddev	.00798	.153	.00306	.00451	.00089	.00127	.00006	.00524
%RSD	2.0398	.79405	2.0929	1.4902	1.3054	1.5977	.39978	1.2209
#1	.39577	19.229	.14818	.30551	.06875	.08008	.01472	.43154
#2	.39600	19.390	.14814	.30519	.06911	.08000	.01484	.43232
#3	.38206	19.085	.14285	.29754	.06742	.07785	.01478	.42289

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14816	7.3824	.21292	.02780	.18924	.91496	8.9527
Stddev	.00360	.0710	.00172	.00026	.00009	.01731	.1154
%RSD	2.4285	.96172	.80959	.94371	.04542	1.8914	1.2889
#1	.15008	7.3646	.21357	.02798	.18914	.92500	9.0055
#2	.15038	7.4606	.21422	.02793	.18929	.92491	9.0321
#3	.14400	7.3220	.21096	.02750	.18928	.89498	8.8203

Approved: July 19, 2016

Sample Name: S4 Acquired: 7/19/2016 9:10:57 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10172.**	**48263.**	**2648.9**
Stddev	19.	97.	33.5
%RSD	.18550	.20041	1.2638
#1	10166.	48373.	2638.7
#2	10157.	48196.	2621.7
#3	10193.	48219.	2686.3

Approved: July 19, 2016

Sample Name: ICV Acquired: 7/19/2016 9:14:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39909	9.8904	.39883	.49081	.99422	.05023	9.8498	.05016
Stddev	.00088	.0299	.00616	.00130	.00383	.00007	.0688	.00125
%RSD	.22055	.30183	1.5444	.26526	.38551	.14200	.69852	2.4989
#1	.39947	9.9047	.40076	.48931	.99301	.05015	9.7791	.05118
#2	.39808	9.8561	.40379	.49169	.99851	.05029	9.9165	.05053
#3	.39971	9.9104	.39194	.49142	.99114	.05025	9.8539	.04876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20094	.49476	.50036	3.9986	50.559	.99241	10.078	.49798
Stddev	.00632	.00013	.01373	.0059	.182	.00164	.147	.00397
%RSD	3.1438	.02642	2.7439	.14654	.35931	.16540	1.4566	.79629
#1	.20458	.49461	.50820	4.0001	50.477	.99409	10.070	.49429
#2	.20459	.49486	.50838	4.0036	50.767	.99082	10.229	.49747
#3	.19365	.49482	.48451	3.9922	50.432	.99232	9.9362	.50217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99873	50.215	.49965	10.020	.50074	1.1962	.40303	4.9119
Stddev	.02840	.082	.01475	.211	.00863	.0253	.00671	.0838
%RSD	2.8434	.16298	2.9531	2.1036	1.7243	2.1136	1.6643	1.7054
#1	1.0147	50.304	.50737	10.125	.50830	1.2090	.40998	4.9568
#2	1.0156	50.197	.50893	10.157	.50258	1.2125	.40250	4.9636
#3	.96594	50.143	.48263	9.7774	.49133	1.1671	.39660	4.8152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 19, 2016

Sample Name: ICV Acquired: 7/19/2016 9:14:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0024**	**.99231**	**1.0105**	**.50473**	**.99122**	**.99937**	**1.0168**
Stddev	.0321	.00381	.0061	.00577	.00184	.02722	.0019
%RSD	3.2072	.38384	.60725	1.1433	.18591	2.7240	.18186
#1	1.0205	.98935	1.0036	.50463	.99329	1.0157	1.0148
#2	1.0214	.99660	1.0153	.51055	.98975	1.0145	1.0184
#3	.96529	.99096	1.0126	.49901	.99061	.96794	1.0173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10310.**	**49303.**	**2671.0**
Stddev	14.	228.	3.0
%RSD	.13175	.46257	.11239
#1	10302.	49043.	2668.7
#2	10301.	49467.	2670.0
#3	10325.	49400.	2674.4

Approved: July 19, 2016

Sample Name: ICB Acquired: 7/19/2016 9:17:50 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00074**	**.00484**	**-.00003**	**.00510**	**.00009**	**-.00004**	**-.00674**	**-.00037**
Stddev	.00130	.00383	.00177	.00060	.00036	.00004	.02581	.00007
%RSD	174.19	79.161	6393.7	11.771	412.42	120.77	382.74	18.038
#1	-.00150	.00238	.00190	.00445	.00007	-.00006	-.00428	-.00041
#2	-.00149	.00926	-.00158	.00564	-.00027	.00001	.01775	-.00041
#3	.00075	.00289	-.00040	.00520	.00046	-.00006	-.03370	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00035**	**.00019**	**-.01717**	**.08584**	**.00340**	**-.09706**	**.00009**
Stddev	.00031	.00040	.00087	.01476	.04330	.00236	.05185	.00150
%RSD	105.10	112.42	456.97	85.948	50.441	69.576	53.423	1650.1
#1	-.00006	.00008	-.00027	-.03062	.03768	.00590	-.03881	.00157
#2	.00047	-.00044	.00119	-.00138	.12154	.00120	-.11420	.00013
#3	.00049	-.00070	-.00035	-.01951	.09830	.00310	-.13818	-.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00830**	**.00087**	**.00213**	**-.00089**	**-.00203**	**.00350**	**.00468**
Stddev	.00003	.01559	.00016	.00244	.00359	.00397	.00765	.00265
%RSD	283.41	187.79	18.625	114.24	402.02	195.94	218.66	56.540
#1	-.00002	-.00705	.00101	.00366	-.00406	.00241	-.00512	.00415
#2	-.00004	.00783	.00092	-.00068	.00301	-.00525	.00614	.00756
#3	.00002	.02413	.00069	.00342	-.00162	-.00325	.00947	.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: ICB Acquired: 7/19/2016 9:17:50 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	-.00058	-.00307	-.00109	-.00051	.00065	-.00031
Stddev	.00032	.00042	.00876	.00288	.00051	.00011	.00009
%RSD	468.39	72.930	285.63	263.44	99.622	17.156	28.925
#1	-.00015	-.00082	.00432	.00046	-.00009	.00072	-.00040
#2	-.00034	-.00083	-.01274	.00067	-.00108	.00072	-.00030
#3	.00028	-.00009	-.00078	-.00442	-.00036	.00052	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10598.	50897.	2728.0
Stddev	32.	46.	18.9
%RSD	.30475	.08976	.69310
#1	10588.	50846.	2741.6
#2	10572.	50913.	2706.4
#3	10634.	50933.	2736.0

Approved: July 19, 2016

Sample Name: LLICV Acquired: 7/19/2016 9:21:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00875	.15422	.00860	.07849	.00833	.00150	.37671	.00054
Stddev	.00039	.00625	.00140	.00230	.00046	.00006	.02411	.00033
%RSD	4.4977	4.0495	16.302	2.9338	5.5538	3.9272	6.4004	60.414
#1	.00844	.15769	.00877	.08113	.00816	.00145	.37348	.00091
#2	.00919	.14701	.00990	.07689	.00798	.00157	.40227	.00034
#3	.00861	.15797	.00712	.07745	.00885	.00148	.35438	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00366	.00297	.00508	.06630	.79652	.07928	.32673	.00931
Stddev	.00034	.00102	.00101	.01530	.03503	.00090	.01885	.00387
%RSD	9.2580	34.431	19.948	23.080	4.3977	1.1297	5.7685	41.581
#1	.00389	.00409	.00478	.06544	.76858	.07855	.30552	.01378
#2	.00381	.00276	.00621	.08201	.78515	.07903	.34155	.00694
#3	.00327	.00207	.00426	.05144	.83581	.08028	.33313	.00722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00688	.38665	.01591	.71642	.00666	.07529	.01361	.71799
Stddev	.00096	.02903	.00155	.07172	.00234	.00869	.00814	.06921
%RSD	13.965	7.5091	9.7329	10.011	35.091	11.535	59.783	9.6392
#1	.00725	.37033	.01681	.76194	.00769	.07794	.02301	.75944
#2	.00761	.42017	.01681	.75357	.00830	.08235	.00911	.75643
#3	.00579	.36944	.01413	.63375	.00398	.06559	.00872	.63809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: LLICV Acquired: 7/19/2016 9:21:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.36909**	**.03899**	**.03024**	**.13995**	**.00751**	**.01579**	**.03945**
Stddev	.04536	.00050	.00873	.01272	.00083	.00215	.00063
%RSD	12.291	1.2868	28.867	9.0854	11.099	13.637	1.6059
#1	.39719	.03841	.02021	.14695	.00763	.01719	.03963
#2	.39332	.03923	.03613	.14763	.00662	.01687	.03875
#3	.31676	.03933	.03437	.12527	.00827	.01331	.03997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10657.**	**51042.**	**2719.0**
Stddev	34.	166.	16.6
%RSD	.32192	.32451	.61002
#1	10661.	50925.	2717.2
#2	10621.	51232.	2736.4
#3	10689.	50970.	2703.3

Approved: July 19, 2016

Sample Name: LLICV Acquired: 7/19/2016 9:25:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01507	.31246	.01657	.15197	.01553	.00298	.74750	.00109
Stddev	.00154	.00366	.00325	.00068	.00100	.00007	.01882	.00015
%RSD	10.246	1.1705	19.615	.44720	6.4198	2.2299	2.5174	14.195
#1	.01666	.31586	.01438	.15120	.01639	.00302	.73005	.00119
#2	.01495	.30859	.02030	.15221	.01444	.00290	.76744	.00116
#3	.01358	.31292	.01502	.15250	.01577	.00302	.74501	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00770	.00675	.00824	.11845	1.5395	.16127	.75226	.01731
Stddev	.00081	.00033	.00096	.02353	.0251	.00351	.06861	.00194
%RSD	10.480	4.8567	11.622	19.863	1.6314	2.1792	9.1208	11.232
#1	.00836	.00643	.00907	.09747	1.5165	.16424	.72188	.01564
#2	.00795	.00709	.00846	.14389	1.5356	.15739	.70409	.01944
#3	.00680	.00674	.00720	.11398	1.5663	.16218	.83082	.01686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01396	.79334	.03097	1.4545	.01428	.15033	.03030	1.4511
Stddev	.00122	.02309	.00298	.1198	.00119	.00973	.00426	.1167
%RSD	8.7419	2.9109	9.6138	8.2377	8.3102	6.4737	14.050	8.0385
#1	.01461	.81932	.03276	1.5223	.01562	.15444	.03499	1.5171
#2	.01472	.78556	.03262	1.5251	.01336	.15733	.02924	1.5198
#3	.01255	.77514	.02753	1.3162	.01387	.13922	.02668	1.3164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: LLICV Acquired: 7/19/2016 9:25:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.74871	.07858	.04748	.28381	.01501	.03131	.07897
Stddev	.07965	.00080	.00158	.02151	.00041	.00297	.00077
%RSD	10.639	1.0180	3.3220	7.5784	2.7104	9.4913	.97146
#1	.79806	.07907	.04599	.29509	.01458	.03300	.07973
#2	.79126	.07766	.04733	.29733	.01539	.03305	.07897
#3	.65682	.07902	.04913	.25901	.01506	.02788	.07820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10549.	50853.	2702.2
Stddev	41.	210.	18.0
%RSD	.38651	.41351	.66453
#1	10541.	50891.	2681.7
#2	10512.	51042.	2710.3
#3	10593.	50627.	2714.8

Approved: July 19, 2016

Sample Name: ICSA Acquired: 7/19/2016 9:29:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00334	269.01	.00253	-.00625	.00091	-.00005	250.06	-.00051
Stddev	.00085	.31	.00158	.00087	.00067	.00007	.68	.00040
%RSD	25.361	.11704	62.259	13.980	73.179	157.73	.27166	77.766
#1	.00362	269.02	.00397	-.00724	.00014	-.00013	250.02	-.00095
#2	.00239	268.69	.00277	-.00592	.00135	.00001	249.40	-.00041
#3	.00402	269.32	.00085	-.00559	.00124	-.00002	250.76	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00112	-.00109	.00095	100.32	.05186	.00622	258.57	.00340
Stddev	.00049	.00051	.01433	.38	.01429	.00178	.52	.00265
%RSD	44.046	46.844	1503.3	.38197	27.549	28.630	.20064	77.859
#1	-.00133	-.00149	.01010	99.963	.06150	.00741	258.64	.00633
#2	-.00147	-.00128	.00832	100.27	.03544	.00706	258.02	.00115
#3	-.00056	-.00051	-.01557	100.72	.05863	.00417	259.06	.00273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00093	.03133	.00042	.01134	.00086	.00043	.00626	.09497
Stddev	.00016	.00699	.00104	.00335	.01017	.00296	.00628	.00540
%RSD	17.671	22.309	248.35	29.522	1186.9	683.82	100.21	5.6823
#1	-.00078	.03585	.00150	.01501	.00972	.00346	.00222	.09711
#2	-.00091	.03487	.00034	.01054	.00310	-.00246	.01350	.09897
#3	-.00111	.02328	-.00058	.00846	-.01025	.00030	.00308	.08883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: ICSA Acquired: 7/19/2016 9:29:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00149	-.00013	-.01233	-.00125	-.00319	-.00532	-.00322
Stddev	.00045	.00045	.00947	.00457	.00088	.00026	.00025
%RSD	30.524	338.67	76.791	366.63	27.542	4.9379	7.8267
#1	.00127	-.00064	-.00761	-.00606	-.00242	-.00520	-.00295
#2	.00118	.00006	-.02323	-.00071	-.00300	-.00514	-.00327
#3	.00201	.00019	-.00614	.00303	-.00415	-.00562	-.00345
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9665.3	45891.	2578.1
Stddev	47.3	93.	13.0
%RSD	.48897	.20160	.50392
#1	9626.1	45983.	2584.6
#2	9652.0	45798.	2586.5
#3	9717.8	45893.	2563.1

Approved: July 19, 2016

Sample Name: ICSAB Acquired: 7/19/2016 9:33:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51660**	**263.75**	**.25317**	**-.01172**	**.25347**	**.24727**	**246.88**	**.48369**
Stddev	.00418	.75	.00783	.00112	.00034	.00047	.87	.01687
%RSD	.80891	.28412	3.0916	9.5720	.13224	.19156	.35060	3.4877
#1	.51184	263.55	.25923	-.01051	.25310	.24729	246.76	.49347
#2	.51827	263.12	.25595	-.01194	.25375	.24678	247.80	.49338
#3	.51968	264.57	.24433	-.01272	.25356	.24773	246.08	.46421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.23706**	**.24898**	**.25620**	**97.585**	**5.3123**	**.00872**	**251.66**	**.24746**
Stddev	.01005	.00025	.01668	.234	.0769	.00255	.56	.00186
%RSD	4.2382	.10006	6.5118	.24001	1.4474	29.255	.22179	.75206
#1	.24350	.24898	.26546	97.463	5.3849	.00715	252.00	.24624
#2	.24219	.24922	.26619	97.855	5.3202	.01166	251.96	.24960
#3	.22548	.24873	.23694	97.437	5.2317	.00735	251.01	.24653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00119**	**5.3075**	**.48088**	**.09112**	**.49206**	**.50013**	**.25762**	**.00926**
Stddev	.00037	.0121	.01952	.00559	.01612	.01892	.00428	.00207
%RSD	30.840	.22717	4.0592	6.1380	3.2770	3.7829	1.6597	22.333
#1	-.00161	5.2985	.49269	.09329	.50191	.51091	.26183	.00779
#2	-.00094	5.3212	.49160	.09531	.50082	.51119	.25777	.01162
#3	-.00102	5.3027	.45835	.08477	.47345	.47828	.25328	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: ICSAB Acquired: 7/19/2016 9:33:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00015	-.01480	.45894	.25213	.46986	-.00332
Stddev	.00079	.00023	.00515	.01060	.00129	.01810	.00062
%RSD	282.22	146.94	34.788	2.3087	.51328	3.8514	18.753
#1	-.00061	.00004	-.01283	.46363	.25091	.48023	-.00265
#2	.00092	-.00009	-.01093	.46638	.25200	.48038	-.00342
#3	.00053	-.00040	-.02065	.44681	.25349	.44896	-.00388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9690.0	46162.	2585.6
Stddev	18.0	214.	19.6
%RSD	.18528	.46409	.75636
#1	9694.9	46165.	2579.7
#2	9670.1	46375.	2569.6
#3	9705.0	45946.	2607.4

Approved: July 19, 2016

Sample Name: CCV Acquired: 7/19/2016 9:36:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39826	9.7999	.39892	.48562	.99052	.05003	9.8550	.05000
Stddev	.00170	.0239	.00635	.00261	.00662	.00015	.0558	.00108
%RSD	.42804	.24344	1.5907	.53645	.66871	.29350	.56618	2.1587
#1	.39693	9.7762	.40050	.48490	.98293	.04999	9.7908	.05070
#2	.40018	9.8239	.40432	.48850	.99348	.05020	9.8825	.05053
#3	.39768	9.7996	.39193	.48344	.99515	.04991	9.8918	.04875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20047	.49172	.49772	3.9733	50.373	.98583	9.9780	.49491
Stddev	.00639	.00054	.01340	.0066	.384	.00603	.0914	.00479
%RSD	3.1860	.11007	2.6929	.16586	.76235	.61141	.91639	.96795
#1	.20430	.49227	.50563	3.9777	50.039	.97937	9.9268	.48995
#2	.20403	.49169	.50528	3.9657	50.793	.99131	9.9237	.49526
#3	.19310	.49119	.48225	3.9766	50.286	.98681	10.084	.49951
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99397	50.111	.49830	10.008	.49549	1.1926	.39931	4.8917
Stddev	.02822	.262	.01475	.209	.00931	.0307	.00021	.0834
%RSD	2.8389	.52318	2.9602	2.0927	1.8793	2.5770	.05235	1.7046
#1	1.0113	49.867	.50772	10.129	.50193	1.2100	.39908	4.9432
#2	1.0092	50.388	.50589	10.130	.49973	1.2106	.39937	4.9364
#3	.96141	50.078	.48130	9.7665	.48482	1.1571	.39948	4.7955
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 19, 2016

Sample Name: CCV Acquired: 7/19/2016 9:36:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0008**	**.98780**	**1.0184**	**.50118**	**.98557**	**.99355**	**1.0147**
Stddev	.0310	.00635	.0109	.00738	.00155	.02581	.0085
%RSD	3.0949	.64306	1.0653	1.4717	.15751	2.5973	.83724
#1	1.0174	.98061	1.0062	.50726	.98717	1.0088	1.0139
#2	1.0199	.99267	1.0223	.50329	.98407	1.0081	1.0235
#3	.96504	.99010	1.0268	.49297	.98546	.96375	1.0066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10346.**	**49579.**	**2676.4**
Stddev	12.	76.	17.5
%RSD	.11535	.15390	.65568
#1	10359.	49576.	2677.3
#2	10337.	49657.	2658.5
#3	10340.	49504.	2693.5

Approved: July 19, 2016

Sample Name: CCB Acquired: 7/19/2016 9:40:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	-.00158	.00030	.00201	.00052	-.00005	-.01292	-.00046
Stddev	.00094	.00416	.00147	.00188	.00092	.00008	.02391	.00011
%RSD	117.79	263.32	493.12	93.504	178.49	143.24	185.07	24.007
#1	-.00026	-.00314	-.00136	-.00006	.00029	-.00005	-.02409	-.00036
#2	.00113	-.00474	.00081	.00248	.00153	.00002	-.02921	-.00045
#3	.00153	.00314	.00145	.00362	-.00027	-.00014	.01453	-.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00029	-.00014	-.03347	.03492	.00131	-.11719	.00035
Stddev	.00027	.00098	.00083	.03206	.09016	.00071	.01335	.00211
%RSD	1983.4	332.75	580.85	95.793	258.16	53.945	11.390	598.99
#1	.00025	-.00011	.00041	-.02182	-.06633	.00050	-.10504	.00265
#2	-.00028	-.00135	-.00110	-.00886	.10653	.00179	-.11504	-.00150
#3	.00007	.00058	.00026	-.06973	.06457	.00165	-.13148	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	-.01506	.00138	.00137	-.00010	.00069	-.00131	.00345
Stddev	.00030	.02893	.00072	.00299	.00010	.00233	.00366	.00149
%RSD	76.920	192.15	51.914	217.98	94.894	336.00	278.68	43.172
#1	-.00010	-.04699	.00061	-.00100	-.00004	.00114	-.00533	.00251
#2	-.00071	-.00761	.00150	.00474	-.00005	.00276	.00184	.00267
#3	-.00038	.00943	.00203	.00038	-.00022	-.00183	-.00045	.00517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: CCB Acquired: 7/19/2016 9:40:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	-.00018	.00513	.00016	-.00117	.00020	-.00008
Stddev	.00046	.00013	.00363	.00012	.00026	.00013	.00028
%RSD	79.859	75.720	70.754	72.255	22.630	67.628	338.28
#1	.00091	-.00024	.00882	.00007	-.00091	.00031	-.00033
#2	.00076	-.00002	.00501	.00029	-.00144	.00023	.00021
#3	.00005	-.00027	.00156	.00012	-.00117	.00005	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10569.	50866.	2696.3
Stddev	59.	72.	2.7
%RSD	.55809	.14227	.10175
#1	10539.	50945.	2699.4
#2	10530.	50803.	2694.5
#3	10637.	50851.	2694.9

Approved: July 19, 2016

Sample Name: PBW 9P Acquired: 7/19/2016 9:44:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	-.01078	.00197	.00196	-.00057	-.00007	-.03603
Stddev	.00162	.00961	.00133	.00100	.00040	.00009	.01125
%RSD	422.84	89.071	67.403	50.883	69.395	133.75	31.211
#1	.00205	-.01887	.00105	.00287	-.00081	.00002	-.04469
#2	.00030	-.00017	.00137	.00089	-.00080	-.00016	-.02332
#3	-.00120	-.01332	.00349	.00211	-.00011	-.00007	-.04008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00034	-.00026	.00063	-.00846	-.00778	.00353
Stddev	.00007	.00023	.00030	.00039	.01739	.07441	.00420
%RSD	19.279	69.417	113.97	61.238	205.48	956.66	119.02
#1	-.00030	.00055	.00003	.00026	-.00952	.00501	.00326
#2	-.00041	.00009	-.00056	.00059	.00943	-.08775	-.00053
#3	-.00044	.00037	-.00026	.00103	-.02530	.05941	.00785
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.11459	.00228	-.00052	.01226	.00022	.00228	.00015
Stddev	.05472	.00119	.00010	.01833	.00030	.00325	.00172
%RSD	47.753	52.138	20.175	149.53	133.05	142.24	1125.0
#1	-.05765	.00098	-.00057	.03278	-.00009	.00120	.00203
#2	-.16678	.00331	-.00040	-.00251	.00049	.00593	-.00136
#3	-.11934	.00254	-.00058	.00651	.00027	-.00029	-.00021
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: July 19, 2016

Sample Name: PBW 9P Acquired: 7/19/2016 9:44:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00483	.00182	-.00092	.00042	-.00033	.00168	-.00111
Stddev	.00332	.00160	.00162	.00027	.00055	.00929	.00278
%RSD	68.648	88.317	176.59	62.783	163.69	552.68	250.08
#1	.00203	.00098	-.00261	.00069	-.00092	-.00591	.00209
#2	.00849	.00367	.00064	.00043	-.00025	-.00109	-.00285
#3	.00396	.00081	-.00079	.00015	.00017	.01204	-.00258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00019	.00044	-.00026
Stddev	.00045	.00013	.00015
%RSD	239.85	28.435	56.257
#1	-.00060	.00055	-.00043
#2	.00029	.00047	-.00021
#3	-.00025	.00031	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10975.	53082.	2809.1
Stddev	13.	138.	17.7
%RSD	.11901	.26086	.63127
#1	10983.	53086.	2793.3
#2	10960.	53219.	2828.3
#3	10982.	52942.	2805.8

Approved: July 19, 2016

Sample Name: LCSW 9P Acquired: 7/19/2016 9:51:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19145**	**4.8121**	**.19803**	**.93281**	**.49426**	**.02405**	**4.9747**	**.02437**
Stddev	.00168	.0241	.00208	.00515	.00487	.00010	.0590	.00007
%RSD	.87707	.50072	1.0480	.55169	.98626	.43034	1.1866	.29488
#1	.19283	4.8355	.19817	.93537	.49986	.02416	5.0180	.02431
#2	.19194	4.7873	.20004	.92688	.49195	.02397	4.9075	.02434
#3	.18958	4.8134	.19589	.93617	.49097	.02402	4.9987	.02445
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10045**	**.24324**	**.25107**	**2.0133**	**24.935**	**.50012**	**4.9796**	**.24638**
Stddev	.00050	.00209	.00096	.0127	.194	.00452	.0654	.00203
%RSD	.49532	.85805	.38108	.62883	.77710	.90385	1.3138	.82504
#1	.10101	.24478	.25158	2.0205	25.074	.50534	5.0049	.24462
#2	.10024	.24408	.25166	1.9987	24.713	.49764	5.0287	.24861
#3	.10008	.24086	.24996	2.0208	25.017	.49738	4.9053	.24590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50733**	**24.764**	**.25183**	**4.8003**	**.25186**	**.58837**	**.18762**	**2.4431**
Stddev	.00156	.277	.00015	.0059	.00287	.00338	.00158	.0066
%RSD	.30819	1.1180	.05834	.12339	1.1411	.57369	.84477	.27158
#1	.50854	25.061	.25200	4.8068	.24872	.59227	.18597	2.4386
#2	.50788	24.514	.25175	4.7989	.25248	.58659	.18914	2.4508
#3	.50557	24.717	.25174	4.7952	.25437	.58627	.18776	2.4401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: LCSW 9P Acquired: 7/19/2016 9:51:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50405	.50087	.50041	.24862	.49114	.49672	.00031
Stddev	.00143	.00339	.00233	.00201	.00188	.00140	.00009
%RSD	.28371	.67748	.46547	.80829	.38276	.28233	28.828
#1	.50458	.50443	.50086	.24758	.49290	.49621	.00029
#2	.50515	.49767	.50249	.24734	.48916	.49831	.00024
#3	.50244	.50050	.49789	.25093	.49136	.49566	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10327.	50076.	2690.1
Stddev	14.	248.	26.0
%RSD	.13425	.49513	.96797
#1	10317.	49826.	2660.4
#2	10322.	50322.	2709.2
#3	10343.	50080.	2700.5

Approved: July 19, 2016

Sample Name: L1606159102 Acquired: 7/19/2016 9:55:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00153	-.00114	.00346	.02092	.03557	-.00009	201.67
Stddev	.00049	.00186	.00293	.00109	.00029	.00001	1.39
%RSD	31.780	163.41	84.596	5.1888	.81923	15.396	.69014
#1	.00193	-.00194	.00613	.02217	.03562	-.00008	203.05
#2	.00166	.00099	.00033	.02031	.03582	-.00011	201.70
#3	.00099	-.00245	.00393	.02028	.03525	-.00008	200.26
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.00213	.00133	.00199	F -.02326	.22679	.00555
Stddev	.00003	.00011	.00077	.00133	.02055	.09290	.00148
%RSD	12.003	4.9993	57.860	66.876	88.383	40.964	26.614
#1	-.00025	.00225	.00136	.00349	-.00305	.13794	.00666
#2	-.00022	.00204	.00208	.00093	-.04414	.21916	.00613
#3	-.00028	.00212	.00054	.00157	-.02258	.32327	.00387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.1544	.85532	-.00035	2.4786	.00346	.00296	-.00096
Stddev	.0432	.00667	.00019	.0113	.00135	.00384	.00074
%RSD	2.0066	.78037	54.597	.45629	38.932	129.74	77.039
#1	2.2026	.86301	-.00029	2.4714	.00268	.00192	-.00074
#2	2.1418	.85109	-.00019	2.4728	.00268	-.00025	-.00178
#3	2.1189	.85184	-.00056	2.4916	.00501	.00722	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 19, 2016

Sample Name: L1606159102 Acquired: 7/19/2016 9:55:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00051**	**.00101**	**.33193**	**-.00006**	**.83438**	F **-.03372**	**-.00173**
Stddev	.00393	.00545	.02869	.00040	.00722	.00419	.00213
%RSD	777.03	542.13	8.6435	680.19	.86562	12.413	122.57
#1	.00244	-.00107	.35043	-.00036	.84210	-.03674	.00070
#2	.00102	-.00311	.34648	-.00022	.83325	-.03547	-.00322
#3	-.00497	.00719	.29888	.00040	.82779	-.02894	-.00268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00099**	**.00701**	**-.00019**
Stddev	.00025	.00066	.00014
%RSD	25.146	9.4506	72.815
#1	-.00120	.00743	-.00014
#2	-.00071	.00735	-.00008
#3	-.00105	.00625	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10201.**	**49539.**	**2702.8**
Stddev	28.	108.	16.0
%RSD	.27165	.21709	.59351
#1	10220.	49491.	2684.9
#2	10214.	49463.	2707.5
#3	10169.	49662.	2715.9

Approved: July 19, 2016

Sample Name: L1606159102S Acquired: 7/19/2016 9:59:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19537**	**4.8902**	**.20198**	**.96858**	**.52907**	**.02406**	**208.79**	**.02463**
Stddev	.00151	.0056	.00110	.00484	.00363	.00009	.99	.00068
%RSD	.77034	.11476	.54640	.49998	.68534	.37352	.47435	2.7671
#1	.19549	4.8851	.20119	.97301	.53305	.02415	209.86	.02522
#2	.19682	4.8962	.20324	.96932	.52595	.02397	207.91	.02479
#3	.19381	4.8894	.20151	.96341	.52821	.02407	208.60	.02388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09895**	**.24215**	**.24188**	**1.9312**	**25.266**	**.51302**	**7.1512**	**1.1023**
Stddev	.00214	.00079	.00529	.0286	.250	.00189	.0520	.0037
%RSD	2.1651	.32579	2.1879	1.4820	.99103	.36861	.72791	.33472
#1	.10002	.24124	.24422	1.9613	25.554	.51092	7.2065	1.1022
#2	.10034	.24259	.24559	1.9043	25.106	.51458	7.1032	1.0986
#3	.09648	.24263	.23582	1.9281	25.137	.51357	7.1439	1.1060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50309**	**27.274**	**.24413**	**4.9428**	**.24486**	**.58897**	**.19160**	**2.8199**
Stddev	.00866	.137	.00437	.0680	.00313	.01186	.00491	.0354
%RSD	1.7211	.50333	1.7888	1.3755	1.2797	2.0142	2.5612	1.2559
#1	.50820	27.432	.24639	4.9809	.24530	.59600	.18633	2.8435
#2	.50798	27.209	.24690	4.9832	.24775	.59563	.19603	2.8371
#3	.49310	27.181	.23909	4.8643	.24153	.57527	.19244	2.7792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1606159102S Acquired: 7/19/2016 9:59:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49525	1.3352	.46237	.24421	.49250	.48109	.00064
Stddev	.01090	.0100	.00966	.00043	.00086	.00876	.00032
%RSD	2.2002	.74530	2.0890	.17805	.17540	1.8205	50.226
#1	.50072	1.3465	.45471	.24404	.49154	.48594	.00044
#2	.50232	1.3277	.45918	.24471	.49274	.48635	.00047
#3	.48270	1.3315	.47322	.24389	.49322	.47098	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10138.	48999.	2690.6
Stddev	23.	72.	19.6
%RSD	.22562	.14749	.72849
#1	10137.	49013.	2668.9
#2	10115.	49064.	2707.0
#3	10161.	48921.	2695.9

Approved: July 19, 2016

Sample Name: L1606159102SD Acquired: 7/19/2016 10:02:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19496**	**4.9187**	**.20592**	**.96391**	**.53303**	**.02422**	**211.20**	**.02493**
Stddev	.00142	.0185	.00347	.00278	.00364	.00006	1.52	.00025
%RSD	.72665	.37642	1.6860	.28885	.68351	.23671	.71949	1.0160
#1	.19514	4.9368	.20191	.96574	.53645	.02427	212.73	.02512
#2	.19346	4.8998	.20804	.96070	.53342	.02416	211.17	.02503
#3	.19628	4.9194	.20779	.96529	.52920	.02422	209.69	.02464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10109**	**.24396**	**.24709**	**1.9713**	**25.654**	**.51763**	**7.1787**	**1.1188**
Stddev	.00025	.00154	.00133	.0336	.113	.00357	.0651	.0054
%RSD	.24756	.63258	.53784	1.7051	.43965	.69003	.90641	.48621
#1	.10136	.24520	.24609	2.0095	25.730	.51545	7.1064	1.1251
#2	.10103	.24223	.24658	1.9463	25.708	.52175	7.1973	1.1157
#3	.10087	.24445	.24860	1.9581	25.524	.51569	7.2325	1.1156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51294**	**27.683**	**.24800**	**5.0000**	**.24753**	**.59925**	**.19780**	**2.8556**
Stddev	.00034	.092	.00096	.0070	.00230	.00719	.00433	.0040
%RSD	.06686	.33071	.38670	.13952	.92735	1.1991	2.1913	.13901
#1	.51319	27.787	.24830	4.9927	.24668	.60240	.19365	2.8566
#2	.51308	27.641	.24693	5.0005	.24578	.59103	.19743	2.8512
#3	.51255	27.619	.24878	5.0067	.25013	.60433	.20230	2.8590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1606159102SD Acquired: 7/19/2016 10:02:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50572	1.3458	.46766	.24592	.49651	.48984	.00059
Stddev	.00128	.0068	.00559	.00402	.00083	.00039	.00048
%RSD	.25335	.50390	1.1962	1.6364	.16673	.07951	81.130
#1	.50573	1.3512	.46554	.24810	.49602	.48986	.00006
#2	.50699	1.3480	.47400	.24838	.49605	.49022	.00099
#3	.50443	1.3382	.46343	.24128	.49747	.48944	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10094.	49315.	2676.0
Stddev	8.	63.	23.0
%RSD	.07965	.12692	.86107
#1	10090.	49305.	2653.0
#2	10089.	49258.	2675.9
#3	10104.	49382.	2699.1

Approved: July 19, 2016

Sample Name: L1606164802 Acquired: 7/19/2016 10:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00249	-.01062	.00190	.00332	.01571	-.00003	1.2867	-.00032
Stddev	.00151	.00498	.00136	.00245	.00022	.00007	.0260	.00014
%RSD	60.528	46.856	71.498	73.790	1.3770	249.02	2.0181	44.289
#1	.00351	-.00737	.00099	.00497	.01590	-.00010	1.2725	-.00027
#2	.00076	-.01635	.00124	.00050	.01548	.00000	1.2708	-.00047
#3	.00321	-.00814	.00345	.00449	.01574	.00002	1.3166	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	-.00108	-.00046	.78330	.20649	.00347	.65356	.20839
Stddev	.00033	.00126	.00138	.04321	.04750	.00313	.03814	.00244
%RSD	51.305	115.97	298.72	5.5159	23.005	90.218	5.8355	1.1719
#1	.00048	-.00090	-.00125	.73345	.16025	.00312	.69263	.20913
#2	.00103	-.00242	.00113	.80644	.20408	.00677	.65162	.21038
#3	.00043	.00007	-.00126	.81000	.25516	.00053	.61643	.20567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	1.7823	.00133	.00372	.00300	.00126	.00396	.52436
Stddev	.00013	.0223	.00095	.00456	.00204	.00258	.00177	.05440
%RSD	25.896	1.2509	70.870	122.60	67.935	204.02	44.751	10.375
#1	-.00039	1.7887	.00038	.00402	.00083	-.00149	.00267	.55810
#2	-.00065	1.8007	.00227	-.00098	.00329	.00166	.00598	.55339
#3	-.00048	1.7575	.00135	.00811	.00488	.00362	.00323	.46161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1606164802 Acquired: 7/19/2016 10:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.02435**	**.00882**	**.00099**	**-.00046**	**.00098**	**-.00004**
Stddev	.00036	.00016	.00843	.00193	.00071	.00016	.00050
%RSD	76.945	.67343	95.577	195.47	152.87	16.223	1136.9
#1	-.00082	.02454	.00517	.00321	-.00015	.00097	-.00007
#2	-.00011	.02431	.01847	-.00022	.00003	.00114	.00047
#3	-.00045	.02422	.00283	-.00003	-.00127	.00083	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11147.**	**53640.**	**2831.7**
Stddev	32.	12.	18.8
%RSD	.29127	.02330	.66530
#1	11156.	53640.	2820.4
#2	11174.	53653.	2821.3
#3	11111.	53628.	2853.5

Approved: July 19, 2016

Sample Name: L1606164802PS Acquired: 7/19/2016 10:10:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG574995-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18695	4.7102	.19108	.92267	.47882	.02321	5.9541	.02327
Stddev	.00037	.0070	.00208	.00117	.00241	.00007	.0448	.00074
%RSD	.19607	.14834	1.0862	.12705	.50408	.31751	.75280	3.1791
#1	.18700	4.7023	.18924	.92135	.47632	.02319	5.9025	.02352
#2	.18728	4.7157	.19333	.92305	.48114	.02329	5.9765	.02386
#3	.18656	4.7125	.19067	.92360	.47899	.02315	5.9833	.02244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09493	.22965	.23876	2.6625	23.669	.46854	5.5130	.43954
Stddev	.00285	.00075	.00574	.0283	.126	.00444	.1203	.00162
%RSD	2.9973	.32552	2.4057	1.0636	.53112	.94786	2.1821	.36912
#1	.09616	.23026	.24072	2.6406	23.559	.46677	5.4482	.44110
#2	.09696	.22882	.24327	2.6525	23.806	.47360	5.6518	.43967
#3	.09168	.22987	.23230	2.6945	23.642	.46527	5.4390	.43786
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.46864	24.867	.23719	4.6580	.23571	.55930	.19829	2.8386
Stddev	.01353	.079	.00530	.0968	.00546	.01423	.00503	.0519
%RSD	2.8862	.31806	2.2350	2.0785	2.3150	2.5440	2.5351	1.8296
#1	.47393	24.791	.23923	4.6764	.23731	.56317	.19643	2.8533
#2	.47872	24.949	.24117	4.7443	.24019	.57120	.20398	2.8817
#3	.45327	24.861	.23117	4.5533	.22964	.54354	.19445	2.7809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1606164802PS Acquired: 7/19/2016 10:10:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG574995-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47198**	**.49351**	**.46280**	**.23846**	**.46633**	**.47815**	**-.00001**
Stddev	.01617	.00287	.00461	.00388	.00161	.01151	.00046
%RSD	3.4256	.58080	.99528	1.6259	.34454	2.4068	4385.8
#1	.48014	.49258	.46532	.24115	.46480	.48230	.00017
#2	.48245	.49673	.46560	.24022	.46618	.48701	-.00053
#3	.45336	.49123	.45748	.23402	.46801	.46514	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11002.**	**52400.**	**2819.9**
Stddev	15.	183.	12.9
%RSD	.14002	.34989	.45861
#1	11019.	52599.	2832.4
#2	10988.	52237.	2806.6
#3	10999.	52364.	2820.6

Approved: July 19, 2016

Sample Name: L1606164802SDL Acquired: 7/19/2016 10:13:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG574995-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00164**	**-.00716**	**.00285**	**.00471**	**.00291**	**-.00003**	**.24542**	**-.00031**
Stddev	.00084	.00646	.00027	.00068	.00044	.00003	.05016	.00024
%RSD	51.043	90.323	9.6058	14.555	15.196	96.553	20.439	77.761
#1	.00068	-.01280	.00295	.00540	.00296	-.00002	.27935	-.00039
#2	.00202	-.00010	.00305	.00403	.00333	-.00006	.26911	-.00004
#3	.00222	-.00857	.00254	.00470	.00245	-.00001	.18780	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00036**	**-.00112**	**-.00006**	**.13556**	**.08263**	**.00176**	**.12383**	**.04176**
Stddev	.00034	.00022	.00003	.02361	.05941	.00339	.03355	.00177
%RSD	95.206	19.619	53.996	17.416	71.904	192.48	27.094	4.2368
#1	.00024	-.00132	-.00007	.11751	.06714	-.00059	.10902	.04367
#2	.00009	-.00116	-.00002	.16227	.14825	.00022	.10023	.04018
#3	.00075	-.00089	-.00009	.12689	.03249	.00565	.16224	.04143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.33842**	**.00032**	**.00104**	**-.00162**	**.00053**	**-.00003**	**.09840**
Stddev	.00039	.03118	.00038	.00611	.00151	.00143	.00050	.01112
%RSD	87.131	9.2148	120.91	586.28	92.906	266.94	1700.4	11.305
#1	-.00015	.36384	-.00009	-.00190	-.00335	.00034	-.00038	.10545
#2	-.00029	.34780	.00036	.00807	-.00085	-.00078	.00054	.10417
#3	-.00088	.30362	.00068	-.00304	-.00066	.00205	-.00025	.08557
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1606164802SDL Acquired: 7/19/2016 10:13:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG574995-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**.00429**	**-.00086**	**.00242**	**-.00066**	**.00018**	**.00001**
Stddev	.00060	.00026	.00190	.00286	.00042	.00007	.00036
%RSD	208.85	6.0852	220.37	118.31	63.975	36.949	3220.9
#1	.00022	.00424	-.00267	.00388	-.00017	.00021	.00037
#2	-.00013	.00405	.00112	-.00088	-.00085	.00010	.00001
#3	-.00096	.00457	-.00104	.00424	-.00095	.00023	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11094.**	**53028.**	**2827.0**
Stddev	44.	226.	1.8
%RSD	.40056	.42555	.06206
#1	11124.	53201.	2828.7
#2	11115.	53109.	2827.2
#3	11043.	52773.	2825.2

Approved: July 19, 2016

Sample Name: CCV Acquired: 7/19/2016 10:17:43 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40159	9.9024	.40096	.48942	.99700	.05012	9.8841	.04989
Stddev	.00155	.0266	.00891	.00338	.00125	.00003	.0356	.00100
%RSD	.38712	.26841	2.2220	.69108	.12580	.06751	.36030	2.0101
#1	.40066	9.9254	.40761	.48585	.99711	.05014	9.8944	.05036
#2	.40339	9.9085	.40442	.49258	.99819	.05008	9.9134	.05058
#3	.40073	9.8733	.39084	.48983	.99569	.05014	9.8444	.04874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20096	.49380	.49855	4.0277	50.324	.98889	10.096	.49757
Stddev	.00525	.00123	.01411	.0297	.076	.00525	.093	.00273
%RSD	2.6102	.24986	2.8305	.73801	.15064	.53091	.91761	.54818
#1	.20459	.49245	.50753	4.0203	50.385	.98315	10.040	.50071
#2	.20335	.49406	.50584	4.0605	50.239	.99007	10.046	.49620
#3	.19495	.49487	.48229	4.0024	50.348	.99345	10.203	.49579
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99341	49.923	.49575	9.9748	.49603	1.1910	.40363	4.8594
Stddev	.02541	.056	.01427	.1899	.01232	.0294	.00315	.0716
%RSD	2.5580	.11307	2.8781	1.9034	2.4837	2.4643	.78165	1.4734
#1	1.0094	49.986	.50578	10.100	.50471	1.2055	.40470	4.9268
#2	1.0068	49.877	.50206	10.068	.50146	1.2103	.40612	4.8672
#3	.96411	49.905	.47942	9.7563	.48193	1.1572	.40008	4.7842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 19, 2016

Sample Name: CCV Acquired: 7/19/2016 10:17:43 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0018**	**.99697**	**1.0016**	**.50370**	**.99179**	**.99026**	**1.0168**
Stddev	.0319	.00089	.0099	.00522	.00246	.02500	.0071
%RSD	3.1841	.08911	.98665	1.0361	.24810	2.5249	.69468
#1	1.0203	.99761	1.0122	.50675	.98985	1.0061	1.0249
#2	1.0202	.99734	.99991	.50667	.99096	1.0032	1.0135
#3	.96501	.99596	.99268	.49767	.99456	.96144	1.0120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10318.**	**49235.**	**2664.4**
Stddev	14.	73.	11.2
%RSD	.13546	.14730	.41854
#1	10314.	49316.	2651.7
#2	10333.	49177.	2672.6
#3	10306.	49212.	2668.8

Approved: July 19, 2016

Sample Name: CCB Acquired: 7/19/2016 10:21:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00160**	**-.00017**	**.00146**	**.00194**	**.00058**	**.00004**	**-.01737**	**-.00037**
Stddev	.00087	.00521	.00161	.00111	.00098	.00006	.00926	.00020
%RSD	54.713	3123.9	110.28	57.022	167.35	155.61	53.334	54.562
#1	.00179	-.00044	.00017	.00320	.00104	.00006	-.02554	-.00040
#2	.00236	-.00523	.00327	.00152	-.00054	-.00003	-.01926	-.00056
#3	.00064	.00517	.00094	.00111	.00125	.00008	-.00731	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**-.00040**	**.00044**	**-.00979**	**.06319**	**.00223**	**-.04951**	**.00027**
Stddev	.00014	.00059	.00046	.01175	.14547	.00365	.05386	.00095
%RSD	57.096	148.87	103.40	120.05	230.23	163.89	108.79	346.99
#1	.00010	.00021	-.00007	-.02331	.11791	.00304	-.08278	.00136
#2	.00037	-.00097	.00079	-.00207	.17336	-.00176	-.07837	-.00038
#3	.00027	-.00044	.00060	-.00398	-.10171	.00541	.01263	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**-.00785**	**.00024**	**.00287**	**-.00033**	**-.00378**	**.00193**	**.00314**
Stddev	.00043	.01321	.00091	.00166	.00283	.00396	.00242	.00118
%RSD	131.19	168.29	372.90	57.775	858.91	104.75	125.03	37.640
#1	-.00063	.00735	.00088	.00112	-.00353	-.00597	.00466	.00450
#2	.00017	-.01657	-.00080	.00307	.00072	.00079	.00107	.00242
#3	-.00052	-.01434	.00066	.00442	.00183	-.00617	.00007	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: CCB Acquired: 7/19/2016 10:21:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	-.00003	.00346	.00059	-.00056	.00034	.00003
Stddev	.00057	.00039	.00569	.00269	.00035	.00005	.00027
%RSD	88.927	1573.4	164.53	456.62	62.292	16.001	820.92
#1	.00101	.00013	-.00258	.00127	-.00051	.00036	-.00024
#2	-.00002	.00027	.00424	-.00237	-.00024	.00028	.00029
#3	.00092	-.00047	.00872	.00287	-.00094	.00038	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10612.	51068.	2721.2
Stddev	75.	34.	4.6
%RSD	.70234	.06662	.16734
#1	10569.	51064.	2720.9
#2	10568.	51104.	2716.9
#3	10698.	51036.	2726.0

Approved: July 19, 2016

Sample Name: LLCCV Acquired: 7/19/2016 10:25:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00839	.16099	.01035	.07792	.00805	.00156	.36730	.00046
Stddev	.00089	.00437	.00125	.00161	.00104	.00004	.04398	.00002
%RSD	10.607	2.7170	12.105	2.0633	12.928	2.7984	11.973	4.5100
#1	.00926	.16442	.00921	.07865	.00722	.00161	.36082	.00047
#2	.00748	.16248	.01169	.07903	.00921	.00152	.41416	.00044
#3	.00843	.15606	.01015	.07607	.00771	.00155	.32693	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00383	.00317	.00447	.05237	.80653	.07914	.39005	.00791
Stddev	.00039	.00068	.00084	.02276	.07486	.00278	.05598	.00137
%RSD	10.290	21.577	18.709	43.455	9.2821	3.5071	14.352	17.286
#1	.00417	.00368	.00528	.06859	.84054	.07880	.41475	.00800
#2	.00394	.00239	.00452	.06217	.72070	.08207	.42942	.00923
#3	.00340	.00343	.00361	.02635	.85835	.07655	.32597	.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00690	.38559	.01517	.71674	.00847	.07302	.01560	.72010
Stddev	.00070	.02075	.00139	.07170	.00218	.01033	.00660	.06241
%RSD	10.095	5.3803	9.1450	10.004	25.764	14.150	42.317	8.6676
#1	.00743	.36164	.01612	.76211	.00736	.08126	.00799	.75914
#2	.00717	.39817	.01580	.75404	.00706	.07638	.01985	.75304
#3	.00611	.39695	.01358	.63408	.01098	.06143	.01895	.64811
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: LLCCV Acquired: 7/19/2016 10:25:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37528**	**.03913**	**.02605**	**.13970**	**.00657**	**.01600**	**.04005**
Stddev	.04234	.00030	.00708	.01283	.00017	.00156	.00061
%RSD	11.283	.77182	27.168	9.1847	2.6645	9.7612	1.5127
#1	.40113	.03883	.03254	.14719	.00657	.01702	.03999
#2	.39829	.03944	.02710	.14702	.00639	.01679	.04069
#3	.32642	.03913	.01850	.12488	.00674	.01421	.03948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10594.**	**50975.**	**2697.3**
Stddev	34.	85.	10.2
%RSD	.31631	.16670	.37810
#1	10567.	51027.	2685.6
#2	10584.	51020.	2704.3
#3	10631.	50877.	2701.9

Approved: July 19, 2016

Sample Name: LLCCV Acquired: 7/19/2016 10:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01557	.31524	.01694	.15244	.01586	.00302	.75198	.00122
Stddev	.00068	.00298	.00141	.00125	.00083	.00007	.05301	.00011
%RSD	4.3615	.94640	8.3178	.81914	5.2576	2.2252	7.0497	8.6980
#1	.01479	.31444	.01818	.15310	.01677	.00310	.80946	.00135
#2	.01591	.31854	.01722	.15100	.01566	.00300	.74147	.00117
#3	.01602	.31273	.01541	.15321	.01514	.00296	.70501	.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00762	.00685	.00727	.14147	1.6425	.15881	.69973	.01634
Stddev	.00111	.00041	.00228	.01846	.0423	.00258	.06957	.00319
%RSD	14.592	5.9126	31.426	13.052	2.5766	1.6234	9.9419	19.489
#1	.00858	.00678	.00881	.12042	1.6095	.15719	.66008	.01994
#2	.00788	.00729	.00835	.14904	1.6278	.15746	.78005	.01520
#3	.00640	.00649	.00464	.15495	1.6902	.16178	.65905	.01389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01386	.78876	.03056	1.4396	.01660	.15036	.02585	1.4356
Stddev	.00126	.01901	.00356	.1309	.00041	.01441	.01023	.1191
%RSD	9.1067	2.4100	11.663	9.0954	2.4769	9.5843	39.570	8.2930
#1	.01466	.80118	.03389	1.5142	.01653	.15855	.03460	1.5077
#2	.01451	.76688	.03098	1.5161	.01704	.15880	.02836	1.5008
#3	.01240	.79822	.02680	1.2884	.01622	.13372	.01460	1.2981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: LLCCV Acquired: 7/19/2016 10:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.74649	.07771	.04639	.28266	.01454	.03128	.07889
Stddev	.08497	.00015	.00498	.02109	.00045	.00313	.00045
%RSD	11.383	.18994	10.735	7.4603	3.1176	10.003	.57376
#1	.80089	.07788	.04396	.29504	.01413	.03335	.07927
#2	.78999	.07762	.05212	.29463	.01503	.03280	.07901
#3	.64857	.07762	.04310	.25831	.01446	.02768	.07839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10636.	51201.	2721.6
Stddev	22.	204.	9.7
%RSD	.20589	.39763	.35653
#1	10638.	51432.	2712.0
#2	10614.	51045.	2731.4
#3	10658.	51127.	2721.3

Approved: July 19, 2016

Sample Name: PBW 12 Acquired: 7/19/2016 10:32:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576596-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**-.00150**	**.00259**	**.00083**	**.00017**	**-.00007**	**-.03724**
Stddev	.00145	.00962	.00052	.00176	.00056	.00003	.02865
%RSD	174.10	643.14	20.057	211.40	330.58	49.568	76.942
#1	-.00184	.00928	.00213	.00032	.00050	-.00006	-.00854
#2	.00083	-.00919	.00248	-.00061	-.00048	-.00003	-.03732
#3	-.00149	-.00458	.00315	.00279	.00050	-.00010	-.06584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.00027**	**-.00019**	**.00043**	F **-.04280**	**.00697**	**.00222**
Stddev	.00004	.00001	.00002	.00066	.01789	.02523	.00084
%RSD	31.726	4.6187	12.241	152.76	41.785	362.16	37.697
#1	-.00008	.00028	-.00022	-.00025	-.04943	-.01685	.00134
#2	-.00013	.00026	-.00019	.00108	-.02255	.00434	.00300
#3	-.00016	.00027	-.00017	.00047	-.05643	.03341	.00232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.12718**	**.00241**	**-.00019**	**.00603**	**.00009**	**-.00311**	**-.00079**
Stddev	.08774	.00340	.00022	.01009	.00056	.00244	.00101
%RSD	68.986	140.93	111.31	167.41	621.98	78.584	128.66
#1	-.03385	.00479	-.00044	-.00299	-.00047	-.00209	-.00184
#2	-.20798	.00392	-.00005	.00415	.00065	-.00134	.00017
#3	-.13972	-.00148	-.00009	.01692	.00010	-.00589	-.00069
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: July 19, 2016

Sample Name: PBW 12 Acquired: 7/19/2016 10:32:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576596-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.00100**	**.00118**	**.00102**	**-.00073**	**-.00108**	**-.00159**
Stddev	.00131	.00193	.00075	.00060	.00045	.00554	.00123
%RSD	227.73	193.21	63.479	59.035	61.615	512.43	77.503
#1	-.00204	.00080	.00055	.00151	-.00024	-.00554	-.00280
#2	-.00014	-.00083	.00201	.00122	-.00081	-.00283	-.00164
#3	.00046	.00302	.00099	.00035	-.00113	.00513	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00115**	**.00118**	**-.00002**
Stddev	.00042	.00019	.00056
%RSD	36.898	15.835	2466.1
#1	-.00073	.00125	-.00066
#2	-.00158	.00133	.00038
#3	-.00115	.00097	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10451.**	**50394.**	**2711.9**
Stddev	43.	223.	11.0
%RSD	.41083	.44195	.40742
#1	10476.	50137.	2700.6
#2	10476.	50538.	2712.4
#3	10402.	50507.	2722.6

Approved: July 19, 2016

Sample Name: LCSW 12 Acquired: 7/19/2016 10:36:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576596-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19323**	**4.8672**	**.19547**	**.94272**	**.49952**	**.02410**	**5.0283**	**.02432**
Stddev	.00109	.0204	.00250	.00363	.00120	.00008	.0197	.00033
%RSD	.56195	.41982	1.2769	.38524	.24053	.33417	.39203	1.3685
#1	.19214	4.8502	.19735	.94163	.49981	.02406	5.0061	.02459
#2	.19325	4.8615	.19641	.93975	.49820	.02420	5.0349	.02444
#3	.19431	4.8899	.19263	.94677	.50055	.02406	5.0439	.02395
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09960**	**.24441**	**.24915**	**2.0076**	**24.756**	**.50013**	**4.9639**	**.24875**
Stddev	.00244	.00145	.00723	.0169	.182	.00122	.0798	.00143
%RSD	2.4513	.59396	2.9017	.84168	.73663	.24402	1.6071	.57485
#1	.10111	.24275	.25474	1.9909	24.546	.50116	5.0287	.24842
#2	.10090	.24547	.25173	2.0247	24.843	.49878	4.9881	.24752
#3	.09678	.24499	.24099	2.0072	24.878	.50045	4.8748	.25032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50270**	**24.674**	**.24978**	**4.7672**	**.24871**	**.58300**	**.18695**	**2.4331**
Stddev	.01241	.125	.00660	.0739	.00447	.01374	.00307	.0293
%RSD	2.4691	.50611	2.6421	1.5509	1.7971	2.3564	1.6415	1.2048
#1	.51055	24.530	.25377	4.8203	.25196	.59351	.18638	2.4560
#2	.50916	24.755	.25342	4.7985	.25056	.58803	.19027	2.4431
#3	.48839	24.737	.24217	4.6828	.24361	.56746	.18421	2.4001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: LCSW 12 Acquired: 7/19/2016 10:36:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576596-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50092**	**.50489**	**.50320**	**.24922**	**.49436**	**.49235**	**.00073**
Stddev	.01106	.00082	.00748	.00471	.00144	.01046	.00016
%RSD	2.2083	.16226	1.4869	1.8901	.29220	2.1252	21.810
#1	.50717	.50419	.50983	.25339	.49386	.49880	.00086
#2	.50743	.50579	.50467	.25016	.49599	.49797	.00055
#3	.48814	.50468	.49509	.24411	.49323	.48028	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10358.**	**49907.**	**2705.2**
Stddev	9.	113.	10.7
%RSD	.08891	.22731	.39632
#1	10350.	49872.	2717.1
#2	10356.	50033.	2696.2
#3	10368.	49814.	2702.5

Approved: July 19, 2016

Sample Name: F BLANK Acquired: 7/19/2016 10:40:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576479-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00266	.00008	.00479	.00038	-.00002	-.02560
Stddev	.00059	.00250	.00078	.00141	.00080	.00006	.02246
%RSD	232.01	93.945	957.73	29.507	209.48	230.35	87.721
#1	.00015	-.00049	-.00030	.00391	-.00054	-.00005	-.00294
#2	.00089	-.00209	.00097	.00404	.00081	-.00006	-.04785
#3	-.00028	-.00539	-.00043	.00643	.00089	.00004	-.02600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	-.00012	-.00016	.00026	-.01685	.14202	.00183
Stddev	.00018	.00038	.00029	.00071	.01854	.04290	.00356
%RSD	67.444	315.20	181.66	270.53	110.05	30.207	194.52
#1	-.00046	-.00049	-.00049	-.00053	-.03480	.09258	.00370
#2	-.00019	.00027	.00002	.00048	.00224	.16952	.00406
#3	-.00013	-.00014	-.00000	.00084	-.01799	.16394	-.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.11622	.00125	-.00009	.01123	.00097	-.00146	-.00049
Stddev	.10616	.00030	.00005	.02239	.00113	.00171	.00300
%RSD	91.344	24.216	50.258	199.31	117.29	116.99	614.96
#1	-.01296	.00158	-.00009	.02517	.00118	-.00201	-.00318
#2	-.11065	.00120	-.00014	-.01459	.00198	.00045	-.00104
#3	-.22506	.00098	-.00005	.02312	-.00026	-.00284	.00275
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: July 19, 2016

Sample Name: F BLANK Acquired: 7/19/2016 10:40:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576479-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00213	-.00123	.00289	.00040	-.00039	.00469	-.00376
Stddev	.00304	.00214	.00098	.00054	.00021	.00678	.00034
%RSD	142.93	173.13	33.821	135.48	55.070	144.57	9.0744
#1	-.00011	-.00090	.00292	-.00020	-.00060	-.00191	-.00339
#2	.00090	.00072	.00385	.00056	-.00040	.00434	-.00406
#3	.00559	-.00352	.00190	.00084	-.00017	.01164	-.00383
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00075	.00239	-.00032
Stddev	.00018	.00033	.00052
%RSD	24.750	13.716	158.55
#1	-.00059	.00269	-.00059
#2	-.00069	.00243	.00027
#3	-.00095	.00204	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10442.	50639.	2698.2
Stddev	27.	138.	19.7
%RSD	.25396	.27336	.73107
#1	10460.	50515.	2700.2
#2	10455.	50788.	2677.5
#3	10412.	50613.	2716.8

Approved: July 19, 2016

Sample Name: L1607055801 Acquired: 7/19/2016 10:44:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG576596-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	-.00861	.00144	.03729	-.00039	-.00003	.03844	-.00041
Stddev	.00109	.00314	.00294	.00202	.00060	.00008	.02809	.00027
%RSD	313.03	36.490	204.41	5.4141	151.27	295.82	73.068	67.353
#1	.00012	-.00499	.00048	.03845	.00013	.00006	.03130	-.00051
#2	.00154	-.01060	.00474	.03845	-.00104	-.00009	.01461	-.00061
#3	-.00061	-.01023	-.00090	.03496	-.00027	-.00005	.06941	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	-.00004	-.00001	.00441	.01952	.00315	-.01551	.00186
Stddev	.00033	.00044	.00097	.00705	.09267	.00511	.02597	.00228
%RSD	108.15	1155.8	15273.	159.81	474.66	162.40	167.38	122.95
#1	.00015	-.00031	-.00052	.00959	.11800	-.00203	-.02735	.00311
#2	.00008	.00047	-.00061	.00726	.00654	.00818	-.03345	.00324
#3	.00069	-.00028	.00111	-.00362	-.06597	.00329	.01426	-.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	3.0036	-.00030	.00033	.00148	.00241	-.00169	.03067
Stddev	.00011	.0419	.00050	.00472	.00256	.00228	.00301	.00365
%RSD	21.732	1.3944	166.17	1429.0	172.94	94.544	177.78	11.899
#1	-.00050	2.9577	-.00028	.00469	.00038	.00359	-.00401	.03290
#2	-.00063	3.0398	.00019	.00097	.00441	-.00022	.00171	.03265
#3	-.00041	3.0132	-.00081	-.00468	-.00034	.00385	-.00277	.02646
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607055801 Acquired: 7/19/2016 10:44:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG576596-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00119	.00567	.00029	.00001	.00174	-.00020
Stddev	.00056	.00040	.01084	.00181	.00007	.00017	.00041
%RSD	195.22	33.316	191.09	634.58	980.56	9.9223	203.86
#1	-.00030	.00099	.00915	.00033	.00007	.00185	-.00049
#2	.00034	.00165	.01434	-.00155	-.00006	.00184	.00027
#3	.00083	.00093	-.00648	.00207	.00001	.00154	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11122.	53388.	2820.0
Stddev	44.	115.	12.9
%RSD	.39281	.21609	.45795
#1	11156.	53257.	2822.2
#2	11136.	53475.	2806.1
#3	11072.	53432.	2831.7

Approved: July 19, 2016

Sample Name: L1607055801S Acquired: 7/19/2016 10:48:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG576596-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	.03627	.00318	.04431	.00566	.00020	.05886
Stddev	.00085	.00187	.00087	.00048	.00035	.00005	.01920
%RSD	82.973	5.1542	27.488	1.0725	6.2289	26.863	32.616
#1	.00196	.03823	.00371	.04377	.00599	.00025	.07988
#2	.00031	.03608	.00365	.04454	.00571	.00022	.04225
#3	.00079	.03451	.00217	.04463	.00529	.00014	.05445
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00112	.00155	.00188	F -.02280	.30886	.00856
Stddev	.00009	.00022	.00005	.00060	.02096	.07984	.00236
%RSD	88.397	19.804	3.5220	31.983	91.921	25.850	27.613
#1	-.00007	.00137	.00151	.00118	-.02528	.22081	.00650
#2	-.00003	.00106	.00161	.00226	-.00071	.32924	.01114
#3	-.00019	.00094	.00153	.00219	-.04241	.37655	.00805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00130	.00491	.00399	3.1346	.00289	.04499	.00434
Stddev	.02632	.00344	.00023	.0102	.00056	.01035	.00162
%RSD	2024.5	70.134	5.7124	.32397	19.418	23.018	37.394
#1	.02394	.00102	.00388	3.1229	.00229	.05081	.00481
#2	-.02857	.00615	.00425	3.1407	.00298	.05112	.00254
#3	.00073	.00756	.00383	3.1403	.00340	.03303	.00568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 19, 2016

Sample Name: L1607055801S Acquired: 7/19/2016 10:48:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG576596-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00207	.00647	.05058	.00458	.00590	.00795	.00416
Stddev	.00047	.00409	.00616	.00018	.00046	.00194	.00088
%RSD	22.709	63.282	12.173	4.0356	7.7322	24.417	21.077
#1	.00167	.00183	.05461	.00476	.00631	.00696	.00366
#2	.00259	.00959	.05365	.00439	.00541	.00669	.00365
#3	.00196	.00798	.04350	.00459	.00596	.01018	.00518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00446	.00674	-.00018
Stddev	.00034	.00061	.00021
%RSD	7.6590	9.1226	117.03
#1	.00456	.00719	-.00009
#2	.00474	.00699	-.00042
#3	.00408	.00604	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11092.	53306.	2820.7
Stddev	37.	238.	6.8
%RSD	.32909	.44659	.24254
#1	11102.	53525.	2823.5
#2	11123.	53342.	2812.9
#3	11052.	53053.	2825.7

Approved: July 19, 2016

Sample Name: L1607055801SD Acquired: 7/19/2016 10:51:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG576596-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	.03540	.00436	.04436	.00487	.00020	.05972	.00001
Stddev	.00104	.00371	.00135	.00227	.00126	.00003	.00509	.00025
%RSD	61.922	10.480	30.974	5.1199	25.878	15.268	8.5171	4461.9
#1	.00176	.03628	.00395	.04437	.00344	.00020	.06544	.00029
#2	.00267	.03859	.00326	.04209	.00533	.00016	.05800	-.00019
#3	.00060	.03133	.00587	.04663	.00583	.00022	.05571	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00130	.00151	.00216	-.00535	.27873	.00619	.03564	.00407
Stddev	.00033	.00053	.00074	.00706	.05004	.00308	.09325	.00194
%RSD	25.267	34.940	34.230	131.81	17.952	49.800	261.66	47.644
#1	.00143	.00160	.00149	.00202	.28840	.00729	.01123	.00186
#2	.00154	.00094	.00295	-.01205	.22456	.00858	.13866	.00482
#3	.00092	.00199	.00203	-.00603	.32322	.00271	-.04298	.00551
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00409	3.1227	.00233	.04631	.00431	.00443	.00025	.05003
Stddev	.00008	.0511	.00054	.00260	.00404	.00149	.00630	.00740
%RSD	2.0753	1.6353	23.242	5.6177	93.855	33.641	2485.3	14.796
#1	.00418	3.0850	.00249	.04891	.00795	.00357	-.00000	.05301
#2	.00401	3.1022	.00277	.04370	.00502	.00357	.00667	.05546
#3	.00409	3.1808	.00173	.04633	-.00004	.00615	-.00591	.04160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607055801SD Acquired: 7/19/2016 10:51:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG576596-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00444	.00555	.00467	.00418	.00403	.00632	.00012
Stddev	.00033	.00027	.00530	.00104	.00035	.00055	.00040
%RSD	7.5308	4.8845	113.49	24.916	8.7801	8.7259	342.89
#1	.00427	.00555	.00750	.00300	.00426	.00666	.00021
#2	.00483	.00528	-.00144	.00457	.00421	.00661	.00046
#3	.00423	.00582	.00794	.00496	.00362	.00568	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11097.	52978.	2819.3
Stddev	33.	208.	33.9
%RSD	.29434	.39320	1.2027
#1	11105.	52854.	2858.2
#2	11125.	53219.	2795.9
#3	11061.	52863.	2803.8

Approved: July 19, 2016

Sample Name: L1607060505 Acquired: 7/19/2016 10:55:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**-.00046**	**.00235**	**.00816**	**.00050**	**-.00005**	**.00918**	**-.00033**
Stddev	.00099	.00396	.00069	.00081	.00084	.00003	.01597	.00014
%RSD	1081.9	862.32	29.572	9.9562	168.70	52.717	173.87	42.875
#1	.00016	-.00306	.00267	.00765	.00093	-.00007	.02722	-.00021
#2	.00075	.00409	.00155	.00772	.00104	-.00005	.00349	-.00049
#3	-.00119	-.00241	.00282	.00909	-.00047	-.00002	-.00316	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.00019**	**.00040**	**-.00540**	**.04306**	**.00277**	**-.05968**	**.00120**
Stddev	.00002	.00047	.00094	.01289	.04974	.00325	.03742	.00157
%RSD	88.224	247.91	236.63	238.76	115.52	117.35	62.695	131.27
#1	.00003	.00024	.00073	.00734	.03904	-.00040	-.10190	-.00061
#2	.00000	-.00070	.00112	-.01844	-.00455	.00262	-.04653	.00227
#3	.00004	-.00011	-.00066	-.00511	.09468	.00609	-.03061	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00942**	**.00113**	**-.00240**	**-.00007**	**-.00157**	**.00357**	**.00483**
Stddev	.00013	.00582	.00015	.00403	.00045	.00232	.00391	.00189
%RSD	95.128	61.758	13.459	168.10	694.54	147.20	109.33	39.178
#1	-.00025	.00507	.00098	-.00623	-.00013	-.00274	.00362	.00675
#2	.00000	.01602	.00113	-.00279	-.00048	.00109	-.00035	.00476
#3	-.00015	.00716	.00129	.00181	.00042	-.00307	.00746	.00297
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607060505 Acquired: 7/19/2016 10:55:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	-.00024	.00133	-.00257	-.00067	.00219	.00017
Stddev	.00041	.00035	.00546	.00191	.00064	.00025	.00018
%RSD	59.880	141.40	410.20	74.201	94.689	11.640	107.03
#1	.00084	-.00061	-.00366	-.00432	.00006	.00223	.00036
#2	.00022	.00008	.00048	-.00287	-.00097	.00242	.00013
#3	.00098	-.00021	.00717	-.00053	-.00110	.00191	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10405.	50855.	2694.6
Stddev	23.	137.	7.5
%RSD	.22439	.26964	.27906
#1	10417.	50757.	2691.0
#2	10420.	51012.	2689.4
#3	10378.	50797.	2703.2

Approved: July 19, 2016

Sample Name: L1607060505PS Acquired: 7/19/2016 10:59:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576859-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19387**	**4.8774**	**.19698**	**.94389**	**.49743**	**.02423**	**5.0475**	**.02439**
Stddev	.00057	.0081	.00346	.00453	.00204	.00012	.0573	.00024
%RSD	.29614	.16541	1.7576	.47941	.41020	.48866	1.1359	1.0019
#1	.19424	4.8687	.19828	.94352	.49844	.02415	5.0911	.02461
#2	.19416	4.8845	.19960	.94859	.49877	.02436	5.0690	.02443
#3	.19321	4.8791	.19305	.93956	.49508	.02417	4.9826	.02412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10042**	**.24660**	**.25106**	**2.0410**	**24.874**	**.50671**	**5.0025**	**.24853**
Stddev	.00259	.00186	.00510	.0116	.179	.00107	.0195	.00263
%RSD	2.5794	.75621	2.0319	.56901	.72147	.21160	.38962	1.0595
#1	.10201	.24472	.25293	2.0503	24.854	.50599	4.9810	.24577
#2	.10182	.24845	.25497	2.0448	25.063	.50794	5.0190	.24880
#3	.09743	.24664	.24529	2.0280	24.706	.50620	5.0075	.25101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50420**	**24.705**	**.25040**	**4.7972**	**.24805**	**.58685**	**.18895**	**2.4118**
Stddev	.01052	.134	.00521	.0836	.00373	.00871	.00291	.0322
%RSD	2.0867	.54427	2.0821	1.7435	1.5026	1.4850	1.5394	1.3333
#1	.51102	24.728	.25391	4.8314	.25177	.59121	.18560	2.4267
#2	.50950	24.826	.25289	4.8583	.24807	.59252	.19047	2.4338
#3	.49208	24.560	.24441	4.7019	.24432	.57682	.19079	2.3749
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607060505PS Acquired: 7/19/2016 10:59:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576859-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50212	.50298	.50084	.24964	.49450	.49484	.00043
Stddev	.01421	.00172	.00341	.00394	.00051	.01009	.00025
%RSD	2.8305	.34184	.68035	1.5775	.10267	2.0396	58.444
#1	.51016	.50387	.50267	.25164	.49482	.50027	.00051
#2	.51049	.50408	.50294	.25217	.49478	.50105	.00062
#3	.48571	.50100	.49691	.24510	.49392	.48319	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10296.	49869.	2682.2
Stddev	10.	83.	13.8
%RSD	.09480	.16693	.51394
#1	10307.	49942.	2679.1
#2	10295.	49779.	2670.2
#3	10287.	49887.	2697.3

Approved: July 19, 2016

Sample Name: L1607060505SDL Acquired: 7/19/2016 11:03:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576859-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**-.00969**	**.00201**	**.00327**	**-.00090**	**-.00000**	**-.02910**
Stddev	.00100	.00498	.00252	.00187	.00138	.00003	.02725
%RSD	150.73	51.357	125.00	57.225	153.62	783.06	93.638
#1	-.00048	-.00431	.00228	.00428	-.00015	-.00004	-.02283
#2	-.00175	-.01413	.00439	.00441	-.00006	.00001	-.05894
#3	.00023	-.01062	-.00063	.00111	-.00249	.00001	-.00553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.00023**	**.00023**	**.00052**	F **-.02147**	**.02275**	**.00364**
Stddev	.00003	.00028	.00090	.00090	.02701	.09161	.00096
%RSD	6.3303	124.98	395.06	175.40	125.80	402.59	26.248
#1	-.00044	.00055	.00127	-.00019	-.02760	.12578	.00368
#2	-.00041	.00005	-.00029	.00021	-.04488	-.04952	.00267
#3	-.00039	.00007	-.00029	.00153	.00808	-.00800	.00458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01527**	**.00080**	**-.00035**	**-.00191**	**.00107**	**.00092**	**.00039**
Stddev	.05090	.00294	.00013	.02129	.00042	.00428	.00140
%RSD	333.40	367.57	37.005	1114.6	39.257	463.70	364.52
#1	.04262	-.00258	-.00020	.02036	.00060	-.00107	.00129
#2	-.05301	.00217	-.00044	-.00404	.00140	-.00199	.00110
#3	-.03541	.00281	-.00042	-.02205	.00121	.00583	-.00123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 19, 2016

Sample Name: L1607060505SDL Acquired: 7/19/2016 11:03:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576859-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00368	.00064	-.00206	.00032	-.00042	.00725	-.00133
Stddev	.00502	.00393	.00100	.00079	.00022	.00554	.00214
%RSD	136.21	612.36	48.683	246.87	51.847	76.460	160.29
#1	.00081	-.00374	-.00232	.00036	-.00035	.00931	-.00177
#2	-.00909	.00183	-.00095	-.00049	-.00025	.01146	.00099
#3	-.00277	.00384	-.00290	.00108	-.00067	.00097	-.00322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00058	.00089	.00001
Stddev	.00032	.00008	.00045
%RSD	54.815	9.0160	4774.2
#1	-.00023	.00087	.00043
#2	-.00086	.00098	.00006
#3	-.00065	.00082	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11108.	53641.	2826.5
Stddev	39.	81.	14.1
%RSD	.35171	.15049	.49915
#1	11140.	53688.	2829.4
#2	11120.	53687.	2811.2
#3	11064.	53548.	2839.0

Approved: July 19, 2016

Sample Name: L1607060505SDL Acquired: 7/19/2016 11:07:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576859-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	-.00799	.00168	.00014	.00088	-.00002	-.04248
Stddev	.00130	.00532	.00281	.00335	.00070	.00005	.00842
%RSD	826.77	66.551	167.59	2314.7	79.146	283.69	19.822
#1	-.00079	-.00855	.00429	-.00358	.00165	-.00007	-.03438
#2	.00164	-.00242	.00202	.00290	.00030	-.00002	-.04189
#3	-.00038	-.01301	-.00129	.00112	.00068	.00003	-.05119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00007	-.00080	.00030	-.01349	-.00572	.00241
Stddev	.00009	.00028	.00071	.00027	.00570	.06475	.00357
%RSD	29.614	396.77	89.100	88.774	42.250	1132.4	148.02
#1	-.00021	-.00025	-.00142	.00033	-.00766	.06552	.00624
#2	-.00033	.00024	-.00002	.00002	-.01904	-.06099	-.00084
#3	-.00040	.00023	-.00096	.00056	-.01376	-.02169	.00184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.11567	.00150	-.00035	-.02184	.00008	.00516	.00021
Stddev	.07912	.00060	.00013	.00809	.00054	.00044	.00104
%RSD	68.399	39.694	37.048	37.059	641.88	8.4771	496.02
#1	-.15877	.00185	-.00042	-.02828	.00070	.00472	-.00074
#2	-.02436	.00184	-.00020	-.02447	-.00027	.00560	.00005
#3	-.16389	.00081	-.00043	-.01276	-.00018	.00515	.00133
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: July 19, 2016

Sample Name: L1607060505SDL Acquired: 7/19/2016 11:07:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576859-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**-.00180**	**-.00189**	**-.00001**	**-.00051**	**.00660**	**.00007**
Stddev	.00471	.00106	.00043	.00067	.00026	.00371	.00032
%RSD	1487.3	59.224	22.886	12787.	51.019	56.132	459.00
#1	-.00415	-.00136	-.00166	-.00043	-.00069	.00435	-.00003
#2	-.00175	-.00102	-.00238	-.00035	-.00021	.01088	.00042
#3	.00494	-.00301	-.00161	.00076	-.00064	.00458	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00044**	**.00063**	**-.00000**
Stddev	.00058	.00015	.00067
%RSD	129.46	23.802	13388.
#1	-.00105	.00079	-.00026
#2	.00010	.00061	.00075
#3	-.00039	.00049	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11093.**	**53478.**	**2800.2**
Stddev	26.	14.	7.7
%RSD	.23637	.02680	.27379
#1	11110.	53492.	2792.1
#2	11105.	53479.	2807.3
#3	11062.	53464.	2801.3

Approved: July 19, 2016

Sample Name: CCV Acquired: 7/19/2016 11:11:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40644**	**10.030**	**.40803**	**.49755**	**1.0063**	**.05084**	**9.9653**	**.05067**
Stddev	.00080	.014	.00828	.00212	.0012	.00005	.0392	.00091
%RSD	.19604	.14200	2.0305	.42592	.11700	.10034	.39302	1.8052
#1	.40584	10.044	.41361	.49567	1.0068	.05081	9.9706	.05139
#2	.40734	10.030	.41197	.49985	1.0072	.05090	10.002	.05097
#3	.40612	10.016	.39851	.49715	1.0050	.05081	9.9238	.04964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20422**	**.49754**	**.50649**	**4.0627**	**50.799**	**1.0035**	**10.101**	**.50208**
Stddev	.00520	.00327	.01118	.0027	.213	.0027	.179	.00507
%RSD	2.5481	.65638	2.2066	.06670	.41954	.27365	1.7768	1.0096
#1	.20704	.50131	.51291	4.0652	51.043	1.0009	9.9705	.49831
#2	.20741	.49563	.51298	4.0631	50.709	1.0064	10.026	.50009
#3	.19822	.49567	.49359	4.0599	50.647	1.0033	10.305	.50784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0147**	**50.436**	**.50347**	**10.123**	**.50242**	**1.2045**	**.40249**	**4.9493**
Stddev	.0285	.120	.01350	.186	.00941	.0276	.00480	.0815
%RSD	2.8087	.23709	2.6816	1.8328	1.8729	2.2887	1.1928	1.6464
#1	1.0265	50.562	.51237	10.225	.50456	1.2161	.40378	4.9979
#2	1.0354	50.324	.51011	10.234	.51057	1.2244	.40652	4.9946
#3	.98218	50.421	.48794	9.9084	.49212	1.1731	.39718	4.8552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 19, 2016

Sample Name: CCV Acquired: 7/19/2016 11:11:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0185**	**1.0049**	**1.0195**	**.50931**	**1.0060**	**1.0080**	**1.0251**
Stddev	.0299	.0033	.0087	.00374	.0045	.0241	.0098
%RSD	2.9336	.33182	.85081	.73395	.44559	2.3919	.95756
#1	1.0384	1.0043	1.0287	.50923	1.0112	1.0228	1.0364
#2	1.0329	1.0086	1.0182	.51309	1.0034	1.0209	1.0198
#3	.98414	1.0020	1.0115	.50562	1.0035	.98015	1.0191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10218.**	**48782.**	**2660.7**
Stddev	2.	81.	19.3
%RSD	.01901	.16669	.72364
#1	10220.	48766.	2638.6
#2	10216.	48710.	2669.5
#3	10217.	48870.	2674.0

Approved: July 19, 2016

Sample Name: CCB Acquired: 7/19/2016 11:14:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00056	.00279	.00255	.00123	-.00001	-.03712	-.00010
Stddev	.00058	.00696	.00062	.00090	.00040	.00008	.01308	.00011
%RSD	79.187	1236.8	22.370	35.147	32.229	1290.2	35.248	109.71
#1	.00101	-.00721	.00303	.00164	.00093	-.00008	-.02213	-.00016
#2	.00007	.00622	.00208	.00257	.00108	.00008	-.04297	-.00017
#3	.00111	.00268	.00326	.00343	.00167	-.00002	-.04626	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	-.00014	.00068	-.00670	.07558	.00104	-.11610	.00119
Stddev	.00044	.00098	.00068	.01396	.10678	.00069	.01456	.00437
%RSD	99.340	707.02	100.79	208.44	141.29	66.476	12.540	366.76
#1	.00093	.00087	.00008	-.02143	.14008	.00174	-.13287	.00624
#2	.00034	-.00020	.00142	-.00499	.13433	.00100	-.10674	-.00130
#3	.00006	-.00108	.00053	.00633	-.04768	.00037	-.10868	-.00137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.01062	.00097	-.00238	-.00226	-.00235	-.00084	.00409
Stddev	.00021	.03508	.00091	.00343	.00037	.00076	.00503	.00020
%RSD	59.310	330.42	94.001	144.10	16.265	32.456	597.86	4.8986
#1	-.00011	.05078	.00178	-.00467	-.00229	-.00166	-.00665	.00390
#2	-.00047	-.00491	-.00002	.00156	-.00188	-.00317	.00214	.00406
#3	-.00049	-.01402	.00115	-.00402	-.00261	-.00222	.00199	.00430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: CCB Acquired: 7/19/2016 11:14:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00030	-.00381	-.00113	-.00092	.00032	.00016
Stddev	.00049	.00014	.00794	.00128	.00016	.00019	.00027
%RSD	174.44	47.826	208.67	113.00	16.808	60.645	169.78
#1	.00008	-.00016	.00123	.00027	-.00081	.00051	-.00015
#2	-.00008	-.00029	-.01296	-.00143	-.00086	.00033	.00031
#3	.00083	-.00044	.00032	-.00224	-.00110	.00012	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10526.	50695.	2683.3
Stddev	9.	122.	22.8
%RSD	.08218	.23989	.85105
#1	10516.	50804.	2659.6
#2	10532.	50717.	2685.1
#3	10529.	50564.	2705.2

Approved: July 19, 2016

Sample Name: L1607056202 Acquired: 7/19/2016 11:18:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00128	.00850	.00402	.01759	.00273	.00002	.79269	-.00014
Stddev	.00083	.00506	.00091	.00215	.00068	.00004	.04589	.00016
%RSD	64.744	59.528	22.725	12.236	24.896	266.90	5.7890	111.95
#1	-.00207	.00725	.00315	.01905	.00236	.00007	.78439	-.00003
#2	-.00041	.00418	.00498	.01860	.00232	.00001	.84216	-.00032
#3	-.00137	.01406	.00394	.01512	.00351	-.00002	.75152	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.29799	.00132	.00419	.21670	.00363	.16716	.00318
Stddev	.00011	.00049	.00079	.00733	.02671	.00186	.05024	.00065
%RSD	30.307	.16299	59.690	175.06	12.324	51.316	30.058	20.516
#1	.00045	.29773	.00209	.01195	.21884	.00558	.13815	.00256
#2	.00037	.29856	.00052	-.00262	.18899	.00187	.22517	.00313
#3	.00024	.29770	.00135	.00323	.24228	.00343	.13815	.00386
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	67.395	.00052	.00751	-.00257	-.00413	.00224	.03333
Stddev	.00009	.515	.00124	.00473	.00168	.00161	.00255	.00436
%RSD	46.375	.76476	237.80	63.040	65.346	38.968	113.68	13.094
#1	-.00010	66.969	.00085	.00936	-.00427	-.00544	.00452	.03631
#2	-.00019	67.968	.00155	.01104	-.00090	-.00233	.00271	.03537
#3	-.00028	67.247	-.00085	.00213	-.00256	-.00461	-.00051	.02832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607056202 Acquired: 7/19/2016 11:18:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00245**	**.00060**	**.00018**	**-.00028**	**.00573**	**-.00013**
Stddev	.00066	.00015	.00215	.00229	.00056	.00066	.00030
%RSD	175.57	5.9374	360.10	1239.4	199.16	11.495	233.16
#1	-.00023	.00261	.00306	.00212	.00027	.00607	.00001
#2	.00020	.00233	-.00039	-.00235	-.00027	.00614	.00008
#3	-.00110	.00242	-.00088	.00078	-.00084	.00497	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10425.**	**49511.**	**2677.1**
Stddev	64.	67.	7.1
%RSD	.61121	.13571	.26576
#1	10375.	49557.	2684.6
#2	10404.	49434.	2676.4
#3	10497.	49541.	2670.4

Approved: July 19, 2016

Sample Name: +1 PPM CR Acquired: 7/19/2016 11:22:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00652	.00467	.01369	.00134	-.00004	.73522	-.00037
Stddev	.00177	.00161	.00186	.00229	.00022	.00005	.02584	.00008
%RSD	470.54	24.666	39.784	16.731	16.716	116.67	3.5141	20.530
#1	.00221	.00483	.00541	.01183	.00154	-.00002	.70540	-.00029
#2	-.00132	.00671	.00256	.01300	.00110	-.00010	.74943	-.00038
#3	.00024	.00802	.00605	.01625	.00138	-.00001	.75084	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	1.3305	.00148	.01179	.16090	.00188	.20182	.00171
Stddev	.00031	.0040	.00033	.01864	.01557	.00153	.03566	.00191
%RSD	35.714	.30132	22.010	158.15	9.6756	81.517	17.668	111.81
#1	.00064	1.3310	.00165	.00229	.15119	.00085	.20232	-.00045
#2	.00121	1.3342	.00169	.03326	.15266	.00114	.16592	.00239
#3	.00072	1.3262	.00111	-.00019	.17886	.00364	.23723	.00318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	65.328	.00055	.00699	.00177	-.01448	-.00161	.03298
Stddev	.00013	.401	.00098	.00145	.00081	.00708	.00416	.00380
%RSD	429.44	.61392	178.55	20.746	45.925	48.920	259.29	11.518
#1	-.00016	65.711	.00137	.00681	.00124	-.01007	.00221	.03600
#2	.00011	64.911	-.00053	.00564	.00270	-.01073	-.00605	.03424
#3	-.00004	65.361	.00081	.00852	.00136	-.02265	-.00097	.02871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: +1 PPM CR Acquired: 7/19/2016 11:22:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00218	-.00488	.00096	-.00120	.00615	-.00033
Stddev	.00056	.00024	.00129	.00250	.00032	.00060	.00019
%RSD	135.79	10.804	26.448	260.46	26.258	9.8148	59.391
#1	.00086	.00242	-.00514	.00325	-.00092	.00633	-.00018
#2	-.00022	.00217	-.00603	-.00171	-.00154	.00664	-.00055
#3	.00059	.00195	-.00348	.00134	-.00115	.00548	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10547.	50644.	2729.5
Stddev	59.	54.	25.0
%RSD	.56277	.10681	.91486
#1	10531.	50668.	2701.1
#2	10497.	50681.	2739.4
#3	10612.	50582.	2748.1

Approved: July 19, 2016

Sample Name: +1.5 PPM CR Acquired: 7/19/2016 11:26:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00097**	**.00303**	**.00613**	**.01518**	**.00236**	**-.00002**	**.78760**
Stddev	.00089	.00131	.00271	.00117	.00124	.00011	.03797
%RSD	91.891	43.307	44.247	7.6962	52.400	541.10	4.8208
#1	-.00042	.00454	.00572	.01507	.00367	-.00014	.79775
#2	-.00049	.00236	.00365	.01640	.00121	-.00002	.81947
#3	-.00200	.00219	.00903	.01407	.00221	.00009	.74559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00149**	**1.8105**	**.00225**	F **-.03432**	**.22494**	**.00467**
Stddev	.00016	.00013	.0046	.00013	.01593	.03080	.00137
%RSD	43.341	8.9491	.25517	5.7717	46.411	13.694	29.340
#1	-.00020	.00155	1.8082	.00212	-.05255	.25989	.00394
#2	-.00051	.00157	1.8074	.00224	-.02308	.21314	.00381
#3	-.00040	.00133	1.8158	.00238	-.02734	.20178	.00624
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09893**	**.00259**	**-.00013**	**64.926**	**.00121**	**.00554**	**.00070**
Stddev	.02175	.00301	.00007	.364	.00097	.00515	.00129
%RSD	21.984	116.14	49.233	.56103	80.484	92.940	183.05
#1	.08023	-.00088	-.00006	64.966	.00009	.00970	.00033
#2	.12280	.00415	-.00019	65.269	.00189	-.00022	.00213
#3	.09376	.00450	-.00015	64.544	.00164	.00714	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 19, 2016

Sample Name: +1.5 PPM CR Acquired: 7/19/2016 11:26:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.02261	.00032	.03202	.00078	.00242	.00354	-.00135
Stddev	.00069	.00113	.00358	.00010	.00017	.00240	.00173
%RSD	3.0473	358.17	11.195	12.915	6.8636	67.709	128.04
#1	-.02316	.00157	.03499	.00069	.00225	.00481	-.00301
#2	-.02184	.00001	.03304	.00089	.00259	.00504	-.00147
#3	-.02283	-.00063	.02804	.00077	.00241	.00078	.00044
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	45.000						
Low Limit	-.02000						

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00020	.00642	-.00108
Stddev	.00042	.00043	.00011
%RSD	209.31	6.7301	10.006
#1	.00016	.00658	-.00116
#2	-.00010	.00674	-.00096
#3	-.00066	.00593	-.00113
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10562.	50407.	2737.9
Stddev	55.	149.	9.6
%RSD	.52436	.29606	.35066
#1	10508.	50490.	2741.4
#2	10559.	50496.	2727.1
#3	10619.	50235.	2745.3

Approved: July 19, 2016

Sample Name: +2 PPM CR Acquired: 7/19/2016 11:30:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.00584**	**.00744**	**.01386**	**.00177**	**-.00008**	**.77259**
Stddev	.00120	.00349	.00231	.00125	.00071	.00004	.00657
%RSD	389.79	59.759	31.099	9.0493	40.074	46.343	.85066
#1	.00054	.00186	.00785	.01525	.00102	-.00008	.78017
#2	-.00168	.00837	.00494	.01281	.00186	-.00012	.76851
#3	.00021	.00728	.00951	.01353	.00243	-.00005	.76910
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.00125**	**2.3392**	**.00331**	**-.00330**	**.26670**	**.00360**
Stddev	.00024	.00037	.0038	.00087	.01981	.02259	.00032
%RSD	90.145	29.834	.16069	26.308	599.97	8.4694	8.9033
#1	-.00010	.00113	2.3354	.00423	-.02189	.28700	.00339
#2	-.00015	.00167	2.3394	.00251	-.00556	.27072	.00344
#3	-.00053	.00095	2.3429	.00317	.01754	.24237	.00397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.15183**	**.00009**	**-.00016**	**65.933**	**.00118**	**.00807**	**.00101**
Stddev	.04816	.00354	.00017	1.353	.00073	.00776	.00283
%RSD	31.717	4102.6	106.59	2.0528	62.095	96.222	281.15
#1	.19503	-.00020	-.00033	65.811	.00038	.01277	.00089
#2	.09991	-.00330	-.00017	64.644	.00182	.01233	-.00176
#3	.16056	.00376	.00001	67.343	.00135	-.00089	.00390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 19, 2016

Sample Name: +2 PPM CR Acquired: 7/19/2016 11:30:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.02847	.00208	.03440	-.00002	.00231	.00197	-.00295
Stddev	.00286	.00346	.00472	.00080	.00054	.00542	.00149
%RSD	10.046	165.92	13.729	3320.1	23.429	275.44	50.369
#1	-.02581	-.00164	.03850	-.00026	.00286	.00076	-.00124
#2	-.02810	.00519	.03545	.00087	.00178	-.00275	-.00379
#3	-.03149	.00270	.02924	-.00068	.00228	.00788	-.00384
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	45.000						
Low Limit	-.02000						

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00048	.00673	-.00129
Stddev	.00061	.00029	.00027
%RSD	128.14	4.3242	20.900
#1	.00006	.00704	-.00138
#2	-.00035	.00671	-.00098
#3	-.00114	.00646	-.00150
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10434.	50161.	2706.6
Stddev	72.	103.	32.7
%RSD	.68577	.20613	1.2068
#1	10383.	50042.	2706.6
#2	10404.	50224.	2739.2
#3	10516.	50218.	2673.9

Approved: July 19, 2016

Sample Name: L1607061101 Acquired: 7/19/2016 11:34:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.48248	.00273	.10973	.00718	-.00002	9.1862	-.00024
Stddev	.00205	.01496	.00070	.00213	.00184	.00006	.0474	.00011
%RSD	244.19	3.1010	25.674	1.9406	25.662	249.32	.51547	47.618
#1	-.00188	.46525	.00351	.10728	.00912	-.00000	9.1394	-.00035
#2	.00152	.49007	.00253	.11077	.00546	-.00009	9.2341	-.00012
#3	-.00216	.49213	.00215	.11113	.00694	.00002	9.1849	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00121	.00348	.33138	1.5698	.00724	.48819	.00318
Stddev	.00044	.00053	.00075	.04212	.1693	.00369	.07151	.00326
%RSD	84.507	43.838	21.694	12.711	10.784	50.995	14.649	102.61
#1	.00060	.00101	.00435	.28715	1.4709	.00309	.46865	.00603
#2	.00091	.00082	.00306	.37102	1.7652	.00850	.42848	.00389
#3	.00005	.00182	.00302	.33596	1.4731	.01014	.56745	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	50.870	.00170	.04157	.00293	-.00116	-.00347	2.5939
Stddev	.00049	.171	.00054	.00800	.00244	.00176	.00216	.1870
%RSD	54.272	.33587	31.766	19.254	83.144	150.80	62.221	7.2099
#1	.00036	50.900	.00108	.04942	.00112	.00063	-.00527	2.7079
#2	.00101	51.025	.00196	.04187	.00570	-.00287	-.00107	2.6958
#3	.00131	50.687	.00206	.03342	.00197	-.00125	-.00407	2.3781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607061101 Acquired: 7/19/2016 11:34:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00316	.01935	.00354	-.00214	-.00022	.00609	.00031
Stddev	.00112	.00054	.00581	.00180	.00028	.00063	.00021
%RSD	35.433	2.7713	164.00	84.055	130.36	10.334	67.771
#1	.00427	.01936	.00931	-.00010	-.00050	.00643	.00020
#2	.00319	.01988	-.00231	-.00348	.00007	.00649	.00018
#3	.00203	.01881	.00364	-.00284	-.00022	.00537	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10305.	49333.	2689.4
Stddev	20.	94.	15.5
%RSD	.19185	.19088	.57666
#1	10313.	49236.	2673.1
#2	10319.	49424.	2691.0
#3	10283.	49339.	2704.0

Approved: July 19, 2016

Sample Name: L1607064701 Acquired: 7/19/2016 11:37:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.01367	.00143	.01240	.00788	-.00002	3.3802	-.00015
Stddev	.00073	.00735	.00115	.00019	.00035	.00006	.0467	.00010
%RSD	384.38	53.768	80.946	1.4981	4.3798	392.71	1.3823	67.666
#1	-.00082	.02177	.00067	.01225	.00764	.00004	3.3940	-.00005
#2	-.00035	.01183	.00085	.01233	.00773	-.00001	3.3281	-.00016
#3	.00061	.00742	.00275	.01261	.00827	-.00007	3.4185	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00047	.00146	3.9210	2.8985	1.1317	1.2050	.03584
Stddev	.00030	.00104	.00142	.0552	.1284	.0094	.0154	.00046
%RSD	29.936	222.29	97.296	1.4086	4.4291	.83427	1.2753	1.2943
#1	.00127	.00156	.00271	3.9714	2.7757	1.1412	1.2144	.03570
#2	.00109	-.00052	.00175	3.8620	2.8880	1.1223	1.1873	.03546
#3	.00068	.00037	-.00008	3.9297	3.0318	1.1316	1.2133	.03636
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	25.866	.00312	.06681	.00165	.00147	.00043	.74748
Stddev	.00021	.127	.00025	.01012	.00387	.00060	.00137	.05441
%RSD	90.768	.49016	8.1055	15.146	235.21	40.973	322.78	7.2794
#1	.00048	25.996	.00321	.07310	.00423	.00197	-.00093	.77904
#2	.00011	25.743	.00332	.07220	.00352	.00080	.00040	.77875
#3	.00011	25.858	.00284	.05514	-.00281	.00163	.00181	.68465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607064701 Acquired: 7/19/2016 11:37:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.01191	-.00387	-.00122	-.00046	.09664	-.00024
Stddev	.00042	.00036	.00225	.00131	.00024	.00936	.00021
%RSD	55.800	3.0460	58.204	107.77	52.091	9.6873	88.238
#1	.00084	.01221	-.00160	-.00181	-.00021	.10234	-.00045
#2	.00029	.01202	-.00391	.00029	-.00069	.10175	-.00023
#3	.00111	.01151	-.00611	-.00212	-.00049	.08584	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10364.	50064.	2683.3
Stddev	36.	163.	8.3
%RSD	.35161	.32586	.30895
#1	10362.	49923.	2679.1
#2	10402.	50243.	2692.9
#3	10329.	50027.	2678.0

Approved: July 19, 2016

Sample Name: L1607062701 Acquired: 7/19/2016 11:41:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	-.00587	.00182	-.00096	.00116	.00002	6.4729	-.00024
Stddev	.00012	.00614	.00165	.00245	.00090	.00009	.0352	.00008
%RSD	16.797	104.60	90.199	254.84	78.075	493.27	.54321	31.844
#1	-.00064	.00121	.00362	-.00235	.00220	-.00008	6.4625	-.00016
#2	-.00082	-.00971	.00147	.00186	.00057	.00011	6.5121	-.00026
#3	-.00061	-.00911	.00038	-.00240	.00071	.00003	6.4442	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00068	.00068	-.00054	.17311	.00407	.36263	.01337
Stddev	.00034	.00065	.00032	.02896	.06795	.00352	.08717	.00091
%RSD	156.42	94.400	47.018	5408.9	39.252	86.485	24.037	6.8441
#1	.00033	.00005	.00098	.01102	.25155	.00163	.29555	.01441
#2	-.00016	-.00092	.00073	-.03349	.13544	.00811	.46115	.01300
#3	.00048	-.00118	.00034	.02086	.13233	.00248	.33118	.01269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	8.2229	.00147	.00427	-.00042	-.00059	-.00022	.02536
Stddev	.00031	.0502	.00036	.00299	.00242	.00219	.00164	.00367
%RSD	114.21	.61018	24.147	69.987	579.68	371.75	749.44	14.484
#1	-.00063	8.1872	.00130	.00614	.00237	-.00311	-.00033	.02869
#2	-.00009	8.2802	.00123	.00082	-.00183	.00073	-.00180	.02596
#3	-.00009	8.2011	.00188	.00584	-.00180	.00062	.00147	.02142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607062701 Acquired: 7/19/2016 11:41:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.01691	-.00190	-.00047	-.00110	.00069	.00020
Stddev	.00035	.00024	.00232	.00194	.00076	.00011	.00029
%RSD	243.48	1.4470	121.83	413.19	69.125	16.522	147.61
#1	-.00026	.01719	-.00074	.00032	-.00190	.00077	.00000
#2	.00035	.01673	-.00457	-.00268	-.00040	.00075	.00054
#3	.00035	.01681	-.00040	.00095	-.00098	.00056	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11008.	52717.	2782.5
Stddev	44.	76.	7.2
%RSD	.40364	.14506	.26048
#1	11052.	52775.	2787.5
#2	11011.	52745.	2785.8
#3	10963.	52630.	2774.2

Approved: July 19, 2016

Sample Name: L1607062702 Acquired: 7/19/2016 11:45:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	-.00811	.00225	.01620	.01003	-.00004	51.495	-.00004
Stddev	.00147	.00448	.00228	.00222	.00059	.00011	.037	.00020
%RSD	1143.3	55.281	101.19	13.678	5.8937	283.93	.07229	461.05
#1	-.00182	-.01184	.00485	.01533	.01040	-.00015	51.469	-.00021
#2	.00090	-.00314	.00131	.01455	.00935	-.00003	51.477	.00017
#3	.00053	-.00934	.00059	.01872	.01034	.00007	51.537	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00005	.00154	.00170	2.2084	.04730	-.07572	.00475
Stddev	.00010	.00038	.00066	.01115	.0728	.00449	.08864	.00407
%RSD	43.287	837.00	43.159	657.38	3.2985	9.4866	117.07	85.795
#1	.00018	.00040	.00224	-.01022	2.2903	.05232	-.17797	.00895
#2	.00016	-.00036	.00147	.01189	2.1508	.04589	-.02067	.00081
#3	.00034	.00010	.00091	.00341	2.1842	.04368	-.02851	.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	1.1521	.00048	.00300	.00195	-.00096	.00012	.00676
Stddev	.00010	.0037	.00010	.00383	.00521	.00127	.00472	.00205
%RSD	17.000	.32051	20.333	127.64	267.34	133.12	4036.7	30.348
#1	-.00068	1.1496	.00049	.00417	.00564	-.00218	.00462	.00907
#2	-.00067	1.1504	.00057	-.00128	.00421	-.00105	.00053	.00604
#3	-.00050	1.1563	.00038	.00612	-.00401	.00036	-.00480	.00516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607062702 Acquired: 7/19/2016 11:45:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.79851	-.00705	-.00176	-.00085	.00101	-.00020
Stddev	.00036	.00130	.00504	.00343	.00009	.00012	.00018
%RSD	148.25	.16241	71.516	194.85	10.135	12.242	88.482
#1	-.00020	.79763	-.00207	-.00463	-.00093	.00112	-.00039
#2	-.00062	.79791	-.01214	-.00268	-.00076	.00088	-.00005
#3	.00009	.80000	-.00693	.00203	-.00087	.00104	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10911.	52250.	2780.5
Stddev	25.	43.	10.7
%RSD	.22556	.08158	.38569
#1	10902.	52228.	2780.1
#2	10939.	52223.	2770.0
#3	10893.	52299.	2791.4

Approved: July 19, 2016

Sample Name: L1607062703 Acquired: 7/19/2016 11:49:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	-.01359	.00141	.01420	.31064	-.00003	4.1627	-.00037
Stddev	.00046	.00925	.00224	.00036	.00112	.00005	.0309	.00021
%RSD	92.220	68.083	158.10	2.5030	.35903	154.74	.74327	57.302
#1	-.00101	-.00308	.00317	.01449	.30990	-.00007	4.1426	-.00061
#2	-.00032	-.01719	-.00110	.01380	.31192	.00002	4.1472	-.00026
#3	-.00015	-.02051	.00218	.01429	.31011	-.00004	4.1984	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.00011	.00141	-.00255	.31320	.03793	.32162	.00308
Stddev	.00038	.00129	.00044	.01143	.05185	.00318	.04734	.00267
%RSD	154.51	1130.4	31.589	447.32	16.555	8.3860	14.718	86.853
#1	-.00019	-.00136	.00109	.01045	.26638	.03970	.31314	.00547
#2	.00052	.00101	.00191	-.01101	.30429	.03983	.37262	.00019
#3	.00041	.00069	.00122	-.00710	.36893	.03426	.27910	.00358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	15.938	.00065	.00297	.00101	-.00069	.00072	.01102
Stddev	.00015	.122	.00086	.00191	.00144	.00578	.00148	.00356
%RSD	55.785	.76404	132.27	64.161	141.92	838.62	205.03	32.277
#1	-.00011	15.905	-.00018	.00122	.00123	-.00066	.00067	.01449
#2	-.00041	16.073	.00058	.00269	.00233	-.00649	-.00073	.01118
#3	-.00028	15.837	.00154	.00501	-.00052	.00508	.00222	.00738
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607062703 Acquired: 7/19/2016 11:49:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**1.8913**	**.00199**	**-.00001**	**-.00073**	**.00231**	**-.00046**
Stddev	.00057	.0074	.00493	.00215	.00058	.00022	.00034
%RSD	9184.6	.39167	248.26	37992.	79.457	9.3591	73.685
#1	.00018	1.8885	.00745	.00230	-.00140	.00228	-.00016
#2	.00044	1.8996	-.00214	-.00196	-.00035	.00255	-.00040
#3	-.00065	1.8856	.00065	-.00036	-.00044	.00212	-.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10986.**	**52448.**	**2794.6**
Stddev	24.	23.	9.1
%RSD	.21921	.04358	.32438
#1	10995.	52463.	2798.2
#2	11004.	52422.	2784.3
#3	10959.	52460.	2801.4

Approved: July 19, 2016

Sample Name: CCV Acquired: 7/19/2016 11:53:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39823	9.8832	.39905	.48707	.99070	.05023	9.8634	.05034
Stddev	.00319	.0434	.00724	.00114	.00442	.00008	.0816	.00098
%RSD	.79996	.43858	1.8152	.23321	.44582	.16089	.82722	1.9433
#1	.40151	9.9247	.40570	.48817	.98573	.05030	9.7713	.05098
#2	.39515	9.8382	.40012	.48714	.99218	.05023	9.8922	.05084
#3	.39802	9.8868	.39133	.48590	.99418	.05014	9.9267	.04922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20192	.48987	.50084	4.0331	50.609	.99807	10.135	.49566
Stddev	.00545	.00133	.01282	.0201	.407	.00935	.155	.00123
%RSD	2.6978	.27061	2.5593	.49765	.80413	.93644	1.5288	.24731
#1	.20559	.48930	.50954	4.0549	50.615	1.0074	10.012	.49547
#2	.20451	.49138	.50686	4.0291	50.199	.98874	10.309	.49697
#3	.19566	.48892	.48612	4.0154	51.012	.99804	10.084	.49454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0004	49.886	.49732	9.9891	.50058	1.1908	.40310	4.8715
Stddev	.0281	.274	.01218	.1917	.00496	.0314	.00811	.0644
%RSD	2.8067	.54904	2.4496	1.9192	.98993	2.6345	2.0108	1.3213
#1	1.0116	49.935	.50490	10.118	.50514	1.2101	.40643	4.8802
#2	1.0212	49.591	.50378	10.081	.50129	1.2076	.40901	4.9311
#3	.96844	50.132	.48326	9.7688	.49531	1.1546	.39386	4.8033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 19, 2016

Sample Name: CCV Acquired: 7/19/2016 11:53:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0109**	**.99086**	**1.0129**	**.50388**	**.99806**	**.99140**	**1.0075**
Stddev	.0289	.00186	.0154	.00287	.00357	.02281	.0050
%RSD	2.8555	.18783	1.5211	.56920	.35747	2.3006	.50052
#1	1.0304	.98953	1.0138	.50518	1.0005	1.0053	1.0107
#2	1.0245	.99007	.99708	.50587	.99971	1.0038	1.0017
#3	.97770	.99299	1.0279	.50059	.99397	.96507	1.0101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10236.**	**48768.**	**2661.2**
Stddev	12.	158.	20.1
%RSD	.11548	.32447	.75521
#1	10231.	48623.	2646.9
#2	10228.	48937.	2684.2
#3	10250.	48746.	2652.5

Approved: July 19, 2016

Sample Name: CCB Acquired: 7/19/2016 11:56:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00576	.00175	.00344	.00077	.00006	-.03098	-.00017
Stddev	.00165	.00950	.00107	.00090	.00086	.00008	.01588	.00027
%RSD	442.09	164.95	61.174	26.143	111.04	127.15	51.245	163.50
#1	.00181	-.00315	.00069	.00259	.00036	.00000	-.01297	.00007
#2	-.00143	.00466	.00173	.00334	.00175	.00003	-.04296	-.00010
#3	.00073	.01576	.00282	.00438	.00020	.00015	-.03702	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00057	.00060	-.01072	-.00917	-.00095	-.00746	-.00078
Stddev	.00008	.00052	.00030	.01243	.05076	.00276	.05015	.00142
%RSD	32.914	92.154	50.215	115.95	553.80	290.03	671.77	182.37
#1	.00035	-.00012	.00077	.00363	-.03048	-.00410	-.04657	.00038
#2	.00020	-.00114	.00025	-.01826	-.04579	.00015	-.02490	-.00236
#3	.00021	-.00044	.00079	-.01752	.04877	.00109	.04907	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	-.00292	.00020	-.00070	.00060	.00071	-.00024	.00580
Stddev	.00008	.00381	.00081	.00500	.00067	.00087	.00696	.00060
%RSD	21.023	130.31	416.87	710.01	111.76	123.04	2927.4	10.307
#1	-.00031	-.00426	.00002	.00310	.00020	-.00012	-.00089	.00643
#2	-.00041	-.00588	-.00052	-.00637	.00138	.00162	-.00685	.00524
#3	-.00047	.00137	.00108	.00115	.00023	.00062	.00702	.00573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: CCB Acquired: 7/19/2016 11:56:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	-.00061	.00260	-.00039	-.00076	.00022	.00018
Stddev	.00017	.00012	.00272	.00156	.00022	.00010	.00027
%RSD	18.028	20.055	104.34	405.94	29.281	45.219	146.98
#1	.00077	-.00075	.00542	-.00201	-.00054	.00026	.00049
#2	.00089	-.00055	.00239	.00111	-.00075	.00031	.00007
#3	.00110	-.00053	.00000	-.00025	-.00098	.00011	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10542.	50581.	2684.8
Stddev	63.	209.	9.2
%RSD	.59499	.41323	.34320
#1	10498.	50786.	2678.7
#2	10514.	50589.	2695.4
#3	10613.	50368.	2680.4

Approved: July 19, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/06/2016 08:44
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/07/2016 09:57
Workgroup #:	WG575345	**Analyst:**	JYH	**Run Date:**	07/07/2016 15:10
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	NI.070716.151016
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/06/2016 08:44
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/07/2016 09:57
Workgroup #:	WG575345	**Analyst:**	JYH	**Run Date:**	07/07/2016 10:29
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	NI.070716.102920
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00243		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00200	U	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0135		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00596	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/06/2016 08:44
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/07/2016 09:57
Workgroup #:	WG575345	**Analyst:**	JYH	**Run Date:**	07/07/2016 13:03
Collect Date:	06/29/2016 08:05	**Dilution:**	50	**File ID:**	NI.070716.130338
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.391		0.300	0.150	0.0750
Manganese, Total	7439-96-5	5.29		0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG575246
Analyst: ERP
Spike Analyst: ERP
Run Date: 07/06/2016 08:44
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 07/06/2016 08:44

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: REK
HNO3 Lot #: COA19030
40 & 50 ML. DIGESTION TU COA18987
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG575246-03	BLANK	1	20 mL	50 mL	183.319 g	183.313 g		
2	WG575246-04	LCS	1	20 mL	50 mL	184.762 g	184.757 g	.25 mL	
3	L16061615-01	SAMP	2	20 mL	50 mL	183.744 g	183.725 g		07/07/16
4	L16061615-02	SAMP	2	20 mL	50 mL	184.155 g	184.142 g		07/07/16
5	WG575246-01	REF	1	20 mL	50 mL	184.987 g	184.983 g		
6	L16061648-02	SAMP	1	20 mL	50 mL	184.987 g	184.983 g		07/11/16
7	L16061650-01	SAMP	2	20 mL	50 mL	182.149 g	182.131 g		07/08/16
8	L16061652-36	SAMP	1	20 mL	50 mL	185.107 g	185.088 g		07/14/16
9	L16061652-38	SAMP	1	20 mL	50 mL	182.109 g	182.096 g		07/14/16
10	L16070050-01	SAMP	2	20 mL	50 mL	183.336 g	183.316 g		07/07/16
11	L16070050-02	SAMP	2	20 mL	50 mL	183.771 g	183.738 g		07/07/16
12	WG575246-02	REF	2	20 mL	50 mL	184.566 g	184.544 g		
13	L16070054-01	SAMP	2	20 mL	50 mL	184.566 g	184.544 g		07/08/16
14	L16070074-01	SAMP	2	20 mL	50 mL	183.091 g	183.07 g		07/07/16
15	L16070090-01	SAMP	1	20 mL	50 mL	182.985 g	182.973 g		07/12/16
16	L16070104-01	SAMP	2	20 mL	50 mL	182.97 g	182.95 g		07/11/16
17	L16070104-02	SAMP	2	20 mL	50 mL	184.551 g	184.53 g		07/11/16
18	L16070104-03	SAMP	2	20 mL	50 mL	184.78 g	184.759 g		07/11/16
19	L16070104-04	SAMP	2	20 mL	50 mL	182.612 g	182.597 g		07/11/16
20	L16070104-05	SAMP	2	20 mL	50 mL	183.317 g	183.299 g		07/11/16
21	L16070107-01	SAMP	2	20 mL	50 mL	182.61 g	182.566 g		07/11/16
22	WG575246-05	MS	1	20 mL	50 mL	182.175 g	182.168 g	.25 mL	
23	WG575246-06	MSD	1	20 mL	50 mL	182.359 g	182.345 g	.25 mL	
24	WG575246-07	DUP	1	20 mL	50 mL	180.43 g	180.404 g		

L16070050-01	filtered digestate
L16061650-01	filtered digestate
L16070107-01	filtered digestate
L16070090-01	filtered digestate

Analyst: Erin Potter

Reviewer:

MW_DIG - Modified 09/30/2009
PDF ID: 4839974
Report generated: 07/06/2016 09:35

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070716A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989

Stannous : Hydroxylamine :

Workgroups: 575345,575483,575542,575059

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.070716.094432	Blank	Blank		1		07/07/16 09:44
2	NI.070716.094744	WG575526-01	Calibration Point		1		07/07/16 09:47
3	NI.070716.095056	WG575526-02	Calibration Point		1		07/07/16 09:50
4	NI.070716.095407	WG575526-03	Calibration Point		1		07/07/16 09:54
5	NI.070716.095719	WG575526-04	Calibration Point		1		07/07/16 09:57
6	NI.070716.100032	WG575526-05	Initial Calibration Verification		1		07/07/16 10:00
7	NI.070716.100345	WG575526-06	Initial Calib Blank		1		07/07/16 10:03
8	NI.070716.100657	WG575526-07	Low Level Initial Calibration V		1		07/07/16 10:06
9	NI.070716.101008	WG575526-08	Interference Check		1		07/07/16 10:10
10	NI.070716.101320	WG575526-09	Interference Check		1		07/07/16 10:13
11	NI.070716.101633	WG575526-10	CCV		1		07/07/16 10:16
12	NI.070716.101945	WG575526-11	CCB		1		07/07/16 10:19
13	NI.070716.102257	WG575246-03	Method/Prep Blank	20/50	1		07/07/16 10:22
14	NI.070716.102608	WG575246-04	Laboratory Control S	20/50	1		07/07/16 10:26
15	NI.070716.102920	WG575246-01	Reference Sample		1	L16061648-02	07/07/16 10:29
16	NI.070716.103238	WG575246-05	Matrix Spike	20/50	1	L16061648-02	07/07/16 10:32
17	NI.070716.103550	WG575246-06	Matrix Spike Duplica	20/50	1	L16061648-02	07/07/16 10:35
18	NI.070716.103901	L16061615-01	BMG20		1		07/07/16 10:39
19	NI.070716.104213	L16061615-02	BMG20	20/50	1		07/07/16 10:42
20	NI.070716.104524	WG575345-01	Post Digestion Spike		1	L16061615-02	07/07/16 10:45
21	NI.070716.104836	WG575345-02	Serial Dilution		5	L16061615-02	07/07/16 10:48
22	NI.070716.105147	WG575345-02	Serial Dilution		25	L16061615-02	07/07/16 10:51
23	NI.070716.105500	WG575526-12	CCV		1		07/07/16 10:55
24	NI.070716.105812	WG575526-13	CCB		1		07/07/16 10:58
25	NI.070716.110125	L16061650-01	16F2389-01	20/50	1		07/07/16 11:01
26	NI.070716.110436	L16070050-01	16F1953-01		1		07/07/16 11:04
27	NI.070716.110748	L16070050-02	16F1953-02	20/50	1		07/07/16 11:07
28	NI.070716.111100	WG575246-02	Reference Sample		1	L16070054-01	07/07/16 11:11
29	NI.070716.111411	WG575246-07	Duplicate	20/50	1	L16070054-01	07/07/16 11:14
30	NI.070716.111723	L16070074-01	J6F1079-01	20/50	1		07/07/16 11:17
31	NI.070716.112034	L16070090-01	1046-C	20/50	1		07/07/16 11:20
32	NI.070716.112345	L16061652-36	ORG-S01-322-14	20/50	1		07/07/16 11:23
33	NI.070716.112657	L16061652-38	ORG-S02-322-14	20/50	1		07/07/16 11:26
34	NI.070716.113010	WG575526-14	CCV		1		07/07/16 11:30

Page: 1 Approved: July 08, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070716A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575345,575483,575542,575059

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.070716.113321	WG575526-15	CCB		1		07/07/16 11:33
36	NI.070716.113634	L16070104-01	6062123-01	20/50	1		07/07/16 11:36
37	NI.070716.113946	L16070104-02	6062123-02	20/50	1		07/07/16 11:39
38	NI.070716.114257	L16070104-03	6062123-03	20/50	1		07/07/16 11:42
39	NI.070716.114609	L16070104-04	6062123-04	20/50	1		07/07/16 11:46
40	NI.070716.114920	L16070104-05	6062123-05	20/50	1		07/07/16 11:49
41	NI.070716.115232	L16070107-01	6062132-01	20/50	1		07/07/16 11:52
42	NI.070716.115544	WG575526-16	CCV		1		07/07/16 11:55
43	NI.070716.115855	WG575526-17	CCB		1		07/07/16 11:58
44	NI.070716.120901	WG575435-03	Method/Prep Blank	20/50	1		07/07/16 12:09
45	NI.070716.121213	WG575435-04	Laboratory Control S	20/50	1		07/07/16 12:12
46	NI.070716.121524	WG575435-05	Filter Blank		1		07/07/16 12:15
47	NI.070716.121836	WG575435-09	Filter Blank		1		07/07/16 12:18
48	NI.070716.122147	WG575435-01	Reference Sample		1	L16070079-12	07/07/16 12:21
49	NI.070716.122459	WG575435-06	Matrix Spike	20/50	1	L16070079-12	07/07/16 12:24
50	NI.070716.122810	WG575435-07	Matrix Spike Duplica	20/50	1	L16070079-12	07/07/16 12:28
51	NI.070716.123121	L16070078-02	V6F0348-02	20/50	1		07/07/16 12:31
52	NI.070716.123433	WG575483-01	Post Digestion Spike		1	L16070078-02	07/07/16 12:34
53	NI.070716.123744	WG575483-02	Serial Dilution		5	L16070078-02	07/07/16 12:37
54	NI.070716.124058	WG575526-18	CCV		1		07/07/16 12:40
55	NI.070716.124409	WG575526-19	CCB		1		07/07/16 12:44
56	NI.070716.124722	L16070078-04	V6F0348-04	20/50	1		07/07/16 12:47
57	NI.070716.125034	L16070078-06	V6F0348-06	20/50	1		07/07/16 12:50
58	NI.070716.125715	L16061615-01	BMG20	20/50	5		07/07/16 12:57
59	NI.070716.130026	L16070050-01	16F1953-01	20/50	2		07/07/16 13:00
60	NI.070716.130338	WG575246-01	Reference Sample		50	L16061648-02	07/07/16 13:03
61	NI.070716.130649	WG575246-05	Matrix Spike	20/50	50	L16061648-02	07/07/16 13:06
62	NI.070716.131001	WG575246-06	Matrix Spike Duplica	20/50	50	L16061648-02	07/07/16 13:10
63	NI.070716.131313	WG575526-20	CCV		1		07/07/16 13:13
64	NI.070716.131624	WG575526-21	CCB		1		07/07/16 13:16
65	NI.070716.131937	L16070078-08	V6F0348-08	20/50	1		07/07/16 13:19
66	NI.070716.132248	L16070078-10	V6F0348-10	20/50	1		07/07/16 13:22
67	NI.070716.132600	L16070078-12	V6F0348-12	20/50	1		07/07/16 13:26
68	NI.070716.132911	L16070079-02	V6F0347-02	20/50	1		07/07/16 13:29

Page: 2 Approved: July 08, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070716A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575345,575483,575542,575059

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.070716.133223	L16070079-04	V6F0347-04	20/50	1		07/07/16 13:32
70	NI.070716.133534	L16070079-06	V6F0347-06	20/50	1		07/07/16 13:35
71	NI.070716.133846	L16070079-08	V6F0347-08	20/50	1		07/07/16 13:38
72	NI.070716.134157	L16070079-10	V6F0347-10	20/50	1		07/07/16 13:41
73	NI.070716.134508	L16070181-01	OUTFALL 003 COMP	20/50	1		07/07/16 13:45
74	NI.070716.134820	L16070182-01	OUTFALL 002 COMP	20/50	1		07/07/16 13:48
75	NI.070716.135133	WG575526-22	CCV		1		07/07/16 13:51
76	NI.070716.135445	WG575526-23	CCB		1		07/07/16 13:54
77	NI.070716.135757	WG575246-03	Method/Prep Blank	20/50	1		07/07/16 13:57
78	NI.070716.140110	WG575526-24	CCV		1		07/07/16 14:01
79	NI.070716.140421	WG575526-25	CCB		1		07/07/16 14:04
80	NI.070716.140738	L16070184-02	LH18/24-SP650-6376-GRAB	20/50	1		07/07/16 14:07
81	NI.070716.141050	L16070191-01	16G0737-03	20/50	1		07/07/16 14:10
82	NI.070716.141402	L16070192-03	OUTFALL 203	20/50	1000		07/07/16 14:14
83	NI.070716.141713	WG575435-02	Reference Sample		1	L16070197-01	07/07/16 14:17
84	NI.070716.142024	WG575435-08	Duplicate	20/50	1	L16070197-01	07/07/16 14:20
85	NI.070716.142413	L16070191-01	16G0737-03	20/50	5		07/07/16 14:24
86	NI.070716.144102	L16070184-02	LH18/24-SP650-6376-GRAB	20/50	20		07/07/16 14:41
87	NI.070716.144415	WG575526-26	CCV		1		07/07/16 14:44
88	NI.070716.144726	WG575526-27	CCB		1		07/07/16 14:47
89	NI.070716.145039	WG575526-28	Low Level Continuing Calibra		1		07/07/16 14:50
90	NI.070716.145940	WG575246-04	Laboratory Control S	20/50	1		07/07/16 14:59
91	NI.070716.150353	WG575246-02	Reference Sample		1	L16070054-01	07/07/16 15:03
92	NI.070716.150704	WG575246-07	Duplicate	20/50	1	L16070054-01	07/07/16 15:07
93	NI.070716.151016	WG575246-01	Reference Sample		1	L16061648-02	07/07/16 15:10
94	NI.070716.151327	WG575246-05	Matrix Spike	20/50	1	L16061648-02	07/07/16 15:13
95	NI.070716.151638	WG575246-06	Matrix Spike Duplica	20/50	1	L16061648-02	07/07/16 15:16
96	NI.070716.152218	L16061615-02	BMG20	20/50	1		07/07/16 15:22
97	NI.070716.152529	WG575345-01	Post Digestion Spike		1	L16061615-02	07/07/16 15:25
98	NI.070716.152841	WG575345-02	Serial Dilution		5	L16061615-02	07/07/16 15:28
99	NI.070716.153152	WG575345-02	Serial Dilution		25	L16061615-02	07/07/16 15:31
100	NI.070716.153505	WG575526-29	CCV		1		07/07/16 15:35
101	NI.070716.153817	WG575526-30	CCB		1		07/07/16 15:38
102	NI.070716.154130	WG575526-31	Low Level Continuing Calibra		1		07/07/16 15:41

Page: 3 Approved: July 08, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070716A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575345,575483,575542,575059

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.070716.155808	WG575508-03	Method/Prep Blank	20/50	1		07/07/16 15:58
104	NI.070716.160120	WG575508-04	Laboratory Control S	20/50	1		07/07/16 16:01
105	NI.070716.160446	WG575508-01	Reference Sample		1	L16070209-03	07/07/16 16:04
106	NI.070716.160758	WG575508-05	Matrix Spike	20/50	1	L16070209-03	07/07/16 16:07
107	NI.070716.161109	WG575508-06	Matrix Spike Duplica	20/50	1	L16070209-03	07/07/16 16:11
108	NI.070716.161421	L16070206-02	OUTFALL 001 / COMP	20/50	1		07/07/16 16:14
109	NI.070716.161732	L16070209-01	T6F1104-05	20/50	1		07/07/16 16:17
110	NI.070716.162044	WG575542-01	Post Digestion Spike		1	L16070209-01	07/07/16 16:20
111	NI.070716.162355	WG575542-02	Serial Dilution		5	L16070209-01	07/07/16 16:23
112	NI.070716.162706	WG575542-02	Serial Dilution		25	L16070209-01	07/07/16 16:27
113	NI.070716.163020	WG575526-32	CCV		1		07/07/16 16:30
114	NI.070716.163331	WG575526-33	CCB		1		07/07/16 16:33
115	NI.070716.163644	L16070209-02	T6F1104-06	20/50	1		07/07/16 16:36
116	NI.070716.163955	L16070212-01	1617 PWT001-PC	50/50	1		07/07/16 16:39
117	NI.070716.164307	WG575508-02	Reference Sample		1	L16070212-02	07/07/16 16:43
118	NI.070716.164618	WG575508-07	Duplicate	20/50	1	L16070212-02	07/07/16 16:46
119	NI.070716.164931	WG575526-34	CCV		1		07/07/16 16:49
120	NI.070716.165243	WG575526-35	CCB		1		07/07/16 16:52
121	NI.070716.165555	WG574535-02	Method/Prep Blank	.25/100	1		07/07/16 16:55
122	NI.070716.165906	WG574535-03	Laboratory Control S	.25/100	1		07/07/16 16:59
123	NI.070716.170217	L16061444-01	TS935DS03105A	.252/100	1		07/07/16 17:02
124	NI.070716.170529	L16061444-02	TS935DS01305C	.254/100	1		07/07/16 17:05
125	NI.070716.170840	L16061444-03	TS935DS01405A	.255/100	1		07/07/16 17:08
126	NI.070716.171152	L16061444-04	TS935DS01505A	.254/100	1		07/07/16 17:11
127	NI.070716.171503	L16061444-05	TS935DS00105A	.252/100	1		07/07/16 17:15
128	NI.070716.171815	L16061444-06	TS935DS00100A	.257/100	1		07/07/16 17:18
129	NI.070716.172126	WG575059-01	Post Digestion Spike		1	L16061444-06	07/07/16 17:21
130	NI.070716.172438	WG575059-02	Serial Dilution		5	L16061444-06	07/07/16 17:24
131	NI.070716.172750	WG575526-36	CCV		1		07/07/16 17:27
132	NI.070716.173101	WG575526-37	CCB		1		07/07/16 17:31
133	NI.070716.173414	L16061444-07	TS935DS00200A		1		07/07/16 17:34
134	NI.070716.173725	L16061444-08	TS935DS00205A	.257/100	1		07/07/16 17:37
135	NI.070716.174037	L16061444-09	TS935DS00500A		1		07/07/16 17:40
136	NI.070716.174348	WG574535-01	Reference Sample		1	L16061444-10	07/07/16 17:43

Page: 4 Approved: July 08, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070716A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575345,575483,575542,575059

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.070716.174700	L16061444-12	TS935DS00600A	.252/100	1		07/07/16 17:47
138	NI.070716.175011	L16061444-13	TS935DS00605A	.258/100	1		07/07/16 17:50
139	NI.070716.175322	L16061444-14	TS935DS00300A	.251/100	1		07/07/16 17:53
140	NI.070716.175634	L16061444-15	TS935DS00305A	.254/100	1		07/07/16 17:56
141	NI.070716.175945	L16061444-16	TS935DS00400A	.25/100	1		07/07/16 17:59
142	NI.070716.180257	L16061444-17	TS935DS00400C	.256/100	1		07/07/16 18:02
143	NI.070716.180610	WG575526-38	CCV		1		07/07/16 18:06
144	NI.070716.180921	WG575526-39	CCB		1		07/07/16 18:09
145	NI.070716.181234	L16061444-18	TS935DS00405A	.252/100	1		07/07/16 18:12
146	NI.070716.181546	WG574535-04	Matrix Spike	.253/100	1	L16061444-10	07/07/16 18:15
147	NI.070716.181857	WG574535-05	Matrix Spike Duplica	.25/100	1	L16061444-10	07/07/16 18:18
148	NI.070716.182209	L16061458-01	SCF-WS01-062416	.254/100	1		07/07/16 18:22
149	NI.070716.182520	L16061458-01	SCF-WS01-062416		100		07/07/16 18:25
150	NI.070716.182833	WG575526-40	Interference Check		1		07/07/16 18:28
151	NI.070716.183145	WG575526-41	Interference Check		1		07/07/16 18:31
152	NI.070716.183458	WG575526-42	CCV		1		07/07/16 18:34
153	NI.070716.183810	WG575526-43	CCB		1		07/07/16 18:38

Page: 5 Approved: July 08, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 07-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 575526
Runlog ID: 76158
Analytical Workgroups: 575345,575483,575542,575059

Additional Workgroup	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	212,1458
Level 4	1648,191,1444
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
08-JUL-2016

Secondary Reviewer:
08-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-08-2016 15:22:13

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG575345

Login Number: L16061648

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW25F-062916	02	06/29/16					07/06/2016	7	180		07/07/16	8.3	180	
18WW25F-062916	02	06/29/16					07/06/2016	7	180		07/07/16	8.1	180	
18WW25F-062916	02	06/29/16					07/06/2016	7	180		07/07/16	8.2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4843195
Report generated 07/08/2016 07:59

METHOD BLANK SUMMARY

Login Number: L16061648
Blank File ID: NI.070716.102257
Prep Date: 07/06/16 08:44
Analyzed Date: 07/07/16 10:22
Analyst: JYH

Work Group: WG575345
Blank Sample ID: WG575246-03
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG575246-04	NI.070716.102608	07/07/16 10:26	01
18WW25F-062916	L16061648-02	NI.070716.102920	07/07/16 10:29	01
DUP	WG575246-07	NI.070716.111411	07/07/16 11:14	01
18WW25F-062916	L16061648-02	NI.070716.130338	07/07/16 13:03	DL01
LCS	WG575246-04	NI.070716.145940	07/07/16 14:59	02
18WW25F-062916	L16061648-02	NI.070716.151016	07/07/16 15:10	02

Report Name: BLANK_SUMMARY
PDF File ID: 4843196
Report generated 07/08/2016 07:59

METHOD BLANK SUMMARY

Login Number: L16061648
Blank File ID: NI.070716.135757
Prep Date: 07/06/16 08:44
Analyzed Date: 07/07/16 13:57
Analyst: JYH

Work Group: WG575345
Blank Sample ID: WG575246-03
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG575246-04	NI.070716.102608	07/07/16 10:26	01
18WW25F-062916	L16061648-02	NI.070716.102920	07/07/16 10:29	01
DUP	WG575246-07	NI.070716.111411	07/07/16 11:14	01
18WW25F-062916	L16061648-02	NI.070716.130338	07/07/16 13:03	DL01
LCS	WG575246-04	NI.070716.145940	07/07/16 14:59	02
18WW25F-062916	L16061648-02	NI.070716.151016	07/07/16 15:10	02

Report Name: BLANK_SUMMARY
PDF File ID: 4843196
Report generated 07/08/2016 07:59

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061648 Prep Date: 07/06/16 08:44 Sample ID: WG575246-03
Instrument ID: ICP-MS2 Run Date: 07/07/16 10:22 Prep Method: 3015
File ID: NI.070716.102257 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG575345 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-07-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4843197
08-JUL-2016 07:59

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061648 Prep Date: 07/06/16 08:44 Sample ID: WG575246-03
Instrument ID: ICP-MS2 Run Date: 07/07/16 13:57 Prep Method: 3015
File ID: NI.070716.135757 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG575345 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-07-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4843197
08-JUL-2016 07:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061648 Run Date: 07/07/2016 Sample ID: WG575246-04
Instrument ID: ICP-MS2 Run Time: 10:26 Prep Method: 3015
File ID: NI.070716.102608 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG575345 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-07-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Arsenic, Total	0.125	0.129	103	80 - 120	
Barium, Total	0.125	0.129	103	80 - 120	
Cadmium, Total	0.125	0.128	103	80 - 120	
Chromium, Total	0.125	0.130	104	80 - 120	
Cobalt, Total	0.125	0.129	103	80 - 120	
Copper, Total	0.125	0.135	108	80 - 120	
Lead, Total	0.125	0.132	106	80 - 120	
Manganese, Total	0.125	0.131	105	80 - 120	
Nickel, Total	0.125	0.132	106	80 - 120	
Silver, Total	0.125	0.131	104	80 - 120	
Thallium, Total	0.125	0.130	104	80 - 120	
Vanadium, Total	0.125	0.127	102	80 - 120	
Zinc, Total	0.125	0.132	105	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4843198
Report generated: 07/08/2016 15:47

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061648 Run Date: 07/07/2016 Sample ID: WG575246-04
Instrument ID: ICP-MS2 Run Time: 14:59 Prep Method: 3015
File ID: NI.070716.145940 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG575345 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-07-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.122	97.4	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4843198
Report generated: 07/08/2016 15:47

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061648 Cal ID: ICP-MS2 - Worknum: WG575345
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG575246-01 File ID: NI.070716.102920 Dil: 1 Matrix: WATER
Sample ID: WG575246-05 MS File ID: NI.070716.103238 Dil: 1 Units: mg/L
Sample ID: WG575246-06 MSD File ID: NI.070716.103550 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Arsenic, Total	0.00243	0.125	0.133	105	0.125	0.133	105	0.0581	80 - 120	20	
Cadmium, Total	ND	0.125	0.129	103	0.125	0.127	102	0.854	80 - 120	20	
Chromium, Total	ND	0.125	0.126	101	0.125	0.128	102	1.51	80 - 120	20	
Cobalt, Total	0.0135	0.125	0.140	101	0.125	0.141	102	0.549	80 - 120	20	
Copper, Total	ND	0.125	0.127	101	0.125	0.126	101	0.367	80 - 120	20	
Lead, Total	ND	0.125	0.130	104	0.125	0.128	103	1.37	80 - 120	20	
Nickel, Total	0.00596	0.125	0.131	100	0.125	0.132	101	1.06	80 - 120	20	
Silver, Total	ND	0.125	0.128	102	0.125	0.127	102	0.109	80 - 120	20	
Thallium, Total	ND	0.125	0.128	102	0.125	0.126	101	0.935	80 - 120	20	
Vanadium, Total	ND	0.125	0.126	101	0.125	0.127	102	0.602	80 - 120	20	
Zinc, Total	ND	0.125	0.139	111	0.125	0.139	111	0.506	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4843199
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061648 Cal ID: ICP-MS2 - Worknum: WG575345
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG575246-01 File ID: NI.070716.130338 Dil: 50 Matrix: WATER
Sample ID: WG575246-05 MS File ID: NI.070716.130649 Dil: 50 Units: mg/L
Sample ID: WG575246-06 MSD File ID: NI.070716.131001 Dil: 50

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Barium, Total	0.391	0.125	0.535	115	0.125	0.537	117	0.455	80 - 120	20	
Manganese, Total	5.29	0.125	5.64	285	0.125	5.63	273	0.259	80 - 120	20	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4843199
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061648 Cal ID: ICP-MS2 - Worknum: WG575345
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG575246-01 File ID: NI.070716.151016 Dil: 1 Matrix: WATER
Sample ID: WG575246-05 MS File ID: NI.070716.151327 Dil: 1 Units: mg/L
Sample ID: WG575246-06 MSD File ID: NI.070716.151638 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony, Total	ND	0.125	0.130	104	0.125	0.130	104	0.0515	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4843199
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061648 **Worknum:** WG575345
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG575345-02 **File ID:** NI.070716.152841 **Dil:** 5 **Units:** ug/L
Sample: L16061615-02 **File ID:** NI.070716.152218 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	ND	U		
Arsenic	7.78	X	8.57	F	10.20	
Barium	ND	U	ND	U		
Cadmium	ND	U	ND	U		
Chromium	3.14	F	ND	U		
Cobalt	ND	U	ND	U		
Copper	5.08	X	7.31	F	43.90	
Lead	ND	U	ND	U		
Manganese	162		156		3.95	
Nickel	10.1	X	10.5	F	4.25	
Silver	ND	U	12.0	X	105000.00	
Thallium	ND	U	ND	U		
Vanadium	ND	U	ND	U		
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4843193
07/08/2016 08:30

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061648 **Worknum:** WG575345
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG575345-02 **File ID:** NI.070716.104836 **Dil:** 5 **Units:** ug/L
Sample: L16061615-02 **File ID:** NI.070716.104213 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	ND	U		
Arsenic	5.14	X	8.76	F	70.50	
Barium	2.85	F	ND	U		
Cadmium	ND	U	ND	U		
Chromium	2.94	F	ND	U		
Cobalt	ND	U	ND	U		
Copper	4.68	X	7.13	F	52.30	
Lead	ND	U	ND	U		
Manganese	317		162		49.00	E
Nickel	12.4	X	11.2	F	9.95	
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	ND	U	ND	U		
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4843193
07/08/2016 08:30

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061648 **Worknum:** WG575345
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG575345-01 **File ID:** NI.070716.104524 **Dil:** 1 **Units:** ug/L
Sample ID: L16061615-02 **File ID:** NI.070716.104213 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	54.3		0	U	50	108.5	75 - 125	
ARSENIC	59.2		5.14		50	108.1	75 - 125	
BARIUM	51.8		2.85		50	98.0	75 - 125	
CADMIUM	48.6		0	U	50	97.2	75 - 125	
CHROMIUM	55.6		2.94		50	105.3	75 - 125	
COBALT	50.5		0.340	F	50	100.4	75 - 125	
COPPER	53.1		4.68		50	96.8	75 - 125	
LEAD	52.0		0	U	50	104.1	75 - 125	
MANGANESE	220		317		50	-192.6	75 - 125	N
NICKEL	60.0		12.4		50	95.3	75 - 125	
SILVER	46.6		0	U	50	93.1	75 - 125	
THALLIUM	52.3		0	U	50	104.6	75 - 125	
VANADIUM	55.1		0.306	F	50	109.5	75 - 125	
ZINC	55.8		7.28	F	50	97.1	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4843194
Report generated: 07/08/2016 08:30

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061648 **Worknum:** WG575345
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG575345-01 **File ID:** NI.070716.152529 **Dil:** 1 **Units:** ug/L
Sample ID: L16061615-02 **File ID:** NI.070716.152218 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	49.2		0	U	50	98.4	75 - 125	
ARSENIC	59.8		7.78		50	104.0	75 - 125	
BARIUM	50.1		1.16	F	50	97.9	75 - 125	
CADMIUM	47.5		0	U	50	95.0	75 - 125	
CHROMIUM	55.0		3.14		50	103.7	75 - 125	
COBALT	49.6		0.233	F	50	98.8	75 - 125	
COPPER	52.5		5.08		50	94.8	75 - 125	
LEAD	51.9		0	U	50	103.8	75 - 125	
MANGANESE	214		162		50	103.1	75 - 125	
NICKEL	58.5		10.1		50	96.7	75 - 125	
SILVER	42.0		0	U	50	84.0	75 - 125	
THALLIUM	51.2		0	U	50	102.5	75 - 125	
VANADIUM	53.8		0	U	50	107.6	75 - 125	
ZINC	56.2		6.54	F	50	99.3	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4843194
Report generated: 07/08/2016 08:30

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061648	Workgroup (AAB#):	WG575345
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG575526	Initial Calibration Date:	07-JUL-2016 09:57

	WG575526-01		WG575526-02		WG575526-03		WG575526-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	95.4	.4	306	50	222000	100	442000	.999996	
ARSENIC	0	-56.7	.4	13.9	50	54200	100	107000	.999975	
BARIUM	0	20.3	.4	131	50	94900	100	187000	.999996	
CADMIUM	0	4.70	.4	109	50	99200	100	193000	.999974	
CHROMIUM	0	6700	.4	7070	50	353000	100	676000	.999994	
COBALT	0	214	.4	566	50	332000	100	641000	.999994	
COPPER	0	115	.4	195	50	90400	100	174000	.999988	
LEAD	0	781	.4	1770	50	907000	100	1790000	.999989	
MANGANESE	0	740	.4	1130	50	317000	100	615000	1	
NICKEL	0	459	.4	553	50	91100	100	175000	.99998	
SILVER	0	73.3	.4	405	50	312000	100	604000	.999946	
THALLIUM	0	4.30	.4	414	50	391000	100	763000	1	
VANADIUM	0	1290	.4	1520	50	336000	100	655000	1	
ZINC	0	136	.4	265	50	53600	100	105000	.999997	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4843202
Report generated: 08-JUL-2016 08:00

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061648
Instrument ID: ICP-MS2
File ID: NI.070716.100345
Workgroup (AAB#): WG575345
Matrix: WATER

Run Date: 07/07/2016
Run Time: 10:03
Analyst: JYH
Cal ID: ICP-MS2 - 07-JUL-16

Sample ID: WG575526-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.2	U
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4843204
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-11
Instrument ID: ICP-MS2
Run Time: 10:19
Method: 6020A
File ID: NI.070716.101945
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.297	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4843207
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-13
Instrument ID: ICP-MS2
Run Time: 10:58
Method: 6020A
File ID: NI.070716.105812
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4843207
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-17
Instrument ID: ICP-MS2
Run Time: 11:58
Method: 6020A
File ID: NI.070716.115855
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4843207
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-19
Instrument ID: ICP-MS2
Run Time: 12:44
Method: 6020A
File ID: NI.070716.124409
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.203	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4843207
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-21
Instrument ID: ICP-MS2
Run Time: 13:16
Method: 6020A
File ID: NI.070716.131624
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4843207
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-23
Instrument ID: ICP-MS2
Run Time: 13:54
Method: 6020A
File ID: NI.070716.135445
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4843207
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-25
Instrument ID: ICP-MS2
Run Time: 14:04
Method: 6020A
File ID: NI.070716.140421
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4843207
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-27
Instrument ID: ICP-MS2
Run Time: 14:47
Method: 6020A
File ID: NI.070716.144726
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4843207
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-30
Instrument ID: ICP-MS2
Run Time: 15:38
Method: 6020A
File ID: NI.070716.153817
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4843207
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-39
Instrument ID: ICP-MS2
Run Time: 18:09
Method: 6020A
File ID: NI.070716.180921
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.232	F
Manganese	0.400	1.60	1.07	F
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4843207
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-43
Instrument ID: ICP-MS2
Run Time: 18:38
Method: 6020A
File ID: NI.070716.183810
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.361	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4843207
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-05
Instrument ID: ICP-MS2
Run Time: 10:00
Method: 6020A
File ID: NI.070716.100032
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	50.2	100	90 - 110	
Arsenic		50	50.5	101	90 - 110	
Barium		50	49.9	99.7	90 - 110	
Cadmium		50	50.2	100	90 - 110	
Chromium		50	50.1	100	90 - 110	
Cobalt		50	50.6	101	90 - 110	
Copper		50	50.7	101	90 - 110	
Lead		50	50.6	101	90 - 110	
Manganese		50	50.7	101	90 - 110	
Nickel		50	50.7	101	90 - 110	
Silver		50	49.8	99.6	90 - 110	
Thallium		50	50.3	101	90 - 110	
Vanadium		50	50.0	100	90 - 110	
Zinc		50	50.9	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4843203
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-10
Instrument ID: ICP-MS2
Run Time: 10:16
Method: 6020A
File ID: NI.070716.101633
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0507	mg/L	101	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.8	90 - 110		
Barium		0.0500	0.0489	mg/L	97.7	90 - 110		
Cadmium		0.0500	0.0492	mg/L	98.3	90 - 110		
Chromium		0.0500	0.0495	mg/L	99.0	90 - 110		
Cobalt		0.0500	0.0504	mg/L	101	90 - 110		
Copper		0.0500	0.0499	mg/L	99.8	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0502	mg/L	100	90 - 110		
Nickel		0.0500	0.0497	mg/L	99.4	90 - 110		
Silver		0.0500	0.0492	mg/L	98.4	90 - 110		
Thallium		0.0500	0.0498	mg/L	99.7	90 - 110		
Vanadium		0.0500	0.0502	mg/L	100	90 - 110		
Zinc		0.0500	0.0499	mg/L	99.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4843206
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-12
Instrument ID: ICP-MS2
Run Time: 10:55
Method: 6020A
File ID: NI.070716.105500
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0483	mg/L	96.7	90 - 110		
Arsenic		0.0500	0.0501	mg/L	100	90 - 110		
Barium		0.0500	0.0482	mg/L	96.5	90 - 110		
Cadmium		0.0500	0.0490	mg/L	97.9	90 - 110		
Chromium		0.0500	0.0501	mg/L	100	90 - 110		
Cobalt		0.0500	0.0504	mg/L	101	90 - 110		
Copper		0.0500	0.0506	mg/L	101	90 - 110		
Lead		0.0500	0.0506	mg/L	101	90 - 110		
Manganese		0.0500	0.0529	mg/L	106	90 - 110		
Nickel		0.0500	0.0507	mg/L	101	90 - 110		
Silver		0.0500	0.0492	mg/L	98.3	90 - 110		
Thallium		0.0500	0.0494	mg/L	98.9	90 - 110		
Vanadium		0.0500	0.0507	mg/L	101	90 - 110		
Zinc		0.0500	0.0502	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4843206
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-16
Instrument ID: ICP-MS2
Run Time: 11:55
Method: 6020A
File ID: NI.070716.115544
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0485	mg/L	97.0	90 - 110		
Arsenic		0.0500	0.0488	mg/L	97.5	90 - 110		
Barium		0.0500	0.0480	mg/L	96.0	90 - 110		
Cadmium		0.0500	0.0487	mg/L	97.4	90 - 110		
Chromium		0.0500	0.0490	mg/L	98.0	90 - 110		
Cobalt		0.0500	0.0498	mg/L	99.6	90 - 110		
Copper		0.0500	0.0495	mg/L	99.1	90 - 110		
Lead		0.0500	0.0506	mg/L	101	90 - 110		
Manganese		0.0500	0.0500	mg/L	100	90 - 110		
Nickel		0.0500	0.0495	mg/L	99.0	90 - 110		
Silver		0.0500	0.0487	mg/L	97.5	90 - 110		
Thallium		0.0500	0.0494	mg/L	98.7	90 - 110		
Vanadium		0.0500	0.0491	mg/L	98.2	90 - 110		
Zinc		0.0500	0.0497	mg/L	99.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4843206
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-18
Instrument ID: ICP-MS2
Run Time: 12:40
Method: 6020A
File ID: NI.070716.124058
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0489	mg/L	97.7	90 - 110		
Arsenic		0.0500	0.0483	mg/L	96.5	90 - 110		
Barium		0.0500	0.0478	mg/L	95.6	90 - 110		
Cadmium		0.0500	0.0489	mg/L	97.9	90 - 110		
Chromium		0.0500	0.0486	mg/L	97.3	90 - 110		
Cobalt		0.0500	0.0484	mg/L	96.8	90 - 110		
Copper		0.0500	0.0495	mg/L	98.9	90 - 110		
Lead		0.0500	0.0512	mg/L	102	90 - 110		
Manganese		0.0500	0.0488	mg/L	97.6	90 - 110		
Nickel		0.0500	0.0490	mg/L	98.0	90 - 110		
Silver		0.0500	0.0483	mg/L	96.7	90 - 110		
Thallium		0.0500	0.0496	mg/L	99.3	90 - 110		
Vanadium		0.0500	0.0480	mg/L	96.1	90 - 110		
Zinc		0.0500	0.0494	mg/L	98.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4843206
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-20
Instrument ID: ICP-MS2
Run Time: 13:13
Method: 6020A
File ID: NI.070716.131313
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0484	mg/L	96.7	90 - 110		
Arsenic		0.0500	0.0493	mg/L	98.7	90 - 110		
Barium		0.0500	0.0479	mg/L	95.9	90 - 110		
Cadmium		0.0500	0.0489	mg/L	97.7	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cobalt		0.0500	0.0482	mg/L	96.3	90 - 110		
Copper		0.0500	0.0502	mg/L	100	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0502	mg/L	100	90 - 110		
Nickel		0.0500	0.0504	mg/L	101	90 - 110		
Silver		0.0500	0.0485	mg/L	96.9	90 - 110		
Thallium		0.0500	0.0492	mg/L	98.4	90 - 110		
Vanadium		0.0500	0.0482	mg/L	96.3	90 - 110		
Zinc		0.0500	0.0496	mg/L	99.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4843206
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-22
Instrument ID: ICP-MS2
Run Time: 13:51
Method: 6020A
File ID: NI.070716.135133
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0481	mg/L	96.2	90 - 110		
Arsenic		0.0500	0.0487	mg/L	97.3	90 - 110		
Barium		0.0500	0.0478	mg/L	95.6	90 - 110		
Cadmium		0.0500	0.0486	mg/L	97.2	90 - 110		
Chromium		0.0500	0.0495	mg/L	98.9	90 - 110		
Cobalt		0.0500	0.0483	mg/L	96.6	90 - 110		
Copper		0.0500	0.0494	mg/L	98.8	90 - 110		
Lead		0.0500	0.0513	mg/L	103	90 - 110		
Manganese		0.0500	0.0505	mg/L	101	90 - 110		
Nickel		0.0500	0.0499	mg/L	99.7	90 - 110		
Silver		0.0500	0.0480	mg/L	96.1	90 - 110		
Thallium		0.0500	0.0499	mg/L	99.8	90 - 110		
Vanadium		0.0500	0.0486	mg/L	97.1	90 - 110		
Zinc		0.0500	0.0493	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4843206
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-24
Instrument ID: ICP-MS2
Run Time: 14:01
Method: 6020A
File ID: NI.070716.140110
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0486	mg/L	97.2	90 - 110		
Arsenic		0.0500	0.0486	mg/L	97.1	90 - 110		
Barium		0.0500	0.0481	mg/L	96.2	90 - 110		
Cadmium		0.0500	0.0486	mg/L	97.3	90 - 110		
Chromium		0.0500	0.0491	mg/L	98.2	90 - 110		
Cobalt		0.0500	0.0480	mg/L	96.0	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0513	mg/L	103	90 - 110		
Manganese		0.0500	0.0498	mg/L	99.6	90 - 110		
Nickel		0.0500	0.0496	mg/L	99.2	90 - 110		
Silver		0.0500	0.0481	mg/L	96.3	90 - 110		
Thallium		0.0500	0.0496	mg/L	99.2	90 - 110		
Vanadium		0.0500	0.0481	mg/L	96.2	90 - 110		
Zinc		0.0500	0.0493	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4843206
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-26
Instrument ID: ICP-MS2
Run Time: 14:44
Method: 6020A
File ID: NI.070716.144415
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0482	mg/L	96.3	90 - 110		
Arsenic		0.0500	0.0489	mg/L	97.7	90 - 110		
Barium		0.0500	0.0477	mg/L	95.5	90 - 110		
Cadmium		0.0500	0.0486	mg/L	97.3	90 - 110		
Chromium		0.0500	0.0497	mg/L	99.3	90 - 110		
Cobalt		0.0500	0.0485	mg/L	97.0	90 - 110		
Copper		0.0500	0.0494	mg/L	98.7	90 - 110		
Lead		0.0500	0.0513	mg/L	103	90 - 110		
Manganese		0.0500	0.0514	mg/L	103	90 - 110		
Nickel		0.0500	0.0498	mg/L	99.6	90 - 110		
Silver		0.0500	0.0482	mg/L	96.5	90 - 110		
Thallium		0.0500	0.0493	mg/L	98.6	90 - 110		
Vanadium		0.0500	0.0483	mg/L	96.7	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.5	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4843206
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-29
Instrument ID: ICP-MS2
Run Time: 15:35
Method: 6020A
File ID: NI.070716.153505
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0484	mg/L	96.9	90 - 110		
Arsenic		0.0500	0.0485	mg/L	97.0	90 - 110		
Barium		0.0500	0.0472	mg/L	94.3	90 - 110		
Cadmium		0.0500	0.0480	mg/L	96.1	90 - 110		
Chromium		0.0500	0.0492	mg/L	98.4	90 - 110		
Cobalt		0.0500	0.0494	mg/L	98.7	90 - 110		
Copper		0.0500	0.0494	mg/L	98.9	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0501	mg/L	100	90 - 110		
Nickel		0.0500	0.0495	mg/L	99.1	90 - 110		
Silver		0.0500	0.0487	mg/L	97.3	90 - 110		
Thallium		0.0500	0.0493	mg/L	98.7	90 - 110		
Vanadium		0.0500	0.0491	mg/L	98.2	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4843206
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-38
Instrument ID: ICP-MS2
Run Time: 18:06
Method: 6020A
File ID: NI.070716.180610
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0486	mg/L	97.1	90 - 110		
Arsenic		0.0500	0.0484	mg/L	96.7	90 - 110		
Barium		0.0500	0.0470	mg/L	94.0	90 - 110		
Cadmium		0.0500	0.0485	mg/L	96.9	90 - 110		
Chromium		0.0500	0.0490	mg/L	98.0	90 - 110		
Cobalt		0.0500	0.0487	mg/L	97.5	90 - 110		
Copper		0.0500	0.0495	mg/L	99.0	90 - 110		
Lead		0.0500	0.0511	mg/L	102	90 - 110		
Manganese		0.0500	0.0499	mg/L	99.8	90 - 110		
Nickel		0.0500	0.0491	mg/L	98.3	90 - 110		
Silver		0.0500	0.0484	mg/L	96.8	90 - 110		
Thallium		0.0500	0.0495	mg/L	99.0	90 - 110		
Vanadium		0.0500	0.0483	mg/L	96.6	90 - 110		
Zinc		0.0500	0.0493	mg/L	98.5	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4843206
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-42
Instrument ID: ICP-MS2
Run Time: 18:34
Method: 6020A
File ID: NI.070716.183458
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0499	mg/L	99.9	90 - 110		
Arsenic		0.0500	0.0488	mg/L	97.5	90 - 110		
Barium		0.0500	0.0470	mg/L	94.1	90 - 110		
Cadmium		0.0500	0.0481	mg/L	96.1	90 - 110		
Chromium		0.0500	0.0492	mg/L	98.3	90 - 110		
Cobalt		0.0500	0.0488	mg/L	97.5	90 - 110		
Copper		0.0500	0.0495	mg/L	98.9	90 - 110		
Lead		0.0500	0.0513	mg/L	103	90 - 110		
Manganese		0.0500	0.0495	mg/L	99.1	90 - 110		
Nickel		0.0500	0.0498	mg/L	99.5	90 - 110		
Silver		0.0500	0.0482	mg/L	96.5	90 - 110		
Thallium		0.0500	0.0493	mg/L	98.5	90 - 110		
Vanadium		0.0500	0.0481	mg/L	96.3	90 - 110		
Zinc		0.0500	0.0493	mg/L	98.5	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4843206
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-07
Instrument ID: ICP-MS2
Run Time: 10:06
Method: 6020A
File ID: NI.070716.100657
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.378	ug/L	94.4	70 - 130		
Arsenic		0.400	0.364	ug/L	91.1	70 - 130		
Barium		0.750	0.709	ug/L	94.5	70 - 130		
Cadmium		0.240	0.229	ug/L	95.3	70 - 130		
Chromium		0.800	0.704	ug/L	88.0	70 - 130		
Cobalt		0.400	0.382	ug/L	95.6	70 - 130		
Copper		0.800	0.767	ug/L	95.9	70 - 130		
Lead		0.200	0.195	ug/L	97.4	70 - 130		
Manganese		0.500	0.451	ug/L	90.2	70 - 130		
Nickel		1.60	1.53	ug/L	95.5	70 - 130		
Silver		0.400	0.383	ug/L	95.8	70 - 130		
Thallium		0.0800	0.0846	ug/L	106	70 - 130		
Vanadium		0.400	0.365	ug/L	91.2	70 - 130		
Zinc		6.25	6.32	ug/L	101	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4844225
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-28
Instrument ID: ICP-MS2
Run Time: 14:50
Method: 6020A
File ID: NI.070716.145039
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.364	ug/L	91.0	70 - 130		
Arsenic		0.400	0.386	ug/L	96.6	70 - 130		
Barium		0.750	0.693	ug/L	92.5	70 - 130		
Cadmium		0.240	0.230	ug/L	95.9	70 - 130		
Chromium		0.800	0.695	ug/L	86.9	70 - 130		
Cobalt		0.400	0.363	ug/L	90.8	70 - 130		
Copper		0.800	0.773	ug/L	96.6	70 - 130		
Lead		0.200	0.195	ug/L	97.7	70 - 130		
Manganese		0.500	0.446	ug/L	89.2	70 - 130		
Nickel		1.60	1.40	ug/L	87.4	70 - 130		
Silver		0.400	0.371	ug/L	92.7	70 - 130		
Thallium		0.0800	0.0784	ug/L	98.0	70 - 130		
Vanadium		0.400	0.330	ug/L	82.5	70 - 130		
Zinc		6.25	6.43	ug/L	103	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4844225
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-31
Instrument ID: ICP-MS2
Run Time: 15:41
Method: 6020A
File ID: NI.070716.154130
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.382	ug/L	95.6	70 - 130		
Arsenic		0.400	0.418	ug/L	104	70 - 130		
Barium		0.750	0.695	ug/L	92.7	70 - 130		
Cadmium		0.240	0.229	ug/L	95.5	70 - 130		
Chromium		0.800	0.729	ug/L	91.1	70 - 130		
Cobalt		0.400	0.376	ug/L	94.0	70 - 130		
Copper		0.800	0.901	ug/L	113	70 - 130		
Lead		0.200	0.197	ug/L	98.5	70 - 130		
Manganese		0.500	0.479	ug/L	95.8	70 - 130		
Nickel		1.60	1.55	ug/L	96.6	70 - 130		
Silver		0.400	0.391	ug/L	97.7	70 - 130		
Thallium		0.0800	0.0816	ug/L	102	70 - 130		
Vanadium		0.400	0.366	ug/L	91.6	70 - 130		
Zinc		6.25	6.55	ug/L	105	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4844225
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061648
Instrument ID: ICP-MS2
Sol. A : WG575526-08 **File ID:** NI.070716.101008
Sol. AB : WG575526-09 **File ID:** NI.070716.101320

Workgroup (AAB#): WG575345
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.160	NS	100	97.1	97.1	
Arsenic	NS	0.0379	NS	100	101	101	
Barium	NS	0.0300	NS	100	97.1	97.1	
Cadmium	NS	-0.0681	NS	100	98.3	98.3	
Chromium	NS	-0.128	NS	100	98.6	98.6	
Cobalt	NS	0.0367	NS	100	98.0	98.0	
Copper	NS	0.265	NS	100	98.5	98.5	
Lead	NS	0.0392	NS	100	98.9	98.9	
Manganese	NS	0.171	NS	100	99.8	99.8	
Nickel	NS	0.254	NS	100	98.2	98.2	
Silver	NS	0.0319	NS	100	96.3	96.3	
Thallium	NS	0.0342	NS	100	97.6	97.6	
Vanadium	NS	-0.0102	NS	100	98.8	98.8	
Zinc	NS	0.485	NS	100	101	101	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4843205
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061648
Instrument ID: ICP-MS2
Sol. A : WG575526-40 **File ID:** NI.070716.182833
Sol. AB : WG575526-41 **File ID:** NI.070716.183145

Workgroup (AAB#): WG575345
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0725	NS	100	94.1	94.1	
Arsenic	NS	0.0454	NS	100	96.7	96.7	
Barium	NS	0.0630	NS	100	91.5	91.5	
Cadmium	NS	-0.0909	NS	100	95.1	95.1	
Chromium	NS	-0.111	NS	100	96.7	96.7	
Cobalt	NS	0.0221	NS	100	93.8	93.8	
Copper	NS	0.247	NS	100	96.7	96.7	
Lead	NS	0.0270	NS	100	101	101	
Manganese	NS	0.273	NS	100	97.5	97.5	
Nickel	NS	0.143	NS	100	96.6	96.6	
Silver	NS	0.00980	NS	100	84.6	84.6	
Thallium	NS	0.00960	NS	100	97.2	97.2	
Vanadium	NS	-0.0341	NS	100	94.2	94.2	
Zinc	NS	0.637	NS	100	99.3	99.3	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4843205
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061648 **Analytical Method:** 6020
Analytical Workgroup: WG575345 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 07-JUL-2016 09:47

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061648-02	SAMP	07-JUL-2016 10:29	97.859	98.052	97.6
L16061648-02	SAMP	07-JUL-2016 13:03	95.508	95.665	94.394
L16061648-02	SAMP	07-JUL-2016 15:10	97.079	100.091	98.64
WG575246-03	BLANK	07-JUL-2016 10:22	94.546	91.389	90.186
WG575246-03	BLANK	07-JUL-2016 13:57	99.578	100.791	100.062
WG575246-04	LCS	07-JUL-2016 10:26	100.687	101.333	100.247
WG575246-04	LCS	07-JUL-2016 14:59	99.204	100.923	100.044
WG575246-05	MS	07-JUL-2016 10:32	97.953	99.08	97.281
WG575246-05	MS	07-JUL-2016 13:06	94.558	94.569	93.531
WG575246-05	MS	07-JUL-2016 15:13	97.916	100.097	98.769
WG575246-06	MSD	07-JUL-2016 10:35	99.06	98.781	97.689
WG575246-06	MSD	07-JUL-2016 13:10	95.222	94.622	94.089
WG575246-06	MSD	07-JUL-2016 15:16	97.356	100.435	99.357
WG575345-01	PSPK	07-JUL-2016 10:45	79.015	88.027	84.512
WG575345-01	PSPK	07-JUL-2016 15:25	79.832	88.071	85.522
WG575345-02	SERIAL	07-JUL-2016 10:48	88.527	93.775	90.782
WG575345-02	SERIAL	07-JUL-2016 15:28	88.268	93.446	91.345
WG575526-05	ICV	07-JUL-2016 10:00	97.703	97.758	97.371
WG575526-06	ICB	07-JUL-2016 10:03	99.365	97.904	98.341
WG575526-07	LLICV	07-JUL-2016 10:06	96.535	95.213	94.89
WG575526-08	ICS	07-JUL-2016 10:10	91.589	91.281	88.803
WG575526-09	ICS	07-JUL-2016 10:13	98.971	97.813	97.014
WG575526-10	CCV	07-JUL-2016 10:16	98.436	98.047	98.495
WG575526-11	CCB	07-JUL-2016 10:19	99.428	98.152	99.19
WG575526-12	CCV	07-JUL-2016 10:55	103.662	102.854	104.06
WG575526-13	CCB	07-JUL-2016 10:58	103.386	101.827	102.88
WG575526-16	CCV	07-JUL-2016 11:55	102.209	102.778	102.709
WG575526-17	CCB	07-JUL-2016 11:58	103.177	102.052	103.209
WG575526-18	CCV	07-JUL-2016 12:40	99.435	102.382	100.961
WG575526-19	CCB	07-JUL-2016 12:44	101.335	101.344	102.049
WG575526-20	CCV	07-JUL-2016 13:13	99.543	102.619	101.477
WG575526-21	CCB	07-JUL-2016 13:16	99.692	101.512	100.276
WG575526-22	CCV	07-JUL-2016 13:51	98.998	101.614	101.077
WG575526-23	CCB	07-JUL-2016 13:54	99.961	101.056	101.014
WG575526-24	CCV	07-JUL-2016 14:01	97.593	101.029	99.449
WG575526-25	CCB	07-JUL-2016 14:04	98.809	99.831	99.302
WG575526-26	CCV	07-JUL-2016 14:44	97.258	100.46	99.199
WG575526-27	CCB	07-JUL-2016 14:47	97.299	99.143	98.75
WG575526-28	LLCCV	07-JUL-2016 14:50	96.231	97.046	95.939
WG575526-29	CCV	07-JUL-2016 15:35	102.687	103.453	103.709

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4843201
Report generated: 07/08/2016 08:00

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061648 **Analytical Method:** 6020
Analytical Workgroup: WG575345 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 07-JUL-2016 09:47

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
WG575526-30	CCB	07-JUL-2016 15:38	103.104	102.285	103.349
WG575526-31	LLCCV	07-JUL-2016 15:41	99.895	97.303	98.679
WG575526-38	CCV	07-JUL-2016 18:06	99.878	107.479	105.008
WG575526-39	CCB	07-JUL-2016 18:09	100.593	106.417	105.453
WG575526-40	ICS	07-JUL-2016 18:28	92.003	96.992	94.114
WG575526-41	ICS	07-JUL-2016 18:31	98.375	104.467	102.723
WG575526-42	CCV	07-JUL-2016 18:34	98.651	103.868	103.113
WG575526-43	CCB	07-JUL-2016 18:38	99.652	103.116	103.403

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4843201
Report generated: 07/08/2016 08:00

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061648 **Analytical Method:** 6020
Analytical Workgroup: WG575345 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 07-JUL-2016 09:47

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061615-02	SAMP	07-JUL-2016 10:42	74.015	83.606	78.904
L16061615-02	SAMP	07-JUL-2016 15:22	77.419	86.115	82.875

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4843201
Report generated: 07/08/2016 08:00

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061648 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4843200
Report generated: 07/08/2016 08:00

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, July 07, 2016 09:25:36

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	6.975	1327	2024	0.708	
Mg	23.985	23.975	4500	2020	0.699	
Co	58.933	58.925	11690	2022	0.693	
In	114.904	114.925	22863	2028	0.692	
U	238.050	238.025	47454	2042	0.694	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	4.399
5.575	2.667
5.625	2.808
5.675	4.159
5.725	2.639
5.775	2.279
5.825	4.276
5.875	3.595
5.925	3.422
5.975	3.733
6.025	3.503
6.075	3.327
6.125	3.280
6.175	5.722
6.225	21.601
6.275	223.607
6.325	156.492
6.375	33.535
6.425	54.149
6.475	15.000
6.525	4.612
6.575	3.377
6.625	2.090
6.675	3.093
6.725	2.392
6.775	2.174
6.825	0.465

Report Date/Time: Thursday, July 07, 2016 09:28:47
Page 1

Approved: July 08, 2016

6.875	2.087
6.925	2.206
6.975	1.371
7.025	2.069
7.075	2.539
7.125	3.241
7.175	3.686
7.225	2.905
7.275	5.375
7.325	45.799
7.375	83.853
7.425	39.123
7.475	75.691
7.525	61.237
7.575	58.685
7.625	91.287
7.675	37.268
7.725	63.888
7.775	70.711
7.825	67.748
7.875	50.000
7.925	34.233
7.975	81.441
8.025	24.845
8.075	67.420
8.125	108.653
8.175	223.607
8.225	79.057
8.275	43.853
8.325	34.401
8.375	63.888
8.425	74.689
8.475	103.652
22.525	223.607
22.575	58.685
22.625	54.294
22.675	55.416
22.725	49.516
22.775	20.306
22.825	29.737
22.875	15.215
22.925	15.935
22.975	27.065
23.025	43.361
23.075	13.176
23.125	31.611
23.175	22.780

Report Date/Time: Thursday, July 07, 2016 09:28:47
Page 2

Approved: July 08, 2016

23.225	34.654
23.275	31.367
23.325	35.355
23.375	35.951
23.425	19.939
23.475	15.319
23.525	4.329
23.575	0.828
23.625	0.914
23.675	0.966
23.725	1.177
23.775	1.332
23.825	1.078
23.875	0.761
23.925	0.871
23.975	0.743
24.025	0.803
24.075	1.186
24.125	0.908
24.175	0.849
24.225	0.890
24.275	2.554
24.325	9.980
24.375	33.164
24.425	37.029
24.475	6.693
24.525	4.530
24.575	2.284
24.625	1.257
24.675	2.971
24.725	1.395
24.775	0.896
24.825	1.202
24.875	1.111
24.925	0.715
24.975	0.725
25.025	1.230
25.075	1.130
25.125	1.753
25.175	1.276
25.225	2.443
25.275	10.811
25.325	36.099
25.375	51.618
25.425	26.438
25.475	18.095
57.525	7.511

Report Date/Time: Thursday, July 07, 2016 09:28:47
Page 3

Approved: July 08, 2016

57.575	4.917
57.625	2.009
57.675	1.329
57.725	0.560
57.775	1.800
57.825	1.664
57.875	1.529
57.925	1.607
57.975	1.441
58.025	1.645
58.075	1.884
58.125	1.593
58.175	2.232
58.225	2.858
58.275	9.239
58.325	26.716
58.375	26.352
58.425	10.499
58.475	4.545
58.525	1.560
58.575	1.381
58.625	1.584
58.675	1.468
58.725	1.187
58.775	0.961
58.825	1.600
58.875	1.572
58.925	2.265
58.975	1.366
59.025	2.150
59.075	1.296
59.125	0.845
59.175	2.005
59.225	3.302
59.275	7.063
59.325	58.330
59.375	34.312
59.425	65.124
59.475	22.880
59.525	16.867
59.575	6.590
59.625	5.299
59.675	2.322
59.725	5.064
59.775	2.316
59.825	2.708
59.875	1.987

Report Date/Time: Thursday, July 07, 2016 09:28:47
Page 4

Approved: July 08, 2016

59.925	2.004
59.975	2.895
60.025	1.749
60.075	3.245
60.125	4.501
60.175	3.483
60.225	6.309
60.275	15.798
60.325	42.426
60.375	77.427
60.425	79.057
60.475	24.786
113.525	7.014
113.575	5.732
113.625	3.582
113.675	2.805
113.725	2.577
113.775	0.716
113.825	1.935
113.875	3.000
113.925	1.130
113.975	1.176
114.025	1.240
114.075	2.756
114.125	1.990
114.175	1.993
114.225	1.783
114.275	7.703
114.325	12.938
114.375	20.328
114.425	34.551
114.475	13.399
114.525	2.431
114.575	3.237
114.625	2.181
114.675	2.704
114.725	2.061
114.775	1.833
114.825	0.867
114.875	1.019
114.925	1.728
114.975	1.431
115.025	0.861
115.075	1.970
115.125	0.480
115.175	0.705
115.225	2.303

Report Date/Time: Thursday, July 07, 2016 09:28:47
Page 5

Approved: July 08, 2016

115.275	2.760
115.325	14.061
115.375	29.881
115.425	55.902
115.475	20.494
115.525	17.020
115.575	9.109
115.625	4.696
115.675	7.467
115.725	4.777
115.775	2.824
115.825	2.194
115.875	3.012
115.925	2.125
115.975	3.542
116.025	3.080
116.075	2.789
116.125	2.744
116.175	2.884
116.225	6.375
116.275	19.955
116.325	48.445
116.375	52.296
116.425	40.745
116.475	26.307
236.525	223.607
236.575	20.092
236.625	30.322
236.675	25.272
236.725	23.981
236.775	26.504
236.825	36.487
236.875	47.791
236.925	35.761
236.975	29.737
237.025	28.748
237.075	24.268
237.125	7.090
237.175	32.061
237.225	17.100
237.275	28.743
237.325	26.504
237.375	52.613
237.425	24.495
237.475	26.146
237.525	28.248
237.575	5.978

Approved: July 08, 2016

237.625	6.128
237.675	3.368
237.725	2.448
237.775	0.585
237.825	1.473
237.875	0.973
237.925	0.500
237.975	0.879
238.025	1.433
238.075	1.012
238.125	0.870
238.175	0.460
238.225	0.802
238.275	0.990
238.325	1.311
238.375	2.314
238.425	2.218
238.475	6.886
238.525	8.951
238.575	9.781
238.625	23.704
238.675	31.419
238.725	19.612
238.775	18.190
238.825	20.074
238.875	28.979
238.925	23.697
238.975	36.335
239.025	32.808
239.075	21.757
239.125	36.288
239.175	29.572
239.225	25.693
239.275	45.134
239.325	42.286
239.375	50.034
239.425	25.471
239.475	42.962

Approved: July 08, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 7/7/2016 9:30:58 AM
End Time: 7/7/2016 9:33:10 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4480.20
        Obtained Intensity (Mg 23.985): 253633.68
        Obtained Intensity (In 114.904): 63480.18
        Obtained Intensity (U 238.05): 131915.39
        Obtained Intensity (Bkgd 220): 0.27
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=3554.68 / 189899.25)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2175.22 / 189899.25)
```

Report Date/Time: Thursday, July 07, 2016 09:33:10
Page 1

Approved: July 08, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 7/7/2016 9:30:58 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4480.20
                Obtained Intensity (Mg 23.985): 253633.68
                Obtained Intensity (In 114.904): 63480.18
                Obtained Intensity (U 238.05): 131915.39
                Obtained Intensity (Bkgd 220): 0.27
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=3554.68 / 189899.25)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2175.22 / 189899.25)
[Passed]  Optimum value(s): N/A

End Time: 7/7/2016 9:33:10 AM
```


Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, July 07, 2016 09:44:32
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59299.1	0.2				ug/L		Standard
	Be	9	16.7	17.3				ug/L		Standard
	Al	27	1471.7	6.1				ug/L		Standard
	Sc	45	27860.6	0.9				ug/L		Standard
	Ti	47	27.7	13.7				ug/L		Standard
	V	51	1156.0	2.3				ug/L		Standard
	Cr	52	6689.5	1.5				ug/L		Standard
	Cr	53	348.3	19.1				ug/L		Standard
	Mn	55	770.4	3.0				ug/L		Standard
	Co	59	215.7	1.6				ug/L		Standard
	Ni	60	439.7	5.9				ug/L		Standard
	Cu	65	116.0	7.4				ug/L		Standard
	Zn	66	135.0	17.1				ug/L		Standard
>	**Ge**	72	445277.3	1.0				ug/L		Standard
	As	75	-57.2	32.7				ug/L		Standard
	Se	82	9.6	71.7				ug/L		Standard
	Se-1	77	56.7	11.8				ug/L		Standard
>	**Ga**	71	78.3	31.5				mg/L		Standard
	Rb	85	21.7	74.2				ug/L		Standard
	Y	89	388958.9	2.0				ug/L		Standard
>	**Rh**	103	8.3	124.9				ug/L		Standard
	Mo	98	10.4	12.9				ug/L		Standard
	Ag	107	65.7	13.0				ug/L		Standard
	Cd	111	3.3	46.2				mg/L		Standard
	Cd	114	3.6	159.7				ug/L		Standard
>	**In**	115	523326.7	0.8				ug/L		Standard
	Sn	118	488.3	8.8				ug/L		Standard
	Sb	123	195.2	33.1				ug/L		Standard
	Ba	135	28.0	31.7				ug/L		Standard
	Ce	140	83.3	33.0				ug/L		Standard
>	**Tb**	159	809211.0	0.6				ug/L		Standard
	Ho	165	13.3	43.3				ug/L		Standard
	Tl	203	4.3	26.6				ug/L		Standard
	Tl	205	8.3	69.3				ug/L		Standard
	Pb	206	230.3	3.7				ug/L		Standard
	Pb	207	184.3	6.7				ug/L		Standard
	Pb	208	775.0	4.2				ug/L		Standard
	U	238	3.3	17.3				ug/L		Standard
>	**Bi**	209	472451.6	0.9				ug/L		Standard

Sample ID: Blank
Report Date/Time: Thursday, July 07, 2016 09:46:49
Page 1

Approved: July 08, 2016

	Na	23	0.0		mg/L	Standard
	Mg	24	51.7	14.8	mg/L	Standard
	K	39	31.7	36.5	mg/L	Standard
	Ca	43	33.3	17.3	mg/L	Standard
	Fe	54	137.6	18.1	mg/L	Standard
	Fe	57	263.3	19.1	mg/L	Standard
>	**Sc-1**	45	27860.6	0.9	mg/L	Standard
	Cl	35	100606.9	0.6	ug/L	Standard
	Kr	83	2.0	132.3	ug/L	Standard
	Br	81	1776.8	7.5	ug/L	Standard
	P	31	18074.1	3.0	ug/L	Standard
	S	34	3900.5	2.6	ug/L	Standard
	Sr	88	60.0	14.4	ug/L	Standard
	C	12	110.0	36.4	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	6.7	86.6	mg/L	Standard
	Dy	164	13.2	86.6	mg/L	Standard
	Ho-1	165	13.3	43.3	mg/L	Standard
	Er	166	3.3	173.2	mg/L	Standard
	I	127	8539.1	1.9	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Blank
Report Date/Time: Thursday, July 07, 2016 09:46:49
Page 2

Approved: July 08, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Thursday, July 07, 2016 09:46:49
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, July 07, 2016 09:47:44
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60562.5	1.6				ug/L	59299	Standard
	Be	9	13.3	43.3				ug/L	17	Standard
	Al	27	1513.4	4.1				ug/L	1472	Standard
	Sc	45	27925.7	1.8				ug/L	27861	Standard
	Ti	47	25.7	21.5				ug/L	28	Standard
	V	51	1294.9	1.2				ug/L	1156	Standard
	Cr	52	6700.8	0.7				ug/L	6689	Standard
	Cr	53	330.0	19.7				ug/L	348	Standard
	Mn	55	740.0	0.4				ug/L	770	Standard
	Co	59	213.7	12.0				ug/L	216	Standard
	Ni	60	459.3	5.8				ug/L	440	Standard
	Cu	65	115.3	4.3				ug/L	116	Standard
	Zn	66	136.0	1.5				ug/L	135	Standard
>	**Ge**	72	443674.7	0.5				ug/L	445277	Standard
	As	75	-56.7	30.9				ug/L	-57	Standard
	Se	82	14.4	11.2				ug/L	10	Standard
	Se-1	77	46.7	11.8				ug/L	57	Standard
>	**Ga**	71	83.3	6.9				mg/L	78	Standard
	Rb	85	28.3	20.4				ug/L	22	Standard
	Y	89	385119.4	2.1				ug/L	388959	Standard
>	**Rh**	103	18.3	68.6				ug/L	8	Standard
	Mo	98	8.2	5.2				ug/L	10	Standard
	Ag	107	73.3	7.9				ug/L	66	Standard
	Cd	111	4.7	62.0				mg/L	3	Standard
	Cd	114	8.7	119.3				ug/L	4	Standard
>	**In**	115	524007.2	0.3				ug/L	523327	Standard
	Sn	118	421.7	7.1				ug/L	488	Standard
	Sb	123	95.4	36.0				ug/L	195	Standard
	Ba	135	20.3	24.8				ug/L	28	Standard
	Ce	140	68.3	16.9				ug/L	83	Standard
>	**Tb**	159	815907.7	0.5				ug/L	809211	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	4.3	26.6				ug/L	4	Standard
	Tl	205	5.0	100.0				ug/L	8	Standard
	Pb	206	221.3	5.6				ug/L	230	Standard
	Pb	207	179.3	13.0				ug/L	184	Standard
	Pb	208	780.7	2.3				ug/L	775	Standard
	U	238	4.0	25.0				ug/L	3	Standard
>	**Bi**	209	471338.4	0.3				ug/L	472452	Standard

Sample ID: Standard 1
Report Date/Time: Thursday, July 07, 2016 09:50:01
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	mg/L	0	Standard
Mg	24	35.0	42.9	mg/L	52	Standard
K	39	26.7	28.6	mg/L	32	Standard
Ca	43	25.0	34.6	mg/L	33	Standard
Fe	54	114.0	15.0	mg/L	138	Standard
Fe	57	236.7	15.9	mg/L	263	Standard
Sc-1	45	27925.7	1.8	mg/L	27861	Standard
Cl	35	98693.1	0.4	ug/L	100607	Standard
Kr	83	3.3	96.4	ug/L	2	Standard
Br	81	1930.1	14.8	ug/L	1777	Standard
P	31	17720.4	1.8	ug/L	18074	Standard
S	34	3968.9	2.6	ug/L	3901	Standard
Sr	88	78.3	13.3	ug/L	60	Standard
C	12	93.3	22.3	mg/L	110	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	16.7	91.7	mg/L	7	Standard
Dy	164	2.5	239.4	mg/L	13	Standard
Ho-1	165	13.3	21.7	mg/L	13	Standard
Er	166	16.7	69.3	mg/L	3	Standard
I	127	8744.2	3.2	mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 1
Report Date/Time: Thursday, July 07, 2016 09:50:01
Page 2

Approved: July 08, 2016

	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Thursday, July 07, 2016 09:50:01
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, July 07, 2016 09:50:56
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60770.0	1.1				ug/L	59299	Standard
	Be	9	41.7	34.6				ug/L	17	Standard
	Al	27	8615.8	2.5				ug/L	1472	Standard
	Sc	45	28019.2	2.1				ug/L	27861	Standard
	Ti	47	51.0	7.1				ug/L	28	Standard
	V	51	1523.8	1.9				ug/L	1156	Standard
	Cr	52	7074.7	1.1				ug/L	6689	Standard
	Cr	53	391.7	3.9				ug/L	348	Standard
	Mn	55	1126.4	1.7				ug/L	770	Standard
	Co	59	566.0	1.1				ug/L	216	Standard
	Ni	60	553.3	4.4				ug/L	440	Standard
	Cu	65	195.0	0.9				ug/L	116	Standard
	Zn	66	265.0	4.9				ug/L	135	Standard
>	**Ge**	72	447029.9	0.6				ug/L	445277	Standard
	As	75	13.9	144.9				ug/L	-57	Standard
	Se	82	21.7	25.3				ug/L	10	Standard
	Se-1	77	50.7	6.3				ug/L	57	Standard
>	**Ga**	71	63.3	27.7				mg/L	78	Standard
	Rb	85	25.0	0.0				ug/L	22	Standard
	Y	89	390857.2	0.1				ug/L	388959	Standard
>	**Rh**	103	16.7	17.3				ug/L	8	Standard
	Mo	98	274.0	4.6				ug/L	10	Standard
	Ag	107	404.7	1.9				ug/L	66	Standard
	Cd	111	108.8	8.9				mg/L	3	Standard
	Cd	114	267.8	17.0				ug/L	4	Standard
>	**In**	115	528990.4	1.0				ug/L	523327	Standard
	Sn	118	705.0	6.3				ug/L	488	Standard
	Sb	123	306.1	4.0				ug/L	195	Standard
	Ba	135	131.0	11.1				ug/L	28	Standard
	Ce	140	86.7	33.8				ug/L	83	Standard
>	**Tb**	159	820820.8	0.4				ug/L	809211	Standard
	Ho	165	10.0	100.0				ug/L	13	Standard
	Tl	203	413.7	5.9				ug/L	4	Standard
	Tl	205	358.3	8.5				ug/L	8	Standard
	Pb	206	489.0	4.3				ug/L	230	Standard
	Pb	207	420.0	3.7				ug/L	184	Standard
	Pb	208	1773.7	3.5				ug/L	775	Standard
	U	238	345.0	3.9				ug/L	3	Standard
>	**Bi**	209	477512.5	0.8				ug/L	472452	Standard

Sample ID: Standard 2
Report Date/Time: Thursday, July 07, 2016 09:53:13
Page 1

Approved: July 08, 2016

	Na	23	0.0		mg/L	0	Standard
	Mg	24	51.7	36.6	mg/L	52	Standard
	K	39	28.3	36.7	mg/L	32	Standard
	Ca	43	30.0	44.1	mg/L	33	Standard
	Fe	54	141.1	14.7	mg/L	138	Standard
	Fe	57	220.0	14.2	mg/L	263	Standard
>	**Sc-1**	45	28019.2	2.1	mg/L	27861	Standard
	Cl	35	98404.5	0.5	ug/L	100607	Standard
	Kr	83	2.7	43.3	ug/L	2	Standard
	Br	81	1780.1	2.6	ug/L	1777	Standard
	P	31	18099.1	0.9	ug/L	18074	Standard
	S	34	3712.1	3.5	ug/L	3901	Standard
	Sr	88	48.3	11.9	ug/L	60	Standard
	C	12	80.0	21.7	mg/L	110	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	6.7	86.6	mg/L	7	Standard
	Dy	164	6.3	86.9	mg/L	13	Standard
	Ho-1	165	10.0	100.0	mg/L	13	Standard
	Er	166	6.7	173.2	mg/L	3	Standard
	I	127	8364.0	1.9	mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 2
Report Date/Time: Thursday, July 07, 2016 09:53:13
Page 2

Approved: July 08, 2016

	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Thursday, July 07, 2016 09:53:13
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, July 07, 2016 09:54:07
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58069.4	2.5				ug/L	59299	Standard
	Be	9	41027.2	1.9	**50.0000**	0.729	1.5	ug/L	17	Standard
	Al	27	6517126.9	1.2	**50.0000**	0.929	1.9	ug/L	1472	Standard
	Sc	45	27651.9	0.6				ug/L	27861	Standard
	Ti	47	23647.4	2.2	**100.0000**	1.783	1.8	ug/L	28	Standard
	V	51	336346.6	0.9	**50.0000**	0.244	0.5	ug/L	1156	Standard
	Cr	52	352909.1	2.3	**50.0000**	0.981	2.0	ug/L	6689	Standard
	Cr	53	43846.7	2.6	**50.0000**	1.147	2.3	ug/L	348	Standard
	Mn	55	316708.6	0.8	**50.0000**	0.401	0.8	ug/L	770	Standard
	Co	59	331578.8	1.6	**50.0000**	0.599	1.2	ug/L	216	Standard
	Ni	60	91054.2	1.9	**50.0000**	0.771	1.5	ug/L	440	Standard
	Cu	65	90405.6	1.7	**50.0000**	0.662	1.3	ug/L	116	Standard
	Zn	66	53623.4	2.2	**50.0000**	0.967	1.9	ug/L	135	Standard
>	**Ge**	72	445834.0	0.4				ug/L	445277	Standard
	As	75	54192.2	0.6	**50.0000**	0.365	0.7	ug/L	-57	Standard
	Se	82	5531.5	1.0	**50.0000**	0.526	1.1	ug/L	10	Standard
	Se-1	77	3754.5	2.1	**50.0000**	1.104	2.2	ug/L	57	Standard
>	**Ga**	71	91.7	26.9				mg/L	78	Standard
	Rb	85	760.0	2.0				ug/L	22	Standard
	Y	89	380544.6	2.3				ug/L	388959	Standard
>	**Rh**	103	36.7	39.4				ug/L	8	Standard
	Mo	98	248731.4	0.8	**100.0000**	0.745	0.7	ug/L	10	Standard
	Ag	107	311799.3	0.8	**50.0000**	0.777	1.6	ug/L	66	Standard
	Cd	111	99173.6	0.5	**50.0000**	0.634	1.3	mg/L	3	Standard
	Cd	114	241575.7	1.3	**50.0000**	0.138	0.3	ug/L	4	Standard
>	**In**	115	512915.7	1.0				ug/L	523327	Standard
	Sn	118	271499.9	2.1	**50.0000**	1.250	2.5	ug/L	488	Standard
	Sb	123	222228.3	1.2	**50.0000**	0.410	0.8	ug/L	195	Standard
	Ba	135	94884.9	0.8	**50.0000**	0.331	0.7	ug/L	28	Standard
	Ce	140	123.3	30.7				ug/L	83	Standard
>	**Tb**	159	804042.9	1.7				ug/L	809211	Standard
	Ho	165	8.3	124.9				ug/L	13	Standard
	Tl	203	391260.5	0.4	**50.0000**	0.239	0.5	ug/L	4	Standard
	Tl	205	337342.6	0.9	**50.0000**	0.860	1.7	ug/L	8	Standard
	Pb	206	246546.8	0.8	**50.0000**	0.391	0.8	ug/L	230	Standard
	Pb	207	222630.7	0.4	**50.0000**	0.577	1.2	ug/L	184	Standard
	Pb	208	906726.2	0.4	**50.0000**	0.222	0.4	ug/L	775	Standard
	U	238	333111.8	0.7	**50.0000**	0.494	1.0	ug/L	3	Standard
>	**Bi**	209	469047.5	0.8				ug/L	472452	Standard

Sample ID: Standard 3
Report Date/Time: Thursday, July 07, 2016 09:56:24
Page 1

Approved: July 08, 2016

Na	23	3.3	86.6	**5.0000**	4.326	86.5	mg/L	0	Standard
Mg	24	3652.1	1.3	**5.0000**	0.098	2.0	mg/L	52	Standard
K	39	1078.4	12.3	**5.0000**	0.616	12.3	mg/L	32	Standard
Ca	43	65.0	23.1	**5.0000**	2.092	41.8	mg/L	33	Standard
Fe	54	6107.3	5.1	**5.0000**	0.292	5.8	mg/L	138	Standard
Fe	57	1875.1	3.8	**5.0000**	0.185	3.7	mg/L	263	Standard
Sc-1	45	27651.9	0.6				mg/L	27861	Standard
Cl	35	104900.6	0.5				ug/L	100607	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	1870.1	9.3				ug/L	1777	Standard
P	31	20380.4	1.6				ug/L	18074	Standard
S	34	4659.1	3.4				ug/L	3901	Standard
Sr	88	78.3	25.8				ug/L	60	Standard
C	12	80.0	69.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	7	Standard
Dy	164	5.5	86.7				mg/L	13	Standard
Ho-1	165	8.3	124.9				mg/L	13	Standard
Er	166	23.3	89.2				mg/L	3	Standard
I	127	15479.6	1.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 3
Report Date/Time: Thursday, July 07, 2016 09:56:24
Page 2

Approved: July 08, 2016

	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
Report Date/Time: Thursday, July 07, 2016 09:56:24
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, July 07, 2016 09:57:19
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56717.7	2.4				ug/L	59299	Standard
	Be	9	79235.0	1.5	**99.4299**	1.121	1.1	ug/L	17	Standard
	Al	27	12863276.6	1.8	**100.5155**	0.744	0.7	ug/L	1472	Standard
	Sc	45	27045.8	2.6				ug/L	27861	Standard
	Ti	47	46653.1	1.0	**201.3179**	1.276	0.6	ug/L	28	Standard
	V	51	654718.1	1.5	**100.0465**	1.483	1.5	ug/L	1156	Standard
	Cr	52	676444.3	0.8	**99.6641**	0.930	0.9	ug/L	6689	Standard
	Cr	53	84496.6	0.8	**99.6554**	0.920	0.9	ug/L	348	Standard
	Mn	55	615132.2	1.7	**99.9104**	1.534	1.5	ug/L	770	Standard
	Co	59	641274.8	1.1	**99.6534**	1.040	1.0	ug/L	216	Standard
	Ni	60	174722.0	0.5	**99.3696**	0.604	0.6	ug/L	440	Standard
	Cu	65	174315.0	0.4	**99.5142**	0.880	0.9	ug/L	116	Standard
	Zn	66	104770.1	1.7	**100.2436**	1.553	1.5	ug/L	135	Standard
>	Ge	72	434291.3	0.6				ug/L	445277	Standard
	As	75	107129.6	1.3	**100.7087**	0.882	0.9	ug/L	-57	Standard
	Se	82	10847.2	0.5	**100.4003**	0.173	0.2	ug/L	10	Standard
	Se-1	77	7144.4	1.6	**99.1286**	1.167	1.2	ug/L	57	Standard
>	Ga	71	123.3	6.2				mg/L	78	Standard
	Rb	85	1448.4	3.2				ug/L	22	Standard
	Y	89	373844.2	0.3				ug/L	388959	Standard
>	Rh	103	45.0	19.2				ug/L	8	Standard
	Mo	98	494647.4	1.1	**200.4938**	2.034	1.0	ug/L	10	Standard
	Ag	107	604333.5	0.6	**98.9644**	0.698	0.7	ug/L	66	Standard
	Cd	111	193461.4	0.4	**99.2827**	0.707	0.7	mg/L	3	Standard
	Cd	114	474834.3	0.8	**99.6652**	0.437	0.4	ug/L	4	Standard
>	In	115	507518.2	1.2				ug/L	523327	Standard
	Sn	118	540158.3	1.7	**100.2977**	0.615	0.6	ug/L	488	Standard
	Sb	123	442057.1	0.5	**100.2705**	1.273	1.3	ug/L	195	Standard
	Ba	135	186681.0	0.2	**99.7207**	1.285	1.3	ug/L	28	Standard
	Ce	140	166.7	16.5				ug/L	83	Standard
>	Tb	159	784779.4	0.3				ug/L	809211	Standard
	Ho	165	5.0	100.0				ug/L	13	Standard
	Tl	203	762588.9	0.8	**99.9152**	0.386	0.4	ug/L	4	Standard
	Tl	205	650502.8	0.8	**99.3789**	1.078	1.1	ug/L	8	Standard
	Pb	206	476610.6	0.5	**99.5293**	0.700	0.7	ug/L	230	Standard
	Pb	207	434766.1	0.9	**100.0319**	0.876	0.9	ug/L	184	Standard
	Pb	208	1786027.6	0.4	**100.4673**	0.877	0.9	ug/L	775	Standard
	U	238	655152.3	0.9	**100.3683**	1.313	1.3	ug/L	3	Standard
>	Bi	209	457869.4	0.5				ug/L	472452	Standard

Sample ID: Standard 4
Report Date/Time: Thursday, July 07, 2016 09:59:35
Page 1

Approved: July 08, 2016

Na	23	3.3	86.6	**6.8096**	5.896	86.6	mg/L	0	Standard
Mg	24	7176.7	0.6	**10.0581**	0.319	3.2	mg/L	52	Standard
K	39	2141.8	5.7	**10.1477**	0.797	7.9	mg/L	32	Standard
Ca	43	111.7	5.2	**10.9123**	1.061	9.7	mg/L	33	Standard
Fe	54	11785.3	2.2	**9.9895**	0.487	4.9	mg/L	138	Standard
Fe	57	3197.0	2.2	**9.5846**	0.259	2.7	mg/L	263	Standard
Sc-1	45	27045.8	2.6				mg/L	27861	Standard
Cl	35	104243.4	1.5				ug/L	100607	Standard
Kr	83	3.7	56.8				ug/L	2	Standard
Br	81	1726.8	6.7				ug/L	1777	Standard
P	31	21441.8	2.2				ug/L	18074	Standard
S	34	4945.8	2.6				ug/L	3901	Standard
Sr	88	80.0	16.5				ug/L	60	Standard
C	12	70.0	51.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	7	Standard
Dy	164	19.2	101.7				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	13	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	1571.7	9.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 4
Report Date/Time: Thursday, July 07, 2016 09:59:35
Page 2

Approved: July 08, 2016

	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Thursday, July 07, 2016 09:59:35
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, July 07, 2016 10:00:32
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56319.5	1.7				ug/L	59299	Standard
	Be	9	39648.5	1.3	**50.1029**	0.706	1.4	ug/L	17	Standard
	Al	27	6562380.7	1.8	**51.6307**	0.423	0.8	ug/L	1472	Standard
	Sc	45	27182.7	1.7				ug/L	27861	Standard
	Ti	47	23353.0	1.7	**100.4874**	1.717	1.7	ug/L	28	Standard
	V	51	328826.6	0.5	**50.0469**	0.677	1.4	ug/L	1156	Standard
	Cr	52	344293.6	1.3	**50.1292**	0.394	0.8	ug/L	6689	Standard
	Cr	53	42554.7	2.7	**49.8685**	0.984	2.0	ug/L	348	Standard
	Mn	55	313412.0	0.2	**50.7264**	0.336	0.7	ug/L	770	Standard
	Co	59	326728.0	0.7	**50.6418**	0.691	1.4	ug/L	216	Standard
	Ni	60	89645.1	1.6	**50.7411**	0.781	1.5	ug/L	440	Standard
	Cu	65	89128.4	0.6	**50.7371**	0.517	1.0	ug/L	116	Standard
	Zn	66	53405.0	0.8	**50.8854**	0.489	1.0	ug/L	135	Standard
>	Ge	72	435294.3	0.8				ug/L	445277	Standard
	As	75	53807.3	1.1	**50.4846**	0.230	0.5	ug/L	-57	Standard
	Se	82	5474.8	1.4	**50.4837**	0.416	0.8	ug/L	10	Standard
	Se-1	77	3632.1	1.1	**49.9725**	0.956	1.9	ug/L	57	Standard
>	Ga	71	108.3	37.0				mg/L	78	Standard
	Rb	85	795.0	1.7				ug/L	22	Standard
	Y	89	372679.1	2.2				ug/L	388959	Standard
>	Rh	103	25.0	52.9				ug/L	8	Standard
	Mo	98	246151.3	0.6	**99.3659**	0.616	0.6	ug/L	10	Standard
	Ag	107	305467.3	0.8	**49.8125**	0.083	0.2	ug/L	66	Standard
	Cd	111	98160.7	0.7	**50.1686**	0.141	0.3	mg/L	3	Standard
	Cd	114	238427.1	2.5	**49.8356**	0.848	1.7	ug/L	4	Standard
>	In	115	509567.6	0.8				ug/L	523327	Standard
	Sn	118	266639.1	0.8	**49.2755**	0.344	0.7	ug/L	488	Standard
	Sb	123	222185.3	0.5	**50.1830**	0.146	0.3	ug/L	195	Standard
	Ba	135	93720.6	0.6	**49.8500**	0.372	0.7	ug/L	28	Standard
	Ce	140	90.0	49.4				ug/L	83	Standard
>	Tb	159	789248.0	1.3				ug/L	809211	Standard
	Ho	165	11.7	89.2				ug/L	13	Standard
	Tl	203	386655.1	0.2	**50.2521**	0.412	0.8	ug/L	4	Standard
	Tl	205	334858.4	0.9	**50.7409**	0.153	0.3	ug/L	8	Standard
	Pb	206	242431.5	0.2	**50.1949**	0.418	0.8	ug/L	230	Standard
	Pb	207	219210.7	0.2	**50.0098**	0.482	1.0	ug/L	184	Standard
	Pb	208	906763.8	0.7	**50.5741**	0.678	1.3	ug/L	775	Standard
	U	238	332051.8	1.2	**50.4589**	0.764	1.5	ug/L	3	Standard
>	Bi	209	461601.7	0.9				ug/L	472452	Standard

Sample ID: QC Std 1
Report Date/Time: Thursday, July 07, 2016 10:02:49
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.3600**	5.811	172.9	mg/L	0	Standard
Mg	24	3830.5	3.0	**5.3100**	0.235	4.4	mg/L	52	Standard
K	39	1030.0	3.9	**4.7869**	0.269	5.6	mg/L	32	Standard
Ca	43	66.7	18.9	**4.8961**	1.497	30.6	mg/L	33	Standard
Fe	54	5998.5	1.6	**5.0016**	0.171	3.4	mg/L	138	Standard
Fe	57	1791.8	1.7	**5.0455**	0.164	3.2	mg/L	263	Standard
Sc-1	45	27182.7	1.7				mg/L	27861	Standard
Cl	35	102719.7	1.3				ug/L	100607	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1590.1	8.2				ug/L	1777	Standard
P	31	21024.6	2.8				ug/L	18074	Standard
S	34	4697.4	3.0				ug/L	3901	Standard
Sr	88	58.3	19.8				ug/L	60	Standard
C	12	56.7	36.7				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	7	Standard
Dy	164	19.2	88.9				mg/L	13	Standard
Ho-1	165	11.7	89.2				mg/L	13	Standard
Er	166	16.7	124.9				mg/L	3	Standard
I	127	14513.6	3.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.206		
Al	27	103.261		
Sc	45			
Ti	47	100.487		
V	51	100.094		
Cr	52	100.258		
Cr	53			
Mn	55	101.453		
Co	59	101.284		
Ni	60	101.482		
Cu	65	101.474		
Zn	66	101.771		
Ge	72		97.758	
As	75	100.969		
Se	82	100.967		
Se-1	77			
Ga	71			

Sample ID: QC Std 1
Report Date/Time: Thursday, July 07, 2016 10:02:49
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	99.366		
Ag	107	99.625		
Cd	111	100.337		
Cd	114			
> In	115		97.371	
Sn	118	98.551		
Sb	123	100.366		
Ba	135	99.700		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.504		
Tl	205			
Pb	206	100.390		
Pb	207	100.020		
Pb	208	101.148		
U	238	100.918		
> Bi	209		97.703	
Na	23	67.200		
Mg	24	106.201		
K	39	95.737		
Ca	43	97.922		
Fe	54	100.031		
Fe	57	100.910		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
Report Date/Time: Thursday, July 07, 2016 10:02:49
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, July 07, 2016 10:03:45
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56900.1	4.1				ug/L	59299	Standard
	Be	9	33.3	56.8	**0.0425**	0.022	51.1	ug/L	17	Standard
	Al	27	4379.0	40.2	**0.0215**	0.015	69.3	ug/L	1472	Standard
	Sc	45	27688.6	2.2				ug/L	27861	Standard
	Ti	47	39.0	26.8	**0.0538**	0.045	83.6	ug/L	28	Standard
	V	51	1124.4	4.4	**-0.0052**	0.007	139.2	ug/L	1156	Standard
	Cr	52	6067.2	1.7	**-0.0733**	0.014	18.6	ug/L	6689	Standard
	Cr	53	351.7	20.7	**0.0143**	0.086	601.4	ug/L	348	Standard
	Mn	55	1048.7	8.7	**0.0419**	0.015	35.0	ug/L	770	Standard
	Co	59	388.0	16.9	**0.0246**	0.010	41.0	ug/L	216	Standard
	Ni	60	446.7	8.4	**-0.0028**	0.021	774.3	ug/L	440	Standard
	Cu	65	161.0	22.6	**0.0334**	0.021	62.1	ug/L	116	Standard
	Zn	66	385.0	6.7	**0.1708**	0.025	14.3	ug/L	135	Standard
>	**Ge**	72	435944.3	0.2				ug/L	445277	Standard
	As	75	4.4	594.4	**0.0414**	0.024	59.1	ug/L	-57	Standard
	Se	82	22.3	11.0	**0.0601**	0.022	36.9	ug/L	10	Standard
	Se-1	77	55.0	14.5	**0.1279**	0.113	88.1	ug/L	57	Standard
>	**Ga**	71	101.7	7.5				mg/L	78	Standard
	Rb	85	20.0	66.1				ug/L	22	Standard
	Y	89	379784.6	1.1				ug/L	388959	Standard
>	**Rh**	103	16.7	17.3				ug/L	8	Standard
	Mo	98	375.1	17.7	**0.1435**	0.027	19.2	ug/L	10	Standard
	Ag	107	240.3	27.6	**0.0253**	0.011	43.5	ug/L	66	Standard
	Cd	111	52.0	55.8	**0.0228**	0.015	65.5	mg/L	3	Standard
	Cd	114	105.8	17.4	**0.0180**	0.004	22.3	ug/L	4	Standard
>	**In**	115	514644.0	0.8				ug/L	523327	Standard
	Sn	118	1086.7	26.0	**0.1236**	0.052	42.3	ug/L	488	Standard
	Sb	123	843.2	31.1	**0.1721**	0.059	34.2	ug/L	195	Standard
	Ba	135	80.3	34.9	**0.0252**	0.015	59.7	ug/L	28	Standard
	Ce	140	23.3	24.7				ug/L	83	Standard
>	**Tb**	159	791224.8	1.9				ug/L	809211	Standard
	Ho	165	8.3	34.6				ug/L	13	Standard
	Tl	203	207.3	46.2	**0.0245**	0.012	49.6	ug/L	4	Standard
	Tl	205	148.3	63.7	**0.0196**	0.014	71.4	ug/L	8	Standard
	Pb	206	361.0	17.7	**0.0256**	0.013	50.7	ug/L	230	Standard
	Pb	207	311.7	22.3	**0.0273**	0.016	57.2	ug/L	184	Standard
	Pb	208	1310.4	15.3	**0.0262**	0.011	41.9	ug/L	775	Standard
	U	238	149.3	39.6	**0.0216**	0.009	40.7	ug/L	3	Standard
>	**Bi**	209	469451.2	0.5				ug/L	472452	Standard

Sample ID: QC Std 2
Report Date/Time: Thursday, July 07, 2016 10:06:02
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.2342**	5.593	172.9	mg/L	0	Standard
Mg	24	45.0	44.4	**-0.0040**	0.027	676.4	mg/L	52	Standard
K	39	40.0	12.5	**0.0604**	0.020	32.3	mg/L	32	Standard
Ca	43	18.3	15.7	**-1.4818**	0.327	22.0	mg/L	33	Standard
Fe	54	170.7	8.8	**0.0311**	0.010	31.3	mg/L	138	Standard
Fe	57	280.0	15.5	**0.2011**	0.131	65.3	mg/L	263	Standard
Sc-1	45	27688.6	2.2				mg/L	27861	Standard
Cl	35	101435.8	1.3				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1686.8	0.7				ug/L	1777	Standard
P	31	19614.4	2.4				ug/L	18074	Standard
S	34	4705.7	1.3				ug/L	3901	Standard
Sr	88	98.3	17.9				ug/L	60	Standard
C	12	73.3	20.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	16.3	72.4				mg/L	13	Standard
Ho-1	165	8.3	34.6				mg/L	13	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	8405.7	2.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.904	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 2
Report Date/Time: Thursday, July 07, 2016 10:06:02
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.341
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.365
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Na	23	
QC Std 2	Ca	43	
QC Std 2	Fe	57	

Sample ID: QC Std 2
Report Date/Time: Thursday, July 07, 2016 10:06:02
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, July 07, 2016 10:06:57
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55217.1	2.3				ug/L	59299	Standard
	Be	9	165.0	6.1	**0.2141**	0.015	6.9	ug/L	17	Standard
	Al	27	1831.8	14.1	**0.0018**	0.002	97.7	ug/L	1472	Standard
	Sc	45	26611.7	3.6				ug/L	27861	Standard
	Ti	47	26.0	21.4	**0.0010**	0.024	2520.0	ug/L	28	Standard
	V	51	3453.1	1.5	**0.3648**	0.008	2.3	ug/L	1156	Standard
	Cr	52	11002.0	0.3	**0.7042**	0.007	1.0	ug/L	6689	Standard
	Cr	53	956.7	2.2	**0.7599**	0.025	3.2	ug/L	348	Standard
	Mn	55	3474.4	1.2	**0.4508**	0.007	1.6	ug/L	770	Standard
	Co	59	2623.9	1.6	**0.3823**	0.006	1.5	ug/L	216	Standard
	Ni	60	3054.6	2.3	**1.5276**	0.038	2.5	ug/L	440	Standard
	Cu	65	1410.4	3.5	**0.7671**	0.031	4.0	ug/L	116	Standard
	Zn	66	6635.1	0.5	**6.3191**	0.033	0.5	ug/L	135	Standard
>	**Ge**	72	423960.0	0.2				ug/L	445277	Standard
	As	75	339.7	4.5	**0.3643**	0.014	3.9	ug/L	-57	Standard
	Se	82	54.3	15.2	**0.3701**	0.078	21.2	ug/L	10	Standard
	Se-1	77	68.0	5.9	**0.3354**	0.059	17.7	ug/L	57	Standard
>	**Ga**	71	81.7	21.5				mg/L	78	Standard
	Rb	85	15.0	100.0				ug/L	22	Standard
	Y	89	362618.0	0.5				ug/L	388959	Standard
>	**Rh**	103	25.0	20.0				ug/L	8	Standard
	Mo	98	109.5	11.3	**0.0388**	0.005	12.9	ug/L	10	Standard
	Ag	107	2371.2	1.0	**0.3833**	0.001	0.4	ug/L	66	Standard
	Cd	111	443.1	1.6	**0.2288**	0.005	2.3	mg/L	3	Standard
	Cd	114	1102.0	6.0	**0.2325**	0.014	5.9	ug/L	4	Standard
>	**In**	115	496585.0	0.8				ug/L	523327	Standard
	Sn	118	548.3	24.5	**0.0284**	0.025	87.7	ug/L	488	Standard
	Sb	123	1700.6	6.2	**0.3775**	0.022	5.7	ug/L	195	Standard
	Ba	135	1329.7	1.0	**0.7088**	0.011	1.6	ug/L	28	Standard
	Ce	140	20.0	66.1				ug/L	83	Standard
>	**Tb**	159	756474.2	1.1				ug/L	809211	Standard
	Ho	165	5.0	100.0				ug/L	13	Standard
	Tl	203	657.7	9.4	**0.0846**	0.008	9.9	ug/L	4	Standard
	Tl	205	526.7	13.5	**0.0783**	0.011	13.9	ug/L	8	Standard
	Pb	206	1212.0	2.8	**0.2063**	0.008	3.7	ug/L	230	Standard
	Pb	207	1021.0	2.2	**0.1932**	0.005	2.3	ug/L	184	Standard
	Pb	208	4256.6	1.2	**0.1948**	0.004	1.8	ug/L	775	Standard
	U	238	2534.5	2.2	**0.3891**	0.010	2.5	ug/L	3	Standard
>	**Bi**	209	456080.2	0.3				ug/L	472452	Standard

Sample ID: QC Std 3
Report Date/Time: Thursday, July 07, 2016 10:09:14
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	31.7	24.1	**-0.0200**	0.013	63.4	mg/L	52	Standard
K	39	33.3	34.6	**0.0345**	0.052	149.4	mg/L	32	Standard
Ca	43	25.0	72.1	**-0.4955**	2.355	475.3	mg/L	33	Standard
Fe	54	117.2	11.0	**-0.0095**	0.012	124.5	mg/L	138	Standard
Fe	57	265.0	16.4	**0.1867**	0.126	67.7	mg/L	263	Standard
Sc-1	45	26611.7	3.6				mg/L	27861	Standard
Cl	35	97886.5	1.1				ug/L	100607	Standard
Kr	83	3.0	88.2				ug/L	2	Standard
Br	81	1573.4	9.6				ug/L	1777	Standard
P	31	13617.8	1.8				ug/L	18074	Standard
S	34	4444.0	3.8				ug/L	3901	Standard
Sr	88	66.7	22.9				ug/L	60	Standard
C	12	80.0	33.1				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	9.4	5.9				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	13	Standard
Er	166	13.3	86.6				mg/L	3	Standard
I	127	948.4	8.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.044		
Al	27	0.185		
Sc	45			
Ti	47			
V	51	91.211		
Cr	52	88.021		
Cr	53			
Mn	55	90.168		
Co	59	95.586		
Ni	60	95.477		
Cu	65	95.885		
Zn	66	101.106		
Ge	72		95.213	
As	75	91.069		
Se	82	92.537		
Se-1	77			
Ga	71			

Sample ID: QC Std 3
Report Date/Time: Thursday, July 07, 2016 10:09:14
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	95.821		
Cd	111	95.341		
Cd	114			
> In	115			94.890
Sn	118			
Sb	123	94.376		
Ba	135	94.513		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	105.709		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.395		
U	238	97.282		
> Bi	209			96.535
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
Report Date/Time: Thursday, July 07, 2016 10:09:14
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, July 07, 2016 10:10:08
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50893.8	4.6				ug/L	59299	Standard
	Be	9	31.7	92.5	**0.0464**	0.042	91.4	ug/L	17	Standard
	Al	27	5702420.5	1.3	**49.6963**	1.622	3.3	ug/L	1472	Standard
	Sc	45	24878.7	1.7				ug/L	27861	Standard
	Ti	47	22532.1	0.8	**103.8445**	1.615	1.6	ug/L	28	Standard
	V	51	1017.2	6.2	**-0.0102**	0.011	112.0	ug/L	1156	Standard
	Cr	52	5313.3	2.4	**-0.1279**	0.015	11.8	ug/L	6689	Standard
	Cr	53	2333.5	5.7	**2.5512**	0.147	5.8	ug/L	348	Standard
	Mn	55	1719.1	4.6	**0.1707**	0.013	7.8	ug/L	770	Standard
	Co	59	435.0	15.1	**0.0367**	0.010	28.6	ug/L	216	Standard
	Ni	60	837.7	4.4	**0.2538**	0.020	7.9	ug/L	440	Standard
	Cu	65	529.3	7.8	**0.2647**	0.023	8.5	ug/L	116	Standard
	Zn	66	665.3	2.7	**0.4847**	0.021	4.3	ug/L	135	Standard
>	Ge	72	406452.8	0.8				ug/L	445277	Standard
	As	75	0.6	1984.1	**0.0379**	0.012	32.2	ug/L	-57	Standard
	Se	82	20.5	19.9	**0.0571**	0.039	67.6	ug/L	10	Standard
	Se-1	77	248.3	6.5	**3.0670**	0.212	6.9	ug/L	57	Standard
>	Ga	71	156.7	12.1				mg/L	78	Standard
	Rb	85	666.7	3.4				ug/L	22	Standard
	Y	89	341056.2	1.2				ug/L	388959	Standard
>	Rh	103	8.3	124.9				ug/L	8	Standard
	Mo	98	209657.3	0.7	**92.8017**	1.115	1.2	ug/L	10	Standard
	Ag	107	254.3	36.0	**0.0319**	0.016	51.0	ug/L	66	Standard
	Cd	111	-115.1	55.9	**-0.0681**	0.036	53.3	mg/L	3	Standard
	Cd	114	515.3	21.4	**0.1142**	0.025	22.0	ug/L	4	Standard
>	In	115	464727.9	0.6				ug/L	523327	Standard
	Sn	118	611.7	7.0	**0.0484**	0.008	17.0	ug/L	488	Standard
	Sb	123	714.1	29.5	**0.1604**	0.053	32.9	ug/L	195	Standard
	Ba	135	81.0	55.8	**0.0300**	0.026	87.6	ug/L	28	Standard
	Ce	140	205.0	62.3				ug/L	83	Standard
>	Tb	159	740286.5	2.0				ug/L	809211	Standard
	Ho	165	8.3	69.3				ug/L	13	Standard
	Tl	203	260.7	63.0	**0.0342**	0.023	66.6	ug/L	4	Standard
	Tl	205	173.3	24.5	**0.0255**	0.007	27.1	ug/L	8	Standard
	Pb	206	408.3	16.7	**0.0423**	0.015	35.8	ug/L	230	Standard
	Pb	207	347.3	19.8	**0.0419**	0.017	40.4	ug/L	184	Standard
	Pb	208	1425.4	12.1	**0.0392**	0.011	27.0	ug/L	775	Standard
	U	238	81.7	51.6	**0.0126**	0.007	54.6	ug/L	3	Standard
>	Bi	209	432715.4	0.4				ug/L	472452	Standard

Sample ID: QC Std 4
Report Date/Time: Thursday, July 07, 2016 10:12:25
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.6544**	6.321	173.0	mg/L	0	Standard
Mg	24	8212.2	4.0	**12.5201**	0.401	3.2	mg/L	52	Standard
K	39	1075.0	8.5	**5.4712**	0.427	7.8	mg/L	32	Standard
Ca	43	136.7	11.2	**15.7658**	2.137	13.6	mg/L	33	Standard
Fe	54	12984.7	2.8	**11.9831**	0.543	4.5	mg/L	138	Standard
Fe	57	3460.4	7.3	**11.4003**	0.981	8.6	mg/L	263	Standard
Sc-1	45	24878.7	1.7				mg/L	27861	Standard
Cl	35	95142.5	1.1				ug/L	100607	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1496.7	1.4				ug/L	1777	Standard
P	31	6833.2	3.0				ug/L	18074	Standard
S	34	4120.6	3.9				ug/L	3901	Standard
Sr	88	70.0	64.3				ug/L	60	Standard
C	12	100.0	17.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	7	Standard
Dy	164	6.2	93.6				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	4892.5	1.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.994		
Sc	45			
Ti	47	103.845		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.281	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 4
Report Date/Time: Thursday, July 07, 2016 10:12:25
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	92.802		
Ag	107			
Cd	111			
Cd	114			
In	115			88.803
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			91.589
Na	23	29.235		
Mg	24	250.401		
K	39	109.424		
Ca	43	105.105		
Fe	54	95.865		
Fe	57	91.203		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

Sample ID: QC Std 4
Report Date/Time: Thursday, July 07, 2016 10:12:25
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, July 07, 2016 10:13:20
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55541.6	0.8				ug/L	59299	Standard
	Be	9	80533.5	0.9	**103.1882**	1.466	1.4	ug/L	17	Standard
	Al	27	5392041.8	1.5	**43.0193**	0.979	2.3	ug/L	1472	Standard
	Sc	45	27141.0	1.7				ug/L	27861	Standard
	Ti	47	20965.8	2.4	**90.1563**	2.316	2.6	ug/L	28	Standard
	V	51	648326.1	0.7	**98.7918**	1.495	1.5	ug/L	1156	Standard
	Cr	52	671386.6	1.0	**98.6289**	1.330	1.3	ug/L	6689	Standard
	Cr	53	84427.9	1.6	**99.2856**	1.244	1.3	ug/L	348	Standard
	Mn	55	615984.8	0.5	**99.7679**	1.040	1.0	ug/L	770	Standard
	Co	59	632094.7	1.2	**97.9521**	1.722	1.8	ug/L	216	Standard
	Ni	60	173236.8	0.9	**98.2489**	1.781	1.8	ug/L	440	Standard
	Cu	65	173068.9	1.0	**98.5276**	1.908	1.9	ug/L	116	Standard
	Zn	66	105930.0	0.8	**101.0756**	1.660	1.6	ug/L	135	Standard
>	Ge	72	435539.2	0.9				ug/L	445277	Standard
	As	75	107334.1	0.5	**100.6162**	0.424	0.4	ug/L	-57	Standard
	Se	82	10768.5	0.6	**99.3930**	1.490	1.5	ug/L	10	Standard
	Se-1	77	7398.8	0.9	**102.3924**	0.997	1.0	ug/L	57	Standard
>	Ga	71	143.3	21.3				mg/L	78	Standard
	Rb	85	713.4	4.3				ug/L	22	Standard
	Y	89	375267.2	0.8				ug/L	388959	Standard
>	Rh	103	36.7	34.3				ug/L	8	Standard
	Mo	98	200040.3	0.3	**81.0480**	0.665	0.8	ug/L	10	Standard
	Ag	107	588522.5	0.3	**96.3381**	0.710	0.7	ug/L	66	Standard
	Cd	111	191557.3	0.2	**98.2663**	0.395	0.4	mg/L	3	Standard
	Cd	114	471678.8	1.3	**98.9670**	1.502	1.5	ug/L	4	Standard
>	In	115	507700.1	0.5				ug/L	523327	Standard
	Sn	118	1076.7	15.3	**0.1243**	0.031	24.7	ug/L	488	Standard
	Sb	123	428248.9	1.6	**97.0998**	1.904	2.0	ug/L	195	Standard
	Ba	135	181906.1	0.6	**97.1285**	0.999	1.0	ug/L	28	Standard
	Ce	140	85.0	30.6				ug/L	83	Standard
>	Tb	159	792348.6	0.5				ug/L	809211	Standard
	Ho	165	6.7	173.2				ug/L	13	Standard
	Tl	203	760377.8	0.2	**97.5590**	0.751	0.8	ug/L	4	Standard
	Tl	205	659523.3	1.4	**98.6578**	0.810	0.8	ug/L	8	Standard
	Pb	206	487390.8	0.4	**99.6699**	1.245	1.2	ug/L	230	Standard
	Pb	207	425230.0	0.6	**95.8086**	1.352	1.4	ug/L	184	Standard
	Pb	208	1794987.1	0.2	**98.8743**	1.038	1.0	ug/L	775	Standard
	U	238	649735.5	1.0	**97.4724**	1.539	1.6	ug/L	3	Standard
>	Bi	209	467591.9	0.9				ug/L	472452	Standard

Sample ID: QC Std 5
Report Date/Time: Thursday, July 07, 2016 10:15:37
Page 1

Approved: July 08, 2016

Na	23	3.3	86.6	**6.6890**	5.791	86.6	mg/L	0	Standard
Mg	24	7546.9	3.2	**10.5362**	0.207	2.0	mg/L	52	Standard
K	39	843.4	3.9	**3.9028**	0.227	5.8	mg/L	32	Standard
Ca	43	111.7	15.7	**10.8671**	2.488	22.9	mg/L	33	Standard
Fe	54	12089.7	1.6	**10.2094**	0.325	3.2	mg/L	138	Standard
Fe	57	3363.7	2.2	**10.0803**	0.264	2.6	mg/L	263	Standard
Sc-1	45	27141.0	1.7				mg/L	27861	Standard
Cl	35	102626.5	2.0				ug/L	100607	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1656.8	4.4				ug/L	1777	Standard
P	31	17695.3	3.0				ug/L	18074	Standard
S	34	4100.6	2.3				ug/L	3901	Standard
Sr	88	66.7	15.6				ug/L	60	Standard
C	12	123.3	20.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	7	Standard
Dy	164	19.5	50.0				mg/L	13	Standard
Ho-1	165	6.7	173.2				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	7428.5	2.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.188		
Al	27	0.860		
Sc	45			
Ti	47	90.156		
V	51	98.792		
Cr	52	98.629		
Cr	53			
Mn	55	99.768		
Co	59	97.952		
Ni	60	98.249		
Cu	65	98.528		
Zn	66	101.076		
Ge	72		97.813	
As	75	100.616		
Se	82	99.393		
Se-1	77			
Ga	71			

Sample ID: QC Std 5
Report Date/Time: Thursday, July 07, 2016 10:15:37
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	81.048		
Ag	107	96.338		
Cd	111	98.266		
Cd	114			
In	115		97.014	
Sn	118			
Sb	123	97.100		
Ba	135	97.128		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.559		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.874		
U	238	97.472		
Bi	209		98.971	
Na	23	53.512		
Mg	24	210.724		
K	39	78.056		
Ca	43	72.447		
Fe	54	81.675		
Fe	57	80.642		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
Report Date/Time: Thursday, July 07, 2016 10:15:37
Page 3

Approved: July 08, 2016

QC Std 5	K	39
QC Std 5	Ca	43

Sample ID: QC Std 5
Report Date/Time: Thursday, July 07, 2016 10:15:37
Page 4

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 10:16:33
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57728.1	1.5				ug/L	59299	Standard
	Be	9	40883.4	1.9	**50.4099**	1.443	2.9	ug/L	17	Standard
	Al	27	6549254.1	1.7	**50.2698**	0.474	0.9	ug/L	1472	Standard
	Sc	45	27222.8	1.4				ug/L	27861	Standard
	Ti	47	22813.8	1.0	**97.8743**	1.029	1.1	ug/L	28	Standard
	V	51	330704.6	0.8	**50.1845**	0.761	1.5	ug/L	1156	Standard
	Cr	52	340944.0	0.4	**49.4858**	0.492	1.0	ug/L	6689	Standard
	Cr	53	43042.7	1.4	**50.2981**	0.357	0.7	ug/L	348	Standard
	Mn	55	310835.0	1.2	**50.1624**	0.979	2.0	ug/L	770	Standard
	Co	59	326210.3	0.5	**50.4109**	0.516	1.0	ug/L	216	Standard
	Ni	60	88113.5	1.0	**49.7205**	0.126	0.3	ug/L	440	Standard
	Cu	65	87926.1	0.9	**49.9031**	0.533	1.1	ug/L	116	Standard
	Zn	66	52538.9	0.2	**49.9094**	0.487	1.0	ug/L	135	Standard
>	Ge	72	436582.8	0.7				ug/L	445277	Standard
	As	75	53321.1	0.5	**49.8826**	0.154	0.3	ug/L	-57	Standard
	Se	82	5427.5	0.3	**49.9018**	0.533	1.1	ug/L	10	Standard
	Se-1	77	3622.4	2.6	**49.6911**	1.660	3.3	ug/L	57	Standard
>	Ga	71	120.0	11.0				mg/L	78	Standard
	Rb	85	676.7	10.8				ug/L	22	Standard
	Y	89	377624.8	0.9				ug/L	388959	Standard
>	Rh	103	21.7	26.6				ug/L	8	Standard
	Mo	98	246608.6	0.6	**98.4120**	0.518	0.5	ug/L	10	Standard
	Ag	107	305187.8	1.0	**49.1997**	0.624	1.3	ug/L	66	Standard
	Cd	111	97311.2	0.8	**49.1657**	0.281	0.6	mg/L	3	Standard
	Cd	114	236807.5	0.7	**48.9359**	0.183	0.4	ug/L	4	Standard
>	In	115	515450.0	0.3				ug/L	523327	Standard
	Sn	118	265997.1	2.3	**48.5923**	1.009	2.1	ug/L	488	Standard
	Sb	123	226933.1	1.3	**50.6712**	0.789	1.6	ug/L	195	Standard
	Ba	135	92934.8	0.6	**48.8661**	0.233	0.5	ug/L	28	Standard
	Ce	140	76.7	38.2				ug/L	83	Standard
>	Tb	159	791982.1	0.7				ug/L	809211	Standard
	Ho	165	6.7	86.6				ug/L	13	Standard
	Tl	203	386311.2	0.4	**49.8344**	0.388	0.8	ug/L	4	Standard
	Tl	205	338220.2	0.9	**50.8762**	0.997	2.0	ug/L	8	Standard
	Pb	206	245142.6	0.3	**50.3808**	0.607	1.2	ug/L	230	Standard
	Pb	207	222663.9	0.3	**50.4228**	0.753	1.5	ug/L	184	Standard
	Pb	208	915689.5	0.5	**50.6949**	0.842	1.7	ug/L	775	Standard
	U	238	335661.7	0.5	**50.6277**	0.350	0.7	ug/L	3	Standard
>	Bi	209	465063.4	1.2				ug/L	472452	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 10:18:50
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3938.8	2.9	**5.4514**	0.127	2.3	mg/L	52	Standard
K	39	1028.4	1.5	**4.7688**	0.027	0.6	mg/L	32	Standard
Ca	43	46.7	49.5	**2.2848**	3.043	133.2	mg/L	33	Standard
Fe	54	5847.4	0.7	**4.8642**	0.070	1.4	mg/L	138	Standard
Fe	57	1730.1	4.3	**4.8400**	0.260	5.4	mg/L	263	Standard
> **Sc-1**	45	27222.8	1.4				mg/L	27861	Standard
Cl	35	101092.1	0.4				ug/L	100607	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1766.8	11.9				ug/L	1777	Standard
P	31	18841.7	2.6				ug/L	18074	Standard
S	34	4487.3	2.4				ug/L	3901	Standard
Sr	88	81.7	15.4				ug/L	60	Standard
C	12	70.0	37.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	16.2	71.4				mg/L	13	Standard
Ho-1	165	6.7	86.6				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	14757.2	0.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.820		
Al	27	100.540		
Sc	45			
Ti	47	97.874		
V	51	100.369		
Cr	52	98.972		
Cr	53			
Mn	55	100.325		
Co	59	100.822		
Ni	60	99.441		
Cu	65	99.806		
Zn	66	99.819		
> Ge	72		98.047	
As	75	99.765		
Se	82	99.804		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 10:18:50
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	98.412		
Ag	107	98.399		
Cd	111	98.331		
Cd	114			
> In	115		98.495	
Sn	118	97.185		
Sb	123	101.342		
Ba	135	97.732		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.669		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.390		
U	238	101.255		
> Bi	209		98.436	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 10:18:50
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 10:19:45
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58735.3	1.3				ug/L	59299	Standard
	Be	9	28.3	53.9	**0.0355**	0.018	50.6	ug/L	17	Standard
	Al	27	2701.9	15.4	**0.0075**	0.003	38.6	ug/L	1472	Standard
	Sc	45	27254.5	2.3				ug/L	27861	Standard
	Ti	47	26.0	20.0	**-0.0024**	0.022	924.3	ug/L	28	Standard
	V	51	1089.6	3.9	**-0.0109**	0.007	61.6	ug/L	1156	Standard
	Cr	52	6027.2	1.5	**-0.0815**	0.013	16.1	ug/L	6689	Standard
	Cr	53	388.3	8.6	**0.0564**	0.040	70.6	ug/L	348	Standard
	Mn	55	933.4	5.8	**0.0229**	0.009	38.6	ug/L	770	Standard
	Co	59	305.3	12.0	**0.0117**	0.006	48.6	ug/L	216	Standard
	Ni	60	405.3	2.3	**-0.0268**	0.006	21.2	ug/L	440	Standard
	Cu	65	125.7	7.1	**0.0131**	0.005	39.3	ug/L	116	Standard
	Zn	66	383.3	0.2	**0.1683**	0.001	0.6	ug/L	135	Standard
>	**Ge**	72	437048.8	0.2				ug/L	445277	Standard
	As	75	-34.5	48.6	**0.0052**	0.016	301.7	ug/L	-57	Standard
	Se	82	13.2	15.5	**-0.0237**	0.019	79.1	ug/L	10	Standard
	Se-1	77	61.7	6.1	**0.2183**	0.051	23.4	ug/L	57	Standard
>	**Ga**	71	75.0	35.3				mg/L	78	Standard
	Rb	85	28.3	50.9				ug/L	22	Standard
	Y	89	376446.1	1.1				ug/L	388959	Standard
>	**Rh**	103	16.7	45.8				ug/L	8	Standard
	Mo	98	297.7	8.0	**0.1114**	0.009	8.2	ug/L	10	Standard
	Ag	107	161.0	8.8	**0.0122**	0.002	17.8	ug/L	66	Standard
	Cd	111	16.2	56.0	**0.0045**	0.005	100.5	mg/L	3	Standard
	Cd	114	57.5	46.1	**0.0079**	0.005	68.5	ug/L	4	Standard
>	**In**	115	519086.6	0.5				ug/L	523327	Standard
	Sn	118	838.4	25.1	**0.0767**	0.038	49.8	ug/L	488	Standard
	Sb	123	1413.9	34.5	**0.2971**	0.109	36.5	ug/L	195	Standard
	Ba	135	57.3	34.2	**0.0127**	0.010	79.8	ug/L	28	Standard
	Ce	140	40.0	21.7				ug/L	83	Standard
>	**Tb**	159	798575.4	0.8				ug/L	809211	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	101.3	16.8	**0.0110**	0.002	20.6	ug/L	4	Standard
	Tl	205	71.7	20.1	**0.0082**	0.002	26.2	ug/L	8	Standard
	Pb	206	285.0	13.4	**0.0101**	0.008	79.4	ug/L	230	Standard
	Pb	207	265.3	13.8	**0.0169**	0.008	49.9	ug/L	184	Standard
	Pb	208	1029.7	7.4	**0.0108**	0.005	42.0	ug/L	775	Standard
	U	238	75.3	35.5	**0.0106**	0.004	38.5	ug/L	3	Standard
>	**Bi**	209	469749.0	0.7				ug/L	472452	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 10:22:02
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	39.4	**-0.0141**	0.021	149.0	mg/L	52	Standard
K	39	21.7	13.3	**-0.0235**	0.014	59.1	mg/L	32	Standard
Ca	43	28.3	36.7	**-0.1237**	1.377	1113.0	mg/L	33	Standard
Fe	54	159.3	11.4	**0.0241**	0.018	76.0	mg/L	138	Standard
Fe	57	213.3	13.7	**0.0035**	0.098	2816.2	mg/L	263	Standard
Sc-1	45	27254.5	2.3				mg/L	27861	Standard
Cl	35	101937.1	1.3				ug/L	100607	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1676.8	12.8				ug/L	1777	Standard
P	31	19375.7	4.3				ug/L	18074	Standard
S	34	4472.3	2.7				ug/L	3901	Standard
Sr	88	83.3	15.1				ug/L	60	Standard
C	12	90.0	69.4				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	173.2				mg/L	7	Standard
Dy	164	5.9	101.5				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	8147.2	1.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.152	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 10:22:02
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.190
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.428
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 10:22:02
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: PBW 67 WG575246-03
Sample Date/Time: Thursday, July 07, 2016 10:22:57
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52838.7	3.6				ug/L	59299	Standard
	Be	9	23.3	32.7	**0.0330**	0.011	34.1	ug/L	17	Standard
	Al	27	1740.1	11.0	**0.0018**	0.002	87.0	ug/L	1472	Standard
	Sc	45	24633.3	2.2				ug/L	27861	Standard
	Ti	47	24.0	14.4	**-0.0033**	0.017	499.8	ug/L	28	Standard
	V	51	970.5	3.2	**-0.0181**	0.005	26.1	ug/L	1156	Standard
	Cr	52	4193.6	3.8	**-0.3068**	0.020	6.5	ug/L	6689	Standard
	Cr	53	208.3	10.0	**-0.1374**	0.024	17.5	ug/L	348	Standard
	Mn	55	439.3	6.3	**-0.0517**	0.005	9.5	ug/L	770	Standard
	Co	59	243.0	9.4	**0.0049**	0.004	85.8	ug/L	216	Standard
	Ni	60	380.0	4.1	**-0.0252**	0.011	43.5	ug/L	440	Standard
	Cu	65	82.7	8.8	**-0.0078**	0.004	51.8	ug/L	116	Standard
	Zn	66	187.3	26.1	**-0.0049**	0.052	1040.9	ug/L	135	Standard
>	Ge	72	406933.5	0.9				ug/L	445277	Standard
	As	75	-16.9	153.2	**0.0205**	0.026	126.1	ug/L	-57	Standard
	Se	82	17.8	29.7	**0.0312**	0.054	173.4	ug/L	10	Standard
	Se-1	77	49.7	14.8	**0.1023**	0.104	101.8	ug/L	57	Standard
>	Ga	71	48.3	57.0				mg/L	78	Standard
	Rb	85	18.3	15.7				ug/L	22	Standard
	Y	89	344665.1	1.5				ug/L	388959	Standard
>	Rh	103	13.3	94.4				ug/L	8	Standard
	Mo	98	200.9	21.4	**0.0809**	0.018	22.4	ug/L	10	Standard
	Ag	107	89.7	11.6	**0.0022**	0.002	78.0	ug/L	66	Standard
	Cd	111	6.6	14.4	**0.0001**	0.001	879.9	mg/L	3	Standard
	Cd	114	23.5	42.0	**0.0014**	0.002	158.5	ug/L	4	Standard
>	In	115	471969.4	1.3				ug/L	523327	Standard
	Sn	118	118.3	23.3	**-0.0521**	0.005	9.9	ug/L	488	Standard
	Sb	123	1955.9	12.6	**0.4604**	0.059	12.9	ug/L	195	Standard
	Ba	135	26.3	13.3	**-0.0021**	0.002	88.2	ug/L	28	Standard
	Ce	140	26.7	71.0				ug/L	83	Standard
>	Tb	159	741240.3	0.3				ug/L	809211	Standard
	Ho	165	11.7	24.7				ug/L	13	Standard
	Tl	203	49.3	27.5	**0.0047**	0.002	39.3	ug/L	4	Standard
	Tl	205	40.0	45.1	**0.0038**	0.003	75.3	ug/L	8	Standard
	Pb	206	221.0	8.0	**-0.0006**	0.004	550.3	ug/L	230	Standard
	Pb	207	183.7	6.6	**0.0006**	0.003	410.6	ug/L	184	Standard
	Pb	208	810.0	3.3	**0.0010**	0.002	161.2	ug/L	775	Standard
	U	238	17.7	36.4	**0.0021**	0.001	48.7	ug/L	3	Standard
>	Bi	209	446686.2	0.5				ug/L	472452	Standard

Sample ID: PBW 67 WG575246-03
Report Date/Time: Thursday, July 07, 2016 10:25:14
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.7300**	6.452	173.0	mg/L	0	Standard
Mg	24	38.3	54.3	**-0.0063**	0.032	511.4	mg/L	52	Standard
K	39	13.3	94.4	**-0.0555**	0.067	121.3	mg/L	32	Standard
Ca	43	35.0	57.1	**1.2411**	2.960	238.5	mg/L	33	Standard
Fe	54	49.5	36.4	**-0.0652**	0.016	24.2	mg/L	138	Standard
Fe	57	258.3	10.7	**0.2327**	0.076	32.8	mg/L	263	Standard
> **Sc-1**	45	24633.3	2.2				mg/L	27861	Standard
Cl	35	90938.8	0.6				ug/L	100607	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	1503.4	3.7				ug/L	1777	Standard
P	31	5974.5	3.8				ug/L	18074	Standard
S	34	4180.6	3.1				ug/L	3901	Standard
Sr	88	105.0	9.5				ug/L	60	Standard
C	12	60.0	44.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	38.5				mg/L	7	Standard
Dy	164	2.9	202.3				mg/L	13	Standard
Ho-1	165	11.7	24.7				mg/L	13	Standard
Er	166	10.0					mg/L	3	Standard
I	127	9608.0	4.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.105	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.389	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 67 WG575246-03
Report Date/Time: Thursday, July 07, 2016 10:25:14
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.186
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.546
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 67 WG575246-03
Report Date/Time: Thursday, July 07, 2016 10:25:14
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: LCSW 67 WG575246-04
Sample Date/Time: Thursday, July 07, 2016 10:26:08
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58104.5	1.1				ug/L	59299	Standard
	Be	9	43621.1	2.8	**53.4306**	1.695	3.2	ug/L	17	Standard
	Al	27	24019.2	10.5	**0.1704**	0.020	11.6	ug/L	1472	Standard
	Sc	45	28197.9	1.2				ug/L	27861	Standard
	Ti	47	50.3	35.0	**0.0946**	0.070	74.2	ug/L	28	Standard
	V	51	345553.6	2.2	**50.7503**	1.727	3.4	ug/L	1156	Standard
	Cr	52	370687.1	0.4	**52.1144**	0.899	1.7	ug/L	6689	Standard
	Cr	53	45339.4	1.0	**51.2752**	0.284	0.6	ug/L	348	Standard
	Mn	55	336000.2	0.9	**52.4766**	1.156	2.2	ug/L	770	Standard
	Co	59	344155.3	1.5	**51.4674**	1.270	2.5	ug/L	216	Standard
	Ni	60	96710.3	0.5	**52.8257**	0.834	1.6	ug/L	440	Standard
	Cu	65	97978.4	0.7	**53.8132**	0.631	1.2	ug/L	116	Standard
	Zn	66	57334.9	0.7	**52.7125**	0.600	1.1	ug/L	135	Standard
>	Ge	72	451214.2	1.4				ug/L	445277	Standard
	As	75	56972.4	0.7	**51.5775**	1.045	2.0	ug/L	-57	Standard
	Se	82	5730.6	1.7	**50.9943**	1.528	3.0	ug/L	10	Standard
	Se-1	77	3820.1	0.3	**50.7166**	0.811	1.6	ug/L	57	Standard
>	Ga	71	88.3	14.2				mg/L	78	Standard
	Rb	85	211.7	9.5				ug/L	22	Standard
	Y	89	388872.2	2.4				ug/L	388959	Standard
>	Rh	103	33.3	48.2				ug/L	8	Standard
	Mo	98	130.7	26.2	**0.0447**	0.014	30.9	ug/L	10	Standard
	Ag	107	329696.2	0.2	**52.2235**	0.407	0.8	ug/L	66	Standard
	Cd	111	103265.4	0.7	**51.2633**	0.163	0.3	mg/L	3	Standard
	Cd	114	249476.4	1.0	**50.6571**	0.817	1.6	ug/L	4	Standard
>	In	115	524619.5	0.8				ug/L	523327	Standard
	Sn	118	788.4	15.6	**0.0662**	0.023	35.0	ug/L	488	Standard
	Sb	123	214311.3	3.0	**47.0087**	1.072	2.3	ug/L	195	Standard
	Ba	135	100126.1	0.8	**51.7280**	0.054	0.1	ug/L	28	Standard
	Ce	140	271.7	14.1				ug/L	83	Standard
>	Tb	159	805893.7	1.1				ug/L	809211	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	410991.8	0.9	**51.8296**	0.328	0.6	ug/L	4	Standard
	Tl	205	356569.5	1.9	**52.4301**	0.984	1.9	ug/L	8	Standard
	Pb	206	264594.8	0.7	**53.1620**	0.573	1.1	ug/L	230	Standard
	Pb	207	230582.1	0.9	**51.0448**	0.646	1.3	ug/L	184	Standard
	Pb	208	975575.9	0.2	**52.7988**	0.318	0.6	ug/L	775	Standard
	U	238	344070.3	0.7	**50.7344**	0.527	1.0	ug/L	3	Standard
>	Bi	209	475698.2	0.4				ug/L	472452	Standard

Sample ID: LCSW 67 WG575246-04
Report Date/Time: Thursday, July 07, 2016 10:28:25
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.2749**	5.664	172.9	mg/L	0	Standard
Mg	24	48.3	11.9	**-0.0004**	0.007	2011.0	mg/L	52	Standard
K	39	23.3	75.3	**-0.0198**	0.080	406.2	mg/L	32	Standard
Ca	43	23.3	12.4	**-0.8864**	0.372	41.9	mg/L	33	Standard
Fe	54	157.4	34.3	**0.0177**	0.044	249.0	mg/L	138	Standard
Fe	57	245.0	9.4	**0.0773**	0.062	80.0	mg/L	263	Standard
> **Sc-1**	45	28197.9	1.2				mg/L	27861	Standard
Cl	35	100977.4	1.7				ug/L	100607	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	1883.5	7.7				ug/L	1777	Standard
P	31	19085.4	2.4				ug/L	18074	Standard
S	34	4415.6	1.0				ug/L	3901	Standard
Sr	88	51.7	22.3				ug/L	60	Standard
C	12	80.0	33.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	7	Standard
Dy	164	16.2	92.5				mg/L	13	Standard
Ho-1	165	13.3	21.7				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	3195.3	6.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.985	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.333	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 67 WG575246-04
Report Date/Time: Thursday, July 07, 2016 10:28:25
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.247
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.687
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 67 WG575246-04
Report Date/Time: Thursday, July 07, 2016 10:28:25
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606164802 WG575246-01
Sample Date/Time: Thursday, July 07, 2016 10:29:20
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57288.1	1.0				ug/L	59299	Standard
	Be	9	40.0	21.7	**0.0510**	0.011	21.3	ug/L	17	Standard
	Al	27	10376992.3	1.1	**80.2803**	1.713	2.1	ug/L	1472	Standard
	Sc	45	29006.1	0.8				ug/L	27861	Standard
	Ti	47	269.7	7.9	**1.0438**	0.083	8.0	ug/L	28	Standard
	V	51	1580.9	9.0	**0.0642**	0.023	36.6	ug/L	1156	Standard
	Cr	52	7984.4	2.4	**0.2090**	0.024	11.5	ug/L	6689	Standard
	Cr	53	1623.4	12.6	**1.5120**	0.246	16.3	ug/L	348	Standard
	Mn	55	12513344.8	1.4	**2024.1071**	20.009	1.0	ug/L	770	Standard
	Co	59	35094.9	1.5	**5.3911**	0.052	1.0	ug/L	216	Standard
	Ni	60	4652.7	2.1	**2.3824**	0.051	2.1	ug/L	440	Standard
	Cu	65	637.3	5.1	**0.3040**	0.020	6.7	ug/L	116	Standard
	Zn	66	4433.6	1.8	**4.0317**	0.111	2.8	ug/L	135	Standard
>	**Ge**	72	436605.2	0.8				ug/L	445277	Standard
	As	75	998.1	10.4	**0.9701**	0.093	9.6	ug/L	-57	Standard
	Se	82	150.4	13.0	**1.2406**	0.170	13.7	ug/L	10	Standard
	Se-1	77	137.3	15.2	**1.2694**	0.279	22.0	ug/L	57	Standard
>	**Ga**	71	608.3	14.5				mg/L	78	Standard
	Rb	85	16675.8	2.5				ug/L	22	Standard
	Y	89	379123.1	0.7				ug/L	388959	Standard
>	**Rh**	103	101.7	20.5				ug/L	8	Standard
	Mo	98	969.1	4.6	**0.3838**	0.021	5.3	ug/L	10	Standard
	Ag	107	198.7	10.8	**0.0187**	0.004	19.0	ug/L	66	Standard
	Cd	111	36.9	18.0	**0.0152**	0.003	21.6	mg/L	3	Standard
	Cd	114	90.3	17.7	**0.0149**	0.003	23.2	ug/L	4	Standard
>	**In**	115	510766.0	0.6				ug/L	523327	Standard
	Sn	118	733.4	15.2	**0.0598**	0.021	35.2	ug/L	488	Standard
	Sb	123	2788.5	30.3	**0.6126**	0.194	31.7	ug/L	195	Standard
	Ba	135	302075.9	0.5	**160.3330**	0.779	0.5	ug/L	28	Standard
	Ce	140	1405.1	10.7				ug/L	83	Standard
>	**Tb**	159	786860.6	1.4				ug/L	809211	Standard
	Ho	165	56.7	22.2				ug/L	13	Standard
	Tl	203	215.3	11.8	**0.0260**	0.003	12.1	ug/L	4	Standard
	Tl	205	183.3	19.7	**0.0252**	0.005	21.1	ug/L	8	Standard
	Pb	206	400.3	13.7	**0.0349**	0.012	33.4	ug/L	230	Standard
	Pb	207	348.7	3.6	**0.0368**	0.003	8.2	ug/L	184	Standard
	Pb	208	1503.4	6.1	**0.0381**	0.005	13.8	ug/L	775	Standard
	U	238	608.3	6.0	**0.0916**	0.006	6.6	ug/L	3	Standard
>	**Bi**	209	462334.3	0.5				ug/L	472452	Standard

Sample ID: L1606164802 WG575246-01
Report Date/Time: Thursday, July 07, 2016 10:31:37
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	13245.8	3.4	**17.3507**	0.712	4.1	mg/L	52	Standard
K	39	185.0	15.0	**0.6993**	0.119	17.0	mg/L	32	Standard
Ca	43	105.0	8.2	**9.0748**	0.963	10.6	mg/L	33	Standard
Fe	54	9138.8	3.0	**7.1874**	0.278	3.9	mg/L	138	Standard
Fe	57	2721.9	3.2	**7.4688**	0.326	4.4	mg/L	263	Standard
> **Sc-1**	45	29006.1	0.8				mg/L	27861	Standard
Cl	35	112874.3	2.0				ug/L	100607	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	32080.7	6.6				ug/L	1777	Standard
P	31	25705.1	1.6				ug/L	18074	Standard
S	34	4113.9	0.9				ug/L	3901	Standard
Sr	88	408.3	11.8				ug/L	60	Standard
C	12	153.3	44.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	7	Standard
Dy	164	35.7	48.6				mg/L	13	Standard
Ho-1	165	56.7	22.2				mg/L	13	Standard
Er	166	90.0	22.2				mg/L	3	Standard
I	127	194286.2	4.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.609	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.052	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606164802 WG575246-01
Report Date/Time: Thursday, July 07, 2016 10:31:37
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.600
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.859
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606164802 WG575246-01
Report Date/Time: Thursday, July 07, 2016 10:31:37
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606164802S WG575246-05
Sample Date/Time: Thursday, July 07, 2016 10:32:38
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59163.6	1.4				ug/L	59299	Standard
	Be	9	43530.8	2.0	**52.3579**	0.567	1.1	ug/L	17	Standard
	Al	27	11063520.9	1.6	**82.8750**	1.589	1.9	ug/L	1472	Standard
	Sc	45	28510.1	1.7				ug/L	27861	Standard
	Ti	47	290.0	13.8	**1.1193**	0.178	15.9	ug/L	28	Standard
	V	51	336886.8	1.0	**50.5913**	0.855	1.7	ug/L	1156	Standard
	Cr	52	350509.3	0.6	**50.3596**	0.390	0.8	ug/L	6689	Standard
	Cr	53	43818.3	0.3	**50.6773**	0.464	0.9	ug/L	348	Standard
	Mn	55	13568478.5	1.3	**2172.2327**	42.746	2.0	ug/L	770	Standard
	Co	59	366793.9	0.8	**56.0971**	0.860	1.5	ug/L	216	Standard
	Ni	60	93775.3	0.9	**52.3800**	0.637	1.2	ug/L	440	Standard
	Cu	65	90286.9	0.9	**50.7118**	0.778	1.5	ug/L	116	Standard
	Zn	66	58983.3	0.3	**55.4685**	0.500	0.9	ug/L	135	Standard
>	Ge	72	441181.9	0.7				ug/L	445277	Standard
	As	75	57609.3	0.4	**53.3301**	0.261	0.5	ug/L	-57	Standard
	Se	82	5728.5	0.7	**52.1244**	0.182	0.3	ug/L	10	Standard
	Se-1	77	3902.8	2.2	**53.0111**	0.922	1.7	ug/L	57	Standard
>	Ga	71	613.3	14.6				mg/L	78	Standard
	Rb	85	17433.4	3.0				ug/L	22	Standard
	Y	89	377809.0	2.3				ug/L	388959	Standard
>	Rh	103	100.0	21.8				ug/L	8	Standard
	Mo	98	1061.1	2.3	**0.4222**	0.011	2.5	ug/L	10	Standard
	Ag	107	312671.2	1.1	**51.0365**	0.776	1.5	ug/L	66	Standard
	Cd	111	100501.0	0.4	**51.4128**	0.420	0.8	mg/L	3	Standard
	Cd	114	243256.1	1.0	**50.8952**	0.295	0.6	ug/L	4	Standard
>	In	115	509099.2	0.5				ug/L	523327	Standard
	Sn	118	5664.4	6.1	**0.9738**	0.068	6.9	ug/L	488	Standard
	Sb	123	236264.9	0.3	**53.4129**	0.245	0.5	ug/L	195	Standard
	Ba	135	414782.9	1.0	**220.8805**	2.325	1.1	ug/L	28	Standard
	Ce	140	2298.5	3.4				ug/L	83	Standard
>	Tb	159	800744.8	2.0				ug/L	809211	Standard
	Ho	165	38.3	39.8				ug/L	13	Standard
	Tl	203	393994.9	0.3	**51.0731**	0.108	0.2	ug/L	4	Standard
	Tl	205	347484.6	0.9	**52.5205**	0.528	1.0	ug/L	8	Standard
	Pb	206	255001.7	0.7	**52.6629**	0.387	0.7	ug/L	230	Standard
	Pb	207	221290.3	0.5	**50.3533**	0.333	0.7	ug/L	184	Standard
	Pb	208	935784.6	1.1	**52.0574**	0.568	1.1	ug/L	775	Standard
	U	238	342122.5	0.3	**51.8540**	0.197	0.4	ug/L	3	Standard
>	Bi	209	462782.6	0.3				ug/L	472452	Standard

Sample ID: L1606164802S WG575246-05
Report Date/Time: Thursday, July 07, 2016 10:34:55
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	13769.6	0.4	**18.3537**	0.263	1.4	mg/L	52	Standard
K	39	248.3	16.9	**1.0033**	0.199	19.8	mg/L	32	Standard
Ca	43	100.0	21.8	**8.6517**	2.553	29.5	mg/L	33	Standard
Fe	54	9769.9	4.4	**7.8233**	0.223	2.8	mg/L	138	Standard
Fe	57	2853.6	7.0	**8.0062**	0.502	6.3	mg/L	263	Standard
> **Sc-1**	45	28510.1	1.7				mg/L	27861	Standard
Cl	35	115432.1	0.7				ug/L	100607	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	31626.3	3.9				ug/L	1777	Standard
P	31	27057.5	3.1				ug/L	18074	Standard
S	34	4265.6	2.1				ug/L	3901	Standard
Sr	88	496.7	18.0				ug/L	60	Standard
C	12	163.3	15.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	7	Standard
Dy	164	53.8	23.0				mg/L	13	Standard
Ho-1	165	38.3	39.8				mg/L	13	Standard
Er	166	60.0	33.3				mg/L	3	Standard
I	127	230951.9	6.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.771	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.080	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606164802S WG575246-05
Report Date/Time: Thursday, July 07, 2016 10:34:55
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.281
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.953
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606164802S WG575246-05
Report Date/Time: Thursday, July 07, 2016 10:34:55
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606164802SD WG575246-06
Sample Date/Time: Thursday, July 07, 2016 10:35:50
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60910.6	2.0				ug/L	59299	Standard
	Be	9	43530.8	0.9	**50.8768**	1.461	2.9	ug/L	17	Standard
	Al	27	11340779.8	1.7	**82.5142**	1.018	1.2	ug/L	1472	Standard
	Sc	45	28839.1	0.7				ug/L	27861	Standard
	Ti	47	291.3	5.8	**1.1279**	0.070	6.2	ug/L	28	Standard
	V	51	337905.2	0.1	**50.8969**	0.334	0.7	ug/L	1156	Standard
	Cr	52	354654.0	0.1	**51.1247**	0.416	0.8	ug/L	6689	Standard
	Cr	53	44602.2	2.1	**51.7468**	1.030	2.0	ug/L	348	Standard
	Mn	55	13735191.1	0.1	**2205.4717**	17.062	0.8	ug/L	770	Standard
	Co	59	367704.1	0.5	**56.4061**	0.671	1.2	ug/L	216	Standard
	Ni	60	94485.4	0.4	**52.9396**	0.527	1.0	ug/L	440	Standard
	Cu	65	89689.0	0.5	**50.5261**	0.334	0.7	ug/L	116	Standard
	Zn	66	59103.7	0.3	**55.7499**	0.203	0.4	ug/L	135	Standard
>	**Ge**	72	439848.9	0.7				ug/L	445277	Standard
	As	75	57470.0	0.9	**53.3611**	0.181	0.3	ug/L	-57	Standard
	Se	82	5776.2	1.5	**52.7166**	0.431	0.8	ug/L	10	Standard
	Se-1	77	3808.8	1.6	**51.8845**	1.164	2.2	ug/L	57	Standard
>	**Ga**	71	640.0	8.3				mg/L	78	Standard
	Rb	85	17787.1	0.3				ug/L	22	Standard
	Y	89	375141.0	1.0				ug/L	388959	Standard
>	**Rh**	103	100.0	26.0				ug/L	8	Standard
	Mo	98	1071.5	0.5	**0.4246**	0.004	1.0	ug/L	10	Standard
	Ag	107	313624.6	1.2	**50.9809**	0.972	1.9	ug/L	66	Standard
	Cd	111	100064.7	0.3	**50.9757**	0.185	0.4	mg/L	3	Standard
	Cd	114	243379.3	1.0	**50.7091**	0.274	0.5	ug/L	4	Standard
>	**In**	115	511230.2	0.7				ug/L	523327	Standard
	Sn	118	566.7	12.0	**0.0289**	0.013	44.9	ug/L	488	Standard
	Sb	123	236298.2	0.7	**53.1986**	0.481	0.9	ug/L	195	Standard
	Ba	135	419212.3	0.3	**222.3111**	1.033	0.5	ug/L	28	Standard
	Ce	140	1581.7	3.6				ug/L	83	Standard
>	**Tb**	159	803049.5	0.8				ug/L	809211	Standard
	Ho	165	56.7	18.4				ug/L	13	Standard
	Tl	203	394735.8	0.3	**50.5980**	0.284	0.6	ug/L	4	Standard
	Tl	205	345145.7	1.4	**51.5834**	0.705	1.4	ug/L	8	Standard
	Pb	206	255756.5	0.3	**52.2284**	0.189	0.4	ug/L	230	Standard
	Pb	207	222528.6	0.2	**50.0696**	0.329	0.7	ug/L	184	Standard
	Pb	208	933513.2	0.4	**51.3502**	0.161	0.3	ug/L	775	Standard
	U	238	340081.6	0.4	**50.9696**	0.409	0.8	ug/L	3	Standard
>	**Bi**	209	468012.7	0.4				ug/L	472452	Standard

Sample ID: L1606164802SD WG575246-06
Report Date/Time: Thursday, July 07, 2016 10:38:07
Page 1

Approved: July 08, 2016

Na	23	3.3	86.6	**6.3418**	5.488	86.5	mg/L	0	Standard
Mg	24	14255.0	1.7	**18.7833**	0.343	1.8	mg/L	52	Standard
K	39	203.3	20.6	**0.7863**	0.183	23.3	mg/L	32	Standard
Ca	43	133.3	9.4	**12.6547**	1.437	11.4	mg/L	33	Standard
Fe	54	10067.9	1.9	**7.9743**	0.141	1.8	mg/L	138	Standard
Fe	57	2858.6	5.8	**7.9273**	0.541	6.8	mg/L	263	Standard
> **Sc-1**	45	28839.1	0.7				mg/L	27861	Standard
Cl	35	114844.4	2.0				ug/L	100607	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	28430.0	4.0				ug/L	1777	Standard
P	31	26291.1	1.5				ug/L	18074	Standard
S	34	4078.9	5.1				ug/L	3901	Standard
Sr	88	478.3	7.4				ug/L	60	Standard
C	12	213.3	29.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	7	Standard
Dy	164	57.0	35.1				mg/L	13	Standard
Ho-1	165	56.7	18.4				mg/L	13	Standard
Er	166	63.3	9.1				mg/L	3	Standard
I	127	236214.0	6.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.717	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.781	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606164802SD WG575246-06
Report Date/Time: Thursday, July 07, 2016 10:38:07
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.689
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.060
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606164802SD WG575246-06
Report Date/Time: Thursday, July 07, 2016 10:38:07
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606161501
Sample Date/Time: Thursday, July 07, 2016 10:39:01
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49342.8	13.0				ug/L	59299	Standard
	Be	9	170.0	22.2	**0.2457**	0.038	15.6	ug/L	17	Standard
	Al	27	94647048.7	0.7	**859.5748**	109.094	12.7	ug/L	1472	Standard
	Sc	45	18783.3	3.1				ug/L	27861	Standard
	Ti	47	856.4	4.1	**6.2112**	0.217	3.5	ug/L	28	Standard
	V	51	5063.5	8.8	**1.1515**	0.147	12.8	ug/L	1156	Standard
	Cr	52	15787.2	3.5	**3.0548**	0.348	11.4	ug/L	6689	Standard
	Cr	53	9881.6	13.4	**19.7238**	3.598	18.2	ug/L	348	Standard
	Mn	55	61119391.1	2.8	**17041.4250**	1393.771	8.2	ug/L	770	Standard
	Co	59	44054.7	4.6	**11.7106**	1.119	9.6	ug/L	216	Standard
	Ni	60	122038.6	4.8	**119.0842**	11.396	9.6	ug/L	440	Standard
	Cu	65	14063.9	3.7	**13.7167**	1.203	8.8	ug/L	116	Standard
	Zn	66	42658.7	2.1	**69.8935**	5.106	7.3	ug/L	135	Standard
>	**Ge**	72	254091.3	5.7				ug/L	445277	Standard
	As	75	90.7	516.2	**0.2055**	0.746	363.0	ug/L	-57	Standard
	Se	82	677.2	10.3	**10.6017**	1.226	11.6	ug/L	10	Standard
	Se-1	77	7580.6	11.2	**181.3884**	29.291	16.1	ug/L	57	Standard
>	**Ga**	71	726.7	9.2				mg/L	78	Standard
	Rb	85	35291.1	1.4				ug/L	22	Standard
	Y	89	316060.1	3.5				ug/L	388959	Standard
>	**Rh**	103	35301.1	1.9				ug/L	8	Standard
	Mo	98	350.0	4.1	**0.2410**	0.024	9.8	ug/L	10	Standard
	Ag	107	1018.7	4.0	**0.2768**	0.011	3.9	ug/L	66	Standard
	Cd	111	2058.7	3.4	**1.8397**	0.166	9.0	mg/L	3	Standard
	Cd	114	4322.1	2.7	**1.5783**	0.129	8.1	ug/L	4	Standard
>	**In**	115	291922.7	5.9				ug/L	523327	Standard
	Sn	118	566.7	10.9	**0.1080**	0.025	23.1	ug/L	488	Standard
	Sb	123	1445.7	23.1	**0.5598**	0.160	28.6	ug/L	195	Standard
	Ba	135	170775.6	1.8	**159.0580**	11.805	7.4	ug/L	28	Standard
	Ce	140	16006.8	3.5				ug/L	83	Standard
>	**Tb**	159	483469.3	7.4				ug/L	809211	Standard
	Ho	165	1531.7	6.1				ug/L	13	Standard
	Tl	203	102.7	31.7	**0.0308**	0.008	26.1	ug/L	4	Standard
	Tl	205	130.0	17.6	**0.0462**	0.006	12.0	ug/L	8	Standard
	Pb	206	355.0	11.1	**0.1346**	0.012	8.7	ug/L	230	Standard
	Pb	207	250.0	8.4	**0.0991**	0.006	6.2	ug/L	184	Standard
	Pb	208	1220.0	8.9	**0.1233**	0.006	4.5	ug/L	775	Standard
	U	238	22357.5	0.8	**8.4600**	0.490	5.8	ug/L	3	Standard
>	**Bi**	209	185828.9	6.7				ug/L	472452	Standard

Sample ID: L1606161501
Report Date/Time: Thursday, July 07, 2016 10:41:18
Page 1

Approved: July 08, 2016

Na	23	220.0	13.6	**638.2449**	67.399	10.6	mg/L	0	Standard
Mg	24	667441.0	0.6	**1355.6161**	34.961	2.6	mg/L	52	Standard
K	39	878.4	2.7	**5.9377**	0.264	4.4	mg/L	32	Standard
Ca	43	18928.5	0.6	**3595.8509**	133.561	3.7	mg/L	33	Standard
Fe	54	3235.9	4.9	**3.8808**	0.216	5.6	mg/L	138	Standard
Fe	57	25312.8	5.1	**116.4696**	9.576	8.2	mg/L	263	Standard
> **Sc-1**	45	18783.3	3.1				mg/L	27861	Standard
Cl	35	506135.0	2.0				ug/L	100607	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	878774.3	2.7				ug/L	1777	Standard
P	31	24491.4	1.6				ug/L	18074	Standard
S	34	3812.1	3.3				ug/L	3901	Standard
Sr	88	186562.5	3.6				ug/L	60	Standard
C	12	106.7	42.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	45.8				mg/L	7	Standard
Dy	164	1748.6	10.9				mg/L	13	Standard
Ho-1	165	1531.7	6.1				mg/L	13	Standard
Er	166	1493.4	5.9				mg/L	3	Standard
I	127	551100.7	14.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.210	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		57.064	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606161501
Report Date/Time: Thursday, July 07, 2016 10:41:18
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	55.782	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	39.333	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

Sample ID: L1606161501
Report Date/Time: Thursday, July 07, 2016 10:41:18
Page 3

Approved: July 08, 2016

Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606161502
Sample Date/Time: Thursday, July 07, 2016 10:42:13
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68089.5	3.7				ug/L	59299	Standard
	Be	9	31.7	48.2	**0.0341**	0.015	43.8	ug/L	17	Standard
	Al	27	111264005.6	1.9	**724.7345**	24.404	3.4	ug/L	1472	Standard
	Sc	45	25526.5	4.1				ug/L	27861	Standard
	Ti	47	335.3	2.4	**1.5755**	0.020	1.3	ug/L	28	Standard
	V	51	2737.3	68.6	**0.3063**	0.328	107.1	ug/L	1156	Standard
	Cr	52	22517.7	2.5	**2.9364**	0.039	1.3	ug/L	6689	Standard
	Cr	53	49733.7	10.1	**68.1981**	4.702	6.9	ug/L	348	Standard
	Mn	55	1659005.9	26.3	**316.7767**	93.285	29.4	ug/L	770	Standard
	Co	59	2062.5	15.5	**0.3402**	0.071	20.8	ug/L	216	Standard
	Ni	60	18978.6	4.5	**12.3904**	0.999	8.1	ug/L	440	Standard
	Cu	65	7111.3	1.6	**4.6835**	0.145	3.1	ug/L	116	Standard
	Zn	66	6675.5	2.5	**7.2781**	0.412	5.7	ug/L	135	Standard
>	**Ge**	72	372276.8	3.5				ug/L	445277	Standard
	As	75	4629.3	18.6	**5.1370**	1.117	21.7	ug/L	-57	Standard
	Se	82	2239.8	12.8	**24.1629**	3.929	16.3	ug/L	10	Standard
	Se-1	77	5921.8	5.7	**95.7921**	2.448	2.6	ug/L	57	Standard
>	**Ga**	71	293.3	8.7				mg/L	78	Standard
	Rb	85	56363.0	1.5				ug/L	22	Standard
	Y	89	330223.7	3.1				ug/L	388959	Standard
>	**Rh**	103	1796.8	5.7				ug/L	8	Standard
	Mo	98	394.9	4.5	**0.1904**	0.014	7.6	ug/L	10	Standard
	Ag	107	117.7	7.1	**0.0101**	0.002	22.7	ug/L	66	Standard
	Cd	111	58.3	52.5	**0.0335**	0.020	60.7	mg/L	3	Standard
	Cd	114	121.1	24.3	**0.0274**	0.008	28.2	ug/L	4	Standard
>	**In**	115	412925.4	2.8				ug/L	523327	Standard
	Sn	118	581.7	5.7	**0.0571**	0.005	8.1	ug/L	488	Standard
	Sb	123	551.2	30.5	**0.1362**	0.043	31.3	ug/L	195	Standard
	Ba	135	4331.3	36.1	**2.8475**	1.106	38.8	ug/L	28	Standard
	Ce	140	333.3	47.5				ug/L	83	Standard
>	**Tb**	159	676507.8	2.6				ug/L	809211	Standard
	Ho	165	65.0	13.3				ug/L	13	Standard
	Tl	203	91.0	16.6	**0.0137**	0.003	19.5	ug/L	4	Standard
	Tl	205	58.3	17.8	**0.0092**	0.002	24.1	ug/L	8	Standard
	Pb	206	314.7	3.0	**0.0382**	0.005	12.3	ug/L	230	Standard
	Pb	207	284.0	4.3	**0.0430**	0.006	13.1	ug/L	184	Standard
	Pb	208	1178.7	1.7	**0.0412**	0.001	2.3	ug/L	775	Standard
	U	238	592.7	28.7	**0.1188**	0.037	31.1	ug/L	3	Standard
>	**Bi**	209	349687.2	2.5				ug/L	472452	Standard

Sample ID: L1606161502
Report Date/Time: Thursday, July 07, 2016 10:44:30
Page 1

Approved: July 08, 2016

Na	23	8.3	91.7	**17.8977**	16.755	93.6	mg/L	0	Standard
Mg	24	1114896.8	2.3	**1666.1531**	29.234	1.8	mg/L	52	Standard
K	39	1325.1	11.6	**6.5947**	0.641	9.7	mg/L	32	Standard
Ca	43	441.7	26.2	**58.3925**	18.566	31.8	mg/L	33	Standard
Fe	54	223.1	21.4	**0.0915**	0.048	52.3	mg/L	138	Standard
Fe	57	1171.7	19.3	**3.3309**	0.921	27.7	mg/L	263	Standard
> **Sc-1**	45	25526.5	4.1				mg/L	27861	Standard
Cl	35	844217.7	1.0				ug/L	100607	Standard
Kr	83	3.7	83.3				ug/L	2	Standard
Br	81	1036899.0	2.7				ug/L	1777	Standard
P	31	18274.4	2.0				ug/L	18074	Standard
S	34	5334.3	0.9				ug/L	3901	Standard
Sr	88	3270.4	34.5				ug/L	60	Standard
C	12	110.0	32.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	36.8	94.9				mg/L	13	Standard
Ho-1	165	65.0	13.3				mg/L	13	Standard
Er	166	66.7	31.2				mg/L	3	Standard
I	127	1977320.1	10.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.824	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		83.606	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606161502
Report Date/Time: Thursday, July 07, 2016 10:44:30
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	78.904
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	74.015
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606161502PS WG575345-01
Sample Date/Time: Thursday, July 07, 2016 10:45:24
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78260.0	1.6				ug/L	59299	Standard
	Be	9	40689.6	1.2	**37.0021**	0.295	0.8	ug/L	17	Standard
	Al	27	117234929.3	1.3	**664.0593**	15.177	2.3	ug/L	1472	Standard
	Sc	45	26429.7	1.3				ug/L	27861	Standard
	Ti	47	317.7	5.2	**1.4056**	0.077	5.4	ug/L	28	Standard
	V	51	325745.3	1.1	**55.0731**	0.742	1.3	ug/L	1156	Standard
	Cr	52	342984.8	0.9	**55.5644**	0.652	1.2	ug/L	6689	Standard
	Cr	53	98257.6	0.5	**128.5115**	0.333	0.3	ug/L	348	Standard
	Mn	55	1224150.0	1.3	**220.4565**	3.243	1.5	ug/L	770	Standard
	Co	59	293508.3	0.5	**50.5181**	0.160	0.3	ug/L	216	Standard
	Ni	60	95421.5	0.8	**60.0280**	0.612	1.0	ug/L	440	Standard
	Cu	65	83985.1	0.2	**53.0948**	0.194	0.4	ug/L	116	Standard
	Zn	66	52746.0	1.5	**55.8312**	0.907	1.6	ug/L	135	Standard
>	Ge	72	391965.6	0.3				ug/L	445277	Standard
	As	75	56790.0	1.6	**59.1661**	0.804	1.4	ug/L	-57	Standard
	Se	82	7711.8	3.9	**79.0505**	2.849	3.6	ug/L	10	Standard
	Se-1	77	9903.2	1.3	**152.5970**	2.382	1.6	ug/L	57	Standard
>	Ga	71	283.3	10.3				mg/L	78	Standard
	Rb	85	57192.8	2.9				ug/L	22	Standard
	Y	89	350245.3	0.3				ug/L	388959	Standard
>	Rh	103	1630.1	7.0				ug/L	8	Standard
	Mo	98	414.6	6.1	**0.1862**	0.012	6.2	ug/L	10	Standard
	Ag	107	247841.0	0.6	**46.5633**	0.131	0.3	ug/L	66	Standard
	Cd	111	82488.1	0.4	**48.5730**	0.307	0.6	mg/L	3	Standard
	Cd	114	200383.4	0.8	**48.2606**	0.384	0.8	ug/L	4	Standard
>	In	115	442275.6	0.3				ug/L	523327	Standard
	Sn	118	681.7	8.2	**0.0697**	0.012	17.7	ug/L	488	Standard
	Sb	123	208479.4	0.8	**54.2520**	0.329	0.6	ug/L	195	Standard
	Ba	135	84581.1	1.1	**51.8321**	0.395	0.8	ug/L	28	Standard
	Ce	140	91.7	19.2				ug/L	83	Standard
>	Tb	159	719770.7	1.0				ug/L	809211	Standard
	Ho	165	53.3	44.3				ug/L	13	Standard
	Tl	203	325480.5	0.6	**52.3064**	0.273	0.5	ug/L	4	Standard
	Tl	205	271952.6	1.4	**50.9615**	1.048	2.1	ug/L	8	Standard
	Pb	206	215034.9	0.9	**55.0560**	0.129	0.2	ug/L	230	Standard
	Pb	207	186246.5	1.1	**52.5386**	0.028	0.1	ug/L	184	Standard
	Pb	208	754712.9	1.4	**52.0473**	0.424	0.8	ug/L	775	Standard
	U	238	289640.8	1.7	**54.4195**	0.460	0.8	ug/L	3	Standard
>	Bi	209	373306.5	1.1				ug/L	472452	Standard

Sample ID: L1606161502PS WG575345-01
Report Date/Time: Thursday, July 07, 2016 10:47:41
Page 1

Approved: July 08, 2016

Na	23	5.0	100.0	**10.2613**	10.260	100.0	mg/L	0	Standard
Mg	24	1187511.2	0.2	**1713.4260**	23.492	1.4	mg/L	52	Standard
K	39	1283.4	1.0	**6.1672**	0.138	2.2	mg/L	32	Standard
Ca	43	281.7	24.2	**34.1675**	8.958	26.2	mg/L	33	Standard
Fe	54	186.6	4.3	**0.0521**	0.009	16.6	mg/L	138	Standard
Fe	57	890.0	6.3	**2.2480**	0.225	10.0	mg/L	263	Standard
Sc-1	45	26429.7	1.3				mg/L	27861	Standard
Cl	35	870636.7	1.7				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1045298.3	2.5				ug/L	1777	Standard
P	31	19195.5	3.5				ug/L	18074	Standard
S	34	5355.9	1.3				ug/L	3901	Standard
Sr	88	1586.7	5.3				ug/L	60	Standard
C	12	113.3	18.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	34.3	16.9				mg/L	13	Standard
Ho-1	165	53.3	44.3				mg/L	13	Standard
Er	166	50.0	20.0				mg/L	3	Standard
I	127	4196228.4	1.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.975	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.027	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606161502PS WG575345-01
Report Date/Time: Thursday, July 07, 2016 10:47:41
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	84.512
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	79.015
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 53 Upper, S, EEE	Cr	53	

Sample ID: L1606161502PS WG575345-01
Report Date/Time: Thursday, July 07, 2016 10:47:41
Page 3

Approved: July 08, 2016

Mn 55 Upper, S, EEE	Mn	55
Se-1 77 Upper, S, EEE	Se-1	77

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606161502SDL WG575345-02
Sample Date/Time: Thursday, July 07, 2016 10:48:36
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65349.0	0.9				ug/L	59299	Standard
	Be	9	43.3	53.3	**0.0485**	0.025	51.4	ug/L	17	Standard
	Al	27	23825231.5	1.4	**161.5947**	3.562	2.2	ug/L	1472	Standard
	Sc	45	27536.7	3.4				ug/L	27861	Standard
	Ti	47	70.0	10.8	**0.2006**	0.037	18.4	ug/L	28	Standard
	V	51	1655.0	32.0	**0.0870**	0.085	97.4	ug/L	1156	Standard
	Cr	52	11900.0	3.4	**0.8685**	0.044	5.0	ug/L	6689	Standard
	Cr	53	22211.3	0.9	**26.9575**	0.504	1.9	ug/L	348	Standard
	Mn	55	191765.0	0.9	**32.3108**	0.466	1.4	ug/L	770	Standard
	Co	59	526.0	2.8	**0.0496**	0.003	5.1	ug/L	216	Standard
	Ni	60	4195.2	1.6	**2.2314**	0.029	1.3	ug/L	440	Standard
	Cu	65	2498.2	7.6	**1.4268**	0.129	9.0	ug/L	116	Standard
	Zn	66	3338.4	5.3	**3.1331**	0.209	6.7	ug/L	135	Standard
>	Ge	72	417558.6	1.0				ug/L	445277	Standard
	As	75	1755.1	9.8	**1.7519**	0.152	8.7	ug/L	-57	Standard
	Se	82	849.7	4.1	**8.0446**	0.260	3.2	ug/L	10	Standard
	Se-1	77	1889.5	3.1	**26.8107**	1.030	3.8	ug/L	57	Standard
>	Ga	71	110.0	12.0				mg/L	78	Standard
	Rb	85	12163.2	2.4				ug/L	22	Standard
	Y	89	361689.5	0.6				ug/L	388959	Standard
>	Rh	103	621.7	34.6				ug/L	8	Standard
	Mo	98	100.3	4.4	**0.0368**	0.002	5.2	ug/L	10	Standard
	Ag	107	121.0	11.5	**0.0076**	0.002	31.2	ug/L	66	Standard
	Cd	111	22.5	11.3	**0.0087**	0.001	16.0	mg/L	3	Standard
	Cd	114	55.1	11.3	**0.0084**	0.001	17.2	ug/L	4	Standard
>	In	115	475086.0	0.5				ug/L	523327	Standard
	Sn	118	306.7	17.3	**-0.0148**	0.011	73.0	ug/L	488	Standard
	Sb	123	686.9	41.3	**0.1500**	0.069	46.3	ug/L	195	Standard
	Ba	135	462.7	2.7	**0.2468**	0.007	2.7	ug/L	28	Standard
	Ce	140	21.7	35.3				ug/L	83	Standard
>	Tb	159	768326.9	1.0				ug/L	809211	Standard
	Ho	165	13.3	43.3				ug/L	13	Standard
	Tl	203	96.3	9.4	**0.0119**	0.001	11.3	ug/L	4	Standard
	Tl	205	113.3	35.9	**0.0165**	0.007	41.7	ug/L	8	Standard
	Pb	206	320.3	3.6	**0.0253**	0.003	10.6	ug/L	230	Standard
	Pb	207	271.7	8.4	**0.0258**	0.006	23.1	ug/L	184	Standard
	Pb	208	1192.4	6.6	**0.0278**	0.005	18.4	ug/L	775	Standard
	U	238	120.3	12.1	**0.0195**	0.003	12.8	ug/L	3	Standard
>	Bi	209	418249.2	0.3				ug/L	472452	Standard

Sample ID: L1606161502SDL WG575345-02
Report Date/Time: Thursday, July 07, 2016 10:50:53
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	234430.4	2.5	**324.6375**	3.865	1.2	mg/L	52	Standard
K	39	293.3	21.6	**1.2603**	0.342	27.2	mg/L	32	Standard
Ca	43	93.3	8.2	**8.2753**	1.225	14.8	mg/L	33	Standard
Fe	54	70.4	39.6	**-0.0528**	0.021	40.5	mg/L	138	Standard
Fe	57	448.3	10.7	**0.7400**	0.190	25.7	mg/L	263	Standard
> **Sc-1**	45	27536.7	3.4				mg/L	27861	Standard
Cl	35	301926.1	0.9				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	201704.1	2.1				ug/L	1777	Standard
P	31	9092.7	0.6				ug/L	18074	Standard
S	34	4689.1	2.8				ug/L	3901	Standard
Sr	88	375.0	4.8				ug/L	60	Standard
C	12	73.3	34.3				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.4	113.3				mg/L	13	Standard
Ho-1	165	13.3	43.3				mg/L	13	Standard
Er	166	20.0	132.3				mg/L	3	Standard
I	127	494650.0	3.7				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.202	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.775	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606161502SDL WG575345-02
Report Date/Time: Thursday, July 07, 2016 10:50:53
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	90.782	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	88.527	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606161502SDL WG575345-02
Report Date/Time: Thursday, July 07, 2016 10:50:53
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606161502SDL WG575345-02
Sample Date/Time: Thursday, July 07, 2016 10:51:47
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63929.6	2.3				ug/L	59299	Standard
	Be	9	25.0	69.3	**0.0293**	0.020	67.3	ug/L	17	Standard
	Al	27	4946825.4	1.1	**34.2954**	0.933	2.7	ug/L	1472	Standard
	Sc	45	27040.8	2.1				ug/L	27861	Standard
	Ti	47	32.7	4.7	**0.0281**	0.006	22.0	ug/L	28	Standard
	V	51	2343.4	16.3	**0.1849**	0.060	32.5	ug/L	1156	Standard
	Cr	52	9429.6	1.3	**0.4408**	0.011	2.5	ug/L	6689	Standard
	Cr	53	7598.6	4.6	**8.6635**	0.372	4.3	ug/L	348	Standard
	Mn	55	42036.7	5.3	**6.7587**	0.334	4.9	ug/L	770	Standard
	Co	59	315.0	9.4	**0.0138**	0.004	31.9	ug/L	216	Standard
	Ni	60	1405.1	3.9	**0.5507**	0.033	6.1	ug/L	440	Standard
	Cu	65	976.4	6.5	**0.5036**	0.034	6.7	ug/L	116	Standard
	Zn	66	1561.4	7.7	**1.3109**	0.108	8.2	ug/L	135	Standard
>	**Ge**	72	431057.2	0.5				ug/L	445277	Standard
	As	75	473.6	18.0	**0.4859**	0.082	16.9	ug/L	-57	Standard
	Se	82	245.1	8.4	**2.1435**	0.192	9.0	ug/L	10	Standard
	Se-1	77	569.0	9.4	**7.3663**	0.717	9.7	ug/L	57	Standard
>	**Ga**	71	46.7	40.6				mg/L	78	Standard
	Rb	85	2360.2	8.8				ug/L	22	Standard
	Y	89	367334.7	0.8				ug/L	388959	Standard
>	**Rh**	103	126.7	23.1				ug/L	8	Standard
	Mo	98	47.0	14.8	**0.0129**	0.003	21.3	ug/L	10	Standard
	Ag	107	106.7	8.0	**0.0043**	0.002	35.3	ug/L	66	Standard
	Cd	111	18.6	59.6	**0.0062**	0.006	95.0	mg/L	3	Standard
	Cd	114	33.6	74.4	**0.0034**	0.005	161.4	ug/L	4	Standard
>	**In**	115	494263.4	0.9				ug/L	523327	Standard
	Sn	118	175.0	24.9	**-0.0423**	0.008	19.8	ug/L	488	Standard
	Sb	123	837.6	42.3	**0.1780**	0.081	45.5	ug/L	195	Standard
	Ba	135	131.7	7.2	**0.0551**	0.006	10.2	ug/L	28	Standard
	Ce	140	10.0	50.0				ug/L	83	Standard
>	**Tb**	159	774688.1	0.6				ug/L	809211	Standard
	Ho	165	15.0	66.7				ug/L	13	Standard
	Tl	203	107.7	24.6	**0.0125**	0.004	28.9	ug/L	4	Standard
	Tl	205	81.7	40.8	**0.0103**	0.005	51.1	ug/L	8	Standard
	Pb	206	268.7	14.4	**0.0094**	0.009	91.5	ug/L	230	Standard
	Pb	207	256.0	2.6	**0.0175**	0.002	10.6	ug/L	184	Standard
	Pb	208	1017.7	5.9	**0.0128**	0.004	29.3	ug/L	775	Standard
	U	238	54.0	42.4	**0.0078**	0.004	46.4	ug/L	3	Standard
>	**Bi**	209	448346.6	0.6				ug/L	472452	Standard

Sample ID: L1606161502SDL WG575345-02
Report Date/Time: Thursday, July 07, 2016 10:54:04
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.3040**	5.714	172.9	mg/L	0	Standard
Mg	24	47830.4	1.6	**67.3976**	1.465	2.2	mg/L	52	Standard
K	39	98.3	7.8	**0.3444**	0.031	8.9	mg/L	32	Standard
Ca	43	43.3	17.6	**1.8895**	1.073	56.8	mg/L	33	Standard
Fe	54	72.7	14.5	**-0.0493**	0.009	17.7	mg/L	138	Standard
Fe	57	318.3	15.7	**0.3450**	0.157	45.4	mg/L	263	Standard
> **Sc-1**	45	27040.8	2.1				mg/L	27861	Standard
Cl	35	175120.9	0.9				ug/L	100607	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	42379.2	2.9				ug/L	1777	Standard
P	31	6748.2	3.1				ug/L	18074	Standard
S	34	4647.4	5.7				ug/L	3901	Standard
Sr	88	153.3	6.8				ug/L	60	Standard
C	12	70.0	49.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	29.2	59.8				mg/L	13	Standard
Ho-1	165	15.0	66.7				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	136360.9	1.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.809	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.806	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606161502SDL WG575345-02
Report Date/Time: Thursday, July 07, 2016 10:54:04
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.446
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.898
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606161502SDL WG575345-02
Report Date/Time: Thursday, July 07, 2016 10:54:04
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 10:55:00
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66093.9	1.8				ug/L	59299	Standard
	Be	9	48196.6	2.1	**51.8920**	0.412	0.8	ug/L	17	Standard
	Al	27	7425415.7	0.8	**49.7917**	1.036	2.1	ug/L	1472	Standard
	Sc	45	29892.8	2.5				ug/L	27861	Standard
	Ti	47	24707.5	2.6	**101.0428**	2.124	2.1	ug/L	28	Standard
	V	51	350306.3	0.8	**50.6747**	0.366	0.7	ug/L	1156	Standard
	Cr	52	362349.7	1.6	**50.1458**	0.659	1.3	ug/L	6689	Standard
	Cr	53	46422.7	3.7	**51.7238**	1.778	3.4	ug/L	348	Standard
	Mn	55	343593.8	1.5	**52.8602**	0.648	1.2	ug/L	770	Standard
	Co	59	342201.2	1.2	**50.4085**	0.291	0.6	ug/L	216	Standard
	Ni	60	94251.3	1.4	**50.7052**	0.622	1.2	ug/L	440	Standard
	Cu	65	93602.9	1.5	**50.6418**	0.492	1.0	ug/L	116	Standard
	Zn	66	55440.3	1.1	**50.2033**	0.227	0.5	ug/L	135	Standard
>	Ge	72	457986.3	1.1				ug/L	445277	Standard
	As	75	56139.2	0.7	**50.0657**	0.346	0.7	ug/L	-57	Standard
	Se	82	5788.6	2.2	**50.7328**	0.860	1.7	ug/L	10	Standard
	Se-1	77	4002.5	2.5	**52.3598**	0.741	1.4	ug/L	57	Standard
>	Ga	71	85.0	17.6				mg/L	78	Standard
	Rb	85	880.0	11.0				ug/L	22	Standard
	Y	89	401461.1	1.0				ug/L	388959	Standard
>	Rh	103	65.0	33.5				ug/L	8	Standard
	Mo	98	258652.3	1.4	**97.6969**	0.756	0.8	ug/L	10	Standard
	Ag	107	322144.5	0.9	**49.1555**	0.203	0.4	ug/L	66	Standard
	Cd	111	102398.8	1.3	**48.9692**	0.235	0.5	mg/L	3	Standard
	Cd	114	246907.2	2.8	**48.2912**	1.084	2.2	ug/L	4	Standard
>	In	115	544575.4	1.0				ug/L	523327	Standard
	Sn	118	281041.7	2.3	**48.5926**	0.649	1.3	ug/L	488	Standard
	Sb	123	228758.8	0.4	**48.3469**	0.289	0.6	ug/L	195	Standard
	Ba	135	96924.1	1.4	**48.2366**	0.207	0.4	ug/L	28	Standard
	Ce	140	71.7	17.6				ug/L	83	Standard
>	Tb	159	836307.4	0.1				ug/L	809211	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	403616.3	0.5	**49.4394**	0.123	0.2	ug/L	4	Standard
	Tl	205	349669.2	1.2	**49.9384**	0.280	0.6	ug/L	8	Standard
	Pb	206	256646.0	0.4	**50.0817**	0.173	0.3	ug/L	230	Standard
	Pb	207	232938.0	0.6	**50.0843**	0.066	0.1	ug/L	184	Standard
	Pb	208	962597.4	0.7	**50.5986**	0.173	0.3	ug/L	775	Standard
	U	238	351208.0	0.8	**50.3012**	0.589	1.2	ug/L	3	Standard
>	Bi	209	489754.4	0.7				ug/L	472452	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 10:57:17
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4047.2	5.1	**5.0950**	0.144	2.8	mg/L	52	Standard
K	39	993.4	11.6	**4.1898**	0.614	14.6	mg/L	32	Standard
Ca	43	40.0	21.7	**0.9441**	1.082	114.6	mg/L	33	Standard
Fe	54	6069.2	1.6	**4.5939**	0.179	3.9	mg/L	138	Standard
Fe	57	1803.4	2.8	**4.5605**	0.158	3.5	mg/L	263	Standard
Sc-1	45	29892.8	2.5				mg/L	27861	Standard
Cl	35	127889.0	4.8				ug/L	100607	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	4117.2	5.1				ug/L	1777	Standard
P	31	21942.6	3.8				ug/L	18074	Standard
S	34	5060.8	0.8				ug/L	3901	Standard
Sr	88	86.7	29.0				ug/L	60	Standard
C	12	76.7	27.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	7	Standard
Dy	164	15.7	36.9				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	40769.9	4.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.784		
Al	27	99.583		
Sc	45			
Ti	47	101.043		
V	51	101.349		
Cr	52	100.292		
Cr	53			
Mn	55	105.720		
Co	59	100.817		
Ni	60	101.410		
Cu	65	101.284		
Zn	66	100.407		
Ge	72		102.854	
As	75	100.131		
Se	82	101.466		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 10:57:17
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	97.697		
Ag	107	98.311		
Cd	111	97.938		
Cd	114			
In	115			104.060
Sn	118	97.185		
Sb	123	96.694		
Ba	135	96.473		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.879		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.197		
U	238	100.602		
Bi	209			103.662
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 10:57:17
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 10:58:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64179.1	3.0				ug/L	59299	Standard
	Be	9	43.3	17.6	**0.0493**	0.007	14.7	ug/L	17	Standard
	Al	27	8747.8	42.7	**0.0476**	0.026	54.7	ug/L	1472	Standard
	Sc	45	29036.1	1.1				ug/L	27861	Standard
	Ti	47	23.7	8.8	**-0.0161**	0.009	56.6	ug/L	28	Standard
	V	51	1268.0	10.2	**0.0093**	0.019	207.3	ug/L	1156	Standard
	Cr	52	6811.5	0.7	**-0.0019**	0.007	379.3	ug/L	6689	Standard
	Cr	53	1783.4	4.5	**1.6225**	0.101	6.2	ug/L	348	Standard
	Mn	55	2166.2	25.4	**0.2097**	0.088	41.7	ug/L	770	Standard
	Co	59	257.3	13.6	**0.0029**	0.005	188.9	ug/L	216	Standard
	Ni	60	703.3	7.3	**0.1277**	0.030	23.5	ug/L	440	Standard
	Cu	65	401.7	10.2	**0.1616**	0.023	14.4	ug/L	116	Standard
	Zn	66	573.7	2.9	**0.3300**	0.018	5.5	ug/L	135	Standard
>	**Ge**	72	453411.3	0.5				ug/L	445277	Standard
	As	75	-11.3	322.8	**0.0272**	0.033	120.1	ug/L	-57	Standard
	Se	82	36.1	28.5	**0.1749**	0.091	52.1	ug/L	10	Standard
	Se-1	77	130.3	8.1	**1.1060**	0.142	12.8	ug/L	57	Standard
>	**Ga**	71	56.7	27.0				mg/L	78	Standard
	Rb	85	65.0	23.1				ug/L	22	Standard
	Y	89	394269.0	0.6				ug/L	388959	Standard
>	**Rh**	103	38.3	39.8				ug/L	8	Standard
	Mo	98	217.6	16.1	**0.0765**	0.013	17.2	ug/L	10	Standard
	Ag	107	144.7	14.9	**0.0087**	0.003	37.1	ug/L	66	Standard
	Cd	111	19.2	77.7	**0.0057**	0.007	126.7	mg/L	3	Standard
	Cd	114	66.9	26.2	**0.0093**	0.003	36.7	ug/L	4	Standard
>	**In**	115	538400.2	0.5				ug/L	523327	Standard
	Sn	118	921.7	20.9	**0.0859**	0.034	39.9	ug/L	488	Standard
	Sb	123	709.3	31.1	**0.1352**	0.048	35.3	ug/L	195	Standard
	Ba	135	56.3	35.6	**0.0111**	0.010	89.5	ug/L	28	Standard
	Ce	140	20.0	109.0				ug/L	83	Standard
>	**Tb**	159	823108.5	0.5				ug/L	809211	Standard
	Ho	165	8.3	124.9				ug/L	13	Standard
	Tl	203	122.0	36.7	**0.0130**	0.006	42.5	ug/L	4	Standard
	Tl	205	100.0	52.7	**0.0119**	0.008	64.0	ug/L	8	Standard
	Pb	206	295.0	11.6	**0.0098**	0.007	70.1	ug/L	230	Standard
	Pb	207	256.3	13.7	**0.0126**	0.008	61.1	ug/L	184	Standard
	Pb	208	1056.3	9.0	**0.0100**	0.005	51.9	ug/L	775	Standard
	U	238	75.3	31.5	**0.0101**	0.003	33.9	ug/L	3	Standard
>	**Bi**	209	488447.4	0.4				ug/L	472452	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 11:00:29
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	126.7	18.2	**0.1007**	0.030	30.0	mg/L	52	Standard
K	39	20.0	25.0	**-0.0372**	0.023	61.2	mg/L	32	Standard
Ca	43	18.3	15.7	**-1.5844**	0.376	23.7	mg/L	33	Standard
Fe	54	144.0	5.7	**0.0033**	0.006	173.3	mg/L	138	Standard
Fe	57	273.3	16.4	**0.1415**	0.142	100.1	mg/L	263	Standard
Sc-1	45	29036.1	1.1				mg/L	27861	Standard
Cl	35	123843.5	1.4				ug/L	100607	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	3020.3	5.5				ug/L	1777	Standard
P	31	21236.6	5.7				ug/L	18074	Standard
S	34	4909.1	3.7				ug/L	3901	Standard
Sr	88	81.7	56.9				ug/L	60	Standard
C	12	53.3	21.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	7	Standard
Dy	164	12.9	44.9				mg/L	13	Standard
Ho-1	165	8.3	124.9				mg/L	13	Standard
Er	166	10.0					mg/L	3	Standard
I	127	25112.5	0.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.827	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 11:00:29
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.880
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.386
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 11:00:29
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606165001
Sample Date/Time: Thursday, July 07, 2016 11:01:25
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67173.7	3.3				ug/L	59299	Standard
	Be	9	36.7	28.4	**0.0401**	0.010	26.1	ug/L	17	Standard
	Al	27	8248422.7	1.0	**54.4415**	1.503	2.8	ug/L	1472	Standard
	Sc	45	29415.2	1.0				ug/L	27861	Standard
	Ti	47	979.0	7.2	**3.8766**	0.283	7.3	ug/L	28	Standard
	V	51	2571.0	13.5	**0.1952**	0.053	27.0	ug/L	1156	Standard
	Cr	52	12496.2	1.1	**0.7830**	0.052	6.6	ug/L	6689	Standard
	Cr	53	6578.1	4.9	**6.9573**	0.475	6.8	ug/L	348	Standard
	Mn	55	242513.5	0.9	**37.1092**	0.699	1.9	ug/L	770	Standard
	Co	59	1235.7	2.6	**0.1459**	0.008	5.5	ug/L	216	Standard
	Ni	60	3471.4	0.7	**1.6125**	0.049	3.0	ug/L	440	Standard
	Cu	65	43698.9	1.3	**23.5058**	0.203	0.9	ug/L	116	Standard
	Zn	66	45694.1	1.8	**41.1566**	0.464	1.1	ug/L	135	Standard
>	Ge	72	460078.0	1.9				ug/L	445277	Standard
	As	75	852.1	7.2	**0.7939**	0.067	8.4	ug/L	-57	Standard
	Se	82	325.4	4.0	**2.7030**	0.154	5.7	ug/L	10	Standard
	Se-1	77	408.3	2.5	**4.7484**	0.241	5.1	ug/L	57	Standard
>	Ga	71	113.3	20.4				mg/L	78	Standard
	Rb	85	44130.8	0.6				ug/L	22	Standard
	Y	89	399573.8	1.0				ug/L	388959	Standard
>	Rh	103	75.0	6.7				ug/L	8	Standard
	Mo	98	1271.0	3.8	**0.4816**	0.022	4.6	ug/L	10	Standard
	Ag	107	4441.3	1.7	**0.6756**	0.005	0.7	ug/L	66	Standard
	Cd	111	63.8	11.3	**0.0274**	0.003	11.1	mg/L	3	Standard
	Cd	114	153.0	14.6	**0.0266**	0.005	18.2	ug/L	4	Standard
>	In	115	535640.8	1.6				ug/L	523327	Standard
	Sn	118	3803.8	0.8	**0.5942**	0.012	2.1	ug/L	488	Standard
	Sb	123	873.8	17.3	**0.1715**	0.035	20.5	ug/L	195	Standard
	Ba	135	56834.7	1.3	**28.7525**	0.295	1.0	ug/L	28	Standard
	Ce	140	785.0	8.4				ug/L	83	Standard
>	Tb	159	830598.5	1.8				ug/L	809211	Standard
	Ho	165	46.7	30.9				ug/L	13	Standard
	Tl	203	89.3	2.8	**0.0092**	0.000	1.8	ug/L	4	Standard
	Tl	205	76.7	10.0	**0.0087**	0.001	13.0	ug/L	8	Standard
	Pb	206	2042.1	1.0	**0.3586**	0.004	1.0	ug/L	230	Standard
	Pb	207	1689.8	3.3	**0.3279**	0.007	2.2	ug/L	184	Standard
	Pb	208	7168.7	0.4	**0.3387**	0.006	1.6	ug/L	775	Standard
	U	238	433.7	6.5	**0.0626**	0.005	7.7	ug/L	3	Standard
>	Bi	209	480534.4	1.4				ug/L	472452	Standard

Sample ID: L1606165001
Report Date/Time: Thursday, July 07, 2016 11:03:42
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.0916**	5.346	172.9	mg/L	0	Standard
Mg	24	34440.8	1.4	**44.5872**	1.016	2.3	mg/L	52	Standard
K	39	945.0	2.3	**4.0364**	0.055	1.4	mg/L	32	Standard
Ca	43	143.3	7.3	**13.5483**	1.166	8.6	mg/L	33	Standard
Fe	54	322.6	10.0	**0.1426**	0.028	19.5	mg/L	138	Standard
Fe	57	501.7	10.1	**0.8031**	0.137	17.1	mg/L	263	Standard
> **Sc-1**	45	29415.2	1.0				mg/L	27861	Standard
Cl	35	154553.7	1.3				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	59791.2	4.6				ug/L	1777	Standard
P	31	23286.2	1.7				ug/L	18074	Standard
S	34	4994.2	4.1				ug/L	3901	Standard
Sr	88	273.3	9.2				ug/L	60	Standard
C	12	476.7	10.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	7	Standard
Dy	164	41.4	49.4				mg/L	13	Standard
Ho-1	165	46.7	30.9				mg/L	13	Standard
Er	166	40.0	25.0				mg/L	3	Standard
I	127	638638.4	2.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.279	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606165001
Report Date/Time: Thursday, July 07, 2016 11:03:42
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.353
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.711
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607005001
Sample Date/Time: Thursday, July 07, 2016 11:04:36
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68246.7	1.2				ug/L	59299	Standard
	Be	9	93.3	8.2	**0.0987**	0.009	9.2	ug/L	17	Standard
	Al	27	16894064.1	1.4	**109.7011**	0.859	0.8	ug/L	1472	Standard
	Sc	45	30881.4	0.7				ug/L	27861	Standard
	Ti	47	2996.3	3.2	**12.2847**	0.323	2.6	ug/L	28	Standard
	V	51	8830.5	3.8	**1.1193**	0.058	5.2	ug/L	1156	Standard
	Cr	52	22652.3	2.7	**2.2572**	0.062	2.8	ug/L	6689	Standard
	Cr	53	10558.7	2.3	**11.5835**	0.291	2.5	ug/L	348	Standard
	Mn	55	615680.1	2.4	**95.8474**	2.531	2.6	ug/L	770	Standard
	Co	59	5004.5	5.4	**0.7103**	0.045	6.3	ug/L	216	Standard
	Ni	60	8413.0	2.6	**4.3408**	0.079	1.8	ug/L	440	Standard
	Cu	65	58656.7	1.7	**32.0550**	0.445	1.4	ug/L	116	Standard
	Zn	66	145801.8	0.3	**133.7804**	0.818	0.6	ug/L	135	Standard
>	**Ge**	72	453110.1	0.9				ug/L	445277	Standard
	As	75	369.5	21.7	**0.3698**	0.070	18.9	ug/L	-57	Standard
	Se	82	131.3	9.4	**1.0207**	0.101	9.9	ug/L	10	Standard
	Se-1	77	581.0	1.1	**7.1399**	0.134	1.9	ug/L	57	Standard
>	**Ga**	71	1001.7	5.1				mg/L	78	Standard
	Rb	85	72966.9	0.6				ug/L	22	Standard
	Y	89	399029.5	0.5				ug/L	388959	Standard
>	**Rh**	103	103.3	17.0				ug/L	8	Standard
	Mo	98	6159.9	3.2	**2.4097**	0.061	2.5	ug/L	10	Standard
	Ag	107	1472.7	25.8	**0.2199**	0.061	27.6	ug/L	66	Standard
	Cd	111	644.9	26.3	**0.3168**	0.085	26.7	mg/L	3	Standard
	Cd	114	1591.6	27.7	**0.3195**	0.090	28.2	ug/L	4	Standard
>	**In**	115	524362.4	1.0				ug/L	523327	Standard
	Sn	118	8704.2	1.9	**1.4899**	0.031	2.1	ug/L	488	Standard
	Sb	123	4657.5	6.2	**1.0061**	0.068	6.7	ug/L	195	Standard
	Ba	135	65664.7	1.8	**33.9339**	0.378	1.1	ug/L	28	Standard
	Ce	140	23182.7	3.1				ug/L	83	Standard
>	**Tb**	159	828267.9	1.5				ug/L	809211	Standard
	Ho	165	440.0	11.2				ug/L	13	Standard
	Tl	203	477.0	132.0	**0.0531**	0.073	137.3	ug/L	4	Standard
	Tl	205	210.0	83.0	**0.0257**	0.024	91.8	ug/L	8	Standard
	Pb	206	6113.9	2.7	**1.0702**	0.035	3.3	ug/L	230	Standard
	Pb	207	5100.2	2.0	**0.9850**	0.026	2.6	ug/L	184	Standard
	Pb	208	21970.6	1.9	**1.0366**	0.026	2.5	ug/L	775	Standard
	U	238	613.7	26.3	**0.0817**	0.022	27.3	ug/L	3	Standard
>	**Bi**	209	523125.7	1.2				ug/L	472452	Standard

Sample ID: L1607005001
Report Date/Time: Thursday, July 07, 2016 11:06:53
Page 1

Approved: July 08, 2016

Na	23	8.3	69.3	**14.6975**	10.075	68.5	mg/L	0	Standard
Mg	24	52915.7	3.6	**65.2692**	2.118	3.2	mg/L	52	Standard
K	39	1531.7	8.1	**6.2997**	0.495	7.9	mg/L	32	Standard
Ca	43	265.0	14.2	**26.7858**	4.344	16.2	mg/L	33	Standard
Fe	54	2703.3	1.9	**1.9161**	0.049	2.5	mg/L	138	Standard
Fe	57	1131.7	10.3	**2.5029**	0.311	12.4	mg/L	263	Standard
> **Sc-1**	45	30881.4	0.7				mg/L	27861	Standard
Cl	35	151468.9	2.3				ug/L	100607	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	12218.3	4.8				ug/L	1777	Standard
P	31	30707.8	2.8				ug/L	18074	Standard
S	34	4587.4	2.6				ug/L	3901	Standard
Sr	88	338.3	18.5				ug/L	60	Standard
C	12	1403.4	14.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	83.3	6.9				mg/L	7	Standard
Dy	164	657.2	14.7				mg/L	13	Standard
Ho-1	165	440.0	11.2				mg/L	13	Standard
Er	166	406.7	9.3				mg/L	3	Standard
I	127	76038.7	0.3				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		115.089	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.759	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1607005001
Report Date/Time: Thursday, July 07, 2016 11:06:53
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.198
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.726
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1607005001
Report Date/Time: Thursday, July 07, 2016 11:06:53
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607005002
Sample Date/Time: Thursday, July 07, 2016 11:07:48
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68782.5	2.4				ug/L	59299	Standard
	Be	9	28.3	71.3	**0.0305**	0.021	68.1	ug/L	17	Standard
	Al	27	29535580.5	1.2	**190.3538**	3.534	1.9	ug/L	1472	Standard
	Sc	45	30265.2	1.4				ug/L	27861	Standard
	Ti	47	225.3	2.4	**0.8185**	0.025	3.1	ug/L	28	Standard
	V	51	6450.3	5.6	**0.7700**	0.061	7.9	ug/L	1156	Standard
	Cr	52	10228.1	3.8	**0.4855**	0.042	8.6	ug/L	6689	Standard
	Cr	53	8118.8	4.5	**8.8110**	0.352	4.0	ug/L	348	Standard
	Mn	55	11656.1	1.0	**1.6888**	0.032	1.9	ug/L	770	Standard
	Co	59	1662.4	4.1	**0.2121**	0.008	3.7	ug/L	216	Standard
	Ni	60	5395.3	1.5	**2.6916**	0.028	1.0	ug/L	440	Standard
	Cu	65	2268.8	0.6	**1.1838**	0.004	0.4	ug/L	116	Standard
	Zn	66	16171.3	0.6	**14.6606**	0.058	0.4	ug/L	135	Standard
>	**Ge**	72	453177.1	1.0				ug/L	445277	Standard
	As	75	352.3	4.5	**0.3546**	0.013	3.6	ug/L	-57	Standard
	Se	82	178.2	4.5	**1.4368**	0.057	4.0	ug/L	10	Standard
	Se-1	77	479.7	10.9	**5.7788**	0.648	11.2	ug/L	57	Standard
>	**Ga**	71	426.7	10.9				mg/L	78	Standard
	Rb	85	62386.5	1.0				ug/L	22	Standard
	Y	89	395178.8	0.2				ug/L	388959	Standard
>	**Rh**	103	81.7	27.6				ug/L	8	Standard
	Mo	98	3123.1	3.0	**1.2135**	0.034	2.8	ug/L	10	Standard
	Ag	107	91.7	20.5	**0.0009**	0.003	346.0	ug/L	66	Standard
	Cd	111	29.8	13.8	**0.0112**	0.002	19.1	mg/L	3	Standard
	Cd	114	84.1	19.3	**0.0131**	0.003	26.2	ug/L	4	Standard
>	**In**	115	526549.0	1.0				ug/L	523327	Standard
	Sn	118	1401.7	2.7	**0.1754**	0.005	2.6	ug/L	488	Standard
	Sb	123	1395.5	7.1	**0.2885**	0.023	7.9	ug/L	195	Standard
	Ba	135	8642.1	0.8	**4.4332**	0.078	1.8	ug/L	28	Standard
	Ce	140	635.0	14.2				ug/L	83	Standard
>	**Tb**	159	822284.8	0.9				ug/L	809211	Standard
	Ho	165	23.3	81.1				ug/L	13	Standard
	Tl	203	73.0	21.5	**0.0074**	0.002	27.1	ug/L	4	Standard
	Tl	205	26.7	39.0	**0.0015**	0.002	104.2	ug/L	8	Standard
	Pb	206	506.3	3.8	**0.0552**	0.004	7.2	ug/L	230	Standard
	Pb	207	448.7	2.1	**0.0580**	0.002	3.7	ug/L	184	Standard
	Pb	208	1812.0	0.6	**0.0538**	0.001	1.5	ug/L	775	Standard
	U	238	27.0	58.8	**0.0033**	0.002	70.7	ug/L	3	Standard
>	**Bi**	209	469484.1	0.2				ug/L	472452	Standard

Sample ID: L1607005002
Report Date/Time: Thursday, July 07, 2016 11:10:05
Page 1

Approved: July 08, 2016

Na	23	3.3	86.6	**5.9898**	5.184	86.5	mg/L	0	Standard
Mg	24	40337.0	0.8	**50.7653**	1.062	2.1	mg/L	52	Standard
K	39	1275.1	6.4	**5.3364**	0.417	7.8	mg/L	32	Standard
Ca	43	168.3	3.4	**16.0082**	0.401	2.5	mg/L	33	Standard
Fe	54	175.6	4.3	**0.0229**	0.007	29.4	mg/L	138	Standard
Fe	57	470.0	12.3	**0.6728**	0.181	26.9	mg/L	263	Standard
> **Sc-1**	45	30265.2	1.4				mg/L	27861	Standard
Cl	35	160456.6	1.3				ug/L	100607	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	33076.1	4.8				ug/L	1777	Standard
P	31	28187.9	0.8				ug/L	18074	Standard
S	34	4685.7	4.8				ug/L	3901	Standard
Sr	88	280.0	4.7				ug/L	60	Standard
C	12	180.0	28.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	14.4	147.8				mg/L	13	Standard
Ho-1	165	23.3	81.1				mg/L	13	Standard
Er	166	46.7	44.6				mg/L	3	Standard
I	127	71008.1	6.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.992	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.774	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607005002
Report Date/Time: Thursday, July 07, 2016 11:10:05
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.616
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.372
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1607005002
Report Date/Time: Thursday, July 07, 2016 11:10:05
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607005401 WG575246-02
Sample Date/Time: Thursday, July 07, 2016 11:11:00
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67903.5	2.5				ug/L	59299	Standard
	Be	9	16.7	86.6	**0.0187**	0.015	80.5	ug/L	17	Standard
	Al	27	8771544.0	1.4	**57.2499**	0.685	1.2	ug/L	1472	Standard
	Sc	45	28181.2	2.9				ug/L	27861	Standard
	Ti	47	734.0	16.7	**2.9612**	0.505	17.1	ug/L	28	Standard
	V	51	2274.5	6.6	**0.1614**	0.024	14.6	ug/L	1156	Standard
	Cr	52	10641.1	3.1	**0.5640**	0.047	8.4	ug/L	6689	Standard
	Cr	53	7913.7	2.9	**8.6947**	0.261	3.0	ug/L	348	Standard
	Mn	55	145515.8	0.7	**22.8412**	0.097	0.4	ug/L	770	Standard
	Co	59	928.0	3.3	**0.1045**	0.004	4.1	ug/L	216	Standard
	Ni	60	2632.9	1.9	**1.2006**	0.022	1.9	ug/L	440	Standard
	Cu	65	7582.9	0.2	**4.1458**	0.011	0.3	ug/L	116	Standard
	Zn	66	27726.7	1.7	**25.6023**	0.383	1.5	ug/L	135	Standard
>	Ge	72	447447.1	0.3				ug/L	445277	Standard
	As	75	761.4	11.7	**0.7316**	0.079	10.8	ug/L	-57	Standard
	Se	82	330.2	4.3	**2.8253**	0.123	4.3	ug/L	10	Standard
	Se-1	77	510.7	3.2	**6.2848**	0.237	3.8	ug/L	57	Standard
>	Ga	71	93.3	15.5				mg/L	78	Standard
	Rb	85	40796.5	0.5				ug/L	22	Standard
	Y	89	386635.4	1.9				ug/L	388959	Standard
>	Rh	103	100.0	8.7				ug/L	8	Standard
	Mo	98	895.3	4.5	**0.3463**	0.016	4.7	ug/L	10	Standard
	Ag	107	202.0	6.5	**0.0186**	0.002	11.2	ug/L	66	Standard
	Cd	111	45.7	6.7	**0.0192**	0.001	7.8	mg/L	3	Standard
	Cd	114	113.8	34.0	**0.0193**	0.008	40.3	ug/L	4	Standard
>	In	115	521910.6	0.5				ug/L	523327	Standard
	Sn	118	1101.7	7.0	**0.1234**	0.013	10.6	ug/L	488	Standard
	Sb	123	617.0	16.5	**0.1194**	0.022	18.2	ug/L	195	Standard
	Ba	135	26023.3	0.6	**13.5021**	0.152	1.1	ug/L	28	Standard
	Ce	140	161.7	20.6				ug/L	83	Standard
>	Tb	159	810811.5	0.6				ug/L	809211	Standard
	Ho	165	26.7	28.6				ug/L	13	Standard
	Tl	203	84.3	7.9	**0.0089**	0.001	9.4	ug/L	4	Standard
	Tl	205	86.7	12.0	**0.0105**	0.002	15.0	ug/L	8	Standard
	Pb	206	1101.4	2.5	**0.1775**	0.006	3.1	ug/L	230	Standard
	Pb	207	960.0	3.2	**0.1738**	0.007	4.0	ug/L	184	Standard
	Pb	208	3876.9	2.3	**0.1681**	0.005	3.2	ug/L	775	Standard
	U	238	57.7	6.1	**0.0080**	0.001	6.4	ug/L	3	Standard
>	Bi	209	467314.2	0.2				ug/L	472452	Standard

Sample ID: L1607005401 WG575246-02
Report Date/Time: Thursday, July 07, 2016 11:13:16
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	37596.6	3.6	**50.8005**	0.506	1.0	mg/L	52	Standard
K	39	885.0	6.1	**3.9406**	0.131	3.3	mg/L	32	Standard
Ca	43	218.3	19.5	**23.8854**	5.789	24.2	mg/L	33	Standard
Fe	54	152.1	14.7	**0.0135**	0.018	132.8	mg/L	138	Standard
Fe	57	520.0	8.4	**0.9280**	0.172	18.6	mg/L	263	Standard
> **Sc-1**	45	28181.2	2.9				mg/L	27861	Standard
Cl	35	157033.1	2.0				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	68715.5	0.5				ug/L	1777	Standard
P	31	22076.1	1.9				ug/L	18074	Standard
S	34	4677.4	5.5				ug/L	3901	Standard
Sr	88	268.3	8.8				ug/L	60	Standard
C	12	163.3	14.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	7	Standard
Dy	164	37.9	81.7				mg/L	13	Standard
Ho-1	165	26.7	28.6				mg/L	13	Standard
Er	166	43.3	70.5				mg/L	3	Standard
I	127	651280.3	5.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.510	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.487	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607005401 WG575246-02
Report Date/Time: Thursday, July 07, 2016 11:13:16
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.729
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.913
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607005401DP WG575246-07
Sample Date/Time: Thursday, July 07, 2016 11:14:11
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67212.2	4.0				ug/L	59299	Standard
	Be	9	23.3	81.1	**0.0256**	0.019	73.1	ug/L	17	Standard
	Al	27	8190056.1	1.4	**54.0374**	1.745	3.2	ug/L	1472	Standard
	Sc	45	28089.4	3.4				ug/L	27861	Standard
	Ti	47	587.0	4.7	**2.3481**	0.111	4.7	ug/L	28	Standard
	V	51	2078.2	9.7	**0.1323**	0.028	21.0	ug/L	1156	Standard
	Cr	52	10471.3	2.0	**0.5408**	0.020	3.7	ug/L	6689	Standard
	Cr	53	7518.5	0.8	**8.2489**	0.129	1.6	ug/L	348	Standard
	Mn	55	133979.8	0.8	**21.0401**	0.209	1.0	ug/L	770	Standard
	Co	59	839.0	3.9	**0.0912**	0.004	4.5	ug/L	216	Standard
	Ni	60	2431.2	3.6	**1.0901**	0.043	4.0	ug/L	440	Standard
	Cu	65	7103.0	0.2	**3.8834**	0.034	0.9	ug/L	116	Standard
	Zn	66	24172.9	0.7	**22.3167**	0.171	0.8	ug/L	135	Standard
>	Ge	72	447044.3	0.7				ug/L	445277	Standard
	As	75	758.6	8.2	**0.7301**	0.062	8.4	ug/L	-57	Standard
	Se	82	318.0	3.8	**2.7186**	0.124	4.6	ug/L	10	Standard
	Se-1	77	473.0	3.9	**5.7800**	0.260	4.5	ug/L	57	Standard
>	Ga	71	90.0	38.5				mg/L	78	Standard
	Rb	85	39429.6	1.8				ug/L	22	Standard
	Y	89	389051.8	2.4				ug/L	388959	Standard
>	Rh	103	68.3	11.2				ug/L	8	Standard
	Mo	98	800.0	6.0	**0.3089**	0.020	6.4	ug/L	10	Standard
	Ag	107	178.0	6.5	**0.0148**	0.002	12.9	ug/L	66	Standard
	Cd	111	39.2	10.7	**0.0160**	0.002	13.5	mg/L	3	Standard
	Cd	114	97.7	25.6	**0.0160**	0.005	31.3	ug/L	4	Standard
>	In	115	521692.8	0.4				ug/L	523327	Standard
	Sn	118	1453.4	7.8	**0.1870**	0.020	10.5	ug/L	488	Standard
	Sb	123	545.7	12.0	**0.1038**	0.015	14.3	ug/L	195	Standard
	Ba	135	24416.0	0.5	**12.6719**	0.070	0.6	ug/L	28	Standard
	Ce	140	116.7	13.8				ug/L	83	Standard
>	Tb	159	809781.0	1.0				ug/L	809211	Standard
	Ho	165	35.0	28.6				ug/L	13	Standard
	Tl	203	75.0	9.3	**0.0077**	0.001	11.9	ug/L	4	Standard
	Tl	205	65.0	15.4	**0.0072**	0.001	20.3	ug/L	8	Standard
	Pb	206	933.0	2.6	**0.1432**	0.004	3.0	ug/L	230	Standard
	Pb	207	796.4	2.9	**0.1371**	0.005	3.7	ug/L	184	Standard
	Pb	208	3191.1	1.7	**0.1304**	0.002	1.9	ug/L	775	Standard
	U	238	46.7	25.7	**0.0063**	0.002	28.5	ug/L	3	Standard
>	Bi	209	466911.1	0.4				ug/L	472452	Standard

Sample ID: L1607005401DP WG575246-07
Report Date/Time: Thursday, July 07, 2016 11:16:28
Page 1

Approved: July 08, 2016

Na	23	5.0	173.2	**9.5102**	16.463	173.1	mg/L	0	Standard
Mg	24	36138.1	2.3	**49.0091**	0.956	2.0	mg/L	52	Standard
K	39	880.0	13.4	**3.9260**	0.437	11.1	mg/L	32	Standard
Ca	43	175.0	7.6	**18.3863**	1.228	6.7	mg/L	33	Standard
Fe	54	172.3	35.5	**0.0317**	0.056	176.1	mg/L	138	Standard
Fe	57	468.3	10.7	**0.7719**	0.162	21.0	mg/L	263	Standard
> **Sc-1**	45	28089.4	3.4				mg/L	27861	Standard
Cl	35	155839.4	0.9				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	68276.9	2.6				ug/L	1777	Standard
P	31	22468.3	1.9				ug/L	18074	Standard
S	34	4587.4	1.6				ug/L	3901	Standard
Sr	88	248.3	14.3				ug/L	60	Standard
C	12	126.7	46.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	7	Standard
Dy	164	31.7	68.7				mg/L	13	Standard
Ho-1	165	35.0	28.6				mg/L	13	Standard
Er	166	33.3	75.5				mg/L	3	Standard
I	127	584344.8	4.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.344	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.397	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607005401DP WG575246-07
Report Date/Time: Thursday, July 07, 2016 11:16:28
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.688
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.827
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007401
Sample Date/Time: Thursday, July 07, 2016 11:17:23
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67898.7	4.9				ug/L	59299	Standard
	Be	9	15.0	88.2	**0.0167**	0.013	80.4	ug/L	17	Standard
	Al	27	12964222.1	0.7	**84.7236**	3.465	4.1	ug/L	1472	Standard
	Sc	45	26670.1	2.6				ug/L	27861	Standard
	Ti	47	206.3	6.2	**0.8289**	0.052	6.3	ug/L	28	Standard
	V	51	2662.0	19.1	**0.2541**	0.078	30.6	ug/L	1156	Standard
	Cr	52	20884.1	1.8	**2.3167**	0.055	2.4	ug/L	6689	Standard
	Cr	53	33670.7	2.8	**41.8213**	1.722	4.1	ug/L	348	Standard
	Mn	55	26002.3	1.3	**4.3486**	0.004	0.1	ug/L	770	Standard
	Co	59	5261.2	1.0	**0.8305**	0.017	2.0	ug/L	216	Standard
	Ni	60	19221.9	2.1	**11.3455**	0.136	1.2	ug/L	440	Standard
	Cu	65	296730.0	1.2	**179.3764**	1.710	1.0	ug/L	116	Standard
	Zn	66	2988.6	1.6	**2.8363**	0.040	1.4	ug/L	135	Standard
>	**Ge**	72	410244.3	1.3				ug/L	445277	Standard
	As	75	2763.3	8.4	**2.7847**	0.199	7.1	ug/L	-57	Standard
	Se	82	1019.4	0.6	**9.8582**	0.092	0.9	ug/L	10	Standard
	Se-1	77	2876.6	1.3	**41.8968**	1.051	2.5	ug/L	57	Standard
>	**Ga**	71	443.3	9.7				mg/L	78	Standard
	Rb	85	290379.6	0.8				ug/L	22	Standard
	Y	89	364299.4	0.9				ug/L	388959	Standard
>	**Rh**	103	183.3	8.3				ug/L	8	Standard
	Mo	98	16002.8	1.5	**7.0127**	0.143	2.0	ug/L	10	Standard
	Ag	107	172.0	1.5	**0.0169**	0.001	4.1	ug/L	66	Standard
	Cd	111	8.6	27.7	**0.0012**	0.001	111.2	mg/L	3	Standard
	Cd	114	93.5	19.3	**0.0173**	0.004	24.4	ug/L	4	Standard
>	**In**	115	469021.6	0.8				ug/L	523327	Standard
	Sn	118	988.4	1.6	**0.1231**	0.003	2.2	ug/L	488	Standard
	Sb	123	2408.2	3.0	**0.5745**	0.016	2.7	ug/L	195	Standard
	Ba	135	137894.1	1.4	**79.6963**	1.119	1.4	ug/L	28	Standard
	Ce	140	130.0	20.4				ug/L	83	Standard
>	**Tb**	159	762401.3	1.8				ug/L	809211	Standard
	Ho	165	3.3	173.2				ug/L	13	Standard
	Tl	203	67.7	18.7	**0.0079**	0.002	23.5	ug/L	4	Standard
	Tl	205	60.0	58.3	**0.0077**	0.006	77.2	ug/L	8	Standard
	Pb	206	331.0	6.9	**0.0291**	0.006	19.2	ug/L	230	Standard
	Pb	207	284.3	3.0	**0.0302**	0.003	8.5	ug/L	184	Standard
	Pb	208	1165.4	2.7	**0.0274**	0.002	8.4	ug/L	775	Standard
	U	238	22.0	7.9	**0.0031**	0.000	9.1	ug/L	3	Standard
>	**Bi**	209	411096.8	0.5				ug/L	472452	Standard

Sample ID: L1607007401
Report Date/Time: Thursday, July 07, 2016 11:19:39
Page 1

Approved: July 08, 2016

Na	23	11.7	89.2	**23.5999**	20.900	88.6	mg/L	0	Standard
Mg	24	325913.4	1.4	**466.0329**	8.244	1.8	mg/L	52	Standard
K	39	11761.2	0.7	**57.0489**	1.671	2.9	mg/L	32	Standard
Ca	43	725.0	5.5	**93.1498**	3.111	3.3	mg/L	33	Standard
Fe	54	144.6	17.2	**0.0144**	0.024	166.5	mg/L	138	Standard
Fe	57	1065.0	3.5	**2.7893**	0.094	3.4	mg/L	263	Standard
> **Sc-1**	45	26670.1	2.6				mg/L	27861	Standard
Cl	35	257687.5	0.5				ug/L	100607	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	242529.8	2.5				ug/L	1777	Standard
P	31	20387.0	2.6				ug/L	18074	Standard
S	34	4924.1	2.1				ug/L	3901	Standard
Sr	88	415.0	7.5				ug/L	60	Standard
C	12	130.0	27.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	31.5				mg/L	7	Standard
Dy	164	9.7	100.8				mg/L	13	Standard
Ho-1	165	3.3	173.2				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	943581.1	6.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.502	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607007401
Report Date/Time: Thursday, July 07, 2016 11:19:39
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.623
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.014
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607009001
Sample Date/Time: Thursday, July 07, 2016 11:20:34
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65434.3	1.1				ug/L	59299	Standard
	Be	9	35.0	14.3	**0.0394**	0.006	14.0	ug/L	17	Standard
	Al	27	361608.2	1.5	**2.4365**	0.025	1.0	ug/L	1472	Standard
	Sc	45	29508.7	2.9				ug/L	27861	Standard
	Ti	47	5160.9	2.2	**19.7657**	0.377	1.9	ug/L	28	Standard
	V	51	559556.4	0.5	**76.2419**	0.185	0.2	ug/L	1156	Standard
	Cr	52	1410102.2	0.7	**186.1862**	0.871	0.5	ug/L	6689	Standard
	Cr	53	177050.1	0.7	**186.6411**	1.048	0.6	ug/L	348	Standard
	Mn	55	4496422.1	1.2	**652.2867**	9.521	1.5	ug/L	770	Standard
	Co	59	171439.9	1.3	**23.7422**	0.377	1.6	ug/L	216	Standard
	Ni	60	202851.6	0.7	**102.9350**	0.669	0.6	ug/L	440	Standard
	Cu	65	20706598.6	0.6	**10552.1569**	47.360	0.4	ug/L	116	Standard
	Zn	66	571278.6	0.2	**488.4224**	0.799	0.2	ug/L	135	Standard
>	Ge	72	486782.0	0.3				ug/L	445277	Standard
	As	75	19642.5	1.3	**16.5060**	0.258	1.6	ug/L	-57	Standard
	Se	82	83.2	5.4	**0.5424**	0.039	7.2	ug/L	10	Standard
	Se-1	77	168.0	16.6	**1.4562**	0.351	24.1	ug/L	57	Standard
>	Ga	71	25978.9	1.2				mg/L	78	Standard
	Rb	85	6072.9	3.7				ug/L	22	Standard
	Y	89	403894.5	0.9				ug/L	388959	Standard
>	Rh	103	1425.1	2.1				ug/L	8	Standard
	Mo	98	129654.3	0.7	**49.2551**	0.544	1.1	ug/L	10	Standard
	Ag	107	2788.9	0.2	**0.4145**	0.002	0.6	ug/L	66	Standard
	Cd	111	15029.9	0.5	**7.2263**	0.031	0.4	mg/L	3	Standard
	Cd	114	38459.3	2.4	**7.5633**	0.203	2.7	ug/L	4	Standard
>	In	115	541434.3	0.4				ug/L	523327	Standard
	Sn	118	406483.6	2.1	**70.7295**	1.493	2.1	ug/L	488	Standard
	Sb	123	28087.5	0.7	**5.9559**	0.069	1.2	ug/L	195	Standard
	Ba	135	2887892.3	0.6	**1446.1112**	8.219	0.6	ug/L	28	Standard
	Ce	140	11591.1	1.9				ug/L	83	Standard
>	Tb	159	823197.7	1.0				ug/L	809211	Standard
	Ho	165	278.3	6.3				ug/L	13	Standard
	Tl	203	315.0	10.0	**0.0366**	0.004	10.5	ug/L	4	Standard
	Tl	205	273.3	14.9	**0.0365**	0.006	16.1	ug/L	8	Standard
	Pb	206	3279147.8	0.5	**640.0029**	3.150	0.5	ug/L	230	Standard
	Pb	207	2624108.2	0.6	**564.2586**	3.674	0.7	ug/L	184	Standard
	Pb	208	11316404.6	0.1	**594.9222**	0.591	0.1	ug/L	775	Standard
	U	238	375.3	3.5	**0.0530**	0.002	3.7	ug/L	3	Standard
>	Bi	209	490093.9	0.1				ug/L	472452	Standard

Sample ID: L1607009001
Report Date/Time: Thursday, July 07, 2016 11:22:51
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1298.4	3.9	**1.6136**	0.097	6.0	mg/L	52	Standard
K	39	98.3	5.9	**0.3060**	0.038	12.5	mg/L	32	Standard
Ca	43	46.7	40.6	**1.8360**	2.391	130.2	mg/L	33	Standard
Fe	54	180576.1	1.3	**141.6848**	3.465	2.4	mg/L	138	Standard
Fe	57	47255.3	1.9	**138.3183**	1.315	1.0	mg/L	263	Standard
> **Sc-1**	45	29508.7	2.9				mg/L	27861	Standard
Cl	35	161361.6	2.0				ug/L	100607	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	7101.7	15.5				ug/L	1777	Standard
P	31	24177.6	2.4				ug/L	18074	Standard
S	34	5227.6	5.1				ug/L	3901	Standard
Sr	88	243.3	16.5				ug/L	60	Standard
C	12	166.7	9.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1020.0	8.5				mg/L	7	Standard
Dy	164	393.4	4.4				mg/L	13	Standard
Ho-1	165	278.3	6.3				mg/L	13	Standard
Er	166	206.7	26.6				mg/L	3	Standard
I	127	102473.4	7.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.346	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.321	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607009001
Report Date/Time: Thursday, July 07, 2016 11:22:51
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.460
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.734
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1607009001
Report Date/Time: Thursday, July 07, 2016 11:22:51
Page 3

Approved: July 08, 2016

Ni 60 Upper, S, EEE	Ni	60
Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606165236
Sample Date/Time: Thursday, July 07, 2016 11:23:45
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65451.1	1.4				ug/L	59299	Standard
	Be	9	18.3	83.3	**0.0214**	0.017	79.3	ug/L	17	Standard
	Al	27	13974.8	5.5	**0.0818**	0.004	4.9	ug/L	1472	Standard
	Sc	45	29420.2	1.6				ug/L	27861	Standard
	Ti	47	39.0	9.2	**0.0433**	0.015	35.1	ug/L	28	Standard
	V	51	1060.0	13.4	**-0.0252**	0.020	79.6	ug/L	1156	Standard
	Cr	52	7883.4	2.7	**0.1226**	0.036	29.3	ug/L	6689	Standard
	Cr	53	1386.7	5.6	**1.1324**	0.083	7.4	ug/L	348	Standard
	Mn	55	1919.8	15.9	**0.1636**	0.047	28.7	ug/L	770	Standard
	Co	59	248.7	7.6	**0.0006**	0.003	451.1	ug/L	216	Standard
	Ni	60	578.7	1.3	**0.0515**	0.002	3.9	ug/L	440	Standard
	Cu	65	4144.9	30.6	**2.1532**	0.679	31.5	ug/L	116	Standard
	Zn	66	1738.8	1.6	**1.3595**	0.038	2.8	ug/L	135	Standard
>	**Ge**	72	465199.3	0.9				ug/L	445277	Standard
	As	75	19.0	213.1	**0.0542**	0.036	65.7	ug/L	-57	Standard
	Se	82	47.1	21.2	**0.2626**	0.089	34.1	ug/L	10	Standard
	Se-1	77	96.7	22.7	**0.6211**	0.275	44.3	ug/L	57	Standard
>	**Ga**	71	33.3	8.7				mg/L	78	Standard
	Rb	85	131.7	25.3				ug/L	22	Standard
	Y	89	405234.4	0.6				ug/L	388959	Standard
>	**Rh**	103	30.0	44.1				ug/L	8	Standard
	Mo	98	130.5	12.6	**0.0422**	0.006	13.9	ug/L	10	Standard
	Ag	107	87.3	12.6	**-0.0004**	0.002	387.9	ug/L	66	Standard
	Cd	111	6.1	34.0	**-0.0007**	0.001	135.6	mg/L	3	Standard
	Cd	114	21.8	97.0	**0.0003**	0.004	1376.6	ug/L	4	Standard
>	**In**	115	550341.6	0.6				ug/L	523327	Standard
	Sn	118	1175.0	23.1	**0.1258**	0.047	37.3	ug/L	488	Standard
	Sb	123	277.3	27.5	**0.0414**	0.016	38.9	ug/L	195	Standard
	Ba	135	1348.1	17.2	**0.6466**	0.112	17.2	ug/L	28	Standard
	Ce	140	60.0	22.0				ug/L	83	Standard
>	**Tb**	159	842951.4	0.7				ug/L	809211	Standard
	Ho	165	8.3	91.7				ug/L	13	Standard
	Tl	203	23.3	47.0	**0.0009**	0.001	152.7	ug/L	4	Standard
	Tl	205	16.7	17.3	**-0.0001**	0.000	280.3	ug/L	8	Standard
	Pb	206	693.4	30.4	**0.0856**	0.040	46.4	ug/L	230	Standard
	Pb	207	592.7	24.3	**0.0831**	0.030	35.9	ug/L	184	Standard
	Pb	208	2520.8	25.5	**0.0851**	0.033	38.3	ug/L	775	Standard
	U	238	4.0	25.0	**-0.0001**	0.000	114.0	ug/L	3	Standard
>	**Bi**	209	496273.9	0.8				ug/L	472452	Standard

Sample ID: L1606165236
Report Date/Time: Thursday, July 07, 2016 11:26:02
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	701.7	10.1	**0.8443**	0.099	11.7	mg/L	52	Standard
K	39	18.3	83.3	**-0.0451**	0.069	152.6	mg/L	32	Standard
Ca	43	21.7	58.1	**-1.2212**	1.489	121.9	mg/L	33	Standard
Fe	54	179.0	4.6	**0.0293**	0.005	15.6	mg/L	138	Standard
Fe	57	275.0	16.2	**0.1337**	0.118	88.3	mg/L	263	Standard
> **Sc-1**	45	29420.2	1.6				mg/L	27861	Standard
Cl	35	111616.4	1.7				ug/L	100607	Standard
Kr	83	2.7	108.3				ug/L	2	Standard
Br	81	6704.8	1.5				ug/L	1777	Standard
P	31	22049.4	2.9				ug/L	18074	Standard
S	34	4887.5	3.0				ug/L	3901	Standard
Sr	88	83.3	29.6				ug/L	60	Standard
C	12	93.3	12.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	7	Standard
Dy	164	5.7	94.0				mg/L	13	Standard
Ho-1	165	8.3	91.7				mg/L	13	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	17550.3	11.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.374	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.474	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606165236
Report Date/Time: Thursday, July 07, 2016 11:26:02
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.162
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.042
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606165238
Sample Date/Time: Thursday, July 07, 2016 11:26:57
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64811.7	0.9				ug/L	59299	Standard
	Be	9	11.7	24.7	**0.0142**	0.003	23.2	ug/L	17	Standard
	Al	27	15372.9	16.0	**0.0923**	0.017	18.2	ug/L	1472	Standard
	Sc	45	29341.7	2.4				ug/L	27861	Standard
	Ti	47	35.7	18.7	**0.0300**	0.027	90.8	ug/L	28	Standard
	V	51	1076.5	15.8	**-0.0225**	0.025	111.0	ug/L	1156	Standard
	Cr	52	7901.7	1.9	**0.1267**	0.024	19.2	ug/L	6689	Standard
	Cr	53	1458.4	0.5	**1.2142**	0.019	1.5	ug/L	348	Standard
	Mn	55	1608.8	16.8	**0.1168**	0.042	36.1	ug/L	770	Standard
	Co	59	251.7	6.8	**0.0011**	0.003	242.7	ug/L	216	Standard
	Ni	60	588.0	0.9	**0.0570**	0.004	7.5	ug/L	440	Standard
	Cu	65	2734.0	49.2	**1.4036**	0.725	51.7	ug/L	116	Standard
	Zn	66	2183.8	1.1	**1.7606**	0.011	0.6	ug/L	135	Standard
>	**Ge**	72	464490.2	0.7				ug/L	445277	Standard
	As	75	-69.3	36.7	**-0.0237**	0.023	95.8	ug/L	-57	Standard
	Se	82	18.1	31.1	**0.0112**	0.048	425.9	ug/L	10	Standard
	Se-1	77	106.3	10.4	**0.7504**	0.134	17.9	ug/L	57	Standard
>	**Ga**	71	48.3	33.3				mg/L	78	Standard
	Rb	85	101.7	43.0				ug/L	22	Standard
	Y	89	398769.7	0.9				ug/L	388959	Standard
>	**Rh**	103	26.7	71.0				ug/L	8	Standard
	Mo	98	57.0	23.7	**0.0147**	0.005	34.5	ug/L	10	Standard
	Ag	107	79.0	13.3	**-0.0017**	0.002	99.0	ug/L	66	Standard
	Cd	111	8.2	28.2	**0.0003**	0.001	376.2	mg/L	3	Standard
	Cd	114	11.1	185.5	**-0.0018**	0.004	228.4	ug/L	4	Standard
>	**In**	115	549884.8	0.5				ug/L	523327	Standard
	Sn	118	703.4	29.5	**0.0450**	0.036	79.6	ug/L	488	Standard
	Sb	123	198.3	31.2	**0.0249**	0.013	52.5	ug/L	195	Standard
	Ba	135	1101.0	15.4	**0.5257**	0.084	16.1	ug/L	28	Standard
	Ce	140	126.7	32.1				ug/L	83	Standard
>	**Tb**	159	831868.0	0.5				ug/L	809211	Standard
	Ho	165	6.7	114.6				ug/L	13	Standard
	Tl	203	23.3	24.7	**0.0009**	0.001	80.7	ug/L	4	Standard
	Tl	205	11.7	24.7	**-0.0008**	0.000	50.0	ug/L	8	Standard
	Pb	206	492.3	33.9	**0.0469**	0.031	67.2	ug/L	230	Standard
	Pb	207	431.0	37.6	**0.0488**	0.034	69.1	ug/L	184	Standard
	Pb	208	1729.4	35.7	**0.0440**	0.031	71.2	ug/L	775	Standard
	U	238	5.7	27.0	**0.0001**	0.000	196.9	ug/L	3	Standard
>	**Bi**	209	496017.7	0.8				ug/L	472452	Standard

Sample ID: L1606165238
Report Date/Time: Thursday, July 07, 2016 11:29:14
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	721.7	11.7	**0.8743**	0.133	15.3	mg/L	52	Standard
K	39	33.3	31.2	**0.0214**	0.050	233.2	mg/L	32	Standard
Ca	43	33.3	8.7	**0.2199**	0.424	193.0	mg/L	33	Standard
Fe	54	149.1	23.8	**0.0062**	0.028	450.2	mg/L	138	Standard
Fe	57	303.3	14.2	**0.2201**	0.118	53.4	mg/L	263	Standard
> **Sc-1**	45	29341.7	2.4				mg/L	27861	Standard
Cl	35	110408.2	1.8				ug/L	100607	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	2753.6	8.9				ug/L	1777	Standard
P	31	21074.6	1.1				ug/L	18074	Standard
S	34	4739.1	3.1				ug/L	3901	Standard
Sr	88	78.3	3.7				ug/L	60	Standard
C	12	86.7	33.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	6.0	180.1				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	12603.6	2.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.296	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.315	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606165238
Report Date/Time: Thursday, July 07, 2016 11:29:14
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.075
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.988
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 11:30:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63405.7	1.1				ug/L	59299	Standard
	Be	9	46116.8	3.8	**51.7516**	1.601	3.1	ug/L	17	Standard
	Al	27	7161462.7	1.2	**50.0462**	0.253	0.5	ug/L	1472	Standard
	Sc	45	29107.9	1.8				ug/L	27861	Standard
	Ti	47	24537.2	1.4	**100.5111**	2.225	2.2	ug/L	28	Standard
	V	51	344774.5	0.6	**49.9480**	0.681	1.4	ug/L	1156	Standard
	Cr	52	359934.4	0.4	**49.8838**	0.652	1.3	ug/L	6689	Standard
	Cr	53	45155.6	2.8	**50.3873**	1.791	3.6	ug/L	348	Standard
	Mn	55	329260.9	1.3	**50.7272**	0.793	1.6	ug/L	770	Standard
	Co	59	338352.9	1.3	**49.9197**	0.922	1.8	ug/L	216	Standard
	Ni	60	93483.2	1.5	**50.3652**	0.737	1.5	ug/L	440	Standard
	Cu	65	93306.1	1.3	**50.5558**	0.388	0.8	ug/L	116	Standard
	Zn	66	55002.3	0.5	**49.8813**	0.438	0.9	ug/L	135	Standard
>	Ge	72	457306.7	0.9				ug/L	445277	Standard
	As	75	55601.5	0.4	**49.6598**	0.295	0.6	ug/L	-57	Standard
	Se	82	5705.6	0.6	**50.0816**	0.554	1.1	ug/L	10	Standard
	Se-1	77	3878.5	1.5	**50.7985**	0.584	1.2	ug/L	57	Standard
>	Ga	71	50.0	26.5				mg/L	78	Standard
	Rb	85	813.4	6.2				ug/L	22	Standard
	Y	89	394891.6	0.6				ug/L	388959	Standard
>	Rh	103	28.3	36.7				ug/L	8	Standard
	Mo	98	255325.4	1.2	**97.3983**	1.403	1.4	ug/L	10	Standard
	Ag	107	321144.6	1.1	**49.4891**	0.691	1.4	ug/L	66	Standard
	Cd	111	101817.0	1.0	**49.1743**	0.571	1.2	mg/L	3	Standard
	Cd	114	249985.1	0.6	**49.3805**	0.169	0.3	ug/L	4	Standard
>	In	115	539236.7	0.4				ug/L	523327	Standard
	Sn	118	282903.7	1.3	**49.4061**	0.845	1.7	ug/L	488	Standard
	Sb	123	229250.4	0.3	**48.9293**	0.286	0.6	ug/L	195	Standard
	Ba	135	96197.8	0.7	**48.3515**	0.487	1.0	ug/L	28	Standard
	Ce	140	73.3	25.8				ug/L	83	Standard
>	Tb	159	824945.9	0.1				ug/L	809211	Standard
	Ho	165	6.7	43.3				ug/L	13	Standard
	Tl	203	397833.0	0.3	**49.7018**	0.078	0.2	ug/L	4	Standard
	Tl	205	345551.2	1.0	**50.3348**	0.430	0.9	ug/L	8	Standard
	Pb	206	253962.4	0.4	**50.5460**	0.289	0.6	ug/L	230	Standard
	Pb	207	229576.5	0.2	**50.3456**	0.143	0.3	ug/L	184	Standard
	Pb	208	949692.1	0.8	**50.9156**	0.369	0.7	ug/L	775	Standard
	U	238	347453.7	0.1	**50.7537**	0.142	0.3	ug/L	3	Standard
>	Bi	209	480182.6	0.2				ug/L	472452	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 11:32:27
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3892.2	4.5	**5.0322**	0.176	3.5	mg/L	52	Standard
K	39	966.7	5.3	**4.1772**	0.215	5.2	mg/L	32	Standard
Ca	43	45.0	11.1	**1.6825**	0.665	39.6	mg/L	33	Standard
Fe	54	6127.4	2.2	**4.7661**	0.176	3.7	mg/L	138	Standard
Fe	57	1836.8	5.8	**4.8014**	0.345	7.2	mg/L	263	Standard
Sc-1	45	29107.9	1.8				mg/L	27861	Standard
Cl	35	112323.5	0.9				ug/L	100607	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2123.5	8.5				ug/L	1777	Standard
P	31	21563.7	1.6				ug/L	18074	Standard
S	34	4930.8	3.8				ug/L	3901	Standard
Sr	88	65.0	23.1				ug/L	60	Standard
C	12	53.3	28.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	19.5	53.7				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	20685.8	3.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.503		
Al	27	100.092		
Sc	45			
Ti	47	100.511		
V	51	99.896		
Cr	52	99.768		
Cr	53			
Mn	55	101.454		
Co	59	99.839		
Ni	60	100.730		
Cu	65	101.112		
Zn	66	99.763		
> Ge	72		102.702	
As	75	99.320		
Se	82	100.163		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 11:32:27
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	97.398		
Ag	107	98.978		
Cd	111	98.349		
Cd	114			
In	115			103.040
Sn	118	98.812		
Sb	123	97.859		
Ba	135	96.703		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.404		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.831		
U	238	101.507		
Bi	209			101.636
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 11:32:27
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 11:33:21
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63009.1	2.6				ug/L	59299	Standard
	Be	9	38.3	19.9	**0.0447**	0.009	20.2	ug/L	17	Standard
	Al	27	4535.9	72.4	**0.0189**	0.023	120.3	ug/L	1472	Standard
	Sc	45	28585.3	3.9				ug/L	27861	Standard
	Ti	47	28.7	14.1	**0.0045**	0.017	381.0	ug/L	28	Standard
	V	51	1026.2	7.3	**-0.0263**	0.010	39.1	ug/L	1156	Standard
	Cr	52	6075.6	2.1	**-0.1076**	0.019	17.7	ug/L	6689	Standard
	Cr	53	883.4	8.3	**0.6001**	0.078	13.0	ug/L	348	Standard
	Mn	55	1060.0	32.2	**0.0369**	0.053	143.0	ug/L	770	Standard
	Co	59	268.7	25.9	**0.0045**	0.010	230.3	ug/L	216	Standard
	Ni	60	496.0	9.3	**0.0141**	0.025	175.0	ug/L	440	Standard
	Cu	65	1247.8	103.4	**0.6232**	0.704	112.9	ug/L	116	Standard
	Zn	66	467.3	8.6	**0.2317**	0.035	15.1	ug/L	135	Standard
>	**Ge**	72	453869.0	0.5				ug/L	445277	Standard
	As	75	-13.6	337.6	**0.0251**	0.041	164.3	ug/L	-57	Standard
	Se	82	25.8	29.1	**0.0835**	0.067	80.0	ug/L	10	Standard
	Se-1	77	71.3	4.9	**0.3157**	0.043	13.5	ug/L	57	Standard
>	**Ga**	71	43.3	58.1				mg/L	78	Standard
	Rb	85	41.7	66.1				ug/L	22	Standard
	Y	89	394419.3	2.2				ug/L	388959	Standard
>	**Rh**	103	41.7	25.0				ug/L	8	Standard
	Mo	98	252.6	15.1	**0.0892**	0.014	15.8	ug/L	10	Standard
	Ag	107	156.0	32.1	**0.0103**	0.008	73.8	ug/L	66	Standard
	Cd	111	23.6	45.7	**0.0077**	0.005	66.7	mg/L	3	Standard
	Cd	114	76.0	37.1	**0.0110**	0.005	49.9	ug/L	4	Standard
>	**In**	115	542461.9	0.4				ug/L	523327	Standard
	Sn	118	895.0	31.9	**0.0799**	0.050	62.1	ug/L	488	Standard
	Sb	123	650.8	38.5	**0.1215**	0.053	43.7	ug/L	195	Standard
	Ba	135	187.3	103.4	**0.0763**	0.096	126.5	ug/L	28	Standard
	Ce	140	23.3	86.6				ug/L	83	Standard
>	**Tb**	159	819822.1	1.9				ug/L	809211	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	109.3	58.8	**0.0115**	0.008	68.6	ug/L	4	Standard
	Tl	205	91.7	55.7	**0.0106**	0.007	68.5	ug/L	8	Standard
	Pb	206	444.3	49.8	**0.0390**	0.043	110.6	ug/L	230	Standard
	Pb	207	359.7	40.5	**0.0349**	0.031	89.7	ug/L	184	Standard
	Pb	208	1634.4	49.4	**0.0404**	0.042	104.7	ug/L	775	Standard
	U	238	89.0	51.4	**0.0121**	0.007	54.2	ug/L	3	Standard
>	**Bi**	209	488723.4	0.4				ug/L	472452	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 11:35:38
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.3379**	5.773	172.9	mg/L	0	Standard
Mg	24	73.3	35.0	**0.0314**	0.031	100.0	mg/L	52	Standard
K	39	23.3	32.7	**-0.0201**	0.038	188.9	mg/L	32	Standard
Ca	43	28.3	88.8	**-0.3600**	3.072	853.2	mg/L	33	Standard
Fe	54	167.8	15.3	**0.0250**	0.025	101.8	mg/L	138	Standard
Fe	57	276.7	10.0	**0.1660**	0.108	65.3	mg/L	263	Standard
> **Sc-1**	45	28585.3	3.9				mg/L	27861	Standard
Cl	35	112008.5	1.1				ug/L	100607	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	2213.5	2.7				ug/L	1777	Standard
P	31	20790.9	2.6				ug/L	18074	Standard
S	34	4690.7	1.2				ug/L	3901	Standard
Sr	88	61.7	26.1				ug/L	60	Standard
C	12	50.0	72.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	12.4	50.0				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	13702.9	1.3				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.930	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 11:35:38
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.656
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.444
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 11:35:38
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607010401
Sample Date/Time: Thursday, July 07, 2016 11:36:34
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69576.1	1.7				ug/L	59299	Standard
	Be	9	33.3	62.5	**0.0353**	0.021	59.4	ug/L	17	Standard
	Al	27	21615254.7	1.1	**137.6949**	1.802	1.3	ug/L	1472	Standard
	Sc	45	28972.7	1.9				ug/L	27861	Standard
	Ti	47	212.0	5.6	**0.7798**	0.056	7.1	ug/L	28	Standard
	V	51	2025.3	4.1	**0.1260**	0.012	9.3	ug/L	1156	Standard
	Cr	52	9717.1	2.6	**0.4390**	0.046	10.5	ug/L	6689	Standard
	Cr	53	4207.3	24.1	**4.4686**	1.203	26.9	ug/L	348	Standard
	Mn	55	541112.7	0.4	**85.7836**	0.888	1.0	ug/L	770	Standard
	Co	59	1465.1	4.8	**0.1869**	0.012	6.6	ug/L	216	Standard
	Ni	60	4127.6	2.6	**2.0414**	0.076	3.7	ug/L	440	Standard
	Cu	65	1572.4	4.1	**0.8186**	0.035	4.2	ug/L	116	Standard
	Zn	66	3691.8	1.8	**3.2580**	0.039	1.2	ug/L	135	Standard
>	**Ge**	72	444874.2	0.7				ug/L	445277	Standard
	As	75	776.1	6.5	**0.7492**	0.045	6.0	ug/L	-57	Standard
	Se	82	338.8	3.8	**2.9205**	0.132	4.5	ug/L	10	Standard
	Se-1	77	305.7	13.1	**3.5322**	0.572	16.2	ug/L	57	Standard
>	**Ga**	71	103.3	24.4				mg/L	78	Standard
	Rb	85	22124.5	2.9				ug/L	22	Standard
	Y	89	385670.5	1.1				ug/L	388959	Standard
>	**Rh**	103	266.7	11.3				ug/L	8	Standard
	Mo	98	345.9	10.2	**0.1306**	0.014	10.7	ug/L	10	Standard
	Ag	107	141.0	8.4	**0.0090**	0.002	20.2	ug/L	66	Standard
	Cd	111	77.4	6.7	**0.0352**	0.003	7.4	mg/L	3	Standard
	Cd	114	228.3	17.7	**0.0430**	0.009	19.9	ug/L	4	Standard
>	**In**	115	518702.2	0.6				ug/L	523327	Standard
	Sn	118	1181.7	15.1	**0.1393**	0.034	24.2	ug/L	488	Standard
	Sb	123	551.5	19.7	**0.1058**	0.025	23.2	ug/L	195	Standard
	Ba	135	61427.9	0.4	**32.0920**	0.236	0.7	ug/L	28	Standard
	Ce	140	3662.1	2.4				ug/L	83	Standard
>	**Tb**	159	803522.9	0.4				ug/L	809211	Standard
	Ho	165	55.0	31.5				ug/L	13	Standard
	Tl	203	177.3	11.5	**0.0214**	0.003	12.3	ug/L	4	Standard
	Tl	205	171.7	28.7	**0.0239**	0.008	31.9	ug/L	8	Standard
	Pb	206	1056.7	1.9	**0.1739**	0.004	2.2	ug/L	230	Standard
	Pb	207	920.0	9.7	**0.1702**	0.021	12.3	ug/L	184	Standard
	Pb	208	4002.9	1.2	**0.1807**	0.003	1.6	ug/L	775	Standard
	U	238	1346.7	2.0	**0.2067**	0.005	2.2	ug/L	3	Standard
>	**Bi**	209	455571.6	0.3				ug/L	472452	Standard

Sample ID: L1607010401
Report Date/Time: Thursday, July 07, 2016 11:38:51
Page 1

Approved: July 08, 2016

Na	23	6.7	86.6	**12.5353**	10.857	86.6	mg/L	0	Standard
Mg	24	35917.5	1.8	**47.2074**	0.197	0.4	mg/L	52	Standard
K	39	410.0	6.1	**1.7067**	0.089	5.2	mg/L	32	Standard
Ca	43	526.7	16.0	**61.1704**	11.307	18.5	mg/L	33	Standard
Fe	54	366.0	15.2	**0.1808**	0.043	23.7	mg/L	138	Standard
Fe	57	681.7	16.9	**1.3622**	0.312	22.9	mg/L	263	Standard
> **Sc-1**	45	28972.7	1.9				mg/L	27861	Standard
Cl	35	177997.8	2.2				ug/L	100607	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	76700.6	4.4				ug/L	1777	Standard
P	31	23312.9	2.0				ug/L	18074	Standard
S	34	4647.4	5.3				ug/L	3901	Standard
Sr	88	1070.0	5.3				ug/L	60	Standard
C	12	180.0	22.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	104.8	5.1				mg/L	13	Standard
Ho-1	165	55.0	31.5				mg/L	13	Standard
Er	166	40.0	25.0				mg/L	3	Standard
I	127	1092081.0	6.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.331	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.909	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607010401
Report Date/Time: Thursday, July 07, 2016 11:38:51
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.116
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.427
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1607010401
Report Date/Time: Thursday, July 07, 2016 11:38:51
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607010402
Sample Date/Time: Thursday, July 07, 2016 11:39:46
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65710.5	1.1				ug/L	59299	Standard
	Be	9	11.7	65.5	**0.0140**	0.008	59.3	ug/L	17	Standard
	Al	27	20990870.8	1.5	**141.5639**	0.846	0.6	ug/L	1472	Standard
	Sc	45	28590.3	2.0				ug/L	27861	Standard
	Ti	47	119.0	11.7	**0.3804**	0.057	14.9	ug/L	28	Standard
	V	51	1721.3	12.4	**0.0769**	0.031	39.9	ug/L	1156	Standard
	Cr	52	9802.8	1.0	**0.4310**	0.014	3.1	ug/L	6689	Standard
	Cr	53	1805.1	6.8	**1.6564**	0.138	8.3	ug/L	348	Standard
	Mn	55	1531786.6	0.7	**239.6174**	2.583	1.1	ug/L	770	Standard
	Co	59	1696.8	2.3	**0.2183**	0.005	2.1	ug/L	216	Standard
	Ni	60	4548.3	1.0	**2.2393**	0.012	0.6	ug/L	440	Standard
	Cu	65	1461.4	7.3	**0.7449**	0.054	7.3	ug/L	116	Standard
	Zn	66	6351.0	1.0	**5.6627**	0.067	1.2	ug/L	135	Standard
>	**Ge**	72	451274.6	0.5				ug/L	445277	Standard
	As	75	155.7	22.8	**0.1780**	0.031	17.6	ug/L	-57	Standard
	Se	82	96.1	6.4	**0.7118**	0.051	7.1	ug/L	10	Standard
	Se-1	77	120.3	6.8	**0.9796**	0.105	10.7	ug/L	57	Standard
>	**Ga**	71	48.3	29.9				mg/L	78	Standard
	Rb	85	5107.5	3.8				ug/L	22	Standard
	Y	89	384590.2	1.1				ug/L	388959	Standard
>	**Rh**	103	110.0	7.9				ug/L	8	Standard
	Mo	98	97.7	3.8	**0.0318**	0.002	4.7	ug/L	10	Standard
	Ag	107	82.0	8.5	**-0.0006**	0.001	202.0	ug/L	66	Standard
	Cd	111	31.5	12.8	**0.0121**	0.002	16.4	mg/L	3	Standard
	Cd	114	80.3	10.6	**0.0124**	0.002	14.2	ug/L	4	Standard
>	**In**	115	523015.1	0.2				ug/L	523327	Standard
	Sn	118	1356.7	3.4	**0.1690**	0.008	5.0	ug/L	488	Standard
	Sb	123	265.3	29.3	**0.0418**	0.017	41.1	ug/L	195	Standard
	Ba	135	38727.4	0.9	**20.0586**	0.184	0.9	ug/L	28	Standard
	Ce	140	576.7	1.8				ug/L	83	Standard
>	**Tb**	159	813230.0	1.4				ug/L	809211	Standard
	Ho	165	38.3	19.9				ug/L	13	Standard
	Tl	203	72.7	6.9	**0.0074**	0.001	8.9	ug/L	4	Standard
	Tl	205	86.7	39.3	**0.0105**	0.005	47.8	ug/L	8	Standard
	Pb	206	324.0	1.3	**0.0185**	0.001	3.7	ug/L	230	Standard
	Pb	207	289.3	11.5	**0.0227**	0.007	31.3	ug/L	184	Standard
	Pb	208	1249.0	10.8	**0.0233**	0.007	30.4	ug/L	775	Standard
	U	238	4561.0	1.2	**0.6854**	0.004	0.6	ug/L	3	Standard
>	**Bi**	209	466282.0	0.7				ug/L	472452	Standard

Sample ID: L1607010402
Report Date/Time: Thursday, July 07, 2016 11:42:03
Page 1

Approved: July 08, 2016

Na	23	11.7	24.7	**22.3159**	5.668	25.4	mg/L	0	Standard
Mg	24	7665.3	2.2	**10.1631**	0.415	4.1	mg/L	52	Standard
K	39	101.7	27.1	**0.3341**	0.125	37.4	mg/L	32	Standard
Ca	43	480.0	8.9	**56.0555**	4.640	8.3	mg/L	33	Standard
Fe	54	182.3	15.5	**0.0362**	0.023	64.4	mg/L	138	Standard
Fe	57	743.4	6.6	**1.5818**	0.181	11.4	mg/L	263	Standard
> **Sc-1**	45	28590.3	2.0				mg/L	27861	Standard
Cl	35	207924.5	1.4				ug/L	100607	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	17610.2	2.2				ug/L	1777	Standard
P	31	23079.2	1.9				ug/L	18074	Standard
S	34	4655.7	1.7				ug/L	3901	Standard
Sr	88	335.0	9.0				ug/L	60	Standard
C	12	216.7	16.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	44.8	54.5				mg/L	13	Standard
Ho-1	165	38.3	19.9				mg/L	13	Standard
Er	166	40.0	43.3				mg/L	3	Standard
I	127	389673.4	3.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.812	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.347	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607010402
Report Date/Time: Thursday, July 07, 2016 11:42:03
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.940
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.694
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607010403
Sample Date/Time: Thursday, July 07, 2016 11:42:57
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64684.5	1.1				ug/L	59299	Standard
	Be	9	25.0	60.0	**0.0288**	0.016	57.1	ug/L	17	Standard
	Al	27	9855401.6	1.6	**67.5139**	0.533	0.8	ug/L	1472	Standard
	Sc	45	29513.7	3.1				ug/L	27861	Standard
	Ti	47	1030.0	18.4	**4.1464**	0.789	19.0	ug/L	28	Standard
	V	51	4873.7	4.4	**0.5379**	0.030	5.6	ug/L	1156	Standard
	Cr	52	11347.3	4.4	**0.6444**	0.069	10.8	ug/L	6689	Standard
	Cr	53	1956.8	6.2	**1.8188**	0.138	7.6	ug/L	348	Standard
	Mn	55	2821657.7	0.4	**439.3946**	1.587	0.4	ug/L	770	Standard
	Co	59	5657.7	1.4	**0.8069**	0.012	1.5	ug/L	216	Standard
	Ni	60	8304.3	2.5	**4.2787**	0.111	2.6	ug/L	440	Standard
	Cu	65	2383.5	28.5	**1.2455**	0.370	29.7	ug/L	116	Standard
	Zn	66	21871.8	0.8	**19.8864**	0.136	0.7	ug/L	135	Standard
>	Ge	72	453422.9	0.2				ug/L	445277	Standard
	As	75	739.9	5.1	**0.7033**	0.034	4.8	ug/L	-57	Standard
	Se	82	65.5	10.4	**0.4364**	0.061	14.0	ug/L	10	Standard
	Se-1	77	93.7	13.5	**0.6154**	0.169	27.5	ug/L	57	Standard
>	Ga	71	421.7	12.0				mg/L	78	Standard
	Rb	85	12089.8	2.0				ug/L	22	Standard
	Y	89	395844.3	0.7				ug/L	388959	Standard
>	Rh	103	81.7	25.5				ug/L	8	Standard
	Mo	98	638.8	4.6	**0.2418**	0.011	4.7	ug/L	10	Standard
	Ag	107	120.3	34.9	**0.0053**	0.007	126.3	ug/L	66	Standard
	Cd	111	433.9	5.4	**0.2101**	0.013	6.1	mg/L	3	Standard
	Cd	114	1040.5	7.6	**0.2057**	0.017	8.5	ug/L	4	Standard
>	In	115	529005.4	0.7				ug/L	523327	Standard
	Sn	118	915.0	4.8	**0.0875**	0.008	8.6	ug/L	488	Standard
	Sb	123	438.4	6.1	**0.0788**	0.005	7.0	ug/L	195	Standard
	Ba	135	46372.9	0.9	**23.7513**	0.371	1.6	ug/L	28	Standard
	Ce	140	16360.5	0.5				ug/L	83	Standard
>	Tb	159	814290.9	0.6				ug/L	809211	Standard
	Ho	165	223.3	14.6				ug/L	13	Standard
	Tl	203	126.3	40.4	**0.0140**	0.007	47.2	ug/L	4	Standard
	Tl	205	103.3	37.6	**0.0127**	0.006	45.6	ug/L	8	Standard
	Pb	206	1964.1	12.7	**0.3465**	0.054	15.6	ug/L	230	Standard
	Pb	207	1574.4	14.0	**0.3057**	0.052	17.1	ug/L	184	Standard
	Pb	208	6706.3	9.6	**0.3170**	0.038	12.1	ug/L	775	Standard
	U	238	3189.0	1.1	**0.4686**	0.007	1.5	ug/L	3	Standard
>	Bi	209	476718.3	1.0				ug/L	472452	Standard

Sample ID: L1607010403
Report Date/Time: Thursday, July 07, 2016 11:45:14
Page 1

Approved: July 08, 2016

Na	23	5.0	173.2	**9.5301**	16.498	173.1	mg/L	0	Standard
Mg	24	6598.1	1.4	**8.4660**	0.347	4.1	mg/L	52	Standard
K	39	181.7	11.1	**0.6721**	0.100	14.8	mg/L	32	Standard
Ca	43	213.3	17.0	**22.0454**	5.080	23.0	mg/L	33	Standard
Fe	54	930.4	5.9	**0.6183**	0.022	3.6	mg/L	138	Standard
Fe	57	688.3	12.0	**1.3537**	0.304	22.4	mg/L	263	Standard
> **Sc-1**	45	29513.7	3.1				mg/L	27861	Standard
Cl	35	138645.7	2.5				ug/L	100607	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	10260.1	4.0				ug/L	1777	Standard
P	31	23935.6	1.0				ug/L	18074	Standard
S	34	4710.7	4.3				ug/L	3901	Standard
Sr	88	286.7	11.6				ug/L	60	Standard
C	12	196.7	17.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	7	Standard
Dy	164	325.0	20.8				mg/L	13	Standard
Ho-1	165	223.3	14.6				mg/L	13	Standard
Er	166	173.3	49.1				mg/L	3	Standard
I	127	65576.7	3.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.082	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.829	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607010403
Report Date/Time: Thursday, July 07, 2016 11:45:14
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.085
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.903
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607010404
Sample Date/Time: Thursday, July 07, 2016 11:46:09
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103175.3	3.1				ug/L	59299	Standard
	Be	9	23.3	49.5	**0.0174**	0.008	45.0	ug/L	17	Standard
	Al	27	91850165.0	2.1	**394.7002**	10.190	2.6	ug/L	1472	Standard
	Sc	45	27453.2	0.3				ug/L	27861	Standard
	Ti	47	1197.7	40.9	**5.0062**	2.054	41.0	ug/L	28	Standard
	V	51	4899.1	7.2	**0.5671**	0.049	8.7	ug/L	1156	Standard
	Cr	52	11564.4	0.7	**0.7341**	0.012	1.6	ug/L	6689	Standard
	Cr	53	4329.0	1.9	**4.6844**	0.104	2.2	ug/L	348	Standard
	Mn	55	267063.0	1.4	**42.9591**	0.911	2.1	ug/L	770	Standard
	Co	59	5200.2	0.3	**0.7664**	0.007	0.9	ug/L	216	Standard
	Ni	60	97126.3	0.4	**54.6797**	0.456	0.8	ug/L	440	Standard
	Cu	65	5186.6	9.1	**2.8819**	0.288	10.0	ug/L	116	Standard
	Zn	66	378227.2	1.4	**359.4927**	5.203	1.4	ug/L	135	Standard
>	**Ge**	72	437818.1	0.8				ug/L	445277	Standard
	As	75	547.8	5.9	**0.5482**	0.034	6.2	ug/L	-57	Standard
	Se	82	235.1	3.7	**2.0162**	0.076	3.8	ug/L	10	Standard
	Se-1	77	326.0	5.9	**3.8775**	0.234	6.0	ug/L	57	Standard
>	**Ga**	71	341.7	23.2				mg/L	78	Standard
	Rb	85	57624.4	0.6				ug/L	22	Standard
	Y	89	385267.1	2.6				ug/L	388959	Standard
>	**Rh**	103	395.0	21.6				ug/L	8	Standard
	Mo	98	148.0	5.6	**0.0537**	0.004	7.0	ug/L	10	Standard
	Ag	107	114.0	14.8	**0.0052**	0.003	54.6	ug/L	66	Standard
	Cd	111	474.7	5.4	**0.2412**	0.014	6.0	mg/L	3	Standard
	Cd	114	1109.4	7.8	**0.2300**	0.019	8.3	ug/L	4	Standard
>	**In**	115	505268.1	0.6				ug/L	523327	Standard
	Sn	118	1080.0	14.9	**0.1258**	0.029	22.9	ug/L	488	Standard
	Sb	123	249.7	16.3	**0.0403**	0.009	23.1	ug/L	195	Standard
	Ba	135	7357.8	1.4	**3.9309**	0.041	1.0	ug/L	28	Standard
	Ce	140	16382.2	2.3				ug/L	83	Standard
>	**Tb**	159	792243.4	0.5				ug/L	809211	Standard
	Ho	165	290.0	16.4				ug/L	13	Standard
	Tl	203	275.3	11.9	**0.0352**	0.004	12.7	ug/L	4	Standard
	Tl	205	231.7	6.9	**0.0340**	0.003	8.0	ug/L	8	Standard
	Pb	206	957.0	8.3	**0.1582**	0.018	11.4	ug/L	230	Standard
	Pb	207	829.0	6.9	**0.1540**	0.014	9.4	ug/L	184	Standard
	Pb	208	3494.5	7.2	**0.1570**	0.016	9.9	ug/L	775	Standard
	U	238	472.7	3.3	**0.0739**	0.002	3.4	ug/L	3	Standard
>	**Bi**	209	444277.3	0.5				ug/L	472452	Standard

Sample ID: L1607010404
Report Date/Time: Thursday, July 07, 2016 11:48:25
Page 1

Approved: July 08, 2016

Na	23	8.3	69.3	**16.5745**	11.462	69.2	mg/L	0	Standard
Mg	24	81575.7	1.7	**113.2381**	1.644	1.5	mg/L	52	Standard
K	39	986.7	9.2	**4.5304**	0.421	9.3	mg/L	32	Standard
Ca	43	671.7	12.4	**83.5115**	11.119	13.3	mg/L	33	Standard
Fe	54	458.6	2.9	**0.2754**	0.011	4.1	mg/L	138	Standard
Fe	57	1180.0	13.9	**3.0538**	0.515	16.9	mg/L	263	Standard
> **Sc-1**	45	27453.2	0.3				mg/L	27861	Standard
Cl	35	567492.9	0.3				ug/L	100607	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	45705.6	4.6				ug/L	1777	Standard
P	31	23833.7	1.3				ug/L	18074	Standard
S	34	4679.1	6.1				ug/L	3901	Standard
Sr	88	1568.4	6.2				ug/L	60	Standard
C	12	103.3	34.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	516.1	16.8				mg/L	13	Standard
Ho-1	165	290.0	16.4				mg/L	13	Standard
Er	166	290.0	37.3				mg/L	3	Standard
I	127	21198.2	4.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		173.991	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.325	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607010404
Report Date/Time: Thursday, July 07, 2016 11:48:25
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.549
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.037
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1607010404
Report Date/Time: Thursday, July 07, 2016 11:48:25
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607010405
Sample Date/Time: Thursday, July 07, 2016 11:49:20
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67620.6	2.8				ug/L	59299	Standard
	Be	9	23.3	12.4	**0.0260**	0.004	14.1	ug/L	17	Standard
	Al	27	21853050.9	2.0	**143.2413**	1.381	1.0	ug/L	1472	Standard
	Sc	45	29159.7	2.4				ug/L	27861	Standard
	Ti	47	141.3	12.8	**0.4723**	0.077	16.3	ug/L	28	Standard
	V	51	3083.7	13.1	**0.2766**	0.057	20.5	ug/L	1156	Standard
	Cr	52	10908.9	3.7	**0.5862**	0.050	8.5	ug/L	6689	Standard
	Cr	53	3832.2	3.0	**3.9589**	0.159	4.0	ug/L	348	Standard
	Mn	55	4583358.2	0.8	**715.8801**	7.454	1.0	ug/L	770	Standard
	Co	59	1804.4	0.8	**0.2340**	0.003	1.2	ug/L	216	Standard
	Ni	60	5839.8	3.5	**2.9418**	0.104	3.5	ug/L	440	Standard
	Cu	65	1383.4	53.1	**0.6995**	0.398	56.8	ug/L	116	Standard
	Zn	66	7850.4	1.3	**7.0321**	0.054	0.8	ug/L	135	Standard
>	**Ge**	72	452124.4	0.6				ug/L	445277	Standard
	As	75	452.9	12.7	**0.4460**	0.049	11.1	ug/L	-57	Standard
	Se	82	176.7	8.2	**1.4280**	0.125	8.7	ug/L	10	Standard
	Se-1	77	244.3	4.3	**2.6405**	0.151	5.7	ug/L	57	Standard
>	**Ga**	71	105.0	12.6				mg/L	78	Standard
	Rb	85	21962.6	0.2				ug/L	22	Standard
	Y	89	388045.4	1.5				ug/L	388959	Standard
>	**Rh**	103	303.3	23.1				ug/L	8	Standard
	Mo	98	141.3	5.4	**0.0490**	0.003	7.1	ug/L	10	Standard
	Ag	107	90.3	15.7	**0.0008**	0.002	298.1	ug/L	66	Standard
	Cd	111	8.7	99.4	**0.0007**	0.004	578.0	mg/L	3	Standard
	Cd	114	27.5	45.0	**0.0017**	0.003	149.1	ug/L	4	Standard
>	**In**	115	522821.9	0.9				ug/L	523327	Standard
	Sn	118	653.3	13.6	**0.0422**	0.016	36.9	ug/L	488	Standard
	Sb	123	253.5	6.0	**0.0392**	0.003	8.6	ug/L	195	Standard
	Ba	135	121881.9	0.6	**63.1901**	0.419	0.7	ug/L	28	Standard
	Ce	140	4017.2	1.3				ug/L	83	Standard
>	**Tb**	159	816839.7	0.8				ug/L	809211	Standard
	Ho	165	361.7	0.8				ug/L	13	Standard
	Tl	203	88.0	21.8	**0.0094**	0.002	26.5	ug/L	4	Standard
	Tl	205	93.3	24.2	**0.0115**	0.003	29.4	ug/L	8	Standard
	Pb	206	427.7	23.0	**0.0400**	0.020	50.8	ug/L	230	Standard
	Pb	207	370.7	23.7	**0.0413**	0.020	48.3	ug/L	184	Standard
	Pb	208	1513.7	21.0	**0.0382**	0.018	46.4	ug/L	775	Standard
	U	238	799.4	4.3	**0.1199**	0.006	4.6	ug/L	3	Standard
>	**Bi**	209	465185.5	0.3				ug/L	472452	Standard

Sample ID: L1607010405
Report Date/Time: Thursday, July 07, 2016 11:51:37
Page 1

Approved: July 08, 2016

Na	23	6.7	43.3	**12.4779**	5.337	42.8	mg/L	0	Standard
Mg	24	15496.3	3.1	**20.2086**	0.877	4.3	mg/L	52	Standard
K	39	460.0	2.9	**1.9194**	0.106	5.5	mg/L	32	Standard
Ca	43	533.3	15.5	**61.3939**	9.508	15.5	mg/L	33	Standard
Fe	54	1309.0	3.5	**0.9285**	0.041	4.5	mg/L	138	Standard
Fe	57	1140.0	2.4	**2.7191**	0.163	6.0	mg/L	263	Standard
Sc-1	45	29159.7	2.4				mg/L	27861	Standard
Cl	35	163884.3	1.1				ug/L	100607	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	35601.8	4.1				ug/L	1777	Standard
P	31	23772.0	2.0				ug/L	18074	Standard
S	34	4804.1	2.5				ug/L	3901	Standard
Sr	88	1206.7	13.9				ug/L	60	Standard
C	12	273.3	20.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	430.4	9.9				mg/L	13	Standard
Ho-1	165	361.7	0.8				mg/L	13	Standard
Er	166	410.0	16.0				mg/L	3	Standard
I	127	849773.8	5.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.033	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.538	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1607010405
Report Date/Time: Thursday, July 07, 2016 11:51:37
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.904
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.462
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607010701
Sample Date/Time: Thursday, July 07, 2016 11:52:32
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66167.6	2.5				ug/L	59299	Standard
	Be	9	41.7	36.7	**0.0464**	0.017	37.5	ug/L	17	Standard
	Al	27	15810840.8	0.5	**105.9375**	2.722	2.6	ug/L	1472	Standard
	Sc	45	28703.8	2.6				ug/L	27861	Standard
	Ti	47	523.3	17.2	**2.0553**	0.367	17.9	ug/L	28	Standard
	V	51	4559.2	3.2	**0.4935**	0.014	2.8	ug/L	1156	Standard
	Cr	52	11870.0	0.6	**0.7235**	0.030	4.2	ug/L	6689	Standard
	Cr	53	5697.7	5.3	**6.0812**	0.414	6.8	ug/L	348	Standard
	Mn	55	378985.8	1.4	**59.0634**	1.010	1.7	ug/L	770	Standard
	Co	59	2536.2	3.6	**0.3432**	0.017	4.9	ug/L	216	Standard
	Ni	60	10989.0	1.1	**5.7609**	0.086	1.5	ug/L	440	Standard
	Cu	65	1907.5	3.6	**0.9884**	0.049	4.9	ug/L	116	Standard
	Zn	66	6256.3	2.3	**5.5622**	0.063	1.1	ug/L	135	Standard
>	**Ge**	72	452251.9	1.2				ug/L	445277	Standard
	As	75	1380.1	3.3	**1.2828**	0.038	3.0	ug/L	-57	Standard
	Se	82	218.6	7.6	**1.8015**	0.162	9.0	ug/L	10	Standard
	Se-1	77	299.0	7.2	**3.3726**	0.293	8.7	ug/L	57	Standard
>	**Ga**	71	208.3	8.4				mg/L	78	Standard
	Rb	85	18571.4	0.7				ug/L	22	Standard
	Y	89	389409.0	0.5				ug/L	388959	Standard
>	**Rh**	103	171.7	6.7				ug/L	8	Standard
	Mo	98	917.3	1.7	**0.3524**	0.004	1.1	ug/L	10	Standard
	Ag	107	134.3	12.2	**0.0076**	0.002	32.7	ug/L	66	Standard
	Cd	111	9.7	46.7	**0.0012**	0.002	188.5	mg/L	3	Standard
	Cd	114	17.3	68.9	**-0.0004**	0.002	568.8	ug/L	4	Standard
>	**In**	115	525637.8	0.8				ug/L	523327	Standard
	Sn	118	846.7	17.1	**0.0764**	0.027	35.3	ug/L	488	Standard
	Sb	123	1427.7	6.2	**0.2961**	0.020	6.9	ug/L	195	Standard
	Ba	135	62417.0	0.7	**32.1778**	0.050	0.2	ug/L	28	Standard
	Ce	140	3675.4	1.7				ug/L	83	Standard
>	**Tb**	159	809226.8	0.6				ug/L	809211	Standard
	Ho	165	105.0	21.8				ug/L	13	Standard
	Tl	203	102.7	21.7	**0.0112**	0.003	24.9	ug/L	4	Standard
	Tl	205	78.3	30.2	**0.0092**	0.003	37.6	ug/L	8	Standard
	Pb	206	1408.7	3.7	**0.2409**	0.011	4.6	ug/L	230	Standard
	Pb	207	1244.4	2.2	**0.2385**	0.007	3.1	ug/L	184	Standard
	Pb	208	5082.7	4.0	**0.2350**	0.011	4.8	ug/L	775	Standard
	U	238	1804.8	1.2	**0.2707**	0.001	0.4	ug/L	3	Standard
>	**Bi**	209	466515.8	0.8				ug/L	472452	Standard

Sample ID: L1607010701
Report Date/Time: Thursday, July 07, 2016 11:54:48
Page 1

Approved: July 08, 2016

Na	23	3.3	86.6	**6.2636**	5.421	86.6	mg/L	0	Standard
Mg	24	23191.1	2.9	**30.7657**	1.503	4.9	mg/L	52	Standard
K	39	588.3	11.6	**2.5254**	0.240	9.5	mg/L	32	Standard
Ca	43	256.7	4.1	**28.0977**	1.757	6.3	mg/L	33	Standard
Fe	54	405.3	10.3	**0.2151**	0.026	12.1	mg/L	138	Standard
Fe	57	555.0	8.6	**1.0025**	0.151	15.1	mg/L	263	Standard
> **Sc-1**	45	28703.8	2.6				mg/L	27861	Standard
Cl	35	158640.2	1.1				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	44401.7	3.5				ug/L	1777	Standard
P	31	22376.5	1.8				ug/L	18074	Standard
S	34	4755.7	1.9				ug/L	3901	Standard
Sr	88	673.3	5.4				ug/L	60	Standard
C	12	213.3	13.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	169.5	13.5				mg/L	13	Standard
Ho-1	165	105.0	21.8				mg/L	13	Standard
Er	166	150.0	43.7				mg/L	3	Standard
I	127	728146.3	6.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.583	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.566	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607010701
Report Date/Time: Thursday, July 07, 2016 11:54:48
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.442	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.744	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1607010701
Report Date/Time: Thursday, July 07, 2016 11:54:48
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 11:55:44
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64324.7	3.1				ug/L	59299	Standard
	Be	9	47143.2	1.7	**52.1709**	0.860	1.6	ug/L	17	Standard
	Al	27	7062364.9	2.0	**48.6614**	0.753	1.5	ug/L	1472	Standard
	Sc	45	28207.9	1.0				ug/L	27861	Standard
	Ti	47	24075.1	1.4	**98.5276**	0.801	0.8	ug/L	28	Standard
	V	51	339321.7	1.3	**49.1139**	0.376	0.8	ug/L	1156	Standard
	Cr	52	353951.6	1.2	**48.9977**	0.476	1.0	ug/L	6689	Standard
	Cr	53	45234.1	2.7	**50.4249**	1.107	2.2	ug/L	348	Standard
	Mn	55	324801.9	0.7	**49.9991**	0.265	0.5	ug/L	770	Standard
	Co	59	337683.1	1.5	**49.7778**	0.456	0.9	ug/L	216	Standard
	Ni	60	91961.3	1.4	**49.5014**	0.372	0.8	ug/L	440	Standard
	Cu	65	91482.1	1.8	**49.5278**	0.600	1.2	ug/L	116	Standard
	Zn	66	54855.5	0.2	**49.7095**	0.255	0.5	ug/L	135	Standard
>	Ge	72	457645.2	0.6				ug/L	445277	Standard
	As	75	54629.9	0.8	**48.7546**	0.103	0.2	ug/L	-57	Standard
	Se	82	5643.3	1.9	**49.4919**	0.662	1.3	ug/L	10	Standard
	Se-1	77	3830.2	1.8	**50.1197**	0.807	1.6	ug/L	57	Standard
>	Ga	71	60.0	36.3				mg/L	78	Standard
	Rb	85	835.0	5.7				ug/L	22	Standard
	Y	89	393508.1	0.9				ug/L	388959	Standard
>	Rh	103	30.0	44.1				ug/L	8	Standard
	Mo	98	254685.6	0.6	**97.4715**	0.961	1.0	ug/L	10	Standard
	Ag	107	315247.3	0.8	**48.7385**	0.579	1.2	ug/L	66	Standard
	Cd	111	100542.2	0.5	**48.7194**	0.669	1.4	mg/L	3	Standard
	Cd	114	248070.6	0.3	**49.1657**	0.680	1.4	ug/L	4	Standard
>	In	115	537505.9	1.2				ug/L	523327	Standard
	Sn	118	276427.6	1.6	**48.4265**	0.435	0.9	ug/L	488	Standard
	Sb	123	226453.9	1.2	**48.4893**	0.531	1.1	ug/L	195	Standard
	Ba	135	95149.2	0.3	**47.9810**	0.473	1.0	ug/L	28	Standard
	Ce	140	66.7	22.9				ug/L	83	Standard
>	Tb	159	821632.5	1.5				ug/L	809211	Standard
	Ho	165	3.3	86.6				ug/L	13	Standard
	Tl	203	397400.9	0.5	**49.3710**	0.225	0.5	ug/L	4	Standard
	Tl	205	351145.8	0.6	**50.8647**	0.241	0.5	ug/L	8	Standard
	Pb	206	253584.2	0.6	**50.1893**	0.435	0.9	ug/L	230	Standard
	Pb	207	228335.4	0.6	**49.7952**	0.574	1.2	ug/L	184	Standard
	Pb	208	949055.2	0.4	**50.5987**	0.480	0.9	ug/L	775	Standard
	U	238	349855.2	0.8	**50.8203**	0.555	1.1	ug/L	3	Standard
>	Bi	209	482888.7	0.9				ug/L	472452	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 11:58:01
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4180.6	5.2	**5.5845**	0.251	4.5	mg/L	52	Standard
K	39	865.0	7.2	**3.8494**	0.325	8.4	mg/L	32	Standard
Ca	43	61.7	26.1	**3.9768**	2.125	53.4	mg/L	33	Standard
Fe	54	5919.0	6.2	**4.7498**	0.323	6.8	mg/L	138	Standard
Fe	57	1800.1	3.8	**4.8632**	0.260	5.4	mg/L	263	Standard
Sc-1	45	28207.9	1.0				mg/L	27861	Standard
Cl	35	130519.4	2.8				ug/L	100607	Standard
Kr	83	3.3	62.4				ug/L	2	Standard
Br	81	2546.9	11.8				ug/L	1777	Standard
P	31	22213.0	4.0				ug/L	18074	Standard
S	34	5262.6	1.7				ug/L	3901	Standard
Sr	88	68.3	15.2				ug/L	60	Standard
C	12	100.0	36.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	173.2				mg/L	7	Standard
Dy	164	5.1	222.3				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	13	Standard
Er	166	33.3	17.3				mg/L	3	Standard
I	127	34853.4	25.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.342		
Al	27	97.323		
Sc	45			
Ti	47	98.528		
V	51	98.228		
Cr	52	97.995		
Cr	53			
Mn	55	99.998		
Co	59	99.556		
Ni	60	99.003		
Cu	65	99.056		
Zn	66	99.419		
Ge	72		102.778	
As	75	97.509		
Se	82	98.984		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 11:58:01
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	97.471		
Ag	107	97.477		
Cd	111	97.439		
Cd	114			
In	115			102.709
Sn	118	96.853		
Sb	123	96.979		
Ba	135	95.962		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.742		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.197		
U	238	101.641		
Bi	209			102.209
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 11:58:01
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 11:58:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62975.7	3.3				ug/L	59299	Standard
	Be	9	53.3	5.4	**0.0617**	0.005	8.4	ug/L	17	Standard
	Al	27	4213.9	9.6	**0.0168**	0.003	16.9	ug/L	1472	Standard
	Sc	45	28839.1	1.3				ug/L	27861	Standard
	Ti	47	27.7	16.3	**0.0003**	0.019	7642.1	ug/L	28	Standard
	V	51	1246.2	3.5	**0.0057**	0.007	127.7	ug/L	1156	Standard
	Cr	52	6419.7	1.3	**-0.0597**	0.013	21.9	ug/L	6689	Standard
	Cr	53	783.4	6.7	**0.4862**	0.064	13.1	ug/L	348	Standard
	Mn	55	1020.7	3.7	**0.0307**	0.005	16.8	ug/L	770	Standard
	Co	59	257.3	6.0	**0.0028**	0.003	91.5	ug/L	216	Standard
	Ni	60	432.0	4.4	**-0.0211**	0.011	50.3	ug/L	440	Standard
	Cu	65	258.3	11.0	**0.0827**	0.015	17.6	ug/L	116	Standard
	Zn	66	450.0	6.5	**0.2154**	0.025	11.5	ug/L	135	Standard
>	**Ge**	72	454414.1	0.6				ug/L	445277	Standard
	As	75	-41.7	53.9	**-0.0002**	0.020	9430.1	ug/L	-57	Standard
	Se	82	19.1	36.6	**0.0234**	0.061	261.3	ug/L	10	Standard
	Se-1	77	66.3	4.8	**0.2480**	0.046	18.5	ug/L	57	Standard
>	**Ga**	71	48.3	15.8				mg/L	78	Standard
	Rb	85	40.0	21.7				ug/L	22	Standard
	Y	89	391078.3	1.3				ug/L	388959	Standard
>	**Rh**	103	18.3	41.7				ug/L	8	Standard
	Mo	98	219.7	9.1	**0.0771**	0.008	10.8	ug/L	10	Standard
	Ag	107	129.0	16.1	**0.0063**	0.003	53.9	ug/L	66	Standard
	Cd	111	15.3	54.4	**0.0038**	0.004	108.0	mg/L	3	Standard
	Cd	114	42.7	30.6	**0.0045**	0.003	58.2	ug/L	4	Standard
>	**In**	115	540120.4	1.1				ug/L	523327	Standard
	Sn	118	893.4	17.8	**0.0802**	0.027	33.1	ug/L	488	Standard
	Sb	123	637.8	30.8	**0.1190**	0.041	34.2	ug/L	195	Standard
	Ba	135	64.3	3.2	**0.0151**	0.001	4.9	ug/L	28	Standard
	Ce	140	18.3	31.5				ug/L	83	Standard
>	**Tb**	159	817889.2	1.4				ug/L	809211	Standard
	Ho	165	11.7	24.7				ug/L	13	Standard
	Tl	203	93.3	20.1	**0.0095**	0.002	24.2	ug/L	4	Standard
	Tl	205	80.0	25.0	**0.0090**	0.003	31.7	ug/L	8	Standard
	Pb	206	290.7	12.0	**0.0091**	0.007	74.3	ug/L	230	Standard
	Pb	207	266.0	16.6	**0.0148**	0.010	64.6	ug/L	184	Standard
	Pb	208	1102.0	7.3	**0.0126**	0.004	33.7	ug/L	775	Standard
	U	238	71.7	22.4	**0.0096**	0.002	23.9	ug/L	3	Standard
>	**Bi**	209	487459.9	0.1				ug/L	472452	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 12:01:12
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	68.3	22.4	**0.0249**	0.022	86.5	mg/L	52	Standard
K	39	28.3	53.9	**0.0003**	0.068	22063.5	mg/L	32	Standard
Ca	43	8.3	34.6	**-2.8077**	0.363	12.9	mg/L	33	Standard
Fe	54	132.7	22.1	**-0.0049**	0.024	491.9	mg/L	138	Standard
Fe	57	225.0	30.9	**-0.0010**	0.201	19563.4	mg/L	263	Standard
Sc-1	45	28839.1	1.3				mg/L	27861	Standard
Cl	35	127614.5	0.4				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2040.1	4.8				ug/L	1777	Standard
P	31	23049.3	7.7				ug/L	18074	Standard
S	34	5105.9	3.3				ug/L	3901	Standard
Sr	88	88.3	27.9				ug/L	60	Standard
C	12	63.3	39.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	7	Standard
Dy	164	15.2	104.5				mg/L	13	Standard
Ho-1	165	11.7	24.7				mg/L	13	Standard
Er	166	30.0	57.7				mg/L	3	Standard
I	127	16155.3	6.3				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.052	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 12:01:12
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.209
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.177
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 12:01:12
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: PBW D2 WG575435-03
Sample Date/Time: Thursday, July 07, 2016 12:09:01
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58097.9	3.7				ug/L	59299	Standard
	Be	9	26.7	84.5	**0.0335**	0.026	78.5	ug/L	17	Standard
	Al	27	4935.9	45.3	**0.0251**	0.018	72.9	ug/L	1472	Standard
	Sc	45	25766.9	1.6				ug/L	27861	Standard
	Ti	47	20.7	20.1	**-0.0221**	0.019	88.1	ug/L	28	Standard
	V	51	1062.6	13.1	**-0.0095**	0.022	230.0	ug/L	1156	Standard
	Cr	52	9995.3	3.5	**0.5557**	0.039	7.1	ug/L	6689	Standard
	Cr	53	1166.7	7.6	**1.0203**	0.122	11.9	ug/L	348	Standard
	Mn	55	636.0	17.5	**-0.0218**	0.017	78.9	ug/L	770	Standard
	Co	59	190.7	9.9	**-0.0050**	0.003	66.0	ug/L	216	Standard
	Ni	60	421.3	1.3	**-0.0096**	0.001	15.1	ug/L	440	Standard
	Cu	65	1231.4	4.5	**0.6646**	0.023	3.5	ug/L	116	Standard
	Zn	66	784.7	0.9	**0.5764**	0.011	1.9	ug/L	135	Standard
>	**Ge**	72	422524.3	1.3				ug/L	445277	Standard
	As	75	-42.5	17.3	**-0.0037**	0.007	182.3	ug/L	-57	Standard
	Se	82	17.0	30.9	**0.0164**	0.051	311.6	ug/L	10	Standard
	Se-1	77	54.7	8.2	**0.1478**	0.073	49.7	ug/L	57	Standard
>	**Ga**	71	30.0	16.7				mg/L	78	Standard
	Rb	85	31.7	9.1				ug/L	22	Standard
	Y	89	366536.7	2.0				ug/L	388959	Standard
>	**Rh**	103	23.3	12.4				ug/L	8	Standard
	Mo	98	38.5	36.9	**0.0094**	0.006	62.0	ug/L	10	Standard
	Ag	107	73.7	21.5	**-0.0012**	0.003	216.3	ug/L	66	Standard
	Cd	111	8.3	38.8	**0.0007**	0.002	224.0	mg/L	3	Standard
	Cd	114	18.3	31.4	**0.0000**	0.001	4166.7	ug/L	4	Standard
>	**In**	115	493876.5	0.4				ug/L	523327	Standard
	Sn	118	810.0	3.4	**0.0790**	0.005	6.4	ug/L	488	Standard
	Sb	123	357.8	37.7	**0.0667**	0.031	46.6	ug/L	195	Standard
	Ba	135	33.3	28.8	**0.0011**	0.005	478.3	ug/L	28	Standard
	Ce	140	21.7	81.0				ug/L	83	Standard
>	**Tb**	159	768258.1	0.8				ug/L	809211	Standard
	Ho	165	8.3	34.6				ug/L	13	Standard
	Tl	203	24.3	35.9	**0.0012**	0.001	93.2	ug/L	4	Standard
	Tl	205	15.0	33.3	**-0.0002**	0.001	340.6	ug/L	8	Standard
	Pb	206	1783.8	1.6	**0.3212**	0.005	1.6	ug/L	230	Standard
	Pb	207	1542.4	4.2	**0.3090**	0.014	4.5	ug/L	184	Standard
	Pb	208	6520.9	1.9	**0.3178**	0.006	1.8	ug/L	775	Standard
	U	238	12.7	91.2	**0.0012**	0.002	141.8	ug/L	3	Standard
>	**Bi**	209	462190.3	0.5				ug/L	472452	Standard

Sample ID: PBW D2 WG575435-03
Report Date/Time: Thursday, July 07, 2016 12:11:18
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	60.0	8.3	**0.0231**	0.006	26.0	mg/L	52	Standard
K	39	36.7	7.9	**0.0580**	0.017	29.6	mg/L	32	Standard
Ca	43	31.7	48.2	**0.5687**	2.177	382.9	mg/L	33	Standard
Fe	54	67.1	17.2	**-0.0513**	0.010	18.9	mg/L	138	Standard
Fe	57	256.7	23.5	**0.1875**	0.199	106.4	mg/L	263	Standard
> **Sc-1**	45	25766.9	1.6				mg/L	27861	Standard
Cl	35	123004.7	1.5				ug/L	100607	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	1763.4	6.8				ug/L	1777	Standard
P	31	10300.2	5.4				ug/L	18074	Standard
S	34	4932.5	2.4				ug/L	3901	Standard
Sr	88	101.7	18.6				ug/L	60	Standard
C	12	60.0	33.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.9	203.0				mg/L	13	Standard
Ho-1	165	8.3	34.6				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	13304.2	2.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.974	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.890	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW D2 WG575435-03
Report Date/Time: Thursday, July 07, 2016 12:11:18
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.372
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.828
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW D2 WG575435-03
Report Date/Time: Thursday, July 07, 2016 12:11:18
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: LCSW D2 WG575435-04
Sample Date/Time: Thursday, July 07, 2016 12:12:13
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59479.9	1.7				ug/L	59299	Standard
	Be	9	44690.8	1.3	**53.4750**	0.820	1.5	ug/L	17	Standard
	Al	27	9821.5	0.7	**0.0604**	0.001	1.2	ug/L	1472	Standard
	Sc	45	28254.7	2.5				ug/L	27861	Standard
	Ti	47	28.3	2.0	**0.0047**	0.003	63.8	ug/L	28	Standard
	V	51	336308.6	0.8	**49.7536**	0.521	1.0	ug/L	1156	Standard
	Cr	52	355314.3	0.6	**50.2942**	0.205	0.4	ug/L	6689	Standard
	Cr	53	44480.2	0.8	**50.6813**	0.215	0.4	ug/L	348	Standard
	Mn	55	325055.6	0.8	**51.1425**	0.448	0.9	ug/L	770	Standard
	Co	59	329326.0	1.4	**49.6173**	0.816	1.6	ug/L	216	Standard
	Ni	60	91987.1	0.8	**50.6139**	0.610	1.2	ug/L	440	Standard
	Cu	65	92477.0	0.6	**51.1753**	0.678	1.3	ug/L	116	Standard
	Zn	66	55966.2	0.4	**51.8400**	0.247	0.5	ug/L	135	Standard
>	**Ge**	72	447799.3	0.9				ug/L	445277	Standard
	As	75	53387.6	1.2	**48.6956**	0.640	1.3	ug/L	-57	Standard
	Se	82	5503.7	2.9	**49.3322**	1.429	2.9	ug/L	10	Standard
	Se-1	77	3675.8	2.4	**49.1420**	0.832	1.7	ug/L	57	Standard
>	**Ga**	71	53.3	39.0				mg/L	78	Standard
	Rb	85	58.3	17.8				ug/L	22	Standard
	Y	89	386924.8	2.3				ug/L	388959	Standard
>	**Rh**	103	35.0	37.8				ug/L	8	Standard
	Mo	98	68.4	9.5	**0.0196**	0.003	13.2	ug/L	10	Standard
	Ag	107	316154.8	0.3	**48.8412**	0.642	1.3	ug/L	66	Standard
	Cd	111	100381.0	1.2	**48.5976**	0.232	0.5	mg/L	3	Standard
	Cd	114	247375.1	1.0	**48.9840**	0.147	0.3	ug/L	4	Standard
>	**In**	115	537936.9	1.2				ug/L	523327	Standard
	Sn	118	750.0	3.7	**0.0559**	0.006	10.9	ug/L	488	Standard
	Sb	123	214526.0	2.4	**45.8968**	1.061	2.3	ug/L	195	Standard
	Ba	135	94449.1	0.4	**47.5919**	0.741	1.6	ug/L	28	Standard
	Ce	140	50.0	26.5				ug/L	83	Standard
>	**Tb**	159	804270.7	1.1				ug/L	809211	Standard
	Ho	165	3.3	86.6				ug/L	13	Standard
	Tl	203	395401.9	0.3	**49.3661**	0.304	0.6	ug/L	4	Standard
	Tl	205	343155.8	0.5	**49.9543**	0.457	0.9	ug/L	8	Standard
	Pb	206	256723.0	0.4	**51.0627**	0.379	0.7	ug/L	230	Standard
	Pb	207	224144.1	0.4	**49.1208**	0.198	0.4	ug/L	184	Standard
	Pb	208	953553.2	0.4	**51.0897**	0.336	0.7	ug/L	775	Standard
	U	238	337670.6	0.4	**49.2921**	0.185	0.4	ug/L	3	Standard
>	**Bi**	209	480506.6	0.7				ug/L	472452	Standard

Sample ID: LCSW D2 WG575435-04
Report Date/Time: Thursday, July 07, 2016 12:14:30
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.3208**	5.743	172.9	mg/L	0	Standard
Mg	24	60.0	30.0	**0.0149**	0.023	151.6	mg/L	52	Standard
K	39	38.3	7.5	**0.0494**	0.016	32.4	mg/L	32	Standard
Ca	43	18.3	15.7	**-1.5298**	0.312	20.4	mg/L	33	Standard
Fe	54	130.1	27.0	**-0.0045**	0.031	685.2	mg/L	138	Standard
Fe	57	253.3	24.7	**0.1020**	0.190	186.1	mg/L	263	Standard
Sc-1	45	28254.7	2.5				mg/L	27861	Standard
Cl	35	129535.5	1.6				ug/L	100607	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	2063.5	3.4				ug/L	1777	Standard
P	31	20939.5	2.3				ug/L	18074	Standard
S	34	5050.8	2.4				ug/L	3901	Standard
Sr	88	101.7	14.2				ug/L	60	Standard
C	12	60.0	44.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	9.2	111.8				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	13	Standard
Er	166	16.7	124.9				mg/L	3	Standard
I	127	12143.2	3.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		100.305	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.566	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: LCSW D2 WG575435-04
Report Date/Time: Thursday, July 07, 2016 12:14:30
Page 2

Approved: July 08, 2016

Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	102.792
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	101.705
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW D2 WG575435-04
Report Date/Time: Thursday, July 07, 2016 12:14:30
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: F BLANK WG575435-05
Sample Date/Time: Thursday, July 07, 2016 12:15:24
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60346.6	2.0				ug/L	59299	Standard
	Be	9	15.0	33.3	**0.0190**	0.006	31.4	ug/L	17	Standard
	Al	27	12126.7	21.8	**0.0765**	0.021	27.3	ug/L	1472	Standard
	Sc	45	27479.9	2.3				ug/L	27861	Standard
	Ti	47	30.0	10.0	**0.0118**	0.013	110.9	ug/L	28	Standard
	V	51	1345.8	7.7	**0.0234**	0.014	62.0	ug/L	1156	Standard
	Cr	52	8669.5	1.0	**0.2800**	0.006	2.3	ug/L	6689	Standard
	Cr	53	1015.0	6.9	**0.7665**	0.075	9.8	ug/L	348	Standard
	Mn	55	1948.5	9.5	**0.1798**	0.029	16.2	ug/L	770	Standard
	Co	59	306.3	11.9	**0.0108**	0.006	51.1	ug/L	216	Standard
	Ni	60	525.0	10.6	**0.0341**	0.029	86.3	ug/L	440	Standard
	Cu	65	266.7	4.3	**0.0897**	0.007	7.7	ug/L	116	Standard
	Zn	66	1948.5	2.4	**1.6171**	0.035	2.2	ug/L	135	Standard
>	**Ge**	72	447189.8	0.5				ug/L	445277	Standard
	As	75	-26.3	91.3	**0.0133**	0.022	164.2	ug/L	-57	Standard
	Se	82	19.3	21.5	**0.0282**	0.038	134.3	ug/L	10	Standard
	Se-1	77	66.3	2.3	**0.2622**	0.018	6.8	ug/L	57	Standard
>	**Ga**	71	45.0	19.2				mg/L	78	Standard
	Rb	85	58.3	4.9				ug/L	22	Standard
	Y	89	384400.7	1.3				ug/L	388959	Standard
>	**Rh**	103	15.0	66.7				ug/L	8	Standard
	Mo	98	51.6	52.9	**0.0133**	0.010	78.8	ug/L	10	Standard
	Ag	107	173.3	5.5	**0.0134**	0.001	10.2	ug/L	66	Standard
	Cd	111	26.9	56.2	**0.0095**	0.007	77.0	mg/L	3	Standard
	Cd	114	79.3	37.9	**0.0119**	0.006	49.8	ug/L	4	Standard
>	**In**	115	532940.4	0.5				ug/L	523327	Standard
	Sn	118	708.3	8.3	**0.0497**	0.010	20.3	ug/L	488	Standard
	Sb	123	2636.2	31.6	**0.5524**	0.178	32.2	ug/L	195	Standard
	Ba	135	117.7	13.5	**0.0426**	0.008	18.5	ug/L	28	Standard
	Ce	140	53.3	47.2				ug/L	83	Standard
>	**Tb**	159	805670.8	0.3				ug/L	809211	Standard
	Ho	165	5.0	100.0				ug/L	13	Standard
	Tl	203	186.0	31.2	**0.0212**	0.007	32.9	ug/L	4	Standard
	Tl	205	138.3	41.1	**0.0176**	0.008	45.7	ug/L	8	Standard
	Pb	206	371.7	13.4	**0.0260**	0.009	34.6	ug/L	230	Standard
	Pb	207	332.0	13.9	**0.0301**	0.009	30.4	ug/L	184	Standard
	Pb	208	1416.0	13.1	**0.0302**	0.009	29.9	ug/L	775	Standard
	U	238	116.0	41.1	**0.0162**	0.007	41.5	ug/L	3	Standard
>	**Bi**	209	480125.5	1.4				ug/L	472452	Standard

Sample ID: F BLANK WG575435-05
Report Date/Time: Thursday, July 07, 2016 12:17:41
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	60.0	22.0	**0.0174**	0.017	98.2	mg/L	52	Standard
K	39	15.0	57.7	**-0.0561**	0.040	70.9	mg/L	32	Standard
Ca	43	18.3	63.0	**-1.4815**	1.465	98.9	mg/L	33	Standard
Fe	54	130.9	15.6	**-0.0011**	0.018	1560.0	mg/L	138	Standard
Fe	57	250.0	10.0	**0.1124**	0.064	57.2	mg/L	263	Standard
> **Sc-1**	45	27479.9	2.3				mg/L	27861	Standard
Cl	35	128311.0	0.6				ug/L	100607	Standard
Kr	83	3.7	103.3				ug/L	2	Standard
Br	81	1873.4	8.5				ug/L	1777	Standard
P	31	20872.7	1.8				ug/L	18074	Standard
S	34	4942.5	3.7				ug/L	3901	Standard
Sr	88	86.7	17.6				ug/L	60	Standard
C	12	73.3	34.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	9.5	107.6				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	5852.8	2.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.766	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.429	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: F BLANK WG575435-05
Report Date/Time: Thursday, July 07, 2016 12:17:41
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.837
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.624
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: F BLANK WG575435-09
Sample Date/Time: Thursday, July 07, 2016 12:18:36
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54409.2	3.2				ug/L	59299	Standard
	Be	9	11.7	65.5	**0.0164**	0.009	57.4	ug/L	17	Standard
	Al	27	1495.1	15.9	**-0.0007**	0.002	234.5	ug/L	1472	Standard
	Sc	45	24915.5	2.7				ug/L	27861	Standard
	Ti	47	18.0	48.4	**-0.0323**	0.040	122.5	ug/L	28	Standard
	V	51	1156.9	6.0	**0.0097**	0.011	113.3	ug/L	1156	Standard
	Cr	52	4963.5	2.0	**-0.1956**	0.017	8.7	ug/L	6689	Standard
	Cr	53	443.3	16.5	**0.1514**	0.088	57.9	ug/L	348	Standard
	Mn	55	350.7	11.8	**-0.0680**	0.007	9.9	ug/L	770	Standard
	Co	59	187.7	7.4	**-0.0048**	0.002	44.6	ug/L	216	Standard
	Ni	60	399.3	5.9	**-0.0169**	0.015	91.7	ug/L	440	Standard
	Cu	65	112.3	8.1	**0.0093**	0.005	56.1	ug/L	116	Standard
	Zn	66	291.0	29.3	**0.0963**	0.084	87.3	ug/L	135	Standard
>	**Ge**	72	412803.0	0.7				ug/L	445277	Standard
	As	75	-34.7	100.3	**0.0028**	0.035	1227.0	ug/L	-57	Standard
	Se	82	22.0	20.8	**0.0690**	0.044	63.3	ug/L	10	Standard
	Se-1	77	57.0	26.2	**0.1998**	0.218	109.2	ug/L	57	Standard
>	**Ga**	71	48.3	31.6				mg/L	78	Standard
	Rb	85	21.7	13.3				ug/L	22	Standard
	Y	89	347154.1	1.4				ug/L	388959	Standard
>	**Rh**	103	25.0	52.9				ug/L	8	Standard
	Mo	98	85.6	24.3	**0.0298**	0.009	29.8	ug/L	10	Standard
	Ag	107	74.0	7.2	**-0.0009**	0.001	97.1	ug/L	66	Standard
	Cd	111	5.5	69.3	**-0.0006**	0.002	323.2	mg/L	3	Standard
	Cd	114	2.5	129.8	**-0.0034**	0.001	21.5	ug/L	4	Standard
>	**In**	115	484590.8	0.6				ug/L	523327	Standard
	Sn	118	155.0	23.3	**-0.0455**	0.007	15.4	ug/L	488	Standard
	Sb	123	2427.2	18.8	**0.5603**	0.110	19.7	ug/L	195	Standard
	Ba	135	21.0	29.0	**-0.0054**	0.003	63.3	ug/L	28	Standard
	Ce	140	8.3	91.7				ug/L	83	Standard
>	**Tb**	159	749937.4	1.6				ug/L	809211	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	40.0	36.8	**0.0033**	0.002	58.5	ug/L	4	Standard
	Tl	205	28.3	127.7	**0.0019**	0.006	296.1	ug/L	8	Standard
	Pb	206	232.3	8.1	**0.0010**	0.004	373.6	ug/L	230	Standard
	Pb	207	195.7	14.0	**0.0028**	0.006	232.9	ug/L	184	Standard
	Pb	208	821.0	2.9	**0.0009**	0.001	151.4	ug/L	775	Standard
	U	238	11.7	64.9	**0.0011**	0.001	105.2	ug/L	3	Standard
>	**Bi**	209	453663.6	0.3				ug/L	472452	Standard

Sample ID: F BLANK WG575435-09
Report Date/Time: Thursday, July 07, 2016 12:20:53
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	58.3	17.8	**0.0234**	0.014	60.1	mg/L	52	Standard
K	39	25.0	72.1	**0.0047**	0.095	2035.7	mg/L	32	Standard
Ca	43	23.3	12.4	**-0.5029**	0.343	68.3	mg/L	33	Standard
Fe	54	47.9	21.2	**-0.0670**	0.010	14.5	mg/L	138	Standard
Fe	57	300.0	4.4	**0.3683**	0.022	5.9	mg/L	263	Standard
Sc-1	45	24915.5	2.7				mg/L	27861	Standard
Cl	35	118817.5	2.0				ug/L	100607	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	1606.8	4.1				ug/L	1777	Standard
P	31	6538.1	1.2				ug/L	18074	Standard
S	34	4802.4	4.2				ug/L	3901	Standard
Sr	88	83.3	9.2				ug/L	60	Standard
C	12	33.3	34.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	100.0	45.8				mg/L	7	Standard
Dy	164	2.7	188.8				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	5267.6	7.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.754	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.707	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: F BLANK WG575435-09
Report Date/Time: Thursday, July 07, 2016 12:20:53
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.598
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.023
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: F BLANK WG575435-09
Report Date/Time: Thursday, July 07, 2016 12:20:53
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007912 WG575435-01
Sample Date/Time: Thursday, July 07, 2016 12:21:47
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59151.9	1.1				ug/L	59299	Standard
	Be	9	20.0	43.3	**0.0253**	0.010	40.0	ug/L	17	Standard
	Al	27	13156998.9	0.5	**98.5745**	0.797	0.8	ug/L	1472	Standard
	Sc	45	29934.5	1.6				ug/L	27861	Standard
	Ti	47	136.7	7.7	**0.4477**	0.041	9.1	ug/L	28	Standard
	V	51	1209.3	8.2	**-0.0002**	0.017	6722.7	ug/L	1156	Standard
	Cr	52	9318.5	1.0	**0.3476**	0.029	8.4	ug/L	6689	Standard
	Cr	53	3740.5	7.1	**3.8190**	0.350	9.2	ug/L	348	Standard
	Mn	55	17031778.3	1.1	**2637.0131**	10.821	0.4	ug/L	770	Standard
	Co	59	43789.9	1.2	**6.4455**	0.004	0.1	ug/L	216	Standard
	Ni	60	40148.5	1.2	**21.5387**	0.119	0.6	ug/L	440	Standard
	Cu	65	847.4	14.6	**0.4021**	0.062	15.3	ug/L	116	Standard
	Zn	66	10243.8	0.9	**9.1532**	0.033	0.4	ug/L	135	Standard
>	Ge	72	456158.2	1.3				ug/L	445277	Standard
	As	75	300.0	1.7	**0.3057**	0.006	1.9	ug/L	-57	Standard
	Se	82	39.1	17.0	**0.1990**	0.055	27.7	ug/L	10	Standard
	Se-1	77	224.7	6.8	**2.3515**	0.236	10.1	ug/L	57	Standard
>	Ga	71	281.7	10.4				mg/L	78	Standard
	Rb	85	13335.9	1.8				ug/L	22	Standard
	Y	89	392432.5	1.1				ug/L	388959	Standard
>	Rh	103	36.7	28.4				ug/L	8	Standard
	Mo	98	585.6	1.6	**0.2198**	0.003	1.4	ug/L	10	Standard
	Ag	107	82.3	23.8	**-0.0007**	0.003	408.5	ug/L	66	Standard
	Cd	111	75.6	23.1	**0.0334**	0.008	25.2	mg/L	3	Standard
	Cd	114	160.3	26.9	**0.0282**	0.009	30.2	ug/L	4	Standard
>	In	115	532031.7	0.4				ug/L	523327	Standard
	Sn	118	795.0	12.0	**0.0653**	0.017	26.6	ug/L	488	Standard
	Sb	123	375.8	10.1	**0.0647**	0.008	12.9	ug/L	195	Standard
	Ba	135	337531.9	0.4	**171.9932**	1.286	0.7	ug/L	28	Standard
	Ce	140	540.0	6.7				ug/L	83	Standard
>	Tb	159	809116.0	0.6				ug/L	809211	Standard
	Ho	165	43.3	43.7				ug/L	13	Standard
	Tl	203	1666.4	2.3	**0.2092**	0.004	2.1	ug/L	4	Standard
	Tl	205	1496.7	8.0	**0.2188**	0.019	8.6	ug/L	8	Standard
	Pb	206	360.3	12.8	**0.0248**	0.009	36.1	ug/L	230	Standard
	Pb	207	306.7	9.8	**0.0256**	0.006	24.9	ug/L	184	Standard
	Pb	208	1279.7	3.0	**0.0240**	0.002	10.0	ug/L	775	Standard
	U	238	157.3	13.6	**0.0226**	0.003	14.5	ug/L	3	Standard
>	Bi	209	473342.6	0.8				ug/L	472452	Standard

Sample ID: L1607007912 WG575435-01
Report Date/Time: Thursday, July 07, 2016 12:24:04
Page 1

Approved: July 08, 2016

Na	23	5.0	0.0	**9.1283**	0.145	1.6	mg/L	0	Standard
Mg	24	14313.4	1.7	**18.1685**	0.283	1.6	mg/L	52	Standard
K	39	178.3	15.4	**0.6460**	0.124	19.2	mg/L	32	Standard
Ca	43	100.0	18.0	**8.0655**	1.970	24.4	mg/L	33	Standard
Fe	54	152.5	16.3	**0.0064**	0.019	297.7	mg/L	138	Standard
Fe	57	421.7	11.3	**0.5468**	0.146	26.6	mg/L	263	Standard
> **Sc-1**	45	29934.5	1.6				mg/L	27861	Standard
Cl	35	133328.2	1.7				ug/L	100607	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	5224.2	2.2				ug/L	1777	Standard
P	31	25765.2	0.7				ug/L	18074	Standard
S	34	5127.5	1.6				ug/L	3901	Standard
Sr	88	133.3	2.2				ug/L	60	Standard
C	12	96.7	21.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	7	Standard
Dy	164	77.3	14.5				mg/L	13	Standard
Ho-1	165	43.3	43.7				mg/L	13	Standard
Er	166	56.7	44.4				mg/L	3	Standard
I	127	84359.5	4.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.752	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.444	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607007912 WG575435-01
Report Date/Time: Thursday, July 07, 2016 12:24:04
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.663
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.189
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1607007912 WG575435-01
Report Date/Time: Thursday, July 07, 2016 12:24:04
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007912S WG575435-06
Sample Date/Time: Thursday, July 07, 2016 12:24:59
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59401.2	1.5				ug/L	59299	Standard
	Be	9	44918.2	1.0	**53.8168**	0.682	1.3	ug/L	17	Standard
	Al	27	13296124.7	0.1	**99.2079**	1.472	1.5	ug/L	1472	Standard
	Sc	45	29396.8	1.8				ug/L	27861	Standard
	Ti	47	133.3	9.4	**0.4368**	0.055	12.7	ug/L	28	Standard
	V	51	333224.8	0.6	**48.6107**	0.813	1.7	ug/L	1156	Standard
	Cr	52	354935.7	0.9	**49.5270**	0.362	0.7	ug/L	6689	Standard
	Cr	53	46655.1	1.7	**52.4355**	1.000	1.9	ug/L	348	Standard
	Mn	55	17623253.1	0.9	**2740.9065**	28.617	1.0	ug/L	770	Standard
	Co	59	367165.1	0.9	**54.5536**	0.836	1.5	ug/L	216	Standard
	Ni	60	129824.5	1.1	**70.5402**	1.033	1.5	ug/L	440	Standard
	Cu	65	89323.9	0.6	**48.7376**	0.309	0.6	ug/L	116	Standard
	Zn	66	63252.1	0.9	**57.7948**	0.207	0.4	ug/L	135	Standard
>	**Ge**	72	454123.6	1.1				ug/L	445277	Standard
	As	75	55839.0	0.6	**50.2244**	0.729	1.5	ug/L	-57	Standard
	Se	82	5528.4	1.1	**48.8655**	0.865	1.8	ug/L	10	Standard
	Se-1	77	3864.8	1.5	**50.9866**	1.337	2.6	ug/L	57	Standard
>	**Ga**	71	281.7	12.1				mg/L	78	Standard
	Rb	85	13739.6	2.2				ug/L	22	Standard
	Y	89	397916.5	1.5				ug/L	388959	Standard
>	**Rh**	103	55.0	32.8				ug/L	8	Standard
	Mo	98	629.5	1.0	**0.2383**	0.002	0.7	ug/L	10	Standard
	Ag	107	305533.6	0.9	**48.0164**	0.595	1.2	ug/L	66	Standard
	Cd	111	98333.0	1.0	**48.4316**	0.269	0.6	mg/L	3	Standard
	Cd	114	240533.3	1.9	**48.4553**	0.897	1.9	ug/L	4	Standard
>	**In**	115	528755.2	0.5				ug/L	523327	Standard
	Sn	118	683.3	13.1	**0.0462**	0.016	34.3	ug/L	488	Standard
	Sb	123	218338.4	1.5	**47.5262**	0.966	2.0	ug/L	195	Standard
	Ba	135	441404.0	0.3	**226.3214**	1.431	0.6	ug/L	28	Standard
	Ce	140	588.3	7.2				ug/L	83	Standard
>	**Tb**	159	812475.1	0.3				ug/L	809211	Standard
	Ho	165	46.7	6.2				ug/L	13	Standard
	Tl	203	389087.5	0.3	**49.5221**	0.088	0.2	ug/L	4	Standard
	Tl	205	337407.3	0.9	**50.0739**	0.713	1.4	ug/L	8	Standard
	Pb	206	249610.6	0.3	**50.6132**	0.330	0.7	ug/L	230	Standard
	Pb	207	218025.1	0.6	**48.7102**	0.522	1.1	ug/L	184	Standard
	Pb	208	930290.5	0.8	**50.8132**	0.563	1.1	ug/L	775	Standard
	U	238	335508.3	1.1	**49.9312**	0.772	1.5	ug/L	3	Standard
>	**Bi**	209	471334.0	0.5				ug/L	472452	Standard

Sample ID: L1607007912S WG575435-06
Report Date/Time: Thursday, July 07, 2016 12:27:15
Page 1

Approved: July 08, 2016

Na	23	3.3	86.6	**6.2627**	5.419	86.5	mg/L	0	Standard
Mg	24	15075.8	4.6	**19.5045**	1.234	6.3	mg/L	52	Standard
K	39	173.3	13.0	**0.6387**	0.110	17.2	mg/L	32	Standard
Ca	43	123.3	12.4	**11.1181**	1.606	14.4	mg/L	33	Standard
Fe	54	139.5	15.6	**-0.0018**	0.016	894.1	mg/L	138	Standard
Fe	57	380.0	3.5	**0.4458**	0.047	10.5	mg/L	263	Standard
> **Sc-1**	45	29396.8	1.8				mg/L	27861	Standard
Cl	35	130571.6	0.8				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	5967.8	2.6				ug/L	1777	Standard
P	31	26055.7	1.5				ug/L	18074	Standard
S	34	4960.8	3.1				ug/L	3901	Standard
Sr	88	130.0	16.8				ug/L	60	Standard
C	12	136.7	37.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	7	Standard
Dy	164	55.2	46.6				mg/L	13	Standard
Ho-1	165	46.7	6.2				mg/L	13	Standard
Er	166	30.0	66.7				mg/L	3	Standard
I	127	96560.6	5.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.172	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.987	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607007912S WG575435-06
Report Date/Time: Thursday, July 07, 2016 12:27:15
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.037	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.763	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1607007912S WG575435-06
Report Date/Time: Thursday, July 07, 2016 12:27:15
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007912SD WG575435-07
Sample Date/Time: Thursday, July 07, 2016 12:28:10
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59712.4	0.9				ug/L	59299	Standard
	Be	9	43505.7	1.8	**51.8510**	1.056	2.0	ug/L	17	Standard
	Al	27	12497054.4	1.8	**92.7585**	2.406	2.6	ug/L	1472	Standard
	Sc	45	28632.0	0.3				ug/L	27861	Standard
	Ti	47	120.3	8.9	**0.3827**	0.045	11.8	ug/L	28	Standard
	V	51	325560.6	1.1	**47.4625**	0.659	1.4	ug/L	1156	Standard
	Cr	52	347542.5	0.5	**48.4511**	0.136	0.3	ug/L	6689	Standard
	Cr	53	46210.4	1.3	**51.9080**	0.961	1.9	ug/L	348	Standard
	Mn	55	16595256.9	0.7	**2579.7029**	11.247	0.4	ug/L	770	Standard
	Co	59	358257.1	0.5	**53.2006**	0.257	0.5	ug/L	216	Standard
	Ni	60	124805.3	0.7	**67.7668**	0.206	0.3	ug/L	440	Standard
	Cu	65	87297.4	0.8	**47.6076**	0.440	0.9	ug/L	116	Standard
	Zn	66	62682.4	1.4	**57.2434**	0.527	0.9	ug/L	135	Standard
>	Ge	72	454332.3	0.6				ug/L	445277	Standard
	As	75	54462.5	0.5	**48.9601**	0.095	0.2	ug/L	-57	Standard
	Se	82	5440.6	1.7	**48.0582**	0.509	1.1	ug/L	10	Standard
	Se-1	77	3783.5	3.2	**49.8626**	1.332	2.7	ug/L	57	Standard
>	Ga	71	313.3	9.6				mg/L	78	Standard
	Rb	85	13114.0	2.7				ug/L	22	Standard
	Y	89	389749.5	0.9				ug/L	388959	Standard
>	Rh	103	53.3	19.5				ug/L	8	Standard
	Mo	98	586.1	6.0	**0.2179**	0.012	5.5	ug/L	10	Standard
	Ag	107	299932.7	0.8	**46.4197**	0.531	1.1	ug/L	66	Standard
	Cd	111	97453.4	0.4	**47.2729**	0.622	1.3	mg/L	3	Standard
	Cd	114	233670.4	2.7	**46.3526**	0.856	1.8	ug/L	4	Standard
>	In	115	536920.1	0.9				ug/L	523327	Standard
	Sn	118	701.7	11.4	**0.0476**	0.014	29.0	ug/L	488	Standard
	Sb	123	223331.7	0.8	**47.8750**	0.745	1.6	ug/L	195	Standard
	Ba	135	415888.9	1.0	**209.9932**	1.290	0.6	ug/L	28	Standard
	Ce	140	598.3	6.3				ug/L	83	Standard
>	Tb	159	811779.2	0.2				ug/L	809211	Standard
	Ho	165	33.3	22.9				ug/L	13	Standard
	Tl	203	383760.2	0.4	**48.5298**	0.124	0.3	ug/L	4	Standard
	Tl	205	334666.2	1.4	**49.3461**	0.756	1.5	ug/L	8	Standard
	Pb	206	245680.5	0.3	**49.4943**	0.183	0.4	ug/L	230	Standard
	Pb	207	213430.7	0.4	**47.3744**	0.109	0.2	ug/L	184	Standard
	Pb	208	913657.4	0.5	**49.5818**	0.342	0.7	ug/L	775	Standard
	U	238	329595.7	1.2	**48.7342**	0.651	1.3	ug/L	3	Standard
>	Bi	209	474382.2	0.2				ug/L	472452	Standard

Sample ID: L1607007912SD WG575435-07
Report Date/Time: Thursday, July 07, 2016 12:30:27
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.1723**	5.486	172.9	mg/L	0	Standard
Mg	24	13727.9	2.0	**18.2178**	0.423	2.3	mg/L	52	Standard
K	39	180.0	16.7	**0.6878**	0.133	19.4	mg/L	32	Standard
Ca	43	103.3	10.1	**9.0424**	1.317	14.6	mg/L	33	Standard
Fe	54	136.5	22.0	**-0.0012**	0.024	1984.3	mg/L	138	Standard
Fe	57	371.7	11.2	**0.4501**	0.125	27.8	mg/L	263	Standard
> **Sc-1**	45	28632.0	0.3				mg/L	27861	Standard
Cl	35	130563.6	2.0				ug/L	100607	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	6744.8	6.2				ug/L	1777	Standard
P	31	25790.3	0.9				ug/L	18074	Standard
S	34	4850.8	3.3				ug/L	3901	Standard
Sr	88	128.3	21.5				ug/L	60	Standard
C	12	113.3	33.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	17.9	57.1				mg/L	13	Standard
Ho-1	165	33.3	22.9				mg/L	13	Standard
Er	166	43.3	13.3				mg/L	3	Standard
I	127	89962.0	6.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.697	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.034	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607007912SD WG575435-07
Report Date/Time: Thursday, July 07, 2016 12:30:27
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.597
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.409
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1607007912SD WG575435-07
Report Date/Time: Thursday, July 07, 2016 12:30:27
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007802
Sample Date/Time: Thursday, July 07, 2016 12:31:21
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61258.6	0.9				ug/L	59299	Standard
	Be	9	36.7	7.9	**0.0439**	0.004	8.2	ug/L	17	Standard
	Al	27	4252451.1	0.9	**30.7558**	0.426	1.4	ug/L	1472	Standard
	Sc	45	29153.0	1.1				ug/L	27861	Standard
	Ti	47	101.7	18.3	**0.2990**	0.077	25.7	ug/L	28	Standard
	V	51	1800.4	1.2	**0.0825**	0.002	3.0	ug/L	1156	Standard
	Cr	52	9843.2	0.6	**0.4046**	0.001	0.3	ug/L	6689	Standard
	Cr	53	1531.7	7.7	**1.3053**	0.137	10.5	ug/L	348	Standard
	Mn	55	14845.0	8.3	**2.1416**	0.174	8.1	ug/L	770	Standard
	Co	59	417.0	7.8	**0.0255**	0.004	17.3	ug/L	216	Standard
	Ni	60	1276.1	2.2	**0.4278**	0.018	4.3	ug/L	440	Standard
	Cu	65	1463.1	0.3	**0.7277**	0.004	0.6	ug/L	116	Standard
	Zn	66	8326.6	2.8	**7.3093**	0.180	2.5	ug/L	135	Standard
>	**Ge**	72	461828.3	0.6				ug/L	445277	Standard
	As	75	73.8	46.4	**0.1026**	0.031	29.8	ug/L	-57	Standard
	Se	82	59.9	11.8	**0.3772**	0.065	17.1	ug/L	10	Standard
	Se-1	77	102.3	9.5	**0.7063**	0.125	17.6	ug/L	57	Standard
>	**Ga**	71	145.0	12.4				mg/L	78	Standard
	Rb	85	5347.6	1.2				ug/L	22	Standard
	Y	89	397946.7	0.8				ug/L	388959	Standard
>	**Rh**	103	43.3	17.6				ug/L	8	Standard
	Mo	98	79.8	5.0	**0.0238**	0.001	6.1	ug/L	10	Standard
	Ag	107	142.7	11.9	**0.0083**	0.002	29.7	ug/L	66	Standard
	Cd	111	123.2	8.9	**0.0557**	0.005	8.6	mg/L	3	Standard
	Cd	114	289.7	13.2	**0.0531**	0.007	13.9	ug/L	4	Standard
>	**In**	115	540916.1	0.8				ug/L	523327	Standard
	Sn	118	943.4	8.0	**0.0888**	0.014	15.5	ug/L	488	Standard
	Sb	123	1086.2	28.8	**0.2145**	0.067	31.1	ug/L	195	Standard
	Ba	135	44164.6	1.2	**22.1198**	0.235	1.1	ug/L	28	Standard
	Ce	140	396.7	5.1				ug/L	83	Standard
>	**Tb**	159	817931.4	0.8				ug/L	809211	Standard
	Ho	165	145.0	17.9				ug/L	13	Standard
	Tl	203	146.3	6.2	**0.0162**	0.001	6.3	ug/L	4	Standard
	Tl	205	116.7	21.6	**0.0144**	0.004	25.9	ug/L	8	Standard
	Pb	206	361.0	4.1	**0.0234**	0.003	13.1	ug/L	230	Standard
	Pb	207	292.3	4.5	**0.0209**	0.003	14.0	ug/L	184	Standard
	Pb	208	1255.7	6.4	**0.0211**	0.004	19.9	ug/L	775	Standard
	U	238	115.0	12.2	**0.0160**	0.002	13.2	ug/L	3	Standard
>	**Bi**	209	484260.9	0.6				ug/L	472452	Standard

Sample ID: L1607007802
Report Date/Time: Thursday, July 07, 2016 12:33:38
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1080.0	5.8	**1.3475**	0.094	6.9	mg/L	52	Standard
K	39	195.0	21.0	**0.7394**	0.177	23.9	mg/L	32	Standard
Ca	43	78.3	45.3	**5.7392**	4.289	74.7	mg/L	33	Standard
Fe	54	143.9	12.3	**0.0028**	0.015	523.5	mg/L	138	Standard
Fe	57	316.7	3.3	**0.2662**	0.022	8.1	mg/L	263	Standard
> **Sc-1**	45	29153.0	1.1				mg/L	27861	Standard
Cl	35	131476.6	0.3				ug/L	100607	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	5130.9	6.5				ug/L	1777	Standard
P	31	25204.3	1.1				ug/L	18074	Standard
S	34	4847.4	1.9				ug/L	3901	Standard
Sr	88	138.3	11.0				ug/L	60	Standard
C	12	76.7	27.2				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	7	Standard
Dy	164	122.2	15.4				mg/L	13	Standard
Ho-1	165	145.0	17.9				mg/L	13	Standard
Er	166	163.3	19.7				mg/L	3	Standard
I	127	13025.6	7.3				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.304	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.717	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607007802
Report Date/Time: Thursday, July 07, 2016 12:33:38
Page 2

Approved: July 08, 2016

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	103.361
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.500
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007802PS WG575483-01
Sample Date/Time: Thursday, July 07, 2016 12:34:33
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60129.1	0.5				ug/L	59299	Standard
	Be	9	45347.8	1.8	**53.6671**	0.704	1.3	ug/L	17	Standard
	Al	27	4239421.0	2.2	**31.2345**	0.564	1.8	ug/L	1472	Standard
	Sc	45	29428.6	1.0				ug/L	27861	Standard
	Ti	47	121.0	2.2	**0.3808**	0.014	3.8	ug/L	28	Standard
	V	51	343987.3	1.1	**49.6908**	0.915	1.8	ug/L	1156	Standard
	Cr	52	370202.5	0.5	**51.1816**	0.260	0.5	ug/L	6689	Standard
	Cr	53	46619.9	0.7	**51.8745**	0.103	0.2	ug/L	348	Standard
	Mn	55	345115.0	1.4	**53.0184**	0.338	0.6	ug/L	770	Standard
	Co	59	338283.8	0.8	**49.7650**	0.695	1.4	ug/L	216	Standard
	Ni	60	94614.2	1.1	**50.8289**	0.370	0.7	ug/L	440	Standard
	Cu	65	95980.4	0.5	**51.8609**	0.677	1.3	ug/L	116	Standard
	Zn	66	64901.4	0.6	**58.7232**	0.385	0.7	ug/L	135	Standard
>	Ge	72	458625.3	0.8				ug/L	445277	Standard
	As	75	53567.8	0.8	**47.7086**	0.624	1.3	ug/L	-57	Standard
	Se	82	5785.5	2.2	**50.6356**	0.934	1.8	ug/L	10	Standard
	Se-1	77	3862.8	2.1	**50.4507**	1.409	2.8	ug/L	57	Standard
>	Ga	71	123.3	27.6				mg/L	78	Standard
	Rb	85	5347.6	0.5				ug/L	22	Standard
	Y	89	397066.3	1.5				ug/L	388959	Standard
>	Rh	103	38.3	32.8				ug/L	8	Standard
	Mo	98	102.3	14.7	**0.0323**	0.005	16.3	ug/L	10	Standard
	Ag	107	320976.9	0.2	**49.3733**	0.755	1.5	ug/L	66	Standard
	Cd	111	103255.8	0.6	**49.7761**	0.368	0.7	mg/L	3	Standard
	Cd	114	254825.2	0.4	**50.2480**	0.872	1.7	ug/L	4	Standard
>	In	115	540273.6	1.3				ug/L	523327	Standard
	Sn	118	1130.0	7.0	**0.1216**	0.014	11.7	ug/L	488	Standard
	Sb	123	223794.3	1.8	**47.6844**	1.447	3.0	ug/L	195	Standard
	Ba	135	140911.2	0.9	**70.7073**	1.365	1.9	ug/L	28	Standard
	Ce	140	428.3	5.5				ug/L	83	Standard
>	Tb	159	822252.3	0.6				ug/L	809211	Standard
	Ho	165	136.7	13.9				ug/L	13	Standard
	Tl	203	409406.6	0.5	**50.7343**	0.389	0.8	ug/L	4	Standard
	Tl	205	358687.7	0.4	**51.8276**	0.570	1.1	ug/L	8	Standard
	Pb	206	264029.3	0.7	**52.1280**	0.735	1.4	ug/L	230	Standard
	Pb	207	230024.9	0.3	**50.0367**	0.486	1.0	ug/L	184	Standard
	Pb	208	975992.3	0.6	**51.9037**	0.459	0.9	ug/L	775	Standard
	U	238	349299.9	0.7	**50.6096**	0.200	0.4	ug/L	3	Standard
>	Bi	209	484109.9	0.7				ug/L	472452	Standard

Sample ID: L1607007802PS WG575483-01
Report Date/Time: Thursday, July 07, 2016 12:36:50
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.1042**	5.368	172.9	mg/L	0	Standard
Mg	24	1070.0	4.5	**1.3205**	0.049	3.7	mg/L	52	Standard
K	39	185.0	14.3	**0.6874**	0.108	15.7	mg/L	32	Standard
Ca	43	58.3	9.9	**3.2306**	0.630	19.5	mg/L	33	Standard
Fe	54	156.3	11.9	**0.0114**	0.013	118.8	mg/L	138	Standard
Fe	57	331.7	20.5	**0.3029**	0.209	68.9	mg/L	263	Standard
> **Sc-1**	45	29428.6	1.0				mg/L	27861	Standard
Cl	35	130058.6	1.7				ug/L	100607	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	5030.8	4.1				ug/L	1777	Standard
P	31	24835.3	2.7				ug/L	18074	Standard
S	34	4745.7	1.1				ug/L	3901	Standard
Sr	88	146.7	7.9				ug/L	60	Standard
C	12	130.0	33.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	7	Standard
Dy	164	184.1	6.1				mg/L	13	Standard
Ho-1	165	136.7	13.9				mg/L	13	Standard
Er	166	123.3	20.4				mg/L	3	Standard
I	127	11000.7	1.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.400	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.998	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607007802PS WG575483-01
Report Date/Time: Thursday, July 07, 2016 12:36:50
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.238
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.468
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007802SDL WG575483-02
Sample Date/Time: Thursday, July 07, 2016 12:37:44
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55747.5	4.7				ug/L	59299	Standard
	Be	9	36.7	56.8	**0.0474**	0.024	50.5	ug/L	17	Standard
	Al	27	823499.2	2.5	**6.5388**	0.153	2.3	ug/L	1472	Standard
	Sc	45	25501.4	1.0				ug/L	27861	Standard
	Ti	47	38.3	10.9	**0.0544**	0.019	35.5	ug/L	28	Standard
	V	51	1276.0	5.4	**0.0220**	0.010	45.1	ug/L	1156	Standard
	Cr	52	6253.0	0.8	**-0.0262**	0.010	36.7	ug/L	6689	Standard
	Cr	53	580.0	9.9	**0.2979**	0.066	22.3	ug/L	348	Standard
	Mn	55	4326.6	10.2	**0.5879**	0.075	12.7	ug/L	770	Standard
	Co	59	293.7	7.0	**0.0110**	0.003	30.7	ug/L	216	Standard
	Ni	60	509.0	6.4	**0.0388**	0.020	51.8	ug/L	440	Standard
	Cu	65	466.3	4.8	**0.2128**	0.014	6.4	ug/L	116	Standard
	Zn	66	2338.8	3.2	**2.0841**	0.080	3.8	ug/L	135	Standard
>	**Ge**	72	426951.7	0.6				ug/L	445277	Standard
	As	75	5.3	402.6	**0.0424**	0.020	47.8	ug/L	-57	Standard
	Se	82	30.0	32.8	**0.1376**	0.094	68.0	ug/L	10	Standard
	Se-1	77	61.7	9.8	**0.2386**	0.085	35.7	ug/L	57	Standard
>	**Ga**	71	83.3	19.3				mg/L	78	Standard
	Rb	85	1008.4	5.5				ug/L	22	Standard
	Y	89	360673.2	1.7				ug/L	388959	Standard
>	**Rh**	103	25.0	20.0				ug/L	8	Standard
	Mo	98	24.3	31.3	**0.0034**	0.003	91.5	ug/L	10	Standard
	Ag	107	154.7	20.7	**0.0122**	0.005	43.8	ug/L	66	Standard
	Cd	111	32.3	20.2	**0.0133**	0.003	25.7	mg/L	3	Standard
	Cd	114	87.9	54.3	**0.0149**	0.010	68.6	ug/L	4	Standard
>	**In**	115	498160.8	0.1				ug/L	523327	Standard
	Sn	118	328.3	9.8	**-0.0135**	0.006	45.6	ug/L	488	Standard
	Sb	123	1597.5	31.2	**0.3525**	0.115	32.7	ug/L	195	Standard
	Ba	135	8300.3	1.0	**4.5002**	0.046	1.0	ug/L	28	Standard
	Ce	140	76.7	7.5				ug/L	83	Standard
>	**Tb**	159	755751.4	0.2				ug/L	809211	Standard
	Ho	165	25.0	52.9				ug/L	13	Standard
	Tl	203	143.3	20.8	**0.0167**	0.004	23.9	ug/L	4	Standard
	Tl	205	126.7	23.8	**0.0167**	0.005	28.8	ug/L	8	Standard
	Pb	206	380.0	2.3	**0.0307**	0.003	9.2	ug/L	230	Standard
	Pb	207	312.3	14.3	**0.0286**	0.011	39.3	ug/L	184	Standard
	Pb	208	1315.7	6.1	**0.0277**	0.005	19.5	ug/L	775	Standard
	U	238	93.0	36.6	**0.0135**	0.005	39.9	ug/L	3	Standard
>	**Bi**	209	462169.0	1.5				ug/L	472452	Standard

Sample ID: L1607007802SDL WG575483-02
Report Date/Time: Thursday, July 07, 2016 12:40:01
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	268.3	14.5	**0.3359**	0.061	18.2	mg/L	52	Standard
K	39	55.0	24.1	**0.1526**	0.065	42.8	mg/L	32	Standard
Ca	43	38.3	32.8	**1.5349**	1.809	117.9	mg/L	33	Standard
Fe	54	72.7	28.4	**-0.0457**	0.018	39.8	mg/L	138	Standard
Fe	57	318.3	13.2	**0.4061**	0.132	32.6	mg/L	263	Standard
Sc-1	45	25501.4	1.0				mg/L	27861	Standard
Cl	35	121849.4	1.7				ug/L	100607	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2320.2	11.5				ug/L	1777	Standard
P	31	10490.3	5.5				ug/L	18074	Standard
S	34	4687.4	5.3				ug/L	3901	Standard
Sr	88	75.0	13.3				ug/L	60	Standard
C	12	56.7	71.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	24.9	45.8				mg/L	13	Standard
Ho-1	165	25.0	52.9				mg/L	13	Standard
Er	166	36.7	15.7				mg/L	3	Standard
I	127	11344.2	3.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.011	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.884	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607007802SDL WG575483-02
Report Date/Time: Thursday, July 07, 2016 12:40:01
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115	95.191	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209	97.824	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 12:40:58
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56736.0	1.2				ug/L	59299	Standard
	Be	9	42753.6	1.7	**53.6239**	0.552	1.0	ug/L	17	Standard
	Al	27	6676811.3	0.3	**52.1509**	0.756	1.4	ug/L	1472	Standard
	Sc	45	28249.6	1.3				ug/L	27861	Standard
	Ti	47	23646.8	0.8	**97.1584**	0.791	0.8	ug/L	28	Standard
	V	51	330596.7	0.4	**48.0437**	0.969	2.0	ug/L	1156	Standard
	Cr	52	349948.5	0.3	**48.6341**	0.973	2.0	ug/L	6689	Standard
	Cr	53	43330.2	0.4	**48.4862**	0.824	1.7	ug/L	348	Standard
	Mn	55	315710.0	0.2	**48.7932**	0.865	1.8	ug/L	770	Standard
	Co	59	326866.5	1.2	**48.3782**	0.932	1.9	ug/L	216	Standard
	Ni	60	90675.2	0.4	**49.0072**	0.976	2.0	ug/L	440	Standard
	Cu	65	90964.6	0.5	**49.4504**	0.975	2.0	ug/L	116	Standard
	Zn	66	54268.0	0.9	**49.3778**	1.207	2.4	ug/L	135	Standard
>	**Ge**	72	455884.6	1.6				ug/L	445277	Standard
	As	75	53858.0	1.2	**48.2613**	1.019	2.1	ug/L	-57	Standard
	Se	82	5441.5	0.7	**47.9156**	1.100	2.3	ug/L	10	Standard
	Se-1	77	3720.1	1.4	**48.8656**	1.317	2.7	ug/L	57	Standard
>	**Ga**	71	110.0	19.8				mg/L	78	Standard
	Rb	85	773.4	9.2				ug/L	22	Standard
	Y	89	385813.8	0.6				ug/L	388959	Standard
>	**Rh**	103	43.3	24.0				ug/L	8	Standard
	Mo	98	247166.6	0.7	**96.2337**	1.505	1.6	ug/L	10	Standard
	Ag	107	307363.4	0.7	**48.3413**	0.525	1.1	ug/L	66	Standard
	Cd	111	99267.0	0.8	**48.9303**	0.302	0.6	mg/L	3	Standard
	Cd	114	242687.2	1.6	**48.9329**	1.169	2.4	ug/L	4	Standard
>	**In**	115	528354.5	0.8				ug/L	523327	Standard
	Sn	118	273458.5	2.8	**48.7439**	1.628	3.3	ug/L	488	Standard
	Sb	123	224359.7	0.4	**48.8723**	0.223	0.5	ug/L	195	Standard
	Ba	135	93157.5	1.1	**47.7916**	0.920	1.9	ug/L	28	Standard
	Ce	140	81.7	35.9				ug/L	83	Standard
>	**Tb**	159	792183.9	1.3				ug/L	809211	Standard
	Ho	165	5.0	100.0				ug/L	13	Standard
	Tl	203	388626.9	0.2	**49.6268**	0.166	0.3	ug/L	4	Standard
	Tl	205	336677.9	0.6	**50.1284**	0.331	0.7	ug/L	8	Standard
	Pb	206	243745.0	0.9	**49.5864**	0.601	1.2	ug/L	230	Standard
	Pb	207	222099.7	0.7	**49.7846**	0.517	1.0	ug/L	184	Standard
	Pb	208	933879.0	0.6	**51.1765**	0.299	0.6	ug/L	775	Standard
	U	238	336355.5	0.2	**50.2205**	0.232	0.5	ug/L	3	Standard
>	**Bi**	209	469783.9	0.4				ug/L	472452	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 12:43:15
Page 1

Approved: July 08, 2016

Na	23	6.7	43.3	**12.8693**	5.474	42.5	mg/L	0	Standard
Mg	24	3872.2	4.5	**5.1636**	0.302	5.9	mg/L	52	Standard
K	39	903.4	13.8	**4.0130**	0.523	13.0	mg/L	32	Standard
Ca	43	58.3	13.1	**3.5227**	0.881	25.0	mg/L	33	Standard
Fe	54	5910.4	5.2	**4.7330**	0.202	4.3	mg/L	138	Standard
Fe	57	1720.1	6.0	**4.6110**	0.389	8.4	mg/L	263	Standard
> **Sc-1**	45	28249.6	1.3				mg/L	27861	Standard
Cl	35	126151.7	1.3				ug/L	100607	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1726.8	1.7				ug/L	1777	Standard
P	31	22451.6	1.9				ug/L	18074	Standard
S	34	5489.3	3.3				ug/L	3901	Standard
Sr	88	71.7	8.1				ug/L	60	Standard
C	12	53.3	28.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	173.2				mg/L	7	Standard
Dy	164	6.2	86.7				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	13894.7	2.1				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	107.248		
	Al	27	104.302		
	Sc	45			
	Ti	47	97.158		
	V	51	96.087		
	Cr	52	97.268		
	Cr	53			
	Mn	55	97.586		
	Co	59	96.756		
	Ni	60	98.014		
	Cu	65	98.901		
	Zn	66	98.756		
>	Ge	72		102.382	
	As	75	96.523		
	Se	82	95.831		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 12:43:15
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	96.234		
Ag	107	96.683		
Cd	111	97.861		
Cd	114			
> In	115			100.961
Sn	118	97.488		
Sb	123	97.745		
Ba	135	95.583		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.254		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.353		
U	238	100.441		
> Bi	209			99.435
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 12:43:15
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 12:44:09
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57017.1	0.9				ug/L	59299	Standard
	Be	9	40.0	21.7	**0.0513**	0.011	21.4	ug/L	17	Standard
	Al	27	3285.4	17.2	**0.0127**	0.004	32.8	ug/L	1472	Standard
	Sc	45	27957.4	2.5				ug/L	27861	Standard
	Ti	47	27.7	19.9	**0.0009**	0.022	2490.4	ug/L	28	Standard
	V	51	1210.3	7.9	**0.0017**	0.015	869.9	ug/L	1156	Standard
	Cr	52	6298.0	1.7	**-0.0708**	0.014	19.2	ug/L	6689	Standard
	Cr	53	488.3	11.3	**0.1561**	0.065	41.4	ug/L	348	Standard
	Mn	55	1590.4	33.4	**0.1213**	0.085	70.0	ug/L	770	Standard
	Co	59	282.7	10.8	**0.0068**	0.005	70.8	ug/L	216	Standard
	Ni	60	345.0	5.2	**-0.0672**	0.009	14.1	ug/L	440	Standard
	Cu	65	168.7	8.4	**0.0345**	0.008	24.3	ug/L	116	Standard
	Zn	66	401.0	7.1	**0.1732**	0.028	16.1	ug/L	135	Standard
>	**Ge**	72	451259.9	0.6				ug/L	445277	Standard
	As	75	-8.6	234.5	**0.0295**	0.018	62.0	ug/L	-57	Standard
	Se	82	19.2	13.3	**0.0261**	0.023	89.2	ug/L	10	Standard
	Se-1	77	59.0	13.9	**0.1560**	0.115	73.8	ug/L	57	Standard
>	**Ga**	71	80.0	22.5				mg/L	78	Standard
	Rb	85	31.7	24.1				ug/L	22	Standard
	Y	89	389318.7	1.0				ug/L	388959	Standard
>	**Rh**	103	21.7	53.3				ug/L	8	Standard
	Mo	98	213.6	10.4	**0.0757**	0.008	11.2	ug/L	10	Standard
	Ag	107	171.0	24.3	**0.0130**	0.007	49.9	ug/L	66	Standard
	Cd	111	33.3	48.0	**0.0126**	0.008	61.8	mg/L	3	Standard
	Cd	114	54.1	43.8	**0.0069**	0.005	68.8	ug/L	4	Standard
>	**In**	115	534051.4	0.1				ug/L	523327	Standard
	Sn	118	780.0	27.5	**0.0621**	0.038	61.2	ug/L	488	Standard
	Sb	123	1018.2	32.3	**0.2029**	0.071	35.0	ug/L	195	Standard
	Ba	135	72.3	21.7	**0.0195**	0.008	41.0	ug/L	28	Standard
	Ce	140	23.3	81.1				ug/L	83	Standard
>	**Tb**	159	803001.2	0.2				ug/L	809211	Standard
	Ho	165	8.3	34.6				ug/L	13	Standard
	Tl	203	119.3	30.6	**0.0130**	0.005	35.2	ug/L	4	Standard
	Tl	205	116.7	34.6	**0.0146**	0.006	40.6	ug/L	8	Standard
	Pb	206	320.7	8.1	**0.0161**	0.005	32.6	ug/L	230	Standard
	Pb	207	269.3	3.0	**0.0166**	0.002	10.4	ug/L	184	Standard
	Pb	208	1173.7	6.2	**0.0175**	0.004	22.6	ug/L	775	Standard
	U	238	112.7	18.0	**0.0158**	0.003	18.8	ug/L	3	Standard
>	**Bi**	209	478756.9	0.1				ug/L	472452	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 12:46:26
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	53.3	35.5	**0.0075**	0.028	371.7	mg/L	52	Standard
K	39	21.7	58.1	**-0.0252**	0.061	243.6	mg/L	32	Standard
Ca	43	16.7	17.3	**-1.7058**	0.427	25.0	mg/L	33	Standard
Fe	54	113.9	31.8	**-0.0171**	0.030	175.1	mg/L	138	Standard
Fe	57	293.3	11.6	**0.2356**	0.120	51.1	mg/L	263	Standard
Sc-1	45	27957.4	2.5				mg/L	27861	Standard
Cl	35	126377.5	0.4				ug/L	100607	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	1930.1	9.3				ug/L	1777	Standard
P	31	21249.9	3.4				ug/L	18074	Standard
S	34	5324.3	3.2				ug/L	3901	Standard
Sr	88	90.0	14.7				ug/L	60	Standard
C	12	46.7	89.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	12.9	45.1				mg/L	13	Standard
Ho-1	165	8.3	34.6				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	8125.5	2.3				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.344	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 12:46:26
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.049
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.335
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 12:46:26
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007804
Sample Date/Time: Thursday, July 07, 2016 12:47:22
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56694.2	0.3				ug/L	59299	Standard
	Be	9	13.3	78.1	**0.0181**	0.013	72.6	ug/L	17	Standard
	Al	27	3551954.8	0.4	**27.7551**	0.202	0.7	ug/L	1472	Standard
	Sc	45	28298.1	0.5				ug/L	27861	Standard
	Ti	47	88.7	25.0	**0.2491**	0.091	36.5	ug/L	28	Standard
	V	51	1581.1	5.6	**0.0530**	0.015	28.1	ug/L	1156	Standard
	Cr	52	9368.6	2.9	**0.3498**	0.047	13.4	ug/L	6689	Standard
	Cr	53	983.4	12.9	**0.7050**	0.153	21.7	ug/L	348	Standard
	Mn	55	9958.3	5.7	**1.4085**	0.094	6.7	ug/L	770	Standard
	Co	59	416.0	11.3	**0.0259**	0.007	28.9	ug/L	216	Standard
	Ni	60	1478.7	6.9	**0.5435**	0.060	11.1	ug/L	440	Standard
	Cu	65	1607.4	29.7	**0.8139**	0.265	32.5	ug/L	116	Standard
	Zn	66	10729.5	0.2	**9.5607**	0.117	1.2	ug/L	135	Standard
>	**Ge**	72	457856.4	1.0				ug/L	445277	Standard
	As	75	32.3	251.8	**0.0665**	0.073	109.4	ug/L	-57	Standard
	Se	82	53.0	29.4	**0.3217**	0.141	43.9	ug/L	10	Standard
	Se-1	77	82.0	2.4	**0.4487**	0.019	4.1	ug/L	57	Standard
>	**Ga**	71	86.7	14.5				mg/L	78	Standard
	Rb	85	4117.2	3.8				ug/L	22	Standard
	Y	89	398018.4	3.2				ug/L	388959	Standard
>	**Rh**	103	48.3	41.8				ug/L	8	Standard
	Mo	98	136.8	11.5	**0.0457**	0.006	12.8	ug/L	10	Standard
	Ag	107	133.7	33.4	**0.0070**	0.007	96.4	ug/L	66	Standard
	Cd	111	78.4	32.6	**0.0343**	0.012	35.6	mg/L	3	Standard
	Cd	114	210.6	11.9	**0.0378**	0.005	12.4	ug/L	4	Standard
>	**In**	115	538139.9	0.8				ug/L	523327	Standard
	Sn	118	910.0	9.1	**0.0839**	0.016	18.7	ug/L	488	Standard
	Sb	123	641.2	21.5	**0.1207**	0.030	25.2	ug/L	195	Standard
	Ba	135	34056.6	1.3	**17.1422**	0.288	1.7	ug/L	28	Standard
	Ce	140	838.4	6.9				ug/L	83	Standard
>	**Tb**	159	798753.7	0.3				ug/L	809211	Standard
	Ho	165	66.7	17.3				ug/L	13	Standard
	Tl	203	139.7	41.8	**0.0157**	0.007	46.8	ug/L	4	Standard
	Tl	205	98.3	26.1	**0.0121**	0.004	31.3	ug/L	8	Standard
	Pb	206	474.7	9.6	**0.0480**	0.009	18.9	ug/L	230	Standard
	Pb	207	380.7	8.1	**0.0421**	0.007	16.0	ug/L	184	Standard
	Pb	208	1721.7	5.1	**0.0481**	0.005	9.6	ug/L	775	Standard
	U	238	172.7	3.2	**0.0249**	0.001	3.1	ug/L	3	Standard
>	**Bi**	209	473003.4	0.2				ug/L	472452	Standard

Sample ID: L1607007804
Report Date/Time: Thursday, July 07, 2016 12:49:39
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.2114**	5.554	172.9	mg/L	0	Standard
Mg	24	761.7	19.7	**0.9600**	0.198	20.6	mg/L	52	Standard
K	39	191.7	25.6	**0.7515**	0.227	30.2	mg/L	32	Standard
Ca	43	58.3	17.8	**3.5159**	1.299	36.9	mg/L	33	Standard
Fe	54	158.9	24.4	**0.0186**	0.032	173.0	mg/L	138	Standard
Fe	57	315.0	9.7	**0.2899**	0.095	32.9	mg/L	263	Standard
> **Sc-1**	45	28298.1	0.5				mg/L	27861	Standard
Cl	35	127571.5	0.7				ug/L	100607	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2933.6	2.6				ug/L	1777	Standard
P	31	23194.4	1.4				ug/L	18074	Standard
S	34	4897.5	1.3				ug/L	3901	Standard
Sr	88	150.0	20.3				ug/L	60	Standard
C	12	96.7	26.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	74.1	39.1				mg/L	13	Standard
Ho-1	165	66.7	17.3				mg/L	13	Standard
Er	166	53.3	10.8				mg/L	3	Standard
I	127	13974.8	5.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.607	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.825	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607007804
Report Date/Time: Thursday, July 07, 2016 12:49:39
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.831
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.117
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007806
Sample Date/Time: Thursday, July 07, 2016 12:50:34
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57801.7	0.8				ug/L	59299	Standard
	Be	9	26.7	28.6	**0.0341**	0.009	27.4	ug/L	17	Standard
	Al	27	7379941.3	1.1	**56.5795**	0.984	1.7	ug/L	1472	Standard
	Sc	45	28520.2	1.3				ug/L	27861	Standard
	Ti	47	76.0	15.2	**0.1994**	0.047	23.4	ug/L	28	Standard
	V	51	1647.6	5.2	**0.0643**	0.012	19.1	ug/L	1156	Standard
	Cr	52	11551.4	2.0	**0.6691**	0.036	5.4	ug/L	6689	Standard
	Cr	53	1688.4	8.0	**1.5095**	0.158	10.5	ug/L	348	Standard
	Mn	55	56293.1	2.1	**8.6168**	0.176	2.0	ug/L	770	Standard
	Co	59	327.7	21.3	**0.0132**	0.010	77.9	ug/L	216	Standard
	Ni	60	1320.4	3.6	**0.4627**	0.028	6.0	ug/L	440	Standard
	Cu	65	929.4	3.7	**0.4488**	0.017	3.9	ug/L	116	Standard
	Zn	66	6095.9	0.6	**5.3854**	0.016	0.3	ug/L	135	Standard
>	**Ge**	72	454657.1	0.3				ug/L	445277	Standard
	As	75	41.7	95.4	**0.0747**	0.036	47.6	ug/L	-57	Standard
	Se	82	217.9	4.7	**1.7842**	0.090	5.0	ug/L	10	Standard
	Se-1	77	204.3	7.5	**2.0880**	0.199	9.5	ug/L	57	Standard
>	**Ga**	71	106.7	30.1				mg/L	78	Standard
	Rb	85	8093.8	0.8				ug/L	22	Standard
	Y	89	391052.2	0.5				ug/L	388959	Standard
>	**Rh**	103	53.3	19.5				ug/L	8	Standard
	Mo	98	87.4	8.5	**0.0269**	0.003	11.4	ug/L	10	Standard
	Ag	107	134.0	58.9	**0.0071**	0.012	170.0	ug/L	66	Standard
	Cd	111	86.1	63.3	**0.0381**	0.026	68.7	mg/L	3	Standard
	Cd	114	196.7	49.0	**0.0350**	0.019	53.7	ug/L	4	Standard
>	**In**	115	537221.4	0.9				ug/L	523327	Standard
	Sn	118	805.0	3.5	**0.0657**	0.006	9.5	ug/L	488	Standard
	Sb	123	457.8	15.1	**0.0816**	0.016	19.2	ug/L	195	Standard
	Ba	135	35049.8	1.1	**17.6718**	0.125	0.7	ug/L	28	Standard
	Ce	140	430.0	2.0				ug/L	83	Standard
>	**Tb**	159	802995.3	0.9				ug/L	809211	Standard
	Ho	165	65.0	33.5				ug/L	13	Standard
	Tl	203	118.7	78.4	**0.0130**	0.012	89.6	ug/L	4	Standard
	Tl	205	51.7	56.7	**0.0051**	0.004	83.5	ug/L	8	Standard
	Pb	206	382.7	19.8	**0.0290**	0.015	51.0	ug/L	230	Standard
	Pb	207	300.3	11.7	**0.0239**	0.007	30.7	ug/L	184	Standard
	Pb	208	1258.7	9.1	**0.0225**	0.006	25.8	ug/L	775	Standard
	U	238	42.3	51.0	**0.0055**	0.003	56.7	ug/L	3	Standard
>	**Bi**	209	475218.0	0.8				ug/L	472452	Standard

Sample ID: L1607007806
Report Date/Time: Thursday, July 07, 2016 12:52:51
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.2074**	5.547	172.9	mg/L	0	Standard
Mg	24	1143.4	10.9	**1.4639**	0.179	12.2	mg/L	52	Standard
K	39	138.3	18.2	**0.5024**	0.119	23.6	mg/L	32	Standard
Ca	43	78.3	25.8	**5.9734**	2.605	43.6	mg/L	33	Standard
Fe	54	130.5	23.4	**-0.0054**	0.026	487.4	mg/L	138	Standard
Fe	57	295.0	10.6	**0.2222**	0.105	47.0	mg/L	263	Standard
> **Sc-1**	45	28520.2	1.3				mg/L	27861	Standard
Cl	35	136383.3	2.2				ug/L	100607	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	3343.7	6.9				ug/L	1777	Standard
P	31	22722.0	0.6				ug/L	18074	Standard
S	34	4774.1	5.0				ug/L	3901	Standard
Sr	88	186.7	3.1				ug/L	60	Standard
C	12	110.0	39.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	7	Standard
Dy	164	113.3	28.4				mg/L	13	Standard
Ho-1	165	65.0	33.5				mg/L	13	Standard
Er	166	70.0	14.3				mg/L	3	Standard
I	127	17446.7	0.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.475	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.107	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607007806
Report Date/Time: Thursday, July 07, 2016 12:52:51
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.655
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.586
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606161501
Sample Date/Time: Thursday, July 07, 2016 12:57:15
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51721.6	4.8				ug/L	59299	Standard
	Be	9	70.0	21.4	**0.0983**	0.024	24.2	ug/L	17	Standard
	Al	27	29143615.2	1.1	**250.0949**	12.047	4.8	ug/L	1472	Standard
	Sc	45	23663.5	2.1				ug/L	27861	Standard
	Ti	47	233.3	2.4	**1.0889**	0.011	1.0	ug/L	28	Standard
	V	51	2589.0	10.6	**0.2963**	0.045	15.3	ug/L	1156	Standard
	Cr	52	9981.0	5.0	**0.8000**	0.066	8.3	ug/L	6689	Standard
	Cr	53	7056.6	7.7	**9.5713**	0.644	6.7	ug/L	348	Standard
	Mn	55	15496112.9	2.8	**3008.7016**	48.280	1.6	ug/L	770	Standard
	Co	59	11119.1	2.4	**2.0282**	0.021	1.1	ug/L	216	Standard
	Ni	60	43999.9	5.0	**29.6902**	1.081	3.6	ug/L	440	Standard
	Cu	65	4428.0	4.3	**2.9612**	0.096	3.2	ug/L	116	Standard
	Zn	66	14913.0	2.2	**16.8738**	0.235	1.4	ug/L	135	Standard
>	**Ge**	72	363711.9	1.4				ug/L	445277	Standard
	As	75	1340.8	9.9	**1.5430**	0.164	10.7	ug/L	-57	Standard
	Se	82	701.9	1.9	**7.6229**	0.039	0.5	ug/L	10	Standard
	Se-1	77	1898.1	10.4	**30.9927**	2.966	9.6	ug/L	57	Standard
>	**Ga**	71	253.3	3.0				mg/L	78	Standard
	Rb	85	9726.5	1.9				ug/L	22	Standard
	Y	89	336771.8	1.1				ug/L	388959	Standard
>	**Rh**	103	9696.4	1.7				ug/L	8	Standard
	Mo	98	66.8	19.0	**0.0269**	0.006	22.5	ug/L	10	Standard
	Ag	107	308.3	3.3	**0.0489**	0.003	5.4	ug/L	66	Standard
	Cd	111	576.5	2.5	**0.3625**	0.011	3.0	mg/L	3	Standard
	Cd	114	1385.2	9.3	**0.3557**	0.030	8.6	ug/L	4	Standard
>	**In**	115	410231.5	1.3				ug/L	523327	Standard
	Sn	118	305.0	4.3	**-0.0055**	0.004	69.5	ug/L	488	Standard
	Sb	123	628.6	38.9	**0.1592**	0.067	41.8	ug/L	195	Standard
	Ba	135	52738.3	1.9	**34.8360**	0.222	0.6	ug/L	28	Standard
	Ce	140	4889.1	4.7				ug/L	83	Standard
>	**Tb**	159	670575.7	1.7				ug/L	809211	Standard
	Ho	165	370.0	15.2				ug/L	13	Standard
	Tl	203	56.0	9.4	**0.0079**	0.001	12.0	ug/L	4	Standard
	Tl	205	40.0	33.1	**0.0057**	0.003	47.3	ug/L	8	Standard
	Pb	206	274.3	6.5	**0.0292**	0.005	17.0	ug/L	230	Standard
	Pb	207	248.0	3.5	**0.0341**	0.003	7.6	ug/L	184	Standard
	Pb	208	927.0	2.1	**0.0245**	0.001	5.9	ug/L	775	Standard
	U	238	6230.3	1.2	**1.2835**	0.014	1.1	ug/L	3	Standard
>	**Bi**	209	340294.7	0.2				ug/L	472452	Standard

Sample ID: L1606161501
Report Date/Time: Thursday, July 07, 2016 12:59:32
Page 1

Approved: July 08, 2016

Na	23	63.3	24.1	**146.6855**	38.591	26.3	mg/L	0	Standard
Mg	24	183916.3	1.6	**296.3422**	4.283	1.4	mg/L	52	Standard
K	39	265.0	18.9	**1.3249**	0.270	20.4	mg/L	32	Standard
Ca	43	5907.8	2.8	**887.1936**	7.130	0.8	mg/L	33	Standard
Fe	54	1335.4	11.0	**1.1956**	0.140	11.7	mg/L	138	Standard
Fe	57	7071.7	2.5	**25.2566**	0.270	1.1	mg/L	263	Standard
> **Sc-1**	45	23663.5	2.1				mg/L	27861	Standard
Cl	35	262418.5	1.1				ug/L	100607	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	177237.7	2.4				ug/L	1777	Standard
P	31	12638.6	2.1				ug/L	18074	Standard
S	34	5125.9	1.0				ug/L	3901	Standard
Sr	88	34497.6	3.4				ug/L	60	Standard
C	12	53.3	39.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	514.7	15.6				mg/L	13	Standard
Ho-1	165	370.0	15.2				mg/L	13	Standard
Er	166	390.0	21.9				mg/L	3	Standard
I	127	215052.9	16.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.221	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		81.682	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606161501
Report Date/Time: Thursday, July 07, 2016 12:59:32
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	78.389	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	72.027	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607005001
Sample Date/Time: Thursday, July 07, 2016 13:00:26
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55437.9	0.2				ug/L	59299	Standard
	Be	9	36.7	51.6	**0.0484**	0.024	50.2	ug/L	17	Standard
	Al	27	7646748.4	1.0	**61.1203**	0.556	0.9	ug/L	1472	Standard
	Sc	45	29687.4	2.1				ug/L	27861	Standard
	Ti	47	1519.1	1.7	**5.9915**	0.118	2.0	ug/L	28	Standard
	V	51	4998.3	5.3	**0.5356**	0.038	7.2	ug/L	1156	Standard
	Cr	52	14373.1	1.2	**1.0179**	0.023	2.2	ug/L	6689	Standard
	Cr	53	6594.8	2.8	**6.8685**	0.204	3.0	ug/L	348	Standard
	Mn	55	311487.8	3.0	**47.0278**	1.492	3.2	ug/L	770	Standard
	Co	59	2547.9	1.7	**0.3332**	0.007	2.0	ug/L	216	Standard
	Ni	60	4325.0	1.1	**2.0390**	0.019	1.0	ug/L	440	Standard
	Cu	65	30312.6	1.3	**16.0592**	0.205	1.3	ug/L	116	Standard
	Zn	66	84347.8	0.3	**75.0744**	0.170	0.2	ug/L	135	Standard
>	**Ge**	72	466553.6	0.3				ug/L	445277	Standard
	As	75	223.9	22.7	**0.2332**	0.044	19.1	ug/L	-57	Standard
	Se	82	75.9	22.5	**0.5096**	0.147	28.9	ug/L	10	Standard
	Se-1	77	347.0	7.5	**3.8728**	0.329	8.5	ug/L	57	Standard
>	**Ga**	71	525.0	14.1				mg/L	78	Standard
	Rb	85	35981.0	1.0				ug/L	22	Standard
	Y	89	398941.4	1.6				ug/L	388959	Standard
>	**Rh**	103	61.7	36.6				ug/L	8	Standard
	Mo	98	2992.7	2.9	**1.1599**	0.033	2.8	ug/L	10	Standard
	Ag	107	650.0	9.5	**0.0888**	0.010	10.8	ug/L	66	Standard
	Cd	111	290.7	9.6	**0.1398**	0.014	9.8	mg/L	3	Standard
	Cd	114	727.0	12.0	**0.1428**	0.018	12.3	ug/L	4	Standard
>	**In**	115	527756.3	0.2				ug/L	523327	Standard
	Sn	118	4087.2	2.8	**0.6548**	0.021	3.3	ug/L	488	Standard
	Sb	123	3900.6	2.4	**0.8343**	0.021	2.6	ug/L	195	Standard
	Ba	135	32662.5	0.8	**16.7625**	0.136	0.8	ug/L	28	Standard
	Ce	140	11257.5	2.8				ug/L	83	Standard
>	**Tb**	159	812390.3	1.0				ug/L	809211	Standard
	Ho	165	226.7	19.9				ug/L	13	Standard
	Tl	203	135.0	36.5	**0.0148**	0.006	41.4	ug/L	4	Standard
	Tl	205	116.7	30.1	**0.0144**	0.005	35.1	ug/L	8	Standard
	Pb	206	3106.0	0.8	**0.5659**	0.003	0.5	ug/L	230	Standard
	Pb	207	2650.9	1.1	**0.5346**	0.006	1.2	ug/L	184	Standard
	Pb	208	11448.4	1.5	**0.5639**	0.016	2.9	ug/L	775	Standard
	U	238	272.0	19.9	**0.0387**	0.008	20.4	ug/L	3	Standard
>	**Bi**	209	484009.3	1.3				ug/L	472452	Standard

Sample ID: L1607005001
Report Date/Time: Thursday, July 07, 2016 13:02:43
Page 1

Approved: July 08, 2016

Na	23	3.3	86.6	**6.0988**	5.280	86.6	mg/L	0	Standard
Mg	24	25204.3	2.4	**32.3113**	0.699	2.2	mg/L	52	Standard
K	39	786.7	4.1	**3.3084**	0.160	4.8	mg/L	32	Standard
Ca	43	158.3	23.7	**15.2551**	4.823	31.6	mg/L	33	Standard
Fe	54	1362.4	4.9	**0.9520**	0.065	6.8	mg/L	138	Standard
Fe	57	746.7	10.9	**1.5040**	0.195	12.9	mg/L	263	Standard
> **Sc-1**	45	29687.4	2.1				mg/L	27861	Standard
Cl	35	138953.1	2.0				ug/L	100607	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	6154.6	17.4				ug/L	1777	Standard
P	31	18127.5	3.8				ug/L	18074	Standard
S	34	5045.8	5.7				ug/L	3901	Standard
Sr	88	205.0	8.4				ug/L	60	Standard
C	12	523.3	16.3				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	43.3	26.6				mg/L	7	Standard
Dy	164	324.4	23.8				mg/L	13	Standard
Ho-1	165	226.7	19.9				mg/L	13	Standard
Er	166	186.7	35.7				mg/L	3	Standard
I	127	45265.9	3.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.489	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607005001
Report Date/Time: Thursday, July 07, 2016 13:02:43
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.846
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.446
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606164802 WG575246-01
Sample Date/Time: Thursday, July 07, 2016 13:03:38
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52427.3	3.5				ug/L	59299	Standard
	Be	9	20.0	66.1	**0.0283**	0.018	63.1	ug/L	17	Standard
	Al	27	212733.2	1.4	**1.7866**	0.046	2.6	ug/L	1472	Standard
	Sc	45	25817.0	0.6				ug/L	27861	Standard
	Ti	47	20.7	31.5	**-0.0231**	0.028	122.0	ug/L	28	Standard
	V	51	1314.5	6.9	**0.0286**	0.016	55.0	ug/L	1156	Standard
	Cr	52	5806.8	2.5	**-0.0917**	0.020	21.7	ug/L	6689	Standard
	Cr	53	800.0	6.8	**0.5655**	0.069	12.2	ug/L	348	Standard
	Mn	55	255857.3	1.0	**42.2966**	0.471	1.1	ug/L	770	Standard
	Co	59	817.7	7.4	**0.0941**	0.010	10.1	ug/L	216	Standard
	Ni	60	411.0	4.5	**-0.0176**	0.009	53.3	ug/L	440	Standard
	Cu	65	254.0	5.2	**0.0897**	0.006	7.2	ug/L	116	Standard
	Zn	66	1196.4	4.4	**0.9723**	0.042	4.3	ug/L	135	Standard
>	**Ge**	72	425976.6	1.2				ug/L	445277	Standard
	As	75	-17.9	122.3	**0.0201**	0.021	105.8	ug/L	-57	Standard
	Se	82	20.6	5.9	**0.0491**	0.010	21.2	ug/L	10	Standard
	Se-1	77	75.7	4.6	**0.4396**	0.037	8.4	ug/L	57	Standard
>	**Ga**	71	60.0	22.0				mg/L	78	Standard
	Rb	85	358.3	6.6				ug/L	22	Standard
	Y	89	360165.3	2.4				ug/L	388959	Standard
>	**Rh**	103	18.3	56.8				ug/L	8	Standard
	Mo	98	58.7	14.4	**0.0178**	0.003	19.2	ug/L	10	Standard
	Ag	107	91.0	19.3	**0.0017**	0.003	169.2	ug/L	66	Standard
	Cd	111	12.6	53.0	**0.0030**	0.003	115.4	mg/L	3	Standard
	Cd	114	24.5	79.7	**0.0014**	0.004	307.2	ug/L	4	Standard
>	**In**	115	493991.5	0.6				ug/L	523327	Standard
	Sn	118	203.3	22.3	**-0.0369**	0.009	23.4	ug/L	488	Standard
	Sb	123	1202.0	41.1	**0.2637**	0.116	44.1	ug/L	195	Standard
	Ba	135	5728.4	0.8	**3.1268**	0.010	0.3	ug/L	28	Standard
	Ce	140	45.0	11.1				ug/L	83	Standard
>	**Tb**	159	757555.8	1.9				ug/L	809211	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	35.7	38.2	**0.0028**	0.002	64.8	ug/L	4	Standard
	Tl	205	33.3	8.7	**0.0027**	0.000	16.2	ug/L	8	Standard
	Pb	206	228.7	10.5	**0.0005**	0.005	970.7	ug/L	230	Standard
	Pb	207	195.3	4.9	**0.0029**	0.002	72.0	ug/L	184	Standard
	Pb	208	887.3	2.7	**0.0050**	0.001	24.6	ug/L	775	Standard
	U	238	32.7	40.7	**0.0044**	0.002	46.9	ug/L	3	Standard
>	**Bi**	209	451230.9	0.3				ug/L	472452	Standard

Sample ID: L1606164802 WG575246-01
Report Date/Time: Thursday, July 07, 2016 13:05:55
Page 1

Approved: July 08, 2016

Na	23	3.3	86.6	**7.0597**	6.110	86.5	mg/L	0	Standard
Mg	24	300.0	6.0	**0.3775**	0.029	7.7	mg/L	52	Standard
K	39	35.0	24.7	**0.0491**	0.043	88.2	mg/L	32	Standard
Ca	43	18.3	68.6	**-1.2994**	1.753	134.9	mg/L	33	Standard
Fe	54	202.8	8.7	**0.0703**	0.015	21.1	mg/L	138	Standard
Fe	57	381.7	9.2	**0.6064**	0.113	18.7	mg/L	263	Standard
> **Sc-1**	45	25817.0	0.6				mg/L	27861	Standard
Cl	35	121303.1	1.6				ug/L	100607	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	2520.2	12.4				ug/L	1777	Standard
P	31	6944.9	2.1				ug/L	18074	Standard
S	34	4784.1	1.6				ug/L	3901	Standard
Sr	88	65.0	7.7				ug/L	60	Standard
C	12	50.0	52.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	12.9	86.6				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	19606.0	4.1				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		88.412	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.665	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606164802 WG575246-01
Report Date/Time: Thursday, July 07, 2016 13:05:55
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.394
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.508
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606164802S WG575246-05
Sample Date/Time: Thursday, July 07, 2016 13:06:49
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50492.4	2.3				ug/L	59299	Standard
	Be	9	801.7	4.2	**1.1309**	0.027	2.4	ug/L	17	Standard
	Al	27	210928.2	1.4	**1.8390**	0.032	1.7	ug/L	1472	Standard
	Sc	45	25953.9	3.6				ug/L	27861	Standard
	Ti	47	25.3	25.1	**-0.0011**	0.029	2577.7	ug/L	28	Standard
	V	51	7289.3	1.4	**0.9742**	0.018	1.9	ug/L	1156	Standard
	Cr	52	12299.0	0.3	**0.9146**	0.010	1.1	ug/L	6689	Standard
	Cr	53	1445.1	3.9	**1.3645**	0.077	5.6	ug/L	348	Standard
	Mn	55	269893.0	0.6	**45.1426**	0.506	1.1	ug/L	770	Standard
	Co	59	6681.8	1.7	**1.0357**	0.010	0.9	ug/L	216	Standard
	Ni	60	2164.8	3.6	**1.0164**	0.038	3.7	ug/L	440	Standard
	Cu	65	1896.8	1.2	**1.0593**	0.020	1.8	ug/L	116	Standard
	Zn	66	2173.2	1.7	**1.9518**	0.027	1.4	ug/L	135	Standard
>	Ge	72	421093.3	0.8				ug/L	445277	Standard
	As	75	1080.3	4.4	**1.0846**	0.053	4.9	ug/L	-57	Standard
	Se	82	136.4	7.7	**1.1589**	0.110	9.5	ug/L	10	Standard
	Se-1	77	150.3	10.0	**1.5277**	0.213	13.9	ug/L	57	Standard
>	Ga	71	68.3	16.9				mg/L	78	Standard
	Rb	85	350.0	4.3				ug/L	22	Standard
	Y	89	356744.3	0.4				ug/L	388959	Standard
>	Rh	103	16.7	45.8				ug/L	8	Standard
	Mo	98	36.8	23.9	**0.0089**	0.004	41.9	ug/L	10	Standard
	Ag	107	5830.8	0.5	**0.9765**	0.006	0.6	ug/L	66	Standard
	Cd	111	1993.7	0.5	**1.0573**	0.007	0.6	mg/L	3	Standard
	Cd	114	4912.4	4.4	**1.0652**	0.046	4.4	ug/L	4	Standard
>	In	115	489472.5	0.2				ug/L	523327	Standard
	Sn	118	251.7	7.0	**-0.0272**	0.003	12.1	ug/L	488	Standard
	Sb	123	5237.4	6.2	**1.2153**	0.079	6.5	ug/L	195	Standard
	Ba	135	7753.7	0.9	**4.2777**	0.044	1.0	ug/L	28	Standard
	Ce	140	40.0	43.3				ug/L	83	Standard
>	Tb	159	740061.1	1.7				ug/L	809211	Standard
	Ho	165	10.0					ug/L	13	Standard
	Tl	203	7270.4	1.3	**0.9744**	0.015	1.5	ug/L	4	Standard
	Tl	205	6156.3	2.4	**0.9615**	0.025	2.6	ug/L	8	Standard
	Pb	206	4775.8	1.5	**0.9747**	0.016	1.7	ug/L	230	Standard
	Pb	207	4141.2	2.4	**0.9342**	0.017	1.9	ug/L	184	Standard
	Pb	208	17815.5	0.7	**0.9819**	0.006	0.6	ug/L	775	Standard
	U	238	5888.5	1.5	**0.9240**	0.019	2.0	ug/L	3	Standard
>	Bi	209	446738.8	1.1				ug/L	472452	Standard

Sample ID: L1606164802S WG575246-05
Report Date/Time: Thursday, July 07, 2016 13:09:06
Page 1

Approved: July 08, 2016

	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	270.0	6.7	**0.3309**	0.017	5.2	mg/L	52	Standard
	K	39	15.0	33.3	**-0.0514**	0.027	51.7	mg/L	32	Standard
	Ca	43	30.0	16.7	**0.3049**	0.832	272.9	mg/L	33	Standard
	Fe	54	208.2	16.8	**0.0743**	0.031	42.0	mg/L	138	Standard
	Fe	57	365.0	18.8	**0.5411**	0.195	36.0	mg/L	263	Standard
>	**Sc-1**	45	25953.9	3.6				mg/L	27861	Standard
	Cl	35	122973.7	1.1				ug/L	100607	Standard
	Kr	83	1.0	0.0				ug/L	2	Standard
	Br	81	2266.8	6.5				ug/L	1777	Standard
	P	31	6841.5	0.5				ug/L	18074	Standard
	S	34	4969.1	1.7				ug/L	3901	Standard
	Sr	88	96.7	32.8				ug/L	60	Standard
	C	12	50.0	52.9				mg/L	110	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	7	Standard
	Dy	164	3.0	200.7				mg/L	13	Standard
	Ho-1	165	10.0					mg/L	13	Standard
	Er	166	6.7	86.6				mg/L	3	Standard
	I	127	18856.7	4.9				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		85.149	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.569	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606164802S WG575246-05
Report Date/Time: Thursday, July 07, 2016 13:09:06
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.531
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.558
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606164802SD WG575246-06
Sample Date/Time: Thursday, July 07, 2016 13:10:01
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49699.7	1.4				ug/L	59299	Standard
	Be	9	740.0	8.3	**1.0607**	0.084	7.9	ug/L	17	Standard
	Al	27	208584.3	0.7	**1.8474**	0.017	0.9	ug/L	1472	Standard
	Sc	45	25591.6	1.6				ug/L	27861	Standard
	Ti	47	28.0	9.4	**0.0107**	0.012	115.8	ug/L	28	Standard
	V	51	7349.5	3.4	**0.9829**	0.031	3.2	ug/L	1156	Standard
	Cr	52	12253.6	0.9	**0.9067**	0.026	2.8	ug/L	6689	Standard
	Cr	53	1318.4	8.6	**1.2093**	0.149	12.3	ug/L	348	Standard
	Mn	55	269363.7	0.8	**45.0260**	0.101	0.2	ug/L	770	Standard
	Co	59	6793.5	0.7	**1.0531**	0.003	0.3	ug/L	216	Standard
	Ni	60	2136.8	1.3	**0.9994**	0.019	1.9	ug/L	440	Standard
	Cu	65	1836.4	1.3	**1.0230**	0.011	1.0	ug/L	116	Standard
	Zn	66	2121.8	2.1	**1.9001**	0.054	2.8	ug/L	135	Standard
>	**Ge**	72	421328.9	0.7				ug/L	445277	Standard
	As	75	1059.3	3.1	**1.0636**	0.037	3.5	ug/L	-57	Standard
	Se	82	125.4	8.2	**1.0524**	0.095	9.1	ug/L	10	Standard
	Se-1	77	136.0	0.7	**1.3203**	0.020	1.5	ug/L	57	Standard
>	**Ga**	71	70.0	18.9				mg/L	78	Standard
	Rb	85	333.3	10.5				ug/L	22	Standard
	Y	89	352355.1	0.5				ug/L	388959	Standard
>	**Rh**	103	36.7	61.5				ug/L	8	Standard
	Mo	98	39.6	8.8	**0.0099**	0.001	13.8	ug/L	10	Standard
	Ag	107	5823.8	2.4	**0.9694**	0.015	1.5	ug/L	66	Standard
	Cd	111	1999.1	2.0	**1.0537**	0.014	1.3	mg/L	3	Standard
	Cd	114	4804.2	3.1	**1.0353**	0.022	2.1	ug/L	4	Standard
>	**In**	115	492392.9	1.0				ug/L	523327	Standard
	Sn	118	183.3	18.2	**-0.0406**	0.006	15.2	ug/L	488	Standard
	Sb	123	5034.7	4.9	**1.1602**	0.047	4.1	ug/L	195	Standard
	Ba	135	7835.7	1.7	**4.2972**	0.041	1.0	ug/L	28	Standard
	Ce	140	26.7	39.0				ug/L	83	Standard
>	**Tb**	159	748388.4	0.9				ug/L	809211	Standard
	Ho	165	8.3	34.6				ug/L	13	Standard
	Tl	203	7271.7	1.0	**0.9678**	0.017	1.8	ug/L	4	Standard
	Tl	205	6323.0	3.0	**0.9806**	0.023	2.4	ug/L	8	Standard
	Pb	206	4710.7	1.4	**0.9538**	0.018	1.9	ug/L	230	Standard
	Pb	207	4077.9	2.6	**0.9128**	0.032	3.5	ug/L	184	Standard
	Pb	208	17441.6	0.8	**0.9534**	0.018	1.9	ug/L	775	Standard
	U	238	5898.1	0.8	**0.9190**	0.014	1.5	ug/L	3	Standard
>	**Bi**	209	449877.6	1.0				ug/L	472452	Standard

Sample ID: L1606164802SD WG575246-06
Report Date/Time: Thursday, July 07, 2016 13:12:18
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	318.3	13.4	**0.4085**	0.061	14.9	mg/L	52	Standard
K	39	46.7	22.3	**0.1098**	0.053	48.4	mg/L	32	Standard
Ca	43	21.7	70.5	**-0.8303**	2.098	252.7	mg/L	33	Standard
Fe	54	230.6	10.1	**0.0971**	0.020	20.5	mg/L	138	Standard
Fe	57	315.0	8.2	**0.3918**	0.086	21.9	mg/L	263	Standard
Sc-1	45	25591.6	1.6				mg/L	27861	Standard
Cl	35	124375.1	0.9				ug/L	100607	Standard
Kr	83	3.7	41.7				ug/L	2	Standard
Br	81	2096.8	5.9				ug/L	1777	Standard
P	31	7461.8	0.8				ug/L	18074	Standard
S	34	5195.9	0.9				ug/L	3901	Standard
Sr	88	88.3	11.8				ug/L	60	Standard
C	12	40.0	43.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	15.9	71.9				mg/L	13	Standard
Ho-1	165	8.3	34.6				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	17712.0	3.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		83.812	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.622	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606164802SD WG575246-06
Report Date/Time: Thursday, July 07, 2016 13:12:18
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.089
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.222
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 13:13:13
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52877.1	0.6				ug/L	59299	Standard
	Be	9	39478.1	3.5	53.1250	1.589	3.0	ug/L	17	Standard
	Al	27	6376332.7	0.9	53.4338	0.546	1.0	ug/L	1472	Standard
	Sc	45	28533.5	3.0				ug/L	27861	Standard
	Ti	47	23946.2	2.0	98.1476	0.848	0.9	ug/L	28	Standard
	V	51	332152.5	0.7	48.1502	0.303	0.6	ug/L	1156	Standard
	Cr	52	359640.9	1.2	49.8795	0.163	0.3	ug/L	6689	Standard
	Cr	53	44968.3	1.5	50.2071	0.225	0.4	ug/L	348	Standard
	Mn	55	325633.9	2.0	50.2015	0.417	0.8	ug/L	770	Standard
	Co	59	326166.8	0.8	48.1564	0.210	0.4	ug/L	216	Standard
	Ni	60	93555.0	1.0	50.4444	0.198	0.4	ug/L	440	Standard
	Cu	65	92506.6	1.2	50.1629	0.087	0.2	ug/L	116	Standard
	Zn	66	54675.8	1.4	49.6216	0.324	0.7	ug/L	135	Standard
>	Ge	72	456939.8	1.2				ug/L	445277	Standard
	As	75	55207.5	1.1	49.3467	0.094	0.2	ug/L	-57	Standard
	Se	82	5590.0	1.5	49.0998	0.219	0.4	ug/L	10	Standard
	Se-1	77	3820.5	3.0	50.0642	1.034	2.1	ug/L	57	Standard
>	Ga	71	78.3	22.4				mg/L	78	Standard
	Rb	85	863.4	7.3				ug/L	22	Standard
	Y	89	388768.1	1.0				ug/L	388959	Standard
>	Rh	103	45.0	58.8				ug/L	8	Standard
	Mo	98	244331.3	0.9	94.6381	0.230	0.2	ug/L	10	Standard
	Ag	107	309769.9	0.4	48.4716	0.331	0.7	ug/L	66	Standard
	Cd	111	99647.7	1.3	48.8684	0.622	1.3	mg/L	3	Standard
	Cd	114	244186.8	1.1	48.9778	0.161	0.3	ug/L	4	Standard
>	In	115	531058.6	1.0				ug/L	523327	Standard
	Sn	118	272439.5	1.4	48.3090	0.674	1.4	ug/L	488	Standard
	Sb	123	223112.9	1.2	48.3530	0.488	1.0	ug/L	195	Standard
	Ba	135	93937.0	1.1	47.9440	0.684	1.4	ug/L	28	Standard
	Ce	140	85.0	31.1				ug/L	83	Standard
>	Tb	159	797488.0	0.5				ug/L	809211	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	385616.6	0.6	49.1920	0.651	1.3	ug/L	4	Standard
	Tl	205	331587.6	0.8	49.3201	0.708	1.4	ug/L	8	Standard
	Pb	206	240047.0	0.6	48.7824	0.650	1.3	ug/L	230	Standard
	Pb	207	217582.9	0.6	48.7197	0.527	1.1	ug/L	184	Standard
	Pb	208	927024.4	0.4	50.7477	0.493	1.0	ug/L	775	Standard
	U	238	328762.0	0.7	49.0349	0.496	1.0	ug/L	3	Standard
>	Bi	209	470290.4	0.7				ug/L	472452	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 13:15:30
Page 1

Approved: July 08, 2016

Na	23	3.3	86.6	**6.3819**	5.530	86.7	mg/L	0	Standard
Mg	24	3848.8	4.2	**5.0795**	0.220	4.3	mg/L	52	Standard
K	39	930.0	11.6	**4.0904**	0.377	9.2	mg/L	32	Standard
Ca	43	58.3	24.7	**3.4630**	1.831	52.9	mg/L	33	Standard
Fe	54	5901.8	2.2	**4.6813**	0.143	3.1	mg/L	138	Standard
Fe	57	1925.1	0.7	**5.1816**	0.146	2.8	mg/L	263	Standard
> **Sc-1**	45	28533.5	3.0				mg/L	27861	Standard
Cl	35	130138.2	3.2				ug/L	100607	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1906.8	6.3				ug/L	1777	Standard
P	31	22177.9	1.7				ug/L	18074	Standard
S	34	5617.7	0.6				ug/L	3901	Standard
Sr	88	85.0	5.9				ug/L	60	Standard
C	12	70.0	28.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	7	Standard
Dy	164	6.3	86.6				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	14058.2	1.1				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	106.250		
	Al	27	106.868		
	Sc	45			
	Ti	47	98.148		
	V	51	96.300		
	Cr	52	99.759		
	Cr	53			
	Mn	55	100.403		
	Co	59	96.313		
	Ni	60	100.889		
	Cu	65	100.326		
	Zn	66	99.243		
>	Ge	72		102.619	
	As	75	98.693		
	Se	82	98.200		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 13:15:30
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	94.638		
Ag	107	96.943		
Cd	111	97.737		
Cd	114			
In	115		101.477	
Sn	118	96.618		
Sb	123	96.706		
Ba	135	95.888		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.384		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.495		
U	238	98.070		
Bi	209		99.543	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 13:15:30
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 13:16:24
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51698.1	1.4				ug/L	59299	Standard
	Be	9	36.7	41.7	**0.0516**	0.020	39.6	ug/L	17	Standard
	Al	27	2365.2	17.1	**0.0074**	0.003	44.8	ug/L	1472	Standard
	Sc	45	28446.7	1.6				ug/L	27861	Standard
	Ti	47	24.7	28.8	**-0.0114**	0.031	273.8	ug/L	28	Standard
	V	51	1197.0	5.0	**-0.0005**	0.010	1887.6	ug/L	1156	Standard
	Cr	52	6479.7	0.8	**-0.0459**	0.026	55.5	ug/L	6689	Standard
	Cr	53	550.0	11.9	**0.2259**	0.082	36.2	ug/L	348	Standard
	Mn	55	1038.4	8.2	**0.0341**	0.010	30.3	ug/L	770	Standard
	Co	59	252.0	2.0	**0.0022**	0.001	51.5	ug/L	216	Standard
	Ni	60	342.0	1.8	**-0.0691**	0.002	3.2	ug/L	440	Standard
	Cu	65	162.3	10.9	**0.0308**	0.008	26.5	ug/L	116	Standard
	Zn	66	404.0	4.8	**0.1752**	0.015	8.5	ug/L	135	Standard
>	**Ge**	72	452008.3	2.0				ug/L	445277	Standard
	As	75	-41.9	42.1	**-0.0005**	0.016	3306.0	ug/L	-57	Standard
	Se	82	15.6	24.1	**-0.0067**	0.031	469.0	ug/L	10	Standard
	Se-1	77	66.3	7.0	**0.2520**	0.045	17.7	ug/L	57	Standard
>	**Ga**	71	46.7	24.7				mg/L	78	Standard
	Rb	85	33.3	31.2				ug/L	22	Standard
	Y	89	385173.0	1.0				ug/L	388959	Standard
>	**Rh**	103	30.0	28.9				ug/L	8	Standard
	Mo	98	189.3	11.3	**0.0676**	0.008	12.1	ug/L	10	Standard
	Ag	107	137.0	8.9	**0.0081**	0.002	23.1	ug/L	66	Standard
	Cd	111	12.6	13.7	**0.0027**	0.001	32.2	mg/L	3	Standard
	Cd	114	37.3	58.8	**0.0037**	0.004	122.0	ug/L	4	Standard
>	**In**	115	524772.6	0.3				ug/L	523327	Standard
	Sn	118	845.0	7.4	**0.0762**	0.011	15.0	ug/L	488	Standard
	Sb	123	725.4	31.1	**0.1426**	0.050	35.0	ug/L	195	Standard
	Ba	135	48.3	3.2	**0.0078**	0.001	11.1	ug/L	28	Standard
	Ce	140	23.3	44.6				ug/L	83	Standard
>	**Tb**	159	802757.1	0.3				ug/L	809211	Standard
	Ho	165	1.7	173.2				ug/L	13	Standard
	Tl	203	78.3	9.8	**0.0080**	0.001	12.5	ug/L	4	Standard
	Tl	205	60.0	22.0	**0.0064**	0.002	30.2	ug/L	8	Standard
	Pb	206	277.0	7.8	**0.0083**	0.004	53.3	ug/L	230	Standard
	Pb	207	222.3	13.3	**0.0071**	0.007	95.5	ug/L	184	Standard
	Pb	208	1035.3	6.5	**0.0110**	0.004	35.3	ug/L	775	Standard
	U	238	67.7	25.3	**0.0094**	0.003	27.3	ug/L	3	Standard
>	**Bi**	209	470998.4	0.4				ug/L	472452	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 13:18:41
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	53.3	5.4	**0.0059**	0.005	84.3	mg/L	52	Standard
K	39	25.0	60.0	**-0.0126**	0.069	549.6	mg/L	32	Standard
Ca	43	26.7	28.6	**-0.4858**	1.002	206.3	mg/L	33	Standard
Fe	54	137.2	20.0	**0.0001**	0.022	19769.0	mg/L	138	Standard
Fe	57	266.7	7.8	**0.1378**	0.072	52.1	mg/L	263	Standard
Sc-1	45	28446.7	1.6				mg/L	27861	Standard
Cl	35	126406.5	0.7				ug/L	100607	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1810.1	5.8				ug/L	1777	Standard
P	31	22009.3	1.9				ug/L	18074	Standard
S	34	5512.7	1.7				ug/L	3901	Standard
Sr	88	83.3	50.0				ug/L	60	Standard
C	12	60.0	16.7				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	6.3	93.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	8799.2	8.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.512	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 13:18:41
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.276
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.692
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 13:18:41
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007808
Sample Date/Time: Thursday, July 07, 2016 13:19:37
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53141.4	3.0				ug/L	59299	Standard
	Be	9	20.0	25.0	**0.0280**	0.006	21.1	ug/L	17	Standard
	Al	27	11756447.4	1.3	**98.0714**	1.686	1.7	ug/L	1472	Standard
	Sc	45	29687.4	1.9				ug/L	27861	Standard
	Ti	47	113.3	15.9	**0.3538**	0.075	21.3	ug/L	28	Standard
	V	51	1794.8	7.4	**0.0860**	0.021	24.9	ug/L	1156	Standard
	Cr	52	10752.2	3.8	**0.5565**	0.072	12.9	ug/L	6689	Standard
	Cr	53	2066.8	8.5	**1.9395**	0.220	11.3	ug/L	348	Standard
	Mn	55	3626.1	1.9	**0.4355**	0.006	1.5	ug/L	770	Standard
	Co	59	429.7	3.0	**0.0283**	0.002	5.8	ug/L	216	Standard
	Ni	60	1342.1	2.4	**0.4749**	0.024	5.1	ug/L	440	Standard
	Cu	65	683.3	2.8	**0.3148**	0.013	4.2	ug/L	116	Standard
	Zn	66	4581.7	2.3	**4.0001**	0.056	1.4	ug/L	135	Standard
>	**Ge**	72	454473.0	0.9				ug/L	445277	Standard
	As	75	11.4	292.1	**0.0474**	0.030	62.6	ug/L	-57	Standard
	Se	82	67.9	2.1	**0.4564**	0.015	3.3	ug/L	10	Standard
	Se-1	77	143.3	5.3	**1.2756**	0.107	8.4	ug/L	57	Standard
>	**Ga**	71	73.3	10.4				mg/L	78	Standard
	Rb	85	15169.3	1.3				ug/L	22	Standard
	Y	89	391930.5	1.8				ug/L	388959	Standard
>	**Rh**	103	26.7	21.7				ug/L	8	Standard
	Mo	98	155.7	18.9	**0.0539**	0.011	20.9	ug/L	10	Standard
	Ag	107	113.0	9.3	**0.0041**	0.002	37.0	ug/L	66	Standard
	Cd	111	42.7	10.2	**0.0174**	0.002	11.8	mg/L	3	Standard
	Cd	114	85.8	41.5	**0.0134**	0.007	54.2	ug/L	4	Standard
>	**In**	115	529089.9	0.7				ug/L	523327	Standard
	Sn	118	841.7	8.8	**0.0744**	0.014	18.8	ug/L	488	Standard
	Sb	123	407.5	28.0	**0.0721**	0.025	35.1	ug/L	195	Standard
	Ba	135	40112.4	1.3	**20.5373**	0.145	0.7	ug/L	28	Standard
	Ce	140	141.7	11.3				ug/L	83	Standard
>	**Tb**	159	802566.0	0.6				ug/L	809211	Standard
	Ho	165	45.0	19.2				ug/L	13	Standard
	Tl	203	97.3	7.8	**0.0106**	0.001	8.7	ug/L	4	Standard
	Tl	205	105.0	17.2	**0.0133**	0.003	19.8	ug/L	8	Standard
	Pb	206	251.0	2.5	**0.0037**	0.001	33.9	ug/L	230	Standard
	Pb	207	215.7	2.6	**0.0062**	0.001	14.9	ug/L	184	Standard
	Pb	208	988.7	2.4	**0.0091**	0.001	12.0	ug/L	775	Standard
	U	238	731.0	3.3	**0.1096**	0.004	3.6	ug/L	3	Standard
>	**Bi**	209	465017.0	0.7				ug/L	472452	Standard

Sample ID: L1607007808
Report Date/Time: Thursday, July 07, 2016 13:21:54
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.0584**	5.289	172.9	mg/L	0	Standard
Mg	24	4030.5	2.6	**5.1128**	0.177	3.5	mg/L	52	Standard
K	39	216.7	10.7	**0.8182**	0.085	10.4	mg/L	32	Standard
Ca	43	141.7	14.3	**13.1906**	2.374	18.0	mg/L	33	Standard
Fe	54	154.1	14.8	**0.0085**	0.016	190.1	mg/L	138	Standard
Fe	57	383.3	12.4	**0.4462**	0.160	35.8	mg/L	263	Standard
> **Sc-1**	45	29687.4	1.9				mg/L	27861	Standard
Cl	35	138329.3	1.0				ug/L	100607	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	4457.3	5.5				ug/L	1777	Standard
P	31	24927.2	1.6				ug/L	18074	Standard
S	34	5139.2	3.6				ug/L	3901	Standard
Sr	88	141.7	16.3				ug/L	60	Standard
C	12	113.3	50.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	7	Standard
Dy	164	54.8	23.4				mg/L	13	Standard
Ho-1	165	45.0	19.2				mg/L	13	Standard
Er	166	40.0	66.1				mg/L	3	Standard
I	127	12143.2	2.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.616	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.065	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607007808
Report Date/Time: Thursday, July 07, 2016 13:21:54
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.101	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.426	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007810
Sample Date/Time: Thursday, July 07, 2016 13:22:48
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53857.2	2.1				ug/L	59299	Standard
	Be	9	11.7	99.0	**0.0168**	0.015	92.0	ug/L	17	Standard
	Al	27	20483813.1	0.2	**168.6058**	3.652	2.2	ug/L	1472	Standard
	Sc	45	29072.9	1.2				ug/L	27861	Standard
	Ti	47	123.3	20.7	**0.3993**	0.109	27.4	ug/L	28	Standard
	V	51	1881.4	10.2	**0.1008**	0.029	29.2	ug/L	1156	Standard
	Cr	52	12061.5	0.9	**0.7559**	0.026	3.4	ug/L	6689	Standard
	Cr	53	9651.4	9.1	**10.6070**	1.006	9.5	ug/L	348	Standard
	Mn	55	27135.6	0.8	**4.1224**	0.021	0.5	ug/L	770	Standard
	Co	59	562.0	0.6	**0.0487**	0.000	0.9	ug/L	216	Standard
	Ni	60	2720.6	1.6	**1.2376**	0.020	1.6	ug/L	440	Standard
	Cu	65	1592.8	0.3	**0.8181**	0.008	1.0	ug/L	116	Standard
	Zn	66	3893.2	0.9	**3.3979**	0.016	0.5	ug/L	135	Standard
>	**Ge**	72	450910.7	0.6				ug/L	445277	Standard
	As	75	-26.5	322.4	**0.0130**	0.078	594.5	ug/L	-57	Standard
	Se	82	144.1	4.2	**1.1413**	0.047	4.1	ug/L	10	Standard
	Se-1	77	586.0	7.3	**7.2463**	0.609	8.4	ug/L	57	Standard
>	**Ga**	71	68.3	16.9				mg/L	78	Standard
	Rb	85	23097.6	0.8				ug/L	22	Standard
	Y	89	384851.5	0.6				ug/L	388959	Standard
>	**Rh**	103	53.3	30.1				ug/L	8	Standard
	Mo	98	483.5	2.9	**0.1859**	0.006	3.4	ug/L	10	Standard
	Ag	107	635.7	1.0	**0.0886**	0.002	1.8	ug/L	66	Standard
	Cd	111	25.8	41.5	**0.0094**	0.005	56.7	mg/L	3	Standard
	Cd	114	71.5	13.6	**0.0108**	0.002	19.0	ug/L	4	Standard
>	**In**	115	516906.4	0.6				ug/L	523327	Standard
	Sn	118	1123.4	8.3	**0.1292**	0.016	12.4	ug/L	488	Standard
	Sb	123	311.4	21.5	**0.0527**	0.015	28.7	ug/L	195	Standard
	Ba	135	61386.1	0.1	**32.1815**	0.207	0.6	ug/L	28	Standard
	Ce	140	155.0	36.4				ug/L	83	Standard
>	**Tb**	159	788016.2	0.4				ug/L	809211	Standard
	Ho	165	76.7	33.5				ug/L	13	Standard
	Tl	203	121.7	3.3	**0.0142**	0.001	3.5	ug/L	4	Standard
	Tl	205	98.3	28.9	**0.0128**	0.004	34.3	ug/L	8	Standard
	Pb	206	489.3	1.7	**0.0560**	0.001	2.0	ug/L	230	Standard
	Pb	207	470.7	0.5	**0.0675**	0.001	1.7	ug/L	184	Standard
	Pb	208	1853.7	1.9	**0.0604**	0.002	3.4	ug/L	775	Standard
	U	238	2684.2	0.9	**0.4174**	0.006	1.4	ug/L	3	Standard
>	**Bi**	209	450381.0	0.6				ug/L	472452	Standard

Sample ID: L1607007810
Report Date/Time: Thursday, July 07, 2016 13:25:05
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36397.0	2.2	**47.6740**	1.034	2.2	mg/L	52	Standard
K	39	331.7	12.3	**1.3533**	0.197	14.6	mg/L	32	Standard
Ca	43	211.7	27.3	**22.1162**	6.945	31.4	mg/L	33	Standard
Fe	54	163.6	10.4	**0.0188**	0.014	75.8	mg/L	138	Standard
Fe	57	505.0	6.2	**0.8306**	0.077	9.2	mg/L	263	Standard
Sc-1	45	29072.9	1.2				mg/L	27861	Standard
Cl	35	151453.2	0.7				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	8178.9	2.5				ug/L	1777	Standard
P	31	24217.7	1.2				ug/L	18074	Standard
S	34	5414.3	3.0				ug/L	3901	Standard
Sr	88	155.0	3.2				ug/L	60	Standard
C	12	126.7	9.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	71.4	45.3				mg/L	13	Standard
Ho-1	165	76.7	33.5				mg/L	13	Standard
Er	166	110.0	18.2				mg/L	3	Standard
I	127	16774.3	2.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.823	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.265	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607007810
Report Date/Time: Thursday, July 07, 2016 13:25:05
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.773
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.328
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1607007810
Report Date/Time: Thursday, July 07, 2016 13:25:05
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007812
Sample Date/Time: Thursday, July 07, 2016 13:26:00
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53945.9	1.8				ug/L	59299	Standard
	Be	9	15.0	33.3	**0.0211**	0.006	30.1	ug/L	17	Standard
	Al	27	16522009.4	0.8	**135.7454**	1.475	1.1	ug/L	1472	Standard
	Sc	45	29076.2	1.7				ug/L	27861	Standard
	Ti	47	104.7	9.7	**0.3196**	0.039	12.2	ug/L	28	Standard
	V	51	1917.9	3.7	**0.1052**	0.009	8.7	ug/L	1156	Standard
	Cr	52	15346.1	0.7	**1.2193**	0.035	2.9	ug/L	6689	Standard
	Cr	53	3310.4	6.3	**3.3625**	0.243	7.2	ug/L	348	Standard
	Mn	55	4564.4	5.4	**0.5846**	0.039	6.6	ug/L	770	Standard
	Co	59	519.3	6.2	**0.0420**	0.005	12.4	ug/L	216	Standard
	Ni	60	1768.4	1.1	**0.7115**	0.018	2.6	ug/L	440	Standard
	Cu	65	782.7	4.4	**0.3709**	0.016	4.3	ug/L	116	Standard
	Zn	66	2787.9	2.2	**2.3686**	0.040	1.7	ug/L	135	Standard
>	**Ge**	72	452423.3	0.9				ug/L	445277	Standard
	As	75	33.9	72.3	**0.0680**	0.022	32.6	ug/L	-57	Standard
	Se	82	58.4	11.7	**0.3743**	0.058	15.6	ug/L	10	Standard
	Se-1	77	170.7	1.2	**1.6507**	0.047	2.8	ug/L	57	Standard
>	**Ga**	71	51.7	55.0				mg/L	78	Standard
	Rb	85	10825.5	1.3				ug/L	22	Standard
	Y	89	391102.4	1.5				ug/L	388959	Standard
>	**Rh**	103	50.0	17.3				ug/L	8	Standard
	Mo	98	710.1	2.9	**0.2736**	0.007	2.6	ug/L	10	Standard
	Ag	107	92.0	15.2	**0.0011**	0.002	204.7	ug/L	66	Standard
	Cd	111	34.0	31.1	**0.0134**	0.005	38.8	mg/L	3	Standard
	Cd	114	73.9	23.9	**0.0112**	0.004	31.6	ug/L	4	Standard
>	**In**	115	521377.1	0.7				ug/L	523327	Standard
	Sn	118	663.3	4.4	**0.0443**	0.006	13.5	ug/L	488	Standard
	Sb	123	291.8	17.3	**0.0478**	0.011	23.7	ug/L	195	Standard
	Ba	135	38681.0	0.9	**20.0982**	0.228	1.1	ug/L	28	Standard
	Ce	140	565.0	0.0				ug/L	83	Standard
>	**Tb**	159	794907.5	0.4				ug/L	809211	Standard
	Ho	165	136.7	18.0				ug/L	13	Standard
	Tl	203	186.7	3.5	**0.0224**	0.001	4.3	ug/L	4	Standard
	Tl	205	180.0	24.7	**0.0249**	0.007	27.6	ug/L	8	Standard
	Pb	206	348.3	3.1	**0.0244**	0.002	8.7	ug/L	230	Standard
	Pb	207	294.0	8.1	**0.0245**	0.005	20.7	ug/L	184	Standard
	Pb	208	1298.7	6.0	**0.0269**	0.004	16.7	ug/L	775	Standard
	U	238	4132.9	2.3	**0.6286**	0.018	2.9	ug/L	3	Standard
>	**Bi**	209	460736.8	0.6				ug/L	472452	Standard

Sample ID: L1607007812
Report Date/Time: Thursday, July 07, 2016 13:28:17
Page 1

Approved: July 08, 2016

Na	23	5.0	100.0	**9.2958**	9.276	99.8	mg/L	0	Standard
Mg	24	8334.0	5.3	**10.8686**	0.673	6.2	mg/L	52	Standard
K	39	240.0	6.3	**0.9427**	0.054	5.7	mg/L	32	Standard
Ca	43	193.3	12.2	**19.8917**	2.836	14.3	mg/L	33	Standard
Fe	54	151.8	10.6	**0.0095**	0.014	145.4	mg/L	138	Standard
Fe	57	405.0	8.6	**0.5337**	0.123	23.0	mg/L	263	Standard
> **Sc-1**	45	29076.2	1.7				mg/L	27861	Standard
Cl	35	151314.5	0.4				ug/L	100607	Standard
Kr	83	3.7	83.3				ug/L	2	Standard
Br	81	3673.8	11.5				ug/L	1777	Standard
P	31	23748.6	1.0				ug/L	18074	Standard
S	34	5419.3	1.2				ug/L	3901	Standard
Sr	88	146.7	7.9				ug/L	60	Standard
C	12	90.0	69.4				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	156.6	4.0				mg/L	13	Standard
Ho-1	165	136.7	18.0				mg/L	13	Standard
Er	166	140.0	7.1				mg/L	3	Standard
I	127	17561.8	4.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.972	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607007812
Report Date/Time: Thursday, July 07, 2016 13:28:17
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.627
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.520
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1607007812
Report Date/Time: Thursday, July 07, 2016 13:28:17
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007902
Sample Date/Time: Thursday, July 07, 2016 13:29:11
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53691.7	1.9				ug/L	59299	Standard
	Be	9	50.0	20.0	**0.0678**	0.014	21.3	ug/L	17	Standard
	Al	27	6590895.3	1.1	**54.3998**	0.588	1.1	ug/L	1472	Standard
	Sc	45	29346.7	1.3				ug/L	27861	Standard
	Ti	47	81.7	8.9	**0.2247**	0.033	14.5	ug/L	28	Standard
	V	51	1817.3	4.0	**0.0905**	0.011	12.6	ug/L	1156	Standard
	Cr	52	11198.1	1.8	**0.6270**	0.021	3.4	ug/L	6689	Standard
	Cr	53	3392.0	2.3	**3.4564**	0.114	3.3	ug/L	348	Standard
	Mn	55	38809.3	0.5	**5.9320**	0.040	0.7	ug/L	770	Standard
	Co	59	323.7	1.3	**0.0128**	0.001	6.1	ug/L	216	Standard
	Ni	60	1868.4	1.3	**0.7664**	0.006	0.8	ug/L	440	Standard
	Cu	65	2264.2	0.6	**1.1835**	0.007	0.6	ug/L	116	Standard
	Zn	66	11444.0	1.6	**10.3365**	0.110	1.1	ug/L	135	Standard
>	**Ge**	72	452327.1	0.7				ug/L	445277	Standard
	As	75	3.7	759.3	**0.0406**	0.025	62.2	ug/L	-57	Standard
	Se	82	90.0	4.8	**0.6561**	0.043	6.5	ug/L	10	Standard
	Se-1	77	214.7	8.2	**2.2421**	0.258	11.5	ug/L	57	Standard
>	**Ga**	71	51.7	11.2				mg/L	78	Standard
	Rb	85	19674.4	0.6				ug/L	22	Standard
	Y	89	402180.4	1.6				ug/L	388959	Standard
>	**Rh**	103	23.3	86.6				ug/L	8	Standard
	Mo	98	54.4	4.0	**0.0143**	0.001	6.8	ug/L	10	Standard
	Ag	107	81.3	9.2	**-0.0010**	0.001	130.1	ug/L	66	Standard
	Cd	111	147.2	4.4	**0.0678**	0.004	5.7	mg/L	3	Standard
	Cd	114	323.4	11.6	**0.0602**	0.007	11.4	ug/L	4	Standard
>	**In**	115	536865.7	1.0				ug/L	523327	Standard
	Sn	118	743.4	15.1	**0.0550**	0.021	38.2	ug/L	488	Standard
	Sb	123	248.8	19.8	**0.0368**	0.011	29.9	ug/L	195	Standard
	Ba	135	83464.6	0.7	**42.1345**	0.134	0.3	ug/L	28	Standard
	Ce	140	866.7	4.1				ug/L	83	Standard
>	**Tb**	159	800750.2	0.5				ug/L	809211	Standard
	Ho	165	380.0	9.9				ug/L	13	Standard
	Tl	203	142.7	7.8	**0.0163**	0.001	9.1	ug/L	4	Standard
	Tl	205	125.0	14.4	**0.0162**	0.003	16.2	ug/L	8	Standard
	Pb	206	289.7	10.7	**0.0112**	0.006	56.9	ug/L	230	Standard
	Pb	207	255.7	6.9	**0.0148**	0.004	25.5	ug/L	184	Standard
	Pb	208	1012.3	1.6	**0.0100**	0.001	10.4	ug/L	775	Standard
	U	238	59.7	10.2	**0.0082**	0.001	10.8	ug/L	3	Standard
>	**Bi**	209	468448.1	0.3				ug/L	472452	Standard

Sample ID: L1607007902
Report Date/Time: Thursday, July 07, 2016 13:31:28
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	7361.8	4.9	**9.5008**	0.484	5.1	mg/L	52	Standard
K	39	233.3	11.8	**0.9032**	0.112	12.4	mg/L	32	Standard
Ca	43	68.3	51.9	**4.5030**	4.376	97.2	mg/L	33	Standard
Fe	54	154.1	35.8	**0.0102**	0.044	436.0	mg/L	138	Standard
Fe	57	336.7	7.3	**0.3199**	0.084	26.2	mg/L	263	Standard
> **Sc-1**	45	29346.7	1.3				mg/L	27861	Standard
Cl	35	146674.0	2.0				ug/L	100607	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	4617.4	4.4				ug/L	1777	Standard
P	31	23690.2	1.8				ug/L	18074	Standard
S	34	5309.3	3.3				ug/L	3901	Standard
Sr	88	130.0	3.8				ug/L	60	Standard
C	12	50.0	20.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	34.6				mg/L	7	Standard
Dy	164	343.1	10.7				mg/L	13	Standard
Ho-1	165	380.0	9.9				mg/L	13	Standard
Er	166	353.3	16.3				mg/L	3	Standard
I	127	19223.9	3.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.544	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.583	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607007902
Report Date/Time: Thursday, July 07, 2016 13:31:28
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.587
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.153
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007904
Sample Date/Time: Thursday, July 07, 2016 13:32:23
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53879.0	1.5				ug/L	59299	Standard
	Be	9	41.7	38.6	**0.0562**	0.020	36.1	ug/L	17	Standard
	Al	27	9972341.7	0.8	**82.0258**	0.669	0.8	ug/L	1472	Standard
	Sc	45	29032.8	3.3				ug/L	27861	Standard
	Ti	47	97.0	7.2	**0.2851**	0.030	10.6	ug/L	28	Standard
	V	51	1899.2	7.0	**0.1003**	0.018	18.0	ug/L	1156	Standard
	Cr	52	10901.3	0.4	**0.5725**	0.004	0.8	ug/L	6689	Standard
	Cr	53	4949.1	5.3	**5.1832**	0.322	6.2	ug/L	348	Standard
	Mn	55	18797.0	1.5	**2.7840**	0.030	1.1	ug/L	770	Standard
	Co	59	690.0	6.6	**0.0667**	0.006	9.4	ug/L	216	Standard
	Ni	60	2107.5	3.1	**0.8884**	0.041	4.6	ug/L	440	Standard
	Cu	65	1394.1	2.9	**0.7004**	0.025	3.6	ug/L	116	Standard
	Zn	66	6557.4	0.7	**5.7918**	0.046	0.8	ug/L	135	Standard
>	**Ge**	72	455890.7	0.5				ug/L	445277	Standard
	As	75	37.3	63.7	**0.0707**	0.021	29.9	ug/L	-57	Standard
	Se	82	98.6	7.5	**0.7253**	0.067	9.2	ug/L	10	Standard
	Se-1	77	292.3	4.1	**3.2520**	0.171	5.3	ug/L	57	Standard
>	**Ga**	71	56.7	28.4				mg/L	78	Standard
	Rb	85	24242.7	1.0				ug/L	22	Standard
	Y	89	397125.1	2.0				ug/L	388959	Standard
>	**Rh**	103	25.0	69.3				ug/L	8	Standard
	Mo	98	120.8	5.8	**0.0408**	0.002	6.1	ug/L	10	Standard
	Ag	107	98.0	2.0	**0.0019**	0.000	21.2	ug/L	66	Standard
	Cd	111	120.7	13.2	**0.0564**	0.008	14.7	mg/L	3	Standard
	Cd	114	340.9	6.9	**0.0653**	0.005	7.4	ug/L	4	Standard
>	**In**	115	524717.6	0.6				ug/L	523327	Standard
	Sn	118	773.4	10.0	**0.0634**	0.015	23.1	ug/L	488	Standard
	Sb	123	293.1	14.0	**0.0477**	0.009	18.5	ug/L	195	Standard
	Ba	135	115007.2	0.3	**59.4090**	0.377	0.6	ug/L	28	Standard
	Ce	140	545.0	6.4				ug/L	83	Standard
>	**Tb**	159	799499.2	1.0				ug/L	809211	Standard
	Ho	165	470.0	14.9				ug/L	13	Standard
	Tl	203	474.7	7.4	**0.0598**	0.004	7.5	ug/L	4	Standard
	Tl	205	385.0	6.9	**0.0559**	0.004	6.7	ug/L	8	Standard
	Pb	206	365.3	6.3	**0.0279**	0.005	17.4	ug/L	230	Standard
	Pb	207	337.0	5.6	**0.0344**	0.004	12.9	ug/L	184	Standard
	Pb	208	1352.7	2.6	**0.0299**	0.002	6.2	ug/L	775	Standard
	U	238	51.3	25.0	**0.0071**	0.002	26.7	ug/L	3	Standard
>	**Bi**	209	460826.8	0.7				ug/L	472452	Standard

Sample ID: L1607007904
Report Date/Time: Thursday, July 07, 2016 13:34:40
Page 1

Approved: July 08, 2016

Na	23	3.3	173.2	**6.2762**	10.862	173.1	mg/L	0	Standard
Mg	24	11596.1	1.0	**15.1770**	0.572	3.8	mg/L	52	Standard
K	39	321.7	15.1	**1.3136**	0.256	19.5	mg/L	32	Standard
Ca	43	100.0	48.2	**8.3587**	5.728	68.5	mg/L	33	Standard
Fe	54	177.2	16.4	**0.0303**	0.026	87.5	mg/L	138	Standard
Fe	57	350.0	10.3	**0.3700**	0.104	28.0	mg/L	263	Standard
Sc-1	45	29032.8	3.3				mg/L	27861	Standard
Cl	35	147936.7	0.6				ug/L	100607	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	6031.2	3.7				ug/L	1777	Standard
P	31	23247.8	2.1				ug/L	18074	Standard
S	34	5416.0	2.5				ug/L	3901	Standard
Sr	88	138.3	8.3				ug/L	60	Standard
C	12	60.0	66.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	75.5				mg/L	7	Standard
Dy	164	397.7	16.5				mg/L	13	Standard
Ho-1	165	470.0	14.9				mg/L	13	Standard
Er	166	466.7	10.1				mg/L	3	Standard
I	127	41037.4	7.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.860	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.384	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607007904
Report Date/Time: Thursday, July 07, 2016 13:34:40
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.266
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.539
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007906
Sample Date/Time: Thursday, July 07, 2016 13:35:34
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53501.0	2.1				ug/L	59299	Standard
	Be	9	41.7	6.9	**0.0567**	0.003	4.7	ug/L	17	Standard
	Al	27	6716370.5	0.8	**55.6375**	0.795	1.4	ug/L	1472	Standard
	Sc	45	29179.7	1.2				ug/L	27861	Standard
	Ti	47	99.3	6.4	**0.2901**	0.028	9.6	ug/L	28	Standard
	V	51	1777.4	2.6	**0.0796**	0.006	7.2	ug/L	1156	Standard
	Cr	52	11039.4	1.3	**0.5744**	0.028	4.9	ug/L	6689	Standard
	Cr	53	3383.7	4.8	**3.3726**	0.161	4.8	ug/L	348	Standard
	Mn	55	29967.3	1.9	**4.4626**	0.113	2.5	ug/L	770	Standard
	Co	59	389.3	7.6	**0.0215**	0.005	21.1	ug/L	216	Standard
	Ni	60	1654.4	3.1	**0.6321**	0.031	4.9	ug/L	440	Standard
	Cu	65	969.4	0.7	**0.4633**	0.006	1.3	ug/L	116	Standard
	Zn	66	7338.4	1.6	**6.4294**	0.112	1.7	ug/L	135	Standard
>	**Ge**	72	461107.8	0.5				ug/L	445277	Standard
	As	75	10.9	207.3	**0.0471**	0.020	42.6	ug/L	-57	Standard
	Se	82	133.0	6.1	**1.0158**	0.068	6.7	ug/L	10	Standard
	Se-1	77	235.3	10.3	**2.4584**	0.325	13.2	ug/L	57	Standard
>	**Ga**	71	61.7	24.8				mg/L	78	Standard
	Rb	85	25004.0	2.4				ug/L	22	Standard
	Y	89	439152.1	1.1				ug/L	388959	Standard
>	**Rh**	103	43.3	17.6				ug/L	8	Standard
	Mo	98	166.6	11.4	**0.0575**	0.008	13.2	ug/L	10	Standard
	Ag	107	127.7	22.8	**0.0063**	0.005	74.7	ug/L	66	Standard
	Cd	111	99.7	6.3	**0.0449**	0.003	6.4	mg/L	3	Standard
	Cd	114	241.1	6.3	**0.0441**	0.003	7.6	ug/L	4	Standard
>	**In**	115	535050.7	0.6				ug/L	523327	Standard
	Sn	118	828.4	0.3	**0.0703**	0.001	1.9	ug/L	488	Standard
	Sb	123	221.1	8.6	**0.0309**	0.004	12.4	ug/L	195	Standard
	Ba	135	95813.3	0.7	**48.5346**	0.324	0.7	ug/L	28	Standard
	Ce	140	588.3	10.6				ug/L	83	Standard
>	**Tb**	159	805642.7	1.6				ug/L	809211	Standard
	Ho	165	1726.8	3.9				ug/L	13	Standard
	Tl	203	126.0	21.8	**0.0140**	0.003	24.1	ug/L	4	Standard
	Tl	205	121.7	27.4	**0.0155**	0.005	30.9	ug/L	8	Standard
	Pb	206	353.3	4.4	**0.0236**	0.003	11.2	ug/L	230	Standard
	Pb	207	303.7	4.1	**0.0251**	0.002	9.2	ug/L	184	Standard
	Pb	208	1288.7	3.1	**0.0246**	0.002	6.9	ug/L	775	Standard
	U	238	36.0	50.7	**0.0046**	0.003	57.4	ug/L	3	Standard
>	**Bi**	209	472361.0	0.7				ug/L	472452	Standard

Sample ID: L1607007906
Report Date/Time: Thursday, July 07, 2016 13:37:51
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.1476**	5.443	172.9	mg/L	0	Standard
Mg	24	4485.7	5.3	**5.7943**	0.243	4.2	mg/L	52	Standard
K	39	345.0	8.1	**1.4048**	0.106	7.5	mg/L	32	Standard
Ca	43	60.0	8.3	**3.5036**	0.686	19.6	mg/L	33	Standard
Fe	54	147.6	8.6	**0.0056**	0.010	180.1	mg/L	138	Standard
Fe	57	321.7	8.6	**0.2801**	0.076	27.3	mg/L	263	Standard
Sc-1	45	29179.7	1.2				mg/L	27861	Standard
Cl	35	144985.8	1.1				ug/L	100607	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	4630.7	9.2				ug/L	1777	Standard
P	31	24147.6	1.1				ug/L	18074	Standard
S	34	5252.6	2.3				ug/L	3901	Standard
Sr	88	135.0	13.4				ug/L	60	Standard
C	12	110.0	15.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	7	Standard
Dy	164	2156.4	5.2				mg/L	13	Standard
Ho-1	165	1726.8	3.9				mg/L	13	Standard
Er	166	1680.1	10.6				mg/L	3	Standard
I	127	18187.6	0.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.222	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.555	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607007906
Report Date/Time: Thursday, July 07, 2016 13:37:51
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.240
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.981
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007908
Sample Date/Time: Thursday, July 07, 2016 13:38:46
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55232.2	1.8				ug/L	59299	Standard
	Be	9	373.3	20.1	**0.4814**	0.088	18.2	ug/L	17	Standard
	Al	27	7093113.2	0.9	**56.9126**	0.605	1.1	ug/L	1472	Standard
	Sc	45	29114.6	1.8				ug/L	27861	Standard
	Ti	47	95.7	18.7	**0.2841**	0.071	25.1	ug/L	28	Standard
	V	51	1813.8	13.1	**0.0912**	0.034	37.7	ug/L	1156	Standard
	Cr	52	10745.5	0.4	**0.5699**	0.013	2.2	ug/L	6689	Standard
	Cr	53	7910.4	4.6	**8.6359**	0.381	4.4	ug/L	348	Standard
	Mn	55	19220.9	0.1	**2.8880**	0.027	0.9	ug/L	770	Standard
	Co	59	346.0	4.1	**0.0164**	0.002	10.2	ug/L	216	Standard
	Ni	60	5270.9	0.9	**2.6433**	0.032	1.2	ug/L	440	Standard
	Cu	65	1779.1	3.8	**0.9221**	0.031	3.4	ug/L	116	Standard
	Zn	66	23785.0	0.3	**21.8036**	0.151	0.7	ug/L	135	Standard
>	**Ge**	72	450139.5	1.0				ug/L	445277	Standard
	As	75	3.8	1986.1	**0.0405**	0.068	168.7	ug/L	-57	Standard
	Se	82	82.2	14.8	**0.5892**	0.102	17.4	ug/L	10	Standard
	Se-1	77	394.7	2.8	**4.6813**	0.198	4.2	ug/L	57	Standard
>	**Ga**	71	68.3	18.4				mg/L	78	Standard
	Rb	85	34257.0	1.4				ug/L	22	Standard
	Y	89	405460.7	1.3				ug/L	388959	Standard
>	**Rh**	103	26.7	28.6				ug/L	8	Standard
	Mo	98	50.8	26.3	**0.0135**	0.005	39.1	ug/L	10	Standard
	Ag	107	1015.4	3.7	**0.1485**	0.006	3.8	ug/L	66	Standard
	Cd	111	753.9	2.2	**0.3735**	0.010	2.6	mg/L	3	Standard
	Cd	114	1911.4	3.7	**0.3871**	0.014	3.7	ug/L	4	Standard
>	**In**	115	520750.8	0.4				ug/L	523327	Standard
	Sn	118	698.3	8.1	**0.0508**	0.010	20.2	ug/L	488	Standard
	Sb	123	223.5	12.0	**0.0328**	0.006	17.6	ug/L	195	Standard
	Ba	135	172843.3	0.6	**89.9719**	0.188	0.2	ug/L	28	Standard
	Ce	140	976.7	7.4				ug/L	83	Standard
>	**Tb**	159	792666.5	1.7				ug/L	809211	Standard
	Ho	165	745.0	6.0				ug/L	13	Standard
	Tl	203	112.7	8.9	**0.0127**	0.001	9.7	ug/L	4	Standard
	Tl	205	81.7	15.4	**0.0099**	0.002	18.6	ug/L	8	Standard
	Pb	206	443.7	3.5	**0.0441**	0.003	7.4	ug/L	230	Standard
	Pb	207	379.0	1.0	**0.0440**	0.000	0.9	ug/L	184	Standard
	Pb	208	1602.0	3.7	**0.0438**	0.003	6.8	ug/L	775	Standard
	U	238	13.7	11.2	**0.0014**	0.000	16.0	ug/L	3	Standard
>	**Bi**	209	461048.7	0.5				ug/L	472452	Standard

Sample ID: L1607007908
Report Date/Time: Thursday, July 07, 2016 13:41:02
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	18379.5	0.9	**24.0125**	0.578	2.4	mg/L	52	Standard
K	39	375.0	1.3	**1.5427**	0.023	1.5	mg/L	32	Standard
Ca	43	56.7	36.7	**3.0834**	2.428	78.7	mg/L	33	Standard
Fe	54	148.9	3.5	**0.0070**	0.005	75.1	mg/L	138	Standard
Fe	57	336.7	13.3	**0.3271**	0.131	40.1	mg/L	263	Standard
> **Sc-1**	45	29114.6	1.8				mg/L	27861	Standard
Cl	35	140540.8	0.8				ug/L	100607	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	6177.9	4.1				ug/L	1777	Standard
P	31	24124.2	3.4				ug/L	18074	Standard
S	34	5284.3	5.6				ug/L	3901	Standard
Sr	88	131.7	25.3				ug/L	60	Standard
C	12	86.7	6.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	366.7	18.6				mg/L	7	Standard
Dy	164	790.9	8.6				mg/L	13	Standard
Ho-1	165	745.0	6.0				mg/L	13	Standard
Er	166	676.7	15.1				mg/L	3	Standard
I	127	11322.6	5.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.092	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607007908
Report Date/Time: Thursday, July 07, 2016 13:41:02
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.508
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.586
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007910
Sample Date/Time: Thursday, July 07, 2016 13:41:57
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53589.7	2.9				ug/L	59299	Standard
	Be	9	25.0	72.1	**0.0341**	0.023	68.0	ug/L	17	Standard
	Al	27	12962926.0	2.2	**107.2164**	1.388	1.3	ug/L	1472	Standard
	Sc	45	28582.0	4.1				ug/L	27861	Standard
	Ti	47	112.3	13.1	**0.3565**	0.076	21.2	ug/L	28	Standard
	V	51	1335.4	12.7	**0.0216**	0.031	142.0	ug/L	1156	Standard
	Cr	52	10105.4	2.4	**0.4821**	0.050	10.4	ug/L	6689	Standard
	Cr	53	9036.0	2.6	**9.9498**	0.264	2.7	ug/L	348	Standard
	Mn	55	7486983.4	0.6	**1177.9106**	27.011	2.3	ug/L	770	Standard
	Co	59	5361.9	0.9	**0.7709**	0.015	2.0	ug/L	216	Standard
	Ni	60	4380.3	2.9	**2.1590**	0.025	1.2	ug/L	440	Standard
	Cu	65	1309.4	1.7	**0.6653**	0.013	1.9	ug/L	116	Standard
	Zn	66	7187.7	2.1	**6.4710**	0.248	3.8	ug/L	135	Standard
>	**Ge**	72	449064.8	2.7				ug/L	445277	Standard
	As	75	144.8	11.3	**0.1691**	0.018	10.4	ug/L	-57	Standard
	Se	82	102.5	12.6	**0.7757**	0.140	18.1	ug/L	10	Standard
	Se-1	77	497.3	3.7	**6.0787**	0.124	2.0	ug/L	57	Standard
>	**Ga**	71	223.3	15.7				mg/L	78	Standard
	Rb	85	24933.8	3.5				ug/L	22	Standard
	Y	89	387612.8	4.2				ug/L	388959	Standard
>	**Rh**	103	46.7	22.3				ug/L	8	Standard
	Mo	98	242.3	8.9	**0.0903**	0.007	8.3	ug/L	10	Standard
	Ag	107	78.3	9.0	**-0.0009**	0.001	129.5	ug/L	66	Standard
	Cd	111	647.2	2.6	**0.3246**	0.014	4.2	mg/L	3	Standard
	Cd	114	1634.5	0.4	**0.3350**	0.007	2.0	ug/L	4	Standard
>	**In**	115	513818.6	1.5				ug/L	523327	Standard
	Sn	118	893.4	12.4	**0.0883**	0.020	23.1	ug/L	488	Standard
	Sb	123	305.3	15.8	**0.0519**	0.012	22.3	ug/L	195	Standard
	Ba	135	103894.3	0.8	**54.8139**	1.027	1.9	ug/L	28	Standard
	Ce	140	1890.1	4.4				ug/L	83	Standard
>	**Tb**	159	785377.8	0.6				ug/L	809211	Standard
	Ho	165	183.3	12.3				ug/L	13	Standard
	Tl	203	647.7	0.5	**0.0833**	0.002	1.9	ug/L	4	Standard
	Tl	205	603.3	6.7	**0.0901**	0.007	8.3	ug/L	8	Standard
	Pb	206	370.3	0.7	**0.0297**	0.001	2.3	ug/L	230	Standard
	Pb	207	312.3	1.8	**0.0295**	0.001	4.0	ug/L	184	Standard
	Pb	208	1409.7	2.0	**0.0340**	0.003	8.0	ug/L	775	Standard
	U	238	577.3	6.0	**0.0882**	0.007	7.4	ug/L	3	Standard
>	**Bi**	209	456068.6	1.3				ug/L	472452	Standard

Sample ID: L1607007910
Report Date/Time: Thursday, July 07, 2016 13:44:14
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	24695.1	0.7	**32.9128**	1.182	3.6	mg/L	52	Standard
K	39	295.0	7.4	**1.2108**	0.076	6.3	mg/L	32	Standard
Ca	43	128.3	46.2	**12.3061**	7.664	62.3	mg/L	33	Standard
Fe	54	182.5	4.3	**0.0366**	0.012	32.2	mg/L	138	Standard
Fe	57	425.0	14.7	**0.6111**	0.148	24.2	mg/L	263	Standard
> **Sc-1**	45	28582.0	4.1				mg/L	27861	Standard
Cl	35	136551.4	2.1				ug/L	100607	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	6484.7	5.2				ug/L	1777	Standard
P	31	24060.8	2.4				ug/L	18074	Standard
S	34	5449.3	1.4				ug/L	3901	Standard
Sr	88	196.7	28.0				ug/L	60	Standard
C	12	113.3	28.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	99.0				mg/L	7	Standard
Dy	164	261.5	14.4				mg/L	13	Standard
Ho-1	165	183.3	12.3				mg/L	13	Standard
Er	166	176.7	22.9				mg/L	3	Standard
I	127	100073.2	4.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.372	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.851	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607007910
Report Date/Time: Thursday, July 07, 2016 13:44:14
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.183
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.532
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1607007910
Report Date/Time: Thursday, July 07, 2016 13:44:14
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607018101
Sample Date/Time: Thursday, July 07, 2016 13:45:08
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56080.3	2.5				ug/L	59299	Standard
	Be	9	13.3	43.3	**0.0181**	0.007	37.6	ug/L	17	Standard
	Al	27	5615167.0	1.4	**44.3737**	0.644	1.5	ug/L	1472	Standard
	Sc	45	28266.3	2.1				ug/L	27861	Standard
	Ti	47	509.0	49.2	**2.0297**	1.043	51.4	ug/L	28	Standard
	V	51	679.1	394.1	**-0.0772**	0.401	518.8	ug/L	1156	Standard
	Cr	52	502648.3	0.8	**72.0566**	0.243	0.3	ug/L	6689	Standard
	Cr	53	65861.2	2.0	**75.7575**	0.983	1.3	ug/L	348	Standard
	Mn	55	228940.2	1.4	**36.2328**	0.375	1.0	ug/L	770	Standard
	Co	59	1620.8	2.8	**0.2105**	0.005	2.4	ug/L	216	Standard
	Ni	60	3487.1	1.1	**1.6853**	0.016	1.0	ug/L	440	Standard
	Cu	65	14101.9	0.7	**7.8083**	0.021	0.3	ug/L	116	Standard
	Zn	66	5215.9	1.9	**4.6862**	0.057	1.2	ug/L	135	Standard
>	**Ge**	72	444699.9	0.8				ug/L	445277	Standard
	As	75	551.2	7.9	**0.5433**	0.041	7.6	ug/L	-57	Standard
	Se	82	81.1	7.8	**0.5886**	0.063	10.8	ug/L	10	Standard
	Se-1	77	250.3	5.7	**2.7767**	0.192	6.9	ug/L	57	Standard
>	**Ga**	71	408.3	5.1				mg/L	78	Standard
	Rb	85	11307.6	2.5				ug/L	22	Standard
	Y	89	381990.8	1.2				ug/L	388959	Standard
>	**Rh**	103	36.7	28.4				ug/L	8	Standard
	Mo	98	2852.2	3.0	**1.1414**	0.043	3.8	ug/L	10	Standard
	Ag	107	89.3	12.0	**0.0009**	0.002	205.5	ug/L	66	Standard
	Cd	111	26.3	12.0	**0.0098**	0.001	15.2	mg/L	3	Standard
	Cd	114	4784.9	26.5	**0.9926**	0.263	26.5	ug/L	4	Standard
>	**In**	115	511208.3	1.6				ug/L	523327	Standard
	Sn	118	1582120.5	2.4	**291.7884**	3.205	1.1	ug/L	488	Standard
	Sb	123	3035.1	1.5	**0.6671**	0.020	3.1	ug/L	195	Standard
	Ba	135	16409.9	0.8	**8.6869**	0.107	1.2	ug/L	28	Standard
	Ce	140	2033.5	5.8				ug/L	83	Standard
>	**Tb**	159	786804.1	1.3				ug/L	809211	Standard
	Ho	165	66.7	45.8				ug/L	13	Standard
	Tl	203	61.0	17.3	**0.0061**	0.001	22.0	ug/L	4	Standard
	Tl	205	41.7	48.5	**0.0040**	0.003	78.0	ug/L	8	Standard
	Pb	206	2387.9	2.9	**0.4577**	0.012	2.6	ug/L	230	Standard
	Pb	207	1979.5	1.3	**0.4193**	0.010	2.4	ug/L	184	Standard
	Pb	208	8593.3	0.6	**0.4445**	0.003	0.7	ug/L	775	Standard
	U	238	817.0	5.6	**0.1262**	0.007	5.8	ug/L	3	Standard
>	**Bi**	209	451671.0	0.9				ug/L	472452	Standard

Sample ID: L1607018101
Report Date/Time: Thursday, July 07, 2016 13:47:25
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.1498**	5.447	172.9	mg/L	0	Standard
Mg	24	37229.0	0.4	**50.1687**	0.866	1.7	mg/L	52	Standard
K	39	195.0	17.9	**0.7679**	0.165	21.5	mg/L	32	Standard
Ca	43	180.0	10.0	**18.8913**	2.289	12.1	mg/L	33	Standard
Fe	54	935.8	9.8	**0.6549**	0.069	10.5	mg/L	138	Standard
Fe	57	701.7	6.7	**1.4797**	0.175	11.8	mg/L	263	Standard
> **Sc-1**	45	28266.3	2.1				mg/L	27861	Standard
Cl	35	187038.2	1.5				ug/L	100607	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	12168.2	0.2				ug/L	1777	Standard
P	31	23060.9	0.5				ug/L	18074	Standard
S	34	5002.5	2.7				ug/L	3901	Standard
Sr	88	206.7	7.4				ug/L	60	Standard
C	12	120.0	33.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	80.1	20.2				mg/L	13	Standard
Ho-1	165	66.7	45.8				mg/L	13	Standard
Er	166	66.7	37.7				mg/L	3	Standard
I	127	36462.4	9.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.572	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.870	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607018101
Report Date/Time: Thursday, July 07, 2016 13:47:25
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.684
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.602
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sn 118 Upper, S, EEE	Sn	118	

Sample ID: L1607018101
Report Date/Time: Thursday, July 07, 2016 13:47:25
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607018201
Sample Date/Time: Thursday, July 07, 2016 13:48:20
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55386.1	0.7				ug/L	59299	Standard
	Be	9	25.0	52.9	**0.0335**	0.017	51.2	ug/L	17	Standard
	Al	27	4588931.5	0.9	**36.7105**	0.491	1.3	ug/L	1472	Standard
	Sc	45	28742.2	0.5				ug/L	27861	Standard
	Ti	47	649.0	45.5	**2.5742**	1.241	48.2	ug/L	28	Standard
	V	51	4779.4	1.2	**0.5239**	0.013	2.4	ug/L	1156	Standard
	Cr	52	11151.8	1.5	**0.6158**	0.015	2.5	ug/L	6689	Standard
	Cr	53	2298.5	5.2	**2.2061**	0.158	7.2	ug/L	348	Standard
	Mn	55	425540.1	0.5	**66.1330**	0.873	1.3	ug/L	770	Standard
	Co	59	1732.8	2.8	**0.2224**	0.009	4.0	ug/L	216	Standard
	Ni	60	2486.9	0.6	**1.1012**	0.020	1.8	ug/L	440	Standard
	Cu	65	2850.9	0.9	**1.5008**	0.002	0.1	ug/L	116	Standard
	Zn	66	5166.2	0.6	**4.5452**	0.068	1.5	ug/L	135	Standard
>	**Ge**	72	453623.8	0.9				ug/L	445277	Standard
	As	75	339.6	4.6	**0.3428**	0.014	4.2	ug/L	-57	Standard
	Se	82	62.2	9.0	**0.4070**	0.053	13.1	ug/L	10	Standard
	Se-1	77	130.7	8.2	**1.1094**	0.139	12.5	ug/L	57	Standard
>	**Ga**	71	211.7	13.6				mg/L	78	Standard
	Rb	85	11766.2	1.6				ug/L	22	Standard
	Y	89	385950.9	1.2				ug/L	388959	Standard
>	**Rh**	103	35.0	71.4				ug/L	8	Standard
	Mo	98	1440.7	2.3	**0.5604**	0.015	2.7	ug/L	10	Standard
	Ag	107	97.7	10.9	**0.0019**	0.002	94.0	ug/L	66	Standard
	Cd	111	57.7	8.6	**0.0251**	0.002	9.0	mg/L	3	Standard
	Cd	114	187.7	13.2	**0.0344**	0.005	15.6	ug/L	4	Standard
>	**In**	115	522704.7	0.9				ug/L	523327	Standard
	Sn	118	3132.0	13.2	**0.4897**	0.078	15.9	ug/L	488	Standard
	Sb	123	390.7	5.8	**0.0694**	0.006	8.1	ug/L	195	Standard
	Ba	135	36878.8	0.6	**19.1132**	0.261	1.4	ug/L	28	Standard
	Ce	140	4350.6	10.1				ug/L	83	Standard
>	**Tb**	159	791343.2	0.6				ug/L	809211	Standard
	Ho	165	136.7	11.8				ug/L	13	Standard
	Tl	203	110.3	27.7	**0.0122**	0.004	31.6	ug/L	4	Standard
	Tl	205	91.7	16.7	**0.0113**	0.002	20.8	ug/L	8	Standard
	Pb	206	2085.1	3.1	**0.3802**	0.013	3.3	ug/L	230	Standard
	Pb	207	1771.8	2.4	**0.3582**	0.009	2.4	ug/L	184	Standard
	Pb	208	7699.1	0.4	**0.3802**	0.003	0.7	ug/L	775	Standard
	U	238	324.3	3.5	**0.0481**	0.002	3.1	ug/L	3	Standard
>	**Bi**	209	465810.0	0.4				ug/L	472452	Standard

Sample ID: L1607018201
Report Date/Time: Thursday, July 07, 2016 13:50:37
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.1640**	5.472	172.9	mg/L	0	Standard
Mg	24	7190.0	2.5	**9.4728**	0.203	2.1	mg/L	52	Standard
K	39	168.3	4.5	**0.6323**	0.031	4.9	mg/L	32	Standard
Ca	43	106.7	31.2	**9.4011**	4.105	43.7	mg/L	33	Standard
Fe	54	522.5	6.9	**0.3094**	0.027	8.7	mg/L	138	Standard
Fe	57	478.3	5.8	**0.7680**	0.083	10.8	mg/L	263	Standard
> **Sc-1**	45	28742.2	0.5				mg/L	27861	Standard
Cl	35	156667.2	1.1				ug/L	100607	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	8439.0	5.9				ug/L	1777	Standard
P	31	21046.3	2.4				ug/L	18074	Standard
S	34	5112.5	1.3				ug/L	3901	Standard
Sr	88	200.0	10.9				ug/L	60	Standard
C	12	103.3	24.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	204.7	9.2				mg/L	13	Standard
Ho-1	165	136.7	11.8				mg/L	13	Standard
Er	166	110.0	24.1				mg/L	3	Standard
I	127	30280.4	8.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.401	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.874	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607018201
Report Date/Time: Thursday, July 07, 2016 13:50:37
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.881
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.594
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 13:51:33
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52840.3	1.1				ug/L	59299	Standard
	Be	9	40006.1	1.4	**53.8836**	1.060	2.0	ug/L	17	Standard
	Al	27	6441786.6	0.6	**54.0230**	0.650	1.2	ug/L	1472	Standard
	Sc	45	28259.7	2.5				ug/L	27861	Standard
	Ti	47	23991.3	0.9	**99.3125**	0.774	0.8	ug/L	28	Standard
	V	51	331766.4	0.8	**48.5690**	0.296	0.6	ug/L	1156	Standard
	Cr	52	353193.6	0.5	**49.4616**	0.181	0.4	ug/L	6689	Standard
	Cr	53	43512.4	2.7	**49.0568**	1.473	3.0	ug/L	348	Standard
	Mn	55	324195.8	1.5	**50.4770**	0.618	1.2	ug/L	770	Standard
	Co	59	323960.9	1.5	**48.3015**	0.622	1.3	ug/L	216	Standard
	Ni	60	91553.1	1.3	**49.8507**	0.788	1.6	ug/L	440	Standard
	Cu	65	90230.9	0.6	**49.4123**	0.383	0.8	ug/L	116	Standard
	Zn	66	53777.6	0.5	**49.2883**	0.261	0.5	ug/L	135	Standard
>	Ge	72	452464.9	0.3				ug/L	445277	Standard
	As	75	53910.7	0.3	**48.6643**	0.174	0.4	ug/L	-57	Standard
	Se	82	5462.9	1.9	**48.4572**	0.911	1.9	ug/L	10	Standard
	Se-1	77	3733.1	1.6	**49.4002**	0.702	1.4	ug/L	57	Standard
>	Ga	71	51.7	24.4				mg/L	78	Standard
	Rb	85	851.7	8.8				ug/L	22	Standard
	Y	89	381944.3	0.7				ug/L	388959	Standard
>	Rh	103	25.0	20.0				ug/L	8	Standard
	Mo	98	246235.9	0.8	**95.7533**	0.762	0.8	ug/L	10	Standard
	Ag	107	305875.4	0.8	**48.0499**	0.406	0.8	ug/L	66	Standard
	Cd	111	98714.4	0.8	**48.6015**	0.419	0.9	mg/L	3	Standard
	Cd	114	242138.0	1.7	**48.7601**	0.847	1.7	ug/L	4	Standard
>	In	115	528960.6	0.1				ug/L	523327	Standard
	Sn	118	274166.4	3.0	**48.8076**	1.501	3.1	ug/L	488	Standard
	Sb	123	221088.8	0.9	**48.1033**	0.445	0.9	ug/L	195	Standard
	Ba	135	93307.8	0.1	**47.8088**	0.024	0.1	ug/L	28	Standard
	Ce	140	61.7	20.4				ug/L	83	Standard
>	Tb	159	799437.3	1.4				ug/L	809211	Standard
	Ho	165	5.0	173.2				ug/L	13	Standard
	Tl	203	388869.2	0.8	**49.8766**	0.252	0.5	ug/L	4	Standard
	Tl	205	329727.6	0.7	**49.3118**	0.565	1.1	ug/L	8	Standard
	Pb	206	242576.4	0.5	**49.5653**	0.076	0.2	ug/L	230	Standard
	Pb	207	220141.4	0.4	**49.5625**	0.091	0.2	ug/L	184	Standard
	Pb	208	931473.3	0.3	**51.2710**	0.299	0.6	ug/L	775	Standard
	U	238	332742.1	0.8	**49.9001**	0.329	0.7	ug/L	3	Standard
>	Bi	209	467716.0	0.4				ug/L	472452	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 13:53:50
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3802.1	4.9	**5.0692**	0.342	6.7	mg/L	52	Standard
K	39	938.4	14.8	**4.1782**	0.655	15.7	mg/L	32	Standard
Ca	43	58.3	19.8	**3.5212**	1.411	40.1	mg/L	33	Standard
Fe	54	6032.6	2.6	**4.8340**	0.141	2.9	mg/L	138	Standard
Fe	57	1840.1	4.6	**4.9732**	0.174	3.5	mg/L	263	Standard
Sc-1	45	28259.7	2.5				mg/L	27861	Standard
Cl	35	130634.3	2.3				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1820.1	11.4				ug/L	1777	Standard
P	31	23009.1	1.3				ug/L	18074	Standard
S	34	5666.1	5.0				ug/L	3901	Standard
Sr	88	106.7	11.8				ug/L	60	Standard
C	12	50.0	52.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	7	Standard
Dy	164	25.9	19.7				mg/L	13	Standard
Ho-1	165	5.0	173.2				mg/L	13	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	11988.1	5.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.767		
Al	27	108.046		
Sc	45			
Ti	47	99.313		
V	51	97.138		
Cr	52	98.923		
Cr	53			
Mn	55	100.954		
Co	59	96.603		
Ni	60	99.701		
Cu	65	98.825		
Zn	66	98.577		
Ge	72		101.614	
As	75	97.329		
Se	82	96.914		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 13:53:50
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	95.753		
Ag	107	96.100		
Cd	111	97.203		
Cd	114			
> In	115		101.077	
Sn	118	97.615		
Sb	123	96.207		
Ba	135	95.618		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.753		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.542		
U	238	99.800		
> Bi	209		98.998	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 13:53:50
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 13:54:45
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51850.3	3.2				ug/L	59299	Standard
	Be	9	25.0	60.0	**0.0359**	0.022	60.0	ug/L	17	Standard
	Al	27	2583.6	17.8	**0.0092**	0.003	35.4	ug/L	1472	Standard
	Sc	45	28496.8	1.9				ug/L	27861	Standard
	Ti	47	27.3	18.4	**0.0000**	0.022	100455.6	ug/L	28	Standard
	V	51	1147.5	3.2	**-0.0071**	0.004	60.9	ug/L	1156	Standard
	Cr	52	6282.0	1.0	**-0.0705**	0.002	3.0	ug/L	6689	Standard
	Cr	53	546.7	5.5	**0.2241**	0.030	13.2	ug/L	348	Standard
	Mn	55	1033.4	3.0	**0.0342**	0.004	10.3	ug/L	770	Standard
	Co	59	236.0	20.2	**-0.0001**	0.007	6763.6	ug/L	216	Standard
	Ni	60	320.0	5.7	**-0.0804**	0.009	10.7	ug/L	440	Standard
	Cu	65	146.7	7.5	**0.0226**	0.006	26.0	ug/L	116	Standard
	Zn	66	413.3	10.8	**0.1856**	0.042	22.5	ug/L	135	Standard
>	**Ge**	72	449981.1	0.8				ug/L	445277	Standard
	As	75	-50.2	15.3	**-0.0082**	0.007	87.1	ug/L	-57	Standard
	Se	82	12.3	46.5	**-0.0360**	0.050	139.0	ug/L	10	Standard
	Se-1	77	54.0	16.1	**0.0899**	0.113	125.3	ug/L	57	Standard
>	**Ga**	71	51.7	40.3				mg/L	78	Standard
	Rb	85	26.7	47.2				ug/L	22	Standard
	Y	89	381280.3	1.7				ug/L	388959	Standard
>	**Rh**	103	8.3	69.3				ug/L	8	Standard
	Mo	98	206.1	23.5	**0.0737**	0.019	26.2	ug/L	10	Standard
	Ag	107	120.3	16.1	**0.0053**	0.003	59.0	ug/L	66	Standard
	Cd	111	16.6	39.2	**0.0046**	0.003	70.9	mg/L	3	Standard
	Cd	114	38.6	19.9	**0.0039**	0.002	41.1	ug/L	4	Standard
>	**In**	115	528631.5	0.6				ug/L	523327	Standard
	Sn	118	1045.0	18.6	**0.1107**	0.034	30.6	ug/L	488	Standard
	Sb	123	641.8	27.2	**0.1230**	0.037	30.4	ug/L	195	Standard
	Ba	135	46.3	28.2	**0.0066**	0.007	103.7	ug/L	28	Standard
	Ce	140	10.0	50.0				ug/L	83	Standard
>	**Tb**	159	791618.3	0.2				ug/L	809211	Standard
	Ho	165	10.0	100.0				ug/L	13	Standard
	Tl	203	72.3	5.6	**0.0072**	0.000	6.4	ug/L	4	Standard
	Tl	205	66.7	17.3	**0.0074**	0.002	22.7	ug/L	8	Standard
	Pb	206	272.0	11.2	**0.0071**	0.006	84.0	ug/L	230	Standard
	Pb	207	238.7	7.5	**0.0106**	0.004	36.3	ug/L	184	Standard
	Pb	208	992.7	3.4	**0.0085**	0.002	20.1	ug/L	775	Standard
	U	238	60.0	19.2	**0.0082**	0.002	21.0	ug/L	3	Standard
>	**Bi**	209	472266.4	0.6				ug/L	472452	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 13:57:02
Page 1

Approved: July 08, 2016

Na	23	3.3	173.2	**6.3296**	10.955	173.1	mg/L	0	Standard
Mg	24	55.0		**0.0079**	0.001	17.4	mg/L	52	Standard
K	39	25.0	34.6	**-0.0134**	0.038	282.0	mg/L	32	Standard
Ca	43	18.3	56.8	**-1.5489**	1.279	82.6	mg/L	33	Standard
Fe	54	156.1	3.6	**0.0154**	0.006	40.4	mg/L	138	Standard
Fe	57	236.7	1.2	**0.0445**	0.011	25.8	mg/L	263	Standard
Sc-1	45	28496.8	1.9				mg/L	27861	Standard
Cl	35	128828.1	1.4				ug/L	100607	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1690.1	6.6				ug/L	1777	Standard
P	31	21426.8	1.4				ug/L	18074	Standard
S	34	5521.0	5.2				ug/L	3901	Standard
Sr	88	78.3	13.3				ug/L	60	Standard
C	12	60.0	33.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	12.2	48.8				mg/L	13	Standard
Ho-1	165	10.0	100.0				mg/L	13	Standard
Er	166	23.3	65.5				mg/L	3	Standard
I	127	7125.0	6.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.056	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 13:57:02
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.014	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.961	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 13:57:02
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: PBW 67 WG575246-03
Sample Date/Time: Thursday, July 07, 2016 13:57:57
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51216.5	2.8				ug/L	59299	Standard
	Be	9	10.0	50.0	**0.0151**	0.007	43.4	ug/L	17	Standard
	Al	27	18324.4	4.7	**0.1458**	0.009	6.1	ug/L	1472	Standard
	Sc	45	27331.3	0.5				ug/L	27861	Standard
	Ti	47	31.0	22.3	**0.0154**	0.028	183.1	ug/L	28	Standard
	V	51	1193.1	5.1	**0.0001**	0.010	7460.2	ug/L	1156	Standard
	Cr	52	7792.7	0.3	**0.1494**	0.010	6.8	ug/L	6689	Standard
	Cr	53	690.0	7.1	**0.3899**	0.052	13.2	ug/L	348	Standard
	Mn	55	1770.4	4.9	**0.1506**	0.012	7.7	ug/L	770	Standard
	Co	59	227.0	4.7	**-0.0013**	0.001	103.9	ug/L	216	Standard
	Ni	60	406.0	4.9	**-0.0325**	0.010	29.7	ug/L	440	Standard
	Cu	65	200.0	7.0	**0.0524**	0.008	15.8	ug/L	116	Standard
	Zn	66	1003.4	3.9	**0.7340**	0.036	4.9	ug/L	135	Standard
>	**Ge**	72	448798.4	0.7				ug/L	445277	Standard
	As	75	-27.5	19.2	**0.0123**	0.005	39.1	ug/L	-57	Standard
	Se	82	17.9	19.2	**0.0155**	0.031	198.2	ug/L	10	Standard
	Se-1	77	53.0	17.3	**0.0784**	0.120	153.7	ug/L	57	Standard
>	**Ga**	71	50.0	30.0				mg/L	78	Standard
	Rb	85	185.0	9.7				ug/L	22	Standard
	Y	89	386993.5	0.9				ug/L	388959	Standard
>	**Rh**	103	11.7	99.0				ug/L	8	Standard
	Mo	98	77.7	13.9	**0.0239**	0.004	16.6	ug/L	10	Standard
	Ag	107	98.0	22.8	**0.0019**	0.003	177.3	ug/L	66	Standard
	Cd	111	10.5	69.9	**0.0016**	0.004	222.8	mg/L	3	Standard
	Cd	114	28.5	78.6	**0.0019**	0.005	241.9	ug/L	4	Standard
>	**In**	115	523650.4	0.9				ug/L	523327	Standard
	Sn	118	801.7	13.7	**0.0687**	0.019	28.1	ug/L	488	Standard
	Sb	123	309.8	34.9	**0.0514**	0.024	46.2	ug/L	195	Standard
	Ba	135	213.7	8.1	**0.0934**	0.008	8.7	ug/L	28	Standard
	Ce	140	175.0	20.0				ug/L	83	Standard
>	**Tb**	159	788364.3	0.9				ug/L	809211	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	40.3	38.4	**0.0032**	0.002	61.8	ug/L	4	Standard
	Tl	205	28.3	66.8	**0.0017**	0.003	162.9	ug/L	8	Standard
	Pb	206	360.0	4.1	**0.0253**	0.003	12.8	ug/L	230	Standard
	Pb	207	298.3	7.1	**0.0241**	0.005	19.1	ug/L	184	Standard
	Pb	208	1273.0	4.4	**0.0240**	0.003	11.9	ug/L	775	Standard
	U	238	31.3	39.9	**0.0040**	0.002	46.6	ug/L	3	Standard
>	**Bi**	209	470456.6	0.3				ug/L	472452	Standard

Sample ID: PBW 67 WG575246-03
Report Date/Time: Thursday, July 07, 2016 14:00:14
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	60.0	50.0	**0.0182**	0.042	232.1	mg/L	52	Standard
K	39	26.7	65.8	**0.0001**	0.084	76827.7	mg/L	32	Standard
Ca	43	21.7	35.3	**-1.0085**	1.008	99.9	mg/L	33	Standard
Fe	54	154.1	12.8	**0.0191**	0.017	87.9	mg/L	138	Standard
Fe	57	268.3	7.1	**0.1759**	0.063	35.9	mg/L	263	Standard
> **Sc-1**	45	27331.3	0.5				mg/L	27861	Standard
Cl	35	127294.6	1.3				ug/L	100607	Standard
Kr	83	3.7	41.7				ug/L	2	Standard
Br	81	1900.1	1.4				ug/L	1777	Standard
P	31	21310.0	5.6				ug/L	18074	Standard
S	34	5551.0	0.9				ug/L	3901	Standard
Sr	88	90.0	14.7				ug/L	60	Standard
C	12	96.7	26.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.9	217.0				mg/L	13	Standard
Ho-1	165	13.3	21.7				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	4579.0	2.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.370	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.791	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 67 WG575246-03
Report Date/Time: Thursday, July 07, 2016 14:00:14
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.062	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.578	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 67 WG575246-03
Report Date/Time: Thursday, July 07, 2016 14:00:14
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 14:01:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49870.3	1.8				ug/L	59299	Standard
	Be	9	38617.5	2.3	**55.1058**	0.871	1.6	ug/L	17	Standard
	Al	27	6309734.3	0.8	**56.0699**	0.550	1.0	ug/L	1472	Standard
	Sc	45	28560.2	0.9				ug/L	27861	Standard
	Ti	47	23536.3	0.9	**97.9955**	1.248	1.3	ug/L	28	Standard
	V	51	326689.2	1.2	**48.1036**	0.778	1.6	ug/L	1156	Standard
	Cr	52	348662.2	0.7	**49.1049**	0.578	1.2	ug/L	6689	Standard
	Cr	53	43736.4	0.4	**49.5968**	0.132	0.3	ug/L	348	Standard
	Mn	55	318079.8	1.3	**49.8118**	0.702	1.4	ug/L	770	Standard
	Co	59	320167.1	1.8	**48.0128**	0.811	1.7	ug/L	216	Standard
	Ni	60	90544.4	0.6	**49.5855**	0.441	0.9	ug/L	440	Standard
	Cu	65	90050.8	0.4	**49.5999**	0.334	0.7	ug/L	116	Standard
	Zn	66	53458.5	0.3	**49.2800**	0.219	0.4	ug/L	135	Standard
>	Ge	72	449858.4	0.5				ug/L	445277	Standard
	As	75	53487.2	1.2	**48.5614**	0.498	1.0	ug/L	-57	Standard
	Se	82	5413.0	1.5	**48.2953**	0.946	2.0	ug/L	10	Standard
	Se-1	77	3573.1	1.9	**47.5313**	0.699	1.5	ug/L	57	Standard
>	Ga	71	73.3	25.8				mg/L	78	Standard
	Rb	85	731.7	6.7				ug/L	22	Standard
	Y	89	383060.9	1.5				ug/L	388959	Standard
>	Rh	103	43.3	24.0				ug/L	8	Standard
	Mo	98	239371.8	1.3	**94.6204**	2.054	2.2	ug/L	10	Standard
	Ag	107	301426.5	0.3	**48.1297**	0.581	1.2	ug/L	66	Standard
	Cd	111	97197.2	0.1	**48.6409**	0.511	1.1	mg/L	3	Standard
	Cd	114	237235.4	0.3	**48.5582**	0.603	1.2	ug/L	4	Standard
>	In	115	520442.4	1.0				ug/L	523327	Standard
	Sn	118	270817.6	1.5	**48.9997**	0.472	1.0	ug/L	488	Standard
	Sb	123	219645.4	0.7	**48.5766**	0.793	1.6	ug/L	195	Standard
	Ba	135	92371.4	0.2	**48.1063**	0.410	0.9	ug/L	28	Standard
	Ce	140	80.0	34.8				ug/L	83	Standard
>	Tb	159	789908.3	0.8				ug/L	809211	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	381373.5	0.6	**49.6197**	0.008	0.0	ug/L	4	Standard
	Tl	205	329649.8	1.7	**50.0068**	0.632	1.3	ug/L	8	Standard
	Pb	206	238267.9	0.8	**49.3874**	0.556	1.1	ug/L	230	Standard
	Pb	207	217653.5	0.6	**49.7097**	0.510	1.0	ug/L	184	Standard
	Pb	208	918006.3	0.3	**51.2570**	0.189	0.4	ug/L	775	Standard
	U	238	330815.3	0.7	**50.3261**	0.373	0.7	ug/L	3	Standard
>	Bi	209	461077.5	0.6				ug/L	472452	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 14:03:27
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3617.1	7.0	**4.7626**	0.313	6.6	mg/L	52	Standard
K	39	931.7	7.9	**4.1011**	0.336	8.2	mg/L	32	Standard
Ca	43	51.7	53.3	**2.6059**	3.425	131.4	mg/L	33	Standard
Fe	54	5844.4	1.6	**4.6285**	0.090	2.0	mg/L	138	Standard
Fe	57	1821.8	2.9	**4.8601**	0.198	4.1	mg/L	263	Standard
Sc-1	45	28560.2	0.9				mg/L	27861	Standard
Cl	35	124633.9	1.1				ug/L	100607	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1916.8	11.3				ug/L	1777	Standard
P	31	22026.0	2.3				ug/L	18074	Standard
S	34	5486.0	2.3				ug/L	3901	Standard
Sr	88	101.7	18.6				ug/L	60	Standard
C	12	66.7	60.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	7	Standard
Dy	164	9.0	110.6				mg/L	13	Standard
Ho-1	165	13.3	21.7				mg/L	13	Standard
Er	166	20.0	0.0				mg/L	3	Standard
I	127	10448.6	0.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.212		
Al	27	112.140		
Sc	45			
Ti	47	97.995		
V	51	96.207		
Cr	52	98.210		
Cr	53			
Mn	55	99.624		
Co	59	96.026		
Ni	60	99.171		
Cu	65	99.200		
Zn	66	98.560		
Ge	72		101.029	
As	75	97.123		
Se	82	96.591		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 14:03:27
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	94.620		
Ag	107	96.259		
Cd	111	97.282		
Cd	114			
> In	115		99.449	
Sn	118	97.999		
Sb	123	97.153		
Ba	135	96.213		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.239		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.514		
U	238	100.652		
> Bi	209		97.593	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 14:03:27
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 14:04:21
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50642.9	2.5				ug/L	59299	Standard
	Be	9	30.0	16.7	**0.0436**	0.008	17.7	ug/L	17	Standard
	Al	27	3192.0	26.4	**0.0150**	0.007	45.2	ug/L	1472	Standard
	Sc	45	28271.4	1.6				ug/L	27861	Standard
	Ti	47	28.3	32.8	**0.0057**	0.040	700.3	ug/L	28	Standard
	V	51	1137.0	4.1	**-0.0066**	0.006	91.2	ug/L	1156	Standard
	Cr	52	6167.9	2.5	**-0.0761**	0.017	22.4	ug/L	6689	Standard
	Cr	53	496.7	5.0	**0.1741**	0.031	17.6	ug/L	348	Standard
	Mn	55	863.0	5.1	**0.0091**	0.006	71.1	ug/L	770	Standard
	Co	59	279.0	11.0	**0.0069**	0.005	65.5	ug/L	216	Standard
	Ni	60	307.0	3.7	**-0.0855**	0.006	6.6	ug/L	440	Standard
	Cu	65	147.0	13.7	**0.0238**	0.011	45.0	ug/L	116	Standard
	Zn	66	234.3	3.1	**0.0226**	0.006	26.3	ug/L	135	Standard
>	**Ge**	72	444525.1	0.6				ug/L	445277	Standard
	As	75	-37.1	29.8	**0.0033**	0.010	300.6	ug/L	-57	Standard
	Se	82	16.8	36.1	**0.0071**	0.056	787.3	ug/L	10	Standard
	Se-1	77	57.7	34.7	**0.1491**	0.273	183.2	ug/L	57	Standard
>	**Ga**	71	48.3	21.5				mg/L	78	Standard
	Rb	85	26.7	47.2				ug/L	22	Standard
	Y	89	378168.3	1.2				ug/L	388959	Standard
>	**Rh**	103	25.0	0.0				ug/L	8	Standard
	Mo	98	243.1	26.3	**0.0897**	0.026	28.8	ug/L	10	Standard
	Ag	107	162.0	17.0	**0.0123**	0.004	36.5	ug/L	66	Standard
	Cd	111	27.9	43.0	**0.0104**	0.006	58.6	mg/L	3	Standard
	Cd	114	73.6	52.1	**0.0112**	0.008	70.6	ug/L	4	Standard
>	**In**	115	519672.9	0.6				ug/L	523327	Standard
	Sn	118	985.0	22.7	**0.1030**	0.040	38.5	ug/L	488	Standard
	Sb	123	714.8	26.5	**0.1416**	0.041	29.1	ug/L	195	Standard
	Ba	135	61.3	47.9	**0.0148**	0.016	104.4	ug/L	28	Standard
	Ce	140	20.0	50.0				ug/L	83	Standard
>	**Tb**	159	774181.5	0.6				ug/L	809211	Standard
	Ho	165	6.7	114.6				ug/L	13	Standard
	Tl	203	103.7	32.5	**0.0114**	0.004	38.1	ug/L	4	Standard
	Tl	205	70.0	12.4	**0.0080**	0.001	16.4	ug/L	8	Standard
	Pb	206	276.0	12.2	**0.0086**	0.007	79.1	ug/L	230	Standard
	Pb	207	254.7	2.5	**0.0148**	0.001	9.2	ug/L	184	Standard
	Pb	208	1097.3	10.8	**0.0149**	0.006	43.6	ug/L	775	Standard
	U	238	86.0	35.8	**0.0122**	0.005	37.8	ug/L	3	Standard
>	**Bi**	209	466825.5	0.3				ug/L	472452	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 14:06:38
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	63.3	16.4	**0.0196**	0.013	65.2	mg/L	52	Standard
K	39	16.7	45.8	**-0.0504**	0.034	67.8	mg/L	32	Standard
Ca	43	23.3	24.7	**-0.8868**	0.781	88.0	mg/L	33	Standard
Fe	54	135.9	25.2	**0.0001**	0.030	35456.3	mg/L	138	Standard
Fe	57	256.7	15.1	**0.1111**	0.114	102.7	mg/L	263	Standard
Sc-1	45	28271.4	1.6				mg/L	27861	Standard
Cl	35	125629.4	0.9				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1606.8	5.9				ug/L	1777	Standard
P	31	21430.2	2.3				ug/L	18074	Standard
S	34	5606.0	6.0				ug/L	3901	Standard
Sr	88	76.7	42.4				ug/L	60	Standard
C	12	36.7	41.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	23.3	65.5				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	13	Standard
Er	166	0.0					mg/L	3	Standard
I	127	6263.0	2.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.831	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 14:06:38
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.302
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.809
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 14:06:38
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607018402
Sample Date/Time: Thursday, July 07, 2016 14:07:38
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52735.1	4.8				ug/L	59299	Standard
	Be	9	23.3	24.7	**0.0329**	0.008	25.5	ug/L	17	Standard
	Al	27	23859895.8	1.0	**200.8618**	10.916	5.4	ug/L	1472	Standard
	Sc	45	28750.6	2.1				ug/L	27861	Standard
	Ti	47	691.7	2.8	**2.9322**	0.072	2.5	ug/L	28	Standard
	V	51	2328.7	13.7	**0.1871**	0.051	27.0	ug/L	1156	Standard
	Cr	52	18726.2	2.0	**1.8695**	0.068	3.6	ug/L	6689	Standard
	Cr	53	27376.4	2.9	**32.6696**	1.100	3.4	ug/L	348	Standard
	Mn	55	109676.5	0.7	**18.0664**	0.127	0.7	ug/L	770	Standard
	Co	59	6915.9	0.7	**1.0612**	0.003	0.3	ug/L	216	Standard
	Ni	60	6788.5	2.4	**3.6922**	0.111	3.0	ug/L	440	Standard
	Cu	65	1733.1	1.2	**0.9516**	0.011	1.2	ug/L	116	Standard
	Zn	66	12757.4	1.3	**12.2788**	0.161	1.3	ug/L	135	Standard
>	**Ge**	72	425754.7	0.4				ug/L	445277	Standard
	As	75	1594.7	9.5	**1.5664**	0.152	9.7	ug/L	-57	Standard
	Se	82	446.2	6.6	**4.0745**	0.294	7.2	ug/L	10	Standard
	Se-1	77	1336.4	4.9	**18.4022**	1.012	5.5	ug/L	57	Standard
>	**Ga**	71	100.0	26.5				mg/L	78	Standard
	Rb	85	7501.9	2.0				ug/L	22	Standard
	Y	89	366407.7	0.9				ug/L	388959	Standard
>	**Rh**	103	116.7	20.3				ug/L	8	Standard
	Mo	98	1120.5	2.5	**0.4659**	0.009	2.0	ug/L	10	Standard
	Ag	107	95.0	28.5	**0.0026**	0.005	182.1	ug/L	66	Standard
	Cd	111	75.6	13.6	**0.0368**	0.006	15.0	mg/L	3	Standard
	Cd	114	199.5	15.6	**0.0397**	0.007	16.9	ug/L	4	Standard
>	**In**	115	487785.0	1.0				ug/L	523327	Standard
	Sn	118	950.0	11.7	**0.1079**	0.020	18.8	ug/L	488	Standard
	Sb	123	878.5	14.4	**0.1905**	0.028	14.8	ug/L	195	Standard
	Ba	135	185277.0	0.8	**102.9675**	0.657	0.6	ug/L	28	Standard
	Ce	140	780.0	5.1				ug/L	83	Standard
>	**Tb**	159	767240.6	1.0				ug/L	809211	Standard
	Ho	165	36.7	20.8				ug/L	13	Standard
	Tl	203	149.7	10.2	**0.0191**	0.002	10.6	ug/L	4	Standard
	Tl	205	108.3	9.6	**0.0153**	0.002	11.6	ug/L	8	Standard
	Pb	206	368.3	4.5	**0.0348**	0.003	9.3	ug/L	230	Standard
	Pb	207	301.7	2.5	**0.0320**	0.002	7.2	ug/L	184	Standard
	Pb	208	1316.7	4.8	**0.0339**	0.004	10.4	ug/L	775	Standard
	U	238	48761.0	0.8	**8.0290**	0.081	1.0	ug/L	3	Standard
>	**Bi**	209	425957.0	0.6				ug/L	472452	Standard

Sample ID: L1607018402
Report Date/Time: Thursday, July 07, 2016 14:09:55
Page 1

Approved: July 08, 2016

Na	23	3.3	173.2	**6.2589**	10.832	173.1	mg/L	0	Standard
Mg	24	137726.5	0.9	**182.6776**	5.535	3.0	mg/L	52	Standard
K	39	83.3	22.7	**0.2504**	0.094	37.7	mg/L	32	Standard
Ca	43	103.3	17.0	**8.9947**	2.196	24.4	mg/L	33	Standard
Fe	54	216.9	11.2	**0.0629**	0.016	25.4	mg/L	138	Standard
Fe	57	446.7	10.9	**0.6744**	0.176	26.1	mg/L	263	Standard
> **Sc-1**	45	28750.6	2.1				mg/L	27861	Standard
Cl	35	165631.8	1.1				ug/L	100607	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	96449.4	1.4				ug/L	1777	Standard
P	31	29243.2	3.3				ug/L	18074	Standard
S	34	4994.2	5.4				ug/L	3901	Standard
Sr	88	358.3	3.5				ug/L	60	Standard
C	12	173.3	14.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	7	Standard
Dy	164	42.4	36.0				mg/L	13	Standard
Ho-1	165	36.7	20.8				mg/L	13	Standard
Er	166	20.0	0.0				mg/L	3	Standard
I	127	533108.7	5.6				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		88.931	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.616	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1607018402
Report Date/Time: Thursday, July 07, 2016 14:09:55
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	93.208	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	90.159	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1607018402
Report Date/Time: Thursday, July 07, 2016 14:09:55
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607019101
Sample Date/Time: Thursday, July 07, 2016 14:10:50
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58465.9	1.2				ug/L	59299	Standard
	Be	9	26.7	60.3	**0.0337**	0.019	57.2	ug/L	17	Standard
	Al	27	34154612.2	0.1	**258.9244**	2.842	1.1	ug/L	1472	Standard
	Sc	45	28966.0	1.6				ug/L	27861	Standard
	Ti	47	351.0	6.8	**1.3957**	0.089	6.4	ug/L	28	Standard
	V	51	493980.1	0.4	**75.1819**	0.745	1.0	ug/L	1156	Standard
	Cr	52	36508.6	0.5	**4.4404**	0.067	1.5	ug/L	6689	Standard
	Cr	53	14869.0	1.6	**17.1464**	0.365	2.1	ug/L	348	Standard
	Mn	55	161404.1	0.2	**26.0316**	0.279	1.1	ug/L	770	Standard
	Co	59	78675.1	0.7	**12.1529**	0.127	1.0	ug/L	216	Standard
	Ni	60	487800.8	0.6	**276.9207**	0.948	0.3	ug/L	440	Standard
	Cu	65	28629.0	0.7	**16.2383**	0.073	0.5	ug/L	116	Standard
	Zn	66	84444.3	0.6	**80.4789**	0.272	0.3	ug/L	135	Standard
>	Ge	72	435804.7	0.9				ug/L	445277	Standard
	As	75	11358.6	3.2	**10.6732**	0.273	2.6	ug/L	-57	Standard
	Se	82	4553.7	3.2	**41.9152**	1.205	2.9	ug/L	10	Standard
	Se-1	77	845.4	2.5	**11.1267**	0.270	2.4	ug/L	57	Standard
>	Ga	71	375.0	10.9				mg/L	78	Standard
	Rb	85	67376.2	2.7				ug/L	22	Standard
	Y	89	370114.0	2.2				ug/L	388959	Standard
>	Rh	103	313.3	17.2				ug/L	8	Standard
	Mo	98	1916878.5	0.9	**797.0464**	6.559	0.8	ug/L	10	Standard
	Ag	107	124.0	4.8	**0.0072**	0.001	15.0	ug/L	66	Standard
	Cd	111	-949.7	1.4	**-0.5036**	0.006	1.2	mg/L	3	Standard
	Cd	114	4395.2	4.3	**0.9425**	0.042	4.5	ug/L	4	Standard
>	In	115	494724.7	0.4				ug/L	523327	Standard
	Sn	118	1136.7	5.2	**0.1410**	0.010	7.4	ug/L	488	Standard
	Sb	123	2445.7	11.6	**0.5525**	0.065	11.8	ug/L	195	Standard
	Ba	135	127677.7	0.5	**69.9541**	0.200	0.3	ug/L	28	Standard
	Ce	140	705.0	7.8				ug/L	83	Standard
>	Tb	159	771256.0	0.5				ug/L	809211	Standard
	Ho	165	30.0	44.1				ug/L	13	Standard
	Tl	203	249.3	5.5	**0.0328**	0.002	5.2	ug/L	4	Standard
	Tl	205	228.3	23.4	**0.0346**	0.008	24.4	ug/L	8	Standard
	Pb	206	1507.1	2.6	**0.2872**	0.007	2.6	ug/L	230	Standard
	Pb	207	1276.4	2.3	**0.2701**	0.006	2.1	ug/L	184	Standard
	Pb	208	5332.4	1.0	**0.2738**	0.002	0.7	ug/L	775	Standard
	U	238	1373.4	2.9	**0.2233**	0.007	2.9	ug/L	3	Standard
>	Bi	209	430092.7	0.6				ug/L	472452	Standard

Sample ID: L1607019101
Report Date/Time: Thursday, July 07, 2016 14:13:07
Page 1

Approved: July 08, 2016

Na	23	5.0	0.0	**9.4335**	0.154	1.6	mg/L	0	Standard
Mg	24	93906.8	1.6	**123.5811**	3.053	2.5	mg/L	52	Standard
K	39	1161.7	9.3	**5.0769**	0.566	11.2	mg/L	32	Standard
Ca	43	611.7	12.6	**71.5631**	9.722	13.6	mg/L	33	Standard
Fe	54	212.1	4.8	**0.0582**	0.010	16.8	mg/L	138	Standard
Fe	57	910.0	2.0	**2.0502**	0.037	1.8	mg/L	263	Standard
> **Sc-1**	45	28966.0	1.6				mg/L	27861	Standard
Cl	35	321811.3	1.2				ug/L	100607	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1027528.3	1.7				ug/L	1777	Standard
P	31	26004.0	1.6				ug/L	18074	Standard
S	34	5107.5	2.5				ug/L	3901	Standard
Sr	88	931.7	3.7				ug/L	60	Standard
C	12	116.7	50.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	243.3	6.3				mg/L	7	Standard
Dy	164	84.8	4.9				mg/L	13	Standard
Ho-1	165	30.0	44.1				mg/L	13	Standard
Er	166	40.0	90.1				mg/L	3	Standard
I	127	67287.5	2.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.595	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.873	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607019101
Report Date/Time: Thursday, July 07, 2016 14:13:07
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	94.535	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	91.034	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ni 60 Upper, S, EEE	Ni	60	
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1607019101
Report Date/Time: Thursday, July 07, 2016 14:13:07
Page 3

Approved: July 08, 2016

Cd 111 Lower	Cd	111

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607019203
Sample Date/Time: Thursday, July 07, 2016 14:14:02
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56378.1	3.4				ug/L	59299	Standard
	Be	9	18.3	41.7	**0.0246**	0.010	40.3	ug/L	17	Standard
	Al	27	33494.4	17.2	**0.2497**	0.037	14.8	ug/L	1472	Standard
	Sc	45	28592.0	4.9				ug/L	27861	Standard
	Ti	47	29.0	17.2	**0.0051**	0.022	442.0	ug/L	28	Standard
	V	51	-201.1	184.3	**-0.2058**	0.054	26.1	ug/L	1156	Standard
	Cr	52	313678.8	1.3	**43.3205**	0.899	2.1	ug/L	6689	Standard
	Cr	53	39237.4	0.4	**43.6973**	0.582	1.3	ug/L	348	Standard
	Mn	55	1378.4	5.9	**0.0847**	0.009	10.6	ug/L	770	Standard
	Co	59	238.7	1.7	**-0.0003**	0.001	454.3	ug/L	216	Standard
	Ni	60	438.3	13.7	**-0.0196**	0.030	151.9	ug/L	440	Standard
	Cu	65	1367.7	2.4	**0.6831**	0.006	0.9	ug/L	116	Standard
	Zn	66	2110.5	1.7	**1.7236**	0.051	3.0	ug/L	135	Standard
>	Ge	72	457639.0	1.6				ug/L	445277	Standard
	As	75	77.8	75.3	**0.1061**	0.051	48.2	ug/L	-57	Standard
	Se	82	74.1	38.2	**0.5041**	0.238	47.1	ug/L	10	Standard
	Se-1	77	73.3	25.8	**0.3321**	0.235	70.6	ug/L	57	Standard
>	Ga	71	53.3	30.1				mg/L	78	Standard
	Rb	85	51.7	20.1				ug/L	22	Standard
	Y	89	388063.8	1.1				ug/L	388959	Standard
>	Rh	103	28.3	36.7				ug/L	8	Standard
	Mo	98	1516.6	29.8	**0.5802**	0.167	28.8	ug/L	10	Standard
	Ag	107	92.0	2.2	**0.0008**	0.000	24.2	ug/L	66	Standard
	Cd	111	4.1	41.1	**-0.0016**	0.001	55.1	mg/L	3	Standard
	Cd	114	21.2	45.1	**0.0003**	0.002	574.1	ug/L	4	Standard
>	In	115	530330.7	1.4				ug/L	523327	Standard
	Sn	118	888.4	3.4	**0.0823**	0.004	4.5	ug/L	488	Standard
	Sb	123	333.8	32.0	**0.0560**	0.024	42.9	ug/L	195	Standard
	Ba	135	127.0	26.0	**0.0476**	0.016	33.6	ug/L	28	Standard
	Ce	140	31.7	9.1				ug/L	83	Standard
>	Tb	159	804185.2	0.5				ug/L	809211	Standard
	Ho	165	1.7	173.2				ug/L	13	Standard
	Tl	203	58.7	37.2	**0.0055**	0.003	50.4	ug/L	4	Standard
	Tl	205	40.0	57.3	**0.0034**	0.003	98.5	ug/L	8	Standard
	Pb	206	291.0	10.7	**0.0111**	0.006	56.5	ug/L	230	Standard
	Pb	207	227.0	9.3	**0.0081**	0.005	58.6	ug/L	184	Standard
	Pb	208	963.7	4.5	**0.0070**	0.002	33.8	ug/L	775	Standard
	U	238	21.7	38.7	**0.0025**	0.001	49.3	ug/L	3	Standard
>	Bi	209	471419.8	0.1				ug/L	472452	Standard

Sample ID: L1607019203
Report Date/Time: Thursday, July 07, 2016 14:16:18
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.2382**	5.600	172.9	mg/L	0	Standard
Mg	24	203.3	2.8	**0.2061**	0.019	9.4	mg/L	52	Standard
K	39	30.0	33.3	**0.0100**	0.049	488.6	mg/L	32	Standard
Ca	43	21.7	13.3	**-1.1287**	0.413	36.6	mg/L	33	Standard
Fe	54	179.2	5.4	**0.0337**	0.006	17.2	mg/L	138	Standard
Fe	57	260.0	10.0	**0.1123**	0.061	53.9	mg/L	263	Standard
> **Sc-1**	45	28592.0	4.9				mg/L	27861	Standard
Cl	35	147508.6	0.5				ug/L	100607	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	13556.6	37.4				ug/L	1777	Standard
P	31	20266.9	0.5				ug/L	18074	Standard
S	34	5054.2	5.6				ug/L	3901	Standard
Sr	88	76.7	39.3				ug/L	60	Standard
C	12	63.3	77.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	8.9	112.6				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	13	Standard
Er	166	23.3	24.7				mg/L	3	Standard
I	127	10787.2	6.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.074	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.776	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607019203
Report Date/Time: Thursday, July 07, 2016 14:16:18
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.338
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.782
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607019701 WG575435-02
Sample Date/Time: Thursday, July 07, 2016 14:17:13
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55173.6	2.3				ug/L	59299	Standard
	Be	9	20.0	25.0	**0.0270**	0.006	21.7	ug/L	17	Standard
	Al	27	5747178.0	1.6	**46.1656**	1.006	2.2	ug/L	1472	Standard
	Sc	45	28648.7	2.9				ug/L	27861	Standard
	Ti	47	306.3	13.7	**1.1603**	0.185	15.9	ug/L	28	Standard
	V	51	6931.1	2.5	**0.8449**	0.036	4.2	ug/L	1156	Standard
	Cr	52	11287.2	2.5	**0.6437**	0.025	4.0	ug/L	6689	Standard
	Cr	53	2703.6	3.5	**2.6818**	0.133	5.0	ug/L	348	Standard
	Mn	55	109172.6	0.3	**16.9630**	0.145	0.9	ug/L	770	Standard
	Co	59	754.4	1.3	**0.0774**	0.002	2.1	ug/L	216	Standard
	Ni	60	2063.1	0.9	**0.8760**	0.018	2.0	ug/L	440	Standard
	Cu	65	1690.8	3.0	**0.8716**	0.035	4.1	ug/L	116	Standard
	Zn	66	2123.1	3.5	**1.7625**	0.073	4.1	ug/L	135	Standard
>	**Ge**	72	451181.2	1.0				ug/L	445277	Standard
	As	75	2330.3	3.2	**2.1455**	0.077	3.6	ug/L	-57	Standard
	Se	82	82.3	21.6	**0.5890**	0.159	27.0	ug/L	10	Standard
	Se-1	77	157.0	6.5	**1.4735**	0.147	10.0	ug/L	57	Standard
>	**Ga**	71	351.7	15.3				mg/L	78	Standard
	Rb	85	10101.7	4.5				ug/L	22	Standard
	Y	89	382209.1	0.1				ug/L	388959	Standard
>	**Rh**	103	61.7	12.4				ug/L	8	Standard
	Mo	98	2859.6	2.1	**1.1218**	0.023	2.0	ug/L	10	Standard
	Ag	107	71.0	3.7	**-0.0023**	0.000	19.7	ug/L	66	Standard
	Cd	111	12.8	26.3	**0.0028**	0.002	59.6	mg/L	3	Standard
	Cd	114	35.7	61.2	**0.0034**	0.004	132.2	ug/L	4	Standard
>	**In**	115	521296.0	0.3				ug/L	523327	Standard
	Sn	118	718.4	7.0	**0.0543**	0.009	17.0	ug/L	488	Standard
	Sb	123	619.3	6.8	**0.1201**	0.010	8.1	ug/L	195	Standard
	Ba	135	40564.2	0.8	**21.0803**	0.186	0.9	ug/L	28	Standard
	Ce	140	1811.8	3.8				ug/L	83	Standard
>	**Tb**	159	789821.9	0.6				ug/L	809211	Standard
	Ho	165	71.7	21.3				ug/L	13	Standard
	Tl	203	371.3	3.1	**0.0462**	0.001	3.0	ug/L	4	Standard
	Tl	205	341.7	11.1	**0.0492**	0.006	12.2	ug/L	8	Standard
	Pb	206	508.3	1.8	**0.0571**	0.002	3.6	ug/L	230	Standard
	Pb	207	416.7	5.2	**0.0522**	0.005	10.0	ug/L	184	Standard
	Pb	208	1968.1	2.9	**0.0639**	0.003	4.7	ug/L	775	Standard
	U	238	753.4	1.0	**0.1135**	0.001	0.5	ug/L	3	Standard
>	**Bi**	209	462753.1	0.5				ug/L	472452	Standard

Sample ID: L1607019701 WG575435-02
Report Date/Time: Thursday, July 07, 2016 14:19:30
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	8609.1	0.8	**11.4016**	0.431	3.8	mg/L	52	Standard
K	39	226.7	15.6	**0.8981**	0.149	16.5	mg/L	32	Standard
Ca	43	110.0	24.1	**9.9319**	3.731	37.6	mg/L	33	Standard
Fe	54	195.6	24.3	**0.0463**	0.036	78.8	mg/L	138	Standard
Fe	57	351.7	3.6	**0.3902**	0.067	17.2	mg/L	263	Standard
> **Sc-1**	45	28648.7	2.9				mg/L	27861	Standard
Cl	35	160527.4	1.5				ug/L	100607	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	12898.8	8.6				ug/L	1777	Standard
P	31	21450.2	1.2				ug/L	18074	Standard
S	34	5167.5	2.9				ug/L	3901	Standard
Sr	88	173.3	18.8				ug/L	60	Standard
C	12	96.7	39.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	7	Standard
Dy	164	66.6	30.8				mg/L	13	Standard
Ho-1	165	71.7	21.3				mg/L	13	Standard
Er	166	70.0	28.6				mg/L	3	Standard
I	127	29485.4	4.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.043	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.326	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607019701 WG575435-02
Report Date/Time: Thursday, July 07, 2016 14:19:30
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.612
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.947
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607019701DP WG575435-08
Sample Date/Time: Thursday, July 07, 2016 14:20:24
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54711.9	0.9				ug/L	59299	Standard
	Be	9	20.0	90.1	**0.0272**	0.023	85.3	ug/L	17	Standard
	Al	27	5315336.4	0.6	**43.0491**	0.627	1.5	ug/L	1472	Standard
	Sc	45	28144.4	0.7				ug/L	27861	Standard
	Ti	47	285.7	18.4	**1.0745**	0.212	19.7	ug/L	28	Standard
	V	51	6484.0	2.5	**0.7804**	0.022	2.8	ug/L	1156	Standard
	Cr	52	11508.4	1.4	**0.6783**	0.013	1.9	ug/L	6689	Standard
	Cr	53	2545.2	4.5	**2.5057**	0.139	5.5	ug/L	348	Standard
	Mn	55	100387.5	0.6	**15.6141**	0.156	1.0	ug/L	770	Standard
	Co	59	715.7	3.7	**0.0718**	0.004	5.5	ug/L	216	Standard
	Ni	60	1909.5	3.6	**0.7932**	0.033	4.1	ug/L	440	Standard
	Cu	65	1537.7	4.6	**0.7886**	0.034	4.3	ug/L	116	Standard
	Zn	66	2162.8	2.4	**1.8025**	0.053	3.0	ug/L	135	Standard
>	Ge	72	450413.9	0.6				ug/L	445277	Standard
	As	75	2104.8	2.7	**1.9448**	0.062	3.2	ug/L	-57	Standard
	Se	82	78.8	6.2	**0.5584**	0.039	7.0	ug/L	10	Standard
	Se-1	77	146.3	4.9	**1.3327**	0.087	6.5	ug/L	57	Standard
>	Ga	71	311.7	12.1				mg/L	78	Standard
	Rb	85	9117.7	5.4				ug/L	22	Standard
	Y	89	382073.2	1.6				ug/L	388959	Standard
>	Rh	103	40.0	66.1				ug/L	8	Standard
	Mo	98	2459.8	1.1	**0.9627**	0.013	1.4	ug/L	10	Standard
	Ag	107	69.7	12.2	**-0.0025**	0.001	54.3	ug/L	66	Standard
	Cd	111	13.1	5.5	**0.0029**	0.000	12.2	mg/L	3	Standard
	Cd	114	31.9	48.9	**0.0026**	0.003	122.7	ug/L	4	Standard
>	In	115	522033.5	0.2				ug/L	523327	Standard
	Sn	118	738.4	14.1	**0.0577**	0.019	32.9	ug/L	488	Standard
	Sb	123	575.1	6.4	**0.1102**	0.008	7.5	ug/L	195	Standard
	Ba	135	37254.1	0.9	**19.3314**	0.207	1.1	ug/L	28	Standard
	Ce	140	1758.4	9.8				ug/L	83	Standard
>	Tb	159	784011.5	0.6				ug/L	809211	Standard
	Ho	165	90.0	5.6				ug/L	13	Standard
	Tl	203	334.3	0.9	**0.0415**	0.000	0.5	ug/L	4	Standard
	Tl	205	278.3	6.8	**0.0397**	0.003	7.2	ug/L	8	Standard
	Pb	206	521.0	1.4	**0.0601**	0.002	2.5	ug/L	230	Standard
	Pb	207	454.0	4.4	**0.0611**	0.005	8.2	ug/L	184	Standard
	Pb	208	1975.1	1.2	**0.0647**	0.001	2.2	ug/L	775	Standard
	U	238	693.0	5.4	**0.1047**	0.005	5.0	ug/L	3	Standard
>	Bi	209	461148.3	0.4				ug/L	472452	Standard

Sample ID: L1607019701DP WG575435-08
Report Date/Time: Thursday, July 07, 2016 14:22:41
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.2451**	5.612	172.9	mg/L	0	Standard
Mg	24	7805.3	1.5	**10.5091**	0.096	0.9	mg/L	52	Standard
K	39	220.0	26.2	**0.8867**	0.268	30.3	mg/L	32	Standard
Ca	43	118.3	17.6	**11.1614**	2.590	23.2	mg/L	33	Standard
Fe	54	200.5	5.3	**0.0535**	0.008	14.5	mg/L	138	Standard
Fe	57	343.3	8.4	**0.3823**	0.088	23.0	mg/L	263	Standard
> **Sc-1**	45	28144.4	0.7				mg/L	27861	Standard
Cl	35	155977.6	1.8				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	11057.4	8.3				ug/L	1777	Standard
P	31	21521.9	1.5				ug/L	18074	Standard
S	34	5057.5	4.5				ug/L	3901	Standard
Sr	88	173.3	14.5				ug/L	60	Standard
C	12	73.3	34.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	7	Standard
Dy	164	74.6	33.4				mg/L	13	Standard
Ho-1	165	90.0	5.6				mg/L	13	Standard
Er	166	43.3	13.3				mg/L	3	Standard
I	127	27842.3	4.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.264	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.154	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607019701DP WG575435-08
Report Date/Time: Thursday, July 07, 2016 14:22:41
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.753
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.608
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607019101
Sample Date/Time: Thursday, July 07, 2016 14:24:13
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51825.2	2.6				ug/L	59299	Standard
	Be	9	13.3	43.3	**0.0195**	0.007	37.6	ug/L	17	Standard
	Al	27	6436753.8	1.1	**55.0619**	1.678	3.0	ug/L	1472	Standard
	Sc	45	26050.7	1.2				ug/L	27861	Standard
	Ti	47	75.3	15.1	**0.2228**	0.053	23.6	ug/L	28	Standard
	V	51	92205.7	0.6	**14.4325**	0.065	0.5	ug/L	1156	Standard
	Cr	52	11956.7	0.8	**0.8686**	0.009	1.1	ug/L	6689	Standard
	Cr	53	3683.8	1.4	**4.1142**	0.048	1.2	ug/L	348	Standard
	Mn	55	31331.4	2.6	**5.1455**	0.104	2.0	ug/L	770	Standard
	Co	59	15068.2	1.0	**2.3890**	0.019	0.8	ug/L	216	Standard
	Ni	60	94957.7	1.2	**55.7865**	0.869	1.6	ug/L	440	Standard
	Cu	65	5862.8	0.9	**3.4080**	0.027	0.8	ug/L	116	Standard
	Zn	66	18436.5	0.2	**18.0975**	0.113	0.6	ug/L	135	Standard
>	**Ge**	72	419592.4	0.6				ug/L	445277	Standard
	As	75	1979.3	7.7	**1.9622**	0.145	7.4	ug/L	-57	Standard
	Se	82	823.1	6.8	**7.7508**	0.520	6.7	ug/L	10	Standard
	Se-1	77	221.7	3.1	**2.5665**	0.091	3.6	ug/L	57	Standard
>	**Ga**	71	128.3	13.7				mg/L	78	Standard
	Rb	85	12543.5	0.4				ug/L	22	Standard
	Y	89	356229.9	1.8				ug/L	388959	Standard
>	**Rh**	103	55.0	32.8				ug/L	8	Standard
	Mo	98	351997.5	0.5	**150.0964**	0.288	0.2	ug/L	10	Standard
	Ag	107	123.0	68.3	**0.0076**	0.014	190.0	ug/L	66	Standard
	Cd	111	-169.5	17.8	**-0.0951**	0.016	17.2	mg/L	3	Standard
	Cd	114	824.1	4.3	**0.1781**	0.009	4.9	ug/L	4	Standard
>	**In**	115	482402.0	0.7				ug/L	523327	Standard
	Sn	118	343.3	22.4	**-0.0086**	0.015	170.1	ug/L	488	Standard
	Sb	123	672.5	20.6	**0.1437**	0.032	22.3	ug/L	195	Standard
	Ba	135	24156.9	0.9	**13.5596**	0.036	0.3	ug/L	28	Standard
	Ce	140	165.0	10.9				ug/L	83	Standard
>	**Tb**	159	739408.9	0.2				ug/L	809211	Standard
	Ho	165	8.3	69.3				ug/L	13	Standard
	Tl	203	181.7	41.7	**0.0229**	0.010	43.2	ug/L	4	Standard
	Tl	205	143.3	10.7	**0.0204**	0.002	10.2	ug/L	8	Standard
	Pb	206	522.3	18.2	**0.0662**	0.019	28.4	ug/L	230	Standard
	Pb	207	416.7	25.1	**0.0576**	0.023	40.6	ug/L	184	Standard
	Pb	208	1771.7	4.1	**0.0588**	0.003	4.6	ug/L	775	Standard
	U	238	275.0	12.4	**0.0434**	0.005	10.9	ug/L	3	Standard
>	**Bi**	209	436958.3	1.6				ug/L	472452	Standard

Sample ID: L1607019101
Report Date/Time: Thursday, July 07, 2016 14:26:30
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.5498**	6.140	173.0	mg/L	0	Standard
Mg	24	17348.3	2.0	**25.3277**	0.403	1.6	mg/L	52	Standard
K	39	278.3	9.2	**1.2584**	0.132	10.5	mg/L	32	Standard
Ca	43	145.0	15.8	**16.0229**	3.073	19.2	mg/L	33	Standard
Fe	54	65.8	16.0	**-0.0530**	0.010	18.0	mg/L	138	Standard
Fe	57	413.3	9.8	**0.7010**	0.138	19.7	mg/L	263	Standard
> **Sc-1**	45	26050.7	1.2				mg/L	27861	Standard
Cl	35	167383.5	0.9				ug/L	100607	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	192840.4	3.5				ug/L	1777	Standard
P	31	10722.1	3.3				ug/L	18074	Standard
S	34	4932.5	6.2				ug/L	3901	Standard
Sr	88	220.0	10.4				ug/L	60	Standard
C	12	76.7	32.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	10.8				mg/L	7	Standard
Dy	164	38.9	69.0				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	13	Standard
Er	166	23.3	99.0				mg/L	3	Standard
I	127	21480.2	0.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.396	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.232	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607019101
Report Date/Time: Thursday, July 07, 2016 14:26:30
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.180
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.487
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mo 98 Upper, S, EEE	Mo	98	

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607018402
Sample Date/Time: Thursday, July 07, 2016 14:41:02
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49338.6	3.0				ug/L	59299	Standard
	Be	9	8.3	124.9	**0.0135**	0.015	111.8	ug/L	17	Standard
	Al	27	1205970.2	1.3	**10.8280**	0.398	3.7	ug/L	1472	Standard
	Sc	45	25591.6	0.5				ug/L	27861	Standard
	Ti	47	57.0	1.8	**0.1443**	0.005	3.5	ug/L	28	Standard
	V	51	1434.0	11.8	**0.0537**	0.027	50.0	ug/L	1156	Standard
	Cr	52	6484.7	0.8	**0.0398**	0.009	21.4	ug/L	6689	Standard
	Cr	53	1926.8	6.5	**1.9935**	0.159	8.0	ug/L	348	Standard
	Mn	55	6185.9	1.3	**0.9276**	0.013	1.4	ug/L	770	Standard
	Co	59	507.0	2.9	**0.0472**	0.002	4.7	ug/L	216	Standard
	Ni	60	618.3	5.0	**0.1134**	0.018	15.5	ug/L	440	Standard
	Cu	65	214.0	3.1	**0.0700**	0.004	5.9	ug/L	116	Standard
	Zn	66	1336.7	2.5	**1.1478**	0.036	3.2	ug/L	135	Standard
>	**Ge**	72	413897.1	0.2				ug/L	445277	Standard
	As	75	37.1	68.5	**0.0740**	0.025	34.0	ug/L	-57	Standard
	Se	82	35.8	16.5	**0.2031**	0.058	28.7	ug/L	10	Standard
	Se-1	77	118.7	3.0	**1.1015**	0.054	4.9	ug/L	57	Standard
>	**Ga**	71	45.0	29.4				mg/L	78	Standard
	Rb	85	375.0	14.0				ug/L	22	Standard
	Y	89	347709.8	1.1				ug/L	388959	Standard
>	**Rh**	103	25.0	60.0				ug/L	8	Standard
	Mo	98	164.5	16.7	**0.0640**	0.012	18.0	ug/L	10	Standard
	Ag	107	60.0	6.7	**-0.0032**	0.001	22.7	ug/L	66	Standard
	Cd	111	7.4	7.9	**0.0004**	0.000	77.7	mg/L	3	Standard
	Cd	114	23.8	18.4	**0.0014**	0.001	70.2	ug/L	4	Standard
>	**In**	115	478876.5	0.3				ug/L	523327	Standard
	Sn	118	230.0	20.7	**-0.0304**	0.009	30.4	ug/L	488	Standard
	Sb	123	378.0	34.3	**0.0742**	0.031	41.7	ug/L	195	Standard
	Ba	135	9103.1	1.4	**5.1368**	0.084	1.6	ug/L	28	Standard
	Ce	140	58.3	13.1				ug/L	83	Standard
>	**Tb**	159	732373.1	1.4				ug/L	809211	Standard
	Ho	165	21.7	48.0				ug/L	13	Standard
	Tl	203	81.7	12.0	**0.0092**	0.001	14.6	ug/L	4	Standard
	Tl	205	80.0	49.6	**0.0103**	0.006	61.6	ug/L	8	Standard
	Pb	206	244.7	9.9	**0.0055**	0.005	96.0	ug/L	230	Standard
	Pb	207	208.3	10.7	**0.0075**	0.005	72.6	ug/L	184	Standard
	Pb	208	851.3	1.6	**0.0044**	0.001	17.8	ug/L	775	Standard
	U	238	2248.8	3.3	**0.3598**	0.011	3.2	ug/L	3	Standard
>	**Bi**	209	437611.3	0.1				ug/L	472452	Standard

Sample ID: L1607018402
Report Date/Time: Thursday, July 07, 2016 14:43:19
Page 1

Approved: July 08, 2016

Na	23	3.3	86.6	**7.1086**	6.152	86.5	mg/L	0	Standard
Mg	24	6578.1	2.3	**9.7366**	0.271	2.8	mg/L	52	Standard
K	39	31.7	50.8	**0.0339**	0.082	241.4	mg/L	32	Standard
Ca	43	30.0	33.3	**0.3478**	1.412	405.9	mg/L	33	Standard
Fe	54	62.9	43.9	**-0.0547**	0.025	45.2	mg/L	138	Standard
Fe	57	306.7	11.8	**0.3634**	0.120	33.0	mg/L	263	Standard
> **Sc-1**	45	25591.6	0.5				mg/L	27861	Standard
Cl	35	134825.9	0.2				ug/L	100607	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	6244.6	9.0				ug/L	1777	Standard
P	31	8322.3	2.4				ug/L	18074	Standard
S	34	5354.3	1.6				ug/L	3901	Standard
Sr	88	116.7	23.6				ug/L	60	Standard
C	12	43.3	58.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.3	86.6				mg/L	13	Standard
Ho-1	165	21.7	48.0				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	37397.9	5.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.203	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.953	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607018402
Report Date/Time: Thursday, July 07, 2016 14:43:19
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.506
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.626
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 14:44:15
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50251.6	2.2				ug/L	59299	Standard
	Be	9	37868.9	1.4	**53.6346**	0.551	1.0	ug/L	17	Standard
	Al	27	6219530.0	1.7	**54.8494**	0.778	1.4	ug/L	1472	Standard
	Sc	45	27528.3	1.5				ug/L	27861	Standard
	Ti	47	23521.9	0.4	**98.4873**	0.283	0.3	ug/L	28	Standard
	V	51	326521.1	0.3	**48.3498**	0.097	0.2	ug/L	1156	Standard
	Cr	52	350537.2	0.3	**49.6577**	0.222	0.4	ug/L	6689	Standard
	Cr	53	44135.9	0.7	**50.3398**	0.512	1.0	ug/L	348	Standard
	Mn	55	326160.0	0.9	**51.3710**	0.657	1.3	ug/L	770	Standard
	Co	59	321687.4	1.2	**48.5156**	0.695	1.4	ug/L	216	Standard
	Ni	60	90395.5	0.6	**49.7837**	0.187	0.4	ug/L	440	Standard
	Cu	65	89098.6	1.0	**49.3514**	0.336	0.7	ug/L	116	Standard
	Zn	66	53685.9	0.8	**49.7706**	0.267	0.5	ug/L	135	Standard
>	**Ge**	72	447327.0	0.4				ug/L	445277	Standard
	As	75	53513.2	1.0	**48.8608**	0.593	1.2	ug/L	-57	Standard
	Se	82	5430.1	0.8	**48.7213**	0.500	1.0	ug/L	10	Standard
	Se-1	77	3738.8	3.5	**50.0519**	1.732	3.5	ug/L	57	Standard
>	**Ga**	71	91.7	35.5				mg/L	78	Standard
	Rb	85	781.7	6.5				ug/L	22	Standard
	Y	89	381971.9	1.1				ug/L	388959	Standard
>	**Rh**	103	35.0	37.8				ug/L	8	Standard
	Mo	98	243568.2	0.8	**96.5150**	0.968	1.0	ug/L	10	Standard
	Ag	107	301294.0	1.0	**48.2273**	0.197	0.4	ug/L	66	Standard
	Cd	111	96969.7	1.3	**48.6457**	0.059	0.1	mg/L	3	Standard
	Cd	114	236666.7	0.9	**48.5618**	0.304	0.6	ug/L	4	Standard
>	**In**	115	519135.4	1.3				ug/L	523327	Standard
	Sn	118	267523.0	1.1	**48.5315**	0.886	1.8	ug/L	488	Standard
	Sb	123	217228.2	0.3	**48.1618**	0.481	1.0	ug/L	195	Standard
	Ba	135	91403.9	0.3	**47.7258**	0.732	1.5	ug/L	28	Standard
	Ce	140	90.0	40.1				ug/L	83	Standard
>	**Tb**	159	777035.5	0.6				ug/L	809211	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	377606.1	0.3	**49.2989**	0.154	0.3	ug/L	4	Standard
	Tl	205	326686.2	0.9	**49.7306**	0.585	1.2	ug/L	8	Standard
	Pb	206	237489.2	0.8	**49.3946**	0.472	1.0	ug/L	230	Standard
	Pb	207	215374.3	0.6	**49.3570**	0.380	0.8	ug/L	184	Standard
	Pb	208	915490.5	0.5	**51.2928**	0.394	0.8	ug/L	775	Standard
	U	238	328000.3	0.1	**50.0697**	0.289	0.6	ug/L	3	Standard
>	**Bi**	209	459499.0	0.6				ug/L	472452	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 14:46:32
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3573.8	2.1	**4.8862**	0.168	3.4	mg/L	52	Standard
K	39	878.4	7.1	**4.0071**	0.259	6.5	mg/L	32	Standard
Ca	43	66.7	22.9	**4.7865**	1.866	39.0	mg/L	33	Standard
Fe	54	5827.6	0.7	**4.7923**	0.071	1.5	mg/L	138	Standard
Fe	57	1733.4	4.5	**4.7875**	0.203	4.2	mg/L	263	Standard
Sc-1	45	27528.3	1.5				mg/L	27861	Standard
Cl	35	132975.4	3.2				ug/L	100607	Standard
Kr	83	3.0	145.3				ug/L	2	Standard
Br	81	2240.2	3.9				ug/L	1777	Standard
P	31	23034.2	1.5				ug/L	18074	Standard
S	34	5709.4	1.4				ug/L	3901	Standard
Sr	88	86.7	38.4				ug/L	60	Standard
C	12	53.3	65.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	1.9	328.5				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	30.0	57.7				mg/L	3	Standard
I	127	10188.4	4.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.269		
Al	27	109.699		
Sc	45			
Ti	47	98.487		
V	51	96.700		
Cr	52	99.315		
Cr	53			
Mn	55	102.742		
Co	59	97.031		
Ni	60	99.567		
Cu	65	98.703		
Zn	66	99.541		
Ge	72		100.460	
As	75	97.722		
Se	82	97.443		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 14:46:32
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	96.515		
Ag	107	96.455		
Cd	111	97.291		
Cd	114			
> In	115			99.199
Sn	118	97.063		
Sb	123	96.324		
Ba	135	95.452		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.598		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.586		
U	238	100.139		
> Bi	209			97.258
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 14:46:32
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 14:47:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49668.0	2.8				ug/L	59299	Standard
	Be	9	16.7	62.4	**0.0254**	0.015	59.3	ug/L	17	Standard
	Al	27	2268.5	11.7	**0.0074**	0.003	33.8	ug/L	1472	Standard
	Sc	45	27159.3	0.6				ug/L	27861	Standard
	Ti	47	28.0	12.9	**0.0050**	0.015	312.5	ug/L	28	Standard
	V	51	1120.2	8.2	**-0.0079**	0.014	172.4	ug/L	1156	Standard
	Cr	52	6253.0	2.2	**-0.0573**	0.021	36.0	ug/L	6689	Standard
	Cr	53	498.3	7.6	**0.1800**	0.045	24.8	ug/L	348	Standard
	Mn	55	827.7	1.3	**0.0044**	0.002	41.7	ug/L	770	Standard
	Co	59	261.0	9.1	**0.0044**	0.004	82.5	ug/L	216	Standard
	Ni	60	297.7	2.2	**-0.0895**	0.004	4.3	ug/L	440	Standard
	Cu	65	157.7	11.2	**0.0304**	0.010	32.9	ug/L	116	Standard
	Zn	66	800.4	4.6	**0.5580**	0.035	6.2	ug/L	135	Standard
>	**Ge**	72	441460.6	0.1				ug/L	445277	Standard
	As	75	-31.1	48.0	**0.0085**	0.014	162.1	ug/L	-57	Standard
	Se	82	17.5	14.4	**0.0137**	0.023	165.5	ug/L	10	Standard
	Se-1	77	61.7	12.4	**0.2097**	0.105	49.8	ug/L	57	Standard
>	**Ga**	71	51.7	11.2				mg/L	78	Standard
	Rb	85	28.3	10.2				ug/L	22	Standard
	Y	89	379037.7	0.7				ug/L	388959	Standard
>	**Rh**	103	21.7	13.3				ug/L	8	Standard
	Mo	98	258.7	8.1	**0.0965**	0.010	10.3	ug/L	10	Standard
	Ag	107	134.7	15.9	**0.0081**	0.004	44.5	ug/L	66	Standard
	Cd	111	17.1	52.7	**0.0051**	0.005	90.8	mg/L	3	Standard
	Cd	114	65.9	59.1	**0.0098**	0.008	84.7	ug/L	4	Standard
>	**In**	115	516785.4	1.6				ug/L	523327	Standard
	Sn	118	896.7	24.5	**0.0878**	0.039	44.1	ug/L	488	Standard
	Sb	123	681.2	29.6	**0.1349**	0.044	32.5	ug/L	195	Standard
	Ba	135	44.3	36.2	**0.0061**	0.009	140.2	ug/L	28	Standard
	Ce	140	15.0	66.7				ug/L	83	Standard
>	**Tb**	159	773377.6	1.9				ug/L	809211	Standard
	Ho	165	11.7	24.7				ug/L	13	Standard
	Tl	203	84.3	15.7	**0.0090**	0.002	18.6	ug/L	4	Standard
	Tl	205	78.3	31.5	**0.0094**	0.004	39.3	ug/L	8	Standard
	Pb	206	270.3	11.9	**0.0083**	0.006	77.8	ug/L	230	Standard
	Pb	207	227.7	9.7	**0.0095**	0.005	52.0	ug/L	184	Standard
	Pb	208	1045.7	7.9	**0.0129**	0.004	33.8	ug/L	775	Standard
	U	238	69.0	10.1	**0.0098**	0.001	10.7	ug/L	3	Standard
>	**Bi**	209	459688.6	0.6				ug/L	472452	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 14:49:43
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.3774**	5.841	172.9	mg/L	0	Standard
Mg	24	56.7	13.5	**0.0139**	0.010	75.4	mg/L	52	Standard
K	39	36.7	47.9	**0.0481**	0.083	172.3	mg/L	32	Standard
Ca	43	28.3	36.7	**-0.1190**	1.361	1143.1	mg/L	33	Standard
Fe	54	147.7	37.2	**0.0142**	0.046	325.7	mg/L	138	Standard
Fe	57	251.7	6.4	**0.1277**	0.048	37.8	mg/L	263	Standard
Sc-1	45	27159.3	0.6				mg/L	27861	Standard
Cl	35	129512.5	0.9				ug/L	100607	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	2033.5	6.1				ug/L	1777	Standard
P	31	21762.3	0.2				ug/L	18074	Standard
S	34	5672.7	2.3				ug/L	3901	Standard
Sr	88	96.7	25.5				ug/L	60	Standard
C	12	56.7	79.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	2.7	219.6				mg/L	13	Standard
Ho-1	165	11.7	24.7				mg/L	13	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	6036.2	1.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.143	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 14:49:43
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.750
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.299
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 14:49:43
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, July 07, 2016 14:50:39
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48417.3	2.9				ug/L	59299	Standard
	Be	9	135.0	20.6	**0.1991**	0.035	17.6	ug/L	17	Standard
	Al	27	1411.7	9.4	**0.0001**	0.001	1301.6	ug/L	1472	Standard
	Sc	45	26463.1	1.6				ug/L	27861	Standard
	Ti	47	17.3	29.6	**-0.0388**	0.022	56.2	ug/L	28	Standard
	V	51	3293.7	3.1	**0.3301**	0.018	5.4	ug/L	1156	Standard
	Cr	52	11155.1	1.5	**0.6953**	0.011	1.6	ug/L	6689	Standard
	Cr	53	1176.7	10.1	**1.0002**	0.146	14.6	ug/L	348	Standard
	Mn	55	3510.4	3.3	**0.4459**	0.024	5.4	ug/L	770	Standard
	Co	59	2551.5	1.9	**0.3632**	0.012	3.2	ug/L	216	Standard
	Ni	60	2889.3	2.3	**1.3991**	0.021	1.5	ug/L	440	Standard
	Cu	65	1447.4	4.9	**0.7725**	0.033	4.3	ug/L	116	Standard
	Zn	66	6879.6	1.1	**6.4317**	0.067	1.0	ug/L	135	Standard
>	Ge	72	432123.5	1.0				ug/L	445277	Standard
	As	75	369.6	4.2	**0.3864**	0.013	3.3	ug/L	-57	Standard
	Se	82	63.7	9.8	**0.4475**	0.053	11.8	ug/L	10	Standard
	Se-1	77	80.0	11.9	**0.4846**	0.123	25.4	ug/L	57	Standard
>	Ga	71	51.7	20.1				mg/L	78	Standard
	Rb	85	30.0	33.3				ug/L	22	Standard
	Y	89	359987.5	2.1				ug/L	388959	Standard
>	Rh	103	15.0	115.5				ug/L	8	Standard
	Mo	98	87.3	16.2	**0.0291**	0.005	18.8	ug/L	10	Standard
	Ag	107	2321.2	3.0	**0.3706**	0.009	2.4	ug/L	66	Standard
	Cd	111	450.5	0.6	**0.2301**	0.002	0.8	mg/L	3	Standard
	Cd	114	1150.5	3.2	**0.2402**	0.007	2.8	ug/L	4	Standard
>	In	115	502072.3	0.8				ug/L	523327	Standard
	Sn	118	416.7	27.4	**0.0025**	0.021	835.7	ug/L	488	Standard
	Sb	123	1659.8	1.9	**0.3640**	0.006	1.7	ug/L	195	Standard
	Ba	135	1315.7	1.0	**0.6934**	0.013	1.8	ug/L	28	Standard
	Ce	140	5.0	100.0				ug/L	83	Standard
>	Tb	159	761667.4	0.7				ug/L	809211	Standard
	Ho	165	5.0	100.0				ug/L	13	Standard
	Tl	203	608.7	2.2	**0.0784**	0.002	2.6	ug/L	4	Standard
	Tl	205	476.7	7.0	**0.0708**	0.005	6.8	ug/L	8	Standard
	Pb	206	1118.0	0.9	**0.1873**	0.003	1.6	ug/L	230	Standard
	Pb	207	937.4	3.1	**0.1746**	0.008	4.3	ug/L	184	Standard
	Pb	208	4252.9	1.3	**0.1953**	0.004	2.2	ug/L	775	Standard
	U	238	2425.2	1.9	**0.3735**	0.006	1.5	ug/L	3	Standard
>	Bi	209	454645.1	0.4				ug/L	472452	Standard

Sample ID: QC Std 8
Report Date/Time: Thursday, July 07, 2016 14:52:56
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	28.4	**-0.0128**	0.015	117.6	mg/L	52	Standard
K	39	30.0	28.9	**0.0208**	0.045	217.0	mg/L	32	Standard
Ca	43	23.3	24.7	**-0.6847**	0.836	122.1	mg/L	33	Standard
Fe	54	115.5	24.8	**-0.0107**	0.024	222.1	mg/L	138	Standard
Fe	57	268.3	10.3	**0.2032**	0.081	39.9	mg/L	263	Standard
Sc-1	45	26463.1	1.6				mg/L	27861	Standard
Cl	35	124949.1	0.9				ug/L	100607	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1756.8	10.0				ug/L	1777	Standard
P	31	15386.1	1.8				ug/L	18074	Standard
S	34	5484.3	1.4				ug/L	3901	Standard
Sr	88	90.0	16.7				ug/L	60	Standard
C	12	56.7	36.7				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	8.7	123.1				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	13	Standard
Er	166	26.7	78.1				mg/L	3	Standard
I	127	1803.4	6.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.540		
Al	27			
Sc	45			
Ti	47			
V	51	82.537		
Cr	52	86.917		
Cr	53			
Mn	55	89.187		
Co	59	90.808		
Ni	60	87.442		
Cu	65	96.561		
Zn	66	102.908		
Ge	72		97.046	
As	75	96.592		
Se	82	111.874		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
Report Date/Time: Thursday, July 07, 2016 14:52:56
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98			
Ag	107	92.658		
Cd	111	95.880		
Cd	114			
In	115			95.939
Sn	118			
Sb	123	90.991		
Ba	135	92.450		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.957		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.674		
U	238	93.364		
Bi	209			96.231
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Thursday, July 07, 2016 14:52:56
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: LCSW 67 WG575246-04
Sample Date/Time: Thursday, July 07, 2016 14:59:40
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50463.9	1.9				ug/L	59299	Standard
	Be	9	40514.1	1.6	**57.1347**	0.512	0.9	ug/L	17	Standard
	Al	27	22111.8	25.2	**0.1813**	0.048	26.7	ug/L	1472	Standard
	Sc	45	27912.4	0.8				ug/L	27861	Standard
	Ti	47	33.3	12.1	**0.0252**	0.018	70.0	ug/L	28	Standard
	V	51	338030.0	0.5	**49.8356**	0.761	1.5	ug/L	1156	Standard
	Cr	52	368637.3	1.6	**52.0389**	1.453	2.8	ug/L	6689	Standard
	Cr	53	45448.1	0.8	**51.6136**	0.829	1.6	ug/L	348	Standard
	Mn	55	345402.3	0.5	**54.1612**	0.465	0.9	ug/L	770	Standard
	Co	59	336048.8	0.5	**50.4526**	0.410	0.8	ug/L	216	Standard
	Ni	60	96431.9	0.2	**52.8852**	0.542	1.0	ug/L	440	Standard
	Cu	65	97530.9	0.3	**53.7841**	0.466	0.9	ug/L	116	Standard
	Zn	66	56996.7	0.6	**52.6120**	0.311	0.6	ug/L	135	Standard
>	**Ge**	72	449385.1	1.2				ug/L	445277	Standard
	As	75	55899.5	0.5	**50.8060**	0.333	0.7	ug/L	-57	Standard
	Se	82	5582.4	0.9	**49.8628**	0.387	0.8	ug/L	10	Standard
	Se-1	77	3856.5	0.3	**51.4126**	0.508	1.0	ug/L	57	Standard
>	**Ga**	71	75.0	26.7				mg/L	78	Standard
	Rb	85	223.3	15.2				ug/L	22	Standard
	Y	89	386074.4	1.6				ug/L	388959	Standard
>	**Rh**	103	28.3	27.0				ug/L	8	Standard
	Mo	98	98.3	41.4	**0.0320**	0.016	49.0	ug/L	10	Standard
	Ag	107	320308.6	0.2	**50.8392**	0.371	0.7	ug/L	66	Standard
	Cd	111	101641.6	0.9	**50.5623**	0.717	1.4	mg/L	3	Standard
	Cd	114	247941.1	0.4	**50.4466**	0.548	1.1	ug/L	4	Standard
>	**In**	115	523558.2	0.9				ug/L	523327	Standard
	Sn	118	611.7	12.7	**0.0346**	0.014	42.0	ug/L	488	Standard
	Sb	123	221411.4	1.3	**48.6760**	0.991	2.0	ug/L	195	Standard
	Ba	135	96386.7	1.4	**49.8992**	0.825	1.7	ug/L	28	Standard
	Ce	140	246.7	10.4				ug/L	83	Standard
>	**Tb**	159	784115.9	1.0				ug/L	809211	Standard
	Ho	165	18.3	56.8				ug/L	13	Standard
	Tl	203	397896.7	0.5	**50.9288**	0.032	0.1	ug/L	4	Standard
	Tl	205	339254.4	0.4	**50.6300**	0.100	0.2	ug/L	8	Standard
	Pb	206	256628.2	0.9	**52.3296**	0.178	0.3	ug/L	230	Standard
	Pb	207	223573.1	0.1	**50.2322**	0.316	0.6	ug/L	184	Standard
	Pb	208	960444.1	0.6	**52.7569**	0.352	0.7	ug/L	775	Standard
	U	238	334309.1	0.8	**50.0304**	0.144	0.3	ug/L	3	Standard
>	**Bi**	209	468690.2	0.6				ug/L	472452	Standard

Sample ID: LCSW 67 WG575246-04
Report Date/Time: Thursday, July 07, 2016 15:01:57
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	58.3	13.1	**0.0140**	0.010	70.9	mg/L	52	Standard
K	39	35.0	37.8	**0.0362**	0.062	172.8	mg/L	32	Standard
Ca	43	23.3	24.7	**-0.8543**	0.756	88.5	mg/L	33	Standard
Fe	54	138.9	17.0	**0.0038**	0.020	537.5	mg/L	138	Standard
Fe	57	278.3	10.5	**0.1896**	0.098	51.5	mg/L	263	Standard
Sc-1	45	27912.4	0.8				mg/L	27861	Standard
Cl	35	130402.8	1.3				ug/L	100607	Standard
Kr	83	3.3	62.4				ug/L	2	Standard
Br	81	2206.8	2.7				ug/L	1777	Standard
P	31	21231.5	1.9				ug/L	18074	Standard
S	34	5419.3	3.5				ug/L	3901	Standard
Sr	88	91.7	32.9				ug/L	60	Standard
C	12	43.3	35.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	7	Standard
Dy	164	11.9	126.0				mg/L	13	Standard
Ho-1	165	18.3	56.8				mg/L	13	Standard
Er	166	30.0	66.7				mg/L	3	Standard
I	127	2898.6	5.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.101	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.923	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 67 WG575246-04
Report Date/Time: Thursday, July 07, 2016 15:01:57
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.044
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.204
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 67 WG575246-04
Report Date/Time: Thursday, July 07, 2016 15:01:57
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607005401 WG575246-02
Sample Date/Time: Thursday, July 07, 2016 15:03:53
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49698.1	2.2				ug/L	59299	Standard
	Be	9	20.0	50.0	**0.0299**	0.014	47.9	ug/L	17	Standard
	Al	27	7335307.9	1.0	**65.4162**	0.877	1.3	ug/L	1472	Standard
	Sc	45	28025.9	1.3				ug/L	27861	Standard
	Ti	47	670.3	0.6	**2.7450**	0.036	1.3	ug/L	28	Standard
	V	51	2010.5	8.3	**0.1272**	0.023	18.2	ug/L	1156	Standard
	Cr	52	9992.3	3.6	**0.4956**	0.043	8.6	ug/L	6689	Standard
	Cr	53	7621.9	11.2	**8.5118**	0.961	11.3	ug/L	348	Standard
	Mn	55	144387.4	0.2	**23.0667**	0.203	0.9	ug/L	770	Standard
	Co	59	929.4	12.2	**0.1073**	0.018	16.7	ug/L	216	Standard
	Ni	60	2297.8	1.5	**1.0377**	0.023	2.2	ug/L	440	Standard
	Cu	65	7348.8	1.5	**4.0878**	0.034	0.8	ug/L	116	Standard
	Zn	66	26592.7	1.0	**24.9841**	0.059	0.2	ug/L	135	Standard
>	**Ge**	72	439685.4	0.8				ug/L	445277	Standard
	As	75	784.1	10.0	**0.7648**	0.067	8.8	ug/L	-57	Standard
	Se	82	313.6	6.0	**2.7257**	0.168	6.1	ug/L	10	Standard
	Se-1	77	425.3	4.5	**5.2284**	0.219	4.2	ug/L	57	Standard
>	**Ga**	71	86.7	3.3				mg/L	78	Standard
	Rb	85	39844.0	1.3				ug/L	22	Standard
	Y	89	373938.6	1.2				ug/L	388959	Standard
>	**Rh**	103	75.0	6.7				ug/L	8	Standard
	Mo	98	846.6	5.6	**0.3398**	0.022	6.4	ug/L	10	Standard
	Ag	107	265.0	12.1	**0.0302**	0.006	18.3	ug/L	66	Standard
	Cd	111	75.1	21.7	**0.0353**	0.009	24.4	mg/L	3	Standard
	Cd	114	190.0	19.9	**0.0364**	0.008	23.0	ug/L	4	Standard
>	**In**	115	502875.9	0.9				ug/L	523327	Standard
	Sn	118	1118.4	7.9	**0.1341**	0.017	12.9	ug/L	488	Standard
	Sb	123	2421.2	29.1	**0.5367**	0.157	29.2	ug/L	195	Standard
	Ba	135	24884.1	1.2	**13.3988**	0.038	0.3	ug/L	28	Standard
	Ce	140	160.0	13.6				ug/L	83	Standard
>	**Tb**	159	766646.0	0.7				ug/L	809211	Standard
	Ho	165	31.7	24.1				ug/L	13	Standard
	Tl	203	228.3	16.5	**0.0289**	0.005	18.0	ug/L	4	Standard
	Tl	205	216.7	16.7	**0.0316**	0.006	18.3	ug/L	8	Standard
	Pb	206	1112.7	3.7	**0.1915**	0.010	5.1	ug/L	230	Standard
	Pb	207	876.4	7.6	**0.1651**	0.017	10.0	ug/L	184	Standard
	Pb	208	4081.2	5.3	**0.1909**	0.014	7.1	ug/L	775	Standard
	U	238	119.7	52.1	**0.0182**	0.010	54.4	ug/L	3	Standard
>	**Bi**	209	444573.4	0.4				ug/L	472452	Standard

Sample ID: L1607005401 WG575246-02
Report Date/Time: Thursday, July 07, 2016 15:06:10
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.2974**	5.703	172.9	mg/L	0	Standard
Mg	24	33565.5	2.2	**45.6019**	0.736	1.6	mg/L	52	Standard
K	39	946.7	5.4	**4.2531**	0.289	6.8	mg/L	32	Standard
Ca	43	198.3	16.2	**21.3919**	3.806	17.8	mg/L	33	Standard
Fe	54	147.3	16.1	**0.0102**	0.020	192.6	mg/L	138	Standard
Fe	57	485.0	12.5	**0.8272**	0.208	25.1	mg/L	263	Standard
> **Sc-1**	45	28025.9	1.3				mg/L	27861	Standard
Cl	35	155693.2	0.3				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	65270.4	2.7				ug/L	1777	Standard
P	31	21618.7	1.4				ug/L	18074	Standard
S	34	5169.2	1.0				ug/L	3901	Standard
Sr	88	238.3	28.5				ug/L	60	Standard
C	12	123.3	4.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	7	Standard
Dy	164	38.2	52.9				mg/L	13	Standard
Ho-1	165	31.7	24.1				mg/L	13	Standard
Er	166	36.7	15.7				mg/L	3	Standard
I	127	626771.4	6.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.809	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.744	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607005401 WG575246-02
Report Date/Time: Thursday, July 07, 2016 15:06:10
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.092
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.099
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607005401DP WG575246-07
Sample Date/Time: Thursday, July 07, 2016 15:07:04
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51793.4	0.9				ug/L	59299	Standard
	Be	9	10.0	100.0	**0.0151**	0.014	90.7	ug/L	17	Standard
	Al	27	7031464.9	1.7	**60.1592**	1.039	1.7	ug/L	1472	Standard
	Sc	45	27955.8	0.3				ug/L	27861	Standard
	Ti	47	643.3	8.3	**2.6214**	0.212	8.1	ug/L	28	Standard
	V	51	1829.6	12.6	**0.0994**	0.036	36.4	ug/L	1156	Standard
	Cr	52	10092.4	2.2	**0.5063**	0.017	3.4	ug/L	6689	Standard
	Cr	53	8188.9	4.2	**9.1540**	0.501	5.5	ug/L	348	Standard
	Mn	55	133711.4	1.0	**21.2914**	0.171	0.8	ug/L	770	Standard
	Co	59	826.7	3.0	**0.0911**	0.004	4.6	ug/L	216	Standard
	Ni	60	2136.5	0.3	**0.9435**	0.010	1.0	ug/L	440	Standard
	Cu	65	6826.5	0.3	**3.7829**	0.044	1.2	ug/L	116	Standard
	Zn	66	23061.5	1.0	**21.5808**	0.219	1.0	ug/L	135	Standard
>	**Ge**	72	440910.7	1.0				ug/L	445277	Standard
	As	75	817.0	3.4	**0.7938**	0.031	3.9	ug/L	-57	Standard
	Se	82	317.4	0.9	**2.7525**	0.047	1.7	ug/L	10	Standard
	Se-1	77	429.7	0.9	**5.2736**	0.116	2.2	ug/L	57	Standard
>	**Ga**	71	90.0	25.5				mg/L	78	Standard
	Rb	85	37250.7	0.7				ug/L	22	Standard
	Y	89	375397.2	1.0				ug/L	388959	Standard
>	**Rh**	103	58.3	4.9				ug/L	8	Standard
	Mo	98	740.3	1.7	**0.2941**	0.006	1.9	ug/L	10	Standard
	Ag	107	202.0	9.1	**0.0196**	0.003	16.3	ug/L	66	Standard
	Cd	111	36.9	19.0	**0.0154**	0.004	23.0	mg/L	3	Standard
	Cd	114	88.1	44.1	**0.0146**	0.008	55.5	ug/L	4	Standard
>	**In**	115	506530.8	0.6				ug/L	523327	Standard
	Sn	118	1436.7	6.3	**0.1919**	0.018	9.6	ug/L	488	Standard
	Sb	123	990.3	24.2	**0.2082**	0.053	25.5	ug/L	195	Standard
	Ba	135	23437.8	0.5	**12.5281**	0.015	0.1	ug/L	28	Standard
	Ce	140	121.7	15.6				ug/L	83	Standard
>	**Tb**	159	779251.2	1.1				ug/L	809211	Standard
	Ho	165	31.7	39.7				ug/L	13	Standard
	Tl	203	118.7	4.6	**0.0140**	0.001	5.1	ug/L	4	Standard
	Tl	205	98.3	29.4	**0.0129**	0.005	35.3	ug/L	8	Standard
	Pb	206	873.7	3.0	**0.1395**	0.006	4.5	ug/L	230	Standard
	Pb	207	713.7	1.8	**0.1260**	0.003	2.0	ug/L	184	Standard
	Pb	208	3136.1	1.6	**0.1355**	0.004	2.6	ug/L	775	Standard
	U	238	55.7	16.3	**0.0081**	0.002	18.6	ug/L	3	Standard
>	**Bi**	209	445889.4	0.8				ug/L	472452	Standard

Sample ID: L1607005401DP WG575246-07
Report Date/Time: Thursday, July 07, 2016 15:09:21
Page 1

Approved: July 08, 2016

Na	23	10.0	50.0	**19.5482**	9.806	50.2	mg/L	0	Standard
Mg	24	31795.0	0.5	**43.3030**	0.295	0.7	mg/L	52	Standard
K	39	811.7	3.7	**3.6363**	0.150	4.1	mg/L	32	Standard
Ca	43	161.7	9.9	**16.7977**	2.003	11.9	mg/L	33	Standard
Fe	54	165.8	14.9	**0.0258**	0.020	77.8	mg/L	138	Standard
Fe	57	413.3	6.2	**0.6068**	0.081	13.3	mg/L	263	Standard
> **Sc-1**	45	27955.8	0.3				mg/L	27861	Standard
Cl	35	159807.1	0.9				ug/L	100607	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	65832.7	1.7				ug/L	1777	Standard
P	31	21660.5	2.0				ug/L	18074	Standard
S	34	5312.6	1.0				ug/L	3901	Standard
Sr	88	228.3	12.8				ug/L	60	Standard
C	12	113.3	18.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	7	Standard
Dy	164	35.2	42.5				mg/L	13	Standard
Ho-1	165	31.7	39.7				mg/L	13	Standard
Er	166	30.0	66.7				mg/L	3	Standard
I	127	567318.9	4.1				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		87.343	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.019	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1607005401DP WG575246-07
Report Date/Time: Thursday, July 07, 2016 15:09:21
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.791
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.378
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606164802 WG575246-01
Sample Date/Time: Thursday, July 07, 2016 15:10:16
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51206.4	2.1				ug/L	59299	Standard
	Be	9	15.0	33.3	**0.0222**	0.007	32.7	ug/L	17	Standard
	Al	27	10122388.0	2.2	**87.6303**	2.854	3.3	ug/L	1472	Standard
	Sc	45	28892.5	1.4				ug/L	27861	Standard
	Ti	47	255.7	10.6	**0.9613**	0.109	11.3	ug/L	28	Standard
	V	51	1273.6	16.0	**0.0132**	0.029	221.6	ug/L	1156	Standard
	Cr	52	8111.2	3.9	**0.2032**	0.040	19.6	ug/L	6689	Standard
	Cr	53	5309.3	5.2	**5.7246**	0.289	5.0	ug/L	348	Standard
	Mn	55	12787702.8	0.9	**2026.3590**	12.065	0.6	ug/L	770	Standard
	Co	59	33803.7	0.6	**5.0853**	0.060	1.2	ug/L	216	Standard
	Ni	60	4682.4	2.0	**2.3451**	0.047	2.0	ug/L	440	Standard
	Cu	65	626.7	6.1	**0.2907**	0.023	8.0	ug/L	116	Standard
	Zn	66	4423.3	1.7	**3.9356**	0.092	2.3	ug/L	135	Standard
>	**Ge**	72	445683.7	0.6				ug/L	445277	Standard
	As	75	957.5	4.2	**0.9142**	0.037	4.0	ug/L	-57	Standard
	Se	82	142.7	7.4	**1.1434**	0.093	8.1	ug/L	10	Standard
	Se-1	77	239.3	0.2	**2.6195**	0.027	1.0	ug/L	57	Standard
>	**Ga**	71	251.7	8.0				mg/L	78	Standard
	Rb	85	15991.8	2.8				ug/L	22	Standard
	Y	89	380893.4	0.9				ug/L	388959	Standard
>	**Rh**	103	90.0	20.0				ug/L	8	Standard
	Mo	98	912.3	3.7	**0.3570**	0.014	3.9	ug/L	10	Standard
	Ag	107	74.0	18.2	**-0.0017**	0.002	126.8	ug/L	66	Standard
	Cd	111	17.3	30.6	**0.0051**	0.003	51.2	mg/L	3	Standard
	Cd	114	48.2	47.5	**0.0061**	0.005	78.5	ug/L	4	Standard
>	**In**	115	516208.1	0.5				ug/L	523327	Standard
	Sn	118	686.7	4.0	**0.0498**	0.006	11.3	ug/L	488	Standard
	Sb	123	686.0	28.1	**0.1365**	0.044	32.0	ug/L	195	Standard
	Ba	135	294316.4	0.3	**154.5675**	0.991	0.6	ug/L	28	Standard
	Ce	140	1316.7	5.1				ug/L	83	Standard
>	**Tb**	159	777924.9	0.9				ug/L	809211	Standard
	Ho	165	53.3	42.3				ug/L	13	Standard
	Tl	203	85.7	5.8	**0.0092**	0.001	6.3	ug/L	4	Standard
	Tl	205	65.0	33.5	**0.0074**	0.003	45.0	ug/L	8	Standard
	Pb	206	346.0	0.8	**0.0242**	0.001	2.2	ug/L	230	Standard
	Pb	207	304.0	3.9	**0.0272**	0.003	11.7	ug/L	184	Standard
	Pb	208	1372.0	2.5	**0.0314**	0.002	6.4	ug/L	775	Standard
	U	238	539.7	2.0	**0.0819**	0.002	2.4	ug/L	3	Standard
>	**Bi**	209	458650.0	0.8				ug/L	472452	Standard

Sample ID: L1606164802 WG575246-01
Report Date/Time: Thursday, July 07, 2016 15:12:33
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	13164.1	2.1	**17.3085**	0.326	1.9	mg/L	52	Standard
K	39	190.0	21.5	**0.7257**	0.183	25.2	mg/L	32	Standard
Ca	43	106.7	14.3	**9.3540**	2.051	21.9	mg/L	33	Standard
Fe	54	8968.2	2.9	**7.0775**	0.157	2.2	mg/L	138	Standard
Fe	57	2640.2	3.4	**7.2556**	0.327	4.5	mg/L	263	Standard
> **Sc-1**	45	28892.5	1.4				mg/L	27861	Standard
Cl	35	138156.8	3.1				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	30754.5	3.7				ug/L	1777	Standard
P	31	28029.3	6.4				ug/L	18074	Standard
S	34	4959.1	3.2				ug/L	3901	Standard
Sr	88	433.3	4.8				ug/L	60	Standard
C	12	113.3	41.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	64.0	23.0				mg/L	13	Standard
Ho-1	165	53.3	42.3				mg/L	13	Standard
Er	166	56.7	27.0				mg/L	3	Standard
I	127	203993.0	2.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.353	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.091	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606164802 WG575246-01
Report Date/Time: Thursday, July 07, 2016 15:12:33
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.640
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.079
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606164802 WG575246-01
Report Date/Time: Thursday, July 07, 2016 15:12:33
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606164802S WG575246-05
Sample Date/Time: Thursday, July 07, 2016 15:13:27
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52599.5	0.9				ug/L	59299	Standard
	Be	9	42481.1	1.7	**57.4729**	0.817	1.4	ug/L	17	Standard
	Al	27	10520171.9	1.4	**88.6295**	0.596	0.7	ug/L	1472	Standard
	Sc	45	28737.2	0.8				ug/L	27861	Standard
	Ti	47	299.3	11.6	**1.1447**	0.137	11.9	ug/L	28	Standard
	V	51	330101.6	1.2	**49.0616**	0.665	1.4	ug/L	1156	Standard
	Cr	52	353309.2	0.3	**50.2456**	0.522	1.0	ug/L	6689	Standard
	Cr	53	48348.7	1.7	**55.3832**	0.806	1.5	ug/L	348	Standard
	Mn	55	13882467.9	0.5	**2199.7883**	13.476	0.6	ug/L	770	Standard
	Co	59	359185.8	1.4	**54.3714**	0.717	1.3	ug/L	216	Standard
	Ni	60	94855.3	0.5	**52.4457**	0.508	1.0	ug/L	440	Standard
	Cu	65	89776.9	0.7	**49.9112**	0.564	1.1	ug/L	116	Standard
	Zn	66	58866.1	0.6	**54.7924**	0.256	0.5	ug/L	135	Standard
>	**Ge**	72	445707.8	0.7				ug/L	445277	Standard
	As	75	56974.2	0.8	**52.2092**	0.678	1.3	ug/L	-57	Standard
	Se	82	5615.1	1.0	**50.5724**	0.804	1.6	ug/L	10	Standard
	Se-1	77	3951.2	0.9	**53.1276**	0.512	1.0	ug/L	57	Standard
>	**Ga**	71	251.7	6.1				mg/L	78	Standard
	Rb	85	17029.6	1.6				ug/L	22	Standard
	Y	89	379636.5	1.7				ug/L	388959	Standard
>	**Rh**	103	126.7	21.7				ug/L	8	Standard
	Mo	98	1009.6	1.1	**0.3952**	0.001	0.4	ug/L	10	Standard
	Ag	107	304621.5	0.6	**48.9736**	0.295	0.6	ug/L	66	Standard
	Cd	111	98587.9	0.5	**49.6763**	0.390	0.8	mg/L	3	Standard
	Cd	114	240239.7	1.0	**49.5096**	0.363	0.7	ug/L	4	Standard
>	**In**	115	516883.6	1.2				ug/L	523327	Standard
	Sn	118	5619.4	4.7	**0.9495**	0.042	4.4	ug/L	488	Standard
	Sb	123	232842.9	0.1	**51.8513**	0.709	1.4	ug/L	195	Standard
	Ba	135	403865.5	0.3	**211.8430**	2.227	1.1	ug/L	28	Standard
	Ce	140	2265.2	6.3				ug/L	83	Standard
>	**Tb**	159	784126.8	0.3				ug/L	809211	Standard
	Ho	165	63.3	29.9				ug/L	13	Standard
	Tl	203	388229.6	0.3	**50.3460**	0.240	0.5	ug/L	4	Standard
	Tl	205	332904.3	0.6	**50.3360**	0.270	0.5	ug/L	8	Standard
	Pb	206	250918.7	0.6	**51.8416**	0.661	1.3	ug/L	230	Standard
	Pb	207	217974.7	0.3	**49.6189**	0.456	0.9	ug/L	184	Standard
	Pb	208	934215.4	0.3	**51.9909**	0.234	0.4	ug/L	775	Standard
	U	238	333239.5	0.6	**50.5270**	0.062	0.1	ug/L	3	Standard
>	**Bi**	209	462605.8	0.7				ug/L	472452	Standard

Sample ID: L1606164802S WG575246-05
Report Date/Time: Thursday, July 07, 2016 15:15:44
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.1449**	5.438	172.9	mg/L	0	Standard
Mg	24	14275.1	0.6	**18.8770**	0.210	1.1	mg/L	52	Standard
K	39	193.3	7.5	**0.7450**	0.058	7.8	mg/L	32	Standard
Ca	43	120.0	27.3	**11.0797**	4.136	37.3	mg/L	33	Standard
Fe	54	9427.9	5.7	**7.4883**	0.454	6.1	mg/L	138	Standard
Fe	57	2796.9	1.4	**7.7702**	0.139	1.8	mg/L	263	Standard
Sc-1	45	28737.2	0.8				mg/L	27861	Standard
Cl	35	134684.8	2.2				ug/L	100607	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	30447.3	5.1				ug/L	1777	Standard
P	31	27989.2	2.8				ug/L	18074	Standard
S	34	4754.1	1.3				ug/L	3901	Standard
Sr	88	390.0	14.8				ug/L	60	Standard
C	12	140.0	28.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	56.5	91.5				mg/L	13	Standard
Ho-1	165	63.3	29.9				mg/L	13	Standard
Er	166	73.3	55.1				mg/L	3	Standard
I	127	238228.5	7.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		88.702	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.097	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606164802S WG575246-05
Report Date/Time: Thursday, July 07, 2016 15:15:44
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.769
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.916
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606164802S WG575246-05
Report Date/Time: Thursday, July 07, 2016 15:15:44
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606164802SD WG575246-06
Sample Date/Time: Thursday, July 07, 2016 15:16:38
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53890.7	1.2				ug/L	59299	Standard
	Be	9	42855.5	2.4	**56.6012**	1.791	3.2	ug/L	17	Standard
	Al	27	10939590.0	0.3	**89.9663**	1.218	1.4	ug/L	1472	Standard
	Sc	45	29366.8	1.3				ug/L	27861	Standard
	Ti	47	403.3	37.5	**1.5747**	0.622	39.5	ug/L	28	Standard
	V	51	336580.8	1.4	**49.8592**	0.857	1.7	ug/L	1156	Standard
	Cr	52	354377.4	0.6	**50.2273**	0.629	1.3	ug/L	6689	Standard
	Cr	53	48512.5	0.9	**55.3875**	0.851	1.5	ug/L	348	Standard
	Mn	55	13904410.0	0.2	**2195.8419**	14.661	0.7	ug/L	770	Standard
	Co	59	360109.3	0.7	**54.3295**	0.693	1.3	ug/L	216	Standard
	Ni	60	94765.8	0.8	**52.2159**	0.177	0.3	ug/L	440	Standard
	Cu	65	89816.1	0.6	**49.7640**	0.507	1.0	ug/L	116	Standard
	Zn	66	58934.7	0.3	**54.6717**	0.437	0.8	ug/L	135	Standard
>	Ge	72	447215.9	0.6				ug/L	445277	Standard
	As	75	57380.5	0.8	**52.4040**	0.697	1.3	ug/L	-57	Standard
	Se	82	5698.3	1.4	**51.1484**	0.826	1.6	ug/L	10	Standard
	Se-1	77	3957.2	2.0	**53.0319**	1.361	2.6	ug/L	57	Standard
>	Ga	71	246.7	1.2				mg/L	78	Standard
	Rb	85	17091.3	1.3				ug/L	22	Standard
	Y	89	380041.0	1.3				ug/L	388959	Standard
>	Rh	103	116.7	23.6				ug/L	8	Standard
	Mo	98	1074.8	3.1	**0.4187**	0.015	3.7	ug/L	10	Standard
	Ag	107	306606.6	0.8	**48.9988**	0.318	0.6	ug/L	66	Standard
	Cd	111	99453.8	0.5	**49.8151**	0.545	1.1	mg/L	3	Standard
	Cd	114	243893.7	1.3	**49.9625**	0.424	0.8	ug/L	4	Standard
>	In	115	519961.7	0.6				ug/L	523327	Standard
	Sn	118	585.0	7.0	**0.0304**	0.007	23.6	ug/L	488	Standard
	Sb	123	234378.2	1.3	**51.8780**	0.504	1.0	ug/L	195	Standard
	Ba	135	411204.9	0.2	**214.4024**	0.970	0.5	ug/L	28	Standard
	Ce	140	1410.1	2.8				ug/L	83	Standard
>	Tb	159	790197.2	0.5				ug/L	809211	Standard
	Ho	165	63.3	19.9				ug/L	13	Standard
	Tl	203	386476.1	0.6	**50.4058**	0.224	0.4	ug/L	4	Standard
	Tl	205	335367.6	0.4	**51.0001**	0.285	0.6	ug/L	8	Standard
	Pb	206	251148.7	0.4	**52.1849**	0.059	0.1	ug/L	230	Standard
	Pb	207	218790.4	0.2	**50.0901**	0.270	0.5	ug/L	184	Standard
	Pb	208	927769.7	0.5	**51.9280**	0.107	0.2	ug/L	775	Standard
	U	238	335547.2	0.5	**51.1693**	0.089	0.2	ug/L	3	Standard
>	Bi	209	459958.5	0.3				ug/L	472452	Standard

Sample ID: L1606164802SD WG575246-06
Report Date/Time: Thursday, July 07, 2016 15:18:55
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.1406**	5.431	172.9	mg/L	0	Standard
Mg	24	14170.0	1.8	**18.3346**	0.340	1.9	mg/L	52	Standard
K	39	198.3	2.9	**0.7489**	0.035	4.7	mg/L	32	Standard
Ca	43	121.7	8.6	**10.9581**	1.422	13.0	mg/L	33	Standard
Fe	54	9678.2	1.3	**7.5230**	0.169	2.2	mg/L	138	Standard
Fe	57	2853.6	3.2	**7.7549**	0.162	2.1	mg/L	263	Standard
> **Sc-1**	45	29366.8	1.3				mg/L	27861	Standard
Cl	35	132946.1	1.0				ug/L	100607	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	27762.2	7.1				ug/L	1777	Standard
P	31	28246.3	0.7				ug/L	18074	Standard
S	34	4737.4	1.7				ug/L	3901	Standard
Sr	88	406.7	6.3				ug/L	60	Standard
C	12	150.0	11.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	7	Standard
Dy	164	67.0	15.4				mg/L	13	Standard
Ho-1	165	63.3	19.9				mg/L	13	Standard
Er	166	63.3	32.9				mg/L	3	Standard
I	127	245471.6	6.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.879	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.435	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606164802SD WG575246-06
Report Date/Time: Thursday, July 07, 2016 15:18:55
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.357
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.356
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606164802SD WG575246-06
Report Date/Time: Thursday, July 07, 2016 15:18:55
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606161502
Sample Date/Time: Thursday, July 07, 2016 15:22:18
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71935.4	2.1				ug/L	59299	Standard
	Be	9	16.7	62.4	**0.0177**	0.010	56.9	ug/L	17	Standard
	Al	27	106932877.4	2.7	**658.8484**	12.859	2.0	ug/L	1472	Standard
	Sc	45	24706.8	1.5				ug/L	27861	Standard
	Ti	47	397.0	8.0	**1.8276**	0.156	8.6	ug/L	28	Standard
	V	51	1607.5	163.4	**0.0999**	0.455	455.4	ug/L	1156	Standard
	Cr	52	24389.6	1.8	**3.1368**	0.045	1.4	ug/L	6689	Standard
	Cr	53	77630.3	4.8	**103.7397**	5.753	5.5	ug/L	348	Standard
	Mn	55	882156.5	0.5	**162.3618**	1.062	0.7	ug/L	770	Standard
	Co	59	1526.4	1.6	**0.2333**	0.003	1.3	ug/L	216	Standard
	Ni	60	16021.1	2.0	**10.0891**	0.132	1.3	ug/L	440	Standard
	Cu	65	7945.4	4.3	**5.0811**	0.190	3.7	ug/L	116	Standard
	Zn	66	6207.9	6.3	**6.5419**	0.382	5.8	ug/L	135	Standard
>	Ge	72	383452.0	0.8				ug/L	445277	Standard
	As	75	7269.3	12.4	**7.7792**	1.014	13.0	ug/L	-57	Standard
	Se	82	3387.5	6.5	**35.4300**	2.570	7.3	ug/L	10	Standard
	Se-1	77	7566.2	1.4	**119.0280**	0.782	0.7	ug/L	57	Standard
>	Ga	71	376.7	7.5				mg/L	78	Standard
	Rb	85	54041.2	0.7				ug/L	22	Standard
	Y	89	338475.7	0.7				ug/L	388959	Standard
>	Rh	103	1018.4	33.4				ug/L	8	Standard
	Mo	98	361.1	0.8	**0.1647**	0.001	0.6	ug/L	10	Standard
	Ag	107	130.7	12.6	**0.0115**	0.003	29.0	ug/L	66	Standard
	Cd	111	26.3	26.6	**0.0122**	0.004	34.6	mg/L	3	Standard
	Cd	114	42.6	40.5	**0.0065**	0.004	64.5	ug/L	4	Standard
>	In	115	433706.2	0.6				ug/L	523327	Standard
	Sn	118	586.7	11.5	**0.0519**	0.014	27.5	ug/L	488	Standard
	Sb	123	371.8	33.9	**0.0820**	0.033	40.5	ug/L	195	Standard
	Ba	135	1878.4	2.3	**1.1571**	0.029	2.5	ug/L	28	Standard
	Ce	140	83.3	12.5				ug/L	83	Standard
>	Tb	159	694972.4	2.1				ug/L	809211	Standard
	Ho	165	60.0	41.7				ug/L	13	Standard
	Tl	203	84.0	20.3	**0.0118**	0.003	22.5	ug/L	4	Standard
	Tl	205	73.3	3.9	**0.0115**	0.000	3.6	ug/L	8	Standard
	Pb	206	247.7	6.9	**0.0168**	0.004	22.7	ug/L	230	Standard
	Pb	207	213.7	2.6	**0.0189**	0.001	4.9	ug/L	184	Standard
	Pb	208	918.3	3.0	**0.0190**	0.002	9.5	ug/L	775	Standard
	U	238	297.0	2.7	**0.0563**	0.001	2.5	ug/L	3	Standard
>	Bi	209	365769.3	1.1				ug/L	472452	Standard

Sample ID: L1606161502
Report Date/Time: Thursday, July 07, 2016 15:24:35
Page 1

Approved: July 08, 2016

Na	23	10.0	86.6	**21.9413**	18.702	85.2	mg/L	0	Standard
Mg	24	1117419.2	2.0	**1725.0426**	56.990	3.3	mg/L	52	Standard
K	39	1188.4	9.8	**6.1136**	0.700	11.5	mg/L	32	Standard
Ca	43	266.7	5.7	**34.6763**	1.918	5.5	mg/L	33	Standard
Fe	54	162.1	2.9	**0.0405**	0.006	15.4	mg/L	138	Standard
Fe	57	861.7	6.7	**2.3505**	0.203	8.6	mg/L	263	Standard
> **Sc-1**	45	24706.8	1.5				mg/L	27861	Standard
Cl	35	907616.5	0.7				ug/L	100607	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1002093.3	2.5				ug/L	1777	Standard
P	31	20822.6	1.1				ug/L	18074	Standard
S	34	5781.1	1.5				ug/L	3901	Standard
Sr	88	1578.4	2.9				ug/L	60	Standard
C	12	110.0	47.2				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	7	Standard
Dy	164	14.6	36.4				mg/L	13	Standard
Ho-1	165	60.0	41.7				mg/L	13	Standard
Er	166	43.3	53.3				mg/L	3	Standard
I	127	1665336.9	17.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.309	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.115	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606161502
Report Date/Time: Thursday, July 07, 2016 15:24:35
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	82.875	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	77.419	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 53 Upper, S, EEE	Cr	53	

Sample ID: L1606161502
Report Date/Time: Thursday, July 07, 2016 15:24:35
Page 3

Approved: July 08, 2016

Mn 55 Upper, S, EEE	Mn	55
Se-1 77 Upper, S, EEE	Se-1	77

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606161502PS WG575345-01
Sample Date/Time: Thursday, July 07, 2016 15:25:29
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81974.5	1.8				ug/L	59299	Standard
	Be	9	42116.8	0.5	**36.5722**	0.824	2.3	ug/L	17	Standard
	Al	27	116573164.8	2.7	**630.3628**	18.709	3.0	ug/L	1472	Standard
	Sc	45	25695.1	3.0				ug/L	27861	Standard
	Ti	47	346.7	5.6	**1.5449**	0.119	7.7	ug/L	28	Standard
	V	51	318462.5	1.4	**53.8113**	0.119	0.2	ug/L	1156	Standard
	Cr	52	339526.9	1.5	**54.9685**	0.567	1.0	ug/L	6689	Standard
	Cr	53	109452.2	0.1	**143.1561**	2.526	1.8	ug/L	348	Standard
	Mn	55	1188034.6	1.2	**213.8989**	5.720	2.7	ug/L	770	Standard
	Co	59	288405.8	0.9	**49.6279**	1.218	2.5	ug/L	216	Standard
	Ni	60	92968.4	0.5	**58.4558**	0.720	1.2	ug/L	440	Standard
	Cu	65	83045.3	0.6	**52.4822**	0.822	1.6	ug/L	116	Standard
	Zn	66	53102.3	2.3	**56.1769**	0.397	0.7	ug/L	135	Standard
>	**Ge**	72	392160.1	1.7				ug/L	445277	Standard
	As	75	57370.2	1.1	**59.7583**	1.553	2.6	ug/L	-57	Standard
	Se	82	8159.2	2.6	**83.6425**	3.384	4.0	ug/L	10	Standard
	Se-1	77	10760.5	0.7	**165.7973**	2.289	1.4	ug/L	57	Standard
>	**Ga**	71	298.3	15.8				mg/L	78	Standard
	Rb	85	55350.9	1.1				ug/L	22	Standard
	Y	89	347466.0	1.1				ug/L	388959	Standard
>	**Rh**	103	1408.4	15.5				ug/L	8	Standard
	Mo	98	417.3	6.5	**0.1852**	0.011	6.0	ug/L	10	Standard
	Ag	107	226088.4	0.9	**41.9738**	0.071	0.2	ug/L	66	Standard
	Cd	111	81641.0	1.1	**47.5053**	0.145	0.3	mg/L	3	Standard
	Cd	114	197249.0	1.2	**46.9443**	0.377	0.8	ug/L	4	Standard
>	**In**	115	447558.2	0.8				ug/L	523327	Standard
	Sn	118	758.4	9.0	**0.0841**	0.014	16.3	ug/L	488	Standard
	Sb	123	191333.9	0.4	**49.2022**	0.206	0.4	ug/L	195	Standard
	Ba	135	82701.4	1.0	**50.0818**	0.228	0.5	ug/L	28	Standard
	Ce	140	71.7	24.5				ug/L	83	Standard
>	**Tb**	159	721795.5	1.0				ug/L	809211	Standard
	Ho	165	40.0	21.7				ug/L	13	Standard
	Tl	203	322181.9	0.7	**51.2454**	0.360	0.7	ug/L	4	Standard
	Tl	205	270532.3	0.9	**50.1751**	0.842	1.7	ug/L	8	Standard
	Pb	206	215562.3	0.2	**54.6283**	0.616	1.1	ug/L	230	Standard
	Pb	207	187232.1	0.4	**52.2795**	0.686	1.3	ug/L	184	Standard
	Pb	208	759955.8	0.7	**51.8735**	0.357	0.7	ug/L	775	Standard
	U	238	296472.3	1.0	**55.1356**	0.478	0.9	ug/L	3	Standard
>	**Bi**	209	377169.3	0.9				ug/L	472452	Standard

Sample ID: L1606161502PS WG575345-01
Report Date/Time: Thursday, July 07, 2016 15:27:46
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.5477**	6.136	173.0	mg/L	0	Standard
Mg	24	1184832.8	1.3	**1759.4063**	63.467	3.6	mg/L	52	Standard
K	39	1080.0	1.2	**5.3246**	0.216	4.1	mg/L	32	Standard
Ca	43	233.3	20.3	**28.6207**	6.911	24.1	mg/L	33	Standard
Fe	54	136.1	5.9	**0.0114**	0.011	96.1	mg/L	138	Standard
Fe	57	875.0	5.1	**2.2837**	0.240	10.5	mg/L	263	Standard
> **Sc-1**	45	25695.1	3.0				mg/L	27861	Standard
Cl	35	945049.6	0.9				ug/L	100607	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1015879.6	1.5				ug/L	1777	Standard
P	31	21610.4	2.1				ug/L	18074	Standard
S	34	5661.1	5.9				ug/L	3901	Standard
Sr	88	1648.4	3.8				ug/L	60	Standard
C	12	133.3	53.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	20.8	119.0				mg/L	13	Standard
Ho-1	165	40.0	21.7				mg/L	13	Standard
Er	166	53.3	21.7				mg/L	3	Standard
I	127	3205214.7	2.0				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		138.239	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		88.071	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606161502PS WG575345-01
Report Date/Time: Thursday, July 07, 2016 15:27:46
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	85.522	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	79.832	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 53 Upper, S, EEE	Cr	53	

Sample ID: L1606161502PS WG575345-01
Report Date/Time: Thursday, July 07, 2016 15:27:46
Page 3

Approved: July 08, 2016

Mn 55 Upper, S, EEE	Mn	55
Se-1 77 Upper, S, EEE	Se-1	77

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606161502SDL WG575345-02
Sample Date/Time: Thursday, July 07, 2016 15:28:41
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64403.3	0.8				ug/L	59299	Standard
	Be	9	33.3	8.7	**0.0382**	0.003	8.7	ug/L	17	Standard
	Al	27	22949042.3	0.7	**157.9295**	2.333	1.5	ug/L	1472	Standard
	Sc	45	25873.7	1.7				ug/L	27861	Standard
	Ti	47	75.3	17.7	**0.2256**	0.061	27.0	ug/L	28	Standard
	V	51	805.4	74.7	**-0.0479**	0.096	200.7	ug/L	1156	Standard
	Cr	52	11094.7	0.1	**0.7503**	0.005	0.7	ug/L	6689	Standard
	Cr	53	21184.8	1.7	**25.7811**	0.369	1.4	ug/L	348	Standard
	Mn	55	184505.7	0.9	**31.1899**	0.212	0.7	ug/L	770	Standard
	Co	59	535.0	9.1	**0.0513**	0.008	14.8	ug/L	216	Standard
	Ni	60	3965.9	1.6	**2.1036**	0.034	1.6	ug/L	440	Standard
	Cu	65	2551.2	9.3	**1.4625**	0.138	9.4	ug/L	116	Standard
	Zn	66	2965.6	9.2	**2.7701**	0.263	9.5	ug/L	135	Standard
>	Ge	72	416095.8	0.3				ug/L	445277	Standard
	As	75	1709.9	6.9	**1.7147**	0.121	7.1	ug/L	-57	Standard
	Se	82	767.1	2.9	**7.2761**	0.238	3.3	ug/L	10	Standard
	Se-1	77	1907.1	0.9	**27.1598**	0.251	0.9	ug/L	57	Standard
>	Ga	71	113.3	22.6				mg/L	78	Standard
	Rb	85	11744.6	2.0				ug/L	22	Standard
	Y	89	358205.1	1.0				ug/L	388959	Standard
>	Rh	103	400.0	44.2				ug/L	8	Standard
	Mo	98	95.5	18.9	**0.0345**	0.008	23.0	ug/L	10	Standard
	Ag	107	13902.5	17.0	**2.4060**	0.428	17.8	ug/L	66	Standard
	Cd	111	47.4	57.5	**0.0222**	0.015	67.0	mg/L	3	Standard
	Cd	114	94.8	76.7	**0.0172**	0.016	94.4	ug/L	4	Standard
>	In	115	478034.0	0.9				ug/L	523327	Standard
	Sn	118	316.7	18.0	**-0.0132**	0.011	85.5	ug/L	488	Standard
	Sb	123	1144.8	43.9	**0.2596**	0.122	47.1	ug/L	195	Standard
	Ba	135	508.3	16.6	**0.2711**	0.048	17.8	ug/L	28	Standard
	Ce	140	28.3	27.0				ug/L	83	Standard
>	Tb	159	747851.5	1.1				ug/L	809211	Standard
	Ho	165	8.3	69.3				ug/L	13	Standard
	Tl	203	166.7	30.4	**0.0220**	0.007	33.1	ug/L	4	Standard
	Tl	205	96.7	34.4	**0.0137**	0.006	41.2	ug/L	8	Standard
	Pb	206	394.3	17.8	**0.0425**	0.016	38.5	ug/L	230	Standard
	Pb	207	335.7	6.3	**0.0422**	0.006	13.5	ug/L	184	Standard
	Pb	208	1342.4	2.2	**0.0372**	0.002	5.6	ug/L	775	Standard
	U	238	143.7	16.0	**0.0235**	0.004	16.9	ug/L	3	Standard
>	Bi	209	417023.8	0.4				ug/L	472452	Standard

Sample ID: L1606161502SDL WG575345-02
Report Date/Time: Thursday, July 07, 2016 15:30:57
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	225656.3	0.4	**332.5569**	5.456	1.6	mg/L	52	Standard
K	39	228.3	9.1	**1.0170**	0.101	10.0	mg/L	32	Standard
Ca	43	90.0	27.8	**8.5387**	3.241	38.0	mg/L	33	Standard
Fe	54	80.4	18.4	**-0.0395**	0.014	34.9	mg/L	138	Standard
Fe	57	408.3	5.5	**0.6940**	0.090	12.9	mg/L	263	Standard
> **Sc-1**	45	25873.7	1.7				mg/L	27861	Standard
Cl	35	324566.9	0.5				ug/L	100607	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	192309.7	1.8				ug/L	1777	Standard
P	31	9996.6	0.9				ug/L	18074	Standard
S	34	4940.8	2.1				ug/L	3901	Standard
Sr	88	335.0	7.9				ug/L	60	Standard
C	12	50.0	72.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	15.7	73.5				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	13	Standard
Er	166	20.0	0.0				mg/L	3	Standard
I	127	1049314.9	3.0				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		108.607	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.446	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606161502SDL WG575345-02
Report Date/Time: Thursday, July 07, 2016 15:30:57
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.345
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.268
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606161502SDL WG575345-02
Report Date/Time: Thursday, July 07, 2016 15:30:57
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606161502SDL WG575345-02
Sample Date/Time: Thursday, July 07, 2016 15:31:52
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62826.7	1.4				ug/L	59299	Standard
	Be	9	75.0	116.2	**0.0866**	0.100	115.0	ug/L	17	Standard
	Al	27	4587938.7	1.1	**32.3562**	0.519	1.6	ug/L	1472	Standard
	Sc	45	25965.6	1.1				ug/L	27861	Standard
	Ti	47	32.7	9.4	**0.0286**	0.013	46.6	ug/L	28	Standard
	V	51	1746.1	17.7	**0.0935**	0.047	49.9	ug/L	1156	Standard
	Cr	52	8837.6	3.5	**0.3570**	0.052	14.5	ug/L	6689	Standard
	Cr	53	7285.1	0.5	**8.3219**	0.073	0.9	ug/L	348	Standard
	Mn	55	38930.8	6.6	**6.2747**	0.447	7.1	ug/L	770	Standard
	Co	59	305.3	26.0	**0.0125**	0.013	100.9	ug/L	216	Standard
	Ni	60	1256.7	6.5	**0.4681**	0.049	10.6	ug/L	440	Standard
	Cu	65	1006.4	8.4	**0.5230**	0.049	9.3	ug/L	116	Standard
	Zn	66	1590.8	2.0	**1.3451**	0.026	1.9	ug/L	135	Standard
>	**Ge**	72	429519.0	0.4				ug/L	445277	Standard
	As	75	403.9	19.1	**0.4211**	0.073	17.4	ug/L	-57	Standard
	Se	82	220.6	6.1	**1.9218**	0.118	6.2	ug/L	10	Standard
	Se-1	77	543.7	4.1	**7.0385**	0.279	4.0	ug/L	57	Standard
>	**Ga**	71	68.3	8.4				mg/L	78	Standard
	Rb	85	2475.2	6.5				ug/L	22	Standard
	Y	89	362055.0	1.0				ug/L	388959	Standard
>	**Rh**	103	158.3	20.1				ug/L	8	Standard
	Mo	98	66.5	36.3	**0.0211**	0.010	49.8	ug/L	10	Standard
	Ag	107	639.7	20.9	**0.0939**	0.024	25.9	ug/L	66	Standard
	Cd	111	31.5	133.3	**0.0132**	0.023	171.1	mg/L	3	Standard
	Cd	114	71.2	150.1	**0.0116**	0.023	201.5	ug/L	4	Standard
>	**In**	115	495726.2	1.9				ug/L	523327	Standard
	Sn	118	205.0	4.2	**-0.0367**	0.002	4.8	ug/L	488	Standard
	Sb	123	786.8	54.7	**0.1667**	0.103	61.5	ug/L	195	Standard
	Ba	135	166.3	74.3	**0.0745**	0.070	93.5	ug/L	28	Standard
	Ce	140	6.7	43.3				ug/L	83	Standard
>	**Tb**	159	756961.3	0.3				ug/L	809211	Standard
	Ho	165	11.7	24.7				ug/L	13	Standard
	Tl	203	128.0	85.5	**0.0152**	0.015	96.7	ug/L	4	Standard
	Tl	205	258.3	138.0	**0.0380**	0.056	147.2	ug/L	8	Standard
	Pb	206	329.7	18.3	**0.0225**	0.013	57.9	ug/L	230	Standard
	Pb	207	274.7	18.0	**0.0220**	0.012	53.6	ug/L	184	Standard
	Pb	208	1587.7	52.1	**0.0458**	0.048	104.5	ug/L	775	Standard
	U	238	266.3	149.1	**0.0411**	0.062	151.7	ug/L	3	Standard
>	**Bi**	209	447477.3	0.2				ug/L	472452	Standard

Sample ID: L1606161502SDL WG575345-02
Report Date/Time: Thursday, July 07, 2016 15:34:09
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	45749.0	0.7	**67.1214**	0.461	0.7	mg/L	52	Standard
K	39	63.3	9.1	**0.1897**	0.032	17.1	mg/L	32	Standard
Ca	43	33.3	31.2	**0.7386**	1.408	190.7	mg/L	33	Standard
Fe	54	70.6	45.5	**-0.0485**	0.029	59.3	mg/L	138	Standard
Fe	57	325.0	8.0	**0.4103**	0.093	22.6	mg/L	263	Standard
Sc-1	45	25965.6	1.1				mg/L	27861	Standard
Cl	35	184936.6	1.3				ug/L	100607	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	40083.0	4.2				ug/L	1777	Standard
P	31	7747.0	5.3				ug/L	18074	Standard
S	34	4677.4	2.8				ug/L	3901	Standard
Sr	88	133.3	22.9				ug/L	60	Standard
C	12	80.0	12.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	7	Standard
Dy	164	6.0	93.6				mg/L	13	Standard
Ho-1	165	11.7	24.7				mg/L	13	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	215896.9	6.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.949	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.461	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606161502SDL WG575345-02
Report Date/Time: Thursday, July 07, 2016 15:34:09
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.726
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.714
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 15:35:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64122.1	2.7				ug/L	59299	Standard
	Be	9	47176.7	2.0	**52.3644**	0.546	1.0	ug/L	17	Standard
	Al	27	7025453.1	0.8	**48.5643**	0.978	2.0	ug/L	1472	Standard
	Sc	45	28718.9	3.4				ug/L	27861	Standard
	Ti	47	23995.3	1.0	**97.5781**	1.648	1.7	ug/L	28	Standard
	V	51	341378.6	1.2	**49.0932**	0.286	0.6	ug/L	1156	Standard
	Cr	52	357689.0	1.4	**49.1980**	0.232	0.5	ug/L	6689	Standard
	Cr	53	46060.0	3.4	**51.0097**	0.874	1.7	ug/L	348	Standard
	Mn	55	327857.9	1.2	**50.1434**	0.317	0.6	ug/L	770	Standard
	Co	59	336994.2	0.6	**49.3622**	0.790	1.6	ug/L	216	Standard
	Ni	60	92639.0	1.4	**49.5452**	0.378	0.8	ug/L	440	Standard
	Cu	65	91907.9	0.4	**49.4439**	0.722	1.5	ug/L	116	Standard
	Zn	66	55595.1	0.8	**50.0574**	0.568	1.1	ug/L	135	Standard
>	Ge	72	460654.6	1.8				ug/L	445277	Standard
	As	75	54721.2	1.2	**48.5211**	0.287	0.6	ug/L	-57	Standard
	Se	82	5648.6	1.7	**49.2168**	0.044	0.1	ug/L	10	Standard
	Se-1	77	3839.5	3.2	**49.9226**	1.852	3.7	ug/L	57	Standard
>	Ga	71	100.0	22.9				mg/L	78	Standard
	Rb	85	825.0	3.2				ug/L	22	Standard
	Y	89	397106.0	1.9				ug/L	388959	Standard
>	Rh	103	95.0	24.1				ug/L	8	Standard
	Mo	98	255080.8	0.1	**96.6927**	1.673	1.7	ug/L	10	Standard
	Ag	107	317789.0	1.0	**48.6575**	0.350	0.7	ug/L	66	Standard
	Cd	111	100113.4	1.1	**48.0414**	0.267	0.6	mg/L	3	Standard
	Cd	114	247500.7	1.3	**48.5781**	0.540	1.1	ug/L	4	Standard
>	In	115	542739.1	1.6				ug/L	523327	Standard
	Sn	118	278410.0	1.5	**48.3100**	0.896	1.9	ug/L	488	Standard
	Sb	123	228356.3	1.3	**48.4262**	0.462	1.0	ug/L	195	Standard
	Ba	135	94436.7	0.4	**47.1667**	0.776	1.6	ug/L	28	Standard
	Ce	140	50.0	26.5				ug/L	83	Standard
>	Tb	159	816810.4	1.0				ug/L	809211	Standard
	Ho	165	8.3	69.3				ug/L	13	Standard
	Tl	203	399007.1	0.7	**49.3408**	0.622	1.3	ug/L	4	Standard
	Tl	205	343766.0	0.2	**49.5640**	0.353	0.7	ug/L	8	Standard
	Pb	206	252925.2	0.2	**49.8245**	0.284	0.6	ug/L	230	Standard
	Pb	207	229306.2	0.1	**49.7721**	0.232	0.5	ug/L	184	Standard
	Pb	208	955350.6	0.6	**50.6954**	0.325	0.6	ug/L	775	Standard
	U	238	348023.3	0.2	**50.3176**	0.282	0.6	ug/L	3	Standard
>	Bi	209	485145.5	0.5				ug/L	472452	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 15:37:22
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3957.2	5.4	**5.1874**	0.178	3.4	mg/L	52	Standard
K	39	816.7	5.9	**3.5663**	0.347	9.7	mg/L	32	Standard
Ca	43	55.0	78.7	**3.1139**	5.701	183.1	mg/L	33	Standard
Fe	54	5634.6	5.6	**4.4310**	0.132	3.0	mg/L	138	Standard
Fe	57	1818.4	8.0	**4.8189**	0.400	8.3	mg/L	263	Standard
Sc-1	45	28718.9	3.4				mg/L	27861	Standard
Cl	35	133445.5	5.4				ug/L	100607	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3770.5	12.6				ug/L	1777	Standard
P	31	22329.8	2.0				ug/L	18074	Standard
S	34	4837.4	3.1				ug/L	3901	Standard
Sr	88	66.7	15.6				ug/L	60	Standard
C	12	73.3	47.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	12.7	50.0				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	29178.2	9.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.729		
Al	27	97.129		
Sc	45			
Ti	47	97.578		
V	51	98.186		
Cr	52	98.396		
Cr	53			
Mn	55	100.287		
Co	59	98.724		
Ni	60	99.090		
Cu	65	98.888		
Zn	66	100.115		
Ge	72		103.453	
As	75	97.042		
Se	82	98.434		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 15:37:22
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	96.693		
Ag	107	97.315		
Cd	111	96.083		
Cd	114			
> In	115			103.709
Sn	118	96.620		
Sb	123	96.852		
Ba	135	94.333		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.682		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.391		
U	238	100.635		
> Bi	209			102.687
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 15:37:22
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 15:38:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63553.0	0.4				ug/L	59299	Standard
	Be	9	35.0	65.5	**0.0405**	0.026	63.1	ug/L	17	Standard
	Al	27	6131.3	32.8	**0.0299**	0.014	46.4	ug/L	1472	Standard
	Sc	45	28059.3	2.9				ug/L	27861	Standard
	Ti	47	32.0	5.4	**0.0178**	0.008	44.4	ug/L	28	Standard
	V	51	1154.8	6.6	**-0.0080**	0.012	153.6	ug/L	1156	Standard
	Cr	52	6507.4	2.9	**-0.0493**	0.029	59.8	ug/L	6689	Standard
	Cr	53	1703.4	10.2	**1.5237**	0.207	13.6	ug/L	348	Standard
	Mn	55	1434.4	13.1	**0.0945**	0.030	31.4	ug/L	770	Standard
	Co	59	263.7	14.9	**0.0036**	0.006	164.2	ug/L	216	Standard
	Ni	60	516.3	3.7	**0.0242**	0.009	35.3	ug/L	440	Standard
	Cu	65	475.0	2.6	**0.2005**	0.008	4.1	ug/L	116	Standard
	Zn	66	1093.0	0.9	**0.8024**	0.010	1.3	ug/L	135	Standard
>	**Ge**	72	455450.2	0.7				ug/L	445277	Standard
	As	75	13.6	224.9	**0.0495**	0.027	55.4	ug/L	-57	Standard
	Se	82	46.3	17.3	**0.2641**	0.073	27.7	ug/L	10	Standard
	Se-1	77	117.7	12.8	**0.9296**	0.201	21.7	ug/L	57	Standard
>	**Ga**	71	91.7	25.2				mg/L	78	Standard
	Rb	85	50.0	10.0				ug/L	22	Standard
	Y	89	386559.0	0.3				ug/L	388959	Standard
>	**Rh**	103	55.0	32.8				ug/L	8	Standard
	Mo	98	227.9	13.0	**0.0802**	0.012	14.8	ug/L	10	Standard
	Ag	107	363.3	11.0	**0.0423**	0.007	15.5	ug/L	66	Standard
	Cd	111	17.6	31.3	**0.0049**	0.003	55.6	mg/L	3	Standard
	Cd	114	48.9	76.3	**0.0058**	0.007	128.8	ug/L	4	Standard
>	**In**	115	540855.3	0.7				ug/L	523327	Standard
	Sn	118	911.7	19.5	**0.0832**	0.030	35.8	ug/L	488	Standard
	Sb	123	808.5	29.5	**0.1552**	0.049	31.9	ug/L	195	Standard
	Ba	135	69.0	45.4	**0.0175**	0.016	91.4	ug/L	28	Standard
	Ce	140	25.0	52.9				ug/L	83	Standard
>	**Tb**	159	810551.3	1.2				ug/L	809211	Standard
	Ho	165	15.0	88.2				ug/L	13	Standard
	Tl	203	114.0	26.1	**0.0121**	0.004	30.6	ug/L	4	Standard
	Tl	205	83.3	21.1	**0.0095**	0.003	26.4	ug/L	8	Standard
	Pb	206	288.0	12.3	**0.0086**	0.007	82.3	ug/L	230	Standard
	Pb	207	240.7	10.4	**0.0094**	0.005	56.8	ug/L	184	Standard
	Pb	208	1066.0	11.6	**0.0107**	0.006	60.1	ug/L	775	Standard
	U	238	79.3	29.7	**0.0107**	0.003	31.6	ug/L	3	Standard
>	**Bi**	209	487114.6	0.7				ug/L	472452	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 15:40:34
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.3232**	5.747	172.9	mg/L	0	Standard
Mg	24	148.3	8.5	**0.1363**	0.023	16.7	mg/L	52	Standard
K	39	23.3	32.7	**-0.0187**	0.036	192.1	mg/L	32	Standard
Ca	43	28.3	44.4	**-0.2625**	1.506	573.6	mg/L	33	Standard
Fe	54	126.0	10.3	**-0.0075**	0.011	146.0	mg/L	138	Standard
Fe	57	241.7	8.4	**0.0728**	0.083	114.6	mg/L	263	Standard
Sc-1	45	28059.3	2.9				mg/L	27861	Standard
Cl	35	127876.0	0.3				ug/L	100607	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2666.9	4.1				ug/L	1777	Standard
P	31	22248.0	2.1				ug/L	18074	Standard
S	34	4750.7	2.8				ug/L	3901	Standard
Sr	88	86.7	14.5				ug/L	60	Standard
C	12	76.7	54.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	6.5	86.7				mg/L	13	Standard
Ho-1	165	15.0	88.2				mg/L	13	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	34957.0	6.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.285	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 15:40:34
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.349
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.104
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 15:40:34
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, July 07, 2016 15:41:30
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61251.9	2.6				ug/L	59299	Standard
	Be	9	208.3	40.3	**0.2419**	0.091	37.5	ug/L	17	Standard
	Al	27	4272.3	40.3	**0.0183**	0.013	71.5	ug/L	1472	Standard
	Sc	45	27409.8	2.5				ug/L	27861	Standard
	Ti	47	26.0	25.2	**-0.0017**	0.027	1626.3	ug/L	28	Standard
	V	51	3538.5	3.4	**0.3662**	0.014	3.8	ug/L	1156	Standard
	Cr	52	11406.6	1.4	**0.7285**	0.013	1.8	ug/L	6689	Standard
	Cr	53	2025.1	8.2	**2.0042**	0.212	10.6	ug/L	348	Standard
	Mn	55	3722.1	1.6	**0.4788**	0.011	2.2	ug/L	770	Standard
	Co	59	2639.9	0.4	**0.3759**	0.003	0.9	ug/L	216	Standard
	Ni	60	3152.7	3.5	**1.5453**	0.056	3.6	ug/L	440	Standard
	Cu	65	1675.8	4.3	**0.9014**	0.044	4.9	ug/L	116	Standard
	Zn	66	7022.6	1.0	**6.5525**	0.139	2.1	ug/L	135	Standard
>	Ge	72	433269.4	1.2				ug/L	445277	Standard
	As	75	404.0	2.2	**0.4179**	0.007	1.7	ug/L	-57	Standard
	Se	82	71.4	12.7	**0.5183**	0.087	16.9	ug/L	10	Standard
	Se-1	77	134.3	16.0	**1.2428**	0.296	23.9	ug/L	57	Standard
>	Ga	71	73.3	21.9				mg/L	78	Standard
	Rb	85	36.7	20.8				ug/L	22	Standard
	Y	89	373342.0	0.1				ug/L	388959	Standard
>	Rh	103	40.0	87.5				ug/L	8	Standard
	Mo	98	74.3	17.4	**0.0230**	0.005	23.3	ug/L	10	Standard
	Ag	107	2511.5	3.4	**0.3906**	0.011	2.8	ug/L	66	Standard
	Cd	111	461.2	5.7	**0.2291**	0.014	6.3	mg/L	3	Standard
	Cd	114	1078.3	4.2	**0.2185**	0.008	3.7	ug/L	4	Standard
>	In	115	516414.3	0.9				ug/L	523327	Standard
	Sn	118	438.3	19.8	**0.0045**	0.016	368.6	ug/L	488	Standard
	Sb	123	1789.6	3.9	**0.3824**	0.018	4.8	ug/L	195	Standard
	Ba	135	1356.7	1.1	**0.6951**	0.003	0.5	ug/L	28	Standard
	Ce	140	8.3	124.9				ug/L	83	Standard
>	Tb	159	796045.1	0.5				ug/L	809211	Standard
	Ho	165	3.3	173.2				ug/L	13	Standard
	Tl	203	657.7	5.9	**0.0816**	0.005	6.0	ug/L	4	Standard
	Tl	205	523.3	4.0	**0.0751**	0.003	4.0	ug/L	8	Standard
	Pb	206	1254.4	4.7	**0.2063**	0.012	5.8	ug/L	230	Standard
	Pb	207	1032.0	1.2	**0.1878**	0.003	1.5	ug/L	184	Standard
	Pb	208	4444.6	1.1	**0.1970**	0.003	1.5	ug/L	775	Standard
	U	238	2576.6	2.7	**0.3822**	0.010	2.6	ug/L	3	Standard
>	Bi	209	471953.7	0.2				ug/L	472452	Standard

Sample ID: QC Std 8
Report Date/Time: Thursday, July 07, 2016 15:43:47
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	115.0	22.6	**0.0950**	0.041	42.8	mg/L	52	Standard
K	39	16.7	62.4	**-0.0486**	0.048	98.6	mg/L	32	Standard
Ca	43	31.7	24.1	**0.2730**	0.927	339.6	mg/L	33	Standard
Fe	54	83.9	17.7	**-0.0404**	0.014	35.3	mg/L	138	Standard
Fe	57	275.0	9.6	**0.1934**	0.063	32.7	mg/L	263	Standard
> **Sc-1**	45	27409.8	2.5				mg/L	27861	Standard
Cl	35	125050.6	0.9				ug/L	100607	Standard
Kr	83	2.7	108.3				ug/L	2	Standard
Br	81	2296.8	7.1				ug/L	1777	Standard
P	31	15709.8	0.6				ug/L	18074	Standard
S	34	4684.1	4.3				ug/L	3901	Standard
Sr	88	81.7	19.7				ug/L	60	Standard
C	12	66.7	8.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	13.2	86.6				mg/L	13	Standard
Ho-1	165	3.3	173.2				mg/L	13	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	16200.3	6.3				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	120.966		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	91.557		
	Cr	52	91.060		
	Cr	53			
	Mn	55	95.764		
	Co	59	93.973		
	Ni	60	96.580		
	Cu	65	112.670		
	Zn	66	104.841		
>	Ge	72		97.303	
	As	75	104.477		
	Se	82	129.568		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 8
Report Date/Time: Thursday, July 07, 2016 15:43:47
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.648		
Cd	111	95.442		
Cd	114			
> In	115			98.679
Sn	118			
Sb	123	95.605		
Ba	135	92.680		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.052		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.481		
U	238	95.560		
> Bi	209			99.895
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Thursday, July 07, 2016 15:43:47
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: PBW 81 WG575508-03
Sample Date/Time: Thursday, July 07, 2016 15:58:08
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61315.5	1.0				ug/L	59299	Standard
	Be	9	11.7	65.5	**0.0149**	0.009	60.3	ug/L	17	Standard
	Al	27	8562.4	1.4	**0.0491**	0.001	2.2	ug/L	1472	Standard
	Sc	45	28353.2	2.3				ug/L	27861	Standard
	Ti	47	34.0	17.9	**0.0253**	0.025	98.8	ug/L	28	Standard
	V	51	1283.7	15.1	**0.0098**	0.028	282.4	ug/L	1156	Standard
	Cr	52	8619.5	0.4	**0.2445**	0.012	5.1	ug/L	6689	Standard
	Cr	53	1035.0	3.8	**0.7629**	0.056	7.3	ug/L	348	Standard
	Mn	55	1079.7	4.0	**0.0386**	0.006	14.9	ug/L	770	Standard
	Co	59	203.7	8.2	**-0.0054**	0.003	51.0	ug/L	216	Standard
	Ni	60	555.0	6.6	**0.0440**	0.023	51.6	ug/L	440	Standard
	Cu	65	322.7	3.5	**0.1167**	0.008	6.4	ug/L	116	Standard
	Zn	66	935.7	2.4	**0.6545**	0.027	4.1	ug/L	135	Standard
>	Ge	72	457647.8	1.0				ug/L	445277	Standard
	As	75	-14.4	304.4	**0.0247**	0.039	158.7	ug/L	-57	Standard
	Se	82	22.4	26.7	**0.0522**	0.054	104.1	ug/L	10	Standard
	Se-1	77	83.0	12.0	**0.4623**	0.129	27.8	ug/L	57	Standard
>	Ga	71	68.3	11.2				mg/L	78	Standard
	Rb	85	61.7	12.4				ug/L	22	Standard
	Y	89	395189.4	1.0				ug/L	388959	Standard
>	Rh	103	41.7	30.2				ug/L	8	Standard
	Mo	98	35.2	19.9	**0.0067**	0.003	38.5	ug/L	10	Standard
	Ag	107	108.3	9.5	**0.0030**	0.001	50.1	ug/L	66	Standard
	Cd	111	2.3	25.8	**-0.0025**	0.000	11.3	mg/L	3	Standard
	Cd	114	17.5	112.8	**-0.0005**	0.004	822.9	ug/L	4	Standard
>	In	115	542810.4	0.9				ug/L	523327	Standard
	Sn	118	776.7	11.6	**0.0592**	0.014	24.3	ug/L	488	Standard
	Sb	123	353.5	35.5	**0.0583**	0.026	45.4	ug/L	195	Standard
	Ba	135	75.0	9.6	**0.0203**	0.003	17.0	ug/L	28	Standard
	Ce	140	28.3	27.0				ug/L	83	Standard
>	Tb	159	819438.8	0.2				ug/L	809211	Standard
	Ho	165	15.0	88.2				ug/L	13	Standard
	Tl	203	20.3	33.5	**0.0006**	0.001	152.1	ug/L	4	Standard
	Tl	205	13.3	78.1	**-0.0006**	0.001	267.4	ug/L	8	Standard
	Pb	206	261.3	2.9	**0.0037**	0.002	49.8	ug/L	230	Standard
	Pb	207	210.7	4.0	**0.0032**	0.002	64.0	ug/L	184	Standard
	Pb	208	944.7	5.4	**0.0046**	0.003	64.5	ug/L	775	Standard
	U	238	6.7	17.3	**0.0003**	0.000	59.6	ug/L	3	Standard
>	Bi	209	483751.4	0.7				ug/L	472452	Standard

Sample ID: PBW 81 WG575508-03
Report Date/Time: Thursday, July 07, 2016 16:00:25
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	73.3	17.2	**0.0332**	0.019	56.8	mg/L	52	Standard
K	39	28.3	36.7	**0.0031**	0.049	1566.6	mg/L	32	Standard
Ca	43	20.0	25.0	**-1.3214**	0.644	48.7	mg/L	33	Standard
Fe	54	147.4	40.3	**0.0085**	0.047	558.4	mg/L	138	Standard
Fe	57	258.3	14.8	**0.1131**	0.100	88.1	mg/L	263	Standard
Sc-1	45	28353.2	2.3				mg/L	27861	Standard
Cl	35	137468.8	0.9				ug/L	100607	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	2026.8	7.4				ug/L	1777	Standard
P	31	22107.8	1.0				ug/L	18074	Standard
S	34	5167.5	4.0				ug/L	3901	Standard
Sr	88	95.0	19.0				ug/L	60	Standard
C	12	83.3	66.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	19.5	52.5				mg/L	13	Standard
Ho-1	165	15.0	88.2				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	9147.8	5.3				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.400	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 81 WG575508-03
Report Date/Time: Thursday, July 07, 2016 16:00:25
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.723
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.392
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 81 WG575508-03
Report Date/Time: Thursday, July 07, 2016 16:00:25
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: LCSW 81 WG575508-04
Sample Date/Time: Thursday, July 07, 2016 16:01:20
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60560.8	2.4				ug/L	59299	Standard
	Be	9	44343.1	1.8	**52.1179**	1.103	2.1	ug/L	17	Standard
	Al	27	9401.2	1.8	**0.0560**	0.001	1.0	ug/L	1472	Standard
	Sc	45	27962.4	0.9				ug/L	27861	Standard
	Ti	47	28.7	20.1	**0.0029**	0.023	805.1	ug/L	28	Standard
	V	51	335407.6	1.2	**48.3236**	0.387	0.8	ug/L	1156	Standard
	Cr	52	358745.8	0.5	**49.4449**	0.369	0.7	ug/L	6689	Standard
	Cr	53	45446.4	1.4	**50.4369**	0.892	1.8	ug/L	348	Standard
	Mn	55	332407.9	0.9	**50.9386**	0.271	0.5	ug/L	770	Standard
	Co	59	333045.6	0.6	**48.8715**	0.112	0.2	ug/L	216	Standard
	Ni	60	93168.9	0.5	**49.9281**	0.460	0.9	ug/L	440	Standard
	Cu	65	93192.4	1.3	**50.2289**	0.802	1.6	ug/L	116	Standard
	Zn	66	55727.6	0.2	**50.2718**	0.244	0.5	ug/L	135	Standard
>	**Ge**	72	459738.4	0.4				ug/L	445277	Standard
	As	75	55667.9	1.1	**49.4539**	0.393	0.8	ug/L	-57	Standard
	Se	82	5545.1	0.7	**48.4084**	0.370	0.8	ug/L	10	Standard
	Se-1	77	3731.1	3.3	**48.5853**	1.725	3.6	ug/L	57	Standard
>	**Ga**	71	98.3	20.5				mg/L	78	Standard
	Rb	85	60.0	16.7				ug/L	22	Standard
	Y	89	394762.2	1.5				ug/L	388959	Standard
>	**Rh**	103	41.7	34.6				ug/L	8	Standard
	Mo	98	39.9	21.1	**0.0086**	0.003	37.7	ug/L	10	Standard
	Ag	107	318764.3	1.2	**48.9638**	0.258	0.5	ug/L	66	Standard
	Cd	111	100855.9	1.4	**48.5540**	0.439	0.9	mg/L	3	Standard
	Cd	114	243507.4	1.1	**47.9527**	0.860	1.8	ug/L	4	Standard
>	**In**	115	540949.0	0.7				ug/L	523327	Standard
	Sn	118	781.7	3.3	**0.0606**	0.004	7.3	ug/L	488	Standard
	Sb	123	233974.5	1.6	**49.7770**	0.455	0.9	ug/L	195	Standard
	Ba	135	93733.7	0.7	**46.9623**	0.030	0.1	ug/L	28	Standard
	Ce	140	38.3	45.8				ug/L	83	Standard
>	**Tb**	159	814137.8	1.6				ug/L	809211	Standard
	Ho	165	5.0	100.0				ug/L	13	Standard
	Tl	203	395255.3	0.8	**48.8772**	0.206	0.4	ug/L	4	Standard
	Tl	205	343580.3	0.4	**49.5409**	0.532	1.1	ug/L	8	Standard
	Pb	206	259190.1	1.5	**51.0603**	0.514	1.0	ug/L	230	Standard
	Pb	207	224496.0	1.1	**48.7284**	0.305	0.6	ug/L	184	Standard
	Pb	208	956931.6	0.2	**50.7832**	0.419	0.8	ug/L	775	Standard
	U	238	337326.5	0.8	**48.7731**	0.353	0.7	ug/L	3	Standard
>	**Bi**	209	485120.5	0.7				ug/L	472452	Standard

Sample ID: LCSW 81 WG575508-04
Report Date/Time: Thursday, July 07, 2016 16:03:36
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	81.7	12.7	**0.0458**	0.015	33.1	mg/L	52	Standard
K	39	23.3	32.7	**-0.0186**	0.035	188.9	mg/L	32	Standard
Ca	43	31.7	18.2	**0.2011**	0.734	364.7	mg/L	33	Standard
Fe	54	117.0	18.1	**-0.0146**	0.018	123.4	mg/L	138	Standard
Fe	57	280.0	9.3	**0.1924**	0.075	38.9	mg/L	263	Standard
Sc-1	45	27962.4	0.9				mg/L	27861	Standard
Cl	35	134087.5	1.9				ug/L	100607	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	7708.7	25.4				ug/L	1777	Standard
P	31	21475.2	1.7				ug/L	18074	Standard
S	34	4945.8	1.8				ug/L	3901	Standard
Sr	88	83.3	44.2				ug/L	60	Standard
C	12	90.0	44.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	12.5	96.6				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	13	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	7460.2	12.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.128	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.248	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: LCSW 81 WG575508-04
Report Date/Time: Thursday, July 07, 2016 16:03:36
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.367
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.682
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 81 WG575508-04
Report Date/Time: Thursday, July 07, 2016 16:03:36
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607020903 WG575508-01
Sample Date/Time: Thursday, July 07, 2016 16:04:46
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59878.1	0.7				ug/L	59299	Standard
	Be	9	38.3	49.4	**0.0469**	0.022	47.6	ug/L	17	Standard
	Al	27	1543853.0	0.8	**11.4147**	0.092	0.8	ug/L	1472	Standard
	Sc	45	28657.1	1.9				ug/L	27861	Standard
	Ti	47	80.7	6.4	**0.2150**	0.019	8.9	ug/L	28	Standard
	V	51	1437.0	7.1	**0.0313**	0.015	49.5	ug/L	1156	Standard
	Cr	52	9275.2	0.7	**0.3313**	0.004	1.1	ug/L	6689	Standard
	Cr	53	1415.1	5.7	**1.1825**	0.082	6.9	ug/L	348	Standard
	Mn	55	37319.6	0.8	**5.6069**	0.021	0.4	ug/L	770	Standard
	Co	59	348.3	6.5	**0.0157**	0.003	19.4	ug/L	216	Standard
	Ni	60	742.0	7.6	**0.1432**	0.028	19.6	ug/L	440	Standard
	Cu	65	465.0	5.8	**0.1927**	0.013	6.8	ug/L	116	Standard
	Zn	66	33110.5	0.8	**29.7967**	0.187	0.6	ug/L	135	Standard
>	**Ge**	72	459615.1	0.6				ug/L	445277	Standard
	As	75	220.6	9.1	**0.2332**	0.016	7.1	ug/L	-57	Standard
	Se	82	32.7	1.9	**0.1410**	0.007	5.1	ug/L	10	Standard
	Se-1	77	89.3	11.9	**0.5415**	0.142	26.2	ug/L	57	Standard
>	**Ga**	71	90.0	16.7				mg/L	78	Standard
	Rb	85	1380.1	5.7				ug/L	22	Standard
	Y	89	393578.2	0.8				ug/L	388959	Standard
>	**Rh**	103	25.0	20.0				ug/L	8	Standard
	Mo	98	78.6	14.5	**0.0231**	0.004	17.9	ug/L	10	Standard
	Ag	107	146.3	14.6	**0.0088**	0.003	37.8	ug/L	66	Standard
	Cd	111	181.2	8.6	**0.0832**	0.008	10.0	mg/L	3	Standard
	Cd	114	427.3	3.6	**0.0798**	0.003	4.4	ug/L	4	Standard
>	**In**	115	543749.9	1.0				ug/L	523327	Standard
	Sn	118	785.0	1.1	**0.0605**	0.001	1.7	ug/L	488	Standard
	Sb	123	282.6	32.6	**0.0432**	0.020	45.3	ug/L	195	Standard
	Ba	135	9145.4	0.9	**4.5432**	0.066	1.4	ug/L	28	Standard
	Ce	140	98.3	20.5				ug/L	83	Standard
>	**Tb**	159	816943.3	1.7				ug/L	809211	Standard
	Ho	165	11.7	89.2				ug/L	13	Standard
	Tl	203	223.0	9.8	**0.0257**	0.002	9.6	ug/L	4	Standard
	Tl	205	185.0	11.8	**0.0242**	0.003	12.0	ug/L	8	Standard
	Pb	206	1054.0	4.8	**0.1603**	0.010	6.5	ug/L	230	Standard
	Pb	207	895.7	5.1	**0.1524**	0.011	7.5	ug/L	184	Standard
	Pb	208	3749.2	1.2	**0.1539**	0.004	2.6	ug/L	775	Standard
	U	238	212.3	11.9	**0.0301**	0.004	12.9	ug/L	3	Standard
>	**Bi**	209	484147.2	0.9				ug/L	472452	Standard

Sample ID: L1607020903 WG575508-01
Report Date/Time: Thursday, July 07, 2016 16:07:03
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	593.3	16.5	**0.7225**	0.116	16.0	mg/L	52	Standard
K	39	30.0	44.1	**0.0096**	0.062	641.4	mg/L	32	Standard
Ca	43	36.7	55.1	**0.7022**	2.444	348.1	mg/L	33	Standard
Fe	54	492.4	5.1	**0.2863**	0.014	4.8	mg/L	138	Standard
Fe	57	403.3	6.8	**0.5445**	0.065	12.0	mg/L	263	Standard
> **Sc-1**	45	28657.1	1.9				mg/L	27861	Standard
Cl	35	131580.2	0.8				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	4053.9	5.5				ug/L	1777	Standard
P	31	23892.2	1.9				ug/L	18074	Standard
S	34	4917.5	1.8				ug/L	3901	Standard
Sr	88	86.7	21.8				ug/L	60	Standard
C	12	73.3	41.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	9.4	104.3				mg/L	13	Standard
Ho-1	165	11.7	89.2				mg/L	13	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	6129.6	3.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.220	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607020903 WG575508-01
Report Date/Time: Thursday, July 07, 2016 16:07:03
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.903
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.476
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607020903S WG575508-05
Sample Date/Time: Thursday, July 07, 2016 16:07:58
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58974.6	2.2				ug/L	59299	Standard
	Be	9	45165.6	1.8	**54.5036**	0.392	0.7	ug/L	17	Standard
	Al	27	1475480.5	1.1	**11.0794**	0.279	2.5	ug/L	1472	Standard
	Sc	45	28466.7	1.2				ug/L	27861	Standard
	Ti	47	95.0	29.5	**0.2750**	0.113	41.1	ug/L	28	Standard
	V	51	332387.0	0.8	**48.1124**	0.531	1.1	ug/L	1156	Standard
	Cr	52	353565.7	0.3	**48.9473**	0.253	0.5	ug/L	6689	Standard
	Cr	53	43972.1	1.1	**49.0155**	0.666	1.4	ug/L	348	Standard
	Mn	55	364600.0	1.1	**56.1439**	0.408	0.7	ug/L	770	Standard
	Co	59	329192.1	0.5	**48.5311**	0.362	0.7	ug/L	216	Standard
	Ni	60	91085.6	0.9	**49.0321**	0.309	0.6	ug/L	440	Standard
	Cu	65	91737.2	0.5	**49.6726**	0.396	0.8	ug/L	116	Standard
	Zn	66	86254.8	0.8	**78.2796**	0.467	0.6	ug/L	135	Standard
>	Ge	72	457616.7	0.6				ug/L	445277	Standard
	As	75	55821.6	1.6	**49.8189**	0.482	1.0	ug/L	-57	Standard
	Se	82	5522.2	2.0	**48.4290**	0.653	1.3	ug/L	10	Standard
	Se-1	77	3811.5	3.0	**49.8728**	1.312	2.6	ug/L	57	Standard
>	Ga	71	86.7	14.5				mg/L	78	Standard
	Rb	85	1313.4	12.3				ug/L	22	Standard
	Y	89	386626.5	1.6				ug/L	388959	Standard
>	Rh	103	35.0	37.8				ug/L	8	Standard
	Mo	98	105.5	10.1	**0.0338**	0.004	12.3	ug/L	10	Standard
	Ag	107	314384.5	0.4	**48.5969**	0.418	0.9	ug/L	66	Standard
	Cd	111	100200.7	0.4	**48.5442**	0.427	0.9	mg/L	3	Standard
	Cd	114	244980.4	0.9	**48.5429**	0.525	1.1	ug/L	4	Standard
>	In	115	537579.1	0.8				ug/L	523327	Standard
	Sn	118	795.0	4.4	**0.0638**	0.007	11.3	ug/L	488	Standard
	Sb	123	216823.9	2.4	**46.4258**	1.475	3.2	ug/L	195	Standard
	Ba	135	101608.9	0.4	**51.2315**	0.574	1.1	ug/L	28	Standard
	Ce	140	141.7	21.6				ug/L	83	Standard
>	Tb	159	805585.3	1.7				ug/L	809211	Standard
	Ho	165	16.7	34.6				ug/L	13	Standard
	Tl	203	394847.2	0.8	**49.0154**	0.254	0.5	ug/L	4	Standard
	Tl	205	340429.5	3.2	**49.2771**	1.686	3.4	ug/L	8	Standard
	Pb	206	256827.8	0.4	**50.7917**	0.148	0.3	ug/L	230	Standard
	Pb	207	223797.8	0.8	**48.7666**	0.544	1.1	ug/L	184	Standard
	Pb	208	952601.0	1.0	**50.7496**	0.758	1.5	ug/L	775	Standard
	U	238	337642.0	0.6	**49.0089**	0.546	1.1	ug/L	3	Standard
>	Bi	209	483252.1	0.5				ug/L	472452	Standard

Sample ID: L1607020903S WG575508-05
Report Date/Time: Thursday, July 07, 2016 16:10:15
Page 1

Approved: July 08, 2016

	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	600.0	8.2	**0.7377**	0.058	7.8	mg/L	52	Standard
	K	39	23.3	65.5	**-0.0204**	0.070	341.7	mg/L	32	Standard
	Ca	43	36.7	68.6	**0.7620**	3.185	418.0	mg/L	33	Standard
	Fe	54	547.9	11.1	**0.3345**	0.053	15.8	mg/L	138	Standard
	Fe	57	396.7	21.0	**0.5311**	0.238	44.9	mg/L	263	Standard
>	**Sc-1**	45	28466.7	1.2				mg/L	27861	Standard
	Cl	35	129084.9	1.1				ug/L	100607	Standard
	Kr	83	0.7	173.2				ug/L	2	Standard
	Br	81	3843.8	5.3				ug/L	1777	Standard
	P	31	23700.2	4.0				ug/L	18074	Standard
	S	34	4625.7	0.8				ug/L	3901	Standard
	Sr	88	75.0	24.0				ug/L	60	Standard
	C	12	113.3	51.7				mg/L	110	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	7	Standard
	Dy	164	29.7	69.0				mg/L	13	Standard
	Ho-1	165	16.7	34.6				mg/L	13	Standard
	Er	166	6.7	173.2				mg/L	3	Standard
	I	127	11516.1	9.6				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		99.453	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.771	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1607020903S WG575508-05
Report Date/Time: Thursday, July 07, 2016 16:10:15
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.723
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.286
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607020903SD WG575508-06
Sample Date/Time: Thursday, July 07, 2016 16:11:09
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59083.4	2.4				ug/L	59299	Standard
	Be	9	44714.2	1.0	**53.8733**	1.181	2.2	ug/L	17	Standard
	Al	27	1512733.2	0.5	**11.3386**	0.233	2.1	ug/L	1472	Standard
	Sc	45	28136.1	2.7				ug/L	27861	Standard
	Ti	47	72.0	0.0	**0.1813**	0.000	0.1	ug/L	28	Standard
	V	51	332364.3	2.1	**48.1557**	1.020	2.1	ug/L	1156	Standard
	Cr	52	352045.3	1.1	**48.7812**	0.556	1.1	ug/L	6689	Standard
	Cr	53	43335.2	2.2	**48.3464**	1.073	2.2	ug/L	348	Standard
	Mn	55	360373.1	0.6	**55.5475**	0.326	0.6	ug/L	770	Standard
	Co	59	327379.4	0.4	**48.3108**	0.213	0.4	ug/L	216	Standard
	Ni	60	89871.8	0.7	**48.4238**	0.350	0.7	ug/L	440	Standard
	Cu	65	91291.2	0.6	**49.4789**	0.290	0.6	ug/L	116	Standard
	Zn	66	85769.1	1.1	**77.9152**	0.869	1.1	ug/L	135	Standard
>	**Ge**	72	457161.0	0.0				ug/L	445277	Standard
	As	75	55350.8	0.6	**49.4501**	0.256	0.5	ug/L	-57	Standard
	Se	82	5498.1	1.3	**48.2684**	0.621	1.3	ug/L	10	Standard
	Se-1	77	3724.8	1.9	**48.7765**	0.960	2.0	ug/L	57	Standard
>	**Ga**	71	66.7	24.1				mg/L	78	Standard
	Rb	85	1418.4	4.3				ug/L	22	Standard
	Y	89	388027.7	0.7				ug/L	388959	Standard
>	**Rh**	103	30.0	44.1				ug/L	8	Standard
	Mo	98	90.2	15.2	**0.0278**	0.005	18.8	ug/L	10	Standard
	Ag	107	314464.5	0.5	**48.4469**	0.221	0.5	ug/L	66	Standard
	Cd	111	99385.4	1.0	**47.9892**	0.578	1.2	mg/L	3	Standard
	Cd	114	240796.5	0.6	**47.5553**	0.380	0.8	ug/L	4	Standard
>	**In**	115	539358.6	0.2				ug/L	523327	Standard
	Sn	118	701.7	8.6	**0.0470**	0.011	22.6	ug/L	488	Standard
	Sb	123	221908.1	1.0	**47.3498**	0.361	0.8	ug/L	195	Standard
	Ba	135	102085.8	0.5	**51.2996**	0.342	0.7	ug/L	28	Standard
	Ce	140	125.0	17.4				ug/L	83	Standard
>	**Tb**	159	815403.2	0.5				ug/L	809211	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	394854.3	0.5	**49.1175**	0.285	0.6	ug/L	4	Standard
	Tl	205	337594.8	1.1	**48.9646**	0.537	1.1	ug/L	8	Standard
	Pb	206	256824.0	0.5	**50.8959**	0.365	0.7	ug/L	230	Standard
	Pb	207	223611.4	0.6	**48.8251**	0.325	0.7	ug/L	184	Standard
	Pb	208	951339.7	0.3	**50.7841**	0.045	0.1	ug/L	775	Standard
	U	238	336699.2	0.9	**48.9719**	0.598	1.2	ug/L	3	Standard
>	**Bi**	209	482259.8	0.3				ug/L	472452	Standard

Sample ID: L1607020903SD WG575508-06
Report Date/Time: Thursday, July 07, 2016 16:13:26
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	548.3	16.2	**0.6782**	0.125	18.4	mg/L	52	Standard
K	39	31.7	24.1	**0.0187**	0.031	166.1	mg/L	32	Standard
Ca	43	51.7	39.1	**2.6898**	2.503	93.1	mg/L	33	Standard
Fe	54	497.1	15.5	**0.2973**	0.060	20.0	mg/L	138	Standard
Fe	57	425.0	7.7	**0.6364**	0.125	19.7	mg/L	263	Standard
> **Sc-1**	45	28136.1	2.7				mg/L	27861	Standard
Cl	35	126515.5	2.4				ug/L	100607	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2383.5	11.5				ug/L	1777	Standard
P	31	24060.8	2.0				ug/L	18074	Standard
S	34	4520.7	5.3				ug/L	3901	Standard
Sr	88	70.0	12.4				ug/L	60	Standard
C	12	103.3	20.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	22.7	62.7				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	13.3	173.2				mg/L	3	Standard
I	127	10828.9	8.7				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		99.636	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.669	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1607020903SD WG575508-06
Report Date/Time: Thursday, July 07, 2016 16:13:26
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.063
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.076
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607020602
Sample Date/Time: Thursday, July 07, 2016 16:14:21
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62619.1	1.5				ug/L	59299	Standard
	Be	9	55.0	27.3	**0.0637**	0.016	25.3	ug/L	17	Standard
	Al	27	38830921.4	2.2	**274.8398**	5.567	2.0	ug/L	1472	Standard
	Sc	45	28184.5	2.1				ug/L	27861	Standard
	Ti	47	844.0	36.7	**3.5138**	1.340	38.1	ug/L	28	Standard
	V	51	5966.9	7.6	**0.7318**	0.064	8.8	ug/L	1156	Standard
	Cr	52	17233.8	3.2	**1.5786**	0.096	6.1	ug/L	6689	Standard
	Cr	53	9903.3	10.1	**11.2710**	1.250	11.1	ug/L	348	Standard
	Mn	55	44948.2	1.0	**7.1445**	0.078	1.1	ug/L	770	Standard
	Co	59	2843.9	5.9	**0.4043**	0.024	5.8	ug/L	216	Standard
	Ni	60	7193.4	1.2	**3.8240**	0.033	0.9	ug/L	440	Standard
	Cu	65	5144.2	1.7	**2.8650**	0.036	1.3	ug/L	116	Standard
	Zn	66	3881.8	1.4	**3.5056**	0.058	1.6	ug/L	135	Standard
>	**Ge**	72	436533.4	0.7				ug/L	445277	Standard
	As	75	709.0	5.8	**0.7003**	0.042	6.0	ug/L	-57	Standard
	Se	82	113.3	10.0	**0.8988**	0.098	10.9	ug/L	10	Standard
	Se-1	77	637.0	6.5	**8.2109**	0.526	6.4	ug/L	57	Standard
>	**Ga**	71	435.0	0.0				mg/L	78	Standard
	Rb	85	24873.7	2.4				ug/L	22	Standard
	Y	89	375073.0	1.5				ug/L	388959	Standard
>	**Rh**	103	153.3	18.0				ug/L	8	Standard
	Mo	98	19395.1	0.3	**7.8024**	0.100	1.3	ug/L	10	Standard
	Ag	107	299.3	34.2	**0.0352**	0.017	48.3	ug/L	66	Standard
	Cd	111	83.4	57.8	**0.0390**	0.025	63.6	mg/L	3	Standard
	Cd	114	254.3	35.1	**0.0492**	0.019	38.6	ug/L	4	Standard
>	**In**	115	510960.4	1.0				ug/L	523327	Standard
	Sn	118	1391.7	2.0	**0.1813**	0.007	4.0	ug/L	488	Standard
	Sb	123	4708.5	23.2	**1.0442**	0.247	23.6	ug/L	195	Standard
	Ba	135	126900.9	1.1	**67.3198**	0.580	0.9	ug/L	28	Standard
	Ce	140	1211.7	4.2				ug/L	83	Standard
>	**Tb**	159	792966.2	0.3				ug/L	809211	Standard
	Ho	165	71.7	38.4				ug/L	13	Standard
	Tl	203	682.3	19.4	**0.0898**	0.018	19.6	ug/L	4	Standard
	Tl	205	590.0	18.0	**0.0900**	0.016	18.1	ug/L	8	Standard
	Pb	206	645.7	7.5	**0.0906**	0.011	12.1	ug/L	230	Standard
	Pb	207	541.3	14.6	**0.0853**	0.019	22.1	ug/L	184	Standard
	Pb	208	2342.7	12.1	**0.0897**	0.017	19.0	ug/L	775	Standard
	U	238	5654.1	2.1	**0.8888**	0.018	2.0	ug/L	3	Standard
>	**Bi**	209	445866.3	0.6				ug/L	472452	Standard

Sample ID: L1607020602
Report Date/Time: Thursday, July 07, 2016 16:16:38
Page 1

Approved: July 08, 2016

Na	23	6.7	114.6	**12.8180**	14.479	113.0	mg/L	0	Standard
Mg	24	51311.8	1.7	**69.3829**	2.210	3.2	mg/L	52	Standard
K	39	908.4	7.5	**4.0550**	0.396	9.8	mg/L	32	Standard
Ca	43	673.3	2.6	**81.4903**	4.035	5.0	mg/L	33	Standard
Fe	54	284.8	3.6	**0.1224**	0.003	2.8	mg/L	138	Standard
Fe	57	1020.0	3.4	**2.4669**	0.175	7.1	mg/L	263	Standard
> **Sc-1**	45	28184.5	2.1				mg/L	27861	Standard
Cl	35	353284.3	1.2				ug/L	100607	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	9786.5	3.2				ug/L	1777	Standard
P	31	24286.1	4.0				ug/L	18074	Standard
S	34	4844.1	7.1				ug/L	3901	Standard
Sr	88	610.0	5.7				ug/L	60	Standard
C	12	156.7	13.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	7	Standard
Dy	164	92.0	53.1				mg/L	13	Standard
Ho-1	165	71.7	38.4				mg/L	13	Standard
Er	166	96.7	36.3				mg/L	3	Standard
I	127	31110.3	2.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.599	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.036	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607020602
Report Date/Time: Thursday, July 07, 2016 16:16:38
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.637
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.373
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1607020602
Report Date/Time: Thursday, July 07, 2016 16:16:38
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607020901
Sample Date/Time: Thursday, July 07, 2016 16:17:32
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62403.3	2.5				ug/L	59299	Standard
	Be	9	28.3	27.0	**0.0338**	0.009	28.0	ug/L	17	Standard
	Al	27	3143277.9	0.8	**22.3180**	0.377	1.7	ug/L	1472	Standard
	Sc	45	28566.9	3.1				ug/L	27861	Standard
	Ti	47	63.0	11.4	**0.1414**	0.027	18.9	ug/L	28	Standard
	V	51	1851.3	9.1	**0.0896**	0.024	26.7	ug/L	1156	Standard
	Cr	52	10923.9	2.1	**0.5541**	0.027	4.9	ug/L	6689	Standard
	Cr	53	2026.8	7.1	**1.8531**	0.138	7.5	ug/L	348	Standard
	Mn	55	3257.4	2.2	**0.3696**	0.007	1.9	ug/L	770	Standard
	Co	59	436.0	1.4	**0.0282**	0.001	5.2	ug/L	216	Standard
	Ni	60	877.7	6.4	**0.2135**	0.027	12.5	ug/L	440	Standard
	Cu	65	1293.4	2.6	**0.6357**	0.013	2.0	ug/L	116	Standard
	Zn	66	1741.4	3.1	**1.3713**	0.044	3.2	ug/L	135	Standard
>	**Ge**	72	462324.3	0.9				ug/L	445277	Standard
	As	75	146.0	4.0	**0.1662**	0.005	2.7	ug/L	-57	Standard
	Se	82	28.6	10.7	**0.1034**	0.025	24.6	ug/L	10	Standard
	Se-1	77	120.3	13.3	**0.9410**	0.210	22.3	ug/L	57	Standard
>	**Ga**	71	78.3	24.2				mg/L	78	Standard
	Rb	85	490.0	5.3				ug/L	22	Standard
	Y	89	394086.6	1.5				ug/L	388959	Standard
>	**Rh**	103	38.3	7.5				ug/L	8	Standard
	Mo	98	57.3	10.2	**0.0150**	0.003	16.6	ug/L	10	Standard
	Ag	107	105.3	2.7	**0.0025**	0.000	20.3	ug/L	66	Standard
	Cd	111	46.2	6.6	**0.0185**	0.002	9.8	mg/L	3	Standard
	Cd	114	133.1	6.2	**0.0221**	0.002	7.2	ug/L	4	Standard
>	**In**	115	545561.0	1.6				ug/L	523327	Standard
	Sn	118	876.7	11.0	**0.0760**	0.018	23.3	ug/L	488	Standard
	Sb	123	962.2	40.1	**0.1873**	0.085	45.1	ug/L	195	Standard
	Ba	135	482.0	3.7	**0.2223**	0.005	2.3	ug/L	28	Standard
	Ce	140	81.7	30.8				ug/L	83	Standard
>	**Tb**	159	818356.0	0.4				ug/L	809211	Standard
	Ho	165	16.7	34.6				ug/L	13	Standard
	Tl	203	132.7	7.9	**0.0145**	0.001	9.8	ug/L	4	Standard
	Tl	205	111.7	22.1	**0.0137**	0.004	27.1	ug/L	8	Standard
	Pb	206	520.7	0.6	**0.0550**	0.001	2.6	ug/L	230	Standard
	Pb	207	433.0	5.3	**0.0516**	0.004	8.5	ug/L	184	Standard
	Pb	208	1847.4	2.4	**0.0526**	0.001	2.7	ug/L	775	Standard
	U	238	129.7	10.5	**0.0181**	0.002	11.8	ug/L	3	Standard
>	**Bi**	209	484060.0	1.0				ug/L	472452	Standard

Sample ID: L1607020901
Report Date/Time: Thursday, July 07, 2016 16:19:49
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1888.5	6.7	**2.4558**	0.165	6.7	mg/L	52	Standard
K	39	30.0	33.3	**0.0102**	0.049	479.5	mg/L	32	Standard
Ca	43	70.0	7.1	**4.9158**	0.754	15.3	mg/L	33	Standard
Fe	54	145.6	20.1	**0.0065**	0.023	360.3	mg/L	138	Standard
Fe	57	368.3	3.4	**0.4437**	0.062	13.9	mg/L	263	Standard
> **Sc-1**	45	28566.9	3.1				mg/L	27861	Standard
Cl	35	151004.9	1.9				ug/L	100607	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3710.5	3.4				ug/L	1777	Standard
P	31	23982.3	0.7				ug/L	18074	Standard
S	34	4900.8	3.8				ug/L	3901	Standard
Sr	88	106.7	23.1				ug/L	60	Standard
C	12	80.0	50.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	7	Standard
Dy	164	1.6	332.4				mg/L	13	Standard
Ho-1	165	16.7	34.6				mg/L	13	Standard
Er	166	36.7	41.7				mg/L	3	Standard
I	127	12768.7	4.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.235	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607020901
Report Date/Time: Thursday, July 07, 2016 16:19:49
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.249
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.457
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607020901PS WG575542-01
Sample Date/Time: Thursday, July 07, 2016 16:20:44
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61225.2	3.3				ug/L	59299	Standard
	Be	9	46263.9	1.2	**53.7966**	1.091	2.0	ug/L	17	Standard
	Al	27	3096631.5	1.2	**22.4140**	0.478	2.1	ug/L	1472	Standard
	Sc	45	27992.5	0.4				ug/L	27861	Standard
	Ti	47	63.0	11.0	**0.1433**	0.027	18.6	ug/L	28	Standard
	V	51	341631.8	0.1	**49.3111**	0.284	0.6	ug/L	1156	Standard
	Cr	52	366855.3	2.0	**50.6695**	0.726	1.4	ug/L	6689	Standard
	Cr	53	46441.1	2.5	**51.6417**	1.502	2.9	ug/L	348	Standard
	Mn	55	333973.0	2.1	**51.2681**	1.018	2.0	ug/L	770	Standard
	Co	59	337546.2	1.2	**49.6171**	0.331	0.7	ug/L	216	Standard
	Ni	60	93170.6	0.8	**50.0139**	0.088	0.2	ug/L	440	Standard
	Cu	65	94608.5	0.4	**51.0801**	0.265	0.5	ug/L	116	Standard
	Zn	66	57679.3	0.9	**52.1283**	0.257	0.5	ug/L	135	Standard
>	Ge	72	458947.4	0.7				ug/L	445277	Standard
	As	75	56911.8	0.9	**50.6456**	0.156	0.3	ug/L	-57	Standard
	Se	82	5628.5	1.0	**49.2233**	0.218	0.4	ug/L	10	Standard
	Se-1	77	3825.1	1.8	**49.9149**	1.178	2.4	ug/L	57	Standard
>	Ga	71	75.0	20.0				mg/L	78	Standard
	Rb	85	541.7	4.4				ug/L	22	Standard
	Y	89	389484.7	1.2				ug/L	388959	Standard
>	Rh	103	55.0	9.1				ug/L	8	Standard
	Mo	98	68.1	2.1	**0.0195**	0.001	3.3	ug/L	10	Standard
	Ag	107	316484.3	0.9	**48.9622**	0.762	1.6	ug/L	66	Standard
	Cd	111	102078.6	0.4	**49.4928**	0.343	0.7	mg/L	3	Standard
	Cd	114	248677.1	1.5	**49.3118**	0.478	1.0	ug/L	4	Standard
>	In	115	537152.6	0.8				ug/L	523327	Standard
	Sn	118	971.7	7.0	**0.0949**	0.012	12.4	ug/L	488	Standard
	Sb	123	225284.5	2.6	**48.2640**	0.852	1.8	ug/L	195	Standard
	Ba	135	95388.3	0.9	**48.1294**	0.127	0.3	ug/L	28	Standard
	Ce	140	50.0	20.0				ug/L	83	Standard
>	Tb	159	809748.6	0.7				ug/L	809211	Standard
	Ho	165	11.7	49.5				ug/L	13	Standard
	Tl	203	403965.7	0.3	**50.5612**	0.441	0.9	ug/L	4	Standard
	Tl	205	351540.2	1.3	**51.3004**	0.621	1.2	ug/L	8	Standard
	Pb	206	262017.9	0.6	**52.2457**	0.343	0.7	ug/L	230	Standard
	Pb	207	227852.5	0.2	**50.0586**	0.254	0.5	ug/L	184	Standard
	Pb	208	974314.6	0.3	**52.3331**	0.409	0.8	ug/L	775	Standard
	U	238	350172.4	0.7	**51.2454**	0.601	1.2	ug/L	3	Standard
>	Bi	209	479313.2	0.5				ug/L	472452	Standard

Sample ID: L1607020901PS WG575542-01
Report Date/Time: Thursday, July 07, 2016 16:23:00
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.2417**	5.606	172.9	mg/L	0	Standard
Mg	24	1778.4	2.3	**2.3570**	0.062	2.6	mg/L	52	Standard
K	39	43.3	53.3	**0.0741**	0.107	144.7	mg/L	32	Standard
Ca	43	85.0	15.6	**7.0015**	1.723	24.6	mg/L	33	Standard
Fe	54	195.7	14.7	**0.0504**	0.024	48.3	mg/L	138	Standard
Fe	57	328.3	15.6	**0.3416**	0.160	46.7	mg/L	263	Standard
> **Sc-1**	45	27992.5	0.4				mg/L	27861	Standard
Cl	35	146539.4	2.0				ug/L	100607	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	3700.5	6.2				ug/L	1777	Standard
P	31	23393.0	1.1				ug/L	18074	Standard
S	34	4930.8	2.8				ug/L	3901	Standard
Sr	88	108.3	16.2				ug/L	60	Standard
C	12	123.3	32.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	13.0	46.5				mg/L	13	Standard
Ho-1	165	11.7	49.5				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	12541.9	6.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.248	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.070	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607020901PS WG575542-01
Report Date/Time: Thursday, July 07, 2016 16:23:00
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.642
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.452
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607020901SDL WG575542-02
Sample Date/Time: Thursday, July 07, 2016 16:23:55
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57174.4	3.5				ug/L	59299	Standard
	Be	9	43.3	43.7	**0.0556**	0.025	44.4	ug/L	17	Standard
	Al	27	608113.3	2.9	**4.7064**	0.256	5.4	ug/L	1472	Standard
	Sc	45	25720.1	0.8				ug/L	27861	Standard
	Ti	47	25.7	13.7	**-0.0008**	0.016	2010.6	ug/L	28	Standard
	V	51	1653.6	5.9	**0.0818**	0.016	20.0	ug/L	1156	Standard
	Cr	52	7048.3	3.6	**0.0979**	0.043	43.7	ug/L	6689	Standard
	Cr	53	808.4	14.9	**0.5771**	0.152	26.3	ug/L	348	Standard
	Mn	55	2883.0	26.6	**0.3509**	0.129	36.9	ug/L	770	Standard
	Co	59	422.0	34.3	**0.0316**	0.023	74.0	ug/L	216	Standard
	Ni	60	578.0	7.5	**0.0800**	0.027	33.9	ug/L	440	Standard
	Cu	65	538.7	7.8	**0.2559**	0.025	9.8	ug/L	116	Standard
	Zn	66	1738.4	6.3	**1.5043**	0.106	7.0	ug/L	135	Standard
>	**Ge**	72	425472.0	0.7				ug/L	445277	Standard
	As	75	61.7	25.7	**0.0965**	0.015	15.8	ug/L	-57	Standard
	Se	82	23.9	21.9	**0.0809**	0.050	61.2	ug/L	10	Standard
	Se-1	77	78.7	5.7	**0.4842**	0.070	14.5	ug/L	57	Standard
>	**Ga**	71	60.0	8.3				mg/L	78	Standard
	Rb	85	143.3	4.0				ug/L	22	Standard
	Y	89	359991.6	0.9				ug/L	388959	Standard
>	**Rh**	103	40.0	21.7				ug/L	8	Standard
	Mo	98	35.0	38.9	**0.0079**	0.006	71.0	ug/L	10	Standard
	Ag	107	206.0	30.6	**0.0208**	0.010	50.0	ug/L	66	Standard
	Cd	111	54.6	52.5	**0.0250**	0.015	59.8	mg/L	3	Standard
	Cd	114	105.6	51.4	**0.0187**	0.012	61.9	ug/L	4	Standard
>	**In**	115	497314.1	0.3				ug/L	523327	Standard
	Sn	118	350.0	19.8	**-0.0093**	0.013	142.9	ug/L	488	Standard
	Sb	123	1721.6	37.8	**0.3818**	0.151	39.5	ug/L	195	Standard
	Ba	135	178.0	32.3	**0.0798**	0.031	38.9	ug/L	28	Standard
	Ce	140	31.7	24.1				ug/L	83	Standard
>	**Tb**	159	752912.1	1.3				ug/L	809211	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	216.0	60.3	**0.0263**	0.017	65.0	ug/L	4	Standard
	Tl	205	326.7	86.1	**0.0473**	0.043	90.8	ug/L	8	Standard
	Pb	206	445.3	15.0	**0.0447**	0.014	31.5	ug/L	230	Standard
	Pb	207	383.7	13.5	**0.0453**	0.012	26.5	ug/L	184	Standard
	Pb	208	2085.1	39.7	**0.0712**	0.047	65.5	ug/L	775	Standard
	U	238	304.3	95.9	**0.0458**	0.045	97.5	ug/L	3	Standard
>	**Bi**	209	459668.6	0.2				ug/L	472452	Standard

Sample ID: L1607020901SDL WG575542-02
Report Date/Time: Thursday, July 07, 2016 16:26:12
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	388.3	21.6	**0.5100**	0.124	24.3	mg/L	52	Standard
K	39	26.7	39.0	**0.0075**	0.052	686.3	mg/L	32	Standard
Ca	43	28.3	53.9	**0.0809**	2.087	2581.8	mg/L	33	Standard
Fe	54	70.5	35.2	**-0.0480**	0.023	47.3	mg/L	138	Standard
Fe	57	258.3	5.6	**0.1956**	0.055	28.2	mg/L	263	Standard
> **Sc-1**	45	25720.1	0.8				mg/L	27861	Standard
Cl	35	137189.0	1.2				ug/L	100607	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	1923.5	10.8				ug/L	1777	Standard
P	31	10702.1	3.4				ug/L	18074	Standard
S	34	5017.5	3.8				ug/L	3901	Standard
Sr	88	81.7	34.8				ug/L	60	Standard
C	12	53.3	39.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.3	179.8				mg/L	13	Standard
Ho-1	165	13.3	21.7				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	12553.5	3.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.417	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.552	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607020901SDL WG575542-02
Report Date/Time: Thursday, July 07, 2016 16:26:12
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.029
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.294
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607020901SDL WG575542-02
Sample Date/Time: Thursday, July 07, 2016 16:27:06
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54335.6	1.5				ug/L	59299	Standard
	Be	9	16.7	69.3	**0.0231**	0.015	64.4	ug/L	17	Standard
	Al	27	113859.6	1.3	**0.9159**	0.004	0.4	ug/L	1472	Standard
	Sc	45	25616.6	2.1				ug/L	27861	Standard
	Ti	47	24.0	22.0	**-0.0068**	0.023	340.5	ug/L	28	Standard
	V	51	1492.2	5.0	**0.0600**	0.012	20.5	ug/L	1156	Standard
	Cr	52	6216.6	2.0	**-0.0144**	0.022	155.5	ug/L	6689	Standard
	Cr	53	560.0	3.2	**0.2864**	0.023	8.0	ug/L	348	Standard
	Mn	55	665.3	4.0	**-0.0159**	0.005	31.0	ug/L	770	Standard
	Co	59	215.3	11.8	**-0.0008**	0.004	551.6	ug/L	216	Standard
	Ni	60	359.3	4.6	**-0.0442**	0.010	21.6	ug/L	440	Standard
	Cu	65	202.0	5.9	**0.0613**	0.008	12.7	ug/L	116	Standard
	Zn	66	843.7	1.1	**0.6410**	0.008	1.2	ug/L	135	Standard
>	**Ge**	72	419255.6	0.7				ug/L	445277	Standard
	As	75	-33.5	72.8	**0.0048**	0.024	494.3	ug/L	-57	Standard
	Se	82	15.9	7.7	**0.0075**	0.013	171.3	ug/L	10	Standard
	Se-1	77	64.7	8.5	**0.2982**	0.081	27.2	ug/L	57	Standard
>	**Ga**	71	60.0	14.4				mg/L	78	Standard
	Rb	85	51.7	31.1				ug/L	22	Standard
	Y	89	348920.8	1.6				ug/L	388959	Standard
>	**Rh**	103	21.7	26.6				ug/L	8	Standard
	Mo	98	41.8	43.2	**0.0108**	0.007	69.3	ug/L	10	Standard
	Ag	107	76.3	15.8	**-0.0008**	0.002	264.3	ug/L	66	Standard
	Cd	111	6.3	18.0	**-0.0003**	0.001	195.4	mg/L	3	Standard
	Cd	114	4.1	132.0	**-0.0030**	0.001	38.9	ug/L	4	Standard
>	**In**	115	494314.8	0.3				ug/L	523327	Standard
	Sn	118	218.3	8.0	**-0.0340**	0.003	10.2	ug/L	488	Standard
	Sb	123	901.9	39.3	**0.1932**	0.082	42.5	ug/L	195	Standard
	Ba	135	33.3	6.2	**0.0011**	0.001	109.6	ug/L	28	Standard
	Ce	140	16.7	91.7				ug/L	83	Standard
>	**Tb**	159	746840.7	0.5				ug/L	809211	Standard
	Ho	165	10.0	100.0				ug/L	13	Standard
	Tl	203	53.7	28.6	**0.0051**	0.002	39.8	ug/L	4	Standard
	Tl	205	48.3	39.2	**0.0050**	0.003	58.9	ug/L	8	Standard
	Pb	206	250.0	1.7	**0.0047**	0.001	18.9	ug/L	230	Standard
	Pb	207	200.3	0.8	**0.0038**	0.000	7.2	ug/L	184	Standard
	Pb	208	876.7	2.2	**0.0041**	0.001	25.0	ug/L	775	Standard
	U	238	13.7	33.0	**0.0014**	0.001	49.1	ug/L	3	Standard
>	**Bi**	209	454018.3	0.2				ug/L	472452	Standard

Sample ID: L1607020901SDL WG575542-02
Report Date/Time: Thursday, July 07, 2016 16:29:23
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	101.7	19.9	**0.0861**	0.033	38.4	mg/L	52	Standard
K	39	36.7	31.5	**0.0596**	0.062	103.9	mg/L	32	Standard
Ca	43	30.0	28.9	**0.3249**	1.112	342.2	mg/L	33	Standard
Fe	54	42.6	43.1	**-0.0732**	0.016	21.4	mg/L	138	Standard
Fe	57	285.0	8.0	**0.2885**	0.060	20.7	mg/L	263	Standard
Sc-1	45	25616.6	2.1				mg/L	27861	Standard
Cl	35	138161.1	0.4				ug/L	100607	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1633.4	10.6				ug/L	1777	Standard
P	31	7972.1	5.8				ug/L	18074	Standard
S	34	5087.5	3.6				ug/L	3901	Standard
Sr	88	85.0	17.6				ug/L	60	Standard
C	12	53.3	21.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	9.8	99.2				mg/L	13	Standard
Ho-1	165	10.0	100.0				mg/L	13	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	12021.4	4.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.630	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.156	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607020901SDL WG575542-02
Report Date/Time: Thursday, July 07, 2016 16:29:23
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.456
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.098
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 16:30:20
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56287.8	2.9				ug/L	59299	Standard
	Be	9	42631.6	4.4	**53.8860**	1.132	2.1	ug/L	17	Standard
	Al	27	6533590.3	1.4	**51.4492**	0.883	1.7	ug/L	1472	Standard
	Sc	45	27992.5	1.4				ug/L	27861	Standard
	Ti	47	23694.9	1.8	**97.7062**	1.237	1.3	ug/L	28	Standard
	V	51	330344.1	1.2	**48.1747**	0.387	0.8	ug/L	1156	Standard
	Cr	52	350609.7	1.4	**48.9007**	0.460	0.9	ug/L	6689	Standard
	Cr	53	43915.2	2.7	**49.3203**	1.222	2.5	ug/L	348	Standard
	Mn	55	314356.6	1.2	**48.7549**	0.446	0.9	ug/L	770	Standard
	Co	59	325607.2	1.8	**48.3613**	0.651	1.3	ug/L	216	Standard
	Ni	60	91100.8	1.4	**49.4106**	0.461	0.9	ug/L	440	Standard
	Cu	65	89658.2	1.1	**48.9098**	0.321	0.7	ug/L	116	Standard
	Zn	66	54243.9	1.3	**49.5260**	0.381	0.8	ug/L	135	Standard
>	Ge	72	454192.9	0.5				ug/L	445277	Standard
	As	75	53955.5	0.7	**48.5192**	0.136	0.3	ug/L	-57	Standard
	Se	82	5433.2	1.9	**48.0079**	0.681	1.4	ug/L	10	Standard
	Se-1	77	3739.1	3.7	**49.2947**	1.970	4.0	ug/L	57	Standard
>	Ga	71	90.0	16.7				mg/L	78	Standard
	Rb	85	745.0	2.9				ug/L	22	Standard
	Y	89	388066.9	0.5				ug/L	388959	Standard
>	Rh	103	45.0	66.7				ug/L	8	Standard
	Mo	98	248412.4	1.0	**96.1827**	0.863	0.9	ug/L	10	Standard
	Ag	107	308514.0	1.3	**48.2534**	0.380	0.8	ug/L	66	Standard
	Cd	111	98320.8	0.6	**48.2001**	0.521	1.1	mg/L	3	Standard
	Cd	114	240017.9	1.8	**48.1211**	0.559	1.2	ug/L	4	Standard
>	In	115	531262.2	0.8				ug/L	523327	Standard
	Sn	118	271670.1	2.7	**48.1481**	0.972	2.0	ug/L	488	Standard
	Sb	123	224843.7	0.2	**48.7099**	0.290	0.6	ug/L	195	Standard
	Ba	135	92016.6	1.1	**46.9426**	0.387	0.8	ug/L	28	Standard
	Ce	140	58.3	26.2				ug/L	83	Standard
>	Tb	159	791073.9	1.0				ug/L	809211	Standard
	Ho	165	6.7	43.3				ug/L	13	Standard
	Tl	203	387941.7	1.1	**49.2367**	0.367	0.7	ug/L	4	Standard
	Tl	205	333064.4	0.7	**49.2895**	0.511	1.0	ug/L	8	Standard
	Pb	206	245484.4	0.2	**49.6353**	0.090	0.2	ug/L	230	Standard
	Pb	207	221539.9	0.3	**49.3564**	0.345	0.7	ug/L	184	Standard
	Pb	208	935921.0	0.6	**50.9758**	0.091	0.2	ug/L	775	Standard
	U	238	338262.6	0.2	**50.1981**	0.263	0.5	ug/L	3	Standard
>	Bi	209	472659.3	0.4				ug/L	472452	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 16:32:37
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.2193**	5.567	172.9	mg/L	0	Standard
Mg	24	3740.5	2.5	**5.0296**	0.106	2.1	mg/L	52	Standard
K	39	781.7	5.3	**3.4941**	0.237	6.8	mg/L	32	Standard
Ca	43	53.3	37.9	**2.9789**	2.668	89.6	mg/L	33	Standard
Fe	54	5881.2	1.7	**4.7546**	0.034	0.7	mg/L	138	Standard
Fe	57	1910.1	5.3	**5.2457**	0.313	6.0	mg/L	263	Standard
Sc-1	45	27992.5	1.4				mg/L	27861	Standard
Cl	35	135259.0	3.9				ug/L	100607	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1970.1	1.3				ug/L	1777	Standard
P	31	23368.0	1.8				ug/L	18074	Standard
S	34	5549.3	1.8				ug/L	3901	Standard
Sr	88	68.3	8.4				ug/L	60	Standard
C	12	86.7	40.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	12.7	40.1				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	9229.5	2.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.772		
Al	27	102.898		
Sc	45			
Ti	47	97.706		
V	51	96.349		
Cr	52	97.801		
Cr	53			
Mn	55	97.510		
Co	59	96.723		
Ni	60	98.821		
Cu	65	97.820		
Zn	66	99.052		
Ge	72		102.002	
As	75	97.038		
Se	82	96.016		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 16:32:37
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	96.183		
Ag	107	96.507		
Cd	111	96.400		
Cd	114			
In	115			101.516
Sn	118	96.296		
Sb	123	97.420		
Ba	135	93.885		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.473		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.952		
U	238	100.396		
Bi	209			100.044
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 16:32:37
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 16:33:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55090.0	2.3				ug/L	59299	Standard
	Be	9	30.0	72.6	**0.0397**	0.027	67.9	ug/L	17	Standard
	Al	27	2630.2	36.4	**0.0082**	0.007	86.7	ug/L	1472	Standard
	Sc	45	27823.9	2.4				ug/L	27861	Standard
	Ti	47	24.7	37.7	**-0.0108**	0.038	348.1	ug/L	28	Standard
	V	51	1203.3	4.5	**0.0024**	0.006	247.4	ug/L	1156	Standard
	Cr	52	6254.3	1.4	**-0.0680**	0.002	2.6	ug/L	6689	Standard
	Cr	53	663.3	16.4	**0.3622**	0.116	32.0	ug/L	348	Standard
	Mn	55	865.7	4.5	**0.0089**	0.005	60.9	ug/L	770	Standard
	Co	59	266.7	16.8	**0.0048**	0.006	132.2	ug/L	216	Standard
	Ni	60	339.7	6.2	**-0.0683**	0.009	13.6	ug/L	440	Standard
	Cu	65	187.3	7.0	**0.0458**	0.007	16.4	ug/L	116	Standard
	Zn	66	820.7	0.6	**0.5680**	0.011	1.8	ug/L	135	Standard
>	**Ge**	72	446755.1	1.3				ug/L	445277	Standard
	As	75	-20.7	79.8	**0.0185**	0.015	80.1	ug/L	-57	Standard
	Se	82	23.4	14.5	**0.0655**	0.033	50.2	ug/L	10	Standard
	Se-1	77	59.0	12.2	**0.1641**	0.104	63.3	ug/L	57	Standard
>	**Ga**	71	55.0	18.2				mg/L	78	Standard
	Rb	85	23.3	24.7				ug/L	22	Standard
	Y	89	384368.1	1.3				ug/L	388959	Standard
>	**Rh**	103	20.0	43.3				ug/L	8	Standard
	Mo	98	296.2	21.8	**0.1079**	0.025	23.2	ug/L	10	Standard
	Ag	107	135.3	16.4	**0.0075**	0.003	46.3	ug/L	66	Standard
	Cd	111	15.8	30.3	**0.0041**	0.002	56.8	mg/L	3	Standard
	Cd	114	59.3	45.3	**0.0079**	0.005	67.7	ug/L	4	Standard
>	**In**	115	532293.2	0.2				ug/L	523327	Standard
	Sn	118	896.7	18.3	**0.0832**	0.029	35.1	ug/L	488	Standard
	Sb	123	1075.1	31.9	**0.2159**	0.074	34.4	ug/L	195	Standard
	Ba	135	58.7	58.2	**0.0127**	0.017	137.2	ug/L	28	Standard
	Ce	140	13.3	21.7				ug/L	83	Standard
>	**Tb**	159	791538.1	0.6				ug/L	809211	Standard
	Ho	165	6.7	114.6				ug/L	13	Standard
	Tl	203	85.7	39.5	**0.0088**	0.004	48.5	ug/L	4	Standard
	Tl	205	111.7	14.4	**0.0139**	0.002	17.2	ug/L	8	Standard
	Pb	206	301.7	12.4	**0.0125**	0.008	61.7	ug/L	230	Standard
	Pb	207	246.0	17.2	**0.0116**	0.009	80.9	ug/L	184	Standard
	Pb	208	1081.7	10.7	**0.0126**	0.006	49.8	ug/L	775	Standard
	U	238	84.7	27.2	**0.0117**	0.003	28.8	ug/L	3	Standard
>	**Bi**	209	477848.1	0.7				ug/L	472452	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 16:35:48
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	51.7	14.8	**0.0053**	0.012	229.4	mg/L	52	Standard
K	39	36.7	41.7	**0.0444**	0.071	159.7	mg/L	32	Standard
Ca	43	20.0	0.0	**-1.2740**	0.062	4.9	mg/L	33	Standard
Fe	54	132.6	5.3	**-0.0011**	0.008	754.0	mg/L	138	Standard
Fe	57	290.0	4.6	**0.2279**	0.021	9.3	mg/L	263	Standard
Sc-1	45	27823.9	2.4				mg/L	27861	Standard
Cl	35	132344.2	0.5				ug/L	100607	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1806.8	9.5				ug/L	1777	Standard
P	31	21748.9	2.7				ug/L	18074	Standard
S	34	5379.3	2.6				ug/L	3901	Standard
Sr	88	76.7	10.0				ug/L	60	Standard
C	12	76.7	32.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	6.0	193.9				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	13	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	6296.3	3.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.332	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 16:35:48
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.713
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.142
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 16:35:48
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607020902
Sample Date/Time: Thursday, July 07, 2016 16:36:44
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56337.9	1.5				ug/L	59299	Standard
	Be	9	25.0	69.3	**0.0331**	0.022	66.9	ug/L	17	Standard
	Al	27	7654249.4	1.6	**60.2040**	0.497	0.8	ug/L	1472	Standard
	Sc	45	27605.1	1.5				ug/L	27861	Standard
	Ti	47	63.7	9.6	**0.1506**	0.023	15.4	ug/L	28	Standard
	V	51	1475.5	12.1	**0.0410**	0.028	68.8	ug/L	1156	Standard
	Cr	52	9524.3	1.7	**0.3921**	0.035	9.0	ug/L	6689	Standard
	Cr	53	1000.0	4.4	**0.7401**	0.061	8.3	ug/L	348	Standard
	Mn	55	45437.4	1.2	**6.9876**	0.077	1.1	ug/L	770	Standard
	Co	59	1909.1	1.9	**0.2503**	0.003	1.3	ug/L	216	Standard
	Ni	60	1269.7	2.1	**0.4407**	0.013	3.0	ug/L	440	Standard
	Cu	65	1722.8	1.8	**0.8893**	0.014	1.6	ug/L	116	Standard
	Zn	66	4350.0	1.8	**3.8186**	0.048	1.3	ug/L	135	Standard
>	**Ge**	72	451014.9	0.9				ug/L	445277	Standard
	As	75	272.1	13.5	**0.2835**	0.033	11.6	ug/L	-57	Standard
	Se	82	73.6	13.6	**0.5112**	0.088	17.2	ug/L	10	Standard
	Se-1	77	88.3	10.3	**0.5504**	0.120	21.8	ug/L	57	Standard
>	**Ga**	71	68.3	11.2				mg/L	78	Standard
	Rb	85	3873.8	3.6				ug/L	22	Standard
	Y	89	384283.1	1.7				ug/L	388959	Standard
>	**Rh**	103	55.0	31.5				ug/L	8	Standard
	Mo	98	321.3	5.6	**0.1184**	0.007	5.8	ug/L	10	Standard
	Ag	107	103.7	4.6	**0.0027**	0.001	27.0	ug/L	66	Standard
	Cd	111	32.7	12.6	**0.0125**	0.002	16.1	mg/L	3	Standard
	Cd	114	80.6	30.4	**0.0123**	0.005	40.0	ug/L	4	Standard
>	**In**	115	528788.8	0.1				ug/L	523327	Standard
	Sn	118	910.0	2.9	**0.0866**	0.005	5.5	ug/L	488	Standard
	Sb	123	762.4	28.5	**0.1493**	0.047	31.5	ug/L	195	Standard
	Ba	135	24850.4	0.4	**12.7243**	0.043	0.3	ug/L	28	Standard
	Ce	140	305.0	11.8				ug/L	83	Standard
>	**Tb**	159	796654.2	0.5				ug/L	809211	Standard
	Ho	165	23.3	65.5				ug/L	13	Standard
	Tl	203	48.7	13.7	**0.0043**	0.001	20.3	ug/L	4	Standard
	Tl	205	46.7	43.3	**0.0045**	0.003	67.3	ug/L	8	Standard
	Pb	206	1336.7	0.6	**0.2244**	0.001	0.5	ug/L	230	Standard
	Pb	207	1147.0	2.5	**0.2147**	0.005	2.6	ug/L	184	Standard
	Pb	208	4868.3	0.9	**0.2214**	0.002	0.9	ug/L	775	Standard
	U	238	1070.4	2.3	**0.1592**	0.003	2.0	ug/L	3	Standard
>	**Bi**	209	469594.2	0.4				ug/L	472452	Standard

Sample ID: L1607020902
Report Date/Time: Thursday, July 07, 2016 16:39:01
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.2690**	5.653	172.9	mg/L	0	Standard
Mg	24	1171.7	7.6	**1.5518**	0.099	6.4	mg/L	52	Standard
K	39	80.0	27.2	**0.2487**	0.100	40.2	mg/L	32	Standard
Ca	43	138.3	12.7	**14.0268**	2.025	14.4	mg/L	33	Standard
Fe	54	497.6	2.9	**0.3060**	0.010	3.2	mg/L	138	Standard
Fe	57	478.3	15.1	**0.8253**	0.206	25.0	mg/L	263	Standard
> **Sc-1**	45	27605.1	1.5				mg/L	27861	Standard
Cl	35	160861.0	2.0				ug/L	100607	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	2620.2	11.3				ug/L	1777	Standard
P	31	23820.4	3.0				ug/L	18074	Standard
S	34	5167.5	2.1				ug/L	3901	Standard
Sr	88	143.3	17.2				ug/L	60	Standard
C	12	73.3	34.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	48.9	21.4				mg/L	13	Standard
Ho-1	165	23.3	65.5				mg/L	13	Standard
Er	166	23.3	49.5				mg/L	3	Standard
I	127	11402.6	6.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.006	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.289	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607020902
Report Date/Time: Thursday, July 07, 2016 16:39:01
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.044	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.395	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607021201
Sample Date/Time: Thursday, July 07, 2016 16:39:55
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66788.6	0.7				ug/L	59299	Standard
	Be	9	40.0	120.5	**0.0440**	0.051	116.8	ug/L	17	Standard
	Al	27	15016031.2	1.8	**99.6296**	1.226	1.2	ug/L	1472	Standard
	Sc	45	26528.2	1.4				ug/L	27861	Standard
	Ti	47	56.0	11.2	**0.1327**	0.028	21.4	ug/L	28	Standard
	V	51	1871.5	11.9	**0.1155**	0.033	28.7	ug/L	1156	Standard
	Cr	52	25815.3	1.0	**2.9450**	0.019	0.7	ug/L	6689	Standard
	Cr	53	2861.9	1.2	**3.0565**	0.063	2.1	ug/L	348	Standard
	Mn	55	1428385.4	0.2	**236.8325**	1.796	0.8	ug/L	770	Standard
	Co	59	26772.6	0.3	**4.2099**	0.020	0.5	ug/L	216	Standard
	Ni	60	36278.4	1.3	**20.8453**	0.404	1.9	ug/L	440	Standard
	Cu	65	6920.2	2.9	**3.9744**	0.139	3.5	ug/L	116	Standard
	Zn	66	5594.4	3.3	**5.2747**	0.210	4.0	ug/L	135	Standard
>	Ge	72	425758.2	0.6				ug/L	445277	Standard
	As	75	2035.0	0.9	**1.9880**	0.012	0.6	ug/L	-57	Standard
	Se	82	184.7	3.2	**1.6010**	0.048	3.0	ug/L	10	Standard
	Se-1	77	134.7	5.7	**1.2808**	0.104	8.1	ug/L	57	Standard
>	Ga	71	618.3	13.4				mg/L	78	Standard
	Rb	85	50846.9	2.1				ug/L	22	Standard
	Y	89	368621.9	2.4				ug/L	388959	Standard
>	Rh	103	213.3	8.9				ug/L	8	Standard
	Mo	98	565.3	8.2	**0.2259**	0.019	8.2	ug/L	10	Standard
	Ag	107	145.3	50.0	**0.0105**	0.012	114.4	ug/L	66	Standard
	Cd	111	160.6	25.7	**0.0800**	0.021	26.7	mg/L	3	Standard
	Cd	114	440.4	25.6	**0.0899**	0.024	26.9	ug/L	4	Standard
>	In	115	500068.7	1.0				ug/L	523327	Standard
	Sn	118	793.4	16.3	**0.0738**	0.023	31.4	ug/L	488	Standard
	Sb	123	478.5	29.7	**0.0933**	0.032	34.2	ug/L	195	Standard
	Ba	135	4856.1	1.5	**2.6158**	0.046	1.8	ug/L	28	Standard
	Ce	140	140.0	27.0				ug/L	83	Standard
>	Tb	159	777503.9	0.8				ug/L	809211	Standard
	Ho	165	8.3	34.6				ug/L	13	Standard
	Tl	203	110007.3	0.6	**15.2129**	0.206	1.4	ug/L	4	Standard
	Tl	205	95802.0	1.2	**15.4460**	0.166	1.1	ug/L	8	Standard
	Pb	206	364.3	24.7	**0.0324**	0.020	60.8	ug/L	230	Standard
	Pb	207	324.3	26.5	**0.0361**	0.021	57.5	ug/L	184	Standard
	Pb	208	1366.4	28.4	**0.0354**	0.023	64.7	ug/L	775	Standard
	U	238	580.0	33.3	**0.0930**	0.031	33.3	ug/L	3	Standard
>	Bi	209	433790.4	0.8				ug/L	472452	Standard

Sample ID: L1607021201
Report Date/Time: Thursday, July 07, 2016 16:42:12
Page 1

Approved: July 08, 2016

Na	23	23.3	44.6	**47.9743**	21.041	43.9	mg/L	0	Standard
Mg	24	7106.7	3.0	**10.1486**	0.214	2.1	mg/L	52	Standard
K	39	165.0	10.5	**0.6791**	0.078	11.5	mg/L	32	Standard
Ca	43	2495.2	4.0	**332.0572**	18.324	5.5	mg/L	33	Standard
Fe	54	119.7	12.0	**-0.0071**	0.011	155.6	mg/L	138	Standard
Fe	57	2781.9	2.1	**8.4237**	0.093	1.1	mg/L	263	Standard
Sc-1	45	26528.2	1.4				mg/L	27861	Standard
Cl	35	801542.8	1.5				ug/L	100607	Standard
Kr	83	4.0	50.0				ug/L	2	Standard
Br	81	3927.2	2.6				ug/L	1777	Standard
P	31	20385.4	2.1				ug/L	18074	Standard
S	34	5821.1	3.7				ug/L	3901	Standard
Sr	88	728.4	9.3				ug/L	60	Standard
C	12	93.3	24.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	16.3	93.8				mg/L	13	Standard
Ho-1	165	8.3	34.6				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	9723.1	0.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.630	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.616	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1607021201
Report Date/Time: Thursday, July 07, 2016 16:42:12
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.556
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.817
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1607021201
Report Date/Time: Thursday, July 07, 2016 16:42:12
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607021202 WG575508-02
Sample Date/Time: Thursday, July 07, 2016 16:43:07
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70433.3	0.9				ug/L	59299	Standard
	Be	9	25.0	34.6	**0.0265**	0.008	32.0	ug/L	17	Standard
	Al	27	16775496.9	0.7	**105.5500**	0.215	0.2	ug/L	1472	Standard
	Sc	45	26728.6	1.8				ug/L	27861	Standard
	Ti	47	67.0	6.8	**0.1792**	0.020	11.2	ug/L	28	Standard
	V	51	2155.8	8.0	**0.1578**	0.027	17.1	ug/L	1156	Standard
	Cr	52	30291.9	0.6	**3.5942**	0.023	0.6	ug/L	6689	Standard
	Cr	53	3475.4	5.4	**3.7704**	0.242	6.4	ug/L	348	Standard
	Mn	55	1570178.2	0.1	**258.6409**	0.950	0.4	ug/L	770	Standard
	Co	59	36800.6	0.9	**5.7616**	0.039	0.7	ug/L	216	Standard
	Ni	60	44225.8	1.4	**25.2965**	0.251	1.0	ug/L	440	Standard
	Cu	65	8227.9	3.9	**4.7038**	0.165	3.5	ug/L	116	Standard
	Zn	66	5796.4	0.4	**5.4343**	0.019	0.3	ug/L	135	Standard
>	**Ge**	72	428569.7	0.5				ug/L	445277	Standard
	As	75	3056.5	0.4	**2.9479**	0.010	0.3	ug/L	-57	Standard
	Se	82	189.0	0.8	**1.6294**	0.008	0.5	ug/L	10	Standard
	Se-1	77	137.7	5.5	**1.3109**	0.111	8.5	ug/L	57	Standard
>	**Ga**	71	738.4	4.8				mg/L	78	Standard
	Rb	85	56853.1	1.2				ug/L	22	Standard
	Y	89	377337.0	1.9				ug/L	388959	Standard
>	**Rh**	103	221.7	23.7				ug/L	8	Standard
	Mo	98	590.3	1.3	**0.2360**	0.004	1.7	ug/L	10	Standard
	Ag	107	85.3	12.2	**0.0006**	0.002	292.2	ug/L	66	Standard
	Cd	111	181.6	8.3	**0.0909**	0.008	9.1	mg/L	3	Standard
	Cd	114	461.1	11.1	**0.0942**	0.011	11.9	ug/L	4	Standard
>	**In**	115	500515.9	0.5				ug/L	523327	Standard
	Sn	118	828.4	11.7	**0.0804**	0.018	22.0	ug/L	488	Standard
	Sb	123	336.5	27.1	**0.0608**	0.021	34.5	ug/L	195	Standard
	Ba	135	5371.6	0.6	**2.8926**	0.026	0.9	ug/L	28	Standard
	Ce	140	2915.3	6.6				ug/L	83	Standard
>	**Tb**	159	790482.9	0.1				ug/L	809211	Standard
	Ho	165	111.7	6.8				ug/L	13	Standard
	Tl	203	116944.9	1.0	**16.0229**	0.113	0.7	ug/L	4	Standard
	Tl	205	101680.1	1.2	**16.2430**	0.099	0.6	ug/L	8	Standard
	Pb	206	259.7	7.3	**0.0088**	0.004	44.5	ug/L	230	Standard
	Pb	207	217.3	3.7	**0.0096**	0.002	23.3	ug/L	184	Standard
	Pb	208	958.3	2.2	**0.0107**	0.001	13.0	ug/L	775	Standard
	U	238	596.7	5.4	**0.0949**	0.005	5.6	ug/L	3	Standard
>	**Bi**	209	437804.9	0.6				ug/L	472452	Standard

Sample ID: L1607021202 WG575508-02
Report Date/Time: Thursday, July 07, 2016 16:45:24
Page 1

Approved: July 08, 2016

Na	23	43.3	35.3	**88.8759**	32.577	36.7	mg/L	0	Standard
Mg	24	7687.0	2.7	**10.8999**	0.150	1.4	mg/L	52	Standard
K	39	148.3	8.5	**0.5928**	0.064	10.8	mg/L	32	Standard
Ca	43	2525.2	2.1	**333.4911**	11.478	3.4	mg/L	33	Standard
Fe	54	359.0	16.7	**0.2001**	0.057	28.3	mg/L	138	Standard
Fe	57	2833.6	4.3	**8.5230**	0.338	4.0	mg/L	263	Standard
> **Sc-1**	45	26728.6	1.8				mg/L	27861	Standard
Cl	35	853704.9	1.3				ug/L	100607	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3830.5	7.9				ug/L	1777	Standard
P	31	19816.3	3.6				ug/L	18074	Standard
S	34	5699.4	3.9				ug/L	3901	Standard
Sr	88	815.0	5.2				ug/L	60	Standard
C	12	76.7	15.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	126.3	32.4				mg/L	13	Standard
Ho-1	165	111.7	6.8				mg/L	13	Standard
Er	166	76.7	30.1				mg/L	3	Standard
I	127	4937.5	5.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.776	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.248	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607021202 WG575508-02
Report Date/Time: Thursday, July 07, 2016 16:45:24
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.641
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.667
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1607021202 WG575508-02
Report Date/Time: Thursday, July 07, 2016 16:45:24
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607021202DP WG575508-07
Sample Date/Time: Thursday, July 07, 2016 16:46:18
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70967.5	1.9				ug/L	59299	Standard
	Be	9	30.0	50.0	**0.0313**	0.015	46.4	ug/L	17	Standard
	Al	27	15959301.4	0.4	**99.6858**	2.267	2.3	ug/L	1472	Standard
	Sc	45	26613.4	1.5				ug/L	27861	Standard
	Ti	47	183.0	19.1	**0.6877**	0.151	22.0	ug/L	28	Standard
	V	51	2304.6	8.8	**0.1814**	0.031	17.1	ug/L	1156	Standard
	Cr	52	29590.2	1.6	**3.4951**	0.066	1.9	ug/L	6689	Standard
	Cr	53	3527.1	3.4	**3.8380**	0.138	3.6	ug/L	348	Standard
	Mn	55	1478485.2	0.9	**243.8915**	1.785	0.7	ug/L	770	Standard
	Co	59	34811.3	0.3	**5.4565**	0.005	0.1	ug/L	216	Standard
	Ni	60	42402.3	0.9	**24.2805**	0.244	1.0	ug/L	440	Standard
	Cu	65	7498.5	3.1	**4.2886**	0.131	3.0	ug/L	116	Standard
	Zn	66	4878.1	0.6	**4.5493**	0.026	0.6	ug/L	135	Standard
>	**Ge**	72	427926.5	0.2				ug/L	445277	Standard
	As	75	2887.3	0.5	**2.7909**	0.017	0.6	ug/L	-57	Standard
	Se	82	180.6	7.8	**1.5534**	0.134	8.6	ug/L	10	Standard
	Se-1	77	160.3	7.4	**1.6349**	0.169	10.3	ug/L	57	Standard
>	**Ga**	71	800.0	6.5				mg/L	78	Standard
	Rb	85	53790.3	1.2				ug/L	22	Standard
	Y	89	376717.4	2.4				ug/L	388959	Standard
>	**Rh**	103	206.7	12.4				ug/L	8	Standard
	Mo	98	559.8	2.9	**0.2226**	0.006	2.6	ug/L	10	Standard
	Ag	107	89.0	10.8	**0.0011**	0.002	142.4	ug/L	66	Standard
	Cd	111	162.4	9.0	**0.0806**	0.007	9.1	mg/L	3	Standard
	Cd	114	372.3	6.6	**0.0750**	0.006	7.3	ug/L	4	Standard
>	**In**	115	502346.6	0.4				ug/L	523327	Standard
	Sn	118	785.0	6.1	**0.0717**	0.009	13.0	ug/L	488	Standard
	Sb	123	291.8	33.7	**0.0502**	0.022	44.4	ug/L	195	Standard
	Ba	135	5219.6	0.6	**2.8000**	0.027	1.0	ug/L	28	Standard
	Ce	140	3113.7	2.6				ug/L	83	Standard
>	**Tb**	159	781166.2	0.1				ug/L	809211	Standard
	Ho	165	66.7	28.4				ug/L	13	Standard
	Tl	203	110860.5	1.2	**15.1464**	0.150	1.0	ug/L	4	Standard
	Tl	205	96075.3	0.9	**15.3050**	0.173	1.1	ug/L	8	Standard
	Pb	206	282.3	4.6	**0.0136**	0.003	21.3	ug/L	230	Standard
	Pb	207	239.3	6.2	**0.0148**	0.003	23.2	ug/L	184	Standard
	Pb	208	998.0	3.6	**0.0129**	0.002	16.3	ug/L	775	Standard
	U	238	544.3	2.8	**0.0863**	0.002	2.6	ug/L	3	Standard
>	**Bi**	209	439036.7	0.2				ug/L	472452	Standard

Sample ID: L1607021202DP WG575508-07
Report Date/Time: Thursday, July 07, 2016 16:48:35
Page 1

Approved: July 08, 2016

Na	23	26.7	65.8	**54.4902**	35.661	65.4	mg/L	0	Standard
Mg	24	7500.2	3.9	**10.6781**	0.268	2.5	mg/L	52	Standard
K	39	141.7	32.0	**0.5651**	0.229	40.5	mg/L	32	Standard
Ca	43	2355.2	6.1	**312.0879**	19.877	6.4	mg/L	33	Standard
Fe	54	392.0	25.2	**0.2291**	0.082	35.6	mg/L	138	Standard
Fe	57	2835.3	3.8	**8.5668**	0.218	2.5	mg/L	263	Standard
> **Sc-1**	45	26613.4	1.5				mg/L	27861	Standard
Cl	35	818946.0	0.4				ug/L	100607	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	5447.6	1.7				ug/L	1777	Standard
P	31	19092.0	1.8				ug/L	18074	Standard
S	34	5329.3	4.0				ug/L	3901	Standard
Sr	88	801.7	4.2				ug/L	60	Standard
C	12	96.7	11.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	106.2	55.0				mg/L	13	Standard
Ho-1	165	66.7	28.4				mg/L	13	Standard
Er	166	80.0	66.1				mg/L	3	Standard
I	127	7173.4	6.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.677	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.103	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607021202DP WG575508-07
Report Date/Time: Thursday, July 07, 2016 16:48:35
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.991
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.927
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1607021202DP WG575508-07
Report Date/Time: Thursday, July 07, 2016 16:48:35
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 16:49:31
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64525.6	3.6				ug/L	59299	Standard
	Be	9	47255.3	2.1	**52.1406**	1.270	2.4	ug/L	17	Standard
	Al	27	6973815.3	1.7	**47.9132**	1.113	2.3	ug/L	1472	Standard
	Sc	45	27909.0	0.3				ug/L	27861	Standard
	Ti	47	23425.1	0.8	**97.2578**	1.682	1.7	ug/L	28	Standard
	V	51	333681.9	1.1	**48.9996**	1.049	2.1	ug/L	1156	Standard
	Cr	52	349558.6	1.1	**49.0881**	0.479	1.0	ug/L	6689	Standard
	Cr	53	44139.2	1.8	**49.9073**	0.023	0.0	ug/L	348	Standard
	Mn	55	319241.0	0.9	**49.8540**	0.863	1.7	ug/L	770	Standard
	Co	59	333528.2	0.9	**49.8861**	1.346	2.7	ug/L	216	Standard
	Ni	60	90488.4	1.2	**49.4109**	0.534	1.1	ug/L	440	Standard
	Cu	65	89719.5	0.5	**49.2781**	0.698	1.4	ug/L	116	Standard
	Zn	66	54060.9	1.2	**49.7022**	1.247	2.5	ug/L	135	Standard
>	**Ge**	72	451198.1	1.9				ug/L	445277	Standard
	As	75	53934.9	1.0	**48.8281**	0.472	1.0	ug/L	-57	Standard
	Se	82	5478.9	1.7	**48.7379**	0.219	0.4	ug/L	10	Standard
	Se-1	77	3696.8	2.2	**49.0530**	0.564	1.1	ug/L	57	Standard
>	**Ga**	71	75.0	11.5				mg/L	78	Standard
	Rb	85	736.7	3.2				ug/L	22	Standard
	Y	89	379961.2	1.8				ug/L	388959	Standard
>	**Rh**	103	25.0	80.0				ug/L	8	Standard
	Mo	98	253772.2	0.4	**97.0756**	0.265	0.3	ug/L	10	Standard
	Ag	107	315169.4	0.8	**48.7029**	0.373	0.8	ug/L	66	Standard
	Cd	111	98932.6	1.0	**47.9148**	0.487	1.0	mg/L	3	Standard
	Cd	114	244157.1	0.8	**48.3649**	0.351	0.7	ug/L	4	Standard
>	**In**	115	537723.6	0.1				ug/L	523327	Standard
	Sn	118	275814.5	0.7	**48.2999**	0.362	0.7	ug/L	488	Standard
	Sb	123	226214.9	1.5	**48.4162**	0.697	1.4	ug/L	195	Standard
	Ba	135	92924.4	0.8	**46.8360**	0.345	0.7	ug/L	28	Standard
	Ce	140	66.7	17.3				ug/L	83	Standard
>	**Tb**	159	804134.6	1.3				ug/L	809211	Standard
	Ho	165	6.7	86.6				ug/L	13	Standard
	Tl	203	396009.4	1.0	**49.3909**	0.674	1.4	ug/L	4	Standard
	Tl	205	339614.0	0.2	**49.3858**	0.185	0.4	ug/L	8	Standard
	Pb	206	252515.5	0.5	**50.1724**	0.463	0.9	ug/L	230	Standard
	Pb	207	229211.8	0.4	**50.1802**	0.384	0.8	ug/L	184	Standard
	Pb	208	951344.2	0.4	**50.9182**	0.477	0.9	ug/L	775	Standard
	U	238	346548.4	0.3	**50.5353**	0.317	0.6	ug/L	3	Standard
>	**Bi**	209	481010.5	0.6				ug/L	472452	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 16:51:48
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3958.9	3.9	**5.3436**	0.224	4.2	mg/L	52	Standard
K	39	823.4	6.7	**3.6961**	0.247	6.7	mg/L	32	Standard
Ca	43	51.7	11.2	**2.7682**	0.752	27.2	mg/L	33	Standard
Fe	54	5893.1	3.2	**4.7790**	0.145	3.0	mg/L	138	Standard
Fe	57	1766.8	6.1	**4.8172**	0.333	6.9	mg/L	263	Standard
Sc-1	45	27909.0	0.3				mg/L	27861	Standard
Cl	35	133958.1	3.5				ug/L	100607	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2040.1	1.7				ug/L	1777	Standard
P	31	21852.4	3.1				ug/L	18074	Standard
S	34	5174.2	7.8				ug/L	3901	Standard
Sr	88	71.7	26.4				ug/L	60	Standard
C	12	70.0	42.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	7	Standard
Dy	164	9.0	115.9				mg/L	13	Standard
Ho-1	165	6.7	86.6				mg/L	13	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	8227.2	2.3				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.281		
Al	27	95.826		
Sc	45			
Ti	47	97.258		
V	51	97.999		
Cr	52	98.176		
Cr	53			
Mn	55	99.708		
Co	59	99.772		
Ni	60	98.822		
Cu	65	98.556		
Zn	66	99.404		
Ge	72		101.330	
As	75	97.656		
Se	82	97.476		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 16:51:48
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	97.076		
Ag	107	97.406		
Cd	111	95.830		
Cd	114			
In	115			102.751
Sn	118	96.600		
Sb	123	96.832		
Ba	135	93.672		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.782		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.836		
U	238	101.071		
Bi	209			101.812
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 16:51:48
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 16:52:43
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61777.4	1.9				ug/L	59299	Standard
	Be	9	33.3	8.7	**0.0397**	0.003	7.2	ug/L	17	Standard
	Al	27	7348.7	42.9	**0.0399**	0.023	57.1	ug/L	1472	Standard
	Sc	45	27099.2	0.3				ug/L	27861	Standard
	Ti	47	24.3	10.3	**-0.0123**	0.010	83.1	ug/L	28	Standard
	V	51	1132.4	5.9	**-0.0087**	0.010	115.6	ug/L	1156	Standard
	Cr	52	6106.9	2.6	**-0.0925**	0.022	23.6	ug/L	6689	Standard
	Cr	53	448.3	15.6	**0.1136**	0.080	70.1	ug/L	348	Standard
	Mn	55	1263.1	19.3	**0.0710**	0.039	54.5	ug/L	770	Standard
	Co	59	300.7	11.5	**0.0098**	0.005	53.5	ug/L	216	Standard
	Ni	60	327.0	2.3	**-0.0759**	0.005	6.3	ug/L	440	Standard
	Cu	65	229.3	1.7	**0.0687**	0.002	2.6	ug/L	116	Standard
	Zn	66	854.7	2.3	**0.5968**	0.021	3.6	ug/L	135	Standard
>	**Ge**	72	448375.3	0.4				ug/L	445277	Standard
	As	75	-33.6	80.7	**0.0067**	0.025	372.0	ug/L	-57	Standard
	Se	82	19.2	20.2	**0.0266**	0.035	132.5	ug/L	10	Standard
	Se-1	77	61.7	17.8	**0.1965**	0.147	74.6	ug/L	57	Standard
>	**Ga**	71	53.3	43.3				mg/L	78	Standard
	Rb	85	38.3	7.5				ug/L	22	Standard
	Y	89	383592.2	1.3				ug/L	388959	Standard
>	**Rh**	103	25.0	40.0				ug/L	8	Standard
	Mo	98	338.7	22.6	**0.1240**	0.030	24.1	ug/L	10	Standard
	Ag	107	156.0	19.0	**0.0107**	0.005	44.4	ug/L	66	Standard
	Cd	111	27.4	53.4	**0.0098**	0.007	73.6	mg/L	3	Standard
	Cd	114	59.8	31.7	**0.0080**	0.004	47.3	ug/L	4	Standard
>	**In**	115	533796.0	0.5				ug/L	523327	Standard
	Sn	118	938.4	19.6	**0.0902**	0.033	36.4	ug/L	488	Standard
	Sb	123	792.8	34.3	**0.1543**	0.058	37.8	ug/L	195	Standard
	Ba	135	57.7	36.8	**0.0121**	0.011	89.9	ug/L	28	Standard
	Ce	140	20.0	43.3				ug/L	83	Standard
>	**Tb**	159	800956.5	0.9				ug/L	809211	Standard
	Ho	165	8.3	69.3				ug/L	13	Standard
	Tl	203	140.3	29.1	**0.0155**	0.005	33.3	ug/L	4	Standard
	Tl	205	141.7	45.4	**0.0181**	0.009	52.2	ug/L	8	Standard
	Pb	206	302.3	7.3	**0.0119**	0.004	35.6	ug/L	230	Standard
	Pb	207	266.3	9.9	**0.0154**	0.006	37.6	ug/L	184	Standard
	Pb	208	1145.4	8.9	**0.0154**	0.005	34.2	ug/L	775	Standard
	U	238	103.0	35.3	**0.0143**	0.005	36.9	ug/L	3	Standard
>	**Bi**	209	482918.1	0.6				ug/L	472452	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 16:54:59
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	56.7	33.4	**0.0141**	0.027	189.7	mg/L	52	Standard
K	39	33.3	22.9	**0.0328**	0.036	110.6	mg/L	32	Standard
Ca	43	10.0	100.0	**-2.5212**	1.321	52.4	mg/L	33	Standard
Fe	54	154.5	17.1	**0.0205**	0.023	109.9	mg/L	138	Standard
Fe	57	285.0	11.5	**0.2363**	0.104	44.0	mg/L	263	Standard
Sc-1	45	27099.2	0.3				mg/L	27861	Standard
Cl	35	130535.3	1.2				ug/L	100607	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1846.8	2.1				ug/L	1777	Standard
P	31	21136.4	1.3				ug/L	18074	Standard
S	34	5092.5	1.9				ug/L	3901	Standard
Sr	88	66.7	28.4				ug/L	60	Standard
C	12	76.7	41.9				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	7	Standard
Dy	164	9.2	108.7				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	5607.7	2.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.696	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 16:54:59
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.001
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.215
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 16:54:59
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: PBS H3 WG574535-02
Sample Date/Time: Thursday, July 07, 2016 16:55:55
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60090.6	1.2				ug/L	59299	Standard
	Be	9	20.0	66.1	**0.0251**	0.016	63.7	ug/L	17	Standard
	Al	27	14870.8	17.2	**0.0969**	0.019	20.0	ug/L	1472	Standard
	Sc	45	27702.0	1.0				ug/L	27861	Standard
	Ti	47	69.3	5.5	**0.1761**	0.018	10.1	ug/L	28	Standard
	V	51	1255.9	1.9	**0.0096**	0.005	52.1	ug/L	1156	Standard
	Cr	52	7897.7	1.6	**0.1658**	0.021	12.5	ug/L	6689	Standard
	Cr	53	676.7	2.6	**0.3756**	0.014	3.8	ug/L	348	Standard
	Mn	55	1507.1	8.0	**0.1094**	0.018	16.9	ug/L	770	Standard
	Co	59	256.3	19.8	**0.0031**	0.007	238.7	ug/L	216	Standard
	Ni	60	468.3	0.9	**0.0022**	0.003	137.4	ug/L	440	Standard
	Cu	65	510.7	0.7	**0.2244**	0.003	1.2	ug/L	116	Standard
	Zn	66	1725.4	2.0	**1.4056**	0.024	1.7	ug/L	135	Standard
>	**Ge**	72	448290.4	0.8				ug/L	445277	Standard
	As	75	-57.4	40.1	**-0.0151**	0.021	142.4	ug/L	-57	Standard
	Se	82	22.0	31.0	**0.0516**	0.060	116.3	ug/L	10	Standard
	Se-1	77	57.7	18.5	**0.1423**	0.140	98.4	ug/L	57	Standard
>	**Ga**	71	50.0	36.1				mg/L	78	Standard
	Rb	85	53.3	53.3				ug/L	22	Standard
	Y	89	388084.7	1.6				ug/L	388959	Standard
>	**Rh**	103	16.7	17.3				ug/L	8	Standard
	Mo	98	244.2	12.2	**0.0873**	0.012	13.4	ug/L	10	Standard
	Ag	107	113.3	31.4	**0.0040**	0.006	137.4	ug/L	66	Standard
	Cd	111	17.2	65.1	**0.0048**	0.005	114.1	mg/L	3	Standard
	Cd	114	38.9	33.8	**0.0038**	0.003	68.2	ug/L	4	Standard
>	**In**	115	535142.3	0.2				ug/L	523327	Standard
	Sn	118	601.7	25.0	**0.0304**	0.027	87.8	ug/L	488	Standard
	Sb	123	412.0	37.1	**0.0720**	0.033	45.8	ug/L	195	Standard
	Ba	135	63.7	11.1	**0.0151**	0.004	23.5	ug/L	28	Standard
	Ce	140	53.3	5.4				ug/L	83	Standard
>	**Tb**	159	805928.3	0.9				ug/L	809211	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	69.3	56.4	**0.0067**	0.005	73.4	ug/L	4	Standard
	Tl	205	58.3	35.7	**0.0060**	0.003	51.3	ug/L	8	Standard
	Pb	206	300.3	3.9	**0.0116**	0.002	20.1	ug/L	230	Standard
	Pb	207	247.7	12.1	**0.0114**	0.007	60.5	ug/L	184	Standard
	Pb	208	1095.3	8.1	**0.0128**	0.005	40.1	ug/L	775	Standard
	U	238	44.3	60.1	**0.0058**	0.004	67.7	ug/L	3	Standard
>	**Bi**	209	482809.4	0.7				ug/L	472452	Standard

Sample ID: PBS H3 WG574535-02
Report Date/Time: Thursday, July 07, 2016 16:58:11
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	60.0	25.0	**0.0170**	0.021	123.7	mg/L	52	Standard
K	39	30.0	28.9	**0.0140**	0.042	299.4	mg/L	32	Standard
Ca	43	13.3	108.3	**-2.1122**	1.883	89.2	mg/L	33	Standard
Fe	54	134.3	20.8	**0.0009**	0.024	2759.0	mg/L	138	Standard
Fe	57	248.3	7.1	**0.1015**	0.052	51.0	mg/L	263	Standard
Sc-1	45	27702.0	1.0				mg/L	27861	Standard
Cl	35	132900.4	1.6				ug/L	100607	Standard
Kr	83	3.0	88.2				ug/L	2	Standard
Br	81	3093.6	1.7				ug/L	1777	Standard
P	31	21899.1	1.4				ug/L	18074	Standard
S	34	5422.6	2.4				ug/L	3901	Standard
Sr	88	73.3	55.5				ug/L	60	Standard
C	12	106.7	37.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	13.2	86.6				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	18764.9	1.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.335	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.677	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBS H3 WG574535-02
Report Date/Time: Thursday, July 07, 2016 16:58:11
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.258
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.192
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS H3 WG574535-02
Report Date/Time: Thursday, July 07, 2016 16:58:11
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: LCSS H3 WG574535-03
Sample Date/Time: Thursday, July 07, 2016 16:59:06
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59600.4	2.2				ug/L	59299	Standard
	Be	9	22942.4	2.7	**27.3928**	0.271	1.0	ug/L	17	Standard
	Al	27	9596.4	4.1	**0.0585**	0.002	3.5	ug/L	1472	Standard
	Sc	45	28052.6	1.3				ug/L	27861	Standard
	Ti	47	146.3	7.5	**0.4986**	0.045	9.1	ug/L	28	Standard
	V	51	166641.0	0.8	**24.5556**	0.084	0.3	ug/L	1156	Standard
	Cr	52	181861.1	1.6	**25.2600**	0.441	1.7	ug/L	6689	Standard
	Cr	53	22102.8	1.2	**24.9744**	0.130	0.5	ug/L	348	Standard
	Mn	55	162103.9	0.6	**25.4330**	0.213	0.8	ug/L	770	Standard
	Co	59	166059.0	0.1	**24.9938**	0.185	0.7	ug/L	216	Standard
	Ni	60	46206.7	1.2	**25.2892**	0.415	1.6	ug/L	440	Standard
	Cu	65	46917.2	1.0	**25.9259**	0.307	1.2	ug/L	116	Standard
	Zn	66	29175.7	0.3	**26.9227**	0.209	0.8	ug/L	135	Standard
>	Ge	72	447933.5	0.9				ug/L	445277	Standard
	As	75	27536.7	0.8	**25.1268**	0.148	0.6	ug/L	-57	Standard
	Se	82	2755.4	3.4	**24.6136**	0.645	2.6	ug/L	10	Standard
	Se-1	77	1922.1	2.9	**25.3843**	0.544	2.1	ug/L	57	Standard
>	Ga	71	56.7	20.4				mg/L	78	Standard
	Rb	85	131.7	43.8				ug/L	22	Standard
	Y	89	384807.4	1.2				ug/L	388959	Standard
>	Rh	103	31.7	24.1				ug/L	8	Standard
	Mo	98	89.3	11.5	**0.0276**	0.004	14.5	ug/L	10	Standard
	Ag	107	158241.1	0.9	**24.4822**	0.361	1.5	ug/L	66	Standard
	Cd	111	50508.9	0.7	**24.4962**	0.271	1.1	mg/L	3	Standard
	Cd	114	121761.2	0.5	**24.1525**	0.188	0.8	ug/L	4	Standard
>	In	115	536962.5	0.6				ug/L	523327	Standard
	Sn	118	605.0	13.0	**0.0306**	0.014	45.0	ug/L	488	Standard
	Sb	123	116983.7	1.0	**25.0667**	0.378	1.5	ug/L	195	Standard
	Ba	135	47059.3	0.9	**23.7449**	0.282	1.2	ug/L	28	Standard
	Ce	140	41.7	6.9				ug/L	83	Standard
>	Tb	159	799651.3	0.7				ug/L	809211	Standard
	Ho	165	15.0	66.7				ug/L	13	Standard
	Tl	203	199066.2	0.4	**24.8247**	0.143	0.6	ug/L	4	Standard
	Tl	205	172336.3	1.1	**25.0582**	0.323	1.3	ug/L	8	Standard
	Pb	206	129608.0	0.9	**25.7261**	0.171	0.7	ug/L	230	Standard
	Pb	207	112906.5	0.4	**24.6946**	0.145	0.6	ug/L	184	Standard
	Pb	208	483881.7	0.2	**25.8738**	0.062	0.2	ug/L	775	Standard
	U	238	170995.5	0.3	**24.9332**	0.046	0.2	ug/L	3	Standard
>	Bi	209	481035.4	0.2				ug/L	472452	Standard

Sample ID: LCSS H3 WG574535-03
Report Date/Time: Thursday, July 07, 2016 17:01:23
Page 1

Approved: July 08, 2016

Na	23	3.3	173.2	**6.4542**	11.170	173.1	mg/L	0	Standard
Mg	24	76.7	15.1	**0.0385**	0.015	39.3	mg/L	52	Standard
K	39	71.7	28.2	**0.2040**	0.090	44.3	mg/L	32	Standard
Ca	43	30.0	28.9	**-0.0271**	1.079	3986.2	mg/L	33	Standard
Fe	54	155.8	15.1	**0.0172**	0.021	121.1	mg/L	138	Standard
Fe	57	268.3	16.3	**0.1549**	0.144	93.1	mg/L	263	Standard
Sc-1	45	28052.6	1.3				mg/L	27861	Standard
Cl	35	130669.8	1.8				ug/L	100607	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	2083.5	12.2				ug/L	1777	Standard
P	31	22369.8	1.7				ug/L	18074	Standard
S	34	5157.5	4.8				ug/L	3901	Standard
Sr	88	76.7	7.5				ug/L	60	Standard
C	12	63.3	9.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	2.7	234.8				mg/L	13	Standard
Ho-1	165	15.0	66.7				mg/L	13	Standard
Er	166	13.3	86.6				mg/L	3	Standard
I	127	7276.7	3.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.508	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.597	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSS H3 WG574535-03
Report Date/Time: Thursday, July 07, 2016 17:01:23
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.606
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.817
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS H3 WG574535-03
Report Date/Time: Thursday, July 07, 2016 17:01:23
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144401
Sample Date/Time: Thursday, July 07, 2016 17:02:17
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60939.0	0.7				ug/L	59299	Standard
	Be	9	571.7	12.6	**0.6689**	0.083	12.5	ug/L	17	Standard
	Al	27	4419898.5	2.2	**32.1319**	0.595	1.9	ug/L	1472	Standard
	Sc	45	31885.2	0.5				ug/L	27861	Standard
	Ti	47	50880.6	0.6	**211.4212**	2.548	1.2	ug/L	28	Standard
	V	51	355129.0	0.2	**52.1692**	0.679	1.3	ug/L	1156	Standard
	Cr	52	177212.7	1.0	**24.4117**	0.131	0.5	ug/L	6689	Standard
	Cr	53	21600.4	3.5	**24.2223**	0.625	2.6	ug/L	348	Standard
	Mn	55	4290469.2	0.6	**671.7724**	11.783	1.8	ug/L	770	Standard
	Co	59	44409.0	0.6	**6.6119**	0.083	1.3	ug/L	216	Standard
	Ni	60	38396.9	0.7	**20.8236**	0.093	0.4	ug/L	440	Standard
	Cu	65	19535.6	0.6	**10.6869**	0.175	1.6	ug/L	116	Standard
	Zn	66	147030.7	1.0	**135.5196**	0.295	0.2	ug/L	135	Standard
>	Ge	72	451065.3	1.2				ug/L	445277	Standard
	As	75	8769.9	0.6	**7.9727**	0.082	1.0	ug/L	-57	Standard
	Se	82	42.9	9.4	**0.2380**	0.040	16.7	ug/L	10	Standard
	Se-1	77	95.0	11.1	**0.6400**	0.143	22.4	ug/L	57	Standard
>	Ga	71	14246.7	1.5				mg/L	78	Standard
	Rb	85	52997.5	0.9				ug/L	22	Standard
	Y	89	523051.1	1.4				ug/L	388959	Standard
>	Rh	103	106.7	34.6				ug/L	8	Standard
	Mo	98	2373.2	0.9	**0.9137**	0.006	0.7	ug/L	10	Standard
	Ag	107	1004.4	9.7	**0.1438**	0.015	10.6	ug/L	66	Standard
	Cd	111	955.7	3.2	**0.4657**	0.016	3.5	mg/L	3	Standard
	Cd	114	2196.5	5.3	**0.4372**	0.024	5.5	ug/L	4	Standard
>	In	115	530453.2	0.4				ug/L	523327	Standard
	Sn	118	1380.1	1.3	**0.1697**	0.003	1.6	ug/L	488	Standard
	Sb	123	514.3	30.3	**0.0949**	0.033	35.3	ug/L	195	Standard
	Ba	135	185920.1	0.4	**95.0102**	0.060	0.1	ug/L	28	Standard
	Ce	140	599861.0	0.6				ug/L	83	Standard
>	Tb	159	814799.5	1.5				ug/L	809211	Standard
	Ho	165	10733.8	0.6				ug/L	13	Standard
	Tl	203	394.3	15.1	**0.0489**	0.007	15.1	ug/L	4	Standard
	Tl	205	375.0	14.8	**0.0539**	0.008	14.7	ug/L	8	Standard
	Pb	206	55398.8	0.7	**11.3449**	0.162	1.4	ug/L	230	Standard
	Pb	207	46130.8	0.5	**10.4089**	0.081	0.8	ug/L	184	Standard
	Pb	208	202772.7	0.3	**11.1863**	0.069	0.6	ug/L	775	Standard
	U	238	8029.8	1.2	**1.2101**	0.020	1.6	ug/L	3	Standard
>	Bi	209	465190.3	0.8				ug/L	472452	Standard

Sample ID: L1606144401
Report Date/Time: Thursday, July 07, 2016 17:04:34
Page 1

Approved: July 08, 2016

Na	23	18.3	15.7	**31.3883**	4.791	15.3	mg/L	0	Standard
Mg	24	136.7	24.9	**0.0977**	0.040	41.2	mg/L	52	Standard
K	39	136.7	2.1	**0.4288**	0.010	2.4	mg/L	32	Standard
Ca	43	736.7	6.3	**78.6208**	5.015	6.4	mg/L	33	Standard
Fe	54	15089.8	1.5	**10.8496**	0.113	1.0	mg/L	138	Standard
Fe	57	5002.5	3.6	**12.9377**	0.445	3.4	mg/L	263	Standard
> **Sc-1**	45	31885.2	0.5				mg/L	27861	Standard
Cl	35	132784.7	1.4				ug/L	100607	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	2196.8	3.5				ug/L	1777	Standard
P	31	23912.2	3.4				ug/L	18074	Standard
S	34	5342.6	0.5				ug/L	3901	Standard
Sr	88	406.7	15.8				ug/L	60	Standard
C	12	110.0	32.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	12.4				mg/L	7	Standard
Dy	164	16367.5	1.7				mg/L	13	Standard
Ho-1	165	10733.8	0.6				mg/L	13	Standard
Er	166	10060.0	3.4				mg/L	3	Standard
I	127	19330.7	2.0				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.765	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.300	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606144401
Report Date/Time: Thursday, July 07, 2016 17:04:34
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.362	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.463	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606144401
Report Date/Time: Thursday, July 07, 2016 17:04:34
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144402
Sample Date/Time: Thursday, July 07, 2016 17:05:29
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63630.0	1.4				ug/L	59299	Standard
	Be	9	901.7	4.4	**1.0098**	0.044	4.3	ug/L	17	Standard
	Al	27	7390489.5	1.5	**51.4660**	0.536	1.0	ug/L	1472	Standard
	Sc	45	33351.7	1.1				ug/L	27861	Standard
	Ti	47	11332.2	1.3	**46.0116**	0.444	1.0	ug/L	28	Standard
	V	51	232604.3	2.5	**33.3882**	0.705	2.1	ug/L	1156	Standard
	Cr	52	169070.4	0.6	**22.7396**	0.179	0.8	ug/L	6689	Standard
	Cr	53	21041.3	2.7	**23.0927**	0.852	3.7	ug/L	348	Standard
	Mn	55	3370651.2	0.2	**516.6706**	6.861	1.3	ug/L	770	Standard
	Co	59	59309.2	0.7	**8.6571**	0.158	1.8	ug/L	216	Standard
	Ni	60	39503.4	0.3	**20.9783**	0.204	1.0	ug/L	440	Standard
	Cu	65	20744.2	0.1	**11.1127**	0.123	1.1	ug/L	116	Standard
	Zn	66	98295.1	0.2	**88.6450**	1.207	1.4	ug/L	135	Standard
>	Ge	72	460698.8	1.2				ug/L	445277	Standard
	As	75	6125.9	1.6	**5.4644**	0.095	1.7	ug/L	-57	Standard
	Se	82	45.7	10.4	**0.2539**	0.045	17.7	ug/L	10	Standard
	Se-1	77	94.3	6.4	**0.6042**	0.074	12.2	ug/L	57	Standard
>	Ga	71	17136.4	1.8				mg/L	78	Standard
	Rb	85	164134.4	1.5				ug/L	22	Standard
	Y	89	568300.6	1.8				ug/L	388959	Standard
>	Rh	103	95.0	24.1				ug/L	8	Standard
	Mo	98	2284.0	2.6	**0.8599**	0.023	2.7	ug/L	10	Standard
	Ag	107	714.0	3.6	**0.0959**	0.004	4.3	ug/L	66	Standard
	Cd	111	300.6	2.7	**0.1408**	0.005	3.5	mg/L	3	Standard
	Cd	114	687.5	4.7	**0.1312**	0.007	5.5	ug/L	4	Standard
>	In	115	542263.1	0.7				ug/L	523327	Standard
	Sn	118	1026.7	13.2	**0.1029**	0.024	23.2	ug/L	488	Standard
	Sb	123	320.1	44.0	**0.0515**	0.030	59.0	ug/L	195	Standard
	Ba	135	303023.9	0.6	**151.5007**	2.016	1.3	ug/L	28	Standard
	Ce	140	911655.8	1.0				ug/L	83	Standard
>	Tb	159	832139.4	0.7				ug/L	809211	Standard
	Ho	165	14635.4	1.1				ug/L	13	Standard
	Tl	203	736.7	0.4	**0.0911**	0.001	0.6	ug/L	4	Standard
	Tl	205	618.3	1.7	**0.0886**	0.001	1.1	ug/L	8	Standard
	Pb	206	190808.3	0.1	**38.3995**	0.233	0.6	ug/L	230	Standard
	Pb	207	160116.6	0.7	**35.5018**	0.107	0.3	ug/L	184	Standard
	Pb	208	700379.7	0.5	**37.9683**	0.418	1.1	ug/L	775	Standard
	U	238	5275.6	1.4	**0.7787**	0.007	1.0	ug/L	3	Standard
>	Bi	209	474758.2	0.6				ug/L	472452	Standard

Sample ID: L1606144402
Report Date/Time: Thursday, July 07, 2016 17:07:46
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**2.7041**	4.675	172.9	mg/L	0	Standard
Mg	24	203.3	8.6	**0.1669**	0.021	12.8	mg/L	52	Standard
K	39	318.3	9.2	**1.1097**	0.102	9.2	mg/L	32	Standard
Ca	43	433.3	15.7	**42.5692**	7.607	17.9	mg/L	33	Standard
Fe	54	19702.2	1.8	**13.5722**	0.286	2.1	mg/L	138	Standard
Fe	57	5614.4	2.4	**13.9315**	0.275	2.0	mg/L	263	Standard
> **Sc-1**	45	33351.7	1.1				mg/L	27861	Standard
Cl	35	126799.1	1.7				ug/L	100607	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2430.2	4.9				ug/L	1777	Standard
P	31	21044.6	2.4				ug/L	18074	Standard
S	34	5601.0	1.6				ug/L	3901	Standard
Sr	88	380.0	13.7				ug/L	60	Standard
C	12	176.7	8.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	66.1				mg/L	7	Standard
Dy	164	23425.1	1.2				mg/L	13	Standard
Ho-1	165	14635.4	1.1				mg/L	13	Standard
Er	166	13235.8	3.1				mg/L	3	Standard
I	127	20518.9	3.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.303	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.463	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144402
Report Date/Time: Thursday, July 07, 2016 17:07:46
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.618
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.488
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144402
Report Date/Time: Thursday, July 07, 2016 17:07:46
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144403
Sample Date/Time: Thursday, July 07, 2016 17:08:40
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64761.4	0.8				ug/L	59299	Standard
	Be	9	1030.0	3.0	**1.1333**	0.039	3.4	ug/L	17	Standard
	Al	27	16213795.4	1.1	**110.9591**	1.959	1.8	ug/L	1472	Standard
	Sc	45	35215.9	2.5				ug/L	27861	Standard
	Ti	47	4245.9	1.6	**16.7004**	0.390	2.3	ug/L	28	Standard
	V	51	167323.1	1.0	**23.3144**	0.356	1.5	ug/L	1156	Standard
	Cr	52	136158.8	1.6	**17.6062**	0.416	2.4	ug/L	6689	Standard
	Cr	53	16729.2	3.8	**17.7647**	0.602	3.4	ug/L	348	Standard
	Mn	55	2557501.5	0.6	**381.3137**	1.284	0.3	ug/L	770	Standard
	Co	59	74268.2	0.7	**10.5526**	0.048	0.5	ug/L	216	Standard
	Ni	60	46771.7	0.7	**24.2025**	0.342	1.4	ug/L	440	Standard
	Cu	65	28943.6	0.8	**15.1047**	0.223	1.5	ug/L	116	Standard
	Zn	66	53822.4	0.5	**47.1241**	0.162	0.3	ug/L	135	Standard
>	**Ge**	72	473556.5	0.7				ug/L	445277	Standard
	As	75	5349.8	0.9	**4.6482**	0.072	1.6	ug/L	-57	Standard
	Se	82	48.9	5.6	**0.2702**	0.026	9.7	ug/L	10	Standard
	Se-1	77	114.3	13.6	**0.8275**	0.205	24.8	ug/L	57	Standard
>	**Ga**	71	20602.3	1.9				mg/L	78	Standard
	Rb	85	210120.5	1.5				ug/L	22	Standard
	Y	89	649907.4	1.3				ug/L	388959	Standard
>	**Rh**	103	30.0	33.3				ug/L	8	Standard
	Mo	98	381.8	7.7	**0.1345**	0.011	8.5	ug/L	10	Standard
	Ag	107	573.7	5.0	**0.0721**	0.004	6.0	ug/L	66	Standard
	Cd	111	262.3	3.7	**0.1191**	0.005	3.8	mg/L	3	Standard
	Cd	114	514.8	6.3	**0.0946**	0.007	6.9	ug/L	4	Standard
>	**In**	115	556660.4	0.6				ug/L	523327	Standard
	Sn	118	503.3	19.7	**0.0097**	0.017	178.5	ug/L	488	Standard
	Sb	123	323.4	35.8	**0.0503**	0.024	47.8	ug/L	195	Standard
	Ba	135	370840.7	0.3	**180.6060**	0.783	0.4	ug/L	28	Standard
	Ce	140	1338325.5	0.8				ug/L	83	Standard
>	**Tb**	159	857127.5	1.2				ug/L	809211	Standard
	Ho	165	21116.4	2.6				ug/L	13	Standard
	Tl	203	1044.7	1.7	**0.1260**	0.003	2.1	ug/L	4	Standard
	Tl	205	866.7	11.9	**0.1213**	0.015	12.2	ug/L	8	Standard
	Pb	206	77980.2	0.3	**15.1810**	0.038	0.2	ug/L	230	Standard
	Pb	207	64541.8	0.3	**13.8443**	0.087	0.6	ug/L	184	Standard
	Pb	208	286944.7	0.8	**15.0485**	0.057	0.4	ug/L	775	Standard
	U	238	4358.3	1.5	**0.6234**	0.007	1.1	ug/L	3	Standard
>	**Bi**	209	489834.1	0.5				ug/L	472452	Standard

Sample ID: L1606144403
Report Date/Time: Thursday, July 07, 2016 17:10:57
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	171.7	11.0	**0.1206**	0.025	20.6	mg/L	52	Standard
K	39	308.3	21.1	**1.0076**	0.238	23.6	mg/L	32	Standard
Ca	43	101.7	10.2	**6.4835**	1.271	19.6	mg/L	33	Standard
Fe	54	20081.5	1.3	**13.0989**	0.161	1.2	mg/L	138	Standard
Fe	57	5521.0	2.2	**12.9394**	0.634	4.9	mg/L	263	Standard
Sc-1	45	35215.9	2.5				mg/L	27861	Standard
Cl	35	122808.4	1.3				ug/L	100607	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2423.5	6.3				ug/L	1777	Standard
P	31	22361.5	3.4				ug/L	18074	Standard
S	34	5160.9	6.0				ug/L	3901	Standard
Sr	88	118.3	17.1				ug/L	60	Standard
C	12	220.0	12.0				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	50.0	34.6				mg/L	7	Standard
Dy	164	34374.0	3.2				mg/L	13	Standard
Ho-1	165	21116.4	2.6				mg/L	13	Standard
Er	166	19075.3	2.1				mg/L	3	Standard
I	127	16278.7	4.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.211	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.351	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144403
Report Date/Time: Thursday, July 07, 2016 17:10:57
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.370
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.679
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144403
Report Date/Time: Thursday, July 07, 2016 17:10:57
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144404
Sample Date/Time: Thursday, July 07, 2016 17:11:52
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63924.6	1.6				ug/L	59299	Standard
	Be	9	771.7	3.3	**0.8604**	0.026	3.0	ug/L	17	Standard
	Al	27	10230820.6	1.5	**70.9313**	1.421	2.0	ug/L	1472	Standard
	Sc	45	35140.7	0.3				ug/L	27861	Standard
	Ti	47	4668.1	3.1	**18.3052**	0.677	3.7	ug/L	28	Standard
	V	51	104152.6	0.5	**14.3917**	0.139	1.0	ug/L	1156	Standard
	Cr	52	114303.9	0.7	**14.5661**	0.189	1.3	ug/L	6689	Standard
	Cr	53	13702.9	0.8	**14.4261**	0.189	1.3	ug/L	348	Standard
	Mn	55	4182962.4	0.2	**621.4745**	5.069	0.8	ug/L	770	Standard
	Co	59	60735.8	0.2	**8.5918**	0.062	0.7	ug/L	216	Standard
	Ni	60	38531.3	1.1	**19.8186**	0.255	1.3	ug/L	440	Standard
	Cu	65	20041.9	0.8	**10.4024**	0.116	1.1	ug/L	116	Standard
	Zn	66	39491.4	0.9	**34.3974**	0.386	1.1	ug/L	135	Standard
>	Ge	72	475298.0	0.6				ug/L	445277	Standard
	As	75	3461.0	1.7	**3.0090**	0.030	1.0	ug/L	-57	Standard
	Se	82	39.8	30.2	**0.1916**	0.099	51.9	ug/L	10	Standard
	Se-1	77	94.0	6.5	**0.5618**	0.073	13.0	ug/L	57	Standard
>	Ga	71	17324.9	0.8				mg/L	78	Standard
	Rb	85	146594.1	0.8				ug/L	22	Standard
	Y	89	628937.4	2.3				ug/L	388959	Standard
>	Rh	103	26.7	28.6				ug/L	8	Standard
	Mo	98	729.7	2.6	**0.2636**	0.007	2.6	ug/L	10	Standard
	Ag	107	430.7	4.4	**0.0509**	0.003	6.3	ug/L	66	Standard
	Cd	111	168.4	8.7	**0.0754**	0.007	9.6	mg/L	3	Standard
	Cd	114	402.9	6.1	**0.0734**	0.005	6.7	ug/L	4	Standard
>	In	115	555505.5	0.6				ug/L	523327	Standard
	Sn	118	1011.7	11.0	**0.0962**	0.020	20.7	ug/L	488	Standard
	Sb	123	346.7	22.7	**0.0552**	0.016	29.7	ug/L	195	Standard
	Ba	135	277107.4	0.4	**135.2315**	0.470	0.3	ug/L	28	Standard
	Ce	140	1011016.2	0.6				ug/L	83	Standard
>	Tb	159	842546.1	2.4				ug/L	809211	Standard
	Ho	165	18317.7	2.7				ug/L	13	Standard
	Tl	203	832.4	3.7	**0.1010**	0.005	4.7	ug/L	4	Standard
	Tl	205	736.7	7.5	**0.1037**	0.008	7.6	ug/L	8	Standard
	Pb	206	48141.7	0.9	**9.4439**	0.234	2.5	ug/L	230	Standard
	Pb	207	39106.4	0.4	**8.4516**	0.161	1.9	ug/L	184	Standard
	Pb	208	175385.1	0.3	**9.2677**	0.133	1.4	ug/L	775	Standard
	U	238	3808.1	1.9	**0.5497**	0.004	0.6	ug/L	3	Standard
>	Bi	209	485303.2	1.6				ug/L	472452	Standard

Sample ID: L1606144404
Report Date/Time: Thursday, July 07, 2016 17:14:09
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**2.5985**	4.492	172.9	mg/L	0	Standard
Mg	24	128.3	19.2	**0.0736**	0.027	36.1	mg/L	52	Standard
K	39	230.0	20.7	**0.7220**	0.178	24.7	mg/L	32	Standard
Ca	43	48.3	21.5	**1.0700**	1.066	99.6	mg/L	33	Standard
Fe	54	14089.6	0.9	**9.1752**	0.087	1.0	mg/L	138	Standard
Fe	57	3820.5	1.3	**8.7583**	0.098	1.1	mg/L	263	Standard
> **Sc-1**	45	35140.7	0.3				mg/L	27861	Standard
Cl	35	119065.4	1.6				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2320.2	5.9				ug/L	1777	Standard
P	31	20957.8	1.0				ug/L	18074	Standard
S	34	4647.4	3.0				ug/L	3901	Standard
Sr	88	118.3	2.4				ug/L	60	Standard
C	12	116.7	34.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	66.7				mg/L	7	Standard
Dy	164	29631.9	1.3				mg/L	13	Standard
Ho-1	165	18317.7	2.7				mg/L	13	Standard
Er	166	16045.2	4.8				mg/L	3	Standard
I	127	26054.1	2.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.800	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.742	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144404
Report Date/Time: Thursday, July 07, 2016 17:14:09
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.149
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.720
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144404
Report Date/Time: Thursday, July 07, 2016 17:14:09
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144405
Sample Date/Time: Thursday, July 07, 2016 17:15:03
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63042.6	0.9				ug/L	59299	Standard
	Be	9	511.7	8.8	**0.5790**	0.053	9.1	ug/L	17	Standard
	Al	27	12097422.8	1.4	**85.0336**	0.433	0.5	ug/L	1472	Standard
	Sc	45	32676.9	0.8				ug/L	27861	Standard
	Ti	47	3699.8	1.3	**14.5090**	0.160	1.1	ug/L	28	Standard
	V	51	97070.5	0.9	**13.4258**	0.142	1.1	ug/L	1156	Standard
	Cr	52	85225.4	0.4	**10.6339**	0.038	0.4	ug/L	6689	Standard
	Cr	53	10403.6	0.8	**10.8765**	0.108	1.0	ug/L	348	Standard
	Mn	55	1564880.7	0.3	**232.8413**	1.452	0.6	ug/L	770	Standard
	Co	59	41553.6	1.0	**5.8776**	0.045	0.8	ug/L	216	Standard
	Ni	60	28548.5	0.8	**14.6444**	0.090	0.6	ug/L	440	Standard
	Cu	65	21137.7	0.4	**10.9943**	0.011	0.1	ug/L	116	Standard
	Zn	66	39760.8	0.9	**34.6962**	0.210	0.6	ug/L	135	Standard
>	Ge	72	474425.2	0.3				ug/L	445277	Standard
	As	75	2358.0	4.0	**2.0659**	0.084	4.1	ug/L	-57	Standard
	Se	82	53.3	12.6	**0.3073**	0.058	19.0	ug/L	10	Standard
	Se-1	77	94.0	7.0	**0.5644**	0.087	15.4	ug/L	57	Standard
>	Ga	71	11717.9	1.3				mg/L	78	Standard
	Rb	85	114304.6	0.6				ug/L	22	Standard
	Y	89	567689.4	1.6				ug/L	388959	Standard
>	Rh	103	38.3	27.2				ug/L	8	Standard
	Mo	98	207.2	2.6	**0.0704**	0.002	2.3	ug/L	10	Standard
	Ag	107	389.3	7.5	**0.0449**	0.004	9.7	ug/L	66	Standard
	Cd	111	245.6	9.5	**0.1119**	0.010	9.3	mg/L	3	Standard
	Cd	114	616.2	4.5	**0.1147**	0.005	4.5	ug/L	4	Standard
>	In	115	553519.4	0.5				ug/L	523327	Standard
	Sn	118	451.7	13.8	**0.0013**	0.011	830.4	ug/L	488	Standard
	Sb	123	242.0	27.8	**0.0337**	0.014	42.1	ug/L	195	Standard
	Ba	135	121636.3	1.3	**59.5617**	0.530	0.9	ug/L	28	Standard
	Ce	140	840491.5	0.4				ug/L	83	Standard
>	Tb	159	841378.0	1.4				ug/L	809211	Standard
	Ho	165	14096.6	1.8				ug/L	13	Standard
	Tl	203	552.7	9.0	**0.0667**	0.006	8.5	ug/L	4	Standard
	Tl	205	453.3	4.5	**0.0632**	0.004	5.9	ug/L	8	Standard
	Pb	206	44163.9	0.6	**8.7057**	0.083	1.0	ug/L	230	Standard
	Pb	207	36188.5	0.2	**7.8600**	0.086	1.1	ug/L	184	Standard
	Pb	208	161120.7	0.5	**8.5568**	0.130	1.5	ug/L	775	Standard
	U	238	4182.2	1.3	**0.6071**	0.007	1.1	ug/L	3	Standard
>	Bi	209	482663.5	1.3				ug/L	472452	Standard

Sample ID: L1606144405
Report Date/Time: Thursday, July 07, 2016 17:17:20
Page 1

Approved: July 08, 2016

Na	23	3.3	173.2	**5.5915**	9.676	173.1	mg/L	0	Standard
Mg	24	130.0	32.9	**0.0863**	0.051	59.0	mg/L	52	Standard
K	39	216.7	9.3	**0.7323**	0.074	10.2	mg/L	32	Standard
Ca	43	53.3	10.8	**1.9873**	0.662	33.3	mg/L	33	Standard
Fe	54	10557.2	2.4	**7.3726**	0.225	3.1	mg/L	138	Standard
Fe	57	2938.6	3.9	**7.1293**	0.353	4.9	mg/L	263	Standard
> **Sc-1**	45	32676.9	0.8				mg/L	27861	Standard
Cl	35	122198.1	0.7				ug/L	100607	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	2653.6	6.2				ug/L	1777	Standard
P	31	21288.3	1.1				ug/L	18074	Standard
S	34	5319.3	5.6				ug/L	3901	Standard
Sr	88	143.3	16.5				ug/L	60	Standard
C	12	193.3	10.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	21.7				mg/L	7	Standard
Dy	164	22895.1	2.5				mg/L	13	Standard
Ho-1	165	14096.6	1.8				mg/L	13	Standard
Er	166	12451.8	5.5				mg/L	3	Standard
I	127	26481.5	1.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.313	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.546	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144405
Report Date/Time: Thursday, July 07, 2016 17:17:20
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.769
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.161
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144406
Sample Date/Time: Thursday, July 07, 2016 17:18:15
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63681.9	1.6				ug/L	59299	Standard
	Be	9	796.7	14.5	**0.8927**	0.139	15.6	ug/L	17	Standard
	Al	27	10040718.8	2.0	**69.8662**	0.570	0.8	ug/L	1472	Standard
	Sc	45	34479.2	0.8				ug/L	27861	Standard
	Ti	47	5538.0	1.9	**21.1115**	0.467	2.2	ug/L	28	Standard
	V	51	150714.1	1.4	**20.3016**	0.271	1.3	ug/L	1156	Standard
	Cr	52	433271.4	0.6	**56.2432**	0.499	0.9	ug/L	6689	Standard
	Cr	53	53646.5	1.0	**55.9850**	0.507	0.9	ug/L	348	Standard
	Mn	55	3321224.8	1.2	**479.3201**	7.096	1.5	ug/L	770	Standard
	Co	59	75140.2	0.4	**10.3327**	0.021	0.2	ug/L	216	Standard
	Ni	60	40179.9	0.2	**20.0793**	0.059	0.3	ug/L	440	Standard
	Cu	65	179669.4	0.9	**91.0390**	1.043	1.1	ug/L	116	Standard
	Zn	66	436590.2	0.4	**371.3245**	1.966	0.5	ug/L	135	Standard
>	**Ge**	72	489270.9	0.3				ug/L	445277	Standard
	As	75	6174.4	1.1	**5.1877**	0.065	1.2	ug/L	-57	Standard
	Se	82	131.4	8.4	**0.9355**	0.094	10.0	ug/L	10	Standard
	Se-1	77	154.3	16.7	**1.2759**	0.322	25.3	ug/L	57	Standard
>	**Ga**	71	15127.6	2.1				mg/L	78	Standard
	Rb	85	190864.8	1.6				ug/L	22	Standard
	Y	89	596675.6	0.8				ug/L	388959	Standard
>	**Rh**	103	120.0	28.9				ug/L	8	Standard
	Mo	98	7038.7	1.0	**2.5467**	0.036	1.4	ug/L	10	Standard
	Ag	107	1942.5	1.9	**0.2711**	0.006	2.2	ug/L	66	Standard
	Cd	111	11145.2	1.1	**5.1151**	0.072	1.4	mg/L	3	Standard
	Cd	114	27701.5	2.5	**5.1992**	0.107	2.0	ug/L	4	Standard
>	**In**	115	567110.3	0.5				ug/L	523327	Standard
	Sn	118	2943.6	4.5	**0.4139**	0.023	5.7	ug/L	488	Standard
	Sb	123	1155.9	3.7	**0.2180**	0.008	3.6	ug/L	195	Standard
	Ba	135	493322.8	1.1	**235.8349**	2.898	1.2	ug/L	28	Standard
	Ce	140	939644.2	0.5				ug/L	83	Standard
>	**Tb**	159	862341.8	1.3				ug/L	809211	Standard
	Ho	165	14563.7	1.8				ug/L	13	Standard
	Tl	203	863.7	3.1	**0.0981**	0.004	3.7	ug/L	4	Standard
	Tl	205	748.4	12.1	**0.0986**	0.012	12.2	ug/L	8	Standard
	Pb	206	1832153.9	0.2	**338.3829**	2.955	0.9	ug/L	230	Standard
	Pb	207	1540625.5	0.7	**313.4908**	3.820	1.2	ug/L	184	Standard
	Pb	208	6779443.0	0.3	**337.2635**	2.277	0.7	ug/L	775	Standard
	U	238	9249.8	0.6	**1.2521**	0.003	0.2	ug/L	3	Standard
>	**Bi**	209	517894.6	0.7				ug/L	472452	Standard

Sample ID: L1606144406
Report Date/Time: Thursday, July 07, 2016 17:20:32
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	201.7	14.3	**0.1573**	0.031	19.6	mg/L	52	Standard
K	39	268.3	19.1	**0.8830**	0.202	22.8	mg/L	32	Standard
Ca	43	123.3	6.2	**8.9279**	0.802	9.0	mg/L	33	Standard
Fe	54	17167.7	2.5	**11.4230**	0.376	3.3	mg/L	138	Standard
Fe	57	4824.1	3.7	**11.4675**	0.511	4.5	mg/L	263	Standard
> **Sc-1**	45	34479.2	0.8				mg/L	27861	Standard
Cl	35	125056.7	1.4				ug/L	100607	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	7615.3	7.7				ug/L	1777	Standard
P	31	21935.9	2.8				ug/L	18074	Standard
S	34	4960.8	1.6				ug/L	3901	Standard
Sr	88	150.0	5.8				ug/L	60	Standard
C	12	930.0	5.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	406.7	16.4				mg/L	7	Standard
Dy	164	24019.3	0.7				mg/L	13	Standard
Ho-1	165	14563.7	1.8				mg/L	13	Standard
Er	166	13305.8	3.9				mg/L	3	Standard
I	127	52007.5	3.4				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		107.391	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.880	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606144406
Report Date/Time: Thursday, July 07, 2016 17:20:32
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.366
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.619
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144406
Report Date/Time: Thursday, July 07, 2016 17:20:32
Page 3

Approved: July 08, 2016

Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144406PS WG575059-01
Sample Date/Time: Thursday, July 07, 2016 17:21:26
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63663.5	1.7				ug/L	59299	Standard
	Be	9	48270.1	1.0	**53.9633**	0.837	1.6	ug/L	17	Standard
	Al	27	9912237.7	0.9	**69.0027**	0.962	1.4	ug/L	1472	Standard
	Sc	45	34526.0	1.8				ug/L	27861	Standard
	Ti	47	5518.3	1.4	**21.1179**	0.295	1.4	ug/L	28	Standard
	V	51	503384.8	1.0	**68.4897**	0.798	1.2	ug/L	1156	Standard
	Cr	52	805938.1	0.7	**105.8709**	0.858	0.8	ug/L	6689	Standard
	Cr	53	101750.5	0.8	**106.9630**	0.571	0.5	ug/L	348	Standard
	Mn	55	3634580.5	0.5	**526.6017**	4.582	0.9	ug/L	770	Standard
	Co	59	425547.3	1.0	**58.9133**	0.587	1.0	ug/L	216	Standard
	Ni	60	137335.7	1.1	**69.5223**	0.636	0.9	ug/L	440	Standard
	Cu	65	276326.7	0.1	**140.5930**	0.647	0.5	ug/L	116	Standard
	Zn	66	497399.6	0.9	**424.7338**	5.078	1.2	ug/L	135	Standard
>	Ge	72	487365.3	0.3				ug/L	445277	Standard
	As	75	66543.2	0.5	**55.7612**	0.445	0.8	ug/L	-57	Standard
	Se	82	6270.8	1.3	**51.6512**	0.754	1.5	ug/L	10	Standard
	Se-1	77	4279.9	2.3	**52.6202**	1.059	2.0	ug/L	57	Standard
>	Ga	71	15364.5	3.5				mg/L	78	Standard
	Rb	85	190667.2	0.7				ug/L	22	Standard
	Y	89	592347.7	1.0				ug/L	388959	Standard
>	Rh	103	140.0	9.4				ug/L	8	Standard
	Mo	98	6914.2	1.8	**2.5189**	0.053	2.1	ug/L	10	Standard
	Ag	107	329428.5	0.7	**48.6048**	0.531	1.1	ug/L	66	Standard
	Cd	111	116119.5	0.5	**53.6960**	0.419	0.8	mg/L	3	Standard
	Cd	114	285423.2	0.8	**53.9836**	0.638	1.2	ug/L	4	Standard
>	In	115	563202.8	0.4				ug/L	523327	Standard
	Sn	118	4122.2	4.2	**0.6146**	0.027	4.3	ug/L	488	Standard
	Sb	123	234632.9	2.3	**47.9478**	1.205	2.5	ug/L	195	Standard
	Ba	135	585429.0	0.7	**281.8107**	2.367	0.8	ug/L	28	Standard
	Ce	140	931331.0	1.2				ug/L	83	Standard
>	Tb	159	856026.8	1.3				ug/L	809211	Standard
	Ho	165	14872.3	1.1				ug/L	13	Standard
	Tl	203	411167.0	0.4	**47.6813**	0.261	0.5	ug/L	4	Standard
	Tl	205	356611.5	1.1	**48.2199**	0.753	1.6	ug/L	8	Standard
	Pb	206	2141052.7	0.4	**395.8767**	2.451	0.6	ug/L	230	Standard
	Pb	207	1750473.5	0.3	**356.5860**	2.029	0.6	ug/L	184	Standard
	Pb	208	7681131.3	0.4	**382.5490**	1.722	0.5	ug/L	775	Standard
	U	238	358383.4	0.8	**48.5932**	0.428	0.9	ug/L	3	Standard
>	Bi	209	517316.7	0.7				ug/L	472452	Standard

Sample ID: L1606144406PS WG575059-01
Report Date/Time: Thursday, July 07, 2016 17:23:43
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**2.6692**	4.615	172.9	mg/L	0	Standard
Mg	24	171.7	16.0	**0.1240**	0.031	25.1	mg/L	52	Standard
K	39	281.7	8.4	**0.9301**	0.077	8.3	mg/L	32	Standard
Ca	43	103.3	10.1	**6.8478**	1.150	16.8	mg/L	33	Standard
Fe	54	16661.1	1.4	**11.0661**	0.048	0.4	mg/L	138	Standard
Fe	57	4737.4	1.6	**11.2326**	0.213	1.9	mg/L	263	Standard
> **Sc-1**	45	34526.0	1.8				mg/L	27861	Standard
Cl	35	123863.6	1.2				ug/L	100607	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	7521.9	2.6				ug/L	1777	Standard
P	31	22017.7	1.3				ug/L	18074	Standard
S	34	5217.6	4.3				ug/L	3901	Standard
Sr	88	151.7	18.2				ug/L	60	Standard
C	12	823.4	10.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	400.0	13.0				mg/L	7	Standard
Dy	164	24220.5	1.6				mg/L	13	Standard
Ho-1	165	14872.3	1.1				mg/L	13	Standard
Er	166	13149.0	1.7				mg/L	3	Standard
I	127	55704.1	5.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.360	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.452	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144406PS WG575059-01
Report Date/Time: Thursday, July 07, 2016 17:23:43
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.620
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.496
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606144406PS WG575059-01
Report Date/Time: Thursday, July 07, 2016 17:23:43
Page 3

Approved: July 08, 2016

Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144406SDL WG575059-02
Sample Date/Time: Thursday, July 07, 2016 17:24:38
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55079.9	1.0				ug/L	59299	Standard
	Be	9	110.0	27.3	**0.1432**	0.037	26.1	ug/L	17	Standard
	Al	27	1024956.9	0.1	**8.2352**	0.085	1.0	ug/L	1472	Standard
	Sc	45	27369.7	1.9				ug/L	27861	Standard
	Ti	47	570.0	4.0	**2.3069**	0.101	4.4	ug/L	28	Standard
	V	51	15709.6	2.1	**2.1888**	0.057	2.6	ug/L	1156	Standard
	Cr	52	46835.3	2.0	**5.8815**	0.169	2.9	ug/L	6689	Standard
	Cr	53	5457.7	7.2	**5.9574**	0.482	8.1	ug/L	348	Standard
	Mn	55	340050.1	1.0	**54.2691**	0.739	1.4	ug/L	770	Standard
	Co	59	7648.9	2.6	**1.1341**	0.031	2.8	ug/L	216	Standard
	Ni	60	4319.6	1.5	**2.1662**	0.045	2.1	ug/L	440	Standard
	Cu	65	18723.9	0.7	**10.4618**	0.103	1.0	ug/L	116	Standard
	Zn	66	48797.1	0.9	**45.8174**	0.460	1.0	ug/L	135	Standard
>	**Ge**	72	441533.5	0.5				ug/L	445277	Standard
	As	75	649.9	2.3	**0.6381**	0.016	2.5	ug/L	-57	Standard
	Se	82	34.6	11.8	**0.1701**	0.039	22.6	ug/L	10	Standard
	Se-1	77	65.0	6.7	**0.2553**	0.057	22.3	ug/L	57	Standard
>	**Ga**	71	1535.1	1.1				mg/L	78	Standard
	Rb	85	19270.6	1.9				ug/L	22	Standard
	Y	89	394682.8	0.1				ug/L	388959	Standard
>	**Rh**	103	38.3	49.4				ug/L	8	Standard
	Mo	98	680.3	0.9	**0.2640**	0.003	1.2	ug/L	10	Standard
	Ag	107	375.0	18.9	**0.0467**	0.012	25.1	ug/L	66	Standard
	Cd	111	1178.9	1.4	**0.5900**	0.009	1.5	mg/L	3	Standard
	Cd	114	2819.1	2.6	**0.5767**	0.017	2.9	ug/L	4	Standard
>	**In**	115	517242.0	0.6				ug/L	523327	Standard
	Sn	118	480.0	6.3	**0.0119**	0.006	50.4	ug/L	488	Standard
	Sb	123	1543.7	35.8	**0.3266**	0.121	37.1	ug/L	195	Standard
	Ba	135	50270.6	0.7	**26.3340**	0.249	0.9	ug/L	28	Standard
	Ce	140	95319.0	2.1				ug/L	83	Standard
>	**Tb**	159	770191.4	1.0				ug/L	809211	Standard
	Ho	165	1548.4	5.6				ug/L	13	Standard
	Tl	203	211.7	40.0	**0.0253**	0.011	42.8	ug/L	4	Standard
	Tl	205	148.3	33.8	**0.0198**	0.007	37.8	ug/L	8	Standard
	Pb	206	190569.3	0.7	**39.0802**	0.339	0.9	ug/L	230	Standard
	Pb	207	160240.9	0.4	**36.2052**	0.192	0.5	ug/L	184	Standard
	Pb	208	691728.7	0.2	**38.2104**	0.121	0.3	ug/L	775	Standard
	U	238	1009.4	4.6	**0.1513**	0.007	4.4	ug/L	3	Standard
>	**Bi**	209	465908.2	0.2				ug/L	472452	Standard

Sample ID: L1606144406SDL WG575059-02
Report Date/Time: Thursday, July 07, 2016 17:26:55
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	55.0	**-0.0003**	0.037	13514.8	mg/L	52	Standard
K	39	58.3	43.1	**0.1500**	0.119	79.5	mg/L	32	Standard
Ca	43	23.3	12.4	**-0.7934**	0.419	52.8	mg/L	33	Standard
Fe	54	1646.3	4.3	**1.2813**	0.036	2.8	mg/L	138	Standard
Fe	57	710.0	12.9	**1.5751**	0.286	18.2	mg/L	263	Standard
Sc-1	45	27369.7	1.9				mg/L	27861	Standard
Cl	35	109460.6	0.6				ug/L	100607	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	2326.8	5.7				ug/L	1777	Standard
P	31	8253.9	4.9				ug/L	18074	Standard
S	34	4652.4	3.0				ug/L	3901	Standard
Sr	88	86.7	17.6				ug/L	60	Standard
C	12	143.3	8.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	7	Standard
Dy	164	2611.9	3.7				mg/L	13	Standard
Ho-1	165	1548.4	5.6				mg/L	13	Standard
Er	166	1426.7	10.6				mg/L	3	Standard
I	127	16065.2	1.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.159	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144406SDL WG575059-02
Report Date/Time: Thursday, July 07, 2016 17:26:55
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.837
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.615
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 17:27:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56956.9	0.7				ug/L	59299	Standard
	Be	9	44501.9	2.1	**55.6005**	1.034	1.9	ug/L	17	Standard
	Al	27	6633419.0	0.3	**51.6060**	0.209	0.4	ug/L	1472	Standard
	Sc	45	29268.2	1.8				ug/L	27861	Standard
	Ti	47	24635.3	0.4	**98.5615**	0.741	0.8	ug/L	28	Standard
	V	51	343396.9	2.2	**48.5896**	1.231	2.5	ug/L	1156	Standard
	Cr	52	362469.1	1.6	**49.0520**	0.846	1.7	ug/L	6689	Standard
	Cr	53	45531.7	1.3	**49.6158**	0.768	1.5	ug/L	348	Standard
	Mn	55	329443.4	1.7	**49.5759**	1.007	2.0	ug/L	770	Standard
	Co	59	337677.1	0.5	**48.6608**	0.336	0.7	ug/L	216	Standard
	Ni	60	93741.4	0.8	**49.3281**	0.509	1.0	ug/L	440	Standard
	Cu	65	93095.5	1.1	**49.2732**	0.723	1.5	ug/L	116	Standard
	Zn	66	55712.9	1.2	**49.3509**	0.636	1.3	ug/L	135	Standard
>	Ge	72	468156.7	0.4				ug/L	445277	Standard
	As	75	55716.7	0.8	**48.6099**	0.535	1.1	ug/L	-57	Standard
	Se	82	5707.9	1.2	**48.9366**	0.730	1.5	ug/L	10	Standard
	Se-1	77	3886.5	2.8	**49.7117**	1.445	2.9	ug/L	57	Standard
>	Ga	71	73.3	43.8				mg/L	78	Standard
	Rb	85	820.0	12.8				ug/L	22	Standard
	Y	89	399643.7	2.2				ug/L	388959	Standard
>	Rh	103	25.0	34.6				ug/L	8	Standard
	Mo	98	256190.1	0.3	**97.1726**	0.800	0.8	ug/L	10	Standard
	Ag	107	318535.4	1.0	**48.8091**	0.784	1.6	ug/L	66	Standard
	Cd	111	101588.4	0.9	**48.7837**	0.268	0.6	mg/L	3	Standard
	Cd	114	250696.2	1.9	**49.2366**	0.617	1.3	ug/L	4	Standard
>	In	115	542324.5	0.6				ug/L	523327	Standard
	Sn	118	282764.7	1.8	**49.1019**	1.129	2.3	ug/L	488	Standard
	Sb	123	233456.3	0.5	**49.5438**	0.304	0.6	ug/L	195	Standard
	Ba	135	95501.7	0.1	**47.7282**	0.259	0.5	ug/L	28	Standard
	Ce	140	1145.0	30.3				ug/L	83	Standard
>	Tb	159	811876.4	0.6				ug/L	809211	Standard
	Ho	165	15.0	33.3				ug/L	13	Standard
	Tl	203	393986.0	0.2	**49.7215**	0.579	1.2	ug/L	4	Standard
	Tl	205	339380.6	0.8	**49.9410**	0.915	1.8	ug/L	8	Standard
	Pb	206	246150.4	0.7	**49.4885**	0.744	1.5	ug/L	230	Standard
	Pb	207	223209.5	0.9	**49.4488**	0.979	2.0	ug/L	184	Standard
	Pb	208	946539.0	0.6	**51.2644**	0.835	1.6	ug/L	775	Standard
	U	238	339513.1	0.5	**50.0960**	0.394	0.8	ug/L	3	Standard
>	Bi	209	475391.6	1.1				ug/L	472452	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 17:30:07
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.1745**	5.490	172.9	mg/L	0	Standard
Mg	24	3972.2	5.5	**5.1074**	0.199	3.9	mg/L	52	Standard
K	39	890.0	6.4	**3.8128**	0.204	5.4	mg/L	32	Standard
Ca	43	55.0	32.8	**2.8580**	2.164	75.7	mg/L	33	Standard
Fe	54	6131.9	0.7	**4.7424**	0.121	2.6	mg/L	138	Standard
Fe	57	1800.1	5.1	**4.6598**	0.214	4.6	mg/L	263	Standard
Sc-1	45	29268.2	1.8				mg/L	27861	Standard
Cl	35	123431.4	0.8				ug/L	100607	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2000.1	3.5				ug/L	1777	Standard
P	31	21113.0	2.9				ug/L	18074	Standard
S	34	5234.2	2.4				ug/L	3901	Standard
Sr	88	80.0	27.2				ug/L	60	Standard
C	12	86.7	24.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	7	Standard
Dy	164	25.4	82.7				mg/L	13	Standard
Ho-1	165	15.0	33.3				mg/L	13	Standard
Er	166	26.7	94.4				mg/L	3	Standard
I	127	8600.8	1.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	111.201		
Al	27	103.212		
Sc	45			
Ti	47	98.562		
V	51	97.179		
Cr	52	98.104		
Cr	53			
Mn	55	99.152		
Co	59	97.322		
Ni	60	98.656		
Cu	65	98.546		
Zn	66	98.702		
Ge	72		105.138	
As	75	97.220		
Se	82	97.873		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 17:30:07
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	97.173		
Ag	107	97.618		
Cd	111	97.567		
Cd	114			
In	115		103.630	
Sn	118	98.204		
Sb	123	99.088		
Ba	135	95.456		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.443		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.529		
U	238	100.192		
Bi	209		100.622	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 17:30:07
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 17:31:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56615.6	2.3				ug/L	59299	Standard
	Be	9	31.7	18.2	**0.0411**	0.007	16.5	ug/L	17	Standard
	Al	27	9106.2	98.9	**0.0593**	0.072	121.6	ug/L	1472	Standard
	Sc	45	28733.9	0.8				ug/L	27861	Standard
	Ti	47	39.7	28.1	**0.0471**	0.045	95.4	ug/L	28	Standard
	V	51	1377.6	28.2	**0.0213**	0.053	249.9	ug/L	1156	Standard
	Cr	52	6447.4	3.1	**-0.0704**	0.018	25.3	ug/L	6689	Standard
	Cr	53	471.7	12.2	**0.1246**	0.060	48.4	ug/L	348	Standard
	Mn	55	2784.7	95.2	**0.2951**	0.398	134.7	ug/L	770	Standard
	Co	59	404.0	51.9	**0.0234**	0.030	127.3	ug/L	216	Standard
	Ni	60	328.7	15.1	**-0.0804**	0.024	30.0	ug/L	440	Standard
	Cu	65	213.3	31.0	**0.0562**	0.034	60.8	ug/L	116	Standard
	Zn	66	965.0	14.5	**0.6728**	0.119	17.7	ug/L	135	Standard
>	**Ge**	72	461704.0	1.4				ug/L	445277	Standard
	As	75	-29.4	27.2	**0.0113**	0.007	62.2	ug/L	-57	Standard
	Se	82	20.2	21.3	**0.0308**	0.037	119.9	ug/L	10	Standard
	Se-1	77	61.0	12.8	**0.1631**	0.094	57.5	ug/L	57	Standard
>	**Ga**	71	45.0	66.7				mg/L	78	Standard
	Rb	85	155.0	103.4				ug/L	22	Standard
	Y	89	399602.9	0.9				ug/L	388959	Standard
>	**Rh**	103	11.7	65.5				ug/L	8	Standard
	Mo	98	297.2	34.6	**0.1056**	0.039	36.5	ug/L	10	Standard
	Ag	107	282.7	76.4	**0.0295**	0.033	111.1	ug/L	66	Standard
	Cd	111	66.4	100.7	**0.0281**	0.032	113.3	mg/L	3	Standard
	Cd	114	200.0	117.6	**0.0351**	0.046	130.5	ug/L	4	Standard
>	**In**	115	544713.6	0.4				ug/L	523327	Standard
	Sn	118	995.0	28.2	**0.0965**	0.048	49.6	ug/L	488	Standard
	Sb	123	1237.8	34.2	**0.2448**	0.089	36.2	ug/L	195	Standard
	Ba	135	355.3	118.7	**0.1592**	0.209	131.3	ug/L	28	Standard
	Ce	140	1093.4	90.1				ug/L	83	Standard
>	**Tb**	159	810052.6	1.3				ug/L	809211	Standard
	Ho	165	21.7	35.3				ug/L	13	Standard
	Tl	203	284.3	117.5	**0.0336**	0.042	124.5	ug/L	4	Standard
	Tl	205	163.3	83.1	**0.0213**	0.020	93.1	ug/L	8	Standard
	Pb	206	875.4	87.4	**0.1265**	0.153	120.8	ug/L	230	Standard
	Pb	207	717.7	92.1	**0.1149**	0.145	126.6	ug/L	184	Standard
	Pb	208	2815.1	76.2	**0.1054**	0.116	109.6	ug/L	775	Standard
	U	238	183.0	80.5	**0.0260**	0.022	82.8	ug/L	3	Standard
>	**Bi**	209	480887.6	1.0				ug/L	472452	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 17:33:18
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	58.3	77.8	**0.0115**	0.059	517.2	mg/L	52	Standard
K	39	15.0	66.7	**-0.0588**	0.046	77.6	mg/L	32	Standard
Ca	43	10.0	50.0	**-2.6018**	0.611	23.5	mg/L	33	Standard
Fe	54	165.8	17.5	**0.0220**	0.022	101.5	mg/L	138	Standard
Fe	57	271.7	18.4	**0.1434**	0.145	101.2	mg/L	263	Standard
Sc-1	45	28733.9	0.8				mg/L	27861	Standard
Cl	35	121031.5	1.3				ug/L	100607	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1906.8	2.1				ug/L	1777	Standard
P	31	20730.8	1.4				ug/L	18074	Standard
S	34	4979.2	5.5				ug/L	3901	Standard
Sr	88	70.0	35.7				ug/L	60	Standard
C	12	46.7	61.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	22.2	69.9				mg/L	13	Standard
Ho-1	165	21.7	35.3				mg/L	13	Standard
Er	166	23.3	99.0				mg/L	3	Standard
I	127	5794.4	6.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.689	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 17:33:18
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.087
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.786
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 17:33:18
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144407
Sample Date/Time: Thursday, July 07, 2016 17:34:14
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62630.9	0.8				ug/L	59299	Standard
	Be	9	1031.7	2.2	**1.1737**	0.034	2.9	ug/L	17	Standard
	Al	27	14608595.3	1.4	**103.3752**	2.144	2.1	ug/L	1472	Standard
	Sc	45	35525.0	3.0				ug/L	27861	Standard
	Ti	47	4791.8	1.1	**18.6256**	0.403	2.2	ug/L	28	Standard
	V	51	174876.1	0.4	**24.0683**	0.297	1.2	ug/L	1156	Standard
	Cr	52	451160.6	0.5	**59.8174**	0.834	1.4	ug/L	6689	Standard
	Cr	53	56316.2	1.8	**59.9871**	0.395	0.7	ug/L	348	Standard
	Mn	55	3407836.1	0.5	**501.8260**	7.055	1.4	ug/L	770	Standard
	Co	59	82161.5	1.0	**11.5329**	0.229	2.0	ug/L	216	Standard
	Ni	60	53573.2	0.9	**27.4097**	0.419	1.5	ug/L	440	Standard
	Cu	65	145884.0	1.3	**75.4074**	0.787	1.0	ug/L	116	Standard
	Zn	66	403897.6	0.4	**350.4876**	3.023	0.9	ug/L	135	Standard
>	**Ge**	72	479558.0	1.2				ug/L	445277	Standard
	As	75	6159.7	1.5	**5.2804**	0.132	2.5	ug/L	-57	Standard
	Se	82	112.9	9.4	**0.8031**	0.099	12.4	ug/L	10	Standard
	Se-1	77	159.7	2.0	**1.3818**	0.022	1.6	ug/L	57	Standard
>	**Ga**	71	22907.3	2.8				mg/L	78	Standard
	Rb	85	238341.8	0.9				ug/L	22	Standard
	Y	89	647888.3	1.8				ug/L	388959	Standard
>	**Rh**	103	133.3	34.0				ug/L	8	Standard
	Mo	98	2453.9	3.1	**0.9112**	0.031	3.4	ug/L	10	Standard
	Ag	107	3233.3	1.2	**0.4750**	0.005	1.1	ug/L	66	Standard
	Cd	111	27777.0	1.4	**13.1478**	0.131	1.0	mg/L	3	Standard
	Cd	114	68029.2	1.4	**13.1700**	0.129	1.0	ug/L	4	Standard
>	**In**	115	550079.8	0.4				ug/L	523327	Standard
	Sn	118	2115.1	11.2	**0.2869**	0.039	13.7	ug/L	488	Standard
	Sb	123	1445.9	14.5	**0.2859**	0.043	15.0	ug/L	195	Standard
	Ba	135	540753.9	0.3	**266.5121**	0.705	0.3	ug/L	28	Standard
	Ce	140	1251421.4	1.4				ug/L	83	Standard
>	**Tb**	159	846496.4	1.3				ug/L	809211	Standard
	Ho	165	19959.8	2.3				ug/L	13	Standard
	Tl	203	1194.4	2.1	**0.1456**	0.004	2.9	ug/L	4	Standard
	Tl	205	1035.0	5.6	**0.1466**	0.009	5.9	ug/L	8	Standard
	Pb	206	2541612.4	0.3	**500.4147**	3.612	0.7	ug/L	230	Standard
	Pb	207	2142805.6	0.7	**464.8107**	3.377	0.7	ug/L	184	Standard
	Pb	208	9246889.1	0.4	**490.4001**	3.954	0.8	ug/L	775	Standard
	U	238	6281.0	0.9	**0.9062**	0.010	1.2	ug/L	3	Standard
>	**Bi**	209	485831.5	0.8				ug/L	472452	Standard

Sample ID: L1606144407
Report Date/Time: Thursday, July 07, 2016 17:36:31
Page 1

Approved: July 08, 2016

Na	23	3.3	86.6	**5.2060**	4.506	86.6	mg/L	0	Standard
Mg	24	183.3	8.3	**0.1310**	0.013	10.3	mg/L	52	Standard
K	39	305.0	3.3	**0.9871**	0.063	6.3	mg/L	32	Standard
Ca	43	81.7	7.1	**4.3592**	0.383	8.8	mg/L	33	Standard
Fe	54	22718.3	1.9	**14.7138**	0.684	4.6	mg/L	138	Standard
Fe	57	6304.6	0.8	**14.7355**	0.551	3.7	mg/L	263	Standard
> **Sc-1**	45	35525.0	3.0				mg/L	27861	Standard
Cl	35	119399.3	0.2				ug/L	100607	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	5004.2	4.9				ug/L	1777	Standard
P	31	21393.5	5.8				ug/L	18074	Standard
S	34	4992.5	2.8				ug/L	3901	Standard
Sr	88	155.0	14.1				ug/L	60	Standard
C	12	313.3	14.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	500.0	16.0				mg/L	7	Standard
Dy	164	32827.0	2.7				mg/L	13	Standard
Ho-1	165	19959.8	2.3				mg/L	13	Standard
Er	166	17753.7	1.4				mg/L	3	Standard
I	127	57786.8	4.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.618	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.699	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144407
Report Date/Time: Thursday, July 07, 2016 17:36:31
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.112	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.832	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606144407
Report Date/Time: Thursday, July 07, 2016 17:36:31
Page 3

Approved: July 08, 2016

Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144408
Sample Date/Time: Thursday, July 07, 2016 17:37:25
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63693.7	2.9				ug/L	59299	Standard
	Be	9	993.4	7.2	**1.1120**	0.091	8.1	ug/L	17	Standard
	Al	27	16683679.4	0.5	**116.1495**	3.608	3.1	ug/L	1472	Standard
	Sc	45	34900.2	2.9				ug/L	27861	Standard
	Ti	47	4125.2	1.9	**16.1865**	0.370	2.3	ug/L	28	Standard
	V	51	175897.2	0.1	**24.4638**	0.070	0.3	ug/L	1156	Standard
	Cr	52	146272.0	0.2	**18.9413**	0.052	0.3	ug/L	6689	Standard
	Cr	53	17710.4	3.2	**18.7916**	0.662	3.5	ug/L	348	Standard
	Mn	55	1608684.4	0.9	**239.2814**	1.453	0.6	ug/L	770	Standard
	Co	59	67267.3	0.9	**9.5338**	0.081	0.8	ug/L	216	Standard
	Ni	60	45947.2	0.5	**23.7182**	0.093	0.4	ug/L	440	Standard
	Cu	65	44902.1	0.8	**23.4130**	0.194	0.8	ug/L	116	Standard
	Zn	66	69591.8	1.0	**60.8582**	0.809	1.3	ug/L	135	Standard
>	**Ge**	72	474575.8	0.4				ug/L	445277	Standard
	As	75	2521.8	2.3	**2.2061**	0.055	2.5	ug/L	-57	Standard
	Se	82	97.0	18.2	**0.6776**	0.153	22.5	ug/L	10	Standard
	Se-1	77	159.0	3.3	**1.3945**	0.066	4.7	ug/L	57	Standard
>	**Ga**	71	20246.9	2.4				mg/L	78	Standard
	Rb	85	211416.5	0.4				ug/L	22	Standard
	Y	89	661692.0	0.8				ug/L	388959	Standard
>	**Rh**	103	35.0	62.3				ug/L	8	Standard
	Mo	98	458.1	19.0	**0.1666**	0.033	19.5	ug/L	10	Standard
	Ag	107	696.3	11.0	**0.0928**	0.011	12.2	ug/L	66	Standard
	Cd	111	634.3	5.5	**0.3000**	0.015	4.8	mg/L	3	Standard
	Cd	114	1498.1	2.1	**0.2895**	0.009	3.0	ug/L	4	Standard
>	**In**	115	543927.1	0.8				ug/L	523327	Standard
	Sn	118	818.4	8.7	**0.0662**	0.012	17.7	ug/L	488	Standard
	Sb	123	484.6	31.9	**0.0860**	0.033	38.4	ug/L	195	Standard
	Ba	135	306973.5	0.5	**152.9991**	0.557	0.4	ug/L	28	Standard
	Ce	140	1316094.2	0.8				ug/L	83	Standard
>	**Tb**	159	839765.2	1.4				ug/L	809211	Standard
	Ho	165	21269.9	1.2				ug/L	13	Standard
	Tl	203	1022.0	10.8	**0.1267**	0.013	10.1	ug/L	4	Standard
	Tl	205	941.7	15.8	**0.1358**	0.021	15.4	ug/L	8	Standard
	Pb	206	117933.9	0.3	**23.6425**	0.138	0.6	ug/L	230	Standard
	Pb	207	96333.3	0.7	**21.2769**	0.097	0.5	ug/L	184	Standard
	Pb	208	424848.7	0.8	**22.9416**	0.053	0.2	ug/L	775	Standard
	U	238	11260.2	1.6	**1.6579**	0.035	2.1	ug/L	3	Standard
>	**Bi**	209	476226.0	0.9				ug/L	472452	Standard

Sample ID: L1606144408
Report Date/Time: Thursday, July 07, 2016 17:39:42
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**2.6893**	4.649	172.9	mg/L	0	Standard
Mg	24	165.0	29.8	**0.1150**	0.055	47.9	mg/L	52	Standard
K	39	370.0	15.2	**1.2514**	0.247	19.7	mg/L	32	Standard
Ca	43	70.0	21.4	**3.3365**	1.668	50.0	mg/L	33	Standard
Fe	54	18288.0	1.0	**12.0326**	0.390	3.2	mg/L	138	Standard
Fe	57	5022.5	2.2	**11.8207**	0.499	4.2	mg/L	263	Standard
Sc-1	45	34900.2	2.9				mg/L	27861	Standard
Cl	35	116703.8	1.0				ug/L	100607	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	2876.9	5.3				ug/L	1777	Standard
P	31	20697.5	3.9				ug/L	18074	Standard
S	34	4799.1	2.6				ug/L	3901	Standard
Sr	88	146.7	12.0				ug/L	60	Standard
C	12	246.7	26.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	146.7	17.2				mg/L	7	Standard
Dy	164	34819.1	2.0				mg/L	13	Standard
Ho-1	165	21269.9	1.2				mg/L	13	Standard
Er	166	18361.1	3.3				mg/L	3	Standard
I	127	24356.2	3.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.411	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.580	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144408
Report Date/Time: Thursday, July 07, 2016 17:39:42
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.936
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.799
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144408
Report Date/Time: Thursday, July 07, 2016 17:39:42
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144409
Sample Date/Time: Thursday, July 07, 2016 17:40:37
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64053.5	1.8				ug/L	59299	Standard
	Be	9	1078.4	2.3	**1.1999**	0.046	3.8	ug/L	17	Standard
	Al	27	15514733.1	1.2	**107.3485**	0.900	0.8	ug/L	1472	Standard
	Sc	45	36136.4	2.7				ug/L	27861	Standard
	Ti	47	6865.2	2.1	**26.8531**	0.619	2.3	ug/L	28	Standard
	V	51	190724.4	1.5	**26.3839**	0.446	1.7	ug/L	1156	Standard
	Cr	52	417772.9	0.9	**55.5690**	0.437	0.8	ug/L	6689	Standard
	Cr	53	51612.8	1.2	**55.1975**	0.515	0.9	ug/L	348	Standard
	Mn	55	5184710.1	0.3	**766.9477**	2.971	0.4	ug/L	770	Standard
	Co	59	91417.3	0.2	**12.8929**	0.067	0.5	ug/L	216	Standard
	Ni	60	55205.1	0.4	**28.3795**	0.128	0.5	ug/L	440	Standard
	Cu	65	92816.4	0.6	**48.1733**	0.355	0.7	ug/L	116	Standard
	Zn	66	362986.3	0.2	**316.3815**	1.233	0.4	ug/L	135	Standard
>	**Ge**	72	477384.3	0.3				ug/L	445277	Standard
	As	75	8092.4	1.0	**6.9557**	0.089	1.3	ug/L	-57	Standard
	Se	82	160.6	1.7	**1.2091**	0.025	2.1	ug/L	10	Standard
	Se-1	77	190.7	6.7	**1.7847**	0.158	8.9	ug/L	57	Standard
>	**Ga**	71	24855.4	0.9				mg/L	78	Standard
	Rb	85	306194.7	0.4				ug/L	22	Standard
	Y	89	655863.2	0.7				ug/L	388959	Standard
>	**Rh**	103	106.7	5.4				ug/L	8	Standard
	Mo	98	4369.1	1.0	**1.6355**	0.007	0.4	ug/L	10	Standard
	Ag	107	2102.1	1.0	**0.3057**	0.005	1.7	ug/L	66	Standard
	Cd	111	23925.0	1.4	**11.3809**	0.098	0.9	mg/L	3	Standard
	Cd	114	57948.4	0.8	**11.2746**	0.068	0.6	ug/L	4	Standard
>	**In**	115	547330.3	0.6				ug/L	523327	Standard
	Sn	118	1328.4	7.4	**0.1532**	0.016	10.2	ug/L	488	Standard
	Sb	123	786.1	10.8	**0.1487**	0.018	11.8	ug/L	195	Standard
	Ba	135	394101.3	0.3	**195.2100**	1.561	0.8	ug/L	28	Standard
	Ce	140	1328703.1	1.0				ug/L	83	Standard
>	**Tb**	159	853607.3	0.7				ug/L	809211	Standard
	Ho	165	20340.3	1.3				ug/L	13	Standard
	Tl	203	1236.1	2.6	**0.1522**	0.004	2.3	ug/L	4	Standard
	Tl	205	1045.0	6.0	**0.1495**	0.009	6.0	ug/L	8	Standard
	Pb	206	2639473.7	0.6	**525.0355**	4.790	0.9	ug/L	230	Standard
	Pb	207	2188747.7	0.5	**479.6700**	4.015	0.8	ug/L	184	Standard
	Pb	208	9518966.7	0.1	**510.0217**	2.117	0.4	ug/L	775	Standard
	U	238	6546.4	0.8	**0.9542**	0.011	1.2	ug/L	3	Standard
>	**Bi**	209	480873.1	0.4				ug/L	472452	Standard

Sample ID: L1606144409
Report Date/Time: Thursday, July 07, 2016 17:42:54
Page 1

Approved: July 08, 2016

Na	23	8.3	69.3	**12.6169**	8.768	69.5	mg/L	0	Standard
Mg	24	183.3	12.9	**0.1283**	0.030	23.4	mg/L	52	Standard
K	39	435.0	13.0	**1.4310**	0.163	11.4	mg/L	32	Standard
Ca	43	71.7	42.6	**3.2939**	3.217	97.7	mg/L	33	Standard
Fe	54	26273.0	2.7	**16.7343**	0.549	3.3	mg/L	138	Standard
Fe	57	7161.7	3.9	**16.5417**	1.116	6.7	mg/L	263	Standard
Sc-1	45	36136.4	2.7				mg/L	27861	Standard
Cl	35	116669.0	2.3				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	5454.3	6.6				ug/L	1777	Standard
P	31	20946.1	3.7				ug/L	18074	Standard
S	34	4624.0	3.0				ug/L	3901	Standard
Sr	88	110.0	4.5				ug/L	60	Standard
C	12	413.3	18.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	316.7	36.6				mg/L	7	Standard
Dy	164	33227.1	2.8				mg/L	13	Standard
Ho-1	165	20340.3	1.3				mg/L	13	Standard
Er	166	18955.2	5.4				mg/L	3	Standard
I	127	68328.8	2.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		108.018	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.211	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606144409
Report Date/Time: Thursday, July 07, 2016 17:42:54
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.587
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.783
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606144409
Report Date/Time: Thursday, July 07, 2016 17:42:54
Page 3

Approved: July 08, 2016

Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144410 WG574535-01
Sample Date/Time: Thursday, July 07, 2016 17:43:48
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62741.3	2.2				ug/L	59299	Standard
	Be	9	945.0	8.7	**1.0735**	0.096	8.9	ug/L	17	Standard
	Al	27	16983951.2	1.2	**119.9811**	1.244	1.0	ug/L	1472	Standard
	Sc	45	35241.0	2.4				ug/L	27861	Standard
	Ti	47	3676.8	0.6	**14.3965**	0.119	0.8	ug/L	28	Standard
	V	51	122127.0	1.2	**16.9107**	0.167	1.0	ug/L	1156	Standard
	Cr	52	139217.0	0.8	**17.9581**	0.132	0.7	ug/L	6689	Standard
	Cr	53	17139.7	1.6	**18.1504**	0.328	1.8	ug/L	348	Standard
	Mn	55	1876781.6	0.4	**278.8499**	0.796	0.3	ug/L	770	Standard
	Co	59	65930.5	0.3	**9.3325**	0.046	0.5	ug/L	216	Standard
	Ni	60	44164.9	1.4	**22.7606**	0.300	1.3	ug/L	440	Standard
	Cu	65	34167.5	0.7	**17.7804**	0.121	0.7	ug/L	116	Standard
	Zn	66	57446.7	0.5	**50.1413**	0.217	0.4	ug/L	135	Standard
>	Ge	72	475141.7	0.2				ug/L	445277	Standard
	As	75	3803.9	0.9	**3.3046**	0.026	0.8	ug/L	-57	Standard
	Se	82	138.0	9.9	**1.0242**	0.118	11.5	ug/L	10	Standard
	Se-1	77	183.0	5.0	**1.6986**	0.122	7.2	ug/L	57	Standard
>	Ga	71	20028.2	1.9				mg/L	78	Standard
	Rb	85	197313.2	0.7				ug/L	22	Standard
	Y	89	624177.3	0.4				ug/L	388959	Standard
>	Rh	103	18.3	56.8				ug/L	8	Standard
	Mo	98	729.8	6.2	**0.2693**	0.017	6.4	ug/L	10	Standard
	Ag	107	512.7	4.4	**0.0647**	0.003	5.3	ug/L	66	Standard
	Cd	111	641.7	1.3	**0.3036**	0.004	1.3	mg/L	3	Standard
	Cd	114	1515.1	7.2	**0.2927**	0.021	7.2	ug/L	4	Standard
>	In	115	544091.5	0.1				ug/L	523327	Standard
	Sn	118	496.7	10.6	**0.0104**	0.009	87.0	ug/L	488	Standard
	Sb	123	252.7	34.5	**0.0368**	0.018	50.0	ug/L	195	Standard
	Ba	135	304315.4	0.4	**151.6253**	0.644	0.4	ug/L	28	Standard
	Ce	140	1146156.4	0.2				ug/L	83	Standard
>	Tb	159	831642.9	0.5				ug/L	809211	Standard
	Ho	165	17842.2	1.4				ug/L	13	Standard
	Tl	203	989.0	2.6	**0.1242**	0.003	2.1	ug/L	4	Standard
	Tl	205	850.0	13.8	**0.1241**	0.018	14.8	ug/L	8	Standard
	Pb	206	73852.9	0.2	**14.9788**	0.122	0.8	ug/L	230	Standard
	Pb	207	60846.9	0.7	**13.5967**	0.022	0.2	ug/L	184	Standard
	Pb	208	271020.5	1.0	**14.8074**	0.135	0.9	ug/L	775	Standard
	U	238	10199.4	0.8	**1.5209**	0.007	0.5	ug/L	3	Standard
>	Bi	209	470167.0	0.7				ug/L	472452	Standard

Sample ID: L1606144410 WG574535-01
Report Date/Time: Thursday, July 07, 2016 17:46:05
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**2.5630**	4.431	172.9	mg/L	0	Standard
Mg	24	148.3	7.8	**0.0950**	0.015	16.0	mg/L	52	Standard
K	39	365.0	12.6	**1.2186**	0.200	16.4	mg/L	32	Standard
Ca	43	90.0	22.2	**5.2839**	2.046	38.7	mg/L	33	Standard
Fe	54	18029.1	3.4	**11.7444**	0.553	4.7	mg/L	138	Standard
Fe	57	5029.2	1.5	**11.7099**	0.134	1.1	mg/L	263	Standard
Sc-1	45	35241.0	2.4				mg/L	27861	Standard
Cl	35	115900.3	1.3				ug/L	100607	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2820.3	4.8				ug/L	1777	Standard
P	31	20886.1	1.0				ug/L	18074	Standard
S	34	4835.8	6.1				ug/L	3901	Standard
Sr	88	96.7	24.4				ug/L	60	Standard
C	12	116.7	47.2				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	63.3	24.1				mg/L	7	Standard
Dy	164	29582.6	2.6				mg/L	13	Standard
Ho-1	165	17842.2	1.4				mg/L	13	Standard
Er	166	16168.6	2.9				mg/L	3	Standard
I	127	20488.9	2.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.805	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.707	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606144410 WG574535-01
Report Date/Time: Thursday, July 07, 2016 17:46:05
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.968	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.516	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144410 WG574535-01
Report Date/Time: Thursday, July 07, 2016 17:46:05
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144412
Sample Date/Time: Thursday, July 07, 2016 17:47:00
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64195.7	1.8				ug/L	59299	Standard
	Be	9	948.4	4.4	**1.0525**	0.041	3.9	ug/L	17	Standard
	Al	27	15083801.6	1.4	**104.1487**	2.362	2.3	ug/L	1472	Standard
	Sc	45	36258.4	3.7				ug/L	27861	Standard
	Ti	47	3746.1	2.5	**14.5841**	0.287	2.0	ug/L	28	Standard
	V	51	164554.2	0.8	**22.7166**	0.371	1.6	ug/L	1156	Standard
	Cr	52	148370.6	1.1	**19.0882**	0.337	1.8	ug/L	6689	Standard
	Cr	53	18059.1	1.9	**19.0350**	0.496	2.6	ug/L	348	Standard
	Mn	55	3294957.3	1.3	**486.8670**	8.085	1.7	ug/L	770	Standard
	Co	59	71903.9	0.9	**10.1239**	0.217	2.1	ug/L	216	Standard
	Ni	60	47406.0	0.7	**24.3086**	0.230	0.9	ug/L	440	Standard
	Cu	65	37212.3	0.3	**19.2601**	0.301	1.6	ug/L	116	Standard
	Zn	66	97092.4	0.4	**84.3952**	0.745	0.9	ug/L	135	Standard
>	Ge	72	477907.1	1.2				ug/L	445277	Standard
	As	75	7670.5	1.2	**6.5878**	0.036	0.5	ug/L	-57	Standard
	Se	82	159.2	1.3	**1.1955**	0.002	0.2	ug/L	10	Standard
	Se-1	77	188.3	2.2	**1.7525**	0.037	2.1	ug/L	57	Standard
>	Ga	71	21007.9	1.1				mg/L	78	Standard
	Rb	85	238142.1	1.4				ug/L	22	Standard
	Y	89	658455.6	1.6				ug/L	388959	Standard
>	Rh	103	33.3	22.9				ug/L	8	Standard
	Mo	98	963.9	7.3	**0.3538**	0.026	7.4	ug/L	10	Standard
	Ag	107	603.0	7.4	**0.0775**	0.007	8.7	ug/L	66	Standard
	Cd	111	1346.9	3.6	**0.6342**	0.023	3.6	mg/L	3	Standard
	Cd	114	3359.8	1.3	**0.6468**	0.012	1.9	ug/L	4	Standard
>	In	115	550064.3	0.6				ug/L	523327	Standard
	Sn	118	641.7	16.8	**0.0343**	0.018	53.3	ug/L	488	Standard
	Sb	123	687.0	8.1	**0.1272**	0.012	9.7	ug/L	195	Standard
	Ba	135	296965.0	0.6	**146.3567**	0.747	0.5	ug/L	28	Standard
	Ce	140	1333956.4	1.1				ug/L	83	Standard
>	Tb	159	842965.0	1.1				ug/L	809211	Standard
	Ho	165	19767.9	2.5				ug/L	13	Standard
	Tl	203	958.4	5.2	**0.1189**	0.006	5.1	ug/L	4	Standard
	Tl	205	908.4	3.6	**0.1311**	0.005	3.6	ug/L	8	Standard
	Pb	206	380750.4	0.2	**76.5186**	0.310	0.4	ug/L	230	Standard
	Pb	207	312208.0	0.9	**69.1278**	0.715	1.0	ug/L	184	Standard
	Pb	208	1376460.0	0.6	**74.5119**	0.428	0.6	ug/L	775	Standard
	U	238	4865.8	1.1	**0.7168**	0.007	0.9	ug/L	3	Standard
>	Bi	209	475702.6	0.2				ug/L	472452	Standard

Sample ID: L1606144412
Report Date/Time: Thursday, July 07, 2016 17:49:17
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**2.5444**	4.398	172.9	mg/L	0	Standard
Mg	24	148.3	19.5	**0.0912**	0.035	38.7	mg/L	52	Standard
K	39	470.0	12.9	**1.5530**	0.207	13.3	mg/L	32	Standard
Ca	43	48.3	36.3	**0.9294**	1.805	194.2	mg/L	33	Standard
Fe	54	19780.3	2.1	**12.5359**	0.553	4.4	mg/L	138	Standard
Fe	57	5562.7	0.5	**12.6488**	0.467	3.7	mg/L	263	Standard
Sc-1	45	36258.4	3.7				mg/L	27861	Standard
Cl	35	115862.0	1.2				ug/L	100607	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	4524.0	1.3				ug/L	1777	Standard
P	31	21054.6	4.1				ug/L	18074	Standard
S	34	4594.0	4.4				ug/L	3901	Standard
Sr	88	85.0	11.8				ug/L	60	Standard
C	12	256.7	21.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	113.3	27.0				mg/L	7	Standard
Dy	164	33232.9	0.3				mg/L	13	Standard
Ho-1	165	19767.9	2.5				mg/L	13	Standard
Er	166	17997.4	1.6				mg/L	3	Standard
I	127	38542.3	3.3				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.257	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.328	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144412
Report Date/Time: Thursday, July 07, 2016 17:49:17
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.109
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144412
Report Date/Time: Thursday, July 07, 2016 17:49:17
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144413
Sample Date/Time: Thursday, July 07, 2016 17:50:11
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61566.5	0.0				ug/L	59299	Standard
	Be	9	808.4	5.9	**0.9357**	0.055	5.9	ug/L	17	Standard
	Al	27	16499092.9	0.9	**118.7621**	1.068	0.9	ug/L	1472	Standard
	Sc	45	33613.9	0.5				ug/L	27861	Standard
	Ti	47	2850.3	0.1	**11.1938**	0.084	0.8	ug/L	28	Standard
	V	51	110064.4	1.5	**15.3030**	0.098	0.6	ug/L	1156	Standard
	Cr	52	108168.4	0.6	**13.8133**	0.073	0.5	ug/L	6689	Standard
	Cr	53	13089.0	5.8	**13.8362**	0.710	5.1	ug/L	348	Standard
	Mn	55	1321786.6	1.2	**197.3744**	0.709	0.4	ug/L	770	Standard
	Co	59	49457.3	0.5	**7.0287**	0.038	0.5	ug/L	216	Standard
	Ni	60	35391.3	0.6	**18.2850**	0.106	0.6	ug/L	440	Standard
	Cu	65	22404.6	0.4	**11.7004**	0.058	0.5	ug/L	116	Standard
	Zn	66	43054.8	1.1	**37.7284**	0.436	1.2	ug/L	135	Standard
>	**Ge**	72	472673.6	0.9				ug/L	445277	Standard
	As	75	3280.5	2.1	**2.8696**	0.037	1.3	ug/L	-57	Standard
	Se	82	43.7	14.7	**0.2266**	0.052	22.9	ug/L	10	Standard
	Se-1	77	106.0	8.4	**0.7228**	0.115	16.0	ug/L	57	Standard
>	**Ga**	71	16327.1	2.0				mg/L	78	Standard
	Rb	85	154109.8	0.9				ug/L	22	Standard
	Y	89	582318.1	0.9				ug/L	388959	Standard
>	**Rh**	103	35.0	24.7				ug/L	8	Standard
	Mo	98	422.6	6.0	**0.1518**	0.010	6.8	ug/L	10	Standard
	Ag	107	449.7	11.0	**0.0545**	0.007	13.0	ug/L	66	Standard
	Cd	111	155.9	5.4	**0.0704**	0.004	5.8	mg/L	3	Standard
	Cd	114	356.9	11.3	**0.0653**	0.007	11.3	ug/L	4	Standard
>	**In**	115	548899.2	0.7				ug/L	523327	Standard
	Sn	118	798.4	0.7	**0.0615**	0.002	3.1	ug/L	488	Standard
	Sb	123	225.7	37.6	**0.0308**	0.018	58.8	ug/L	195	Standard
	Ba	135	240574.6	0.5	**118.8196**	1.475	1.2	ug/L	28	Standard
	Ce	140	1027918.5	0.6				ug/L	83	Standard
>	**Tb**	159	829539.6	0.9				ug/L	809211	Standard
	Ho	165	15489.6	2.4				ug/L	13	Standard
	Tl	203	810.0	5.1	**0.1010**	0.005	4.7	ug/L	4	Standard
	Tl	205	690.0	9.7	**0.0998**	0.009	9.3	ug/L	8	Standard
	Pb	206	46790.1	1.3	**9.4409**	0.061	0.6	ug/L	230	Standard
	Pb	207	38589.4	1.1	**8.5794**	0.052	0.6	ug/L	184	Standard
	Pb	208	171187.6	1.3	**9.3056**	0.080	0.9	ug/L	775	Standard
	U	238	4011.9	1.3	**0.5959**	0.004	0.7	ug/L	3	Standard
>	**Bi**	209	471693.3	0.6				ug/L	472452	Standard

Sample ID: L1606144413
Report Date/Time: Thursday, July 07, 2016 17:52:28
Page 1

Approved: July 08, 2016

Na	23	5.0	100.0	**8.1461**	8.132	99.8	mg/L	0	Standard
Mg	24	148.3	34.1	**0.1025**	0.057	55.5	mg/L	52	Standard
K	39	223.3	6.5	**0.7343**	0.051	7.0	mg/L	32	Standard
Ca	43	83.3	18.3	**5.0041**	1.583	31.6	mg/L	33	Standard
Fe	54	14673.5	2.8	**9.9985**	0.235	2.4	mg/L	138	Standard
Fe	57	4092.2	3.5	**9.8896**	0.408	4.1	mg/L	263	Standard
> **Sc-1**	45	33613.9	0.5				mg/L	27861	Standard
Cl	35	119350.9	0.7				ug/L	100607	Standard
Kr	83	3.0	88.2				ug/L	2	Standard
Br	81	3510.4	3.3				ug/L	1777	Standard
P	31	21336.7	2.6				ug/L	18074	Standard
S	34	5089.2	4.6				ug/L	3901	Standard
Sr	88	151.7	5.0				ug/L	60	Standard
C	12	103.3	39.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	7	Standard
Dy	164	25736.6	1.2				mg/L	13	Standard
Ho-1	165	15489.6	2.4				mg/L	13	Standard
Er	166	13422.6	0.9				mg/L	3	Standard
I	127	21350.0	3.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.824	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.153	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144413
Report Date/Time: Thursday, July 07, 2016 17:52:28
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.887	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.839	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144413
Report Date/Time: Thursday, July 07, 2016 17:52:28
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144414
Sample Date/Time: Thursday, July 07, 2016 17:53:22
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61835.9	0.3				ug/L	59299	Standard
	Be	9	1133.4	13.2	**1.3059**	0.176	13.5	ug/L	17	Standard
	Al	27	19329730.8	0.2	**138.5335**	0.293	0.2	ug/L	1472	Standard
	Sc	45	35961.0	2.2				ug/L	27861	Standard
	Ti	47	4303.9	1.9	**16.9226**	0.176	1.0	ug/L	28	Standard
	V	51	197978.0	0.8	**27.6107**	0.418	1.5	ug/L	1156	Standard
	Cr	52	170268.4	1.0	**22.2536**	0.405	1.8	ug/L	6689	Standard
	Cr	53	20735.8	1.1	**22.1135**	0.444	2.0	ug/L	348	Standard
	Mn	55	4077816.9	0.6	**607.9346**	8.707	1.4	ug/L	770	Standard
	Co	59	84557.3	0.3	**12.0166**	0.132	1.1	ug/L	216	Standard
	Ni	60	52976.1	1.3	**27.4411**	0.614	2.2	ug/L	440	Standard
	Cu	65	39855.0	1.0	**20.8155**	0.372	1.8	ug/L	116	Standard
	Zn	66	97440.3	1.0	**85.4540**	1.373	1.6	ug/L	135	Standard
>	**Ge**	72	473694.6	1.0				ug/L	445277	Standard
	As	75	6779.5	2.0	**5.8793**	0.164	2.8	ug/L	-57	Standard
	Se	82	102.7	8.7	**0.7272**	0.074	10.1	ug/L	10	Standard
	Se-1	77	145.0	8.0	**1.2199**	0.162	13.3	ug/L	57	Standard
>	**Ga**	71	24730.2	3.1				mg/L	78	Standard
	Rb	85	256647.1	0.5				ug/L	22	Standard
	Y	89	680511.3	1.2				ug/L	388959	Standard
>	**Rh**	103	30.0	44.1				ug/L	8	Standard
	Mo	98	807.1	4.6	**0.2994**	0.013	4.5	ug/L	10	Standard
	Ag	107	690.0	2.3	**0.0921**	0.001	1.5	ug/L	66	Standard
	Cd	111	900.3	3.5	**0.4285**	0.016	3.6	mg/L	3	Standard
	Cd	114	2284.3	2.3	**0.4445**	0.009	2.0	ug/L	4	Standard
>	**In**	115	542685.0	1.5				ug/L	523327	Standard
	Sn	118	841.7	9.3	**0.0708**	0.016	22.3	ug/L	488	Standard
	Sb	123	375.6	14.5	**0.0630**	0.011	17.1	ug/L	195	Standard
	Ba	135	391757.3	0.9	**195.7332**	3.483	1.8	ug/L	28	Standard
	Ce	140	1541900.1	0.5				ug/L	83	Standard
>	**Tb**	159	840970.4	0.5				ug/L	809211	Standard
	Ho	165	22832.2	1.7				ug/L	13	Standard
	Tl	203	1216.4	2.7	**0.1526**	0.004	2.6	ug/L	4	Standard
	Tl	205	971.7	7.9	**0.1415**	0.010	7.0	ug/L	8	Standard
	Pb	206	250221.0	0.7	**50.6702**	0.971	1.9	ug/L	230	Standard
	Pb	207	204953.9	0.8	**45.7272**	0.956	2.1	ug/L	184	Standard
	Pb	208	911164.1	0.4	**49.6973**	0.457	0.9	ug/L	775	Standard
	U	238	5579.4	1.6	**0.8284**	0.004	0.5	ug/L	3	Standard
>	**Bi**	209	472023.0	1.3				ug/L	472452	Standard

Sample ID: L1606144414
Report Date/Time: Thursday, July 07, 2016 17:55:39
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	141.7	20.7	**0.0841**	0.027	32.6	mg/L	52	Standard
K	39	646.7	7.0	**2.2069**	0.213	9.6	mg/L	32	Standard
Ca	43	103.3	23.9	**6.4061**	2.381	37.2	mg/L	33	Standard
Fe	54	24298.6	1.6	**15.5475**	0.596	3.8	mg/L	138	Standard
Fe	57	6541.4	1.4	**15.1121**	0.235	1.6	mg/L	263	Standard
> **Sc-1**	45	35961.0	2.2				mg/L	27861	Standard
Cl	35	118755.6	1.3				ug/L	100607	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	4360.6	9.7				ug/L	1777	Standard
P	31	22041.0	1.8				ug/L	18074	Standard
S	34	5112.5	1.4				ug/L	3901	Standard
Sr	88	138.3	10.4				ug/L	60	Standard
C	12	463.3	26.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	11.2				mg/L	7	Standard
Dy	164	38187.2	0.3				mg/L	13	Standard
Ho-1	165	22832.2	1.7				mg/L	13	Standard
Er	166	20667.4	1.6				mg/L	3	Standard
I	127	37782.1	2.3				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.278	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		106.382	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606144414
Report Date/Time: Thursday, July 07, 2016 17:55:39
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.699	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.909	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144414
Report Date/Time: Thursday, July 07, 2016 17:55:39
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144415
Sample Date/Time: Thursday, July 07, 2016 17:56:34
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66363.4	2.4				ug/L	59299	Standard
	Be	9	2108.5	1.5	**2.2634**	0.079	3.5	ug/L	17	Standard
	Al	27	39174737.2	0.5	**261.7315**	7.318	2.8	ug/L	1472	Standard
	Sc	45	38859.8	0.7				ug/L	27861	Standard
	Ti	47	3226.0	1.1	**12.7016**	0.129	1.0	ug/L	28	Standard
	V	51	232421.6	1.5	**32.5586**	0.543	1.7	ug/L	1156	Standard
	Cr	52	224601.5	0.5	**29.7710**	0.213	0.7	ug/L	6689	Standard
	Cr	53	27319.6	2.5	**29.3641**	0.768	2.6	ug/L	348	Standard
	Mn	55	6225231.5	0.5	**931.3624**	5.395	0.6	ug/L	770	Standard
	Co	59	135653.6	0.5	**19.3668**	0.093	0.5	ug/L	216	Standard
	Ni	60	87895.6	0.9	**45.8556**	0.516	1.1	ug/L	440	Standard
	Cu	65	48064.4	0.3	**25.2019**	0.032	0.1	ug/L	116	Standard
	Zn	66	93460.4	0.7	**82.2404**	0.475	0.6	ug/L	135	Standard
>	**Ge**	72	472019.4	0.3				ug/L	445277	Standard
	As	75	5719.8	1.0	**4.9828**	0.053	1.1	ug/L	-57	Standard
	Se	82	75.7	18.7	**0.5000**	0.122	24.5	ug/L	10	Standard
	Se-1	77	158.3	8.2	**1.3969**	0.167	11.9	ug/L	57	Standard
>	**Ga**	71	37197.3	2.0				mg/L	78	Standard
	Rb	85	341732.8	1.1				ug/L	22	Standard
	Y	89	788339.5	0.8				ug/L	388959	Standard
>	**Rh**	103	55.0	48.1				ug/L	8	Standard
	Mo	98	487.1	3.3	**0.1777**	0.006	3.5	ug/L	10	Standard
	Ag	107	793.7	8.5	**0.1077**	0.010	9.1	ug/L	66	Standard
	Cd	111	480.4	5.1	**0.2266**	0.013	5.6	mg/L	3	Standard
	Cd	114	1162.8	11.4	**0.2239**	0.025	11.0	ug/L	4	Standard
>	**In**	115	543585.1	0.6				ug/L	523327	Standard
	Sn	118	2753.6	3.0	**0.4021**	0.017	4.3	ug/L	488	Standard
	Sb	123	200.9	30.8	**0.0259**	0.013	50.1	ug/L	195	Standard
	Ba	135	862276.7	0.7	**430.0626**	1.895	0.4	ug/L	28	Standard
	Ce	140	2256470.5	0.1				ug/L	83	Standard
>	**Tb**	159	855953.7	1.1				ug/L	809211	Standard
	Ho	165	31748.2	2.2				ug/L	13	Standard
	Tl	203	1725.8	1.4	**0.2195**	0.004	1.9	ug/L	4	Standard
	Tl	205	1480.1	11.2	**0.2189**	0.023	10.6	ug/L	8	Standard
	Pb	206	123737.2	0.2	**25.2723**	0.175	0.7	ug/L	230	Standard
	Pb	207	101759.9	0.6	**22.8992**	0.266	1.2	ug/L	184	Standard
	Pb	208	451105.0	0.8	**24.8189**	0.286	1.2	ug/L	775	Standard
	U	238	7070.0	1.2	**1.0601**	0.014	1.3	ug/L	3	Standard
>	**Bi**	209	467495.5	0.7				ug/L	472452	Standard

Sample ID: L1606144415
Report Date/Time: Thursday, July 07, 2016 17:58:51
Page 1

Approved: July 08, 2016

Na	23	3.3	86.6	**4.6803**	4.049	86.5	mg/L	0	Standard
Mg	24	236.7	9.8	**0.1665**	0.022	13.2	mg/L	52	Standard
K	39	473.3	8.2	**1.4526**	0.140	9.6	mg/L	32	Standard
Ca	43	240.0	25.3	**18.2155**	5.667	31.1	mg/L	33	Standard
Fe	54	32223.4	2.4	**19.0951**	0.456	2.4	mg/L	138	Standard
Fe	57	8730.8	3.3	**18.8250**	0.786	4.2	mg/L	263	Standard
Sc-1	45	38859.8	0.7				mg/L	27861	Standard
Cl	35	120377.7	1.4				ug/L	100607	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	2950.3	8.0				ug/L	1777	Standard
P	31	22698.7	3.2				ug/L	18074	Standard
S	34	5169.2	2.3				ug/L	3901	Standard
Sr	88	270.0	17.0				ug/L	60	Standard
C	12	143.3	24.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	47.2				mg/L	7	Standard
Dy	164	53566.9	2.3				mg/L	13	Standard
Ho-1	165	31748.2	2.2				mg/L	13	Standard
Er	166	28443.4	3.5				mg/L	3	Standard
I	127	29413.6	4.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.913	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.006	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144415
Report Date/Time: Thursday, July 07, 2016 17:58:51
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.871	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.951	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144415
Report Date/Time: Thursday, July 07, 2016 17:58:51
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144416
Sample Date/Time: Thursday, July 07, 2016 17:59:45
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61978.2	0.3				ug/L	59299	Standard
	Be	9	1008.4	4.1	**1.1591**	0.046	4.0	ug/L	17	Standard
	Al	27	19566258.4	0.8	**139.9065**	1.010	0.7	ug/L	1472	Standard
	Sc	45	35837.3	1.1				ug/L	27861	Standard
	Ti	47	3287.7	0.1	**12.6045**	0.021	0.2	ug/L	28	Standard
	V	51	163394.1	0.6	**22.2333**	0.144	0.6	ug/L	1156	Standard
	Cr	52	143730.5	0.1	**18.1858**	0.016	0.1	ug/L	6689	Standard
	Cr	53	17695.3	1.6	**18.3731**	0.312	1.7	ug/L	348	Standard
	Mn	55	3922690.2	1.2	**571.4511**	7.145	1.3	ug/L	770	Standard
	Co	59	78753.5	0.7	**10.9333**	0.066	0.6	ug/L	216	Standard
	Ni	60	51328.8	0.6	**25.9658**	0.116	0.4	ug/L	440	Standard
	Cu	65	39944.6	0.9	**20.3847**	0.202	1.0	ug/L	116	Standard
	Zn	66	73762.5	0.5	**63.1615**	0.385	0.6	ug/L	135	Standard
>	Ge	72	484718.0	0.1				ug/L	445277	Standard
	As	75	8159.5	1.2	**6.9074**	0.080	1.2	ug/L	-57	Standard
	Se	82	85.9	9.4	**0.5680**	0.067	11.8	ug/L	10	Standard
	Se-1	77	144.3	9.5	**1.1684**	0.169	14.5	ug/L	57	Standard
>	Ga	71	21511.9	1.5				mg/L	78	Standard
	Rb	85	216548.2	0.0				ug/L	22	Standard
	Y	89	677358.4	0.5				ug/L	388959	Standard
>	Rh	103	45.0	11.1				ug/L	8	Standard
	Mo	98	2043.7	3.9	**0.7546**	0.034	4.5	ug/L	10	Standard
	Ag	107	636.3	23.9	**0.0821**	0.023	27.7	ug/L	66	Standard
	Cd	111	1218.4	5.0	**0.5709**	0.033	5.7	mg/L	3	Standard
	Cd	114	2857.9	1.8	**0.5472**	0.009	1.7	ug/L	4	Standard
>	In	115	552443.1	0.7				ug/L	523327	Standard
	Sn	118	708.4	16.0	**0.0452**	0.019	41.9	ug/L	488	Standard
	Sb	123	652.8	14.4	**0.1194**	0.019	16.0	ug/L	195	Standard
	Ba	135	405525.5	0.9	**199.0027**	0.448	0.2	ug/L	28	Standard
	Ce	140	1350116.3	0.5				ug/L	83	Standard
>	Tb	159	846778.5	1.8				ug/L	809211	Standard
	Ho	165	21286.6	1.5				ug/L	13	Standard
	Tl	203	1142.7	9.6	**0.1417**	0.013	9.3	ug/L	4	Standard
	Tl	205	941.7	7.4	**0.1355**	0.010	7.2	ug/L	8	Standard
	Pb	206	352240.5	0.6	**70.5774**	0.801	1.1	ug/L	230	Standard
	Pb	207	289153.4	0.2	**63.8304**	0.431	0.7	ug/L	184	Standard
	Pb	208	1280862.1	1.0	**69.1300**	0.925	1.3	ug/L	775	Standard
	U	238	5162.9	1.0	**0.7584**	0.011	1.5	ug/L	3	Standard
>	Bi	209	477119.9	0.5				ug/L	472452	Standard

Sample ID: L1606144416
Report Date/Time: Thursday, July 07, 2016 18:02:02
Page 1

Approved: July 08, 2016

Na	23	3.3	86.6	**5.1063**	4.418	86.5	mg/L	0	Standard
Mg	24	143.3	16.5	**0.0867**	0.024	27.4	mg/L	52	Standard
K	39	466.7	8.0	**1.5612**	0.139	8.9	mg/L	32	Standard
Ca	43	93.3	43.6	**5.4393**	3.978	73.1	mg/L	33	Standard
Fe	54	19779.9	0.7	**12.6739**	0.227	1.8	mg/L	138	Standard
Fe	57	5439.3	3.1	**12.4980**	0.510	4.1	mg/L	263	Standard
> **Sc-1**	45	35837.3	1.1				mg/L	27861	Standard
Cl	35	119410.7	0.8				ug/L	100607	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	4517.3	5.8				ug/L	1777	Standard
P	31	21984.3	1.1				ug/L	18074	Standard
S	34	4960.8	1.7				ug/L	3901	Standard
Sr	88	138.3	7.5				ug/L	60	Standard
C	12	266.7	20.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	100.0	36.1				mg/L	7	Standard
Dy	164	35740.6	0.9				mg/L	13	Standard
Ho-1	165	21286.6	1.5				mg/L	13	Standard
Er	166	19562.6	1.4				mg/L	3	Standard
I	127	36450.5	3.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.518	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.858	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144416
Report Date/Time: Thursday, July 07, 2016 18:02:02
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.564
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.988
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144417
Sample Date/Time: Thursday, July 07, 2016 18:02:57
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65086.2	2.2				ug/L	59299	Standard
	Be	9	1806.8	5.4	**1.9759**	0.066	3.4	ug/L	17	Standard
	Al	27	33900214.7	2.1	**230.8357**	0.568	0.2	ug/L	1472	Standard
	Sc	45	37934.1	1.3				ug/L	27861	Standard
	Ti	47	3588.1	1.5	**14.3140**	0.396	2.8	ug/L	28	Standard
	V	51	229693.1	1.9	**32.5693**	1.014	3.1	ug/L	1156	Standard
	Cr	52	222624.7	0.6	**29.8724**	0.770	2.6	ug/L	6689	Standard
	Cr	53	26975.7	1.7	**29.3522**	1.083	3.7	ug/L	348	Standard
	Mn	55	5077704.5	1.1	**768.8417**	14.417	1.9	ug/L	770	Standard
	Co	59	120381.0	0.9	**17.3937**	0.509	2.9	ug/L	216	Standard
	Ni	60	78670.7	0.7	**41.5207**	1.134	2.7	ug/L	440	Standard
	Cu	65	59222.5	0.7	**31.4469**	0.832	2.6	ug/L	116	Standard
	Zn	66	104689.1	0.5	**93.2682**	2.001	2.1	ug/L	135	Standard
>	Ge	72	466476.1	2.0				ug/L	445277	Standard
	As	75	10837.2	0.8	**9.5220**	0.252	2.6	ug/L	-57	Standard
	Se	82	87.1	18.9	**0.6065**	0.143	23.6	ug/L	10	Standard
	Se-1	77	161.7	7.4	**1.4630**	0.115	7.9	ug/L	57	Standard
>	Ga	71	36366.9	1.9				mg/L	78	Standard
	Rb	85	329596.4	0.6				ug/L	22	Standard
	Y	89	751587.8	1.0				ug/L	388959	Standard
>	Rh	103	45.0	11.1				ug/L	8	Standard
	Mo	98	566.6	15.0	**0.2114**	0.033	15.8	ug/L	10	Standard
	Ag	107	748.0	2.9	**0.1027**	0.004	4.2	ug/L	66	Standard
	Cd	111	1157.1	2.5	**0.5598**	0.010	1.7	mg/L	3	Standard
	Cd	114	2810.0	0.7	**0.5558**	0.009	1.5	ug/L	4	Standard
>	In	115	534851.6	0.9				ug/L	523327	Standard
	Sn	118	570.0	4.6	**0.0248**	0.004	14.8	ug/L	488	Standard
	Sb	123	409.3	10.3	**0.0714**	0.008	11.6	ug/L	195	Standard
	Ba	135	546625.3	0.1	**277.0901**	2.348	0.8	ug/L	28	Standard
	Ce	140	1980044.4	0.6				ug/L	83	Standard
>	Tb	159	836960.7	0.5				ug/L	809211	Standard
	Ho	165	28812.4	2.0				ug/L	13	Standard
	Tl	203	1592.4	1.0	**0.2052**	0.002	1.0	ug/L	4	Standard
	Tl	205	1498.4	10.4	**0.2249**	0.024	10.7	ug/L	8	Standard
	Pb	206	236723.0	1.0	**49.0665**	0.627	1.3	ug/L	230	Standard
	Pb	207	194455.3	0.8	**44.4066**	0.518	1.2	ug/L	184	Standard
	Pb	208	858693.9	0.2	**47.9421**	0.086	0.2	ug/L	775	Standard
	U	238	6800.5	2.1	**1.0339**	0.021	2.0	ug/L	3	Standard
>	Bi	209	461076.4	0.3				ug/L	472452	Standard

Sample ID: L1606144417
Report Date/Time: Thursday, July 07, 2016 18:05:14
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	206.7	23.0	**0.1422**	0.048	33.8	mg/L	52	Standard
K	39	816.7	18.3	**2.6645**	0.517	19.4	mg/L	32	Standard
Ca	43	238.3	6.4	**18.6001**	1.739	9.3	mg/L	33	Standard
Fe	54	31659.0	0.8	**19.2209**	0.284	1.5	mg/L	138	Standard
Fe	57	8574.1	1.1	**18.9390**	0.163	0.9	mg/L	263	Standard
> **Sc-1**	45	37934.1	1.3				mg/L	27861	Standard
Cl	35	118769.0	0.6				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	3723.8	5.5				ug/L	1777	Standard
P	31	22062.7	1.4				ug/L	18074	Standard
S	34	4934.1	5.3				ug/L	3901	Standard
Sr	88	166.7	31.8				ug/L	60	Standard
C	12	153.3	10.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	44.1				mg/L	7	Standard
Dy	164	48443.8	2.0				mg/L	13	Standard
Ho-1	165	28812.4	2.0				mg/L	13	Standard
Er	166	26463.1	0.4				mg/L	3	Standard
I	127	38133.0	4.0				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.759	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.761	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606144417
Report Date/Time: Thursday, July 07, 2016 18:05:14
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.202	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.592	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144417
Report Date/Time: Thursday, July 07, 2016 18:05:14
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 18:06:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55984.9	2.3				ug/L	59299	Standard
	Be	9	43841.7	2.1	**55.7325**	0.753	1.4	ug/L	17	Standard
	Al	27	6792924.1	1.8	**53.7719**	0.801	1.5	ug/L	1472	Standard
	Sc	45	30487.3	1.5				ug/L	27861	Standard
	Ti	47	25132.2	1.8	**98.3589**	1.785	1.8	ug/L	28	Standard
	V	51	348856.3	0.7	**48.2847**	0.439	0.9	ug/L	1156	Standard
	Cr	52	370271.6	0.8	**49.0184**	0.733	1.5	ug/L	6689	Standard
	Cr	53	45306.0	2.4	**48.2852**	1.284	2.7	ug/L	348	Standard
	Mn	55	338984.8	1.3	**49.9009**	0.735	1.5	ug/L	770	Standard
	Co	59	345694.2	1.2	**48.7315**	0.602	1.2	ug/L	216	Standard
	Ni	60	95470.6	1.5	**49.1467**	1.070	2.2	ug/L	440	Standard
	Cu	65	95646.0	0.9	**49.5223**	0.752	1.5	ug/L	116	Standard
	Zn	66	56859.5	1.5	**49.2698**	0.745	1.5	ug/L	135	Standard
>	Ge	72	478581.8	0.8				ug/L	445277	Standard
	As	75	56668.4	0.4	**48.3635**	0.312	0.6	ug/L	-57	Standard
	Se	82	5750.5	1.7	**48.2252**	0.755	1.6	ug/L	10	Standard
	Se-1	77	3918.5	1.3	**49.0221**	0.815	1.7	ug/L	57	Standard
>	Ga	71	68.3	37.5				mg/L	78	Standard
	Rb	85	878.4	2.0				ug/L	22	Standard
	Y	89	404697.6	1.5				ug/L	388959	Standard
>	Rh	103	30.0	33.3				ug/L	8	Standard
	Mo	98	259235.1	1.5	**97.0319**	1.133	1.2	ug/L	10	Standard
	Ag	107	320130.3	0.4	**48.4068**	0.230	0.5	ug/L	66	Standard
	Cd	111	102257.4	0.7	**48.4605**	0.164	0.3	mg/L	3	Standard
	Cd	114	250929.6	1.8	**48.6365**	0.690	1.4	ug/L	4	Standard
>	In	115	549537.0	0.6				ug/L	523327	Standard
	Sn	118	283666.0	1.1	**48.6098**	0.777	1.6	ug/L	488	Standard
	Sb	123	231932.5	0.6	**48.5737**	0.273	0.6	ug/L	195	Standard
	Ba	135	95322.3	0.8	**47.0130**	0.493	1.0	ug/L	28	Standard
	Ce	140	1728.4	31.8				ug/L	83	Standard
>	Tb	159	815158.8	1.6				ug/L	809211	Standard
	Ho	165	30.0	76.4				ug/L	13	Standard
	Tl	203	389318.0	0.4	**49.4972**	0.579	1.2	ug/L	4	Standard
	Tl	205	335424.0	0.8	**49.7209**	0.381	0.8	ug/L	8	Standard
	Pb	206	244813.0	0.1	**49.5832**	0.361	0.7	ug/L	230	Standard
	Pb	207	220921.6	0.4	**49.3005**	0.210	0.4	ug/L	184	Standard
	Pb	208	935952.4	0.2	**51.0639**	0.295	0.6	ug/L	775	Standard
	U	238	335209.9	0.7	**49.8283**	0.410	0.8	ug/L	3	Standard
>	Bi	209	471876.7	0.8				ug/L	472452	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 18:08:27
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3995.5	4.0	**4.9325**	0.216	4.4	mg/L	52	Standard
K	39	850.0	9.1	**3.4839**	0.279	8.0	mg/L	32	Standard
Ca	43	51.7	56.7	**2.2371**	3.517	157.2	mg/L	33	Standard
Fe	54	6192.0	3.4	**4.5919**	0.101	2.2	mg/L	138	Standard
Fe	57	1866.8	6.1	**4.6366**	0.293	6.3	mg/L	263	Standard
> **Sc-1**	45	30487.3	1.5				mg/L	27861	Standard
Cl	35	122563.7	0.6				ug/L	100607	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2126.8	3.1				ug/L	1777	Standard
P	31	22867.2	0.5				ug/L	18074	Standard
S	34	5492.7	3.0				ug/L	3901	Standard
Sr	88	78.3	9.8				ug/L	60	Standard
C	12	70.0	28.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	7	Standard
Dy	164	75.4	67.5				mg/L	13	Standard
Ho-1	165	30.0	76.4				mg/L	13	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	8073.8	8.2				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	111.465		
	Al	27	107.544		
	Sc	45			
	Ti	47	98.359		
	V	51	96.569		
	Cr	52	98.037		
	Cr	53			
	Mn	55	99.802		
	Co	59	97.463		
	Ni	60	98.293		
	Cu	65	99.045		
	Zn	66	98.540		
>	Ge	72		107.479	
	As	75	96.727		
	Se	82	96.450		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 18:08:27
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	97.032		
Ag	107	96.814		
Cd	111	96.921		
Cd	114			
In	115		105.008	
Sn	118	97.220		
Sb	123	97.147		
Ba	135	94.026		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.994		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.128		
U	238	99.657		
Bi	209		99.878	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 18:08:27
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 18:09:21
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54894.3	1.1				ug/L	59299	Standard
	Be	9	26.7	21.7	**0.0359**	0.007	20.0	ug/L	17	Standard
	Al	27	33121.4	102.4	**0.2538**	0.271	106.8	ug/L	1472	Standard
	Sc	45	30283.6	1.7				ug/L	27861	Standard
	Ti	47	39.3	60.0	**0.0415**	0.092	223.0	ug/L	28	Standard
	V	51	1662.0	37.8	**0.0563**	0.087	154.0	ug/L	1156	Standard
	Cr	52	6963.3	4.9	**-0.0231**	0.044	189.2	ug/L	6689	Standard
	Cr	53	451.7	22.0	**0.0892**	0.104	117.0	ug/L	348	Standard
	Mn	55	8087.2	109.5	**1.0735**	1.310	122.0	ug/L	770	Standard
	Co	59	561.3	64.1	**0.0443**	0.051	114.2	ug/L	216	Standard
	Ni	60	359.7	28.3	**-0.0686**	0.052	76.2	ug/L	440	Standard
	Cu	65	232.0	39.5	**0.0631**	0.047	75.0	ug/L	116	Standard
	Zn	66	1004.0	25.2	**0.6847**	0.217	31.7	ug/L	135	Standard
>	Ge	72	473852.5	0.7				ug/L	445277	Standard
	As	75	-23.0	147.8	**0.0174**	0.029	168.3	ug/L	-57	Standard
	Se	82	19.7	17.9	**0.0220**	0.029	132.6	ug/L	10	Standard
	Se-1	77	55.7	12.6	**0.0748**	0.087	116.7	ug/L	57	Standard
>	Ga	71	53.3	57.3				mg/L	78	Standard
	Rb	85	280.0	84.9				ug/L	22	Standard
	Y	89	406803.7	2.1				ug/L	388959	Standard
>	Rh	103	13.3	21.7				ug/L	8	Standard
	Mo	98	321.1	29.3	**0.1132**	0.036	31.8	ug/L	10	Standard
	Ag	107	160.3	31.2	**0.0106**	0.008	72.4	ug/L	66	Standard
	Cd	111	42.5	58.6	**0.0165**	0.012	72.1	mg/L	3	Standard
	Cd	114	104.1	36.6	**0.0162**	0.007	45.7	ug/L	4	Standard
>	In	115	551862.8	0.6				ug/L	523327	Standard
	Sn	118	905.0	18.7	**0.0791**	0.029	37.2	ug/L	488	Standard
	Sb	123	761.3	34.3	**0.1423**	0.055	38.7	ug/L	195	Standard
	Ba	135	442.0	91.8	**0.2006**	0.201	100.3	ug/L	28	Standard
	Ce	140	1760.1	74.5				ug/L	83	Standard
>	Tb	159	808534.7	0.7				ug/L	809211	Standard
	Ho	165	16.7	124.9				ug/L	13	Standard
	Tl	203	128.7	48.0	**0.0143**	0.008	54.4	ug/L	4	Standard
	Tl	205	173.3	68.4	**0.0230**	0.017	75.7	ug/L	8	Standard
	Pb	206	1230.4	115.7	**0.1995**	0.286	143.5	ug/L	230	Standard
	Pb	207	1086.1	113.7	**0.1980**	0.274	138.2	ug/L	184	Standard
	Pb	208	5121.9	96.8	**0.2318**	0.268	115.8	ug/L	775	Standard
	U	238	173.7	47.6	**0.0249**	0.012	48.8	ug/L	3	Standard
>	Bi	209	475252.5	0.2				ug/L	472452	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 18:11:38
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**3.0279**	5.236	172.9	mg/L	0	Standard
Mg	24	55.0	41.7	**0.0033**	0.028	840.5	mg/L	52	Standard
K	39	16.7	45.8	**-0.0549**	0.034	61.5	mg/L	32	Standard
Ca	43	18.3	15.7	**-1.6757**	0.372	22.2	mg/L	33	Standard
Fe	54	215.8	21.5	**0.0535**	0.036	66.9	mg/L	138	Standard
Fe	57	270.0	6.7	**0.0979**	0.059	60.7	mg/L	263	Standard
Sc-1	45	30283.6	1.7				mg/L	27861	Standard
Cl	35	121755.4	1.9				ug/L	100607	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	2086.8	3.5				ug/L	1777	Standard
P	31	21483.6	2.1				ug/L	18074	Standard
S	34	5194.2	5.4				ug/L	3901	Standard
Sr	88	75.0	37.1				ug/L	60	Standard
C	12	80.0	12.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	72.4	76.7				mg/L	13	Standard
Ho-1	165	16.7	124.9				mg/L	13	Standard
Er	166	20.0	100.0				mg/L	3	Standard
I	127	5257.6	2.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.417	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 18:11:38
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.453
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.593
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 18:11:38
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144418
Sample Date/Time: Thursday, July 07, 2016 18:12:34
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65673.7	1.4				ug/L	59299	Standard
	Be	9	1835.1	1.9	**1.9902**	0.055	2.8	ug/L	17	Standard
	Al	27	38467332.8	1.0	**259.6485**	6.173	2.4	ug/L	1472	Standard
	Sc	45	39732.0	2.2				ug/L	27861	Standard
	Ti	47	3607.4	1.5	**14.2355**	0.166	1.2	ug/L	28	Standard
	V	51	271116.3	0.8	**38.0596**	0.441	1.2	ug/L	1156	Standard
	Cr	52	271623.1	0.3	**36.2569**	0.192	0.5	ug/L	6689	Standard
	Cr	53	33154.6	0.4	**35.7691**	0.226	0.6	ug/L	348	Standard
	Mn	55	4183630.7	0.7	**626.7068**	4.374	0.7	ug/L	770	Standard
	Co	59	130693.3	1.5	**18.6829**	0.345	1.8	ug/L	216	Standard
	Ni	60	85872.3	0.3	**44.8536**	0.219	0.5	ug/L	440	Standard
	Cu	65	55019.7	1.2	**28.8952**	0.261	0.9	ug/L	116	Standard
	Zn	66	100882.1	0.7	**88.9047**	0.325	0.4	ug/L	135	Standard
>	**Ge**	72	471392.7	0.4				ug/L	445277	Standard
	As	75	9740.1	0.4	**8.4701**	0.047	0.6	ug/L	-57	Standard
	Se	82	89.6	2.2	**0.6194**	0.017	2.7	ug/L	10	Standard
	Se-1	77	154.3	7.2	**1.3479**	0.135	10.0	ug/L	57	Standard
>	**Ga**	71	42143.5	0.9				mg/L	78	Standard
	Rb	85	400510.2	1.5				ug/L	22	Standard
	Y	89	793627.9	0.3				ug/L	388959	Standard
>	**Rh**	103	66.7	8.7				ug/L	8	Standard
	Mo	98	995.1	0.7	**0.3738**	0.003	0.7	ug/L	10	Standard
	Ag	107	928.4	4.3	**0.1298**	0.007	5.1	ug/L	66	Standard
	Cd	111	391.9	1.7	**0.1861**	0.004	2.0	mg/L	3	Standard
	Cd	114	916.9	5.9	**0.1776**	0.011	6.4	ug/L	4	Standard
>	**In**	115	538154.0	0.4				ug/L	523327	Standard
	Sn	118	550.0	11.6	**0.0207**	0.011	54.8	ug/L	488	Standard
	Sb	123	357.8	35.2	**0.0598**	0.027	44.6	ug/L	195	Standard
	Ba	135	1256101.9	0.5	**632.8131**	2.217	0.4	ug/L	28	Standard
	Ce	140	2379856.1	1.2				ug/L	83	Standard
>	**Tb**	159	840635.0	0.9				ug/L	809211	Standard
	Ho	165	32466.4	2.6				ug/L	13	Standard
	Tl	203	1984.1	1.9	**0.2542**	0.006	2.5	ug/L	4	Standard
	Tl	205	1768.4	6.6	**0.2638**	0.020	7.8	ug/L	8	Standard
	Pb	206	123366.5	0.5	**25.3496**	0.474	1.9	ug/L	230	Standard
	Pb	207	101037.4	0.5	**22.8726**	0.290	1.3	ug/L	184	Standard
	Pb	208	453732.5	0.7	**25.1156**	0.519	2.1	ug/L	775	Standard
	U	238	8586.4	1.3	**1.2953**	0.011	0.9	ug/L	3	Standard
>	**Bi**	209	464747.0	1.5				ug/L	472452	Standard

Sample ID: L1606144418
Report Date/Time: Thursday, July 07, 2016 18:14:51
Page 1

Approved: July 08, 2016

Na	23	6.7	114.6	**9.1759**	10.396	113.3	mg/L	0	Standard
Mg	24	225.0	3.8	**0.1503**	0.008	5.4	mg/L	52	Standard
K	39	858.4	1.3	**2.6734**	0.027	1.0	mg/L	32	Standard
Ca	43	346.7	10.6	**27.2678**	2.735	10.0	mg/L	33	Standard
Fe	54	39489.4	3.2	**22.9141**	0.803	3.5	mg/L	138	Standard
Fe	57	10573.7	2.8	**22.4212**	0.594	2.6	mg/L	263	Standard
Sc-1	45	39732.0	2.2				mg/L	27861	Standard
Cl	35	119700.4	1.8				ug/L	100607	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	3740.5	3.4				ug/L	1777	Standard
P	31	21969.3	2.0				ug/L	18074	Standard
S	34	5215.9	2.4				ug/L	3901	Standard
Sr	88	315.0	14.3				ug/L	60	Standard
C	12	140.0	44.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	113.8				mg/L	7	Standard
Dy	164	54349.2	1.6				mg/L	13	Standard
Ho-1	165	32466.4	2.6				mg/L	13	Standard
Er	166	28663.8	4.7				mg/L	3	Standard
I	127	30340.4	2.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		110.750	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.865	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606144418
Report Date/Time: Thursday, July 07, 2016 18:14:51
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.833	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.369	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144418
Report Date/Time: Thursday, July 07, 2016 18:14:51
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144419S WG574535-04
Sample Date/Time: Thursday, July 07, 2016 18:15:46
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60935.7	2.2				ug/L	59299	Standard
	Be	9	23773.6	3.2	**27.7691**	0.916	3.3	ug/L	17	Standard
	Al	27	18667083.8	1.8	**135.7725**	1.438	1.1	ug/L	1472	Standard
	Sc	45	36415.4	1.6				ug/L	27861	Standard
	Ti	47	4576.4	2.1	**17.7749**	0.272	1.5	ug/L	28	Standard
	V	51	315016.1	0.9	**43.4839**	0.435	1.0	ug/L	1156	Standard
	Cr	52	328403.1	1.1	**43.2614**	0.297	0.7	ug/L	6689	Standard
	Cr	53	41015.4	1.2	**43.5729**	0.543	1.2	ug/L	348	Standard
	Mn	55	4329482.6	0.9	**637.3658**	4.645	0.7	ug/L	770	Standard
	Co	59	239459.8	1.8	**33.6671**	0.509	1.5	ug/L	216	Standard
	Ni	60	95668.8	1.7	**49.1303**	0.610	1.2	ug/L	440	Standard
	Cu	65	82381.4	0.4	**42.5469**	0.109	0.3	ug/L	116	Standard
	Zn	66	89723.9	0.7	**77.6821**	0.088	0.1	ug/L	135	Standard
>	Ge	72	479670.0	0.6				ug/L	445277	Standard
	As	75	29322.9	0.8	**24.9860**	0.104	0.4	ug/L	-57	Standard
	Se	82	2162.2	0.3	**18.0014**	0.158	0.9	ug/L	10	Standard
	Se-1	77	1544.7	2.3	**18.8947**	0.487	2.6	ug/L	57	Standard
>	Ga	71	23782.0	1.7				mg/L	78	Standard
	Rb	85	234457.2	2.0				ug/L	22	Standard
	Y	89	649182.6	0.5				ug/L	388959	Standard
>	Rh	103	38.3	39.8				ug/L	8	Standard
	Mo	98	552.8	3.7	**0.2024**	0.007	3.6	ug/L	10	Standard
	Ag	107	153373.4	0.7	**23.4151**	0.250	1.1	ug/L	66	Standard
	Cd	111	50530.4	1.2	**24.1832**	0.333	1.4	mg/L	3	Standard
	Cd	114	122937.1	1.0	**24.0644**	0.314	1.3	ug/L	4	Standard
>	In	115	544139.8	0.7				ug/L	523327	Standard
	Sn	118	740.0	14.4	**0.0527**	0.019	36.5	ug/L	488	Standard
	Sb	123	8734.2	1.0	**1.8314**	0.023	1.3	ug/L	195	Standard
	Ba	135	389039.3	1.0	**193.8379**	2.947	1.5	ug/L	28	Standard
	Ce	140	1318627.0	1.9				ug/L	83	Standard
>	Tb	159	830693.4	1.7				ug/L	809211	Standard
	Ho	165	20136.7	1.2				ug/L	13	Standard
	Tl	203	187741.7	0.6	**23.9484**	0.218	0.9	ug/L	4	Standard
	Tl	205	164412.3	1.4	**24.4563**	0.619	2.5	ug/L	8	Standard
	Pb	206	219308.2	0.8	**44.5643**	0.607	1.4	ug/L	230	Standard
	Pb	207	184741.2	0.9	**41.3643**	0.882	2.1	ug/L	184	Standard
	Pb	208	811237.8	0.4	**44.4050**	0.522	1.2	ug/L	775	Standard
	U	238	167150.9	0.3	**24.9323**	0.395	1.6	ug/L	3	Standard
>	Bi	209	470301.3	1.3				ug/L	472452	Standard

Sample ID: L1606144419S WG574535-04
Report Date/Time: Thursday, July 07, 2016 18:18:03
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**2.4610**	4.254	172.9	mg/L	0	Standard
Mg	24	165.0	16.0	**0.1074**	0.030	27.9	mg/L	52	Standard
K	39	371.7	4.1	**1.1968**	0.074	6.2	mg/L	32	Standard
Ca	43	106.7	23.1	**6.6308**	2.533	38.2	mg/L	33	Standard
Fe	54	20878.1	2.0	**13.1673**	0.096	0.7	mg/L	138	Standard
Fe	57	5802.8	2.7	**13.1582**	0.588	4.5	mg/L	263	Standard
> **Sc-1**	45	36415.4	1.6				mg/L	27861	Standard
Cl	35	114414.4	1.5				ug/L	100607	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	3347.0	5.7				ug/L	1777	Standard
P	31	21276.6	1.6				ug/L	18074	Standard
S	34	4784.1	5.5				ug/L	3901	Standard
Sr	88	138.3	19.9				ug/L	60	Standard
C	12	110.0	24.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	83.3	48.5				mg/L	7	Standard
Dy	164	33667.7	3.7				mg/L	13	Standard
Ho-1	165	20136.7	1.2				mg/L	13	Standard
Er	166	18057.4	3.0				mg/L	3	Standard
I	127	26095.8	3.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.760	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.724	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144419S WG574535-04
Report Date/Time: Thursday, July 07, 2016 18:18:03
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.977
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.545
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144419S WG574535-04
Report Date/Time: Thursday, July 07, 2016 18:18:03
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606144420SD WG574535-05
Sample Date/Time: Thursday, July 07, 2016 18:18:57
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60980.8	1.7				ug/L	59299	Standard
	Be	9	22581.8	1.9	**26.3523**	0.060	0.2	ug/L	17	Standard
	Al	27	18145741.3	0.8	**131.9055**	3.124	2.4	ug/L	1472	Standard
	Sc	45	35620.2	4.7				ug/L	27861	Standard
	Ti	47	4438.7	1.6	**17.4667**	0.332	1.9	ug/L	28	Standard
	V	51	320003.0	1.3	**44.7582**	0.557	1.2	ug/L	1156	Standard
	Cr	52	319491.8	1.5	**42.6279**	0.577	1.4	ug/L	6689	Standard
	Cr	53	39489.7	1.0	**42.4929**	0.223	0.5	ug/L	348	Standard
	Mn	55	4438149.5	1.2	**661.9746**	8.673	1.3	ug/L	770	Standard
	Co	59	235190.9	1.4	**33.5015**	0.311	0.9	ug/L	216	Standard
	Ni	60	94162.0	0.7	**48.9944**	0.346	0.7	ug/L	440	Standard
	Cu	65	80476.8	1.1	**42.1099**	0.493	1.2	ug/L	116	Standard
	Zn	66	87781.2	1.0	**76.9975**	0.296	0.4	ug/L	135	Standard
>	**Ge**	72	473441.2	0.6				ug/L	445277	Standard
	As	75	28779.0	0.6	**24.8456**	0.057	0.2	ug/L	-57	Standard
	Se	82	2067.7	1.2	**17.4356**	0.207	1.2	ug/L	10	Standard
	Se-1	77	1481.4	1.4	**18.3408**	0.381	2.1	ug/L	57	Standard
>	**Ga**	71	22625.2	2.6				mg/L	78	Standard
	Rb	85	233541.2	0.9				ug/L	22	Standard
	Y	89	643890.5	0.5				ug/L	388959	Standard
>	**Rh**	103	38.3	39.8				ug/L	8	Standard
	Mo	98	511.7	7.1	**0.1881**	0.015	8.0	ug/L	10	Standard
	Ag	107	148081.5	0.8	**22.7409**	0.316	1.4	ug/L	66	Standard
	Cd	111	49029.0	1.3	**23.6029**	0.320	1.4	mg/L	3	Standard
	Cd	114	119744.3	2.8	**23.5777**	0.679	2.9	ug/L	4	Standard
>	**In**	115	540943.4	0.7				ug/L	523327	Standard
	Sn	118	586.7	5.7	**0.0266**	0.005	19.8	ug/L	488	Standard
	Sb	123	3118.1	2.0	**0.6469**	0.010	1.5	ug/L	195	Standard
	Ba	135	406252.7	0.2	**203.6050**	1.323	0.6	ug/L	28	Standard
	Ce	140	1263277.9	0.2				ug/L	83	Standard
>	**Tb**	159	825216.9	1.9				ug/L	809211	Standard
	Ho	165	19334.0	1.8				ug/L	13	Standard
	Tl	203	181450.4	0.5	**23.4461**	0.390	1.7	ug/L	4	Standard
	Tl	205	157927.3	1.9	**23.7953**	0.706	3.0	ug/L	8	Standard
	Pb	206	197502.7	1.3	**40.6491**	0.850	2.1	ug/L	230	Standard
	Pb	207	166457.8	1.0	**37.7446**	0.564	1.5	ug/L	184	Standard
	Pb	208	732349.6	1.2	**40.6014**	0.756	1.9	ug/L	775	Standard
	U	238	163026.4	0.7	**24.6301**	0.334	1.4	ug/L	3	Standard
>	**Bi**	209	464307.9	1.3				ug/L	472452	Standard

Sample ID: L1606144420SD WG574535-05
Report Date/Time: Thursday, July 07, 2016 18:21:14
Page 1

Approved: July 08, 2016

Na	23	3.3	173.2	**4.9043**	8.486	173.0	mg/L	0	Standard
Mg	24	143.3	11.2	**0.0885**	0.024	26.7	mg/L	52	Standard
K	39	418.3	15.4	**1.4050**	0.311	22.1	mg/L	32	Standard
Ca	43	85.0	36.7	**4.7497**	3.312	69.7	mg/L	33	Standard
Fe	54	21530.0	1.7	**13.9163**	0.906	6.5	mg/L	138	Standard
Fe	57	6057.9	2.0	**14.1131**	0.991	7.0	mg/L	263	Standard
Sc-1	45	35620.2	4.7				mg/L	27861	Standard
Cl	35	112916.0	2.0				ug/L	100607	Standard
Kr	83	3.3	96.4				ug/L	2	Standard
Br	81	2990.3	14.0				ug/L	1777	Standard
P	31	20400.4	2.2				ug/L	18074	Standard
S	34	4795.8	1.5				ug/L	3901	Standard
Sr	88	120.0	7.2				ug/L	60	Standard
C	12	170.0	15.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	21.7				mg/L	7	Standard
Dy	164	32159.3	1.2				mg/L	13	Standard
Ho-1	165	19334.0	1.8				mg/L	13	Standard
Er	166	17186.4	3.5				mg/L	3	Standard
I	127	24820.3	0.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.836	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.325	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606144420SD WG574535-05
Report Date/Time: Thursday, July 07, 2016 18:21:14
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.366
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.276
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144420SD WG574535-05
Report Date/Time: Thursday, July 07, 2016 18:21:14
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606145801
Sample Date/Time: Thursday, July 07, 2016 18:22:09
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59478.2	1.6				ug/L	59299	Standard
	Be	9	1430.1	0.9	**1.7126**	0.036	2.1	ug/L	17	Standard
	Al	27	5219865.0	0.9	**38.8937**	0.947	2.4	ug/L	1472	Standard
	Sc	45	38796.3	4.0				ug/L	27861	Standard
	Ti	47	44649.4	0.4	**174.0333**	0.721	0.4	ug/L	28	Standard
	V	51	252895.9	1.2	**34.7933**	0.365	1.0	ug/L	1156	Standard
	Cr	52	187692.1	0.8	**24.2512**	0.189	0.8	ug/L	6689	Standard
	Cr	53	22912.3	3.1	**24.1080**	0.776	3.2	ug/L	348	Standard
	Mn	55	4695861.8	0.9	**689.7417**	7.268	1.1	ug/L	770	Standard
	Co	59	128190.1	1.9	**17.9650**	0.273	1.5	ug/L	216	Standard
	Ni	60	54457.4	1.1	**27.7938**	0.421	1.5	ug/L	440	Standard
	Cu	65	47073.0	0.5	**24.2307**	0.088	0.4	ug/L	116	Standard
	Zn	66	166193.9	1.0	**143.7249**	0.691	0.5	ug/L	135	Standard
>	**Ge**	72	480772.8	0.7				ug/L	445277	Standard
	As	75	9716.9	0.9	**8.2862**	0.109	1.3	ug/L	-57	Standard
	Se	82	66.8	8.8	**0.4135**	0.045	10.9	ug/L	10	Standard
	Se-1	77	135.7	16.6	**1.0749**	0.290	27.0	ug/L	57	Standard
>	**Ga**	71	29256.6	3.2				mg/L	78	Standard
	Rb	85	237908.7	1.9				ug/L	22	Standard
	Y	89	778434.5	2.1				ug/L	388959	Standard
>	**Rh**	103	36.7	31.5				ug/L	8	Standard
	Mo	98	1918.5	2.1	**0.7193**	0.013	1.8	ug/L	10	Standard
	Ag	107	748.0	2.0	**0.1008**	0.002	1.8	ug/L	66	Standard
	Cd	111	434.5	3.7	**0.2046**	0.007	3.3	mg/L	3	Standard
	Cd	114	1095.8	1.7	**0.2108**	0.005	2.1	ug/L	4	Standard
>	**In**	115	543652.5	0.4				ug/L	523327	Standard
	Sn	118	14697.1	1.9	**2.4741**	0.055	2.2	ug/L	488	Standard
	Sb	123	236.7	25.6	**0.0335**	0.013	37.9	ug/L	195	Standard
	Ba	135	371524.9	0.3	**185.2668**	0.541	0.3	ug/L	28	Standard
	Ce	140	1289228.4	1.1				ug/L	83	Standard
>	**Tb**	159	838327.5	1.0				ug/L	809211	Standard
	Ho	165	30477.3	1.3				ug/L	13	Standard
	Tl	203	2160.5	0.9	**0.2747**	0.001	0.4	ug/L	4	Standard
	Tl	205	1806.8	4.6	**0.2673**	0.014	5.3	ug/L	8	Standard
	Pb	206	188287.7	0.4	**38.4001**	0.508	1.3	ug/L	230	Standard
	Pb	207	154634.1	0.3	**34.7441**	0.229	0.7	ug/L	184	Standard
	Pb	208	689169.5	0.4	**37.8606**	0.520	1.4	ug/L	775	Standard
	U	238	10609.4	1.2	**1.5879**	0.032	2.0	ug/L	3	Standard
>	**Bi**	209	468506.6	0.9				ug/L	472452	Standard

Sample ID: L1606145801
Report Date/Time: Thursday, July 07, 2016 18:24:26
Page 1

Approved: July 08, 2016

Na	23	1.7	173.2	**2.2555**	3.898	172.8	mg/L	0	Standard
Mg	24	836.7	15.2	**0.7556**	0.107	14.2	mg/L	52	Standard
K	39	245.0	16.7	**0.6892**	0.108	15.7	mg/L	32	Standard
Ca	43	33.3	43.3	**-0.7670**	1.348	175.8	mg/L	33	Standard
Fe	54	51272.8	1.4	**30.5228**	0.944	3.1	mg/L	138	Standard
Fe	57	13601.1	3.4	**29.7568**	0.734	2.5	mg/L	263	Standard
Sc-1	45	38796.3	4.0				mg/L	27861	Standard
Cl	35	111468.0	2.2				ug/L	100607	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2466.9	3.0				ug/L	1777	Standard
P	31	20867.7	2.2				ug/L	18074	Standard
S	34	4460.7	3.7				ug/L	3901	Standard
Sr	88	143.3	12.3				ug/L	60	Standard
C	12	113.3	31.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	193.3	26.0				mg/L	7	Standard
Dy	164	47134.4	1.0				mg/L	13	Standard
Ho-1	165	30477.3	1.3				mg/L	13	Standard
Er	166	28804.1	4.1				mg/L	3	Standard
I	127	23097.6	1.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.302	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.972	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145801
Report Date/Time: Thursday, July 07, 2016 18:24:26
Page 2

Approved: July 08, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.884
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.165
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606145801
Report Date/Time: Thursday, July 07, 2016 18:24:26
Page 3

Approved: July 08, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606145801
Sample Date/Time: Thursday, July 07, 2016 18:25:20
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52079.4	3.9				ug/L	59299	Standard
	Be	9	20.0	25.0	**0.0287**	0.007	25.6	ug/L	17	Standard
	Al	27	50649.6	3.5	**0.4185**	0.016	3.9	ug/L	1472	Standard
	Sc	45	26910.5	1.2				ug/L	27861	Standard
	Ti	47	415.7	0.5	**1.6570**	0.006	0.4	ug/L	28	Standard
	V	51	3328.6	0.7	**0.3262**	0.002	0.5	ug/L	1156	Standard
	Cr	52	6373.7	3.6	**-0.0369**	0.028	74.7	ug/L	6689	Standard
	Cr	53	451.7	12.3	**0.1272**	0.065	51.0	ug/L	348	Standard
	Mn	55	44624.6	2.2	**7.0343**	0.208	3.0	ug/L	770	Standard
	Co	59	1349.4	5.0	**0.1715**	0.009	5.5	ug/L	216	Standard
	Ni	60	730.4	3.2	**0.1544**	0.010	6.6	ug/L	440	Standard
	Cu	65	559.7	5.5	**0.2573**	0.017	6.8	ug/L	116	Standard
	Zn	66	2358.5	2.2	**2.0345**	0.060	2.9	ug/L	135	Standard
>	**Ge**	72	440112.8	0.7				ug/L	445277	Standard
	As	75	44.0	37.4	**0.0781**	0.015	19.4	ug/L	-57	Standard
	Se	82	17.6	11.1	**0.0154**	0.017	112.6	ug/L	10	Standard
	Se-1	77	54.3	18.2	**0.1107**	0.131	118.6	ug/L	57	Standard
>	**Ga**	71	280.0	9.4				mg/L	78	Standard
	Rb	85	2130.2	7.5				ug/L	22	Standard
	Y	89	373439.7	1.0				ug/L	388959	Standard
>	**Rh**	103	30.0	16.7				ug/L	8	Standard
	Mo	98	83.5	34.8	**0.0276**	0.012	42.8	ug/L	10	Standard
	Ag	107	89.3	4.2	**0.0012**	0.001	51.8	ug/L	66	Standard
	Cd	111	7.2	70.7	**0.0001**	0.003	1995.8	mg/L	3	Standard
	Cd	114	14.9	67.3	**-0.0007**	0.002	288.1	ug/L	4	Standard
>	**In**	115	501803.6	0.3				ug/L	523327	Standard
	Sn	118	251.7	8.0	**-0.0284**	0.004	13.7	ug/L	488	Standard
	Sb	123	941.7	45.0	**0.1993**	0.097	48.6	ug/L	195	Standard
	Ba	135	3473.4	2.4	**1.8594**	0.039	2.1	ug/L	28	Standard
	Ce	140	12199.9	1.3				ug/L	83	Standard
>	**Tb**	159	749432.3	0.4				ug/L	809211	Standard
	Ho	165	273.3	21.1				ug/L	13	Standard
	Tl	203	40.3	13.7	**0.0035**	0.001	20.6	ug/L	4	Standard
	Tl	205	35.0	14.3	**0.0030**	0.001	25.6	ug/L	8	Standard
	Pb	206	1960.5	3.5	**0.3724**	0.012	3.4	ug/L	230	Standard
	Pb	207	1558.4	5.6	**0.3254**	0.018	5.7	ug/L	184	Standard
	Pb	208	6959.6	2.1	**0.3563**	0.007	2.0	ug/L	775	Standard
	U	238	104.3	11.7	**0.0157**	0.002	12.8	ug/L	3	Standard
>	**Bi**	209	446080.5	0.6				ug/L	472452	Standard

Sample ID: L1606145801
Report Date/Time: Thursday, July 07, 2016 18:27:37
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	61.7	32.8	**0.0217**	0.029	133.2	mg/L	52	Standard
K	39	18.3	103.3	**-0.0390**	0.090	229.7	mg/L	32	Standard
Ca	43	20.0	66.1	**-1.2019**	1.713	142.5	mg/L	33	Standard
Fe	54	434.4	15.6	**0.2621**	0.056	21.3	mg/L	138	Standard
Fe	57	385.0	5.7	**0.5660**	0.085	15.0	mg/L	263	Standard
Sc-1	45	26910.5	1.2				mg/L	27861	Standard
Cl	35	97785.2	0.8				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1560.1	1.7				ug/L	1777	Standard
P	31	6371.3	2.4				ug/L	18074	Standard
S	34	3908.8	0.6				ug/L	3901	Standard
Sr	88	83.3	33.0				ug/L	60	Standard
C	12	53.3	47.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	7	Standard
Dy	164	472.3	19.0				mg/L	13	Standard
Ho-1	165	273.3	21.1				mg/L	13	Standard
Er	166	300.0	3.3				mg/L	3	Standard
I	127	8742.5	2.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		87.825	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.840	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606145801
Report Date/Time: Thursday, July 07, 2016 18:27:37
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.887
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.418
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, July 07, 2016 18:28:33
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48432.4	4.1				ug/L	59299	Standard
	Be	9	11.7	89.2	**0.0185**	0.016	84.2	ug/L	17	Standard
	Al	27	5665867.3	0.5	**51.8946**	2.164	4.2	ug/L	1472	Standard
	Sc	45	27732.0	2.4				ug/L	27861	Standard
	Ti	47	24494.1	1.5	**106.2374**	1.740	1.6	ug/L	28	Standard
	V	51	926.2	9.4	**-0.0341**	0.013	38.0	ug/L	1156	Standard
	Cr	52	5760.8	4.8	**-0.1108**	0.036	32.2	ug/L	6689	Standard
	Cr	53	4857.4	4.1	**5.3833**	0.231	4.3	ug/L	348	Standard
	Mn	55	2455.2	25.4	**0.2731**	0.099	36.3	ug/L	770	Standard
	Co	59	368.7	10.7	**0.0221**	0.006	25.9	ug/L	216	Standard
	Ni	60	697.0	4.7	**0.1431**	0.017	11.6	ug/L	440	Standard
	Cu	65	532.0	4.5	**0.2473**	0.012	4.7	ug/L	116	Standard
	Zn	66	864.7	1.3	**0.6368**	0.017	2.6	ug/L	135	Standard
>	**Ge**	72	431881.9	0.7				ug/L	445277	Standard
	As	75	8.2	897.3	**0.0454**	0.069	151.9	ug/L	-57	Standard
	Se	82	13.1	27.9	**-0.0235**	0.034	144.4	ug/L	10	Standard
	Se-1	77	356.3	3.4	**4.3660**	0.139	3.2	ug/L	57	Standard
>	**Ga**	71	118.3	25.5				mg/L	78	Standard
	Rb	85	785.0	13.2				ug/L	22	Standard
	Y	89	361645.5	2.8				ug/L	388959	Standard
>	**Rh**	103	15.0	120.2				ug/L	8	Standard
	Mo	98	214642.3	0.7	**89.6475**	1.179	1.3	ug/L	10	Standard
	Ag	107	138.7	11.2	**0.0098**	0.003	27.0	ug/L	66	Standard
	Cd	111	-165.1	5.4	**-0.0909**	0.004	4.6	mg/L	3	Standard
	Cd	114	430.7	8.4	**0.0893**	0.008	9.1	ug/L	4	Standard
>	**In**	115	492522.4	0.7				ug/L	523327	Standard
	Sn	118	410.0	8.0	**0.0028**	0.006	221.7	ug/L	488	Standard
	Sb	123	382.1	45.4	**0.0725**	0.040	55.2	ug/L	195	Standard
	Ba	135	145.3	44.7	**0.0630**	0.036	57.8	ug/L	28	Standard
	Ce	140	370.0	55.4				ug/L	83	Standard
>	**Tb**	159	747205.2	0.9				ug/L	809211	Standard
	Ho	165	23.3	32.7				ug/L	13	Standard
	Tl	203	83.7	22.8	**0.0096**	0.003	27.6	ug/L	4	Standard
	Tl	205	81.7	9.4	**0.0107**	0.001	11.5	ug/L	8	Standard
	Pb	206	334.7	11.7	**0.0257**	0.009	33.5	ug/L	230	Standard
	Pb	207	291.0	11.3	**0.0279**	0.008	28.2	ug/L	184	Standard
	Pb	208	1226.4	8.5	**0.0270**	0.006	22.7	ug/L	775	Standard
	U	238	18.3	56.8	**0.0023**	0.002	73.9	ug/L	3	Standard
>	**Bi**	209	434670.5	0.3				ug/L	472452	Standard

Sample ID: QC Std 4
Report Date/Time: Thursday, July 07, 2016 18:30:50
Page 1

Approved: July 08, 2016

Na	23	3.3	86.6	**6.6023**	5.718	86.6	mg/L	0	Standard
Mg	24	8434.0	0.6	**11.5357**	0.293	2.5	mg/L	52	Standard
K	39	895.0	1.7	**4.0586**	0.172	4.2	mg/L	32	Standard
Ca	43	113.3	10.2	**10.7683**	1.734	16.1	mg/L	33	Standard
Fe	54	13141.5	1.4	**10.8668**	0.187	1.7	mg/L	138	Standard
Fe	57	3807.1	4.8	**11.2363**	0.466	4.1	mg/L	263	Standard
Sc-1	45	27732.0	2.4				mg/L	27861	Standard
Cl	35	109200.8	1.3				ug/L	100607	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1683.4	18.7				ug/L	1777	Standard
P	31	7265.1	3.0				ug/L	18074	Standard
S	34	4579.0	2.5				ug/L	3901	Standard
Sr	88	86.7	23.3				ug/L	60	Standard
C	12	103.3	14.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	7	Standard
Dy	164	16.2	38.3				mg/L	13	Standard
Ho-1	165	23.3	32.7				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	3003.6	2.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	1.038		
Sc	45			
Ti	47	106.237		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.992	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 4
Report Date/Time: Thursday, July 07, 2016 18:30:50
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	89.648		
Ag	107			
Cd	111			
Cd	114			
In	115			94.114
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			92.003
Na	23	52.819		
Mg	24	230.715		
K	39	81.171		
Ca	43	71.789		
Fe	54	86.935		
Fe	57	89.891		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Mn	55	
QC Std 4	Na	23	

Sample ID: QC Std 4
Report Date/Time: Thursday, July 07, 2016 18:30:50
Page 3

Approved: July 08, 2016

QC Std 4	Mg	24
QC Std 4	Ca	43

Sample ID: QC Std 4
Report Date/Time: Thursday, July 07, 2016 18:30:50
Page 4

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, July 07, 2016 18:31:45
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50791.7	2.2				ug/L	59299	Standard
	Be	9	84642.4	0.1	**118.6299**	2.802	2.4	ug/L	17	Standard
	Al	27	5467395.8	0.8	**47.7156**	1.370	2.9	ug/L	1472	Standard
	Sc	45	29027.8	1.2				ug/L	27861	Standard
	Ti	47	22416.9	1.4	**90.2542**	1.482	1.6	ug/L	28	Standard
	V	51	660199.2	0.1	**94.1796**	0.665	0.7	ug/L	1156	Standard
	Cr	52	702857.2	0.3	**96.6535**	0.595	0.6	ug/L	6689	Standard
	Cr	53	91966.6	0.9	**101.2698**	0.081	0.1	ug/L	348	Standard
	Mn	55	642800.7	1.3	**97.4683**	0.609	0.6	ug/L	770	Standard
	Co	59	646389.5	1.1	**93.7773**	0.721	0.8	ug/L	216	Standard
	Ni	60	181893.7	1.0	**96.5742**	0.935	1.0	ug/L	440	Standard
	Cu	65	181396.7	0.5	**96.6795**	0.311	0.3	ug/L	116	Standard
	Zn	66	111120.3	0.5	**99.2640**	0.757	0.8	ug/L	135	Standard
>	Ge	72	465170.0	0.8				ug/L	445277	Standard
	As	75	110140.9	0.4	**96.6734**	0.802	0.8	ug/L	-57	Standard
	Se	82	10938.4	0.7	**94.5147**	0.175	0.2	ug/L	10	Standard
	Se-1	77	7747.3	1.6	**100.3806**	2.230	2.2	ug/L	57	Standard
>	Ga	71	130.0	3.8				mg/L	78	Standard
	Rb	85	713.4	6.0				ug/L	22	Standard
	Y	89	389851.3	1.9				ug/L	388959	Standard
>	Rh	103	31.7	48.2				ug/L	8	Standard
	Mo	98	206597.8	0.5	**79.0608**	1.281	1.6	ug/L	10	Standard
	Ag	107	547187.4	1.3	**84.6073**	2.113	2.5	ug/L	66	Standard
	Cd	111	196194.5	0.1	**95.0587**	1.034	1.1	mg/L	3	Standard
	Cd	114	474211.4	1.8	**93.9823**	2.475	2.6	ug/L	4	Standard
>	In	115	537576.1	1.2				ug/L	523327	Standard
	Sn	118	896.7	8.9	**0.0816**	0.014	17.1	ug/L	488	Standard
	Sb	123	439249.0	2.3	**94.0751**	3.062	3.3	ug/L	195	Standard
	Ba	135	181442.6	0.6	**91.4976**	0.623	0.7	ug/L	28	Standard
	Ce	140	1083.4	35.5				ug/L	83	Standard
>	Tb	159	791767.7	0.4				ug/L	809211	Standard
	Ho	165	33.3	67.6				ug/L	13	Standard
	Tl	203	752794.2	0.4	**97.1671**	0.257	0.3	ug/L	4	Standard
	Tl	205	653201.4	0.0	**98.3063**	0.316	0.3	ug/L	8	Standard
	Pb	206	479667.5	0.6	**98.6772**	0.463	0.5	ug/L	230	Standard
	Pb	207	415813.7	0.7	**94.2458**	0.370	0.4	ug/L	184	Standard
	Pb	208	1813698.9	0.2	**100.5054**	0.257	0.3	ug/L	775	Standard
	U	238	639962.1	0.7	**96.5825**	0.976	1.0	ug/L	3	Standard
>	Bi	209	464776.6	0.3				ug/L	472452	Standard

Sample ID: QC Std 5
Report Date/Time: Thursday, July 07, 2016 18:34:02
Page 1

Approved: July 08, 2016

Na	23	5.0	0.0	**9.4126**	0.112	1.2	mg/L	0	Standard
Mg	24	7980.4	1.2	**10.4188**	0.199	1.9	mg/L	52	Standard
K	39	686.7	11.3	**2.9419**	0.381	13.0	mg/L	32	Standard
Ca	43	88.3	34.6	**7.0120**	3.741	53.3	mg/L	33	Standard
Fe	54	12595.5	1.9	**9.9382**	0.086	0.9	mg/L	138	Standard
Fe	57	3487.1	1.5	**9.7496**	0.211	2.2	mg/L	263	Standard
Sc-1	45	29027.8	1.2				mg/L	27861	Standard
Cl	35	116265.8	2.0				ug/L	100607	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	2026.8	4.0				ug/L	1777	Standard
P	31	18194.3	1.7				ug/L	18074	Standard
S	34	4427.3	3.4				ug/L	3901	Standard
Sr	88	61.7	12.4				ug/L	60	Standard
C	12	170.0	25.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	7	Standard
Dy	164	39.2	43.8				mg/L	13	Standard
Ho-1	165	33.3	67.6				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	4252.3	6.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	118.630		
Al	27	0.954		
Sc	45			
Ti	47	90.254		
V	51	94.180		
Cr	52	96.653		
Cr	53			
Mn	55	97.468		
Co	59	93.777		
Ni	60	96.574		
Cu	65	96.680		
Zn	66	99.264		
Ge	72		104.467	
As	75	96.673		
Se	82	94.515		
Se-1	77			
Ga	71			

Sample ID: QC Std 5
Report Date/Time: Thursday, July 07, 2016 18:34:02
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	79.061		
Ag	107	84.607		
Cd	111	95.059		
Cd	114			
In	115		102.723	
Sn	118			
Sb	123	94.075		
Ba	135	91.498		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.167		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.505		
U	238	96.582		
Bi	209		98.375	
Na	23	75.301		
Mg	24	208.377		
K	39	58.838		
Ca	43	46.747		
Fe	54	79.506		
Fe	57	77.997		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Mo	98	
QC Std 5	Na	23	

Sample ID: QC Std 5
Report Date/Time: Thursday, July 07, 2016 18:34:02
Page 3

Approved: July 08, 2016

QC Std 5	Mg	24
QC Std 5	K	39
QC Std 5	Ca	43
QC Std 5	Fe	54
QC Std 5	Fe	57

Sample ID: QC Std 5
Report Date/Time: Thursday, July 07, 2016 18:34:02
Page 4

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 18:34:58
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53813.7	1.5				ug/L	59299	Standard
	Be	9	42243.8	2.6	**55.8838**	2.221	4.0	ug/L	17	Standard
	Al	27	6585407.5	0.6	**54.2341**	0.994	1.8	ug/L	1472	Standard
	Sc	45	28982.7	1.2				ug/L	27861	Standard
	Ti	47	24460.4	1.4	**99.0594**	1.578	1.6	ug/L	28	Standard
	V	51	336202.2	1.5	**48.1498**	0.768	1.6	ug/L	1156	Standard
	Cr	52	358962.4	0.3	**49.1731**	0.062	0.1	ug/L	6689	Standard
	Cr	53	45138.8	1.0	**49.7890**	0.472	0.9	ug/L	348	Standard
	Mn	55	325151.6	0.7	**49.5258**	0.315	0.6	ug/L	770	Standard
	Co	59	334244.8	1.1	**48.7551**	0.570	1.2	ug/L	216	Standard
	Ni	60	93426.5	0.3	**49.7649**	0.089	0.2	ug/L	440	Standard
	Cu	65	92328.1	0.7	**49.4636**	0.426	0.9	ug/L	116	Standard
	Zn	66	54951.8	1.1	**49.2716**	0.589	1.2	ug/L	135	Standard
>	**Ge**	72	462501.9	0.2				ug/L	445277	Standard
	As	75	55230.7	0.9	**48.7737**	0.407	0.8	ug/L	-57	Standard
	Se	82	5593.1	2.0	**48.5354**	0.883	1.8	ug/L	10	Standard
	Se-1	77	3809.1	2.2	**49.3126**	1.155	2.3	ug/L	57	Standard
>	**Ga**	71	41.7	18.3				mg/L	78	Standard
	Rb	85	873.4	4.9				ug/L	22	Standard
	Y	89	391190.7	0.3				ug/L	388959	Standard
>	**Rh**	103	35.0	57.1				ug/L	8	Standard
	Mo	98	252601.1	1.3	**96.2919**	1.558	1.6	ug/L	10	Standard
	Ag	107	313215.1	0.9	**48.2309**	0.286	0.6	ug/L	66	Standard
	Cd	111	99574.7	0.2	**48.0572**	0.210	0.4	mg/L	3	Standard
	Cd	114	241057.7	1.0	**47.5834**	0.425	0.9	ug/L	4	Standard
>	**In**	115	539615.7	0.4				ug/L	523327	Standard
	Sn	118	278808.5	0.4	**48.6543**	0.354	0.7	ug/L	488	Standard
	Sb	123	234122.5	0.4	**49.9338**	0.141	0.3	ug/L	195	Standard
	Ba	135	93656.6	1.1	**47.0393**	0.446	0.9	ug/L	28	Standard
	Ce	140	491.7	12.8				ug/L	83	Standard
>	**Tb**	159	795106.8	0.9				ug/L	809211	Standard
	Ho	165	20.0	75.0				ug/L	13	Standard
	Tl	203	382621.3	0.4	**49.2527**	0.630	1.3	ug/L	4	Standard
	Tl	205	332846.4	0.8	**49.9550**	0.576	1.2	ug/L	8	Standard
	Pb	206	241102.2	0.5	**49.4397**	0.307	0.6	ug/L	230	Standard
	Pb	207	217155.1	0.3	**49.0663**	0.626	1.3	ug/L	184	Standard
	Pb	208	928907.9	0.2	**51.3141**	0.685	1.3	ug/L	775	Standard
	U	238	332209.7	1.0	**49.9970**	0.386	0.8	ug/L	3	Standard
>	**Bi**	209	466076.1	1.1				ug/L	472452	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 18:37:15
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3798.8	1.8	**4.9331**	0.126	2.6	mg/L	52	Standard
K	39	841.7	5.6	**3.6377**	0.229	6.3	mg/L	32	Standard
Ca	43	58.3	17.8	**3.3339**	1.189	35.7	mg/L	33	Standard
Fe	54	6114.9	4.2	**4.7761**	0.228	4.8	mg/L	138	Standard
Fe	57	1881.8	8.0	**4.9599**	0.479	9.7	mg/L	263	Standard
> **Sc-1**	45	28982.7	1.2				mg/L	27861	Standard
Cl	35	114614.6	1.1				ug/L	100607	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1873.4	2.9				ug/L	1777	Standard
P	31	19916.4	1.5				ug/L	18074	Standard
S	34	4892.5	3.0				ug/L	3901	Standard
Sr	88	86.7	8.8				ug/L	60	Standard
C	12	70.0	37.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	16.0	127.5				mg/L	13	Standard
Ho-1	165	20.0	75.0				mg/L	13	Standard
Er	166	13.3	86.6				mg/L	3	Standard
I	127	6413.0	6.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	111.768		
Al	27	108.468		
Sc	45			
Ti	47	99.059		
V	51	96.300		
Cr	52	98.346		
Cr	53			
Mn	55	99.052		
Co	59	97.510		
Ni	60	99.530		
Cu	65	98.927		
Zn	66	98.543		
> Ge	72		103.868	
As	75	97.547		
Se	82	97.071		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 18:37:15
Page 2

Approved: July 08, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	96.292		
Ag	107	96.462		
Cd	111	96.114		
Cd	114			
> In	115			103.113
Sn	118	97.309		
Sb	123	99.868		
Ba	135	94.079		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.505		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.628		
U	238	99.994		
> Bi	209			98.651
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
Report Date/Time: Thursday, July 07, 2016 18:37:15
Page 3

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 18:38:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54014.5	1.9				ug/L	59299	Standard
	Be	9	43.3	58.1	**0.0582**	0.032	55.5	ug/L	17	Standard
	Al	27	6925.7	87.9	**0.0435**	0.049	112.2	ug/L	1472	Standard
	Sc	45	29151.4	0.8				ug/L	27861	Standard
	Ti	47	34.7	64.3	**0.0271**	0.090	330.1	ug/L	28	Standard
	V	51	1252.2	21.1	**0.0045**	0.037	818.0	ug/L	1156	Standard
	Cr	52	6291.0	5.0	**-0.0874**	0.037	42.6	ug/L	6689	Standard
	Cr	53	550.0	11.8	**0.2152**	0.069	32.1	ug/L	348	Standard
	Mn	55	1661.8	65.8	**0.1268**	0.165	130.4	ug/L	770	Standard
	Co	59	396.0	56.1	**0.0226**	0.032	142.0	ug/L	216	Standard
	Ni	60	277.3	19.3	**-0.1071**	0.027	25.7	ug/L	440	Standard
	Cu	65	200.3	27.3	**0.0499**	0.028	57.1	ug/L	116	Standard
	Zn	66	881.7	3.5	**0.6025**	0.021	3.5	ug/L	135	Standard
>	Ge	72	459154.0	0.9				ug/L	445277	Standard
	As	75	-5.8	547.3	**0.0320**	0.028	88.8	ug/L	-57	Standard
	Se	82	17.6	19.6	**0.0089**	0.031	349.8	ug/L	10	Standard
	Se-1	77	63.0	7.3	**0.1949**	0.065	33.1	ug/L	57	Standard
>	Ga	71	28.3	40.8				mg/L	78	Standard
	Rb	85	91.7	80.4				ug/L	22	Standard
	Y	89	393198.4	0.5				ug/L	388959	Standard
>	Rh	103	25.0	34.6				ug/L	8	Standard
	Mo	98	508.0	36.6	**0.1862**	0.069	37.0	ug/L	10	Standard
	Ag	107	381.7	23.6	**0.0450**	0.013	29.7	ug/L	66	Standard
	Cd	111	46.7	109.4	**0.0188**	0.024	129.4	mg/L	3	Standard
	Cd	114	114.9	87.4	**0.0186**	0.019	104.7	ug/L	4	Standard
>	In	115	541136.5	1.1				ug/L	523327	Standard
	Sn	118	935.0	6.2	**0.0873**	0.010	11.0	ug/L	488	Standard
	Sb	123	1773.9	29.5	**0.3612**	0.113	31.2	ug/L	195	Standard
	Ba	135	166.3	87.0	**0.0658**	0.071	108.7	ug/L	28	Standard
	Ce	140	421.7	70.5				ug/L	83	Standard
>	Tb	159	798148.1	0.4				ug/L	809211	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	216.0	76.1	**0.0256**	0.021	81.8	ug/L	4	Standard
	Tl	205	171.7	76.5	**0.0230**	0.019	84.7	ug/L	8	Standard
	Pb	206	388.3	35.6	**0.0309**	0.028	90.7	ug/L	230	Standard
	Pb	207	333.3	40.7	**0.0319**	0.030	95.0	ug/L	184	Standard
	Pb	208	1430.7	42.6	**0.0326**	0.033	102.2	ug/L	775	Standard
	U	238	173.7	90.8	**0.0252**	0.023	93.2	ug/L	3	Standard
>	Bi	209	470805.2	0.3				ug/L	472452	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 18:40:26
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	27.0	**-0.0046**	0.017	361.3	mg/L	52	Standard
K	39	20.0	66.1	**-0.0380**	0.058	153.7	mg/L	32	Standard
Ca	43	15.0	57.7	**-2.0040**	1.060	52.9	mg/L	33	Standard
Fe	54	177.4	16.7	**0.0294**	0.023	77.8	mg/L	138	Standard
Fe	57	283.3	18.4	**0.1674**	0.157	93.7	mg/L	263	Standard
Sc-1	45	29151.4	0.8				mg/L	27861	Standard
Cl	35	115608.8	1.5				ug/L	100607	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1923.5	3.0				ug/L	1777	Standard
P	31	19545.9	2.1				ug/L	18074	Standard
S	34	4854.1	4.2				ug/L	3901	Standard
Sr	88	86.7	24.0				ug/L	60	Standard
C	12	80.0	12.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	7	Standard
Dy	164	39.5	42.8				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	4280.6	0.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.116	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 18:40:26
Page 2

Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.403	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.652	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 18:40:26
Page 3

Approved: July 08, 2016

2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW25F-062916	**Prep Method:**	7470A	**Prep Date:**	07/05/2016 07:18
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/07/2016 13:11
Workgroup #:	WG575509	**Analyst:**	PDM	**Run Date:**	07/07/2016 13:54
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	M7.070716.135434
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG575094
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 07/05/2016 07:18
Hotblock Start Temp: 95.4 @ 07:10
Hotblock End Temp: 95.5 @ 09:10
Instrument: HB6

SOP: ME404 Revison 17
Spike Solution: STD76924
Spike Witness: ERP
H2SO4 Lot #: COA18359
40 & 50 ML. DIGESTION TU COA18987
HNO3 Lot #: COA19030
KMnO4 1:1 Lot #: RGT37128
K2S2O8 1:1 Lot #: RGT37142
Mercury Water ICV Lot #: STD76926
HG H2O STDS 10PPM Lot #: STD76932

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG575094-03	BLANK	1	40 mL	40 mL		
2	WG574809-01	FBLK1	17	4 mL	40 mL		
3	WG575094-04	LCS	1	40 mL	40 mL	4 mL	
4	L16061591-01	SAMP	17	4 mL	40 mL		07/07/16
5	WG575094-01	REF	17	4 mL	40 mL		
6	L16061591-02	SAMP	17	4 mL	40 mL		07/07/16
7	L16061591-03	SAMP	17	4 mL	40 mL		07/07/16
8	L16061636-02	SAMP	2	40 mL	40 mL		07/08/16
9	L16061648-02	SAMP	1	40 mL	40 mL		07/11/16
10	L16070001-01	ML01	1	40 mL	40 mL	.1 mL	07/15/16
11	L16070003-01	ML01	1	40 mL	40 mL	.2 mL	07/15/16
12	L16070003-09	ML09	1	40 mL	40 mL	.2 mL	07/15/16
13	WG575094-02	REF	2	40 mL	40 mL		
14	L16070067-01	SAMP	2	40 mL	40 mL		07/12/16
15	L16070067-02	SAMP	2	40 mL	40 mL		07/12/16
16	L16070067-03	SAMP	2	40 mL	40 mL		07/12/16
17	WG575094-05	MS	1	36 mL	40 mL	4 mL	
18	WG575094-06	MSD	1	36 mL	40 mL	4 mL	
19	WG575094-07	DUP	1	40 mL	40 mL		

Analyst: [signature]

Reviewer: [signature]

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4838325
Report generated: 07/05/2016 10:27

MICROBAC®

TCLP Non-Volatile

Analyst(s): AMA, CPD, BNB
Date: 6/30/16
Filter Lot #: 94860030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
AMA	6/30/16	CPD	7/1/16
Time On	Temp On °C	Time Off	Temp Off °C
1529	23.4	0818	22.1

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
G-8	6-1591-01	ME, SV	1311	F2-380	S	100	8.81	6.61	50.47	1009	6.24
G-10	-02						8.78	6.70	50.77	1015	6.32
G15	-03						8.59	5.70	50.30	1006	5.00
NA	FBLK 2	ME, SV	1311	F2-380	NA	NA	NA	NA	100	100	2.85

BNB 06/30/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: NA

Peer Review By:

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 070716A.CSV

Analyst1: PDM Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76932 ICV Std: STD76926 Post Spike: STD76932

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 575509

Comments: Seqeunces 28 through 31 were not reported due to continuing calibration verification failure for NPDES acceptance criteria.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.070716.125846	WG575552-01	Calibration Point		1		07/07/16 12:58
2	M7.070716.130117	WG575552-02	Calibration Point		1		07/07/16 13:01
3	M7.070716.130349	WG575552-03	Calibration Point		1		07/07/16 13:03
4	M7.070716.130621	WG575552-04	Calibration Point		1		07/07/16 13:06
5	M7.070716.130854	WG575552-05	Calibration Point		1		07/07/16 13:08
6	M7.070716.131128	WG575552-06	Calibration Point		1		07/07/16 13:11
7	M7.070716.131402	WG575552-07	Initial Calibration Verification		1		07/07/16 13:14
8	M7.070716.131633	WG575552-08	Initial Calib Blank		1		07/07/16 13:16
9	M7.070716.131905	WG575552-09	CCV		1		07/07/16 13:19
10	M7.070716.132136	WG575552-10	CCB		1		07/07/16 13:21
11	M7.070716.132407	WG575094-03	Method/Prep Blank	40/40	1		07/07/16 13:24
12	M7.070716.132638	WG575094-04	Laboratory Control S	40/40	1		07/07/16 13:26
13	M7.070716.132910	WG574809-01	Fluid Blank 1		1		07/07/16 13:29
14	M7.070716.133141	L16061591-01	062316-11	4/40	1		07/07/16 13:31
15	M7.070716.133413	WG575509-01	Post Digestion Spike		1	L16061591-01	07/07/16 13:34
16	M7.070716.133646	WG575094-01	Reference Sample	4/40	1	L16061591-02	07/07/16 13:36
17	M7.070716.133918	WG575094-05	Matrix Spike	36/40	1	L16061591-02	07/07/16 13:39
18	M7.070716.134151	WG575094-06	Matrix Spike Duplica	36/40	1	L16061591-02	07/07/16 13:41
19	M7.070716.134424	L16061591-03	062316-13	4/40	1		07/07/16 13:44
20	M7.070716.134657	L16061636-02	V6F0241-02	40/40	1		07/07/16 13:46
21	M7.070716.134930	WG575552-11	CCV		1		07/07/16 13:49
22	M7.070716.135201	WG575552-12	CCB		1		07/07/16 13:52
23	M7.070716.135434	L16061648-02	18WW25F-062916	40/40	1		07/07/16 13:54
24	M7.070716.135708	WG575509-02	Post Digestion Spike		1	L16061648-02	07/07/16 13:57
25	M7.070716.135939	L16070001-01	MDL-1	40/40	1		07/07/16 13:59
26	M7.070716.140209	L16070003-01	LOQ-1	40/40	1		07/07/16 14:02
27	M7.070716.140440	L16070003-09	LOQ-9	40/40	1		07/07/16 14:04
28	M7.070716.140711	L16070067-01	WEST RETENTION POND		1	WG575094-02	07/07/16 14:07
29	M7.070716.140943	WG575094-07	Duplicate		1	L16070067-01	07/07/16 14:09
30	M7.070716.141214	L16070067-02	OUTFALL 001		1		07/07/16 14:12
31	M7.070716.141446	L16070067-03	CATCH BASIN 29		1		07/07/16 14:14
32	M7.070716.141719	WG575552-13	CCV		1		07/07/16 14:17
33	M7.070716.141949	WG575552-14	CCB		1		07/07/16 14:19

Page: 1 Approved: July 11, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 07-JUL-2016
Analyst: PDM
Analyst: NA
Method: 7470/245.1
Instrument: CVAA1
Curve Workgroup: 575552
Runlog ID: 76164
Analytical Workgroups: 575509

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1648
Client Forms	X
Level X	
Level 3	
Level 4	1648
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	PDM
Secondary Reviewer	KHR
Comments	

Primary Reviewer: 08-JUL-2016 Pierce Morris

Secondary Reviewer: 11-JUL-2016 Kym H. Rhoden

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-11-2016 07:38:16

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG575509

Login Number: L16061648

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW25F-062916	02	06/29/16					07/05/2016	6	28		07/07/16	8.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4845210
Report generated 07/08/2016 12:43

METHOD BLANK SUMMARY

Login Number: L16061648
Blank File ID: M7.070716.132407
Prep Date: 07/05/16 07:18
Analyzed Date: 07/07/16 13:24
Analyst: PDM

Work Group: WG575509
Blank Sample ID: WG575094-03
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG575094-04	M7.070716.132638	07/07/16 13:26	01
18WW25F-062916	L16061648-02	M7.070716.135434	07/07/16 13:54	01

Report Name: BLANK_SUMMARY
PDF File ID: 4845211
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061648 Prep Date: 07/05/16 07:18 Sample ID: WG575094-03
Instrument ID: CVAA1 Run Date: 07/07/16 13:24 Prep Method: 7470A
File ID: M7.070716.132407 Analyst: PDM Method: 7470A
Workgroup (AAB#): WG575509 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-07-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4845212
08-JUL-2016 12:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061648 Run Date: 07/07/2016 Sample ID: WG575094-04
Instrument ID: CVAA1 Run Time: 13:26 Prep Method: 7470A
File ID: M7.070716.132638 Analyst: PDM Method: 7470A
Workgroup (AAB#): WG575509 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76924 Cal ID: CVAA1-07-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00430	107	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4845213
Report generated: 07/08/2016 12:43

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061648 Cal ID: CVAA1 - Worknum: WG575509
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG575094-01 File ID: M7.070716.133646 Dil: 1 Matrix: WATER
Sample ID: WG575094-05 MS File ID: M7.070716.133918 Dil: 1 Units: mg/L
Sample ID: WG575094-06 MSD File ID: M7.070716.134151 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00488	110	0.00444	0.00486	109	0.251	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4845214
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061648 **Worknum:** WG575509
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG575509-02 **File ID:** M7.070716.135708 **Dil:** 1 **Units:** ug/L
Sample ID: L16061648-02 **File ID:** M7.070716.135434 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.07		0	U	1	107.4	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4845209
Report generated: 07/08/2016 12:43

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061648
Analytical Method: 7470A
ICAL Worknum: WG575552

Workgroup (AAB#): WG575509
Instrument ID: CVAA1
Initial Calibration Date: 07/07/2016 13:11

Analyte	WG575552-01		WG575552-02		WG575552-03		WG575552-04		WG575552-05		WG575552-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	-28.08	0.200	2269	1.00	11300	2.00	23140	5.00	57040	10.0	109900

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4845215
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061648
Analytical Method: 7470A
ICAL Worknum: WG575552

Workgroup (AAB#): WG575509
Instrument ID: CVAA1
Initial Calibration Date: 07/07/2016 13:11

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4845215
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061648
Instrument ID: CVAA1
File ID: M7.070716.131633
Workgroup (AAB#): WG575509
Matrix: WATER

Run Date: 07/07/2016
Run Time: 13:16
Analyst: PDM
Cal ID: CVAA1 - 07-JUL-16

Sample ID: WG575552-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4845217
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575552-10
Instrument ID: CVAA1
Run Time: 13:21
Method: 7470A
File ID: M7.070716.132136
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG575509
Cal ID: CVAA1 - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4845219
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575552-12
Instrument ID: CVAA1
Run Time: 13:52
Method: 7470A
File ID: M7.070716.135201
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG575509
Cal ID: CVAA1 - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4845219
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575552-14
Instrument ID: CVAA1
Run Time: 14:19
Method: 7470A
File ID: M7.070716.141949
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG575509
Cal ID: CVAA1 - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4845219
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061648 Run Date: 07/07/2016 Sample ID: WG575552-07
Instrument ID: CVAA1 Run Time: 13:14 Method: 7470A
File ID: M7.070716.131402 Analyst: PDM Units: ug/L
Workgroup (AAB#): WG575509 Cal ID: CVAA1 - 07-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.05	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4845216
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575552-09
Instrument ID: CVAA1
Run Time: 13:19
Method: 7470A
File ID: M7.070716.131905
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG575509
Cal ID: CVAA1 - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00207	mg/L	104	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4845218
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575552-11
Instrument ID: CVAA1
Run Time: 13:49
Method: 7470A
File ID: M7.070716.134930
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG575509
Cal ID: CVAA1 - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00215	mg/L	108	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4845218
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575552-13
Instrument ID: CVAA1
Run Time: 14:17
Method: 7470A
File ID: M7.070716.141719
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG575509
Cal ID: CVAA1 - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00223	mg/L	111	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4845218
Report generated 07/08/2016 12:43

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\070716A.wsz
Date Started: 7/7/2016 12:36:09 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	07/07/16 12:58:46 pm	0.0000	-28	98.19		1.00
Replicates	1.6	-53.6	-49.4	-10.9							
Standard #1 (0.2 ug/L)					STD	07/07/16 01:01:17 pm	0.2000	2269	0.70		1.00
Replicates	2289.7	2256.5	2256.7	2274.5							
Standard #2 (1.0 ug/L)					STD	07/07/16 01:03:49 pm	1.0000	11300	0.31		1.00
Replicates	11349.4	11297.0	11269.8	11284.3							
Standard #3 (2.0 ug/L)					STD	07/07/16 01:06:21 pm	2.0000	23139	0.18		1.00
Replicates	23194.7	23147.0	23116.8	23096.5							
Standard #4 (5.0 ug/L)					STD	07/07/16 01:08:54 pm	5.0000	57042	0.26		1.00
Replicates	57240.8	57061.1	56930.6	56935.9							
Standard #5 (10.0 ug/L)					STD	07/07/16 01:11:28 pm	10.0000	109860	0.39		1.00
Replicates	110419.9	109967.5	109578.8	109475.3							

Calibration

Equation: A = 517.356 + 11015.300C
R2: 0.99960
SEE: 956.2371
Flags:

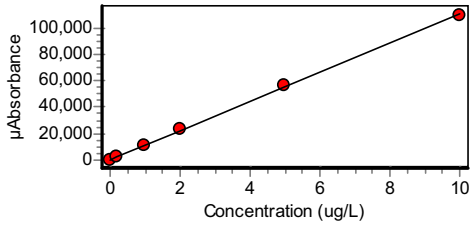

ICV					ICV	07/07/16 01:14:02 pm	2.0480	23073	0.36		1.00
Replicates	23170.8	23111.7	23010.2	23001.2							
% Recovery	102.39										

Approved: July 08, 2016
Pierce Morris

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	07/07/16 01:16:33 pm	-0.0506	-40	28.11		1.00
Replicates	-39.6	-36.2	-29.0	-55.7							
CCV					CCV	07/07/16 01:19:05 pm	2.0710	23330	0.80		1.00
Replicates	23541.1	23407.5	23266.3	23106.2							
% Recovery	103.55										
CCB					CCB	07/07/16 01:21:36 pm	-0.0581	-123	22.01		1.00
Replicates	-92.2	-112.0	-130.7	-155.5							
WG575094-03					MB	07/07/16 01:24:07 pm	-0.0464	6	176.12		1.00
Replicates	-2.0	0.2	4.6	22.9							
WG575094-04					LCS	07/07/16 01:26:38 pm	4.2970	47849	0.91		1.00
Replicates	48342.6	48043.9	47674.4	47336.9							
% Recovery	107.42										
WG574809-01					UNK	07/07/16 01:29:10 pm	-0.0414	61	59.38		1.00
Replicates	100.8	83.3	23.7	38.2							
L1606159101					UNK	07/07/16 01:31:41 pm	-0.0476	-7	375.01		1.00
Replicates	-26.8	23.7	-27.1	3.7							
WG575509-01					SPK	07/07/16 01:34:13 pm	1.0300	11867	0.59		1.00
Replicates	11942.0	11902.5	11841.6	11782.0							
% Recovery	107.79										
L1606159102					UNK	07/07/16 01:36:46 pm	-0.0477	-8	391.78		1.00
Replicates	7.5	21.9	-11.0	-50.3							
WG575094-05					MSK	07/07/16 01:39:18 pm	4.3880	48850	0.53		1.00
Replicates	48474.1	48877.3	49003.3	49046.9							
% Recovery	110.89										
WG575094-06					MSDUP	07/07/16 01:41:51 pm	4.3770	48731	0.58		1.00
Replicates	49006.5	48893.6	48659.6	48363.6							
% Recovery	110.62	RPD 0.25									
L1606159103					UNK	07/07/16 01:44:24 pm	-0.0241	251	23.64		1.00
Replicates	310.5	280.2	242.5	172.7							

Approved: July 08, 2016
Pierce Morris

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606163602					UNK	07/07/16 01:46:57 pm	-0.0393	85	16.76		1.00
Replicates	97.8	94.8	67.8	78.1							
CCV					CCV	07/07/16 01:49:30 pm	2.1510	24206	0.69		1.00
Replicates	24377.7	24295.9	24148.4	24001.6							
% Recovery	107.53										
CCB					CCB	07/07/16 01:52:01 pm	-0.0370	110	40.65		1.00
Replicates	151.7	133.2	103.6	49.7							
L1606164802					UNK	07/07/16 01:54:34 pm	-0.0444	28	72.29		1.00
Replicates	29.7	2.1	29.3	52.1							
WG575509-02					SPK	07/07/16 01:57:08 pm	1.0740	12351	0.38		1.00
Replicates	12381.0	12399.5	12322.7	12301.7							
% Recovery	111.87										
L1607000101					UNK	07/07/16 01:59:39 pm	0.0823	1424	2.28		1.00
Replicates	1452.9	1445.9	1381.9	1414.9							
L1607000301					UNK	07/07/16 02:02:09 pm	0.1791	2490	1.43		1.00
Replicates	2524.3	2514.2	2448.1	2472.6							
L1607000309					UNK	07/07/16 02:04:40 pm	0.1823	2526	0.55		1.00
Replicates	2528.7	2523.7	2542.2	2508.8							
L1607006701					UNK	07/07/16 02:07:11 pm	-0.0440	33	55.90		1.00
Replicates	22.9	12.3	47.3	50.3							
WG575094-07					DUP	07/07/16 02:09:43 pm	-0.0474	-5	259.33		1.00
Replicates	-2.0	-12.0	11.2	-15.8							
		RPD 0.00									
L1607006702					UNK	07/07/16 02:12:14 pm	-0.0457	14	32.15		1.00
Replicates	11.0	11.3	21.0	14.5							
L1607006703					UNK	07/07/16 02:14:46 pm	-0.0457	14	78.82		1.00
Replicates	26.1	2.2	18.2	7.7							

Approved: July 08, 2016
Pierce Morris

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV					CCV	07/07/16 02:17:19 pm	2.2250	25027	0.66	Q	1.00
	Replicates	25174.9	25133.1	24989.3	24811.4						
	% Recovery	111.25									
CCB					CCB	07/07/16 02:19:49 pm	-0.0351	130	11.61		1.00
	Replicates	150.5	131.9	123.3	115.3						

Approved: July 08, 2016

Pierce Morris

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 20, 2016

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - HANAH D. COE
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RNP - RICK N. PETTY
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 20, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 20, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD		
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18WW25-062916			6/29/16	0805		✓	W	6	✓	✓		✓					
	18WW25F-062916			6/29/16	0805		✓	W	1			✓						
	TRIP BLANK			6/29/16			✓	W	2	✓								

pH:

Comments: STANDARD TAT

Microbac OVD
Received: 06/30/2016 09:36
By: CARA STRICKLER
221000087876
Cara Strickler

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Scott Beesinger	6/29/16	1500					
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:	

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061648
Account: 2551
Project: 2551.096
Samples: 3
Due Date: 11-JUL-2016

Samplenum	Container ID	Products
L16061648-01	768205	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	30-JUN-2016 13:52	CLS		
2	ANALYZ	L1	ORG4	30-JUN-2016 16:23	JST	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	30-JUN-2016 13:52	CLS		
2	ANALYZ	L1	ORG4	30-JUN-2016 16:23	JST	CLS	
3	STORE	ORG4	A1	14-JUL-2016 07:18	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	30-JUN-2016 13:52	CLS		
2	ANALYZ	L1	ORG4	30-JUN-2016 16:23	JST	CLS	
3	STORE	ORG4	A1	14-JUL-2016 07:18	CLS	AWE	

Samplenum	Container ID	Products
L16061648-01	768206	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JUN-2016 13:52	CLS		
2	PREP	W1	EXT	30-JUN-2016 16:17	CPD	CLS	
3	DISP	EXT	DISP	01-JUL-2016 08:21	BJO	BJO	
4	ANALYZ*	EXT	SEMI	01-JUL-2016 15:24	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		30-JUN-2016 13:52	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061648-01	768207	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JUN-2016 13:52	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:24	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:47	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061648
Account: 2551
Project: 2551.096
Samples: 3
Due Date: 11-JUL-2016

Samplenum	Container ID	Products
L16061648-02	768208	CR-MS CU-MS FE HG K MG MN-MS NA NI-MS PB-MS SE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JUN-2016 13:52	CLS		
2	PREP	W1	DIG	30-JUN-2016 15:34	ERP	CLS	
3	ANALYZ*	DIG	METALS	01-JUL-2016 12:49	JYH	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061648-03	768209	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	30-JUN-2016 13:52	CLS		
2	STORE	ORG4	A1	14-JUL-2016 07:18	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	30-JUN-2016 13:52	CLS		
2	ANALYZ	L1	ORG4	30-JUN-2016 16:23	JST	CLS	
3	STORE	ORG4	A1	14-JUL-2016 07:18	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

APPENDIX C: Groundwater Sampling Forms – June 2016

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 102	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 21.13	Weather Conditions: Clear
	Total Well Depth (ft) from TOC: 29.33	Screen Interval (ft) from TOC: 15.20 - 30.20	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	1348	21.33	NA							Bailing well
6/15/16	1354	29.30	NA							Bailed 1.25 gallons Ran Dry
	0840									
6/16/16	[redacted]	21.37	NA	21.74	4.90	0.327	NA	8.7	NA	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 102-061616 TIME: 0840

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Bailer	VOC
1-250 ml plastic	NA	Y	Bailer	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 109	Date: 6/21/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 28.98	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 38.23	Screen Intverval (ft) from TOC: 22.83-37.83	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/21/16	1514	28.98	NA							Bailing well
6/21/16	1520	38.19	NA							Bailed 1.5 gallons Ran dry
6/22/16	0720	29.02	NA	21.35	5.53	0.235	NA	10.1	NA	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 109-062216 TIME: 0720

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Bailer	VOC
2- 1 Liter Amber	NA	N		1,4-Dioxane
1- 500 ml plastic	HNO3			TOTAL metals
1- 250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 120	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 12.31	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 26.93	Screen Interval (ft) from TOC: 12.00 - 27.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	1413	12.31	NA							Bailing well
6/15/16	1419	26.87	NA							Bailed 2.25 gallons DRY
6/16/16	0925	13.03	NA	27.10	6.02	1.32	NA	139	NA	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 120-061616 TIME: 0925

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Bailer	VOC
2 - 1 Liter Amber	NA	N	↓	1,4-Dioxane
1 - 500 ml plastic	HNO3	Y	↓	Total metals
1 - 250 ml plastic	NA	Y	↓	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 123	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 12.60	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 20.10	Screen Intverval (ft) from TOC: 6.00 - 21.00	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	1423	12.60	NA							Bailing well
6/15/16	1430	20.03	NA							Bailed 1.25 gallons Ran Dry
6/16/16	0955	12.89	NA	24.37	6.56	0.263	NA	9.3	NA	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 123-061616 TIME: 0955

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Bailer	VOC
2-1 Liter Amber	NA	N	↓	1,4-Dioxane
1-500 ml plastic	HNO3			TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 125	Date: 6/21/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst : ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 24.18	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 27.43	Screen Intverval (ft) from TOC: 12.94 - 27.94	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/21/16	1505	24.18	NA							Bailing well
6/21/16	1510	27.39	NA							Bailed .5 gallons RAN DRY
6/22/16	0655	24.22	NA	21.25	4.50	0.338	NA	22.2	NA	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 125-062216 TIME: 0655

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40ml glass	HCL	N	Bailer	VOC
1 - 250 ml plastic	NA	Y	Bailer	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 126	Date: 6/14/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4 11	Static Water Level Reading (ft) from TOC: 28.85	Weather Conditions: Cloudy
	Total Well Depth (ft) from TOC: 39.00	Screen Interval (ft) from TOC: 24.00 - 39.00	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 31.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/14/16	1040	28.87	100	24.48	5.99	7.30	2.28	35.9	205	
	1045	28.93	100	23.45	5.76	7.36	1.20	32.2	139	
	1050	28.97	100	22.76	5.49	7.40	0.60	32.9	145	
	1055	29.00	100	22.40	5.49	7.41	0.67	29.2	135	
	1100	29.02	100	22.37	5.50	7.42	0.68	29.0	134	
	1105	29.03	100	22.34	5.50	7.43	0.69	28.5	133	
	1110	29.03	100	22.31	5.50	7.43	0.69	28.0	132	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 126-061416 TIME: 1110

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	Y		Total metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 129	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 25.95	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 36.24	Screen Intverval (ft) from TOC: 21.25 - 36.25	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	1403	25.95	NA							Bailing well
6/15/16	1409	36.20	NA							Bailed 1.5 gallons RAN DRY
6/16/16	0905	25.95	NA	23.54	5.35	0.956	NA	3.6	NA	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 129-061616 TIME: 0905

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCl	N	~~Pump~~ Bailer	VOC
2 - 1 Liter Amber	NA	N	↓	1,4-Dioxane
1 - 500 ml plastic	HNO3			TOTAL metals
1 - 250 ml plastic	NA	Y	↓	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 130	Date: 6/10/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 6.30	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 25.63	Screen Intverval (ft) from TOC: 10.57- 25.57	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: 18.07	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/10/16	1035	6.27	100	22.39	5.35	1.68	1.22	41.9	168	
	1040	6.35	100	21.85	5.20	1.85	0.78	36.9	171	
	1045	6.41	100	21.68	5.18	1.79	0.39	32.6	170	
	1050	6.45	100	21.76	5.19	1.74	0.38	16.3	166	
	1055	6.47	100	21.79	5.18	1.72	0.37	16.0	166	
	1100	6.49	100	21.83	5.20	1.72	0.37	7.4	164	
	1105	6.50	100	21.85	5.21	1.73	0.38	7.9	163	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 130-061016 TIME: 1105

DUPLICATE (D): YES/NO Yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6- 40 ml glass	HCL	N	Pump	VOC
2- 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW01DW	Date: 6/24/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 37.33	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 101.73	Screen Interval (ft) from TOC: 91.73 - 101.23	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 96.48	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/24/16	1300	37.33	100	26.49	7.64	1.37	1.10	0.0	47	
	1305	37.38	100	24.74	7.14	1.31	0.84	0.0	98	
	1310	37.43	100	24.55	6.33	1.29	0.69	0.0	124	
	1315	37.47	100	24.34	6.14	1.29	0.63	0.0	107	
	1320	37.49	100	24.30	6.13	1.28	0.62	0.1	105	
	1325	37.50	100	24.39	6.13	1.27	0.62	0.2	105	
	1330	37.51	100	24.44	6.12	1.27	0.62	0.5	104	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW01DW-062416 TIME: 1330

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Pump	VOC
2- 1 Liter Amber	NA	N	Pump	1,4-Dioxane
1- 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW01SW	Date: 6/24/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.25	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 65.32	Screen Intverval (ft) from TOC: 57.32-66.82	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 62.07	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/24/16	1355	27.27	100	26.25	5.99	1.16	2.07	21.2	28	
	1400	27.35	100	25.09	5.55	1.13	0.88	7.3	42	
	1405	27.41	100	24.50	5.18	1.15	0.70	1.0	60	
	1410	27.44	100	24.40	5.04	1.15	0.59	1.4	79	
	1415	27.46	100	24.30	5.02	1.14	0.58	2.7	80	
	1420	27.47	100	24.29	5.00	1.15	0.57	3.8	82	
	1425	27.48	100	24.24	4.99	1.15	0.57	3.2	83	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW01SW-062416 TIME: 1425

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Pump	VOC
2- 1 Liter Amber	NA	N		1,4-Dioxane
1- 500 ml plastic	HNO3	N		TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW035W	Date: 6/8/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 28.35	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 70.38	Screen Intverval (ft) from TOC: 60.18 - 69.78	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 65.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/8/16	1050	28.37	100	24.64	8.03	2.74	1.55	10.6	-17	
	1055	28.42	100	24.48	7.77	2.52	0.84	12.0	-102	
	1100	28.46	100	24.17	7.60	2.44	0.68	12.2	-122	
	1105	28.49	100	23.90	7.51	2.37	0.65	11.9	-132	
	1110	28.52	100	23.95	7.50	2.37	0.64	12.5	-134	
	1115	28.53	100	23.91	7.49	2.37	0.63	11.9	-136	
	1120	28.53	100	23.96	7.49	2.36	0.63	11.8	-137	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW035W-060816 TIME: 1120

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW04	Date: 6/14/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 24.12	Weather Conditions: CLOUDY
	Total Well Depth (ft) from TOC: 37.38	Screen Interval (ft) from TOC: 17.38-36.88	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 27.13	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/14/16	0930	24.15	100	23.52	6.45	0.920	2.86	2.4	183	
	0935	24.22	100	23.40	6.17	0.897	2.29	2.0	193	
	0940	24.27	100	23.34	5.85	0.895	1.45	1.4	210	
	0945	24.30	100	23.34	5.59	0.896	1.41	1.7	227	
	0950	24.33	100	23.39	5.58	0.897	1.39	1.8	228	
	0955	24.35	100	23.44	5.55	0.897	1.37	1.6	228	
	1000	24.36	100	23.47	5.54	0.897	1.36	1.4	229	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW04-061416 TIME: 1000

DUPLICATE (D): YES/NO Yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6-40ml glass	HCl	N	Pump	VOC
4-1 Liter Amber	NA	N	↓	1,4-Dioxane
2-250ml plastic	NA	Y	↓	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW04SW	Date: 6/14/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 26.33	Weather Conditions: Cloudy
	Total Well Depth (ft) from TOC: 65.45	Screen Intverval (ft) from TOC: 54.98 - 64.48	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 59.73	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/14/16	0825	26.35	100	22.02	6.65	1.23	2.93	20.6	157	
	0830	26.43	100	21.70	6.59	1.23	2.55	15.4	146	
	0835	26.49	100	21.56	6.33	1.22	2.31	12.1	140	
	0840	26.53	100	21.53	6.30	1.22	2.16	9.8	140	
	0845	26.55	100	21.53	6.17	1.22	2.05	9.0	140	
	0850	26.57	100	21.54	6.14	1.23	2.03	8.6	138	
	0855	26.59	100	21.55	6.13	1.22	2.01	8.0	136	
	0900	26.60	100	21.57	6.12	1.22	1.99	7.7	135	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW04SW-061416 TIME: 0900

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500ml plastic	HNO3	N		TOTAL metals
1-250ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTmw06	Date: 6/8/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.95	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 66.80	Screen Intverval (ft) from TOC: 57.25 - 66.75	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 62.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/8/16	1300	27.97	100	23.88	7.76	1.51	1.18	14.4	-188	
	1305	28.03	100	23.00	7.27	1.56	0.74	16.3	-157	
	1310	28.07	100	23.32	6.42	1.60	0.70	15.2	-137	
	1315	28.10	100	23.44		1.69	0.70	15.1	-100	
	1320	28.12	100	23.30		1.68	0.72	15.4	-98	
	1325	28.13	100	23.29		1.69	0.71	15.5	-97	
	1330	28.13	100	23.22	6.26	1.70	0.72	15.7	-95	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTmw06-060816 TIME: 1330

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO Yes

MATRIX DUPLICATE (MD): YES/NO Yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9 - 40 ml glass	HCL	N	Pump	VOC
6 - 1 Liter Amber	NA	N	Pump	1,4-Dioxane
3 - 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW07	Date: 6/22/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.47	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 67.10	Screen Interval (ft) from TOC: 57.10-66.60	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 61.35	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/22/16	0755	27.49	100	21.19	7.81	0.982	4.07	34.4	113	
	0800	27.57	100	20.52	7.43	0.879	2.63	15.2	121	
	0805	27.82	100	20.24	7.08	0.863	2.10	15.3	-22	
	0810	27.85	100	20.17	6.48	0.872	1.65	16.2	-10	
	0815	27.87	100	20.20	6.45	0.872	1.50	16.9	-23	
	0820	27.88	100	20.23	6.45	0.871	1.49	17.1	-24	
	0825	27.89	100	20.30	6.44	0.873	1.48	16.5	-25	
	0830	27.89	100	20.25	6.44	0.873	1.47	16.8	-25	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW07-062216 TIME: 0830

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTmw08DW	Date: 6/8/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 26.40	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 102.28	Screen Interval (ft) from TOC: 92.86-102.36	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 97.61	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/8/16	0835	26.42	100	19.99	8.96	1.16	1.86	12.3	153	
	0840	26.47	100	19.67	8.07	1.15	0.90	14.3	65	
	0845	26.50	100	19.70	7.75	1.14	0.63	14.9	25	
	0850	26.52	100	19.77	7.33	1.12	0.63	14.7	22	
	0855	26.53	100	19.81	7.30	1.10	0.63	14.8	23	
	0900	26.53	100	19.84	7.29	1.09	0.62	14.9	24	
	0905	26.53	100	19.83	7.28	1.09	0.62	15.0	25	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTmw08DW-060816 TIME: 0905

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW085W	Date: 6/8/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 25.98	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 56.26	Screen Intverval (ft) from TOC: 49.95 - 55.45	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 50.07	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/8/16	0730	26.00	100	22.20	4.16	1.37	2.57	6.0	298	
	0735	26.06	100	18.95	5.23	1.48	1.05	0.5	278	
	0740	26.12	100	18.91	5.21	1.48	0.69	0.0	278	
	0745	26.17	100	18.93	5.15	1.47	0.66	0.0	285	
	0750	26.21	100	18.98	5.12	1.46	0.65	0.0	286	
	0755	26.22	100	19.01	5.12	1.46	0.65	0.0	287	
	0800	26.23	100	19.03	5.14	1.46	0.64	0.0	286	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW085W-060815 TIME: 0800

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Pump	VOC
2- 1 Liter Amber	NA	N	Pump	1,4-Dioxane
1- 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTmw10SW	Date: 6/22/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 16.86	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 56.05	Screen Interval (ft) from TOC: 46.29 - 55.79	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 51.04	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/22/16	1425	16.88	100	23.20	5.80	1.24	0.94	11.4	56	
	1430	16.95	100	22.50	5.85	1.30	0.60	22.0	27	
	1435	17.00	100	22.40	5.83	1.32	0.54	24.9	20	
	1440	17.04	100	22.38	5.82	1.33	0.46	25.5	10	
	1445	17.08	100	22.33	5.78	1.33	0.45	24.9	9	
	1450	17.10	100	22.30	5.77	1.34	0.45	24.3	8	
	1455	17.11	100	22.29	5.76	1.34	0.44	24.0	7	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 18CPTmw10SW-062216 TIME: 1455

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW12DW	Date: 6/24/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 20.53	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 103.16	Screen Interval (ft) from TOC: 93.16 - 102.66	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 97.91	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/24/16	0820	20.53	100	23.65	6.11	1.77	2.05	8.6	199	
	0825	20.58	100	22.59	8.76	1.50	1.11	7.6	72	
	0830	20.62	100	22.39	8.45	1.48	0.80	8.6	27	
	0835	20.65	100	22.45	8.21	1.46	0.70	7.1	0	
	0840	20.67	100	22.46	7.95	1.45	0.66	7.5	-13	
	0845	20.68	100	22.48	7.93	1.43	0.65	7.3	-14	
	0850	20.68	100	22.52	7.92	1.42	0.64	7.4	-15	
	0855	20.68	100	22.55	7.92	1.42	0.64	7.5	-16	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW12DW-062416 TIME: 0855

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
2 - 1 Liter Amber	NA	N	Pump	1,4-Dioxane

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW12SW	Date: 6/24/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 21.00	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 56.08	Screen Intverval (ft) from TOC: 45.66 - 55.16	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 50.41	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/24/16	0715	21.03	100	25.27	5.64	2.06	2.44	10.4	360	
	0720	21.10	100	22.93	6.09	2.14	1.88	8.0	342	
	0725	21.16	100	22.01	5.80	2.10	1.59	7.2	351	
	0730	21.21	100	22.08	5.49	2.09	1.33	6.3	361	
	0735	21.25	100	22.10	5.45	2.08	1.32	4.4	350	
	0740	21.27	100	22.12	5.45	2.07	1.31	3.9	348	
	0745	21.28	100	22.13	5.46	2.06	1.30	4.0	347	
	0750	21.29	100	22.15	5.47	2.06	1.30	3.7	346	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW12SW-062416 TIME: 0750

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW14	Date: 6/13/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.05	Weather Conditions: Cloudy
	Total Well Depth (ft) from TOC: 37.18	Screen Intverval (ft) from TOC: 27.18 - 36.68	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 31.93	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/13/16	0845	27.07	100	23.77	7.47	4.31	5.28	43.2	47	
	0850	27.14	100	22.33	6.56	3.66	4.45	23.1	56	
	0855	27.19	100	21.45	6.00	3.85	2.07	11.9	186	
	0900	27.23	100	21.00	5.60	3.89	2.06	8.8	233	
	0905	27.25	100	20.83	5.58	3.89	2.04	6.3	235	
	0910	27.26	100	20.80	5.57	3.90	2.02	3.8	237	
	0915	27.27	100	20.77	5.55	3.91	2.00	3.5	239	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW14-061316 TIME: 0915

DUPLICATE (D): YES/NO yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
8-40ml glass	HCL	N	Pump	VOC
4-1 Liter Amber	NA	N		1,4-Dioxane
2-500 ml plastic	HNO3	N		Total metals
2-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPT MW 15B	Date: 6/7/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 9.92	Weather Conditions: Clear
	Total Well Depth (ft) from TOC: 38.68	Screen Intverval (ft) from TOC: 18.37-37.87	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 33.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/7/16	1335	9.95	100	23.21	4.40	1.56	1.63	25.5	282	
	1340	9.97	100	23.30	4.30	1.56	1.49	24.3	295	
	1345	9.99	100	23.37	4.23	1.55	1.45	24.0	296	
	1350	10.00	100	23.40	4.25	1.55	1.47	23.8	297	
	1355	10.00	100	23.42	4.27	1.54	1.46	23.5	298	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW15B-060716 TIME: 1355

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC
2 - 1 Liter Amber	NA	N		1,4-Dioxane
1 - 250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW15T	Date: 6/7/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 9.78	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 38.68	Screen Interval (ft) from TOC: 18.37 - 37.87	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 23.25	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/7/16	1245	9.80	100	25.30	5.62	1.58	1.79	51.7	200	
	1250	9.85	100	24.16	5.37	1.59	1.24	12.7	220	
	1255	9.89	100	23.67	4.88	1.59	1.35	8.2	241	
	1300	9.93	100	23.40	4.35	1.58	1.39	8.9	258	
	1305	9.95	100	23.39	4.34	1.57	1.40	8.3	269	
	1310	9.96	100	23.41	4.33	1.56	1.38	8.0	270	
	1315	9.96	100	23.47	4.32	1.56	1.39	8.2	271	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW15T-060716 TIME: 1315

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC
2 - 1 Liter Amber	NA	N	↓	1,4-Dioxane
1 - 250 ml plastic	NA	Y	↓	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTmw16	Date: 6/21/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 5.51	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 37.72	Screen Intverval (ft) from TOC: 17.72-37.22	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 27.47	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/21/16	1245	5.54	100	23.25	6.19	0.588	0.95	160	60	
	1250	5.60	100	21.70	6.14	0.616	0.84	246	46	
	1255	5.65	100	20.86	6.10	0.629	0.62	116	38	
	1300	5.68	100	20.49	6.02	0.637	0.57	53.0	35	
	1305	5.70	100	20.24	5.91	0.639	0.51	45.9	34	
	1310	5.71	100	20.24	5.89	0.639	0.50	44.5	34	
	1315	5.72	100	20.23	5.86	0.639	0.49	44.1	34	
	1320	5.72	100	20.20	5.86	0.638	0.49	44.0	33	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTmw16-062116 TIME: 1320

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPT mw18	Date: 6/21/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 26.98	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 38.08	Screen Interval (ft) from TOC: 28.08 - 37.58	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 32.83	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/21/16	0835	27.00	100	21.01	5.35	7.70	1.09	0.0	219	
	0840	27.06	100	20.32	5.32	7.78	0.65	0.0	195	
	0845	27.12	100	20.02	5.33	7.79	0.59	0.0	169	
	0850	27.15	100	19.89	5.37	7.80	0.49	0.0	153	
	0855	27.18	100	19.82	5.38	7.81	0.48	0.0	152	
	0900	27.20	100	19.75	5.39	7.82	0.47	0.0	151	
	0905	27.21	100	19.73	5.40	7.82	0.46	0.0	151	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTmw18-062116 TIME: 0905

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		TOTAL metals
1-250 ml plastic	NA	Y		Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW19	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 21.89	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 37.16	Screen Intverval (ft) from TOC: 27.16 36.66	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 31.91	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	1045	21.89	100	20.85	5.23	0.183	0.30	67.7	184	
	1050	21.95	100	19.95	4.87	0.184	1.54	76.9	192	
	1055	22.01	100	19.86	4.70	0.183	0.90	80.4	191	
	1100	22.05	100	19.83	4.68	0.184	0.79	80.5	185	
	1105	22.08	100	19.90	4.68	0.185	0.78	80.9	185	
	1110	22.10	100	19.95	4.67	0.185	0.77	81.1	184	
	1115	22.12	100	19.97	4.66	0.185	0.76	81.4	183	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW19-061516 TIME:

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCl	N	Pump	VOC
2-1 liter Amber	NA	N	↓	1,4-Dioxane
1-250 ml plastic	NA	Y	↓	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW195W	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 22.96	Weather Conditions: Clear
	Total Well Depth (ft) from TOC: 67.51	Screen Intverval (ft) from TOC: 57.58-67.18	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 62.38	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	0945	22.98	100	21.00	5.77	0.457	1.17	55.3	41	
	0950	23.05	100	20.03	5.43	0.457	0.89	50.1	74	
	0955	23.09	100	19.89	5.41	0.458	0.75	49.9	77	
	1000	23.12	100	19.78	5.43	0.457	0.71	48.4	77	
	1005	23.14	100	19.76	5.41	0.458	0.71	48.1	79	
	1010	23.16	100	19.76	5.43	0.457	0.72	48.0	78	
	1015	23.18	100	19.76	5.43	0.456	0.71	47.8	77	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW195W-061516 TIME: 1015

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW22DW	Date: 6/9/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 17.72	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 85.45	Screen Interval (ft) from TOC: 75.45 - 85.05	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 80.25	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/9/16	0810	17.75	100	19.11	5.71	1.17	2.48	5.8	202	
	0815	17.81	100	18.49	6.22	1.32	1.25	2.2	66	
	0820	17.86	100	18.66	5.92	1.36	0.85	2.2	67	
	0825	17.90	100	18.55	5.82	1.37	0.80	1.9	84	
	0830	17.93	100	18.53	5.80	1.37	0.79	1.7	85	
	0835	17.95	100	18.52	5.79	1.38	0.79	1.4	86	
	0840	17.96	100	18.52	5.78	1.38	0.80	1.9	87	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW22DW-060916 TIME: 0840

DUPLICATE (D): YES/NO Yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC
4 - 1 Liter Amber	NA	N	Pump	1,4-Dioxane
2 - 250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPT MW22R	Date: 6/9/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 9.14	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 16.88	Screen Intverval (ft) from TOC: 6.90 - 16.40	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 11.65	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/9/16	0710	9.16	100	20.62	5.37	0.306	3.16	117	312	
	0715	9.22	100	19.33	4.97	0.175	2.05	110	339	
	0720	9.25	100	18.93	4.55	0.147	1.37	105	362	
	0725	9.28	100	18.60	4.24	0.137	1.10	101	379	
	0730	9.30	100	18.57	4.21	0.137	1.09	100	380	
	0735	9.31	100	18.55	4.20	0.138	1.07	100	381	
	0740	9.32	100	18.58	4.19	0.139	1.09	100	383	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW22R-060916 TIME: 0740

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW22SW	Date: 6/9/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 17.92	Weather Conditions: Clear
	Total Well Depth (ft) from TOC: 57.14	Screen Intverval (ft) from TOC: 47.14 - 56.74	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 51.94	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/9/16	0920	17.95	100	19.60	8.06	3.45	2.37	6.0	-17	
	0925	18.00	100	19.29	7.79	3.36	1.46	14.0	-40	
	0930	18.03	100	19.22	7.61	3.05	1.17	17.3	[redacted]-9	
	0935	18.05	100	19.12	7.55	2.77	1.03	20.2	[redacted]23	
	0940	18.06	100	18.97	7.43	2.68	1.07	20.3	55	
	0945	18.06	100	19.00	7.42	2.68	1.07	20.5	56	
	0950	18.06	100	19.05	7.41	2.67	1.08	20.7	57	
	0955	18.06	100	19.08	7.41	2.67	1.08	20.9	58	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW22SW-060916 TIME: 0955

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
2-1 liter Amber	NA	N	Pump	1,4-Dioxane
1-250ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW23	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 7.39	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 34.34	Screen Intverval (ft) from TOC: 23.97 - 33.47	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 28.72	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	0830	7.41	100	22.05	6.16	0.524	2.06	87.4	35	
	0835	7.47	100	20.80	5.48	0.686	1.17	91.9	66	
	0840	7.53	100	20.10	5.21	0.702	0.89	69.6	80	
	0845	7.56	100	20.06	5.14	0.701	0.84	65.9	84	
	0850	7.58	100	20.00	5.12	0.695	0.70	65.3	86	
	0855	7.59	100	19.98	5.12	0.694	0.70	65.0	86	
	0900	7.60	100	19.98	5.10	0.693	0.71	64.9	88	
	0905	7.60	100	19.95	5.09	0.693	0.71	64.7	89	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW23-061516 TIME: 0905

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	↓	1,4-Dioxane
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW233W	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 7.07	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 68.56	Screen Intverval (ft) from TOC: 58.50 - 68.20	Condition of Well/Remarks: NO PAD OR BOLLARDS
		Pump Placement (ft) from TOC: 63.35	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	0725	7.09	100	22.01	6.04	0.857	2.41	9.5	84	
	0730	7.14	100	20.29	6.13	0.901	1.17	11.3	-17	
	0735	7.18	100	19.81	6.13	0.907	0.80	11.3	-29	
	0740	7.20	100	19.65	6.13	0.908	0.70	11.1	-43	
	0745	7.21	100	19.50	6.28	0.907	0.66	11.5	-52	
	0750	7.22	100	19.52	6.28	0.908	0.65	11.7	-54	
	0755	7.22	100	19.47	6.29	0.907	0.64	11.5	-55	
	0800	7.22	100	19.49	6.30	0.906	0.64	11.1	-56	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW233W-061516 TIME:

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTmw24	Date: 6/13/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 213944	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 26.58	Weather Conditions: Cloudy / RAIN
	Total Well Depth (ft) from TOC: 37.45	Screen Intverval (ft) from TOC: 27.45 - 36.95	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 32.20	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/13/16	1000	26.60	100	23.85	6.25	8.05	4.37	5.2	234	
	1005	26.67	100	23.29	6.12	8.05	1.29	4.5	198	
	1010	26.74	100	22.82	5.90	8.02	0.74	5.0	174	
	1015	26.78	100	22.50	5.75	8.03	0.60	5.1	114	
	1020	26.81	100	22.25	5.71	8.06	0.60	4.9	104	
	1025	26.83	100	22.21	5.70	8.07	0.61	4.3	102	
	1030	26.85	100	22.18	5.69	8.07	0.60	4.0	104	
	1035	26.87	100	22.14	5.68	8.08	0.58	4.0	106	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTmw24-061316 TIME: 1035

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500ml plastic	HNO3	N		TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW26	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 15.72	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 17.30	Screen Interval (ft) from TOC: 7.30 - 17.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 12.15	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	1335	15.72	N/A							Bailing well
6/15/16	1340	17.25	N/A							Bailed 1 gallon RAN DRY

Well DID NOT Recharge to within 80% of original DTW

Well is CONSIDERED DRY

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO						
MATRIX SPIKE (MS): YES/NO						
MATRIX DUPLICATE (MD): YES/NO						
CO= LEL= OXY= H2S=						

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTmw26SW	Date: 6/9/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 11.71	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 58.25	Screen Interval (ft) from TOC: 42.60 - 52.20	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 47.4	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/9/16	1255	11.73	100	23.93	6.30	1.71	2.08	7.4	-18	
	1300	11.77	100	21.26	6.23	2.56	0.94	5.4	-39	
	1305	11.80	100	20.79	6.04	2.65	0.81	6.0	-42	
	1310	11.82	100	20.80	5.87	2.60	0.80	5.6	-40	
	1315	11.82	100	20.85	5.86	2.61	0.80	5.5	-38	
	1320	11.82	100	20.87	5.86	2.61	0.80	5.7	-37	
	1325	11.82	100	20.90	5.85	2.61	0.79	6.1	-36	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTmw26SW-060916 TIME: 1325

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		total metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 17WW08	Date: 6/10/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 9.31	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 33.98	Screen Interval (ft) from TOC: 24.00 - 34.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 29.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/10/16	0935	9.33	100	19.53	6.11	0.970	1.76	39.4	57	
	0940	9.39	100	18.68	5.75	1.08	0.60	23.1	91	
	0945	9.45	100	18.55	5.40	1.01	0.59	14.3	121	
	0950	9.48	100	18.41	5.29	0.928	0.40	9.9	140	
	0955	9.50	100	18.37	5.15	0.909	0.40	9.0	141	
	1000	9.50	100	18.34	5.16	0.910	0.42	8.8	143	
	1005	9.50	100	18.40	5.12	0.909	0.42	8.0	145	
	1010	9.50	100	18.41	5.11	0.908	0.43	8.4	147	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 17WW08-061016 TIME: 1010

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
1-500 ml plastic	HNO3	N	Pump	TOTAL metals
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW02	Date: 6/22/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 321394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 8.83	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 188.10	Screen Interval (ft) from TOC: 178.06 - 188.06	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 183.06	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/22/16	1305	8.83	100	27.20	6.70	0.536	3.36	23.8	269	
	1310	8.87	100	26.75	6.61	0.221	1.57	36.9	115	
	1315	8.90	100	25.37	5.37	0.156	0.87	30.3	33	
	1320	8.92	100	24.10	5.35	0.146	0.82	17.1	61	
	1325	8.94	100	24.21	5.16	0.137	0.60	23.4	95	
	1330	8.95	100	24.25	5.13	0.138	0.59	24.0	97	
	1335	8.95	100	24.28	5.17	0.139	0.60	24.3	98	
	1340	8.95	100	24.30	5.15	0.138	0.59	23.9	99	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW02-062216 TIME: 1340

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	Y		TOTAL metals
1-250 ml plastic	NA	Y		Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW03	Date: 6/14/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 25.90	Weather Conditions: Cloudy
	Total Well Depth (ft) from TOC: 74.96	Screen Interval (ft) from TOC: 65.00 - 75.00	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: 70.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/14/16	0710	25.92	100	22.87	6.24	0.865	2.24	62.9	248	
	0715	25.97	100	21.55	6.13	0.716	1.05	37.2	87	
	0720	26.02	100	20.90	6.00	0.687	0.90	37.5	56	
	0725	26.05	100	20.50	5.87	0.665	0.89	30.9	78	
	0730	26.08	100	20.47	5.86	0.664	0.88	30.5	80	
	0735	26.10	100	20.40	5.86	0.663	0.87	30.1	79	
	0740	26.11	100	20.35	5.85	0.663	0.87	29.8	79	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW03-061416 TIME: 0740

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	↓	1,4-Dioxane
1-500 ml plastic	HNO3	Y		TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW06	Date: 6/20/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4 4	Static Water Level Reading (ft) from TOC: 9.83	Weather Conditions: CLOUDY
	Total Well Depth (ft) from TOC: 70.06	Screen Interval (ft) from TOC: 60.66-70.66	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 65.66	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/20/16	1315	9.84	100	24.64	5.74	0.152	0.99	32.4	151	
	1320	9.88	100	24.08	5.82	0.157	0.67	21.6	98	
	1325	9.91	100	23.65	5.84	0.151	0.47	18.3	65	
	1330	9.94	100	23.42	5.83	0.147	0.46	18.7	53	
	1335	9.96	100	23.43	5.83	0.147	0.46	19.0	52	
	1340	9.97	100	23.43	5.82	0.146	0.45	19.1	51	
	1345	9.97	100	23.44	5.82	0.146	0.45	19.3	50	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW06-062016 TIME: 1345

DUPLICATE (D): YES/NO Yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6-40ml glass	HCL	N	Pump	VOC
4-1 Liter Amber	NA	N	Pump	1,4-Dioxane
2-250ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW08	Date: 6/20/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4 4	Static Water Level Reading (ft) from TOC: 8.77	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 22.48	Screen Interval (ft) from TOC: 12.23 - 22.23	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 17.23	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/20/16	0940	8.79	100	22.07	5.60	0.701	1.04	26.3	199	
	0945	8.85	100	21.73	5.62	0.728	0.82	19.2	162	
	0950	8.90	100	21.50	5.61	0.735	0.68	11.2	129	
	0955	8.93	100	21.39	5.60	0.740	0.55	7.5	118	
	1000	8.95	100	21.29	5.59	0.741	0.54	5.2	118	
	1005	8.96	100	21.35	5.59	0.742	0.53	4.5	117	
	1010	8.96	100	21.37	5.59	0.742	0.53	2.2	116	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW08-062016 TIME: 1010

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW09	Date: 6/20/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 8.63	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 62.10	Screen Interval (ft) from TOC: 52.17-62.17	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 57.17	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/20/16	1040	8.65	100	22.44	5.44	0.112	0.99	47.4	117	
	1045	8.70	100	22.05	5.39	0.112	0.79	38.5	98	
	1050	8.75	100	21.90	5.47	0.110	0.60	30.4	72	
	1055	8.78	100	21.94	5.57	0.110	0.57	23.7	53	
	1100	8.80	100	21.88	5.58	0.111	0.56	23.2	51	
	1105	8.80	100	21.92	5.59	0.112	0.55	22.9	50	
	1110	8.80	100	21.90	5.60	0.112	0.55	22.8	49	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW09-062016 TIME: 1110

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW16	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 4 11	Static Water Level Reading (ft) from TOC: 31.63	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 33.75	Screen Interval (ft) from TOC: 23.75 - 33.75	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	1315	31.63	NA							Bailing well
6/15/16	1325	33.70	NA							Bailed .5 gallons RAN DRY
6/15/16	0755	31.63	NA	22.10	3.51	5.57	NA	35.9	NA	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18NW16-061616 TIME: 0755

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Bailer	VOC
1-500 ml plastic	HNO3	Y	↓	TOTAL metals
1-250 ml plastic	NA	Y	↓	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW18	Date: 6/21/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.09	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 64.24	Screen Interval (ft) from TOC: 54.02 - 64.02	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: 59.02	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/21/16	1045	27.12	100	21.28	6.05	1.81	1.53	0.0	133	
	1050	27.19	100	20.13	5.50	1.76	0.89	0.0	115	
	1055	27.25	100	19.85	5.30	1.74	0.63	0.0	118	
	1100	27.28	100	19.81	5.22	1.73	0.61	0.0	120	
	1105	27.30	100	19.76	5.21	1.72	0.60	0.0	121	
	1110	27.32	100	19.73	5.20	1.72	0.59	0.0	122	
	1115	27.34	100	19.70	5.20	1.72	0.59	0.0	123	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18NW18-062116 TIME: 1115

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		TOTAL metals
1-250 ml plastic	NA	Y		Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW19	Date: 6/20/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 10.00	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 58.18	Screen Intverval (ft) from TOC: 47.53 - 57.53	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: 52.53	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/20/16	0825	10.02	100	20.36	5.00	0.100	1.41	71.3	346	
	0830	10.08	100	20.05	5.27	0.101	0.89	72.3	176	
	0835	10.15	100	19.97	5.28	0.096	0.71	64.5	106	
	0840	10.20	100	19.96	5.39	0.096	0.67	47.7	102	
	0845	10.23	100	19.93	5.42	0.098	0.66	47.3	101	
	0850	10.25	100	19.97	5.43	0.098	0.65	47.0	100	
	0855	10.25	100	20.01	5.43	0.098	0.64	46.6	98	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW19-062016 TIME: 0855

DUPLICATE (D): YES/NO Yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC
2 - 500 ml plastic	HNO3	Y		TOTAL metals
2 - 250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW20	Date: 6/20/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Bessinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4 11	Static Water Level Reading (ft) from TOC: 10.86	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 36.80	Screen Interval (ft) from TOC: 26.80 - 36.80	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 31.80	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/20/16	0725	10.88	100	20.16	4.72	0.218	2.27	13.2	316	
	0730	10.95	100	19.30	4.40	0.194	1.04	7.8	305	
	0735	11.01	100	19.09	4.30	0.190	0.78	3.6	303	
	0740	11.04	100	19.03	4.33	0.190	0.70	2.8	303	
	0745	11.06	100	18.98	4.30	0.190	0.69	3.6	305	
	0750	11.07	100	19.08	4.32	0.190	0.68	4.7	307	
	0755	11.08	100	19.06	4.31	0.190	0.68	4.5	308	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW20-06 2016 TIME: 0755

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		Total metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW22	Date: 6/21/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 213 94	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 25.53	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 45.53	Screen Interval (ft) from TOC: 30.53 - 45.03	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 37.78	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/21/16	0725	25.55	100	22.05	7.83	0.990	4.12	5.5	75	
	0730	25.61	100	20.14	6.82	1.04	2.21	2.1	196	
	0735	25.66	100	19.60	5.38	1.11	1.25	0.0	301	
	0740	25.70	100	19.29	5.39	1.20	1.18	0.0	322	
	0745	25.72	100	19.25	5.37	1.20	1.17	0.0	323	
	0750	25.73	100	19.23	5.37	1.21	1.16	0.0	324	
	0755	25.74	100	19.20	5.37	1.22	1.16	0.0	325	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW22-062116 TIME: 0755

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		total metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW24	Date: 6/10/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 5.32	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: ~~18.43~~ 18.91	Screen Interval (ft) from TOC: 8.91 - 18.41	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 13.66	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/10/16	1405	5.34	100	20.99	4.73	0.972	1.25	13.9	165	
	1410	5.39	100	20.68	4.10	0.708	1.15	18.1	220	
	1415	5.45	100	20.46	3.88	0.695	1.13	17.7	237	
	1420	5.50	100	20.46	3.67	0.679	1.01	20.5	254	
	1425	5.53	100	20.39	3.68	0.687	0.88	20.7	259	
	1430	5.55	100	20.25	3.73	0.688	0.86	21.0	257	
	1435	5.57	100	20.30	3.72	0.689	0.85	21.2	258	
	1440	5.59	100	20.24	3.70	0.689	0.84	21.4	260	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW24-061016 TIME: 1440

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-500 ml plastic	HNO3	Y	Pump	TOTAL metals
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW25	Date: 6/29/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4	Static Water Level Reading (ft) from TOC: 6.51	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 17.48	Screen Interval (ft) from TOC: 17.18 - 26.78	Condition of Well/Remarks: No pad or Bollards yet
		Pump Placement (ft) from TOC: 21.98	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/29/16	0730	6.53	100	20.18	5.72	0.773	2.36	23.3	-12	
	0735	6.60	100	19.39	5.78	0.730	1.58	20.7	-42	
	0740	6.65	100	19.13	5.75	0.719	1.28	22.6	-50	
	0745	6.67	100	19.08	5.69	0.716	1.25	22.8	-53	
	0750	6.69	100	19.07	5.60	0.717	1.20	23.0	-54	
	0755	6.70	100	19.00	5.59	0.717	1.22	23.2	-55	
	0800	6.71	100	18.94	5.59	0.717	1.23	23.5	-56	
	0805	6.72	100	18.94	5.60	0.716	1.21	23.1	-58	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW25-062916 TIME: 0805

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	Y		TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: AWD1B	Date: 6/7/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 9.77	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 25.53	Screen Interval (ft) from TOC: 7.5-27.5	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 22.50 Bottom portion of screen	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/7/16	0815	9.79	100	19.15	4.82	0.384	1.12	700	239	
	0820	9.83	100	19.07	4.77	0.386	0.91	533	233	
	0825	9.85	100	19.07	4.69	0.386	0.70	493	235	
	0830	9.87	100	19.07	4.60	0.385	0.65	475	238	
	0835	9.88	100	19.10	4.59	0.384	0.63	473	240	
	0840	9.89	100	19.12	4.60	0.384	0.62	473	241	
	0845	9.89	100	19.13	4.59	0.383	0.62	472	242	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: AWD1B-060716 TIME: 0845

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	↓	1,4-Dioxane
1-250 ml plastic	NA	Y	↓	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: AWDIT	Date: 6/7/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 9.64	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 25.53	Screen Interval (ft) from TOC: 7.5 - 27.5	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 12.5 Top portion of screen	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/7/16	0720	9.67	100	20.29	6.24	0.560	4.03	177	147	
	0725	9.73	100	19.24	5.19	0.416	3.87	184	190	
	0730	9.77	100	19.08	5.02	0.403	3.89	175	203	
	0735	9.79	100	18.94	4.77	0.396	3.86	170	222	
	0740	9.80	100	18.92	4.61	0.391	3.84	158	237	
	0745	9.81	100	18.91	4.60	0.390	3.82	159	239	
	0750	9.81	100	18.90	4.59	0.390	3.78	160	240	
	0755	9.81	100	18.92	4.59	0.389	3.76	160	241	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: AWDIT-060716 TIME: 0755

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Pump	VOC
1- 250 ml plastic	NA	Y		Perchlorate
2- 1 Liter Amber	NA	N		1,4-Dioxane

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: AWD4B	Date: 6/7/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 21.71	Weather Conditions: Clear
	Total Well Depth (ft) from TOC: 38.49	Screen Intverval (ft) from TOC: 18.47-38.47	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 33.47 bottom portion of screen	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/7/16	1515	21.71	100	24.33	5.85	0.381	1.10	48.5	[redacted]NO	
	1520	21.73	100	24.30	5.76	0.382	1.05	46.5	208	
	1525	21.75	100	24.25	5.74	0.382	1.07	46.7	208	
	1530	21.77	100	24.21	5.73	0.383	1.07	46.3	210	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: AWD4B-060716 TIME: 1530

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass				
2-1 Liter Amber				
1-500 ml plastic				
1-250 ml plastic				

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: AWD4T	Date: 6/7/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4	Static Water Level Reading (ft) from TOC: 21.55	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 38.~~29~~	Screen Interval (ft) from TOC: 18.47- 38.47	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 23.47 top portion of screen	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/7/16	1430	21.57	100	24.24	5.97	0.408	2.18	63.5	186	
	1435	21.63	100	24.00	5.74	0.395	1.44	49.5	207	
	1440	21.66	100	23.91	5.66	0.395	1.22	54.5	230	
	1445	21.68	100	23.51	5.26	0.394	1.02	53.8	242	
	1450	21.70	100	23.55	5.25	0.394	1.00	53.6	244	
	1455	21.72	100	23.60	5.24	0.394	0.99	53.0	245	
	1500	21.74	100	23.62	5.23	0.393	0.99	52.7	247	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: AWD4T-060716 TIME: 1500

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NA

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		TOTAL metals
1-250 ml Plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: C01	Date: 6/17/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 23.39	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 49.20	Screen Interval (ft) from TOC: 39.48 - 49.48	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 39.48	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/17/16	0805	23.42	100	20.58	5.55	2.74	1.48	0.0	312	
	0810	23.47	100	20.05	5.28	2.77	0.93	0.0	322	
	0815	23.53	100	19.82	5.09	2.70	0.85	0.0	325	
	0820	23.57	100	19.89	5.09	2.63	0.85	0.0	325	
	0825	23.59	100	19.86	5.07	2.62	0.85	0.0	323	
	0830	23.60	100	19.90	5.06	2.61	0.84	0.0	322	
	0835	23.60	100	19.91	5.06	2.61	0.83	0.0	320	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: C01-061716 TIME: 0835

DUPLICATE (D): YES/NO yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC
2 - 500 ml plastic	HNO3	N	↓	Total metals
2 - 250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: CO2	Date: 6/17/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 5.27	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 29.19	Screen Intverval (ft) from TOC: 19.00 - 29.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 24.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/17/16	1005	5.29	100	21.07	5.85	0.661	1.22	68.6	41	
	1010	5.35	100	20.41	5.62	0.772	0.72	44.5	39	
	1015	5.40	100	20.35	5.49	0.761	0.63	45.7	42	
	1020	5.43	100	20.35	5.35	0.729	0.64	44.3	50	
	1025	5.45	100	20.30	5.30	0.720	0.60	43.2	52	
	1030	5.46	100	20.39	5.15	0.690	0.50	31.1	60	
	1035	5.47	100	20.42	5.16	0.691	0.49	30.9	60	
	1040	5.47	100	20.46	5.17	0.691	0.49	30.4	60	
	1045	5.47	100	20.40	5.15	0.690	0.50	30.1	61	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: CO2-061716 TIME: 1045

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO yes

MATRIX DUPLICATE (MD): YES/NO yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9-40 ml glass	HCL	N	Pump	VOC
3-250 ml plastic	NA	Y	Pump	perchlorate
~~3-250 ml plastic~~				

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: C03	Date: 6/14/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 26.22	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 62.56	Screen Interval (ft) from TOC: 52.60 - 62.80	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 57.70	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/14/16	1345	26.24	100	24.07	5.71	1.95	1.41	3.3	75	
	1350	26.30	100	21.52	5.55	1.88	0.91	0.0	68	
	1355	26.33	100	21.00	5.40	1.85	0.75	0.0	70	
	1400	26.35	100	20.59	5.40	1.84	0.70	0.0	65	
	1405	26.36	100	20.50	5.43	1.85	0.69	0.0	64	
	1410	26.37	100	20.44	5.42	1.86	0.68	0.0	62	
	1415	26.37	100	20.40	5.41	1.87	0.67	0.0	61	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: C03-061416 TIME: 1415

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		Total metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: C04	Date: 6/21/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 24.67	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 55.15	Screen Interval (ft) from TOC: 45.33 - 55.33	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 50.38	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/21/16	0825	24.69	100	20.40	5.67	0.416	2.42	95.7	282	
	0830	24.76	100	19.73	5.23	0.384	1.10	97.8	260	
	0835	24.82	100	19.48	4.90	0.367	0.91	97.5	267	
	0840	24.85	100	19.29	4.75	0.362	0.95	97.9	275	
	0845	24.87	100	19.30	4.74	0.361	0.96	98.3	276	
	0850	24.89	100	19.34	4.73	0.361	0.97	98.5	277	
	0855	24.90	100	19.37	4.72	0.361	0.97	98.6	276	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: C04-062116 TIME: 0855

DUPLICATE (D): YES/NO YES

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC
2 - 500 ml plastic	HNO3	Y	Pump	TOTAL metals
2 - 250 ml plastic	N	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: C08	Date: 6/14/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 23.95	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 32.66	Screen Interval (ft) from TOC: 22.66-32.66	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 27.66	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/14/16	1240	23.95	100	23.52	6.27	5.80	1.49	6.6	172	
	1245	23.98	100	21.92	5.98	5.71	0.90	6.5	172	
	1250	24.04	100	21.65	6.02	5.71	0.79	5.6	171	
	1255	24.10	100	21.30	5.61	5.76	0.73	6.0	170	
	1300	24.14	100	21.29	5.61	5.77	0.72	6.0	169	
	1305	24.16	100	21.20	5.63	5.79	0.70	6.1	169	
	1310	24.17	100	21.16	5.65	5.79	0.69	5.6	168	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: C08-061416 TIME: 1310

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500ml plastic	HNO3	N		TOTAL metals
1-250ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW1	Date: 6/10/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.15	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 40.30	Screen Interval (ft) from TOC: 35.30 - 40.30	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 37.80	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/10/16	0720	27.17	100	20.08	6.02	2.10	1.59	14.5	51	
	0725	27.22	100	19.83	5.86	1.98	0.87	10.1	64	
	0730	27.26	100	19.77	5.71	1.97	0.70	9.6	69	
	0735	27.30	100	19.74	5.68	2.01	0.67	9.6	62	
	0740	27.33	100	19.75	5.67	2.16	0.66	7.6	47	
	0745	27.35	100	19.77	5.65	2.17	0.65	6.3	46	
	0750	27.37	100	19.78	5.65	2.18	0.65	6.1	45	
	0755	27.39	100	19.80	5.64	2.18	0.64	5.5	44	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW1-061016 TIME: 0755

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-500 ml plastic	HNO3	N	Pump	TOTAL metals
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: mw2	Date: 6/24/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.40	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 42.74	Screen Interval (ft) from TOC: 37.74 - 42.74	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 39.24	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/24/16	1030	27.43	100	25.29	5.20	2.41	0.82	0.0	178	
	1035	27.50	100	23.91	5.10	2.38	0.67	0.0	170	
	1040	27.55	100	23.94	5.04	2.38	0.63	0.0	167	
	1045	27.59	100	23.75	4.91	2.30	0.47	0.0	167	
	1050	27.61	100	23.70	4.90	2.30	0.46	0.0	167	
	1055	27.62	100	23.65	4.90	2.29	0.45	0.0	168	
	1100	27.62	100	23.68	4.89	2.29	0.45	0.0	168	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: mw2-062416 TIME: 1100

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW3	Date: 6/10/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 26.15	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 49.63	Screen Intverval (ft) from TOC: 44.63 - 49.63	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 47.13	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/10/16	0835	26.18	100	19.97	5.96	1.61	1.89	0.0	110	
	0840	26.25	100	19.81	5.78	1.59	1.50	0.0	129	
	0845	26.30	100	19.83	5.60	1.58	1.24	0.0	150	
	0850	26.35	100	19.90	5.51	1.57	1.33	0.0	160	
	0855	26.37	100	19.99	5.50	1.57	1.35	0.0	161	
	0900	26.39	100	20.03	5.48	1.57	1.32	0.0	163	
	0905	26.40	100	20.05	5.47	1.57	1.33	0.0	164	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: MW3-061016 TIME:

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
8-40ml glass	HCL	N	Pump	VOC
1-500ml plastic	HNO3	N	Pump	TOTAL metals
1-250ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW5	Date: 6/8/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 24.25	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 43.60	Screen Interval (ft) from TOC: 38.70 - 43.70	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: ~~38.70~~ 41.20	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/8/16	0935	24.27	100	24.49	5.58	0.963	1.77	5.4	162	
	0940	24.35	100	24.33	5.78	1.13	1.08	2.4	201	
	0945	24.40	100	23.40	5.59	1.11	0.71	0.0	228	
	0950	24.44	100	23.36	5.68	1.10	0.67	0.0	242	
	0955	24.46	100	23.42	5.00	1.10	0.67	0.0	244	
	1000	24.48	100	23.48	5.02	1.11	0.68	0.0	246	
	1005	24.49	100	23.50	5.03	1.10	0.68	0.0	247	
	1010	24.50	100	23.55	5.04	1.10	0.67	0.0	248	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW5-060815 TIME: 1010

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	↓	1,4-Dioxane
1-500 ml plastic	HNO3	N		Total metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW7	Date: 6/24/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 18.88	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 27.74	Screen Intverval (ft) from TOC: 22.74-27.74	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 23.24	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/24/16	0925	18.90	100	26.95	7.43	1.12	1.05	1.1	180	
	0930	18.96	100	26.25	6.76	1.10	0.84	2.5	211	
	0935	19.02	100	26.22	6.21	1.10	0.72	4.3	229	
	0940	19.06	100	25.90	5.90	1.09	0.62	4.9	225	
	0945	19.09	100	25.87	5.87	1.09	0.62	3.9	224	
	0950	19.11	100	25.90	5.85	1.09	0.61	3.1	223	
	0955	19.12	100	25.88	5.85	1.09	0.61	1.7	222	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW7-062416 TIME: 0955

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW8	Date: 6/9/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 15.56	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 33.63	Screen Intverval (ft) from TOC: 23.63 - 33.63	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 30.03	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/9/16	1030	15.58	100	22.64	7.04	1.13	2.24	18.9	190	
	1035	15.65	100	20.61	5.20	1.10	1.53	3.9	259	
	1040	15.71	100	20.20	4.80	1.08	1.41	3.0	290	
	1045	15.75	100	19.85	4.63	1.07	1.33	2.2	310	
	1050	15.78	100	19.81	4.62	1.07	1.34	2.0	312	
	1055	15.79	100	19.83	4.61	1.07	1.34	2.4	314	
	1100	15.80	100	19.84	4.61	1.07	1.35	2.1	315	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW8-060916 TIME: 1100

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW9	Date: 6/22/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 13.60	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 29.75	Screen Interval (ft) from TOC: 24.75 - 29.75	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 27.25	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/22/16	1035	13.63	100	23.22	5.45	0.298	1.29	24.4	252	
	1040	13.70	100	22.50	5.34	0.188	0.83	17.4	242	
	1045	13.75	100	22.48	5.31	0.176	0.74	13.2	230	
	1050	13.80	100	22.59	5.31	0.173	0.67	9.3	219	
	1055	13.83	100	22.61	5.31	0.172	0.67	8.6	218	
	1100	13.85	100	22.65	5.32	0.172	0.66	8.0	217	
	1105	13.85	100	22.67	5.32	0.172	0.66	7.5	217	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW9-062216 TIME: 1105

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCl	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW10	Date: 6/9/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 7.77	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 36.70	Screen Interval (ft) from TOC: 31.70 - 36.70	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 33.20	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/9/16	1405	7.80	100	21.21	6.54	0.237	1.94	57.1	41	
	1410	7.85	100	19.03	5.87	0.164	0.90	49.3	73	
	1415	7.90	100	18.67	5.43	0.143	0.55	50.1	113	
	1420	7.93	100	18.54	4.86	0.141	0.44	45.3	129	
	1425	7.95	100	18.40	4.62	0.143	0.43	45.9	148	
	1430	7.96	100	18.41	4.61	0.144	0.43	46.1	150	
	1435	7.96	100	18.48	4.60	0.145	0.44	46.3	152	
	1440	7.96	100	18.50	4.60	0.145	0.43	46.5	154	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW10-060916 TIME: 1440

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	Y		TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW12	Date: 6/10/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 8.58	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 31.21	Screen Interval (ft) from TOC: 26.21 - 31.21	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 28.71	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/10/16	1300	8.60	100	22.56	5.60	1.04	1.24	28.4	76	
	1305	8.66	100	21.18	5.41	1.15	0.84	25.6	74	
	1310	8.71	100	20.70	5.20	1.14	0.50	16.0	87	
	1315	8.75	100	20.90	5.11	1.10	0.50	9.5	90	
	1320	8.77	100	20.93	5.13	1.12	0.50	8.7	88	
	1325	8.78	100	20.95	5.12	1.12	0.50	8.9	87	
	1330	8.79	100	20.97	5.11	1.13	0.50	5.3	87	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW12-061016 TIME: 1330

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
1-250ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW13	Date: 6/17/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 6.58	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 48.83	Screen Interval (ft) from TOC: 43.80 - 48.80	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 46.30	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/17/16	0910	6.59	100	21.58	5.99	0.540	1.35	43.1	107	
	0915	6.65	100	20.38	6.10	0.527	0.75	46.9	-4	
	0920	6.70	100	20.19	6.12	0.527	0.50	47.4	-24	
	0925	6.75	100	20.13	6.13	0.358	0.45	45.3	-25	
	0930	6.78	100	20.11	6.12	0.205	0.41	35.9	-25	
	0935	6.80	100	20.03	6.11	0.205	0.40	35.1	-26	
	0940	6.80	100	20.02	6.09	0.204	0.40	34.7	-26	
	0945	6.80	100	20.04	6.08	0.205	0.40	34.5	-25	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW13-061716 TIME: 0945

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	PERCHLORATE

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW14B	Date: 6/7/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 12.67	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 53.80	Screen Intverval (ft) from TOC: 48.82-53.82	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 52.57	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/7/16	1050	12.70	100	24.88	4.81	3.52	1.02	53.4	174	
	1055	12.73	100	23.54	4.85	3.80	0.76	44.4	148	
	1100	12.75	100	23.17	4.83	3.88	0.70	35.1	143	
	1105	12.77	100	23.19	4.72	3.85	0.67	33.3	146	
	1110	12.78	100	23.15	4.71	3.85	0.65	33.0	145	
	1115	12.79	100	23.18	4.71	3.84	0.64	32.9	146	
	1120	12.79	100	23.20	4.70	3.84	0.64	32.5	145	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW14B-060716 TIME: 1120

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40ml glass	HCL	N	Pump	VOC
2 - 1 Liter Amber	NA	N	↓	1,4-Dioxane
1 - 250 ml plastic	NA	Y	↓	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW14T	Date: 6/7/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4	Static Water Level Reading (ft) from TOC: 12.53	Weather Conditions: Clear
	Total Well Depth (ft) from TOC: 53.80	Screen Interval (ft) from TOC: 48.82 - 53.82	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 50.07 Top portion of Screen	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/7/16	0955	12.55	100	24.17	5.12	1.92	4.56	231	140	
	1000	12.61	100	23.39	5.30	2.78	2.06	171	133	
	1005	12.65	100	23.48	5.11	2.93	1.08	152	140	
	1010	12.68	100	23.56	4.80	3.13	0.90	139	159	
	1015	12.70	100	23.74	4.52	3.27	0.81	96.1	182	
	1020	12.70	100	23.84	4.51	3.28	0.80	95.8	184	
	1025	12.70	100	23.85	4.50	3.29	0.80	95.2	186	
	1030	12.70	100	23.89	4.50	3.29	0.79	94.4	188	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: MW14T-060716 TIME: 1030

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCl	N	Pump	VOC
2-1 Liter Amber	NA	N	↓	perchlorate
1-250 ml plastic	NA	Y	↓	1,4-Dioxane

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW16	Date: 6/21/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 8.68	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 37.24	Screen Intverval (ft) from TOC: 32.00 - 37.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 34.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/21/16	1405	8.70	100	25.53	5.74	1.10	1.61	95.1	118	
	1410	8.77	100	23.77	5.36	1.50	0.88	75.9	97	
	1415	8.83	100	23.41	5.35	1.50	0.75	61.0	91	
	1420	8.86	100	22.89	5.20	1.40	0.59	56.8	96	
	1425	8.89	100	22.76	5.02	1.30	0.59	41.2	113	
	1430	8.91	100	22.70	5.00	1.20	0.59	41.0	114	
	1435	8.93	100	22.65	5.00	1.21	0.58	40.7	113	
	1440	8.93	100	22.61	5.00	1.22	0.58	40.3	114	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW16-062116 TIME: 1440

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	Y		TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW17	Date: 6/20/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 8.76	Weather Conditions: Cloudy
	Total Well Depth (ft) from TOC: 28.63	Screen Intverval (ft) from TOC: 23.63-28.13	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 26.13	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/20/16	1430	8.79	100	25.20	5.80	0.114	0.92	111	113	
	1435	8.86	100	24.09	5.20	0.125	0.63	67.9	139	
	1440	8.91	100	23.00	5.08	0.129	0.49	52.3	142	
	1445	8.95	100	23.08	5.05	0.130	0.49	49.1	142	
	1450	8.97	100	23.11	5.04	0.131	0.48	48.8	142	
	1455	8.98	100	23.13	5.03	0.132	0.48	48.7	142	
	1500	8.98	100	23.14	5.03	0.132	0.48	48.5	142	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: MW17-062016 TIME: 1500

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW18	Date: 6/17/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 8.02	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 33.69	Screen Interval (ft) from TOC: 28.60-33.60	Condition of Well/Remarks: ~~[illegible]~~ Needs paint
		Pump Placement (ft) from TOC: 31.10	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/17/16	1345	8.04	100	20.70	5.99	1.76	1.11	206	97	
	1350	8.10	100	19.70	5.34	1.62	0.79	184	112	
	1355	8.15	100	19.56	5.27	1.61	0.66	177	113	
	1400	8.20	100	19.60	5.24	1.59	0.50	140	113	
	1405	8.23	100	19.65	5.15	1.56	0.41	136	113	
	1410	8.25	100	19.70	5.13	1.55	0.41	135	113	
	1415	8.27	100	19.72	5.13	1.54	0.41	135	112	
	1420	8.27	100	19.75	5.12	1.54	0.42	134	112	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW18-061716 TIME: 1420

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO yes

MATRIX DUPLICATE (MD): YES/NO yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9 - 40 ml glass	HCL	N	Pump	VOC
~~[illegible]~~				
3 - 500 ml plastic	HNO3	Y	Pump	TOTAL metals
3 - 250 ml plastic	NA	N	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW19	Date: 6/17/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 8.16	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 33.61	Screen Interval (ft) from TOC: 28.60 - 33.60	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: 31.10	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/17/16	1235	8.18	100	19.54	5.37	0.225	0.60	437	107	
	1240	8.25	100	18.87	4.98	0.205	0.52	384	129	
	1245	8.31	100	18.49	4.88	0.200	0.45	300	134	
	1250	8.35	100	18.50	4.82	0.199	0.42	288	137	
	1255	8.37	100	18.37	4.77	0.198	0.41	264	138	
	1300	8.39	100	18.37	4.74	0.199	0.41	263	140	
	1305	8.40	100	18.30	4.73	0.200	0.40	262	141	
	1310	8.40	100	19.26	4.73	0.201	0.39	262	142	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW19-061716 TIME: 1310

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-500 ml plastic	HNO3	Y	Pump	TOTAL metals
1-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW21	Date: 6/22/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 32.25	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 46.80	Screen Intverval (ft) from TOC: 41.80 - 46.80	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 44.30	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/22/16	0915	32.28	100	22.40	5.72	5.17	1.58	8.7	192	
	0920	32.35	100	22.26	5.39	5.23	1.01	4.8	183	
	0925	32.41	100	22.47	5.22	5.26	0.90	3.8	182	
	0930	32.45	100	22.56	5.04	5.30	0.90	3.3	191	
	0935	32.47	100	22.60	5.03	5.31	0.89	2.6	192	
	0940	32.49	100	22.63	5.02	5.32	0.89	2.3	193	
	0945	32.50	100	22.65	5.02	5.32	0.88	1.9	194	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW21-062216 TIME: 0945

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		Total metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: mw22	Date: 6/8/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.69	Weather Conditions: clear
	Total Well Depth (ft) from TOC: 43.79	Screen Intverval (ft) from TOC: 38.69 - 44.89	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 41.29	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/8/16	1420	27.72	100	26.31	6.32	2.47	1.52	12.2	29	
	1425	27.77	100	26.01	5.95	2.41	1.46	16.0	81	
	1430	27.82	100	25.60	5.60	2.40	1.47	16.8	124	
	1435	27.86	100	25.16	5.47	2.39	1.45	17.0	143	
	1440	27.88	100	25.12	5.37	2.38	1.41	17.7	159	
	1445	27.89	100	24.91	5.32	2.39	1.39	16.9	171	
	1450	27.90	100	24.84	5.34	2.40	1.37	16.8	173	
	1455	27.90	100	24.80	5.34	2.40	1.35	16.5	174	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: mw22-060816 TIME: 1455

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC
1 - 250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW23	Date: 6/17/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.70	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 46.80	Screen Interval (ft) from TOC: 36.80 - 46.80	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 39.30	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/17/16	0700	27.72	100	21.14	5.57	2.02	1.85	0.4	255	
	0705	27.79	100	20.26	5.24	2.00	1.33	0.0	265	
	0710	27.85	100	20.12	5.08	1.98	1.01	0.0	280	
	0715	27.90	100	20.09	5.00	1.98	1.01	0.0	288	
	0720	27.93	100	20.14	4.98	1.98	1.00	0.0	290	
	0725	27.95	100	20.15	4.99	1.98	1.00	0.0	292	
	0730	27.96	100	20.19	4.99	1.99	0.99	0.1	294	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW23-061716 TIME: 0730

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO Yes
MATRIX DUPLICATE (MD): YES/NO Yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9 - 40ml glass	HCL	N	Pump	VOC
3 - 250 ml plastic	NA	Y	Pump	perchlorate

APPENDIX C: RESULTS OF TREATABILITY STUDIES

10515 Research Dr.
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
Web: www.microbe.com

SITE LOGIC Report

In Situ Microcosm Study / Stable Isotope Probing (SIP)

Contact: Linda Raabe
Address: AECOM
112 East Pecan Street, Suite 499
San Antonio, TX 78205

Phone: (210) 296-2000
Email: linda.raabe@aecom.com

MI Identifier: 006LI

Report Date: October 29, 2014

Project: LHAAP-18/24, 60274185.0013BA

Comments:

NOTICE: This report is intended only for the addressee shown above and may contain confidential or privileged information. If the recipient of this material is not the intended recipient or if you have received this in error, please notify Microbial Insights, Inc. immediately. The data and other information in this report represent only the sample(s) analyzed and are rendered upon condition that it is not to be reproduced without approval from Microbial Insights, Inc. Thank you for your cooperation.

microbialinsights

Executive Summary

An In Situ Microcosm (ISM) study using stable isotope probing (SIP) was performed at the site to determine whether the addition of oxygen release compound (ORC) or emulsified vegetable oil (EVO) would enhance the biodegradation of Methylene Chloride. A control unit to simulate monitored natural attenuation (MNA) conditions, as well as two BioStim units amended with either ORC or EVO were deployed into monitoring wells MW2 and 120. All Bio-Trap® samplers were baited with ^{13}C labeled Methylene Chloride to qualify incorporation into biomass and mineralization. Following an 84-day deployment period, Bio-Traps® were recovered for quantification of ^{13}C incorporation into biomass and dissolved inorganic carbon (DIC). Dissolved gases, anions, and pH were also measured in select units. A complete summary of the results is provided in Table 1 and Figures 1 through 5. Following are key observations from the results.

MW2

- Evidence for biodegradation in the MNA and EVO units was inconclusive, as the ^{13}C-enriched biomass fell below the detection limit in both units.
- DIC $\delta^{13}C$ values were near background levels for both the MNA (-10‰) and EVO (-13‰) units, indicating little to no mineralization of methylene chloride occurred during the deployment period.
- The average PLFA $\delta^{13}C$ for the ORC unit was 61‰, indicating a low level of incorporation of ^{13}C-labeled methylene chloride into microbial biomass.
- The average DIC $\delta^{13}C$ value in the ORC unit was in the low range (53‰), indicating methylene chloride was mineralized during the deployment period.
- Total PLFA biomass for the MNA, ORC, and EVO units in the MW2 monitoring well were moderate (1.83E+06 cells/bead, 3.50E+06 cells/bead, and 4.84E+06 cells/bead respectively).
- The PLFA community structure in this well was dominated by monoenoics indicating proteobacteria, and normal saturates were the next most abundant group. Additionally, indicators of eukaryotes, firmicutes, Actinobacteria, and anaerobic metal reducers were detected.
- Overall, the results of the SIP analysis suggested that ORC addition stimulated methylene chloride biodegradation beyond MNA levels while the addition of EVO did not increase methylene chloride degradation during the study period.

120

- The average PLFA $\delta^{13}C$ value for the MNA unit (271‰) was in the moderate range, Indicating methylene chloride was biodegraded under current site conditions.
- The DIC $\delta^{13}C$ value for the MNA unit was low (58‰), indicating that the indigenous microbial community was also mineralizing the methylene chloride.
- The average PLFA $\delta^{13}C$ value for the ORC unit (1,361‰) fell in the high range and conclusively demonstrates biodegradation and incorporation of methylene chloride into the microbial biomass during the deployment period.
- The DIC $\delta^{13}C$ value for the ORC unit was 29‰, indicating some of the methylene chloride was also mineralized.
- Evidence for biodegradation in the EVO unit was inconclusive as the ^{13}C enriched biomass fell below detection limit.
- The DIC $\delta^{13}C$ value for the EVO unit (-11‰) was near background levels, indicating little or no mineralization.
- Total PLFA biomass for the MNA, ORC, and EVO units in the 120 monitoring well were moderate (1.66E+06 cells/bead, 1.83E+06 cells/bead, and 2.35E+06 cells/bead respectively).
- The PLFA community structure for this well was dominated by monoenoics indicating proteobacteria, with normal saturates being the next most abundant group. Additionally, indicators of firmicutes, anaerobic metal reducers, eukaryotes, and Actinobacteria were detected.

10515 Research Dr.
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

- The results from the MNA unit indicated that methylene chloride was capable of being degraded under current conditions in the vicinity of 120. ORC addition appeared to further stimulate methylene chloride degradation, as the average PLFA $\delta^{13}C$ value for the ORC unit was an order of magnitude higher compared to the MNA unit. Results from the EVO unit suggested that little to no methylene chloride was degraded with that treatment.

10515 Research Dr.
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

microbialinsights

The *In Situ* Microcosm Approach

Site managers have frequently turned to laboratory microcosms or small pilot studies to evaluate bioremediation. However, duplication of *in situ* conditions in the laboratory is difficult and the results often do not correlate to the field. Pilot studies are performed in the field but are often prohibitively expensive as an investigative tool. Bio-Trap studies serve as cost-effective, *in situ* microcosms providing microbial, chemical, and geochemical evidence to evaluate biodegradation as a treatment mechanism and to screen remedial alternatives.

Typically each Bio-Trap Unit will contain samplers to evaluate the following:

Geochemical Fingerprint (GEO)	•20 mL amber VOA vial with a nylon screened cap designed for assessment of a variety of geochemical parameters including anions and metabolic acids.
Contaminant of Concern (COC)	•A low density polyethylene (LDPE) passive diffusion bag designed for analysis of a variety of COCs including chlorinated solvents and petroleum hydrocarbons.
Microbial Populations (MICRO)	•PVC cassette containing Bio-Sep beads which provide a large surface area for microbial attachment and were designed for analysis by a variety of molecular biological tools (MBTs).

How do ISMs work?

The MICRO sampler (microbial populations) contains Bio-Sep® beads, an engineered composite of Nomex® and powdered activated carbon which provides an incredibly large surface area (~600 m^2/g) that is readily colonized by subsurface microorganisms. In addition to a matrix for microbial growth, the Bio-Sep® beads can be "baited" with amendments including electron donors (e.g. hydrogen releasing compounds) to investigate biostimulation approaches to enhance biodegradation. The ISM units also contain a COC (contaminant of concern) sampler to measure contaminant concentrations, daughter product formation, and dissolved gases and a GEO (geochemical fingerprint) sampler for quantification of geochemical parameters (nitrate, iron, sulfate, etc.), and volatile fatty acids (pyruvic, lactic, acetic, propionic, etc.).

Bio-Trap® *In Situ* Microcosm studies at chlorinated solvent sites typically include three types of Bio-Trap Units deployed within a monitoring well. Each Bio-Trap Unit corresponds to one of the three most common remedial options: monitored natural attenuation (MNA), Biostimulation (BioStim), and Bioaugmentation (BioAug). All three Bio-Trap Units contain COC and GEO samplers for chemical and geochemical analyses. The key difference between the Bio-Trap Units is in the MICRO sampler.

10515 Research Dr.
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

microbialinsights

Types of ISM Units typically deployed and MICRO sampler configurations:

Control (MNA)	•Bio-Sep® beads contain no additional electron donor and represent current aquifer conditions.
Biostimulation (BioStim)	•Bio-Sep® beads are baited with a specified electron donor (sodium lactate, EOS, HRC, molasses, etc) or an Amendment Supplier is used to release the desired amendment.
Bioaugmentation (BioAug)	•Bio-Sep® beads are pre-inoculated with a *Dehalococcoides* culture. These units can also be baited with an additional electron donor.

MNA Unit: The purpose of the Control ISM Unit is to quantify contaminant degrading bacteria and daughter product formation under monitored natural attenuation (MNA) conditions and to serve as a baseline for comparison to BioStim and/or BioAug Units.

Following in-well deployment, DNA or phospholipid fatty acids can be extracted from the Bio-Sep beads for CENSUS or PLFA analyses. For example, DNA extracted from the Bio-Sep beads can be used in CENSUS analysis of *Dehalococcoides* (qDHC) and vinyl chloride reductase (qVC) genes to evaluate the potential for complete reductive dechlorination of PCE to ethene under MNA conditions. The VOC and anion samplers can be used to determine concentrations of contaminants, daughter products, dissolved gases, terminal electron acceptors, and chloride.

BioStim Unit: The Biostimulation ISM Unit is designed to test the hypothesis that electron donor addition will stimulate growth of dechlorinating bacteria and enhance biodegradation. As with the MNA Unit, the BioStim Unit contains COC and GEO samplers for chemical analyses. The BioStim Unit may contain either a MICRO sampler that contains Bio-Sep beads "baited" with the specified electron donor or an amendment supplier to release the desired amendment over the incubation time. If an Amendment Supplier is used the MICRO sampler will contain standard Bio-Sep beads for the growth matrix.

BioAug Unit: The Bioaugmentation ISM Unit is designed to evaluate bioaugmentation as a treatment technology. The MICRO sampler contains Bio-Sep beads pre-inoculated with the desired commercial culture and also contains an electron donor of choice. As with the MNA and BioStim Units, the BioAug Unit also contains a COC and GEO samplers for chemical analyses.

Stable Isotope Probing (SIP)

Stable isotope probing (SIP) is an innovative method to track the environmental fate of a "labeled" contaminant of concern to unambiguously demonstrate biodegradation. Two stable carbon isotopes exist in nature – carbon 12 (^{12}C) which accounts for 99% of carbon and carbon 13 (^{13}C) which is considerably less abundant (~1%). With the SIP method, the Bio-Trap® sampler is baited with a specially synthesized form of the contaminant containing ^{13}C labeled carbon. Since ^{13}C is rare, the labeled compound can be readily differentiated from the contaminants present at the site. Following deployment, the Bio-Trap® is recovered and three approaches are used to conclusively demonstrate biodegradation of the contaminant of concern.

- The loss of the labeled compound provides an estimate of the degradation rate (% loss of ^{13}C).

10515 Research Dr.
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

microbialinsights

- Quantification of ^{13}C enriched phospholipid fatty acids (PLFA) indicates incorporation into microbial biomass.
- Quantification of ^{13}C enriched dissolved inorganic carbon (DIC) indicates contaminant mineralization.

Phospholipid Fatty Acids (PLFA)

PLFA are a primary component of the membrane of all living cells including bacteria. PLFA decomposes rapidly upon cell death (1, 2), so the total amount of PLFA present in a sample is indicative of the viable biomass. When combined with stable isotope probing (SIP), incorporation of ^{13}C into PLFA is a conclusive indicator of biodegradation.

Some organisms produce "signature" types of PLFA allowing quantification of important microbial functional groups (e.g. iron reducers, sulfate reducers, or fermenters). The relative proportions of the groups of PLFA provide a "fingerprint" of the microbial community. In addition, Proteobacteria modify specific PLFA during periods of slow growth or in response to environmental stress providing an index of their health and metabolic activity.

CENSUS®

Based on quantitative polymerase chain reaction (qPCR), CENSUS® is a nucleic acid-based approach to quantify specific microorganisms, groups of microorganisms, or functional genes involved in bioremediation or other biological processes. CENSUS targets include bacteria and functional genes responsible for biodegradation of chlorinated solvents and petroleum products among others.

10515 Research Dr.
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

microbialinsights

Results

Table 1. Summary of the results obtained from the Bio-Trap® Units.

Sample Name	MW2-MNA	MW2-ORC	MW2-EVO
^{13}C Contaminant Loss			
^{13}C Methylene Chloride Pre-deployment (µg/bead)	39 ± 8	39 ± 8	39 ± 8
^{13}C Methylene Chloride Post-deployment (µg/bead)	10 ± 1	6 ± 3	10 ± 2
Biomass & ^{13}C Incorporation			
Total Biomass (Cells/bead)	1.83E+06	3.50E+06	4.84E+06
^{13}C Enriched Biomass (Cells/bead)	ND	3.81E+04	ND
Average PLFA Del (‰)	ND	61	ND
Maximum PLFA Del (‰)	ND	201	ND
^{13}C Mineralization			
DIC Del (‰)	-10	52	-13
% ^{13}C in DIC	1.09	1.16	1.09
Community Structure (% total PLFA)			
Firmicutes (TerBrSats)	2.69	5.95	0.20
Proteobacteria (Monos)	77.51	73.64	29.44
Anaerobic metal reducers (BrMonos)	0.10	1.59	0.00
Actinomycetes (MidBrSats)	0.52	0.34	0.00
General (Nsats)	12.31	17.66	21.18
Eukaryotes (Polyenoics)	6.89	0.81	0.00
Physiological Status (Proteobacteria only)			
Slowed Growth	0.33	4.19	0.82
Decreased Permeability	0.04	0.10	0.08
Dissolved Gases (µg/L)			
Ethene	NA	NA	15
Ethane	NA	NA	9.7
Methane	NA	NA	220
Anions (mg/L)			
Chloride	NA	1400	1200
Nitrite	NA	<12	<0.50
Nitrate	NA	<0.50	<0.50
Ortho phosphate as P	NA	<1.5	<1.5
Sulfate	NA	6.6	0.86 (J)
pH			
pH	NA	4.6	NA

10515 Research Dr.
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

microbialinsights

Table 1 (continued). Summary of the results obtained from the Bio-Trap® Units.

Sample Name	120-MNA	120-ORC	120-EVO
^{13}C Contaminant Loss			
^{13}C Methylene Chloride Pre-deployment (µg/bead)	39 ± 8	39 ± 8	39 ± 8
^{13}C Methylene Chloride Post-deployment (µg/bead)	10 ± 0.4	ND	10 ± 6
Biomass & ^{13}C Incorporation			
Total Biomass (Cells/bead)	1.66E+06	1.83E+06	2.35E+06
^{13}C Enriched Biomass (Cells/bead)	1.95E+04	5.02E+04	ND
Average PLFA Del (‰)	271	1361	ND
Maximum PLFA Del (‰)	655	2584	ND
^{13}C Mineralization			
DIC Del (‰)	58	29	-11
% ^{13}C in DIC	1.17	1.14	1.09
Community Structure (% total PLFA)			
Firmicutes (TerBrSats)	1.90	1.72	0.94
Proteobacteria (Monos)	65.41	73.64	50.15
Anaerobic metal reducers (BrMonos)	2.00	5.70	0.41
Actinomycetes (MidBrSats)	0.00	0.50	0.38
General (Nsats)	23.22	14.86	25.63
Eukaryotes (Polyenoics)	7.48	3.56	0.43
Physiological Status (Proteobacteria only)			
Slowed Growth	1.88	4.41	1.14
Decreased Permeability	0.08	0.08	0.17
Dissolved Gases (µg/L)			
Ethene	NA	NA	7.2
Ethane	NA	NA	1.4
Methane	NA	NA	3.5
Anions (mg/L)			
Chloride	NA	620	700
Nitrite	NA	<0.50	<0.50
Nitrate	NA	85	0.90
Ortho phosphate as P	NA	3.1	1.9
Sulfate	NA	94	91
pH			
pH	NA	5.9	NA

Legend: ND = Non-Detect J = Estimated concentration below PQL but above LQL NA = Analysis not performed

10515 Research Dr.
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

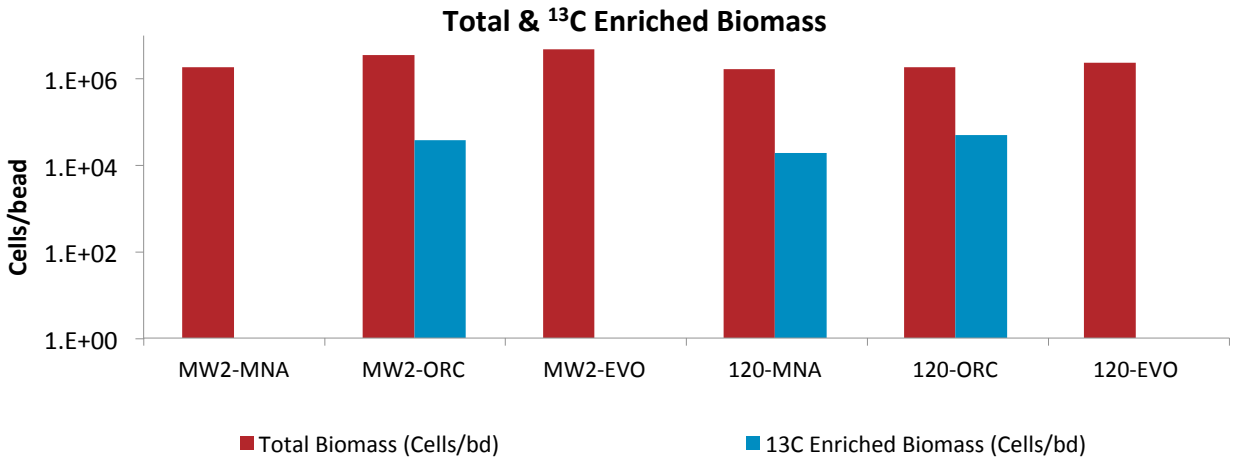

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

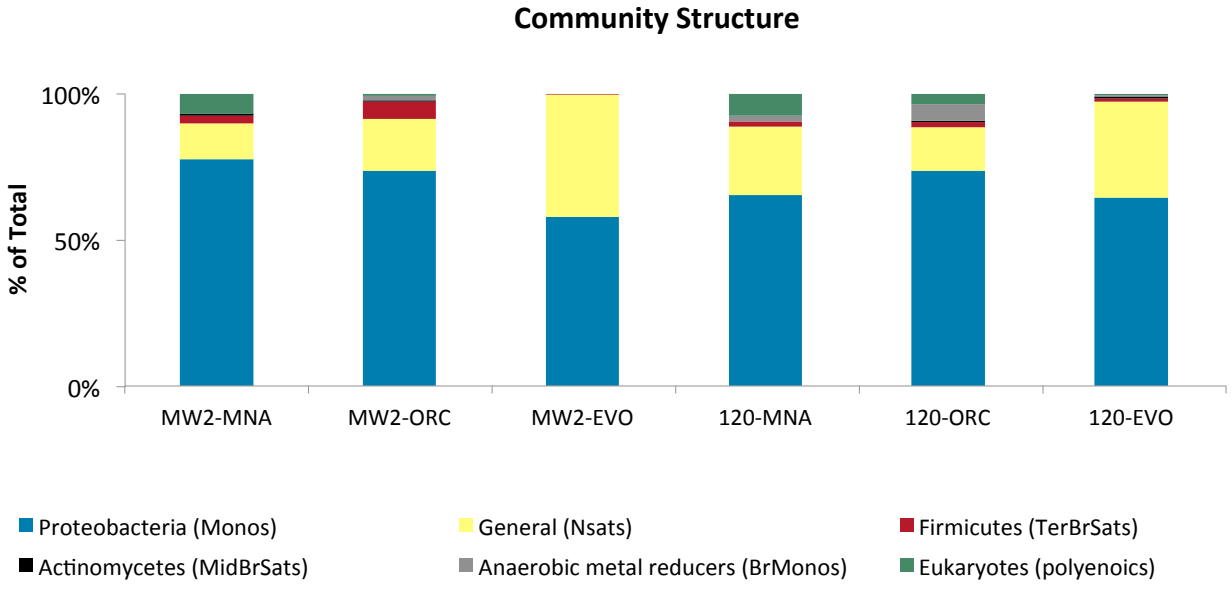

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.

10515 Research Dr.
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

microbialinsights

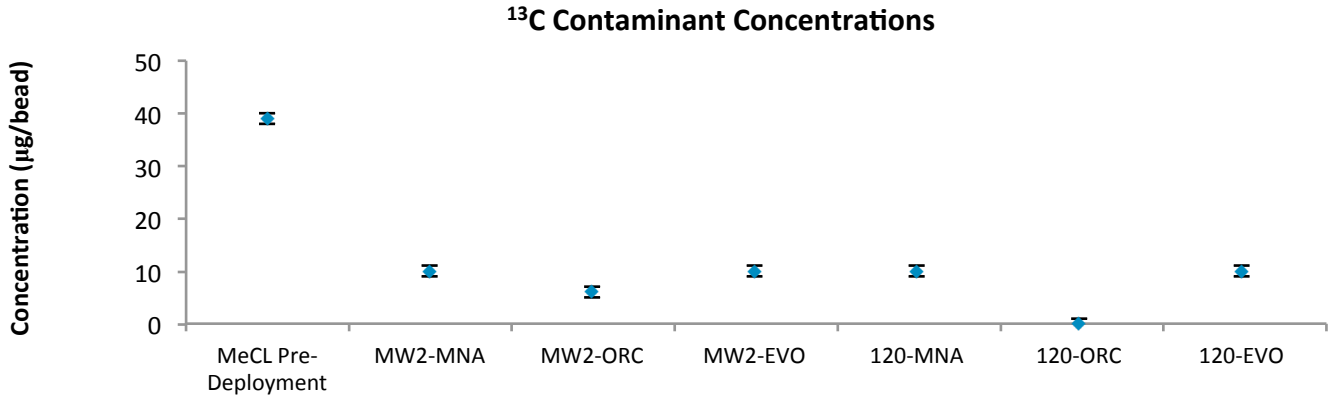

Figure 3. Comparison of Pre-deployment concentrations loaded on Bio-Sep beads to the concentrations detected after incubation.

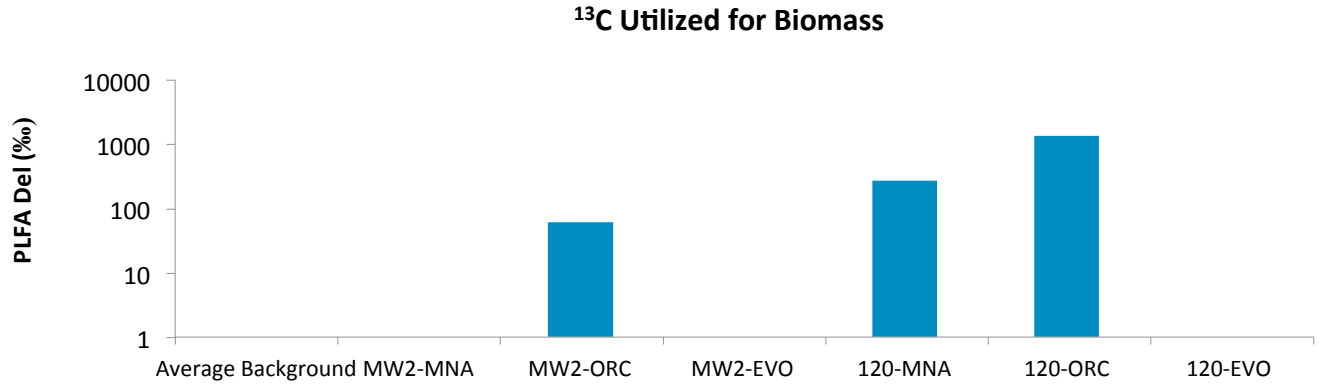

Figure 4. Comparison of the average Del value obtained from PLFA biomarkers from each Bio-Trap® unit to the average background Del observed in samples not exposed to ^{13}C enriched compounds.

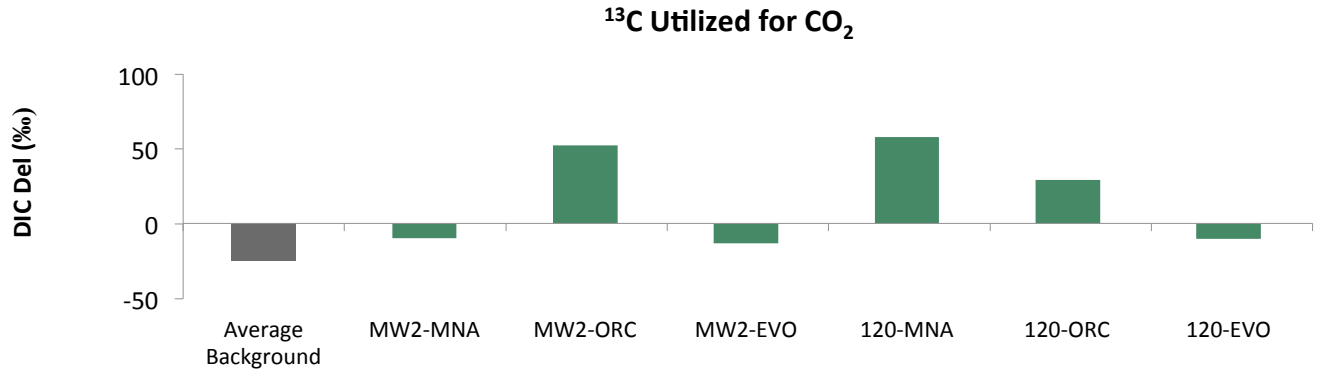

Figure 5. Comparison of the Del value obtained from DIC from each Bio-Trap® unit to the average background Del observed in samples not exposed to ^{13}C enriched compounds.

10515 Research Dr.
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

microbialinsights

Interpretation

Interpretation of the results of the SIP Bio-Trap® study must be performed with due consideration of site conditions, site activities, and the desired treatment mechanism. The following discussion describes interpretation of results in general terms and is meant to serve as a guide.

Contaminant Concentration: Bio-Traps® are baited with a ^{13}C labeled contaminant of concern and a pre-deployment concentration is determined prior to shipping. Following deployment, Bio-Traps® are recovered for analysis including measurement of the concentration of the ^{13}C labeled contaminant remaining. Pre- and post-deployment concentrations are used to calculate percent loss.

Biomass Concentrations: PLFA analysis is one of the most reliable and accurate methods available for the determination of viable (live) biomass. Phospholipids break down rapidly upon cell death, so biomass calculations based on PLFA content do not include "fossil" lipids from dead cells. Total biomass (cells/bead) is calculated from total PLFA using a conversion factor of 20,000 cells/pmole of PLFA. When making comparisons between wells, treatments, or over time, differences of one order of magnitude or more are considered significant.

	Total Biomass	
Low	**Moderate**	**High**
10^3 to 10^4 cells	10^5 to 10^6 cells	10^7 to 10^8 cells

For SIP studies, the ^{13}C enriched PLFA is also determined to conclusively demonstrate contaminant biodegradation and quantify incorporation into biomass as a result of the ^{13}C being used for cellular growth. The % ^{13}C incorporation (^{13}C enriched biomass/total biomass) is also provided in the data summary table, but the value must be interpreted carefully especially when comparing wells or treatments. Typically, biodegradation of a contaminant of concern is performed by a small subset of the total microbial community. For Bio-Traps® with large total biomass, the % ^{13}C incorporation value could be low despite significant ^{13}C labeled biomass and loss of the compound. The % ^{13}C incorporation should be viewed in light of total biomass, percent loss, and dissolved inorganic carbon (DIC) results.

^{13}C enrichment data is often reported as a del value. The del value is the difference between the isotopic ratio ($^{13}C/^{12}C$) of the sample (R_x) and a standard (R_{std}) normalized to the isotopic ratio of the standard (R_{std}) and multiplied by 1,000 (units are parts per thousand, denoted ‰).

R_{std} is the naturally occurring isotopic ratio and is approximately 0.011180 (roughly 1% of naturally occurring carbon is ^{13}C). The isotopic ratio, R_x, of PLFA is typically less than the R_{std} under natural conditions, resulting in a del value between -20 and -30‰. For a SIP Bio-Trap® study, biodegradation and incorporation of the ^{13}C labeled compound into PLFA results in a larger $^{13}C/^{12}C$ ratio (R_x) and thus del values greater than under natural conditions. Typical PLFA del values are provided below.

	PLFA Del (‰)	
Low	**Moderate**	**High**
0 to 100	100 to 1,000	>1,000

10515 Research Dr.
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

microbialinsights

Dissolved Inorganic Carbon (DIC): Often, bacteria can utilize the ^{13}C labeled compound as both a carbon and energy source. The ^{13}C portion used as a carbon source for growth can be incorporated into PLFA as discussed above, while the ^{13}C used for energy is oxidized to $^{13}CO_2$ (mineralized).

^{13}C enriched CO_2 data is often reported as a del value as described above for PLFA. Under natural conditions, the R_x of CO_2 is approximately the same as R_{std} (0.01118 or about 1.1% ^{13}C). For an SIP Bio-Trap® study, mineralization of the ^{13}C labeled contaminant of concern would lead to a greater value of R_x (increased $^{13}CO_2$ production) and thus a positive del value. As with PLFA, del values between 0 and 100‰ are considered low, values between 100 and 1,000‰ are considered moderate, and values greater than 1,000‰ are considered high. Thus DIC %^{13}C are considered low if the value is less than 1.23%, moderate if between 1.23 and 2.24%, and high if greater than 2.24%.

Dissolved Inorganic Carbon (DIC) Del and %^{13}C		
Low	**Moderate**	**High**
0 to 100	100 to 1,000	>1,000
1.11 to 1.23%	1.23 to 2.24%	>2.24%

Community Structure (% total PLFA): Community structure data is presented as a percentage of PLFA structural groups normalized to the total PLFA biomass. The relative proportions of the PLFA structural groups provide a "fingerprint" of the types of microbial groups (e.g. anaerobes, sulfate reducers, etc.) present and therefore offer insight into the dominant metabolic processes occurring at the sample location. Thorough interpretation of the PLFA structural groups depends in part on an understanding of site conditions and the desired microbial biodegradation pathways. For example, an increase in mid chain branched saturated PLFA (MidBrSats), indicative of sulfate reducing bacteria (SRB) and Actinomycetes, may be desirable at a site where anaerobic BTEX biodegradation is the treatment mechanism, but would not be desirable for a corrective action promoting aerobic BTEX or MTBE biodegradation. The following table provides a brief summary of each PLFA structural group and its potential relevance to bioremediation.

Table 2. Description of PLFA structural groups.

PLFA Structural Group	General classification	Potential Relevance to Bioremediation Studies
Monoenoic (Monos)	Abundant in Proteobacteria (Gram negative bacteria), typically fast growing, utilize many carbon sources, and adapt quickly to a variety of environments.	Proteobacteria is one of the largest groups of bacteria and represents a wide variety of both aerobes and anaerobes. The majority of Hydrocarbon utilizing bacteria fall within the Proteobacteria
Terminally Branched Saturated (TerBrSats)	Characteristic of Firmicutes (Low G+C Gram-positive bacteria), and also found in Bacteriodes, and some Gram-negative bacteria (especially anaerobes).	Firmicutes are indicative of presence of anaerobic fermenting bacteria (mainly *Clostridia/Bacteriodes*-like), which produce the H_2 necessary for reductive dechlorination
Branched Monoenoic (BrMonos)	Found in the cell membranes of micro-aerophiles and anaerobes, such as sulfate- or iron-reducing bacteria	In contaminated environments high proportions are often associated with anaerobic sulfate and iron reducing bacteria
Mid-Chain Branched Saturated (MidBrSats)	Common in sulfate reducing bacteria and also Actinobacteria (High G+C Gram-positive bacteria).	In contaminated environments high proportions are often associated with anaerobic sulfate and iron reducing bacteria
Normal Saturated (Nsats)	Found in all organisms.	High proportions often indicate less diverse populations.
Polyenoic	Found in higher plants, and animals.	Eukaryotic scavengers will often prey on contaminant utilizing bacteria.

10515 Research Dr.
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

microbialinsights

Physiological Status (Proteobacteria): Some Proteobacteria modify specific PLFA as a strategy to adapt to stressful environmental conditions (3, 4). For example, *cis* monounsaturated fatty acids may be modified to cyclopropyl fatty acids during periods of slowed growth or modified to *trans* monounsaturated fatty acids to decrease membrane permeability in response to environmental stress. The ratio of product to substrate fatty acid thus provides an index of their health and metabolic activity. In general, status ratios greater than 0.25 indicate a response to unfavorable environmental conditions.

Glossary

Amendment Supplier: a component that fits inside the MICRO-Trac/Bio-Trap unit at the bottom. This component is designed to slowly diffuse a desired amendment within a BioStim and/or a BioAug Unit during the incubation time.

Sampler: Individual components consisting either of a geochemical (GEO), contaminant of concern (COC) or microbial (MICRO) sampler. Geochemical samplers are essentially VOA vials with special septa that facilitate transfer. The microbial samplers are made from a smaller PVC pipe ~1" x 3 ½" and contains Bio-Sep® beads which serve as a microbial growth matrix.

> **COC Sampler:** 40 mL amber VOA with a low density polyethylene membrane permitting passive diffusion of volatile organic compounds (VOCs).
>
> **GEO Sampler:** a 20 mL amber VOA with a nylon based membrane permitting passive diffusion of anionic species.
>
> **MICRO Sampler:** a polyvinylchloride cassette containing Bio-Sep® beads which provide a large surface area for microbial growth. In addition to a matrix for microbial growth, the Bio-Sep® beads can be "baited" with amendments including ^{13}C labeled chlorobenzene as used in this study. Bio-Sep® beads were designed to allow extraction of phospholipids fatty acids and DNA for analysis of microbial communities.

Unit: 1.25" x 15" PVC housing that all of the samplers are place into for deployment. Units will have baffled end caps to separate different zones within the monitoring well. Typically each unit will correspond to a treatment approach.

Assembly: Collections of Units for a particular monitoring well. Samplers (GEO, COC, and MICRO) are placed in each unit. Units are linked to form an Assembly. An entire Assembly (consisting of multiple units) is deployed in each wel**l.**

CENSUS: CENSUS is based on a technique called quantitative polymerase chain reaction (qPCR) whereby many copies of a specific gene are generated. As each gene copy is made, a fluorescent marker is released, measured, and used to quantify the number of target genes present in a sample.

Del (δ): A Del value is the difference between the isotopic ratio ($^{13}C/^{12}C$) of the sample (R_x) and a standard (R_{std}) normalized to the isotopic ratio of the standard (R_{std}) and multiplied by 1,000 (units are parts per thousand denoted ‰).

$$Del = (R_x - R_{std})/R_{std} \times 1000$$

10515 Research Dr.
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

microbialinsights

References

1. White, D.C., W.M. Davis, J.S. Nickels, J.D. King, and R.J. Bobbie. 1979. Determination of the sedimentary microbial biomass by extractable lipid phosphate. Œcologia 40:51-62.
2. White, D.C. and D.B. Ringelberg. 1995. Utility of signature lipid biomarker analysis in determining in situ viable biomass. In P.S. Amy and D.L. Halderman (eds.) The microbiology of the terrestrial surface. CRC Press, Boca Raton.
3. Guckert, J.B., M.A. Hood, and D.C. White. 1986. Phospholipid ester-linked fatty acid profile changes during nutrient deprivation of *Vibrio chloerae*: increases in the trans/cis ratio and proportions of cyclopropyl fatty acids. Applied and Environmental Microbiology. 52:794-801.
4. Tsitko, I.V., G.M. Zaitsev, A.G. Lobanok, and M.S. Salkinoja-Salonen. 1999. Effect of aromatic compounds on cellular fatty acid composition of *Rhodococcus opacus*. Applied and Environmental Microbiology. 65:853-855.

10515 Research Dr.
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

Prepared for:

AECOM
16000 Dallas Parkway, Suite 350
Dallas, Texas
75248

Final Report

Laboratory Treatability Study to Evaluate Remediation of Chlorinated VOCs and Perchlorate in Groundwater

LHAAP 18/24 Site, Karnack, Texas

Prepared by:

SiREM

130 Research Lane, Suite 2
Guelph, Ontario N1G 5G3

SiREM Ref: TL0337F1.01

23 February 2015

siremlab.com

TABLE OF CONTENTS

Page

1. INTRODUCTION 1

1.1 Summary of Degradation Processes 1

2. MATERIALS AND METHODS 2

2.1 Microcosm and Reactor Construction and Incubation 3

2.1.1 Microcosm and Reactor Construction 3

2.1.2 Microcosm and Reactor Amendments and Incubation 4

2.2 Microcosm and Reactor Sampling and Analysis 7

2.2.1 Microcosm and Reactor Sampling 7

2.2.2 Analysis of cVOCs and DHGs 7

2.2.3 Analysis of Perchlorate 8

2.2.4 Analysis of Total Volatile Fatty Acids and Anions 8

2.2.5 Analysis of Volatile Fatty Acids 9

2.2.6 Analysis of pH 9

2.2.7 Analysis of ORP 10

2.2.8 Baseline Analysis of Geologic Material cVOCs and FOC 10

2.2.9 Baseline Analysis of Nutrients 10

2.2.10 Baseline Gene-Trac® *Dhc* and *Dhb* Testing 10

2.2.11 Analysis of Gaseous cVOCs from the ZVI Amended Chemical Reduction Extension Reactors 10

2.2.12 Analysis of Reactor Headspace from the ZVI Amended Chemical Reduction Extension Reactors 11

3. RESULTS 11

3.1 Baseline Analysis Results 12

3.2 Redox Processes 12

3.2.1 Biotreatability Microcosms 13

3.2.2 Chemical Reduction Reactors 14

3.2.3 Chemical Reduction Extension Reactors 15

3.3 VOC and Perchlorate Results 15

3.3.1 Biotreatability Microcosms 15
3.3.2 Chemical Reduction Reactors.....18
3.3.3 Chemical Reduction Extension Reactors 20
3.4 VFA Results 22
3.4.1 Biotreatability Microcosms 22
3.4.2 Chemical Reduction Reactors.....23
3.5 pH Results.....24
3.5.1 Biotreatability Microcosms 24
3.5.2 Chemical Reduction Reactors.....24
3.5.3 Chemical Reduction - Extension Reactors 25
4. SUMMARY AND CONCLUSIONS.....25
5. REFERENCES.....27

LIST OF TABLES

Table 1A: Summary of Microcosm Controls, Treatments and Amendments of the MW21 Location Biotreatability Study
Table 1B: Summary of Reactor Controls, Treatments and Amendments of the MW2 Location Chemical Reduction Study
Table 2A: Summary of Microcosm cVOC and DHG Results of the MW21 Location Biotreatability Study
Table 2B: Summary of Reactor cVOC and DHG Results of the MW2 Location Chemical Reduction Study
Table 3: Summary of Gaseous cVOC Results of the MW2 Location Chemical Reduction Study Reactors with Gas Collection
Table 4A: Summary of Microcosm Perchlorate Results of the MW21 Location Biotreatability Study
Table 4B: Summary of Reactor Perchlorate Results of the MW2 Location Chemical Reduction Study
Table 5A: Summary of Microcosm Anion Results of the MW21 Location Biotreatability Study
Table 5B: Summary of Reactor Anion Results of the MW2 Location Chemical Reduction Study
Table 6A: Summary of Microcosm VFA Results of the MW21 Location Biotreatability Study
Table 6B: Summary of Reactor VFA Results of the MW2 Location Chemical Reduction Study
Table 7A: Summary of Microcosm pH Results of the MW21 Location Biotreatability Study
Table 7B: Summary of Reactor pH Results of the MW2 Location Chemical Reduction Study
Table 8A: Half-Lives (Days) of cVOCs Detected in Microcosms of the MW21 Location Biotreatability Study
Table 8B: Half-Lives (Days) of cVOCs Detected in Reactors of the MW2 Location Chemical Reduction Study
Table 9: Summary of MW2 and MW21 Location Baseline Analysis of Soil cVOCs, Soil FOC, and Aqueous Nutrients

LIST OF FIGURES

Figure 1: Pathway for the Biodegradation of Chlorinated Ethenes
Figure 2: Pathway for the Biodegradation of Chlorinated Methanes
Figure 3: Pathway for the Biodegradation of Perchlorate
Figure 4: Chlorinated Ethene Degradation Pathways with ZVI
Figure 5: Chlorinated Methanes Degradation Pathways with ZVI
Figure 6: cVOCs, Ethene and Perchlorate Concentration Trends in the Anaerobic Sterile Control (MW21 Location) Microcosms
Figure 7: cVOCs, Ethene and Perchlorate Concentration Trends in the Anaerobic Active Control (MW21 Location) Microcosms

Figure 8A: cVOCs, Ethene and Perchlorate Concentration Trends in the Lactate Amended/KB-1® Plus Bioaugmented (MW21 Location) Replicate 1 – Microcosm 5
Figure 8B: cVOCs, Ethene and Perchlorate Concentration Trends in the Lactate Amended/KB-1® Plus Bioaugmented (MW21 Location) Replicate 2 – Microcosm 6
Figure 9: cVOCs, Ethene and Perchlorate Concentration Trends in the SRS-SD Amended/KB-1® Plus Bioaugmented (MW21 Location) Microcosms
Figure 10: cVOCs, Ethene and Perchlorate Concentration Trends in the Anaerobic Sterile Control (MW2 Location) Reactors
Figure 11: cVOCs, Ethene and Perchlorate Concentration Trends in the 0.4 g EZVI Amended (MW2 Location) Reactors
Figure 12: cVOCs, Ethene and Perchlorate Concentration Trends in the 3.0 g EZVI Amended (MW2 Location) Reactors
Figure 13: cVOCs, Ethene and Perchlorate Concentration Trends in the 10 g EZVI Amended (MW2 Location) Reactors
Figure 14: cVOCs, Ethene and Perchlorate Concentration Trends in the 20 g EZVI Amended (MW2 Location) Reactors
Figure 15: cVOCs, Ethene and Perchlorate Concentration Trends in the 0.4 g ZVI Amended (MW2 Location) Reactors
Figure 16: cVOCs, Ethene and Perchlorate Concentration Trends in the 3.0 g ZVI Amended (MW2 Location) Reactors
Figure 17: cVOCs, Ethene and Perchlorate Concentration Trends in the 10 g ZVI Amended (MW2 Location) Reactors
Figure 18: cVOCs, Ethene and Perchlorate Concentration Trends in the 20 g ZVI Amended (MW2 Location) Reactors
Figure 19: cVOCs and Ethene Concentration Trends in the Anaerobic Active Control (MW2 Location) – Extension Reactors
Figure 20: cVOCs and Ethene Concentration Trends in the 10 g ZVI Amended (MW2 Location) – Extension Reactors with Gas Collection
Figure 21: cVOCs and Ethene Concentration Trends in the 10 g EZVI Amended (MW2 Location) – Extension Reactors
Figure 22: pH Trends in the MW21 Location Biotreatability Microcosms
Figure 23: pH Trends in the EZVI Amended MW2 Location Chemical Reduction Reactors
Figure 24: pH Trends in the ZVI Amended MW2 Location Chemical Reduction Reactors

LIST OF APPENDICES

Appendix A: Chain of Custody Documentation
Appendix B: Henry's Law Calculations
Appendix C: Microcosm and Reactor Amendments Information Sheets
Appendix D: ALS Laboratory Reports
Appendix E: University of Guelph Laboratory Services Laboratory Report
Appendix F: Gene-Trac® Report

LIST OF ABBREVIATIONS

AECOM	AECOM Technical Services, Inc.
ALS	ALS Laboratories
CO_2	carbon dioxide
cells/L	cells per liter
cVOC	chlorinated volatile organic compound
cDCE	cis-1,2-dichloroethene
°C	degrees Celsius
°C/min	degrees Celsius per minute
Dhb	*Dehalobacter*
Dhc	*Dehalococcoides*
DCM	dichloromethane
DHG	dissolved hydrogen gases
EZVI	emulsified zero valent iron
ERD	enhanced reductive dechlorination
FOC	fraction organic carbon
GC	gas chromatograph
g	grams
g/g	grams per gram
g/L	grams per liter
in Hg	inches of mercury
IC	ion chromatograph
L	liter
µg/L	micrograms per liter
µL	microliter
min	minutes
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mL	milliliters
mL/min	milliliters per minute
mM	millimolar
mmol/bottle	millimoles per bottle
mV	millivolts
ORP	oxidation reduction potential
%	percent
psi	pounds per square inch
QL	quantitation limit
qPCR	quantitative polymerase chain reaction
RPM	revolutions per minute
rRNA	ribosomal ribonucleic acid
SiREM	SiREM Laboratory
$NaHCO_3$	sodium bicarbonate
TKN	total Kjeldahl nitrogen
TOC	total organic carbon

TCE	trichloroethene
VC	vinyl chloride
VFA	volatile fatty acid
VOA	volatile organic analysis
ZVI	zero valent iron

1. INTRODUCTION

AECOM Technical Services, Inc. (AECOM) on behalf of the United States Army Corps of Engineers (USACE), Tulsa District, under the Huntsville District's Worldwide Environmental Remediation Services (WERS) Contract No. W912DY-09-D-0059 Task Order No. DS01, for remediation activities at the former Longhorn Army Ammunition Plant (LHAAP) located in Karnack, Texas retained SiREM Laboratory (SiREM) to perform a laboratory treatability study to assess the potential for in situ anaerobic bioremediation and chemical reduction of chlorinated volatile organic compounds (cVOCs), namely trichloroethene (TCE) and dichloromethane (DCM), as well as perchlorate in groundwater at the LHAAP 18/24 site in Karnack, Texas (the Site).

The geologic material samples from locations labelled MW2 EZVI and MW21 Microcosm used in this study were collected by AECOM personnel on 5 May 2014 and 6 May 2014 and received by SiREM on 8 May 2014. The ground water samples from locations MW2 and MW21 used in this study were collected by AECOM personnel on 7 May 2014 and received by SiREM on 9 May 2014. Refer to **Appendix A** for the chain of custody documentation received with the materials. MW2 geologic material and groundwater represent high contaminant concentration areas (secondary source areas) where dense non-aqueous phase liquid (DNAPL) could be present. This material is planned for abiotic or chemical reduction testing with zero valent iron (ZVI) and emulsified zero valent iron (EZVI). MW21 geologic material and groundwater represent plume areas where contaminant concentrations are at lower levels than secondary source areas. This material is planned for evaluation of biostimulation and bioaugmentation.

The remainder of this report contains a summary of key degradation processes (Section 1.1), the experimental materials and methods (Section 2), the results and discussion of the microcosm study (Section 3), conclusions (Section 4) and report references (Section 5).

1.1 Summary of Degradation Processes

Biological degradation products of TCE include cis-1,2-dichloroethene (cDCE), vinyl chloride (VC) and the fully dechlorinated end product ethene. **Figure 1** contains degradation pathways for the chlorinated ethenes. DCM is degraded via an anaerobic fermentation pathway to carbon dioxide (CO2) and organic acids. **Figure 2** contains degradation pathways for chlorinated methanes including DCM. Perchlorate bioremediation can be achieved through microbially-mediated redox reactions, whereby perchlorate serves as the electron acceptor, and is reduced via chlorate and chlorite to chloride, oxygen and CO2. Both chlorate and chlorite are transient intermediates, and are typically not observed during in situ perchlorate reduction (reaction rates for these intermediates are typically too rapid for detection). **Figure 3** contains degradation pathways for perchlorate.

Natural attenuation processes can occur in situ and are often mediated by indigenous microbial populations present at contaminated sites. Enhanced reductive dechlorination

(ERD) can, in certain cases, be achieved by stimulating the indigenous microbial populations through the addition of electron donors. Bioaugmentation is the process in which a microbial population known to promote ERD or other biodegradation processes is introduced to groundwater to enhance the rate or extent of biodegradation. KB-1 Plus® is a custom formulated microbial consortium containing microorganisms (including *Dehalococcoides* [*Dhc*] and *Dehalobacter* [*Dhb*]) known to be responsible for mediating the complete dechlorination of TCE, cDCE and VC to ethene (Major et al., 2002; Duhamel et al., 2002) and the complete fermentation of DCM to acetate and carbon dioxide (SiREM, unpublished data). In addition, recent research has also identified a Dhb strain responsible for the fermentation of DCM (Justicia-Leon et al., 2011). KB-1 Plus® is used to introduce Dhc and Dhb and complete dechlorination activity to sites exhibiting slow or incomplete dechlorination of chlorinated ethenes and methanes.

A variety of perchlorate-reducing microorganisms have been isolated from natural subsurface soil and groundwater environments, including various *Dechlorosoma*, *Dechloromonas*, *Rhodocyclus*, *Azospirillum*, and *Ferribacterium* species (Coates et al., 1999). Based on recent research results, perchlorate-reducing bacteria appear to be ubiquitous in subsurface environments.

The key to successfully implementing in situ bioremediation of perchlorate, TCE, and DCM appears to be the addition of appropriate electron donors in adequate quantities to reduce competing electron acceptors present in the groundwater (e.g., oxygen and nitrate), and to promote the perchlorate and TCE reduction reactions and achieve suitably anaerobic environments for DCM fermentation to occur. A variety of electron donors have been used to stimulate TCE, DCM and perchlorate reduction, including organic acids (e.g., acetate, lactate, oleate), alcohols (e.g., ethanol), sugars (e.g., molasses, corn syrup) and edible oils (e.g., canola oil). In this study SRS-SD (Terra Systems, Inc. Washington, DE) and sodium lactate (JRW Bioremediation, LLC, Lenexa, Kansas) were evaluated as the electron donors.

Abiotic degradation of TCE in the presence of iron occurs via two dominant pathways that involve hydrogenolysis and reductive β-elimination (Gillham et al., 2010). **Figure 4** provides the ZVI mediated transformation mechanisms for chlorinated ethenes. Some chlorinated methanes, such as carbon tetrachloride and chloroform can be degraded by ZVI through hydrogenolysis and reductive α-elimination (**Figure 5**) (Tamara and Butler, 2004). However, DCM and chloromethane are typically not treated by ZVI and must be further dechlorinated through other means such as ERD (ITRC, 2005). In this study ZVI and EZVI were obtained from Remquest (Baton Rouge, LA) were evaluated as chemical reduction agents.

2. MATERIALS AND METHODS

The following sections describe the materials and methods used for microcosm and reactor construction and incubation (Section 2.1), and microcosm and reactor sampling and analysis (Section 2.2).

2.1 Microcosm and Reactor Construction and Incubation

2.1.1 Microcosm and Reactor Construction

Biotreatability Microcosm and Chemical Reduction Reactor Construction

Biotreatability microcosms (MW21 material) and chemical reduction reactors (MW2 material) were constructed on 20 May 2014 (Day -3) in a disposable anaerobic glove bag containing the MW21 Site groundwater and geologic materials for the biotreatability task and the MW2 Site groundwater and geologic material for the chemical reduction task. All of the necessary tools (e.g. scoops, funnels, beakers, and spatulas) required for microcosm and reactor construction were also included in the glove bag in duplicate to prevent cross-contamination between the MW2 and MW21 site materials. The glove bag was purged with nitrogen gas in order to create an anaerobic environment and to protect any microorganisms present in the Site materials from oxygen exposure. Prior to microcosm and reactor construction Site geologic materials were homogenized by passing materials from the cores through a ½ inch sieve and mixing by hand. During microcosm and reactor construction, the Site water was mixed thoroughly to ensure reproducibility between replicates.

Microcosms and reactors were constructed by filling sterile 250 milliliter (mL) (nominal volume) screw cap Boston round clear glass bottles (Systems Plus, New Hamburg, ON) with 100 grams (g) of homogenized geologic material and 200 mL of Site groundwater. The bottles were capped with Mininert™ closures to allow nutrient amendment or sampling, as needed, throughout the incubation period. All treatment and control microcosms were constructed in duplicate as shown in **Tables 1A** and **1B**.

Anaerobic sterile control microcosms and reactors were constructed to quantify potential abiotic and experimental losses from the microcosms. The sterile controls were constructed by autoclaving the Site geologic materials at 121 degrees Celsius (°C) and 15 pounds per square inch (psi) pressure for 45 to 60 minutes (min). After autoclaving, the sterile control microcosms were returned to the anaerobic chamber, filled with 200 mL of Site groundwater and amended with mercuric chloride and sodium azide as described in **Tables 1A** and **1B**.

Chemical Reduction Extension Reactor Construction

The reactors for the extension study were constructed on 22 July 14 (Day -1) in an anaerobic chamber (Coy Laboratory Products, Grass Lake, MI). The reactors were constructed with the remaining MW2 Site groundwater and geologic material by filling sterile 250 mL (nominal volume) screw cap Boston round clear glass bottles with 100 g of the MW2 homogenized geologic material that had been mixed with 10 g of ZVI or EZVI prior to reactor construction. A volume of 200 mL of MW2 Site groundwater was then added and the reactors were capped with Mininert™ closures to allow for sampling and amendment, as needed, throughout the incubation period. All treatment and control reactors were constructed in duplicate as shown in **Table 1B**.

The ZVI reactors were constructed to allow collection of gases generated in the reactor by attaching 1.2 liter (L) Tedlar™ bags (SASSCO, Hillsborough, NC) to the reactors with Teflon tubing (Johnston Industrial Plastics, Toronto, ON) and stainless steel fittings (Swagelok, Mississauga, ON) through a sterile 21 gauge BD Safety Glide needle (Fisher Scientific, Burlington, ON) inserted through the Mininert™ closures. This was performed to collect potential gas produced by the ZVI and to quantify cVOC losses from the reactors by volatilization.

2.1.2 Microcosm and Reactor Amendments and Incubation

All microcosms and reactors were sampled and incubated in an anaerobic chamber filled with an atmosphere of approximately 80 percent (%) nitrogen, 10% CO_2 and 10% hydrogen (Linde Gases, Guelph, ON). Hydrogen in the anaerobic chamber functions to scavenge trace oxygen via a palladium catalyst. Anaerobic conditions in the anaerobic chamber were verified using an indicator containing resazurin (Sigma, St. Louis, MO) in a mineral medium which turns pink in the presence of oxygen. During quiescent incubation all microcosms and reactors were covered to minimize photodegradation. The biotreatability microcosms were stored horizontally to limit cVOC losses through the closure. Due to excessive gas production in the ZVI amended reactors groundwater losses were observed when reactors were stored horizontally. Therefore, the chemical reduction reactors were stored vertically to limit groundwater losses through the Mininert™ closures..

<u>Biotreatability Microcosm Amendments and Incubation</u>

The biotreatability microcosms (1 to 8) were incubated for a period of up to 213 days at approximately 22 °C (room temperature).

AECOM specified that the initial TCE, DCM, and perchlorate concentrations in the microcosms should be 32 milligrams per liter (mg/L), 10 mg/L, and 120 mg/L, respectively, to represent concentrations measured at the MW21 Site location. The initial concentrations measured in the prepared microcosms were not at the target concentrations; therefore on 22 May 14 (Day -1), the microcosms were amended with neat TCE, a saturated solution of DCM (concentration of 20,000 mg/L), and a 32.5 gram per liter (g/L) sodium perchlorate solution to achieve the target concentrations in the microcosms (**Table 1A**).

Due to the rapid degradation of DCM in the active controls, and in consultation with AECOM, the active control microcosms were amended with an additional amount of DCM to a target concentration of 10 mg/L on 21 June 2014 (Day 29).

Treatment microcosms were amended with electron donor on 23 May 2014 (Day 0). Sodium lactate and SRS-SD were the selected electron donors evaluated in this study. Cut sheets for sodium lactate and SRS-SD are presented in **Appendix C**. The first microcosm of each treatment and control was amended with resazurin (Sigma, St. Louis, MO) to monitor redox conditions. Resazurin turns from pink to clear in the absence of

oxygen and can be used to indicate the on-set of reducing conditions. Details of cVOC and perchlorate spiking, electron donor addition and resazurin amendment are provided in **Table 1A** and **Table 2A**.

Bioaugmentation may improve the extent and rate of TCE and DCM dechlorination. Microcosms are typically bioaugmented after reducing conditions required by the KB-1 Plus® culture are achieved. Suitable reducing conditions are typically achieved after electron donor addition and are assessed qualitatively by both changes in the resazurin indicator colour (from pink to clear) and the on-set of sulfate reduction. The on-set of sulfate reduction was observed on 27 June 2014 (Day 35) and the resazurin colour had changed from pink to clear in all treatment microcosms. The oxidation-reduction potential (ORP) of the electron donor microcosms was also analysed on 17 June 2014 (Day 25) to verify reducing conditions: the Lactate Amended (MW21 Location) Microcosms had an average ORP of -162 millivolts (mV), the SRS-SD Amended (MW21 Location) Microcosms had an average ORP of -85 mV. Both of these ORP values were sufficiently reduced to allow for bioaugmentation.

The optimal pH range for dehalorespiring bacteria is known to be 6.8 to 7.8 (Middledorp et al., 1999). Due to the low pH of these treatment microcosms, the lactate amended and SRS-SD amended microcosms were buffered on Day 28 to a target pH of 7.0 (±0.2) with saturated sodium bicarbonate ($NaHCO_3$) (concentration of 96 grams per liter (g/L) at room temperature). After this, the electron donor amended microcosms (microcosms 5 through 8) were bioaugmented with KB-1® Plus culture on 20 June 2014 (Day 28). To maintain the optimal pH range, the electron donor amended microcosms were buffered again on Day 53 to a target pH of 7.0 (±0.2).

In consultation with AECOM, the Lactate Amended/KB-1® Plus Bioaugmented (MW21 Location) microcosms (5 and 6) were amended with additional sodium lactate on the following days: 11 August 2014 (Day 80), 3 September 2014 (Day 103), 3 October 2014 (Day 133), 30 October 2014 (Day 160), and 21 November 2014 (Day 182). The SRS-SD Amended/KB-1® Plus Bioaugmented (MW21 Location) microcosms (7 and 8) were amended with additional SRS-SD on 11 August 2014 (Day 80) and 21 November 2014 (Day 182). Both electron donor treatments were bioaugmented a second time with KB-1® Plus culture on 26 September 2014 (Day 126) and a third time on 21 November 2014 (Day 182). Both treatments were additionally amended with diammonium phosphate on 21 November 2014 (Day 182). **Tables 1A** and **2A** provide the details related to bioaugmentation and amendments.

Chemical Reduction Reactors Amendments and Incubation

The ZVI Task reactors (9 to 26) were incubated for a period of up to 213 days at approximately 22 °C (room temperature).

AECOM specified that the initial TCE, DCM, and perchlorate concentrations in the reactors should be 2,023 mg/L, 3,720 mg/L and 8 mg/L, respectively to represent concentrations measured at the MW2 Site location. The initial concentrations of TCE

and DCM were not at the target concentrations; therefore on 22 May 2014 (Day -1), the reactors were amended with neat TCE and neat DCM to achieve the target concentrations in the microcosms. Reactor 19 was not amended on 22 May 2014 (Day -1) with TCE by mistake; to correct this, reactor 19 was amended with TCE on 29 May 2014 (Day 6). The perchlorate concentration was at the target of approximately 8 mg/L and therefore the reactors were not amended with additional perchlorate.

Treatment reactors (11 to 26) were amended with 0.4 g, 3 g, 10 g, or 20 g of ZVI or EZVI on 23 May 14 (Day 0). The EZVI used was a thick, grey paste that was mixed well before dispensing into each treatment reactor. The ZVI was a consistent grey powder. Cut sheets for ZVI and EZVI are presented in **Appendix C**. The first reactor of each treatment and control was amended with resazurin to monitor redox conditions. The 0.4 g and 3 g ZVI amended reactors (19 to 22) were subsequently amended with lactate on 21 November 2014 (Day 182) in an attempt to stimulate further degradation of perchlorate. Details of cVOC and perchlorate spiking, ZVI, EZVI, lactate and resazurin amendment are provided in **Table 1B** and **Table 2B**.

Chemical Reduction Extension Amendments and Incubation

Due to the excess gas production in the ZVI Amended reactors and minimal degradation activity observed in the EZVI Amended reactors, two new treatments and an active control were constructed using the MW2 Site location material (reactors 27 to 32). The extension reactors were incubated for a period of 131 days at approximately 22 °C (room temperature).

The initial TCE and DCM concentrations as specified by AECOM were the same as the initial study (2,023 mg/L and 3,720 mg/L, respectively). The initial concentrations of TCE and DCM were not at the target concentrations; therefore on 22 July 14 (Day -1), the reactors were amended with neat TCE and neat DCM to achieve the target concentrations in the reactors. Perchlorate was not monitored in the extension reactors and was not included in the initial compound amendment.

Treatment reactors (29 to 32) were amended with ZVI or EZVI on 22 July 2014 (Day-1) by first mixing 10 g of the ZVI or EZVI with the 100 g of MW2 Site geologic material prior to filling the reactor. The ZVI was the same ZVI received from Remquest used in the original study. Due to the minimal activity observed in the original EZVI treatments a new batch of EZVI from Remquest was used. The EZVI used in the extension study was a dark grey-black liquid which was mixed well before being weighed out to mix with the MW2 Site geologic material. The first reactor of each treatment and control was amended with resazurin to monitor redox conditions. To promote degradation in the EZVI amended extension reactors (29 and 30), the reactors were bioaugmented with KB-1® Plus on 18 September 2014 (Day 57). Details of cVOC spiking, ZVI/EZVI addition, KB-1® Plus bioaugmentation, and resazurin amendment are provided in **Table 1B** and **Table 2B**.

2.2 Microcosm and Reactor Sampling and Analysis

2.2.1 Microcosm and Reactor Sampling

Aqueous samples were collected from the control and treatment microcosms and reactors on a biweekly or monthly schedule for analysis of cVOCs, perchlorate, dissolved hydrocarbon gases (DHGs – ethene, ethane, and methane), and pH. Aqueous samples were also collected less frequently for analysis of volatile fatty acids (VFAs – lactate, acetate, propionate, formate, butyrate and pyruvate) and anions (sulfate, nitrate, nitrite, chloride, phosphate, bromide). The microcosms and reactors were sampled using gas-tight 25 microliter (µL) and 1 mL Hamilton glass syringes. Separate sets of syringes were used for the bioaugmented and non-bioaugmented treatments to minimize the potential for transfer of KB-1® Plus microorganisms from bioaugmented to non-bioaugmented treatments. Syringes were cleaned with acidified water (pH ~2) and rinsed 10 times with deionized water between samples to ensure that cVOCs and microorganisms were not transferred between different samples or treatments. The analytical methods employed by SiREM are described below.

Additionally, external analysis of the geologic material and groundwater from both the MW2 and MW21 sites was completed before the start of the study for baseline analysis. Two sacrificial reactors were prepared using the MW2 geologic material and groundwater (MW2A and MW2B), and two sacrificial microcosms were prepared using the MW21 geologic material and groundwater (MW21A and MW21B). The geologic material from the sacrificial microcosms and reactors were sent for analysis of soil cVOCs and fraction organic carbon (FOC) analysis at ALS Laboratories (ALS) in Waterloo, ON. The water was sent for analysis of nutrient compounds at the University of Guelph Lab Services in Guelph, ON. The aqueous phase was also sampled for Gene-Trac® analysis of *Dhc* and *Dhb* internally at SiREM. The sampling methods employed by SiREM for these events are described below.

The chemical reduction extension ZVI reactors used for gas collection were sampled for analysis of gaseous cVOCs at ALS on Day 7.

2.2.2 Analysis of cVOCs and DHGs

This section describes the methods used to quantify the cVOCs and DHGs. The quantitation limits (QLs) for the cVOCs and DHGs were typically 10 micrograms per liter (µg/L) in the microcosms based on the lowest concentration standards that were included in the linear calibration trend.

Aqueous cVOC and DHG concentrations in the microcosms and reactors were measured using a Hewlett-Packard (Hewlett Packard 7890) gas chromatograph (GC) equipped with an auto sampler (Hewlett Packard G1888) programmed to heat each sample vial to 75°C for 45 min. prior to headspace injection into a GSQ Plot column (0.53 millimeters x 30 meters, J&W) and a flame ionization detector. Sample vials were heated to ensure that all cVOCs and DHGs in the aqueous sample would partition into

the headspace. The injector temperature was 200°C, and the detector temperature was 250°C. The oven temperature was programmed as follows: 35°C for 2 min, increased to 100°C at 30 degrees Celsius per minute (°C/min), then increased to 185°C at 25°C/min and held at 185°C for 3 min and finally increased to 225°C at 25°C/min and held for 10 min. The carrier gas was helium at a flow rate of 11 milliliters per minute (mL/min).

After withdrawing a 5 µL sample for chemical reduction reactors or a 250 µL sample for the biotreatability microcosms (as described in section 2.2.1), the sample was injected into a 10 mL auto sampler vial with enough acidified deionized water (pH ~2) to reach a final volume of 6 mL in the sampling vial. The water was acidified to inhibit microbial activity between microcosm or reactor sampling and GC analysis. The vial was sealed with an inert Teflon®-coated septum and aluminium crimp cap for automated injection of 3 mL of headspace onto the GC. cVOC standards were analysed with each set of samples to verify the instrument seven-point calibration curve. Calibration was performed using external standard solutions (Sigma, St Louis, MO), where known volumes of standard solutions were added to acidified water in auto sampler vials and analysed as described above for microcosm or reactor samples. Data were integrated using Chemstation Software (Agilent Technologies, Santa Clara, CA).

2.2.3 Analysis of Perchlorate

Perchlorate analysis was performed on a Thermo-Fisher ICS-2100 ion chromatograph (IC) equipped with a Thermo-Fisher AS-DV auto sampler and an AS16 column. The sample loop volume was 25 µL. An isocratic separation was performed using 35 millimolar (mM) reagent grade sodium hydroxide (Thermo Scientific, Oakville, ON) eluent for 26 min. One standard was analysed with each set of samples tested in order to verify the seven-point calibration using external standards of known concentrations. The external standard was prepared gravimetrically using chemicals of the highest purity available (Sigma St Louis, MO or Bioshop, Burlington, ON). Data were integrated using Chromeleon 7 Chromatography software (Thermo Scientific, Oakville, ON). The QL was 0.01 mg/L.

A 1.0 mL sample was withdrawn (as described in section 2.2.1), after which the sample was placed in a 1.5 mL micro-centrifuge tube. Samples were centrifuged for five minutes at 13,000 revolutions per minute (RPM) to remove solids. The supernatant was removed, diluted 12.5-fold in deionized water and placed in a Thermo-Fisher auto sampler vial with a cap that filters the sample during automated injection onto the IC.

2.2.4 Analysis of Total Volatile Fatty Acids and Anions

Anion analysis was performed on a Thermo-Fisher ICS-2100 IC equipped with a Thermo-Fisher AS-DV auto sampler and an AS18 column. The sample loop volume was 25 µL. An isocratic separation was performed using 33 mM reagent grade sodium hydroxide (Thermo Scientific, Oakville, ON) eluent for 15 min at a flow rate of 0.25 mL/min. One standard was analysed with each set of samples tested in order to verify

the seven-point calibration using external standards of known concentrations. External standards were prepared gravimetrically using chemicals of the highest purity available (Sigma St Louis, MO or Bioshop, Burlington, ON). Data were integrated using Chromeleon 7 Chromatography software (Thermo Scientific, Oakville, ON). The QLs were as follows: 0.07 mg/L total VFAs (calibrated as lactate), 0.07 mg/L chloride, 0.09 mg/L nitrite, 0.09 mg/L nitrate, 0.07 mg/L sulfate, 0.07 mg/L phosphate and 0.08 mg/L bromide.

A 1.0 mL sample was withdrawn (as described in section 2.2.1), after which the sample was placed in a 1.5 mL micro-centrifuge tube. Samples were centrifuged for five minutes at 13,000 RPM to remove solids. The supernatant was removed, diluted 50-fold in deionized water and placed in a Thermo-Fisher auto sampler vial with a cap that filters the sample during automated injection onto the IC.

2.2.5 Analysis of Volatile Fatty Acids

Individual VFAs (lactate, acetate, propionate, formate, butyrate and pyruvate) analysis was performed on a Thermo-Fisher ICS-2100 IC equipped with a Thermo-Fisher AS-DV auto sampler and an AS11-HC column, the sample loop volume was 25 µL. A gradient separation was performed using the following eluent profile; 1.0 mM sodium hydroxide for 8.0 min to 15 mM at 18.0 min and proceeding to 30 mM at 28.0 min with a flow rate of 0.25 mL/min. Calibration was performed using external standards of known concentrations. One standard was analysed with each set of samples to verify the instrument's seven-point calibration curve produced using external standards of known concentrations. External standards were prepared gravimetrically using chemicals of the highest purity available (Sigma St Louis, MO or Bioshop, Burlington, ON). Data were integrated using Chromeleon 7 chromatography software (Thermo Scientific, Oakville, ON). The QLs were as follows: lactate 0.40 mg/L, acetate 0.54 mg/L, propionate 0.31 mg/L, formate 0.23 mg/L, butyrate 0.41 mg/L and pyruvate 0.69 mg/L.

A 1.0 mL sample was withdrawn (as described in section 2.2.1), after which the sample was placed in a 1.5 mL micro-centrifuge tube. Samples were centrifuged for five minutes at 13,000 RPM in a micro-centrifuge to remove solids. The supernatant was removed, diluted 50-fold in deionized water and placed in a Thermo-Fisher auto sampler vial with a cap that filters the sample during automated injection onto the IC.

2.2.6 Analysis of pH

The pH measurements for both tasks and the extension study were performed using an Oakton pH spear with a combination pH electrode (Oakton, Vernon Hills, IL). A 0.5 mL sample was taken (as described in section 2.2.1), the vial was removed from the glove box and the pH was measured on the lab bench. The pH spear was calibrated at each sampling event according to the manufacturer's instructions using pH 4.0, 7.0 and 10 standards.

2.2.7 Analysis of ORP

The ORP analyses completed on 21 November 2014 (Day 182) were performed using an Omega PHH-127 Multi-Parameter Water Quality Monitor with ORP Probe (Omega, Laval, QC). A 1.0 mL sample was taken (as described in section 2.2.1) and placed in a 5 mL Thermo-Fisher vial. The ORP was measured on the lab bench immediately after sampling. The ORP probe was tested at each sampling event according to the manufacturer's instructions using Zobell's solution.

2.2.8 Baseline Analysis of Geologic Material cVOCs and FOC

Prior to the start of the study on 12 May 2014 (Day -11), two sacrificial reactors were prepared using the MW2 geologic material and groundwater (MW2A and MW2B), and two sacrificial microcosms were prepared using the MW21 geologic material and groundwater (MW21A and MW21B). On 13 May 2014 (Day -10) the geologic material was collected for analysis of and cVOCs and FOC. Samples were collected in 20 mL Volatile Organic Analysis (VOA) Vials with minimal headspace and shipped overnight on ice to ALS in Waterloo, ON. Laboratory reports from ALS are attached in **Appendix D**.

2.2.9 Baseline Analysis of Nutrients

Analysis of nutrients was completed at University of Guelph Laboratory Services in Guelph, ON. On 13 May 2014 (day -10), aqueous samples were collected from the four sacrificial microcosms or reactors for total Kjeldahl nitrogen (TKN) and total phosphorus. The 100 mL water samples were collected in unpreserved 250 mL (nominal volume) Boston round clear glass bottles and delivered on ice to the University of Guelph Lab Services. The laboratory report from the University of Guelph Laboratory Services can be found in **Appendix E**.

2.2.10 Baseline Gene-Trac® *Dhc* and *Dhb* Testing

Gene-Trac® quantitative polymerase chain reaction (qPCR) testing was performed in this study to quantify and characterize *Dhc* and *Dhb* microorganisms. The Gene-Trac® *Dhc* and *Dhb* tests quantify the total *Dhc* and *Dhb* populations by targeting the 16S ribosomal ribonucleic acid (rRNA) gene.

On 13 May 2014 (Day -10) 10 mL baseline samples were collected from the four sacrificial microcosms or reactors and submitted for analysis. Refer to **Appendix F** for the Gene-Trac® test certificates.

2.2.11 Analysis of Gaseous cVOCs from the ZVI Amended Chemical Reduction Extension Reactors

On 30 July 2014 (Day 7), the gas collection bags attached to the ZVI amended extension reactors (31 and 32) were isolated and detached from their reactors. The bags were then connected through the Teflon tubing to 1.2 L Stainless Steel Summa

Canisters (ALS, Waterloo, ON) with a vacuum of -29 inches of mercury (in Hg). Once the valve between the canister and gas collection bag was opened, the gas was evacuated from the bag into the canister and then sealed. The final pressures of the canisters were -24 in Hg and -26 in Hg for replicates 1 and 2, respectively. The canisters were sent to ALS in Waterloo, ON for analysis of the collected gas. Laboratory reports from ALS can be found in **Appendix D**.

2.2.12 Analysis of Reactor Headspace from the ZVI Amended Chemical Reduction Extension Reactors

On 1 December 2014 (Day 192 for the Chemical Reduction Study and Day 131 of the Chemical Reduction Extension), the 10 g ZVI amended reactors (reactors 23, 24, 31, and 32) were sealed with new Teflon lined septa caps. The reactors were packed into a cooler and sent by overnight courier to ALS in Simi Valley, California for analysis of fixed gases in the headspace by GC/ECD analysis. Gasses analyzed by this method included nitrogen, oxygen, CO_2, methane, and hydrogen. The reactors were analyzed on Day 201 of the Chemical Reduction Study and Day 140 of the Chemical Reduction Extension (10 December 2015). Laboratory reports from ALS are provided in **Appendix D**.

3. RESULTS

The following section presents and discusses the results of the study.

- Baseline analysis results (Section 3.1)
- Redox Processes (Section 3.2),
- cVOC, Perchlorate and DHG results (Section 3.3),
- Anion results (Section 3.4),
- VFA results (Section 3.5), and
- pH results (Section 3.6)

Tables 2, 3, 4, 5, 6 and **7** provide cVOC and DHG, perchlorate, anion, VFA, and pH data from the control and treatment microcosms and reactors over the incubation period for the study. **Table 8** contains calculated half-life data for the cVOC trends. **Table 9** contains baseline geologic material cVOC and FOC data as well as aqueous nutrient data from the sacrificial microcosms and reactors. All aqueous cVOC and DHG concentrations are presented in units of mg/L and millimoles per microcosm bottle (mmol/bottle) to demonstrate mass balances on a molar basis. Concentrations were converted from mg/L to mmol/bottle using Henry's Law as demonstrated in **Appendix B**. Anion, VFA, and perchlorate results are reported in mg/L.

Figures 6 through **21** present trends in the cVOC and DHG concentrations of the microcosms and reactors over the incubation period of the study. **Figures 22** to **24** present trends in the pH of the microcosms and reactors over the incubation period of the study.

3.1 Baseline Analysis Results

The baseline soil VOC results from the MW2 sacrificial reactors had higher concentrations of TCE, cDCE, and DCM than the MW21 location sacrificial microcosms (**Table 9**). The MW2 geologic material had average concentrations of 9.2 milligrams per kilogram (mg/kg), 4.1 mg/kg, and 444 mg/kg of TCE, cDCE, and DCM, respectively. The MW21 geologic material had average concentrations of 0.655 mg/kg and 0.182 mg/kg for TCE and DCM, respectively. The concentration of cDCE in the MW21 location geological material was below the detection limit, as were the concentrations of VC at both locations. FOC and total organic carbon (TOC) had average concentrations of 0.0019 grams per gram (g/g) and 0.19 % at the MW2 location; they were below the detection limit at the MW21 location.

The Gene-Trac® test results for aqueous samples collected from the baseline groundwater from the sacrificial microcosms and reactors are summarized in **Appendix F**. The results for the baseline microcosms and reactors indicated low populations of *Dhc* and *Dhb* (at or near the detection limit). One of the MW2 location reactors had trace concentrations of vinyl chloride reductase (*vcr*A) (above the detection limit, but below the quantitation limit). However, it was not detected at a concentration sufficient to facilitate complete dechlorination of TCE to ethene. Typically *Dhc* concentrations above 1 x 10^7 cells per liter (cells/L) are required for high rates of in situ reductive dechlorination and ethene production (Lu et al., 2006). ***These results indicate that bioaugmentation with Dhc and Dhb, found in KB-1® Plus, may be required for complete dechlorination of TCE and DCM by ERD***.

Nutrient analysis was completed by analyzing the sacrificial microcosm and reactor groundwater for phosphorus and TKN (**Table 9**). The MW2 location reactors were found to have no detectable phosphorus or TKN. One of the sacrificial microcosms from the MW21 location did have 1.5 mg/L of phosphorus; however, all other nutrient parameters were below their respective detection limits. ***These results suggest intrinsic microbial populations at the site may require additional nutrient amendment to grow***.

3.2 Redox Processes

The addition of electron donor typically results in microbial activity that promotes changes in the redox conditions in groundwater. Aerobic or mildly reducing redox conditions will be reduced, resulting in more strongly reducing conditions required to support anaerobic degradation of cVOCs.

Alternatively, anaerobic reducing conditions can be stimulated by the addition and subsequent corrosion of ZVI. When iron is exposed to water, several reactions occur as

a result of iron corrosion, including the production of electrons, the reduction of oxygen to water and the reduction of water to hydrogen gas and hydroxide. These processes result in high pH and extremely reducing conditions.

The sequence of redox reactions in groundwater is well known (Appelo and Postma, 1994). Oxygen is first consumed, followed by nitrate (denitrification), and sulfate reduction. The final step is CO_2 reduction producing methane (methanogenesis). The consumption of each species in sequence indicates that conditions are becoming increasingly reducing. Dechlorination of chlorinated solvents and perchlorate typically occurs in the range of sulfate reducing to methanogenic conditions.

3.2.1 Biotreatability Microcosms

Anaerobic Sterile Control (MW21 Location) Microcosms

In the Anaerobic Sterile Control Microcosms (1 and 2), sulfate, and nitrate concentrations remained relatively stable (**Table 5A**) and methane concentrations did not increase (**Table 2A**) which suggests that reducing conditions were not established in the sterile control microcosms. These observations are expected and consistent with low levels of microbial activity expected in control microcosms.

Anaerobic Active Control (MW21 Location) Microcosms

In the Anaerobic Active Control Microcosms (3 and 4) sulfate decreased slightly over the incubation period from approximately 5.9 mg/L at Day 0 to 4.3 mg/L on Day 173 (**Table 5A**). Methane concentrations in the active controls did not increase which suggests strongly reducing methanogenic conditions were not achieved without the addition of electron donor (**Table 2A**). The ORP of the active control microcosms on Day 182 was measured to be 180 mV in microcosm 3 and 183 mV in microcosm 4, which suggest reducing conditions were not achieved.

Lactate Amended/KB-1® Plus Bioaugmented (MW21 Location) Microcosms

Partial sulfate reduction was observed in the lactate amended microcosms (5 and 6) on Day 35 with reduction of sulfate from 7.2 mg/L on Day 0 to 0.25 mg/L by Day 35. Complete sulfate reduction was observed by Day 89 after bioaugmentation with KB-1® Plus. Nitrate remained relatively stable at low concentrations around 0.18 mg/L throughout the study (**Table 5A**). ORP measurements collected on Day 25 in microcosms 5 and 6 were -170 and -152 mV respectively, indicating reducing conditions were achieved by this date. The ORP was measured again on Day 182 and found to be -122 mV in microcosm 5 and -136 mV in microcosm 6; these results indicate that reducing conditions were maintained over the incubation period. Methane was not observed to increase over the incubation period in the first replicate (microcosm 5), indicating that strongly reducing methanogenic conditions were not achieved even with the addition of lactate as electron donor and KB-1® Plus bioaugmentation (**Table 2A**). A small increase in methane concentration in the second replicate (microcosm 6) on Day 173 was observed indicating methanogenic conditions were achieved in this replicate.

Complete dechlorination was also achieved in this replicate (discussed further in Section 3.2). Methane production was not observed until after complete dechlorination suggesting that the methanogenic organisms were inhibited by the cVOCs.

SRS-SD Amended/KB-1® Plus Bioaugmented (MW21 Location) Microcosms

Partial sulfate reduction was observed in the SRS-SD amended microcosms (7 and 8) on Day 35 with reduction of the sulfate from 6.8 mg/L on Day 0 to 3.5 mg/L by Day 35. Complete sulfate reduction was observed on Day 173 after bioaugmentation with KB-1® Plus. Nitrate remained relatively stable at low concentrations around 0.12 mg/L through the study (**Table 5A**). The ORP values of the SRS-SD amended microcosms on Day 25 were -84 and -86 mV for microcosms 7 and 8 respectively, indicating reducing conditions were achieved. ORP results from Day 182 of -278 mV in microcosm 7 and -160 mV in microcosm 8 indicate that reducing conditions were maintained throughout the incubation period. Methane was observed to increase in the SRS-SD amended microcosms starting on Day 117, reaching an average concentration of 22 mg/L by Day 213, indicating strongly reducing conditions were achieved. This is supported by the complete dechlorination of the target compounds by Day 213 (**Table 2A**).

3.2.2 Chemical Reduction Reactors

Anaerobic Sterile Control (MW2 Location) Reactors

In the Anaerobic Sterile Control Reactors (reactors 9 and 10), sulfate, and nitrate concentrations remained relatively stable (**Table 5B**) and methane concentrations did not increase (**Table 2B**) which suggests that reducing conditions were not established in the sterile control reactors. These observations are expected and consistent with low levels of microbial activity expected in sterile control microcosms.

EZVI Amended (MW2 Location) Reactors

In the EZVI amended reactors (11 to 18), sulfate and methane concentrations remained relatively stable (**Tables 2B** and **5B**). Partial nitrate reduction was observed in the 10 g and 20 g EZVI amended reactors from an average of 1.3 mg/L on Day 0 to 0.07 mg/L by Day 82. The 0.4 g and 3.0 g EZVI amended reactors did not show signs of nitrate reduction. These results indicate that sulfate reducing conditions were not achieved in the EZVI amended reactors.

ZVI Amended (MW2 Location) Reactors

In the ZVI amended reactors (19 to 26) partial reduction of nitrate and sulfate were observed at ZVI doses of 0.40 g and 3.0 g (**Table 5B**). Greater reductions were observed with higher ZVI doses (10 g and 20 g ZVI doses). Nitrate was measured at an average concentration of 1.4 mg/L across all four ZVI amended treatments on Day 0; complete reduction of nitrate was observed in the 20 g and 10 g ZVI amended reactors by Day 21. Sulfate was observed at an average concentration in all ZVI amended reactors to be 7.1 mg/L at time zero. In the 10 g reactors sulfate was reduced to 0.57

mg/L by Day 82 and to 0.66 mg/L by Day 21 in the 20 g reactors. ORP values of -93, -84, -367, and -290 mV measured on Day 182 in reactors 19, 20, 21 and 22 (0.4 g and 3.0 g ZVI), respectively, indicate that reducing conditions were maintained in the lower ZVI dosed reactors over the incubation period. Methanogenesis was not observed in any of the ZVI amended reactors (**Table 2B**).

3.2.3 Chemical Reduction Extension Reactors

Sulfate and nitrate were not analysed in the chemical reduction extension reactors, However, methane was monitored (**Table 2B**). Methane production was observed to increase in the ZVI amended extension reactors on Day 63 after complete removal of chlorinated ethenes (from 3.8 mg/L to 6.1 mg/L on Day 84). These results indicate strongly reducing conditions were achieved in the ZVI amended extension and that methanogenic organisms may have consumed a portion of the hydrogen gas produced from ZVI corrosion. Methane production was not observed in the EZVI amended reactors, even after amendment with KB-1® Plus culture. The high concentrations of cVOCs remaining in the EZVI amended reactors may have been inhibitory to methanogenic organisms.

3.3 VOC and Perchlorate Results

cVOC and perchlorate half-lives were calculated based on the average cVOC and perchlorate degradation observed in the treatment microcosms and reactors. First order reaction kinetics was assumed for all calculations, as described in Newell et al. (2002). Where cVOC or perchlorate compounds decreased below the detection limit, a concentration of one half the detection limit was used to calculate the half-life. The half-lives were calculated using the following relationship:

$$Half - Life = \frac{\ln(2) \cdot (t_2 - t_1)}{\ln(C_2) - \ln(C_1)}$$

where,

C_1 is the concentration at an early time (t_1 days)

C_2 is the concentration at a later time (t_2 days)

The calculated cVOC and perchlorate degradation half-lives for the control and treatment microcosms are presented in **Tables 8A** and **8B** and are described further in the cVOC and perchlorate results sections.

3.3.1 Biotreatability Microcosms

<u>Anaerobic Sterile Control (MW21 Location) Microcosms</u>

The cVOC concentrations in the Sterile Control Microcosms (1 and 2) for the biotreatability study remained stable over the incubation period with no increases in

degradation products (**Table 2A** and **Figure 6**). Half-lives of 3,386 days, 5,095 days for TCE and DCM, respectively, were calculated (**Table 8A**). Perchlorate concentrations also remained stable over the incubation period and had a calculated half-life of 551 days (**Tables 4A** and **8A** and **Figure 6**). These results indicate that there was minimal mass loss in the control microcosms resulting from abiotic degradation or experimental losses (e.g., sorption or loss through microcosm closures) during the incubation period.

Anaerobic Active Control (MW21 Location) Microcosms

At time 0, the average DCM concentration in the active controls (microcosms 3 and 4) was 15 mg/L (**Table 2A** and **Figure 5**). After 28 days of incubation, the DCM had declined in concentration to levels below the detection limit of 0.04 mg/L. The microcosms were re-spiked with DCM on Day 28 and sampled on Day 29. Methane average concentration was found to be 14 mg/L. The DCM concentration showed similar behaviour after this spiking event and declined to an average concentration of 0.07 mg/L after 20 days (Day 49). The DCM concentration then remained just above the detection limit until Day 173 when it decreased below the detection limit. The calculated half-life for DCM after the first spiking events was 1.5 days (**Table 8A**). Chloromethane and methane concentrations did not increase over the course of the incubation period. This data combined with the lack of abiotic degradation in the sterile control ***suggests there may be intrinsic bacteria at the MW21 location of the Site capable of degrading DCM to non-chlorinated compounds, most likely through a fermentation pathway***, as described by Justicia-Leon et al. (2012).

The TCE remained relatively stable over the course of the incubation period with a half-life of 7,853 days, indicating abiotic or biotic degradation of TCE did not occur. Perchlorate decreased slightly over the incubation period and had a calculated half-life of 228 days (**Tables 4A** and **8A**).

Lactate Amended/KB-1® Plus Bioaugmented (MW21 Location) Microcosms

In both lactate amended microcosms (5 and 6), the average DCM concentration at time zero was 15 mg/L (**Table 2A** and **Figures 8A** and **8B**). After 28 days, replicate 2 showed almost complete degradation of DCM and after 117 days the DCM had decreased to below the detection limit in both microcosms. The calculated half-lives for DCM in the fifth and sixth microcosms were 4.7 and 4.2 days, respectively (**Table 8A**). These data support the active control data which suggests bacteria intrinsic to the MW21 site are capable of degrading DCM. The slower observed degradation in the lactate amended microcosms compared to the active controls suggests that ***the DCM is being degraded through a fermentation reaction rather than by reductive dechlorination*** and ***more easily fermentable substrates, such as lactate, are preferentially used by the intrinsic bacteria, which may have reduced the rate of DCM degradation***.

Complete perchlorate reduction was observed by Day 28 in both replicates, indicating that bacteria intrinsic to the MW21 location of the Site are capable of degrading

perchlorate when amended with electron donor (**Table 4A** and **Figures 8A** and **8B**). A calculated half-life of 1.9 days was determined for both replicates (Table 8a).

The TCE in both microcosms remained stable with an average concentration of 40 mg/L until Day 28 when the microcosms were bioaugmented with KB-1® Plus culture. The TCE was degraded almost completely to cDCE by Day 63 in microcosm 5 (0.23 mg/L) and to 1.5 mg/L in microcosm 6 by Day 90. TCE and cDCE concentrations remained relatively stable even after repeated additions of lactate to ensure sufficient electron donor was present. The VC in both microcosms increased slightly to an average concentration of 0.56 mg/L by Day 117. On Day 126 the microcosms were re-bioaugmented with KB-1® Plus. After bioaugmentation microcosm 6 was observed to undergo complete dechlorination to ethene by Day 173. Microcosm 5 differed in that VC increased only slightly and increases in ethene were not observed with little observed degradation of cDCE by Day 173. On Day 182, microcosm 5 was re-amended with lactate, amended with diammonium phosphate and bioaugmented a final time with KB-1® Plus. After these amendments, cDCE concentrations decreased with a corresponding increase in VC and ethene in microcosm 5 indicating that complete dechlorination to ethene is possible. It is anticipated that with more time complete dechlorination to ethene, similar to microcosm 6, would be achieved.

In microcosm 5 half-lives of 4.8 days and 66 days were calculated for TCE and cDCE respectively, after bioaugmentation took place on Day 28. A half-life for VC was not calculated, as no decreases in VC were observed. In microcosm 6 half-lives of 18 days, 2.7 days, and 6 days for TCE, cDCE, and VC, respectively were calculated. ***These data suggest complete dechlorination of TCE to ethene and complete perchlorate degradation is possible in the MW21 location with the addition of lactate as electron donor, diammonium phosphate as a nutrient source, and bioaugmentation with KB-1® Plus***.

<u>SRS-SD Amended/KB-1® Plus Bioaugmented (MW21 Location) Microcosms</u>

The average DCM concentration in the SRS-SD amended microcosms (7 and 8) at time zero was 17 mg/L (**Table 2A** and **Figure 9**). After 28 days, both microcosms showed complete degradation of DCM. The calculated DCM half-life for both microcosms was 2.9 days (**Table 8A**). These data support the active control data which suggests bacteria intrinsic to the MW21 site are capable of degrading DCM.

Complete perchlorate reduction was observed by Day 35 with a calculated half-life of 2.4 days indicating that bacteria intrinsic to the MW21 location of the Site are capable of degrading perchlorate when amended with electron donor (**Tables 4A** and **8A** and **Figure 9**).

TCE remained stable until Day 28 when the microcosms were bioaugmented with KB-1® Plus culture. The TCE was slowly degraded to cDCE and by Day 90 TCE was not detected in both microcosms. Degradation of cDCE to VC and ethene was not observed and on Day 80 the microcosms were amended with SRS-SD to a target concentration of

0.1% as oil. After the addition of SRS-SD on Day 90, cDCE remained relatively stable and VC increased slightly to 2.7 mg/L by Day 173. The microcosms were re-bioaugmented with KB-1® Plus on Day 126. cDCE remained stable after the second bioaugmentation event, but the VC continued to slowly increase in concentration. On Day 182, the microcosms were re-amended with SRS-SD, amended with diammonium phosphate and bioaugmented with KB-1® Plus. By Day 213, both microcosms 7 and 8 had undergone complete dechlorination of the remaining cDCE and VC to ethene. Half-lives for TCE, cDCE, and VC were calculated to be 5.9 days, 3.9 days, and 6.0 Days respectively. The rates for cDCE and VC were calculated after the final amendments were completed. These data suggest that dechlorination of TCE to ethene is possible with the addition of SRS-SD as electron donor, diammonium phosphate as a nutrient source, and bioaugmentation with KB-1® Plus.

3.3.2 Chemical Reduction Reactors

Anaerobic Sterile Control (MW2 Location) Reactors

The cVOC and perchlorate concentrations in the sterile control reactors (reactors 9 and 10) remained stable over the incubation period with no increases in degradation products (**Tables 2B**, **4B**, and **8B** and **Figure 10**). These results indicate that there was no mass loss in the control microcosms resulting from abiotic degradation during the incubation period.

EZVI Amended (MW2 Location) Reactors

The cVOC and perchlorate concentrations in all four EZVI amended reactors (11-18) remained stable over the 82 day incubation period (**Tables 2B**, **4B**, and **8B** and **Figures 11** to **14**). The concentrations of TCE and DCM were all progressively lower than the sterile control microcosms; the highest starting concentration was observed in the 0.4 g EZVI amended treatment reactors and the lowest in the 20 g EZVI amended treatment reactors. The lower concentrations in the EZVI amended reactors when compared to the sterile control reactors were due to TCE and DCM partitioning into the oil phase of the EZVI. The initial decrease due to sorption is not visible on the Figures as the time zero samples for all reactors were collected after EZVI addition. The reactors were amended with EZVI, mixed and allowed to settle for approximately one hour before being sampled. These data suggest that the EZVI is capable of sorbing the cVOCs, but the ZVI component of the EZVI did not promote chemical reduction of the cVOCs.

ZVI Amended (MW2 Location) Reactors

The average concentration of TCE in the ZVI amended reactors (19-26) at time zero was approximately 690 mg/L with the exception of reactor 19 (0.4 g ZVI amended), which had a starting concentration of 35 mg/L (**Table 2B** and **Figures 15** to **18**). This reactor was mistakenly not spiked with TCE at time zero. The reactor was spiked with TCE on Day 6 to match the concentrations of the remaining ZVI reactors. The TCE concentration increased over the first 7 days of the study in the 0.4 g, 3.0 g, and 10 g ZVI amended reactors to an average concentration of 1,630 mg/L. This increase was most likely due to

the neat TCE spiked into the reactors dissolving over time. The 20 g ZVI amended reactors did not show an increase in TCE. After the first 7 days, all ZVI reactors began to show continued decreases in TCE concentration. The rate of TCE degradation corresponded with the mass of ZVI added to the reactors. The 20 g ZVI reactors had the lowest concentration of TCE at Day 21. These reactors were discontinued due to excessive fluid losses from the reactors due to gas production.

In the 10 g ZVI reactors complete dechlorination of TCE was observed by Day 82, and complete dechlorination was observed in the 3 g ZVI reactors by Day 173. In the 0.4 g ZVI reactors TCE reached approximately 110 mg/L at Day 124 and remained stable for the duration of the study. This data suggests that the ZVI in the 0.4 g reactors had reacted completely and was no longer producing hydrogen or hydroxides (Section 3.2) and unable to further degrade TCE. TCE half-lives were calculated to be 39, 13, 4.8, and 7.2 days for the 0.4, 3, 10 and 20 g ZVI reactors respectively (**Table 8B**). The 20 g half-life is longer than the 10 g half-life likely due to the decreased sampling period affecting the half-life calculation.

The DCM at time zero in all ZVI amended reactors was an average of concentration 1,925 mg/L. The DCM increased in the 0.4 g ZVI amended reactors after the first 7 days of the incubation period to 2,100 mg/L. The DCM in all other ZVI amended reactors remained stable or decreased after the first 7 days of the study. After Day 7, the concentration of DCM in all of the ZVI amended reactors decreased. In the 20 g ZVI amended reactors the DCM had decreased to an average concentration of 1,300 mg/L by Day 21 when that treatment was discontinued due to excessive fluid losses from the reactors. The 10 g ZVI amended reactors decreased to approximately 680 mg/L after 124 days. The 0.4 g and 3.0 g ZVI amended reactor DCM concentrations decreased to average concentrations of 460 mg/L and 500 mg/L, respectively, by Day 213. Calculated DCM half-lives for all ZVI Amended treatments are presented in **Table 8B**.

ZVI is not expected to degrade DCM (ITRC, 2005). The ZVI amended to these reactors may have promoted highly reduced conditions, allowing intrinsic microbial populations capable of fermenting DCM to degrade the DCM. The hydrogen gas produced during the ZVI corrosion may have also acted as an electron donor to stimulate growth of bacteria that could later promote DCM fermentation.

Partial degradation of perchlorate was also observed at all ZVI doses with greater decreases in perchlorate observed for the higher ZVI doses (**Table 4B**). Calculated half-lives for perchlorate were 31 days and 32 days for the 10 g, and 20 g reactors, respectively (**Table 8B**). ***It is possible that perchlorate reducing bacteria intrinsic to the site were capable of using the hydrogen produced from the ZVI as an electron donor for perchlorate reduction***. After the addition of lactate on Day 182 to the 0.4 g and 3.0 g ZVI amended reactors, complete perchlorate degradation was observed, suggesting intrinsic bacteria capable of degrading perchlorate are present at the site and can be stimulated to degrade perchlorate with the addition of electron donor (i.e. lactate).

Perchlorate half-lives for the 0.4 g and 3.0 g reactors were calculated to be 3.9 days and 4.3 days, respectively, after the addition of lactate.

On Day 192, the 10 g ZVI Amended reactors were collected and shipped to ALS in Simi Valley, California for analysis of headspace gases, including nitrogen, hydrogen, CO_2, carbon monoxide, methane, and oxygen and argon combined. The original laboratory report from ALS can be found in **Appendix D**. On Day 201 ALS completed the analysis of the headspace; Reactor 23 (10 g ZVI reactor) was found to have a headspace comprised of 57 % nitrogen, 42.2 % hydrogen, 0.63 % argon and oxygen, and 0.132 % methane. These results indicate that the ZVI was still producing hydrogen gas and was capable of maintaining anaerobic conditions even after the groundwater in the reactor had been completely lost and the reactor removed from the anaerobic chamber on Day 125. On Day 201, Reactor 24 (10 g ZVI reactor replicate) was found to have a headspace composed of 21.8 % oxygen and argon, 78 % nitrogen, and 0.204 % carbon dioxide. These results match atmospheric composition and are most likely caused by the reactor equilibrating with the atmosphere through the plastic portions of the Mininert™ cap of the reactor after being removed from the anaerobic chamber on Day 53.

3.3.3 Chemical Reduction Extension Reactors

<u>Anaerobic Active Control (MW2 Location) – Extension Reactors</u>

The cVOC concentrations in the active control reactors (27 and 28) for the extension reactors remained stable over the incubation period with no increases in degradation products (**Table 2B** and **Figure 19**). These results indicate that there was no mass loss in the control microcosms resulting from abiotic degradation during the incubation period. DCM degradation was not observed like it was in the MW21 location Anaerobic Active Controls, suggesting that the concentration of TCE and DCM in the MW2 location may have been inhibitory to microbial activity without prior treatment to lower the concentrations of TCE and DCM.

<u>EZVI Amended (MW2 Location) – Extension Reactors</u>

The TCE concentrations in the EZVI amended extension reactors (29 and 30) decreased quickly from approximately 1,300 mg/L (as measured in the active controls on Day 0, which was used as the data point for all reactors in the Chemical Reduction Extension Study) to 330 mg/L by Day 2 (**Table 2B** and **Figure 20**). After which, the concentration of TCE remained relatively stable until Day 57. The initial decrease of TCE was due to sorption into the oil phase of the EZVI. To demonstrate this decrease, the concentration of TCE at time zero was taken from the MW2 Location active controls for graphing purposes in **Figure 20**. The reactors were bioaugmented with KB-1® Plus on Day 57. Dechlorination of TCE was not observed after bioaugmentation indicating that complete dechlorination to ethene under these conditions did not occur. The DCM varied in concentration over the first 42 days of the study, but remained stable around 1,400 mg/L after Day 57 indicating that DCM degradation did not occur. Calculated half-lives for DCM and TCE are presented in **Table 8B**. These data support the observations made in

the original study that the high concentrations of TCE and DCM may have been inhibitory to microbial activity and the ZVI present in the EZVI did not appear to promote chemical reduction. The half-life for TCE of 64 days reflects the sorption of TCE into the oil phase of the EZVI and is not related to the degradation of the compound.

These reactors were constructed to test a hypothesis that the minimal observed TCE degradation in the original EZVI amended reactors was the result of poor contact between the geological material and the EZVI. For the extension reactors, the EZVI was mixed with the MW2 geological material prior to adding the material to the reactors to obtain better contact between the EZVI and geologic materials. These data suggest that mixing the EZVI with the geological material did not improve the degradation and was similar to what was previously observed with the EZVI amended reactors.

ZVI Amended (MW2 Location) – Extension Reactors with Gas Collection

The ZVI amended reactors (31 and 32) with Gas Collection were constructed to identify potential losses of cVOCs due to the venting of the original ZVI amended reactors. To assess losses due to volatilization these reactors were attached to gas collection apparatuses for the first 7 days of incubation, after which the collected gas was analysed for the presence of TCE, cDCE, VC and DCM (**Table 3**). The calculations used to evaluate volatile losses are presented in here:

$$m_{gas} = \frac{C_{gas} \cdot \left(V_{gas} + V_{reactor}\right)}{1000\,\frac{\mu g}{mg} \cdot 1000\,\frac{L}{m^3}}$$

$$Percent_{gas} = \frac{m_{gas}}{m_{total}}$$

$$Percent_{degraded} = \frac{m_{total} - m_{gas} - m_{aqueous}}{m_{total}}$$

Where,

C_{gas} = gaseous concentration (µg/m^3)

V_{gas} = volume of gas in gas collection apparatus (based on ALS Report [**Appendix D**]) (m^3)

$V_{reactor}$ = headspace volume (0.03 L) per reactor

m_{gas} = mass of analyte in the gaseous phase (ug)

m_{total} = total mass of analyte added on Day 0 (ug)

$m_{aqueous}$ = mass of analyte in the aqueous phase (ug)

After 7 days of incubation the percentage of DCM in the gas phase was only 0.60 % and 0.11 % of the total DCM added to the reactors on Day 0 in reactors 31 and 32, respectively. TCE in the gas phase was only 1.7 % and 0.33 % of the total TCE added to the reactors at Day 0 for the reactors 31 and 32, respectively. Other cVOC compounds, namely cDCE and VC, were also detected in the gas phase indicating that a very small portion of the cVOCs sorbed to the site geologic material had desorbed and volatilized into the headspace by Day 7. These results also indicate that by Day 7, 51 % and 60 % of the DCM in the first and second replicate, respectively, were degraded. TCE was observed to degrade by 67 % and 80 % in reactors 31 and 32, respectively, after Day 7. In reactor 31 a -21 % decrease (or 21% increase) in cDCE was calculated which indicates desorption from the geologic materials or possible biological production of cDCE from the TCE. Reactor 32 was observed to have a 28 % degradation of cDCE from Day 0 concentrations. These data suggest that even though gas production was observed in the reactors, the cVOC decreases due to volatilization were minimal.

The aqueous results (**Table 2B** and **Figure 21**) indicate that the TCE, which had a starting concentration of 1,300 mg/L at Day 0 in the MW2 Location active control (which was used as the Day 0 data for all reactors in the Chemical Reduction Extension Study), was completely degraded to below detection limits by Day 42; a half-life of 2.6 days for TCE was calculated (**Table 8B**). DCM also showed decreases throughout the incubation period from a starting average concentration of 1,900 mg/L in the MW2 Location active control to 560 mg/L by Day 112. A half-life of 57 days was calculated for DCM in these reactors.

On Day 140, reactors 31 and 32 were analysed for headspace gases at ALS in Simi Valley, California. The original laboratory report is provided in **Appendix D**, Reactor 31 was found to have a gas mixture composed of 70.8 % hydrogen, 28.4 % nitrogen, and 0.716 % methane. These results indicate that the ZVI was still active after 140 Days of incubation and producing hydrogen. Reactor 32 was observed to have a headspace composed of 40.8 % hydrogen, 58.5 % nitrogen, 0.488 % argon and oxygen, and 0.188 % methane. Reactor 32 was removed from the anaerobic chamber on Day 63 of the Chemical Reduction Study, which accounts for the small amount of oxygen and argon, and smaller concentration of hydrogen in the headspace.

3.4 VFA Results

3.4.1 Biotreatability Microcosms

<u>Lactate Amended/KB-1® Plus Bioaugmented (MW21 Location) Microcosms</u>

In the Lactate Amended/KB-1® Plus Bioaugmented microcosms (5 and 6) lactate and formate were measured on Day 0 at average concentrations of 651 mg/L and 1.1 mg/L respectively (**Table 6A**). Acetate, propionate, butyrate, and pyruvate were not detected initially. Throughout the study these microcosms were amended with lactate four

additional times, resulting in large increases in fermentation products: namely acetate and propionate. The fermentation of lactate to acetate and propionate results in the production of hydrogen. Hydrogen is the ultimate electron donor used by dechlorinators. At Day 173 the concentration of lactate and formate had both decreased to below the detection limit. Acetate, propionate, butyrate and pyruvate had all increased to 1,171 mg/L, 1,173 mg/L, 3.9 mg/L, and 1.2 mg/L, respectively by Day 173. These data suggest that fermentation of was occurring in these microcosms.

SRS-SD Amended/KB-1® Plus Bioaugmented (MW21 Location) Microcosms

In the SRS-SD Amended/KB-1® Plus Bioaugmented microcosms (7 and 8) lactate, acetate, propionate and formate were measured on Day 0 at average concentrations of 35 mg/L, 1.5 mg/L, 1.0 mg/L and 0.36 mg/L, respectively (**Table 6A**). Butyrate and pyruvate were not detected initially. On Day 80 these microcosms were amended with additional SRS-SD, resulting in increases in fermentation products: acetate, propionate, and butyrate. SRS-SD contains lactate, which provides a soluble and an easily fermentable electron donor source to promote microbial activity. On Day 173 the concentration of lactate had decreased below the detection limit; formate and pyruvate had remained stable since the beginning of the incubation period. Acetate, propionate, and butyrate had all increased to 937 mg/L, 85 mg/L, and 71 mg/L, respectively by Day 173. These data suggest that fermentation of the SRS-SD electron donor was occurring in these microcosms.

3.4.2 Chemical Reduction Reactors

EZVI Amended (MW2 Location) Reactors

The VFAs in the EZVI amended reactors (11 through 18) remained relatively stable at low levels over the course of the incubation period (**Table 6B**). The one exception was the acetate results, which all increased slightly from around 3 mg/L at Day 0 to around 5 mg/L in the 0.4 g reactors (11 and 12), 6.0 mg/L in the 3.0 g and 10 g reactors (13 to 16), 8.4 mg/L in reactor 17 of the 20 g reactors, and 102 mg/L in reactor 18 of the 20 g reactors. These results indicate that only a minimal amount of fermentation of the oil component of the EZVI occurred in these reactors.

ZVI Amended (MW2 Location) Reactors

The 0.4 g ZVI amended reactors (19 and 20) remained relatively stable over the incubation period with respect to the VFA results (**Table 6B**). In the 3.0 g reactors (21 and 22) only acetate increased from 4.3 mg/L to 12 mg/L over 173 days. In the 10 g and 20 g reactors (23 to 26) an increase in the acetate concentration by Day 14 from 5.7 mg/L to 14 mg/L and 8.0 mg/L to 14 mg/L was observed, respectively. These results demonstrate acetate was produced, possibly as a result of DCM fermentation.

3.5 pH Results

3.5.1 Biotreatability Microcosms

Anaerobic Sterile and Active Control (MW21 Location) Microcosms

In the control microcosms (1 to 4) the pH remained between 5.47 and 5.88 (**Table 7A** and **Figure 22**) over the incubation period. These observations are consistent with low levels of microbial activity expected in control microcosms and reflect background conditions.

Lactate Amended KB-1® Plus Bioaugmented (MW21 Location) Microcosms

The initial pH of the Lactate Amended/KB-1® Plus Bioaugmented Microcosms (5 and 6) was approximately 5.69 on Day 0 (**Table 7A** and **Figure 22**). After buffering with $NaHCO_3$ on Day 28, the pH increased to 6.95 followed by a decrease to approximately 6.58 on Day 49. The microcosms were buffered again on Day 53 to a pH of 7.11 followed by a decrease in pH throughout the incubation period to 6.59 on Day 173. On Day 182 and 187, microcosm 5 was buffered with $NaHCO_3$ again to a final pH of 6.93, which increased to 7.09 by Day 213. These results indicate that ***the intrinsic pH of the Site groundwater is below the optimal range for dechlorination***. Additionally, the natural buffering capacity at the Site may be insufficient to counteract the acid producing reductive dechlorination and electron donor fermentation processes. These results suggest that ***the application of buffering agents may be required at the site to increase the pH into the dechlorination range***.

SRS-SD Amended/KB-1® Plus Bioaugmented (MW21 Location) Microcosms

The initial pH of the SRS-SD Amended/KB-1® Plus Bioaugmented microcosms (7 and 8) was approximately 5.71 on Day 0 (**Table 7A** and **Figure 22**). Due to the low pH of these treatment microcosms they were buffered on Day 28 to a target pH of 7.0 (±0.2) with saturated $NaHCO_3$. The pH increased to 6.97 followed by a decrease to approximately 6.26 on Day 49. The microcosms were buffered again with saturated $NaHCO_3$ on Day 53 to a pH of 6.92 followed by a decrease to 6.24 on Day 173. On Day 182 and 187, the microcosms were buffered again with $NaHCO_3$ to a pH of 6.85, which decreased to a final pH of 6.68 on Day 213. These results support the observations made with the lactate amended microcosms (5 and 6).

3.5.2 Chemical Reduction Reactors

In the Anaerobic Sterile Control reactors (9 and 10) of the chemical reduction study the pH remained between 5.22 and 5.69 (**Table 7B** and **Figures 23** and **24**) over the incubation period. These observations are consistent with low levels of microbial activity expected in control microcosms.

The pH of the EZVI amended reactors (11 to 18) all increased over the incubation period, with greater increases observed with larger amounts of EZVI (**Table 7B** and

Figure 23). These results indicate ZVI corrosion was occurring, which releases hydroxide and is expected to increase pH as discussed in Section 3.2.

The pH of the ZVI amended reactors (19 to 26) all increased over the incubation period, with greater increases in pH observed with larger amounts of ZVI (**Table 7B** and **Figure 24**). As discussed above, these results indicate ZVI corrosion, which releases hydroxide and is expected to increase pH. Higher pH increase was observed in the ZVI reactors than in the EZVI reactors because the oil coating the ZVI in the EZVI reactors reduced the amount of iron corrosion and the amount of released hydroxide.

3.5.3 Chemical Reduction - Extension Reactors

In the Anaerobic Active Control Extension reactors (27 and 28) the pH remained between 5.38 and 5.77 (**Table 7B**) over the incubation period.

The pH of the EZVI extension reactors (29 and 30) increased compared to the active controls to between 6.14 on Day 2 and 6.54 on Day 112 with a maximum pH of 6.78 on Day 21 (**Table 7B**).

The pH of the ZVI amended extension reactors (31 and 32) increased over the incubation period, from 7.10 on Day 2 to 8.37 on Day 112 indicating corrosion of the ZVI occurred (**Table 7B**).

4. SUMMARY AND CONCLUSIONS

Baseline testing results suggest the following:

1. Concentrations of the target compounds in the MW2 Site geologic material and groundwater were higher than in the MW21 Site geologic material and groundwater, as expected. The MW2 Site material was used for testing chemical reduction using ZVI and EZVI while the MW21 Site material was used for testing biologically mediated degradation processes.

2. Addition of the target compounds (TCE, DCM, and perchlorate) to both Site materials, increasing the time zero concentrations of the compounds, was required to match the concentrations measured at the Site and to provide conservative starting concentrations.

3. Gene-Trac® test results for aqueous samples of the Site materials from sacrificial microcosms and reactors indicated low populations of *Dhc* and *Dhb* (at or near the detection limit) present in the Site material. Vinyl chloride reductase (*vcr*A) (above the detection limit, but below the quantitation limit) was reported in one MW2 sample; however, it was not detected at a concentration sufficient to facilitate complete dechlorination of TCE to ethene. These results indicate that bioaugmentation with Dhc and Dhb, found in KB-1® Plus, may be required for complete dechlorination of TCE and DCM by ERD.

4. Nutrient (nitrogen and phosphorous) concentrations in both Site materials were mostly below the detection limit and nutrient amendment may be required to enhance microbial degradation.

5. The intrinsic pH of the Site material is approximately 5.5 and therefore below the optimal pH range for biodegradation. These results indicate that buffering would be required to increase the pH to an optimal range.

The laboratory biotreatability microcosm results suggest the following:

1. The rate and extent of intrinsic degradation of TCE in the MW21 groundwater may be limited due to the lack of electron donors and/or appropriate microorganisms to promote complete dechlorination. DCM fermentation was possible without electron donor addition or bioaugmentation (i.e., intrinsic bacteria capable of degrading DCM is present in site media).

2. Lactate and SRS-SD amendment promoted the appropriate geochemical conditions (i.e., negative ORP values and sulfate reducing conditions) for reductive dechlorination of TCE and perchlorate.

3. Complete dechlorination of TCE to ethene and perchlorate degradation was achieved with the addition of lactate or SRS-SD (with nutrient amendment) as the electron donor and KB-1® Plus bioaugmentation. Complete degradation of DCM to non-chlorinated end products was possible with and without the addition of lactate or SRS-SD, although addition of organic substrates (electron donors) introduced competing fermenting compounds and reduced the intrinsic fermentation of DCM.

4. Intrinsic bacteria at MW21 locations capable of degrading perchlorate exist but amendment with an electron donor is required to initiate the process.

5. Addition of a pH buffer was required to maintain the pH in the optimal range for dechlorination.

The laboratory chemical reduction reactors suggest the following:

1. Complete dechlorination of TCE was achieved with a ZVI dose of at least 3.0 g in 100 g of geological material. Partial dechlorination of DCM and perchlorate was also achieved. The optimum dose of ZVI occurs between 0.4 g and 3.0 g per 100 g of geological material.

2. Methane production was observed in the ZVI reactors after complete removal of chlorinated ethenes, indicating strongly reducing conditions and reduced toxicity of cVOCs in the reactors. Methane production in the EZVI reactors was not observed.

3. Although not expected, reduction of DCM and perchlorate concentrations was observed in the ZVI reactors. It is hypothesized that the intrinsic bacteria at the site was capable of

using the hydrogen produced from the ZVI as an electron donor for DCM fermentation and perchlorate reduction.

4. The ZVI reactors generated excessive gases requiring repeated venting of the reactors which could have driven off cVOCs from the solution. Gas analysis of the 10 g ZVI Amended – Extension Reactors indicated, however, that the cVOCs losses were minimal.

5. EZVI amendments promoted decreases in TCE and DCM most likely due to sorption of the compounds sorption into the oil phase of the EZVI. Evidence of chemical reduction of the TCE was not observed in the EZVI reactors in the original or extension study reactors. Perchlorate and DCM degradation were not observed.

6. EZVI amendment combined with bioaugmentation with KB-1® Plus did not promote dechlorination of TCE or DCM.

7. Both ZVI and EZVI addition increased the reactor pH with a higher increases corresponding to higher doses of these amendments. The observed pH increase was higher for the ZVI amended reactors because corrosion of the iron was impeded in the EZVI amended reactors due to the oil coating.

Half-lives for degradation of various chemicals were calculated from the data obtained in this study.

The results of this study indicate that the addition of lactate or SRS-SD combined with bioaugmentation of KB-1® Plus has the potential to be an effective remedial approach for TCE, DCM and perchlorate in the MW21 Site materials. The addition of ZVI was effective for TCE degradation in the MW2 location materials; however DCM and perchlorate degradation may require alternative means of treatment (e.g., enhanced biodegradation) at the MW2 location of the Site.

5. REFERENCES

Appelo, C.A.J and Postma, D. Geochemistry, groundwater and pollution. Rotterdam, Netherlands, A.A. Balkema, 1994.

Coates, J.D., Michaelidou, U., Bruce, R.A., O'Connor, S.M., Crespi, J.N., Achenbach, L.A. 1999. Ubiquity and Diversity of (Per)chlorate-Reducing Bacteria. Appl. Environ. Microbiol 65(12): 5234-5241.

Duhamel, M., S.D. Wehr, L. Yu, H. Rizvi, D. Seepersad, S. Dworatzek, E.E. Cox, and E.A. Edwards. 2002. Comparison of anaerobic dechlorinating enrichment cultures maintained on tetrachloroethene, trichloroethene, cis-1,2-dichloroethene and vinyl chloride. Water Research 36: 4193-4202.

Gillham, R., Vogan, J., Gui, L., Duchene M., Son J. 2010. Iron barrier walls for chlorinated solvent remediation. In Situ Remediation of Chlorinated Solvent Plumes. Springer Science+Business Media, New York, NY: 537.

ITRC (Interstate Technology & Regulatory Council). 2005. Permeable Reactive Barriers: Lessons Learned/New Directions. PRB-4. Washington, D.C.: Interstate Technology &Regulatory Council, Permeable Reactive Barriers Team. Accessed at http://www.itrcweb.org/GuidanceDocuments/PRB-4.pdf

Justicia-Leon, S.D., K.M. Ritalahti, E.E. Mack, and F.E. Loffler 2012 Dichloromethane Fermentation by a Dehalobacter sp. in an Enrichment Culture Derived from Pristine River Sediment. Appl. Environ. Microbiol. 78(4): 1288-1291.

Lu, X., Wilson, J.T., Kampbell, D.H. 2006. Relationship between Dehalococcoides DNA in ground water and rates of reductive dechlorination at field scale. Water Research. 40: 3131-3140.

Major, D.W., M.L. McMaster, E.E. Cox, E.A. Edwards, S.M. Dworatzek, E.R. Hendrickson, M.G. Starr, J.A. Payne, and L.W. Buonamici. 2002. Field demonstration of successful bioaugmentation to achieve dechlorination of tetrachloroethene to ethene. Environmental Science and Technology 36: 5106-5116.

Middledorp, P.J.M., Luijten, M.L.G.C., van de Pas, B.A., van Eedert, M.H.A., Kengen, S.W.M., Schraa, G., Stams, A.J.M. 1999. Anaerobic Microbial Reductive Dechlorination of Chlorinated Ethenes. Bioremediation J. 3:151-169.

Newell, C.J, Rifal, S.H, Wilson, J.T, Connor, J.A, Aziz, J.A, Suarez, M.P. 2002. Calculation and use of first-order rate constants for monitored natural attenuation studies. United States Environmental Protection Agency. National Risk Management Research Laboratory Cincinnati, OH: 45268.

Tamara, M. and Butler, E., 2004. Effects of Iron Purity and Groundwater Characteristics on Rates and Products in the Degradation of Carbon Tetrachloride by Iron Metal. Environ. Sci. Technol., 38, 1866-1876.

TABLES

TABLE 1A: SUMMARY OF MICROCOSM CONTROLS, TREATMENTS AND AMENDMENTS OF THE MW21 LOCATION BIOTREATABILITY STUDY
LHAAP 18/24 Site, Karnack, Texas

Treatment/Control	Assigned bottle Number	Number of Microcosms	Geologic Material (g)	Groundwater (mL)	Headspace (mL)	Sodium Azide	Mercuric Chloride	Rezasurin	TCE	DCM	ClO_4^-	Lactate	SRS-SD	Diammonium Phosphate	KB-1® Plus
Anaerobic Sterile Control (MW21 Location)	1 to 2	2	100	200	50	Amended with 0.5 mL of a 5% solution on Day -1.	Amended with 2.8 mL of a 2.7% solution on Day -1.	Amended the first replicate with 100 µL resazurin on Day -1.	Spiked with 3.6 µL of neat TCE to a target concentration of 32 mg/L on Day -1.	Spiked with 99 µL of a saturated DCM stock solution to a target concentration of 10 mg/L on Day -1.	Spiked with 520 µL of a 32.5 mg/L stock solution of ClO_4^- to a target concentration of 120 mg/L on Day -1.	NA	NA	NA	NA
Anaerobic Active Control (MW21 Location)	3 to 4	2	100	200	50	NA	NA	Amended the first replicate with 100 µL resazurin on Day -1.	Spiked with 3.6 µL of neat TCE to a target concentration of 32 mg/L on Day -1.	Spiked with 99 µL of a saturated DCM stock solution to a target concentration of 10 mg/L on Day -1 and 29.	Spiked with 520 µL of a 32.5 mg/L stock solution of ClO_4^- to a target concentration of 120 mg/L on Day -1.	NA	NA	NA	NA
Lactate Amended (MW21 Location)	5 to 6	2	100	200	50	NA	NA	Amended the first replicate with 100 µL resazurin on Day -1.	Spiked with 3.6 µL of neat TCE to a target concentration of 32 mg/L on Day -1.	Spiked with 99 µL of a saturated DCM stock solution to a target concentration of 10 mg/L on Day -1.	Spiked with 520 µL of a 32.5 mg/L stock solution of ClO_4^- to a target concentration of 120 mg/L on Day -1.	Amended with 185 µL of a 60 % Lactate solution to a target concentration of 555 mg/L on Days 0, 80, 103, 133, 160 and 182.	NA	Amended microcosm 5 with 314 µL of a 150 g/L stock solution of DAP to a target concentration of 236 mg/L on Day 182.	Bioaugmented with KB-1® Plus culture on Days 28, 126, and 182.
SRS-SD Amended (MW21 Location)	7 to 8	2	100	200	50	NA	NA	Amended the first replicate with 100 µL resazurin on Day -1.	Spiked with 3.6 µL of neat TCE to a target concentration of 32 mg/L on Day -1.	Spiked with 99 µL of a saturated DCM stock solution to a target concentration of 10 mg/L on Day -1.	Spiked with 520 µL of a 32.5 mg/L stock solution of ClO_4^- to a target concentration of 120 mg/L on Day -1.	NA	Amended with 333 µL of SRS-SD to a target concentration of 0.1 % as oil on Days 0, 80 and 182.	Amended with 314 µL of a 150 g/L stock solution of DAP to a target concentration of 236 mg/L on Day 182.	Bioaugmented with KB-1® Plus culture on Days 28, 126, and 182.

Notes:

DAP - diammonium phosphate
DCM - dichloromethane
ClO_4^- - perchlorate
g - grams
g/L - grams per liter
mg/L - milligrams per liter
mL - milliliters
NA - not applicable
TCE - trichloroethene
% - percent
µL - microliters

TABLE 1B: SUMMARY OF REACTOR CONTROLS, TREATMENTS AND AMENDMENTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY
LHAAP 18/24 Site, Karnack, Texas

Treatment/Control	Assigned bottle Number	Number of Microcosms	Geologic Material (g)	Groundwater (mL)	Headspace (mL)	Sodium Azide	Mercuric Chloride	Rezasurin	TCE	DCM	EZVI	ZVI	Lactate	KB-1® Plus
Anaerobic Sterile Control (MW2 Location)	9 to 10	2	100	200	50	Amended with 0.5 mL of a 5% solution on Day -1.	Amended with 2.8 mL of a 2.7% solution on Day -1.	Amended the first replicate with 100 µL resazurin on Day -1.	Spiked with 266 µL of neat TCE to a target concentration of 2,023 mg/L on Day -1.	Spiked with 128 µL of neat DCM to a target concentration of 3,720 mg/L on Day -1.	NA	NA	NA	NA
0.4 g EZVI Amended (MW2 Location)	11 to 12	2	100	200	50	NA	NA	Amended the first replicate with 100 µL resazurin on Day -1.	Spiked with 266 µL of neat TCE to a target concentration of 2,023 mg/L on Day -1.	Spiked with 128 µL of neat DCM to a target concentration of 3,720 mg/L on Day -1.	Amended with 0.4 g of EZVI on Day 0.	NA	NA	NA
3.0 g EZVI Amended (MW2 Location)	13 to 14	2	100	200	50	NA	NA	Amended the first replicate with 100 µL resazurin on Day -1.	Spiked with 266 µL of neat TCE to a target concentration of 2,023 mg/L on Day -1.	Spiked with 128 µL of neat DCM to a target concentration of 3,720 mg/L on Day -1.	Amended with 3.0 g of EZVI on Day 0.	NA	NA	NA
10 g EZVI Amended (MW2 Location)	15 to 16	2	100	200	50	NA	NA	Amended the first replicate with 100 µL resazurin on Day -1.	Spiked with 266 µL of neat TCE to a target concentration of 2,023 mg/L on Day -1.	Spiked with 128 µL of neat DCM to a target concentration of 3,720 mg/L on Day -1.	Amended with 10 g of EZVI on Day 0.	NA	NA	NA
20 g EZVI Amended (MW2 Location)	17 to 18	2	100	200	50	NA	NA	Amended the first replicate with 100 µL resazurin on Day -1.	Spiked with 266 µL of neat TCE to a target concentration of 2,023 mg/L on Day -1.	Spiked with 128 µL of neat DCM to a target concentration of 3,720 mg/L on Day -1.	Amended with 20 g of EZVI on Day 0.	NA	NA	NA
0.4 g ZVI Amended (MW2 Location)	19 to 20	2	100	200	50	NA	NA	Amended the first replicate with 100 µL resazurin on Day -1.	Spiked with 266 µL of neat TCE to a target concentration of 2,023 mg/L on Day -1.	Spiked with 128 µL of neat DCM to a target concentration of 3,720 mg/L on Day -1.	NA	Amended with 0.4 g of ZVI on Day 0.	Amended with 8 µL of a 60 % Lactate solution to a target concentration of 23 mg/L on Day 182.	NA
3.0 g ZVI Amended (MW2 Location)	21 to 22	2	100	200	50	NA	NA	Amended the first replicate with 100 µL resazurin on Day -1.	Spiked with 266 µL of neat TCE to a target concentration of 2,023 mg/L on Day -1.	Spiked with 128 µL of neat DCM to a target concentration of 3,720 mg/L on Day -1.	NA	Amended with 3.0 g of ZVI on Day 0.	Amended with 8 µL of a 60 % Lactate solution to a target concentration of 23 mg/L on Day 182.	NA
10 g ZVI Amended (MW2 Location)	23 to 24	2	100	200	50	NA	NA	Amended the first replicate with 100 µL resazurin on Day -1.	Spiked with 266 µL of neat TCE to a target concentration of 2,023 mg/L on Day -1.	Spiked with 128 µL of neat DCM to a target concentration of 3,720 mg/L on Day -1.	NA	Amended with 10 g of ZVI on Day 0.	NA	NA
20 g ZVI Amended (MW2 Location)	25 to 26	2	100	200	50	NA	NA	Amended the first replicate with 100 µL resazurin on Day -1.	Spiked with 266 µL of neat TCE to a target concentration of 2,023 mg/L on Day -1.	Spiked with 128 µL of neat DCM to a target concentration of 3,720 mg/L on Day -1.	NA	Amended with 20 g of ZVI on Day 0.	NA	NA
Anaerobic Active Control (MW2 Location) - Extension	27 to 28	2	100	200	50	NA	NA	Amended the first replicate with 100 µL resazurin on Day 0.	Spiked with 266 µL of neat TCE to a target concentration of 2,023 mg/L on Day 0.	Spiked with 128 µL of neat DCM to a target concentration of 3,720 mg/L on Day 0.	N/A	N/A	N/A	N/A
10 g EZVI Amended (MW2 Location) - Extension	29 to 30	2	100	200	50	NA	NA	Amended the first replicate with 100 µL resazurin on Day 0.	Spiked with 266 µL of neat TCE to a target concentration of 2,023 mg/L on Day 0.	Spiked with 128 µL of neat DCM to a target concentration of 3,720 mg/L on Day 0.	Mixed 10 g of EZVI with the geologic material prior to groundwater addition on Day 0.	N/A	N/A	Bioaugmented with KB-1® Plus culture on Day 57.
10 g ZVI Amended (MW2 Location) - Extension with Gas Collection	31 to 32	2	100	200	50	NA	NA	Amended the first replicate with 100 µL resazurin on Day 0.	Spiked with 266 µL of neat TCE to a target concentration of 2,023 mg/L on Day 0.	Spiked with 128 µL of neat DCM to a target concentration of 3,720 mg/L on Day 0.	N/A	Mixed 10 g of ZVI with the geologic material prior to groundwater addition on Day 0.	N/A	N/A

Notes:

DCM - dichloromethane
EZVI - emusified zero valent iron
g - grams
mg/L - milligrams per liter
mL - milliliters
NA - not applicable
TCE - trichloroethene
ZVI - zero valent iron
% - percent
µL - microliters

TABLE 2A: SUMMARY OF MICROCOSM cVOC AND DHG RESULTS OF MW21 LOCATION BIOTREATABILITY STUDY

LHAAP 18/24 Site, Karnack, Texas

SiREM

Treatment	Date	Day	Bottle	Replicate	Chlorinated Ethenes, Ethene, and Ethane						Chlorinated Methanes and Methane			Comment
					TCE	cDCE	VC	Ethene	Total Ethenes	Ethane	DCM	CM	Methane	
					mg/L	mg/L	mg/L	mg/L	mmol/bottle	mg/L	mg/L	mg/L	mg/L	
Anaerobic Sterile Control (MW21 Location)	22-May-14	-1												Poisoned with mercuric chloride and sodium azide.
														Spiked with DCM, TCE, and perchlorate to target concentrations of 10 mg/L, 32 mg/L, and 120 mg/L respectively.
														Amended the first replicate with resazurin.
	23-May-14	0	1	ANSC-MW21-1	38	0.40	<0.040	<0.040	--	<0.040	20	<0.040	0.09	
			2	ANSC-MW21-2	43	0.18	<0.040	<0.040	--	<0.040	16	<0.040	0.078	
				Average Concentration (mg/L)	40	0.29	ND	ND	--	ND	18	ND	0.084	
				Standard Deviation (mmoles)	5.4E-03	3.3E-04	0.0E+00	0.0E+00	--	0.0E+00	7.3E-03	0.0E+00	3.7E-04	
				Average Total mmoles	**0.065**	**0.00062**	**ND**	**ND**	**6.6E-02**	**ND**	**0.043**	**ND**	**0.0039**	
	06-Jun-14	14	1	ANSC-MW21-1	44	0.45	<0.040	<0.040	--	<0.040	19	<0.040	0.086	
			2	ANSC-MW21-2	45	0.47	<0.040	<0.040	--	<0.040	15	<0.040	0.083	
				Average Concentration (mg/L)	44	0.46	ND	ND	--	ND	17	ND	0.085	
				Standard Deviation (mmoles)	1.3E-03	3.2E-05	0.0E+00	0.0E+00	--	0.0E+00	7.7E-03	0.0E+00	8.9E-05	
				Average Total mmoles	**0.071**	**0.00098**	**ND**	**ND**	**7.2E-02**	**ND**	**0.042**	**ND**	**0.0039**	
	20-Jun-14	28	1	ANSC-MW21-1	43	0.38	<0.040	<0.040	--	<0.040	19	<0.040	0.081	
			2	ANSC-MW21-2	44	0.55	<0.040	<0.040	--	<0.040	15	<0.040	0.077	
				Average Concentration (mg/L)	43	0.46	ND	ND	--	ND	17	ND	0.079	
				Standard Deviation (mmoles)	1.2E-03	2.5E-04	0.0E+00	0.0E+00	--	0.0E+00	7.2E-03	0.0E+00	1.3E-04	
				Average Total mmoles	**0.069**	**0.00099**	**ND**	**ND**	**7.0E-02**	**ND**	**0.041**	**ND**	**0.0037**	
	11-Jul-14	49	1	ANSC-MW21-1	42	0.43	<0.040	<0.040	--	<0.040	19	<0.040	0.085	
			2	ANSC-MW21-2	44	0.67	<0.040	<0.040	--	<0.040	15	<0.040	0.083	
				Average Concentration (mg/L)	43	0.55	ND	ND	--	ND	17	ND	0.084	
				Standard Deviation (mmoles)	2.2E-03	3.6E-04	0.0E+00	0.0E+00	--	0.0E+00	6.8E-03	0.0E+00	6.8E-05	
				Average Total mmoles	**0.068**	**0.0012**	**ND**	**ND**	**6.9E-02**	**ND**	**0.041**	**ND**	**0.0039**	
	21-Aug-14	90	1	ANSC-MW21-1	41	0.29	<0.040	<0.040	--	<0.040	19	<0.040	0.078	
			2	ANSC-MW21-2	45	0.63	0.046	<0.040	--	<0.040	16	<0.040	0.075	
				Average Concentration (mg/L)	43	0.46	0.023	ND	--	ND	17	ND	0.076	
				Standard Deviation (mmoles)	4.8E-03	5.1E-04	1.2E-04	0.0E+00	--	0.0E+00	5.8E-03	0.0E+00	1.2E-04	
				Average Total mmoles	**0.068**	**0.00099**	**0.000081**	**ND**	**6.9E-02**	**ND**	**0.042**	**ND**	**0.0035**	
	17-Sep-14	117	1	ANSC-MW21-1	41	0.30	<0.040	<0.040	--	<0.040	19	<0.040	0.081	
			2	ANSC-MW21-2	45	0.67	0.075	<0.040	--	<0.040	16	<0.040	0.083	
				Average Concentration (mg/L)	43	0.49	0.037	ND	--	ND	18	ND	0.082	
				Standard Deviation (mmoles)	3.4E-03	5.6E-04	1.8E-04	0.0E+00	--	0.0E+00	6.3E-03	0.0E+00	4.2E-05	
				Average Total mmoles	**0.069**	**0.001**	**0.00013**	**ND**	**7.0E-02**	**ND**	**0.043**	**ND**	**0.0038**	
	12-Nov-14	173	1	ANSC-MW21-1	37	0.32	<0.040	<0.040	--	<0.040	19	<0.040	0.084	
			2	ANSC-MW21-2	41	0.68	0.043	<0.040	--	<0.040	15	<0.040	0.074	
				Average Concentration (mg/L)	39	0.50	0.021	ND	--	ND	17	ND	0.079	
				Standard Deviation (mmoles)	3.8E-03	5.5E-04	1.1E-04	0.0E+00	--	0.0E+00	6.9E-03	0.0E+00	3.3E-04	
				Average Total mmoles	**0.063**	**0.0011**	**0.000075**	**ND**	**6.4E-02**	**ND**	**0.042**	**ND**	**0.0037**	
Anaerobic Active Control (MW21 Location)	22-May-14	-1												Amended the first replicate with resazurin.
														Spiked with DCM, TCE, and perchlorate to target concentrations of 10 mg/L, 32 mg/L, and 120 mg/L respectively.
	23-May-14	0	3	ANAC-MW21-1	45	0.15	<0.040	<0.040	--	<0.040	15	<0.040	0.11	
			4	ANAC-MW21-2	38	0.21	<0.040	<0.040	--	<0.040	15	<0.040	0.098	
				Average Concentration (mg/L)	41	0.18	ND	ND	--	ND	15	ND	0.10	
				Standard Deviation (mmoles)	7.8E-03	9.3E-05	0.0E+00	0.0E+00	--	0.0E+00	4.2E-04	0.0E+00	4.0E-04	
				Average Total mmoles	**0.066**	**0.00037**	**ND**	**ND**	**6.6E-02**	**ND**	**0.036**	**ND**	**0.0048**	
	06-Jun-14	14	3	ANAC-MW21-1	43	0.76	<0.040	<0.040	--	<0.040	<0.040	<0.040	0.11	
			4	ANAC-MW21-2	43	0.78	<0.040	<0.040	--	<0.040	0.54	<0.040	0.10	
				Average Concentration (mg/L)	43	0.77	ND	ND	--	ND	0.27	ND	0.11	
				Standard Deviation (mmoles)	1.2E-04	3.5E-05	0.0E+00	0.0E+00	--	0.0E+00	9.4E-04	0.0E+00	2.9E-04	
				Average Total mmoles	**0.069**	**0.0016**	**ND**	**ND**	**7.1E-02**	**ND**	**0.00066**	**ND**	**0.0049**	
	20-Jun-14	28	3	ANAC-MW21-1	40	0.51	<0.040	<0.040	--	<0.040	<0.040	<0.040	0.087	
			4	ANAC-MW21-2	40	0.65	<0.040	<0.040	--	<0.040	<0.040	<0.040	0.097	
				Average Concentration (mg/L)	40	0.58	ND	ND	--	ND	ND	ND	0.092	
				Standard Deviation (mmoles)	5.4E-04	2.2E-04	0.0E+00	0.0E+00	--	0.0E+00	0.0E+00	0.0E+00	3.4E-04	
				Average Total mmoles	**0.064**	**0.0012**	**ND**	**ND**	**6.5E-02**	**ND**	**ND**	**ND**	**0.0043**	

TABLE 2A: SUMMARY OF MICROCOSM cVOC AND DHG RESULTS OF MW21 LOCATION BIOTREATABILITY STUDY

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Replicate	Chlorinated Ethenes, Ethene, and Ethane						Chlorinated Methanes and Methane			Comment
					TCE	cDCE	VC	Ethene	Total Ethenes	Ethane	DCM	CM	Methane	
					mg/L	mg/L	mg/L	mg/L	mmol/bottle	mg/L	mg/L	mg/L	mg/L	
Anaerobic Active Control (MW21 Location) Continued	21-Jun-14	29												Spiked with DCM to a target concentration of 10 mg/L.
			3	ANAC-MW21-1	43	0.74	<0.040	<0.040	--	<0.040	13	<0.040	0.11	
			4	ANAC-MW21-2	45	0.73	<0.040	<0.040	--	<0.040	15	<0.040	0.10	
				Average Concentration (mg/L)	44	0.74	ND	ND	--	ND	14	ND	0.11	
				Standard Deviation (mmoles)	1.4E-03	1.1E-05	0.0E+00	0.0E+00	--	0.0E+00	3.1E-03	0.0E+00	1.7E-04	
				Average Total mmoles	**0.07**	**0.0016**	**ND**	**ND**	**7.2E-02**	**ND**	**0.035**	**ND**	**0.0049**	
	11-Jul-14	49	3	ANAC-MW21-1	44	0.81	<0.040	<0.040	--	<0.040	0.072	<0.040	0.11	
			4	ANAC-MW21-2	44	0.85	<0.040	<0.040	--	<0.040	0.068	<0.040	0.10	
				Average Concentration (mg/L)	44	0.83	ND	ND	--	ND	0.07	ND	0.10	
				Standard Deviation (mmoles)	1.7E-04	6.8E-05	0.0E+00	0.0E+00	--	0.0E+00	8.1E-06	0.0E+00	3.2E-04	
				Average Total mmoles	**0.071**	**0.0018**	**ND**	**ND**	**7.3E-02**	**ND**	**0.00017**	**ND**	**0.0049**	
	21-Aug-14	90	3	ANAC-MW21-1	44	0.52	0.059	<0.040	--	<0.040	0.12	<0.040	0.10	
			4	ANAC-MW21-2	42	0.64	0.10	<0.040	--	<0.040	0.15	<0.040	0.093	
				Average Concentration (mg/L)	43	0.58	0.079	ND	--	ND	0.14	ND	0.097	
				Standard Deviation (mmoles)	2.5E-03	1.8E-04	1.0E-04	0.0E+00	--	0.0E+00	5.2E-05	0.0E+00	2.4E-04	
				Average Total mmoles	**0.069**	**0.0012**	**0.00028**	**ND**	**7.0E-02**	**ND**	**0.00033**	**ND**	**0.0045**	
	17-Sep-14	117	3	ANAC-MW21-1	46	0.74	0.076	<0.040	--	<0.040	0.15	<0.040	0.11	
			4	ANAC-MW21-2	42	0.71	0.11	<0.040	--	<0.040	<0.040	<0.040	0.095	
				Average Concentration (mg/L)	44	0.72	0.092	ND	--	ND	0.077	ND	0.10	
				Standard Deviation (mmoles)	4.4E-03	4.0E-05	8.1E-05	0.0E+00	--	0.0E+00	2.7E-04	0.0E+00	4.4E-04	
				Average Total mmoles	**0.07**	**0.0015**	**0.00032**	**ND**	**7.2E-02**	**ND**	**0.00019**	**ND**	**0.0047**	
	12-Nov-14	173	3	ANAC-MW21-1	44	0.51	0.061	<0.040	--	<0.040	<0.040	<0.040	0.097	
			4	ANAC-MW21-2	38	0.61	0.091	<0.040	--	<0.040	<0.040	<0.040	0.092	
				Average Concentration (mg/L)	41	0.56	0.076	ND	--	ND	ND	ND	0.095	
				Standard Deviation (mmoles)	6.8E-03	1.5E-04	7.6E-05	0.0E+00	--	0.0E+00	0.0E+00	0.0E+00	1.8E-04	
				Average Total mmoles	**0.065**	**0.0012**	**0.00027**	**ND**	**6.6E-02**	**ND**	**ND**	**ND**	**0.0044**	
Lactate Amended/KB-1® Plus Bioaugmented (MW21 Location)	22-May-14	-1												Amended the first replicate with resazurin.
														Spiked with DCM, TCE, and perchlorate to target concentrations of 10 mg/L, 32 mg/L, and 120 mg/L respectively.
	23-May-14	0												Amended with lactate to a target concentration of 555 mg/L.
			5	LAC-MW21-1	40	0.18	<0.040	<0.040	--	<0.040	15	<0.040	0.11	
			6	LAC-MW21-2	--	0.16	<0.040	<0.040	--	<0.040	15	<0.040	0.11	
				Average Concentration (mg/L)	40	0.17	ND	ND	--	ND	15	ND	0.11	
				Standard Deviation (mmoles)	5.4E-04	3.0E-05	0.0E+00	0.0E+00	--	0.0E+00	5.8E-04	0.0E+00	6.0E-05	
				Average Total mmoles	**0.064**	**0.00036**	**ND**	**ND**	**2.0E-01**	**ND**	**0.037**	**ND**	**0.0053**	
	06-Jun-14	14	5	LAC-MW21-1	44	0.9	<0.040	<0.040	--	<0.040	14	0.04	0.11	
			6	LAC-MW21-2	39	0.77	<0.040	<0.040	--	<0.040	8.9	<0.040	0.11	
				Average Concentration (mg/L)	41	0.83	ND	ND	--	ND	12	0.02	0.11	
				Standard Deviation (mmoles)	6.5E-03	2.0E-04	0.0E+00	0.0E+00	--	0.0E+00	9.5E-03	1.1E-04	1.6E-04	
				Average Total mmoles	**0.066**	**0.0018**	**ND**	**ND**	**6.8E-02**	**ND**	**0.028**	**0.00008**	**0.0051**	
	20-Jun-14	28												Bioaugmented with KB-1® Plus.
			5	LAC-MW21-1	38	0.68	<0.040	<0.040	--	<0.040	13	<0.040	0.099	
			6	LAC-MW21-2	28	0.47	<0.040	<0.040	--	<0.040	0.28	<0.040	0.096	
				Average Concentration (mg/L)	33	0.58	ND	ND	--	ND	6.5	ND	0.098	
				Standard Deviation (mmoles)	1.1E-02	3.1E-04	0.0E+00	0.0E+00	--	0.0E+00	2.1E-02	0.0E+00	9.3E-05	
				Average Total mmoles	**0.053**	**0.0012**	**ND**	**ND**	**5.4E-02**	**ND**	**0.016**	**ND**	**0.0045**	
	27-Jun-14	35	5	LAC-MW21-1	40	0.93	<0.040	<0.040	--	<0.040	13	<0.040	0.12	
			6	LAC-MW21-2	35	4.6	<0.040	<0.040	--	<0.040	7.2	<0.040	0.13	
				Average Concentration (mg/L)	37	2.8	ND	ND	--	ND	10	ND	0.12	
				Standard Deviation (mmoles)	5.2E-03	5.6E-03	0.0E+00	0.0E+00	--	0.0E+00	9.6E-03	0.0E+00	2.3E-04	
				Average Total mmoles	**0.06**	**0.0059**	**ND**	**ND**	**6.6E-02**	**ND**	**0.024**	**ND**	**0.0058**	
	11-Jul-14	49	5	LAC-MW21-1	27	10	<0.040	<0.040	--	<0.040	1.6	0.051	0.12	
			6	LAC-MW21-2	9.9	23	<0.040	<0.040	--	<0.040	1.3	0.043	0.12	
				Average Concentration (mg/L)	18	16	ND	ND	--	ND	1.5	0.047	0.12	
				Standard Deviation (mmoles)	1.9E-02	1.8E-02	0.0E+00	0.0E+00	--	0.0E+00	6.1E-04	2.4E-05	1.3E-04	
				Average Total mmoles	**0.029**	**0.035**	**ND**	**ND**	**6.5E-02**	**ND**	**0.0036**	**0.00019**	**0.0055**	

TABLE 2A: SUMMARY OF MICROCOSM cVOC AND DHG RESULTS OF MW21 LOCATION BIOTREATABILITY STUDY

LHAAP 18/24 Site, Karnack, Texas

SiREM

Treatment	Date	Day	Bottle	Replicate	Chlorinated Ethenes, Ethene, and Ethane						Chlorinated Methanes and Methane			Comment
					TCE	cDCE	VC	Ethene	Total Ethenes	Ethane	DCM	CM	Methane	
					mg/L	mg/L	mg/L	mg/L	mmol/bottle	mg/L	mg/L	mg/L	mg/L	
Lactate Amended/KB-1® Plus Bioaugmented (MW21 Location) Continued	25-Jul-14	63	5	LAC-MW21-1	0.23	31	<0.040	<0.040	--	<0.040	0.075	0.051	0.11	
			6	LAC-MW21-2	2.2	29	<0.040	<0.040	--	<0.040	0.068	0.049	0.11	
				Average Concentration (mg/L)	1.2	30	ND	ND	--	ND	0.071	0.05	0.11	
				Standard Deviation (mmoles)	2.2E-03	3.0E-03	0.0E+00	0.0E+00	--	0.0E+00	1.3E-05	4.4E-06	1.9E-04	
				Average Total mmoles	**0.0019**	**0.063**	**ND**	**ND**	**6.6E-02**	**ND**	**0.00017**	**0.0002**	**0.0052**	
	11-Aug-14	80												Amended with lactate to a target concentration of 555 mg/L.
	21-Aug-14	90	5	LAC-MW21-1	<0.040	31	0.50	<0.040	--	<0.040	0.16	0.068	0.10	
			6	LAC-MW21-2	1.5	29	0.40	<0.040	--	<0.040	0.16	0.069	0.11	
				Average Concentration (mg/L)	0.77	30	0.45	ND	--	ND	0.16	0.069	0.11	
				Standard Deviation (mmoles)	1.8E-03	3.4E-03	2.5E-04	0.0E+00	--	0.0E+00	6.6E-06	3.0E-06	3.2E-04	
				Average Total mmoles	**0.0012**	**0.063**	**0.0016**	**ND**	**6.7E-02**	**ND**	**0.00039**	**0.00028**	**0.0051**	
	03-Sep-14	103												Amended with lactate to a target concentration of 555 mg/L.
	17-Sep-14	117	5	LAC-MW21-1	0.051	31	0.60	<0.040	--	<0.040	<0.040	0.094	0.11	
			6	LAC-MW21-2	1.2	29	0.51	<0.040	--	<0.040	<0.040	0.09	0.13	
				Average Concentration (mg/L)	0.61	30	0.56	ND	--	ND	ND	0.092	0.12	
				Standard Deviation (mmoles)	1.3E-03	2.5E-03	2.2E-04	0.0E+00	--	0.0E+00	0.0E+00	1.1E-05	4.9E-04	
				Average Total mmoles	**0.00098**	**0.064**	**0.002**	**ND**	**6.8E-02**	**ND**	**ND**	**0.00037**	**0.0056**	
	26-Sep-14	126												Bioaugmented with KB-1® Plus.
	03-Oct-14	133												Amended with lactate to a target concentration of 555 mg/L.
	15-Oct-14	145	5	LAC-MW21-1	0.37	30	1.3	<0.040	--	<0.040	0.069	0.14	0.12	
			6	LAC-MW21-2	0.33	<0.040	<0.040	2.8	--	<0.040	0.15	<0.040	0.16	
				Average Concentration (mg/L)	0.35	15	0.64	1.4	--	ND	0.11	0.072	0.14	
				Standard Deviation (mmoles)	3.6E-05	4.5E-02	3.2E-03	2.6E-02	--	0.0E+00	1.3E-04	4.1E-04	1.4E-03	
				Average Total mmoles	**0.00056**	**0.032**	**0.0023**	**0.018**	**5.3E-02**	**ND**	**0.00026**	**0.00029**	**0.0066**	
	30-Oct-14	160												Amended with lactate to a target concentration of 555 mg/L.
	12-Nov-14	173	5	LAC-MW21-1	0.094	29	1.3	<0.040	--	<0.040	<0.040	0.17	0.13	
			6	LAC-MW21-2	<0.040	<0.040	<0.040	2.2	--	<0.040	<0.040	<0.040	0.23	
				Average Concentration (mg/L)	0.047	15	0.67	1.1	--	ND	ND	0.085	0.18	
				Standard Deviation (mmoles)	1.1E-04	4.4E-02	3.3E-03	2.0E-02	--	0.0E+00	0.0E+00	4.8E-04	3.3E-03	
				Average Total mmoles	**7.5E-05**	**0.031**	**0.0023**	**0.014**	**4.8E-02**	**ND**	**ND**	**0.00034**	**0.0083**	
	21-Nov-14	182												Bioaugmented with KB-1® Plus.
														Amended with lactate to a target concentration of 555 mg/L and DAP to a target concentration of 236 mg/L.
	22-Dec-14	213	5	LAC-MW21-1	0.040	19	6.0	0.35	--	<0.040	<0.040	0.23	0.20	
				Average Concentration (mg/L)	0.040	19	6.0	0.35	--	ND	ND	0.23	0.20	
				Standard Deviation (mmoles)	0.0E+00	0.0E+00	0.0E+00	0.0E+00	--	0.0E+00	0.0E+00	0.0E+00	0.0E+00	
				Average Total mmoles	**6.5E-05**	**0.041**	**0.021**	**0.0046**	**6.7E-02**	**ND**	**ND**	**0.00091**	**0.0094**	
SRS-SD Amended/KB-1® Plus Bioaugmented (MW21 Location)	22-May-14	-1												Amended the first replicate with resazurin.
														Spiked with DCM, TCE, and perchlorate to target concentrations of 10 mg/L, 32 mg/L, and 120 mg/L respectively.
	23-May-14	0												Amended with SRS-SD to a target concentration of 0.1% as oil.
			7	SRS-SD-MW21-1	28	0.17	<0.040	<0.040	--	<0.040	17	<0.040	0.10	
			8	SRS-SD-MW21-2	27	0.18	<0.040	<0.040	--	<0.040	17	<0.040	0.13	
				Average Concentration (mg/L)	28	0.18	ND	ND	--	ND	17	ND	0.12	
				Standard Deviation (mmoles)	1.4E-03	1.2E-05	0.0E+00	0.0E+00	--	0.0E+00	5.8E-04	0.0E+00	7.0E-04	
				Average Total mmoles	**0.044**	**0.00038**	**ND**	**ND**	**4.4E-02**	**ND**	**0.041**	**ND**	**0.0054**	
	06-Jun-14	14	7	SRS-SD-MW21-1	28	0.56	<0.040	<0.040	--	<0.040	11	<0.040	0.10	
			8	SRS-SD-MW21-2	27	0.60	<0.040	<0.040	--	<0.040	9.5	<0.040	0.11	
				Average Concentration (mg/L)	28	0.58	ND	ND	--	ND	10	ND	0.11	
				Standard Deviation (mmoles)	1.5E-03	7.1E-05	0.0E+00	0.0E+00	--	0.0E+00	2.6E-03	0.0E+00	2.7E-04	
				Average Total mmoles	**0.044**	**0.0012**	**ND**	**ND**	**4.5E-02**	**ND**	**0.025**	**ND**	**0.0051**	
	20-Jun-14	28												Bioaugmented with KB-1® Plus.
			7	SRS-SD-MW21-1	28	0.49	<0.040	<0.040	--	<0.040	<0.040	<0.040	0.098	
			8	SRS-SD-MW21-2	27	0.47	<0.040	<0.040	--	<0.040	<0.040	<0.040	0.10	
				Average Concentration (mg/L)	27	0.48	ND	ND	--	ND	ND	ND	0.10	
				Standard Deviation (mmoles)	4.5E-04	2.8E-05	0.0E+00	0.0E+00	--	0.0E+00	0.0E+00	0.0E+00	2.0E-04	
				Average Total mmoles	**0.044**	**0.001**	**ND**	**ND**	**4.5E-02**	**ND**	**ND**	**ND**	**0.0047**	

TABLE 2A: SUMMARY OF MICROCOSM cVOC AND DHG RESULTS OF MW21 LOCATION BIOTREATABILITY STUDY

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Replicate	Chlorinated Ethenes, Ethene, and Ethane						Chlorinated Methanes and Methane			Comment
					TCE	cDCE	VC	Ethene	Total Ethenes	Ethane	DCM	CM	Methane	
					mg/L	mg/L	mg/L	mg/L	mmol/bottle	mg/L	mg/L	mg/L	mg/L	
SRS-SD Amended/KB-1® Plus Bioaugmented (MW21 Location) Continued	27-Jun-14	35	7	SRS-SD-MW21-1	23	5.0	<0.040	<0.040	--	<0.040	0.12	<0.040	0.10	
			8	SRS-SD-MW21-2	25	2.1	<0.040	<0.040	--	<0.040	0.19	<0.040	0.11	
				Average Concentration (mg/L)	24	3.5	ND	ND	--	ND	0.16	ND	0.11	
				Standard Deviation (mmoles)	2.5E-03	4.4E-03	0.0E+00	0.0E+00	--	0.0E+00	1.2E-04	0.0E+00	3.5E-04	
				Average Total mmoles	**0.038**	**0.0075**	**ND**	**ND**	**4.6E-02**	**ND**	**0.00038**	**ND**	**0.0049**	
	11-Jul-14	49	7	SRS-SD-MW21-1	10	18	<0.040	<0.040	--	<0.040	0.095	<0.040	0.12	
			8	SRS-SD-MW21-2	4.7	23	<0.040	<0.040	--	<0.040	0.12	<0.040	0.12	
				Average Concentration (mg/L)	7.5	21	ND	ND	--	ND	0.11	ND	0.12	
				Standard Deviation (mmoles)	6.4E-03	6.5E-03	0.0E+00	0.0E+00	--	0.0E+00	4.1E-05	0.0E+00	2.0E-04	
				Average Total mmoles	**0.012**	**0.044**	**ND**	**ND**	**5.7E-02**	**ND**	**0.00026**	**ND**	**0.0055**	
	25-Jul-14	63	7	SRS-SD-MW21-1	4.4	24	<0.040	<0.040	--	<0.040	0.046	<0.040	0.12	
			8	SRS-SD-MW21-2	4.5	24	<0.040	<0.040	--	<0.040	0.043	<0.040	0.11	
				Average Concentration (mg/L)	4.5	24	ND	ND	--	ND	0.045	ND	0.12	
				Standard Deviation (mmoles)	1.0E-04	9.3E-04	0.0E+00	0.0E+00	--	0.0E+00	5.2E-06	0.0E+00	3.0E-04	
				Average Total mmoles	**0.0072**	**0.051**	**ND**	**ND**	**5.9E-02**	**ND**	**0.00011**	**ND**	**0.0054**	
	11-Aug-14	80												Amended with SRS-SD to a target concentration of 0.1% as oil.
	21-Aug-14	90	7	SRS-SD-MW21-1	<0.040	22	0.76	<0.040	--	<0.040	0.072	0.043	0.33	
			8	SRS-SD-MW21-2	<0.040	23	0.74	<0.040	--	<0.040	0.074	0.047	0.12	
				Average Concentration (mg/L)	ND	22	0.75	ND	--	ND	0.073	0.045	0.22	
				Standard Deviation (mmoles)	0.0E+00	3.0E-04	6.6E-05	0.0E+00	--	0.0E+00	2.2E-06	1.1E-05	7.0E-03	
				Average Total mmoles	**ND**	**0.048**	**0.0026**	**ND**	**5.1E-02**	**ND**	**0.00018**	**0.00018**	**0.01**	
	17-Sep-14	117	7	SRS-SD-MW21-1	<0.040	28	0.94	<0.040	--	<0.040	0.055	0.062	2.8	
			8	SRS-SD-MW21-2	0.069	26	0.86	<0.040	--	<0.040	0.056	0.068	0.79	
				Average Concentration (mg/L)	0.035	27	0.9	ND	--	ND	0.056	0.065	1.8	
				Standard Deviation (mmoles)	7.8E-05	1.7E-03	2.0E-04	0.0E+00	--	0.0E+00	1.1E-06	1.6E-05	6.5E-02	
				Average Total mmoles	**5.5E-05**	**0.058**	**0.0031**	**ND**	**6.2E-02**	**ND**	**0.00014**	**0.00026**	**0.083**	
	26-Sep-14	126												Bioaugmented with KB-1® Plus.
	15-Oct-14	145	7	SRS-SD-MW21-1	0.30	25	2.2	<0.040	--	<0.040	0.20	0.071	5.9	
			8	SRS-SD-MW21-2	0.30	25	1.9	<0.040	--	<0.040	0.072	0.081	3.1	
				Average Concentration (mg/L)	0.30	25	2.1	ND	--	ND	0.13	0.076	4.5	
				Standard Deviation (mmoles)	2.5E-07	3.0E-04	6.9E-04	0.0E+00	--	0.0E+00	2.2E-04	3.0E-05	9.1E-02	
				Average Total mmoles	**0.00048**	**0.054**	**0.0073**	**ND**	**6.2E-02**	**ND**	**0.00033**	**0.0003**	**0.21**	
	12-Nov-14	173	7	SRS-SD-MW21-1	0.040	26	2.2	<0.040	--	<0.040	<0.040	0.074	6.7	
			8	SRS-SD-MW21-2	<0.040	24	3.2	<0.040	--	<0.040	<0.040	0.088	4.2	
				Average Concentration (mg/L)	0.02	25	2.7	ND	--	ND	ND	0.081	5.5	
				Standard Deviation (mmoles)	4.6E-05	3.0E-03	2.5E-03	0.0E+00	--	0.0E+00	0.0E+00	4.1E-05	8.0E-02	
				Average Total mmoles	**3.2E-05**	**0.052**	**0.0095**	**ND**	**6.2E-02**	**ND**	**ND**	**0.00032**	**0.25**	
	21-Nov-14	182												Amended with SRS-SD to a target concentration of 0.1 % as oil and DAP to a target concentration of 236 mg/L.
														Bioaugmented with KB-1® Plus.
	22-Dec-14	213	7	SRS-SD-MW21-1	<0.040	<0.040	0.055	2.4	--	<0.040	0.078	<0.040	21	
			8	SRS-SD-MW21-2	<0.040	<0.040	<0.040	3.1	--	<0.040	0.077	<0.040	24	
				Average Concentration (mg/L)	ND	ND	0.027	2.8	--	ND	0.077	ND	22	
				Standard Deviation (mmoles)	0.0E+00	0.0E+00	1.4E-04	6.8E-03	--	0.0E+00	1.0E-06	0.0E+00	1.1E-01	
				Average Total mmoles	**ND**	**ND**	**0.000096**	**0.036**	**3.6E-02**	**ND**	**0.00019**	**ND**	**1.0**	

Notes:

ANAC - anaerobic active control
ANSC - anaerobic sterile control
cDCE - *cis*-1,2-dichloroethene
CM - chloromethane
cVOC - chlorinated volatile organic compound
DAP - diammonium phosphate
DCM - dichloromethane
DHG - dissolved hydrogen gases
g - grams
mg/L - milligrams per liter
mL - milliliters
ND - not detected
TCE - trichloroethene
VC - vinyl chloride
% - percent
< - compound not detected, the associated value is the detection limit
-- - not analysed

TABLE 2B: SUMMARY OF REACTOR cVOC AND DHG RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY

SiREM

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Replicate	Chlorinated Ethenes, Ethene, and Ethane						Chlorinated Methanes and Methane			Comment
					TCE	cDCE	VC	Ethene	Total Ethenes	Ethane	DCM	CM	Methane	
					mg/L	mg/L	mg/L	mg/L	mmol/bottle	mg/L	mg/L	mg/L	mg/L	
Anaerobic Sterile Control (MW2 Location)	22-May-14	-1												Poisoned with mercuric chloride and sodium azide.
														Amended the first replicate with resazurin.
														Spiked with DCM and TCE to target concentrations of 3,720 mg/L and 2,020 mg/L respectively.
	23-May-14	0	9	ANSC-MW2-1	930	51	<2.0	<2.0	--	<2.0	2300	<2.0	3.8	
			10	ANSC-MW2-2	830	56	<2.0	<2.0	--	<2.0	2600	<2.0	3.8	
				Average Concentration (mg/L)	880	54	ND	ND	--	ND	2500	ND	3.8	
				Standard Deviation (mmoles)	1.2E-01	8.4E-03	0.0E+00	0.0E+00	--	0.0E+00	5.1E-01	0.0E+00	4.0E-05	
				Average Total mmoles	**1.4**	**0.11**	**ND**	**ND**	**1.5E+00**	**ND**	**6.1**	**ND**	**0.17**	
	27-May-14	4	9	ANSC-MW2-1	1700	53	<2.0	<2.0	--	<2.0	2500	<2.0	3.8	
			10	ANSC-MW2-2	1300	45	<2.0	<2.0	--	<2.0	2100	<2.0	3.8	
				Average Concentration (mg/L)	1500	49	ND	ND	--	ND	2300	ND	3.8	
				Standard Deviation (mmoles)	4.5E-01	1.2E-02	0.0E+00	0.0E+00	--	0.0E+00	5.9E-01	0.0E+00	2.2E-03	
				Average Total mmoles	**2.3**	**0.10**	**ND**	**ND**	**2.4E+00**	**ND**	**5.7**	**ND**	**0.18**	
	30-May-14	7	9	ANSC-MW2-1	1700	50	<2.0	<2.0	--	<2.0	2400	<2.0	3.9	
			10	ANSC-MW2-2	1300	38	<2.0	<2.0	--	<2.0	1800	<2.0	3.8	
				Average Concentration (mg/L)	1500	44	ND	ND	--	ND	2100	ND	3.9	
				Standard Deviation (mmoles)	4.6E-01	1.9E-02	0.0E+00	0.0E+00	--	0.0E+00	1.0E+00	0.0E+00	7.6E-04	
				Average Total mmoles	**2.3**	**0.094**	**ND**	**ND**	**2.4E+00**	**ND**	**5.1**	**ND**	**0.18**	
	06-Jun-14	14	9	ANSC-MW2-1	1500	47	<2.0	<2.0	--	<2.0	2300	<2.0	3.9	
			10	ANSC-MW2-2	1600	51	<2.0	<2.0	--	<2.0	2200	<2.0	3.9	
				Average Concentration (mg/L)	1500	49	ND	ND	--	ND	2300	ND	3.9	
				Standard Deviation (mmoles)	1.8E-01	6.3E-03	0.0E+00	0.0E+00	--	0.0E+00	1.6E-01	0.0E+00	4.5E-04	
				Average Total mmoles	**2.5**	**0.10**	**ND**	**ND**	**2.6E+00**	**ND**	**5.5**	**ND**	**0.18**	
	13-Jun-14	21	9	ANSC-MW2-1	1700	55	<2.0	<2.0	--	<2.0	2400	<2.0	4.0	
			10	ANSC-MW2-2	1700	47	<2.0	<2.0	--	<2.0	2200	<2.0	4.0	
				Average Concentration (mg/L)	1700	51	ND	ND	--	ND	2300	ND	4.0	
				Standard Deviation (mmoles)	3.3E-02	1.1E-02	0.0E+00	0.0E+00	--	0.0E+00	2.1E-01	0.0E+00	1.1E-03	
				Average Total mmoles	**2.7**	**0.11**	**ND**	**ND**	**2.8E+00**	**ND**	**5.6**	**ND**	**0.18**	
	13-Aug-14	82	9	ANSC-MW2-1	1800	50	<2.0	<2.0	--	<2.0	2200	<2.0	3.6	
			10	ANSC-MW2-2	1800	47	<2.0	<2.0	--	<2.0	2200	<2.0	3.6	
				Average Concentration (mg/L)	1800	48	ND	ND	--	ND	2200	ND	3.6	
				Standard Deviation (mmoles)	9.3E-02	3.8E-03	0.0E+00	0.0E+00	--	0.0E+00	4.7E-02	0.0E+00	1.6E-03	
				Average Total mmoles	**2.9**	**0.10**	**ND**	**ND**	**3.0E+00**	**ND**	**5.4**	**ND**	**0.17**	
	03-Sep-14	103	9	ANSC-MW2-1	1600	45	<2.0	<2.0	--	<2.0	2300	<2.0	3.6	
			10	ANSC-MW2-2	1400	40	<2.0	<2.0	--	<2.0	2000	<2.0	3.7	
				Average Concentration (mg/L)	1500	42	ND	ND	--	ND	2100	ND	3.6	
				Standard Deviation (mmoles)	2.4E-01	7.0E-03	0.0E+00	0.0E+00	--	0.0E+00	5.0E-01	0.0E+00	2.1E-03	
				Average Total mmoles	**2.4**	**0.09**	**ND**	**ND**	**2.5E+00**	**ND**	**5.2**	**ND**	**0.17**	
	24-Sep-14	124	9	ANSC-MW2-1	1500	40	<2.0	<2.0	--	<2.0	1900	<2.0	3.6	
			10	ANSC-MW2-2	1300	38	<2.0	<2.0	--	<2.0	1900	<2.0	3.6	
				Average Concentration (mg/L)	1400	39	ND	ND	--	ND	1900	ND	3.6	
				Standard Deviation (mmoles)	1.9E-01	3.9E-03	0.0E+00	0.0E+00	--	0.0E+00	5.5E-02	0.0E+00	1.3E-05	
				Average Total mmoles	**2.2**	**0.083**	**ND**	**ND**	**2.3E+00**	**ND**	**4.6**	**ND**	**0.17**	
	15-Oct-14	145	9	ANSC-MW2-1	1300	34	<2.0	<2.0	--	<2.0	1600	<2.0	3.4	
			10	ANSC-MW2-2	1100	31	<2.0	<2.0	--	<2.0	1600	<2.0	3.5	
				Average Concentration (mg/L)	1200	33	ND	ND	--	ND	1600	ND	3.5	
				Standard Deviation (mmoles)	2.7E-01	5.4E-03	0.0E+00	0.0E+00	--	0.0E+00	1.1E-01	0.0E+00	1.9E-03	
				Average Total mmoles	**1.9**	**0.069**	**ND**	**ND**	**2.0E+00**	**ND**	**3.9**	**ND**	**0.16**	
	12-Nov-14	173	9	ANSC-MW2-1	1600	41	<2.0	<2.0	--	<2.0	2000	<2.0	3.7	
			10	ANSC-MW2-2	840	25	<2.0	<2.0	--	<2.0	1300	<2.0	3.7	
				Average Concentration (mg/L)	1200	33	ND	ND	--	ND	1700	ND	3.7	
				Standard Deviation (mmoles)	8.4E-01	2.5E-02	0.0E+00	0.0E+00	--	0.0E+00	1.3E+00	0.0E+00	3.9E-04	
				Average Total mmoles	**1.9**	**0.07**	**ND**	**ND**	**2.0E+00**	**ND**	**4.0**	**ND**	**0.17**	

TABLE 2B: SUMMARY OF REACTOR cVOC AND DHG RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Replicate	Chlorinated Ethenes, Ethene, and Ethane						Chlorinated Methanes and Methane			Comment
					TCE	cDCE	VC	Ethene	Total Ethenes	Ethane	DCM	CM	Methane	
					mg/L	mg/L	mg/L	mg/L	mmol/bottle	mg/L	mg/L	mg/L	mg/L	
0.4 g EZVI Amended (MW2 Location)	22-May-14	-1												Spiked with DCM and TCE to target concentrations of 3,720 mg/L and 2,020 mg/L respectively.
														Amended the first replicate with resazurin.
	23-May-14	0												Amended with 0.4 g EZVI.
			11	EZVI-1-MW2-1	1100	48	<2.0	<2.0	--	<2.0	2300	<2.0	3.8	
			12	EZVI-1-MW2-2	950	46	<2.0	<2.0	--	<2.0	2300	<2.0	3.7	
				Average Concentration (mg/L)	1000	47	ND	ND	--	ND	2300	ND	3.8	
				Standard Deviation (mmoles)	1.4E-01	2.4E-03	0.0E+00	0.0E+00	--	0.0E+00	1.2E-01	0.0E+00	1.3E-03	
				Average Total mmoles	**1.6**	**0.10**	**ND**	**ND**	**1.7E+00**	**ND**	**5.6**	**ND**	**0.17**	
	27-May-14	4	11	EZVI-1-MW2-1	1400	51	<2.0	<2.0	--	<2.0	2500	<2.0	3.8	
			12	EZVI-1-MW2-2	1000	40	<2.0	<2.0	--	<2.0	2100	<2.0	3.8	
				Average Concentration (mg/L)	1200	46	ND	ND	--	ND	2300	ND	3.8	
				Standard Deviation (mmoles)	4.1E-01	1.7E-02	0.0E+00	0.0E+00	--	0.0E+00	8.0E-01	0.0E+00	4.6E-04	
				Average Total mmoles	**1.9**	**0.097**	**ND**	**ND**	**2.0E+00**	**ND**	**5.6**	**ND**	**0.18**	
	30-May-14	7	11	EZVI-1-MW2-1	1300	44	<2.0	<2.0	--	<2.0	2100	<2.0	3.8	
			12	EZVI-1-MW2-2	1400	45	<2.0	<2.0	--	<2.0	2300	<2.0	3.8	
				Average Concentration (mg/L)	1300	45	ND	ND	--	ND	2200	ND	3.8	
				Standard Deviation (mmoles)	1.2E-01	2.4E-03	0.0E+00	0.0E+00	--	0.0E+00	3.5E-01	0.0E+00	1.7E-03	
				Average Total mmoles	**2.1**	**0.095**	**ND**	**ND**	**2.2E+00**	**ND**	**5.4**	**ND**	**0.18**	
	06-Jun-14	14	11	EZVI-1-MW2-1	1300	46	<2.0	<2.0	--	<2.0	2300	<2.0	4.0	
			12	EZVI-1-MW2-2	1300	45	<2.0	<2.0	--	<2.0	2200	<2.0	4.0	
				Average Concentration (mg/L)	1300	46	ND	ND	--	ND	2300	ND	4.0	
				Standard Deviation (mmoles)	5.8E-02	1.7E-03	0.0E+00	0.0E+00	--	0.0E+00	2.0E-01	0.0E+00	3.4E-04	
				Average Total mmoles	**2.1**	**0.098**	**ND**	**ND**	**2.2E+00**	**ND**	**5.5**	**ND**	**0.18**	
	13-Jun-14	21	11	EZVI-1-MW2-1	1300	45	<2.0	<2.0	--	<2.0	2100	<2.0	3.9	
			12	EZVI-1-MW2-2	1400	49	<2.0	<2.0	--	<2.0	2400	<2.0	3.9	
				Average Concentration (mg/L)	1400	47	ND	ND	--	ND	2300	ND	3.9	
				Standard Deviation (mmoles)	4.4E-02	6.0E-03	0.0E+00	0.0E+00	--	0.0E+00	5.4E-01	0.0E+00	5.0E-04	
				Average Total mmoles	**2.2**	**0.10**	**ND**	**ND**	**2.3E+00**	**ND**	**5.5**	**ND**	**0.18**	
	08-Jul-14	46												Began shaking reactors daily.
	13-Aug-14	82	11	EZVI-1-MW2-1	1300	50	<2.0	<2.0	--	<2.0	2400	<2.0	3.6	
			12	EZVI-1-MW2-2	1400	48	<2.0	<2.0	--	<2.0	2300	<2.0	3.6	
				Average Concentration (mg/L)	1300	49	ND	ND	--	ND	2400	ND	3.6	
				Standard Deviation (mmoles)	1.9E-02	2.4E-03	0.0E+00	0.0E+00	--	0.0E+00	1.5E-02	0.0E+00	3.7E-04	
				Average Total mmoles	**2.1**	**0.10**	**ND**	**ND**	**2.2E+00**	**ND**	**5.8**	**ND**	**0.17**	
	14-Aug-14	83												Due to a lack of degradation, this treatment was discontinued.
3.0 g EZVI Amended (MW2 Location)	22-May-14	-1												Spiked with DCM and TCE to target concentrations of 3,720 mg/L and 2,020 mg/L respectively.
														Amended the first replicate with resazurin.
	23-May-14	0												Amended with 3 g EZVI.
			13	EZVI-2-MW2-1	750	38	<2.0	<2.0	--	<2.0	2100	<2.0	3.8	
			14	EZVI-2-MW2-2	700	35	<2.0	<2.0	--	<2.0	2000	<2.0	3.7	
				Average Concentration (mg/L)	730	36	ND	ND	--	ND	2000	ND	3.8	
				Standard Deviation (mmoles)	5.5E-02	4.7E-03	0.0E+00	0.0E+00	--	0.0E+00	7.4E-02	0.0E+00	3.1E-03	
				Average Total mmoles	**1.2**	**0.078**	**ND**	**ND**	**1.3E+00**	**ND**	**5**	**ND**	**0.18**	
	27-May-14	4	13	EZVI-2-MW2-1	680	36	<2.0	<2.0	--	<2.0	2100	<2.0	3.9	
			14	EZVI-2-MW2-2	740	36	<2.0	<2.0	--	<2.0	2100	<2.0	3.8	
				Average Concentration (mg/L)	710	36	ND	ND	--	ND	2100	ND	3.8	
				Standard Deviation (mmoles)	7.8E-02	8.4E-04	0.0E+00	0.0E+00	--	0.0E+00	1.0E-01	0.0E+00	3.6E-03	
				Average Total mmoles	**1.1**	**0.077**	**ND**	**ND**	**1.2E+00**	**ND**	**5.1**	**ND**	**0.18**	
	30-May-14	7	13	EZVI-2-MW2-1	830	39	<2.0	<2.0	--	<2.0	2200	<2.0	3.8	
			14	EZVI-2-MW2-2	750	37	<2.0	<2.0	--	<2.0	2100	<2.0	3.9	
				Average Concentration (mg/L)	790	38	ND	ND	--	ND	2100	ND	3.9	
				Standard Deviation (mmoles)	8.5E-02	2.3E-03	0.0E+00	0.0E+00	--	0.0E+00	4.6E-02	0.0E+00	2.6E-03	
				Average Total mmoles	**1.3**	**0.081**	**ND**	**ND**	**1.4E+00**	**ND**	**5.2**	**ND**	**0.18**	
	06-Jun-14	14	13	EZVI-2-MW2-1	1200	42	<2.0	<2.0	--	<2.0	2100	<2.0	4.0	
			14	EZVI-2-MW2-2	770	42	<2.0	<2.0	--	<2.0	2300	<2.0	3.9	
				Average Concentration (mg/L)	1000	42	ND	ND	--	ND	2200	ND	4.0	
				Standard Deviation (mmoles)	5.3E-01	1.4E-04	0.0E+00	0.0E+00	--	0.0E+00	4.0E-01	0.0E+00	2.6E-03	
				Average Total mmoles	**1.6**	**0.09**	**ND**	**ND**	**1.7E+00**	**ND**	**5.3**	**ND**	**0.18**	

TABLE 2B: SUMMARY OF REACTOR cVOC AND DHG RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Replicate	Chlorinated Ethenes, Ethene, and Ethane						Chlorinated Methanes and Methane			Comment
					TCE	cDCE	VC	Ethene	Total Ethenes	Ethane	DCM	CM	Methane	
					mg/L	mg/L	mg/L	mg/L	mmol/bottle	mg/L	mg/L	mg/L	mg/L	
3.0 g EZVI Amended (MW2 Location) Continued	13-Jun-14	21	13	EZVI-2-MW2-1	750	43	<2.0	<2.0	--	<2.0	2400	<2.0	3.9	
			14	EZVI-2-MW2-2	600	31	<2.0	<2.0	--	<2.0	1800	<2.0	3.9	
				Average Concentration (mg/L)	670	37	ND	ND	--	ND	2100	ND	3.9	
				Standard Deviation (mmoles)	1.7E-01	1.7E-02	0.0E+00	0.0E+00	--	0.0E+00	1.1E+00	0.0E+00	8.3E-05	
				Average Total mmoles	**1.1**	**0.079**	**ND**	**ND**	**1.2E+00**	**ND**	**5.2**	**ND**	**0.18**	
	08-Jul-14	46												Began shaking reactors daily.
	13-Aug-14	82	13	EZVI-2-MW2-1	700	39	<2.0	2.2	--	<2.0	2100	<2.0	3.6	
			14	EZVI-2-MW2-2	600	33	<2.0	<2.0	--	<2.0	1800	<2.0	3.6	
				Average Concentration (mg/L)	650	36	ND	1.1	--	ND	1900	ND	3.6	
				Standard Deviation (mmoles)	1.2E-01	8.6E-03	0.0E+00	2.0E-02	--	0.0E+00	4.2E-01	0.0E+00	2.5E-03	
				Average Total mmoles	**1.0**	**0.076**	**ND**	**0.014**	**1.1E+00**	**ND**	**4.8**	**ND**	**0.17**	
	14-Aug-14	83												Due to a lack of degradation, this treatment was discontinued.
10 g EZVI Amended (MW2 Location)	22-May-14	-1												Amended the first replicate with resazurin.
														Spiked with DCM and TCE to target concentrations of 3,720 mg/L and 2,020 mg/L respectively.
	23-May-14	0												Amended with 10 g EZVI.
			15	EZVI-3-MW2-1	200	17	<2.0	<2.0	--	<2.0	1300	<2.0	3.7	
			16	EZVI-3-MW2-2	180	15	<2.0	<2.0	--	<2.0	1300	<2.0	3.9	
				Average Concentration (mg/L)	190	16	ND	ND	--	ND	1300	ND	3.8	
				Standard Deviation (mmoles)	2.4E-02	1.9E-03	0.0E+00	0.0E+00	--	0.0E+00	8.2E-02	0.0E+00	3.9E-03	
				Average Total mmoles	**0.31**	**0.034**	**ND**	**ND**	**3.4E-01**	**ND**	**3.2**	**ND**	**0.18**	
	27-May-14	4	15	EZVI-3-MW2-1	360	45	<2.0	<2.0	--	<2.0	1600	<2.0	4.0	
			16	EZVI-3-MW2-2	260	22	<2.0	<2.0	--	<2.0	1700	<2.0	3.8	
				Average Concentration (mg/L)	310	34	ND	ND	--	ND	1600	ND	3.9	
				Standard Deviation (mmoles)	1.1E-01	3.6E-02	0.0E+00	0.0E+00	--	0.0E+00	1.6E-01	0.0E+00	7.7E-03	
				Average Total mmoles	**0.50**	**0.071**	**ND**	**ND**	**5.7E-01**	**ND**	**4.0**	**ND**	**0.18**	
	30-May-14	7	15	EZVI-3-MW2-1	250	20	<2.0	<2.0	--	<2.0	1600	<2.0	3.7	
			16	EZVI-3-MW2-2	240	18	<2.0	<2.0	--	<2.0	1500	<2.0	3.9	
				Average Concentration (mg/L)	240	19	ND	ND	--	ND	1500	ND	3.8	
				Standard Deviation (mmoles)	1.1E-02	2.2E-03	0.0E+00	0.0E+00	--	0.0E+00	1.1E-01	0.0E+00	4.7E-03	
				Average Total mmoles	**0.39**	**0.040**	**ND**	**ND**	**4.3E-01**	**ND**	**3.7**	**ND**	**0.18**	
	06-Jun-14	14	15	EZVI-3-MW2-1	300	20	<2.0	<2.0	--	<2.0	1500	<2.0	3.9	
			16	EZVI-3-MW2-2	200	20	<2.0	<2.0	--	<2.0	1400	<2.0	3.9	
				Average Concentration (mg/L)	250	20	ND	ND	--	ND	1400	ND	3.9	
				Standard Deviation (mmoles)	1.1E-01	8.6E-04	0.0E+00	0.0E+00	--	0.0E+00	7.6E-02	0.0E+00	1.2E-04	
				Average Total mmoles	**0.4**	**0.043**	**ND**	**ND**	**4.4E-01**	**ND**	**3.5**	**ND**	**0.18**	
	13-Jun-14	21	15	EZVI-3-MW2-1	240	20	<0.40	1.3	--	<0.40	1500	<0.40	0.82	
			16	EZVI-3-MW2-2	220	18	<0.40	1.3	--	<0.40	1400	<0.40	0.79	
				Average Concentration (mg/L)	230	19	ND	1.3	--	ND	1500	ND	0.81	
				Standard Deviation (mmoles)	1.8E-02	2.7E-03	0.0E+00	1.5E-04	--	0.0E+00	1.2E-01	0.0E+00	7.6E-04	
				Average Total mmoles	**0.36**	**0.04**	**ND**	**0.018**	**4.2E-01**	**ND**	**3.6**	**ND**	**0.037**	
	08-Jul-14	46												Began shaking reactors daily.
	13-Aug-14	82	15	EZVI-3-MW2-1	250	21	<2.0	<2.0	--	<2.0	1600	<2.0	3.6	
			16	EZVI-3-MW2-2	190	17	<2.0	2.7	--	<2.0	1400	<2.0	3.5	
				Average Concentration (mg/L)	220	19	ND	1.3	--	ND	1500	ND	3.5	
				Standard Deviation (mmoles)	6.2E-02	6.0E-03	0.0E+00	2.5E-02	--	0.0E+00	4.1E-01	0.0E+00	3.7E-03	
				Average Total mmoles	**0.35**	**0.041**	**ND**	**0.017**	**4.1E-01**	**ND**	**3.6**	**ND**	**0.16**	
	14-Aug-14	83												Due to a lack of degradation, this treatment was discontinued.
20 g EZVI Amended (MW2 Location)	22-May-14	-1												Spiked with DCM and TCE to target concentrations of 3,720 mg/L and 2,020 mg/L respectively.
														Amended the first replicate with resazurin.
	23-May-14	0												Amended with 20 g EZVI.
			17	EZVI-4-MW2-1	180	11	<2.0	<2.0	--	<2.0	910	<2.0	3.7	
			18	EZVI-4-MW2-2	130	11	<2.0	<2.0	--	<2.0	900	<2.0	3.7	
				Average Concentration (mg/L)	150	11	ND	ND	--	ND	910	ND	3.7	
				Standard Deviation (mmoles)	5.9E-02	7.9E-04	0.0E+00	0.0E+00	--	0.0E+00	1.3E-02	0.0E+00	1.5E-03	
				Average Total mmoles	**0.25**	**0.023**	**ND**	**ND**	**2.8E-01**	**ND**	**2.2**	**ND**	**0.17**	

TABLE 2B: SUMMARY OF REACTOR cVOC AND DHG RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY

SiREM

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Replicate	Chlorinated Ethenes, Ethene, and Ethane						Chlorinated Methanes and Methane			Comment
					TCE	cDCE	VC	Ethene	Total Ethenes	Ethane	DCM	CM	Methane	
					mg/L	mg/L	mg/L	mg/L	mmol/bottle	mg/L	mg/L	mg/L	mg/L	
20 g EZVI Amended (MW2 Location) Continued	27-May-14	4	17	EZVI-4-MW2-1	150	12	<2.0	<2.0	--	<2.0	1100	<2.0	3.8	
			18	EZVI-4-MW2-2	150	14	<2.0	<2.0	--	<2.0	1100	<2.0	3.8	
				Average Concentration (mg/L)	150	13	ND	ND	--	ND	1100	ND	3.8	
				Standard Deviation (mmoles)	8.6E-03	3.3E-03	0.0E+00	0.0E+00	--	0.0E+00	3.3E-02	0.0E+00	1.7E-03	
				Average Total mmoles	**0.24**	**0.028**	**ND**	**ND**	**2.7E-01**	**ND**	**2.7**	**ND**	**0.18**	
	30-May-14	7	17	EZVI-4-MW2-1	270	14	<2.0	<2.0	--	<2.0	1200	<2.0	3.9	
			18	EZVI-4-MW2-2	170	14	<2.0	<2.0	--	<2.0	1200	<2.0	3.8	
				Average Concentration (mg/L)	220	14	ND	ND	--	ND	1200	ND	3.8	
				Standard Deviation (mmoles)	1.1E-01	1.3E-04	0.0E+00	0.0E+00	--	0.0E+00	4.9E-02	0.0E+00	4.0E-03	
				Average Total mmoles	**0.36**	**0.031**	**ND**	**ND**	**3.9E-01**	**ND**	**2.9**	**ND**	**0.18**	
	06-Jun-14	14	17	EZVI-4-MW2-1	130	15	<2.0	<2.0	--	<2.0	1100	<2.0	3.9	
			18	EZVI-4-MW2-2	170	18	<2.0	<2.0	--	<2.0	1100	<2.0	3.9	
				Average Concentration (mg/L)	150	17	ND	ND	--	ND	1100	ND	3.9	
				Standard Deviation (mmoles)	4.5E-02	3.6E-03	0.0E+00	0.0E+00	--	0.0E+00	3.6E-02	0.0E+00	1.4E-03	
				Average Total mmoles	**0.25**	**0.035**	**ND**	**ND**	**2.9E-01**	**ND**	**2.8**	**ND**	**0.18**	
	13-Jun-14	21	17	EZVI-4-MW2-1	150	12	<0.40	1.2	--	<0.40	1100	<0.40	0.87	
			18	EZVI-4-MW2-2	120	14	<0.40	2.2	--	0.45	1100	<0.40	0.82	
				Average Concentration (mg/L)	140	13	ND	1.7	--	0.22	1100	ND	0.84	
				Standard Deviation (mmoles)	3.9E-02	3.2E-03	0.0E+00	9.3E-03	--	6.2E-03	8.6E-03	0.0E+00	1.8E-03	
				Average Total mmoles	**0.22**	**0.028**	**ND**	**0.022**	**2.7E-01**	**0.0044**	**2.7**	**ND**	**0.039**	
	08-Jul-14	46												Began shaking reactors daily.
	13-Aug-14	82	17	EZVI-4-MW2-1	160	15	<2.0	<2.0	--	<2.0	1300	<2.0	3.8	
			18	EZVI-4-MW2-2	110	14	<2.0	6.4	--	<2.0	1200	<2.0	3.7	
				Average Concentration (mg/L)	140	14	ND	3.2	--	ND	1200	ND	3.8	
				Standard Deviation (mmoles)	6.1E-02	2.1E-03	0.0E+00	6.0E-02	--	0.0E+00	8.5E-02	0.0E+00	1.1E-03	
				Average Total mmoles	**0.22**	**0.031**	**ND**	**0.042**	**2.9E-01**	**ND**	**3.0**	**ND**	**0.17**	
	14-Aug-14	83												Due to a lack of degradation, this treatment was discontinued.
0.4 g ZVI Amended (MW2 Location)	22-May-14	-1												Spiked with DCM and TCE to target concentrations of 3,720 mg/L and 2,020 mg/L respectively.
														Amended the first replicate with resazurin.
	23-May-14	0												Amended with 0.4 g ZVI.
			19	ZVI-1-MW2-1	35	51	<2.0	<2.0	--	<2.0	2200	<2.0	3.8	
			20	ZVI-1-MW2-2	550	33	<2.0	<2.0	--	<2.0	1500	<2.0	3.8	
				Average Concentration (mg/L)	290	42	ND	ND	--	ND	1900	ND	3.8	
				Standard Deviation (mmoles)	5.9E-01	2.7E-02	0.0E+00	0.0E+00	--	0.0E+00	1.2E+00	0.0E+00	2.7E-05	
				Average Total mmoles	**0.47**	**0.089**	**ND**	**ND**	**5.6E-01**	**ND**	**4.5**	**ND**	**0.18**	
	27-May-14	4												Vented 10 mL gas from each replicate.
			19	ZVI-1-MW2-1	14	37	<2.0	<2.0	--	<2.0	1900	<2.0	3.9	
			20	ZVI-1-MW2-2	1200	47	<2.0	<2.0	--	<2.0	2100	<2.0	3.8	
				Average Concentration (mg/L)	600	42	ND	ND	--	ND	2000	ND	3.8	
				Standard Deviation (mmoles)	1.3E+00	1.5E-02	0.0E+00	0.0E+00	--	0.0E+00	4.7E-01	0.0E+00	2.5E-03	
				Average Total mmoles	**0.95**	**0.089**	**ND**	**ND**	**1.0E+00**	**ND**	**4.9**	**ND**	**0.18**	
	29-May-14	6												Vented 3 mL gas from each replicate.
														Spiked replicate 1 with TCE to a target concentration of 2,020 mg/L.
	30-May-14	7	19	ZVI-1-MW2-1	1700	37	<2.0	<2.0	--	<2.0	2100	<2.0	3.8	
			20	ZVI-1-MW2-2	1500	46	<2.0	<2.0	--	<2.0	2000	<2.0	3.9	
				Average Concentration (mg/L)	1600	42	ND	ND	--	ND	2100	ND	3.8	
				Standard Deviation (mmoles)	1.5E-01	1.4E-02	0.0E+00	0.0E+00	--	0.0E+00	5.6E-02	0.0E+00	2.9E-03	
				Average Total mmoles	**2.6**	**0.089**	**ND**	**ND**	**2.7E+00**	**ND**	**5.0**	**ND**	**0.18**	
	02-Jun-14	10												Vented 4 mL gas from each replicate.
	06-Jun-14	14	19	ZVI-1-MW2-1	1600	42	<2.0	<2.0	--	<2.0	2100	<2.0	3.9	
			20	ZVI-1-MW2-2	1500	45	<2.0	<2.0	--	<2.0	1700	<2.0	4.0	
				Average Concentration (mg/L)	1500	44	ND	ND	--	ND	1900	ND	3.9	
				Standard Deviation (mmoles)	1.5E-01	4.5E-03	0.0E+00	0.0E+00	--	0.0E+00	7.5E-01	0.0E+00	1.7E-03	
				Average Total mmoles	**2.4**	**0.093**	**ND**	**ND**	**2.5E+00**	**ND**	**4.7**	**ND**	**0.18**	

TABLE 2B: SUMMARY OF REACTOR cVOC AND DHG RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY

SiREM

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Replicate	Chlorinated Ethenes, Ethene, and Ethane						Chlorinated Methanes and Methane			Comment
					TCE	cDCE	VC	Ethene	Total Ethenes	Ethane	DCM	CM	Methane	
					mg/L	mg/L	mg/L	mg/L	mmol/bottle	mg/L	mg/L	mg/L	mg/L	
0.4 g ZVI Amended (MW2 Location) Continued	13-Jun-14	21	19	ZVI-1-MW2-1	1600	39	<2.0	<2.0	--	<2.0	2000	<2.0	3.8	
			20	ZVI-1-MW2-2	840	28	<2.0	<2.0	--	<2.0	1100	<2.0	3.8	
				Average Concentration (mg/L)	1200	34	ND	ND	--	ND	1500	ND	3.8	
				Standard Deviation (mmoles)	8.1E-01	1.7E-02	0.0E+00	0.0E+00	--	0.0E+00	1.6E+00	0.0E+00	4.9E-04	
				Average Total mmoles	**1.9**	**0.072**	**ND**	**ND**	**2.0E+00**	**ND**	**3.8**	**ND**	**0.18**	
	08-Jul-14	46												Began shaking reactors daily.
	09-Jul-14	47												Vented 10 mL gas from each replicate.
	15-Jul-14	53												Vented 5 mL gas from each replicate.
	13-Aug-14	82	19	ZVI-1-MW2-1	400	14	<2.0	<2.0	--	<2.0	730	<2.0	3.7	
			20	ZVI-1-MW2-2	380	22	<2.0	<2.0	--	<2.0	880	<2.0	3.7	
				Average Concentration (mg/L)	390	18	ND	ND	--	ND	810	ND	3.7	
				Standard Deviation (mmoles)	2.1E-02	1.1E-02	0.0E+00	0.0E+00	--	0.0E+00	2.5E-01	0.0E+00	7.2E-04	
				Average Total mmoles	**0.62**	**0.038**	**ND**	**ND**	**6.6E-01**	**ND**	**2.0**	**ND**	**0.17**	
	03-Sep-14	103	19	ZVI-1-MW2-1	140	6.9	<2.0	<2.0	--	<2.0	390	<2.0	3.7	
			20	ZVI-1-MW2-2	150	12	<2.0	<2.0	--	<2.0	550	<2.0	3.7	
				Average Concentration (mg/L)	140	9.4	ND	ND	--	ND	470	ND	3.7	
				Standard Deviation (mmoles)	8.4E-03	7.5E-03	0.0E+00	0.0E+00	--	0.0E+00	2.8E-01	0.0E+00	7.0E-04	
				Average Total mmoles	**0.23**	**0.020**	**ND**	**ND**	**2.5E-01**	**ND**	**1.2**	**ND**	**0.17**	
	24-Sep-14	124	19	ZVI-1-MW2-1	77	4.3	<2.0	<2.0	--	<2.0	290	<2.0	3.5	
			20	ZVI-1-MW2-2	130	11	<2.0	<2.0	--	<2.0	490	<2.0	3.8	
				Average Concentration (mg/L)	110	7.6	ND	ND	--	ND	390	ND	3.6	
				Standard Deviation (mmoles)	6.5E-02	9.7E-03	0.0E+00	0.0E+00	--	0.0E+00	3.5E-01	0.0E+00	7.3E-03	
				Average Total mmoles	**0.17**	**0.016**	**ND**	**ND**	**1.9E-01**	**ND**	**0.96**	**ND**	**0.17**	
	15-Oct-14	145	19	ZVI-1-MW2-1	80	4.8	<2.0	<2.0	--	<2.0	5.3	<2.0	3.5	
			20	ZVI-1-MW2-2	150	13	<2.0	<2.0	--	<2.0	600	<2.0	3.5	
				Average Concentration (mg/L)	110	8.7	ND	ND	--	ND	300	ND	3.5	
				Standard Deviation (mmoles)	7.6E-02	1.2E-02	0.0E+00	0.0E+00	--	0.0E+00	1.0E+00	0.0E+00	3.5E-04	
				Average Total mmoles	**0.18**	**0.019**	**ND**	**ND**	**2.7E-01**	**ND**	**0.74**	**ND**	**0.16**	
	12-Nov-14	173	19	ZVI-1-MW2-1	63	4.3	<2.0	<2.0	--	<2.0	280	<2.0	3.6	
			20	ZVI-1-MW2-2	110	10	<2.0	<2.0	--	<2.0	480	<2.0	3.7	
				Average Concentration (mg/L)	85	7.4	ND	ND	--	ND	380	ND	3.6	
				Standard Deviation (mmoles)	5.0E-02	9.3E-03	0.0E+00	0.0E+00	--	0.0E+00	3.4E-01	0.0E+00	4.1E-03	
				Average Total mmoles	**0.14**	**0.016**	**ND**	**ND**	**1.6E-01**	**ND**	**0.93**	**ND**	**0.17**	
	21-Nov-14	182												Amended with lactate to a target concentration of 23 mg/L.
	22-Dec-14	213	19	ZVI-1-MW2-1	61	6.5	<2.0	<2.0	--	<2.0	320	<2.0	3.6	
			20	ZVI-1-MW2-2	130	13	<2.0	<2.0	--	<2.0	590	<2.0	3.6	
				Average Concentration (mg/L)	97	9.8	ND	ND	--	ND	460	ND	3.6	
				Standard Deviation (mmoles)	8.2E-02	9.9E-03	0.0E+00	0.0E+00	--	0.0E+00	4.7E-01	0.0E+00	1.5E-04	
				Average Total mmoles	**0.16**	**0.021**	**ND**	**ND**	**1.8E-01**	**ND**	**1.1**	**ND**	**0.17**	
3.0 g ZVI Amended (MW2 Location)	22-May-14	-1												Amended the first replicate with resazurin.
														Spiked with DCM and TCE to target concentrations of 3,720 mg/L and 2,020 mg/L respectively.
	23-May-14	0												Amended with 3 g ZVI.
			21	ZVI-2-MW2-1	750	41	<2.0	<2.0	--	<2.0	1900	<2.0	3.8	
			22	ZVI-2-MW2-2	650	36	<2.0	<2.0	--	<2.0	1700	<2.0	3.9	
				Average Concentration (mg/L)	700	39	ND	ND	--	ND	1800	ND	3.8	
				Standard Deviation (mmoles)	1.1E-01	7.5E-03	0.0E+00	0.0E+00	--	0.0E+00	3.7E-01	0.0E+00	4.9E-03	
				Average Total mmoles	**1.1**	**0.082**	**ND**	**ND**	**1.2E+00**	**ND**	**4.3**	**ND**	**0.18**	
	27-May-14	4												Vented 60 mL gas from each replicate.
			21	ZVI-2-MW2-1	810	33	<2.0	2.1	--	<2.0	1500	<2.0	4.0	
			22	ZVI-2-MW2-2	990	42	<2.0	3.0	--	<2.0	1900	<2.0	4.1	
				Average Concentration (mg/L)	900	37	ND	2.6	--	ND	1700	ND	4.0	
				Standard Deviation (mmoles)	2.0E-01	1.3E-02	0.0E+00	7.9E-03	--	0.0E+00	6.0E-01	0.0E+00	3.1E-03	
				Average Total mmoles	**1.4**	**0.080**	**ND**	**0.034**	**1.5E+00**	**ND**	**4.2**	**ND**	**0.19**	
	29-May-14	6												Vented 66 mL gas from each replicate.

TABLE 2B: SUMMARY OF REACTOR cVOC AND DHG RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Replicate	Chlorinated Ethenes, Ethene, and Ethane						Chlorinated Methanes and Methane			Comment
					TCE	cDCE	VC	Ethene	Total Ethenes	Ethane	DCM	CM	Methane	
					mg/L	mg/L	mg/L	mg/L	mmol/bottle	mg/L	mg/L	mg/L	mg/L	
3.0 g ZVI Amended (MW2 Location) Continued	30-May-14	7	21	ZVI-2-MW2-1	1400	43	<2.0	<2.0	--	<2.0	1900	<2.0	3.9	
			22	ZVI-2-MW2-2	1000	39	<2.0	<2.0	--	<2.0	1700	<2.0	3.9	
				Average Concentration (mg/L)	1200	41	ND	ND	--	ND	1800	ND	3.9	
				Standard Deviation (mmoles)	4.5E-01	5.6E-03	0.0E+00	0.0E+00	--	0.0E+00	3.8E-01	0.0E+00	2.7E-03	
				Average Total mmoles	**2.0**	**0.087**	**ND**	**ND**	**2.1E+00**	**ND**	**4.3**	**ND**	**0.18**	
	02-Jun-14	10												Vented 5 mL gas from each replicate.
	06-Jun-14	14	21	ZVI-2-MW2-1	400	23	<2.0	<2.0	--	<2.0	1000	<2.0	3.9	
			22	ZVI-2-MW2-2	580	27	<2.0	<2.0	--	<2.0	1100	<2.0	3.9	
				Average Concentration (mg/L)	490	25	ND	ND	--	ND	1000	ND	3.9	
				Standard Deviation (mmoles)	2.1E-01	6.0E-03	0.0E+00	0.0E+00	--	0.0E+00	5.8E-03	0.0E+00	1.3E-03	
				Average Total mmoles	**0.78**	**0.054**	**ND**	**ND**	**8.3E-01**	**ND**	**2.6**	**ND**	**0.18**	
	13-Jun-14	21	21	ZVI-2-MW2-1	290	22	<0.40	0.67	--	<0.40	1100	1.5	0.86	
			22	ZVI-2-MW2-2	580	33	<0.40	0.94	--	<0.40	1200	2.0	0.85	
				Average Concentration (mg/L)	430	28	ND	0.8	--	ND	1200	1.7	0.85	
				Standard Deviation (mmoles)	3.2E-01	1.8E-02	0.0E+00	2.5E-03	--	0.0E+00	1.8E-01	1.5E-03	8.9E-05	
				Average Total mmoles	**0.69**	**0.059**	**ND**	**0.011**	**7.6E-01**	**ND**	**2.9**	**0.0069**	**0.04**	
	08-Jul-14	46												Began shaking reactors daily.
	09-Jul-14	47												Vented 10 mL gas from each replicate.
	15-Jul-14	53												Vented 5 mL gas from each replicate.
	13-Aug-14	82	21	ZVI-2-MW2-1	6.9	<2.0	<2.0	<2.0	--	<2.0	450	4.0	3.9	
			22	ZVI-2-MW2-2	35	<2.0	<2.0	<2.0	--	<2.0	750	6.8	3.9	
				Average Concentration (mg/L)	21	ND	ND	ND	--	ND	600	5.4	3.9	
				Standard Deviation (mmoles)	3.2E-02	0.0E+00	0.0E+00	0.0E+00	--	0.0E+00	5.1E-01	7.8E-03	1.4E-03	
				Average Total mmoles	**0.033**	**ND**	**ND**	**ND**	**3.3E-02**	**ND**	**1.5**	**0.022**	**0.18**	
	03-Sep-14	103	21	ZVI-2-MW2-1	<2.0	<2.0	<2.0	<2.0	--	<2.0	670	8.4	5.1	
			22	ZVI-2-MW2-2	23	<2.0	<2.0	<2.0	--	<2.0	1100	13	4.2	
				Average Concentration (mg/L)	12	ND	ND	ND	--	ND	880	11	4.7	
				Standard Deviation (mmoles)	2.7E-02	0.0E+00	0.0E+00	0.0E+00	--	0.0E+00	7.3E-01	1.3E-02	2.8E-02	
				Average Total mmoles	**0.019**	**ND**	**ND**	**ND**	**1.9E-02**	**ND**	**2.1**	**0.043**	**0.22**	
	24-Sep-14	124	21	ZVI-2-MW2-1	<2.0	<2.0	<2.0	<2.0	--	<2.0	540	8.7	4.6	
			22	ZVI-2-MW2-2	6.9	<2.0	<2.0	<2.0	--	<2.0	910	13	4.4	
				Average Concentration (mg/L)	3.5	ND	ND	ND	--	ND	730	11	4.5	
				Standard Deviation (mmoles)	7.8E-03	0.0E+00	0.0E+00	0.0E+00	--	0.0E+00	6.3E-01	1.3E-02	6.8E-03	
				Average Total mmoles	**0.0055**	**ND**	**ND**	**ND**	**5.5E-03**	**ND**	**1.8**	**0.044**	**0.21**	
	15-Oct-14	145	21	ZVI-2-MW2-1	8.6	<2.0	<2.0	<2.0	--	<2.0	530	9.9	3.9	
			22	ZVI-2-MW2-2	11	<2.0	<2.0	<2.0	--	<2.0	870	16	4.9	
				Average Concentration (mg/L)	9.6	ND	ND	ND	--	ND	700	13	4.4	
				Standard Deviation (mmoles)	2.2E-03	0.0E+00	0.0E+00	0.0E+00	--	0.0E+00	5.8E-01	1.7E-02	3.3E-02	
				Average Total mmoles	**0.015**	**ND**	**ND**	**ND**	**1.5E-02**	**ND**	**1.7**	**0.052**	**0.20**	
	12-Nov-14	173	21	ZVI-2-MW2-1	<2.0	<2.0	<2.0	<2.0	--	<2.0	36	<2.0	3.6	
			22	ZVI-2-MW2-2	<2.0	<2.0	<2.0	<2.0	--	<2.0	480	11	4.2	
				Average Concentration (mg/L)	ND	ND	ND	ND	--	ND	260	5.4	3.9	
				Standard Deviation (mmoles)	0.0E+00	0.0E+00	0.0E+00	0.0E+00	--	0.0E+00	7.7E-01	3.1E-02	1.9E-02	
				Average Total mmoles	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.64**	**0.022**	**0.18**	
	21-Nov-14	182												Amended with lactate to a target concentration of 23 mg/L.
	22-Dec-14	213	21	ZVI-2-MW2-1	<2.0	<2.0	<2.0	<2.0	--	<2.0	480	14	4.9	
			22	ZVI-2-MW2-2	<2.0	<2.0	<2.0	<2.0	--	<2.0	520	16	4.5	
				Average Concentration (mg/L)	ND	ND	ND	ND	--	ND	500	15	4.7	
				Standard Deviation (mmoles)	0.0E+00	0.0E+00	0.0E+00	0.0E+00	--	0.0E+00	5.7E-02	3.7E-03	1.4E-02	
				Average Total mmoles	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**1.2**	**0.06**	**0.22**	
10 g ZVI Amended (MW2 Location)	22-May-14	-1												Spiked with DCM and TCE to target concentrations of 3,720 mg/L and 2,020 mg/L respectively.
														Amended the first replicate with resazurin.
	23-May-14	0												Amended with 10 g ZVI.
			23	ZVI-3-MW2-1	810	53	<2.0	<2.0	--	<2.0	2100	<2.0	9.2	
			24	ZVI-3-MW2-2	520	38	<2.0	<2.0	--	<2.0	1800	<2.0	4.3	
				Average Concentration (mg/L)	660	46	ND	ND	--	ND	1900	ND	6.7	
				Standard Deviation (mmoles)	3.2E-01	2.1E-02	0.0E+00	0.0E+00	--	0.0E+00	5.3E-01	0.0E+00	1.6E-01	
				Average Total mmoles	**1.1**	**0.097**	**ND**	**ND**	**1.2E+00**	**ND**	**4.7**	**ND**	**0.31**	

TABLE 2B: SUMMARY OF REACTOR cVOC AND DHG RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY

SiREM

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Replicate	Chlorinated Ethenes, Ethene, and Ethane						Chlorinated Methanes and Methane			Comment
					TCE	cDCE	VC	Ethene	Total Ethenes	Ethane	DCM	CM	Methane	
					mg/L	mg/L	mg/L	mg/L	mmol/bottle	mg/L	mg/L	mg/L	mg/L	
10 g ZVI Amended (MW2 Location) Continued	27-May-14	4												Vented 60 mL gas from each replicate.
			23	ZVI-3-MW2-1	670	33	<2.0	3.0	--	<2.0	1600	<2.0	4.2	
			24	ZVI-3-MW2-2	1100	46	<2.0	3.8	--	<2.0	2000	<2.0	4.2	
				Average Concentration (mg/L)	870	39	ND	3.4	--	ND	1800	ND	4.2	
				Standard Deviation (mmoles)	4.6E-01	1.9E-02	0.0E+00	7.4E-03	--	0.0E+00	6.5E-01	0.0E+00	5.9E-04	
				Average Total mmoles	**1.4**	**0.084**	**ND**	**0.044**	**1.5E+00**	**ND**	**4.3**	**ND**	**0.20**	
	29-May-14	6												Vented 88 mL gas from each replicate.
	30-May-14	7	23	ZVI-3-MW2-1	1100	41	<2.0	<2.0	--	<2.0	1800	<2.0	4.0	
			24	ZVI-3-MW2-2	1000	44	<2.0	<2.0	--	<2.0	1700	<2.0	3.9	
				Average Concentration (mg/L)	1100	43	ND	ND	--	ND	1700	ND	4.0	
				Standard Deviation (mmoles)	5.9E-02	5.2E-03	0.0E+00	0.0E+00	--	0.0E+00	1.4E-01	0.0E+00	1.0E-03	
				Average Total mmoles	**1.7**	**0.09**	**ND**	**ND**	**1.8E+00**	**ND**	**4.3**	**ND**	**0.18**	
	02-Jun-14	10												Vented 15 mL gas from each replicate.
	06-Jun-14	14	23	ZVI-3-MW2-1	770	46	<2.0	<2.0	--	<2.0	1700	3.3	4.0	
			24	ZVI-3-MW2-2	470	51	<2.0	<2.0	--	<2.0	1600	3.3	3.3	
				Average Concentration (mg/L)	620	48	ND	ND	--	ND	1600	3.3	3.6	
				Standard Deviation (mmoles)	3.4E-01	7.6E-03	0.0E+00	0.0E+00	--	0.0E+00	2.1E-01	2.5E-04	2.1E-02	
				Average Total mmoles	**0.98**	**0.1**	**ND**	**ND**	**1.1E+00**	**ND**	**4.0**	**0.013**	**0.17**	
	13-Jun-14	21	23	ZVI-3-MW2-1	490	41	<0.40	1.5	--	0.47	1600	5.5	0.92	
			24	ZVI-3-MW2-2	270	32	<0.40	1.1	--	<0.40	1400	5.5	0.91	
				Average Concentration (mg/L)	380	37	ND	1.3	--	0.24	1500	5.5	0.92	
				Standard Deviation (mmoles)	2.5E-01	1.4E-02	0.0E+00	3.6E-03	--	6.6E-03	3.0E-01	2.3E-04	4.5E-04	
				Average Total mmoles	**0.61**	**0.078**	**ND**	**0.017**	**7.1E-01**	**0.0047**	**3.7**	**0.022**	**0.043**	
	08-Jul-14	46												Began shaking reactors daily.
	09-Jul-14	47												Vented 10 mL gas from each replicate.
	15-Jul-14	53												Vented 5 mL gas from each replicate.
	13-Aug-14	82												Due to a lack of sampling volume, replicate 2 was discontinued.
			23	ZVI-3-MW2-1	<2.0	<2.0	<2.0	<2.0	--	<2.0	790	14	4.1	
				Average Concentration (mg/L)	ND	ND	ND	ND	--	ND	790	14	4.1	
				Standard Deviation (mmoles)	0.0E+00	0.0E+00	0.0E+00	0.0E+00	--	0.0E+00	0.0E+00	0.0E+00	0.0E+00	
				Average Total mmoles	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**1.9**	**0.057**	**0.19**	
	03-Sep-14	103	23	ZVI-3-MW2-1	<2.0	<2.0	<2.0	<2.0	--	<2.0	880	20	4.4	
				Average Concentration (mg/L)	ND	ND	ND	ND	--	ND	880	20	4.4	
				Standard Deviation (mmoles)	0.0E+00	0.0E+00	0.0E+00	0.0E+00	--	0.0E+00	0.0E+00	0.0E+00	0.0E+00	
				Average Total mmoles	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**2.1**	**0.08**	**0.2**	
	24-Sep-14	124	23	ZVI-3-MW2-1	<2.0	<2.0	<2.0	<2.0	--	<2.0	680	23	5.4	
				Average Concentration (mg/L)	ND	ND	ND	ND	--	ND	680	23	5.4	
				Standard Deviation (mmoles)	0.0E+00	0.0E+00	0.0E+00	0.0E+00	--	0.0E+00	0.0E+00	0.0E+00	0.0E+00	
				Average Total mmoles	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**1.7**	**0.091**	**0.25**	
	25-Sep-14	125												Due to a lack of sampling volume, replicate 1 was discontinued.
20 g ZVI Amended (MW2 Location)	22-May-14	-1												Spiked with DCM and TCE to target concentrations of 3,720 mg/L and 2,020 mg/L respectively.
														Amended the first replicate with resazurin.
	23-May-14	0												Amended with 20 g ZVI.
			25	ZVI-4-MW2-1	810	46	<2.0	<2.0	--	<2.0	2200	<2.0	5.5	
			26	ZVI-4-MW2-2	870	40	<2.0	<2.0	--	<2.0	1800	<2.0	4.0	
				Average Concentration (mg/L)	840	43	ND	ND	--	ND	2000	ND	4.7	
				Standard Deviation (mmoles)	6.9E-02	8.9E-03	0.0E+00	0.0E+00	--	0.0E+00	6.1E-01	0.0E+00	4.9E-02	
				Average Total mmoles	**1.3**	**0.092**	**ND**	**ND**	**1.4E+00**	**ND**	**4.9**	**ND**	**0.22**	
	27-May-14	4												Vented 5 mL gas from each replicate.
			25	ZVI-4-MW2-1	560	31	<2.0	<2.0	--	<2.0	1600	<2.0	5.0	
			26	ZVI-4-MW2-2	850	47	<2.0	3.0	--	<2.0	1900	<2.0	4.2	
				Average Concentration (mg/L)	710	39	ND	1.5	--	ND	1700	ND	4.6	
				Standard Deviation (mmoles)	3.3E-01	2.4E-02	0.0E+00	2.8E-02	--	0.0E+00	5.7E-01	0.0E+00	2.7E-02	
				Average Total mmoles	**1.1**	**0.084**	**ND**	**0.020**	**1.2E+00**	**ND**	**4.2**	**ND**	**0.21**	
	29-May-14	6												Vented 59 mL gas from each replicate.

TABLE 2B: SUMMARY OF REACTOR cVOC AND DHG RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Replicate	Chlorinated Ethenes, Ethene, and Ethane						Chlorinated Methanes and Methane			Comment
					TCE	cDCE	VC	Ethene	Total Ethenes	Ethane	DCM	CM	Methane	
					mg/L	mg/L	mg/L	mg/L	mmol/bottle	mg/L	mg/L	mg/L	mg/L	
20 g ZVI Amended (MW2 Location) Continued	30-May-14	7	25	ZVI-4-MW2-1	72	2.9	<2.0	11	--	7.4	79	<2.0	6.7	
			26	ZVI-4-MW2-2	1000	64	<2.0	<2.0	--	<2.0	1900	3.6	3.9	
				Average Concentration (mg/L)	560	33	ND	5.6	--	3.7	970	1.8	5.3	
				Standard Deviation (mmoles)	1.1E+00	9.2E-02	0.0E+00	1.0E-01	--	1.0E-01	3.1E+00	1.0E-02	9.1E-02	
				Average Total mmoles	**0.90**	**0.071**	**ND**	**0.074**	**1.1E+00**	**0.073**	**2.4**	**0.0072**	**0.24**	
	02-Jun-14	10												Vented 4.5 mL gas from each replicate.
	06-Jun-14	14	25	ZVI-4-MW2-1	230	30	<2.0	<2.0	--	<2.0	1200	4.6	4.5	
			26	ZVI-4-MW2-2	330	45	<2.0	<2.0	--	<2.0	1400	5.5	4.1	
				Average Concentration (mg/L)	280	38	ND	ND	--	ND	1300	5.0	4.3	
				Standard Deviation (mmoles)	1.1E-01	2.3E-02	0.0E+00	0.0E+00	--	0.0E+00	3.5E-01	2.7E-03	1.5E-02	
				Average Total mmoles	**0.44**	**0.080**	**ND**	**ND**	**5.2E-01**	**ND**	**3.1**	**0.02**	**0.20**	
	13-Jun-14	21	25	ZVI-4-MW2-1	96	20	<0.40	0.90	--	<0.40	1200	7.5	1.0	
			26	ZVI-4-MW2-2	110	26	<0.40	1.0	--	<0.40	1300	9.0	1.4	
				Average Concentration (mg/L)	100	23	ND	0.95	--	ND	1300	8.3	1.2	
				Standard Deviation (mmoles)	1.7E-02	9.2E-03	0.0E+00	1.0E-03	--	0.0E+00	2.9E-01	4.3E-03	1.2E-02	
				Average Total mmoles	**0.17**	**0.049**	**ND**	**0.013**	**2.3E-01**	**ND**	**3.1**	**0.033**	**0.055**	
	14-Jun-14	22												Due to a lack of sampling volume, this treatment was discontinued.
Anaerobic Active Control (MW2 Location) - Extension	22-Jul-14	-1												Spiked with DCM and TCE to target concentrations of 3,720 mg/L and 2,020 mg/L respectively.
			27	ANAC-1	1400	37	<2.0	<2.0	--	<2.0	1900	<2.0	3.7	
			28	ANAC-2	1100	36	<2.0	<2.0	--	<2.0	1900	<2.0	3.8	
				Average Concentration (mg/L)	1300	37	ND	ND	--	ND	1900	ND	3.7	
				Standard Deviation (mmoles)	3.3E-01	2.3E-03	0.0E+00	0.0E+00	--	0.0E+00	6.1E-02	0.0E+00	1.9E-03	
				Average Total mmoles	**2.0**	**0.078**	**ND**	**ND**	**2.1E+00**	**ND**	**4.6**	**ND**	**0.17**	
	23-Jul-14	0	27	ANAC-1	1600	44	<2.0	<2.0	--	<2.0	2200	<2.0	3.8	
			28	ANAC-2	1700	46	<2.0	<2.0	--	<2.0	2300	<2.0	3.9	
				Average Concentration (mg/L)	1600	45	ND	ND	--	ND	2200	ND	3.8	
				Standard Deviation (mmoles)	6.6E-02	2.3E-03	0.0E+00	0.0E+00	--	0.0E+00	1.3E-01	0.0E+00	1.1E-03	
				Average Total mmoles	**2.6**	**0.096**	**ND**	**ND**	**2.7E+00**	**ND**	**5.5**	**ND**	**0.18**	
	25-Jul-14	2	27	ANAC-1	1700	42	<2.0	<2.0	--	<2.0	2200	<2.0	3.7	
			28	ANAC-2	1600	41	<2.0	<2.0	--	<2.0	2100	<2.0	3.7	
				Average Concentration (mg/L)	1700	41	ND	ND	--	ND	2200	ND	3.7	
				Standard Deviation (mmoles)	8.0E-02	1.2E-03	0.0E+00	0.0E+00	--	0.0E+00	2.1E-01	0.0E+00	5.4E-05	
				Average Total mmoles	**2.7**	**0.088**	**ND**	**ND**	**2.8E+00**	**ND**	**5.3**	**ND**	**0.17**	
	30-Jul-14	7	27	ANAC-1	1600	39	<2.0	<2.0	--	<2.0	2100	<2.0	3.8	
			28	ANAC-2	1600	39	<2.0	<2.0	--	<2.0	2000	<2.0	3.7	
				Average Concentration (mg/L)	1600	39	ND	ND	--	ND	2000	ND	3.8	
				Standard Deviation (mmoles)	2.0E-02	4.5E-04	0.0E+00	0.0E+00	--	0.0E+00	9.5E-02	0.0E+00	7.2E-04	
				Average Total mmoles	**2.6**	**0.084**	**ND**	**ND**	**2.7E+00**	**ND**	**5.0**	**ND**	**0.17**	
	06-Aug-14	14	27	ANAC-1	2000	48	4.2	<2.0	--	<2.0	2400	<2.0	3.8	
			28	ANAC-2	1800	43	<2.0	<2.0	--	<2.0	2200	<2.0	3.8	
				Average Concentration (mg/L)	1900	46	2.1	ND	--	ND	2300	ND	3.8	
				Standard Deviation (mmoles)	2.5E-01	8.3E-03	1.0E-02	0.0E+00	--	0.0E+00	3.2E-01	0.0E+00	1.0E-03	
				Average Total mmoles	**3.1**	**0.097**	**0.0074**	**ND**	**3.2E+00**	**ND**	**5.6**	**ND**	**0.18**	
	13-Aug-14	21	27	ANAC-1	1400	33	<2.0	<2.0	--	<2.0	1800	<2.0	3.7	
			28	ANAC-2	1200	30	<2.0	<2.0	--	<2.0	1600	<2.0	3.7	
				Average Concentration (mg/L)	1300	31	ND	ND	--	ND	1700	ND	3.7	
				Standard Deviation (mmoles)	2.0E-01	5.4E-03	0.0E+00	0.0E+00	--	0.0E+00	3.7E-01	0.0E+00	1.8E-03	
				Average Total mmoles	**2.0**	**0.067**	**ND**	**ND**	**2.1E+00**	**ND**	**4.1**	**ND**	**0.17**	
	03-Sep-14	42	27	ANAC-1	2000	45	<2.0	<2.0	--	<2.0	2300	<2.0	3.7	
			28	ANAC-2	1800	43	<2.0	<2.0	--	<2.0	2200	<2.0	3.6	
				Average Concentration (mg/L)	1900	44	ND	ND	--	ND	2300	ND	3.7	
				Standard Deviation (mmoles)	2.5E-01	4.2E-03	0.0E+00	0.0E+00	--	0.0E+00	2.9E-01	0.0E+00	1.8E-03	
				Average Total mmoles	**3.0**	**0.094**	**ND**	**ND**	**3.1E+00**	**ND**	**5.5**	**ND**	**0.17**	
	24-Sep-14	63	27	ANAC-1	1900	44	<2.0	<2.0	--	<2.0	2200	<2.0	3.8	
			28	ANAC-2	1600	38	<2.0	<2.0	--	<2.0	2100	<2.0	3.8	
				Average Concentration (mg/L)	1700	41	ND	ND	--	ND	2200	ND	3.8	
				Standard Deviation (mmoles)	3.2E-01	8.1E-03	0.0E+00	0.0E+00	--	0.0E+00	2.3E-01	0.0E+00	1.1E-03	
				Average Total mmoles	**2.8**	**0.087**	**ND**	**ND**	**2.9E+00**	**ND**	**5.3**	**ND**	**0.17**	

TABLE 2B: SUMMARY OF REACTOR cVOC AND DHG RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY

SiREM

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Replicate	Chlorinated Ethenes, Ethene, and Ethane						Chlorinated Methanes and Methane			Comment
					TCE	cDCE	VC	Ethene	Total Ethenes	Ethane	DCM	CM	Methane	
					mg/L	mg/L	mg/L	mg/L	mmol/bottle	mg/L	mg/L	mg/L	mg/L	
Anaerobic Active Control (MW2 Location) - Extension Continued	15-Oct-14	84	27	ANAC-1	1400	32	<2.0	<2.0	--	<2.0	1700	<2.0	3.5	
			28	ANAC-2	1300	28	<2.0	<2.0	--	<2.0	1600	<2.0	3.5	
				Average Concentration (mg/L)	1300	30	ND	ND	--	ND	1600	ND	3.5	
				Standard Deviation (mmoles)	1.7E-01	5.6E-03	0.0E+00	0.0E+00	--	0.0E+00	2.1E-01	0.0E+00	2.6E-03	
				Average Total mmoles	**2.1**	**0.064**	**ND**	**ND**	**2.2E+00**	**ND**	**4.0**	**ND**	**0.16**	
	12-Nov-14	112	27	ANAC-1	2400	37	<2.0	<2.0	--	<2.0	1900	<2.0	3.7	
			28	ANAC-2	1100	23	<2.0	<2.0	--	<2.0	1400	<2.0	3.7	
				Average Concentration (mg/L)	1800	30	ND	ND	--	ND	1600	ND	3.7	
				Standard Deviation (mmoles)	1.5E+00	2.1E-02	0.0E+00	0.0E+00	--	0.0E+00	1.0E+00	0.0E+00	5.7E-04	
				Average Total mmoles	**2.8**	**0.064**	**ND**	**ND**	**2.9E+00**	**ND**	**4.0**	**ND**	**0.17**	
EZVI Mixed with Soil (MW2 Location) - Extension	22-Jul-14	-1												Mixed 10 g of EZVI into the geologic material, then added site groundwater.
														Spiked with DCM and TCE to target concentrations of 3,720 mg/L and 2,020 mg/L respectively.
	25-Jul-14	2												Vented 16.5 mL of gas from each replicate.
			29	EZVI-S-1	320	21	<2.0	2.0	--	<2.0	1600	<2.0	3.8	
			30	EZVI-S-2	330	20	<2.0	<2.0	--	<2.0	1600	<2.0	3.8	
				Average Concentration (mg/L)	330	20	ND	1.0	--	ND	1600	ND	3.8	
				Standard Deviation (mmoles)	8.5E-03	1.3E-03	0.0E+00	1.9E-02	--	0.0E+00	1.0E-02	0.0E+00	7.6E-04	
				Average Total mmoles	**0.52**	**0.043**	**ND**	**0.013**	**5.8E-01**	**ND**	**3.9**	**ND**	**0.17**	
	30-Jul-14	7	29	EZVI-S-1	340	23	<2.0	3.6	--	<2.0	1800	<2.0	3.7	
			30	EZVI-S-2	380	23	<2.0	3.1	--	<2.0	1800	<2.0	3.7	
				Average Concentration (mg/L)	360	23	ND	3.4	--	ND	1800	ND	3.7	
				Standard Deviation (mmoles)	4.1E-02	6.2E-04	0.0E+00	4.2E-03	--	0.0E+00	6.4E-02	0.0E+00	1.7E-03	
				Average Total mmoles	**0.57**	**0.048**	**ND**	**0.044**	**6.6E-01**	**ND**	**4.3**	**ND**	**0.17**	
	06-Aug-14	14												Vented 19 mL gas from each replicate.
			29	EZVI-S-1	260	19	<2.0	3.9	--	<2.0	1400	<2.0	3.8	
			30	EZVI-S-2	310	15	<2.0	9.2	--	6.9	1100	<2.0	4.2	
				Average Concentration (mg/L)	290	17	ND	6.5	--	3.5	1200	ND	4.0	
				Standard Deviation (mmoles)	4.9E-02	5.6E-03	0.0E+00	4.9E-02	--	9.7E-02	5.8E-01	0.0E+00	1.4E-02	
				Average Total mmoles	**0.46**	**0.036**	**ND**	**0.086**	**5.8E-01**	**0.068**	**3.1**	**ND**	**0.19**	
	13-Aug-14	21	29	EZVI-S-1	140	11	<2.0	2.3	--	<2.0	860	<2.0	3.7	
			30	EZVI-S-2	120	8.1	<2.0	3.9	--	3.3	780	<2.0	2.6	
				Average Concentration (mg/L)	130	9.5	ND	3.1	--	1.6	820	ND	3.2	
				Standard Deviation (mmoles)	2.6E-02	4.2E-03	0.0E+00	1.4E-02	--	4.6E-02	1.3E-01	0.0E+00	3.6E-02	
				Average Total mmoles	**0.21**	**0.020**	**ND**	**0.041**	**2.7E-01**	**0.033**	**2.0**	**ND**	**0.15**	
	03-Sep-14	42	29	EZVI-S-1	280	23	<2.0	3.8	--	<2.0	1800	<2.0	3.8	
			30	EZVI-S-2	310	21	<2.0	3.9	--	2.1	1600	<2.0	3.9	
				Average Concentration (mg/L)	300	22	ND	3.8	--	1.0	1700	ND	3.9	
				Standard Deviation (mmoles)	3.1E-02	3.5E-03	0.0E+00	1.3E-03	--	2.9E-02	3.1E-01	0.0E+00	3.1E-03	
				Average Total mmoles	**0.48**	**0.046**	**ND**	**0.051**	**5.8E-01**	**0.021**	**4.1**	**ND**	**0.18**	
	18-Sep-14	57												Bioaugmented with KB-1® Plus.
			29	EZVI-S-1	240	22	<2.0	2.9	--	<2.0	1600	<2.0	3.9	
			30	EZVI-S-2	280	20	<2.0	<2.0	--	<2.0	1500	<2.0	3.8	
				Average Concentration (mg/L)	260	21	ND	1.4	--	ND	1600	ND	3.8	
				Standard Deviation (mmoles)	5.0E-02	3.5E-03	0.0E+00	2.7E-02	--	0.0E+00	1.7E-01	0.0E+00	3.5E-03	
				Average Total mmoles	**0.41**	**0.045**	**ND**	**0.019**	**4.7E-01**	**ND**	**3.8**	**ND**	**0.18**	
	15-Oct-14	84	29	EZVI-S-1	490	20	<2.0	<2.0	--	<2.0	1200	<2.0	3.5	
			30	EZVI-S-2	650	26	<2.0	2.4	--	<2.0	1600	<2.0	3.6	
				Average Concentration (mg/L)	570	23	ND	1.2	--	ND	1400	ND	3.5	
				Standard Deviation (mmoles)	1.8E-01	8.9E-03	0.0E+00	2.2E-02	--	0.0E+00	6.1E-01	0.0E+00	3.4E-03	
				Average Total mmoles	**0.91**	**0.049**	**ND**	**0.016**	**9.8E-01**	**ND**	**3.4**	**ND**	**0.16**	
	12-Nov-14	112	29	EZVI-S-1	210	19	<2.0	<2.0	--	<2.0	1400	<2.0	3.7	
			30	EZVI-S-2	760	24	<2.0	2.7	--	<2.0	1400	<2.0	3.6	
				Average Concentration (mg/L)	480	22	ND	1.3	--	ND	1400	ND	3.6	
				Standard Deviation (mmoles)	6.2E-01	7.5E-03	0.0E+00	2.5E-02	--	0.0E+00	2.8E-02	0.0E+00	1.7E-03	
				Average Total mmoles	**0.77**	**0.047**	**ND**	**0.018**	**8.4E-01**	**ND**	**3.4**	**ND**	**0.17**	

TABLE 2B: SUMMARY OF REACTOR cVOC AND DHG RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY

SiREM

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Replicate	Chlorinated Ethenes, Ethene, and Ethane						Chlorinated Methanes and Methane			Comment
					TCE	cDCE	VC	Ethene	Total Ethenes	Ethane	DCM	CM	Methane	
					mg/L	mg/L	mg/L	mg/L	mmol/bottle	mg/L	mg/L	mg/L	mg/L	
ZVI Amended (MW2 Location) - Extension with Gas Collection	22-Jul-14	-1												Mixed 10 g of ZVI into the geologic material, then added site groundwater and attached reactors to gas collection bag.
														Spiked with DCM and TCE to target concentrations of 3,720 mg/L and 2,020 mg/L respectively.
	25-Jul-14	2	31	ZVI-G-1	1200	45	<2.0	<2.0	--	<2.0	2000	<2.0	3.9	
			32	ZVI-G-2	1000	34	<2.0	<2.0	--	<2.0	1700	<2.0	3.9	
				Average Concentration (mg/L)	1100	39	ND	ND	--	ND	1800	ND	3.9	
				Standard Deviation (mmoles)	1.9E-01	1.7E-02	0.0E+00	0.0E+00	--	0.0E+00	4.7E-01	0.0E+00	1.5E-03	
				Average Total mmoles	**1.8**	**0.084**	**ND**	**ND**	**1.9E+00**	**ND**	**4.5**	**ND**	**0.18**	
	30-Jul-14	7												Ceased gas collection and submitted collected gas for analysis.
			31	ZVI-G-1	640	44	<2.0	<2.0	--	<2.0	1800	2.2	4.0	
			32	ZVI-G-2	390	27	<2.0	<2.0	--	<2.0	1500	<2.0	4.0	
				Average Concentration (mg/L)	510	35	ND	ND	--	ND	1700	1.1	4.0	
				Standard Deviation (mmoles)	2.8E-01	2.5E-02	0.0E+00	0.0E+00	--	0.0E+00	6.3E-01	6.3E-03	1.0E-03	
				Average Total mmoles	**0.82**	**0.075**	**ND**	**ND**	**9.0E-01**	**ND**	**4.1**	**0.0044**	**0.18**	
	06-Aug-14	14												Vented 1 mL gas from each replicate.
			31	ZVI-G-1	240	28	<2.0	<2.0	--	<2.0	1600	4.7	4.0	
			32	ZVI-G-2	63	11	<2.0	<2.0	--	<2.0	1200	2.9	3.9	
				Average Concentration (mg/L)	150	19	ND	ND	--	ND	1400	3.8	3.9	
				Standard Deviation (mmoles)	2.0E-01	2.5E-02	0.0E+00	0.0E+00	--	0.0E+00	6.7E-01	4.8E-03	3.4E-03	
				Average Total mmoles	**0.24**	**0.041**	**ND**	**ND**	**2.8E-01**	**ND**	**3.4**	**0.015**	**0.18**	
	13-Aug-14	21	31	ZVI-G-1	74	13	<2.0	<2.0	--	<2.0	1500	6.7	3.9	
			32	ZVI-G-2	5.4	<2.0	<2.0	<2.0	--	<2.0	1000	3.7	3.8	
				Average Concentration (mg/L)	40	6.6	ND	ND	--	ND	1300	5.2	3.8	
				Standard Deviation (mmoles)	7.8E-02	2.0E-02	0.0E+00	0.0E+00	--	0.0E+00	8.3E-01	8.6E-03	1.7E-03	
				Average Total mmoles	**0.063**	**0.014**	**ND**	**ND**	**7.7E-02**	**ND**	**3.1**	**0.021**	**0.18**	
	03-Sep-14	42	31	ZVI-G-1	<2.0	<2.0	<2.0	<2.0	--	<2.0	1100	10	4.0	
			32	ZVI-G-2	<2.0	<2.0	<2.0	<2.0	--	<2.0	160	<2.0	3.8	
				Average Concentration (mg/L)	ND	ND	ND	ND	--	ND	630	5	3.9	
				Standard Deviation (mmoles)	0.0E+00	0.0E+00	0.0E+00	0.0E+00	--	0.0E+00	1.6E+00	2.8E-02	8.2E-03	
				Average Total mmoles	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**1.5**	**0.02**	**0.18**	
	24-Sep-14	63												Due to a lack of sampling volume, replicate 2 was discontinued.
			31	ZVI-G-1	<2.0	<2.0	<2.0	<2.0	--	<2.0	940	15	4.4	
				Average Concentration (mg/L)	ND	ND	ND	ND	--	ND	940	15	4.4	
				Standard Deviation (mmoles)	0.0E+00	0.0E+00	0.0E+00	0.0E+00	--	0.0E+00	0.0E+00	0.0E+00	0.0E+00	
				Average Total mmoles	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**2.3**	**0.061**	**0.21**	
	15-Oct-14	84	31	ZVI-G-1	7.8	<2.0	<2.0	<2.0	--	<2.0	700	17	6.1	
				Average Concentration (mg/L)	7.8	ND	ND	ND	--	ND	700	17	6.1	
				Standard Deviation (mmoles)	0.0E+00	0.0E+00	0.0E+00	0.0E+00	--	0.0E+00	0.0E+00	0.0E+00	0.0E+00	
				Average Total mmoles	**0.013**	**ND**	**ND**	**ND**	**1.3E-02**	**ND**	**1.7**	**0.069**	**0.28**	
	12-Nov-14	112	31	ZVI-G-1	<2.0	<2.0	<2.0	<2.0	--	<2.0	560	17	5.7	
				Average Concentration (mg/L)	ND	ND	ND	ND	--	ND	560	17	5.7	
				Standard Deviation (mmoles)	0.0E+00	0.0E+00	0.0E+00	0.0E+00	--	0.0E+00	0.0E+00	0.0E+00	0.0E+00	
				Average Total mmoles	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**1.4**	**0.068**	**0.27**	

Notes:

ANAC - anaerobic active control
ANSC - anaerobic sterile control
cDCE - cis-1,2-dichloroethene
CM - chloromethane
cVOC - chlorinated volatile organic compound
DCM - dichloromethane
DHG - dissolved hydrogen gases
E-ZVI - emulsified zero valent iron
g - grams
mg/L - milligrams per liter
mL - milliliters
ND - not detected
TCE - trichloroethene
VC - vinyl chloride
ZVI - zero valent iron
% - percent
< - compound not detected, the associated value is the detection limit
-- - not analysed

TABLE 3: SUMMARY OF GASEOUS cVOC RESULTS OF THE ZVI EXTENSION ZVI AMENDED (MW2 LOCATION) REACTORS WITH GAS COLLECTION

LHAAP 18/24 Site, Karnack, Texas

Treatment	Compound	Reported Gas Concentration at Day 7 ($\mu g/m^3$)	Mass in the Gas Phase at Day 7 (mg)	Aqueous Phase Concentration at Day 7 (mg/L)	Mass in the Aqueous Phase at Day 7 (mg)	Total Mass of Compound Added/Measured on Day 0 (mg)*	% Mass in the Gas Phase at Day 7	% Mass in the Aqueous Phase at Day 7	% Mass Degraded at Day 7
ZVI Amended (MW2 Location) - Extension with Gas Collection Replicate 1 - Reactor 31	DCM	17000000	4.5	1800	360	744	0.60%	48%	51%
	TCE	26000000	6.9	640	128	405	1.7%	32%	67%
	cDCE	210000	0.06	44	8.8	7.3	0.76%	120%	-21%
	VC	27000	0.01	<2.0	<0.4	N/A	N/A	N/A	N/A
ZVI Amended (MW2 Location) - Extension with Gas Collection Replicate 2 - Reactor 32	DCM	5000000	0.85	1500	300	744	0.11%	40%	60%
	TCE	7800000	1.3	390	78	405	0.33%	19%	80%
	cDCE	310000	0.05	27	5.4	7.5	0.70%	72%	28%
	VC	40000	0.01	<2.0	<0.4	N/A	N/A	N/A	N/A

* Masses for TCE and DCM based on spiking targets; VC and cDCE masses based on concentrations measured at Day 0.

Notes:

cDCE - cis-1,2-Dichloroethene
cVOC - chlorinated volatile organic compound
DCM - Dichloromethane
mg - milligrams
mg/L - milligram per liter
N/A - not applicable
TCE - Trichloroethene
VC - Vinyl Chloride
% - percent
$\mu g/m^3$ - micrograms per meter cubed
< - not detected, associated value is below the reporting limit

TABLE 4A: SUMMARY OF MICROCOSM PERCHLORATE RESULTS OF THE MW21 LOCATION BIOTREATABILITY STUDY

SiREM

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Treatment Replicate	Perchlorate mg/L
Anaerobic Sterile Control (MW21 Location)	23-May-14	0	1	ANSC-MW21-1	144
			2	ANSC-MW21-2	131
				Average Concentration	**138**
	6-Jun-14	14	1	ANSC-MW21-1	136
			2	ANSC-MW21-2	133
				Average Concentration	**135**
	20-Jun-14	28	1	ANSC-MW21-1	105
			2	ANSC-MW21-2	111
				Average Concentration	**108**
	11-Jul-14	49	1	ANSC-MW21-1	90
			2	ANSC-MW21-2	105
				Average Concentration	**97**
	17-Sep-14	117	1	ANSC-MW21-1	126
			2	ANSC-MW21-2	122
				Average Concentration	**124**
	12-Nov-14	173	1	ANSC-MW21-1	113
			2	ANSC-MW21-2	108
				Average Concentration	**111**
Anaerobic Active Control (MW21 Location)	23-May-14	0	3	ANAC-MW21-1	152
			4	ANAC-MW21-2	114
				Average Concentration	**133**
	6-Jun-14	14	3	ANAC-MW21-1	92
			4	ANAC-MW21-2	113
				Average Concentration	**103**
	20-Jun-14	28	3	ANAC-MW21-1	76
			4	ANAC-MW21-2	93
				Average Concentration	**84**
	11-Jul-14	49	3	ANAC-MW21-1	91
			4	ANAC-MW21-2	86
				Average Concentration	**88**
	17-Sep-14	117	3	ANAC-MW21-1	126
			4	ANAC-MW21-2	95
				Average Concentration	**110**
	12-Nov-14	173	3	ANAC-MW21-1	89
			4	ANAC-MW21-2	68
				Average Concentration	**79**
Lactate Amended/KB-1® Plus Bioaugmented (MW21 Location)	23-May-14	0	5	LAC-MW21-1	136
			6	LAC-MW21-2	139
				Average Concentration	**138**
	6-Jun-14	14	5	LAC-MW21-1	78
			6	LAC-MW21-2	40
				Average Concentration	**59**
	20-Jun-14	28	5	LAC-MW21-1	<0.01
			6	LAC-MW21-2	<0.01
				Average Concentration	**ND**
	27-Jun-14	35	5	LAC-MW21-1	<0.01
			6	LAC-MW21-2	<0.01
				Average Concentration	**ND**
	11-Jul-14	49	5	LAC-MW21-1	<0.01
			6	LAC-MW21-2	<0.01
				Average Concentration	**ND**
	25-Jul-14	63	5	LAC-MW21-1	<0.01
			6	LAC-MW21-2	<0.01
				Average Concentration	**ND**
	17-Sep-14	117	5	LAC-MW21-1	<0.01
			6	LAC-MW21-2	<0.01
				Average Concentration	**ND**
	12-Nov-14	173	5	LAC-MW21-1	<0.01
			6	LAC-MW21-2	<0.01
				Average Concentration	**ND**
SRS-SD Amended/KB-1® Plus Bioaugmented (MW21 Location)	23-May-14	0	7	SRS-SD-MW21-1	120
			8	SRS-SD-MW21-2	129
				Average Concentration	**125**
	6-Jun-14	14	7	SRS-SD-MW21-1	89
			8	SRS-SD-MW21-2	66
				Average Concentration	**78**
	20-Jun-14	28	7	SRS-SD-MW21-1	0.34
			8	SRS-SD-MW21-2	0.25
				Average Concentration	**0.30**
	27-Jun-14	35	7	SRS-SD-MW21-1	<0.01
			8	SRS-SD-MW21-2	<0.01
				Average Concentration	**ND**
	11-Jul-14	49	7	SRS-SD-MW21-1	<0.01
			8	SRS-SD-MW21-2	<0.01
				Average Concentration	**ND**
	25-Jul-14	63	7	SRS-SD-MW21-1	<0.01
			8	SRS-SD-MW21-2	<0.01
				Average Concentration	**ND**
	17-Sep-14	117	7	SRS-SD-MW21-1	<0.01
			8	SRS-SD-MW21-2	<0.01
				Average Concentration	**ND**
	12-Nov-14	173	7	SRS-SD-MW21-1	<0.01
			8	SRS-SD-MW21-2	<0.01
				Average Concentration	**ND**

Notes:

ANAC - anaerobic active control
ANSC - anaerobic sterile control
mg/L - milligram per liter
ND - not detected

TABLE 4B: SUMMARY OF REACTOR PERCHLORATE RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY

LHAAP 18/24 Site, Karnack, Texas

SiREM

Treatment	Date	Day	Bottle	Treatment Replicate	Perchlorate mg/L
Anaerobic Sterile Control (MW2 Location)	23-May-14	0	9	ANSC-MW2-1	9.1
			10	ANSC-MW2-2	8.8
				Average Concentration	**8.9**
	27-May-14	4	9	ANSC-MW2-1	8.4
			10	ANSC-MW2-2	8.9
				Average Concentration	**8.6**
	30-May-14	7	9	ANSC-MW2-1	8.8
			10	ANSC-MW2-2	8.4
				Average Concentration	**8.6**
	6-Jun-14	14	9	ANSC-MW2-1	6.7
			10	ANSC-MW2-2	8.0
				Average Concentration	**7.3**
	13-Jun-14	21	9	ANSC-MW2-1	8.7
			10	ANSC-MW2-2	7.5
				Average Concentration	**8.1**
	13-Aug-14	82	9	ANSC-MW2-1	8.8
			10	ANSC-MW2-2	6.8
				Average Concentration	**7.8**
	3-Sep-14	103	9	ANSC-MW2-1	7.8
			10	ANSC-MW2-2	7.7
				Average Concentration	**7.8**
	24-Sep-14	124	9	ANSC-MW2-1	6.1
			10	ANSC-MW2-2	6.7
				Average Concentration	**6.4**
	15-Oct-14	145	9	ANSC-MW2-1	6.3
			10	ANSC-MW2-2	8.3
				Average Concentration	**7.3**
	12-Nov-14	173	9	ANSC-MW2-1	6.7
			10	ANSC-MW2-2	6.9
				Average Concentration	**6.8**
0.4 g EZVI Amended (MW2 Location)	23-May-14	0	11	EZVI-1-MW2-1	8.9
			12	EZVI-1-MW2-2	7.1
				Average Concentration	**8.0**
	27-May-14	4	11	EZVI-1-MW2-1	8.5
			12	EZVI-1-MW2-2	8.5
				Average Concentration	**8.5**
	30-May-14	7	11	EZVI-1-MW2-1	6.8
			12	EZVI-1-MW2-2	7.8
				Average Concentration	**7.3**
	6-Jun-14	14	11	EZVI-1-MW2-1	8.3
			12	EZVI-1-MW2-2	6.4
				Average Concentration	**7.4**
	13-Jun-14	21	11	EZVI-1-MW2-1	7.2
			12	EZVI-1-MW2-2	7.9
				Average Concentration	**7.6**
	13-Aug-14	82	11	EZVI-1-MW2-1	8.7
			12	EZVI-1-MW2-2	8.7
				Average Concentration	**8.7**
3.0 g EZVI Amended (MW2 Location)	23-May-14	0	13	EZVI-2-MW2-1	8.2
			14	EZVI-2-MW2-2	7.1
				Average Concentration	**7.6**
	27-May-14	4	13	EZVI-2-MW2-1	7.5
			14	EZVI-2-MW2-2	8.2
				Average Concentration	**7.9**
	30-May-14	7	13	EZVI-2-MW2-1	6.9
			14	EZVI-2-MW2-2	7.6
				Average Concentration	**7.2**
	6-Jun-14	14	13	EZVI-2-MW2-1	7.9
			14	EZVI-2-MW2-2	7.1
				Average Concentration	**7.5**
	13-Jun-14	21	13	EZVI-2-MW2-1	7.7
			14	EZVI-2-MW2-2	7.7
				Average Concentration	**7.7**
	13-Aug-14	82	13	EZVI-2-MW2-1	8.0
			14	EZVI-2-MW2-2	9.0
				Average Concentration	**8.5**
10 g EZVI Amended (MW2 Location)	23-May-14	0	15	EZVI-3-MW2-1	6.6
			16	EZVI-3-MW2-2	6.6
				Average Concentration	**6.6**
	27-May-14	4	15	EZVI-3-MW2-1	6.8
			16	EZVI-3-MW2-2	9.5
				Average Concentration	**8.1**
	30-May-14	7	15	EZVI-3-MW2-1	7.7
			16	EZVI-3-MW2-2	8.0
				Average Concentration	**7.9**
	6-Jun-14	14	15	EZVI-3-MW2-1	6.4
			16	EZVI-3-MW2-2	7.5
				Average Concentration	**6.9**
	13-Jun-14	21	15	EZVI-3-MW2-1	6.3
			16	EZVI-3-MW2-2	6.3
				Average Concentration	**6.3**
	13-Aug-14	82	15	EZVI-3-MW2-1	8.3
			16	EZVI-3-MW2-2	7.7
				Average Concentration	**8.0**
20 g EZVI Amended (MW2 Location)	23-May-14	0	17	EZVI-4-MW2-1	6.8
			18	EZVI-4-MW2-2	6.7
				Average Concentration	**6.8**
	27-May-14	4	17	EZVI-4-MW2-1	6.5
			18	EZVI-4-MW2-2	7.8
				Average Concentration	**7.1**
	30-May-14	7	17	EZVI-4-MW2-1	7.4
			18	EZVI-4-MW2-2	8.6
				Average Concentration	**8.0**

TABLE 4B: SUMMARY OF REACTOR PERCHLORATE RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY

LHAAP 18/24 Site, Karnack, Texas

SiREM

Treatment	Date	Day	Bottle	Treatment Replicate	Perchlorate mg/L
20 g E-ZVI Amended (MW2 Location) Continued	6-Jun-14	14	17	EZVI-4-MW2-1	6.4
			18	EZVI-4-MW2-2	7.0
				Average Concentration	**6.7**
	13-Jun-14	21	17	EZVI-4-MW2-1	7.3
			18	EZVI-4-MW2-2	6.1
				Average Concentration	**6.7**
	13-Aug-14	82	17	EZVI-4-MW2-1	7.5
			18	EZVI-4-MW2-2	7.2
				Average Concentration	**7.3**
0.4 g ZVI Amended (MW2 Location)	23-May-14	0	19	ZVI-1-MW2-1	6.8
			20	ZVI-1-MW2-2	6.6
				Average Concentration	**6.7**
	27-May-14	4	19	ZVI-1-MW2-1	6.7
			20	ZVI-1-MW2-2	6.2
				Average Concentration	**6.4**
	30-May-14	7	19	ZVI-1-MW2-1	7.5
			20	ZVI-1-MW2-2	8.0
				Average Concentration	**7.8**
	6-Jun-14	14	19	ZVI-1-MW2-1	6.9
			20	ZVI-1-MW2-2	6.5
				Average Concentration	**6.7**
	13-Jun-14	21	19	ZVI-1-MW2-1	7.2
			20	ZVI-1-MW2-2	6.5
				Average Concentration	**6.9**
	13-Aug-14	82	19	ZVI-1-MW2-1	7.1
			20	ZVI-1-MW2-2	6.7
				Average Concentration	**6.9**
	3-Sep-14	103	19	ZVI-1-MW2-1	7.7
			20	ZVI-1-MW2-2	6.7
				Average Concentration	**7.2**
	24-Sep-14	124	19	ZVI-1-MW2-1	6.2
			20	ZVI-1-MW2-2	6.0
				Average Concentration	**6.1**
	15-Oct-14	145	19	ZVI-1-MW2-1	6.9
			20	ZVI-1-MW2-2	5.4
				Average Concentration	**6.1**
	12-Nov-14	173	19	ZVI-1-MW2-1	5.6
			20	ZVI-1-MW2-2	6.5
				Average Concentration	**6.0**
	22-Dec-14	213	19	ZVI-1-MW2-1	<0.01
			20	ZVI-1-MW2-2	<0.01
				Average Concentration	**ND**
3.0 g ZVI Amended (MW2 Location)	23-May-14	0	21	ZVI-2-MW2-1	6.5
			22	ZVI-2-MW2-2	6.6
				Average Concentration	**6.6**
	27-May-14	4	21	ZVI-2-MW2-1	6.5
			22	ZVI-2-MW2-2	6.8
				Average Concentration	**6.6**
	30-May-14	7	21	ZVI-2-MW2-1	6.8
			22	ZVI-2-MW2-2	7.4
				Average Concentration	**7.1**
	6-Jun-14	14	21	ZVI-2-MW2-1	6.2
			22	ZVI-2-MW2-2	6.2
				Average Concentration	**6.2**
	13-Jun-14	21	21	ZVI-2-MW2-1	6.5
			22	ZVI-2-MW2-2	6.4
				Average Concentration	**6.5**
	13-Aug-14	82	21	ZVI-2-MW2-1	6.1
			22	ZVI-2-MW2-2	5.9
				Average Concentration	**6.0**
	3-Sep-14	103	21	ZVI-2-MW2-1	5.8
			22	ZVI-2-MW2-2	5.2
				Average Concentration	**5.5**
	24-Sep-14	124	21	ZVI-2-MW2-1	4.5
			22	ZVI-2-MW2-2	4.7
				Average Concentration	**4.6**
	15-Oct-14	145	21	ZVI-2-MW2-1	5.2
			22	ZVI-2-MW2-2	5.1
				Average Concentration	**5.1**
	12-Nov-14	173	21	ZVI-2-MW2-1	2.7
			22	ZVI-2-MW2-2	3.9
				Average Concentration	**3.3**
	22-Dec-14	213	21	ZVI-2-MW2-1	<0.01
			22	ZVI-2-MW2-2	<0.01
				Average Concentration	**ND**
10 g ZVI Amended (MW2 Location)	23-May-14	0	23	ZVI-3-MW2-1	6.7
			24	ZVI-3-MW2-2	6.6
				Average Concentration	**6.7**
	27-May-14	4	23	ZVI-3-MW2-1	6.1
			24	ZVI-3-MW2-2	6.2
				Average Concentration	**6.1**
	30-May-14	7	23	ZVI-3-MW2-1	6.7
			24	ZVI-3-MW2-2	6.7
				Average Concentration	**6.7**
	6-Jun-14	14	23	ZVI-3-MW2-1	5.4
			24	ZVI-3-MW2-2	5.9
				Average Concentration	**5.6**
	13-Jun-14	21	23	ZVI-3-MW2-1	5.3
			24	ZVI-3-MW2-2	5.5
				Average Concentration	**5.4**
	13-Aug-14	82	23	ZVI-3-MW2-1	1.9
			24	ZVI-3-MW2-2	--
				Average Concentration	**1.9**

TABLE 4B: SUMMARY OF REACTOR PERCHLORATE RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY

SiREM

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Treatment Replicate	Perchlorate mg/L
10 g ZVI Amended (MW2 Location) Continued	3-Sep-14	103	23	ZVI-3-MW2-1	0.88
			24	ZVI-3-MW2-2	--
				Average Concentration	**0.88**
	24-Sep-14	124	23	ZVI-3-MW2-1	0.40
			24	ZVI-3-MW2-2	--
				Average Concentration	**0.40**
20 g ZVI Amended (MW2 Location)	23-May-14	0	25	ZVI-4-MW2-1	6.4
			26	ZVI-4-MW2-2	6.7
				Average Concentration	**6.5**
	27-May-14	4	25	ZVI-4-MW2-1	6.5
			26	ZVI-4-MW2-2	6.3
				Average Concentration	**6.4**
	30-May-14	7	25	ZVI-4-MW2-1	6.5
			26	ZVI-4-MW2-2	6.5
				Average Concentration	**6.5**
	6-Jun-14	14	25	ZVI-4-MW2-1	5.4
			26	ZVI-4-MW2-2	5.8
				Average Concentration	**5.6**
	13-Jun-14	21	25	ZVI-4-MW2-1	3.9
			26	ZVI-4-MW2-2	4.4
				Average Concentration	**4.2**

Notes:

ANSC - anaerobic sterile control
EZVI - emulsified zero valent iron
mg/L - miligrams per liter
ZVI - zero valent iron
-- - not analysed

TABLE 5A: SUMMARY OF MICROCOSM ANION RESULTS OF THE MW21 LOCATION BIOTREATABILITY STUDY
LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Treatment Replicate	Total VFAs	Chloride	Nitrite-N	Nitrate-N	Sulfate	Phosphate
					mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Anaerobic Sterile Control (MW21 Location)	23-May-14	0	1	ANSC-MW21-1	6.3	1717	<0.09	0.40	7.3	<0.07
			2	ANSC-MW21-2	3.8	2144	<0.09	0.09	8.2	<0.07
				Average Concentration	**5.0**	**1931**	**ND**	**0.25**	**7.8**	**ND**
	6-Jun-14	14	1	ANSC-MW21-1	15	1886	<0.09	0.24	11	<0.07
			2	ANSC-MW21-2	15	1906	<0.09	0.17	11	<0.07
				Average Concentration	**15**	**1896**	**ND**	**0.20**	**11**	**ND**
	11-Jul-14	49	1	ANSC-MW21-1	16	1296	<0.09	0.30	4.1	<0.07
			2	ANSC-MW21-2	16	1665	<0.09	0.17	5.3	<0.07
				Average Concentration	**16**	**1480**	**ND**	**0.24**	**4.7**	**ND**
	20-Aug-14	89	1	ANSC-MW21-1	9.1	1726	<0.09	0.10	4.5	<0.07
			2	ANSC-MW21-2	7.6	1980	<0.09	<0.09	5.7	<0.07
				Average Concentration	**8.3**	**1853**	**ND**	**0.05**	**5.1**	**ND**
	12-Nov-14	173	1	ANSC-MW21-1	9.1	1677	<0.09	0.40	8.1	<0.07
			2	ANSC-MW21-2	14	1457	<0.09	0.09	6.6	<0.07
				Average Concentration	**12**	**1567**	**ND**	**0.25**	**7.3**	**ND**
Anaerobic Active Control (MW21 Location)	23-May-14	0	3	ANAC-MW21-1	7.9	2014	<0.09	0.14	6.3	<0.07
			4	ANAC-MW21-2	3.7	1792	<0.09	0.33	5.6	<0.07
				Average Concentration	**5.8**	**1903**	**ND**	**0.24**	**5.9**	**ND**
	6-Jun-14	14	3	ANAC-MW21-1	7.1	1919	<0.09	0.20	5.0	<0.07
			4	ANAC-MW21-2	6.9	1831	<0.09	0.24	5.5	<0.07
				Average Concentration	**7.0**	**1875**	**ND**	**0.22**	**5.3**	**ND**
	11-Jul-14	49	3	ANAC-MW21-1	16	1850	<0.09	0.28	5.0	<0.07
			4	ANAC-MW21-2	15	1668	<0.09	0.14	2.7	<0.07
				Average Concentration	**15**	**1759**	**ND**	**0.21**	**3.9**	**ND**
	20-Aug-14	89	3	ANAC-MW21-1	4.9	1788	<0.09	0.21	2.9	<0.07
			4	ANAC-MW21-2	4.9	1882	<0.09	0.10	3.3	<0.07
				Average Concentration	**4.9**	**1835**	**ND**	**0.15**	**3.1**	**ND**
	12-Nov-14	173	3	ANAC-MW21-1	2.9	1486	<0.09	0.14	5.1	<0.07
			4	ANAC-MW21-2	2.1	1292	<0.09	0.11	3.6	<0.07
				Average Concentration	**2.5**	**1389**	**ND**	**0.13**	**4.3**	**ND**
Lactate Amended/KB-1® Plus Bioaugmented (MW21 Location)	23-May-14	0	5	LAC-MW21-1	565	1754	<0.09	0.22	7.0	<0.07
			6	LAC-MW21-2	619	1927	<0.09	0.21	7.5	<0.07
				Average Concentration	**592**	**1841**	**ND**	**0.22**	**7.2**	**ND**
	6-Jun-14	14	5	LAC-MW21-1	520	1880	<0.09	0.23	5.5	<0.07
			6	LAC-MW21-2	506	2009	<0.09	0.18	6.9	<0.07
				Average Concentration	**513**	**1944**	**ND**	**0.21**	**6.2**	**ND**
	27-Jun-14	35	5	LAC-MW21-1	324	1827	<0.09	<0.09	0.19	<0.07
			6	LAC-MW21-2	315	1736	<0.09	0.14	0.31	<0.07
				Average Concentration	**320**	**1782**	**ND**	**0.07**	**0.25**	**ND**
	11-Jul-14	49	5	LAC-MW21-1	363	1762	<0.09	0.15	0.32	<0.07
			6	LAC-MW21-2	385	1773	<0.09	0.12	0.86	<0.07
				Average Concentration	**374**	**1767**	**ND**	**0.14**	**0.59**	**ND**
	20-Aug-14	89	5	LAC-MW21-1	680	2038	<0.09	0.38	<0.07	<0.07
			6	LAC-MW21-2	643	1913	<0.09	0.78	<0.07	<0.07
				Average Concentration	**661**	**1976**	**ND**	**0.58**	**ND**	**ND**
	12-Nov-14	173	5	LAC-MW21-1	900	1459	<0.09	0.22	<0.07	<0.07
			6	LAC-MW21-2	978	1679	<0.09	0.13	<0.07	<0.07
				Average Concentration	**939**	**1569**	**ND**	**0.18**	**ND**	**ND**
SRS-SD Amended/KB-1® Plus Bioaugmented (MW21 Location)	23-May-14	0	7	SRS-SD-MW21-1	45	1822	<0.09	0.20	6.8	<0.07
			8	SRS-SD-MW21-2	47	1967	<0.09	0.20	6.8	<0.07
				Average Concentration	**46**	**1894**	**ND**	**0.20**	**6.8**	**ND**
	6-Jun-14	14	7	SRS-SD-MW21-1	12	2218	<0.09	0.25	7.1	<0.07
			8	SRS-SD-MW21-2	15	1876	<0.09	0.43	5.4	<0.07
				Average Concentration	**14**	**2047**	**ND**	**0.34**	**6.3**	**ND**
	27-Jun-14	35	7	SRS-SD-MW21-1	16	1788	<0.09	0.24	2.7	<0.07
			8	SRS-SD-MW21-2	39	2189	<0.09	0.23	4.3	<0.07
				Average Concentration	**28**	**1988**	**ND**	**0.24**	**3.5**	**ND**
	11-Jul-14	49	7	SRS-SD-MW21-1	68	2450	<0.09	0.16	0.39	<0.07
			8	SRS-SD-MW21-2	49	1710	<0.09	0.14	17	<0.07
				Average Concentration	**58**	**2080**	**ND**	**0.15**	**8.6**	**ND**
	20-Aug-14	89	7	SRS-SD-MW21-1	279	1928	<0.09	0.49	17	<0.07
			8	SRS-SD-MW21-2	227	1884	<0.09	0.15	<0.07	<0.07
				Average Concentration	**253**	**1906**	**ND**	**0.32**	**8.5**	**ND**
	12-Nov-14	173	7	SRS-SD-MW21-1	580	1714	<0.09	0.12	<0.07	<0.07
			8	SRS-SD-MW21-2	390	1744	<0.09	0.12	<0.07	<0.07
				Average Concentration	**485**	**1729**	**ND**	**0.12**	**ND**	**ND**

Notes:

ANAC - anaerobic active control
ANSC - anaerobic sterile control
ND - not detected
mg/L - milligrams per liter
VFAs - total volatile fatty acids, calibrated as lactate but may include other VFAs such as formate, acetate, propionate, pyruvate and butyrate
< - compound not detected, the associated value is the detection limit

TABLE 5B: SUMMARY OF REACTOR ANION RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY
LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Treatment Replicate	Total VFAs	Chloride	Nitrite-N	Nitrate-N	Sulfate	Phosphate
					mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Anaerobic Sterile Control (MW2 Location)	23-May-14	0	9	ANSC-MW2-1	13	1114	<0.09	1.5	8.6	<0.07
			10	ANSC-MW2-2	13	1240	<0.09	1.3	8.8	<0.07
				Average Concentration	**13**	**1177**	**ND**	**1.4**	**8.7**	**ND**
	27-May-14	4	9	ANSC-MW2-1	11	1303	<0.09	1.8	4.3	0.08
			10	ANSC-MW2-2	12	1335	<0.09	1.6	2.4	0.22
				Average Concentration	**12**	**1319**	**ND**	**1.7**	**3.4**	**0.15**
	13-Jun-14	21	9	ANSC-MW2-1	12	1278	<0.09	1.1	2.3	<0.07
			10	ANSC-MW2-2	13	1307	<0.09	0.91	2.1	<0.07
				Average Concentration	**13**	**1293**	**ND**	**1.0**	**2.2**	**ND**
	13-Aug-14	82	9	ANSC-MW2-1	14	1073	<0.09	0.91	4.4	<0.07
			10	ANSC-MW2-2	16	1218	<0.09	0.81	4.1	<0.07
				Average Concentration	**15**	**1146**	**ND**	**0.86**	**4.2**	**ND**
	12-Nov-14	173	9	ANSC-MW2-1	12	1020	<0.09	1.5	5.7	<0.07
			10	ANSC-MW2-2	12	906	<0.09	1.1	5.1	<0.07
				Average Concentration	**12**	**963**	**ND**	**1.3**	**5.4**	**ND**
0.4 g EZVI Amended (MW2 Location)	23-May-14	0	11	EZVI-1-MW2-1	8.7	1034	<0.09	1.3	5.1	<0.07
			12	EZVI-1-MW2-2	7.6	1320	<0.09	1.7	5.9	<0.07
				Average Concentration	**8.2**	**1177**	**ND**	**1.5**	**5.5**	**ND**
	27-May-14	4	11	EZVI-1-MW2-1	5.2	1132	<0.09	1.4	2.5	0.23
			12	EZVI-1-MW2-2	6.6	1100	<0.09	1.7	2.8	0.57
				Average Concentration	**5.9**	**1116**	**ND**	**1.5**	**2.6**	**0.40**
	13-Jun-14	21	11	EZVI-1-MW2-1	6.5	1248	<0.09	1.4	3.4	<0.07
			12	EZVI-1-MW2-2	9.3	1308	<0.09	1.7	4.4	<0.07
				Average Concentration	**7.9**	**1278**	**ND**	**1.6**	**3.9**	**ND**
	13-Aug-14	82	11	EZVI-1-MW2-1	6.7	1083	<0.09	1.3	7.7	<0.07
			12	EZVI-1-MW2-2	11	1107	<0.09	1.6	9.5	<0.07
				Average Concentration	**8.7**	**1095**	**ND**	**1.4**	**8.6**	**ND**
3.0 g EZVI Amended (MW2 Location)	23-May-14	0	13	EZVI-2-MW2-1	12	1095	<0.09	1.7	6.6	<0.07
			14	EZVI-2-MW2-2	10	1100	<0.09	1.5	6.1	<0.07
				Average Concentration	**11**	**1097**	**ND**	**1.6**	**6.3**	**ND**
	27-May-14	4	13	EZVI-2-MW2-1	6.6	1154	<0.09	1.6	1.8	0.23
			14	EZVI-2-MW2-2	8.4	1179	<0.09	1.3	1.7	0.16
				Average Concentration	**7.5**	**1167**	**ND**	**1.5**	**1.7**	**0.20**
	13-Jun-14	21	13	EZVI-2-MW2-1	8.8	1406	<0.09	1.8	4.1	<0.07
			14	EZVI-2-MW2-2	10	1326	<0.09	1.5	3.3	<0.07
				Average Concentration	**9.5**	**1366**	**ND**	**1.7**	**3.7**	**ND**
	13-Aug-14	82	13	EZVI-2-MW2-1	8.6	1144	<0.09	1.5	8.8	<0.07
			14	EZVI-2-MW2-2	13	1091	<0.09	1.4	11	<0.07
				Average Concentration	**11**	**1117**	**ND**	**1.5**	**10**	**ND**
10 g EZVI Amended (MW2 Location)	23-May-14	0	15	EZVI-3-MW2-1	10	1210	<0.09	1.5	6.0	<0.07
			16	EZVI-3-MW2-2	11	1046	<0.09	1.4	8.9	<0.07
				Average Concentration	**11**	**1128**	**ND**	**1.4**	**7.5**	**ND**
	27-May-14	4	15	EZVI-3-MW2-1	6.9	1099	<0.09	1.4	3.5	<0.07
			16	EZVI-3-MW2-2	8.9	1183	<0.09	1.4	4.2	<0.07
				Average Concentration	**7.9**	**1141**	**ND**	**1.4**	**3.8**	**ND**
	13-Jun-14	21	15	EZVI-3-MW2-1	8.9	1180	<0.09	0.22	5.0	<0.07
			16	EZVI-3-MW2-2	7.5	1077	<0.09	<0.09	4.4	<0.07
				Average Concentration	**8.2**	**1128**	**ND**	**0.11**	**4.7**	**ND**
	13-Aug-14	82	15	EZVI-3-MW2-1	8.6	1110	<0.09	0.12	8.8	<0.07
			16	EZVI-3-MW2-2	11.3	1262	<0.09	<0.09	18	<0.07
				Average Concentration	**9.9**	**1186**	**ND**	**0.06**	**14**	**ND**
20 g EZVI Amended (MW2 Location)	23-May-14	0	17	EZVI-4-MW2-1	7.9	1010	<0.09	1.3	11	<0.07
			18	EZVI-4-MW2-2	10	1041	<0.09	1.2	9.4	<0.07
				Average Concentration	**9.1**	**1026**	**ND**	**1.2**	**10**	**ND**
	27-May-14	4	17	EZVI-4-MW2-1	7.6	1233	<0.09	1.4	7.1	<0.07
			18	EZVI-4-MW2-2	6.0	1149	<0.09	0.83	4.3	<0.07
				Average Concentration	**6.8**	**1191**	**ND**	**1.1**	**5.7**	**ND**
	13-Jun-14	21	17	EZVI-4-MW2-1	7.0	1157	<0.09	0.12	7.1	<0.07
			18	EZVI-4-MW2-2	8.0	805	<0.09	0.12	1.7	<0.07
				Average Concentration	**7.5**	**981**	**ND**	**0.12**	**4.4**	**ND**
	13-Aug-14	82	17	EZVI-4-MW2-1	11	1171	<0.09	0.13	12	<0.07
			18	EZVI-4-MW2-2	55	1176	<0.09	<0.09	4.0	<0.07
				Average Concentration	**33**	**1173**	**ND**	**0.07**	**7.8**	**ND**
0.4 g ZVI Amended (MW2 Location)	23-May-14	0	19	ZVI-1-MW2-1	40	1196	<0.09	1.7	7.9	<0.07
			20	ZVI-1-MW2-2	13	1105	<0.09	1.3	5.4	<0.07
				Average Concentration	**26**	**1151**	**ND**	**1.5**	**6.7**	**ND**
	27-May-14	4	19	ZVI-1-MW2-1	11	1135	<0.09	0.49	3.4	<0.07
			20	ZVI-1-MW2-2	10	1203	<0.09	0.86	3.1	<0.07
				Average Concentration	**11**	**1169**	**ND**	**0.67**	**3.2**	**ND**
	13-Jun-14	21	19	ZVI-1-MW2-1	9.5	667	<0.09	0.26	1.5	<0.07
			20	ZVI-1-MW2-2	13	1279	<0.09	<0.09	2.4	<0.07
				Average Concentration	**11**	**973**	**ND**	**0.13**	**1.9**	**ND**

TABLE 5B: SUMMARY OF REACTOR ANION RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY
LHAAP 18/24 Site, Karnack, Texas

SiREM

Treatment	Date	Day	Bottle	Treatment Replicate	Total VFAs	Chloride	Nitrite-N	Nitrate-N	Sulfate	Phosphate
					mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
0.4 g ZVI Amended (MW2 Location) Continued	13-Aug-14	82	19	ZVI-1-MW2-1	14	1065	<0.09	0.10	3.1	<0.07
			20	ZVI-1-MW2-2	16	1231	<0.09	0.15	5.0	<0.07
				Average Concentration	**15**	**1148**	**ND**	**0.13**	**4.1**	**ND**
	12-Nov-14	173	19	ZVI-1-MW2-1	25	1006	<0.09	0.16	4.9	<0.07
			20	ZVI-1-MW2-2	13	1198	<0.09	0.12	2.1	<0.07
				Average Concentration	**19**	**1102**	**ND**	**0.14**	**3.5**	**ND**
3.0 g ZVI Amended (MW2 Location)	23-May-14	0	21	ZVI-2-MW2-1	9.0	1070	<0.09	1.3	7.0	<0.07
			22	ZVI-2-MW2-2	11	1124	<0.09	1.2	6.8	<0.07
				Average Concentration	**10**	**1097**	**ND**	**1.2**	**6.9**	**ND**
	27-May-14	4	21	ZVI-2-MW2-1	13	1086	<0.09	0.19	2.6	<0.07
			22	ZVI-2-MW2-2	16	1315	<0.09	0.34	2.1	<0.07
				Average Concentration	**14**	**1201**	**ND**	**0.27**	**2.4**	**ND**
	13-Jun-14	21	21	ZVI-2-MW2-1	18	1463	<0.09	0.14	0.78	<0.07
			22	ZVI-2-MW2-2	22	1307	<0.09	<0.09	0.80	<0.07
				Average Concentration	**20**	**1385**	**ND**	**0.07**	**0.79**	**ND**
	13-Aug-14	82	21	ZVI-2-MW2-1	27	1377	<0.09	0.21	1.0	<0.07
			22	ZVI-2-MW2-2	27	1424	<0.09	0.13	2.5	<0.07
				Average Concentration	**27**	**1400**	**ND**	**0.17**	**1.7**	**ND**
	12-Nov-14	173	21	ZVI-2-MW2-1	27	1477	<0.09	0.34	2.6	<0.07
			22	ZVI-2-MW2-2	23	1666	<0.09	0.15	3.2	<0.07
				Average Concentration	**25**	**1572**	**ND**	**0.24**	**2.9**	**ND**
10 g ZVI Amended (MW2 Location)	23-May-14	0	23	ZVI-3-MW2-1	13	1097	<0.09	1.3	7.5	<0.07
			24	ZVI-3-MW2-2	13	1134	<0.09	1.3	7.1	<0.07
				Average Concentration	**13**	**1116**	**ND**	**1.3**	**7.3**	**ND**
	27-May-14	4	23	ZVI-3-MW2-1	18	1447	<0.09	0.12	1.8	0.36
			24	ZVI-3-MW2-2	17	1469	<0.09	0.14	1.6	<0.07
				Average Concentration	**18**	**1458**	**ND**	**0.13**	**1.7**	**0.18**
	13-Jun-14	21	23	ZVI-3-MW2-1	25	1688	<0.09	<0.09	0.81	<0.07
			24	ZVI-3-MW2-2	25	1449	<0.09	<0.09	1.0	<0.07
				Average Concentration	**25**	**1568**	**ND**	**ND**	**0.91**	**ND**
	13-Aug-14	82	23	ZVI-3-MW2-1	32	1759	<0.09	<0.09	0.57	<0.07
			24	ZVI-3-MW2-2	--	--	--	--	--	--
				Average Concentration	**32**	**1759**	**ND**	**ND**	**0.57**	**ND**
20 g ZVI Amended (MW2 Location)	23-May-14	0	25	ZVI-4-MW2-1	18	1127	<0.09	1.3	7.7	<0.07
			26	ZVI-4-MW2-2	37	1130	<0.09	1.6	7.4	<0.07
				Average Concentration	**28**	**1129**	**ND**	**1.4**	**7.6**	**ND**
	27-May-14	4	25	ZVI-4-MW2-1	22	1578	<0.09	0.14	1.3	<0.07
			26	ZVI-4-MW2-2	26	1662	<0.09	0.58	1.6	<0.07
				Average Concentration	**24**	**1620**	**ND**	**0.36**	**1.4**	**ND**
	13-Jun-14	21	25	ZVI-4-MW2-1	39	2749	<0.09	<0.09	0.94	<0.07
			26	ZVI-4-MW2-2	24	1212	<0.09	<0.09	0.38	<0.07
				Average Concentration	**31**	**1981**	**ND**	**ND**	**0.66**	**ND**

Notes:

ANSC - anaerobic sterile control
EZVI - emulsified zero valent iron
g - gram
ND - not detected
mg/L - milligrams per liter
VFAs - total volatile fatty acids, calibrated as lactate but may include other VFAs such as formate, acetate, propionate, pyruvate and butyrate
ZVI - zero valent iron
< - compound not detected, the associated value is the detection limit
-- - not analysed

TABLE 6A: SUMMARY OF MICROCOSM VFA RESULTS OF THE MW21 LOCATION BIOTREATABILITY STUDY

LHAAP 18/24 Site, Karnack, Texas

SiREM

Treatment	Date	Day	Bottle	Treatment Replicate	Lactate	Acetate	Propionate	Formate	Butyrate	Pyruvate
					mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Lactate Amended/KB-1® Plus Bioaugmented (MW21 Location)	23-May-14	0	5	LAC-MW21-1	628	<0.54	<0.31	<0.22	<0.41	<0.69
			6	LAC-MW21-2	674	<0.54	<0.31	1.1	<0.41	<0.69
				Average Concentration	**651**	**ND**	**ND**	**1.1**	**ND**	**ND**
	6-Jun-14	14	5	LAC-MW21-1	467	4.2	1.4	0.63	<0.41	1.7
			6	LAC-MW21-2	419	6.1	1.0	0.54	<0.41	9.7
				Average Concentration	**443**	**5.1**	**1.2**	**0.59**	**ND**	**5.7**
	11-Jul-14	49	5	LAC-MW21-1	<0.39	258	188	0.41	26	<0.69
			6	LAC-MW21-2	<0.39	262	211	0.25	1.7	<0.69
				Average Concentration	**ND**	**260**	**199**	**0.33**	**14**	**ND**
	20-Aug-14	89	5	LAC-MW21-1	<0.39	708	570	<0.22	0.82	<0.69
			6	LAC-MW21-2	<0.39	685	492	<0.22	<0.41	<0.69
				Average Concentration	**ND**	**696**	**531**	**ND**	**0.41**	**ND**
	12-Nov-14	173	5	LAC-MW21-1	<0.39	1109	1106	<0.22	3.3	1.1
			6	LAC-MW21-2	<0.39	1232	1241	<0.22	4.5	1.3
				Average Concentration	**ND**	**1171**	**1173**	**ND**	**3.9**	**1.2**
SRS-SD Amended/KB-1® Plus Bioaugmented (MW21 Location)	23-May-14	0	7	SRS-SD-MW21-1	35	1.5	1.0	0.34	<0.41	<0.69
			8	SRS-SD-MW21-2	35	1.6	1.0	0.38	<0.41	<0.69
				Average Concentration	**35**	**1.5**	**1.0**	**0.36**	**ND**	**ND**
	6-Jun-14	14	7	SRS-SD-MW21-1	0.96	4.1	<0.31	0.92	<0.41	<0.69
			8	SRS-SD-MW21-2	<0.39	7.9	<0.31	0.55	<0.41	<0.69
				Average Concentration	**0.48**	**6.0**	**ND**	**0.73**	**ND**	**ND**
	11-Jul-14	49	7	SRS-SD-MW21-1	<0.39	50	1.6	1.1	1.9	<0.69
			8	SRS-SD-MW21-2	<0.39	46	0.83	1.4	1.7	<0.69
				Average Concentration	**ND**	**48**	**1.2**	**1.3**	**1.8**	**ND**
	20-Aug-14	89	7	SRS-SD-MW21-1	<0.39	423	48	1.4	20	<0.69
			8	SRS-SD-MW21-2	<0.39	372	47	1.5	13	<0.69
				Average Concentration	**ND**	**398**	**48**	**1.5**	**17**	**ND**
	12-Nov-14	173	7	SRS-SD-MW21-1	<0.39	1172	111	0.26	97	<0.69
			8	SRS-SD-MW21-2	<0.39	701	59	0.50	46	<0.69
				Average Concentration	**ND**	**937**	**85**	**0.38**	**71**	**ND**

Notes:

mg/L - milligrams per liter
ND - not detected
< - compound not detected, the associated value is the detection limit

TABLE 6B: SUMMARY OF REACTOR VFA RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY

LHAAP 18/24 Site, Karnack Texas

SiREM

Treatment	Date	Day	Bottle	Treatment Replicate	Lactate	Acetate	Propionate	Formate	Butyrate	Pyruvate
					mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
0.4 g EZVI Amended (MW2 Location)	23-May-14	0	11	EZVI-1-MW2-1	<0.39	2.3	<0.31	1.4	<0.41	<0.69
			12	EZVI-1-MW2-2	<0.39	2.6	<0.31	<0.22	<0.41	<0.69
				Average Concentration	**ND**	**2.4**	**ND**	**1.4**	**ND**	**ND**
	6-Jun-14	14	11	EZVI-1-MW2-1	<0.39	5.7	0.44	2.3	<0.41	<0.69
			12	EZVI-1-MW2-2	<0.39	4.2	<0.31	1.4	<0.41	<0.69
				Average Concentration	**ND**	**5.0**	**0.44**	**1.9**	**ND**	**ND**
	13-Aug-14	82	11	EZVI-1-MW2-1	<0.39	5.1	<0.31	0.46	<0.41	<0.69
			12	EZVI-1-MW2-2	1.3	4.9	<0.31	2.0	<0.41	<0.69
				Average Concentration	**0.66**	**5.0**	**ND**	**1.2**	**ND**	**ND**
3.0 g EZVI Amended (MW2 Location)	23-May-14	0	13	EZVI-2-MW2-1	<0.39	2.4	0.32	1.7	<0.41	<0.69
			14	EZVI-2-MW2-2	<0.39	3.1	0.42	2.2	<0.41	<0.69
				Average Concentration	**ND**	**2.8**	**0.37**	**2.0**	**ND**	**ND**
	6-Jun-14	14	13	EZVI-2-MW2-1	<0.39	6.1	0.42	2.2	<0.41	<0.69
			14	EZVI-2-MW2-2	<0.39	7.7	0.55	2.6	<0.41	<0.69
				Average Concentration	**ND**	**6.9**	**0.48**	**2.4**	**ND**	**ND**
	13-Aug-14	82	13	EZVI-2-MW2-1	<0.39	5.0	<0.31	0.55	<0.41	<0.69
			14	EZVI-2-MW2-2	<0.39	6.9	<0.31	1.7	<0.41	<0.69
				Average Concentration	**ND**	**6.0**	**ND**	**1.1**	**ND**	**ND**
10 g EZVI Amended (MW2 Location)	23-May-14	0	15	EZVI-3-MW2-1	<0.39	3.1	0.42	2.1	<0.41	<0.69
			16	EZVI-3-MW2-2	<0.39	3.4	0.40	2.5	<0.41	<0.69
				Average Concentration	**ND**	**3.3**	**0.41**	**2.3**	**ND**	**ND**
	6-Jun-14	14	15	EZVI-3-MW2-1	<0.39	7.1	0.38	2.1	<0.41	<0.69
			16	EZVI-3-MW2-2	<0.39	6.2	0.50	1.6	<0.41	<0.69
				Average Concentration	**ND**	**6.6**	**0.44**	**1.8**	**ND**	**ND**
	13-Aug-14	82	15	EZVI-3-MW2-1	<0.39	8.5	<0.31	1.5	<0.41	<0.69
			16	EZVI-3-MW2-2	<0.39	4.2	0.61	1.6	<0.41	<0.69
				Average Concentration	**ND**	**6.3**	**0.31**	**1.5**	**ND**	**ND**
20 g EZVI Amended (MW2 Location)	23-May-14	0	17	EZVI-4-MW2-1	<0.39	3.3	0.39	1.8	<0.41	<0.69
			18	EZVI-4-MW2-2	<0.39	3.9	0.52	2.2	<0.41	<0.69
				Average Concentration	**ND**	**3.6**	**0.45**	**2.0**	**ND**	**ND**
	6-Jun-14	14	17	EZVI-4-MW2-1	1.0	5.8	<0.31	0.95	<0.41	<0.69
			18	EZVI-4-MW2-2	<0.39	7.7	0.72	0.99	<0.41	<0.69
				Average Concentration	**0.51**	**6.8**	**0.36**	**0.97**	**ND**	**ND**
	13-Aug-14	82	17	EZVI-4-MW2-1	<0.39	8.4	<0.31	1.7	<0.41	<0.69
			18	EZVI-4-MW2-2	<0.39	102	2.9	0.89	1.8	<0.69
				Average Concentration	**ND**	**55**	**1.5**	**1.3**	**0.90**	**ND**
0.4 g ZVI Amended (MW2 Location)	23-May-14	0	19	ZVI-1-MW2-1	0.48	19	5.0	5.9	0.88	<0.69
			20	ZVI-1-MW2-2	<0.39	4.6	0.62	2.7	<0.41	<0.69
				Average Concentration	**0.24**	**12**	**2.8**	**4.3**	**0.44**	**ND**
	6-Jun-14	14	19	ZVI-1-MW2-1	<0.39	6.8	0.47	2.6	<0.41	<0.69
			20	ZVI-1-MW2-2	<0.39	8.0	0.63	3.5	<0.41	<0.69
				Average Concentration	**ND**	**7.4**	**0.55**	**3.0**	**ND**	**ND**
	13-Aug-14	82	19	ZVI-1-MW2-1	<0.39	7.6	<0.31	1.8	<0.41	<0.69
			20	ZVI-1-MW2-2	<0.39	7.4	<0.31	2.4	<0.41	<0.69
				Average Concentration	**ND**	**7.5**	**ND**	**2.1**	**ND**	**ND**
	12-Nov-14	173	19	ZVI-1-MW2-1	<0.39	4.3	0.63	4.0	<0.41	<0.69
			20	ZVI-1-MW2-2	<0.39	8.8	0.61	0.74	<0.41	<0.69
				Average Concentration	**ND**	**6.5**	**0.62**	**2.4**	**ND**	**ND**
3.0 g ZVI Amended (MW2 Location)	23-May-14	0	21	ZVI-2-MW2-1	<0.39	3.8	<0.31	1.4	<0.41	<0.69
			22	ZVI-2-MW2-2	<0.39	4.9	0.50	2.2	<0.41	<0.69
				Average Concentration	**ND**	**4.3**	**0.25**	**1.8**	**ND**	**ND**
	6-Jun-14	14	21	ZVI-2-MW2-1	<0.39	7.6	0.48	2.0	<0.41	<0.69
			22	ZVI-2-MW2-2	<0.39	9.5	0.70	2.9	<0.41	<0.69
				Average Concentration	**ND**	**8.6**	**0.59**	**2.4**	**ND**	**ND**
	13-Aug-14	82	21	ZVI-2-MW2-1	<0.39	10	<0.31	2.8	<0.41	<0.69
			22	ZVI-2-MW2-2	<0.39	13	<0.31	2.6	<0.41	<0.69
				Average Concentration	**ND**	**12**	**ND**	**2.7**	**ND**	**ND**

TABLE 6B: SUMMARY OF REACTOR VFA RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY

LHAAP 18/24 Site, Karnack Texas

SiREM

Treatment	Date	Day	Bottle	Treatment Replicate	Lactate	Acetate	Propionate	Formate	Butyrate	Pyruvate
					mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
3.0 g ZVI Amended (MW2 Location) Continued	12-Nov-14	173	21	ZVI-2-MW2-1	<0.39	11	1.2	3.0	1.0	<0.69
			22	ZVI-2-MW2-2	<0.39	7.3	0.48	2.3	<0.41	<0.69
				Average Concentration	**ND**	**9.0**	**0.82**	**2.7**	**0.48**	**ND**
10 g ZVI Amended (MW2 Location)	23-May-14	0	23	ZVI-3-MW2-1	<0.39	6.0	0.45	2.3	<0.41	<0.69
			24	ZVI-3-MW2-2	<0.39	5.4	0.33	2.0	<0.41	<0.69
				Average Concentration	**ND**	**5.7**	**0.39**	**2.2**	**ND**	**ND**
	6-Jun-14	14	23	ZVI-3-MW2-1	9.8	11	0.66	2.8	<0.41	<0.69
			24	ZVI-3-MW2-2	11	17	0.60	2.6	<0.41	<0.69
				Average Concentration	**10**	**14**	**0.63**	**2.7**	**ND**	**ND**
	13-Aug-14	82	23	ZVI-3-MW2-1	<0.39	14	<0.31	2.9	<0.41	<0.69
			24	ZVI-3-MW2-2	--	--	--	--	--	--
				Average Concentration	**ND**	**14**	**ND**	**2.9**	**ND**	**ND**
20 g ZVI Amended (MW2 Location)	23-May-14	0	25	ZVI-4-MW2-1	<0.39	7.7	0.48	2.7	<0.41	<0.69
			26	ZVI-4-MW2-2	0.44	8.2	0.52	2.8	<0.41	<0.69
				Average Concentration	**0.22**	**8.0**	**0.50**	**2.7**	**ND**	**ND**
	6-Jun-14	14	25	ZVI-4-MW2-1	12	14	0.77	3.2	<0.41	<0.69
			26	ZVI-4-MW2-2	14	15	0.80	3.3	<0.41	<0.69
				Average Concentration	**13**	**14**	**0.79**	**3.2**	**ND**	**ND**

Notes:

ANSC - anaerobic sterile control
EZVI - emulsified zero valent iron
g - gram
mg/L - milligrams per liter
ND - not detected
ZVI - zero valent iron
< - compound not detected, the associated value is the detection limit
-- - not analysed

TABLE 7A: SUMMARY OF MICROCOSM pH RESULTS OF THE MW21 LOCATION BIOTREATABILITY STUDY SiREM

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Treatment Replicate	pH
Anaerobic Sterile Control (MW21 Location)	23-May-14	0	1	ANSC-MW21-1	5.68
			2	ANSC-MW21-2	5.72
				Average Concentration	**5.70**
	6-Jun-14	14	1	ANSC-MW21-1	5.80
			2	ANSC-MW21-2	5.78
				Average Concentration	**5.79**
	20-Jun-14	28	1	ANSC-MW21-1	5.43
			2	ANSC-MW21-2	5.51
				Average Concentration	**5.47**
	11-Jul-14	49	1	ANSC-MW21-1	5.76
			2	ANSC-MW21-2	5.83
				Average Concentration	**5.80**
	20-Aug-14	89	1	ANSC-MW21-1	5.80
			2	ANSC-MW21-2	5.89
				Average Concentration	**5.85**
	17-Sep-14	117	1	ANSC-MW21-1	5.82
			2	ANSC-MW21-2	5.93
				Average Concentration	**5.88**
	12-Nov-14	173	1	ANSC-MW21-1	5.74
			2	ANSC-MW21-2	5.79
				Average Concentration	**5.77**
Anaerobic Active Control (MW21 Location)	23-May-14	0	3	ANAC-MW21-1	5.66
			4	ANAC-MW21-2	5.60
				Average Concentration	**5.63**
	6-Jun-14	14	3	ANAC-MW21-1	5.73
			4	ANAC-MW21-2	5.71
				Average Concentration	**5.72**
	20-Jun-14	28	3	ANAC-MW21-1	5.54
			4	ANAC-MW21-2	5.42
				Average Concentration	**5.48**
	11-Jul-14	49	3	ANAC-MW21-1	5.62
			4	ANAC-MW21-2	5.63
				Average Concentration	**5.63**
	20-Aug-14	89	3	ANAC-MW21-1	5.56
			4	ANAC-MW21-2	5.66
				Average Concentration	**5.61**
	17-Sep-14	117	3	ANAC-MW21-1	5.67
			4	ANAC-MW21-2	5.70
				Average Concentration	**5.69**
	12-Nov-14	173	3	ANAC-MW21-1	5.67
			4	ANAC-MW21-2	5.72
				Average Concentration	**5.70**
Lactate Amended/KB-1® Plus Bioaugmented (MW21 Location)	23-May-14	0	5	LAC-MW21-1	5.73
			6	LAC-MW21-2	5.65
				Average Concentration	**5.69**
	6-Jun-14	14	5	LAC-MW21-1	5.84
			6	LAC-MW21-2	5.98
				Average Concentration	**5.91**
	20-Jun-14	28	5	LAC-MW21-1	5.30
			6	LAC-MW21-2	5.40
				Average Concentration	**5.35**
	Amended with 2.1 mL of a saturated sodium bicarbonate solution.				
	20-Jun-14	28	5	LAC-MW21-1	6.96
			6	LAC-MW21-2	6.98
				Average Concentration	**6.97**
	27-Jun-14	35	5	LAC-MW21-1	6.90
			6	LAC-MW21-2	6.99
				Average Concentration	**6.95**
	11-Jul-14	49	5	LAC-MW21-1	6.54
			6	LAC-MW21-2	6.61
				Average Concentration	**6.58**
	Amended with 1.0 mL of a saturated sodium bicarbonate solution.				
	15-Jul-14	53	5	LAC-MW21-1	7.06
			6	LAC-MW21-2	7.15
				Average Concentration	**7.11**
	25-Jul-14	63	5	LAC-MW21-1	6.75
			6	LAC-MW21-2	6.91
				Average Concentration	**6.83**
	20-Aug-14	89	5	LAC-MW21-1	6.68
			6	LAC-MW21-2	6.76
				Average Concentration	**6.72**
	3-Sep-14	103	5	LAC-MW21-1	6.71
			6	LAC-MW21-2	6.76
				Average Concentration	**6.74**
	17-Sep-14	117	5	LAC-MW21-1	6.85
			6	LAC-MW21-2	6.78
				Average Concentration	**6.82**
	15-Oct-14	145	5	LAC-MW21-1	6.58
			6	LAC-MW21-2	6.68
				Average Concentration	**6.63**

TABLE 7A: SUMMARY OF MICROCOSM pH RESULTS OF THE MW21 LOCATION BIOTREATABILITY STUDY SiREM

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Treatment Replicate	pH
Lactate Amended/KB-1® Plus Bioaugmented (MW21 Location) Continued	31-Oct-14	161	5	LAC-MW21-1	6.70
			6	LAC-MW21-2	6.74
				Average Concentration	**6.72**
	12-Nov-14	173	5	LAC-MW21-1	6.65
			6	LAC-MW21-2	6.53
				Average Concentration	**6.59**
	Amended with 1.0 mL of a saturated sodium bicarbonate solution.				
	21-Nov-14	182	5	LAC-MW21-1	6.82
			6	LAC-MW21-2	--
				Average Concentration	**6.82**
	26-Nov-14 Start	187	5	LAC-MW21-1	6.56
			6	LAC-MW21-2	--
				Average Concentration	**6.56**
	Amended with 1.75 mL of a saturated sodium bicarbonate solution.				
	26-Nov-14 End	187	5	LAC-MW21-1	6.88
			6	LAC-MW21-2	--
				Average Concentration	**6.88**
	5-Dec-14	196	5	LAC-MW21-1	6.93
			6	LAC-MW21-2	--
				Average Concentration	**6.93**
	22-Dec-14	213	5	LAC-MW21-1	7.09
			6	LAC-MW21-2	--
				Average Concentration	**7.09**
SRS-SD Amended/KB-1® Plus Bioaugmented (MW21 Location)	23-May-14	0	7	SRS-SD-MW21-1	5.71
			8	SRS-SD-MW21-2	5.70
				Average Concentration	**5.71**
	6-Jun-14	14	7	SRS-SD-MW21-1	5.86
			8	SRS-SD-MW21-2	5.89
				Average Concentration	**5.88**
	20-Jun-14	28	7	SRS-SD-MW21-1	5.44
			8	SRS-SD-MW21-2	5.54
				Average Concentration	**5.49**
	Amended with 1.1 mL of a saturated sodium bicarbonate solution.				
	20-Jun-14	28	7	SRS-SD-MW21-1	6.91
			8	SRS-SD-MW21-2	7.03
				Average Concentration	**6.97**
	27-Jun-14	35	7	SRS-SD-MW21-1	6.87
			8	SRS-SD-MW21-2	6.81
				Average Concentration	**6.84**
	11-Jul-14	49	7	SRS-SD-MW21-1	6.29
			8	SRS-SD-MW21-2	6.23
				Average Concentration	**6.26**
	Amended with 1.0 mL of a saturated sodium bicarbonate solution.				
	15-Jul-14	53	7	SRS-SD-MW21-1	6.94
			8	SRS-SD-MW21-2	6.89
				Average Concentration	**6.92**
	25-Jul-14	63	7	SRS-SD-MW21-1	6.68
			8	SRS-SD-MW21-2	6.72
				Average Concentration	**6.70**
	20-Aug-14	89	7	SRS-SD-MW21-1	6.49
			8	SRS-SD-MW21-2	6.54
				Average Concentration	**6.52**
	3-Sep-14	103	7	SRS-SD-MW21-1	6.57
			8	SRS-SD-MW21-2	6.66
				Average Concentration	**6.62**
	17-Sep-14	117	7	SRS-SD-MW21-1	6.63
			8	SRS-SD-MW21-2	6.71
				Average Concentration	**6.67**
	15-Oct-14	145	7	SRS-SD-MW21-1	6.31
			8	SRS-SD-MW21-2	6.47
				Average Concentration	**6.39**
	12-Nov-14	173	7	SRS-SD-MW21-1	6.27
			8	SRS-SD-MW21-2	6.20
				Average Concentration	**6.24**
	Amended with 1.0 mL of a saturated sodium bicarbonate solution.				
	21-Nov-14	182	7	SRS-SD-MW21-1	6.60
			8	SRS-SD-MW21-2	6.72
				Average Concentration	**6.66**
	26-Nov-14 Start	187	7	SRS-SD-MW21-1	6.54
			8	SRS-SD-MW21-2	6.40
				Average Concentration	**6.47**
	Amended with 1.75 mL of a saturated sodium bicarbonate solution.				
	26-Nov-14 End	187	7	SRS-SD-MW21-1	6.84
			8	SRS-SD-MW21-2	6.98
				Average Concentration	**6.91**
	5-Dec-14	196	7	SRS-SD-MW21-1	6.76
			8	SRS-SD-MW21-2	6.93
				Average Concentration	**6.85**
	22-Dec-14	213	7	SRS-SD-MW21-1	6.65
			8	SRS-SD-MW21-2	6.71
				Average Concentration	**6.68**

Notes:

ANAC - anaerobic active control
ANSC - anaerobic sterile control
mL - milliliter

TABLE 7B: SUMMARY OF REACTOR pH RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY SiREM

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Treatment Replicate	pH
Anaerobic Sterile Control (MW2 Location)	23-May-14	0	9	ANSC-MW2-1	5.23
			10	ANSC-MW2-2	5.16
				Average Concentration	**5.20**
	27-May-14	4	9	ANSC-MW2-1	5.43
			10	ANSC-MW2-2	5.40
				Average Concentration	**5.42**
	30-May-14	7	9	ANSC-MW2-1	5.25
			10	ANSC-MW2-2	5.18
				Average Concentration	**5.22**
	6-Jun-14	14	9	ANSC-MW2-1	5.26
			10	ANSC-MW2-2	5.37
				Average Concentration	**5.32**
	13-Jun-14	21	9	ANSC-MW2-1	5.42
			10	ANSC-MW2-2	5.45
				Average Concentration	**5.44**
	13-Aug-14	82	9	ANSC-MW2-1	5.65
			10	ANSC-MW2-2	5.73
				Average Concentration	**5.69**
	3-Sep-14	103	9	ANSC-MW2-1	5.42
			10	ANSC-MW2-2	5.49
				Average Concentration	**5.46**
	24-Sep-14	124	9	ANSC-MW2-1	5.55
			10	ANSC-MW2-2	5.56
				Average Concentration	**5.56**
	15-Oct-14	145	9	ANSC-MW2-1	5.49
			10	ANSC-MW2-2	5.39
				Average Concentration	**5.44**
	12-Nov-14	173	9	ANSC-MW2-1	5.39
			10	ANSC-MW2-2	5.35
				Average Concentration	**5.37**
0.4 g EZVI Amended (MW2 Location)	23-May-14	0	11	EZVI-1-MW2-1	5.17
			12	EZVI-1-MW2-2	5.21
				Average Concentration	**5.19**
	27-May-14	4	11	EZVI-1-MW2-1	5.51
			12	EZVI-1-MW2-2	5.40
				Average Concentration	**5.46**
	30-May-14	7	11	EZVI-1-MW2-1	5.32
			12	EZVI-1-MW2-2	5.26
				Average Concentration	**5.29**
	6-Jun-14	14	11	EZVI-1-MW2-1	5.24
			12	EZVI-1-MW2-2	5.38
				Average Concentration	**5.31**
	13-Jun-14	21	11	EZVI-1-MW2-1	5.48
			12	EZVI-1-MW2-2	5.43
				Average Concentration	**5.46**
	13-Aug-14	82	11	EZVI-1-MW2-1	5.82
			12	EZVI-1-MW2-2	5.69
				Average Concentration	**5.76**
3.0 g EZVI Amended (MW2 Location)	23-May-14	0	13	EZVI-2-MW2-1	5.19
			14	EZVI-2-MW2-2	5.22
				Average Concentration	**5.21**
	27-May-14	4	13	EZVI-2-MW2-1	5.50
			14	EZVI-2-MW2-2	5.35
				Average Concentration	**5.43**
	30-May-14	7	13	EZVI-2-MW2-1	5.22
			14	EZVI-2-MW2-2	5.23
				Average Concentration	**5.23**
	6-Jun-14	14	13	EZVI-2-MW2-1	5.47
			14	EZVI-2-MW2-2	5.48
				Average Concentration	**5.48**
	13-Jun-14	21	13	EZVI-2-MW2-1	5.45
			14	EZVI-2-MW2-2	5.58
				Average Concentration	**5.52**
	13-Aug-14	82	13	EZVI-2-MW2-1	5.91
			14	EZVI-2-MW2-2	5.97
				Average Concentration	**5.94**
10 g EZVI Amended (MW2 Location)	23-May-14	0	15	EZVI-3-MW2-1	5.34
			16	EZVI-3-MW2-2	5.47
				Average Concentration	**5.41**
	27-May-14	4	15	EZVI-3-MW2-1	5.48
			16	EZVI-3-MW2-2	5.61
				Average Concentration	**5.55**
	30-May-14	7	15	EZVI-3-MW2-1	5.31
			16	EZVI-3-MW2-2	5.29
				Average Concentration	**5.30**
	6-Jun-14	14	15	EZVI-3-MW2-1	5.64
			16	EZVI-3-MW2-2	5.71
				Average Concentration	**5.68**
	13-Jun-14	21	15	EZVI-3-MW2-1	5.72
			16	EZVI-3-MW2-2	5.76
				Average Concentration	**5.74**

TABLE 7B: SUMMARY OF REACTOR pH RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY SiREM

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Treatment Replicate	pH
10 g EZVI Amended (MW2 Location) Continued	13-Aug-14	82	15	EZVI-3-MW2-1	6.05
			16	EZVI-3-MW2-2	6.44
				Average Concentration	**6.25**
20 g EZVI Amended (MW2 Location)	23-May-14	0	17	EZVI-4-MW2-1	5.45
			18	EZVI-4-MW2-2	5.55
				Average Concentration	**5.50**
	27-May-14	4	17	EZVI-4-MW2-1	5.57
			18	EZVI-4-MW2-2	5.64
				Average Concentration	**5.61**
	30-May-14	7	17	EZVI-4-MW2-1	5.46
			18	EZVI-4-MW2-2	5.54
				Average Concentration	**5.50**
	6-Jun-14	14	17	EZVI-4-MW2-1	5.87
			18	EZVI-4-MW2-2	5.78
				Average Concentration	**5.83**
	13-Jun-14	21	17	EZVI-4-MW2-1	5.86
			18	EZVI-4-MW2-2	6.03
				Average Concentration	**5.95**
	13-Aug-14	82	17	EZVI-4-MW2-1	6.31
			18	EZVI-4-MW2-2	6.46
				Average Concentration	**6.39**
0.4 g ZVI Amended (MW2 Location)	23-May-14	0	19	ZVI-1-MW2-1	5.13
			20	ZVI-1-MW2-2	5.18
				Average Concentration	**5.16**
	27-May-14	4	19	ZVI-1-MW2-1	6.64
			20	ZVI-1-MW2-2	6.13
				Average Concentration	**6.39**
	30-May-14	7	19	ZVI-1-MW2-1	5.99
			20	ZVI-1-MW2-2	5.93
				Average Concentration	**5.96**
	6-Jun-14	14	19	ZVI-1-MW2-1	6.38
			20	ZVI-1-MW2-2	6.44
				Average Concentration	**6.41**
	13-Jun-14	21	19	ZVI-1-MW2-1	6.46
			20	ZVI-1-MW2-2	6.64
				Average Concentration	**6.55**
	13-Aug-14	82	19	ZVI-1-MW2-1	6.78
			20	ZVI-1-MW2-2	6.78
				Average Concentration	**6.78**
	3-Sep-14	103	19	ZVI-1-MW2-1	6.42
			20	ZVI-1-MW2-2	6.41
				Average Concentration	**6.42**
	24-Sep-14	124	19	ZVI-1-MW2-1	6.56
			20	ZVI-1-MW2-2	6.55
				Average Concentration	**6.56**
	15-Oct-14	145	19	ZVI-1-MW2-1	6.43
			20	ZVI-1-MW2-2	6.41
				Average Concentration	**6.42**
	12-Nov-14	173	19	ZVI-1-MW2-1	6.55
			20	ZVI-1-MW2-2	6.34
				Average Concentration	**6.45**
	22-Dec-14	213	19	ZVI-1-MW2-1	6.72
			20	ZVI-1-MW2-2	6.66
				Average Concentration	**6.69**
3.0 g ZVI Amended (MW2 Location)	23-May-14	0	21	ZVI-2-MW2-1	5.40
			22	ZVI-2-MW2-2	5.32
				Average Concentration	**5.36**
	27-May-14	4	21	ZVI-2-MW2-1	6.71
			22	ZVI-2-MW2-2	6.86
				Average Concentration	**6.79**
	30-May-14	7	21	ZVI-2-MW2-1	6.39
			22	ZVI-2-MW2-2	6.40
				Average Concentration	**6.40**
	6-Jun-14	14	21	ZVI-2-MW2-1	6.77
			22	ZVI-2-MW2-2	6.65
				Average Concentration	**6.71**
	13-Jun-14	21	21	ZVI-2-MW2-1	6.61
			22	ZVI-2-MW2-2	6.68
				Average Concentration	**6.65**
	13-Aug-14	82	21	ZVI-2-MW2-1	6.61
			22	ZVI-2-MW2-2	6.49
				Average Concentration	**6.55**
	3-Sep-14	103	21	ZVI-2-MW2-1	6.24
			22	ZVI-2-MW2-2	6.29
				Average Concentration	**6.27**
	24-Sep-14	124	21	ZVI-2-MW2-1	7.01
			22	ZVI-2-MW2-2	6.38
				Average Concentration	**6.70**

TABLE 7B: SUMMARY OF REACTOR pH RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY SiREM

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Treatment Replicate	pH
3.0 g ZVI Amended (MW2 Location) Continued	15-Oct-14	145	21	ZVI-2-MW2-1	7.79
			22	ZVI-2-MW2-2	7.52
				Average Concentration	**7.66**
	12-Nov-14	173	21	ZVI-2-MW2-1	6.63
			22	ZVI-2-MW2-2	7.65
				Average Concentration	**7.14**
	22-Dec-14	213	21	ZVI-2-MW2-1	6.86
			22	ZVI-2-MW2-2	6.93
				Average Concentration	**6.90**
10 g ZVI Amended (MW2 Location)	23-May-14	0	23	ZVI-3-MW2-1	5.32
			24	ZVI-3-MW2-2	5.26
				Average Concentration	**5.29**
	27-May-14	4	23	ZVI-3-MW2-1	6.89
			24	ZVI-3-MW2-2	6.76
				Average Concentration	**6.83**
	30-May-14	7	23	ZVI-3-MW2-1	6.75
			24	ZVI-3-MW2-2	6.68
				Average Concentration	**6.72**
	6-Jun-14	14	23	ZVI-3-MW2-1	6.99
			24	ZVI-3-MW2-2	7.42
				Average Concentration	**7.21**
	13-Jun-14	21	23	ZVI-3-MW2-1	7.86
			24	ZVI-3-MW2-2	7.90
				Average Concentration	**7.88**
	13-Aug-14	82	23	ZVI-3-MW2-1	8.35
			24	ZVI-3-MW2-2	--
				Average Concentration	**8.35**
	3-Sep-14	103	23	ZVI-3-MW2-1	8.25
			24	ZVI-3-MW2-2	--
				Average Concentration	**8.25**
	24-Sep-14	124	23	ZVI-3-MW2-1	8.52
			24	ZVI-3-MW2-2	--
				Average Concentration	**8.52**
20 g ZVI Amended (MW2 Location)	23-May-14	0	25	ZVI-4-MW2-1	5.35
			26	ZVI-4-MW2-2	5.38
				Average Concentration	**5.37**
	27-May-14	4	25	ZVI-4-MW2-1	7.03
			26	ZVI-4-MW2-2	6.95
				Average Concentration	**6.99**
	30-May-14	7	25	ZVI-4-MW2-1	7.56
			26	ZVI-4-MW2-2	7.42
				Average Concentration	**7.49**
	6-Jun-14	14	25	ZVI-4-MW2-1	8.10
			26	ZVI-4-MW2-2	8.17
				Average Concentration	**8.14**
	13-Jun-14	21	25	ZVI-4-MW2-1	8.32
			26	ZVI-4-MW2-2	8.43
				Average Concentration	**8.38**
Anaerobic Active Control (MW2 Location) - Extension	23-Jul-14	0	27	ANAC-1	5.34
			28	ANAC-2	5.42
				Average Concentration	**5.38**
	25-Jul-14	2	27	ANAC-1	5.39
			28	ANAC-2	5.45
				Average Concentration	**5.42**
	30-Jul-14	7	27	ANAC-1	5.43
			28	ANAC-2	5.48
				Average Concentration	**5.46**
	6-Aug-14	14	27	ANAC-1	5.55
			28	ANAC-2	5.36
				Average Concentration	**5.46**
	13-Aug-14	21	27	ANAC-1	5.79
			28	ANAC-2	5.75
				Average Concentration	**5.77**
	3-Sep-14	42	27	ANAC-1	5.80
			28	ANAC-2	5.51
				Average Concentration	**5.66**
	24-Sep-14	63	27	ANAC-1	5.65
			28	ANAC-2	5.52
				Average Concentration	**5.59**
	15-Oct-14	84	27	ANAC-1	5.45
			28	ANAC-2	5.55
				Average Concentration	**5.50**
	12-Nov-14	112	27	ANAC-1	5.66
			28	ANAC-2	5.64
				Average Concentration	**5.65**

TABLE 7B: SUMMARY OF REACTOR pH RESULTS OF THE MW2 LOCATION CHEMICAL REDUCTION STUDY SiREM

LHAAP 18/24 Site, Karnack, Texas

Treatment	Date	Day	Bottle	Treatment Replicate	pH
10 g EZVI Amended (MW2 Location) - Extension	25-Jul-14	2	29	EZVI-S-1	6.06
			30	EZVI-S-2	6.22
				Average Concentration	**6.14**
	30-Jul-14	7	29	EZVI-S-1	6.29
			30	EZVI-S-2	6.33
				Average Concentration	**6.31**
	6-Aug-14	14	29	EZVI-S-1	6.36
			30	EZVI-S-2	6.46
				Average Concentration	**6.41**
	13-Aug-14	21	29	EZVI-S-1	6.73
			30	EZVI-S-2	6.83
				Average Concentration	**6.78**
	3-Sep-14	42	29	EZVI-S-1	6.48
			30	EZVI-S-2	6.39
				Average Concentration	**6.44**
	18-Sep-14	57	29	EZVI-S-1	6.48
			30	EZVI-S-2	6.39
				Average Concentration	**6.44**
	15-Oct-14	84	29	EZVI-S-1	6.36
			30	EZVI-S-2	6.43
				Average Concentration	**6.40**
	12-Nov-14	112	29	EZVI-S-1	6.41
			30	EZVI-S-2	6.66
				Average Concentration	**6.54**
10 g ZVI Amended (MW2 Location) - Extension with Gas Collection	25-Jul-14	2	31	ZVI-G-1	7.22
			32	ZVI-G-2	6.98
				Average Concentration	**7.10**
	30-Jul-14	7	31	ZVI-G-1	6.96
			32	ZVI-G-2	6.99
				Average Concentration	**6.98**
	6-Aug-14	14	31	ZVI-G-1	8.06
			32	ZVI-G-2	8.18
				Average Concentration	**8.12**
	13-Aug-14	21	31	ZVI-G-1	8.34
			32	ZVI-G-2	8.26
				Average Concentration	**8.30**
	3-Sep-14	42	31	ZVI-G-1	7.95
			32	ZVI-G-2	7.72
				Average Concentration	**7.84**
	24-Sep-14	63	31	ZVI-G-1	8.48
			32	ZVI-G-2	--
				Average Concentration	**8.48**
	15-Oct-14	84	31	ZVI-G-1	8.48
			32	ZVI-G-2	--
				Average Concentration	**8.48**
	12-Nov-14	112	31	ZVI-G-1	8.37
			32	ZVI-G-2	--
				Average Concentration	**8.37**

Notes:

ANAC - anaerobic active control
ANSC - anaerobic sterile control
EZVI - emulsified zero valent iron
g - gram
ZVI - zero valent iron
-- - not analysed

TABLE 8A: HALF-LIVES (DAYS) OF cVOCs DETECTED IN MICROCOSMS OF THE MW21 LOCATION BIOTREATABILITY STUDY
LHAAP 18/24 Site, Karnack, Texas

SiREM

Treatment/Control	TCE			cDCE			VC			DCM			Perchlorate		
	Half Life (Days)	t_1 (Day)	t_2 (Day)	**Half Life (Days)**	t_1 (Day)	t_2 (Day)	**Half Life (Days)**	t_1 (Day)	t_2 (Day)	**Half Life (Days)**	t_1 (Day)	t_2 (Day)	**Half Life (Days)**	t_1 (Day)	t_2 (Day)
Anaerobic Sterile Control (MW21 Location)	3836	0	173	~	0	173	~	0	173	5,095	0	173	551	0	173
Anaerobic Active Control (MW21 Location)	7853	0	173	~	0	173	~	0	173	1.5**	0	14	228	0	173
Lactate Amended/KB-1® Plus Bioaugmented (MW21 Location) - Replicate 1	4.8*	28	63	66*	173	213	~	0	173	4.7*	28	63	1.9	0	28
Lactate Amended/KB-1® Plus Bioaugmented (MW21 Location) - Replicate 2	18*	28	145	2.7*	117	145	6.0*	117	145	4.2*	35	63	1.9	0	28
SRS-SD Amended/KB-1® Plus Bioaugmented (MW21 Location)	5.9*	28	90	3.9*	173	213	6.0*	173	213	2.9	0	28	2.4	0	35

* half lives determined after the addition of KB-1® Plus
** half life determined before re-spiking the active control with DCM

Notes:

~ - net degradation of compound was not detected over duration of study
cDCE - cis-1,2-dichloroethene
cVOC - chlorinated volatile organic compound
DCM - dichloromethane
NA - not applicable
t_1 - initial time
t_2 - final time
TCE - trichloroethene
VC - vinyl chloride

TABLE 8B: HALF-LIVES (DAYS) OF cVOCs DETECTED IN REACTORS OF THE MW2 LOCATION OF THE CHEMICAL REDUCTION STUDY
LHAAP 18/24 Site, Karnack, Texas

Treatment/Control	TCE			DCM			Perchlorate		
	Half Life (Days)	t_1 (Day)	t_2 (Day)	**Half Life (Days)**	t_1 (Day)	t_2 (Day)	**Half Life (Days)**	t_1 (Day)	t_2 (Day)
Anaerobic Sterile Control (MW2 Location)	~	0	173	284	0	173	445	0	173
0.4 g EZVI Amended (MW2 Location)	~	0	82	~	0	82	~	0	82
3.0 g EZVI Amended (MW2 Location)	312	0	82	~	0	82	~	0	82
10 g EZVI Amended (MW2 Location)	~	0	82	~	0	82	~	0	82
20 g EZVI Amended (MW2 Location)	445	0	82	~	0	82	~	0	82
0.4 g ZVI Amended (MW2 Location)	39	7	173	68	7	173	3.9*	173	213
3.0 g ZVI Amended (MW2 Location)	13	7	82	60	7	173	4.3*	173	213
10 g ZVI Amended (MW2 Location)	4.8	7	82	92	0	123	31	0	124
20 g ZVI Amended (MW2 Location)	7.2	0	21	32	0	21	32	0	21
Anaerobic Active Control (MW2 Location) - Extension	~	0	112	244	0	112	- -	- -	- -
10 g EZVI Amended (MW2 Location) - Extension	64	0	112	161	0	112	- -	- -	- -
10 g ZVI Amended (MW2 Location) - Extension with Gas Collection	2.6	0	42	57	0	112	- -	- -	- -

* half lives determined after the addition of lactate

Notes:

- - not analyzed
~ - net degradation of compound was not detected over duration of study
cVOC - chlorinated volatile organic compound
DCM - dichloromethane
EZVI - emulsified zero valent iron
t_1 - initial time
t_2 - final time
TCE - trichloroethene
ZVI - zero valent iron

TABLE 9: SUMMARY OF MW2 AND MW21 LOCATION BASELINE ANALYSIS OF SOIL cVOCs, SOIL FOC, AND AQUEOUS NUTRIENTS

LHAAP 18/24 Site, Karnack, Texas

SiREM

Treatment	Date	Day	Treatment Replicate	Soil cVOCs and FOC						Aqueous Nutrients	
				TCE	cDCE	VC	DCM	Soil FOC	Soil TOC	Phosphorus	TKN
				mg/kg	mg/kg	mg/kg	mg/kg	g/g	%	mg/L	mg/L
MW2 Location Sacrificial Baseline Reactors	13-May-14	-10	MW2-A	6.8	2.9	<0.020	313	0.0026	0.26	<0.05	<1.0
			MW2-B	12	5.3	<0.020	575	0.0011	0.11	<0.05	<1.0
			Average Concentration	**9.2**	**4.1**	**ND**	**444**	**0.0019**	**0.19**	**ND**	**ND**
MW21 Location Sacrificial Baseline Microcosms	13-May-14	-10	MW21-A	0.659	<0.050	<0.020	0.136	<0.0010	<0.10	<0.05	1.5
			MW21-B	0.651	<0.050	<0.020	0.227	<0.0010	<0.10	<0.05	<1.0
			Average Concentration	**0.655**	**ND**	**ND**	**0.182**	**ND**	**ND**	**ND**	**0.73**

Notes:

cDCE - cis-1,2-dichloroethene
cVOC - chlorinated volatile organic compound
DCM - dichloromethane
FOC - fraction organic carbon (reported as grams of organic carbon per grams of all carbon)
g/g - gram per gram
mg/kg - milligram per kilogram
mg/L - milligrams per liter
ND - not detected
TCE - trichloroethene
TKN - total Kjeldahl nitrogen
TOC - total organic carbon (reported as a % of organic carbon in all carbon)
VC - vinyl chloride
% - percent
< - compound not detected, the associated value is the detection limit

SiREM

FIGURES

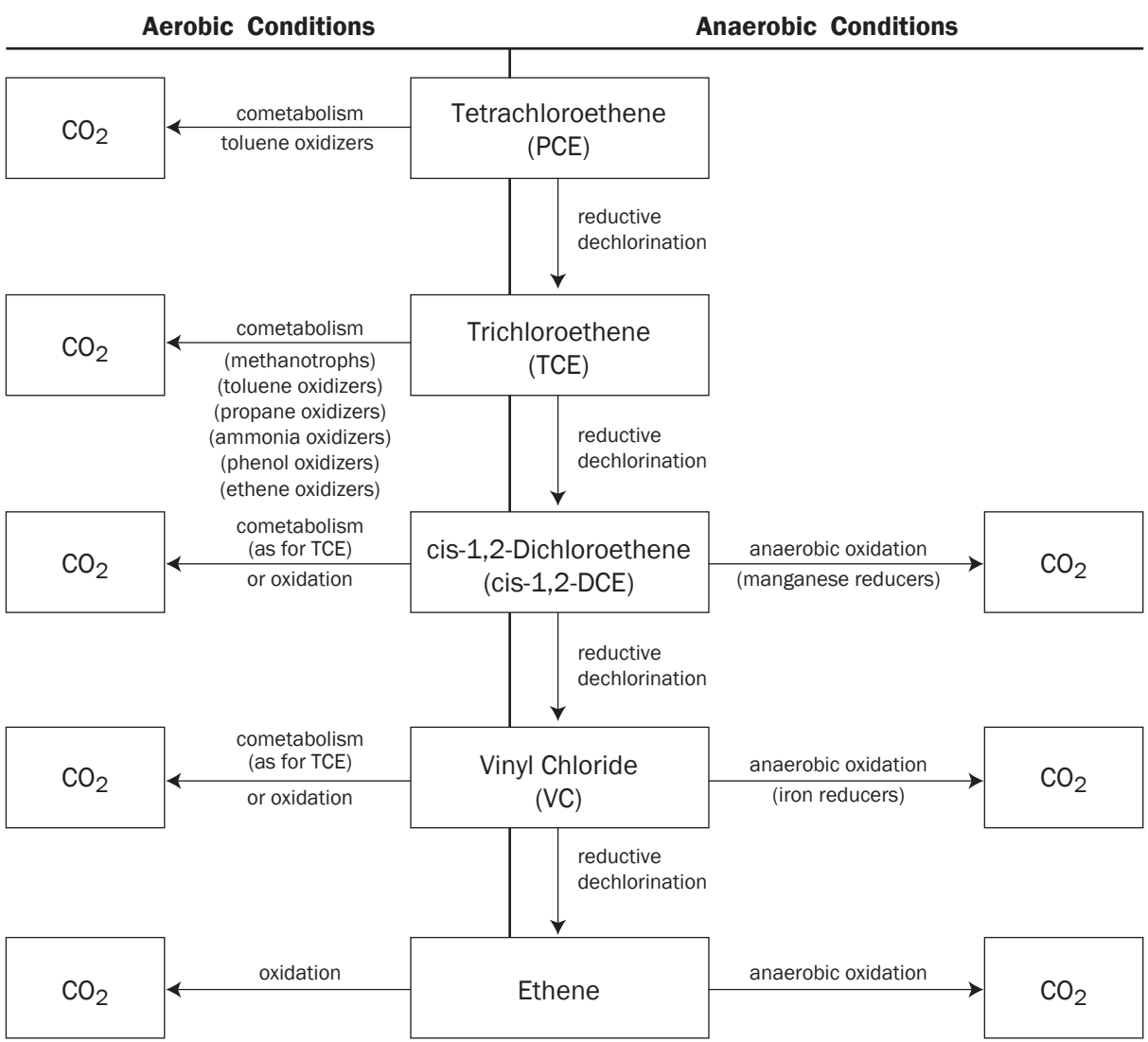

Pathways for the Degradation of Chlorinated Ethenes

SiREM

June 2014

Figure: **1**

pathways_chlorinated ethenes.ai

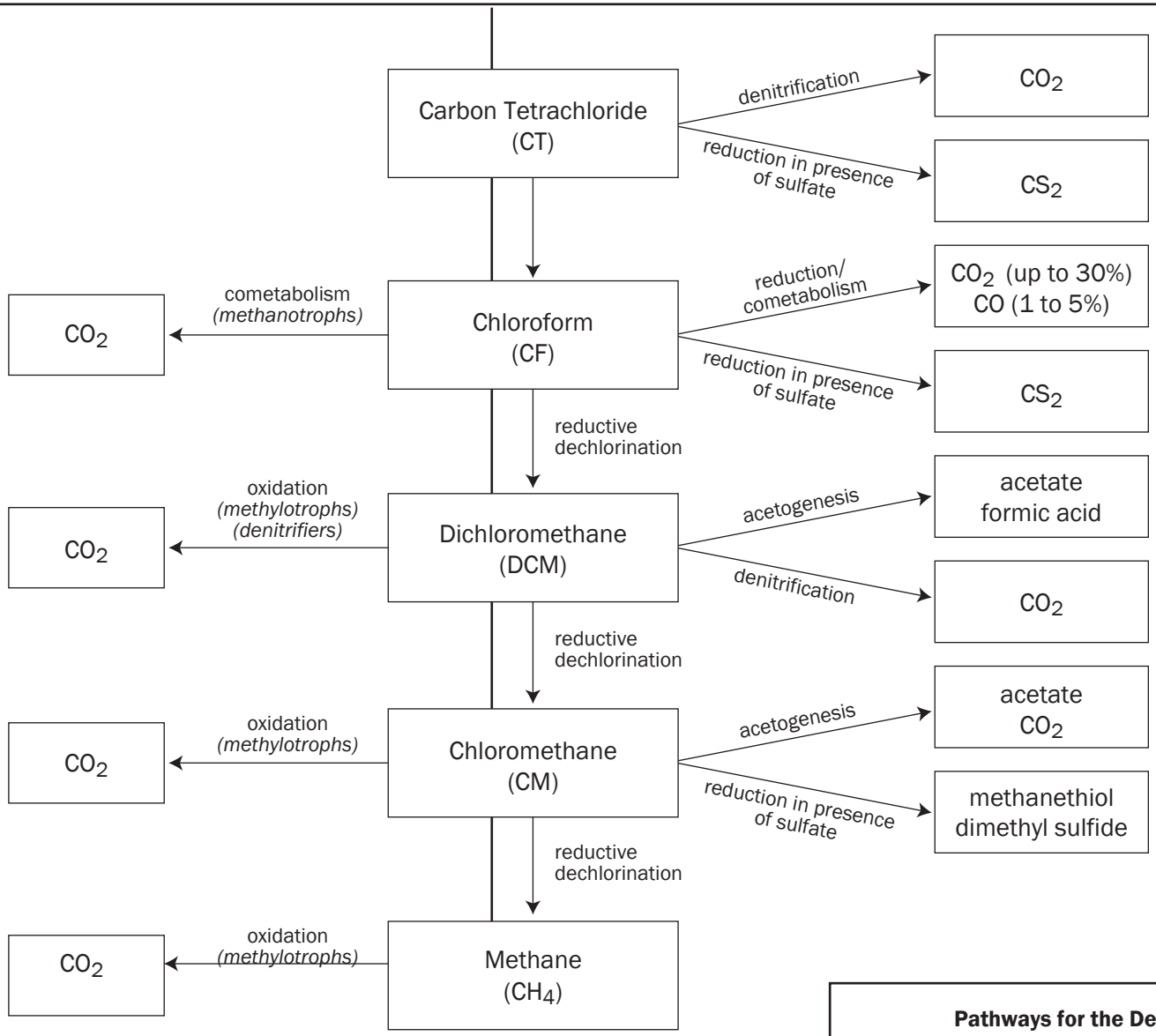

Pathways for the Degradation of Chlorinated Methanes

SiREM

March 2014

Figure: 2

pathway_methane_2012.ai

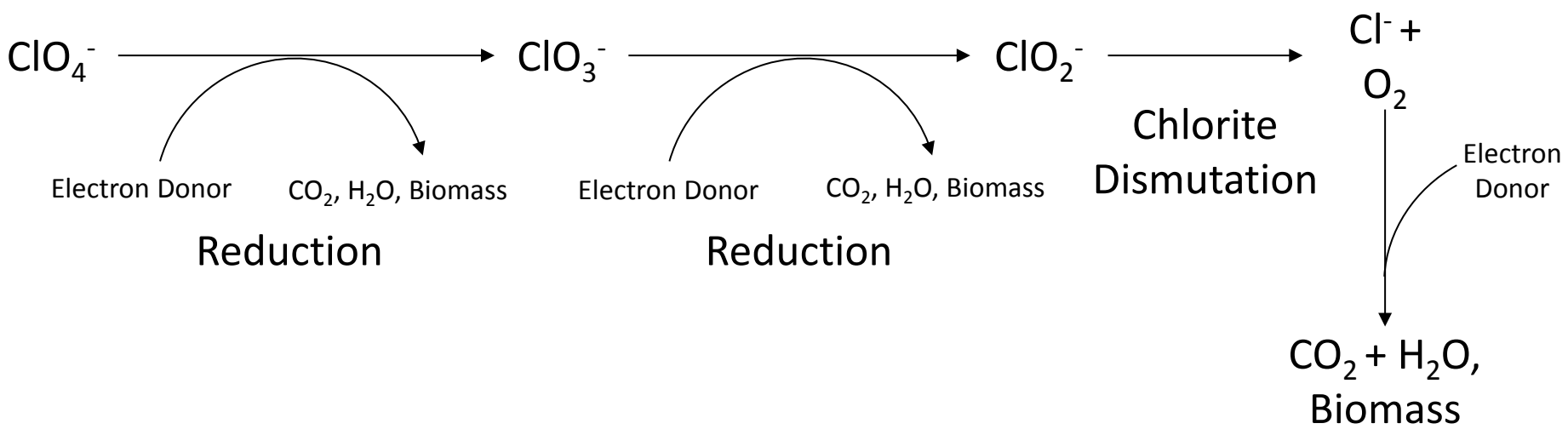

Pathway for the Biodegradation of Perchlorate

SiREM

September 2014

Figure: **3**

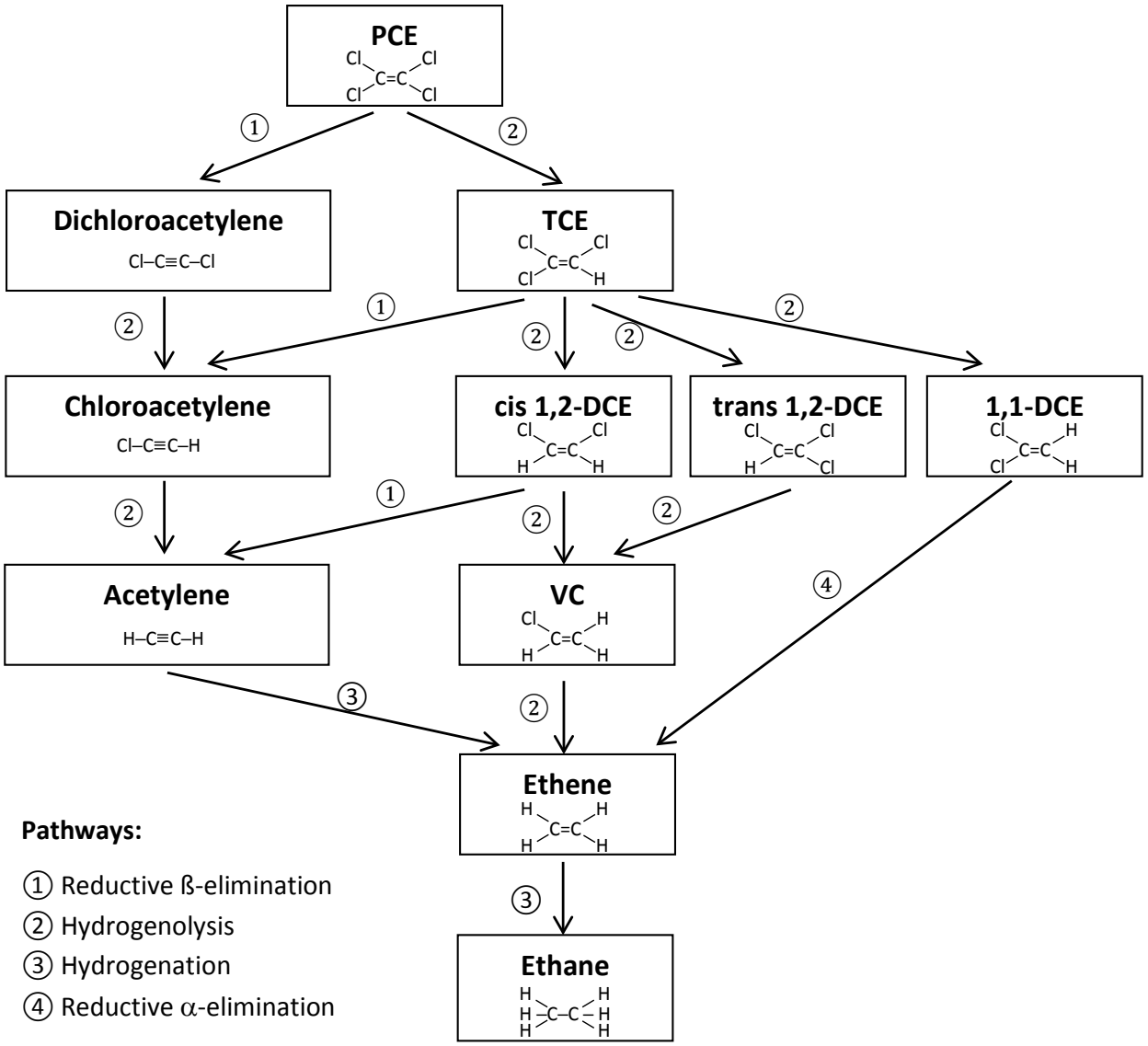

(modified from Arnold and Roberts, 2000)

Chlorinated Ethene Degradation Pathways with ZVI

Ripley, Tennessee

SiREM

September 2013

Figure: **4**

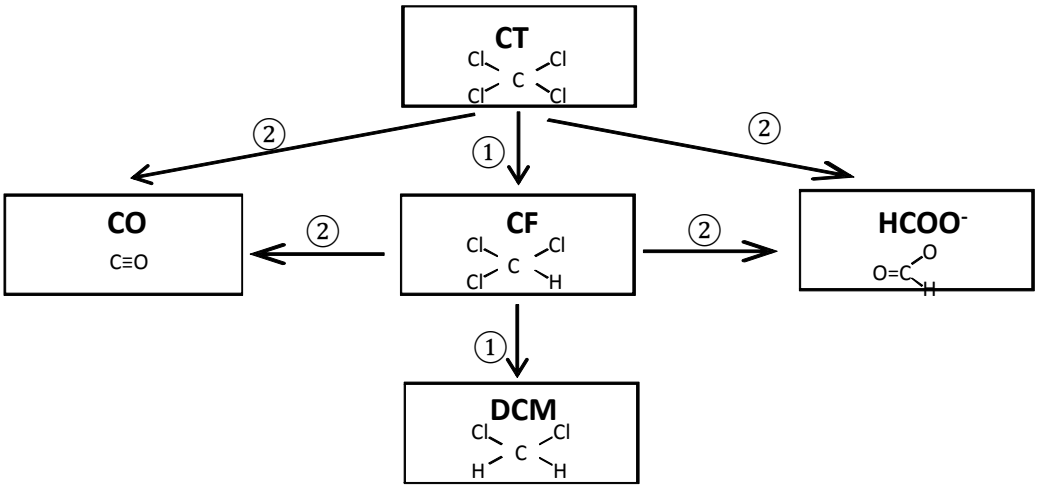

Pathways:

① Hydrogenolysis
② α-elimination and hydrolysis

(modified from Tamara and Butler, 2004)

Chlorinated Methane Degradation Pathways with ZVI Ripley, Tennessee	
SiREM	September 2013
	Figure: **5**

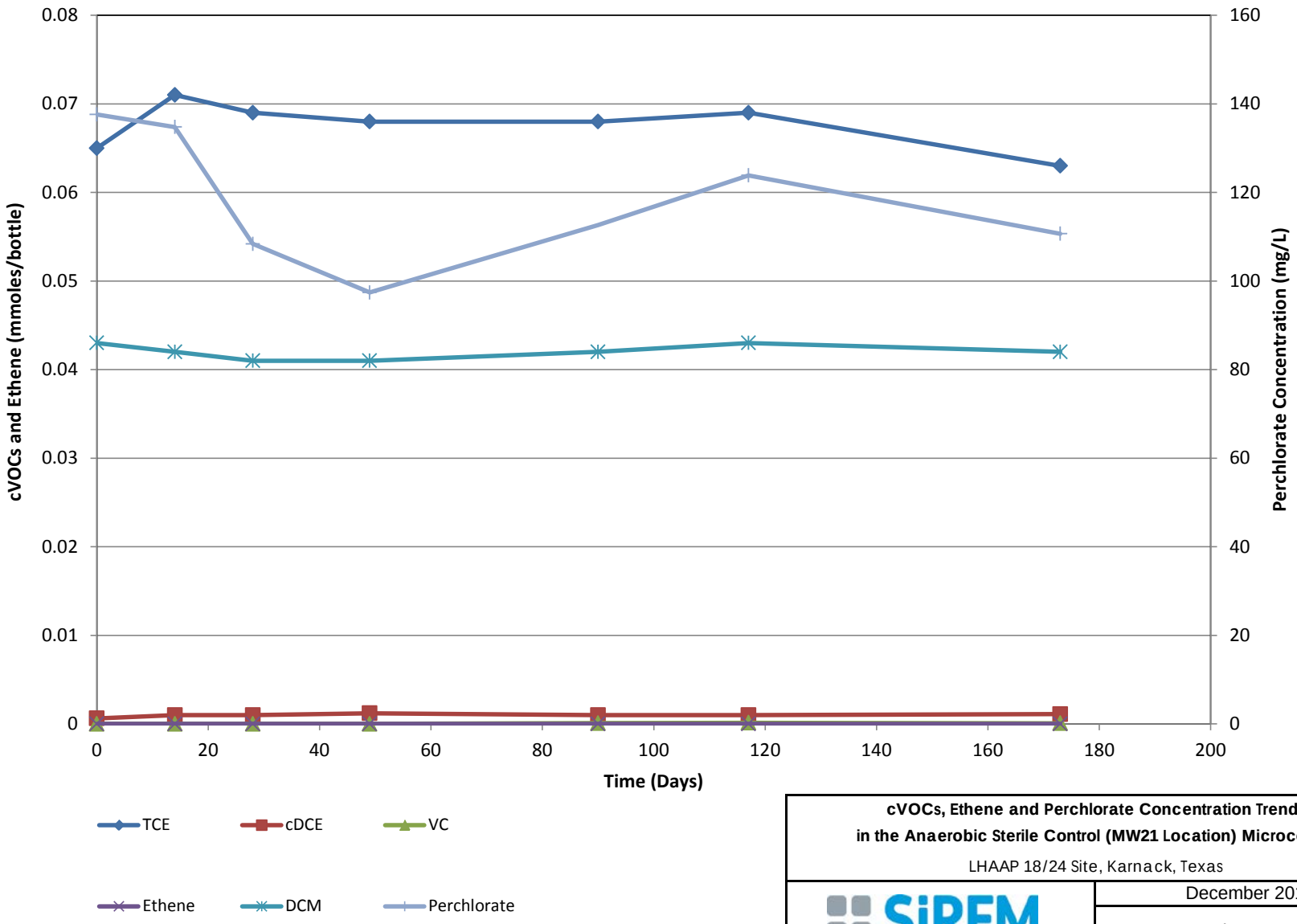

cVOCs, Ethene and Perchlorate Concentration Trends in the Anaerobic Sterile Control (MW21 Location) Microcosms

LHAAP 18/24 Site, Karnack, Texas

SiREM

December 2014

Figure: **6**

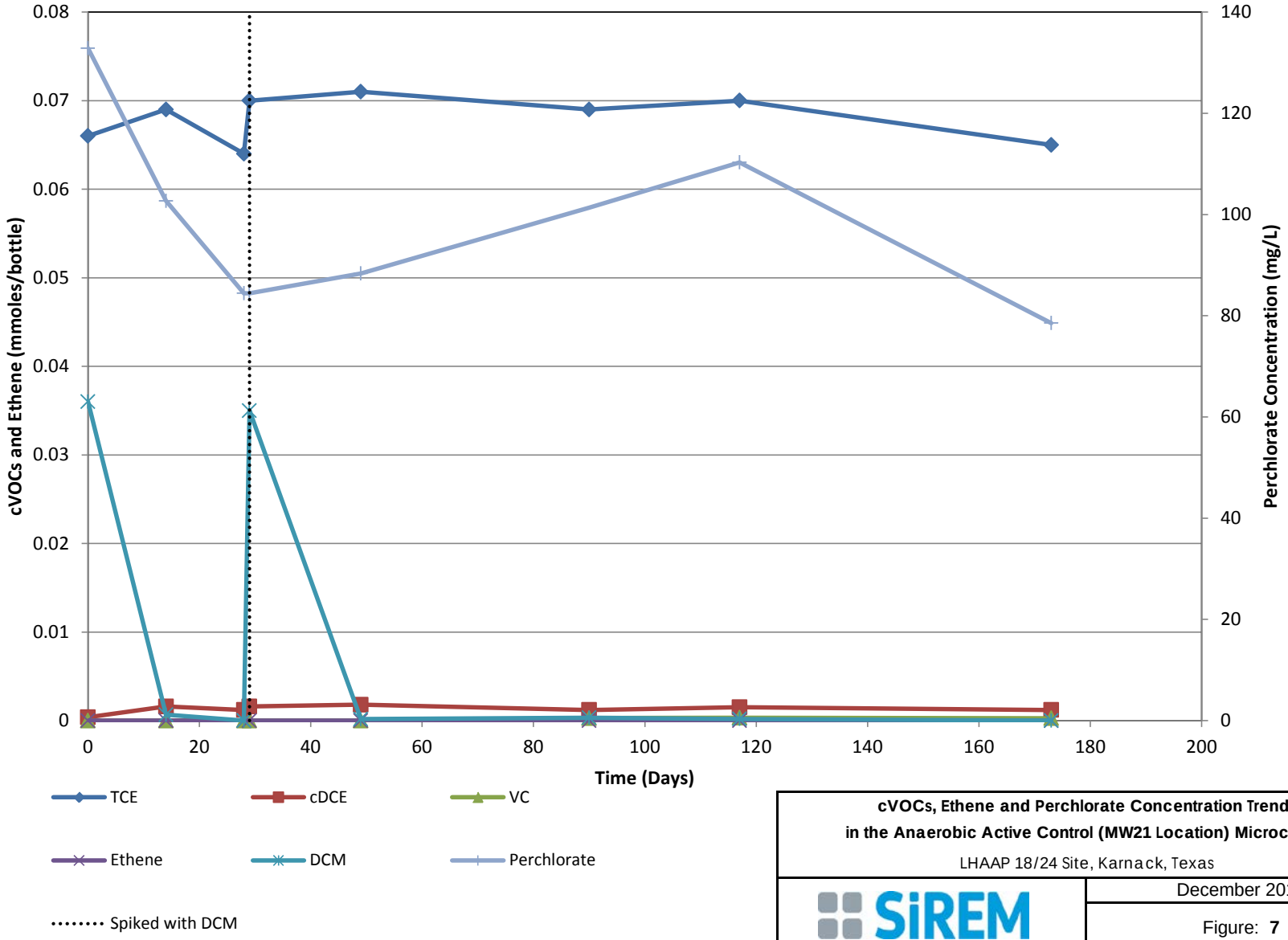

cVOCs, Ethene and Perchlorate Concentration Trends
in the Anaerobic Active Control (MW21 Location) Microcosms
LHAAP 18/24 Site, Karnack, Texas

SiREM

December 2014

Figure: **7**

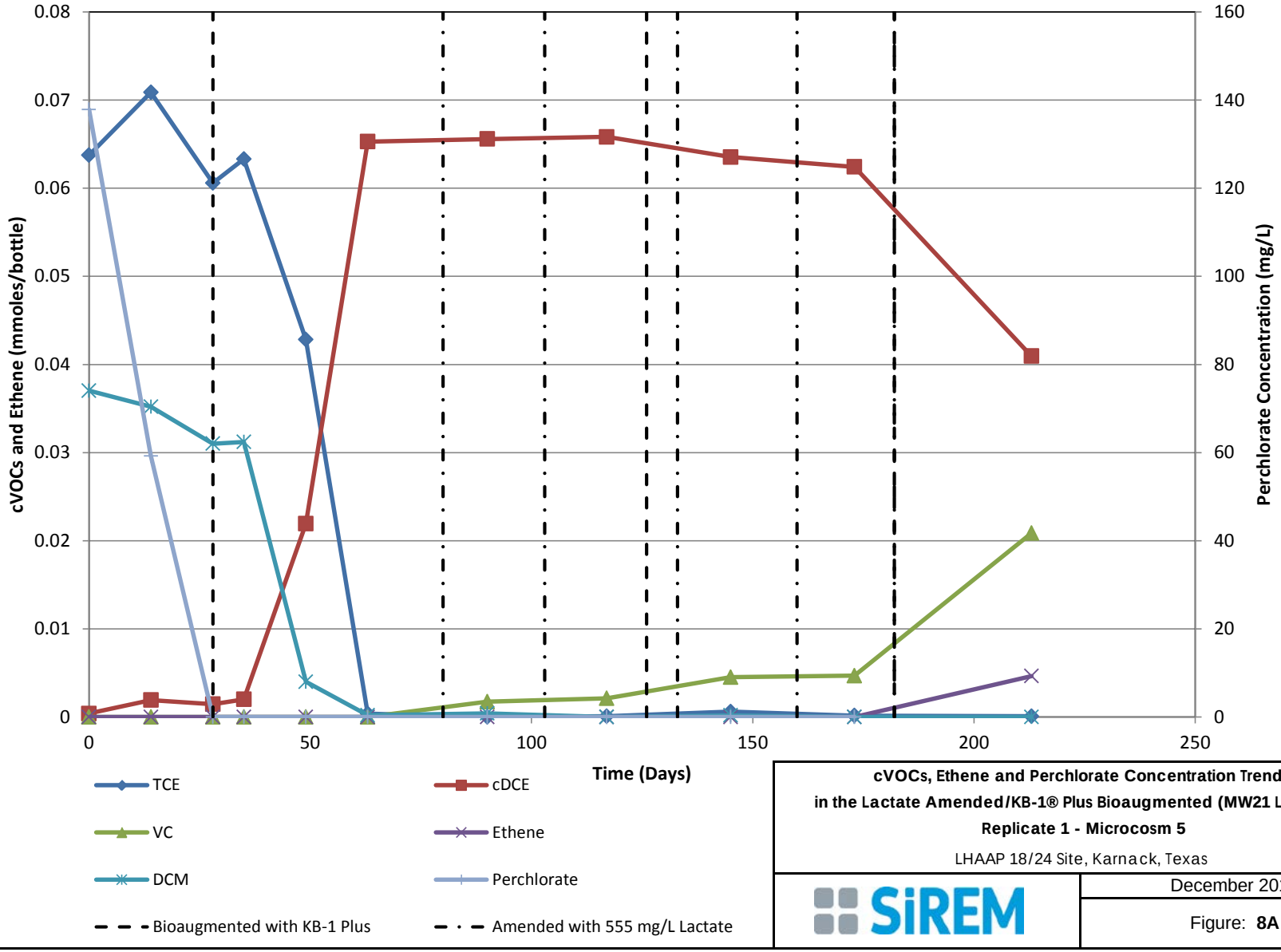

cVOCs, Ethene and Perchlorate Concentration Trends
in the Lactate Amended/KB-1® Plus Bioaugmented (MW21 Location)
Replicate 1 - Microcosm 5

LHAAP 18/24 Site, Karnack, Texas

SiREM

December 2014

Figure: **8A**

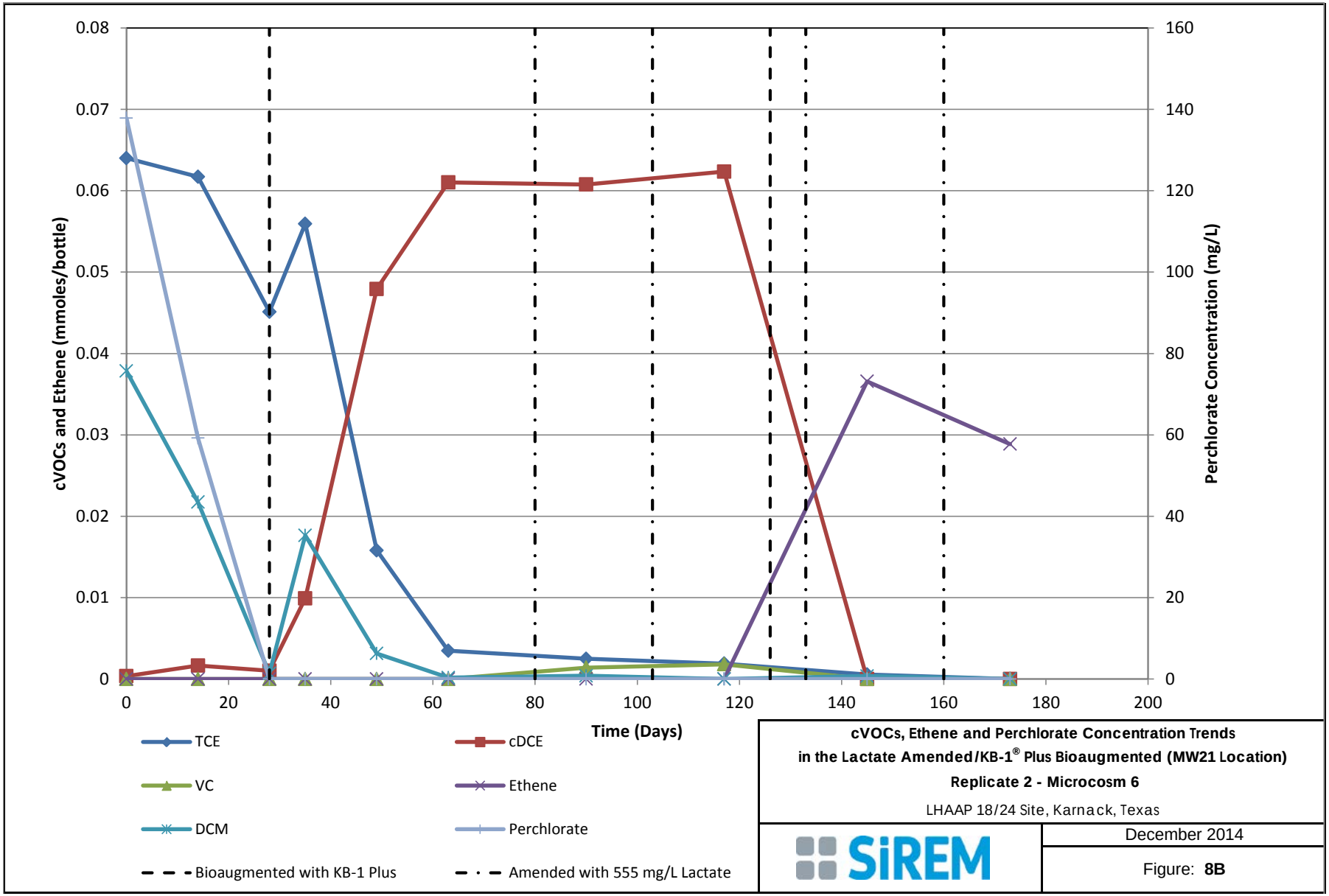

cVOCs, Ethene and Perchlorate Concentration Trends
in the Lactate Amended/KB-1® Plus Bioaugmented (MW21 Location)
Replicate 2 - Microcosm 6

LHAAP 18/24 Site, Karnack, Texas

SiREM

December 2014

Figure: **8B**

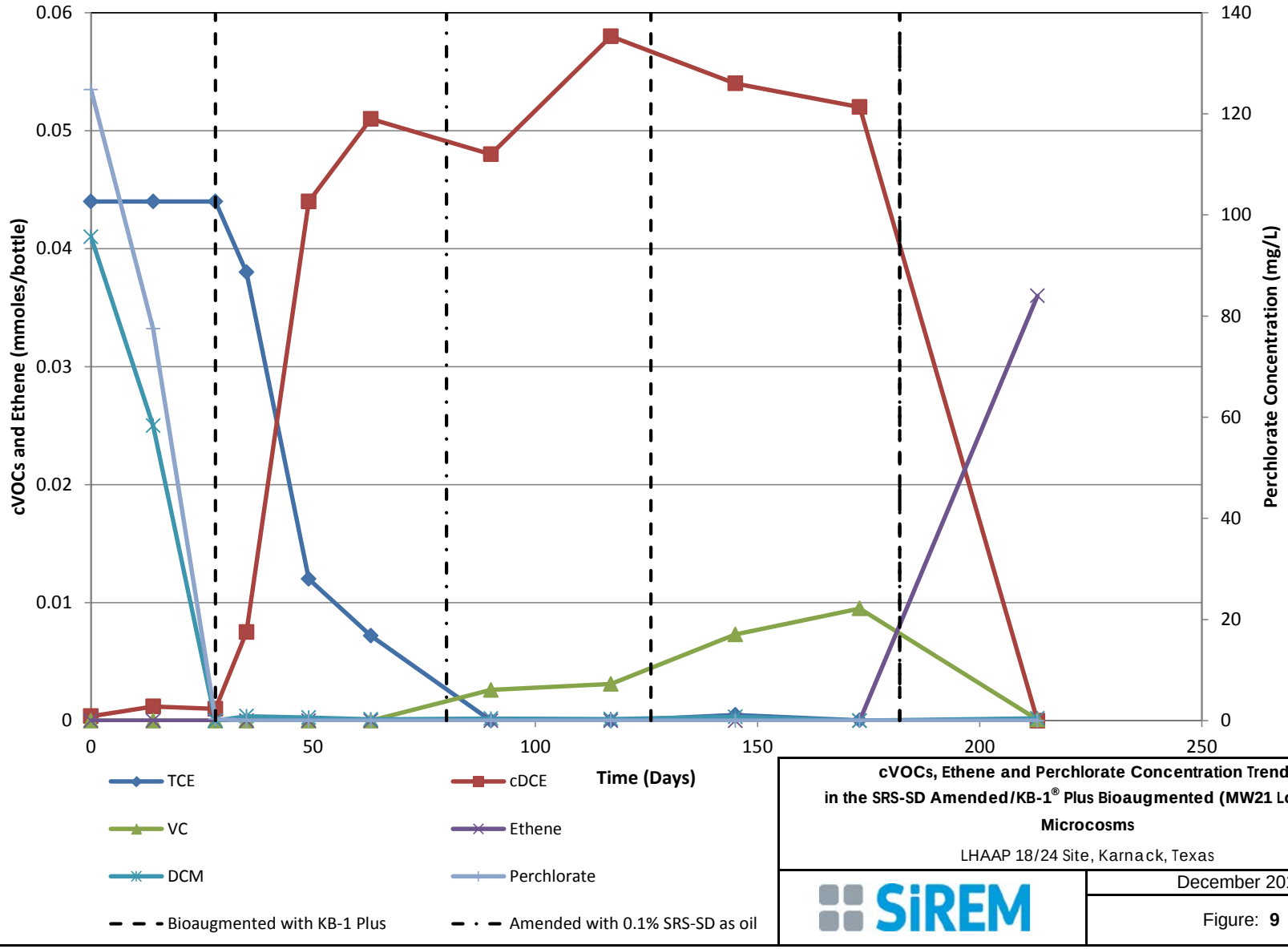

cVOCs, Ethene and Perchlorate Concentration Trends in the SRS-SD Amended/KB-1® Plus Bioaugmented (MW21 Location) Microcosms

LHAAP 18/24 Site, Karnack, Texas

SiREM

December 2014

Figure: **9**

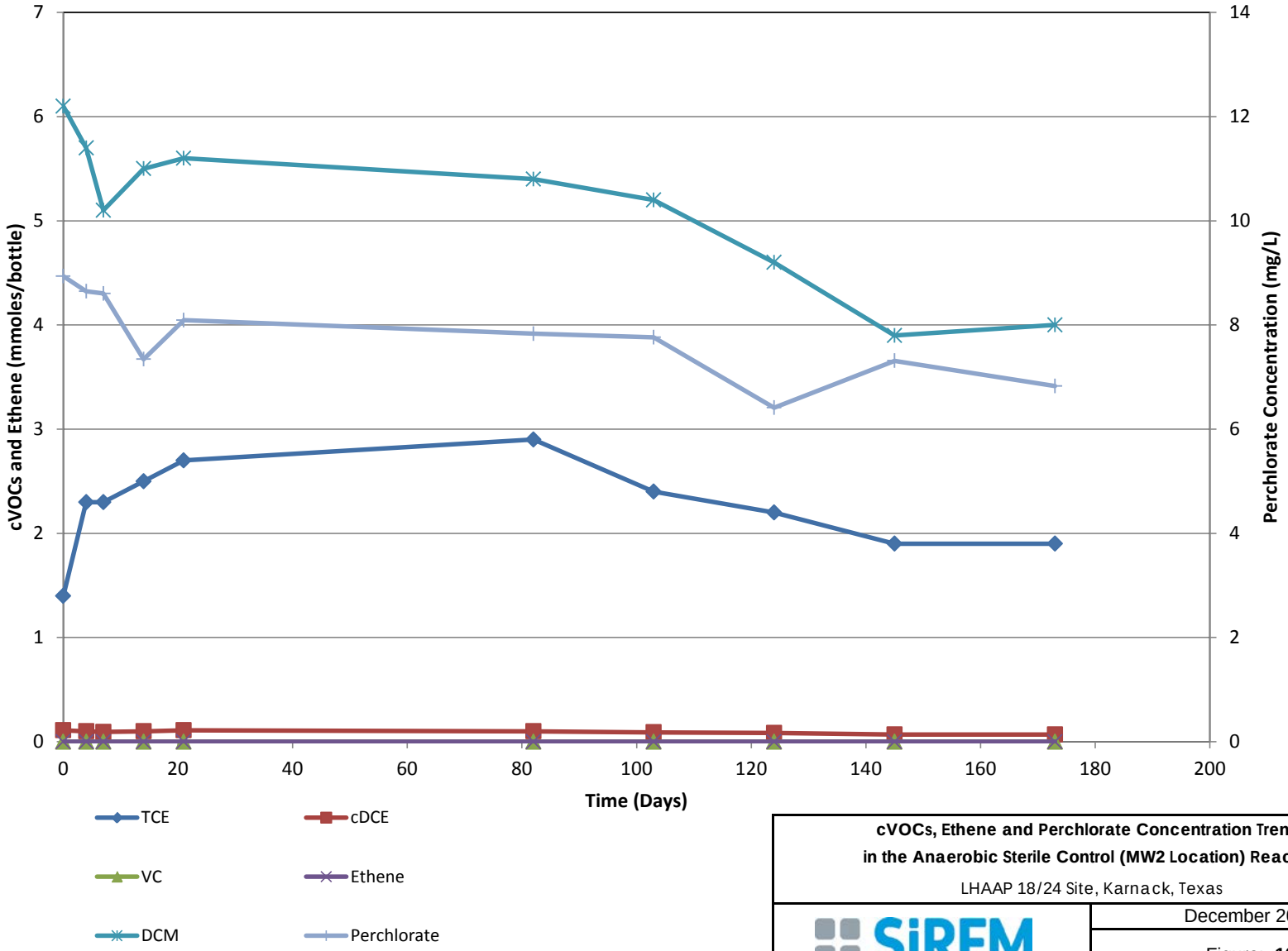

cVOCs, Ethene and Perchlorate Concentration Trends in the Anaerobic Sterile Control (MW2 Location) Reactors

LHAAP 18/24 Site, Karnack, Texas

SiREM

December 2014

Figure: **10**

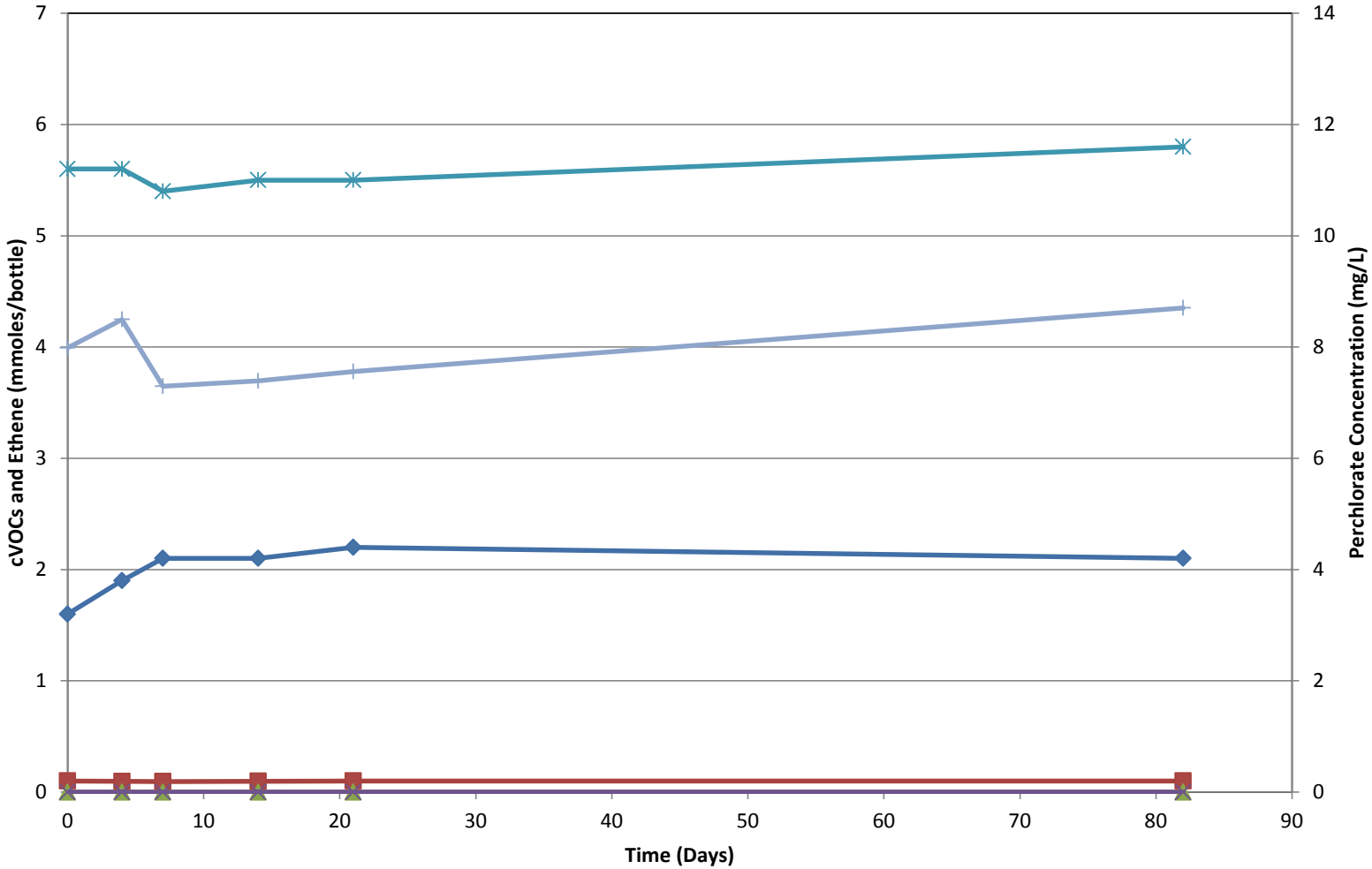

cVOCs, Ethene and Perchlorate Concentration Trends in the 0.4 g EZVI Amended (MW2 Location) Reactors

LHAAP 18/24 Site, Karnack, Texas

SiREM

December 2014

Figure: **11**

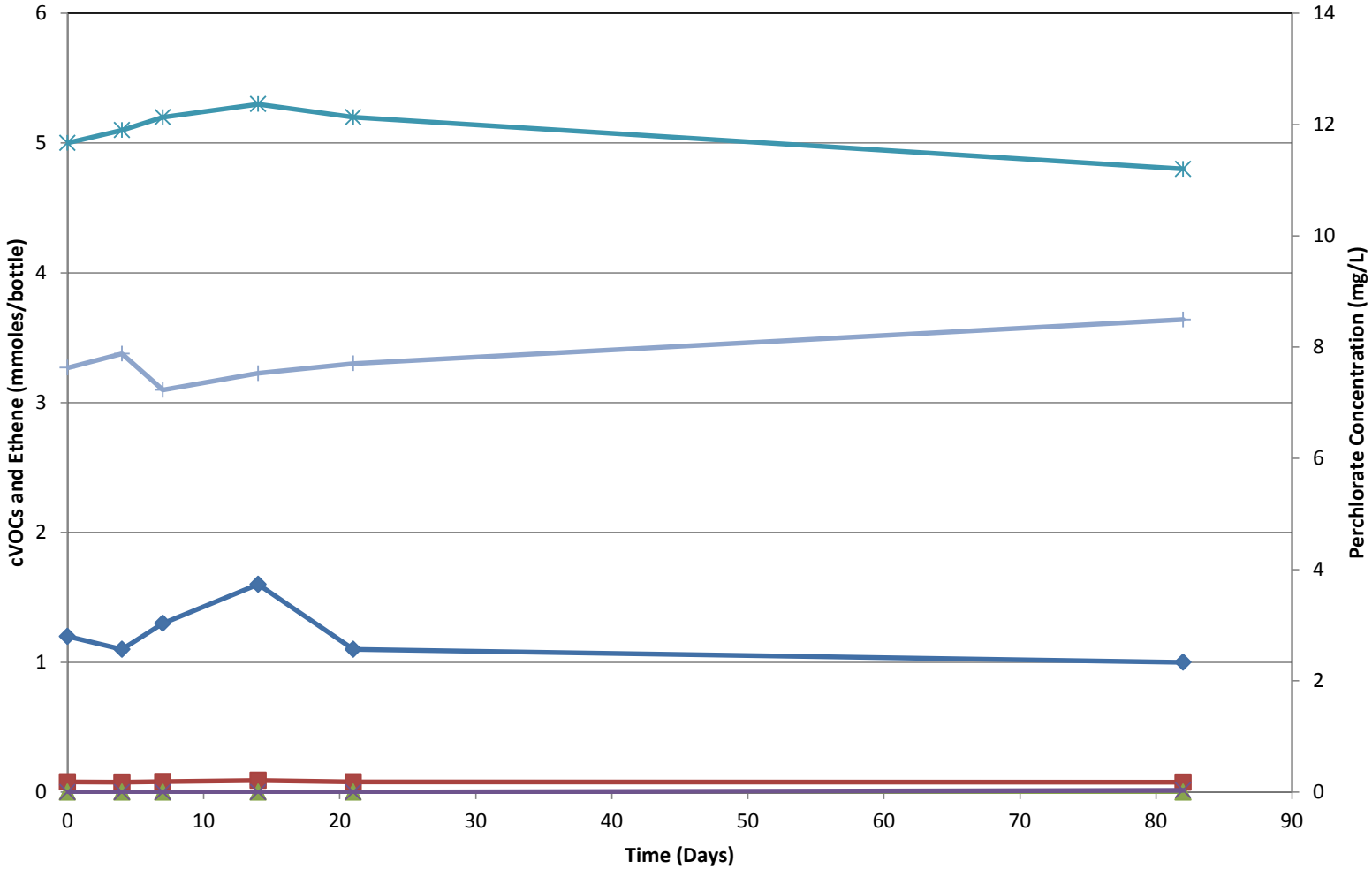

cVOCs, Ethene and Perchlorate Concentration Trends in the 3.0 g EZVI Amended (MW2 Location) Reactors

LHAAP 18/24 Site, Karnack, Texas

SiREM

December 2014

Figure: **12**

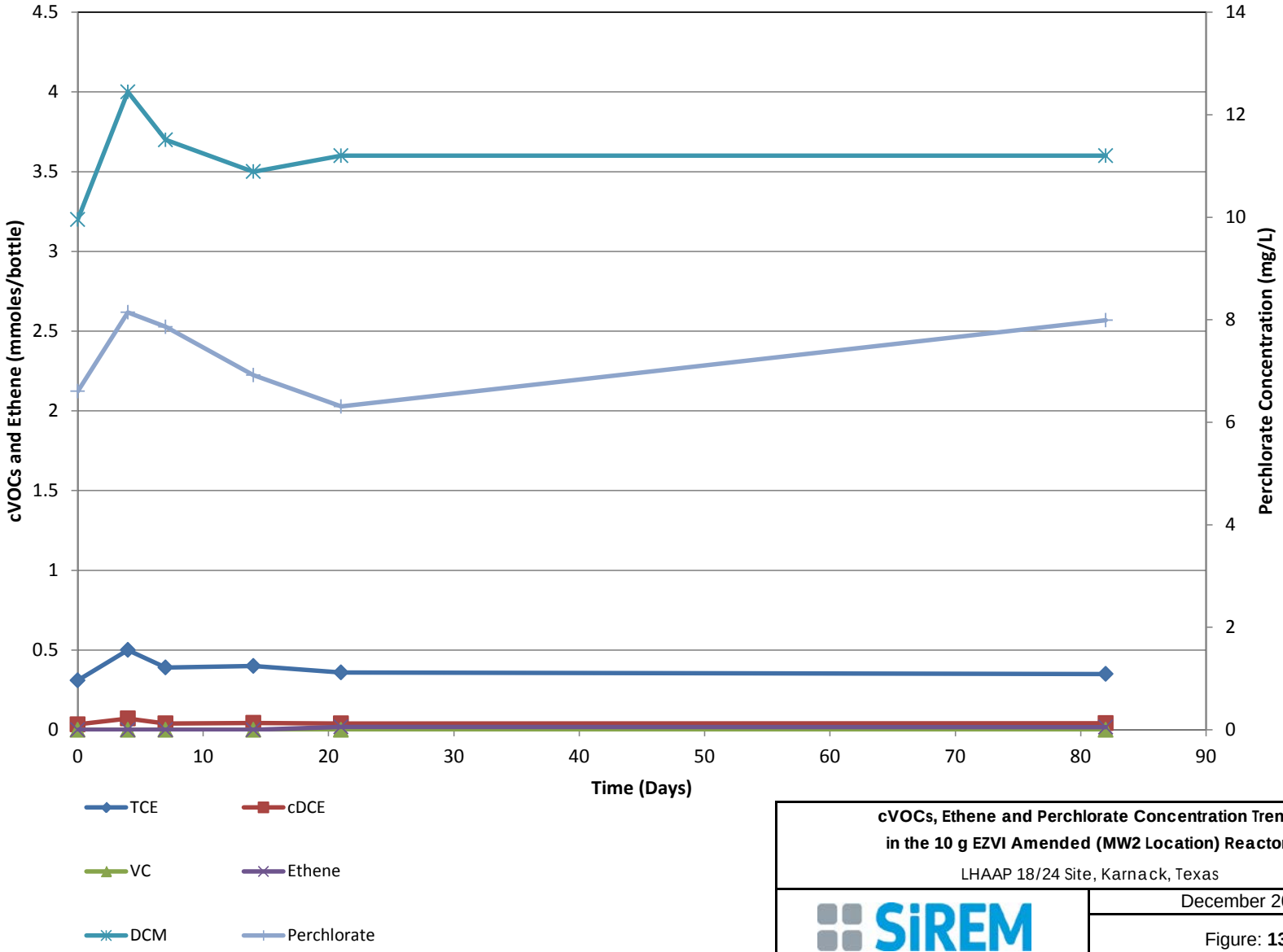

cVOCs, Ethene and Perchlorate Concentration Trends in the 10 g EZVI Amended (MW2 Location) Reactors

LHAAP 18/24 Site, Karnack, Texas

SiREM

December 2014

Figure: **13**

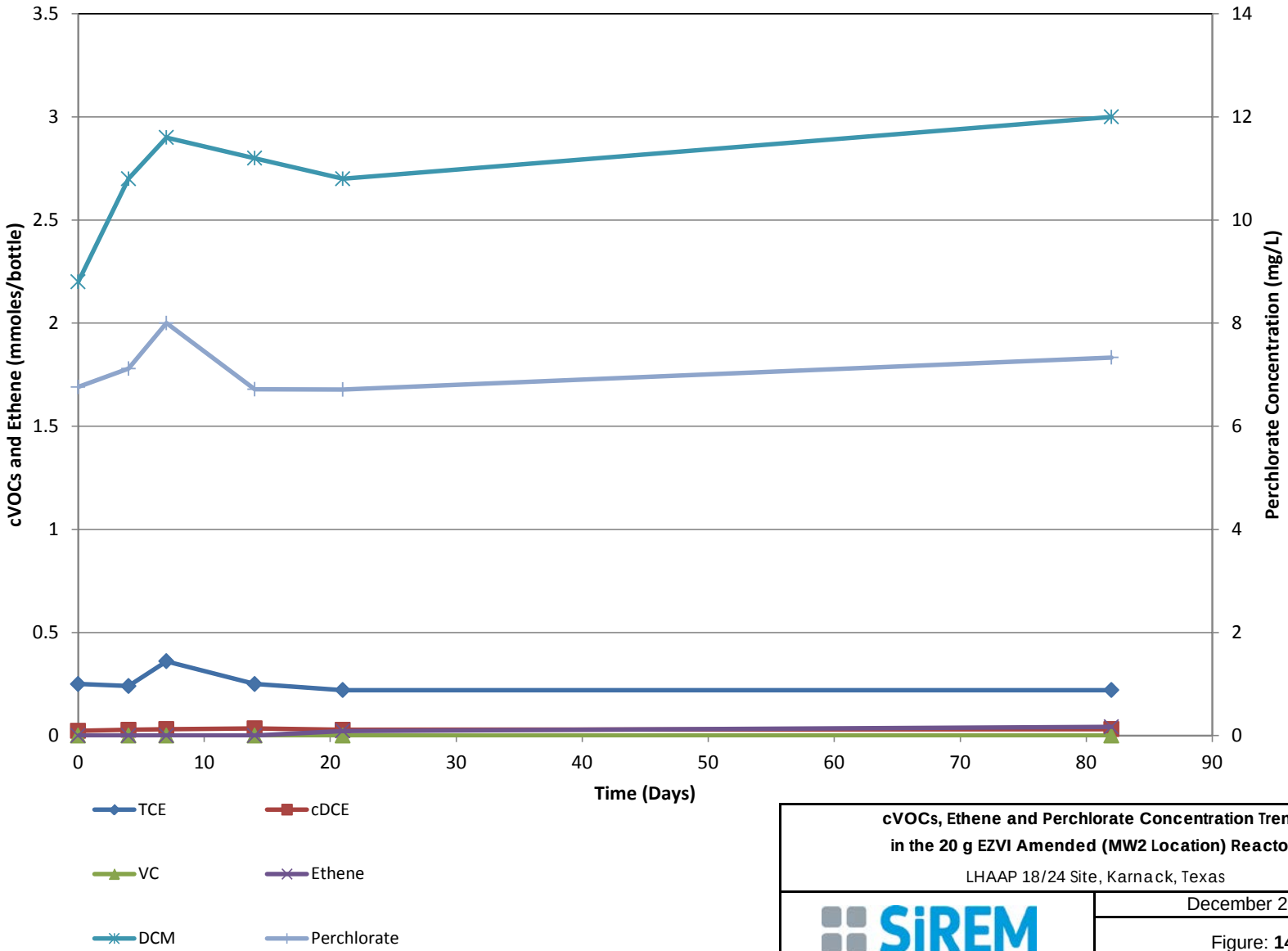

cVOCs, Ethene and Perchlorate Concentration Trends in the 20 g EZVI Amended (MW2 Location) Reactors

LHAAP 18/24 Site, Karnack, Texas

SiREM

December 2014

Figure: **14**

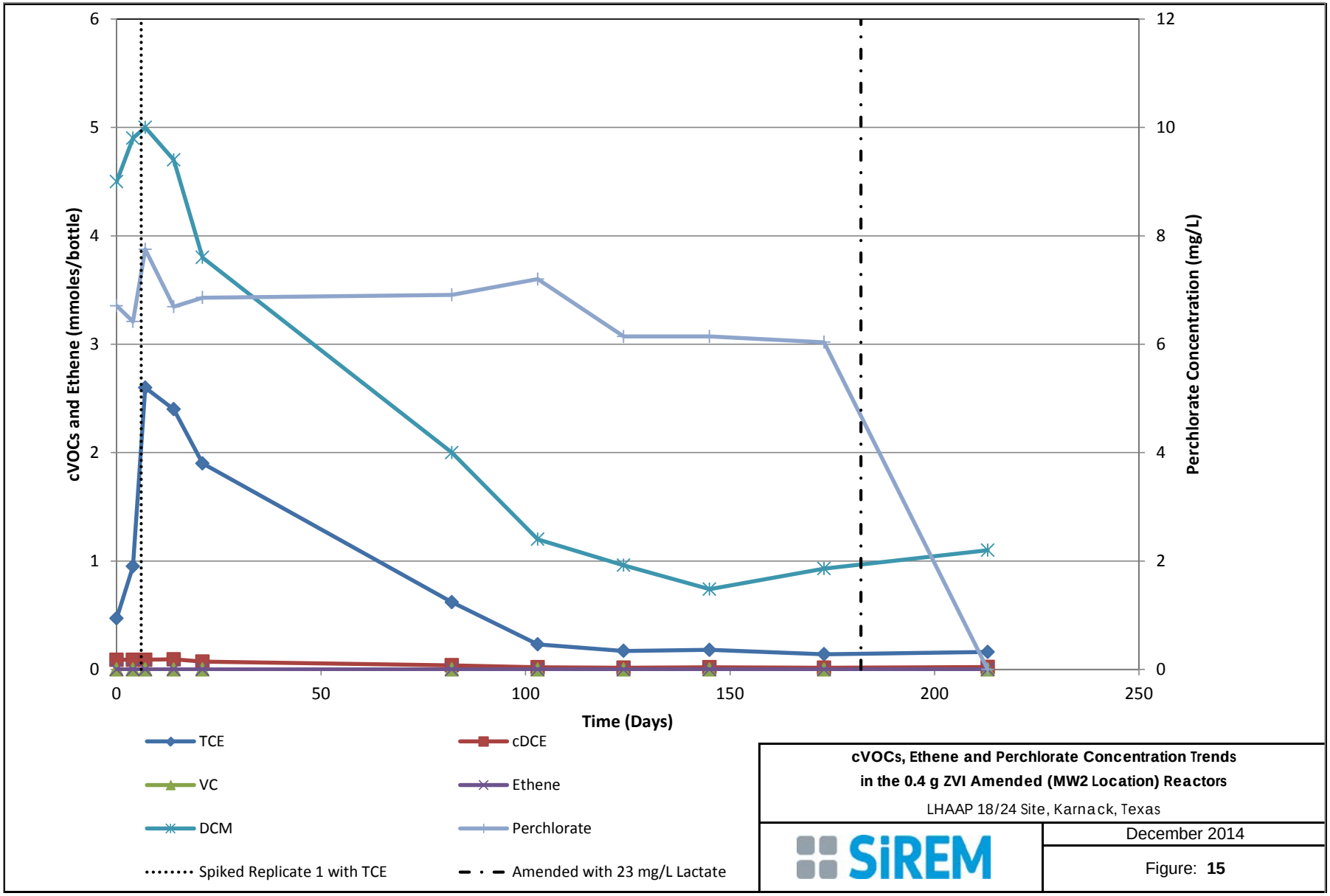

cVOCs, Ethene and Perchlorate Concentration Trends in the 0.4 g ZVI Amended (MW2 Location) Reactors

LHAAP 18/24 Site, Karnack, Texas

SiREM

December 2014

Figure: **15**

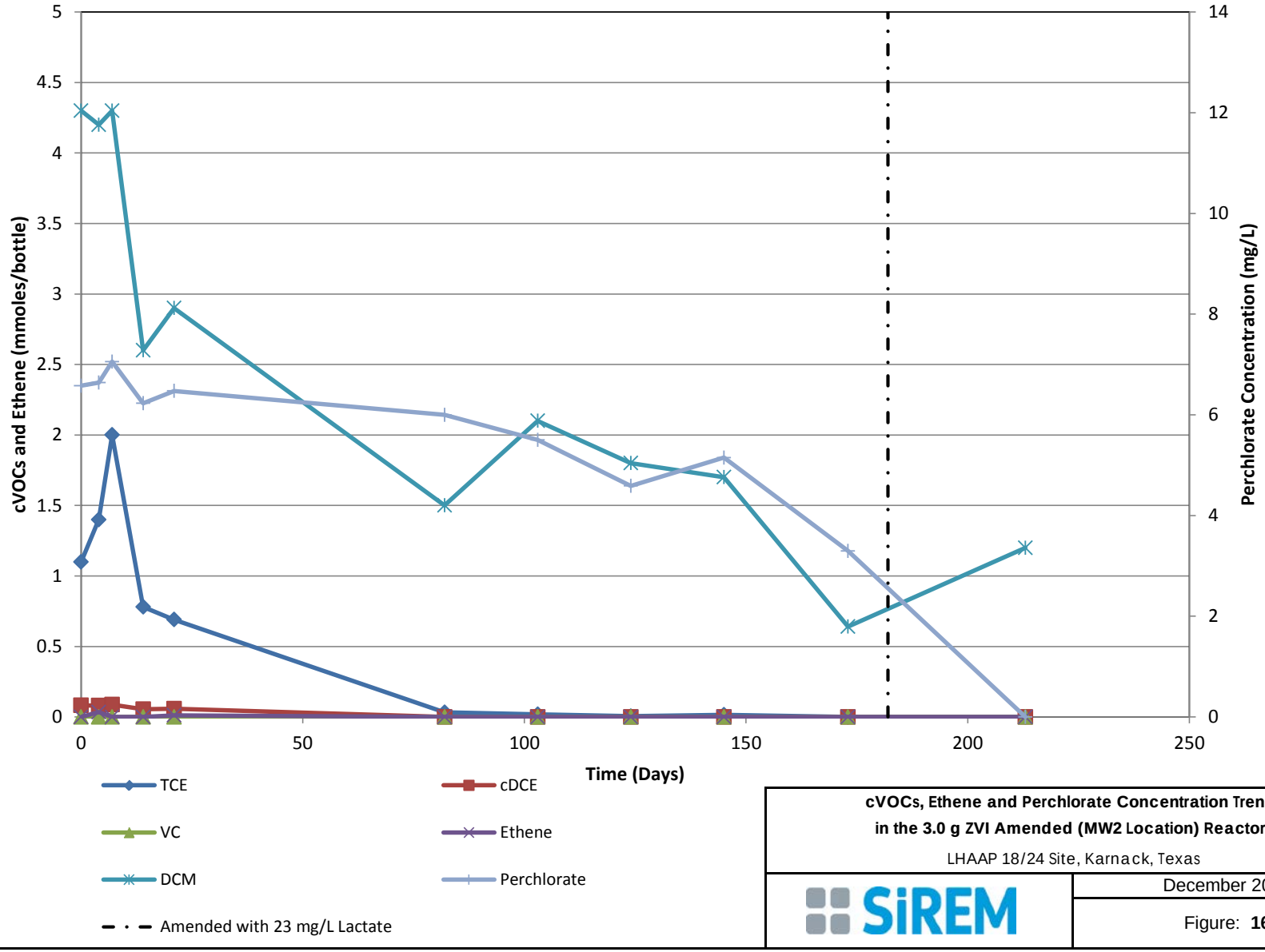

cVOCs, Ethene and Perchlorate Concentration Trends in the 3.0 g ZVI Amended (MW2 Location) Reactors

LHAAP 18/24 Site, Karnack, Texas

SiREM

December 2014

Figure: **16**

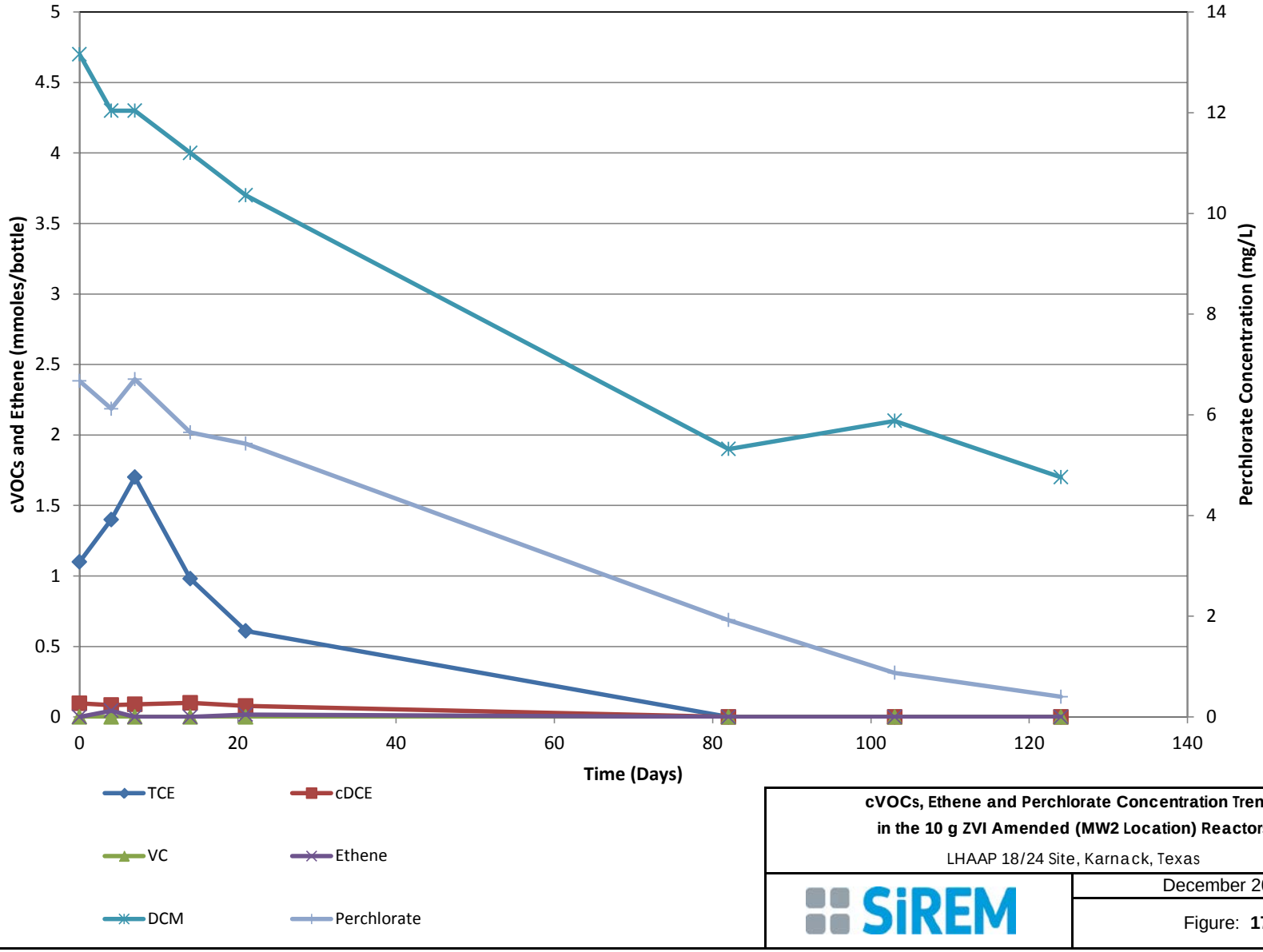

cVOCs, Ethene and Perchlorate Concentration Trends in the 10 g ZVI Amended (MW2 Location) Reactors

LHAAP 18/24 Site, Karnack, Texas

SiREM

December 2014

Figure: **17**

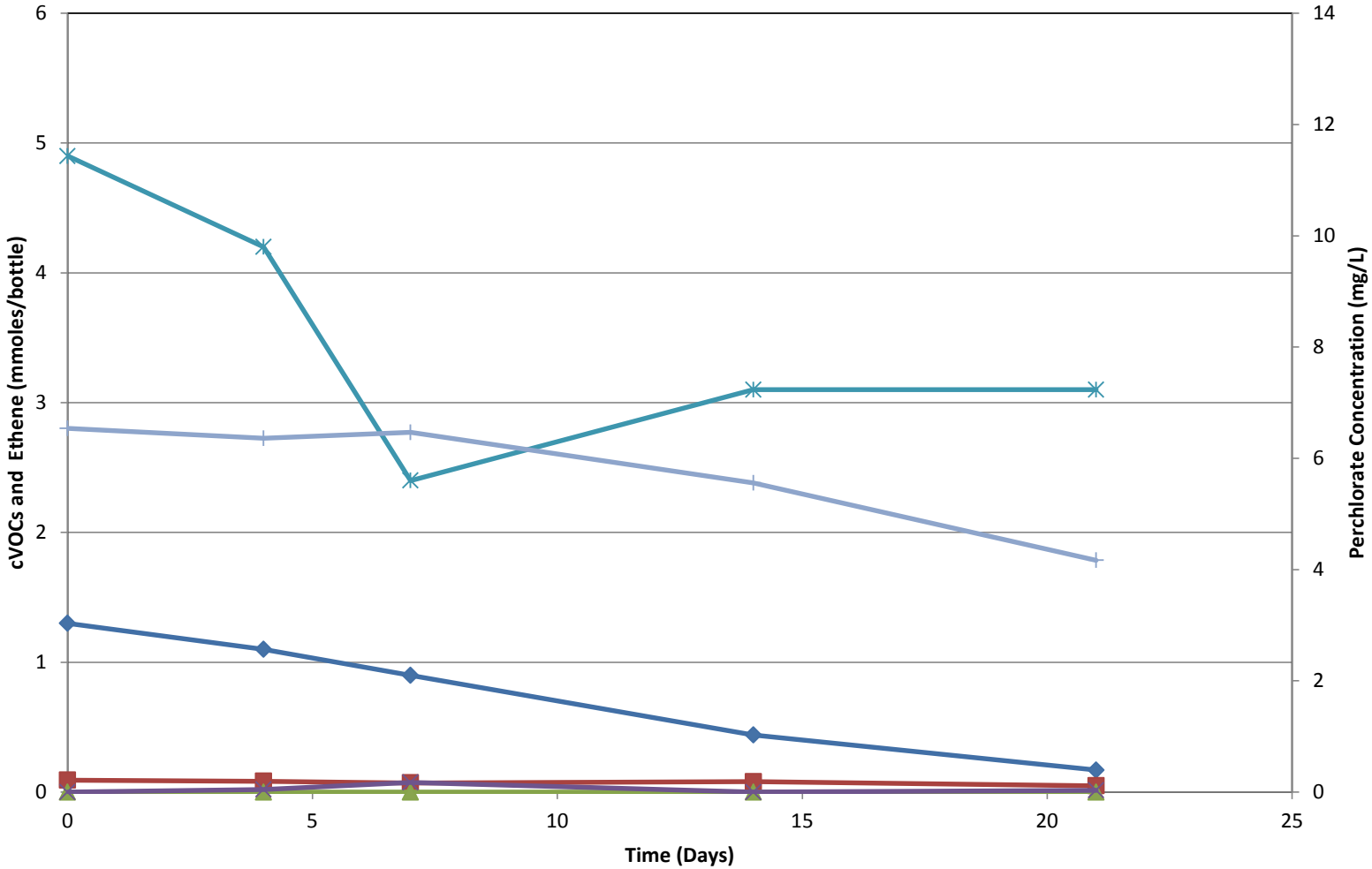

cVOCs, Ethene and Perchlorate Concentration Trends in the 20 g ZVI Amended (MW2 Location) Reactors

LHAAP 18/24 Site, Karnack, Texas

SiREM

December 2014

Figure: **18**

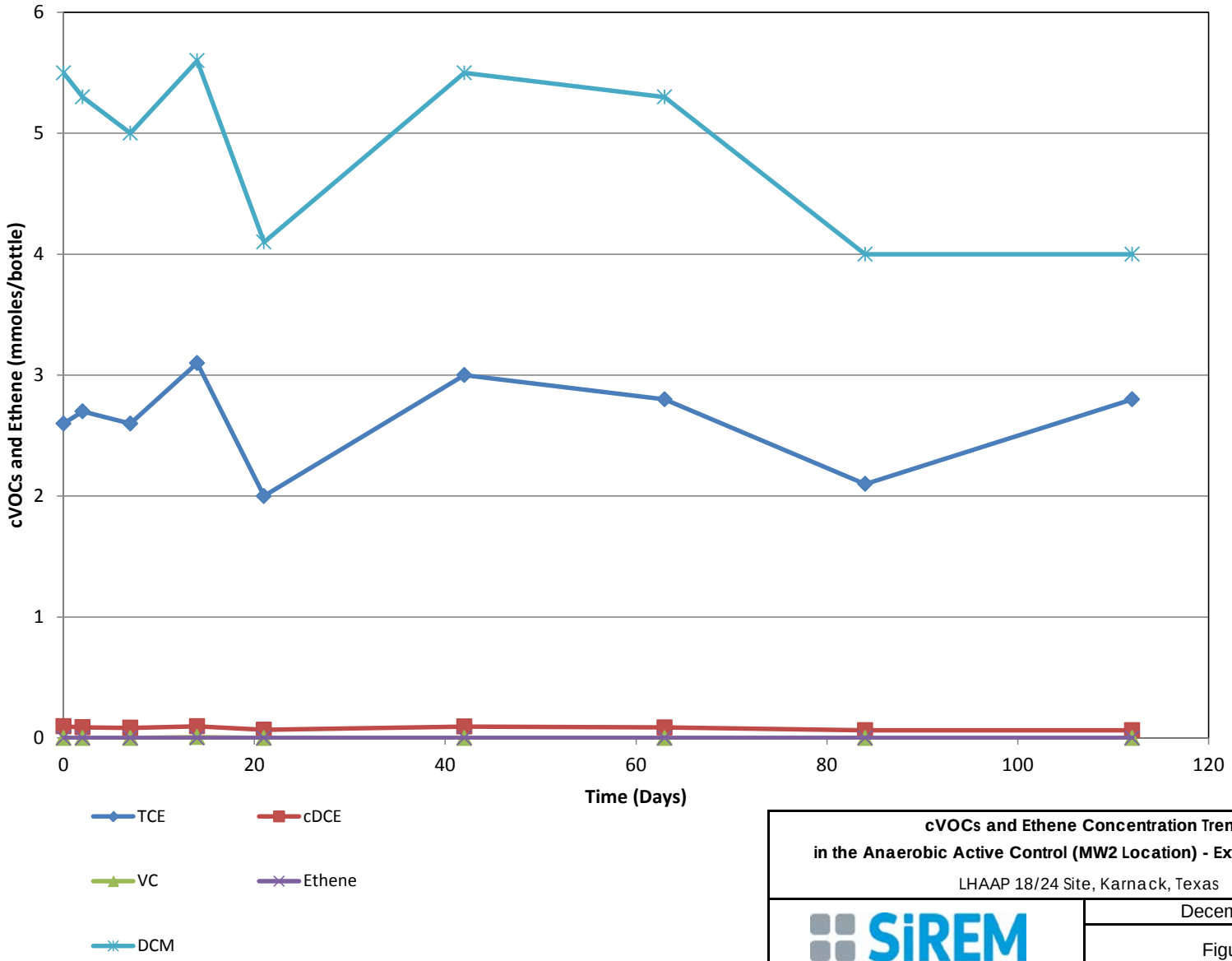

cVOCs and Ethene Concentration Trends
in the Anaerobic Active Control (MW2 Location) - Extension Reactors
LHAAP 18/24 Site, Karnack, Texas

SiREM

December 2014

Figure: **19**

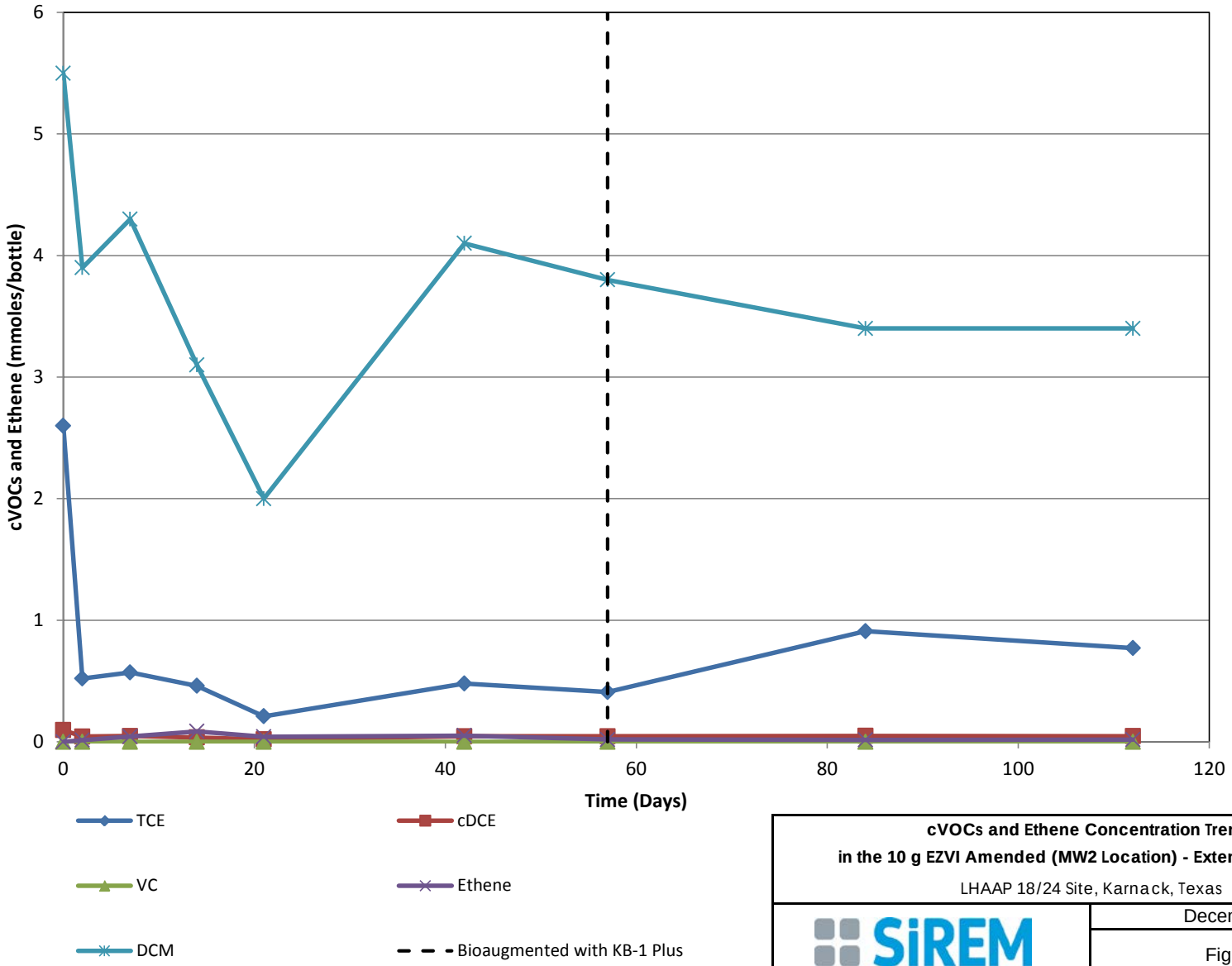

cVOCs and Ethene Concentration Trends
in the 10 g EZVI Amended (MW2 Location) - Extension Reactors
LHAAP 18/24 Site, Karnack, Texas

SiREM

December 2014

Figure: **20**

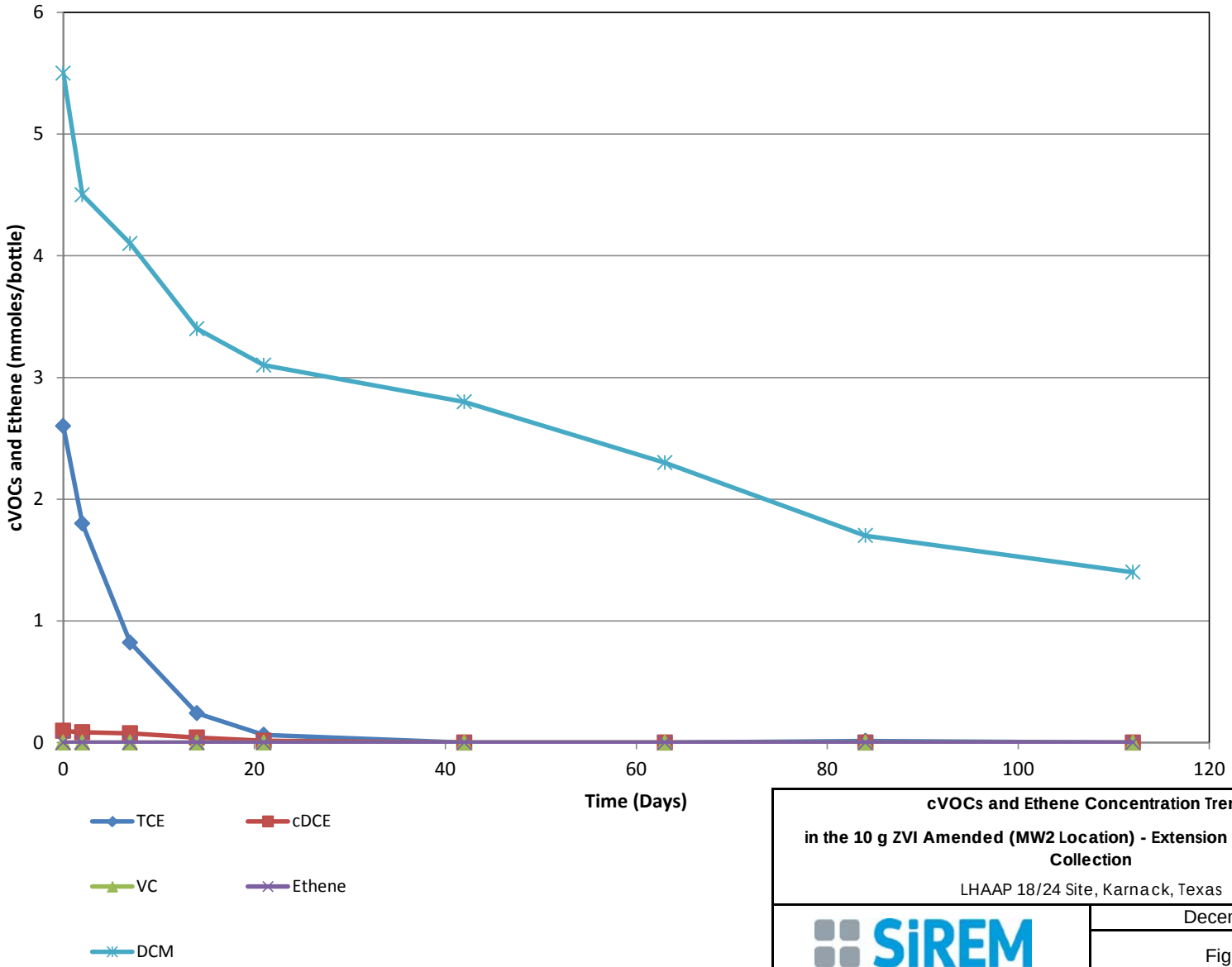

cVOCs and Ethene Concentration Trends

in the 10 g ZVI Amended (MW2 Location) - Extension Reactors with Gas Collection

LHAAP 18/24 Site, Karnack, Texas

SiREM

December 2014

Figure: **21**

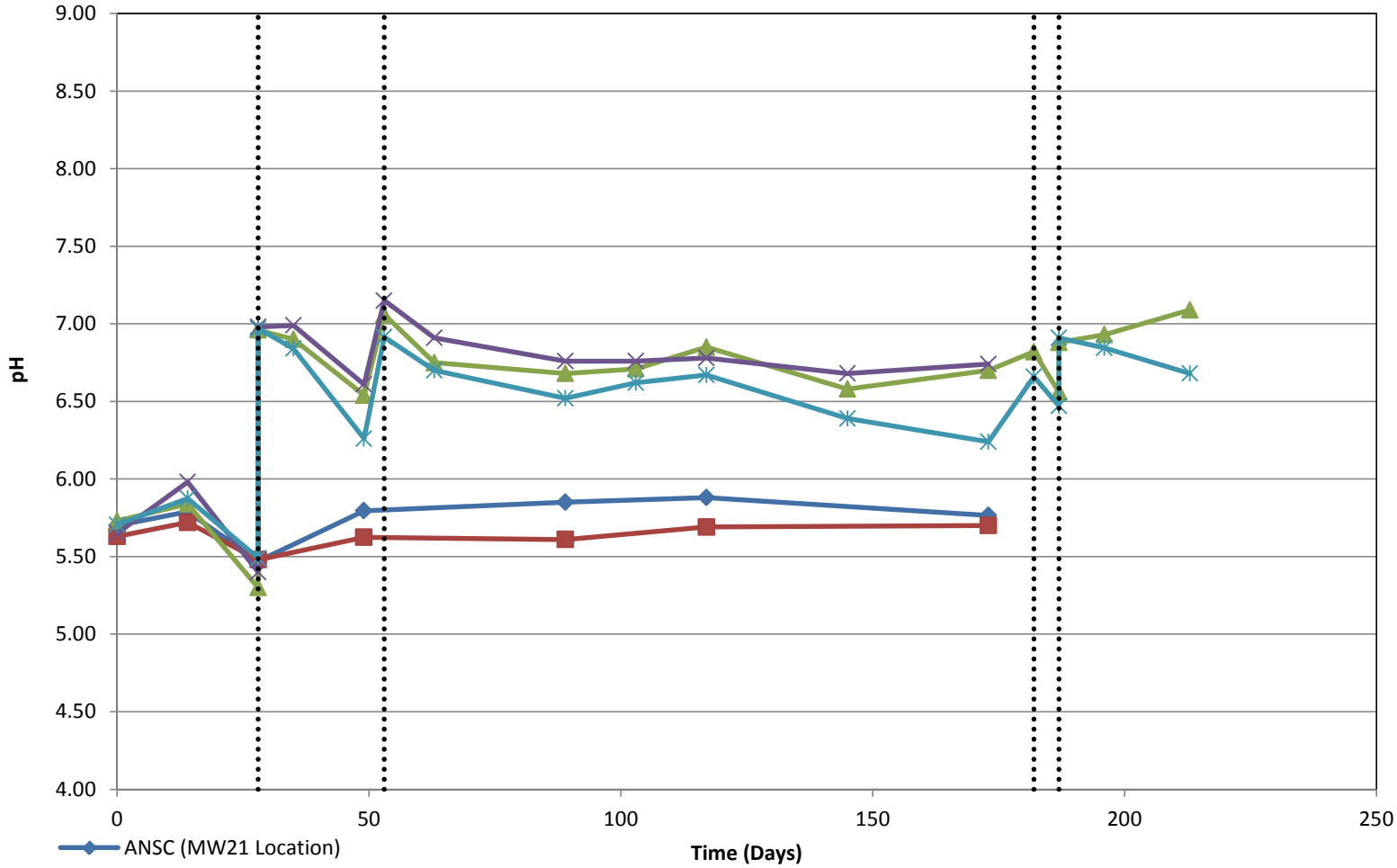

pH Trends
in the MW21 Location Biotreatability Microcosms
LHAAP 18/24 Site, Karnack, Texas

SiREM

December 2014

Figure: **22**

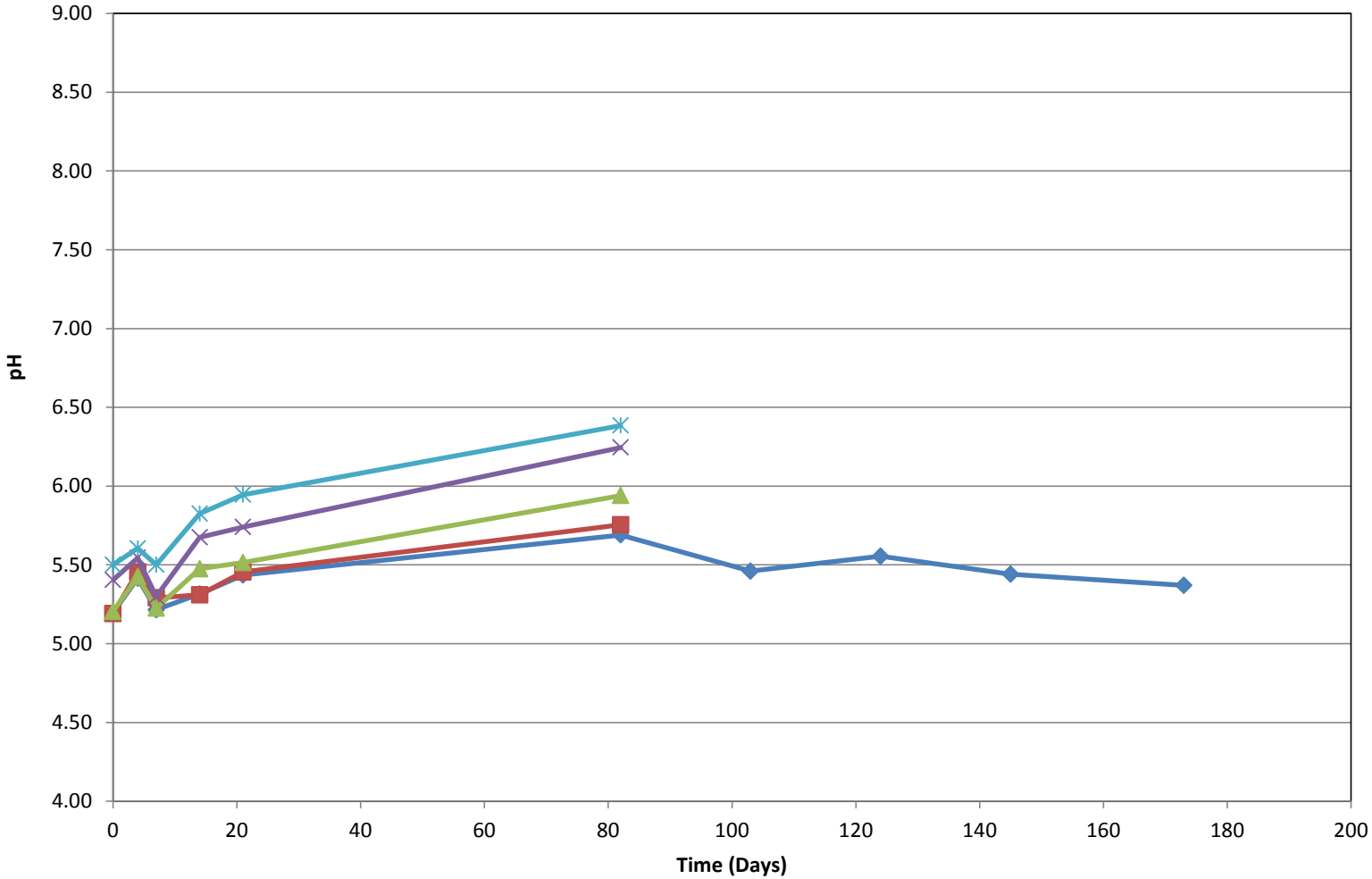

ANSC (MW2 Location)
0.4 g EZVI Amended (MW2 Location)
3.0 g EZVI Amended (MW2 Location)
10 g EZVI Amended (MW2 Location)
20 g EZVI Amended (MW2 Location)

pH Trends
in the EZVI Amended MW2 Location Chemical Reduction Reactors
Longhorn AAP 18/24 Study, Karnack, TX

SiREM

December 2014

Figure: **23**

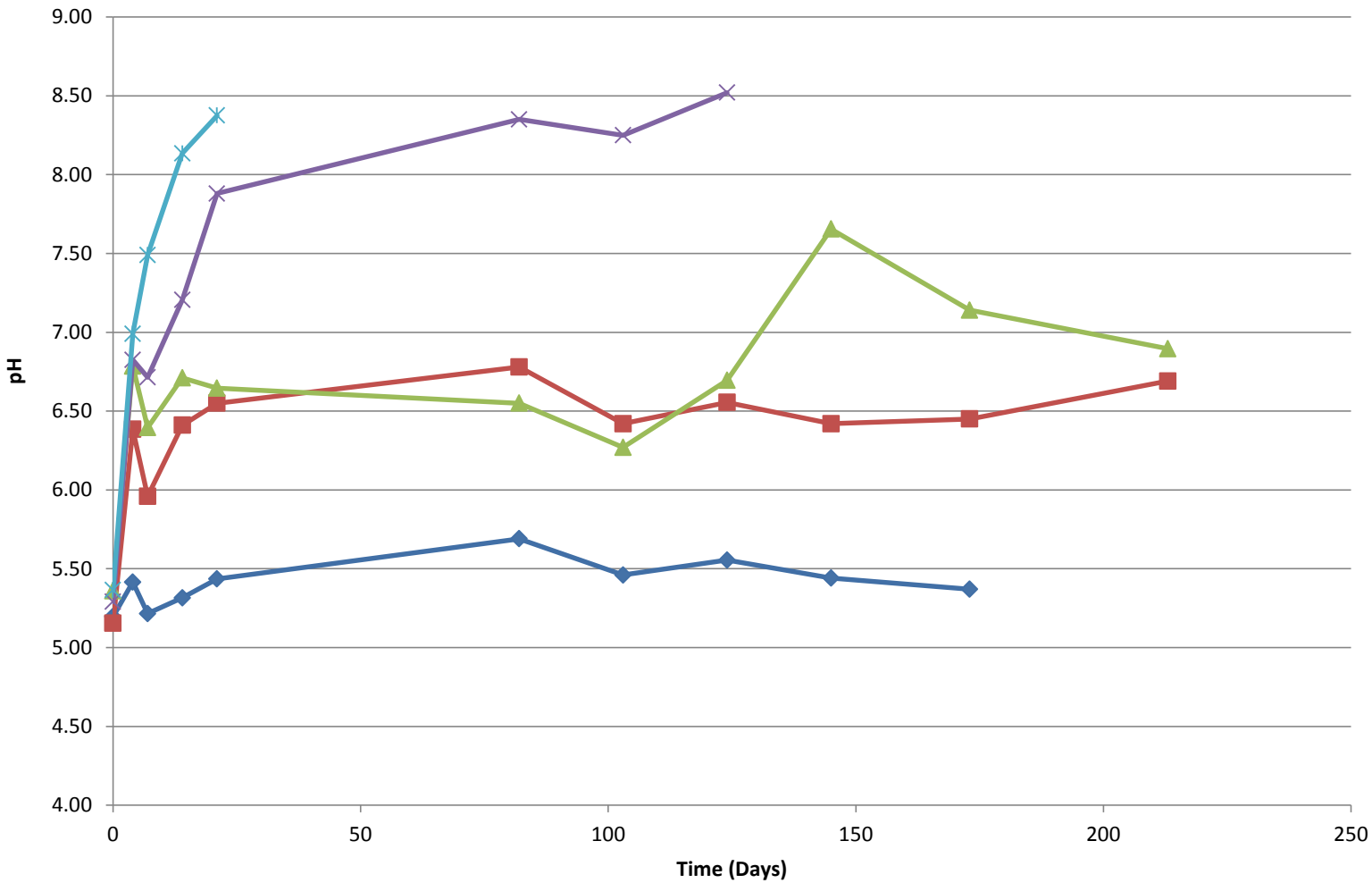

pH Trends
in the ZVI Amended MW2 Location Chemical Reduction Reactors
Longhorn AAP 18/24 Study, Karnack, TX

SiREM

December 2014

Figure: **24**

APPENDIX A: Chain of Custody Documentation

00731869

SiREM

Chain-of-Custody Form

siremlab.com

130 Research Lane, Ste 2
Guelph ON, Canada N1G 5G3
(519) 822-2265

Lab # S-3196

Project Name	LONGHORN AAP 18/24
Project #	60274185
Project Manager	DAVE WACKER / MARWAN SALAMEH
Company	AECOM
Address	112 E. PECAN, SUITE 400 SAN ANTONIO, TX 78205
Phone #	210-296-2000
Fax #	
Sampler's Signature	Gretchen McDonnell
Sampler's Printed Name	Gretchen McDonnell

Analysis

Preservative: 0 0

Preservative Key
0. None
1. HCL
2. Other
3. Other
4. Other
5. Other
6. Other

Client Sample ID	Lab ID	Sampling Date	Sampling Time	Matrix	# of Containers	EZVI Bench	Microcosm Bench	Other Information
MW2 EZVI		5/5/14	1615	SOIL	2	X		
MW21 MICROCOSM		5/6/14	0844	SOIL	2		X	

Sample Receipt

Cooler Condition: GOOD.

Cooler Temperature: 2°C

Custody Seals: Yes ☐ No ☒

Invoice Information

P.O. #

Bill To:

For Lab Use Only

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: Gretchen McDonnell	Signature: D. Nespoli	Signature:	Signature:	Signature:	Signature:
Printed Name: Gretchen McDonnell	Printed Name: D. Nespoli	Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm: AECOM	Firm: SiREM	Firm:	Firm:	Firm:	Firm:
Date/Time: 5/7/14 1600	Date/Time: MAY 8'14. 1:30pm	Date/Time:	Date/Time:	Date/Time:	Date/Time:

Distribution: White - Return to Originator: Yellow - Lab Copy: Pink - Retained by Client

In the absence of an executed agreement, submission of samples to SiREM implies consent for performance of analyses specified on this Chain-of-Custody form and agreement with the terms and conditions of the SiREM Laboratory Services Agreement. The entity submitting samples shall be responsible for payment in full for said analyses.

00731870

SiREM

Chain-of-Custody Form

siremlab.com

130 Research Lane, Ste 2
Guelph ON, Canada N1G 5G3
(519) 822-2265

Lab # S-3203

Project Name	LONGHORN AAP 18/24
Project #	60274185
Project Manager	DAVE WACKER / MARWAN SALAMEH
Company	AECOM
Address	112 E. PECAN, SUITE 400
	SAN ANTONIO, TX 78205
Phone #	210-296-2000
Fax #	
Sampler's Signature	Gretchen McDonnell
Sampler's Printed Name	Gretchen McDonnell

Analysis

Preservative: 0 0

Client Sample ID	Lab ID	Sampling Date	Sampling Time	Matrix	# of Containers	EZVI BENCH	MICROCOSM BENCH	Other Information
MW2		5/7/14	1550	w	6	X		
MW21		5/7/14	1330	w	6		X	

Preservative Key
0. None
1. HCL
2. Other
3. Other
4. Other
5. Other
6. Other

Sample Receipt

Cooler Condition: Good

Cooler Temperature: 15 °C

Custody Seals: Yes ☐ No ☒

Invoice Information

P.O. #

Bill To:

For Lab Use Only

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: Gretchen McDonnell	Signature:	Signature: Julia Keropoli	Signature:	Signature:	Signature:
Printed Name: Gretchen McDonnell	Printed Name:	Printed Name: Julia Keropoli	Printed Name:	Printed Name:	Printed Name:
Firm: AECOM	Firm:	Firm: SiREM	Firm:	Firm:	Firm:
Date/Time: 5/8/14 0900	Date/Time:	Date/Time: May 9 '14 15:30	Date/Time:	Date/Time:	Date/Time:

Distribution: White - Return to Originator: Yellow - Lab Copy: Pink - Retained by Client

In the absence of an executed agreement, submission of samples to SiREM implies consent for performance of analyses specified on this Chain-of-Custody form and agreement with the terms and conditions of the SiREM Laboratory Services Agreement. The entity submitting samples shall be responsible for payment in full for said analyses.

SiREM

APPENDIX B: Henry's Law Calculation

The following Henry's Law calculation was used to convert aqueous concentrations (Table 2) to total mmoles of each analyte per microcosm bottle:

$$Total\ mmoles = \frac{C_{liq} \cdot (V_{liq} + H \cdot V_{gas})}{Molecular\ Weight\ (\frac{mg}{mmol})}$$

Where

C_{liq} = liquid concentration (mg/L)
V_{liq} = liquid volume (0.200 L) per bottle
V_{gas} = headspace volume (0.025 L) per bottle
H = Henry's Law constant (dimensionless)

The Henry's Law constants used are summarized in the table below.

Analyte	Henry's Law Constant [a] (dimensionless)
Trichloroethene	0.417
cis-1,2-dichloroethene	0.184
trans-1,2-dichloroethene	0.386
1,1-dichloroethene	1.06
Vinyl chloride	1.08
Ethene	8.78
Ethane	20.5
Dichloromethane	0.121
Chloromethane	0.409
Methane	27.3

[a] Source: Montgomery, J.H. 2000. *Groundwater Chemicals Desk Reference, Third Edition.* CRC Press LLC, Boca Raton, FL.

SiREM

APPENDIX C: Microcosm and Reactor Amendments Information Sheets

WILCLEAR® LACTATE CONCENTRATE

PROVEN ELECTRON DONOR EFFICIENCY AND DECHLORINATION KINETICS AT A LOW COST

WILCLEAR® is a food grade 60% sodium or potassium lactate solution that has been deployed at U.S. Department of Energy sites and military installations, Superfund sites, mining sites, Brownfields, industrial sites, private chemical plants, and dry cleaners across North America and Europe. To date, WILCLEAR® has been used on over 250 projects in nearly every state in the US, including Hawaii and Alaska.

BENEFITS OF WILCLEAR®

- Provides carbon for rapid establishment of anaerobic conditions needed for reduction of nitrate, hexavalent chromium, perchlorate, and RDX.
- Miscibility in water and low viscosity allow for advective transport with groundwater; enhancing subsurface distribution and minimizing the number of injection points.
- Effective for both dissolved phase and DNAPL source area treatment.

RAPID DECHLORINATION KINETICS

Microcosm studies comparing WILCLEAR® to other soluble donors show that while all four donors stimulate complete dechlorination of PCE to ethene, WILCLEAR® and ethanol have the fastest dechlorination kinetics.

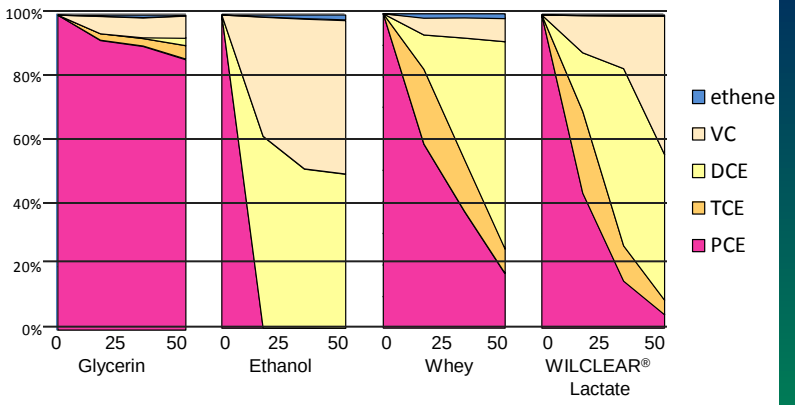

GREATER DONOR EFFICIENCY

Efficiency (amount of contaminant remediated per unit donor added) should be considered when determining donor cost performance. Of the three donors that show both complete dechlorination and reasonable remediation rates, lactate has the best efficiency.

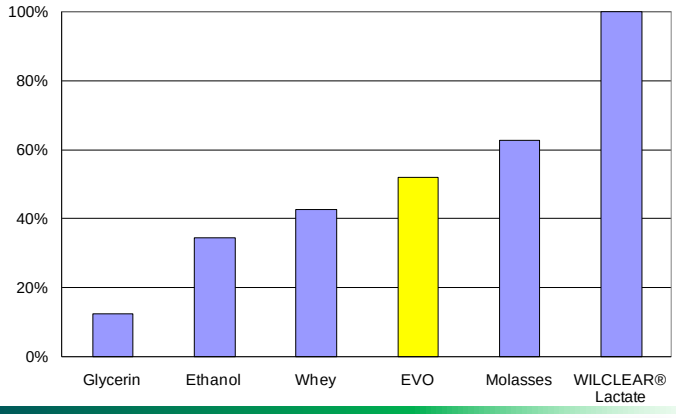

TYPICAL PROPERTIES

- WILCLEAR® sodium lactate (% wt/wt): 60 ± 1.2
- pH: 7 ± 1.0
- Viscosity: 110cP at 20ºC
- Specific gravity: 1.32 – 1.35
- Soluble in water
- Color: clear to light straw

JRW BIOREMEDIATION LLC

www.jrwbioremediation.com
(913)438-5544
info@jrwbiorem.com

Terra Systems INCORPORATED

LINK TO:
SRS-SD
Safety Data Sheet

60% SRS®-SD Small Droplet Emulsified Vegetable Oil (EVO) Substrate for Maximum Radius of Influence

United States Patent #RE40,448

The anaerobic bioremediation process uses native or introduced microorganisms (*Dehalococcoides*) to degrade chlorinated solvents such as tetrachloroethene (PCE) and trichloroethene (TCE) to innocuous end products including ethene and ethane. Terra Systems patented **SRS®-SD** Small Droplet Emulsified Vegetable Oil Substrate includes a **nonionic emulsifier** (does not have a charge), which does not readily stick to soil particles and is specifically designed when maximum radius of influence in the formation is key to making contact with the bacteria. It is is added to the groundwater to rapidly generate reducing conditions and provide the necessary carbon and hydrogen to support biodegradation of the chlorinated solvents.

Table I: SRS®-SD Small Droplet Emulsified Vegetable Oil Substrate Specifications

Ingredient	Percent	Description	Benefit
Food Grade U.S. Grown Soybean Oil	60%	Terra Systems operates its own state-of-the-art manufacturing facility.	Long lasting slow release source of carbon and hydrogen, consistent product quality, uniform droplet size, neutral pH, QA/QC lab on floor to check product before shipment.
Food Grade Sodium or Potassium Lactate	4%	Rapidly biodegradable soluble substrate	Fast release source of carbon and hydrogen to rapidly generate anaerobic conditions
Proprietary Food Grade Nutrients	<1%	Proprietary organic and inorganic nutrients such as yeast extract, nitrogen and phosphorus.	Nutrients have been demonstrated to support the growth of the anaerobic microbial population.
Proprietary Food Grade Emulsifiers and Preservatives	7.5%	Proprietary nonionic emulsifier	Maximum radius of influence due to small droplet size and nonionic emulsifier in moderate to fine sand, silt and clay aquifers
Vitamin B_{12}	<1%	At least 250 µg/L of Vitamin B_{12}	He et al. 2007 demonstrated Vitamin B_{12} to be an important micronutrient to enhance dechlorination activity with 25 µg/L providing maximum stimulation
Median Oil Droplet Size (microns)	NA	0.6 µm	Maximum radius of influence due to small droplet size and nonionic emulsifier in moderate to fine sand, silt and clay aquifers
pH	6.5 - 7	6.5 - 7	Optimum microbial activity

Application: Terra Systems **patented**, nutrient enriched, proven slow release SRS®-SD **small droplet** emulsified vegetable oil substrate with a **nonionic emulsifier** is used when a long lasting carbon substrate is desired that provides maximum radius of influence in moderate to fine sand, silt and clay aquifers, which increases the distance between injection points and reduces the frequency of reinjection. The groundwater flow-rate is typically less than 180 feet/year. SRS®-SD does not stick to soil particles and is specifically designed when radius of influence in the formation is key to making contact with the bacteria.

130 Hickman Road – Suite 1 – Claymont – Delaware – 19703
For More Information Call Michael Free at 302-798-9553 or Email: mfree@terrasystems.net

Terra Systems INCORPORATED

Customers: SRS®-SD is used extensively by consultants working with current and former drycleaners, semiconductor plants and private firms and the Air Force, DOD, Navy, and EPA to cost effectively remediate chlorinated solvent sites. SRS®-SD releases bio-available hydrogen over a period of 3 to 5 years thus enhancing the long-term anaerobic biodegradation of the chlorinated solvents and reducing the frequency of reinjection.

Manufactured vs. Field Emulsion

In the early days of in-situ bioremediation when Terra Systems first patented the technology, it was common to bring the water, emulsifiers, oil, and other ingredients to the site and using trash or other pumps to mix the ingredients together to form an emulsion. It soon became apparent that poor emulsion consistency and a broad range of droplet sizes resulted in inadequate and uneven distribution when injected. This resulted in higher long-term costs due to higher reinjection frequency and higher substrate volumes to adequately make contact with the COC.

Don't be "***penny wise and pound foolish***".

Consider:

- ✓ The labor and equipment time and cost of mixing in the field.
- ✓ The need to mix the nutrients and Vitamin B_{12} longer to achieve consistency.
- ✓ The cost of inadequate distribution due to droplet size and emulsion inconsistency
- ✓ The inability to accurately determine if you have 100% emulsification.
- ✓ The lack of QA/QC in the field

- Terra Systems owns and operates a state of the art US based manufacturing plant with an in-house quality control laboratory for strict quality assurance of the emulsion, droplet size and pH.
- SRS®-SD arrives at the site "***injection ready***" with all the ingredients – Vitamin B_{12}, proprietary nutrients, sodium or potassium lactate and anionic emulsifier(s) already blended together.
- At the PM's request Terra Systems will blend 2-8 g/L of sodium bicarbonate into the SRS®-SD during manufacturing to counter the acids produced during the fermentation process in the aquifer. This is especially beneficial for marginal pH aquifers of pH 5 – 6.

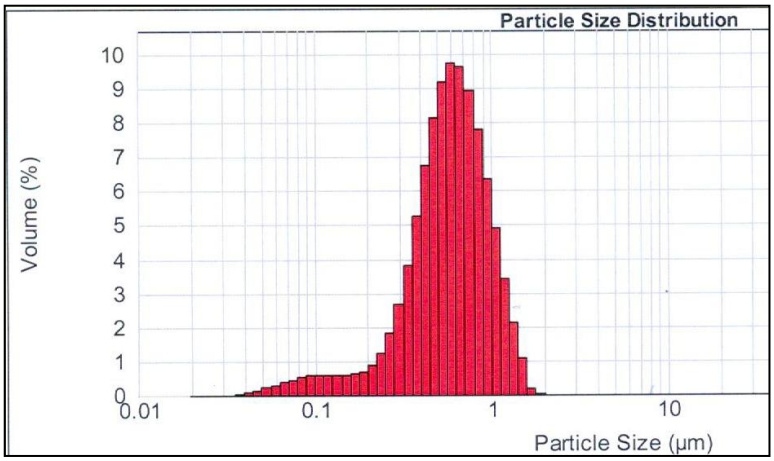

A Digital Microscope is connected to a laptop computer with proprietary "***Droplet Size Calculation Software***" which allows us to calculate the "***mean***" droplet size for each batch of SRS®-SD before transferring to a bucket, drum, tote or tanker for shipment to the customer

130 Hickman Road – Suite 1 – Claymont – Delaware – 19703
For More Information Call Michael Free at 302-798-9553 or Email: mfree@terrasystems.net

Terra Systems
INCORPORATED

- SRS®-SD optimizes the naturally occurring biodegradation system by supplying the rate limiting factor (in this case hydrogen) in the degradation of CVOC's, certain pesticides/herbicides, perchlorate, and immobilization of certain metals (hexavalent chromium, molybdenum, selenium, and some radionucleides).
- The **small droplet size** of **0.6 µm** combined with the **neutral surface charge** on the droplets results in a higher radius of influence in the subsurface.
- Terra Systems holds United States Patent #**RE40,448** for the use of emulsified vegetable oil for remediation of chlorinated solvents.
- The soy bean oil is grown in the United States and provides a **slow release** biodegradable carbon source, which promotes long-term biological activity.
- SRS®-SD comes **standard** with **biostimulating vitamins** like Vitamin $B_{12,}$ which He et al. 2007 demonstrated is an important micronutrient to enhance dechlorination activity.
- SRS®-SD contains proprietary organic and inorganic nutrients such as yeast extract, nitrogen and phosphorus, which have been demonstrated to support the growth of the anaerobic microbial population.
- SRS®-SD comes with **at least 4% sodium** or **potassium lactate** a quick release biodegradable substrate, which helps to "*jump start*" bacterial growth.
- SRS®-SD emulsified vegetable oil substrate has been validated by the Florida DEP, California Water Board and others.
- SRS®-SD contains only non-toxic food grade materials, which results in green, sustainable remediation.

Packaging: Terra Systems patented SRS®-SD can be shipped in 5-gallon buckets, 55-gallon drums, 275-gallon IBC totes, 275-gallon cardboard totes or bulk tankers.

If the *Dehalococcoides* are not present or are in small numbers Terra Systems **TSI DC®** Bioaugmentation Culture can also be injected.

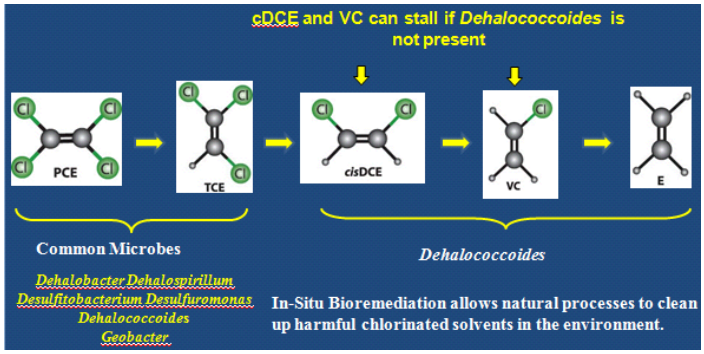

130 Hickman Road – Suite 1 – Claymont – Delaware – 19703
For More Information Call Michael Free at 302-798-9553 or Email: mfree@terrasystems.net

Emulsified Zero-Valent Iron (EZVI)

Emulsified Zero-Valent Iron (EZVI) is a water in oil emulsion consisting of nano/micro scale zero-valent iron, surfactant, food grade vegetable oil, and water that reductively dehalogenates halogenated hydrocarbons (e.g. PCE, TCE, CFC, VC). EZVI uses a patented micellular structure to deliver reactive iron which mimics the physical chemistry of DNAPL. It has the ability to mix with DNAPLs present in the subsurface environment. Thus, EZVI is a "source area" remediation technology.

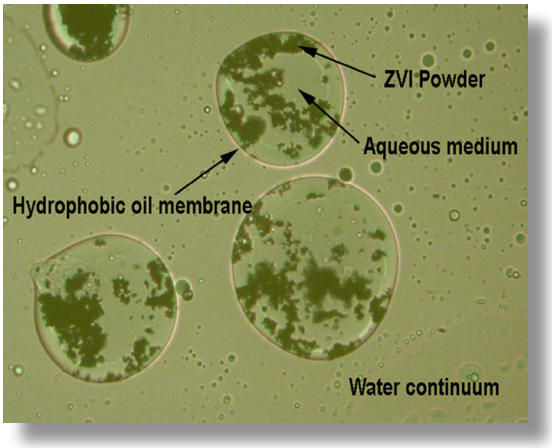

TEA is the largest custom manufacturer/supplier of EZVI, providing reactive, stable emulsions since 2005. TEA's EZVI products have been utilized at multiple locations across the United States as well as internationally.

EZVI AWARDS:

- **2007 - Induction into the NASA's Space Technology Hall of Fame**
- **2006 - Excellence in Technology Transfer awarded by Federal Laboratory Consortium (FLC)**
- **2005 - Awarded Governmental Invention of the Year by NASA**
- **2005 - Awarded Commercialization Invention of the Year by NASA**

ADVANTAGES AND BENEFITS

- Developed/patented by NASA
- Field-tested by the U.S. EPA under the SITE Program
- Primarily used for in-situ DNAPL source area destruction
- Typical source concentration decrease ~90+% within 3 months
- Surfactant-stabilized water-in-oil emulsion with zero-valent iron particles
- Hydrophobic, dense emulsion absorbs DNAPL, delivering contaminant to iron
- In-situ chemical reduction of chlorinated solvent to ethene and water
- Injection or soil mixing using conventional technologies
- Does not promote mobilization of DNAPL

TEA Inc. | Environmental Solutions

10636 Linkwood Court
Baton Rouge, Louisiana 70810
Phone: 225.767.3880

TEAincONLINE.COM

GREG BOOTH, Ph.D.
gbooth@teainconline.com

SiREM

APPENDIX D: ALS Laboratory Reports

SIREM
ATTN: JEFF ROBERTS/MICHAEL HEALEY
130 Research Lane
Suite 2
Guelph ON N1G 5G3

Date Received: 14-MAY-14
Report Date: 20-MAY-14 15:06 (MT)
Version: FINAL

Client Phone: 519-515-0840

Certificate of Analysis

Lab Work Order #: L1455370

Project P.O. #: NOT SUBMITTED
Job Reference: LHAAP-18-24
C of C Numbers:
Legal Site Desc:

Mathumai Ganeshakumar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1455370-1 LHAAP-18-24-MW2-A							
Sampled By: MICHAEL HEALEY on 14-MAY-14 @ 09:15							
Matrix: SOIL							
Physical Tests							
% Moisture	30.5		0.10	%	15-MAY-14	16-MAY-14	R2839641
Organic / Inorganic Carbon							
Fraction Organic Carbon	0.0026		0.0010	g/g	16-MAY-14	16-MAY-14	R2840501
Total Organic Carbon	0.26		0.10	%	16-MAY-14	16-MAY-14	R2840501
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	15-MAY-14	20-MAY-14	R2841438
Benzene	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438
Bromodichloromethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Bromoform	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Bromomethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Carbon Disulfide	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Carbon tetrachloride	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Chlorobenzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Dibromochloromethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Chloroethane	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438
Chloroform	<8.0	DLA	8.0	ug/g	15-MAY-14	20-MAY-14	R2841438
Chloromethane	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438
1,2-Dibromoethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Dibromomethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,2-Dichlorobenzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,3-Dichlorobenzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,4-Dichlorobenzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Dichlorodifluoromethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1-Dichloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,2-Dichloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1-Dichloroethylene	0.122		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
cis-1,2-Dichloroethylene	2.87		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Dichloromethane	313	DLA	8.0	ug/g	15-MAY-14	20-MAY-14	R2841438
1,2-Dichloropropane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	15-MAY-14	20-MAY-14	R2841438
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	15-MAY-14	20-MAY-14	R2841438
Ethyl Benzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
n-Hexane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
2-Hexanone	<0.50		0.50	ug/g	15-MAY-14	20-MAY-14	R2841438
Methyl Ethyl Ketone	<0.50		0.50	ug/g	15-MAY-14	20-MAY-14	R2841438
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	15-MAY-14	20-MAY-14	R2841438
MTBE	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Styrene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1455370-1 LHAAP-18-24-MW2-A Sampled By: MICHAEL HEALEY on 14-MAY-14 @ 09:15 Matrix: SOIL							
Volatile Organic Compounds							
Tetrachloroethylene	<8.0	DLA	8.0	ug/g	15-MAY-14	20-MAY-14	R2841438
Toluene	<0.20		0.20	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1,1-Trichloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1,2-Trichloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Trichloroethylene	6.75		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Trichlorofluoromethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Vinyl chloride	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438
o-Xylene	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438
m+p-Xylenes	<0.030		0.030	ug/g	15-MAY-14	20-MAY-14	R2841438
Xylenes (Total)	<0.050		0.050	ug/g		20-MAY-14	
Surrogate: 4-Bromofluorobenzene	79.6		50-140	%	15-MAY-14	20-MAY-14	R2841438
Surrogate: 1,4-Difluorobenzene	91.4		50-140	%	15-MAY-14	20-MAY-14	R2841438
Trihalomethanes							
Total THMs	<8.0		8.0	ug/g		20-MAY-14	
L1455370-2 LHAAP-18-24-MW2-B Sampled By: MICHAEL HEALEY on 14-MAY-14 @ 09:30 Matrix: SOIL							
Physical Tests							
% Moisture	30.9		0.10	%	15-MAY-14	16-MAY-14	R2839641
Organic / Inorganic Carbon							
Fraction Organic Carbon	<0.0010		0.0010	g/g	16-MAY-14	16-MAY-14	R2840501
Total Organic Carbon	<0.10		0.10	%	16-MAY-14	16-MAY-14	R2840501
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	15-MAY-14	20-MAY-14	R2841438
Benzene	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438
Bromodichloromethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Bromoform	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Bromomethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Carbon Disulfide	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Carbon tetrachloride	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Chlorobenzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Dibromochloromethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Chloroethane	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438
Chloroform	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Chloromethane	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438
1,2-Dibromoethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Dibromomethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,2-Dichlorobenzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,3-Dichlorobenzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,4-Dichlorobenzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Dichlorodifluoromethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1-Dichloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1455370-2 LHAAP-18-24-MW2-B Sampled By: MICHAEL HEALEY on 14-MAY-14 @ 09:30 Matrix: SOIL							
Volatile Organic Compounds							
1,2-Dichloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1-Dichloroethylene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Dichloromethane	0.136		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,2-Dichloropropane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	15-MAY-14	20-MAY-14	R2841438
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	15-MAY-14	20-MAY-14	R2841438
Ethyl Benzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
n-Hexane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
2-Hexanone	<0.50		0.50	ug/g	15-MAY-14	20-MAY-14	R2841438
Methyl Ethyl Ketone	<0.50		0.50	ug/g	15-MAY-14	20-MAY-14	R2841438
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	15-MAY-14	20-MAY-14	R2841438
MTBE	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Styrene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Tetrachloroethylene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Toluene	<0.20		0.20	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1,1-Trichloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1,2-Trichloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Trichloroethylene	0.659		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Trichlorofluoromethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Vinyl chloride	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438
o-Xylene	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438
m+p-Xylenes	<0.030		0.030	ug/g	15-MAY-14	20-MAY-14	R2841438
Xylenes (Total)	<0.050		0.050	ug/g		20-MAY-14	
Surrogate: 4-Bromofluorobenzene	80.7		50-140	%	15-MAY-14	20-MAY-14	R2841438
Surrogate: 1,4-Difluorobenzene	92.4		50-140	%	15-MAY-14	20-MAY-14	R2841438
Trihalomethanes							
Total THMs	<0.10		0.10	ug/g		20-MAY-14	
L1455370-3 LHAAP-18-24-MW21-A Sampled By: MICHAEL HEALEY on 14-MAY-14 @ 09:45 Matrix: SOIL							
Physical Tests							
% Moisture	26.5		0.10	%	15-MAY-14	16-MAY-14	R2839641
Organic / Inorganic Carbon							
Fraction Organic Carbon	0.0011		0.0010	g/g	16-MAY-14	16-MAY-14	R2840501
Total Organic Carbon	0.11		0.10	%	16-MAY-14	16-MAY-14	R2840501
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	15-MAY-14	20-MAY-14	R2841438
Benzene	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1455370-3 LHAAP-18-24-MW21-A Sampled By: MICHAEL HEALEY on 14-MAY-14 @ 09:45 Matrix: SOIL							
Volatile Organic Compounds							
Bromodichloromethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Bromoform	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Bromomethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Carbon Disulfide	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Carbon tetrachloride	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Chlorobenzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Dibromochloromethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Chloroethane	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438
Chloroform	0.120		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Chloromethane	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438
1,2-Dibromoethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Dibromomethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,2-Dichlorobenzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,3-Dichlorobenzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,4-Dichlorobenzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Dichlorodifluoromethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1-Dichloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,2-Dichloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1-Dichloroethylene	0.244		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
cis-1,2-Dichloroethylene	5.34		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
trans-1,2-Dichloroethylene	0.061		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Dichloromethane	575	DLA	8.0	ug/g	15-MAY-14	20-MAY-14	R2841438
1,2-Dichloropropane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	15-MAY-14	20-MAY-14	R2841438
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	15-MAY-14	20-MAY-14	R2841438
Ethyl Benzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
n-Hexane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
2-Hexanone	<0.50		0.50	ug/g	15-MAY-14	20-MAY-14	R2841438
Methyl Ethyl Ketone	<0.50		0.50	ug/g	15-MAY-14	20-MAY-14	R2841438
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	15-MAY-14	20-MAY-14	R2841438
MTBE	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Styrene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Tetrachloroethylene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Toluene	<0.20		0.20	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1,1-Trichloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1,2-Trichloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Trichloroethylene	11.6	DLA	8.0	ug/g	15-MAY-14	20-MAY-14	R2841438
Trichlorofluoromethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Vinyl chloride	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1455370-3 LHAAP-18-24-MW21-A Sampled By: MICHAEL HEALEY on 14-MAY-14 @ 09:45 Matrix: SOIL							
Volatile Organic Compounds							
o-Xylene	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438
m+p-Xylenes	<0.030		0.030	ug/g	15-MAY-14	20-MAY-14	R2841438
Xylenes (Total)	<0.050		0.050	ug/g		20-MAY-14	
Surrogate: 4-Bromofluorobenzene	78.5		50-140	%	15-MAY-14	20-MAY-14	R2841438
Surrogate: 1,4-Difluorobenzene	90.1		50-140	%	15-MAY-14	20-MAY-14	R2841438
Trihalomethanes							
Total THMs	0.12		0.10	ug/g		20-MAY-14	
L1455370-4 LHAAP-18-24-MW21-B Sampled By: MICHAEL HEALEY on 14-MAY-14 @ 09:55 Matrix: SOIL							
Physical Tests							
% Moisture	34.1		0.10	%	15-MAY-14	16-MAY-14	R2839641
Organic / Inorganic Carbon							
Fraction Organic Carbon	<0.0010		0.0010	g/g	16-MAY-14	16-MAY-14	R2840501
Total Organic Carbon	<0.10		0.10	%	16-MAY-14	16-MAY-14	R2840501
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	15-MAY-14	20-MAY-14	R2841438
Benzene	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438
Bromodichloromethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Bromoform	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Bromomethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Carbon Disulfide	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Carbon tetrachloride	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Chlorobenzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Dibromochloromethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Chloroethane	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438
Chloroform	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Chloromethane	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438
1,2-Dibromoethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Dibromomethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,2-Dichlorobenzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,3-Dichlorobenzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,4-Dichlorobenzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Dichlorodifluoromethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1-Dichloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,2-Dichloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1-Dichloroethylene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Dichloromethane	0.227		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,2-Dichloropropane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	15-MAY-14	20-MAY-14	R2841438

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1455370-4 LHAAP-18-24-MW21-B							
Sampled By: MICHAEL HEALEY on 14-MAY-14 @ 09:55							
Matrix: SOIL							
Volatile Organic Compounds							
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	15-MAY-14	20-MAY-14	R2841438
Ethyl Benzene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
n-Hexane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
2-Hexanone	<0.50		0.50	ug/g	15-MAY-14	20-MAY-14	R2841438
Methyl Ethyl Ketone	<0.50		0.50	ug/g	15-MAY-14	20-MAY-14	R2841438
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	15-MAY-14	20-MAY-14	R2841438
MTBE	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Styrene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Tetrachloroethylene	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Toluene	<0.20		0.20	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1,1-Trichloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
1,1,2-Trichloroethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Trichloroethylene	0.651		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Trichlorofluoromethane	<0.050		0.050	ug/g	15-MAY-14	20-MAY-14	R2841438
Vinyl chloride	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438
o-Xylene	<0.020		0.020	ug/g	15-MAY-14	20-MAY-14	R2841438
m+p-Xylenes	<0.030		0.030	ug/g	15-MAY-14	20-MAY-14	R2841438
Xylenes (Total)	<0.050		0.050	ug/g		20-MAY-14	
Surrogate: 4-Bromofluorobenzene	80.4		50-140	%	15-MAY-14	20-MAY-14	R2841438
Surrogate: 1,4-Difluorobenzene	92.0		50-140	%	15-MAY-14	20-MAY-14	R2841438
Trihalomethanes							
Total THMs	<0.10		0.10	ug/g		20-MAY-14	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLA	Detection Limit adjusted for required dilution

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
THM-SUM-CALC-WT	Soil	Total Trihalomethanes (THMs)	CALCULATION
Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
TOC-WT	Soil	TOC & FOC in Solids	CARTER 21.2
VOC-ROU-HS-WT	Soil	Volatile Organic Compounds	SW846 8260
Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.			
XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION
Total xylenes represents the sum of o-xylene and m&p-xylene.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L1455370 Report Date: 20-MAY-14

Client: SIREM
130 Research Lane Suite 2
Guelph ON N1G 5G3

Contact: JEFF ROBERTS/MICHAEL HEALEY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT	**Soil**							
Batch R2839641								
WG1873756-3 DUP		**L1455437-32**						
% Moisture		22.7	23.0		%	1.3	30	16-MAY-14
WG1873756-2 LCS								
% Moisture			101.5		%		70-130	16-MAY-14
WG1873756-1 MB								
% Moisture			<0.10		%		0.1	16-MAY-14
TOC-WT	**Soil**							
Batch R2840501								
WG1874791-3 DUP		**L1455370-1**						
Total Organic Carbon		0.26	0.23		%	9.8	30	16-MAY-14
Fraction Organic Carbon		0.0026	0.0023		g/g	9.8	25	16-MAY-14
WG1874791-2 LCS								
Total Organic Carbon			99.8		%		80-120	16-MAY-14
WG1874791-1 MB								
Total Organic Carbon			<0.10		%		0.1	16-MAY-14
Fraction Organic Carbon			<0.0010		g/g		0.001	16-MAY-14
VOC-ROU-HS-WT	**Soil**							
Batch R2841438								
WG1875598-1 CVS								
1,1,1,2-Tetrachloroethane			99.2		%		70-130	20-MAY-14
1,1,2,2-Tetrachloroethane			100.3		%		70-130	20-MAY-14
1,1,1-Trichloroethane			98.9		%		70-130	20-MAY-14
1,1,2-Trichloroethane			98.6		%		70-130	20-MAY-14
1,1-Dichloroethane			98.2		%		70-130	20-MAY-14
1,1-Dichloroethylene			88.3		%		70-130	20-MAY-14
1,2-Dibromoethane			91.5		%		70-130	20-MAY-14
1,2-Dichlorobenzene			102.4		%		70-130	20-MAY-14
1,2-Dichloroethane			98.0		%		70-130	20-MAY-14
1,2-Dichloropropane			94.4		%		70-130	20-MAY-14
1,3-Dichlorobenzene			98.9		%		70-130	20-MAY-14
1,4-Dichlorobenzene			95.7		%		70-130	20-MAY-14
2-Hexanone			77.7		%		70-130	20-MAY-14
Acetone			103.3		%		70-130	20-MAY-14
Benzene			99.5		%		70-130	20-MAY-14
Bromodichloromethane			95.4		%		70-130	20-MAY-14
Bromoform			96.3				70-130	

Quality Control Report

Workorder: L1455370 Report Date: 20-MAY-14

Client: SIREM
130 Research Lane Suite 2
Guelph ON N1G 5G3

Contact: JEFF ROBERTS/MICHAEL HEALEY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-ROU-HS-WT	**Soil**							
Batch R2841438								
WG1875598-1 CVS								
Bromoform			96.3		%		70-130	20-MAY-14
Bromomethane			87.6		%		60-140	20-MAY-14
Carbon Disulfide			85.5		%		70-130	20-MAY-14
Carbon tetrachloride			100.1		%		70-130	20-MAY-14
Chlorobenzene			106.6		%		70-130	20-MAY-14
Chloroethane			95.8		%		60-140	20-MAY-14
Chloroform			101.3		%		70-130	20-MAY-14
Chloromethane			84.5		%		60-140	20-MAY-14
cis-1,2-Dichloroethylene			96.3		%		70-130	20-MAY-14
cis-1,3-Dichloropropene			84.1		%		70-130	20-MAY-14
Dibromochloromethane			94.0		%		70-130	20-MAY-14
Dibromomethane			93.4		%		70-130	20-MAY-14
Dichlorodifluoromethane			61.4		%		60-140	20-MAY-14
Dichloromethane			97.9		%		70-130	20-MAY-14
Ethyl Benzene			98.6		%		70-130	20-MAY-14
MTBE			98.8		%		70-130	20-MAY-14
m+p-Xylenes			103.1		%		70-130	20-MAY-14
Methyl Ethyl Ketone			85.9		%		70-130	20-MAY-14
Methyl Isobutyl Ketone			73.8		%		70-130	20-MAY-14
n-Hexane			99.1		%		50-150	20-MAY-14
o-Xylene			99.5		%		70-130	20-MAY-14
Styrene			96.3		%		70-130	20-MAY-14
Tetrachloroethylene			100.8		%		70-130	20-MAY-14
Toluene			93.7		%		70-130	20-MAY-14
trans-1,2-Dichloroethylene			95.7		%		70-130	20-MAY-14
trans-1,3-Dichloropropene			72.2		%		70-130	20-MAY-14
Trichloroethylene			95.6		%		70-130	20-MAY-14
Trichlorofluoromethane			101.9		%		60-140	20-MAY-14
Vinyl chloride			82.5		%		60-140	20-MAY-14
WG1873713-3 DUP		**WG1873713-5**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
1,1,2-Trichloroethane		<0.050	<0.050					

Quality Control Report

Workorder: L1455370 Report Date: 20-MAY-14

Client: SIREM
130 Research Lane Suite 2
Guelph ON N1G 5G3

Contact: JEFF ROBERTS/MICHAEL HEALEY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-ROU-HS-WT	**Soil**							
Batch R2841438								
WG1873713-3 DUP		**WG1873713-5**						
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
2-Hexanone		<0.50	<0.50	RPD-NA	ug/g	N/A	50	20-MAY-14
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	50	20-MAY-14
Benzene		<0.020	<0.020	RPD-NA	ug/g	N/A	50	20-MAY-14
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
Carbon Disulfide		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
Chloroethane		<0.020	<0.020	RPD-NA	ug/g	N/A	50	20-MAY-14
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
Chloromethane		<0.020	<0.020	RPD-NA	ug/g	N/A	50	20-MAY-14
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	50	20-MAY-14
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
Dibromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
Dichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
Ethyl Benzene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	50	20-MAY-14
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	50	20-MAY-14
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	50	20-MAY-14
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
o-Xylene		<0.020	<0.020		ug/g			20-MAY-14

Quality Control Report

Workorder: L1455370 Report Date: 20-MAY-14

Client: SIREM
130 Research Lane Suite 2
Guelph ON N1G 5G3

Contact: JEFF ROBERTS/MICHAEL HEALEY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-ROU-HS-WT	**Soil**							
Batch	**R2841438**							
WG1873713-3	**DUP**	**WG1873713-5**						
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	50	20-MAY-14
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
Toluene		<0.20	<0.20	RPD-NA	ug/g	N/A	50	20-MAY-14
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	50	20-MAY-14
Trichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-MAY-14
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	50	20-MAY-14
WG1873713-1	**MB**							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	20-MAY-14
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	20-MAY-14
1,1,1-Trichloroethane			<0.050		ug/g		0.05	20-MAY-14
1,1,2-Trichloroethane			<0.050		ug/g		0.05	20-MAY-14
1,1-Dichloroethane			<0.050		ug/g		0.05	20-MAY-14
1,1-Dichloroethylene			<0.050		ug/g		0.05	20-MAY-14
1,2-Dibromoethane			<0.050		ug/g		0.05	20-MAY-14
1,2-Dichlorobenzene			<0.050		ug/g		0.05	20-MAY-14
1,2-Dichloroethane			<0.050		ug/g		0.05	20-MAY-14
1,2-Dichloropropane			<0.050		ug/g		0.05	20-MAY-14
1,3-Dichlorobenzene			<0.050		ug/g		0.05	20-MAY-14
1,4-Dichlorobenzene			<0.050		ug/g		0.05	20-MAY-14
2-Hexanone			<0.50		ug/g		0.5	20-MAY-14
Acetone			<0.50		ug/g		0.5	20-MAY-14
Benzene			<0.020		ug/g		0.02	20-MAY-14
Bromodichloromethane			<0.050		ug/g		0.05	20-MAY-14
Bromoform			<0.050		ug/g		0.05	20-MAY-14
Bromomethane			<0.050		ug/g		0.05	20-MAY-14
Carbon Disulfide			<0.050		ug/g		0.05	20-MAY-14
Carbon tetrachloride			<0.050		ug/g		0.05	20-MAY-14
Chlorobenzene			<0.050		ug/g		0.05	20-MAY-14
Chloroethane			<0.020		ug/g		0.02	20-MAY-14
Chloroform			<0.050		ug/g		0.05	20-MAY-14
Chloromethane			<0.020		ug/g		0.02	20-MAY-14
							0.05	

Quality Control Report

Workorder: L1455370 Report Date: 20-MAY-14

Client: SIREM
130 Research Lane Suite 2
Guelph ON N1G 5G3

Contact: JEFF ROBERTS/MICHAEL HEALEY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-ROU-HS-WT	**Soil**							
Batch R2841438								
WG1873713-1 MB								
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	20-MAY-14
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	20-MAY-14
Dibromochloromethane			<0.050		ug/g		0.05	20-MAY-14
Dibromomethane			<0.050		ug/g		0.05	20-MAY-14
Dichlorodifluoromethane			<0.050		ug/g		0.05	20-MAY-14
Dichloromethane			<0.050		ug/g		0.05	20-MAY-14
Ethyl Benzene			<0.050		ug/g		0.05	20-MAY-14
MTBE			<0.050		ug/g		0.05	20-MAY-14
m+p-Xylenes			<0.030		ug/g		0.03	20-MAY-14
Methyl Ethyl Ketone			<0.50		ug/g		0.5	20-MAY-14
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	20-MAY-14
n-Hexane			<0.050		ug/g		0.05	20-MAY-14
o-Xylene			<0.020		ug/g		0.02	20-MAY-14
Styrene			<0.050		ug/g		0.05	20-MAY-14
Tetrachloroethylene			0.050		ug/g		0.05	20-MAY-14
Toluene			<0.20		ug/g		0.2	20-MAY-14
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	20-MAY-14
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	20-MAY-14
Trichloroethylene			<0.050		ug/g		0.05	20-MAY-14
Trichlorofluoromethane			<0.050		ug/g		0.05	20-MAY-14
Vinyl chloride			<0.020		ug/g		0.02	20-MAY-14
Surrogate: 1,4-Difluorobenzene			102.9		%		50-140	20-MAY-14
Surrogate: 4-Bromofluorobenzene			91.5		%		50-140	20-MAY-14

Quality Control Report

Workorder: L1455370 Report Date: 20-MAY-14

Client: SIREM
130 Research Lane Suite 2
Guelph ON N1G 5G3
Contact: JEFF ROBERTS/MICHAEL HEALEY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

00731894

C of C #

60 NORTHLAND ROAD, UNIT 1
WATERLOO, ON N2V 2B8
Phone: (519) 886-6910
Fax: (519) 886-9047
Toll Free: 1-800-668-9878

ALS

CHAIN OF CUSTODY / ANALYTICAL SERVICES REQUEST FORM

Page 1 of 1

Note: all TAT Quoted material is in business days which exclude statutory holidays and weekends. TAT samples received past 3:00 pm or Saturday/Sunday begin the next day.

Specify date required

Service requested			
5 day (regular)		2 day TAT (50%)	
3-4 day (25%)	X	Next day TAT (100%)	
		Same day TAT (200%)	

COMPANY NAME: SiREM

OFFICE:

PROJECT MANAGER: Jeff Roberts/Michael Healey

PROJECT #: LHAAP-18-24

PHONE: (519)-515-0839

FAX: 519-822-3151

ACCOUNT #:

QUOTATION #:

PO #:

CRITERIA: Criteria on report YES___ NO___

Reg 153/04 Reg 511/09

Table 1 2 3

TCLP _____ MISA _____ PWQO _____

ODWS _____ OTHER _____

REPORT FORMAT/DISTRIBUTION

EMAIL X FAX _____ BOTH _____

SELECT: PDF ____ DIGITAL ____ BOTH X

EMAIL 1 jroberts@siremlab.com

EMAIL 2 mhealey@siremlab.com

ANALYSIS REQUEST

PLEASE INDICATE FILTERED, PRESERVED OR BOTH <----- (F, P, F/P)

SUBMISSION #: L1455370

ENTERED BY: aj

DATE/TIME ENTERED: 14/5/14 16:37

BIN #: B6666

SAMPLING INFORMATION

Sample Date/Time: Date (dd-mm-yy)	Time (24hr) (hh:mm)	TYPE: COMP	TYPE: GRAB	MATRIX: WATER	MATRIX: SOIL	MATRIX: OTHER	SAMPLE DESCRIPTION TO APPEAR ON REPORT	NUMBER OF CONTAINERS	PHC	VOC	COMMENTS	LAB ID
14 May 14	9:15				X		LHAAP-18-24-MW2-A	1	X	X		1
14 May 14	9:37				X		LHAAP-18-24-MW2-B	1	X	X		2
14 May 14	9:45				X		LHAAP-18-24-MW21-A	1	X	X		3
14 May 14	9:55				X		LHAAP-18-24-MW21-B	1	X	X		4

L1455370-COFC

SPECIAL INSTRUCTIONS/COMMENTS

THE QUESTIONS BELOW MUST BE ANSWERED FORWATER SAMPLES (CHECK Yes OR No)

Are any samples taken from a regulated DW System? Yes ___ No ___

If yes, an authorized drinking water COC MUST be used for this submission.

Is the water sampled intended to be potable for human consumption? Yes ___ No ___

SAMPLE CONDITION

___ FROZEN
___ COLD
✓ COOLING INITIATED
___ AMBIENT

MEAN TEMP: 1.0

SAMPLED BY: Michael Healey	DATE & TIME: 14 May 14 09:00	RECEIVED BY:	DATE & TIME
RELINQUISHED BY: Michael Healey	DATE & TIME: 14 May 14 10:30	RECEIVED AT LAB BY: MK	DATE & TIME: 14 MAY 14 16:10

OBSERVATIONS Yes___ No ___ If yes add SIF

INIT: MK

Notes

1. Quote number must be provided to ensure proper pricing

2. TAT may vary dependent on complexity of analysis and lab workload at time of submission. Please contact the lab to confirm TATs.

3. Any known or suspected hazards relating to a sample must be noted on the chain of custody in comments section.

SIREM
ATTN: Jeff Roberts
130 Research Lane
Suite 2
Guelph ON N1G 5G3

Date Received: 31-JUL-14
Report Date: 18-AUG-14 11:01 (MT)
Version: FINAL

Client Phone: 519-515-0840

Certificate of Analysis

Lab Work Order #: L1495674

Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers:
Legal Site Desc:

Mathumai Ganeshakumar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1495674-1 LAAP ZVI-250714-31							
Sampled By: MICHAEL HEALEY on 30-JUL-14 @ 15:00							
Matrix: AIR							
Volatile Organic Compounds							
Carbon Tetrachloride	410	DLM	160	ug/m3		17-AUG-14	R2911628
Carbon Tetrachloride	65	DLM	25	ppb(V)		17-AUG-14	R2911628
Chloroethane	530	DLM	67	ug/m3		17-AUG-14	R2911628
Chloroethane	201	DLM	25	ppb(V)		17-AUG-14	R2911628
Chloroform	3760	DLA	620	ug/m3		17-AUG-14	R2911628
Chloroform	770	DLA	130	ppb(V)		17-AUG-14	R2911628
1,1-Dichloroethane	5670	DLA	510	ug/m3		17-AUG-14	R2911628
1,1-Dichloroethane	1400	DLA	130	ppb(V)		17-AUG-14	R2911628
1,2-Dichloroethane	300	DLM	100	ug/m3		17-AUG-14	R2911628
1,2-Dichloroethane	74	DLM	25	ppb(V)		17-AUG-14	R2911628
1,1-Dichloroethene	557000	DLA	42000	ug/m3		17-AUG-14	R2911628
1,1-Dichloroethene	140000	DLA	11000	ppb(V)		17-AUG-14	R2911628
cis-1,2-Dichloroethene	2110000	DLA	210000	ug/m3		17-AUG-14	R2911628
cis-1,2-Dichloroethene	531000	DLA	53000	ppb(V)		17-AUG-14	R2911628
trans-1,2-Dichloroethene	27200	DLA	500	ug/m3		17-AUG-14	R2911628
trans-1,2-Dichloroethene	6860	DLA	130	ppb(V)		17-AUG-14	R2911628
Methylene chloride	90000000	DLA	17000000	ug/m3		18-AUG-14	R2911628
Methylene chloride	25800000	DLA	4800000	ppb(V)		18-AUG-14	R2911628
Tetrachloroethylene	830	DLM	170	ug/m3		17-AUG-14	R2911628
Tetrachloroethylene	123	DLM	25	ppb(V)		17-AUG-14	R2911628
1,1,1-Trichloroethane	400	DLM	140	ug/m3		17-AUG-14	R2911628
1,1,1-Trichloroethane	73	DLM	25	ppb(V)		17-AUG-14	R2911628
1,1,2-Trichloroethane	1380	R	140	ug/m3		17-AUG-14	R2911628
1,1,2-Trichloroethane	253	R	25	ppb(V)		17-AUG-14	R2911628
Trichloroethylene	153000000	DLA	26000000	ug/m3		18-AUG-14	R2911628
Trichloroethylene	28500000	DLA	4800000	ppb(V)		18-AUG-14	R2911628
Vinyl chloride	93000	DLA	27000	ug/m3		17-AUG-14	R2911628
Vinyl chloride	36000	DLA	11000	ppb(V)		17-AUG-14	R2911628
Surrogate: 4-Bromofluorobenzene	113.5		50-150	%		17-AUG-14	R2911628
Miscellaneous							
Batch Proof ID	140527.105				01-AUG-14	01-AUG-14	R2905807
Canister ID	01400-0023				01-AUG-14	01-AUG-14	R2905807
Pressure on Receipt	-23.9		-30	in Hg	01-AUG-14	01-AUG-14	R2905807
Regulator ID	G65				01-AUG-14	01-AUG-14	R2905807
L1495674-2 LAAP ZVI-250714-32							
Sampled By: MICHAEL HEALEY on 30-JUL-14 @ 15:00							
Matrix: AIR							
Volatile Organic Compounds							
Carbon Tetrachloride	870	DLM	240	ug/m3		17-AUG-14	R2911628
Carbon Tetrachloride	138	DLM	38	ppb(V)		17-AUG-14	R2911628
Chloroethane	520	DLM	100	ug/m3		17-AUG-14	R2911628
Chloroethane	199	DLM	38	ppb(V)		17-AUG-14	R2911628
Chloroform	2120	DLM	190	ug/m3		17-AUG-14	R2911628
Chloroform	434	DLM	38	ppb(V)		17-AUG-14	R2911628

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1495674-2 LAAP ZVI-250714-32							
Sampled By: MICHAEL HEALEY on 30-JUL-14 @ 15:00							
Matrix: AIR							
Volatile Organic Compounds							
1,1-Dichloroethane	4260	DLA	770	ug/m3		17-AUG-14	R2911628
1,1-Dichloroethane	1050	DLA	190	ppb(V)		17-AUG-14	R2911628
1,2-Dichloroethane	220	DLM	150	ug/m3		17-AUG-14	R2911628
1,2-Dichloroethane	54	DLM	38	ppb(V)		17-AUG-14	R2911628
1,1-Dichloroethene	423000	DLA	62000	ug/m3		17-AUG-14	R2911628
1,1-Dichloroethene	107000	DLA	16000	ppb(V)		17-AUG-14	R2911628
cis-1,2-Dichloroethene	2250000	DLA	310000	ug/m3		17-AUG-14	R2911628
cis-1,2-Dichloroethene	568000	DLA	78000	ppb(V)		17-AUG-14	R2911628
trans-1,2-Dichloroethene	19800	DLA	750	ug/m3		17-AUG-14	R2911628
trans-1,2-Dichloroethene	4990	DLA	190	ppb(V)		17-AUG-14	R2911628
Methylene chloride	90000000	DLA	5000000	ug/m3		18-AUG-14	R2911628
Methylene chloride	25900000	DLA	1500000	ppb(V)		18-AUG-14	R2911628
Tetrachloroethylene	350	DLM	260	ug/m3		17-AUG-14	R2911628
Tetrachloroethylene	52	DLM	38	ppb(V)		17-AUG-14	R2911628
1,1,1-Trichloroethane	480	DLM	210	ug/m3		17-AUG-14	R2911628
1,1,1-Trichloroethane	87	DLM	38	ppb(V)		17-AUG-14	R2911628
1,1,2-Trichloroethane	610	DLM	210	ug/m3		17-AUG-14	R2911628
1,1,2-Trichloroethane	112	DLM	38	ppb(V)		17-AUG-14	R2911628
Trichloroethylene	103000000	DLA	7800000	ug/m3		18-AUG-14	R2911628
Trichloroethylene	19200000	DLA	1500000	ppb(V)		18-AUG-14	R2911628
Vinyl chloride	93000	DLA	40000	ug/m3		17-AUG-14	R2911628
Vinyl chloride	37000	DLA	16000	ppb(V)		17-AUG-14	R2911628
Surrogate: 4-Bromofluorobenzene	132.1		50-150	%		17-AUG-14	R2911628
Miscellaneous							
Batch Proof ID	140527.129000001				01-AUG-14	01-AUG-14	R2905807
Canister ID	01400-0117				01-AUG-14	01-AUG-14	R2905807
Pressure on Receipt	-25.9		-30	in Hg	01-AUG-14	01-AUG-14	R2905807
Regulator ID	G43				01-AUG-14	01-AUG-14	R2905807

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLA	Detection Limit adjusted for required dilution
DLM	Detection Limit Adjusted due to sample matrix effects.
R	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
CAN-DATA-WT	Canister	Canister Information	EPA TO-15A
VOC-GCMS-WT	Canister	Volatile Organic Compounds	EPA TO-15

This analysis is performed using procedures adapted from EPA Method TO-15. Air samples are collected into cleaned evacuated canisters. A volume of air sample is transferred from the canister to a preconcentrator system where the analytes are trapped & focused. The analytes are then thermally desorbed into a GC-MSD for analysis. Test results are not blank corrected unless indicated by a qualifier.

This analysis was performed under AIHA-IHLAP Scope of Accreditation, GC/MS Field of Testing which is compliant with AIHA-LAP, LLC Accreditation Policy Modules & ISO/IEC 17025:2005 Standard.

Canister samples will be retained for 7 calendar days after final report. If you require a longer canister storage time, please contact your account manager.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L1495674 Report Date: 18-AUG-14

Client: SIREM
130 Research Lane Suite 2
Guelph ON N1G 5G3

Contact: Jeff Roberts

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CAN-DATA-WT	**Canister**							
Batch R2905807								
WG1922764-1 MB								
Pressure on Receipt			-29.8		in Hg			01-AUG-14
VOC-GCMS-WT	**Canister**							
Batch R2911628								
WG1925531-4 DUP		**L1491837-2**						
1,1,1-Trichloroethane		<0.20	<0.20	RPD-NA	ppb(V)	N/A	30	08-AUG-14
1,1,2-Trichloroethane		<0.20	<0.20	RPD-NA	ppb(V)	N/A	30	08-AUG-14
1,1-Dichloroethane		<0.20	<0.20	RPD-NA	ppb(V)	N/A	30	08-AUG-14
1,1-Dichloroethene		<0.20	<0.20	RPD-NA	ppb(V)	N/A	30	08-AUG-14
1,2-Dichloroethane		<0.20	<0.20	RPD-NA	ppb(V)	N/A	30	08-AUG-14
Carbon Tetrachloride		<0.20	<0.20	RPD-NA	ppb(V)	N/A	30	08-AUG-14
Chloroethane		<0.20	<0.20	RPD-NA	ppb(V)	N/A	30	08-AUG-14
Chloroform		<0.20	<0.20	RPD-NA	ppb(V)	N/A	30	08-AUG-14
cis-1,2-Dichloroethene		<0.20	<0.20	RPD-NA	ppb(V)	N/A	30	08-AUG-14
Methylene chloride		<0.20	<0.20	RPD-NA	ppb(V)	N/A	30	08-AUG-14
Tetrachloroethylene		<0.20	<0.20	RPD-NA	ppb(V)	N/A	30	08-AUG-14
trans-1,2-Dichloroethene		<0.20	<0.20	RPD-NA	ppb(V)	N/A	30	08-AUG-14
Trichloroethylene		<0.20	<0.20	RPD-NA	ppb(V)	N/A	30	08-AUG-14
Vinyl chloride		<0.20	<0.20	RPD-NA	ppb(V)	N/A	30	08-AUG-14
WG1925531-2 LCS								
1,1,1-Trichloroethane			71.1		%		70-130	08-AUG-14
1,1,2-Trichloroethane			82.1		%		70-130	08-AUG-14
1,1-Dichloroethane			87.5		%		70-130	08-AUG-14
1,1-Dichloroethene			76.1		%		70-130	08-AUG-14
1,2-Dichloroethane			70.2		%		70-130	08-AUG-14
Carbon Tetrachloride			73.3		%		70-130	08-AUG-14
Chloroethane			101.0		%		70-130	08-AUG-14
Chloroform			74.8		%		70-130	08-AUG-14
cis-1,2-Dichloroethene			80.2		%		70-130	08-AUG-14
Methylene chloride			91.7		%		70-130	08-AUG-14
Tetrachloroethylene			85.7		%		70-130	08-AUG-14
trans-1,2-Dichloroethene			88.6		%		70-130	08-AUG-14
Trichloroethylene			84.0		%		70-130	08-AUG-14
Vinyl chloride			91.0		%		70-130	08-AUG-14

Quality Control Report

Workorder: L1495674 Report Date: 18-AUG-14

Client: SIREM
130 Research Lane Suite 2
Guelph ON N1G 5G3

Contact: Jeff Roberts

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-GCMS-WT	**Canister**							
Batch R2911628								
WG1925531-3 LCSD		**WG1925531-2**						
1,1,1-Trichloroethane		71.1	70.1		%	1.5	25	08-AUG-14
1,1,2-Trichloroethane		82.1	84.0		%	2.3	25	08-AUG-14
1,1-Dichloroethane		87.5	86.5		%	1.1	25	08-AUG-14
1,1-Dichloroethene		76.1	77.1		%	1.2	25	08-AUG-14
1,2-Dichloroethane		70.2	70.2		%	0.0	25	08-AUG-14
Carbon Tetrachloride		73.3	73.3		%	0.0	25	08-AUG-14
Chloroethane		101.0	92.9		%	8.3	25	08-AUG-14
Chloroform		74.8	74.8		%	0.0	25	08-AUG-14
cis-1,2-Dichloroethene		80.2	80.2		%	0.0	25	08-AUG-14
Methylene chloride		91.7	91.7		%	0.0	25	08-AUG-14
Tetrachloroethylene		85.7	87.6		%	2.2	25	08-AUG-14
trans-1,2-Dichloroethene		88.6	88.6		%	0.0	25	08-AUG-14
Trichloroethylene		84.0	83.0		%	1.1	25	08-AUG-14
Vinyl chloride		91.0	90.0		%	1.1	25	08-AUG-14
WG1925531-1 MB								
1,1,1-Trichloroethane			<0.20		ppb(V)		0.2	08-AUG-14
1,1,2-Trichloroethane			<0.20		ppb(V)		0.2	08-AUG-14
1,1-Dichloroethane			<0.20		ppb(V)		0.2	08-AUG-14
1,1-Dichloroethene			<0.20		ppb(V)		0.2	08-AUG-14
1,2-Dichloroethane			<0.20		ppb(V)		0.2	08-AUG-14
Carbon Tetrachloride			<0.20		ppb(V)		0.2	08-AUG-14
Chloroethane			<0.20		ppb(V)		0.2	08-AUG-14
Chloroform			<0.20		ppb(V)		0.2	08-AUG-14
cis-1,2-Dichloroethene			<0.20		ppb(V)		0.2	08-AUG-14
Methylene chloride			<0.20		ppb(V)		0.2	08-AUG-14
Tetrachloroethylene			<0.20		ppb(V)		0.2	08-AUG-14
trans-1,2-Dichloroethene			<0.20		ppb(V)		0.2	08-AUG-14
Trichloroethylene			<0.20		ppb(V)		0.2	08-AUG-14
Vinyl chloride			<0.20		ppb(V)		0.2	08-AUG-14
Surrogate: 4-Bromofluorobenzene			97.5		%		50-150	08-AUG-14

Quality Control Report

00731901

Workorder: L1495674 Report Date: 18-AUG-14

Client: SIREM
130 Research Lane Suite 2
Guelph ON N1G 5G3
Contact: Jeff Roberts

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Batch Proof Report

Batch ID	Canister ID	Parameters	Value	Units	Date	Analyst
B140527.128	01400-0114	1,1,1-Trichloroethane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	1,1,2,2-Tetrachloroethane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	1,1,2-Trichloroethane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	1,1-Dichloroethane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	1,1-Dichloroethene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	1,2,4-Trichlorobenzene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	1,2,4-Trimethylbenzene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	1,2-Dibromoethane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	1,2-Dichlorobenzene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	1,2-Dichloroethane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	1,2-Dichloropropane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	1,3,5-Trimethylbenzene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	1,3-Butadiene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	1,3-Dichlorobenzene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	1,4-Dichlorobenzene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	1,4-Dioxane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	2-Hexanone	<1.0	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	4-Ethyltoluene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Acetone	<0.5	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Allyl Chloride	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Benzene	<0.1	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Benzyl Chloride	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Bromodichloromethane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Bromoform	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Bromomethane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Carbon Disulfide	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Carbon Tetrachloride	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Chlorobenzene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Chloroethane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Chloroform	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Chloromethane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	cis-1,2-Dichloroethene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	cis-1,3-Dichloropropene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Cyclohexane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Dibromochloromethane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Dichlorodifluoromethane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Ethyl Acetate	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Ethyl Benzene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Freon 113	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Freon 114	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Hexachlorobutadiene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Isooctane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Isopropyl Alcohol	<1.0	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	m&p-Xylene	<0.4	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Methyl Ethyl Ketone	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Methyl Isobutyl Ketone	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Methylene Chloride	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	MTBE	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Naphthalene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	n-Heptane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	n-Hexane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	o-Xylene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Propylene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Styrene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Tetrachloroethylene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Tetrahydrofuran	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Toluene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	trans-1,2-Dichloroethene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	trans-1,3-Dichloropropene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Trichloroethylene	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Trichlorofluoromethane	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Vinyl Acetate	<0.5	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Vinyl Bromide	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	Vinyl Chloride	<0.2	ppb(V)	3-Jun-14	el1
B140527.128	01400-0114	4-Bromofluorobenzene	98.6	%	3-Jun-14	el1

ADDRESS 60 Northland Rd, Unit 1 Waterloo, ON, N2V 2B8 Canada | PHONE +1 519 886-6910 | FAX +1 519 886-9047

ALS CANADA LTD. Part of the ALS Group A Campbell Brothers Limited Company

Environmental www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

00731903

60 NORTHLAND ROAD, UNIT 1
WATERLOO, ON N2V 2B8
Phone: (519) 886-6910
Fax: (519) 886-9047
Toll Free: 1-800-668-9878

ALS Environmental

AIR QUALITY CHAIN OF CUSTODY FORM - Canister/Tube/Gas Bag

Page 1 of 1

Note: All TAT Quoted is in business days which exclude statutory holidays and weekends. TAT of samples received past 3:00 pm or Saturday / Sunday begin the next day.

Specify date required

Service Requested: 10 day (regular) ☒ Rush 5 day (50%) ☐ Rush 3 day (100%) ☐ Rush 2 day (200%) ☐ Rush 1 day (300%) - Enquire ☐

All rush work requires lab approval before sample submission

COMPANY NAME	SiREM
OFFICE	130 Research Lane, Guelph, ON
PROJECT MANAGER	Jeff Roberts
PROJECT #	
PHONE	519-822-2265
FAX	
ACCOUNT #	
QUOTATION #	Q46264
PO #	

CRITERIA: Reg 419/05 ☐ Reg 153/04 SVI ☐ OTHER ☐ Please List _____

REPORT FORMAT/DISTRIBUTION: EMAIL X FAX ___ BOTH ___ SELECT: PDF ___ DIGITAL ___ BOTH X
EMAIL 1 jroberts@siremlab.com
EMAIL 2 mhealey@siremlab.com

SUBMISSION #: L1495674
ENTERED BY:
DATE/TIME ENTERED: July 31/14 16:50
BIN #:

SAMPLING INFORMATION

Sample Date/Time: Date (dd-mmm-yy)	Time (24hr) (hh:mm)	Canister or Tube ID# (e.g. 060000-XXXX or G0XXXXXXSVI)	Regulator Serial # CS1200-XXXX or GXX	Matrix Type	SAMPLE DESCRIPTION TO APPEAR ON REPORT	TUBE AIR VOLUME - L ☐ or m³ ☐	EPA TO-15*	STARTING PRESSURE - Pre-Sampling ("Hg)	ENDING PRESSURE - Post Sampling ("Hg)	COLLECTION TIME (HRS)	Field Conditions (Rain/Wind/Dust/Odour) Field PID Reading	LAB ID
30-Jul-14	15:00	01400-0023	G65		LAAP 2VI-250714-31		X	-29	-24			1
30-Jul-14	1505	01400-0117	G43		LAAP 2VI-250714-32		X	-29	-26			2

L1495674-COFC

SPECIAL INSTRUCTIONS/COMMENTS: * need The list of contaminants from Quote Q46264 (attached)

This Chain of Custody Form is only to be used for Air Quality Samples

Matrix Type: Soil Gas Vapour = SG; Indoor Air = IA; Ambient Air = AA; Industrial Hygiene = IH

SAMPLE CONDITION AS RECEIVED: FROZEN ☐ COLD ☐ COOLING INITIATED ☐ AMBIENT ☐ MEAN TEMP: —

OBSERVATIONS Yes ☐ No ☐ If yes add SIF

INIT: JH

SAMPLED BY: Michael Healey	DATE & TIME 30 Jul 14 @ 3:30pm	RECEIVED BY:	DATE & TIME
RELINQUISHED BY: Michael Healey	DATE & TIME 31 Jul 14 @ 9:00am	RECEIVED AT LAB BY:	DATE & TIME 31/7/14 1500

Notes

1. Quote number must be provided to ensure proper pricing
2. TAT may vary dependent on complexity of analysis and lab workload at time of submission. Please contact the lab to confirm TATs.
3. Any known or suspected hazards relating to a sample must be noted on the chain of custody in comments section.

REV5-2014

L1495674-COFC

ALS Quote Number: Q46264
SIREM
11-Jul-2014

Quoted Parameters with Detection Limits

Parameter	Method Reference	Report D.L.	Units
Canister-Volatile Organic Compounds			
1,1,1-Trichloroethane	EPA TO-15	0.2	ppb(V)
1,1,2-Trichloroethane	EPA TO-15	0.2	ppb(V)
1,1-Dichloroethane	EPA TO-15	0.2	ppb(V)
1,1-Dichloroethene	EPA TO-15	0.2	ppb(V)
1,2-Dichloroethane	EPA TO-15	0.2	ppb(V)
4-Bromofluorobenzene	EPA TO-15	1	%
Carbon Tetrachloride	EPA TO-15	0.2	ppb(V)
Chloroethane	EPA TO-15	0.2	ppb(V)
Chloroform	EPA TO-15	0.2	ppb(V)
cis-1,2-Dichloroethene	EPA TO-15	0.2	ppb(V)
Methylene chloride	EPA TO-15	0.2	ppb(V)
Tetrachloroethylene	EPA TO-15	0.2	ppb(V)
trans-1,2-Dichloroethene	EPA TO-15	0.2	ppb(V)
Trichloroethylene	EPA TO-15	0.2	ppb(V)
Vinyl chloride	EPA TO-15	0.2	ppb(V)
Canister-Miscellaneous			
Batch Proof ID	EPA TO-15A		
Canister ID	EPA TO-15A		
Pressure on Receipt	EPA TO-15A	-30	in Hg
Regulator ID	EPA TO-15A		

Methodology

Product	Matrix	Product Description	Analytical Method Reference
CAN-DATA-WT	Canister	Canister Information	EPA TO-15A
PREP-CANISTER-WT	Canister	Canister Prep Charge	EPA TO-15
SAMPLE-DISPOSAL-WT	Misc.	Sample Handling and Disposal Fee	
VOC-GCMS-WT	Canister	Volatile Organic Compounds	EPA TO-15

This analysis is performed using procedures adapted from EPA Method TO-15. Air samples are collected into cleaned evacuated canisters. A volume of air sample is transferred from the canister to a preconcentrator system where the analytes are trapped & focused. The analytes are then thermally desorbed into a GC-MSD for analysis. Test results are not blank corrected unless indicated by a qualifier.

This analysis was performed under AIHA-IHLAP Scope of Accreditation, GC/MS Field of Testing which is compliant with AIHA-LAP, LLC Accreditation Policy Modules & ISO/IEC 17025:2005 Standard.

Canister samples will be retained for 7 calendar days after final report. If you require a longer canister storage time, please contact your account manager.

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

LABORATORY REPORT

December 12, 2014

Linda Raabe
AECOM
112 E. Pecan Street Suite 400
San Antonio, TX 78205

RE: LHAAP-18-24

Dear Linda:

Enclosed are the results of the samples submitted to our laboratory on December 2, 2014. For your reference, these analyses have been assigned our service request number P1404902.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Kate Aguilera

By Kate Aguilera at 3:28 pm, Dec 12, 2014

Kate Aguilera
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

Client: AECOM
Project: LHAAP-18-24

Service Request No: P1404902

CASE NARRATIVE

The samples were received intact under chain of custody on December 2, 2014 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Fixed Gases Analysis

The headspace of each of the samples were analyzed for fixed gases (hydrogen, oxygen/argon, nitrogen, carbon monoxide, methane and carbon dioxide) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This procedure is described in laboratory SOP VOA-EPA3C. This method is not included on the laboratory's NELAP or AIHA-LAP scope of accreditation.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L14-2
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2014025
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	643428
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	CA200007
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-14-5
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272014-4
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: AECOM
Project ID: LHAAP-18-24

Service Request: P1404902

Date Received: 12/2/2014
Time Received: 10:01

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	None - MiscVOAGC Air 1
LHAAP-18-24-MW2-23	P1404902-001	Product	12/1/2014	14:23	X
LHAAP-18-24-MW2-24	P1404902-002	Product	12/1/2014	14:22	X
LHAAP-18-24-MW2-31	P1404902-003	Product	12/1/2014	14:21	X
LHAAP-18-24-MW2-32	P1404902-004	Product	12/1/2014	14:20	X

Columbia Analytical Services

Air - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No.: P1404902

CAS Contact: Kato Aguilera

Company Name & Address (Reporting Information): AECOM, 16000 Dallas Parkway, Suite 350, Dallas, Texas, 75248

Project Name: LHAAP-18-24

Project Number:

Project Manager: Marwan Salameh

P.O. # / Billing Information:

Phone: 1-972-735-7063

Fax:

Email Address for Result Reporting: marwan.salameh@aecom.com

Sampler (Print & Sign): Michael Healey Michael Healey

Analysis Method/Analytes

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Sample Type (Air/Tube/ Solid)	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller (Bar code - FC #)	Sample Volume	Fixed Gases (N_2, O_2, CO_2, CH_4, H_2) by GC/TCD			Comments e.g. Actual Preservative or specific instructions
LHAAP-18-24-MW2-23	1	1-Dec-14	14:23	Air				X			Contact
LHAAP-18-24-MW2-24	2	1-Dec-14	14:22					X			Marwan
LHAAP-18-24-MW2-31	3	1-Dec-14	14:21					X			Salameh before
LHAAP-18-24-MW2-32	4	1-Dec-14	14:20					X			analysis.

Report Tier Levels - please select

Tier I - (Results/Default if not specified) _____
Tier II (Results + QC) _____
Tier III (Data Validation Package) 10% Surcharge _____
Tier V (client specified) _____

EDD required Yes / No
Type: _____ EDD Units: _____

Project Requirements (MRLs, QAPP): qcl

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Michael Healey	1-Dec-14	16:00	K. Kelm	12/2/14	1001
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature 3 °C

ALS Environmental
Sample Acceptance Check Form

Client: AECOM Work order: P1404902
Project: LHAAP-18-24
Sample(s) received on: 12/2/14 Date opened: 12/2/14 by: KKELPE

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by ALS**?	☐	☒	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☐	☐	☒
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: 3° C Blank Temperature: ° C **Gel Packs**			
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1404902-001.01	8oz Glass Jar					
P1404902-002.01	8oz Glass Jar					
P1404902-003.01	8oz Glass Jar					
P1404902-004.01	8oz Glass Jar					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **AECOM**
Client Sample ID: **LHAAP-18-24-MW2-23**
Client Project ID: **LHAAP-18-24**

ALS Project ID: P1404902
ALS Sample ID: P1404902-001

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Nalini Lall
Sample Type: Liquid Headspace
Test Notes:

Date Collected: 12/1/14
Date Received: 12/2/14
Date Analyzed: 12/10/14
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**42.2**	0.10	
7782-44-7	**Oxygen +**			
7440-37-1	**Argon**	**0.630**	0.10	
7727-37-9	**Nitrogen**	**57.0**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**0.132**	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **AECOM**
Client Sample ID: **LHAAP-18-24-MW2-24**
Client Project ID: **LHAAP-18-24**

ALS Project ID: P1404902
ALS Sample ID: P1404902-002

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Nalini Lall
Sample Type: Liquid Headspace
Test Notes:

Date Collected: 12/1/14
Date Received: 12/2/14
Date Analyzed: 12/10/14
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7782-44-7	**Oxygen +**			
7440-37-1	**Argon**	**21.8**	0.10	
7727-37-9	**Nitrogen**	**78.0**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	Methane	ND	0.10	
124-38-9	**Carbon Dioxide**	**0.204**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **AECOM**
Client Sample ID: **LHAAP-18-24-MW2-31**
Client Project ID: **LHAAP-18-24**

ALS Project ID: P1404902
ALS Sample ID: P1404902-003

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Nalini Lall
Sample Type: Liquid Headspace
Test Notes:

Date Collected: 12/1/14
Date Received: 12/2/14
Date Analyzed: 12/10/14
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**70.8**	0.10	
7782-44-7	Oxygen +			
7440-37-1	Argon	ND	0.10	
7727-37-9	**Nitrogen**	**28.4**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**0.716**	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **AECOM**
Client Sample ID: **LHAAP-18-24-MW2-32**
Client Project ID: **LHAAP-18-24**

ALS Project ID: P1404902
ALS Sample ID: P1404902-004

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Nalini Lall
Sample Type: Liquid Headspace
Test Notes:

Date Collected: 12/1/14
Date Received: 12/2/14
Date Analyzed: 12/10/14
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**40.8**	0.10	
7782-44-7	**Oxygen +**			
7440-37-1	**Argon**	**0.488**	0.10	
7727-37-9	**Nitrogen**	**58.5**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**0.188**	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **AECOM**
Client Sample ID: **Method Blank**
Client Project ID: **LHAAP-18-24**

ALS Project ID: P1404902
ALS Sample ID: P141210-MB

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Nalini Lall
Sample Type: Liquid Headspace
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 12/10/14
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7782-44-7	Oxygen +			
7440-37-1	Argon	ND	0.10	
7727-37-9	Nitrogen	ND	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	Methane	ND	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **AECOM**
Client Sample ID: **Lab Control Sample**
Client Project ID: **LHAAP-18-24**

ALS Project ID: P1404902
ALS Sample ID: P141210-LCS

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Nalini Lall
Sample Type: Liquid Headspace
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 12/10/14
Volume(s) Analyzed: NA ml(s)

CAS #	Compound	Spike Amount ppmV	Result ppmV	% Recovery	ALS Acceptance Limits	Data Qualifier
1333-74-0	Hydrogen	40,000	**39,800**	**100**	84-110	
7782-44-7	Oxygen +					
7440-37-1	Argon	50,000	**52,100**	**104**	88-114	
7727-37-9	Nitrogen	50,000	**51,100**	**102**	88-114	
630-08-0	Carbon Monoxide	50,000	**51,900**	**104**	88-113	
74-82-8	Methane	40,000	**40,600**	**102**	87-110	
124-38-9	Carbon Dioxide	50,000	**50,200**	**100**	84-109	

APPENDIX E: University of Guelph Laboratory Services Laboratory Report

UNIVERSITY of GUELPH
LABORATORY SERVICES
Agriculture and Food Laboratory

FINAL Report
Submission# **14-036130**
Reported: 2014-Jun-02

Submitted By:

SIREM LABORATORIES
MICHAEL HEALEY
130 RESEARCH LANE
SUITE 2
GUELPH, ON N1G 5G3

Phone: 519 822-2230
Fax: 519 822-3151
Sampling Date: 2014-May-14
Received Date: 2014-May-14

Owner:
JEFF ROBERTS

Phosphorus, Water

Date Authorized: 2014-Jun-02 13:37

Sample ID	Client Sample ID	Specimen type	Sampling date / time	Test	Result		Note
0001	LHAAP-18--24-MW2A	Water	14-May-14 09:03	Phosphorus	<0.0500	mg/L	
0002	LHAAP-18--24-MW2B	Water	14-May-14 09:10	Phosphorus	<0.0500	mg/L	
0003	LHAAP-18--24-MW21A	Water	14-May-14 09:15	Phosphorus	<0.0500	mg/L	
0004	LHAAP-18--24-MW21B	Water	14-May-14 09:20	Phosphorus	<0.0500	mg/L	

Total Kjeldahl Nitrogen, Water

Date Authorized: 2014-Jun-02 13:37

Sample ID	Client Sample ID	Specimen type	Sampling date / time	Test	Result		Note
0001	LHAAP-18--24-MW2A	Water	14-May-14 09:03	Total Kjeldahl Nitrogen	0.00	mg/L	
0002	LHAAP-18--24-MW2B	Water	14-May-14 09:10	Total Kjeldahl Nitrogen	1.45	mg/L	
0003	LHAAP-18--24-MW21A	Water	14-May-14 09:15	Total Kjeldahl Nitrogen	0.00	mg/L	
0004	LHAAP-18--24-MW21B	Water	14-May-14 09:20	Total Kjeldahl Nitrogen	0.00	mg/L	

Comments:

0 refers to a value of TKN-N water of <1.0 mg/L

Test method(s): SNL-007 CHEM-039

Supervisor: Nicolaas Schrier MSc 519 823 1268 ext. 57215 nschrier@uoguelph.ca

This report may not be reproduced except in full without written approval by Laboratory Services.
These test results pertain only to the specimens tested.

SiREM

APPENDIX F: Gene-Trac® Report

SiREM
Leading Science · Lasting Solutions

130 Research Lane, Ste 2
Guelph ON N1G 5G3
(519) 822-2265

Certificate of Analysis: Gene-Trac® *Dehalococcoides* Assay

Customer: Dave Wacker & Marwan Salmeh, AECOM

Project: LHAAP-18/24

Customer Reference: 60274185

SiREM Reference: S-3208

Report Date: 29-May-14

Data Files: MyiQ-DHC-QPCR-1116
MyiQ-DB-DHC-QPCR-0473
iQ5-TBA-QPCR-0047

Table 1a: Test Results

Customer Sample ID	SiREM Sample ID	Sample Collection Date	Sample Matrix	Percent Dhc *	*Dehalococcoides* Enumeration/Liter **
LHAAP-18/24-MW2A	DHC-10451	14-May-14	Microcosm	NA	9×10^4 U
LHAAP-18/24-MW2B	DHC-10452	14-May-14	Microcosm	NA	9×10^4 U
LHAAP-18/24-MW21A	DHC-10453	14-May-14	Microcosm	0.00004 - 0.0001 %	3×10^4 J
LHAAP-18/24-MW21B	DHC-10454	14-May-14	Microcosm	NA	9×10^4 U

Notes:

* Percent *Dehalococcoides* (Dhc) in microbial population. This value is calculated by dividing the number of Dhc 16S ribosomal ribonucleic acid (rRNA) gene copies by the total number of bacteria as estimated by the mass of DNA extracted from the sample. Range represents normal variation in Dhc enumeration.

** Based on quantification of Dhc 16S rRNA gene copies. Dhc are generally reported to contain one 16S rRNA gene copy per cell; therefore, this number is often interpreted to represent the number of Dhc cells present in the sample.

J The associated value is an estimated quantity between the method detection limit and quantitation limit.
U Not detected, associated value is the quantification limit.
B Analyte was detected in the method blank within an order of magnitude of the test sample
NA Not applicable as *Dehalococcoides* not detected and/or quantifiable DNA not extracted from the sample.
I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers.
E Extracted genomic DNA was not detected in sample.

Analyst: J. Wilkinson
Jennifer Wilkinson
Senior Laboratory Technician

Approved: Ximena Druar
Ximena Druar, B.Sc.
Genetic Testing Coordinator

SiREM
Leading Science · Lasting Solutions

130 Research Lane, Ste 2
Guelph ON N1G 5G3
(519) 822-2265

Certificate of Analysis: Gene-Trac® VC, Vinyl Chloride Reductase (*vcrA*) Assay

Customer: Dave Wacker & Marwan Salmeh, AECOM

Project: LHAAP-18/24

Customer Reference: 60274185

SiREM Reference: S-3208

Report Date: 29-May-14

Data Files: MyiQ-VC-QPCR-0659
VC-QPCR-check-gel-0662
MyiQ-DB-VC-QPCR-0380

Table 1b: Test Results

Customer Sample ID	SiREM Sample ID	Sample Collection Date	Sample Matrix	Percent *vcrA* *	Vinyl Chloride Reductase (*vcrA*) Gene Copies/Liter
LHAAP-18/24-MW2A	VCR-4793	14-May-14	Microcosm	0.00003 - 0.00009 %	2×10^4 J

Notes:

* Percent *vcrA* in microbial population. This value is calculated by dividing the number of vinyl chloride reductase A (*vcrA)* gene copies quantified by the total number of bacteria estimated to be in the sample based on the mass of DNA extracted from the sample. Range represents normal variation in enumeration of *vcrA*.

J The associated value is an estimated quantity between the method detection limit and quantitation limit.
U Not detected, associated value is the quantification limit.
B Analyte was detected in the method blank within an order of magnitude of the test sample.
NA Not applicable as *vcrA* not detected and/or quantifiable DNA not extracted from the sample.
I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers.
C Correction factor applied to correct for non-specific PCR amplification products, value is an estimated quantity.

Analyst: J. Wilkinson
Jennifer Wilkinson
Senior Laboratory Technician

Approved: Ximena Druar
Ximena Druar, B.Sc.
Genetic Testing Coordinator

SiREM
Leading Science · Lasting Solutions

130 Research Lane, Ste 2
Guelph ON N1G 5G3
(519) 822-2265

Certificate of Analysis: Gene-Trac® *Dehalobacter* Assay

Customer: Dave Wacker & Marwan Salmeh, AECOM
Project: LHAAP-18/24
Customer Reference: 60274185

SiREM Reference: S-3208
Report Date: 29-May-14
Data Files: MyiQ-DHB-QPCR-0295
MyiQ-DB-DHB-QPCR-0111

Table 1c: Test Results

Customer Sample ID	SiREM Sample ID	Sample Collection Date	Sample Matrix	Percent Dhb*	*Dehalobacter* 16S rRNA Gene Copies/Liter
LHAAP-18/24-MW2A	DHB-1107	14-May-14	Microcosm	0.00002 - 0.00006 %	1×10^4 J
LHAAP-18/24-MW2B	DHB-1108	14-May-14	Microcosm	0.00003 - 0.00009 %	2×10^4 J
LHAAP-18/24-MW21A	DHB-1109	14-May-14	Microcosm	0.00006 - 0.0002 %	3×10^4 J
LHAAP-18/24-MW21B	DHB-1110	14-May-14	Microcosm	NA	9×10^4 U

Notes:

* Percent Dehalobacter (Dhb) in microbial population. This value is calculated by dividing the number of Dhb 16S ribosomal ribonucleic acid (rRNA) gene copies by the total number of bacteria as estimated by the mass of DNA extracted from the sample. Range represents normal variation in Dhb enumeration.

J The associated value is an estimated quantity between the method detection limit and quantitation limit.
U Not detected, associated value is the quantification limit.
B Analyte was detected in the method blank within an order of magnitude of the test sample
NA Not applicable as *Dehalobacter* not detected and/or quantifiable DNA not extracted from the sample.
I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers.
E Extracted genomic DNA was not detected in sample.

Analyst: J. Wilkinson
Jennifer Wilkinson
Senior Laboratory Technician

Approved: Ximena Druar
Ximena Druar, B.Sc.
Genetic Testing Coordinator

Table 2: Detailed Test Parameters, Gene-Trac Test Reference S-3208

Customer Sample ID	LHAAP-18/24-MW2A	LHAAP-18/24-MW2B	LHAAP-18/24-MW21A	LHAAP-18/24-MW21B
SiREM Dhc Sample ID	DHC-10451	DHC-10452	DHC-10453	DHC-10454
SiREM *vcrA* Sample ID	NA	NA	VCR-4793	NA
SiREM Dhb Sample ID	DHB-1107	DHB-1108	DHB-1109	DHB-1110
Date Received	14-May-14	14-May-14	14-May-14	14-May-14
Sample Temperature	NA	NA	NA	NA
Filtration Date	22-May-14	22-May-14	22-May-14	22-May-14
Volume Used for DNA Extraction	15 mL	15 mL	15 mL	15 mL
DNA Extraction Date	22-May-14	22-May-14	22-May-14	22-May-14
DNA Concentration in Sample (extractable)	91300 ng/L	118850 ng/L	118150 ng/L	110900 ng/L
PCR Amplifiable DNA	Detected	Detected	Detected	Detected
Dhc qPCR Date Analyzed	27-May-14	27-May-14	27-May-14	27-May-14
***vcrA* qPCR Date Analyzed**	NA	NA	28-May-14	NA
Dhb qPCR Date Analyzed	23-May-14	23-May-14	23-May-14	23-May-14
Laboratory Controls (see Tables 3, 4 & 5)	Passed	Passed	Passed	Passed
Comments	- -	- -	- -	- -

Notes:

Refer to Tables 3, 4 & 5 for detailed results of controls.
NA = not applicable
°C = degrees Celsius
DNA = Deoxyribonucleic acid
PCR = polymerase chain reaction
qPCR = quantitative PCR
Dhc = *Dehalococcoides*
Dhb = *Dehalobacter*
ng/L = nanograms per liter
mL = milliliters
vcrA = vinyl chloride reductase

Table 3: Gene-Trac Dhc Control Results, Test Reference S-3208

Laboratory Control	Analysis Date	Control Description	Spiked Dhc 16S rRNA Gene Copies per Liter	Recovered Dhc 16S rRNA Gene Copies per Liter	Comments
Positive Control Low Concentration	27-May-14	qPCR with KB1 genomic DNA (CSLD-0754)	1.4×10^5	8.7×10^4	--
Positive Control High Concentration	27-May-14	qPCR with KB1 genomic DNA (CSHD-0754)	1.5×10^7	6.2×10^6	See Note 1
DNA Extraction Blank	27-May-14	DNA extraction sterile water (FB-2191)	0	2.6×10^3 U	--
Negative Control	27-May-14	Tris Reagent Blank (TBD-0713)	0	2.6×10^3 U	--

Notes:

Dhc = *Dehalococcoides*

DNA = Deoxyribonucleic acid

qPCR = quantitative PCR

16S rRNA = 16S ribosomal ribonucleic acid

U Not detected, associated value is the quantification limit.

[1]Outside recovery limit guideline of +/- 50%.

Table 4: Gene-Trac VC Control Results, Test Reference S-3208

Laboratory Control	Analysis Date	Control Description	Spiked *vcrA* reductase Gene Copies per Liter	Recovered *vcrA* reductase Gene Copies per Liter	Comments
Positive Control Low Concentration	28-May-14	qPCR with KB1 genomic DNA (CSLV-0527)	9.8×10^4	8.9×10^4	--
Positive Control High Concentration	28-May-14	qPCR with KB1 genomic DNA (CSHV-0527)	9.6×10^7	1.0×10^7	--
DNA Extraction Blank	28-May-14	DNA extraction sterile water (FB-2191)	0	2.6×10^3 U	--
Negative Control	28-May-14	Tris Reagent Blank (TBV-0498)	0	2.6×10^3 U	--

Notes:

DNA = Deoxyribonucleic acid

qPCR = quantitative PCR

16S rRNA = 16S ribosomal ribonucleic acid

U Not detected, associated value is the quantification limit.

vcrA = vinyl chloride reductase

Table 5: Gene-Trac Dhb Control Results, Test Reference S-3208

Laboratory Control	Analysis Date	Control Description	Spiked Dhb 16S rRNA Gene Copies per Liter	Recovered Dhb 16S rRNA Gene Copies per Liter	Comments
Positive Control Low Concentration	23-May-14	qPCR with SC05 genomic DNA (CSLDB-0255)	1.8×10^6	5.1×10^6	See Note 1
Positive Control High Concentration	23-May-14	qPCR with SC05 genomic DNA (CSHDB-0255)	2.8×10^8	2.9×10^8	--
DNA Extraction Blank	23-May-14	DNA extraction sterile water (FB-2191)	0	2.6×10^3 U	--
Negative Control	23-May-14	Tris Reagent Blank (TBD-0255)	0	2.6×10^3 U	--

Notes:

Dhb = *Dehalobacter*

DNA = Deoxyribonucleic acid

qPCR = quantitative PCR

16S rRNA = 16S ribosomal ribonucleic acid

U Not detected, associated value is the quantification limit.

[1]Outside recovery limit guideline of +/- 50%.

00731927

№ 2479

SiREM
Leading Science · Lasting Solutions

Chain-of-Custody Form

130 Research Lane, Suite 2 · Guelph, Ontario, Canada N1G 5G3 · Phone (519) 822-2265 or toll free 1-866-251-1747 Fax (519) 822-3151
www.siremlab.com

Page 1 of 1

Lab # S-3208

Project Name: LHAAP-18/24	Project #:
Project Manager: Jeff Roberts for AECOM	
Email Address: jroberts@siremlab.com	
Company:	
Address:	
Phone #: (519) 515-0840	Fax #:
Sampler's Signature:	Sampler's Printed Name: Michael Healy

Analysis

Preservative Key
0. None
1. HCl
2. Other
3. Other

Customer Sample ID	Sampling Date	Sampling Time	Matrix	# of Containers	Gene-Trac Dhc	Gene-Trac VC	Gene-Trac Dhb	Other Information
LHAAP-18/24-MW2A	14 May	14	GW	1x10ml	✓	✓	✓	NOTE: Treatability materials recieved with S# 3203 (GW) and S-3196 (Geologic material)
LHAAP-18/24-MW2B	"		"	"	✓	✓	✓	
LHAAP-18/24-MW21A	"		"	"	✓	✓	✓	
LHAAP-18/24-MW21B	"		"	"	✓	✓	✓	

Sample Receipt
Cooler Condition:
Cooler Temperature: NA
Custody Seals: Yes ☐ No ☐

Billing Information
P.O. #:
Bill To:

Turnaround Time Requested
Normal ☐
Rush ☐

For Lab Use Only
Proposal #:

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature:	Signature: Rita Schofield	Signature:	Signature:	Signature:	Signature:
Printed Name: Michael Healy	Printed Name: Rita Schofield	Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm: SiREM	Firm: SiREM	Firm:	Firm:	Firm:	Firm:
Date/Time: 14 May 14 10:15	Date/Time: 14 May 14 10:15	Date/Time:	Date/Time:	Date/Time:	Date/Time:

Distribution: White - Return to Originator; Yellow - Lab Copy; Pink - Retained by Client

SiREM
Leading Science · Lasting Solutions

130 Research Lane, Ste 2
Guelph ON N1G 5G3
(519) 822-2265

SiREM Technical Note 1.5:

Guidelines for Interpretation of Gene-Trac® Test Results

This document provides technical background information and guidelines for interpreting the results for the following Gene-Trac® assays:

(1) Gene-Trac® Dhc
(2) Gene-Trac® VC
(3) Gene-Trac® Dhb

SiREM Technical Note 1.4 - *Quantitative Gene-Trac® Assay Test Procedure and Reporting Overview* provides detailed information on Gene-Trac® test procedures and reporting. Explanation of data qualifiers and commonly used notes is provided as Appendix A. Table 1 provides a brief interpretation for some common scenarios, more detailed interpretation information is provided in the following sections.

Table 1: Common Gene-Trac® Test Result Scenarios and Interpretation

Gene-Trac® Dhc (*Dehalococcoides*)	Gene-Trac® VC (*vcrA*)	Gene-Trac® Dhb (*Dehalobacter*)	Interpretation
>1 x10^7/L	**>1 x10^7/L**	Not Analyzed	Complete dechlorination to ethene likely as Dhc high and *vcrA* high
1 x10^7/L	**Not Detected**	Not Analyzed	VC accumulation possible as *vcrA* negative
Not Detected	**Not Detected**	Not Analyzed	Dhc negative/ lack of dechlorination or *cis*-DCE accumulation likely
Not Analyzed	Not Analyzed	**1 x10^6/L**	Dhb positive,potential for biodegradation of 1,1,1-TCA, 1,2-DCA, carbon tetrachloride and chloroform, PCE and TCE to *cis*-DCE
Not Analyzed	Not Analyzed	**Not Detected**	Biodegradation of 1,1,1-TCA, carbon tetrachloride and chloroform not expected as Dhb negative

Gene-Trac® Dhc -Total *Dehalococcoides* Test

Background:

Gene-Trac® Dhc is a quantitative PCR (qPCR) test for total *Dehalococcoides* (Dhc) microbes that targets Dhc specific sequences of the 16S ribosomal ribonucleic acid (rRNA) gene, a gene commonly used to indentify microbes. Dhc are the only known microorganisms capable of complete dechlorination of chloroethenes (i.e., tetrachloroethene, trichloroethene, cis-1,2-dichloroethene [cis-DCE] and vinyl chloride) to non-toxic ethene. Gene-Trac® Dhc may also be used to assess the in situ growth of Dhc containing bioaugmentation cultures such as KB-1®.

Negative Gene-Trac® Dhc Test Results (U qualified)

A non-detect in the Gene-Trac® Dhc assay (e.g., 4,000U) indicates that Dhc were not detected in the sample. The absence of Dhc is frequently associated with a lack of complete dechlorination or incomplete dechlorination of chlorinated ethenes. Where Dhc are absent the accumulation of cis-DCE is commonly observed, particularly after addition of electron donors. Bioaugmentation with Dhc containing cultures, such as KB-1®, is commonly used to improve bioremediation performance at sites that lack an indigenous Dhc population.

Positive Gene-Trac® Dhc Test Results

The detection of Dhc has been correlated with the complete biological dechlorination of chlorinated ethenes to ethene at contaminated sites (Hendrickson et al., 2002). A positive Gene-Trac® Dhc test indicates that Dhc DNA was detected in the sample and is encouraging for dechlorination of chlorinated ethenes to ethene. Note not all Dhc are capable of conversion of vinyl chloride to ethene; this capability can be determined by the Gene-Trac® VC test (see Section 2) which is commonly performed as a follow-on analysis after positive Gene-Trac® Dhc tests. In most cases Dhc must be present at sufficient concentrations in order for significant dechlorination to be observed, guidelines for expected impacts at various Dhc concentrations are indicated below.

Values of 10^4 Dhc gene copies per liter (or lower): indicates that the sample contains low concentrations of Dhc which may indicate that site conditions are suboptimal for high rates of dechlorination. Increases in Dhc concentrations at the site may be possible if conditions are optimized (e.g., electron donor addition).

Values of 10^5-10^6 Dhc gene copies per liter: indicates the sample contains moderate concentrations of Dhc which may, or may not, be associated with observable dechlorination activity (i.e., detectable ethene).

Values at or above 10^7 Dhc gene copies per liter: indicates that the sample contains high concentrations of Dhc that are often associated with high rates of dechlorination (Lu et al., 2006) and the production of ethene.

Values of 10^9 Dhc gene copies per liter are generally the highest observed for groundwater samples with rare exceptions.

Gene-Trac® VC- Vinyl Chloride Reductase (*vcrA*) Test

Background

Gene-Trac® VC is a qPCR test for the vinyl chloride reductase (*vcrA*) gene that codes for a Dhc enzyme that converts (VC) to ethene, a critical step in reductive dechlorination of chlorinated ethenes. Gene-Trac® VC is commonly used where Gene-Trac® Dhc test results are positive to confirm that the Dhc detected are capable of complete dechlorination to ethene.#

The vinyl chloride reductase gene (*vcrA)* (Müller et al., 2004) produces an enzyme that is found in many (but not all) Dhc and is reported to be the most common identified VC reductase in the environment (van der Zaan et al., 2010).

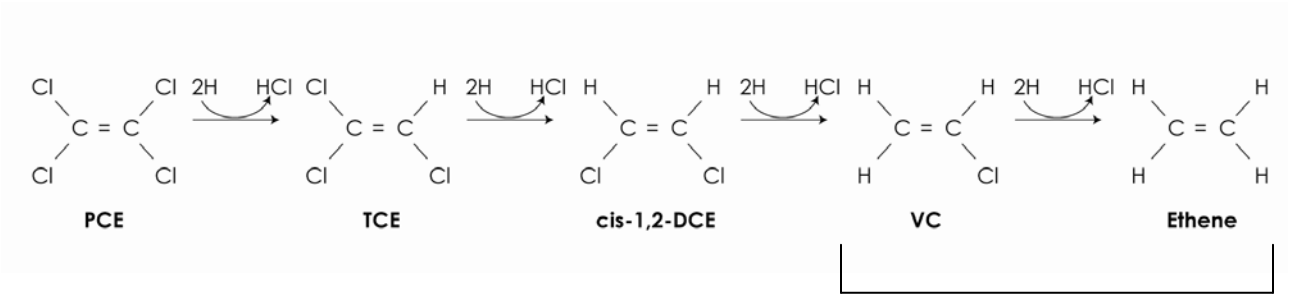

Key activity of vinyl chloride reductase vcrA gene/enzyme

Interpretation of Gene-Trac® VC Results

Detect in Gene-Trac® VC Test

A detect in the Gene-Trac® VC test indicates that a Dhc population has the *vcrA* gene and the prospects for complete dechlorination to ethene are good. As a minimal requirement, *vcrA* copies exceeding 10^5/L combined with observed increases over time (i.e., cell growth) are required for robust VC dechlorination (van der Zaan et al., 2010). Also the guidelines for detection of ethene provided under Gene-Trac® Dhc are conservative for interpretation of Gene-Trac® VC (i.e., > 1 x10^7 gene copies/L indicate a high likelihood of detection of ethene). In one study, more than 90% of samples where *vcrA* enumeration exceeded 1 x10^7 gene copies/L had detectable ethene (Dennis, 2009). In cases where *vcrA* gene copies are lower the likelihood of detectable ethene decreases.

Non-Detect in Gene-Trac® VC Test (U qualified)

A non-detect in the Gene-Trac® VC test indicates that *vcrA* gene sequences in the sample are below the detection limit of the assay (typically 4 x 10^3 *vcrA* gene copies/L). This indicates VC accumulation (VC stall) is possible. Note negative Gene-Trac® VC test results do not indicate with 100% certainty that a VC-stall will occur as there are other vinyl chloride reductase genes, such as *bvcA* (van der Zaan et al., 2010) that also convert VC to ethene.

Comparing Gene-Trac® VC and Gene-Trac® Dhc Test Results

Sites may contain different types of Dhc populations. At some sites the Dhc population is homogenous while other sites have Dhc populations that are mixtures of different types of Dhc. This can lead to differing results for Gene-Trac® Dhc and Gene-Trac® VC.

In many cases, the numerical results of Gene-Trac® VC test are identical to those obtained in the Gene-Trac® Dhc test, indicating that the entire Dhc population contains the *vcrA* gene. In other cases, Gene-Trac® VC results may differ significantly (i.e., more than an order or magnitude) from the total Dhc for a number of reasons.

Table 3 provides some common scenarios for Gene-Trac® VC and Gene-Trac® Dhc test results. In general, where Gene-Trac® VC results are non-detect, or significantly lower than Gene-Trac® Dhc, accumulation of VC is more likely.

Table 2: Interpretation of Gene-Trac® VC in Relation to Gene-Trac® Dhc

Gene-Trac® Dhc (16S rRNA gene copies/ L)	Gene-Trac® VC (*vcr*A gene copies/L)	Results Summary	Interpretation	Potential Site Implications
2×10^8 /L	3×10^8/L	Total Dhc and *vcrA* are ~the same (within 3-fold)	Entire Dhc population has *vcrA* gene	Potential for complete dechlorination high. VC stall unlikely-sites with *vcr*A above 1×10^7/L typically have detectable ethene
1×10^8/L	Non-detect	Total Dhc high; *vcrA* non-detect	High concentration of Dhc and entire population lacks the *vcrA* gene	Likelihood for VC accumulation high as *vcrA* non-detect
1×10^8/L	1×10^6 /L	Total Dhc is significantly higher (100 fold) than *vcrA*	*Dhc* population consists of different types, some with the *vcrA* gene (~1%) and some without (~99%)	VC-accumulation possible; Dhc/*vcrA* proportions may change over course of remediation
1×10^6/L	1×10^8/L	*vcrA* orders of magnitude higher than Dhc	Significantly higher *vcrA* may indicate the presence of populations of non-Dhc microorganisms with *vcrA* like genes	Potential for VC-stall likely low

Gene-Trac® Dhb-Total *Dehalobacter* Test

Gene-Trac® Dhb is a qPCR test targeting the 16S rRNA gene sequences unique to *Dehalobacter* (Dhb). Dhb are implicated in the biodegradation of 1,1,1-trichloroethane (to chloroethane), 1,1,2-trichloroethane and 1,2-dichloroethane to ethene (Grostern and Edwards, 2006) and chloroform (to dichloromethane) (Grostern et al., 2010) as well as incomplete dechlorination of PCE and TCE to cis-DCE (Holliger et al.,1998). Gene-Trac® Dhb may also be used as a tool to assess the impact of bioaugmentation with the KB-1® Plus cultures which contain high concentrations of Dhb.

Positive Gene-Trac® Dhb Test Results (Detects)

A positive Gene-Trac® Dhb indicates that a member of the *Dehalobacter* (Dhb) genus was detected in the sample. The detection of Dhb indicates that some or all of the dechlorination activities attributed to Dhb may be present at the subject site. Increasing concentrations of Dhb are indicative of increased potential to degrade some or all of these compounds.

Note: the Gene-Trac® Dhb test will not differentiate the type of Dhb*;* therefore, observations of the specific biodegradation pathways and end products based on chemical analytical methods in conjunction with Gene-Trac® Dhb will increase the interpretability of Gene-Trac® Dhb results.

Note: Dhb have been reported to contain multiple copies (up to 4 per cell) of the 16S rRNA gene (Grostern and Edwards, 2008). This means that, unlike Dhc, there is not a 1:1 ratio between the 16S rRNA gene copy and the number of Dhb cells in a sample. Calculating the number of Dhb cells requires dividing the Gene-Trac® Dhb test result by the 16S rRNA gene copy number (often 3-4 copies/cell).

Non-detect Gene-Trac® Dhb Results (U qualified)

In cases where Gene-Trac® Dhb is not detected (e.g., 4,000U) this indicates that *Dehalobacter* species were not identified in the sample and that anaerobic reductive dechlorination of 1,1,1-TCA, 1,1,2-TCA, 1,2-DCA or chloroform, which are dechlorinated by *Dehalobacter*, may not be observed. This activity can be introduced at sites through the addition of bioaugmentation cultures containing *Dehalobacter* such as KB-1® Plus.

Key Elements of Gene-Trac® Data

Gene-Trac® test results include two key values (a) Target Gene Enumeration, an enumeration of target gene sequence by quantitative PCR (e.g. "Dhc Enumeration" "Dhb 16S Gene Copies" or "*vcrA* gene copies") and (b) Target gene percent (e.g. "Percent Dhc"), an estimated percentage of the microbial population comprised by microbes harboring the target gene and other microbes present in sample. Further explanation of these values is provided below.

a) Target Gene Enumeration

This value is the concentration of Dhc or Dhb 16S rRNA or *vcrA* gene copies detected in the sample. Results may be reported as either gene copies per liter (for groundwater) or per gram (for soil). In general, the greater the number of gene copies in a sample the greater the likelihood of related dechlorination activity. Dhc 16S gene copies are typically equivalent to the number of Dhc as they have 1 gene copy per cell this is not necessarily true for Dhb or *vcrA* which have the potential be present in multiple gene copies per cell. Guidelines for relating target gene presence and concentration to observable dechlorination activity for groundwater samples are provided below in previous sections.

b) Target Gene Percent (%Dhc, %Dhb, %*vcrA*)

This value estimates the percentage of the target gene (e.g., %Dhc) relative to other microorganisms in the sample based on the formulas/assumptions presented below. For example, %Dhc is a measure of the predominance of Dhc and, in general, the higher this percentage the better.

$$\%Dhc = \frac{\text{Number Dhc}}{\text{Number Dhc} + \text{Number other Bacteria}}$$

Where:

$$\text{Number other Bacteria} = \frac{\text{Total DNA in sample (ng)} - \text{DNA attributed to Dhc (ng)}}{*4.0 \times 10^{-6}\ \text{ng DNA per bacterial cell}}$$

*Paul and Clark, (1996).

Percent Dhc (and % *vcrA*) values can range from very low fractions of percentages, in samples with low numbers of Dhc and a high number of other bacteria (incompletely colonized by Dhc), to greater than 50% in Dhc enriched locations (highly colonized by Dhc).

In addition to determining the predominance of the target gene target gene percent is also useful for interpretation of Dhc counts from different sampling locations, or the same location over time. For example, the %Dhc value can be used to correct Dhc counts where samples are biased due to non-representative sampling. Example 1 illustrates a hypothetical scenario where the %Dhc value improved data interpretation.

Example 1, use of %Dhc to interpret enumeration data

Table 2 presents results from MW-1 sampled in April, May and June. Based on the Dhc enumeration alone one would conclude that the concentration of Dhc held steady between April and May; however, the %Dhc indicates the proportion of Dhc actually increased from April to May and the unchanged count in May could be a case of low biomass recovery during sampling or other losses such as sample degradation in transit. The higher raw count and the higher percentage of Dhc in June confirm the trend of increasing Dhc concentrations over time.

Table 3: Use of % Dhc* Value to Diagnose Sampling Bias

Sample	Dhc Enumeration	%Dhc	Interpretation Based on %Dhc
MW-1, April	1.0×10^5/Liter	0.1%	Dhc is a low proportion of total microbial population
MW-1, May	1.0×10^5/Liter	1%	Dhc proportion increased 10-fold from April. Dhc enumeration was unchanged possibly due to low biomass recovery from monitoring well, non-biased sample would be $[(1.0/0.1) \times 1.0 \times 10^5] = 1.0 \times 10^6$/Liter
MW-1, June	1.0×10^7/Liter	10%	Dhc has increased 100-fold from April and confirms May sample was likely low biased

**Note: the above approach is also applicable to the "%vcrA" and "%Dhb" values provided on their respective test certificates*

References

Dennis, P., X.M. Druar, A. Waller and E. Edwards, 2006. Advantages of Vinyl Chloride Reductase Gene Testing in Bioremediation. Abstract and platform presentation, Presented at Fifth International Conference on Remediation of Chlorinated & Recalcitrant Compounds, Monterey, California May 22-25, 2006.

Dennis, P**.,** 2009. Lessons Learned from Interpreting the Quantification of *Dehalococcoides* - Platform Presentation-Clemson Hydrogeology Symposium, Clemson University, Clemson, South Carolina, April 2, 2009.

Grostern, A. and E.A. Edwards, 2006. Growth of *Dehalobacter* and *Dehalococcoides* spp. during Degradation of Chlorinated Ethanes. *Appl. Environ. Microbiol*. 72: 428–436.

Grostern, A. and E.A. Edwards, 2008. Characterization of a *Dehalobacter* Coculture that Dechlorinates 1,2-Dichloroethane to Ethene and Identification of the Putative Reductive Dehalogenase Gene. *Appl. Environ. Microbiol*. 75: 2684–2693.

Grostern, A., M. Duhamel, S. Dworatzek and E.A. Edwards, 2010. Chloroform respiration to dichloromethane by a *Dehalobacter* population. *Environmental Microbiology* 12(4) 1053-1060.

Holliger, C., D. Hahn, H. Harmsen, W. Ludwig, W. Schumacher, B. Tindall, F. Vazquez, N. Weiss, and A.J.B. Zehnder, 1998. Dehalobacter restrictus gen. nov. and sp. nov.,a strictly anaerobic bacterium that reductively dechlorinates tetraandtrichloroethene in an anaerobic respiration *Arch Microbiol* (1998) 169 : 313–321.

Krajmalnik-Brown, R., T. Hölscher, I.N. Thomson, F.M. Saunders, K.M. Ritalahti, and F.E. Löffler, 2004. Genetic Identification of a Putative Vinyl Chloride Reductase in *Dehalococcoides* sp. Strain BAV1. *Appl. Environ. Microbiol.* 70: 6347–6351.

Lu, X., J.T. Wilson, D.H. Kampbell, 2006. Relationship between *Dehalococcoides* DNA in ground water and rates of reductive dechlorination at field scale. *Water Res.* 40: 3131- 3140.

Paul, E.A. and F.E. Clark, 1996. *Soil Microbiology and Biochemistry* Academic Press, Inc., San Diego, CA.

Müller, J.A., B.M. Rosner, G. von Abendroth, G. Meshulam-Simon, P.L. McCarty, and A.M. Spormann, 2004. Molecular Identification of the Catabolic Vinyl Chloride Reductase from *Dehalococcoides* sp. Strain VS and Its Environmental Distribution. A*pplied and Environmental Microbiology* 2004 August; 70(8): 4880–4888.

van der Zaan, B. , F. Hannes, N. Hoekstra, H. Rijnaarts, W.M. de Vos, H. Smidt, and J. Gerritse, 2010. Correlation of Dehalococcoides 16S rRNA and Chloroethene-Reductive Dehalogenase Genes with Geochemical Conditions in Chloroethene-Contaminated Groundwater. *Appl. Environ. Microbiol*. 76(3) 843–850.

Appendix A: Data Qualifiers

Data Qualification

Data qualifiers and notes are used to clarify Gene-Trac® test results. Additional explanation beyond that provided on the test certificate is provided below.

"**U" Not detected, associated value is the quantitation limit.** Indicates that the target gene (microbe) was not detected in the sample above the quantitation limit of the assay. Note the quantitation limit value can change between samples as the volume filtered can vary; thus, a sample in which 100 ml was tested would have a 5–fold higher quantification limit compared with a sample in which 500 ml was tested.

"J" The associated value is an estimated quantity between the method detection limit and quantitation limit. Indicates that the target gene was conclusively detected but the concentration is below the quantitation limit where it cannot be accurately quantified.

"I" Sample inhibited the test reaction. This means universal primers were incapable of amplifying DNA from this sample. The inability to amplify with universal primers suggests that the sample may be imparting matrix interference. Matrix interference is commonly attributed to humic compounds, polyphenols and metals. Non-detects with an "I" qualifier are more likely to be false negative.

"B" Analyte was also detected in the method blank. Indicates that DNA was detected in a method blank or negative control; detectable contamination of the blanks with microbes or DNA containing the gene of interest is not uncommon as the test reaction is extremely sensitive. In most cases, blank contamination is at a very low level relative to test results (often orders of magnitude lower). In these cases, blank contamination is not relevant to interpretation of test results. The potential of test samples being contaminated (i.e. false positives) should be considered in cases where blank results are within 1 order of magnitude of test results.

PO Box 737
Longview, WA 98632

www.thermalrs.com

June 9, 2014

Marwan Salameh
AECOM
1600 Dallas Parkway, Suite 350
Dallas, TX 75248

Subject: Soil Resistivity Report
Long Horn Army Plant 18-24

Dear Mr. Salameh,

TRS Group received 6 soil samples from the Long Horn Army Plant 18-24 on June 3, 2014 for soil resistivity testing per ASTM Method G187-12a. The soil samples were received inside 8-ounce glass jars and were packaged on ice inside a cooler. A chain-of-custody was included with the samples and is provided as Attachment A to this document. The sample labels and descriptions were as follows:

- Sample 18CPTUEP09 (34-35)300514 – Brown clayey sand
- Sample 18CPTUEP09 (27-28)300514 – Brown sand
- Sample 18CPTUEP11 (25-26)310514 – Brown sand
- Sample 18CPTUEP11 (45-46)310514 – Gray clay
- Sample 18CPTACD07 (15-16)020614 – Gray silt
- Sample 18CPTACD07 (27-28)020614 – Gray clay with solvent odor

The soil samples were subjected to resistivity testing using the two-electrode soil box method outlined in ASTM G187-12a. The testing was performed at several different voltage levels in the range of 20 to 130 volts. In this testing, the true soil resistivity is approached as voltage levels are increased. The results of the testing are provided below in Tables 1 through 6.

TABLE 1: 18CPTUEP09 (34-35)300514 Resistivity Test Results

TRS Accelerating Value

G187 – 12a

Soil Resistivity Test using the Two-Electrode Soil Box Method

Test Date: 6/3/14 A/d (cm) = 1.6

Sample Description	Sample Temperature (°C)	Voltage	Amps	Measured Resistance (Ω)	Calculated Resistivity (Ω-m)
18CPTUEP09(34-35)300514	10	20	0.016	1250	20
18CPTUEP09(34-35)300514	10	30	0.025	1200	19
18CPTUEP09(34-35)300514	10	40	0.035	1143	18
18CPTUEP09(34-35)300514	10	50	0.045	1111	18
18CPTUEP09(34-35)300514	10	60	0.054	1111	18
18CPTUEP09(34-35)300514	10	70	0.062	1129	18
18CPTUEP09(34-35)300514	10	80	0.071	1127	18
18CPTUEP09(34-35)300514	10	90	0.081	1111	18
18CPTUEP09(34-35)300514	10	100	0.091	1099	18
18CPTUEP09(34-35)300514	10	110	0.101	1089	18
18CPTUEP09(34-35)300514	10	120	0.110	1091	18
18CPTUEP09(34-35)300514	10	130	0.121	1074	17

TABLE 2: 18CPTUEP09 (27-28)300514 Resistivity Test Results

TRS Accelerating Value

G187 – 12a

Soil Resistivity Test using the Two-Electrode Soil Box Method

Test Date: 6/3/14 A/d (cm) = 1.6

Sample Description	Sample Temperature (°C)	Voltage	Amps	Measured Resistance (Ω)	Calculated Resistivity (Ω-m)
18CPTUEP09(27-28)300514	10	20	0.012	1667	27
18CPTUEP09(27-28)300514	10	30	0.020	1500	24
18CPTUEP09(27-28)300514	10	40	0.027	1481	24
18CPTUEP09(27-28)300514	10	50	0.034	1471	24
18CPTUEP09(27-28)300514	10	60	0.042	1429	23
18CPTUEP09(27-28)300514	10	70	0.049	1429	23
18CPTUEP09(27-28)300514	10	80	0.056	1429	23
18CPTUEP09(27-28)300514	10	90	0.062	1452	23
18CPTUEP09(27-28)300514	10	100	0.070	1429	23
18CPTUEP09(27-28)300514	10	110	0.078	1410	23
18CPTUEP09(27-28)300514	10	120	0.083	1446	23
18CPTUEP09(27-28)300514	10	130	0.092	1413	23

TABLE 3: 18CPTUEP11 (25-26)310514 Resistivity Test Results

TRS Accelerating Value

G187 – 12a

Soil Resistivity Test using the Two-Electrode Soil Box Method

Test Date: 6/3/14 A/d (cm) = 1.6

Sample Description	Sample Temperature (°C)	Voltage	Amps	Measured Resistance (Ω)	Calculated Resistivity (Ω-m)
18CPTUEP11(25-26)310514	10	20	0.007	2857	46
18CPTUEP11(25-26)310514	10	30	0.012	2500	40
18CPTUEP11(25-26)310514	10	40	0.017	2353	38
18CPTUEP11(25-26)310514	10	50	0.022	2273	37
18CPTUEP11(25-26)310514	10	60	0.027	2222	36
18CPTUEP11(25-26)310514	10	70	0.031	2258	36
18CPTUEP11(25-26)310514	10	80	0.036	2222	36
18CPTUEP11(25-26)310514	10	90	0.041	2195	35
18CPTUEP11(25-26)310514	10	100	0.045	2222	36
18CPTUEP11(25-26)310514	10	110	0.049	2245	36
18CPTUEP11(25-26)310514	10	120	0.052	2308	37
18CPTUEP11(25-26)310514	10	130	0.059	2203	35

TABLE 4: 18CPTUEP11 (45-46)310514 Resistivity Test Results

TRS Accelerating Value

G187 – 12a

Soil Resistivity Test using the Two-Electrode Soil Box Method

Test Date: 6/3/14 A/d (cm) = 1.6

Sample Description	Sample Temperature (°C)	Voltage	Amps	Measured Resistance (Ω)	Calculated Resistivity (Ω-m)
18CPTUEP11(45-46)310514	10	20	0.012	1667	27
18CPTUEP11(45-46)310514	10	30	0.018	1667	27
18CPTUEP11(45-46)310514	10	40	0.026	1538	25
18CPTUEP11(45-46)310514	10	50	0.033	1515	24
18CPTUEP11(45-46)310514	10	60	0.039	1538	25
18CPTUEP11(45-46)310514	10	70	0.046	1522	24
18CPTUEP11(45-46)310514	10	80	0.053	1509	24
18CPTUEP11(45-46)310514	10	90	0.059	1525	25
18CPTUEP11(45-46)310514	10	100	0.066	1515	24
18CPTUEP11(45-46)310514	10	110	0.074	1486	24
18CPTUEP11(45-46)310514	10	120	0.083	1446	23
18CPTUEP11(45-46)310514	10	130	0.092	1413	23

TABLE 5: 18CPTACD07 (15-16)020614 Resistivity Test Results

TRS Accelerating Value

G187 – 12a

Soil Resistivity Test using the Two-Electrode Soil Box Method

Test Date: 6/3/14 A/d (cm) = 1.6

Sample Description	Sample Temperature (°C)	Voltage	Amps	Measured Resistance (Ω)	Calculated Resistivity (Ω-m)
18CPTACD07(15-16)020614	10	20	0.013	1538	25
18CPTACD07(15-16)020614	10	30	0.019	1579	25
18CPTACD07(15-16)020614	10	40	0.028	1429	23
18CPTACD07(15-16)020614	10	50	0.035	1429	23
18CPTACD07(15-16)020614	10	60	0.043	1395	22
18CPTACD07(15-16)020614	10	70	0.049	1429	23
18CPTACD07(15-16)020614	10	80	0.056	1429	23
18CPTACD07(15-16)020614	10	90	0.063	1429	23
18CPTACD07(15-16)020614	10	100	0.071	1408	23
18CPTACD07(15-16)020614	10	110	0.078	1410	23
18CPTACD07(15-16)020614	10	120	0.087	1379	22
18CPTACD07(15-16)020614	10	130	0.094	1383	22

TABLE 6: 18CPTUACD07 (27-28)020614 Resistivity Test Results

TRS Accelerating Value

G187 – 12a

Soil Resistivity Test using the Two-Electrode Soil Box Method

Test Date: 6/3/14 A/d (cm) = 1.6

Sample Description	Sample Temperature (°C)	Voltage	Amps	Measured Resistance (Ω)	Calculated Resistivity (Ω-m)
18CPTUACD07 (27-28)020614	10	20	0.013	1538	25
18CPTUACD07 (27-28)020614	10	30	0.019	1579	25
18CPTUACD07 (27-28)020614	10	40	0.028	1429	23
18CPTUACD07 (27-28)020614	10	50	0.035	1429	23
18CPTUACD07 (27-28)020614	10	60	0.043	1395	22
18CPTUACD07 (27-28)020614	10	70	0.049	1429	23
18CPTUACD07 (27-28)020614	10	80	0.056	1429	23
18CPTUACD07 (27-28)020614	10	90	0.063	1429	23
18CPTUACD07 (27-28)020614	10	100	0.071	1408	23
18CPTUACD07 (27-28)020614	10	110	0.078	1410	23
18CPTUACD07 (27-28)020614	10	120	0.087	1379	22
18CPTUACD07 (27-28)020614	10	130	0.094	1383	22

SUMMARY OF RESULTS

The resistivity tests show that the soil resistivity for samples fall into the range of 15 to 35 ohm-m which is highly typical for these types of soil. There was little variability in soil resistivity as a function of depth. Soil with this resistivity value is very amenable to ERH. The soil resistivity values suggest that an ERH system for this project would operate in the range of 100 to 200 volts during operations with a current draw in the range of 2 to 4 amps per linear foot of electrode.

We appreciate to opportunity to work with you on this project. If you have any questions please feel free to contact me at (419) 517-3649.

Sincerely,
TRS Group, Inc.

Daniel Oberle, P.E.
VP – Engineering

APPENDIX D: COST ESTIMATES

Alternative 2: Enhanced Groundwater Extraction and Ex Situ Treatment, LUC, EISB Inside and Outside Containment Area and in Wilcox Formation, Unsaturated Soil Excavation and Off-Site Disposal

Year	FY	Capital Costs		O&M Costs				Present Value (NPV)			
				Monitoring	GWTP	5-Yr Review	Total	Discount Rate 3.0%		Capital	O&M
1	2015	$8,359,531	Fees, Workplan, Documentation, Reactivate ICT 3 and 9, Soil Excavation; New GWTP, Extraction within DNAPL zones, EISB - 1st Event	$646,751	$541,936		$1,188,686	NPV		$14,560,000	$19,600,000
2	2016			$646,751	$558,194		$1,204,944		Total Capital and O&M		$34,160,000
3	2017	$1,391,099	EISB - 2nd Event	$323,084	$574,939		$898,023				
4	2018			$323,084	$592,188		$915,271				
5	2019			$323,084	$609,953	$40,983	$974,020				
6	2020	$4,722,705	Capital Cost to Excavate UEP Area	$166,045	$628,252		$794,297				
7	2021			$166,045	$647,099		$813,144				
8	2022			$166,045	$666,512		$832,557				
9	2023			$166,045	$686,508		$852,553				
10	2024	$326,379	Major Equipment Replacement	$166,045	$707,103	$40,983	$914,131				
11	2025				$728,316		$728,316				
12	2026			$166,045	$750,166		$916,210				
13	2027				$772,671		$772,671				
14	2028			$166,045	$795,851		$961,896				
15	2029	$336,171	Major Equipment Replacement		$819,726	$40,983	$860,710				
16	2030			$166,045	$844,318		$1,010,363				
17	2031				$869,647		$869,647				
18	2032			$166,045	$895,737		$1,061,782				
19	2033				$922,609		$922,609				
20	2034	$346,256	Major Equipment Replacement	$166,045	$950,287	$40,983	$1,157,316				
21	2035				$978,796		$978,796				
22	2036			$166,045	$1,008,160		$1,174,205				
23	2037				$1,038,405		$1,038,405				
24	2038			$166,045	$1,069,557		$1,235,602				
25	2039	$356,644	Major Equipment Replacement		$1,101,643	$40,983	$1,142,627				
26	2040			$166,045	$1,134,693		$1,300,738				
27	2041				$1,168,734		$1,168,734				
28	2042			$166,045	$1,203,796		$1,369,840				
29	2043				$1,239,909		$1,239,909				
30	2044	$367,343	Major Equipment Replacement	$166,045	$1,277,107	$40,983	$1,484,135				
TOTAL		**$16,206,128**		**$4,753,426**	**$25,782,810**	**$245,901**	**$30,782,137**				

Alternative 2: Enhanced Groundwater Extraction and Ex Situ Treatment, LUC, EISB Inside and Outside Containment Area and in Wilcox Formation,

					LABOR			MATERIAL		EQUIPMENT		SUBCONTRACT		
DESCRIPTION	**QTY**	**UNIT**	**UNIT MH**	**TOTAL MH**	**CRAFT**	**$/MH**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**TOTAL $**
Allowance for Legal Fees, Controls, Documentation														
Establish initial database, licenses, work plans, etc.	1	lot										$20,000	$20,000	$20,000
Project Management	1	ea	300	300	mgr	$150	$45,000	$5,000	$5,000					$50,000
Project Support	1	ea	300	300	eng	$100	$30,000							$30,000
Subtotal							**$75,000**		**$5,000**				**$20,000**	**$100,000**
Tax @ 6.25%									$313					$313
Subtotal														**$100,313**
Indirect @ 21.5%														$21,567
Year 1 Capital Costs														**$121,880**
Reactivation of GWTP ICT 3 and ICT 9														
Equipment/Subcontract	1	lot								$15,000	$15,000	$3,500	$3,500	$18,500
Installation	1	ea	60	60	tech	$35	$2,100							$2,100
Installation	1	ea	60	60	tech	$35	$2,100							$2,100
Engineering	1	ea	20	20	eng	$125	$2,500							$2,500
Admin	1	ea	10	10	eng	$60	$600							$600
Subtotal							**$7,300**				**$15,000**		**$3,500**	**$25,800**
Tax @ 6.25%											$938			$938
Subtotal														**$26,738**
Indirect @ 21.5%														$5,749
Reactivation														**$32,486**
New GWTP Capitalization														
Major Equipment	1	lot								$2,500,000	$2,500,000	$30,000	$30,000	$2,530,000
Subtotal							**$0**		**$0**		**$2,500,000**		**$30,000**	**$2,530,000**
Tax @ 6.25%									$0		$156,250			$156,250
Subtotal														**$2,686,250**
Indirect @ 21.5%														$577,544
Major GWTP Repair/Replacement														**$3,263,794**
New GWTP O&M														
GWTP O&M: GW Extraction, Plant Ops, Incidental	1	ea	2080	2080	mgr	$35	$72,800	$15,000	$15,000	$40,000	$40,000	$53,000	$53,000	$180,800
Maintenance & Repairs, Influent & Effluent	1	ea	2080	2080	mgr	$35	$72,800							$72,800
Testing, GW Elevation Readings	1	ea	1000	1000	eng	90	$90,000							$90,000
Reporting	1	ea	300	300	eng	150	$45,000							$45,000
Office Support	1	ea	600	600	Sci	90	$54,000							$54,000
Subtotal							**$334,600**		**$15,000**		**$40,000**		**$53,000**	**$442,600**
Tax @ 6.25%									$938		$2,500			$3,438
Subtotal														**$446,038**
Indirect @ 21.5%														$95,898
Major GWTP Repair/Replacement														**$541,936**
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 1-2														
Collect and Prepare Samples Quarterly (GW)	168	ea	16	2688	tech	$35	$94,080	$300	$50,400	$100	$16,800			$161,280
Sample Analysis (Level IV)	168	ea										$1,600	$268,800	$268,800
Sample Analysis (Level IV) - Only MNA Parameters for Wilcox	32	ea										$2,600	$83,200	$83,200
Annual Report	2	ea	80	160	eng	$90	$14,400	$200	$400					$14,800
Subtotal							**$108,480**		**$50,800**		**$16,800**		**$352,000**	**$528,080**
Tax @ 6.25%									$3,175		$1,050			$4,225
Subtotal														**$532,305**
Indirect @ 21.5%														$114,446
Yearly Total - Semiannual Monitoring (Years 1 - 2)														**$646,751**
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 3-5														
Collect and Prepare Samples Semiannually (GW)	100	ea	16	1600	tech	$35	$56,000	$300	$30,000	$100	$10,000			$96,000
Sample Analysis (Level IV)	100	ea										$1,600	$160,000	$160,000
Annual Report	1	ea	80	80	eng	$90	$7,200	$200	$200					$7,400
Subtotal							**$63,200**		**$30,200**		**$10,000**		**$160,000**	**$263,400**
Tax @ 6.25%									$1,888		$625			$2,513
Subtotal														**$265,913**
Indirect @ 21.5%														$57,171
Yearly Total - Semiannual Monitoring (Years 2 - 5)														**$323,084**
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 6-10 and Thereafter														
Collect and Prepare Samples Annually (GW)	50	ea	16	800	tech	$35	$28,000	$300	$15,000	$100	$5,000			$48,000
Sample Analysis (Level IV)	50	ea										$1,600	$80,000	$80,000
Annual Report	1	ea	80	80	eng	$90	$7,200	$200	$200					$7,400
Subtotal							**$35,200**		**$15,200**		**$5,000**		**$80,000**	**$135,400**
Tax @ 6.25%									$950		$313			$1,263
Subtotal														**$136,663**
Indirect @ 21.5%														$29,382
Yearly Total - Annual Monitoring (Years 6 - 10)														**$166,045**

Alternative 2: Enhanced Groundwater Extraction and Ex Situ Treatment, LUC, EISB Inside and Outside Containment Area and in Wilcox Formation,

					LABOR			MATERIAL		EQUIPMENT		SUBCONTRACT		
DESCRIPTION	QTY	UNIT	UNIT MH	TOTAL MH	CRAFT	$/MH	$ VALUE	$/UNIT	$ VALUE	$/UNIT	$ VALUE	$/UNIT	$ VALUE	TOTAL $
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 11-30 and Thereafter														
Collect and Prepare Samples Biennially (GW)	50	ea	16	800	tech	$35	$28,000	$300	$15,000	$100	$5,000			$48,000
Sample Analysis (Level IV)	50	ea										$1,600	$80,000	$80,000
Annual Report	1	ea	80	80	eng	$90	$7,200	$200	$200					$7,400
Subtotal							**$35,200**		**$15,200**		**$5,000**		**$80,000**	**$135,400**
Tax @ 6.25%									$950		$313			$1,263
Subtotal														**$136,663**
Indirect @ 21.5%														$29,382
Yearly Total - Biennial Monitoring (Years 11 - 30)														**$166,045**
Five Year Review Report, Years 5, 10, 15, 20, 25, 30														
Five Year Inspection/Report	1	ea	120	120	eng	125	$15,000							$15,000
	1	ea	100	100	geo	150	$15,000							$15,000
	1	ea	40	40	CAD	80	$3,200	$500	$500					$3,700
Subtotal							**$33,200**		**$500**					**$33,700**
Tax @ 6.25%									$31					$31
Subtotal														**$33,731**
Indirect @ 21.5%														$7,252
Total for Five Year Inspection/Report														**$40,983**
Soil Excavation Excluding UEP Area														
Labor/Sub/Material	1	ea	35	35	eng	125	$4,375					$730,000	$730,000	$734,375
Field Labor	3	ea	50	150	tech	35	$5,250							$5,250
Subtotal							**$9,625**						**$730,000**	**$739,625**
Tax @ 6.25%														$0
Subtotal														**$739,625**
Indirect @ 21.5%														$159,019
Total for Five Year Inspection/Report														**$898,644**
Soil Excavation UEP Area														
Labor/Sub/Material	2	ea	50	100	eng	125	$12,500					$3,850,000	$3,850,000	$3,862,500
Field Labor	14	ea	50	700	tech	35	$24,500							$24,500
Subtotal							**$37,000**						**$3,850,000**	**$3,887,000**
Tax @ 6.25%														$0
Subtotal														**$3,887,000**
Indirect @ 21.5%														$835,705
Total for Five Year Inspection/Report														**$4,722,705**
New Extraction Wells														
New Extraction System: Labor/Sub/Material	5	ea	60	300	eng	125	$37,500	$1,000	$1,000		$0	$207,660	$207,660	$246,160
Field Labor	4	ea	120	480	tech	50	$24,000							$24,000
Subtotal							**$61,500**		**$1,000**		**$0**		**$207,660**	**$270,160**
Tax @ 6.25%									$63		$0			$63
Subtotal														**$270,223**
Indirect @ 21.5%														$58,098
Extraction Well Installation - Year 1														**$328,320**
Enhanced In Situ Bioremediation - 1st Event														
EISB: Labor/Sub/Material	1	ea						$1,300,000	$1,300,000	$350,000	$350,000	$1,000,000	$1,000,000	$2,700,000
Labor/Sub/Material	1	ea	400	400	eng	125	$50,000							$50,000
Construction Manager	1	ea	400	400	eng	110	$44,000							$44,000
Field Labor	2	ea	800	1600	tech	50	$160,000							$160,000
Subtotal							**$254,000**		**$1,300,000**		**$350,000**		**$1,000,000**	**$2,954,000**
Tax @ 6.25%									$81,250		$21,875			$103,125
Subtotal														**$3,057,125**
Indirect @ 21.5%														$657,282
EISB - 1st Event														**$3,714,407**
Enhanced In Situ Bioremediation - 2nd Event														
EISB: Labor/Sub/Material	1	ea						$550,000	$550,000	$25,000	$25,000	$400,000	$400,000	$975,000
	1	ea	400	400	eng	125	$50,000							$50,000
Construction Manager	1	ea	400	400	eng	110	$44,000							$44,000
Field Labor	1	ea	800	800	tech	50	$40,000							$40,000
Subtotal							**$134,000**		**$550,000**		**$25,000**		**$400,000**	**$1,109,000**
Tax @ 6.25%									$34,375		$1,563			$35,938
Subtotal														**$1,144,938**
Indirect @ 21.5%														$246,162
EISB - 2nd Event														**$1,391,099**

Alternative 3: Enhanced Groundwater Extraction and Ex Situ Treatment, MNA Outside Containment and in the Wilcox Formation, LUC, Containment

Year	FY	Capital Costs		O&M Costs						Present Value (NPV)		
				Monitoring	GWTP Reduced ops	5-Yr Review	2-Yr Study	Slurry Wall @ Cover Maintenance	Total	Discount Rate 3.0%	Capital	O&M
1	2015	$5,708,770	Fees, Workplan, Documentation, Slurry Wall, Surface Improvement, New GWTP	$206,823	$525,533		$217,280	$9,659	$959,296	NPV	$6,410,000	$12,240,000
2	2016			$206,823	$541,299		$217,280	$9,949	$975,351	Total Capital and O&M		$18,650,000
3	2017			$71,822	$446,030			$10,247	$528,100			
4	2018			$71,822	$459,411			$10,555	$541,788			
5	2019			$71,822	$473,194	$31,263		$10,872	$587,150			
6	2020				$487,389			$11,198	$498,587			
7	2021			$71,822	$502,011			$11,534	$585,367			
8	2022				$413,657			$11,880	$425,537			
9	2023			$71,822	$426,067			$12,236	$510,125			
10	2024	$236,014	Major Equipment Replacement		$438,849	$31,263		$12,603	$482,716			
11	2025				$452,014			$12,981	$464,996			
12	2026				$465,575			$13,371	$478,945			
13	2027				$479,542			$13,772	$493,314			
14	2028			$71,822	$493,928			$14,185	$579,935			
15	2029	$243,094	Major Equipment Replacement		$508,746	$31,263		$14,610	$554,620			
16	2030				$524,009			$15,049	$539,057			
17	2031				$539,729			$15,500	$555,229			
18	2032				$555,921			$15,965	$571,886			
19	2033			$71,822	$572,598			$16,444	$660,864			
20	2034	$250,387	Major Equipment Replacement		$589,776	$31,263		$16,938	$637,977			
21	2035				$607,470			$17,446	$624,915			
22	2036				$625,694			$17,969	$643,663			
23	2037				$644,464			$18,508	$662,973			
24	2038			$71,822	$663,798			$19,063	$754,683			
25	2039	$257,899	Major Equipment Replacement		$683,712	$31,263		$19,635	$734,611			
26	2040				$704,224			$20,224	$724,448			
27	2041				$725,350			$20,831	$746,181			
28	2042				$747,111			$21,456	$768,567			
29	2043			$71,822	$769,524			$22,100	$863,446			
30	2044	$265,636	Major Equipment Replacement		$792,610	$31,263		$22,763	$846,636			
TOTAL		**$6,961,799**		**$1,060,042**	**$16,859,237**	**$187,581**	**$434,560**	**$459,543**	**$18,541,420**			

Alternative 3: Enhanced Groundwater Extraction and Ex Situ Treatment, MNA Outside Containment and in the Wilcox Formation, LUC, Containment

					LABOR			MATERIAL		EQUIPMENT		SUBCONTRACT		
DESCRIPTION	QTY	UNIT	UNIT MH	TOTAL MH	CRAFT	$/MH	$ VALUE	$/UNIT	$ VALUE	$/UNIT	$ VALUE	$/UNIT	$ VALUE	TOTAL $
Allowance for Legal Fees, Controls, Documentation														
Establish initial database, licenses, work plans, etc.	1	lot										$20,000	$20,000	$20,000
Project Management	1	ea	300	300	mgr	$150	$45,000	$5,000	$5,000					$50,000
Project Support	1	ea	300	300	eng	$100	$30,000							$30,000
Subtotal							**$75,000**		**$5,000**				**$20,000**	**$100,000**
Tax @ 6.25%									$313					$313
Subtotal														**$100,313**
Indirect @ 21.5%														$21,567
Year 1 Capital Costs														**$121,880**
New GWTP Capitalization														
Major Equipment	1	lot								$1,800,000	$1,800,000	$30,000	$30,000	$1,830,000
Subtotal							**$0**		**$0**		**$1,800,000**		**$30,000**	**$1,830,000**
Tax @ 6.25%									$0		$112,500			$112,500
Subtotal														**$1,942,500**
Indirect @ 21.5%														$417,638
Major GWTP Repair/Replacement														**$2,360,138**
New GWTP O&M														
GWTP O&M: GW Extraction, Plant Ops, Incidental	1	ea	2080	2080	mgr	$35	$72,800			$38,000	$47,000	$48,000	$48,000	$167,800
Maintenance & Repairs, Influent & Effluent	1	ea	2080	2080	mgr	$35	$72,800							$72,800
Testing, GW Elevation Readings	1	ea	1000	1000	eng	90	$90,000							$90,000
Reporting	1	ea	300	300	eng	150	$45,000							$45,000
Office Support	1	ea	600	600	Sci	90	$54,000							$54,000
Subtotal							**$334,600**		**$0**		**$47,000**		**$48,000**	**$429,600**
Tax @ 6.25%									$0		$2,938			$2,938
Subtotal														**$432,538**
Indirect @ 21.5%														$92,996
Major GWTP Repair/Replacement (1-2)														**$525,533**
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 1-2														
Collect and Prepare Samples Semiannually (GW)	40	ea	16	640	tech	35	22400	300	12000	100	4000			38400
Sample Analysis (Level IV)	40	ea										$1,600	$64,000	$64,000
Sample Analysis (Level IV) - Only MNA Parameters for Wilcox	20	ea										$2,600	$52,000	$52,000
Annual Report	2	ea	80	160	eng	$90	$14,400	$200	$400					$14,800
Subtotal							**$36,800**		**$12,400**		**$4,000**		**$116,000**	**$169,200**
Tax @ 6.25%									$775		$250			$1,025
Subtotal														**$170,225**
Indirect @ 21.5%														$36,598
Yearly Total - Semiannual Monitoring (Years 1 - 2)														**$206,823**
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 3-5														
Collect and Prepare Samples Annually (GW)	20	ea	16	320	tech	35	11200	300	6000	100	2000			19200
Sample Analysis (Level IV)	20	ea										$1,600	$32,000	$32,000
Annual Report	1	ea	80	80	eng	$90	$7,200	$200	$200					$7,400
Subtotal							$18,400		$6,200		$2,000		$32,000	$58,600
Tax @ 6.25%									**$388**		**$125**			**$513**
Subtotal														$59,113
Indirect @ 21.5%														**$12,709**
Yearly Total - Annual Monitoring (Years 3 - 5)														$71,822
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 6-9 and Thereafter														
Collect and Prepare Samples Biennially (GW)	20	ea	16	320	tech	$35	$11,200	$300	$6,000	$100	$2,000			$19,200
Sample Analysis (Level IV)	20	ea										$1,600	$32,000	$32,000
Annual Report	1	ea	80	80	eng	$90	$7,200	$200	$200					$7,400
Subtotal							**$18,400**		**$6,200**		**$2,000**		**$32,000**	**$58,600**
Tax @ 6.25%									$388		$125			$513
Subtotal														**$59,113**
Indirect @ 21.5%														$12,709
Yearly Total - Biennial Monitoring (Years 6 - 9)														**$71,822**

Alternative 3: Enhanced Groundwater Extraction and Ex Situ Treatment, MNA Outside Containment and in the Wilcox Formation, LUC, Containment

					LABOR			MATERIAL		EQUIPMENT		SUBCONTRACT		
DESCRIPTION	**QTY**	**UNIT**	**UNIT MH**	**TOTAL MH**	**CRAFT**	**$/MH**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**TOTAL $**
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 10-30 and Thereafter														
Collect and Prepare Samples Every five years (GW)	20	ea	16	320	tech	$35	$11,200	$300	$6,000	$100	$2,000			$19,200
Sample Analysis (Level IV)	20	ea										$1,600	$32,000	$32,000
Annual Report	1	ea	80	80	eng	$90	$7,200	$200	$200					$7,400
Subtotal							**$18,400**		**$6,200**		**$2,000**		**$32,000**	**$58,600**
Tax @ 6.25%									$388		$125			$513
Subtotal														**$59,113**
Indirect @ 21.5%														$12,709
Yearly Total - Every 5 Years Monitoring (Years 10 - 30)														**$71,822**
Five Year Review Report, Years 5, 10, 15, 20, 25, 30														
Five Year Inspection/Report	1	ea	80	80	eng	125	$10,000							$10,000
	1	ea	80	80	geo	150	$12,000							$12,000
	1	ea	40	40	CAD	80	$3,200	$500	$500					$3,700
Subtotal							**$25,200**		**$500**					**$25,700**
Tax @ 6.25%									$31					$31
Subtotal														**$25,731**
Indirect @ 21.5%														$5,532
Total for Five Year Inspection/Report														**$31,263**
Two Year Containment Study														
Two year study of rainfall, groundwater response relationship	1	ea	80	80	eng	120	$9,600	$500	$500					$10,100
	1	ea	80	80	geo	100	$8,000	$500	$500					$8,500
	20	ea	120	2400	tech	35	$84,000			12000	$240,000			$324,000
Subtotal							**$101,600**		**$1,000**		**$240,000**			**$342,600**
Tax @ 6.25%									$63		$15,000			$15,063
Subtotal														**$357,663**
Indirect @ 21.5%														$76,897
Total for Two Year Containment Study														**$434,560**
Slurry Wall and Soil Cover Construction														
Slurry Wall and Soil Cover Construction: Labor/Material/Sub	1	ea	500	600	eng	125	$75,000					$1,900,000	$1,900,000	$1,975,000
Field Labor	1	ea	2000	2200	tech	50	$110,000	$87,500	$87,500					$197,500
Subtotal							**$185,000**							**$2,172,500**
Tax @ 6.25%														$0
Subtotal														**$2,172,500**
Indirect @ 21.5%														$467,088
Total for Five Year Inspection/Report														**$2,639,588**
Slurry Wall and Soil Cover Maintenance														
Slurry Wall and Soil Cover Maintenance: Labor/Material/Sub	1	ea	30	30	eng	125	$3,750							$3,750
Field Labor	1	ea	120	120	tech	35	$4,200							$4,200
Subtotal							**$7,950**							**$7,950**
Tax @ 6.25%														$0
Subtotal														**$7,950**
Indirect @ 21.5%														$1,709
Total for Five Year Inspection/Report														**$9,659**

Alternative 4: Enhanced Groundwater Extraction and Ex Situ Treatment, LUC, EISB Inside & Outside Containment Area and in Wilcox, Unsaturated Soil Excavation and Off-Site Disposal, and Surfactant Enhanced DNAPL Removal

Year	FY	Capital Costs		O&M Costs				Present Value (NPV)		
								Discount Rate	Capital	O&M
				Monitoring	GWTP	5-Yr Review	Total	3.0%		
1	2015	$10,516,083	Fees, Workplan, Documentation, Reactivate ICT 3 and 9, Soil Excavation, New GWTP, Surfactant Flushing, Bench-Pilot-Testing, EISB - 1st Event	$646,751	$534,987		$1,181,738	NPV	$13,110,000	$19,390,000
2	2016			$646,751	$551,037		$1,197,787	Total Capital and O&M		$32,500,000
3	2017	$1,768,144	EISB- 2nd Event	$323,084	$567,568		$890,652			
4	2018			$323,084	$584,595		$907,679			
5	2019			$323,084	$602,133	$40,983	$966,200			
6	2020	$4,722,705	Capital Cost to Excavate UEP Area	$166,045	$620,197		$786,242			
7	2021			$166,045	$638,803		$804,848			
8	2022			$166,045	$657,967		$824,012			
9	2023			$166,045	$677,706		$843,751			
10	2024	$326,379	Major Equipment Replacement	$166,045	$698,037	$40,983	$905,065			
11	2025				$718,978		$718,978			
12	2026			$166,045	$740,548		$906,592			
13	2027				$762,764		$762,764			
14	2028			$166,045	$785,647		$951,692			
15	2029	$336,171	Major Equipment Replacement		$809,216	$40,983	$850,200			
16	2030			$166,045	$833,493		$999,538			
17	2031				$858,498		$858,498			
18	2032			$166,045	$884,252		$1,050,297			
19	2033				$910,780		$910,780			
20	2034	$346,256	Major Equipment Replacement	$166,045	$938,103	$40,983	$1,145,132			
21	2035				$966,247		$966,247			
22	2036			$166,045	$995,234		$1,161,279			
23	2037				$1,025,091		$1,025,091			
24	2038			$166,045	$1,055,844		$1,221,889			
25	2039	$356,644	Major Equipment Replacement		$1,087,519	$40,983	$1,128,502			
26	2040			$166,045	$1,120,145		$1,286,189			
27	2041				$1,153,749		$1,153,749			
28	2042			$166,045	$1,188,361		$1,354,406			
29	2043				$1,224,012		$1,224,012			
30	2044	$367,343	Major Equipment Replacement	$166,045	$1,260,733	$40,983	$1,467,761			
TOTAL		**$18,739,725**		**$4,753,426**	**$25,452,242**	**$245,901**	**$30,451,569**			

Alternative 4: Enhanced Groundwater Extraction and Ex Situ Treatment, LUC, EISB Inside & Outside Containment Area and in Wilcox, Unsaturated Soil Excavation and Off-Site Disposal, and Surfactanct Enhanced DNAPL Removal

					LABOR			MATERIAL		EQUIPMENT		SUBCONTRACT		
DESCRIPTION	**QTY**	**UNIT**	**UNIT MH**	**TOTAL MH**	**CRAFT**	**$/MH**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**TOTAL $**
Allowance for Legal Fees, Controls, Documentation														
Establish initial database, licenses, work plans, etc.	1	lot										$20,000	$20,000	$20,000
Project Management	1	ea	300	300	mgr	$150	$45,000	$5,000	$5,000					$50,000
Project Support	1	ea	300	300	eng	$100	$30,000							$30,000
Subtotal							**$75,000**		**$5,000**				**$20,000**	**$100,000**
Tax @ 6.25%									$313					$313
Subtotal														**$100,313**
Indirect @ 21.5%														$21,567
Year 1 Capital Costs														**$121,880**
Reactivation of GWTP ICT 3 and ICT 9														
Equipment/Subcontract	1	lot								$15,000	$15,000	$3,500	$3,500	$18,500
Installation	1	ea	60	60	tech	$35	$2,100							$2,100
Installation	1	ea	60	60	tech	$35	$2,100							$2,100
Engineering	1	ea	20	20	eng	$125	$2,500							$2,500
Admin	1	ea	10	10	eng	$60	$600							$600
Subtotal							**$7,300**				**$15,000**		**$3,500**	**$25,800**
Tax @ 6.25%											$938			$938
Subtotal														**$26,738**
Indirect @ 21.5%														$5,749
Reactivation														**$32,486**
New GWTP Capitalization														
Major Equipment	1	lot								$2,500,000	$2,500,000	$30,000	$30,000	$2,530,000
Subtotal							**$0**		**$0**		**$2,500,000**		**$30,000**	**$2,530,000**
Tax @ 6.25%									$0		$156,250			$156,250
Subtotal														**$2,686,250**
Indirect @ 21.5%														$577,544
Major GWTP Repair/Replacement														**$3,263,794**
New GWTP O&M														
GWTP O&M: GW Extraction, Plant Ops, Incidental	1	ea	2080	2080	mgr	$35	$72,800	$13,500	$13,500	$38,000	$38,000	$51,000	$51,000	$175,300
Maintenance & Repairs, Influent & Effluent	1	ea	2080	2080	mgr	$35	$72,800							$72,800
Testing, GW Elevation Readings	1	ea	1000	1000	eng	90	$90,000							$90,000
Reporting	1	ea	300	300	eng	150	$45,000							$45,000
Office Support	1	ea	600	600	Sci	90	$54,000							$54,000
Subtotal							**$334,600**		**$13,500**		**$38,000**		**$51,000**	**$437,100**
Tax @ 6.25%									$844		$2,375			$3,219
Subtotal														**$440,319**
Indirect @ 21.5%														$94,669
Major GWTP Repair/Replacement														**$534,987**
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 1-2														
Collect and Prepare Samples Quarterly (GW)	168	ea	16	2688	tech	$35	$94,080	$300	$50,400	$100	$16,800			$161,280
Sample Analysis (Level IV)	168	ea										$1,600	$268,800	$268,800
Sample Analysis (Level IV) - Only MNA Parameters for Wil	32	ea										$2,600	$83,200	$83,200
Annual Report	2	ea	80	160	eng	$90	$14,400	$200	$400					$14,800
Subtotal							**$108,480**		**$50,800**		**$16,800**		**$352,000**	**$528,080**
Tax @ 6.25%									$3,175		$1,050			$4,225
Subtotal														**$532,305**
Indirect @ 21.5%														$114,446
Yearly Total - Semiannual Monitoring (Years 1 - 2)														**$646,751**
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 3-5														
Collect and Prepare Samples Semiannually (GW)	100	ea	16	1600	tech	$35	$56,000	$300	$30,000	$100	$10,000			$96,000
Sample Analysis (Level IV)	100	ea										$1,600	$160,000	$160,000
Annual Report	1	ea	80	80	eng	$90	$7,200	$200	$200					$7,400
Subtotal							**$63,200**		**$30,200**		**$10,000**		**$160,000**	**$263,400**
Tax @ 6.25%									$1,888		$625			$2,513
Subtotal														**$265,913**
Indirect @ 21.5%														$57,171
Yearly Total - Semiannual Monitoring (Years 2 - 5)														**$323,084**
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 6-10 and Thereafter														
Collect and Prepare Samples Annually (GW)	50	ea	16	800	tech	$35	$28,000	$300	$15,000	$100	$5,000			$48,000
Sample Analysis (Level IV)	50	ea										$1,600	$80,000	$80,000
Annual Report	1	ea	80	80	eng	$90	$7,200	$200	$200					$7,400
Subtotal							**$35,200**		**$15,200**		**$5,000**		**$80,000**	**$135,400**
Tax @ 6.25%									$950		$313			$1,263
Subtotal														**$136,663**
Indirect @ 21.5%														$29,382
Yearly Total - Annual Monitoring (Years 6 - 10)														**$166,045**

Alternative 4: Enhanced Groundwater Extraction and Ex Situ Treatment, LUC, EISB Inside & Outside Containment Area and in Wilcox, Unsaturated Soil Excavation and Off-Site Disposal, and Surfactanct Enhanced DNAPL Removal

			LABOR					MATERIAL		EQUIPMENT		SUBCONTRACT		
DESCRIPTION	**QTY**	**UNIT**	**UNIT MH**	**TOTAL MH**	**CRAFT**	**$/MH**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**TOTAL $**
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 11-30 and Thereafter														
Collect and Prepare Samples Biennially (GW)	50	ea	16	800	tech	$35	$28,000	$300	$15,000	$100	$5,000			$48,000
Sample Analysis (Level IV)	50	ea										$1,600	$80,000	$80,000
Annual Report	1	ea	80	80	eng	$90	$7,200	$200	$200					$7,400
Subtotal							**$35,200**		**$15,200**		**$5,000**		**$80,000**	**$135,400**
Tax @ 6.25%									$950		$313			$1,263
Subtotal														**$136,663**
Indirect @ 21.5%														$29,382
Yearly Total - Biennial Monitoring (Years 11 - 30)														**$166,045**
Five Year Review Report, Years 5, 10, 15, 20, 25, 30														
Five Year Inspection/Report	1	ea	120	120	eng	125	$15,000							$15,000
	1	ea	100	100	geo	150	$15,000							$15,000
	1	ea	40	40	CAD	80	$3,200	$500	$500					$3,700
Subtotal							**$33,200**		**$500**					**$33,700**
Tax @ 6.25%									$31					$31
Subtotal														**$33,731**
Indirect @ 21.5%														$7,252
Total for Five Year Inspection/Report														**$40,983**
Soil Excavation Excluding UEP Area														
Labor/Sub/Material	1	ea	35	35	eng	125	$4,375					$730,000	$730,000	$734,375
Field Labor	3	ea	50	150	tech	35	$5,250							$5,250
Subtotal							**$9,625**						**$730,000**	**$739,625**
Tax @ 6.25%														$0
Subtotal														**$739,625**
Indirect @ 21.5%														$159,019
Total for Five Year Inspection/Report														**$898,644**
Soil Excavation UEP Area														
Labor/Sub/Material	2	ea	50	100	eng	125	$12,500					$3,850,000	$3,850,000	$3,862,500
Field Labor	14	ea	50	700	tech	35	$24,500							$24,500
Subtotal							**$37,000**						**$3,850,000**	**$3,887,000**
Tax @ 6.25%														$0
Subtotal														**$3,887,000**
Indirect @ 21.5%														$835,705
Total for Five Year Inspection/Report														**$4,722,705**
Surfactant Flushing														
Labor/Sub/Material	1	ea	120	120	eng	150	$18,000					$1,293,000	$1,293,000	$1,311,000
Field Labor	1	ea	600	600	tech	85	$51,000							$51,000
Field Labor	1	ea	300	300	tech	70	$21,000							$26,400
Geologist	1	ea	300	300	tech	85	$25,500	$5,400	$5,400					$28,200
Design/construction	1	ea	240	240	eng	120	$28,800	$2,700	$2,700					$36,900
Subtotal							**$144,300**		**$8,100**				**$1,293,000**	**$1,453,500**
Tax @ 6.25%									$506					$506
Subtotal														**$1,454,006**
Indirect @ 21.5%														$312,611
Total for Five Year Inspection/Report														**$1,766,618**
Bench- and Pilot-Scale Studies														
Labor/Sub/Material	1	ea	90	90	eng	150	$13,500					$150,000	$150,000	$163,500
Field Labor	1	ea	300	300	tech	85	$25,500							$25,500
Field Labor	1	ea	300	300	tech	70	$21,000							$26,400
Geologist	1	ea	300	300	tech	85	$25,500	$5,400	$5,400					$28,200
Design/construction	1	ea	150	150	eng	120	$18,000	$2,700	$2,700					$26,100
Subtotal							**$103,500**		**$8,100**				**$150,000**	**$269,700**
Tax @ 6.25%									$506					$506
Subtotal														**$270,206**
Indirect @ 21.5%														$58,094
Total for Five Year Inspection/Report														**$328,301**
Enhanced In Situ Bioremediation Polishing - Post Surfactant Flushing - 1st Event														
EISB: Labor/Sub/Material	1	ea						$75,000	$75,000	$25,000	$25,000	$165,000	$165,000	$271,250
Labor/Sub/Material	1	ea	50	50	eng	125	$6,250							$6,250
Construction Manager	1	ea	120	120	eng	110	$13,200							$13,200
Field Labor	2	ea	120	240	tech	50	$24,000							$24,000
Subtotal							**$43,450**		**$75,000**		**$25,000**		**$165,000**	**$314,700**
Tax @ 6.25%									$4,688		$1,563			$6,250
Subtotal														**$320,950**
Indirect @ 21.5%														$69,004
EISB Polishing - 1st Event														**$389,954**
Enhanced In Situ Bioremediation Polishing - Post Surfactant Flushing - 2nd Event														
EISB: Labor/Sub/Material	1	ea						$65,000	$65,000	$25,000	$25,000	$165,000	$165,000	$261,250
Labor/Sub/Material	1	ea	50	50	eng	125	$6,250							$6,250
Construction Manager	1	ea	120	120	eng	110	$13,200							$13,200
Field Labor	2	ea	120	240	tech	50	$24,000							$24,000
Subtotal							**$43,450**		**$65,000**		**$25,000**		**$165,000**	**$304,700**
Tax @ 6.25%									$4,063		$1,563			$5,625
Subtotal														**$310,325**
Indirect @ 21.5%														$66,720
EISB Polishing - 2nd Event														**$377,045**

Alternative 4: Enhanced Groundwater Extraction and Ex Situ Treatment, LUC, EISB Inside & Outside Containment Area and in Wilcox, Unsaturated Soil Excavation and Off-Site Disposal, and Surfactanct Enhanced DNAPL Removal

			LABOR				MATERIAL		EQUIPMENT		SUBCONTRACT		
DESCRIPTION	**QTY**	**UNIT**	**UNIT MH**	**TOTAL MH**	**CRAFT**	**$/MH**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**TOTAL $**
Enhanced In Situ Bioremediation - 1st Event														
EISB: Labor/Sub/Material	1	ea						$1,300,000	$1,300,000	$350,000	$350,000	$1,000,000	$1,000,000	$2,700,000
Labor/Sub/Material	1	ea	400	400	eng	125	$50,000							$50,000
Construction Manager	1	ea	400	400	eng	110	$44,000							$44,000
Field Labor	2	ea	800	1600	tech	50	$160,000							$160,000
Subtotal							**$254,000**		**$1,300,000**		**$350,000**		**$1,000,000**	**$2,954,000**
Tax @ 6.25%									$81,250		$21,875			$103,125
Subtotal														**$3,057,125**
Indirect @ 21.5%														$657,282
EISB - 1st Event														**$3,714,407**
Enhanced In Situ Bioremediation - 2nd Event														
EISB: Labor/Sub/Material	1	ea						$550,000	$550,000	$25,000	$25,000	$400,000	$400,000	$975,000
	1	ea	400	400	eng	125	$50,000							$50,000
Construction Manager	1	ea	400	400	eng	110	$44,000							$44,000
Field Labor	1	ea	800	800	tech	50	$40,000							$40,000
Subtotal							**$134,000**		**$550,000**		**$25,000**		**$400,000**	**$1,109,000**
Tax @ 6.25%									$34,375		$1,563			$35,938
Subtotal														**$1,144,938**
Indirect @ 21.5%														$246,162
EISB - 2nd Event														**$1,391,099**

Alternative 5: Enhanced Groundwater Extraction and Ex Situ Treatment, LUC, EISB Inside and Outside Containment Area and in Wilcox, Unsaturated Soil Excavation and Off-Site Disposal, and Thermal DNAPL Removal

Year	FY	Capital Costs		O&M Costs				Present Value (NPV)		
				Monitoring	GWTP	5-Yr Review	Total	Discount Rate 3.0%	Capital	O&M
1	2015	$17,441,249	Fees, Workplan, Documentation, Reactivate ICT 3 and 9, Soil Excavation, New GWTP, ERH, EISB - 1st Event	$646,751	$534,987		$1,181,738	NPV	$19,520,000	$13,150,000
2	2016			$646,751	$551,037		$1,197,787	Total Capital and O&M		$32,670,000
3	2017	$1,768,144	EISB - 2nd event	$323,084	$567,568		$890,652			
4	2018			$323,084	$584,595		$907,679			
5	2019			$323,084	$602,133	$40,983	$966,200			
6	2020	$2,879,550	Capital Cost to Excavate UEP Area	$166,045	$620,197		$786,242			
7	2021			$166,045	$638,803		$804,848			
8	2022			$166,045	$657,967		$824,012			
9	2023			$166,045	$677,706		$843,751			
10	2024	$326,379	Major Equipment Replacement	$166,045	$698,037	$40,983	$905,065			
11	2025				$575,183		$575,183			
12	2026			$166,045	$592,438		$758,483			
13	2027				$610,211		$610,211			
14	2028			$166,045	$628,517		$794,562			
15	2029	$336,171	Major Equipment Replacement		$647,373	$40,983	$688,356			
16	2030			$166,045	$666,794		$832,839			
17	2031				$686,798		$686,798			
18	2032			$166,045	$707,402		$873,447			
19	2033				$728,624		$728,624			
20	2034			$166,045	$750,483	$40,983	$957,511			
21	2035						$0			
22	2036			$166,045			$166,045			
23	2037						$0			
24	2038			$166,045			$166,045			
25	2039					$32,787	$32,787			
26	2040			$166,045			$166,045			
27	2041						$0			
28	2042			$166,045			$166,045			
29	2043						$0			
30	2044			$166,045		$32,787	$198,832			
TOTAL		**$22,751,493**		**$4,753,426**	**$12,726,853**	**$229,507**	**$17,709,787**			

Alternative 5: Enhanced Groundwater Extraction and Ex Situ Treatment, LUC, EISB Inside and Outside Containment Area and in Wilcox, Unsaturated Soil Excavation and Off-Site Disposal, and Thermal DNAPL Removal

					LABOR			MATERIAL		EQUIPMENT		SUBCONTRACT		
DESCRIPTION	**QTY**	**UNIT**	**UNIT MH**	**TOTAL MH**	**CRAFT**	**$/MH**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**TOTAL $**
Allowance for Legal Fees, Controls, Documentation														
Establish initial database, licenses, work plans,	1	lot										$20,000	$20,000	$20,000
Project Management	1	ea	300	300	mgr	$150	$45,000	$5,000	$5,000					$50,000
Project Support	1	ea	300	300	eng	$100	$30,000							$30,000
Subtotal							**$75,000**		**$5,000**				**$20,000**	**$100,000**
Tax @ 6.25%									$313					$313
Subtotal														**$100,313**
Indirect @ 21.5%														$21,567
Year 1 Capital Costs														**$121,880**
Reactivation of GWTP ICT 3 and ICT 9														
Equipment/Subcontract	1	lot								$15,000	$15,000	$3,500	$3,500	$18,500
Installation	1	ea	60	60	tech	$35	$2,100							$2,100
Installation	1	ea	60	60	tech	$35	$2,100							$2,100
Engineering	1	ea	20	20	eng	$125	$2,500							$2,500
Admin	1	ea	10	10	eng	$60	$600							$600
Subtotal							**$7,300**				**$15,000**		**$3,500**	**$25,800**
Tax @ 6.25%											$938			$938
Subtotal														**$26,738**
Indirect @ 21.5%														$5,749
Reactivation														**$32,486**
New GWTP Capitalization														
Major Equipment	1	lot								$2,500,000	$2,500,000	$30,000	$30,000	$2,530,000
Subtotal							**$0**		**$0**		**$2,500,000**		**$30,000**	**$2,530,000**
Tax @ 6.25%									$0		$156,250			$156,250
Subtotal														**$2,686,250**
Indirect @ 21.5%														$577,544
Major GWTP Repair/Replacement														**$3,263,794**
New GWTP O&M														
GWTP O&M: GW Extraction, Plant Ops, Incide	1	ea	2080	2080	mgr	$35	$72,800	$13,500	$13,500	$38,000	$38,000	$51,000	$51,000	$175,300
Maintenance & Repairs, Influent &	1	ea	2080	2080	mgr	$35	$72,800							$72,800
Testing, GW Elevation Readings	1	ea	1000	1000	eng	90	$90,000							$90,000
Reporting	1	ea	300	300	eng	150	$45,000							$45,000
Office Support	1	ea	600	600	Sci	90	$54,000							$54,000
Subtotal							**$334,600**		**$13,500**		**$38,000**		**$51,000**	**$437,100**
Tax @ 6.25%									$844		$2,375			$3,219
Subtotal														**$440,319**
Indirect @ 21.5%														$94,669
Major GWTP Repair/Replacement														**$534,987**
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 1-2														
Collect and Prepare Samples Quarterly (GW)	168	ea	16	2688	tech	$35	$94,080	$300	$50,400	$100	$16,800			$161,280
Sample Analysis (Level IV)	168	ea										$1,600	$268,800	$268,800
Sample Analysis (Level IV) - Only MNA Param	32	ea										$2,600	$83,200	$83,200
Annual Report	2	ea	80	160	eng	$90	$14,400	$200	$400					$14,800
Subtotal							**$108,480**		**$50,800**		**$16,800**		**$352,000**	**$528,080**
Tax @ 6.25%									$3,175		$1,050			$4,225
Subtotal														**$532,305**
Indirect @ 21.5%														$114,446
Yearly Total - Semiannual Monitoring (Years 1 - 2)														**$646,751**

Alternative 5: Enhanced Groundwater Extraction and Ex Situ Treatment, LUC, EISB Inside and Outside Containment Area and in Wilcox, Unsaturated Soil Excavation and Off-Site Disposal, and Thermal DNAPL Removal

					LABOR			MATERIAL		EQUIPMENT		SUBCONTRACT		
DESCRIPTION	**QTY**	**UNIT**	**UNIT MH**	**TOTAL MH**	**CRAFT**	**$/MH**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**TOTAL $**
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 3-5														
Collect and Prepare Samples Semiannually (G	100	ea	16	1600	tech	$35	$56,000	$300	$30,000	$100	$10,000			$96,000
Sample Analysis (Level IV)	100	ea										$1,600	$160,000	$160,000
Annual Report	1	ea	80	80	eng	$90	$7,200	$200	$200					$7,400
Subtotal							**$63,200**		**$30,200**		**$10,000**		**$160,000**	**$263,400**
Tax @ 6.25%									$1,888		$625			$2,513
Subtotal														**$265,913**
Indirect @ 21.5%														$57,171
Yearly Total - Semiannual Monitoring (Years 2 - 5)														**$323,084**
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 6-10 and Thereafter														
Collect and Prepare Samples Annually (GW)	50	ea	16	800	tech	$35	$28,000	$300	$15,000	$100	$5,000			$48,000
Sample Analysis (Level IV)	50	ea										$1,600	$80,000	$80,000
Annual Report	1	ea	80	80	eng	$90	$7,200	$200	$200					$7,400
Subtotal							**$35,200**		**$15,200**		**$5,000**		**$80,000**	**$135,400**
Tax @ 6.25%									$950		$313			$1,263
Subtotal														**$136,663**
Indirect @ 21.5%														$29,382
Yearly Total - Annual Monitoring (Years 6 - 10)														**$166,045**
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 11-30 and Thereafter														
Collect and Prepare Samples Biennially (GW)	50	ea	16	800	tech	$35	$28,000	$300	$15,000	$100	$5,000			$48,000
Sample Analysis (Level IV)	50	ea										$1,600	$80,000	$80,000
Annual Report	1	ea	80	80	eng	$90	$7,200	$200	$200					$7,400
Subtotal							**$35,200**		**$15,200**		**$5,000**		**$80,000**	**$135,400**
Tax @ 6.25%									$950		$313			$1,263
Subtotal														**$136,663**
Indirect @ 21.5%														$29,382
Yearly Total - Biennial Monitoring (Years 11 - 30)														**$166,045**
Five Year Review Report, Years 5, 10, 15, 20, 25, 30														
Five Year Inspection/Report	1	ea	120	120	eng	125	$15,000							$15,000
	1	ea	100	100	geo	150	$15,000							$15,000
	1	ea	40	40	CAD	80	$3,200	$500	$500					$3,700
Subtotal							**$33,200**		**$500**					**$33,700**
Tax @ 6.25%									$31					$31
Subtotal														**$33,731**
Indirect @ 21.5%														$7,252
Total for Five Year Inspection/Report														**$40,983**
Soil Excavation Excluding UEP Area														
Labor/Sub/Material	1	ea	35	35	eng	125	$4,375					$730,000	$730,000	$734,375
Field Labor	3	ea	50	150	tech	35	$5,250							$5,250
Subtotal							**$9,625**						**$730,000**	**$739,625**
Tax @ 6.25%														$0
Subtotal														**$739,625**
Indirect @ 21.5%														$159,019
Total for Five Year Inspection/Report														**$898,644**

Alternative 5: Enhanced Groundwater Extraction and Ex Situ Treatment, LUC, EISB Inside and Outside Containment Area and in Wilcox, Unsaturated Soil Excavation and Off-Site Disposal, and Thermal DNAPL Removal

					LABOR			MATERIAL		EQUIPMENT		SUBCONTRACT		
DESCRIPTION	QTY	UNIT	UNIT MH	TOTAL MH	CRAFT	$/MH	$ VALUE	$/UNIT	$ VALUE	$/UNIT	$ VALUE	$/UNIT	$ VALUE	TOTAL $
Soil Excavation UEP Area														
Labor/Sub/Material	2	ea	50	100	eng	125	$12,500					$2,333,000	$2,333,000	$2,345,500
Field Labor	14	ea	50	700	tech	35	$24,500							$24,500
Subtotal							**$37,000**						**$2,333,000**	**$2,370,000**
Tax @ 6.25%														$0
Subtotal														**$2,370,000**
Indirect @ 21.5%														$509,550
Total for Five Year Inspection/Report														**$2,879,550**
Electrical Resistance Heating														
ERH: Labor/Sub/Material	1	ea	1400	1400	eng	125	$175,000	$7,000	$7,000	$30,000	$30,000	$6,500,000	$6,500,000	$6,712,000
Construction Manager	2800	ea	1400	1400	eng	110	$154,000	$100	$280,000					$434,000
Field Labor	2800	ea	700	700	tech	50	$35,000	75	$210,000					$245,000
Subtotal							**$364,000**		**$497,000**		**$30,000**		**$6,500,000**	**$7,391,000**
Tax @ 6.25%									$31,063		$1,875			$32,938
Subtotal														**$7,423,938**
Indirect @ 21.5%														$1,596,147
New Power Supply - Year 1														**$9,020,084**
Enhanced In Situ Bioremediation Polishing - Post Thermal Treatment - 1st Event														
EISB: Labor/Sub/Material	1	ea						$75,000	$75,000	$25,000	$25,000	$165,000	$165,000	$271,250
Labor/Sub/Material	1	ea	50	50	eng	125	$6,250							$6,250
Construction Manager	1	ea	120	120	eng	110	$13,200							$13,200
Field Labor	2	ea	120	240	tech	50	$24,000							$24,000
Subtotal							**$43,450**		**$75,000**		**$25,000**		**$165,000**	**$314,700**
Tax @ 6.25%									$4,688		$1,563			$6,250
Subtotal														**$320,950**
Indirect @ 21.5%														$69,004
EISB Polishing - 1st Event														**$389,954**
Enhanced In Situ Bioremediation Polishing - Post Thermal Treatment - 2nd Event														
EISB: Labor/Sub/Material	1	ea						$65,000	$65,000	$25,000	$25,000	$165,000	$165,000	$261,250
Labor/Sub/Material	1	ea	50	50	eng	125	$6,250							$6,250
Construction Manager	1	ea	120	120	eng	110	$13,200							$13,200
Field Labor	2	ea	120	240	tech	50	$24,000							$24,000
Subtotal							**$43,450**		**$65,000**		**$25,000**		**$165,000**	**$304,700**
Tax @ 6.25%									$4,063		$1,563			$5,625
Subtotal														**$310,325**
Indirect @ 21.5%														$66,720
EISB Polishing - 2nd Event														**$377,045**
Enhanced In Situ Bioremediation - 1st Event														
EISB: Labor/Sub/Material	1	ea						$1,300,000	$1,300,000	$350,000	$350,000	$1,000,000	$1,000,000	$2,700,000
Labor/Sub/Material	1	ea	400	400	eng	125	$50,000							$50,000
Construction Manager	1	ea	400	400	eng	110	$44,000							$44,000
Field Labor	2	ea	800	1600	tech	50	$160,000							$160,000
Subtotal							**$254,000**		**$1,300,000**		**$350,000**		**$1,000,000**	**$2,954,000**
Tax @ 6.25%									$81,250		$21,875			$103,125
Subtotal														**$3,057,125**
Indirect @ 21.5%														$657,282
EISB - 1st Event														**$3,714,407**
Enhanced In Situ Bioremediation - 2nd Event														
EISB: Labor/Sub/Material	1	ea						$550,000	$550,000	$25,000	$25,000	$400,000	$400,000	$975,000
	1	ea	400	400	eng	125	$50,000							$50,000
Construction Manager	1	ea	400	400	eng	110	$44,000							$44,000
Field Labor	1	ea	800	800	tech	50	$40,000							$40,000
Subtotal							**$134,000**		**$550,000**		**$25,000**		**$400,000**	**$1,109,000**
Tax @ 6.25%									$34,375		$1,563			$35,938
Subtotal														**$1,144,938**
Indirect @ 21.5%														$246,162
EISB - 2nd Event														**$1,391,099**

Alternative 6: Enhanced Groundwater Extraction and Ex Situ Treatment, LUC, EISB Inside and Outside Containment Area and in Wilcox, Unsaturated Soil Excavation and Off-Site Disposal, and Enhanced DNAPL Remediation using ZVI

Year	FY	Capital Costs		O&M Costs				Present Value (NPV)		
				Monitoring	GWTP	5-Yr Review	Total	Discount Rate 3.0%	Capital	O&M
1	2015	$75,575,862	Fees, Workplan, Documentation, Reactivate ICT 3 and 9, ISB, Soil Excavation, New GWTP, ZVI injection, EISB - 1st Event	$646,751	$534,987		$1,181,738	NPV	$102,230,000	$19,390,000
2	2016			$646,751	$551,037		$1,197,787	Total Capital and O&M		$121,620,000
3	2017	$28,628,029	EISB & ZVI - 2nd events	$323,084	$567,568		$890,652			
4	2018			$323,084	$584,595		$907,679			
5	2019			$323,084	$602,133	$40,983	$966,200			
6	2020	$4,722,705	Capital Cost to Excavate UEP Area	$166,045	$620,197		$786,242			
7	2021			$166,045	$638,803		$804,848			
8	2022			$166,045	$657,967		$824,012			
9	2023			$166,045	$677,706		$843,751			
10	2024	$326,379	Major Equipment Replacement	$166,045	$698,037	$40,983	$905,065			
11	2025				$718,978		$718,978			
12	2026			$166,045	$740,548		$906,592			
13	2027				$762,764		$762,764			
14	2028			$166,045	$785,647		$951,692			
15	2029	$336,171	Major Equipment Replacement		$809,216	$40,983	$850,200			
16	2030			$166,045	$833,493		$999,538			
17	2031				$858,498		$858,498			
18	2032			$166,045	$884,252		$1,050,297			
19	2033				$910,780		$910,780			
20	2034			$166,045	$938,103	$40,983	$1,145,132			
21	2035				$966,247		$966,247			
22	2036			$166,045	$995,234		$1,161,279			
23	2037				$1,025,091		$1,025,091			
24	2038			$166,045	$1,055,844		$1,221,889			
25	2039				$1,087,519	$32,787	$1,120,306			
26	2040			$166,045	$1,120,145		$1,286,189			
27	2041				$1,153,749		$1,153,749			
28	2042			$166,045	$1,188,361		$1,354,406			
29	2043				$1,224,012		$1,224,012			
30	2044			$166,045	$1,260,733	$32,787	$1,459,564			
TOTAL		**$109,589,145**		**$4,753,426**	**$25,452,242**	**$229,507**	**$30,435,176**			

Alternative 6: Enhanced Groundwater Extraction and Ex Situ Treatment, LUC, EISB Inside and Outside Containment Area and in Wilcox, Unsaturated Soil Excavation and Off-Site Disposal, and Enhanced DNAPL Remediation using ZVI

					LABOR			MATERIAL		EQUIPMENT		SUBCONTRACT		
DESCRIPTION	**QTY**	**UNIT**	**UNIT MH**	**TOTAL MH**	**CRAFT**	**$/MH**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**TOTAL $**
Allowance for Legal Fees, Controls, Documentation														
Establish initial database, licenses, work plan	1	lot										$20,000	$20,000	$20,000
Project Management	1	ea	300	300	mgr	$150	$45,000	$5,000	$5,000					$50,000
Project Support	1	ea	300	300	eng	$100	$30,000							$30,000
Subtotal							**$75,000**		**$5,000**				**$20,000**	**$100,000**
Tax @ 6.25%									$313					$313
Subtotal														**$100,313**
Indirect @ 21.5%														$21,567
Year 1 Capital Costs														**$121,880**
Reactivation of GWTP ICT 3 and ICT 9														
Equipment/Subcontract	1	lot								$15,000	$15,000	$3,500	$3,500	$18,500
Installation	1	ea	60	60	tech	$35	$2,100							$2,100
Installation	1	ea	60	60	tech	$35	$2,100							$2,100
Engineering	1	ea	20	20	eng	$125	$2,500							$2,500
Admin	1	ea	10	10	eng	$60	$600							$600
Subtotal							**$7,300**				**$15,000**		**$3,500**	**$25,800**
Tax @ 6.25%											$938			$938
Subtotal														**$26,738**
Indirect @ 21.5%														$5,749
Reactivation														**$32,486**
New GWTP Capitalization														
Major Equipment	1	lot								$2,500,000	$2,500,000	$30,000	$30,000	$2,530,000
Subtotal							**$0**		**$0**		**$2,500,000**		**$30,000**	**$2,530,000**
Tax @ 6.25%									$0		$156,250			$156,250
Subtotal														**$2,686,250**
Indirect @ 21.5%														$577,544
Major GWTP Repair/Replacement														**$3,263,794**
New GWTP O&M														
GWTP O&M: GW Extraction, Plant Ops, Incid	1	ea	2080	2080	mgr	$35	$72,800	$13,500	$13,500	$38,000	$38,000	$51,000	$51,000	$175,300
Maintenance & Repairs, Influent &	1	ea	2080	2080	mgr	$35	$72,800							$72,800
Testing, GW Elevation Readings	1	ea	1000	1000	eng	90	$90,000							$90,000
Reporting	1	ea	300	300	eng	150	$45,000							$45,000
Office Support	1	ea	600	600	Sci	90	$54,000							$54,000
Subtotal							**$334,600**		**$13,500**		**$38,000**		**$51,000**	**$437,100**
Tax @ 6.25%									$844		$2,375			$3,219
Subtotal														**$440,319**
Indirect @ 21.5%														$94,669
Major GWTP Repair/Replacement														**$534,987**
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 1-2														
Collect and Prepare Samples Quarterly (GW)	168	ea	16	2688	tech	$35	$94,080	$300	$50,400	$100	$16,800			$161,280
Sample Analysis (Level IV)	168	ea										$1,600	$268,800	$268,800
Sample Analysis (Level IV) - Only MNA Parar	32	ea										$2,600	$83,200	$83,200
Annual Report	2	ea	80	160	eng	$90	$14,400	$200	$400					$14,800
Subtotal							**$108,480**		**$50,800**		**$16,800**		**$352,000**	**$528,080**
Tax @ 6.25%									$3,175		$1,050			$4,225
Subtotal														**$532,305**
Indirect @ 21.5%														$114,446
Yearly Total - Semiannual Monitoring (Years 1 - 2)														**$646,751**
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 3-5														
Collect and Prepare Samples Semiannually (	100	ea	16	1600	tech	$35	$56,000	$300	$30,000	$100	$10,000			$96,000
Sample Analysis (Level IV)	100	ea										$1,600	$160,000	$160,000
Annual Report	1	ea	80	80	eng	$90	$7,200	$200	$200					$7,400
Subtotal							**$63,200**		**$30,200**		**$10,000**		**$160,000**	**$263,400**
Tax @ 6.25%									$1,888		$625			$2,513
Subtotal														**$265,913**
Indirect @ 21.5%														$57,171
Yearly Total - Semiannual Monitoring (Years 2 - 5)														**$323,084**

Alternative 6: Enhanced Groundwater Extraction and Ex Situ Treatment, LUC, EISB Inside and Outside Containment Area and in Wilcox, Unsaturated Soil Excavation and Off-Site Disposal, and Enhanced DNAPL Remediation using ZVI

					LABOR			MATERIAL		EQUIPMENT		SUBCONTRACT		
DESCRIPTION	**QTY**	**UNIT**	**UNIT MH**	**TOTAL MH**	**CRAFT**	**$/MH**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**TOTAL $**
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 6-10 and Thereafter														
Collect and Prepare Samples Annually (GW)	50	ea	16	800	tech	$35	$28,000	$300	$15,000	$100	$5,000			$48,000
Sample Analysis (Level IV)	50	ea										$1,600	$80,000	$80,000
Annual Report	1	ea	80	80	eng	$90	$7,200	$200	$200					$7,400
Subtotal							**$35,200**		**$15,200**		**$5,000**		**$80,000**	**$135,400**
Tax @ 6.25%									$950		$313			$1,263
Subtotal														**$136,663**
Indirect @ 21.5%														$29,382
Yearly Total - Annual Monitoring (Years 6 - 10)														**$166,045**
Monitoring of Monitoring Wells and ICTs and Extraction Wells (O&M Costs)														
Years 11-30 and Thereafter														
Collect and Prepare Samples Biennially (GW)	50	ea	16	800	tech	$35	$28,000	$300	$15,000	$100	$5,000			$48,000
Sample Analysis (Level IV)	50	ea										$1,600	$80,000	$80,000
Annual Report	1	ea	80	80	eng	$90	$7,200	$200	$200					$7,400
Subtotal							**$35,200**		**$15,200**		**$5,000**		**$80,000**	**$135,400**
Tax @ 6.25%									$950		$313			$1,263
Subtotal														**$136,663**
Indirect @ 21.5%														$29,382
Yearly Total - Biennial Monitoring (Years 11 - 30)														**$166,045**
Five Year Review Report, Years 5, 10, 15, 20, 25, 30														
Five Year Inspection/Report	1	ea	120	120	eng	125	$15,000							$15,000
	1	ea	100	100	geo	150	$15,000							$15,000
	1	ea	40	40	CAD	80	$3,200	$500	$500					$3,700
Subtotal							**$33,200**		**$500**					**$33,700**
Tax @ 6.25%									$31					$31
Subtotal														**$33,731**
Indirect @ 21.5%														$7,252
Total for Five Year Inspection/Report														**$40,983**
Soil Excavation Excluding UEP Area														
Labor/Sub/Material	1	ea	35	35	eng	125	$4,375					$730,000	$730,000	$734,375
Field Labor	3	ea	50	150	tech	35	$5,250							$5,250
Subtotal							**$9,625**						**$730,000**	**$739,625**
Tax @ 6.25%														$0
Subtotal														**$739,625**
Indirect @ 21.5%														$159,019
Total for Five Year Inspection/Report														**$898,644**
Soil Excavation UEP Area														
Labor/Sub/Material	2	ea	50	100	eng	125	$12,500					$3,850,000	$3,850,000	$3,862,500
Field Labor	14	ea	50	700	tech	35	$24,500							$24,500
Subtotal							**$37,000**						**$3,850,000**	**$3,887,000**
Tax @ 6.25%														$0
Subtotal														**$3,887,000**
Indirect @ 21.5%														$835,705
Total for Five Year Inspection/Report														**$4,722,705**
ZVI - 1st injection														
Labor/Sub/Material	1	ea	120	120	eng	125	$15,000	$51,623,734	$51,623,734			$202,500	$202,500	$51,841,234
Field Labor	2	ea	1080	2160	field	35	$75,600							$75,600
Field Labor/Geo	1	ea	1080	1080	geo	90	$97,200	$22,500	$22,500					$119,700
Admin	1	ea	80	80	Admin	80	$6,400	$500	$500					$6,900
Subtotal							**$194,200**		**$51,646,734**				**$202,500**	**$52,043,434**
Tax @ 6.25%									$3,227,921					$3,227,921
Subtotal														**$55,271,355**
Indirect @ 21.5%														$11,883,341
Total EZVI														**$67,154,697**

Alternative 6: Enhanced Groundwater Extraction and Ex Situ Treatment, LUC, EISB Inside and Outside Containment Area and in Wilcox, Unsaturated Soil Excavation and Off-Site Disposal, and Enhanced DNAPL Remediation using ZVI

					LABOR			MATERIAL		EQUIPMENT		SUBCONTRACT		
DESCRIPTION	**QTY**	**UNIT**	**UNIT MH**	**TOTAL MH**	**CRAFT**	**$/MH**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**$/UNIT**	**$ VALUE**	**TOTAL $**
ZVI - 2nd injection														
Labor/Sub/Material	1	ea	40	40	eng	125	$5,000	$20,649,494	$20,649,494			$81,000	$81,000	$20,735,494
Field Labor	2	ea	432	864	field	35	$30,240							$30,240
Field Labor/Geo	1	ea	432	432	geo	90	$38,880	$9,000	$9,000					$47,880
Admin	1	ea	20	20	Admin	80	$1,600	$500	$500					$2,100
Subtotal							**$75,720**		**$20,658,994**				**$81,000**	**$20,815,714**
Tax @ 6.25%									$1,291,187					$1,291,187
Subtotal														**$22,106,901**
Indirect @ 21.5%														$4,752,984
Total EZVI														**$26,859,885**
Enhanced In Situ Bioremediation Polishing - Post ZVI - 1st Event														
EISB: Labor/Sub/Material	1	ea						$75,000	$75,000	$25,000	$25,000	$165,000	$165,000	$271,250
Labor/Sub/Material	1	ea	50	50	eng	125	$6,250							$6,250
Construction Manager	1	ea	120	120	eng	110	$13,200							$13,200
Field Labor	2	ea	120	240	tech	50	$24,000							$24,000
Subtotal							**$43,450**		**$75,000**		**$25,000**		**$165,000**	**$314,700**
Tax @ 6.25%									$4,688		$1,563			$6,250
Subtotal														**$320,950**
Indirect @ 21.5%														$69,004
EISB Polishing - 1st Event														**$389,954**
Enhanced In Situ Bioremediation Polishing - Post ZVI - 2nd Event														
EISB: Labor/Sub/Material	1	ea						$65,000	$65,000	$25,000	$25,000	$165,000	$165,000	$261,250
Labor/Sub/Material	1	ea	50	50	eng	125	$6,250							$6,250
Construction Manager	1	ea	120	120	eng	110	$13,200							$13,200
Field Labor	2	ea	120	240	tech	50	$24,000							$24,000
Subtotal							**$43,450**		**$65,000**		**$25,000**		**$165,000**	**$304,700**
Tax @ 6.25%									$4,063		$1,563			$5,625
Subtotal														**$310,325**
Indirect @ 21.5%														$66,720
EISB Polishing - 2nd Event														**$377,045**
Enhanced In Situ Bioremediation - 1st Event														
EISB: Labor/Sub/Material	1	ea						$1,300,000	$1,300,000	$350,000	$350,000	$1,000,000	$1,000,000	$2,700,000
Labor/Sub/Material	1	ea	400	400	eng	125	$50,000							$50,000
Construction Manager	1	ea	400	400	eng	110	$44,000							$44,000
Field Labor	2	ea	800	1600	tech	50	$160,000							$160,000
Subtotal							**$254,000**		**$1,300,000**		**$350,000**		**$1,000,000**	**$2,954,000**
Tax @ 6.25%									$81,250		$21,875			$103,125
Subtotal														**$3,057,125**
Indirect @ 21.5%														$657,282
EISB - 1st Event														**$3,714,407**
Enhanced In Situ Bioremediation - 2nd Event														
EISB: Labor/Sub/Material	1	ea						$550,000	$550,000	$25,000	$25,000	$400,000	$400,000	$975,000
	1	ea	400	400	eng	125	$50,000							$50,000
Construction Manager	1	ea	400	400	eng	110	$44,000							$44,000
Field Labor	1	ea	800	800	tech	50	$40,000							$40,000
Subtotal							**$134,000**		**$550,000**		**$25,000**		**$400,000**	**$1,109,000**
Tax @ 6.25%									$34,375		$1,563			$35,938
Subtotal														**$1,144,938**
Indirect @ 21.5%														$246,162
EISB - 2nd Event														**$1,391,099**

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

January 31, 2017

DAIM-ODB-LO

Mr. Rich Mayer
US Environmental Protection Agency
Federal Facilities Section R6
1445 Ross Avenue
Dallas, TX 75202-2733

Re: Draft Final 1st Annual Remedial Action Operation Report for LHAAP-67, Above Ground Storage Tank Farm at Longhorn Army Ammunition Plant, Karnack, Texas

Dear Mr. Mayer,

The above-referenced document is being transmitted to you for your records and includes revisions based upon your comments on the Draft. In accordance with the FFA, the Draft Final will be considered Final after 30 days without further comment.

The document was prepared by AECOM on behalf of the Army as part of AECOM's Performance Based Remediation contract for the facility. I ask that Debra Richmann, AECOM's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
A. Palmie, TCEQ, Austin, TX
P. Bruckwicki, Caddo Lake NWR, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USAEC, San Antonio, TX
D. Richmann, AECOM – San Antonio, TX (for project files)

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

January 31, 2017

DAIM-ODB-LO

Ms. April Palmie
Texas Commission on Environmental Quality Superfund Section, MC-136
12100 Park 35 Circle, Bldg D
Austin, TX 78753

Re: Draft Final 1st Annual Remedial Action Operation Report for LHAAP-67, Above Ground Storage Tank Farm at Longhorn Army Ammunition Plant, Karnack, Texas

Dear Ms. Palmie,

The above-referenced document is being transmitted to you for your records and includes revisions based upon your comments on the Draft. In accordance with the FFA, the Draft Final will be considered Final after 30 days without further comment.

The document was prepared by AECOM on behalf of the Army as part of AECOM's Performance Based Remediation contract for the facility. I ask that Debra Richmann, AECOM's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
R. Mayer, USEPA Region 6, Dallas, TX
P. Bruckwicki, Caddo Lake NWR, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USAEC, San Antonio, TX
D. Richmann, AECOM, San Antonio, TX (for project files)

Responses to Comments on
Draft 1st Annual Remedial Action Operation Report for Site LHAAP-67 (Above Ground Storage Tank Farm)
Longhorn Army Ammunition Plant, Karnack, Texas

November 2016

Reviewer: Richard Mayer, EPA

Respondent: Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
1	iii	Minor Editorial Comment	Please move micrograms per liter at the top of page to the location of "milligrams per liter", so the abbreviations are in alphabetical order.	C	The acronym "µg/L -micrograms per liter" has been moved as requested.	
2	2-2	Last Full Paragraph	Please add Shaw, 2011 reference to reference list. Please also add RD to the acronyms and abbreviation list.	C/E	The Shaw, 2011 reference has been added to reference list on page 5-1 of the draft report. Since the abbreviation for Remedial Design (RD) was only used once in the report, it has been removed from Section 2.2.2 instead of adding it to the acronyms abbreviation list.	
3	2-3	Minor Editorial Comment	There is a reference to EPA, 2014 in this section. In the reference section, EPA and USEPA are used. EPA recommends changing the EPA, 2014 reference to USEPA to be consistent.	C	EPA has been changed to USEPA as requested in both locations, and anywhere else it occurs in the document. The definition, U.S. Environmental Protection Agency, has also been inserted in second line of Section 2.2.1.	
4		Figure 2-3	The groundwater flow direction in the text and the flow lines shown on the map indicates a northerly/northeast flow. Based on the data for this map, it appears to be several flow directions, including east and even southeast, dependent on where you look at on the contour map. The lack of water level data to the north indicates a gap in water levels. EPA would not consider the flow to be predominantly north based on what is shown on this map. In addition, the plume orientation appears to be more of a west to east direction which is odd.	C	With monitoring wells 67WW03 being dry at the time of the gauging event and the 67WW12 groundwater elevation considered an outlier, agree that a data gap exists in the north. The text in Section 2.2.2 has been changed to indicate that based on these considerations, the interpreted flow directions may vary from east, to northeast, and north. Figure 2-3 has been revised to account for this information.	

Responses to Comments on
Draft 1st Annual Remedial Action Operation Report for Site LHAAP-67 (Above Ground Storage Tank Farm)
Longhorn Army Ammunition Plant, Karnack, Texas

November 2016

Reviewer: Richard Mayer, EPA

Respondent: Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
5		Figure 2-7	The monitoring well groundwater elevations are not shown on the figure, please include them.	D	It is assumed this comment refers to Figure 2-6. Figure 2-6 was modified from Figure 2-4 in the Final Remedial Design (Shaw, 2011), which shows the groundwater surface elevation contours, based on December 2007 measurements. However, that source figure does not include the groundwater surface elevations for the individual wells. Please note that in response to a TCEQ comment, Figure 2-6 has been re-named "Historical Shallow Zone Groundwater Gradient Map".	
6	3-1	Monitoring Well 67WW01	The text states "Concentrations of 1,1-DCE (degradation product of 1,1,1-TCA) and 1,2-DCA (degradation product of 1,1,2-TCA) have generally remained stable over the last year with slight increase observed in May 2014, but significantly lower than the 1998 levels." When using the phrase significantly lower than the 1998 levels, this would suggest a statistical analysis which is not the case here. Suggest rephrasing. In addition, Figure 2-11 is a times-series plot over just a few data points, so the use of the word trend may make a person believe this is statistically valid trend. Also, please include the 1998 levels in the text or in a table, so the reader can see the difference.	C/E	The word "statistically" has been changed to "considerably" in Section 3.1, Well 67WW01. Similarly, Figure 2-11 has been renamed, "COC Concentration and Groundwater Elevation Evaluation". Historical COC concentrations, including those from 1998, are included in Table 2-3. A reference to this table has been added to the first paragraph in Section 3.1.	

Responses to Comments on
Draft 1st Annual Remedial Action Operation Report for Site LHAAP-67 (Above Ground Storage Tank Farm)
Longhorn Army Ammunition Plant, Karnack, Texas

November 2016

Reviewer: Richard Mayer, EPA

Respondent: Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
7	3-1	Monitoring Well 67WW03	Figure 2-11 does not include a water level or screened interval data for the time period. Please add to the figure or clarify why it cannot be included on the figure. Based on the data presented in figure 2-11, the water level within the screen is important, as you can see changes in concentration on the other figures with screen saturation. Typically, in these graphs, you see a lower concentration with less saturated screen thickness. Also, EPA is perplexed on what is being attributed to MNA from 1,800 ug/l for 1,1,1, TCA in 1998 to non-detect in 2004, this does not seem practical based on changes in other wells. EPA recommends trying to verifying the initial value of 1,800 ug/l to see if that was a "real" value and if it is a real value then try to determine if it is possible for a concentration of 1,800 ug/l to attenuate in a six year period.	C	Historical water level data for 67WW03, predating 2007, were noted on Figure 2-11 as not available; however, a groundwater elevation for the September 12, 2004 sampling event was found in the *Final Data Gaps Investigation Report, Longhorn Army Ammunition Plant, Karnack,* Texas, prepared by Shaw (April 2007). Figure 2-11 has been revised to include this groundwater elevation, and the screened interval for 67WW03 has been added to the graph. Note that 67WW03 was dry and could not be sampled during the four quarterly sampling events during the Year 1 RA(O) monitoring period; however, based on Table 2-1, enough water was present in 67WW03 during the May 2013 event to obtain a water level measurement. Therefore, the May 2013 groundwater elevation was also added to the 67WW03 graph on Figure 2-11. The text concerning the COCs reported in 67WW03 in 1998 has been changed to indicate "the initially reported concentrations are suspect and/or not representative of the shallow zone groundwater." The second to last sentence has been modified as follows: "Because this well has been chronically dry, it was replaced by adjacent well 67WW12, which is screened over an interval that is approximately 10 feet deeper than well 67WW03."	

Responses to Comments on
Draft 1st Annual Remedial Action Operation Report for Site LHAAP-67 (Above Ground Storage Tank Farm)
Longhorn Army Ammunition Plant, Karnack, Texas

November 2016

Reviewer: Richard Mayer, EPA

Respondent: Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
8	3-2	Section 3.1.1, Second Sentence	The flow direction over the quarterly samplings seems to vary in direction depending on where one considers drawing a flow path. The plume appears to be in a more northwest to east/southeast orientation. As stated before, this seems very odd. EPA recognizes that some additional wells have been installed at the site and future reports may indicate a more consistent flow direction and a better defined plume.	--	Noted. "variable" has been inserted in the third sentence of the section to acknowledge the groundwater flow directions can be interpreted differently, depending on the flow path.	
9	3-3	Third Paragraph	This comment is related to comments number 5 and 6 in regards to concentration and saturated thickness of a well screen. EPA definitely appreciates the efforts to look for a relationship between water level elevation and concentrations. However, at this point there are only a few points to use for correlation, so is the sample size large enough to be statistically valid? Over time, when there is more data, the correlation calculations may be more useful. Also, please include a table or appendix with the calculations. Also, there could be other factors involved such as such as low-flow purged samples verses bailed samples.	C	The supporting documentation for the correlation coefficients are provided in Appendix E.	
10	3-5	Fifth Paragraph, Minor Editorial Comment	Please change monitoring well 67W08 to 67WW08.	C	Text changed as requested.	
11	5-1	References	EPA could not locate USACE, 2011 reference in text. Please remove if not used in text.	C	Reference has been removed.	

Responses to Comments on
Draft 1st Annual Remedial Action Operation Report for Site LHAAP-67 (Above Ground Storage Tank Farm)
Longhorn Army Ammunition Plant, Karnack, Texas

November 2016

Reviewer: April Palmie, TCEQ

Respondent: Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
1	2-3	Section 2.3	Second paragraph could also note that plume is delineated within the LUC boundary and not near surface water body.	C	The following text has been added before the last sentence in the second paragraph: "Further, the VOC plume is delineated within the LUC boundary and is not near any surface water body."	
2		Figures 2-2 through 2-6	The groundwater gradient is pretty flat at this site with generally less than 1 foot change across the site. There really are not enough data points to justify the o.1 foot contours and the extra lines really don't add information. Such small variations could be related to well development, screening, or smearing. I request again that we not contour more often than every 0.5 foot. The contours should be at XXX.0 and XXX.5 (not XXX.45 as on Figure 2-4). 2-3 – Revise note 2 "appears to be an outlier" not "on" 2-6 – Has no elevations. Change title to add "Historic Groundwater Gradient" or similar.	C/D	Because of the very low relief and number of control points at the site, re-contouring the potentiometric surface figures at a 0.5 ft contour interval would not add any value (only one or possibly two contour lines would be shown per figure). Note 2 on Figure 2-3 has been corrected to say "appears to be an outlier." The title on Figure 2-6 has been changed to, "Historical Shallow Zone Groundwater Gradient Map", because AECOM Figure 2-6 was modified from Figure 2-4 in the Final Remedial Design (Shaw, 2011), which did not include groundwater elevations for the individual wells.	
3	3-1	Section 3.1	Well 67WW03 – the absence of COCs is not likely from natural attenuation. This well is screened higher than the wells that produce water and contain site COCs. Please revise assertion.	C	The text concerning the COCs reported in 67WW03 in 1998 has been changed to indicate "the initially reported concentrations are suspect and/or not representative of the shallow zone groundwater." The second to last sentence has been modified as follows: "Because this well has been chronically dry, it was replaced by adjacent well 67WW12, which is screened across an interval that is approximately 10 feet deeper than well 67WW03."	

Responses to Comments on
Draft 1st Annual Remedial Action Operation Report for Site LHAAP-67 (Above Ground Storage Tank Farm)
Longhorn Army Ammunition Plant, Karnack, Texas

November 2016

Reviewer: April Palmie, TCEQ

Respondent: Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
4	3-2	Section 3.1	Wells 67WW09 and 67WW11 – Please provide a better explanation as to why these wells were not sampled in May 2014. Well 67WW09A serves to monitor LUC boundary, not plume extent.	C	In the text of Section 3.1, under wells 67WW09 and 67WW11, the following will be inserted after "May 2014" in the second sentence (note that the well ID number will correspond to the well that is being described in that particular section): "Well 67WW09 [or well 67WW11] was not sampled in May 2014, because a monitoring well adjustment plan that was submitted to the regulators in April 2014, with a recommendation to remove well 67WW09 [or well 67WW11] from sampling. It was assumed that the adjustment plan would be approved. However, it was not until the November 2014 monthly managers' meeting that all parties agreed to hold off on any changes to the monitoring network until a year of data from the existing well network was obtained. For this reason, well 67WW09 [or well 67WW11] was not sampled in May 2014. Another well, 67WW09A, was installed upgradient of the plume and serves to define the south LUC boundary.	
5	3-2	Section 3.1.1	First paragraph – Several of these edits also relate to copied text in Section 4, 4-1, second paragraph Sentence three seems to track groundwater flow along two pathways. This is very confusing. Please revise. Sentence 5 beginning with "The in-plume well", remove ( ) around the well name which make it seem that is the only in-plume well. Sentence 6 beginning "Monitoring well 67WW01" – it is not likely that 67WW01 is downgradient of 67WW08. More likely cross gradient. Sentence 9 beginning with "However, this well" should mention that well is screened very shallow compared to non-dry wells.	C	Text has been revised.	

Responses to Comments on
Draft 1st Annual Remedial Action Operation Report for Site LHAAP-67 (Above Ground Storage Tank Farm)
Longhorn Army Ammunition Plant, Karnack, Texas

November 2016

Reviewer: April Palmie, TCEQ

Respondent: Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
6	3-3	Section 3.1.1	Second paragraph, first sentence beginning with "Concentrations of" should include 67WW13 as one of the most impacted wells.	C	67WW13 has been added to this sentence as an impacted well.	
7	4-1	Section 4	See comment 5 on 3.1.1	C	Text has been revised.	

From: Mayer, Richard <mayer.richard@epa.gov>
Sent: Wednesday, February 01, 2017 3:00 PM
To: Snow, JoLynn; Zeiler, Rose M CIV USARMY HQDA ACSIM (US)
Cc: Aaron.K.Williams@usace.army.mil; Smith, Nicholas B CIV USARMY IMCOM (US; 'Becher, Kent'; Tzhone, Stephen; Richmann, Debra; Richard.P.Smith@usace.army.mil; April Palmie; Forsythe, Barry; Harrison, Dorelle; Sharp, Elspeth; paul_bruckwicki@fws.gov
Subject: FW: EPA Approval of the Draft Final 1st Annual RAO Report for Longhorn AAP Site 67 (Above Ground Storage Tank Farm)

Good Afternoon JoLynn/Rose, I've reviewed the Draft Final 1st Annual RAO Report for Longhorn AAP Site 67 and accept all edits and comment responses. Thanks.

From: April Palmie <april.palmie@tceq.texas.gov>
Sent: Thursday, February 02, 2017 1:54 PM
To: Snow, JoLynn; mayer.richard@epa.gov
Cc: Williams, Aaron K CIV USARMY CESWT (US); 'rose.m.zeiler.civ@mail.mil'; 'nicholas.b.smith56.civ@mail.mil'; Smith, Richard P CIV USARMY CESWF (US); Richmann, Debra; Sharp, Elspeth; April Palmie
Subject: RE: LHAAP-67 Draft Final Year 1 RAO

Good afternoon. I've reviewed the LHAAP-67 Draft Final Year 1 RAO and accept the document and RTCs.

April Palmie
Project and Grant Manager
Superfund Section
Remediation Division
Texas Commission on Environmental Quality
Phone: (512) 239-4152
Email: April.Palmie@tceq.texas.gov

From: Snow, JoLynn [mailto:JoLynn.Snow@aecom.com]
Sent: Tuesday, January 31, 2017 5:35 PM
To: April Palmie <april.palmie@tceq.texas.gov>; mayer.richard@epa.gov
Cc: Williams, Aaron K CIV USARMY CESWT (US) <Aaron.K.Williams@usace.army.mil>; 'rose.m.zeiler.civ@mail.mil' <rose.m.zeiler.civ@mail.mil>; 'nicholas.b.smith56.civ@mail.mil' <nicholas.b.smith56.civ@mail.mil>; Smith, Richard P CIV USARMY CESWF (US) <Richard.P.Smith@usace.army.mil>; Richmann, Debra <debra.richmann@aecom.com>; Sharp, Elspeth <elspeth.sharp@aecom.com>
Subject: LHAAP-67 Draft Final Year 1 RAO

Good afternoon,

Please see the link below to the full PDF of the Draft Final Year 1 RAO for LHAAP-67. I have also attached the redline Draft document for your convenience. Please let me know if you need anything else.

JoLynn Snow has sent you 1 file using AECOM's File Transfer System.

This file will be available for download until 2/7/2017

File	Description	Size
LHAAP-67 Draft Final Yr 1 RAO Report_013117_w-lab data.pdf		58,458KB

Download all files (.zip)

If you are having trouble accessing the links in this email, you can view this message as a web page by copying the following link and pasting it into your browser:

https://sendfiles.aecom.com/message.aspx?msgId=ad6f9c74-77b3-4a4d-b808-fbc73fe16fef

Thank you,

JoLynn Snow
Project Administrator, AECOM Environment
Direct: 1-210-823-6710
jolynn.snow@aecom.com

AECOM
4921 Shed Road, Suite 400
Bossier City, LA, 71111
318- 42-3191
aecom.com

DRAFT FINAL
1ST ANNUAL REMEDIAL ACTION OPERATION REPORT
LHAAP-67 (ABOVE GROUND STORAGE TANK FARM)
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers
Tulsa District

Prepared By:

AECOM Technical Services, Inc.

January 2017

DRAFT FINAL
1ST ANNUAL REMEDIAL ACTION OPERATION REPORT
LHAAP-67 (ABOVE GROUND STORAGE TANK FARM)
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:

U.S. Army Corp of Engineers

Tulsa District

Prepared By:

AECOM Technical Services, Inc.

Contract No. W912DY-09-D-0059

Task Order No. DS01

January 2017

Table of Contents

1 INTRODUCTION 1-1

1.1 Remedial Action Objectives 1-1

1.2 Performance Objectives 1-1

1.3 Site Description 1-2

1.4 Conceptual Site Model 1-2

2 SITE ACTIVITIES AT LHAAP-67 2-1

2.1 Annual LUC Compliance Inspection, Monitoring, and Repairs 2-1

2.2 Groundwater Monitoring 2-1

2.2.1 Approved Modifications to the Groundwater Monitoring Program 2-1

2.2.2 Groundwater Elevations and Flow Direction 2-2

2.2.3 Groundwater Analytical Results 2-3

2.3 Surface Water Sampling 2-3

3 NATURAL ATTENUTION EVALUTION 3-1

3.1 First Line of Evidence: Change in COC Concentrations over Time and with Distance 3-1

3.1.1 Plume Stability 3-3

3.2 Second Line of Evidence: Geochemical Indicators 3-4

3.3 Third Line of Evidence: Predictive Modeling and Microbial Analysis 3-6

4 SUMMARY AND CONCLUSIONS 4-1

5 REFERENCES 5-1

List of Figures

Figure 1-1: LHAAP-67 Site Area Map

Figure 1-2: LHAAP-67 Site Location Map

Figure 2-1: LHAAP-67 Groundwater Monitoring Well Locations

Figure 2-2: LHAAP-67 May 2013 Shallow Zone Potentiometric Map

Figure 2-3: LHAAP-67 September 2013 Shallow Zone Potentiometric Map

Figure 2-4: LHAAP-67 January 2014 Shallow Zone Potentiometric Map

Figure 2-5: LHAAP-67 May 2014 Shallow Zone Potentiometric Map

Figure 2-6: LHAAP-67 Historic Shallow Zone Groundwater Gradient Map

Figure 2-7: LHAAP-67 May 2013 VOCs in Shallow Zone Groundwater

Figure 2-8: LHAAP-67 September 2013 VOCs in Shallow Zone Groundwater

Figure 2-9: LHAAP-67 January 2014 VOCs in Shallow Zone Groundwater

Figure 2-10: LHAAP-67 May 2014 VOCs in Shallow Zone Groundwater

Figure 2-11: LHAAP-67 COC Concentration and Groundwater Elevation Evaluation

List of Tables

Table 2-1: Groundwater Elevation Data – LHAAP-67

Table 2-2: Groundwater Analytical Results, Year 1 – LHAAP-67

Table 2-3: Historic Groundwater COC Concentrations – LHAAP-67

List of Appendices

APPENDIX A: ANNUAL LUC COMPLIANCE CERTIFICATION DOCUMENTATION

APPENDIX B: PHOTO LOG

APPENDIX C: MONITORING WELL SAMPLING FORMS

APPENDIX D: LABORATORY ANALYTICAL RESULTS

APPENDIX E: CORRELATION DOCUMENTATION

Acronyms and Abbreviations

AECOM	AECOM Technical Services, Inc.
AST	above ground storage tank
COC	contaminant of concern
DCA	dichloroethane
DCE	dichloroethene
DO	dissolved oxygen
LHAAP	Longhorn Army Ammunition Plant
LUC	Land Use Control
MCL	maximum contaminant level
µg/L	micrograms per liter
mg/L	milligram per liter
MNA	Monitored Natural Attenuation
mV	milli-volts
No.	number
ORP	oxidation-reduction potential
PCL	Texas Risk Reduction Program Tier 1 Groundwater Residential Protective Concentration Level
RACR	Remedial Action Completion Report
RA(O)	Remedial Action Operation
RAO	Remedial Action Objective
ROD	Record of Decision
TCA	trichloroethane
TCE	trichloroethene
TOC	total organic carbon
TRRP	Texas Risk Reduction Program
U.S.	United States
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VC	vinyl chloride
VOC	volatile organic compound

1 INTRODUCTION

The United States (U.S.) Army Corps of Engineers (USACE), Tulsa District, contracted AECOM Technical Services, Inc. (AECOM), to perform remedial activities at multiple sites at the former Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas, under the Huntsville District's Worldwide Environmental Restoration Services Contract Number (No.) W912DY-09-D-0059, Task Order No. DS01. As part of this contract, AECOM is performing groundwater and surface water monitoring as part of Remedial Action Operations (RA(O)s) for the Monitored Natural Attenuation (MNA) groundwater remedy at site LHAAP-67. A Final Record of Decision (ROD) was executed for LHAAP-67 in June 2010 (USACE, 2010). Groundwater monitoring at LHAAP-67 is ongoing as described in the Draft Final Remedial Action Completion Report (RACR) (AECOM, 2015). This RA(O)s report summarizes the results of sampling activities completed between May 2013 and May 2014.

LHAAP is located in east-central Texas in the northeastern corner of Harrison County between State Highway 43 in Karnack, Texas, and the western shore of Caddo Lake (see **Figure 1-1**). The nearest cities are Marshall, Texas, approximately 14 miles to the southwest, and Shreveport, Louisiana, approximately 40 miles to the east. Caddo Lake is a large freshwater lake that bounds LHAAP to the north and east. The eastern fence of the LHAAP installation is 3.5 miles from the Texas-Louisiana state border.

1.1 Remedial Action Objectives

The Remedial Action Objectives (RAOs) at the LHAAP-67 site must protect human health and meet applicable or relevant and appropriate requirements. There are no ecological risks at the LHAAP-67 site (USACE, 2010).

The RAOs for the LHAAP-67 site, consistent with the reasonably anticipated future use as a national wildlife refuge, are:

- Protection of human health by preventing human exposure to the contaminated groundwater;
- Protection of human health and the environment by preventing contaminated groundwater from migrating into nearby surface water; and,
- Return of groundwater to its potential beneficial use as drinking water, wherever practicable.

1.2 Performance Objectives

The remedy selected for LHAAP-67 is Land Use Control (LUC) and MNA. The performance objectives at LHAAP-67 consist of two components: physical inspections and groundwater/surface water monitoring. As a component of the LUC implementation, the civil survey of the LUC boundary was conducted in November 2014 and recorded in the Harrison County Courthouse in December 2014. Physical inspections are conducted annually to confirm compliance with the LUC objectives, which consist of preventing human exposure to groundwater contamination presenting an unacceptable risk to a future maintenance worker and ensuring that there is no withdrawal or use of groundwater from the site for anything other than environmental monitoring and testing until the cleanup levels are attained. Groundwater

monitoring has been in-progress at the site since May 2013, and LHAAP-67 will also have Five-Year Reviews completed as part of the site wide Longhorn Five-Year Review.

Groundwater monitoring is being performed to demonstrate that natural attenuation is effective, detect changes in environmental conditions that may reduce the efficacy of natural attenuation processes, identify potentially toxic and/or mobile transformation products, verify that the plume is not expanding, verify no unacceptable impact to downgradient receptors, detect new releases of contaminants to the environment that could impact effectiveness of the natural attenuation remedy, and verify attainment of the remediation objectives.

Work completed as part of the 2013/2014 RA(O) consisted of four quarterly groundwater sampling events at fifteen wells. This report summarizes the LUC compliance inspection, results of groundwater sampling, and a preliminary discussion of MNA evaluation.

1.3 Site Description

LHAAP-67 is in the central portion of LHAAP, on the southeast corner of 48th Street and Ignatus Avenue (see **Figure 1-2**), and covers an area of approximately 1.9 acres. The site topography is relatively flat. The nearest significant surface water body is Central Creek located approximately 870 feet southeast of LHAAP-67. Central Creek eventually flows into Caddo Lake.

When operational, LHAAP-67 consisted of seven above ground storage tanks (ASTs) used for storing No. 2 fuel oil, kerosene, and solvents. The size of the tanks is unknown. The tanks were surrounded by earthen dikes designed to contain potential spills. The ASTs have been removed and the only structure remaining at the site is a railroad bed.

The LUC area associated with the groundwater use restriction at LHAAP-67 extends beyond the historical site boundaries along the western, eastern and southern sections of the site, and encompasses a total of 2.6 acres. LHAAP-67 has no known areas of archaeological or historical importance.

1.4 Conceptual Site Model

A detailed Conceptual Site Model of LHAAP-67 was previously presented in the ROD (USACE, 2010). Based upon additional data collected as part of final remedy implementation as presented in the LHAAP-67 Draft Final RACR (AECOM, 2015), the lithologic units at the site have been reclassified.

Historically, two water-bearing zones (shallow and intermediate) had been designated at LHAAP-67; however, the lithology encountered during 2013 investigation did not identify a continuous clay layer (aquitard) or significant lithological differences between previously identified shallow and intermediate zones. Co-located monitoring wells 67WW06 (total depth 49.83 feet below ground surface) and 67WW07 (total depth 27.86 feet below ground surface), historically identified as intermediate and shallow zone wells, respectively, had almost similar static water levels during the four sampling events performed during 2013/2014 with a maximum difference of 1.04 ft noted during the January 2014 event. Therefore, the previously designated shallow and intermediate zones are now defined as one shallow-water bearing zone to a depth of approximately 50 feet below ground surface and historically identified intermediate zone monitoring well 67WW06 is now classified to be present in the shallow zone.

A deeper "intermediate" water-bearing zone was; however, identified at a depth of approximately 68 feet below ground surface in boring 67DPT14 (drilled in June 2014) with a clear aquitard separating this unit from the shallow zone.

Based on this information, shallow and intermediate water-bearing zones are present in the LHAAP-67 investigation area, but the configuration has been modified from that presented in the remedial design as discussed above.

The contaminants of concern (COCs) identified in LHAAP-67 shallow zone groundwater are trichloroethene (TCE), 1,1-dichloroethene (1,1-DCE), 1,2-dichloroethane (1,2-DCA), 1,1,1-trichloroethane (1,1,1-TCA), and 1,1,2-trichloroethane (1,1,2-TCA). The presence of these COCs in the shallow groundwater zone represents the primary driver for remedial action as they are at concentrations above the human health standard for future maintenance worker under an industrial exposure scenario. There are no ecological risks at the LHAAP-67 site.

The nature and extent of groundwater contamination at LHAAP-67 was evaluated during field investigations conducted between 1998 and 2007. It is believed that historic releases from the ASTs at the site contaminated the soil, with contaminants then leaching from the soil into groundwater. A relatively small area of contamination is observed in the shallow groundwater which poses an unacceptable carcinogenic risk and non-carcinogenic hazard to a hypothetical future maintenance worker under an industrial exposure scenario. There is no groundwater contamination in the deeper "intermediate" groundwater zone. The only potentially complete exposure pathway is via use of shallow-zone groundwater as drinking water. However, shallow groundwater is not used as drinking water at the refuge and the pathway is eliminated from any hypothetical receptor because land use controls are in place that prohibits the use of groundwater other than for environmental monitoring and testing. The nearest significant surface water body to LHAAP-67 site is Central Creek, located upgradient and approximately 870 feet from the site. There is no other surface water body in close proximity to the LHAAP-67 site. Therefore, there is no demonstrated complete pathway from groundwater to surface water.

Based on groundwater level data collected in 2013/2014, the dominant shallow zone groundwater gradient appears to be to the north/northeast. The gradient is based on data collected from up to 15 monitoring wells. Historical gradient was assumed to be to the southeast which was based on data collected primarily from three (3) monitoring wells because some of the wells such as 67WW03 and 67WW04 were dry most of the time. This reinterpretation of the gradient was a result of installation of additional monitoring wells which provided a better definition of the groundwater gradient. The change in groundwater flow direction changed Central Creek from being a downgradient potential receptor to being an upgradient potential receptor from the site. Therefore, potential discharge to surface water in Central Creek became an incomplete exposure pathway and surface water sampling as stated in the RAWP was no longer necessary.

A temporary well installed in soil boring 67DPT14 was completed in the deeper "intermediate" water-bearing zone to a depth of 78 feet below ground surface. Groundwater analyzed from 67DPT14 revealed that no COCs were identified. Therefore, the contaminants are confined to the shallow zone groundwater.

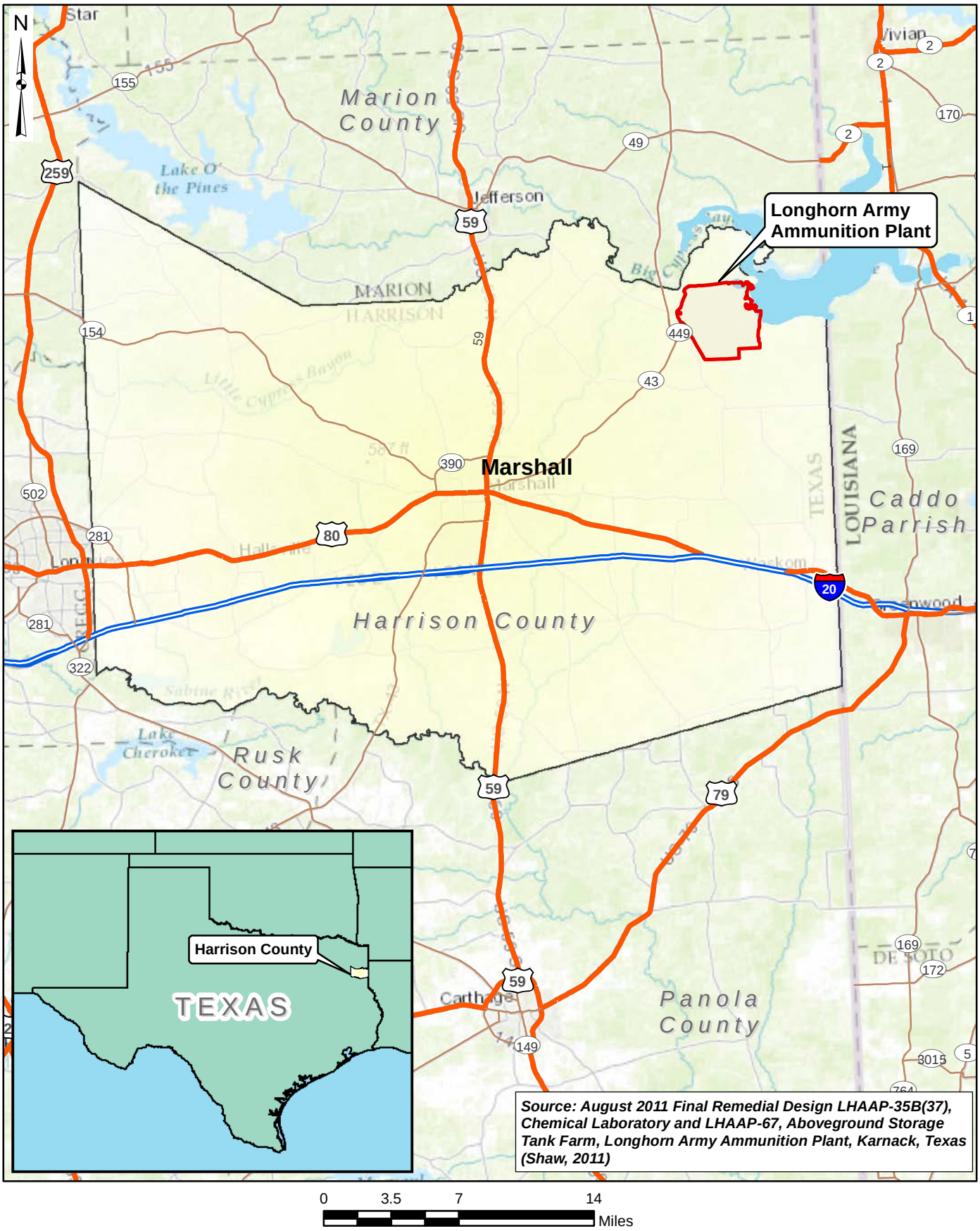

AECOM

Figure 1-1
LHAAP-67 Site Area Map
Remedial Action Operation Report (Year 1)

Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR01\Fig 1-1 LHAAP67 Area Map.mxd

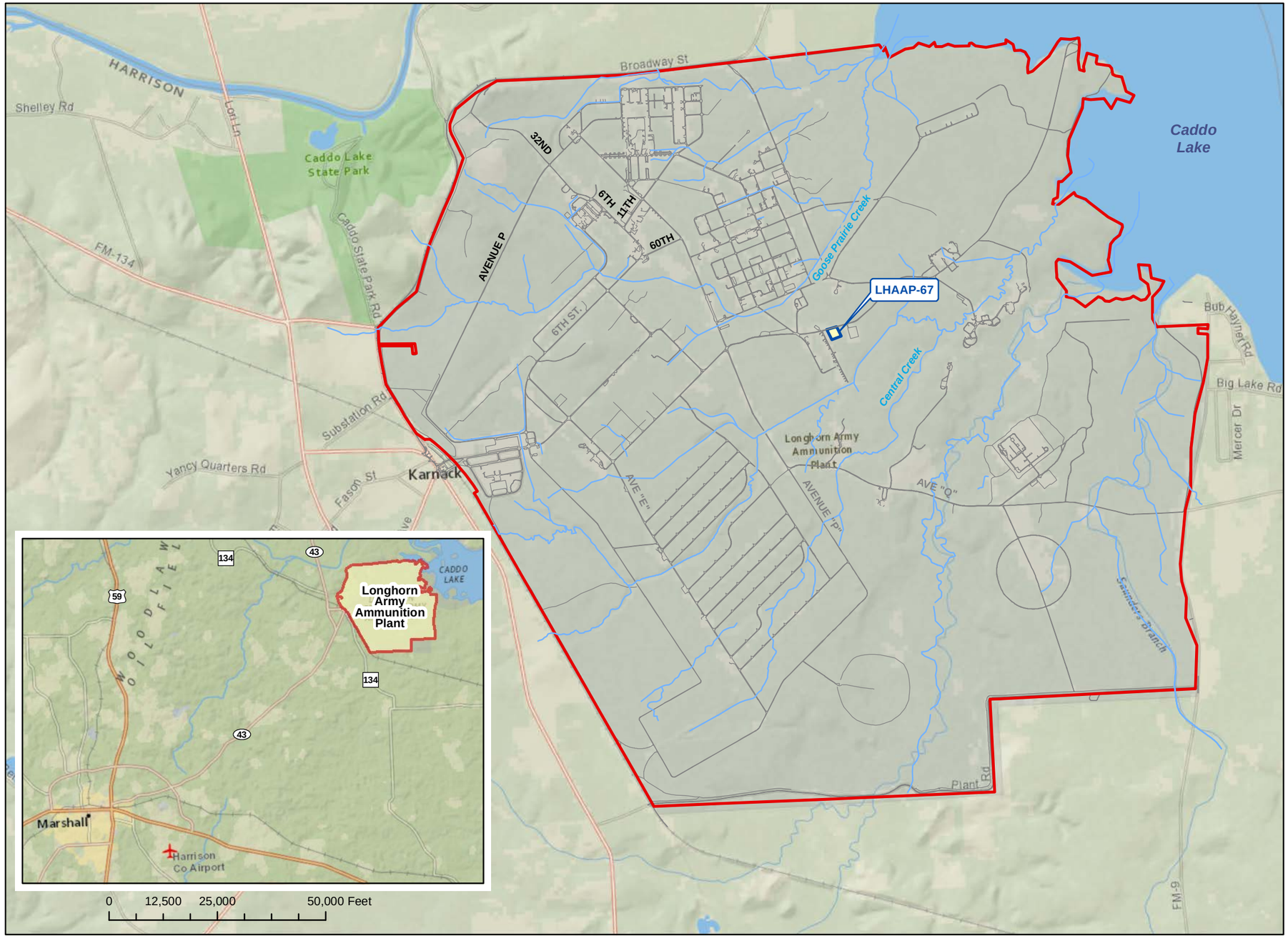

Legend

- Streams
- Roads
- LHAAP Boundary
- Site
- Lake/Pond

Source: August 2011 Final Remedial Design LHAAP-35B(37), Chemical Laboratory and LHAAP-67, Aboveground Storage Tank Farm, Longhorn Army Ammunition Plant, Karnack, Texas (Shaw, 2011)

AECOM

Figure 1-2
Site Location Map
Remedial Action Operation Report (Year 1)
LHAAP-67 Site
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 January 2017

L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR01\Figure 1-2 LHAAP67_Site Location Map.mxd

2 SITE ACTIVITIES AT LHAAP-67

2.1 Annual LUC Compliance Inspection, Monitoring, and Repairs

AECOM performed the annual LUC compliance inspection for LHAAP-67 site on July 10, 2014. The Annual LUC Compliance Certification Documentation Form is included in **Appendix A**. No non-compliance issues or concerns were noted during the annual inspection.

No damage to bollards, pads, or protective casings was observed and minimal encroachment of weeds or brush on the well pads was observed. Monitoring well identification tag replacement, as well as painting/re-labeling as needed, for wells outside the current monitoring network was completed in Fall 2013.

2.2 Groundwater Monitoring

For the 1st year RA(O), four quarterly groundwater sampling events of 15 monitoring wells were completed in May 2013 (only 13 wells were included in May 2013 because monitoring wells 67WW09A and 67WW14 were installed after May 2013; no impact on data evaluation to date due to the late installation of these two wells was observed because these wells serve as boundary (perimeter) wells and COCs in these wells have remained below cleanup levels as discussed below), September 2013, January 2014, and May 2014. The monitoring wells are depicted in **Figure 2-1** and listed in **Table 2-1**. Each of the 15 wells was sampled with no technical issues encountered.

Before collecting groundwater samples, the wells were gauged using a water level probe and the depth to water recorded to the neared 0.01 foot from the top of casing. Water samples were collected using the low-flow sampling technique as described in the Groundwater Sampling Procedures found in the Installation-Wide Work Plan (AECOM, 2014). The objective of using this method was to collect representative samples of the groundwater in the formation adjacent to the well screen, eliminating the mixing of stagnant water above and below the well screen. After water quality parameters stabilized and were within acceptable ranges, samples were collected at the same low flow rate.

2.2.1 Approved Modifications to the Groundwater Monitoring Program

During this first year of RAO, minor modifications were made to the groundwater monitoring program, with U.S. Environmental Protection Agency (USEPA) and TCEQ concurrence.

- 67WW04. While 67WW04 was utilized historically to bound the plume to the south, new wells 67WW09A and 67WW10 now serve that purpose, providing better refinement of the plume boundary. 67WW04 will continue to be gauged for water level during each sampling event, but will no longer be sampled for VOCs or evaluated for field parameters.
- 67WW06. Based on changes in designation of groundwater bearing zones at LHAAP-67 described in the Remedial Action Completion Report (AECOM, 2015), co-located shallow zone monitoring wells 67WW06 and 67WW07 are now considered duplicative. Of the well pair, 67WW07 with a shallower screened interval was retained for monitoring, while eliminating 67WW06 from further monitoring. Well 67WW06 will continue to be gauged for water level during each sampling event.

- Monitoring wells 67WW01 and 67WW08 were selected in the RAWP for collection of geochemical parameters. However, 67WW01 has been dry on two occasions and had insufficient water to collect MNA geochemical parameters on a third event. Therefore, MNA geochemical parameters were collected from 67WW11 in October 2013 instead. However, based on assessment of COC concentrations and location of monitoring wells with respect to the plume, it was determined that future sampling for MNA geochemical parameters will occur from monitoring well 67WW13 in addition to 67WW08.

2.2.2 Groundwater Elevations and Flow Direction

During the May 2013 event, monitoring well 67WW04 was noted to be dry. The presence of dry wells did not diminish the ability to construct a complete potentiometric contour map. Groundwater data was not collected from well 67WW05 and wells 67WW14, and 67WW09A did not exist during this event. Based on the gauging data during this event, the groundwater flow direction is interpreted to be northerly (**Figure 2-2**).

During the September 2013 event, monitoring wells 67WW01, 67WW03, and 67WW04, were dry. Additionally, the groundwater elevation measured at 67WW12, on the north side of the site, is higher than typical and appears to be an outlier; therefore, it was not used in contouring. Gauging data were used to construct a potentiometric surface map; however, the presence of dry wells and the elevation outlier, specifically on the north side of the site at 67WW03 and 67WW12, diminished the ability to construct a complete potentiometric contour map. Based on the available gauging data during this event, the interpreted flow directions may vary from east, to northeast, and north (**Figure 2-3).**

During the January 2014 event, monitoring wells 67WW01, 67WW03, and 67WW04, were noted to be dry. The presence of dry wells did not diminish the ability to construct a complete potentiometric contour map. Based on the gauging data during this event, the groundwater flow direction is interpreted to be northeasterly (**Figure 2-4**).

During the May 2014 event, monitoring wells 67WW03 and 67WW04 were noted to be dry. The presence of dry wells did not diminish the ability to construct a complete potentiometric contour map. Based on the gauging data during this event, the groundwater flow direction is interpreted to be northerly (**Figure 2-5**).

Groundwater elevations generally decreased by up to one foot across the site between May 2013 and September 2013 and subsequently (between September 2013 and May 2014) rose by greater than one foot across the site. However, well 67WW01, located within the VOC plume and designated as one of the wells for collection of MNA parameters, was dry in two of the four quarterly monitoring events. This is likely because this well is relatively shallower compared to other wells with the bottom of the screen interval at 24.68 feet below top of casing (ft TOC) and the static water level is below the screen bottom. As such, limited data is available from this well for use in the MNA evaluation or analysis of plume stability.

Based on data collected during the first year of RA(O), groundwater flow direction is generally noted to be in the north/northeasterly direction. The interpretation of groundwater flow direction has altered from what was presented previously in the Remedial Design document (Shaw, 2011) (see **Figure 2-6**). This is likely due to the installation of additional monitoring wells which provided a better definition of the groundwater gradient. The drier weather conditions the area

has experienced in the past four years could have also influenced the predominant gradient of groundwater at the site.

A photo log representing the condition of a few select wells is included in **Appendix B**.

2.2.3 Groundwater Analytical Results

Analytical results for the quarterly samples are presented on **Table 2-2**. **Figures 2-7 through 2-10** depict the VOC data in wells sampled in May 2013, September 2013, January 2014, and May 2014, respectively.

Over the course of the 1st year of RA(O), wells 67WW01, 67WW08, 67WW09, 67WW11, and 67WW13, contained COCs above the respective cleanup levels. The highest concentrations of COCs were detected in wells 67WW08 and 67WW11. The trends of COC concentrations in monitoring wells with COC concentrations greater than the maximum contaminant level (MCL) / Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (PCL) (USEPA, 2014) are depicted in graphs presented on **Figure 2-11**.

Historically, since December 1998 and prior to May 2013, concentrations of COCs in 67WW01 were greater than their MCLs as shown on **Table 2-3**. Other monitoring wells such as 67WW02 and 67WW03 had COCs greater than their MCLs (December 1998) but subsequent sampling events revealed COC concentrations below the laboratory detection limits.

An expanded discussion on the VOCs and their distribution including trends is included **Section 3.1**.

Groundwater monitoring well sampling forms were completed for each monitoring well sampled and are included in **Appendix C**. Laboratory analytical results are included in **Appendix D**.

2.3 Surface Water Sampling

As discussed in the LHAAP-67 site RACR, semi-annual sampling of surface water from one location in Central Creek was planned (AECOM, 2015). The Central Creek surface water sampling location was dry during the baseline groundwater monitoring event and no surface water sample was collected.

Subsequently, with the addition of multiple new shallow zone monitoring wells, the potentiometric surface of groundwater was more clearly defined. Consequently, the shallow zone groundwater flow direction (north/northeast) interpreted from quarterly well gauging data indicates that Central Creek located south of the LHAAP-67 site is up gradient and, therefore, is not an appropriate surface water body to monitor for potential impacts from LHAAP-67. As shown in **Figure 1-2**, Goose Prairie Creek is located downstream to the north but at a distance of more than 1,500 feet from the LHAAP-67 site. The plume is delineated within the LUC boundary and there is no other surface water body downgradient or in close proximity of the LHAAP-67 site to collect an appropriate surface water sample. Therefore, no further surface water monitoring is planned for the LHAAP-67 site.

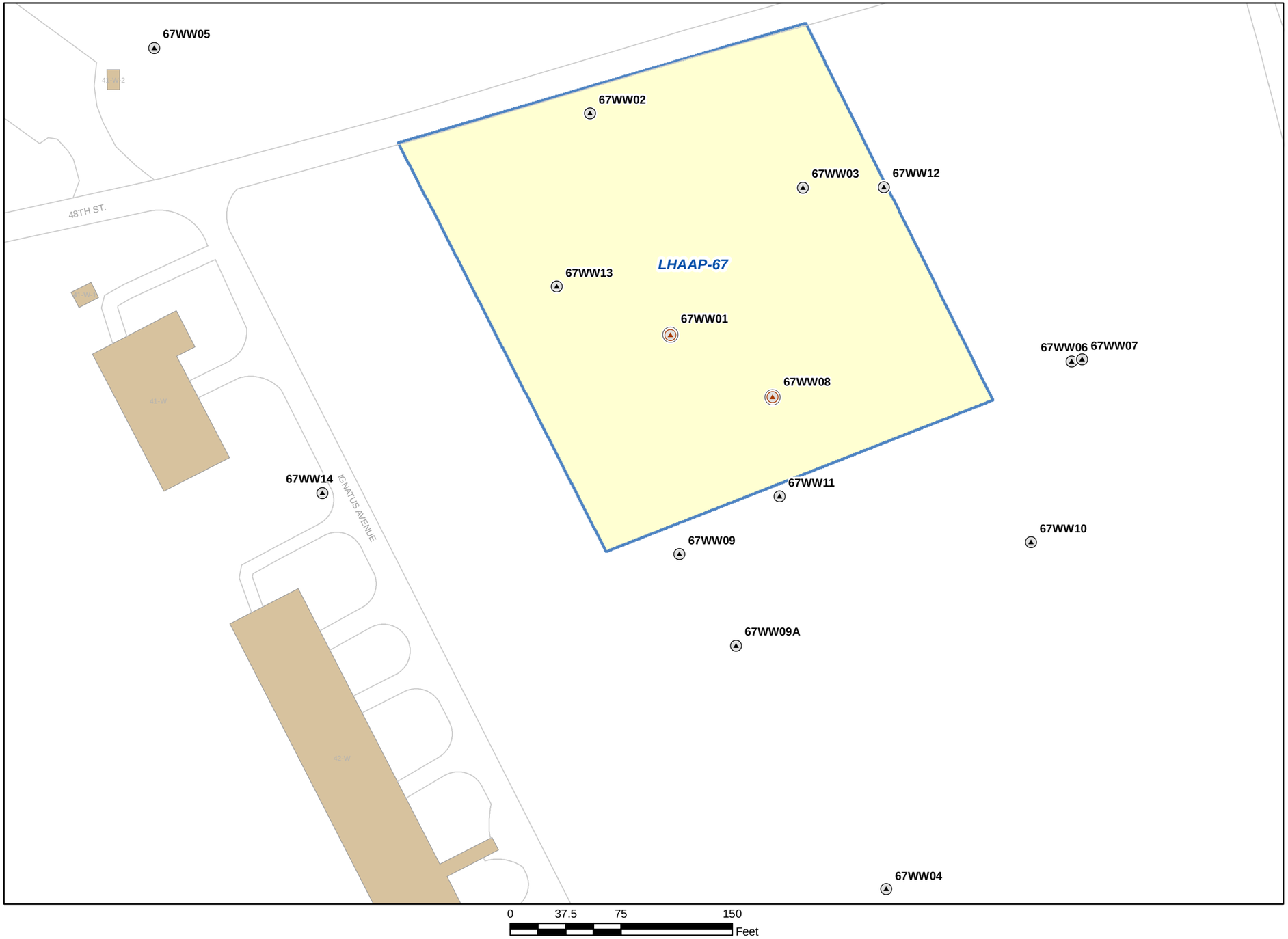

Legend

- MNA Parameter Analysis Well
- Shallow Monitoring Well
- Streams
- Roads
- Former Buildings or Concrete Slab
- LHAAP-67 Site Boundary

AECOM

Figure 2-1
Groundwater Monitoring Well Locations
Remedial Action Operation Report (Year 1)
LHAAP-67
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR01\Figure 2-1 LHAAP67_Groundwater Monitoring Well Locations.mxd

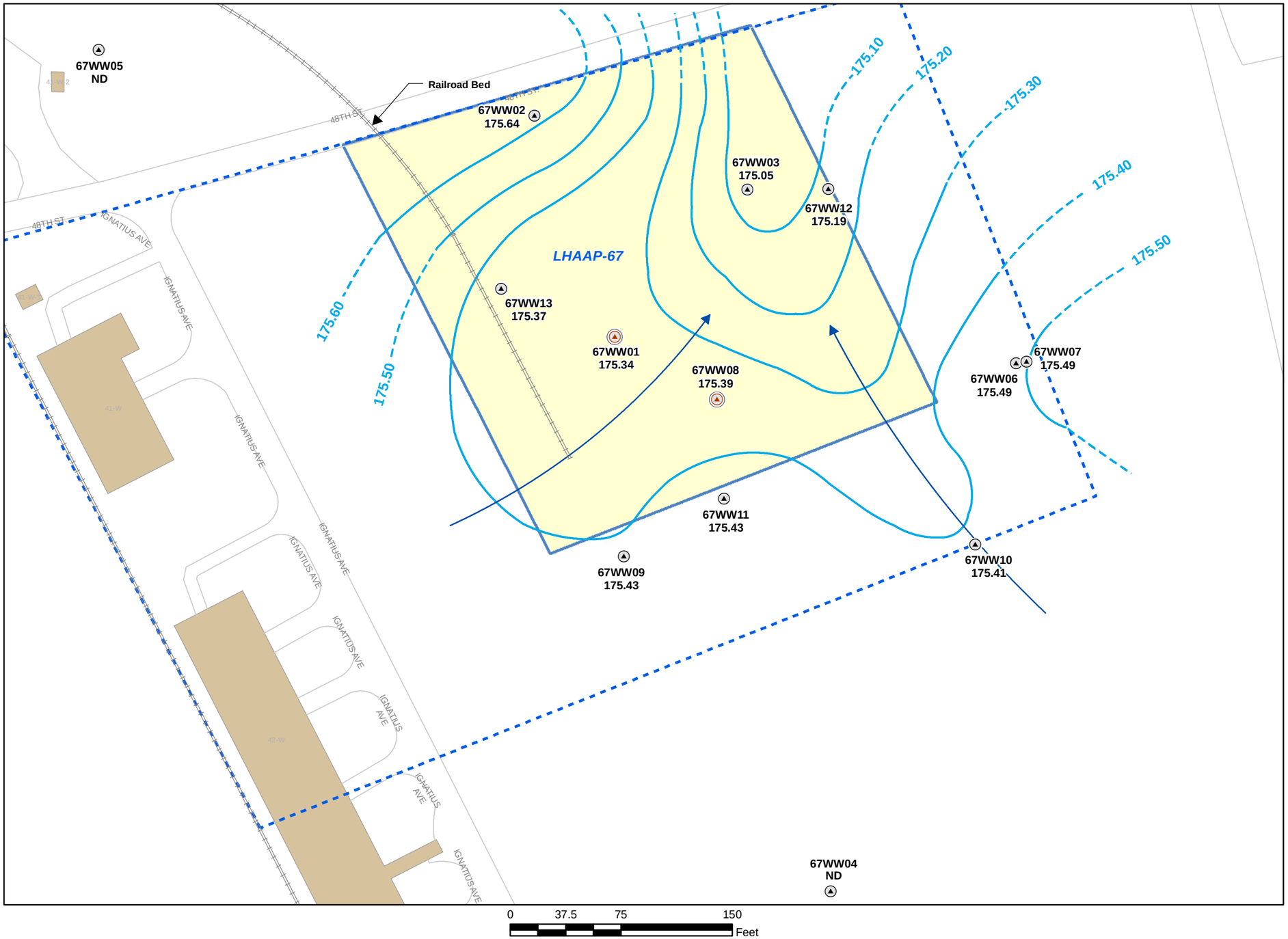

Legend

- MNA Parameter Analysis Well
- Shallow Monitoring Well Location
- Groundwater Flow Direction
- Groundwater Elevation Contour (Dashed Where Inferred) Contour Interval = 0.1 feet MSL
- Roads
- Land Use Control Boundary
- Buildings
- LHAAP-67 Site Boundary

Notes:
1. Groundwater elevations are presented in feet above mean sea level (MSL).
2. ND - No Data. Depth to groundwater not measured.

AECOM

Figure 2-2
May 2013
Shallow Zone Potentiometric Map
Remedial Action Operation Report (Year 1)
LHAAP-67 Site
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR01\Figure 2-2 LHAAP67_Shallow Zone Potentiometric Map_May 2013.mxd

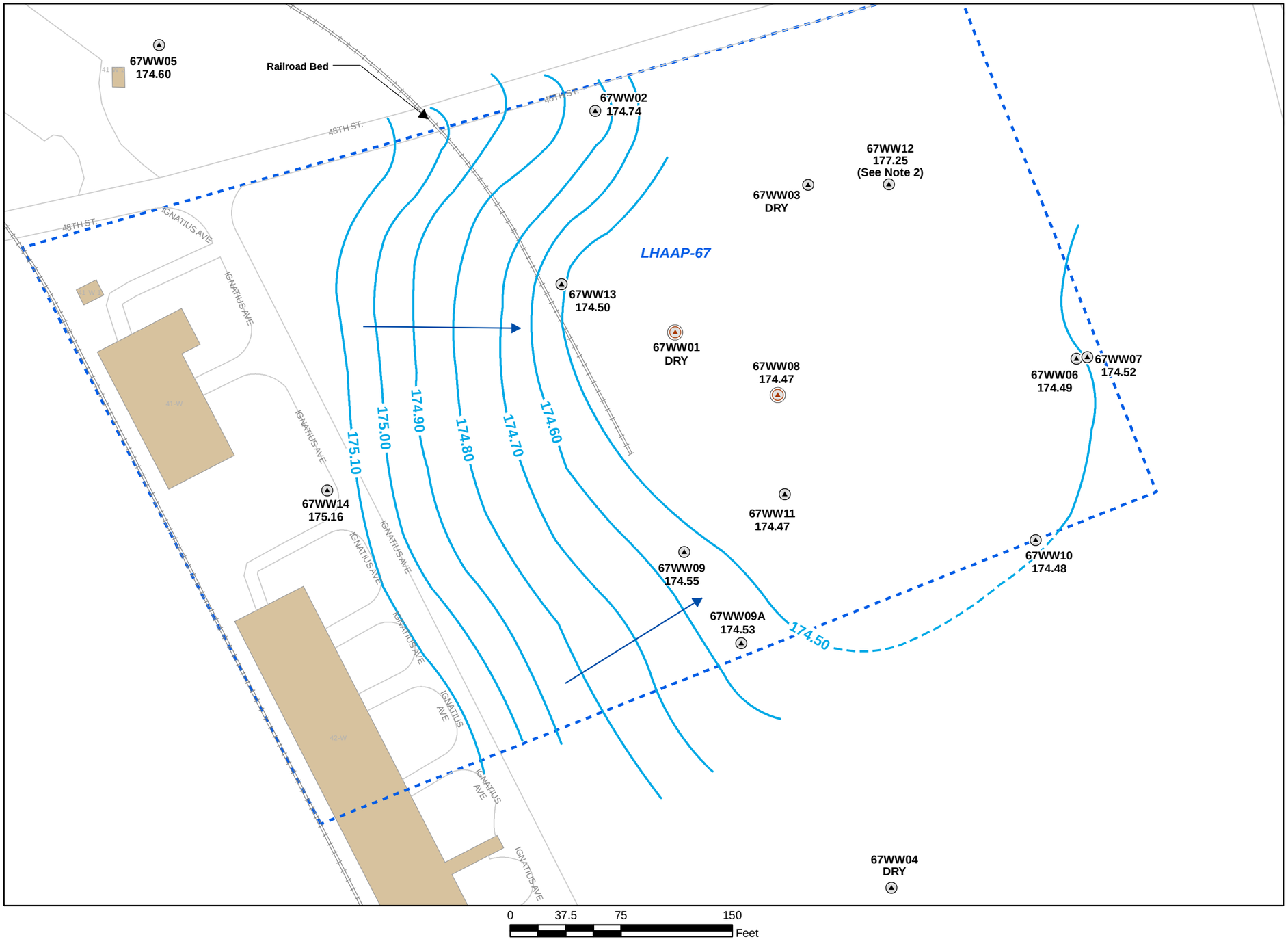

Legend

- MNA Parameter Analysis Well
- Shallow Monitoring Well Location
- Groundwater Flow Direction
- Groundwater Elevation Contour (Dashed Where Inferred) Contour Interval = 0.1 feet MSL
- Roads
- Land Use Control Boundary
- Buildings
- LHAAP-67 Site Boundary

Notes:
1. Groundwater elevations are presented in feet above mean sea level (MSL).
2. Groundwater elevation data for well 67WW12 appears to be an outlier and was not used in contouring.

AECOM

Figure 2-3
Shallow Zone Potentiometric Map - September 2013
Remedial Action Operation Report (Year 1)
LHAAP-67 Site
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR01\Figure 2-3 LHAAP67_Shallow Zone Potentiometric Map_Sept 2013.mxd

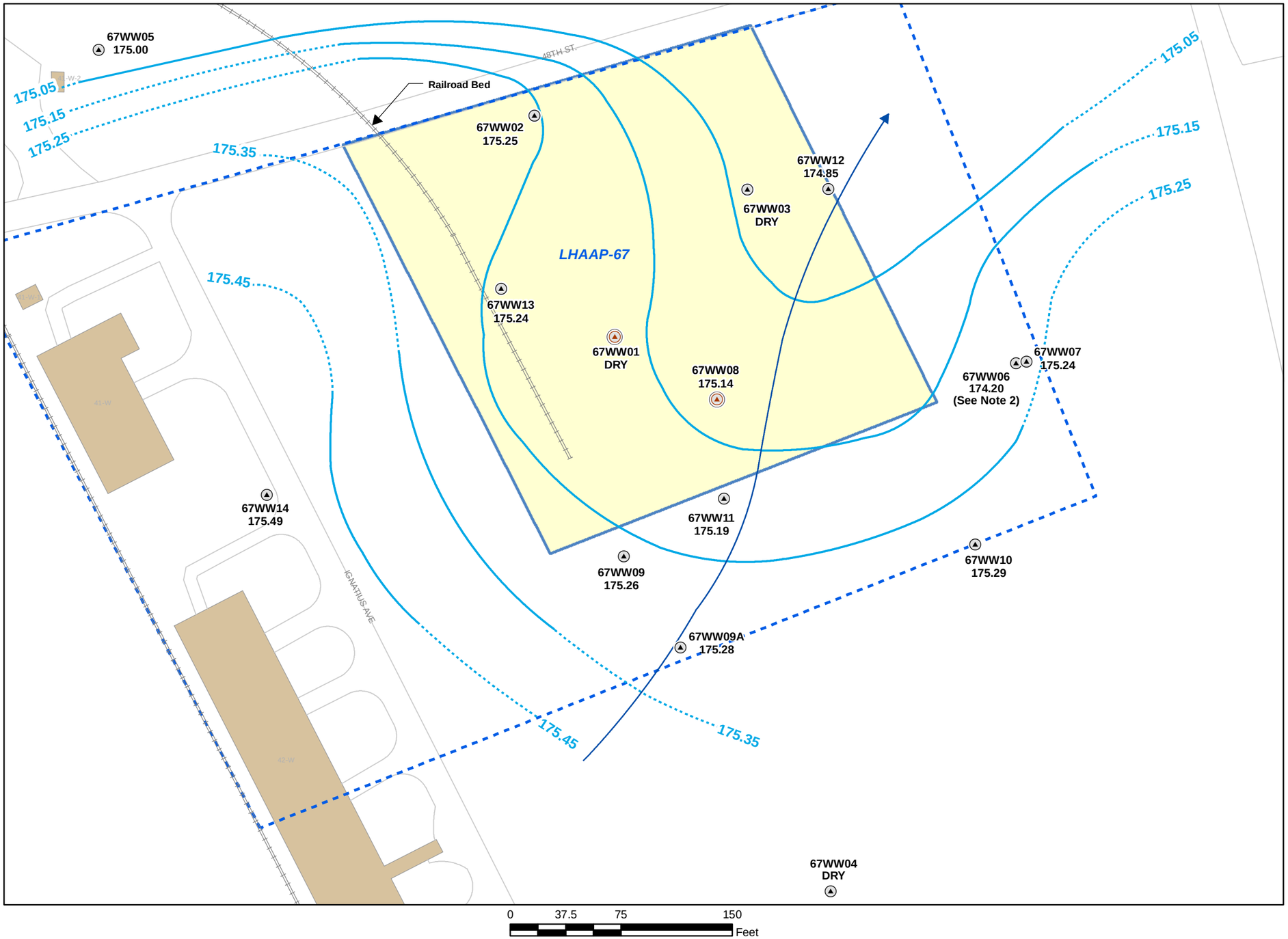

Legend

- MNA Parameter Analysis Well
- Shallow Monitoring Well Location
- Groundwater Flow Direction
- Groundwater Elevation Contour (Dashed Where Inferred) Contour Interval = 0.1 feet MSL
- Roads
- Land Use Control Boundary
- Buildings
- LHAAP-67 Site Boundary

Notes:
1. Groundwater elevations are presented in feet above mean sea level (MSL).
2. Groundwater elevation data for well 67WW06 appears to be an outlier and was not used in contouring.

AECOM

Figure 2-4
Shallow Zone Potentiometric Map - January 2014
Remedial Action Operation Report (Year 1)
LHAAP-67 Site
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR01\Figure 2-4 LHAAP67_Shallow Zone Potentiometric Map_Jan 2014.mxd

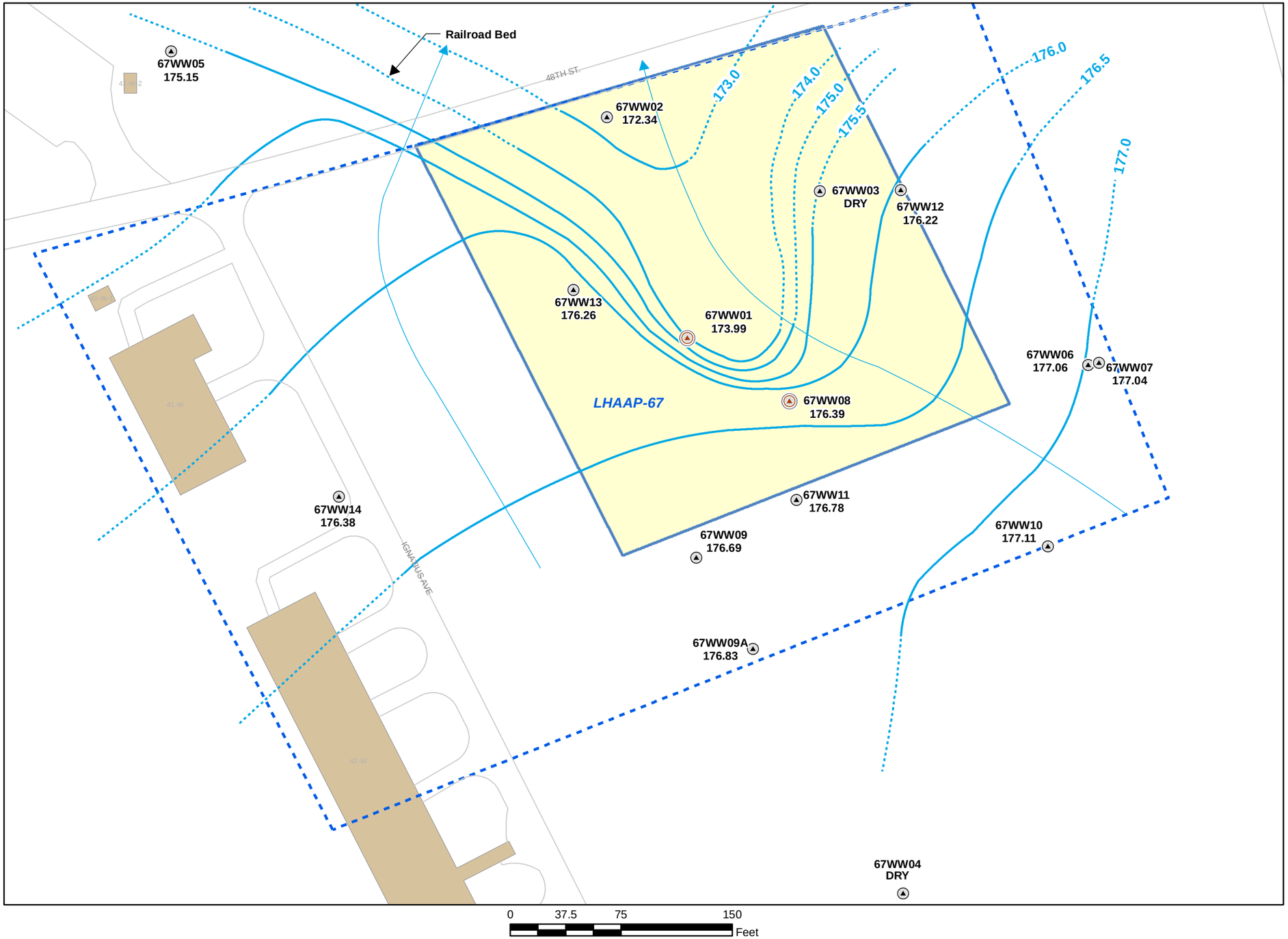

Legend

- MNA Parameter Analysis Well
- Shallow Monitoring Well Location
- Groundwater Flow Direction
- Groundwater Elevation Contour (Dashed Where Inferred) Contour Interval = 0.1 feet MSL
- Roads
- Land Use Control Boundary
- Buildings
- LHAAP-67 Site Boundary

Note:
Groundwater elevations are presented in feet above mean sea level (MSL).

AECOM

Figure 2-5
Shallow Zone Potentiometric Map - May 2014
Remedial Action Operation Report (Year 1)
LHAAP-67 Site
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR01\Figure 2-5 LHAAP67 Shallow Zone Potentiometric Map_May 2014.mxd

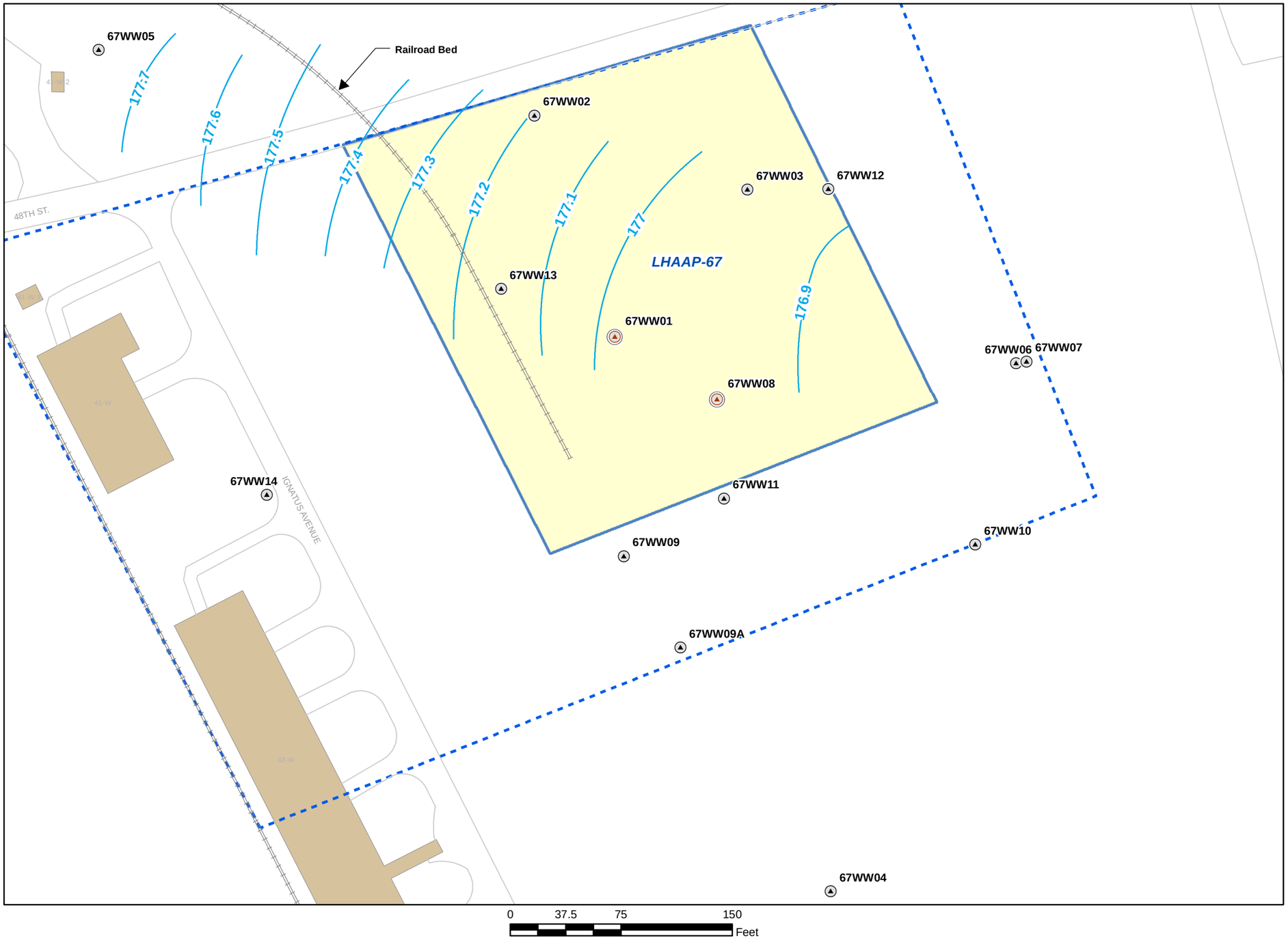

Legend

- MNA Parameter Analysis Well
- Shallow Monitoring Well
- 176.9 Groundwater Elevation Contour - December 2007 (ft msl)
- Roads
- Land Use Control Boundary
- Buildings
- LHAAP-67 Site Boundary

Source:
August 2011 Final Remedial Design LHAAP-35B(37), Chemical Laboratory and LHAAP-67, Aboveground Storage Tank Farm, Longhorn Army Ammunition Plant, Karnack, Texas (Shaw, 2011)

AECOM

Figure 2-6
Historical Shallow Zone Groundwater Gradient
Remedial Action Operation Report (Year 1)
LHAAP-67 Site

60256135

Longhorn Army Ammunition Plant
Karnack, Texas

January 2017

L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR01\Figure 2-6 LHAAP67_Shallow Zone Potentiometric Map_2011.mxd

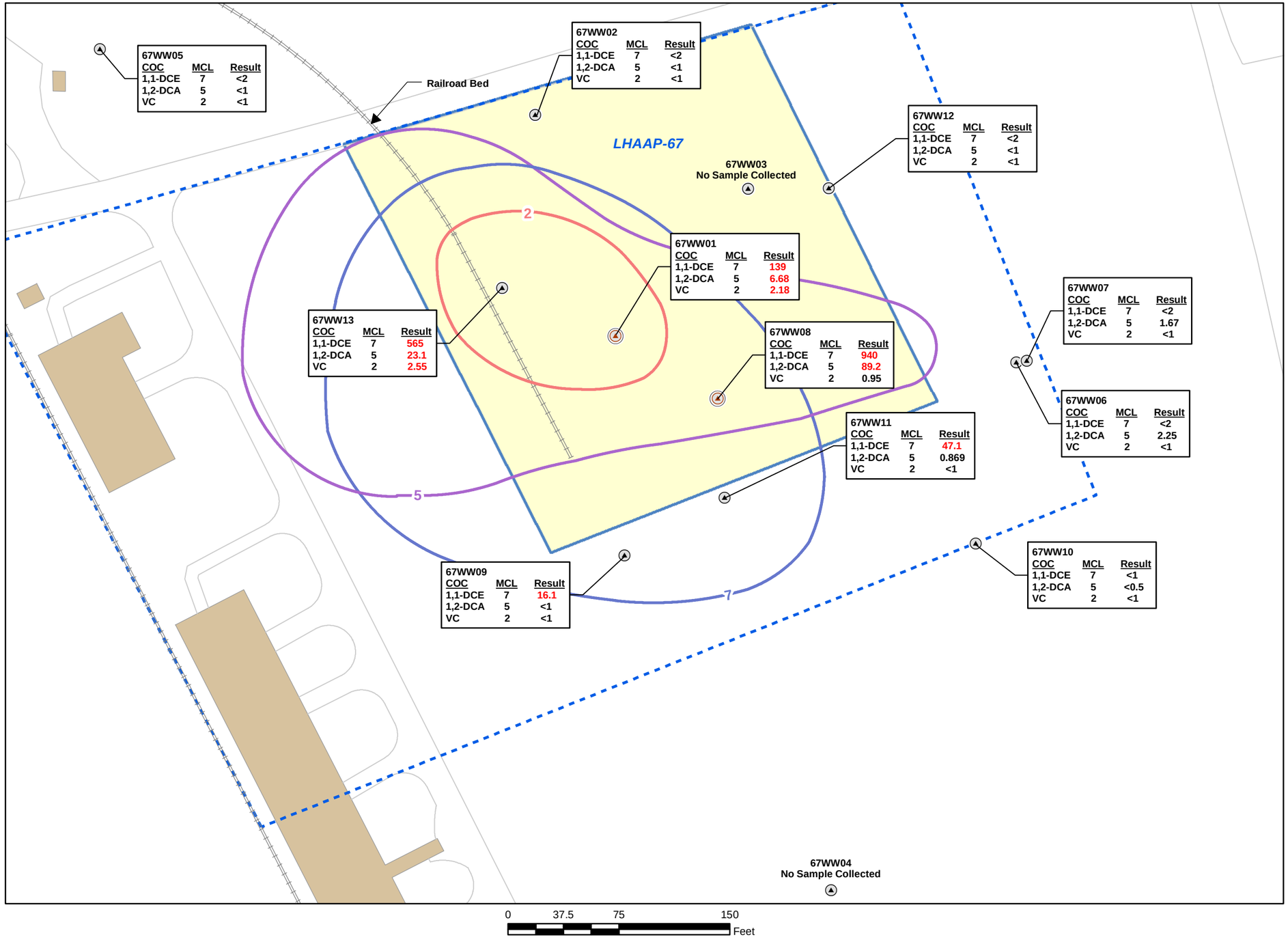

Legend

- 940 — Concentration exceeds MCL
- MNA Parameter Analysis Well
- Shallow Monitoring Well Location
- 1,1-DCE Concentration Contour (7µg/L)
- 1,2-DCA Concentration Contour (5 µg/L)
- VC Concentration Contour (2 µg/L)
- Roads
- Land Use Control Boundary
- Buildings
- LHAAP-67 Site Boundary

Notes:
1. Sampling results reported in micrograms per liter (µg/L).
2. 1,2-DCA - 1,2-dichloroethane
3. VC - Vinyl Chloride
4. 1,1-DCE - 1,1-dichloroethene
5. J - Estimated value
6. COC - Constituent of Concern
7. MCL - Maximum Contaminant Level.

AECOM

Figure 2-7
May 2013
VOCs in Shallow Zone Groundwater
Remedial Action Operation Report (Year 1)
LHAAP-67 Site
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR01\Figure 2-7 LHAAP67_VOCs in Shallow Groundwater_May2013.mxd

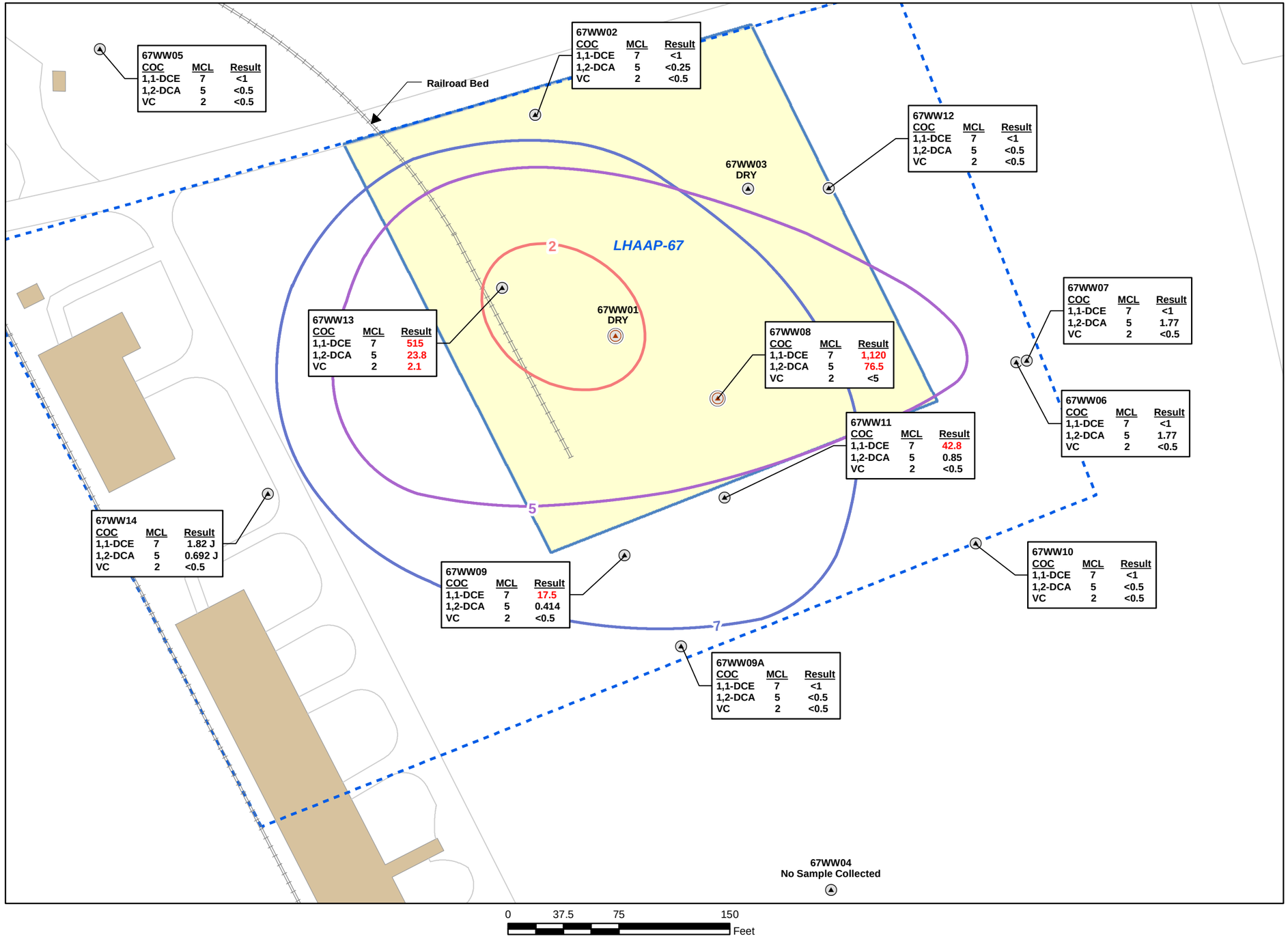

Legend

- 940 Concentration exceeds MCL
- MNA Parameter Analysis Well
- Shallow Monitoring Well Location
- 1,1-DCE Concentration Contour (7µg/L)
- 1,2-DCA Concentration Contour (5 µg/L)
- VC Concentration Contour (2 µg/L)
- Roads
- Land Use Control Boundary
- Buildings
- LHAAP-67 Site Boundary

Notes:
1. Sampling results reported in micrograms per liter (µg/L).
2. 1,2-DCA - 1,2-dichloroethane
3. VC - Vinyl Chloride
4. 1,1-DCE - 1,1-dichloroethene
5. J - Estimated value
6. COC - Constituent of Concern
7. MCL - Maximum Contaminant Level.

AECOM

Figure 2-8
September 2013
VOCs in Shallow Zone Groundwater
Remedial Action Operation Report (Year 1)
LHAAP-67 Site

60256135

Longhorn Army Ammunition Plant
Karnack, Texas

January 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR01\Figure 2-8 LHAAP67_VOCs in Shallow Groundwater_Sept2013.mxd

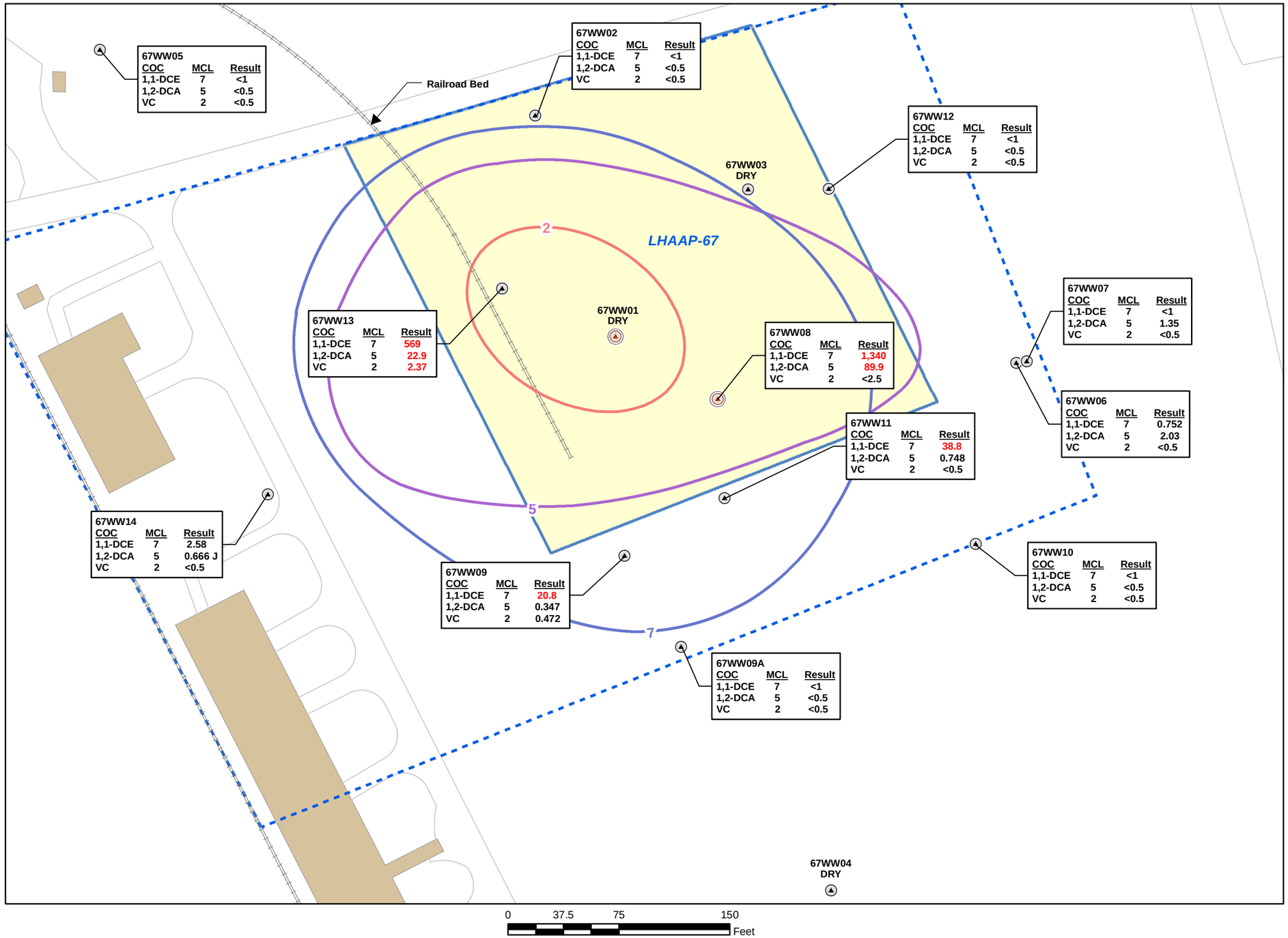

Legend

- 940 — Concentration exceeds MCL
- MNA Parameter Analysis Well
- Shallow Monitoring Well Location
- 1,1-DCE Concentration Contour (7µg/L)
- 1,2-DCA Concentration Contour (5 µg/L)
- VC Concentration Contour (2 µg/L)
- Roads
- Land Use Control Boundary
- Buildings
- LHAAP-67 Site Boundary

Notes:
1. Sampling results reported in micrograms per liter (µg/L).
2. 1,2-DCA - 1,2-dichloroethane
3. VC - Vinyl Chloride
4. 1,1-DCE - 1,1-dichloroethene
5. J - Estimated value
6. COC - Constituent of Concern
7. MCL - Maximum Contaminant Level.

AECOM

Figure 2-9
January 2014
VOCs in Shallow Zone Groundwater
Remedial Action Operation Report (Year 1)
LHAAP-67 Site
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 January 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR01\Figure 2-9 LHAAP67_VOCs in Shallow Groundwater_Jan 2014.mxd

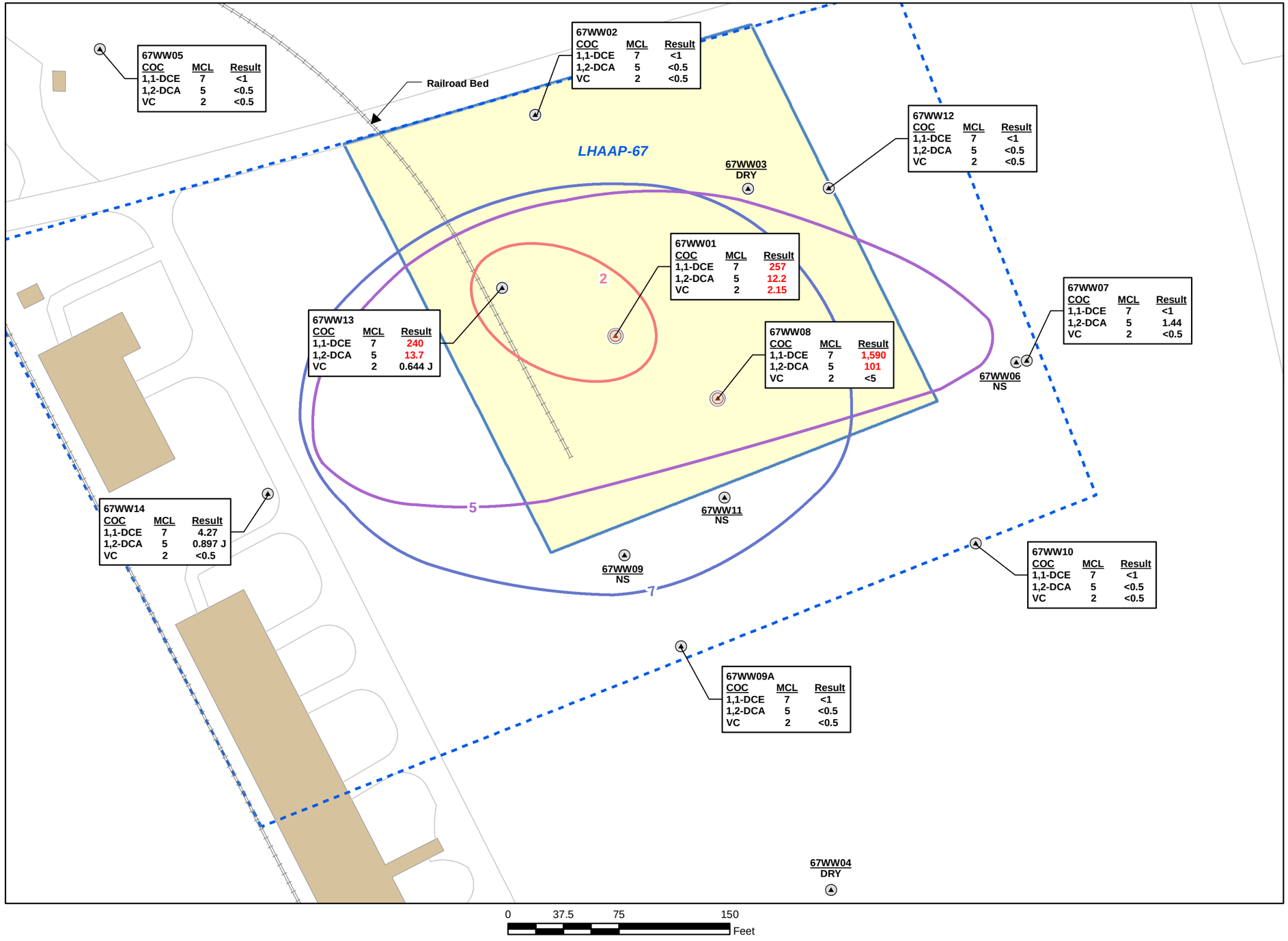

Legend

940	Concentration exceeds MCL
	MNA Parameter Analysis Well
	Shallow Monitoring Well Location
	1,1-DCE Concentration Contour (7µg/L)
	1,2-DCA Concentration Contour (5 µg/L)
	VC Concentration Contour (2 µg/L)
	Roads
	Land Use Control Boundary
	Buildings
	LHAAP-67 Site Boundary

Notes:
1. Sampling results reported in micrograms per liter (µg/L).
2. 1,2-DCA - 1,2-dichloroethane
3. VC - Vinyl Chloride
4. 1,1-DCE - 1,1-dichloroethene
5. J - Estimated value
6. COC - Constituent of Concern
7. MCL - Maximum Contaminant Level.
8. NS- Not Sampled

AECOM

Figure 2-10
May 2014
VOCs in Shallow Zone Groundwater
Remedial Action Operation Report (Year 1)
LHAAP-67 Site

60256135

Longhorn Army Ammunition Plant
Karnack, Texas

January 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR01\Figure 2-10 LHAAP67_VOCs in Shallow Groundwater_May 2014.mxd

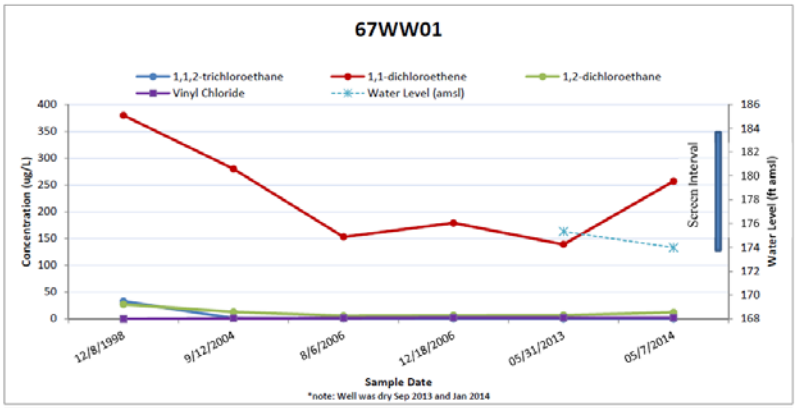

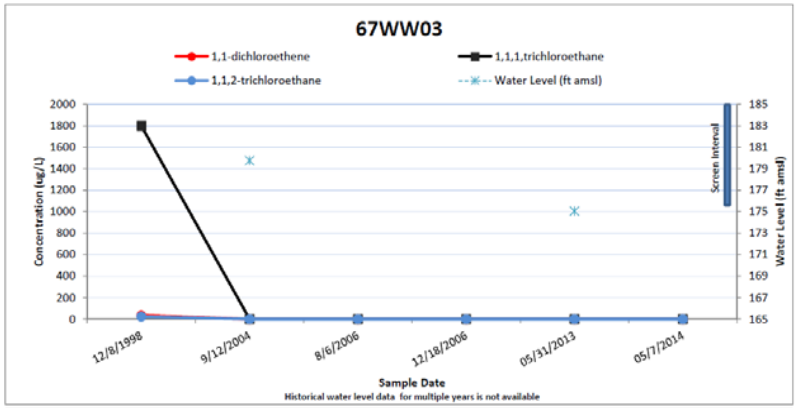

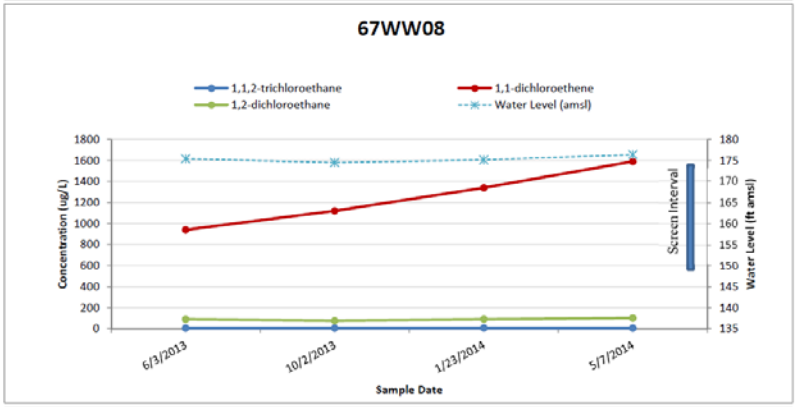

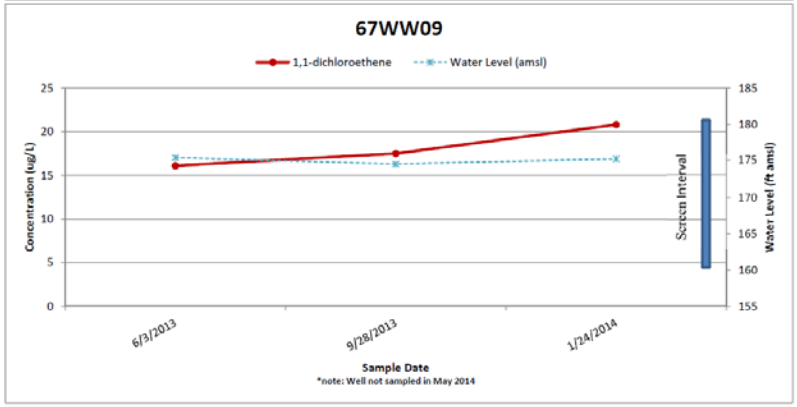

MCLs:

1,1,2-TCA = 5 ug/L

1,1,1-TCA = 200 ug/L

1,1-DCE = 7 ug/L

1,2-DCA = 5 ug/L

VC = 2 ug/L

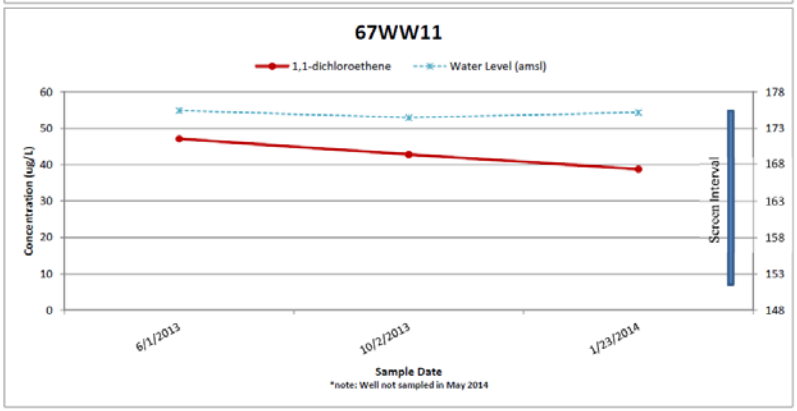

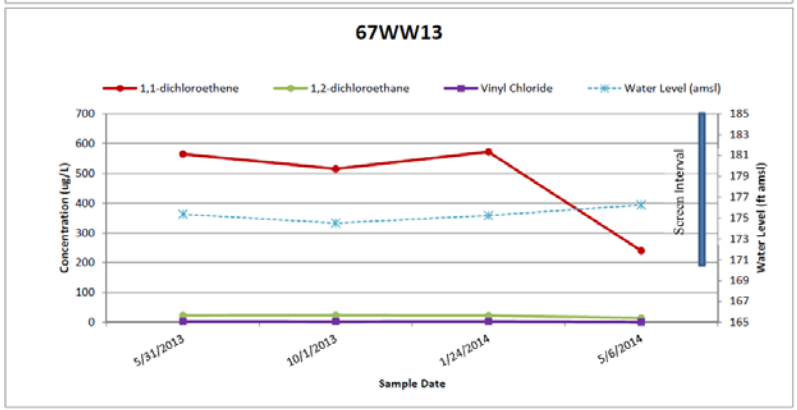

AECOM

Figure 2-11
COC Concentration and Groundwater Elevation Evaluation
Remedial Action Operation Report (Year 1) – LHAAP-67

60256135

Longhorn Army Ammunition Plant
Karnack, Texas

January 2017

Table 2-1: Groundwater Elevation Data - LHAAP-67

Well ID	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from TOC)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)
					Top	Bottom	Top	Bottom	
67WW01[a]	05/31/13	200.89	198.21	25.55	17.25	26.98	183.64	173.91	175.34
	09/27/13	200.89	198.21	Dry	17.25	26.98	183.64	173.91	Dry
	01/23/14	200.89	198.21	Dry	17.25	26.98	183.64	173.91	Dry
	05/07/14	200.89	198.21	26.9	17.25	26.98	183.64	173.91	173.99
67WW02	05/31/13	200.02	196.61	24.38	18.05	27.78	181.97	172.24	175.64
	09/27/13	200.02	196.61	25.28	18.05	27.78	181.97	172.24	174.74
	01/23/14	200.02	196.61	24.77	18.05	27.78	181.97	172.24	175.25
	05/06/14	200.02	196.61	27.68	18.05	27.78	181.97	172.24	172.34
67WW03	05/31/13	200.44	198.12	25.39	15.27	24.9	185.17	175.54	175.05
	09/27/13	200.44	198.12	Dry	15.27	24.9	185.17	175.54	Dry
	01/23/14	200.44	198.12	Dry	15.27	24.9	185.17	175.54	Dry
	05/06/14	200.44	198.12	Dry	15.27	24.9	185.17	175.54	Dry
67WW04[a]	09/27/13	203.76	200.5	Dry	14.26	24.26	189.5	179.5	Dry
	01/23/14	203.76	200.5	Dry	14.26	24.26	189.5	179.5	Dry
	05/06/14	203.76	200.5	Dry	14.26	24.26	189.5	179.5	Dry
67WW05[a]	09/28/13	201	197.48	26.4	19.52	29.52	181.48	171.48	174.6
	01/23/14	201	197.48	26	19.52	29.52	181.48	171.48	175
	05/06/14	201	197.48	25.85	19.52	29.52	181.48	171.48	175.15
67WW06[a]	05/31/13	200.81	196.95	25.32	41.86	51.86	158.95	148.95	175.49
	09/28/13	200.81	196.95	26.32	41.86	51.86	158.95	148.95	174.49
	01/24/14	200.81	196.95	26.61	41.86	51.86	158.95	148.95	174.2
	05/06/14	200.81	196.95	23.75	41.86	51.86	158.95	148.95	177.06
67WW07[a]	05/31/13	200.84	197.04	25.35	17.8	27.8	183.04	173.04	175.49
	09/27/13	200.84	197.04	26.32	17.8	27.8	183.04	173.04	174.52
	01/23/14	200.84	197.04	25.6	17.8	27.8	183.04	173.04	175.24
	05/06/14	200.84	197.04	23.8	17.8	27.8	183.04	173.04	177.04
67WW08[b]	06/03/13	200.04	197.6	24.65	26.04	50.54	174	149.5	175.39
	10/02/13	200.04	197.6	25.57	26.04	50.54	174	149.5	174.47
	01/23/14	200.04	197.6	24.9	26.04	50.54	174	149.5	175.14
	05/07/14	200.04	197.6	23.65	26.04	50.54	174	149.5	176.39
67WW09[b]	06/01/13	198.21	195.72	22.78	16.99	36.49	181.22	161.72	175.43
	09/28/13	198.21	195.72	23.66	16.99	36.49	181.22	161.72	174.55
	01/24/14	198.21	195.72	22.95	16.99	36.49	181.22	161.72	175.26
	05/06/14	198.21	195.72	21.52	16.99	36.49	181.22	161.72	176.69

Table 2-1: Groundwater Elevation Data - LHAAP-67

Well ID	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from TOC)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)
					Top	Bottom	Top	Bottom	
67WW09A[b]	09/27/13	202.93	200.4	28.4	23.33	38.03	179.6	164.9	174.53
	01/23/14	202.93	200.4	27.65	23.33	38.03	179.6	164.9	175.28
	05/06/14	202.93	200.4	26.1	23.33	38.03	179.6	164.9	176.83
67WW10[b]	06/01/13	201.51	198.8	26.1	22.71	52.21	178.8	149.3	175.41
	09/27/13	201.51	198.8	27.03	22.71	52.21	178.8	149.3	174.48
	01/24/14	201.51	198.8	26.22	22.71	52.21	178.8	149.3	175.29
	05/06/14	201.51	198.8	24.4	22.71	52.21	178.8	149.3	177.11
67WW11[b]	06/01/13	199.64	197.21	24.21	22.93	47.43	176.71	152.21	175.43
	10/02/13	199.64	197.21	25.17	22.93	47.43	176.71	152.21	174.47
	01/23/14	199.64	197.21	24.45	22.93	47.43	176.71	152.21	175.19
	05/06/14	199.64	197.21	22.86	22.93	47.43	176.71	152.21	176.78
67WW12[b]	06/01/13	201.65	199.07	26.46	26.58	36.08	175.07	165.57	175.19
	10/01/13	201.65	199.07	24.4	26.58	36.08	175.07	165.57	177.25
	01/24/14	201.65	199.07	26.8	26.58	36.08	175.07	165.57	174.85
	05/06/14	201.65	199.07	25.43	26.58	36.08	175.07	165.57	176.22
67WW13	05/31/13	197.92	195.85	22.55	12.57	27.07	185.35	170.85	175.37
	10/01/13	197.92	195.85	23.42	12.57	27.07	185.35	170.85	174.5
	01/24/14	197.92	195.85	22.68	12.57	27.07	185.35	170.85	175.24
	05/06/14	197.92	195.85	21.66	12.57	27.07	185.35	170.85	176.26
67WW14	10/01/13	196.96	194.52	21.8	14.44	29.44	182.52	167.52	175.16
	01/24/14	196.96	194.52	21.47	14.44	29.44	182.52	167.52	175.49
	05/07/14	196.96	194.52	20.58	14.44	29.44	182.52	167.52	176.38

Elevations are reported as feet above mean sea level (ft MSL)

[a] Screen information calculated from Data Gap Investigation Report (Shaw 2007).

[b] Screen information calculated from well construction detail forms

Dry=Insufficient or no water in well.

TOC=Top of Casing

Table 2-2: Groundwater Results for Year 1 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW01-053113 5/31/2013	67WW01-050714 5/7/2014	67WW02-053113 5/31/2013	67WW02-092713 9/27/2013	67WW02-012314 1/23/2014	67WW02-050614 5/6/2014	67WW05-053113 5/31/2013	67WW05-092813 9/28/2013	67WW05-012314 1/23/2014	67WW05-050614 5/6/2014	67WW06-053113 5/31/2013	67WW06-053113-FD 5/31/2013	67WW06-092813 9/28/2013	67WW06-012414 1/24/2014
Water Quality Field Parameters																
Temperature	°C		28	19.77	27.07	25.23	16.2	21.01	26.87	21.75	15.83	22.15	24.28	NA	20.2	15.42
pH	pH Units		5.84	5.52	6.57	6.69	6.78	5.62	6.94	6.37	6.57	5.56	5.27	NA	5.45	5.58
Conductivity	mS/cm		3.41	3.57	3.02	2.94	3.04	3	2.66	2.67	2.75	2.62	6.37	NA	6.45	7.09
Dissolved Oxygen	mg/L		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	1.57	NA	0.82	0.8
Turbidity	NTU		69.6	36.6	51.4	21	49.7	106	2.5	16.2	9.7	8.1	13.4	NA	5.5	42.9
Oxidation Reduction Potential	mV		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	22	NA	13	67
Sulfide (376.1)																
sulfide	mg/L		NA	<1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Inorganic and Organic Carbon (415.1)																
total inorganic carbon (TIC)	mg/L		NA	23.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
total organic carbon (TOC)	mg/L		NA	5.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)																
1,1,1,2-tetrachloroethane	ug/L	35	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
1,1,1-trichloroethane	ug/L	200	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
1,1,2,2-tetrachloroethane	ug/L	4.6	<1 U	<0.4 U	<1 UJ	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U
1,1,2-trichloroethane	ug/L	5	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
1,1-dichloroethane	ug/L	4900	6.37	11	0.507 J	0.508 J	0.406 J	0.44 J	<1 U	<0.25 U	<0.25 U	<0.25 U	0.212 J	0.193 J	<0.25 U	0.234 J
1,1-dichloroethene	ug/L	7	139	257	<2 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	0.752 J
1,1-dichloropropene	ug/L	9.1	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
1,2,3-trichlorobenzene	ug/L	73	<1 U	<0.3 U	<1 U	<0.3 U	<0.3 U	<0.3 U	<1 U	<0.3 U	<0.3 U	<0.3 U	<1 U	<1 U	<0.3 U	<0.3 U
1,2,3-trichloropropane	ug/L	0.03	<2 U	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U
1,2,4-trichlorobenzene	ug/L	70	<1 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U
1,2,4-trimethylbenzene	ug/L	1200	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
1,2-dibromo-3-chloropropane	ug/L	0.2	<5 U	<2 U	<5 U	<2 U	<2 U	<2 U	<5 U	<2 U	<2 U	<2 U	<5 U	<5 U	<2 U	<2 UJ
1,2-dibromoethane	ug/L	0.05	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
1,2-dichlorobenzene	ug/L	600	<1 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U
1,2-dichloroethane	ug/L	5	6.68	12.2	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	2.25	2.2	1.77	2.03
1,2-dichloropropane	ug/L	5	<1 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U
1,3,5-trimethylbenzene	ug/L	1200	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
1,3-dichlorobenzene	ug/L	730	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
1,3-dichloropropane	ug/L	9.1	<1 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U
1,4-dichlorobenzene	ug/L	75	<1 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U
2,2-dichloropropane	ug/L	13	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 UJ	<1 U	<0.5 U	<0.5 U	<0.5 UJ	<1 U	<1 U	<0.5 U	<0.5 U
2-butanone	ug/L	15000	<10 U	<5 U	<10 U	<5 U	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U	<10 U	<10 U	<5 U	<5 U
2-chlorotoluene	ug/L	490	<1 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U
2-hexanone	ug/L	120	<10 U	<5 U	<10 U	<5 U	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U	<10 U	<10 U	<5 U	<5 U
4-chlorotoluene	ug/L	490	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
4-methyl-2-pentanone	ug/L	2000	<10 U	<5 U	<10 U	<5 U	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U	<10 U	<10 U	<5 U	<5 U
acetone	ug/L	22000	<10 U	<5 U	<10 U	<5 U	<5 U	<5 U	<10 UJ	<5 U	<5 U	<5 U	<10 UJ	<10 UJ	<5 U	<5 U
benzene	ug/L	5	<1 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U
bromobenzene	ug/L	200	<1 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U
bromochloromethane	ug/L	980	<1 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U
bromodichloromethane	ug/L	15	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
bromoform	ug/L	120	<2 U	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U
bromomethane	ug/L	34	<2 U	<1 U	<2 UJ	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 UJ	<1 U
carbon disulfide	ug/L	2400	<2 U	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U
carbon tetrachloride	ug/L	5	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
chlorobenzene	ug/L	100	<1 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U
chloroethane	ug/L	98000	<2 U	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U
chloroform	ug/L	240	<1 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U
chloromethane	ug/L	70	<2 U	<1 U	<2 UJ	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U
cis-1,2-dichloroethene	ug/L	70	1.12	1.29	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
cis-1,3-dichloropropene	ug/L	1.7	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
dibromochloromethane	ug/L	11	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
dibromomethane	ug/L	120	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U

Table 2-2: Groundwater Results for Year 1 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW01-053113 5/31/2013	67WW01-050714 5/7/2014	67WW02-053113 5/31/2013	67WW02-092713 9/27/2013	67WW02-012314 1/23/2014	67WW02-050614 5/6/2014	67WW05-053113 5/31/2013	67WW05-092813 9/28/2013	67WW05-012314 1/23/2014	67WW05-050614 5/6/2014	67WW06-053113 5/31/2013	67WW06-053113-FD 5/31/2013	67WW06-092813 9/28/2013	67WW06-012414 1/24/2014
dichlorodifluoromethane	ug/L	4900	<1 U	<0.5 U	<1 UJ	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
ethylbenzene	ug/L	700	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
hexachlorobutadiene	ug/L	12	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
isopropylbenzene	ug/L	2400	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
m,p-xylene	ug/L	10000	<2 U	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U
methylene chloride	ug/L	5	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	0.918 J	0.846 J	0.966 J	<0.5 U
naphthalene	ug/L	490	<1 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U
n-butylbenzene	ug/L	1200	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
n-propylbenzene	ug/L	980	<1 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U
o-xylene	ug/L	10000	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
p-isopropyltoluene	ug/L	2400	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
sec-butylbenzene	ug/L	980	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
styrene	ug/L	100	<1 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U
tert-butylbenzene	ug/L	980	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
tetrachloroethene	ug/L	5	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
toluene	ug/L	1000	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
trans-1,2-dichloroethene	ug/L	100	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
trans-1,3-dichloropropene	ug/L	9.1	<2 U	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U
trichloroethene	ug/L	5	2.96	3	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
trichlorofluoromethane	ug/L	7300	<1 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
vinyl chloride	ug/L	2	2.18	2.15	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
Anions (9056)																
chloride	mg/L		NA	981	NA	NA	NA	NA	NA	NA	NA	697	NA	NA	NA	NA
nitrate	mg/L	10	NA	<1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
nitrite	mg/L	1	NA	<1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sulfate	mg/L		NA	167	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dechlorinating Bacteria (CENSUS)																
dehalococcoides ethenogenes	CEQ/mL		NA	4.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tceA reductase	CEQ/mL		NA	<0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAV1 vinyl chloride reductase	CEQ/mL		NA	<0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
vinyl chloride reductase	CEQ/mL		NA	<0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases (RSK-175)																
ethane	ug/L		NA	<2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ethene	ug/L		NA	<2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
methane	ug/L		NA	33.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron (SM3500FE)																
ferrous iron	mg/L		NA	5.69	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

"FD" in Sample ID indicates a field duplicate sample.

CEQ/mL - cells equivalent per milliliter

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

mg/L - milligram per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

µg/L - microgram per liter

Table 2-2: Groundwater Results for Year 1 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW07-053113 5/31/2013	67WW07-092713 9/27/2013	67WW07-012314 1/23/2014	67WW07-050614 5/6/2014	67WW08-060313 6/3/2013	67WW08-100213 10/2/2013	67WW08-012314 1/23/2014	67WW08-050714 5/7/2014	67WW09-060113 6/3/2013	67WW09-092813 9/28/2013	67WW09-012414 1/24/2014	67WW09A-092713 9/27/2013	67WW09A-092713-FD 9/27/2013	67WW09A-012314 1/23/2014
Water Quality Field Parameters																
Temperature	°C		25.72	25.11	14.63	26.29	29.25	21.82	17.22	19.33	27.95	22.22	16.27	28.67	NA	15.63
pH	pH Units		5.52	5.78	5.79	5.45	6.62	6.47	6.8	5.55	6.64	6.31	6.24	5.62	NA	6.73
Conductivity	mS/cm		3.99	4.13	4.14	3.71	4.85	5.11	5.08	5.43	3.31	3.47	3.39	2.45	NA	2.49
Dissolved Oxygen	mg/L		NR	NR	NR	NR	0	0.74	0.38	0.45	0.52	0.83	0.86	1.19	NA	0.59
Turbidity	NTU		13.9	9.6	54.4	30.2	7.6	1.5	0.6	9.7	4.5	1.7	0.9	21.5	NA	32.1
Oxidation Reduction Potential	mV		NR	NR	NR	NR	74	-165	-90	-32	189	157	136	182	NA	18
Sulfide (376.1)																
sulfide	mg/L		NA	NA	NA	NA	NA	<1 U	<1 U	<1 U	NA	NA	NA	NA	NA	NA
Total Inorganic and Organic Carbon (415.1)																
total inorganic carbon (TIC)	mg/L		NA	NA	NA	NA	10.3	28.9	NA	80.6	NA	NA	NA	NA	NA	NA
total organic carbon (TOC)	mg/L		NA	NA	NA	NA	3.61	6.32	9.95	10.6	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)																
1,1,1,2-tetrachloroethane	ug/L	35	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-trichloroethane	ug/L	200	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-tetrachloroethane	ug/L	4.6	<1 UJ	<0.4 U	<0.4 U	<0.4 U	<1 U	<4 U	<2 U	<4 U	<1 UJ	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-trichloroethane	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	4.25	5.08 J	6.7	5.01 J	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-dichloroethane	ug/L	4900	<1 U	<0.25 U	<0.25 U	<0.25 U	53.2	46.5	54.4	57.3	3.6	3.97	4.59	<0.25 U	<0.25 U	<0.25 U
1,1-dichloroethene	ug/L	7	<2 U	<1 U	<1 U	<1 U	940	1120	1340	1590	16.1	17.5	20.8	<1 U	<1 U	<1 U
1,1-dichloropropene	ug/L	9.1	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-trichlorobenzene	ug/L	73	<1 U	<0.3 U	<0.3 U	<0.3 U	<1 U	<3 U	<1.5 U	<3 U	<1 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-trichloropropane	ug/L	0.03	<2 U	<1 U	<1 U	<1 U	<2 U	<10 U	<5 U	<10 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-trichlorobenzene	ug/L	70	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<4 U	<2 U	<4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-trimethylbenzene	ug/L	1200	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-dibromo-3-chloropropane	ug/L	0.2	<5 UJ	<2 U	<2 U	<2 U	<5 UJ	<20 U	<10 U	<20 U	<5 UJ	<2 U	<2 UJ	<2 U	<2 U	<2 UJ
1,2-dibromoethane	ug/L	0.05	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-dichlorobenzene	ug/L	600	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<2.5 U	<1.25 U	<2.5 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-dichloroethane	ug/L	5	1.67	1.77	1.35	1.44	89.2	76.5	89.9	101	<1 U	0.414 J	0.347 J	<0.5 U	<0.5 U	<0.5 U
1,2-dichloropropane	ug/L	5	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<4 U	<2 U	<4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-trimethylbenzene	ug/L	1200	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-dichlorobenzene	ug/L	730	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-dichloropropane	ug/L	9.1	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<4 U	<2 U	<4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-dichlorobenzene	ug/L	75	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<2.5 U	<1.25 U	<2.5 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-dichloropropane	ug/L	13	<1 U	<0.5 U	<0.5 U	<0.5 UJ	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-butanone	ug/L	15000	<10 U	<5 U	<5 U	<5 U	<10 U	<50 U	<25 U	<50 U	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U
2-chlorotoluene	ug/L	490	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<2.5 U	<1.25 U	<2.5 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-hexanone	ug/L	120	<10 U	<5 U	<5 U	<5 U	<10 U	<50 U	<25 U	<50 U	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U
4-chlorotoluene	ug/L	490	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-methyl-2-pentanone	ug/L	2000	<10 U	<5 U	<5 U	<5 U	<10 U	<50 U	<25 U	<50 U	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U
acetone	ug/L	22000	<10 U	<5 U	<5 U	<5 U	<10 U	<50 U	<25 U	<50 U	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U
benzene	ug/L	5	<1 U	<0.25 U	<0.25 U	<0.25 U	0.194 J	<2.5 U	<1.25 U	<2.5 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
bromobenzene	ug/L	200	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<2.5 U	<1.25 U	<2.5 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
bromochloromethane	ug/L	980	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<4 U	<2 U	<4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
bromodichloromethane	ug/L	15	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
bromoform	ug/L	120	<2 U	<1 U	<1 U	<1 U	<2 U	<10 U	<5 U	<10 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
bromomethane	ug/L	34	<2 UJ	<1 U	<1 U	<1 U	<2 UJ	<10 U	<5 U	<10 U	<2 UJ	<1 U	<1 U	<1 U	<1 U	<1 U
carbon disulfide	ug/L	2400	<2 U	<1 U	<1 U	<1 U	<2 U	<10 U	<5 U	<10 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
carbon tetrachloride	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
chlorobenzene	ug/L	100	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<2.5 U	<1.25 U	<2.5 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
chloroethane	ug/L	98000	<2 U	<1 U	<1 U	<1 U	<2 U	<10 U	<5 U	<10 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
chloroform	ug/L	240	<1 U	<0.25 U	<0.25 U	<0.25 U	3.56	<2.5 UJ	4.11 J	4.88 J	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
chloromethane	ug/L	70	<2 UJ	<1 U	<1 U	<1 U	<2 UJ	<10 U	<5 U	<10 U	<2 UJ	<1 U	<1 U	<1 U	<1 U	<1 U
cis-1,2-dichloroethene	ug/L	70	<1 U	<0.5 U	<0.5 U	<0.5 U	2.18	<5 U	2.73 J	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
cis-1,3-dichloropropene	ug/L	1.7	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
dibromochloromethane	ug/L	11	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
dibromomethane	ug/L	120	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Table 2-2: Groundwater Results for Year 1 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW07-053113 5/31/2013	67WW07-092713 9/27/2013	67WW07-012314 1/23/2014	67WW07-050614 5/6/2014	67WW08-060313 6/3/2013	67WW08-100213 10/2/2013	67WW08-012314 1/23/2014	67WW08-050714 5/7/2014	67WW09-060113 6/3/2013	67WW09-092813 9/28/2013	67WW09-012414 1/24/2014	67WW09A-092713 9/27/2013	67WW09A-092713-FD 9/27/2013	67WW09A-012314 1/23/2014
dichlorodifluoromethane	ug/L	4900	<1 UJ	<0.5 U	<0.5 U	<0.5 U	<1 UJ	<5 U	<2.5 U	<5 U	<1 UJ	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ethylbenzene	ug/L	700	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
hexachlorobutadiene	ug/L	12	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
isopropylbenzene	ug/L	2400	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
m,p-xylene	ug/L	10000	<2 U	<1 U	<1 U	<1 U	<2 U	<10 U	<5 U	<10 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
methylene chloride	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
naphthalene	ug/L	490	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<4 U	<2 U	<4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
n-butylbenzene	ug/L	1200	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
n-propylbenzene	ug/L	980	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<2.5 U	<1.25 U	<2.5 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
o-xylene	ug/L	10000	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
p-isopropyltoluene	ug/L	2400	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
sec-butylbenzene	ug/L	980	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
styrene	ug/L	100	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<2.5 U	<1.25 U	<2.5 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
tert-butylbenzene	ug/L	980	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
tetrachloroethene	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
toluene	ug/L	1000	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
trans-1,2-dichloroethene	ug/L	100	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
trans-1,3-dichloropropene	ug/L	9.1	<2 U	<1 U	<1 U	<1 U	<2 U	<10 U	<5 U	<10 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
trichloroethene	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	2.86	<5 U	3.12 J	4.41 J	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
trichlorofluoromethane	ug/L	7300	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
vinyl chloride	ug/L	2	<1 U	<0.5 U	<0.5 U	<0.5 U	0.951 J	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	0.472 J	<0.5 U	<0.5 U	<0.5 U
Anions (9056)																
chloride	mg/L		NA	NA	NA	NA	1440 J	1360	1490	1380	NA	NA	NA	NA	NA	NA
nitrate	mg/L	10	NA	NA	NA	NA	<20 U	<2 U	<2 U	<2 U	NA	NA	NA	NA	NA	NA
nitrite	mg/L	1	NA	NA	NA	NA	<20 U	<2 U	<2 U	<2 U	NA	NA	NA	NA	NA	NA
sulfate	mg/L		NA	NA	NA	NA	300	297	303	365	NA	NA	NA	NA	NA	NA
Dechlorinating Bacteria (CENSUS)																
dehalococcoides ethenogenes	CEQ/mL		NA	NA	NA	NA	<1 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	NA	NA	NA	NA
tceA reductase	CEQ/mL		NA	NA	NA	NA	NA	<0.5 U	<0.5 U	0.6	NA	NA	NA	NA	NA	NA
BAV1 vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	NA	NA	NA	NA	NA
vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	NA	NA	NA	NA	NA
Dissolved Gases (RSK-175)																
ethane	ug/L		NA	NA	NA	NA	<5 U	<2 U	<2 U	<2 U	NA	NA	NA	NA	NA	NA
ethene	ug/L		NA	NA	NA	NA	1.29 J	<2 U	<2 U	<2 U	NA	NA	NA	NA	NA	NA
methane	ug/L		NA	NA	NA	NA	10.6	<2 U	7.79	6.97	NA	NA	NA	NA	NA	NA
Ferrous Iron (SM3500FE)																
ferrous iron	mg/L		NA	NA	NA	NA	0.0795	0.161	0.344	0.282	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

"FD" in Sample ID indicates a field duplicate sample.

CEQ/mL - cells equivalent per milliliter

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

mg/L - milligram per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

µg/L - microgram per liter

Table 2-2: Groundwater Results for Year 1 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW09A-050614 5/6/2014	67WW10-060113 6/1/2013	67WW10-092713 9/27/2013	67WW10-012414 1/24/2014	67WW10-050614 5/6/2014	67WW11-060113 6/1/2013	67WW11-060113-FD 6/1/2013	67WW11-100213 10/2/2013	67WW11 FD-012314 1/23/2014	67WW11-012314 1/23/2014	67WW12-060113 6/1/2013	67WW12-100113 10/1/2013	67WW12-012414 1/24/2014	67WW12-050614 5/6/2014
Water Quality Field Parameters																
Temperature	°C		19.01	24.32	25.2	15.1	20.2	23.9	NA	22.65	NA	17.25	27.34	22.99	15.69	20.51
pH	pH Units		5.55	6.27	6.02	6.07	5.29	6.78	NA	6.23	NA	5.84	6.71	6.31	6.22	5.39
Conductivity	mS/cm		2.53	5.08	6.23	6.45	6.02	4.27	NA	4.74	NA	4.77	4.4	4.54	4.12	4.56
Dissolved Oxygen	mg/L		0.46	0.11	0.6	0.54	0.44	1.17	NA	0.63	NA	0.48	0.57	0.66	0.62	0.8
Turbidity	NTU		20.7	4.9	1.6	0.4	2.6	9.6	NA	4	NA	1.9	2.7	0.3	0	5.2
Oxidation Reduction Potential	mV		20	190	-9	29	55	168	NA	64	NA	129	175	-119	91	43
Sulfide (376.1)																
sulfide	mg/L		NA	NA	NA	NA	NA	NA	NA	<1 U	NA	NA	NA	NA	NA	NA
Total Inorganic and Organic Carbon (415.1)																
total inorganic carbon (TIC)	mg/L		NA	NA	NA	NA	NA	NA	NA	17.6	NA	NA	NA	NA	NA	NA
total organic carbon (TOC)	mg/L		NA	NA	NA	NA	NA	NA	NA	5.7	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)																
1,1,1,2-tetrachloroethane	ug/L	35	<0.5 U	<1 UJ	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-trichloroethane	ug/L	200	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-tetrachloroethane	ug/L	4.6	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 UJ	<1 UJ	<0.4 U	<0.4 U	<0.4 U	<1 UJ	<0.4 U	<0.4 U	<0.4 U
1,1,2-trichloroethane	ug/L	5	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
1,1-dichloroethane	ug/L	4900	<0.25 U	0.39 J	0.362 J	0.319 J	<0.25 U	10.6	10.6	10.6	10.7	9.83	<1 U	<0.25 U	<0.25 U	<0.25 U
1,1-dichloroethene	ug/L	7	<1 U	<2 U	<1 U	<1 U	<1 U	47.1	46.8	42.8	43	38.8	<2 U	<1 U	<1 U	<1 U
1,1-dichloropropene	ug/L	9.1	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-trichlorobenzene	ug/L	73	<0.3 U	<1 U	<0.3 U	<0.3 U	<0.3 U	<1 U	<1 U	<0.3 U	<0.3 U	<0.3 U	<1 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-trichloropropane	ug/L	0.03	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U
1,2,4-trichlorobenzene	ug/L	70	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-trimethylbenzene	ug/L	1200	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
1,2-dibromo-3-chloropropane	ug/L	0.2	<2 U	<5 UJ	<2 U	<2 UJ	<2 U	<5 UJ	<5 UJ	<2 U	<2 U	<2 U	<5 UJ	<2 UJ	<2 UJ	<2 U
1,2-dibromoethane	ug/L	0.05	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
1,2-dichlorobenzene	ug/L	600	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U
1,2-dichloroethane	ug/L	5	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	0.869 J	0.85 J	0.799 J	0.823 J	0.748 J	<1 U	<0.5 U	<0.5 U	<0.5 U
1,2-dichloropropane	ug/L	5	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-trimethylbenzene	ug/L	1200	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
1,3-dichlorobenzene	ug/L	730	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
1,3-dichloropropane	ug/L	9.1	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U
1,4-dichlorobenzene	ug/L	75	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U
2,2-dichloropropane	ug/L	13	<0.5 UJ	<1 U	<0.5 U	<0.5 U	<0.5 UJ	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
2-butanone	ug/L	15000	<5 U	<10 U	<5 U	<5 U	<5 U	<10 U	<10 U	<5 U	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U
2-chlorotoluene	ug/L	490	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U
2-hexanone	ug/L	120	<5 U	<10 U	<5 U	<5 U	<5 U	<10 U	<10 U	<5 U	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U
4-chlorotoluene	ug/L	490	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
4-methyl-2-pentanone	ug/L	2000	<5 U	<10 U	<5 U	<5 U	<5 U	<10 U	<10 U	<5 U	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U
acetone	ug/L	22000	<5 U	<10 U	<5 U	<5 U	<5 U	<10 U	<10 U	33.6	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U
benzene	ug/L	5	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U
bromobenzene	ug/L	200	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U
bromochloromethane	ug/L	980	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U
bromodichloromethane	ug/L	15	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
bromoform	ug/L	120	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U
bromomethane	ug/L	34	<1 U	<2 UJ	<1 U	<1 U	<1 U	<2 UJ	<2 UJ	<1 U	<1 U	<1 U	<2 UJ	<1 U	<1 U	<1 U
carbon disulfide	ug/L	2400	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U
carbon tetrachloride	ug/L	5	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
chlorobenzene	ug/L	100	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U
chloroethane	ug/L	98000	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U
chloroform	ug/L	240	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U
chloromethane	ug/L	70	<1 U	<2 UJ	<1 U	<1 U	<1 U	<2 UJ	<2 U	0.536 J	<1 U	<1 U	<2 UJ	<1 U	<1 U	<1 U
cis-1,2-dichloroethene	ug/L	70	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
cis-1,3-dichloropropene	ug/L	1.7	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
dibromochloromethane	ug/L	11	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
dibromomethane	ug/L	120	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U

Table 2-2: Groundwater Results for Year 1 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW09A-050614 5/6/2014	67WW10-060113 6/1/2013	67WW10-092713 9/27/2013	67WW10-012414 1/24/2014	67WW10-050614 5/6/2014	67WW11-060113 6/1/2013	67WW11-060113-FD 6/1/2013	67WW11-100213 10/2/2013	67WW11 FD-012314 1/23/2014	67WW11-012314 1/23/2014	67WW12-060113 6/1/2013	67WW12-100113 10/1/2013	67WW12-012414 1/24/2014	67WW12-050614 5/6/2014
dichlorodifluoromethane	ug/L	4900	<0.5 U	<1 UJ	<0.5 U	<0.5 U	<0.5 U	<1 UJ	<1 UJ	<0.5 U	<0.5 U	<0.5 U	<1 UJ	<0.5 U	<0.5 U	<0.5 U
ethylbenzene	ug/L	700	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
hexachlorobutadiene	ug/L	12	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
isopropylbenzene	ug/L	2400	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
m,p-xylene	ug/L	10000	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U
methylene chloride	ug/L	5	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
naphthalene	ug/L	490	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U
n-butylbenzene	ug/L	1200	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
n-propylbenzene	ug/L	980	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U
o-xylene	ug/L	10000	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
p-isopropyltoluene	ug/L	2400	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	0.299 J	<0.5 U	<0.5 U	<0.5 U
sec-butylbenzene	ug/L	980	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
styrene	ug/L	100	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U
tert-butylbenzene	ug/L	980	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
tetrachloroethene	ug/L	5	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
toluene	ug/L	1000	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
trans-1,2-dichloroethene	ug/L	100	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
trans-1,3-dichloropropene	ug/L	9.1	<1 U	<2 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U
trichloroethene	ug/L	5	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
trichlorofluoromethane	ug/L	7300	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
vinyl chloride	ug/L	2	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	0.296 J	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
Anions (9056)																
chloride	mg/L		NA	NA	NA	NA	NA	NA	NA	1200	NA	NA	NA	NA	NA	NA
nitrate	mg/L	10	NA	NA	NA	NA	NA	NA	NA	<2 U	NA	NA	NA	NA	NA	NA
nitrite	mg/L	1	NA	NA	NA	NA	NA	NA	NA	<2 U	NA	NA	NA	NA	NA	NA
sulfate	mg/L		NA	NA	NA	NA	NA	NA	NA	375	NA	NA	NA	NA	NA	NA
Dechlorinating Bacteria (CENSUS)																
dehalococcoides ethenogenes	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	<0.5 U	NA	NA	NA	NA	NA	NA
tceA reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	<0.5 U	NA	NA	NA	NA	NA	NA
BAV1 vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	<0.5 U	NA	NA	NA	NA	NA	NA
vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	<0.5 U	NA	NA	NA	NA	NA	NA
Dissolved Gases (RSK-175)																
ethane	ug/L		NA	NA	NA	NA	NA	NA	NA	<2 U	NA	NA	NA	NA	NA	NA
ethene	ug/L		NA	NA	NA	NA	NA	NA	NA	<2 U	NA	NA	NA	NA	NA	NA
methane	ug/L		NA	NA	NA	NA	NA	NA	NA	<2 U	NA	NA	NA	NA	NA	NA
Ferrous Iron (SM3500FE)																
ferrous iron	mg/L		NA	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

"FD" in Sample ID indicates a field duplicate sample.

CEQ/mL - cells equivalent per milliliter

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

mg/L - milligram per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

µg/L - microgram per liter

Table 2-2: Groundwater Results for Year 1 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW13-053113 5/31/2013	67WW13-100113 10/1/2013	67WW13-012414 1/24/2014	67WW13FD-012414 1/24/2014	67WW13-050614 5/6/2014	67WW13FD-050614 5/6/2014	67WW14-100113 10/1/2013	67WW14-100113-FD 10/1/2013	67WW14-012414 1/24/2014	67WW14-050714 5/7/2014
Water Quality Field Parameters												
Temperature	°C		34.55	21.97	15.8	NA	25.17	NA	22.78	NA	18.42	19.86
pH	pH Units		6.68	7.09	6.76	NA	5.86	NA	6.47	NA	6.52	5.67
Conductivity	mS/cm		5.55	6.65	6.87	NA	6.16	NA	1.55	NA	1.53	1.68
Dissolved Oxygen	mg/L		1.17	0.98	0.16	NA	2.03	NA	1.34	NA	0.67	1.17
Turbidity	NTU		0.2	0.3	0	NA	1.2	NA	3.6	NA	15.5	24.8
Oxidation Reduction Potential	mV		106	37	125	NA	122	NA	-60	NA	-37	-5
Sulfide (376.1)												
sulfide	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Inorganic and Organic Carbon (415.1)												
total inorganic carbon (TIC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
total organic carbon (TOC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)												
1,1,1,2-tetrachloroethane	ug/L	35	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-trichloroethane	ug/L	200	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-tetrachloroethane	ug/L	4.6	<10 U	<0.4 U	<1 U	<1 U	<0.8 U	<0.8 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-trichloroethane	ug/L	5	3.58	3.37	2.99	3.01	1.99 J	1.95 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-dichloroethane	ug/L	4900	35.5	33.8	32.7	32.4	15.5	14.4	0.197 J	0.304 J	0.275 J	0.538 J
1,1-dichloroethene	ug/L	7	565 J	515	572	569	240	228	1.82 J	2.22	2.58	4.27
1,1-dichloropropene	ug/L	9.1	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-trichlorobenzene	ug/L	73	<10 U	<0.3 U	<0.75 U	<0.75 U	<0.6 U	<0.6 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-trichloropropane	ug/L	0.03	<20 U	<1 U	<2.5 U	<2.5 U	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U
1,2,4-trichlorobenzene	ug/L	70	<10 U	<0.4 U	<1 U	<1 U	<0.8 U	<0.8 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-trimethylbenzene	ug/L	1200	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-dibromo-3-chloropropane	ug/L	0.2	<50 U	<2 UJ	<5 UJ	<5 UJ	<4 U	<4 U	<2 UJ	<2 UJ	<2 UJ	<2 U
1,2-dibromoethane	ug/L	0.05	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-dichlorobenzene	ug/L	600	<10 U	<0.25 U	<0.626 U	<0.626 U	<0.5 U	<0.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-dichloroethane	ug/L	5	23.1	23.8	22.9	22.9	13.7	12.9	0.692 J	0.849 J	0.666 J	0.897 J
1,2-dichloropropane	ug/L	5	<10 U	<0.4 U	<1 U	<1 U	<0.8 U	<0.8 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-trimethylbenzene	ug/L	1200	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-dichlorobenzene	ug/L	730	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-dichloropropane	ug/L	9.1	<10 U	<0.4 U	<1 U	<1 U	<0.8 U	<0.8 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-dichlorobenzene	ug/L	75	<10 U	<0.25 U	<0.626 U	<0.626 U	<0.5 U	<0.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-dichloropropane	ug/L	13	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 UJ	<1 UJ	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-butanone	ug/L	15000	<100 U	<5 U	<12.5 U	<12.5 U	<10 U	<10 U	9.06 J	7.47 J	<5 U	<5 U
2-chlorotoluene	ug/L	490	<10 U	<0.25 U	<0.626 U	<0.626 U	<0.5 U	<0.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-hexanone	ug/L	120	<100 U	<5 U	<12.5 U	<12.5 U	<10 U	<10 U	<5 U	<5 U	<5 U	<5 U
4-chlorotoluene	ug/L	490	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-methyl-2-pentanone	ug/L	2000	<100 U	<5 U	<12.5 U	<12.5 U	<10 U	<10 U	<5 U	<5 U	<5 U	<5 U
acetone	ug/L	22000	<100 U	<5 U	<12.5 U	<12.5 U	<10 U	<10 U	3.27 J	2.59 J	<5 U	<5 U
benzene	ug/L	5	<10 U	<0.25 U	<0.626 U	<0.626 U	1.21 J	0.79 J	<0.25 U	<0.25 U	<0.25 U	<0.25 U
bromobenzene	ug/L	200	<10 U	<0.25 U	<0.626 U	<0.626 U	<0.5 U	<0.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
bromochloromethane	ug/L	980	<10 U	<0.4 U	<1 U	<1 U	<0.8 U	<0.8 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
bromodichloromethane	ug/L	15	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
bromoform	ug/L	120	<20 U	<1 U	<2.5 U	<2.5 U	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U
bromomethane	ug/L	34	<20 U	<1 U	<2.5 U	<2.5 U	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U
carbon disulfide	ug/L	2400	<20 U	<1 U	<2.5 U	<2.5 U	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U
carbon tetrachloride	ug/L	5	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
chlorobenzene	ug/L	100	<10 U	<0.25 U	<0.626 U	<0.626 U	<0.5 U	<0.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
chloroethane	ug/L	98000	<20 U	<1 U	<2.5 U	<2.5 U	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U
chloroform	ug/L	240	0.462 J	<0.25 UJ	<0.626 U	0.359 J	<0.5 U	<0.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
chloromethane	ug/L	70	<20 U	<1 U	<2.5 U	<2.5 U	<2 U	<2 U	0.64 J	<1 U	<1 U	<1 U
cis-1,2-dichloroethene	ug/L	70	1.68	1.66	1.67 J	1.77 J	0.755 J	0.684 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U
cis-1,3-dichloropropene	ug/L	1.7	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
dibromochloromethane	ug/L	11	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
dibromomethane	ug/L	120	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Table 2-2: Groundwater Results for Year 1 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW13-053113 5/31/2013	67WW13-100113 10/1/2013	67WW13-012414 1/24/2014	67WW13FD-012414 1/24/2014	67WW13-050614 5/6/2014	67WW13FD-050614 5/6/2014	67WW14-100113 10/1/2013	67WW14-100113-FD 10/1/2013	67WW14-012414 1/24/2014	67WW14-050714 5/7/2014
dichlorodifluoromethane	ug/L	4900	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ethylbenzene	ug/L	700	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
hexachlorobutadiene	ug/L	12	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
isopropylbenzene	ug/L	2400	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
m,p-xylene	ug/L	10000	<20 U	<1 U	<2.5 U	<2.5 U	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U
methylene chloride	ug/L	5	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
naphthalene	ug/L	490	<10 U	<0.4 U	<1 U	<1 U	<0.8 U	<0.8 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
n-butylbenzene	ug/L	1200	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
n-propylbenzene	ug/L	980	<10 U	<0.25 U	<0.626 U	<0.626 U	<0.5 U	<0.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
o-xylene	ug/L	10000	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
p-isopropyltoluene	ug/L	2400	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	0.431 J	0.353 J	<0.5 U	<0.5 U
sec-butylbenzene	ug/L	980	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
styrene	ug/L	100	<10 U	<0.25 U	<0.626 U	<0.626 U	<0.5 U	<0.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
tert-butylbenzene	ug/L	980	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
tetrachloroethene	ug/L	5	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
toluene	ug/L	1000	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
trans-1,2-dichloroethene	ug/L	100	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
trans-1,3-dichloropropene	ug/L	9.1	<20 U	<1 U	<2.5 U	<2.5 U	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U
trichloroethene	ug/L	5	3.11	2.81	2.86	2.99	1.25 J	1.27 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U
trichlorofluoromethane	ug/L	7300	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
vinyl chloride	ug/L	2	2.55	2.1	2.37 J	2.37 J	0.644 J	0.619 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Anions (9056)												
chloride	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
nitrate	mg/L	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
nitrite	mg/L	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sulfate	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dechlorinating Bacteria (CENSUS)												
dehalococcoides ethenogenes	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tceA reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAV1 vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases (RSK-175)												
ethane	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ethene	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
methane	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron (SM3500FE)												
ferrous iron	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

"FD" in Sample ID indicates a field duplicate sample.

CEQ/mL - cells equivalent per milliliter

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

mg/L - milligram per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

µg/L - microgram per liter

Table 2-3: Historical Groundwater COC Concentrations - LHAAP-67

Sample ID: / Sample Date:	Units	MCL/ PCL	67WW01-981208 12/8/1998	67WW01-040912 9/12/2004	67WW01-060806 8/6/2006	67WW01-061218 12/18/2006	67WW01-053113 5/31/2013	67WW01-050714 5/7/2014	67WW02-981208 12/8/1998	67WW02-981208FD 12/8/1998	67WW02-040912 9/12/2004	67WW02-060806 8/6/2006	67WW02-061218 12/18/2006
1,1,1-TRICHLOROETHANE	ug/L	200	560	<5 U	<5 U	<5 U	<1 U	<0.5 U	100	100	<5 U	<5 U	<5 U
1,1,2-TRICHLOROETHANE	ug/L	5	33	1 J	0.305 J	0.28 J	<1 U	<0.5 U	6.4	5.9	<5 U	<5 U	<5 U
1,1-DICHLOROETHENE	ug/L	7	380	280 J	153	179	139	257	2.4	<10 U	<5 U	<5 U	<5 U
1,2-DICHLOROETHANE	ug/L	5	27	13	5.57 J	6.37	6.68	12.2	<1 U	<10 U	<5 U	<5 U	<5 U
TRICHLOROETHENE	ug/L	5	6.3	6	5.38	5.99	2.96	3	<1 U	<10 U	<5 U	<5 U	<5 U
VINYL CHLORIDE	ug/L	2	<4 U	1 J	1.46 J	2.34 J	2.18	2.15	<1 U	<10 U	<5 U	<10 U	<10 U

Blue Highlighting Indicates concentrations above the MCL/PCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical Groundwater COC Concentrations - LHAAP-67

Sample ID: / Sample Date:	Units	MCL/ PCL	67WW02-053113 5/31/2013	67WW02-092713 9/27/2013	67WW02-012314 1/23/2014	67WW02-050614 5/6/2014	67WW03-981208 12/8/1998	67WW03-040912 9/12/2004	67WW03-060809 8/9/2006	67WW03-061218 12/18/2006	67WW04-001219 12/19/2000	67WW04-040912 9/12/2004	67WW05-001219 12/19/2000
1,1,1-TRICHLOROETHANE	ug/L	200	<1 U	<0.5 U	<0.5 U	<0.5 U	1800	<5 U	<5 U	<5 U	<0.1 U	<5 U	<0.1 U
1,1,2-TRICHLOROETHANE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	24	<5 U	<5 U	<5 U	<0.1 U	<5 U	<0.1 U
1,1-DICHLOROETHENE	ug/L	7	<2 U	<1 U	<1 U	<1 U	36	<5 U	<5 U	<5 U	<0.2 U	<5 U	<0.2 U
1,2-DICHLOROETHANE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<20 U	<5 U	<5 U	<5 U	<0.1 U	<5 U	<0.1 U
TRICHLOROETHENE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<20 U	<5 U	<5 U	<5 U	<0.1 U	1 J	<0.1 U
VINYL CHLORIDE	ug/L	2	<1 U	<0.5 U	<0.5 U	<0.5 U	<20 U	<5 U	<10 U	<10 U	<0.2 U	<5 U	<0.2 U

Blue Highlighting Indicates concentrations above the MCL/PCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical Groundwater COC Concentrations - LHAAP-67

Sample ID: / Sample Date:	Units	MCL/ PCL	67WW05-040912 9/12/2004	67WW05-060808 8/8/2006	67WW05-061217 12/17/2006	67WW05-053113 5/31/2013	67WW05-092813 9/28/2013	67WW05-012314 1/23/2014	67WW05-050614 5/6/2014	67WW06-001219 12/19/2000	67WW06-001219FD 12/19/2000	67WW06-040912 9/12/2004	67WW06-060808 8/8/2006
1,1,1-TRICHLOROETHANE	ug/L	200	<5 U	<5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.1 U	<0.1 U	<5 U	<5 U
1,1,2-TRICHLOROETHANE	ug/L	5	<5 U	<5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.1 U	<0.1 U	<5 U	<5 U
1,1-DICHLOROETHENE	ug/L	7	<5 U	<5 U	<5 U	<2 U	<1 U	<1 U	<1 U	<0.2 U	<0.2 U	<5 U	<5 U
1,2-DICHLOROETHANE	ug/L	5	<5 U	<5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	3.51	3.5	<5 U	3.02 J
TRICHLOROETHENE	ug/L	5	<5 U	<5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	0.14	0.15	<5 U	<5 U
VINYL CHLORIDE	ug/L	2	<5 U	<10 U	<10 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.2 U	<0.2 U	<5 U	<10 U

Blue Highlighting Indicates concentrations above the MCL/PCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical Groundwater COC Concentrations - LHAAP-67

Sample ID: / Sample Date:	Units	MCL/ PCL	67WW06-061218 12/18/2006	67WW06-100806 8/6/2010	67WW06-053113 5/31/2013	67WW06-053113-FD 5/31/2013	67WW06-092813 9/28/2013	67WW06-012414 1/24/2014	67WW07-001219 12/19/2000	67WW07-040912 9/12/2004	67WW07-060808 8/8/2006	67WW07-061218 12/18/2006	67WW07-053113 5/31/2013
1,1,1-TRICHLOROETHANE	ug/L	200	<5 U	<1 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.1 U	<5 U	<5 U	<5 U	<1 U
1,1,2-TRICHLOROETHANE	ug/L	5	<5 U	<1 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.1 U	<5 U	<5 U	<5 U	<1 U
1,1-DICHLOROETHENE	ug/L	7	<5 U	<1 U	<2 U	<2 U	<1 U	0.752 J	<0.2 U	<5 U	<5 U	<5 U	<2 U
1,2-DICHLOROETHANE	ug/L	5	1.62 J	2.39	2.25	2.2	1.77	2.03	2.28	<5 U	<5 U	1.65 J	1.67
TRICHLOROETHENE	ug/L	5	<5 U	<1 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.1 U	<5 U	<5 U	<5 U	<1 U
VINYL CHLORIDE	ug/L	2	<10 U	<1 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.2 U	<5 U	<10 U	<10 U	<1 U

Blue Highlighting Indicates concentrations above the MCL/PCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical Groundwater COC Concentrations - LHAAP-67

Sample ID: / Sample Date:	Units	MCL/ PCL	67WW07-092713 9/27/2013	67WW07-012314 1/23/2014	67WW07-050614 5/6/2014	67WW08-060313 6/3/2013	67WW08-100213 10/2/2013	67WW08-012314 1/23/2014	67WW08-050714 5/7/2014	67WW09-060113 6/3/2013	67WW09-092813 9/28/2013	67WW09-012414 1/24/2014	67WW09A-092713 9/27/2013
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	4.25	5.08 J	6.7	5.01 J	<1 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	940	1120	1340	1590	16.1	17.5	20.8	<1 U
1,2-DICHLOROETHANE	ug/L	5	1.77	1.35	1.44	89.2	76.5	89.9	101	<1 U	0.414 J	0.347 J	<0.5 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	2.86	<5 U	3.12 J	4.41 J	<1 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	0.951 J	<5 U	<2.5 U	<5 U	<1 U	<0.5 U	0.472 J	<0.5 U

Blue Highlighting Indicates concentrations above the MCL/PCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical Groundwater COC Concentrations - LHAAP-67

Sample ID: / Sample Date:	Units	MCL/ PCL	67WW09A-092713-FD 9/27/2013	67WW09A-012314 1/23/2014	67WW09A-050614 5/6/2014	67WW10-060113 6/1/2013	67WW10-092713 9/27/2013	67WW10-012414 1/24/2014	67WW10-050614 5/6/2014	67WW11-060113 6/1/2013	67WW11-060113-FD 6/1/2013	67WW11-100213 10/2/2013	67WW11-012314 1/23/2014
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	47.1	46.8	42.8	38.8
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	0.869 J	0.85 J	0.799 J	0.748 J
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	0.296 J

Blue Highlighting Indicates concentrations above the MCL/PCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical Groundwater COC Concentrations - LHAAP-67

Sample ID: / Sample Date:	Units	MCL/ PCL	67WW11 FD-012314 1/23/2014	67WW12-060113 6/1/2013	67WW12-100113 10/1/2013	67WW12-012414 1/24/2014	67WW12-050614 5/6/2014	67WW13-053113 5/31/2013	67WW13-100113 10/1/2013	67WW13-012414 1/24/2014	67WW13FD-012414 1/24/2014	67WW13-050614 5/6/2014	67WW13FD-050614 5/6/2014
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<10 U	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	3.58	3.37	2.99	3.01	1.99 J	1.95 J
1,1-DICHLOROETHENE	ug/L	7	43	<2 U	<1 U	<1 U	<1 U	565 J	515	572	569	240	228
1,2-DICHLOROETHANE	ug/L	5	0.823 J	<1 U	<0.5 U	<0.5 U	<0.5 U	23.1	23.8	22.9	22.9	13.7	12.9
TRICHLOROETHENE	ug/L	5	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	3.11	2.81	2.86	2.99	1.25 J	1.27 J
VINYL CHLORIDE	ug/L	2	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	2.55	2.1	2.37 J	2.37 J	0.644 J	0.619 J

Blue Highlighting Indicates concentrations above the MCL/PCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical Groundwater COC Concentrations - LHAAP-67

Sample ID: / Sample Date:	Units	MCL/ PCL	67WW14-100113 10/1/2013	67WW14-100113-FD 10/1/2013	67WW14-012414 1/24/2014	67WW14-050714 5/7/2014
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHENE	ug/L	7	1.82 J	2.22	2.58	4.27
1,2-DICHLOROETHANE	ug/L	5	0.692 J	0.849 J	0.666 J	0.897 J
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates concentrations above the MCL/PCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Analyte was not detected.

µg/L - microgram per liter

3 NATURAL ATTENUTION EVALUTION

The following sections present the results of the natural attenuation evaluation in accordance with the three lines of evidence discussed in the RACR (AECOM, 2015) for site COCs.

3.1 First Line of Evidence: Change in COC Concentrations over Time and with Distance

Natural attenuation is the combination of multiple mechanisms, including biodegradation, volatilization, dilution, advection, and absorption that reduce contaminant concentrations. The decrease of COC concentrations over time and distance is evidence of natural attenuation. The change in groundwater COC concentrations over time and with distance was evaluated at LHAAP-67. VOC concentrations for the 2013/14 period for the five wells with COC concentrations above the MCLs are identified on **Figure 2-11**. Historical COC concentrations are provided in **Table 2-3**.

Of all the wells included in the monitoring program, the only wells that detected COCs above respective cleanup levels are 67WW01, 67WW08, 67WW09, 67WW11, and 67WW13. The other wells in the monitoring program did not contain COCs above the cleanup levels in the four sampling events. Based on the direction of groundwater flow, wells 67WW09A and 67WW10 can be considered background wells and monitoring wells 67WW02 and 67WW12 are considered downgradient wells. The following discussion is focused on VOC trends noted in the five wells with COCs above the MCL: 67WW01, 67WW08, 67WW09, 67WW11, and 67WW13.

Well 67WW01

A total of six data sets are available for this well, including the first set collected in 1998. For the period of 2013-14, data is available only from two sampling events, as the well was dry during the September 2013 and January 2014 events. 1,1,1-TCA and 1,1,2-TCA were detected above the MCL in 1998 (Table 2-3); however, these constituents have remained below the MCL since that event. Concentrations of 1,1-DCE (degradation product of 1,1,1-TCA) and 1,2-DCA (degradation product of 1,1,2-TCA) have generally remained stable over the last year with a slight increase observed in May 2014, but considerably lower than the 1998 levels. VC (a degradation product of TCE) has also been detected slightly above the MCL during the last year. TCE levels have remained below the cleanup level in this well. The well was dry in two of the four events during 2013/14, likely due to static groundwater level remaining below the bottom of the well screen. Therefore, limited data is available from this well for use in the MNA evaluation or analysis of plume stability. When insufficient sample volume was available to collect MNA parameters from 67WW01, MNA parameters were collected from 67WW11.

Well 67WW03

A total of four historical data points between 1998 and 2006 are available for this well. No data were collected in 2013/2014 because the well was dry. In the December 1998 sample, 1,1,1-TCA, 1,1,2-TCA, and 1,1-DCE were reported at concentrations of 1,800 μg/L, 24 μg/L, and 36 μg/L, respectively. Subsequent three data points collected between 2004 and 2006 denoted non-detect levels for these compounds, indicating that the initially reported concentrations are suspect and/or not representative of the shallow zone groundwater. Because this well has been

chronically dry, it was replaced by adjacent well 67WW12, which is screened across an interval that is approximately 10 feet deeper than well 67WW03. Concentrations of COCs in 67WW12 which was sampled in 2013/2014 were non-detect, corroborating the 2004 to 2006 results from 67WW03.

Well 67WW08

This well was installed in 2013. TCE has remained below the cleanup level in this well. Over the last year, 1,1,2-TCA levels remained close to its MCL of 5 ug/L. 1,1-DCE increased over the monitoring period with each subsequent event from 940 µg/L to 1120 µg/L to 1340 µg/L, and 1590 µg/L. 1,2-DCA levels have fluctuated between 76.5 µg/L and 101 µg/L. These results indicate that natural attenuation is not observed in this monitoring well.

Well 67WW09

This well was installed in 2013. Only 1,1-DCE has been detected in this well above the MCL with the levels increasing from 16.1 µg/L (June 2013) to 20.8 µg/L (January 2014). This well was not sampled in May 2014, because a monitoring well adjustment plan that was submitted to the regulators in April 2014, with a recommendation to remove this well (and 67WW11) from sampling. It was assumed that the adjustment plan would be approved. However, it was not until the November 2014 monthly managers' meeting that all parties agreed to hold off on any changes to the monitoring network until a year of data from the existing well network was obtained. For this reason, 67WW09 was not sampled in May 2014. Another well, 67WW09A was installed upgradient to bound the plume in the south and upgradient direction and defines the south LUC boundary. VOC data in well 67WW09A has remained below the cleanup levels.

Well 67WW11

This well was installed in 2013. Similar to well 67WW09, only 1,1-DCE has been detected in this well above the MCL with the levels decreasing from 47.1 µg/L (June 2013) to 38.8 µg/L (January 2014). This well was not sampled in May 2014, because a monitoring well adjustment plan that was submitted to the regulators in April 2014, with a recommendation to remove this well 67WW11 (and 67WW09)) from sampling. It was assumed that the adjustment plan would be approved. However, it was not until the November 2014 monthly managers' meeting that all parties agreed to hold off on any changes to the monitoring network until a year of data from the existing well network was obtained. For this reason, 67WW11 was not sampled in May 2014. Another well, 67WW09A, was installed upgradient to bound the plume in the south and upgradient direction and defines the south LUC boundary. VOC data in well 67WW09A has remained below the cleanup levels.

Well 67WW13

This well was installed in 2013. 1,1-DCE, 1,2-DCA, and VC have been detected in this well during the monitoring period. For the first three events of the monitoring period 1,1-DCE levels remained close to 550 µg/L and then decreased to 240 µg/L during the May 2014 event. Similar trends were observed for 1,2-DCA and VC with VC decreasing below the MCL in May 2014 at a concentration of 0.644 ug/L.

3.1.1 Plume Stability

COC plume maps completed for each sampling event are presented in **Figures 2-7** through **2-10**. The COC data over the monitoring period indicate that the plume is showing overall stable conditions. Based on the variable groundwater flow directions (but generally northerly), the following wells can be considered to be along the northeasterly groundwater flow path: 67WW09A, 67WW11, 67WW08, and 67WW12/67WW03. Wells 67WW10, 67WW08, 67WW01, and 67WW02 are considered to be along the northwesterly flow path. The COCs in up gradient wells 67WW09A and 67WW10 have remained below the cleanup levels throughout the reporting period. The in-plume well 67WW08 exhibits the highest levels of COCs which have generally remained stable, with an observed increase in 1,1-DCE concentration. Monitoring well 67WW01, which depending on groundwater flow direction could be considered a cross-gradient well for 67WW08, exhibits lower concentrations of 1,1,2-trichloroethane, 1,1-dichloroethene, and 1,2-dichloroethane than in 67WW08The downgradient well 67WW03 located in close proximity to 67WW12) is screened shallower than most of the productive site and has been dry during three of the four events and had insufficient water for a sample to be collected in the fourth event (May 2013). However, this well had no detects of COCs between 2004 and 2006, the last time this well was sampled. The COCs in downgradient wells 67WW02 and 67WW12 have remained below detection during the RA(O) period of performance. Therefore, based on the inferred flow path (using the groundwater flow direction), the COC plume is not expanding with distance from the source area as evidenced by non-detection of COCs in downgradient wells 67WW02 and 67WW12. Concentrations of COCs in individual wells over time have either remained stable or slightly decreased with the exception of 1,1-DCE in wells 67WW01, 67WW08, and 67WW09.

Concentrations of COCs in perimeter wells surrounding the most impacted wells 67WW01, 67WW08, and 67WW13 in all directions have identified no increase or new detections of COCs (boundary area wells 67WW02, 67WW12, 67WW07, 67WW10, 67WW09A, 67WW14, and 67WW05), indicating no plume migration with complete definition of plume extent in all directions. Boundary well 67WW02, a downgradient well, had no detections of any COC since 2004; boundary well 67WW12, a downgradient well which was installed in 2013, had no detections of any COCs during the reporting period; boundary well 67WW07, generally classified as a cross-gradient well, had low detections of 1,2-DCA consistently below the MCL; boundary well 67WW10, an upgradient well which was installed in 2013, had no detections of any COCs during the reporting period; boundary well 67WW09A, an upgradient well which was installed in 2013, had no detections of any COCs during the reporting period; boundary well 67WW14, a cross gradient to an upgradient well installed in 2013, had low detections of 1,1-DCE and 1,2-DCA consistently below the MCLs; boundary well 67WW05, generally considered a cross-gradient well, had no detections of any COCs since it was first sampled in 2000. **Table 2-3** present the analytical results in these wells.

Although only a few data points exist, the relationship between groundwater level elevations and COC concentrations was reviewed. A review of the data in individual wells over the course of the monitoring period does not indicate any definite correlation between groundwater elevations and COC concentrations as depicted in **Figure 2-11**. For example, 1,1,2-trichloroethane in 67WW08 had a -18% correlation coefficient with groundwater elevation, 1,1-dichloroethene in 67WW08 had a 65.1% correlation coefficient with groundwater elevation, and 1,2-dichloroethane in 67WW08 had a 97.4% correlation coefficient with groundwater elevation.

These disparate correlation coefficients between COCs and groundwater elevation change in the same well indicate the weak seasonal effects on well COC concentrations. Another example for change in 1,1-dichloroethene concentration versus groundwater elevation change across several wells reveal the following results: 65.1% correlation coefficient in 67WW08, 4.6% correlation coefficient in 67WW09, 26% correlation coefficient in 67WW11, and -75.3% correlation coefficient in 67WW13. These widely dispersed correlation coefficients for the same COC across several monitoring wells indicate the lack of a defined correlation between COC concentration and groundwater levels or lack of seasonality effects. The supporting data for the correlation coefficients are provided in Appendix E.

3.2 Second Line of Evidence: Geochemical Indicators

Table 2-2 presents geochemical indicators that are useful MNA evaluation parameters. Some geochemical indicators are collected in the field, and are recorded for all sampling events for all wells. The field parameters for LHAAP-67 wells include: dissolved oxygen (DO), oxidation-reduction potential (ORP), pH, conductivity, turbidity, ferrous iron, and temperature.

DO is the most thermodynamically favored electron acceptor used by microbes for biodegradation of organic carbon, whether natural or anthropogenic (USEPA, 1998). Anaerobic bacteria generally cannot function at DO concentrations greater than about 0.5 milligrams per liter (mg/L) and hence, reductive dechlorination will not occur. During the course of the monitoring period, the DO levels in well 67WW01 have remained above 8 mg/L, and in the other two most contaminated wells, 67WW08 and 67WW13, have ranged between less than 0.5 mg/L and 2.0 mg/L. The low DO level in 67WW08 with a maximum reported concentration of 0.74 mg/L in October 2013, bodes well for reductive dechlorination.

The ORP levels indicate how oxidative or reductive the groundwater is in the aquifer matrix and provide real-time data if conditions are conducive for anaerobic biodegradation. ORP values less than 50 milli-volts (mV) are indicative that the aquifer is reaching anaerobic conditions and are favorable for the biological reductive dechlorination of chlorinated ethenes and ethanes. The ORP measurements at LHAAP-67 during the monitoring period have generally been negative in the highest contaminated well (67WW08) ranging between -165 mV (October 2013) to 74 mV (June 2013). In other wells within the plume (67WW01, 67WW09, 67WW11, and 67WW13), the ORP has generally been near or greater than 50 mV indicating a higher level of oxidative conditions than observed in 67WW01. Given the presence of biodegradation products (1,2-DCA) in well 67WW08, the aquifer conditions (low DO and negative ORP) appear to be conducive for reductive dechlorination in the vicinity of 67WW08. However, over the entire extent of the plume, the conditions are generally aerobic and do not support reductive dechlorination.

After DO has been depleted in the microbiological treatment zone, nitrate may be used as an electron acceptor for anaerobic biodegradation of organic carbon via denitrification. In order for reductive dechlorination to occur, nitrate concentrations in the contaminated portion of the aquifer must be less than 1.0 mg/L (USEPA, 1998). **Table 2-2** indicates that nitrate and nitrite concentrations were generally below the laboratory reporting limits at LHAAP-67 groundwater. Therefore, nitrate reduction is not a likely a mode of microbial respiration at the site, and the lack of nitrate is favorable for achieving the highly reducing conditions ideal for anaerobic reductive dechlorination.

In some cases, iron (III) (ferric iron) is used as an electron acceptor during anaerobic biodegradation of organic carbon. During this process, iron (III) is reduced to iron (II) (ferrous iron), which may be soluble in water. Ferrous iron concentrations can thus be used as an indicator of anaerobic degradation of fuel compounds, and VC. Ferrous iron concentrations were measured in wells 67WW01 and 67WW08 and ranged from 0.0795 mg/L to 0.344 mg/L in 67WW08 and was reported at 5.69 mg/L (a single measurement conducted in May 2014) in 67WW01. Ferrous iron concentrations indicate limited reductive conditions.

After DO and nitrate have been depleted in the microbiological treatment zone, sulfate may be used as an electron acceptor for anaerobic biodegradation. This process is termed "sulfate reduction" and results in the production of sulfide. Concentrations of sulfate greater than 20 mg/L may cause competitive exclusion of dechlorination. However, in many plumes with high concentrations of sulfate, reductive dechlorination still occurs (USEPA, 1998).

Table 2-2 indicates that the sulfate concentrations ranged from 167 mg/L in 67WW01 to 365 mg/L in 67WW08 during the May 2014 sampling event. Relatively high concentrations of sulfate and corresponding sulfide concentrations below laboratory reporting limit of 1 mg/L indicates that the conditions in the aquifer are not conducive for sulfate reduction.

Methanogenesis occurs in highly reducing conditions and generally occurs after oxygen, nitrate, and sulfate have been depleted. Methane levels above 500 µg/L is considered to indicate methanogenic conditions (USEPA, 1998). Methane was measured in wells 67WW01 and 67WW08 and was generally found to be below 50 µg/L.

Regardless of the electron acceptor being used, organic carbon is a required source of reduced carbon and energy to sustain microbial activity. Total organic carbon (TOC) is utilized as a carbon and energy source to support the reductive dechlorination of the chlorinated COCs. TOC concentrations greater than 20 mg/L are considered adequate to support microbial activity (USEPA, 1998). TOC concentration was measured in wells 67WW01 and 67WW08 and was found to be below 20 mg/L.

The pH of ground water has an effect on the presence and activity of microbial populations in ground water. This is especially true for bacteria responsible for reductive dechlorination. Microbes capable of degrading chlorinated aliphatic hydrocarbons and petroleum hydrocarbon compounds generally prefer pH values varying from 6 to 8 standard units (USEPA, 1998). The shallow zone groundwater pH within the plume has been between 5.3 and 7.1 standard units with pH values in wells 67WW01 and 67WW08 below 6. The conditions in these wells will be prohibitive for dechlorinating bacteria.

Ethane and ethene, the two end products of the reductive dechlorination pathways for chlorinated ethanes and ethenes, were also below the laboratory reporting limits during the monitoring period in 67WW01, 67WW08, and 67WW11, indicating that complete dechlorination is not taking place.

Dechlorinating bacteria, dehalococcoides ethenogenes and associated functional genes were analyzed in wells 67WW01 and 67WW08, located within the VOC plume. Generally, the microbial population count and the functional gene counts were below the laboratory reporting limits, indicating limited population count of the bacteria and absence of gene expression necessary for anaerobic biological degradation of the COCs.

The qualitative assessment of geochemical indicators and the absence of dechlorinating bacteria in the shallow groundwater zone at LHAAP-67 indicate current geochemical conditions are not optimal for MNA. Nonetheless, certain parameters observed in a few locations may indicate that conditions could favor natural attenuation, such as the low DO and negative ORP observed in 67WW08. The presence of methane and dissolved iron also provides evidence that reducing anaerobic conditions can be present even within high DO areas such as at 67WW01. Although, degradation products (1,2-DCA, 1,1-DCE, and VC) have been detected in the plume monitoring wells, adequate conditions within the impacted area currently do not exist to sustain complete reductive dechlorination.

3.3 Third Line of Evidence: Predictive Modeling and Microbial Analysis

If the first two lines of evidence for MNA are deemed inadequate or inconclusive, and/or if the need for a contingency remedy is evaluated, data from field or microcosm studies will be necessary to establish the third line of evidence for MNA. Evaluation of the third line of evidence will be deferred until the initial two-year groundwater monitoring program has been completed and a more thorough technical evaluation of MNA is completed for the site.

4 SUMMARY AND CONCLUSIONS

VOC data and geochemical indicators were collected over the course of the monitoring period at LHAAP-67 to evaluate effectiveness of MNA as a site remedy. A tiered approach assessing the first two of three lines of evidence was used to evaluate the occurrence of natural attenuation in site groundwater. The first line of evidence evaluated reductions in COC concentrations over time and with distance, the second line of evidence evaluated geochemical indicators, while the third line of evidence will be deferred until the initial two-year groundwater monitoring program has been completed. The results of the tiered evaluation and the conclusions are summarized below.

An assessment of the first line of evidence indicate that the plume is showing overall stable conditions but not decreasing. The in-plume well 67WW08 exhibits the highest levels of COCs which have generally remained stable, with the exception of 1,1,-DCE, which exhibited an increasing trend throughout the reporting period. Monitoring well 67WW01, which depending on groundwater flow direction could be considered a cross-gradient well for 67WW08, exhibits lower concentrations of 1,1,2-trichloroethane, 1,1-dichloroethene, and 1,2-dichloroethane than in 67WW08. The downgradient well 67WW03 is located in close proximity to 67WW12 and is screened shallower than most of the productive site wells. 67WW03 has been dry in three of the four events and had insufficient water for a sample to be collected during the fourth event (May 2013). The COCs in downgradient wells 67WW02 and 67WW12 have remained below detection. Therefore, based on the inferred flow path (using the groundwater flow direction), COC levels are not increasing with distance from the source area as evidenced by non-detection of COCs in downgradient wells 67WW02 and 67WW12. Concentrations of COCs in individual wells over time have either remained stable or slightly decreased with the exception of 1,1-DCE in wells 67WW01, 67WW08, and 67WW09. Concentrations of COCs in perimeter wells away from the most impacted wells 67WW01 and 67WW08 have identified no increase or new detections of COCs (boundary area wells 67WW02, 67WW12, 67WW10, 67WW09A, 67WW14, and 67WW05), indicating no plume migration. The data sets for LHAAP-67 (including historical results) are limited to six events and the wells will continue to be monitored for decreasing concentration trends.

The qualitative assessment of geochemical indicators and the absence of dechlorinating bacteria in the shallow groundwater zone at LHAAP-67 indicate current geochemical conditions are not optimal for MNA. Although, degradation products (1,2-DCA, 1,1-DCE, and VC) have been detected in the plume monitoring wells, adequate conditions within the impacted area currently do not exist to sustain complete reductive dechlorination.

Based on the collected data thus far, MNA associated with biodegradation appears not to be occurring in the shallow groundwater at LHAAP-67. The concentration decrease observed in some COCs in some wells are likely associated with other MNA occurrences such as dilution and volatilization. The VOC plume is currently considered stable and does not show signs of downgradient migration (i.e., expansion in size).

Groundwater monitoring continues to be performed at LHAAP-67 in compliance with the Remedial Action Work Plan (AECOM, 2013). However, collection of additional MNA parameter data from 67WW13 will be conducted in the future to provide enhanced spatial

distribution of MNA data for 2nd year RA(O) evaluation. No change in land or groundwater use has occurred at the site, and the use of the site is still consistent with that mandated by the ROD.

5 REFERENCES

AECOM, 2013, *Final Remedial Action Work Plan for LHAAP-67, Aboveground Storage Tank Farm*, Longhorn Army Ammunition Plant, Karnack, Texas, March.

AECOM, 2014, *Final Installation-Wide Work Plan* for Longhorn Army Ammunition Plant, Karnack, Texas, July.

AECOM, 2015, *Draft Final Remedial Action Completion Report, LHAAP-67, Aboveground Storage Tank Farm*, Longhorn Army Ammunition Plant, Karnack Texas, January.

Shaw, 2011, *Final Remedial Design, LHAAP-35B (37), Chemical Laboratory and LHAAP-67, Above Ground Storage Tank Farm*, Longhorn Army Ammunition Plant, Karnack, Texas, August.

USACE, 2010, *Final Record of Decision, LHAAP-35B (37), Chemical Laboratory and LHAAP-67, Above Ground Storage Tank Farm*, Longhorn Army Ammunition Plant, Karnack, Texas, June.

USEPA, 1998, *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water*, USEPA/600/R-98/128, September.

USEPA, 2014, *Transmittal of Final Dispute Decision*, Letter dated October 31, 2014 from Gina McCarthy, USEPA Administrator, to John McHugh, Secretary of the Army and Bryan Shaw, Chairman of TCEQ. Longhorn Army Ammunition Plant, Karnack, Texas Administrative Record, Volume 4, 2014, 00192717-00192750.

APPENDIX A: ANNUAL LUC COMPLIANCE CERTIFICATION DOCUMENTATION

AECOM

Annual Land Use Control Compliance Certification Documentation

In accordance with the Remedial Design dated September 2011 for LHAAP-67 a certification of site was conducted by Aecom Technical Services on July 10, 2014

A summary of land use control mechanisms is as follows:

- Groundwater restriction – restriction of the use of groundwater to environmental monitoring and testing until cleanup goals are met

A summary of compliance with land use and restriction covenants is as follows:

- No use of groundwater, installation of new groundwater wells, or tampering with existing wells at LHAAP-67

I, the undersigned, do document that the certification was performed as indicated above, and that the above information is true and correct to the best of my knowledge, information, and belief.

Date: July 10, 2014

Name/Title: Scott Beesinger / Senior Technician

Signature: Scott Beesinger

APPENDIX B: PHOTO LOG

Well ID: 67WW02	
Well ID: 67WW03	

Well ID: 67WW10	
Well ID: 67WW14	

APPENDIX C: MONITORING WELL SAMPLING FORMS

00732030

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW01	Date: 5/31/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID: Billes/level	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 018704	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 25.55	Weather Conditions: CLEAR 79°F
	Total Well Depth (ft) [d]: 26.90	Screened Interval/Pump placement: 12-22	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
5-31-13	0732	25.55								only 1.3 ft water Bailing well
5-31-13	0746	26.87								Bailed 1.5 gallons RANDRY
5-31-13	1435	25.55		28.00	5.87	341	8.62	69.6	15	collect Sample

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW01-053113 TIME: 1435

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 mL glass vials	HCl	N	Bail	8260B-SIMS

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732031

LOCATION	Site: 67	LocID: 67WW02	Date: 5/31/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID# 611 GES/CEVR	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 018704	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 24.38	Weather Conditions: CLEAR 80°F
	Total Well Depth (ft) [d]: 27.50	Screened Interval/Pump placement: 15-25	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
5-31-13	0751	24.38								Only 3.1 ft water Bailing well
5-31-13	0800	27.45								Bailed 3.5 gallons Rapid Dry
5-31-13	1450	24.38		27.07	6.57	3.02	8.68	51.4	-8	Collect Sample

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 67WW02-053113 TIME: 1450

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 mL glass vials	HCl	N	Bail	8260B-SIMS

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732032

LOCATION	Site: 67	LocID: 67WW05	Date: 5/31/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID# 611 Ges/Cev	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 018704	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 25.39	Weather Conditions: Clear 78°F
	Total Well Depth (ft) [d]: 29.90	Screened Interval/Pump placement: 16-26	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
5-31-13	0720	25.39								only 4.5 ft. water, Bailing well
5-31-13	0726	29.85								Bailed 3.5 gallons RANDRY
5-31-13	1420	25.65		26.87	6.94	2.66	8.72	2.5	-15	Recharged more than 80% of original DTW, collected sample

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW05-053113 TIME: 1420

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 mL glass vials	HCl	N	Bail	8260B-SIMS

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732033

LOCATION	Site: 67	LocID: 67WW06	Date: 5/31/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID# Helices/[illegible]	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 018704	Sampling Equipment: Peristaltic/Bladder/Bailer ID#: Grp-Spk-Hp	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 25.32	Weather Conditions: Clear 81°F
	Total Well Depth (ft) [d]: 49.75	Screened Interval/Pump placement: 38-48 43.00	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
5-31-13	0830	25.34	100	25.98	6.41	6.45	1.32	26.0	54	
5-31-13	0835	25.36	100	23.94	5.50	6.65	1.84	24.2	32	
5-31-13	0840	25.37	100	23.56	5.41	6.65	1.60	23.3	29	
5-31-13	0845	25.38	100	23.44	5.37	6.66	2.38	22.1	28	
5-31-13	0850	25.39	100	23.40	5.33	6.65	2.09	21.2	26	
5-31-13	0855	25.40	100	23.46	5.32	6.63	2.02	21.2	25	
5-31-13	0900	25.42	100	23.43	5.31	6.62	1.83	22.0	24	
5-31-13	0905	25.44	100	23.49	5.30	6.61	1.86	21.1	24	
5-31-13	0910	25.46	100	23.59	5.28	6.60	1.71	20.2	24	
5-31-13	0915	25.47	100	23.61	5.25	6.56	2.71	18.4	25	
5-31-13	0920	25.48	100	23.61	5.25	6.54	2.52	16.8	25	
5-31-13	0925	25.49	100	23.74	5.24	6.51	2.31	16.9	25	
5-31-13	0930	25.50	100	23.77	5.24	6.50	2.30	16.0	26	
5-31-13	0935	25.51	100	23.90	5.23	6.45	1.93	14.3	26	
5-31-13	0940	25.52	100	24.03	5.25	6.42	1.77	13.7	24	
5-31-13	0945	25.53	100	24.14	5.26	6.38	1.60	13.2	23	
5-31-13	0950	25.54	100	24.20	5.26	6.37	1.58	13.4	23	
5-31-13	0955	25.55	100	24.25	5.26	6.37	1.58	13.5	23	
5-31-13	1000	25.56	100	24.28	5.27	6.37	1.57	13.4	22	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW06-053113 TIME: 1000

DUPLICATE (D): YES/NO Yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 40 mL glass vials	HCl	N	Pump	8260B-SIMS

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732034

LOCATION	Site: 67	LocID: 67WW07	Date: 5/31/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID# Elitechs/Cerv	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 018704	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 25.35	Weather Conditions: CLEAR 80 °F
	Total Well Depth (ft) [d]: 27.80	Screened Interval/Pump placement: 14 - 24	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
5-31-13	0806	25.35								Only 2.5 ft water, Bailing well
5-31-13	0814	27.75								Bailed 2.5 gallons RAN DRY
5-31-13	1505	25.35		25.72	5.52	3.99	8.75	13.9	35	Collect Sample

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW07-053113 TIME: 1505

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 mL glass vials	HCl	N	Bail	8260B-SIMS

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW08	Date: 6/3/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID# 61165/60 m	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 018704	Sampling Equipment: Peristaltic/Bladder/Bailer ID#: mp-spl4-4P	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 24.65	Weather Conditions: CLEAR 83°F
	Total Well Depth (ft) [d]: 51.87	Screened Interval/Pump placement: 23.6-48.1 36.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6-3-13	1215	24.67	100	28.05	5.75	3.03	3.10	9.2	199	
6-3-13	1220	24.69	100	28.04	6.54	4.88	0.39	9.1	164	
6-3-13	1225	24.70	100	27.57	6.55	4.95	0.07	9.4	141	
6-3-13	1230	24.71	100	27.71	6.58	4.94	0.00	9.5	119	
6-3-13	1235	24.72	100	27.99	6.58	4.93	0.00	9.1	109	
6-3-13	1240	24.73	100	28.37	6.58	4.93	0.00	8.9	96	
6-3-13	1245	24.74	100	28.67	6.59	4.92	0.00	8.4	87	
6-3-13	1250	24.75	100	29.00	6.61	4.88	0.00	8.1	81	
6-3-13	1255	24.75	100	29.12	6.61	4.86	0.00	8.1	77	
6-3-13	1300	24.75	100	29.17	6.62	4.86	0.00	7.9	75	
6-3-13	1305	24.75	100	29.22	6.62	4.85	0.00	7.5	75	
6-3-13	1310	24.75	100	29.25	6.62	4.85	0.00	7.6	74	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW08-060313 TIME: 1310

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 mL glass vials	HCl	N	Pump	8260B-SIMS
1-1 Liter Amber	NA	NO	"	qPCR
1-250 ml plastic	NA	NO	"	ANIONS - 9056
1-250ml plastic	H2SO4	NO	"	TIC TOC - E415.1
3-20 ml glass	HCL	NO	"	GASES - RSK175
1-250 ml Amber	NA	NO	"	Ferrous IRON - SM3500-Fe.B

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW09	Date: 6/1/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID# 61/Ges/Cev/2	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 018704	Sampling Equipment: Peristaltic/(Bladder)/Bailer ID#: mp-sp/L-4P	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 22.78	Weather Conditions: CLOUDY 92°F
	Total Well Depth (ft) [d]: 37.78	Screened Interval/Pump placement: 14.5-34.5 2450	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	**0.75**	1.5	**2.0**	2.2	3.0	**4.0**	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	**0.023**	0.09	**0.16**	0.20	0.37	**0.65**	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6-1-13	1315	22.81	100	32.06	6.74	3.27	1.47	6.0	170	
6-1-13	1320	22.83	100	30.47	6.63	3.22	0.85	4.3	180	
6-1-13	1325	22.85	100	29.00	6.62	3.25	0.67	5.5	181	
6-1-13	1330	22.87	100	28.55	6.62	3.27	0.58	6.7	182	
6-1-13	1335	22.89	100	28.18	6.62	3.28	0.57	5.9	184	
6-1-13	1340	22.91	100	28.06	6.63	3.31	0.53	5.2	185	
6-1-13	1345	22.93	100	27.99	6.64	3.30	0.50	5.1	186	
6-1-13	1350	22.95	100	27.93	6.64	3.30	0.52	4.8	188	
6-1-13	1355	22.97	100	27.95	6.64	3.31	0.52	4.5	189	

Pump Rate: <=0.5 L/min **Drawdown:** <0.33 ft **Measurements:** 3-5 min **Stabilization:** +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW09-060113 TIME: 1355

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 mL glass vials	HCl	N	Pump	8260B-SIMS

00732037

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW10	Date: 6/1/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID# 11 cas/cavi	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 013704	Sampling Equipment: Peristaltic/Bladder/Bailer ID#: mp-SP/L-4P	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 26.10	Weather Conditions: Cloudy 80 °F
	Total Well Depth (ft) [d]: 50.45	Screened Interval/Pump placement: 18-49.5 34.00	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6-1-13	0905	26.12	100	26.25	6.50	5.02	1.24	5.4	183	
6-1-13	0910	26.14	100	25.05	6.34	5.03	0.57	6.0	187	
6-1-13	0915	26.16	100	24.13	6.30	5.07	0.29	5.5	190	
6-1-13	0920	26.18	100	24.24	6.28	5.08	0.23	5.2	191	
6-1-13	0925	26.20	100	24.28	6.27	5.07	0.15	5.4	190	
6-1-13	0930	26.22	100	24.40	6.27	5.09	0.12	5.1	190	
6-1-13	0935	26.24	100	24.35	6.27	5.08	0.12	5.0	190	
6-1-13	0940	26.26	100	24.32	6.27	5.08	0.11	4.9	190	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW10-060113 TIME: 0940

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO Yes

MATRIX DUPLICATE (MD): YES/NO Yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9 - 40 mL glass vials	HCl	N	Pump	8260B-SIMS

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732038

LOCATION	Site: 67	LocID: 67WW11	Date: 6/1/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611 Geotech	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 018409	Sampling Equipment: Peristaltic/Bladder/Bailer ID#: MP-SPK-4D	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 24.21	Weather Conditions: Cloudy 83°F
	Total Well Depth (ft) [d]: 46.50	Screened Interval/Pump placement: 20.5-45 32.50	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6-1-13	1010	24.25	100	27.33	6.60	4.12	2.47	13.6	172	
6-1-13	1015	24.26	100	25.53	6.76	4.21	1.80	13.8	169	
6-1-13	1020	24.27	100	24.74	6.78	4.25	1.62	13.9	167	
6-1-13	1025	24.28	100	24.28	6.77	4.26	1.38	13.0	167	
6-1-13	1030	24.29	100	24.12	6.77	4.26	1.31	12.3	167	
6-1-13	1035	24.30	100	23.91	6.78	4.26	1.30	10.0	167	
6-1-13	1040	24.31	100	23.89	6.78	4.26	1.19	9.7	167	
6-1-13	1045	24.32	100	23.83	6.78	4.27	1.18	9.5	167	
6-1-13	1050	24.33	100	23.90	6.78	4.27	1.17	9.6	168	

Pump Rate: <=0.5 L/min **Drawdown:** <0.33 ft **Measurements:** 3-5 min **Stabilization:** +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 67WW11-060113 TIME: 1050

DUPLICATE (D): YES/NO Yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 40 mL glass vials	HCl	N	Pump	8260B-SIMS

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732039

LOCATION	Site: 67	LocID: 67WW12	Date: 6/1/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID# 611 ces/ces/	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 018704	Sampling Equipment: Peristaltic/Bladder/Bailer ID#: MP-SP L-4P	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 26.46	Weather Conditions: Cloudy/Humid 85°F
	Total Well Depth (ft) [d]: 36.80	Screened Interval/Pump placement: 24-33.5 29.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6-1-13	1115	26.50	100	28.34	7.00	3.85	2.88	4.4	134	
6-1-13	1120	26.52	100	27.89	6.82	4.47	1.51	3.9	170	
6-1-13	1125	26.54	100	27.30	6.78	4.42	1.16	4.2	172	
6-1-13	1130	26.56	100	27.07	6.75	4.43	0.89	4.2	173	
6-1-13	1135	26.57	100	27.05	6.73	4.42	0.80	4.1	174	
6-1-13	1140	26.58	100	27.11	6.72	4.42	0.65	3.8	175	
6-1-13	1145	26.59	100	27.15	6.71	4.41	0.60	3.7	175	
6-1-13	1150	26.60	100	27.24	6.71	4.41	0.58	3.2	175	
6-1-13	1155	26.61	100	27.30	6.71	4.41	0.57	3.0	175	
6-1-13	1200	26.62	100	27.34	6.71	4.40	0.57	2.7	175	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW12-060113 TIME: 1200

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 mL glass vials	HCl	N	Pump	8260B-SIMS

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732040

LOCATION	Site: 67	LocID: 67WW13	Date: 5/31/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611 Ces/Cerr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 018704	Sampling Equipment: Peristaltic/Bladder/Bailer ID#: mp-sp/K-4P	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 22.55	Weather Conditions: CLEAR 90 °F
	Total Well Depth (ft) [d]: 28.55	Screened Interval/Pump placement: 10.5-25 23-50	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
5-31-13	1310	22.57	100	34.64	6.05	5.73	2.75	0.0	17	
5-31-13	1315	22.59	100	34.02	6.62	5.68	2.00	0.0	32	
5-31-13	1320	22.61	100	33.81	6.66	5.64	1.62	0.8	52	
5-31-13	1325	22.63	100	33.92	6.67	5.65	1.43	0.2	67	
5-31-13	1330	22.65	100	34.20	6.67	5.65	1.37	0.00	75	
5-31-13	1335	22.67	100	34.39	6.68	5.67	1.34	0.0	87	
5-31-13	1340	22.69	100	34.45	6.68	5.65	1.22	0.0	95	
5-31-13	1345	22.71	100	34.50	6.68	5.57	1.19	0.0	101	
5-31-13	1350	22.73	100	34.54	6.68	5.56	1.18	0.0	106	
5-31-13	1355	22.75	100	34.55	6.68	5.55	1.18	0.1	105	
5-31-13	1400	22.77	100	34.55	6.68	5.55	1.17	0.2	106	

Pump Rate: <=0.5 L/min **Drawdown:** <0.33 ft **Measurements:** 3-5 min **Stabilization:** +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW13-053113 TIME: 1400

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 mL glass vials	HCl	N	Pump	8260B-SIMS

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW01	Date: 9/27/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID#: Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21191	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: DRY	Weather Conditions: CLEAR 82°F
	Total Well Depth (ft) [d]: 27.00	Screened Interval/Pump placement: 12-22	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW02	Date: 9/27/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID#: Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21191	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 25.28	Weather Conditions: CLEAR 80°F
	Total Well Depth (ft) [d]: 27.53	Screened Interval/Pump placement: 15-25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
9-27-13	1030	25.28	NA										Only 2.25 ft water Bailing well
9-27-13	1038	27.45	NA										Bailed 2.5 gallons Ran Dry
9-27-13	1600	25.28	NA	25.23	6.69	2.94	10.06	21.1	73				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 67WW02-092713 TIME: 1600

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Bailer	VOC

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW03	Date: 9/27/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID#: Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21191	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: DRY	Weather Conditions: CLEAR 83°F
	Total Well Depth (ft) [d]: 24.93	Screened Interval/Pump placement: 14-24	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW04	Date: 9/27/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID#: Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21191	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: DRY	Weather Conditions: CLEAR 85°F
	Total Well Depth (ft) [d]: 24.33	Screened Interval/Pump placement: 11-21'	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW05	Date: 9/27/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID#: Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21191	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 26.40	Weather Conditions: CLEAR 80 °F
	Total Well Depth (ft) [d]: 29.98	Screened Interval/Pump placement: 16-26	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
9-27-13	1015	26.40	NA										Only 3.5 ft
													Bailing well
9-27-13	1022	29.90	NA										Bailed 3 gallons
													RAN DRY
9-27-13	0735	26.40	NA	21.75	6.37	2.67	10.02	16.2	-72				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW05-092813 TIME: 0735

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW06	Date: 9/28/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID#: Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21191	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 26.32	Weather Conditions: CLEAR 73°F
	Total Well Depth (ft) [d]: ~~[illegible]~~ 49.83	Screened Interval/Pump placement: 38-48 43	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
9-28-13	0805	26.35	100	20.99	6.46	5.72	2.44	10.3	-46				
9-28-13	0810	26.37	100	20.39	5.98	5.77	1.51	8.8	4				
9-28-13	0815	26.39	100	20.20	5.85	5.85	1.39	8.9	5				
9-28-13	0820	26.40	100	20.17	5.82	6.08	1.15	10.1	-10				
9-28-13	0825	26.41	100	20.14	5.67	6.29	1.03	7.5	-5				
9-28-13	0830	26.42	100	20.15	5.59	6.27	0.97	6.3	4				
9-28-13	0835	26.43	100	20.14	5.54	6.37	0.91	6.0	6				
9-28-13	0840	26.44	100	20.18	5.50	6.46	0.86	6.2	9				
9-28-13	0845	26.45	100	20.18	5.47	6.50	0.84	6.1	8				
9-28-13	0850	26.46	100	20.17	5.45	6.46	0.83	5.6	12				
9-28-13	0855	26.47	100	20.20	5.45	6.45	0.82	5.5	13				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW06-092813 TIME: 0855

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW07	Date: 9/27/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID#: Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21191	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 26.32	Weather Conditions: CLEAR 83°F
	Total Well Depth (ft) [d]: 27.86	Screened Interval/Pump placement: 14-24	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
9-27-13	1057	26.32	NA										ONLY 1.5 ft. water
													Bailing well
9-27-13	1106	27.86	NA										Bailed 1.25 gallons
													RAN DRY
9-27-13	1535	26.32	NA	25.11	5.78	4.13	10.55	9.6	0				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW07-092713 TIME: 1535

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW08	Date: 10/2/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID#: Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21191	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 25.57	Weather Conditions: Cloudy 75°F
	Total Well Depth (ft) [d]: 51.65	Screened Interval/Pump placement: 23.6-48.1 36.00	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
10-2-13	0800	25.59	100	24.58	6.85	3.04	3.50	3.2	39				
10-2-13	0805	25.60	100	23.05	6.38	5.12	1.85	2.9	-118				
10-2-13	0810	25.61	100	21.75	6.41	5.27	1.34	2.9	-143				
10-2-13	0815	25.62	100	21.75	6.49	5.26	1.10	2.3	-158				
10-2-13	0820	25.63	100	21.77	6.51	5.23	0.98	2.1	-163				
10-2-13	0825	25.64	100	21.81	6.51	5.20	0.89	2.1	-164				
10-2-13	0830	25.65	100	21.83	6.51	5.17	0.84	1.9	-165				
10-2-13	0835	25.66	100	21.84	6.49	5.15	0.81	1.8	-165				
10-2-13	0840	25.67	100	21.83	6.48	5.13	0.78	1.6	-164				
10-2-13	0845	25.68	100	21.86	6.48	5.12	0.73	1.7	-165				
10-2-13	0850	25.69	100	21.82	6.47	5.11	0.74	1.5	-165				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 67WW08-100213 TIME: 0850

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	GASES
1-500 ml plastic	2 NaOH	N	"	Sulfide
2-500 ml plastic	NA	N	"	DHC
1-250 ml Amber	NA	N	"	Ferrous Iron
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	H2SO4	N	"	TOC & Inorganic Carbon

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW09	Date: 9/28/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID#: Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21191	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 23.66	Weather Conditions: CLEAR 77°F
	Total Well Depth (ft) [d]: 37.83	Screened Interval/Pump placement: 14.5-34.5 28.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
9-28-13	0925	23.63	100	21.97	6.22	3.42	2.45	4.9	97				
9-28-13	0930	23.65	100	21.91	6.14	3.46	1.48	4.0	108				
9-28-13	0935	23.67	100	21.92	6.18	3.46	1.18	3.8	120				
9-28-13	0940	23.69	100	21.93	6.21	3.47	1.08	3.5	134				
9-28-13	0945	23.71	100	22.00	6.24	3.48	1.02	3.1	142				
9-28-13	0950	23.73	100	22.03	6.27	3.48	0.96	2.9	149				
9-28-13	0955	23.75	100	22.07	6.28	3.48	0.92	2.6	155				
9-28-13	1000	23.77	100	22.13	6.31	3.48	0.88	2.3	158				
9-28-13	1005	23.79	100	22.20	6.32	3.48	0.87	2.1	159				
9-28-13	1010	23.81	100	22.20	6.32	3.48	0.85	1.9	158				
9-28-13	1015	23.83	100	22.22	6.31	3.47	0.83	1.7	157				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 67WW09-092813 TIME: 1015

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO Yes
MATRIX DUPLICATE (MD): YES/NO Yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW09A	Date: 9/27/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID#: Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21191	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 28.40	Weather Conditions: CLEAR 90°F
	Total Well Depth (ft) [d]: 38.58	Screened Interval/Pump placement: 20.8-35.5 31.0	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
9-27-13	1315	28.45	100	33.15	6.18	1.77	3.93	22.4	117				
9-27-13	1320	28.48	100	28.49	6.23	2.52	3.00	22.3	109				
9-27-13	1325	28.50	100	28.98	6.03	2.51	2.80	22.2	124				
9-27-13	1330	28.52	100	28.81	5.89	2.50	2.49	22.2	138				
9-27-13	1335	28.54	100	28.74	5.76	2.49	2.11	21.3	154				
9-27-13	1340	28.56	100	28.85	5.71	2.49	1.86	21.5	162				
9-27-13	1345	28.58	100	28.99	5.67	2.49	1.60	21.7	168				
9-27-13	1350	28.60	100	28.82	5.65	2.48	1.27	21.4	175				
9-27-13	1355	28.61	100	28.75	5.63	2.47	1.23	21.2	178				
9-27-13	1400	28.62	100	28.70	5.62	2.46	1.20	21.3	180				
9-27-13	1405	28.63	100	28.67	5.62	2.45	1.19	21.5	182				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW09A-092713 TIME: 1405

DUPLICATE (D): YES/NO Yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW10	Date: 9/27/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID#: Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21191	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 27.03	Weather Conditions: CLEAR 93°F
	Total Well Depth (ft) [d]: 50.48	Screened Interval/Pump placement: 18-49.5 33.75	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
9-27-13	1435	27.05	100	30.57	6.17	5.88	1.78	3.0	-18				
9-27-13	1440	27.07	100	27.03	6.11	6.07	1.50	3.3	-14				
9-27-13	1445	27.08	100	26.05	6.08	6.11	0.96	3.8	-13				
9-27-13	1450	27.09	100	25.44	6.06	6.19	0.86	3.2	-13				
9-27-13	1455	27.10	100	25.11	6.05	6.20	0.71	2.4	-12				
9-27-13	1500	27.11	100	25.08	6.04	6.20	0.63	2.3	-11				
9-27-13	1500	27.12	100	25.17	6.03	6.21	0.62	2.3	-10				
9-27-13	1505	27.13	100	25.17	6.03	6.22	0.61	2.0	-10				
9-27-13	1510	27.14	100	25.20	6.02	6.23	0.60	1.6	-9				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW10-092713 TIME: 1510

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW11	Date: 10/2/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID#: Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21191	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 25.17	Weather Conditions: Cloudy 78°F
	Total Well Depth (ft) [d]: 46.30	Screened Interval/Pump placement: 20.5-45 32.75	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
10-2-13	0935	25.19	100	23.73	6.52	4.61	2.06	6.6	99				
10-2-13	0940	25.21	100	22.60	6.20	4.76	1.28	5.8	86				
10-2-13	0945	25.23	100	22.49	6.20	4.76	1.04	6.2	80				
10-2-13	0950	25.25	100	22.35	6.21	4.76	0.88	6.0	76				
10-2-13	0955	25.27	100	22.31	6.22	4.76	0.80	5.8	72				
10-2-13	1000	25.28	100	22.31	6.21	4.77	0.73	5.3	69				
10-2-13	1005	25.29	100	22.39	6.21	4.76	0.68	6.1	68				
10-2-13	1010	25.30	100	22.50	6.22	4.75	0.65	4.9	66				
10-2-13	1015	25.31	100	22.60	6.23	4.74	0.62	4.3	65				
10-2-13	1020	25.32	100	22.65	6.23	4.74	0.63	4.0	64				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW11-100213 TIME: 1020

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Dissolved Gases
1-250ml Amber	NA	N	"	Ferrous IRON
1-250 ml plastic	ZnAcNaOH	N	"	Sulfide
2-250ml plastic	NA	N	"	DHC
1-250ml plastic	H2SO4	N	"	TOC & Inorganic Carbon
1-250ml plastic	NA	N	"	ANIONS

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW12	Date: 10/1/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID#: Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21191	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 24.40	Weather Conditions: CLEAR 83°F
	Total Well Depth (ft) [d]: 36.65	Screened Interval/Pump placement: 24-33.5 30.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
10-1-13	1235	24.43	100	28.85	7.26	4.19	2.40	2.6	73				
10-1-13	1240	24.45	100	24.31	6.25	4.54	1.75	1.4	0				
10-1-13	1245	24.47	100	23.61	6.24	4.54	1.17	0.4	-201				
10-1-13	1250	24.49	100	23.30	6.24	4.54	1.07	0.3	-409				
10-1-13	1255	24.51	100	23.01	6.26	4.53	0.95	0.0	-174				
10-1-13	1300	24.53	100	22.98	6.28	4.54	0.90	0.0	-144				
10-1-13	1305	24.55	100	23.07	6.28	4.54	0.82	0.0	-122				
10-1-13	1310	24.56	100	23.09	6.29	4.54	0.76	0.6	-123				
10-1-13	1315	24.57	100	22.85	6.30	4.54	0.71	0.4	-122				
10-1-13	1320	24.58	100	22.94	6.30	4.54	0.68	0.5	-121				
10-1-13	1325	24.59	100	22.97	6.31	4.54	0.67	0.4	-120				
10-1-13	1330	24.60	100	22.99	6.31	4.54	0.66	0.3	-119				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW12-100113 TIME: 1330

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW13	Date: 10-1-13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID#: Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21191	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 23.42	Weather Conditions: CLOUDY/DRIZZLE 81°F
	Total Well Depth (ft) [d]: 28.42	Screened Interval/Pump placement: 10.5-25 24.75	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
10-1-13	0950	23.45	100	24.57	7.71	2.82	6.41	1.9	94				
10-1-13	0955	23.48	100	22.07	6.92	6.61	1.69	0.7	36				
10-1-13	1000	23.50	100	21.82	6.99	6.63	1.33	0.5	36				
10-1-13	1005	23.52	100	21.71	7.04	6.64	1.21	0.5	37				
10-1-13	1010	23.54	100	21.79	7.06	6.63	1.15	0.6	37				
10-1-13	1015	23.56	100	21.89	7.07	6.63	1.13	0.5	37				
10-1-13	1020	23.58	100	21.96	7.07	6.64	1.07	0.3	38				
10-1-13	1025	23.60	100	21.87	7.08	6.65	0.99	0.4	38				
10-1-13	1030	23.62	100	21.90	7.08	6.65	0.99	0.4	40				
10-1-13	1035	23.64	100	21.95	7.09	6.65	1.00	0.3	38				
10-1-13	1040	23.66	100	21.97	7.09	6.65	0.98	0.3	37				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW13-D00113 TIME: 1040

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC

AECOM MONITORING WELL SAMPLE COLLECTION FORM

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW14	Date: 10/1/13
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID#: Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21191	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 21.80	Weather Conditions: Cloudy 75°F
	Total Well Depth (ft) [d]: 30.38	Screened Interval/Pump placement: 12-27 25.00	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
10-1-13	0820	21.83	~~250~~ 100	24.94	6.79	1.52	2.65	19.4	29				
10-1-13	0825	21.85	100	24.85	6.45	1.52	2.07	18.1	21				
10-1-13	0830	21.87	100	23.74	6.37	1.51	1.84	16.5	13				
10-1-13	0835	21.89	100	23.16	6.39	1.52	1.68	13.0	1				
10-1-13	0840	21.91	100	22.91	6.41	1.52	1.63	11.1	-31				
10-1-13	0845	21.93	100	22.89	6.41	1.51	1.56	9.0	-50				
10-1-13	0850	21.94	100	22.87	6.42	1.52	1.48	8.6	-57				
10-1-13	0855	21.95	100	22.78	6.43	1.52	1.45	8.0	-60				
10-1-13	0900	21.96	100	22.81	6.45	1.52	1.39	5.7	-62				
10-1-13	0905	21.97	100	22.78	6.46	1.53	1.38	5.6	-63				
10-1-13	0910	21.98	100	22.76	6.47	1.54	1.37	4.2	-61				
10-1-13	0915	21.99	100	22.78	6.47	1.55	1.34	3.6	-60				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 67WW14-\$00113 TIME: 0915

DUPLICATE (D): YES/NO Yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732056

LOCATION	Site: 67	LocID: 67WW01	Date: 1/23/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4 11	Static Water Level Reading (ft) [c]: DRY	Weather Conditions: Cloudy/windy/COLD
	Total Well Depth (ft) [d]: 26.98	Screened Interval/Pump placement: 12-22	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732057

LOCATION	Site: 67	LocID: 67WW02	Date: 1/23/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4 in	Static Water Level Reading (ft) [c]: 24.77	Weather Conditions: Cloudy/windy/cold
	Total Well Depth (ft) [d]: 27.50	Screened Interval/Pump placement: 15-25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
1/23/14	0818	24.77								Bailing well only 2.8 ft water
1/23/14	0824	27.43								Bailed 2 gallons Ran Dry
1/23/14	1515	24.77	NA	16.20	6.78	3.04	5.81	49.7	-65	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW02-012314 TIME: 1515

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732058

LOCATION	Site: 67	LocID: 67WW03	Date: 1/23/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4 11	Static Water Level Reading (ft) [c]: DRY	Weather Conditions: Cloudy/windy/COLD
	Total Well Depth (ft) [d]: 24.97	Screened Interval/Pump placement: 14-24	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: TIME:

DUPLICATE (D): YES/NO

MATRIX SPIKE (MS): YES/NO

MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732059

LOCATION	Site: 67	LocID: 67WW04	Date: 1/23/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4 11	Static Water Level Reading (ft) [c]: DRY	Weather Conditions: Cloudy/windy/COLD
	Total Well Depth (ft) [d]: 21.89	Screened Interval/Pump placement: 11-21	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732060

LOCATION	Site: 67	LocID: 67WW05	Date: 1/23/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 26.00	Weather Conditions: CLOUDY / COLD
	Total Well Depth (ft) [d]: 30.08	Screened Interval/Pump placement: 16-26	Condition of Well/Remarks: MEADS paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
1/23/14	0800	26.00								Bailing well only 4 ft. water
1/23/14	0806	30.00								BAILED 3 GALLONS RAN DRY
1/23/14	1505	26.00	NA	15.83	6.57	2.75	6.01	9.7	-34	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW05-012314 TIME: 1505

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732061

LOCATION	Site: 67	LocID: 67WW06	Date: 1/24/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 26.61	Weather Conditions: CLEAR / COLD
	Total Well Depth (ft) [d]: 49.87	Screened Interval/Pump placement: 38-48 43.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
1-24-14	0905	26.60	100	11.84	5.83	7.03	1.52	26.0	71	
1-24-14	0910	26.61	100	13.62	5.69	7.07	1.25	32.6	73	
1-24-14	0915	26.62	100	14.39	5.53	7.10	0.99	43.0	75	
1-24-14	0920	26.63	100	14.61	5.61	7.12	0.87	47.7	71	
1-24-14	0925	26.64	100	14.28	5.57	7.06	0.82	48.1	69	
1-24-14	0930	26.65	100	14.40	5.58	7.05	0.80	49.1	69	
1-24-14	0935	26.66	100	15.18	5.57	7.10	0.85	45.3	66	
1-24-14	0940	26.67	100	15.21	5.57	7.09	0.83	42.9	65	
1-24-14	0945	26.68	100	15.34	5.57	7.09	0.81	42.5	63	
1-24-14	0950	26.69	100	15.38	5.57	7.09	0.81	42.3	65	
1-24-14	0955	26.70	100	15.42	5.58	7.09	0.80	42.9	67	

Pump Rate: <=0.5 L/min **Drawdown:** <0.33 ft **Measurements:** 3-5 min **Stabilization:** +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW06-012414 TIME: 0955

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732062

LOCATION	Site: 67	LocID: 67WW07	Date: 1/23/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 25.60	Weather Conditions: Cloudy/windy/COLD
	Total Well Depth (ft) [d]: 27.90	Screened Interval/Pump placement: 14-24	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
1/23/14	0835	25.60								Bailing well only 1.3 ft water
1/23/14	0840	27.84								Bailed 1.5 gallons Rain Day
1/23/14	1533	25.60	NA	14.63	5.79	4.14	5.96	54.4	60	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW07-012314 TIME: 1533

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732063

LOCATION	Site: 67	LocID: 67WW08	Date: 1/23/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 24.90	Weather Conditions: Cloudy/windy/cold
	Total Well Depth (ft) [d]: 51.96	Screened Interval/Pump placement: 23.6-48.1 36.08	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
1-23-14	0920	24.91	100	15.39	6.73	4.96	4.50	15.7	-42	
1-23-14	0925	24.93	100	16.25	6.78	5.02	0.50	15.3	-68	
1-23-14	0930	24.95	100	16.96	6.78	5.07	0.47	9.7	-79	
1-23-14	0935	24.97	100	17.01	6.77	5.09	0.43	7.0	-81	
1-23-14	0940	24.99	100	17.23	6.78	5.12	0.41	0.9	-87	
1-23-14	0945	25.01	100	17.20	6.80	5.09	0.40	1.0	-88	
1-23-14	0950	25.02	100	17.19	6.80	5.09	0.39	0.8	-89	
1-23-14	0955	25.03	100	17.22	6.80	5.08	0.38	0.6	-90	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW08-012314 TIME: 0955

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20ml glass	HCL	N	"	GASES
1-250 ml Amber	NA	N	"	Ferrous IRON
1-1 liter plastic	NA	N	"	DHC
1-500 ml plastic	Zinc Acetate	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC
1-250 ml plastic	NA	N	"	TIC
1-250 ml plastic	NA	N	"	ANIONS

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732064

LOCATION	Site: 67	LocID: 67WW09	Date: 1/24/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 22.95	Weather Conditions: CLEAR / COLD
	Total Well Depth (ft) [d]: 37.93	Screened Interval/Pump placement: 14.5-34.5 26.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
1-24-14	1240	22.95	100	13.67	6.25	3.30	2.13	19.5	152	
1-24-14	1245	22.97	100	15.04	6.26	3.34	1.47	19.1	141	
1-24-14	1250	22.99	100	15.65	6.26	3.35	1.09	14.9	140	
1-24-14	1255	23.01	100	16.04	6.25	3.37	0.95	12.7	139	
1-24-14	1300	23.03	100	16.19	6.25	3.38	0.88	10.0	135	
1-24-14	1305	23.05	100	16.22	6.25	3.38	0.85	3.1	134	
1-24-14	1310	23.07	100	16.26	6.24	3.39	0.87	1.4	135	
1-24-14	1315	23.09	100	16.27	6.24	3.39	0.86	0.9	136	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW09-012414 TIME: 1315

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732065

LOCATION	Site: 67	LocID: 67WW09A	Date: 1/23/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 27.65 31.00	Weather Conditions: SNOW/windy/COLD
	Total Well Depth (ft) [d]: 38.68	Screened Interval/Pump placement: 30.8-35.5	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
1-23-14	1610	27.65	100	12.89	6.59	2.61	1.09	101	54	
1-23-14	1615	27.67	100	14.11	6.65	2.60	0.90	119	30	
1-23-14	1620	27.69	100	15.01	6.70	2.58	0.73	133	14	
1-23-14	1625	27.71	100	15.61	6.72	2.54	0.68	123	13	
1-23-14	1630	27.73	100	15.46	6.73	2.48	0.65	96.5	15	
1-23-14	1635	27.75	100	15.39	6.73	2.47	0.62	51.9	16	
1-23-14	1640	27.77	100	15.51	6.73	2.48	0.60	38.5	18	
1-23-14	1645	27.79	100	15.58	6.73	2.49	0.61	32.0	17	
1-23-14	1650	27.81	100	15.60	6.73	2.49	0.60	31.9	17	
1-23-14	1655	27.83	100	15.63	6.73	2.49	0.59	32.1	18	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW09A-012314 TIME: 1655

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732066

LOCATION	Site: 67	LocID: 67WW10	Date: 1/24/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 26.22	Weather Conditions: CLEAR / COLD
	Total Well Depth (ft) [d]: 50.53	Screened Interval/Pump placement: 18-49.5 33.75	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
1-24-14	0755	26.22	100	11.48	5.90	6.50	1.80	3.5	96	
1-24-14	0800	26.24	100	13.63	6.06	6.47	0.92	7.3	55	
1-24-14	0805	26.26	100	14.45	6.08	6.47	0.79	6.5	41	
1-24-14	0810	26.28	100	15.03	6.07	6.47	0.60	2.9	37	
1-24-14	0815	26.30	100	15.13	6.07	6.46	0.58	1.7	33	
1-24-14	0820	26.32	100	14.98	6.07	6.46	0.56	0.5	31	
1-24-14	0825	26.34	100	15.06	6.07	6.45	0.55	0.7	30	
1-24-14	0830	26.36	100	15.10	6.07	6.45	0.54	0.4	29	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 67WW10-012414 TIME: 0830

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO Yes
MATRIX DUPLICATE (MD): YES/NO Yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

0073267

LOCATION	Site: 67	LocID: 67WW11	Date: 1/23/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 24.45	Weather Conditions: Cloudy/windy/cold
	Total Well Depth (ft) [d]: 46.52	Screened Interval/Pump placement: 20.5-45 34.00	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
1-23-14	1040	24.46	100	16.15	6.19	4.76	0.96	14.8	97	
1-23-14	1045	24.48	100	16.85	6.09	4.77	0.61	10.7	102	
1-23-14	1050	24.49	100	17.04	6.02	4.76	0.55	5.0	107	
1-23-14	1055	24.50	100	17.27	5.95	4.77	0.53	5.0	113	
1-23-14	1100	24.51	100	17.33	5.92	4.77	0.52	3.6	119	
1-23-14	1105	24.52	100	17.25	5.88	4.77	0.51	2.1	123	
1-23-14	1110	24.53	100	17.19	5.85	4.77	0.50	1.8	126	
1-23-14	1115	24.54	100	17.21	5.85	4.77	0.50	1.7	127	
1-23-14	1120	24.55	100	17.23	5.85	4.77	0.49	1.6	128	
1-23-14	1125	24.56	100	17.25	5.84	4.77	0.48	1.9	129	

Pump Rate: <=0.5 L/min **Drawdown:** <0.33 ft **Measurements:** 3-5 min **Stabilization:** +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW11-012314 TIME: 1125

DUPLICATE (D): YES/NO Yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00732068

LOCATION	Site: 67	LocID: 67WW12	Date: 1/24/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 26.80	Weather Conditions: CLEAR/COLD
	Total Well Depth (ft) [d]: 36.98	Screened Interval/Pump placement: 24-33.5 28.75	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
1-24-14	1025	26.82	100	12.33	6.55	4.09	3.59	1.9	77	
1-24-14	1030	26.84	100	14.09	6.26	3.92	1.29	0.0	93	
1-24-14	1035	26.86	100	15.06	6.25	3.96	0.77	0.0	97	
1-24-14	1040	26.88	100	15.50	6.23	4.07	0.62	0.0	94	
1-24-14	1045	26.90	100	15.59	6.22	4.10	0.60	0.0	93	
1-24-14	1050	26.92	100	15.63	6.22	4.11	0.65	0.0	92	
1-24-14	1055	26.94	100	15.69	6.22	4.12	0.62	0.0	91	

Pump Rate: <=0.5 L/min **Drawdown:** <0.33 ft **Measurements:** 3-5 min **Stabilization:** +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW12-012424 TIME: 1055

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NA

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

0073206 9

LOCATION	Site: 67	LocID: 67WW13	Date: 1/24/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 22.68	Weather Conditions: CLEAR / COLD
	Total Well Depth (ft) [d]: 28.60	Screened Interval/Pump placement: 10.5-25 24.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
1-24-14	1345	22.69	100	14.46	6.75	6.59	1.63	1.1	124	
1-24-14	1350	22.71	100	15.09	6.72	6.70	0.85	0.9	127	
1-24-14	1355	22.73	100	15.86	6.70	6.86	0.50	0.5	129	
1-24-14	1400	22.75	100	15.87	6.74	6.86	0.30	0.0	129	
1-24-14	1405	22.77	100	15.90	6.77	6.86	0.19	0.0	128	
1-24-14	1410	22.79	100	15.87	6.77	6.86	0.18	0.0	127	
1-24-14	1415	22.81	100	15.82	6.77	6.87	0.17	0.0	126	
1-24-14	1420	22.83	100	15.80	6.76	6.87	0.16	0.0	125	

Pump Rate: <=0.5 L/min **Drawdown:** <0.33 ft **Measurements:** 3-5 min **Stabilization:** +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 67WW13-012414 TIME: 1420

DUPLICATE (D): YES/NO Yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6- 40ml glass	HCL	N	Pmp	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW14	Date: 1/24/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 21.47	Weather Conditions: CLEAR/COLD
	Total Well Depth (ft) [d]: 30.57	Screened Interval/Pump placement: 12-27 24.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
1-24-14	1450	21.44	100	16.62	6.67	1.67	1.00	53.0	-15	
1-24-14	1455	21.46	100	19.50	6.53	1.54	0.91	62.1	-18	
1-24-14	1500	21.48	100	18.14	6.53	1.52	0.85	57.2	-28	
1-24-14	1505	21.50	100	18.42	6.53	1.52	0.79	45.4	-34	
1-24-14	1510	21.52	100	18.40	6.53	1.52	0.77	41.7	-37	
1-24-14	1515	21.54	100	18.23	6.53	1.53	0.74	34.6	-39	
1-24-14	1520	21.56	100	18.20	6.52	1.52	0.72	26.4	-39	
1-24-14	1525	21.58	100	18.26	6.52	1.52	0.70	21.0	-40	
1-24-14	1530	21.60	100	18.52	6.50	1.52	0.69	15.9	-39	
1-24-14	1535	21.62	100	18.47	6.51	1.53	0.68	15.5	-38	
1-24-14	1540	21.64	100	18.45	6.52	1.53	0.67	15.3	-38	
1-24-14	1545	21.66	100	18.42	6.52	1.53	0.67	15.5	-37	

Pump Rate: <=0.5 L/min **Drawdown:** <0.33 ft **Measurements:** 3-5 min **Stabilization:** +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW14-012414 TIME: 1545

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NA

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW01	Date: 5/6/14
	Project: Longhorn Army Ammunition Plant	60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Baller ·ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 26.90	Weather Conditions: Clear 83°F
	Total Well Depth (ft) [d]: 24.57	Screened Interval/Pump placement: 12-22	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
5/6/14	1227	~~26.90~~ 24.57	NA							Bailing well
5/6/14	1235	26.83	NA							Bail 1.5 gallons RAN DRY
5/7/14	0845	24.57	NA	19.77	5.52	3.57	8.81	36.6	85	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW01-050714 TIME: 0845

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	HCL	N	"	Dissolved metals
1-500 ml plastic	ZnAcetate NaOH	N	"	Sulfide
1-250 ml Amber	NA	N	"	Ferrous IRON
1-250 ml plastic	NA	N	"	ANIONS
1-250 ml plastic	~~NA~~ H2SO4	N	"	TOC
1-250 ml plastic	NA	N	"	TTC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW02	Date: 5/6/14
	Project: Longhorn Army Ammunition Plant	60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 27.68	Weather Conditions: CLEAR 65°F
	Total Well Depth (ft) [d]: 23.75	Screened Interval/Pump placement: 15-25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
5/6/14	0745	23.25	NA							Bailing well
5/6/14	0750	27.60	NA							Bailed ~2 gallons RANDRY
5/6/14	1050	23.75	NA	21.01	5.62	3.00	6.54	106	47	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW02-050614 TIME:

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW03	Date: 5/6/14
	Project: Longhorn Army Ammunition Plant	60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Baller ID#:	
WELL INFO	Casing I.D. (in) [a]: 4.11	Static Water Level Reading (ft) [c]: DRY	Weather Conditions: CLEAR 67°F
	Total Well Depth (ft) [d]: 24.86	Screened Interval/Pump placement: 14-24	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Baller	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW04	Date: 5/6/14
	Project: Longhorn Army Ammunition Plant	60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: DRY	Weather Conditions: CLEAR 90°F
	Total Well Depth (ft) [d]: 24.44	Screened Interval/Pump placement:	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

NOT REQUIRED TO COLLECT SAMPLES FROM THIS WELL

ONLY COLLECT WATER LEVEL

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW05	Date: 5/6/14
	Project: Longhorn Army Ammunition Plant	60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ·ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: ~~29.85~~ 25.85	Weather Conditions: CLEAR 63°F
	Total Well Depth (ft) [d]: ~~25.85~~ 29.85	Screened Interval/Pump placement: 16-26	Condition of Well/Remarks: NEEDS paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
5/6/14	0730	25.85	NA							Not enough water to pump. Bailing well
5/6/14	0740	29.80	NA							Bailed 2.5 gallons RAN DRY
5/6/14	1215	25.85	NA	27.15	5.56	2.62	7.35	8.1	13	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW05-050614 TIME: 1215

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Bailer	VOC
1-250ml plastic	NA	N	Bailer	chloride

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW06	Date: 5/6/14
	Project: Longhorn Army Ammunition Plant	60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 23.75	Weather Conditions: Clear 86°F
	Total Well Depth (ft) [d]: 49.73	Screened Interval/Pump placement:	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
		NOT REQUIRED TO Collect Samples from THIS well. ONLY Collect WATER LEVEL								

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW07	Date: 5/6/14
	Project: Longhorn Army Ammunition Plant	60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 23.80	Weather Conditions: CLEAR 83°F
	Total Well Depth (ft) [d]: 27.75	Screened Interval/Pump placement: 14-24	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
5/6/14	1245	23.80	NA							Bailing well
5/6/14	1258	27.71	NA							Bailed 3 gallons RAN DRY
05/6/14	1620	23.80	NA	26.29	5.45	3.71	6.12	30.2	36	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW07-050614 TIME: 1620

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67 WW 08	Date: 5/7/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 23.65	Weather Conditions: CLEAR 77°F
	Total Well Depth (ft) [d]: 51.96	Screened Interval/Pump placement: 23.6-48.1 / 37.75	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
5/7/14	0925	23.66	100	19.34	5.66	5.29	1.71	13.9	-2	
5/7/14	0930	23.68	100	19.18	5.61	5.40	1.04	12.5	-13	
5/7/14	0935	23.70	100	19.07	5.59	5.55	0.72	12.3	-20	
5/7/14	0940	23.72	100	19.10	5.58	5.48	0.54	11.5	-23	
5/7/14	0945	23.74	100	19.23	5.57	5.40	0.53	11.7	-24	
5/7/14	0950	23.76	100	19.24	5.56	5.41	0.48	10.9	-27	
5/7/14	0955	23.78	100	19.32	5.56	5.42	0.47	10.3	-29	
5/7/14	1000	23.80	100	19.29	5.55	5.43	0.46	9.6	-31	
5/7/14	1005	23.82	100	19.33	5.55	5.43	0.45	9.7	-32	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 67WW08-050714 TIME: 1005

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	HCL	N	"	Dissolved Gases
1-500 ml plastic	2N NaOH	N	"	Sulfide
1-250 ml Amber	NA	N	"	Ferrous Iron
1-250 ml plastic	H2SO4	N	"	TOC
1-250 ml plastic	NA	N	"	TIC
1-250 ml plastic	NA	N	"	Anions

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW09	Date: 5/6/14
	Project: Longhorn Army Ammunition Plant	60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 21.52	Weather Conditions: CLEAR 89°F
	Total Well Depth (ft) [d]: 37.88	Screened Interval/Pump placement:	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

NOT REQUIRED to COLLECT SAMPLES FROM THIS WELL. ONLY COLLECT WATER LEVEL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW09A	Date: 5/6/14
	Project: Longhorn Army Ammunition Plant	60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 38.68	Weather Conditions: CLEAR 67°F
	Total Well Depth (ft) [d]: 26.10	Screened Interval/Pump placement: 20.8-35.5 / 30.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
5/6/14	0820	26.05	100	18.59	5.52	2.60	2.73	76.4	47	
5/6/14	0825	26.07	100	18.56	5.52	2.61	1.73	69.7	28	
5/6/14	0830	26.09	100	18.54	5.55	2.62	1.17	71.9	15	
5/6/14	0835	26.11	100	18.58	5.54	2.58	0.90	63.1	15	
5/6/14	0840	26.13	100	18.60	5.53	2.56	0.71	56.7	16	
5/6/14	0845	26.15	100	18.68	5.53	2.54	0.65	47.7	16	
5/6/14	0850	26.17	100	18.79	5.53	2.53	0.52	32.3	17	
5/6/14	0855	26.19	100	18.85	5.56	2.53	0.49	21.9	18	
5/6/14	0900	26.21	100	18.95	5.57	2.53	0.48	21.3	19	
5/6/14	0905	26.23	100	18.99	5.56	2.53	0.47	20.9	20	
5/6/14	0910	26.25	100	19.01	5.55	2.53	0.46	20.7	20	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 67WW09A-050614 TIME: 0910

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW10	Date: 5/6/14
	Project: Longhorn Army Ammunition Plant	60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 24.40	Weather Conditions: CLEAR 77°F
	Total Well Depth (ft) [d]: 52.43	Screened Interval/Pump placement: 18-49.5 / 33.75	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
5/6/14	0945	24.42	100	20.21	5.32	5.91	1.37	4.5	53	
5/6/14	0950	24.44	100	20.08	5.30	5.97	0.91	4.0	52	
5/6/14	0955	24.46	100	19.95	5.29	6.02	0.62	3.2	51	
5/6/14	1000	24.48	100	20.00	5.30	6.02	0.54	3.0	51	
5/6/14	1005	24.50	100	20.09	5.31	6.02	0.47	2.7	52	
5/6/14	1010	24.52	100	20.12	5.30	6.02	0.46	2.6	53	
5/6/14	1015	24.54	100	20.15	5.29	6.02	0.45	2.4	54	
5/6/14	1020	24.55	100	20.20	5.29	6.02	0.44	2.6	55	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW10-050614 TIME: 1020

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW11	Date: 5/6/14
	Project: Longhorn Army Ammunition Plant	60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 22.86	Weather Conditions: CLEAR 89°F
	Total Well Depth (ft) [d]: 46.56	Screened Interval/Pump placement:	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

NOT REQUIRED TO COLLECT SAMPLES FROM THIS WELL

ONLY Collect WATER LEVEL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW12	Date: 5/6/14
	Project: Longhorn Army Ammunition Plant	60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 25.43	Weather Conditions: CLEAR 86°F
	Total Well Depth (ft) [d]: 36.83	Screened Interval/Pump placement: 24-33.5 / 28.25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
5/6/14	1320	25.43	100	21.53	5.65	4.79	1.76	13.1	12	
5/6/14	1325	25.45	100	20.47	5.58	5.01	0.65	8.1	19	
5/6/14	1330	25.47	100	20.09	5.54	5.07	0.55	7.7	21	
5/6/14	1335	25.49	100	20.06	5.57	5.00	0.52	8.8	18	
5/6/14	1340	25.51	100	20.11	5.65	4.76	0.70	8.2	24	
5/6/14	1345	25.53	100	20.25	5.60	4.65	0.77	7.8	30	
5/6/14	1350	25.55	100	20.33	5.49	4.59	0.80	6.9	38	
5/6/14	1355	25.57	100	20.37	5.42	4.58	0.80	6.5	39	
5/6/14	1400	25.59	100	20.40	5.40	4.58	0.81	6.1	40	
5/6/14	1405	25.61	100	20.45	5.40	4.57	0.81	5.7	42	
5/6/14	1410	2563	100	20.51	5.39	4.56	0.80	5.2	43	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 67WW12-050614 TIME: 1410

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO yes
MATRIX DUPLICATE (MD): YES/NO yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9- 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW13	Date: 5/6/14
	Project: Longhorn Army Ammunition Plant	60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 21.66	Weather Conditions: CLEAR 88°F
	Total Well Depth (ft) [d]: 28.53	Screened Interval/Pump placement: 10.5-25 / 23.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
5/6/14	1445	21.65	100	28.27	5.91	5.96	2.49	0.5	109	
5/6/14	1450	21.68	100	26.25	5.91	6.10	2.22	0.8	113	
5/6/14	1455	21.70	100	26.06	5.90	6.13	2.14	1.0	115	
5/6/14	1500	21.72	100	25.80	5.90	6.15	2.09	1.2	117	
5/6/14	1505	21.74	100	25.53	5.87	6.14	2.04	1.1	119	
5/6/14	1510	21.77	100	25.31	5.87	6.14	2.03	1.1	120	
5/6/14	1515	21.79	100	25.23	5.87	6.15	2.01	1.2	122	
5/6/14	1520	21.81	100	25.17	5.86	6.16	2.03	1.2	122	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW13-050614 TIME: 1520

DUPLICATE (D): YES/NO Yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6-40ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67 WW 14	Date: 5/7/14
	Project: Longhorn Army Ammunition Plant	60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 20.58	Weather Conditions: CLEAR 65 °F
	Total Well Depth (ft) [d]: 30.56	Screened Interval/Pump placement: 12-27 / 23.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
5/7/14	0720	20.55	100	20.88	5.62	1.67	3.03	35.9	150	
5/7/14	0725	20.57	100	20.33	5.64	1.69	2.44	50.1	155	
5/7/14	0730	20.59	100	20.01	5.65	1.69	2.24	64.5	159	
5/7/14	0735	20.61	100	19.95	5.66	1.69	2.23	77.1	138	
5/7/14	0740	20.63	100	19.81	5.67	1.69	2.22	75.9	126	
5/7/14	0745	20.65	100	19.76	5.64	1.69	2.07	63.0	75	
5/7/14	0750	20.67	100	19.78	5.64	1.69	2.01	45.7	47	
5/7/14	0755	20.69	100	19.78	5.67	1.69	1.35	37.5	11	
5/7/14	0800	20.71	100	19.80	5.69	1.68	1.22	26.4	0	
5/7/14	0805	20.73	100	19.83	5.70	1.68	1.20	25.1	-1	
5/7/14	0810	20.75	100	19.85	5.68	1.68	1.18	24.9	-3	
5/7/14	0815	20.77	100	19.86	5.67	1.68	1.17	24.8	-5	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW14-050714 TIME: 0815

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC

APPENDIX D: LABORATORY ANALYTICAL RESULTS

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133
Email: info@microbe.com

Client: Linda Raabe
AECOM
112 East Pecan Street
Suite 499
San Antonio, TX 78205

Phone: 210-253-7518

Fax:

Identifier: 015KJ **Date Rec:** 10/03/2013 **Report Date:** 10/09/2013

Client Project #: 60256135.0002JA **Client Project Name:** LHAAP Site 67

Purchase Order #: FA8903-08-D-8770/0188

Analysis Requested: CENSUS

Reviewed By:

NOTICE: This report is intended only for the addressee shown above and may contain confidential or privileged information. If the recipient of this material is not the intended recipient or if you have received this in error, please notify Microbial Insights, Inc. immediately. The data and other information in this report represent only the sample(s) analyzed and are rendered upon condition that it is not to be reproduced without approval from Microbial Insights, Inc. Thank you for your cooperation.

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **AECOM**
Project: LHAAP Site 67

MI Project Number: **015KJ**
Date Received: 10/03/2013

Sample Information

Client Sample ID:		**67WW08-100213**	**67WW11-100213**	**LH5MW58-100313**	**35BWW12-100313**	**35BWW04-100313**
Sample Date:		10/02/2013	10/02/2013	10/03/2013	10/03/2013	10/03/2013
Units:		cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Analyst:		RW	RW	RW	RW	RW
Dechlorinating Bacteria						
Dehalococcoides	*DHC*	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01
tceA Reductase	TCE	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01
BAV1 Vinyl Chloride Reductase	BVC	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01
Vinyl Chloride Reductase	VCR	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Client: Linda Raabe
AECOM
112 East Pecan Street
Suite 499
San Antonio, TX 78205

Phone: 210-253-7518

Fax:

Identifier: 034LE **Date Rec:** 05/08/2014 **Report Date:** 05/14/2014

Client Project #: 60256135.0002JA **Client Project Name:** LHAAP Site 67

Purchase Order #:

Analysis Requested: CENSUS

Reviewed By:

NOTICE: This report is intended only for the addressee shown above and may contain confidential or privileged information. If the recipient of this material is not the intended recipient or if you have received this in error, please notify Microbial Insights, Inc. immediately. The data and other information in this report represent only the sample(s) analyzed and are rendered upon condition that it is not to be reproduced without approval from Microbial Insights, Inc. Thank you for your cooperation.

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **AECOM**
Project: LHAAP Site 67

MI Project Number: **034LE**
Date Received: 05/08/2014

Sample Information

Client Sample ID:	**67WW01-050714**	**67WW08-050714**
Sample Date:	05/07/2014	05/07/2014
Units:	cells/mL	cells/mL
Analyst:	RW	RW

Dechlorinating Bacteria

Dehalococcoides	*DHC*	**4.70E+00**	**6.00E-01**
tceA Reductase	TCE	<5.00E-01	<5.00E-01
BAV1 Vinyl Chloride Reductase	BVC	<5.00E-01	<5.00E-01
Vinyl Chloride Reductase	VCR	<5.00E-01	<5.00E-01

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133
Email: info@microbe.com

Client: Linda Raabe
AECOM
112 East Pecan Street
Suite 499
San Antonio, TX 78205

Phone: 210-253-7518

Fax:

Identifier: 065LA **Date Rec:** 01/24/2014 **Report Date:** 01/31/2014

Client Project #: 60256135.0002JA **Client Project Name:** LHAAP Site 67

Purchase Order #:

Analysis Requested: CENSUS

Reviewed By:

NOTICE: This report is intended only for the addressee shown above and may contain confidential or privileged information. If the recipient of this material is not the intended recipient or if you have received this in error, please notify Microbial Insights, Inc. immediately. The data and other information in this report represent only the sample(s) analyzed and are rendered upon condition that it is not to be reproduced without approval from Microbial Insights, Inc. Thank you for your cooperation.

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **AECOM**
Project: LHAAP Site 67

MI Project Number: **065LA**
Date Received: 01/24/2014

Sample Information

Client Sample ID:	**67WW08-01231 4**
Sample Date:	01/23/2014
Units:	cells/mL
Analyst:	RW

Dechlorinating Bacteria

Dehalococcoides	*DHC*	<4.00E-01
tceA Reductase	TCE	<4.00E-01
BAV1 Vinyl Chloride Reductase	BVC	<4.00E-01
Vinyl Chloride Reductase	VCR	<4.00E-01

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

Microbac

Laboratory Report Number: L13040315

Linda Raabe
AECOM Technical Services, Inc.
112 East Pecan
San Antonio, TX 78205

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Erin Long – Project Chemist
(740) 373-4071
Erin.Long@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on April 12 2013

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #
0017551	H	3.0		1ZAX65772210000040

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
67DPT08(25-30)030413	L13040315-01	04/03/2013 16:30	04/06/2013 10:29
EB-040413	L13040315-02	04/04/2013 08:30	04/06/2013 10:29
67DPT11(25-30)040413	L13040315-03	04/04/2013 10:50	04/06/2013 10:29
TB-030413	L13040315-04	04/03/2013 00:01	04/06/2013 10:29

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L13040315
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 13
2.0 Full Sample Data Package 26
2.1 Volatiles Data 27
2.1.1 Volatiles GCMS Data (8260) 28
2.1.1.1 Summary Data 29
2.1.1.2 QC Summary Data 45
2.1.1.3 Sample Data 81
2.1.1.4 Standards Data 118
2.1.1.5 Raw QC Data 179
3.0 Attachments 201

1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13040315
Project Name:		**Method:**	8260
Prep Batch Number(s):	426251, 426300	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-04-12 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2013-04-12 19:49:48

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13040315
Project Name:		**Method:**	8260
Prep Batch Number(s):	426251, 426300	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-04-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13040315
Project Name:		**Method:**	8260
Prep Batch Number(s):	426251, 426300	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-04-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13040315
Project Name:		**Method:**	8260
Prep Batch Number(s):	426251, 426300	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-04-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13040315
Project Name:		**Method:**	8260
Prep Batch Number(s):	426251, 426300	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-04-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13040315
Project Name:		**Method:**	8260
Prep Batch Number(s):	426251, 426300	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-04-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Acetone was below the LCL and dichlorodifluoromethane exceeded the UCL.
2) 2-Butanone was below the LCL.

1.2 Certificate of Analysis

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Certificate of Analysis

Sample #:	L13040315-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67DPT08(25-30)030413	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:01
Workgroup #:	WG426251	**Analyst:**	FJB	**Run Date:**	04/11/2013 02:51
Collect Date:	04/03/2013 16:30	**Dilution:**	1	**File ID:**	11M91034
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.18	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.737	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	40.1		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	75.9		1.00	0.500	0.250
cis-1,2-Dichloroethene	156-59-2	2.20		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	8.26		1.00	0.500	0.250
Trichloroethene	79-01-6	3.48		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.469	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.4	85	115	
1,2-Dichloroethane-d4	96.4	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Certificate of Analysis

Sample #:	L13040315-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67DPT08(25-30)030413	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:01
Workgroup #:	WG426300	**Analyst:**	TMB	**Run Date:**	04/11/2013 10:35
Collect Date:	04/03/2013 16:30	**Dilution:**	20	**File ID:**	11M91043
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1-Dichloroethene	75-35-4	539		40.0	20.0	10.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.4	85	115	
1,2-Dichloroethane-d4	94.5	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Certificate of Analysis

Sample #:	L13040315-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	EB-040413	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:01
Workgroup #:	WG426251	**Analyst:**	FJB	**Run Date:**	04/10/2013 20:34
Collect Date:	04/04/2013 08:30	**Dilution:**	1	**File ID:**	11M91022
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.266	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.524	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.7	85	115	
1,2-Dichloroethane-d4	93.4	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	110	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Certificate of Analysis

Sample #:	L13040315-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67DPT11(25-30)040413	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:01
Workgroup #:	WG426251	**Analyst:**	FJB	**Run Date:**	04/11/2013 03:23
Collect Date:	04/04/2013 10:50	**Dilution:**	1	**File ID:**	11M91035
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.68	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	9.16		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.13		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	32.0		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.7	85	115	
1,2-Dichloroethane-d4	96.2	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Certificate of Analysis

Sample #:	L13040315-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TB-030413	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:01
Workgroup #:	WG426251	**Analyst:**	FJB	**Run Date:**	04/10/2013 20:03
Collect Date:	04/03/2013 00:01	**Dilution:**	1	**File ID:**	11M91021
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.6	85	115	
1,2-Dichloroethane-d4	93.3	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	107	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Certificate of Analysis

Sample #:	L13040315-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67DPT08(25-30)030413	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:01
Workgroup #:	WG426251	**Analyst:**	FJB	**Run Date:**	04/11/2013 02:51
Collect Date:	04/03/2013 16:30	**Dilution:**	1	**File ID:**	11M91034
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.18	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.737	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	40.1		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	75.9		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	757	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	2.20		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	8.26		1.00	0.500	0.250
Trichloroethene	79-01-6	3.48		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.469	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.4	85	115	
1,2-Dichloroethane-d4	96.4	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Certificate of Analysis

Sample #:	L13040315-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67DPT08(25-30)030413	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:01
Workgroup #:	WG426300	**Analyst:**	TMB	**Run Date:**	04/11/2013 10:35
Collect Date:	04/03/2013 16:30	**Dilution:**	20	**File ID:**	11M91043
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	100	U	200	100	50.0
Benzene	71-43-2	5.00	U	20.0	5.00	2.50
Bromobenzene	108-86-1	5.00	U	20.0	5.00	2.50
Bromochloromethane	74-97-5	8.00	U	20.0	8.00	4.00
Bromodichloromethane	75-27-4	10.0	U	20.0	10.0	5.00
Bromoform	75-25-2	20.0	U	40.0	20.0	10.0
Bromomethane	74-83-9	20.0	U	40.0	20.0	10.0
2-Butanone	78-93-3	100	U	200	100	50.0
n-Butylbenzene	104-51-8	10.0	U	20.0	10.0	5.00
sec-Butylbenzene	135-98-8	10.0	U	20.0	10.0	5.00
tert-Butylbenzene	98-06-6	10.0	U	20.0	10.0	5.00
Carbon disulfide	75-15-0	20.0	U	40.0	20.0	10.0
Carbon tetrachloride	56-23-5	10.0	U	20.0	10.0	5.00
Chlorobenzene	108-90-7	5.00	U	20.0	5.00	2.50
Chlorodibromomethane	124-48-1	10.0	U	20.0	10.0	5.00
Chloroethane	75-00-3	20.0	U	40.0	20.0	10.0
Chloroform	67-66-3	5.00	U	20.0	5.00	2.50
Chloromethane	74-87-3	20.0	U	40.0	20.0	10.0
2-Chlorotoluene	95-49-8	5.00	U	20.0	5.00	2.50
4-Chlorotoluene	106-43-4	10.0	U	20.0	10.0	5.00
1,2-Dibromo-3-chloropropane	96-12-8	40.0	U	100	40.0	20.0
1,2-Dibromoethane	106-93-4	10.0	U	20.0	10.0	5.00
Dibromomethane	74-95-3	10.0	U	20.0	10.0	5.00
1,2-Dichlorobenzene	95-50-1	5.00	U	20.0	5.00	2.50
1,3-Dichlorobenzene	541-73-1	10.0	U	20.0	10.0	5.00
1,4-Dichlorobenzene	106-46-7	5.00	U	20.0	5.00	2.50
Dichlorodifluoromethane	75-71-8	10.0	U	20.0	10.0	5.00
1,1-Dichloroethane	75-34-3	29.7		20.0	5.00	2.50
1,2-Dichloroethane	107-06-2	62.4		20.0	10.0	5.00
1,1-Dichloroethene	75-35-4	539		40.0	20.0	10.0
cis-1,2-Dichloroethene	156-59-2	10.0	U	20.0	10.0	5.00

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	10.0	U	20.0	10.0	5.00
1,2-Dichloropropane	78-87-5	8.00	U	20.0	8.00	4.00
1,3-Dichloropropane	142-28-9	8.00	U	20.0	8.00	4.00
2,2-Dichloropropane	594-20-7	10.0	U	20.0	10.0	5.00
cis-1,3-Dichloropropene	10061-01-5	10.0	U	20.0	10.0	5.00
trans-1,3-Dichloropropene	10061-02-6	20.0	U	40.0	20.0	10.0
1,1-Dichloropropene	563-58-6	10.0	U	20.0	10.0	5.00
Ethylbenzene	100-41-4	10.0	U	20.0	10.0	5.00
2-Hexanone	591-78-6	100	U	200	100	50.0
Hexachlorobutadiene	87-68-3	8.43	J	20.0	10.0	5.00
Isopropylbenzene	98-82-8	10.0	U	20.0	10.0	5.00
p-Isopropyltoluene	99-87-6	10.0	U	20.0	10.0	5.00
4-Methyl-2-pentanone	108-10-1	100	U	200	100	50.0
Methylene chloride	75-09-2	10.0	U	20.0	10.0	5.00
Naphthalene	91-20-3	8.00	U	20.0	8.00	4.00
n-Propylbenzene	103-65-1	5.00	U	20.0	5.00	2.50
Styrene	100-42-5	5.00	U	20.0	5.00	2.50
1,1,1,2-Tetrachloroethane	630-20-6	10.0	U	20.0	10.0	5.00
1,1,2,2-Tetrachloroethane	79-34-5	8.00	U	20.0	8.00	4.00
Tetrachloroethene	127-18-4	10.0	U	20.0	10.0	5.00
Toluene	108-88-3	10.0	U	20.0	10.0	5.00
1,2,3-Trichlorobenzene	87-61-6	6.00	U	20.0	6.00	3.00
1,2,4-Trichlorobenzene	120-82-1	8.00	U	20.0	8.00	4.00
1,1,1-Trichloroethane	71-55-6	10.0	U	20.0	10.0	5.00
1,1,2-Trichloroethane	79-00-5	6.70	J	20.0	10.0	5.00
Trichloroethene	79-01-6	10.0	U	20.0	10.0	5.00
Trichlorofluoromethane	75-69-4	10.0	U	20.0	10.0	5.00
1,2,3-Trichloropropane	96-18-4	20.0	U	40.0	20.0	10.0
1,2,4-Trimethylbenzene	95-63-6	10.0	U	20.0	10.0	5.00
1,3,5-Trimethylbenzene	108-67-8	10.0	U	20.0	10.0	5.00
Vinyl chloride	75-01-4	10.0	U	20.0	10.0	5.00
o-Xylene	95-47-6	10.0	U	20.0	10.0	5.00
m-,p-Xylene	179601-23-1	20.0	U	40.0	20.0	10.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.4	85	115	
1,2-Dichloroethane-d4	94.5	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Certificate of Analysis

Sample #:	L13040315-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	EB-040413	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:01
Workgroup #:	WG426251	**Analyst:**	FJB	**Run Date:**	04/10/2013 20:34
Collect Date:	04/04/2013 08:30	**Dilution:**	1	**File ID:**	11M91022
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.266	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.524	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.7	85	115	
1,2-Dichloroethane-d4	93.4	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	110	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Certificate of Analysis

Sample #:	L13040315-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67DPT11(25-30)040413	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:01
Workgroup #:	WG426251	**Analyst:**	FJB	**Run Date:**	04/11/2013 03:23
Collect Date:	04/04/2013 10:50	**Dilution:**	1	**File ID:**	11M91035
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.68	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	9.16		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.13		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	32.0		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.7	85	115	
1,2-Dichloroethane-d4	96.2	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Certificate of Analysis

Sample #:	L13040315-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TB-030413	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:01
Workgroup #:	WG426251	**Analyst:**	FJB	**Run Date:**	04/10/2013 20:03
Collect Date:	04/03/2013 00:01	**Dilution:**	1	**File ID:**	11M91021
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.6	85	115	
1,2-Dichloroethane-d4	93.3	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	107	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13040315
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 040213
Analyst1: FJB Analyst2: ADC
Method: 8260B SOP: MSV01 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13

Maintenance Log ID: 45429

Internal Standard: STD56821 Surrogate Standard: STD57152
CCV: STD57020 LCS: STD57151, STD57021 MS/MSD: STD57151

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG425304, WG425405

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M90722	WG425304-01 BFB 50ng 8260	NA	1	1	STD57083	04/02/13 07:26
11M90724	WG425304-01 BFB 50ng 8260	NA	1	1	STD57083	04/02/13 07:49
11M90725	WG425304-02 0.3ug/L STD 8260	NA	1	1	STD57020	04/02/13 08:14
11M90726	WG425304-03 0.4ug/L STD 8260	NA	1	1	STD57020	04/02/13 08:50
11M90727	WG425304-04 1ug/L STD 8260	NA	1	1	STD57020	04/02/13 09:21
11M90728	WG425304-05 2ug/L STD 8260	NA	1	1	STD57020	04/02/13 09:53
11M90729	WG425304-06 5ug/L STD 8260	NA	1	1	STD57020	04/02/13 10:24
11M90730	WG425304-07 20ug/L STD 8260	NA	1	1	STD57020	04/02/13 10:56
11M90731	WG425304-08 50ug/L STD 8260	NA	1	1	STD57020	04/02/13 11:27
11M90732	WG425304-09 100ug/L STD 8260	NA	1	1	STD57020	04/02/13 11:59
11M90733	WG425304-10 200ug/L STD 8260	NA	1	1	STD57020	04/02/13 12:30
11M90734	WG425304-11 300ug/L STD 8260	NA	1	1	STD57020	04/02/13 13:01
11M90735	RINSE	NA	1	1		04/02/13 14:03
11M90736	WG425304-12 50ug/L ALT SRC 8260	NA	1	1	STD57021	04/02/13 14:58
11M90737	WG425304-12 50ug/L ALT SRC 8260	NA	1	1	STD57021	04/02/13 16:35
11M90738	WG425404-01 50ng/L BFB 8260	NA	1	1	STD57083	04/02/13 17:40
11M90739	WG425404-01 50ng/L BFB 8260	NA	1	1	STD57083	04/02/13 17:51
11M90740	WG425404-02 50ug/L CCV 8260	NA	1	1	STD57020	04/02/13 18:16
11M90741	WG425XXX-01 100ug/L CCV 8260	NA	1	1	STDXXXXX	04/02/13 18:47
11M90742	WG425405-01 VBLK 0402 8260	NA	1	1		04/02/13 19:19
11M90743	WG425405-02 20ug/L LCS 8260	NA	1	1	STD57151	04/02/13 19:50
11M90744	L13031084-04 A MS 826-SPE	<2	1	1	STD57151	04/02/13 20:22
11M90745	L13031084-05 A MSD 826-SPE	<2	1	1	STD57151	04/02/13 20:53
11M90746	L13031119-02 A 826-SPE	<2	1	1		04/02/13 21:25
11M90747	L13031084-01 A 826-SPE	<2	1	1		04/02/13 21:56
11M90748	L13031084-09 A 826-SPE	<2	1	1		04/02/13 22:27
11M90749	L13031003-05 A 826-LOW	<2	1	1		04/02/13 22:59
11M90750	L13031003-06 A 826-LOW	<2	1	1		04/02/13 23:30
11M90751	L13031003-07 A 826-LOW	<2	1	1		04/03/13 00:02
11M90752	L13031116-03 A 826-SPE1	<2	1	1		04/03/13 00:33
11M90753	L13030979-03 A 826-LOW	<2	1	1		04/03/13 01:05
11M90754	L13031084-07 A 826-SPE	<2	1	1		04/03/13 01:36
11M90755	L13031119-01 A 826-SPE	<2	1	1		04/03/13 02:07
11M90756	L13031084-02 A 826-SPE	<2	1	1		04/03/13 02:39

Approved: April 08, 2013

Microbac

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 040213
Analyst1: FJB Analyst2: ADC
Method: 8260B SOP: MSV01 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13

Maintenance Log ID: 45429

Internal Standard: STD56821 Surrogate Standard: STD57152
CCV: STD57020 LCS: STD57151, STD57021 MS/MSD: STD57151

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG425304, WG425405

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M90757	L13031084-03 A 826-SPE	<2	1	1		04/03/13 03:10
11M90758	L13031084-06 A 826-SPE	<2	1	1		04/03/13 03:42
11M90759	L13031084-08 A 826-SPE	<2	1	1		04/03/13 04:13
11M90760	L13031116-01 A 826-SPE1	<2	1	1		04/03/13 04:45
11M90761	L13031116-02 A 826-SPE1	<2	1	1		04/03/13 05:16
11M90762	L13030979-01 A 826-LOW	<2	1	1		04/03/13 05:48
11M90763	RINSE	NA	1	1		04/03/13 06:19
11M90764	RINSE	NA	1	1		04/03/13 06:50
11M90765	RINSE	NA	1	1		04/03/13 07:22

Comments

Seq.	Rerun	Dil.	Reason	Analytes
42	X			
File ID: 11M90722				
12	X			
File ID: 11M90736				
	ss and acetone low			
14	X			
File ID: 11M90738				

Approved: April 08, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 041013
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13

Maintenance Log ID: 45511

Internal Standard: STD57256 Surrogate Standard: STD57152
CCV: STD57195 LCS: STD57151 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG426251

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M91013	WG426250-01 BFB 50ng 8260	NA	1	1	STD57083	04/10/13 14:35
11M91014	WG426250-01 BFB 50ng 8260	NA	1	1	STD57083	04/10/13 15:46
11M91015	WG426250-02 50ug/L CCV 8260	NA	1	1	STD57195	04/10/13 16:11
11M91016	RINSE	NA	1	1		04/10/13 17:25
11M91017	WG426251-01 VBLK0410 BLANK 8260	NA	1	1		04/10/13 17:57
11M91018	WG426251-02 20ug/L LCS 8260	NA	1	1	STD57151	04/10/13 18:28
11M91019	WG426251-03 20ug/L LCS DUP 8260	NA	1	1	STD57151	04/10/13 19:00
11M91020	RINSE	NA	1	1		04/10/13 19:31
11M91021	L13040315-04 TB A 826-LOW	NA	1	1		04/10/13 20:03
11M91022	L13040315-02 EB A 826-LOW	NA	1	1		04/10/13 20:34
11M91023	L13040139-12 AB A 826-SPE	NA	1	1		04/10/13 21:06
11M91024	L13040139-04 A 826-SPE	NA	1	1		04/10/13 21:37
11M91025	L13040139-05 A 826-SPE	NA	1	1		04/10/13 22:09
11M91026	L13040139-06 A 826-SPE	NA	1	1		04/10/13 22:40
11M91027	L13040139-07 A 826-SPE	NA	1	1		04/10/13 23:12
11M91028	L13040139-08 A 826-SPE	NA	1	1		04/10/13 23:43
11M91029	L13040139-09 A 826-SPE	NA	1	1		04/11/13 00:14
11M91030	L13040139-10 A 826-SPE	NA	1	1		04/11/13 00:46
11M91031	L13040139-11 A 826-SPE	NA	1	1		04/11/13 01:17
11M91032	L13040139-13 A 826-SPE	NA	1	1		04/11/13 01:49
11M91033	L13040139-14 A 826-SPE	NA	1	1		04/11/13 02:20
11M91034	L13040315-01 A 826-LOW	NA	1	1		04/11/13 02:51
11M91035	L13040315-03 A 826-LOW	NA	1	1		04/11/13 03:23

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 11M91013				
	Do injection port maintenance.			
22	X	20	Over Calibration Range	11-DCE
File ID: 11M91034				

Approved: April 11, 2013

Page: 1

Microbac Laboratories Inc.

Data Checklist

Date: 02-APR-2013
Analyst: FJB
Analyst: ADC
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 52293
Analytical Workgroups: WG425304, WG425405

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 05-APR-2013

Secondary Reviewer: 08-APR-2013

CHECKLIST1 - Modified 03/05/2008

Generated: APR-08-2013 08:29:32

Microbac Laboratories Inc.

Data Checklist

Date: 10-APR-2013
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 52447
Analytical Workgroups: WG426251

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 11-APR-2013

Secondary Reviewer: 11-APR-2013

CHECKLIST1 - Modified 03/05/2008

Generated: APR-11-2013 16:29:03

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG426251

Login Number: L13040315

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67DPT08(25-30)030413	01	04/03/13					04/11/2013	7.4	14		04/11/13	7.4	14	
EB-040413	02	04/04/13					04/10/2013	6.5	14		04/10/13	6.5	14	
67DPT11(25-30)040413	03	04/04/13					04/11/2013	6.7	14		04/11/13	6.7	14	
TB-030413	04	04/03/13					04/10/2013	7.8	14		04/10/13	7.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2825280
Report generated 04/12/2013 15:48

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG426300

Login Number: L13040315

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67DPT08(25-30)030413	01	04/03/13					04/11/2013	7.8	14		04/11/13	7.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2825280
Report generated 04/12/2013 15:48

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L13040315
Instrument Id: HPMS11
Workgroup (AAB#): WG426300

Method: 8260
CAL ID: HPMS11-02-APR-13
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L13040315-01	20.0	DL01	94.5	98.4	108	104
WG426300-01	1.00	01	91.8	95.0	104	100
WG426300-02	1.00	01	94.9	98.7	102	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 2825303
Report generated: 04/12/2013 15:48

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L13040315
Instrument Id: HPMS11
Workgroup (AAB#): WG426251

Method: 8260
CAL ID: HPMS11-02-APR-13
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L13040315-01	1.00	01	96.4	99.4	103	105
L13040315-02	1.00	01	93.4	99.7	110	105
L13040315-03	1.00	01	96.2	98.7	102	103
L13040315-04	1.00	01	93.3	98.6	107	104
WG426251-01	1.00	01	94.7	100	106	106
WG426251-02	1.00	01	95.1	99.9	104	104
WG426251-03	1.00	01	94.5	99.9	104	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 2825303
Report generated: 04/12/2013 15:48

METHOD BLANK SUMMARY

Login Number: L13040315
Blank File ID: 11M91017
Prep Date: 04/10/13 17:57
Analyzed Date: 04/10/13 17:57
Analyst: FJB

Work Group: WG426251
Blank Sample ID: WG426251-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG426251-02	11M91018	04/10/13 18:28	01
LCS2	WG426251-03	11M91019	04/10/13 19:00	01
TB-030413	L13040315-04	11M91021	04/10/13 20:03	01
EB-040413	L13040315-02	11M91022	04/10/13 20:34	01
67DPT08(25-30)030413	L13040315-01	11M91034	04/11/13 02:51	01
67DPT11(25-30)040413	L13040315-03	11M91035	04/11/13 03:23	01

Report Name: BLANK_SUMMARY
PDF File ID: 2825281
Report generated 04/12/2013 15:48

METHOD BLANK SUMMARY

Login Number: L13040315
Blank File ID: 11M91039
Prep Date: 04/11/13 08:22
Analyzed Date: 04/11/13 08:22
Analyst: TMB

Work Group: WG426300
Blank Sample ID: WG426300-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG426300-02	11M91040	04/11/13 08:53	01
67DPT08(25-30)030413	L13040315-01	11M91043	04/11/13 10:35	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 2825281
Report generated 04/12/2013 15:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13040315 Prep Date: 04/10/13 17:57 Sample ID: WG426251-01
Instrument ID: HPMS11 Run Date: 04/10/13 17:57 Prep Method: 5030B/5030C/503
File ID: 11M91017 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG426251 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-02-APR-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 2825283
12-APR-2013 15:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13040315 Prep Date: 04/10/13 17:57 Sample ID: WG426251-01
Instrument ID: HPMS11 Run Date: 04/10/13 17:57 Prep Method: 5030B/5030C/503
File ID: 11M91017 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG426251 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-02-APR-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	100	85 - 115	PASS
1,2-Dichloroethane-d4	94.7	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	106	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2825283
12-APR-2013 15:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13040315 Prep Date: 04/11/13 08:22 Sample ID: WG426300-01
Instrument ID: HPMS11 Run Date: 04/11/13 08:22 Prep Method: 5030B/5030C/503
File ID: 11M91039 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG426300 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-02-APR-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 2825283
12-APR-2013 15:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13040315 Prep Date: 04/11/13 08:22 Sample ID: WG426300-01
Instrument ID: HPMS11 Run Date: 04/11/13 08:22 Prep Method: 5030B/5030C/503
File ID: 11M91039 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG426300 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-02-APR-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	95.0	85 - 115	PASS
1,2-Dichloroethane-d4	91.8	70 - 120	PASS
Toluene-d8	100	85 - 120	PASS
4-Bromofluorobenzene	104	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2825283
12-APR-2013 15:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13040315 | Run Date: 04/11/2013 | Sample ID: WG426300-02
Instrument ID: HPMS11 | Run Time: 08:53 | Prep Method: 5030B/5030C/503
File ID: 11M91040 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG426300 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD57227 | Cal ID: HPMS11-02-APR-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	18.5	92.6	40 - 140	
Benzene	20.0	18.0	90.2	80 - 120	
Bromobenzene	20.0	17.8	89.1	75 - 125	
Bromochloromethane	20.0	19.1	95.4	65 - 130	
Bromodichloromethane	20.0	18.2	90.9	75 - 120	
Bromoform	20.0	19.2	96.1	70 - 130	
Bromomethane	20.0	15.8	79.2	30 - 145	
2-Butanone	20.0	18.3	91.3	30 - 150	
n-Butylbenzene	20.0	18.3	91.6	70 - 135	
sec-Butylbenzene	20.0	16.4	81.8	70 - 125	
tert-Butylbenzene	20.0	17.2	86.2	70 - 130	
Carbon disulfide	20.0	17.2	86.2	35 - 160	
Carbon tetrachloride	20.0	18.9	94.4	65 - 140	
Chlorobenzene	20.0	17.4	86.8	80 - 120	
Chlorodibromomethane	20.0	18.8	94.1	60 - 135	
Chloroethane	20.0	18.6	93.0	60 - 135	
Chloroform	20.0	18.7	93.3	65 - 135	
Chloromethane	20.0	18.1	90.5	40 - 125	
2-Chlorotoluene	20.0	17.1	85.7	75 - 125	
4-Chlorotoluene	20.0	16.1	80.6	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	18.5	92.7	50 - 130	
1,2-Dibromoethane	20.0	19.8	99.0	80 - 120	
Dibromomethane	20.0	18.4	91.8	75 - 125	
1,2-Dichlorobenzene	20.0	17.0	85.0	70 - 120	
1,3-Dichlorobenzene	20.0	16.8	83.9	75 - 125	
1,4-Dichlorobenzene	20.0	18.0	90.2	75 - 125	
Dichlorodifluoromethane	20.0	24.8	124	30 - 155	
1,1-Dichloroethane	20.0	18.7	93.6	70 - 135	
1,2-Dichloroethane	20.0	19.5	97.4	70 - 130	
1,1-Dichloroethene	20.0	17.8	89.2	70 - 130	
cis-1,2-Dichloroethene	20.0	18.7	93.4	70 - 125	
trans-1,2-Dichloroethene	20.0	18.7	93.3	60 - 140	
1,2-Dichloropropane	20.0	18.9	94.3	75 - 125	
1,3-Dichloropropane	20.0	19.3	96.5	75 - 125	
2,2-Dichloropropane	20.0	17.5	87.5	70 - 135	
cis-1,3-Dichloropropene	20.0	19.5	97.4	70 - 130	
trans-1,3-Dichloropropene	20.0	18.8	94.2	55 - 140	
1,1-Dichloropropene	20.0	18.6	92.8	75 - 130	
Ethylbenzene	20.0	18.3	91.7	75 - 125	
2-Hexanone	20.0	19.2	96.2	55 - 130	
Hexachlorobutadiene	20.0	18.6	92.9	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 2827802
Report generated: 04/12/2013 15:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13040315 | Run Date: 04/11/2013 | Sample ID: WG426300-02
Instrument ID: HPMS11 | Run Time: 08:53 | Prep Method: 5030B/5030C/503
File ID: 11M91040 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG426300 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD57227 | Cal ID: HPMS11-02-APR-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	17.4	87.1	75 - 125	
p-Isopropyltoluene	20.0	17.1	85.5	75 - 130	
4-Methyl-2-pentanone	20.0	19.3	96.3	60 - 135	
Methylene chloride	20.0	18.6	93.2	55 - 140	
Naphthalene	20.0	17.2	85.8	55 - 140	
n-Propylbenzene	20.0	16.5	82.4	70 - 130	
Styrene	20.0	18.0	89.9	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.6	98.0	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	19.3	96.4	65 - 130	
Tetrachloroethene	20.0	18.9	94.3	45 - 150	
Toluene	20.0	18.1	90.7	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.6	88.1	55 - 140	
1,2,4-Trichlorobenzene	20.0	18.2	90.8	65 - 135	
1,1,1-Trichloroethane	20.0	18.9	94.5	65 - 130	
1,1,2-Trichloroethane	20.0	19.8	98.9	75 - 125	
Trichloroethene	20.0	20.0	99.8	70 - 125	
Trichlorofluoromethane	20.0	18.3	91.4	60 - 145	
1,2,3-Trichloropropane	20.0	17.8	89.2	75 - 125	
1,2,4-Trimethylbenzene	20.0	17.7	88.7	75 - 130	
1,3,5-Trimethylbenzene	20.0	18.8	93.9	75 - 130	
Vinyl chloride	20.0	18.9	94.3	50 - 145	
o-Xylene	20.0	17.3	86.6	80 - 120	
m-,p-Xylene	40.0	36.6	91.5	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	98.7	85 - 115	PASS
1,2-Dichloroethane-d4	94.9	70 - 120	PASS
Toluene-d8	102	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 2827802
Report generated: 04/12/2013 15:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13040315 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG426251 Units: ug/L
QC Key: DOD4 Lot #: STD57151

Sample ID: WG426251-02 LCS File ID: 11M91018 Run Date: 04/10/2013 18:28
Sample ID: WG426251-03 LCS2 File ID: 11M91019 Run Date: 04/10/2013 19:00

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.6	103	20.0	20.2	101	2.09	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.7	103	20.0	20.2	101	2.15	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	19.5	97.6	20.0	20.0	100	2.52	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.8	104	20.0	20.6	103	1.18	75 - 125	30	
1,1-Dichloroethane	20.0	19.6	97.9	20.0	19.1	95.7	2.36	70 - 135	30	
1,1-Dichloroethene	20.0	19.7	98.4	20.0	19.3	96.3	2.15	70 - 130	30	
1,1-Dichloropropene	20.0	20.3	102	20.0	20.1	100	1.16	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	18.2	91.0	20.0	18.1	90.7	0.401	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.2	96.1	20.0	19.6	98.1	2.01	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	18.6	92.8	20.0	18.8	93.9	1.23	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	18.9	94.5	20.0	18.6	93.0	1.65	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	18.7	93.7	20.0	19.3	96.6	3.04	50 - 130	30	
1,2-Dibromoethane	20.0	20.1	101	20.0	19.8	99.0	1.70	80 - 120	30	
1,2-Dichlorobenzene	20.0	17.6	88.2	20.0	17.6	88.1	0.153	70 - 120	30	
1,2-Dichloroethane	20.0	20.3	102	20.0	20.0	100	1.38	70 - 130	30	
1,2-Dichloropropane	20.0	20.1	100	20.0	19.5	97.3	3.09	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.0	100	20.0	19.8	99.2	0.942	75 - 130	30	
1,3-Dichlorobenzene	20.0	17.9	89.4	20.0	17.7	88.7	0.731	75 - 125	30	
1,3-Dichloropropane	20.0	20.3	102	20.0	19.9	99.3	2.41	75 - 125	30	
1,4-Dichlorobenzene	20.0	18.8	94.1	20.0	18.6	93.2	1.00	75 - 125	30	
2,2-Dichloropropane	20.0	18.6	93.0	20.0	19.0	95.1	2.27	70 - 135	30	
2-Butanone	20.0	19.9	99.5	20.0	19.5	97.3	2.26	30 - 150	30	
2-Chlorotoluene	20.0	18.6	93.0	20.0	18.2	90.8	2.44	75 - 125	30	
2-Hexanone	20.0	20.2	101	20.0	20.2	101	0.330	55 - 130	30	
4-Chlorotoluene	20.0	17.2	86.1	20.0	17.1	85.4	0.815	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.3	96.3	20.0	19.8	99.0	2.82	60 - 135	30	
Acetone	20.0	13.0	65.1	20.0	14.0	70.2	7.46	40 - 140	30	
Benzene	20.0	19.2	96.1	20.0	18.8	93.9	2.35	80 - 120	30	
Bromobenzene	20.0	19.0	95.2	20.0	18.8	94.0	1.21	75 - 125	30	
Bromochloromethane	20.0	19.9	99.3	20.0	19.3	96.7	2.60	65 - 130	30	
Bromodichloromethane	20.0	19.2	95.8	20.0	18.7	93.4	2.48	75 - 120	30	
Bromoform	20.0	19.9	99.6	20.0	19.9	99.6	0.0099	70 - 130	30	
Bromomethane	20.0	17.8	89.1	20.0	16.8	83.9	5.96	30 - 145	30	
Carbon disulfide	20.0	19.9	99.7	20.0	19.4	97.2	2.55	35 - 160	30	
Carbon tetrachloride	20.0	20.9	104	20.0	20.3	101	2.82	65 - 140	30	
Chlorobenzene	20.0	18.3	91.6	20.0	17.9	89.3	2.50	80 - 120	30	
Chloroethane	20.0	20.6	103	20.0	19.9	99.7	3.13	60 - 135	30	
Chloroform	20.0	19.5	97.6	20.0	19.3	96.6	1.03	65 - 135	30	
Chloromethane	20.0	21.3	107	20.0	20.8	104	2.26	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.1	101	20.0	19.7	98.3	2.28	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2825284
Report generated: 04/12/2013 15:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13040315 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG426251 Units: ug/L
QC Key: DOD4 Lot #: STD57151

Sample ID: WG426251-02 LCS File ID: 11M91018 Run Date: 04/10/2013 18:28
Sample ID: WG426251-03 LCS2 File ID: 11M91019 Run Date: 04/10/2013 19:00

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	20.3	102	20.0	20.0	100	1.68	70 - 130	30	
Chlorodibromomethane	20.0	19.6	98.2	20.0	19.5	97.4	0.778	60 - 135	30	
Dibromomethane	20.0	19.4	97.0	20.0	18.9	94.6	2.47	75 - 125	30	
Dichlorodifluoromethane	20.0	27.3	136	20.0	26.4	132	3.31	30 - 155	30	
Ethylbenzene	20.0	19.7	98.4	20.0	19.2	96.2	2.27	75 - 125	30	
Hexachlorobutadiene	20.0	19.3	96.5	20.0	19.9	99.4	2.94	50 - 140	30	
Isopropylbenzene	20.0	18.6	93.0	20.0	18.2	90.9	2.31	75 - 125	30	
m-,p-Xylene	40.0	38.8	97.0	40.0	37.9	94.6	2.48	75 - 130	30	
Methylene chloride	20.0	19.8	99.0	20.0	18.7	93.7	5.43	55 - 140	30	
n-Butylbenzene	20.0	19.8	98.9	20.0	19.6	98.2	0.693	70 - 135	30	
n-Propylbenzene	20.0	17.9	89.5	20.0	17.9	89.4	0.176	70 - 130	30	
Naphthalene	20.0	17.7	88.3	20.0	17.8	88.9	0.671	55 - 140	30	
o-Xylene	20.0	18.4	91.8	20.0	17.9	89.4	2.63	80 - 120	30	
p-Isopropyltoluene	20.0	18.4	91.9	20.0	18.2	91.0	1.04	75 - 130	30	
sec-Butylbenzene	20.0	17.7	88.6	20.0	17.5	87.3	1.42	70 - 125	30	
Styrene	20.0	18.9	94.7	20.0	18.4	92.1	2.83	65 - 135	30	
tert-Butylbenzene	20.0	18.3	91.6	20.0	18.0	90.0	1.68	70 - 130	30	
Tetrachloroethene	20.0	20.6	103	20.0	19.9	99.4	3.66	45 - 150	30	
Toluene	20.0	19.4	97.0	20.0	19.0	95.2	1.89	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.9	99.4	20.0	19.5	97.7	1.76	60 - 140	30	
trans-1,3-Dichloropropene	20.0	19.6	98.1	20.0	19.3	96.7	1.35	55 - 140	30	
Trichloroethene	20.0	21.8	109	20.0	21.2	106	2.71	70 - 125	30	
Trichlorofluoromethane	20.0	21.3	106	20.0	20.8	104	2.41	60 - 145	30	
Vinyl chloride	20.0	21.5	108	20.0	20.9	105	2.70	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	95.1	94.5	70 - 120	PASS
Dibromofluoromethane	99.9	99.9	85 - 115	PASS
4-Bromofluorobenzene	104	104	75 - 120	PASS
Toluene-d8	104	102	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2825284
Report generated: 04/12/2013 15:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13040315
Instrument: HPMS11
Analyst: FJB
Workgroup: WG425304

Tune ID: WG425304-01
Run Date: 04/02/2013
Run Time: 07:49
File ID: 11M90724
Cal ID: HPMS11 - 02-APR-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.2	2994	PASS
75.0	95.0	30.0	60.0	46.9	6611	PASS
95.0	95.0	100	100	100	14091	PASS
96.0	95.0	5.00	9.00	7.23	1019	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	93.6	13187	PASS
175	174	5.00	9.00	7.20	950	PASS
176	174	95.0	101	100	13208	PASS
177	176	5.00	9.00	7.00	925	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG425304-02	STD	01	04/02/2013 08:14	
WG425304-03	STD	01	04/02/2013 08:50	
WG425304-04	STD	01	04/02/2013 09:21	
WG425304-05	STD	01	04/02/2013 09:53	
WG425304-06	STD	01	04/02/2013 10:24	
WG425304-07	STD	01	04/02/2013 10:56	
WG425304-08	STD-CCV	01	04/02/2013 11:27	
WG425304-09	STD	01	04/02/2013 11:59	
WG425304-10	STD	01	04/02/2013 12:30	
WG425304-11	STD	01	04/02/2013 13:01	
WG425304-12	SSCV	01	04/02/2013 16:35	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 2825287
Report generated 04/12/2013 15:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13040315
Instrument: HPMS11
Analyst: FJB
Workgroup: WG426250

Tune ID: WG426250-01
Run Date: 04/10/2013
Run Time: 15:46
File ID: 11M91014
Cal ID: HPMS11 - 02-APR-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.3	3235	PASS
75.0	95.0	30.0	60.0	44.4	7425	PASS
95.0	95.0	100	100	100	16723	PASS
96.0	95.0	5.00	9.00	6.47	1082	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	88.2	14748	PASS
175	174	5.00	9.00	7.33	1081	PASS
176	174	95.0	101	96.9	14293	PASS
177	176	5.00	9.00	6.93	991	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG426250-02	CCV	01	04/10/2013 16:11	
WG426251-01	BLANK	01	04/10/2013 17:57	
WG426251-02	LCS	01	04/10/2013 18:28	
WG426251-03	LCS2	01	04/10/2013 19:00	
L13040315-04	TB-030413	01	04/10/2013 20:03	
L13040315-02	EB-040413	01	04/10/2013 20:34	
L13040315-01	67DPT08(25-30)030413	01	04/11/2013 02:51	
L13040315-03	67DPT11(25-30)040413	01	04/11/2013 03:23	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 2825287
Report generated 04/12/2013 15:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13040315
Instrument: HPMS11
Analyst: TMB
Workgroup: WG426299

Tune ID: WG426299-01
Run Date: 04/11/2013
Run Time: 06:55
File ID: 11M91036
Cal ID: HPMS11 - 02-APR-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.0	5109	PASS
75.0	95.0	30.0	60.0	40.6	12222	PASS
95.0	95.0	100	100	100	30131	PASS
96.0	95.0	5.00	9.00	6.77	2039	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	89.5	26960	PASS
175	174	5.00	9.00	8.27	2230	PASS
176	174	95.0	101	96.8	26085	PASS
177	176	5.00	9.00	6.92	1806	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG426299-02	CCV	01	04/11/2013 07:19	
WG426300-01	BLANK	01	04/11/2013 08:22	
WG426300-02	LCS	01	04/11/2013 08:53	
L13040315-01	67DPT08(25-30)030413	DL01	04/11/2013 10:35	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 2825287
Report generated 04/12/2013 15:48

Calibration Table Report
Method: 8260_WT.M
Title: 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Calibration: Fri Apr 05 12:47:46 2013
Curve: WG425304
Calibration Files

	Compound	0.3	0.4	1	2	5	20	50	100	200	300	Avg	%RSD	Linear	Quadratic
		11M90725.D	11M90726.D	11M90727.D	11M90728.D	11M90729.D	11M90730.D	11M90731.D	11M90732.D	11M90733.D	11M90734.D				
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.186	0.206	0.221	0.239	0.249	0.237	0.239	0.229	0.226	9.230		
P	Chloromethane			0.378	0.273	0.285	0.267	0.253	0.244	0.260	0.269	0.279	15.128	0.999	
C	Vinyl Chloride		0.392	0.291	0.264	0.248	0.241	0.246	0.228	0.223	0.199	0.259	21.645	0.995	
T	1,3-Butadiene					0.246	0.176	0.137	0.117	0.113	0.108	0.149	35.796	0.996	
T	Bromomethane			0.301	0.269	0.252	0.195	0.198	0.193	0.200	0.198	0.226	18.802	1.000	
T	Chloroethane		0.202	0.190	0.192	0.207	0.203	0.206	0.194	0.196	0.192	0.198	3.323		
T	Trichlorofluoromethane		0.386	0.373	0.381	0.415	0.409	0.434	0.405	0.411	0.404	0.402	4.717		
T	Diethyl ether			0.212	0.203	0.209	0.214	0.216	0.209	0.211	0.207	0.210	1.831		
T	Isoprene		0.368	0.344	0.383	0.406	0.393	0.408	0.396	0.397	0.392	0.387	5.235		
T	Acrolein			0.007	0.007	0.008	0.008	0.009	0.009	0.009	0.009	0.008	10.900		
T	1,1,2-Trichloro-1,2,2-Trifluoroe		0.222	0.231	0.251	0.258	0.257	0.274	0.255	0.258	0.252	0.251	6.204		
T	Acetone				0.078	0.066	0.065	0.070	0.069	0.068	0.068	0.069	6.200		
C	1,1-Dichloroethene		0.425	0.402	0.397	0.425	0.406	0.420	0.399	0.406	0.398	0.409	2.846		
T	Tert-Butyl Alcohol				0.014	0.015	0.016	0.016	0.017	0.017	0.018	0.016	8.362		
T	Dimethyl Sulfide		0.308	0.341	0.319	0.335	0.338	0.341	0.331	0.332	0.332	0.331	3.266		
T	Iodomethane			0.062	0.087	0.193	0.337	0.362	0.349	0.357	0.358	0.263	49.201	0.999	
T	Methyl acetate			0.139	0.138	0.157	0.149	0.148	0.149	0.146	0.148	0.147	4.149		
T	Methylene Chloride		0.291	0.302	0.280	0.287	0.284	0.293	0.277	0.280	0.276	0.285	3.010		
T	Carbon Disulfide		0.937	0.844	0.853	0.917	0.893	0.917	0.899	0.896	0.882	0.893	3.388		
T	Acrylonitrile			0.068	0.064	0.070	0.073	0.077	0.076	0.079	0.080	0.073	8.035		
T	Methyl Tert Butyl Ether		0.530	0.610	0.578	0.608	0.637	0.652	0.623	0.631	0.638	0.612	6.145		
T	trans-1,2-Dichloroethene		0.314	0.297	0.275	0.289	0.291	0.298	0.281	0.286	0.283	0.291	3.963		
T	n-Hexane		0.409	0.326	0.366	0.387	0.383	0.402	0.387	0.380	0.369	0.379	6.340		
T	Diisopropyl ether			1.070	0.995	1.004	1.003	1.005	0.964	0.974	0.948	0.995	3.715		
T	Vinyl Acetate					0.335	0.408	0.438	0.421	0.424	0.422	0.408	9.075		
P	1,1-Dichloroethane		0.527	0.495	0.507	0.519	0.504	0.522	0.484	0.488	0.481	0.503	3.390		
T	Ethyl-Tert-Butyl ether			0.891	0.837	0.848	0.864	0.877	0.851	0.864	0.855	0.861	1.992		
T	2-Butanone				0.071	0.075	0.079	0.082	0.083	0.082	0.086	0.080	6.320		
T	Propionitrile			0.024	0.025	0.025	0.027	0.028	0.028	0.029	0.030	0.027	8.250		
T	2,2-Dichloropropane		0.428	0.423	0.390	0.416	0.414	0.429	0.403	0.406	0.397	0.412	3.378		
T	cis-1,2-Dichloroethene		0.308	0.320	0.297	0.319	0.316	0.324	0.305	0.311	0.309	0.312	2.699		
C	Chloroform	0.493	0.500	0.485	0.471	0.479	0.489	0.498	0.467	0.476	0.471	0.483	2.472		
T	1-Bromopropane			0.063	0.056	0.069	0.067	0.069	0.065	0.067	0.067	0.065	6.756		
T	Bromochloromethane		0.154	0.195	0.165	0.185	0.186	0.190	0.180	0.184	0.183	0.180	7.076		
T	Tetrahydrofuran			0.049	0.046	0.048	0.051	0.055	0.054	0.053	0.055	0.051	6.324		
S	Dibromofluoromethane			0.264	0.261	0.277	0.281	0.287	0.273	0.276	0.273	0.274	3.043		
T	1,1,1-Trichloroethane		0.429	0.390	0.411	0.429	0.423	0.440	0.411	0.421	0.416	0.419	3.410		
T	Cyclohexane		0.548	0.465	0.529	0.547	0.526	0.550	0.532	0.530	0.520	0.527	4.908		
T	1,1-Dichloropropene		0.346	0.348	0.357	0.389	0.374	0.389	0.369	0.375	0.368	0.368	4.275		
T	Carbon Tetrachloride		0.351	0.342	0.350	0.377	0.380	0.403	0.373	0.381	0.375	0.370	5.179		
T	Tert-Amyl-Methyl ether			0.646	0.637	0.642	0.659	0.676	0.661	0.673	0.675	0.659	2.354		
S	1,2-Dichloroethane-d4			0.277	0.238	0.252	0.246	0.256	0.243	0.241	0.242	0.249	5.086		
T	Heptane											0.000	0.000		
T	1,2-Dichloroethane		0.266	0.327	0.307	0.309	0.314	0.326	0.306	0.312	0.308	0.309	5.721		
T	Benzene		1.323	1.214	1.112	1.184	1.151	1.176	1.098	1.111	1.072	1.160	6.579		
T	Trichloroethene		0.296	0.294	0.303	0.304	0.294	0.308	0.286	0.291	0.287	0.296	2.621		
T	Methylcyclohexane		0.408	0.357	0.377	0.404	0.402	0.414	0.405	0.407	0.402	0.397	4.590		
C	1,2-Dichloropropane		0.264	0.317	0.287	0.304	0.297	0.306	0.287	0.295	0.291	0.294	5.088		
T	1,4-Dioxane					0.002	0.002	0.002	0.002	0.002	0.002	0.002	13.357		
T	Bromodichloromethane		0.338	0.358	0.343	0.355	0.371	0.384	0.359	0.372	0.371	0.361	4.056		
T	Dibromomethane		0.139	0.15	0.132	0.143	0.148	0.154	0.145	0.147	0.149	0.145	4.549		
T	2-Chloroethyl Vinyl Ether			0.113	0.112	0.121	0.131	0.14	0.137	0.141	0.146	0.130	10.121		
T	4-Methyl-2-Pentanone			0.069	0.061	0.066	0.075	0.081	0.081	0.081	0.086	0.075	11.646		
T	cis-1,3-Dichloropropene		0.385	0.441	0.398	0.429	0.441	0.467	0.435	0.446	0.444	0.432	5.826		

T	Dimethyl Disulfide		0.179	0.202	0.194	0.21	0.231	0.244	0.243	0.25	0.253	0.223	12.145		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.381	1.277	1.359	1.345	1.368	1.292	1.26	1.247	1.316	4.026		
C	Toluene		2.003	1.716	1.569	1.645	1.617	1.624	1.501	1.467	1.398	1.616	10.855		
T	Ethyl Methacrylate		0.249	0.281	0.258	0.296	0.322	0.344	0.342	0.34	0.351	0.309	12.671		
T	Paraldehyde											0.000	0.000		
T	trans-1,3-Dichloropropene		0.432	0.45	0.408	0.453	0.483	0.509	0.479	0.473	0.475	0.462	6.543		
T	1,1,2-Trichloroethane		0.229	0.262	0.246	0.267	0.281	0.287	0.266	0.262	0.265	0.263	6.597		
T	2-Hexanone		0.106	0.138	0.121	0.127	0.151	0.161	0.16	0.158	0.166	0.143	14.668		
T	1,3-Dichloropropane		0.432	0.449	0.42	0.453	0.466	0.482	0.447	0.442	0.449	0.449	3.979		
T	Tetrachloroethene		0.287	0.34	0.32	0.335	0.333	0.34	0.315	0.311	0.303	0.320	5.714		
T	Dibromochloromethane		0.301	0.345	0.317	0.346	0.36	0.379	0.354	0.353	0.361	0.346	6.827		
T	1,2-Dibromoethane		0.23	0.272	0.23	0.255	0.278	0.295	0.276	0.275	0.281	0.266	8.589		
T	1-Chlorohexane		0.655	0.477	0.459	0.474	0.461	0.481	0.469	0.463	0.461	0.489	12.868		
P	Chlorobenzene		1.138	1.123	1.057	1.073	1.055	1.075	0.994	0.975	0.942	1.048	6.272		
T	1,1,1,2-Tetrachloroethane		0.345	0.384	0.35	0.378	0.386	0.392	0.363	0.359	0.356	0.368	4.664		
C	Ethylbenzene		0.622	0.574	0.546	0.602	0.587	0.599	0.552	0.544	0.528	0.573	5.553		
T	m-,p-Xylene		0.729	0.708	0.677	0.711	0.696	0.719	0.663	0.638	0.604	0.683	6.055		
T	o-Xylene		0.726	0.668	0.667	0.678	0.69	0.711	0.661	0.655	0.647	0.678	3.894		
T	Styrene		1.453	1.222	1.157	1.148	1.177	1.2	1.122	1.11	1.086	1.186	9.177		
P	Bromoform		0.168	0.212	0.187	0.205	0.232	0.245	0.228	0.229	0.237	0.216	11.733		
T	Isopropylbenzene		1.729	1.61	1.649	1.723	1.703	1.755	1.62	1.578	1.498	1.652	5.066		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.452	0.569	0.498	0.54	0.591	0.621	0.571	0.58	0.601	0.558	9.613		
S	p-Bromofluorobenzene			1.045	0.924	0.934	0.947	0.95	0.906	0.907	0.925	0.942	4.740		
T	1,2,3-Trichloropropane			0.174	0.169	0.163	0.172	0.179	0.168	0.169	0.173	0.171	2.803		
T	trans-1,4-Dichloro-2-Butene			0.111	0.117	0.15	0.163	0.18	0.175	0.18	0.186	0.158	18.636	0.999	
T	n-Propylbenzene		4.205	3.899	3.785	3.801	3.792	3.826	3.543	3.436	3.176	3.718	7.972		
T	Bromobenzene	0.942	0.894	0.968	0.844	0.878	0.873	0.877	0.808	0.821	0.817	0.872	6.072		
T	1,3,5-Trimethylbenzene		2.811	2.764	2.726	2.686	2.718	2.737	2.528	2.523	2.423	2.657	4.983		
T	2-Chlorotoluene		2.485	2.873	2.696	2.718	2.268	2.253	2.432	2.38	2.235	2.482	9.299		
T	4-Chlorotoluene		2.637	2.199	2.065	2.056	2.421	2.447	1.913	1.916	1.9	2.173	12.458		
T	a-Methylstyrene		1.228	1.361	1.428	1.388	1.428	1.442	1.406	1.411	1.402	1.388	4.659		
T	tert-Butylbenzene		0.554	0.535	0.547	0.574	0.536	0.542	0.496	0.5	0.494	0.531	5.321		
T	1,2,4-Trimethylbenzene		3.186	3.479	3.092	2.887	2.785	2.752	2.545	2.522	2.413	2.851	12.230		
T	sec-Butylbenzene		3.784	3.326	3.265	3.281	3.164	3.178	2.914	2.876	2.751	3.171	9.651		
T	p-Isopropyltoluene		2.882	2.648	2.667	2.715	2.683	2.73	2.507	2.488	2.382	2.634	5.721		
T	1,3-Dichlorobenzene		1.643	1.73	1.618	1.625	1.637	1.641	1.515	1.516	1.487	1.601	4.915		
T	1,4-Dichlorobenzene	1.861	1.717	1.755	1.58	1.591	1.648	1.668	1.528	1.527	1.495	1.637	7.095		
T	n-Butylbenzene		2.374	2.168	2.207	2.194	2.248	2.305	2.143	2.121	2.053	2.201	4.417		
T	1,2-Dichlorobenzene	1.576	1.512	1.647	1.448	1.528	1.539	1.552	1.431	1.422	1.402	1.506	5.218		
T	1,2-Dibromo-3-Chloropropane				0.07	0.081	0.097	0.1	0.093	0.094	0.097	0.090	12.040		
T	1,2,4-Trichlorobenzene		0.957	1.494	1.102	0.978	1.022	1.024	0.95	0.949	0.961	1.048	16.648	0.999	
T	Hexachlorobutadiene		0.339	0.34	0.361	0.355	0.366	0.373	0.339	0.34	0.339	0.350	3.908		
T	Naphthalene		1.255	1.317	1.338	1.498	1.901	2.049	1.949	1.949	1.99	1.694	19.666	0.999	
T	1,2,3-Trichlorobenzene	0.948	0.788	0.766	1.582	1.107	0.965	0.929	0.853	0.842	0.865	0.965	24.699		0.999

Fri Apr 05 13:19:58 2013

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13040315 Run Date: 04/02/2013 Sample ID: WG425304-12
Instrument ID: HPMS11 Run Time: 16:35 Method: 8260B
File ID: 11M90737 Analyst: FJB QC Key: DOD4
ICal Workgroup: WG425304 Cal ID: HPMS11 - 02-APR-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.8	ug/L	0.471	2.40	20	
1,1-Dichloroethene	CCC	50.0	49.1	ug/L	0.401	1.90	20	
1,2-Dichloropropane	CCC	50.0	50.4	ug/L	0.297	0.900	20	
Ethylbenzene	CCC	50.0	48.4	ug/L	0.554	3.30	20	
Toluene	CCC	50.0	47.7	ug/L	1.54	4.60	20	
Vinyl Chloride	CCC	50.0	48.2	ug/L	0.209	3.60	20	
Bromoform	SPCC	50.0	48.9	ug/L	0.211	2.20	20	
Chlorobenzene	SPCC	50.0	44.7	ug/L	0.936	10.6	20	
Chloromethane	SPCC	50.0	57.1	ug/L	0.300	14.3	20	
1,1-Dichloroethane	SPCC	50.0	49.1	ug/L	0.494	1.90	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	48.2	ug/L	0.538	3.60	20	
Acetone		50.0	34.0	ug/L	0.0471	32.0	20	*
Benzene		50.0	49.0	ug/L	1.14	2.00	20	
Bromobenzene		50.0	45.9	ug/L	0.800	8.30	20	
Bromochloromethane		50.0	49.6	ug/L	0.179	0.700	20	
Bromodichloromethane		50.0	47.6	ug/L	0.344	4.80	20	
Bromomethane		50.0	50.6	ug/L	0.201	1.20	20	
2-Butanone		50.0	46.6	ug/L	0.0743	6.80	20	
n-Butylbenzene		50.0	52.9	ug/L	2.33	5.80	20	
sec-Butylbenzene		50.0	44.3	ug/L	2.81	11.5	20	
tert-Butylbenzene		50.0	44.5	ug/L	0.472	11.1	20	
Carbon Disulfide		50.0	52.0	ug/L	0.929	4.10	20	
Carbon Tetrachloride		50.0	51.1	ug/L	0.378	2.20	20	
Dibromochloromethane		50.0	47.3	ug/L	0.328	5.40	20	
Chloroethane		50.0	52.8	ug/L	0.209	5.60	20	
2-Chlorotoluene		50.0	44.5	ug/L	2.21	10.9	20	
4-Chlorotoluene		50.0	41.2	ug/L	1.79	17.6	20	
1,2-Dibromo-3-Chloropropane		50.0	46.2	ug/L	0.0835	7.60	20	
1,2-Dibromoethane		50.0	49.2	ug/L	0.261	1.70	20	
Dibromomethane		50.0	47.6	ug/L	0.138	4.80	20	
1,2-Dichlorobenzene		50.0	44.5	ug/L	1.34	11.1	20	
1,3-Dichlorobenzene		50.0	44.5	ug/L	1.43	10.9	20	
1,4-Dichlorobenzene		50.0	47.3	ug/L	1.55	5.40	20	
Dichlorodifluoromethane		50.0	73.2	ug/L	0.331	46.4	20	*
1,2-Dichloroethane		50.0	48.4	ug/L	0.299	3.20	20	
cis-1,2-Dichloroethene		50.0	51.6	ug/L	0.322	3.10	20	
trans-1,2-Dichloroethene		50.0	51.1	ug/L	0.297	2.20	20	
1,3-Dichloropropane		50.0	48.2	ug/L	0.433	3.60	20	
2,2-Dichloropropane		50.0	49.0	ug/L	0.403	2.10	20	
cis-1,3-Dichloropropene		50.0	52.7	ug/L	0.455	5.30	20	
trans-1,3-Dichloropropene		50.0	47.4	ug/L	0.439	5.10	20	
1,1-Dichloropropene		50.0	51.8	ug/L	0.382	3.60	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 2825286
Report generated 04/12/2013 15:48

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13040315 Run Date: 04/02/2013 Sample ID: WG425304-12
Instrument ID: HPMS11 Run Time: 16:35 Method: 8260B
File ID: 11M90737 Analyst: FJB QC Key: DOD4
ICal Workgroup: WG425304 Cal ID: HPMS11 - 02-APR-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.3	ug/L	0.138	3.50	20	
Hexachlorobutadiene		50.0	55.7	ug/L	0.390	11.4	20	
Isopropylbenzene		50.0	46.4	ug/L	1.53	7.30	20	
p-Isopropyltoluene		50.0	46.8	ug/L	2.47	6.30	20	
4-Methyl-2-Pentanone		50.0	48.4	ug/L	0.0726	3.30	20	
Methylene Chloride		50.0	49.5	ug/L	0.283	1.00	20	
Naphthalene		50.0	46.5	ug/L	1.82	7.00	20	
n-Propylbenzene		50.0	44.1	ug/L	3.28	11.7	20	
Styrene		50.0	47.8	ug/L	1.13	4.40	20	
1,1,1,2-Tetrachloroethane		50.0	49.5	ug/L	0.364	1.00	20	
Tetrachloroethene		50.0	50.3	ug/L	0.322	0.600	20	
1,2,3-Trichlorobenzene		50.0	48.1	ug/L	0.864	3.80	20	
1,2,4-Trichlorobenzene		50.0	50.8	ug/L	0.995	1.50	20	
1,1,1-Trichloroethane		50.0	50.2	ug/L	0.420	0.300	20	
1,1,2-Trichloroethane		50.0	50.0	ug/L	0.263	0	20	
Trichloroethene		50.0	54.5	ug/L	0.323	9.10	20	
Trichlorofluoromethane		50.0	52.1	ug/L	0.419	4.20	20	
1,2,3-Trichloropropane		50.0	44.1	ug/L	0.151	11.8	20	
1,2,4-Trimethylbenzene		50.0	47.0	ug/L	2.68	6.00	20	
1,3,5-Trimethylbenzene		50.0	50.1	ug/L	2.66	0.300	20	
o-Xylene		50.0	45.3	ug/L	0.615	9.40	20	
m-,p-Xylene		100	95.8	ug/L	0.654	4.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 2825286
Report generated 04/12/2013 15:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13040315 Run Date: 04/10/2013 Sample ID: WG426250-02
Instrument ID: HPMS11 Run Time: 16:11 Method: 8260B
File ID: 11M91015 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG426251 Cal ID: HPMS11 - 02-APR-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.5	ug/L	0.459	4.93	20	
1,1-Dichloroethene	CCC	50.0	48.8	ug/L	0.399	2.42	20	
1,2-Dichloropropane	CCC	50.0	47.3	ug/L	0.278	5.45	20	
Ethylbenzene	CCC	50.0	48.8	ug/L	0.559	2.40	20	
Toluene	CCC	50.0	47.8	ug/L	1.54	4.42	20	
Vinyl Chloride	CCC	50.0	55.2	ug/L	0.239	10.4	20	
Bromoform	SPCC	50.0	47.3	ug/L	0.204	5.32	20	
Chlorobenzene	SPCC	50.0	48.4	ug/L	1.01	3.22	20	
Chloromethane	SPCC	50.0	50.1	ug/L	0.263	0.193	20	
1,1-Dichloroethane	SPCC	50.0	48.7	ug/L	0.490	2.63	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.3	ug/L	0.506	9.42	20	
Xylenes		150	149	ug/L	0.674	0.805	20	
Acetone		50.0	44.3	ug/L	0.0614	11.3	20	
Benzene		50.0	47.0	ug/L	1.09	6.03	20	
Bromobenzene		50.0	47.3	ug/L	0.825	5.45	20	
Bromochloromethane		50.0	47.2	ug/L	0.170	5.57	20	
Bromodichloromethane		50.0	47.8	ug/L	0.345	4.49	20	
Bromomethane		50.0	40.3	ug/L	0.160	19.4	20	
2-Butanone		50.0	39.4	ug/L	0.0628	21.3	20	*
n-Butylbenzene		50.0	49.9	ug/L	2.20	0.164	20	
sec-Butylbenzene		50.0	48.0	ug/L	3.04	4.08	20	
tert-Butylbenzene		50.0	49.5	ug/L	0.526	0.988	20	
Carbon Disulfide		50.0	44.0	ug/L	0.786	12.0	20	
Carbon Tetrachloride		50.0	51.5	ug/L	0.381	3.03	20	
Dibromochloromethane		50.0	48.2	ug/L	0.334	3.65	20	
Chloroethane		50.0	48.9	ug/L	0.194	2.12	20	
2-Chlorotoluene		50.0	47.9	ug/L	2.38	4.29	20	
4-Chlorotoluene		50.0	48.1	ug/L	2.09	3.71	20	
1,2-Dibromo-3-Chloropropane		50.0	43.4	ug/L	0.0785	13.2	20	
1,2-Dibromoethane		50.0	46.8	ug/L	0.248	6.48	20	
Dibromomethane		50.0	44.3	ug/L	0.129	11.5	20	
1,2-Dichlorobenzene		50.0	47.0	ug/L	1.42	5.96	20	
1,3-Dichlorobenzene		50.0	48.8	ug/L	1.56	2.47	20	
1,4-Dichlorobenzene		50.0	47.8	ug/L	1.57	4.37	20	
Dichlorodifluoromethane		50.0	49.0	ug/L	0.221	2.05	20	
1,2-Dichloroethane		50.0	46.7	ug/L	0.288	6.61	20	
cis-1,2-Dichloroethene		50.0	47.9	ug/L	0.299	4.13	20	
trans-1,2-Dichloroethene		50.0	47.6	ug/L	0.277	4.73	20	
1,3-Dichloropropane		50.0	46.3	ug/L	0.416	7.32	20	
2,2-Dichloropropane		50.0	48.3	ug/L	0.397	3.47	20	
cis-1,3-Dichloropropene		50.0	48.2	ug/L	0.416	3.68	20	
trans-1,3-Dichloropropene		50.0	48.4	ug/L	0.448	3.15	20	

CCV - Modified 03/05/2008
PDF File ID: 2825294
Report generated 04/12/2013 15:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13040315 Run Date: 04/10/2013 Sample ID: WG426250-02
Instrument ID: HPMS11 Run Time: 16:11 Method: 8260B
File ID: 11M91015 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG426251 Cal ID: HPMS11 - 02-APR-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	49.7	ug/L	0.366	0.550	20	
2-Hexanone		50.0	43.6	ug/L	0.125	12.7	20	
Hexachlorobutadiene		50.0	49.3	ug/L	0.345	1.48	20	
Isopropylbenzene		50.0	50.0	ug/L	1.65	0.0910	20	
p-Isopropyltoluene		50.0	49.6	ug/L	2.61	0.757	20	
4-Methyl-2-Pentanone		50.0	40.4	ug/L	0.0606	19.3	20	
Methylene Chloride		50.0	46.8	ug/L	0.267	6.48	20	
Naphthalene		50.0	43.7	ug/L	1.72	12.5	20	
n-Propylbenzene		50.0	49.5	ug/L	3.68	0.925	20	
Styrene		50.0	47.0	ug/L	1.11	6.03	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/L	0.366	0.649	20	
Tetrachloroethene		50.0	50.5	ug/L	0.324	0.993	20	
1,2,3-Trichlorobenzene		50.0	44.0	ug/L	0.792	12.0	20	
1,2,4-Trichlorobenzene		50.0	47.7	ug/L	0.920	4.67	20	
1,1,1-Trichloroethane		50.0	49.5	ug/L	0.415	0.948	20	
1,1,2-Trichloroethane		50.0	46.6	ug/L	0.245	6.80	20	
Trichloroethene		50.0	48.7	ug/L	0.288	2.56	20	
Trichlorofluoromethane		50.0	51.1	ug/L	0.411	2.19	20	
1,2,3-Trichloropropane		50.0	43.5	ug/L	0.149	13.0	20	
1,2,4-Trimethylbenzene		50.0	46.2	ug/L	2.64	7.54	20	
1,3,5-Trimethylbenzene		50.0	49.4	ug/L	2.63	1.11	20	
o-Xylene		50.0	49.3	ug/L	0.669	1.37	20	
m-,p-Xylene		100	99.5	ug/L	0.679	0.521	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 2825294
Report generated 04/12/2013 15:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13040315 Run Date: 04/11/2013 Sample ID: WG426299-02
Instrument ID: HPMS11 Run Time: 07:19 Method: 8260B
File ID: 11M91037 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG426300 Cal ID: HPMS11 - 02-APR-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	46.4	ug/L	0.448	7.25	20	
1,1-Dichloroethene	CCC	50.0	46.4	ug/L	0.379	7.26	20	
1,2-Dichloropropane	CCC	50.0	46.5	ug/L	0.274	7.05	20	
Ethylbenzene	CCC	50.0	47.3	ug/L	0.542	5.45	20	
Toluene	CCC	50.0	45.6	ug/L	1.47	8.80	20	
Vinyl Chloride	CCC	50.0	50.8	ug/L	0.220	1.55	20	
Bromoform	SPCC	50.0	49.2	ug/L	0.212	1.61	20	
Chlorobenzene	SPCC	50.0	47.9	ug/L	1.00	4.26	20	
Chloromethane	SPCC	50.0	43.8	ug/L	0.230	12.4	20	
1,1-Dichloroethane	SPCC	50.0	46.6	ug/L	0.469	6.85	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	48.6	ug/L	0.542	2.87	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 2825294
Report generated 04/12/2013 15:48

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13040315
Instrument ID: HPMS11
Workgroup (AAB#): WG426251

ICAL CCV Number: WG425304-08
CAL ID: HPMS11 - 02-APR-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG425304-08	NA	NA	341238	632876	814817
Upper Limit	NA	NA	682476	1265752	1629634
Lower Limit	NA	NA	170619	316438	407409
L13040315-01	1.00	01	382983	720881	964899
L13040315-02	1.00	01	378497	758836	1009432
L13040315-03	1.00	01	379744	722021	957708
L13040315-04	1.00	01	382758	754037	1005899
WG426251-01	1.00	01	374305	730067	979274
WG426251-02	1.00	01	401554	760400	1001105
WG426251-03	1.00	01	408369	783315	1026229

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 2825299
Report generated 04/12/2013 15:48

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13040315
Instrument ID: HPMS11
Workgroup (AAB#): WG426300

ICAL CCV Number: WG425304-08
CAL ID: HPMS11 - 02-APR-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG425304-08	NA	NA	341238	632876	814817
Upper Limit	NA	NA	682476	1265752	1629634
Lower Limit	NA	NA	170619	316438	407409
L13040315-01	20.0	DL01	366886	727477	982988
WG426300-01	1.00	01	387521	766150	1022151
WG426300-02	1.00	01	403493	749523	982577

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 2825299
Report generated 04/12/2013 15:48

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13040315
Instrument ID: HPMS11
Workgroup (AAB#): WG426251

ICAL CCV Number: WG425304-08
CAL ID: HPMS11-02-APR-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG425304-08	NA	NA	16.61	13.8	10.17
Upper Limit	NA	NA	17.11	14.3	10.67
Lower Limit	NA	NA	16.11	13.3	9.67
L13040315-01	1.00	01	16.61	13.8	10.17
L13040315-02	1.00	01	16.61	13.8	10.17
L13040315-03	1.00	01	16.61	13.8	10.17
L13040315-04	1.00	01	16.61	13.8	10.17
WG426251-01	1.00	01	16.61	13.8	10.17
WG426251-02	1.00	01	16.61	13.8	10.17
WG426251-03	1.00	01	16.61	13.8	10.17

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 2825304
Report generated: 04/12/2013 15:48

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13040315
Instrument ID: HPMS11
Workgroup (AAB#): WG426300

ICAL CCV Number: WG425304-08
CAL ID: HPMS11 - 02-APR-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG425304-08	NA	NA	16.61	13.8	10.17
Upper Limit	NA	NA	17.11	14.3	10.67
Lower Limit	NA	NA	16.11	13.3	9.67
L13040315-01	20.0	DL01	16.61	13.8	10.17
WG426300-01	1.00	01	16.61	13.8	10.17
WG426300-02	1.00	01	16.61	13.8	10.17

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 2825304
Report generated: 04/12/2013 15:48

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041013\11M91034.D Vial: 21
Acq On : 11 Apr 2013 2:51 Operator: FJB
Sample : L13040315-01 A 826-LOW Inst : hpms11
Misc : 1,1 sediment transferred Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 11 14:34:24 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	964899	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.80	117	720881	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.61	152	382983	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.18	111	262646	24.8555 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.44%		
43) 1,2-Dichloroethane-d4	9.79	65	231838	24.1013 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.40%		
58) Toluene-d8	12.04	98	996045	26.2484 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.00%		
80) p-Bromofluorobenzene	15.20	95	371983	25.7678 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.08%		

Target Compounds

					Qvalue
3) Chloromethane	3.38	50	1966	Below Cal #	66
4) Vinyl Chloride	3.60	62	7488	0.4685 ug/L	78
6) Bromomethane	4.45	94	610	Below Cal	92
13) Acetone	5.90	43	8499	3.1817 ug/L #	63
14) 1,1-Dichloroethene	6.12	61	11936867	756.8832 ug/L	99
15) Tert-Butyl Alcohol	6.25	59	230	0.3743 ug/L #	59
19) Methylene Chloride	6.87	84	1699	0.1542 ug/L	80
27) 1,1-Dichloroethane	7.91	63	778632	40.1039 ug/L	98
29) 2-Butanone	8.46	43	942	0.3062 ug/L #	49
32) cis-1,2-Dichloroethene	8.72	96	26471	2.1977 ug/L	99
33) Chloroform	8.91	83	13727	0.7366 ug/L	98
45) 1,2-Dichloroethane	9.91	62	904169	75.9135 ug/L	98
46) Benzene	9.95	78	5430	0.1213 ug/L	97
47) Trichloroethene	10.66	130	39749	3.4810 ug/L	97
50) 1,4-Dioxane	11.13	88	10768	148.1535 ug/L	73
63) 1,1,2-Trichloroethane	12.50	97	62512	8.2551 ug/L	98
100) Naphthalene	19.42	128	218	0.3056 ug/L #	68

(#) = qualifier out of range (m) = manual integration
11M91034.D 8260_WT.M Thu Apr 11 14:34:25 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041013\11M91034.D Vial: 21
Acq On : 11 Apr 2013 2:51 Operator: FJB
Sample : L13040315-01 A 826-LOW Inst : hpms11
Misc : 1,1 sediment transferred Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 11 14:34 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration

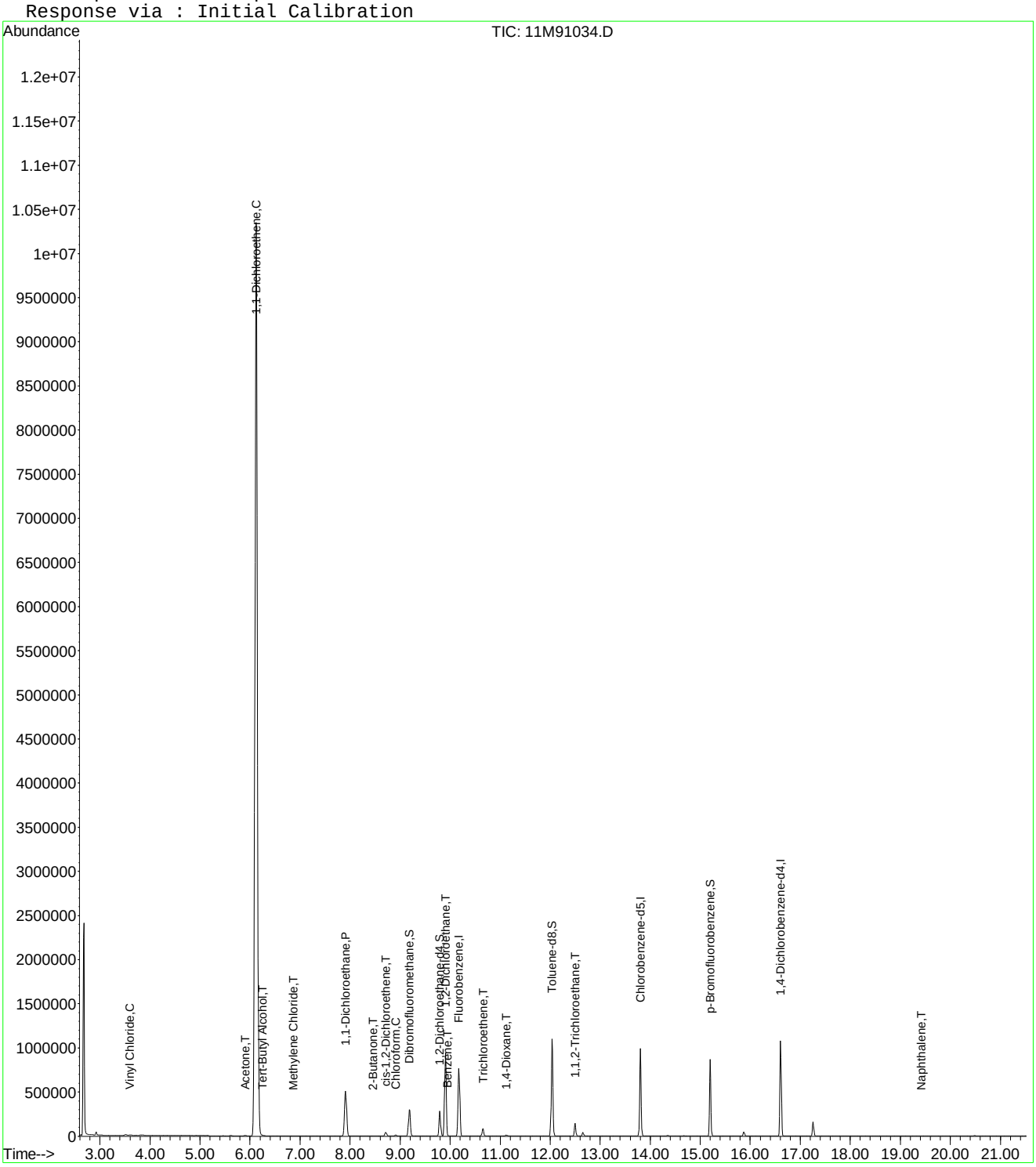

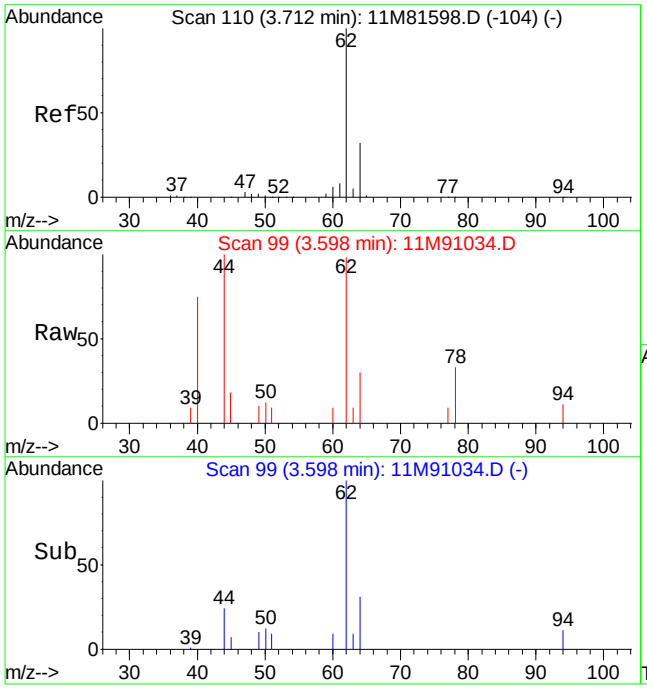

#4
Vinyl Chloride
Concen: 0.47 ug/L
RT: 3.60 min Scan# 99
Delta R.T. 0.00 min
Lab File: 11M91034.D
Acq: 11 Apr 2013 2:51

Tgt Ion: 62 Resp: 7488

Ion	Ratio	Lower	Upper
62	100		
64	45.6	19.9	46.5

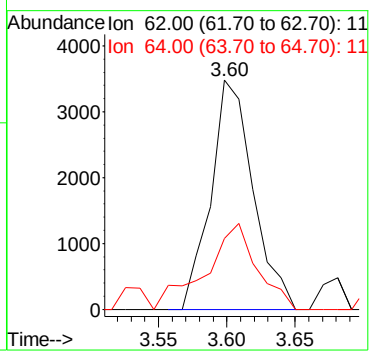

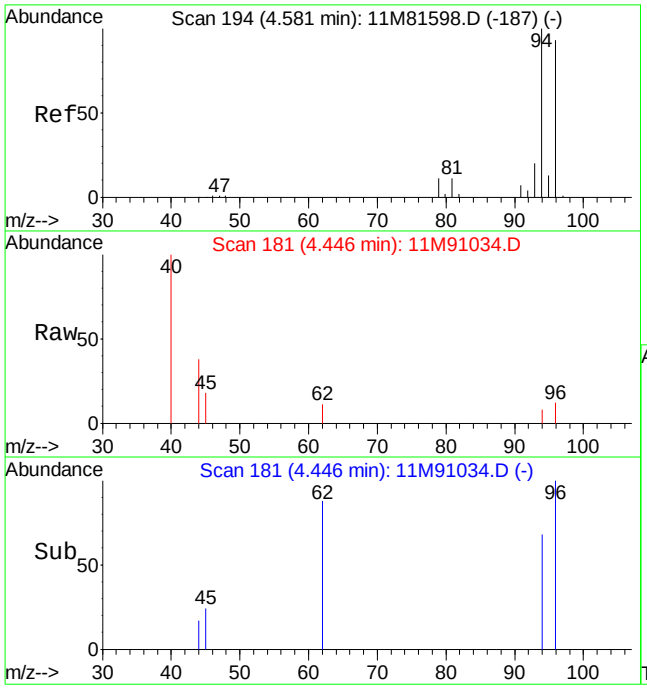

#6
Bromomethane
Concen: Below Cal
RT: 4.45 min Scan# 181
Delta R.T. 0.00 min
Lab File: 11M91034.D
Acq: 11 Apr 2013 2:51

Tgt Ion: 94 Resp: 610

Ion	Ratio	Lower	Upper
94	100		
96	86.4	56.7	132.3

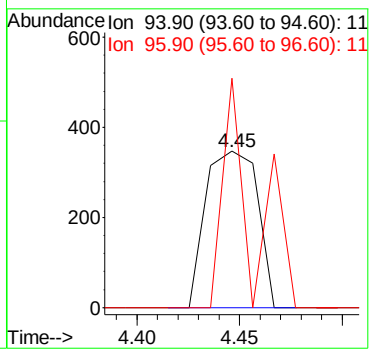

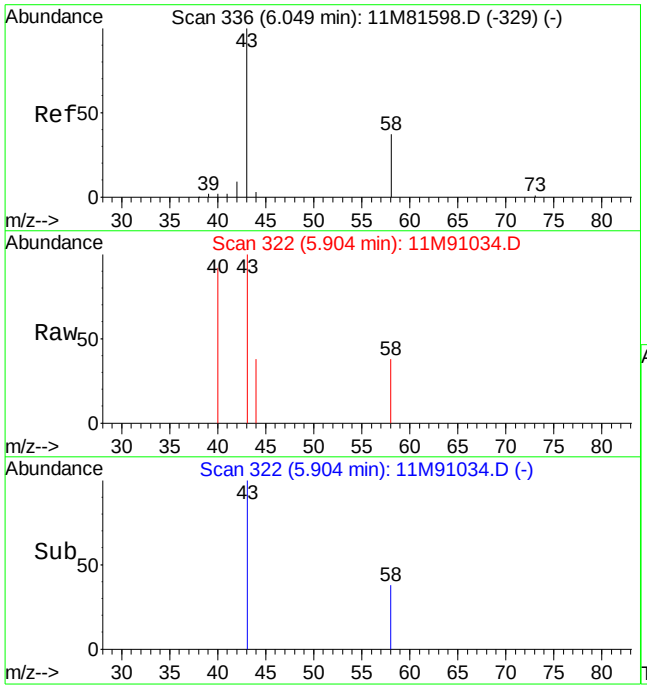

#13
Acetone
Concen: 3.18 ug/L
RT: 5.90 min Scan# 322
Delta R.T. 0.01 min
Lab File: 11M91034.D
Acq: 11 Apr 2013 2:51

Tgt Ion: 43 Resp: 8499

Ion	Ratio	Lower	Upper
43	100		
58	49.5	17.6	41.2#

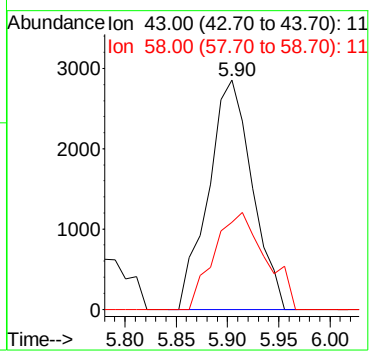

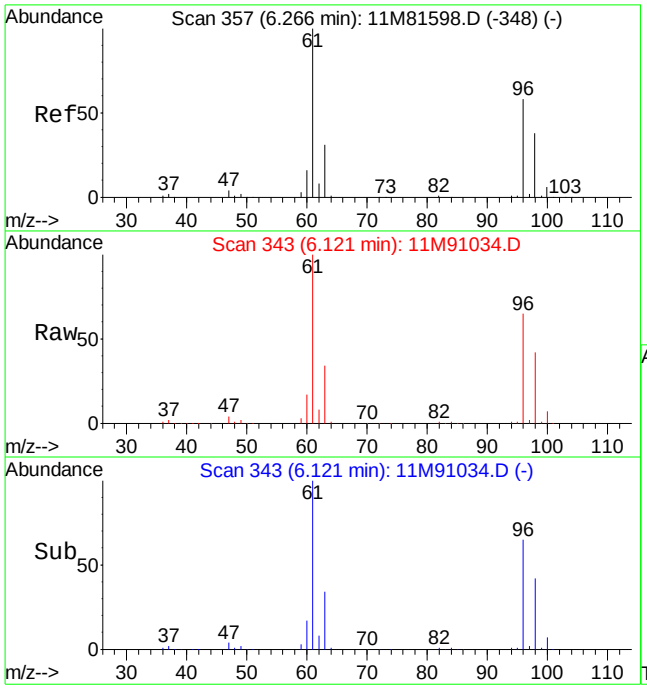

#14
1,1-Dichloroethene
Concen: 756.88 ug/L
RT: 6.12 min Scan# 343
Delta R.T. -0.00 min
Lab File: 11M91034.D
Acq: 11 Apr 2013 2:51

Tgt Ion: 61 Resp:11936867

Ion	Ratio	Lower	Upper
61	100		
96	64.0	37.9	88.5

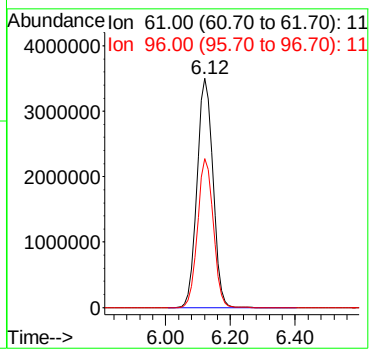

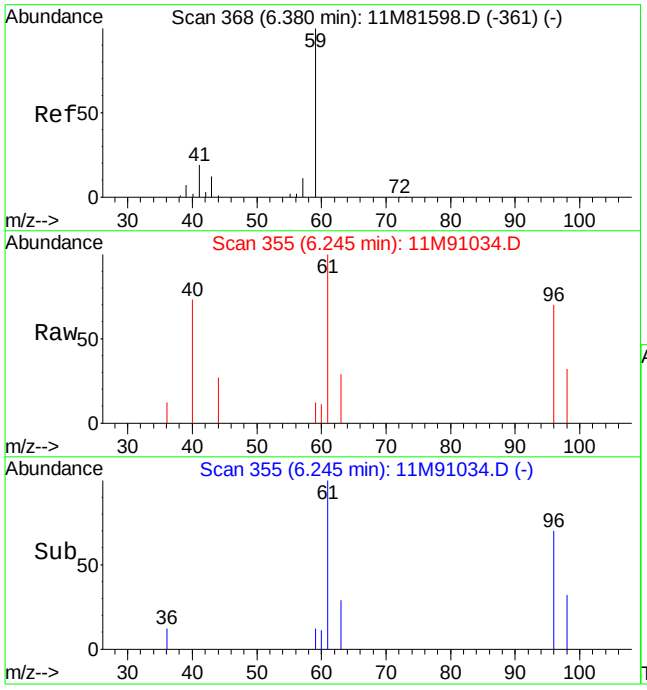

#15
Tert-Butyl Alcohol
Concen: 0.37 ug/L
RT: 6.25 min Scan# 355
Delta R.T. 0.02 min
Lab File: 11M91034.D
Acq: 11 Apr 2013 2:51

Tgt Ion: 59 Resp: 230

Ion	Ratio	Lower	Upper
59	100		
41	0.0	13.6	31.6#
57	0.0	6.2	14.4#

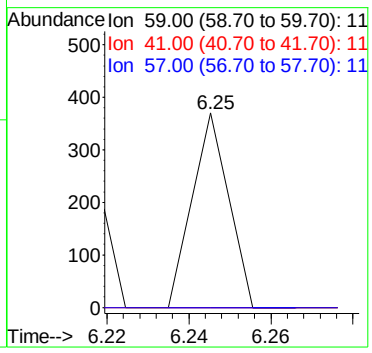

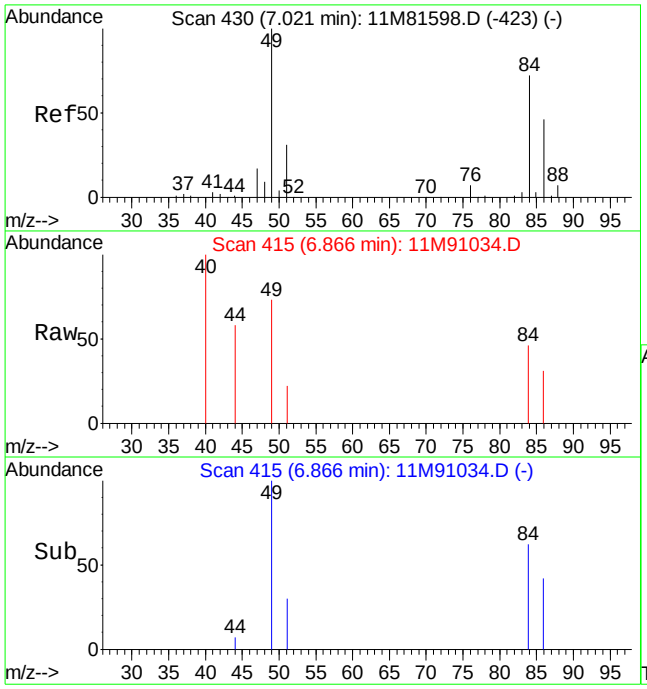

#19
Methylene Chloride
Concen: 0.15 ug/L
RT: 6.87 min Scan# 415
Delta R.T. -0.01 min
Lab File: 11M91034.D
Acq: 11 Apr 2013 2:51

Tgt Ion: 84 Resp: 1699

Ion	Ratio	Lower	Upper
84	100		
49	144.9	73.4	171.4

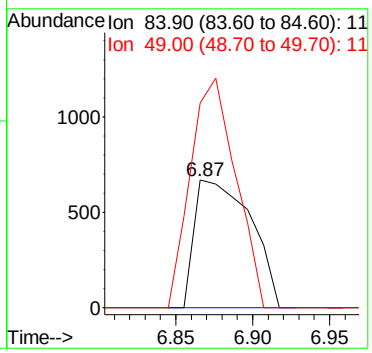

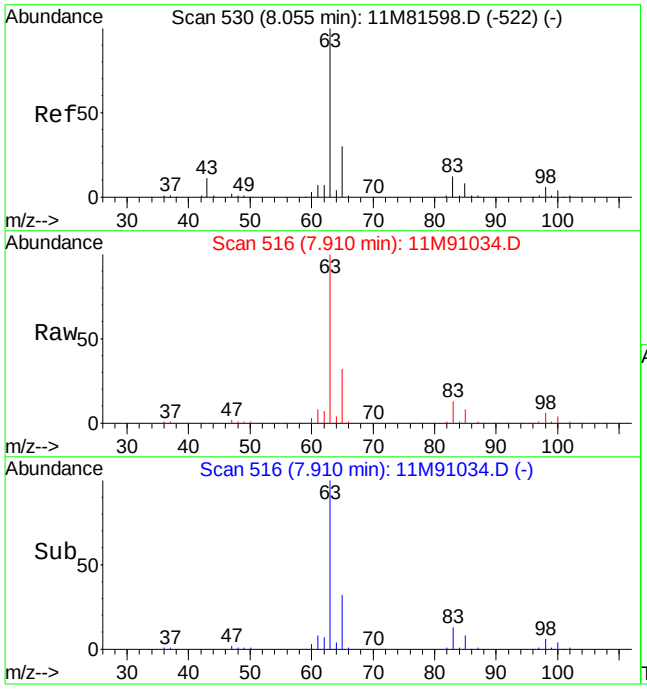

#27
1,1-Dichloroethane
Concen: 40.10 ug/L
RT: 7.91 min Scan# 516
Delta R.T. -0.00 min
Lab File: 11M91034.D
Acq: 11 Apr 2013 2:51

Tgt Ion: 63 Resp: 778632

Ion	Ratio	Lower	Upper
63	100		
65	30.9	19.1	44.5
83	12.9	8.6	20.2

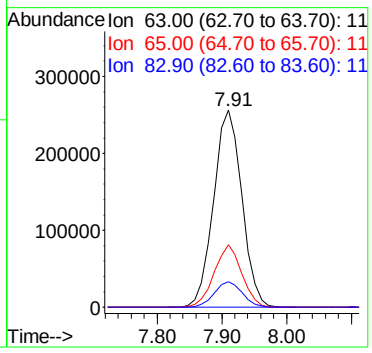

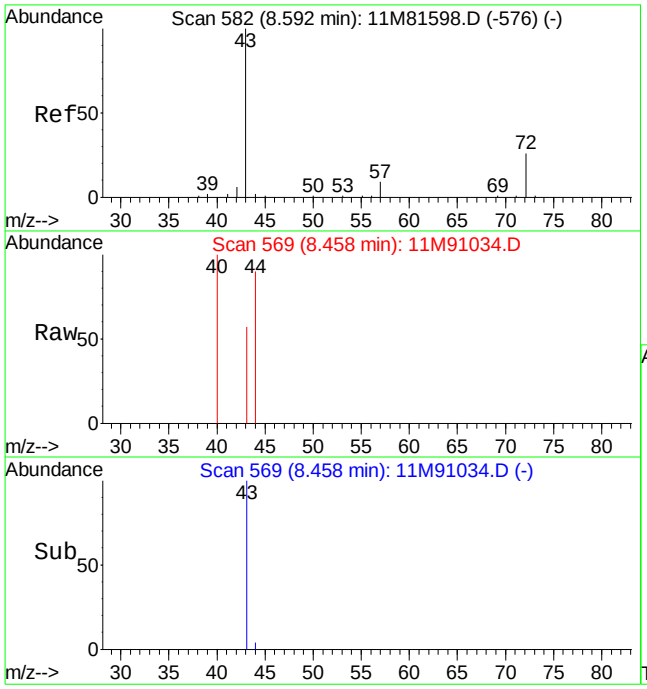

#29
2-Butanone
Concen: 0.31 ug/L
RT: 8.46 min Scan# 569
Delta R.T. 0.02 min
Lab File: 11M91034.D
Acq: 11 Apr 2013 2:51

Tgt Ion: 43 Resp: 942

Ion	Ratio	Lower	Upper
43	100		
72	0.0	15.8	36.8#

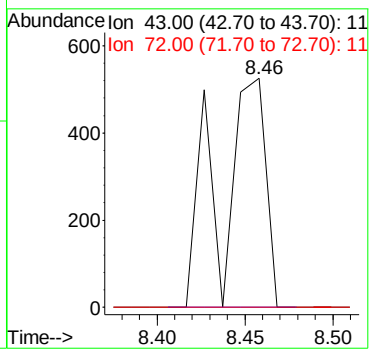

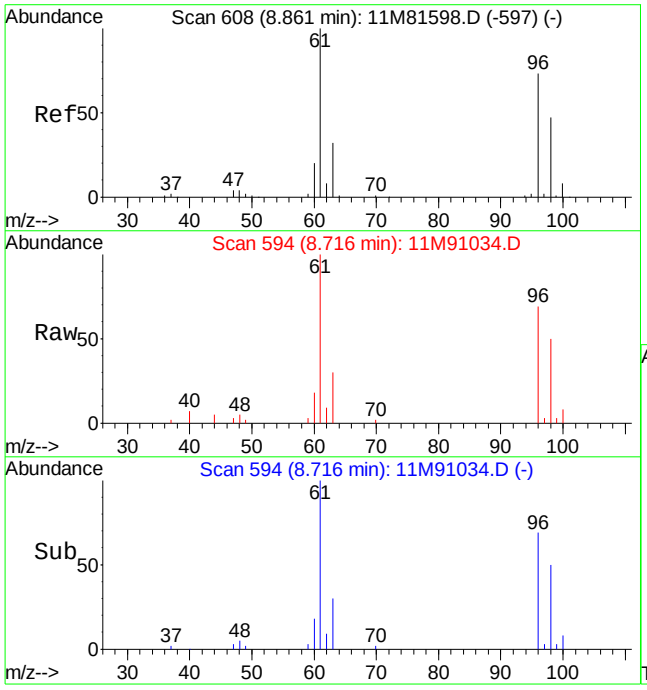

#32
cis-1,2-Dichloroethene
Concen: 2.20 ug/L
RT: 8.72 min Scan# 594
Delta R.T. 0.01 min
Lab File: 11M91034.D
Acq: 11 Apr 2013 2:51

Tgt Ion: 96 Resp: 26471

Ion	Ratio	Lower	Upper
96	100		
61	134.7	81.5	190.1

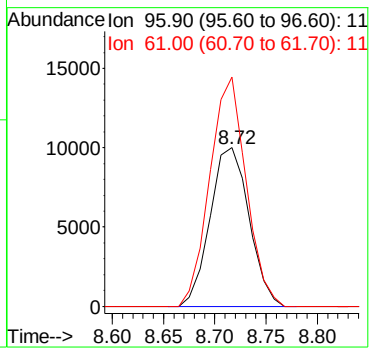

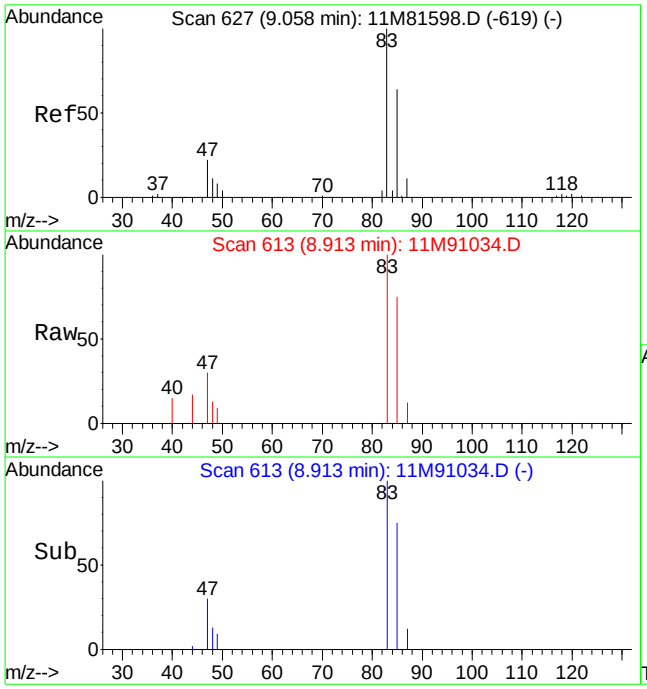

#33
Chloroform
Concen: 0.74 ug/L
RT: 8.91 min Scan# 613
Delta R.T. -0.00 min
Lab File: 11M91034.D
Acq: 11 Apr 2013 2:51

Tgt Ion: 83 Resp: 13727

Ion	Ratio	Lower	Upper
83	100		
85	66.0	40.7	94.9

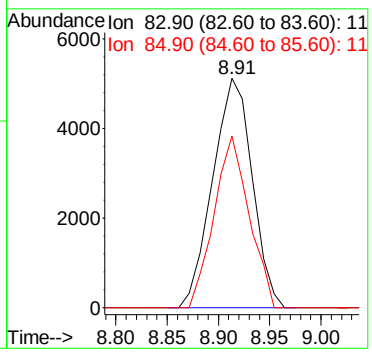

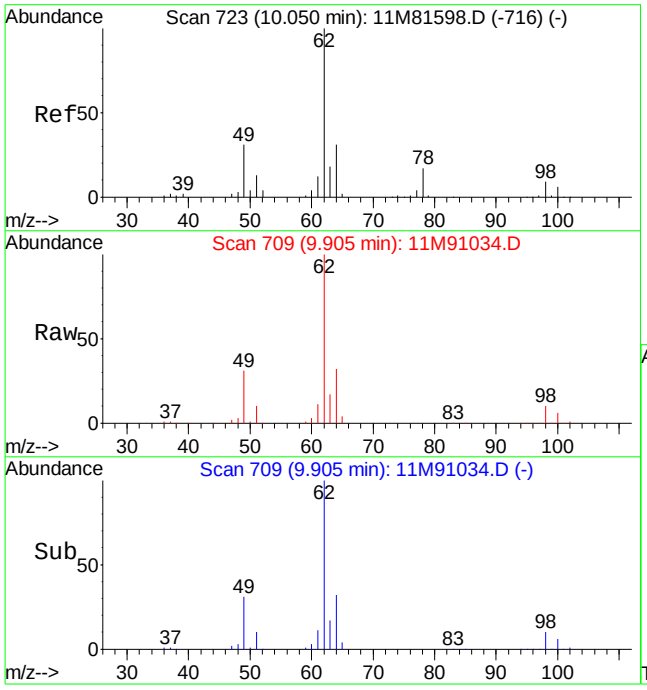

#45
1,2-Dichloroethane
Concen: 75.91 ug/L
RT: 9.91 min Scan# 709
Delta R.T. -0.00 min
Lab File: 11M91034.D
Acq: 11 Apr 2013 2:51

Tgt Ion: 62 Resp: 904169

Ion	Ratio	Lower	Upper
62	100		
64	32.4	20.0	46.6
49	32.2	20.3	47.3

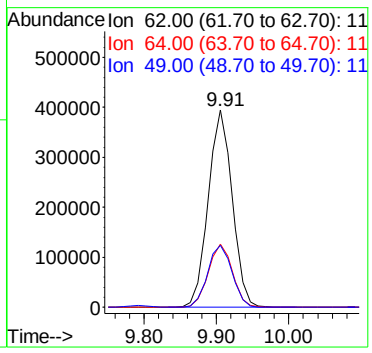

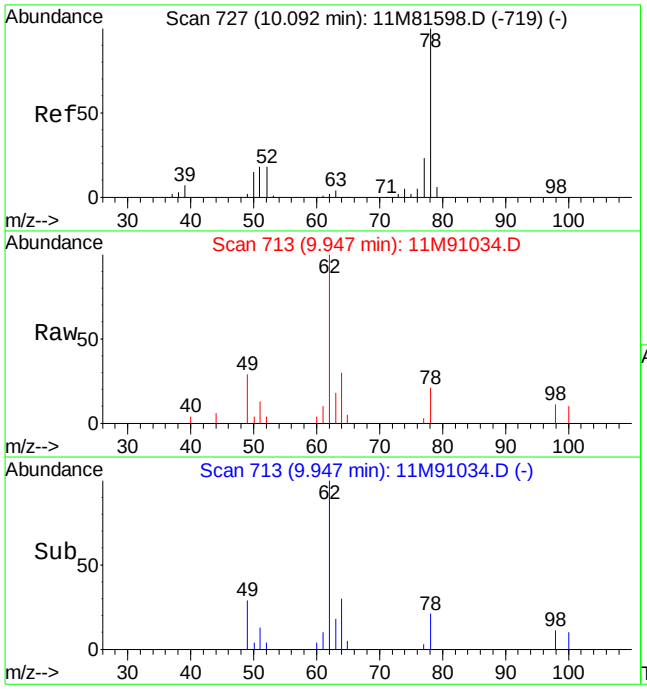

#46
Benzene
Concen: 0.12 ug/L
RT: 9.95 min Scan# 713
Delta R.T. 0.01 min
Lab File: 11M91034.D
Acq: 11 Apr 2013 2:51

Tgt Ion: 78 Resp: 5430

Ion	Ratio	Lower	Upper
78	100		
77	22.4	14.5	33.7

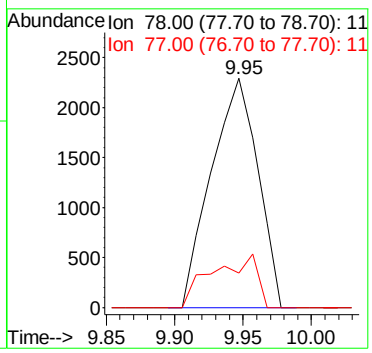

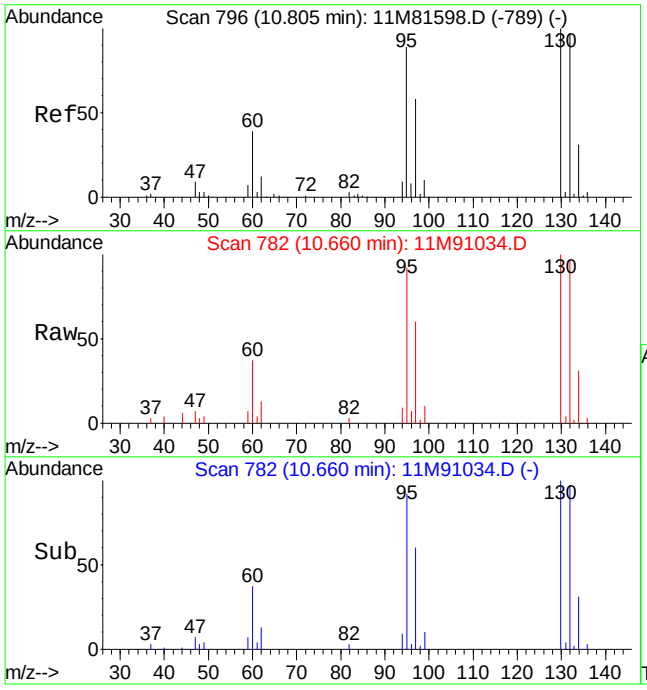

#47
Trichloroethene
Concen: 3.48 ug/L
RT: 10.66 min Scan# 782
Delta R.T. 0.01 min
Lab File: 11M91034.D
Acq: 11 Apr 2013 2:51

Tgt Ion:130 Resp: 39749

Ion	Ratio	Lower	Upper
130	100		
132	97.0	58.1	135.7
95	95.3	53.2	124.0

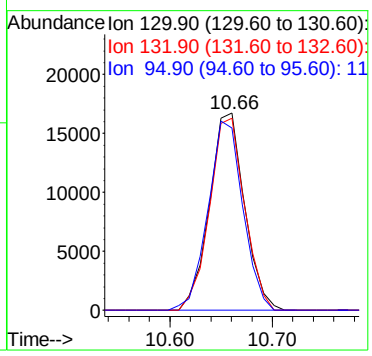

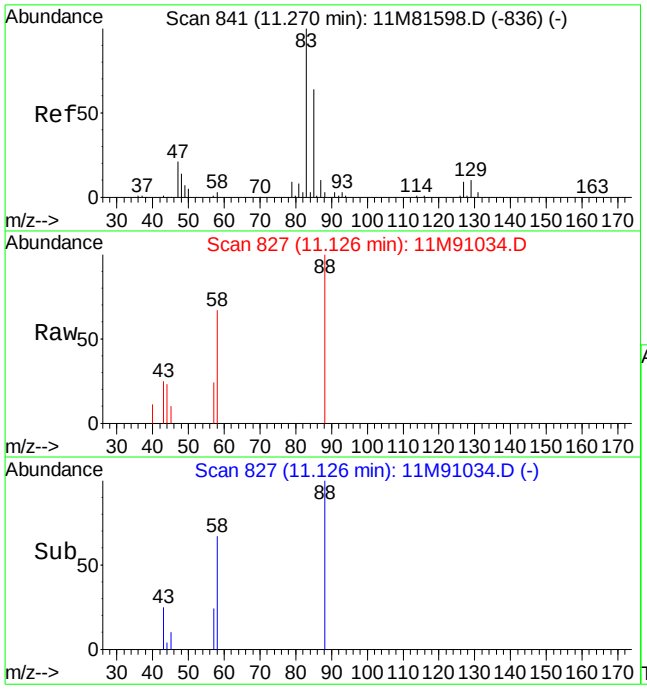

#50
1,4-Dioxane
Concen: 148.15 ug/L
RT: 11.13 min Scan# 827
Delta R.T. 0.00 min
Lab File: 11M91034.D
Acq: 11 Apr 2013 2:51

Tgt Ion: 88 Resp: 10768

Ion	Ratio	Lower	Upper
88	100		
58	74.7	33.2	77.6

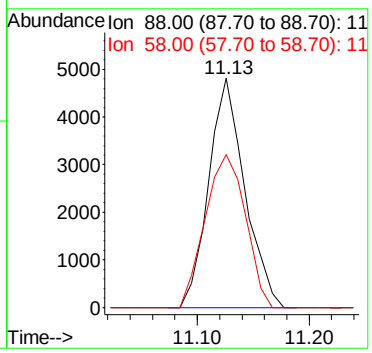

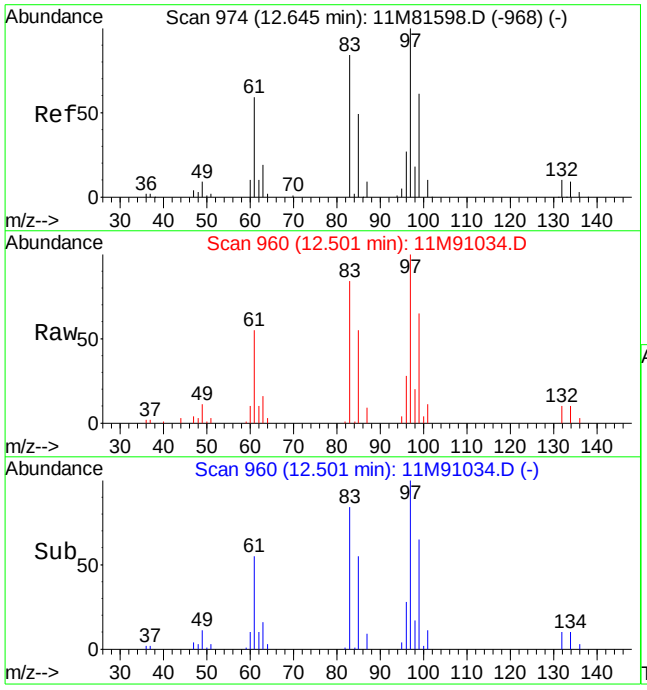

#63
1,1,2-Trichloroethane
Concen: 8.26 ug/L
RT: 12.50 min Scan# 960
Delta R.T. -0.00 min
Lab File: 11M91034.D
Acq: 11 Apr 2013 2:51

Tgt Ion: 97 Resp: 62512

Ion	Ratio	Lower	Upper
97	100		
83	80.9	49.7	116.1

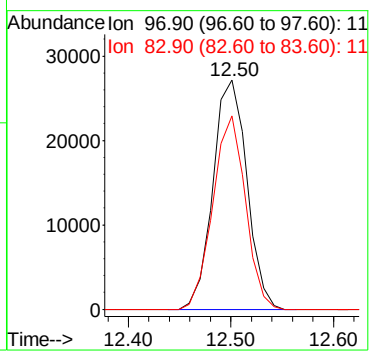

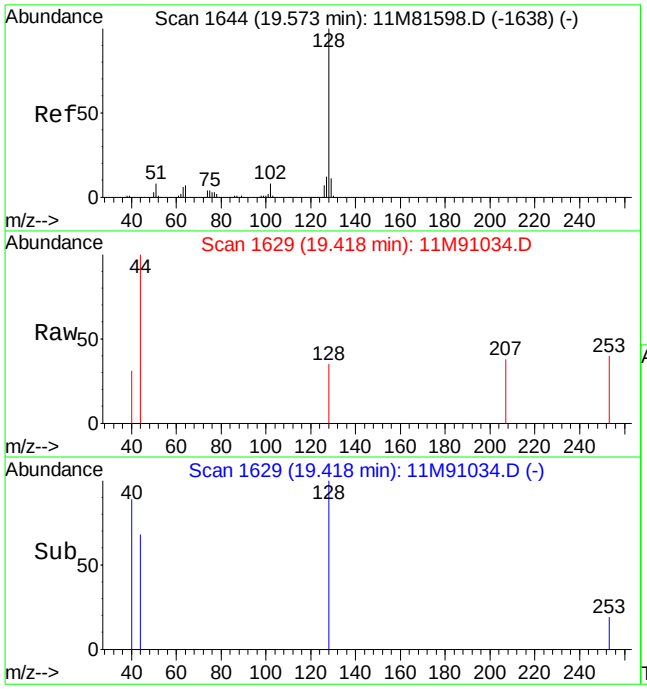

#100
Naphthalene
Concen: 0.31 ug/L
RT: 19.42 min Scan# 1629
Delta R.T. 0.00 min
Lab File: 11M91034.D
Acq: 11 Apr 2013 2:51

Tgt Ion:128 Resp: 218

Ion	Ratio	Lower	Upper
128	100		
127	0.0	11.4	14.0#

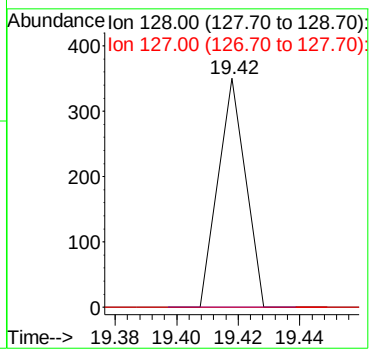

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041113\11M91043.D Vial: 8
Acq On : 11 Apr 2013 10:35 Operator: TMB
Sample : L13040315-01 B 20X 826-LOW D1 Inst : hpms11
Misc : 1,20 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 12 10:01:48 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	982988	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.80	117	727477	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.61	152	366886	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.18	111	264699	24.5888 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.36%		
43) 1,2-Dichloroethane-d4	9.79	65	231518	23.6252 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.52%		
58) Toluene-d8	12.04	98	998499	26.0745 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.28%		
80) p-Bromofluorobenzene	15.20	95	372442	26.9316 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.72%		

Target Compounds

					Qvalue
3) Chloromethane	3.39	50	2626	Below Cal #	1
4) Vinyl Chloride	3.60	62	1347	Below Cal #	41
9) Diethyl ether	5.59	59	2382	0.2884 ug/L #	4
13) Acetone	5.91	43	1107	0.4068 ug/L #	45
14) 1,1-Dichloroethene	6.12	61	433240	26.9650 ug/L	99
17) Iodomethane	6.62	142	2022	1.3367 ug/L #	30
19) Methylene Chloride	6.88	84	1419	0.1264 ug/L	61
27) 1,1-Dichloroethane	7.91	63	29339	1.4833 ug/L	98
45) 1,2-Dichloroethane	9.91	62	37855	3.1198 ug/L	97
47) Trichloroethene	10.66	130	2548	0.2190 ug/L	96
63) 1,1,2-Trichloroethane	12.49	97	2560	0.3350 ug/L	99
98) 1,2,4-Trichlorobenzene	19.08	180	1932	Below Cal #	72
99) Hexachlorobutadiene	19.22	225	2166	0.4213 ug/L #	68
100) Naphthalene	19.43	128	4175	0.4424 ug/L #	68

(#) = qualifier out of range (m) = manual integration
11M91043.D 8260_WT.M Fri Apr 12 10:01:48 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041113\11M91043.D Vial: 8
Acq On : 11 Apr 2013 10:35 Operator: TMB
Sample : L13040315-01 B 20X 826-LOW D1 Inst : hpms11
Misc : 1,20 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 12 10:01 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration

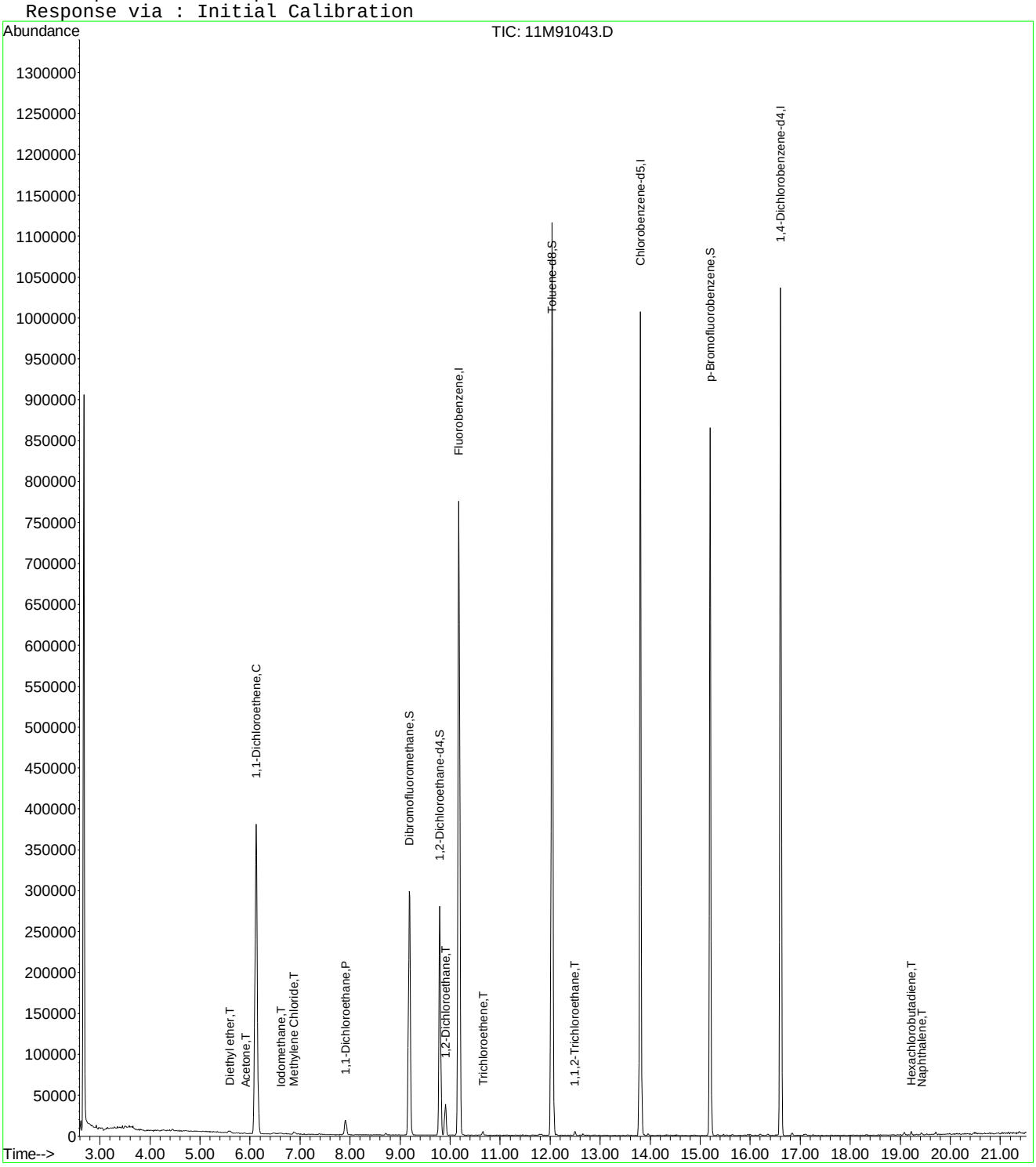

11M91043.D 8260_WT.M Fri Apr 12 10:01:49 2013 Page 2

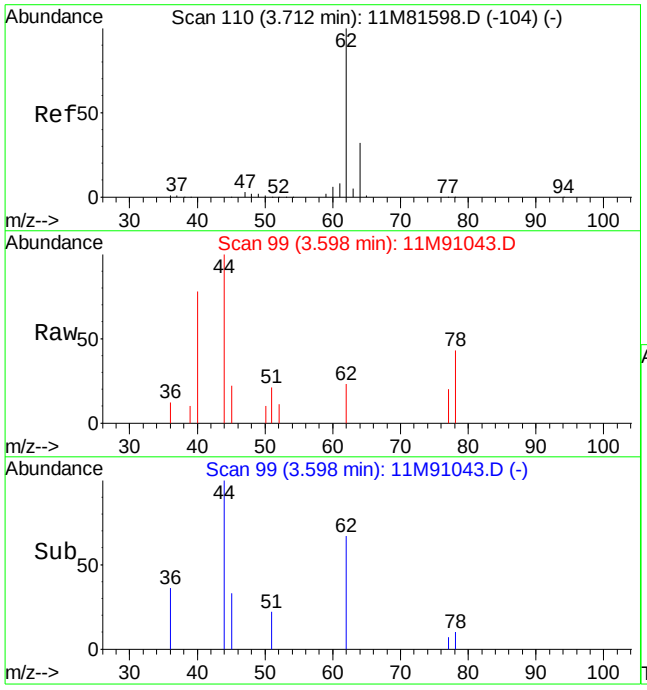

#4
Vinyl Chloride
Concen: Below Cal
RT: 3.60 min Scan# 99
Delta R.T. 0.00 min
Lab File: 11M91043.D
Acq: 11 Apr 2013 10:35

Tgt Ion: 62 Resp: 1347

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.9	46.5#

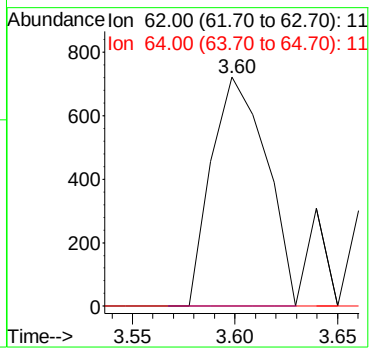

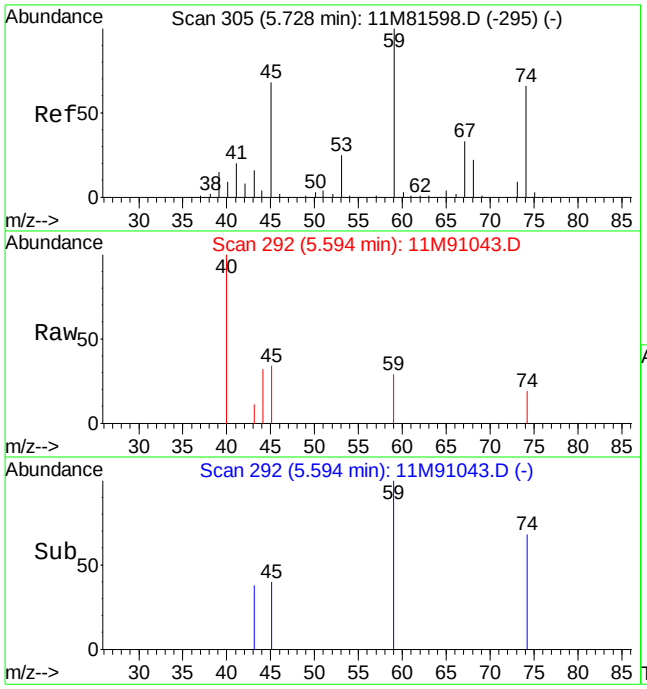

#9
Diethyl ether
Concen: 0.29 ug/L
RT: 5.59 min Scan# 292
Delta R.T. 0.02 min
Lab File: 11M91043.D
Acq: 11 Apr 2013 10:35

Tgt Ion: 59 Resp: 2382

Ion	Ratio	Lower	Upper
59	100		
45	206.5	42.7	99.5#
74	48.2	47.8	111.4

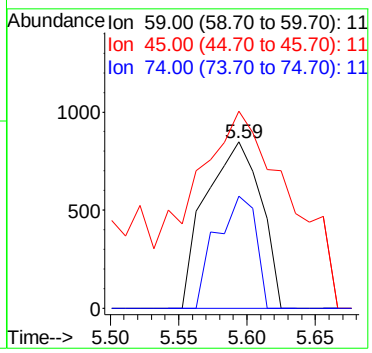

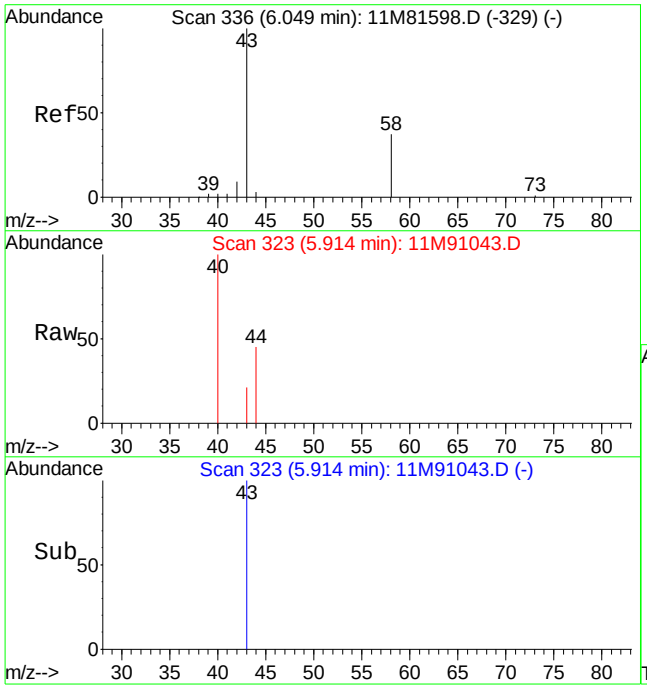

#13
Acetone
Concen: 0.41 ug/L
RT: 5.91 min Scan# 323
Delta R.T. 0.02 min
Lab File: 11M91043.D
Acq: 11 Apr 2013 10:35

Tgt Ion: 43 Resp: 1107

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.6	41.2#

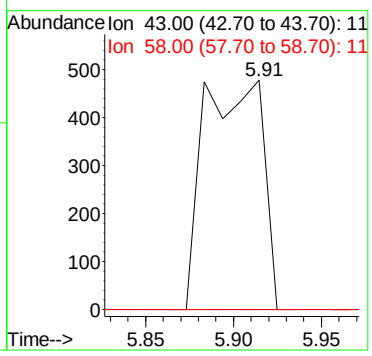

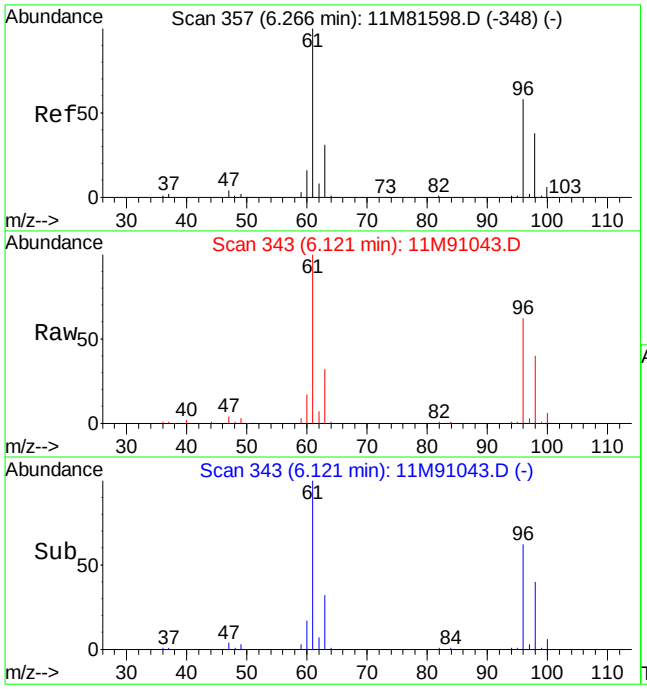

#14
1,1-Dichloroethene
Concen: 26.97 ug/L
RT: 6.12 min Scan# 343
Delta R.T. -0.00 min
Lab File: 11M91043.D
Acq: 11 Apr 2013 10:35

Tgt Ion: 61 Resp: 433240

Ion	Ratio	Lower	Upper
61	100		
96	62.7	37.9	88.5

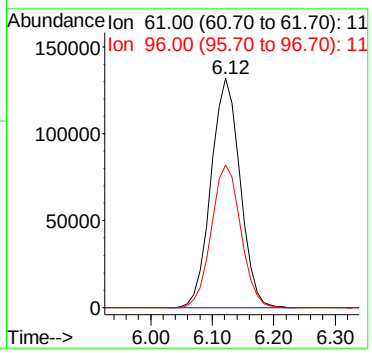

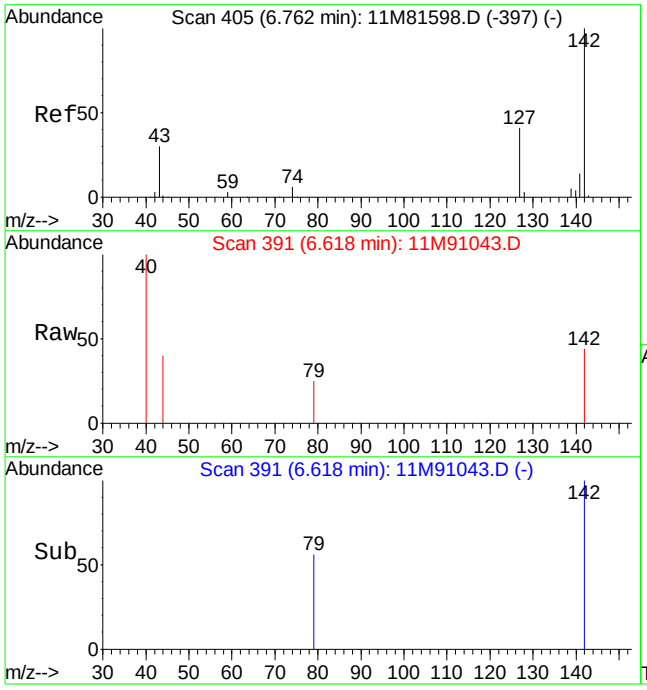

#17
Iodomethane
Concen: 1.34 ug/L
RT: 6.62 min Scan# 391
Delta R.T. 0.01 min
Lab File: 11M91043.D
Acq: 11 Apr 2013 10:35

Tgt Ion:142 Resp: 2022

Ion	Ratio	Lower	Upper
142	100		
127	0.0	27.9	65.1#

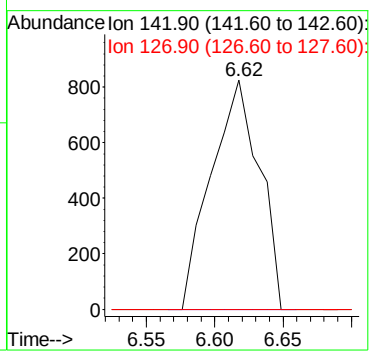

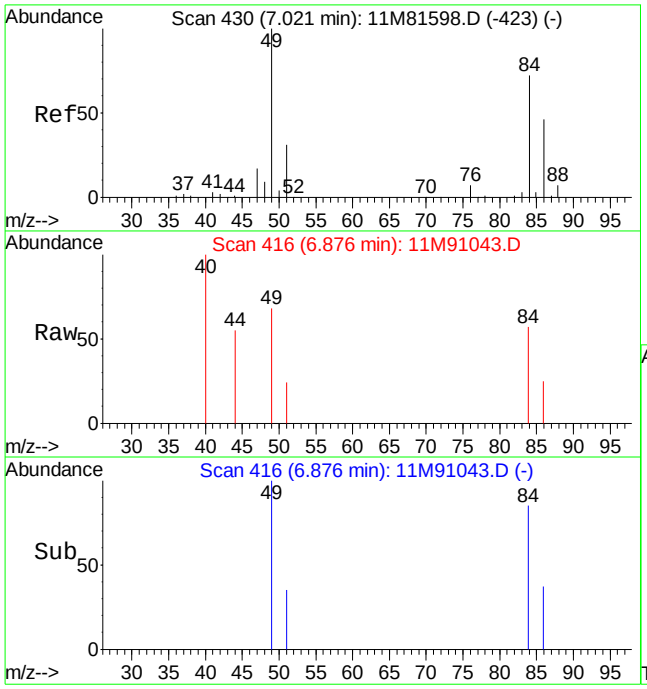

#19
Methylene Chloride
Concen: 0.13 ug/L
RT: 6.88 min Scan# 416
Delta R.T. -0.00 min
Lab File: 11M91043.D
Acq: 11 Apr 2013 10:35

Tgt Ion: 84 Resp: 1419

Ion	Ratio	Lower	Upper
84	100		
49	165.9	73.4	171.4

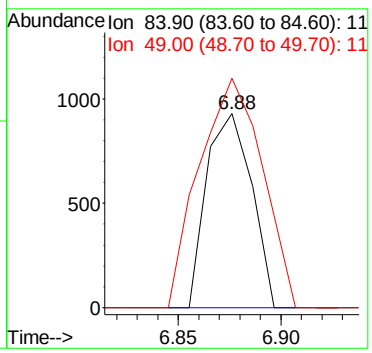

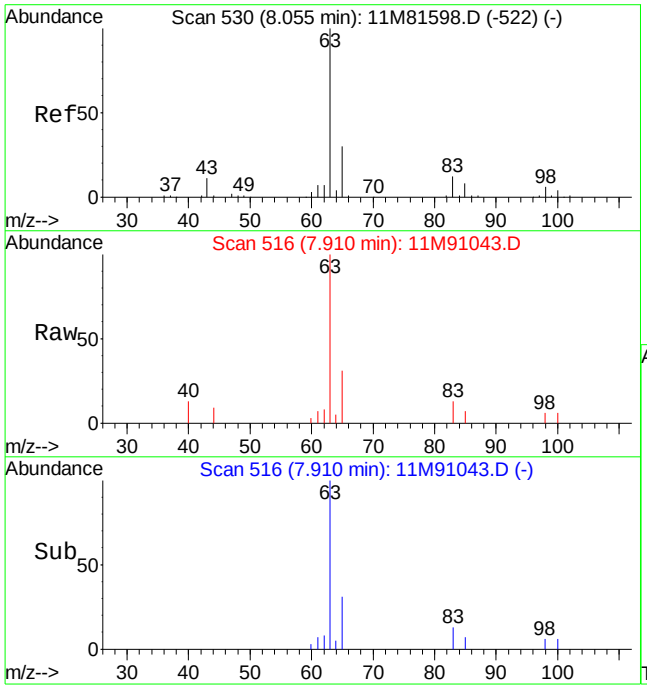

#27
1,1-Dichloroethane
Concen: 1.48 ug/L
RT: 7.91 min Scan# 516
Delta R.T. -0.00 min
Lab File: 11M91043.D
Acq: 11 Apr 2013 10:35

Tgt Ion: 63 Resp: 29339

Ion	Ratio	Lower	Upper
63	100		
65	30.9	19.1	44.5
83	12.7	8.6	20.2

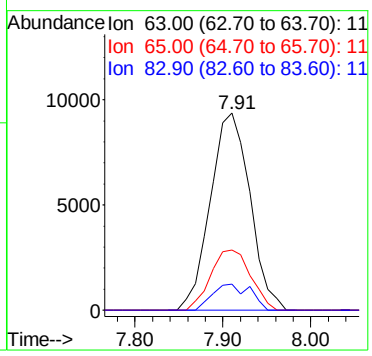

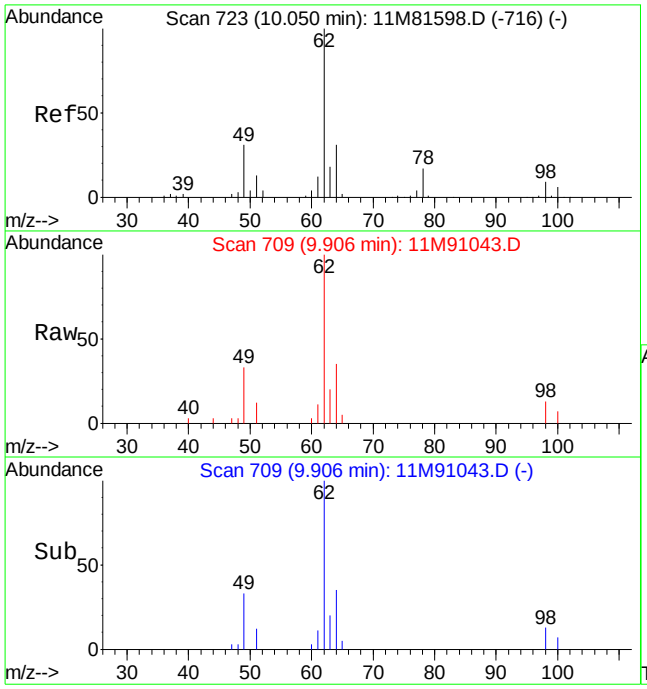

#45
1,2-Dichloroethane
Concen: 3.12 ug/L
RT: 9.91 min Scan# 709
Delta R.T. -0.00 min
Lab File: 11M91043.D
Acq: 11 Apr 2013 10:35

Tgt Ion: 62 Resp: 37855

Ion	Ratio	Lower	Upper
62	100		
64	30.7	20.0	46.6
49	32.5	20.3	47.3

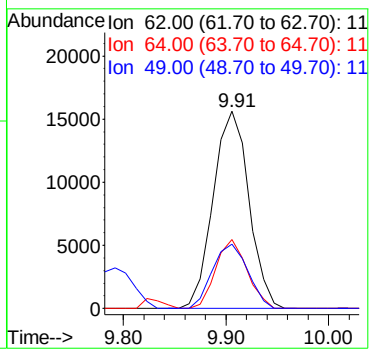

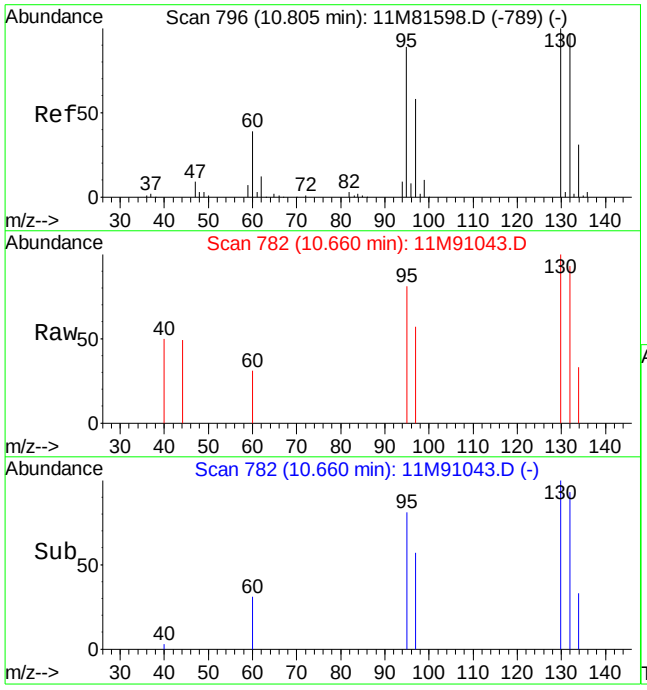

#47
Trichloroethene
Concen: 0.22 ug/L
RT: 10.66 min Scan# 782
Delta R.T. 0.01 min
Lab File: 11M91043.D
Acq: 11 Apr 2013 10:35

Tgt Ion:130 Resp: 2548

Ion	Ratio	Lower	Upper
130	100		
132	99.2	58.1	135.7
95	84.0	53.2	124.0

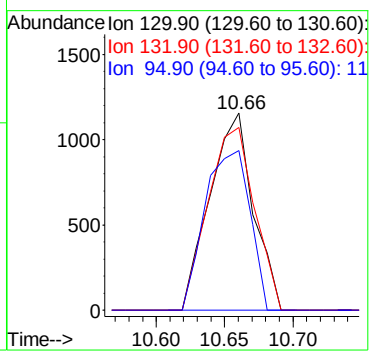

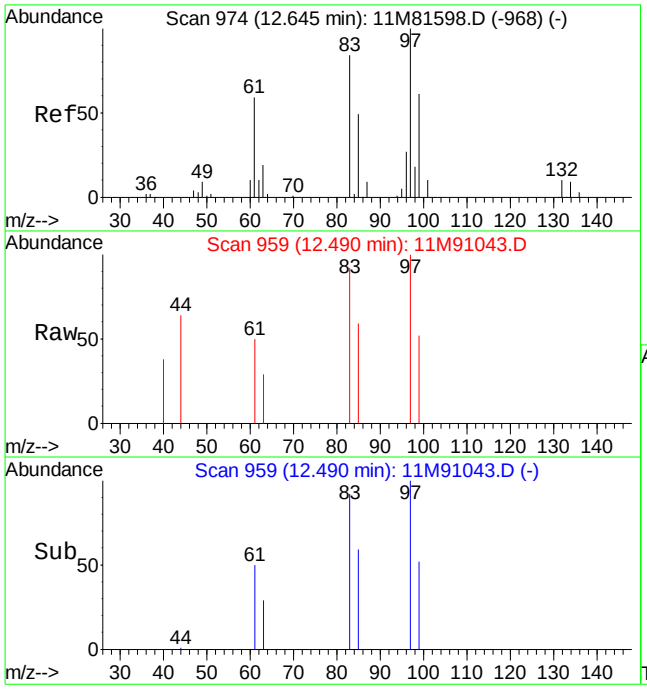

#63
1,1,2-Trichloroethane
Concen: 0.33 ug/L
RT: 12.49 min Scan# 959
Delta R.T. -0.01 min
Lab File: 11M91043.D
Acq: 11 Apr 2013 10:35

Tgt Ion: 97 Resp: 2560

Ion	Ratio	Lower	Upper
97	100		
83	81.6	49.7	116.1

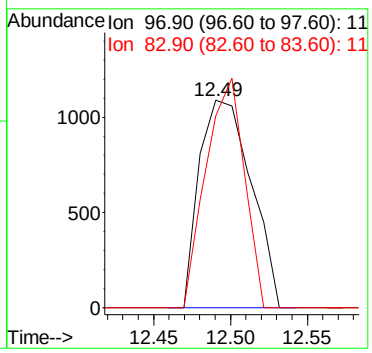

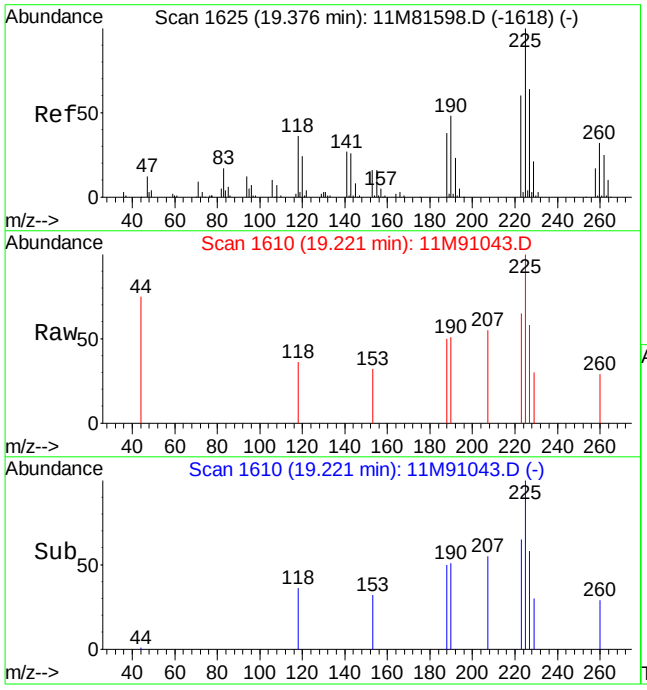

#99
Hexachlorobutadiene
Concen: 0.42 ug/L
RT: 19.22 min Scan# 1610
Delta R.T. -0.00 min
Lab File: 11M91043.D
Acq: 11 Apr 2013 10:35

Tgt Ion:225 Resp: 2166

Ion	Ratio	Lower	Upper
225	100		
227	44.5	39.1	91.1
118	24.7	30.9	72.1#

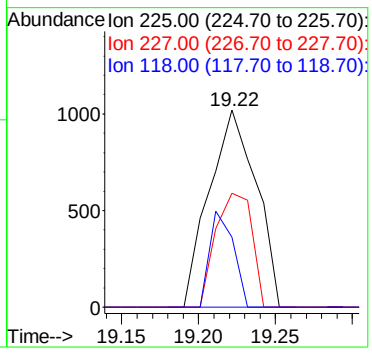

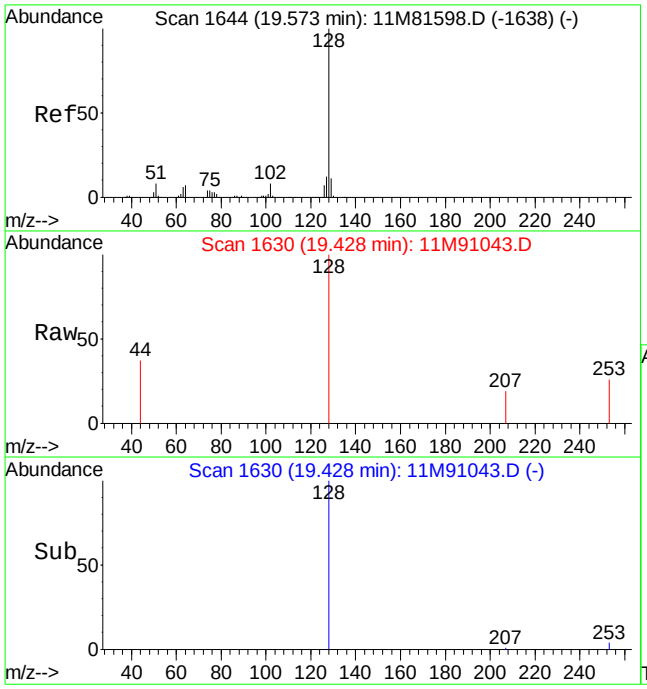

#100
Naphthalene
Concen: 0.44 ug/L
RT: 19.43 min Scan# 1630
Delta R.T. 0.01 min
Lab File: 11M91043.D
Acq: 11 Apr 2013 10:35

Tgt Ion:128 Resp: 4175

Ion	Ratio	Lower	Upper
128	100		
127	0.0	11.4	14.0#

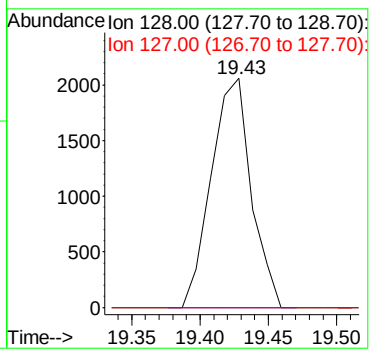

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041013\11M91022.D Vial: 9
Acq On : 10 Apr 2013 20:34 Operator: FJB
Sample : L13040315-02 EB A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 11 14:33:58 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	1009432	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.80	117	758836	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.61	152	378497	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.18	111	275566	24.9277 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.72%		
43) 1,2-Dichloroethane-d4	9.79	65	235066	23.3588 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.44%		
58) Toluene-d8	12.04	98	1051588	26.3260 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.32%		
80) p-Bromofluorobenzene	15.20	95	390568	27.3759 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.52%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.59	62	377	Below Cal #	41
6) Bromomethane	4.45	94	893	Below Cal	89
13) Acetone	5.90	43	6760	2.4190 ug/L	95
17) Iodomethane	6.62	142	242	1.2101 ug/L #	30
19) Methylene Chloride	6.88	84	6034	0.5236 ug/L	81
29) 2-Butanone	8.44	43	1082	0.3361 ug/L #	49
33) Chloroform	8.90	83	5185	0.2659 ug/L	98
100) Naphthalene	19.42	128	1077	0.3344 ug/L #	68
101) 1,2,3-Trichlorobenzene	19.71	180	251	Below Cal #	43

(#) = qualifier out of range (m) = manual integration
11M91022.D 8260_WT.M Thu Apr 11 14:33:59 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041013\11M91022.D Vial: 9
Acq On : 10 Apr 2013 20:34 Operator: FJB
Sample : L13040315-02 EB A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 11 14:33 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration

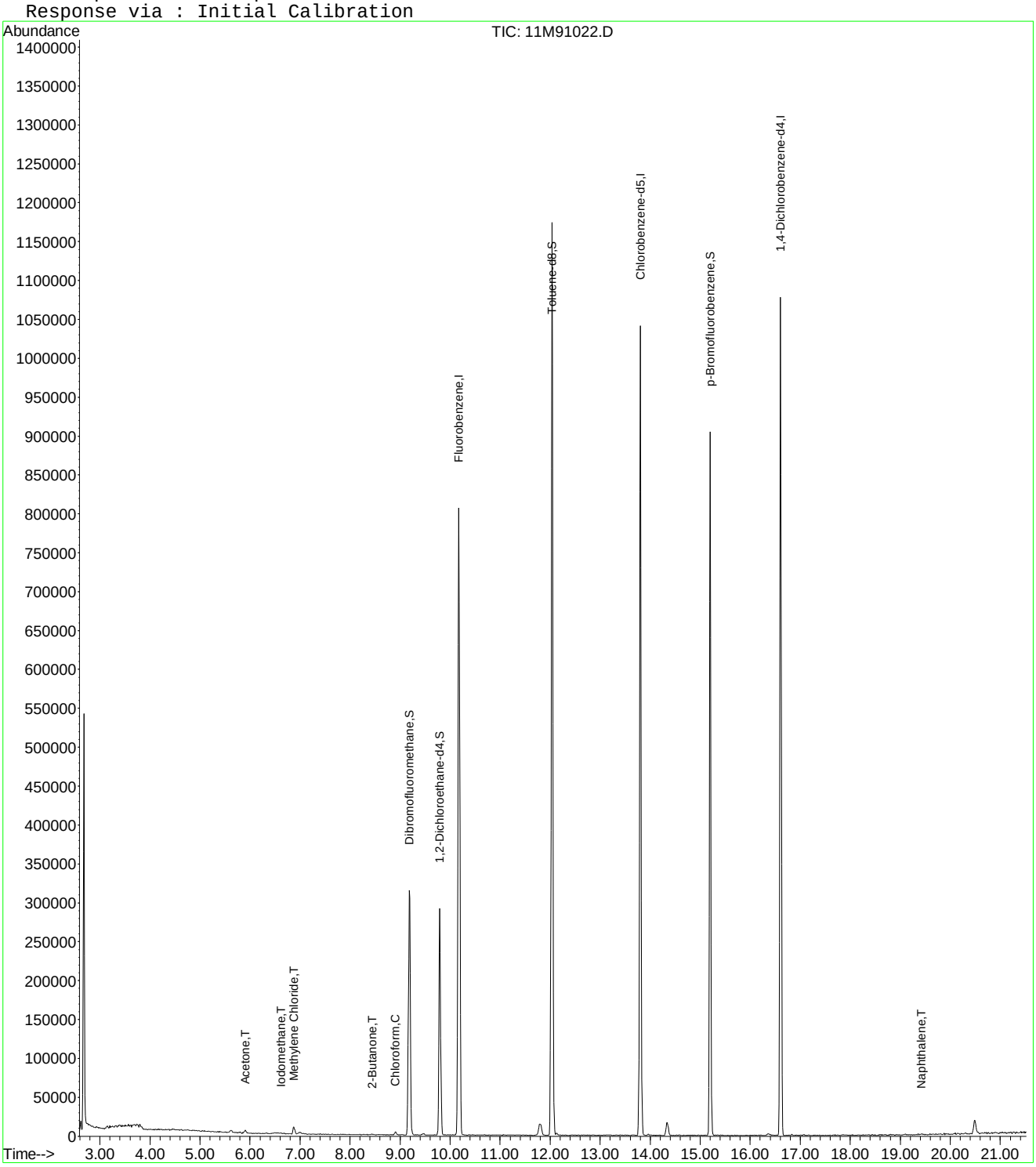

11M91022.D 8260_WT.M Thu Apr 11 14:33:59 2013 Page 2

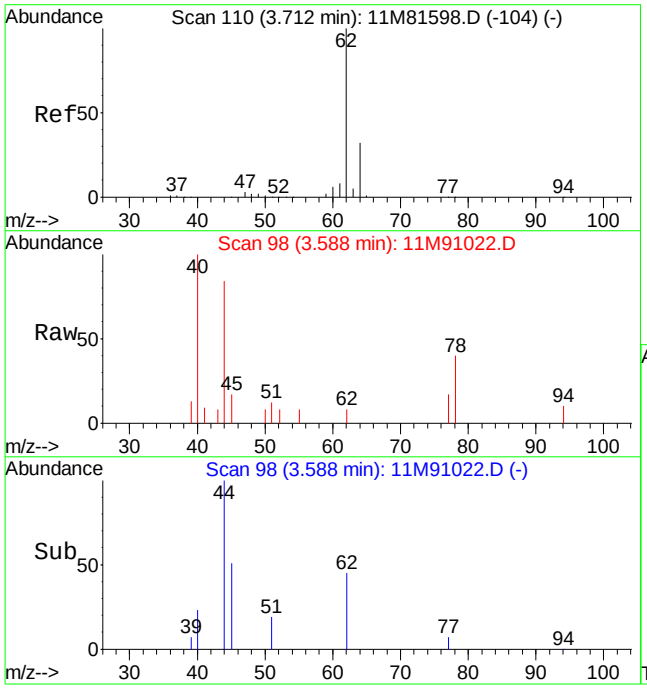

#4
Vinyl Chloride
Concen: Below Cal
RT: 3.59 min Scan# 98
Delta R.T. -0.01 min
Lab File: 11M91022.D
Acq: 10 Apr 2013 20:34

Tgt Ion: 62 Resp: 377

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.9	46.5#

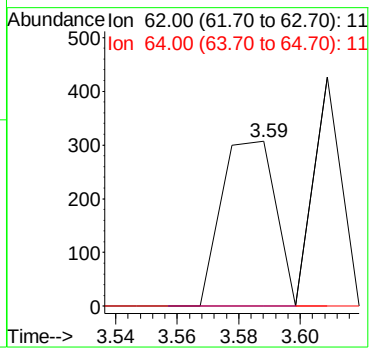

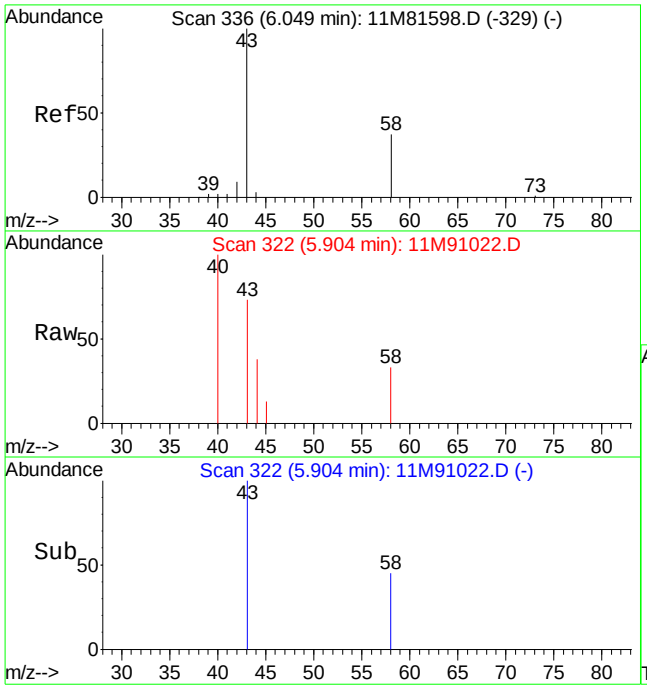

#13
Acetone
Concen: 2.42 ug/L
RT: 5.90 min Scan# 322
Delta R.T. 0.01 min
Lab File: 11M91022.D
Acq: 10 Apr 2013 20:34

Tgt Ion: 43 Resp: 6760

Ion	Ratio	Lower	Upper
43	100		
58	31.9	17.6	41.2

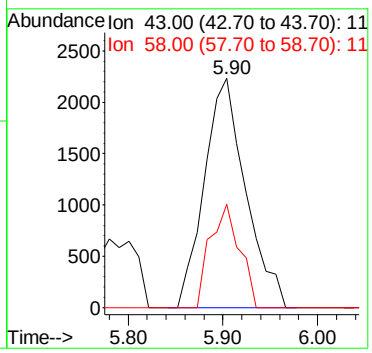

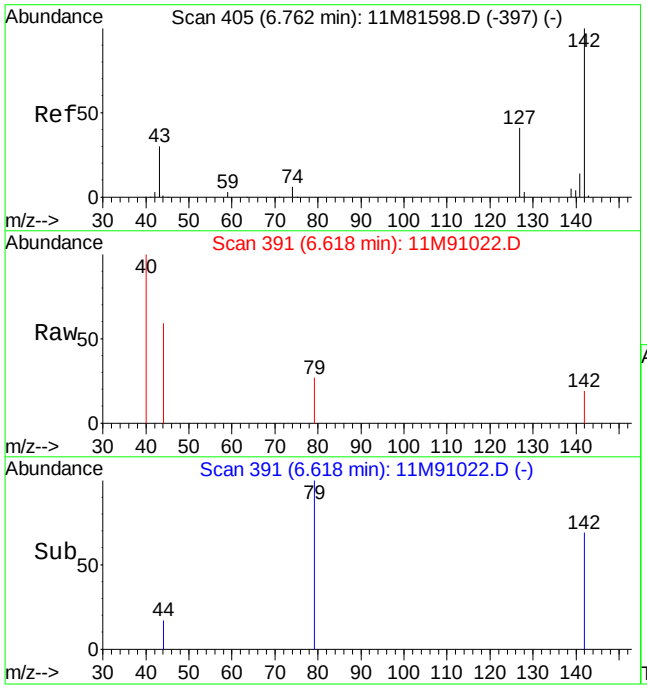

#17
Iodomethane
Concen: 1.21 ug/L
RT: 6.62 min Scan# 391
Delta R.T. 0.01 min
Lab File: 11M91022.D
Acq: 10 Apr 2013 20:34

Tgt Ion:142 Resp: 242

Ion	Ratio	Lower	Upper
142	100		
127	0.0	27.9	65.1#

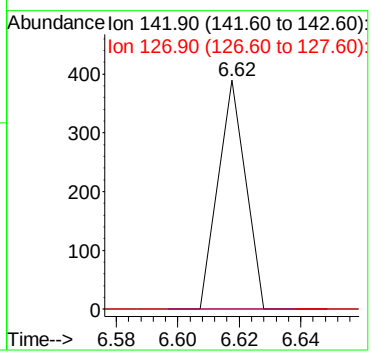

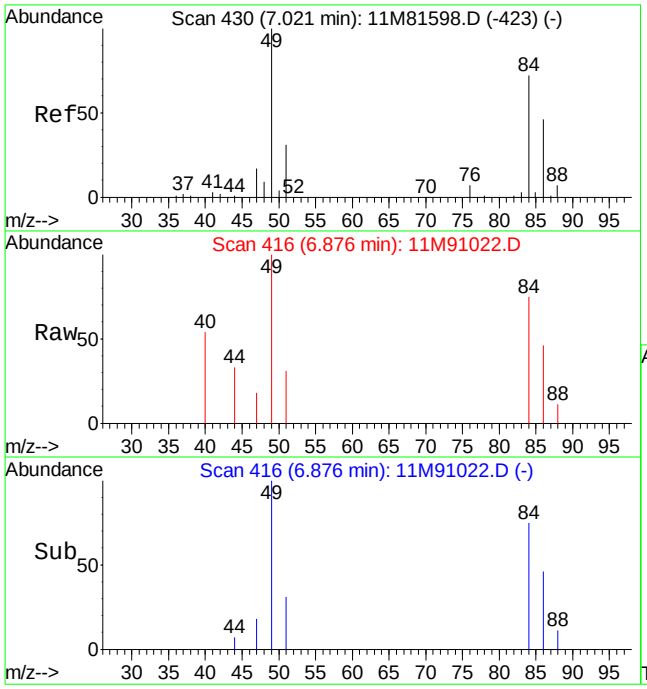

#19
Methylene Chloride
Concen: 0.52 ug/L
RT: 6.88 min Scan# 416
Delta R.T. -0.00 min
Lab File: 11M91022.D
Acq: 10 Apr 2013 20:34

Tgt Ion: 84 Resp: 6034

Ion	Ratio	Lower	Upper
84	100		
49	143.8	73.4	171.4

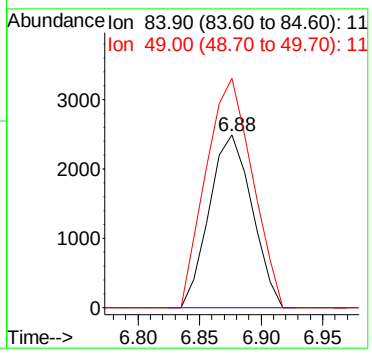

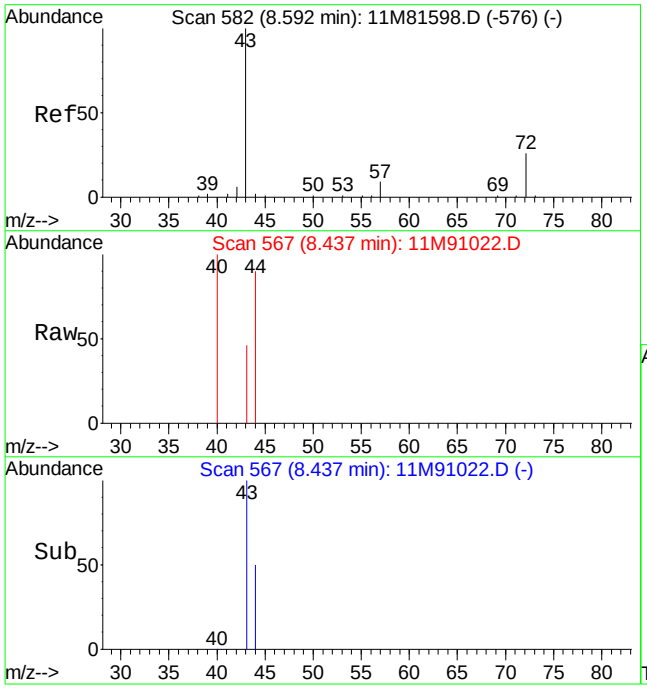

#29
2-Butanone
Concen: 0.34 ug/L
RT: 8.44 min Scan# 567
Delta R.T. -0.00 min
Lab File: 11M91022.D
Acq: 10 Apr 2013 20:34

Tgt Ion: 43 Resp: 1082

Ion	Ratio	Lower	Upper
43	100		
72	0.0	15.8	36.8#

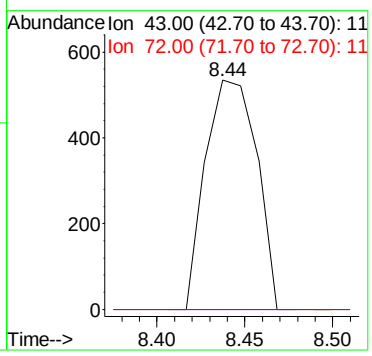

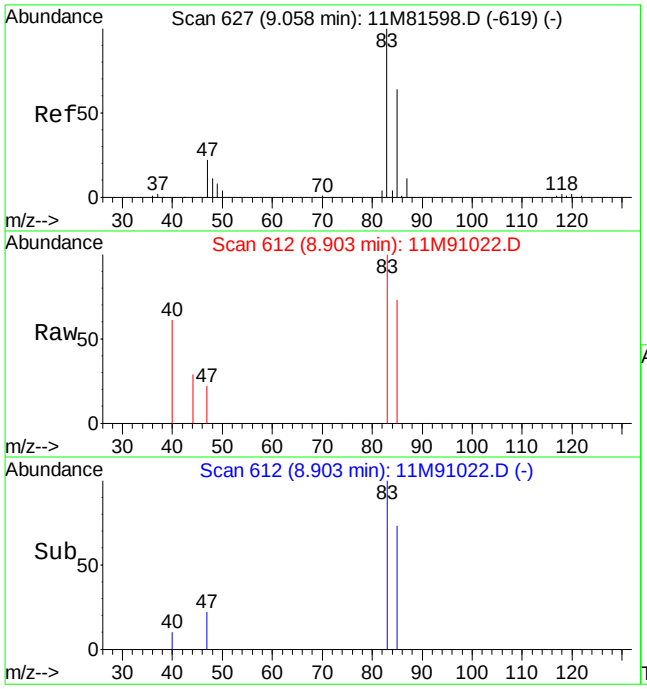

#33
Chloroform
Concen: 0.27 ug/L
RT: 8.90 min Scan# 612
Delta R.T. -0.01 min
Lab File: 11M91022.D
Acq: 10 Apr 2013 20:34

Tgt Ion: 83 Resp: 5185

Ion	Ratio	Lower	Upper
83	100		
85	65.8	40.7	94.9

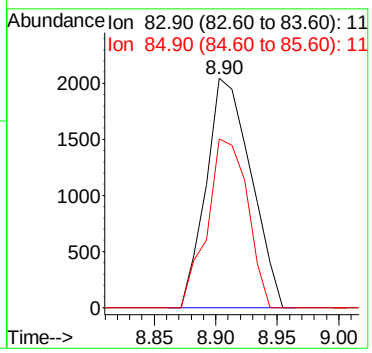

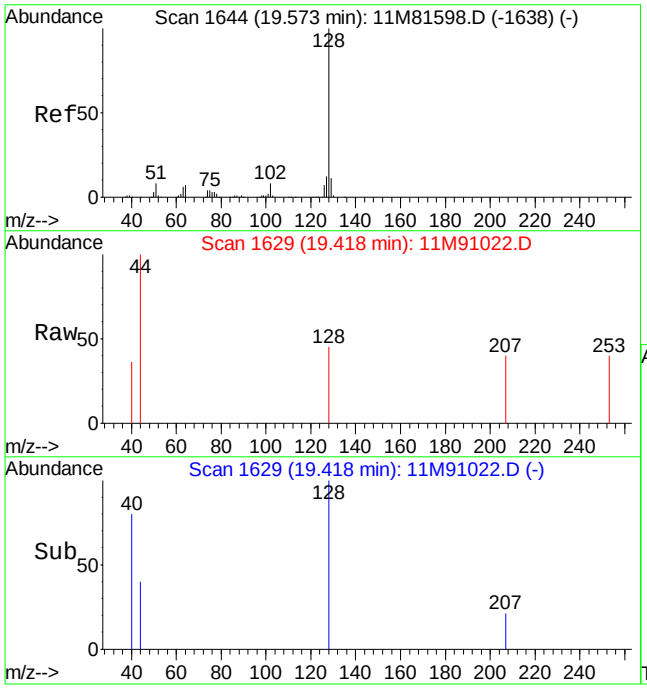

#100
Naphthalene
Concen: 0.33 ug/L
RT: 19.42 min Scan# 1629
Delta R.T. 0.00 min
Lab File: 11M91022.D
Acq: 10 Apr 2013 20:34

Tgt Ion:128 Resp: 1077

Ion	Ratio	Lower	Upper
128	100		
127	0.0	11.4	14.0#

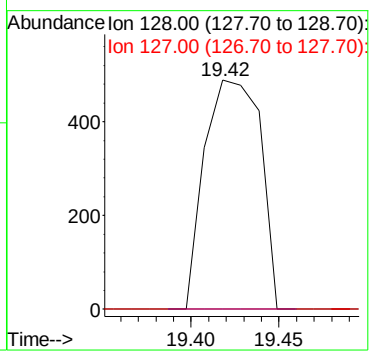

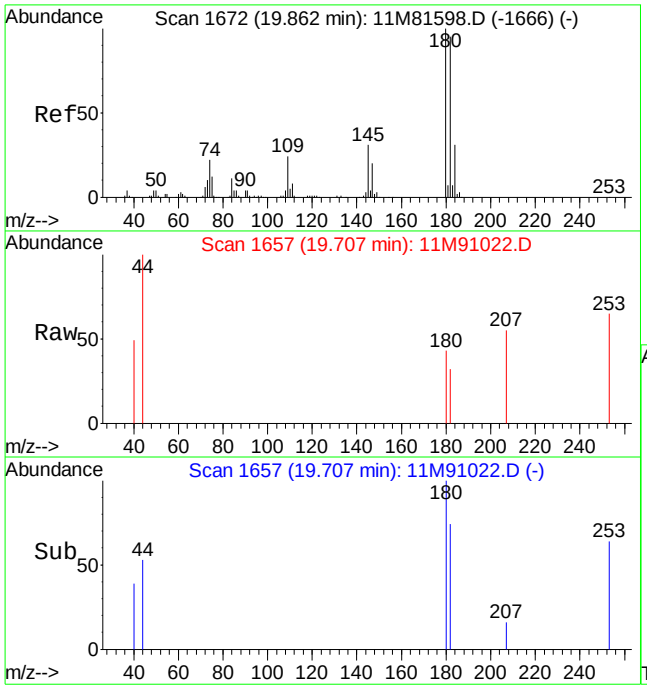

#101
1,2,3-Trichlorobenzene
Concen: Below Cal
RT: 19.71 min Scan# 1657
Delta R.T. 0.00 min
Lab File: 11M91022.D
Acq: 10 Apr 2013 20:34

Tgt Ion:180 Resp: 251

Ion	Ratio	Lower	Upper
180	100		
145	0.0	19.3	44.9#

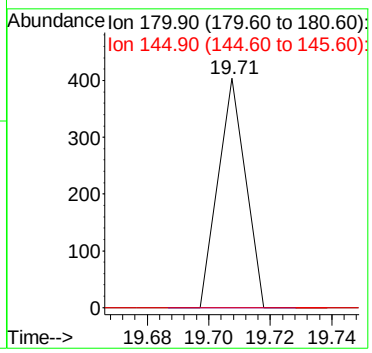

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041013\11M91035.D Vial: 22
Acq On : 11 Apr 2013 3:23 Operator: FJB
Sample : L13040315-03 A 826-LOW Inst : hpms11
Misc : 1,1 sediment transferred Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 11 14:34:27 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	957708	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.80	117	722021	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.61	152	379744	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.19	111	258788	24.6743 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.68%		
43) 1,2-Dichloroethane-d4	9.79	65	229600	24.0479 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.20%		
58) Toluene-d8	12.04	98	974171	25.6314 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.52%		
80) p-Bromofluorobenzene	15.20	95	363837	25.4185 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.68%		

Target Compounds

					Qvalue
3) Chloromethane	3.39	50	2139	Below Cal	79
6) Bromomethane	4.46	94	849	Below Cal	66
13) Acetone	5.90	43	7108	2.6809 ug/L #	29
14) 1,1-Dichloroethene	6.12	61	500897	31.9989 ug/L	99
15) Tert-Butyl Alcohol	6.22	59	2211	3.6254 ug/L #	59
27) 1,1-Dichloroethane	7.91	63	176544	9.1613 ug/L	97
29) 2-Butanone	8.46	43	972	0.3183 ug/L #	49
45) 1,2-Dichloroethane	9.91	62	13347	1.1290 ug/L	96
50) 1,4-Dioxane	11.13	88	9560	132.5206 ug/L	73
100) Naphthalene	19.44	128	388	0.3113 ug/L #	68

(#) = qualifier out of range (m) = manual integration
11M91035.D 8260_WT.M Thu Apr 11 14:34:28 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041013\11M91035.D Vial: 22
Acq On : 11 Apr 2013 3:23 Operator: FJB
Sample : L13040315-03 A 826-LOW Inst : hpms11
Misc : 1,1 sediment transferred Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 11 14:34 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration

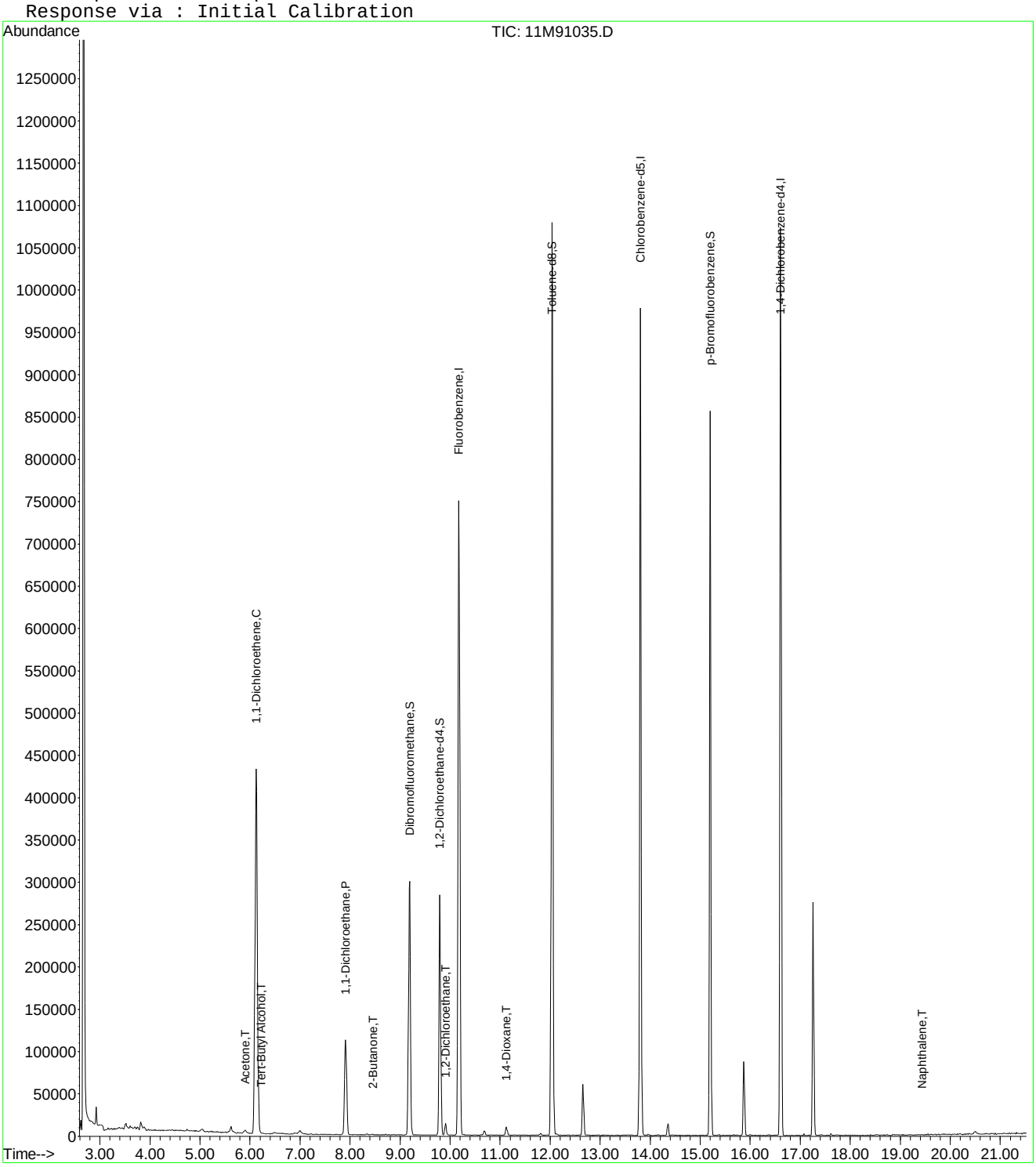

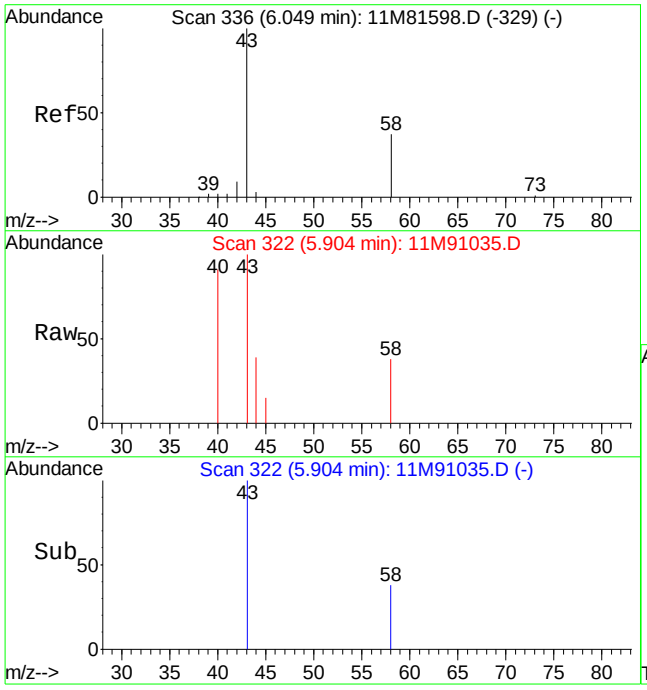

#13
Acetone
Concen: 2.68 ug/L
RT: 5.90 min Scan# 322
Delta R.T. 0.01 min
Lab File: 11M91035.D
Acq: 11 Apr 2013 3:23

Tgt Ion: 43 Resp: 7108

Ion	Ratio	Lower	Upper
43	100		
58	67.4	17.6	41.2#

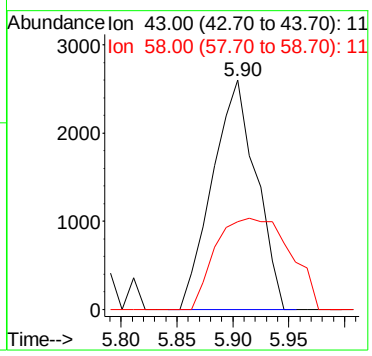

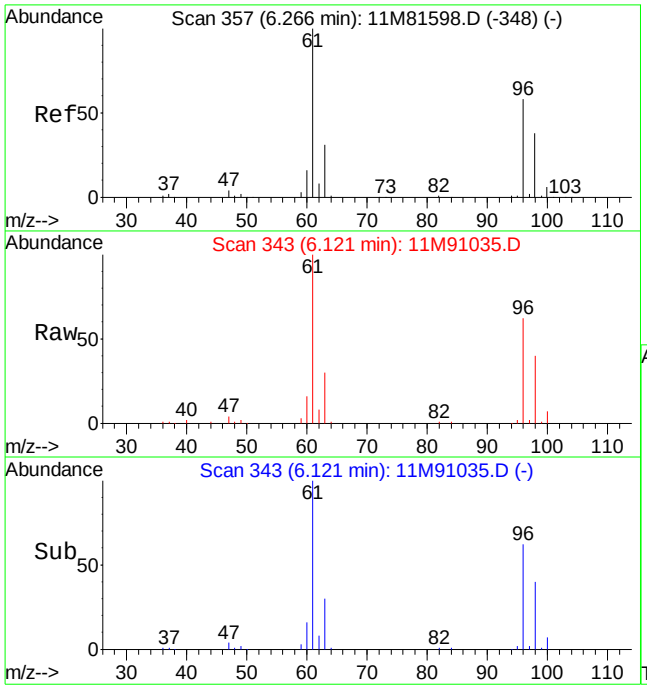

#14
1,1-Dichloroethene
Concen: 32.00 ug/L
RT: 6.12 min Scan# 343
Delta R.T. -0.00 min
Lab File: 11M91035.D
Acq: 11 Apr 2013 3:23

Tgt Ion: 61 Resp: 500897

Ion	Ratio	Lower	Upper
61	100		
96	62.5	37.9	88.5

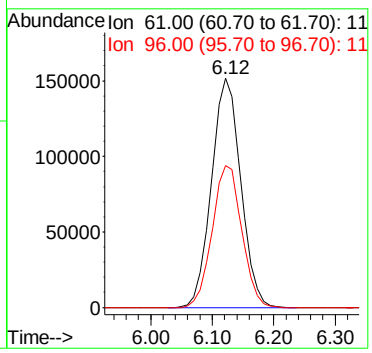

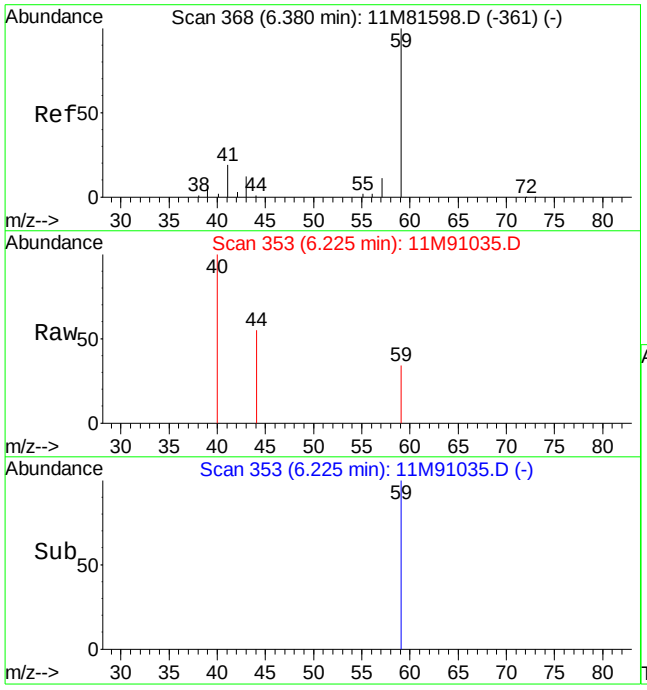

#15
Tert-Butyl Alcohol
Concen: 3.63 ug/L
RT: 6.22 min Scan# 353
Delta R.T. -0.00 min
Lab File: 11M91035.D
Acq: 11 Apr 2013 3:23

Tgt Ion: 59 Resp: 2211

Ion	Ratio	Lower	Upper
59	100		
41	0.0	13.6	31.6#
57	0.0	6.2	14.4#

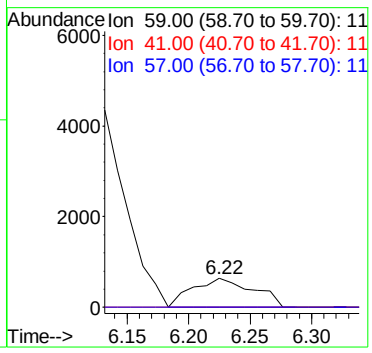

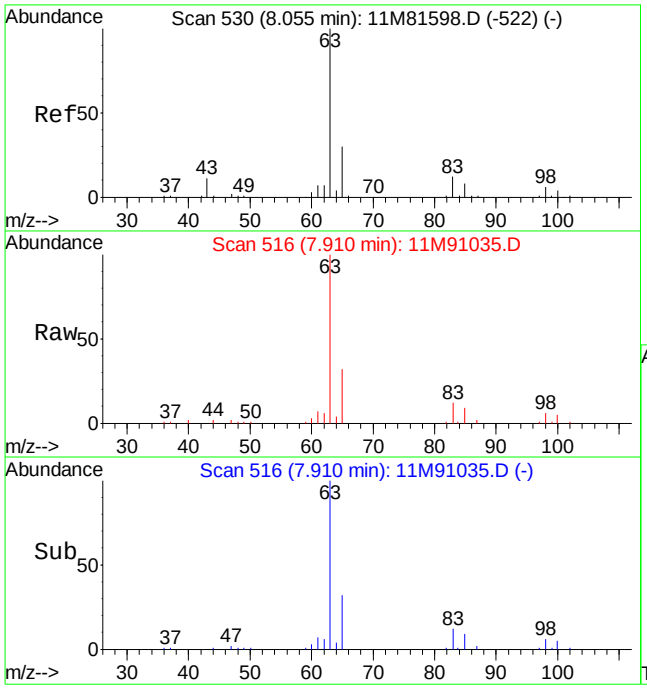

#27
1,1-Dichloroethane
Concen: 9.16 ug/L
RT: 7.91 min Scan# 516
Delta R.T. -0.00 min
Lab File: 11M91035.D
Acq: 11 Apr 2013 3:23

Tgt Ion: 63 Resp: 176544

Ion	Ratio	Lower	Upper
63	100		
65	30.8	19.1	44.5
83	12.4	8.6	20.2

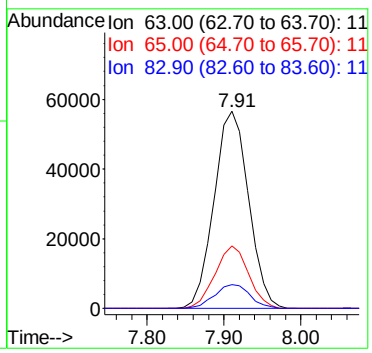

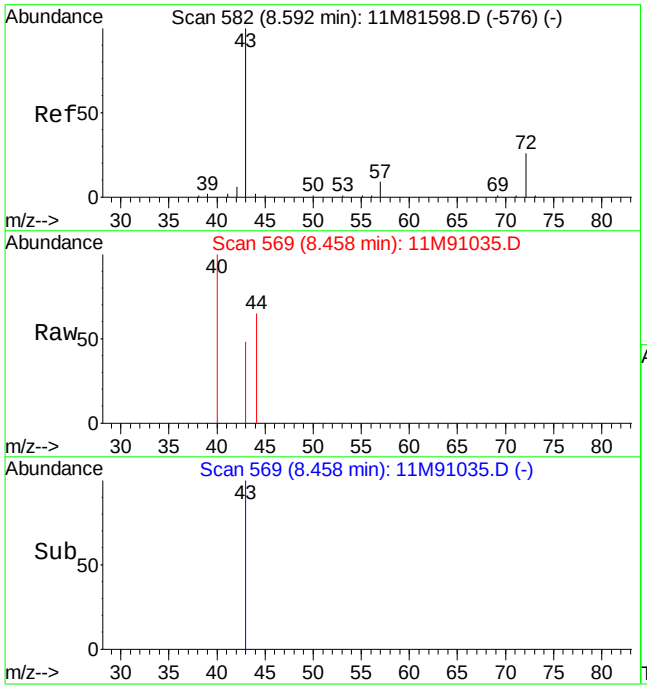

#29
2-Butanone
Concen: 0.32 ug/L
RT: 8.46 min Scan# 569
Delta R.T. 0.02 min
Lab File: 11M91035.D
Acq: 11 Apr 2013 3:23

Tgt Ion: 43 Resp: 972

Ion	Ratio	Lower	Upper
43	100		
72	0.0	15.8	36.8#

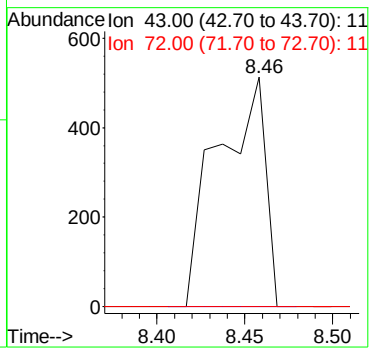

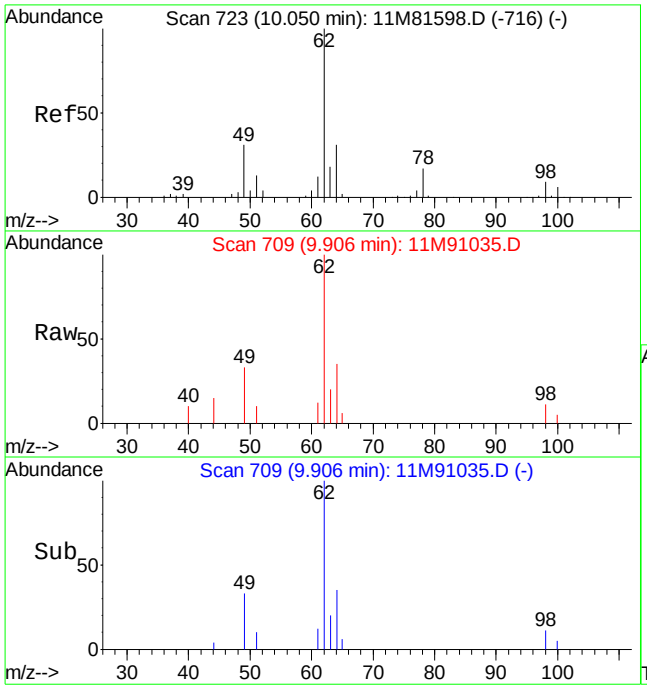

#45
1,2-Dichloroethane
Concen: 1.13 ug/L
RT: 9.91 min Scan# 709
Delta R.T. -0.00 min
Lab File: 11M91035.D
Acq: 11 Apr 2013 3:23

Tgt Ion: 62 Resp: 13347

Ion	Ratio	Lower	Upper
62	100		
64	32.1	20.0	46.6
49	30.1	20.3	47.3

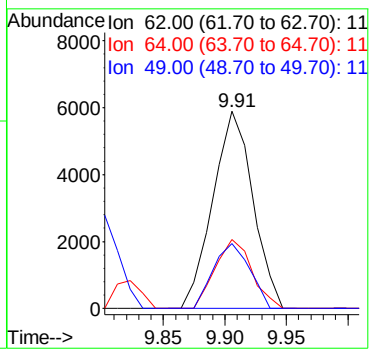

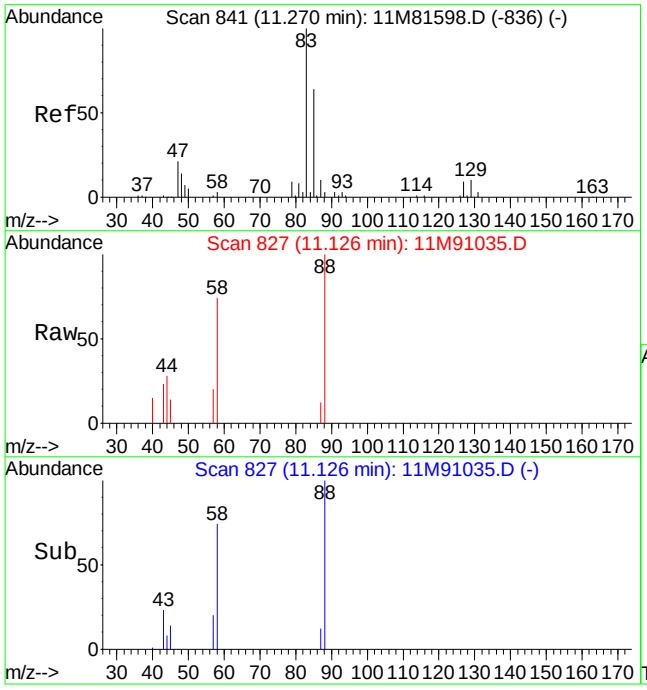

#50
1,4-Dioxane
Concen: 132.52 ug/L
RT: 11.13 min Scan# 827
Delta R.T. 0.00 min
Lab File: 11M91035.D
Acq: 11 Apr 2013 3:23

Tgt Ion: 88 Resp: 9560

Ion	Ratio	Lower	Upper
88	100		
58	75.0	33.2	77.6

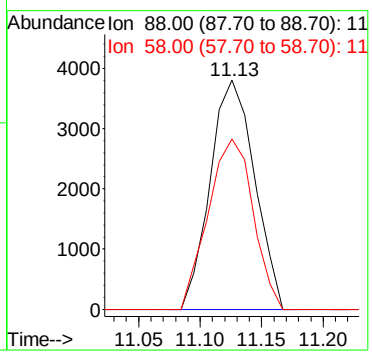

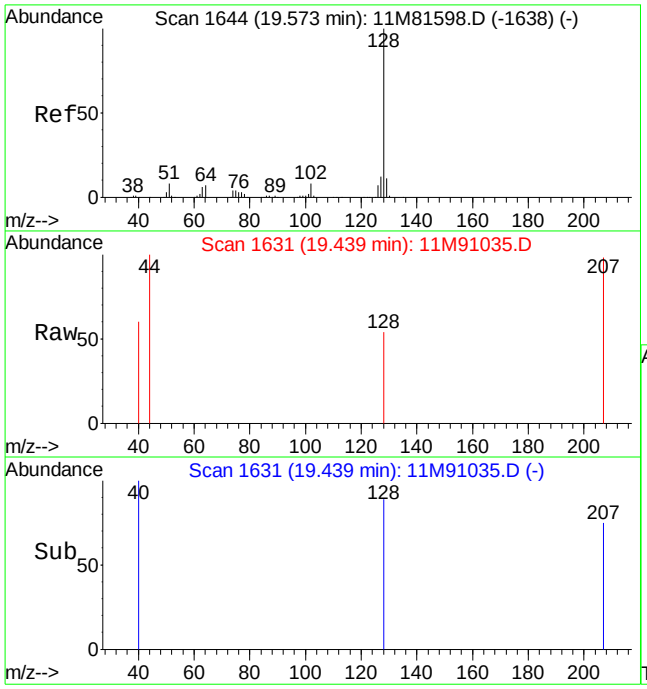

#100
Naphthalene
Concen: 0.31 ug/L
RT: 19.44 min Scan# 1631
Delta R.T. 0.02 min
Lab File: 11M91035.D
Acq: 11 Apr 2013 3:23

Tgt Ion:128 Resp: 388

Ion	Ratio	Lower	Upper
128	100		
127	0.0	11.4	14.0#

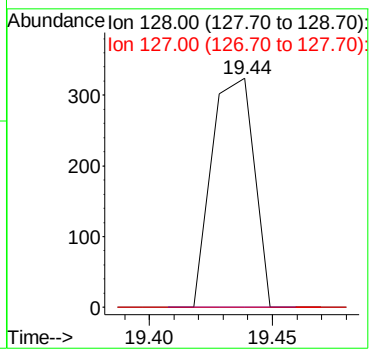

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041013\11M91021.D Vial: 8
Acq On : 10 Apr 2013 20:03 Operator: FJB
Sample : L13040315-04 TB A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 11 14:33:56 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	1005899	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.80	117	754037	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.61	152	382758	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.18	111	271657	24.6604 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.64%		
43) 1,2-Dichloroethane-d4	9.79	65	233988	23.3334 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.32%		
58) Toluene-d8	12.04	98	1033118	26.0282 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.12%		
80) p-Bromofluorobenzene	15.20	95	387325	26.8464 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.40%		

Target Compounds

					Qvalue
3) Chloromethane	3.38	50	2330	Below Cal	# 1
4) Vinyl Chloride	3.61	62	404	Below Cal	# 41
5) 1,3-Butadiene	3.59	54	381	Below Cal	# 4
6) Bromomethane	4.46	94	1496	Below Cal	# 51
13) Acetone	5.90	43	1008	0.3620 ug/L	# 45
17) Iodomethane	6.62	142	434	1.2234 ug/L	# 30
98) 1,2,4-Trichlorobenzene	19.08	180	673	Below Cal	# 44
100) Naphthalene	19.43	128	1824	0.3587 ug/L	# 68
101) 1,2,3-Trichlorobenzene	19.71	180	524	Below Cal	# 43

(#) = qualifier out of range (m) = manual integration
11M91021.D 8260_WT.M Thu Apr 11 14:33:57 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041013\11M91021.D Vial: 8
Acq On : 10 Apr 2013 20:03 Operator: FJB
Sample : L13040315-04 TB A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 11 14:33 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration

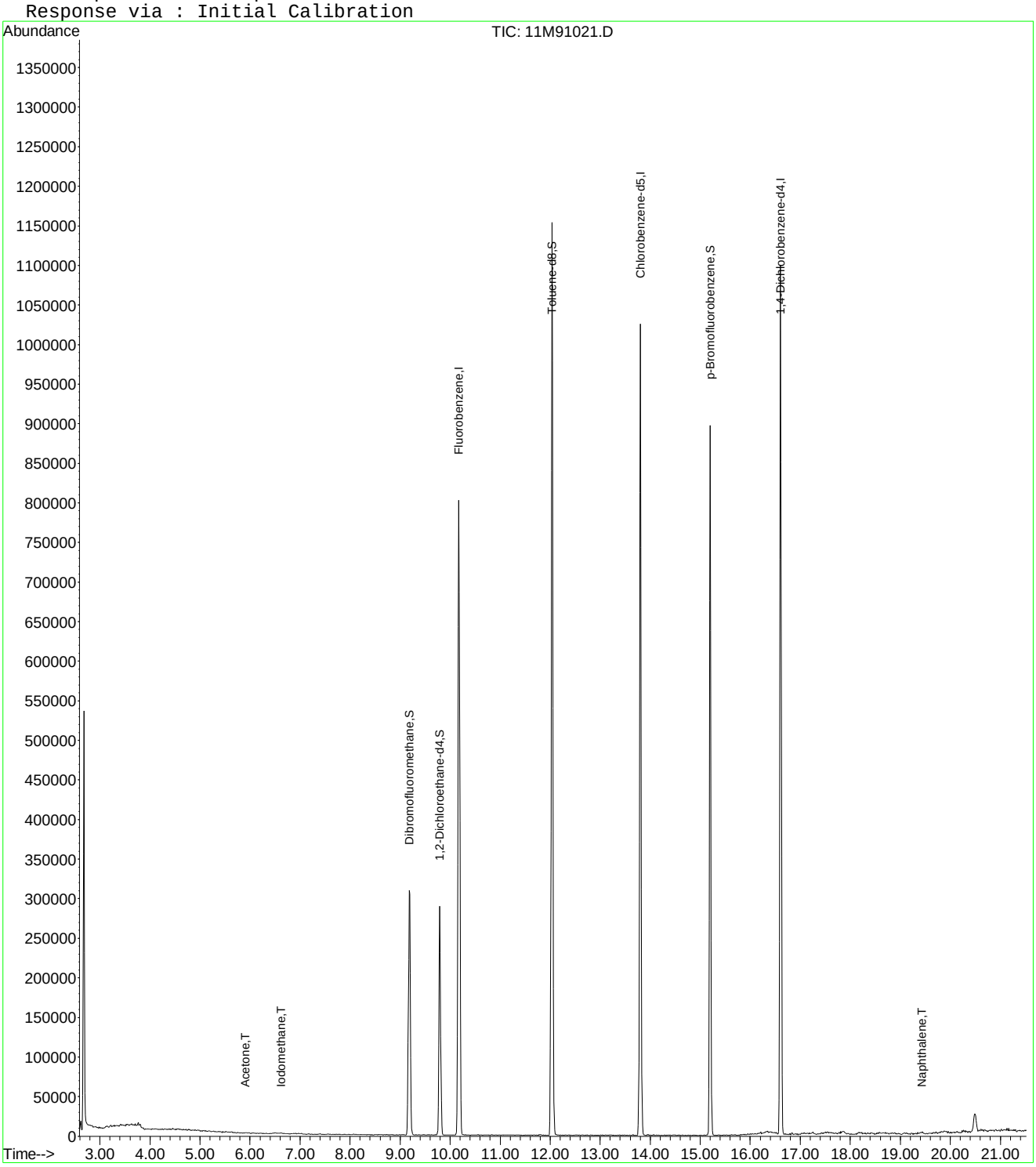

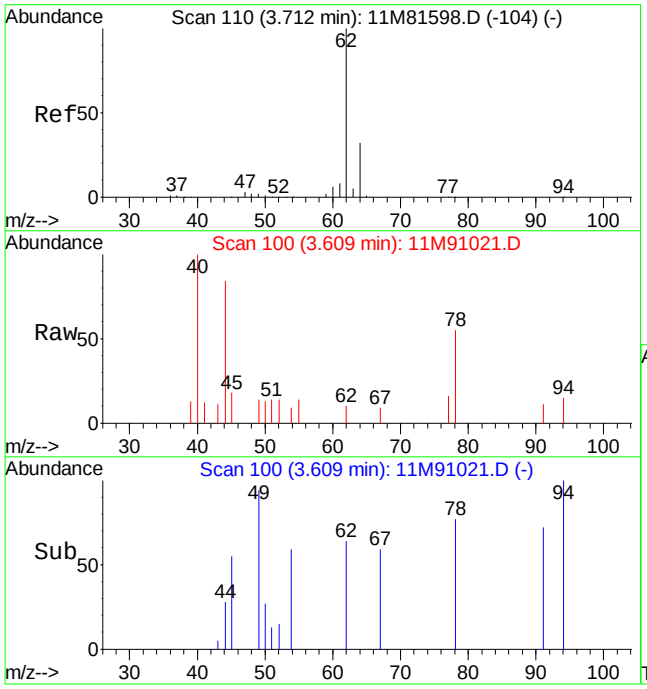

#4
Vinyl Chloride
Concen: Below Cal
RT: 3.61 min Scan# 100
Delta R.T. 0.01 min
Lab File: 11M91021.D
Acq: 10 Apr 2013 20:03

Tgt Ion: 62 Resp: 404

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.9	46.5#

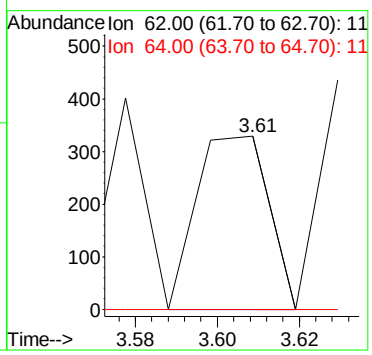

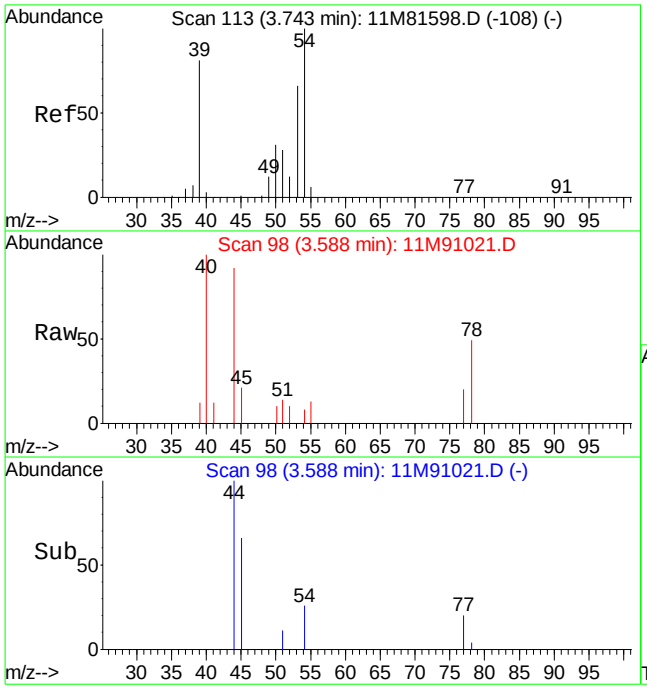

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.59 min Scan# 98
Delta R.T. -0.05 min
Lab File: 11M91021.D
Acq: 10 Apr 2013 20:03

Tgt Ion: 54 Resp: 381

Ion	Ratio	Lower	Upper
54	100		
39	174.5	47.9	111.9#
53	0.0	39.7	92.7#

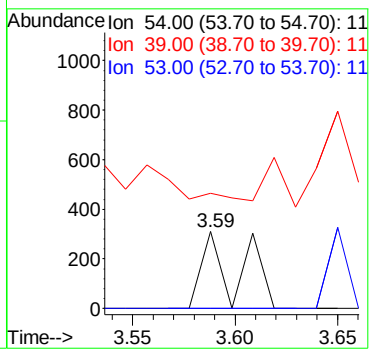

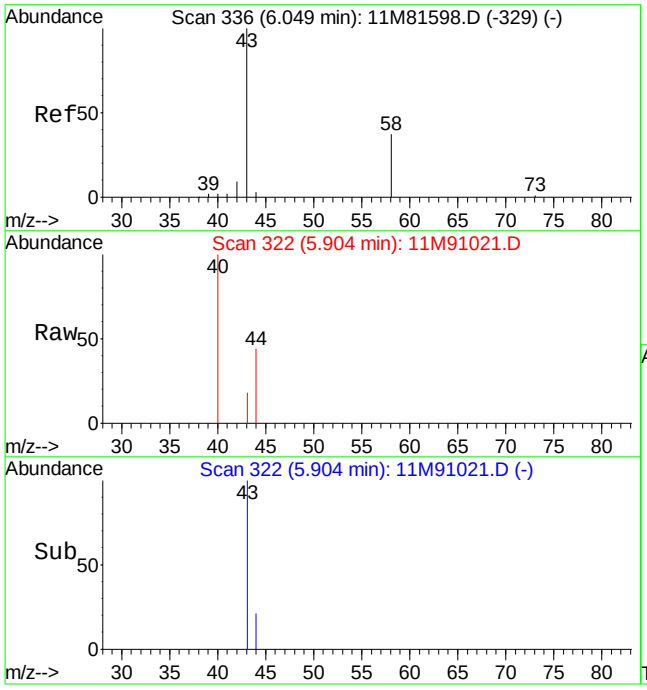

#13
Acetone
Concen: 0.36 ug/L
RT: 5.90 min Scan# 322
Delta R.T. 0.01 min
Lab File: 11M91021.D
Acq: 10 Apr 2013 20:03

Tgt Ion: 43 Resp: 1008

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.6	41.2#

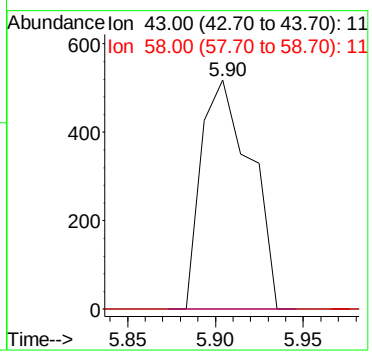

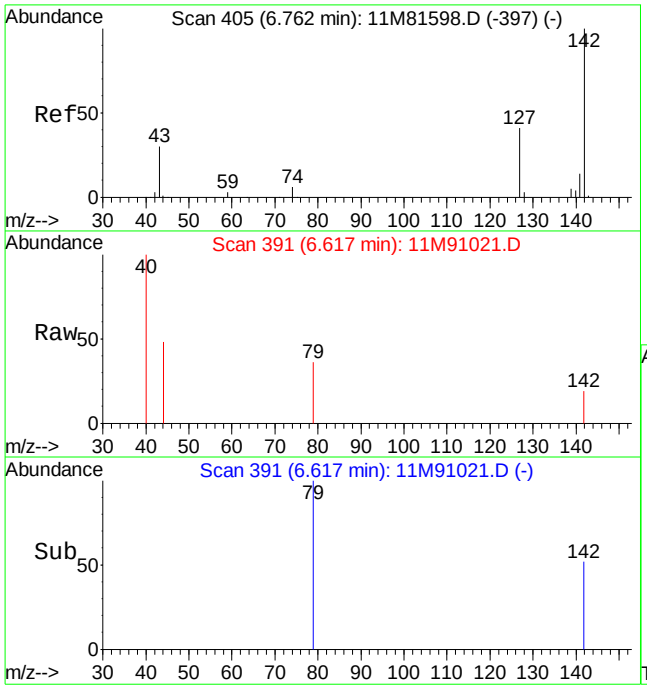

#17
Iodomethane
Concen: 1.22 ug/L
RT: 6.62 min Scan# 391
Delta R.T. 0.01 min
Lab File: 11M91021.D
Acq: 10 Apr 2013 20:03

Tgt Ion:142 Resp: 434

Ion	Ratio	Lower	Upper
142	100		
127	0.0	27.9	65.1#

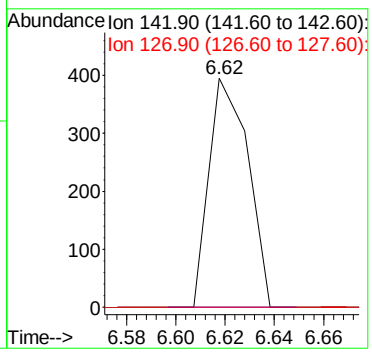

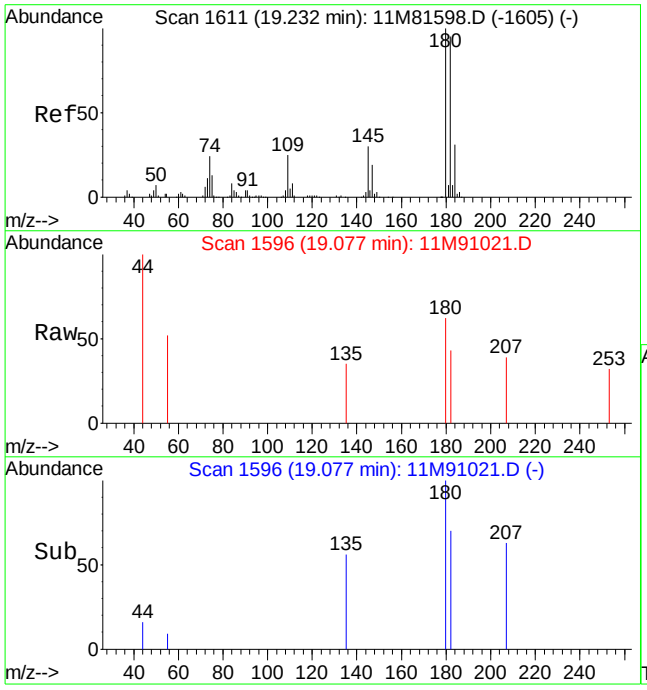

#98
1,2,4-Trichlorobenzene
Concen: Below Cal
RT: 19.08 min Scan# 1596
Delta R.T. 0.00 min
Lab File: 11M91021.D
Acq: 10 Apr 2013 20:03

Tgt Ion:180 Resp: 673

Ion	Ratio	Lower	Upper
180	100		
145	0.0	18.4	42.8#

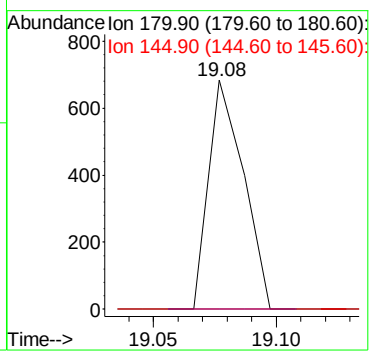

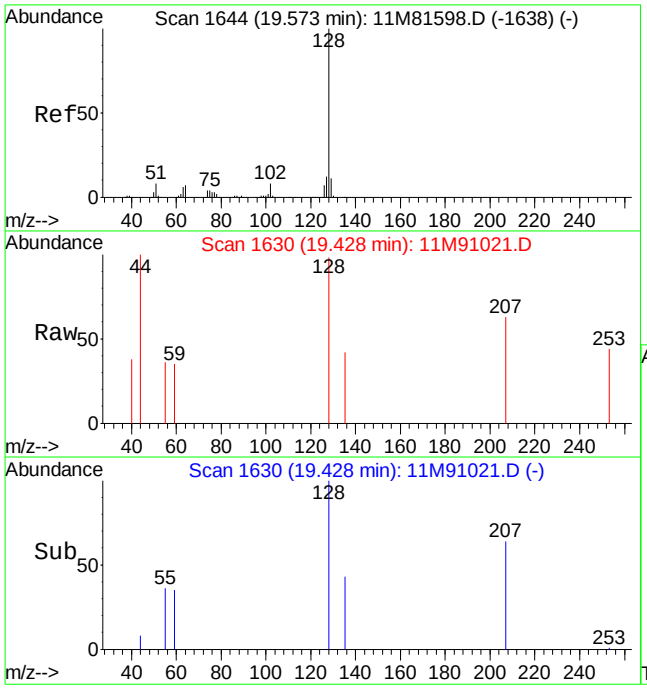

#100
Naphthalene
Concen: 0.36 ug/L
RT: 19.43 min Scan# 1630
Delta R.T. 0.01 min
Lab File: 11M91021.D
Acq: 10 Apr 2013 20:03

Tgt Ion:128 Resp: 1824

Ion	Ratio	Lower	Upper
128	100		
127	0.0	11.4	14.0#

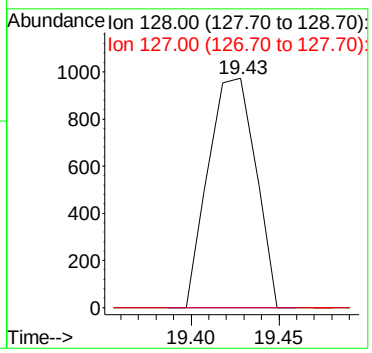

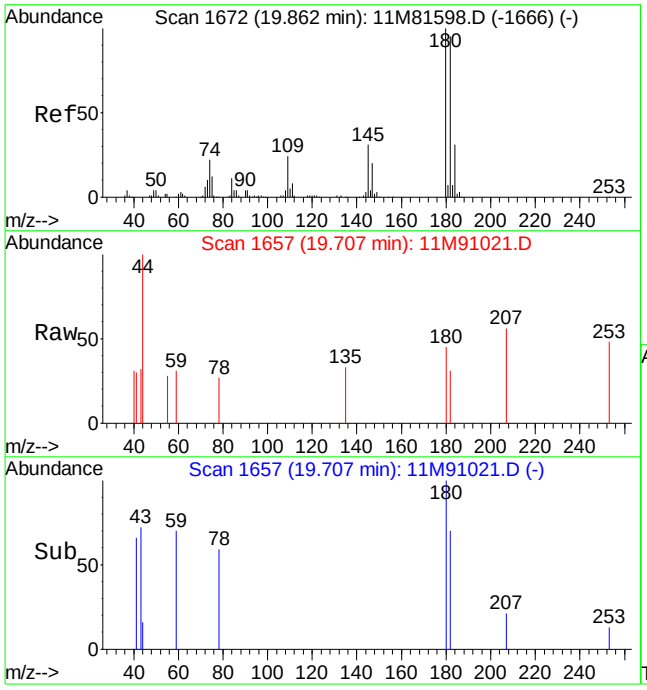

#101
1,2,3-Trichlorobenzene
Concen: Below Cal
RT: 19.71 min Scan# 1657
Delta R.T. 0.00 min
Lab File: 11M91021.D
Acq: 10 Apr 2013 20:03

Tgt Ion:180 Resp: 524

Ion	Ratio	Lower	Upper
180	100		
145	0.0	19.3	44.9#

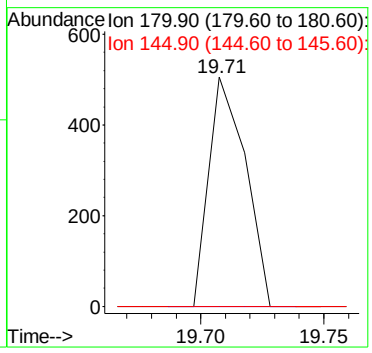

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\11M90725.D Vial: 2
Acq On : 2 Apr 2013 8:14 Operator: FJB
Sample : WG425304-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 08:54:38 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	808522	25.00 ug/L	-0.02
57) Chlorobenzene-d5	13.80	117	594837	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	16.61	152	296672	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.04	98	780	0.0269 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.12%#	
80) p-Bromofluorobenzene	15.19	95	674	0.0604 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.97	85	2859	0.3667 ug/L	87
3) Chloromethane	3.39	50	4291	0.3972 ug/L	85
4) Vinyl Chloride	3.60	62	5795	0.6095 ug/L	97
5) 1,3-Butadiene	3.65	54	3863	0.8390 ug/L	84
6) Bromomethane	4.46	94	4136	0.6344 ug/L	87
7) Chloroethane	4.61	64	2473	0.3989 ug/L #	58
8) Trichlorofluoromethane	5.07	101	4345	0.3029 ug/L	89
10) Isoprene	5.61	67	4260	0.3100 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	5.82	101	2175	0.2684 ug/L	84
13) Acetone	5.89	43	16988	9.7236 ug/L	83
14) 1,1-Dichloroethene	6.12	61	4907	0.3513 ug/L	94
16) Dimethyl Sulfide	6.37	62	3794	0.3294 ug/L	63
18) Methyl acetate	6.64	43	1260	0.2731 ug/L #	58
19) Methylene Chloride	6.88	84	3030	0.3304 ug/L	81
20) Carbon Disulfide	6.91	76	9456	0.3088 ug/L #	39
22) Methyl Tert Butyl Ether	7.09	73	4743	0.2326 ug/L #	56
23) trans-1,2-Dichloroethene	7.30	96	3017	0.3286 ug/L	89
24) n-Hexane	7.40	57	4830	0.3583 ug/L #	71
26) Vinyl Acetate	7.87	43	1445	0.1357 ug/L #	70
27) 1,1-Dichloroethane	7.90	63	5326	0.3250 ug/L #	83
29) 2-Butanone	8.46	43	1138	0.4551 ug/L #	49
31) 2,2-Dichloropropane	8.64	77	4757	0.3442 ug/L	92
32) cis-1,2-Dichloroethene	8.72	96	3296	0.3339 ug/L	91
33) Chloroform	8.90	83	4781	0.3022 ug/L	93
35) Bromochloromethane	9.13	130	1435	0.2796 ug/L	80
38) 1,1,1-Trichloroethane	9.42	97	4249	0.2971 ug/L #	84
39) Cyclohexane	9.45	56	5936	0.3332 ug/L	69
40) 1,1-Dichloropropene	9.60	75	3670	0.3051 ug/L	100
41) Carbon Tetrachloride	9.74	117	3237	0.2554 ug/L #	86
45) 1,2-Dichloroethane	9.90	62	2336	0.2090 ug/L	90
46) Benzene	9.94	78	14394	0.4021 ug/L	95
47) Trichloroethene	10.65	130	3784	0.3878 ug/L	93
48) Methylcyclohexane	10.73	83	4586	0.3213 ug/L	82
49) 1,2-Dichloropropane	10.86	63	3298	0.3669 ug/L #	52
51) Bromodichloromethane	11.13	83	2747	0.2401 ug/L #	80
52) Dibromomethane	11.22	93	1439	0.3223 ug/L	85
53) 2-Chloroethyl Vinyl Ether	11.43	63	1500	0.3883 ug/L #	44
55) cis-1,3-Dichloropropene	11.74	75	3542	0.2629 ug/L	96
56) Dimethyl Disulfide	11.98	79	1586	0.1909 ug/L	87
59) Toluene	12.13	91	17480	0.4861 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M90725.D 8260_WT.M Tue Apr 02 08:54:38 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\11M90725.D Vial: 2
Acq On : 2 Apr 2013 8:14 Operator: FJB
Sample : WG425304-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 08:54:38 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
60)	Ethyl Methacrylate	12.22	69	1934	0.2384 ug/L		95
62)	trans-1,3-Dichloropropene	12.29	75	2991	0.2764 ug/L		93
63)	1,1,2-Trichloroethane	12.50	97	1441	0.2395 ug/L		97
64)	2-Hexanone	12.45	43	590	0.1654 ug/L	#	73
65)	1,3-Dichloropropane	12.78	76	2648	0.2551 ug/L		89
66)	Tetrachloroethene	12.89	164	2748	0.3714 ug/L		86
67)	Dibromochloromethane	13.14	129	2509	0.3190 ug/L		83
68)	1,2-Dibromoethane	13.39	107	1334	0.2187 ug/L		93
69)	1-Chlorohexane	13.46	91	4299	0.3612 ug/L		99
70)	Chlorobenzene	13.84	112	8372	0.3505 ug/L		99
71)	1,1,1,2-Tetrachloroethane	13.89	131	2514	0.2948 ug/L		97
72)	Ethylbenzene	13.88	106	4586	0.3456 ug/L		82
73)	m-,p-Xylene	13.96	106	10744	0.6745 ug/L		96
74)	o-Xylene	14.48	106	5027	0.3179 ug/L		63
75)	Styrene	14.52	104	9668	0.3791 ug/L		97
76)	Bromoform	14.97	173	862	0.1825 ug/L	#	59
77)	Isopropylbenzene	14.88	105	14185	0.3657 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.08	83	1483	0.2295 ug/L		98
83)	n-Propylbenzene	15.34	91	17979	0.4363 ug/L		93
84)	Bromobenzene	15.47	156	3355	0.3448 ug/L		71
85)	1,3,5-Trimethylbenzene	15.52	105	11565	0.3865 ug/L		87
86)	2-Chlorotoluene	15.60	91	11484	0.4262 ug/L		87
87)	4-Chlorotoluene	15.64	91	9234	0.3498 ug/L		90
88)	a-Methylstyrene	15.89	118	4986	0.2812 ug/L		87
89)	tert-Butylbenzene	15.95	134	2310	0.3703 ug/L	#	54
90)	1,2,4-Trimethylbenzene	16.01	105	23264	0.7544 ug/L	#	56
91)	sec-Butylbenzene	16.20	105	15118	0.4124 ug/L		92
92)	p-Isopropyltoluene	16.35	119	11941	0.3981 ug/L		90
93)	1,3-Dichlorobenzene	16.52	146	6232	0.3459 ug/L		99
94)	1,4-Dichlorobenzene	16.65	146	6627	0.3584 ug/L	#	61
95)	n-Butylbenzene	16.83	91	11368	0.4202 ug/L		88
96)	1,2-Dichlorobenzene	17.10	146	5612	0.3323 ug/L		95
98)	1,2,4-Trichlorobenzene	19.08	180	3541	0.3290 ug/L		99
99)	Hexachlorobutadiene	19.23	225	1616	0.3420 ug/L	#	81
100)	Naphthalene	19.42	128	7831	0.4155 ug/L	#	75
101)	1,2,3-Trichlorobenzene	19.71	180	3375	0.3560 ug/L		90

(#) = qualifier out of range (m) = manual integration
11M90725.D 8260_WT.M Tue Apr 02 08:54:39 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\11M90725.D Vial: 2
Acq On : 2 Apr 2013 8:14 Operator: FJB
Sample : WG425304-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 2 8:54 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration

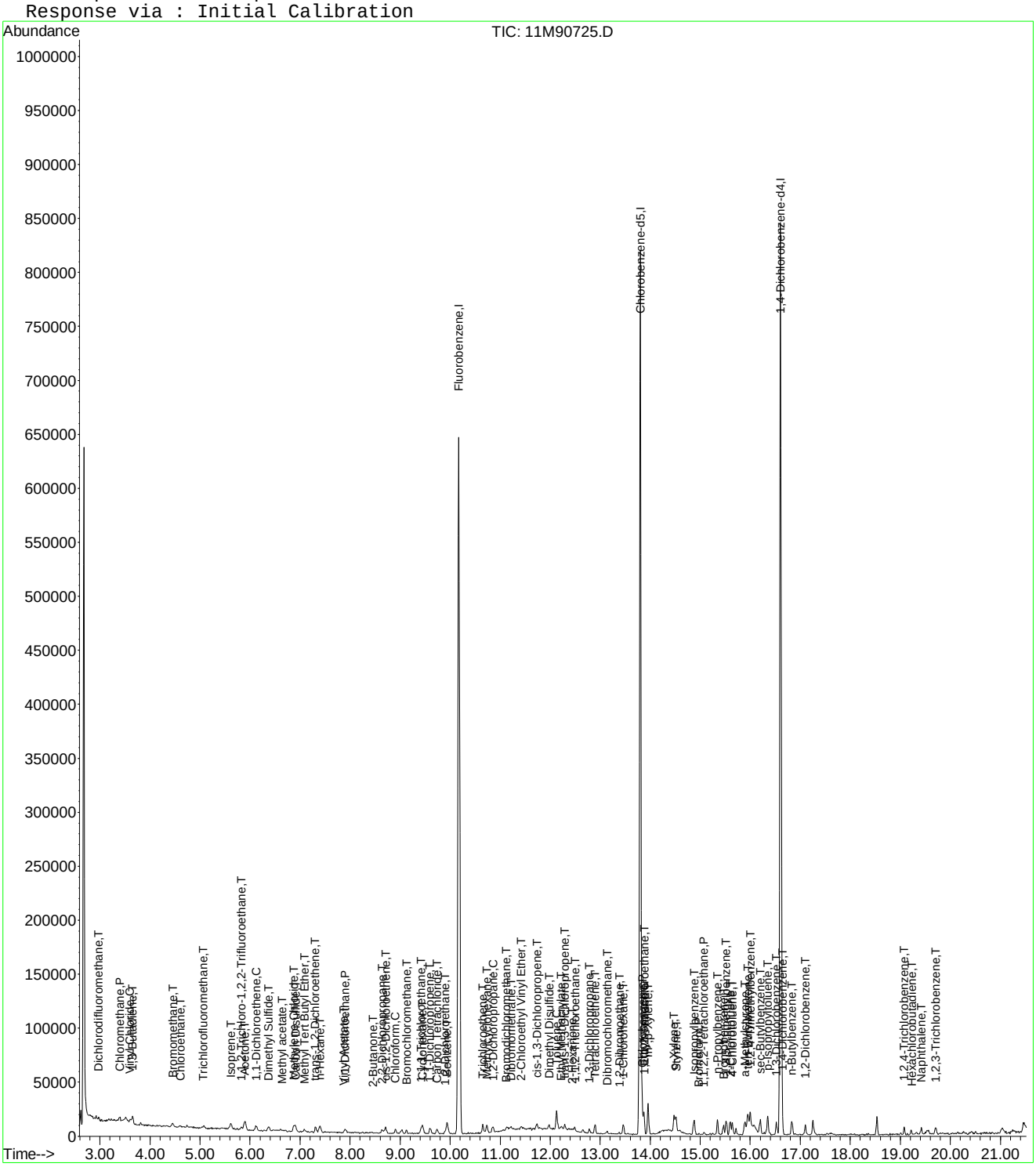

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90726.D Vial: 3
Acq On : 2 Apr 2013 8:50 Operator: FJB
Sample : WG425304-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 09:12:21 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	780082	25.00 ug/L	-0.02
57) Chlorobenzene-d5	13.80	117	586260	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	16.61	152	293378	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.98	85	2598	0.3454 ug/L #	68
3) Chloromethane	3.39	50	4826	0.4630 ug/L #	15
4) Vinyl Chloride	3.61	62	4893	0.5334 ug/L	93
5) 1,3-Butadiene	3.66	54	4731	1.0650 ug/L	86
6) Bromomethane	4.45	94	3906	0.6209 ug/L	89
7) Chloroethane	4.59	64	2515	0.4205 ug/L	88
8) Trichlorofluoromethane	5.09	101	4822	0.3484 ug/L	94
10) Isoprene	5.60	67	4595	0.3466 ug/L	80
12) 1,1,2-Trichloro-1,2,2-Trif	5.83	101	2777	0.3552 ug/L	79
13) Acetone	5.89	43	1919	1.1384 ug/L #	64
14) 1,1-Dichloroethene	6.12	61	5304	0.3936 ug/L	98
16) Dimethyl Sulfide	6.36	62	3843	0.3458 ug/L	97
18) Methyl acetate	6.64	43	1308	0.2939 ug/L #	58
19) Methylene Chloride	6.88	84	3627	0.4099 ug/L	82
20) Carbon Disulfide	6.91	76	11701	0.3960 ug/L	92
22) Methyl Tert Butyl Ether	7.08	73	6620	0.3365 ug/L	99
23) trans-1,2-Dichloroethene	7.32	96	3923	0.4428 ug/L	97
24) n-Hexane	7.39	57	5105	0.3925 ug/L #	70
26) Vinyl Acetate	7.87	43	2431	0.2365 ug/L #	70
27) 1,1-Dichloroethane	7.90	63	6572	0.4157 ug/L #	84
29) 2-Butanone	8.44	43	606	0.2512 ug/L #	49
31) 2,2-Dichloropropane	8.65	77	5337	0.4002 ug/L	87
32) cis-1,2-Dichloroethene	8.72	96	3844	0.4037 ug/L	96
33) Chloroform	8.90	83	6238	0.4087 ug/L	95
35) Bromochloromethane	9.13	130	1924	0.3885 ug/L #	62
38) 1,1,1-Trichloroethane	9.41	97	5357	0.3883 ug/L #	82
39) Cyclohexane	9.43	56	6841	0.3980 ug/L #	70
40) 1,1-Dichloropropene	9.60	75	4313	0.3717 ug/L	93
41) Carbon Tetrachloride	9.74	117	4380	0.3582 ug/L	93
45) 1,2-Dichloroethane	9.91	62	3323	0.3081 ug/L	94
46) Benzene	9.94	78	16509	0.4780 ug/L	93
47) Trichloroethene	10.65	130	3697	0.3927 ug/L	93
48) Methylcyclohexane	10.73	83	5093	0.3698 ug/L	80
49) 1,2-Dichloropropane	10.85	63	3297	0.3802 ug/L	82
51) Bromodichloromethane	11.14	83	4220	0.3823 ug/L #	91
52) Dibromomethane	11.21	93	1738	0.4035 ug/L	90
53) 2-Chloroethyl Vinyl Ether	11.42	63	1026	0.2753 ug/L #	44
55) cis-1,3-Dichloropropene	11.74	75	4811	0.3701 ug/L	91
56) Dimethyl Disulfide	11.97	79	2238	0.2792 ug/L	98
59) Toluene	12.13	91	18790	0.5302 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90726.D Vial: 3
Acq On : 2 Apr 2013 8:50 Operator: FJB
Sample : WG425304-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 09:12:21 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
60)	Ethyl Methacrylate	12.22	69	2338	0.2924 ug/L		97
62)	trans-1,3-Dichloropropene	12.29	75	4049	0.3796 ug/L		92
63)	1,1,2-Trichloroethane	12.49	97	2144	0.3616 ug/L		99
64)	2-Hexanone	12.44	43	997	0.2836 ug/L	#	82
65)	1,3-Dichloropropane	12.78	76	4049	0.3958 ug/L		99
66)	Tetrachloroethene	12.89	164	2689	0.3687 ug/L		92
67)	Dibromochloromethane	13.13	129	2825	0.3644 ug/L		89
68)	1,2-Dibromoethane	13.37	107	2155	0.3585 ug/L		89
69)	1-Chlorohexane	13.46	91	6148	0.5241 ug/L		92
70)	Chlorobenzene	13.84	112	10671	0.4533 ug/L		94
71)	1,1,1,2-Tetrachloroethane	13.88	131	3236	0.3851 ug/L		94
72)	Ethylbenzene	13.88	106	5835	0.4461 ug/L		95
73)	m-,p-Xylene	13.96	106	13670	0.8707 ug/L		92
74)	o-Xylene	14.49	106	6812	0.4371 ug/L		95
75)	Styrene	14.52	104	13625	0.5421 ug/L		85
76)	Bromoform	14.97	173	1574	0.3381 ug/L		96
77)	Isopropylbenzene	14.88	105	16214	0.4242 ug/L		94
79)	1,1,2,2-Tetrachloroethane	15.08	83	2120	0.3318 ug/L		88
81)	1,2,3-Trichloropropane	15.26	110	416	0.2220 ug/L	#	54
83)	n-Propylbenzene	15.34	91	19739	0.4843 ug/L		94
84)	Bromobenzene	15.47	156	4197	0.4362 ug/L		87
85)	1,3,5-Trimethylbenzene	15.51	105	13193	0.4459 ug/L		97
86)	2-Chlorotoluene	15.59	91	11664	0.4378 ug/L		99
87)	4-Chlorotoluene	15.64	91	12376	0.4741 ug/L		83
88)	a-Methylstyrene	15.89	118	5765	0.3288 ug/L		99
89)	tert-Butylbenzene	15.94	134	2599	0.4213 ug/L		84
90)	1,2,4-Trimethylbenzene	16.00	105	14954	0.4904 ug/L		90
91)	sec-Butylbenzene	16.20	105	17760	0.4899 ug/L		88
92)	p-Isopropyltoluene	16.35	119	13526	0.4560 ug/L		97
93)	1,3-Dichlorobenzene	16.52	146	7710	0.4328 ug/L		99
94)	1,4-Dichlorobenzene	16.65	146	8062	0.4409 ug/L		81
95)	n-Butylbenzene	16.83	91	11143	0.4165 ug/L		96
96)	1,2-Dichlorobenzene	17.10	146	7096	0.4249 ug/L		98
98)	1,2,4-Trichlorobenzene	19.08	180	4491	0.4219 ug/L		87
99)	Hexachlorobutadiene	19.22	225	1591	0.3405 ug/L	#	72
100)	Naphthalene	19.42	128	5889	0.3159 ug/L	#	85
101)	1,2,3-Trichlorobenzene	19.71	180	3699	0.3946 ug/L		83

(#) = qualifier out of range (m) = manual integration
11M90726.D 8260_WT.M Tue Apr 02 09:12:22 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90726.D Vial: 3
Acq On : 2 Apr 2013 8:50 Operator: FJB
Sample : WG425304-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 2 9:12 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration

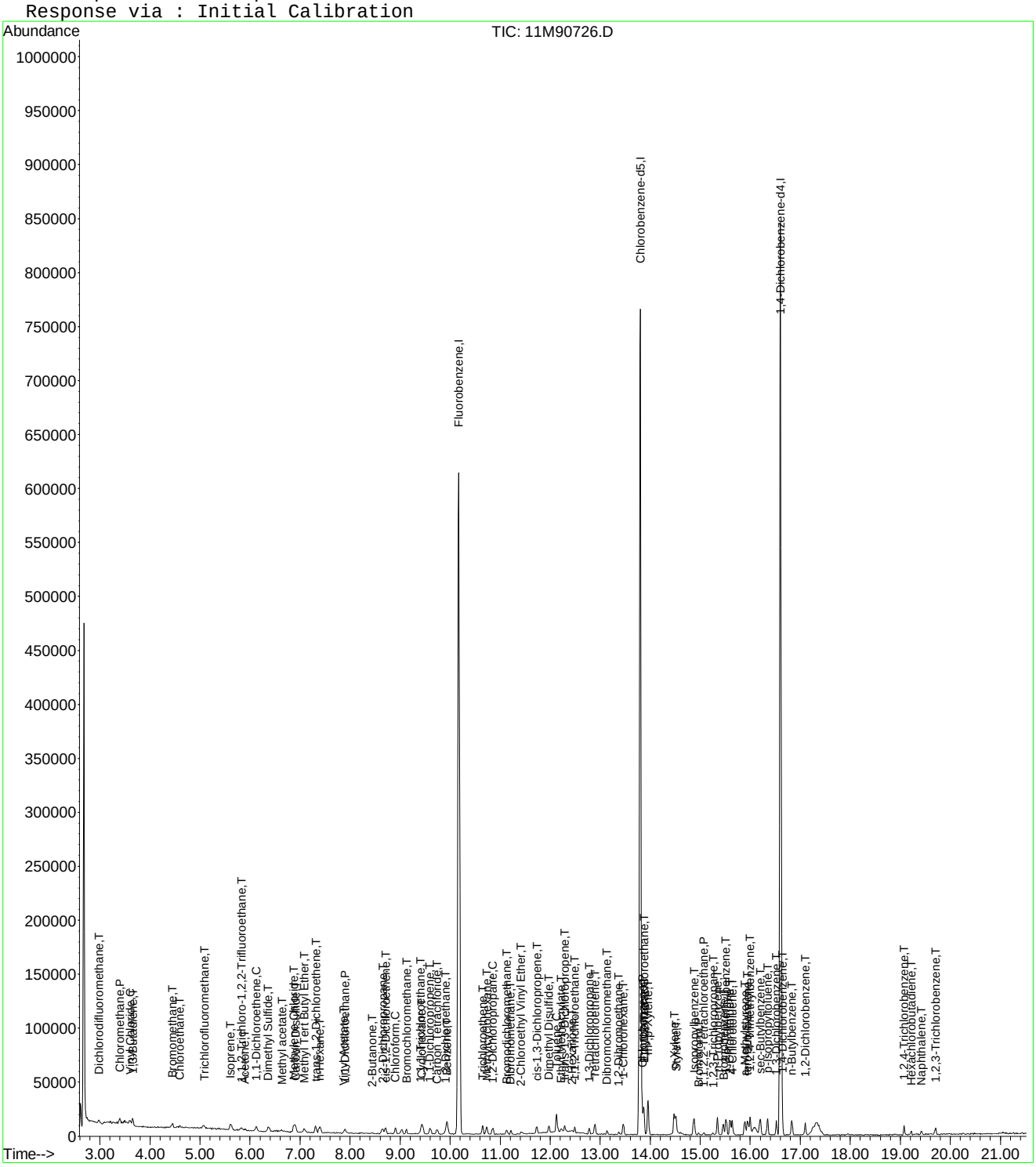

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90727.D Vial: 4
Acq On : 2 Apr 2013 9:21 Operator: FJB
Sample : WG425304-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 09:43:48 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	806350	25.00 ug/L	-0.02
57) Chlorobenzene-d5	13.80	117	608758	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	16.61	152	301774	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	9.18	111	4254	0.5291 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.12%#	
43) 1,2-Dichloroethane-d4	9.79	65	4462	0.5466 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.20%#	
58) Toluene-d8	12.04	98	16811	0.5673 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.28%#	
80) p-Bromofluorobenzene	15.20	95	6310	0.5563 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.97	85	5999	0.7715 ug/L	92
3) Chloromethane	3.39	50	12207	1.1330 ug/L	82
4) Vinyl Chloride	3.60	62	9399	0.9912 ug/L	89
5) 1,3-Butadiene	3.65	54	10262	2.2349 ug/L	86
6) Bromomethane	4.45	94	9722	1.4952 ug/L	99
7) Chloroethane	4.60	64	6121	0.9900 ug/L	92
8) Trichlorofluoromethane	5.08	101	12018	0.8401 ug/L	99
9) Diethyl ether	5.58	59	34189	4.9628 ug/L	80
10) Isoprene	5.61	67	11088	0.8091 ug/L	88
11) Acrolein	5.80	56	1091	1.2176 ug/L #	35
12) 1,1,2-Trichloro-1,2,2-Trif	5.82	101	7435	0.9199 ug/L	99
13) Acetone	5.90	43	3389	1.9450 ug/L #	66
14) 1,1-Dichloroethene	6.12	61	12972	0.9312 ug/L	95
15) Tert-Butyl Alcohol	6.23	59	4154	8.6468 ug/L #	59
16) Dimethyl Sulfide	6.38	62	11004	0.9580 ug/L	97
17) Iodomethane	6.62	142	1989	0.1768 ug/L #	49
18) Methyl acetate	6.64	43	4492	0.9764 ug/L #	72
19) Methylene Chloride	6.88	84	9745	1.0654 ug/L	80
20) Carbon Disulfide	6.91	76	27211	0.8910 ug/L	98
21) Acrylonitrile	7.05	53	10901	4.5350 ug/L	95
22) Methyl Tert Butyl Ether	7.08	73	19689	0.9682 ug/L	91
23) trans-1,2-Dichloroethene	7.31	96	9564	1.0445 ug/L	92
24) n-Hexane	7.39	57	10519	0.7825 ug/L #	82
25) Diisopropyl ether	7.72	45	172618	5.4272 ug/L	86
26) Vinyl Acetate	7.88	43	8316	0.7828 ug/L #	74
27) 1,1-Dichloroethane	7.91	63	15962	0.9767 ug/L	98
28) Ethyl-Tert-Butyl ether	8.27	59	143648	4.9054 ug/L	92
29) 2-Butanone	8.44	43	2404	0.9641 ug/L #	49
30) Propionitrile	8.54	54	3855	4.8120 ug/L #	74
31) 2,2-Dichloropropane	8.65	77	13651	0.9903 ug/L	91
32) cis-1,2-Dichloroethene	8.71	96	10310	1.0474 ug/L	86
33) Chloroform	8.91	83	15642	0.9915 ug/L	98
34) 1-Bromopropane	9.05	122	2023	1.3360 ug/L	96
35) Bromochloromethane	9.13	130	6294	1.2294 ug/L	81
36) Tetrahydrofuran	9.15	42	7896	4.9202 ug/L	82
38) 1,1,1-Trichloroethane	9.41	97	12595	0.8831 ug/L	99
39) Cyclohexane	9.45	56	14986	0.8435 ug/L	76
40) 1,1-Dichloropropene	9.61	75	11233	0.9365 ug/L	98
41) Carbon Tetrachloride	9.74	117	11027	0.8723 ug/L	97
42) Tert-Amyl-Methyl ether	9.71	73	104258	4.5921 ug/L #	83

(#) = qualifier out of range (m) = manual integration
11M90727.D 8260_WT.M Tue Apr 02 09:43:49 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90727.D Vial: 4
Acq On : 2 Apr 2013 9:21 Operator: FJB
Sample : WG425304-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 09:43:48 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.90	62	10540	0.9454 ug/L		92
46)	Benzene	9.94	78	39159	1.0969 ug/L		99
47)	Trichloroethene	10.66	130	9494	0.9755 ug/L		91
48)	Methylcyclohexane	10.73	83	11527	0.8098 ug/L		87
49)	1,2-Dichloropropane	10.86	63	10231	1.1412 ug/L		80
51)	Bromodichloromethane	11.14	83	11536	1.0110 ug/L		98
52)	Dibromomethane	11.21	93	4835	1.0859 ug/L		97
53)	2-Chloroethyl Vinyl Ether	11.41	63	3647	0.9466 ug/L		81
54)	4-Methyl-2-Pentanone	11.45	58	2225	0.9298 ug/L	#	39
55)	cis-1,3-Dichloropropene	11.74	75	14211	1.0577 ug/L		95
56)	Dimethyl Disulfide	11.97	79	6520	0.7869 ug/L		93
59)	Toluene	12.13	91	41792	1.1356 ug/L		99
60)	Ethyl Methacrylate	12.22	69	6851	0.8251 ug/L		100
62)	trans-1,3-Dichloropropene	12.29	75	10962	0.9897 ug/L		93
63)	1,1,2-Trichloroethane	12.50	97	6383	1.0367 ug/L		98
64)	2-Hexanone	12.44	43	3360	0.9203 ug/L		96
65)	1,3-Dichloropropane	12.78	76	10934	1.0294 ug/L		94
66)	Tetrachloroethene	12.89	164	8285	1.0940 ug/L		87
67)	Dibromochloromethane	13.14	129	8395	1.0430 ug/L		99
68)	1,2-Dibromoethane	13.38	107	6633	1.0626 ug/L		100
69)	1-Chlorohexane	13.46	91	11616	0.9537 ug/L		86
70)	Chlorobenzene	13.84	112	27345	1.1188 ug/L		96
71)	1,1,1,2-Tetrachloroethane	13.88	131	9349	1.0714 ug/L		97
72)	Ethylbenzene	13.88	106	13972	1.0288 ug/L		85
73)	m-,p-Xylene	13.96	106	34479	2.1150 ug/L		98
74)	o-Xylene	14.49	106	16257	1.0046 ug/L		92
75)	Styrene	14.52	104	29745	1.1398 ug/L		96
76)	Bromoform	14.97	173	5164	1.0682 ug/L		99
77)	Isopropylbenzene	14.88	105	39208	0.9878 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.08	83	6874	1.0458 ug/L		91
81)	1,2,3-Trichloropropane	15.25	110	2096	1.0874 ug/L		85
82)	trans-1,4-Dichloro-2-Buten	15.29	53	1337	0.6005 ug/L	#	30
83)	n-Propylbenzene	15.34	91	47065	1.1227 ug/L		98
84)	Bromobenzene	15.47	156	11683	1.1804 ug/L		98
85)	1,3,5-Trimethylbenzene	15.52	105	33365	1.0962 ug/L		96
86)	2-Chlorotoluene	15.59	91	34677	1.2653 ug/L		91
87)	4-Chlorotoluene	15.64	91	26541	0.9885 ug/L		95
88)	a-Methylstyrene	15.89	118	16433	0.9113 ug/L		97
89)	tert-Butylbenzene	15.95	134	6454	1.0170 ug/L		90
90)	1,2,4-Trimethylbenzene	16.00	105	41990	1.3387 ug/L		85
91)	sec-Butylbenzene	16.20	105	40142	1.0764 ug/L		98
92)	p-Isopropyltoluene	16.35	119	31961	1.0476 ug/L		98
93)	1,3-Dichlorobenzene	16.52	146	20879	1.1394 ug/L		98
94)	1,4-Dichlorobenzene	16.65	146	21179	1.1261 ug/L	#	74
95)	n-Butylbenzene	16.83	91	26170	0.9510 ug/L		95
96)	1,2-Dichlorobenzene	17.10	146	19886	1.1576 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	18.02	75	766	0.6977 ug/L		87
98)	1,2,4-Trichlorobenzene	19.08	180	18038	1.6474 ug/L	#	73
99)	Hexachlorobutadiene	19.22	225	4109	0.8550 ug/L		91
100)	Naphthalene	19.42	128	15899	0.8292 ug/L	#	95
101)	1,2,3-Trichlorobenzene	19.71	180	9250	0.9592 ug/L		98

(#) = qualifier out of range (m) = manual integration
11M90727.D 8260_WT.M Tue Apr 02 09:43:49 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90727.D Vial: 4
Acq On : 2 Apr 2013 9:21 Operator: FJB
Sample : WG425304-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 2 9:43 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration

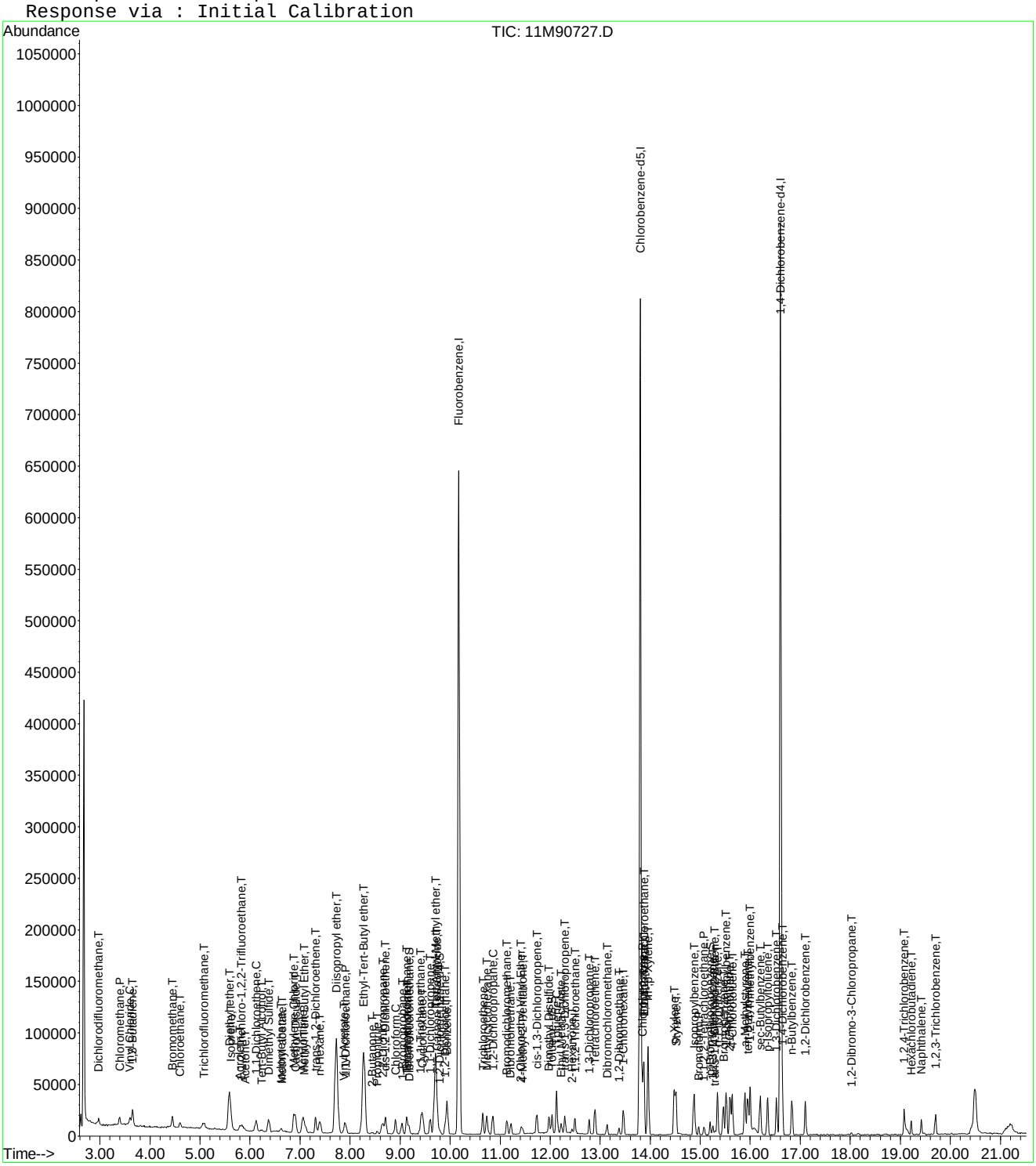

11M90727.D 8260_WT.M Tue Apr 02 09:43:49 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90728.D Vial: 5
Acq On : 2 Apr 2013 9:53 Operator: FJB
Sample : WG425304-05 2ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 10:15:08 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	804650	25.00 ug/L	-0.02
57) Chlorobenzene-d5	13.80	117	611932	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	16.61	152	309436	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	9.18	111	8407	1.0478 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.20%#	
43) 1,2-Dichloroethane-d4	9.79	65	7650	0.9392 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.76%#	
58) Toluene-d8	12.04	98	31252	1.0492 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.20%#	
80) p-Bromofluorobenzene	15.20	95	11439	0.9835 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.92%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.97	85	13281	1.7116 ug/L	89
3) Chloromethane	3.39	50	17577	1.6348 ug/L	87
4) Vinyl Chloride	3.60	62	16979	1.7944 ug/L	93
5) 1,3-Butadiene	3.65	54	20505	4.4751 ug/L	90
6) Bromomethane	4.45	94	17347	2.6735 ug/L	98
7) Chloroethane	4.59	64	12354	2.0024 ug/L	100
8) Trichlorofluoromethane	5.07	101	24537	1.7188 ug/L	98
9) Diethyl ether	5.57	59	163618	23.8004 ug/L	86
10) Isoprene	5.61	67	24637	1.8017 ug/L	88
11) Acrolein	5.80	56	5797	6.4836 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	5.82	101	16183	2.0065 ug/L	99
13) Acetone	5.91	43	5040	2.8987 ug/L	94
14) 1,1-Dichloroethene	6.12	61	25533	1.8368 ug/L	98
15) Tert-Butyl Alcohol	6.22	59	21955	45.7970 ug/L	91
16) Dimethyl Sulfide	6.37	62	20565	1.7942 ug/L	96
17) Iodomethane	6.62	142	5570	0.4961 ug/L	82
18) Methyl acetate	6.64	43	8888	1.9360 ug/L #	78
19) Methylene Chloride	6.88	84	18003	1.9723 ug/L	86
20) Carbon Disulfide	6.91	76	54916	1.8019 ug/L	100
21) Acrylonitrile	7.05	53	51150	21.3241 ug/L	90
22) Methyl Tert Butyl Ether	7.08	73	37178	1.8320 ug/L	92
23) trans-1,2-Dichloroethene	7.31	96	17719	1.9391 ug/L	88
24) n-Hexane	7.39	57	23585	1.7582 ug/L #	88
25) Diisopropyl ether	7.72	45	800369	25.2171 ug/L	87
26) Vinyl Acetate	7.88	43	17521	1.6528 ug/L	90
27) 1,1-Dichloroethane	7.91	63	32659	2.0026 ug/L	94
28) Ethyl-Tert-Butyl ether	8.27	59	673346	23.0424 ug/L	92
29) 2-Butanone	8.44	43	4602	1.8494 ug/L #	77
30) Propionitrile	8.54	54	19760	24.7177 ug/L	96
31) 2,2-Dichloropropane	8.64	77	25073	1.8228 ug/L	97
32) cis-1,2-Dichloroethene	8.72	96	19137	1.9482 ug/L	94
33) Chloroform	8.91	83	30288	1.9240 ug/L	96
34) 1-Bromopropane	9.04	122	3577	2.3673 ug/L	95
35) Bromochloromethane	9.13	130	10621	2.0790 ug/L #	75
36) Tetrahydrofuran	9.15	42	37309	23.2974 ug/L	88
38) 1,1,1-Trichloroethane	9.42	97	26437	1.8576 ug/L	95
39) Cyclohexane	9.44	56	34041	1.9200 ug/L	75
40) 1,1-Dichloropropene	9.61	75	22977	1.9196 ug/L	100
41) Carbon Tetrachloride	9.75	117	22517	1.7850 ug/L	99
42) Tert-Amyl-Methyl ether	9.71	73	512567	22.6238 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M90728.D 8260_WT.M Tue Apr 02 10:15:09 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90728.D Vial: 5
Acq On : 2 Apr 2013 9:53 Operator: FJB
Sample : WG425304-05 2ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 10:15:08 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.91	62	19788	1.7787 ug/L	91
46)	Benzene	9.94	78	71557	2.0086 ug/L	99
47)	Trichloroethene	10.65	130	19528	2.0108 ug/L	96
48)	Methylcyclohexane	10.73	83	24240	1.7065 ug/L	86
49)	1,2-Dichloropropane	10.85	63	18499	2.0679 ug/L	83
50)	1,4-Dioxane	11.13	88	1915	36.4709 ug/L #	66
51)	Bromodichloromethane	11.14	83	22080	1.9392 ug/L	97
52)	Dibromomethane	11.21	93	8481	1.9089 ug/L	93
53)	2-Chloroethyl Vinyl Ether	11.42	63	7200	1.8728 ug/L	86
54)	4-Methyl-2-Pentanone	11.46	58	3956	1.6567 ug/L	76
55)	cis-1,3-Dichloropropene	11.74	75	25641	1.9125 ug/L	99
56)	Dimethyl Disulfide	11.97	79	12486	1.5102 ug/L	99
59)	Toluene	12.13	91	76791	2.0758 ug/L	98
60)	Ethyl Methacrylate	12.22	69	12633	1.5136 ug/L	90
62)	trans-1,3-Dichloropropene	12.29	75	19953	1.7921 ug/L	98
63)	1,1,2-Trichloroethane	12.49	97	12028	1.9434 ug/L	98
64)	2-Hexanone	12.44	43	5935	1.6172 ug/L	95
65)	1,3-Dichloropropane	12.78	76	20572	1.9267 ug/L	95
66)	Tetrachloroethene	12.89	164	15659	2.0570 ug/L	96
67)	Dibromochloromethane	13.14	129	15524	1.9187 ug/L	99
68)	1,2-Dibromoethane	13.38	107	11237	1.7908 ug/L	85
69)	1-Chlorohexane	13.46	91	22477	1.8358 ug/L	92
70)	Chlorobenzene	13.84	112	51745	2.1061 ug/L	97
71)	1,1,1,2-Tetrachloroethane	13.88	131	17126	1.9525 ug/L	100
72)	Ethylbenzene	13.88	106	26732	1.9581 ug/L	90
73)	m-,p-Xylene	13.96	106	66269	4.0439 ug/L	100
74)	o-Xylene	14.49	106	32639	2.0065 ug/L	99
75)	Styrene	14.52	104	56649	2.1594 ug/L	97
76)	Bromoform	14.97	173	9160	1.8850 ug/L	100
77)	Isopropylbenzene	14.88	105	80721	2.0231 ug/L	98
79)	1,1,2,2-Tetrachloroethane	15.08	83	12318	1.8276 ug/L	97
81)	1,2,3-Trichloropropane	15.25	110	4187	2.1184 ug/L	88
82)	trans-1,4-Dichloro-2-Buten	15.30	53	2890	1.2660 ug/L	78
83)	n-Propylbenzene	15.34	91	93695	2.1797 ug/L	98
84)	Bromobenzene	15.47	156	20892	2.0585 ug/L	94
85)	1,3,5-Trimethylbenzene	15.52	105	67479	2.1622 ug/L	94
86)	2-Chlorotoluene	15.60	91	66731	2.3745 ug/L	96
87)	4-Chlorotoluene	15.64	91	51116	1.8567 ug/L	92
88)	a-Methylstyrene	15.89	118	35361	1.9124 ug/L	99
89)	tert-Butylbenzene	15.94	134	13546	2.0816 ug/L	97
90)	1,2,4-Trimethylbenzene	16.00	105	76532	2.3795 ug/L	88
91)	sec-Butylbenzene	16.20	105	80828	2.1138 ug/L	96
92)	p-Isopropyltoluene	16.35	119	66017	2.1103 ug/L	95
93)	1,3-Dichlorobenzene	16.52	146	40054	2.1317 ug/L	98
94)	1,4-Dichlorobenzene	16.65	146	39116	2.0283 ug/L	86
95)	n-Butylbenzene	16.83	91	54640	1.9365 ug/L	96
96)	1,2-Dichlorobenzene	17.10	146	35842	2.0348 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	18.02	75	1731	1.5376 ug/L	74
98)	1,2,4-Trichlorobenzene	19.08	180	27273	2.4291 ug/L	86
99)	Hexachlorobutadiene	19.22	225	8948	1.8158 ug/L	92
100)	Naphthalene	19.42	128	33112	1.6842 ug/L	97
101)	1,2,3-Trichlorobenzene	19.71	180	39162	3.9605 ug/L #	69

(#) = qualifier out of range (m) = manual integration
11M90728.D 8260_WT.M Tue Apr 02 10:15:09 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90728.D Vial: 5
Acq On : 2 Apr 2013 9:53 Operator: FJB
Sample : WG425304-05 2ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 2 10:15 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration

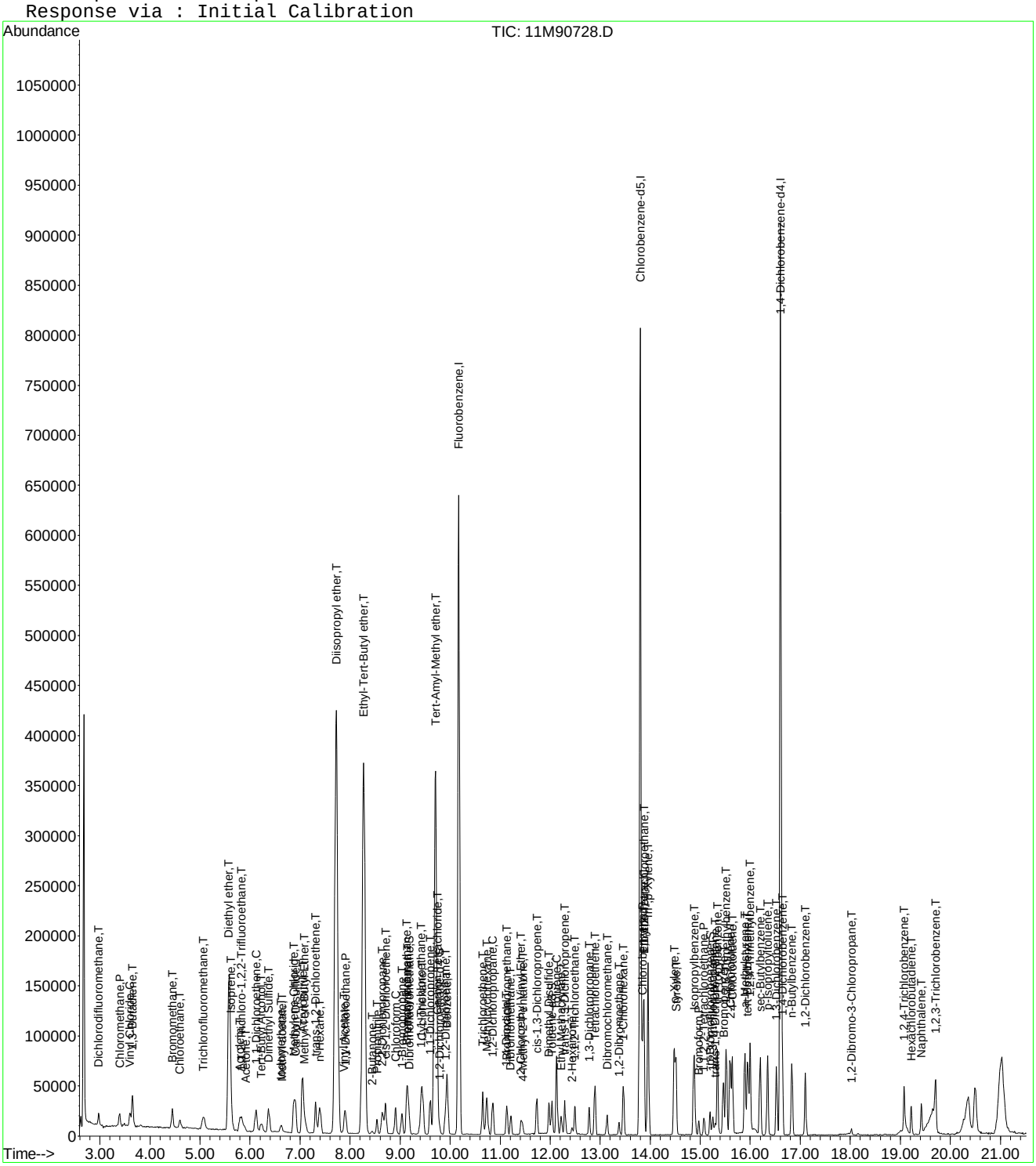

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90729.D Vial: 6
Acq On : 2 Apr 2013 10:24 Operator: FJB
Sample : WG425304-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 10:46:50 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	804015	25.00 ug/L	-0.02
57) Chlorobenzene-d5	13.80	117	617607	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	16.61	152	322707	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	9.18	111	22232	2.7731 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 11.08%#		
43) 1,2-Dichloroethane-d4	9.79	65	20281	2.4918 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 9.96%#		
58) Toluene-d8	12.04	98	83918	2.7915 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery = 11.16%#		
80) p-Bromofluorobenzene	15.20	95	30135	2.4844 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 9.92%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.97	85	35603	4.5921 ug/L	94
3) Chloromethane	3.39	50	45846	4.2675 ug/L	93
4) Vinyl Chloride	3.60	62	39897	4.2197 ug/L	92
5) 1,3-Butadiene	3.65	54	39559	8.6404 ug/L	93
6) Bromomethane	4.45	94	40560	6.2559 ug/L	97
7) Chloroethane	4.60	64	33296	5.4011 ug/L	96
8) Trichlorofluoromethane	5.07	101	66727	4.6779 ug/L	99
9) Diethyl ether	5.58	59	336190	48.9419 ug/L	88
10) Isoprene	5.61	67	65279	4.7775 ug/L	82
11) Acrolein	5.80	56	12640	14.1482 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	5.83	101	41541	5.1548 ug/L	94
13) Acetone	5.89	43	10679	6.1467 ug/L	90
14) 1,1-Dichloroethene	6.12	61	68415	4.9256 ug/L	98
15) Tert-Butyl Alcohol	6.22	59	48371	100.9791 ug/L	93
16) Dimethyl Sulfide	6.37	62	53924	4.7084 ug/L	97
17) Iodomethane	6.61	142	31004	2.7638 ug/L	87
18) Methyl acetate	6.63	43	25310	5.5174 ug/L	85
19) Methylene Chloride	6.88	84	46170	5.0621 ug/L	83
20) Carbon Disulfide	6.91	76	147483	4.8431 ug/L	100
21) Acrylonitrile	7.04	53	111813	46.6509 ug/L	99
22) Methyl Tert Butyl Ether	7.08	73	97690	4.8177 ug/L	85
23) trans-1,2-Dichloroethene	7.31	96	46518	5.0948 ug/L	89
24) n-Hexane	7.39	57	62178	4.6388 ug/L	91
25) Diisopropyl ether	7.72	45	1615256	50.9318 ug/L	86
26) Vinyl Acetate	7.88	43	53849	5.0838 ug/L	91
27) 1,1-Dichloroethane	7.90	63	83452	5.1212 ug/L	97
28) Ethyl-Tert-Butyl ether	8.27	59	1363330	46.6911 ug/L	92
29) 2-Butanone	8.44	43	11993	4.8235 ug/L	86
30) Propionitrile	8.54	54	40010	50.0878 ug/L	99
31) 2,2-Dichloropropane	8.65	77	66953	4.8712 ug/L	98
32) cis-1,2-Dichloroethene	8.71	96	51255	5.2221 ug/L	91
33) Chloroform	8.91	83	77074	4.8998 ug/L	100
34) 1-Bromopropane	9.04	122	11041	7.3127 ug/L	97
35) Bromochloromethane	9.13	130	29712	5.8207 ug/L	77
36) Tetrahydrofuran	9.15	42	76975	48.1045 ug/L	85
38) 1,1,1-Trichloroethane	9.42	97	68948	4.8485 ug/L	97
39) Cyclohexane	9.45	56	87953	4.9648 ug/L	75
40) 1,1-Dichloropropene	9.61	75	62479	5.2238 ug/L	99
41) Carbon Tetrachloride	9.74	117	60574	4.8058 ug/L	97
42) Tert-Amyl-Methyl ether	9.71	73	1032401	45.6044 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M90729.D 8260_WT.M Tue Apr 02 10:46:51 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90729.D Vial: 6
Acq On : 2 Apr 2013 10:24 Operator: FJB
Sample : WG425304-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 10:46:50 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	9.91	62	49689	4.4699	ug/L	93
46)	Benzene	9.94	78	190342	5.3470	ug/L	97
47)	Trichloroethene	10.65	130	48894	5.0386	ug/L	96
48)	Methylcyclohexane	10.73	83	64984	4.5785	ug/L	84
49)	1,2-Dichloropropane	10.86	63	48925	5.4733	ug/L	85
50)	1,4-Dioxane	11.13	88	5049	96.2334	ug/L	74
51)	Bromodichloromethane	11.14	83	57062	5.0154	ug/L	97
52)	Dibromomethane	11.22	93	22935	5.1661	ug/L	94
53)	2-Chloroethyl Vinyl Ether	11.42	63	19521	5.0817	ug/L	93
54)	4-Methyl-2-Pentanone	11.45	58	10605	4.4446	ug/L	84
55)	cis-1,3-Dichloropropene	11.74	75	68951	5.1469	ug/L	99
56)	Dimethyl Disulfide	11.97	79	33830	4.0949	ug/L	97
59)	Toluene	12.13	91	203218	5.4428	ug/L	97
60)	Ethyl Methacrylate	12.22	69	36566	4.3410	ug/L	96
62)	trans-1,3-Dichloropropene	12.29	75	55941	4.9783	ug/L	97
63)	1,1,2-Trichloroethane	12.49	97	32925	5.2708	ug/L	100
64)	2-Hexanone	12.44	43	15727	4.2460	ug/L	92
65)	1,3-Dichloropropane	12.78	76	55970	5.1939	ug/L	100
66)	Tetrachloroethene	12.89	164	41352	5.3823	ug/L	96
67)	Dibromochloromethane	13.14	129	42772	5.2377	ug/L	100
68)	1,2-Dibromoethane	13.38	107	31477	4.9703	ug/L	94
69)	1-Chlorohexane	13.46	91	58497	4.7338	ug/L	86
70)	Chlorobenzene	13.84	112	132489	5.3429	ug/L	100
71)	1,1,1,2-Tetrachloroethane	13.88	131	46728	5.2784	ug/L	94
72)	Ethylbenzene	13.88	106	74316	5.3937	ug/L	99
73)	m-,p-Xylene	13.96	106	175713	10.6239	ug/L	99
74)	o-Xylene	14.49	106	83766	5.1022	ug/L	97
75)	Styrene	14.52	104	141742	5.3534	ug/L	98
76)	Bromoform	14.97	173	25265	5.1514	ug/L	99
77)	Isopropylbenzene	14.88	105	212867	5.2861	ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.08	83	34839	4.9565	ug/L	98
81)	1,2,3-Trichloropropane	15.25	110	10500	5.0940	ug/L	80
82)	trans-1,4-Dichloro-2-Buten	15.29	53	9685	4.0680	ug/L	98
83)	n-Propylbenzene	15.34	91	245326	5.4725	ug/L	98
84)	Bromobenzene	15.47	156	56644	5.3517	ug/L	94
85)	1,3,5-Trimethylbenzene	15.52	105	173327	5.3254	ug/L	97
86)	2-Chlorotoluene	15.60	91	175444	5.9861	ug/L	95
87)	4-Chlorotoluene	15.64	91	132671	4.6208	ug/L	95
88)	a-Methylstyrene	15.89	118	89575	4.6451	ug/L	98
89)	tert-Butylbenzene	15.95	134	37043	5.4584	ug/L	95
90)	1,2,4-Trimethylbenzene	16.00	105	186355	5.5558	ug/L	93
91)	sec-Butylbenzene	16.20	105	211733	5.3095	ug/L	97
92)	p-Isopropyltoluene	16.35	119	175200	5.3702	ug/L	99
93)	1,3-Dichlorobenzene	16.52	146	104900	5.3533	ug/L	98
94)	1,4-Dichlorobenzene	16.65	146	102665	5.1047	ug/L	94
95)	n-Butylbenzene	16.83	91	141595	4.8119	ug/L	97
96)	1,2-Dichlorobenzene	17.10	146	98628	5.3690	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	18.02	75	5248	4.4700	ug/L	92
98)	1,2,4-Trichlorobenzene	19.08	180	63141	5.3925	ug/L	96
99)	Hexachlorobutadiene	19.22	225	22896	4.4551	ug/L	93
100)	Naphthalene	19.42	128	96665	4.7145	ug/L	98
101)	1,2,3-Trichlorobenzene	19.71	180	71441	6.9279	ug/L	83

(#) = qualifier out of range (m) = manual integration
11M90729.D 8260_WT.M Tue Apr 02 10:46:51 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90729.D Vial: 6
Acq On : 2 Apr 2013 10:24 Operator: FJB
Sample : WG425304-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 2 10:46 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration

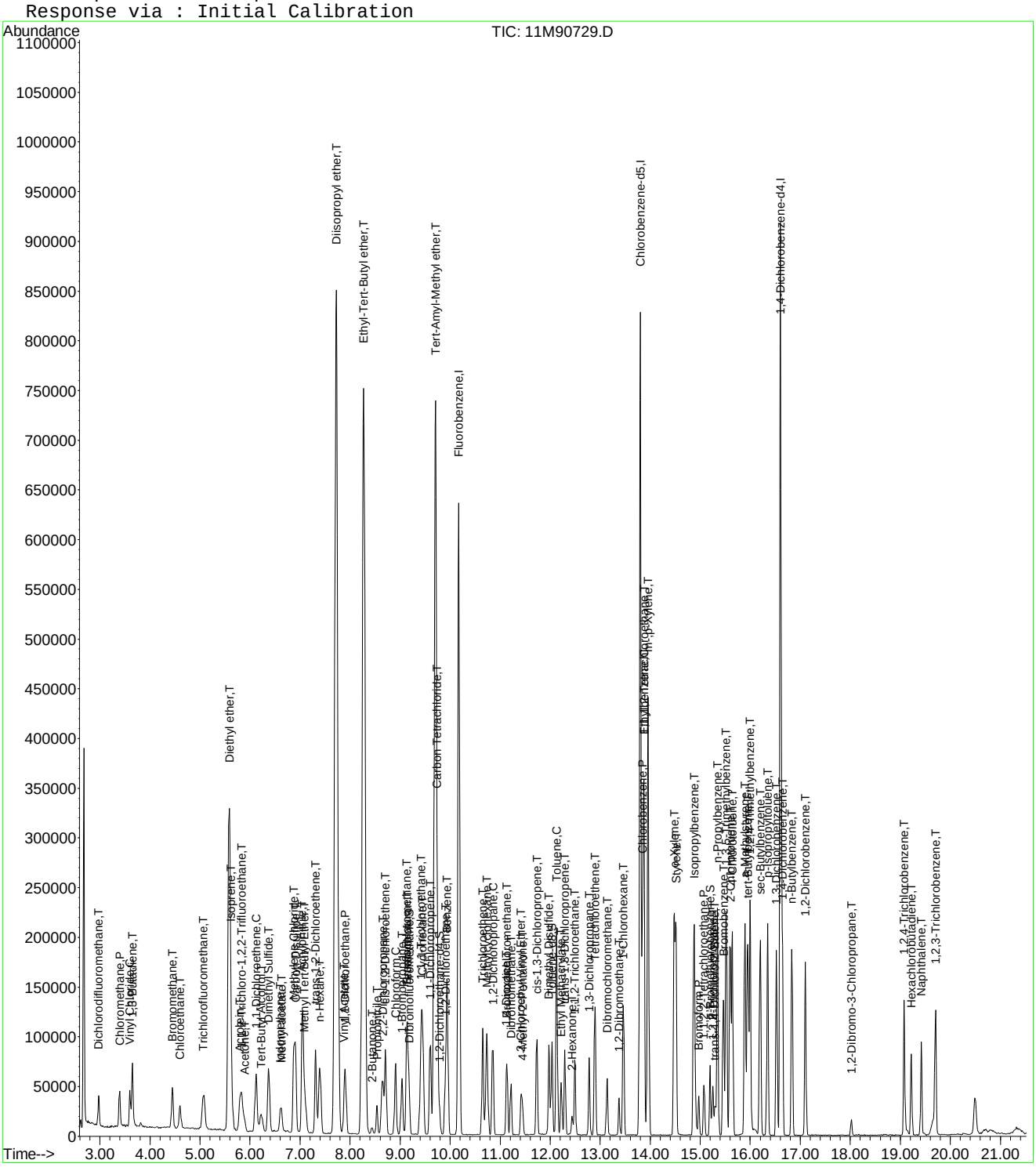

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90730.D Vial: 7
Acq On : 2 Apr 2013 10:56 Operator: FJB
Sample : WG425304-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 11:18:14 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	813422	25.00 ug/L	-0.02
57) Chlorobenzene-d5	13.80	117	626788	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	16.61	152	330902	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	9.18	111	91273	11.2530 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 45.00%#		
43) 1,2-Dichloroethane-d4	9.79	65	79913	9.7050 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 38.84%#		
58) Toluene-d8	12.04	98	337261	11.0544 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery = 44.20%#		
80) p-Bromofluorobenzene	15.20	95	125296	10.0739 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 40.28%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.97	85	155749	19.8564 ug/L	96
3) Chloromethane	3.39	50	173936	16.0033 ug/L	97
4) Vinyl Chloride	3.60	62	157074	16.4207 ug/L	97
5) 1,3-Butadiene	3.64	54	114281	24.6725 ug/L	95
6) Bromomethane	4.45	94	126726	19.3200 ug/L	98
7) Chloroethane	4.60	64	131887	21.1465 ug/L	98
8) Trichlorofluoromethane	5.07	101	266289	18.4522 ug/L	100
9) Diethyl ether	5.58	59	556331	80.0530 ug/L	88
10) Isoprene	5.61	67	255782	18.5032 ug/L	84
11) Acrolein	5.80	56	22073	24.4210 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	5.83	101	167269	20.5162 ug/L	95
13) Acetone	5.89	43	42516	24.1887 ug/L	85
14) 1,1-Dichloroethene	6.12	61	264279	18.8071 ug/L	99
15) Tert-Butyl Alcohol	6.22	59	80808	166.7436 ug/L	94
16) Dimethyl Sulfide	6.37	62	219793	18.9692 ug/L	97
17) Iodomethane	6.61	142	219442	19.3357 ug/L	88
18) Methyl acetate	6.63	43	96722	20.8409 ug/L	94
19) Methylene Chloride	6.88	84	184544	19.9995 ug/L	82
20) Carbon Disulfide	6.91	76	580970	18.8576 ug/L	99
21) Acrylonitrile	7.04	53	190231	78.4509 ug/L	98
22) Methyl Tert Butyl Ether	7.08	73	414709	20.2155 ug/L	88
23) trans-1,2-Dichloroethene	7.31	96	189680	20.5343 ug/L	93
24) n-Hexane	7.39	57	249466	18.3964 ug/L	91
25) Diisopropyl ether	7.72	45	2611787	81.4017 ug/L	86
26) Vinyl Acetate	7.88	43	265776	24.8012 ug/L	92
27) 1,1-Dichloroethane	7.91	63	328192	19.9071 ug/L	98
28) Ethyl-Tert-Butyl ether	8.27	59	2248719	76.1231 ug/L	92
29) 2-Butanone	8.44	43	51389	20.4293 ug/L	92
30) Propionitrile	8.54	54	69415	85.8945 ug/L	98
31) 2,2-Dichloropropane	8.64	77	269432	19.3761 ug/L	98
32) cis-1,2-Dichloroethene	8.71	96	205823	20.7277 ug/L	90
33) Chloroform	8.90	83	318515	20.0148 ug/L	96
34) 1-Bromopropane	9.04	122	43787	28.6659 ug/L	98
35) Bromochloromethane	9.13	130	121020	23.4340 ug/L	79
36) Tetrahydrofuran	9.15	42	132865	82.0720 ug/L	85
38) 1,1,1-Trichloroethane	9.42	97	275385	19.1413 ug/L	97
39) Cyclohexane	9.45	56	342357	19.1020 ug/L	76
40) 1,1-Dichloropropene	9.61	75	243215	20.0996 ug/L	97
41) Carbon Tetrachloride	9.74	117	247138	19.3805 ug/L	98
42) Tert-Amyl-Methyl ether	9.71	73	1715556	74.9051 ug/L	89

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90730.D Vial: 7
Acq On : 2 Apr 2013 10:56 Operator: FJB
Sample : WG425304-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 11:18:14 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.91	62	204437	18.1782 ug/L		94
46)	Benzene	9.94	78	748978	20.7967 ug/L		98
47)	Trichloroethene	10.65	130	191402	19.4960 ug/L		95
48)	Methylcyclohexane	10.73	83	261705	18.2256 ug/L		85
49)	1,2-Dichloropropane	10.86	63	193014	21.3428 ug/L		85
50)	1,4-Dioxane	11.13	88	8503	160.1920 ug/L		77
51)	Bromodichloromethane	11.14	83	241338	20.9669 ug/L		98
52)	Dibromomethane	11.21	93	96633	21.5150 ug/L		94
53)	2-Chloroethyl Vinyl Ether	11.42	63	85174	21.9162 ug/L		97
54)	4-Methyl-2-Pentanone	11.45	58	48789	20.2110 ug/L		84
55)	cis-1,3-Dichloropropene	11.74	75	286974	21.1738 ug/L		99
56)	Dimethyl Disulfide	11.97	79	150328	17.9859 ug/L		99
59)	Toluene	12.13	91	810582	21.3920 ug/L		99
60)	Ethyl Methacrylate	12.22	69	161658	18.9103 ug/L		97
62)	trans-1,3-Dichloropropene	12.29	75	242132	21.2322 ug/L		97
63)	1,1,2-Trichloroethane	12.49	97	141099	22.2570 ug/L		99
64)	2-Hexanone	12.44	43	75690	20.1356 ug/L	#	24
65)	1,3-Dichloropropane	12.78	76	233673	21.3666 ug/L		99
66)	Tetrachloroethene	12.89	164	166919	21.4076 ug/L		93
67)	Dibromochloromethane	13.14	129	180322	21.7583 ug/L		100
68)	1,2-Dibromoethane	13.38	107	139207	21.6591 ug/L		100
69)	1-Chlorohexane	13.46	91	231192	18.4348 ug/L		85
70)	Chlorobenzene	13.84	112	528924	21.0174 ug/L		99
71)	1,1,1,2-Tetrachloroethane	13.88	131	193394	21.5256 ug/L		98
72)	Ethylbenzene	13.88	106	294201	21.0397 ug/L		99
73)	m-,p-Xylene	13.96	106	697798	41.5720 ug/L		98
74)	o-Xylene	14.48	106	345808	20.7546 ug/L		98
75)	Styrene	14.52	104	590314	21.9689 ug/L		97
76)	Bromoform	14.97	173	116158	23.3372 ug/L		95
77)	Isopropylbenzene	14.88	105	853777	20.8913 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.08	83	156411	21.7014 ug/L		99
81)	1,2,3-Trichloropropane	15.25	110	45655	21.6006 ug/L		83
82)	trans-1,4-Dichloro-2-Buten	15.29	53	43239	17.7120 ug/L	#	32
83)	n-Propylbenzene	15.34	91	1003755	21.8361 ug/L		98
84)	Bromobenzene	15.47	156	231204	21.3029 ug/L		94
85)	1,3,5-Trimethylbenzene	15.52	105	719390	21.5557 ug/L		96
86)	2-Chlorotoluene	15.59	91	600421	19.9790 ug/L		95
87)	4-Chlorotoluene	15.64	91	641016	21.7732 ug/L		85
88)	a-Methylstyrene	15.89	118	377971	19.1150 ug/L		97
89)	tert-Butylbenzene	15.95	134	141930	20.3957 ug/L		98
90)	1,2,4-Trimethylbenzene	16.00	105	737273	21.4359 ug/L		97
91)	sec-Butylbenzene	16.20	105	837555	20.4828 ug/L		98
92)	p-Isopropyltoluene	16.35	119	710372	21.2350 ug/L		100
93)	1,3-Dichlorobenzene	16.52	146	433426	21.5711 ug/L		99
94)	1,4-Dichlorobenzene	16.65	146	436250	21.1539 ug/L		98
95)	n-Butylbenzene	16.83	91	595072	19.7218 ug/L		97
96)	1,2-Dichlorobenzene	17.10	146	407455	21.6312 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	18.02	75	25707	21.3540 ug/L		97
98)	1,2,4-Trichlorobenzene	19.08	180	270476	22.5278 ug/L		96
99)	Hexachlorobutadiene	19.22	225	96907	18.3890 ug/L		91
100)	Naphthalene	19.42	128	503221	23.9353 ug/L		99
101)	1,2,3-Trichlorobenzene	19.71	180	255456	24.1589 ug/L		95

(#) = qualifier out of range (m) = manual integration
11M90730.D 8260_WT.M Tue Apr 02 11:18:14 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90730.D Vial: 7
Acq On : 2 Apr 2013 10:56 Operator: FJB
Sample : WG425304-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 2 11:18 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration

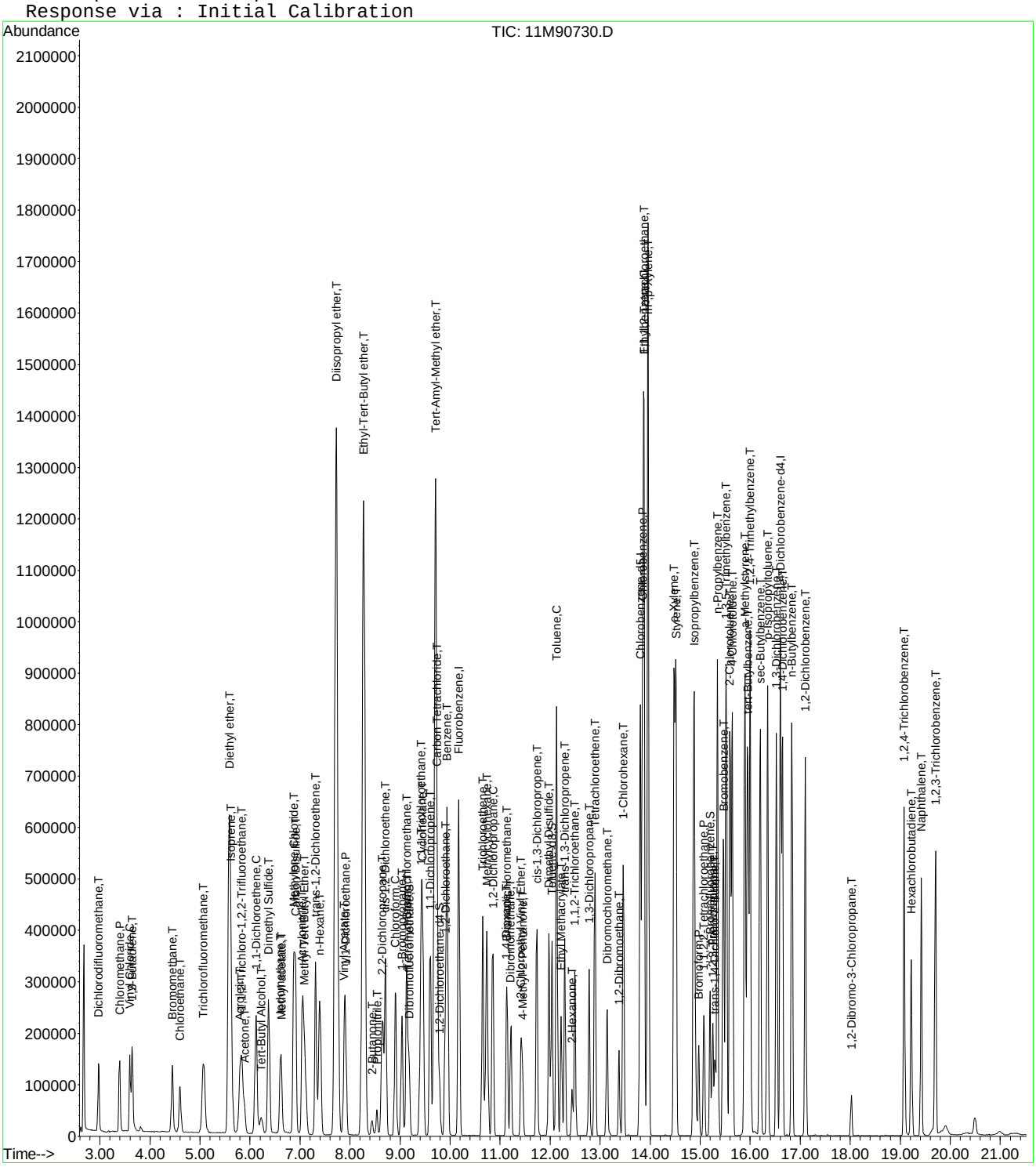

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90731.D Vial: 8
Acq On : 2 Apr 2013 11:27 Operator: FJB
Sample : WG425304-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 11:49:35 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	814817	25.00 ug/L	-0.02
57) Chlorobenzene-d5	13.80	117	632876	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	16.61	152	341238	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	9.18	111	233689	28.7622 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 115.04%		
43) 1,2-Dichloroethane-d4	9.79	65	208766	25.3101 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.24%		
58) Toluene-d8	12.04	98	865796	28.1052 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery = 112.44%#		
80) p-Bromofluorobenzene	15.20	95	324197	25.2762 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.97	85	406400	51.7230 ug/L	94
3) Chloromethane	3.39	50	412824	37.9176 ug/L	99
4) Vinyl Chloride	3.60	62	400825	41.8310 ug/L	97
5) 1,3-Butadiene	3.64	54	223796	48.2333 ug/L	98
6) Bromomethane	4.45	94	322086	49.0196 ug/L	100
7) Chloroethane	4.60	64	336474	53.8573 ug/L	100
8) Trichlorofluoromethane	5.07	101	707165	48.9184 ug/L	100
9) Diethyl ether	5.57	59	702426	100.9022 ug/L	88
10) Isoprene	5.61	67	665397	48.0522 ug/L	85
11) Acrolein	5.80	56	28078	31.0116 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	5.82	101	447193	54.7561 ug/L	98
13) Acetone	5.89	43	113911	64.6966 ug/L	87
14) 1,1-Dichloroethene	6.12	61	683806	48.5788 ug/L	100
15) Tert-Butyl Alcohol	6.22	59	104165	214.5717 ug/L	95
16) Dimethyl Sulfide	6.37	62	555505	47.8608 ug/L	99
17) Iodomethane	6.61	142	590090	51.9055 ug/L	88
18) Methyl acetate	6.63	43	241829	52.0183 ug/L	95
19) Methylene Chloride	6.88	84	476977	51.6028 ug/L	85
20) Carbon Disulfide	6.91	76	1494313	48.4205 ug/L	99
21) Acrylonitrile	7.04	53	250233	103.0189 ug/L	100
22) Methyl Tert Butyl Ether	7.08	73	1063250	51.7406 ug/L	88
23) trans-1,2-Dichloroethene	7.31	96	485499	52.4689 ug/L	91
24) n-Hexane	7.39	57	654581	48.1881 ug/L	90
25) Diisopropyl ether	7.72	45	3275023	101.8981 ug/L	87
26) Vinyl Acetate	7.88	43	712983	66.4189 ug/L	92
27) 1,1-Dichloroethane	7.91	63	850891	51.5241 ug/L	98
28) Ethyl-Tert-Butyl ether	8.27	59	2858762	96.6084 ug/L	92
29) 2-Butanone	8.44	43	134167	53.2457 ug/L	93
30) Propionitrile	8.53	54	92467	114.2232 ug/L	97
31) 2,2-Dichloropropane	8.64	77	698685	50.1597 ug/L	100
32) cis-1,2-Dichloroethene	8.71	96	528135	53.0955 ug/L	90
33) Chloroform	8.91	83	811741	50.9207 ug/L	97
34) 1-Bromopropane	9.04	122	112236	73.3513 ug/L	98
35) Bromochloromethane	9.13	130	309242	59.7783 ug/L	79
36) Tetrahydrofuran	9.15	42	178562	110.1107 ug/L	83
38) 1,1,1-Trichloroethane	9.42	97	717784	49.8058 ug/L	97
39) Cyclohexane	9.45	56	896718	49.9472 ug/L	76
40) 1,1-Dichloropropene	9.61	75	634644	52.3581 ug/L	97
41) Carbon Tetrachloride	9.74	117	656376	51.3846 ug/L	99
42) Tert-Amyl-Methyl ether	9.71	73	2202002	95.9799 ug/L	89

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90731.D Vial: 8
Acq On : 2 Apr 2013 11:27 Operator: FJB
Sample : WG425304-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 11:49:35 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.91	62	531938	47.2180 ug/L		94
46)	Benzene	9.94	78	1916319	53.1188 ug/L		97
47)	Trichloroethene	10.65	130	501227	50.9670 ug/L		96
48)	Methylcyclohexane	10.73	83	675149	46.9381 ug/L		85
49)	1,2-Dichloropropane	10.86	63	499343	55.1211 ug/L		84
50)	1,4-Dioxane	11.13	88	12030	226.2508 ug/L		70
51)	Bromodichloromethane	11.14	83	625265	54.2287 ug/L		98
52)	Dibromomethane	11.21	93	250867	55.7591 ug/L		95
53)	2-Chloroethyl Vinyl Ether	11.42	63	228519	58.6997 ug/L		95
54)	4-Methyl-2-Pentanone	11.45	58	132144	54.6474 ug/L		86
55)	cis-1,3-Dichloropropene	11.74	75	761785	56.1105 ug/L		100
56)	Dimethyl Disulfide	11.97	79	397392	47.4642 ug/L		98
59)	Toluene	12.13	91	2055983	53.7372 ug/L		97
60)	Ethyl Methacrylate	12.22	69	435527	50.4567 ug/L		96
62)	trans-1,3-Dichloropropene	12.29	75	644288	55.9533 ug/L		97
63)	1,1,2-Trichloroethane	12.50	97	362640	56.6527 ug/L		100
64)	2-Hexanone	12.44	43	204025	53.7540 ug/L	#	24
65)	1,3-Dichloropropane	12.78	76	609626	55.2067 ug/L		98
66)	Tetrachloroethene	12.89	164	430206	54.6437 ug/L		96
67)	Dibromochloromethane	13.14	129	480040	57.3661 ug/L		100
68)	1,2-Dibromoethane	13.38	107	372816	57.4480 ug/L		99
69)	1-Chlorohexane	13.46	91	608860	48.0823 ug/L		85
70)	Chlorobenzene	13.84	112	1360066	53.5240 ug/L		100
71)	1,1,1,2-Tetrachloroethane	13.88	131	496177	54.6955 ug/L		100
72)	Ethylbenzene	13.88	106	758690	53.7355 ug/L		99
73)	m-,p-Xylene	13.96	106	1819693	107.3673 ug/L		99
74)	o-Xylene	14.48	106	900505	53.5263 ug/L		99
75)	Styrene	14.52	104	1518777	55.9784 ug/L		99
76)	Bromoform	14.97	173	309866	61.6559 ug/L		98
77)	Isopropylbenzene	14.88	105	2221049	53.8246 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.08	83	424093	57.0590 ug/L		97
81)	1,2,3-Trichloropropane	15.25	110	121933	55.9425 ug/L		82
82)	trans-1,4-Dichloro-2-Buten	15.29	53	123010	48.8623 ug/L	#	27
83)	n-Propylbenzene	15.34	91	2611254	55.0857 ug/L		99
84)	Bromobenzene	15.47	156	598284	53.4556 ug/L		94
85)	1,3,5-Trimethylbenzene	15.52	105	1867621	54.2660 ug/L		97
86)	2-Chlorotoluene	15.59	91	1537667	49.6160 ug/L		95
87)	4-Chlorotoluene	15.64	91	1669795	54.9995 ug/L		86
88)	a-Methylstyrene	15.89	118	984291	48.2704 ug/L		97
89)	tert-Butylbenzene	15.95	134	369981	51.5569 ug/L		98
90)	1,2,4-Trimethylbenzene	16.00	105	1878107	52.9512 ug/L		98
91)	sec-Butylbenzene	16.20	105	2168852	51.4337 ug/L		99
92)	p-Isopropyltoluene	16.35	119	1863386	54.0145 ug/L		99
93)	1,3-Dichlorobenzene	16.52	146	1119635	54.0351 ug/L		98
94)	1,4-Dichlorobenzene	16.65	146	1138366	53.5278 ug/L		100
95)	n-Butylbenzene	16.83	91	1573113	50.5567 ug/L		98
96)	1,2-Dichlorobenzene	17.10	146	1059278	54.5321 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	18.02	75	68438	55.1273 ug/L		99
98)	1,2,4-Trichlorobenzene	19.08	180	698942	56.4511 ug/L		99
99)	Hexachlorobutadiene	19.22	225	254715	46.8704 ug/L		92
100)	Naphthalene	19.42	128	1398527	64.5049 ug/L		99
101)	1,2,3-Trichlorobenzene	19.71	180	634097	58.1513 ug/L		98

(#) = qualifier out of range (m) = manual integration
11M90731.D 8260_WT.M Tue Apr 02 11:49:36 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90731.D Vial: 8
Acq On : 2 Apr 2013 11:27 Operator: FJB
Sample : WG425304-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 2 11:49 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration

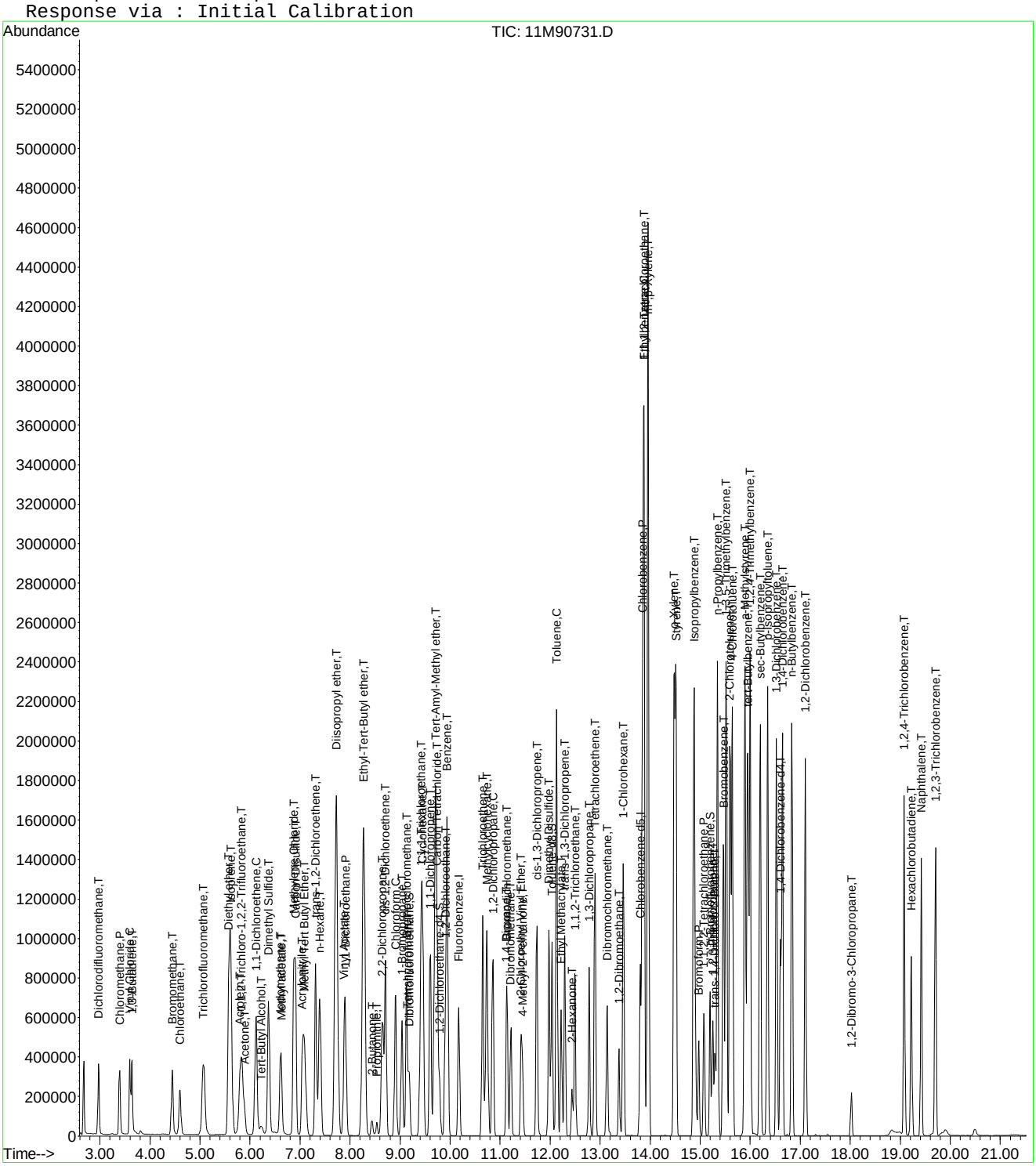

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90732.D Vial: 9
Acq On : 2 Apr 2013 11:59 Operator: FJB
Sample : WG425304-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 12:20:58 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	842569	25.00 ug/L	-0.02
57) Chlorobenzene-d5	13.80	117	654379	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	16.61	152	356358	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	9.18	111	460172	54.7720 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 219.08%#		
43) 1,2-Dichloroethane-d4	9.79	65	408730	47.9209 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 191.68%#		
58) Toluene-d8	12.04	98	1690754	53.0813 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery = 212.32%#		
80) p-Bromofluorobenzene	15.20	95	645693	48.2059 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 192.84%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.97	85	800318	98.5026 ug/L	95
3) Chloromethane	3.39	50	822012	73.0145 ug/L	98
4) Vinyl Chloride	3.60	62	769485	77.6602 ug/L	97
5) 1,3-Butadiene	3.63	54	394122	82.1447 ug/L	98
6) Bromomethane	4.45	94	649895	95.6524 ug/L	100
7) Chloroethane	4.59	64	655239	101.4255 ug/L	99
8) Trichlorofluoromethane	5.07	101	1365192	91.3271 ug/L	99
9) Diethyl ether	5.57	59	1410705	195.9705 ug/L	89
10) Isoprene	5.61	67	1334725	93.2135 ug/L	85
11) Acrolein	5.80	56	60126	64.2206 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	5.82	101	858236	101.6247 ug/L	97
13) Acetone	5.89	43	232976	127.9622 ug/L	85
14) 1,1-Dichloroethene	6.12	61	1344930	92.3993 ug/L	99
15) Tert-Butyl Alcohol	6.22	59	225979	450.1666 ug/L	95
16) Dimethyl Sulfide	6.37	62	1115468	92.9402 ug/L	98
17) Iodomethane	6.61	142	1177136	100.1327 ug/L	88
18) Methyl acetate	6.63	43	503694	104.7778 ug/L	94
19) Methylene Chloride	6.88	84	932923	97.6060 ug/L	86
20) Carbon Disulfide	6.91	76	3030647	94.9682 ug/L	100
21) Acrylonitrile	7.04	53	512700	204.1222 ug/L	99
22) Methyl Tert Butyl Ether	7.08	73	2098270	98.7443 ug/L	89
23) trans-1,2-Dichloroethene	7.31	96	946390	98.9096 ug/L	91
24) n-Hexane	7.39	57	1304842	92.8943 ug/L	90
25) Diisopropyl ether	7.72	45	6498574	195.5349 ug/L	87
26) Vinyl Acetate	7.88	43	1417585	127.7074 ug/L	92
27) 1,1-Dichloroethane	7.90	63	1631390	95.5320 ug/L	98
28) Ethyl-Tert-Butyl ether	8.27	59	5735758	187.4487 ug/L	92
29) 2-Butanone	8.44	43	278119	106.7393 ug/L	93
30) Propionitrile	8.53	54	191079	228.2628 ug/L	93
31) 2,2-Dichloropropane	8.64	77	1357069	94.2172 ug/L	100
32) cis-1,2-Dichloroethene	8.71	96	1026311	99.7807 ug/L	91
33) Chloroform	8.91	83	1572309	95.3827 ug/L	96
34) 1-Bromopropane	9.04	122	220622	139.4374 ug/L	99
35) Bromochloromethane	9.13	130	605358	113.1649 ug/L	80
36) Tetrahydrofuran	9.15	42	361323	215.4719 ug/L	86
38) 1,1,1-Trichloroethane	9.42	97	1385746	92.9875 ug/L	97
39) Cyclohexane	9.44	56	1793171	96.5899 ug/L	77
40) 1,1-Dichloropropene	9.61	75	1243743	99.2291 ug/L	98
41) Carbon Tetrachloride	9.74	117	1257572	95.2068 ug/L	98
42) Tert-Amyl-Methyl ether	9.71	73	4456704	187.8585 ug/L	90

(#) = qualifier out of range (m) = manual integration
11M90732.D 8260_WT.M Tue Apr 02 12:20:59 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90732.D Vial: 9
Acq On : 2 Apr 2013 11:59 Operator: FJB
Sample : WG425304-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 12:20:58 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	9.91	62	1032909	88.6672	ug/L		94
46)	Benzene	9.94	78	3701936	99.2347	ug/L		98
47)	Trichloroethene	10.65	130	963082	94.7049	ug/L		96
48)	Methylcyclohexane	10.73	83	1364207	91.7192	ug/L		86
49)	1,2-Dichloropropane	10.86	63	967157	103.2453	ug/L		84
50)	1,4-Dioxane	11.13	88	26346	479.1747	ug/L		78
51)	Bromodichloromethane	11.14	83	1211026	101.5717	ug/L		98
52)	Dibromomethane	11.21	93	487333	104.7497	ug/L		95
53)	2-Chloroethyl Vinyl Ether	11.42	63	462157	114.8041	ug/L		95
54)	4-Methyl-2-Pentanone	11.45	58	271692	108.6560	ug/L		84
55)	cis-1,3-Dichloropropene	11.74	75	1467467	104.5285	ug/L		99
56)	Dimethyl Disulfide	11.97	79	817471	94.4222	ug/L		98
59)	Toluene	12.13	91	3927920	99.2904	ug/L		97
60)	Ethyl Methacrylate	12.22	69	894278	100.1994	ug/L		97
62)	trans-1,3-Dichloropropene	12.29	75	1253178	105.2562	ug/L		98
63)	1,1,2-Trichloroethane	12.49	97	695680	105.1100	ug/L		100
64)	2-Hexanone	12.44	43	419856	106.9836	ug/L	#	24
65)	1,3-Dichloropropane	12.78	76	1170410	102.5075	ug/L		99
66)	Tetrachloroethene	12.89	164	824043	101.2285	ug/L		95
67)	Dibromochloromethane	13.14	129	927118	107.1524	ug/L		100
68)	1,2-Dibromoethane	13.38	107	722628	107.6923	ug/L		99
69)	1-Chlorohexane	13.46	91	1228331	93.8150	ug/L		86
70)	Chlorobenzene	13.84	112	2601822	99.0274	ug/L		100
71)	1,1,1,2-Tetrachloroethane	13.88	131	950050	101.2863	ug/L		99
72)	Ethylbenzene	13.88	106	1445317	99.0033	ug/L		99
73)	m-,p-Xylene	13.96	106	3470557	198.0442	ug/L		100
74)	o-Xylene	14.48	106	1730342	99.4723	ug/L		100
75)	Styrene	14.52	104	2937975	104.7283	ug/L		98
76)	Bromoform	14.97	173	595934	114.6801	ug/L		98
77)	Isopropylbenzene	14.88	105	4240735	99.3925	ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.08	83	813264	104.7769	ug/L		98
81)	1,2,3-Trichloropropane	15.25	110	239691	105.3035	ug/L		80
82)	trans-1,4-Dichloro-2-Buten	15.29	53	249636	94.9536	ug/L	#	26
83)	n-Propylbenzene	15.34	91	5050988	102.0321	ug/L		98
84)	Bromobenzene	15.47	156	1151095	98.4845	ug/L		93
85)	1,3,5-Trimethylbenzene	15.52	105	3603330	100.2569	ug/L		97
86)	2-Chlorotoluene	15.59	91	3467336	107.1338	ug/L		94
87)	4-Chlorotoluene	15.64	91	2726500	85.9948	ug/L		95
88)	a-Methylstyrene	15.89	118	2003736	94.0954	ug/L		97
89)	tert-Butylbenzene	15.95	134	706454	94.2675	ug/L		97
90)	1,2,4-Trimethylbenzene	16.00	105	3627683	97.9390	ug/L		97
91)	sec-Butylbenzene	16.20	105	4154079	94.3331	ug/L		98
92)	p-Isopropyltoluene	16.35	119	3573379	99.1877	ug/L		99
93)	1,3-Dichlorobenzene	16.52	146	2160229	99.8320	ug/L		98
94)	1,4-Dichlorobenzene	16.65	146	2178244	98.0788	ug/L		99
95)	n-Butylbenzene	16.83	91	3055230	94.0230	ug/L		98
96)	1,2-Dichlorobenzene	17.10	146	2040019	100.5652	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	18.02	75	132083	101.8796	ug/L		97
98)	1,2,4-Trichlorobenzene	19.08	180	1353652	104.6910	ug/L		99
99)	Hexachlorobutadiene	19.22	225	483704	85.2304	ug/L		92
100)	Naphthalene	19.42	128	2778720	122.7262	ug/L		100
101)	1,2,3-Trichlorobenzene	19.71	180	1215447	106.7359	ug/L		99

(#) = qualifier out of range (m) = manual integration
11M90732.D 8260_WT.M Tue Apr 02 12:20:59 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90732.D Vial: 9
Acq On : 2 Apr 2013 11:59 Operator: FJB
Sample : WG425304-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 2 12:20 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration

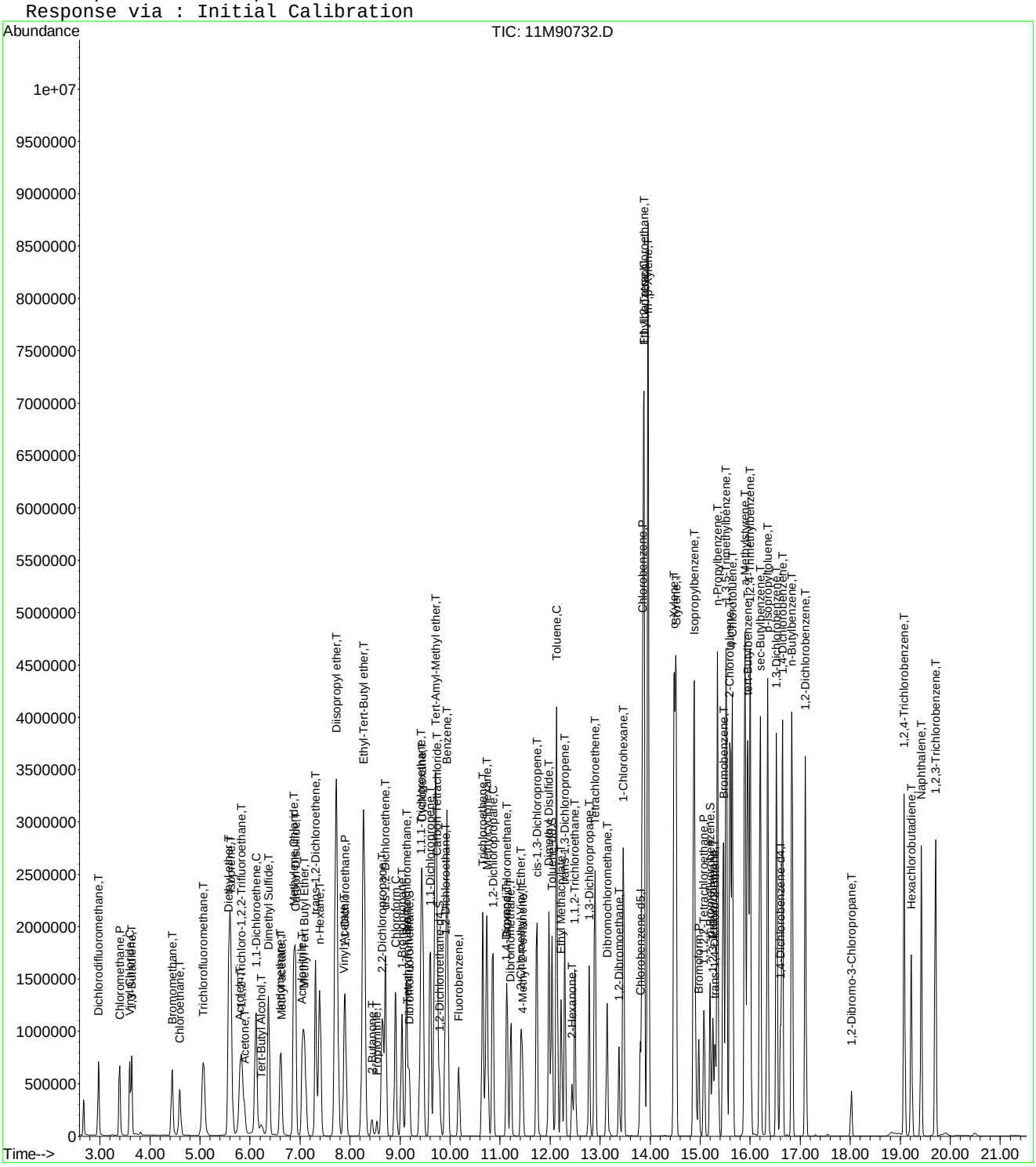

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90733.D Vial: 10
Acq On : 2 Apr 2013 12:30 Operator: FJB
Sample : WG425304-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 12:52:16 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	820251	25.00 ug/L	-0.02
57) Chlorobenzene-d5	13.80	117	655382	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	16.61	152	351024	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.18	111	904536	110.5917 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 442.36%#		
43) 1,2-Dichloroethane-d4	9.79	65	790213	95.1681 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 380.68%#		
58) Toluene-d8	12.04	98	3301894	103.5044 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery = 414.00%#		
80) p-Bromofluorobenzene	15.20	95	1273697	96.5361 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 386.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.97	85	1568936	198.3576 ug/L	95
3) Chloromethane	3.39	50	1706010	155.6580 ug/L	98
4) Vinyl Chloride	3.59	62	1463971	151.7713 ug/L	97
5) 1,3-Butadiene	3.63	54	740878	158.6187 ug/L	98
6) Bromomethane	4.44	94	1312103	198.3715 ug/L	100
7) Chloroethane	4.59	64	1288781	204.9204 ug/L	99
8) Trichlorofluoromethane	5.07	101	2696950	185.3265 ug/L	100
9) Diethyl ether	5.58	59	1658442	236.6538 ug/L	89
10) Isoprene	5.61	67	2602696	186.7106 ug/L	86
11) Acrolein	5.80	56	72473	79.5147 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	5.82	101	1695525	206.2316 ug/L	97
13) Acetone	5.89	43	443144	250.0197 ug/L	88
14) 1,1-Dichloroethene	6.11	61	2663840	187.9904 ug/L	100
15) Tert-Butyl Alcohol	6.22	59	265688	543.6705 ug/L	94
16) Dimethyl Sulfide	6.37	62	2181776	186.7306 ug/L	97
17) Iodomethane	6.61	142	2344914	204.8968 ug/L	88
18) Methyl acetate	6.63	43	958577	204.8275 ug/L	94
19) Methylene Chloride	6.87	84	1839070	197.6458 ug/L	88
20) Carbon Disulfide	6.91	76	5877859	189.1998 ug/L	99
21) Acrylonitrile	7.04	53	622579	254.6127 ug/L	99
22) Methyl Tert Butyl Ether	7.08	73	4143819	200.3134 ug/L	89
23) trans-1,2-Dichloroethene	7.31	96	1879722	201.7998 ug/L	91
24) n-Hexane	7.39	57	2492978	182.3092 ug/L	91
25) Diisopropyl ether	7.72	45	7670001	237.0611 ug/L	87
26) Vinyl Acetate	7.88	43	2785374	257.7563 ug/L	92
27) 1,1-Dichloroethane	7.90	63	3202756	192.6521 ug/L	98
28) Ethyl-Tert-Butyl ether	8.27	59	6800020	228.2761 ug/L	93
29) 2-Butanone	8.44	43	541326	213.4083 ug/L	95
30) Propionitrile	8.54	54	228321	280.1734 ug/L	89
31) 2,2-Dichloropropane	8.64	77	2661280	189.7918 ug/L	100
32) cis-1,2-Dichloroethene	8.71	96	2042751	204.0054 ug/L	91
33) Chloroform	8.91	83	3124102	194.6775 ug/L	97
34) 1-Bromopropane	9.04	122	441733	286.7801 ug/L	100
35) Bromochloromethane	9.13	130	1206461	231.6710 ug/L	80
36) Tetrahydrofuran	9.15	42	420262	257.4387 ug/L	87
38) 1,1,1-Trichloroethane	9.41	97	2762257	190.3985 ug/L	97
39) Cyclohexane	9.44	56	3475066	192.2790 ug/L	77
40) 1,1-Dichloropropene	9.61	75	2462454	201.8065 ug/L	98
41) Carbon Tetrachloride	9.74	117	2501066	194.4998 ug/L	99
42) Tert-Amyl-Methyl ether	9.71	73	5301175	229.5344 ug/L	91

(#) = qualifier out of range (m) = manual integration
11M90733.D 8260_WT.M Tue Apr 02 12:52:17 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90733.D Vial: 10
Acq On : 2 Apr 2013 12:30 Operator: FJB
Sample : WG425304-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 12:52:16 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.91	62	2049848	180.7513 ug/L		94
46)	Benzene	9.94	78	7292556	200.8044 ug/L		98
47)	Trichloroethene	10.65	130	1906991	192.6268 ug/L		96
48)	Methylcyclohexane	10.73	83	2668662	184.3030 ug/L		86
49)	1,2-Dichloropropane	10.86	63	1933139	211.9802 ug/L		84
50)	1,4-Dioxane	11.13	88	32759	612.0241 ug/L		80
51)	Bromodichloromethane	11.14	83	2437894	210.0356 ug/L		98
52)	Dibromomethane	11.21	93	967516	213.6209 ug/L		95
53)	2-Chloroethyl Vinyl Ether	11.41	63	926626	236.4455 ug/L		94
54)	4-Methyl-2-Pentanone	11.45	58	532849	218.8969 ug/L		87
55)	cis-1,3-Dichloropropene	11.74	75	2926657	214.1397 ug/L		99
56)	Dimethyl Disulfide	11.97	79	1643587	195.0083 ug/L		99
59)	Toluene	12.13	91	7692315	194.1497 ug/L		96
60)	Ethyl Methacrylate	12.22	69	1781767	199.3326 ug/L		98
62)	trans-1,3-Dichloropropene	12.29	75	2478609	207.8633 ug/L		97
63)	1,1,2-Trichloroethane	12.49	97	1372778	207.0950 ug/L		99
64)	2-Hexanone	12.44	43	830234	211.2283 ug/L	#	23
65)	1,3-Dichloropropane	12.78	76	2317306	202.6449 ug/L		99
66)	Tetrachloroethene	12.89	164	1630101	199.9412 ug/L		96
67)	Dibromochloromethane	13.14	129	1852958	213.8293 ug/L		100
68)	1,2-Dibromoethane	13.38	107	1441011	214.4233 ug/L		100
69)	1-Chlorohexane	13.46	91	2427285	185.1025 ug/L		87
70)	Chlorobenzene	13.84	112	5112728	194.2966 ug/L		99
71)	1,1,1,2-Tetrachloroethane	13.88	131	1883748	200.5219 ug/L		98
72)	Ethylbenzene	13.88	106	2853116	195.1374 ug/L		97
73)	m-,p-Xylene	13.96	106	6685734	380.9316 ug/L		92
74)	o-Xylene	14.48	106	3434926	197.1617 ug/L		100
75)	Styrene	14.52	104	5817469	207.0546 ug/L		100
76)	Bromoform	14.97	173	1198699	230.3218 ug/L		98
77)	Isopropylbenzene	14.88	105	8272854	193.5987 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.08	83	1628631	213.0132 ug/L		98
81)	1,2,3-Trichloropropane	15.25	110	473302	211.0956 ug/L		80
82)	trans-1,4-Dichloro-2-Buten	15.29	53	504668	194.8765 ug/L	#	26
83)	n-Propylbenzene	15.34	91	9648432	197.8641 ug/L		99
84)	Bromobenzene	15.47	156	2306196	200.3099 ug/L		93
85)	1,3,5-Trimethylbenzene	15.52	105	7083712	200.0879 ug/L		98
86)	2-Chlorotoluene	15.60	91	6683634	209.6491 ug/L		96
87)	4-Chlorotoluene	15.64	91	5379291	172.2429 ug/L		96
88)	a-Methylstyrene	15.89	118	3963185	188.9392 ug/L		96
89)	tert-Butylbenzene	15.95	134	1404118	190.2091 ug/L		97
90)	1,2,4-Trimethylbenzene	16.00	105	7082896	194.1274 ug/L		99
91)	sec-Butylbenzene	16.20	105	8077637	186.2186 ug/L		99
92)	p-Isopropyltoluene	16.35	119	6986154	196.8641 ug/L		100
93)	1,3-Dichlorobenzene	16.52	146	4256608	199.7025 ug/L		97
94)	1,4-Dichlorobenzene	16.65	146	4287343	195.9776 ug/L		98
95)	n-Butylbenzene	16.83	91	5954787	186.0398 ug/L		98
96)	1,2-Dichlorobenzene	17.10	146	3994211	199.8914 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	18.02	75	264215	206.8938 ug/L		96
98)	1,2,4-Trichlorobenzene	19.08	180	2664059	209.1683 ug/L		100
99)	Hexachlorobutadiene	19.22	225	953943	170.6424 ug/L		92
100)	Naphthalene	19.42	128	5473782	245.4312 ug/L		100
101)	1,2,3-Trichlorobenzene	19.71	180	2365401	210.8768 ug/L		100

(#) = qualifier out of range (m) = manual integration
11M90733.D 8260_WT.M Tue Apr 02 12:52:17 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90733.D Vial: 10
Acq On : 2 Apr 2013 12:30 Operator: FJB
Sample : WG425304-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 2 12:52 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration

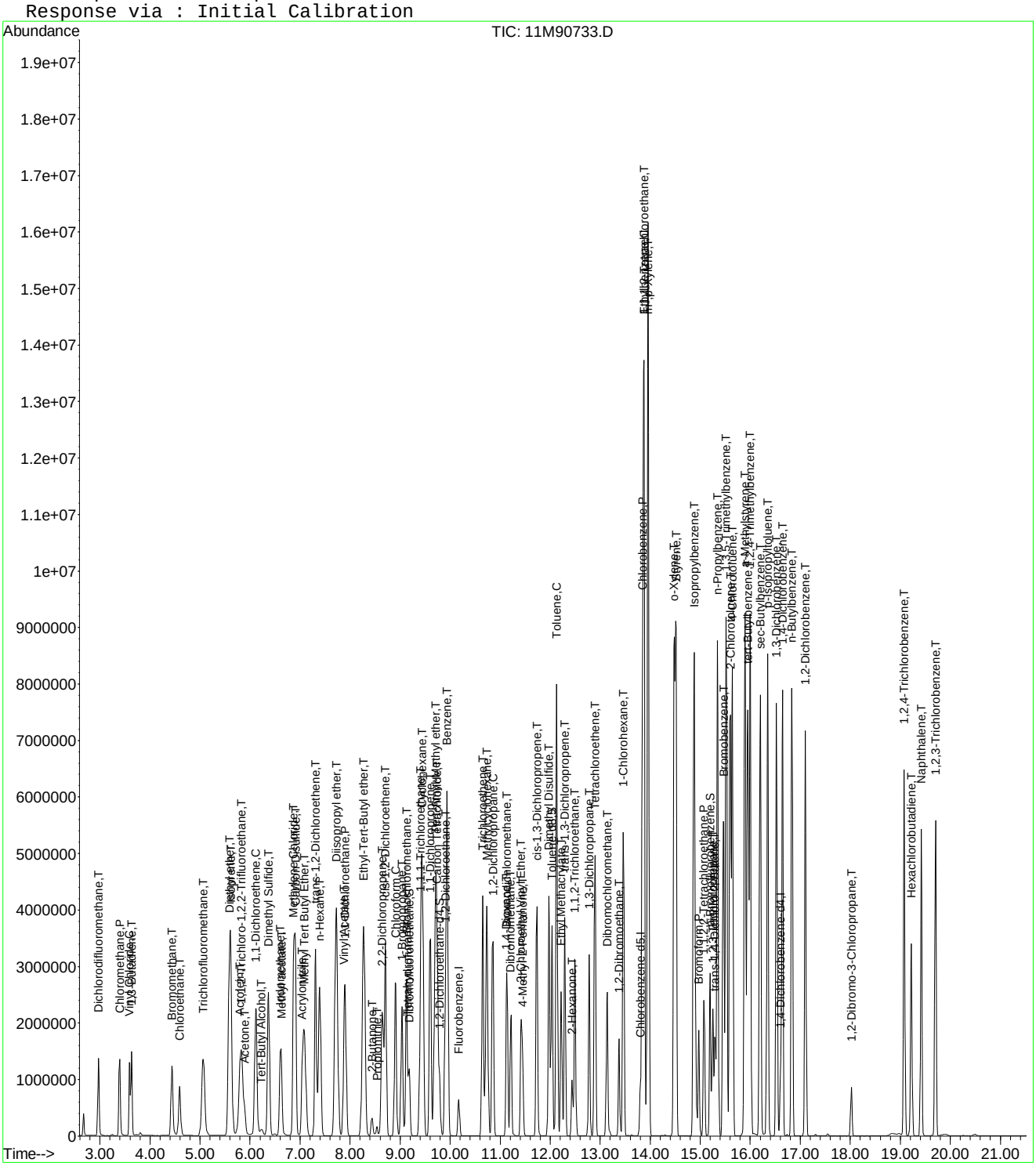

11M90733.D 8260_WT.M Tue Apr 02 12:52:17 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90734.D Vial: 11
Acq On : 2 Apr 2013 13:01 Operator: FJB
Sample : WG425304-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 13:23:39 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	792470	25.00 ug/L	-0.02
57) Chlorobenzene-d5	13.80	117	632951	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	16.61	152	341143	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	9.18	111	1296572	164.0806 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 656.32%#		
43) 1,2-Dichloroethane-d4	9.79	65	1150786	143.4518 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 573.80%#		
58) Toluene-d8	12.04	98	4735700	153.7107 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery = 614.84%#		
80) p-Bromofluorobenzene	15.20	95	1894207	147.7241 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 590.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.97	85	2177740	284.9795 ug/L	94
3) Chloromethane	3.39	50	2560328	241.7961 ug/L	98
4) Vinyl Chloride	3.59	62	1893195	203.1498 ug/L	97
5) 1,3-Butadiene	3.63	54	1023166	226.7345 ug/L	98
6) Bromomethane	4.44	94	1882172	294.5334 ug/L	100
7) Chloroethane	4.59	64	1824109	300.2070 ug/L	99
8) Trichlorofluoromethane	5.06	101	3839113	273.0608 ug/L	100
9) Diethyl ether	5.58	59	1968295	290.7150 ug/L	90
10) Isoprene	5.60	67	3728336	276.8372 ug/L	86
11) Acrolein	5.80	56	86359	98.0714 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	5.82	101	2400283	302.1882 ug/L	97
13) Acetone	5.90	43	645403	376.8984 ug/L	87
14) 1,1-Dichloroethene	6.11	61	3781049	276.1874 ug/L	99
15) Tert-Butyl Alcohol	6.23	59	335162	709.8761 ug/L	94
16) Dimethyl Sulfide	6.37	62	3152589	279.2780 ug/L	96
17) Iodomethane	6.61	142	3405885	308.0364 ug/L	87
18) Methyl acetate	6.63	43	1407977	311.4016 ug/L	95
19) Methylene Chloride	6.87	84	2623365	291.8179 ug/L	90
20) Carbon Disulfide	6.91	76	8390285	279.5388 ug/L	99
21) Acrylonitrile	7.05	53	762953	322.9589 ug/L	99
22) Methyl Tert Butyl Ether	7.08	73	6067304	303.5771 ug/L	89
23) trans-1,2-Dichloroethene	7.31	96	2690497	298.9672 ug/L	92
24) n-Hexane	7.39	57	3508647	265.5789 ug/L	91
25) Diisopropyl ether	7.72	45	9011854	288.2989 ug/L	87
26) Vinyl Acetate	7.88	43	4016846	384.7467 ug/L	93
27) 1,1-Dichloroethane	7.90	63	4574369	284.8034 ug/L	98
28) Ethyl-Tert-Butyl ether	8.27	59	8128184	282.4280 ug/L	93
29) 2-Butanone	8.44	43	814589	332.3953 ug/L	95
30) Propionitrile	8.54	54	281465	357.4945 ug/L	88
31) 2,2-Dichloropropane	8.64	77	3770579	278.3292 ug/L	100
32) cis-1,2-Dichloroethene	8.71	96	2936985	303.5931 ug/L	92
33) Chloroform	8.90	83	4479815	288.9446 ug/L	97
34) 1-Bromopropane	9.04	122	637741	428.5461 ug/L	100
35) Bromochloromethane	9.13	130	1739128	345.6638 ug/L	81
36) Tetrahydrofuran	9.15	42	518416	328.6972 ug/L	87
38) 1,1,1-Trichloroethane	9.41	97	3956641	282.2865 ug/L	96
39) Cyclohexane	9.44	56	4944231	283.1597 ug/L	78
40) 1,1-Dichloropropene	9.61	75	3498434	296.7595 ug/L	97
41) Carbon Tetrachloride	9.74	117	3569183	287.2941 ug/L	99
42) Tert-Amyl-Methyl ether	9.71	73	6423712	287.8894 ug/L	92

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90734.D Vial: 11
Acq On : 2 Apr 2013 13:01 Operator: FJB
Sample : WG425304-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 13:23:39 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.91	62	2933651	267.7516 ug/L		94
46)	Benzene	9.94	78	10190969	290.4510 ug/L		99
47)	Trichloroethene	10.65	130	2725739	284.9812 ug/L		96
48)	Methylcyclohexane	10.73	83	3819038	272.9962 ug/L		86
49)	1,2-Dichloropropane	10.86	63	2771576	314.5741 ug/L		85
50)	1,4-Dioxane	11.13	88	42140	814.8850 ug/L		85
51)	Bromodichloromethane	11.14	83	3525016	314.3425 ug/L		98
52)	Dibromomethane	11.21	93	1412613	322.8292 ug/L		95
53)	2-Chloroethyl Vinyl Ether	11.41	63	1384619	365.6965 ug/L		95
54)	4-Methyl-2-Pentanone	11.45	58	820110	348.7157 ug/L		86
55)	cis-1,3-Dichloropropene	11.74	75	4218213	319.4609 ug/L		98
56)	Dimethyl Disulfide	11.97	79	2403147	295.1240 ug/L		100
59)	Toluene	12.13	91	10619452	277.5276 ug/L		93
60)	Ethyl Methacrylate	12.22	69	2665933	308.8169 ug/L		99
62)	trans-1,3-Dichloropropene	12.29	75	3609308	313.4139 ug/L		97
63)	1,1,2-Trichloroethane	12.50	97	2013314	314.4888 ug/L		99
64)	2-Hexanone	12.44	43	1257239	331.2026 ug/L	#	23
65)	1,3-Dichloropropane	12.78	76	3413271	309.0634 ug/L		100
66)	Tetrachloroethene	12.89	164	2305072	292.7499 ug/L		97
67)	Dibromochloromethane	13.14	129	2738373	327.2041 ug/L		99
68)	1,2-Dibromoethane	13.38	107	2134641	328.8925 ug/L		100
69)	1-Chlorohexane	13.46	91	3501183	276.4591 ug/L		87
70)	Chlorobenzene	13.84	112	7154631	281.5297 ug/L		98
71)	1,1,1,2-Tetrachloroethane	13.88	131	2702657	297.8889 ug/L		98
72)	Ethylbenzene	13.88	106	4013472	284.2273 ug/L		91
73)	m-,p-Xylene	13.96	106	9178113	541.4716 ug/L		83
74)	o-Xylene	14.49	106	4914721	292.0979 ug/L		97
75)	Styrene	14.52	104	8248772	303.9936 ug/L		98
76)	Bromoform	14.97	173	1801886	358.4896 ug/L		99
77)	Isopropylbenzene	14.88	105	11378850	275.7211 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.08	83	2460756	331.1714 ug/L		98
81)	1,2,3-Trichloropropane	15.25	110	710163	325.9111 ug/L		79
82)	trans-1,4-Dichloro-2-Buten	15.29	53	759788	301.8885 ug/L	#	25
83)	n-Propylbenzene	15.34	91	12999972	274.3172 ug/L		96
84)	Bromobenzene	15.47	156	3344380	298.8975 ug/L		93
85)	1,3,5-Trimethylbenzene	15.52	105	9917974	288.2593 ug/L		100
86)	2-Chlorotoluene	15.60	91	9149060	295.2957 ug/L		98
87)	4-Chlorotoluene	15.64	91	7779442	256.3098 ug/L		97
88)	a-Methylstyrene	15.89	118	5739249	281.5354 ug/L		95
89)	tert-Butylbenzene	15.95	134	2021487	281.7727 ug/L		98
90)	1,2,4-Trimethylbenzene	16.01	105	9878745	278.5981 ug/L		99
91)	sec-Butylbenzene	16.20	105	11261041	267.1270 ug/L		100
92)	p-Isopropyltoluene	16.35	119	9753029	282.7927 ug/L		99
93)	1,3-Dichlorobenzene	16.52	146	6088557	293.9236 ug/L		95
94)	1,4-Dichlorobenzene	16.65	146	6119090	287.8096 ug/L		96
95)	n-Butylbenzene	16.83	91	8406335	270.2382 ug/L		99
96)	1,2-Dichlorobenzene	17.10	146	5737989	295.4766 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	18.02	75	398251	320.8834 ug/L		97
98)	1,2,4-Trichlorobenzene	19.08	180	3932141	317.6738 ug/L		100
99)	Hexachlorobutadiene	19.22	225	1388848	255.6346 ug/L		92
100)	Naphthalene	19.42	128	8148469	375.9401 ug/L		99
101)	1,2,3-Trichlorobenzene	19.71	180	3541902	324.9084 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M90734.D 8260_WT.M Tue Apr 02 13:23:40 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90734.D Vial: 11
Acq On : 2 Apr 2013 13:01 Operator: FJB
Sample : WG425304-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 2 13:23 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 07:09:50 2013
Response via : Initial Calibration

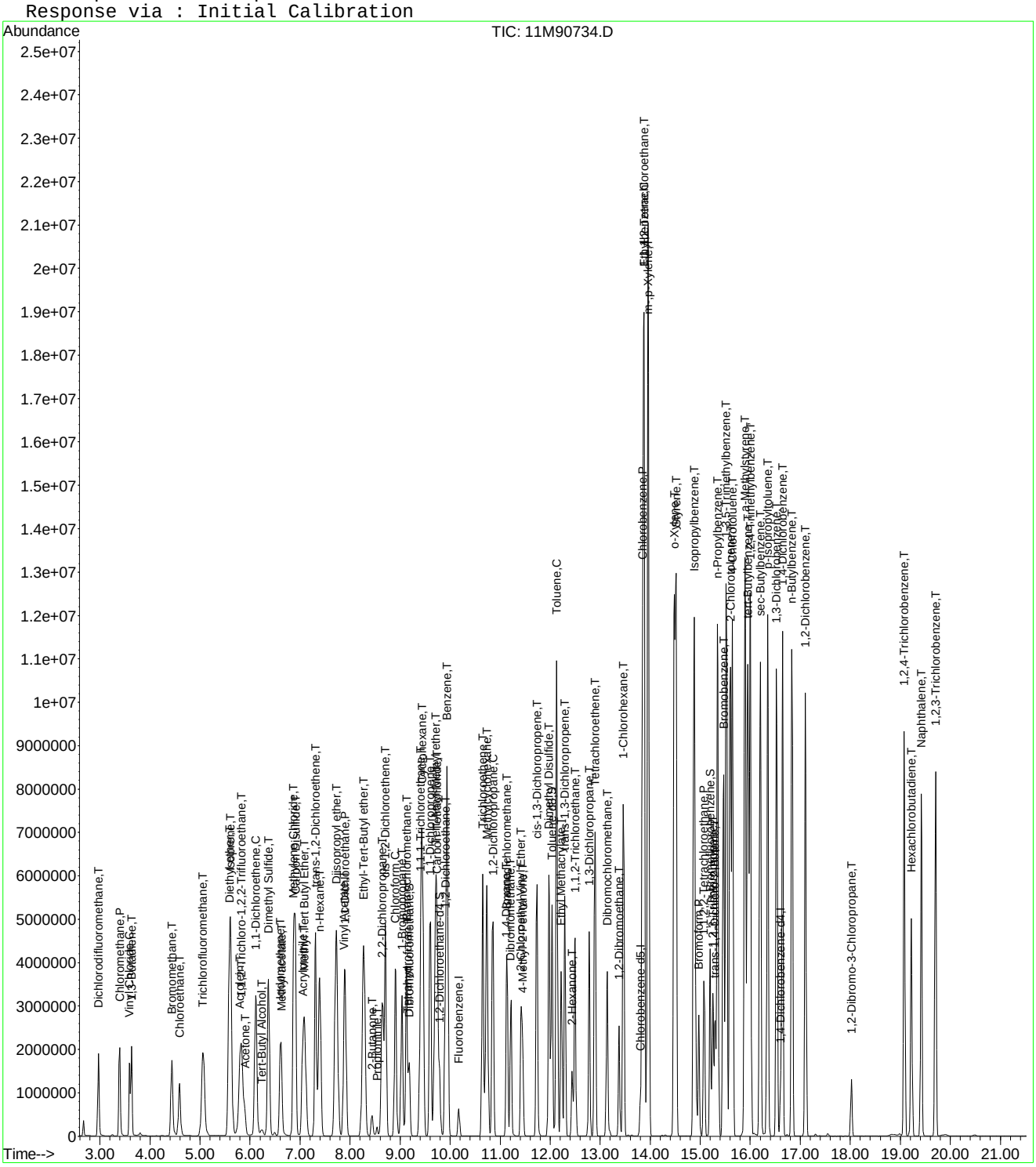

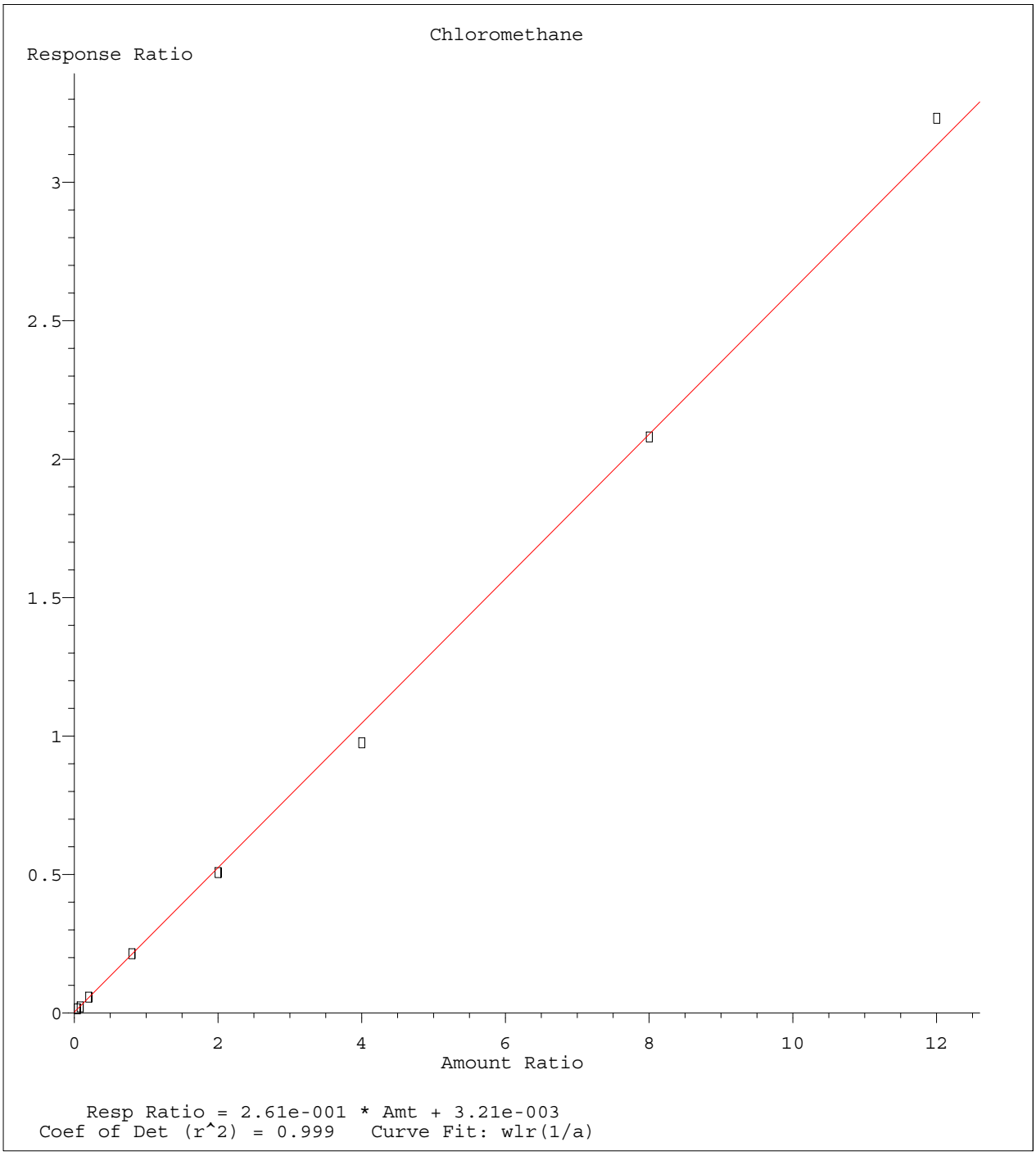

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Fri Apr 05 12:47:46 2013

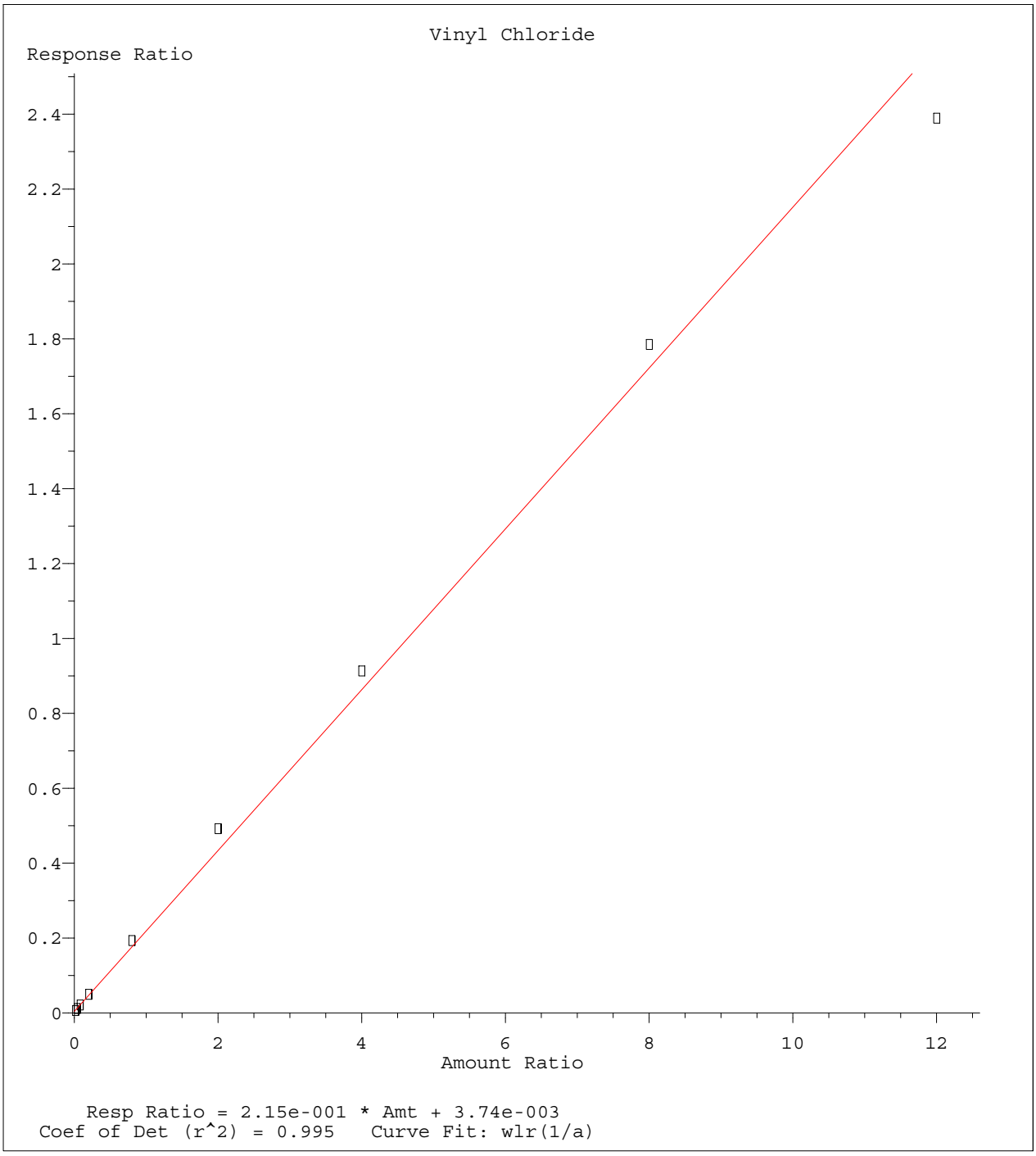

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Fri Apr 05 12:47:46 2013

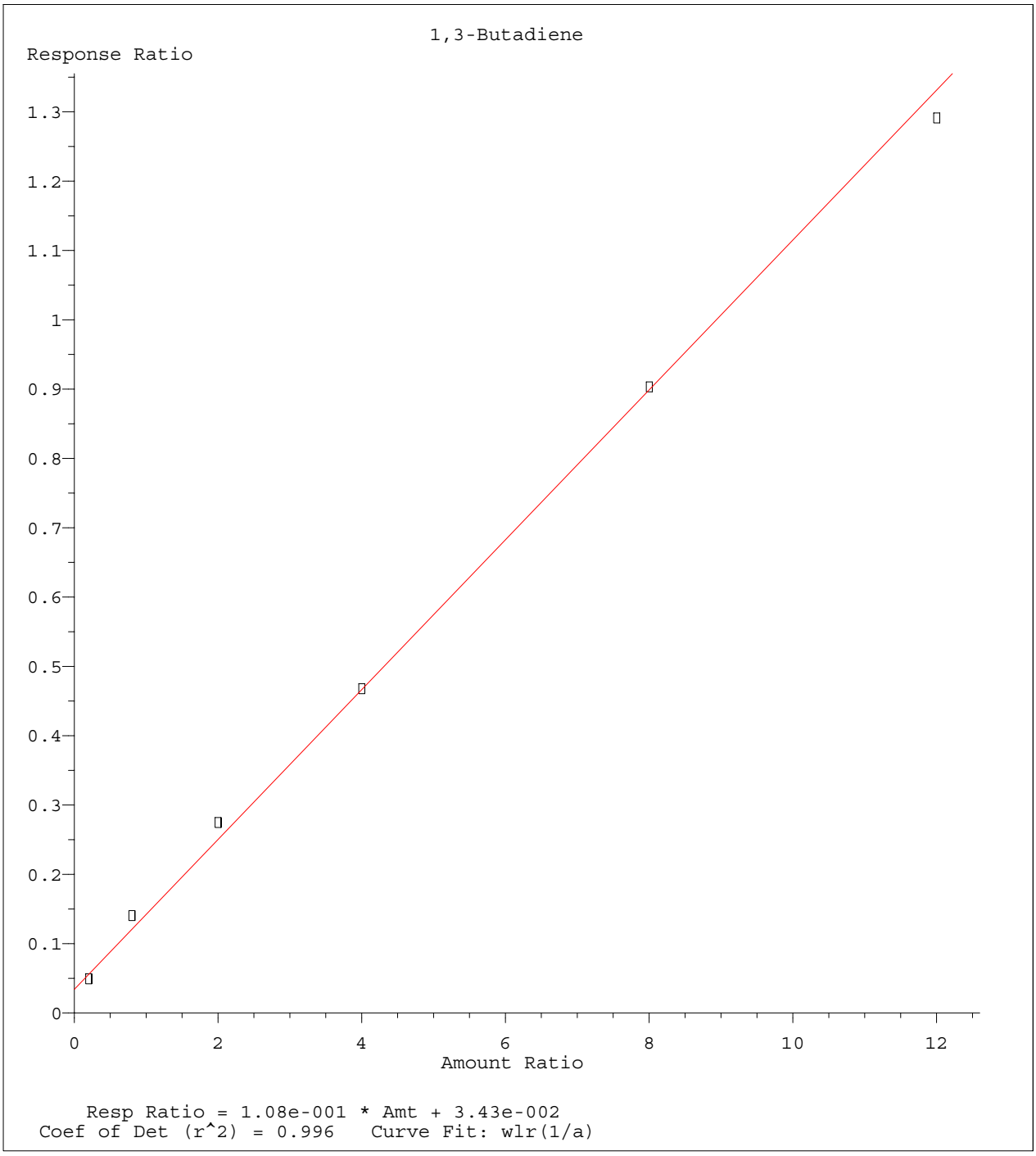

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Fri Apr 05 12:47:46 2013

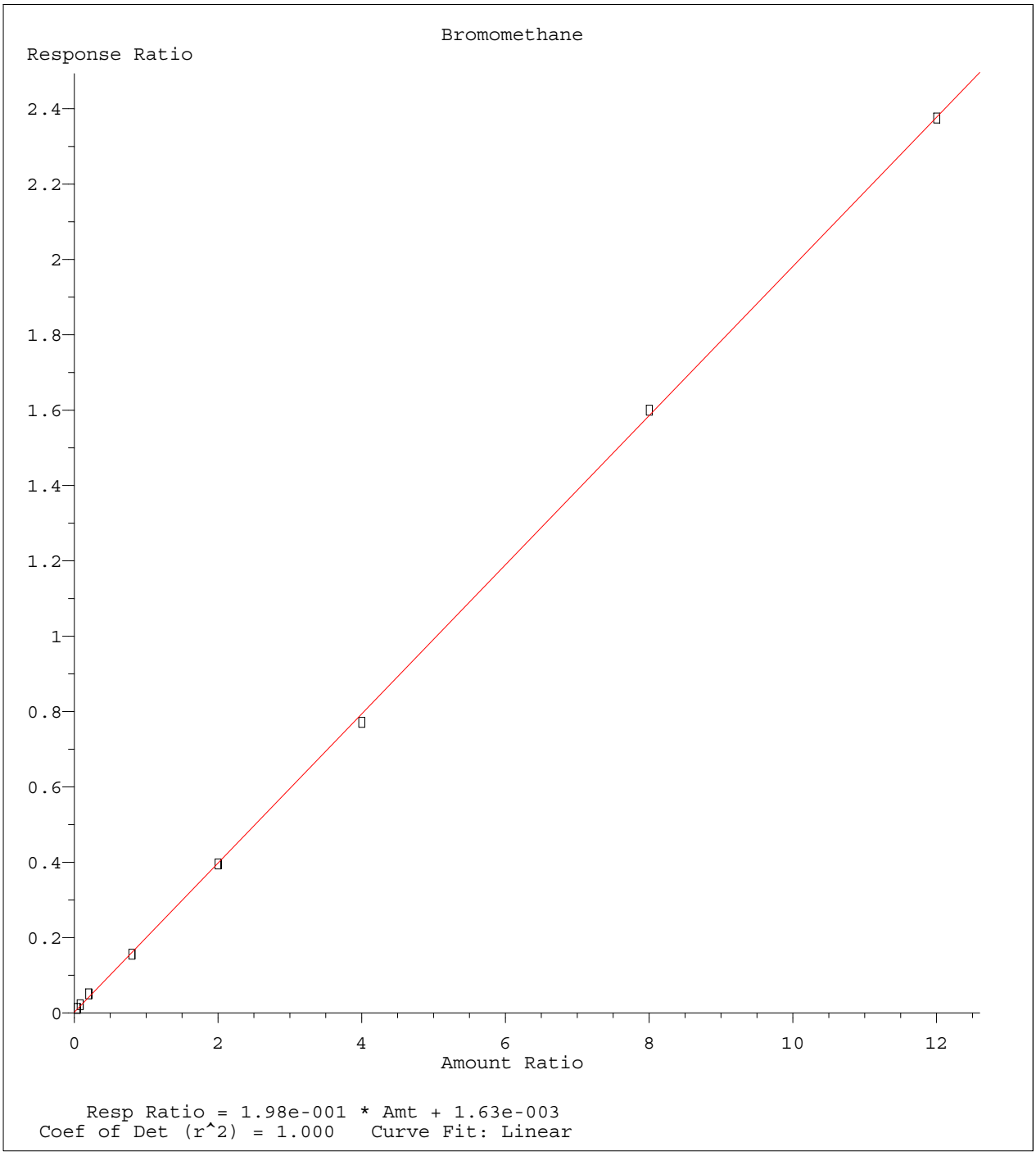

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Fri Apr 05 12:47:46 2013

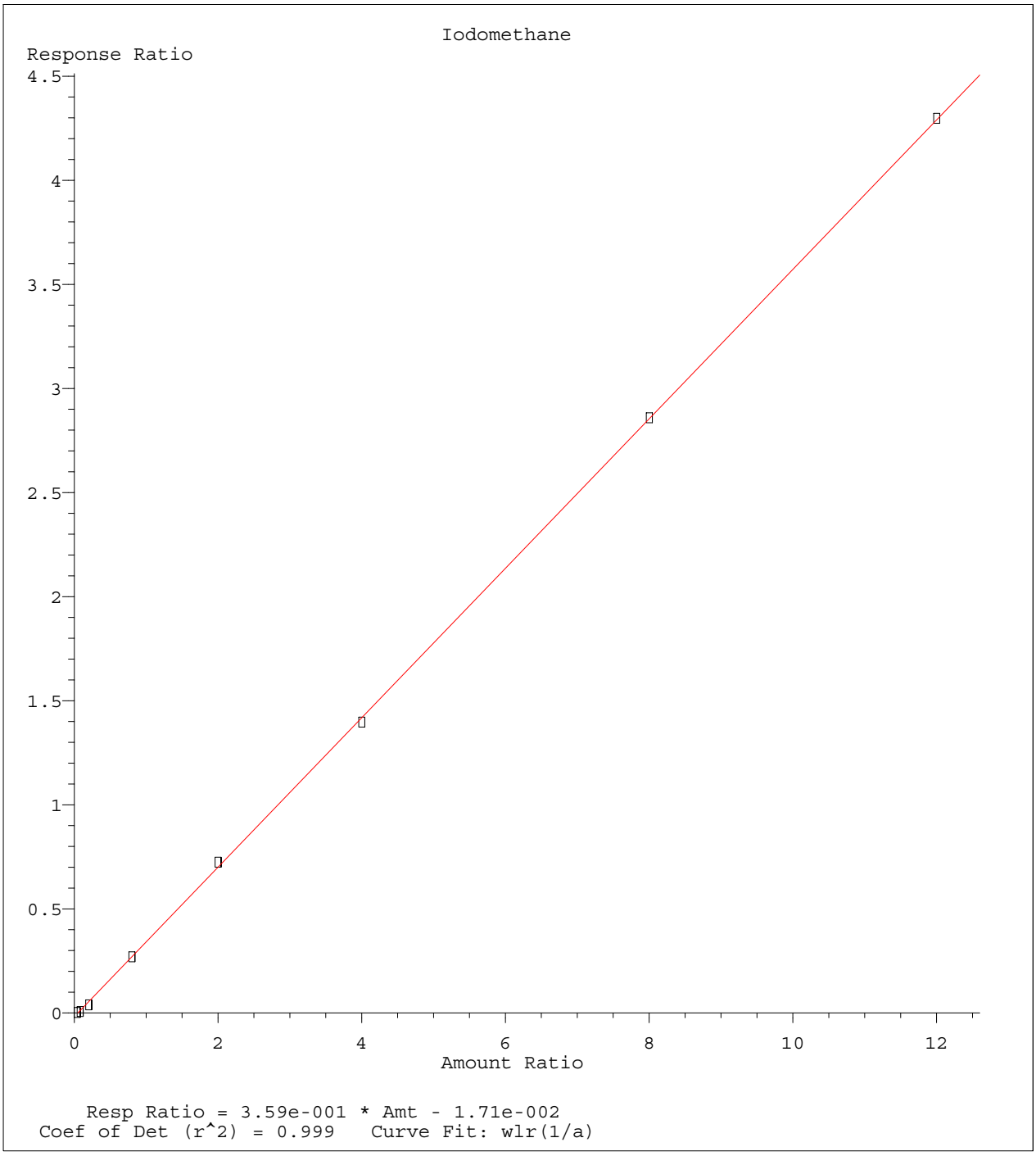

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Fri Apr 05 12:47:46 2013

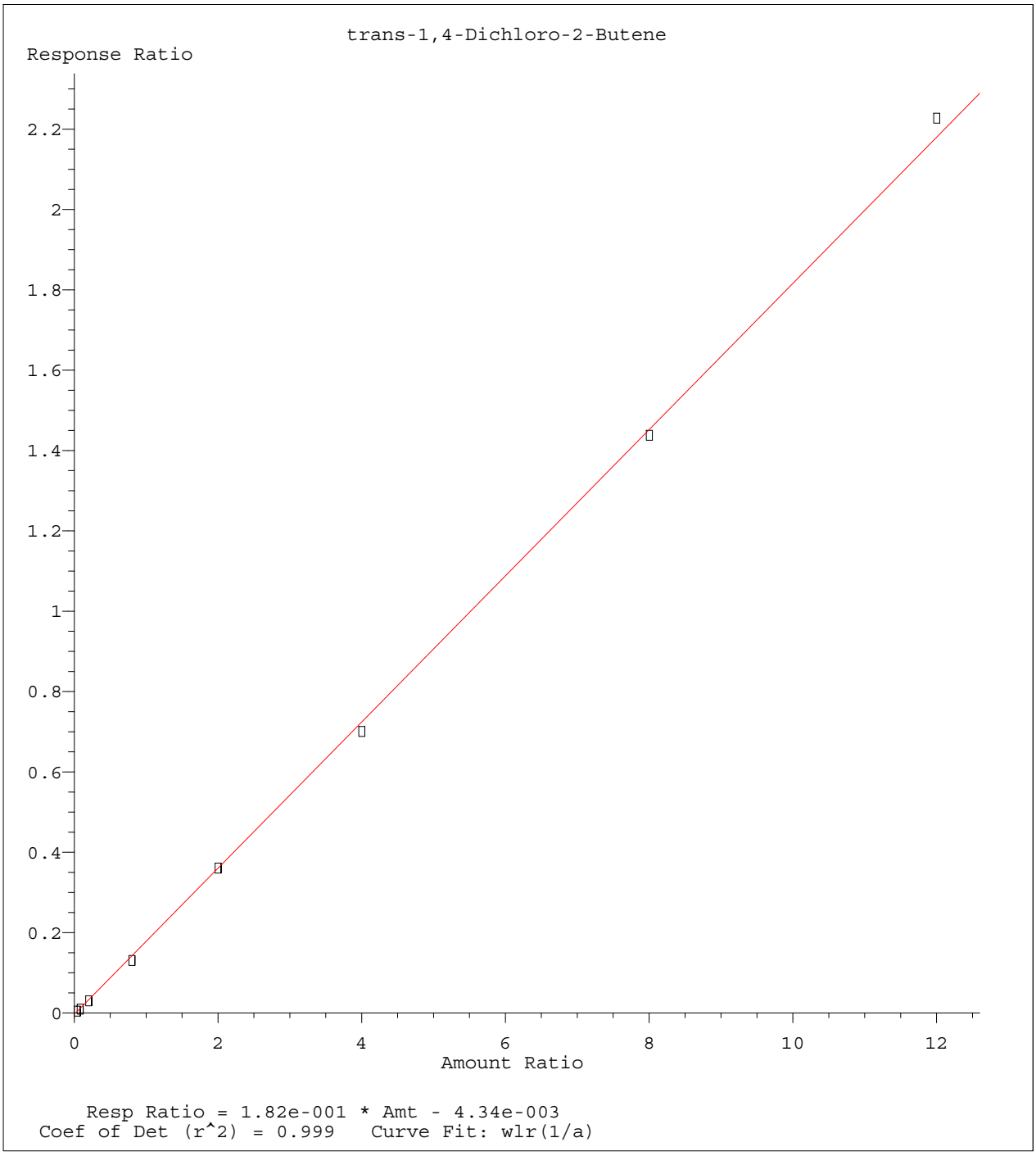

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Fri Apr 05 12:47:46 2013

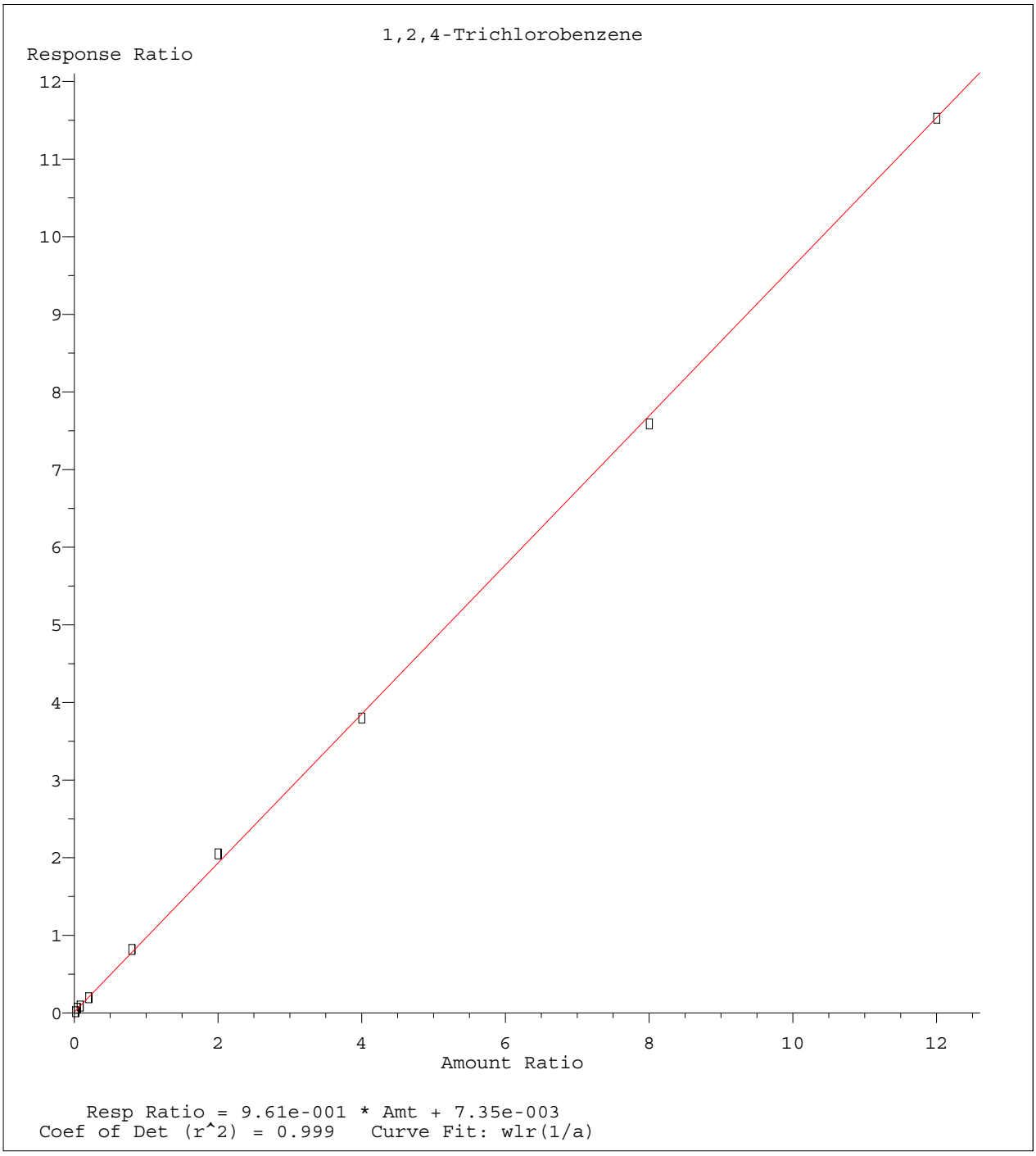

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Fri Apr 05 12:47:46 2013

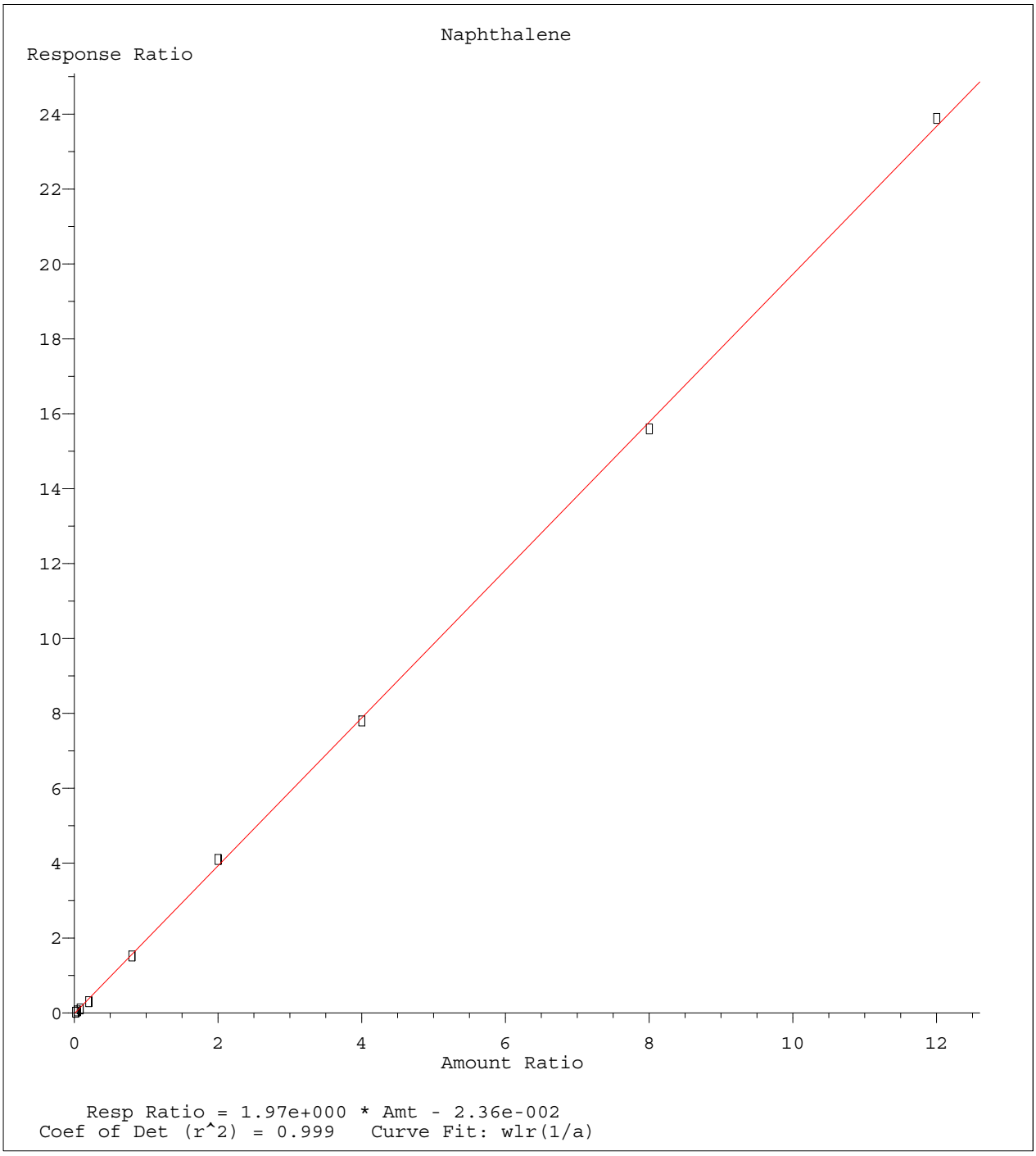

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Fri Apr 05 12:47:46 2013

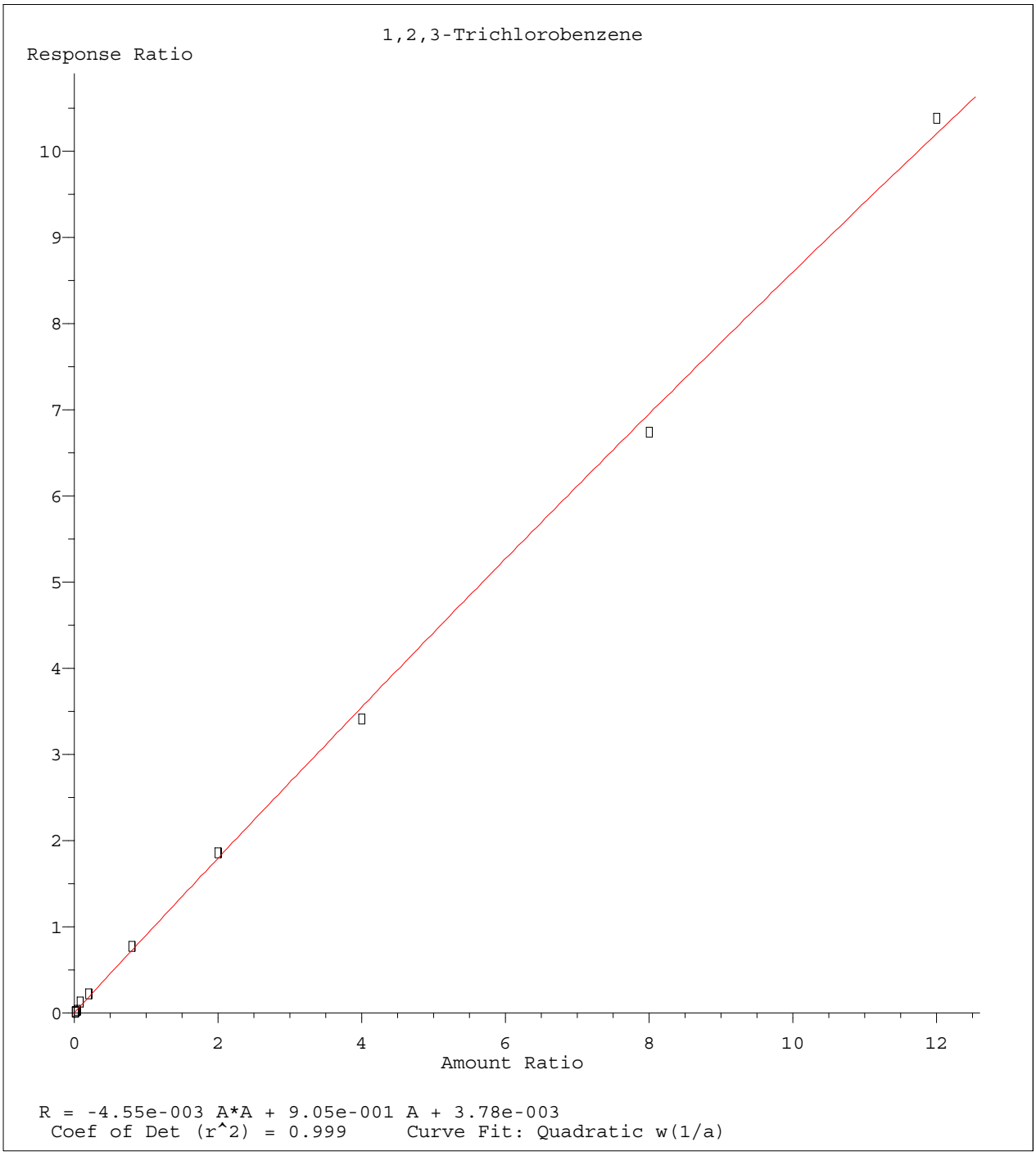

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Fri Apr 05 12:47:46 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90737.D Vial: 14
Acq On : 2 Apr 2013 16:35 Operator: FJB
Sample : WG425304-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD57021 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 16:57:33 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 15:06:00 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	842086	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.80	117	665018	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.61	152	361137	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.18	111	241303	26.1661 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.68%		
43) 1,2-Dichloroethane-d4	9.79	65	201090	23.9537 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.80%		
58) Toluene-d8	12.04	98	926962	26.4799 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.92%		
80) p-Bromofluorobenzene	15.20	95	345650	25.3921 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.56%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.97	85	557117	73.1849 ug/L	95
3) Chloromethane	3.39	50	504861	57.1456 ug/L	98
4) Vinyl Chloride	3.59	62	351841	48.2086 ug/L	97
5) 1,3-Butadiene	3.63	54	175216	40.1584 ug/L	95
6) Bromomethane	4.44	94	338796	50.6087 ug/L	99
7) Chloroethane	4.59	64	352271	52.8187 ug/L	98
8) Trichlorofluoromethane	5.07	101	705503	52.1022 ug/L	99
9) Diethyl ether	5.58	59	507085	71.6650 ug/L	89
10) Isoprene	5.60	67	702981	53.8710 ug/L	88
11) Acrolein	5.80	56	90631	325.5024 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	5.82	101	482694	57.0768 ug/L	98
13) Acetone	5.90	43	79263	34.0007 ug/L	82
14) 1,1-Dichloroethene	6.11	61	675395	49.0706 ug/L	99
15) Tert-Butyl Alcohol	6.24	59	104121	194.1677 ug/L	94
16) Dimethyl Sulfide	6.37	62	627312	56.2936 ug/L	96
17) Iodomethane	6.61	142	564411	47.8849 ug/L	87
18) Methyl acetate	6.63	43	234259	47.3369 ug/L	96
19) Methylene Chloride	6.87	84	475982	49.5105 ug/L	90
20) Carbon Disulfide	6.91	76	1565290	52.0296 ug/L	100
21) Acrylonitrile	7.04	53	362773	147.0541 ug/L	99
22) Methyl Tert Butyl Ether	7.08	73	1041478	50.5248 ug/L	89
23) trans-1,2-Dichloroethene	7.31	96	500277	51.1177 ug/L	92
24) n-Hexane	7.39	57	690518	54.1179 ug/L	91
25) Diisopropyl ether	7.72	45	2858175	85.2422 ug/L	87
26) Vinyl Acetate	7.88	43	687263	50.0029 ug/L	93
27) 1,1-Dichloroethane	7.90	63	831474	49.0714 ug/L	98
28) Ethyl-Tert-Butyl ether	8.27	59	2487363	85.7964 ug/L	93
29) 2-Butanone	8.44	43	125145	46.6041 ug/L	96
30) Propionitrile	8.54	54	84845	93.5862 ug/L	93
31) 2,2-Dichloropropane	8.64	77	678666	48.9540 ug/L	100
32) cis-1,2-Dichloroethene	8.71	96	541921	51.5534 ug/L	93
33) Chloroform	8.90	83	793917	48.8130 ug/L	97
34) 1-Bromopropane	9.04	122	112055	50.8913 ug/L	100
35) Bromochloromethane	9.13	130	301180	49.6399 ug/L	83
36) Tetrahydrofuran	9.15	42	145816	84.3622 ug/L	88
38) 1,1,1-Trichloroethane	9.41	97	708023	50.1670 ug/L	96
39) Cyclohexane	9.44	56	903282	50.8492 ug/L	79
40) 1,1-Dichloropropene	9.61	75	642724	51.8095 ug/L	97
41) Carbon Tetrachloride	9.74	117	637067	51.0949 ug/L	99
42) Tert-Amyl-Methyl ether	9.71	73	1997154	90.0050 ug/L	92

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90737.D Vial: 14
Acq On : 2 Apr 2013 16:35 Operator: FJB
Sample : WG425304-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD57021 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 02 16:57:33 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 15:06:00 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.91	62	502883	48.3796 ug/L		94
46)	Benzene	9.94	78	1913907	48.9814 ug/L		98
47)	Trichloroethene	10.65	130	543468	54.5358 ug/L		96
48)	Methylcyclohexane	10.73	83	741750	55.4282 ug/L		88
49)	1,2-Dichloropropane	10.86	63	500147	50.4474 ug/L		84
50)	1,4-Dioxane	11.13	88	12944	204.0660 ug/L		81
51)	Bromodichloromethane	11.14	83	578803	47.5897 ug/L		98
52)	Dibromomethane	11.21	93	232716	47.5911 ug/L		94
53)	2-Chloroethyl Vinyl Ether	11.42	63	219537	50.0697 ug/L		94
54)	4-Methyl-2-Pentanone	11.45	58	122262	48.3555 ug/L		86
55)	cis-1,3-Dichloropropene	11.74	75	766174	52.6723 ug/L		99
56)	Dimethyl Disulfide	11.97	79	422658	56.2857 ug/L		97
59)	Toluene	12.13	91	2049665	47.6943 ug/L		98
60)	Ethyl Methacrylate	12.22	69	450624	54.7709 ug/L		98
62)	trans-1,3-Dichloropropene	12.29	75	583242	47.4253 ug/L		96
63)	1,1,2-Trichloroethane	12.50	97	349388	50.0147 ug/L		100
64)	2-Hexanone	12.44	43	183873	48.2538 ug/L	#	23
65)	1,3-Dichloropropane	12.78	76	575443	48.1893 ug/L		99
66)	Tetrachloroethene	12.89	164	428593	50.2886 ug/L		95
67)	Dibromochloromethane	13.14	129	435549	47.2873 ug/L		99
68)	1,2-Dibromoethane	13.38	107	347377	49.1630 ug/L		100
69)	1-Chlorohexane	13.46	91	671690	51.6440 ug/L		88
70)	Chlorobenzene	13.84	112	1245435	44.6816 ug/L		100
71)	1,1,1,2-Tetrachloroethane	13.88	131	484643	49.4965 ug/L		98
72)	Ethylbenzene	13.88	106	736826	48.3653 ug/L		98
73)	m-,p-Xylene	13.96	106	1739261	95.7759 ug/L		100
74)	o-Xylene	14.48	106	817592	45.3250 ug/L		99
75)	Styrene	14.52	104	1507794	47.7933 ug/L		97
76)	Bromoform	14.97	173	280527	48.8858 ug/L		99
77)	Isopropylbenzene	14.88	105	2036690	46.3580 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.08	83	388458	48.1890 ug/L		98
81)	1,2,3-Trichloropropane	15.25	110	108862	44.1104 ug/L		86
82)	trans-1,4-Dichloro-2-Buten	15.29	53	95108	36.7777 ug/L	#	38
83)	n-Propylbenzene	15.34	91	2370507	44.1355 ug/L		99
84)	Bromobenzene	15.47	156	577864	45.8661 ug/L		95
85)	1,3,5-Trimethylbenzene	15.52	105	1923913	50.1253 ug/L		97
86)	2-Chlorotoluene	15.60	91	1597021	44.5383 ug/L		96
87)	4-Chlorotoluene	15.64	91	1292427	41.1825 ug/L		96
88)	a-Methylstyrene	15.89	118	1086550	54.1788 ug/L		98
89)	tert-Butylbenzene	15.95	134	340982	44.4703 ug/L		94
90)	1,2,4-Trimethylbenzene	16.00	105	1935261	46.9875 ug/L		97
91)	sec-Butylbenzene	16.20	105	2028009	44.2747 ug/L		99
92)	p-Isopropyltoluene	16.35	119	1781827	46.8381 ug/L		99
93)	1,3-Dichlorobenzene	16.52	146	1030190	44.5354 ug/L		99
94)	1,4-Dichlorobenzene	16.65	146	1118327	47.2924 ug/L		99
95)	n-Butylbenzene	16.83	91	1683015	52.9228 ug/L		98
96)	1,2-Dichlorobenzene	17.10	146	966909	44.4516 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	18.02	75	60295	46.1825 ug/L		93
98)	1,2,4-Trichlorobenzene	19.08	180	718586	50.7516 ug/L		99
99)	Hexachlorobutadiene	19.22	225	281888	55.6983 ug/L		91
100)	Naphthalene	19.42	128	1317379	46.4790 ug/L		99
101)	1,2,3-Trichlorobenzene	19.71	180	623930	48.0908 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M90737.D 8260_WT.M Tue Apr 02 16:57:33 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040213\11M90737.D Vial: 14
Acq On : 2 Apr 2013 16:35 Operator: FJB
Sample : WG425304-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD57021 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 2 16:57 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Tue Apr 02 15:06:00 2013
Response via : Initial Calibration

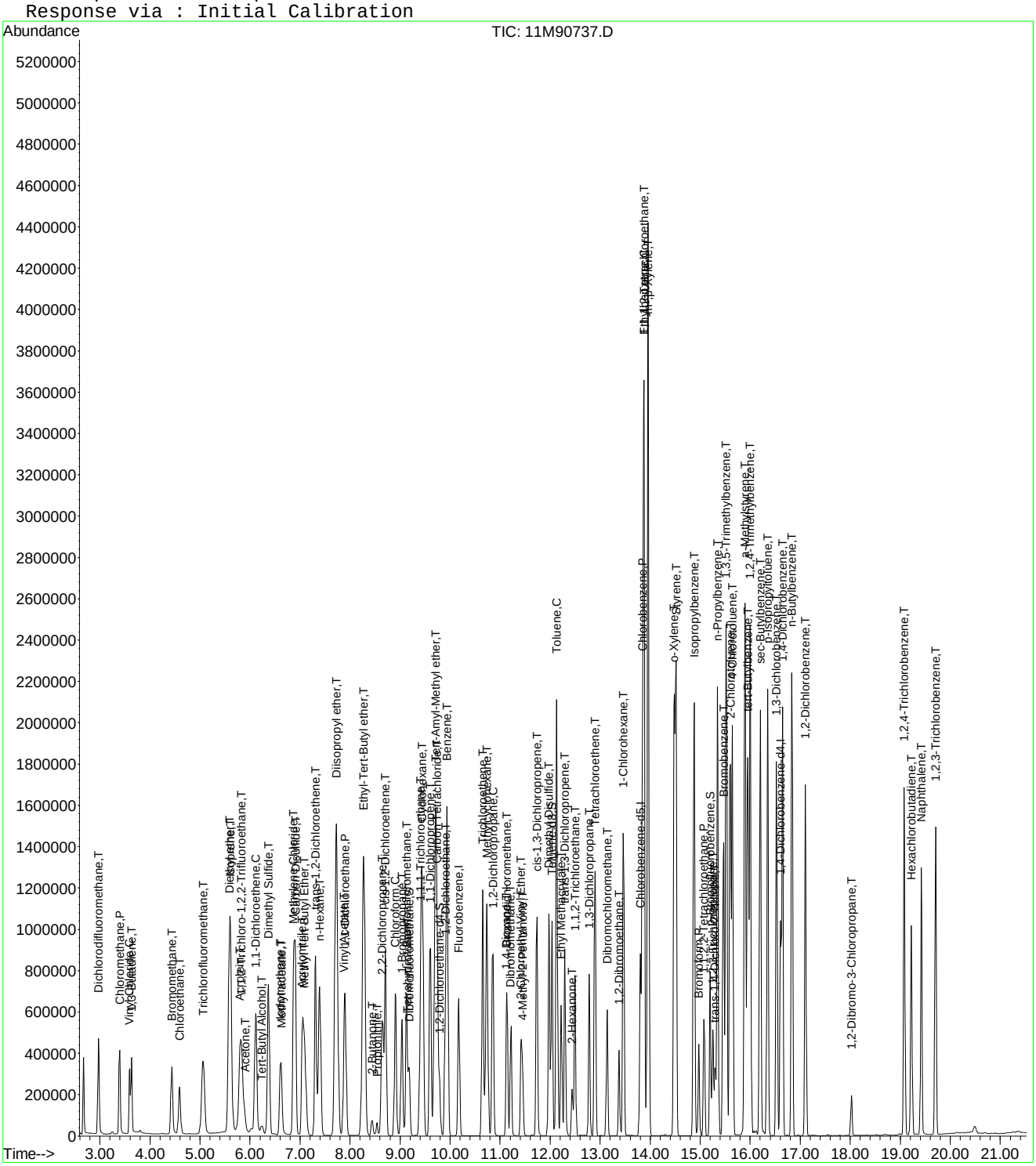

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040213\11M90737.D Vial: 14
Acq On : 2 Apr 2013 16:35 Operator: FJB
Sample : WG425304-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD57021 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	103	0.00
2	T	Dichlorodifluoromethane	50.0000	73.1849	-46.4#	137	0.00
3	P	Chloromethane	50.0000	57.1456	-14.3	122	0.00
4	C	Vinyl Chloride	50.0000	48.2086	3.6	88	0.00
5	T	1,3-Butadiene	50.0000	40.1584	19.7	78	0.00
6	T	Bromomethane	50.0000	50.6087	-1.2	105	-0.01
7	T	Chloroethane	50.0000	52.8187	-5.6	105	-0.01
8	T	Trichlorofluoromethane	50.0000	52.1022	-4.2	100	0.00
9	T	Diethyl ether	100.0000	71.6650	28.3#	72	0.01
10	T	Isoprene	50.0000	53.8710	-7.7	106	-0.01
11	T	Acrolein	100.0000	325.5023	-225.5#	323	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	57.0768	-14.2	108	0.00
13	T	Acetone	50.0000	34.0007	32.0#	70	0.01
14	C	1,1-Dichloroethene	50.0000	49.0706	1.9	99	-0.01
15	T	Tert-Butyl Alcohol	200.0000	194.1677	2.9	100	0.01
16	T	Dimethyl Sulfide	50.0000	56.2936	-12.6	113	0.00
17	T	Iodomethane	50.0000	47.8849	4.2	96	0.00
18	T	Methyl acetate	50.0000	47.3369	5.3	97	0.00
19	T	Methylene Chloride	50.0000	49.5105	1.0	100	-0.01
20	T	Carbon Disulfide	50.0000	52.0296	-4.1	105	0.00
21	T	Acrylonitrile	100.0000	147.0541	-47.1#	145	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.5248	-1.0	98	0.00
23	T	trans-1,2-Dichloroethene	50.0000	51.1177	-2.2	103	0.00
24	T	n-Hexane	50.0000	54.1179	-8.2	105	0.00
25	T	Diisopropyl ether	100.0000	85.2422	14.8	87	0.00
26	T	Vinyl Acetate	50.0000	50.0029	-0.0	96	0.00
27	P	1,1-Dichloroethane	50.0000	49.0714	1.9	98	-0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	85.7964	14.2	87	0.00
29	T	2-Butanone	50.0000	46.6041	6.8	93	0.00
30	T	Propionitrile	100.0000	93.5862	6.4	92	0.01
31	T	2,2-Dichloropropane	50.0000	48.9540	2.1	97	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.5534	-3.1	103	0.00
33	C	Chloroform	50.0000	48.8130	2.4	98	-0.01
34	T	1-Bromopropane	50.0000	50.8914	-1.8	100	0.00
35	T	Bromochloromethane	50.0000	49.6399	0.7	97	0.00
36	T	Tetrahydrofuran	100.0000	84.3622	15.6	82	0.00
37	S	Dibromofluoromethane	25.0000	26.1661	-4.7	103	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.1670	-0.3	99	-0.01
39	T	Cyclohexane	50.0000	50.8492	-1.7	101	-0.01
40	T	1,1-Dichloropropene	50.0000	51.8095	-3.6	101	0.00
41	T	Carbon Tetrachloride	50.0000	51.0949	-2.2	97	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	90.0050	10.0	91	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.9537	4.2	96	0.00
44	T	Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	50.0000	48.3796	3.2	95	0.00
46	T	Benzene	50.0000	48.9814	2.0	100	0.00
47	T	Trichloroethene	50.0000	54.5358	-9.1	108	0.00
48	T	Methylcyclohexane	50.0000	55.4282	-10.9	110	0.00
49	C	1,2-Dichloropropane	50.0000	50.4474	-0.9	100	0.00
50	T	1,4-Dioxane	200.0000	204.0660	-2.0	108	0.00
51	T	Bromodichloromethane	50.0000	47.5897	4.8	93	0.00
52	T	Dibromomethane	50.0000	47.5911	4.8	93	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	50.0697	-0.1	96	0.00
54	T	4-Methyl-2-Pentanone	50.0000	48.3555	3.3	93	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040213\11M90737.D Vial: 14
Acq On : 2 Apr 2013 16:35 Operator: FJB
Sample : WG425304-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD57021 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.6723	-5.3	101	0.00
56	T	Dimethyl Disulfide	50.0000	56.2858	-12.6	106	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
58	S	Toluene-d8	25.0000	26.4799	-5.9	107	0.00
59	C	Toluene	50.0000	47.6943	4.6	100	0.00
60	T	Ethyl Methacrylate	50.0000	54.7709	-9.5	103	0.00
61	T	Paraldehyde	-1.0000	0.0000	0.0	0	-12.30#
62	T	trans-1,3-Dichloropropene	50.0000	47.4253	5.1	91	0.00
63	T	1,1,2-Trichloroethane	50.0000	50.0147	-0.0	96	0.00
64	T	2-Hexanone	50.0000	48.2538	3.5	90	0.00
65	T	1,3-Dichloropropane	50.0000	48.1893	3.6	94	0.00
66	T	Tetrachloroethene	50.0000	50.2886	-0.6	100	0.00
67	T	Dibromochloromethane	50.0000	47.2873	5.4	91	0.00
68	T	1,2-Dibromoethane	50.0000	49.1630	1.7	93	0.00
69	T	1-Chlorohexane	50.0000	51.6440	-3.3	110	0.00
70	P	Chlorobenzene	50.0000	44.6816	10.6	92	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.4965	1.0	98	0.00
72	C	Ethylbenzene	50.0000	48.3653	3.3	97	0.00
73	T	m-,p-Xylene	100.0000	95.7759	4.2	96	0.00
74	T	o-Xylene	50.0000	45.3250	9.3	91	0.00
75	T	Styrene	50.0000	47.7933	4.4	99	0.00
76	P	Bromoform	50.0000	48.8858	2.2	91	0.00
77	T	Isopropylbenzene	50.0000	46.3580	7.3	92	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	48.1890	3.6	92	0.00
80	S	p-Bromofluorobenzene	25.0000	25.3921	-1.6	107	0.00
81	T	1,2,3-Trichloropropane	50.0000	44.1104	11.8	89	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	36.7777	26.4#	77	0.00
83	T	n-Propylbenzene	50.0000	44.1355	11.7	91	0.00
84	T	Bromobenzene	50.0000	45.8661	8.3	97	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.1253	-0.3	103	0.00
86	T	2-Chlorotoluene	50.0000	44.5383	10.9	104	0.01
87	T	4-Chlorotoluene	50.0000	41.1825	17.6	77	0.00
88	T	a-Methylstyrene	50.0000	54.1788	-8.4	110	0.00
89	T	tert-Butylbenzene	50.0000	44.4703	11.1	92	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	46.9875	6.0	103	0.00
91	T	sec-Butylbenzene	50.0000	44.2747	11.5	94	0.00
92	T	p-Isopropyltoluene	50.0000	46.8381	6.3	96	0.00
93	T	1,3-Dichlorobenzene	50.0000	44.5354	10.9	92	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.2923	5.4	98	0.00
95	T	n-Butylbenzene	50.0000	52.9228	-5.8	107	0.00
96	T	1,2-Dichlorobenzene	50.0000	44.4516	11.1	91	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	46.1825	7.6	88	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.7516	-1.5	103	0.00
99	T	Hexachlorobutadiene	50.0000	55.6983	-11.4	111	0.00
100	T	Naphthalene	50.0000	46.4790	7.0	94	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	48.0908	3.8	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M90737.D 8260_WT.M Fri Apr 05 13:06:08 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041013\11M91015.D Vial: 2
Acq On : 10 Apr 2013 16:11 Operator: FJB
Sample : WG426250-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD57195 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 10 16:32:59 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	1026940	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.80	117	770863	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.61	152	406126	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.18	111	275819	24.5252 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.12%		
43) 1,2-Dichloroethane-d4	9.79	65	229389	22.4061 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.64%		
58) Toluene-d8	12.04	98	1059124	26.1010 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.40%		
80) p-Bromofluorobenzene	15.20	95	390883	25.5341 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.98	85	454648	48.9736 ug/L	96
3) Chloromethane	3.39	50	540147	50.0965 ug/L	99
4) Vinyl Chloride	3.60	62	490812	55.2074 ug/L	98
5) 1,3-Butadiene	3.65	54	328460	65.9907 ug/L	91
6) Bromomethane	4.45	94	329476	40.3156 ug/L	99
7) Chloroethane	4.60	64	398053	48.9399 ug/L	99
8) Trichlorofluoromethane	5.08	101	843751	51.0955 ug/L	99
9) Diethyl ether	5.58	59	761675	88.2689 ug/L	87
10) Isoprene	5.61	67	731630	45.9742 ug/L	85
11) Acrolein	5.80	56	33718	99.3003 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	5.83	101	518804	50.3040 ug/L	97
13) Acetone	5.89	43	126028	44.3298 ug/L	82
14) 1,1-Dichloroethene	6.12	61	818985	48.7923 ug/L	99
15) Tert-Butyl Alcohol	6.22	59	97845	149.6197 ug/L	97
16) Dimethyl Sulfide	6.37	62	575485	42.3468 ug/L	100
17) Iodomethane	6.62	142	582683	40.7197 ug/L	89
18) Methyl acetate	6.63	43	270102	44.7551 ug/L	93
19) Methylene Chloride	6.88	84	548212	46.7592 ug/L	83
20) Carbon Disulfide	6.91	76	1613490	43.9778 ug/L	99
21) Acrylonitrile	7.05	53	135336	44.9849 ug/L	97
22) Methyl Tert Butyl Ether	7.08	73	1109898	44.1519 ug/L	88
23) trans-1,2-Dichloroethene	7.31	96	568536	47.6354 ug/L	89
24) n-Hexane	7.39	57	708400	45.5256 ug/L	91
25) Diisopropyl ether	7.72	45	3770276	92.2042 ug/L	87
26) Vinyl Acetate	7.88	43	551583	32.9074 ug/L	92
27) 1,1-Dichloroethane	7.91	63	1006014	48.6850 ug/L	97
28) Ethyl-Tert-Butyl ether	8.27	59	3182603	90.0169 ug/L	93
29) 2-Butanone	8.44	43	128885	39.3572 ug/L	95
30) Propionitrile	8.54	54	91340	82.6148 ug/L	93
31) 2,2-Dichloropropane	8.65	77	816013	48.2659 ug/L	100
32) cis-1,2-Dichloroethene	8.72	96	614476	47.9333 ug/L	90
33) Chloroform	8.91	83	942865	47.5359 ug/L	97
34) 1-Bromopropane	9.05	122	123027	45.8168 ug/L	99
35) Bromochloromethane	9.13	130	349339	47.2132 ug/L	79
36) Tetrahydrofuran	9.15	42	172278	81.7304 ug/L	84
38) 1,1,1-Trichloroethane	9.42	97	852413	49.5259 ug/L	97
39) Cyclohexane	9.45	56	982670	45.3607 ug/L	77
40) 1,1-Dichloropropene	9.61	75	752280	49.7251 ug/L	98
41) Carbon Tetrachloride	9.74	117	783282	51.5136 ug/L	99
42) Tert-Amyl-Methyl ether	9.71	73	2372977	87.6920 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M91015.D 8260_WT.M Wed Apr 10 16:33:00 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041013\11M91015.D Vial: 2
Acq On : 10 Apr 2013 16:11 Operator: FJB
Sample : WG426250-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD57195 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 10 16:32:59 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.91	62	591913	46.6943 ug/L		94
46)	Benzene	9.95	78	2239021	46.9872 ug/L		97
47)	Trichloroethene	10.65	130	592091	48.7200 ug/L		97
48)	Methylcyclohexane	10.73	83	750487	45.9862 ug/L		85
49)	1,2-Dichloropropane	10.86	63	571556	47.2728 ug/L		86
50)	1,4-Dioxane	11.13	88	12824	165.7819 ug/L		73
51)	Bromodichloromethane	11.14	83	708287	47.7533 ug/L		97
52)	Dibromomethane	11.22	93	264006	44.2715 ug/L		94
53)	2-Chloroethyl Vinyl Ether	11.43	63	210944	39.4499 ug/L		95
54)	4-Methyl-2-Pentanone	11.45	58	124493	40.3748 ug/L		86
55)	cis-1,3-Dichloropropene	11.74	75	854356	48.1621 ug/L		99
56)	Dimethyl Disulfide	11.98	79	422401	46.1260 ug/L		97
59)	Toluene	12.13	91	2380643	47.7897 ug/L		97
60)	Ethyl Methacrylate	12.22	69	417592	43.7869 ug/L		95
62)	trans-1,3-Dichloropropene	12.29	75	690289	48.4227 ug/L		97
63)	1,1,2-Trichloroethane	12.50	97	377344	46.5997 ug/L		100
64)	2-Hexanone	12.44	43	192770	43.6424 ug/L	#	24
65)	1,3-Dichloropropane	12.78	76	641437	46.3402 ug/L		97
66)	Tetrachloroethene	12.89	164	498860	50.4963 ug/L		97
67)	Dibromochloromethane	13.14	129	514331	48.1733 ug/L		100
68)	1,2-Dibromoethane	13.38	107	382968	46.7580 ug/L		99
69)	1-Chlorohexane	13.46	91	670168	44.4520 ug/L		84
70)	Chlorobenzene	13.85	112	1563476	48.3899 ug/L		100
71)	1,1,1,2-Tetrachloroethane	13.88	131	563810	49.6754 ug/L		99
72)	Ethylbenzene	13.88	106	861789	48.8007 ug/L		98
73)	m-,p-Xylene	13.96	106	2094029	99.4787 ug/L		99
74)	o-Xylene	14.49	106	1031132	49.3142 ug/L		98
75)	Styrene	14.52	104	1718147	46.9831 ug/L		99
76)	Bromoform	14.97	173	314904	47.3416 ug/L		97
77)	Isopropylbenzene	14.88	105	2544008	49.9545 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.08	83	410566	45.2895 ug/L		98
81)	1,2,3-Trichloropropane	15.25	110	120741	43.5041 ug/L		78
82)	trans-1,4-Dichloro-2-Buten	15.30	53	113046	38.8377 ug/L	#	26
83)	n-Propylbenzene	15.34	91	2992093	49.5374 ug/L		99
84)	Bromobenzene	15.47	156	669842	47.2769 ug/L		96
85)	1,3,5-Trimethylbenzene	15.52	105	2134280	49.4464 ug/L		97
86)	2-Chlorotoluene	15.60	91	1929745	47.8557 ug/L		95
87)	4-Chlorotoluene	15.64	91	1699200	48.1463 ug/L		94
88)	a-Methylstyrene	15.89	118	1077959	47.7962 ug/L		97
89)	tert-Butylbenzene	15.95	134	426883	49.5061 ug/L		99
90)	1,2,4-Trimethylbenzene	16.00	105	2141230	46.2293 ug/L		98
91)	sec-Butylbenzene	16.20	105	2470530	47.9609 ug/L		99
92)	p-Isopropyltoluene	16.35	119	2122867	49.6213 ug/L		100
93)	1,3-Dichlorobenzene	16.52	146	1268551	48.7649 ug/L		99
94)	1,4-Dichlorobenzene	16.65	146	1271489	47.8130 ug/L		99
95)	n-Butylbenzene	16.83	91	1785225	49.9182 ug/L		97
96)	1,2-Dichlorobenzene	17.10	146	1150232	47.0217 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	18.02	75	63741	43.4137 ug/L		98
98)	1,2,4-Trichlorobenzene	19.08	180	747000	47.6673 ug/L		99
99)	Hexachlorobutadiene	19.22	225	280369	49.2614 ug/L		91
100)	Naphthalene	19.42	128	1393265	43.7288 ug/L		99
101)	1,2,3-Trichlorobenzene	19.71	180	642887	44.0176 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M91015.D 8260_WT.M Wed Apr 10 16:33:00 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041013\11M91015.D Vial: 2
Acq On : 10 Apr 2013 16:11 Operator: FJB
Sample : WG426250-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD57195 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 10 16:32 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration

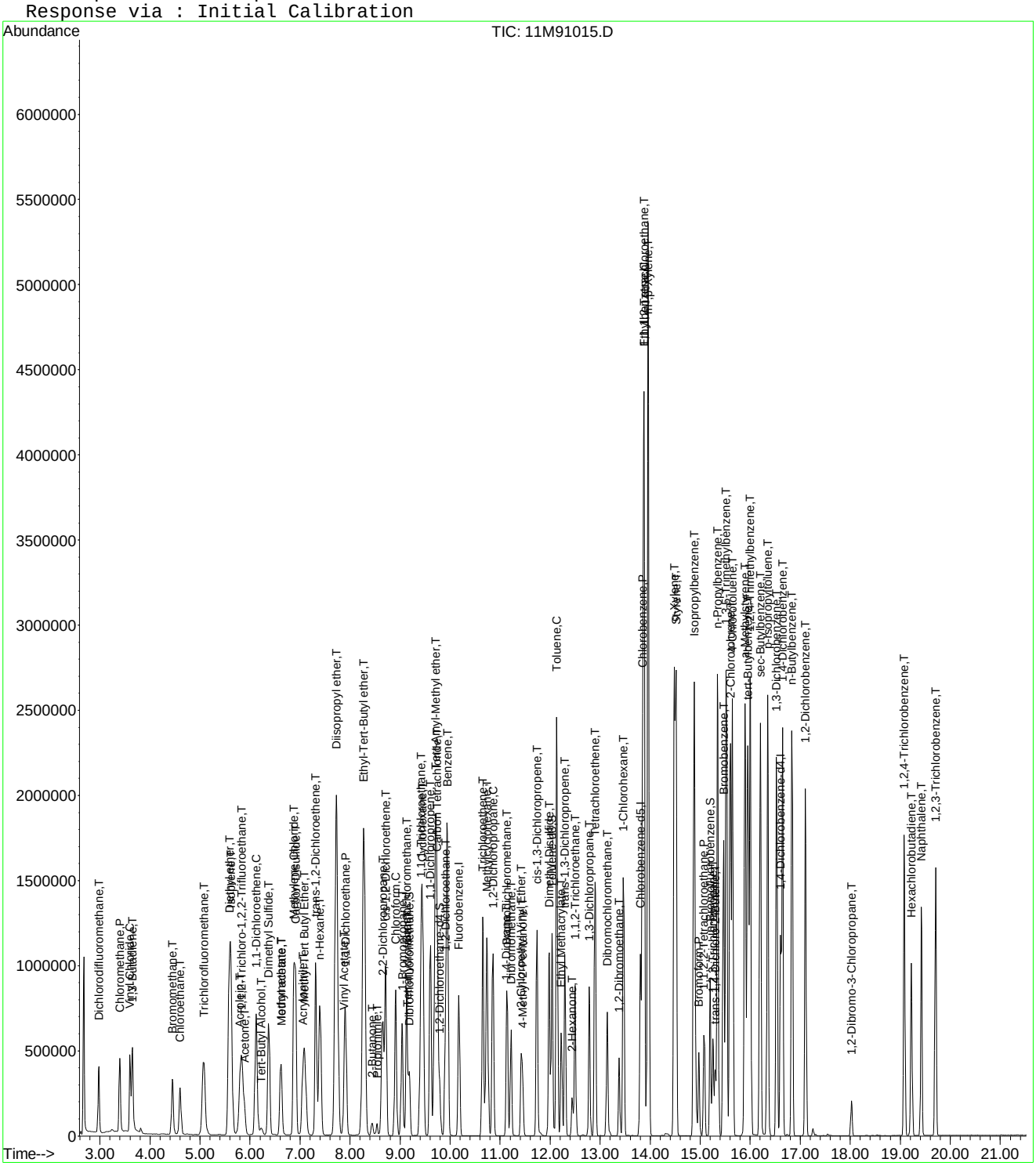

Continuing Calibration Area and RT check

Instrument: hpms11
Initial cal date: 8 Feb 2013 13:44
CCV date: 10 Apr 2013 16:11
CCV Filename: 11M91015.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	832175	10.20	640098	13.82	359772	16.63
CCV	1026940	10.17	770863	13.80	406126	16.61

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\041013\11M91015.D Vial: 2
Acq On : 10 Apr 2013 16:11 Operator: FJB
Sample : WG426250-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD57195 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	126	0.00
2	T	Dichlorodifluoromethane	0.2260	0.2214	2.1	112	0.01
3	P	Chloromethane	0.2788	0.2630	5.7	131	0.00
4	C	Vinyl Chloride	0.2592	0.2390	7.8	122	0.00
5	T	1,3-Butadiene	0.1494	0.1599	-7.0	147	0.01
6	T	Bromomethane	0.2258	0.1604	28.9#	102	0.00
7	T	Chloroethane	0.1980	0.1938	2.1	118	0.00
8	T	Trichlorofluoromethane	0.4020	0.4108	-2.2	119	0.01
9	T	Diethyl ether	0.2101	0.1854	11.7	108	0.01
10	T	Isoprene	0.3874	0.3562	8.1	110	0.00
11	T	Acrolein	0.0083	0.0082	0.7	120	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2511	0.2526	-0.6	116	0.01
13	T	Acetone	0.0692	0.0614	11.3	111	0.00
14	C	1,1-Dichloroethene	0.4086	0.3987	2.4	120	0.00
15	T	Tert-Butyl Alcohol	0.0159	0.0119	25.2#	94	0.00
16	T	Dimethyl Sulfide	0.3308	0.2802	15.3	104	0.00
17	T	Iodomethane	0.2631	0.2837	-7.8	99	0.01
18	T	Methyl acetate	0.1469	0.1315	10.5	112	0.00
19	T	Methylene Chloride	0.2854	0.2669	6.5	115	0.00
20	T	Carbon Disulfide	0.8932	0.7856	12.0	108	0.00
21	T	Acrylonitrile	0.0732	0.0330	55.0#	54	0.01
22	T	Methyl Tert Butyl Ether	0.6120	0.5404	11.7	104	0.00
23	T	trans-1,2-Dichloroethene	0.2905	0.2768	4.7	117	0.00
24	T	n-Hexane	0.3788	0.3449	8.9	108	0.00
25	T	Diisopropyl ether	0.9954	0.9178	7.8	115	0.00
26	T	Vinyl Acetate	0.4081	0.2686	34.2#	77	0.00
27	P	1,1-Dichloroethane	0.5030	0.4898	2.6	118	0.00
28	T	Ethyl-Tert-Butyl ether	0.8607	0.7748	10.0	111	0.00
29	T	2-Butanone	0.0797	0.0628	21.3	96	0.00
30	T	Propionitrile	0.0269	0.0222	17.4	99	0.01
31	T	2,2-Dichloropropane	0.4116	0.3973	3.5	117	0.01
32	T	cis-1,2-Dichloroethene	0.3121	0.2992	4.1	116	0.01
33	C	Chloroform	0.4829	0.4591	4.9	116	0.00
34	T	1-Bromopropane	0.0654	0.0599	8.4	110	0.01
35	T	Bromochloromethane	0.1801	0.1701	5.6	113	0.00
36	T	Tetrahydrofuran	0.0513	0.0419	18.3	96	0.00
37	S	Dibromofluoromethane	0.2738	0.2686	1.9	118	0.00
38	T	1,1,1-Trichloroethane	0.4190	0.4150	0.9	119	0.00
39	T	Cyclohexane	0.5274	0.4784	9.3	110	0.00
40	T	1,1-Dichloropropene	0.3683	0.3663	0.6	119	0.00
41	T	Carbon Tetrachloride	0.3702	0.3814	-3.0	119	0.00
42	T	Tert-Amyl-Methyl ether	0.6588	0.5777	12.3	108	0.00
43	S	1,2-Dichloroethane-d4	0.2492	0.2234	10.4	110	0.00
44	T	Heptane	0.0000	0.0000	0.0	127	0.00
45	T	1,2-Dichloroethane	0.3086	0.2882	6.6	111	0.00
46	T	Benzene	1.1600	1.0901	6.0	117	0.01
47	T	Trichloroethene	0.2959	0.2883	2.6	118	0.00
48	T	Methylcyclohexane	0.3973	0.3654	8.0	111	0.00
49	C	1,2-Dichloropropane	0.2943	0.2783	5.5	114	0.00
50	T	1,4-Dioxane	0.0019	0.0016	17.0	107	0.00
51	T	Bromodichloromethane	0.3611	0.3448	4.5	113	0.00
52	T	Dibromomethane	0.1452	0.1285	11.5	105	0.01
53	T	2-Chloroethyl Vinyl Ether	0.1302	0.1027	21.1	92	0.01
54	T	4-Methyl-2-Pentanone	0.0751	0.0606	19.3	94	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\041013\11M91015.D Vial: 2
Acq On : 10 Apr 2013 16:11 Operator: FJB
Sample : WG426250-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD57195 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4319	0.4160	3.7	112	0.00
56	T	Dimethyl Disulfide	0.2229	0.2057	7.7	106	0.01
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	122	0.00
58	S	Toluene-d8	1.3160	1.3740	-4.4	122	0.00
59	C	Toluene	1.6156	1.5441	4.4	116	0.00
60	T	Ethyl Methacrylate	0.3093	0.2709	12.4	96	0.00
61	T	Paraldehyde	0.0000	0.0000	0.0	0#	-12.30#
62	T	trans-1,3-Dichloropropene	0.4623	0.4477	3.2	107	0.00
63	T	1,1,2-Trichloroethane	0.2626	0.2448	6.8	104	0.00
64	T	2-Hexanone	0.1432	0.1250	12.7	94	0.00
65	T	1,3-Dichloropropane	0.4489	0.4160	7.3	105	0.00
66	T	Tetrachloroethene	0.3204	0.3236	-1.0	116	0.00
67	T	Dibromochloromethane	0.3463	0.3336	3.7	107	0.00
68	T	1,2-Dibromoethane	0.2656	0.2484	6.5	103	0.00
69	T	1-Chlorohexane	0.4889	0.4347	11.1	110	0.00
70	P	Chlorobenzene	1.0478	1.0141	3.2	115	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3681	0.3657	0.6	114	0.00
72	C	Ethylbenzene	0.5727	0.5590	2.4	114	0.00
73	T	m-,p-Xylene	0.6827	0.6791	0.5	115	0.00
74	T	o-Xylene	0.6781	0.6688	1.4	115	0.01
75	T	Styrene	1.1860	1.1144	6.0	113	0.00
76	P	Bromoform	0.2157	0.2042	5.3	102	0.00
77	T	Isopropylbenzene	1.6516	1.6501	0.1	115	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	119	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5580	0.5055	9.4	97	0.00
80	S	p-Bromofluorobenzene	0.9423	0.9625	-2.1	121	0.00
81	T	1,2,3-Trichloropropane	0.1709	0.1487	13.0	99	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1577	0.1392	11.7	92	0.01
83	T	n-Propylbenzene	3.7181	3.6837	0.9	115	0.00
84	T	Bromobenzene	0.8722	0.8247	5.4	112	0.00
85	T	1,3,5-Trimethylbenzene	2.6570	2.6276	1.1	114	0.00
86	T	2-Chlorotoluene	2.4823	2.3758	4.3	125	0.01
87	T	4-Chlorotoluene	2.1725	2.0920	3.7	102	0.00
88	T	a-Methylstyrene	1.3883	1.3271	4.4	110	0.00
89	T	tert-Butylbenzene	0.5308	0.5255	1.0	115	0.00
90	T	1,2,4-Trimethylbenzene	2.8512	2.6362	7.5	114	0.00
91	T	sec-Butylbenzene	3.1709	3.0416	4.1	114	0.00
92	T	p-Isopropyltoluene	2.6335	2.6136	0.8	114	0.00
93	T	1,3-Dichlorobenzene	1.6013	1.5618	2.5	113	0.00
94	T	1,4-Dichlorobenzene	1.6370	1.5654	4.4	112	0.00
95	T	n-Butylbenzene	2.2015	2.1979	0.2	113	0.00
96	T	1,2-Dichlorobenzene	1.5058	1.4161	6.0	109	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0904	0.0785	13.2	93	0.00
98	T	1,2,4-Trichlorobenzene	1.0484	0.9197	12.3	107	0.00
99	T	Hexachlorobutadiene	0.3503	0.3452	1.5	110	0.00
100	T	Naphthalene	1.6940	1.7153	-1.3	100	0.00
101	T	1,2,3-Trichlorobenzene	0.9646	0.7915	17.9	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M91015.D 8260_WT.M Wed Apr 10 17:07:01 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\041013\11M91015.D Vial: 2
Acq On : 10 Apr 2013 16:11 Operator: FJB
Sample : WG426250-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD57195 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	126	0.00
2	T	Dichlorodifluoromethane	50.0000	48.9736	2.1	112	0.01
3	P	Chloromethane	50.0000	50.0965	-0.2	131	0.00
4	C	Vinyl Chloride	50.0000	55.2074	-10.4	122	0.00
5	T	1,3-Butadiene	50.0000	65.9908	-32.0#	147	0.01
6	T	Bromomethane	50.0000	40.3156	19.4	102	0.00
7	T	Chloroethane	50.0000	48.9399	2.1	118	0.00
8	T	Trichlorofluoromethane	50.0000	51.0956	-2.2	119	0.01
9	T	Diethyl ether	100.0000	88.2689	11.7	108	0.01
10	T	Isoprene	50.0000	45.9742	8.1	110	0.00
11	T	Acrolein	100.0000	99.3003	0.7	120	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.3040	-0.6	116	0.01
13	T	Acetone	50.0000	44.3298	11.3	111	0.00
14	C	1,1-Dichloroethene	50.0000	48.7923	2.4	120	0.00
15	T	Tert-Butyl Alcohol	200.0000	149.6197	25.2#	94	0.00
16	T	Dimethyl Sulfide	50.0000	42.3468	15.3	104	0.00
17	T	Iodomethane	50.0000	40.7197	18.6	99	0.01
18	T	Methyl acetate	50.0000	44.7551	10.5	112	0.00
19	T	Methylene Chloride	50.0000	46.7592	6.5	115	0.00
20	T	Carbon Disulfide	50.0000	43.9778	12.0	108	0.00
21	T	Acrylonitrile	100.0000	44.9849	55.0#	54	0.01
22	T	Methyl Tert Butyl Ether	50.0000	44.1519	11.7	104	0.00
23	T	trans-1,2-Dichloroethene	50.0000	47.6354	4.7	117	0.00
24	T	n-Hexane	50.0000	45.5256	8.9	108	0.00
25	T	Diisopropyl ether	100.0000	92.2042	7.8	115	0.00
26	T	Vinyl Acetate	50.0000	32.9074	34.2#	77	0.00
27	P	1,1-Dichloroethane	50.0000	48.6850	2.6	118	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	90.0169	10.0	111	0.00
29	T	2-Butanone	50.0000	39.3572	21.3	96	0.00
30	T	Propionitrile	100.0000	82.6148	17.4	99	0.01
31	T	2,2-Dichloropropane	50.0000	48.2659	3.5	117	0.01
32	T	cis-1,2-Dichloroethene	50.0000	47.9333	4.1	116	0.01
33	C	Chloroform	50.0000	47.5359	4.9	116	0.00
34	T	1-Bromopropane	50.0000	45.8168	8.4	110	0.01
35	T	Bromochloromethane	50.0000	47.2131	5.6	113	0.00
36	T	Tetrahydrofuran	100.0000	81.7304	18.3	96	0.00
37	S	Dibromofluoromethane	25.0000	24.5252	1.9	118	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.5259	0.9	119	0.00
39	T	Cyclohexane	50.0000	45.3607	9.3	110	0.00
40	T	1,1-Dichloropropene	50.0000	49.7251	0.5	119	0.00
41	T	Carbon Tetrachloride	50.0000	51.5136	-3.0	119	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	87.6920	12.3	108	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.4061	10.4	110	0.00
44	T	Heptane	-1.0000	0.0000	0.0	127	0.00
45	T	1,2-Dichloroethane	50.0000	46.6944	6.6	111	0.00
46	T	Benzene	50.0000	46.9872	6.0	117	0.01
47	T	Trichloroethene	50.0000	48.7200	2.6	118	0.00
48	T	Methylcyclohexane	50.0000	45.9862	8.0	111	0.00
49	C	1,2-Dichloropropane	50.0000	47.2728	5.5	114	0.00
50	T	1,4-Dioxane	200.0000	165.7819	17.1	107	0.00
51	T	Bromodichloromethane	50.0000	47.7533	4.5	113	0.00
52	T	Dibromomethane	50.0000	44.2715	11.5	105	0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	39.4499	21.1	92	0.01
54	T	4-Methyl-2-Pentanone	50.0000	40.3748	19.3	94	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\041013\11M91015.D Vial: 2
Acq On : 10 Apr 2013 16:11 Operator: FJB
Sample : WG426250-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD57195 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	48.1621	3.7	112	0.00
56	T	Dimethyl Disulfide	50.0000	46.1260	7.7	106	0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	122	0.00
58	S	Toluene-d8	25.0000	26.1010	-4.4	122	0.00
59	C	Toluene	50.0000	47.7897	4.4	116	0.00
60	T	Ethyl Methacrylate	50.0000	43.7869	12.4	96	0.00
61	T	Paraldehyde	-1.0000	0.0000	0.0	0	-12.30#
62	T	trans-1,3-Dichloropropene	50.0000	48.4227	3.2	107	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.5997	6.8	104	0.00
64	T	2-Hexanone	50.0000	43.6424	12.7	94	0.00
65	T	1,3-Dichloropropane	50.0000	46.3402	7.3	105	0.00
66	T	Tetrachloroethene	50.0000	50.4963	-1.0	116	0.00
67	T	Dibromochloromethane	50.0000	48.1733	3.7	107	0.00
68	T	1,2-Dibromoethane	50.0000	46.7580	6.5	103	0.00
69	T	1-Chlorohexane	50.0000	44.4520	11.1	110	0.00
70	P	Chlorobenzene	50.0000	48.3899	3.2	115	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.6754	0.6	114	0.00
72	C	Ethylbenzene	50.0000	48.8007	2.4	114	0.00
73	T	m-,p-Xylene	100.0000	99.4787	0.5	115	0.00
74	T	o-Xylene	50.0000	49.3142	1.4	115	0.01
75	T	Styrene	50.0000	46.9831	6.0	113	0.00
76	P	Bromoform	50.0000	47.3415	5.3	102	0.00
77	T	Isopropylbenzene	50.0000	49.9545	0.1	115	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	119	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	45.2895	9.4	97	0.00
80	S	p-Bromofluorobenzene	25.0000	25.5341	-2.1	121	0.00
81	T	1,2,3-Trichloropropane	50.0000	43.5041	13.0	99	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	38.8377	22.3	92	0.01
83	T	n-Propylbenzene	50.0000	49.5374	0.9	115	0.00
84	T	Bromobenzene	50.0000	47.2769	5.4	112	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	49.4464	1.1	114	0.00
86	T	2-Chlorotoluene	50.0000	47.8558	4.3	125	0.01
87	T	4-Chlorotoluene	50.0000	48.1463	3.7	102	0.00
88	T	a-Methylstyrene	50.0000	47.7962	4.4	110	0.00
89	T	tert-Butylbenzene	50.0000	49.5061	1.0	115	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	46.2293	7.5	114	0.00
91	T	sec-Butylbenzene	50.0000	47.9609	4.1	114	0.00
92	T	p-Isopropyltoluene	50.0000	49.6213	0.8	114	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.7649	2.5	113	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.8130	4.4	112	0.00
95	T	n-Butylbenzene	50.0000	49.9182	0.2	113	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.0217	6.0	109	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	43.4137	13.2	93	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.6673	4.7	107	0.00
99	T	Hexachlorobutadiene	50.0000	49.2614	1.5	110	0.00
100	T	Naphthalene	50.0000	43.7288	12.5	100	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	44.0176	12.0	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M91015.D 8260_WT.M Wed Apr 10 17:07:03 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041113\11M91037.D Vial: 2
Acq On : 11 Apr 2013 7:19 Operator: TMB
Sample : WG426299-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD57195 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 11 07:41:20 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	1020542	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.80	117	773383	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.61	152	410978	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.19	111	278681	24.9350 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.76%		
43) 1,2-Dichloroethane-d4	9.79	65	237213	23.3156 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.28%		
58) Toluene-d8	12.04	98	1066459	26.1961 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.80%		
80) p-Bromofluorobenzene	15.20	95	398308	25.7119 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.84%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.98	85	424505	46.0133 ug/L	95
3) Chloromethane	3.39	50	469696	43.7972 ug/L	98
4) Vinyl Chloride	3.60	62	448892	50.7740 ug/L	96
5) 1,3-Butadiene	3.64	54	291041	57.9799 ug/L	96
6) Bromomethane	4.45	94	293433	36.1090 ug/L	100
7) Chloroethane	4.60	64	374039	46.2757 ug/L	99
8) Trichlorofluoromethane	5.08	101	774144	47.1742 ug/L	99
9) Diethyl ether	5.58	59	791207	92.2661 ug/L	88
10) Isoprene	5.62	67	676360	42.7676 ug/L	84
11) Acrolein	5.80	56	34271	101.5616 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	5.83	101	481782	47.0071 ug/L	96
13) Acetone	5.90	43	98730	34.9456 ug/L	90
14) 1,1-Dichloroethene	6.12	61	773505	46.3717 ug/L	98
15) Tert-Butyl Alcohol	6.22	59	105928	162.9953 ug/L	96
16) Dimethyl Sulfide	6.37	62	565457	41.8698 ug/L	99
17) Iodomethane	6.62	142	575306	40.4639 ug/L	89
18) Methyl acetate	6.64	43	279983	46.6832 ug/L	93
19) Methylene Chloride	6.88	84	525005	45.0605 ug/L	83
20) Carbon Disulfide	6.92	76	1532939	42.0442 ug/L	99
21) Acrylonitrile	7.05	53	138771	46.4159 ug/L	97
22) Methyl Tert Butyl Ether	7.09	73	1112530	44.5340 ug/L	88
23) trans-1,2-Dichloroethene	7.31	96	540164	45.5420 ug/L	90
24) n-Hexane	7.40	57	680520	44.0081 ug/L	91
25) Diisopropyl ether	7.72	45	3777190	92.9524 ug/L	87
26) Vinyl Acetate	7.89	43	570333	34.2394 ug/L	92
27) 1,1-Dichloroethane	7.91	63	956419	46.5750 ug/L	98
28) Ethyl-Tert-Butyl ether	8.27	59	3193188	90.8825 ug/L	93
29) 2-Butanone	8.44	43	131324	40.3534 ug/L	94
30) Propionitrile	8.54	54	93632	85.2188 ug/L	99
31) 2,2-Dichloropropane	8.65	77	791058	47.0832 ug/L	99
32) cis-1,2-Dichloroethene	8.72	96	592180	46.4837 ug/L	89
33) Chloroform	8.91	83	914112	46.3752 ug/L	96
34) 1-Bromopropane	9.05	122	119752	44.8767 ug/L	99
35) Bromochloromethane	9.13	130	342844	46.6258 ug/L	80
36) Tetrahydrofuran	9.15	42	179251	85.5716 ug/L	83
38) 1,1,1-Trichloroethane	9.42	97	802023	46.8904 ug/L	97
39) Cyclohexane	9.45	56	931092	43.2493 ug/L	77
40) 1,1-Dichloropropene	9.61	75	707005	47.0255 ug/L	97
41) Carbon Tetrachloride	9.74	117	735016	48.6423 ug/L	99
42) Tert-Amyl-Methyl ether	9.71	73	2429093	90.3285 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M91037.D 8260_WT.M Thu Apr 11 07:41:21 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041113\11M91037.D Vial: 2
Acq On : 11 Apr 2013 7:19 Operator: TMB
Sample : WG426299-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD57195 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 11 07:41:20 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.91	62	586744	46.5768 ug/L		93
46)	Benzene	9.95	78	2128178	44.9411 ug/L		98
47)	Trichloroethene	10.66	130	557113	46.1293 ug/L		97
48)	Methylcyclohexane	10.73	83	723450	44.6074 ug/L		86
49)	1,2-Dichloropropane	10.86	63	558436	46.4772 ug/L		86
50)	1,4-Dioxane	11.13	88	14284	185.8136 ug/L		90
51)	Bromodichloromethane	11.14	83	704071	47.7666 ug/L		98
52)	Dibromomethane	11.22	93	267453	45.1307 ug/L		95
53)	2-Chloroethyl Vinyl Ether	11.43	63	229085	43.1111 ug/L		95
54)	4-Methyl-2-Pentanone	11.45	58	132991	43.4012 ug/L		85
55)	cis-1,3-Dichloropropene	11.74	75	846430	48.0144 ug/L		99
56)	Dimethyl Disulfide	11.98	79	416542	45.7713 ug/L		97
59)	Toluene	12.13	91	2279057	45.6013 ug/L		97
60)	Ethyl Methacrylate	12.22	69	431491	45.0968 ug/L		95
62)	trans-1,3-Dichloropropene	12.29	75	714174	49.9349 ug/L		99
63)	1,1,2-Trichloroethane	12.50	97	389423	47.9347 ug/L		100
64)	2-Hexanone	12.44	43	198539	44.8021 ug/L	#	23
65)	1,3-Dichloropropane	12.78	76	654956	47.1627 ug/L		97
66)	Tetrachloroethene	12.90	164	472321	47.6541 ug/L		97
67)	Dibromochloromethane	13.14	129	533999	49.8525 ug/L		99
68)	1,2-Dibromoethane	13.38	107	394563	48.0167 ug/L		100
69)	1-Chlorohexane	13.46	91	638259	42.1975 ug/L		84
70)	Chlorobenzene	13.86	112	1551701	47.8690 ug/L		100
71)	1,1,1,2-Tetrachloroethane	13.88	131	564010	49.5311 ug/L		98
72)	Ethylbenzene	13.88	106	837564	47.2744 ug/L		97
73)	m-,p-Xylene	13.96	106	2044301	96.7999 ug/L		99
74)	o-Xylene	14.49	106	1020907	48.6661 ug/L		99
75)	Styrene	14.52	104	1721650	46.9254 ug/L		99
76)	Bromoform	14.97	173	328295	49.1939 ug/L		98
77)	Isopropylbenzene	14.88	105	2488469	48.7047 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.08	83	445523	48.5654 ug/L		98
81)	1,2,3-Trichloropropane	15.25	110	130465	46.4528 ug/L		89
82)	trans-1,4-Dichloro-2-Buten	15.30	53	118803	40.3107 ug/L		97
83)	n-Propylbenzene	15.35	91	2920380	47.7793 ug/L		99
84)	Bromobenzene	15.47	156	675958	47.1454 ug/L		97
85)	1,3,5-Trimethylbenzene	15.52	105	2074939	47.5040 ug/L		98
86)	2-Chlorotoluene	15.60	91	1865015	45.7045 ug/L		95
87)	4-Chlorotoluene	15.64	91	1725995	48.3281 ug/L		94
88)	a-Methylstyrene	15.89	118	1068694	46.8260 ug/L		98
89)	tert-Butylbenzene	15.95	134	414562	47.5097 ug/L		97
90)	1,2,4-Trimethylbenzene	16.01	105	2130481	45.4542 ug/L		98
91)	sec-Butylbenzene	16.20	105	2420547	46.4358 ug/L		99
92)	p-Isopropyltoluene	16.35	119	2092757	48.3400 ug/L		99
93)	1,3-Dichlorobenzene	16.53	146	1276549	48.4930 ug/L		99
94)	1,4-Dichlorobenzene	16.65	146	1278420	47.5061 ug/L		98
95)	n-Butylbenzene	16.83	91	1753675	48.4571 ug/L		98
96)	1,2-Dichlorobenzene	17.10	146	1183354	47.8046 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	18.02	75	70919	47.7323 ug/L		98
98)	1,2,4-Trichlorobenzene	19.08	180	759454	47.8907 ug/L		100
99)	Hexachlorobutadiene	19.22	225	277976	48.2643 ug/L		93
100)	Naphthalene	19.43	128	1467896	45.5150 ug/L		99
101)	1,2,3-Trichlorobenzene	19.71	180	672679	45.5312 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M91037.D 8260_WT.M Thu Apr 11 07:41:21 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041113\11M91037.D Vial: 2
Acq On : 11 Apr 2013 7:19 Operator: TMB
Sample : WG426299-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD57195 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 11 7:41 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration

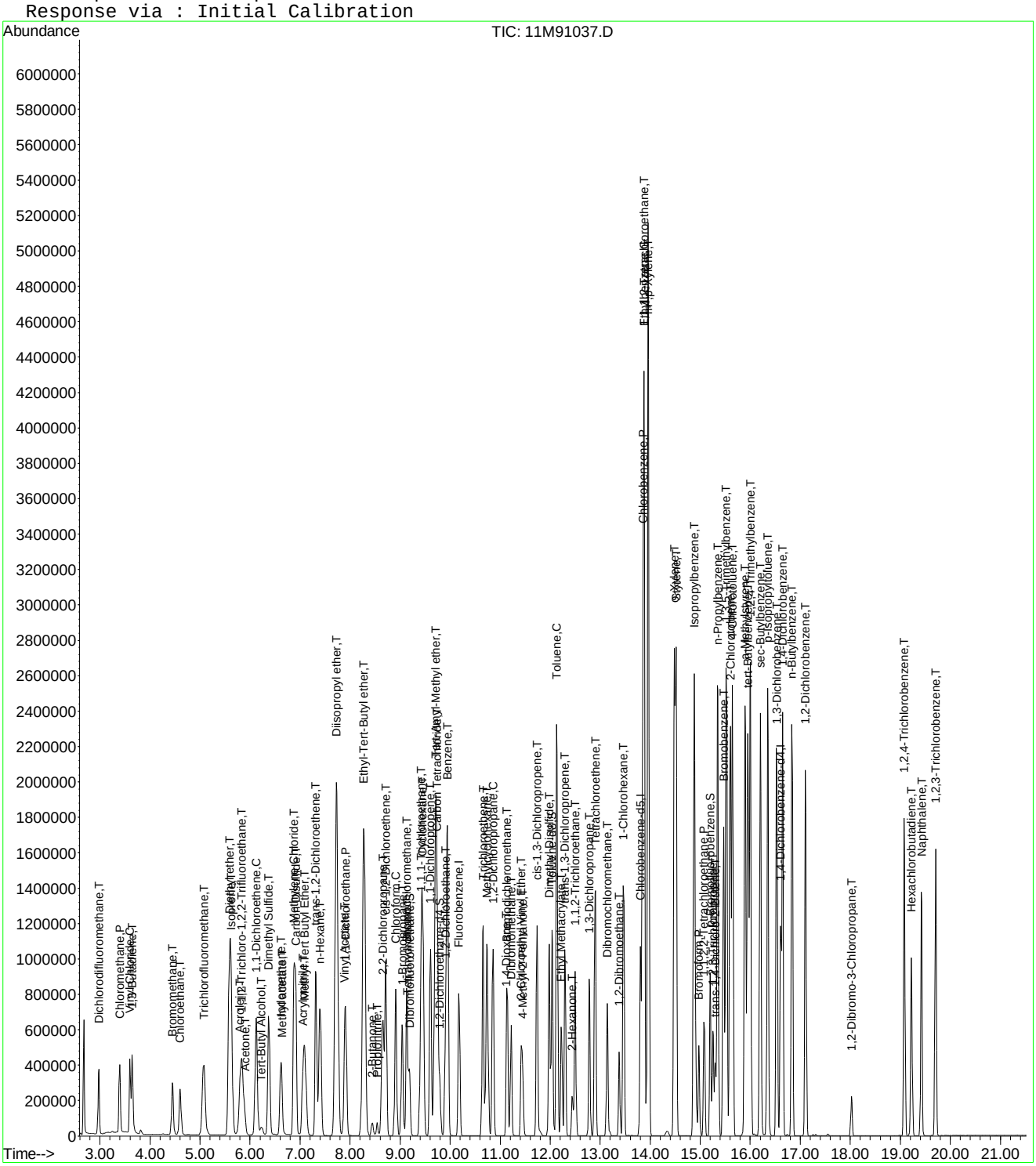

11M91037.D 8260_WT.M Thu Apr 11 07:41:22 2013 Page 3

Continuing Calibration Area and RT check

Instrument: hpms11
Initial cal date: 8 Feb 2013 13:44
CCV date: 11 Apr 2013 7:19
CCV Filename: 11M91037.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	832175	10.20	640098	13.82	359772	16.63
CCV	1020542	10.17	773383	13.80	410978	16.61

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\041113\11M91037.D Vial: 2
Acq On : 11 Apr 2013 7:19 Operator: TMB
Sample : WG426299-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD57195 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	125	0.00
2	T	Dichlorodifluoromethane	0.2260	0.2080	8.0	104	0.01
3	P	Chloromethane	0.2788	0.2301	17.5	114	0.00
4	C	Vinyl Chloride	0.2592	0.2199	15.2	112	0.00
5	T	1,3-Butadiene	0.1494	0.1426	4.6	130	0.00
6	T	Bromomethane	0.2258	0.1438	36.3#	91	0.00
7	T	Chloroethane	0.1980	0.1833	7.4	111	0.00
8	T	Trichlorofluoromethane	0.4020	0.3793	5.7	109	0.01
9	T	Diethyl ether	0.2101	0.1938	7.7	113	0.01
10	T	Isoprene	0.3874	0.3314	14.5	102	0.01
11	T	Acrolein	0.0083	0.0084	-1.6	122	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2511	0.2360	6.0	108	0.01
13	T	Acetone	0.0692	0.0484	30.1#	87	0.01
14	C	1,1-Dichloroethene	0.4086	0.3790	7.3	113	0.00
15	T	Tert-Butyl Alcohol	0.0159	0.0130	18.5	102	0.00
16	T	Dimethyl Sulfide	0.3308	0.2770	16.3	102	0.00
17	T	Iodomethane	0.2631	0.2819	-7.1	97	0.01
18	T	Methyl acetate	0.1469	0.1372	6.6	116	0.01
19	T	Methylene Chloride	0.2854	0.2572	9.9	110	0.00
20	T	Carbon Disulfide	0.8932	0.7510	15.9	103	0.01
21	T	Acrylonitrile	0.0732	0.0340	53.6#	55	0.01
22	T	Methyl Tert Butyl Ether	0.6120	0.5451	10.9	105	0.01
23	T	trans-1,2-Dichloroethene	0.2905	0.2647	8.9	111	0.00
24	T	n-Hexane	0.3788	0.3334	12.0	104	0.01
25	T	Diisopropyl ether	0.9954	0.9253	7.0	115	0.00
26	T	Vinyl Acetate	0.4081	0.2794	31.5#	80	0.01
27	P	1,1-Dichloroethane	0.5030	0.4686	6.9	112	0.00
28	T	Ethyl-Tert-Butyl ether	0.8607	0.7822	9.1	112	0.00
29	T	2-Butanone	0.0797	0.0643	19.3	98	0.00
30	T	Propionitrile	0.0269	0.0229	14.8	101	0.01
31	T	2,2-Dichloropropane	0.4116	0.3876	5.8	113	0.01
32	T	cis-1,2-Dichloroethene	0.3121	0.2901	7.0	112	0.01
33	C	Chloroform	0.4829	0.4479	7.2	113	0.00
34	T	1-Bromopropane	0.0654	0.0587	10.2	107	0.01
35	T	Bromochloromethane	0.1801	0.1680	6.8	111	0.00
36	T	Tetrahydrofuran	0.0513	0.0439	14.4	100	0.00
37	S	Dibromofluoromethane	0.2738	0.2731	0.3	119	0.01
38	T	1,1,1-Trichloroethane	0.4190	0.3929	6.2	112	0.00
39	T	Cyclohexane	0.5274	0.4562	13.5	104	0.00
40	T	1,1-Dichloropropene	0.3683	0.3464	5.9	111	0.00
41	T	Carbon Tetrachloride	0.3702	0.3601	2.7	112	0.00
42	T	Tert-Amyl-Methyl ether	0.6588	0.5950	9.7	110	0.00
43	S	1,2-Dichloroethane-d4	0.2492	0.2324	6.7	114	0.00
44	T	Heptane	0.0000	0.0000	0.0	126	0.00
45	T	1,2-Dichloroethane	0.3086	0.2875	6.8	110	0.00
46	T	Benzene	1.1600	1.0427	10.1	111	0.01
47	T	Trichloroethene	0.2959	0.2730	7.7	111	0.01
48	T	Methylcyclohexane	0.3973	0.3544	10.8	107	0.00
49	C	1,2-Dichloropropane	0.2943	0.2736	7.0	112	0.00
50	T	1,4-Dioxane	0.0019	0.0018	6.9	119	0.00
51	T	Bromodichloromethane	0.3611	0.3449	4.5	113	0.00
52	T	Dibromomethane	0.1452	0.1310	9.7	107	0.01
53	T	2-Chloroethyl Vinyl Ether	0.1302	0.1122	13.8	100	0.01
54	T	4-Methyl-2-Pentanone	0.0751	0.0652	13.2	101	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\041113\11M91037.D Vial: 2
Acq On : 11 Apr 2013 7:19 Operator: TMB
Sample : WG426299-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD57195 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4319	0.4147	4.0	111	0.00
56	T	Dimethyl Disulfide	0.2229	0.2041	8.5	105	0.01
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	122	0.00
58	S	Toluene-d8	1.3160	1.3789	-4.8	123	0.00
59	C	Toluene	1.6156	1.4734	8.8	111	0.00
60	T	Ethyl Methacrylate	0.3093	0.2790	9.8	99	0.00
61	T	Paraldehyde	0.0000	0.0000	0.0	0#	-12.30#
62	T	trans-1,3-Dichloropropene	0.4623	0.4617	0.1	111	0.00
63	T	1,1,2-Trichloroethane	0.2626	0.2518	4.1	107	0.00
64	T	2-Hexanone	0.1432	0.1284	10.4	97	0.00
65	T	1,3-Dichloropropane	0.4489	0.4234	5.7	107	0.00
66	T	Tetrachloroethene	0.3204	0.3054	4.7	110	0.01
67	T	Dibromochloromethane	0.3463	0.3452	0.3	111	0.00
68	T	1,2-Dibromoethane	0.2656	0.2551	4.0	106	0.00
69	T	1-Chlorohexane	0.4889	0.4126	15.6	105	0.00
70	P	Chlorobenzene	1.0478	1.0032	4.3	114	0.01
71	T	1,1,1,2-Tetrachloroethane	0.3681	0.3646	0.9	114	0.00
72	C	Ethylbenzene	0.5727	0.5415	5.5	110	0.00
73	T	m-,p-Xylene	0.6827	0.6608	3.2	112	0.00
74	T	o-Xylene	0.6781	0.6600	2.7	113	0.01
75	T	Styrene	1.1860	1.1131	6.1	113	0.00
76	P	Bromoform	0.2157	0.2122	1.6	106	0.00
77	T	Isopropylbenzene	1.6516	1.6088	2.6	112	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	120	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5580	0.5420	2.9	105	0.00
80	S	p-Bromofluorobenzene	0.9423	0.9692	-2.8	123	0.00
81	T	1,2,3-Trichloropropane	0.1709	0.1587	7.1	107	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1577	0.1445	8.3	97	0.01
83	T	n-Propylbenzene	3.7181	3.5530	4.4	112	0.01
84	T	Bromobenzene	0.8722	0.8224	5.7	113	0.00
85	T	1,3,5-Trimethylbenzene	2.6570	2.5244	5.0	111	0.00
86	T	2-Chlorotoluene	2.4823	2.2690	8.6	121	0.01
87	T	4-Chlorotoluene	2.1725	2.0999	3.3	103	0.00
88	T	a-Methylstyrene	1.3883	1.3002	6.3	109	0.00
89	T	tert-Butylbenzene	0.5308	0.5044	5.0	112	0.00
90	T	1,2,4-Trimethylbenzene	2.8512	2.5920	9.1	113	0.01
91	T	sec-Butylbenzene	3.1709	2.9449	7.1	112	0.00
92	T	p-Isopropyltoluene	2.6335	2.5461	3.3	112	0.00
93	T	1,3-Dichlorobenzene	1.6013	1.5531	3.0	114	0.01
94	T	1,4-Dichlorobenzene	1.6370	1.5553	5.0	112	0.00
95	T	n-Butylbenzene	2.2015	2.1335	3.1	111	0.00
96	T	1,2-Dichlorobenzene	1.5058	1.4397	4.4	112	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0904	0.0863	4.5	104	0.00
98	T	1,2,4-Trichlorobenzene	1.0484	0.9240	11.9	109	0.00
99	T	Hexachlorobutadiene	0.3503	0.3382	3.5	109	0.00
100	T	Naphthalene	1.6940	1.7859	-5.4	105	0.01
101	T	1,2,3-Trichlorobenzene	0.9646	0.8184	15.2	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M91037.D 8260_WT.M Thu Apr 11 07:52:30 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\041113\11M91037.D Vial: 2
Acq On : 11 Apr 2013 7:19 Operator: TMB
Sample : WG426299-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD57195 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	125	0.00
2	T	Dichlorodifluoromethane	50.0000	46.0133	8.0	104	0.01
3	P	Chloromethane	50.0000	43.7972	12.4	114	0.00
4	C	Vinyl Chloride	50.0000	50.7740	-1.5	112	0.00
5	T	1,3-Butadiene	50.0000	57.9799	-16.0	130	0.00
6	T	Bromomethane	50.0000	36.1090	27.8#	91	0.00
7	T	Chloroethane	50.0000	46.2757	7.4	111	0.00
8	T	Trichlorofluoromethane	50.0000	47.1742	5.7	109	0.01
9	T	Diethyl ether	100.0000	92.2661	7.7	113	0.01
10	T	Isoprene	50.0000	42.7676	14.5	102	0.01
11	T	Acrolein	100.0000	101.5616	-1.6	122	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	47.0071	6.0	108	0.01
13	T	Acetone	50.0000	34.9456	30.1#	87	0.01
14	C	1,1-Dichloroethene	50.0000	46.3717	7.3	113	0.00
15	T	Tert-Butyl Alcohol	200.0000	162.9953	18.5	102	0.00
16	T	Dimethyl Sulfide	50.0000	41.8698	16.3	102	0.00
17	T	Iodomethane	50.0000	40.4639	19.1	97	0.01
18	T	Methyl acetate	50.0000	46.6832	6.6	116	0.01
19	T	Methylene Chloride	50.0000	45.0605	9.9	110	0.00
20	T	Carbon Disulfide	50.0000	42.0442	15.9	103	0.01
21	T	Acrylonitrile	100.0000	46.4159	53.6#	55	0.01
22	T	Methyl Tert Butyl Ether	50.0000	44.5340	10.9	105	0.01
23	T	trans-1,2-Dichloroethene	50.0000	45.5420	8.9	111	0.00
24	T	n-Hexane	50.0000	44.0081	12.0	104	0.01
25	T	Diisopropyl ether	100.0000	92.9523	7.0	115	0.00
26	T	Vinyl Acetate	50.0000	34.2394	31.5#	80	0.01
27	P	1,1-Dichloroethane	50.0000	46.5750	6.8	112	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	90.8825	9.1	112	0.00
29	T	2-Butanone	50.0000	40.3534	19.3	98	0.00
30	T	Propionitrile	100.0000	85.2188	14.8	101	0.01
31	T	2,2-Dichloropropane	50.0000	47.0832	5.8	113	0.01
32	T	cis-1,2-Dichloroethene	50.0000	46.4837	7.0	112	0.01
33	C	Chloroform	50.0000	46.3752	7.2	113	0.00
34	T	1-Bromopropane	50.0000	44.8767	10.2	107	0.01
35	T	Bromochloromethane	50.0000	46.6258	6.7	111	0.00
36	T	Tetrahydrofuran	100.0000	85.5716	14.4	100	0.00
37	S	Dibromofluoromethane	25.0000	24.9350	0.3	119	0.01
38	T	1,1,1-Trichloroethane	50.0000	46.8903	6.2	112	0.00
39	T	Cyclohexane	50.0000	43.2493	13.5	104	0.00
40	T	1,1-Dichloropropene	50.0000	47.0255	5.9	111	0.00
41	T	Carbon Tetrachloride	50.0000	48.6423	2.7	112	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	90.3285	9.7	110	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.3156	6.7	114	0.00
44	T	Heptane	-1.0000	0.0000	0.0	126	0.00
45	T	1,2-Dichloroethane	50.0000	46.5768	6.8	110	0.00
46	T	Benzene	50.0000	44.9411	10.1	111	0.01
47	T	Trichloroethene	50.0000	46.1293	7.7	111	0.01
48	T	Methylcyclohexane	50.0000	44.6074	10.8	107	0.00
49	C	1,2-Dichloropropane	50.0000	46.4772	7.0	112	0.00
50	T	1,4-Dioxane	200.0000	185.8136	7.1	119	0.00
51	T	Bromodichloromethane	50.0000	47.7666	4.5	113	0.00
52	T	Dibromomethane	50.0000	45.1307	9.7	107	0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.1111	13.8	100	0.01
54	T	4-Methyl-2-Pentanone	50.0000	43.4012	13.2	101	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\041113\11M91037.D Vial: 2
Acq On : 11 Apr 2013 7:19 Operator: TMB
Sample : WG426299-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD57195 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	48.0144	4.0	111	0.00
56	T	Dimethyl Disulfide	50.0000	45.7713	8.5	105	0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	122	0.00
58	S	Toluene-d8	25.0000	26.1961	-4.8	123	0.00
59	C	Toluene	50.0000	45.6013	8.8	111	0.00
60	T	Ethyl Methacrylate	50.0000	45.0968	9.8	99	0.00
61	T	Paraldehyde	-1.0000	0.0000	0.0	0	-12.30#
62	T	trans-1,3-Dichloropropene	50.0000	49.9349	0.1	111	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.9347	4.1	107	0.00
64	T	2-Hexanone	50.0000	44.8021	10.4	97	0.00
65	T	1,3-Dichloropropane	50.0000	47.1627	5.7	107	0.00
66	T	Tetrachloroethene	50.0000	47.6542	4.7	110	0.01
67	T	Dibromochloromethane	50.0000	49.8525	0.3	111	0.00
68	T	1,2-Dibromoethane	50.0000	48.0167	4.0	106	0.00
69	T	1-Chlorohexane	50.0000	42.1975	15.6	105	0.00
70	P	Chlorobenzene	50.0000	47.8690	4.3	114	0.01
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.5311	0.9	114	0.00
72	C	Ethylbenzene	50.0000	47.2744	5.5	110	0.00
73	T	m-,p-Xylene	100.0000	96.7999	3.2	112	0.00
74	T	o-Xylene	50.0000	48.6661	2.7	113	0.01
75	T	Styrene	50.0000	46.9254	6.1	113	0.00
76	P	Bromoform	50.0000	49.1939	1.6	106	0.00
77	T	Isopropylbenzene	50.0000	48.7047	2.6	112	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	120	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	48.5654	2.9	105	0.00
80	S	p-Bromofluorobenzene	25.0000	25.7120	-2.8	123	0.00
81	T	1,2,3-Trichloropropane	50.0000	46.4528	7.1	107	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	40.3107	19.4	97	0.01
83	T	n-Propylbenzene	50.0000	47.7793	4.4	112	0.01
84	T	Bromobenzene	50.0000	47.1454	5.7	113	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	47.5040	5.0	111	0.00
86	T	2-Chlorotoluene	50.0000	45.7045	8.6	121	0.01
87	T	4-Chlorotoluene	50.0000	48.3281	3.3	103	0.00
88	T	a-Methylstyrene	50.0000	46.8260	6.3	109	0.00
89	T	tert-Butylbenzene	50.0000	47.5097	5.0	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	45.4542	9.1	113	0.01
91	T	sec-Butylbenzene	50.0000	46.4358	7.1	112	0.00
92	T	p-Isopropyltoluene	50.0000	48.3400	3.3	112	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.4930	3.0	114	0.01
94	T	1,4-Dichlorobenzene	50.0000	47.5061	5.0	112	0.00
95	T	n-Butylbenzene	50.0000	48.4571	3.1	111	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.8046	4.4	112	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	47.7323	4.5	104	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.8907	4.2	109	0.00
99	T	Hexachlorobutadiene	50.0000	48.2643	3.5	109	0.00
100	T	Naphthalene	50.0000	45.5149	9.0	105	0.01
101	T	1,2,3-Trichlorobenzene	50.0000	45.5312	8.9	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M91037.D 8260_WT.M Thu Apr 11 07:52:32 2013 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\040213\11M90724.D          Vial: 1
Acq On    :  2 Apr 2013   7:49                        Operator: FJB
Sample    : WG425304-01 BFB 50ng 8260                 Inst    : hpms11
Misc      : 1,1 STD57083                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

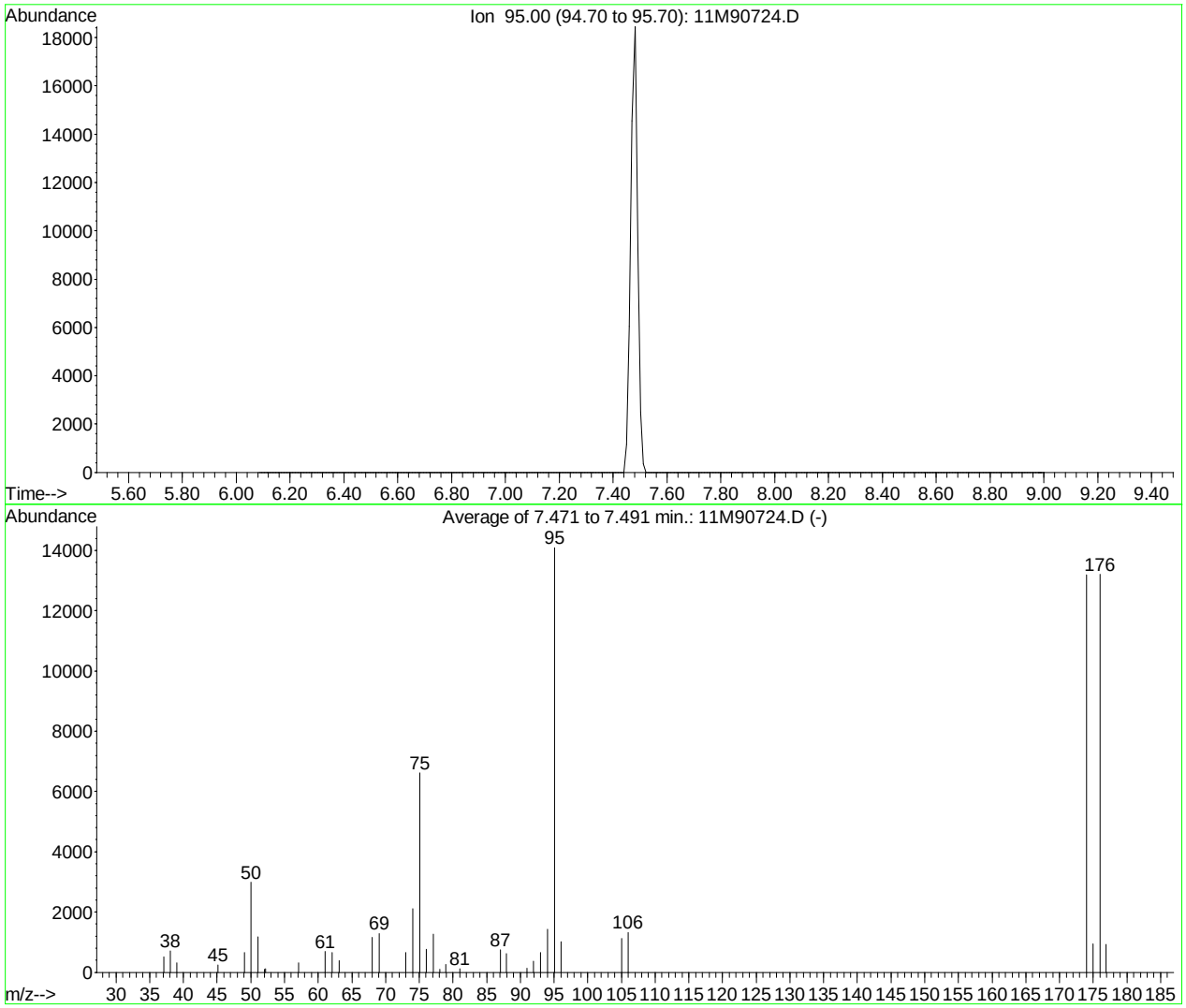

AutoFind: Scans 135, 136, 137; Background Corrected with Scan 130

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.2	2994	PASS
75	95	30	60	46.9	6611	PASS
95	95	100	100	100.0	14091	PASS
96	95	5	9	7.2	1019	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	93.6	13187	PASS
175	174	5	9	7.2	950	PASS
176	174	95	101	100.2	13208	PASS
177	176	5	9	7.0	925	PASS

11M90724.D BFB.M Fri Apr 05 15:59:33 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\041013\11M91014.D          Vial: 1
Acq On    : 10 Apr 2013  15:46                       Operator: FJB
Sample    : WG426250-01 BFB 50ng 8260                Inst    : hpms11
Misc      : 1,1 STD57083                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

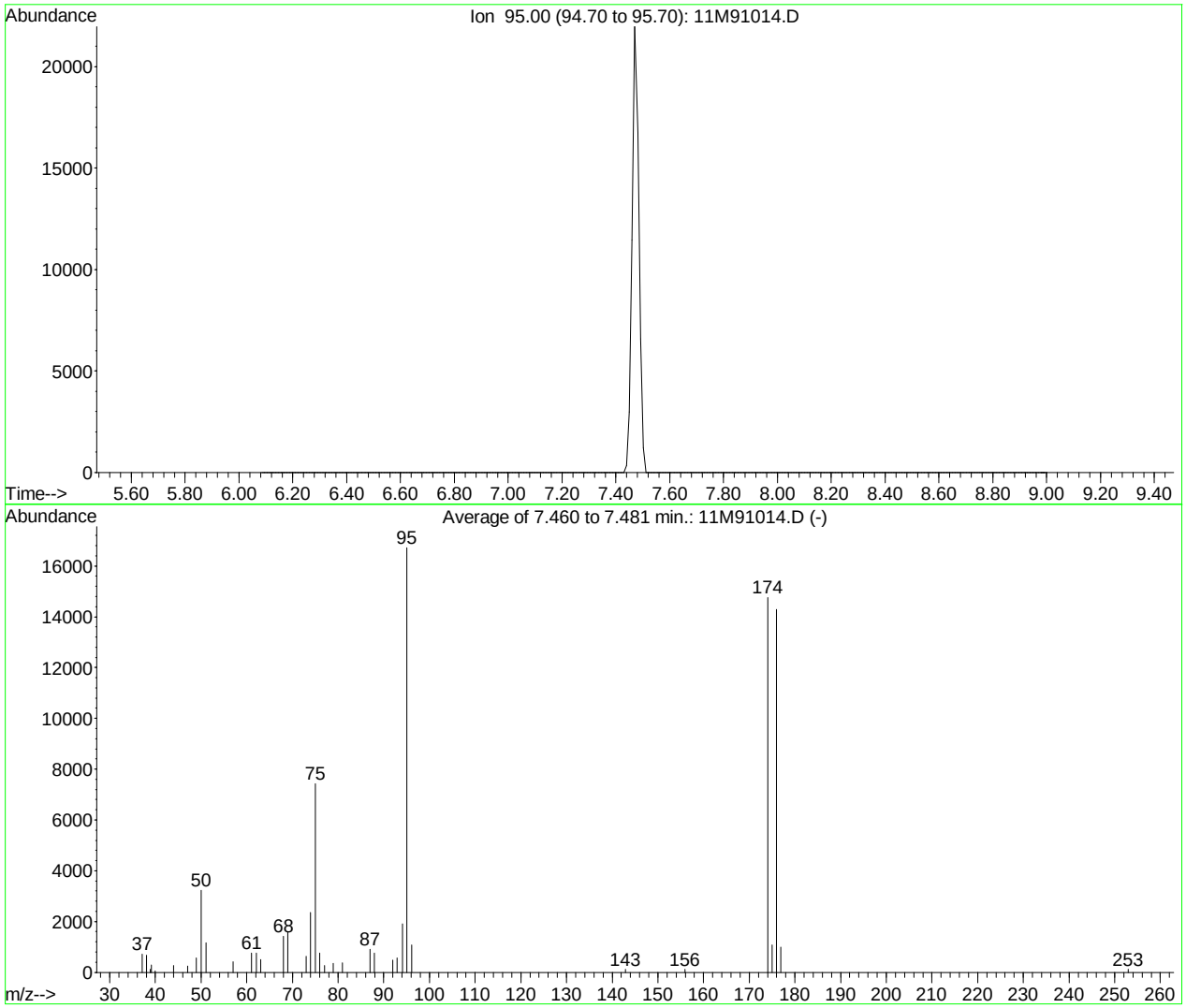

AutoFind: Scans 134, 135, 136; Background Corrected with Scan 129

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.3	3235	PASS
75	95	30	60	44.4	7425	PASS
95	95	100	100	100.0	16723	PASS
96	95	5	9	6.5	1082	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	88.2	14748	PASS
175	174	5	9	7.3	1081	PASS
176	174	95	101	96.9	14293	PASS
177	176	5	9	6.9	991	PASS

11M91014.D BFB.M Wed Apr 10 15:55:52 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\041113\11M91036.D          Vial: 1
Acq On    : 11 Apr 2013   6:55                       Operator: TMB
Sample    : WG426299-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD57083                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

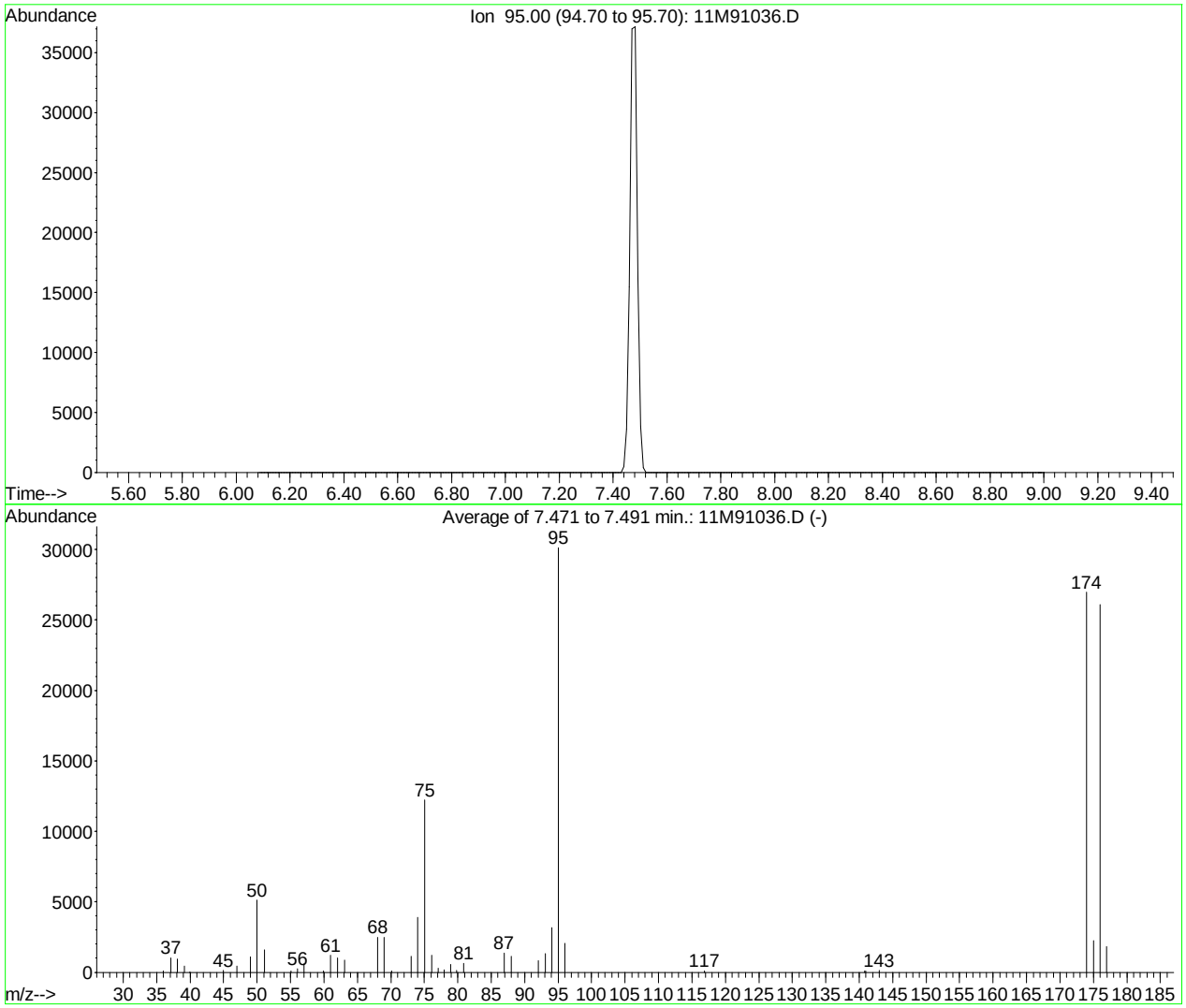

AutoFind: Scans 135, 136, 137; Background Corrected with Scan 129

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.0	5109	PASS
75	95	30	60	40.6	12222	PASS
95	95	100	100	100.0	30131	PASS
96	95	5	9	6.8	2039	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	89.5	26960	PASS
175	174	5	9	8.3	2230	PASS
176	174	95	101	96.8	26085	PASS
177	176	5	9	6.9	1806	PASS

11M91036.D BFB.M Thu Apr 11 07:33:31 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041013\11M91017.D Vial: 4
Acq On : 10 Apr 2013 17:57 Operator: FJB
Sample : WG426251-01 VBLK0410 BLANK 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 11 14:33:54 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	979274	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.80	117	730067	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.61	152	374305	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.18	111	268069	24.9963 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.00%		
43) 1,2-Dichloroethane-d4	9.79	65	231040	23.6658 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.68%		
58) Toluene-d8	12.04	98	1015320	26.4197 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.68%		
80) p-Bromofluorobenzene	15.20	95	375062	26.5835 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.32%		

Target Compounds

					Qvalue
3) Chloromethane	3.41	50	1061	Below Cal	# 77
4) Vinyl Chloride	3.60	62	246	Below Cal	# 41
6) Bromomethane	4.46	94	1459	Below Cal	78
17) Iodomethane	6.62	142	186	1.2066 ug/L	# 30
98) 1,2,4-Trichlorobenzene	19.09	180	686	Below Cal	# 44
100) Naphthalene	19.42	128	1441	0.3471 ug/L	# 68
101) 1,2,3-Trichlorobenzene	19.71	180	738	Below Cal	# 43

(#) = qualifier out of range (m) = manual integration
11M91017.D 8260_WT.M Thu Apr 11 14:33:55 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041013\11M91017.D Vial: 4
Acq On : 10 Apr 2013 17:57 Operator: FJB
Sample : WG426251-01 VBLK0410 BLANK 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 11 14:33 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration

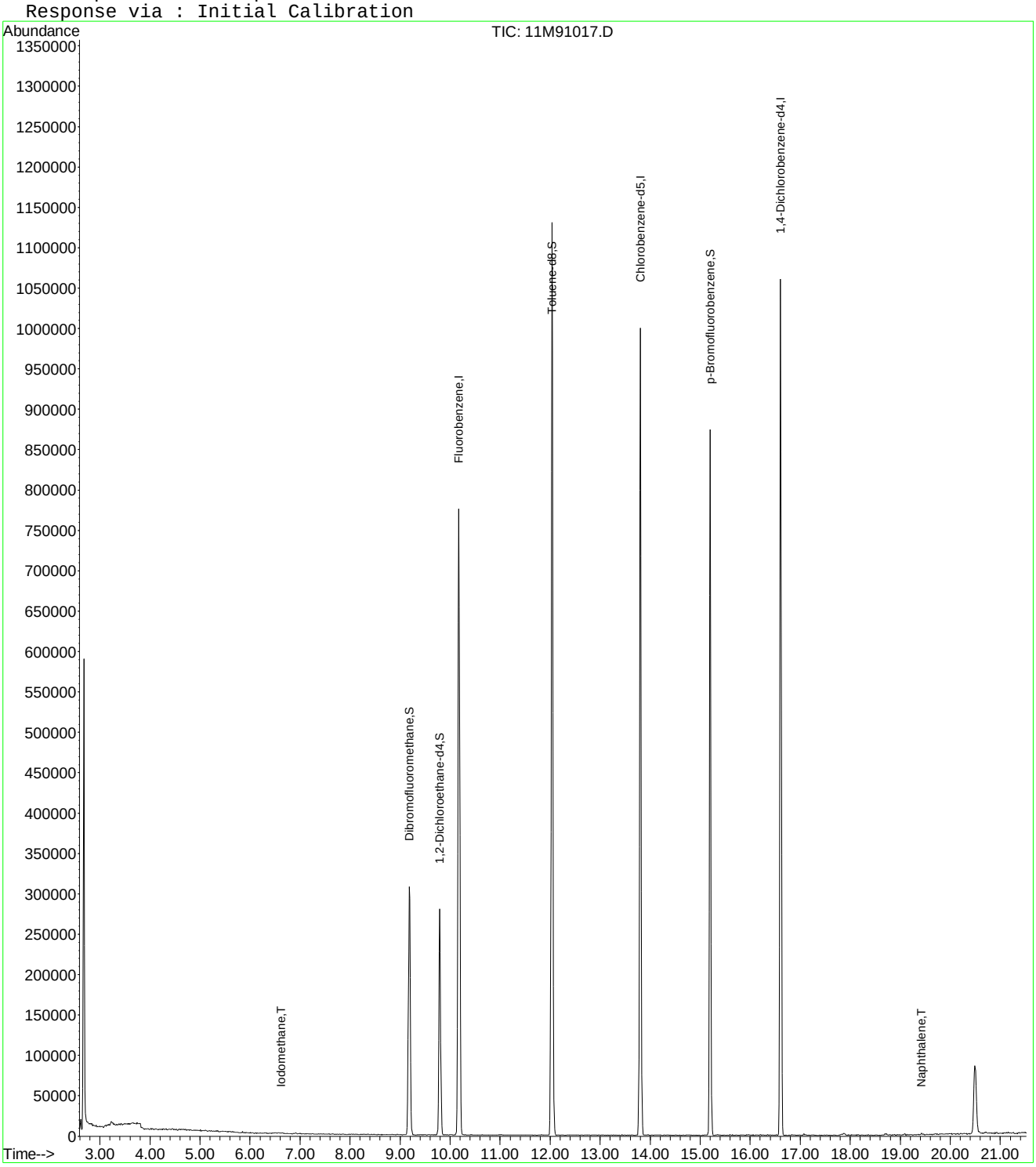

11M91017.D 8260_WT.M Thu Apr 11 14:33:55 2013 Page 2

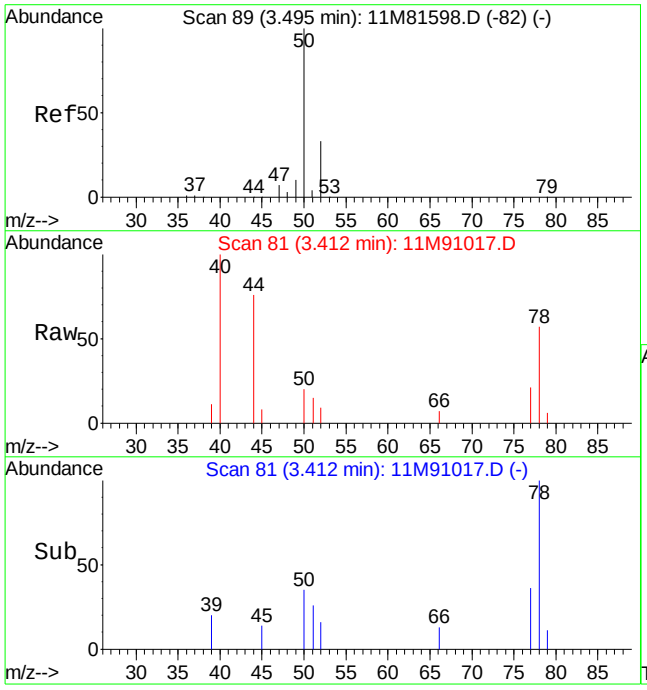

#3
Chloromethane
Concen: Below Cal
RT: 3.41 min Scan# 81
Delta R.T. 0.02 min
Lab File: 11M91017.D
Acq: 10 Apr 2013 17:57

Tgt Ion: 50 Resp: 1061

Ion	Ratio	Lower	Upper
50	100		
52	45.3	19.4	45.2#

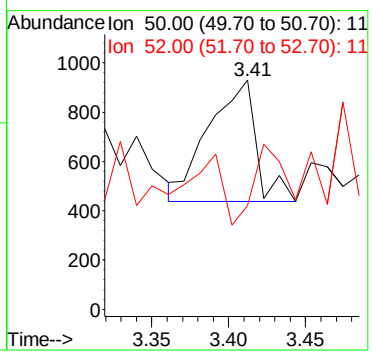

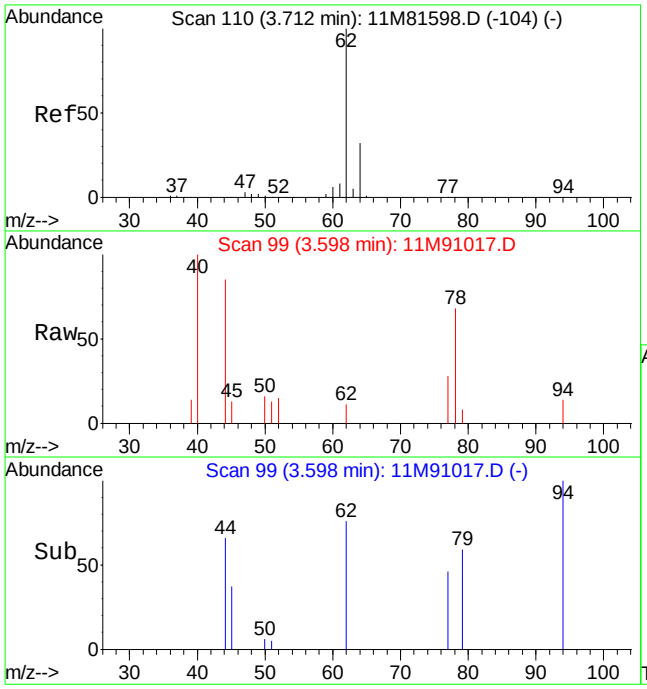

#4
Vinyl Chloride
Concen: Below Cal
RT: 3.60 min Scan# 99
Delta R.T. 0.00 min
Lab File: 11M91017.D
Acq: 10 Apr 2013 17:57

Tgt Ion: 62 Resp: 246

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.9	46.5#

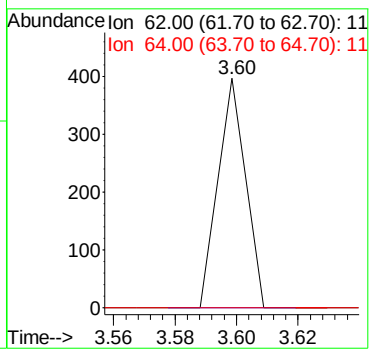

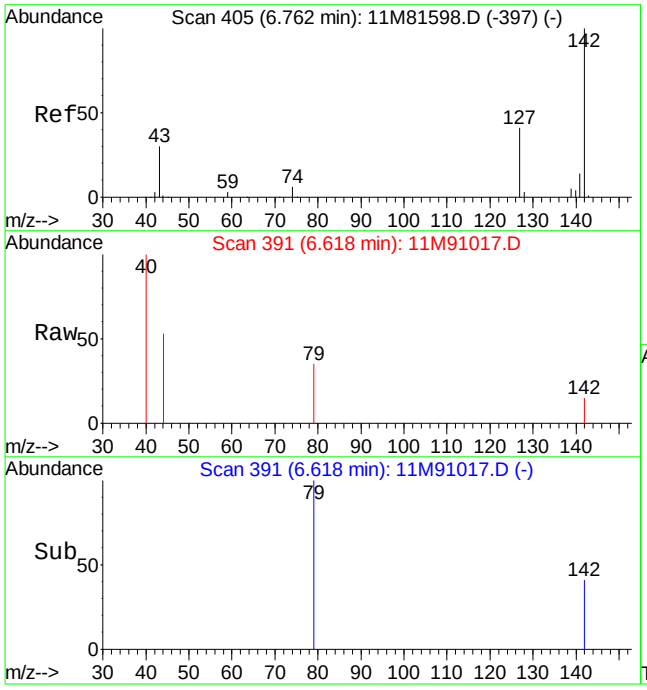

#17
Iodomethane
Concen: 1.21 ug/L
RT: 6.62 min Scan# 391
Delta R.T. 0.01 min
Lab File: 11M91017.D
Acq: 10 Apr 2013 17:57

Tgt Ion:142 Resp: 186

Ion	Ratio	Lower	Upper
142	100		
127	0.0	27.9	65.1#

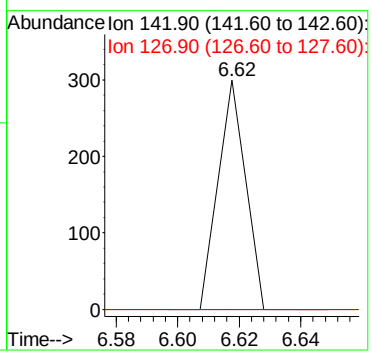

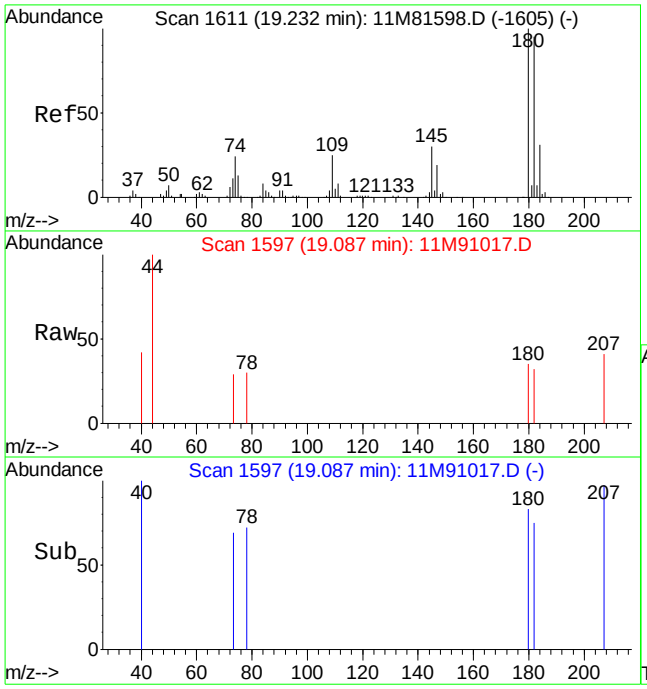

#98
1,2,4-Trichlorobenzene
Concen: Below Cal
RT: 19.09 min Scan# 1597
Delta R.T. 0.01 min
Lab File: 11M91017.D
Acq: 10 Apr 2013 17:57

Tgt Ion:180 Resp: 686

Ion	Ratio	Lower	Upper
180	100		
145	0.0	18.4	42.8#

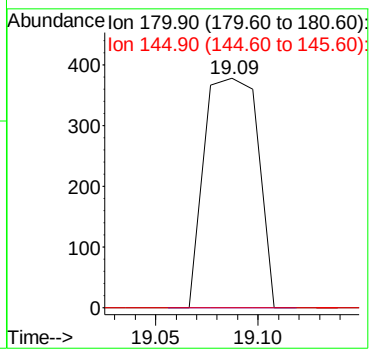

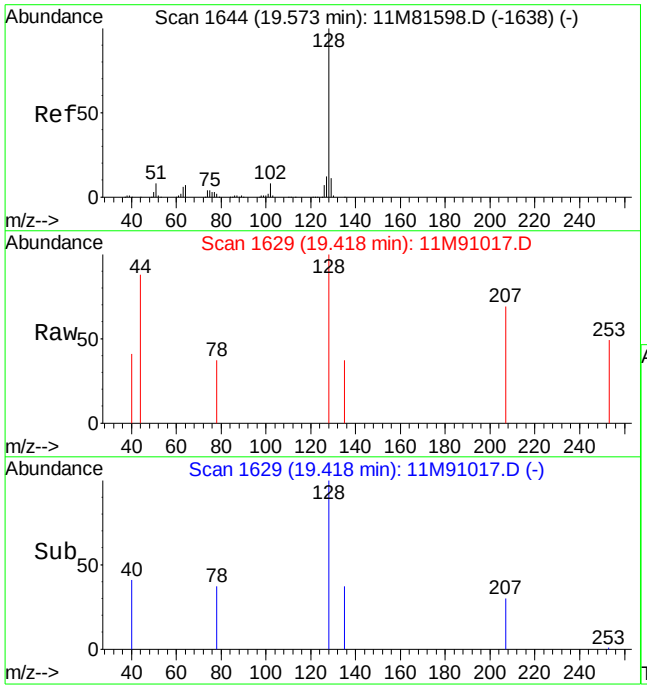

#100
Naphthalene
Concen: 0.35 ug/L
RT: 19.42 min Scan# 1629
Delta R.T. 0.00 min
Lab File: 11M91017.D
Acq: 10 Apr 2013 17:57

Tgt Ion:128 Resp: 1441

Ion	Ratio	Lower	Upper
128	100		
127	0.0	11.4	14.0#

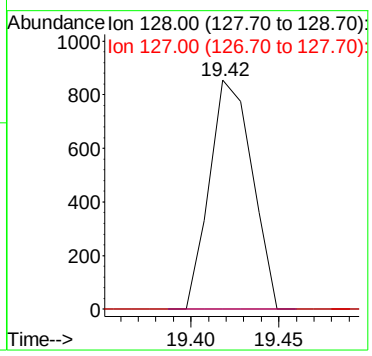

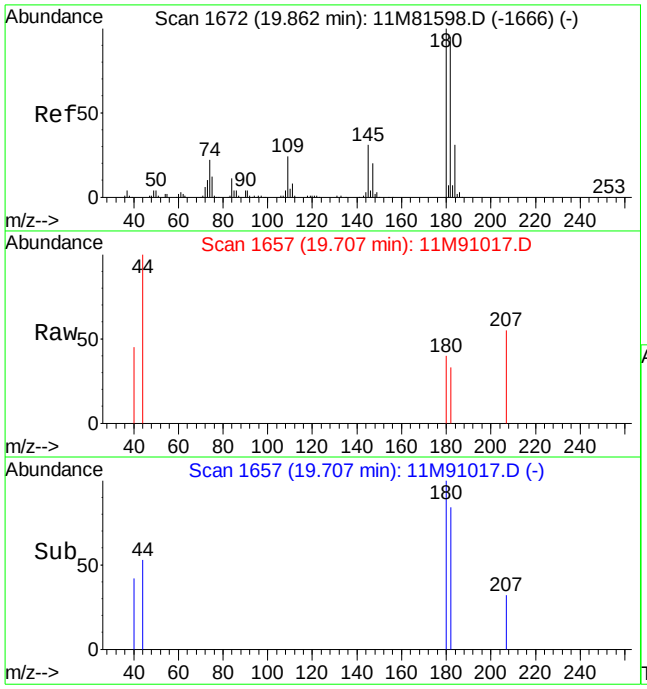

#101
1,2,3-Trichlorobenzene
Concen: Below Cal
RT: 19.71 min Scan# 1657
Delta R.T. 0.00 min
Lab File: 11M91017.D
Acq: 10 Apr 2013 17:57

Tgt Ion:180 Resp: 738

Ion	Ratio	Lower	Upper
180	100		
145	0.0	19.3	44.9#

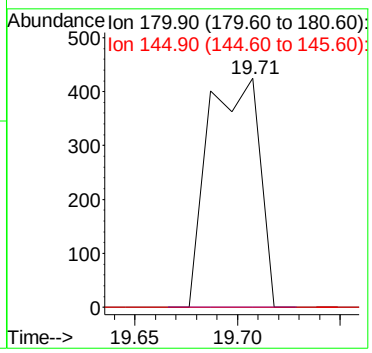

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041113\11M91039.D Vial: 4
Acq On : 11 Apr 2013 8:22 Operator: TMB
Sample : WG426300-01 VBLK0411 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 12 10:01:46 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	1022151	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.80	117	766150	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.61	152	387521	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.18	111	265875	23.7517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.00%		
43) 1,2-Dichloroethane-d4	9.79	65	233814	22.9453 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.80%		
58) Toluene-d8	12.04	98	1011703	25.0857 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.36%		
80) p-Bromofluorobenzene	15.20	95	379591	25.9869 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.96%		
Target Compounds					Qvalue
3) Chloromethane	3.38	50	1056	Below Cal	# 75
4) Vinyl Chloride	3.59	62	433	Below Cal	# 41
98) 1,2,4-Trichlorobenzene	19.09	180	503	Below Cal	# 44
100) Naphthalene	19.43	128	1180	0.3369 ug/L	# 68

(#) = qualifier out of range (m) = manual integration
11M91039.D 8260_WT.M Fri Apr 12 10:01:47 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041113\11M91039.D Vial: 4
Acq On : 11 Apr 2013 8:22 Operator: TMB
Sample : WG426300-01 VBLK0411 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 12 10:01 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration

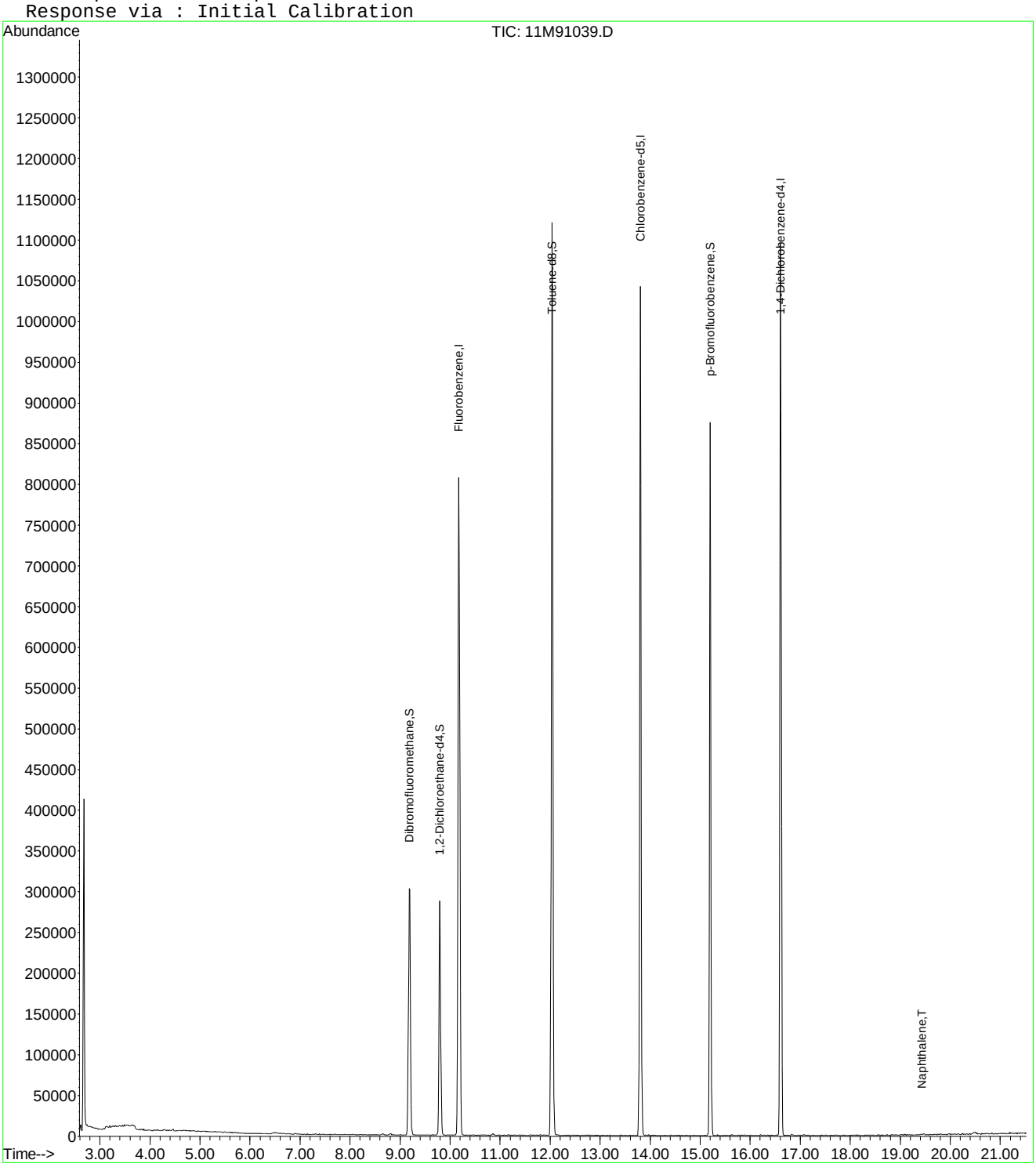

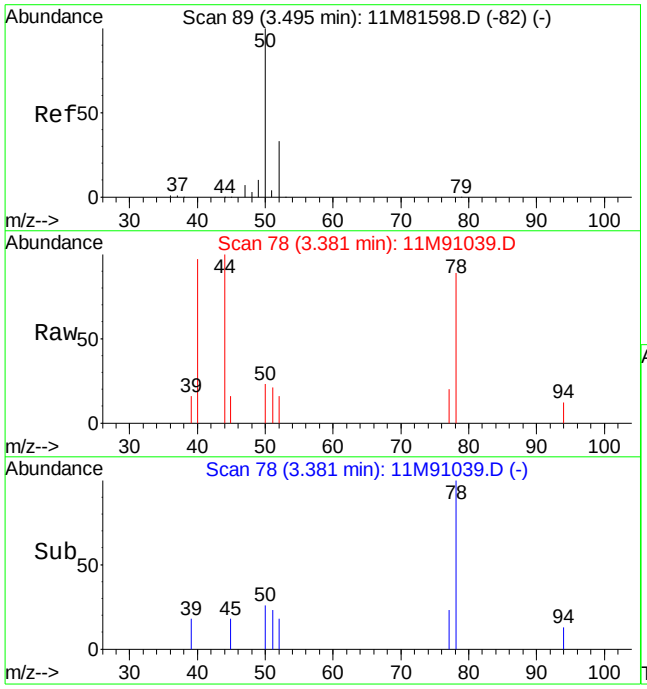

#3
Chloromethane
Concen: Below Cal
RT: 3.38 min Scan# 78
Delta R.T. -0.01 min
Lab File: 11M91039.D
Acq: 11 Apr 2013 8:22

Tgt Ion: 50 Resp: 1056

Ion	Ratio	Lower	Upper
50	100		
52	18.4	19.4	45.2#

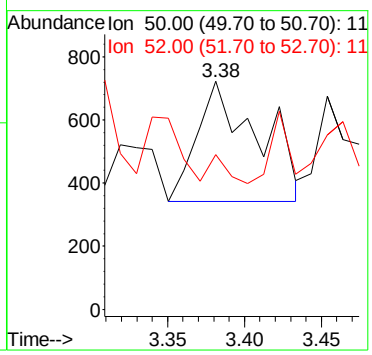

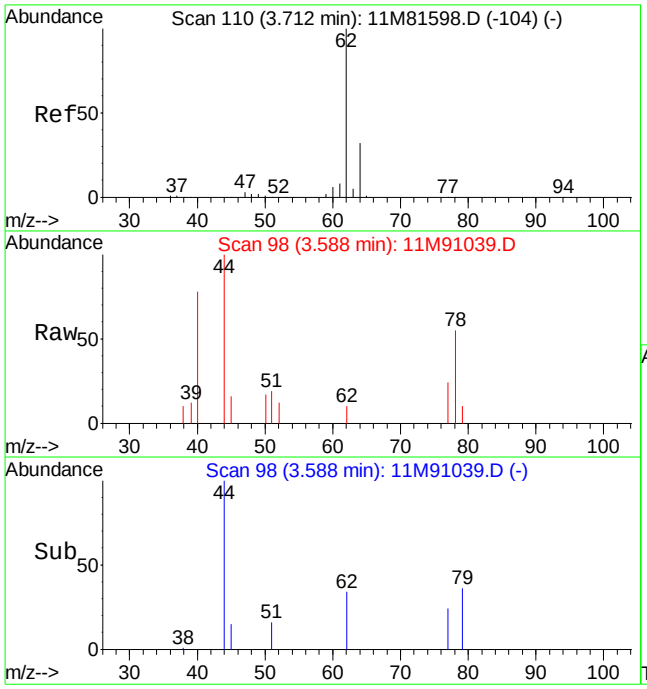

#4
Vinyl Chloride
Concen: Below Cal
RT: 3.59 min Scan# 98
Delta R.T. -0.01 min
Lab File: 11M91039.D
Acq: 11 Apr 2013 8:22

Tgt Ion: 62 Resp: 433

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.9	46.5#

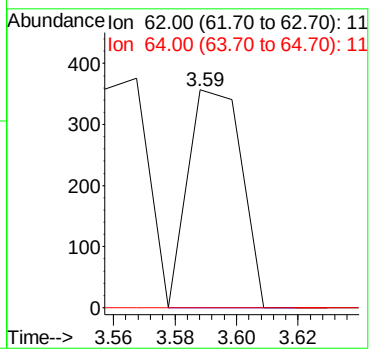

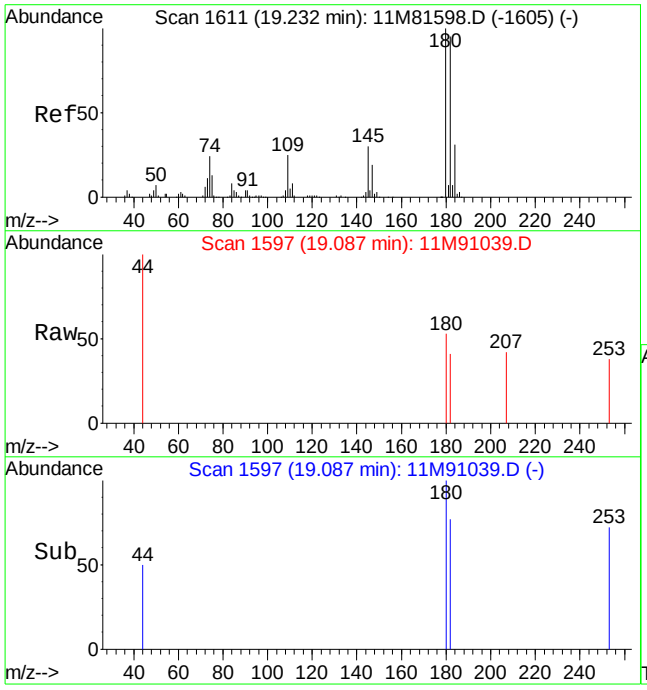

#98
1,2,4-Trichlorobenzene
Concen: Below Cal
RT: 19.09 min Scan# 1597
Delta R.T. 0.01 min
Lab File: 11M91039.D
Acq: 11 Apr 2013 8:22

Tgt Ion:180 Resp: 503

Ion	Ratio	Lower	Upper
180	100		
145	0.0	18.4	42.8#

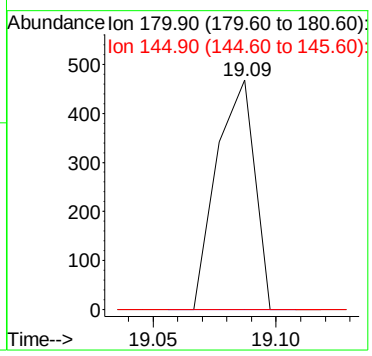

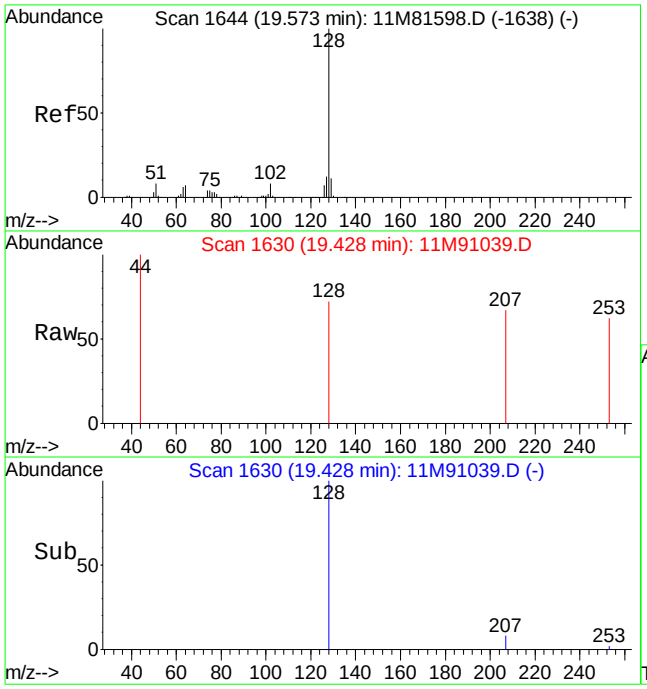

#100
Naphthalene
Concen: 0.34 ug/L
RT: 19.43 min Scan# 1630
Delta R.T. 0.01 min
Lab File: 11M91039.D
Acq: 11 Apr 2013 8:22

Tgt Ion:128 Resp: 1180

Ion	Ratio	Lower	Upper
128	100		
127	0.0	11.4	14.0#

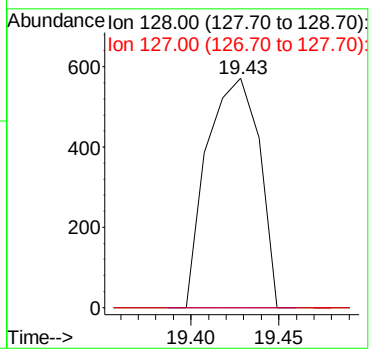

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041013\11M91018.D Vial: 5
Acq On : 10 Apr 2013 18:28 Operator: FJB
Sample : WG426251-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD57151 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 10 18:50:38 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	1001105	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.80	117	760400	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.61	152	401554	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.18	111	273941	24.9868 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.96%		
43) 1,2-Dichloroethane-d4	9.79	65	237169	23.7638 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.04%		
58) Toluene-d8	12.04	98	1038497	25.9448 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.76%		
80) p-Bromofluorobenzene	15.20	95	392442	25.9278 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.72%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.97	85	246801	27.2709 ug/L	94
3) Chloromethane	3.39	50	225966	21.3230 ug/L	98
4) Vinyl Chloride	3.60	62	188686	21.5080 ug/L	96
5) 1,3-Butadiene	3.64	54	83492	11.3436 ug/L	96
6) Bromomethane	4.45	94	142815	17.8119 ug/L	100
7) Chloroethane	4.59	64	163137	20.5750 ug/L	99
8) Trichlorofluoromethane	5.07	101	342547	21.2792 ug/L	99
9) Diethyl ether	5.58	59	803048	95.4652 ug/L	90
10) Isoprene	5.61	67	322285	20.7744 ug/L	85
11) Acrolein	5.80	56	82957	250.6151 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	5.83	101	226887	22.5670 ug/L	97
13) Acetone	5.89	43	36107	13.0282 ug/L #	67
14) 1,1-Dichloroethene	6.12	61	321961	19.6763 ug/L	99
15) Tert-Butyl Alcohol	6.22	59	105368	165.2815 ug/L	94
16) Dimethyl Sulfide	6.37	62	294119	22.2012 ug/L	98
17) Iodomethane	6.61	142	205183	15.4712 ug/L	89
18) Methyl acetate	6.63	43	121758	20.6956 ug/L	99
19) Methylene Chloride	6.88	84	226257	19.7964 ug/L	87
20) Carbon Disulfide	6.91	76	713084	19.9376 ug/L	98
21) Acrylonitrile	7.05	53	342512	116.7871 ug/L	98
22) Methyl Tert Butyl Ether	7.08	73	527071	21.5080 ug/L	91
23) trans-1,2-Dichloroethene	7.31	96	231351	19.8842 ug/L	89
24) n-Hexane	7.39	57	300159	19.7876 ug/L	92
25) Diisopropyl ether	7.72	45	3735456	93.7101 ug/L	87
26) Vinyl Acetate	7.88	43	246939	15.1126 ug/L	91
27) 1,1-Dichloroethane	7.91	63	394601	19.5891 ug/L	98
28) Ethyl-Tert-Butyl ether	8.27	59	3272923	94.9604 ug/L	92
29) 2-Butanone	8.44	43	63555	19.9084 ug/L	93
30) Propionitrile	8.54	54	98632	91.5125 ug/L	97
31) 2,2-Dichloropropane	8.65	77	306566	18.6008 ug/L	100
32) cis-1,2-Dichloroethene	8.72	96	251263	20.1060 ug/L	91
33) Chloroform	8.91	83	377257	19.5108 ug/L	97
34) 1-Bromopropane	9.04	122	48337	18.4658 ug/L	94
35) Bromochloromethane	9.13	130	143187	19.8511 ug/L	79
36) Tetrahydrofuran	9.15	42	192211	93.5400 ug/L	85
38) 1,1,1-Trichloroethane	9.42	97	347062	20.6850 ug/L	97
39) Cyclohexane	9.45	56	424406	20.0964 ug/L	77
40) 1,1-Dichloropropene	9.61	75	299414	20.3018 ug/L	98
41) Carbon Tetrachloride	9.74	117	309455	20.8769 ug/L	99
42) Tert-Amyl-Methyl ether	9.71	73	2522412	95.6198 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M91018.D 8260_WT.M Wed Apr 10 18:50:39 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041013\11M91018.D Vial: 5
Acq On : 10 Apr 2013 18:28 Operator: FJB
Sample : WG426251-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD57151 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 10 18:50:38 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.91	62	251099	20.3197 ug/L	94
46)	Benzene	9.94	78	893016	19.2241 ug/L	98
47)	Trichloroethene	10.65	130	257859	21.7654 ug/L	97
48)	Methylcyclohexane	10.73	83	330307	20.7619 ug/L	86
49)	1,2-Dichloropropane	10.86	63	236605	20.0744 ug/L	85
50)	1,4-Dioxane	11.13	88	12185	161.5863 ug/L	72
51)	Bromodichloromethane	11.14	83	276979	19.1561 ug/L	99
52)	Dibromomethane	11.22	93	112746	19.3944 ug/L	94
53)	2-Chloroethyl Vinyl Ether	11.41	63	95729	18.3649 ug/L	94
54)	4-Methyl-2-Pentanone	11.45	58	57884	19.2571 ug/L	86
55)	cis-1,3-Dichloropropene	11.74	75	351741	20.3402 ug/L	99
56)	Dimethyl Disulfide	11.97	79	184999	20.7231 ug/L	91
59)	Toluene	12.13	91	953242	19.3989 ug/L	98
60)	Ethyl Methacrylate	12.22	69	211156	22.4456 ug/L	99
62)	trans-1,3-Dichloropropene	12.29	75	275801	19.6132 ug/L	98
63)	1,1,2-Trichloroethane	12.50	97	166143	20.8000 ug/L	99
64)	2-Hexanone	12.44	43	87835	20.1592 ug/L	93
65)	1,3-Dichloropropane	12.78	76	277762	20.3429 ug/L	98
66)	Tetrachloroethene	12.89	164	201013	20.6272 ug/L	96
67)	Dibromochloromethane	13.14	129	206740	19.6301 ug/L	99
68)	1,2-Dibromoethane	13.38	107	162623	20.1284 ug/L	99
69)	1-Chlorohexane	13.46	91	302926	20.3694 ug/L	85
70)	Chlorobenzene	13.84	112	583808	18.3176 ug/L	100
71)	1,1,1,2-Tetrachloroethane	13.88	131	230384	20.5777 ug/L	100
72)	Ethylbenzene	13.88	106	342826	19.6804 ug/L	98
73)	m-,p-Xylene	13.96	106	805774	38.8057 ug/L	100
74)	o-Xylene	14.49	106	378713	18.3613 ug/L	99
75)	Styrene	14.52	104	683439	18.9459 ug/L	97
76)	Bromoform	14.97	173	130653	19.9122 ug/L	99
77)	Isopropylbenzene	14.88	105	934341	18.5993 ug/L	98
79)	1,1,2,2-Tetrachloroethane	15.08	83	174932	19.5165 ug/L	98
81)	1,2,3-Trichloropropane	15.25	110	52767	19.2289 ug/L	99
82)	trans-1,4-Dichloro-2-Buten	15.30	53	36615	13.1238 ug/L	78
83)	n-Propylbenzene	15.34	91	1069349	17.9058 ug/L	99
84)	Bromobenzene	15.47	156	266693	19.0373 ug/L	97
85)	1,3,5-Trimethylbenzene	15.52	105	854677	20.0263 ug/L	97
86)	2-Chlorotoluene	15.60	91	741775	18.6047 ug/L	94
87)	4-Chlorotoluene	15.64	91	600654	17.2131 ug/L	94
88)	a-Methylstyrene	15.89	118	471561	21.1469 ug/L	97
89)	tert-Butylbenzene	15.95	134	156142	18.3141 ug/L	95
90)	1,2,4-Trimethylbenzene	16.00	105	865703	18.9034 ug/L	97
91)	sec-Butylbenzene	16.20	105	902343	17.7168 ug/L	98
92)	p-Isopropyltoluene	16.35	119	777755	18.3867 ug/L	99
93)	1,3-Dichlorobenzene	16.52	146	459643	17.8705 ug/L	99
94)	1,4-Dichlorobenzene	16.65	146	494913	18.8226 ug/L	99
95)	n-Butylbenzene	16.83	91	699569	19.7840 ug/L	98
96)	1,2-Dichlorobenzene	17.10	146	426685	17.6416 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	18.02	75	27212	18.7450 ug/L	94
98)	1,2,4-Trichlorobenzene	19.08	180	289257	18.5517 ug/L	99
99)	Hexachlorobutadiene	19.22	225	108649	19.3072 ug/L	92
100)	Naphthalene	19.42	128	550493	17.6535 ug/L	99
101)	1,2,3-Trichlorobenzene	19.71	180	265138	18.2037 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041013\11M91018.D Vial: 5
Acq On : 10 Apr 2013 18:28 Operator: FJB
Sample : WG426251-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD57151 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 10 18:50 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration

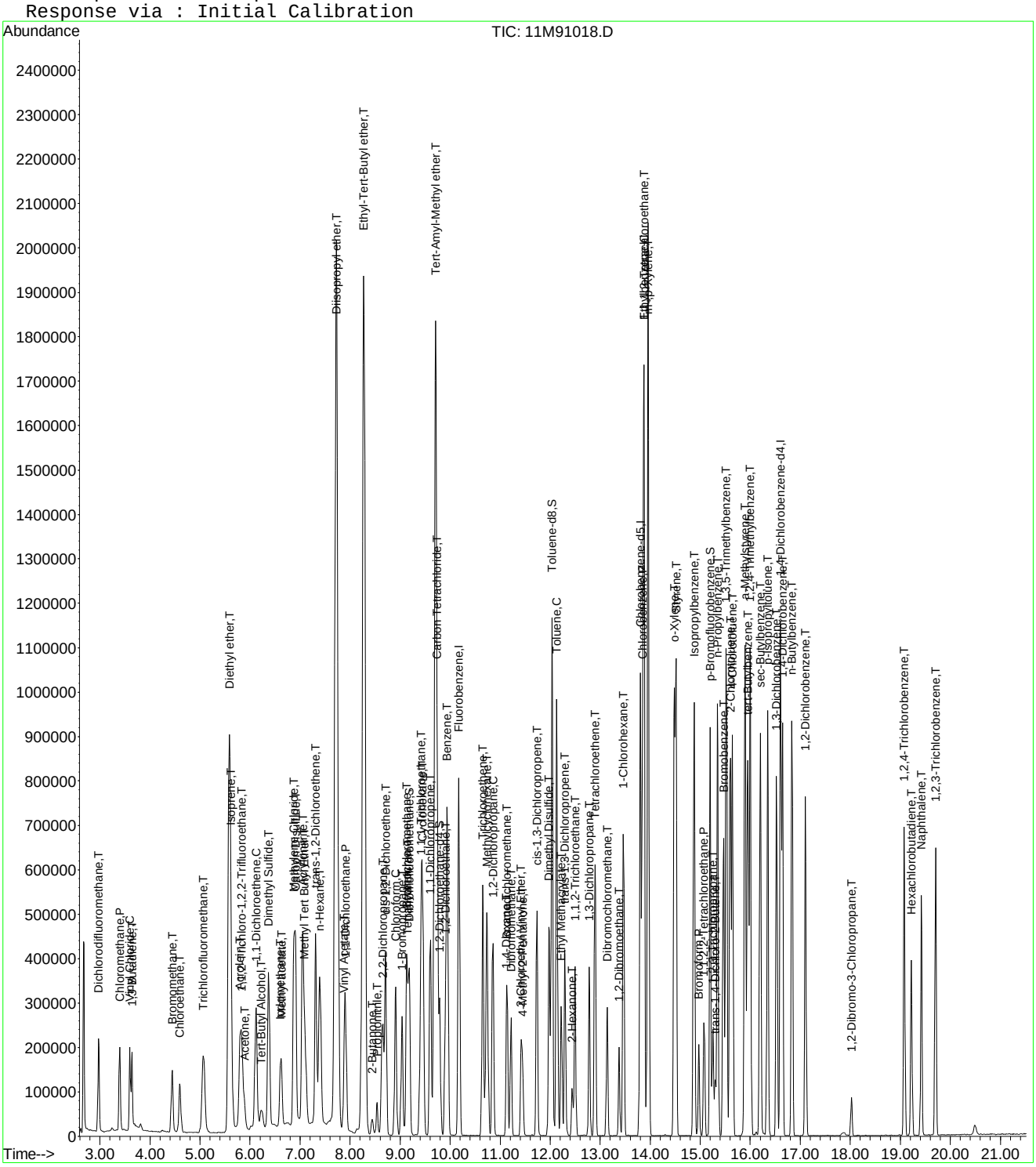

11M91018.D 8260_WT.M Wed Apr 10 18:50:39 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041113\11M91040.D Vial: 5
Acq On : 11 Apr 2013 8:53 Operator: TMB
Sample : WG426300-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD57227 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 11 09:15:44 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	982577	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.80	117	749523	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.61	152	403493	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.18	111	265571	24.6801 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.72%		
43) 1,2-Dichloroethane-d4	9.79	65	232390	23.7241 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.88%		
58) Toluene-d8	12.04	98	1009085	25.5758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.32%		
80) p-Bromofluorobenzene	15.20	95	386586	25.4182 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.68%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.97	85	220243	24.7952 ug/L	94
3) Chloromethane	3.39	50	188820	18.1081 ug/L	96
4) Vinyl Chloride	3.60	62	162798	18.8544 ug/L	97
5) 1,3-Butadiene	3.63	54	75177	9.7512 ug/L	92
6) Bromomethane	4.45	94	124854	15.8430 ug/L	100
7) Chloroethane	4.59	64	144709	18.5950 ug/L	98
8) Trichlorofluoromethane	5.07	101	288753	18.2757 ug/L	99
9) Diethyl ether	5.58	59	761919	92.2837 ug/L	89
10) Isoprene	5.61	67	265420	17.4315 ug/L	83
11) Acrolein	5.80	56	75058	231.0278 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	5.82	101	200712	20.3400 ug/L	98
13) Acetone	5.89	43	50404	18.5299 ug/L	99
14) 1,1-Dichloroethene	6.12	61	286486	17.8385 ug/L	100
15) Tert-Butyl Alcohol	6.22	59	114292	182.6604 ug/L	94
16) Dimethyl Sulfide	6.37	62	262053	20.1537 ug/L	99
17) Iodomethane	6.62	142	186572	14.4209 ug/L	89
18) Methyl acetate	6.63	43	114268	19.7887 ug/L	93
19) Methylene Chloride	6.88	84	209124	18.6423 ug/L	86
20) Carbon Disulfide	6.91	76	605356	17.2447 ug/L	99
21) Acrylonitrile	7.05	53	321451	111.6727 ug/L	96
22) Methyl Tert Butyl Ether	7.09	73	464939	19.3304 ug/L	89
23) trans-1,2-Dichloroethene	7.31	96	213034	18.6552 ug/L	88
24) n-Hexane	7.39	57	247025	16.5919 ug/L	91
25) Diisopropyl ether	7.72	45	3500853	89.4808 ug/L	87
26) Vinyl Acetate	7.88	43	280383	17.4829 ug/L	92
27) 1,1-Dichloroethane	7.91	63	370241	18.7264 ug/L	97
28) Ethyl-Tert-Butyl ether	8.27	59	3041845	89.9201 ug/L	93
29) 2-Butanone	8.44	43	57215	18.2604 ug/L	94
30) Propionitrile	8.54	54	99864	94.4027 ug/L	99
31) 2,2-Dichloropropane	8.65	77	283232	17.5091 ug/L	99
32) cis-1,2-Dichloroethene	8.72	96	229167	18.6837 ug/L	90
33) Chloroform	8.91	83	354050	18.6559 ug/L	96
34) 1-Bromopropane	9.04	122	48133	18.7346 ug/L	99
35) Bromochloromethane	9.13	130	135144	19.0894 ug/L	82
36) Tetrahydrofuran	9.15	42	185614	92.0329 ug/L	85
38) 1,1,1-Trichloroethane	9.42	97	311103	18.8914 ug/L	97
39) Cyclohexane	9.45	56	352813	17.0214 ug/L	77
40) 1,1-Dichloropropene	9.61	75	268636	18.5583 ug/L	98
41) Carbon Tetrachloride	9.74	117	274562	18.8722 ug/L	98
42) Tert-Amyl-Methyl ether	9.71	73	2386151	92.1600 ug/L	89

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041113\11M91040.D Vial: 5
Acq On : 11 Apr 2013 8:53 Operator: TMB
Sample : WG426300-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD57227 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 11 09:15:44 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.91	62	236186	19.4733 ug/L		94
46)	Benzene	9.95	78	822136	18.0320 ug/L		98
47)	Trichloroethene	10.66	130	232189	19.9682 ug/L		96
48)	Methylcyclohexane	10.73	83	276909	17.7337 ug/L		87
49)	1,2-Dichloropropane	10.86	63	218281	18.8689 ug/L		85
50)	1,4-Dioxane	11.13	88	11261	152.1490 ug/L	#	68
51)	Bromodichloromethane	11.14	83	258024	18.1816 ug/L		97
52)	Dibromomethane	11.22	93	104805	18.3684 ug/L		93
53)	2-Chloroethyl Vinyl Ether	11.42	63	90545	17.6979 ug/L		95
54)	4-Methyl-2-Pentanone	11.46	58	56841	19.2666 ug/L		82
55)	cis-1,3-Dichloropropene	11.74	75	330577	19.4768 ug/L		99
56)	Dimethyl Disulfide	11.98	79	166478	19.0001 ug/L		90
59)	Toluene	12.13	91	879076	18.1492 ug/L		97
60)	Ethyl Methacrylate	12.22	69	195626	21.0965 ug/L		98
62)	trans-1,3-Dichloropropene	12.29	75	261160	18.8415 ug/L		100
63)	1,1,2-Trichloroethane	12.50	97	155728	19.7790 ug/L		98
64)	2-Hexanone	12.44	43	82646	19.2435 ug/L		92
65)	1,3-Dichloropropane	12.78	76	259674	19.2941 ug/L		99
66)	Tetrachloroethene	12.90	164	181204	18.8643 ug/L		97
67)	Dibromochloromethane	13.14	129	195371	18.8198 ug/L		99
68)	1,2-Dibromoethane	13.38	107	157622	19.7926 ug/L		99
69)	1-Chlorohexane	13.46	91	266001	18.1461 ug/L		86
70)	Chlorobenzene	13.86	112	545364	17.3597 ug/L		100
71)	1,1,1,2-Tetrachloroethane	13.88	131	216189	19.5900 ug/L		99
72)	Ethylbenzene	13.88	106	314934	18.3416 ug/L		98
73)	m-,p-Xylene	13.96	106	749126	36.6011 ug/L		100
74)	o-Xylene	14.49	106	352120	17.3197 ug/L		99
75)	Styrene	14.52	104	639161	17.9756 ug/L		98
76)	Bromoform	14.97	173	124305	19.2196 ug/L		99
77)	Isopropylbenzene	14.88	105	862945	17.4274 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.08	83	173718	19.2879 ug/L		98
81)	1,2,3-Trichloropropane	15.25	110	49184	17.8371 ug/L		91
82)	trans-1,4-Dichloro-2-Buten	15.29	53	36257	12.9417 ug/L		82
83)	n-Propylbenzene	15.34	91	989219	16.4845 ug/L		99
84)	Bromobenzene	15.47	156	250716	17.8108 ug/L		96
85)	1,3,5-Trimethylbenzene	15.52	105	805236	18.7772 ug/L		96
86)	2-Chlorotoluene	15.60	91	687053	17.1494 ug/L		95
87)	4-Chlorotoluene	15.64	91	565017	16.1140 ug/L		94
88)	a-Methylstyrene	15.89	118	433804	19.3602 ug/L		98
89)	tert-Butylbenzene	15.95	134	147697	17.2404 ug/L		97
90)	1,2,4-Trimethylbenzene	16.01	105	816239	17.7377 ug/L		96
91)	sec-Butylbenzene	16.20	105	837727	16.3691 ug/L		99
92)	p-Isopropyltoluene	16.35	119	726953	17.1032 ug/L		99
93)	1,3-Dichlorobenzene	16.53	146	433781	16.7840 ug/L		98
94)	1,4-Dichlorobenzene	16.65	146	476551	18.0371 ug/L		99
95)	n-Butylbenzene	16.83	91	651049	18.3233 ug/L		98
96)	1,2-Dichlorobenzene	17.10	146	412964	16.9922 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	18.02	75	27037	18.5349 ug/L		99
98)	1,2,4-Trichlorobenzene	19.08	180	284533	18.1570 ug/L		100
99)	Hexachlorobutadiene	19.22	225	105078	18.5829 ug/L		91
100)	Naphthalene	19.42	128	537150	17.1515 ug/L		99
101)	1,2,3-Trichlorobenzene	19.71	180	257893	17.6157 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M91040.D 8260_WT.M Thu Apr 11 09:15:45 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041113\11M91040.D Vial: 5
Acq On : 11 Apr 2013 8:53 Operator: TMB
Sample : WG426300-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD57227 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 11 9:15 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration

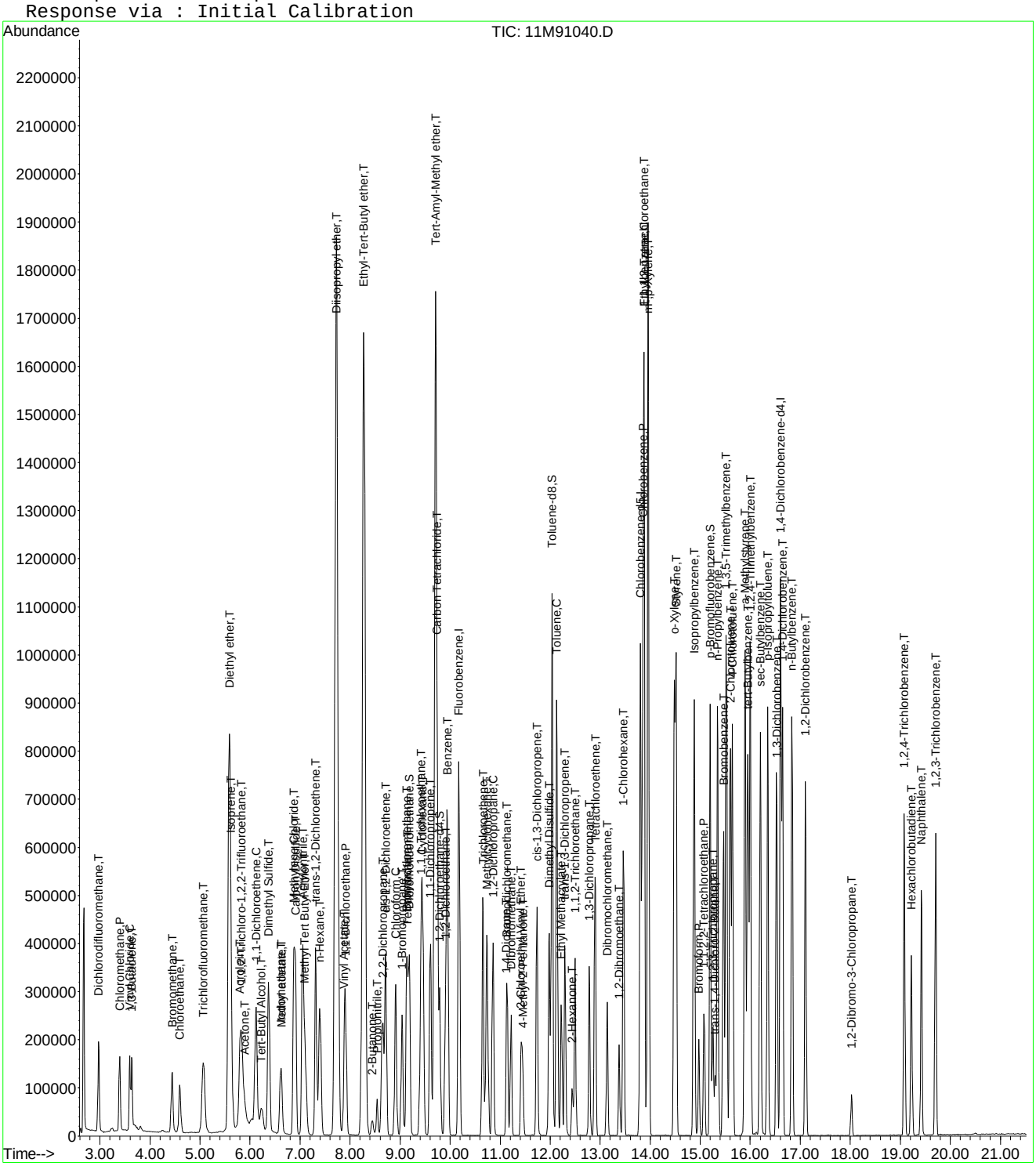

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041013\11M91019.D Vial: 6
Acq On : 10 Apr 2013 19:00 Operator: FJB
Sample : WG426251-03 20ug/L LCS DUP 8260 Inst : hpms11
Misc : 1,1 STD57151 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 10 19:22:19 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	1026229	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.80	117	783315	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.61	152	408369	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.18	111	280724	24.9786 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.92%		
43) 1,2-Dichloroethane-d4	9.79	65	241784	23.6332 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.52%		
58) Toluene-d8	12.04	98	1054562	25.5754 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.32%		
80) p-Bromofluorobenzene	15.20	95	398692	25.9012 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.60%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.97	85	244766	26.3839 ug/L	93
3) Chloromethane	3.39	50	226529	20.8460 ug/L	98
4) Vinyl Chloride	3.60	62	188372	20.9352 ug/L	98
5) 1,3-Butadiene	3.64	54	84610	11.1235 ug/L	97
6) Bromomethane	4.45	94	138017	16.7803 ug/L	97
7) Chloroethane	4.60	64	162075	19.9406 ug/L	98
8) Trichlorofluoromethane	5.07	101	342769	20.7717 ug/L	99
9) Diethyl ether	5.58	59	816544	94.6931 ug/L	89
10) Isoprene	5.61	67	318070	20.0008 ug/L	86
11) Acrolein	5.80	56	89693	264.3310 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	5.83	101	229228	22.2417 ug/L	97
13) Acetone	5.90	43	39882	14.0380 ug/L	83
14) 1,1-Dichloroethene	6.12	61	323014	19.2574 ug/L	99
15) Tert-Butyl Alcohol	6.22	59	112951	172.8387 ug/L	96
16) Dimethyl Sulfide	6.37	62	291734	21.4820 ug/L	99
17) Iodomethane	6.62	142	239884	17.4772 ug/L	88
18) Methyl acetate	6.63	43	123938	20.5504 ug/L	97
19) Methylene Chloride	6.88	84	219672	18.7497 ug/L	86
20) Carbon Disulfide	6.91	76	712603	19.4364 ug/L	99
21) Acrylonitrile	7.05	53	350647	116.6338 ug/L	97
22) Methyl Tert Butyl Ether	7.09	73	525172	20.9059 ug/L	89
23) trans-1,2-Dichloroethene	7.31	96	233012	19.5367 ug/L	90
24) n-Hexane	7.39	57	313176	20.1403 ug/L	91
25) Diisopropyl ether	7.72	45	3763200	92.0949 ug/L	87
26) Vinyl Acetate	7.88	43	287382	17.1571 ug/L	92
27) 1,1-Dichloroethane	7.91	63	395076	19.1325 ug/L	97
28) Ethyl-Tert-Butyl ether	8.27	59	3311887	93.7384 ug/L	93
29) 2-Butanone	8.44	43	63696	19.4641 ug/L	97
30) Propionitrile	8.54	54	102715	92.9676 ug/L	98
31) 2,2-Dichloropropane	8.65	77	321466	19.0274 ug/L	99
32) cis-1,2-Dichloroethene	8.72	96	251764	19.6529 ug/L	91
33) Chloroform	8.91	83	382776	19.3116 ug/L	96
34) 1-Bromopropane	9.04	122	52887	19.7094 ug/L	97
35) Bromochloromethane	9.13	130	143015	19.3419 ug/L	81
36) Tetrahydrofuran	9.15	42	199005	94.4754 ug/L	86
38) 1,1,1-Trichloroethane	9.42	97	348218	20.2458 ug/L	96
39) Cyclohexane	9.45	56	422618	19.5218 ug/L	78
40) 1,1-Dichloropropene	9.61	75	303392	20.0679 ug/L	99
41) Carbon Tetrachloride	9.74	117	308396	20.2961 ug/L	98
42) Tert-Amyl-Methyl ether	9.71	73	2566060	94.8929 ug/L	90

(#) = qualifier out of range (m) = manual integration
11M91019.D 8260_WT.M Wed Apr 10 19:22:20 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041013\11M91019.D Vial: 6
Acq On : 10 Apr 2013 19:00 Operator: FJB
Sample : WG426251-03 20ug/L LCS DUP 8260 Inst : hpms11
Misc : 1,1 STD57151 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 10 19:22:19 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.91	62	253863	20.0404 ug/L	94
46)	Benzene	9.95	78	894181	18.7779 ug/L	98
47)	Trichloroethene	10.65	130	257253	21.1827 ug/L	96
48)	Methylcyclohexane	10.73	83	330439	20.2617 ug/L	86
49)	1,2-Dichloropropane	10.86	63	235160	19.4633 ug/L	84
50)	1,4-Dioxane	11.13	88	13840	179.0401 ug/L	83
51)	Bromodichloromethane	11.14	83	276970	18.6865 ug/L	99
52)	Dibromomethane	11.22	93	112754	18.9210 ug/L	94
53)	2-Chloroethyl Vinyl Ether	11.43	63	97437	18.2349 ug/L	95
54)	4-Methyl-2-Pentanone	11.45	58	61036	19.8085 ug/L	85
55)	cis-1,3-Dichloropropene	11.74	75	354550	20.0007 ug/L	97
56)	Dimethyl Disulfide	11.97	79	189026	20.6558 ug/L	92
59)	Toluene	12.13	91	963594	19.0360 ug/L	98
60)	Ethyl Methacrylate	12.22	69	215787	22.2668 ug/L	98
62)	trans-1,3-Dichloropropene	12.29	75	280293	19.3495 ug/L	99
63)	1,1,2-Trichloroethane	12.50	97	169148	20.5567 ug/L	99
64)	2-Hexanone	12.44	43	90781	20.2258 ug/L	92
65)	1,3-Dichloropropane	12.78	76	279313	19.8580 ug/L	100
66)	Tetrachloroethene	12.89	164	199624	19.8854 ug/L	96
67)	Dibromochloromethane	13.14	129	211319	19.4779 ug/L	100
68)	1,2-Dibromoethane	13.38	107	164708	19.7901 ug/L	99
69)	1-Chlorohexane	13.46	91	303927	19.8389 ug/L	85
70)	Chlorobenzene	13.84	112	586535	17.8648 ug/L	100
71)	1,1,1,2-Tetrachloroethane	13.88	131	232410	20.1514 ug/L	98
72)	Ethylbenzene	13.88	106	345247	19.2396 ug/L	100
73)	m-,p-Xylene	13.96	106	809760	37.8569 ug/L	99
74)	o-Xylene	14.49	106	379998	17.8846 ug/L	99
75)	Styrene	14.52	104	684405	18.4177 ug/L	97
76)	Bromoform	14.97	173	134577	19.9102 ug/L	98
77)	Isopropylbenzene	14.88	105	940486	18.1739 ug/L	98
79)	1,1,2,2-Tetrachloroethane	15.08	83	182440	20.0144 ug/L	98
81)	1,2,3-Trichloropropane	15.25	110	54751	19.6189 ug/L	97
82)	trans-1,4-Dichloro-2-Buten	15.30	53	40141	14.1010 ug/L	86
83)	n-Propylbenzene	15.34	91	1085588	17.8744 ug/L	99
84)	Bromobenzene	15.47	156	267953	18.8080 ug/L	95
85)	1,3,5-Trimethylbenzene	15.52	105	861036	19.8387 ug/L	97
86)	2-Chlorotoluene	15.60	91	736205	18.1569 ug/L	94
87)	4-Chlorotoluene	15.64	91	605891	17.0734 ug/L	94
88)	a-Methylstyrene	15.89	118	471974	20.8122 ug/L	98
89)	tert-Butylbenzene	15.95	134	156153	18.0098 ug/L	95
90)	1,2,4-Trimethylbenzene	16.00	105	866016	18.5947 ug/L	97
91)	sec-Butylbenzene	16.20	105	904732	17.4673 ug/L	98
92)	p-Isopropyltoluene	16.35	119	782738	18.1957 ug/L	99
93)	1,3-Dichlorobenzene	16.53	146	464040	17.7404 ug/L	99
94)	1,4-Dichlorobenzene	16.65	146	498289	18.6347 ug/L	98
95)	n-Butylbenzene	16.83	91	706531	19.6474 ug/L	98
96)	1,2-Dichlorobenzene	17.10	146	433262	17.6145 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	18.02	75	28527	19.3229 ug/L	100
98)	1,2,4-Trichlorobenzene	19.08	180	297765	18.7810 ug/L	98
99)	Hexachlorobutadiene	19.22	225	113793	19.8838 ug/L	90
100)	Naphthalene	19.42	128	563670	17.7724 ug/L	99
101)	1,2,3-Trichlorobenzene	19.71	180	268568	18.1308 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M91019.D 8260_WT.M Wed Apr 10 19:22:20 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041013\11M91019.D Vial: 6
Acq On : 10 Apr 2013 19:00 Operator: FJB
Sample : WG426251-03 20ug/L LCS DUP 8260 Inst : hpms11
Misc : 1,1 STD57151 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 10 19:22 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 04/02/13 HPMS11
Last Update : Fri Apr 05 12:47:46 2013
Response via : Initial Calibration

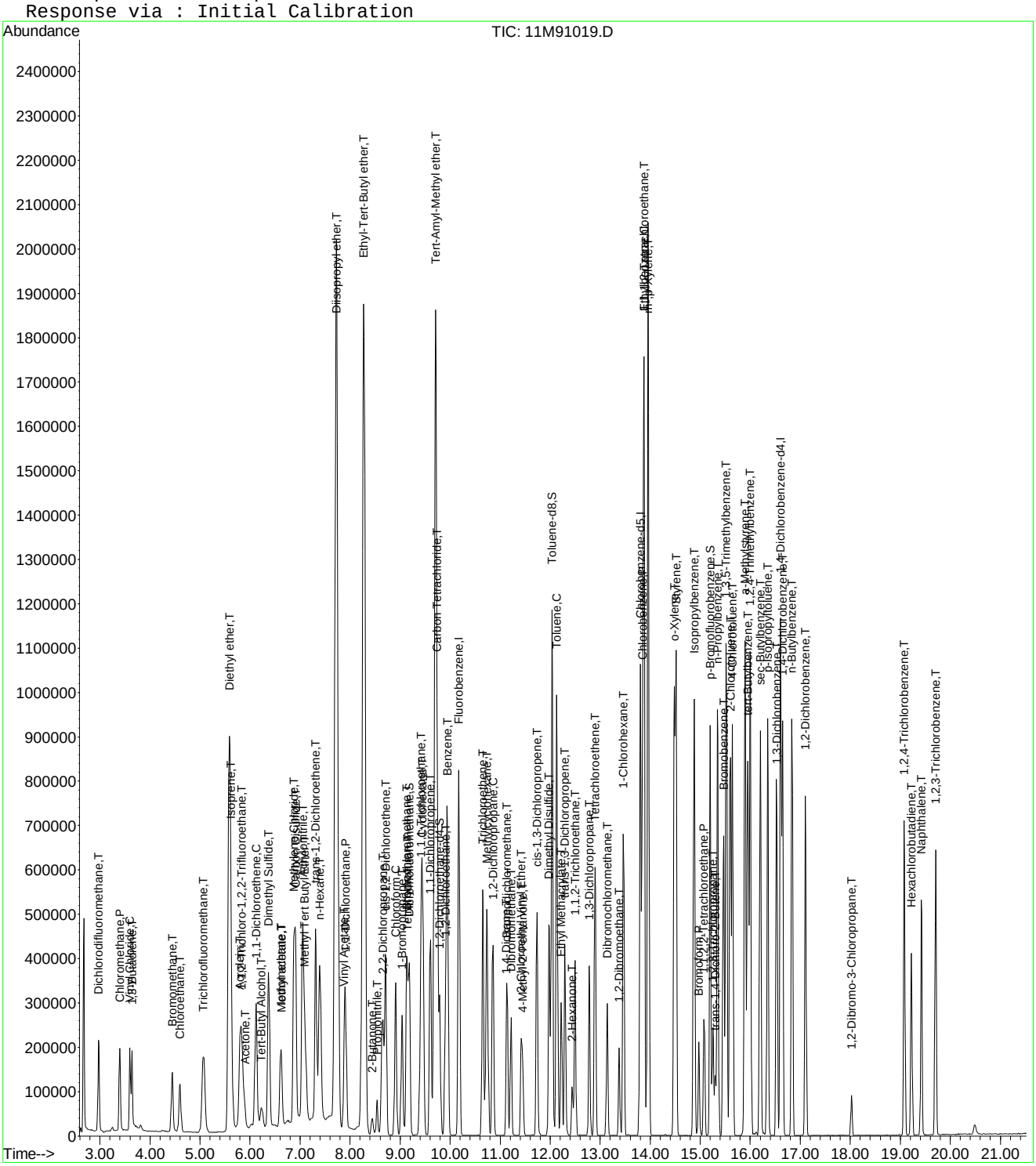

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
April 12, 2013

ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE	AJF - AMANDA J. FICKIESEN
AML - TONY M. LONG	AZH - AFTER HOURS	BAF - BRICE A. FENTON
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES	CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER	CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	CTB - CHRIS T. BUCINA	DDE - DEBRA D. ELLIOTT
DEV - DAVID E. VANDENBERG	DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLR - DIANNA L. RAUCH	DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON	EDL - ERIN D. LONG	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	HJR - HOLLY J. REED	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JKS - JANE K. SCHAAD	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES	KRA - KATHY R. ALBERTSON
LKN - LINDA K. NEDEFF	LSB - LESLIE S. BUCINA	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
QX - QIN XU	RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RS - ROSEMARY SCOTT	RWC - RODNEY W. CAMPBELL
SEP - SUZANNE J. PAUGH	SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
April 12, 2013

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL).
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Analyte was not detected. The concentration is below the reported LOD.
UB	Analyte was not detected. The concentration is below the reported LOQ, however the reported result is associated with a c
UJ	Undetected; the analyte was analyzed for, but not detected.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Erin Long	Project Manager: Dave Wacker	Mail to: Linda Raabe	
Address: 158 Starlite Dr.	Phone/Fax Number: 210-296-2000	AECOM	
Marietta, OH 45750	Sampler (print): Jason Garrett	112 East Pecan Ste. 400	
Phone: 800-373-4071		San Antonio, TX 78205	
Client: AECOM	Signature: Jason Garrett	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: GW-24 hour TAT, Soil-standard TAT	pH:	Program: DoD QSM	
Project Name/Location: Longhorn AAP			
Project Number: 60274185			

Site Name	Sample ID/Location ID	SBD	SED	Date 2013	Time	Comp*	Grab	Matrix	Number of Containers	SW8260B - VOCs	SW6850 Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 18/24	67DPT08(25-30)030413			4-3	1630		X	GW	3	X			01			030413
	EB-040413			4-4	0830		X	WQ	3	X					040413	
	67DPT11(25-30)040413			4-4	1050		X	GW	3	X						
	TB-030413			4-3	—			WQ	2	X						

ERPIMS REQUIRED FIELDS

Comments: GW-24 hour TAT, Soil-standard TAT Temp blank included

	Date	Time		Date	Time	Relinquished by: (Signature)
(Signature) Jason Garrett	4-4-13	1500				
Relinquished by: (Signature) UPS	4-4-13	1500			Time	Remarks:

Microbac OVD
Received: 04/06/2013 10:29
By: ROSEMARY SCOTT 221000034379

*Homogenize all composite samples prior to analysis

...Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13040315
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 11-APR-2013

Samplenum	Container ID	Products
L13040315-01	168762	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	08-APR-2013 11:52	CLS		<2
2	ANALYZ	V1	ORG4	09-APR-2013 08:53	KDW	JKS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	08-APR-2013 11:52	CLS		<2
2	ANALYZ	V1	ORG4	09-APR-2013 08:53	KDW	JKS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	08-APR-2013 11:52	CLS		<2
2	ANALYZ	V1	ORG4	09-APR-2013 08:52	KDW	JKS	

Samplenum	Container ID	Products
L13040315-02	168763	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	08-APR-2013 11:52	CLS		<2
2	ANALYZ	V1	ORG4	09-APR-2013 08:53	KDW	JKS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	08-APR-2013 11:52	CLS		<2
2	ANALYZ	V1	ORG4	09-APR-2013 08:52	KDW	JKS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	08-APR-2013 11:52	CLS		<2
2	ANALYZ	V1	ORG4	09-APR-2013 08:52	KDW	JKS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13040315
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 11-APR-2013

Samplenum	Container ID	Products
L13040315-03	168764	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	08-APR-2013 11:52	CLS		<2
2	ANALYZ	V1	ORG4	09-APR-2013 08:53	KDW	JKS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	08-APR-2013 11:52	CLS		<2
2	ANALYZ	V1	ORG4	09-APR-2013 08:52	KDW	JKS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	08-APR-2013 11:52	CLS		<2
2	ANALYZ	V1	ORG4	09-APR-2013 08:52	KDW	JKS	

Samplenum	Container ID	Products
L13040315-04	168765	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	08-APR-2013 11:52	CLS		<2
2	ANALYZ	V1	ORG4	09-APR-2013 08:55	KDW	JKS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	08-APR-2013 11:52	CLS		<2
2	ANALYZ	V1	ORG4	09-APR-2013 08:55	KDW	JKS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - March 7, 2013

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)
Ethylene Glycol (Non-potable Water)
Aroclor 1262 (Non-potable Water)

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Nitroguanidine
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL KNITRO-C-WUV-VIS

Nitrocellulose

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL HPLCOS-HPLC-UV

Nitroguanidine

OVL KNITRO-C-S/UV-VIS

Nitrocellulose

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L13040768

Linda Raabe
AECOM Technical Services, Inc.
112 East Pecan
San Antonio, TX 78205

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Erin Long – Project Chemist
(740) 373-4071
Erin.Long@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on April 22 2013

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #
0017577	I	3.0		1ZAX65772210000013

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
EB TUBING-160413	L13040768-01	04/16/2013 15:52	04/17/2013 09:49
EB SCREEN-160413	L13040768-02	04/16/2013 14:32	04/17/2013 09:49
67DPT11A(23-27)-160413	L13040768-03	04/16/2013 15:21	04/17/2013 09:49
TB-160413	L13040768-04	04/16/2013 00:01	04/17/2013 09:49

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L13040768
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 13
2.0 Full Sample Data Package 25
2.1 Volatiles Data 26
2.1.1 Volatiles GCMS Data (8260) 27
2.1.1.1 Summary Data 28
2.1.1.2 QC Summary Data 40
2.1.1.3 Sample Data 65
2.1.1.4 Standards Data 85
2.1.1.5 Raw QC Data 140
3.0 Attachments 156

1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13040768
Project Name:		**Method:**	8260
Prep Batch Number(s):	427303	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-04-22 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2013-04-22 19:12:58

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13040768
Project Name:		**Method:**	8260
Prep Batch Number(s):	427303	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-04-22 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13040768
Project Name:		**Method:**	8260
Prep Batch Number(s):	427303	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-04-22 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13040768
Project Name:		**Method:**	8260
Prep Batch Number(s):	427303	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-04-22 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13040768
Project Name:		**Method:**	8260
Prep Batch Number(s):	427303	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-04-22 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13040768
Project Name:		**Method:**	8260
Prep Batch Number(s):	427303	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-04-22 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Dichlorodifluoromethane exceeded the upper control limit in the Alternate Source analyzed 03/29/2013 on HPMS8.

1.2 Certificate of Analysis

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Certificate of Analysis

Sample #:	L13040768-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	EB TUBING-160413	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/29/2013 16:35
Workgroup #:	WG427303	**Analyst:**	TMB	**Run Date:**	04/19/2013 02:32
Collect Date:	04/16/2013 15:52	**Dilution:**	1	**File ID:**	8M387152
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.236	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.785	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.2	85	115	
1,2-Dichloroethane-d4	99.3	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Certificate of Analysis

Sample #:	L13040768-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	EB SCREEN-160413	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/29/2013 16:35
Workgroup #:	WG427303	**Analyst:**	TMB	**Run Date:**	04/19/2013 03:02
Collect Date:	04/16/2013 14:32	**Dilution:**	1	**File ID:**	8M387153
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.51	J	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.222	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.779	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.1	85	115	
1,2-Dichloroethane-d4	99.5	70	120	
Toluene-d8	96.9	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Certificate of Analysis

Sample #:	L13040768-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67DPT11A(23-27)-160413	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/29/2013 16:35
Workgroup #:	WG427303	**Analyst:**	TMB	**Run Date:**	04/19/2013 03:33
Collect Date:	04/16/2013 15:21	**Dilution:**	1	**File ID:**	8M387154
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	8.35	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.295	J	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.1	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Certificate of Analysis

Sample #:	L13040768-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TB-160413	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/29/2013 16:35
Workgroup #:	WG427303	**Analyst:**	TMB	**Run Date:**	04/18/2013 21:27
Collect Date:	04/16/2013 00:01	**Dilution:**	1	**File ID:**	8M387142
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.8	85	115	
1,2-Dichloroethane-d4	95.1	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	107	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Certificate of Analysis

Sample #:	L13040768-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	EB TUBING-160413	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/29/2013 16:35
Workgroup #:	WG427303	**Analyst:**	TMB	**Run Date:**	04/19/2013 02:32
Collect Date:	04/16/2013 15:52	**Dilution:**	1	**File ID:**	8M387152
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.236	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.785	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.2	85	115	
1,2-Dichloroethane-d4	99.3	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Certificate of Analysis

Sample #:	L13040768-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	EB SCREEN-160413	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/29/2013 16:35
Workgroup #:	WG427303	**Analyst:**	TMB	**Run Date:**	04/19/2013 03:02
Collect Date:	04/16/2013 14:32	**Dilution:**	1	**File ID:**	8M387153
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.51	J	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.222	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.779	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.1	85	115	
1,2-Dichloroethane-d4	99.5	70	120	
Toluene-d8	96.9	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Certificate of Analysis

Sample #:	L13040768-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67DPT11A(23-27)-160413	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/29/2013 16:35
Workgroup #:	WG427303	**Analyst:**	TMB	**Run Date:**	04/19/2013 03:33
Collect Date:	04/16/2013 15:21	**Dilution:**	1	**File ID:**	8M387154
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	8.35	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.295	J	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.1	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Certificate of Analysis

Sample #:	L13040768-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TB-160413	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/29/2013 16:35
Workgroup #:	WG427303	**Analyst:**	TMB	**Run Date:**	04/18/2013 21:27
Collect Date:	04/16/2013 00:01	**Dilution:**	1	**File ID:**	8M387142
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.8	85	115	
1,2-Dichloroethane-d4	95.1	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	107	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13040768
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Erin Long

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 032913
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13

Maintenance Log ID: 45391

Internal Standard: STD57149 Surrogate Standard: STD57149
CCV: STD57020 LCS: STD57021 MS/MSD: STD57021

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG425063 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M386633	WG425063-01 BFB 50ng 8260	NA	1	1	STD56567	03/29/13 10:55
8M386634	RINSE	NA	1	1	STD56680	03/29/13 11:28
8M386635	WG425063-02 0.3ug/L STD 8260	NA	1	1	STD57020	03/29/13 12:00
8M386636	WG425063-03 0.4ug/L STD 8260	NA	1	1	STD57020	03/29/13 12:30
8M386637	WG425063-04 1.0ug/L STD 8260	NA	1	1	STD57020	03/29/13 13:01
8M386638	WG425063-05 2.0ug/L STD 8260	NA	1	1	STD57020	03/29/13 13:32
8M386639	WG425063-06 5.0ug/L STD 8260	NA	1	1	STD57020	03/29/13 14:02
8M386640	WG425063-07 20.0ug/L STD 8260	NA	1	1	STD57020	03/29/13 14:33
8M386641	WG425063-08 50.0ug/L STD 8260	NA	1	1	STD57020	03/29/13 15:03
8M386642	WG425063-09 100.0ug/L STD 8260	NA	1	1	STD57020	03/29/13 15:34
8M386643	WG425063-10 200.0ug/L STD 8260	NA	1	1	STD57020	03/29/13 16:04
8M386644	WG425063-11 300.0ug/L STD 8260	NA	1	1	STD57020	03/29/13 16:35
8M386645	RINSE	NA	1	1		03/29/13 17:05
8M386646	WG425063-12 50.0ug/L ALTSRC 8260	NA	1	1	STD57021	03/29/13 17:36
8M386647	RINSE	NA	1	1	STD57021	04/01/13 08:42

Approved: April 03, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 041813
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13

Maintenance Log ID: 45613

Internal Standard: STD57122 Surrogate Standard: STD57122
CCV: STD57388 LCS: STD57467 MS/MSD: STD57467

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG427141, WG427303

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M387112	WG427140-01 50ng BFB STD 8260	NA	1	1	STD57083	04/18/13 06:40
8M387113	WG427140-02 50ug/L CCV STD 8260	NA	1	1	STD57195	04/18/13 07:03
8M387114	WG426XXX-01 100ug/L A9 CCV	NA	1	1	STDXXXXX	04/18/13 07:33
8M387115	WG427141-01 VBLK 0418 8260	NA	1	1		04/18/13 08:04
8M387116	WG427141-02 20ug/L LCS STD 8260	NA	1	1	STD57227	04/18/13 08:34
8M387117	WG427141-03 20ug/L LCSDUP STD 8260	NA	1	1	STD57227	04/18/13 09:05
8M387118	L13040598-02 B 10X 826-SPE	<2	1	10		04/18/13 09:35
8M387119	L13040619-01 A 826-SPE	<2	1	1		04/18/13 10:06
8M387120	L13040501-10 A 826-SPE	<2	1	1		04/18/13 10:36
8M387121	L13040501-11 A 826-SPE	<2	1	1		04/18/13 11:07
8M387122	L13040462-01 B 826-SPE	<2	1	1		04/18/13 11:38
8M387123	L13040619-05 A 826-SPE	<2	1	1		04/18/13 12:08
8M387124	L13040619-10 A 826-SPE	<2	1	1		04/18/13 12:39
8M387125	L13040619-11 A 500X 826-SPE	<2	1	500		04/18/13 13:10
8M387126	L13040619-13 A 826-SPE	<2	1	1		04/18/13 13:41
8M387127	L13040619-15 A 826-SPE	<2	1	1		04/18/13 14:11
8M387128	L13040501-01 A 826-SPE1	<2	1	1		04/18/13 14:42
8M387129	L13040501-03 A 826-SPE1	<2	1	1		04/18/13 15:13
8M387130	L13040501-04 A 826-SPE1	<2	1	1		04/18/13 15:43
8M387131	L13040501-06 A 826-SPE1	<2	1	1		04/18/13 16:14
8M387132	L13040501-08 A 826-SPE1	<2	1	1		04/18/13 16:44
8M387133	WG427302-01 50ng BFB STD 8260	NA	1	1	STD57083	04/18/13 17:13
8M387134	WG427302-01 50ng BFB STD 8260	NA	1	1	STD57083	04/18/13 17:27
8M387135	WG427302-02 50ug/L CCV STD 8260	NA	1	1	STD57388	04/18/13 17:50
8M387136	WG427302-02 50ug/L CCV STD 8260	NA	1	1	STD57388	04/18/13 18:24
8M387137	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD57084	04/18/13 18:55
8M387138	WG427303-01 VBLK0418 BLANK STD 826	NA	1	1		04/18/13 19:25
8M387139	WG427303-02 20ug/L LCS STD 8260	NA	1	1	STD57467	04/18/13 19:56
8M387140	WG427303-03 20ug/L LCSDUP STD 8260	NA	1	1	STD57467	04/18/13 20:26
8M387141	L13040685-07 A TB 826-SPE	<2	1	1		04/18/13 20:57
8M387142	L13040768-04 A TB 826-LOW	<2	1	1		04/18/13 21:27
8M387143	L13040649-02 A TB 826-SPE	<2	1	1		04/18/13 21:57
8M387144	L13040555-13 A TB 826-SPE	<2	1	1		04/18/13 22:28
8M387145	L13040361-01 B 8260	12	1	1		04/18/13 22:59

Approved: April 19, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 041813
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13

Maintenance Log ID: 45613

Internal Standard: STD57122 Surrogate Standard: STD57122
CCV: STD57388 LCS: STD57467 MS/MSD: STD57467

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG427141, WG427303

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M387146	L13040555-01 A 826-SPE	<2	1	1		04/18/13 23:29
8M387147	L13040555-03 A 826-SPE	<2	1	1		04/19/13 00:00
8M387148	L13040555-05 A 826-SPE	<2	1	1		04/19/13 00:30
8M387149	L13040555-09 A 826-SPE	<2	1	1		04/19/13 01:01
8M387150	L13040555-07 A 10X 826-SPE	<2	1	10		04/19/13 01:31
8M387151	L13040555-11 A 20X 826-SPE	6	1	20		04/19/13 02:02
8M387152	L13040768-01 A 826-SPE	<2	1	1		04/19/13 02:32
8M387153	L13040768-02 A 826-SPE	<2	1	1		04/19/13 03:02
8M387154	L13040768-03 A 826-SPE	<2	1	1		04/19/13 03:33
8M387155	L13040860-01 A 826-SPE	<2	1	1		04/19/13 04:03
8M387156	L13040649-01 A 826-SPE	<2	1	1		04/19/13 04:34
8M387157	CCV	NA	1	1		04/19/13 05:04
8M387158	RINSE	NA	1	1		04/19/13 05:35
8M387159	RINSE	NA	1	1		04/19/13 06:05
8M387160	ANTIFOAM BLANK	NA	1	1		04/19/13 06:36

Comments

Seq.	Rerun	Dil.	Reason	Analytes
39	X	50	Over Calibration Range	4m2p
File ID: 8M387150				
L13040555-07				

Approved: April 19, 2013

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 29-MAR-2013
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS8
Curve Workgroup: WG425063
Runlog ID: 52253
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	NA
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	NA
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
03-APR-2013

Secondary Reviewer:
03-APR-2013

CHECKLIST1 - Modified 03/05/2008
Generated: APR-03-2013 13:13:20

Microbac Laboratories Inc.

Data Checklist

Date: 18-APR-2013
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 52629
Analytical Workgroups: WG427141, WG427303

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC/MES
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-APR-2013

Secondary Reviewer:
19-APR-2013

CHECKLIST1 - Modified 03/05/2008
Generated: APR-19-2013 12:54:52

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG427303

Login Number: L13040768

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
EB TUBING-160413	01	04/16/13					04/19/2013	2.4	14		04/19/13	2.4	14	
EB SCREEN-160413	02	04/16/13					04/19/2013	2.5	14		04/19/13	2.5	14	
67DPT11A(23-27)-160413	03	04/16/13					04/19/2013	2.5	14		04/19/13	2.5	14	
TB-160413	04	04/16/13					04/18/2013	2.9	14		04/18/13	2.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2841970
Report generated 04/22/2013 14:10

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L13040768
Instrument Id: HPMS8
Workgroup (AAB#): WG427303

Method: 8260
CAL ID: HPMS8-29-MAR-13
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L13040768-01	1.00	01	99.3	96.2	105	101
L13040768-02	1.00	01	99.5	95.1	105	96.9
L13040768-03	1.00	01	101	96.1	104	101
L13040768-04	1.00	01	95.1	94.8	107	100
WG427303-01	1.00	01	94.8	94.3	103	99.1
WG427303-02	1.00	01	94.9	91.9	105	100
WG427303-03	1.00	01	93.4	94.7	102	99.1

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 2838455
Report generated: 04/22/2013 14:10

METHOD BLANK SUMMARY

Login Number: L13040768
Blank File ID: 8M387138
Prep Date: 04/18/13 19:25
Analyzed Date: 04/18/13 19:25
Analyst: TMB

Work Group: WG427303
Blank Sample ID: WG427303-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG427303-02	8M387139	04/18/13 19:56	01
LCS2	WG427303-03	8M387140	04/18/13 20:26	01
TB-160413	L13040768-04	8M387142	04/18/13 21:27	01
EB TUBING-160413	L13040768-01	8M387152	04/19/13 02:32	01
EB SCREEN-160413	L13040768-02	8M387153	04/19/13 03:02	01
67DPT11A(23-27)-160413	L13040768-03	8M387154	04/19/13 03:33	01

Report Name: BLANK_SUMMARY
PDF File ID: 2841971
Report generated 04/22/2013 14:10

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13040768 Prep Date: 04/18/13 19:25 Sample ID: WG427303-01
Instrument ID: HPMS8 Run Date: 04/18/13 19:25 Prep Method: 5030B/5030C/503
File ID: 8M387138 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG427303 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-29-MAR-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 2841972
22-APR-2013 14:10

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13040768 Prep Date: 04/18/13 19:25 Sample ID: WG427303-01
Instrument ID: HPMS8 Run Date: 04/18/13 19:25 Prep Method: 5030B/5030C/503
File ID: 8M387138 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG427303 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-29-MAR-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.3	85 - 115	PASS
1,2-Dichloroethane-d4	94.8	70 - 120	PASS
Toluene-d8	99.1	85 - 120	PASS
4-Bromofluorobenzene	103	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2841972
22-APR-2013 14:10

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13040768 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG427303 Units: ug/L
QC Key: DOD4 Lot #: STD57467

Sample ID: WG427303-02 LCS File ID: 8M387139 Run Date: 04/18/2013 19:56
Sample ID: WG427303-03 LCS2 File ID: 8M387140 Run Date: 04/18/2013 20:26

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.7	103	20.0	19.9	99.7	3.55	80 - 130	30	
1,1,1-Trichloroethane	20.0	18.1	90.6	20.0	18.4	92.2	1.72	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.5	92.7	20.0	18.7	93.4	0.799	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.7	103	20.0	20.0	99.9	3.42	75 - 125	30	
1,1-Dichloroethane	20.0	18.0	90.1	20.0	18.8	94.0	4.23	70 - 135	30	
1,1-Dichloroethene	20.0	18.7	93.6	20.0	18.7	93.4	0.169	70 - 130	30	
1,1-Dichloropropene	20.0	18.6	93.2	20.0	19.1	95.7	2.73	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.9	99.7	20.0	19.8	99.2	0.535	55 - 140	30	
1,2,3-Trichloropropane	20.0	18.8	94.1	20.0	19.0	94.9	0.892	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.4	96.8	20.0	19.2	96.2	0.702	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.0	99.8	20.0	20.1	100	0.635	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	20.9	104	20.0	19.1	95.3	9.19	50 - 130	30	
1,2-Dibromoethane	20.0	20.0	100	20.0	19.6	98.0	2.20	80 - 120	30	
1,2-Dichlorobenzene	20.0	17.6	88.0	20.0	17.4	87.1	0.994	70 - 120	30	
1,2-Dichloroethane	20.0	19.3	96.4	20.0	19.3	96.7	0.285	70 - 130	30	
1,2-Dichloropropane	20.0	19.4	96.8	20.0	19.6	97.9	1.07	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.3	101	20.0	20.6	103	1.72	75 - 130	30	
1,3-Dichlorobenzene	20.0	18.0	89.9	20.0	18.0	89.8	0.0677	75 - 125	30	
1,3-Dichloropropane	20.0	19.7	98.5	20.0	19.5	97.3	1.19	75 - 125	30	
1,4-Dichlorobenzene	20.0	18.5	92.7	20.0	18.8	93.9	1.30	75 - 125	30	
2,2-Dichloropropane	20.0	16.8	84.1	20.0	18.3	91.3	8.24	70 - 135	30	
2-Butanone	20.0	19.8	98.9	20.0	19.2	96.0	2.99	30 - 150	30	
2-Chlorotoluene	20.0	16.5	82.6	20.0	17.3	86.6	4.67	75 - 125	30	
2-Hexanone	20.0	18.7	93.7	20.0	17.5	87.5	6.78	55 - 130	30	
4-Chlorotoluene	20.0	18.1	90.7	20.0	17.6	88.1	2.88	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.5	97.5	20.0	18.2	90.8	7.11	60 - 135	30	
Acetone	20.0	16.5	82.7	20.0	16.0	79.8	3.53	40 - 140	30	
Benzene	20.0	18.1	90.4	20.0	18.8	94.0	3.88	80 - 120	30	
Bromobenzene	20.0	18.8	94.0	20.0	18.7	93.7	0.247	75 - 125	30	
Bromochloromethane	20.0	19.2	95.8	20.0	19.5	97.7	2.04	65 - 130	30	
Bromodichloromethane	20.0	19.0	94.9	20.0	18.9	94.3	0.689	75 - 120	30	
Bromoform	20.0	19.5	97.5	20.0	18.7	93.7	4.03	70 - 130	30	
Bromomethane	20.0	13.3	66.3	20.0	14.7	73.6	10.4	30 - 145	30	
Carbon disulfide	20.0	18.4	92.2	20.0	18.8	94.1	1.96	35 - 160	30	
Carbon tetrachloride	20.0	17.5	87.5	20.0	17.8	89.2	1.86	65 - 140	30	
Chlorobenzene	20.0	18.2	90.9	20.0	17.8	88.9	2.24	80 - 120	30	
Chloroethane	20.0	18.4	92.1	20.0	18.9	94.7	2.78	60 - 135	30	
Chloroform	20.0	18.4	92.1	20.0	18.7	93.4	1.39	65 - 135	30	
Chloromethane	20.0	16.3	81.4	20.0	16.2	81.1	0.294	40 - 125	30	
cis-1,2-Dichloroethene	20.0	18.9	94.6	20.0	19.5	97.4	2.91	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2838452
Report generated: 04/22/2013 14:10

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13040768 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG427303 Units: ug/L
QC Key: DOD4 Lot #: STD57467

Sample ID: WG427303-02 LCS File ID: 8M387139 Run Date: 04/18/2013 19:56
Sample ID: WG427303-03 LCS2 File ID: 8M387140 Run Date: 04/18/2013 20:26

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	19.9	99.4	20.0	19.8	99.2	0.128	70 - 130	30	
Chlorodibromomethane	20.0	19.5	97.4	20.0	19.1	95.6	1.94	60 - 135	30	
Dibromomethane	20.0	19.6	98.0	20.0	19.9	99.5	1.50	75 - 125	30	
Dichlorodifluoromethane	20.0	18.8	94.0	20.0	19.4	96.8	2.98	30 - 155	30	
Ethylbenzene	20.0	19.9	99.4	20.0	19.7	98.4	0.993	75 - 125	30	
Hexachlorobutadiene	20.0	20.0	99.9	20.0	20.9	105	4.52	50 - 140	30	
Isopropylbenzene	20.0	18.5	92.7	20.0	18.7	93.7	1.06	75 - 125	30	
m-,p-Xylene	40.0	38.4	95.9	40.0	37.7	94.3	1.72	75 - 130	30	
Methylene chloride	20.0	18.2	90.8	20.0	18.4	92.0	1.28	55 - 140	30	
n-Butylbenzene	20.0	20.4	102	20.0	21.1	106	3.64	70 - 135	30	
n-Propylbenzene	20.0	17.9	89.4	20.0	18.2	90.9	1.66	70 - 130	30	
Naphthalene	20.0	19.3	96.7	20.0	18.9	94.3	2.46	55 - 140	30	
o-Xylene	20.0	18.8	93.9	20.0	18.5	92.4	1.66	80 - 120	30	
p-Isopropyltoluene	20.0	19.0	95.2	20.0	19.3	96.4	1.22	75 - 130	30	
sec-Butylbenzene	20.0	18.5	92.7	20.0	18.9	94.4	1.75	70 - 125	30	
Styrene	20.0	20.6	103	20.0	20.2	101	2.26	65 - 135	30	
tert-Butylbenzene	20.0	18.6	93.0	20.0	18.9	94.4	1.50	70 - 130	30	
Tetrachloroethene	20.0	19.0	94.9	20.0	19.3	96.3	1.40	45 - 150	30	
Toluene	20.0	18.7	93.3	20.0	18.8	94.0	0.814	75 - 120	30	
trans-1,2-Dichloroethene	20.0	18.2	90.9	20.0	19.2	96.0	5.54	60 - 140	30	
trans-1,3-Dichloropropene	20.0	18.9	94.5	20.0	18.4	92.0	2.61	55 - 140	30	
Trichloroethene	20.0	20.2	101	20.0	21.1	105	4.47	70 - 125	30	
Trichlorofluoromethane	20.0	18.8	93.9	20.0	18.9	94.7	0.777	60 - 145	30	
Vinyl chloride	20.0	15.9	79.6	20.0	15.9	79.7	0.0641	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	94.9	93.4	70 - 120	PASS
Dibromofluoromethane	91.9	94.7	85 - 115	PASS
4-Bromofluorobenzene	105	102	75 - 120	PASS
Toluene-d8	100	99.1	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2838452
Report generated: 04/22/2013 14:10

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13040768
Instrument: HPMS8
Analyst: ADC
Workgroup: WG425063

Tune ID: WG425063-01
Run Date: 03/29/2013
Run Time: 10:55
File ID: 8M386633
Cal ID: HPMS8 - 29-MAR-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.9	7467	PASS
75.0	95.0	30.0	60.0	49.2	19489	PASS
95.0	95.0	100	100	100	39584	PASS
96.0	95.0	5.00	9.00	6.45	2554	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.3	29029	PASS
175	174	5.00	9.00	7.38	2143	PASS
176	174	95.0	101	98.0	28461	PASS
177	176	5.00	9.00	6.72	1914	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG425063-02	STD	01	03/29/2013 12:00	
WG425063-03	STD	01	03/29/2013 12:30	
WG425063-04	STD	01	03/29/2013 13:01	
WG425063-05	STD	01	03/29/2013 13:32	
WG425063-06	STD	01	03/29/2013 14:02	
WG425063-07	STD	01	03/29/2013 14:33	
WG425063-08	STD-CCV	01	03/29/2013 15:03	
WG425063-09	STD	01	03/29/2013 15:34	
WG425063-10	STD	01	03/29/2013 16:04	
WG425063-11	STD	01	03/29/2013 16:35	
WG425063-12	SSCV	01	03/29/2013 17:36	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 2841973
Report generated 04/22/2013 14:10

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13040768
Instrument: HPMS8
Analyst: TMB
Workgroup: WG427302

Tune ID: WG427302-01
Run Date: 04/18/2013
Run Time: 17:27
File ID: 8M387134
Cal ID: HPMS8 - 29-MAR-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.4	6773	PASS
75.0	95.0	30.0	60.0	49.0	15479	PASS
95.0	95.0	100	100	100	31576	PASS
96.0	95.0	5.00	9.00	6.16	1946	PASS
173	174	0	2.00	0.466	109	PASS
174	95.0	50.0	100	74.1	23405	PASS
175	174	5.00	9.00	8.35	1954	PASS
176	174	95.0	101	98.6	23082	PASS
177	176	5.00	9.00	5.53	1277	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG427302-02	CCV	01	04/18/2013 18:24	
WG427303-01	BLANK	01	04/18/2013 19:25	
WG427303-02	LCS	01	04/18/2013 19:56	
WG427303-03	LCS2	01	04/18/2013 20:26	
L13040768-04	TB-160413	01	04/18/2013 21:27	
L13040768-01	EB TUBING-160413	01	04/19/2013 02:32	
L13040768-02	EB SCREEN-160413	01	04/19/2013 03:02	
L13040768-03	67DPT11A(23-27)-160413	01	04/19/2013 03:33	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 2841973
Report generated 04/22/2013 14:10

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Calibration: Mon Apr 01 10:00:57 2013
Curve: WG425063
Calibration Files

Compound	0.3 8M386635.D	0.4 8M386636.D	1 8M386637.D	2 8M386638.D	5 8M386639.D	20 8M386640.D	50 8M386641.D	100 8M386642.D	200 8M386643.D	300 8M386644.D	Avg	%RSD	R^2 Linear	R^2 Quadratic
Fluorobenzene	ISTD													
Dichlorodifluoromethane			0.373	0.384	0.366	0.393	0.399	0.378	0.366	0.336	0.374	5.241		
Chloromethane			0.506	0.541	0.517	0.475	0.470	0.456	0.445		0.487	7.154		
Vinyl Chloride		0.505	0.399	0.428	0.387	0.409	0.410	0.389	0.385	0.355	0.407	10.250		
1,3-Butadiene					0.410	0.403	0.419	0.393	0.376	0.335	0.389	7.824		
Bromomethane			0.201	0.202	0.185	0.204	0.224	0.225	0.229	0.214	0.211	7.117		
Chloroethane		0.136	0.195	0.190	0.188	0.206	0.209	0.202	0.201	0.187	0.191	11.441		
Trichlorofluoromethane		0.358	0.597	0.609	0.635	0.626	0.639	0.608	0.597	0.541	0.579	15.162	0.996	
Diethyl ether			0.194	0.205	0.210	0.202	0.195	0.189		0.182	0.197	4.938		
Isoprene			0.402	0.406	0.407	0.402	0.408	0.409	0.403	0.371	0.401	3.076		
Acrolein				0.008	0.007	0.007	0.007	0.007		0.007	0.007	3.533		
1,1,2-Trichloro-1,2,2-Trifluoroe			0.281	0.295	0.286	0.291	0.292	0.288	0.281	0.255	0.284	4.447		
Acetone					0.080	0.065	0.073	0.068	0.069	0.067	0.070	7.736		
1,1-Dichloroethene		0.574	0.486	0.552	0.554	0.558	0.568	0.540	0.531	0.489	0.539	5.920		
Tert-Butyl Alcohol			0.016	0.017	0.019	0.015	0.015	0.014		0.015	0.016	10.112		
Dimethyl Sulfide			0.324	0.309	0.304	0.311	0.320	0.314	0.310	0.294	0.311	2.985		
Iodomethane			0.292	0.331	0.349	0.381	0.397	0.390	0.390	0.361	0.361	9.981		
Methyl acetate				0.155	0.147	0.134	0.136	0.131	0.131	0.130	0.138	6.963		
Methylene Chloride		0.279	0.316	0.313	0.295	0.283	0.293	0.280	0.281	0.265	0.289	5.718		
Carbon Disulfide		1.049	0.984	0.993	0.937	0.961	0.974	0.936	0.918	0.859	0.957	5.558		
Acrylonitrile			0.065	0.064	0.062	0.064	0.066	0.064		0.069	0.065	3.523		
Methyl Tert Butyl Ether	0.603	0.591	0.702	0.732	0.712	0.709	0.722	0.688	0.702	0.649	0.681	7.267		
trans-1,2-Dichloroethene		0.507	0.491	0.474	0.512	0.491	0.499	0.492	0.497	0.466	0.492	2.942		
n-Hexane			0.405	0.378	0.386	0.401	0.405	0.392	0.373	0.342	0.385	5.484		
Diisopropyl ether			1.100	1.132	1.094	1.092	1.062	1.015		0.971	1.066	5.222		
Vinyl Acetate					0.488	0.480	0.505	0.474	0.463	0.444	0.476	4.365		
1,1-Dichloroethane		0.564	0.566	0.575	0.607	0.593	0.598	0.588	0.589	0.557	0.582	2.943		
Ethyl-Tert-Butyl ether			0.970	1.022	0.999	0.989	0.963	0.920		0.895	0.965	4.638		
2-Butanone					0.085	0.079	0.084	0.079	0.081	0.080	0.081	3.177		
Propionitrile			0.023	0.024	0.025	0.024	0.024	0.024		0.025	0.024	2.727		
2,2-Dichloropropane		0.642	0.586	0.626	0.595	0.635	0.635	0.614	0.594	0.539	0.607	5.389		
cis-1,2-Dichloroethene		0.293	0.292	0.331	0.321	0.332	0.327	0.323	0.327	0.309	0.317	4.871		
Chloroform	0.650	0.655	0.702	0.680	0.631	0.647	0.653	0.626	0.613	0.573	0.643	5.541		
1-Bromopropane			0.058	0.073	0.062	0.068	0.070	0.069	0.070	0.067	0.067	6.989		
Bromochloromethane		0.154	0.160	0.189	0.179	0.177	0.186	0.177	0.179	0.167	0.174	6.632		
Tetrahydrofuran			0.052	0.055	0.054	0.051	0.052	0.049		0.050	0.052	3.837		
Dibromofluoromethane				0.376	0.348	0.337	0.341	0.333	0.334	0.322	0.342	5.056		
1,1,1-Trichloroethane		0.709	0.573	0.623	0.595	0.626	0.641	0.617	0.607	0.556	0.616	7.094		
Cyclohexane			0.492	0.529	0.556	0.551	0.556	0.552	0.545	0.517	0.537	4.272		
1,1-Dichloropropene		0.401	0.473	0.479	0.478	0.479	0.490	0.475	0.474	0.438	0.465	6.030		
Tert-Amyl-Methyl ether			0.735	0.760	0.754	0.749	0.728	0.694		0.693	0.731	3.763		
Carbon Tetrachloride		0.578	0.525	0.538	0.526	0.547	0.558	0.538	0.538	0.484	0.53691	4.79218		
1,2-Dichloroethane-d4					0.427	0.392	0.41	0.376	0.373	0.352	0.38842	6.95213		
Heptane											0	0		
1,2-Dichloroethane		0.433	0.477	0.464	0.495	0.473	0.481	0.461	0.452	0.418	0.46163	5.23049		
Benzene		1.34	1.173	1.183	1.168	1.161	1.167	1.127	1.106	1.017	1.1601	7.3124		
Trichloroethene		0.275	0.294	0.285	0.316	0.294	0.304	0.295	0.297	0.279	0.29321	4.27986		
Methylcyclohexane			0.419	0.401	0.424	0.432	0.434	0.428	0.414	0.395	0.41838	3.39572		
1,2-Dichloropropane		0.312	0.319	0.298	0.296	0.309	0.31	0.298	0.3	0.286	0.3031	3.30431		
Bromodichloromethane		0.46	0.492	0.504	0.486	0.504	0.517	0.497	0.493	0.452	0.48934	4.3072		
1,4-Dioxane				0.001	0.001	0.001	0.002	0.002		0.002	0.00141	17.2532	0.991	
Dibromomethane		0.139	0.167	0.164	0.174	0.162	0.174	0.161	0.165	0.153	0.16204	6.59532		
2-Chloroethyl Vinyl Ether			0.139	0.121	0.138	0.137	0.149	0.142	0.146	0.142	0.13926	6.08192		
4-Methyl-2-Pentanone				0.055	0.066	0.064	0.075	0.065	0.07	0.068	0.06616	9.22356		
cis-1,3-Dichloropropene		0.594	0.486	0.522	0.53	0.543	0.555	0.528	0.527	0.491	0.5306	6.09226		
Dimethyl Disulfide			0.456	0.446	0.479	0.496	0.53	0.509	0.515	0.488	0.48989	5.91425		
Chlorobenzene-d5	ISTD													
Toluene-d8					1.701	1.518	1.546	1.46	1.417	1.37	1.50215	7.77812		
Toluene		1.994	1.791	1.824	1.822	1.765	1.774	1.686	1.625	1.48	1.75124	8.2112		
Ethyl Methacrylate			0.343	0.317	0.38	0.363	0.383	0.358	0.366	0.346	0.3569	6.05752		
Paraldehyde											0	0		
trans-1,3-Dichloropropene		0.633	0.634	0.667	0.679	0.7	0.697	0.674	0.665	0.609	0.66197	4.66438		
1,1,2-Trichloroethane		0.278	0.264	0.31	0.295	0.301	0.302	0.284	0.287	0.273	0.28827	5.17664		
2-Hexanone					0.087	0.08	0.093	0.084	0.088	0.083	0.08571	5.2001		
1,3-Dichloropropane		0.523	0.54	0.514	0.561	0.561	0.55	0.529	0.527	0.489	0.53251	4.38032		
Tetrachloroethene		0.384	0.368	0.357	0.353	0.369	0.377	0.367	0.366	0.344	0.3651	3.30721		
Dibromochloromethane		0.357	0.399	0.432	0.421	0.449	0.443	0.43	0.434	0.401	0.41835	6.83898		
1,2-Dibromoethane		0.259	0.286	0.295	0.322	0.314	0.319	0.307	0.311	0.289	0.30016	6.67208		
1-Chlorohexane		0.513	0.507	0.503	0.536	0.534	0.548	0.531	0.518	0.487	0.51959	3.72356		
Chlorobenzene		1.258	1.27	1.182	1.206	1.174	1.168	1.131	1.095	1.007	1.1657	6.95624		
1,1,1,2-Tetrachloroethane		0.452	0.457	0.471	0.488	0.486	0.477	0.461	0.46	0.42	0.46372	4.46155		
Ethylbenzene		0.603	0.64	0.647	0.646	0.636	0.656	0.639	0.624	0.584	0.63069	3.67861		
m-,p-Xylene		0.729	0.794	0.796	0.808	0.791	0.797	0.762	0.738	0.675	0.76568	5.76492		
o-Xylene		0.728	0.732	0.757	0.752	0.785	0.79	0.759	0.75	0.698	0.75005	3.80103		
Styrene		1.189	1.176	1.203	1.287	1.311	1.313	1.277	1.241	1.145	1.23808	5.0365		
Bromoform			0.265	0.244	0.26	0.276	0.269	0.263	0.267	0.252	0.26188	3.82713		
Isopropylbenzene		2.013	2.101	1.981	2.021	2.048	2.028	1.951	1.837	1.646	1.95848	7.05243		
1,4-Dichlorobenzene-d4	ISTD													
1,1,2,2-Tetrachloroethane		0.644	0.568	0.545	0.639	0.631	0.605	0.563	0.57	0.539	0.58921	6.97314		
p-Bromofluorobenzene					1.242	1.161	1.186	1.12	1.114	1.067	1.14844	5.35588		

1,2,3-Trichloropropane			0.169	0.196	0.201	0.207	0.2	0.191	0.19	0.179	0.19165	6.49729
trans-1,4-Dichloro-2-Butene			0.21	0.2	0.219	0.233	0.254	0.227	0.231	0.218	0.22408	7.32124
n-Propylbenzene		4.991	4.627	4.521	4.463	4.548	4.44	4.163	3.871	3.438	4.34033	10.5338
Bromobenzene	0.956	0.902	0.847	0.853	0.889	0.931	0.901	0.862	0.87	0.818	0.88288	4.68388
1,3,5-Trimethylbenzene		3.323	3.161	3.216	3.254	3.276	3.264	3.051	2.91	2.654	3.12314	6.99216
2-Chlorotoluene		3.584	3.375	3.421	2.991	2.951	2.837	3.041	3.2	2.688	3.12084	9.44292
4-Chlorotoluene		3.153	3.12	3.031	2.867	3.191	3.056	2.901	2.437	2.463	2.91317	9.73601
a-Methylstyrene			1.549	1.582	1.548	1.573	1.632	1.565	1.52	1.468	1.55477	3.06685
tert-Butylbenzene		0.558	0.54	0.572	0.604	0.622	0.618	0.587	0.586	0.549	0.58201	5.06218
1,2,4-Trimethylbenzene		3.687	3.256	3.315	3.303	3.396	3.317	3.13	2.953	2.676	3.22594	8.84336
sec-Butylbenzene		3.828	3.633	3.717	3.57	3.644	3.582	3.357	3.174	2.898	3.4893	8.43332
p-Isopropyltoluene		2.998	2.939	3.105	3.057	3.061	3.031	2.872	2.713	2.49	2.91816	6.87514
1,3-Dichlorobenzene		1.825	1.79	1.719	1.7	1.814	1.746	1.657	1.615	1.524	1.71007	5.78567
1,4-Dichlorobenzene	2.066	2.076	1.817	1.688	1.741	1.841	1.748	1.66	1.623	1.527	1.77873	10.0582
n-Butylbenzene		3.06	2.659	2.93	2.712	2.821	2.768	2.583	2.431	2.24	2.68919	9.30012
1,2-Dichlorobenzene	1.489	1.746	1.521	1.616	1.551	1.655	1.573	1.498	1.462	1.378	1.54877	6.77602
1,2-Dibromo-3-Chloropropane				0.111	0.13	0.144	0.132	0.121	0.125	0.118	0.12599	8.5518
1,2,4-Trichlorobenzene		0.936	0.976	0.991	1.061	1.069	1.016	0.969	0.962	0.899	0.9867	5.6132
Hexachlorobutadiene		0.411	0.348	0.388	0.399	0.427	0.427	0.405	0.405	0.384	0.39938	6.10052
Naphthalene		1.649	1.779	1.829	1.799	1.985	1.847	1.708	1.717	1.581	1.76607	6.74581
1,2,3-Trichlorobenzene	0.625	0.851	0.747	0.882	0.881	0.919	0.865	0.817	0.821	0.772	0.81806	10.4481

Wed Apr 03 10:26:35 2013

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13040768 Run Date: 03/29/2013 Sample ID: WG425063-12
Instrument ID: HPMS8 Run Time: 17:36 Method: 8260B
File ID: 8M386646 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG425063 Cal ID: HPMS8 - 29-MAR-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.6	ug/L	0.626	2.70	20	
1,1-Dichloroethene	CCC	50.0	49.9	ug/L	0.538	0.200	20	
1,2-Dichloropropane	CCC	50.0	51.8	ug/L	0.314	3.70	20	
Ethylbenzene	CCC	50.0	51.6	ug/L	0.651	3.30	20	
Toluene	CCC	50.0	50.7	ug/L	1.78	1.50	20	
Vinyl Chloride	CCC	50.0	49.8	ug/L	0.406	0.300	20	
Bromoform	SPCC	50.0	52.4	ug/L	0.275	4.80	20	
Chlorobenzene	SPCC	50.0	47.3	ug/L	1.10	5.30	20	
Chloromethane	SPCC	50.0	48.3	ug/L	0.471	3.30	20	
1,1-Dichloroethane	SPCC	50.0	50.0	ug/L	0.581	0.100	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.4	ug/L	0.618	4.90	20	
Acetone		50.0	43.3	ug/L	0.0608	13.4	20	
Benzene		50.0	50.3	ug/L	1.17	0.700	20	
Bromobenzene		50.0	51.1	ug/L	0.902	2.20	20	
Bromochloromethane		50.0	52.6	ug/L	0.183	5.30	20	
Bromodichloromethane		50.0	49.8	ug/L	0.488	0.400	20	
Bromomethane		50.0	50.4	ug/L	0.212	0.900	20	
2-Butanone		50.0	52.1	ug/L	0.0849	4.20	20	
n-Butylbenzene		50.0	51.5	ug/L	2.77	2.90	20	
sec-Butylbenzene		50.0	47.3	ug/L	3.30	5.40	20	
tert-Butylbenzene		50.0	49.0	ug/L	0.570	2.10	20	
Carbon Disulfide		50.0	46.1	ug/L	0.883	7.70	20	
Carbon Tetrachloride		50.0	49.3	ug/L	0.529	1.50	20	
Dibromochloromethane		50.0	52.1	ug/L	0.436	4.10	20	
Chloroethane		50.0	58.5	ug/L	0.223	17.0	20	
2-Chlorotoluene		50.0	43.5	ug/L	2.72	12.9	20	
4-Chlorotoluene		50.0	46.0	ug/L	2.68	7.90	20	
1,2-Dibromo-3-Chloropropane		50.0	53.0	ug/L	0.134	6.00	20	
1,2-Dibromoethane		50.0	53.7	ug/L	0.322	7.30	20	
Dibromomethane		50.0	51.4	ug/L	0.167	2.80	20	
1,2-Dichlorobenzene		50.0	47.2	ug/L	1.46	5.60	20	
1,3-Dichlorobenzene		50.0	47.1	ug/L	1.61	5.70	20	
1,4-Dichlorobenzene		50.0	49.1	ug/L	1.75	1.70	20	
Dichlorodifluoromethane		50.0	69.7	ug/L	0.522	39.4	20	*
1,2-Dichloroethane		50.0	50.8	ug/L	0.469	1.70	20	
cis-1,2-Dichloroethene		50.0	52.1	ug/L	0.331	4.20	20	
trans-1,2-Dichloroethene		50.0	50.7	ug/L	0.499	1.40	20	
1,3-Dichloropropane		50.0	53.4	ug/L	0.568	6.70	20	
2,2-Dichloropropane		50.0	47.5	ug/L	0.577	4.90	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.572	7.90	20	
trans-1,3-Dichloropropene		50.0	50.2	ug/L	0.665	0.400	20	
1,1-Dichloropropene		50.0	50.9	ug/L	0.474	1.80	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 2838453
Report generated 04/22/2013 14:10

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13040768 Run Date: 03/29/2013 Sample ID: WG425063-12
Instrument ID: HPMS8 Run Time: 17:36 Method: 8260B
File ID: 8M386646 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG425063 Cal ID: HPMS8 - 29-MAR-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.2	ug/L	0.0895	4.40	20	
Hexachlorobutadiene		50.0	53.5	ug/L	0.427	7.00	20	
Isopropylbenzene		50.0	48.3	ug/L	1.89	3.30	20	
p-Isopropyltoluene		50.0	48.7	ug/L	2.84	2.60	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0686	3.70	20	
Methylene Chloride		50.0	50.9	ug/L	0.295	1.80	20	
Naphthalene		50.0	52.0	ug/L	1.84	4.10	20	
n-Propylbenzene		50.0	45.7	ug/L	3.97	8.50	20	
Styrene		50.0	53.7	ug/L	1.33	7.50	20	
1,1,1,2-Tetrachloroethane		50.0	52.4	ug/L	0.486	4.70	20	
Tetrachloroethene		50.0	51.3	ug/L	0.374	2.60	20	
1,2,3-Trichlorobenzene		50.0	52.8	ug/L	0.863	5.50	20	
1,2,4-Trichlorobenzene		50.0	51.1	ug/L	1.01	2.20	20	
1,1,1-Trichloroethane		50.0	49.8	ug/L	0.614	0.400	20	
1,1,2-Trichloroethane		50.0	54.1	ug/L	0.312	8.30	20	
Trichloroethene		50.0	56.1	ug/L	0.329	12.2	20	
Trichlorofluoromethane		50.0	54.4	ug/L	0.629	8.80	20	
1,2,3-Trichloropropane		50.0	51.2	ug/L	0.196	2.50	20	
1,2,4-Trimethylbenzene		50.0	51.3	ug/L	3.31	2.70	20	
1,3,5-Trimethylbenzene		50.0	52.6	ug/L	3.28	5.10	20	
o-Xylene		50.0	48.3	ug/L	0.725	3.30	20	
m-,p-Xylene		100	100	ug/L	0.769	0.500	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 2838453
Report generated 04/22/2013 14:10

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13040768 Run Date: 04/18/2013 Sample ID: WG427302-02
Instrument ID: HPMS8 Run Time: 18:24 Method: 8260B
File ID: 8M387136 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG427303 Cal ID: HPMS8 - 29-MAR-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.7	ug/L	0.614	4.52	20	
1,1-Dichloroethene	CCC	50.0	52.0	ug/L	0.560	3.94	20	
1,2-Dichloropropane	CCC	50.0	47.6	ug/L	0.289	4.82	20	
Ethylbenzene	CCC	50.0	50.5	ug/L	0.637	0.941	20	
Toluene	CCC	50.0	48.0	ug/L	1.68	4.06	20	
Vinyl Chloride	CCC	50.0	46.3	ug/L	0.377	7.39	20	
Bromoform	SPCC	50.0	46.9	ug/L	0.246	6.19	20	
Chlorobenzene	SPCC	50.0	48.2	ug/L	1.12	3.54	20	
Chloromethane	SPCC	50.0	46.6	ug/L	0.455	6.70	20	
1,1-Dichloroethane	SPCC	50.0	49.9	ug/L	0.581	0.189	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.4	ug/L	0.535	9.16	20	
Xylenes		150	152	ug/L	0.771	1.49	20	
Acetone		50.0	48.0	ug/L	0.0674	3.98	20	
Benzene		50.0	47.7	ug/L	1.11	4.52	20	
Bromobenzene		50.0	46.7	ug/L	0.825	6.58	20	
Bromochloromethane		50.0	48.0	ug/L	0.167	3.98	20	
Bromodichloromethane		50.0	49.2	ug/L	0.482	1.53	20	
Bromomethane		50.0	47.2	ug/L	0.199	5.59	20	
2-Butanone		50.0	44.4	ug/L	0.0723	11.2	20	
n-Butylbenzene		50.0	51.9	ug/L	2.79	3.70	20	
sec-Butylbenzene		50.0	50.9	ug/L	3.55	1.75	20	
tert-Butylbenzene		50.0	51.5	ug/L	0.599	2.97	20	
Carbon Disulfide		50.0	49.5	ug/L	0.948	0.975	20	
Carbon Tetrachloride		50.0	49.6	ug/L	0.532	0.861	20	
Dibromochloromethane		50.0	49.9	ug/L	0.417	0.230	20	
Chloroethane		50.0	51.0	ug/L	0.194	2.00	20	
2-Chlorotoluene		50.0	44.0	ug/L	2.74	12.1	20	
4-Chlorotoluene		50.0	50.3	ug/L	2.93	0.656	20	
1,2-Dibromo-3-Chloropropane		50.0	47.6	ug/L	0.120	4.79	20	
1,2-Dibromoethane		50.0	49.7	ug/L	0.298	0.656	20	
Dibromomethane		50.0	49.8	ug/L	0.161	0.498	20	
1,2-Dichlorobenzene		50.0	47.8	ug/L	1.48	4.31	20	
1,3-Dichlorobenzene		50.0	48.7	ug/L	1.67	2.61	20	
1,4-Dichlorobenzene		50.0	46.7	ug/L	1.66	6.69	20	
Dichlorodifluoromethane		50.0	49.5	ug/L	0.371	1.01	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.453	1.92	20	
cis-1,2-Dichloroethene		50.0	49.0	ug/L	0.311	2.02	20	
trans-1,2-Dichloroethene		50.0	50.1	ug/L	0.493	0.292	20	
1,3-Dichloropropane		50.0	49.3	ug/L	0.525	1.47	20	
2,2-Dichloropropane		50.0	51.3	ug/L	0.623	2.57	20	
cis-1,3-Dichloropropene		50.0	48.4	ug/L	0.514	3.20	20	
trans-1,3-Dichloropropene		50.0	49.3	ug/L	0.653	1.39	20	

CCV - Modified 03/05/2008
PDF File ID: 2838454
Report generated 04/22/2013 14:10

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13040768 Run Date: 04/18/2013 Sample ID: WG427302-02
Instrument ID: HPMS8 Run Time: 18:24 Method: 8260B
File ID: 8M387136 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG427303 Cal ID: HPMS8 - 29-MAR-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.0	ug/L	0.466	0.0734	20	
2-Hexanone		50.0	45.5	ug/L	0.0780	8.95	20	
Hexachlorobutadiene		50.0	52.7	ug/L	0.421	5.48	20	
Isopropylbenzene		50.0	51.5	ug/L	2.02	2.93	20	
p-Isopropyltoluene		50.0	51.6	ug/L	3.01	3.15	20	
4-Methyl-2-Pentanone		50.0	45.6	ug/L	0.0604	8.75	20	
Methylene Chloride		50.0	48.7	ug/L	0.282	2.61	20	
Naphthalene		50.0	48.8	ug/L	1.72	2.42	20	
n-Propylbenzene		50.0	49.7	ug/L	4.32	0.582	20	
Styrene		50.0	51.5	ug/L	1.27	2.95	20	
1,1,1,2-Tetrachloroethane		50.0	49.5	ug/L	0.459	1.02	20	
Tetrachloroethene		50.0	49.3	ug/L	0.360	1.33	20	
1,2,3-Trichlorobenzene		50.0	51.2	ug/L	0.838	2.47	20	
1,2,4-Trichlorobenzene		50.0	51.1	ug/L	1.01	2.13	20	
1,1,1-Trichloroethane		50.0	49.1	ug/L	0.605	1.88	20	
1,1,2-Trichloroethane		50.0	46.7	ug/L	0.269	6.58	20	
Trichloroethene		50.0	48.9	ug/L	0.287	2.22	20	
Trichlorofluoromethane		50.0	52.7	ug/L	0.610	5.49	20	
1,2,3-Trichloropropane		50.0	47.2	ug/L	0.181	5.69	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	3.20	0.691	20	
1,3,5-Trimethylbenzene		50.0	51.2	ug/L	3.20	2.33	20	
o-Xylene		50.0	51.2	ug/L	0.768	2.34	20	
m-,p-Xylene		100	101	ug/L	0.774	1.07	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 2838454
Report generated 04/22/2013 14:10

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13040768
Instrument ID: HPMS8
Workgroup (AAB#): WG427303

ICAL CCV Number: WG425063-08
CAL ID: HPMS8 - 29-MAR-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG425063-08	NA	NA	225750	420930	570486
Upper Limit	NA	NA	451500	841860	1140972
Lower Limit	NA	NA	112875	210465	285243
L13040768-01	1.00	01	201328	374903	506215
L13040768-02	1.00	01	199093	386527	516000
L13040768-03	1.00	01	203727	373072	511254
L13040768-04	1.00	01	200604	385188	519671
WG427303-01	1.00	01	208398	389433	523349
WG427303-02	1.00	01	214958	386030	524319
WG427303-03	1.00	01	218017	401164	534121

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 2841974
Report generated 04/22/2013 14:10

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13040768
Instrument ID: HPMS8
Workgroup (AAB#): WG427303

ICAL CCV Number: WG425063-08
CAL ID: HPMS8-29-MAR-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG425063-08	NA	NA	16.79	13.79	9.95
Upper Limit	NA	NA	17.29	14.29	10.45
Lower Limit	NA	NA	16.29	13.29	9.45
L13040768-01	1.00	01	16.79	13.78	9.94
L13040768-02	1.00	01	16.79	13.78	9.94
L13040768-03	1.00	01	16.79	13.79	9.93
L13040768-04	1.00	01	16.79	13.79	9.94
WG427303-01	1.00	01	16.79	13.79	9.94
WG427303-02	1.00	01	16.79	13.79	9.93
WG427303-03	1.00	01	16.79	13.78	9.94

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 2841975
Report generated: 04/22/2013 14:10

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041813\8M387152.D Vial: 19
Acq On : 19 Apr 2013 2:32 Operator: TMB
Sample : L13040768-01 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 19 09:18:34 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.94	96	506215	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.78	117	374903	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	201328	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	8.88	111	166357	24.0505 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.20%		
43) 1,2-Dichloroethane-d4	9.52	65	195153	24.8129 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.24%		
58) Toluene-d8	11.91	98	566556	25.1508 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.60%		
80) p-Bromofluorobenzene	15.28	95	242248	26.1932 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.76%		
Target Compounds					Qvalue
13) Acetone	5.49	43	3680	2.5872 ug/L #	50
19) Methylene Chloride	6.47	84	4599	0.7849 ug/L	85
33) Chloroform	8.61	83	3072	0.2359 ug/L	90
56) Dimethyl Disulfide	11.91	94	17839	1.7984 ug/L #	23

(#) = qualifier out of range (m) = manual integration
8M387152.D 8260WT.M Fri Apr 19 09:18:35 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041813\8M387152.D Vial: 19
Acq On : 19 Apr 2013 2:32 Operator: TMB
Sample : L13040768-01 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 19 9:18 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

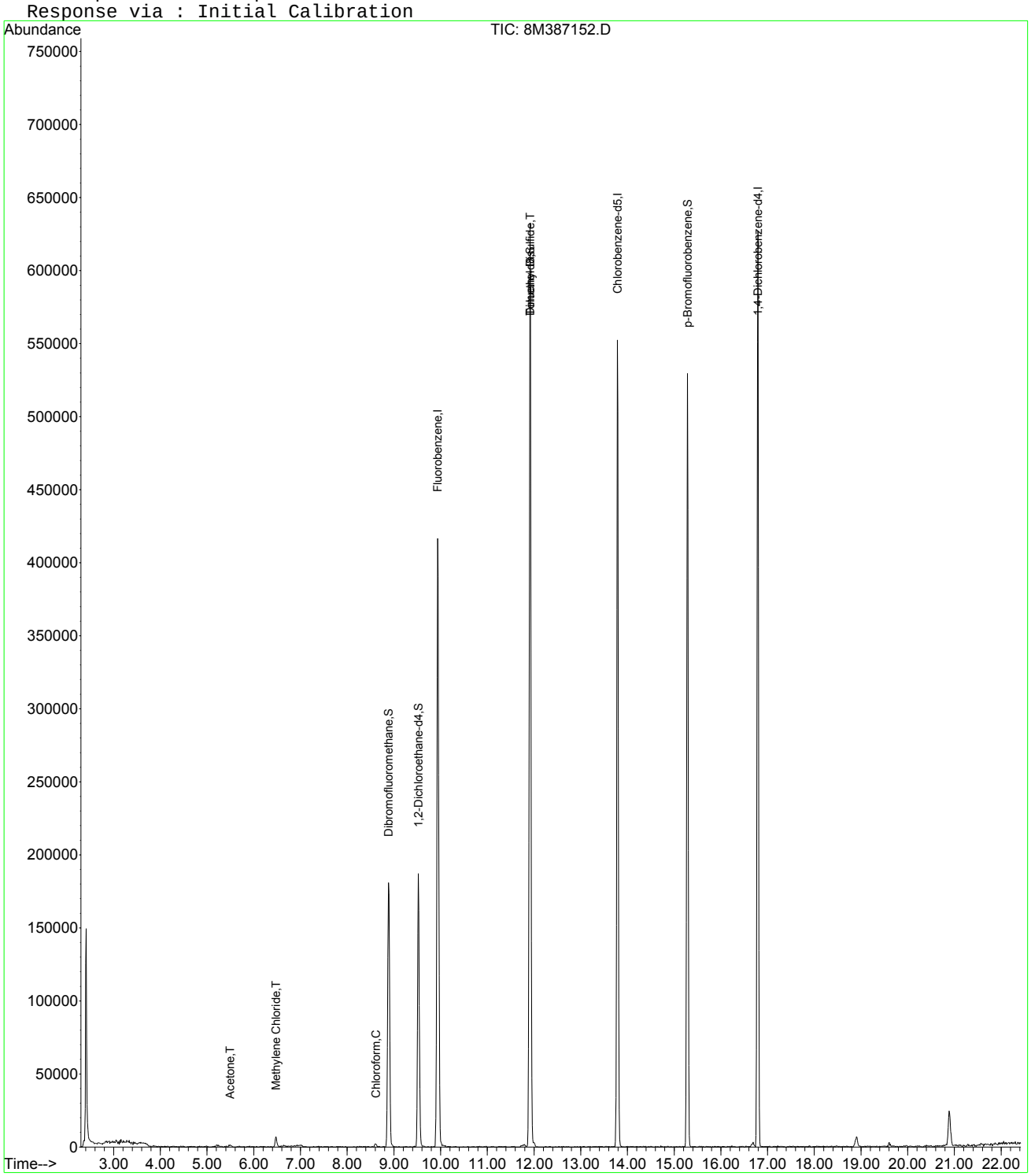

8M387152.D 8260WT.M Fri Apr 19 09:18:35 2013 Page 2

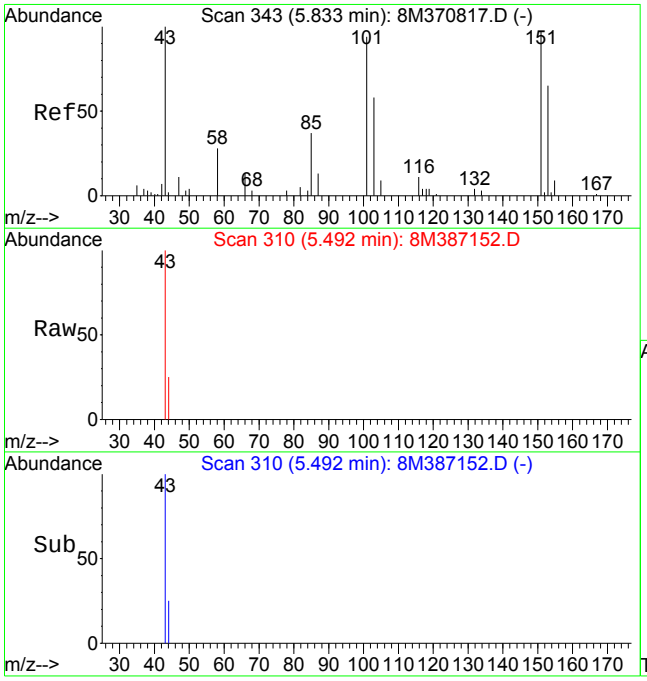

#13
Acetone
Concen: 2.59 ug/L
RT: 5.49 min Scan# 310
Delta R.T. 0.01 min
Lab File: 8M387152.D
Acq: 19 Apr 2013 2:32

Tgt Ion: 43 Resp: 3680

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.0	35.0#

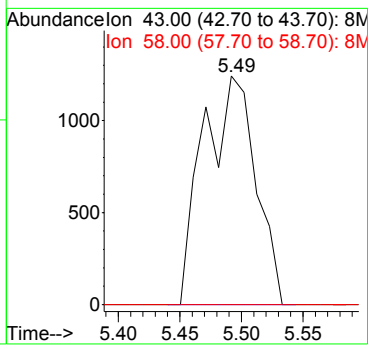

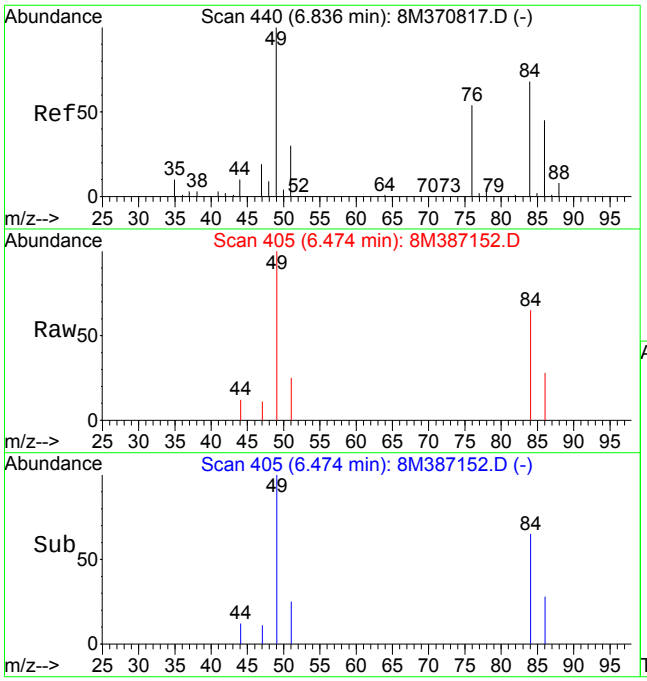

#19
Methylene Chloride
Concen: 0.78 ug/L
RT: 6.47 min Scan# 405
Delta R.T. -0.01 min
Lab File: 8M387152.D
Acq: 19 Apr 2013 2:32

Tgt Ion: 84 Resp: 4599

Ion	Ratio	Lower	Upper
84	100		
49	172.6	91.7	214.1

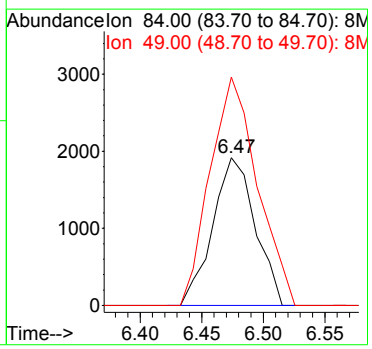

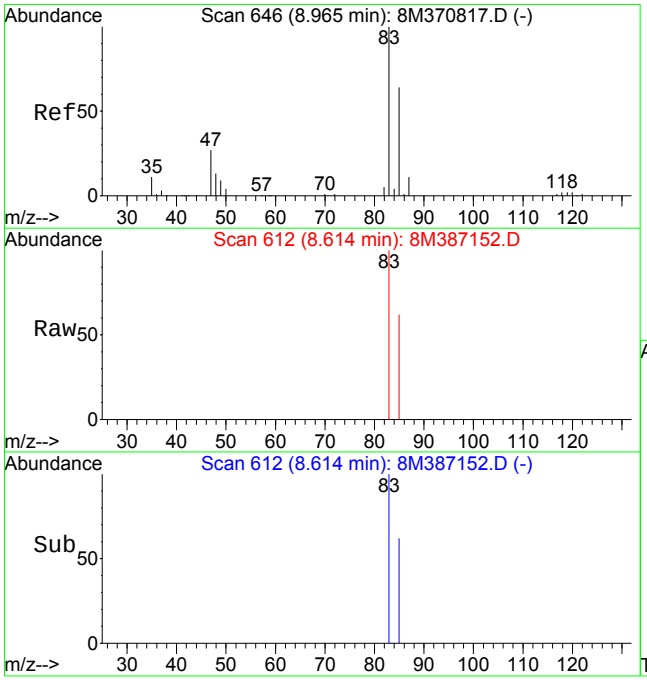

#33
Chloroform
Concen: 0.24 ug/L
RT: 8.61 min Scan# 612
Delta R.T. 0.01 min
Lab File: 8M387152.D
Acq: 19 Apr 2013 2:32

Tgt Ion: 83 Resp: 3072

Ion	Ratio	Lower	Upper
83	100		
85	72.2	38.5	89.7

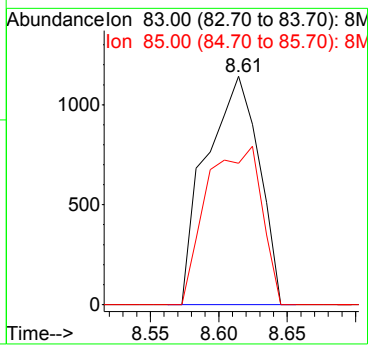

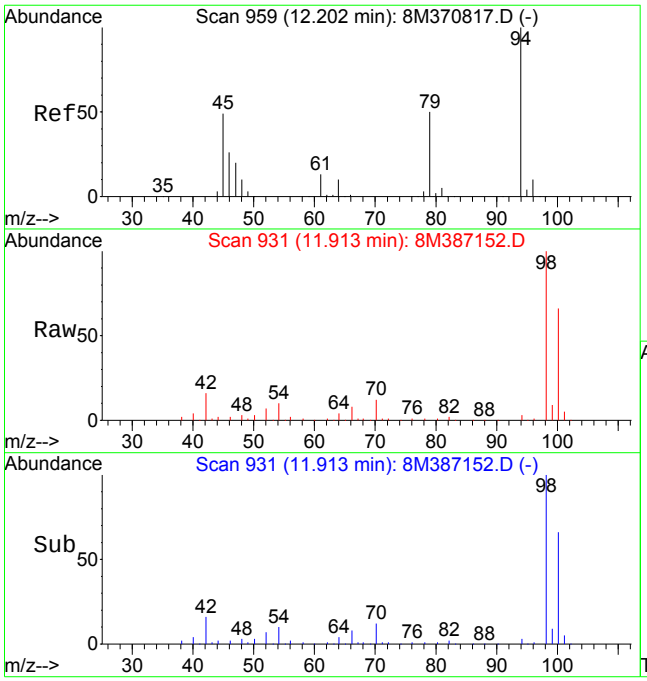

#56
Dimethyl Disulfide
Concen: 1.80 ug/L
RT: 11.91 min Scan# 931
Delta R.T. 0.08 min
Lab File: 8M387152.D
Acq: 19 Apr 2013 2:32

Tgt Ion: 94 Resp: 17839

Ion	Ratio	Lower	Upper
94	100		
79	0.0	33.9	79.1#

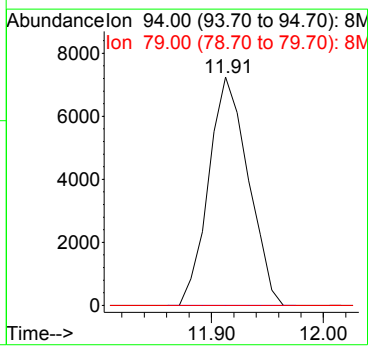

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041813\8M387153.D Vial: 20
Acq On : 19 Apr 2013 3:02 Operator: TMB
Sample : L13040768-02 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 19 09:18:36 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.94	96	516000	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.78	117	386527	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	199093	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	8.89	111	167614	23.7727 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.08%		
43) 1,2-Dichloroethane-d4	9.52	65	199363	24.8675 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.48%		
58) Toluene-d8	11.91	98	562798	24.2326 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.92%		
80) p-Bromofluorobenzene	15.28	95	240495	26.2956 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.20%		
Target Compounds					Qvalue
13) Acetone	5.48	43	2664	1.8374 ug/L #	72
19) Methylene Chloride	6.47	84	4653	0.7791 ug/L	89
20) Carbon Disulfide	6.50	76	29872	1.5125 ug/L	100
29) 2-Butanone	8.11	43	223	0.1327 ug/L #	57
33) Chloroform	8.60	83	2953	0.2225 ug/L	98
56) Dimethyl Disulfide	11.92	94	17659	1.7465 ug/L #	23

(#) = qualifier out of range (m) = manual integration
8M387153.D 8260WT.M Fri Apr 19 09:18:37 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041813\8M387153.D Vial: 20
Acq On : 19 Apr 2013 3:02 Operator: TMB
Sample : L13040768-02 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 19 9:18 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

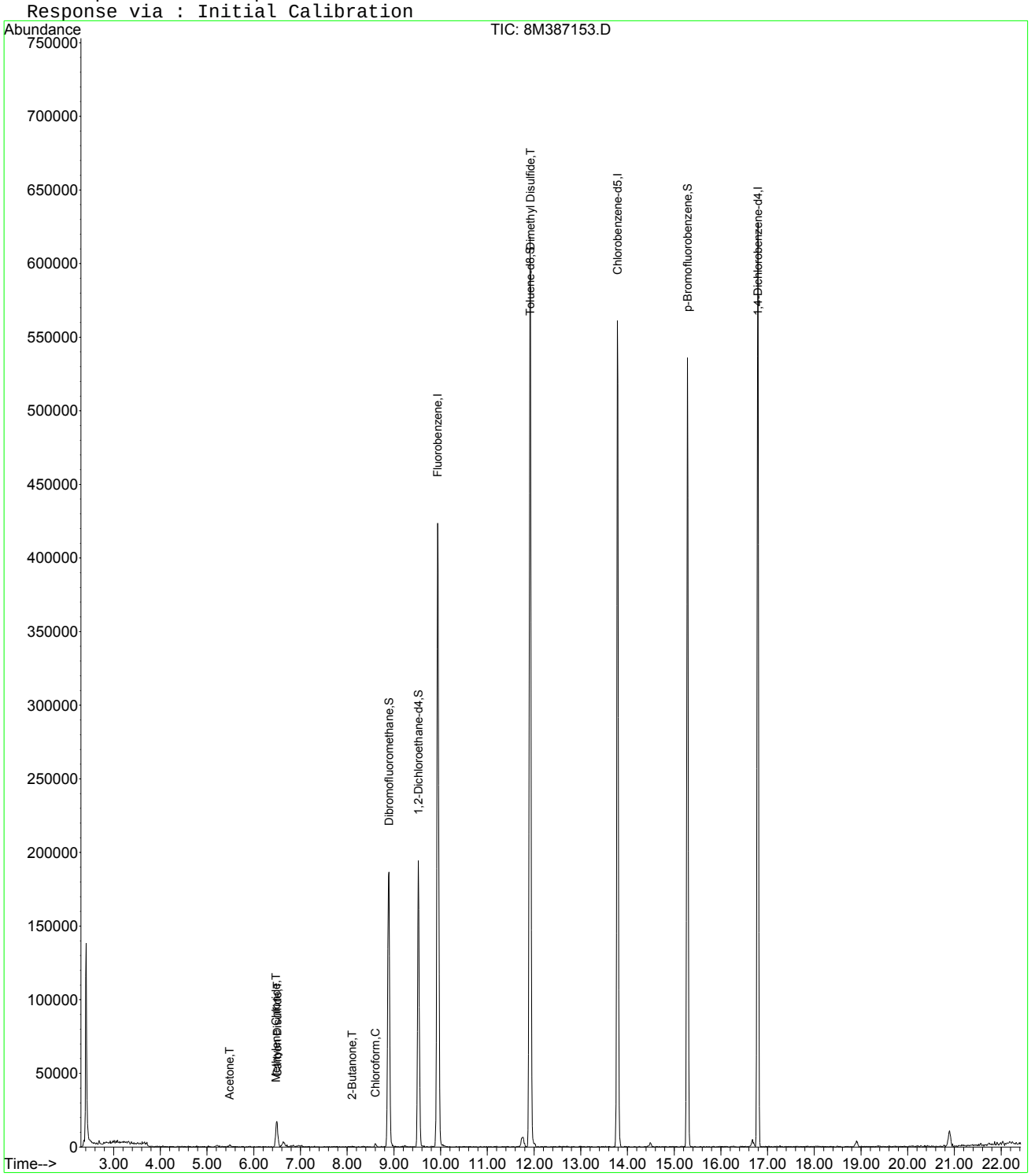

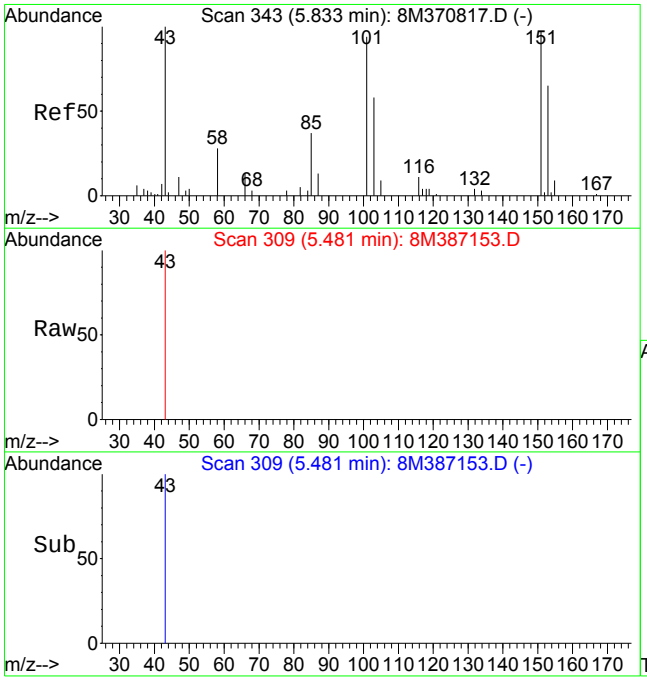

#13
Acetone
Concen: 1.84 ug/L
RT: 5.48 min Scan# 309
Delta R.T. 0.00 min
Lab File: 8M387153.D
Acq: 19 Apr 2013 3:02

Tgt Ion: 43 Resp: 2664

Ion	Ratio	Lower	Upper
43	100		
58	10.8	15.0	35.0#

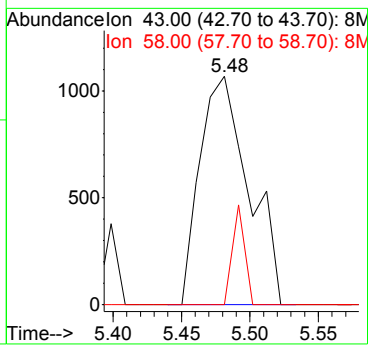

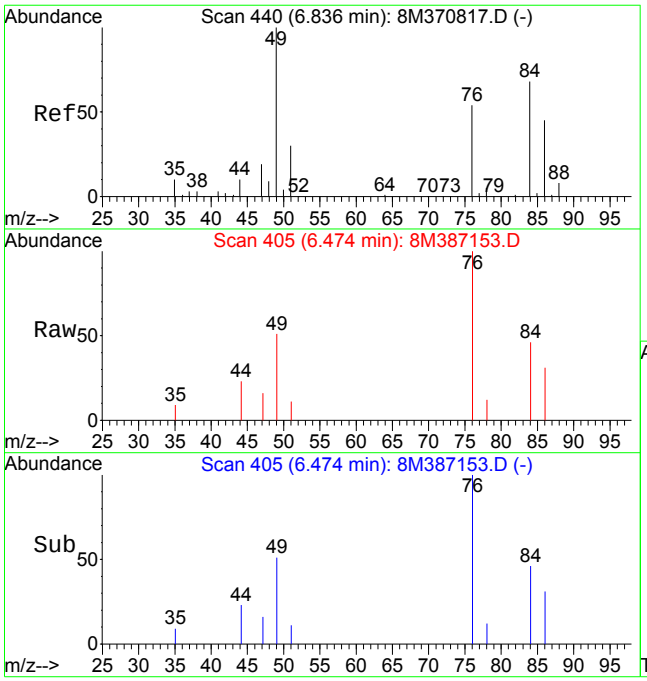

#19
Methylene Chloride
Concen: 0.78 ug/L
RT: 6.47 min Scan# 405
Delta R.T. -0.01 min
Lab File: 8M387153.D
Acq: 19 Apr 2013 3:02

Tgt Ion: 84 Resp: 4653

Ion	Ratio	Lower	Upper
84	100		
49	138.7	91.7	214.1

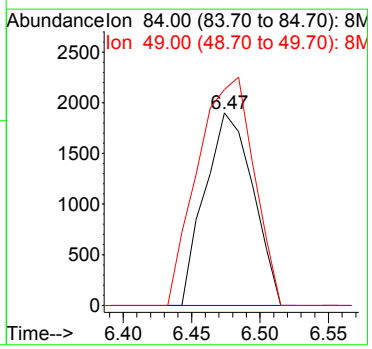

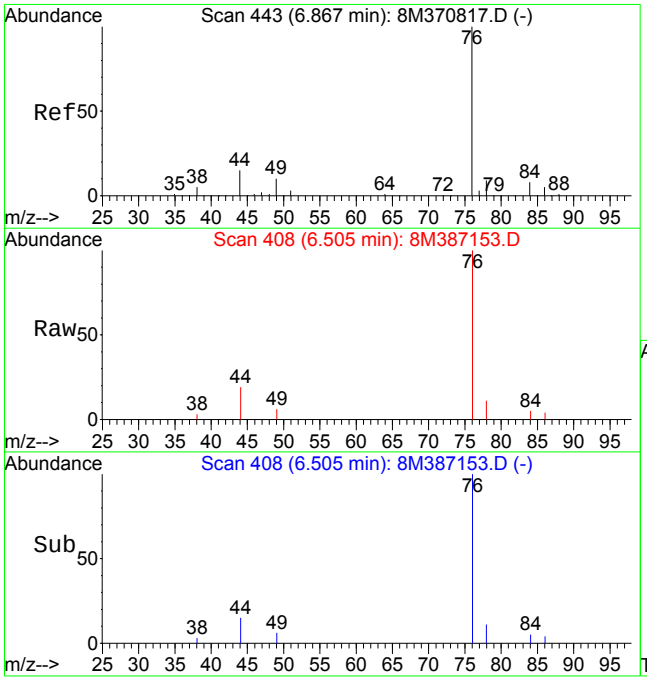

#20
Carbon Disulfide
Concen: 1.51 ug/L
RT: 6.50 min Scan# 408
Delta R.T. 0.00 min
Lab File: 8M387153.D
Acq: 19 Apr 2013 3:02

Tgt Ion: 76 Resp: 29872

Ion	Ratio	Lower	Upper
76	100		
78	9.5	5.6	13.2

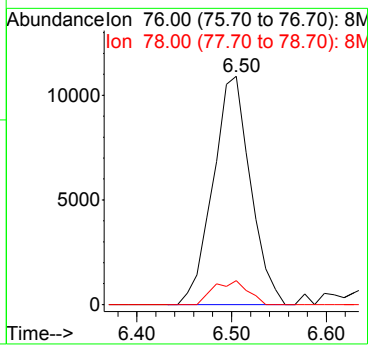

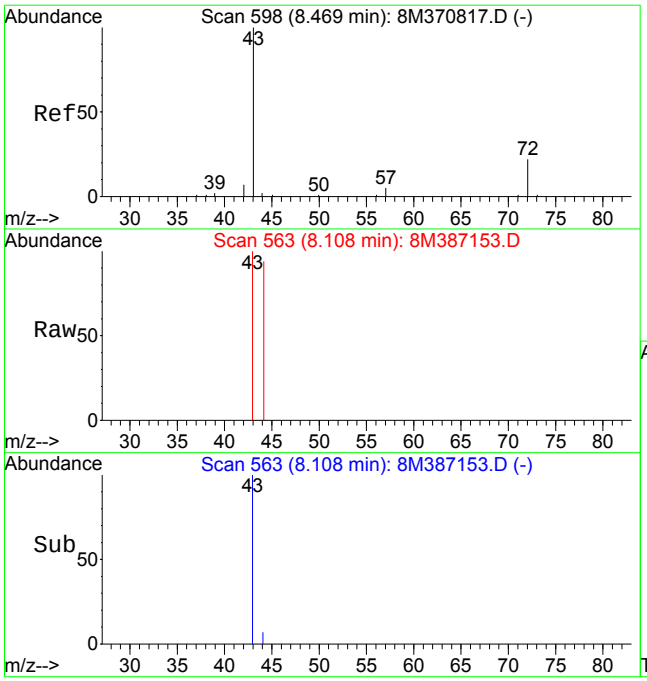

#29
2-Butanone
Concen: 0.13 ug/L
RT: 8.11 min Scan# 563
Delta R.T. -0.01 min
Lab File: 8M387153.D
Acq: 19 Apr 2013 3:02

Tgt Ion: 43 Resp: 223

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.7	27.3#

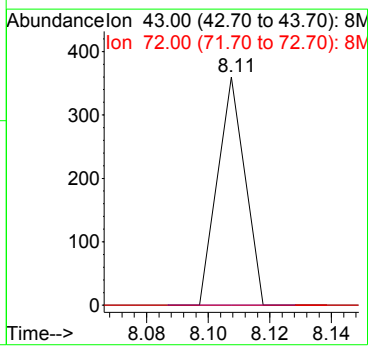

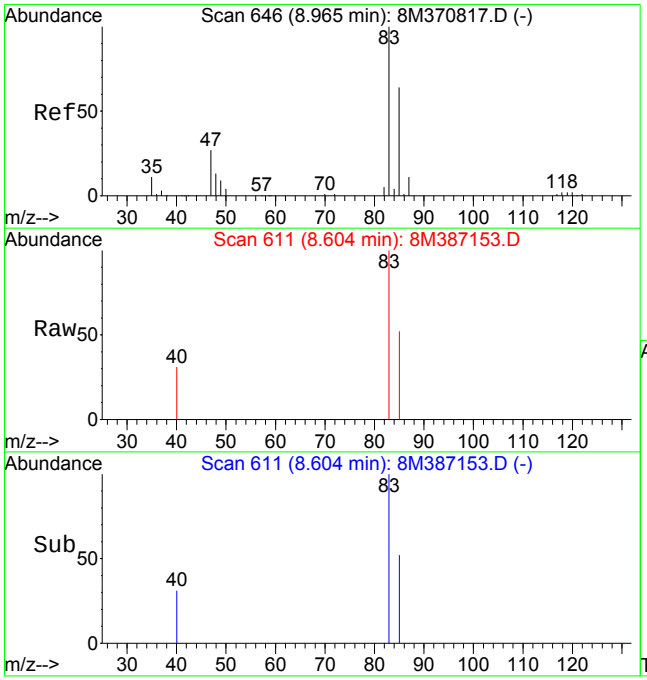

#33
Chloroform
Concen: 0.22 ug/L
RT: 8.60 min Scan# 611
Delta R.T. 0.00 min
Lab File: 8M387153.D
Acq: 19 Apr 2013 3:02

Tgt Ion: 83 Resp: 2953

Ion	Ratio	Lower	Upper
83	100		
85	62.6	38.5	89.7

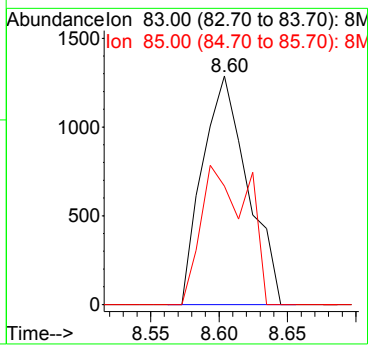

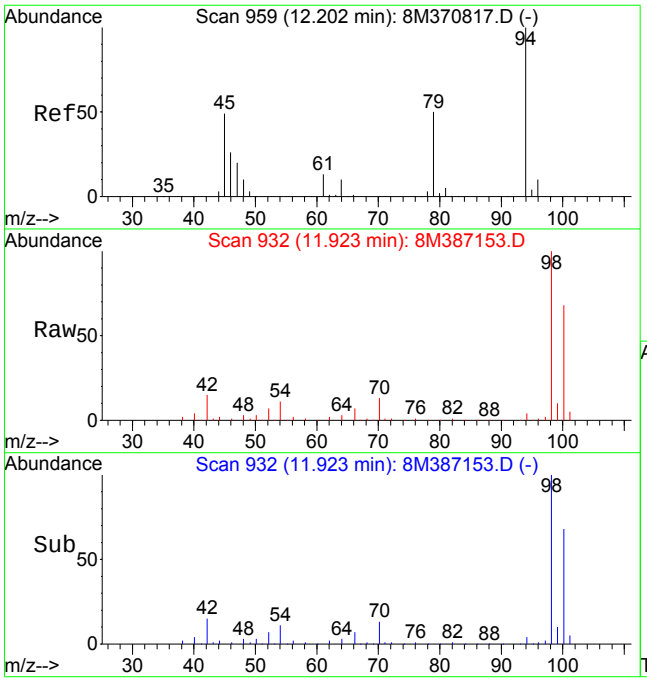

#56
Dimethyl Disulfide
Concen: 1.75 ug/L
RT: 11.92 min Scan# 932
Delta R.T. 0.09 min
Lab File: 8M387153.D
Acq: 19 Apr 2013 3:02

Tgt Ion: 94 Resp: 17659

Ion	Ratio	Lower	Upper
94	100		
79	0.0	33.9	79.1#

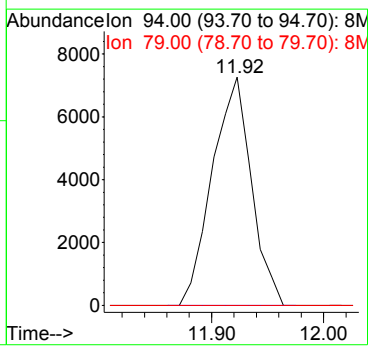

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041813\8M387154.D Vial: 21
Acq On : 19 Apr 2013 3:33 Operator: TMB
Sample : L13040768-03 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 19 09:18:39 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.93	96	511254	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.79	117	373072	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	203727	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	8.89	111	167796	24.0194 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.08%		
43) 1,2-Dichloroethane-d4	9.52	65	201098	25.3168 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.28%		
58) Toluene-d8	11.92	98	564684	25.1907 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.76%		
80) p-Bromofluorobenzene	15.28	95	244374	26.1119 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.44%		

Target Compounds					Qvalue
3) Chloromethane	3.07	50	1308	0.1313 ug/L #	41
13) Acetone	5.49	43	11994	8.3492 ug/L	83
29) 2-Butanone	8.12	43	4163	2.4995 ug/L	99
51) 1,4-Dioxane	10.95	88	232	25.0291 ug/L #	7
56) Dimethyl Disulfide	11.91	94	17539	1.7507 ug/L #	23
90) 1,2,4-Trimethylbenzene	16.16	105	7747	0.2947 ug/L	80
100) Naphthalene	19.78	128	3050	0.2119 ug/L #	68

(#) = qualifier out of range (m) = manual integration
8M387154.D 8260WT.M Fri Apr 19 09:18:39 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041813\8M387154.D Vial: 21
Acq On : 19 Apr 2013 3:33 Operator: TMB
Sample : L13040768-03 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 19 9:18 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

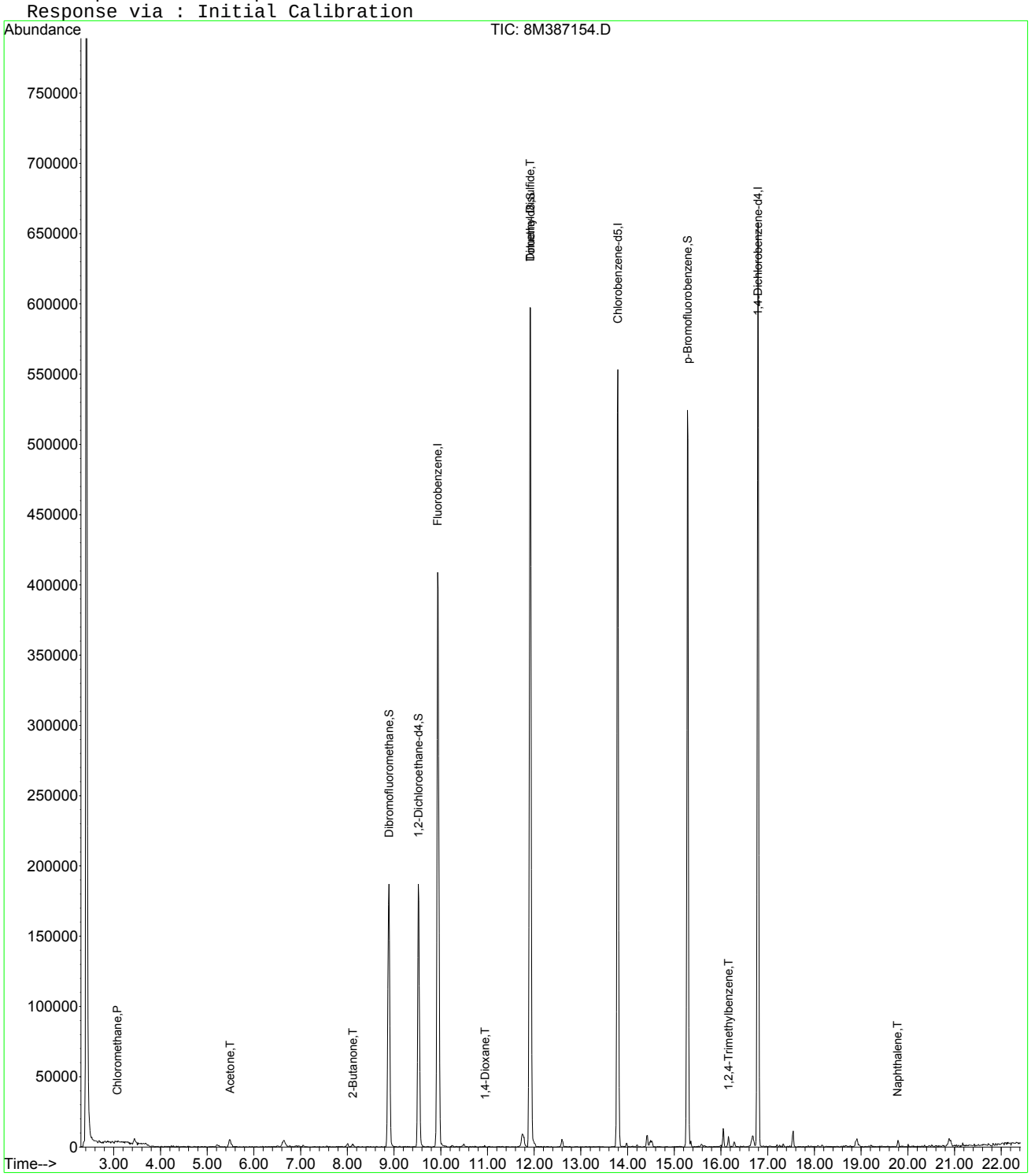

8M387154.D 8260WT.M Fri Apr 19 09:18:40 2013 Page 2

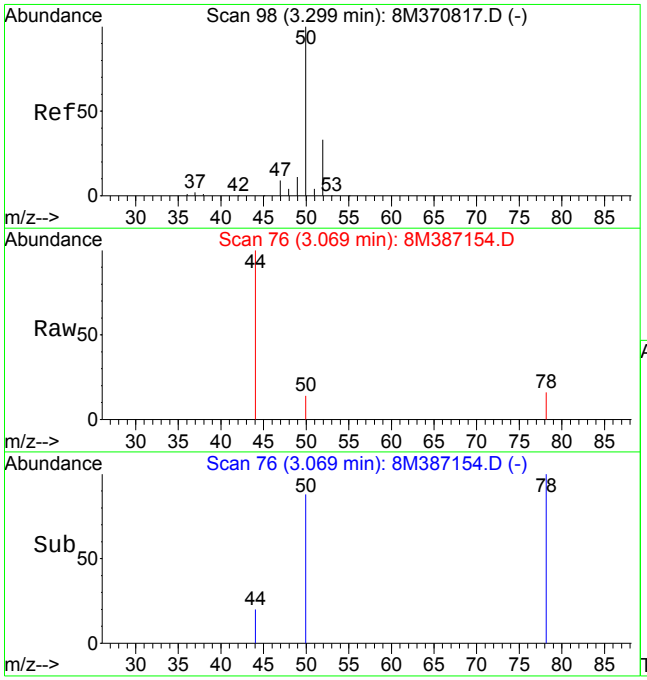

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.07 min Scan# 76
Delta R.T. 0.01 min
Lab File: 8M387154.D
Acq: 19 Apr 2013 3:33

Tgt Ion: 50 Resp: 1308

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.9	46.5#

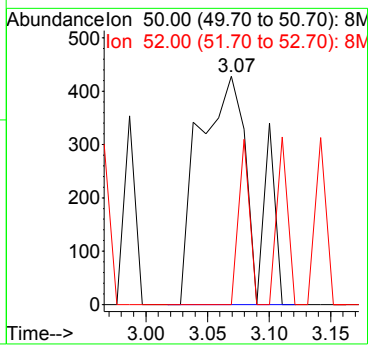

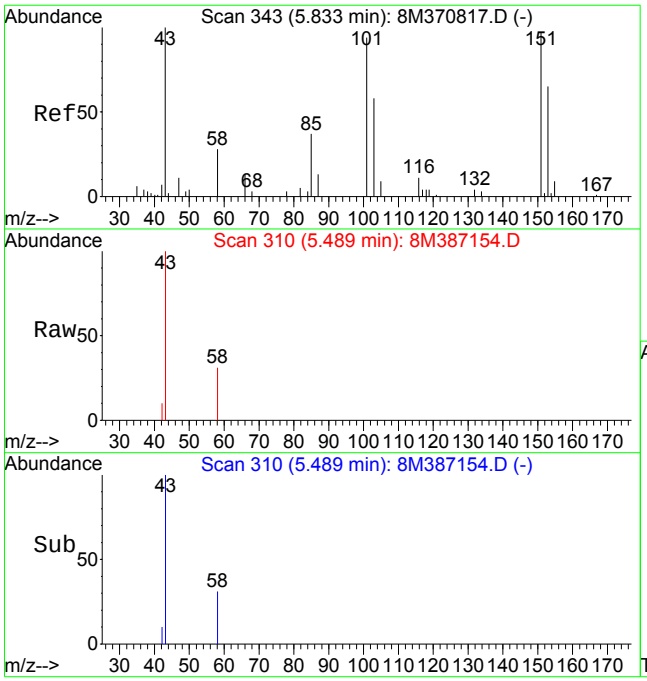

#13
Acetone
Concen: 8.35 ug/L
RT: 5.49 min Scan# 310
Delta R.T. 0.01 min
Lab File: 8M387154.D
Acq: 19 Apr 2013 3:33

Tgt Ion: 43 Resp: 11994

Ion	Ratio	Lower	Upper
43	100		
58	33.6	15.0	35.0

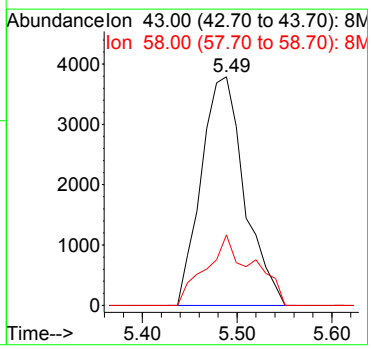

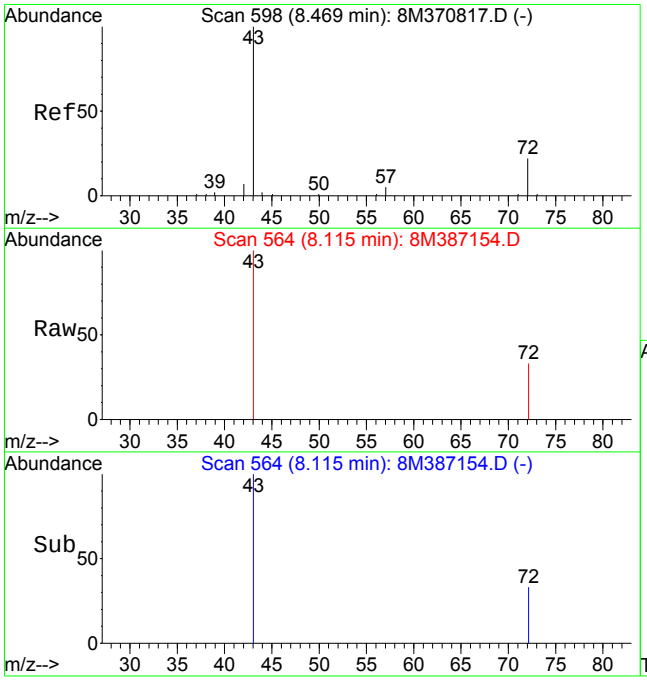

#29
2-Butanone
Concen: 2.50 ug/L
RT: 8.12 min Scan# 564
Delta R.T. -0.00 min
Lab File: 8M387154.D
Acq: 19 Apr 2013 3:33

Tgt Ion: 43 Resp: 4163

Ion	Ratio	Lower	Upper
43	100		
72	20.1	11.7	27.3

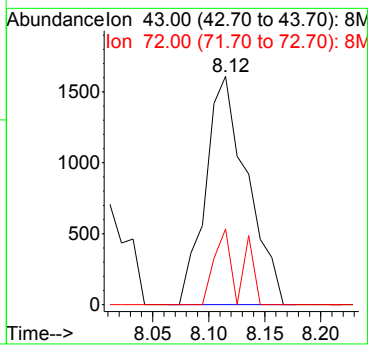

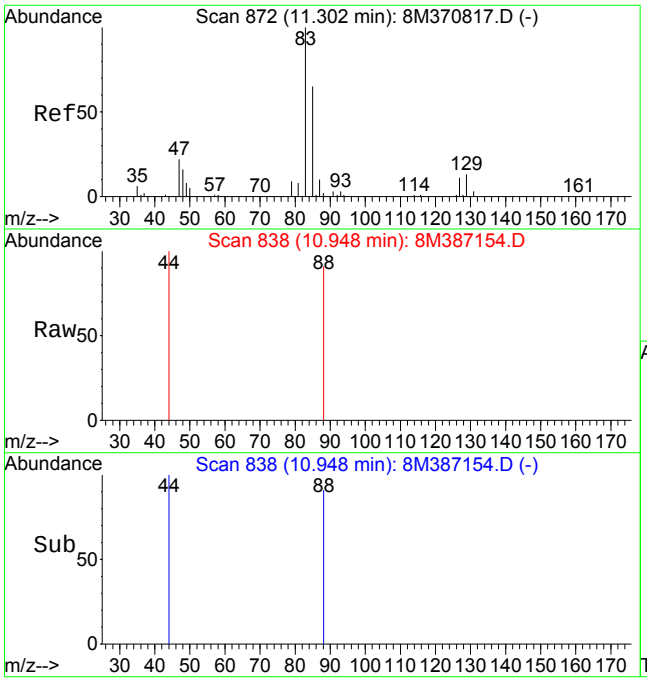

#51
1,4-Dioxane
Concen: 25.03 ug/L
RT: 10.95 min Scan# 838
Delta R.T. 0.01 min
Lab File: 8M387154.D
Acq: 19 Apr 2013 3:33

Tgt Ion: 88 Resp: 232

Ion	Ratio	Lower	Upper
88	100		
58	120.3	32.3	75.5#

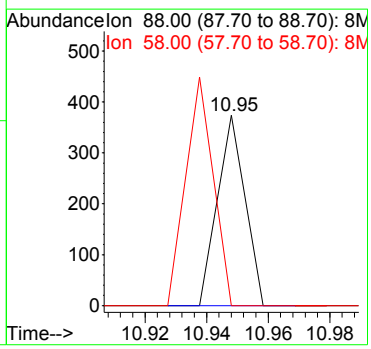

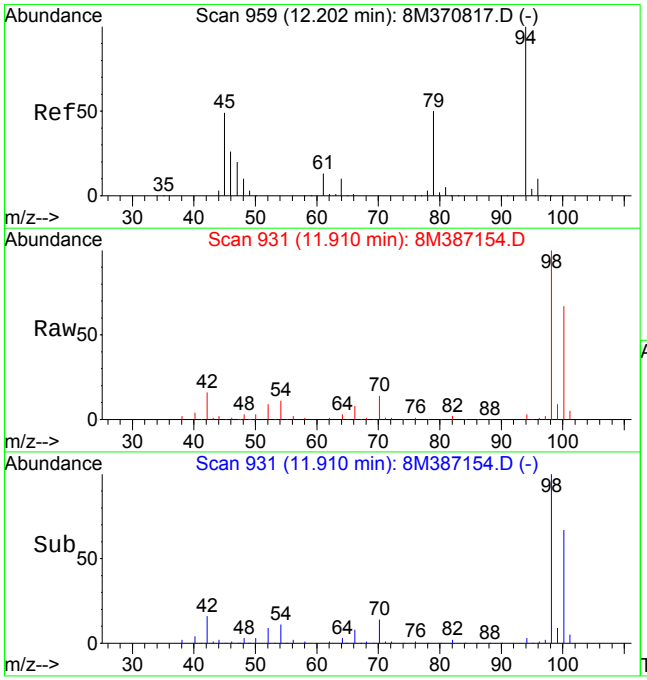

#56
Dimethyl Disulfide
Concen: 1.75 ug/L
RT: 11.91 min Scan# 931
Delta R.T. 0.07 min
Lab File: 8M387154.D
Acq: 19 Apr 2013 3:33

Tgt Ion: 94 Resp: 17539

Ion	Ratio	Lower	Upper
94	100		
79	0.0	33.9	79.1#

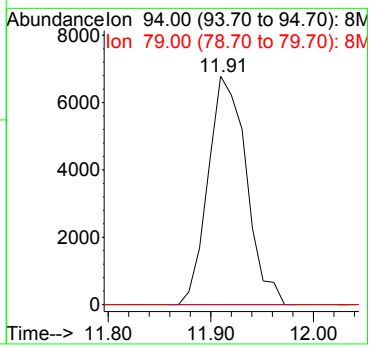

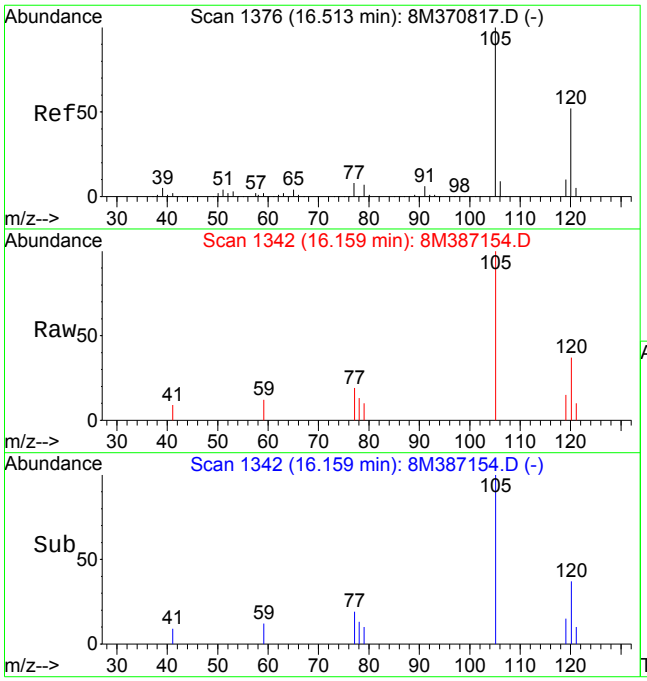

#90
1,2,4-Trimethylbenzene
Concen: 0.29 ug/L
RT: 16.16 min Scan# 1342
Delta R.T. -0.00 min
Lab File: 8M387154.D
Acq: 19 Apr 2013 3:33

Tgt Ion:105 Resp: 7747

Ion	Ratio	Lower	Upper
105	100		
120	35.2	29.5	68.7

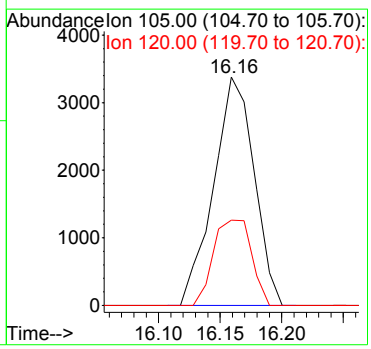

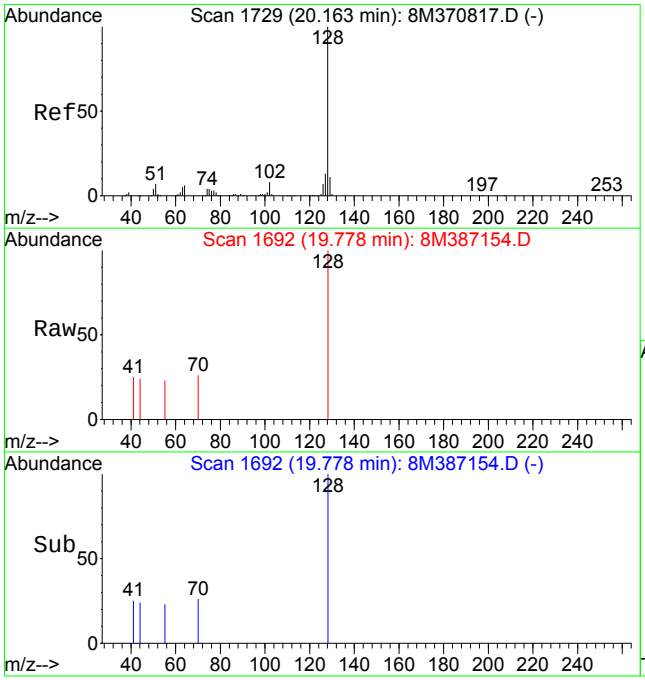

#100
Naphthalene
Concen: 0.21 ug/L
RT: 19.78 min Scan# 1692
Delta R.T. -0.01 min
Lab File: 8M387154.D
Acq: 19 Apr 2013 3:33

Tgt Ion:128 Resp: 3050

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.5	17.5#

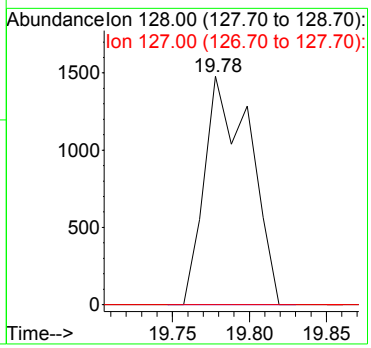

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041813\8M387142.D Vial: 9
Acq On : 18 Apr 2013 21:27 Operator: TMB
Sample : L13040768-04 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 19 09:18:06 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.94	96	519671	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.79	117	385188	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	200604	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	8.89	111	168328	23.7053 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.84%		
43) 1,2-Dichloroethane-d4	9.52	65	191939	23.7724 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.08%		
58) Toluene-d8	11.92	98	579240	25.0273 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.12%		
80) p-Bromofluorobenzene	15.28	95	247020	26.8056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.24%		
Target Compounds					Qvalue
3) Chloromethane	3.06	50	1270	0.1254 ug/L #	1
13) Acetone	5.50	43	2014	1.3793 ug/L #	50
56) Dimethyl Disulfide	11.92	94	16940	1.6635 ug/L #	23

(#) = qualifier out of range (m) = manual integration
8M387142.D 8260WT.M Fri Apr 19 09:18:07 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041813\8M387142.D Vial: 9
Acq On : 18 Apr 2013 21:27 Operator: TMB
Sample : L13040768-04 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 19 9:18 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

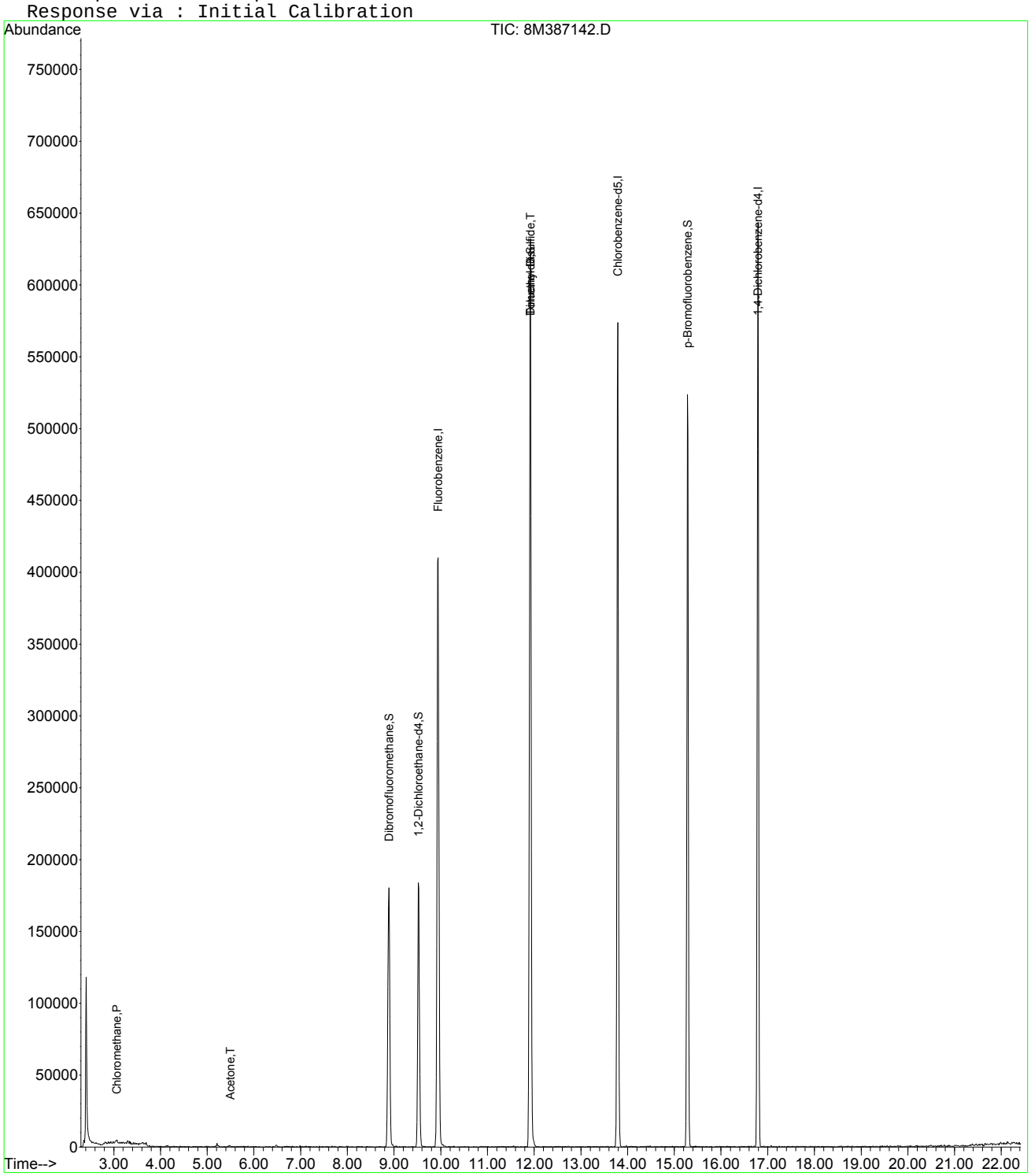

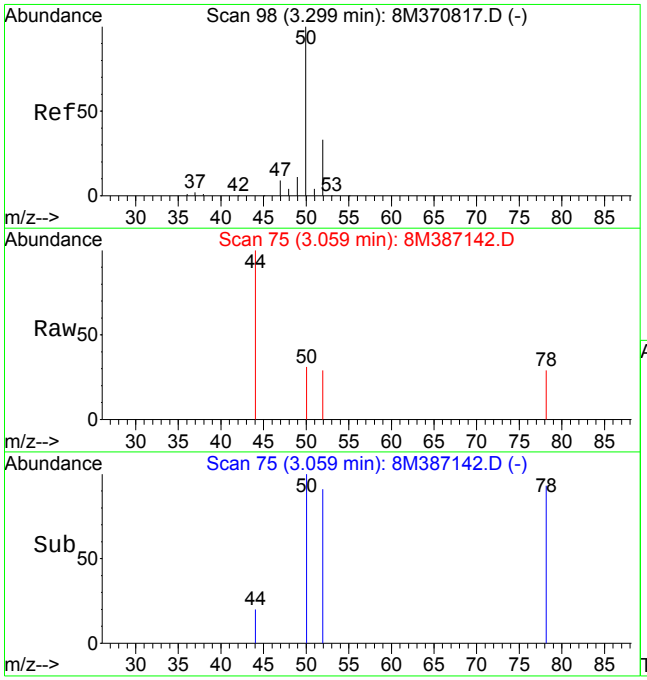

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.06 min Scan# 75
Delta R.T. -0.00 min
Lab File: 8M387142.D
Acq: 18 Apr 2013 21:27

Tgt Ion: 50 Resp: 1270

Ion	Ratio	Lower	Upper
50	100		
52	108.7	19.9	46.5#

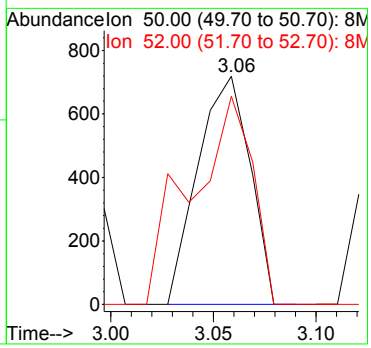

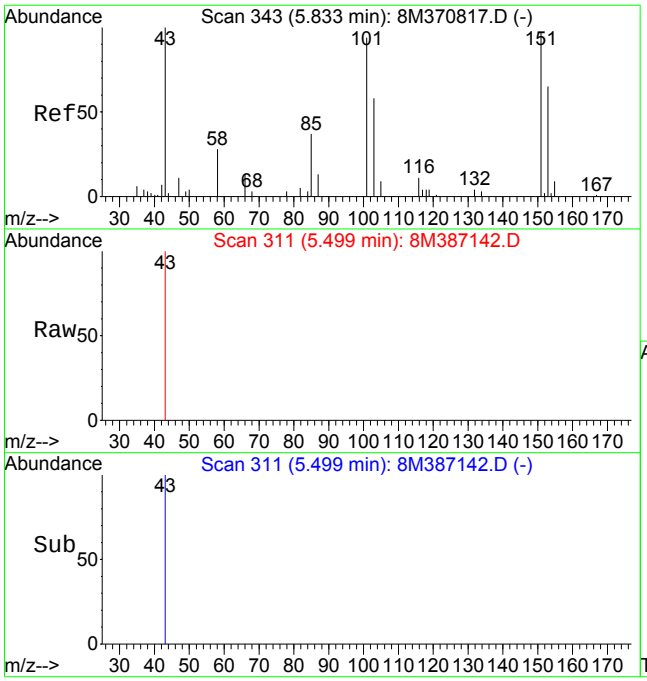

#13
Acetone
Concen: 1.38 ug/L
RT: 5.50 min Scan# 311
Delta R.T. 0.02 min
Lab File: 8M387142.D
Acq: 18 Apr 2013 21:27

Tgt Ion: 43 Resp: 2014

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.0	35.0#

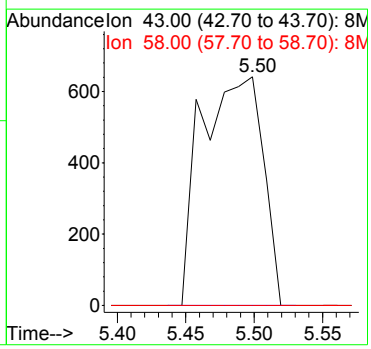

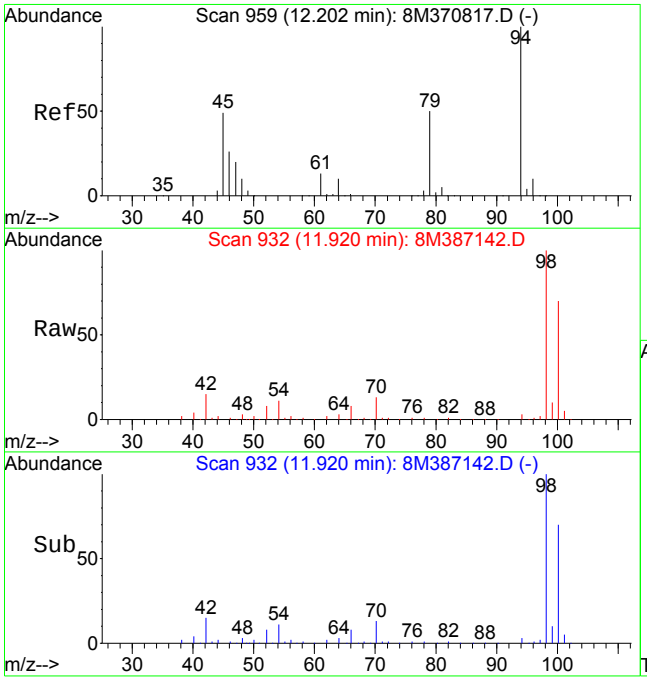

#56
Dimethyl Disulfide
Concen: 1.66 ug/L
RT: 11.92 min Scan# 932
Delta R.T. 0.08 min
Lab File: 8M387142.D
Acq: 18 Apr 2013 21:27

Tgt Ion: 94 Resp: 16940

Ion	Ratio	Lower	Upper
94	100		
79	0.0	33.9	79.1#

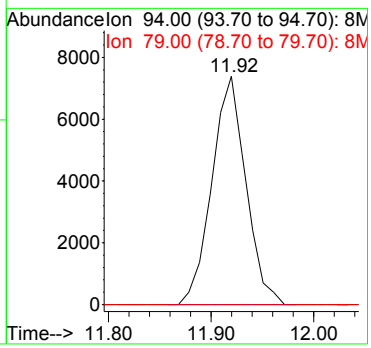

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386635.D Vial: 3
Acq On : 29 Mar 2013 12:00 Operator: adc
Sample : WG425063-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:03:53 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.94	96	677885	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.79	117	473422	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	251566	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	8.88	111	3783	0.4084 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.64%#	
43) 1,2-Dichloroethane-d4	9.53	65	3945	0.3746 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.48%#	
58) Toluene-d8	11.91	98	18380	0.6461 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.60%#	
80) p-Bromofluorobenzene	15.29	95	6541	0.5660 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.68	85	2685	0.2645 ug/L	80
3) Chloromethane	3.05	50	5263	0.3984 ug/L	81
4) Vinyl Chloride	3.25	62	3335	0.3019 ug/L	93
5) 1,3-Butadiene	3.31	54	3634	0.3442 ug/L #	74
6) Bromomethane	4.02	94	1572	0.2754 ug/L	83
7) Chloroethane	4.17	64	1104	0.2136 ug/L #	43
8) Trichlorofluoromethane	4.66	101	4828	0.3046 ug/L #	68
10) Isoprene	5.21	67	3014	0.2772 ug/L	73
14) 1,1-Dichloroethene	5.71	61	4312	0.2950 ug/L	92
16) Dimethyl Sulfide	5.96	62	2177	0.2584 ug/L	98
17) Iodomethane	6.19	142	1832	0.1870 ug/L	86
19) Methylene Chloride	6.47	84	2973	0.3789 ug/L	85
20) Carbon Disulfide	6.50	76	9260	0.3569 ug/L #	76
22) Methyl Tert Butyl Ether	6.72	73	4907	0.2657 ug/L #	63
23) trans-1,2-Dichloroethene	6.94	61	3199	0.2398 ug/L	74
24) n-Hexane	7.06	57	3418	0.3271 ug/L	96
26) Vinyl Acetate	7.55	43	3742	0.2900 ug/L #	78
27) 1,1-Dichloroethane	7.55	63	4303	0.2727 ug/L #	93
31) 2,2-Dichloropropane	8.35	77	4690	0.2848 ug/L #	63
32) cis-1,2-Dichloroethene	8.40	96	2136	0.2484 ug/L	87
33) Chloroform	8.59	83	5289	0.3033 ug/L	87
35) Bromochloromethane	8.83	130	1100	0.2328 ug/L	76
38) 1,1,1-Trichloroethane	9.14	97	4746	0.2839 ug/L	99
39) Cyclohexane	9.17	56	4232	0.2905 ug/L	97
40) 1,1-Dichloropropene	9.34	75	3776	0.2993 ug/L	82
42) Carbon Tetrachloride	9.48	117	3491	0.2398 ug/L #	81
45) 1,2-Dichloroethane	9.65	62	3196	0.2553 ug/L	85
46) Benzene	9.69	78	10583	0.3364 ug/L	88
47) Trichloroethene	10.45	130	2320	0.2918 ug/L	91
48) Methylcyclohexane	10.54	83	2855	0.2517 ug/L #	86
49) 1,2-Dichloropropane	10.66	63	2518	0.3064 ug/L #	51
50) Bromodichloromethane	10.95	83	4011	0.3023 ug/L #	84
52) Dibromomethane	11.01	93	1403	0.3193 ug/L #	72
53) 2-Chloroethyl Vinyl Ether	11.28	63	512	0.1356 ug/L #	49
55) cis-1,3-Dichloropropene	11.58	75	4114	0.2859 ug/L	77
56) Dimethyl Disulfide	11.84	94	3046	0.2293 ug/L	87
59) Toluene	12.02	91	11208	0.3380 ug/L	96
60) Ethyl Methacrylate	12.15	69	1371	0.2029 ug/L	70
62) trans-1,3-Dichloropropene	12.20	75	3568	0.2846 ug/L	91
63) 1,1,2-Trichloroethane	12.40	97	1475	0.2702 ug/L	81
65) 1,3-Dichloropropane	12.71	76	2925	0.2901 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386635.D Vial: 3
Acq On : 29 Mar 2013 12:00 Operator: adc
Sample : WG425063-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:03:53 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
66)	Tetrachloroethene	12.83	164	1295	0.1873 ug/L #	66
67)	Dibromochloromethane	13.07	129	2208	0.2787 ug/L	92
68)	1,2-Dibromoethane	13.33	107	1662	0.2924 ug/L	86
69)	1-Chlorohexane	13.46	91	3752	0.3813 ug/L	86
70)	Chlorobenzene	13.84	112	6927	0.3138 ug/L	99
71)	1,1,1,2-Tetrachloroethane	13.88	131	2264	0.2578 ug/L	90
72)	Ethylbenzene	13.89	106	3628	0.3038 ug/L	96
73)	m-,p-Xylene	13.98	106	8684	0.5989 ug/L	83
74)	o-Xylene	14.53	106	4047	0.2849 ug/L	89
75)	Styrene	14.56	104	7339	0.3130 ug/L	81
76)	Bromoform	15.01	173	1234	0.2488 ug/L #	55
77)	Isopropylbenzene	14.96	105	11646	0.3140 ug/L	98
79)	1,1,2,2-Tetrachloroethane	15.16	83	1536	0.2591 ug/L #	67
81)	1,2,3-Trichloropropane	15.35	110	448	0.2323 ug/L #	60
83)	n-Propylbenzene	15.46	91	13065	0.2991 ug/L	98
84)	Bromobenzene	15.56	156	2886	0.3248 ug/L	90
85)	1,3,5-Trimethylbenzene	15.66	105	9615	0.3059 ug/L	90
86)	2-Chlorotoluene	15.71	91	9129	0.2907 ug/L	98
87)	4-Chlorotoluene	15.77	91	8876	0.3028 ug/L	99
88)	a-Methylstyrene	16.05	118	4450	0.2844 ug/L	94
89)	tert-Butylbenzene	16.11	134	1303	0.2225 ug/L #	24
90)	1,2,4-Trimethylbenzene	16.16	105	9695	0.2987 ug/L	98
91)	sec-Butylbenzene	16.38	105	11274	0.3211 ug/L	90
92)	p-Isopropyltoluene	16.54	119	9181	0.3127 ug/L	89
93)	1,3-Dichlorobenzene	16.71	146	5621	0.3267 ug/L	92
94)	1,4-Dichlorobenzene	16.83	146	6236	0.3484 ug/L	77
95)	n-Butylbenzene	17.06	91	8462	0.3127 ug/L	98
96)	1,2-Dichlorobenzene	17.32	146	4494	0.2884 ug/L	99
98)	1,2,4-Trichlorobenzene	19.45	180	3070	0.3092 ug/L	90
99)	Hexachlorobutadiene	19.62	225	1011	0.2516 ug/L	83
100)	Naphthalene	19.79	128	6259	0.3522 ug/L #	77
101)	1,2,3-Trichlorobenzene	20.10	180	1888	0.2294 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M386635.D 8260WT.M Mon Apr 01 10:03:53 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386635.D Vial: 3
Acq On : 29 Mar 2013 12:00 Operator: adc
Sample : WG425063-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 10:03 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

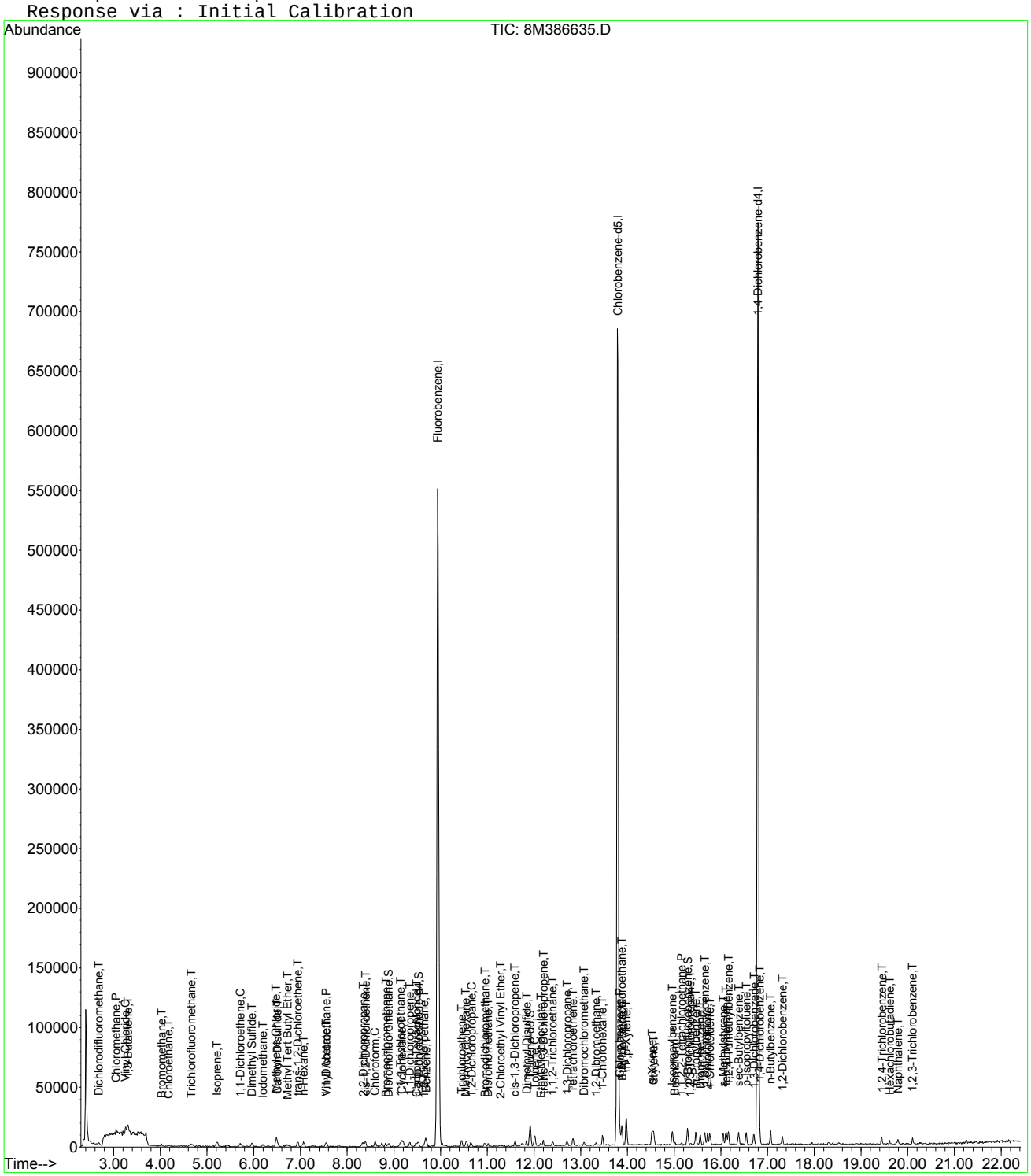

8M386635.D 8260WT.M Mon Apr 01 10:03:54 2013 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032913\8M386635.D Vial: 3
Acq On : 29 Mar 2013 12:00 Operator: adc
Sample : WG425063-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 09:53:12 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2645	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.3984	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.3019	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3442	0.0	100	0.02
6	T	Bromomethane	-1.0000	0.2754	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2136	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.3046	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.18#
10	T	Isoprene	-1.0000	0.2772	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.38#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0852	0.0	100	0.00
13	T	Acetone	-1.0000	0.1055	0.0	100	0.01
14	C	1,1-Dichloroethene	-1.0000	0.2950	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-5.84#
16	T	Dimethyl Sulfide	-1.0000	0.2584	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.1870	0.0	100	0.00
18	T	Methyl acetate	-1.0000	0.0576	0.0	100	0.01
19	T	Methylene Chloride	-1.0000	0.3789	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3569	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-6.65#
22	T	Methyl Tert Butyl Ether	0.3000	0.2657	11.4	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.2398	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3271	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.41#
26	T	Vinyl Acetate	-1.0000	0.2900	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.2727	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-7.98#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.12#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.20#
31	T	2,2-Dichloropropane	-1.0000	0.2848	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.2484	0.0	100	0.00
33	C	Chloroform	0.3000	0.3033	-1.1	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-8.75#
35	T	Bromochloromethane	-1.0000	0.2328	0.0	100	0.01
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-8.86#
37	S	Dibromofluoromethane	-1.0000	0.4084	0.0	100	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.2839	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2905	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2993	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-9.48#
42	T	Carbon Tetrachloride	-1.0000	0.2398	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.3746	0.0	100	0.01
44		Heptane	-1.0000	0.0000	0.0	0	-2.44#
45	T	1,2-Dichloroethane	-1.0000	0.2553	0.0	100	0.00
46	T	Benzene	-1.0000	0.3364	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2918	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.2517	0.0	100	-0.02
49	C	1,2-Dichloropropane	-1.0000	0.3064	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.3023	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-10.94#
52	T	Dibromomethane	-1.0000	0.3193	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1356	0.0	100	0.01
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-11.31#
55	T	cis-1,3-Dichloropropene	-1.0000	0.2859	0.0	100	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032913\8M386635.D Vial: 3
Acq On : 29 Mar 2013 12:00 Operator: adc
Sample : WG425063-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 09:53:12 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	-1.0000	0.2293	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.6461	0.0	100	0.00
59	C	Toluene	-1.0000	0.3380	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2029	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-12.31#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2846	0.0	100	0.01
63	T	1,1,2-Trichloroethane	-1.0000	0.2702	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-12.37#
65	T	1,3-Dichloropropane	-1.0000	0.2901	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.1873	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2787	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.2924	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3813	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3138	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2578	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.3038	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.5989	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.2849	0.0	100	0.00
75	T	Styrene	-1.0000	0.3130	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2488	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3140	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2591	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5660	0.0	100	0.01
81	T	1,2,3-Trichloropropane	-1.0000	0.2323	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0958	0.0	100	0.00
83	T	n-Propylbenzene	-1.0000	0.2991	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.3249	-8.3	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3059	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.2907	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3028	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2844	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2225	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.2987	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3211	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3127	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3267	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3484	-16.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3127	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.2884	3.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-18.30#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3092	0.0	100	0.01
99	T	Hexachlorobutadiene	-1.0000	0.2516	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3522	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.2294	23.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M386635.D 8260WT.M Mon Apr 01 09:55:01 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386636.D Vial: 4
Acq On : 29 Mar 2013 12:30 Operator: adc
Sample : WG425063-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:03:54 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.94	96	619372	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.78	117	445526	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	229372	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	8.87	111	1596	0.1886 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.76%#	
43) 1,2-Dichloroethane-d4	9.51	65	2308	0.2398 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.96%#	
58) Toluene-d8	11.91	98	7774	0.2904 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.16%#	
80) p-Bromofluorobenzene	15.28	95	3118	0.2959 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.20%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.68	85	2919	0.3147 ug/L	91
3) Chloromethane	3.05	50	7672	0.6357 ug/L	95
4) Vinyl Chloride	3.26	62	5000	0.4954 ug/L #	77
5) 1,3-Butadiene	3.30	54	3643	0.3776 ug/L #	32
6) Bromomethane	4.05	94	1986	0.3807 ug/L	99
7) Chloroethane	4.19	64	1352	0.2863 ug/L #	43
8) Trichlorofluoromethane	4.63	101	3547	0.2442 ug/L #	43
10) Isoprene	5.21	67	3803	0.3828 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	5.43	101	1444	0.2054 ug/L	69
13) Acetone	5.47	43	488	0.2804 ug/L #	50
14) 1,1-Dichloroethene	5.71	61	5684	0.4256 ug/L	78
16) Dimethyl Sulfide	5.97	62	2503	0.3252 ug/L	96
17) Iodomethane	6.20	142	2414	0.2697 ug/L	84
18) Methyl acetate	6.24	43	1357	0.3976 ug/L #	65
19) Methylene Chloride	6.49	84	2760	0.3850 ug/L	73
20) Carbon Disulfide	6.50	76	10393	0.4384 ug/L	95
22) Methyl Tert Butyl Ether	6.72	73	5861	0.3473 ug/L #	78
23) trans-1,2-Dichloroethene	6.94	61	5022	0.4121 ug/L	95
24) n-Hexane	7.06	57	3396	0.3557 ug/L	88
26) Vinyl Acetate	7.55	43	4484	0.3804 ug/L #	78
27) 1,1-Dichloroethane	7.55	63	5588	0.3877 ug/L #	90
29) 2-Butanone	8.12	43	943	0.4674 ug/L #	57
31) 2,2-Dichloropropane	8.34	77	6361	0.4228 ug/L	89
32) cis-1,2-Dichloroethene	8.39	96	2906	0.3699 ug/L	98
33) Chloroform	8.59	83	6489	0.4073 ug/L	95
34) 1-Bromopropane	8.75	122	409	0.2462 ug/L	54
35) Bromochloromethane	8.82	130	1530	0.3544 ug/L	75
38) 1,1,1-Trichloroethane	9.14	97	7027	0.4601 ug/L	92
39) Cyclohexane	9.17	56	4960	0.3726 ug/L #	88
40) 1,1-Dichloropropene	9.35	75	3972	0.3446 ug/L	89
42) Carbon Tetrachloride	9.47	117	5731	0.4308 ug/L #	79
45) 1,2-Dichloroethane	9.65	62	4289	0.3750 ug/L	92
46) Benzene	9.68	78	13279	0.4620 ug/L	96
47) Trichloroethene	10.46	130	2725	0.3751 ug/L	93
48) Methylcyclohexane	10.56	83	3803	0.3669 ug/L	94
49) 1,2-Dichloropropane	10.66	63	3087	0.4111 ug/L	78
50) Bromodichloromethane	10.95	83	4554	0.3756 ug/L #	92
52) Dibromomethane	11.01	93	1380	0.3437 ug/L	96
53) 2-Chloroethyl Vinyl Ether	11.27	63	927	0.2687 ug/L #	49
54) 4-Methyl-2-Pentanone	11.31	58	239	0.1458 ug/L #	37
55) cis-1,3-Dichloropropene	11.59	75	5884	0.4476 ug/L	92

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386636.D Vial: 4
Acq On : 29 Mar 2013 12:30 Operator: adc
Sample : WG425063-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:03:54 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
56)	Dimethyl Disulfide	11.84	94	4390	0.3617 ug/L		75
59)	Toluene	12.02	91	14212	0.4554 ug/L		96
60)	Ethyl Methacrylate	12.15	69	2241	0.3523 ug/L		68
62)	trans-1,3-Dichloropropene	12.20	75	4510	0.3823 ug/L		100
63)	1,1,2-Trichloroethane	12.40	97	1985	0.3864 ug/L		70
65)	1,3-Dichloropropane	12.70	76	3728	0.3928 ug/L		86
66)	Tetrachloroethene	12.84	164	2734	0.4202 ug/L		86
67)	Dibromochloromethane	13.07	129	2546	0.3415 ug/L		98
68)	1,2-Dibromoethane	13.33	107	1847	0.3453 ug/L		79
69)	1-Chlorohexane	13.47	91	3656	0.3948 ug/L		99
70)	Chlorobenzene	13.84	112	8966	0.4316 ug/L		97
71)	1,1,1,2-Tetrachloroethane	13.88	131	3223	0.3900 ug/L		95
72)	Ethylbenzene	13.89	106	4298	0.3824 ug/L		71
73)	m-,p-Xylene	13.98	106	10400	0.7622 ug/L		78
74)	o-Xylene	14.53	106	5190	0.3883 ug/L		94
75)	Styrene	14.56	104	8478	0.3842 ug/L		88
76)	Bromoform	15.00	173	1652	0.3540 ug/L	#	48
77)	Isopropylbenzene	14.96	105	14347	0.4111 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.16	83	2363	0.4371 ug/L	#	90
81)	1,2,3-Trichloropropane	15.35	110	430	0.2445 ug/L	#	9
82)	trans-1,4-Dichloro-2-Buten	15.41	53	503	0.2447 ug/L	#	46
83)	n-Propylbenzene	15.47	91	18315	0.4599 ug/L		94
84)	Bromobenzene	15.55	156	3310	0.4086 ug/L		100
85)	1,3,5-Trimethylbenzene	15.66	105	12197	0.4257 ug/L		97
86)	2-Chlorotoluene	15.71	91	13152	0.4593 ug/L		85
87)	4-Chlorotoluene	15.77	91	11570	0.4329 ug/L		96
88)	a-Methylstyrene	16.04	118	5627	0.3945 ug/L		90
89)	tert-Butylbenzene	16.12	134	2049	0.3837 ug/L		94
90)	1,2,4-Trimethylbenzene	16.16	105	13531	0.4572 ug/L		93
91)	sec-Butylbenzene	16.38	105	14050	0.4389 ug/L		97
92)	p-Isopropyltoluene	16.55	119	11001	0.4109 ug/L		100
93)	1,3-Dichlorobenzene	16.70	146	6697	0.4268 ug/L		95
94)	1,4-Dichlorobenzene	16.84	146	7618	0.4668 ug/L		90
95)	n-Butylbenzene	17.06	91	11229	0.4551 ug/L	#	91
96)	1,2-Dichlorobenzene	17.32	146	6407	0.4509 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	18.29	75	450	0.3893 ug/L	#	4
98)	1,2,4-Trichlorobenzene	19.44	180	3436	0.3796 ug/L		92
99)	Hexachlorobutadiene	19.61	225	1507	0.4113 ug/L	#	68
100)	Naphthalene	19.78	128	6052	0.3735 ug/L		100
101)	1,2,3-Trichlorobenzene	20.11	180	3124	0.4162 ug/L		88

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386636.D Vial: 4
Acq On : 29 Mar 2013 12:30 Operator: adc
Sample : WG425063-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 10:03 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

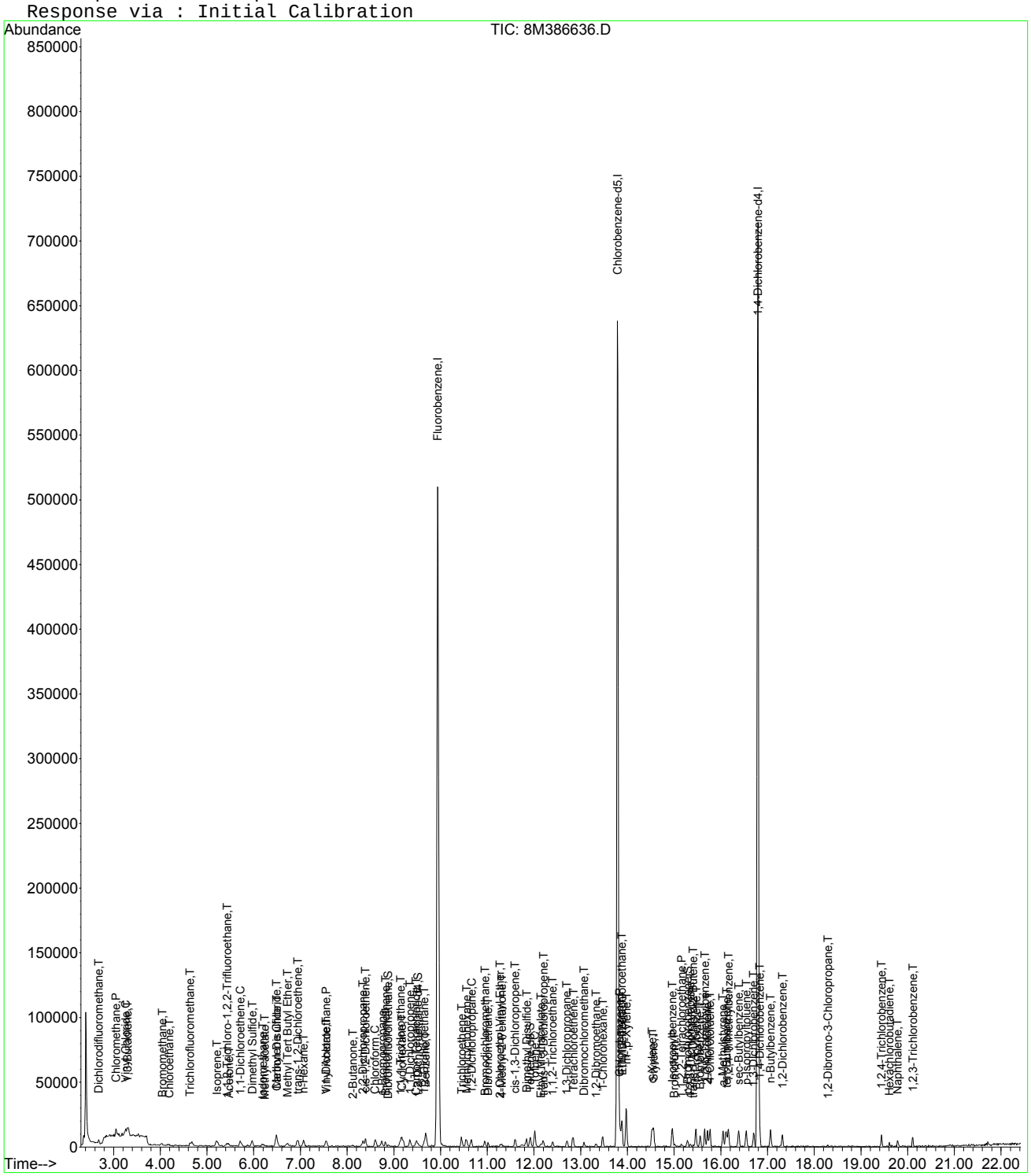

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032913\8M386636.D Vial: 4
Acq On : 29 Mar 2013 12:30 Operator: adc
Sample : WG425063-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 09:53:12 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3147	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.6357	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.4954	-23.9#	100	0.01
5	T	1,3-Butadiene	-1.0000	0.3776	0.0	100	0.01
6	T	Bromomethane	-1.0000	0.3807	0.0	100	0.01
7	T	Chloroethane	0.4000	0.2863	28.4#	100	0.01
8	T	Trichlorofluoromethane	0.4000	0.2442	39.0#	100	-0.03
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.18#
10	T	Isoprene	-1.0000	0.3828	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.38#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2054	0.0	134	0.00
13	T	Acetone	-1.0000	0.2804	0.0	100	0.00
14	C	1,1-Dichloroethene	0.4000	0.4256	-6.4	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-5.84#
16	T	Dimethyl Sulfide	-1.0000	0.3252	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.2697	0.0	100	0.00
18	T	Methyl acetate	-1.0000	0.3976	0.0	100	0.00
19	T	Methylene Chloride	0.4000	0.3850	3.8	100	0.00
20	T	Carbon Disulfide	0.4000	0.4384	-9.6	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-6.65#
22	T	Methyl Tert Butyl Ether	0.4000	0.3473	13.2	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4121	-3.0	100	0.00
24	T	n-Hexane	-1.0000	0.3557	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.41#
26	T	Vinyl Acetate	-1.0000	0.3804	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.3876	3.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-7.98#
29	T	2-Butanone	-1.0000	0.4674	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.20#
31	T	2,2-Dichloropropane	0.4000	0.4228	-5.7	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3699	7.5	100	0.00
33	C	Chloroform	0.4000	0.4073	-1.8	100	0.00
34		1-Bromopropane	-1.0000	0.2462	0.0	100	0.00
35	T	Bromochloromethane	0.4000	0.3544	11.4	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-8.86#
37	S	Dibromofluoromethane	-1.0000	0.1886	0.0	100	-0.02
38	T	1,1,1-Trichloroethane	0.4000	0.4601	-15.0	100	0.00
39	T	Cyclohexane	-1.0000	0.3726	0.0	100	0.00
40	T	1,1-Dichloropropene	0.4000	0.3446	13.8	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-9.48#
42	T	Carbon Tetrachloride	0.4000	0.4308	-7.7	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.2398	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.44#
45	T	1,2-Dichloroethane	0.4000	0.3750	6.2	100	0.00
46	T	Benzene	0.4000	0.4620	-15.5	100	0.00
47	T	Trichloroethene	0.4000	0.3751	6.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3669	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.4111	-2.8	100	0.00
50	T	Bromodichloromethane	0.4000	0.3756	6.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-10.94#
52	T	Dibromomethane	0.4000	0.3438	14.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2687	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.1458	0.0	100	0.00
55	T	cis-1,3-Dichloropropene	0.4000	0.4476	-11.9	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032913\8M386636.D Vial: 4
Acq On : 29 Mar 2013 12:30 Operator: adc
Sample : WG425063-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 09:53:12 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	-1.0000	0.3617	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.2904	0.0	100	0.00
59	C	Toluene	0.4000	0.4554	-13.8	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3523	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-12.31#
62	T	trans-1,3-Dichloropropene	0.4000	0.3823	4.4	100	0.01
63	T	1,1,2-Trichloroethane	0.4000	0.3864	3.4	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-12.37#
65	T	1,3-Dichloropropane	0.4000	0.3928	1.8	100	0.00
66	T	Tetrachloroethene	0.4000	0.4202	-5.0	100	0.01
67	T	Dibromochloromethane	0.4000	0.3415	14.6	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3453	13.7	100	0.00
69	T	1-Chlorohexane	0.4000	0.3948	1.3	100	0.00
70	P	Chlorobenzene	0.4000	0.4316	-7.9	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3900	2.5	100	0.00
72	C	Ethylbenzene	0.4000	0.3824	4.4	100	0.00
73	T	m-,p-Xylene	0.8000	0.7622	4.7	100	0.00
74	T	o-Xylene	0.4000	0.3883	2.9	100	0.00
75	T	Styrene	0.4000	0.3842	3.9	100	0.00
76	P	Bromoform	-1.0000	0.3540	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4111	-2.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.4371	-9.3	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.2959	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.2445	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.2447	0.0	100	0.00
83	T	n-Propylbenzene	0.4000	0.4599	-15.0	100	0.00
84	T	Bromobenzene	0.4000	0.4086	-2.2	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4257	-6.4	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4593	-14.8	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4329	-8.2	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3945	0.0	100	0.00
89	T	tert-Butylbenzene	0.4000	0.3837	4.1	100	0.01
90	T	1,2,4-Trimethylbenzene	0.4000	0.4572	-14.3	100	0.00
91	T	sec-Butylbenzene	0.4000	0.4389	-9.7	100	0.00
92	T	p-Isopropyltoluene	0.4000	0.4109	-2.7	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4268	-6.7	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4668	-16.7	100	0.00
95	T	n-Butylbenzene	0.4000	0.4551	-13.8	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4509	-12.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.3893	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	0.4000	0.3796	5.1	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4113	-2.8	100	0.00
100	T	Naphthalene	0.4000	0.3735	6.6	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4162	-4.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
8M386636.D 8260WT.M Mon Apr 01 09:55:50 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386637.D Vial: 5
Acq On : 29 Mar 2013 13:01 Operator: adc
Sample : WG425063-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:03:56 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.95	96	595081	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.79	117	431644	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	229846	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	8.89	111	5435	0.6684 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.68%#	
43) 1,2-Dichloroethane-d4	9.51	65	5777	0.6248 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.48%#	
58) Toluene-d8	11.92	98	17107	0.6596 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.64%#	
80) p-Bromofluorobenzene	15.29	95	7253	0.6869 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.76%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.68	85	8885	0.9970 ug/L	90
3) Chloromethane	3.06	50	12038	1.0381 ug/L #	74
4) Vinyl Chloride	3.26	62	9508	0.9806 ug/L	94
5) 1,3-Butadiene	3.31	54	9752	1.0521 ug/L	86
6) Bromomethane	4.03	94	4781	0.9540 ug/L	95
7) Chloroethane	4.19	64	4651	1.0251 ug/L #	86
8) Trichlorofluoromethane	4.65	101	14215	1.0299 ug/L #	93
9) Diethyl ether	5.18	59	23096	4.9344 ug/L	95
10) Isoprene	5.21	67	9559	1.0016 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	5.45	101	6695	0.9910 ug/L	100
13) Acetone	5.49	43	1860	1.1124 ug/L #	50
14) 1,1-Dichloroethene	5.72	61	11565	0.9014 ug/L	95
15) Tert-Butyl Alcohol	5.85	59	3821	10.1607 ug/L #	57
16) Dimethyl Sulfide	5.96	62	7714	1.0431 ug/L	87
17) Iodomethane	6.19	142	6958	0.8091 ug/L	96
18) Methyl acetate	6.23	43	3003	0.9158 ug/L #	65
19) Methylene Chloride	6.48	84	7515	1.0910 ug/L	95
20) Carbon Disulfide	6.49	76	23415	1.0280 ug/L	99
21) Acrylonitrile	6.65	53	7730	4.9987 ug/L	90
22) Methyl Tert Butyl Ether	6.71	73	16703	1.0302 ug/L	93
23) trans-1,2-Dichloroethene	6.95	61	11688	0.9982 ug/L	96
24) n-Hexane	7.07	57	9648	1.0518 ug/L	95
25) Diisopropyl ether	7.41	45	130861	5.1553 ug/L	99
26) Vinyl Acetate	7.55	43	10823	0.9556 ug/L #	85
27) 1,1-Dichloroethane	7.56	63	13469	0.9725 ug/L #	94
28) Ethyl-Tert-Butyl ether	7.98	59	115436	5.0231 ug/L	97
29) 2-Butanone	8.14	43	1267	0.6536 ug/L #	57
30) Propionitrile	8.20	54	2749	4.7679 ug/L	98
31) 2,2-Dichloropropane	8.33	77	13941	0.9644 ug/L	97
32) cis-1,2-Dichloroethene	8.39	96	6954	0.9212 ug/L	98
33) Chloroform	8.60	83	16716	1.0919 ug/L	93
34) 1-Bromopropane	8.75	122	1390	0.8710 ug/L	99
35) Bromochloromethane	8.82	130	3805	0.9174 ug/L	83
36) Tetrahydrofuran	8.87	42	6152	5.0142 ug/L	90
38) 1,1,1-Trichloroethane	9.14	97	13649	0.9302 ug/L	98
39) Cyclohexane	9.18	56	11711	0.9156 ug/L	90
40) 1,1-Dichloropropene	9.35	75	11266	1.0174 ug/L	94
41) Tert-Amyl-Methyl ether	9.48	73	87486	5.0307 ug/L	99
42) Carbon Tetrachloride	9.49	117	12485	0.9769 ug/L	98
45) 1,2-Dichloroethane	9.65	62	11364	1.0342 ug/L	95
46) Benzene	9.69	78	27910	1.0107 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386637.D Vial: 5
Acq On : 29 Mar 2013 13:01 Operator: adc
Sample : WG425063-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:03:56 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
47)	Trichloroethene	10.45	130	7004	1.0035 ug/L	99
48)	Methylcyclohexane	10.56	83	9973	1.0014 ug/L	96
49)	1,2-Dichloropropane	10.66	63	7598	1.0531 ug/L	91
50)	Bromodichloromethane	10.95	83	11711	1.0054 ug/L	97
52)	Dibromomethane	11.02	93	3971	1.0295 ug/L	92
53)	2-Chloroethyl Vinyl Ether	11.27	63	3309	0.9982 ug/L #	78
54)	4-Methyl-2-Pentanone	11.30	58	1392	0.8840 ug/L #	52
55)	cis-1,3-Dichloropropene	11.59	75	11579	0.9168 ug/L	96
56)	Dimethyl Disulfide	11.84	94	10850	0.9305 ug/L	88
59)	Toluene	12.01	91	30926	1.0228 ug/L	100
60)	Ethyl Methacrylate	12.14	69	5930	0.9623 ug/L	95
62)	trans-1,3-Dichloropropene	12.19	75	10949	0.9580 ug/L	100
63)	1,1,2-Trichloroethane	12.41	97	4560	0.9162 ug/L	93
64)	2-Hexanone	12.37	58	1365	0.9224 ug/L	96
65)	1,3-Dichloropropane	12.71	76	9318	1.0135 ug/L	93
66)	Tetrachloroethene	12.84	164	6352	1.0077 ug/L	92
67)	Dibromochloromethane	13.07	129	6889	0.9537 ug/L	98
68)	1,2-Dibromoethane	13.33	107	4935	0.9522 ug/L	88
69)	1-Chlorohexane	13.47	91	8747	0.9750 ug/L	99
70)	Chlorobenzene	13.83	112	21923	1.0892 ug/L	83
71)	1,1,1,2-Tetrachloroethane	13.87	131	7898	0.9864 ug/L	99
72)	Ethylbenzene	13.88	106	11051	1.0148 ug/L	92
73)	m-,p-Xylene	13.98	106	27435	2.0753 ug/L	92
74)	o-Xylene	14.54	106	12634	0.9756 ug/L	88
75)	Styrene	14.56	104	20296	0.9495 ug/L	98
76)	Bromoform	15.02	173	4579	1.0127 ug/L	93
77)	Isopropylbenzene	14.96	105	36268	1.0726 ug/L	98
79)	1,1,2,2-Tetrachloroethane	15.16	83	5220	0.9636 ug/L #	89
81)	1,2,3-Trichloropropane	15.35	110	1552	0.8808 ug/L #	60
82)	trans-1,4-Dichloro-2-Buten	15.40	53	1930	0.9368 ug/L #	62
83)	n-Propylbenzene	15.47	91	42542	1.0661 ug/L	98
84)	Bromobenzene	15.57	156	7785	0.9591 ug/L	97
85)	1,3,5-Trimethylbenzene	15.65	105	29061	1.0121 ug/L	96
86)	2-Chlorotoluene	15.71	91	31033	1.0816 ug/L	87
87)	4-Chlorotoluene	15.77	91	28687	1.0711 ug/L	94
88)	a-Methylstyrene	16.05	118	14241	0.9963 ug/L	97
89)	tert-Butylbenzene	16.12	134	4968	0.9284 ug/L	75
90)	1,2,4-Trimethylbenzene	16.16	105	29936	1.0093 ug/L	97
91)	sec-Butylbenzene	16.38	105	33405	1.0413 ug/L	98
92)	p-Isopropyltoluene	16.54	119	27017	1.0070 ug/L	96
93)	1,3-Dichlorobenzene	16.71	146	16459	1.0469 ug/L	98
94)	1,4-Dichlorobenzene	16.83	146	16701	1.0213 ug/L #	73
95)	n-Butylbenzene	17.07	91	24450	0.9889 ug/L	99
96)	1,2-Dichlorobenzene	17.32	146	13983	0.9820 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	18.30	75	989	0.8538 ug/L	92
98)	1,2,4-Trichlorobenzene	19.44	180	8976	0.9895 ug/L	95
99)	Hexachlorobutadiene	19.61	225	3199	0.8712 ug/L	84
100)	Naphthalene	19.79	128	16354	1.0072 ug/L	97
101)	1,2,3-Trichlorobenzene	20.11	180	6870	0.9134 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M386637.D 8260WT.M Mon Apr 01 10:03:56 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386637.D Vial: 5
Acq On : 29 Mar 2013 13:01 Operator: adc
Sample : WG425063-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 10:03 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

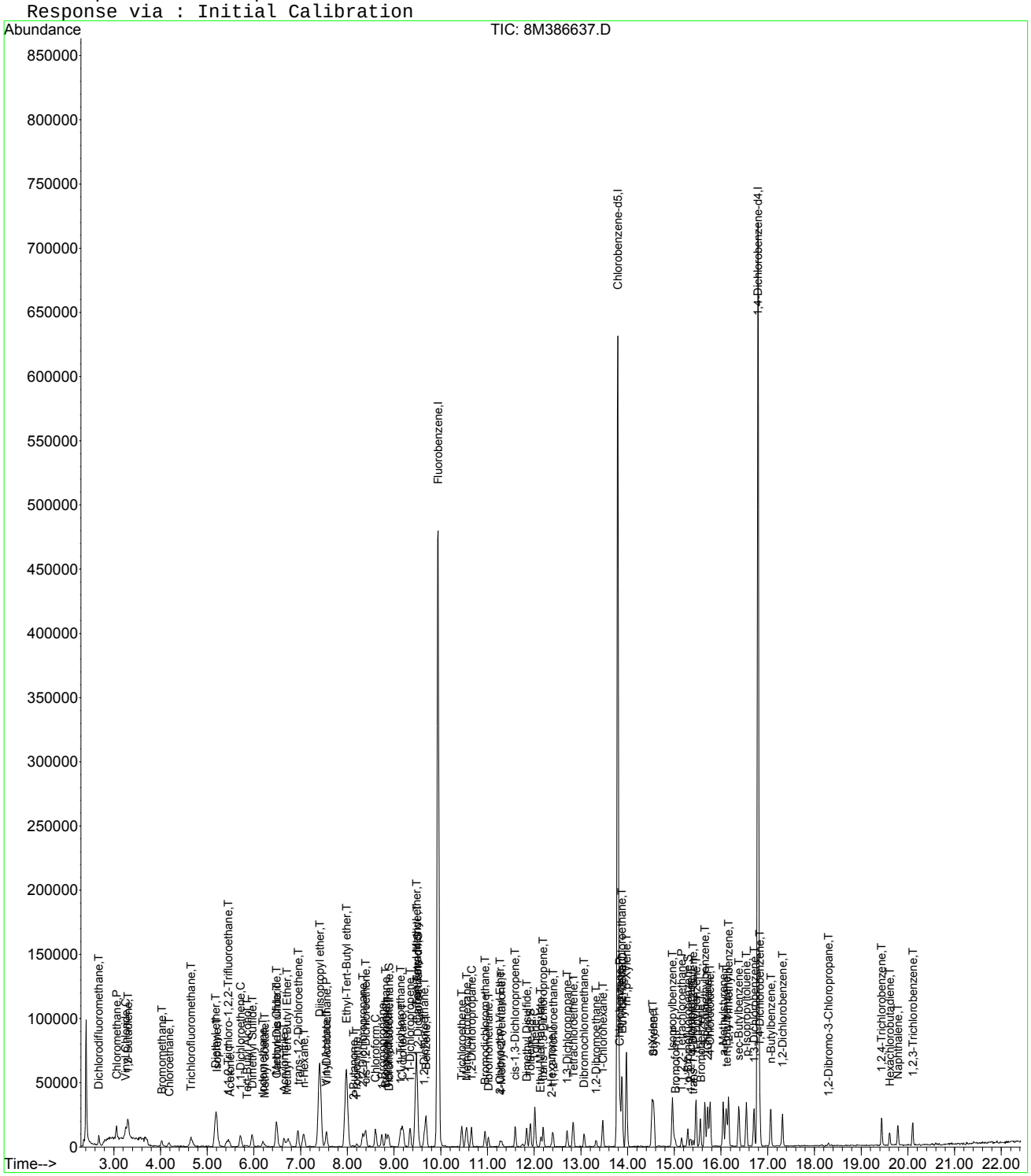

8M386637.D 8260WT.M Mon Apr 01 10:03:57 2013 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032913\8M386637.D Vial: 5
Acq On : 29 Mar 2013 13:01 Operator: adc
Sample : WG425063-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 09:53:12 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9970	0.3	100	-0.01
3	P	Chloromethane	1.0000	1.0381	-3.8	100	0.00
4	C	Vinyl Chloride	1.0000	0.9806	1.9	100	0.01
5	T	1,3-Butadiene	-1.0000	1.0521	0.0	100	0.02
6	T	Bromomethane	1.0000	0.9540	4.6	100	0.00
7	T	Chloroethane	1.0000	1.0251	-2.5	100	0.01
8	T	Trichlorofluoromethane	1.0000	1.0299	-3.0	100	0.00
9	T	Diethyl ether	5.0000	4.9344	1.3	100	0.00
10	T	Isoprene	1.0000	1.0015	-0.2	100	0.00
11	T	Acrolein	2.5000	0.0000	100.0#	0	-5.38#
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9910	0.9	100	0.01
13	T	Acetone	-1.0000	1.1124	0.0	100	0.01
14	C	1,1-Dichloroethene	1.0000	0.9014	9.9	100	0.00
15	T	Tert-Butyl Alcohol	10.0000	10.1607	-1.6	100	0.01
16	T	Dimethyl Sulfide	1.0000	1.0431	-4.3	100	0.00
17	T	Iodomethane	1.0000	0.8091	19.1	100	0.00
18	T	Methyl acetate	-1.0000	0.9158	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0911	-9.1	100	0.00
20	T	Carbon Disulfide	1.0000	1.0280	-2.8	100	-0.01
21	T	Acrylonitrile	2.5000	2.4993	0.0	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	1.0302	-3.0	100	-0.02
23	T	trans-1,2-Dichloroethene	1.0000	0.9982	0.2	100	0.01
24	T	n-Hexane	1.0000	1.0518	-5.2	100	0.00
25	T	Diisopropyl ether	5.0000	5.1553	-3.1	100	0.00
26	T	Vinyl Acetate	-1.0000	0.9556	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9725	2.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.0231	-0.5	100	0.00
29	T	2-Butanone	-1.0000	0.6536	0.0	100	0.02
30	T	Propionitrile	5.0000	4.7679	4.6	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9644	3.6	100	-0.01
32	T	cis-1,2-Dichloroethene	1.0000	0.9212	7.9	100	0.00
33	C	Chloroform	1.0000	1.0919	-9.2	100	0.00
34		1-Bromopropane	1.0000	0.8710	12.9	100	0.00
35	T	Bromochloromethane	1.0000	0.9174	8.3	100	0.00
36	T	Tetrahydrofuran	5.0000	5.0142	-0.3	100	0.01
37	S	Dibromofluoromethane	-1.0000	0.6684	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9302	7.0	100	0.00
39	T	Cyclohexane	1.0000	0.9156	8.4	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0174	-1.7	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0307	-0.6	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9769	2.3	100	0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.6248	0.0	100	-0.01
44		Heptane	1.0000	0.0000	100.0#	0	-2.44#
45	T	1,2-Dichloroethane	1.0000	1.0342	-3.4	100	0.00
46	T	Benzene	1.0000	1.0107	-1.1	100	0.00
47	T	Trichloroethene	1.0000	1.0035	-0.4	100	0.00
48	T	Methylcyclohexane	1.0000	1.0014	-0.1	100	0.00
49	C	1,2-Dichloropropane	1.0000	1.0531	-5.3	100	0.00
50	T	Bromodichloromethane	1.0000	1.0054	-0.5	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-10.94#
52	T	Dibromomethane	1.0000	1.0295	-3.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	1.0000	0.9982	0.2	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.8840	0.0	100	-0.01
55	T	cis-1,3-Dichloropropene	1.0000	0.9168	8.3	100	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032913\8M386637.D Vial: 5
Acq On : 29 Mar 2013 13:01 Operator: adc
Sample : WG425063-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 09:53:12 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	1.0000	0.9305	7.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.6596	0.0	100	0.00
59	C	Toluene	1.0000	1.0228	-2.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.9623	3.8	100	-0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-12.31#
62	T	trans-1,3-Dichloropropene	1.0000	0.9580	4.2	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9162	8.4	100	0.00
64	T	2-Hexanone	-1.0000	0.9224	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	1.0135	-1.3	100	0.00
66	T	Tetrachloroethene	1.0000	1.0076	-0.8	100	0.01
67	T	Dibromochloromethane	1.0000	0.9537	4.6	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9522	4.8	100	0.00
69	T	1-Chlorohexane	1.0000	0.9750	2.5	100	0.00
70	P	Chlorobenzene	1.0000	1.0893	-8.9	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9864	1.4	100	0.00
72	C	Ethylbenzene	1.0000	1.0149	-1.5	100	0.00
73	T	m-,p-Xylene	2.0000	2.0753	-3.8	100	0.00
74	T	o-Xylene	1.0000	0.9756	2.4	100	0.01
75	T	Styrene	1.0000	0.9495	5.1	100	0.00
76	P	Bromoform	1.0000	1.0127	-1.3	100	0.01
77	T	Isopropylbenzene	1.0000	1.0725	-7.3	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9636	3.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.6869	0.0	100	0.01
81	T	1,2,3-Trichloropropane	1.0000	0.8808	11.9	100	0.01
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.9368	6.3	100	0.00
83	T	n-Propylbenzene	1.0000	1.0661	-6.6	100	0.00
84	T	Bromobenzene	1.0000	0.9591	4.1	100	0.01
85	T	1,3,5-Trimethylbenzene	1.0000	1.0121	-1.2	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0816	-8.2	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0711	-7.1	100	0.00
88	T	a-Methylstyrene	1.0000	0.9963	0.4	100	0.00
89	T	tert-Butylbenzene	1.0000	0.9284	7.2	100	0.01
90	T	1,2,4-Trimethylbenzene	1.0000	1.0094	-0.9	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0413	-4.1	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0070	-0.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0213	-2.1	100	0.00
95	T	n-Butylbenzene	1.0000	0.9889	1.1	100	0.01
96	T	1,2-Dichlorobenzene	1.0000	0.9820	1.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.8538	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9895	1.1	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.8712	12.9	100	0.00
100	T	Naphthalene	1.0000	1.0072	-0.7	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	0.9134	8.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M386637.D 8260WT.M Mon Apr 01 09:56:19 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386638.D Vial: 6
Acq On : 29 Mar 2013 13:32 Operator: adc
Sample : WG425063-05 2.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:03:57 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.95	96	579472	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.79	117	422308	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	219253	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	8.89	111	8723	1.1017 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.40%#	
43) 1,2-Dichloroethane-d4	9.52	65	10220	1.1352 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.56%#	
58) Toluene-d8	11.92	98	30200	1.1902 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.76%#	
80) p-Bromofluorobenzene	15.28	95	12481	1.2392 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.96%#	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.69	85	17809	2.0522 ug/L	96
3) Chloromethane	3.06	50	25068	2.2200 ug/L	89
4) Vinyl Chloride	3.26	62	19818	2.0990 ug/L	96
5) 1,3-Butadiene	3.31	54	17924	1.9859 ug/L	85
6) Bromomethane	4.03	94	9368	1.9197 ug/L	88
7) Chloroethane	4.18	64	8810	1.9941 ug/L	97
8) Trichlorofluoromethane	4.65	101	28238	2.1047 ug/L	94
9) Diethyl ether	5.18	59	118532	26.0061 ug/L	99
10) Isoprene	5.21	67	18812	2.0241 ug/L	99
11) Acrolein	5.39	56	4381	26.2560 ug/L	73
12) 1,1,2-Trichloro-1,2,2-Trif	5.44	101	13695	2.0817 ug/L	99
13) Acetone	5.49	43	3392	2.0833 ug/L #	74
14) 1,1-Dichloroethene	5.72	61	25606	2.0495 ug/L	98
15) Tert-Butyl Alcohol	5.84	59	19962	54.5123 ug/L	89
16) Dimethyl Sulfide	5.96	62	14304	1.9864 ug/L	95
17) Iodomethane	6.19	142	15324	1.8299 ug/L	96
18) Methyl acetate	6.23	43	7180	2.2486 ug/L #	73
19) Methylene Chloride	6.48	84	14489	2.1602 ug/L	97
20) Carbon Disulfide	6.50	76	46046	2.0761 ug/L	100
21) Acrylonitrile	6.65	53	37003	24.5728 ug/L	91
22) Methyl Tert Butyl Ether	6.73	73	33943	2.1499 ug/L	95
23) trans-1,2-Dichloroethene	6.95	61	21993	1.9289 ug/L	94
24) n-Hexane	7.07	57	17519	1.9613 ug/L	97
25) Diisopropyl ether	7.41	45	655525	26.5203 ug/L	99
26) Vinyl Acetate	7.55	43	22952	2.0811 ug/L	100
27) 1,1-Dichloroethane	7.56	63	26673	1.9778 ug/L	96
28) Ethyl-Tert-Butyl ether	7.98	59	592474	26.4755 ug/L	100
29) 2-Butanone	8.12	43	3546	1.8784 ug/L #	57
30) Propionitrile	8.20	54	14063	25.0479 ug/L	99
31) 2,2-Dichloropropane	8.34	77	29006	2.0606 ug/L	95
32) cis-1,2-Dichloroethene	8.39	96	15330	2.0854 ug/L	92
33) Chloroform	8.61	83	31532	2.1153 ug/L	94
34) 1-Bromopropane	8.75	122	3368	2.1673 ug/L	98
35) Bromochloromethane	8.82	130	8775	2.1726 ug/L	94
36) Tetrahydrofuran	8.86	42	31596	26.4461 ug/L	97
38) 1,1,1-Trichloroethane	9.13	97	28858	2.0198 ug/L	99
39) Cyclohexane	9.19	56	24531	1.9696 ug/L	98
40) 1,1-Dichloropropene	9.35	75	22195	2.0583 ug/L	100
41) Tert-Amyl-Methyl ether	9.48	73	440688	26.0236 ug/L	99
42) Carbon Tetrachloride	9.49	117	24946	2.0045 ug/L	98
45) 1,2-Dichloroethane	9.65	62	21487	2.0081 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M386638.D 8260WT.M Mon Apr 01 10:03:58 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386638.D Vial: 6
Acq On : 29 Mar 2013 13:32 Operator: adc
Sample : WG425063-05 2.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:03:57 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
46)	Benzene	9.68	78	54843	2.0395	ug/L		98
47)	Trichloroethene	10.45	130	13199	1.9421	ug/L		94
48)	Methylcyclohexane	10.56	83	18585	1.9165	ug/L		95
49)	1,2-Dichloropropane	10.65	63	13807	1.9653	ug/L		98
50)	Bromodichloromethane	10.95	83	23350	2.0587	ug/L		99
51)	1,4-Dioxane	10.94	88	1304	52.5851	ug/L		98
52)	Dibromomethane	11.02	93	7581	2.0184	ug/L		98
53)	2-Chloroethyl Vinyl Ether	11.28	63	5601	1.7351	ug/L		100
54)	4-Methyl-2-Pentanone	11.31	58	2563	1.6714	ug/L	#	71
55)	cis-1,3-Dichloropropene	11.59	75	24179	1.9660	ug/L		99
56)	Dimethyl Disulfide	11.84	94	20662	1.8196	ug/L		99
59)	Toluene	12.01	91	61621	2.0830	ug/L		99
60)	Ethyl Methacrylate	12.15	69	10695	1.7740	ug/L		88
62)	trans-1,3-Dichloropropene	12.20	75	22527	2.0145	ug/L		94
63)	1,1,2-Trichloroethane	12.41	97	10459	2.1479	ug/L		99
64)	2-Hexanone	12.38	58	1596	1.1024	ug/L	#	1
65)	1,3-Dichloropropane	12.71	76	17357	1.9295	ug/L		98
66)	Tetrachloroethene	12.83	164	12078	1.9584	ug/L		96
67)	Dibromochloromethane	13.07	129	14586	2.0640	ug/L		95
68)	1,2-Dibromoethane	13.33	107	9961	1.9645	ug/L		95
69)	1-Chlorohexane	13.46	91	16998	1.9366	ug/L		93
70)	Chlorobenzene	13.84	112	39949	2.0288	ug/L		82
71)	1,1,1,2-Tetrachloroethane	13.87	131	15909	2.0309	ug/L		91
72)	Ethylbenzene	13.88	106	21869	2.0527	ug/L		100
73)	m-,p-Xylene	13.98	106	53779	4.1579	ug/L		98
74)	o-Xylene	14.53	106	25586	2.0194	ug/L		93
75)	Styrene	14.56	104	40652	1.9438	ug/L		95
76)	Bromoform	15.01	173	8230	1.8604	ug/L		98
77)	Isopropylbenzene	14.96	105	66922	2.0228	ug/L		94
79)	1,1,2,2-Tetrachloroethane	15.16	83	9552	1.8485	ug/L		94
81)	1,2,3-Trichloropropane	15.34	110	3436	2.0442	ug/L		85
82)	trans-1,4-Dichloro-2-Buten	15.39	53	3512	1.7871	ug/L		86
83)	n-Propylbenzene	15.47	91	79302	2.0833	ug/L		93
84)	Bromobenzene	15.56	156	14964	1.9326	ug/L		97
85)	1,3,5-Trimethylbenzene	15.65	105	56412	2.0596	ug/L		100
86)	2-Chlorotoluene	15.71	91	59998	2.1921	ug/L		93
87)	4-Chlorotoluene	15.77	91	53165	2.0809	ug/L		98
88)	a-Methylstyrene	16.05	118	27749	2.0351	ug/L		95
89)	tert-Butylbenzene	16.11	134	10033	1.9656	ug/L		80
90)	1,2,4-Trimethylbenzene	16.16	105	58143	2.0551	ug/L		96
91)	sec-Butylbenzene	16.38	105	65194	2.1304	ug/L		97
92)	p-Isopropyltoluene	16.54	119	54457	2.1278	ug/L		96
93)	1,3-Dichlorobenzene	16.71	146	30160	2.0110	ug/L		95
94)	1,4-Dichlorobenzene	16.83	146	29605	1.8978	ug/L		82
95)	n-Butylbenzene	17.06	91	51390	2.1790	ug/L		95
96)	1,2-Dichlorobenzene	17.32	146	28348	2.0870	ug/L		95
97)	1,2-Dibromo-3-Chloropropan	18.29	75	1948	1.7630	ug/L		97
98)	1,2,4-Trichlorobenzene	19.44	180	17390	2.0096	ug/L		98
99)	Hexachlorobutadiene	19.61	225	6808	1.9437	ug/L		96
100)	Naphthalene	19.79	128	32082	2.0713	ug/L		96
101)	1,2,3-Trichlorobenzene	20.11	180	15464	2.1554	ug/L		96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386638.D Vial: 6
Acq On : 29 Mar 2013 13:32 Operator: adc
Sample : WG425063-05 2.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 10:03 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

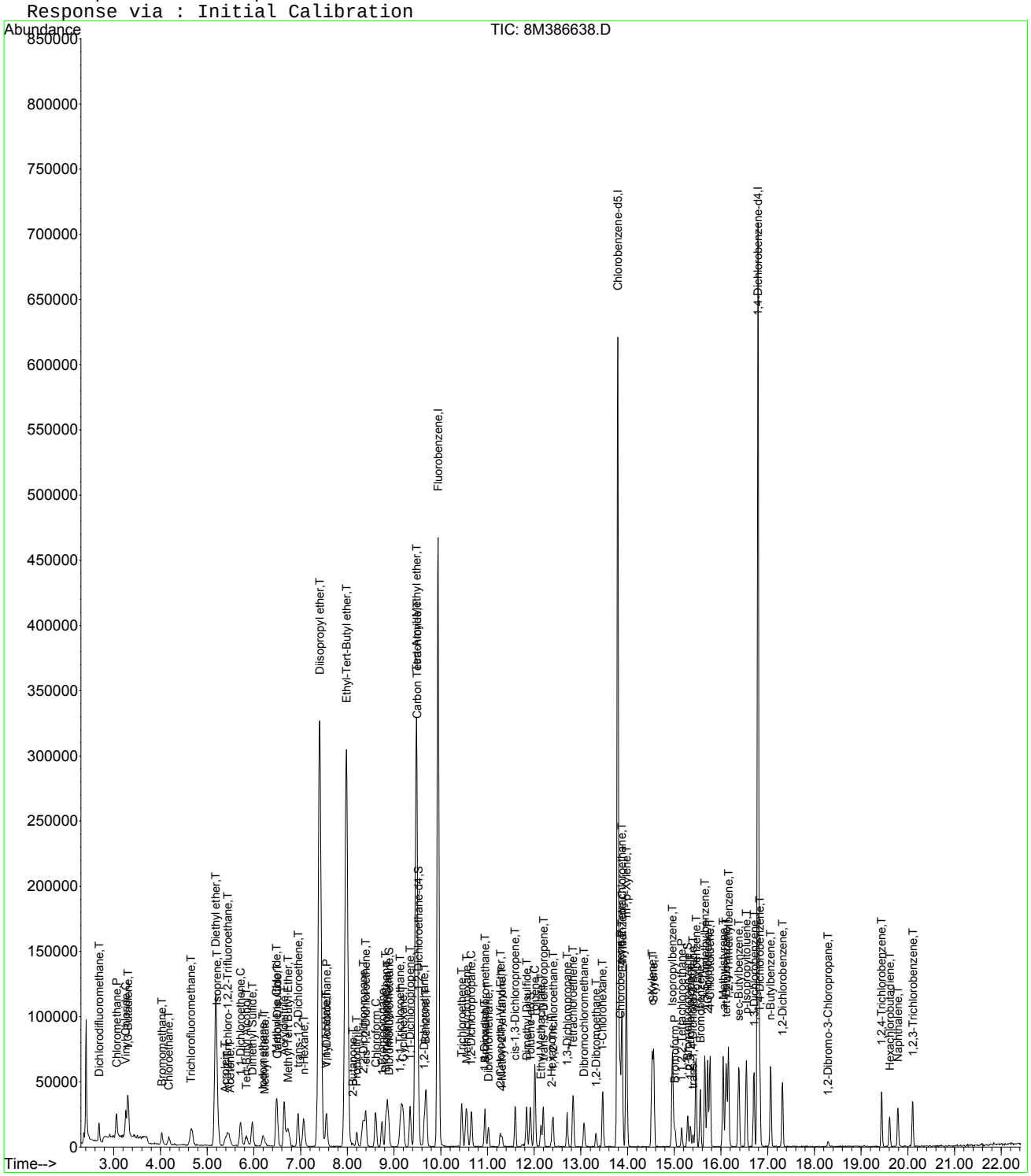
Abundance
TIC: 8M386638.D
Time-->
Chlorobenzene-d5,I
1,4-Dichlorobenzene-d4,I
Fluorobenzene,I
Diisopropyl ether,T
Ethyl-Tert-Butyl ether,T
Carbon Tetrachloride,T
Tert-Amyl Methyl Ether,T
Dichlorodifluoromethane,T
Chloromethane,P
Vinyl Chloride,T
Bromomethane,T
Chloroethane,T
Trichlorofluoromethane,T
Isoprene,T
Diethyl ether,T
1,2,2-Trifluoroethane,T
Acrolein,T
Acetone,T
Tert-Butyl Alcohol,T
Dimethyl Sulfide,T
Methyl Acetate,T
Methylene Chloride,T
Methyl Tert-Butyl Ether,T
trans-1,2-Dichloroethene,T
n-Hexane,T
Vinyl Acetate,T
Chloroprene,T
Acrylonitrile,T
Propionitrile,T
Methacrylonitrile,T
Methyl Methacrylate,T
Propionitrile,T
Methacrylonitrile,T
Methyl Methacrylate,T
2-Butanone,T
2-Chloroethanol,T
Propionitrile,T
Methacrylonitrile,T
Methyl Methacrylate,T
2-Nitropropane,T
1,1-Dichloroethane,T
Vinyl Acetate,T
2-Chloroethanol,T
1,2-Dichloroethane-d4,S
1,2-Dichloroethane,T
Benzene,T
Tert-Amyl Methyl Ether,T
Tert-Butyl Alcohol,T
Methyl Acrylate,T
Dibromomethane,T
Methyl Acrylate,T
Methyl Methacrylate,T
Propionitrile,T
Methacrylonitrile

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032913\8M386638.D Vial: 6
Acq On : 29 Mar 2013 13:32 Operator: adc
Sample : WG425063-05 2.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 09:53:12 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	2.0522	-2.6	100	0.00
3	P	Chloromethane	2.0000	2.2200	-11.0	100	0.00
4	C	Vinyl Chloride	2.0000	2.0990	-4.9	100	0.01
5	T	1,3-Butadiene	-1.0000	1.9859	0.0	100	0.02
6	T	Bromomethane	2.0000	1.9197	4.0	100	0.00
7	T	Chloroethane	2.0000	1.9941	0.3	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.1047	-5.2	100	0.00
9	T	Diethyl ether	25.0000	26.0061	-4.0	100	0.00
10	T	Isoprene	2.0000	2.0241	-1.2	100	0.00
11	T	Acrolein	12.5000	13.1280	-5.0	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.0817	-4.1	100	0.00
13	T	Acetone	-1.0000	2.0833	0.0	100	0.01
14	C	1,1-Dichloroethene	2.0000	2.0495	-2.5	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	54.5123	-9.0	100	0.00
16	T	Dimethyl Sulfide	2.0000	1.9864	0.7	100	0.00
17	T	Iodomethane	2.0000	1.8299	8.5	100	0.00
18	T	Methyl acetate	2.0000	2.2486	-12.4	100	0.00
19	T	Methylene Chloride	2.0000	2.1602	-8.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.0761	-3.8	100	0.00
21	T	Acrylonitrile	12.5000	12.2864	1.7	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.1499	-7.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9289	3.6	100	0.01
24	T	n-Hexane	2.0000	1.9613	1.9	100	0.00
25	T	Diisopropyl ether	25.0000	26.5203	-6.1	100	0.00
26	T	Vinyl Acetate	-1.0000	2.0811	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	1.9778	1.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.4755	-5.9	100	0.00
29	T	2-Butanone	-1.0000	1.8784	0.0	100	0.00
30	T	Propionitrile	25.0000	25.0479	-0.2	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.0606	-3.0	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0854	-4.3	100	0.00
33	C	Chloroform	2.0000	2.1153	-5.8	100	0.01
34		1-Bromopropane	2.0000	2.1673	-8.4	100	0.00
35	T	Bromochloromethane	2.0000	2.1727	-8.6	100	0.00
36	T	Tetrahydrofuran	25.0000	26.4461	-5.8	100	0.00
37	S	Dibromofluoromethane	1.0000	1.1017	-10.2	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0198	-1.0	100	-0.01
39	T	Cyclohexane	2.0000	1.9696	1.5	100	0.01
40	T	1,1-Dichloropropene	2.0000	2.0583	-2.9	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0236	-4.1	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0045	-0.2	100	0.01
43	S	1,2-Dichloroethane-d4	-1.0000	1.1352	0.0	100	0.00
44		Heptane	2.0000	0.0000	100.0#	0	-2.44#
45	T	1,2-Dichloroethane	2.0000	2.0081	-0.4	100	0.00
46	T	Benzene	2.0000	2.0396	-2.0	100	-0.01
47	T	Trichloroethene	2.0000	1.9421	2.9	100	0.00
48	T	Methylcyclohexane	2.0000	1.9165	4.2	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.9653	1.7	100	-0.01
50	T	Bromodichloromethane	2.0000	2.0587	-2.9	100	0.00
51	T	1,4-Dioxane	50.0000	52.5851	-5.2	100	0.00
52	T	Dibromomethane	2.0000	2.0184	-0.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.7351	13.2	100	0.01
54	T	4-Methyl-2-Pentanone	2.0000	1.6714	16.4	100	0.00
55	T	cis-1,3-Dichloropropene	2.0000	1.9660	1.7	100	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032913\8M386638.D Vial: 6
Acq On : 29 Mar 2013 13:32 Operator: adc
Sample : WG425063-05 2.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 09:53:12 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	2.0000	1.8196	9.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	1.1902	0.0	100	0.00
59	C	Toluene	2.0000	2.0830	-4.2	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.7740	11.3	100	0.00
61		Paraldehyde	25.0000	0.0000	100.0#	0	-12.31#
62	T	trans-1,3-Dichloropropene	2.0000	2.0145	-0.7	100	0.01
63	T	1,1,2-Trichloroethane	2.0000	2.1479	-7.4	100	0.00
64	T	2-Hexanone	-1.0000	1.1024	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	1.9296	3.5	100	0.00
66	T	Tetrachloroethene	2.0000	1.9584	2.1	100	0.00
67	T	Dibromochloromethane	2.0000	2.0640	-3.2	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9645	1.8	100	0.00
69	T	1-Chlorohexane	2.0000	1.9366	3.2	100	-0.01
70	P	Chlorobenzene	2.0000	2.0288	-1.4	100	0.01
71	T	1,1,1,2-Tetrachloroethane	2.0000	2.0309	-1.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0527	-2.6	100	0.00
73	T	m-,p-Xylene	4.0000	4.1579	-3.9	100	0.00
74	T	o-Xylene	2.0000	2.0194	-1.0	100	0.00
75	T	Styrene	2.0000	1.9438	2.8	100	0.00
76	P	Bromoform	2.0000	1.8604	7.0	100	0.00
77	T	Isopropylbenzene	2.0000	2.0228	-1.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.8485	7.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	1.2392	0.0	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0442	-2.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7871	10.6	100	-0.01
83	T	n-Propylbenzene	2.0000	2.0833	-4.2	100	0.00
84	T	Bromobenzene	2.0000	1.9326	3.4	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0596	-3.0	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1921	-9.6	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0809	-4.0	100	0.00
88	T	a-Methylstyrene	2.0000	2.0351	-1.8	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9656	1.7	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.0551	-2.8	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1304	-6.5	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1278	-6.4	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.0110	-0.6	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	1.8978	5.1	100	0.00
95	T	n-Butylbenzene	2.0000	2.1790	-8.9	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0870	-4.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.7630	11.8	100	-0.01
98	T	1,2,4-Trichlorobenzene	2.0000	2.0096	-0.5	100	0.00
99	T	Hexachlorobutadiene	2.0000	1.9437	2.8	100	0.00
100	T	Naphthalene	2.0000	2.0713	-3.6	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	2.1554	-7.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M386638.D 8260WT.M Mon Apr 01 09:56:47 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386639.D Vial: 7
Acq On : 29 Mar 2013 14:02 Operator: adc
Sample : WG425063-06 5.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:03:59 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.94	96	574589	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.78	117	414840	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	222905	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	8.88	111	20018	2.5497 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.20%#		
43) 1,2-Dichloroethane-d4	9.52	65	24512	2.7457 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 11.00%#		
58) Toluene-d8	11.92	98	70581	2.8316 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 11.32%#		
80) p-Bromofluorobenzene	15.28	95	27685	2.7037 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.80%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	2.68	85	42099	4.8925 ug/L	97
3) Chloromethane	3.05	50	59446	5.3093 ug/L	99
4) Vinyl Chloride	3.25	62	44426	4.7452 ug/L	96
5) 1,3-Butadiene	3.30	54	47152	5.2685 ug/L	93
6) Bromomethane	4.03	94	21313	4.4045 ug/L	97
7) Chloroethane	4.18	64	21587	4.9276 ug/L	95
8) Trichlorofluoromethane	4.67	101	72962	5.4902 ug/L	97
9) Diethyl ether	5.18	59	241399	53.4134 ug/L	96
10) Isoprene	5.21	67	46781	5.0763 ug/L	98
11) Acrolein	5.39	56	8282	50.0570 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	5.45	101	32849	5.0356 ug/L	98
13) Acetone	5.48	43	9161	5.6742 ug/L	81
14) 1,1-Dichloroethene	5.71	61	63623	5.1357 ug/L	96
15) Tert-Butyl Alcohol	5.84	59	42757	117.7533 ug/L	89
16) Dimethyl Sulfide	5.97	62	34921	4.8906 ug/L	97
17) Iodomethane	6.20	142	40146	4.8347 ug/L	96
18) Methyl acetate	6.24	43	16926	5.3458 ug/L	91
19) Methylene Chloride	6.47	84	33912	5.0990 ug/L	96
20) Carbon Disulfide	6.50	76	107679	4.8963 ug/L	99
21) Acrylonitrile	6.65	53	71237	47.7089 ug/L	88
22) Methyl Tert Butyl Ether	6.73	73	81874	5.2298 ug/L	98
23) trans-1,2-Dichloroethene	6.94	61	58798	5.2008 ug/L	92
24) n-Hexane	7.06	57	44409	5.0139 ug/L	99
25) Diisopropyl ether	7.41	45	1257368	51.3011 ug/L	99
26) Vinyl Acetate	7.54	43	56128	5.1326 ug/L	100
27) 1,1-Dichloroethane	7.55	63	69705	5.2125 ug/L	95
28) Ethyl-Tert-Butyl ether	7.97	59	1148030	51.7373 ug/L	99
29) 2-Butanone	8.13	43	9773	5.2210 ug/L	90
30) Propionitrile	8.20	54	28637	51.4394 ug/L	99
31) 2,2-Dichloropropane	8.35	77	68409	4.9010 ug/L	99
32) cis-1,2-Dichloroethene	8.39	96	36921	5.0652 ug/L	100
33) Chloroform	8.60	83	72551	4.9083 ug/L	98
34) 1-Bromopropane	8.73	122	7116	4.6180 ug/L	88
35) Bromochloromethane	8.82	130	20598	5.1433 ug/L	97
36) Tetrahydrofuran	8.86	42	61488	51.9034 ug/L	97
38) 1,1,1-Trichloroethane	9.14	97	68412	4.8288 ug/L	100
39) Cyclohexane	9.19	56	63868	5.1716 ug/L	98
40) 1,1-Dichloropropene	9.35	75	54964	5.1404 ug/L	99
41) Tert-Amyl-Methyl ether	9.47	73	868901	51.7465 ug/L	100
42) Carbon Tetrachloride	9.48	117	60438	4.8977 ug/L	96
45) 1,2-Dichloroethane	9.64	62	56857	5.3589 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386639.D Vial: 7
Acq On : 29 Mar 2013 14:02 Operator: adc
Sample : WG425063-06 5.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:03:59 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
46)	Benzene	9.69	78	134224	5.0341	ug/L		98
47)	Trichloroethene	10.44	130	36350	5.3940	ug/L		94
48)	Methylcyclohexane	10.55	83	48756	5.0704	ug/L		100
49)	1,2-Dichloropropane	10.66	63	34064	4.8898	ug/L		98
50)	Bromodichloromethane	10.94	83	55819	4.9631	ug/L		97
51)	1,4-Dioxane	10.94	88	2648	88.7558	ug/L	#	42
52)	Dibromomethane	11.02	93	19959	5.3591	ug/L		98
53)	2-Chloroethyl Vinyl Ether	11.27	63	15861	4.9554	ug/L		100
54)	4-Methyl-2-Pentanone	11.31	58	7569	4.9779	ug/L		94
55)	cis-1,3-Dichloropropene	11.59	75	60865	4.9910	ug/L		99
56)	Dimethyl Disulfide	11.84	94	55063	4.8904	ug/L		96
59)	Toluene	12.02	91	151167	5.2020	ug/L		99
60)	Ethyl Methacrylate	12.14	69	31517	5.3218	ug/L		89
62)	trans-1,3-Dichloropropene	12.19	75	56373	5.1321	ug/L		100
63)	1,1,2-Trichloroethane	12.40	97	24457	5.1129	ug/L		100
64)	2-Hexanone	12.37	58	7199	5.0619	ug/L		91
65)	1,3-Dichloropropane	12.71	76	46504	5.2628	ug/L		97
66)	Tetrachloroethene	12.83	164	29305	4.8371	ug/L		93
67)	Dibromochloromethane	13.07	129	34901	5.0276	ug/L		99
68)	1,2-Dibromoethane	13.32	107	26687	5.3580	ug/L		94
69)	1-Chlorohexane	13.46	91	44434	5.1536	ug/L		100
70)	Chlorobenzene	13.84	112	100045	5.1721	ug/L		94
71)	1,1,1,2-Tetrachloroethane	13.88	131	40497	5.2629	ug/L		97
72)	Ethylbenzene	13.89	106	53582	5.1199	ug/L		94
73)	m-,p-Xylene	13.97	106	134105	10.5550	ug/L		99
74)	o-Xylene	14.53	106	62363	5.0107	ug/L		93
75)	Styrene	14.56	104	106790	5.1981	ug/L		98
76)	Bromoform	15.02	173	21585	4.9673	ug/L		98
77)	Isopropylbenzene	14.96	105	167708	5.1605	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.16	83	28468	5.4189	ug/L		94
81)	1,2,3-Trichloropropane	15.35	110	8957	5.2416	ug/L		90
82)	trans-1,4-Dichloro-2-Buten	15.40	53	9781	4.8954	ug/L		96
83)	n-Propylbenzene	15.46	91	198983	5.1418	ug/L		95
84)	Bromobenzene	15.55	156	39628	5.0341	ug/L		97
85)	1,3,5-Trimethylbenzene	15.66	105	145058	5.2092	ug/L		97
86)	2-Chlorotoluene	15.72	91	133328	4.7915	ug/L		93
87)	4-Chlorotoluene	15.76	91	127807	4.9205	ug/L		94
88)	a-Methylstyrene	16.05	118	69020	4.9788	ug/L		98
89)	tert-Butylbenzene	16.11	134	26908	5.1853	ug/L		97
90)	1,2,4-Trimethylbenzene	16.16	105	147273	5.1202	ug/L		95
91)	sec-Butylbenzene	16.38	105	159171	5.1162	ug/L		97
92)	p-Isopropyltoluene	16.55	119	136263	5.2371	ug/L		98
93)	1,3-Dichlorobenzene	16.71	146	75778	4.9699	ug/L		97
94)	1,4-Dichlorobenzene	16.83	146	77635	4.8952	ug/L		99
95)	n-Butylbenzene	17.06	91	120888	5.0418	ug/L		98
96)	1,2-Dichlorobenzene	17.31	146	69135	5.0065	ug/L		100
97)	1,2-Dibromo-3-Chloropropan	18.29	75	5813	5.1748	ug/L		99
98)	1,2,4-Trichlorobenzene	19.44	180	47311	5.3777	ug/L		90
99)	Hexachlorobutadiene	19.62	225	17775	4.9916	ug/L		95
100)	Naphthalene	19.79	128	80184	5.0921	ug/L		99
101)	1,2,3-Trichlorobenzene	20.10	180	39281	5.3854	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M386639.D 8260WT.M Mon Apr 01 10:04:00 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386639.D Vial: 7
Acq On : 29 Mar 2013 14:02 Operator: adc
Sample : WG425063-06 5.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 10:03 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

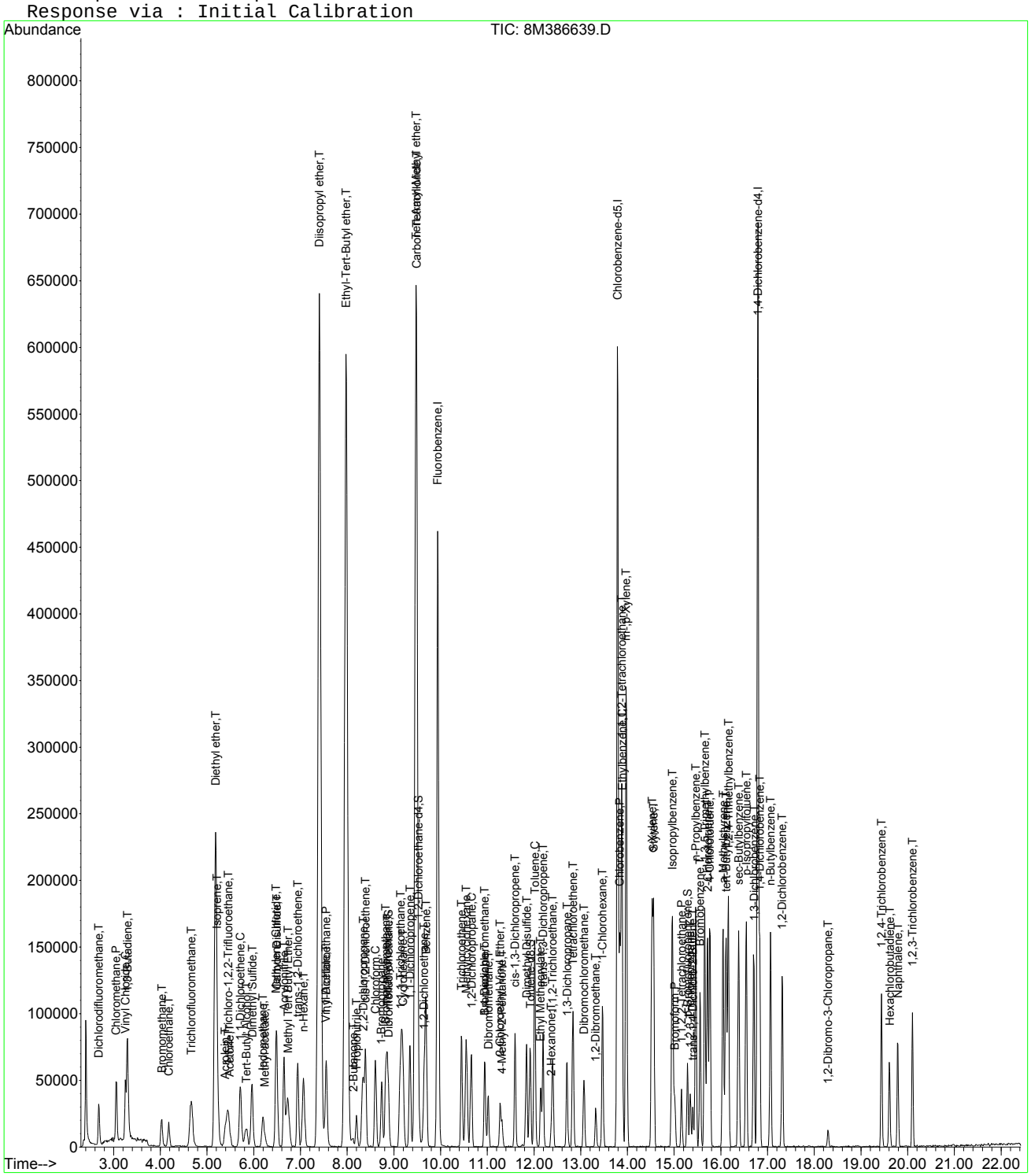

8M386639.D 8260WT.M Mon Apr 01 10:04:00 2013 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032913\8M386639.D Vial: 7
Acq On : 29 Mar 2013 14:02 Operator: adc
Sample : WG425063-06 5.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 09:53:12 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.8925	2.1	100	0.00
3	P	Chloromethane	5.0000	5.3093	-6.2	100	0.00
4	C	Vinyl Chloride	5.0000	4.7452	5.1	100	0.00
5	T	1,3-Butadiene	5.0000	5.2685	-5.4	100	0.01
6	T	Bromomethane	5.0000	4.4045	11.9	100	0.00
7	T	Chloroethane	5.0000	4.9276	1.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	5.4902	-9.8	100	0.00
9	T	Diethyl ether	50.0000	53.4134	-6.8	100	0.00
10	T	Isoprene	5.0000	5.0763	-1.5	100	0.00
11	T	Acrolein	25.0000	25.0285	-0.1	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.0356	-0.7	100	0.01
13	T	Acetone	5.0000	5.6742	-13.5	100	0.00
14	C	1,1-Dichloroethene	5.0000	5.1357	-2.7	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	117.7533	-17.8	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.8906	2.2	100	0.00
17	T	Iodomethane	5.0000	4.8347	3.3	100	0.00
18	T	Methyl acetate	5.0000	5.3458	-6.9	100	0.00
19	T	Methylene Chloride	5.0000	5.0990	-2.0	100	0.00
20	T	Carbon Disulfide	5.0000	4.8963	2.1	100	0.00
21	T	Acrylonitrile	25.0000	23.8544	4.6	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	5.2298	-4.6	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	5.2008	-4.0	100	0.00
24	T	n-Hexane	5.0000	5.0139	-0.3	100	0.00
25	T	Diisopropyl ether	50.0000	51.3011	-2.6	100	0.00
26	T	Vinyl Acetate	5.0000	5.1326	-2.7	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.2125	-4.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.7373	-3.5	100	0.00
29	T	2-Butanone	5.0000	5.2210	-4.4	100	0.01
30	T	Propionitrile	50.0000	51.4394	-2.9	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9010	2.0	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0652	-1.3	100	0.00
33	C	Chloroform	5.0000	4.9083	1.8	100	0.00
34		1-Bromopropane	5.0000	4.6180	7.6	100	-0.02
35	T	Bromochloromethane	5.0000	5.1433	-2.9	100	0.00
36	T	Tetrahydrofuran	50.0000	51.9034	-3.8	100	0.00
37	S	Dibromofluoromethane	2.5000	2.5497	-2.0	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8288	3.4	100	0.00
39	T	Cyclohexane	5.0000	5.1716	-3.4	100	0.01
40	T	1,1-Dichloropropene	5.0000	5.1404	-2.8	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	51.7465	-3.5	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8977	2.0	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.7457	-9.8	100	0.00
44		Heptane	5.0000	0.0000	100.0#	0	-2.44#
45	T	1,2-Dichloroethane	5.0000	5.3589	-7.2	100	0.00
46	T	Benzene	5.0000	5.0340	-0.7	100	0.00
47	T	Trichloroethene	5.0000	5.3940	-7.9	100	0.00
48	T	Methylcyclohexane	5.0000	5.0704	-1.4	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.8898	2.2	100	0.00
50	T	Bromodichloromethane	5.0000	4.9631	0.7	100	0.00
51	T	1,4-Dioxane	100.0000	88.7558	11.2	100	0.00
52	T	Dibromomethane	5.0000	5.3591	-7.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.9554	0.9	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.9779	0.4	100	0.00
55	T	cis-1,3-Dichloropropene	5.0000	4.9910	0.2	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032913\8M386639.D Vial: 7
Acq On : 29 Mar 2013 14:02 Operator: adc
Sample : WG425063-06 5.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 09:53:12 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	5.0000	4.8904	2.2	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.8316	-13.3	100	0.00
59	C	Toluene	5.0000	5.2020	-4.0	100	0.00
60	T	Ethyl Methacrylate	5.0000	5.3218	-6.4	100	0.00
61		Paraldehyde	50.0000	0.0000	100.0#	0	-12.31#
62	T	trans-1,3-Dichloropropene	5.0000	5.1321	-2.6	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	5.1129	-2.3	100	0.00
64	T	2-Hexanone	5.0000	5.0619	-1.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	5.2628	-5.3	100	0.00
66	T	Tetrachloroethene	5.0000	4.8371	3.3	100	0.00
67	T	Dibromochloromethane	5.0000	5.0276	-0.6	100	0.00
68	T	1,2-Dibromoethane	5.0000	5.3580	-7.2	100	0.00
69	T	1-Chlorohexane	5.0000	5.1536	-3.1	100	0.00
70	P	Chlorobenzene	5.0000	5.1721	-3.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	5.2629	-5.3	100	0.00
72	C	Ethylbenzene	5.0000	5.1199	-2.4	100	0.00
73	T	m-,p-Xylene	10.0000	10.5550	-5.5	100	0.00
74	T	o-Xylene	5.0000	5.0107	-0.2	100	0.00
75	T	Styrene	5.0000	5.1981	-4.0	100	0.00
76	P	Bromoform	5.0000	4.9673	0.7	100	0.00
77	T	Isopropylbenzene	5.0000	5.1605	-3.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.4189	-8.4	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.7037	-8.1	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2416	-4.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.8955	2.1	100	0.00
83	T	n-Propylbenzene	5.0000	5.1418	-2.8	100	0.00
84	T	Bromobenzene	5.0000	5.0341	-0.7	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.2092	-4.2	100	0.00
86	T	2-Chlorotoluene	5.0000	4.7915	4.2	100	0.00
87	T	4-Chlorotoluene	5.0000	4.9205	1.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.9789	0.4	100	0.00
89	T	tert-Butylbenzene	5.0000	5.1852	-3.7	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.1202	-2.4	100	0.00
91	T	sec-Butylbenzene	5.0000	5.1162	-2.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.2371	-4.7	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9699	0.6	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8952	2.1	100	0.00
95	T	n-Butylbenzene	5.0000	5.0418	-0.8	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0065	-0.1	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1748	-3.5	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	5.3777	-7.6	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.9916	0.2	100	0.00
100	T	Naphthalene	5.0000	5.0921	-1.8	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	5.3854	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M386639.D 8260WT.M Mon Apr 01 09:57:17 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386640.D Vial: 8
Acq On : 29 Mar 2013 14:33 Operator: adc
Sample : WG425063-07 20.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:04:00 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.94	96	572043	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.79	117	415097	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	222030	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	8.89	111	77061	9.8588 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 39.44%#		
43) 1,2-Dichloroethane-d4	9.52	65	89761	10.0994 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.40%#		
58) Toluene-d8	11.92	98	251976	10.1027 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 40.40%#		
80) p-Bromofluorobenzene	15.28	95	103108	10.1091 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 40.44%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.69	85	179880	20.9977 ug/L	98
3) Chloromethane	3.06	50	217456	19.5079 ug/L	99
4) Vinyl Chloride	3.24	62	187193	20.0834 ug/L	99
5) 1,3-Butadiene	3.30	54	184529	20.7101 ug/L	93
6) Bromomethane	4.03	94	93355	19.3785 ug/L	99
7) Chloroethane	4.18	64	94427	21.6505 ug/L	97
8) Trichlorofluoromethane	4.66	101	286290	21.6489 ug/L	99
9) Diethyl ether	5.18	59	370033	82.2401 ug/L	99
10) Isoprene	5.21	67	184084	20.0643 ug/L	99
11) Acrolein	5.36	56	13449	81.6486 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	5.45	101	133321	20.5285 ug/L	97
13) Acetone	5.49	43	29641	18.4410 ug/L	99
14) 1,1-Dichloroethene	5.72	61	255373	20.7056 ug/L	99
15) Tert-Butyl Alcohol	5.83	59	54154	149.8045 ug/L	98
16) Dimethyl Sulfide	5.96	62	142318	20.0200 ug/L	100
17) Iodomethane	6.19	142	174268	21.0800 ug/L	99
18) Methyl acetate	6.23	43	61446	19.4932 ug/L	99
19) Methylene Chloride	6.47	84	129686	19.5864 ug/L	93
20) Carbon Disulfide	6.49	76	439607	20.0784 ug/L	100
21) Acrylonitrile	6.65	53	117710	79.1836 ug/L	93
22) Methyl Tert Butyl Ether	6.73	73	324468	20.8182 ug/L	100
23) trans-1,2-Dichloroethene	6.94	61	224673	19.9610 ug/L	99
24) n-Hexane	7.06	57	183559	20.8164 ug/L	99
25) Diisopropyl ether	7.40	45	1997692	81.8694 ug/L	99
26) Vinyl Acetate	7.55	43	219798	20.1886 ug/L	99
27) 1,1-Dichloroethane	7.55	63	271503	20.3932 ug/L	100
28) Ethyl-Tert-Butyl ether	7.98	59	1808546	81.8670 ug/L	100
29) 2-Butanone	8.11	43	36260	19.4573 ug/L	98
30) Propionitrile	8.20	54	44027	79.4358 ug/L	98
31) 2,2-Dichloropropane	8.33	77	290743	20.9224 ug/L	100
32) cis-1,2-Dichloroethene	8.39	96	151799	20.9181 ug/L	95
33) Chloroform	8.60	83	296101	20.1212 ug/L	100
34) 1-Bromopropane	8.75	122	31211	20.3447 ug/L	97
35) Bromochloromethane	8.82	130	80839	20.2753 ug/L	97
36) Tetrahydrofuran	8.86	42	92789	78.6738 ug/L	100
38) 1,1,1-Trichloroethane	9.14	97	286540	20.3153 ug/L	100
39) Cyclohexane	9.18	56	252198	20.5123 ug/L	99
40) 1,1-Dichloropropene	9.35	75	219149	20.5868 ug/L	98
41) Tert-Amyl-Methyl ether	9.48	73	1365754	81.6981 ug/L	100
42) Carbon Tetrachloride	9.48	117	250192	20.3649 ug/L	99
45) 1,2-Dichloroethane	9.65	62	216599	20.5058 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M386640.D 8260WT.M Mon Apr 01 10:04:01 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386640.D Vial: 8
Acq On : 29 Mar 2013 14:33 Operator: adc
Sample : WG425063-07 20.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:04:00 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	9.69	78	531257	20.0134	ug/L	99
47)	Trichloroethene	10.45	130	134370	20.0278	ug/L	99
48)	Methylcyclohexane	10.55	83	197554	20.6360	ug/L	99
49)	1,2-Dichloropropane	10.66	63	141263	20.3684	ug/L	98
50)	Bromodichloromethane	10.95	83	230620	20.5968	ug/L	99
51)	1,4-Dioxane	10.94	88	4863	148.4619	ug/L	77
52)	Dibromomethane	11.02	93	74012	19.9610	ug/L	94
53)	2-Chloroethyl Vinyl Ether	11.27	63	62628	19.6536	ug/L	99
54)	4-Methyl-2-Pentanone	11.31	58	29213	19.2981	ug/L	97
55)	cis-1,3-Dichloropropene	11.59	75	248432	20.4623	ug/L	99
56)	Dimethyl Disulfide	11.84	94	226780	20.2310	ug/L	98
59)	Toluene	12.01	91	586155	20.1585	ug/L	99
60)	Ethyl Methacrylate	12.15	69	120415	20.3202	ug/L	98
62)	trans-1,3-Dichloropropene	12.20	75	232335	21.1382	ug/L	99
63)	1,1,2-Trichloroethane	12.41	97	99835	20.8584	ug/L	99
64)	2-Hexanone	12.36	58	26624	18.7088	ug/L	89
65)	1,3-Dichloropropane	12.71	76	186258	21.0657	ug/L	97
66)	Tetrachloroethene	12.84	164	122655	20.2331	ug/L	98
67)	Dibromochloromethane	13.07	129	149123	21.4682	ug/L	99
68)	1,2-Dibromoethane	13.33	107	104403	20.9483	ug/L	99
69)	1-Chlorohexane	13.47	91	177280	20.5489	ug/L	99
70)	Chlorobenzene	13.83	112	389911	20.1451	ug/L	99
71)	1,1,1,2-Tetrachloroethane	13.87	131	161396	20.9616	ug/L	98
72)	Ethylbenzene	13.88	106	211329	20.1806	ug/L	93
73)	m-,p-Xylene	13.98	106	525317	41.3204	ug/L	98
74)	o-Xylene	14.53	106	260843	20.9450	ug/L	99
75)	Styrene	14.57	104	435514	21.1858	ug/L	100
76)	Bromoform	15.02	173	91556	21.0563	ug/L	99
77)	Isopropylbenzene	14.96	105	680032	20.9122	ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.16	83	112140	21.4300	ug/L	96
81)	1,2,3-Trichloropropane	15.34	110	36700	21.5614	ug/L	88
82)	trans-1,4-Dichloro-2-Buten	15.40	53	41427	20.8162	ug/L	92
83)	n-Propylbenzene	15.47	91	807905	20.9588	ug/L	98
84)	Bromobenzene	15.56	156	165402	21.0944	ug/L	99
85)	1,3,5-Trimethylbenzene	15.65	105	581896	20.9789	ug/L	100
86)	2-Chlorotoluene	15.71	91	524197	18.9126	ug/L	100
87)	4-Chlorotoluene	15.77	91	566782	21.9067	ug/L	99
88)	a-Methylstyrene	16.05	118	279452	20.2381	ug/L	100
89)	tert-Butylbenzene	16.11	134	110559	21.3890	ug/L	100
90)	1,2,4-Trimethylbenzene	16.16	105	603233	21.0551	ug/L	99
91)	sec-Butylbenzene	16.38	105	647222	20.8855	ug/L	99
92)	p-Isopropyltoluene	16.54	119	543707	20.9790	ug/L	100
93)	1,3-Dichlorobenzene	16.71	146	322251	21.2182	ug/L	100
94)	1,4-Dichlorobenzene	16.83	146	327079	20.7048	ug/L	99
95)	n-Butylbenzene	17.06	91	501025	20.9781	ug/L	99
96)	1,2-Dichlorobenzene	17.32	146	293975	21.3723	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	18.30	75	25581	22.8621	ug/L	92
98)	1,2,4-Trichlorobenzene	19.44	180	189880	21.6683	ug/L	98
99)	Hexachlorobutadiene	19.61	225	75895	21.3969	ug/L	98
100)	Naphthalene	19.79	128	352669	22.4847	ug/L	100
101)	1,2,3-Trichlorobenzene	20.11	180	163221	22.4657	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M386640.D 8260WT.M Mon Apr 01 10:04:01 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386640.D Vial: 8
Acq On : 29 Mar 2013 14:33 Operator: adc
Sample : WG425063-07 20.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 10:04 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

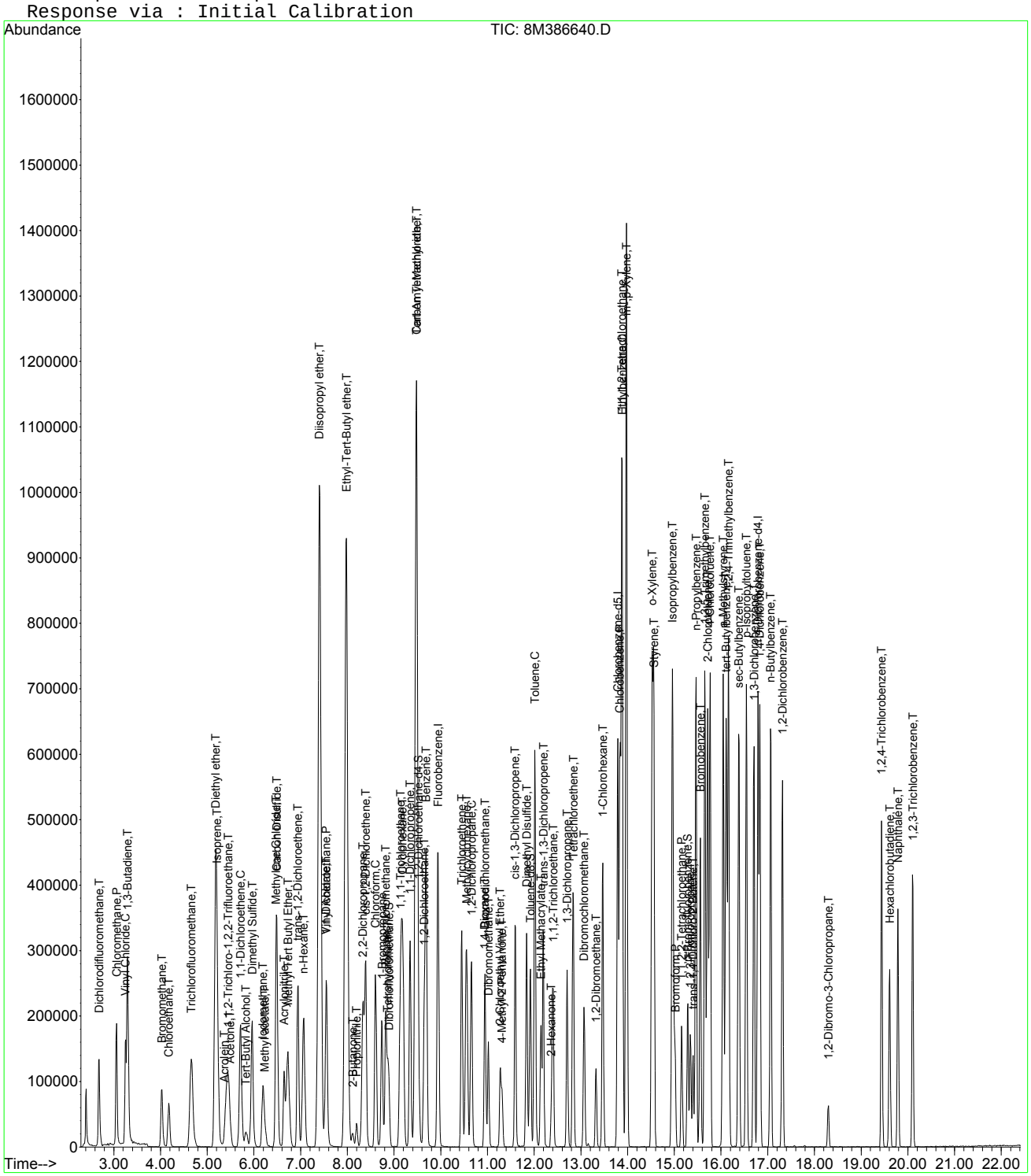

8M386640.D 8260WT.M Mon Apr 01 10:04:02 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386641.D Vial: 9
Acq On : 29 Mar 2013 15:03 Operator: adc
Sample : WG425063-08 50.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:04:02 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.95	96	570486	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.79	117	420930	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	225750	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	8.89	111	194631	24.9680 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.88%		
43) 1,2-Dichloroethane-d4	9.52	65	234116	26.4134 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.64%		
58) Toluene-d8	11.92	98	650843	25.7332 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.92%		
80) p-Bromofluorobenzene	15.28	95	267832	25.8266 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.32%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.69	85	455132	53.2733 ug/L	100
3) Chloromethane	3.06	50	536066	48.2217 ug/L	100
4) Vinyl Chloride	3.25	62	467989	50.3462 ug/L	100
5) 1,3-Butadiene	3.29	54	477410	53.7269 ug/L	100
6) Bromomethane	4.03	94	255111	53.1000 ug/L	100
7) Chloroethane	4.18	64	238758	54.8925 ug/L	100
8) Trichlorofluoromethane	4.66	101	729292	55.3043 ug/L	100
9) Diethyl ether	5.18	59	445080	99.1893 ug/L	100
10) Isoprene	5.21	67	465117	50.8339 ug/L	100
11) Acrolein	5.38	56	16031	97.5895 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.44	101	333186	51.4432 ug/L	100
13) Acetone	5.48	43	83545	52.1188 ug/L	100
14) 1,1-Dichloroethene	5.72	61	647724	52.6607 ug/L	100
15) Tert-Butyl Alcohol	5.84	59	67443	187.0746 ug/L	100
16) Dimethyl Sulfide	5.96	62	365138	51.5046 ug/L	100
17) Iodomethane	6.19	142	452627	54.9007 ug/L	100
18) Methyl acetate	6.23	43	155163	49.3584 ug/L	100
19) Methylene Chloride	6.48	84	334499	50.6571 ug/L	100
20) Carbon Disulfide	6.50	76	1111661	50.9120 ug/L	100
21) Acrylonitrile	6.65	53	150749	101.6858 ug/L	100
22) Methyl Tert Butyl Ether	6.73	73	823214	52.9624 ug/L	100
23) trans-1,2-Dichloroethene	6.94	61	568837	50.6761 ug/L	100
24) n-Hexane	7.07	57	461789	52.5118 ug/L	100
25) Diisopropyl ether	7.41	45	2422057	99.5317 ug/L	100
26) Vinyl Acetate	7.55	43	575690	53.0220 ug/L	100
27) 1,1-Dichloroethane	7.56	63	682466	51.4014 ug/L	100
28) Ethyl-Tert-Butyl ether	7.98	59	2196843	99.7153 ug/L	100
29) 2-Butanone	8.12	43	95983	51.6456 ug/L	100
30) Propionitrile	8.20	54	55530	100.4635 ug/L	100
31) 2,2-Dichloropropane	8.34	77	724972	52.3128 ug/L	100
32) cis-1,2-Dichloroethene	8.39	96	373244	51.5739 ug/L	100
33) Chloroform	8.60	83	745018	50.7651 ug/L	100
34) 1-Bromopropane	8.75	122	79892	52.2193 ug/L	100
35) Bromochloromethane	8.82	130	211672	53.2345 ug/L	100
36) Tetrahydrofuran	8.86	42	117643	100.0192 ug/L	100
38) 1,1,1-Trichloroethane	9.14	97	730807	51.9547 ug/L	100
39) Cyclohexane	9.18	56	634237	51.7259 ug/L	100
40) 1,1-Dichloropropene	9.35	75	559050	52.6602 ug/L	100
41) Tert-Amyl-Methyl ether	9.48	73	1661492	99.6601 ug/L	100
42) Carbon Tetrachloride	9.48	117	637028	51.9937 ug/L	100
45) 1,2-Dichloroethane	9.65	62	548842	52.1017 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M386641.D 8260WT.M Mon Apr 01 10:04:03 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386641.D Vial: 9
Acq On : 29 Mar 2013 15:03 Operator: adc
Sample : WG425063-08 50.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:04:02 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	9.69	78	1331081	50.2810	ug/L	100
47)	Trichloroethene	10.45	130	346564	51.7963	ug/L	100
48)	Methylcyclohexane	10.56	83	495283	51.8771	ug/L	100
49)	1,2-Dichloropropane	10.66	63	353790	51.1514	ug/L	100
50)	Bromodichloromethane	10.95	83	590029	52.8396	ug/L	100
51)	1,4-Dioxane	10.94	88	7854	229.2352	ug/L	100
52)	Dibromomethane	11.02	93	198619	53.7138	ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.27	63	169813	53.4352	ug/L	100
54)	4-Methyl-2-Pentanone	11.31	58	85550	56.6685	ug/L	100
55)	cis-1,3-Dichloropropene	11.60	75	633120	52.2898	ug/L	100
56)	Dimethyl Disulfide	11.84	94	604328	54.0590	ug/L	100
59)	Toluene	12.01	91	1493820	50.6621	ug/L	100
60)	Ethyl Methacrylate	12.15	69	322781	53.7148	ug/L	100
62)	trans-1,3-Dichloropropene	12.19	75	587067	52.6721	ug/L	100
63)	1,1,2-Trichloroethane	12.41	97	254648	52.4659	ug/L	100
64)	2-Hexanone	12.37	58	78180	54.1760	ug/L	100
65)	1,3-Dichloropropane	12.71	76	463361	51.6796	ug/L	100
66)	Tetrachloroethene	12.83	164	317705	51.6822	ug/L	100
67)	Dibromochloromethane	13.07	129	373199	52.9823	ug/L	100
68)	1,2-Dibromoethane	13.33	107	268583	53.1441	ug/L	100
69)	1-Chlorohexane	13.47	91	461515	52.7539	ug/L	100
70)	Chlorobenzene	13.83	112	983617	50.1152	ug/L	100
71)	1,1,1,2-Tetrachloroethane	13.87	131	401978	51.4840	ug/L	100
72)	Ethylbenzene	13.88	106	552511	52.0303	ug/L	100
73)	m-,p-Xylene	13.98	106	1342663	104.1476	ug/L	100
74)	o-Xylene	14.53	106	664854	52.6463	ug/L	100
75)	Styrene	14.56	104	1105718	53.0428	ug/L	100
76)	Bromoform	15.01	173	226106	51.2800	ug/L	100
77)	Isopropylbenzene	14.96	105	1707447	51.7795	ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.16	83	273201	51.3485	ug/L	100
81)	1,2,3-Trichloropropane	15.34	110	90476	52.2791	ug/L	95
82)	trans-1,4-Dichloro-2-Buten	15.40	53	114850	56.7587	ug/L	98
83)	n-Propylbenzene	15.47	91	2004876	51.1537	ug/L	100
84)	Bromobenzene	15.56	156	406650	51.0071	ug/L	100
85)	1,3,5-Trimethylbenzene	15.65	105	1473592	52.2514	ug/L	100
86)	2-Chlorotoluene	15.71	91	1280894	45.4521	ug/L	100
87)	4-Chlorotoluene	15.77	91	1379843	52.4536	ug/L	100
88)	a-Methylstyrene	16.05	118	736792	52.4796	ug/L	100
89)	tert-Butylbenzene	16.11	134	279224	53.1292	ug/L	100
90)	1,2,4-Trimethylbenzene	16.16	105	1497683	51.4133	ug/L	100
91)	sec-Butylbenzene	16.38	105	1617207	51.3263	ug/L	100
92)	p-Isopropyltoluene	16.54	119	1368622	51.9383	ug/L	100
93)	1,3-Dichlorobenzene	16.71	146	788290	51.0487	ug/L	100
94)	1,4-Dichlorobenzene	16.83	146	789393	49.1468	ug/L	100
95)	n-Butylbenzene	17.06	91	1249826	51.4683	ug/L	100
96)	1,2-Dichlorobenzene	17.32	146	710369	50.7935	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	18.30	75	59811	52.5731	ug/L	100
98)	1,2,4-Trichlorobenzene	19.44	180	458842	51.4982	ug/L	100
99)	Hexachlorobutadiene	19.61	225	192868	53.4788	ug/L	100
100)	Naphthalene	19.79	128	834049	52.2993	ug/L	100
101)	1,2,3-Trichlorobenzene	20.11	180	390574	52.8727	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M386641.D 8260WT.M Mon Apr 01 10:04:03 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386641.D Vial: 9
Acq On : 29 Mar 2013 15:03 Operator: adc
Sample : WG425063-08 50.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 10:04 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

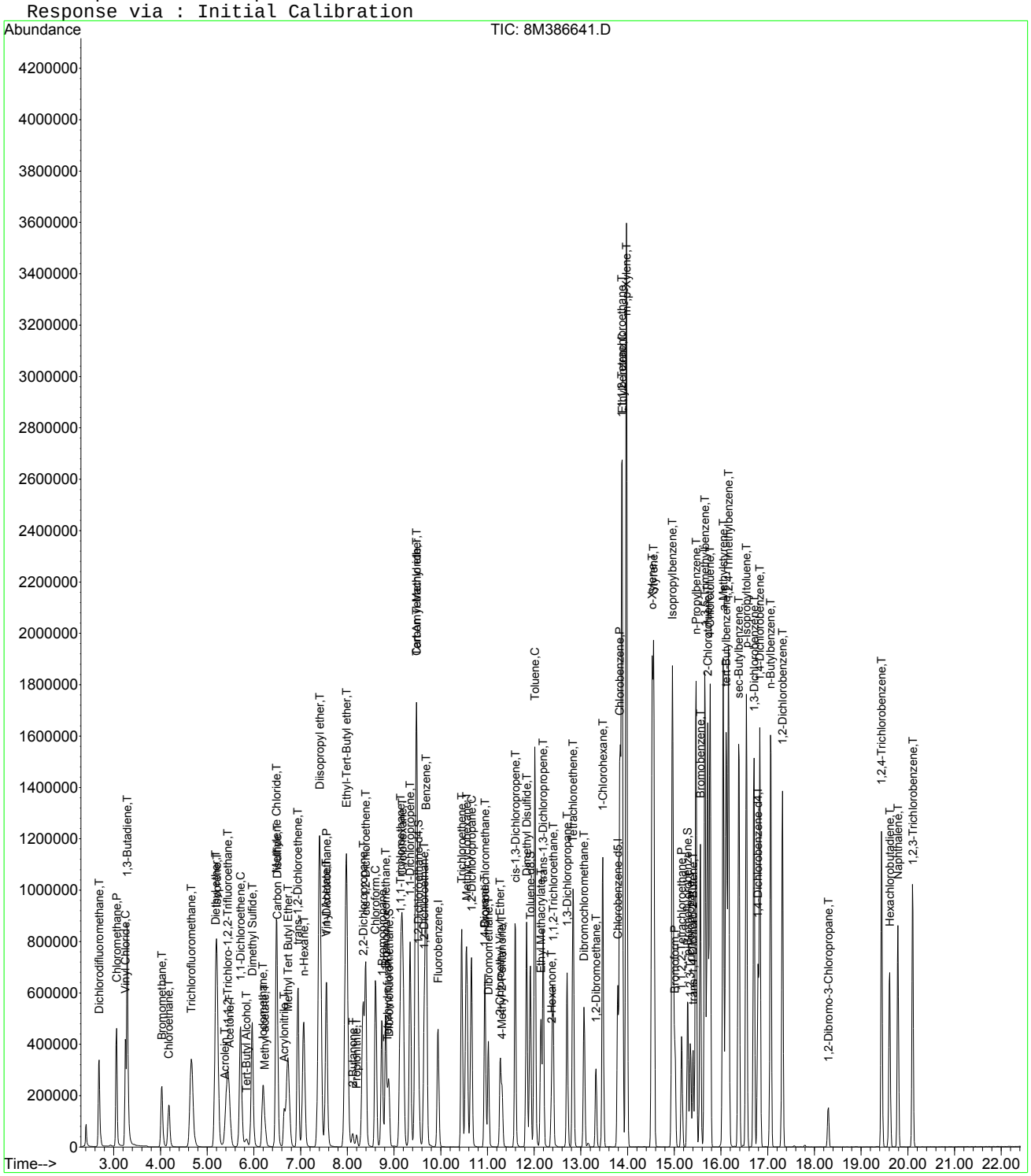

8M386641.D 8260WT.M Mon Apr 01 10:04:03 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386642.D Vial: 10
Acq On : 29 Mar 2013 15:34 Operator: adc
Sample : WG425063-09 100.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:04:04 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.94	96	596287	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.79	117	433982	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	236536	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	8.89	111	396719	48.6906 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 194.76%#		
43) 1,2-Dichloroethane-d4	9.53	65	448619	48.4240 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 193.68%#		
58) Toluene-d8	11.92	98	1267436	48.6051 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 194.44%#		
80) p-Bromofluorobenzene	15.29	95	529713	48.7501 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 195.00%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	2.69	85	901001	100.8991 ug/L	99
3) Chloromethane	3.06	50	1087484	93.5915 ug/L	98
4) Vinyl Chloride	3.24	62	927579	95.4710 ug/L	98
5) 1,3-Butadiene	3.29	54	937455	100.9347 ug/L	95
6) Bromomethane	4.03	94	536620	106.8616 ug/L	99
7) Chloroethane	4.18	64	481249	105.8557 ug/L	98
8) Trichlorofluoromethane	4.66	101	1449783	105.1873 ug/L	99
9) Diethyl ether	5.18	59	901426	192.1970 ug/L	99
10) Isoprene	5.21	67	976691	102.1265 ug/L	100
11) Acrolein	5.39	56	32557	189.6166 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	5.44	101	687353	101.5339 ug/L	100
13) Acetone	5.48	43	163080	97.3340 ug/L	96
14) 1,1-Dichloroethene	5.72	61	1287844	100.1727 ug/L	98
15) Tert-Butyl Alcohol	5.84	59	135464	359.4939 ug/L	98
16) Dimethyl Sulfide	5.96	62	748642	101.0305 ug/L	96
17) Iodomethane	6.19	142	929421	107.8548 ug/L	100
18) Methyl acetate	6.24	43	312424	95.0840 ug/L	100
19) Methylene Chloride	6.48	84	668740	96.8931 ug/L	99
20) Carbon Disulfide	6.50	76	2233364	97.8581 ug/L	100
21) Acrylonitrile	6.65	53	306523	197.8147 ug/L	99
22) Methyl Tert Butyl Ether	6.73	73	1641275	101.0243 ug/L	100
23) trans-1,2-Dichloroethene	6.94	61	1172396	99.9263 ug/L	100
24) n-Hexane	7.07	57	934657	101.6846 ug/L	100
25) Diisopropyl ether	7.40	45	4838123	190.2144 ug/L	99
26) Vinyl Acetate	7.55	43	1130768	99.6392 ug/L	100
27) 1,1-Dichloroethane	7.56	63	1401286	100.9742 ug/L	99
28) Ethyl-Tert-Butyl ether	7.98	59	4385590	190.4498 ug/L	99
29) 2-Butanone	8.11	43	188179	96.8723 ug/L	100
30) Propionitrile	8.21	54	113720	196.8373 ug/L	99
31) 2,2-Dichloropropane	8.34	77	1463504	101.0346 ug/L	99
32) cis-1,2-Dichloroethene	8.39	96	769267	101.6960 ug/L	98
33) Chloroform	8.61	83	1494260	97.4123 ug/L	98
34) 1-Bromopropane	8.75	122	164378	102.7924 ug/L	100
35) Bromochloromethane	8.83	130	422180	101.5820 ug/L	99
36) Tetrahydrofuran	8.86	42	232444	189.0712 ug/L	99
38) 1,1,1-Trichloroethane	9.14	97	1472326	100.1419 ug/L	100
39) Cyclohexane	9.19	56	1317434	102.7956 ug/L	99
40) 1,1-Dichloropropene	9.35	75	1133310	102.1341 ug/L	99
41) Tert-Amyl-Methyl ether	9.48	73	3310930	190.0040 ug/L	100
42) Carbon Tetrachloride	9.48	117	1283430	100.2199 ug/L	99
45) 1,2-Dichloroethane	9.64	62	1100654	99.9644 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386642.D Vial: 10
Acq On : 29 Mar 2013 15:34 Operator: adc
Sample : WG425063-09 100.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:04:04 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	9.69	78	2686987	97.1080	ug/L	99
47)	Trichloroethene	10.45	130	702497	100.4498	ug/L	99
48)	Methylcyclohexane	10.55	83	1017636	101.9776	ug/L	99
49)	1,2-Dichloropropane	10.66	63	710588	98.2922	ug/L	98
50)	Bromodichloromethane	10.95	83	1184342	101.4736	ug/L	97
51)	1,4-Dioxane	10.94	88	14929	402.0893	ug/L	85
52)	Dibromomethane	11.02	93	384382	99.4529	ug/L	96
53)	2-Chloroethyl Vinyl Ether	11.28	63	339664	102.2577	ug/L	99
54)	4-Methyl-2-Pentanone	11.31	58	154936	98.1892	ug/L	97
55)	cis-1,3-Dichloropropene	11.60	75	1259935	99.5563	ug/L	100
56)	Dimethyl Disulfide	11.84	94	1214855	103.9704	ug/L	98
59)	Toluene	12.01	91	2927490	96.2983	ug/L	98
60)	Ethyl Methacrylate	12.15	69	620922	100.2216	ug/L	100
62)	trans-1,3-Dichloropropene	12.20	75	1170745	101.8811	ug/L	99
63)	1,1,2-Trichloroethane	12.41	97	493300	98.5794	ug/L	98
64)	2-Hexanone	12.36	58	145097	97.5232	ug/L	94
65)	1,3-Dichloropropane	12.71	76	918056	99.3132	ug/L	98
66)	Tetrachloroethene	12.84	164	637162	100.5321	ug/L	98
67)	Dibromochloromethane	13.07	129	746122	102.7397	ug/L	100
68)	1,2-Dibromoethane	13.33	107	532446	102.1857	ug/L	99
69)	1-Chlorohexane	13.47	91	922345	102.2588	ug/L	100
70)	Chlorobenzene	13.84	112	1962727	96.9932	ug/L	100
71)	1,1,1,2-Tetrachloroethane	13.87	131	800721	99.4695	ug/L	99
72)	Ethylbenzene	13.88	106	1108806	101.2765	ug/L	98
73)	m-,p-Xylene	13.98	106	2646458	199.1066	ug/L	98
74)	o-Xylene	14.53	106	1316816	101.1357	ug/L	99
75)	Styrene	14.57	104	2216002	103.1075	ug/L	99
76)	Bromoform	15.01	173	456398	100.3963	ug/L	100
77)	Isopropylbenzene	14.96	105	3387591	99.6414	ug/L	99
79)	1,1,2,2-Tetrachloroethane	15.16	83	532619	95.5417	ug/L	100
81)	1,2,3-Trichloropropane	15.34	110	181096	99.8698	ug/L	89
82)	trans-1,4-Dichloro-2-Buten	15.40	53	214707	101.2693	ug/L	95
83)	n-Propylbenzene	15.47	91	3938603	95.9097	ug/L	100
84)	Bromobenzene	15.56	156	815658	97.6447	ug/L	97
85)	1,3,5-Trimethylbenzene	15.65	105	2886446	97.6820	ug/L	98
86)	2-Chlorotoluene	15.71	91	2877274	97.4434	ug/L	94
87)	4-Chlorotoluene	15.77	91	2744725	99.5807	ug/L	99
88)	a-Methylstyrene	16.05	118	1481028	100.6791	ug/L	99
89)	tert-Butylbenzene	16.12	134	555788	100.9300	ug/L	99
90)	1,2,4-Trimethylbenzene	16.16	105	2961784	97.0375	ug/L	98
91)	sec-Butylbenzene	16.39	105	3175860	96.1981	ug/L	98
92)	p-Isopropyltoluene	16.54	119	2716989	98.4061	ug/L	99
93)	1,3-Dichlorobenzene	16.71	146	1567649	96.8898	ug/L	100
94)	1,4-Dichlorobenzene	16.83	146	1570253	93.3044	ug/L	100
95)	n-Butylbenzene	17.07	91	2443918	96.0523	ug/L	99
96)	1,2-Dichlorobenzene	17.32	146	1417087	96.7055	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	18.30	75	114564	96.1085	ug/L	97
98)	1,2,4-Trichlorobenzene	19.45	180	916581	98.1816	ug/L	99
99)	Hexachlorobutadiene	19.61	225	383457	101.4772	ug/L	98
100)	Naphthalene	19.79	128	1615792	96.6985	ug/L	99
101)	1,2,3-Trichlorobenzene	20.11	180	772955	99.8649	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M386642.D 8260WT.M Mon Apr 01 10:04:04 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386642.D Vial: 10
Acq On : 29 Mar 2013 15:34 Operator: adc
Sample : WG425063-09 100.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 10:04 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

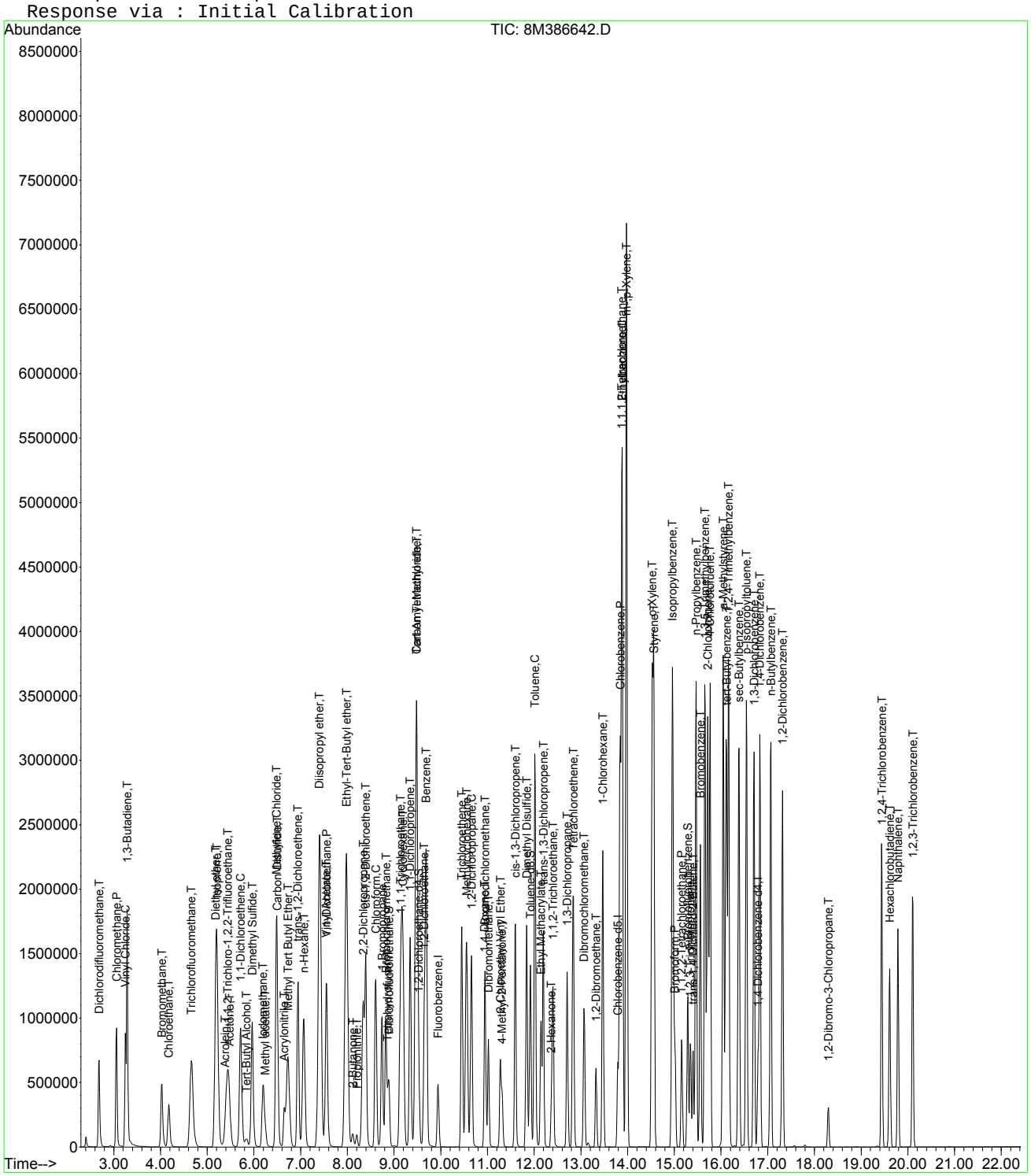

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386643.D Vial: 11
Acq On : 29 Mar 2013 16:04 Operator: adc
Sample : WG425063-10 200.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:04:05 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.95	96	605212	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.79	117	449728	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	245351	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	8.89	111	807354	97.6279 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 390.52%#		
43) 1,2-Dichloroethane-d4	9.52	65	901968	95.9227 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 383.68%#		
58) Toluene-d8	11.92	98	2549559	94.3502 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 377.40%#		
80) p-Bromofluorobenzene	15.28	95	1093317	97.0042 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 388.00%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.69	85	1772002	195.5124 ug/L	99
3) Chloromethane	3.06	50	2156479	182.8549 ug/L	99
4) Vinyl Chloride	3.25	62	1864310	189.0543 ug/L	99
5) 1,3-Butadiene	3.29	54	1820860	193.1587 ug/L	96
6) Bromomethane	4.02	94	1108789	217.5463 ug/L	100
7) Chloroethane	4.18	64	973214	210.9117 ug/L	99
8) Trichlorofluoromethane	4.66	101	2888794	206.5056 ug/L	100
9) Diethyl ether	5.18	59	6614	1.3894 ug/L	89
10) Isoprene	5.21	67	1949175	200.8074 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.44	101	1362455	198.2902 ug/L	99
13) Acetone	5.48	43	333248	195.9653 ug/L	99
14) 1,1-Dichloroethene	5.71	61	2570131	196.9650 ug/L	97
15) Tert-Butyl Alcohol	5.85	59	968	2.5310 ug/L #	57
16) Dimethyl Sulfide	5.96	62	1500245	199.4749 ug/L	98
17) Iodomethane	6.19	142	1887757	215.8345 ug/L	100
18) Methyl acetate	6.23	43	632500	189.6580 ug/L	98
19) Methylene Chloride	6.47	84	1358814	193.9739 ug/L	100
20) Carbon Disulfide	6.49	76	4447030	191.9797 ug/L	100
21) Acrylonitrile	6.72	53	34765	22.1047 ug/L #	18
22) Methyl Tert Butyl Ether	6.73	73	3401204	206.2648 ug/L	99
23) trans-1,2-Dichloroethene	6.94	61	2404375	201.9089 ug/L	100
24) n-Hexane	7.06	57	1807957	193.7933 ug/L	100
25) Diisopropyl ether	7.41	45	7411	0.2871 ug/L #	79
26) Vinyl Acetate	7.55	43	2241889	194.6340 ug/L	99
27) 1,1-Dichloroethane	7.56	63	2852882	202.5420 ug/L	99
28) Ethyl-Tert-Butyl ether	7.97	59	5821	0.2491 ug/L #	50
29) 2-Butanone	8.12	43	393683	199.6746 ug/L	97
30) Propionitrile	8.14	54	624	1.0641 ug/L #	1
31) 2,2-Dichloropropane	8.34	77	2874038	195.4864 ug/L	99
32) cis-1,2-Dichloroethene	8.39	96	1583434	206.2408 ug/L	95
33) Chloroform	8.60	83	2969462	190.7275 ug/L	98
34) 1-Bromopropane	8.75	122	337624	208.0167 ug/L	100
35) Bromochloromethane	8.82	130	867506	205.6551 ug/L	98
36) Tetrahydrofuran	8.85	42	1027	0.8230 ug/L #	39
38) 1,1,1-Trichloroethane	9.14	97	2939831	197.0072 ug/L	100
39) Cyclohexane	9.18	56	2639556	202.9198 ug/L	99
40) 1,1-Dichloropropene	9.35	75	2295101	203.7847 ug/L	99
41) Tert-Amyl-Methyl ether	9.49	73	5423	0.3066 ug/L #	67
42) Carbon Tetrachloride	9.48	117	2603655	200.3148 ug/L	100
45) 1,2-Dichloroethane	9.65	62	2188801	195.8612 ug/L	99
46) Benzene	9.69	78	5354711	190.6660 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386643.D Vial: 11
Acq On : 29 Mar 2013 16:04 Operator: adc
Sample : WG425063-10 200.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:04:05 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
47)	Trichloroethene	10.45	130	1439636	202.8174	ug/L		99
48)	Methylcyclohexane	10.56	83	2005010	197.9596	ug/L		99
49)	1,2-Dichloropropane	10.66	63	1452471	197.9505	ug/L		99
50)	Bromodichloromethane	10.95	83	2388723	201.6459	ug/L		98
51)	1,4-Dioxane	10.95	88	2908	91.7685	ug/L	#	25
52)	Dibromomethane	11.02	93	798872	203.6476	ug/L		95
53)	2-Chloroethyl Vinyl Ether	11.27	63	706506	209.5609	ug/L		99
54)	4-Methyl-2-Pentanone	11.31	58	340754	212.7649	ug/L		97
55)	cis-1,3-Dichloropropene	11.60	75	2552222	198.6949	ug/L		98
56)	Dimethyl Disulfide	11.84	94	2495703	210.4388	ug/L		99
59)	Toluene	12.01	91	5845985	185.5679	ug/L		97
60)	Ethyl Methacrylate	12.15	69	1315840	204.9506	ug/L		99
62)	trans-1,3-Dichloropropene	12.19	75	2390795	200.7684	ug/L		100
63)	1,1,2-Trichloroethane	12.41	97	1033071	199.2173	ug/L		97
64)	2-Hexanone	12.36	58	316038	204.9795	ug/L		98
65)	1,3-Dichloropropane	12.71	76	1894827	197.8013	ug/L		98
66)	Tetrachloroethene	12.83	164	1316812	200.4937	ug/L		98
67)	Dibromochloromethane	13.07	129	1560504	207.3552	ug/L		97
68)	1,2-Dibromoethane	13.33	107	1117299	206.9216	ug/L		100
69)	1-Chlorohexane	13.47	91	1864492	199.4755	ug/L		99
70)	Chlorobenzene	13.84	112	3939921	187.8843	ug/L		99
71)	1,1,1,2-Tetrachloroethane	13.87	131	1655089	198.4046	ug/L		99
72)	Ethylbenzene	13.88	106	2246281	197.9881	ug/L		94
73)	m-,p-Xylene	13.98	106	5308916	385.4324	ug/L		89
74)	o-Xylene	14.53	106	2698324	199.9841	ug/L		96
75)	Styrene	14.57	104	4464622	200.4594	ug/L		98
76)	Bromoform	15.01	173	959498	203.6760	ug/L		99
77)	Isopropylbenzene	14.96	105	6609528	187.6036	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.16	83	1118456	193.4215	ug/L		99
81)	1,2,3-Trichloropropane	15.34	110	373096	198.3605	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	15.40	53	452898	205.9403	ug/L		93
83)	n-Propylbenzene	15.47	91	7598040	178.3738	ug/L		97
84)	Bromobenzene	15.56	156	1707938	197.1161	ug/L		95
85)	1,3,5-Trimethylbenzene	15.66	105	5710791	186.3189	ug/L		97
86)	2-Chlorotoluene	15.71	91	6280171	205.0464	ug/L		90
87)	4-Chlorotoluene	15.77	91	4782456	167.2771	ug/L		88
88)	a-Methylstyrene	16.05	118	2984324	195.5832	ug/L		100
89)	tert-Butylbenzene	16.12	134	1150844	201.4823	ug/L		93
90)	1,2,4-Trimethylbenzene	16.16	105	5795433	183.0549	ug/L		96
91)	sec-Butylbenzene	16.39	105	6230045	181.9305	ug/L		96
92)	p-Isopropyltoluene	16.54	119	5324126	185.9054	ug/L		97
93)	1,3-Dichlorobenzene	16.71	146	3169939	188.8816	ug/L		100
94)	1,4-Dichlorobenzene	16.83	146	3185833	182.5009	ug/L		100
95)	n-Butylbenzene	17.07	91	4770937	180.7733	ug/L		98
96)	1,2-Dichlorobenzene	17.32	146	2868751	188.7369	ug/L		100
97)	1,2-Dibromo-3-Chloropropan	18.30	75	244857	198.0320	ug/L		93
98)	1,2,4-Trichlorobenzene	19.45	180	1888882	195.0623	ug/L		98
99)	Hexachlorobutadiene	19.61	225	795210	202.8817	ug/L		98
100)	Naphthalene	19.79	128	3370785	194.4800	ug/L		99
101)	1,2,3-Trichlorobenzene	20.11	180	1611335	200.7030	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M386643.D 8260WT.M Mon Apr 01 10:04:06 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386643.D Vial: 11
Acq On : 29 Mar 2013 16:04 Operator: adc
Sample : WG425063-10 200.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 10:04 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

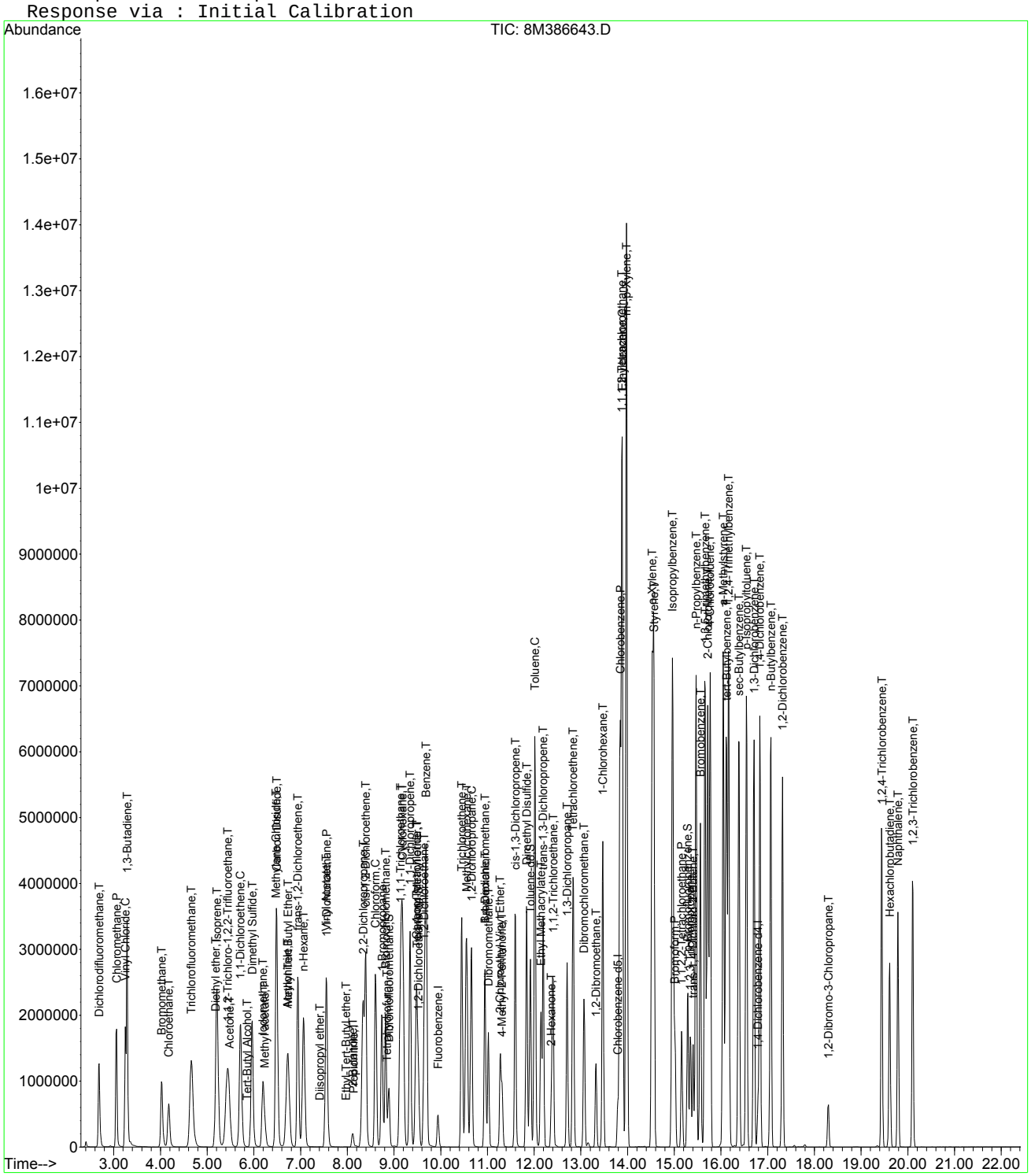

8M386643.D 8260WT.M Mon Apr 01 10:04:06 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386644.D Vial: 12
Acq On : 29 Mar 2013 16:35 Operator: adc
Sample : WG425063-11 300.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:04:07 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.94	96	611488	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.79	117	457457	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	248363	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	8.89	111	1182861	141.5673 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 566.28%#		
43) 1,2-Dichloroethane-d4	9.52	65	1293292	136.1277 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 544.52%#		
58) Toluene-d8	11.92	98	3760786	136.8221 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 547.28%#		
80) p-Bromofluorobenzene	15.28	95	1590732	139.4256 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 557.72%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.68	85	2462795	268.9415 ug/L	99
3) Chloromethane	3.05	50	3020671	253.5038 ug/L	99
4) Vinyl Chloride	3.25	62	2604070	261.3609 ug/L	97
5) 1,3-Butadiene	3.28	54	2457517	258.0202 ug/L	95
6) Bromomethane	4.01	94	1572683	305.3961 ug/L	100
7) Chloroethane	4.17	64	1374992	294.9254 ug/L	98
8) Trichlorofluoromethane	4.65	101	3970010	280.8849 ug/L	99
9) Diethyl ether	5.18	59	1332932	277.1353 ug/L	100
10) Isoprene	5.20	67	2724260	277.7775 ug/L	98
11) Acrolein	5.38	56	53036	301.2105 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	5.43	101	1872301	269.6958 ug/L	99
13) Acetone	5.48	43	488428	284.2705 ug/L	99
14) 1,1-Dichloroethene	5.71	61	3589627	272.2718 ug/L	96
15) Tert-Butyl Alcohol	5.84	59	219280	567.4585 ug/L	99
16) Dimethyl Sulfide	5.96	62	2158402	284.0390 ug/L	97
17) Iodomethane	6.20	142	2649281	299.7936 ug/L	99
18) Methyl acetate	6.24	43	955849	283.6740 ug/L	98
19) Methylene Chloride	6.47	84	1943493	274.5908 ug/L	98
20) Carbon Disulfide	6.50	76	6304940	269.3926 ug/L	99
21) Acrylonitrile	6.65	53	508869	320.2350 ug/L	100
22) Methyl Tert Butyl Ether	6.72	73	4764637	285.9841 ug/L	99
23) trans-1,2-Dichloroethene	6.94	61	3416707	283.9753 ug/L	99
24) n-Hexane	7.06	57	2511001	266.3895 ug/L	100
25) Diisopropyl ether	7.41	45	7123090	273.0878 ug/L	99
26) Vinyl Acetate	7.55	43	3261138	280.2162 ug/L	98
27) 1,1-Dichloroethane	7.56	63	4085081	287.0460 ug/L	99
28) Ethyl-Tert-Butyl ether	7.98	59	6564516	277.9858 ug/L	99
29) 2-Butanone	8.12	43	587416	294.8775 ug/L	96
30) Propionitrile	8.20	54	183774	310.1858 ug/L	99
31) 2,2-Dichloropropane	8.34	77	3957418	266.4131 ug/L	100
32) cis-1,2-Dichloroethene	8.40	96	2264113	291.8718 ug/L	94
33) Chloroform	8.60	83	4202590	267.1605 ug/L	98
34) 1-Bromopropane	8.74	122	488110	297.6475 ug/L	100
35) Bromochloromethane	8.82	130	1226225	287.7112 ug/L	98
36) Tetrahydrofuran	8.86	42	367736	291.6826 ug/L	97
38) 1,1,1-Trichloroethane	9.14	97	4081981	270.7387 ug/L	100
39) Cyclohexane	9.18	56	3795162	288.7643 ug/L	99
40) 1,1-Dichloropropene	9.35	75	3212650	282.3272 ug/L	97
41) Tert-Amyl-Methyl ether	9.48	73	5087395	284.6922 ug/L	99
42) Carbon Tetrachloride	9.48	117	3554971	270.6981 ug/L	100
45) 1,2-Dichloroethane	9.65	62	3069358	271.8375 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386644.D Vial: 12
Acq On : 29 Mar 2013 16:35 Operator: adc
Sample : WG425063-11 300.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:04:07 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	9.69	78	7465221	263.0871 ug/L	97
47)	Trichloroethene	10.46	130	2050255	285.8775 ug/L	99
48)	Methylcyclohexane	10.55	83	2899463	283.3330 ug/L	98
49)	1,2-Dichloropropane	10.65	63	2100454	283.3231 ug/L	96
50)	Bromodichloromethane	10.95	83	3317509	277.1758 ug/L	99
51)	1,4-Dioxane	10.94	88	22756	588.8728 ug/L	89
52)	Dibromomethane	11.01	93	1123668	283.5044 ug/L	94
53)	2-Chloroethyl Vinyl Ether	11.27	63	1043746	306.4141 ug/L	99
54)	4-Methyl-2-Pentanone	11.31	58	497449	307.4165 ug/L	98
55)	cis-1,3-Dichloropropene	11.59	75	3601627	277.5151 ug/L	98
56)	Dimethyl Disulfide	11.84	94	3584094	299.1107 ug/L	100
59)	Toluene	12.02	91	8121700	253.4496 ug/L	95
60)	Ethyl Methacrylate	12.15	69	1898538	290.7133 ug/L	98
62)	trans-1,3-Dichloropropene	12.19	75	3341641	275.8750 ug/L	99
63)	1,1,2-Trichloroethane	12.40	97	1498846	284.1539 ug/L	97
64)	2-Hexanone	12.37	58	455686	290.5605 ug/L	98
65)	1,3-Dichloropropane	12.71	76	2683799	275.4288 ug/L	97
66)	Tetrachloroethene	12.83	164	1888292	282.6479 ug/L	97
67)	Dibromochloromethane	13.07	129	2199585	287.3363 ug/L	99
68)	1,2-Dibromoethane	13.32	107	1588244	289.1700 ug/L	100
69)	1-Chlorohexane	13.47	91	2670791	280.9109 ug/L	99
70)	Chlorobenzene	13.84	112	5529130	259.2146 ug/L	98
71)	1,1,1,2-Tetrachloroethane	13.88	131	2306420	271.8118 ug/L	100
72)	Ethylbenzene	13.89	106	3207612	277.9435 ug/L	87
73)	m-,p-Xylene	13.98	106	7406731	528.6504 ug/L	80
74)	o-Xylene	14.53	106	3830857	279.1239 ug/L	91
75)	Styrene	14.56	104	6286052	277.4721 ug/L	99
76)	Bromoform	15.01	173	1384147	288.8534 ug/L	100
77)	Isopropylbenzene	14.96	105	9037689	252.1899 ug/L	95
79)	1,1,2,2-Tetrachloroethane	15.16	83	1605994	274.3662 ug/L	99
81)	1,2,3-Trichloropropane	15.35	110	533846	280.3829 ug/L	95
82)	trans-1,4-Dichloro-2-Buten	15.41	53	649286	291.6608 ug/L	93
83)	n-Propylbenzene	15.47	91	10246391	237.6301 ug/L	94
84)	Bromobenzene	15.56	156	2437937	277.9543 ug/L	94
85)	1,3,5-Trimethylbenzene	15.66	105	7909556	254.9257 ug/L	95
86)	2-Chlorotoluene	15.72	91	8012385	258.4302 ug/L	97
87)	4-Chlorotoluene	15.77	91	7341474	253.6704 ug/L	94
88)	a-Methylstyrene	16.05	118	4375357	283.2697 ug/L	100
89)	tert-Butylbenzene	16.11	134	1636911	283.1042 ug/L	91
90)	1,2,4-Trimethylbenzene	16.16	105	7974985	248.8435 ug/L	93
91)	sec-Butylbenzene	16.38	105	8638109	249.1920 ug/L	95
92)	p-Isopropyltoluene	16.55	119	7419806	255.9395 ug/L	95
93)	1,3-Dichlorobenzene	16.71	146	4542858	267.4046 ug/L	100
94)	1,4-Dichlorobenzene	16.83	146	4552398	257.6221 ug/L	99
95)	n-Butylbenzene	17.06	91	6674691	249.8404 ug/L	96
96)	1,2-Dichlorobenzene	17.32	146	4106087	266.8659 ug/L	100
97)	1,2-Dibromo-3-Chloropropan	18.29	75	352107	281.3186 ug/L	92
98)	1,2,4-Trichlorobenzene	19.44	180	2678407	273.2412 ug/L	98
99)	Hexachlorobutadiene	19.62	225	1144919	288.5604 ug/L	97
100)	Naphthalene	19.79	128	4712697	268.6051 ug/L	98
101)	1,2,3-Trichlorobenzene	20.10	180	2301095	283.1414 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M386644.D 8260WT.M Mon Apr 01 10:04:07 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386644.D Vial: 12
Acq On : 29 Mar 2013 16:35 Operator: adc
Sample : WG425063-11 300.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 10:04 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

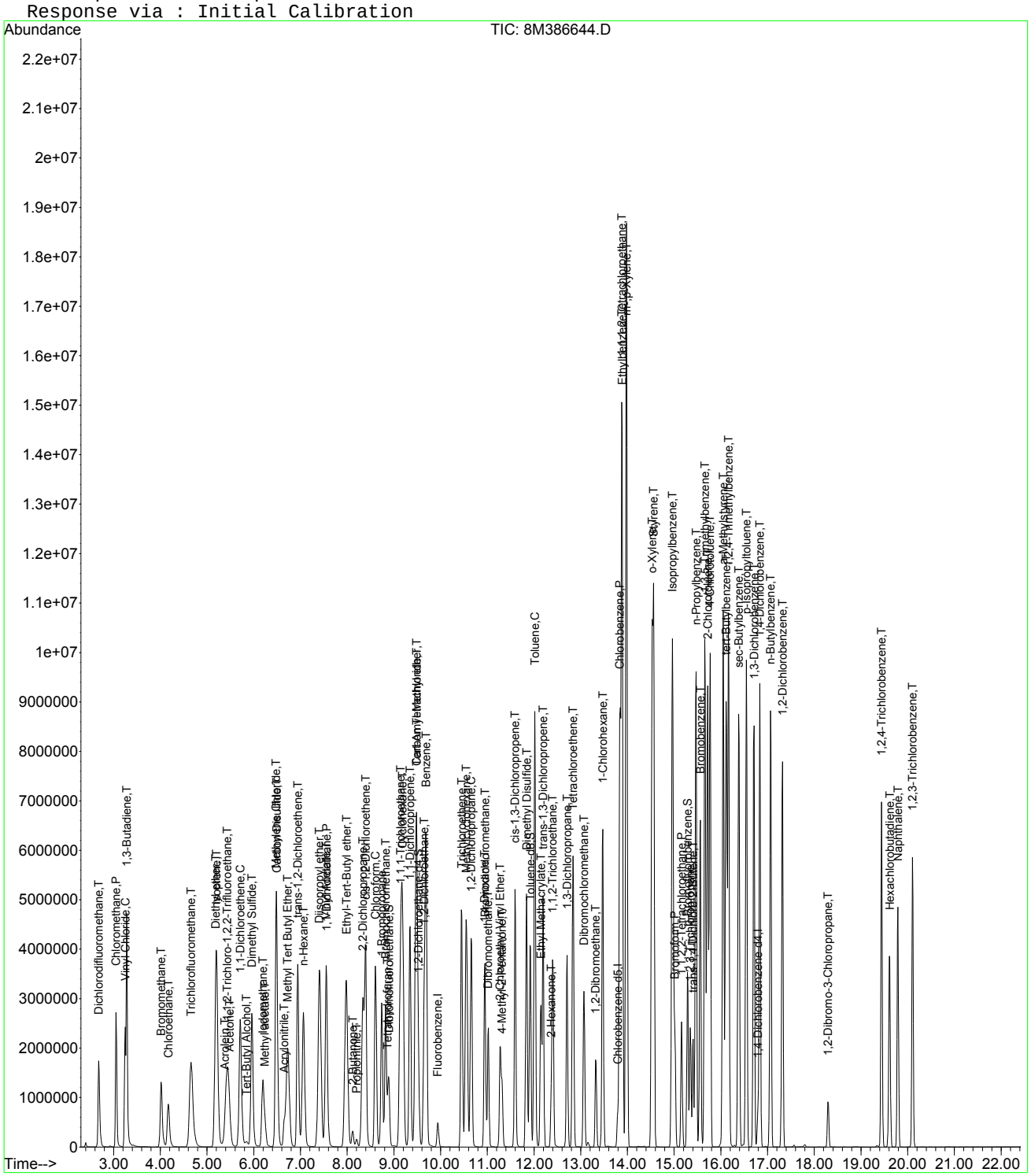

8M386644.D 8260WT.M Mon Apr 01 10:04:08 2013 Page 3

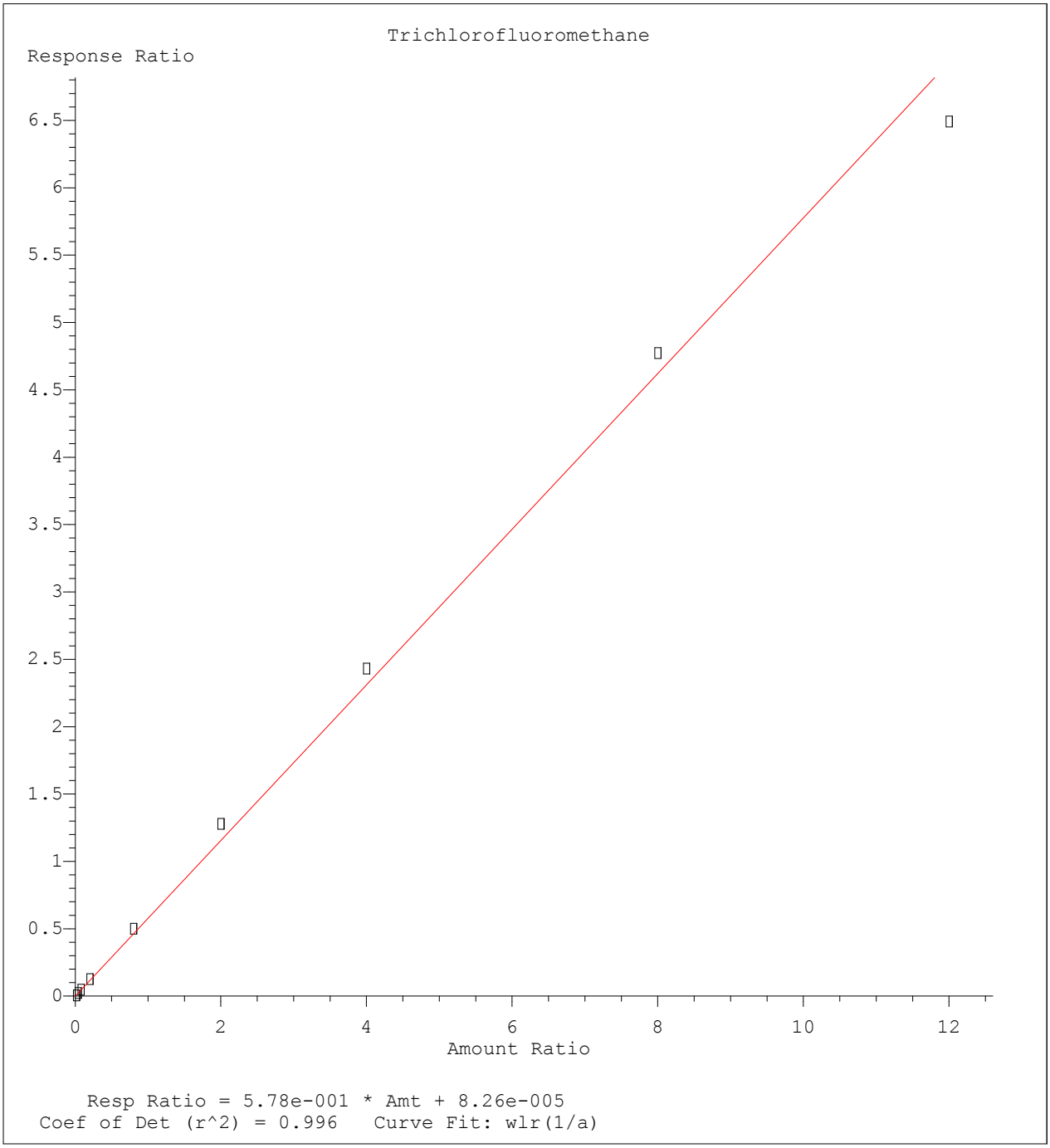

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Mon Apr 01 10:00:57 2013

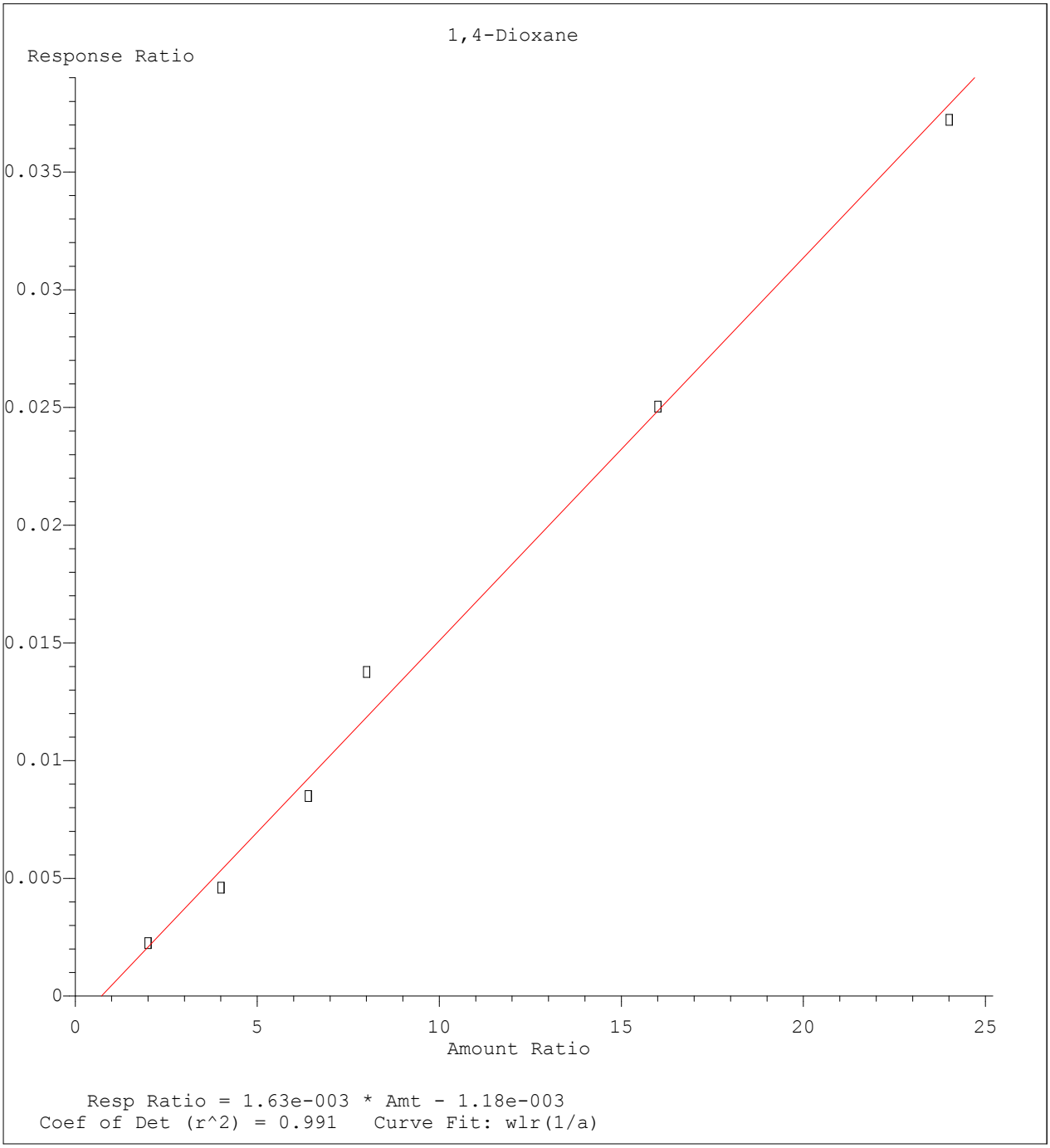

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Mon Apr 01 10:00:57 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386646.D Vial: 14
Acq On : 29 Mar 2013 17:36 Operator: adc
Sample : WG425063-12 50.0ug/L ALTSRC 8260 Inst : HPMS8
Misc : 1,1 STD57021 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:02:17 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.94	96	582726	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.79	117	429529	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	234305	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	8.89	111	193077	24.2484 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.00%		
43) 1,2-Dichloroethane-d4	9.52	65	214127	23.6508 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.60%		
58) Toluene-d8	11.91	98	632952	24.5248 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.08%		
80) p-Bromofluorobenzene	15.28	95	268413	24.9376 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.76%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.68	85	608458	69.7242 ug/L	100
3) Chloromethane	3.05	50	548941	48.3426 ug/L	99
4) Vinyl Chloride	3.25	62	473183	49.8357 ug/L	98
5) 1,3-Butadiene	3.28	54	405460	44.6713 ug/L	96
6) Bromomethane	4.02	94	247467	50.4270 ug/L	99
7) Chloroethane	4.17	64	259945	58.5082 ug/L	99
8) Trichlorofluoromethane	4.65	101	732743	54.3988 ug/L	98
9) Diethyl ether	5.18	59	395649	86.3212 ug/L	100
10) Isoprene	5.20	67	434922	46.5354 ug/L	98
11) Acrolein	5.38	56	41357	246.4745 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	5.44	101	359248	54.3021 ug/L	96
13) Acetone	5.48	43	70871	43.2836 ug/L	96
14) 1,1-Dichloroethene	5.71	61	627125	49.9150 ug/L	97
15) Tert-Butyl Alcohol	5.84	59	79617	216.2044 ug/L	96
16) Dimethyl Sulfide	5.96	62	403396	55.7059 ug/L	96
17) Iodomethane	6.19	142	509212	60.4667 ug/L	100
18) Methyl acetate	6.24	43	163113	50.7975 ug/L	98
19) Methylene Chloride	6.47	84	343272	50.8938 ug/L	97
20) Carbon Disulfide	6.49	76	1028935	46.1335 ug/L	100
21) Acrylonitrile	6.65	53	87771	57.9612 ug/L	99
22) Methyl Tert Butyl Ether	6.73	73	824355	51.9218 ug/L	99
23) trans-1,2-Dichloroethene	6.94	61	581246	50.6940 ug/L	99
24) n-Hexane	7.06	57	430925	47.9728 ug/L	98
25) Diisopropyl ether	7.41	45	2290158	92.1346 ug/L	98
26) Vinyl Acetate	7.55	43	589484	53.1520 ug/L	99
27) 1,1-Dichloroethane	7.56	63	677529	49.9577 ug/L	99
28) Ethyl-Tert-Butyl ether	7.98	59	2086935	92.7368 ug/L	100
29) 2-Butanone	8.12	43	98941	52.1190 ug/L	99
30) Propionitrile	8.20	54	57575	101.9754 ug/L	99
31) 2,2-Dichloropropane	8.33	77	672986	47.5415 ug/L	99
32) cis-1,2-Dichloroethene	8.40	96	385203	52.1083 ug/L	96
33) Chloroform	8.60	83	728979	48.6288 ug/L	99
34) 1-Bromopropane	8.74	122	81503	52.1533 ug/L	97
35) Bromochloromethane	8.82	130	213789	52.6375 ug/L	98
36) Tetrahydrofuran	8.86	42	117819	98.0648 ug/L	98
38) 1,1,1-Trichloroethane	9.14	97	715538	49.8007 ug/L	100
39) Cyclohexane	9.18	56	593146	47.3585 ug/L	98
40) 1,1-Dichloropropene	9.35	75	552146	50.9175 ug/L	100
41) Tert-Amyl-Methyl ether	9.48	73	1661456	97.5646 ug/L	99
42) Carbon Tetrachloride	9.48	117	616660	49.2741 ug/L	98
45) 1,2-Dichloroethane	9.65	62	547064	50.8421 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386646.D Vial: 14
Acq On : 29 Mar 2013 17:36 Operator: adc
Sample : WG425063-12 50.0ug/L ALTSRC 8260 Inst : HPMS8
Misc : 1,1 STD57021 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 10:02:17 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	9.69	78	1360908	50.3279	ug/L	99
47)	Trichloroethene	10.45	130	383256	56.0770	ug/L	99
48)	Methylcyclohexane	10.55	83	493396	50.5940	ug/L	99
49)	1,2-Dichloropropane	10.65	63	366302	51.8480	ug/L	97
50)	Bromodichloromethane	10.95	83	568203	49.8162	ug/L	98
51)	1,4-Dioxane	10.95	88	7502	215.5345	ug/L	95
52)	Dibromomethane	11.02	93	194099	51.3888	ug/L	93
53)	2-Chloroethyl Vinyl Ether	11.27	63	171634	52.8738	ug/L	98
54)	4-Methyl-2-Pentanone	11.31	58	79965	51.8564	ug/L	95
55)	cis-1,3-Dichloropropene	11.59	75	666959	53.9275	ug/L	99
56)	Dimethyl Disulfide	11.84	94	625604	54.7868	ug/L	99
59)	Toluene	12.02	91	1526890	50.7470	ug/L	99
60)	Ethyl Methacrylate	12.15	69	347057	56.5984	ug/L	95
62)	trans-1,3-Dichloropropene	12.19	75	571016	50.2064	ug/L	100
63)	1,1,2-Trichloroethane	12.40	97	268123	54.1363	ug/L	98
64)	2-Hexanone	12.37	58	76885	52.2120	ug/L	94
65)	1,3-Dichloropropane	12.71	76	488210	53.3610	ug/L	94
66)	Tetrachloroethene	12.83	164	321644	51.2755	ug/L	97
67)	Dibromochloromethane	13.07	129	374181	52.0582	ug/L	97
68)	1,2-Dibromoethane	13.32	107	276730	53.6599	ug/L	99
69)	1-Chlorohexane	13.47	91	486328	54.4773	ug/L	98
70)	Chlorobenzene	13.83	112	948191	47.3431	ug/L	100
71)	1,1,1,2-Tetrachloroethane	13.88	131	417093	52.3505	ug/L	99
72)	Ethylbenzene	13.89	106	559598	51.6427	ug/L	100
73)	m-,p-Xylene	13.98	106	1321995	100.4916	ug/L	99
74)	o-Xylene	14.53	106	622974	48.3425	ug/L	99
75)	Styrene	14.56	104	1143215	53.7436	ug/L	98
76)	Bromoform	15.01	173	235831	52.4148	ug/L	100
77)	Isopropylbenzene	14.96	105	1626460	48.3361	ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.16	83	289581	52.4399	ug/L	99
81)	1,2,3-Trichloropropane	15.34	110	92019	51.2293	ug/L	92
82)	trans-1,4-Dichloro-2-Buten	15.40	53	90576	43.1281	ug/L	95
83)	n-Propylbenzene	15.46	91	1860665	45.7408	ug/L	100
84)	Bromobenzene	15.56	156	422638	51.0769	ug/L	95
85)	1,3,5-Trimethylbenzene	15.65	105	1538501	52.5611	ug/L	99
86)	2-Chlorotoluene	15.72	91	1273247	43.5311	ug/L	94
87)	4-Chlorotoluene	15.77	91	1257246	46.0481	ug/L	92
88)	a-Methylstyrene	16.05	118	775190	53.1986	ug/L	99
89)	tert-Butylbenzene	16.11	134	267123	48.9709	ug/L	94
90)	1,2,4-Trimethylbenzene	16.16	105	1552290	51.3422	ug/L	99
91)	sec-Butylbenzene	16.38	105	1547532	47.3217	ug/L	99
92)	p-Isopropyltoluene	16.54	119	1331327	48.6782	ug/L	99
93)	1,3-Dichlorobenzene	16.71	146	755528	47.1406	ug/L	99
94)	1,4-Dichlorobenzene	16.83	146	819164	49.1382	ug/L	99
95)	n-Butylbenzene	17.06	91	1297149	51.4667	ug/L	99
96)	1,2-Dichlorobenzene	17.32	146	685098	47.1979	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	18.29	75	62610	53.0240	ug/L	98
98)	1,2,4-Trichlorobenzene	19.44	180	472596	51.1052	ug/L	99
99)	Hexachlorobutadiene	19.61	225	200272	53.5042	ug/L	98
100)	Naphthalene	19.79	128	861493	52.0477	ug/L	99
101)	1,2,3-Trichlorobenzene	20.10	180	404442	52.7510	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M386646.D 8260WT.M Mon Apr 01 10:02:18 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032913\8M386646.D Vial: 14
Acq On : 29 Mar 2013 17:36 Operator: adc
Sample : WG425063-12 50.0ug/L ALTSRC 8260 Inst : HPMS8
Misc : 1,1 STD57021 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 10:02 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

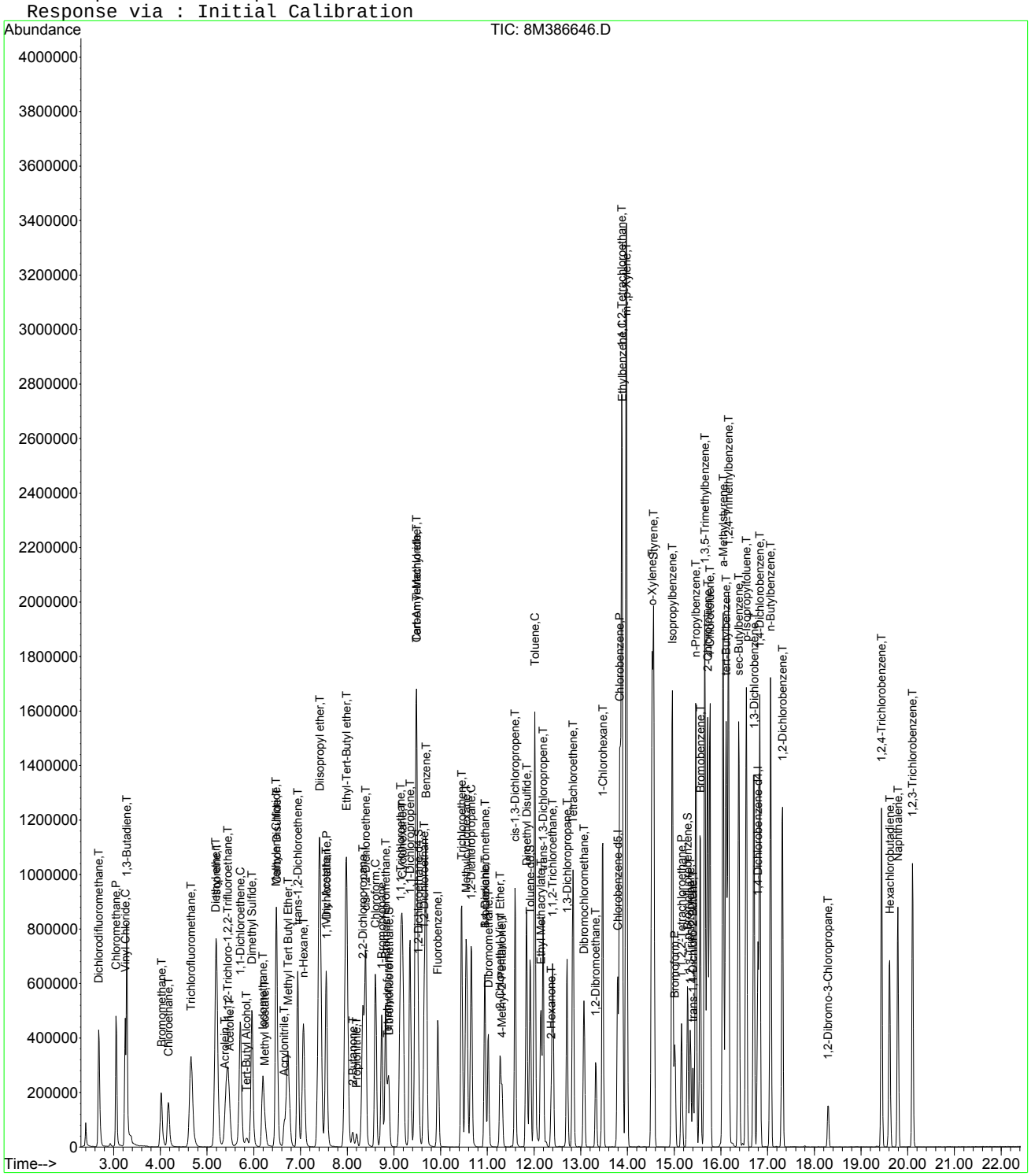

8M386646.D 8260WT.M Mon Apr 01 10:02:18 2013 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032913\8M386646.D Vial: 14
Acq On : 29 Mar 2013 17:36 Operator: adc
Sample : WG425063-12 50.0ug/L ALTSRC 8260 Inst : HPMS8
Misc : 1,1 STD57021 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	102	0.00
2	T	Dichlorodifluoromethane	50.0000	69.7242	-39.4#	134	0.00
3	P	Chloromethane	50.0000	48.3426	3.3	102	0.00
4	C	Vinyl Chloride	50.0000	49.8357	0.3	101	0.00
5	T	1,3-Butadiene	50.0000	44.6713	10.7	85	0.00
6	T	Bromomethane	50.0000	50.4270	-0.9	97	0.00
7	T	Chloroethane	50.0000	58.5082	-17.0	109	0.00
8	T	Trichlorofluoromethane	50.0000	54.3988	-8.8	100	0.00
9	T	Diethyl ether	100.0000	86.3212	13.7	89	0.00
10	T	Isoprene	50.0000	46.5354	6.9	94	0.00
11	T	Acrolein	100.0000	246.4745	-146.5#	258	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.3021	-8.6	108	0.00
13	T	Acetone	50.0000	43.2836	13.4	85	0.00
14	C	1,1-Dichloroethene	50.0000	49.9150	0.2	97	0.00
15	T	Tert-Butyl Alcohol	200.0000	216.2044	-8.1	118	0.00
16	T	Dimethyl Sulfide	50.0000	55.7058	-11.4	110	0.00
17	T	Iodomethane	50.0000	60.4667	-20.9	113	0.00
18	T	Methyl acetate	50.0000	50.7975	-1.6	105	0.00
19	T	Methylene Chloride	50.0000	50.8938	-1.8	103	0.00
20	T	Carbon Disulfide	50.0000	46.1335	7.7	93	0.00
21	T	Acrylonitrile	100.0000	57.9612	42.0#	58	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.9218	-3.8	100	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.6940	-1.4	102	0.00
24	T	n-Hexane	50.0000	47.9729	4.1	93	0.00
25	T	Diisopropyl ether	100.0000	92.1346	7.9	95	0.00
26	T	Vinyl Acetate	50.0000	53.1520	-6.3	102	0.00
27	P	1,1-Dichloroethane	50.0000	49.9577	0.1	99	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	92.7368	7.3	95	0.00
29	T	2-Butanone	50.0000	52.1189	-4.2	103	0.00
30	T	Propionitrile	100.0000	101.9754	-2.0	104	0.00
31	T	2,2-Dichloropropane	50.0000	47.5415	4.9	93	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.1084	-4.2	103	0.00
33	C	Chloroform	50.0000	48.6288	2.7	98	0.00
34		1-Bromopropane	50.0000	52.1533	-4.3	102	0.00
35	T	Bromochloromethane	50.0000	52.6375	-5.3	101	0.00
36	T	Tetrahydrofuran	100.0000	98.0648	1.9	100	0.00
37	S	Dibromofluoromethane	25.0000	24.2484	3.0	99	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.8007	0.4	98	0.00
39	T	Cyclohexane	50.0000	47.3585	5.3	94	0.00
40	T	1,1-Dichloropropene	50.0000	50.9175	-1.8	99	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	97.5647	2.4	100	0.00
42	T	Carbon Tetrachloride	50.0000	49.2741	1.5	97	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.6508	5.4	91	0.00
44		Heptane	50.0000	0.0000	100.0#	0	-2.44#
45	T	1,2-Dichloroethane	50.0000	50.8421	-1.7	100	0.00
46	T	Benzene	50.0000	50.3279	-0.7	102	0.00
47	T	Trichloroethene	50.0000	56.0770	-12.2	111	0.00
48	T	Methylcyclohexane	50.0000	50.5940	-1.2	100	0.00
49	C	1,2-Dichloropropane	50.0000	51.8479	-3.7	104	0.00
50	T	Bromodichloromethane	50.0000	49.8162	0.4	96	0.00
51	T	1,4-Dioxane	200.0000	215.5345	-7.8	96	0.01
52	T	Dibromomethane	50.0000	51.3888	-2.8	98	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.8738	-5.7	101	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8564	-3.7	93	0.00
55	T	cis-1,3-Dichloropropene	50.0000	53.9275	-7.9	105	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032913\8M386646.D Vial: 14
Acq On : 29 Mar 2013 17:36 Operator: adc
Sample : WG425063-12 50.0ug/L ALTSRC 8260 Inst : HPMS8
Misc : 1,1 STD57021 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	50.0000	54.7867	-9.6	104	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	102	0.00
58	S	Toluene-d8	25.0000	24.5248	1.9	97	0.00
59	C	Toluene	50.0000	50.7470	-1.5	102	0.00
60	T	Ethyl Methacrylate	50.0000	56.5984	-13.2	108	0.00
61		Paraldehyde	100.0000	0.0000	100.0#	0	-12.31#
62	T	trans-1,3-Dichloropropene	50.0000	50.2064	-0.4	97	0.00
63	T	1,1,2-Trichloroethane	50.0000	54.1363	-8.3	105	0.00
64	T	2-Hexanone	50.0000	52.2120	-4.4	98	0.00
65	T	1,3-Dichloropropane	50.0000	53.3610	-6.7	105	0.00
66	T	Tetrachloroethene	50.0000	51.2755	-2.6	101	0.00
67	T	Dibromochloromethane	50.0000	52.0582	-4.1	100	0.00
68	T	1,2-Dibromoethane	50.0000	53.6599	-7.3	103	0.00
69	T	1-Chlorohexane	50.0000	54.4773	-9.0	105	0.00
70	P	Chlorobenzene	50.0000	47.3430	5.3	96	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.3505	-4.7	104	0.00
72	C	Ethylbenzene	50.0000	51.6427	-3.3	101	0.00
73	T	m-,p-Xylene	100.0000	100.4916	-0.5	98	0.00
74	T	o-Xylene	50.0000	48.3425	3.3	94	0.00
75	T	Styrene	50.0000	53.7437	-7.5	103	0.00
76	P	Bromoform	50.0000	52.4148	-4.8	104	0.00
77	T	Isopropylbenzene	50.0000	48.3361	3.3	95	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	104	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	52.4399	-4.9	106	0.00
80	S	p-Bromofluorobenzene	25.0000	24.9376	0.2	100	0.00
81	T	1,2,3-Trichloropropane	50.0000	51.2293	-2.5	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	43.1281	13.7	79	0.00
83	T	n-Propylbenzene	50.0000	45.7408	8.5	93	0.00
84	T	Bromobenzene	50.0000	51.0769	-2.2	104	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.5611	-5.1	104	0.00
86	T	2-Chlorotoluene	50.0000	43.5311	12.9	99	0.00
87	T	4-Chlorotoluene	50.0000	46.0482	7.9	91	0.00
88	T	a-Methylstyrene	50.0000	53.1986	-6.4	105	0.00
89	T	tert-Butylbenzene	50.0000	48.9709	2.1	96	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.3422	-2.7	104	0.00
91	T	sec-Butylbenzene	50.0000	47.3217	5.4	96	0.00
92	T	p-Isopropyltoluene	50.0000	48.6782	2.6	97	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.1407	5.7	96	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.1382	1.7	104	0.00
95	T	n-Butylbenzene	50.0000	51.4667	-2.9	104	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.1979	5.6	96	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	53.0240	-6.0	105	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.1052	-2.2	103	0.00
99	T	Hexachlorobutadiene	50.0000	53.5042	-7.0	104	0.00
100	T	Naphthalene	50.0000	52.0477	-4.1	103	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	52.7510	-5.5	104	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M386646.D 8260WT.M Mon Apr 01 10:02:20 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041813\8M387136.D Vial: 3
Acq On : 18 Apr 2013 18:24 Operator: TMB
Sample : WG427302-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD57388 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 18 18:47:07 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.94	96	535381	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.79	117	392513	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	216751	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	8.89	111	177256	24.2301 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.92%		
43) 1,2-Dichloroethane-d4	9.52	65	200716	24.1300 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.52%		
58) Toluene-d8	11.92	98	590932	25.0560 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.24%		
80) p-Bromofluorobenzene	15.28	95	255211	25.6313 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.52%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.69	85	396850	49.4972 ug/L	99
3) Chloromethane	3.06	50	486663	46.6481 ug/L	97
4) Vinyl Chloride	3.25	62	403925	46.3035 ug/L	99
5) 1,3-Butadiene	3.30	54	418528	50.1888 ug/L	96
6) Bromomethane	4.03	94	212837	47.2057 ug/L	100
7) Chloroethane	4.19	64	208172	50.9987 ug/L	99
8) Trichlorofluoromethane	4.66	101	652735	52.7442 ug/L	99
9) Diethyl ether	5.18	59	370457	87.9725 ug/L	99
10) Isoprene	5.21	67	419551	48.8605 ug/L	98
11) Acrolein	5.37	56	9859	63.9525 ug/L	84
12) 1,1,2-Trichloro-1,2,2-Trif	5.44	101	303969	50.0095 ug/L	99
13) Acetone	5.48	43	72220	48.0080 ug/L	94
14) 1,1-Dichloroethene	5.72	61	599916	51.9719 ug/L	99
15) Tert-Butyl Alcohol	5.84	59	58048	171.5724 ug/L	98
16) Dimethyl Sulfide	5.96	62	324822	48.8221 ug/L	99
17) Iodomethane	6.19	142	362724	46.8809 ug/L	95
18) Methyl acetate	6.24	43	170099	57.6577 ug/L	100
19) Methylene Chloride	6.48	84	301749	48.6938 ug/L	97
20) Carbon Disulfide	6.50	76	1014574	49.5123 ug/L	100
21) Acrylonitrile	6.66	53	71314	51.2581 ug/L	95
22) Methyl Tert Butyl Ether	6.73	73	680766	46.6697 ug/L	100
23) trans-1,2-Dichloroethene	6.95	61	528247	50.1458 ug/L	100
24) n-Hexane	7.07	57	451047	54.6534 ug/L	99
25) Diisopropyl ether	7.40	45	2067851	90.5479 ug/L	100
26) Vinyl Acetate	7.55	43	280559	27.5343 ug/L	99
27) 1,1-Dichloroethane	7.56	63	621832	49.9056 ug/L	99
28) Ethyl-Tert-Butyl ether	7.98	59	1817535	87.9078 ug/L	99
29) 2-Butanone	8.11	43	77463	44.4135 ug/L	99
30) Propionitrile	8.20	54	46983	90.5740 ug/L	99
31) 2,2-Dichloropropane	8.34	77	666989	51.2846 ug/L	98
32) cis-1,2-Dichloroethene	8.39	96	332727	48.9900 ug/L	99
33) Chloroform	8.61	83	657476	47.7376 ug/L	98
34) 1-Bromopropane	8.74	122	67773	47.2026 ug/L	96
35) Bromochloromethane	8.82	130	179159	48.0120 ug/L	96
36) Tetrahydrofuran	8.86	42	97531	88.3572 ug/L	100
38) 1,1,1-Trichloroethane	9.14	97	647610	49.0589 ug/L	99
39) Cyclohexane	9.19	56	575936	50.0510 ug/L	99
40) 1,1-Dichloropropene	9.34	75	498511	50.0367 ug/L	99
41) Tert-Amyl-Methyl ether	9.48	73	1365552	87.2797 ug/L	100
42) Carbon Tetrachloride	9.48	117	569953	49.5693 ug/L	100
45) 1,2-Dichloroethane	9.64	62	484817	49.0416 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041813\8M387136.D Vial: 3
Acq On : 18 Apr 2013 18:24 Operator: TMB
Sample : WG427302-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD57388 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 18 18:47:07 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	9.69	78	1186085	47.7417	ug/L	99
47)	Trichloroethene	10.45	130	306989	48.8900	ug/L	99
48)	Methylcyclohexane	10.55	83	478667	53.4242	ug/L	99
49)	1,2-Dichloropropane	10.66	63	308889	47.5879	ug/L	99
50)	Bromodichloromethane	10.95	83	515948	49.2350	ug/L	98
51)	1,4-Dioxane	10.95	88	7176	223.6571	ug/L	85
52)	Dibromomethane	11.02	93	172645	49.7509	ug/L	99
53)	2-Chloroethyl Vinyl Ether	11.28	63	138409	46.4091	ug/L	99
54)	4-Methyl-2-Pentanone	11.31	58	64642	45.6266	ug/L	98
55)	cis-1,3-Dichloropropene	11.60	75	549938	48.3979	ug/L	100
56)	Dimethyl Disulfide	11.84	94	524621	50.0061	ug/L	100
59)	Toluene	12.01	91	1318915	47.9687	ug/L	100
60)	Ethyl Methacrylate	12.15	69	279028	49.7955	ug/L	100
62)	trans-1,3-Dichloropropene	12.20	75	512448	49.3059	ug/L	99
63)	1,1,2-Trichloroethane	12.41	97	211405	46.7098	ug/L	96
64)	2-Hexanone	12.36	58	61259	45.5236	ug/L	92
65)	1,3-Dichloropropane	12.70	76	411910	49.2672	ug/L	97
66)	Tetrachloroethene	12.84	164	282806	49.3357	ug/L	98
67)	Dibromochloromethane	13.07	129	327661	49.8851	ug/L	98
68)	1,2-Dibromoethane	13.33	107	234088	49.6720	ug/L	99
69)	1-Chlorohexane	13.47	91	440155	53.9549	ug/L	99
70)	Chlorobenzene	13.84	112	882713	48.2301	ug/L	99
71)	1,1,1,2-Tetrachloroethane	13.87	131	360313	49.4887	ug/L	99
72)	Ethylbenzene	13.88	106	499766	50.4705	ug/L	99
73)	m-,p-Xylene	13.98	106	1215037	101.0713	ug/L	99
74)	o-Xylene	14.52	106	602571	51.1688	ug/L	99
75)	Styrene	14.56	104	1000631	51.4768	ug/L	99
76)	Bromoform	15.01	173	192851	46.9044	ug/L	99
77)	Isopropylbenzene	14.96	105	1582557	51.4667	ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.16	83	232019	45.4188	ug/L	100
81)	1,2,3-Trichloropropane	15.34	110	78353	47.1538	ug/L	91
82)	trans-1,4-Dichloro-2-Buten	15.40	53	98021	50.4530	ug/L	94
83)	n-Propylbenzene	15.47	91	1870600	49.7092	ug/L	99
84)	Bromobenzene	15.56	156	357540	46.7091	ug/L	96
85)	1,3,5-Trimethylbenzene	15.65	105	1385385	51.1632	ug/L	100
86)	2-Chlorotoluene	15.71	91	1189776	43.9716	ug/L	100
87)	4-Chlorotoluene	15.77	91	1271154	50.3281	ug/L	100
88)	a-Methylstyrene	16.04	118	689473	51.1481	ug/L	99
89)	tert-Butylbenzene	16.11	134	259805	51.4866	ug/L	99
90)	1,2,4-Trimethylbenzene	16.16	105	1388784	49.6543	ug/L	99
91)	sec-Butylbenzene	16.38	105	1539108	50.8757	ug/L	100
92)	p-Isopropyltoluene	16.54	119	1304818	51.5728	ug/L	99
93)	1,3-Dichlorobenzene	16.71	146	722001	48.6971	ug/L	100
94)	1,4-Dichlorobenzene	16.83	146	719488	46.6544	ug/L	99
95)	n-Butylbenzene	17.06	91	1208960	51.8524	ug/L	100
96)	1,2-Dichlorobenzene	17.32	146	642447	47.8441	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	18.30	75	52002	47.6069	ug/L	98
98)	1,2,4-Trichlorobenzene	19.44	180	436839	51.0642	ug/L	98
99)	Hexachlorobutadiene	19.61	225	182623	52.7404	ug/L	98
100)	Naphthalene	19.79	128	747054	48.7891	ug/L	100
101)	1,2,3-Trichlorobenzene	20.10	180	363402	51.2368	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M387136.D 8260WT.M Thu Apr 18 18:47:08 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041813\8M387136.D Vial: 3
Acq On : 18 Apr 2013 18:24 Operator: TMB
Sample : WG427302-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD57388 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 18 18:47 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

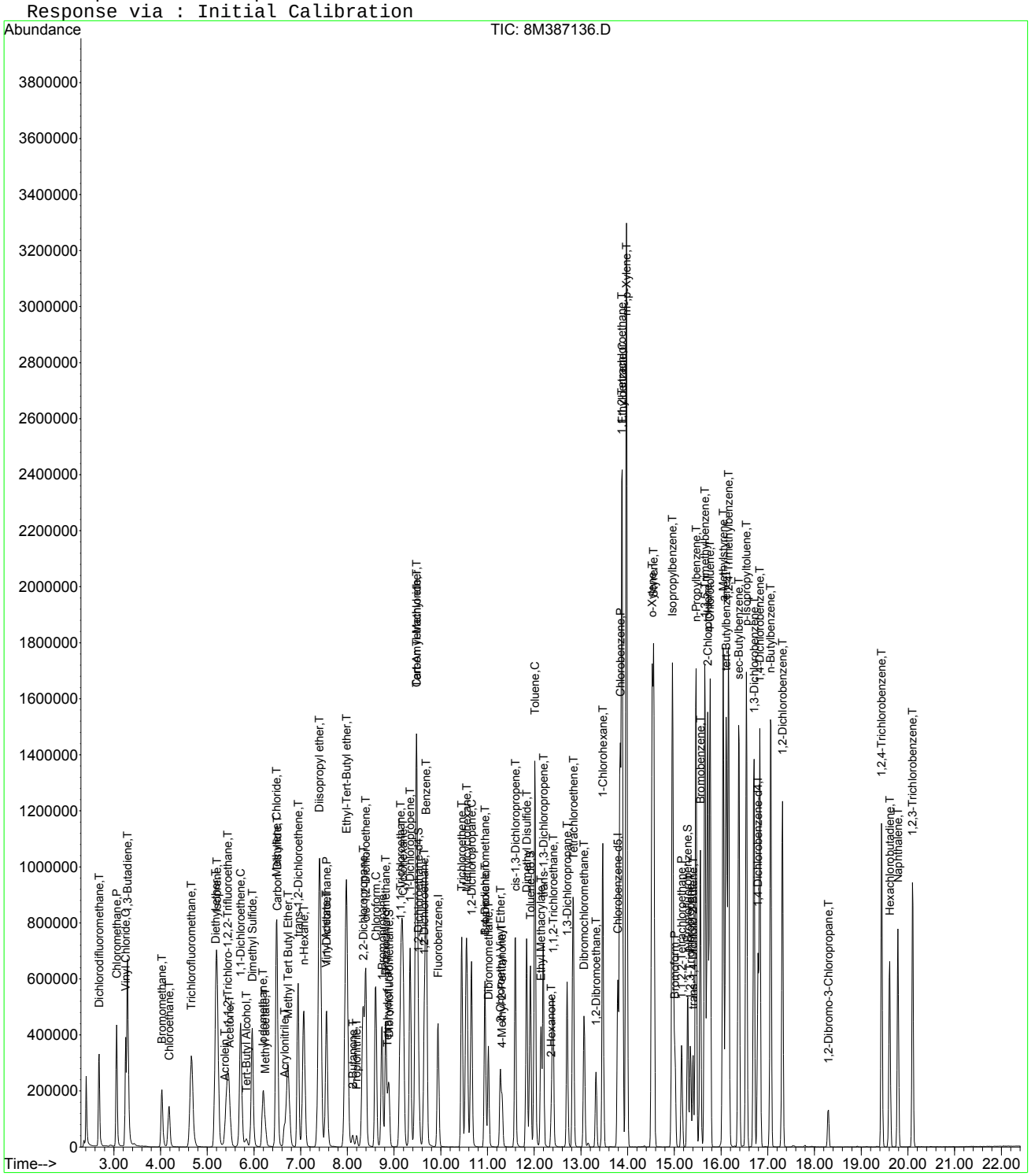

8M387136.D 8260WT.M Thu Apr 18 18:47:08 2013 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\041813\8M387136.D Vial: 3
Acq On : 18 Apr 2013 18:24 Operator: TMB
Sample : WG427302-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD57388 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	0.3744	0.3706	1.0	87	0.00
3	P	Chloromethane	0.4872	0.4545	6.7	91	0.00
4	C	Vinyl Chloride	0.4073	0.3772	7.4	86	0.00
5	T	1,3-Butadiene	0.3894	0.3909	-0.4	88	0.00
6	T	Bromomethane	0.2105	0.1988	5.6	83	0.00
7	T	Chloroethane	0.1906	0.1944	-2.0	87	0.00
8	T	Trichlorofluoromethane	0.5788	0.6096	-5.3	90	0.00
9	T	Diethyl ether	0.1966	0.1730	12.0	83	0.00
10	T	Isoprene	0.4010	0.3918	2.3	90	0.00
11	T	Acrolein	0.0072	0.0046	36.1#	61	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2838	0.2839	-0.0	91	0.00
13	T	Acetone	0.0703	0.0674	4.0	86	0.00
14	C	1,1-Dichloroethene	0.5390	0.5603	-3.9	93	0.00
15	T	Tert-Butyl Alcohol	0.0158	0.0136	14.2	86	0.00
16	T	Dimethyl Sulfide	0.3107	0.3034	2.4	89	0.00
17	T	Iodomethane	0.3613	0.3388	6.2	80	0.00
18	T	Methyl acetate	0.1378	0.1589	-15.3	110	0.00
19	T	Methylene Chloride	0.2894	0.2818	2.6	90	0.00
20	T	Carbon Disulfide	0.9569	0.9475	1.0	91	0.00
21	T	Acrylonitrile	0.0650	0.0333	48.7#	47#	0.01
22	T	Methyl Tert Butyl Ether	0.6812	0.6358	6.7	83	0.00
23	T	trans-1,2-Dichloroethene	0.4919	0.4933	-0.3	93	0.00
24	T	n-Hexane	0.3854	0.4212	-9.3	98	0.00
25	T	Diisopropyl ether	1.0664	0.9656	9.5	85	-0.01
26	T	Vinyl Acetate	0.4758	0.2620	44.9#	49#	0.00
27	P	1,1-Dichloroethane	0.5818	0.5807	0.2	91	0.00
28	T	Ethyl-Tert-Butyl ether	0.9655	0.8487	12.1	83	0.00
29	T	2-Butanone	0.0814	0.0723	11.2	81	0.00
30	T	Propionitrile	0.0242	0.0219	9.4	85	0.00
31	T	2,2-Dichloropropane	0.6073	0.6229	-2.6	92	0.00
32	T	cis-1,2-Dichloroethene	0.3171	0.3107	2.0	89	0.00
33	C	Chloroform	0.6431	0.6140	4.5	88	0.00
34		1-Bromopropane	0.0670	0.0633	5.6	85	0.00
35	T	Bromochloromethane	0.1742	0.1673	4.0	85	0.00
36	T	Tetrahydrofuran	0.0515	0.0455	11.6	83	0.00
37	S	Dibromofluoromethane	0.3416	0.3311	3.1	91	0.00
38	T	1,1,1-Trichloroethane	0.6164	0.6048	1.9	89	0.00
39	T	Cyclohexane	0.5373	0.5379	-0.1	91	0.00
40	T	1,1-Dichloropropene	0.4652	0.4656	-0.1	89	0.00
41	T	Tert-Amyl-Methyl ether	0.7306	0.6377	12.7	82	0.00
42	T	Carbon Tetrachloride	0.5369	0.5323	0.9	89	0.00
43	S	1,2-Dichloroethane-d4	0.3884	0.3749	3.5	86	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.44#
45	T	1,2-Dichloroethane	0.4616	0.4528	1.9	88	0.00
46	T	Benzene	1.1601	1.1077	4.5	89	0.00
47	T	Trichloroethene	0.2932	0.2867	2.2	89	0.00
48	T	Methylcyclohexane	0.4184	0.4470	-6.8	97	0.00
49	C	1,2-Dichloropropane	0.3031	0.2885	4.8	87	0.00
50	T	Bromodichloromethane	0.4893	0.4819	1.5	87	0.00
51	T	1,4-Dioxane	0.0014	0.0017	-19.1	91	0.01
52	T	Dibromomethane	0.1620	0.1612	0.5	87	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1393	0.1293	7.2	82	0.00
54	T	4-Methyl-2-Pentanone	0.0662	0.0604	8.8	76	0.00
55	T	cis-1,3-Dichloropropene	0.5306	0.5136	3.2	87	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\041813\8M387136.D Vial: 3
Acq On : 18 Apr 2013 18:24 Operator: TMB
Sample : WG427302-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD57388 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	0.4899	0.4900	-0.0	87	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	93	0.00
58	S	Toluene-d8	1.5022	1.5055	-0.2	91	0.00
59	C	Toluene	1.7512	1.6801	4.1	88	0.00
60	T	Ethyl Methacrylate	0.3569	0.3554	0.4	86	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-12.31#
62	T	trans-1,3-Dichloropropene	0.6620	0.6528	1.4	87	0.00
63	T	1,1,2-Trichloroethane	0.2883	0.2693	6.6	83	0.00
64	T	2-Hexanone	0.0857	0.0780	9.0	78	-0.01
65	T	1,3-Dichloropropane	0.5325	0.5247	1.5	89	0.00
66	T	Tetrachloroethene	0.3651	0.3603	1.3	89	0.00
67	T	Dibromochloromethane	0.4184	0.4174	0.2	88	0.00
68	T	1,2-Dibromoethane	0.3002	0.2982	0.7	87	0.00
69	T	1-Chlorohexane	0.5196	0.5607	-7.9	95	0.00
70	P	Chlorobenzene	1.1657	1.1244	3.5	90	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4637	0.4590	1.0	90	0.00
72	C	Ethylbenzene	0.6307	0.6366	-0.9	90	0.00
73	T	m-,p-Xylene	0.7657	0.7739	-1.1	90	0.00
74	T	o-Xylene	0.7500	0.7676	-2.3	91	0.00
75	T	Styrene	1.2381	1.2747	-3.0	90	0.00
76	P	Bromoform	0.2619	0.2457	6.2	85	0.00
77	T	Isopropylbenzene	1.9585	2.0159	-2.9	93	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	96	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5892	0.5352	9.2	85	0.00
80	S	p-Bromofluorobenzene	1.1484	1.1774	-2.5	95	0.00
81	T	1,2,3-Trichloropropane	0.1916	0.1807	5.7	87	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2241	0.2261	-0.9	85	0.00
83	T	n-Propylbenzene	4.3403	4.3151	0.6	93	0.00
84	T	Bromobenzene	0.8829	0.8248	6.6	88	0.00
85	T	1,3,5-Trimethylbenzene	3.1231	3.1958	-2.3	94	0.00
86	T	2-Chlorotoluene	3.1208	2.7446	12.1	93	0.00
87	T	4-Chlorotoluene	2.9132	2.9323	-0.7	92	0.00
88	T	a-Methylstyrene	1.5548	1.5905	-2.3	94	0.00
89	T	tert-Butylbenzene	0.5820	0.5993	-3.0	93	0.00
90	T	1,2,4-Trimethylbenzene	3.2259	3.2036	0.7	93	0.00
91	T	sec-Butylbenzene	3.4893	3.5504	-1.8	95	0.00
92	T	p-Isopropyltoluene	2.9182	3.0099	-3.1	95	0.00
93	T	1,3-Dichlorobenzene	1.7101	1.6655	2.6	92	0.00
94	T	1,4-Dichlorobenzene	1.7787	1.6597	6.7	91	0.00
95	T	n-Butylbenzene	2.6892	2.7888	-3.7	97	0.00
96	T	1,2-Dichlorobenzene	1.5488	1.4820	4.3	90	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1260	0.1200	4.8	87	0.00
98	T	1,2,4-Trichlorobenzene	0.9867	1.0077	-2.1	95	0.00
99	T	Hexachlorobutadiene	0.3994	0.4213	-5.5	95	0.00
100	T	Naphthalene	1.7661	1.7233	2.4	90	0.00
101	T	1,2,3-Trichlorobenzene	0.8181	0.8383	-2.5	93	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M387136.D 8260WT.M Thu Apr 18 18:50:36 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\041813\8M387136.D Vial: 3
Acq On : 18 Apr 2013 18:24 Operator: TMB
Sample : WG427302-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD57388 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	50.0000	49.4972	1.0	87	0.00
3	P	Chloromethane	50.0000	46.6481	6.7	91	0.00
4	C	Vinyl Chloride	50.0000	46.3035	7.4	86	0.00
5	T	1,3-Butadiene	50.0000	50.1888	-0.4	88	0.00
6	T	Bromomethane	50.0000	47.2057	5.6	83	0.00
7	T	Chloroethane	50.0000	50.9987	-2.0	87	0.00
8	T	Trichlorofluoromethane	50.0000	52.7442	-5.5	90	0.00
9	T	Diethyl ether	100.0000	87.9725	12.0	83	0.00
10	T	Isoprene	50.0000	48.8605	2.3	90	0.00
11	T	Acrolein	100.0000	63.9525	36.0#	61	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.0095	-0.0	91	0.00
13	T	Acetone	50.0000	48.0080	4.0	86	0.00
14	C	1,1-Dichloroethene	50.0000	51.9719	-3.9	93	0.00
15	T	Tert-Butyl Alcohol	200.0000	171.5724	14.2	86	0.00
16	T	Dimethyl Sulfide	50.0000	48.8221	2.4	89	0.00
17	T	Iodomethane	50.0000	46.8809	6.2	80	0.00
18	T	Methyl acetate	50.0000	57.6577	-15.3	110	0.00
19	T	Methylene Chloride	50.0000	48.6938	2.6	90	0.00
20	T	Carbon Disulfide	50.0000	49.5123	1.0	91	0.00
21	T	Acrylonitrile	100.0000	51.2581	48.7#	47	0.01
22	T	Methyl Tert Butyl Ether	50.0000	46.6697	6.7	83	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.1458	-0.3	93	0.00
24	T	n-Hexane	50.0000	54.6534	-9.3	98	0.00
25	T	Diisopropyl ether	100.0000	90.5479	9.5	85	-0.01
26	T	Vinyl Acetate	50.0000	27.5343	44.9#	49	0.00
27	P	1,1-Dichloroethane	50.0000	49.9056	0.2	91	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	87.9078	12.1	83	0.00
29	T	2-Butanone	50.0000	44.4135	11.2	81	0.00
30	T	Propionitrile	100.0000	90.5740	9.4	85	0.00
31	T	2,2-Dichloropropane	50.0000	51.2846	-2.6	92	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9900	2.0	89	0.00
33	C	Chloroform	50.0000	47.7375	4.5	88	0.00
34		1-Bromopropane	50.0000	47.2026	5.6	85	0.00
35	T	Bromochloromethane	50.0000	48.0120	4.0	85	0.00
36	T	Tetrahydrofuran	100.0000	88.3572	11.6	83	0.00
37	S	Dibromofluoromethane	25.0000	24.2301	3.1	91	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.0589	1.9	89	0.00
39	T	Cyclohexane	50.0000	50.0510	-0.1	91	0.00
40	T	1,1-Dichloropropene	50.0000	50.0367	-0.1	89	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	87.2797	12.7	82	0.00
42	T	Carbon Tetrachloride	50.0000	49.5694	0.9	89	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.1300	3.5	86	0.00
44		Heptane	50.0000	0.0000	100.0#	0	-2.44#
45	T	1,2-Dichloroethane	50.0000	49.0416	1.9	88	0.00
46	T	Benzene	50.0000	47.7417	4.5	89	0.00
47	T	Trichloroethene	50.0000	48.8900	2.2	89	0.00
48	T	Methylcyclohexane	50.0000	53.4242	-6.8	97	0.00
49	C	1,2-Dichloropropane	50.0000	47.5879	4.8	87	0.00
50	T	Bromodichloromethane	50.0000	49.2350	1.5	87	0.00
51	T	1,4-Dioxane	200.0000	223.6571	-11.8	91	0.01
52	T	Dibromomethane	50.0000	49.7509	0.5	87	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	46.4091	7.2	82	0.00
54	T	4-Methyl-2-Pentanone	50.0000	45.6266	8.7	76	0.00
55	T	cis-1,3-Dichloropropene	50.0000	48.3979	3.2	87	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\041813\8M387136.D Vial: 3
Acq On : 18 Apr 2013 18:24 Operator: TMB
Sample : WG427302-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD57388 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	50.0000	50.0061	-0.0	87	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	93	0.00
58	S	Toluene-d8	25.0000	25.0560	-0.2	91	0.00
59	C	Toluene	50.0000	47.9687	4.1	88	0.00
60	T	Ethyl Methacrylate	50.0000	49.7955	0.4	86	0.00
61		Paraldehyde	100.0000	0.0000	100.0#	0	-12.31#
62	T	trans-1,3-Dichloropropene	50.0000	49.3059	1.4	87	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.7098	6.6	83	0.00
64	T	2-Hexanone	50.0000	45.5236	9.0	78	-0.01
65	T	1,3-Dichloropropane	50.0000	49.2672	1.5	89	0.00
66	T	Tetrachloroethene	50.0000	49.3357	1.3	89	0.00
67	T	Dibromochloromethane	50.0000	49.8851	0.2	88	0.00
68	T	1,2-Dibromoethane	50.0000	49.6720	0.7	87	0.00
69	T	1-Chlorohexane	50.0000	53.9549	-7.9	95	0.00
70	P	Chlorobenzene	50.0000	48.2301	3.5	90	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.4887	1.0	90	0.00
72	C	Ethylbenzene	50.0000	50.4705	-0.9	90	0.00
73	T	m-,p-Xylene	100.0000	101.0713	-1.1	90	0.00
74	T	o-Xylene	50.0000	51.1688	-2.3	91	0.00
75	T	Styrene	50.0000	51.4768	-3.0	90	0.00
76	P	Bromoform	50.0000	46.9044	6.2	85	0.00
77	T	Isopropylbenzene	50.0000	51.4667	-2.9	93	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	45.4188	9.2	85	0.00
80	S	p-Bromofluorobenzene	25.0000	25.6313	-2.5	95	0.00
81	T	1,2,3-Trichloropropane	50.0000	47.1538	5.7	87	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	50.4530	-0.9	85	0.00
83	T	n-Propylbenzene	50.0000	49.7092	0.6	93	0.00
84	T	Bromobenzene	50.0000	46.7091	6.6	88	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.1632	-2.3	94	0.00
86	T	2-Chlorotoluene	50.0000	43.9716	12.1	93	0.00
87	T	4-Chlorotoluene	50.0000	50.3281	-0.7	92	0.00
88	T	a-Methylstyrene	50.0000	51.1481	-2.3	94	0.00
89	T	tert-Butylbenzene	50.0000	51.4866	-3.0	93	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6543	0.7	93	0.00
91	T	sec-Butylbenzene	50.0000	50.8757	-1.8	95	0.00
92	T	p-Isopropyltoluene	50.0000	51.5728	-3.1	95	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.6971	2.6	92	0.00
94	T	1,4-Dichlorobenzene	50.0000	46.6544	6.7	91	0.00
95	T	n-Butylbenzene	50.0000	51.8524	-3.7	97	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.8441	4.3	90	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	47.6069	4.8	87	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.0642	-2.1	95	0.00
99	T	Hexachlorobutadiene	50.0000	52.7404	-5.5	95	0.00
100	T	Naphthalene	50.0000	48.7891	2.4	90	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	51.2368	-2.5	93	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M387136.D 8260WT.M Thu Apr 18 18:50:37 2013 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\1\DATA\032913\8M386633.D Vial: 1
Acq On : 29 Mar 2013 10:55 Operator: adc
Sample : WG425063-01 BFB 50ng 8260 Inst : HPMS8
Misc : 1,1 STD56567 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8

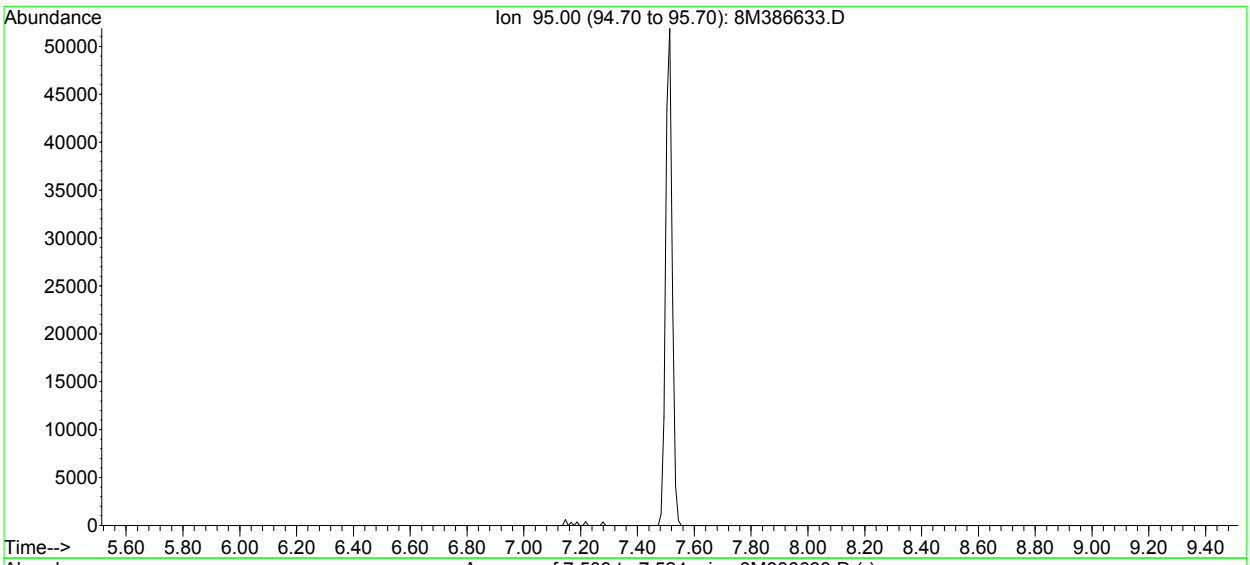

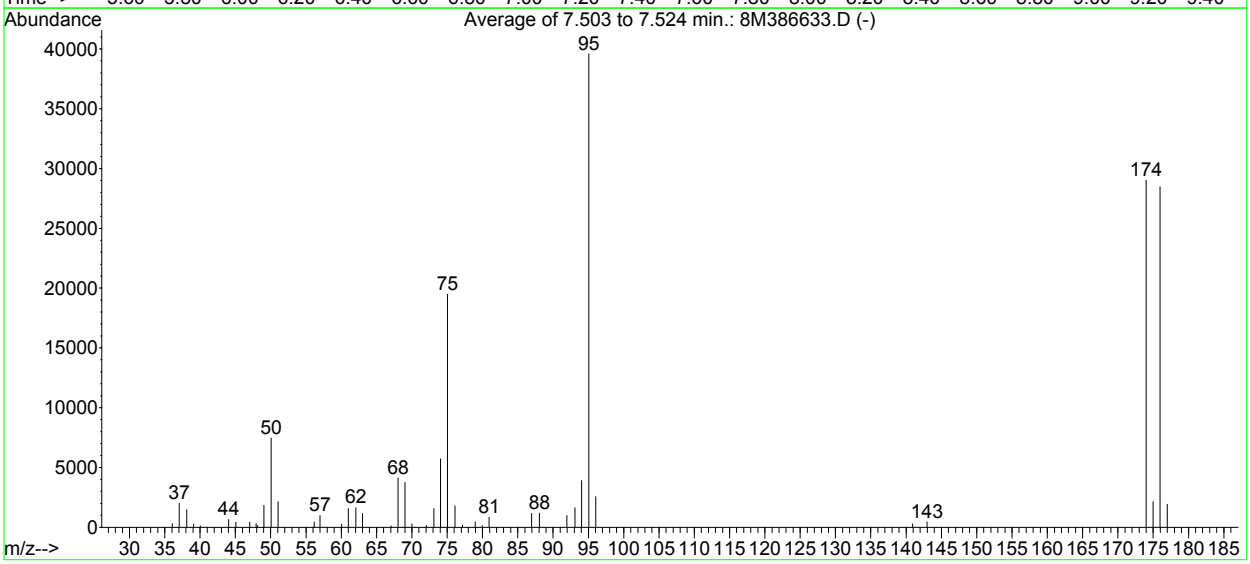

AutoFind: Scans 41, 42, 43; Background Corrected with Scan 36

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.9	7467	PASS
75	95	30	60	49.2	19489	PASS
95	95	100	100	100.0	39584	PASS
96	95	5	9	6.5	2554	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.3	29029	PASS
175	174	5	9	7.4	2143	PASS
176	174	95	101	98.0	28461	PASS
177	176	5	9	6.7	1914	PASS

8M386633.D 8260WT.M Wed Apr 03 10:39:32 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\041813\8M387134.D          Vial: 2
Acq On    : 18 Apr 2013  17:27                       Operator: TMB
Sample    : WG427302-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD57083                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

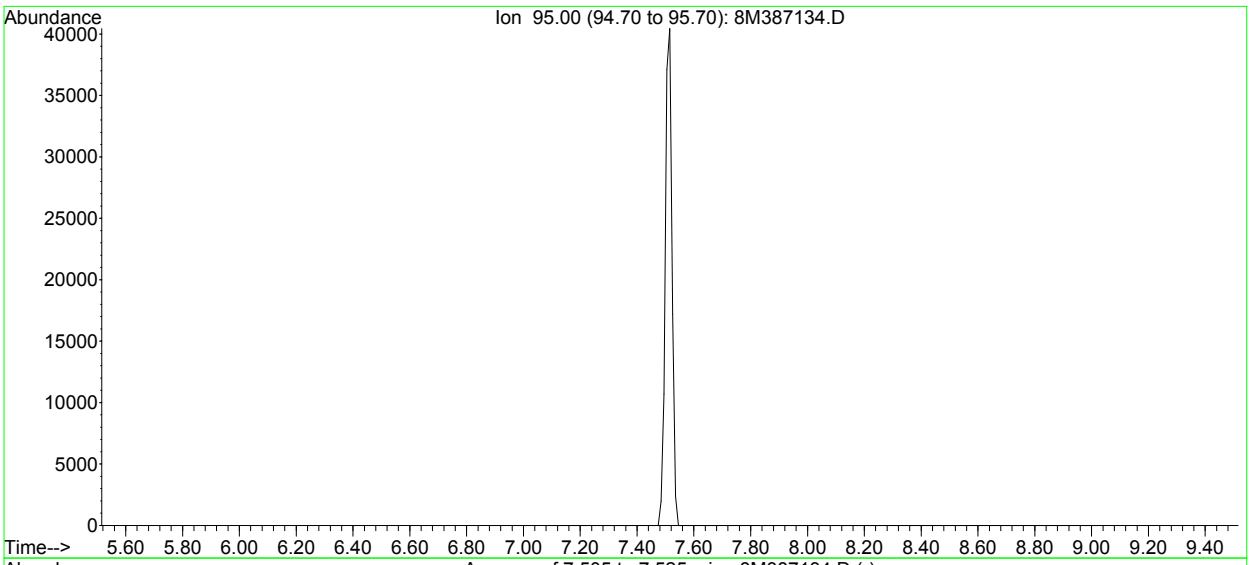

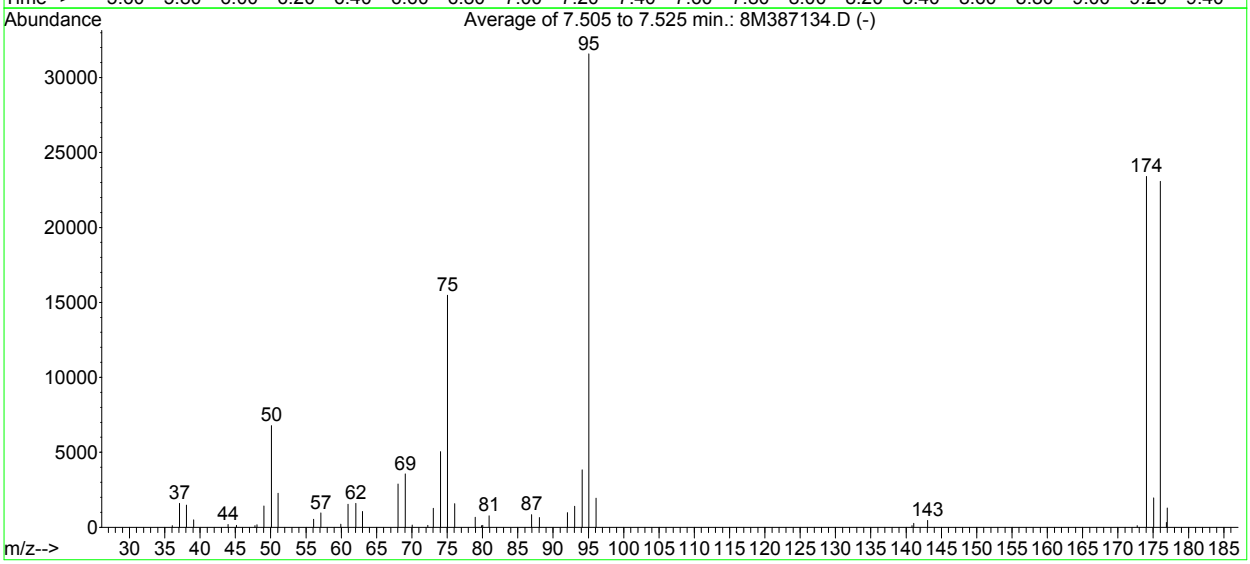

AutoFind: Scans 41, 42, 43; Background Corrected with Scan 36

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.4	6773	PASS
75	95	30	60	49.0	15479	PASS
95	95	100	100	100.0	31576	PASS
96	95	5	9	6.2	1946	PASS
173	174	0.00	2	0.5	109	PASS
174	95	50	100	74.1	23405	PASS
175	174	5	9	8.3	1954	PASS
176	174	95	101	98.6	23082	PASS
177	176	5	9	5.5	1277	PASS

8M387134.D BFB.M Thu Apr 18 17:38:06 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041813\8M387138.D Vial: 5
Acq On : 18 Apr 2013 19:25 Operator: TMB
Sample : WG427303-01 VBLK0418 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 19 09:18:02 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.94	96	523349	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.79	117	389433	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	208398	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	8.88	111	168526	23.5664 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.28%		
43) 1,2-Dichloroethane-d4	9.52	65	192733	23.7030 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.80%		
58) Toluene-d8	11.91	98	579689	24.7737 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.08%		
80) p-Bromofluorobenzene	15.28	95	247625	25.8662 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.48%		
Target Compounds					Qvalue
56) Dimethyl Disulfide	11.92	94	17611	1.7172 ug/L #	23

(#) = qualifier out of range (m) = manual integration
8M387138.D 8260WT.M Fri Apr 19 09:18:03 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041813\8M387138.D Vial: 5
Acq On : 18 Apr 2013 19:25 Operator: TMB
Sample : WG427303-01 VBLK0418 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 19 9:18 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

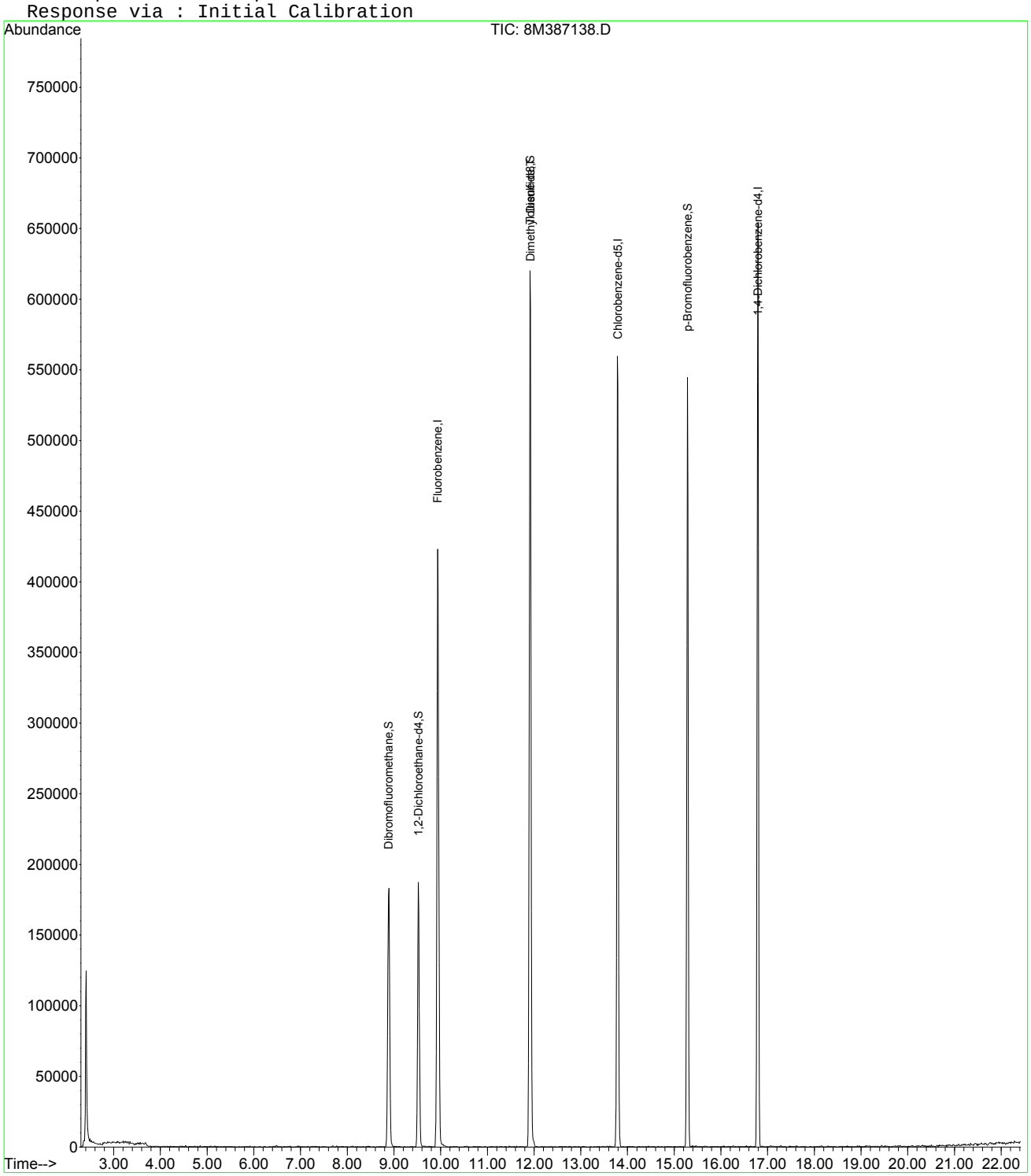

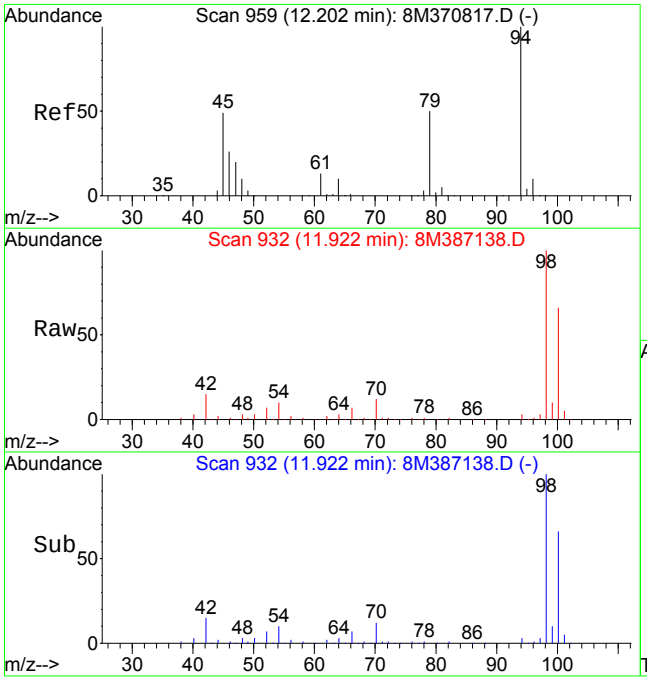

#56
Dimethyl Disulfide
Concen: 1.72 ug/L
RT: 11.92 min Scan# 932
Delta R.T. 0.08 min
Lab File: 8M387138.D
Acq: 18 Apr 2013 19:25

Tgt Ion: 94 Resp: 17611

Ion	Ratio	Lower	Upper
94	100		
79	0.0	33.9	79.1#

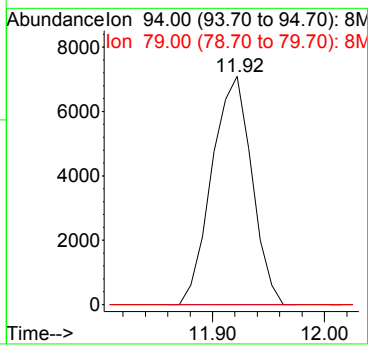

LSC Area Percent Report

Data File : C:\MSDCHEM\1\DATA\041813\8M387138.D Vial: 5
Acq On : 18 Apr 2013 19:25 Operator: TMB
Sample : WG427303-01 VBLK0418 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 200 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.857	147	152	153	rBB	545	1443	0.09%	0.019%
2	3.899	153	156	159	rBV	534	1660	0.10%	0.022%
3	4.074	170	173	176	rVB	661	1452	0.09%	0.019%
4	4.136	176	179	181	rBB	555	1057	0.07%	0.014%
5	4.219	183	187	190	rBV	790	1691	0.11%	0.022%
6	4.426	201	207	210	rBB	714	2019	0.13%	0.026%
7	4.540	216	218	223	rBB	1296	1722	0.11%	0.022%
8	4.622	223	226	232	rBB	512	1473	0.09%	0.019%
9	4.736	233	237	239	rBB	747	1256	0.08%	0.016%
10	4.798	240	243	245	rBB	597	1078	0.07%	0.014%
11	4.850	246	248	251	rBB	1000	903	0.06%	0.012%
12	4.984	258	261	264	rBB	478	1151	0.07%	0.015%
13	5.077	268	270	274	rBB	711	1110	0.07%	0.014%
14	5.160	275	278	280	rBB	681	1221	0.08%	0.016%
15	5.460	301	307	310	rBB	452	1601	0.10%	0.021%
16	5.501	310	311	318	rBB	357	861	0.05%	0.011%
17	5.863	342	346	349	rBB	416	905	0.06%	0.012%
18	6.411	397	399	401	rBB	577	860	0.05%	0.011%
19	6.483	404	406	411	rBB	1294	2202	0.14%	0.029%
20	6.711	427	428	431	rBV	476	1010	0.06%	0.013%
21	6.949	444	451	453	rBB	931	1437	0.09%	0.019%
22	7.249	475	480	481	rBB	513	960	0.06%	0.013%
23	7.693	519	523	527	rBB	932	1526	0.10%	0.020%
24	8.086	558	561	563	rBV	608	1048	0.07%	0.014%
25	8.448	594	596	599	rBB	786	896	0.06%	0.012%
26	8.893	631	639	648	rBV	183248	525540	33.08%	6.847%
27	9.523	692	700	712	rBV	187474	473614	29.81%	6.171%
28	9.668	712	714	717	rVB	800	1146	0.07%	0.015%
29	9.740	718	721	723	rBB	644	1208	0.08%	0.016%
30	9.937	733	740	761	rBB	423161	1166291	73.41%	15.195%
31	10.288	769	774	775	rBB	480	947	0.06%	0.012%
32	10.350	775	780	782	rBB	464	1099	0.07%	0.014%
33	10.557	793	800	803	rBB	604	1583	0.10%	0.021%
34	11.209	858	863	865	rBB	440	969	0.06%	0.013%
35	11.260	866	868	876	rBB	391	1343	0.08%	0.017%
36	11.467	886	888	892	rBB	676	946	0.06%	0.012%
37	11.705	907	911	914	rBB	462	902	0.06%	0.012%
38	11.912	923	931	943	rBB	620226	1588700	100.00%	20.699%
39	12.780	1009	1015	1017	rBB	604	1113	0.07%	0.015%
40	13.494	1078	1084	1087	rBB	486	1579	0.10%	0.021%
41	13.556	1088	1090	1094	rBV	670	1565	0.10%	0.020%
42	13.618	1094	1096	1098	rVB	782	830	0.05%	0.011%
43	13.783	1105	1112	1121	rBB	559805	1307804	82.32%	17.039%

44	14.331	1161	1165	1168	rBB	486	1070	0.07%	0.014%
45	14.652	1193	1196	1199	rBB	654	849	0.05%	0.011%
46	15.282	1251	1257	1265	rBB	544830	1144234	72.02%	14.908%
47	15.468	1273	1275	1277	rBB	1051	1323	0.08%	0.017%
48	15.530	1278	1281	1283	rBB	469	965	0.06%	0.013%
49	15.655	1289	1293	1296	rBB	723	1612	0.10%	0.021%
50	15.841	1309	1311	1318	rBB	508	1821	0.11%	0.024%
51	16.027	1324	1329	1330	rBB	522	1188	0.07%	0.015%
52	16.140	1337	1340	1343	rBB	479	982	0.06%	0.013%
53	16.265	1350	1352	1355	rBB	902	1442	0.09%	0.019%
54	16.461	1368	1371	1373	rBB	451	950	0.06%	0.012%
55	16.544	1377	1379	1384	rBB	1011	1392	0.09%	0.018%
56	16.637	1385	1388	1391	rBB	781	1270	0.08%	0.017%
57	16.792	1397	1403	1409	rBB	653995	1322159	83.22%	17.226%
58	16.885	1410	1412	1414	rBB	809	1118	0.07%	0.015%
59	17.071	1425	1430	1433	rBV	862	2730	0.17%	0.036%
60	17.288	1446	1451	1453	rBB	999	1903	0.12%	0.025%
61	17.474	1465	1469	1471	rBB	756	1200	0.08%	0.016%
62	17.619	1477	1483	1484	rBB	843	1778	0.11%	0.023%
63	18.002	1517	1520	1523	rBB	507	1022	0.06%	0.013%
64	18.157	1531	1535	1541	rBB	909	2178	0.14%	0.028%
65	18.291	1545	1548	1552	rBB	818	1609	0.10%	0.021%
66	18.353	1552	1554	1558	rBV	452	1406	0.09%	0.018%
67	18.570	1573	1575	1577	rBB	505	840	0.05%	0.011%
68	18.601	1577	1578	1580	rBV	669	829	0.05%	0.011%
69	18.705	1585	1588	1591	rBB	857	1123	0.07%	0.015%
70	18.870	1599	1604	1605	rVB	464	1092	0.07%	0.014%
71	18.922	1606	1609	1610	rBB	964	1165	0.07%	0.015%
72	18.963	1611	1613	1616	rVB	899	1106	0.07%	0.014%
73	19.098	1622	1626	1627	rBB	857	1139	0.07%	0.015%
74	19.129	1627	1629	1631	rBV	860	1570	0.10%	0.020%
75	19.263	1638	1642	1644	rVB	482	1320	0.08%	0.017%
76	19.304	1644	1646	1648	rBB	623	984	0.06%	0.013%
77	19.356	1649	1651	1655	rBB	789	1392	0.09%	0.018%
78	19.439	1655	1659	1663	rBB	1160	2625	0.17%	0.034%
79	19.511	1663	1666	1669	rBV	1076	1814	0.11%	0.024%
80	19.687	1679	1683	1685	rBV	669	1612	0.10%	0.021%
81	19.739	1687	1688	1691	rVB	841	965	0.06%	0.013%
82	19.801	1691	1694	1695	rBV	904	1807	0.11%	0.024%
83	19.914	1701	1705	1711	rBB	749	2542	0.16%	0.033%
84	20.007	1711	1714	1716	rBB	759	1057	0.07%	0.014%
85	20.090	1716	1722	1726	rBV2	1081	3641	0.23%	0.047%
86	20.204	1728	1733	1735	rVV2	611	1344	0.08%	0.018%
87	20.318	1739	1744	1746	rVV2	1132	1809	0.11%	0.024%
88	20.411	1752	1753	1755	rBB2	811	956	0.06%	0.012%
89	20.473	1755	1759	1761	rBB2	1023	2123	0.13%	0.028%
90	20.504	1761	1762	1764	rBV2	1597	1711	0.11%	0.022%
91	20.638	1770	1775	1776	rBB	1223	2769	0.17%	0.036%
92	20.679	1776	1779	1783	rBV	1563	4464	0.28%	0.058%
93	20.742	1783	1785	1790	rVB	943	2064	0.13%	0.027%
94	20.866	1794	1797	1798	rBV	1510	3148	0.20%	0.041%
95	20.979	1806	1808	1811	rVB	1132	1782	0.11%	0.023%
96	21.093	1816	1819	1821	rVB	1500	2615	0.16%	0.034%
97	21.165	1824	1826	1827	rBV2	1046	1398	0.09%	0.018%
98	21.341	1842	1843	1846	rBV3	1748	2511	0.16%	0.033%
99	21.455	1850	1854	1857	rVB3	1773	5242	0.33%	0.068%
100	21.765	1878	1884	1886	rBV2	2291	6945	0.44%	0.090%

Sum of corrected areas: 7675426

8M387138.D 8260WT.M Fri Apr 19 11:12:04 2013 Page 2

LSC Report - Integrated Chromatogram

File : C:\MSDCHEM\1\DATA\041813\8M387138.D
Operator : TMB
Acquired : 18 Apr 2013 19:25 using AcqMethod 8260WT
Instrument : HPMS8
Sample Name: WG427303-01 VBLK0418 BLANK STD 8260
Misc Info : 1,1
Vial Number: 5
Quant File :8260WT.RES (RTE Integrator)

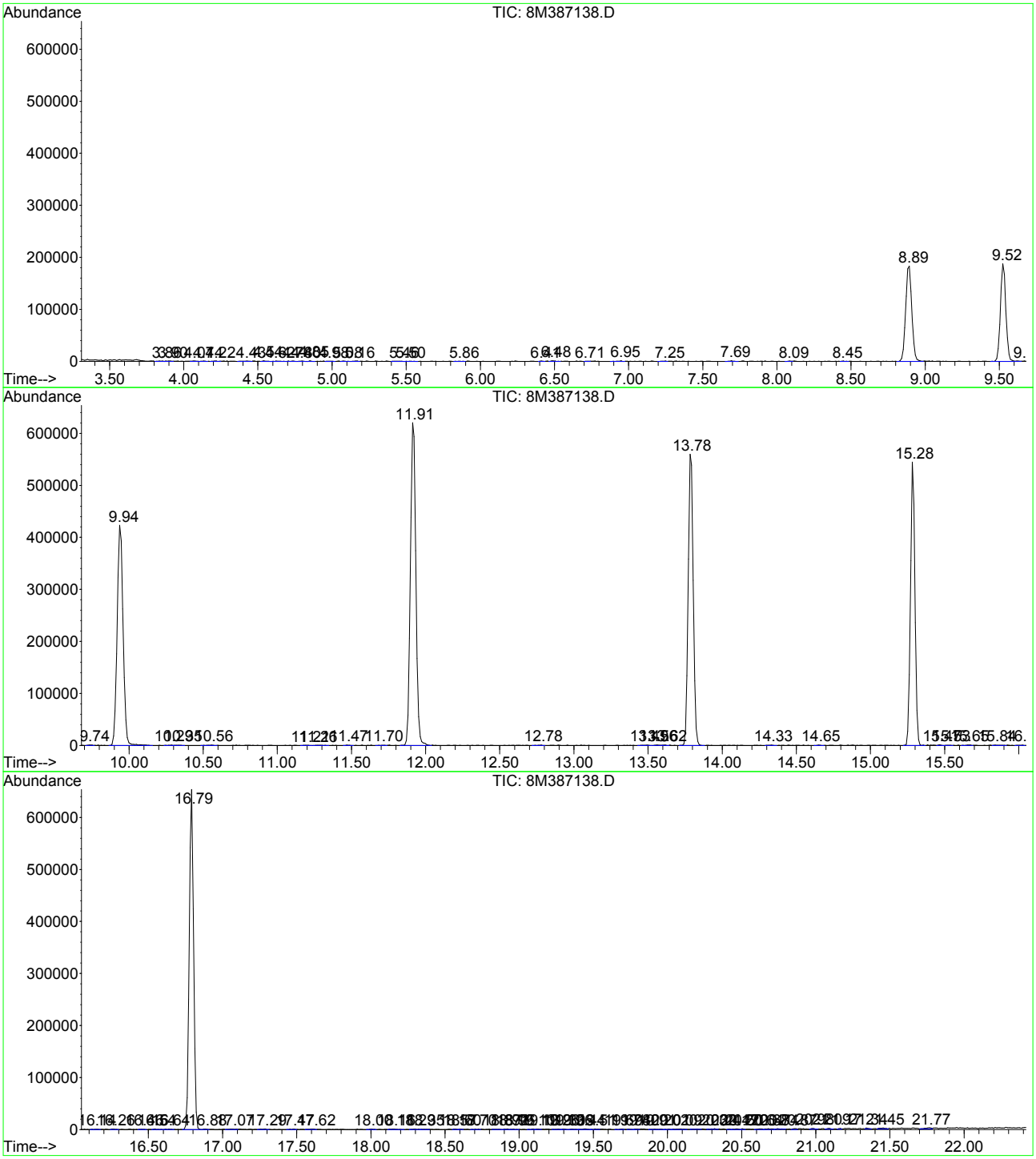

8M387138.D 8260WT.M Fri Apr 19 11:12:05 2013 Page 3

Tentatively Identified Compound (LSC) summary

Operator ID: TMB Date Acquired: 18 Apr 2013 19:25
Data File: C:\MSDCHEM\1\DATA\041813\8M387138.D
Name: WG427303-01 VBLK0418 BLANK STD 8260
Misc: 1,1
Method: C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title: Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Library Searched: C:\DATABASE\NIST02.L

						--Internal Standard---|			
TIC	Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041813\8M387139.D Vial: 6
Acq On : 18 Apr 2013 19:56 Operator: TMB
Sample : WG427303-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD57467 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 18 20:18:33 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.93	96	524319	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.79	117	386030	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	214958	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	8.89	111	164635	22.9797 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.92%		
43) 1,2-Dichloroethane-d4	9.52	65	193349	23.7347 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.92%		
58) Toluene-d8	11.92	98	582109	25.0964 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.40%		
80) p-Bromofluorobenzene	15.28	95	259138	26.2428 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.96%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.69	85	147568	18.7938 ug/L	100
3) Chloromethane	3.06	50	166248	16.2716 ug/L	98
4) Vinyl Chloride	3.25	62	136087	15.9293 ug/L	99
5) 1,3-Butadiene	3.29	54	149113	18.2585 ug/L	99
6) Bromomethane	4.02	94	58576	13.2658 ug/L	99
7) Chloroethane	4.18	64	73648	18.4232 ug/L	96
8) Trichlorofluoromethane	4.65	101	227756	18.7898 ug/L	98
9) Diethyl ether	5.18	59	351033	85.1186 ug/L	100
10) Isoprene	5.21	67	141386	16.8131 ug/L	100
11) Acrolein	5.38	56	53448	354.0162 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	5.44	101	110385	18.5439 ug/L	96
13) Acetone	5.48	43	24357	16.5328 ug/L	99
14) 1,1-Dichloroethene	5.71	61	211510	18.7101 ug/L	99
15) Tert-Butyl Alcohol	5.83	59	60572	182.8097 ug/L #	81
16) Dimethyl Sulfide	5.96	62	136493	20.9483 ug/L	97
17) Iodomethane	6.19	142	138126	18.2290 ug/L	100
18) Methyl acetate	6.23	43	53437	18.4954 ug/L	98
19) Methylene Chloride	6.47	84	110247	18.1661 ug/L	96
20) Carbon Disulfide	6.49	76	370202	18.4474 ug/L	99
21) Acrylonitrile	6.65	53	28583	20.9779 ug/L	99
22) Methyl Tert Butyl Ether	6.73	73	262320	18.3627 ug/L	100
23) trans-1,2-Dichloroethene	6.94	61	187473	18.1720 ug/L	98
24) n-Hexane	7.06	57	150439	18.6133 ug/L	99
25) Diisopropyl ether	7.40	45	1894049	84.6871 ug/L	100
26) Vinyl Acetate	7.55	43	178662	17.9039 ug/L	98
27) 1,1-Dichloroethane	7.56	63	219807	18.0129 ug/L	99
28) Ethyl-Tert-Butyl ether	7.97	59	1692121	83.5687 ug/L	100
29) 2-Butanone	8.11	43	33776	19.7741 ug/L	96
30) Propionitrile	8.20	54	48925	96.3077 ug/L	99
31) 2,2-Dichloropropane	8.33	77	214159	16.8140 ug/L	100
32) cis-1,2-Dichloroethene	8.39	96	125894	18.9274 ug/L	96
33) Chloroform	8.60	83	248346	18.4122 ug/L	98
34) 1-Bromopropane	8.75	122	24629	17.5155 ug/L	95
35) Bromochloromethane	8.82	130	69985	19.1507 ug/L	97
36) Tetrahydrofuran	8.85	42	92194	85.2844 ug/L	98
38) 1,1,1-Trichloroethane	9.14	97	234212	18.1168 ug/L	97
39) Cyclohexane	9.18	56	200471	17.7892 ug/L	99
40) 1,1-Dichloropropene	9.35	75	181795	18.6322 ug/L	98
41) Tert-Amyl-Methyl ether	9.48	73	1283937	83.7946 ug/L	99
42) Carbon Tetrachloride	9.48	117	197103	17.5039 ug/L	100
45) 1,2-Dichloroethane	9.65	62	186654	19.2793 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041813\8M387139.D Vial: 6
Acq On : 18 Apr 2013 19:56 Operator: TMB
Sample : WG427303-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD57467 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 18 20:18:33 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	9.69	78	439842	18.0778	ug/L	100
47)	Trichloroethene	10.45	130	123939	20.1545	ug/L	97
48)	Methylcyclohexane	10.54	83	169236	19.2870	ug/L	98
49)	1,2-Dichloropropane	10.65	63	123123	19.3687	ug/L	96
50)	Bromodichloromethane	10.95	83	194806	18.9818	ug/L	99
51)	1,4-Dioxane	10.95	88	5672	183.9968	ug/L	88
52)	Dibromomethane	11.02	93	66644	19.6099	ug/L	98
53)	2-Chloroethyl Vinyl Ether	11.27	63	57164	19.5717	ug/L	99
54)	4-Methyl-2-Pentanone	11.31	58	27049	19.4950	ug/L	97
55)	cis-1,3-Dichloropropene	11.59	75	221147	19.8729	ug/L	99
56)	Dimethyl Disulfide	11.84	94	209491	20.3897	ug/L	96
59)	Toluene	12.01	91	504457	18.6551	ug/L	99
60)	Ethyl Methacrylate	12.15	69	116036	21.0556	ug/L	99
62)	trans-1,3-Dichloropropene	12.19	75	193108	18.8922	ug/L	96
63)	1,1,2-Trichloroethane	12.41	97	92040	20.6777	ug/L	100
64)	2-Hexanone	12.36	58	24791	18.7324	ug/L	91
65)	1,3-Dichloropropane	12.71	76	161988	19.7002	ug/L	96
66)	Tetrachloroethene	12.83	164	107039	18.9866	ug/L	99
67)	Dibromochloromethane	13.07	129	125902	19.4900	ug/L	100
68)	1,2-Dibromoethane	13.33	107	92890	20.0417	ug/L	100
69)	1-Chlorohexane	13.47	91	172995	21.5621	ug/L	99
70)	Chlorobenzene	13.83	112	327124	18.1737	ug/L	100
71)	1,1,1,2-Tetrachloroethane	13.87	131	147907	20.6561	ug/L	96
72)	Ethylbenzene	13.88	106	193548	19.8743	ug/L	97
73)	m-,p-Xylene	13.98	106	453693	38.3737	ug/L	98
74)	o-Xylene	14.53	106	217523	18.7817	ug/L	97
75)	Styrene	14.56	104	394263	20.6232	ug/L	98
76)	Bromoform	15.01	173	78876	19.5061	ug/L	98
77)	Isopropylbenzene	14.96	105	560647	18.5391	ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.16	83	93882	18.5312	ug/L	98
81)	1,2,3-Trichloropropane	15.34	110	31009	18.8173	ug/L	80
82)	trans-1,4-Dichloro-2-Buten	15.40	53	28122	14.5956	ug/L	90
83)	n-Propylbenzene	15.47	91	667123	17.8760	ug/L	99
84)	Bromobenzene	15.56	156	142683	18.7956	ug/L	98
85)	1,3,5-Trimethylbenzene	15.65	105	543819	20.2511	ug/L	98
86)	2-Chlorotoluene	15.71	91	443543	16.5292	ug/L	93
87)	4-Chlorotoluene	15.77	91	454297	18.1368	ug/L	94
88)	a-Methylstyrene	16.05	118	286226	21.4106	ug/L	97
89)	tert-Butylbenzene	16.11	134	93096	18.6031	ug/L	94
90)	1,2,4-Trimethylbenzene	16.16	105	553701	19.9620	ug/L	99
91)	sec-Butylbenzene	16.38	105	556404	18.5455	ug/L	99
92)	p-Isopropyltoluene	16.54	119	477923	19.0474	ug/L	99
93)	1,3-Dichlorobenzene	16.71	146	264317	17.9762	ug/L	99
94)	1,4-Dichlorobenzene	16.83	146	283468	18.5345	ug/L	99
95)	n-Butylbenzene	17.06	91	470941	20.3672	ug/L	99
96)	1,2-Dichlorobenzene	17.32	146	234284	17.5930	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	18.30	75	22631	20.8911	ug/L	91
98)	1,2,4-Trichlorobenzene	19.44	180	164300	19.3660	ug/L	97
99)	Hexachlorobutadiene	19.61	225	68629	19.9849	ug/L	97
100)	Naphthalene	19.79	128	293539	19.3305	ug/L	100
101)	1,2,3-Trichlorobenzene	20.10	180	140264	19.9411	ug/L	97

(#) = qualifier out of range (m) = manual integration
8M387139.D 8260WT.M Thu Apr 18 20:18:34 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041813\8M387139.D Vial: 6
Acq On : 18 Apr 2013 19:56 Operator: TMB
Sample : WG427303-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD57467 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 18 20:18 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

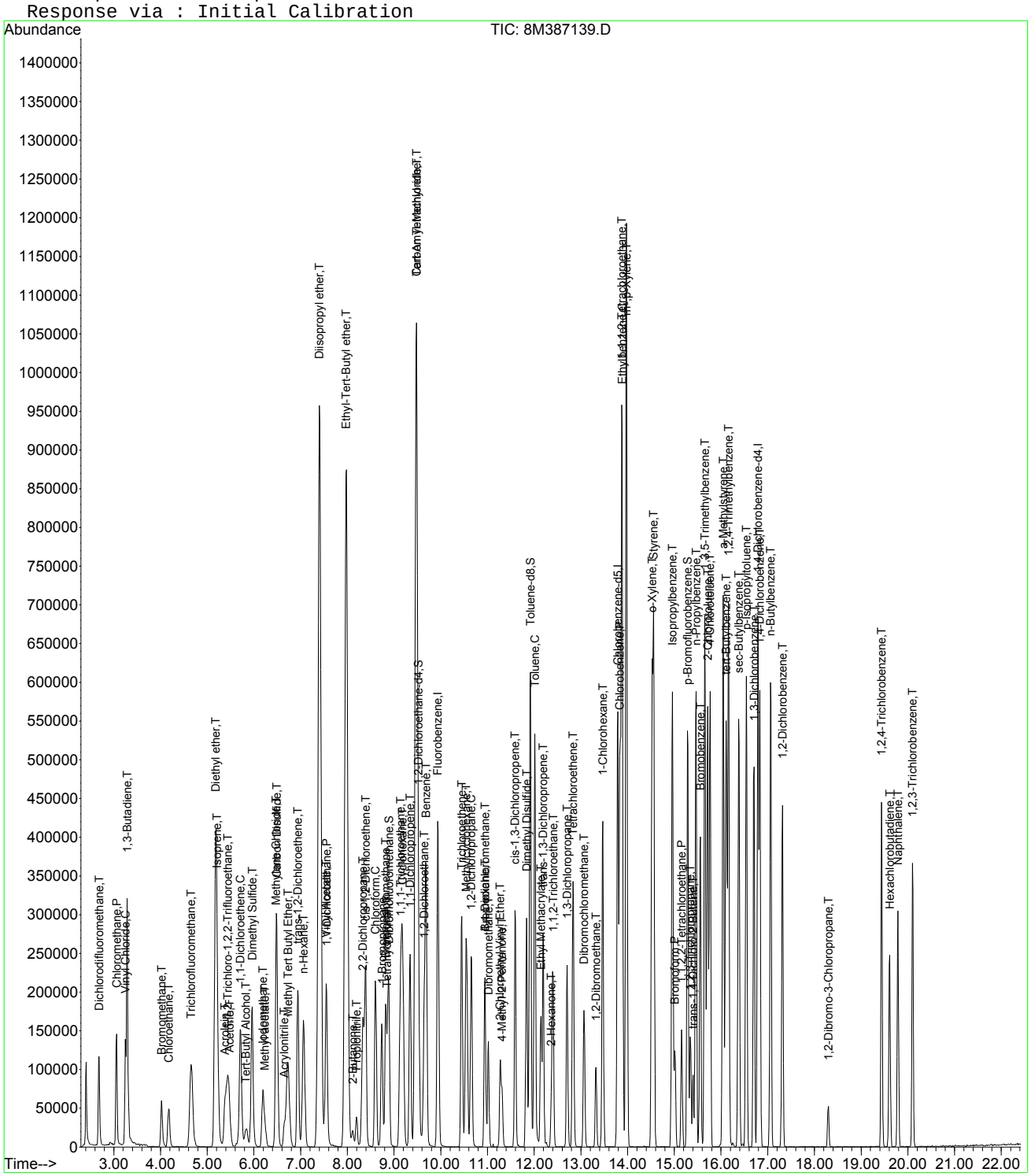

8M387139.D 8260WT.M Thu Apr 18 20:18:34 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041813\8M387140.D Vial: 7
Acq On : 18 Apr 2013 20:26 Operator: TMB
Sample : WG427303-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD57467 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 18 20:49:02 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.94	96	534121	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.78	117	401164	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.79	152	218017	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	8.88	111	172702	23.6633 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.64%		
43) 1,2-Dichloroethane-d4	9.52	65	193827	23.3568 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.44%		
58) Toluene-d8	11.91	98	597195	24.7755 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.12%		
80) p-Bromofluorobenzene	15.28	95	254670	25.4284 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.72%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.68	85	154874	19.3623 ug/L	98
3) Chloromethane	3.05	50	168859	16.2238 ug/L	100
4) Vinyl Chloride	3.25	62	138720	15.9395 ug/L	100
5) 1,3-Butadiene	3.29	54	152206	18.2952 ug/L	97
6) Bromomethane	4.02	94	66190	14.7151 ug/L	98
7) Chloroethane	4.18	64	77137	18.9419 ug/L	99
8) Trichlorofluoromethane	4.66	101	233823	18.9363 ug/L	98
9) Diethyl ether	5.18	59	364008	86.6449 ug/L	98
10) Isoprene	5.21	67	149862	17.4940 ug/L	98
11) Acrolein	5.38	56	52801	343.3127 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	5.44	101	122789	20.2491 ug/L	93
13) Acetone	5.48	43	23951	15.9589 ug/L	92
14) 1,1-Dichloroethene	5.71	61	215100	18.6785 ug/L	98
15) Tert-Butyl Alcohol	5.83	59	63784	188.9710 ug/L	97
16) Dimethyl Sulfide	5.97	62	134456	20.2570 ug/L	98
17) Iodomethane	6.19	142	145781	18.8862 ug/L	97
18) Methyl acetate	6.24	43	51712	17.5699 ug/L	98
19) Methylene Chloride	6.47	84	113753	18.3998 ug/L	98
20) Carbon Disulfide	6.49	76	384575	18.8120 ug/L	99
21) Acrylonitrile	6.65	53	28554	20.5721 ug/L	99
22) Methyl Tert Butyl Ether	6.73	73	261883	17.9957 ug/L	99
23) trans-1,2-Dichloroethene	6.94	61	201858	19.2073 ug/L	100
24) n-Hexane	7.06	57	164689	20.0024 ug/L	99
25) Diisopropyl ether	7.40	45	1993995	87.5198 ug/L	100
26) Vinyl Acetate	7.54	43	190409	18.7310 ug/L	99
27) 1,1-Dichloroethane	7.55	63	233589	18.7911 ug/L	98
28) Ethyl-Tert-Butyl ether	7.97	59	1764060	85.5227 ug/L	100
29) 2-Butanone	8.12	43	33393	19.1911 ug/L	97
30) Propionitrile	8.20	54	48385	93.4968 ug/L	100
31) 2,2-Dichloropropane	8.34	77	236913	18.2592 ug/L	98
32) cis-1,2-Dichloroethene	8.39	96	132034	19.4862 ug/L	97
33) Chloroform	8.60	83	256542	18.6708 ug/L	97
34) 1-Bromopropane	8.74	122	26223	18.3069 ug/L	97
35) Bromochloromethane	8.82	130	72765	19.5460 ug/L	99
36) Tetrahydrofuran	8.85	42	95540	86.7577 ug/L	97
38) 1,1,1-Trichloroethane	9.14	97	242721	18.4304 ug/L	98
39) Cyclohexane	9.18	56	214824	18.7130 ug/L	98
40) 1,1-Dichloropropene	9.34	75	190319	19.1478 ug/L	99
41) Tert-Amyl-Methyl ether	9.47	73	1336603	85.6310 ug/L	99
42) Carbon Tetrachloride	9.48	117	204560	17.8327 ug/L	98
45) 1,2-Dichloroethane	9.65	62	190686	19.3343 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041813\8M387140.D Vial: 7
Acq On : 18 Apr 2013 20:26 Operator: TMB
Sample : WG427303-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD57467 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 18 20:49:02 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	9.69	78	465778	18.7925	ug/L	100
47)	Trichloroethene	10.44	130	132032	21.0766	ug/L	96
48)	Methylcyclohexane	10.55	83	186653	20.8816	ug/L	99
49)	1,2-Dichloropropane	10.66	63	126780	19.5780	ug/L	97
50)	Bromodichloromethane	10.94	83	197085	18.8515	ug/L	99
51)	1,4-Dioxane	10.95	88	6685	210.0421	ug/L	76
52)	Dibromomethane	11.01	93	68919	19.9071	ug/L	97
53)	2-Chloroethyl Vinyl Ether	11.27	63	55806	18.7561	ug/L	96
54)	4-Methyl-2-Pentanone	11.30	58	25664	18.1573	ug/L	97
55)	cis-1,3-Dichloropropene	11.59	75	224993	19.8475	ug/L	99
56)	Dimethyl Disulfide	11.84	94	207914	19.8648	ug/L	98
59)	Toluene	12.02	91	528517	18.8075	ug/L	99
60)	Ethyl Methacrylate	12.14	69	115905	20.2384	ug/L	96
62)	trans-1,3-Dichloropropene	12.19	75	195509	18.4055	ug/L	99
63)	1,1,2-Trichloroethane	12.40	97	92429	19.9817	ug/L	98
64)	2-Hexanone	12.37	58	24073	17.5037	ug/L	86
65)	1,3-Dichloropropane	12.71	76	166348	19.4673	ug/L	97
66)	Tetrachloroethene	12.83	164	112804	19.2544	ug/L	100
67)	Dibromochloromethane	13.07	129	128320	19.1149	ug/L	98
68)	1,2-Dibromoethane	13.32	107	94427	19.6047	ug/L	100
69)	1-Chlorohexane	13.47	91	182149	21.8466	ug/L	99
70)	Chlorobenzene	13.84	112	332417	17.7711	ug/L	99
71)	1,1,1,2-Tetrachloroethane	13.88	131	148338	19.9347	ug/L	98
72)	Ethylbenzene	13.88	106	199148	19.6779	ug/L	100
73)	m-,p-Xylene	13.97	106	463423	37.7179	ug/L	96
74)	o-Xylene	14.53	106	222332	18.4727	ug/L	97
75)	Styrene	14.56	104	400560	20.1622	ug/L	99
76)	Bromoform	15.01	173	78732	18.7359	ug/L	96
77)	Isopropylbenzene	14.96	105	588836	18.7367	ug/L	99
79)	1,1,2,2-Tetrachloroethane	15.16	83	95982	18.6798	ug/L	100
81)	1,2,3-Trichloropropane	15.35	110	31732	18.9858	ug/L	94
82)	trans-1,4-Dichloro-2-Buten	15.40	53	25176	12.8832	ug/L	87
83)	n-Propylbenzene	15.46	91	687929	18.1748	ug/L	98
84)	Bromobenzene	15.56	156	144356	18.7492	ug/L	98
85)	1,3,5-Trimethylbenzene	15.66	105	561126	20.6024	ug/L	100
86)	2-Chlorotoluene	15.72	91	471342	17.3187	ug/L	93
87)	4-Chlorotoluene	15.77	91	447695	17.6224	ug/L	92
88)	a-Methylstyrene	16.05	118	284120	20.9549	ug/L	100
89)	tert-Butylbenzene	16.11	134	95851	18.8849	ug/L	94
90)	1,2,4-Trimethylbenzene	16.16	105	565158	20.0892	ug/L	100
91)	sec-Butylbenzene	16.38	105	574297	18.8733	ug/L	100
92)	p-Isopropyltoluene	16.54	119	490677	19.2813	ug/L	99
93)	1,3-Dichlorobenzene	16.70	146	267897	17.9640	ug/L	100
94)	1,4-Dichlorobenzene	16.83	146	291270	18.7774	ug/L	99
95)	n-Butylbenzene	17.06	91	495347	21.1221	ug/L	99
96)	1,2-Dichlorobenzene	17.32	146	235268	17.4190	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	18.29	75	20937	19.0561	ug/L	93
98)	1,2,4-Trichlorobenzene	19.44	180	165473	19.2306	ug/L	99
99)	Hexachlorobutadiene	19.61	225	72825	20.9093	ug/L	98
100)	Naphthalene	19.79	128	290472	18.8602	ug/L	100
101)	1,2,3-Trichlorobenzene	20.10	180	141501	19.8347	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M387140.D 8260WT.M Thu Apr 18 20:49:03 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\041813\8M387140.D Vial: 7
Acq On : 18 Apr 2013 20:26 Operator: TMB
Sample : WG427303-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD57467 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 18 20:49 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03/29/13 HPMS 8
Last Update : Mon Apr 01 10:00:57 2013
Response via : Initial Calibration

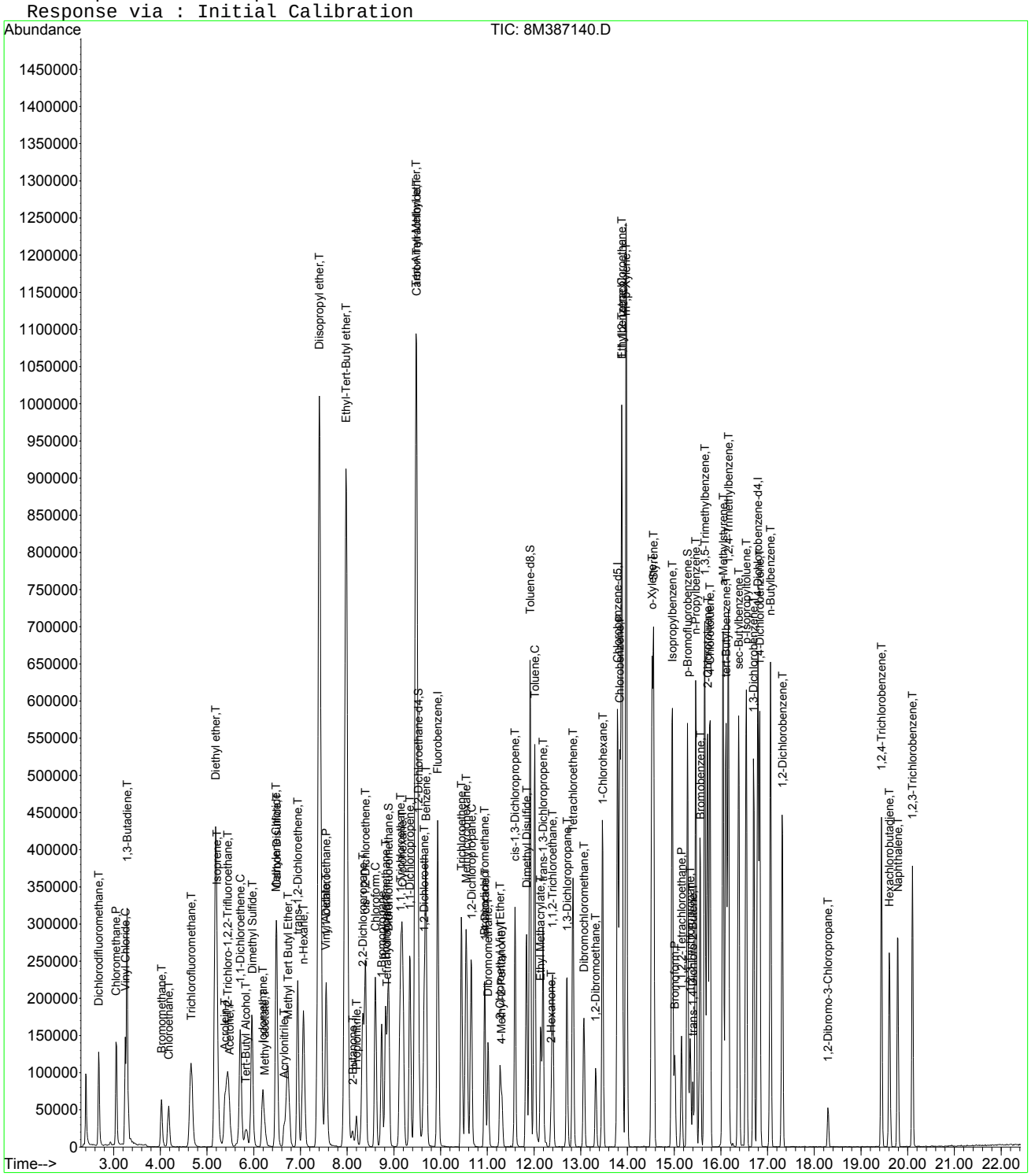

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
April 22, 2013

ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE	AJF - AMANDA J. FICKIESEN
AML - TONY M. LONG	AZH - AFTER HOURS	BAF - BRICE A. FENTON
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES	CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER	CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	CTB - CHRIS T. BUCINA	DDE - DEBRA D. ELLIOTT
DEV - DAVID E. VANDENBERG	DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLR - DIANNA L. RAUCH	DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON	EDL - ERIN D. LONG	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	HJR - HOLLY J. REED	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JKS - JANE K. SCHAAD	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES	KRA - KATHY R. ALBERTSON
LKN - LINDA K. NEDEFF	LSB - LESLIE S. BUCINA	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
QX - QIN XU	RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RS - ROSEMARY SCOTT	RWC - RODNEY W. CAMPBELL
SEP - SUZANNE J. PAUGH	SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
April 22, 2013

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL).
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Analyte was not detected. The concentration is below the reported LOD.
UB	Analyte was not detected. The concentration is below the reported LOQ, however the reported result is associated with a c
UJ	Undetected; the analyte was analyzed for, but not detected.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Erin Long	Project Manager: Dave Wacker	Mail to: Linda Raabe	
Address: 158 Starlite Dr.	Phone/Fax Number: 210-296-2000	AECOM	
Marietta, OH 45750	Sampler (print): GRETCHEN McDONNELL	112 East Pecan Ste. 400	
Phone: 800-373-4071		San Antonio, TX 78205	
Client: AECOM	Signature: Gretchen McDonnell	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: ~~Standard TAT~~ 72 HR	pH:	Program: DoD QSM	
Project Name/Location: Longhorn AAP			
Project Number: ~~60274185~~ 60256135			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	SW8260B - VOCs	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 67	EB TUBING - 160413			4/16/13	1552		X		3	X					
	EB SCREEN - 160413			4/16/13	1432		X		3	X					
	67DPT11A (23-27) - 160413			4/16/13	1521		X		3	X					
	TB - 160413								2	X					

ERPIMS REQUIRED FIELDS

Comments: GW-~~24 hour~~ TAT, Soil-standard TAT 72hr

Gretchen McDonnell (Signature)	Date 04/16/13	Time 1730	Rec	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Rec (Sig	Time		Remarks:

Microbac OVD
Received: 04/17/2013 09:49
By: ROSEMARY SCOTT 221000034784

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00732460

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13040768
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 22-APR-2013

Samplenum	Container ID	Products
L13040768-01	174491	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-APR-2013 13:31	CLS		<2
2	ANALYZ	V1	ORG4	18-APR-2013 08:37	KDW	JKS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-APR-2013 13:31	CLS		<2
2	ANALYZ	V1	ORG4	18-APR-2013 08:37	KDW	JKS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-APR-2013 13:31	CLS		<2
2	ANALYZ	V1	ORG4	18-APR-2013 08:37	KDW	JKS	

Samplenum	Container ID	Products
L13040768-02	174492	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-APR-2013 13:31	CLS		<2
2	ANALYZ	V1	ORG4	18-APR-2013 08:37	KDW	JKS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-APR-2013 13:31	CLS		<2
2	ANALYZ	V1	ORG4	18-APR-2013 08:37	KDW	JKS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-APR-2013 13:31	CLS		<2
2	ANALYZ	V1	ORG4	18-APR-2013 08:37	KDW	JKS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13040768
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 22-APR-2013

Samplenum	Container ID	Products
L13040768-03	174493	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-APR-2013 13:31	CLS		<2
2	ANALYZ	V1	ORG4	18-APR-2013 08:37	KDW	JKS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-APR-2013 13:31	CLS		<2
2	ANALYZ	V1	ORG4	18-APR-2013 08:37	KDW	JKS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-APR-2013 13:31	CLS		<2
2	ANALYZ	V1	ORG4	18-APR-2013 08:37	KDW	JKS	

Samplenum	Container ID	Products
L13040768-04	174494	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-APR-2013 13:31	CLS		<2
2	ANALYZ	V1	ORG4	18-APR-2013 08:37	KDW	JKS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-APR-2013 13:31	CLS		<2
2	ANALYZ	V1	ORG4	18-APR-2013 08:37	KDW	JKS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - March 7, 2013

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)
Ethylene Glycol (Non-potable Water)
Aroclor 1262 (Non-potable Water)

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Nitroguanidine
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL KNITRO-C-WUV-VIS

Nitrocellulose

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL HPLCOS-HPLC-UV

Nitroguanidine

OVL KNITRO-C-S/UV-VIS

Nitrocellulose

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L13060134

Linda Raabe
AECOM Technical Services, Inc.
112 East Pecan
San Antonio, TX 78205

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Tony Long – Team Chemist/Data Specialist
(740) 373-4071
Tony.Long@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on June 17 2013

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #
0018923	I	4.0		J2317153736
0015745	I	4.0		J2317153745

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
EQUIPMENT RINSE-053113	L13060134-01	05/31/2013 06:30	06/04/2013 09:54
67WW06-053113	L13060134-02	05/31/2013 10:00	06/04/2013 09:54
67WW06-053113-FD	L13060134-03	05/31/2013 10:00	06/04/2013 09:54
67WW13-053113	L13060134-04	05/31/2013 14:00	06/04/2013 09:54
67WW05-053113	L13060134-05	05/31/2013 14:20	06/04/2013 09:54
67WW01-053113	L13060134-06	05/31/2013 14:35	06/04/2013 09:54
67WW02-053113	L13060134-07	05/31/2013 14:50	06/04/2013 09:54
67WW07-053113	L13060134-08	05/31/2013 15:05	06/04/2013 09:54
67WW10-060113	L13060134-09	06/01/2013 09:40	06/04/2013 09:54
67WW10-060113-MS	L13060134-10	06/01/2013 09:40	06/04/2013 09:54
67WW10-060113-MD	L13060134-11	06/01/2013 09:40	06/04/2013 09:54
67WW11-060113	L13060134-12	06/01/2013 10:50	06/04/2013 09:54
67WW11-060113-FD	L13060134-13	06/01/2013 10:50	06/04/2013 09:54
67WW12-060113	L13060134-14	06/01/2013 12:00	06/04/2013 09:54
67WW09-060113	L13060134-15	06/03/2013 13:55	06/04/2013 09:54
67WW08-060313	L13060134-16	06/03/2013 13:10	06/04/2013 09:54
TRIP BLANK	L13060134-17	06/03/2013 00:01	06/04/2013 09:54

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L13060134
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 39
2.0 Full Sample Data Package 89
2.1 Volatiles Data 90
2.1.1 Volatiles GCMS Data (8260) 91
2.1.1.1 Summary Data 92
2.1.1.2 QC Summary Data 142
2.1.1.3 Sample Data 237
2.1.1.4 Standards Data 336
2.1.1.5 Raw QC Data 524
2.1.2 RSK 175 569
2.1.2.1 Summary Data 570
2.1.2.2 QC Summary Data 575
2.1.2.3 Sample Data 595
2.1.2.4 Standards Data 598
2.1.2.5 Raw QC Data 628
2.2 General Chemistry Data 633
2.2.1 Method 9056 634
2.2.1.1 Summary Data 635
2.2.1.2 QC Summary Data 638
2.2.1.3 Sample Data 673
2.2.1.4 Standards Data 676
2.2.1.5 Raw QC Data 710
2.2.2 Ferrous Iron Data 715
2.2.2.1 Summary Data 716
2.2.2.2 QC Summary Data 718
2.2.2.3 Raw Data 725
2.2.3 Total Organic Carbon Data 733
2.2.3.1 Summary Data 734
2.2.3.2 QC Summary Data 736
2.2.3.3 Raw Data 743
3.0 Attachments 802

1.0 Summary Data

1.1 Narratives

Microbac Laboratories
Case Narrative

Login Number: L13060134
Department: Volatiles - GC
Analyst: Franci Bolden

Analysis RSK-175

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes/Sample Duplicates: The MS/MSD results were not associated with this sample delivery group (SDG), due to insufficient volume of sample. Microbac Laboratories recommends site specific MS/MSD samples to avoid possible data qualifications.

SAMPLES

Samples: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration

is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

Narrative ID: 65643
Approved By: Michael Albertson

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	8260
Prep Batch Number(s):	433470,433591,433686,433810	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-06-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2013-06-14 18:01:43

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	8260
Prep Batch Number(s):	433470,433591,433686,433810	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-06-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	8260
Prep Batch Number(s):	433470,433591,433686,433810	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-06-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	8260
Prep Batch Number(s):	433470,433591,433686,433810	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-06-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	8260
Prep Batch Number(s):	433470,433591,433686,433810	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-06-14 00:00:00		

Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	8260
Prep Batch Number(s):	433470,433591,433686,433810	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-06-14 00:00:00		

data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Acetone, carbon disulfide, and dichlorodifluoromethane were outside the control limits in the Alternate Source analyzed 05-14-13 on HPMS10.
Vinyl chloride, chloromethane, acetone, dichlorodifluoromethane, and styrene were outside the control limits in the Alternate Source analyzed 05-16-13 on HPMS11. Dichlorodifluoromethane was outside the control limits in the Alternate Source analyzed 04-02-13 on HPMS6.
2) Acetone, dichlorodifluoromethane, and styrene were outside the control limits in the water CCV analyzed 06-10-13 on HPMS11.
Chloromethane, 1,1,2,2-tetrachloroethane, bromomethane, 1,3-dibromo-3-chloropropane, and dichlorodifluoromethane were outside the control limits in the water CCV analyzed 06-10-13 on HPMS6. Chloromethane, dichlorodifluoromethane, and styrene were outside the control limits in the water CCV analyzed 06-12-13 on HPMS10.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	433492	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-06-14 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2013-06-14 18:18:32

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	433492	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-06-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			1
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	433492	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-06-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	433492	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-06-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	433492	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-06-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	433492	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-06-14 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Methane exceeded the MDL.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG432972	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2013-06-06 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Jeremy Kinney		Chemist I	2013-06-06 12:45:11

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG432972	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2013-06-06 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG432972	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2013-06-06 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				1
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG432972	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2013-06-06 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG432972	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2013-06-06 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG432972	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2013-06-06 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fraction -16 was analyzed at a dilution only due to its high chloride concentrationswhich was greater than 200 ppm. Any sample that has a single anion load greater than 200 ppm will be diluted in order to prevent damage to the IC from repeated overloading of the analytical column and oversaturation of the suppressor membranes.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG433068	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-06-15 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2013-06-15 13:13:10

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG433068	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-06-15 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG433068	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-06-15 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG433068	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-06-15 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG433068	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-06-15 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG433068	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-06-15 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG433259	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-06-15 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2013-06-15 13:13:53

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG433259	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-06-15 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG433259	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-06-15 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG433259	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-06-15 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG433259	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-06-15 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13060134
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG433259	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-06-15 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	EQUIPMENT RINSE-053113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/15/2013 21:28
Workgroup #:	WG433470	**Analyst:**	FJB	**Run Date:**	06/10/2013 16:40
Collect Date:	05/31/2013 06:30	**Dilution:**	1	**File ID:**	11M92742
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.127	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.3	85	115	
1,2-Dichloroethane-d4	83.8	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW06-053113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/15/2013 21:28
Workgroup #:	WG433470	**Analyst:**	FJB	**Run Date:**	06/10/2013 20:20
Collect Date:	05/31/2013 10:00	**Dilution:**	1	**File ID:**	11M92749
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.212	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	2.25		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.918	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.6	85	115	
1,2-Dichloroethane-d4	86.1	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW06-053113-FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/15/2013 21:28
Workgroup #:	WG433470	**Analyst:**	FJB	**Run Date:**	06/10/2013 20:51
Collect Date:	05/31/2013 10:00	**Dilution:**	1	**File ID:**	11M92750
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.193	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	2.20		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.846	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.5	85	115	
1,2-Dichloroethane-d4	85.4	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW13-053113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/15/2013 21:28
Workgroup #:	WG433470	**Analyst:**	FJB	**Run Date:**	06/10/2013 21:22
Collect Date:	05/31/2013 14:00	**Dilution:**	1	**File ID:**	11M92751
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.462	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	35.5		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.1		1.00	0.500	0.250
cis-1,2-Dichloroethene	156-59-2	1.68		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	3.58		1.00	0.500	0.250
Trichloroethene	79-01-6	3.11		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	2.55		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.1	85	115	
1,2-Dichloroethane-d4	84.6	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	107	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW13-053113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/15/2013 21:28
Workgroup #:	WG433686	**Analyst:**	FJB	**Run Date:**	06/11/2013 14:49
Collect Date:	05/31/2013 14:00	**Dilution:**	10	**File ID:**	11M92765
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1-Dichloroethene	75-35-4	498		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.1	85	115	
1,2-Dichloroethane-d4	83.5	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	107	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW05-053113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/15/2013 21:28
Workgroup #:	WG433470	**Analyst:**	FJB	**Run Date:**	06/10/2013 21:54
Collect Date:	05/31/2013 14:20	**Dilution:**	1	**File ID:**	11M92752
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.7	85	115	
1,2-Dichloroethane-d4	84.9	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	108	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	67WW01-053113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/14/2013 20:33
Workgroup #:	WG433810	**Analyst:**	TMB	**Run Date:**	06/12/2013 16:46
Collect Date:	05/31/2013 14:35	**Dilution:**	1	**File ID:**	10M05685
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	6.37		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	6.68		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	139		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.12		1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	2.96		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	2.18		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	96.0	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW02-053113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/11/2013 00:27
Collect Date:	05/31/2013 14:50	**Dilution:**	1	**File ID:**	6M117419
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.507	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	93.5	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW07-053113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/11/2013 00:58
Collect Date:	05/31/2013 15:05	**Dilution:**	1	**File ID:**	6M117420
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.67		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	93.0	85	120	
4-Bromofluorobenzene	106	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW10-060113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/10/2013 21:50
Collect Date:	06/01/2013 09:40	**Dilution:**	1	**File ID:**	6M117414
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.390	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	93.6	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW10-060113-MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/10/2013 18:44
Collect Date:	06/01/2013 09:40	**Dilution:**	1	**File ID:**	6M117408
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.2		10.0	5.00	2.50
Benzene	71-43-2	22.0		1.00	0.250	0.125
Bromobenzene	108-86-1	19.4		1.00	0.250	0.125
Bromochloromethane	74-97-5	22.7		1.00	0.400	0.200
Bromodichloromethane	75-27-4	23.1		1.00	0.500	0.250
Bromoform	75-25-2	19.0		2.00	1.00	0.500
Bromomethane	74-83-9	15.5		2.00	1.00	0.500
2-Butanone	78-93-3	17.6		10.0	5.00	2.50
n-Butylbenzene	104-51-8	20.7		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.7		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.5		1.00	0.500	0.250
Carbon disulfide	75-15-0	17.0		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	25.2		1.00	0.500	0.250
Chlorobenzene	108-90-7	18.1		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.2		1.00	0.500	0.250
Chloroethane	75-00-3	22.7		2.00	1.00	0.500
Chloroform	67-66-3	23.5		1.00	0.250	0.125
Chloromethane	74-87-3	18.7		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.9		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.1		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	18.2		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.7		1.00	0.500	0.250
Dibromomethane	74-95-3	23.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	18.3		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.3		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.2		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	24.7		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	22.6		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	24.4		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	22.2		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	23.0		1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	22.9		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	22.3		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.6		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	24.0		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.0		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.3		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	22.4		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.1		1.00	0.500	0.250
2-Hexanone	591-78-6	17.1		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	21.6		1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.6		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.3		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.0		10.0	5.00	2.50
Methylene chloride	75-09-2	22.5		1.00	0.500	0.250
Naphthalene	91-20-3	17.6		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.6		1.00	0.250	0.125
Styrene	100-42-5	19.7		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	21.3		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.9		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.2		1.00	0.500	0.250
Toluene	108-88-3	19.6		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.0		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.4		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	24.7		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.7		1.00	0.500	0.250
Trichloroethene	79-01-6	24.0		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	24.7		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.5		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.2		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.2		1.00	0.500	0.250
Vinyl chloride	75-01-4	20.1		1.00	0.500	0.250
o-Xylene	95-47-6	18.8		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	39.5		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	94.2	85	120	
4-Bromofluorobenzene	106	75	120	

Certificate of Analysis

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Sample #:	L13060134-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW10-060113-MD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/10/2013 19:15
Collect Date:	06/01/2013 09:40	**Dilution:**	1	**File ID:**	6M117409
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.1		10.0	5.00	2.50
Benzene	71-43-2	22.0		1.00	0.250	0.125
Bromobenzene	108-86-1	19.3		1.00	0.250	0.125
Bromochloromethane	74-97-5	22.3		1.00	0.400	0.200
Bromodichloromethane	75-27-4	22.8		1.00	0.500	0.250
Bromoform	75-25-2	18.8		2.00	1.00	0.500
Bromomethane	74-83-9	16.2		2.00	1.00	0.500
2-Butanone	78-93-3	16.9		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.0		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.6		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.5		1.00	0.500	0.250
Carbon disulfide	75-15-0	16.9		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	24.6		1.00	0.500	0.250
Chlorobenzene	108-90-7	18.1		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	18.6		1.00	0.500	0.250
Chloroethane	75-00-3	22.9		2.00	1.00	0.500
Chloroform	67-66-3	23.1		1.00	0.250	0.125
Chloromethane	74-87-3	18.3		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.1		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	17.4		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.5		1.00	0.500	0.250
Dibromomethane	74-95-3	23.0		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	18.1		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.2		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.1		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.2		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	22.3		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.9		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	22.0		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	22.5		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	22.5		1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	22.2		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.3		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	23.5		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.1		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.0		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	22.2		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.1		1.00	0.500	0.250
2-Hexanone	591-78-6	17.1		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	21.0		1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.6		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.1		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.9		10.0	5.00	2.50
Methylene chloride	75-09-2	22.5		1.00	0.500	0.250
Naphthalene	91-20-3	18.5		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.3		1.00	0.250	0.125
Styrene	100-42-5	19.4		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	21.2		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.8		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.0		1.00	0.500	0.250
Toluene	108-88-3	19.3		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.1		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.4		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	24.6		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.2		1.00	0.500	0.250
Trichloroethene	79-01-6	23.9		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	24.4		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.0		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.1		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.9		1.00	0.500	0.250
Vinyl chloride	75-01-4	20.7		1.00	0.500	0.250
o-Xylene	95-47-6	18.8		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	39.0		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	93.4	85	120	
4-Bromofluorobenzene	106	75	120	

Certificate of Analysis

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Sample #:	L13060134-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW11-060113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/11/2013 01:30
Collect Date:	06/01/2013 10:50	**Dilution:**	1	**File ID:**	6M117421
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	10.6		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.869	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	47.1		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	93.3	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW11-060113-FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/11/2013 02:01
Collect Date:	06/01/2013 10:50	**Dilution:**	1	**File ID:**	6M117422
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	10.6		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.850	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	46.8		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	92.9	85	120	
4-Bromofluorobenzene	107	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW12-060113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/11/2013 02:33
Collect Date:	06/01/2013 12:00	**Dilution:**	1	**File ID:**	6M117423
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.299	J	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	93.3	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-15	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW09-060113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/11/2013 03:03
Collect Date:	06/03/2013 13:55	**Dilution:**	1	**File ID:**	6M117424
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	3.60		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	16.1		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	93.6	85	120	
4-Bromofluorobenzene	106	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW08-060313	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/11/2013 03:35
Collect Date:	06/03/2013 13:10	**Dilution:**	1	**File ID:**	6M117425
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.194	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	3.56		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	53.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	89.2		1.00	0.500	0.250
cis-1,2-Dichloroethene	156-59-2	2.18		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	4.25		1.00	0.500	0.250
Trichloroethene	79-01-6	2.86		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.951	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	92.4	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	67WW08-060313	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/14/2013 20:33
Workgroup #:	WG433810	**Analyst:**	TMB	**Run Date:**	06/12/2013 13:43
Collect Date:	06/03/2013 13:10	**Dilution:**	25	**File ID:**	10M05679
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1-Dichloroethene	75-35-4	940		50.0	25.0	12.5

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.3	85	115	
1,2-Dichloroethane-d4	96.6	70	120	
Toluene-d8	94.3	85	120	
4-Bromofluorobenzene	93.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-16	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW08-060313	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/02/2013 13:25
Workgroup #:	WG433492	**Analyst:**	QX	**Run Date:**	06/10/2013 12:05
Collect Date:	06/03/2013 13:10	**Dilution:**	1	**File ID:**	16G38561
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	10.6		5.00	2.00	1.00
Ethene	74-85-1	1.29	J	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-16	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-060313	**Prep Method:**	9056	**Prep Date:**	06/05/2013 08:57
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	05/01/2013 13:02
Workgroup #:	WG432972	**Analyst:**	JBK	**Run Date:**	06/05/2013 17:48
Collect Date:	06/03/2013 13:10	**Dilution:**	50	**File ID:**	I1_060513-32
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfate	14808-79-8	300		100	50.0	25.0

J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-16	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-060313	**Prep Method:**	9056	**Prep Date:**	06/06/2013 16:53
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	05/01/2013 13:02
Workgroup #:	WG433268	**Analyst:**	JBK	**Run Date:**	06/06/2013 21:44
Collect Date:	06/03/2013 13:10	**Dilution:**	100	**File ID:**	I1_060613-19
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1320		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L13060134-16	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW08-060313	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	04/22/2013 15:00
Workgroup #:	WG433068	**Analyst:**	TMM	**Run Date:**	06/06/2013 20:13
Collect Date:	06/03/2013 13:10	**Dilution:**	1	**File ID:**	1V.1306062013-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.0795		0.0400	0.0400	0.0200

Certificate of Analysis

Sample #:	L13060134-16	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-060313	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	08/06/2012 08:11
Workgroup #:	WG433259	**Analyst:**	BAF	**Run Date:**	06/07/2013 23:25
Collect Date:	06/03/2013 13:10	**Dilution:**	1	**File ID:**	TC06072013.045
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		10.3		2.00	1.00	0.500

Certificate of Analysis

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Sample #:	L13060134-16	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-060313	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	08/06/2012 08:11
Workgroup #:	WG433259	**Analyst:**	BAF	**Run Date:**	06/07/2013 23:25
Collect Date:	06/03/2013 13:10	**Dilution:**	1	**File ID:**	TC06072013.045
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	3.61		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L13060134-17	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/10/2013 21:19
Collect Date:	06/03/2013 00:01	**Dilution:**	1	**File ID:**	6M117413
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	94.2	85	120	
4-Bromofluorobenzene	107	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	EQUIPMENT RINSE-053113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/15/2013 21:28
Workgroup #:	WG433470	**Analyst:**	FJB	**Run Date:**	06/10/2013 16:40
Collect Date:	05/31/2013 06:30	**Dilution:**	1	**File ID:**	11M92742
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.127	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.3	85	115	
1,2-Dichloroethane-d4	83.8	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW06-053113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/15/2013 21:28
Workgroup #:	WG433470	**Analyst:**	FJB	**Run Date:**	06/10/2013 20:20
Collect Date:	05/31/2013 10:00	**Dilution:**	1	**File ID:**	11M92749
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.212	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	2.25		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.918	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.6	85	115	
1,2-Dichloroethane-d4	86.1	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW06-053113-FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/15/2013 21:28
Workgroup #:	WG433470	**Analyst:**	FJB	**Run Date:**	06/10/2013 20:51
Collect Date:	05/31/2013 10:00	**Dilution:**	1	**File ID:**	11M92750
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.193	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	2.20		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.846	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.5	85	115	
1,2-Dichloroethane-d4	85.4	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW13-053113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/15/2013 21:28
Workgroup #:	WG433470	**Analyst:**	FJB	**Run Date:**	06/10/2013 21:22
Collect Date:	05/31/2013 14:00	**Dilution:**	1	**File ID:**	11M92751
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.462	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	35.5		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.1		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	565	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.68		1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	3.58		1.00	0.500	0.250
Trichloroethene	79-01-6	3.11		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	2.55		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.1	85	115	
1,2-Dichloroethane-d4	84.6	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	107	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW13-053113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/15/2013 21:28
Workgroup #:	WG433686	**Analyst:**	FJB	**Run Date:**	06/11/2013 14:49
Collect Date:	05/31/2013 14:00	**Dilution:**	10	**File ID:**	11M92765
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	2.50	U	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	30.6		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	19.9		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	498		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	2.91	J	10.0	5.00	2.50
Trichloroethene	79-01-6	2.71	J	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.1	85	115	
1,2-Dichloroethane-d4	83.5	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	107	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW05-053113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/15/2013 21:28
Workgroup #:	WG433470	**Analyst:**	FJB	**Run Date:**	06/10/2013 21:54
Collect Date:	05/31/2013 14:20	**Dilution:**	1	**File ID:**	11M92752
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.7	85	115	
1,2-Dichloroethane-d4	84.9	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	108	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	67WW01-053113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/14/2013 20:33
Workgroup #:	WG433810	**Analyst:**	TMB	**Run Date:**	06/12/2013 16:46
Collect Date:	05/31/2013 14:35	**Dilution:**	1	**File ID:**	10M05685
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	6.37		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	6.68		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	139		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.12		1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	2.96		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	2.18		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	96.0	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW02-053113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/11/2013 00:27
Collect Date:	05/31/2013 14:50	**Dilution:**	1	**File ID:**	6M117419
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.507	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	93.5	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW07-053113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/11/2013 00:58
Collect Date:	05/31/2013 15:05	**Dilution:**	1	**File ID:**	6M117420
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.67		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	93.0	85	120	
4-Bromofluorobenzene	106	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW10-060113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/10/2013 21:50
Collect Date:	06/01/2013 09:40	**Dilution:**	1	**File ID:**	6M117414
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.390	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	93.6	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW10-060113-MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/10/2013 18:44
Collect Date:	06/01/2013 09:40	**Dilution:**	1	**File ID:**	6M117408
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.2		10.0	5.00	2.50
Benzene	71-43-2	22.0		1.00	0.250	0.125
Bromobenzene	108-86-1	19.4		1.00	0.250	0.125
Bromochloromethane	74-97-5	22.7		1.00	0.400	0.200
Bromodichloromethane	75-27-4	23.1		1.00	0.500	0.250
Bromoform	75-25-2	19.0		2.00	1.00	0.500
Bromomethane	74-83-9	15.5		2.00	1.00	0.500
2-Butanone	78-93-3	17.6		10.0	5.00	2.50
n-Butylbenzene	104-51-8	20.7		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.7		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.5		1.00	0.500	0.250
Carbon disulfide	75-15-0	17.0		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	25.2		1.00	0.500	0.250
Chlorobenzene	108-90-7	18.1		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.2		1.00	0.500	0.250
Chloroethane	75-00-3	22.7		2.00	1.00	0.500
Chloroform	67-66-3	23.5		1.00	0.250	0.125
Chloromethane	74-87-3	18.7		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.9		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.1		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	18.2		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.7		1.00	0.500	0.250
Dibromomethane	74-95-3	23.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	18.3		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.3		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.2		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	24.7		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	22.6		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	24.4		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	22.2		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	23.0		1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	22.9		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	22.3		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.6		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	24.0		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.0		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.3		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	22.4		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.1		1.00	0.500	0.250
2-Hexanone	591-78-6	17.1		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	21.6		1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.6		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.3		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.0		10.0	5.00	2.50
Methylene chloride	75-09-2	22.5		1.00	0.500	0.250
Naphthalene	91-20-3	17.6		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.6		1.00	0.250	0.125
Styrene	100-42-5	19.7		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	21.3		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.9		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.2		1.00	0.500	0.250
Toluene	108-88-3	19.6		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.0		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.4		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	24.7		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.7		1.00	0.500	0.250
Trichloroethene	79-01-6	24.0		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	24.7		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.5		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.2		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.2		1.00	0.500	0.250
Vinyl chloride	75-01-4	20.1		1.00	0.500	0.250
o-Xylene	95-47-6	18.8		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	39.5		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	94.2	85	120	
4-Bromofluorobenzene	106	75	120	

Certificate of Analysis

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Sample #:	L13060134-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW10-060113-MD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/10/2013 19:15
Collect Date:	06/01/2013 09:40	**Dilution:**	1	**File ID:**	6M117409
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.1		10.0	5.00	2.50
Benzene	71-43-2	22.0		1.00	0.250	0.125
Bromobenzene	108-86-1	19.3		1.00	0.250	0.125
Bromochloromethane	74-97-5	22.3		1.00	0.400	0.200
Bromodichloromethane	75-27-4	22.8		1.00	0.500	0.250
Bromoform	75-25-2	18.8		2.00	1.00	0.500
Bromomethane	74-83-9	16.2		2.00	1.00	0.500
2-Butanone	78-93-3	16.9		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.0		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.6		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.5		1.00	0.500	0.250
Carbon disulfide	75-15-0	16.9		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	24.6		1.00	0.500	0.250
Chlorobenzene	108-90-7	18.1		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	18.6		1.00	0.500	0.250
Chloroethane	75-00-3	22.9		2.00	1.00	0.500
Chloroform	67-66-3	23.1		1.00	0.250	0.125
Chloromethane	74-87-3	18.3		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.1		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	17.4		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.5		1.00	0.500	0.250
Dibromomethane	74-95-3	23.0		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	18.1		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.2		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.1		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.2		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	22.3		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.9		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	22.0		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	22.5		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	22.5		1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	22.2		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.3		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	23.5		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.1		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.0		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	22.2		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.1		1.00	0.500	0.250
2-Hexanone	591-78-6	17.1		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	21.0		1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.6		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.1		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.9		10.0	5.00	2.50
Methylene chloride	75-09-2	22.5		1.00	0.500	0.250
Naphthalene	91-20-3	18.5		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.3		1.00	0.250	0.125
Styrene	100-42-5	19.4		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	21.2		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.8		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.0		1.00	0.500	0.250
Toluene	108-88-3	19.3		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.1		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.4		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	24.6		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.2		1.00	0.500	0.250
Trichloroethene	79-01-6	23.9		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	24.4		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.0		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.1		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.9		1.00	0.500	0.250
Vinyl chloride	75-01-4	20.7		1.00	0.500	0.250
o-Xylene	95-47-6	18.8		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	39.0		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	93.4	85	120	
4-Bromofluorobenzene	106	75	120	

Certificate of Analysis

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Sample #:	L13060134-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW11-060113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/11/2013 01:30
Collect Date:	06/01/2013 10:50	**Dilution:**	1	**File ID:**	6M117421
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	10.6		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.869	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	47.1		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	93.3	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW11-060113-FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/11/2013 02:01
Collect Date:	06/01/2013 10:50	**Dilution:**	1	**File ID:**	6M117422
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	10.6		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.850	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	46.8		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	92.9	85	120	
4-Bromofluorobenzene	107	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW12-060113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/11/2013 02:33
Collect Date:	06/01/2013 12:00	**Dilution:**	1	**File ID:**	6M117423
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.299	J	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	93.3	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-15	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW09-060113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/11/2013 03:03
Collect Date:	06/03/2013 13:55	**Dilution:**	1	**File ID:**	6M117424
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	3.60		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	16.1		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	93.6	85	120	
4-Bromofluorobenzene	106	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW08-060313	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/11/2013 03:35
Collect Date:	06/03/2013 13:10	**Dilution:**	1	**File ID:**	6M117425
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.194	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	3.56		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	53.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	89.2		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1390	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	2.18		1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	4.25		1.00	0.500	0.250
Trichloroethene	79-01-6	2.86		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.951	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	92.4	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	67WW08-060313	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/14/2013 20:33
Workgroup #:	WG433810	**Analyst:**	TMB	**Run Date:**	06/12/2013 13:43
Collect Date:	06/03/2013 13:10	**Dilution:**	25	**File ID:**	10M05679
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	125	U	250	125	62.5
Benzene	71-43-2	6.26	U	25.0	6.26	3.13
Bromobenzene	108-86-1	6.26	U	25.0	6.26	3.13
Bromochloromethane	74-97-5	10.0	U	25.0	10.0	5.00
Bromodichloromethane	75-27-4	12.5	U	25.0	12.5	6.25
Bromoform	75-25-2	25.0	U	50.0	25.0	12.5
Bromomethane	74-83-9	25.0	U	50.0	25.0	12.5
2-Butanone	78-93-3	125	U	250	125	62.5
n-Butylbenzene	104-51-8	12.5	U	25.0	12.5	6.25
sec-Butylbenzene	135-98-8	12.5	U	25.0	12.5	6.25
tert-Butylbenzene	98-06-6	12.5	U	25.0	12.5	6.25
Carbon disulfide	75-15-0	25.0	U	50.0	25.0	12.5
Carbon tetrachloride	56-23-5	12.5	U	25.0	12.5	6.25
Chlorobenzene	108-90-7	6.26	U	25.0	6.26	3.13
Chlorodibromomethane	124-48-1	12.5	U	25.0	12.5	6.25
Chloroethane	75-00-3	25.0	U	50.0	25.0	12.5
Chloroform	67-66-3	6.26	U	25.0	6.26	3.13
Chloromethane	74-87-3	25.0	U	50.0	25.0	12.5
2-Chlorotoluene	95-49-8	6.26	U	25.0	6.26	3.13
4-Chlorotoluene	106-43-4	12.5	U	25.0	12.5	6.25
1,2-Dibromo-3-chloropropane	96-12-8	50.0	U	125	50.0	25.0
1,2-Dibromoethane	106-93-4	12.5	U	25.0	12.5	6.25
Dibromomethane	74-95-3	12.5	U	25.0	12.5	6.25
1,2-Dichlorobenzene	95-50-1	6.26	U	25.0	6.26	3.13
1,3-Dichlorobenzene	541-73-1	12.5	U	25.0	12.5	6.25
1,4-Dichlorobenzene	106-46-7	6.26	U	25.0	6.26	3.13
Dichlorodifluoromethane	75-71-8	12.5	U	25.0	12.5	6.25
1,1-Dichloroethane	75-34-3	37.5		25.0	6.26	3.13
1,2-Dichloroethane	107-06-2	64.3		25.0	12.5	6.25
1,1-Dichloroethene	75-35-4	940		50.0	25.0	12.5
cis-1,2-Dichloroethene	156-59-2	12.5	U	25.0	12.5	6.25

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	12.5	U	25.0	12.5	6.25
1,2-Dichloropropane	78-87-5	10.0	U	25.0	10.0	5.00
1,3-Dichloropropane	142-28-9	10.0	U	25.0	10.0	5.00
2,2-Dichloropropane	594-20-7	12.5	U	25.0	12.5	6.25
cis-1,3-Dichloropropene	10061-01-5	12.5	U	25.0	12.5	6.25
trans-1,3-Dichloropropene	10061-02-6	25.0	U	50.0	25.0	12.5
1,1-Dichloropropene	563-58-6	12.5	U	25.0	12.5	6.25
Ethylbenzene	100-41-4	12.5	U	25.0	12.5	6.25
2-Hexanone	591-78-6	125	U	250	125	62.5
Hexachlorobutadiene	87-68-3	12.5	U	25.0	12.5	6.25
Isopropylbenzene	98-82-8	12.5	U	25.0	12.5	6.25
p-Isopropyltoluene	99-87-6	12.5	U	25.0	12.5	6.25
4-Methyl-2-pentanone	108-10-1	125	U	250	125	62.5
Methylene chloride	75-09-2	12.5	U	25.0	12.5	6.25
Naphthalene	91-20-3	10.0	U	25.0	10.0	5.00
n-Propylbenzene	103-65-1	6.26	U	25.0	6.26	3.13
Styrene	100-42-5	6.26	U	25.0	6.26	3.13
1,1,1,2-Tetrachloroethane	630-20-6	12.5	U	25.0	12.5	6.25
1,1,2,2-Tetrachloroethane	79-34-5	10.0	U	25.0	10.0	5.00
Tetrachloroethene	127-18-4	12.5	U	25.0	12.5	6.25
Toluene	108-88-3	7.92	J	25.0	12.5	6.25
1,2,3-Trichlorobenzene	87-61-6	7.50	U	25.0	7.50	3.75
1,2,4-Trichlorobenzene	120-82-1	10.0	U	25.0	10.0	5.00
1,1,1-Trichloroethane	71-55-6	12.5	U	25.0	12.5	6.25
1,1,2-Trichloroethane	79-00-5	12.5	U	25.0	12.5	6.25
Trichloroethene	79-01-6	12.5	U	25.0	12.5	6.25
Trichlorofluoromethane	75-69-4	12.5	U	25.0	12.5	6.25
1,2,3-Trichloropropane	96-18-4	25.0	U	50.0	25.0	12.5
1,2,4-Trimethylbenzene	95-63-6	12.5	U	25.0	12.5	6.25
1,3,5-Trimethylbenzene	108-67-8	12.5	U	25.0	12.5	6.25
Vinyl chloride	75-01-4	12.5	U	25.0	12.5	6.25
o-Xylene	95-47-6	12.5	U	25.0	12.5	6.25
m-,p-Xylene	179601-23-1	25.0	U	50.0	25.0	12.5

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.3	85	115	
1,2-Dichloroethane-d4	96.6	70	120	
Toluene-d8	94.3	85	120	
4-Bromofluorobenzene	93.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-17	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/02/2013 13:49
Workgroup #:	WG433591	**Analyst:**	ADC	**Run Date:**	06/10/2013 21:19
Collect Date:	06/03/2013 00:01	**Dilution:**	1	**File ID:**	6M117413
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	94.2	85	120	
4-Bromofluorobenzene	107	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS10 Dataset: 013113
Analyst1: TMB Analyst2: FJB/MDA
Method: 8260B SOP: MSV01 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Method: 624 SOP: MSV10 Rev: 9
Maintenance Log ID: 44696

Internal Standard: STD55662 Surrogate Standard: STD55765
CCV: STD56128 LCS: STD56130 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG419631,WG419632

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
10M01769	RINSE	NA	1	1		01/31/13 08:56
10M01770	RINSE	NA	1	1		01/31/13 09:45
10M01771	RINSE	NA	1	1		01/31/13 10:51
10M01772	WG419631-01 50ng BFB STD A9/FOO	NA	1	1	STD56031	01/31/13 11:53
10M01773	WG419631-02 5ug/L STD A9/FOO	NA	1	1	STD56128	01/31/13 12:18
10M01774	WG419631-03 20ug/L STD A9/FOO	NA	1	1	STD56128	01/31/13 12:48
10M01775	WG419631-04 50ug/L STD A9/FOO	NA	1	1	STD56128	01/31/13 13:19
10M01776	WG419631-05 100ug/L STD A9/FOO	NA	1	1	STD56128	01/31/13 13:49
10M01777	WG419631-06 200ug/L STD A9/FOO	NA	1	1	STD56128	01/31/13 14:20
10M01778	WG419631-07 300ug/L STD A9/FOO	NA	1	1	STD56128	01/31/13 14:50
10M01779	WG419631-08 400ug/L STD A9/FOO	NA	1	1	STD56128	01/31/13 15:21
10M01780	WG419631-09 500ug/L STD A9/FOO	NA	1	1	STD56128	01/31/13 15:51
10M01781	RINSE	NA	1	1		01/31/13 16:21
10M01782	WG419631-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD56130	01/31/13 16:51
10M01783	WG419632-01 100ug/L P\&A STD A9/FOO	NA	1	1	STD56130	01/31/13 17:21
10M01784	WG419632-02 100ug/L P\&A STD A9/FOO	NA	1	1	STD56130	01/31/13 17:52
10M01785	WG419632-03 100ug/L P\&A STD A9/FOO	NA	1	1	STD56130	01/31/13 18:22
10M01786	WG419632-04 100ug/L P\&A STD A9/FOO	NA	1	1	STD56130	01/31/13 18:52
10M01787	WG419632-05 100ug/L P\&A STD A9/FOO	NA	1	1	STD56130	01/31/13 19:22
10M01788	WG419632-06 100ug/L P\&A STD A9/FOO	NA	1	1	STD56130	01/31/13 19:52
10M01789	WG419632-07 100ug/L P\&A STD A9/FOO	NA	1	1	STD56130	01/31/13 20:22
10M01790	WG419632-08 100ug/L P\&A STD A9/FOO	NA	1	1	STD56130	01/31/13 20:52

Approved: February 04, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 040213
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Method: 624 SOP: MSV10 Rev: 9
Maintenance Log ID: 45419

Internal Standard: STD57149 Surrogate Standard: STD57149
CCV: STD57020 LCS: STD57021 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG425306 (ICAL), WG425402

Comments: L13031114-01 through -08 have C/O and need RR STR. DNR.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M115121	WG425306-01 BFB 50ng 8260	NA	1	1	STD57083	04/02/13 07:26
6M115122	WG425306-02 0.3ug/L STD 8260	NA	1	1	STD57020	04/02/13 08:02
6M115123	WG425306-02 0.4ug/L STD 8260	NA	1	1	STD57020	04/02/13 08:34
6M115124	WG425306-02 0.3ug/L STD 8260	NA	1	1	STD57020	04/02/13 09:08
6M115125	WG425306-03 0.4ug/L STD 8260	NA	1	1	STD57020	04/02/13 09:38
6M115126	WG425306-04 1ug/L STD 8260	NA	1	1	STD57020	04/02/13 10:08
6M115127	WG425306-05 2ug/L STD 8260	NA	1	1	STD57020	04/02/13 10:39
6M115128	WG425306-06 5ug/L STD 8260	NA	1	1	STD57020	04/02/13 11:10
6M115129	WG425306-07 20ug/L STD 8260	NA	1	1	STD57020	04/02/13 11:41
6M115130	WG425306-08 50ug/L STD 8260	NA	1	1	STD57020	04/02/13 12:13
6M115131	WG425306-09 100ug/L STD 8260	NA	1	1	STD57020	04/02/13 12:45
6M115132	WG425306-10 200ug/L STD 8260	NA	1	1	STD57020	04/02/13 13:17
6M115133	WG425306-11 300ug/L STD 8260	NA	1	1	STD57020	04/02/13 13:49
6M115134	rinse	NA	1	1		04/02/13 14:58
6M115135	WG425306-12 50ug/L ALT SRC 8260	NA	1	1	STD57021	04/02/13 15:29
6M115136	WG425401-01 50ng/L BFB 8260	NA	1	1	STD57083	04/02/13 17:40
6M115137	WG425401-02 50ug/L CCV 8260	NA	1	1	STD57020	04/02/13 18:03
6M115138	WG425861-01 100ug/L A9CCV 8260	NA	1	1	STD56857	04/02/13 18:35
6M115139	WG425402-01 04/02 VBLK 8260	NA	1	1		04/02/13 19:07
6M115140	WG425402-02 20ug/L LCS 8260	NA	1	1	STD57151	04/02/13 19:39
6M115141	L13031114-10 A MS 826-A9-SPE	<2	1	1	STD57151	04/02/13 20:11
6M115142	L13031114-11 A MSD 826-A9-SPE	<2	1	1	STD57151	04/02/13 20:43
6M115143	WG425402-06 100ug/L A9LCS 8260	NA	1	1	STD57084	04/02/13 21:14
6M115144	L13031114-12 A 826-A9-SPE	<2	1	1		04/02/13 21:45
6M115145	L13030987-03 A 826-A9-SPE	<2	1	1		04/02/13 22:16
6M115146	L13030984-08 A 826-A9-SPE	<2	1	1		04/02/13 22:46
6M115147	L13031114-09 A 826-A9-SPE	<2	1	1		04/02/13 23:17
6M115148	L13030987-01 A 826-A9-SPE	<2	1	1		04/02/13 23:48
6M115149	L13030987-02 A 826-A9-SPE	<2	1	1		04/03/13 00:18
6M115150	L13031114-01 A 826-A9-SPE	<2	1	1		04/03/13 00:48
6M115151	L13031114-02 A 826-A9-SPE	<2	1	1		04/03/13 01:18
6M115152	L13031114-03 A 826-A9-SPE	<2	1	1		04/03/13 01:48
6M115153	L13031114-04 A 826-A9-SPE	<2	1	1		04/03/13 02:18
6M115154	L13031114-05 A 826-A9-SPE	<2	1	1		04/03/13 02:49

Approved: April 05, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 040213
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Method: 624 SOP: MSV10 Rev: 9
Maintenance Log ID: 45419

Internal Standard: STD57149 Surrogate Standard: STD57149
CCV: STD57020 LCS: STD57021 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG425306 (ICAL), WG425402

Comments: L13031114-01 through -08 have C/O and need RR STR. DNR.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M115155	L13031114-06 A 826-A9-SPE	<2	1	1		04/03/13 03:19
6M115156	L13031114-07 A 826-A9-SPE	<2	1	1		04/03/13 03:48
6M115157	L13031114-08 A 826-A9-SPE	<2	1	1		04/03/13 04:18
6M115158	L13031095-07 A 826-A9-SPE	<2	1	1		04/03/13 04:48
6M115159	RINSE	NA	1	1		04/03/13 05:18
6M115160	RINSE	NA	1	1		04/03/13 05:47
6M115161	RINSE	NA	1	1		04/03/13 06:17
6M115162	RINSE	NA	1	1		04/03/13 10:50
6M115163	RINSE	NA	1	1		04/03/13 11:21
6M115164	RINSE	NA	1	1		04/03/13 11:52
6M115165	RINSE	NA	1	1		04/03/13 12:24

Comments

Seq.	Rerun	Dil.	Reason	Analytes
29	X	1000	Over Calibration Range	
File ID: 6M115149				
	L13030987-02			
38				
File ID: 6M115158				
	L13031095-07 DNR C/O RR 5X			

Approved: April 05, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS10 Dataset: 051413
Analyst1: TMB Analyst2: NA
Method: 8260B/OVAP SOP: MSV01/PAT01 Rev: 15/0
Method: 624 SOP: MSV10 Rev: 9
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 45956

Internal Standard: STD57749 Surrogate Standard: STD57794
CCV: STD57872 LCS: STD57878 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG430035

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
10M04726	WG430035-01 50ng BFB STD 8260	NA	1	1	STD57627	05/14/13 09:20
10M04727	WG430035-01 50ng BFB STD 8260	NA	1	1	STD57627	05/14/13 09:34
10M04728	WG430035-02 50ug/L CCV STD 8260	NA	1	1	STD57789	05/14/13 10:00
10M04729	WG430035-02 50ug/L CCV STD 8260	NA	1	1	STD57789	05/14/13 10:30
10M04730	WG430035-01 50ng BFB STD 8260	NA	1	1	STD57627	05/14/13 11:47
10M04731	WG430035-02 50ug/L CCV STD 8260	NA	1	1	STD57789	05/14/13 12:13
10M04732	gro std	NA	1	1	STD57789	05/14/13 13:10
10M04733	WG430035-02 50ug/L CCV STD 8260	NA	1	1	STD57789	05/14/13 13:40
10M04734	a9/foo ccv	NA	1	1	STD57519	05/14/13 14:11
10M04735	blank	NA	1	1		05/14/13 14:41
10M04736	WG430035-01 50ng BFB STD 8260	NA	1	1	STD57627	05/14/13 15:36
10M04737	WG430035-02 0.3ug/L STD 8260	NA	1	1	STD57872	05/14/13 16:02
10M04738	WG430035-03 0.4ug/L STD 8260	NA	1	1	STD57872	05/14/13 16:32
10M04739	WG430035-04 1ug/L STD 8260	NA	1	1	STD57872	05/14/13 17:02
10M04740	WG430035-05 2ug/L STD 8260	NA	1	1	STD57872	05/14/13 17:32
10M04741	WG430035-06 5ug/L STD 8260	NA	1	1	STD57872	05/14/13 18:03
10M04742	WG430035-07 20ug/L STD 8260	NA	1	1	STD57872	05/14/13 18:33
10M04743	WG430035-08 50ug/L STD 8260	NA	1	1	STD57872	05/14/13 19:03
10M04744	WG430035-09 100ug/L STD 8260	NA	1	1	STD57872	05/14/13 19:33
10M04745	WG430035-10 200ug/L STD 8260	NA	1	1	STD57872	05/14/13 20:03
10M04746	WG430035-11 300ug/L STD 8260	NA	1	1	STD57872	05/14/13 20:33
10M04747	rinse	NA	1	1		05/14/13 21:03
10M04748	rinse	NA	1	1		05/14/13 21:34
10M04749	rinse	NA	1	1		05/14/13 22:04
10M04750	WG430035-12 50ug/L ALT SRC STD 8260	NA	1	1	STD57878	05/14/13 22:35
10M04751	RINSE	NA	1	1		05/14/13 23:05
10M04752	RINSE	NA	1	1		05/14/13 23:36
10M04753	RINSE	NA	1	1		05/15/13 00:07

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 10M04726				

Approved: May 16, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS10	Dataset:	051413		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B/OVAP	SOP:	MSV01/PAT01	Rev:	15/0
Method:	624	SOP:	MSV10	Rev:	9
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	13
Maintenance Log ID:	45956				

Internal Standard: STD57749 Surrogate Standard: STD57794

CCV: STD57872 LCS: STD57878 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG430035

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Tune failed, DNR.	
3	X			
File ID: 10M04728				
			VC low, DNR.	
4	X			
File ID: 10M04729				
			VC low, DNR.	
6				
File ID: 10M04731				
			VC low, DNR.	
8				
File ID: 10M04733				
			VC low, DNR.	

Approved: May 16, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 051513
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 15 / 0
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 13 / 0
Method: 624 SOP: MSV10 Rev: 9
Maintenance Log ID: 46002

Internal Standard: STD57792 Surrogate Standard: STD57558
CCV: STD57872 LCS: STD57878 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG430143

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M91895	WG430143-01 BFB 50ng 8260	NA	1	1	STD57814	05/15/13 11:24
11M91896	WG430143-02 50ug/L CCV 8260	NA	1	1	STD57789	05/15/13 11:54
11M91897	WG430143-02 50ug/L CCV 8260	NA	1	1	STD57789	05/15/13 12:26
11M91898	WG430XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	05/15/13 12:58
11M91899	WG430144-01 VBLK0515 BLANK 8260	NA	1	1		05/15/13 13:29
11M91900	WG430143-01 BFB 50ng 8260	NA	1	1	STD57627	05/15/13 16:00
11M91901	WG430143-02 0.3ug/L STD 8260	NA	1	1	STD57872	05/15/13 16:25
11M91902	WG430143-03 0.4ug/L STD 8260	NA	1	1	STD57872	05/15/13 16:57
11M91903	WG430143-04 1ug/L STD 8260	NA	1	1	STD57872	05/15/13 17:48
11M91904	WG430143-05 2ug/L STD 8260	NA	1	1	STD57872	05/15/13 18:20
11M91905	WG430143-06 5ug/L STD 8260	NA	1	1	STD57872	05/15/13 18:52
11M91906	WG430143-07 20ug/L STD 8260	NA	1	1	STD57872	05/15/13 19:23
11M91907	WG430143-08 50ug/L STD 8260	NA	1	1	STD57872	05/15/13 19:54
11M91908	WG430143-09 100ug/L STD 8260	NA	1	1	STD57872	05/15/13 20:26
11M91909	WG430143-10 200ug/L STD 8260	NA	1	1	STD57872	05/15/13 20:57
11M91910	WG430143-11 300ug/L STD 8260	NA	1	1	STD57872	05/15/13 21:28
11M91911	RINSE	NA	1	1		05/15/13 22:00
11M91912	WG430143-12 50ug/L ALT SRC 8260	NA	1	1	STD57878	05/15/13 22:31
11M91913	RINSE	NA	1	1		05/15/13 23:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 11M91896				
	VC HIGH			
3				
File ID: 11M91897				
	VC HIGH. RECALIBRATE.			
18	X			
File ID: 11M91912				
	Try a new mix for VC and acetone low.			

Approved: May 20, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 051613
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Method: 624 SOP: MSV10 Rev: 9
Maintenance Log ID: 46022

Internal Standard: STD57792 Surrogate Standard: STD57558
CCV: STD57872 LCS: STD57878 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG430392

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M91914	WG430391-01 BFB 50ng 8260	NA	1	1	STD57627	05/16/13 10:22
11M91915	WG430391-02 50ug/L CCV 8260	NA	1	1	STD57872	05/16/13 10:45
11M91916	WG430391-02 50ug/L CCV 8260	NA	1	1	STD57872	05/16/13 11:20
11M91917	WG430XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	05/16/13 11:52
11M91918	WG430392-01 VBLK0516 BLANK 8260	NA	1	1		05/16/13 12:23
11M91919	WG430143-12 50ug/L ALT SRC 8260	NA	1	1	STD57930	05/16/13 12:55
11M91920	WG430392-02 20ug/L LCS 8260	NA	1	1	STD57878	05/16/13 13:26
11M91921	WG430392-03 20ug/L LCS DUP 8260	NA	1	1	STD57878	05/16/13 14:10
11M91922	L13050566-06 20X B 826-A9-SPE D1	6	1	20		05/16/13 14:41
11M91923	L13050259-07 100X B 826-LOW 00	<2	1	100		05/16/13 15:13
11M91924	L13050318-07 100X B 826-A9-SPE D1	<2	1	100		05/16/13 15:45
11M91925	L13050317-02 10X B 826-A9-SPE D1	<2	1	10		05/16/13 16:16
11M91926	L13050205-01 TB A 826-SPE	<2	1	1		05/16/13 16:48
11M91927	L13050291-03 TB A 826-LOW	<2	1	1		05/16/13 17:19
11M91928	L13050292-03 TB A 826-LOW	<2	1	1		05/16/13 17:50
11M91929	L13050640-01 B 826-SPE	<2	1	1		05/16/13 18:22
11M91930	L13050291-01 A 826-LOW	<2	1	1		05/16/13 18:53
11M91931	L13050292-01 50X A 826-LOW	<2	1	50		05/16/13 19:25
11M91932	L13050205-02 A 826-SPE	<2	1	1		05/16/13 19:56
11M91933	L13050273-28 A 826-SPE1	<2	1	1		05/16/13 20:27
11M91934	L13050273-29 A 826-SPE1	<2	1	1		05/16/13 20:59
11M91935	L13050273-30 A 826-SPE1	<2	1	1		05/16/13 21:30
11M91936	L13050273-31 A 826-SPE1	<2	1	1		05/16/13 22:02
11M91937	WG430445-01 20ug/L LCS 624	NA	2	1	STD57930	05/16/13 22:33
11M91938	WG430445-02 20ug/L LCS DUP 624	NA	2	1	STD57930	05/16/13 23:04
11M91939	AF BLK	NA	2	1		05/16/13 23:36
11M91940	WG430445-03 BLANK 624	NA	2	1		05/17/13 00:07
11M91941	L13050755-04 TB A 624-SPE	<2	2	1		05/17/13 00:38
11M91942	L13050664-01 A 624-SPE12	<2	2	1		05/17/13 01:10
11M91943	L13050755-01 A 624-SPE	5	2	1		05/17/13 01:41
11M91944	L13050755-02 A 624-SPE	5	2	1		05/17/13 02:12
11M91945	L13050755-03 A 624-SPE	5	2	1		05/17/13 02:44
11M91946	L13050665-01 A 624-SPE	<2	2	1		05/17/13 03:15
11M91947	L13050726-01 A 624-SPE	<2	2	1		05/17/13 03:46

Approved: May 21, 2013

Microbac

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 051613
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Method: 624 SOP: MSV10 Rev: 9
Maintenance Log ID: 46022

Internal Standard: STD57792 Surrogate Standard: STD57558
CCV: STD57872 LCS: STD57878 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG430392

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M91948	L13050726-02 A 624-SPE	<2	2	1		05/17/13 04:18
11M91949	L13050726-03 A 624-SPE	<2	2	1		05/17/13 04:49
11M91950	L13050662-01 100X A 624-SPE12	<2	2	100		05/17/13 05:20
11M91951	L13050666-02 A 624-SPE12	<2	2	1		05/17/13 05:52
11M91952	L13050669-01 A 624-SPE12	<2	2	1		05/17/13 06:23
11M91953	L13050669-02 A 624-SPE12	<2	2	1		05/17/13 06:54
11M91954	L13050669-03 A 624-SPE12	<2	2	1		05/17/13 07:26
11M91955	L13050669-04 A 624-SPE12	<2	2	1		05/17/13 07:57
11M91956	L13050669-05 A 624-SPE12	<2	2	1		05/17/13 08:28
11M91957	L13050669-06 A 624-SPE12	<2	2	1		05/17/13 09:00
11M91958	L13050669-07 A 624-SPE12	<2	2	1		05/17/13 09:31
11M91959	L13050747-01 A 624-SPE	<2	2	1		05/17/13 10:02
11M91960	CCV	NA	1	1		05/17/13 10:34
11M91961	RINSE	NA	1	1		05/17/13 11:05

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 11M91915				
	rr			

Approved: May 21, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061013
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 15 / 0
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 13 / 0

Maintenance Log ID: 46311

Internal Standard: STD58366 Surrogate Standard: STD58011
CCV: STD58374 LCS: STD58291 MS/MSD: STD58291

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG433470

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M92731	WG433467-01 BFB 50ng 8260	NA	1	1	STD58184	06/10/13 11:03
11M92732	WG433467-01 BFB 50ng 8260	NA	1	1		06/10/13 11:29
11M92733	WG433467-02 50ug/L CCV 8260	NA	1	1	STD58277	06/10/13 11:55
11M92734	WG433467-02 50ug/L CCV 8260	NA	1	1	STD58277	06/10/13 12:28
11M92735	WG433XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	06/10/13 12:59
11M92736	WG433470-01 VBLK0610 BLANK 8260	NA	1	1		06/10/13 13:30
11M92737	WG433470-02 20ug/L LCS 8260	NA	1	1	STD58291	06/10/13 14:02
11M92738	L13060311-02 MS A 826-SPE	NA	1	1	STD58291	06/10/13 14:34
11M92739	L13060311-03 MSD A 826-SPE	NA	1	1	STD58291	06/10/13 15:05
11M92740	L13060074-02 EB A 826-SPE	<2	1	1		06/10/13 15:37
11M92741	L13060074-03 TB A 826-SPE	<2	1	1		06/10/13 16:08
11M92742	L13060134-01 ER A 826-LOW	<2	1	1		06/10/13 16:40
11M92743	L13060394-04 TB A 826-SPE	<2	1	1		06/10/13 17:11
11M92744	L13060311-01 REF A 826-SPE	NA	1	1		06/10/13 17:43
11M92745	L13060312-01 B 826-VAP2	6	1	1		06/10/13 18:14
11M92746	L13060312-02 A 826-VAP2	6	1	1		06/10/13 18:45
11M92747	L13060312-03 B 826-VAP2	6	1	1		06/10/13 19:17
11M92748	L13060312-04 A 826-VAP2	6	1	1		06/10/13 19:48
11M92749	L13060134-02 A 826-LOW	<2	1	1		06/10/13 20:20
11M92750	L13060134-03 A 826-LOW	<2	1	1		06/10/13 20:51
11M92751	L13060134-04 A 826-LOW	<2	1	1		06/10/13 21:22
11M92752	L13060134-05 A 826-LOW	<2	1	1		06/10/13 21:54
11M92753	L13060394-03 100X A 826-LOW	6	1	100		06/10/13 22:25
11M92754	L13060394-05 100X A 826-LOW	6	1	100		06/10/13 22:57
11M92755	L13060394-06 100X A 826-LOW	6	1	100		06/10/13 23:28
11M92756	CCV	NA	1	1		06/10/13 23:59
11M92757	RINSE	NA	1	1		06/11/13 00:30
11M92758	RINSE	NA	1	1		06/11/13 01:02

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 11M92731				

Approved: June 13, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061013
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 15 / 0
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 13 / 0

Maintenance Log ID: 46311

Internal Standard: STD58366 Surrogate Standard: STD58011
CCV: STD58374 LCS: STD58291 MS/MSD: STD58291

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG433470

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3	X			
File ID: 11M92733				
	SOME LOW COMPOUNDS			
15				
File ID: 11M92745				
	Used the B vial since it did not come with headspace like the A vial. Transferred due to sediment.			
16				
File ID: 11M92746				
	Transferred due to sediment.			
17				
File ID: 11M92747				
	Used the B vial since it did not come with headspace like the A vial. Transferred due to sediment.			
18				
File ID: 11M92748				
	Transferred due to sediment.			
21	X	10	Over Calibration Range	11-dce
File ID: 11M92751				
23	X	1000	Over Calibration Range	c.form
File ID: 11M92753				
24	X	20	Analyzed too dilute	
File ID: 11M92754				
25	X	20	Analyzed too dilute	
File ID: 11M92755				
	All 3 vials for this sample came with about 1 mL of headspace.			

Approved: June 13, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 061013
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 5030C SOP: PAT01 Rev: 13
Method: 624 SOP: MSV10 Rev: 9
Maintenance Log ID: 46307

Internal Standard: STD57908 Surrogate Standard: STD57908
CCV: STD58374 LCS: STD58291 MS/MSD: STD58291

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG433591

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M117402	WG433588-01 50ng BFB	NA	1	1	STD57627	06/10/13 15:44
6M117403	WG433588-02 50ug/L CCV 8260	NA	1	1	STD58079	06/10/13 16:07
6M117404	WG433588-02 50ug/L CCV 8260	NA	1	1	STD58079	06/10/13 16:41
6M117405	WG433XXX-01 100ug/L A9CCV 8260	NA	1	1	STD58272	06/10/13 17:12
6M117406	WG433591-01 VBLK 0610 8260	NA	1	1		06/10/13 17:43
6M117407	WG433591-02 20ug/L LCS 8260	NA	1	1	STD58291	06/10/13 18:14
6M117408	L13060134-10 A MS 826-SPE	<2	1	1	STD58291	06/10/13 18:44
6M117409	L13060134-11 A MSD 826-SPE	<2	1	1	STD58291	06/10/13 19:15
6M117410	L13060057-08 B 826-BETX	<2	1	1		06/10/13 19:46
6M117411	L13060069-01 A 826-SPE	<2	1	1		06/10/13 20:17
6M117412	L13060013-15 A 826-SPE	<2	1	1		06/10/13 20:48
6M117413	L13060134-17 A 826-LOW	<2	1	1		06/10/13 21:19
6M117414	L13060134-09 A 826-SPE	<2	1	1		06/10/13 21:50
6M117415	L13060057-01 B 10X 826-BETX	<2	1	10		06/10/13 22:22
6M117416	L13060013-14 A 826-SPE	<2	1	1		06/10/13 22:53
6M117417	L13060069-02 A 826-SPE	<2	1	1		06/10/13 23:24
6M117418	L13060134-06 A 826-LOW	<2	1	1		06/10/13 23:55
6M117419	L13060134-07 A 826-LOW	<2	1	1		06/11/13 00:27
6M117420	L13060134-08 A 826-LOW	<2	1	1		06/11/13 00:58
6M117421	L13060134-12 A 826-LOW	<2	1	1		06/11/13 01:30
6M117422	L13060134-13 A 826-LOW	<2	1	1		06/11/13 02:01
6M117423	L13060134-14 A 826-LOW	<2	1	1		06/11/13 02:33
6M117424	L13060134-15 A 826-LOW	<2	1	1		06/11/13 03:03
6M117425	L13060134-16 A 826-LOW	<2	1	1		06/11/13 03:35
6M117426	RINSE	NA	1	1		06/11/13 04:06
6M117427	RINSE	NA	1	1		06/11/13 04:37
6M117428	RINSE	NA	1	1		06/11/13 05:09

Comments

Seq.	Rerun	Dil.	Reason	Analytes
16	X	10	Over Calibration Range	BEN
File ID: 6M117417				
L13060069-02				

Approved: June 12, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS6	Dataset:	061013		
Analyst1:	ADC	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	15
Method:	5030C	SOP:	PAT01	Rev:	13
Method:	624	SOP:	MSV10	Rev:	9
Maintenance Log ID:	46307				

Internal Standard: STD57908 Surrogate Standard: STD57908

CCV: STD58374 LCS: STD58291 MS/MSD: STD58291

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG433591

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X		Carry-over contamination	
File ID: 6M117418				
	L13060134-06 DNR			
24	X	25	Over Calibration Range	11DCE
File ID: 6M117425				
	L13060134-16			

Approved: June 12, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061113
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13

Maintenance Log ID: 46315

Internal Standard: STD58366 Surrogate Standard: STD58011
CCV: STD58374 LCS: STD58291 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG433686

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M92759	WG433685-01 BFB 50ng 8260	NA	1	1	STD58184	06/11/13 11:46
11M92760	WG433685-02 50ug/L CCV 8260	NA	1	1	STD58374	06/11/13 12:11
11M92761	WG433XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	06/11/13 12:43
11M92762	WG433686-01 VBLK0611 BLANK 8260	NA	1	1		06/11/13 13:15
11M92763	WG433686-02 20ug/L LCS 8260	NA	1	1	STD58291	06/11/13 13:46
11M92764	WG433686-03 20ug/L LCS DUP 8260	NA	1	1	STD58291	06/11/13 14:18
11M92765	L13060134-04 10X B 826-LOW D1	6	1	10		06/11/13 14:49
11M92766	L13060394-06 20X B 826-SPE 00	5	1	20		06/11/13 15:21
11M92767	L13060394-05 20X B 826-SPE 00	5	1	20		06/11/13 15:52
11M92768	L13060394-03 1000X B 826-SPE D1	<2	1	1000		06/11/13 16:24
11M92769	L13060347-01 A 826-SPE	<2	1	1		06/11/13 16:57
11M92770	L13060347-02 A 826-SPE	5	1	1		06/11/13 17:29
11M92771	L13060294-05 A 826-SPE	5	1	1		06/11/13 18:00
11M92772	L13060294-06 A 826-SPE	<2	1	1		06/11/13 18:32
11M92773	L13060224-01 A 826-LOW	5	1	1		06/11/13 19:03
11M92774	L13060224-07 A 826-LOW	NA	1	1		06/11/13 19:35
11M92775	L13060151-03 10X 826-TC	NA	17	10		06/11/13 20:06
11M92776	L13060294-02 10X 826-TC	NA	17	10		06/11/13 20:38
11M92777	L13060294-04 10X 826-TC	NA	17	10		06/11/13 21:09
11M92778	L13060313-02 10X 826-TC	NA	17	10		06/11/13 21:41
11M92779	L13051493-04 1000X 826-TC	NA	17	1000		06/11/13 22:12
11M92780	L13051493-06 1000X 826-TC	NA	17	1000		06/11/13 22:43
11M92781	L13051493-03 1000X 8260	NA	12	1000		06/11/13 23:15
11M92782	L13051493-05 1000X 8260	NA	12	1000		06/11/13 23:46
11M92783	WG432912-01 FBLK 826-SPLP	NA	18	1		06/12/13 00:17
11M92784	WG433046-01 10X FBLK 826-TC	NA	17	10		06/12/13 00:49
11M92785	WG433375-01 10X FBLK 826-TC	NA	17	10		06/12/13 01:20
11M92786	L13060215-01 10X 826-TC	NA	17	10		06/12/13 01:52
11M92787	L13060215-02 10X 826-TC	NA	17	10		06/12/13 02:23
11M92788	L13060215-03 10X 826-TC	NA	17	10		06/12/13 02:54
11M92789	L13060215-04 10X 826-TC	NA	17	10		06/12/13 03:26
11M92790	L13060215-05 10X 826-TC	NA	17	10		06/12/13 03:57
11M92791	L13060219-01 10X 826-TC	NA	17	10		06/12/13 04:28
11M92792	L13060219-02 10X 826-TC	NA	17	10		06/12/13 04:59

Approved: June 13, 2013

Microbac

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061113
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13

Maintenance Log ID: 46315

Internal Standard: STD58366 Surrogate Standard: STD58011
CCV: STD58374 LCS: STD58291 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG433686

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M92793	WG433686-04 624 BLANK	NA	1	1		06/12/13 05:31
11M92794	L13060427-02 TB A 624-SPE	<2	2	1		06/12/13 06:02
11M92795	L13060427-01 A 624-SPE	<2	2	1		06/12/13 06:34
11M92796	CCV	NA	1	1		06/12/13 07:05
11M92797	RINSE	NA	1	1		06/12/13 07:36

Approved: June 13, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS10 Dataset: 061213
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 624 SOP: MSV10 Rev: 9
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 46320

Internal Standard: STD58370 Surrogate Standard: STD58371
CCV: STD58374 LCS: STD58291 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG433810

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
10M05671	WG433809-01 50ng BFB STD 8260	NA	1	1	STD58184	06/12/13 09:44
10M05672	WG433809-02 50ug/L CCV STD 8260	NA	1	1	STD58374	06/12/13 10:09
10M05673	WG433809-02 50ug/L CCV STD 8260	NA	1	1	STD58374	06/12/13 10:40
10M05674	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD58272	06/12/13 11:11
10M05675	WG433810-01 VBLK0612 BLANK STD 826	NA	1	1		06/12/13 11:41
10M05676	L13060399-03 WG433810-02 20ug/L LCS S	NA	1	1	STD58291	06/12/13 12:11
10M05677	WG433810-03 20ug/L LCSDUP STD 8260	NA	1	1	STD58291	06/12/13 12:41
10M05678	L13060217-05 B 200X 826-SPE D1	<2	1	200		06/12/13 13:12
10M05679	L13060134-16 B 25X 826-LOW D1	<2	1	25		06/12/13 13:43
10M05680	L13060257-01 B 826-SPE	<2	1	1		06/12/13 14:13
10M05681	L13060360-03 TB A 826-BETX	<2	1	1		06/12/13 14:44
10M05682	L13060337-02 TB A 826-BETX	<2	1	1		06/12/13 15:14
10M05683	L13060347-06 TB A 826-SPE	<2	1	1		06/12/13 15:45
10M05684	L13060354-04 TB A 826-SPE	<2	1	1		06/12/13 16:15
10M05685	L13060134-06 B 826-LOW	<2	1	1		06/12/13 16:46
10M05686	L13060360-01 A 826-BETX	<2	1	1		06/12/13 17:16
10M05687	L13060360-02 A 826-BETX	<2	1	1		06/12/13 17:46
10M05688	L13060337-01 A 826-BETX	<2	1	1		06/12/13 18:17
10M05689	L13060409-01 A 826-SPE	<2	1	1		06/12/13 18:47
10M05690	WG430656-01 FBLK 10X 826-TC	NA	17	10		06/12/13 19:18
10M05691	L13060347-03 A 25X 826-SPE	<2	1	25		06/12/13 19:48
10M05692	L13060347-04 A 25X 826-SPE	<2	1	25		06/12/13 20:19
10M05693	L13060347-05 A 200X 826-SPE	<2	1	200		06/12/13 20:49
10M05694	L13060399-01 A 826-SPE	5	1	1		06/12/13 21:19
10M05695	RINSE	NA	1	1		06/12/13 21:50
10M05696	WG433810-04 VBLK0612 BLANK STD 624	NA	2	1		06/12/13 22:20
10M05697	L13060400-01 A 624-SPE	<2	2	1		06/12/13 22:50
10M05698	CCV	NA	1	1		06/12/13 23:20
10M05699	RINSE	NA	1	1		06/12/13 23:50
10M05700	RINSE	NA	1	1		06/13/13 00:20
10M05701	ANTIFOAM BLANK	NA	1	1		06/13/13 00:50

Comments

Approved: June 13, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS10 Dataset: 061213
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 624 SOP: MSV10 Rev: 9
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 46320

Internal Standard: STD58370 Surrogate Standard: STD58371
CCV: STD58374 LCS: STD58291 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG433810

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 10M05672				
	Vc was high, DNR.			
4				
File ID: 10M05674				
	Not needed, DNR.			

Approved: June 13, 2013

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 31-JAN-2013
Analyst: TMB
Analyst: MDA/FJB
Method: 8260B/OVAP
Instrument: HPMS10
Curve Workgroup: NA
Runlog ID: 51151
Analytical Workgroups: WG419631; WG419632

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-FEB-2013
Tiffany Bailey

Secondary Reviewer:
04-FEB-2013

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-04-2013 08:27:20

Microbac Laboratories Inc.

Data Checklist

Date: 02-APR-2013
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS6
Curve Workgroup: WG425306
Runlog ID: 52307
Analytical Workgroups: WG425402

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
05-APR-2013

Secondary Reviewer:
05-APR-2013

CHECKLIST1 - Modified 03/05/2008
Generated: APR-08-2013 14:44:21

Microbac Laboratories Inc.

Data Checklist

Date: 14-MAY-2013
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS10
Curve Workgroup: NA
Runlog ID: 53176
Analytical Workgroups: WG430035

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
16-MAY-2013
Tiffany Bailey

Secondary Reviewer:
16-MAY-2013

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-16-2013 14:38:29

Microbac Laboratories Inc.

Data Checklist

Date: 15-MAY-2013
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 53245
Analytical Workgroups: WG430143

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 20-MAY-2013

Secondary Reviewer: 20-MAY-2013

CHECKLIST1 - Modified 03/05/2008

Generated: MAY-20-2013 15:05:02

Microbac Laboratories Inc.

Data Checklist

Date: 16-MAY-2013
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 53247
Analytical Workgroups: WG430392, WG430445

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 21-MAY-2013

Secondary Reviewer: 21-MAY-2013

CHECKLIST1 - Modified 03/05/2008

Generated: MAY-21-2013 13:12:12

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2013
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 53765
Analytical Workgroups: WG433470

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 12-JUN-2013

Secondary Reviewer: 13-JUN-2013

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-13-2013 13:29:15

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2013
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 53756
Analytical Workgroups: WG433591

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
11-JUN-2013

Secondary Reviewer:
12-JUN-2013

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-12-2013 08:22:49

Microbac Laboratories Inc.

Data Checklist

Date: 11-JUN-2013
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 53767
Analytical Workgroups: WG433686

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 12-JUN-2013

Secondary Reviewer: 13-JUN-2013

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-13-2013 09:11:37

Microbac Laboratories Inc.

Data Checklist

Date: 12-JUN-2013
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS10
Curve Workgroup: NA
Runlog ID: 53774
Analytical Workgroups: WG433810

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
12-JUN-2013
Tiffany Bailey

Secondary Reviewer:
13-JUN-2013

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-13-2013 13:01:28

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG433470

Login Number: L13060134

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
EQUIPMENT RINSE-053113	01	05/31/13					06/10/2013	10.4	14		06/10/13	10.4	14	
67WW06-053113	02	05/31/13					06/10/2013	10.4	14		06/10/13	10.4	14	
67WW06-053113-FD	03	05/31/13					06/10/2013	10.5	14		06/10/13	10.5	14	
67WW13-053113	04	05/31/13					06/10/2013	10.3	14		06/10/13	10.3	14	
67WW05-053113	05	05/31/13					06/10/2013	10.3	14		06/10/13	10.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2922140
Report generated 06/14/2013 13:48

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG433591

Login Number: L13060134

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW02-053113	07	05/31/13					06/11/2013	10.4	14		06/11/13	10.4	14	
67WW07-053113	08	05/31/13					06/11/2013	10.4	14		06/11/13	10.4	14	
67WW10-060113	09	06/01/13					06/10/2013	9.5	14		06/10/13	9.5	14	
67WW10-060113-MS	10	06/01/13					06/10/2013	9.4	14		06/10/13	9.4	14	
67WW10-060113-MD	11	06/01/13					06/10/2013	9.4	14		06/10/13	9.4	14	
67WW11-060113	12	06/01/13					06/11/2013	9.6	14		06/11/13	9.6	14	
67WW11-060113-FD	13	06/01/13					06/11/2013	9.6	14		06/11/13	9.6	14	
67WW12-060113	14	06/01/13					06/11/2013	9.6	14		06/11/13	9.6	14	
67WW09-060113	15	06/03/13					06/11/2013	7.5	14		06/11/13	7.5	14	
67WW08-060313	16	06/03/13					06/11/2013	7.6	14		06/11/13	7.6	14	
TRIP BLANK	17	06/03/13					06/10/2013	7.9	14		06/10/13	7.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2922140
Report generated 06/14/2013 13:48

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG433686

Login Number: L13060134

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW13-053113	04	05/31/13					06/11/2013	11	14		06/11/13	11	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2922140
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG433810

Login Number: L13060134

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW01-053113	06	05/31/13					06/12/2013	12.1	14		06/12/13	12.1	14	
67WW08-060313	16	06/03/13					06/12/2013	9	14		06/12/13	9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2922140
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L13060134
Instrument Id: HPMS6
Workgroup (AAB#): WG433591

Method: 8260
CAL ID: HPMS6-02-APR-13
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L13060134-07	1.00	01	101	106	105	93.5
L13060134-08	1.00	01	103	107	106	93.0
L13060134-09	1.00	01	103	106	104	93.6
L13060134-10	1.00	01	103	106	106	94.2
L13060134-11	1.00	01	102	106	106	93.4
L13060134-12	1.00	01	104	107	105	93.3
L13060134-13	1.00	01	106	108	107	92.9
L13060134-14	1.00	01	105	109	105	93.3
L13060134-15	1.00	01	108	109	106	93.6
L13060134-16	1.00	01	109	110	105	92.4
L13060134-17	1.00	01	104	107	107	94.2
WG433591-01	1.00	01	105	107	106	93.6
WG433591-02	1.00	01	104	105	105	94.3

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 2921769
Report generated: 06/14/2013 13:49

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L13060134
Instrument Id: HPMS11
Workgroup (AAB#): WG433686

Method: 8260
CAL ID: HPMS11-15-MAY-13
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L13060134-04	10.0	DL01	83.5	92.1	107	107
WG433686-01	1.00	01	82.9	91.0	109	106
WG433686-02	1.00	01	85.7	93.1	106	104
WG433686-03	1.00	01	82.8	91.9	107	105
WG433686-04	1.00	01	83.0	90.7	107	108

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 2921769
Report generated: 06/14/2013 13:49

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L13060134
Instrument Id: HPMS11
Workgroup (AAB#): WG433470

Method: 8260
CAL ID: HPMS11-15-MAY-13
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L13060134-01	1.00	01	83.8	92.3	105	105
L13060134-02	1.00	01	86.1	92.6	108	107
L13060134-03	1.00	01	85.4	92.5	106	107
L13060134-04	1.00	01	84.6	93.1	107	107
L13060134-05	1.00	01	84.9	92.7	108	107
WG433470-01	1.00	01	82.5	91.7	106	105
WG433470-02	1.00	01	83.4	93.8	106	105

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 2921769
Report generated: 06/14/2013 13:49

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L13060134
Instrument Id: HPMS10
Workgroup (AAB#): WG433810

Method: 8260
CAL ID: HPMS10-14-MAY-13
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L13060134-06	1.00	01	105	103	96.0	97.5
L13060134-16	25.0	DL01	96.6	99.3	93.8	94.3
WG433810-01	1.00	01	101	102	95.4	96.2
WG433810-02	1.00	01	101	107	94.9	96.8
WG433810-03	1.00	01	97.0	104	92.5	93.7
WG433810-04	1.00	01	103	104	95.8	97.5

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 2921769
Report generated: 06/14/2013 13:49

METHOD BLANK SUMMARY

Login Number: L13060134
Blank File ID: 10M05675
Prep Date: 06/12/13 11:41
Analyzed Date: 06/12/13 11:41
Analyst: TMB

Work Group: WG433810
Blank Sample ID: WG433810-01
Instrument ID: HPMS10
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG433810-02	10M05676	06/12/13 12:11	01
LCS2	WG433810-03	10M05677	06/12/13 12:41	01
67WW08-060313	L13060134-16	10M05679	06/12/13 13:43	DL01
67WW01-053113	L13060134-06	10M05685	06/12/13 16:46	01

Report Name: BLANK_SUMMARY
PDF File ID: 2922141
Report generated 06/14/2013 13:48

METHOD BLANK SUMMARY

Login Number: L13060134
Blank File ID: 11M92736
Prep Date: 06/10/13 13:30
Analyzed Date: 06/10/13 13:30
Analyst: FJB

Work Group: WG433470
Blank Sample ID: WG433470-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG433470-02	11M92737	06/10/13 14:02	01
EQUIPMENT RINSE-053113	L13060134-01	11M92742	06/10/13 16:40	01
67WW06-053113	L13060134-02	11M92749	06/10/13 20:20	01
67WW06-053113-FD	L13060134-03	11M92750	06/10/13 20:51	01
67WW13-053113	L13060134-04	11M92751	06/10/13 21:22	01
67WW05-053113	L13060134-05	11M92752	06/10/13 21:54	01

Report Name: BLANK_SUMMARY
PDF File ID: 2922141
Report generated 06/14/2013 13:48

METHOD BLANK SUMMARY

Login Number: L13060134
Blank File ID: 11M92762
Prep Date: 06/11/13 13:15
Analyzed Date: 06/11/13 13:15
Analyst: FJB

Work Group: WG433686
Blank Sample ID: WG433686-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG433686-02	11M92763	06/11/13 13:46	01
LCS2	WG433686-03	11M92764	06/11/13 14:18	01
67WW13-053113	L13060134-04	11M92765	06/11/13 14:49	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 2922141
Report generated 06/14/2013 13:48

METHOD BLANK SUMMARY

Login Number: L13060134
Blank File ID: 6M117406
Prep Date: 06/10/13 17:43
Analyzed Date: 06/10/13 17:43
Analyst: ADC

Work Group: WG433591
Blank Sample ID: WG433591-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG433591-02	6M117407	06/10/13 18:14	01
67WW10-060113-MS	L13060134-10	6M117408	06/10/13 18:44	01
67WW10-060113-MD	L13060134-11	6M117409	06/10/13 19:15	01
TRIP BLANK	L13060134-17	6M117413	06/10/13 21:19	01
67WW10-060113	L13060134-09	6M117414	06/10/13 21:50	01
67WW02-053113	L13060134-07	6M117419	06/11/13 00:27	01
67WW07-053113	L13060134-08	6M117420	06/11/13 00:58	01
67WW11-060113	L13060134-12	6M117421	06/11/13 01:30	01
67WW11-060113-FD	L13060134-13	6M117422	06/11/13 02:01	01
67WW12-060113	L13060134-14	6M117423	06/11/13 02:33	01
67WW09-060113	L13060134-15	6M117424	06/11/13 03:03	01
67WW08-060313	L13060134-16	6M117425	06/11/13 03:35	01

Report Name: BLANK_SUMMARY
PDF File ID: 2922141
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13060134 Prep Date: 06/12/13 11:41 Sample ID: WG433810-01
Instrument ID: HPMS10 Run Date: 06/12/13 11:41 Prep Method: 5030B/5030C/503
File ID: 10M05675 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG433810 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS10-14-MAY-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 2922142
14-JUN-2013 13:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13060134 Prep Date: 06/12/13 11:41 Sample ID: WG433810-01
Instrument ID: HPMS10 Run Date: 06/12/13 11:41 Prep Method: 5030B/5030C/503
File ID: 10M05675 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG433810 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS10-14-MAY-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	85 - 115	PASS
1,2-Dichloroethane-d4	101	70 - 120	PASS
Toluene-d8	96.2	85 - 120	PASS
4-Bromofluorobenzene	95.4	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2922142
14-JUN-2013 13:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13060134 Prep Date: 06/10/13 13:30 Sample ID: WG433470-01
Instrument ID: HPMS11 Run Date: 06/10/13 13:30 Prep Method: 5030B/5030C/503
File ID: 11M92736 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG433470 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-15-MAY-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 2922142
14-JUN-2013 13:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13060134 Prep Date: 06/10/13 13:30 Sample ID: WG433470-01
Instrument ID: HPMS11 Run Date: 06/10/13 13:30 Prep Method: 5030B/5030C/503
File ID: 11M92736 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG433470 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-15-MAY-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.342	1	J
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	91.7	85 - 115	PASS
1,2-Dichloroethane-d4	82.5	70 - 120	PASS
Toluene-d8	105	85 - 120	PASS
4-Bromofluorobenzene	106	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2922142
14-JUN-2013 13:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13060134 Prep Date: 06/11/13 13:15 Sample ID: WG433686-01
Instrument ID: HPMS11 Run Date: 06/11/13 13:15 Prep Method: 5030B/5030C/503
File ID: 11M92762 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG433686 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-15-MAY-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 2922142
14-JUN-2013 13:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13060134 Prep Date: 06/11/13 13:15 Sample ID: WG433686-01
Instrument ID: HPMS11 Run Date: 06/11/13 13:15 Prep Method: 5030B/5030C/503
File ID: 11M92762 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG433686 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-15-MAY-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	91.0	85 - 115	PASS
1,2-Dichloroethane-d4	82.9	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	109	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2922142
14-JUN-2013 13:48

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13060134 Prep Date: 06/10/13 17:43 Sample ID: WG433591-01
Instrument ID: HPMS6 Run Date: 06/10/13 17:43 Prep Method: 5030B/5030C/503
File ID: 6M117406 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG433591 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-02-APR-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 2922142
14-JUN-2013 13:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13060134 Prep Date: 06/10/13 17:43 Sample ID: WG433591-01
Instrument ID: HPMS6 Run Date: 06/10/13 17:43 Prep Method: 5030B/5030C/503
File ID: 6M117406 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG433591 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-02-APR-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	107	85 - 115	PASS
1,2-Dichloroethane-d4	105	70 - 120	PASS
Toluene-d8	93.6	85 - 120	PASS
4-Bromofluorobenzene	106	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2922142
14-JUN-2013 13:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13060134 | Run Date: 06/10/2013 | Sample ID: WG433470-02
Instrument ID: HPMS11 | Run Time: 14:02 | Prep Method: 5030B/5030C/503
File ID: 11M92737 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG433470 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD58291 | Cal ID: HPMS11-15-MAY-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	10.4	52.0	40 - 140	
Benzene	20.0	21.0	105	80 - 120	
Bromobenzene	20.0	20.6	103	75 - 125	
Bromochloromethane	20.0	20.2	101	65 - 130	
Bromodichloromethane	20.0	19.7	98.6	75 - 120	
Bromoform	20.0	17.3	86.5	70 - 130	
Bromomethane	20.0	16.9	84.6	30 - 145	
2-Butanone	20.0	15.2	76.2	30 - 150	
n-Butylbenzene	20.0	21.8	109	70 - 135	
sec-Butylbenzene	20.0	20.5	103	70 - 125	
tert-Butylbenzene	20.0	19.7	98.4	70 - 130	
Carbon disulfide	20.0	15.5	77.4	35 - 160	
Carbon tetrachloride	20.0	20.5	103	65 - 140	
Chlorobenzene	20.0	20.9	105	80 - 120	
Chlorodibromomethane	20.0	20.0	100	60 - 135	
Chloroethane	20.0	22.0	110	60 - 135	
Chloroform	20.0	20.7	103	65 - 135	
Chloromethane	20.0	20.3	101	40 - 125	
2-Chlorotoluene	20.0	20.5	103	75 - 125	
4-Chlorotoluene	20.0	19.6	98.0	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	14.9	74.5	50 - 130	
1,2-Dibromoethane	20.0	19.9	99.3	80 - 120	
Dibromomethane	20.0	18.9	94.7	75 - 125	
1,2-Dichlorobenzene	20.0	19.6	97.8	70 - 120	
1,3-Dichlorobenzene	20.0	20.8	104	75 - 125	
1,4-Dichlorobenzene	20.0	21.4	107	75 - 125	
Dichlorodifluoromethane	20.0	20.7	104	30 - 155	
1,1-Dichloroethane	20.0	20.8	104	70 - 135	
1,2-Dichloroethane	20.0	19.3	96.5	70 - 130	
1,1-Dichloroethene	20.0	19.2	96.0	70 - 130	
cis-1,2-Dichloroethene	20.0	21.1	105	70 - 125	
trans-1,2-Dichloroethene	20.0	20.6	103	60 - 140	
1,2-Dichloropropane	20.0	21.1	105	75 - 125	
1,3-Dichloropropane	20.0	20.4	102	75 - 125	
2,2-Dichloropropane	20.0	18.8	93.9	70 - 135	
cis-1,3-Dichloropropene	20.0	21.4	107	70 - 130	
trans-1,3-Dichloropropene	20.0	19.8	99.0	55 - 140	
1,1-Dichloropropene	20.0	20.4	102	75 - 130	
Ethylbenzene	20.0	21.4	107	75 - 125	
2-Hexanone	20.0	16.5	82.5	55 - 130	
Hexachlorobutadiene	20.0	19.8	99.0	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 2921764
Report generated: 06/12/2013 09:52

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13060134 Run Date: 06/10/2013 Sample ID: WG433470-02
Instrument ID: HPMS11 Run Time: 14:02 Prep Method: 5030B/5030C/503
File ID: 11M92737 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG433470 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD58291 Cal ID: HPMS11-15-MAY-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.9	104	75 - 125	
p-Isopropyltoluene	20.0	21.2	106	75 - 130	
4-Methyl-2-pentanone	20.0	16.3	81.5	60 - 135	
Methylene chloride	20.0	18.9	94.7	55 - 140	
Naphthalene	20.0	17.5	87.4	55 - 140	
n-Propylbenzene	20.0	20.0	100	70 - 130	
Styrene	20.0	23.2	116	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.8	109	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.9	94.5	65 - 130	
Tetrachloroethene	20.0	21.5	108	45 - 150	
Toluene	20.0	22.5	113	75 - 120	
1,2,3-Trichlorobenzene	20.0	18.7	93.4	55 - 140	
1,2,4-Trichlorobenzene	20.0	20.3	101	65 - 135	
1,1,1-Trichloroethane	20.0	20.4	102	65 - 130	
1,1,2-Trichloroethane	20.0	20.7	104	75 - 125	
Trichloroethene	20.0	22.4	112	70 - 125	
Trichlorofluoromethane	20.0	20.5	103	60 - 145	
1,2,3-Trichloropropane	20.0	17.4	87.1	75 - 125	
1,2,4-Trimethylbenzene	20.0	23.4	117	75 - 130	
1,3,5-Trimethylbenzene	20.0	23.2	116	75 - 130	
Vinyl chloride	20.0	18.7	93.7	50 - 145	
o-Xylene	20.0	20.1	100	80 - 120	
m-,p-Xylene	40.0	43.4	109	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	93.8	85 - 115	PASS
1,2-Dichloroethane-d4	83.4	70 - 120	PASS
Toluene-d8	105	85 - 120	PASS
4-Bromofluorobenzene	106	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 2921764
Report generated: 06/12/2013 09:52

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13060134 | Run Date: 06/10/2013 | Sample ID: WG433591-02
Instrument ID: HPMS6 | Run Time: 18:14 | Prep Method: 5030B/5030C/503
File ID: 6M117407 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG433591 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD58185 | Cal ID: HPMS6-02-APR-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	15.2	75.9	40 - 140	
Benzene	20.0	22.3	111	80 - 120	
Bromobenzene	20.0	19.5	97.7	75 - 125	
Bromochloromethane	20.0	22.6	113	65 - 130	
Bromodichloromethane	20.0	23.1	115	75 - 120	
Bromoform	20.0	19.3	96.3	70 - 130	
Bromomethane	20.0	16.2	81.1	30 - 145	
2-Butanone	20.0	17.8	88.9	30 - 150	
n-Butylbenzene	20.0	21.3	107	70 - 135	
sec-Butylbenzene	20.0	19.1	95.4	70 - 125	
tert-Butylbenzene	20.0	18.9	94.6	70 - 130	
Carbon disulfide	20.0	17.2	86.1	35 - 160	
Carbon tetrachloride	20.0	25.5	128	65 - 140	
Chlorobenzene	20.0	18.2	90.9	80 - 120	
Chlorodibromomethane	20.0	18.9	94.7	60 - 135	
Chloroethane	20.0	23.7	118	60 - 135	
Chloroform	20.0	23.5	118	65 - 135	
Chloromethane	20.0	18.9	94.5	40 - 125	
2-Chlorotoluene	20.0	18.9	94.4	75 - 125	
4-Chlorotoluene	20.0	18.1	90.6	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	17.2	85.8	50 - 130	
1,2-Dibromoethane	20.0	19.8	98.9	80 - 120	
Dibromomethane	20.0	23.1	116	75 - 125	
1,2-Dichlorobenzene	20.0	18.1	90.7	70 - 120	
1,3-Dichlorobenzene	20.0	18.2	90.9	75 - 125	
1,4-Dichlorobenzene	20.0	19.3	96.6	75 - 125	
Dichlorodifluoromethane	20.0	27.1	136	30 - 155	
1,1-Dichloroethane	20.0	22.2	111	70 - 135	
1,2-Dichloroethane	20.0	24.6	123	70 - 130	
1,1-Dichloroethene	20.0	22.7	113	70 - 130	
cis-1,2-Dichloroethene	20.0	22.7	113	70 - 125	
trans-1,2-Dichloroethene	20.0	23.1	115	60 - 140	
1,2-Dichloropropane	20.0	22.4	112	75 - 125	
1,3-Dichloropropane	20.0	19.5	97.6	75 - 125	
2,2-Dichloropropane	20.0	23.5	118	70 - 135	
cis-1,3-Dichloropropene	20.0	24.1	121	70 - 130	
trans-1,3-Dichloropropene	20.0	19.3	96.6	55 - 140	
1,1-Dichloropropene	20.0	22.8	114	75 - 130	
Ethylbenzene	20.0	20.4	102	75 - 125	
2-Hexanone	20.0	16.0	79.9	55 - 130	
Hexachlorobutadiene	20.0	21.4	107	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 2921764
Report generated: 06/12/2013 09:52

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13060134 Run Date: 06/10/2013 Sample ID: WG433591-02
Instrument ID: HPMS6 Run Time: 18:14 Prep Method: 5030B/5030C/503
File ID: 6M117407 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG433591 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD58185 Cal ID: HPMS6-02-APR-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.0	100	75 - 125	
p-Isopropyltoluene	20.0	19.5	97.4	75 - 130	
4-Methyl-2-pentanone	20.0	18.8	93.9	60 - 135	
Methylene chloride	20.0	23.0	115	55 - 140	
Naphthalene	20.0	17.6	88.2	55 - 140	
n-Propylbenzene	20.0	18.6	93.2	70 - 130	
Styrene	20.0	19.7	98.6	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.6	108	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	17.3	86.4	65 - 130	
Tetrachloroethene	20.0	20.4	102	45 - 150	
Toluene	20.0	19.7	98.6	75 - 120	
1,2,3-Trichlorobenzene	20.0	19.0	94.8	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.5	97.4	65 - 135	
1,1,1-Trichloroethane	20.0	25.3	126	65 - 130	
1,1,2-Trichloroethane	20.0	19.3	96.6	75 - 125	
Trichloroethene	20.0	24.7	124	70 - 125	
Trichlorofluoromethane	20.0	25.9	129	60 - 145	
1,2,3-Trichloropropane	20.0	18.5	92.5	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.3	101	75 - 130	
1,3,5-Trimethylbenzene	20.0	21.3	106	75 - 130	
Vinyl chloride	20.0	21.1	105	50 - 145	
o-Xylene	20.0	19.0	95.0	80 - 120	
m-,p-Xylene	40.0	40.0	100	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	105	85 - 115	PASS
1,2-Dichloroethane-d4	104	70 - 120	PASS
Toluene-d8	94.3	85 - 120	PASS
4-Bromofluorobenzene	105	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 2921764
Report generated: 06/12/2013 09:52

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13060134 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS10 Matrix: Water Method: 8260B
Workgroup (AAB#): WG433810 Units: ug/L
QC Key: DOD4 Lot #: STD58291

Sample ID: WG433810-02 LCS File ID: 10M05676 Run Date: 06/12/2013 12:11
Sample ID: WG433810-03 LCS2 File ID: 10M05677 Run Date: 06/12/2013 12:41

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	22.0	110	20.0	20.5	103	7.12	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.8	104	20.0	19.5	97.7	6.22	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	20.9	105	20.0	20.3	102	2.86	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.3	102	20.0	19.3	96.5	5.11	75 - 125	30	
1,1-Dichloroethane	20.0	20.8	104	20.0	19.7	98.3	5.51	70 - 135	30	
1,1-Dichloroethene	20.0	18.3	91.5	20.0	17.4	86.9	5.15	70 - 130	30	
1,1-Dichloropropene	20.0	20.2	101	20.0	19.2	96.1	4.99	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	18.5	92.6	20.0	17.9	89.7	3.26	55 - 140	30	
1,2,3-Trichloropropane	20.0	20.1	100	20.0	19.8	98.9	1.32	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.4	97.2	20.0	18.9	94.7	2.57	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	21.3	106	20.0	20.3	102	4.59	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.5	97.4	20.0	19.4	96.8	0.589	50 - 130	30	
1,2-Dibromoethane	20.0	20.8	104	20.0	20.0	99.8	4.04	80 - 120	30	
1,2-Dichlorobenzene	20.0	18.8	94.1	20.0	17.9	89.7	4.80	70 - 120	30	
1,2-Dichloroethane	20.0	21.2	106	20.0	20.4	102	3.93	70 - 130	30	
1,2-Dichloropropane	20.0	21.4	107	20.0	20.7	104	3.11	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	21.3	107	20.0	20.3	102	4.89	75 - 130	30	
1,3-Dichlorobenzene	20.0	19.0	95.0	20.0	17.9	89.7	5.72	75 - 125	30	
1,3-Dichloropropane	20.0	20.2	101	20.0	19.2	96.0	5.11	75 - 125	30	
1,4-Dichlorobenzene	20.0	19.6	98.0	20.0	18.8	94.1	4.08	75 - 125	30	
2,2-Dichloropropane	20.0	20.1	101	20.0	19.7	98.3	2.37	70 - 135	30	
2-Butanone	20.0	23.8	119	20.0	23.7	119	0.496	30 - 150	30	
2-Chlorotoluene	20.0	17.5	87.7	20.0	16.7	83.5	4.86	75 - 125	30	
2-Hexanone	20.0	22.1	111	20.0	21.9	110	0.886	55 - 130	30	
4-Chlorotoluene	20.0	18.8	93.9	20.0	18.2	91.0	3.14	75 - 130	30	
4-Methyl-2-pentanone	20.0	21.6	108	20.0	22.0	110	2.07	60 - 135	30	
Acetone	20.0	17.6	88.0	20.0	17.2	86.0	2.25	40 - 140	30	
Benzene	20.0	20.0	100	20.0	18.9	94.7	5.66	80 - 120	30	
Bromobenzene	20.0	19.6	98.0	20.0	18.6	93.0	5.25	75 - 125	30	
Bromochloromethane	20.0	20.5	103	20.0	19.6	98.2	4.34	65 - 130	30	
Bromodichloromethane	20.0	20.6	103	20.0	19.8	98.9	4.09	75 - 120	30	
Bromoform	20.0	20.8	104	20.0	19.9	99.6	4.44	70 - 130	30	
Bromomethane	20.0	19.1	95.6	20.0	18.5	92.4	3.39	30 - 145	30	
Carbon disulfide	20.0	18.2	91.1	20.0	18.0	90.0	1.24	35 - 160	30	
Carbon tetrachloride	20.0	21.6	108	20.0	20.0	99.9	7.84	65 - 140	30	
Chlorobenzene	20.0	18.8	94.2	20.0	18.0	89.9	4.64	80 - 120	30	
Chloroethane	20.0	22.3	111	20.0	20.7	104	7.21	60 - 135	30	
Chloroform	20.0	20.5	103	20.0	19.3	96.5	6.23	65 - 135	30	
Chloromethane	20.0	23.7	118	20.0	21.6	108	9.04	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.3	102	20.0	19.6	97.8	3.75	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2922696
Report generated: 06/14/2013 13:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13060134 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS10 Matrix: Water Method: 8260B
Workgroup (AAB#): WG433810 Units: ug/L
QC Key: DOD4 Lot #: STD58291

Sample ID: WG433810-02 LCS File ID: 10M05676 Run Date: 06/12/2013 12:11
Sample ID: WG433810-03 LCS2 File ID: 10M05677 Run Date: 06/12/2013 12:41

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.2	111	20.0	21.4	107	3.52	70 - 130	30	
Chlorodibromomethane	20.0	21.4	107	20.0	20.1	100	6.15	60 - 135	30	
Dibromomethane	20.0	20.1	100	20.0	19.2	95.8	4.68	75 - 125	30	
Dichlorodifluoromethane	20.0	18.0	90.1	20.0	16.6	83.1	8.09	30 - 155	30	
Ethylbenzene	20.0	20.4	102	20.0	19.2	96.2	5.80	75 - 125	30	
Hexachlorobutadiene	20.0	20.8	104	20.0	19.6	97.9	6.08	50 - 140	30	
Isopropylbenzene	20.0	19.3	96.5	20.0	18.4	92.0	4.87	75 - 125	30	
m-,p-Xylene	40.0	39.0	97.4	40.0	37.0	92.5	5.14	75 - 130	30	
Methylene chloride	20.0	19.3	96.6	20.0	18.2	91.1	5.91	55 - 140	30	
n-Butylbenzene	20.0	21.0	105	20.0	20.1	100	4.52	70 - 135	30	
n-Propylbenzene	20.0	18.0	89.9	20.0	17.2	86.2	4.20	70 - 130	30	
Naphthalene	20.0	19.0	94.8	20.0	18.4	91.8	3.16	55 - 140	30	
o-Xylene	20.0	19.0	95.0	20.0	18.3	91.3	3.97	80 - 120	30	
p-Isopropyltoluene	20.0	19.7	98.3	20.0	18.8	93.9	4.56	75 - 130	30	
sec-Butylbenzene	20.0	19.3	96.3	20.0	18.3	91.3	5.31	70 - 125	30	
Styrene	20.0	21.8	109	20.0	21.0	105	3.77	65 - 135	30	
tert-Butylbenzene	20.0	19.0	95.2	20.0	18.1	90.4	5.21	70 - 130	30	
Tetrachloroethene	20.0	19.7	98.6	20.0	19.0	94.8	3.91	45 - 150	30	
Toluene	20.0	19.8	99.0	20.0	18.8	94.0	5.15	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.7	98.4	20.0	18.8	94.0	4.62	60 - 140	30	
trans-1,3-Dichloropropene	20.0	19.6	98.2	20.0	18.8	93.9	4.51	55 - 140	30	
Trichloroethene	20.0	22.0	110	20.0	20.9	105	4.93	70 - 125	30	
Trichlorofluoromethane	20.0	21.3	107	20.0	20.0	99.9	6.39	60 - 145	30	
Vinyl chloride	20.0	20.5	103	20.0	19.2	96.0	6.78	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	101	97.0	70 - 120	PASS
Dibromofluoromethane	107	104	85 - 115	PASS
4-Bromofluorobenzene	94.9	92.5	75 - 120	PASS
Toluene-d8	96.8	93.7	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2922696
Report generated: 06/14/2013 13:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13060134 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG433686 Units: ug/L
QC Key: DOD4 Lot #: STD58291

Sample ID: WG433686-02 LCS File ID: 11M92763 Run Date: 06/11/2013 13:46
Sample ID: WG433686-03 LCS2 File ID: 11M92764 Run Date: 06/11/2013 14:18

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.7	108	20.0	21.9	110	1.20	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.1	101	20.0	20.0	100	0.590	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	20.0	100	20.0	19.4	97.2	3.02	65 - 130	30	
1,1,2-Trichloroethane	20.0	21.1	106	20.0	20.8	104	1.70	75 - 125	30	
1,1-Dichloroethane	20.0	20.9	105	20.0	20.8	104	0.520	70 - 135	30	
1,1-Dichloroethene	20.0	18.9	94.7	20.0	19.1	95.7	1.00	70 - 130	30	
1,1-Dichloropropene	20.0	20.3	101	20.0	20.3	101	0.199	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.3	96.5	20.0	19.3	96.6	0.179	55 - 140	30	
1,2,3-Trichloropropane	20.0	18.6	93.2	20.0	18.5	92.5	0.778	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	21.0	105	20.0	20.7	104	1.34	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	23.2	116	20.0	23.5	118	1.29	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	15.3	76.5	20.0	15.8	79.2	3.49	50 - 130	30	
1,2-Dibromoethane	20.0	20.3	101	20.0	20.1	101	0.725	80 - 120	30	
1,2-Dichlorobenzene	20.0	19.7	98.3	20.0	19.3	96.3	2.14	70 - 120	30	
1,2-Dichloroethane	20.0	19.7	98.4	20.0	19.4	97.0	1.45	70 - 130	30	
1,2-Dichloropropane	20.0	21.4	107	20.0	21.4	107	0.0077	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	23.3	116	20.0	23.4	117	0.669	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.7	104	20.0	20.6	103	0.873	75 - 125	30	
1,3-Dichloropropane	20.0	21.3	107	20.0	20.8	104	2.45	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.5	108	20.0	21.5	107	0.290	75 - 125	30	
2,2-Dichloropropane	20.0	19.5	97.7	20.0	19.2	96.0	1.80	70 - 135	30	
2-Butanone	20.0	15.3	76.6	20.0	16.0	80.0	4.35	30 - 150	30	
2-Chlorotoluene	20.0	20.7	103	20.0	20.8	104	0.494	75 - 125	30	
2-Hexanone	20.0	17.8	89.1	20.0	18.4	92.2	3.44	55 - 130	30	
4-Chlorotoluene	20.0	19.4	97.0	20.0	19.4	96.9	0.0696	75 - 130	30	
4-Methyl-2-pentanone	20.0	17.0	85.0	20.0	17.1	85.3	0.420	60 - 135	30	
Acetone	20.0	10.5	52.7	20.0	12.7	63.5	18.7	40 - 140	30	
Benzene	20.0	20.9	104	20.0	21.0	105	0.475	80 - 120	30	
Bromobenzene	20.0	20.6	103	20.0	20.7	103	0.304	75 - 125	30	
Bromochloromethane	20.0	20.4	102	20.0	20.2	101	1.46	65 - 130	30	
Bromodichloromethane	20.0	20.1	100	20.0	19.9	99.6	0.716	75 - 120	30	
Bromoform	20.0	17.8	89.2	20.0	17.7	88.3	0.978	70 - 130	30	
Bromomethane	20.0	16.3	81.3	20.0	16.5	82.3	1.14	30 - 145	30	
Carbon disulfide	20.0	15.0	75.0	20.0	15.0	74.9	0.214	35 - 160	30	
Carbon tetrachloride	20.0	20.1	100	20.0	20.0	100	0.316	65 - 140	30	
Chlorobenzene	20.0	20.8	104	20.0	20.7	103	0.720	80 - 120	30	
Chloroethane	20.0	21.6	108	20.0	21.6	108	0.0264	60 - 135	30	
Chloroform	20.0	20.4	102	20.0	20.5	102	0.322	65 - 135	30	
Chloromethane	20.0	20.2	101	20.0	19.5	97.7	3.49	40 - 125	30	
cis-1,2-Dichloroethene	20.0	21.2	106	20.0	20.4	102	3.88	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2922696
Report generated: 06/14/2013 13:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13060134 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG433686 Units: ug/L
QC Key: DOD4 Lot #: STD58291

Sample ID: WG433686-02 LCS File ID: 11M92763 Run Date: 06/11/2013 13:46
Sample ID: WG433686-03 LCS2 File ID: 11M92764 Run Date: 06/11/2013 14:18

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.1	110	20.0	21.6	108	2.29	70 - 130	30	
Chlorodibromomethane	20.0	20.5	103	20.0	20.1	101	1.92	60 - 135	30	
Dibromomethane	20.0	19.3	96.3	20.0	19.0	94.9	1.42	75 - 125	30	
Dichlorodifluoromethane	20.0	19.9	99.6	20.0	20.2	101	1.30	30 - 155	30	
Ethylbenzene	20.0	21.2	106	20.0	21.2	106	0.0378	75 - 125	30	
Hexachlorobutadiene	20.0	20.3	101	20.0	20.3	101	0.0802	50 - 140	30	
Isopropylbenzene	20.0	20.7	104	20.0	20.8	104	0.195	75 - 125	30	
m-,p-Xylene	40.0	42.5	106	40.0	42.9	107	0.964	75 - 130	30	
Methylene chloride	20.0	18.8	94.1	20.0	18.8	94.2	0.176	55 - 140	30	
n-Butylbenzene	20.0	22.5	113	20.0	22.7	114	1.02	70 - 135	30	
n-Propylbenzene	20.0	20.0	100	20.0	20.2	101	0.820	70 - 130	30	
Naphthalene	20.0	18.7	93.5	20.0	18.7	93.5	0.0216	55 - 140	30	
o-Xylene	20.0	19.7	98.5	20.0	19.8	99.1	0.669	80 - 120	30	
p-Isopropyltoluene	20.0	21.3	107	20.0	21.4	107	0.643	75 - 130	30	
sec-Butylbenzene	20.0	20.6	103	20.0	20.8	104	0.929	70 - 125	30	
Styrene	20.0	23.2	116	20.0	23.4	117	0.784	65 - 135	30	
tert-Butylbenzene	20.0	20.0	100	20.0	20.2	101	1.14	70 - 130	30	
Tetrachloroethene	20.0	21.0	105	20.0	21.3	107	1.74	45 - 150	30	
Toluene	20.0	22.3	112	20.0	22.4	112	0.0545	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.4	102	20.0	20.3	102	0.222	60 - 140	30	
trans-1,3-Dichloropropene	20.0	20.5	103	20.0	20.4	102	0.733	55 - 140	30	
Trichloroethene	20.0	22.0	110	20.0	22.0	110	0.0109	70 - 125	30	
Trichlorofluoromethane	20.0	20.1	100	20.0	20.3	102	1.26	60 - 145	30	
Vinyl chloride	20.0	18.3	91.5	20.0	17.8	89.1	2.63	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	85.7	82.8	70 - 120	PASS
Dibromofluoromethane	93.1	91.9	85 - 115	PASS
4-Bromofluorobenzene	106	107	75 - 120	PASS
Toluene-d8	104	105	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2922696
Report generated: 06/14/2013 13:48

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L13060134 Cal ID: HPMS6- 02-APR-13 Worknum: WG433591

Instrument ID: HPMS6 Contract #: Prep Method: 5030B/5030C/

Parent ID: L13060134-09 File ID: 6M117414 Dil: 1 Method: 5035A

Sample ID: L13060134-10 MS File ID: 6M117408 Dil: 1 Matrix: 8260B

Sample ID: L13060134-11 MSD File ID: 6M117409 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	21.3	106	20.0	21.2	106	0.232	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	24.7	124	20.0	24.6	123	0.462	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	17.9	89.7	20.0	17.8	89.1	0.624	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	19.7	98.3	20.0	19.2	95.9	2.43	75 - 125	30	
1,1-Dichloroethane	0.390	20.0	22.6	111	20.0	22.3	110	1.39	70 - 135	30	
1,1-Dichloroethene	U	20.0	22.2	111	20.0	22.0	110	0.790	70 - 130	30	
1,1-Dichloropropene	U	20.0	22.4	112	20.0	22.2	111	0.951	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	19.0	95	20.0	19.1	95.3	0.236	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	18.5	92.5	20.0	19.0	94.8	2.48	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	19.4	97	20.0	19.4	96.9	0.0833	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	20.2	101	20.0	20.1	101	0.579	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	18.2	90.8	20.0	17.4	86.8	4.48	50 - 130	30	
1,2-Dibromoethane	U	20.0	19.7	98.7	20.0	19.5	97.7	1.03	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	18.3	91.6	20.0	18.1	90.5	1.20	70 - 120	30	
1,2-Dichloroethane	U	20.0	24.4	122	20.0	23.9	120	1.97	70 - 130	30	
1,2-Dichloropropane	U	20.0	22.3	112	20.0	22.2	111	0.712	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	21.2	106	20.0	20.9	105	1.47	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	18.3	91.3	20.0	18.2	90.9	0.382	75 - 125	30	
1,3-Dichloropropane	U	20.0	19.6	97.9	20.0	19.3	96.6	1.41	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	19.2	96.1	20.0	19.1	95.3	0.792	75 - 125	30	
2,2-Dichloropropane	U	20.0	24.0	120	20.0	23.5	117	2.03	70 - 135	30	
2-Butanone	U	20.0	17.6	88.1	20.0	16.9	84.3	4.40	30 - 150	30	
2-Chlorotoluene	U	20.0	18.9	94.5	20.0	18.6	92.9	1.75	75 - 125	30	
2-Hexanone	U	20.0	17.1	85.5	20.0	17.1	85.5	0.0198	55 - 130	30	
4-Chlorotoluene	U	20.0	18.1	90.7	20.0	18.1	90.5	0.218	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	19.0	94.9	20.0	18.9	94.7	0.213	60 - 135	30	
Acetone	U	20.0	15.2	75.9	20.0	15.1	75.5	0.633	40 - 140	30	
Benzene	U	20.0	22.0	110	20.0	22.0	110	0.320	80 - 120	30	
Bromobenzene	U	20.0	19.4	97	20.0	19.3	96.7	0.321	75 - 125	30	
Bromochloromethane	U	20.0	22.7	113	20.0	22.3	112	1.60	65 - 130	30	
Bromodichloromethane	U	20.0	23.1	116	20.0	22.8	114	1.30	75 - 120	30	
Bromoform	U	20.0	19.0	95	20.0	18.8	93.9	1.22	70 - 130	30	
Bromomethane	U	20.0	15.5	77.6	20.0	16.2	80.8	4.08	30 - 145	30	
Carbon disulfide	U	20.0	17.0	84.9	20.0	16.9	84.7	0.232	35 - 160	30	
Carbon tetrachloride	U	20.0	25.2	126	20.0	24.6	123	2.45	65 - 140	30	
Chlorobenzene	U	20.0	18.1	90.6	20.0	18.1	90.7	0.0517	80 - 120	30	
Chloroethane	U	20.0	22.7	113	20.0	22.9	115	1.16	60 - 135	30	
Chloroform	U	20.0	23.5	118	20.0	23.1	115	1.91	65 - 135	30	
Chloromethane	U	20.0	18.7	93.5	20.0	18.3	91.6	2.08	40 - 125	30	
cis-1,2-Dichloroethene	U	20.0	23.0	115	20.0	22.5	112	2.10	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	24.0	120	20.0	24.1	120	0.310	70 - 130	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 2921765
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L13060134 Cal ID: HPMS6 02-APR-13 Worknum: WG433591

Instrument ID: HPMS6 Contract #: Prep Method: 5030B/5030C/

Parent ID: L13060134-09 File ID: 6M117414 Dil: 1 Method: 5035A

Sample ID: L13060134-10 MS File ID: 6M117408 Dil: 1 Matrix: 8260B

Sample ID: L13060134-11 MSD File ID: 6M117409 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	19.2	96.2	20.0	18.6	93.1	3.27	60 - 135	30	
Dibromomethane	U	20.0	23.4	117	20.0	23.0	115	1.68	75 - 125	30	
Dichlorodifluoromethane	U	20.0	24.7	124	20.0	25.2	126	2.00	30 - 155	30	
Ethylbenzene	U	20.0	20.1	100	20.0	20.1	100	0.0383	75 - 125	30	
Hexachlorobutadiene	U	20.0	21.6	108	20.0	21.0	105	2.98	50 - 140	30	
Isopropylbenzene	U	20.0	19.6	98.1	20.0	19.6	97.8	0.337	75 - 125	30	
m-,p-Xylene	U	40.0	39.5	98.7	40.0	39.0	97.6	1.07	75 - 130	30	
Methylene chloride	U	20.0	22.5	113	20.0	22.5	112	0.166	55 - 140	30	
n-Butylbenzene	U	20.0	20.7	104	20.0	21.0	105	1.23	70 - 135	30	
n-Propylbenzene	U	20.0	18.6	92.8	20.0	18.3	91.7	1.19	70 - 130	30	
Naphthalene	U	20.0	17.6	88.2	20.0	18.5	92.5	4.68	55 - 140	30	
o-Xylene	U	20.0	18.8	94	20.0	18.8	93.9	0.0759	80 - 120	30	
p-Isopropyltoluene	U	20.0	19.3	96.3	20.0	19.1	95.3	1.04	75 - 130	30	
sec-Butylbenzene	U	20.0	18.7	93.3	20.0	18.6	92.8	0.470	70 - 125	30	
Styrene	U	20.0	19.7	98.3	20.0	19.4	97.2	1.11	65 - 135	30	
tert-Butylbenzene	U	20.0	18.5	92.6	20.0	18.5	92.6	0.0639	70 - 130	30	
Tetrachloroethene	U	20.0	20.2	101	20.0	20.0	100	0.950	45 - 150	30	
Toluene	U	20.0	19.6	98	20.0	19.3	96.6	1.43	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	22.9	115	20.0	22.5	113	1.61	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	19.3	96.3	20.0	19.0	95.1	1.20	55 - 140	30	
Trichloroethene	U	20.0	24.0	120	20.0	23.9	120	0.237	70 - 125	30	
Trichlorofluoromethane	U	20.0	24.7	123	20.0	24.4	122	1.06	60 - 145	30	
Vinyl chloride	U	20.0	20.1	101	20.0	20.7	104	2.99	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 2921765
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13060134
Instrument: HPMS10
Analyst: TMB
Workgroup: WG419631

Tune ID: WG419631-01
Run Date: 01/31/2013
Run Time: 11:53
File ID: 10M01772
Cal ID: HPMS10 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.5	3385	PASS
75.0	95.0	30.0	60.0	47.2	8623	PASS
95.0	95.0	100	100	100	18256	PASS
96.0	95.0	5.00	9.00	6.56	1198	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	93.3	17040	PASS
175	174	5.00	9.00	7.63	1300	PASS
176	174	95.0	101	96.9	16512	PASS
177	176	5.00	9.00	6.11	1009	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG419631-02	STD	01	01/31/2013 12:18	
WG419631-03	STD	01	01/31/2013 12:48	
WG419631-04	STD	01	01/31/2013 13:19	
WG419631-05	STD	01	01/31/2013 13:49	
WG419631-06	STD	01	01/31/2013 14:20	
WG419631-07	STD	01	01/31/2013 14:50	
WG419631-08	STD	01	01/31/2013 15:21	
WG419631-09	STD	01	01/31/2013 15:51	
WG419631-10	SSCV	01	01/31/2013 16:51	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 2922143
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13060134
Instrument: HPMS10
Analyst: TMB
Workgroup: WG430035

Tune ID: WG430035-01
Run Date: 05/14/2013
Run Time: 15:36
File ID: 10M04736
Cal ID: HPMS10 - 14-MAY-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.7	2864	PASS
75.0	95.0	30.0	60.0	44.3	6803	PASS
95.0	95.0	100	100	100	15346	PASS
96.0	95.0	5.00	9.00	6.44	988	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	88.1	13513	PASS
175	174	5.00	9.00	7.30	987	PASS
176	174	95.0	101	99.2	13408	PASS
177	176	5.00	9.00	6.64	890	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG430035-02	STD	01	05/14/2013 16:02	
WG430035-03	STD	01	05/14/2013 16:32	
WG430035-04	STD	01	05/14/2013 17:02	
WG430035-05	STD	01	05/14/2013 17:32	
WG430035-06	STD	01	05/14/2013 18:03	
WG430035-07	STD	01	05/14/2013 18:33	
WG430035-08	STD-CCV	01	05/14/2013 19:03	
WG430035-09	STD	01	05/14/2013 19:33	
WG430035-10	STD	01	05/14/2013 20:03	
WG430035-11	STD	01	05/14/2013 20:33	
WG430035-12	SSCV	01	05/14/2013 22:35	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 2922143
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13060134
Instrument: HPMS10
Analyst: TMB
Workgroup: WG433809

Tune ID: WG433809-01
Run Date: 06/12/2013
Run Time: 09:44
File ID: 10M05671
Cal ID: HPMS10 - 14-MAY-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.8	2731	PASS
75.0	95.0	30.0	60.0	45.0	5919	PASS
95.0	95.0	100	100	100	13157	PASS
96.0	95.0	5.00	9.00	6.71	883	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	92.4	12160	PASS
175	174	5.00	9.00	8.11	986	PASS
176	174	95.0	101	97.2	11820	PASS
177	176	5.00	9.00	7.28	860	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG433809-02	CCV	01	06/12/2013 10:40	
WG433810-01	BLANK	01	06/12/2013 11:41	
WG433810-02	LCS	01	06/12/2013 12:11	
WG433810-03	LCS2	01	06/12/2013 12:41	
L13060134-16	67WW08-060313	DL01	06/12/2013 13:43	
L13060134-06	67WW01-053113	01	06/12/2013 16:46	
WG433810-04	BLANK2	01	06/12/2013 22:20	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 2922143
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13060134
Instrument: HPMS11
Analyst: FJB
Workgroup: WG430143

Tune ID: WG430143-01
Run Date: 05/15/2013
Run Time: 16:00
File ID: 11M91900
Cal ID: HPMS11 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.5	2409	PASS
75.0	95.0	30.0	60.0	49.7	7247	PASS
95.0	95.0	100	100	100	14579	PASS
96.0	95.0	5.00	9.00	6.54	954	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	84.2	12269	PASS
175	174	5.00	9.00	7.28	893	PASS
176	174	95.0	101	95.4	11707	PASS
177	176	5.00	9.00	6.42	752	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG430143-02	STD	01	05/15/2013 16:25	
WG430143-03	STD	01	05/15/2013 16:57	
WG430143-04	STD	01	05/15/2013 17:48	
WG430143-05	STD	01	05/15/2013 18:20	
WG430143-06	STD	01	05/15/2013 18:52	
WG430143-07	STD	01	05/15/2013 19:23	
WG430143-08	STD-CCV	01	05/15/2013 19:54	
WG430143-09	STD	01	05/15/2013 20:26	
WG430143-10	STD	01	05/15/2013 20:57	
WG430143-11	STD	01	05/15/2013 21:28	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 2922143
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13060134
Instrument: HPMS11
Analyst: FJB
Workgroup: WG430391

Tune ID: WG430391-01
Run Date: 05/16/2013
Run Time: 10:22
File ID: 11M91914
Cal ID: HPMS11 - 15-MAY-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.0	2093	PASS
75.0	95.0	30.0	60.0	49.4	4917	PASS
95.0	95.0	100	100	100	9947	PASS
96.0	95.0	5.00	9.00	7.07	703	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	82.7	8226	PASS
175	174	5.00	9.00	7.33	603	PASS
176	174	95.0	101	96.3	7923	PASS
177	176	5.00	9.00	7.48	593	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG430143-12	SSCV	01	05/16/2013 12:55	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 2922143
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13060134
Instrument: HPMS11
Analyst: FJB
Workgroup: WG433467

Tune ID: WG433467-01
Run Date: 06/10/2013
Run Time: 11:29
File ID: 11M92732
Cal ID: HPMS11 - 15-MAY-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.2	3689	PASS
75.0	95.0	30.0	60.0	47.0	10707	PASS
95.0	95.0	100	100	100	22760	PASS
96.0	95.0	5.00	9.00	6.89	1569	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	83.2	18944	PASS
175	174	5.00	9.00	8.05	1525	PASS
176	174	95.0	101	97.7	18509	PASS
177	176	5.00	9.00	6.36	1178	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG433467-02	CCV	01	06/10/2013 12:28	
WG433470-01	BLANK	01	06/10/2013 13:30	
WG433470-02	LCS	01	06/10/2013 14:02	
L13060134-01	EQUIPMENT RINSE-053113	01	06/10/2013 16:40	
L13060134-02	67WW06-053113	01	06/10/2013 20:20	
L13060134-03	67WW06-053113-FD	01	06/10/2013 20:51	
L13060134-04	67WW13-053113	01	06/10/2013 21:22	
L13060134-05	67WW05-053113	01	06/10/2013 21:54	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 2922143
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13060134
Instrument: HPMS11
Analyst: FJB
Workgroup: WG433685

Tune ID: WG433685-01
Run Date: 06/11/2013
Run Time: 11:46
File ID: 11M92759
Cal ID: HPMS11 - 15-MAY-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.6	1365	PASS
75.0	95.0	30.0	60.0	53.3	3533	PASS
95.0	95.0	100	100	100	6623	PASS
96.0	95.0	5.00	9.00	8.24	546	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	89.1	5902	PASS
175	174	5.00	9.00	7.62	450	PASS
176	174	95.0	101	97.3	5745	PASS
177	176	5.00	9.00	5.83	335	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG433685-02	CCV	01	06/11/2013 12:11	
WG433686-01	BLANK	01	06/11/2013 13:15	
WG433686-02	LCS	01	06/11/2013 13:46	
WG433686-03	LCS2	01	06/11/2013 14:18	
L13060134-04	67WW13-053113	DL01	06/11/2013 14:49	
WG433686-04	BLANK2	01	06/12/2013 05:31	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 2922143
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13060134
Instrument: HPMS6
Analyst: FJB
Workgroup: WG425306

Tune ID: WG425306-01
Run Date: 04/02/2013
Run Time: 07:26
File ID: 6M115121
Cal ID: HPMS6 - 02-APR-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.4	6758	PASS
75.0	95.0	30.0	60.0	46.7	16243	PASS
95.0	95.0	100	100	100	34754	PASS
96.0	95.0	5.00	9.00	6.61	2297	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	84.4	29349	PASS
175	174	5.00	9.00	7.51	2203	PASS
176	174	95.0	101	99.4	29170	PASS
177	176	5.00	9.00	6.54	1907	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG425306-02	STD	01	04/02/2013 09:08	
WG425306-03	STD	01	04/02/2013 09:38	
WG425306-04	STD	01	04/02/2013 10:08	
WG425306-05	STD	01	04/02/2013 10:39	
WG425306-06	STD	01	04/02/2013 11:10	
WG425306-07	STD	01	04/02/2013 11:41	
WG425306-08	STD-CCV	01	04/02/2013 12:13	
WG425306-09	STD	01	04/02/2013 12:45	
WG425306-10	STD	01	04/02/2013 13:17	
WG425306-11	STD	01	04/02/2013 13:49	
WG425306-12	SSCV	01	04/02/2013 15:29	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 2922143
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13060134
Instrument: HPMS6
Analyst: ADC
Workgroup: WG433588

Tune ID: WG433588-01
Run Date: 06/10/2013
Run Time: 15:44
File ID: 6M117402
Cal ID: HPMS6 - 02-APR-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.6	5718	PASS
75.0	95.0	30.0	60.0	48.2	13381	PASS
95.0	95.0	100	100	100	27765	PASS
96.0	95.0	5.00	9.00	6.86	1905	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	81.3	22572	PASS
175	174	5.00	9.00	7.74	1748	PASS
176	174	95.0	101	97.8	22077	PASS
177	176	5.00	9.00	6.59	1454	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG433588-02	CCV	01	06/10/2013 16:41	
WG433591-01	BLANK	01	06/10/2013 17:43	
WG433591-02	LCS	01	06/10/2013 18:14	
L13060134-10	67WW10-060113-MS	01	06/10/2013 18:44	
L13060134-11	67WW10-060113-MD	01	06/10/2013 19:15	
L13060134-17	TRIP BLANK	01	06/10/2013 21:19	
L13060134-09	67WW10-060113	01	06/10/2013 21:50	
L13060134-07	67WW02-053113	01	06/11/2013 00:27	
L13060134-08	67WW07-053113	01	06/11/2013 00:58	
L13060134-12	67WW11-060113	01	06/11/2013 01:30	
L13060134-13	67WW11-060113-FD	01	06/11/2013 02:01	
L13060134-14	67WW12-060113	01	06/11/2013 02:33	
L13060134-15	67WW09-060113	01	06/11/2013 03:03	
L13060134-16	67WW08-060313	01	06/11/2013 03:35	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 2922143
Report generated 06/14/2013 13:48

Calibration Table Report
Method: A9FOOWT.M
Title: FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Calibration: Fri Feb 01 15:59:54 2013
Curve: WG419631
Calibration Files

Compound	5	20	50	100	200	300	400	500	Avg	%RSD	Linear	Quad
	10M01773.D	10M01774.D	10M01775.D	10M01776.D	10M01777.D	10M01778.D	10M01779.D	10M01780.D				
Fluorobenzene	ISTD											
Acetonitrile	0.012	0.014	0.015	0.015	0.016	0.017	0.017	0.018	0.015	11.771		
3-Chloro-1-propene	0.309	0.300	0.313	0.316	0.331	0.333	0.339	0.344	0.323	4.841		
2-Chloro-1,3-butadiene	0.326	0.333	0.354	0.371	0.386	0.388	0.394	0.405	0.370	7.895		
Ethyl Acetate	0.110	0.133	0.133	0.134	0.140	0.144	0.148	0.152	0.137	9.382		
Methacrylonitrile	0.055	0.070	0.072	0.073	0.075	0.077	0.079	0.082	0.073	11.309		
Isobutyl Alcohol			0.003	0.003	0.003	0.004	0.004	0.005	0.004	25.456		0.996
Chlorobenzene-d5	ISTD											
1-Butanol									0.000	0.000		
Methyl methacrylate	0.118	0.134	0.150	0.154	0.162	0.173	0.178	0.184	0.157	14.483		
2-Nitropropane		0.040	0.047	0.050	0.054	0.059	0.061		0.052	14.504		
1,4-Dichlorobenzene-d4	ISTD											
Cyclohexanone		0.013	0.012	0.013	0.014	0.016	0.016	0.017	0.014	12.168		

Fri Feb 01 16:23:12 2013

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Calibration: Wed May 15 09:01:37 2013
Curve: WG430035
Calibration Files

	Compound	0.3 10M04737.D	0.4 10M04738.D	1 10M04739.D	2 10M04740.D	5 10M04741.D	20 10M04742.D	50 10M04743.D	100 10M04744.D	200 10M04745.D	300 10M04746.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.238	0.211	0.212	0.244	0.233	0.231	0.223	0.228	0.228	5.134		
P	Chloromethane			0.332	0.324	0.272	0.272	0.258	0.245	0.251	0.262	0.277	11.905		
C	Vinyl Chloride			0.313	0.283	0.246	0.253	0.239	0.224	0.213		0.253	13.737		
T	1,3-Butadiene				0.303	0.219	0.228	0.150	0.114	0.109	0.106	0.175	43.300		0.998
T	Bromomethane			0.214	0.232	0.200	0.151	0.148	0.151	0.163	0.170	0.179	18.070	0.997	
T	Chloroethane			0.160	0.169	0.164	0.168	0.167	0.160	0.166	0.167	0.165	2.026		
T	Trichlorofluoromethane		0.383	0.444	0.413	0.408	0.408	0.401	0.399	0.395	0.397	0.405	4.199		
T	Diethyl ether			0.188	0.194	0.186	0.186	0.185	0.197		0.198	0.191	2.918		
T	Isoprene			0.376	0.358	0.363	0.367	0.388	0.395	0.393	0.396	0.379	4.074		
T	Acrolein				0.008	0.008	0.009	0.010	0.011			0.009	13.752		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.262	0.247	0.241	0.239	0.238	0.243	0.238	0.247	0.244	3.257		
T	Acetone					0.066	0.064	0.064	0.064	0.064	0.063	0.064	1.837		
C	1,1-Dichloroethene		0.258	0.236	0.252	0.245	0.236	0.238	0.242	0.245	0.249	0.245	3.110		
T	Tert-Butyl Alcohol				0.016	0.016	0.015	0.015	0.017		0.014	0.016	4.726		
T	Dimethyl Sulfide			0.315	0.289	0.291	0.299	0.315	0.314	0.323	0.323	0.308	4.439		
T	Iodomethane				0.054	0.105	0.270	0.345	0.351	0.368	0.349	0.263	49.462	0.998	
T	Methyl acetate			0.088	0.103	0.115	0.118	0.126	0.132	0.132	0.139	0.119	14.134		
T	Methylene Chloride			0.316	0.282	0.269	0.264	0.270	0.265	0.272	0.269	0.276	6.238		
T	Carbon Disulfide			0.903	0.863	0.852	0.824	0.864	0.852	0.858	0.838	0.857	2.665		
T	Acrylonitrile			0.056	0.059	0.061	0.065	0.068	0.072		0.079	0.066	12.414		
T	Methyl Tert Butyl Ether		0.587	0.634	0.624	0.618	0.611	0.613	0.612	0.615	0.619	0.615	2.073		
T	trans-1,2-Dichloroethene		0.286	0.291	0.267	0.266	0.264	0.267	0.265	0.271	0.272	0.272	3.586		
T	n-Hexane					0.356	0.337	0.347	0.348	0.348	0.361	0.349	2.387		
T	Diisopropyl ether			0.814	0.829	0.795	0.802	0.799	0.830		0.815	0.812	1.725		
T	Vinyl Acetate					0.186	0.262	0.301	0.319	0.335	0.353	0.292	20.876	0.998	
P	1,1-Dichloroethane		0.474	0.495	0.468	0.463	0.453	0.466	0.461	0.467	0.466	0.468	2.500		
T	Ethyl-Tert-Butyl ether			0.802	0.820	0.785	0.791	0.783	0.813		0.790	0.798	1.803		
T	2-Butanone					0.065	0.070	0.069	0.071	0.071	0.073	0.070	3.993		
T	Propionitrile			0.022	0.024	0.023	0.024	0.024	0.025			0.024	3.693		
T	2,2-Dichloropropane		0.412	0.418	0.405	0.397	0.373	0.370	0.364	0.364	0.361	0.385	5.914		
T	cis-1,2-Dichloroethene		0.276	0.311	0.289	0.292	0.289	0.291	0.288	0.294	0.293	0.291	3.084		
C	Chloroform	0.488	0.463	0.482	0.465	0.464	0.449	0.453	0.440	0.444	0.439	0.459	3.706		
T	1-Bromopropane				0.058	0.057	0.059	0.061	0.060	0.061	0.061	0.060	2.757		
T	Bromochloromethane		0.113	0.136	0.139	0.137	0.136	0.136	0.134	0.139	0.140	0.134	6.084		
T	Tetrahydrofuran			0.046	0.047	0.043	0.044	0.045	0.048		0.048	0.046	4.011		
S	Dibromofluoromethane			0.213	0.227	0.248	0.259	0.257	0.254	0.252	0.250	0.245	6.609		
T	1,1,1-Trichloroethane		0.398	0.414	0.417	0.405	0.400	0.403	0.394	0.396	0.392	0.402	2.142		
T	Cyclohexane			0.474	0.450	0.446	0.443	0.456	0.457	0.462	0.474	0.458	2.570		
T	1,1-Dichloropropene			0.363	0.351	0.352	0.348	0.349	0.347	0.350	0.352	0.352	1.435		
T	Carbon Tetrachloride		0.335	0.366	0.356	0.369	0.365	0.365	0.360	0.358	0.353	0.359	2.822		
T	Tert-Amyl-Methyl ether			0.639	0.662	0.637	0.648	0.637	0.666		0.647	0.6481	1.81853		
S	1,2-Dichloroethane-d4			0.244	0.251	0.25	0.248	0.241	0.241	0.233	0.233	0.2422	2.90115		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.325	0.342	0.33	0.322	0.318	0.312	0.305	0.305	0.303	0.3181	4.09249		
T	Benzene		1.14	1.119	1.074	1.041	1.014	1.021	1.002	0.997	0.957	1.0406	5.73814		
T	Trichloroethene		0.28	0.308	0.309	0.29	0.28	0.278	0.274	0.277	0.275	0.2857	4.83003		
T	Methylcyclohexane					0.396	0.395	0.394	0.397	0.394	0.407	0.3973	1.27925		
C	1,2-Dichloropropane		0.239	0.27	0.266	0.259	0.258	0.26	0.259	0.268	0.272	0.2611	3.76529		
T	Bromodichloromethane		0.283	0.334	0.33	0.329	0.338	0.341	0.337	0.342	0.34	0.3306	5.55924		
T	1,4-Dioxane					0.002	0.002	0.002	0.002		0.002	0.0017	4.55474		
T	Dibromomethane		0.138	0.145	0.151	0.145	0.144	0.142	0.141	0.144	0.144	0.1437	2.43664		
T	2-Chloroethyl Vinyl Ether					0.107	0.125	0.131	0.134	0.139	0.14	0.1293	9.4197		
T	4-Methyl-2-Pentanone					0.06	0.067	0.067	0.069	0.07	0.069	0.067	5.40068		
T	cis-1,3-Dichloropropene		0.343	0.386	0.376	0.395	0.399	0.405	0.401	0.409	0.407	0.3914	5.34732		

T	Dimethyl Disulfide			0.133	0.145	0.17	0.207	0.23	0.234	0.244	0.246	0.201	22.7412	0.999
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.306	1.242	1.18	1.191	1.163	1.172	1.168	1.132	1.1943	4.58046	
C	Toluene		1.542	1.599	1.503	1.46	1.443	1.44	1.425	1.385	1.275	1.4525	6.39744	
T	Ethyl Methacrylate			0.293	0.292	0.304	0.335	0.358	0.361	0.364	0.351	0.3322	9.41802	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.446	0.444	0.448	0.466	0.469	0.468	0.474	0.456	0.4589	2.6097	
T	1,1,2-Trichloroethane		0.249	0.268	0.276	0.261	0.262	0.258	0.256	0.26	0.251	0.2602	3.10905	
T	2-Hexanone					0.125	0.138	0.139	0.142	0.142	0.133	0.1365	4.67281	
T	1,3-Dichloropropane		0.424	0.484	0.455	0.453	0.449	0.446	0.442	0.445	0.432	0.4478	3.71282	
T	Tetrachloroethene		0.347	0.358	0.343	0.327	0.322	0.317	0.317	0.314	0.304	0.3277	5.43163	
T	Dibromochloromethane		0.278	0.292	0.317	0.314	0.336	0.339	0.336	0.34	0.328	0.32	6.87156	
T	1,2-Dibromoethane		0.249	0.273	0.256	0.269	0.275	0.269	0.268	0.268	0.26	0.2653	3.16458	
T	1-Chlorohexane		0.444	0.458	0.466	0.461	0.459	0.47	0.467	0.468	0.453	0.4608	1.86894	
P	Chlorobenzene		1.017	1.087	1.009	0.979	0.971	0.974	0.967	0.948	0.876	0.981	5.78916	
T	1,1,1,2-Tetrachloroethane		0.319	0.368	0.365	0.36	0.367	0.37	0.37	0.361	0.33	0.3568	5.27964	
C	Ethylbenzene		0.557	0.547	0.534	0.522	0.526	0.526	0.53	0.52	0.487	0.5277	3.70665	
T	m-,p-Xylene	0.781	0.661	0.659	0.649	0.637	0.635	0.641	0.626	0.587	0.518	0.6394	10.242	
T	o-Xylene			0.641	0.616	0.62	0.626	0.631	0.627	0.605	0.562	0.616	3.9334	
T	Styrene		0.918	0.929	0.963	0.973	1.052	1.084	1.069	1.009	0.901	0.9887	6.88681	
P	Bromoform			0.191	0.201	0.206	0.233	0.236	0.237	0.227	0.202	0.2167	8.53243	
T	Isopropylbenzene		1.609	1.602	1.568	1.566	1.549	1.552	1.509	1.391	1.246	1.5102	7.84712	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.378	0.454	0.466	0.488	0.51	0.522	0.539	0.563	0.563	0.4981	11.9102	
S	p-Bromofluorobenzene				0.819	0.833	0.826	0.83	0.855	0.894	0.92	0.8538	4.53369	
T	1,2,3-Trichloropropane			0.164	0.171	0.162	0.168	0.161	0.164	0.169	0.167	0.1658	2.17331	
T	trans-1,4-Dichloro-2-Butene			0.093	0.114	0.138	0.151	0.162	0.167	0.177	0.18	0.1478	20.9434	0.999
T	n-Propylbenzene		3.412	3.435	3.326	3.296	3.241	3.281	3.267	3.26	3.165	3.298	2.53932	
T	Bromobenzene	0.922	0.87	0.921	0.846	0.838	0.806	0.817	0.832	0.854	0.851	0.8556	4.57415	
T	1,3,5-Trimethylbenzene		2.305	2.333	2.331	2.347	2.312	2.333	2.329	2.299	2.293	2.3203	0.800995	
T	2-Chlorotoluene		2.23	2.213	2.211	2.129	2.082	2.095	2.25	2.186	2.054	2.161	3.33508	
T	4-Chlorotoluene		2.095	2.113	2.025	1.96	1.911	1.943	1.82	1.898	1.965	1.9702	4.78266	
T	a-Methylstyrene					1.199	1.309	1.394	1.38	1.372	1.37	1.3372	5.53036	
T	tert-Butylbenzene			0.536	0.518	0.523	0.531	0.53	0.532	0.53	0.527	0.5285	1.04991	
T	1,2,4-Trimethylbenzene		2.416	2.415	2.431	2.383	2.388	2.396	2.347	2.272	2.209	2.3619	3.15784	
T	sec-Butylbenzene			3.073	2.851	2.856	2.811	2.811	2.767	2.663	2.596	2.8036	5.0706	
T	p-Isopropyltoluene			2.473	2.393	2.395	2.386	2.387	2.329	2.255	2.211	2.3536	3.60268	
T	1,3-Dichlorobenzene		1.658	1.594	1.583	1.527	1.504	1.499	1.465	1.434	1.394	1.5176	5.48077	
T	1,4-Dichlorobenzene	1.888	1.716	1.666	1.573	1.554	1.501	1.496	1.465	1.43	1.391	1.5681	9.61777	
T	n-Butylbenzene			2.084	2.063	2.054	2.037	2.044	1.99	1.931	1.893	2.012	3.38489	
T	1,2-Dichlorobenzene	1.566	1.405	1.481	1.446	1.406	1.405	1.384	1.361	1.334	1.295	1.4082	5.43746	
T	1,2-Dibromo-3-Chloropropane				0.087	0.098	0.106	0.111	0.113	0.118		0.1055	10.8904	
T	1,2,4-Trichlorobenzene		0.952	0.956	0.945	0.947	0.951	0.948	0.93	0.917	0.948	0.9439	1.31574	
T	Hexachlorobutadiene		0.401	0.434	0.402	0.395	0.374	0.365	0.356	0.353	0.357	0.382	7.25766	
T	Naphthalene		1.549	1.55	1.543	1.571	1.68	1.689	1.663	1.638	1.677	1.6178	3.92379	
T	1,2,3-Trichlorobenzene			0.847	0.845	0.839	0.834	0.826	0.804	0.801	0.821	0.8272	2.14602	

Thu May 16 11:40:32 2013

Calibration Table Report
Method: 8260BWT.M
Title: 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Calibration: Thu May 16 11:19:39 2013
Curve: WG430143
Calibration Files

	Compound	0.3 11M91901.D	0.4 11M91902.D	1 11M91903.D	2 11M91904.D	5 11M91905.D	20 11M91906.D	50 11M91907.D	100 11M91908.D	200 11M91909.D	300 11M91910.D	Avg	%RSD	Linear	Quadratic
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.250	0.237	0.225	0.235	0.269	0.291	0.285	0.279	0.261	0.259	9.165		
P	Chloromethane			0.336	0.317	0.302	0.302	0.291	0.278	0.278	0.273	0.297	7.269		
C	Vinyl Chloride		0.384	0.373	0.343	0.309	0.313	0.320	0.297	0.266		0.326	12.056		
T	1,3-Butadiene			0.304	0.323	0.280	0.251	0.165	0.121			0.241	33.451		1.006
T	Bromomethane		0.217	0.194	0.196	0.179	0.168	0.170	0.175	0.194	0.191	0.187	8.336		
T	Chloroethane		0.162	0.174	0.168	0.167	0.170	0.180	0.183	0.185	0.181	0.174	4.602		
T	Trichlorofluoromethane		0.453	0.438	0.465	0.471	0.451	0.481	0.480	0.471	0.452	0.462	3.154		
T	Diethyl ether			0.170	0.168	0.168	0.167	0.167	0.176		0.174	0.170	2.206		
T	Isoprene		0.420	0.377	0.412	0.405	0.434	0.443	0.453	0.444	0.436	0.425	5.630		
T	Acrolein				0.008	0.008	0.008	0.008	0.010		0.010	0.008	10.875		
T	1,1,2-Trichloro-1,2,2-Trifluoroe		0.189	0.249	0.275	0.266	0.256	0.274	0.278	0.280	0.274	0.260	11.013		
T	Acetone				0.062	0.066	0.062	0.064	0.069	0.071	0.064	0.065	5.120		
C	1,1-Dichloroethene		0.418	0.373	0.398	0.399	0.389	0.419	0.418	0.407	0.390	0.401	3.934		
T	Tert-Butyl Alcohol			0.020	0.024	0.018	0.017	0.017	0.019		0.016	0.019	14.056		
T	Dimethyl Sulfide		0.292	0.286	0.288	0.292	0.310	0.306	0.313	0.313	0.301	0.300	3.691		
T	Iodomethane			0.062	0.122	0.200	0.311	0.385	0.388	0.378	0.361	0.276	47.107	0.998	
T	Methyl acetate			0.081	0.099	0.110	0.118	0.117	0.128	0.130	0.120	0.113	14.403		
T	Methylene Chloride		0.387	0.332	0.319	0.300	0.292	0.308	0.313	0.312	0.302	0.318	8.839		
T	Carbon Disulfide		0.980	0.897	0.969	0.931	0.986	0.977	0.940	0.820	0.701	0.911	10.405		
T	Acrylonitrile			0.056	0.056	0.061	0.061	0.064	0.070		0.072	0.063	10.171		
T	Methyl Tert Butyl Ether		0.724	0.674	0.725	0.729	0.719	0.727	0.746	0.715	0.657	0.713	3.998		
T	trans-1,2-Dichloroethene		0.296	0.285	0.294	0.292	0.288	0.307	0.309	0.307	0.296	0.297	2.908		
T	n-Hexane			0.334	0.353	0.340	0.365	0.356	0.360	0.359	0.339	0.351	3.240		
T	Diisopropyl ether			0.774	0.743	0.731	0.710	0.705	0.691		0.650	0.715	5.548		
T	Vinyl Acetate				0.246	0.279	0.322	0.338	0.369	0.355	0.328	0.320	13.548		
P	1,1-Dichloroethane		0.481	0.454	0.494	0.489	0.467	0.489	0.491	0.473	0.449	0.476	3.486		
T	Ethyl-Tert-Butyl ether			0.810	0.810	0.798	0.777	0.773	0.755		0.697	0.774	5.101		
T	2-Butanone				0.063	0.063	0.065	0.067	0.074	0.074	0.067	0.067	6.818		
T	Propionitrile			0.017	0.024	0.022	0.023	0.023	0.025		0.023	0.023	10.788		
T	2,2-Dichloropropane		0.526	0.460	0.490	0.454	0.439	0.466	0.473	0.454	0.432	0.466	6.059		
T	cis-1,2-Dichloroethene		0.289	0.301	0.329	0.316	0.317	0.329	0.334	0.328	0.318	0.318	4.644		
C	Chloroform	0.575	0.520	0.508	0.530	0.516	0.511	0.534	0.531	0.502	0.471	0.520	5.161		
T	1-Bromopropane			0.055	0.059	0.062	0.066	0.066	0.068	0.068	0.068	0.064	7.543		
T	Bromochloromethane		0.149	0.149	0.177	0.182	0.187	0.194	0.201	0.201	0.195	0.182	10.962		
T	Tetrahydrofuran			0.038	0.044	0.042	0.043	0.043	0.047		0.043	0.043	6.464		
S	Dibromofluoromethane			0.261	0.252	0.302	0.306	0.301	0.313	0.314	0.305	0.294	8.163		
T	1,1,1-Trichloroethane		0.448	0.460	0.477	0.478	0.470	0.502	0.505	0.495	0.472	0.479	4.013		
T	Cyclohexane		0.451	0.404	0.463	0.446	0.465	0.464	0.465	0.462	0.440	0.451	4.429		
T	1,1-Dichloropropene		0.447	0.390	0.406	0.412	0.401	0.420	0.419	0.404	0.382	0.409	4.622		
T	Carbon Tetrachloride		0.418	0.388	0.430	0.430	0.420	0.452	0.459	0.435	0.421	0.428	4.789		
T	Tert-Amyl-Methyl ether			0.746	0.788	0.758	0.751	0.742	0.728		0.66	0.739	5.341		
S	1,2-Dichloroethane-d4			0.269	0.29	0.312	0.314	0.301	0.312	0.311	0.294	0.300	5.223		
T	Heptane											0.000	0.000		
T	1,2-Dichloroethane		0.359	0.359	0.349	0.358	0.352	0.364	0.371	0.356	0.33	0.355	3.189		
T	Benzene		1.312	1.164	1.186	1.147	1.116	1.132	1.064	0.898		1.127	10.401		
T	Trichloroethene		0.294	0.276	0.292	0.291	0.284	0.301	0.304	0.299	0.289	0.292	2.951		
T	Methylcyclohexane		0.487	0.458	0.492	0.485	0.508	0.497	0.505	0.489	0.461	0.487	3.578		
C	1,2-Dichloropropane		0.271	0.254	0.273	0.263	0.261	0.271	0.277	0.272	0.266	0.267	2.684		
T	1,4-Dioxane				0.002	0.002	0.002	0.002	0.002		0.002	0.002	6.098		
T	Bromodichloromethane		0.351	0.356	0.388	0.384	0.39	0.414	0.427	0.406	0.384	0.389	6.392		
T	Dibromomethane		0.143	0.146	0.166	0.163	0.166	0.172	0.179	0.178	0.17	0.165	7.716		
T	2-Chloroethyl Vinyl Ether			0.105	0.124	0.132	0.132	0.141	0.147	0.148	0.133	0.133	10.525		
T	4-Methyl-2-Pentanone			0.059	0.062	0.063	0.065	0.07	0.076	0.078	0.07	0.068	10.166		
T	cis-1,3-Dichloropropene		0.449	0.425	0.448	0.449	0.461	0.478	0.484	0.45	0.413	0.451	4.982		

T	Dimethyl Disulfide			0.221	0.229	0.238	0.282	0.29	0.302	0.305	0.289	0.270	12.761	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.41	1.457	1.519	1.534	1.465	1.493	1.367	1.218	1.433	7.171	
C	Toluene		1.775	1.698	1.762	1.699	1.653	1.669	1.533	1.197		1.623	11.567	
T	Ethyl Methacrylate		0.295	0.306	0.368	0.378	0.426	0.432	0.456	0.441	0.39	0.388	14.925	
T	Paraldehyde											0.000	0.000	
T	trans-1,3-Dichloropropene		0.544	0.519	0.557	0.558	0.579	0.599	0.615	0.559	0.5	0.559	6.445	
T	1,1,2-Trichloroethane		0.283	0.286	0.305	0.312	0.32	0.322	0.344	0.325	0.306	0.312	6.111	
T	2-Hexanone		0.104	0.108	0.128	0.138	0.143	0.147	0.159	0.158	0.137	0.136	14.371	
T	1,3-Dichloropropane		0.54	0.514	0.548	0.553	0.543	0.549	0.571	0.523	0.474	0.535	5.286	
T	Tetrachloroethene		0.363	0.321	0.359	0.347	0.345	0.366	0.371	0.361	0.347	0.353	4.307	
T	Dibromochloromethane		0.32	0.314	0.368	0.378	0.395	0.418	0.444	0.419	0.394	0.383	11.550	
T	1,2-Dibromoethane		0.243	0.276	0.303	0.311	0.32	0.326	0.348	0.331	0.309	0.308	10.252	
T	1-Chlorohexane		0.587	0.527	0.566	0.543	0.582	0.574	0.576	0.548	0.502	0.556	5.156	
P	Chlorobenzene		1.225	1.098	1.146	1.132	1.119	1.148	1.128	0.937	0.786	1.080	12.400	
T	1,1,1,2-Tetrachloroethane		0.36	0.348	0.382	0.398	0.404	0.433	0.459	0.442	0.419	0.405	9.219	
C	Ethylbenzene		0.636	0.604	0.621	0.611	0.617	0.655	0.678	0.638	0.578	0.626	4.688	
T	m-,p-Xylene		0.74	0.708	0.746	0.734	0.726	0.752	0.713	0.554		0.709	9.103	
T	o-Xylene		0.686	0.728	0.733	0.734	0.724	0.761	0.773	0.705	0.638	0.720	5.593	
T	Styrene		1.035	1.034	1.087	1.128	1.18	1.252	1.224	0.999	0.833	1.086	11.924	
P	Bromoform			0.181	0.213	0.23	0.256	0.278	0.306	0.286	0.268	0.252	16.476	0.997
T	Isopropylbenzene		1.814	1.739	1.801	1.808	1.768	1.799	1.65	1.244		1.703	11.341	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.572	0.558	0.64	0.658	0.663	0.676	0.716	0.67	0.634	0.643	7.801	
S	p-Bromofluorobenzene			0.908	0.989	0.998	0.991	0.981	1.016	1.029	1.013	0.991	3.744	
T	1,2,3-Trichloropropane			0.154	0.186	0.205	0.198	0.2	0.216	0.21	0.203	0.197	9.741	
T	trans-1,4-Dichloro-2-Butene			0.129	0.159	0.18	0.191	0.195	0.208	0.212	0.197	0.184	14.964	
T	n-Propylbenzene		4.01	3.747	3.958	3.873	3.684	3.648	3.184			3.729	7.411	
T	Bromobenzene	1.017	0.9	0.78	0.883	0.855	0.834	0.868	0.891	0.853	0.82	0.870	7.236	
T	1,3,5-Trimethylbenzene		2.696	2.561	2.654	2.664	2.594	2.641	2.481	1.976		2.533	9.295	
T	2-Chlorotoluene		2.627	2.311	2.373	2.347	2.253	2.282	2.164			2.337	6.207	
T	4-Chlorotoluene		2.465	2.368	2.466	2.394	2.283	2.315	2.166			2.351	4.546	
T	a-Methylstyrene		1.282	1.22	1.288	1.34	1.518	1.526	1.51	1.384	1.226	1.366	9.120	
T	tert-Butylbenzene		0.479	0.487	0.572	0.552	0.534	0.576	0.598	0.59	0.589	0.553	8.013	
T	1,2,4-Trimethylbenzene			2.676	2.796	2.718	2.662	2.696	2.503	1.968		2.574	10.931	
T	sec-Butylbenzene		3.592	3.113	3.327	3.278	3.122	3.161	2.879	2.216		3.086	13.181	
T	p-Isopropyltoluene			2.514	2.666	2.67	2.583	2.672	2.493	1.96		2.508	10.091	
T	1,3-Dichlorobenzene		1.625	1.521	1.643	1.585	1.556	1.614	1.585	1.379	1.22	1.525	9.114	
T	1,4-Dichlorobenzene	2.029	1.684	1.558	1.637	1.627	1.581	1.625	1.599	1.377	1.206	1.592	13.247	
T	n-Butylbenzene			2.556	2.53	2.484	2.363	2.438	2.28	1.818		2.353	10.819	
T	1,2-Dichlorobenzene	1.82	1.515	1.431	1.524	1.507	1.485	1.524	1.516	1.334	1.184	1.484	10.863	
T	1,2-Dibromo-3-Chloropropane			0.108	0.097	0.109	0.117	0.12	0.131	0.126	0.123	0.116	9.694	
T	1,2,4-Trichlorobenzene		1.104	0.988	1.048	1.045	1.046	1.082	1.088	0.999	0.958	1.040	4.722	
T	Hexachlorobutadiene		0.429	0.376	0.391	0.374	0.369	0.396	0.405	0.393	0.408	0.393	4.833	
T	Naphthalene		2.294	1.987	2.113	2.131	2.215	2.173	2.073	1.666	1.418	2.008	14.181	
T	1,2,3-Trichlorobenzene	1.129	0.984	0.901	0.91	0.963	0.956	0.98	0.984	0.909	0.882	0.960	7.350	

Fri May 17 10:32:57 2013

Calibration Table Report
Method: 8260_WT.M
Title: 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Calibration: Tue Apr 02 17:16:38 2013
Curve: WG425306
Calibration Files

Compound	0.3 6M115124.D	0.4 6M115125.D	1 6M115126.D	2 6M115127.D	5 6M115128.D	20 6M115129.D	50 6M115130.D	100 6M115131.D	200 6M115132.D	300 6M115133.D	Avg	%RSD	R^2 Linear	R^2 Quadratic
Fluorobenzene	ISTD													
Dichlorodifluoromethane			0.151	0.233	0.230	0.241	0.250	0.256	0.230	0.214	0.226	14.550		
Chloromethane		0.269	0.216	0.260	0.258	0.239	0.247	0.251	0.229	0.232	0.244	6.960		
Vinyl Chloride		0.214	0.196	0.255	0.234	0.222	0.229	0.233	0.207	0.187	0.220	9.514		
1,3-Butadiene					0.192	0.174	0.162	0.133	0.115	0.107	0.147	23.046		1.001
Bromomethane			0.146	0.172	0.178	0.180	0.195	0.201	0.192	0.191	0.182	9.527		
Chloroethane		0.178	0.159	0.208	0.220	0.210	0.216	0.222	0.205	0.198	0.202	10.252		
Trichlorofluoromethane		0.345	0.337	0.458	0.479	0.455	0.473	0.487	0.443	0.423	0.433	12.885		
Diethyl ether			0.147	0.151	0.174	0.171	0.175	0.174	0.164	0.159	0.164	6.552		
Isoprene			0.279	0.408	0.423	0.408	0.428	0.432	0.402	0.401	0.398	12.442		
Acrolein				0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	8.453		
1,1,2-Trichloro-1,2,2-Trifluoroet			0.174	0.274	0.281	0.265	0.276	0.285	0.265	0.259	0.260	13.855	0.999	
Acetone					0.038	0.040	0.042	0.042	0.040	0.039	0.040	3.863		
1,1-Dichloroethene		0.382	0.341	0.460	0.475	0.448	0.465	0.480	0.441	0.430	0.436	10.547		
Tert-Butyl Alcohol				0.006	0.009	0.009	0.009	0.010	0.009	0.008	0.009	12.109		
Dimethyl Sulfide		0.282	0.266	0.302	0.314	0.312	0.329	0.321	0.305	0.305	0.304	6.369		
Iodomethane			0.213	0.290	0.307	0.307	0.328	0.336	0.318	0.312	0.301	12.735		
Methyl acetate			0.074	0.100	0.116	0.106	0.110	0.110	0.104	0.106	0.103	12.343		
Methylene Chloride		0.248	0.222	0.274	0.277	0.264	0.270	0.272	0.254	0.248	0.259	6.853		
Carbon Disulfide		0.910	0.736	0.974	0.991	0.941	0.973	0.975	0.889	0.867	0.917	8.788		
Acrylonitrile			0.043	0.044	0.051	0.051	0.053	0.054	0.054	0.054	0.050	8.896		
Methyl Tert Butyl Ether		0.353	0.386	0.441	0.474	0.469	0.498	0.511	0.491	0.489	0.457	11.852		
trans-1,2-Dichloroethene		0.263	0.222	0.284	0.294	0.285	0.295	0.303	0.285	0.282	0.279	8.691		
n-Hexane			0.262	0.392	0.412	0.395	0.415	0.420	0.389	0.386	0.384	13.309		
Diisopropyl ether			0.897	0.906	1.011	0.979	0.985	0.964	0.914	0.889	0.943	4.974		
Vinyl Acetate					0.347	0.367	0.373	0.372	0.344	0.327	0.355	5.301		
1,1-Dichloroethane		0.524	0.461	0.570	0.586	0.553	0.567	0.576	0.536	0.525	0.544	7.024		
Ethyl-Tert-Butyl ether			0.660	0.679	0.766	0.755	0.769	0.767	0.737	0.728	0.733	5.714		
2-Butanone					0.056	0.055	0.059	0.059	0.055	0.056	0.057	3.172		
Propionitrile			0.011	0.016	0.018	0.018	0.019	0.019	0.018	0.019	0.017	15.243	0.999	
2,2-Dichloropropane		0.417	0.347	0.465	0.464	0.451	0.475	0.482	0.446	0.433	0.442	9.347		
cis-1,2-Dichloroethene		0.264	0.240	0.308	0.322	0.303	0.314	0.320	0.303	0.299	0.297	9.255		
Chloroform	0.460	0.491	0.442	0.523	0.534	0.503	0.524	0.529	0.495	0.483	0.498	6.190		
1-Bromopropane			0.039	0.057	0.067	0.064	0.068	0.068	0.065	0.066	0.062	16.276	1.000	
Bromochloromethane		0.121	0.127	0.155	0.165	0.155	0.163	0.167	0.157	0.151	0.151	10.748		
Tetrahydrofuran			0.030	0.031	0.036	0.037	0.038	0.038		0.036	0.035	9.205		
Dibromofluoromethane			0.235	0.277	0.299	0.295	0.283	0.290	0.282	0.281	0.280	7.071		
1,1,1-Trichloroethane		0.418	0.358	0.461	0.470	0.449	0.470	0.480	0.444	0.430	0.442	8.481		
Cyclohexane		0.410	0.374	0.555	0.575	0.542	0.565	0.569	0.526	0.513	0.514	14.168		
1,1-Dichloropropene		0.345	0.308	0.416	0.428	0.403	0.424	0.436	0.409	0.402	0.397	10.667		
Tert-Amyl-Methyl ether			0.445	0.462	0.522	0.520	0.538	0.547		0.524	0.508	7.680		
Carbon Tetrachloride		0.311	0.305	0.417	0.428	0.406	0.429	0.441	0.412	0.399	0.3941	12.797		
1,2-Dichloroethane-d4				0.233	0.256	0.26	0.243	0.247	0.236	0.231	0.2436	4.6532		
Heptane											0	0		
1,2-Dichloroethane		0.268	0.254	0.299	0.306	0.3	0.31	0.311	0.289	0.278	0.2904	6.9382		
Benzene		1.165	0.998	1.186	1.201	1.126	1.163	1.18	1.084	1.035	1.1265	6.4133		
Trichloroethene		0.26	0.234	0.293	0.306	0.289	0.305	0.314	0.295	0.292	0.2875	8.7989		
Methylcyclohexane		0.288	0.266	0.396	0.411	0.394	0.423	0.43	0.408	0.409	0.3805	15.796	0.999	
1,2-Dichloropropane		0.291	0.237	0.291	0.305	0.296	0.312	0.316	0.3	0.293	0.2935	7.8572		
1,4-Dioxane				0	0.001	0.001	0.001	0.001	0.001	0.001	0.0009	39.046	0.999	
Bromodichloromethane		0.314	0.289	0.341	0.355	0.346	0.374	0.377	0.356	0.348	0.3446	8.1158		
Dibromomethane		0.084	0.088	0.116	0.123	0.122	0.127	0.128	0.124	0.122	0.1149	14.508		
2-Chloroethyl Vinyl Ether					0.102	0.108	0.114	0.118	0.114	0.115	0.1118	5.4188		
4-Methyl-2-Pentanone					0.046	0.047	0.052	0.052	0.05	0.051	0.0498	5.1406		
cis-1,3-Dichloropropene		0.324	0.31	0.36	0.397	0.405	0.438	0.439	0.42	0.412	0.3894	12.17		
Dimethyl Disulfide				0.143	0.161	0.184	0.211	0.216	0.211	0.214	0.1914	15.393	1	
Chlorobenzene-d5	ISTD													
Toluene-d8				1.424	1.469	1.471	1.41	1.439	1.413	1.407	1.4333	1.9087		
Toluene		1.961	1.44	1.71	1.746	1.622	1.671	1.678	1.563	1.479	1.6523	9.3809		
Ethyl Methacrylate			0.192	0.212	0.247	0.253	0.28	0.277	0.273	0.277	0.2514	13.169		
Paraldehyde											0	0		
trans-1,3-Dichloropropene			0.32	0.38	0.433	0.446	0.486	0.488	0.472	0.467	0.4366	13.433		
1,1,2-Trichloroethane		0.139	0.156	0.212	0.224	0.223	0.236	0.234	0.228	0.227	0.2086	17.154	1	
2-Hexanone					0.103	0.11	0.119	0.12	0.113	0.113	0.113	5.189		
1,3-Dichloropropane		0.361	0.307	0.384	0.411	0.405	0.435	0.431	0.418	0.413	0.3962	10.24		
Tetrachloroethene		0.418	0.334	0.438	0.447	0.419	0.437	0.45	0.427	0.423	0.4215	8.2695		
Dibromochloromethane		0.212	0.223	0.261	0.29	0.304	0.336	0.335	0.329	0.327	0.2906	16.564	1	
1,2-Dibromoethane			0.17	0.199	0.22	0.223	0.243	0.241	0.237	0.236	0.221	11.309		
1-Chlorohexane			0.379	0.488	0.513	0.49	0.523	0.527	0.501	0.497	0.4898	9.5984		
Chlorobenzene	1.125	1.07	0.929	1.076	1.11	1.053	1.098	1.098	1.029	0.989	1.0577	5.7554		
1,1,1,2-Tetrachloroethane		0.316	0.279	0.36	0.375	0.365	0.392	0.392	0.369	0.355	0.3558	10.265		
Ethylbenzene		0.575	0.473	0.589	0.605	0.574	0.601	0.605	0.567	0.548	0.5708	7.2411		
m-,p-Xylene		0.712	0.593	0.719	0.741	0.695	0.731	0.72	0.654	0.607	0.6858	7.9703		
o-Xylene		0.64	0.548	0.693	0.697	0.678	0.711	0.71	0.669	0.648	0.6659	7.6512		
Styrene		1.324	0.967	1.115	1.152	1.119	1.191	1.173	1.096	1.049	1.1318	8.7369		
Bromoform			0.112	0.139	0.16	0.167	0.188	0.187	0.183	0.182	0.1647	16.421	1	
Isopropylbenzene		1.634	1.39	1.765	1.825	1.728	1.798	1.775	1.626	1.514	1.6727	8.7		
1,4-Dichlorobenzene-d4	ISTD													
1,1,2,2-Tetrachloroethane		0.285	0.334	0.448	0.481	0.471	0.506	0.503	0.488	0.493	0.4456	17.927	1	
p-Bromofluorobenzene			0.921	0.964	1.055	1.029	0.998	1.04	1.018	1.034	1.0075	4.4472		

1,2,3-Trichloropropane			0.074	0.118	0.129	0.13	0.141	0.138	0.133	0.134	0.1246	17.304	1
trans-1,4-Dichloro-2-Butene				0.113	0.147	0.15	0.165	0.161	0.153	0.154	0.149	11.271	
n-Propylbenzene		4.197	3.436	4.254	4.341	4.041	4.231	4.241	3.798	3.545	4.0094	8.3552	
Bromobenzene	0.765	0.831	0.698	0.857	0.866	0.833	0.877	0.887	0.844	0.843	0.8301	6.9001	
1,3,5-Trimethylbenzene		2.786	2.306	2.923	2.978	2.774	2.932	2.977	2.752	2.654	2.7868	7.6364	
2-Chlorotoluene		3.084	2.5	3.068	3.074	2.852	2.926	2.932	2.698	2.6	2.8593	7.5393	
4-Chlorotoluene		2.61	2.204	2.529	2.596	2.416	2.611	2.619	2.453	2.39	2.4918	5.6187	
a-Methylstyrene			1.132	1.419	1.518	1.489	1.597	1.584	1.508	1.502	1.4686	10.006	
tert-Butylbenzene		0.482	0.429	0.587	0.612	0.559	0.588	0.596	0.565	0.564	0.5535	10.743	
1,2,4-Trimethylbenzene		3.379	2.544	3.111	3.092	2.849	2.985	2.972	2.749	2.634	2.924	8.8926	
sec-Butylbenzene		3.656	2.762	3.596	3.607	3.293	3.46	3.48	3.175	3.031	3.34	9.0385	
p-Isopropyltoluene		2.791	2.342	2.961	3.03	2.825	2.974	3.003	2.751	2.636	2.8127	7.838	
1,3-Dichlorobenzene		1.626	1.441	1.662	1.703	1.608	1.685	1.678	1.58	1.551	1.6148	5.1057	
1,4-Dichlorobenzene	1.601	1.724	1.478	1.63	1.704	1.595	1.67	1.663	1.557	1.523	1.6145	4.9131	
n-Butylbenzene		2.657	2.042	2.613	2.629	2.473	2.595	2.603	2.372	2.283	2.4742	8.3517	
1,2-Dichlorobenzene	1.362	1.358	1.271	1.396	1.463	1.386	1.469	1.445	1.364	1.341	1.3856	4.393	
1,2-Dibromo-3-Chloropropane				0.046	0.067	0.073	0.079	0.078	0.076	0.077	0.071	16.435	1
1,2,4-Trichlorobenzene		0.907	0.826	0.933	0.966	0.957	1.009	1.001	0.947	0.941	0.9432	5.7558	
Hexachlorobutadiene		0.264	0.324	0.435	0.43	0.404	0.431	0.434	0.408	0.41	0.3933	15.148	0.999
Naphthalene		1.364	1.153	1.347	1.4	1.451	1.567	1.543	1.489	1.482	1.4217	8.8389	
1,2,3-Trichlorobenzene	0.69	0.754	0.678	0.78	0.783	0.781	0.836	0.827	0.778	0.788	0.7695	6.6467	

Fri Apr 05 10:01:28 2013

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13060134 Run Date: 05/14/2013 Sample ID: WG430035-12
Instrument ID: HPMS10 Run Time: 22:35 Method: 8260B
File ID: 10M04750 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG430035 Cal ID: HPMS10 - 14-MAY-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.5	ug/L	0.454	1.10	20	
1,1-Dichloroethene	CCC	50.0	47.6	ug/L	0.233	4.90	20	
1,2-Dichloropropane	CCC	50.0	52.0	ug/L	0.272	4.10	20	
Ethylbenzene	CCC	50.0	50.2	ug/L	0.530	0.400	20	
Toluene	CCC	50.0	49.9	ug/L	1.45	0.200	20	
Vinyl Chloride	CCC	50.0	43.3	ug/L	0.219	13.3	20	
Bromoform	SPCC	50.0	55.6	ug/L	0.241	11.1	20	
Chlorobenzene	SPCC	50.0	46.2	ug/L	0.906	7.60	20	
Chloromethane	SPCC	50.0	45.2	ug/L	0.250	9.70	20	
1,1-Dichloroethane	SPCC	50.0	49.6	ug/L	0.465	0.700	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.1	ug/L	0.549	10.2	20	
Acetone		50.0	38.5	ug/L	0.0494	23.1	20	*
Benzene		50.0	49.5	ug/L	1.03	1.00	20	
Bromobenzene		50.0	48.7	ug/L	0.833	2.70	20	
Bromochloromethane		50.0	51.2	ug/L	0.138	2.30	20	
Bromodichloromethane		50.0	50.7	ug/L	0.335	1.40	20	
Bromomethane		50.0	51.0	ug/L	0.167	2.00	20	
2-Butanone		50.0	52.0	ug/L	0.0725	4.10	20	
n-Butylbenzene		50.0	53.0	ug/L	2.13	5.90	20	
sec-Butylbenzene		50.0	47.8	ug/L	2.68	4.40	20	
tert-Butylbenzene		50.0	47.6	ug/L	0.504	4.70	20	
Carbon Disulfide		50.0	36.6	ug/L	0.628	26.7	20	*
Carbon Tetrachloride		50.0	50.6	ug/L	0.363	1.20	20	
Dibromochloromethane		50.0	53.2	ug/L	0.340	6.40	20	
Chloroethane		50.0	50.0	ug/L	0.165	0	20	
2-Chlorotoluene		50.0	47.8	ug/L	2.07	4.40	20	
4-Chlorotoluene		50.0	43.9	ug/L	1.73	12.2	20	
1,2-Dibromo-3-Chloropropane		50.0	52.8	ug/L	0.111	5.60	20	
1,2-Dibromoethane		50.0	52.7	ug/L	0.280	5.40	20	
Dibromomethane		50.0	51.1	ug/L	0.147	2.10	20	
1,2-Dichlorobenzene		50.0	45.7	ug/L	1.29	8.60	20	
1,3-Dichlorobenzene		50.0	46.2	ug/L	1.40	7.70	20	
1,4-Dichlorobenzene		50.0	48.0	ug/L	1.50	4.00	20	
Dichlorodifluoromethane		50.0	69.8	ug/L	0.318	39.5	20	*
1,2-Dichloroethane		50.0	49.9	ug/L	0.318	0.200	20	
cis-1,2-Dichloroethene		50.0	51.3	ug/L	0.299	2.50	20	
trans-1,2-Dichloroethene		50.0	50.0	ug/L	0.272	0	20	
1,3-Dichloropropane		50.0	51.3	ug/L	0.459	2.50	20	
2,2-Dichloropropane		50.0	43.7	ug/L	0.336	12.6	20	
cis-1,3-Dichloropropene		50.0	54.8	ug/L	0.429	9.70	20	
trans-1,3-Dichloropropene		50.0	49.4	ug/L	0.454	1.10	20	
1,1-Dichloropropene		50.0	49.9	ug/L	0.351	0.200	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 2921766
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13060134 Run Date: 05/14/2013 Sample ID: WG430035-12
Instrument ID: HPMS10 Run Time: 22:35 Method: 8260B
File ID: 10M04750 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG430035 Cal ID: HPMS10 - 14-MAY-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.4	ug/L	0.143	4.80	20	
Hexachlorobutadiene		50.0	50.2	ug/L	0.383	0.300	20	
Isopropylbenzene		50.0	47.9	ug/L	1.45	4.30	20	
p-Isopropyltoluene		50.0	48.8	ug/L	2.30	2.50	20	
4-Methyl-2-Pentanone		50.0	54.5	ug/L	0.0729	8.90	20	
Methylene Chloride		50.0	48.0	ug/L	0.265	4.00	20	
Naphthalene		50.0	49.7	ug/L	1.61	0.600	20	
n-Propylbenzene		50.0	46.2	ug/L	3.05	7.60	20	
Styrene		50.0	54.5	ug/L	1.08	9.10	20	
1,1,1,2-Tetrachloroethane		50.0	53.2	ug/L	0.380	6.40	20	
Tetrachloroethene		50.0	48.9	ug/L	0.321	2.10	20	
1,2,3-Trichlorobenzene		50.0	47.3	ug/L	0.783	5.40	20	
1,2,4-Trichlorobenzene		50.0	47.6	ug/L	0.900	4.70	20	
1,1,1-Trichloroethane		50.0	50.6	ug/L	0.407	1.30	20	
1,1,2-Trichloroethane		50.0	53.2	ug/L	0.277	6.30	20	
Trichloroethene		50.0	53.3	ug/L	0.305	6.60	20	
Trichlorofluoromethane		50.0	51.3	ug/L	0.416	2.60	20	
1,2,3-Trichloropropane		50.0	51.0	ug/L	0.169	2.00	20	
1,2,4-Trimethylbenzene		50.0	52.5	ug/L	2.48	4.90	20	
1,3,5-Trimethylbenzene		50.0	53.0	ug/L	2.46	6.10	20	
o-Xylene		50.0	47.3	ug/L	0.582	5.50	20	
m-,p-Xylene		100	96.4	ug/L	0.616	3.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 2921766
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13060134 Run Date: 05/16/2013 Sample ID: WG430143-12
Instrument ID: HPMS11 Run Time: 12:55 Method: 8260B
File ID: 11M91919 Analyst: FJB QC Key: DOD4
ICal Workgroup: WG430143 Cal ID: HPMS11 - 15-MAY-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	54.9	ug/L	0.571	9.80	20	
1,1-Dichloroethene	CCC	50.0	52.8	ug/L	0.424	5.70	20	
1,2-Dichloropropane	CCC	50.0	55.6	ug/L	0.297	11.2	20	
Ethylbenzene	CCC	50.0	55.7	ug/L	0.698	11.4	20	
Toluene	CCC	50.0	55.1	ug/L	1.79	10.2	20	
Vinyl Chloride	CCC	50.0	39.7	ug/L	0.259	20.6	20	*
Bromoform	SPCC	50.0	52.5	ug/L	0.292	5.00	20	
Chlorobenzene	SPCC	50.0	53.1	ug/L	1.15	6.20	20	
Chloromethane	SPCC	50.0	63.5	ug/L	0.377	27.0	20	*
1,1-Dichloroethane	SPCC	50.0	54.4	ug/L	0.518	8.70	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.5	ug/L	0.714	11.0	20	
Acetone		50.0	36.4	ug/L	0.0477	27.2	20	*
Benzene		50.0	53.4	ug/L	1.20	6.90	20	
Bromobenzene		50.0	52.3	ug/L	0.911	4.70	20	
Bromochloromethane		50.0	56.9	ug/L	0.207	13.8	20	
Bromodichloromethane		50.0	55.2	ug/L	0.429	10.3	20	
Bromomethane		50.0	50.2	ug/L	0.188	0.500	20	
2-Butanone		50.0	52.6	ug/L	0.0710	5.20	20	
n-Butylbenzene		50.0	57.3	ug/L	2.70	14.6	20	
sec-Butylbenzene		50.0	51.2	ug/L	3.16	2.30	20	
tert-Butylbenzene		50.0	51.3	ug/L	0.567	2.60	20	
Carbon Disulfide		50.0	51.5	ug/L	0.938	2.90	20	
Carbon Tetrachloride		50.0	55.5	ug/L	0.475	10.9	20	
Dibromochloromethane		50.0	57.4	ug/L	0.441	14.9	20	
Chloroethane		50.0	59.7	ug/L	0.208	19.4	20	
2-Chlorotoluene		50.0	48.1	ug/L	2.25	3.70	20	
4-Chlorotoluene		50.0	48.0	ug/L	2.26	4.00	20	
1,2-Dibromo-3-Chloropropane		50.0	51.6	ug/L	0.120	3.30	20	
1,2-Dibromoethane		50.0	57.5	ug/L	0.354	15.0	20	
Dibromomethane		50.0	55.7	ug/L	0.184	11.4	20	
1,2-Dichlorobenzene		50.0	50.0	ug/L	1.48	0.100	20	
1,3-Dichlorobenzene		50.0	52.0	ug/L	1.59	4.00	20	
1,4-Dichlorobenzene		50.0	54.1	ug/L	1.72	8.10	20	
Dichlorodifluoromethane		50.0	83.1	ug/L	0.431	66.2	20	*
1,2-Dichloroethane		50.0	55.6	ug/L	0.396	11.3	20	
cis-1,2-Dichloroethene		50.0	55.5	ug/L	0.353	11.0	20	
trans-1,2-Dichloroethene		50.0	55.5	ug/L	0.330	11.1	20	
1,3-Dichloropropane		50.0	56.5	ug/L	0.605	13.1	20	
2,2-Dichloropropane		50.0	51.6	ug/L	0.481	3.20	20	
cis-1,3-Dichloropropene		50.0	59.6	ug/L	0.538	19.2	20	
trans-1,3-Dichloropropene		50.0	55.6	ug/L	0.622	11.3	20	
1,1-Dichloropropene		50.0	54.2	ug/L	0.444	8.50	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 2921766
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13060134 Run Date: 05/16/2013 Sample ID: WG430143-12
Instrument ID: HPMS11 Run Time: 12:55 Method: 8260B
File ID: 11M91919 Analyst: FJB QC Key: DOD4
ICal Workgroup: WG430143 Cal ID: HPMS11 - 15-MAY-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	57.2	ug/L	0.155	14.4	20	
Hexachlorobutadiene		50.0	56.2	ug/L	0.442	12.3	20	
Isopropylbenzene		50.0	52.8	ug/L	1.80	5.50	20	
p-Isopropyltoluene		50.0	53.7	ug/L	2.70	7.40	20	
4-Methyl-2-Pentanone		50.0	54.2	ug/L	0.0735	8.50	20	
Methylene Chloride		50.0	51.0	ug/L	0.325	2.00	20	
Naphthalene		50.0	56.5	ug/L	2.27	13.0	20	
n-Propylbenzene		50.0	48.1	ug/L	3.59	3.80	20	
Styrene		50.0	61.6	ug/L	1.34	23.2	20	*
1,1,1,2-Tetrachloroethane		50.0	58.3	ug/L	0.472	16.6	20	
Tetrachloroethene		50.0	55.4	ug/L	0.392	10.9	20	
1,2,3-Trichlorobenzene		50.0	54.5	ug/L	1.05	9.00	20	
1,2,4-Trichlorobenzene		50.0	55.9	ug/L	1.16	11.8	20	
1,1,1-Trichloroethane		50.0	56.0	ug/L	0.536	11.9	20	
1,1,2-Trichloroethane		50.0	57.5	ug/L	0.358	15.0	20	
Trichloroethene		50.0	58.7	ug/L	0.343	17.4	20	
Trichlorofluoromethane		50.0	57.5	ug/L	0.532	15.0	20	
1,2,3-Trichloropropane		50.0	53.2	ug/L	0.209	6.50	20	
1,2,4-Trimethylbenzene		50.0	57.3	ug/L	2.95	14.6	20	
1,3,5-Trimethylbenzene		50.0	57.2	ug/L	2.90	14.4	20	
o-Xylene		50.0	51.9	ug/L	0.747	3.70	20	
m-,p-Xylene		100	110	ug/L	0.780	9.90	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 2921766
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13060134 Run Date: 04/02/2013 Sample ID: WG425306-12
Instrument ID: HPMS6 Run Time: 15:29 Method: 8260B
File ID: 6M115135 Analyst: FJB QC Key: DOD4
ICal Workgroup: WG425306 Cal ID: HPMS6 - 02-APR-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	46.5	ug/L	0.463	7.00	20	
1,1-Dichloroethene	CCC	50.0	46.1	ug/L	0.402	7.70	20	
1,2-Dichloropropane	CCC	50.0	50.4	ug/L	0.296	0.800	20	
Ethylbenzene	CCC	50.0	50.4	ug/L	0.576	0.800	20	
Toluene	CCC	50.0	49.0	ug/L	1.62	2.00	20	
Vinyl Chloride	CCC	50.0	43.1	ug/L	0.190	13.7	20	
Bromoform	SPCC	50.0	50.1	ug/L	0.182	0.100	20	
Chlorobenzene	SPCC	50.0	46.6	ug/L	0.985	6.90	20	
Chloromethane	SPCC	50.0	47.5	ug/L	0.232	5.00	20	
1,1-Dichloroethane	SPCC	50.0	46.8	ug/L	0.510	6.40	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.2	ug/L	0.514	4.40	20	
Acetone		50.0	41.4	ug/L	0.0331	17.3	20	
Benzene		50.0	48.3	ug/L	1.09	3.30	20	
Bromobenzene		50.0	50.9	ug/L	0.845	1.80	20	
Bromochloromethane		50.0	50.8	ug/L	0.154	1.60	20	
Bromodichloromethane		50.0	47.1	ug/L	0.325	5.80	20	
Bromomethane		50.0	47.5	ug/L	0.173	5.00	20	
2-Butanone		50.0	48.5	ug/L	0.0551	3.10	20	
n-Butylbenzene		50.0	51.2	ug/L	2.53	2.30	20	
sec-Butylbenzene		50.0	46.4	ug/L	3.10	7.20	20	
tert-Butylbenzene		50.0	48.1	ug/L	0.532	3.90	20	
Carbon Disulfide		50.0	42.0	ug/L	0.771	16.0	20	
Carbon Tetrachloride		50.0	46.7	ug/L	0.368	6.60	20	
Dibromochloromethane		50.0	47.9	ug/L	0.314	4.10	20	
Chloroethane		50.0	51.1	ug/L	0.206	2.10	20	
2-Chlorotoluene		50.0	45.8	ug/L	2.62	8.40	20	
4-Chlorotoluene		50.0	45.8	ug/L	2.28	8.40	20	
1,2-Dibromo-3-Chloropropane		50.0	51.4	ug/L	0.0783	2.80	20	
1,2-Dibromoethane		50.0	54.1	ug/L	0.239	8.10	20	
Dibromomethane		50.0	51.6	ug/L	0.119	3.10	20	
1,2-Dichlorobenzene		50.0	47.1	ug/L	1.31	5.80	20	
1,3-Dichlorobenzene		50.0	46.4	ug/L	1.50	7.10	20	
1,4-Dichlorobenzene		50.0	49.7	ug/L	1.61	0.500	20	
Dichlorodifluoromethane		50.0	63.1	ug/L	0.285	26.3	20	*
1,2-Dichloroethane		50.0	47.7	ug/L	0.277	4.60	20	
cis-1,2-Dichloroethene		50.0	49.3	ug/L	0.293	1.50	20	
trans-1,2-Dichloroethene		50.0	49.7	ug/L	0.278	0.500	20	
1,3-Dichloropropane		50.0	53.8	ug/L	0.427	7.70	20	
2,2-Dichloropropane		50.0	46.5	ug/L	0.411	7.00	20	
cis-1,3-Dichloropropene		50.0	54.8	ug/L	0.427	9.70	20	
trans-1,3-Dichloropropene		50.0	51.4	ug/L	0.449	2.80	20	
1,1-Dichloropropene		50.0	48.8	ug/L	0.387	2.40	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 2921766
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13060134 Run Date: 04/02/2013 Sample ID: WG425306-12
Instrument ID: HPMS6 Run Time: 15:29 Method: 8260B
File ID: 6M115135 Analyst: FJB QC Key: DOD4
ICal Workgroup: WG425306 Cal ID: HPMS6 - 02-APR-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	50.4	ug/L	0.114	0.700	20	
Hexachlorobutadiene		50.0	50.2	ug/L	0.415	0.300	20	
Isopropylbenzene		50.0	47.5	ug/L	1.59	5.00	20	
p-Isopropyltoluene		50.0	48.0	ug/L	2.70	3.90	20	
4-Methyl-2-Pentanone		50.0	50.3	ug/L	0.0500	0.500	20	
Methylene Chloride		50.0	48.3	ug/L	0.250	3.50	20	
Naphthalene		50.0	54.3	ug/L	1.54	8.70	20	
n-Propylbenzene		50.0	46.0	ug/L	3.69	8.00	20	
Styrene		50.0	50.3	ug/L	1.14	0.700	20	
1,1,1,2-Tetrachloroethane		50.0	52.7	ug/L	0.375	5.30	20	
Tetrachloroethene		50.0	50.3	ug/L	0.424	0.600	20	
1,2,3-Trichlorobenzene		50.0	52.8	ug/L	0.813	5.60	20	
1,2,4-Trichlorobenzene		50.0	52.1	ug/L	0.983	4.20	20	
1,1,1-Trichloroethane		50.0	46.5	ug/L	0.411	7.00	20	
1,1,2-Trichloroethane		50.0	52.3	ug/L	0.239	4.60	20	
Trichloroethene		50.0	53.3	ug/L	0.306	6.60	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.407	6.10	20	
1,2,3-Trichloropropane		50.0	50.2	ug/L	0.135	0.500	20	
1,2,4-Trimethylbenzene		50.0	49.8	ug/L	2.91	0.500	20	
1,3,5-Trimethylbenzene		50.0	51.7	ug/L	2.88	3.50	20	
o-Xylene		50.0	47.5	ug/L	0.633	4.90	20	
m-,p-Xylene		100	98.2	ug/L	0.674	1.80	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 2921766
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13060134 Run Date: 06/10/2013 Sample ID: WG433467-02
Instrument ID: HPMS11 Run Time: 12:28 Method: 8260B
File ID: 11M92734 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG433470 Cal ID: HPMS11 - 15-MAY-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.3	ug/L	0.544	4.55	20	
1,1-Dichloroethene	CCC	50.0	53.0	ug/L	0.426	6.10	20	
1,2-Dichloropropane	CCC	50.0	53.1	ug/L	0.284	6.18	20	
Ethylbenzene	CCC	50.0	54.8	ug/L	0.686	9.57	20	
Toluene	CCC	50.0	55.1	ug/L	1.79	10.2	20	
Vinyl Chloride	CCC	50.0	51.0	ug/L	0.332	1.91	20	
Bromoform	SPCC	50.0	46.8	ug/L	0.260	6.37	20	
Chlorobenzene	SPCC	50.0	56.4	ug/L	1.22	12.8	20	
Chloromethane	SPCC	50.0	56.9	ug/L	0.338	13.8	20	
1,1-Dichloroethane	SPCC	50.0	53.6	ug/L	0.511	7.27	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	48.5	ug/L	0.623	3.06	20	
Xylenes		150	169	ug/L	0.801	12.5	20	
Acetone		50.0	39.0	ug/L	0.0510	22.1	20	*
Benzene		50.0	52.3	ug/L	1.18	4.59	20	
Bromobenzene		50.0	52.4	ug/L	0.911	4.72	20	
Bromochloromethane		50.0	52.7	ug/L	0.192	5.46	20	
Bromodichloromethane		50.0	52.8	ug/L	0.411	5.59	20	
Bromomethane		50.0	48.4	ug/L	0.181	3.21	20	
2-Butanone		50.0	42.2	ug/L	0.0569	15.6	20	
n-Butylbenzene		50.0	54.0	ug/L	2.54	7.98	20	
sec-Butylbenzene		50.0	54.1	ug/L	3.34	8.22	20	
tert-Butylbenzene		50.0	54.6	ug/L	0.604	9.25	20	
Carbon Disulfide		50.0	47.8	ug/L	0.871	4.42	20	
Carbon Tetrachloride		50.0	53.0	ug/L	0.454	5.92	20	
Dibromochloromethane		50.0	53.9	ug/L	0.413	7.79	20	
Chloroethane		50.0	55.9	ug/L	0.195	11.8	20	
2-Chlorotoluene		50.0	54.0	ug/L	2.52	8.03	20	
4-Chlorotoluene		50.0	52.7	ug/L	2.48	5.47	20	
1,2-Dibromo-3-Chloropropane		50.0	40.9	ug/L	0.0953	18.2	20	
1,2-Dibromoethane		50.0	51.0	ug/L	0.314	2.03	20	
Dibromomethane		50.0	49.1	ug/L	0.162	1.73	20	
1,2-Dichlorobenzene		50.0	52.9	ug/L	1.57	5.85	20	
1,3-Dichlorobenzene		50.0	56.1	ug/L	1.71	12.1	20	
1,4-Dichlorobenzene		50.0	53.8	ug/L	1.71	7.66	20	
Dichlorodifluoromethane		50.0	60.6	ug/L	0.314	21.1	20	*
1,2-Dichloroethane		50.0	48.0	ug/L	0.341	3.95	20	
cis-1,2-Dichloroethene		50.0	53.3	ug/L	0.339	6.51	20	
trans-1,2-Dichloroethene		50.0	53.4	ug/L	0.317	6.77	20	
1,3-Dichloropropane		50.0	51.4	ug/L	0.550	2.71	20	
2,2-Dichloropropane		50.0	53.0	ug/L	0.494	6.02	20	
cis-1,3-Dichloropropene		50.0	53.6	ug/L	0.483	7.15	20	
trans-1,3-Dichloropropene		50.0	54.4	ug/L	0.608	8.77	20	

CCV - Modified 03/05/2008
PDF File ID: 2921768
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13060134 Run Date: 06/10/2013 Sample ID: WG433467-02
Instrument ID: HPMS11 Run Time: 12:28 Method: 8260B
File ID: 11M92734 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG433470 Cal ID: HPMS11 - 15-MAY-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.5	ug/L	0.430	5.04	20	
2-Hexanone		50.0	46.8	ug/L	0.127	6.34	20	
Hexachlorobutadiene		50.0	49.6	ug/L	0.390	0.852	20	
Isopropylbenzene		50.0	55.7	ug/L	1.90	11.4	20	
p-Isopropyltoluene		50.0	56.6	ug/L	2.84	13.2	20	
4-Methyl-2-Pentanone		50.0	44.6	ug/L	0.0604	10.8	20	
Methylene Chloride		50.0	49.6	ug/L	0.316	0.830	20	
Naphthalene		50.0	46.1	ug/L	1.85	7.85	20	
n-Propylbenzene		50.0	53.3	ug/L	3.98	6.62	20	
Styrene		50.0	60.7	ug/L	1.32	21.4	20	*
1,1,1,2-Tetrachloroethane		50.0	55.4	ug/L	0.449	10.9	20	
Tetrachloroethene		50.0	55.2	ug/L	0.390	10.4	20	
1,2,3-Trichlorobenzene		50.0	47.6	ug/L	0.914	4.81	20	
1,2,4-Trichlorobenzene		50.0	51.9	ug/L	1.08	3.89	20	
1,1,1-Trichloroethane		50.0	52.2	ug/L	0.499	4.34	20	
1,1,2-Trichloroethane		50.0	50.8	ug/L	0.317	1.68	20	
Trichloroethene		50.0	53.0	ug/L	0.310	6.08	20	
Trichlorofluoromethane		50.0	52.7	ug/L	0.487	5.35	20	
1,2,3-Trichloropropane		50.0	46.6	ug/L	0.183	6.72	20	
1,2,4-Trimethylbenzene		50.0	56.8	ug/L	2.93	13.6	20	
1,3,5-Trimethylbenzene		50.0	56.3	ug/L	2.85	12.5	20	
o-Xylene		50.0	55.5	ug/L	0.799	11.0	20	
m-,p-Xylene		100	113	ug/L	0.803	13.2	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 2921768
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13060134 Run Date: 06/10/2013 Sample ID: WG433588-02
Instrument ID: HPMS6 Run Time: 16:41 Method: 8260B
File ID: 6M117404 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG433591 Cal ID: HPMS6 - 02-APR-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.8	ug/L	0.516	3.50	20	
1,1-Dichloroethene	CCC	50.0	52.2	ug/L	0.455	4.40	20	
1,2-Dichloropropane	CCC	50.0	48.6	ug/L	0.285	2.82	20	
Ethylbenzene	CCC	50.0	46.1	ug/L	0.526	7.89	20	
Toluene	CCC	50.0	43.9	ug/L	1.45	12.2	20	
Vinyl Chloride	CCC	50.0	45.6	ug/L	0.200	8.86	20	
Bromoform	SPCC	50.0	43.9	ug/L	0.160	12.2	20	
Chlorobenzene	SPCC	50.0	43.9	ug/L	0.928	12.3	20	
Chloromethane	SPCC	50.0	35.6	ug/L	0.174	28.7	20	*
1,1-Dichloroethane	SPCC	50.0	49.1	ug/L	0.535	1.73	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	38.8	ug/L	0.381	22.5	20	*
Xylenes		150	139	ug/L	0.627	7.25	20	
Acetone		50.0	54.9	ug/L	0.0440	9.86	20	
Benzene		50.0	50.0	ug/L	1.13	0.0210	20	
Bromobenzene		50.0	43.7	ug/L	0.725	12.7	20	
Bromochloromethane		50.0	50.5	ug/L	0.153	0.981	20	
Bromodichloromethane		50.0	53.4	ug/L	0.368	6.77	20	
Bromomethane		50.0	39.0	ug/L	0.142	22.0	20	*
2-Butanone		50.0	46.5	ug/L	0.0528	7.09	20	
n-Butylbenzene		50.0	47.3	ug/L	2.34	5.41	20	
sec-Butylbenzene		50.0	46.0	ug/L	3.07	7.96	20	
tert-Butylbenzene		50.0	44.8	ug/L	0.496	10.3	20	
Carbon Disulfide		50.0	51.6	ug/L	0.947	3.23	20	
Carbon Tetrachloride		50.0	57.8	ug/L	0.456	15.6	20	
Dibromochloromethane		50.0	43.6	ug/L	0.285	12.8	20	
Chloroethane		50.0	47.1	ug/L	0.190	5.72	20	
2-Chlorotoluene		50.0	44.7	ug/L	2.56	10.6	20	
4-Chlorotoluene		50.0	43.9	ug/L	2.19	12.2	20	
1,2-Dibromo-3-Chloropropane		50.0	38.4	ug/L	0.0582	23.2	20	*
1,2-Dibromoethane		50.0	44.4	ug/L	0.196	11.2	20	
Dibromomethane		50.0	51.8	ug/L	0.119	3.63	20	
1,2-Dichlorobenzene		50.0	44.1	ug/L	1.22	11.8	20	
1,3-Dichlorobenzene		50.0	44.5	ug/L	1.44	11.0	20	
1,4-Dichlorobenzene		50.0	43.8	ug/L	1.41	12.4	20	
Dichlorodifluoromethane		50.0	39.5	ug/L	0.178	20.9	20	*
1,2-Dichloroethane		50.0	53.5	ug/L	0.311	7.04	20	
cis-1,2-Dichloroethene		50.0	50.2	ug/L	0.298	0.490	20	
trans-1,2-Dichloroethene		50.0	50.5	ug/L	0.282	1.06	20	
1,3-Dichloropropane		50.0	43.8	ug/L	0.347	12.5	20	
2,2-Dichloropropane		50.0	56.1	ug/L	0.497	12.3	20	
cis-1,3-Dichloropropene		50.0	52.4	ug/L	0.408	4.76	20	
trans-1,3-Dichloropropene		50.0	45.7	ug/L	0.399	8.50	20	

CCV - Modified 03/05/2008
PDF File ID: 2921768
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13060134 Run Date: 06/10/2013 Sample ID: WG433588-02
Instrument ID: HPMS6 Run Time: 16:41 Method: 8260B
File ID: 6M117404 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG433591 Cal ID: HPMS6 - 02-APR-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.6	ug/L	0.410	3.29	20	
2-Hexanone		50.0	43.7	ug/L	0.0988	12.6	20	
Hexachlorobutadiene		50.0	47.7	ug/L	0.395	4.66	20	
Isopropylbenzene		50.0	48.3	ug/L	1.61	3.48	20	
p-Isopropyltoluene		50.0	46.9	ug/L	2.64	6.16	20	
4-Methyl-2-Pentanone		50.0	49.4	ug/L	0.0492	1.26	20	
Methylene Chloride		50.0	50.1	ug/L	0.259	0.183	20	
Naphthalene		50.0	41.7	ug/L	1.19	16.5	20	
n-Propylbenzene		50.0	45.8	ug/L	3.67	8.39	20	
Styrene		50.0	44.4	ug/L	1.01	11.1	20	
1,1,1,2-Tetrachloroethane		50.0	47.6	ug/L	0.339	4.78	20	
Tetrachloroethene		50.0	46.7	ug/L	0.393	6.67	20	
1,2,3-Trichlorobenzene		50.0	43.5	ug/L	0.669	13.1	20	
1,2,4-Trichlorobenzene		50.0	44.7	ug/L	0.844	10.6	20	
1,1,1-Trichloroethane		50.0	56.0	ug/L	0.495	12.0	20	
1,1,2-Trichloroethane		50.0	42.2	ug/L	0.192	15.6	20	
Trichloroethene		50.0	51.5	ug/L	0.296	2.97	20	
Trichlorofluoromethane		50.0	53.7	ug/L	0.466	7.49	20	
1,2,3-Trichloropropane		50.0	40.7	ug/L	0.109	18.7	20	
1,2,4-Trimethylbenzene		50.0	44.3	ug/L	2.59	11.3	20	
1,3,5-Trimethylbenzene		50.0	46.2	ug/L	2.57	7.64	20	
o-Xylene		50.0	46.5	ug/L	0.619	7.10	20	
m-,p-Xylene		100	92.7	ug/L	0.636	7.33	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 2921768
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13060134 Run Date: 06/11/2013 Sample ID: WG433685-02
Instrument ID: HPMS11 Run Time: 12:11 Method: 8260B
File ID: 11M92760 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG433686 Cal ID: HPMS11 - 15-MAY-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	53.3	ug/L	0.555	6.70	20	
1,1-Dichloroethene	CCC	50.0	56.9	ug/L	0.457	13.8	20	
1,2-Dichloropropane	CCC	50.0	54.8	ug/L	0.293	9.66	20	
Ethylbenzene	CCC	50.0	57.2	ug/L	0.716	14.3	20	
Toluene	CCC	50.0	57.6	ug/L	1.87	15.3	20	
Vinyl Chloride	CCC	50.0	53.4	ug/L	0.348	6.80	20	
Bromoform	SPCC	50.0	43.4	ug/L	0.241	13.2	20	
Chlorobenzene	SPCC	50.0	58.4	ug/L	1.26	16.7	20	
Chloromethane	SPCC	50.0	59.1	ug/L	0.351	18.2	20	
1,1-Dichloroethane	SPCC	50.0	56.7	ug/L	0.540	13.4	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.7	ug/L	0.588	8.54	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 2921768
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13060134 Run Date: 06/12/2013 Sample ID: WG433809-02
Instrument ID: HPMS10 Run Time: 10:40 Method: 8260B
File ID: 10M05673 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG433810 Cal ID: HPMS10 - 14-MAY-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	53.0	ug/L	0.486	6.01	20	
1,1-Dichloroethene	CCC	50.0	51.6	ug/L	0.252	3.18	20	
1,2-Dichloropropane	CCC	50.0	55.3	ug/L	0.289	10.7	20	
Ethylbenzene	CCC	50.0	55.1	ug/L	0.582	10.3	20	
Toluene	CCC	50.0	51.8	ug/L	1.50	3.61	20	
Vinyl Chloride	CCC	50.0	59.6	ug/L	0.302	19.3	20	
Bromoform	SPCC	50.0	58.5	ug/L	0.254	17.1	20	
Chlorobenzene	SPCC	50.0	54.2	ug/L	1.06	8.34	20	
Chloromethane	SPCC	50.0	64.9	ug/L	0.359	29.8	20	*
1,1-Dichloroethane	SPCC	50.0	54.5	ug/L	0.510	8.90	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	56.1	ug/L	0.559	12.2	20	
Xylenes		150	165	ug/L	0.695	10.2	20	
Acetone		50.0	54.9	ug/L	0.0705	9.86	20	
Benzene		50.0	51.9	ug/L	1.08	3.78	20	
Bromobenzene		50.0	52.5	ug/L	0.899	5.05	20	
Bromochloromethane		50.0	54.0	ug/L	0.145	7.92	20	
Bromodichloromethane		50.0	56.7	ug/L	0.375	13.4	20	
Bromomethane		50.0	51.2	ug/L	0.168	2.39	20	
2-Butanone		50.0	54.4	ug/L	0.0759	8.88	20	
n-Butylbenzene		50.0	56.1	ug/L	2.26	12.2	20	
sec-Butylbenzene		50.0	55.8	ug/L	3.13	11.6	20	
tert-Butylbenzene		50.0	54.8	ug/L	0.580	9.67	20	
Carbon Disulfide		50.0	48.8	ug/L	0.836	2.36	20	
Carbon Tetrachloride		50.0	55.9	ug/L	0.401	11.7	20	
Dibromochloromethane		50.0	57.8	ug/L	0.370	15.6	20	
Chloroethane		50.0	58.8	ug/L	0.194	17.6	20	
2-Chlorotoluene		50.0	50.8	ug/L	2.20	1.65	20	
4-Chlorotoluene		50.0	54.9	ug/L	2.16	9.72	20	
1,2-Dibromo-3-Chloropropane		50.0	59.4	ug/L	0.125	18.7	20	
1,2-Dibromoethane		50.0	54.5	ug/L	0.289	8.93	20	
Dibromomethane		50.0	52.4	ug/L	0.151	4.89	20	
1,2-Dichlorobenzene		50.0	54.4	ug/L	1.53	8.89	20	
1,3-Dichlorobenzene		50.0	54.8	ug/L	1.66	9.56	20	
1,4-Dichlorobenzene		50.0	53.4	ug/L	1.67	6.75	20	
Dichlorodifluoromethane		50.0	60.3	ug/L	0.274	20.6	20	*
1,2-Dichloroethane		50.0	53.8	ug/L	0.342	7.54	20	
cis-1,2-Dichloroethene		50.0	52.5	ug/L	0.306	5.10	20	
trans-1,2-Dichloroethene		50.0	51.5	ug/L	0.280	2.95	20	
1,3-Dichloropropane		50.0	52.4	ug/L	0.469	4.80	20	
2,2-Dichloropropane		50.0	56.3	ug/L	0.433	12.6	20	
cis-1,3-Dichloropropene		50.0	57.1	ug/L	0.447	14.1	20	
trans-1,3-Dichloropropene		50.0	54.9	ug/L	0.504	9.74	20	

CCV - Modified 03/05/2008
PDF File ID: 2921768
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13060134 Run Date: 06/12/2013 Sample ID: WG433809-02
Instrument ID: HPMS10 Run Time: 10:40 Method: 8260B
File ID: 10M05673 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG433810 Cal ID: HPMS10 - 14-MAY-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.1	ug/L	0.373	6.12	20	
2-Hexanone		50.0	54.6	ug/L	0.149	9.21	20	
Hexachlorobutadiene		50.0	55.4	ug/L	0.423	10.8	20	
Isopropylbenzene		50.0	56.1	ug/L	1.69	12.2	20	
p-Isopropyltoluene		50.0	56.6	ug/L	2.67	13.3	20	
4-Methyl-2-Pentanone		50.0	53.6	ug/L	0.0718	7.15	20	
Methylene Chloride		50.0	50.8	ug/L	0.280	1.66	20	
Naphthalene		50.0	54.8	ug/L	1.77	9.51	20	
n-Propylbenzene		50.0	53.1	ug/L	3.51	6.28	20	
Styrene		50.0	60.1	ug/L	1.19	20.3	20	*
1,1,1,2-Tetrachloroethane		50.0	57.4	ug/L	0.409	14.7	20	
Tetrachloroethene		50.0	51.9	ug/L	0.340	3.87	20	
1,2,3-Trichlorobenzene		50.0	52.6	ug/L	0.871	5.24	20	
1,2,4-Trichlorobenzene		50.0	55.1	ug/L	1.04	10.3	20	
1,1,1-Trichloroethane		50.0	53.4	ug/L	0.429	6.75	20	
1,1,2-Trichloroethane		50.0	51.5	ug/L	0.268	3.06	20	
Trichloroethene		50.0	52.7	ug/L	0.301	5.31	20	
Trichlorofluoromethane		50.0	54.9	ug/L	0.445	9.78	20	
1,2,3-Trichloropropane		50.0	52.9	ug/L	0.175	5.78	20	
1,2,4-Trimethylbenzene		50.0	56.4	ug/L	2.67	12.9	20	
1,3,5-Trimethylbenzene		50.0	56.0	ug/L	2.60	12.0	20	
o-Xylene		50.0	56.2	ug/L	0.692	12.4	20	
m-,p-Xylene		100	109	ug/L	0.697	9.06	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 2921768
Report generated 06/14/2013 13:48

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13060134
Instrument ID: HPMS11
Workgroup (AAB#): WG433470

ICAL CCV Number: WG430143-08
CAL ID: HPMS11-15-MAY-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG430143-08	NA	NA	309664	532754	740966
Upper Limit	NA	NA	619328	1065508	1481932
Lower Limit	NA	NA	154832	266377	370483
L13060134-01	1.00	01	210292	380736	559747
L13060134-02	1.00	01	193023	355522	521083
L13060134-03	1.00	01	192605	350667	518075
L13060134-04	1.00	01	191155	348879	515733
L13060134-05	1.00	01	186642	345691	505063
WG433470-01	1.00	01	221545	399532	585464
WG433470-02	1.00	01	229797	408501	588891

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 2922144
Report generated 06/14/2013 13:49

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13060134
Instrument ID: HPMS6
Workgroup (AAB#): WG433591

ICAL CCV Number: WG425306-08
CAL ID: HPMS6-02-APR-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG425306-08	NA	NA	232088	454997	632737
Upper Limit	NA	NA	464176	909994	1265474
Lower Limit	NA	NA	116044	227499	316369
L13060134-07	1.00	01	215119	420312	504311
L13060134-08	1.00	01	208143	411774	487040
L13060134-09	1.00	01	187660	369249	439450
L13060134-10	1.00	01	203597	394687	481420
L13060134-11	1.00	01	205193	396460	477194
L13060134-12	1.00	01	200868	395404	475600
L13060134-13	1.00	01	194239	388657	460486
L13060134-14	1.00	01	188383	374216	445225
L13060134-15	1.00	01	187406	368435	435488
L13060134-16	1.00	01	184496	361204	428774
L13060134-17	1.00	01	189810	380017	458467
WG433591-01	1.00	01	198141	392850	472470
WG433591-02	1.00	01	204494	392746	479163

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 2922144
Report generated 06/14/2013 13:49

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13060134
Instrument ID: HPMS11
Workgroup (AAB#): WG433686

ICAL CCV Number: WG430143-08
CAL ID: HPMS11-15-MAY-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG430143-08	NA	NA	309664	532754	740966
Upper Limit	NA	NA	619328	1065508	1481932
Lower Limit	NA	NA	154832	266377	370483
L13060134-04	10.0	DL01	209355	378263	560277
WG433686-01	1.00	01	206485	383621	567638
WG433686-02	1.00	01	221712	394966	569941
WG433686-03	1.00	01	222874	396926	576266

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 2922144
Report generated 06/14/2013 13:49

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13060134
Instrument ID: HPMS10
Workgroup (AAB#): WG433810

ICAL CCV Number: WG430035-08
CAL ID: HPMS10-14-MAY-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG430035-08	NA	NA	337548	611257	799646
Upper Limit	NA	NA	675096	1222514	1599292
Lower Limit	NA	NA	168774	305629	399823
L13060134-06	1.00	01	231321	430694	563198
L13060134-16	25.0	DL01	247925	467786	612860
WG433810-01	1.00	01	247720	464511	609311
WG433810-02	1.00	01	264477	484207	623545
WG433810-03	1.00	01	277144	509618	657136

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 2922144
Report generated 06/14/2013 13:49

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13060134
Instrument ID: HPMS6
Workgroup (AAB#): WG433591

ICAL CCV Number: WG425306-08
CAL ID: HPMS6-02-APR-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG425306-08	NA	NA	18.27	14.72	10.24
Upper Limit	NA	NA	18.77	15.22	10.74
Lower Limit	NA	NA	17.77	14.22	9.74
L13060134-07	1.00	01	18.27	14.73	10.25
L13060134-08	1.00	01	18.27	14.73	10.25
L13060134-09	1.00	01	18.27	14.73	10.25
L13060134-10	1.00	01	18.27	14.72	10.24
L13060134-11	1.00	01	18.27	14.72	10.24
L13060134-12	1.00	01	18.27	14.73	10.25
L13060134-13	1.00	01	18.27	14.72	10.25
L13060134-14	1.00	01	18.27	14.72	10.25
L13060134-15	1.00	01	18.27	14.72	10.25
L13060134-16	1.00	01	18.27	14.73	10.26
L13060134-17	1.00	01	18.27	14.73	10.25
WG433591-01	1.00	01	18.27	14.72	10.25
WG433591-02	1.00	01	18.27	14.72	10.25

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 2922145
Report generated: 06/14/2013 13:49

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13060134
Instrument ID: HPMS10
Workgroup (AAB#): WG433810

ICAL CCV Number: WG430035-08
CAL ID: HPMS10-14-MAY-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG430035-08	NA	NA	16.13	13.34	9.74
Upper Limit	NA	NA	16.63	13.84	10.24
Lower Limit	NA	NA	15.63	12.84	9.24
L13060134-06	1.00	01	16.11	13.33	9.72
L13060134-16	25.0	DL01	16.11	13.32	9.72
WG433810-01	1.00	01	16.11	13.33	9.72
WG433810-02	1.00	01	16.11	13.32	9.72
WG433810-03	1.00	01	16.11	13.32	9.72

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 2922145
Report generated: 06/14/2013 13:49

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13060134
Instrument ID: HPMS11
Workgroup (AAB#): WG433470

ICAL CCV Number: WG430143-08
CAL ID: HPMS11-15-MAY-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG430143-08	NA	NA	16.51	13.71	10.08
Upper Limit	NA	NA	17.01	14.21	10.58
Lower Limit	NA	NA	16.01	13.21	9.58
L13060134-01	1.00	01	16.5	13.7	10.07
L13060134-02	1.00	01	16.5	13.7	10.07
L13060134-03	1.00	01	16.49	13.7	10.07
L13060134-04	1.00	01	16.49	13.7	10.07
L13060134-05	1.00	01	16.5	13.7	10.07
WG433470-01	1.00	01	16.49	13.7	10.07
WG433470-02	1.00	01	16.49	13.7	10.07

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 2922145
Report generated: 06/14/2013 13:49

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13060134
Instrument ID: HPMS11
Workgroup (AAB#): WG433686

ICAL CCV Number: WG430143-08
CAL ID: HPMS11-15-MAY-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG430143-08	NA	NA	16.51	13.71	10.08
Upper Limit	NA	NA	17.01	14.21	10.58
Lower Limit	NA	NA	16.01	13.21	9.58
L13060134-04	10.0	DL01	16.49	13.7	10.07
WG433686-01	1.00	01	16.49	13.7	10.07
WG433686-02	1.00	01	16.49	13.7	10.07
WG433686-03	1.00	01	16.49	13.7	10.07

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 2922145
Report generated: 06/14/2013 13:49

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\11M92742.D Vial: 11
Acq On : 10 Jun 2013 16:40 Operator: FJB
Sample : L13060134-01 ER A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 09:05:53 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	559747	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.70	117	380736	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.50	152	210292	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.09	111	151901	23.0625 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.24%		
43) 1,2-Dichloroethane-d4	9.69	65	140837	20.9433 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.76%		
58) Toluene-d8	11.93	98	570961	26.1645 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.64%		
80) p-Bromofluorobenzene	15.09	95	219047	26.2872 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.16%		
Target Compounds					Qvalue
3) Chloromethane	3.31	50	1711	0.2572 ug/L	88
13) Acetone	5.82	43	398	0.2715 ug/L #	45
33) Chloroform	8.81	83	1478	0.1270 ug/L	76

(#) = qualifier out of range (m) = manual integration
11M92742.D 8260BWT.M Tue Jun 11 09:05:54 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\11M92742.D Vial: 11
Acq On : 10 Jun 2013 16:40 Operator: FJB
Sample : L13060134-01 ER A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 9:05 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration

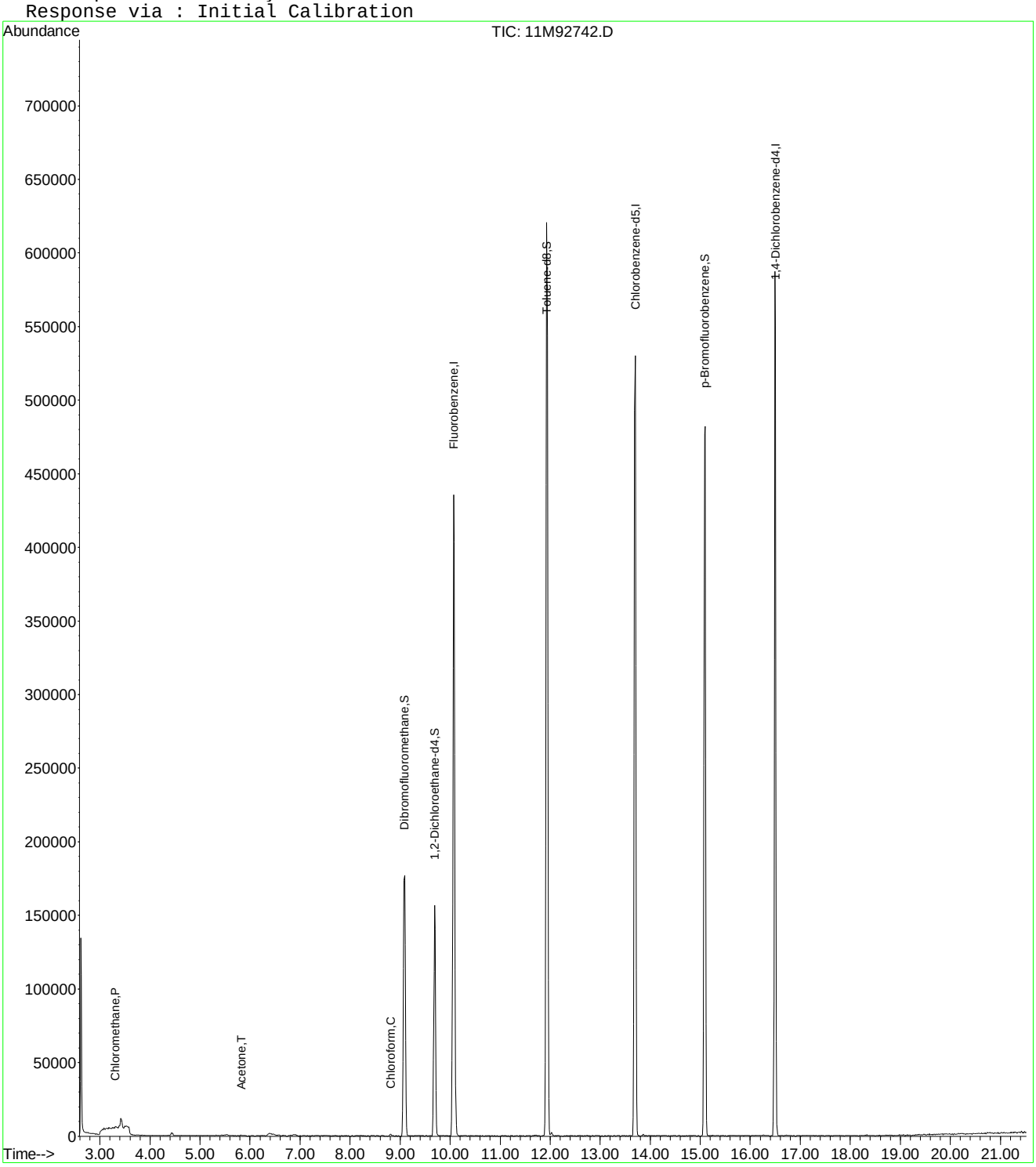

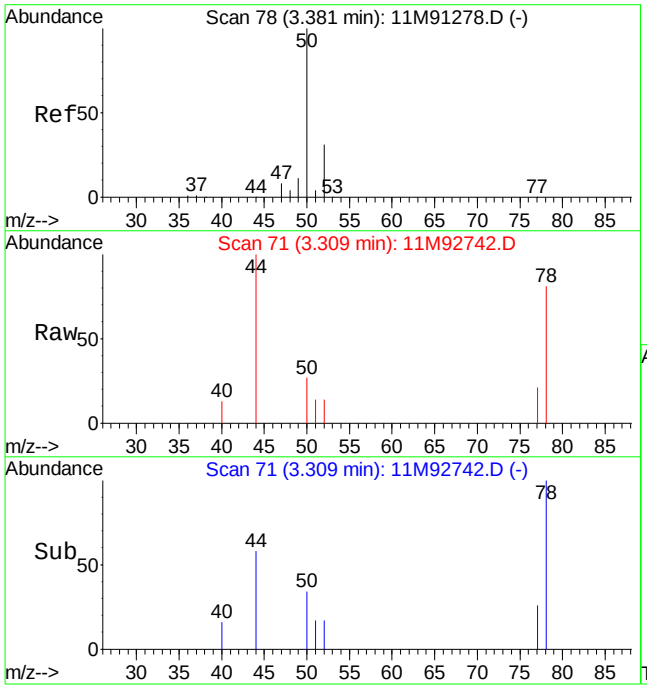

#3
Chloromethane
Concen: 0.26 ug/L
RT: 3.31 min Scan# 71
Delta R.T. -0.02 min
Lab File: 11M92742.D
Acq: 10 Jun 2013 16:40

Tgt Ion: 50 Resp: 1711

Ion	Ratio	Lower	Upper
50	100		
52	39.3	19.4	45.2

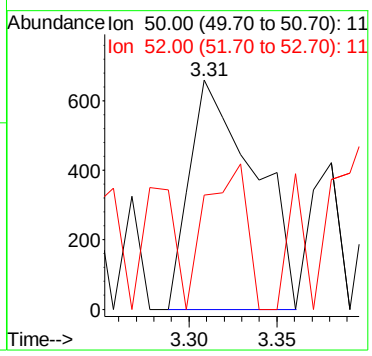

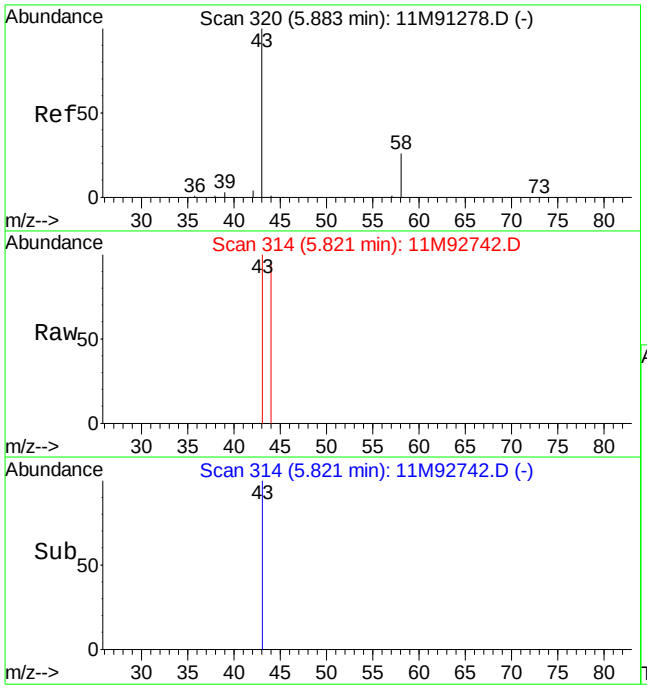

#13
Acetone
Concen: 0.27 ug/L
RT: 5.82 min Scan# 314
Delta R.T. 0.01 min
Lab File: 11M92742.D
Acq: 10 Jun 2013 16:40

Tgt Ion: 43 Resp: 398

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.6	41.2#

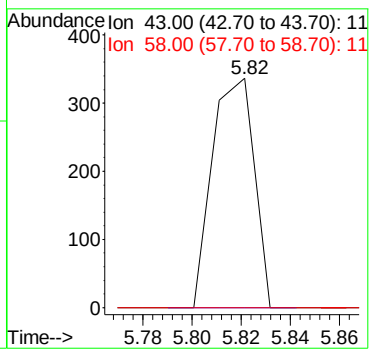

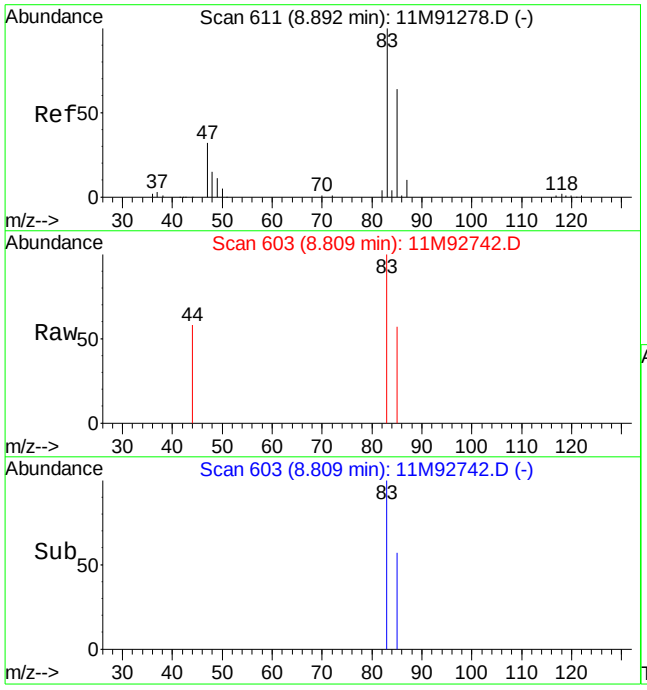

#33
Chloroform
Concen: 0.13 ug/L
RT: 8.81 min Scan# 603
Delta R.T. -0.01 min
Lab File: 11M92742.D
Acq: 10 Jun 2013 16:40

Tgt Ion: 83 Resp: 1478

Ion	Ratio	Lower	Upper
83	100		
85	48.4	40.7	94.9

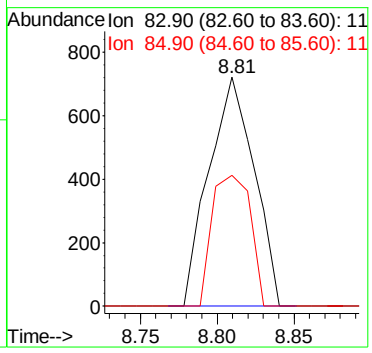

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\11M92749.D Vial: 18
Acq On : 10 Jun 2013 20:20 Operator: FJB
Sample : L13060134-02 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 09:06:06 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	521083	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.70	117	355522	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.50	152	193023	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.09	111	141984	23.1564 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.64%		
43) 1,2-Dichloroethane-d4	9.69	65	134796	21.5323 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.12%		
58) Toluene-d8	11.93	98	543937	26.6939 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.76%		
80) p-Bromofluorobenzene	15.10	95	206859	27.0455 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.20%		

Target Compounds

					Qvalue
3) Chloromethane	3.31	50	1450	0.2341 ug/L #	46
4) Vinyl Chloride	3.53	62	917	0.1351 ug/L #	41
13) Acetone	5.82	43	676	0.4954 ug/L #	45
14) 1,1-Dichloroethene	6.03	61	2055	0.2457 ug/L	98
19) Methylene Chloride	6.77	84	6092	0.9183 ug/L	83
27) 1,1-Dichloroethane	7.82	63	2106	0.2121 ug/L #	63
45) 1,2-Dichloroethane	9.80	62	16680	2.2517 ug/L	89
63) 1,1,2-Trichloroethane	12.44	97	716	0.1616 ug/L #	8

(#) = qualifier out of range (m) = manual integration
11M92749.D 8260BWT.M Tue Jun 11 09:06:07 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\11M92749.D Vial: 18
Acq On : 10 Jun 2013 20:20 Operator: FJB
Sample : L13060134-02 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 9:06 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration

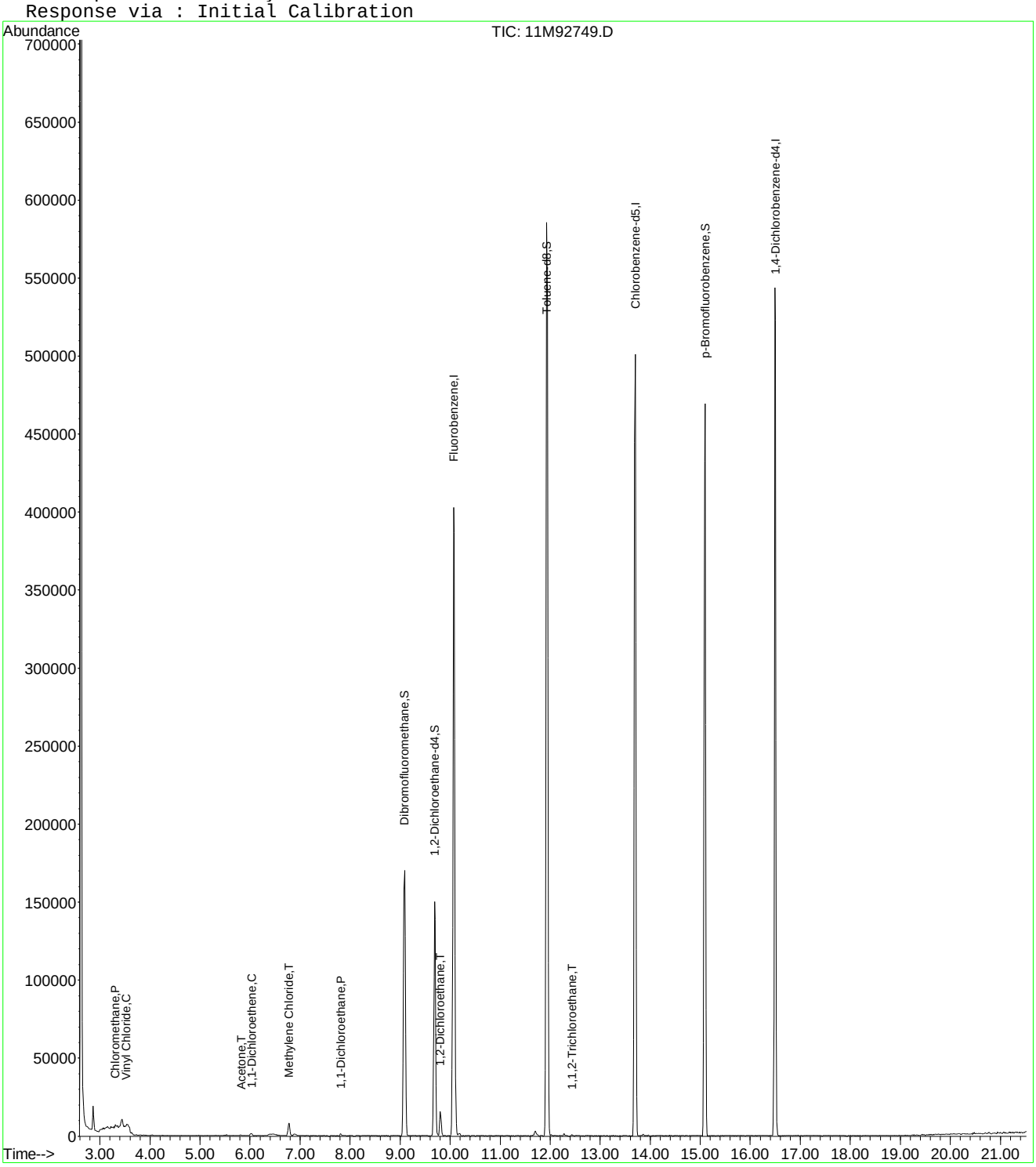

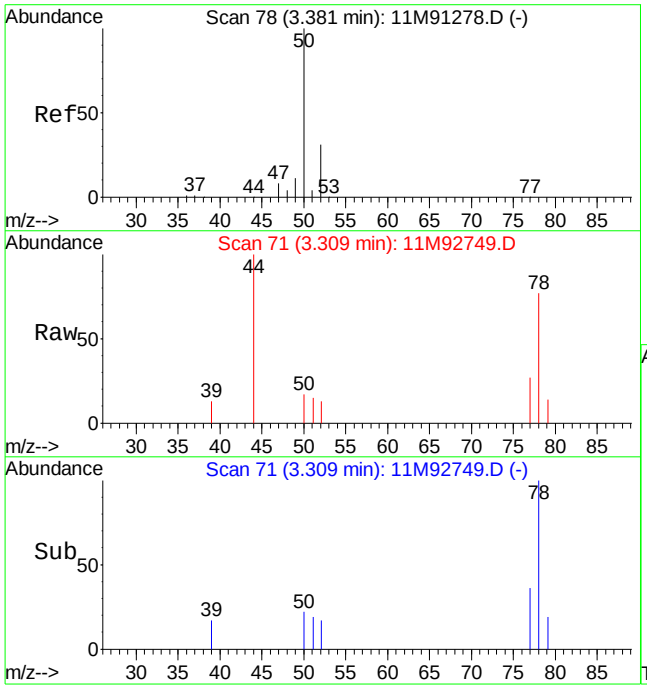

#3
Chloromethane
Concen: 0.23 ug/L
RT: 3.31 min Scan# 71
Delta R.T. -0.02 min
Lab File: 11M92749.D
Acq: 10 Jun 2013 20:20

Tgt Ion: 50 Resp: 1450

Ion	Ratio	Lower	Upper
50	100		
52	62.8	19.4	45.2#

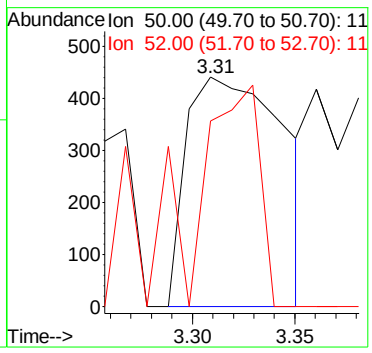

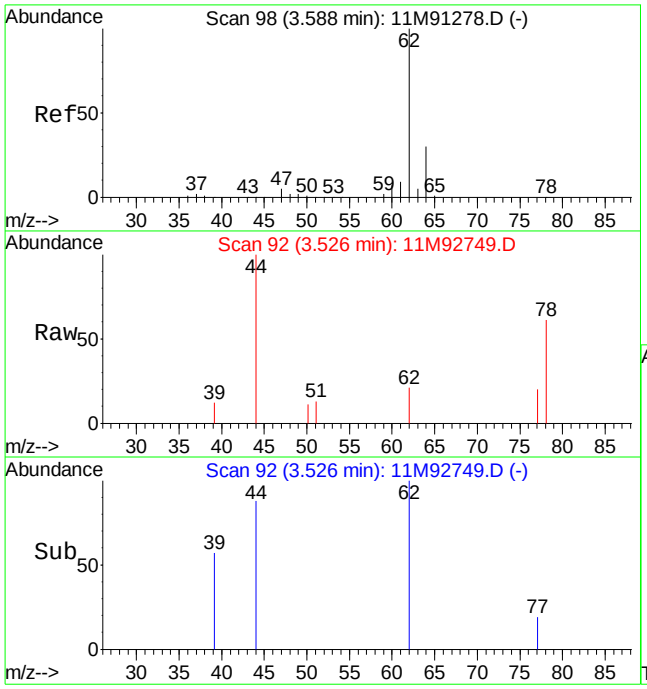

#4
Vinyl Chloride
Concen: 0.14 ug/L
RT: 3.53 min Scan# 92
Delta R.T. 0.00 min
Lab File: 11M92749.D
Acq: 10 Jun 2013 20:20

Tgt Ion: 62 Resp: 917

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.9	46.5#

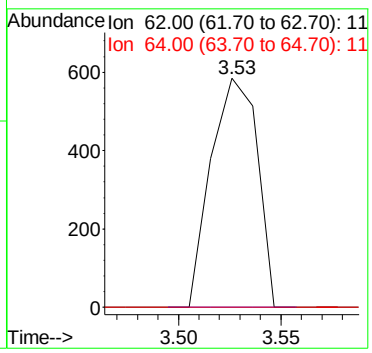

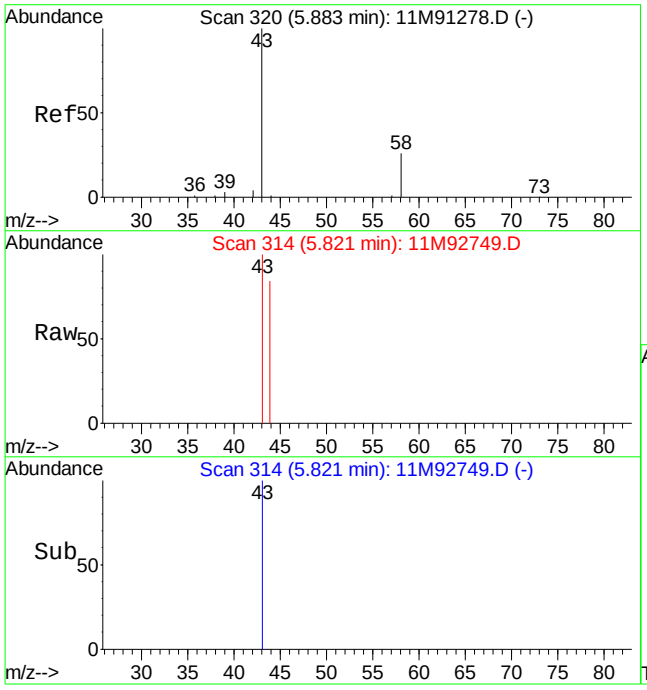

#13
Acetone
Concen: 0.50 ug/L
RT: 5.82 min Scan# 314
Delta R.T. 0.01 min
Lab File: 11M92749.D
Acq: 10 Jun 2013 20:20

Tgt Ion: 43 Resp: 676

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.6	41.2#

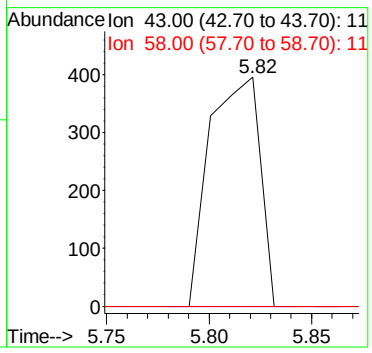

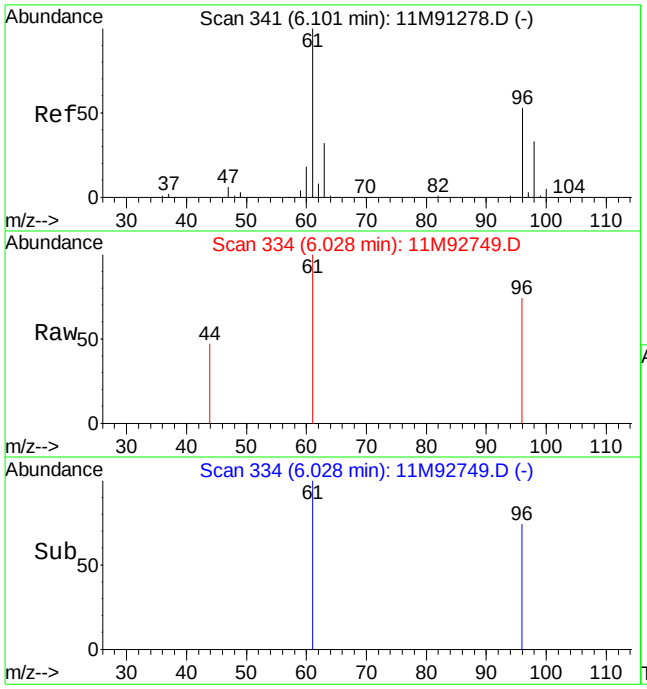

#14
1,1-Dichloroethene
Concen: 0.25 ug/L
RT: 6.03 min Scan# 334
Delta R.T. 0.00 min
Lab File: 11M92749.D
Acq: 10 Jun 2013 20:20

Tgt Ion: 61 Resp: 2055

Ion	Ratio	Lower	Upper
61	100		
96	61.5	37.9	88.5

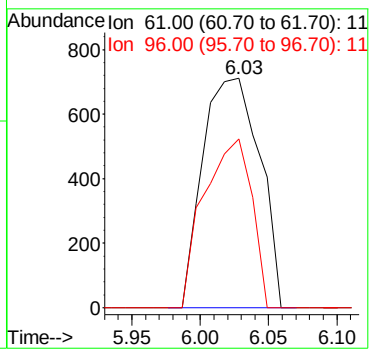

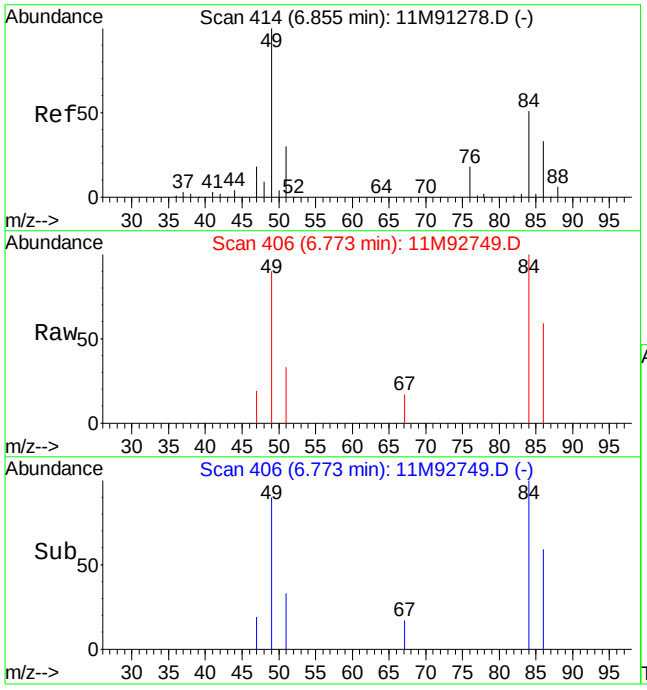

#19
Methylene Chloride
Concen: 0.92 ug/L
RT: 6.77 min Scan# 406
Delta R.T. -0.01 min
Lab File: 11M92749.D
Acq: 10 Jun 2013 20:20

Tgt Ion: 84 Resp: 6092

Ion	Ratio	Lower	Upper
84	100		
49	102.9	73.4	171.4

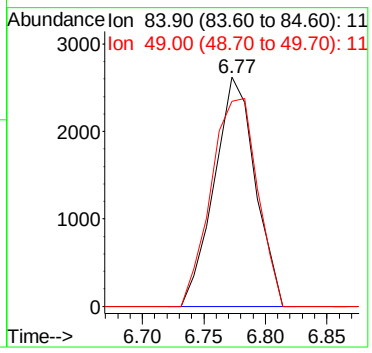

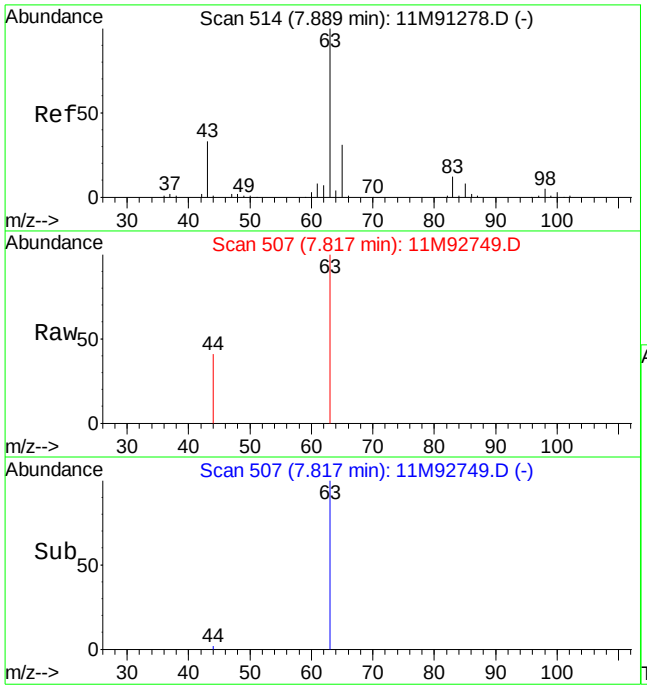

#27
1,1-Dichloroethane
Concen: 0.21 ug/L
RT: 7.82 min Scan# 507
Delta R.T. 0.00 min
Lab File: 11M92749.D
Acq: 10 Jun 2013 20:20

Tgt Ion: 63 Resp: 2106

Ion	Ratio	Lower	Upper
63	100		
65	10.7	19.1	44.5#
83	0.0	8.6	20.2#

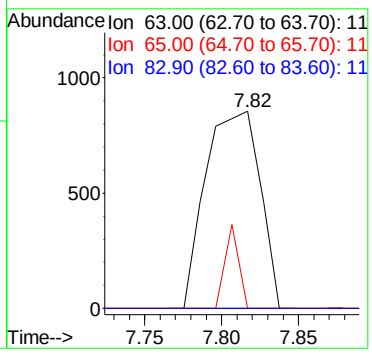

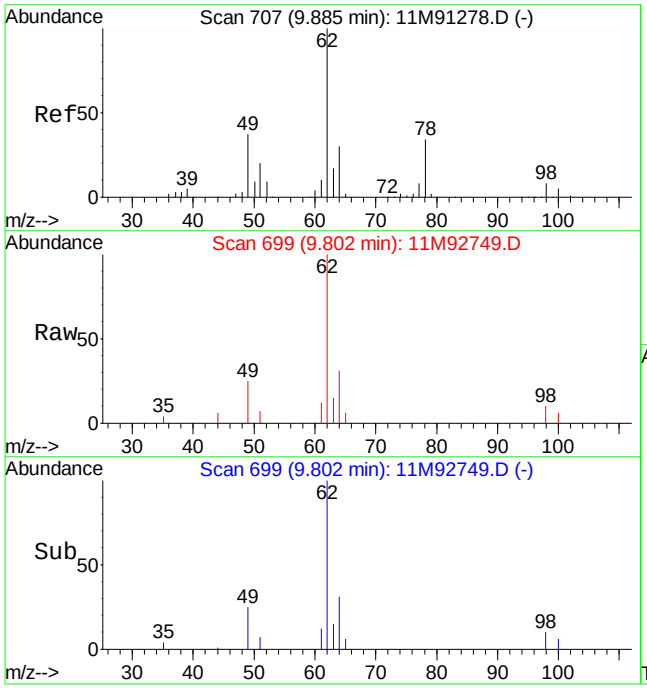

#45
1,2-Dichloroethane
Concen: 2.25 ug/L
RT: 9.80 min Scan# 699
Delta R.T. -0.01 min
Lab File: 11M92749.D
Acq: 10 Jun 2013 20:20

Tgt Ion: 62 Resp: 16680

Ion	Ratio	Lower	Upper
62	100		
64	31.4	20.0	46.6
49	23.1	20.3	47.3

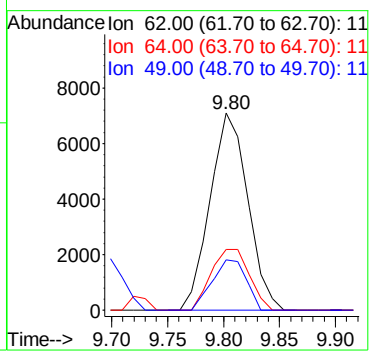

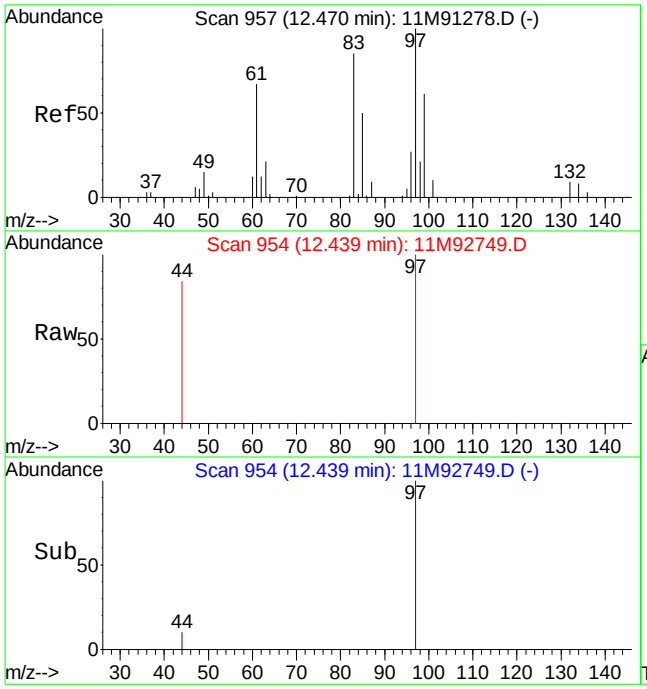

#63
1,1,2-Trichloroethane
Concen: 0.16 ug/L
RT: 12.44 min Scan# 954
Delta R.T. 0.03 min
Lab File: 11M92749.D
Acq: 10 Jun 2013 20:20

Tgt Ion: 97 Resp: 716

Ion	Ratio	Lower	Upper
97	100		
83	0.0	49.7	116.1#

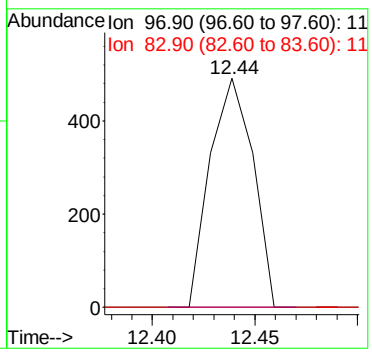

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\11M92750.D Vial: 19
Acq On : 10 Jun 2013 20:51 Operator: FJB
Sample : L13060134-03 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 09:06:08 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	518075	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.70	117	350667	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.49	152	192605	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.09	111	140969	23.1243 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.48%		
43) 1,2-Dichloroethane-d4	9.69	65	132921	21.3561 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.44%		
58) Toluene-d8	11.93	98	536850	26.7108 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.84%		
80) p-Bromofluorobenzene	15.09	95	201787	26.4396 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.76%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.52	62	922	0.1366 ug/L #	41
13) Acetone	5.81	43	190	0.1400 ug/L #	45
14) 1,1-Dichloroethene	6.02	61	1874	0.2254 ug/L	100
19) Methylene Chloride	6.77	84	5577	0.8456 ug/L	87
27) 1,1-Dichloroethane	7.82	63	1900	0.1925 ug/L #	65
45) 1,2-Dichloroethane	9.80	62	16184	2.1975 ug/L	90

(#) = qualifier out of range (m) = manual integration
11M92750.D 8260BWT.M Tue Jun 11 09:06:09 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\11M92750.D Vial: 19
Acq On : 10 Jun 2013 20:51 Operator: FJB
Sample : L13060134-03 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 9:06 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration

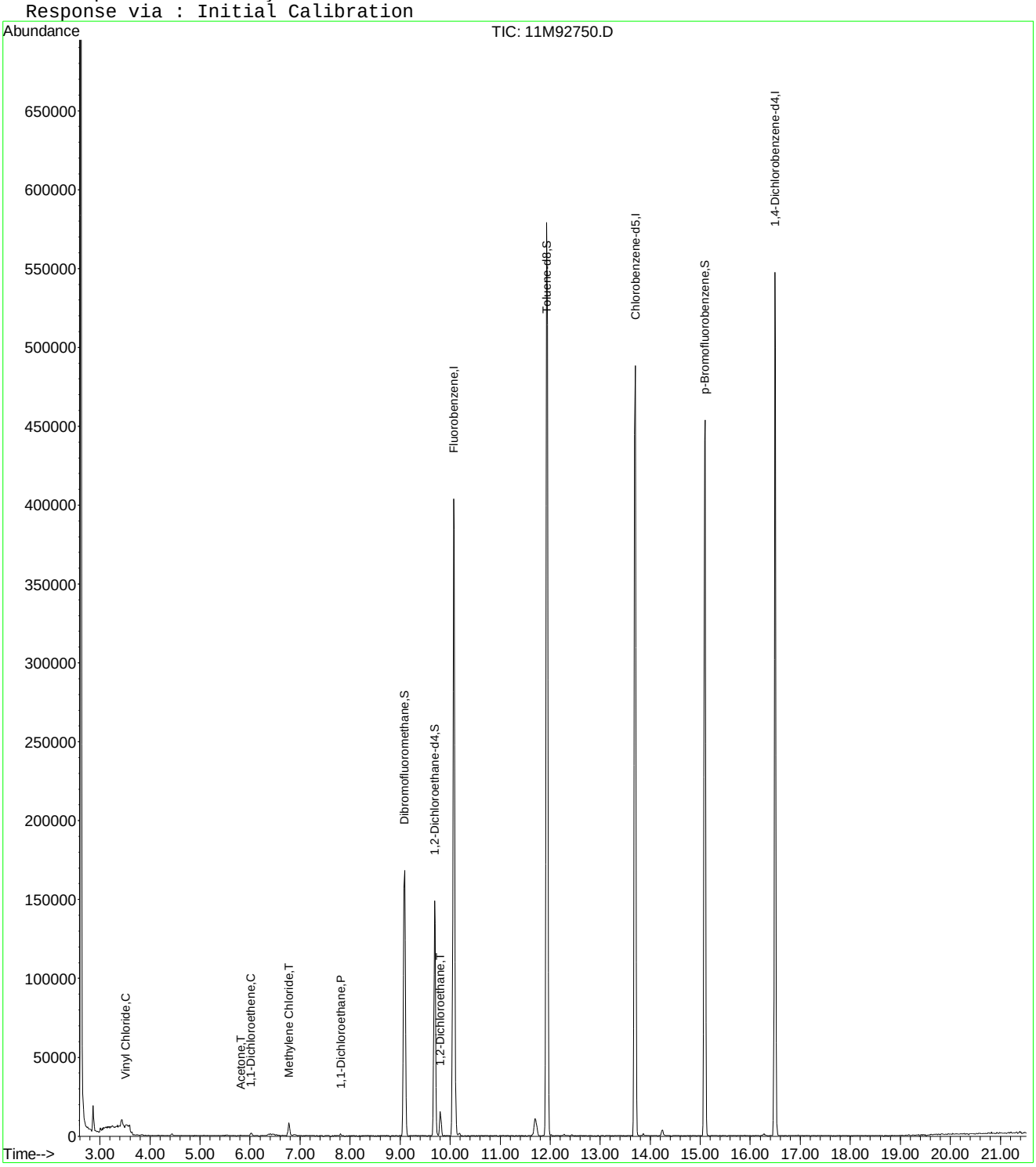

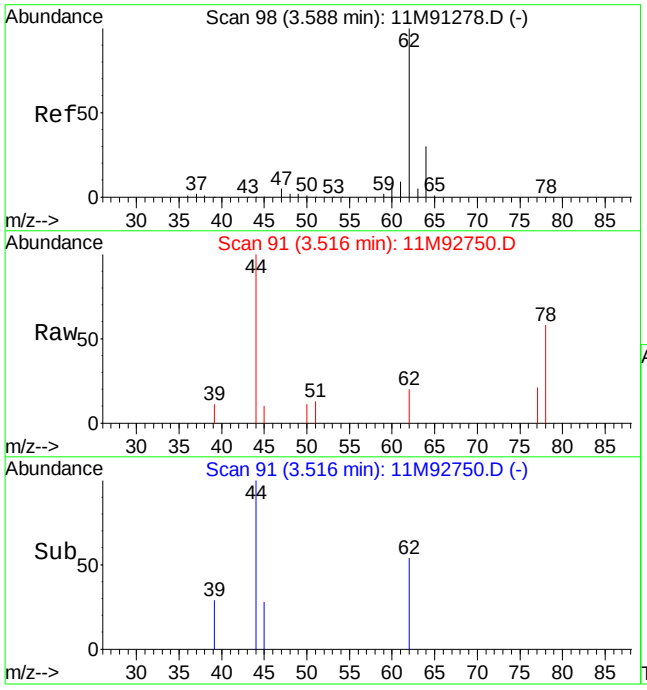

#4
Vinyl Chloride
Concen: 0.14 ug/L
RT: 3.52 min Scan# 91
Delta R.T. -0.01 min
Lab File: 11M92750.D
Acq: 10 Jun 2013 20:51

Tgt Ion: 62 Resp: 922

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.9	46.5#

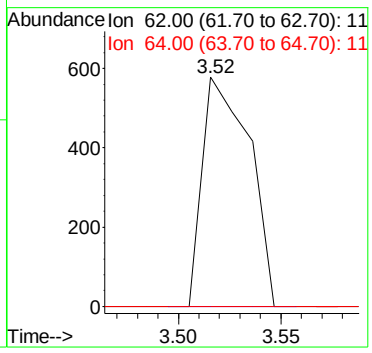

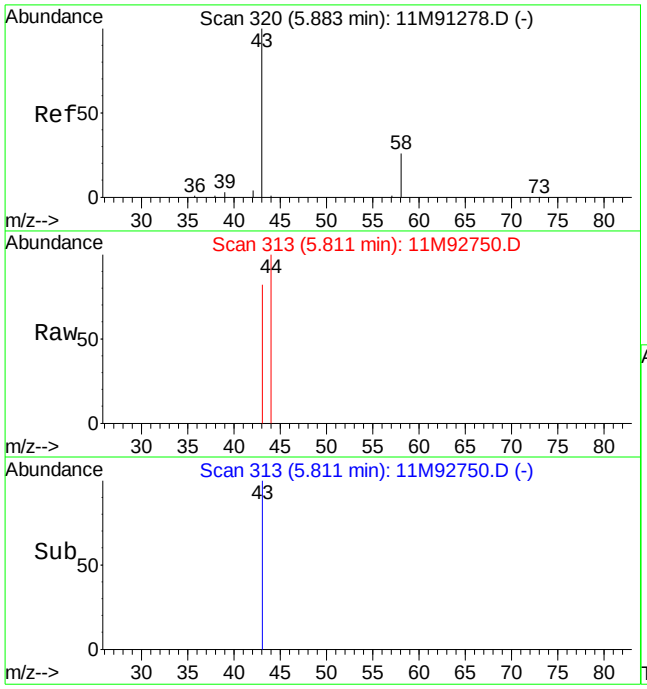

#13
Acetone
Concen: 0.14 ug/L
RT: 5.81 min Scan# 313
Delta R.T. 0.00 min
Lab File: 11M92750.D
Acq: 10 Jun 2013 20:51

Tgt Ion: 43 Resp: 190

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.6	41.2#

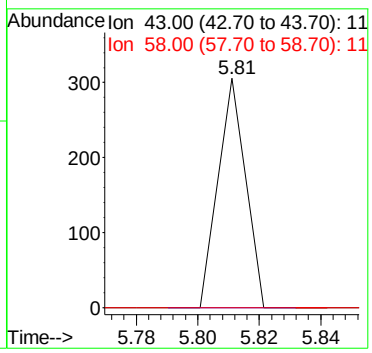

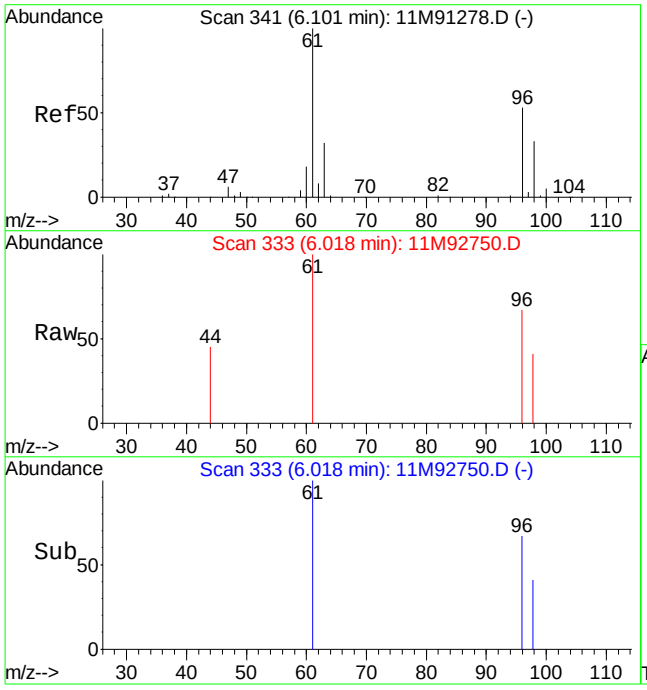

#14
1,1-Dichloroethene
Concen: 0.23 ug/L
RT: 6.02 min Scan# 333
Delta R.T. -0.01 min
Lab File: 11M92750.D
Acq: 10 Jun 2013 20:51

Tgt Ion: 61 Resp: 1874

Ion	Ratio	Lower	Upper
61	100		
96	63.1	37.9	88.5

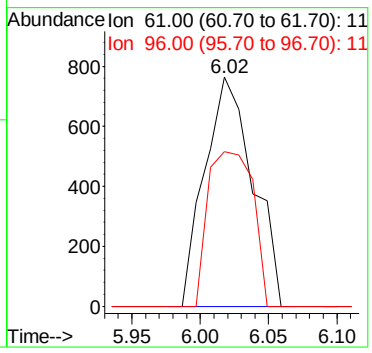

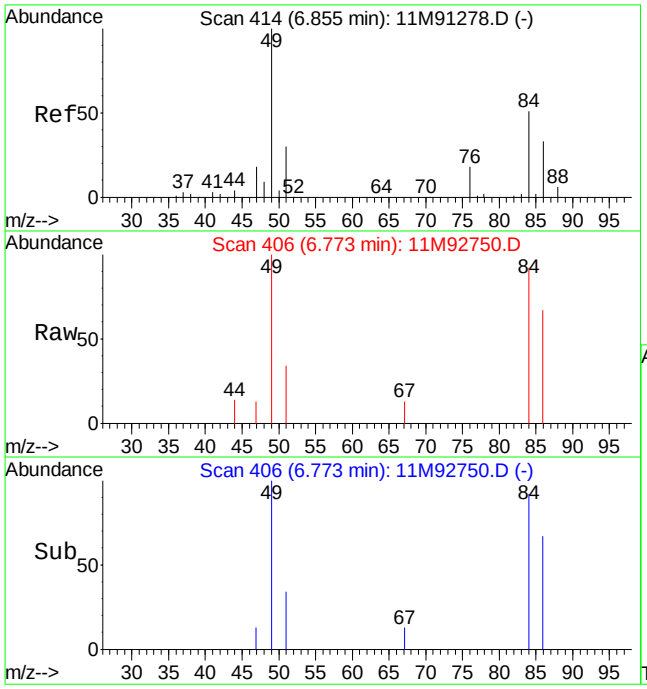

#19
Methylene Chloride
Concen: 0.85 ug/L
RT: 6.77 min Scan# 406
Delta R.T. -0.01 min
Lab File: 11M92750.D
Acq: 10 Jun 2013 20:51

Tgt Ion: 84 Resp: 5577

Ion	Ratio	Lower	Upper
84	100		
49	107.4	73.4	171.4

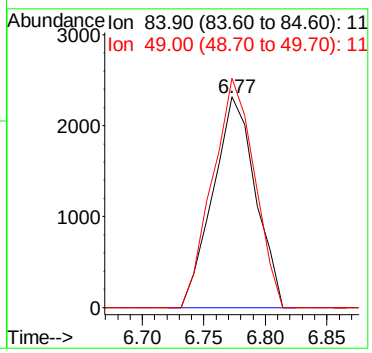

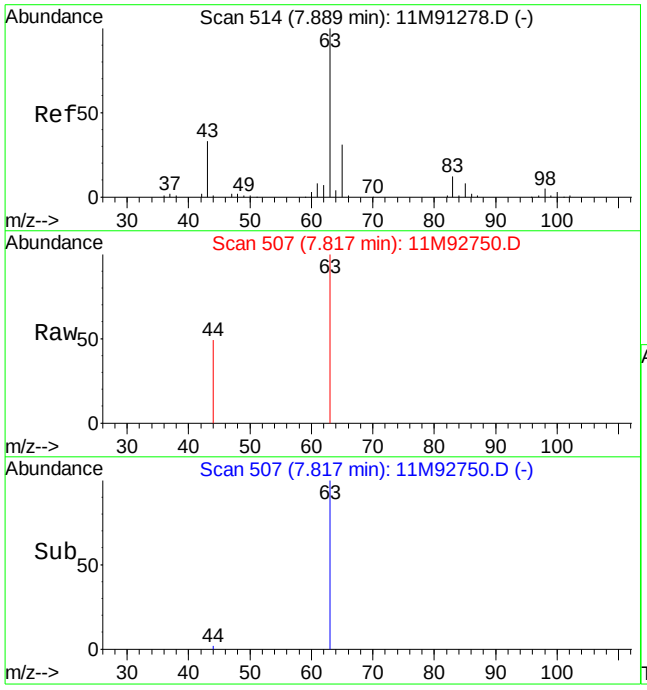

#27
1,1-Dichloroethane
Concen: 0.19 ug/L
RT: 7.82 min Scan# 507
Delta R.T. 0.00 min
Lab File: 11M92750.D
Acq: 10 Jun 2013 20:51

Tgt Ion: 63 Resp: 1900

Ion	Ratio	Lower	Upper
63	100		
65	12.1	19.1	44.5#
83	0.0	8.6	20.2#

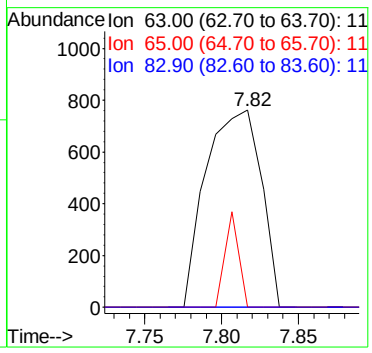

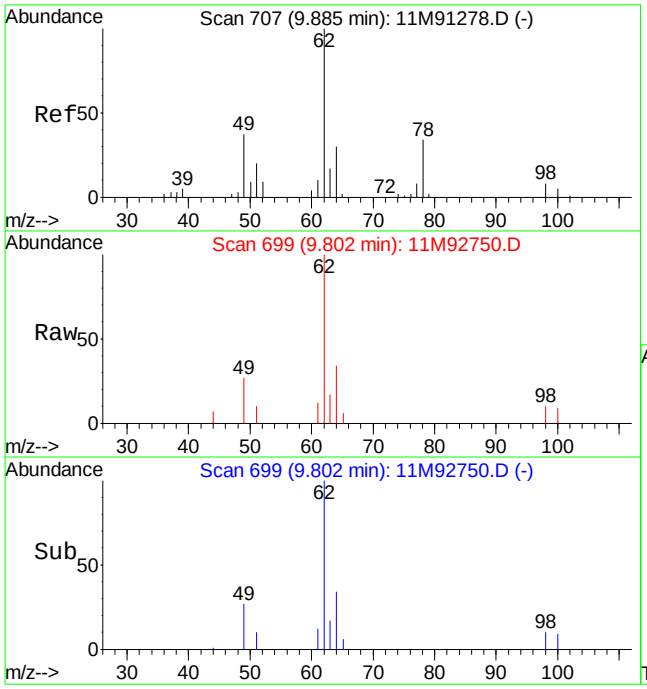

#45
1,2-Dichloroethane
Concen: 2.20 ug/L
RT: 9.80 min Scan# 699
Delta R.T. -0.01 min
Lab File: 11M92750.D
Acq: 10 Jun 2013 20:51

Tgt Ion: 62 Resp: 16184

Ion	Ratio	Lower	Upper
62	100		
64	30.6	20.0	46.6
49	25.1	20.3	47.3

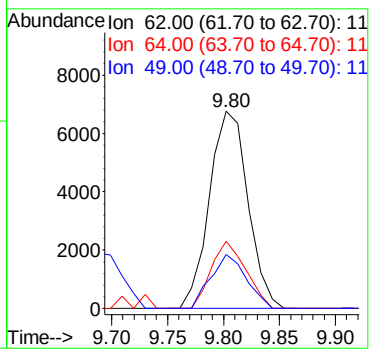

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\11M92751.D Vial: 20
Acq On : 10 Jun 2013 21:22 Operator: FJB
Sample : L13060134-04 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 09:06:10 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	515733	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.70	117	348879	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.49	152	191155	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.09	111	141198	23.2671 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.08%		
43) 1,2-Dichloroethane-d4	9.69	65	130993	21.1419 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 84.56%		
58) Toluene-d8	11.93	98	533809	26.6956 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.80%		
80) p-Bromofluorobenzene	15.09	95	202181	26.6922 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.76%		

Target Compounds					Qvalue
3) Chloromethane	3.32	50	2111	0.3444 ug/L #	10
4) Vinyl Chloride	3.53	62	17133	2.5500 ug/L	99
13) Acetone	5.82	43	413	0.3058 ug/L #	45
14) 1,1-Dichloroethene	6.02	61	4676202	564.9064 ug/L	89
20) Carbon Disulfide	6.80	76	2574	0.1369 ug/L #	75
27) 1,1-Dichloroethane	7.81	63	348981	35.5195 ug/L	99
32) cis-1,2-Dichloroethene	8.61	96	11046	1.6845 ug/L	87
33) Chloroform	8.81	83	4954	0.4619 ug/L	90
45) 1,2-Dichloroethane	9.80	62	169014	23.0530 ug/L	92
46) Benzene	9.83	78	3724	0.1601 ug/L #	62
47) Trichloroethene	10.56	130	18770	3.1119 ug/L	94
50) 1,4-Dioxane	11.02	88	443	9.4709 ug/L #	24
63) 1,1,2-Trichloroethane	12.40	97	15566	3.5800 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M92751.D 8260BWT.M Tue Jun 11 09:06:11 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\11M92751.D Vial: 20
Acq On : 10 Jun 2013 21:22 Operator: FJB
Sample : L13060134-04 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 9:06 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration

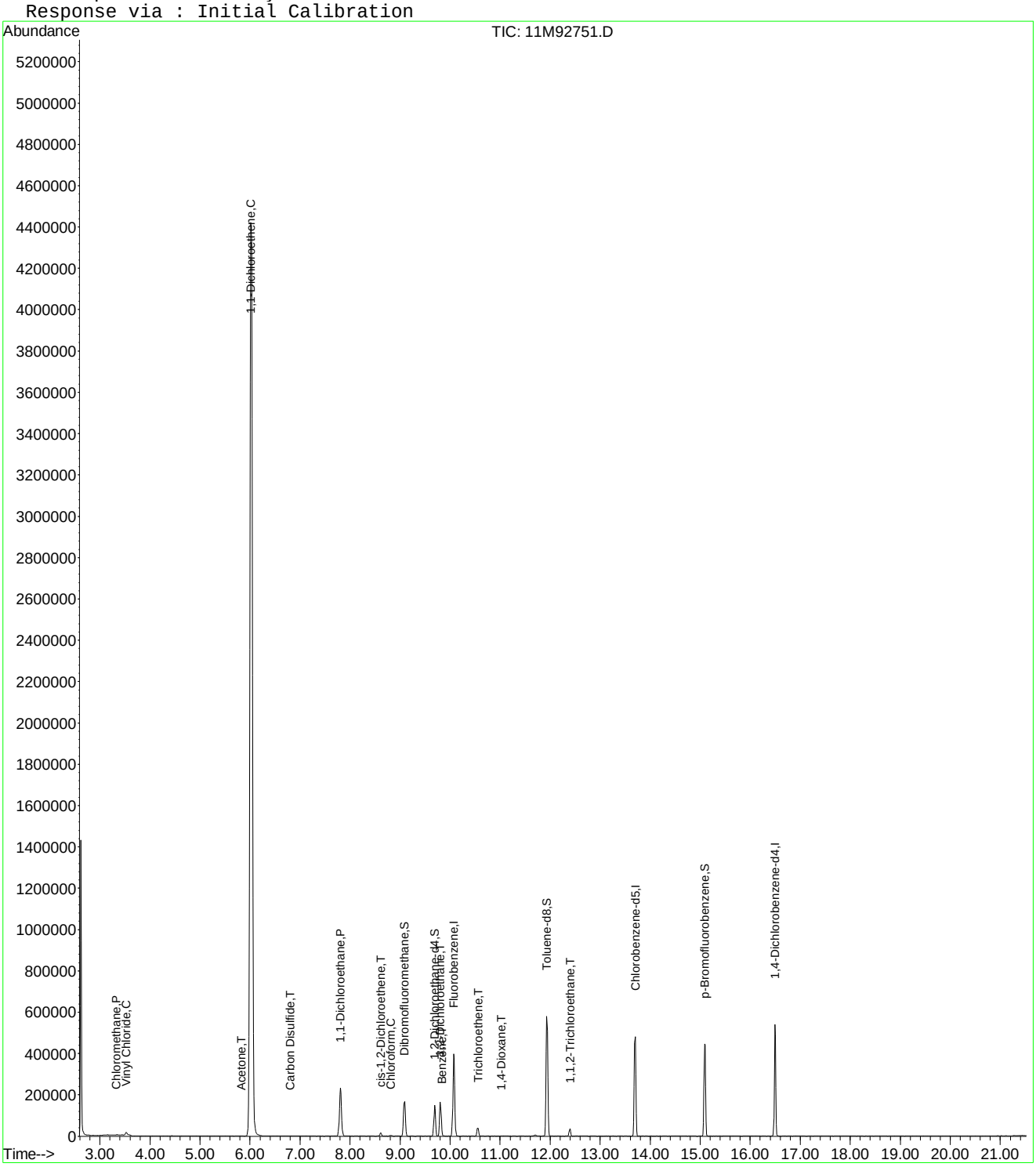

11M92751.D 8260BWT.M Tue Jun 11 09:06:11 2013 Page 2

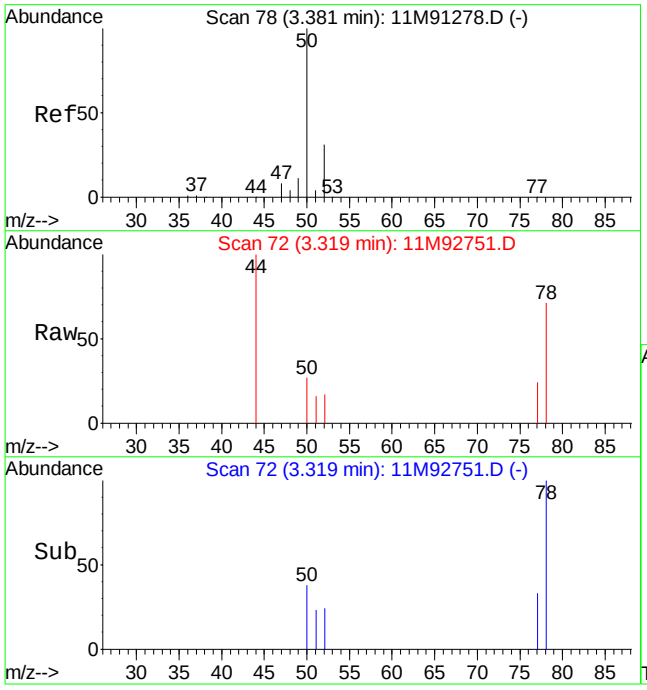

#3
Chloromethane
Concen: 0.34 ug/L
RT: 3.32 min Scan# 72
Delta R.T. -0.01 min
Lab File: 11M92751.D
Acq: 10 Jun 2013 21:22

Tgt Ion: 50 Resp: 2111

Ion	Ratio	Lower	Upper
50	100		
52	82.6	19.4	45.2#

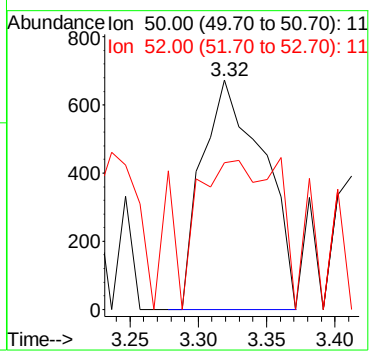

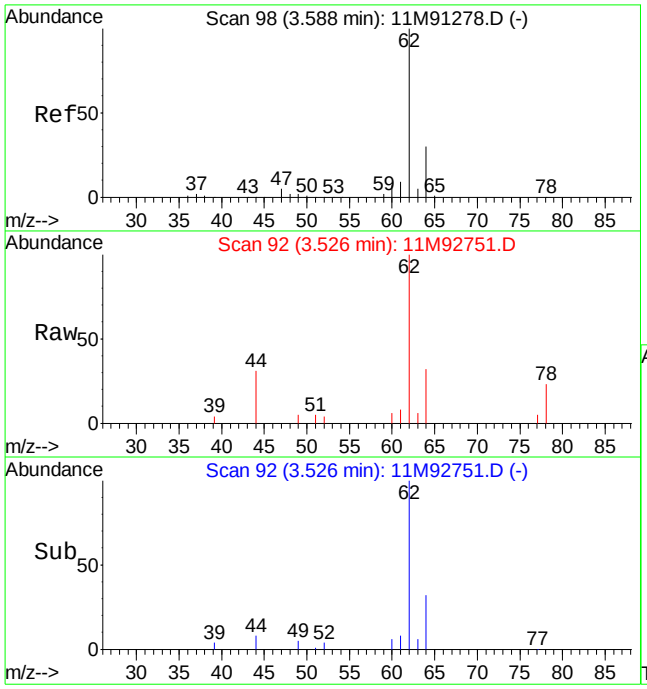

#4
Vinyl Chloride
Concen: 2.55 ug/L
RT: 3.53 min Scan# 92
Delta R.T. 0.00 min
Lab File: 11M92751.D
Acq: 10 Jun 2013 21:22

Tgt Ion: 62 Resp: 17133

Ion	Ratio	Lower	Upper
62	100		
64	33.8	19.9	46.5

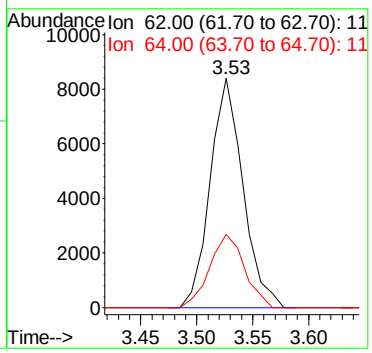

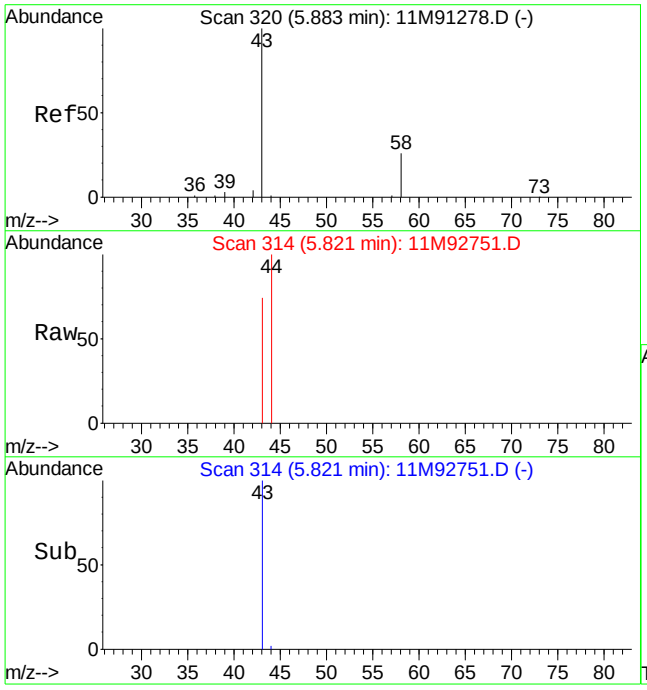

#13
Acetone
Concen: 0.31 ug/L
RT: 5.82 min Scan# 314
Delta R.T. 0.01 min
Lab File: 11M92751.D
Acq: 10 Jun 2013 21:22

Tgt Ion: 43 Resp: 413

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.6	41.2#

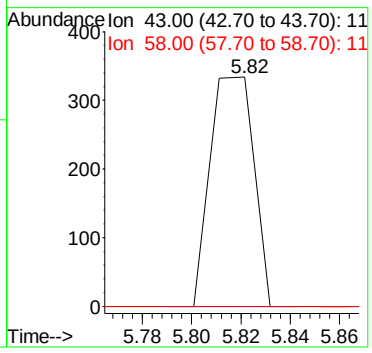

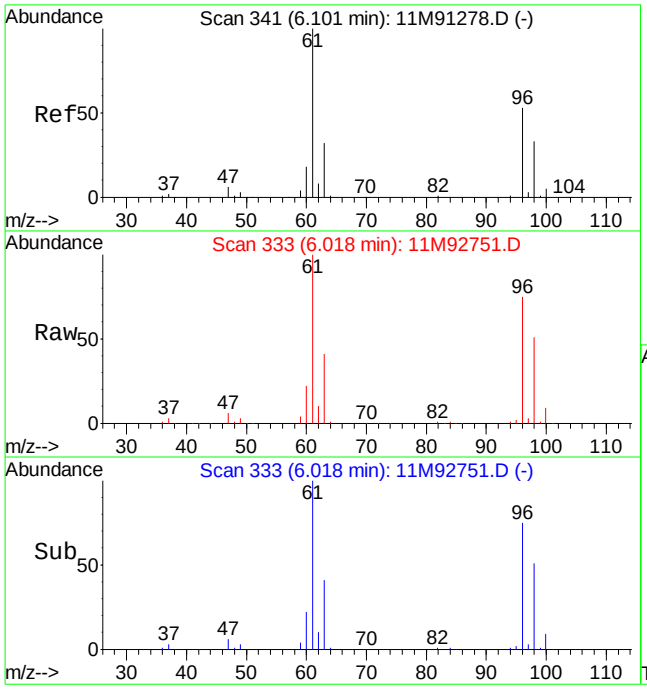

#14
1,1-Dichloroethene
Concen: 564.91 ug/L
RT: 6.02 min Scan# 333
Delta R.T. -0.01 min
Lab File: 11M92751.D
Acq: 10 Jun 2013 21:22

Tgt Ion: 61 Resp: 4676202

Ion	Ratio	Lower	Upper
61	100		
96	71.8	37.9	88.5

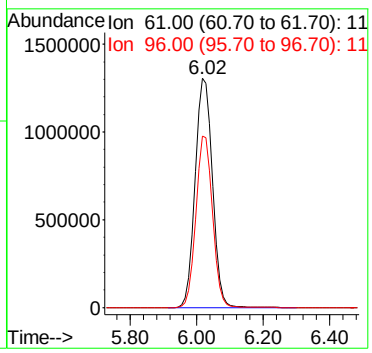

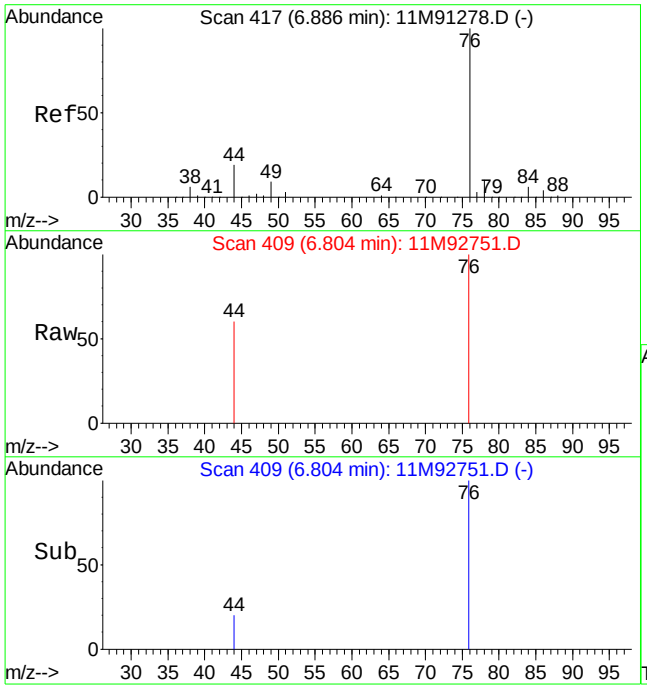

#20
Carbon Disulfide
Concen: 0.14 ug/L
RT: 6.80 min Scan# 409
Delta R.T. -0.01 min
Lab File: 11M92751.D
Acq: 10 Jun 2013 21:22

Tgt Ion: 76 Resp: 2574

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.3	12.5#

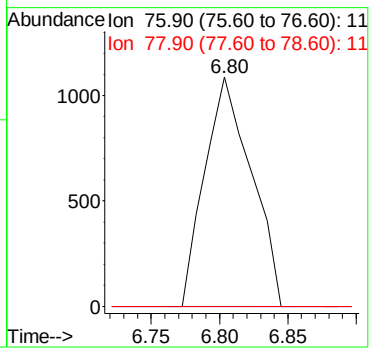

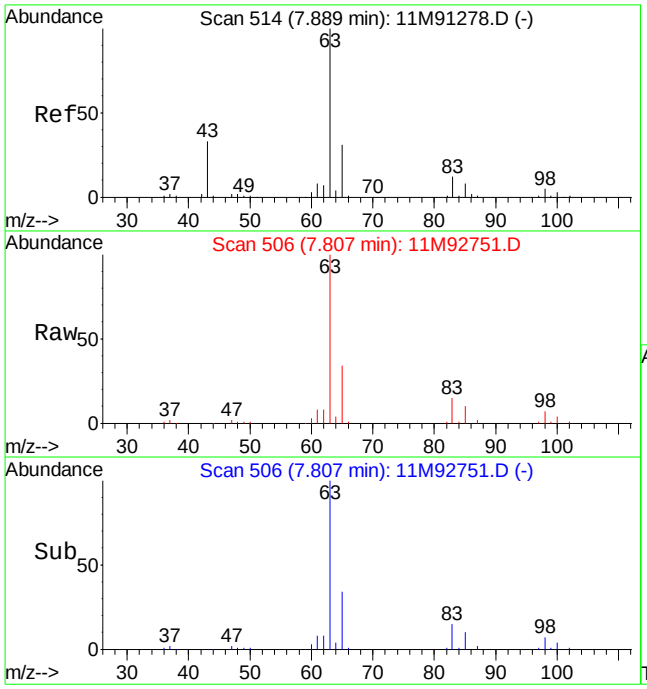

#27
1,1-Dichloroethane
Concen: 35.52 ug/L
RT: 7.81 min Scan# 506
Delta R.T. -0.01 min
Lab File: 11M92751.D
Acq: 10 Jun 2013 21:22

Tgt Ion: 63 Resp: 348981

Ion	Ratio	Lower	Upper
63	100		
65	32.8	19.1	44.5
83	14.5	8.6	20.2

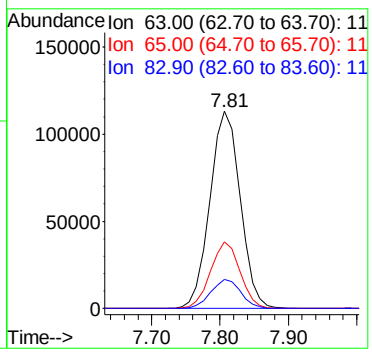

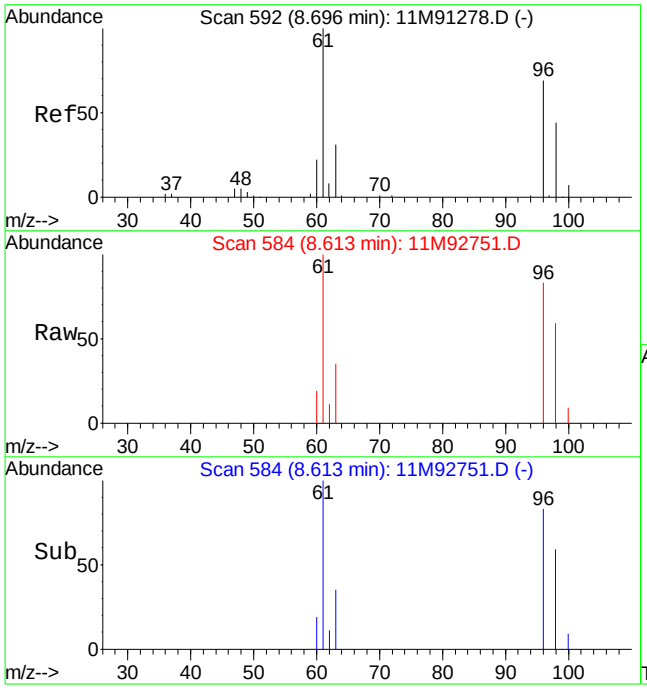

#32
cis-1,2-Dichloroethene
Concen: 1.68 ug/L
RT: 8.61 min Scan# 584
Delta R.T. -0.01 min
Lab File: 11M92751.D
Acq: 10 Jun 2013 21:22

Tgt Ion: 96 Resp: 11046

Ion	Ratio	Lower	Upper
96	100		
61	119.9	81.5	190.1

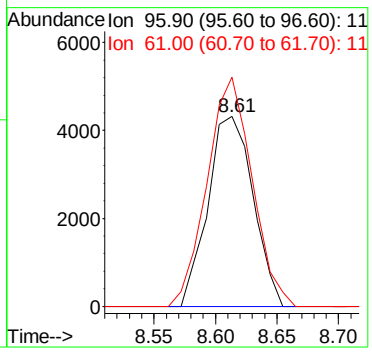

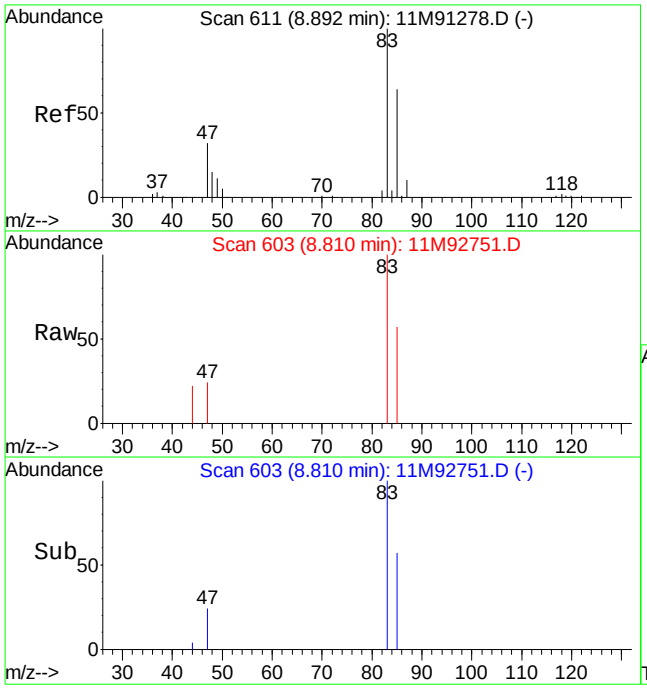

#33
Chloroform
Concen: 0.46 ug/L
RT: 8.81 min Scan# 603
Delta R.T. -0.01 min
Lab File: 11M92751.D
Acq: 10 Jun 2013 21:22

Tgt Ion: 83 Resp: 4954

Ion	Ratio	Lower	Upper
83	100		
85	59.5	40.7	94.9

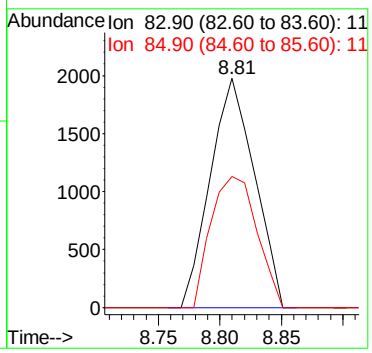

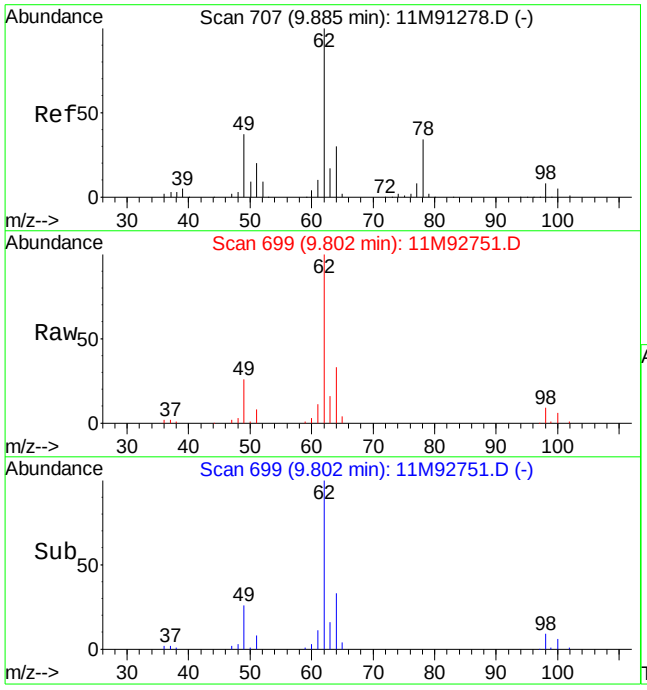

#45
1,2-Dichloroethane
Concen: 23.05 ug/L
RT: 9.80 min Scan# 699
Delta R.T. -0.01 min
Lab File: 11M92751.D
Acq: 10 Jun 2013 21:22

Tgt Ion: 62 Resp: 169014

Ion	Ratio	Lower	Upper
62	100		
64	32.3	20.0	46.6
49	25.9	20.3	47.3

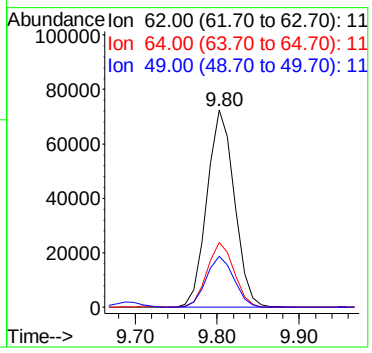

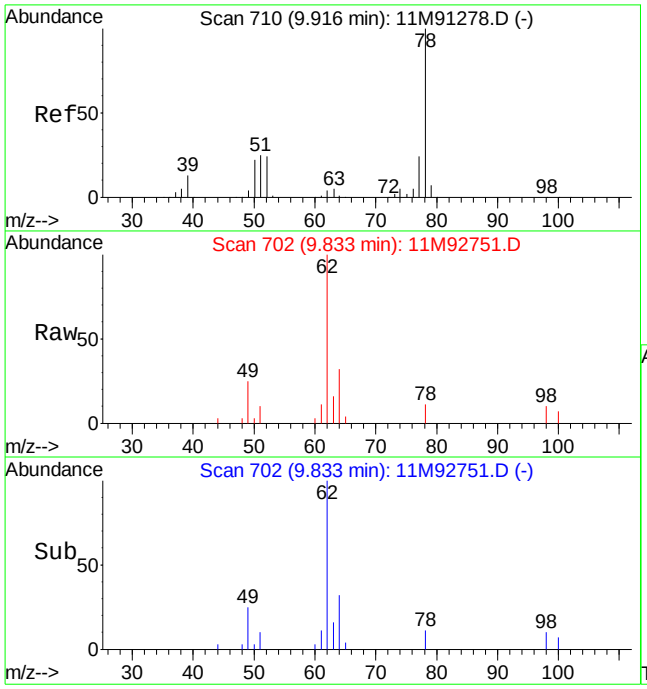

#46
Benzene
Concen: 0.16 ug/L
RT: 9.83 min Scan# 702
Delta R.T. -0.02 min
Lab File: 11M92751.D
Acq: 10 Jun 2013 21:22

Tgt Ion: 78 Resp: 3724

Ion	Ratio	Lower	Upper
78	100		
77	5.2	14.5	33.7#

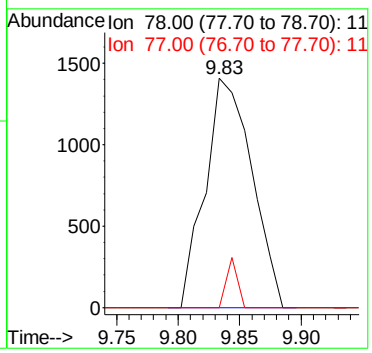

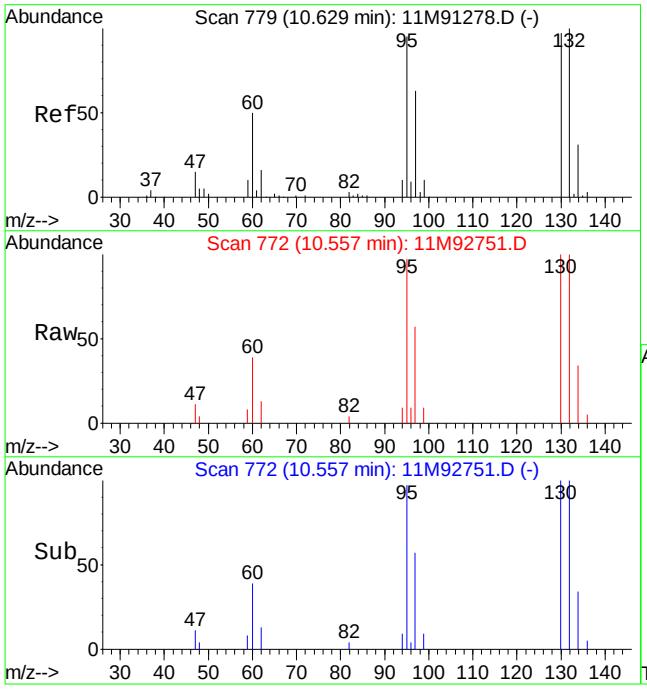

#47
Trichloroethene
Concen: 3.11 ug/L
RT: 10.56 min Scan# 772
Delta R.T. -0.01 min
Lab File: 11M92751.D
Acq: 10 Jun 2013 21:22

Tgt Ion:130 Resp: 18770

Ion	Ratio	Lower	Upper
130	100		
132	95.4	58.1	135.7
95	97.9	53.2	124.0

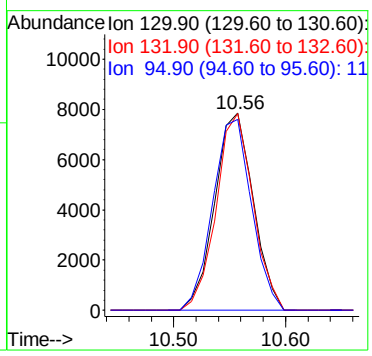

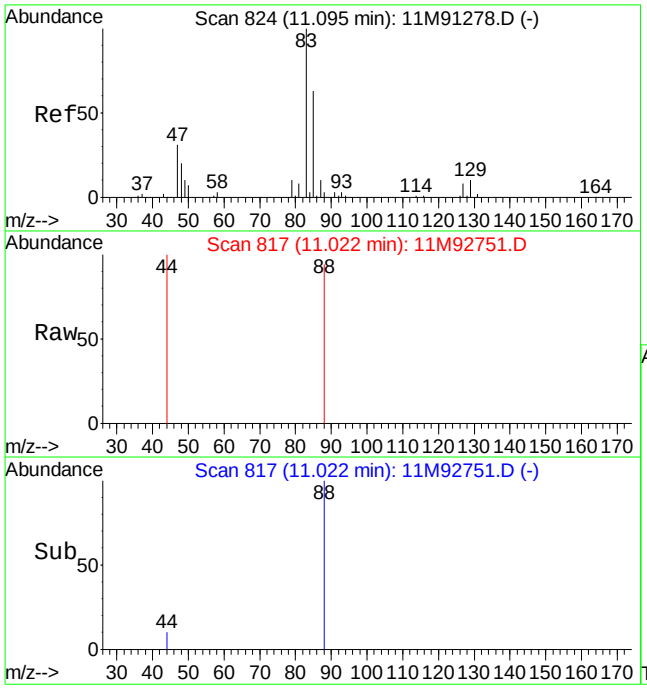

#50
1,4-Dioxane
Concen: 9.47 ug/L
RT: 11.02 min Scan# 817
Delta R.T. -0.02 min
Lab File: 11M92751.D
Acq: 10 Jun 2013 21:22

Tgt Ion: 88 Resp: 443

Ion	Ratio	Lower	Upper
88	100		
58	0.0	33.2	77.6#

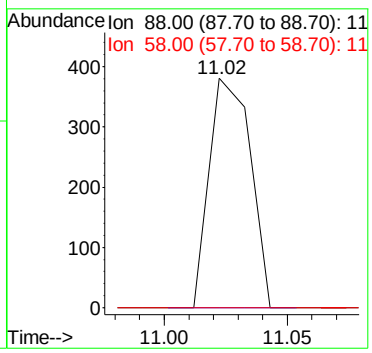

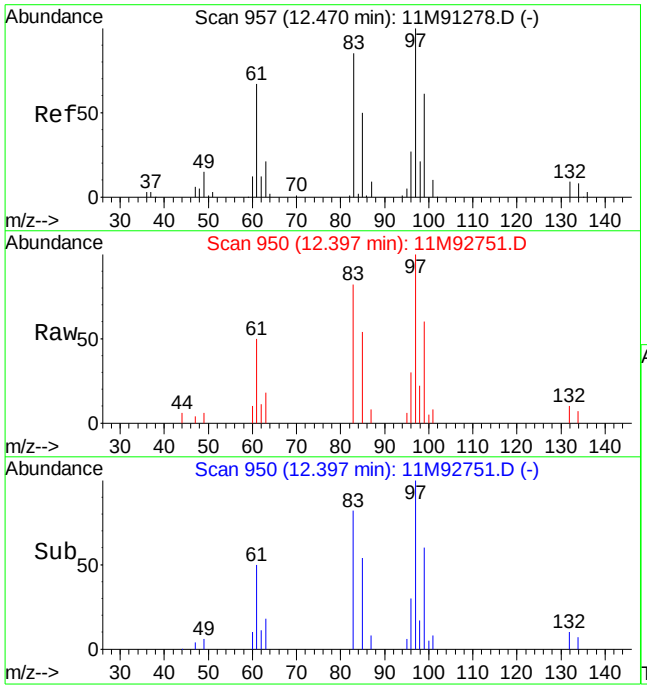

#63
1,1,2-Trichloroethane
Concen: 3.58 ug/L
RT: 12.40 min Scan# 950
Delta R.T. -0.01 min
Lab File: 11M92751.D
Acq: 10 Jun 2013 21:22

Tgt Ion: 97 Resp: 15566

Ion	Ratio	Lower	Upper
97	100		
83	81.6	49.7	116.1

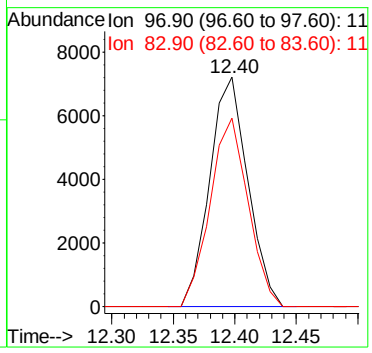

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061113\11M92765.D Vial: 7
Acq On : 11 Jun 2013 14:49 Operator: FJB
Sample : L13060134-04 10X B 826-LOW D1 Inst : hpms11
Misc : 1,10 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 12 08:48:23 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	560277	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.70	117	378263	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.49	152	209355	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.09	111	151837	23.0310 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.12%		
43) 1,2-Dichloroethane-d4	9.69	65	140492	20.8723 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.48%		
58) Toluene-d8	11.93	98	578766	26.6955 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.80%		
80) p-Bromofluorobenzene	15.09	95	222390	26.8078 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.24%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.52	62	1700	0.2329 ug/L	91
6) Bromomethane	4.36	94	1094	0.2610 ug/L	87
9) Diethyl ether	5.51	59	1511	0.3965 ug/L #	1
13) Acetone	5.80	43	1020	0.6952 ug/L #	45
14) 1,1-Dichloroethene	6.02	61	447869	49.8031 ug/L	96
15) Tert-Butyl Alcohol	6.14	59	16297	39.1745 ug/L	92
27) 1,1-Dichloroethane	7.81	63	32637	3.0577 ug/L	99
29) 2-Butanone	8.35	43	408	0.2698 ug/L #	49
30) Propionitrile	8.45	54	1838	3.6203 ug/L #	60
36) Tetrahydrofuran	9.06	42	2243	2.3300 ug/L	93
42) Tert-Amyl-Methyl ether	9.63	73	2966	0.1791 ug/L #	58
45) 1,2-Dichloroethane	9.80	62	15876	1.9933 ug/L	92
47) Trichloroethene	10.56	130	1773	0.2706 ug/L	90
50) 1,4-Dioxane	11.03	88	3683	72.4785 ug/L	90
63) 1,1,2-Trichloroethane	12.40	97	1370	0.2906 ug/L	88
64) 2-Hexanone	12.35	43	276	0.1345 ug/L #	20
98) 1,2,4-Trichlorobenzene	18.96	180	1680	0.1930 ug/L #	66
99) Hexachlorobutadiene	19.12	225	882	0.2677 ug/L #	60
100) Naphthalene	19.30	128	7720	0.4592 ug/L #	86
101) 1,2,3-Trichlorobenzene	19.59	180	2519	0.3134 ug/L	81

(#) = qualifier out of range (m) = manual integration
11M92765.D 8260BWT.M Wed Jun 12 08:48:24 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061113\11M92765.D Vial: 7
Acq On : 11 Jun 2013 14:49 Operator: FJB
Sample : L13060134-04 10X B 826-LOW D1 Inst : hpms11
Misc : 1,10 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 12 8:48 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration

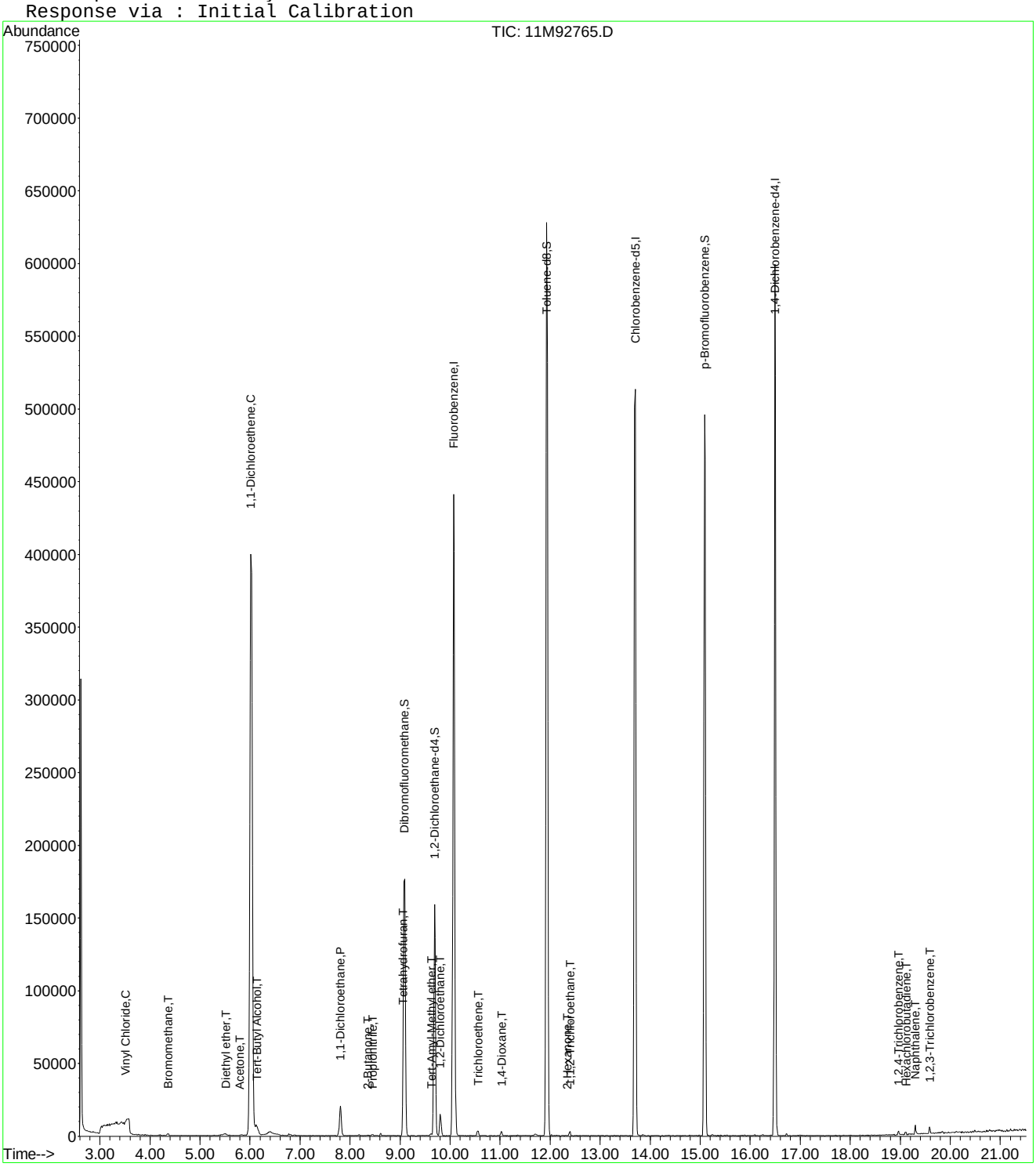

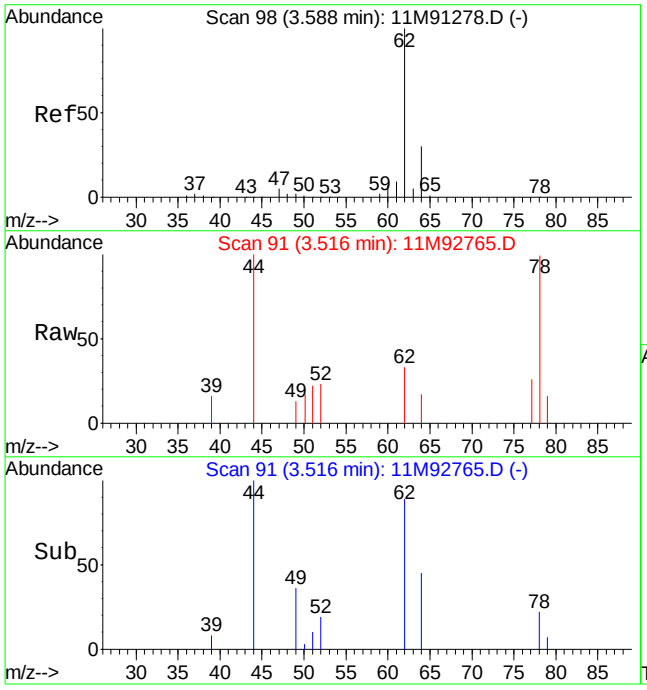

#4
Vinyl Chloride
Concen: 0.23 ug/L
RT: 3.52 min Scan# 91
Delta R.T. -0.01 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion: 62 Resp: 1700

Ion	Ratio	Lower	Upper
62	100		
64	28.4	19.9	46.5

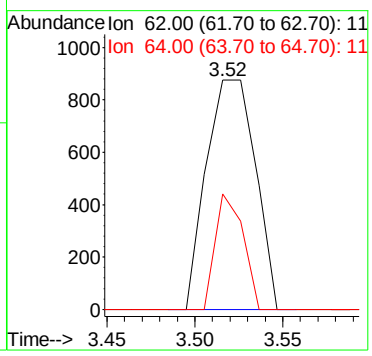

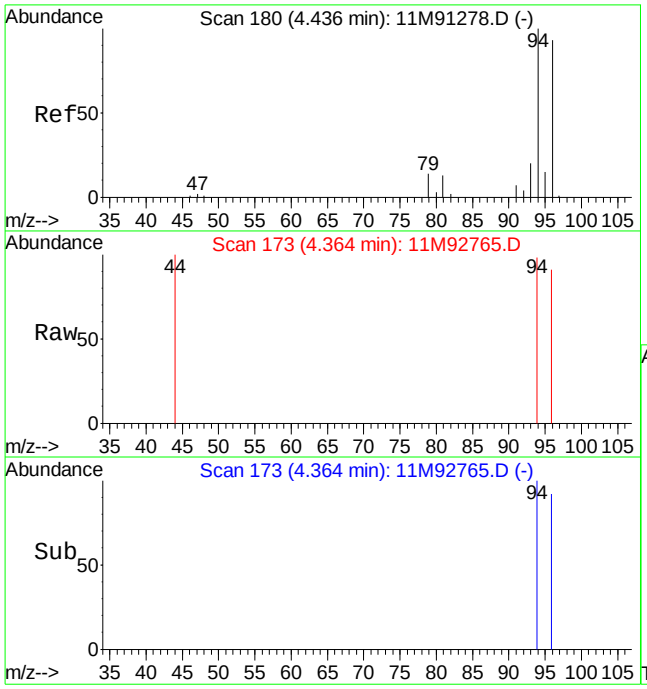

#6
Bromomethane
Concen: 0.26 ug/L
RT: 4.36 min Scan# 173
Delta R.T. 0.00 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion: 94 Resp: 1094

Ion	Ratio	Lower	Upper
94	100		
96	107.0	56.7	132.3

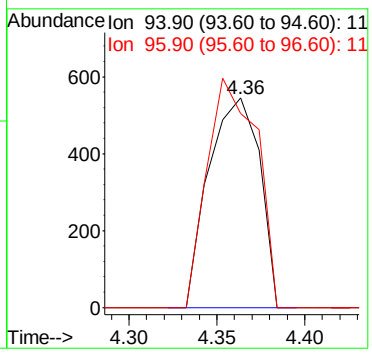

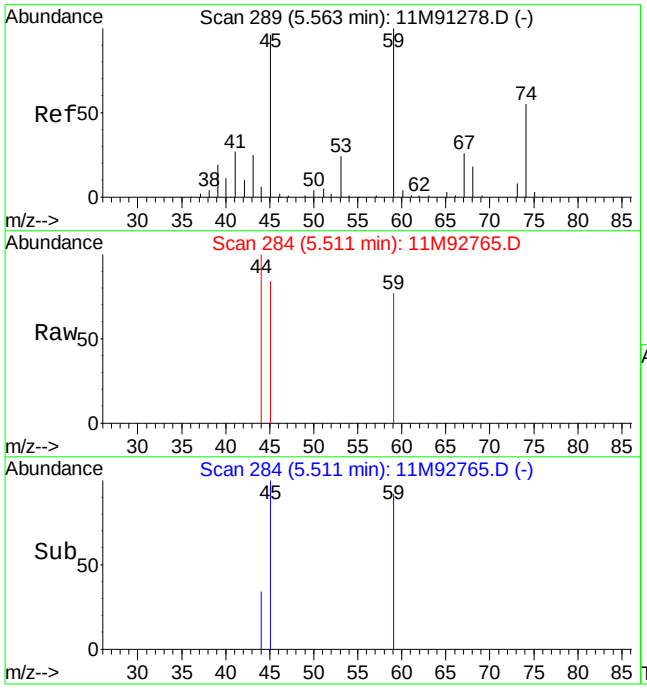

#9
Diethyl ether
Concen: 0.40 ug/L
RT: 5.51 min Scan# 284
Delta R.T. 0.01 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion: 59 Resp: 1511

Ion	Ratio	Lower	Upper
59	100		
45	185.4	42.7	99.5#
74	0.0	47.8	111.4#

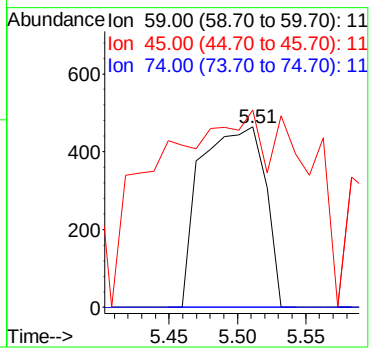

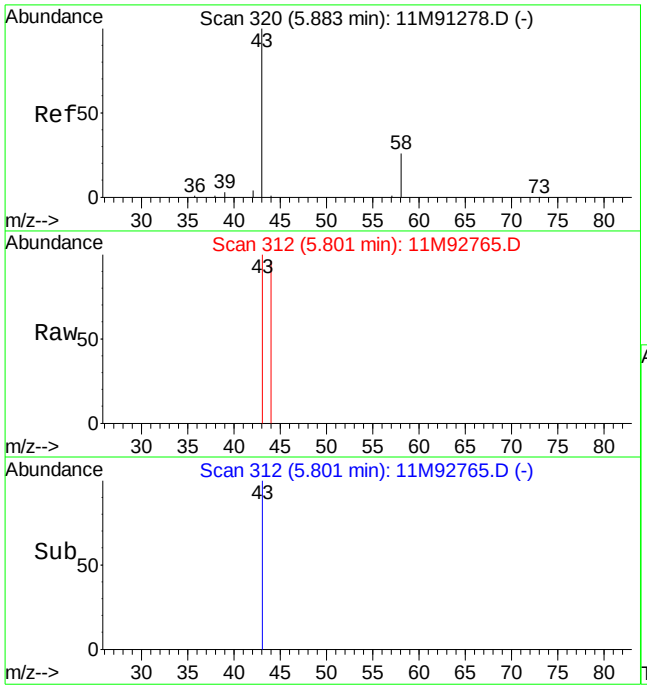

#13
Acetone
Concen: 0.70 ug/L
RT: 5.80 min Scan# 312
Delta R.T. -0.01 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion: 43 Resp: 1020

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.6	41.2#

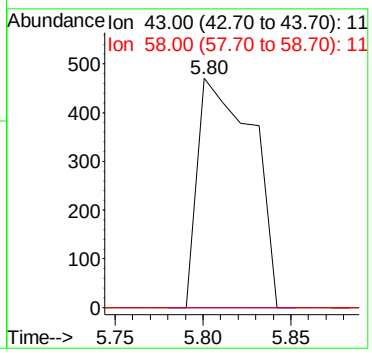

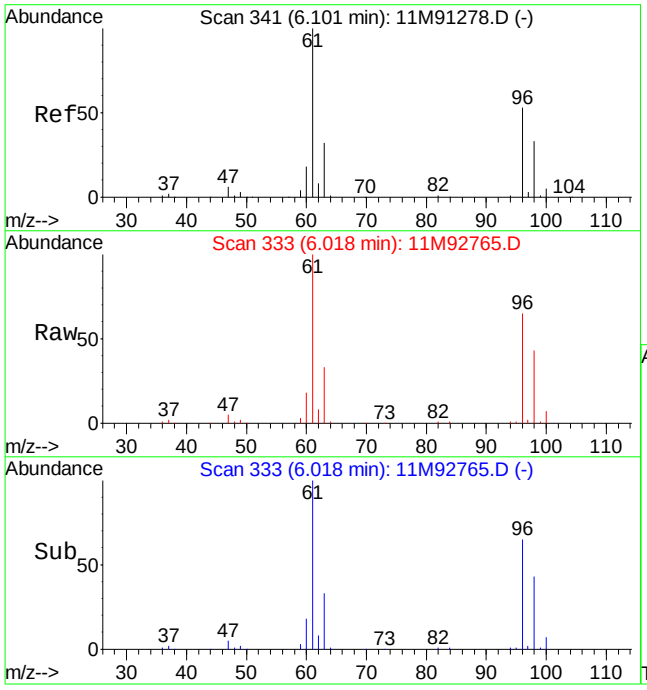

#14
1,1-Dichloroethene
Concen: 49.80 ug/L
RT: 6.02 min Scan# 333
Delta R.T. -0.01 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion: 61 Resp: 447869

Ion	Ratio	Lower	Upper
61	100		
96	66.2	37.9	88.5

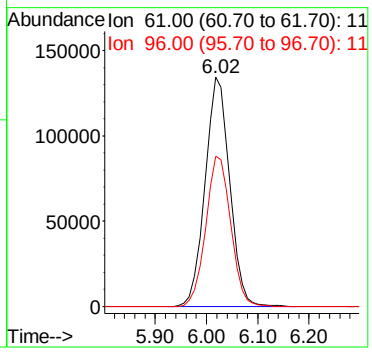

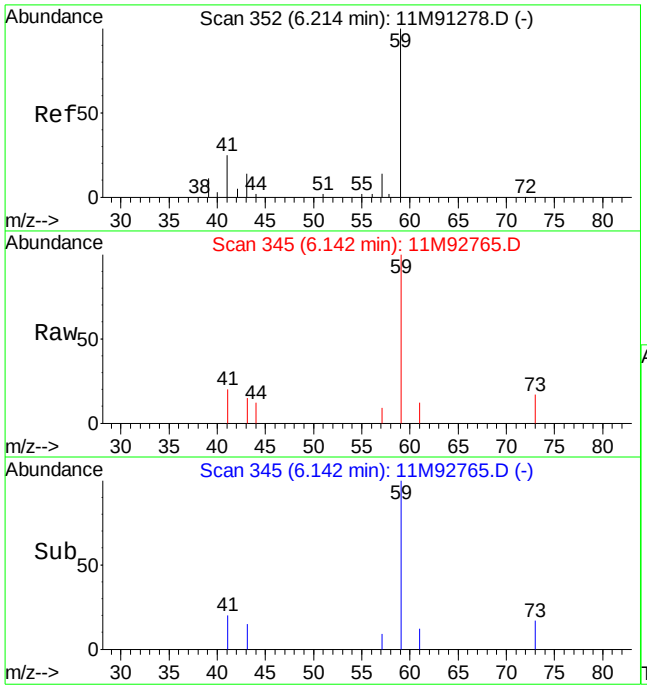

#15
Tert-Butyl Alcohol
Concen: 39.17 ug/L
RT: 6.14 min Scan# 345
Delta R.T. 0.00 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion: 59 Resp: 16297

Ion	Ratio	Lower	Upper
59	100		
41	18.1	13.6	31.6
57	7.9	6.2	14.4

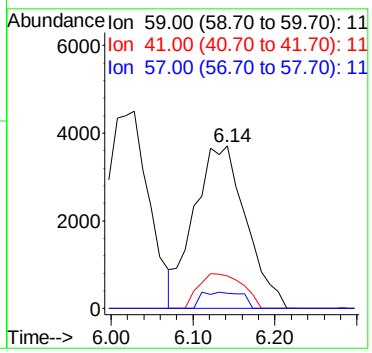

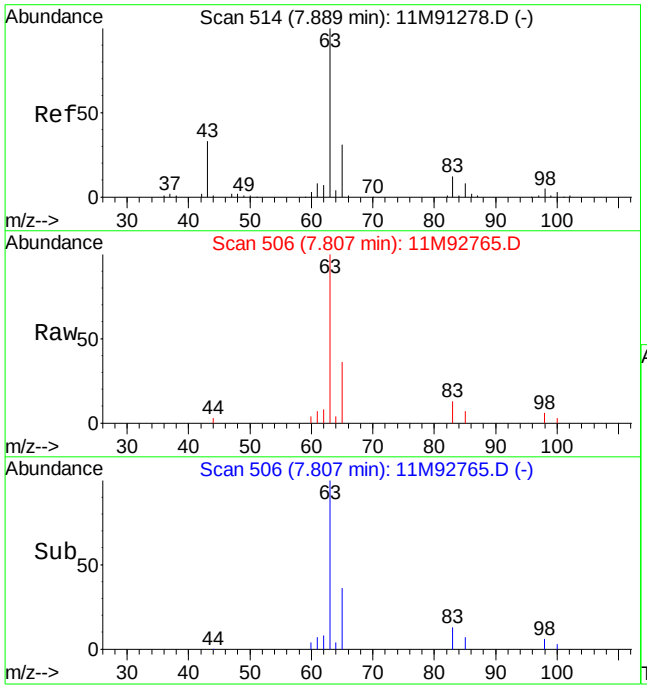

#27
1,1-Dichloroethane
Concen: 3.06 ug/L
RT: 7.81 min Scan# 506
Delta R.T. -0.01 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion: 63 Resp: 32637

Ion	Ratio	Lower	Upper
63	100		
65	31.6	19.1	44.5
83	13.0	8.6	20.2

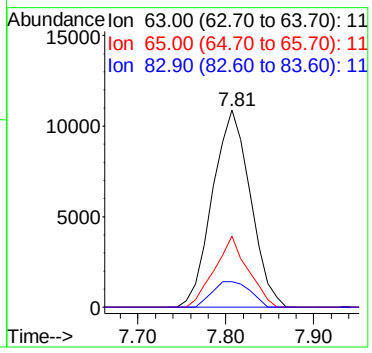

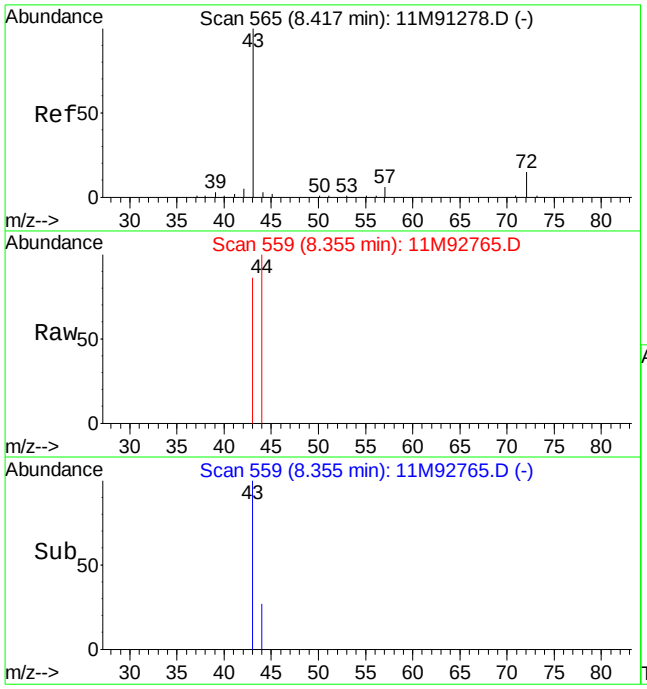

#29
2-Butanone
Concen: 0.27 ug/L
RT: 8.35 min Scan# 559
Delta R.T. 0.00 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion: 43 Resp: 408

Ion	Ratio	Lower	Upper
43	100		
72	0.0	15.8	36.8#

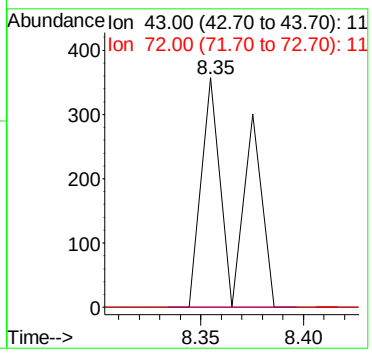

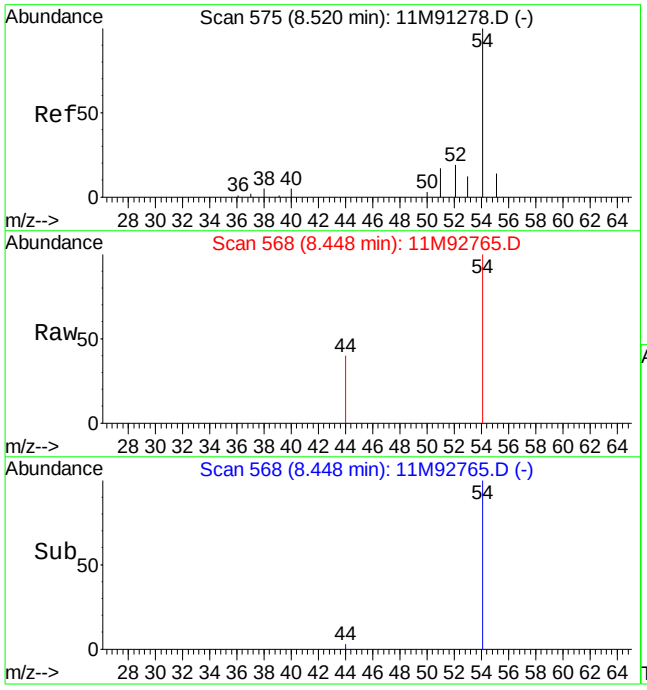

#30
Propionitrile
Concen: 3.62 ug/L
RT: 8.45 min Scan# 568
Delta R.T. 0.00 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion: 54 Resp: 1838

Ion	Ratio	Lower	Upper
54	100		
55	0.0	10.4	24.2#

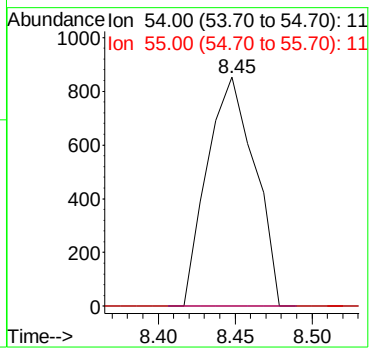

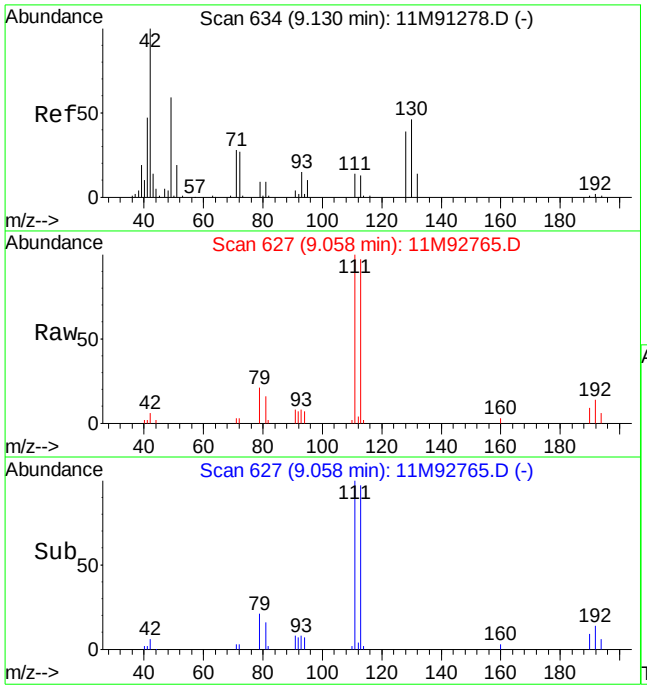

#36
Tetrahydrofuran
Concen: 2.33 ug/L
RT: 9.06 min Scan# 627
Delta R.T. -0.01 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion: 42 Resp: 2243

Ion	Ratio	Lower	Upper
42	100		
71	47.7	28.4	66.2
72	40.6	30.2	70.4

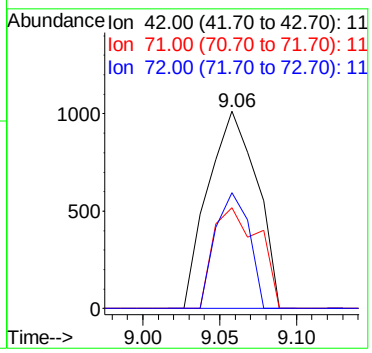

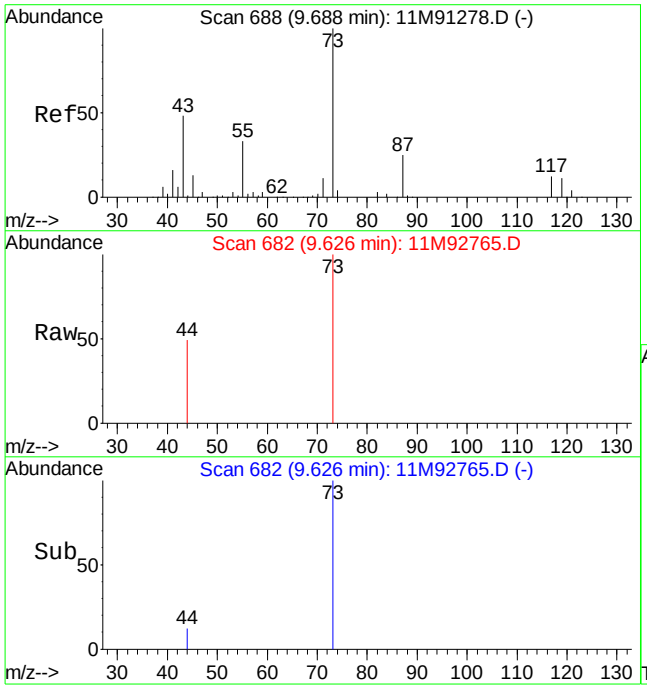

#42
Tert-Amyl-Methyl ether
Concen: 0.18 ug/L
RT: 9.63 min Scan# 682
Delta R.T. 0.00 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion: 73 Resp: 2966

Ion	Ratio	Lower	Upper
73	100		
55	0.0	12.7	29.7#
57	0.0	1.1	2.7#

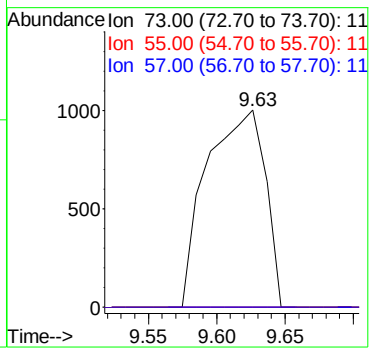

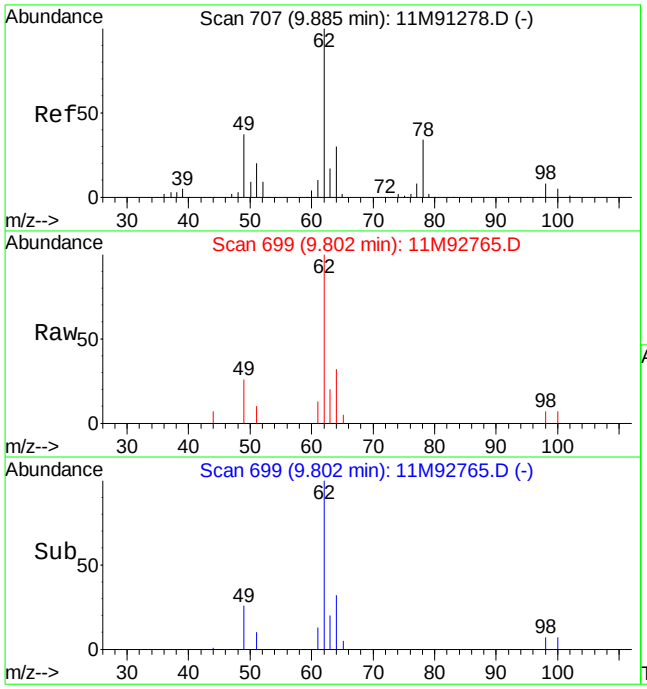

#45
1,2-Dichloroethane
Concen: 1.99 ug/L
RT: 9.80 min Scan# 699
Delta R.T. -0.01 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion: 62 Resp: 15876

Ion	Ratio	Lower	Upper
62	100		
64	32.4	20.0	46.6
49	25.1	20.3	47.3

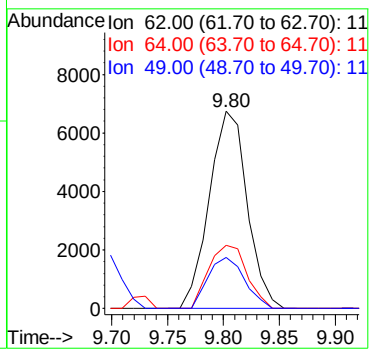

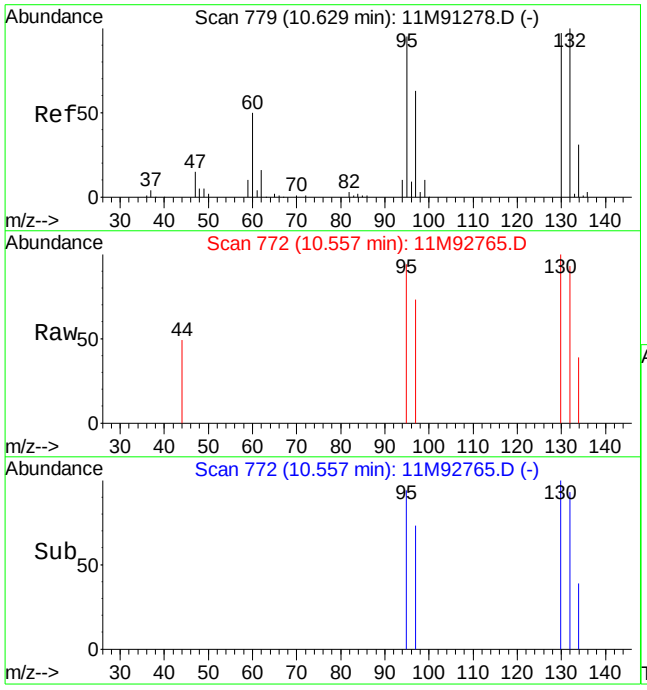

#47
Trichloroethene
Concen: 0.27 ug/L
RT: 10.56 min Scan# 772
Delta R.T. -0.01 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion:130 Resp: 1773

Ion	Ratio	Lower	Upper
130	100		
132	80.9	58.1	135.7
95	92.2	53.2	124.0

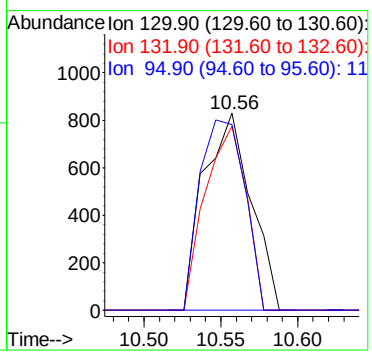

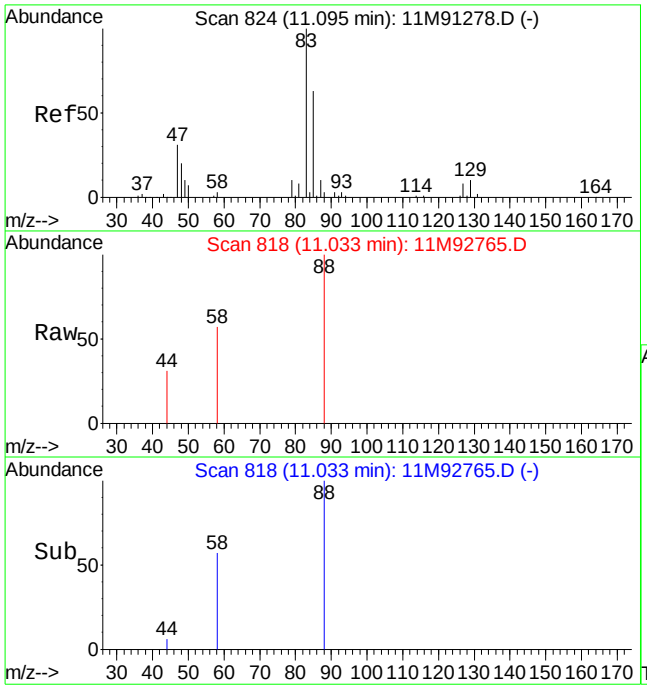

#50
1,4-Dioxane
Concen: 72.48 ug/L
RT: 11.03 min Scan# 818
Delta R.T. -0.01 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion: 88 Resp: 3683

Ion	Ratio	Lower	Upper
88	100		
58	48.4	33.2	77.6

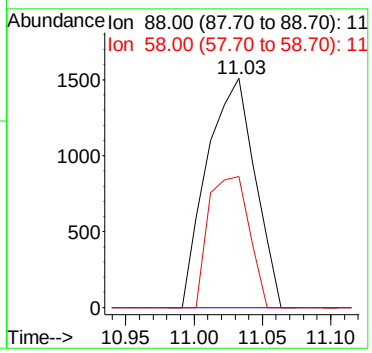

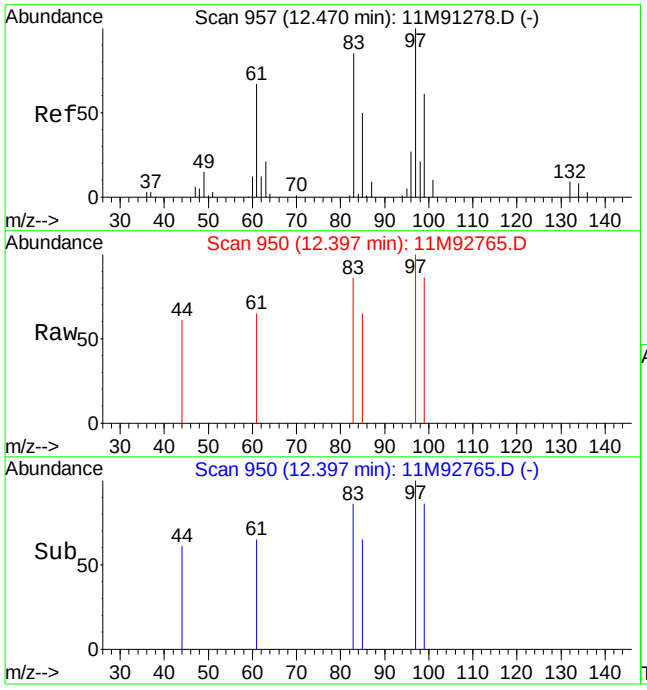

#63
1,1,2-Trichloroethane
Concen: 0.29 ug/L
RT: 12.40 min Scan# 950
Delta R.T. -0.01 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion: 97 Resp: 1370

Ion	Ratio	Lower	Upper
97	100		
83	93.6	49.7	116.1

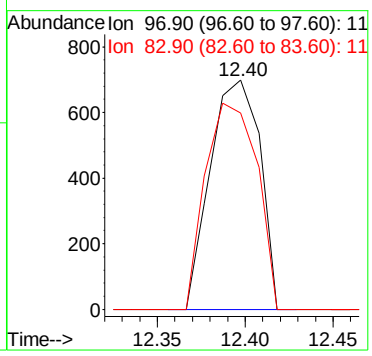

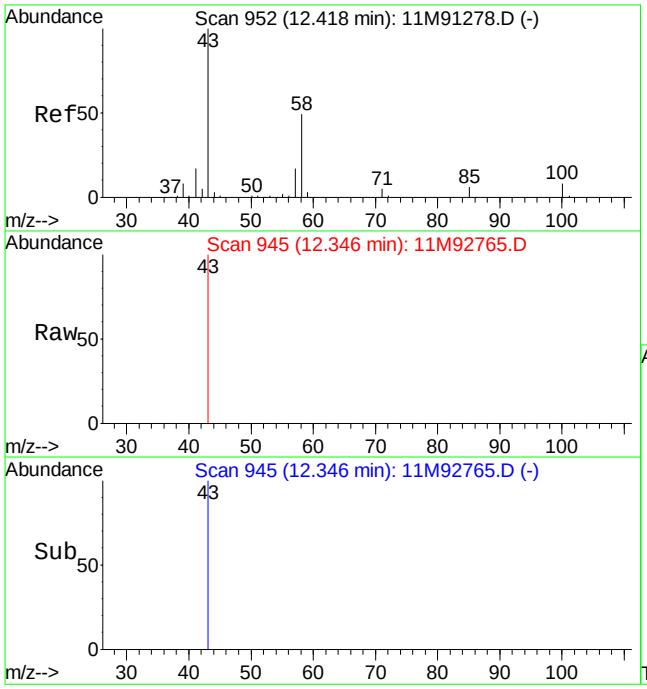

#64
2-Hexanone
Concen: 0.13 ug/L
RT: 12.35 min Scan# 945
Delta R.T. -0.01 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion: 43 Resp: 276

Ion	Ratio	Lower	Upper
43	100		
58	0.0	32.1	74.9#
85	207.6	70.3	164.1#

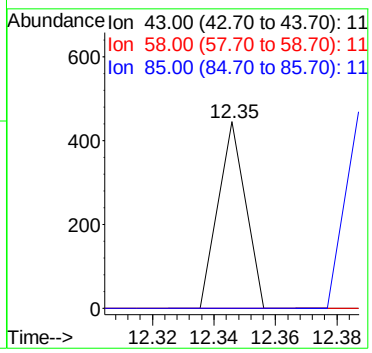

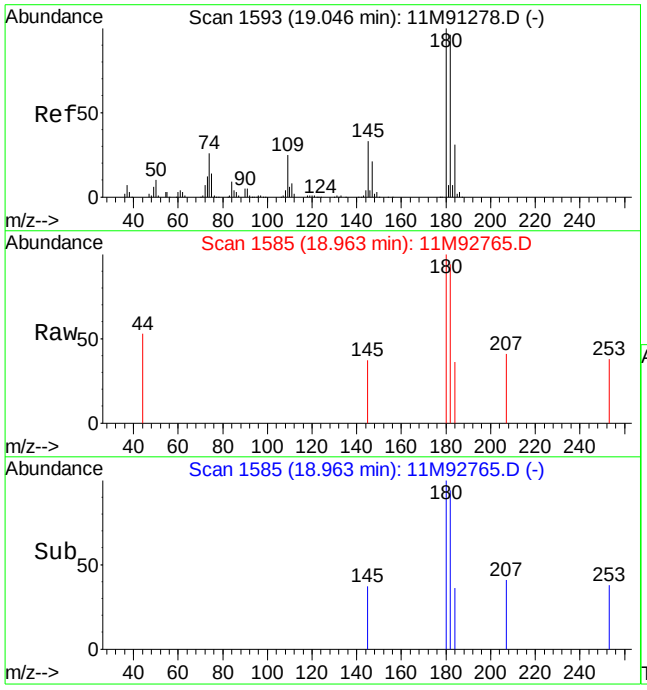

#98
1,2,4-Trichlorobenzene
Concen: 0.19 ug/L
RT: 18.96 min Scan# 1585
Delta R.T. -0.01 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion:180 Resp: 1680

Ion	Ratio	Lower	Upper
180	100		
145	12.0	18.4	42.8#

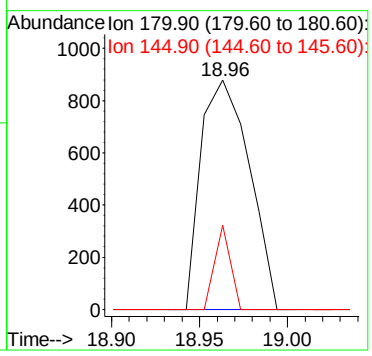

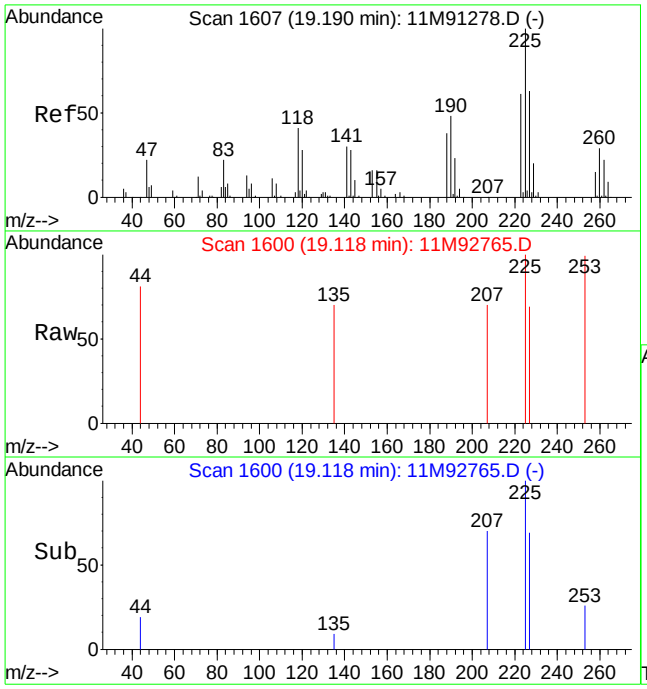

#99
Hexachlorobutadiene
Concen: 0.27 ug/L
RT: 19.12 min Scan# 1600
Delta R.T. 0.00 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion:225 Resp: 882

Ion	Ratio	Lower	Upper
225	100		
227	54.5	39.1	91.1
118	0.0	30.9	72.1#

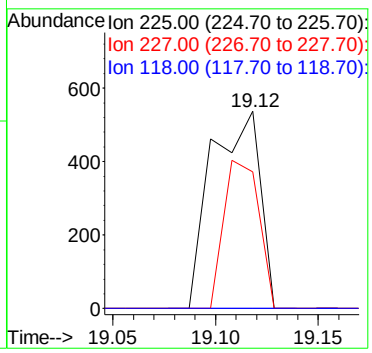

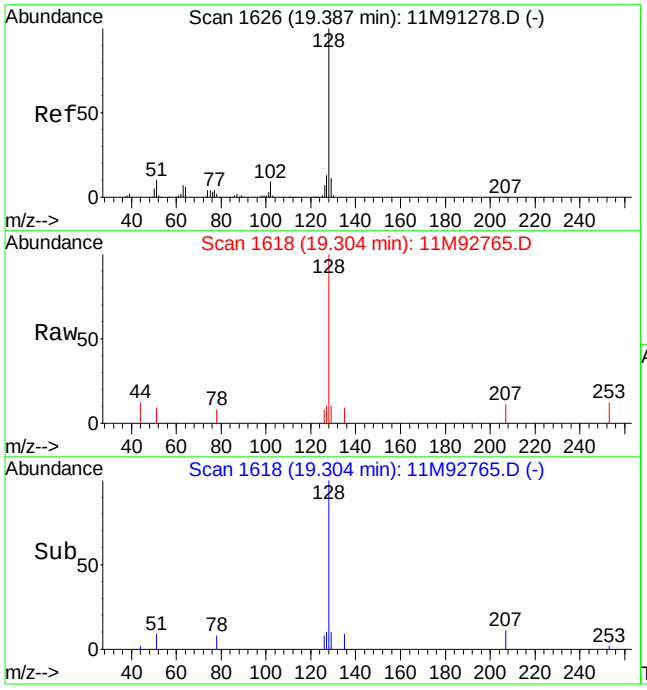

#100
Naphthalene
Concen: 0.46 ug/L
RT: 19.30 min Scan# 1618
Delta R.T. -0.01 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion:128 Resp: 7720

Ion	Ratio	Lower	Upper
128	100		
127	7.3	11.4	14.0#

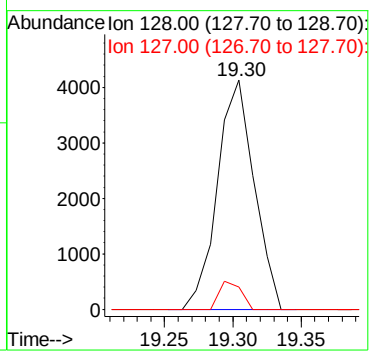

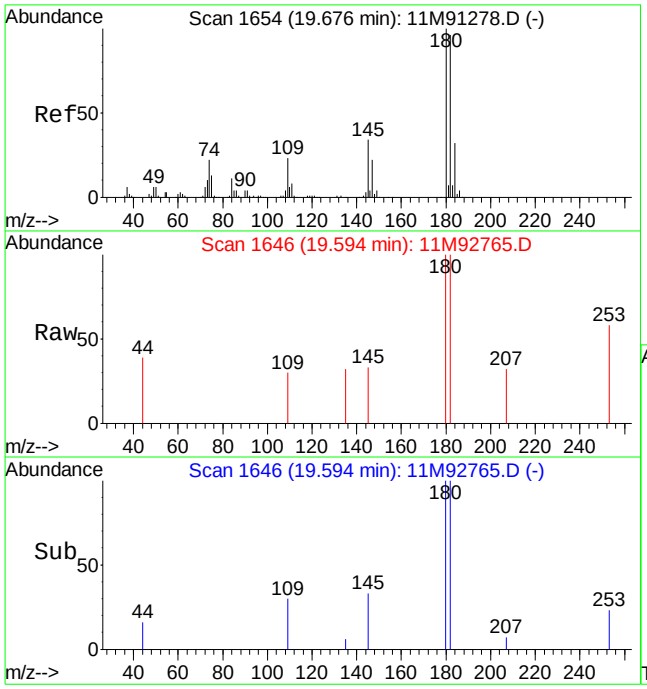

#101
1,2,3-Trichlorobenzene
Concen: 0.31 ug/L
RT: 19.59 min Scan# 1646
Delta R.T. -0.01 min
Lab File: 11M92765.D
Acq: 11 Jun 2013 14:49

Tgt Ion:180 Resp: 2519

Ion	Ratio	Lower	Upper
180	100		
145	21.5	19.3	44.9

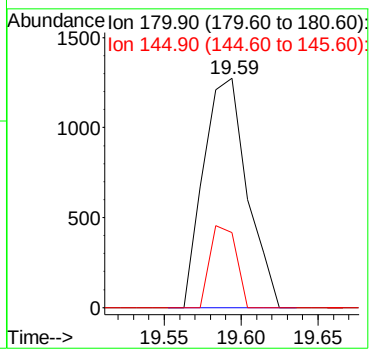

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\11M92752.D Vial: 21
Acq On : 10 Jun 2013 21:54 Operator: FJB
Sample : L13060134-05 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 09:06:13 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	505063	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.70	117	345691	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.50	152	186642	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.09	111	137747	23.1779 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.72%		
43) 1,2-Dichloroethane-d4	9.69	65	128735	21.2164 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 84.88%		
58) Toluene-d8	11.93	98	527591	26.6280 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.52%		
80) p-Bromofluorobenzene	15.10	95	199981	27.0401 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.16%		

Target Compounds					Qvalue
3) Chloromethane	3.34	50	1118	0.1862 ug/L #	1
14) 1,1-Dichloroethene	6.02	61	3542	0.4369 ug/L	92
50) 1,4-Dioxane	11.03	88	702	15.3251 ug/L #	24

(#) = qualifier out of range (m) = manual integration
11M92752.D 8260BWT.M Tue Jun 11 09:06:14 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\11M92752.D Vial: 21
Acq On : 10 Jun 2013 21:54 Operator: FJB
Sample : L13060134-05 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 9:06 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration

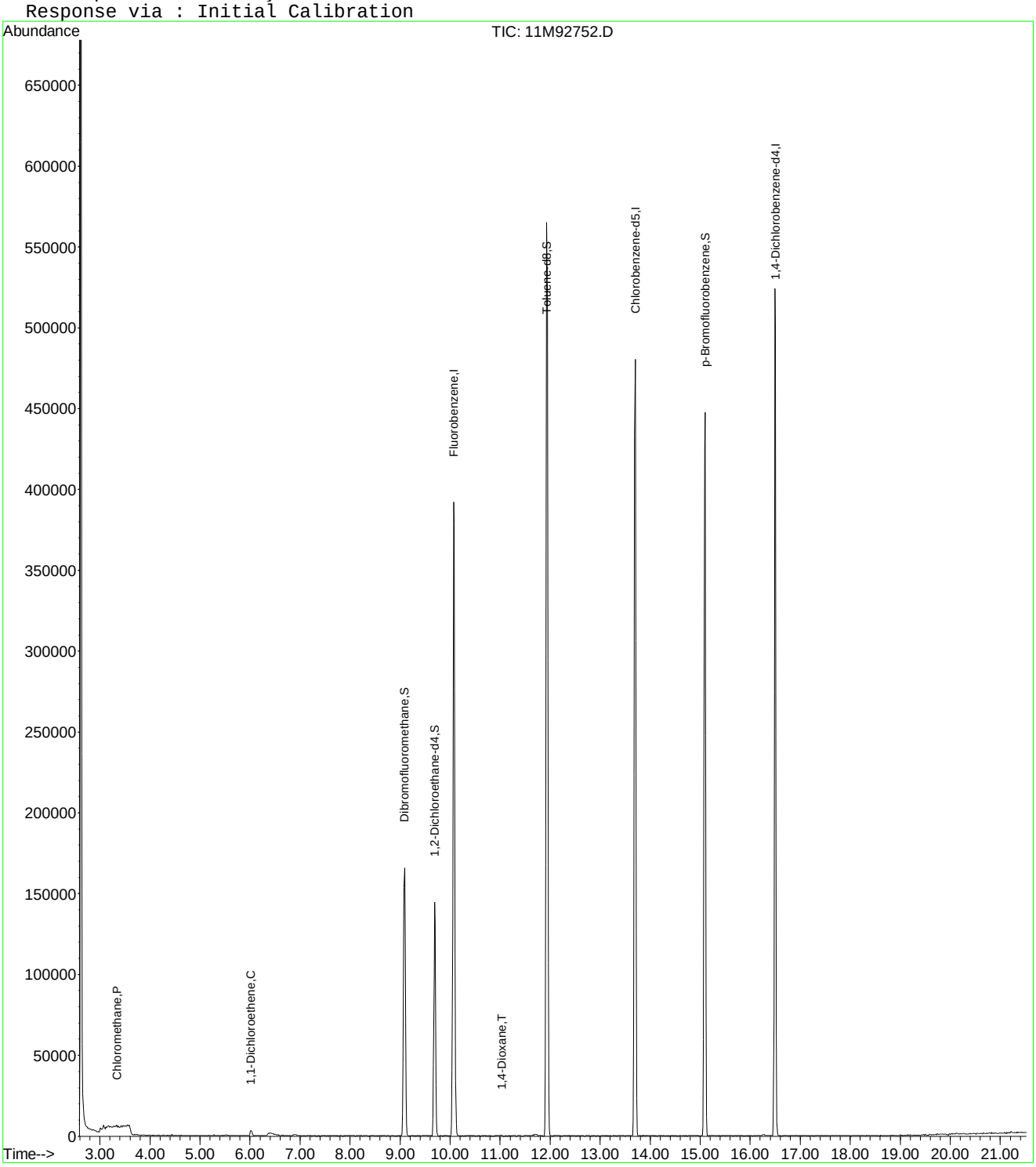

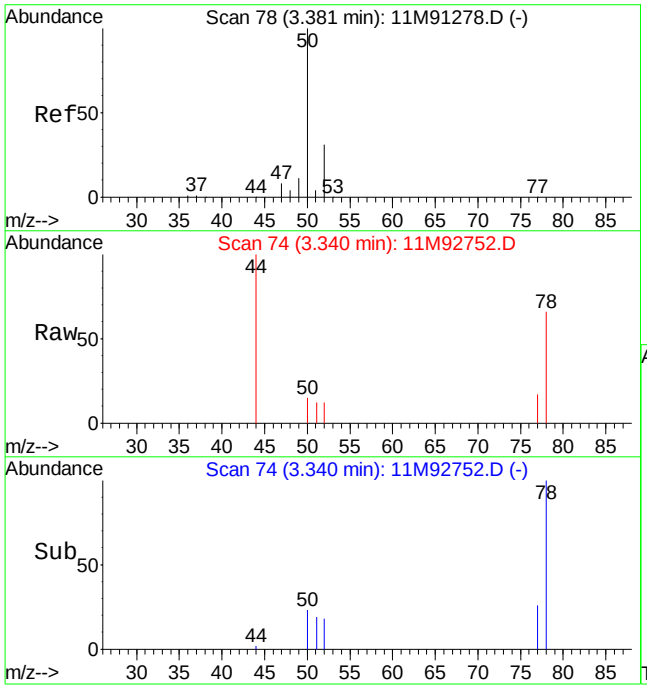

#3
Chloromethane
Concen: 0.19 ug/L
RT: 3.34 min Scan# 74
Delta R.T. 0.01 min
Lab File: 11M92752.D
Acq: 10 Jun 2013 21:54

Tgt Ion: 50 Resp: 1118

Ion	Ratio	Lower	Upper
50	100		
52	99.6	19.4	45.2#

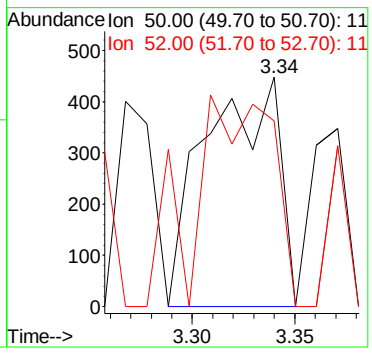

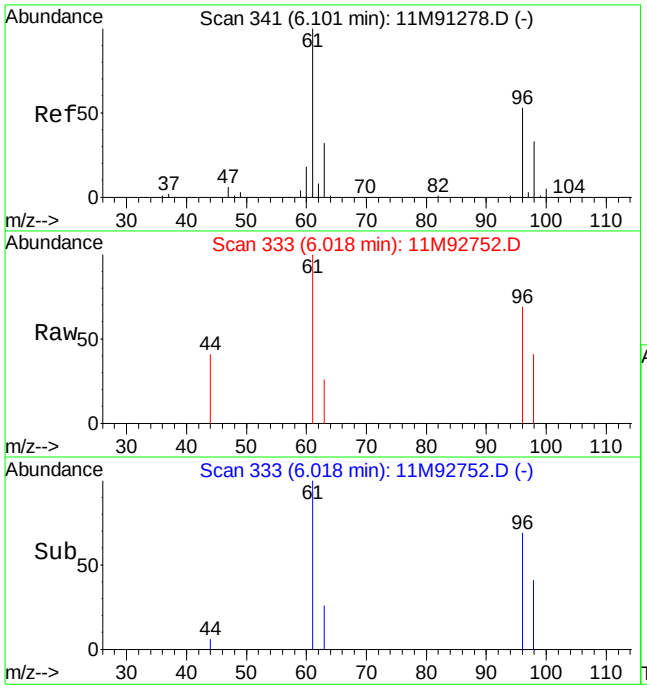

#14
1,1-Dichloroethene
Concen: 0.44 ug/L
RT: 6.02 min Scan# 333
Delta R.T. -0.01 min
Lab File: 11M92752.D
Acq: 10 Jun 2013 21:54

Tgt Ion: 61 Resp: 3542

Ion	Ratio	Lower	Upper
61	100		
96	69.6	37.9	88.5

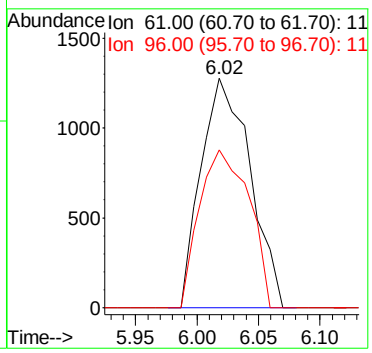

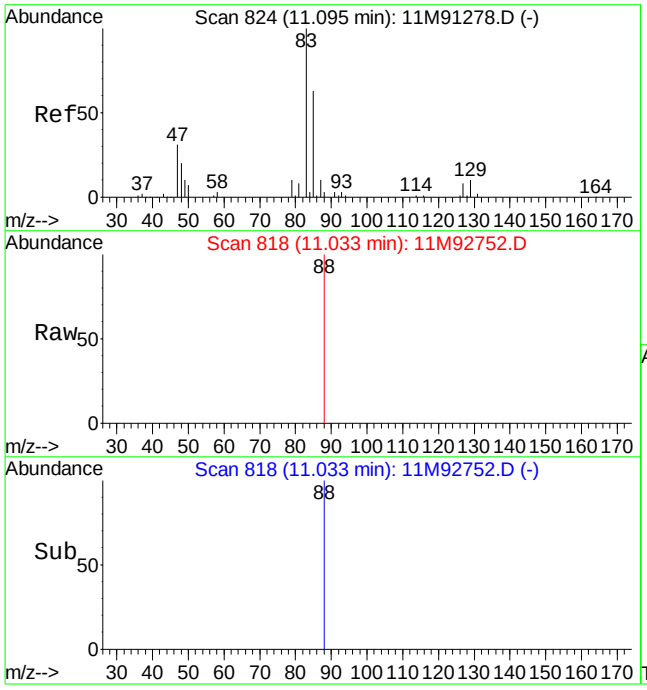

#50
1,4-Dioxane
Concen: 15.33 ug/L
RT: 11.03 min Scan# 818
Delta R.T. -0.01 min
Lab File: 11M92752.D
Acq: 10 Jun 2013 21:54

Tgt Ion: 88 Resp: 702

Ion	Ratio	Lower	Upper
88	100		
58	0.0	33.2	77.6#

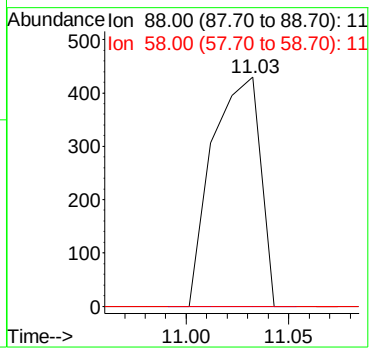

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\10M05685.D Vial: 15
Acq On : 12 Jun 2013 16:46 Operator: TMB
Sample : L13060134-06 B 826-LOW Inst : HPMS10
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:17:42 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.72	96	563198	25.00 ug/L	-0.02
57) Chlorobenzene-d5	13.33	117	430694	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.11	152	231321	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	8.73	111	142192	25.74 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.96%		
43) 1,2-Dichloroethane-d4	9.33	65	142900	26.19 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.76%		
58) Toluene-d8	11.58	98	501358	24.37 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.48%		
80) p-Bromofluorobenzene	14.72	95	189580	24.00 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.00%		

Target Compounds					Qvalue
3) Chloromethane	3.04	50	1227	0.20 ug/L #	68
4) Vinyl Chloride	3.23	62	12410	2.18 ug/L	88
13) Acetone	5.45	43	1409	0.97 ug/L #	42
14) 1,1-Dichloroethene	5.65	96	763774	138.62 ug/L	93
27) 1,1-Dichloroethane	7.45	63	67178	6.37 ug/L	98
32) cis-1,2-Dichloroethene	8.26	96	7346	1.12 ug/L	95
45) 1,2-Dichloroethane	9.45	62	47855	6.68 ug/L	91
47) Trichloroethene	10.19	130	19020	2.96 ug/L	97

(#) = qualifier out of range (m) = manual integration
10M05685.D 8260WT.M Thu Jun 13 08:17:42 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\10M05685.D Vial: 15
Acq On : 12 Jun 2013 16:46 Operator: TMB
Sample : L13060134-06 B 826-LOW Inst : HPMS10
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:17 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Initial Calibration

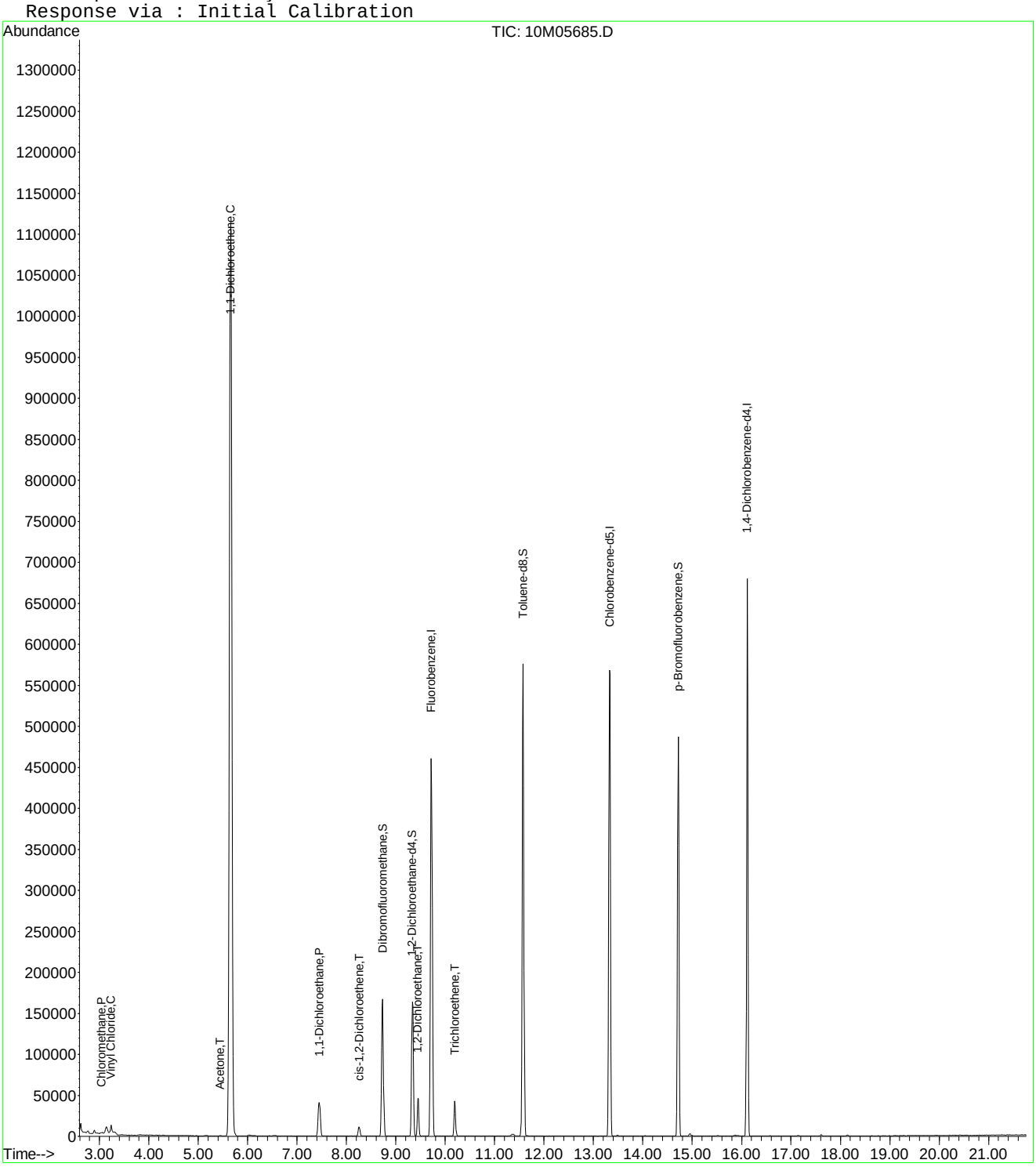

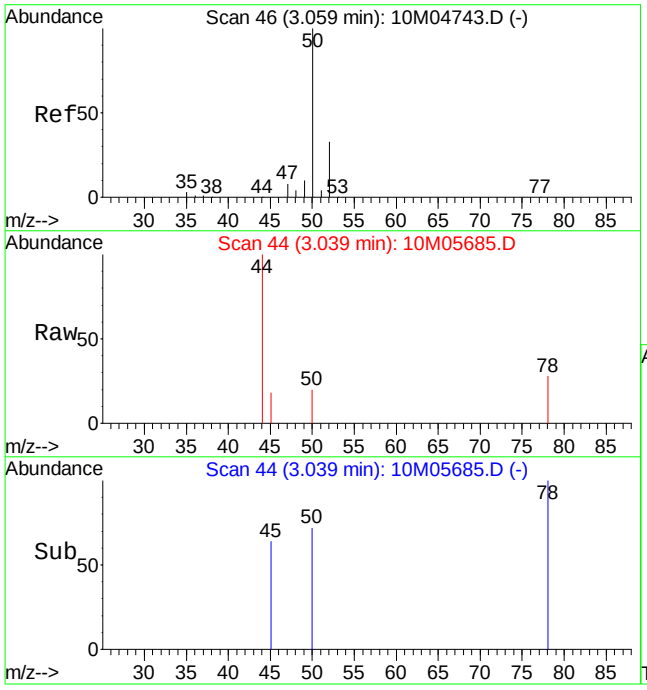

#3
Chloromethane
Concen: 0.20 ug/L
RT: 3.04 min Scan# 44
Delta R.T. -0.02 min
Lab File: 10M05685.D
Acq: 12 Jun 2013 16:46

Tgt Ion: 50 Resp: 1227

Ion	Ratio	Lower	Upper
50	100		
52	15.7	20.3	47.3#

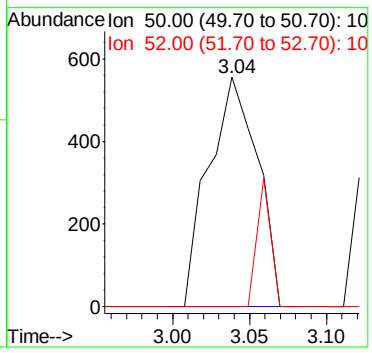

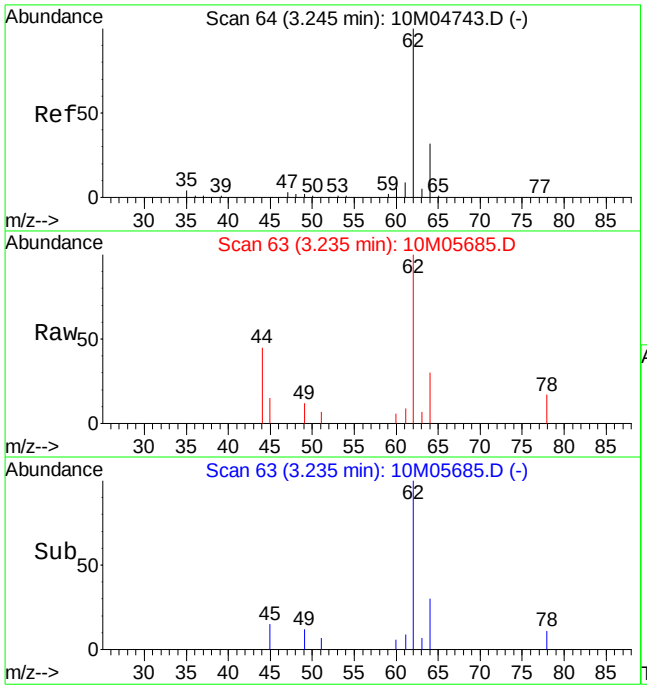

#4
Vinyl Chloride
Concen: 2.18 ug/L
RT: 3.23 min Scan# 63
Delta R.T. -0.01 min
Lab File: 10M05685.D
Acq: 12 Jun 2013 16:46

Tgt Ion: 62 Resp: 12410

Ion	Ratio	Lower	Upper
62	100		
64	25.0	19.1	44.7

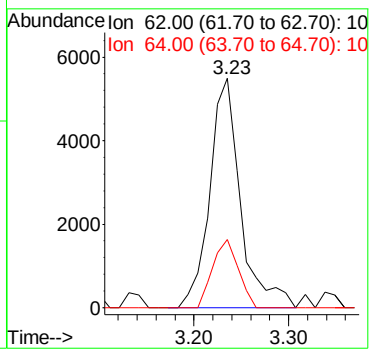

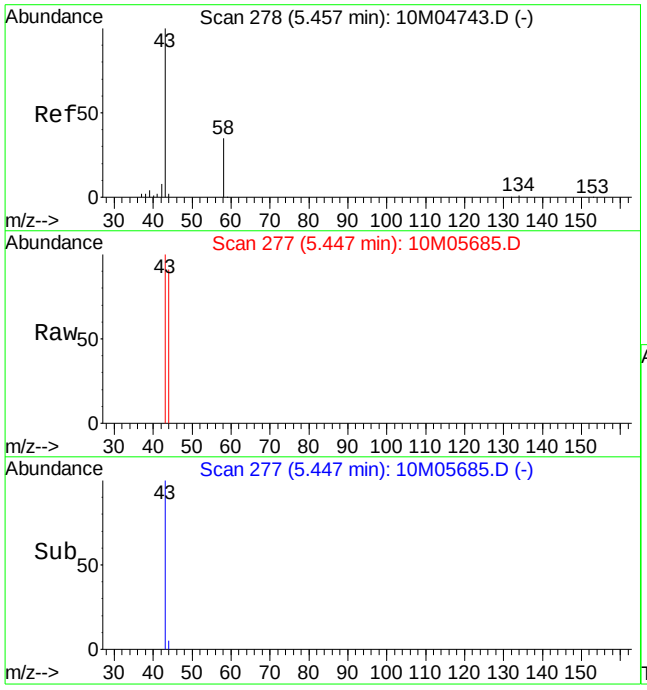

#13
Acetone
Concen: 0.97 ug/L
RT: 5.45 min Scan# 277
Delta R.T. -0.01 min
Lab File: 10M05685.D
Acq: 12 Jun 2013 16:46

Tgt Ion: 43 Resp: 1409

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.6	45.6#

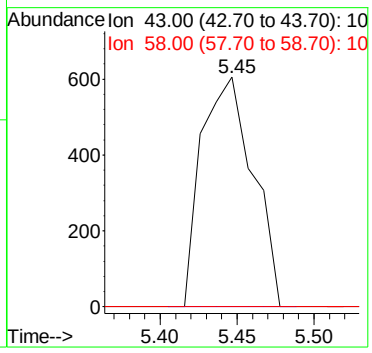

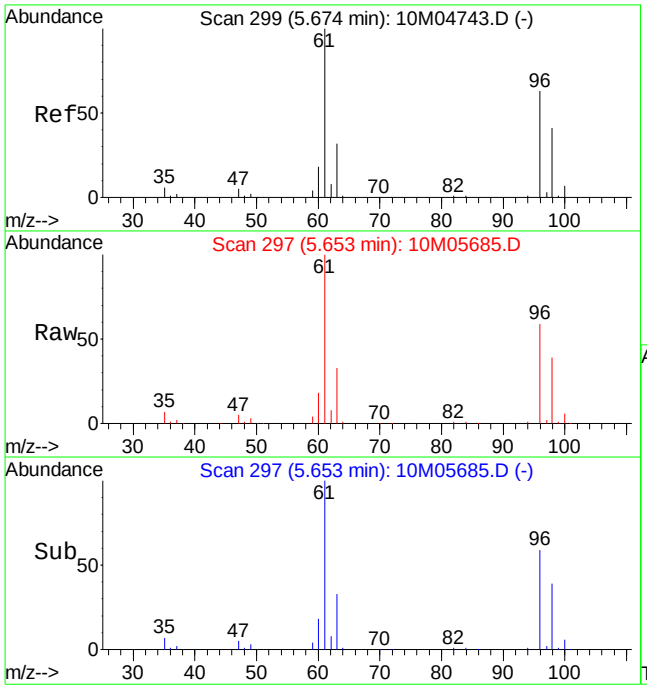

#14
1,1-Dichloroethene
Concen: 138.62 ug/L
RT: 5.65 min Scan# 297
Delta R.T. -0.02 min
Lab File: 10M05685.D
Acq: 12 Jun 2013 16:46

Tgt Ion: 96 Resp: 763774

Ion	Ratio	Lower	Upper
96	100		
61	169.6	96.1	224.1

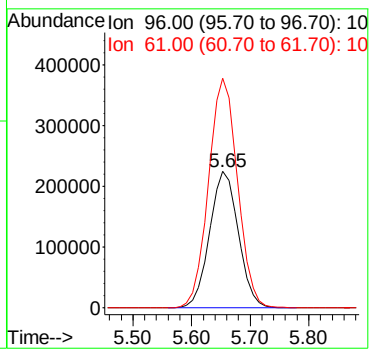

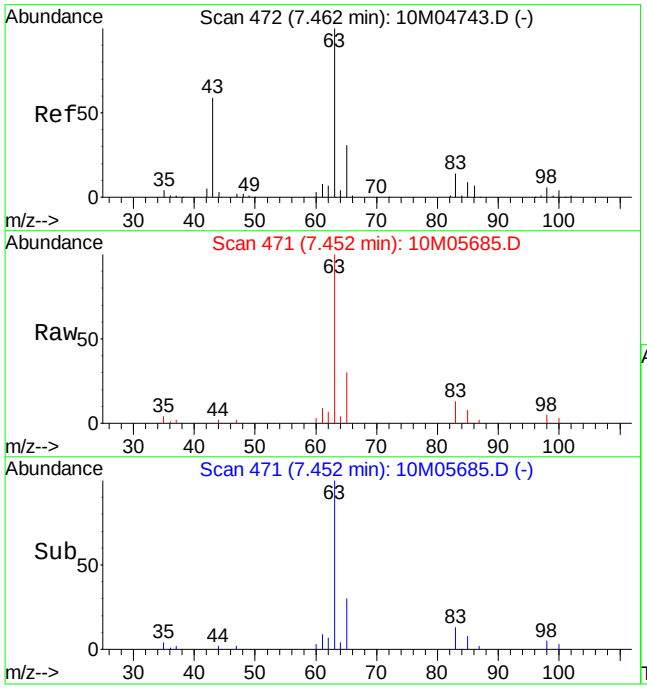

#27
1,1-Dichloroethane
Concen: 6.37 ug/L
RT: 7.45 min Scan# 471
Delta R.T. -0.01 min
Lab File: 10M05685.D
Acq: 12 Jun 2013 16:46

Tgt Ion: 63 Resp: 67178

Ion	Ratio	Lower	Upper
63	100		
65	31.0	19.0	44.4
83	12.6	8.0	18.8

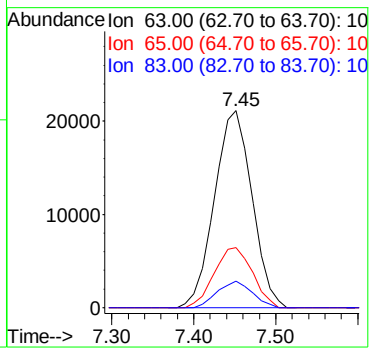

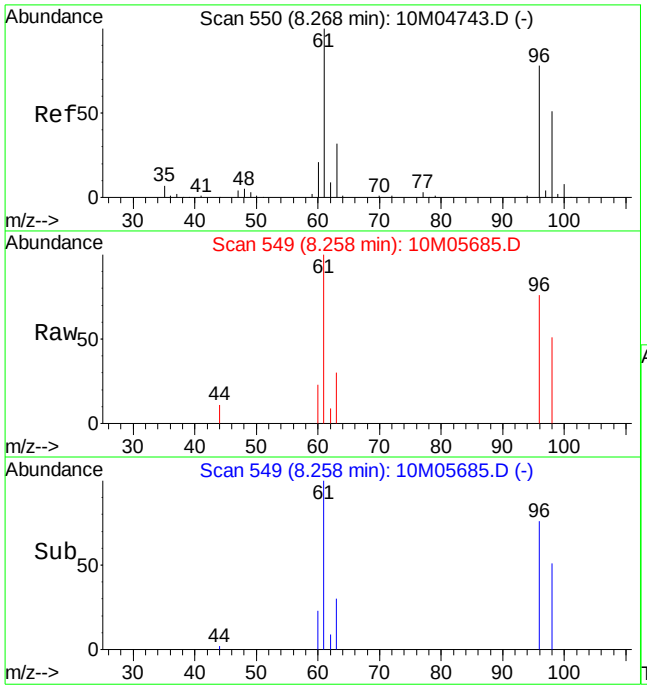

#32
cis-1,2-Dichloroethene
Concen: 1.12 ug/L
RT: 8.26 min Scan# 549
Delta R.T. -0.01 min
Lab File: 10M05685.D
Acq: 12 Jun 2013 16:46

Tgt Ion: 96 Resp: 7346

Ion	Ratio	Lower	Upper
96	100		
61	136.9	86.1	200.9

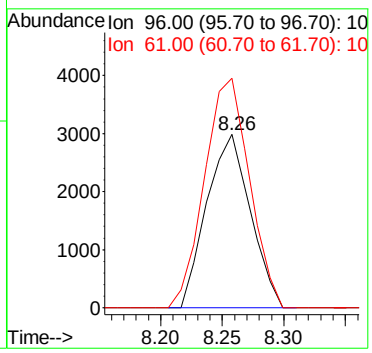

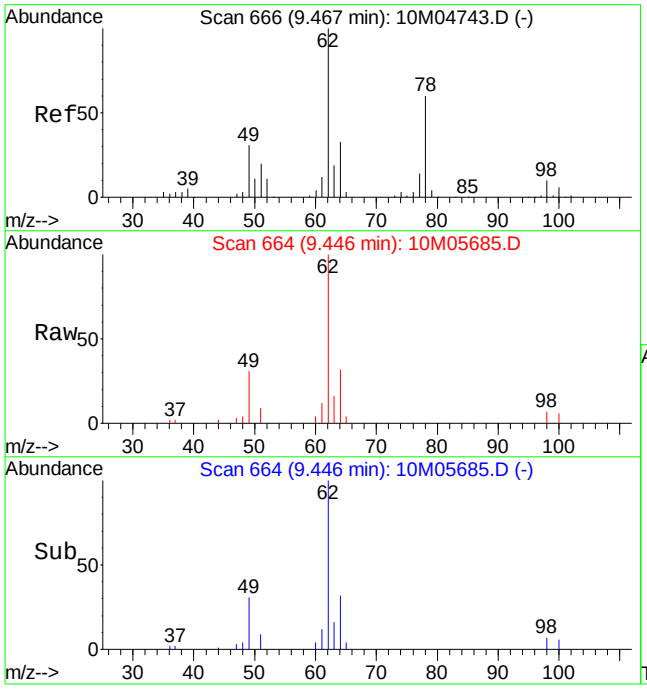

#45
1,2-Dichloroethane
Concen: 6.68 ug/L
RT: 9.45 min Scan# 664
Delta R.T. -0.02 min
Lab File: 10M05685.D
Acq: 12 Jun 2013 16:46

Tgt Ion: 62 Resp: 47855

Ion	Ratio	Lower	Upper
62	100		
49	30.3	21.8	51.0
98	7.9	5.6	13.2

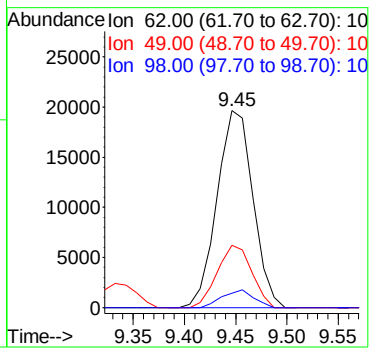

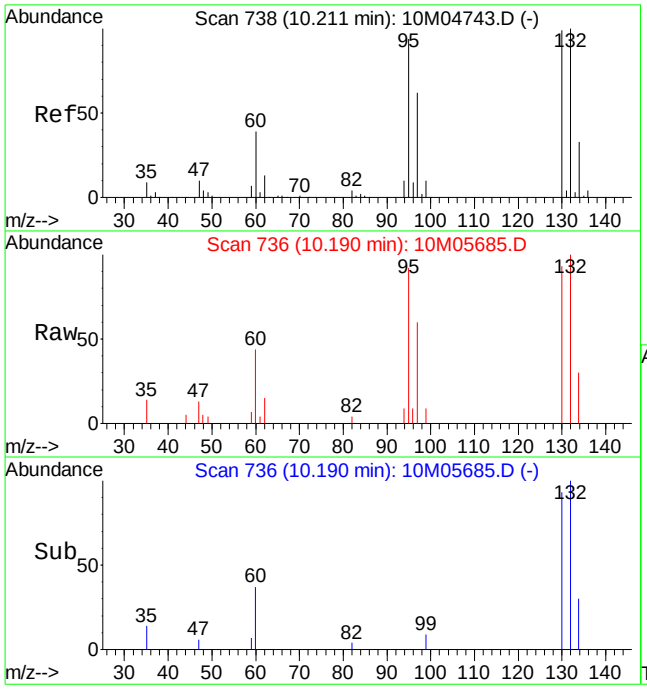

#47
Trichloroethene
Concen: 2.96 ug/L
RT: 10.19 min Scan# 736
Delta R.T. -0.02 min
Lab File: 10M05685.D
Acq: 12 Jun 2013 16:46

Tgt Ion:130 Resp: 19020

Ion	Ratio	Lower	Upper
130	100		
132	104.6	60.4	141.0
95	93.0	56.5	131.7

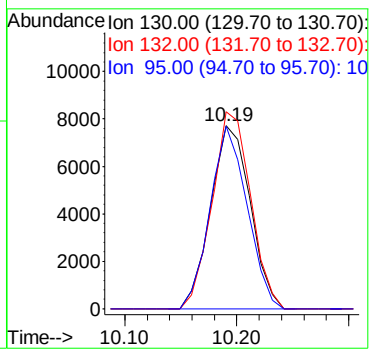

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117419.D Vial: 17
Acq On : 11 Jun 2013 00:27 Operator: ADC
Sample : L13060134-07 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:29:23 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	504311	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.73	117	420312	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	215119	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.06	111	149062	26.3876 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.56%		
43) 1,2-Dichloroethane-d4	9.78	65	124648	25.3616 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.44%		
58) Toluene-d8	12.53	98	563270	23.3741 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.48%		
80) p-Bromofluorobenzene	16.49	95	228180	26.3213 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.28%		

Target Compounds					Qvalue
27) 1,1-Dichloroethane	7.57	63	5568	0.5071 ug/L	90

(#) = qualifier out of range (m) = manual integration
6M117419.D 8260_WT.M Tue Jun 11 16:29:24 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117419.D Vial: 17
Acq On : 11 Jun 2013 00:27 Operator: ADC
Sample : L13060134-07 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:29 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

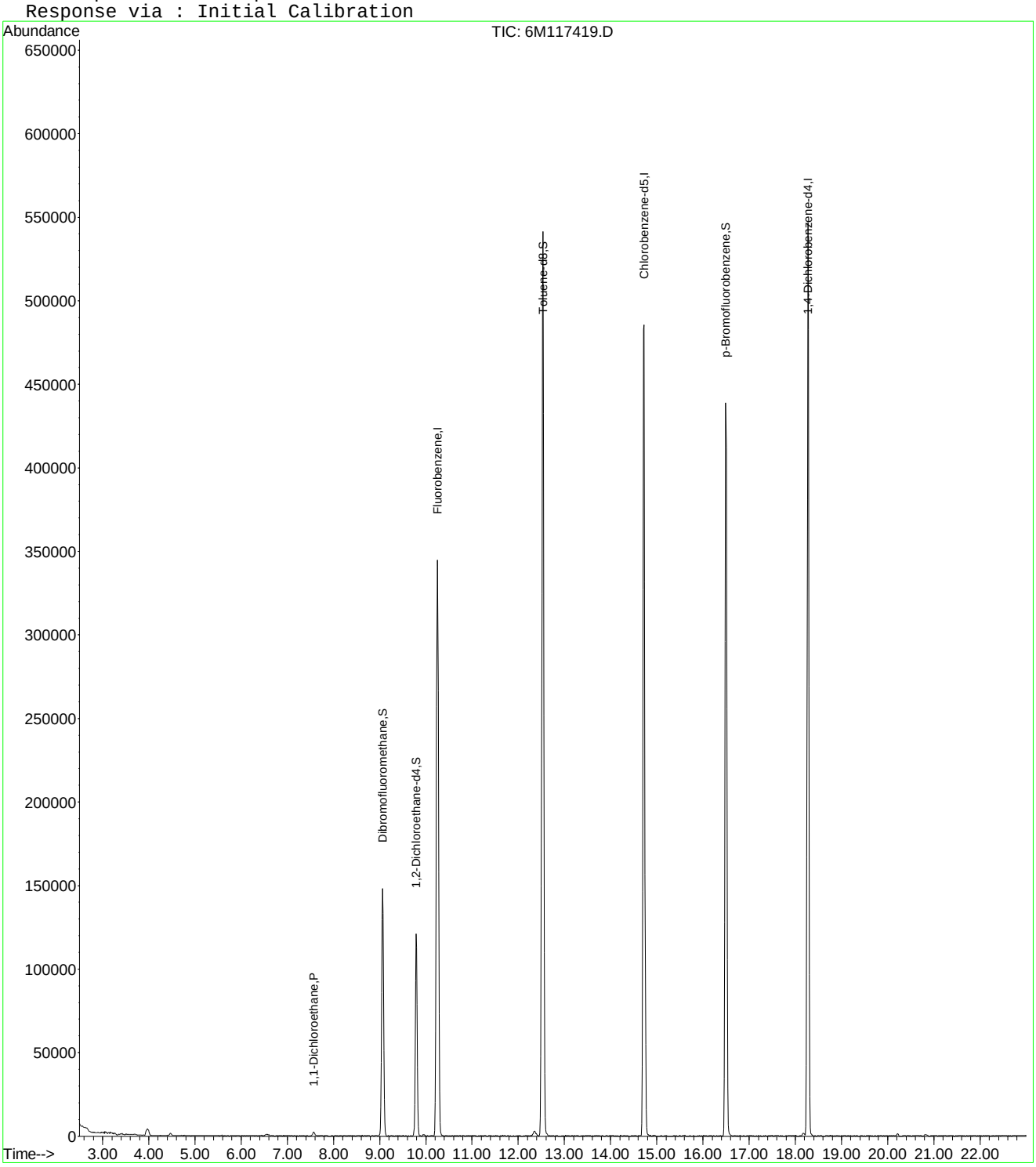

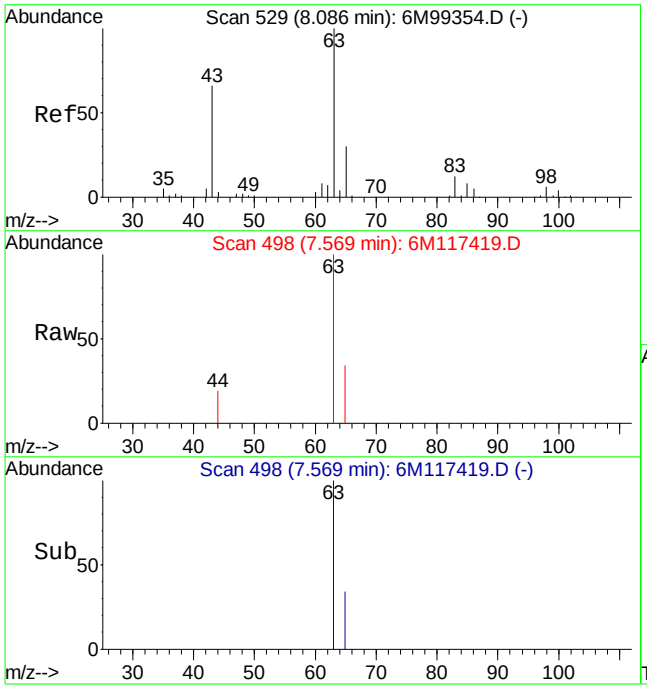

#27
1,1-Dichloroethane
Concen: 0.51 ug/L
RT: 7.57 min Scan# 498
Delta R.T. -0.00 min
Lab File: 6M117419.D
Acq: 11 Jun 2013 00:27

Tgt Ion: 63 Resp: 5568

Ion	Ratio	Lower	Upper
63	100		
65	25.3	18.4	42.8

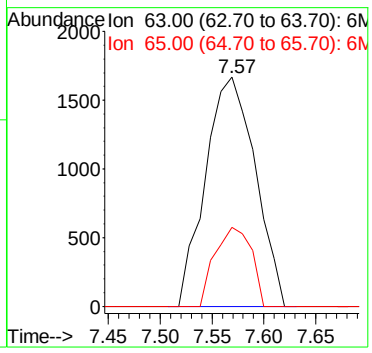

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117420.D Vial: 18
Acq On : 11 Jun 2013 00:58 Operator: ADC
Sample : L13060134-08 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:29:24 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	487040	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.73	117	411774	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	208143	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.06	111	146101	26.7805 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.12%		
43) 1,2-Dichloroethane-d4	9.79	65	121669	25.6334 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.52%		
58) Toluene-d8	12.53	98	549166	23.2614 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.04%		
80) p-Bromofluorobenzene	16.49	95	222000	26.4667 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.88%		

Target Compounds					Qvalue
45) 1,2-Dichloroethane	9.92	62	9452	1.6706 ug/L #	83

(#) = qualifier out of range (m) = manual integration
6M117420.D 8260_WT.M Tue Jun 11 16:29:25 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117420.D Vial: 18
Acq On : 11 Jun 2013 00:58 Operator: ADC
Sample : L13060134-08 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:29 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

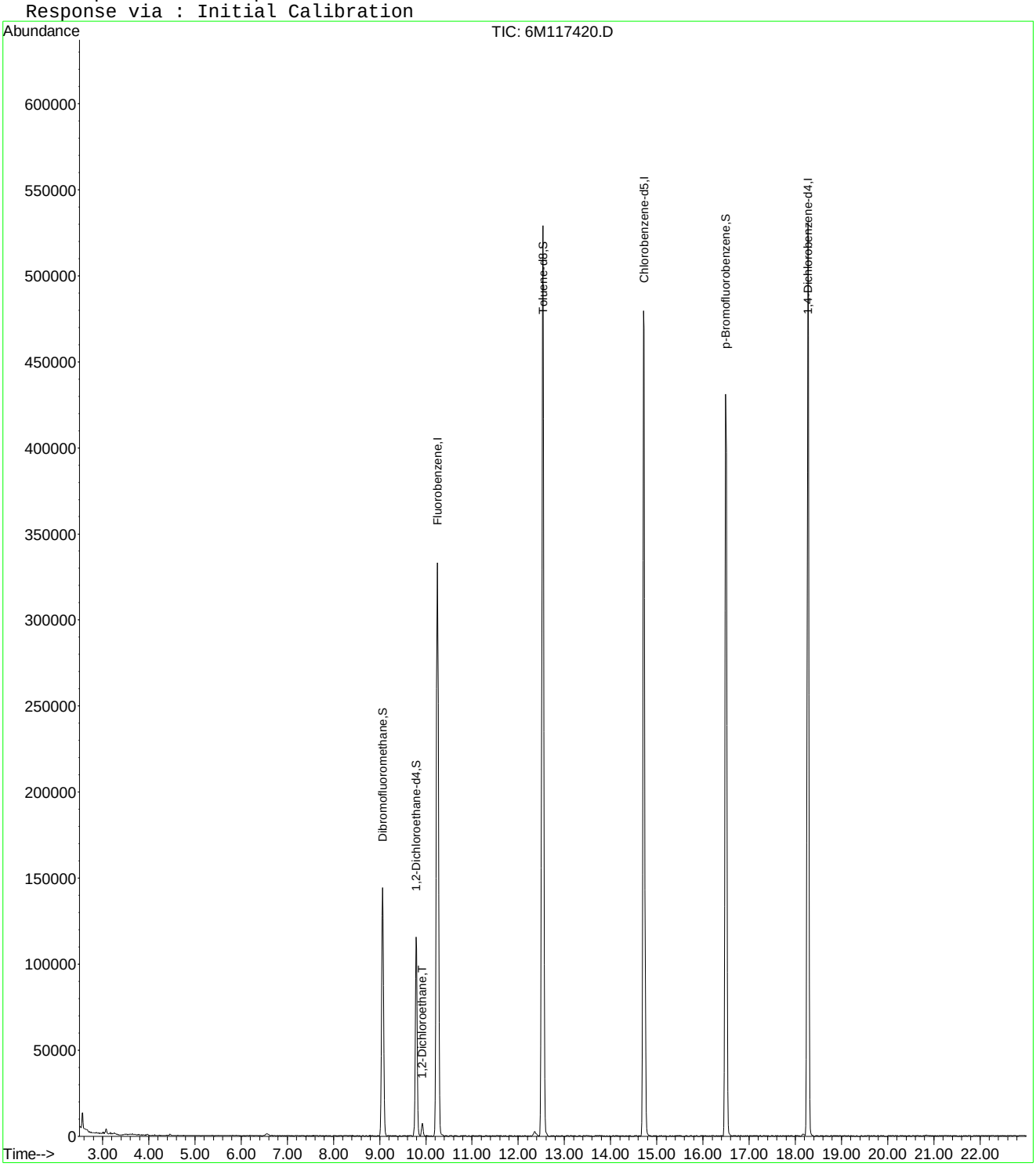

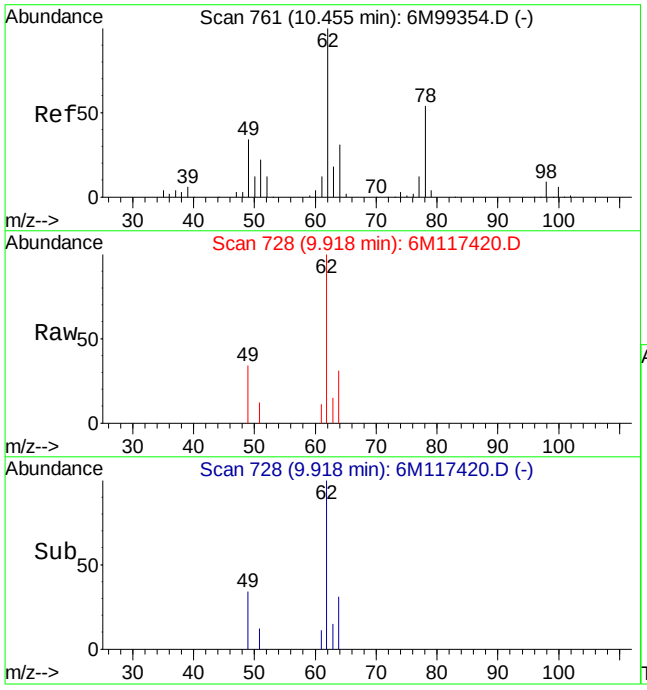

#45
1,2-Dichloroethane
Concen: 1.67 ug/L
RT: 9.92 min Scan# 728
Delta R.T. -0.00 min
Lab File: 6M117420.D
Acq: 11 Jun 2013 00:58

Tgt Ion: 62 Resp: 9452

Ion	Ratio	Lower	Upper
62	100		
49	29.4	23.9	55.9
98	2.4	5.0	11.6#

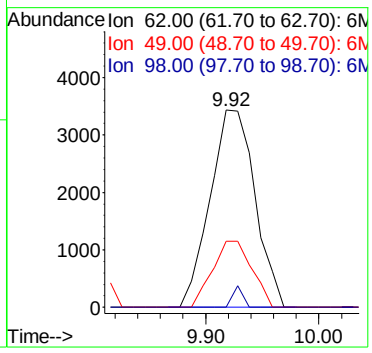

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117414.D Vial: 12
Acq On : 10 Jun 2013 21:50 Operator: ADC
Sample : L13060134-09 A 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:29:02 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	439450	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.73	117	369249	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	187660	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.06	111	130305	26.4717 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.88%		
43) 1,2-Dichloroethane-d4	9.78	65	110812	25.8742 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.48%		
58) Toluene-d8	12.53	98	495223	23.3923 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.56%		
80) p-Bromofluorobenzene	16.49	95	196075	25.9274 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.72%		

Target Compounds					Qvalue
14) 1,1-Dichloroethene	5.58	61	1367	0.1784 ug/L #	23
27) 1,1-Dichloroethane	7.57	63	3734	0.3903 ug/L #	74
28) Ethyl-Tert-Butyl ether	7.85	59	1734	0.1346 ug/L #	40
36) Tetrahydrofuran	9.02	42	2377	3.8373 ug/L #	39

(#) = qualifier out of range (m) = manual integration
6M117414.D 8260_WT.M Tue Jun 11 16:29:03 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117414.D Vial: 12
Acq On : 10 Jun 2013 21:50 Operator: ADC
Sample : L13060134-09 A 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:29 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

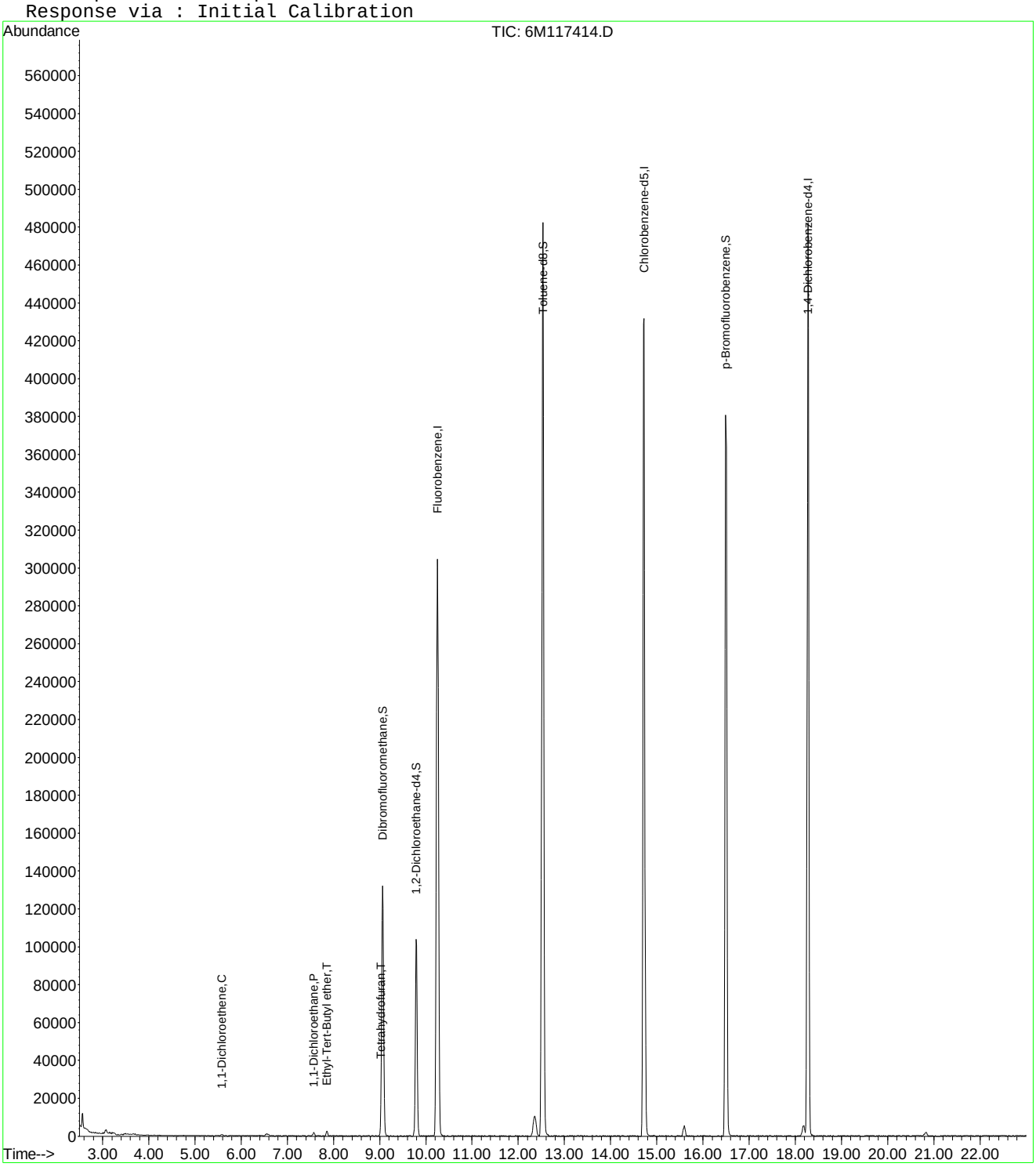

6M117414.D 8260_WT.M Tue Jun 11 16:29:03 2013 Page 2

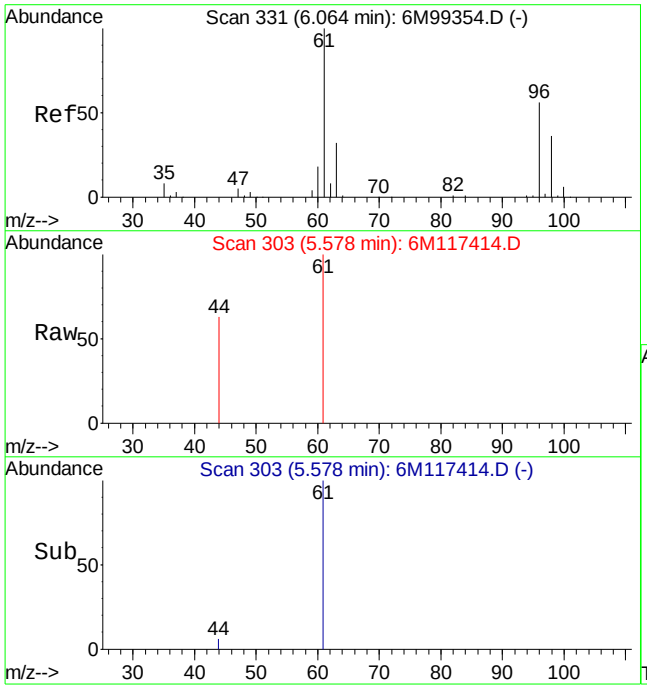

#14
1,1-Dichloroethene
Concen: 0.18 ug/L
RT: 5.58 min Scan# 303
Delta R.T. -0.00 min
Lab File: 6M117414.D
Acq: 10 Jun 2013 21:50

Tgt Ion: 61 Resp: 1367

Ion	Ratio	Lower	Upper
61	100		
96	0.0	33.7	78.5#

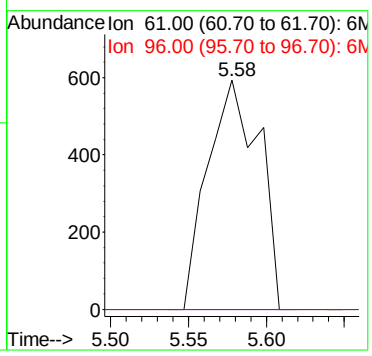

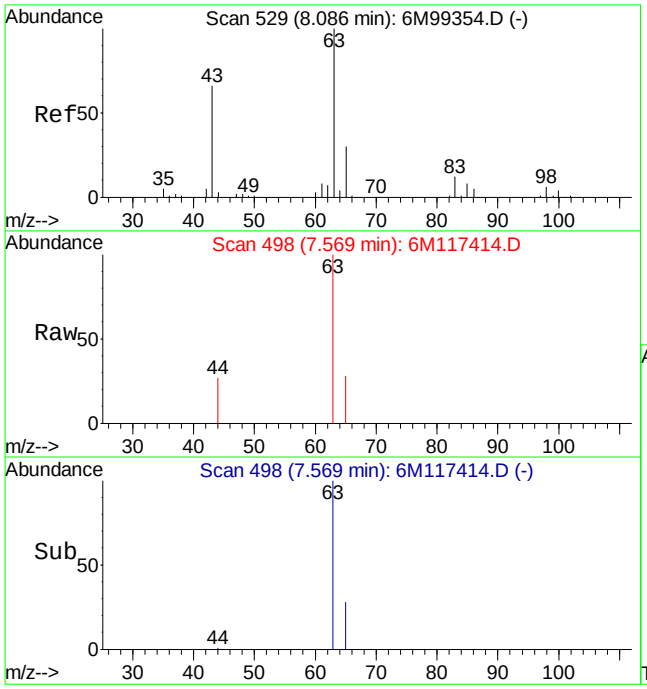

#27
1,1-Dichloroethane
Concen: 0.39 ug/L
RT: 7.57 min Scan# 498
Delta R.T. -0.00 min
Lab File: 6M117414.D
Acq: 10 Jun 2013 21:50

Tgt Ion: 63 Resp: 3734

Ion	Ratio	Lower	Upper
63	100		
65	16.2	18.4	42.8#

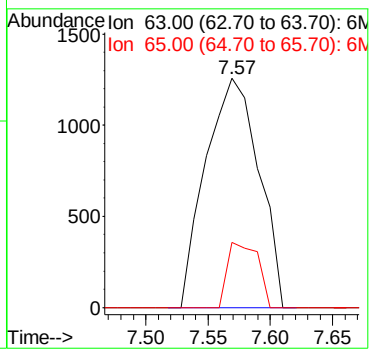

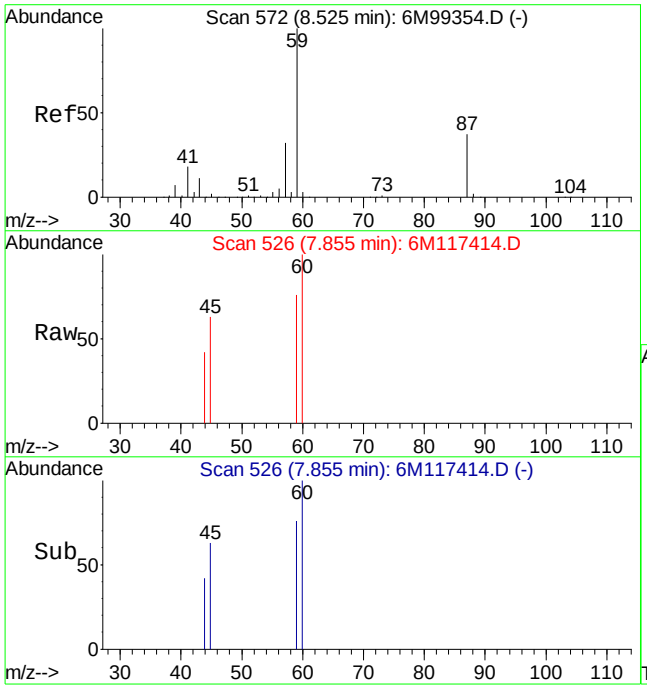

#28
Ethyl-Tert-Butyl ether
Concen: 0.13 ug/L
RT: 7.85 min Scan# 526
Delta R.T. -0.16 min
Lab File: 6M117414.D
Acq: 10 Jun 2013 21:50

Tgt Ion: 59 Resp: 1734

Ion	Ratio	Lower	Upper
59	100		
87	0.0	21.6	50.4#
57	0.0	19.4	45.4#

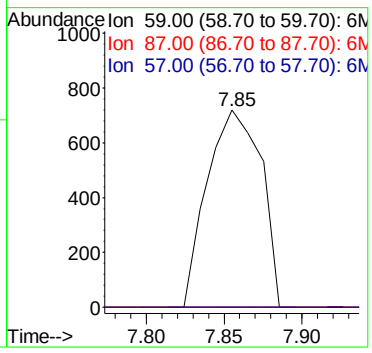

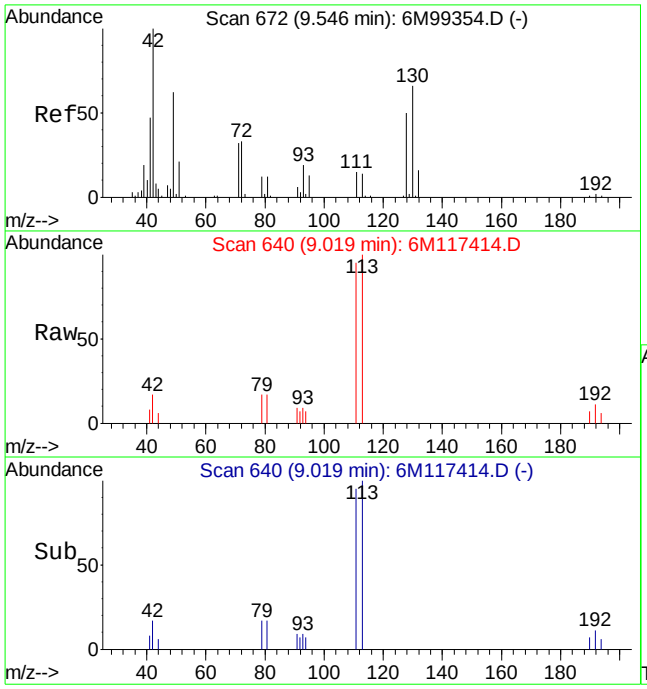

#36
Tetrahydrofuran
Concen: 3.84 ug/L
RT: 9.02 min Scan# 640
Delta R.T. -0.00 min
Lab File: 6M117414.D
Acq: 10 Jun 2013 21:50

Tgt Ion: 42 Resp: 2377

Ion	Ratio	Lower	Upper
42	100		
72	0.0	22.0	51.2#
71	0.0	20.5	47.9#

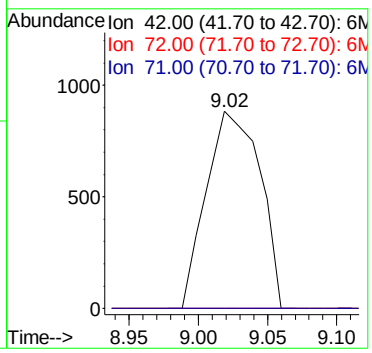

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061013\6M117408.D Vial: 6
Acq On : 10 Jun 2013 18:44 Operator: ADC
Sample : L13060134-10 A MS 826-SPE Inst : HPMS6
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 10 19:07:56 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.24	96	481420	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.72	117	394687	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	203597	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.06	111	143537	26.6177 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.48%		
43) 1,2-Dichloroethane-d4	9.79	65	121179	25.8282 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.32%		
58) Toluene-d8	12.53	98	532646	23.5384 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.16%		
80) p-Bromofluorobenzene	16.49	95	217351	26.4910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.61	85	107377	24.7115 ug/L	100
3) Chloromethane	2.96	50	88043	18.7089 ug/L	99
4) Vinyl Chloride	3.15	62	85205	20.1380 ug/L	100
6) Bromomethane	3.89	94	54353	15.5227 ug/L	100
7) Chloroethane	4.04	64	88127	22.6762 ug/L	98
8) Trichlorofluoromethane	4.50	101	205808	24.6658 ug/L	100
10) Isoprene	5.06	67	131523	17.1733 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.27	101	120127	23.5167 ug/L	97
13) Acetone	5.36	43	11707	15.1898 ug/L	97
14) 1,1-Dichloroethene	5.58	61	186172	22.1798 ug/L	98
15) Tert-Butyl Alcohol	5.71	59	3612	21.8841 ug/L #	61
16) Dimethyl Sulfide	5.84	62	116267	19.8718 ug/L	98
17) Iodomethane	6.10	142	77113	13.2885 ug/L	96
18) Methyl acetate	6.15	43	36225	18.2408 ug/L	99
19) Methylene Chloride	6.39	84	112161	22.5068 ug/L	100
20) Carbon Disulfide	6.41	76	300108	16.9873 ug/L	100
21) Acrylonitrile	6.61	53	20591	21.2252 ug/L	95
22) Methyl Tert Butyl Ether	6.65	73	199108	22.6336 ug/L	98
23) trans-1,2-Dichloroethene	6.88	96	123151	22.9024 ug/L	100
24) n-Hexane	6.99	57	141252	19.1055 ug/L	100
27) 1,1-Dichloroethane	7.57	63	237307	22.6417 ug/L	100
28) Ethyl-Tert-Butyl ether	7.86	59	1765	0.1251 ug/L #	40
29) 2-Butanone	8.20	43	19291	17.6137 ug/L	96
31) 2,2-Dichloropropane	8.43	77	204090	23.9586 ug/L	99
32) cis-1,2-Dichloroethene	8.50	96	131387	22.9734 ug/L	99
33) Chloroform	8.73	83	225606	23.5056 ug/L	100
34) 1-Bromopropane	8.74	122	399	0.6239 ug/L #	1
35) Bromochloromethane	8.99	130	66052	22.6690 ug/L	100
36) Tetrahydrofuran	9.02	42	2965	4.3692 ug/L	84
38) 1,1,1-Trichloroethane	9.33	97	210505	24.7238 ug/L	99
39) Cyclohexane	9.36	56	197222	19.9148 ug/L	99
40) 1,1-Dichloropropene	9.56	75	171195	22.4086 ug/L	97
41) Tert-Amyl-Methyl ether	9.56	73	24472	2.5016 ug/L #	54
42) Carbon Tetrachloride	9.70	117	191403	25.2236 ug/L	99
45) 1,2-Dichloroethane	9.92	62	136559	24.4185 ug/L	98
46) Benzene	9.95	78	478283	22.0478 ug/L	99
47) Trichloroethene	10.83	130	132739	23.9734 ug/L	95
48) Methylcyclohexane	10.91	83	161854	20.5118 ug/L	98
49) 1,2-Dichloropropane	11.07	63	126114	22.3127 ug/L	95
50) 1,4-Dioxane	11.43	88	1107	86.6595 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M117408.D 8260_WT.M Mon Jun 10 19:07:56 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061013\6M117408.D Vial: 6
Acq On : 10 Jun 2013 18:44 Operator: ADC
Sample : L13060134-10 A MS 826-SPE Inst : HPMS6
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 10 19:07:56 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
51)	Bromodichloromethane	11.41	83	153311	23.1025 ug/L	99
52)	Dibromomethane	11.49	93	51791	23.4078 ug/L	99
54)	4-Methyl-2-Pentanone	11.85	58	18188	18.9730 ug/L	95
55)	cis-1,3-Dichloropropene	12.17	75	179943	23.9998 ug/L	99
56)	Dimethyl Disulfide	12.44	79	87896	22.2795 ug/L	98
59)	Toluene	12.64	91	511374	19.6038 ug/L	100
60)	Ethyl Methacrylate	12.83	69	79263	19.9686 ug/L	97
62)	trans-1,3-Dichloropropene	12.88	75	132715	19.2561 ug/L	100
63)	1,1,2-Trichloroethane	13.11	97	70353	19.6532 ug/L	99
64)	2-Hexanone	13.09	43	30510	17.1013 ug/L	96
65)	1,3-Dichloropropane	13.47	76	122524	19.5898 ug/L	96
66)	Tetrachloroethene	13.58	166	134460	20.2074 ug/L	98
67)	Dibromochloromethane	13.88	129	98692	19.2487 ug/L	98
68)	1,2-Dibromoethane	14.18	107	68871	19.7361 ug/L	99
69)	1-Chlorohexane	14.36	91	159138	20.5811 ug/L	95
70)	Chlorobenzene	14.78	112	302669	18.1250 ug/L	97
71)	1,1,1,2-Tetrachloroethane	14.83	131	119388	21.2512 ug/L	99
72)	Ethylbenzene	14.84	106	181058	20.0903 ug/L	97
73)	m-,p-Xylene	14.94	106	427269	39.4626 ug/L	97
74)	o-Xylene	15.60	106	197561	18.7929 ug/L	98
75)	Styrene	15.65	104	351401	19.6656 ug/L	99
76)	Bromoform	16.18	173	53733	19.0004 ug/L	99
77)	Isopropylbenzene	16.11	105	518098	19.6188 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.36	83	71352	17.9318 ug/L	98
81)	1,2,3-Trichloropropane	16.59	110	19981	18.4961 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.67	53	18197	14.9987 ug/L	92
83)	n-Propylbenzene	16.71	91	606215	18.5660 ug/L	100
84)	Bromobenzene	16.81	156	131149	19.4002 ug/L	100
85)	1,3,5-Trimethylbenzene	16.93	105	481738	21.2261 ug/L	97
86)	2-Chlorotoluene	16.99	91	440121	18.9012 ug/L	99
87)	4-Chlorotoluene	17.06	91	368216	18.1449 ug/L	99
88)	a-Methylstyrene	17.40	118	252291	21.0943 ug/L	99
89)	tert-Butylbenzene	17.47	134	83526	18.5298 ug/L	90
90)	1,2,4-Trimethylbenzene	17.54	105	481721	20.2298 ug/L	97
91)	sec-Butylbenzene	17.79	105	507487	18.6572 ug/L	99
92)	p-Isopropyltoluene	17.98	119	441369	19.2684 ug/L	99
93)	1,3-Dichlorobenzene	18.17	146	240097	18.2570 ug/L	99
94)	1,4-Dichlorobenzene	18.32	146	252685	19.2177 ug/L	99
95)	n-Butylbenzene	18.61	91	417335	20.7121 ug/L	98
96)	1,2-Dichlorobenzene	18.89	146	206736	18.3211 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	20.07	75	10966	18.1556 ug/L	89
98)	1,2,4-Trichlorobenzene	21.42	180	149005	19.3992 ug/L	99
99)	Hexachlorobutadiene	21.61	225	72723	21.6330 ug/L	99
100)	Naphthalene	21.82	128	204316	17.6464 ug/L	100
101)	1,2,3-Trichlorobenzene	22.19	180	119116	19.0069 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M117408.D 8260_WT.M Mon Jun 10 19:07:56 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061013\6M117408.D Vial: 6
Acq On : 10 Jun 2013 18:44 Operator: ADC
Sample : L13060134-10 A MS 826-SPE Inst : HPMS6
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 10 19:07 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

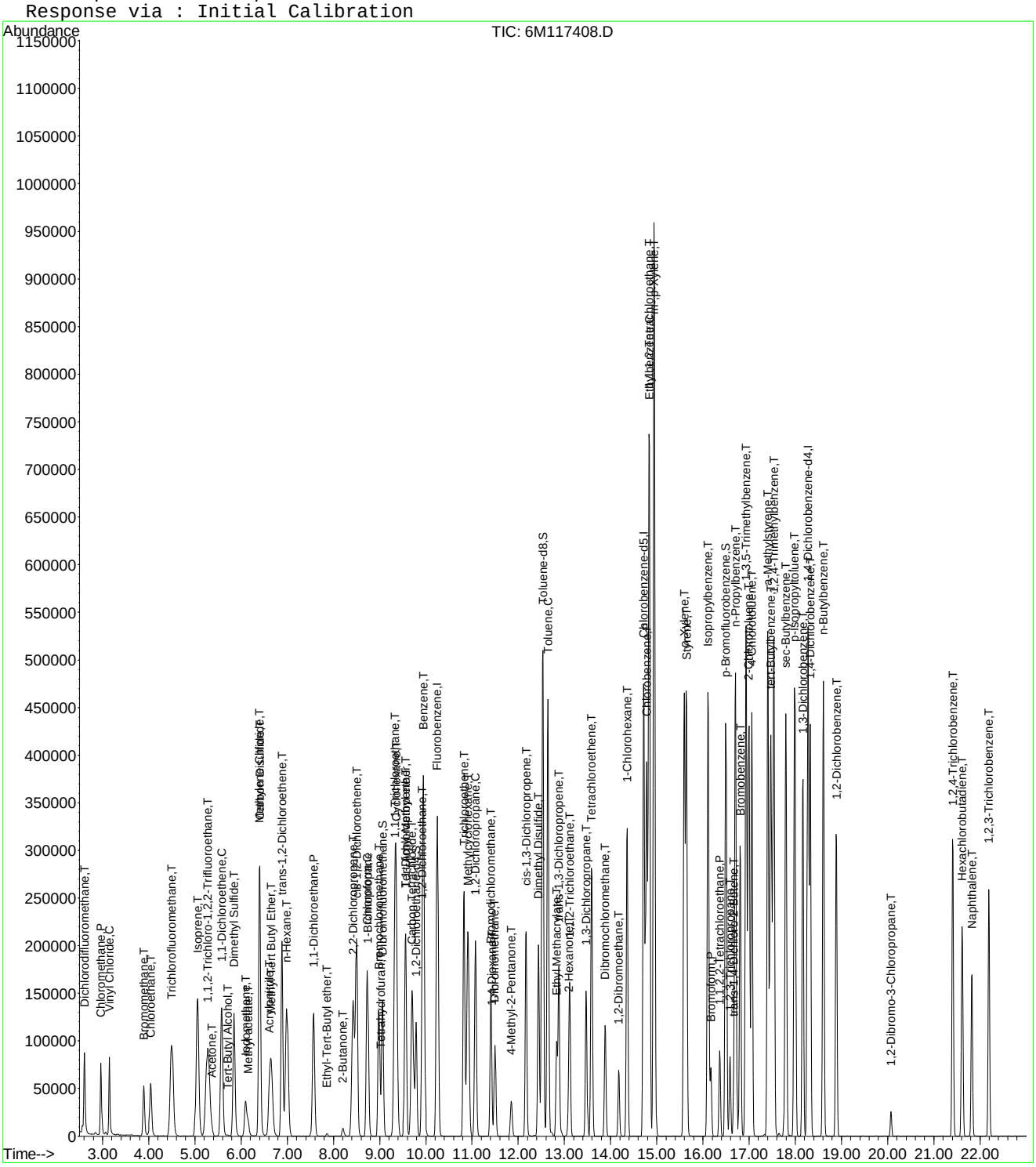

6M117408.D 8260_WT.M Mon Jun 10 19:07:57 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061013\6M117409.D Vial: 7
Acq On : 10 Jun 2013 19:15 Operator: ADC
Sample : L13060134-11 A MSD 826-SPE Inst : HPMS6
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 10 19:38:37 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.24	96	477194	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.72	117	396460	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	205193	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.06	111	141962	26.5588 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.24%		
43) 1,2-Dichloroethane-d4	9.78	65	118722	25.5286 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.12%		
58) Toluene-d8	12.53	98	530672	23.3463 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.40%		
80) p-Bromofluorobenzene	16.49	95	218878	26.4697 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.61	85	108586	25.2110 ug/L	100
3) Chloromethane	2.96	50	85476	18.3243 ug/L	99
4) Vinyl Chloride	3.15	62	87021	20.7494 ug/L	99
6) Bromomethane	3.89	94	56120	16.1693 ug/L	100
7) Chloroethane	4.03	64	88372	22.9406 ug/L	99
8) Trichlorofluoromethane	4.49	101	201857	24.4065 ug/L	99
10) Isoprene	5.06	67	128114	16.8763 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	5.28	101	117797	23.2660 ug/L	97
13) Acetone	5.36	43	11531	15.0940 ug/L	95
14) 1,1-Dichloroethene	5.58	61	183085	22.0052 ug/L	99
15) Tert-Butyl Alcohol	5.85	59	3814	23.3126 ug/L #	1
16) Dimethyl Sulfide	5.84	62	113658	19.5979 ug/L	98
17) Iodomethane	6.10	142	78138	13.5843 ug/L	99
18) Methyl acetate	6.15	43	36014	18.2951 ug/L	96
19) Methylene Chloride	6.39	84	110992	22.4694 ug/L	99
20) Carbon Disulfide	6.40	76	296784	16.9479 ug/L	100
21) Acrylonitrile	6.61	53	20029	20.8287 ug/L	96
22) Methyl Tert Butyl Ether	6.64	73	195114	22.3760 ug/L	98
23) trans-1,2-Dichloroethene	6.88	96	120122	22.5369 ug/L	100
24) n-Hexane	7.00	57	139671	19.0590 ug/L	99
27) 1,1-Dichloroethane	7.57	63	231979	22.3293 ug/L	100
28) Ethyl-Tert-Butyl ether	7.85	59	1921	0.1374 ug/L #	40
29) 2-Butanone	8.20	43	18299	16.8559 ug/L	99
31) 2,2-Dichloropropane	8.43	77	198228	23.4765 ug/L	98
32) cis-1,2-Dichloroethene	8.50	96	127527	22.4960 ug/L	99
33) Chloroform	8.73	83	219400	23.0615 ug/L	100
35) Bromochloromethane	8.99	130	64430	22.3081 ug/L	99
36) Tetrahydrofuran	9.02	42	2978	4.4272 ug/L #	71
38) 1,1,1-Trichloroethane	9.33	97	207696	24.6099 ug/L	99
39) Cyclohexane	9.36	56	195060	19.8709 ug/L	98
40) 1,1-Dichloropropene	9.56	75	168086	22.1965 ug/L	97
41) Tert-Amyl-Methyl ether	9.56	73	23786	2.4530 ug/L #	52
42) Carbon Tetrachloride	9.71	117	185138	24.6140 ug/L	99
45) 1,2-Dichloroethane	9.92	62	132723	23.9427 ug/L	96
46) Benzene	9.95	78	472568	21.9773 ug/L	99
47) Trichloroethene	10.83	130	131262	23.9166 ug/L	95
48) Methylcyclohexane	10.92	83	160081	20.4671 ug/L	97
49) 1,2-Dichloropropane	11.07	63	124120	22.1544 ug/L	95
51) Bromodichloromethane	11.41	83	149996	22.8032 ug/L	99
52) Dibromomethane	11.49	93	50483	23.0187 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M117409.D 8260_WT.M Mon Jun 10 19:38:37 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061013\6M117409.D Vial: 7
Acq On : 10 Jun 2013 19:15 Operator: ADC
Sample : L13060134-11 A MSD 826-SPE Inst : HPMS6
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 10 19:38:37 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
54)	4-Methyl-2-Pentanone	11.85	58	17990	18.9327 ug/L	97
55)	cis-1,3-Dichloropropene	12.17	75	178918	24.0744 ug/L	99
56)	Dimethyl Disulfide	12.44	79	85718	21.9348 ug/L	97
59)	Toluene	12.64	91	506392	19.3260 ug/L	100
60)	Ethyl Methacrylate	12.83	69	80688	20.2367 ug/L	98
62)	trans-1,3-Dichloropropene	12.88	75	131720	19.0262 ug/L	99
63)	1,1,2-Trichloroethane	13.11	97	68954	19.1808 ug/L	98
64)	2-Hexanone	13.09	43	30641	17.0979 ug/L	94
65)	1,3-Dichloropropane	13.47	76	121353	19.3158 ug/L	95
66)	Tetrachloroethene	13.59	166	133787	20.0163 ug/L	98
67)	Dibromochloromethane	13.88	129	95904	18.6292 ug/L	99
68)	1,2-Dibromoethane	14.17	107	68470	19.5334 ug/L	99
69)	1-Chlorohexane	14.36	91	160724	20.6932 ug/L	96
70)	Chlorobenzene	14.78	112	304186	18.1344 ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.83	131	119646	21.2019 ug/L	99
72)	Ethylbenzene	14.84	106	181941	20.0980 ug/L	98
73)	m-,p-Xylene	14.94	106	424606	39.0413 ug/L	96
74)	o-Xylene	15.59	106	198298	18.7787 ug/L	98
75)	Styrene	15.65	104	349096	19.4492 ug/L	99
76)	Bromoform	16.18	173	53304	18.7702 ug/L	99
77)	Isopropylbenzene	16.12	105	518677	19.5529 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.36	83	71459	17.8203 ug/L	99
81)	1,2,3-Trichloropropane	16.58	110	20654	18.9614 ug/L	91
82)	trans-1,4-Dichloro-2-Buten	16.67	53	18302	14.9679 ug/L	91
83)	n-Propylbenzene	16.71	91	603768	18.3472 ug/L	100
84)	Bromobenzene	16.81	156	131753	19.3379 ug/L	99
85)	1,3,5-Trimethylbenzene	16.93	105	478415	20.9157 ug/L	98
86)	2-Chlorotoluene	16.99	91	435893	18.5740 ug/L	99
87)	4-Chlorotoluene	17.05	91	370296	18.1055 ug/L	98
88)	a-Methylstyrene	17.40	118	249549	20.7027 ug/L	99
89)	tert-Butylbenzene	17.47	134	84127	18.5180 ug/L	92
90)	1,2,4-Trimethylbenzene	17.53	105	482692	20.1129 ug/L	97
91)	sec-Butylbenzene	17.79	105	509067	18.5697 ug/L	98
92)	p-Isopropyltoluene	17.99	119	440240	19.0696 ug/L	99
93)	1,3-Dichlorobenzene	18.17	146	241056	18.1874 ug/L	99
94)	1,4-Dichlorobenzene	18.32	146	252657	19.0661 ug/L	99
95)	n-Butylbenzene	18.61	91	425809	20.9683 ug/L	98
96)	1,2-Dichlorobenzene	18.89	146	205865	18.1021 ug/L	100
97)	1,2-Dibromo-3-Chloropropan	20.07	75	10548	17.3607 ug/L	95
98)	1,2,4-Trichlorobenzene	21.41	180	150048	19.3830 ug/L	99
99)	Hexachlorobutadiene	21.62	225	71127	20.9969 ug/L	99
100)	Naphthalene	21.82	128	215788	18.4922 ug/L	100
101)	1,2,3-Trichlorobenzene	22.20	180	120333	19.0517 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M117409.D 8260_WT.M Mon Jun 10 19:38:37 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061013\6M117409.D Vial: 7
Acq On : 10 Jun 2013 19:15 Operator: ADC
Sample : L13060134-11 A MSD 826-SPE Inst : HPMS6
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 10 19:38 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

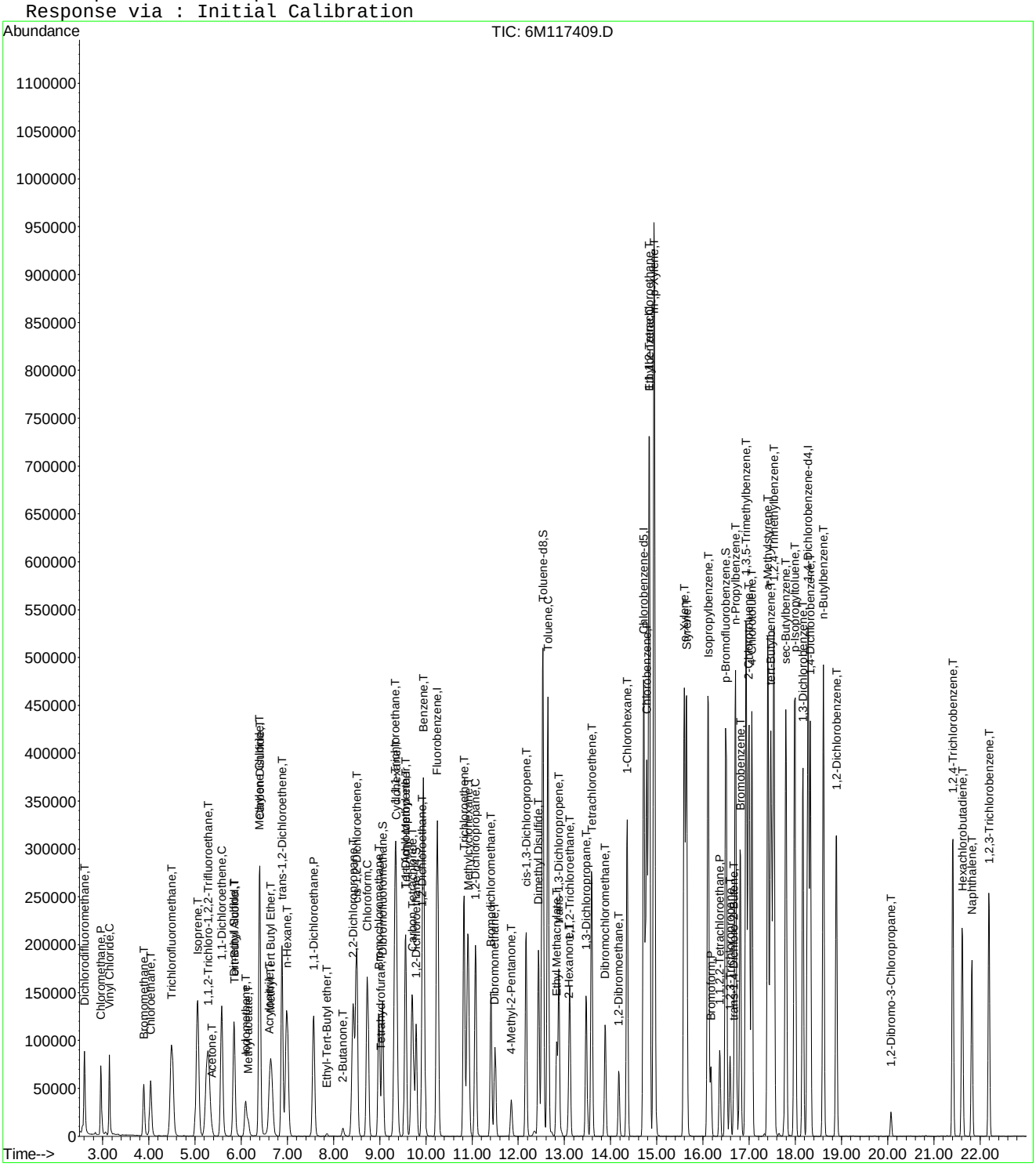

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117421.D Vial: 19
Acq On : 11 Jun 2013 1:30 Operator: ADC
Sample : L13060134-12 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:29:26 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	475600	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.73	117	395404	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	200868	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.06	111	142750	26.7957 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.20%		
43) 1,2-Dichloroethane-d4	9.78	65	120009	25.8918 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.56%		
58) Toluene-d8	12.53	98	528902	23.3305 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.32%		
80) p-Bromofluorobenzene	16.49	95	212197	26.2142 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.84%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.15	62	574	0.1373 ug/L #	43
14) 1,1-Dichloroethene	5.58	61	390547	47.0976 ug/L	99
15) Tert-Butyl Alcohol	5.58	59	12740	78.1325 ug/L #	61
19) Methylene Chloride	6.39	84	681	0.1383 ug/L	72
27) 1,1-Dichloroethane	7.57	63	109463	10.5718 ug/L	100
45) 1,2-Dichloroethane	9.93	62	4803	0.8693 ug/L #	76

(#) = qualifier out of range (m) = manual integration
6M117421.D 8260_WT.M Tue Jun 11 16:29:26 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117421.D Vial: 19
Acq On : 11 Jun 2013 1:30 Operator: ADC
Sample : L13060134-12 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:29 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

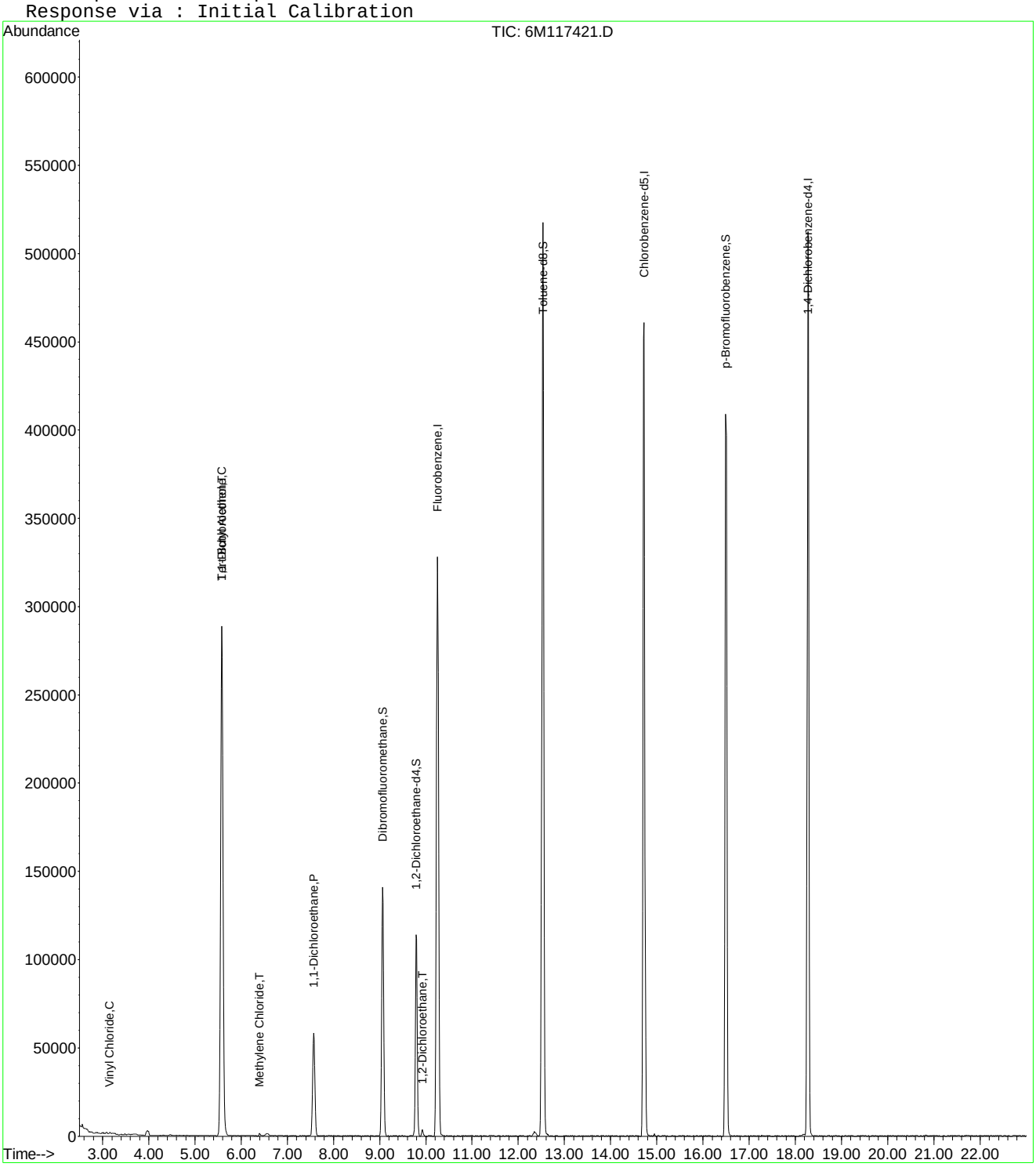

6M117421.D 8260_WT.M Tue Jun 11 16:29:26 2013 Page 2

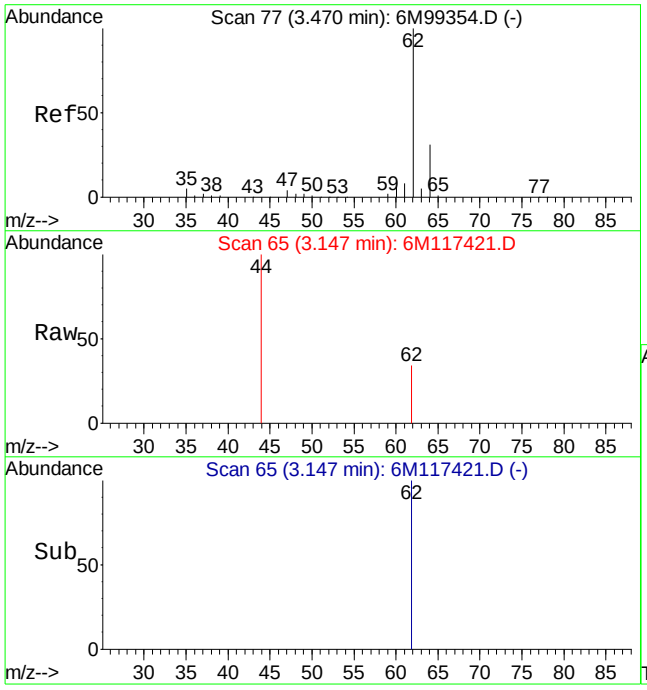

#4
Vinyl Chloride
Concen: 0.14 ug/L
RT: 3.15 min Scan# 65
Delta R.T. -0.00 min
Lab File: 6M117421.D
Acq: 11 Jun 2013 1:30

Tgt Ion: 62 Resp: 574

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.9	44.1#

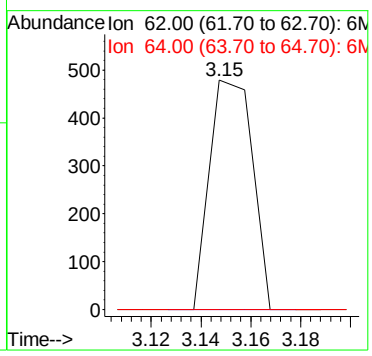

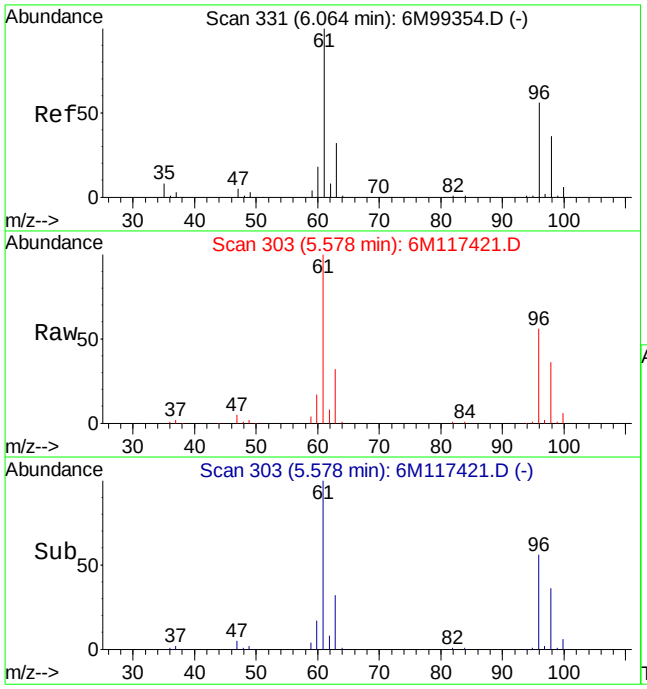

#14
1,1-Dichloroethene
Concen: 47.10 ug/L
RT: 5.58 min Scan# 303
Delta R.T. -0.00 min
Lab File: 6M117421.D
Acq: 11 Jun 2013 1:30

Tgt Ion: 61 Resp: 390547

Ion	Ratio	Lower	Upper
61	100		
96	55.5	33.7	78.5

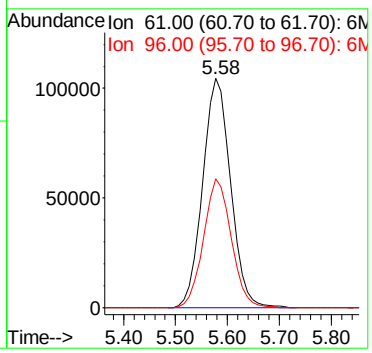

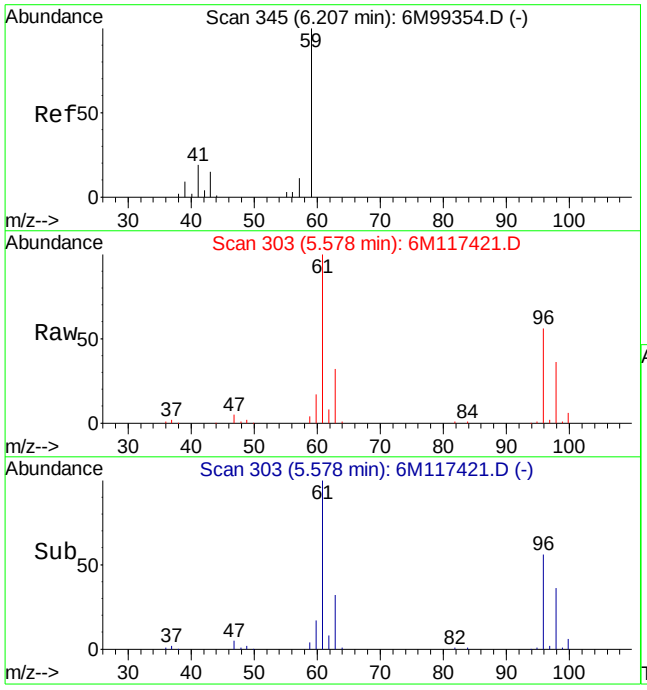

#15
Tert-Butyl Alcohol
Concen: 78.13 ug/L
RT: 5.58 min Scan# 303
Delta R.T. -0.14 min
Lab File: 6M117421.D
Acq: 11 Jun 2013 1:30

Tgt Ion: 59 Resp: 12740

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.5	29.1#
57	0.0	5.2	12.0#

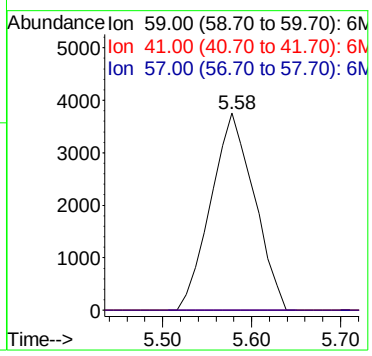

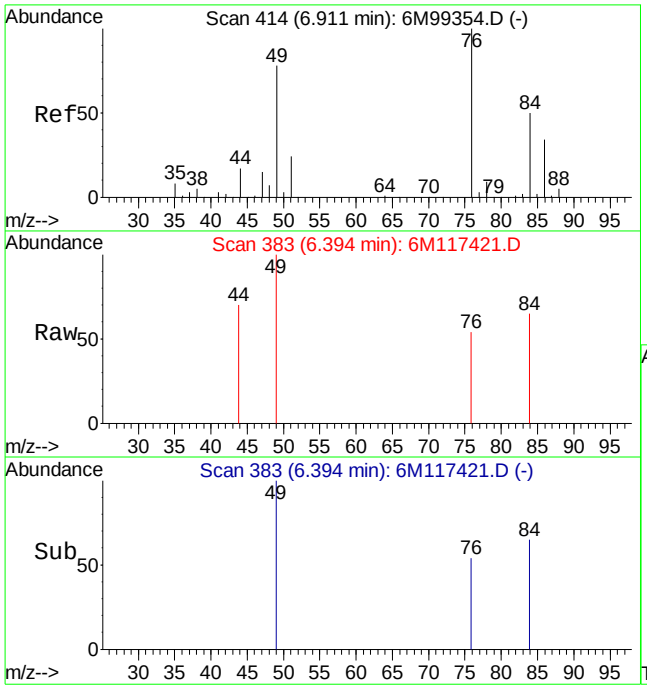

#19
Methylene Chloride
Concen: 0.14 ug/L
RT: 6.39 min Scan# 383
Delta R.T. -0.00 min
Lab File: 6M117421.D
Acq: 11 Jun 2013 1:30

Tgt Ion: 84 Resp: 681

Ion	Ratio	Lower	Upper
84	100		
49	191.8	92.9	216.9

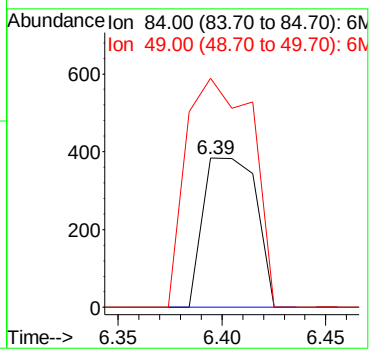

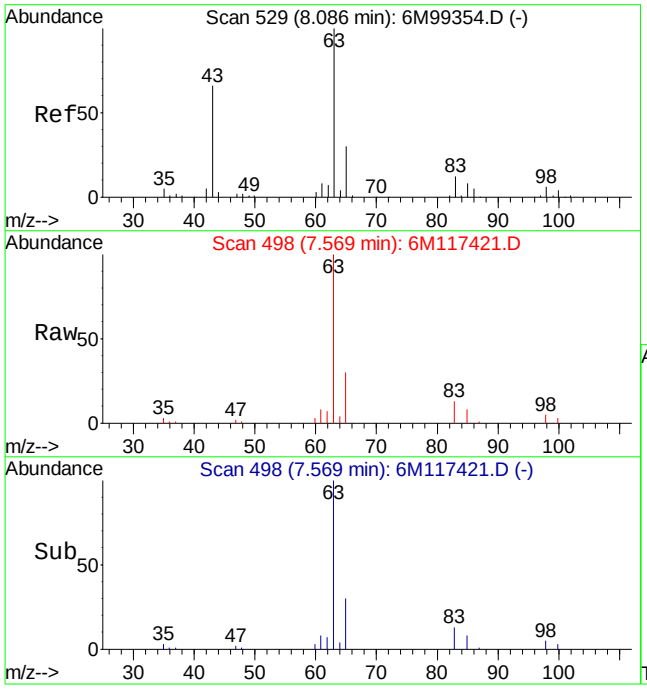

#27
1,1-Dichloroethane
Concen: 10.57 ug/L
RT: 7.57 min Scan# 498
Delta R.T. -0.00 min
Lab File: 6M117421.D
Acq: 11 Jun 2013 1:30

Tgt Ion: 63 Resp: 109463

Ion	Ratio	Lower	Upper
63	100		
65	30.5	18.4	42.8

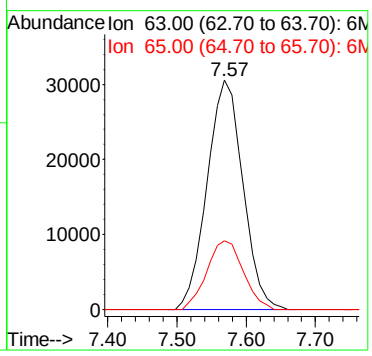

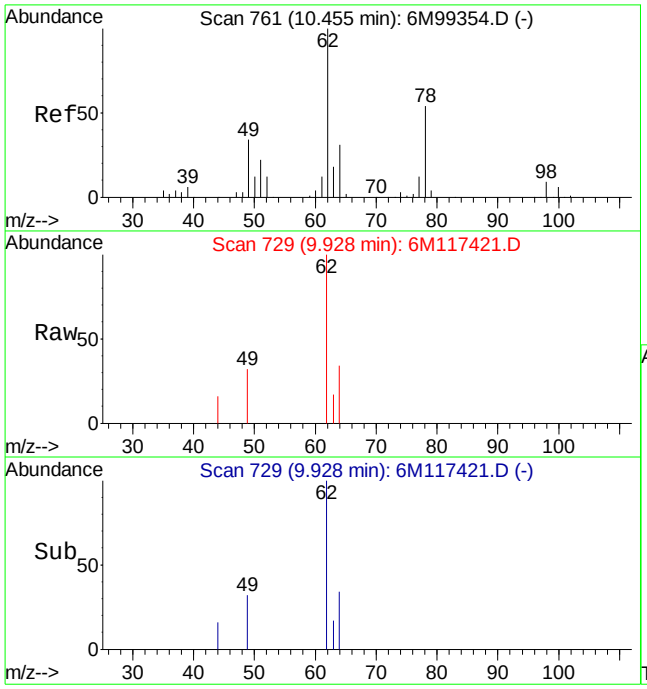

#45
1,2-Dichloroethane
Concen: 0.87 ug/L
RT: 9.93 min Scan# 729
Delta R.T. 0.01 min
Lab File: 6M117421.D
Acq: 11 Jun 2013 1:30

Tgt Ion: 62 Resp: 4803

Ion	Ratio	Lower	Upper
62	100		
49	24.7	23.9	55.9
98	0.0	5.0	11.6#

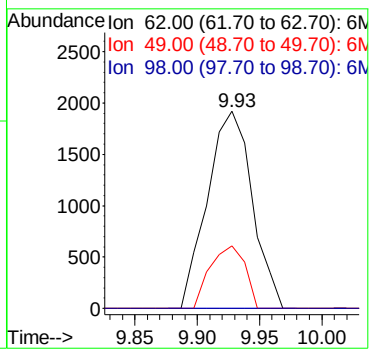

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117422.D Vial: 20
Acq On : 11 Jun 2013 2:01 Operator: ADC
Sample : L13060134-13 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:29:27 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	460486	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.72	117	388657	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	194239	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.06	111	139221	26.9910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.96%		
43) 1,2-Dichloroethane-d4	9.79	65	118739	26.4586 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.84%		
58) Toluene-d8	12.53	98	517464	23.2223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.88%		
80) p-Bromofluorobenzene	16.50	95	209321	26.7415 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.96%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.15	62	783	0.1935 ug/L #	43
14) 1,1-Dichloroethene	5.58	61	375535	46.7737 ug/L	99
15) Tert-Butyl Alcohol	5.58	59	12387	78.4610 ug/L #	61
16) Dimethyl Sulfide	5.58	62	20178	3.6055 ug/L #	60
19) Methylene Chloride	6.41	84	611	0.1282 ug/L #	21
27) 1,1-Dichloroethane	7.57	63	105848	10.5582 ug/L	99
45) 1,2-Dichloroethane	9.93	62	4548	0.8502 ug/L #	75
50) 1,4-Dioxane	11.43	88	1119	89.2500 ug/L	95

(#) = qualifier out of range (m) = manual integration
6M117422.D 8260_WT.M Tue Jun 11 16:29:28 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117422.D Vial: 20
Acq On : 11 Jun 2013 2:01 Operator: ADC
Sample : L13060134-13 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:29 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

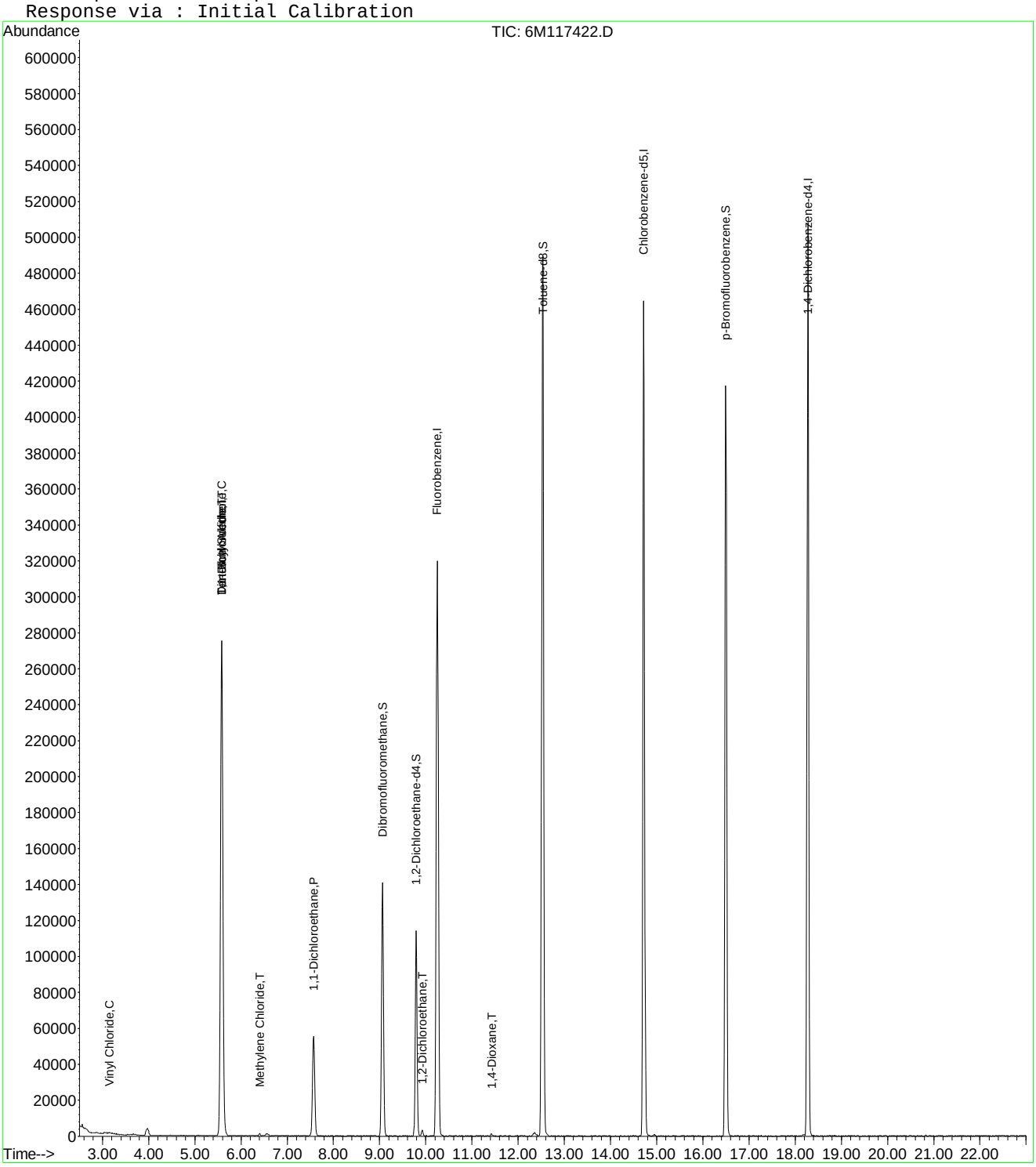

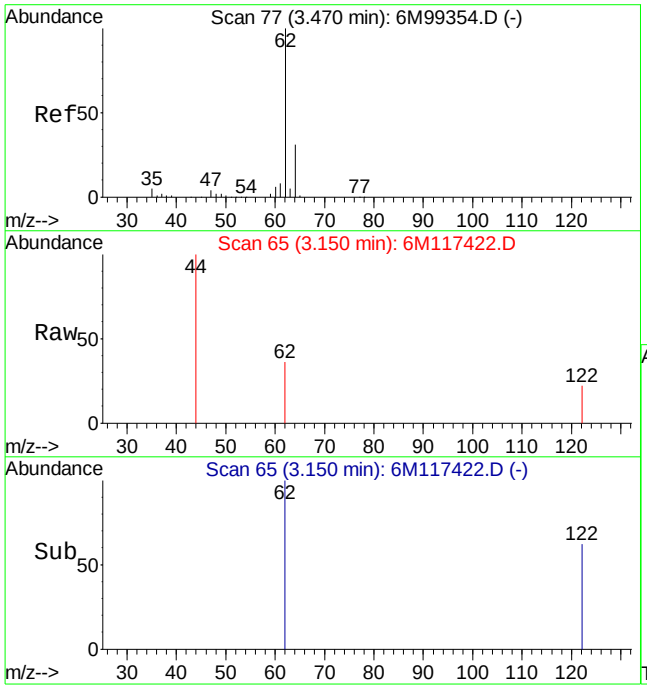

#4
Vinyl Chloride
Concen: 0.19 ug/L
RT: 3.15 min Scan# 65
Delta R.T. 0.00 min
Lab File: 6M117422.D
Acq: 11 Jun 2013 2:01

Tgt Ion: 62 Resp: 783

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.9	44.1#

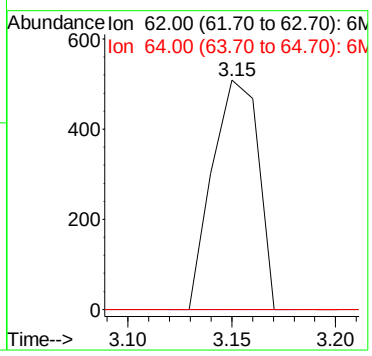

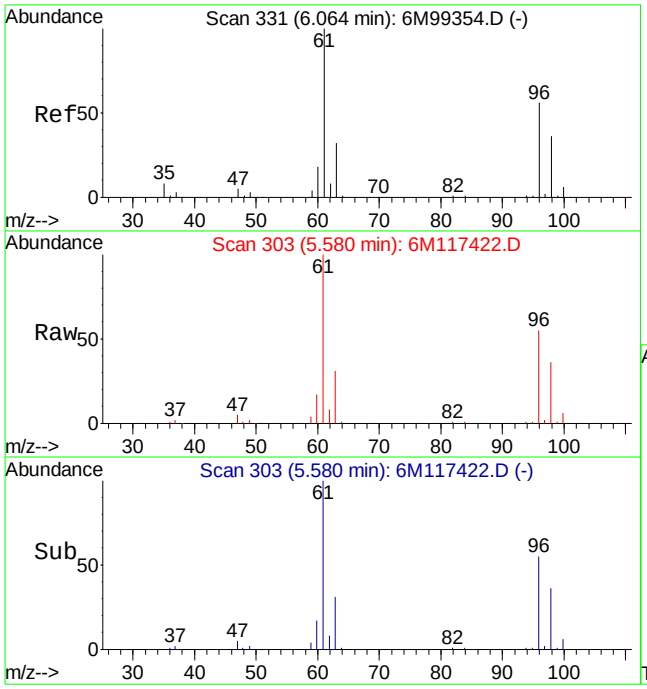

#14
1,1-Dichloroethene
Concen: 46.77 ug/L
RT: 5.58 min Scan# 303
Delta R.T. 0.00 min
Lab File: 6M117422.D
Acq: 11 Jun 2013 2:01

Tgt Ion: 61 Resp: 375535

Ion	Ratio	Lower	Upper
61	100		
96	55.2	33.7	78.5

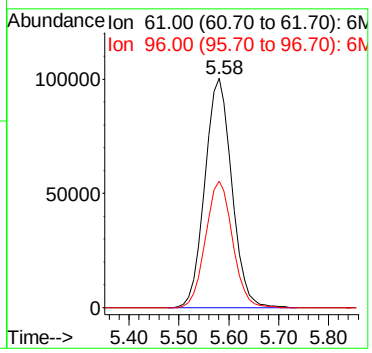

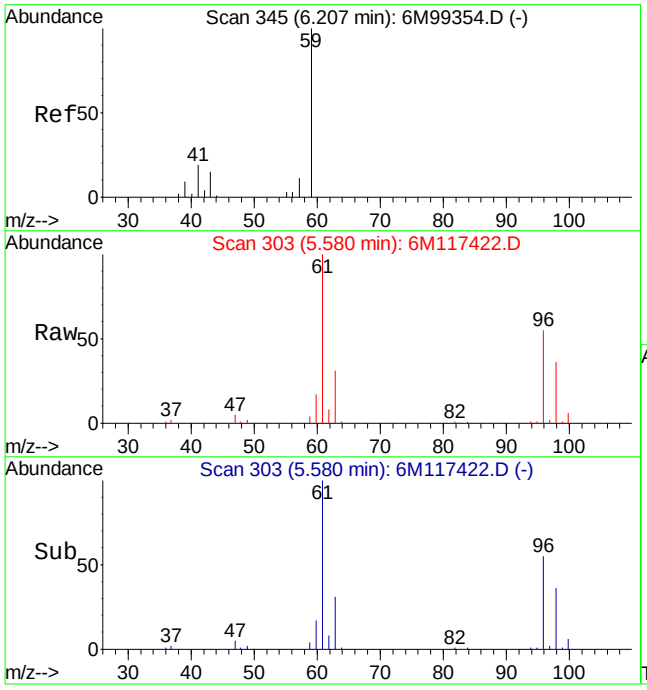

#15
Tert-Butyl Alcohol
Concen: 78.46 ug/L
RT: 5.58 min Scan# 303
Delta R.T. -0.14 min
Lab File: 6M117422.D
Acq: 11 Jun 2013 2:01

Tgt Ion: 59 Resp: 12387

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.5	29.1#
57	0.0	5.2	12.0#

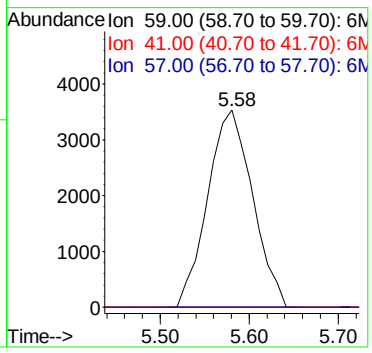

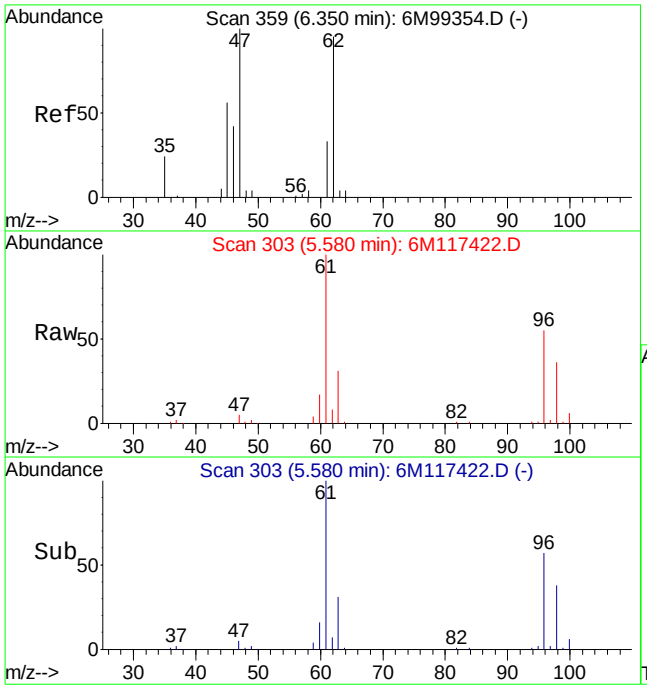

#16
Dimethyl Sulfide
Concen: 3.61 ug/L
RT: 5.58 min Scan# 303
Delta R.T. -0.26 min
Lab File: 6M117422.D
Acq: 11 Jun 2013 2:01

Tgt Ion: 62 Resp: 20178

Ion	Ratio	Lower	Upper
62	100		
47	58.7	59.2	138.0#

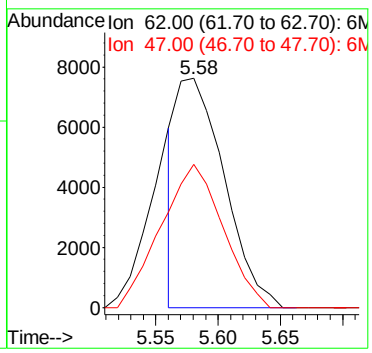

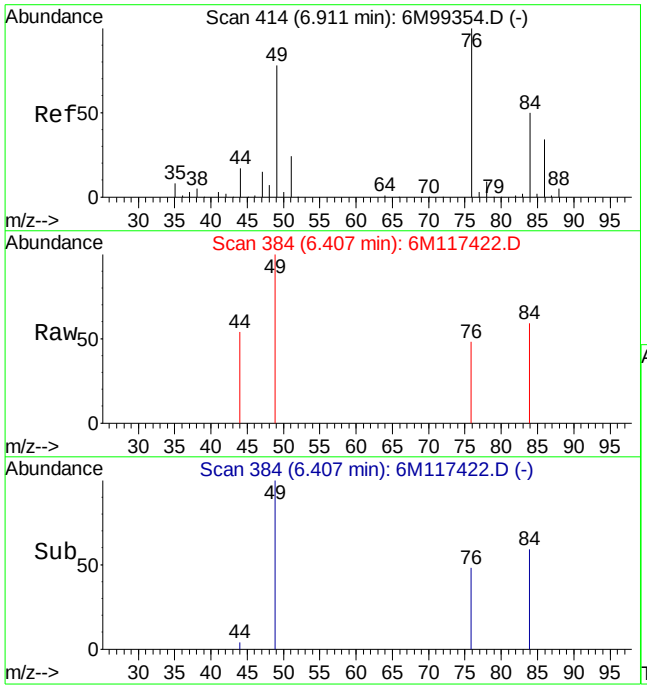

#19
Methylene Chloride
Concen: 0.13 ug/L
RT: 6.41 min Scan# 384
Delta R.T. 0.01 min
Lab File: 6M117422.D
Acq: 11 Jun 2013 2:01

Tgt Ion: 84 Resp: 611

Ion	Ratio	Lower	Upper
84	100		
49	257.0	92.9	216.9#

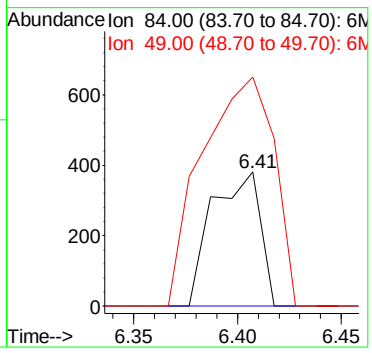

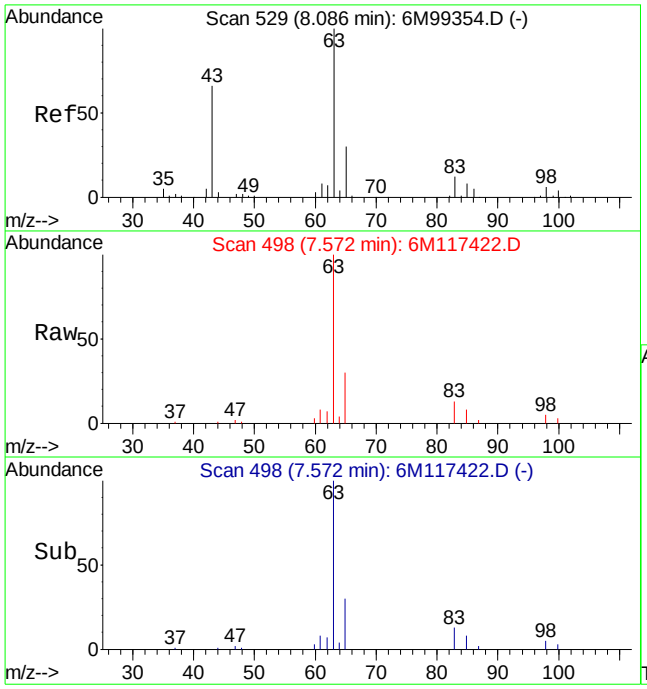

#27
1,1-Dichloroethane
Concen: 10.56 ug/L
RT: 7.57 min Scan# 498
Delta R.T. 0.00 min
Lab File: 6M117422.D
Acq: 11 Jun 2013 2:01

Tgt Ion: 63 Resp: 105848

Ion	Ratio	Lower	Upper
63	100		
65	30.2	18.4	42.8

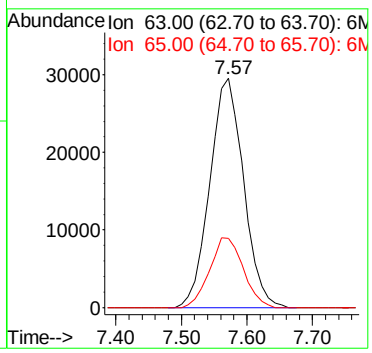

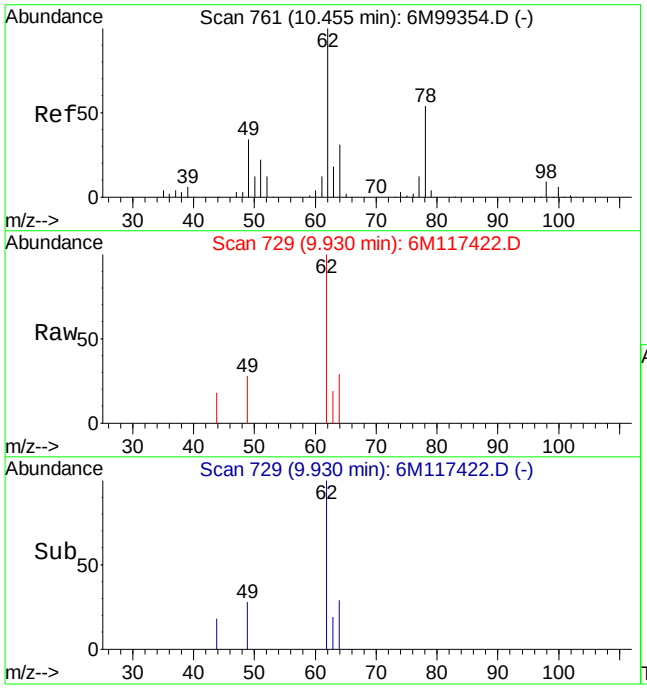

#45
1,2-Dichloroethane
Concen: 0.85 ug/L
RT: 9.93 min Scan# 729
Delta R.T. 0.01 min
Lab File: 6M117422.D
Acq: 11 Jun 2013 2:01

Tgt Ion: 62 Resp: 4548

Ion	Ratio	Lower	Upper
62	100		
49	24.5	23.9	55.9
98	0.0	5.0	11.6#

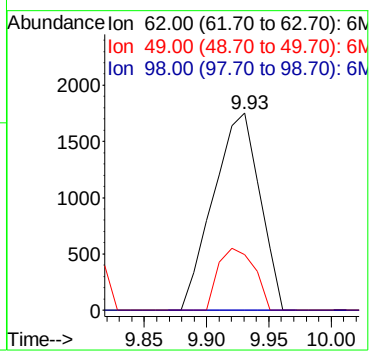

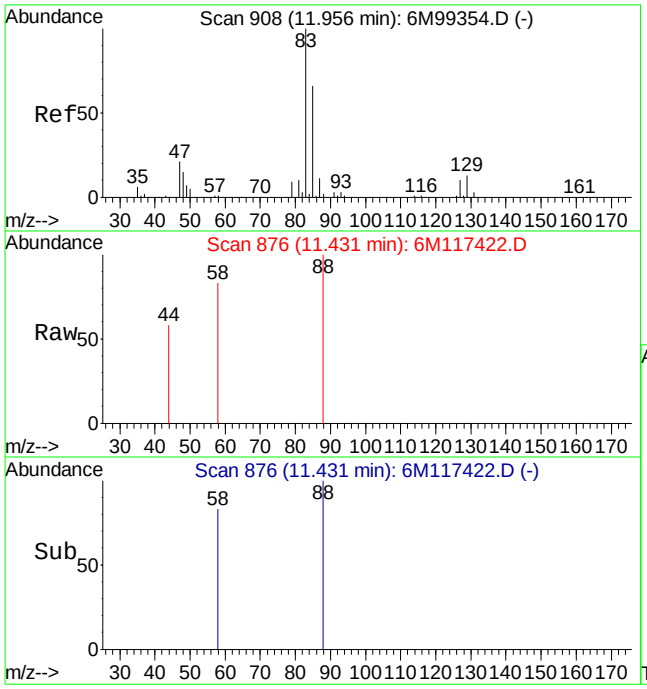

#50
1,4-Dioxane
Concen: 89.25 ug/L
RT: 11.43 min Scan# 876
Delta R.T. 0.01 min
Lab File: 6M117422.D
Acq: 11 Jun 2013 2:01

Tgt Ion: 88 Resp: 1119

Ion	Ratio	Lower	Upper
88	100		
58	68.2	38.8	90.4

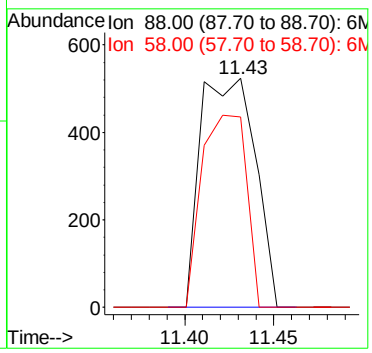

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117423.D Vial: 21
Acq On : 11 Jun 2013 2:33 Operator: ADC
Sample : L13060134-14 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:29:29 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	445225	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.72	117	374216	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	188383	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.06	111	135394	27.1488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.60%		
43) 1,2-Dichloroethane-d4	9.79	65	114291	26.3404 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.36%		
58) Toluene-d8	12.53	98	500246	23.3159 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.28%		
80) p-Bromofluorobenzene	16.50	95	199671	26.3016 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.20%		

Target Compounds					Qvalue
16) Dimethyl Sulfide	5.85	62	4931	0.9113 ug/L	99
50) 1,4-Dioxane	11.42	88	705	72.4568 ug/L #	54
92) p-Isopropyltoluene	17.99	119	6329	0.2986 ug/L	85

(#) = qualifier out of range (m) = manual integration
6M117423.D 8260_WT.M Tue Jun 11 16:29:30 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117423.D Vial: 21
Acq On : 11 Jun 2013 2:33 Operator: ADC
Sample : L13060134-14 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:29 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

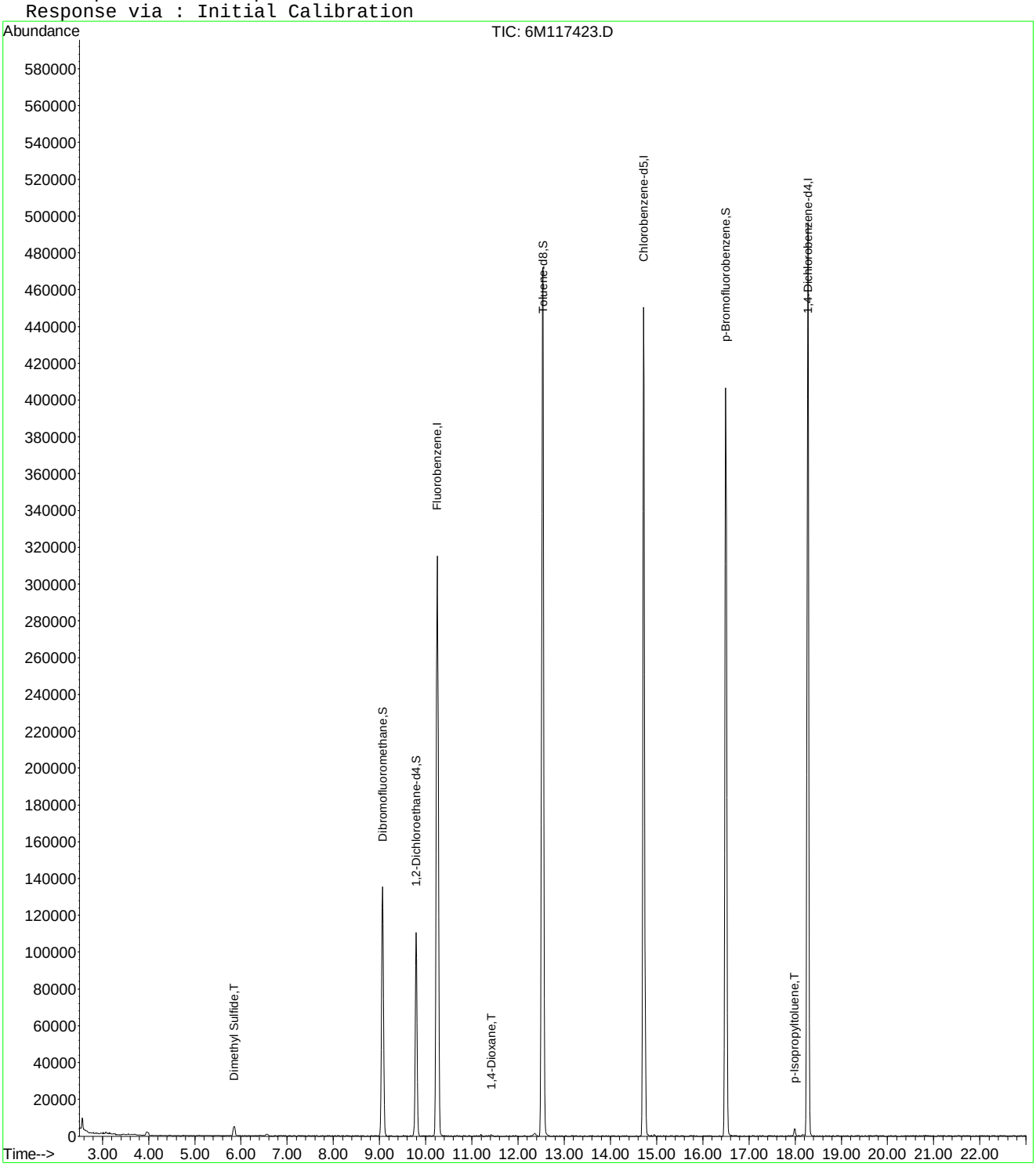

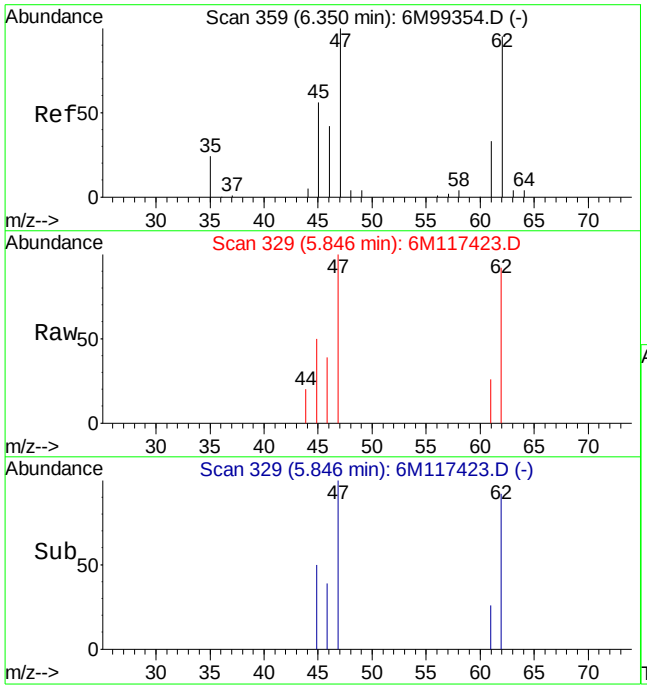

#16
Dimethyl Sulfide
Concen: 0.91 ug/L
RT: 5.85 min Scan# 329
Delta R.T. 0.00 min
Lab File: 6M117423.D
Acq: 11 Jun 2013 2:33

Tgt Ion: 62 Resp: 4931

Ion	Ratio	Lower	Upper
62	100		
47	97.4	59.2	138.0

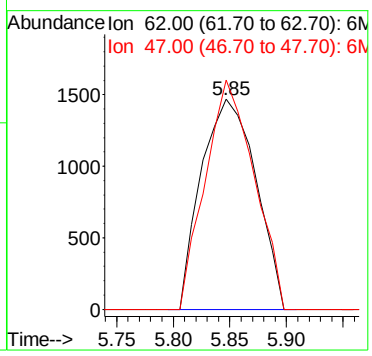

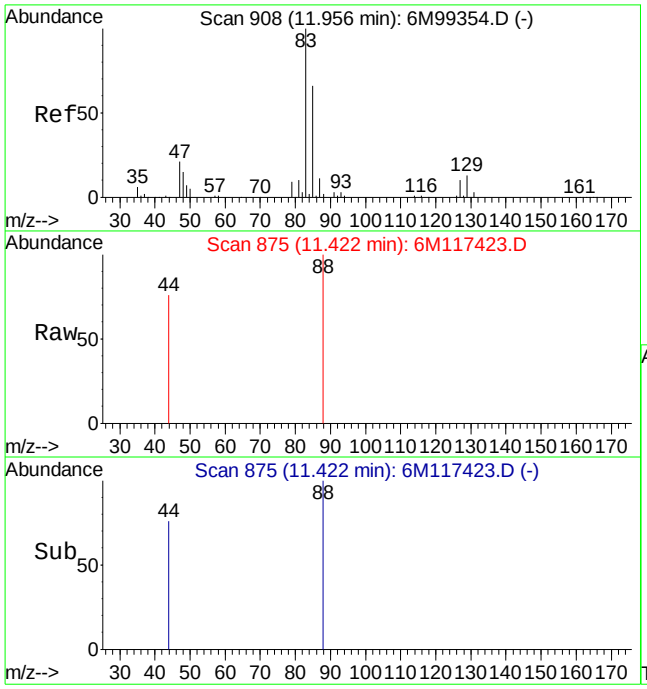

#50
1,4-Dioxane
Concen: 72.46 ug/L
RT: 11.42 min Scan# 875
Delta R.T. 0.00 min
Lab File: 6M117423.D
Acq: 11 Jun 2013 2:33

Tgt Ion: 88 Resp: 705

Ion	Ratio	Lower	Upper
88	100		
58	28.2	38.8	90.4#

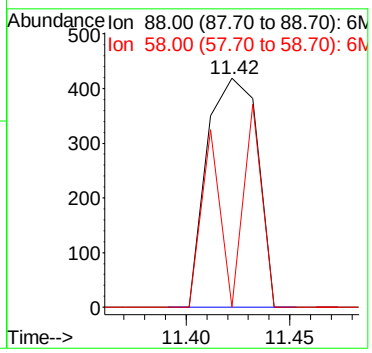

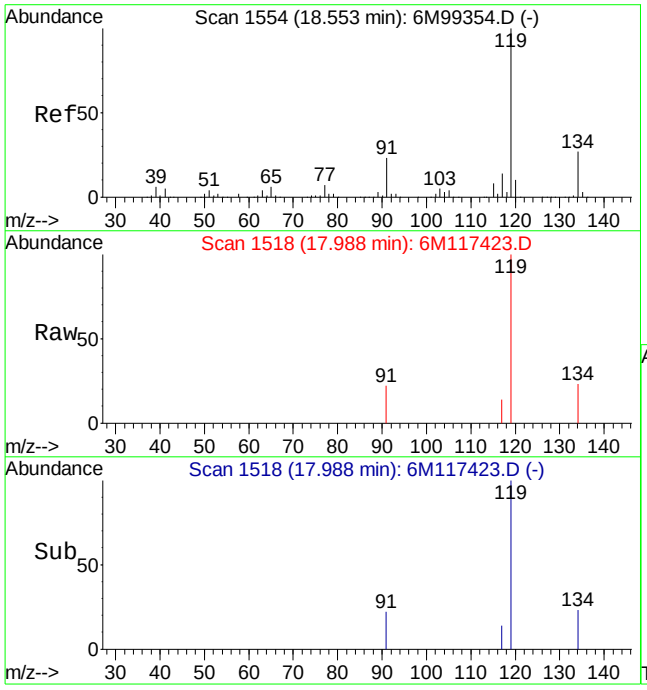

#92
p-Isopropyltoluene
Concen: 0.30 ug/L
RT: 17.99 min Scan# 1518
Delta R.T. -0.01 min
Lab File: 6M117423.D
Acq: 11 Jun 2013 2:33

Tgt Ion:119 Resp: 6329

Ion	Ratio	Lower	Upper
119	100		
134	18.7	15.7	36.7

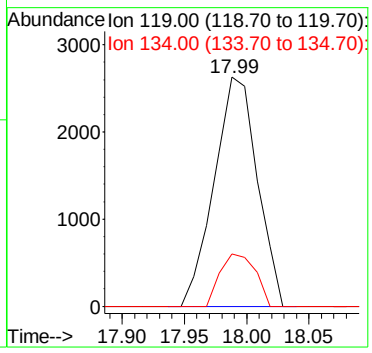

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117424.D Vial: 22
Acq On : 11 Jun 2013 3:03 Operator: ADC
Sample : L13060134-15 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:29:31 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	435488	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.72	117	368435	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	187406	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.06	111	133138	27.2933 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.16%		
43) 1,2-Dichloroethane-d4	9.79	65	114622	27.0074 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.04%		
58) Toluene-d8	12.53	98	494386	23.4043 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.60%		
80) p-Bromofluorobenzene	16.50	95	199962	26.4773 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.92%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.15	62	652	0.1704 ug/L #	43
14) 1,1-Dichloroethene	5.58	61	121978	16.0647 ug/L	98
15) Tert-Butyl Alcohol	5.57	59	3822	25.5987 ug/L #	61
16) Dimethyl Sulfide	5.58	62	6360	1.2017 ug/L #	56
27) 1,1-Dichloroethane	7.57	63	34103	3.5970 ug/L	99
45) 1,2-Dichloroethane	9.92	62	1855	0.3667 ug/L #	42

(#) = qualifier out of range (m) = manual integration
6M117424.D 8260_WT.M Tue Jun 11 16:29:31 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117424.D Vial: 22
Acq On : 11 Jun 2013 3:03 Operator: ADC
Sample : L13060134-15 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:29 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

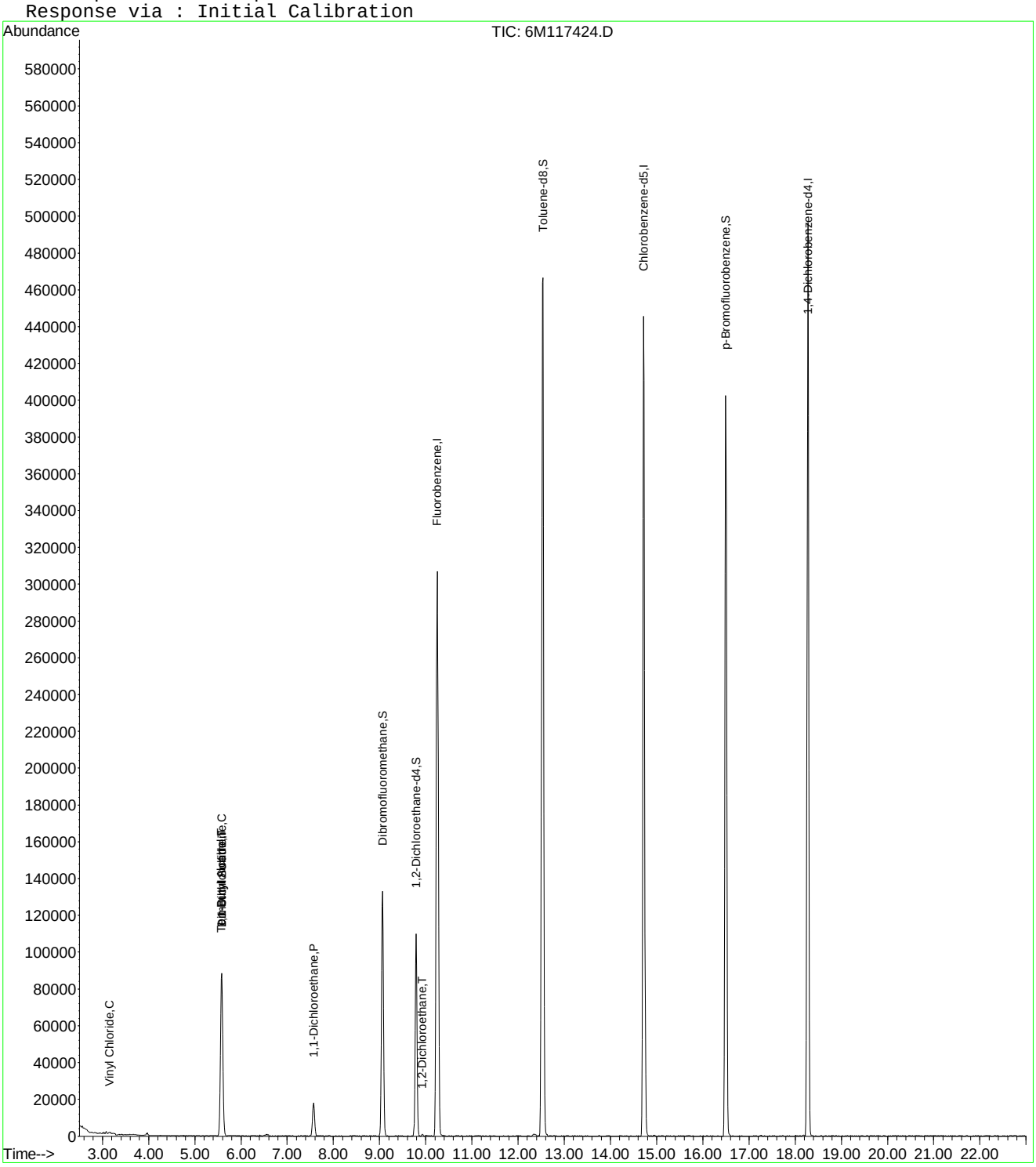

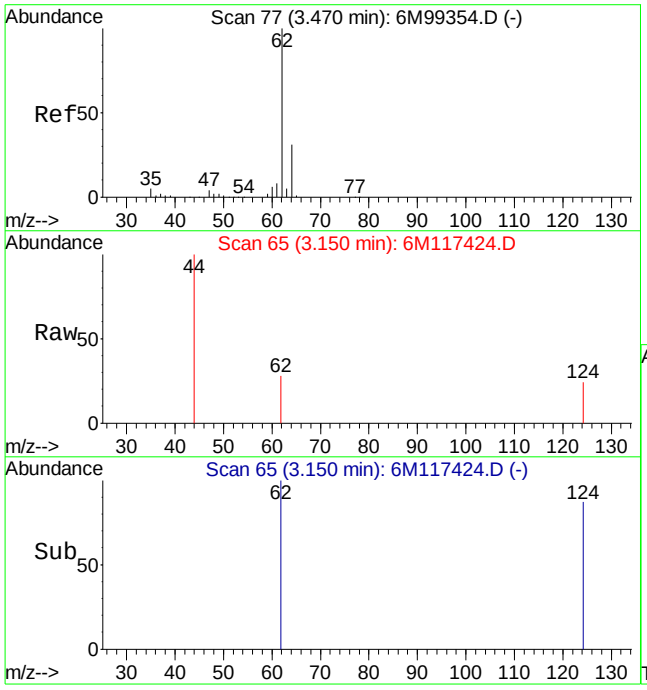

#4
Vinyl Chloride
Concen: 0.17 ug/L
RT: 3.15 min Scan# 65
Delta R.T. 0.00 min
Lab File: 6M117424.D
Acq: 11 Jun 2013 3:03

Tgt Ion: 62 Resp: 652

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.9	44.1#

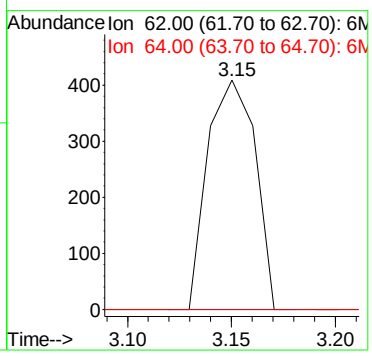

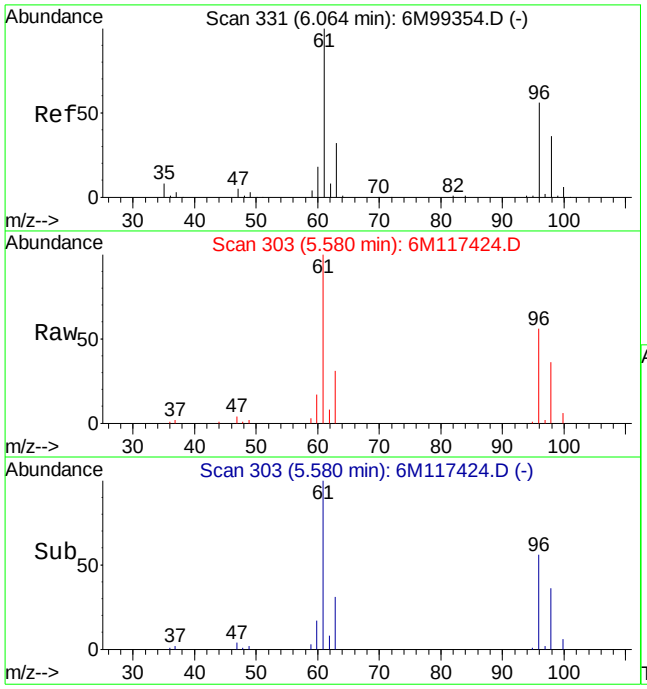

#14
1,1-Dichloroethene
Concen: 16.06 ug/L
RT: 5.58 min Scan# 303
Delta R.T. 0.00 min
Lab File: 6M117424.D
Acq: 11 Jun 2013 3:03

Tgt Ion: 61 Resp: 121978

Ion	Ratio	Lower	Upper
61	100		
96	54.4	33.7	78.5

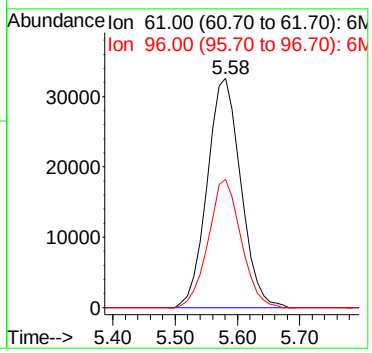

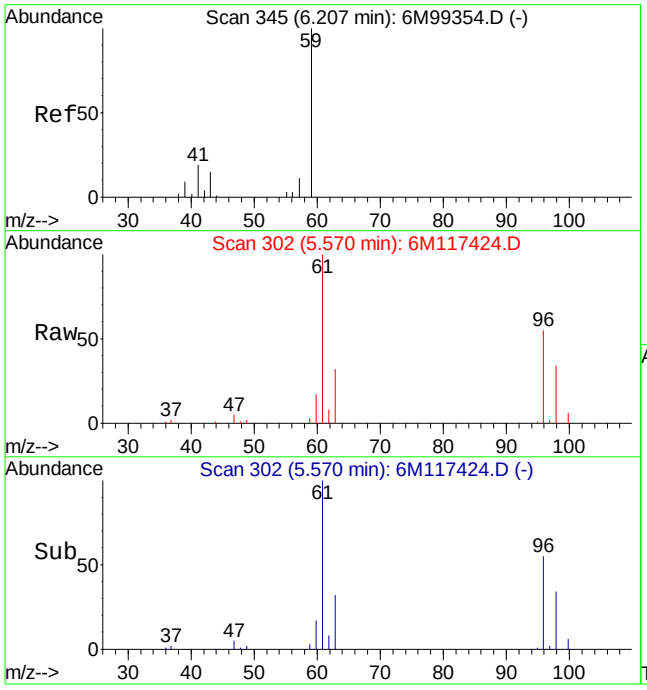

#15
Tert-Butyl Alcohol
Concen: 25.60 ug/L
RT: 5.57 min Scan# 302
Delta R.T. -0.15 min
Lab File: 6M117424.D
Acq: 11 Jun 2013 3:03

Tgt Ion: 59 Resp: 3822

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.5	29.1#
57	0.0	5.2	12.0#

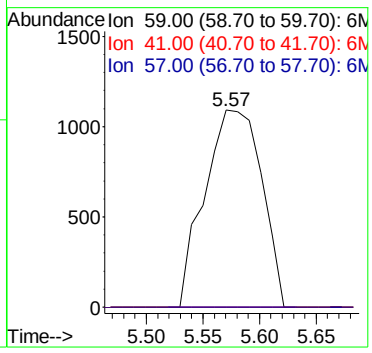

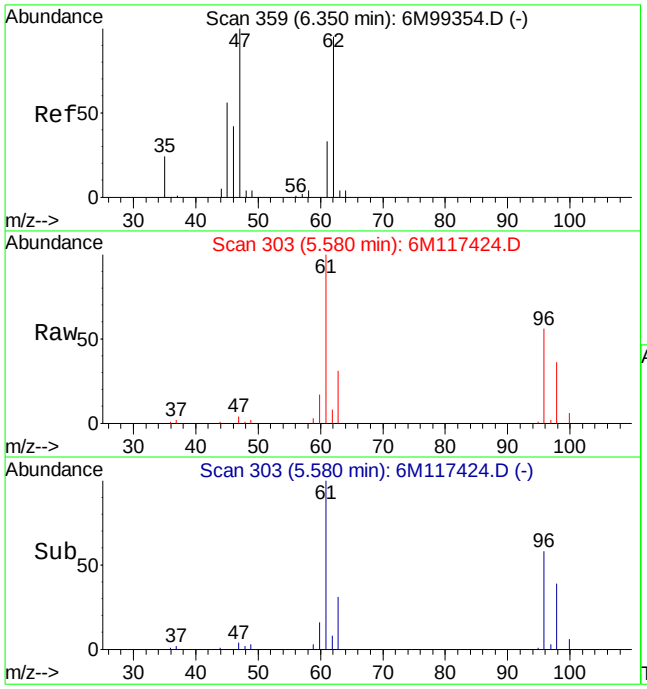

#16
Dimethyl Sulfide
Concen: 1.20 ug/L
RT: 5.58 min Scan# 303
Delta R.T. -0.26 min
Lab File: 6M117424.D
Acq: 11 Jun 2013 3:03

Tgt Ion: 62 Resp: 6360

Ion	Ratio	Lower	Upper
62	100		
47	54.5	59.2	138.0#

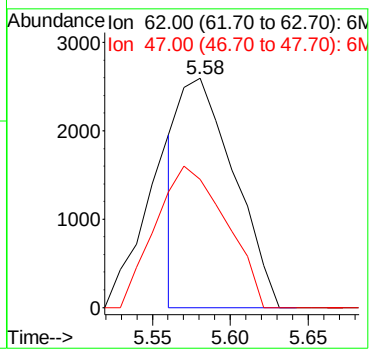

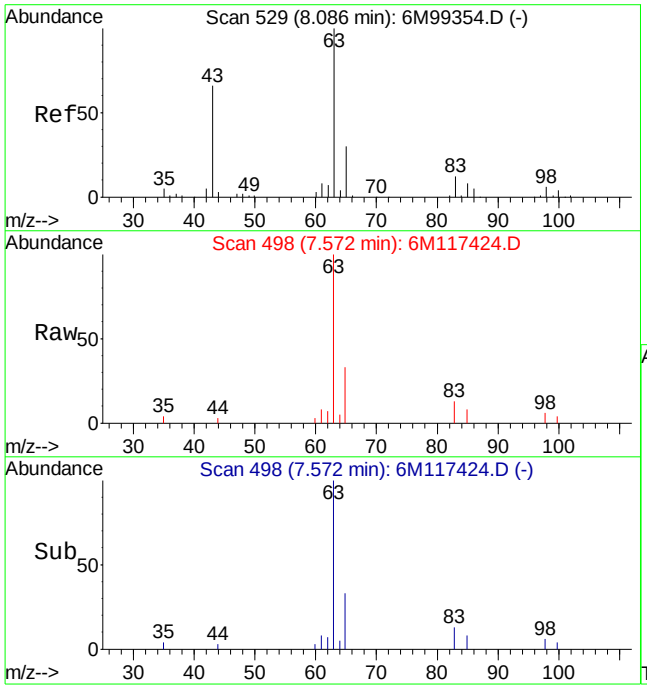

#27
1,1-Dichloroethane
Concen: 3.60 ug/L
RT: 7.57 min Scan# 498
Delta R.T. 0.00 min
Lab File: 6M117424.D
Acq: 11 Jun 2013 3:03

Tgt Ion: 63 Resp: 34103

Ion	Ratio	Lower	Upper
63	100		
65	31.3	18.4	42.8

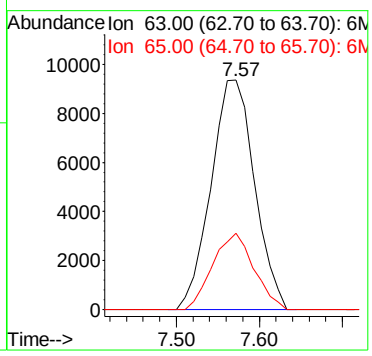

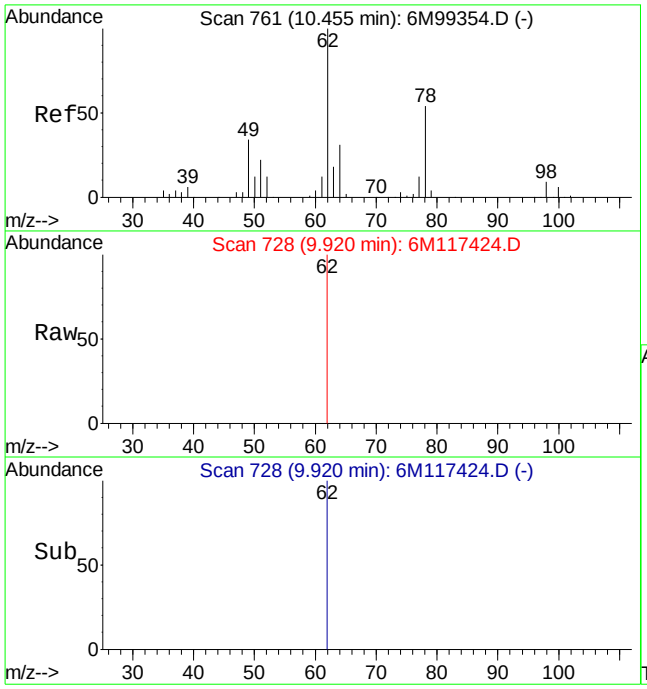

#45
1,2-Dichloroethane
Concen: 0.37 ug/L
RT: 9.92 min Scan# 728
Delta R.T. 0.00 min
Lab File: 6M117424.D
Acq: 11 Jun 2013 3:03

Tgt Ion: 62 Resp: 1855

Ion	Ratio	Lower	Upper
62	100		
49	0.0	23.9	55.9#
98	0.0	5.0	11.6#

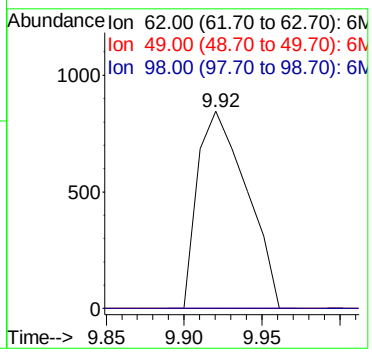

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117425.D Vial: 23
Acq On : 11 Jun 2013 3:35 Operator: ADC
Sample : L13060134-16 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:29:33 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.26	96	428774	25.00 ug/L	0.01
57) Chlorobenzene-d5	14.73	117	361204	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	18.27	152	184496	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.06	111	132014	27.4867 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.96%		
43) 1,2-Dichloroethane-d4	9.79	65	113517	27.1658 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.68%		
58) Toluene-d8	12.53	98	478551	23.1082 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.44%		
80) p-Bromofluorobenzene	16.49	95	195860	26.3431 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.36%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.16	62	3584	0.9511 ug/L	91
14) 1,1-Dichloroethene	5.58	61	10374485	1387.7318 ug/L	98
15) Tert-Butyl Alcohol	5.58	59	384412	2615.0059 ug/L #	62
27) 1,1-Dichloroethane	7.57	63	496431	53.1805 ug/L	99
28) Ethyl-Tert-Butyl ether	7.86	59	3551	0.2826 ug/L #	40
32) cis-1,2-Dichloroethene	8.50	96	11122	2.1835 ug/L	89
33) Chloroform	8.73	83	30400	3.5562 ug/L	100
45) 1,2-Dichloroethane	9.93	62	444414	89.2240 ug/L	86
46) Benzene	9.96	78	3755	0.1944 ug/L #	80
47) Trichloroethene	10.83	130	14102	2.8596 ug/L	96
63) 1,1,2-Trichloroethane	13.11	97	13442	4.2503 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M117425.D 8260_WT.M Tue Jun 11 16:29:33 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117425.D Vial: 23
Acq On : 11 Jun 2013 3:35 Operator: ADC
Sample : L13060134-16 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:29 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

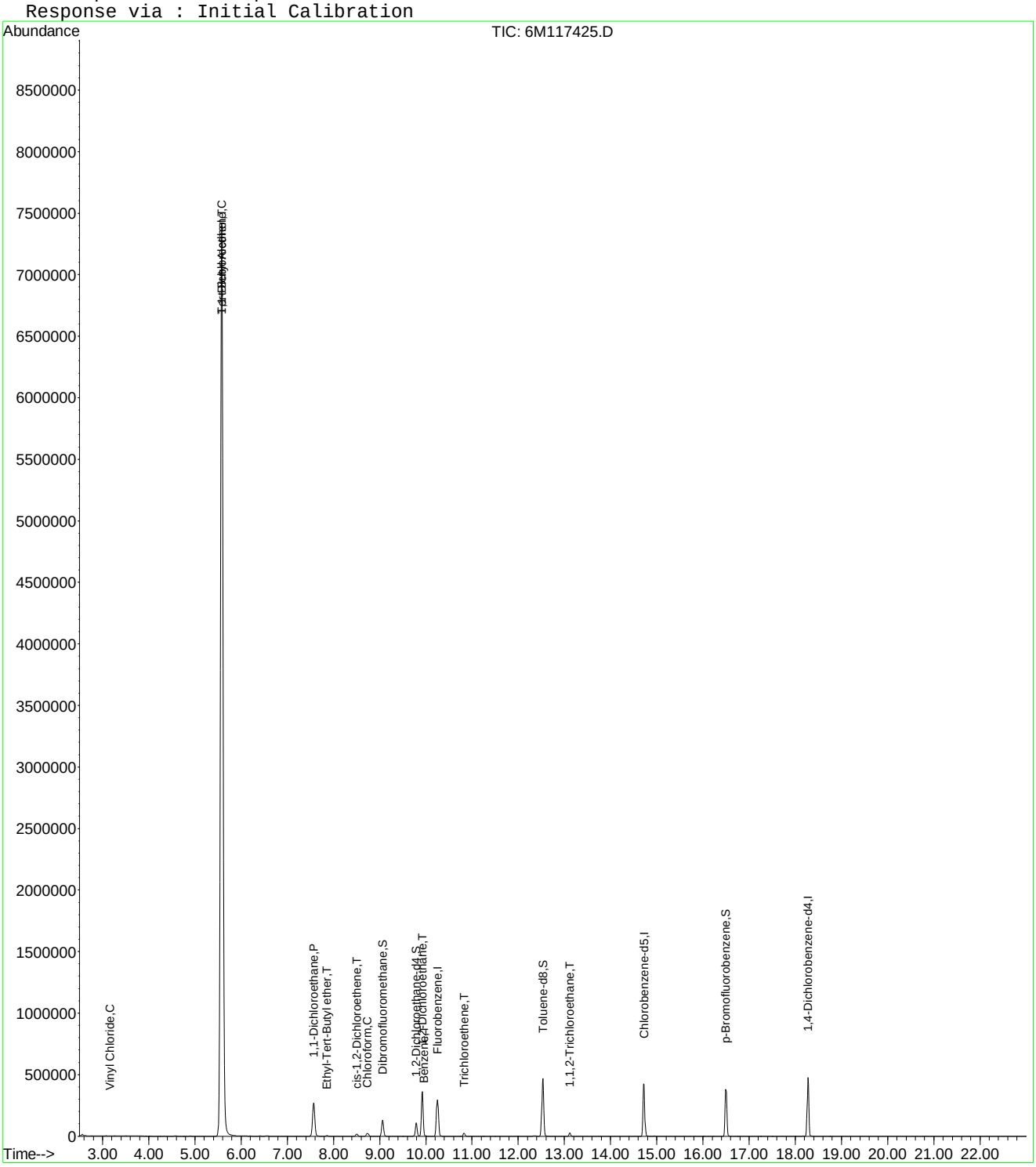

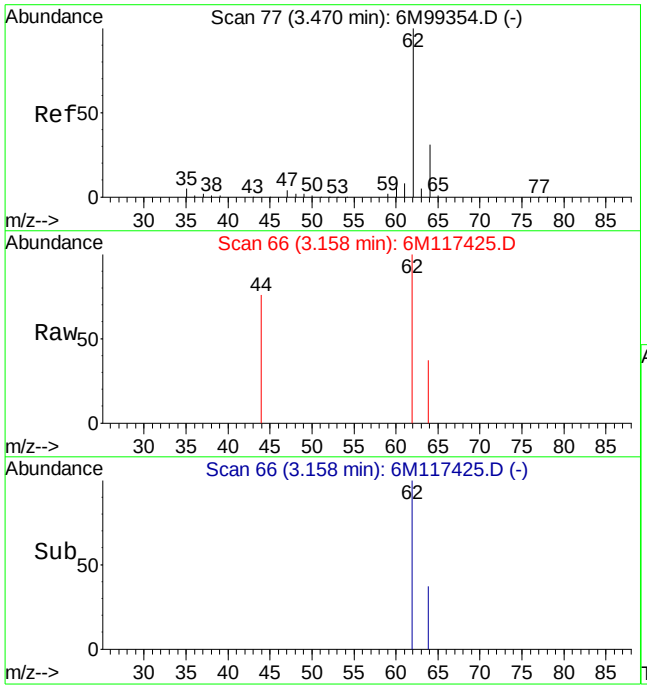

#4
Vinyl Chloride
Concen: 0.95 ug/L
RT: 3.16 min Scan# 66
Delta R.T. 0.01 min
Lab File: 6M117425.D
Acq: 11 Jun 2013 3:35

Tgt Ion: 62 Resp: 3584

Ion	Ratio	Lower	Upper
62	100		
64	26.8	18.9	44.1

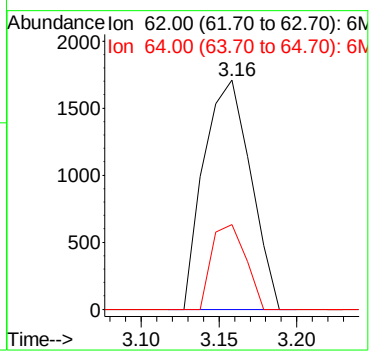

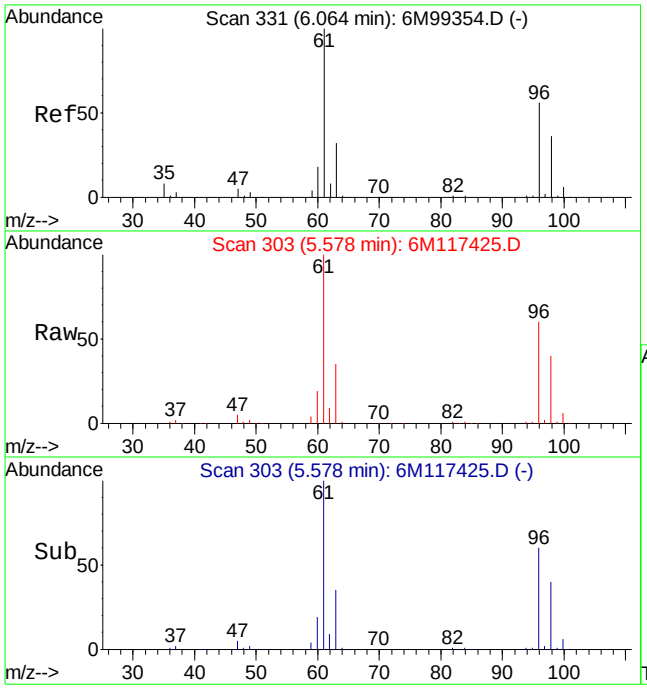

#14
1,1-Dichloroethene
Concen: 1387.73 ug/L
RT: 5.58 min Scan# 303
Delta R.T. -0.00 min
Lab File: 6M117425.D
Acq: 11 Jun 2013 3:35

Tgt Ion: 61 Resp:10374485

Ion	Ratio	Lower	Upper
61	100		
96	57.8	33.7	78.5

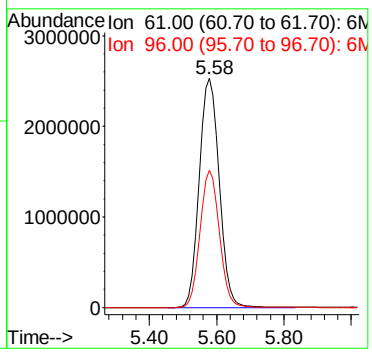

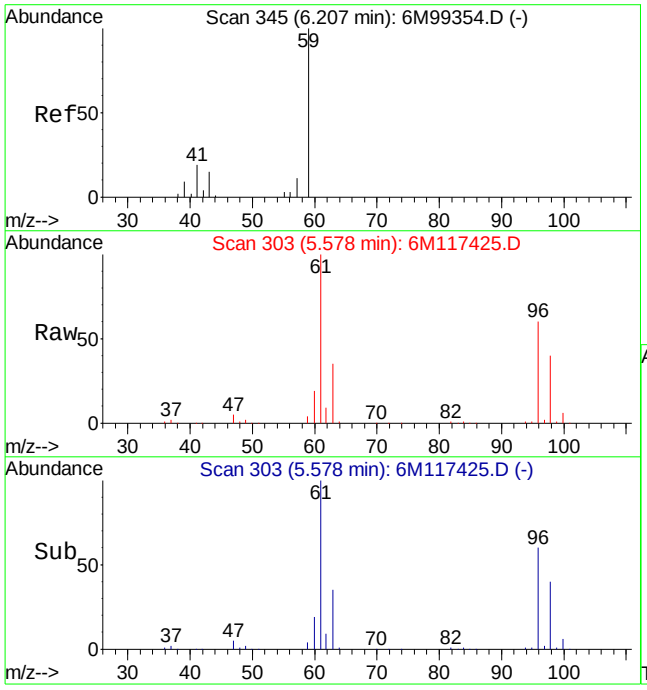

#15
Tert-Butyl Alcohol
Concen: 2615.01 ug/L
RT: 5.58 min Scan# 303
Delta R.T. -0.14 min
Lab File: 6M117425.D
Acq: 11 Jun 2013 3:35

Tgt Ion: 59 Resp: 384412

Ion	Ratio	Lower	Upper
59	100		
41	0.4	12.5	29.1#
57	0.0	5.2	12.0#

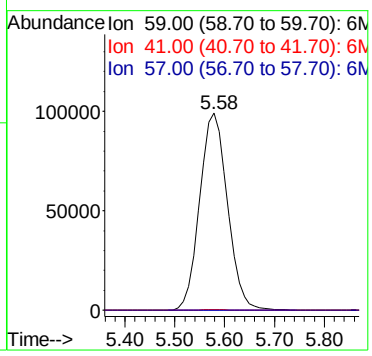

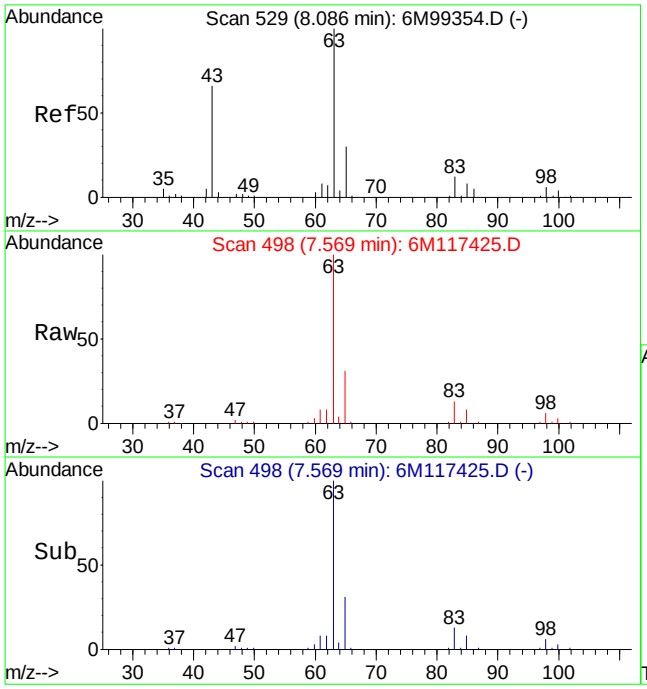

#27
1,1-Dichloroethane
Concen: 53.18 ug/L
RT: 7.57 min Scan# 498
Delta R.T. -0.00 min
Lab File: 6M117425.D
Acq: 11 Jun 2013 3:35

Tgt Ion: 63 Resp: 496431

Ion	Ratio	Lower	Upper
63	100		
65	30.9	18.4	42.8

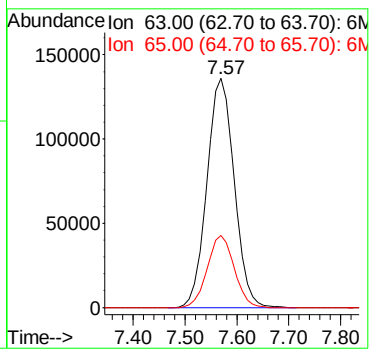

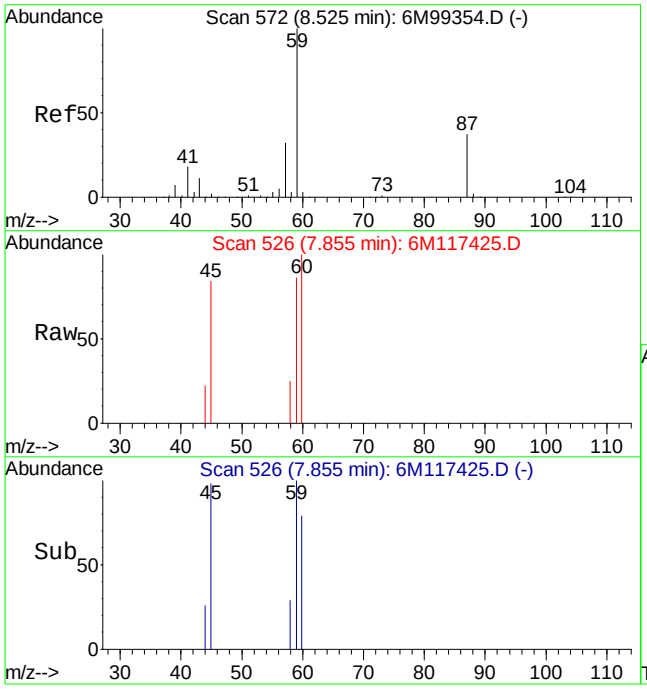

#28
Ethyl-Tert-Butyl ether
Concen: 0.28 ug/L
RT: 7.86 min Scan# 526
Delta R.T. -0.16 min
Lab File: 6M117425.D
Acq: 11 Jun 2013 3:35

Tgt Ion: 59 Resp: 3551

Ion	Ratio	Lower	Upper
59	100		
87	0.0	21.6	50.4#
57	0.0	19.4	45.4#

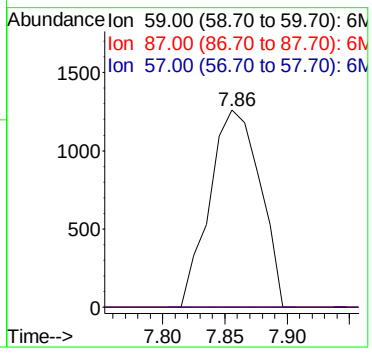

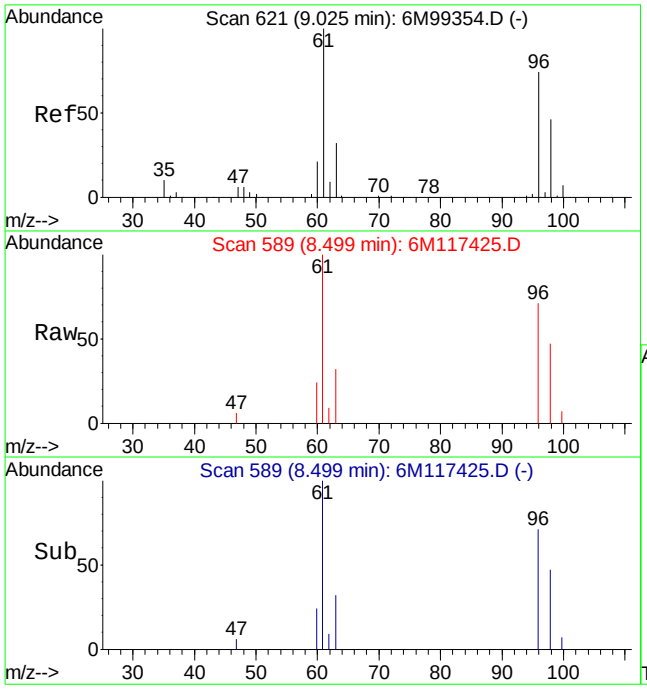

#32
cis-1,2-Dichloroethene
Concen: 2.18 ug/L
RT: 8.50 min Scan# 589
Delta R.T. -0.00 min
Lab File: 6M117425.D
Acq: 11 Jun 2013 3:35

Tgt Ion: 96 Resp: 11122

Ion	Ratio	Lower	Upper
96	100		
61	150.1	98.8	230.4

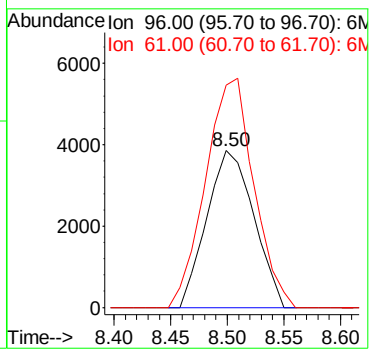

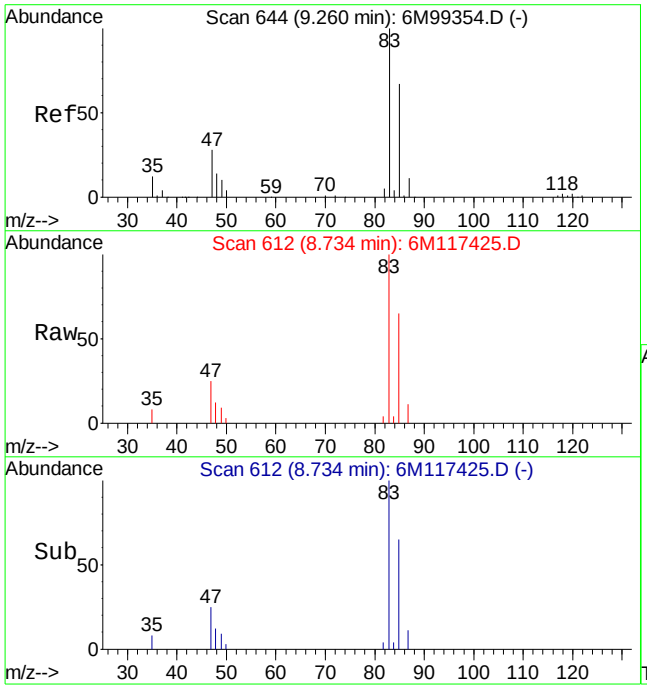

#33
Chloroform
Concen: 3.56 ug/L
RT: 8.73 min Scan# 612
Delta R.T. -0.00 min
Lab File: 6M117425.D
Acq: 11 Jun 2013 3:35

Tgt Ion: 83 Resp: 30400

Ion	Ratio	Lower	Upper
83	100		
85	64.5	38.9	90.7
47	24.3	14.8	34.4

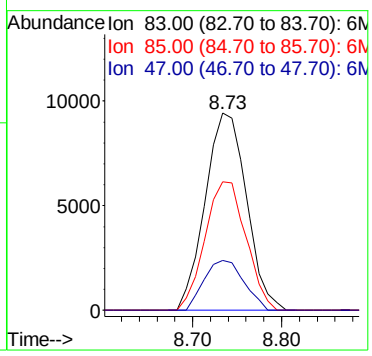

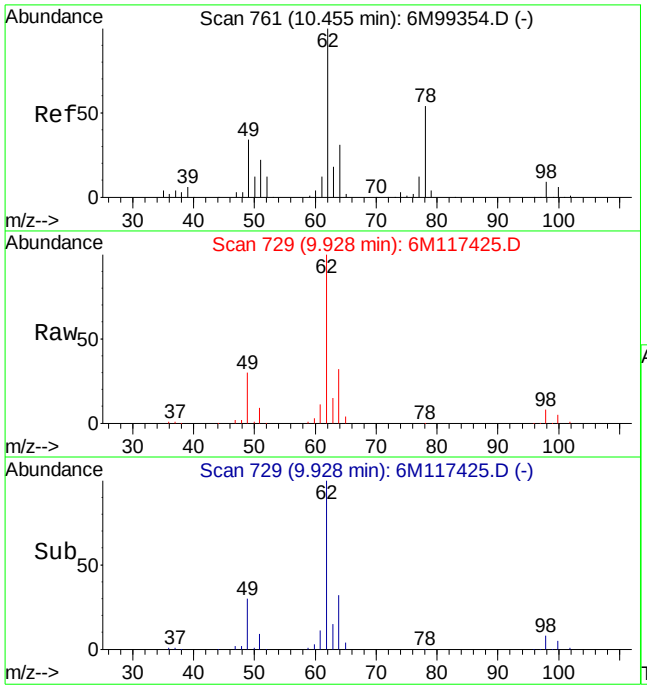

#45
1,2-Dichloroethane
Concen: 89.22 ug/L
RT: 9.93 min Scan# 729
Delta R.T. 0.01 min
Lab File: 6M117425.D
Acq: 11 Jun 2013 3:35

Tgt Ion: 62 Resp: 444414

Ion	Ratio	Lower	Upper
62	100		
49	29.7	23.9	55.9
98	7.8	5.0	11.6

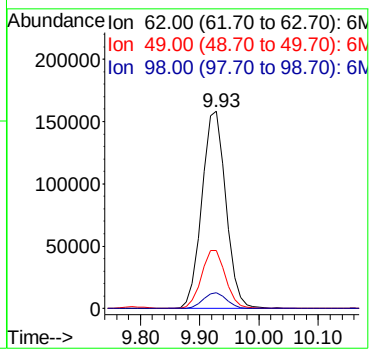

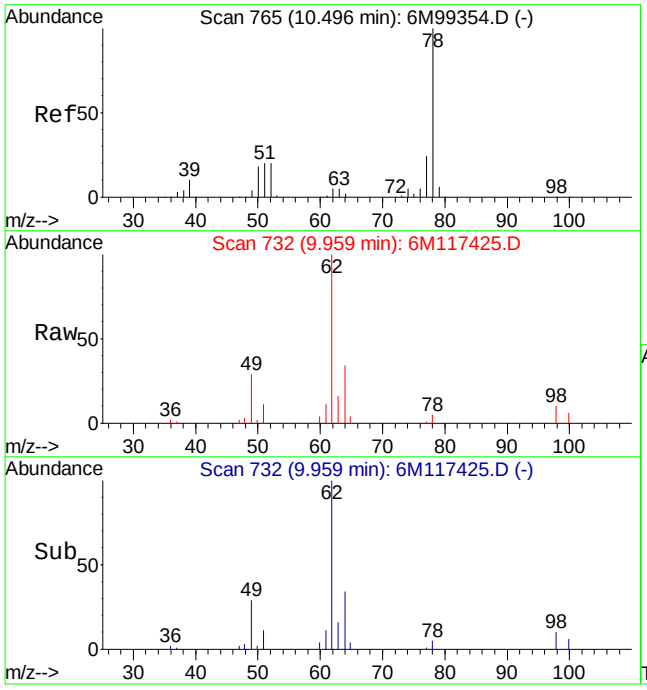

#46
Benzene
Concen: 0.19 ug/L
RT: 9.96 min Scan# 732
Delta R.T. 0.01 min
Lab File: 6M117425.D
Acq: 11 Jun 2013 3:35

Tgt Ion: 78 Resp: 3755

Ion	Ratio	Lower	Upper
78	100		
52	10.5	11.6	27.2#

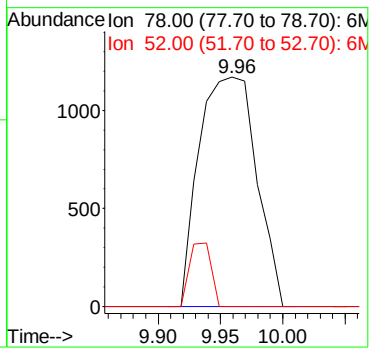

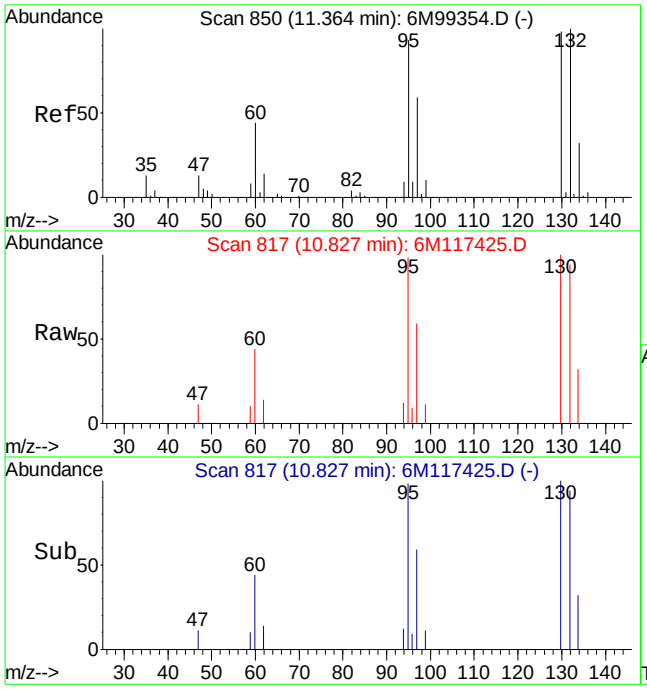

#47
Trichloroethene
Concen: 2.86 ug/L
RT: 10.83 min Scan# 817
Delta R.T. -0.00 min
Lab File: 6M117425.D
Acq: 11 Jun 2013 3:35

Tgt Ion:130 Resp: 14102

Ion	Ratio	Lower	Upper
130	100		
60	46.6	26.3	61.3

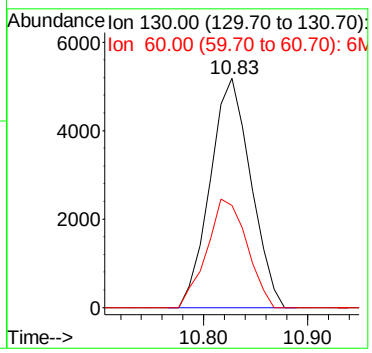

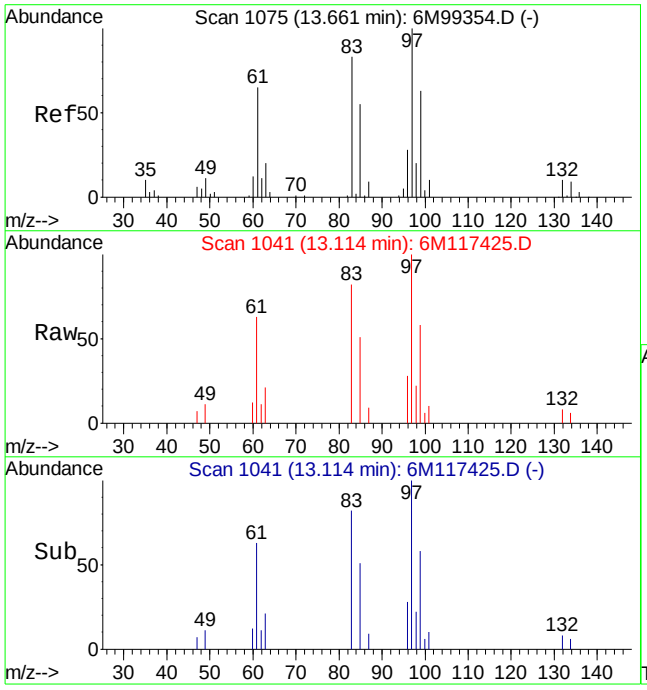

#63
1,1,2-Trichloroethane
Concen: 4.25 ug/L
RT: 13.11 min Scan# 1041
Delta R.T. 0.00 min
Lab File: 6M117425.D
Acq: 11 Jun 2013 3:35

Tgt Ion: 97 Resp: 13442

Ion	Ratio	Lower	Upper
97	100		
83	83.7	51.8	121.0
99	61.5	37.9	88.3

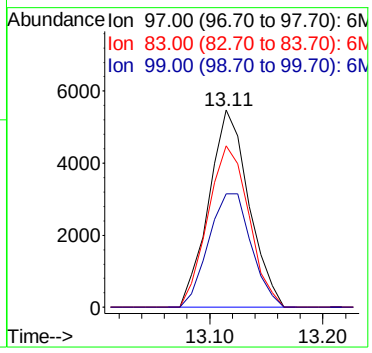

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\10M05679.D Vial: 9
Acq On : 12 Jun 2013 13:43 Operator: TMB
Sample : L13060134-16 B 25X 826-LOW D1 Inst : HPMS10
Misc : 1,25 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:17:34 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.72	96	612860	25.00 ug/L	-0.02
57) Chlorobenzene-d5	13.32	117	467786	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	16.11	152	247925	25.00 ug/L	-0.02
System Monitoring Compounds					
37) Dibromofluoromethane	8.72	111	149153	24.82 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.28%		
43) 1,2-Dichloroethane-d4	9.33	65	143386	24.15 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.60%		
58) Toluene-d8	11.58	98	526822	23.57 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.28%		
80) p-Bromofluorobenzene	14.72	95	198561	23.45 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.80%		
Target Compounds					Qvalue
3) Chloromethane	3.04	50	1882	0.28 ug/L #	71
4) Vinyl Chloride	3.24	62	1246	0.20 ug/L #	43
6) Bromomethane	4.00	94	958	Below Cal	74
13) Acetone	5.44	43	211	0.13 ug/L #	42
14) 1,1-Dichloroethene	5.65	96	225363	37.59 ug/L	96
27) 1,1-Dichloroethane	7.44	63	17208	1.50 ug/L	98
45) 1,2-Dichloroethane	9.45	62	20044	2.57 ug/L	90
59) Toluene	11.67	91	8609	0.32 ug/L	98

(#) = qualifier out of range (m) = manual integration
10M05679.D 8260WT.M Thu Jun 13 08:17:34 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\10M05679.D Vial: 9
Acq On : 12 Jun 2013 13:43 Operator: TMB
Sample : L13060134-16 B 25X 826-LOW D1 Inst : HPMS10
Misc : 1,25 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:17 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Initial Calibration

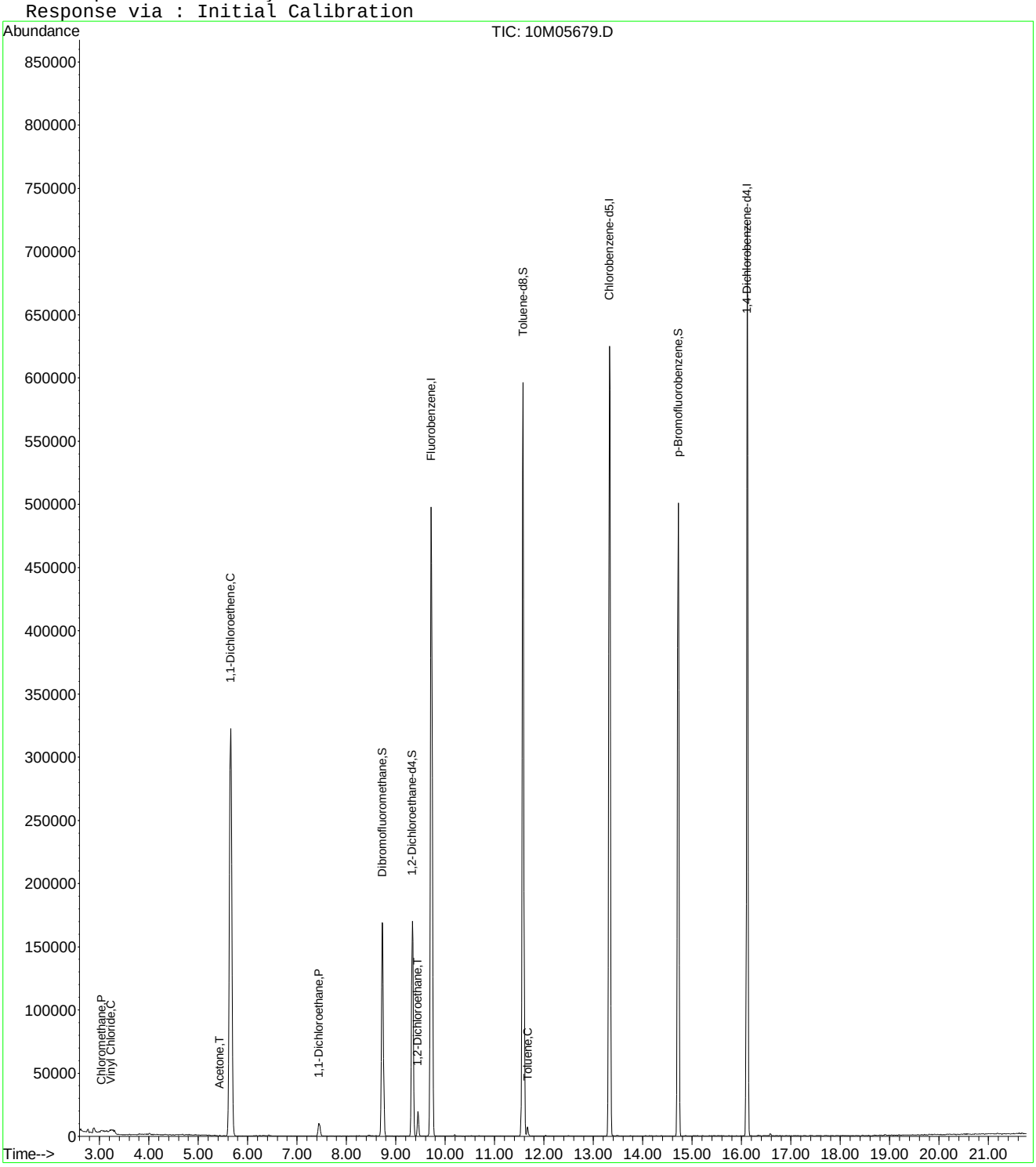

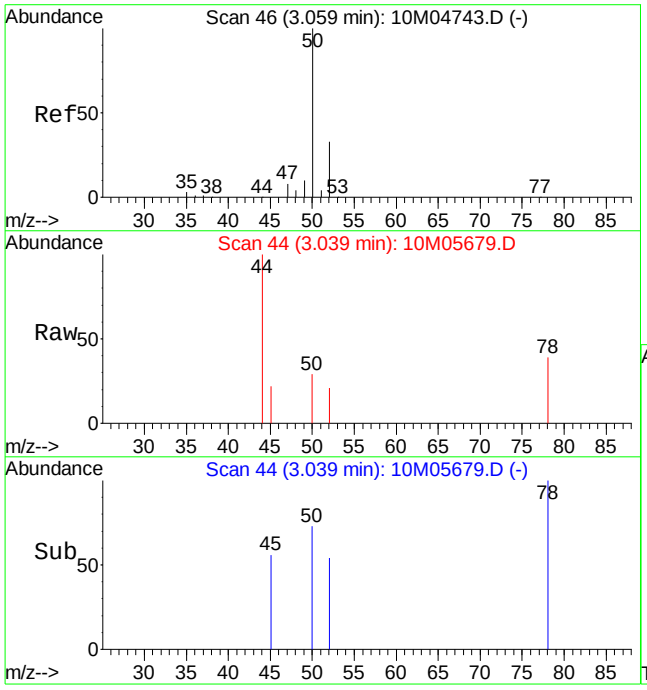

#3
Chloromethane
Concen: 0.28 ug/L
RT: 3.04 min Scan# 44
Delta R.T. -0.02 min
Lab File: 10M05679.D
Acq: 12 Jun 2013 13:43

Tgt Ion: 50 Resp: 1882

Ion	Ratio	Lower	Upper
50	100		
52	50.2	20.3	47.3#

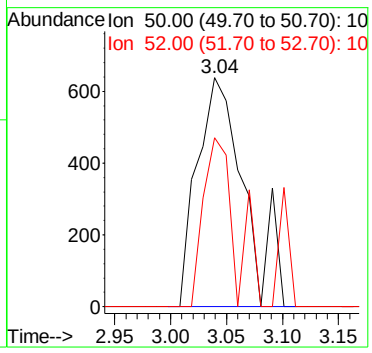

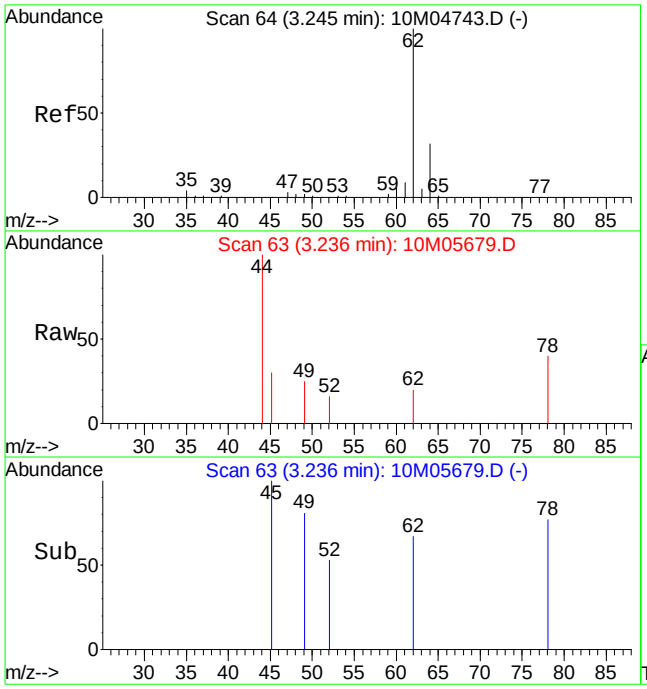

#4
Vinyl Chloride
Concen: 0.20 ug/L
RT: 3.24 min Scan# 63
Delta R.T. -0.01 min
Lab File: 10M05679.D
Acq: 12 Jun 2013 13:43

Tgt Ion: 62 Resp: 1246

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.1	44.7#

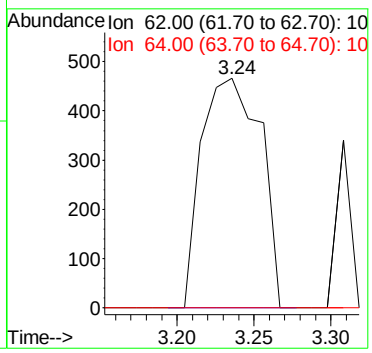

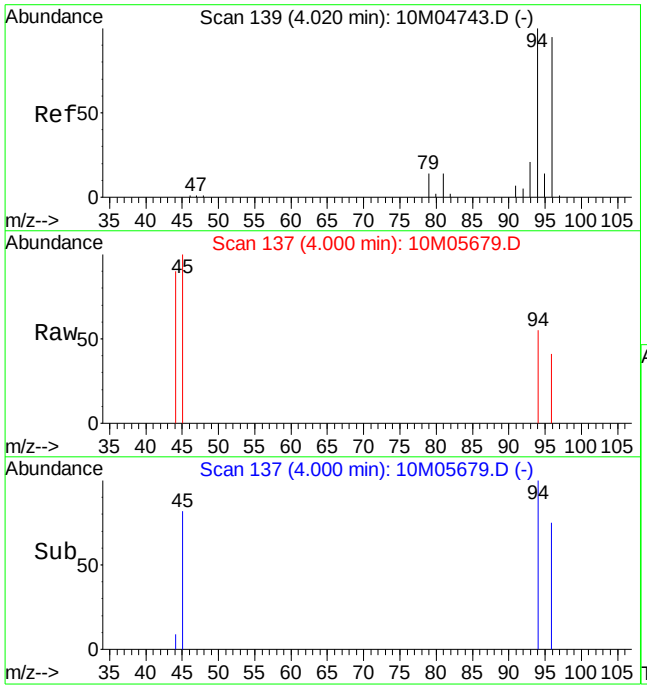

#6
Bromomethane
Concen: Below Cal
RT: 4.00 min Scan# 137
Delta R.T. -0.02 min
Lab File: 10M05679.D
Acq: 12 Jun 2013 13:43

Tgt Ion: 94 Resp: 958

Ion	Ratio	Lower	Upper
94	100		
96	69.6	57.0	133.0

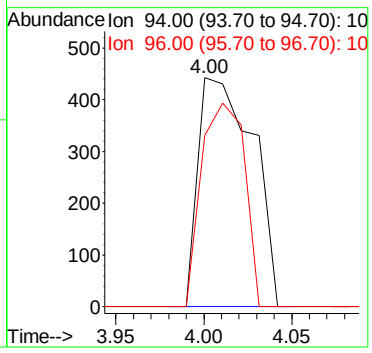

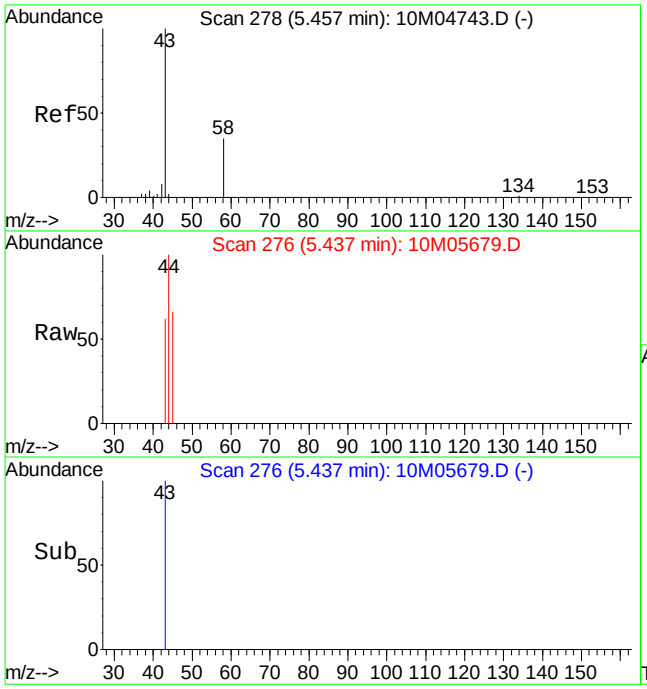

#13
Acetone
Concen: 0.13 ug/L
RT: 5.44 min Scan# 276
Delta R.T. -0.02 min
Lab File: 10M05679.D
Acq: 12 Jun 2013 13:43

Tgt Ion: 43 Resp: 211

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.6	45.6#

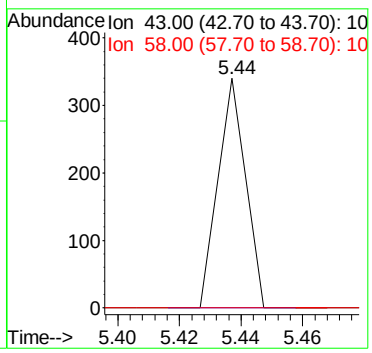

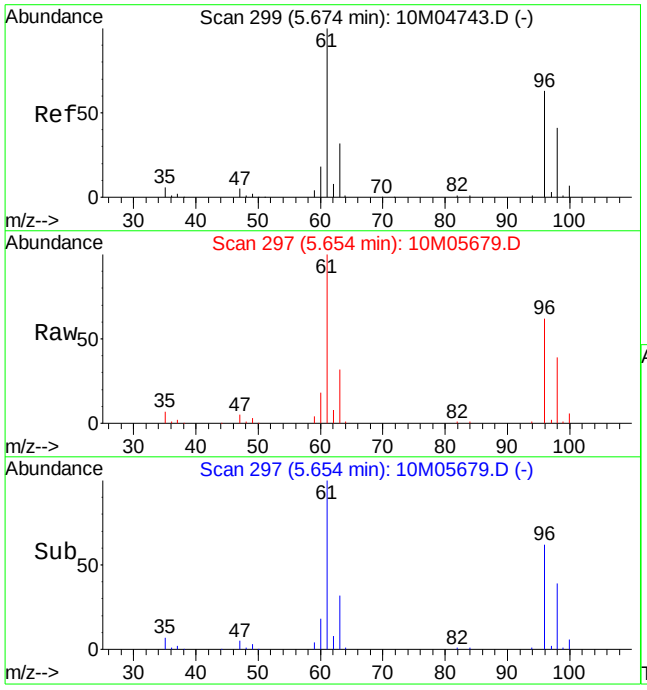

#14
1,1-Dichloroethene
Concen: 37.59 ug/L
RT: 5.65 min Scan# 297
Delta R.T. -0.02 min
Lab File: 10M05679.D
Acq: 12 Jun 2013 13:43

Tgt Ion: 96 Resp: 225363

Ion	Ratio	Lower	Upper
96	100		
61	165.3	96.1	224.1

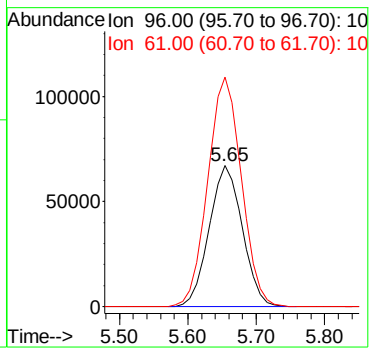

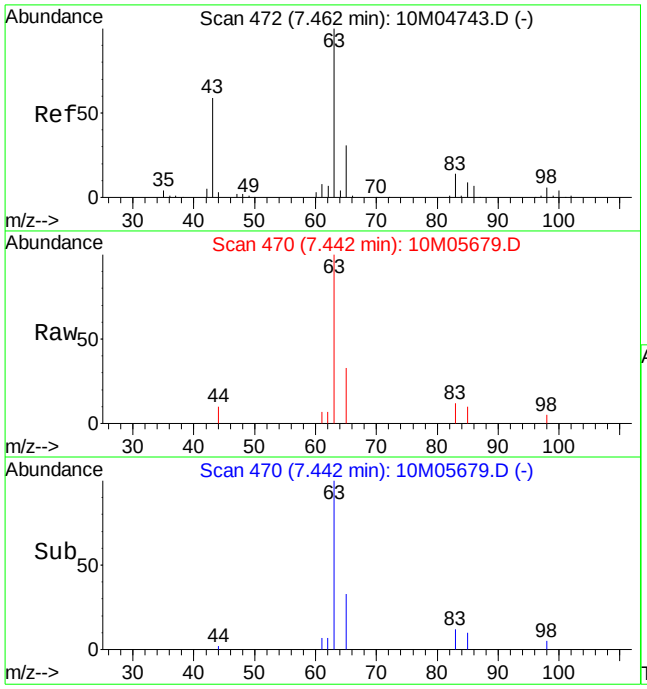

#27
1,1-Dichloroethane
Concen: 1.50 ug/L
RT: 7.44 min Scan# 470
Delta R.T. -0.02 min
Lab File: 10M05679.D
Acq: 12 Jun 2013 13:43

Tgt Ion: 63 Resp: 17208

Ion	Ratio	Lower	Upper
63	100		
65	32.1	19.0	44.4
83	11.8	8.0	18.8

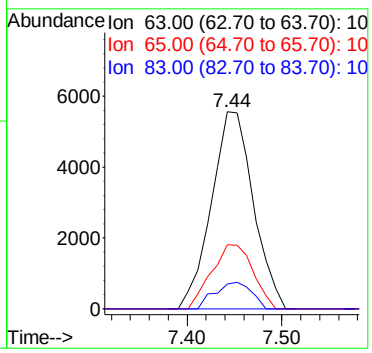

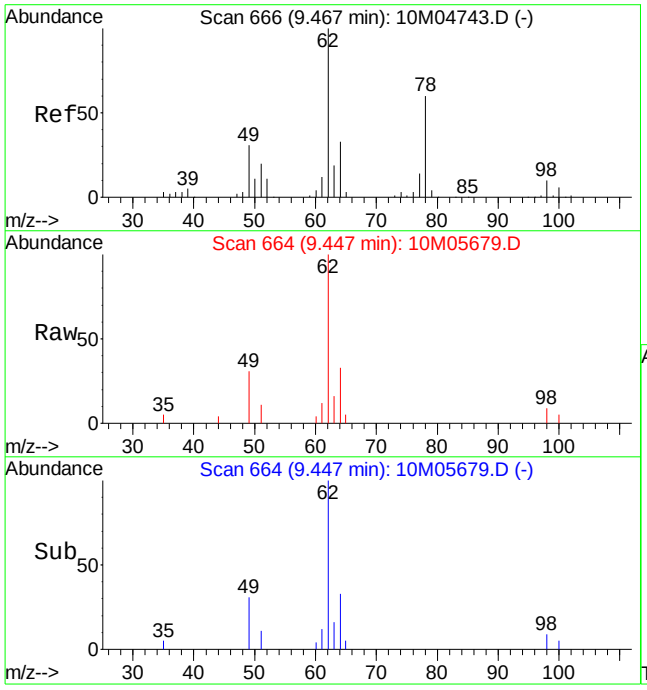

#45
1,2-Dichloroethane
Concen: 2.57 ug/L
RT: 9.45 min Scan# 664
Delta R.T. -0.02 min
Lab File: 10M05679.D
Acq: 12 Jun 2013 13:43

Tgt Ion: 62 Resp: 20044

Ion	Ratio	Lower	Upper
62	100		
49	30.0	21.8	51.0
98	7.4	5.6	13.2

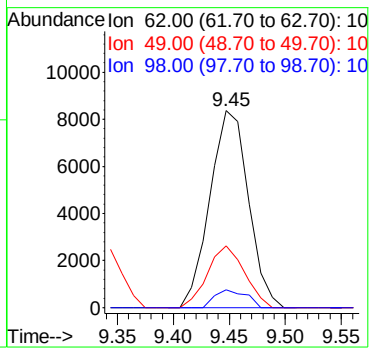

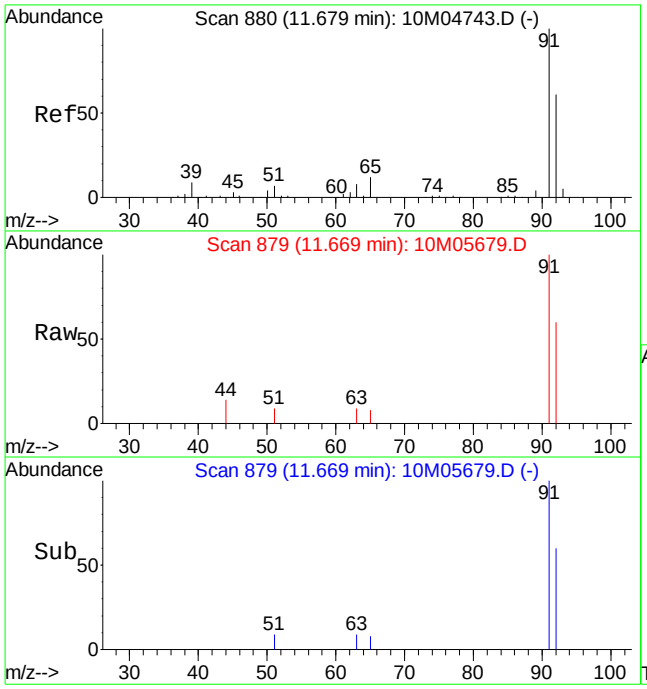

#59
Toluene
Concen: 0.32 ug/L
RT: 11.67 min Scan# 879
Delta R.T. -0.01 min
Lab File: 10M05679.D
Acq: 12 Jun 2013 13:43

Tgt Ion: 91 Resp: 8609

Ion	Ratio	Lower	Upper
91	100		
92	57.8	35.8	83.6

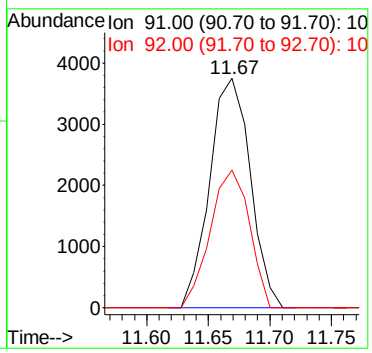

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117413.D Vial: 11
Acq On : 10 Jun 2013 21:19 Operator: ADC
Sample : L13060134-17 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:29:01 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	458467	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.73	117	380017	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	189810	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.06	111	137379	26.7512 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.00%		
43) 1,2-Dichloroethane-d4	9.78	65	116027	25.9682 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.88%		
58) Toluene-d8	12.53	98	513048	23.5475 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.20%		
80) p-Bromofluorobenzene	16.49	95	203866	26.6523 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.60%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
6M117413.D 8260_WT.M Tue Jun 11 16:29:01 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117413.D Vial: 11
Acq On : 10 Jun 2013 21:19 Operator: ADC
Sample : L13060134-17 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:29 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

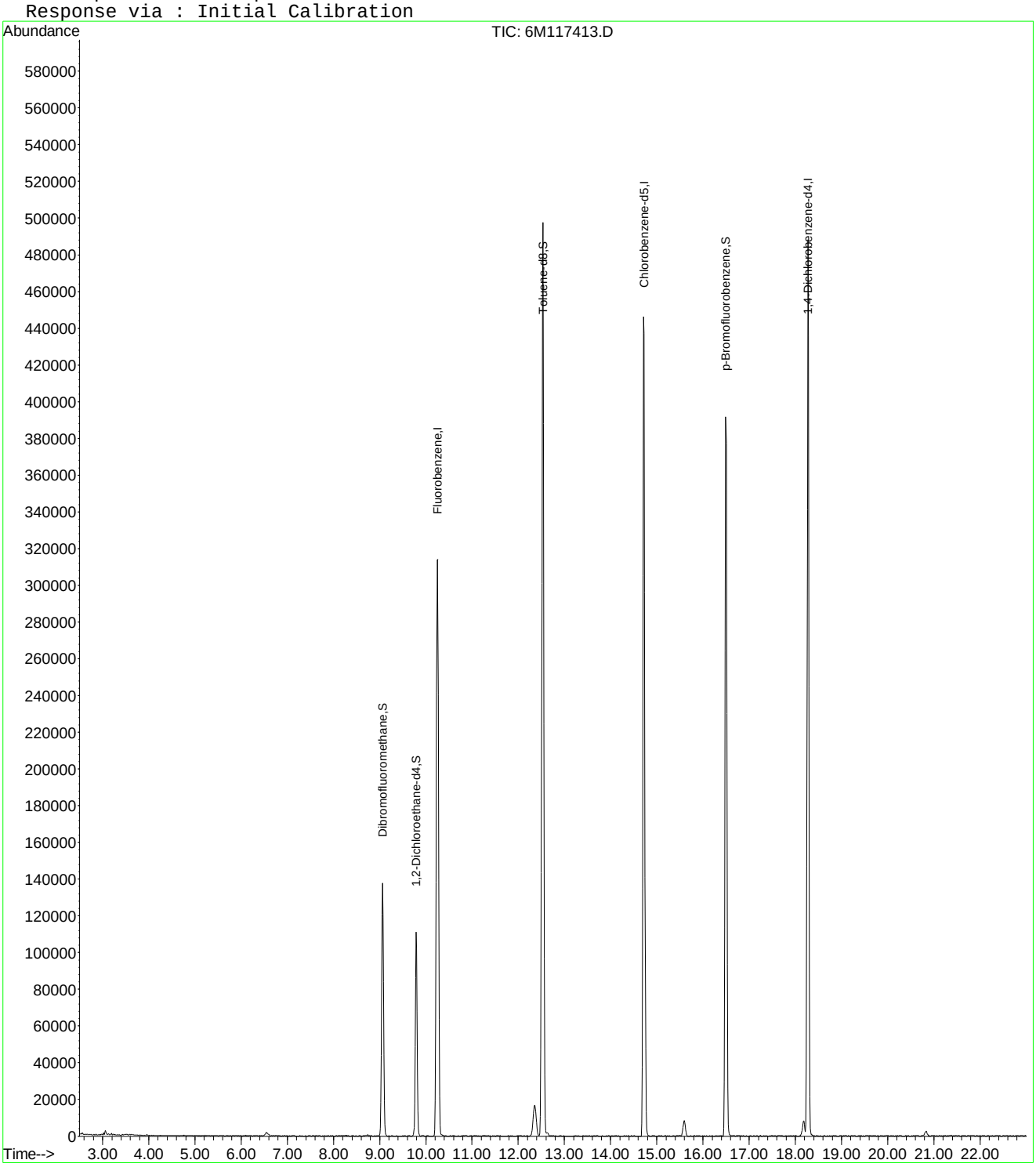

6M117413.D 8260_WT.M Tue Jun 11 16:29:02 2013 Page 2

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013113\10M01773.D Vial: 2
Acq On : 31 Jan 2013 12:18 Operator: TMB
Sample : WG419631-02 5ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 12:40:44 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 01/30/13 HPMS10
Last Update : Thu Jan 31 08:56:41 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.02	96	664308	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.63	117	539124	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.42	152	258394	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.02	111	150879	22.62 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.48%		
43) 1,2-Dichloroethane-d4	9.63	65	164448	20.01 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 80.04%		
58) Toluene-d8	11.87	98	556402	24.07 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.28%		
80) p-Bromofluorobenzene	15.02	95	197593	25.04 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.16%		
Target Compounds					Qvalue
13) Acetone	5.76	43	2070	1.35 ug/L	96
20) Carbon Disulfide	6.74	76	3772	0.17 ug/L #	89
36) Tetrahydrofuran	8.99	42	198	0.16 ug/L #	33

(#) = qualifier out of range (m) = manual integration
10M01773.D 8260BWT.M Thu Jan 31 12:40:44 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013113\10M01773.D Vial: 2
Acq On : 31 Jan 2013 12:18 Operator: TMB
Sample : WG419631-02 5ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 12:40 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 01/30/13 HPMS10
Last Update : Thu Jan 31 08:56:41 2013
Response via : Initial Calibration

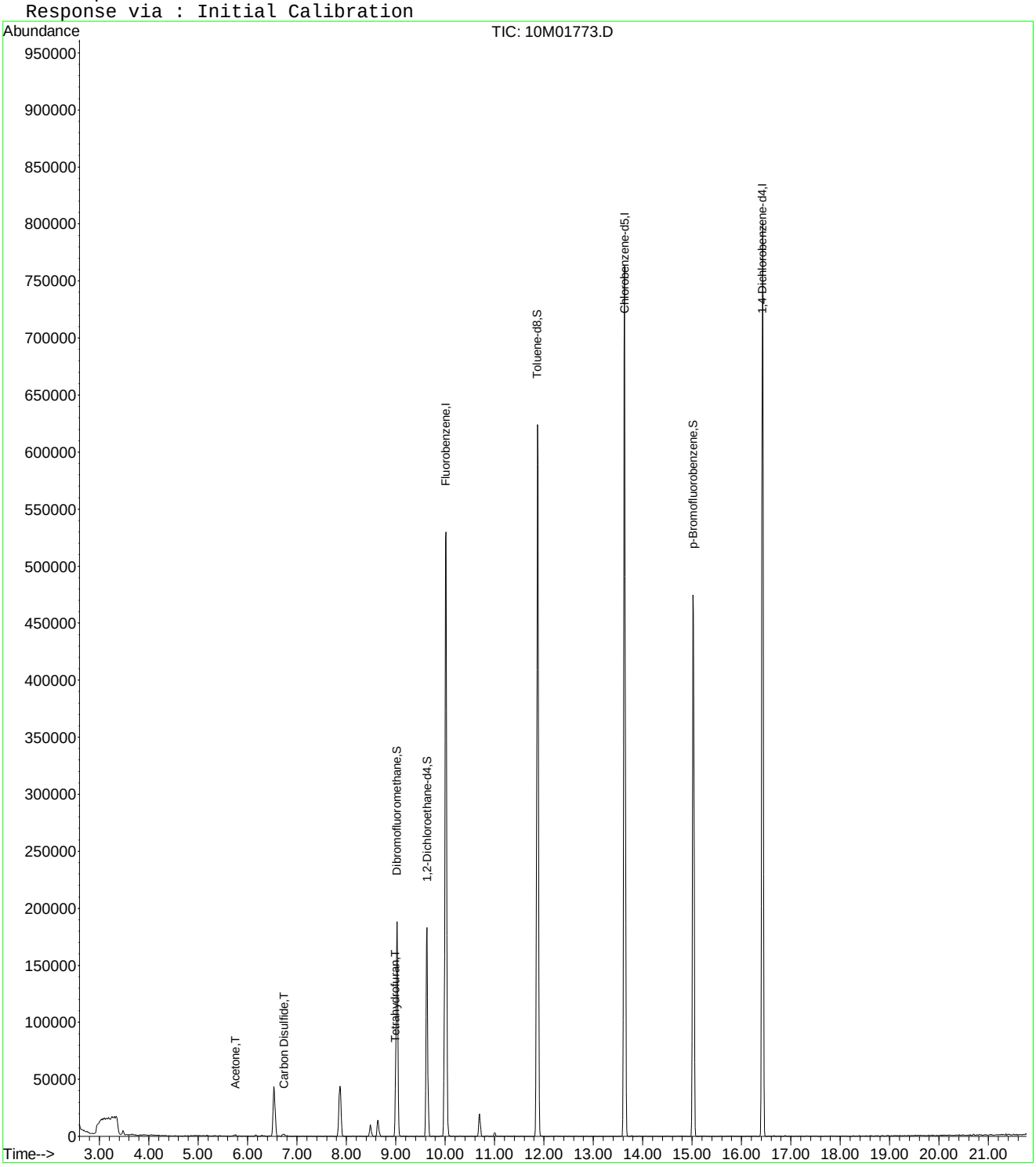

10M01773.D 8260BWT.M Thu Jan 31 12:40:44 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013113\10M01773.D Vial: 2
Acq On : 31 Jan 2013 12:18 Operator: TMB
Sample : WG419631-02 5ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 01 16:00:41 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Thu Jan 31 16:15:56 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.02	96	664308	25.00	ug/L	0.00
8) Chlorobenzene-d5	13.63	117	539124	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	16.42	152	258394	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.17	41	1548	3.78	ug/L #	63
3) 3-Chloro-1-propene	6.53	41	41088	4.79	ug/L	90
4) 2-Chloro-1,3-butadiene	7.87	53	43283	4.41	ug/L	96
5) Ethyl Acetate	8.49	43	14639	4.03	ug/L	89
6) Methacrylonitrile	8.63	67	7277	3.75	ug/L	78
10) Methyl methacrylate	10.70	41	12672	3.75	ug/L	91
11) 2-Nitropropane	11.01	43	3208	2.87	ug/L	81
13) Cyclohexanone	14.79	55	191	1.29	ug/L #	23

(#) = qualifier out of range (m) = manual integration
10M01773.D A9FOOWT.M Fri Feb 01 16:00:41 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013113\10M01773.D Vial: 2
Acq On : 31 Jan 2013 12:18 Operator: TMB
Sample : WG419631-02 5ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 1 16:00 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Initial Calibration

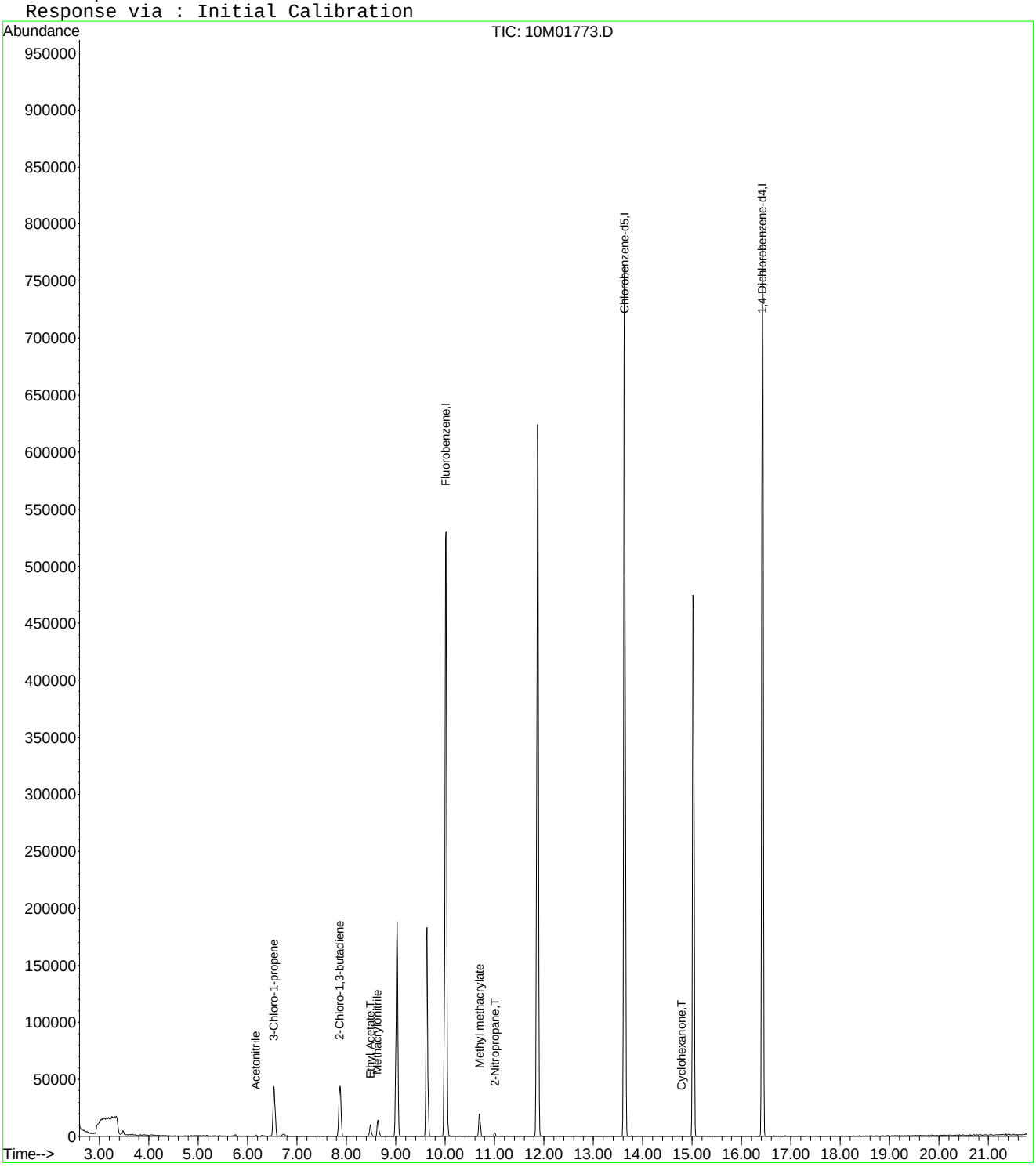

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013113\10M01774.D Vial: 3
Acq On : 31 Jan 2013 12:48 Operator: TMB
Sample : WG419631-03 20ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 13:10:50 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 01/30/13 HPMS10
Last Update : Thu Jan 31 08:56:41 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.02	96	645361	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.63	117	536156	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.42	152	256259	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.02	111	149517	23.07 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.28%		
43) 1,2-Dichloroethane-d4	9.63	65	166761	20.89 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.56%		
58) Toluene-d8	11.87	98	552090	24.01 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.04%		
80) p-Bromofluorobenzene	15.02	95	195400	24.97 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.88%		

Target Compounds					Qvalue
3) Chloromethane	3.27	50	1753	0.18 ug/L #	40
13) Acetone	5.75	43	2564	1.72 ug/L	88

(#) = qualifier out of range (m) = manual integration
10M01774.D 8260BWT.M Thu Jan 31 13:10:51 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013113\10M01774.D Vial: 3
Acq On : 31 Jan 2013 12:48 Operator: TMB
Sample : WG419631-03 20ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 13:10 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 01/30/13 HPMS10
Last Update : Thu Jan 31 08:56:41 2013
Response via : Initial Calibration

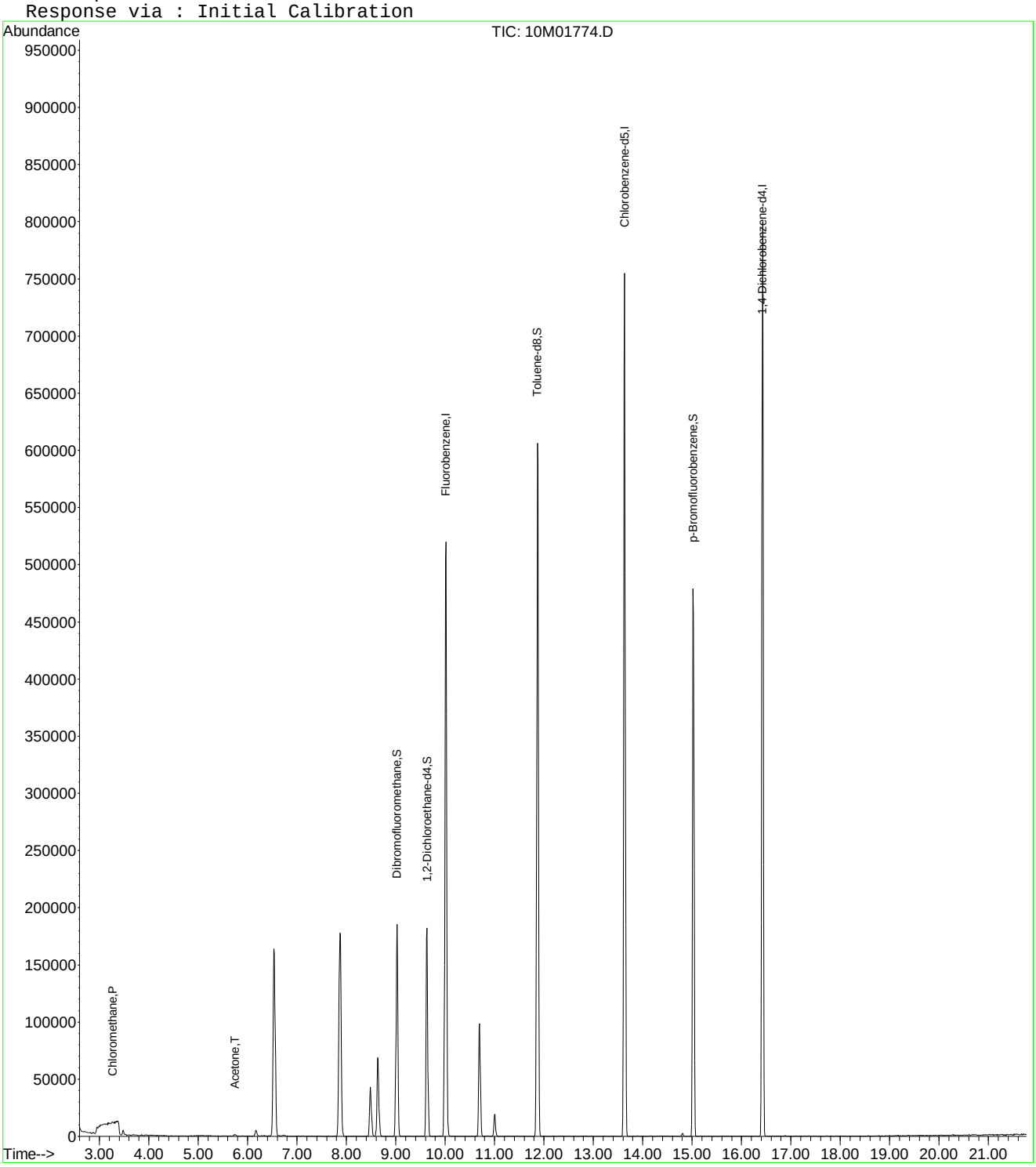

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013113\10M01774.D Vial: 3
Acq On : 31 Jan 2013 12:48 Operator: TMB
Sample : WG419631-03 20ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 01 16:00:42 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.02	96	645361	25.00	ug/L	0.00
8) Chlorobenzene-d5	13.63	117	536156	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	16.42	152	256259	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.16	41	7403	18.59	ug/L	93
3) 3-Chloro-1-propene	6.53	41	155038	18.59	ug/L	93
4) 2-Chloro-1,3-butadiene	7.87	53	171964	18.03	ug/L	96
5) Ethyl Acetate	8.49	43	68433	19.41	ug/L	90
6) Methacrylonitrile	8.64	67	36324	19.29	ug/L #	67
10) Methyl methacrylate	10.69	41	57474	17.11	ug/L	85
11) 2-Nitropropane	11.01	43	17255	15.50	ug/L	86
13) Cyclohexanone	14.80	55	2611	17.77	ug/L	82

(#) = qualifier out of range (m) = manual integration
10M01774.D A9FOOWT.M Fri Feb 01 16:00:42 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013113\10M01774.D Vial: 3
Acq On : 31 Jan 2013 12:48 Operator: TMB
Sample : WG419631-03 20ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 1 16:00 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Initial Calibration

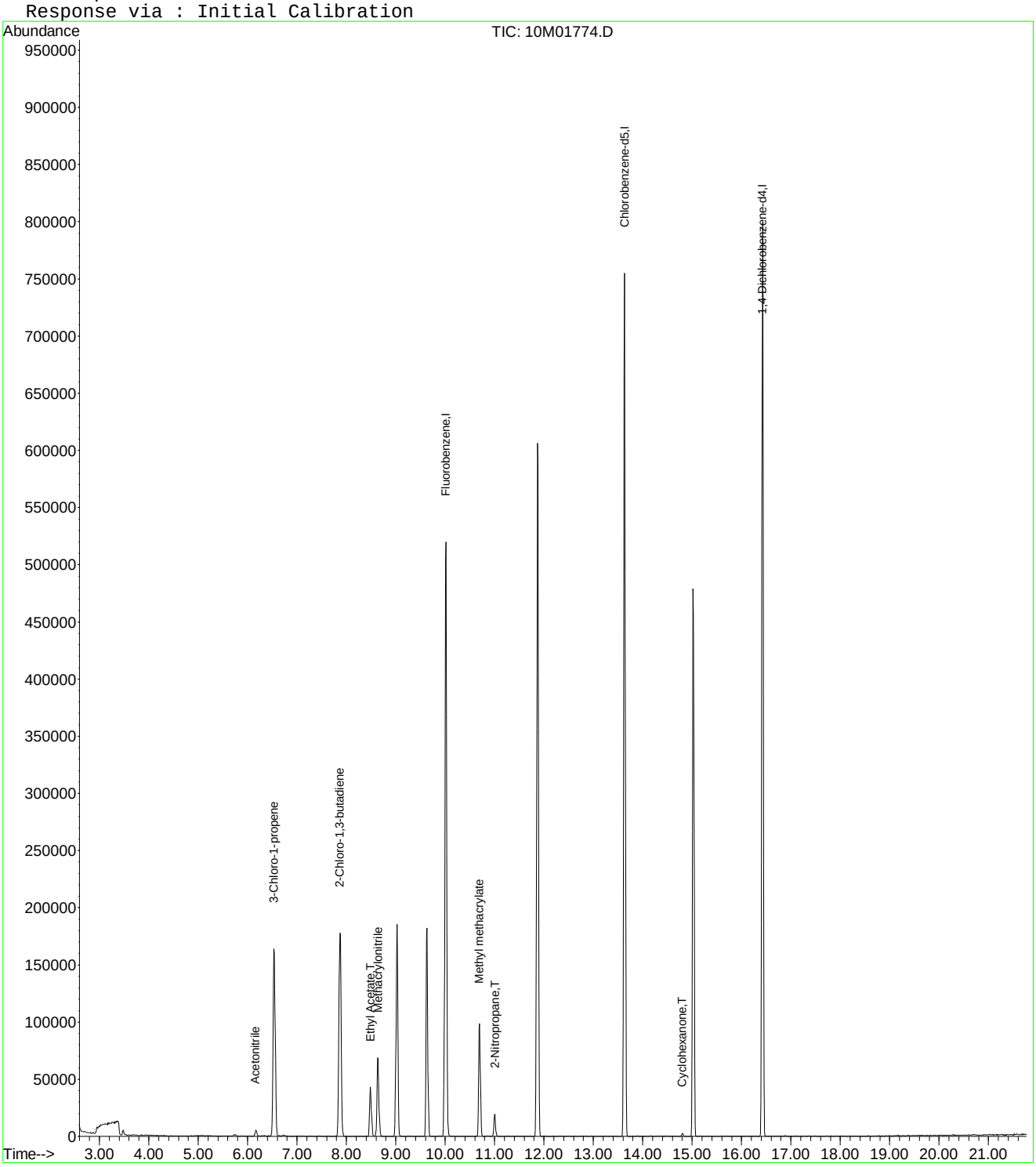

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013113\10M01775.D Vial: 4
Acq On : 31 Jan 2013 13:19 Operator: TMB
Sample : WG419631-04 50ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 13:40:54 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 01/30/13 HPMS10
Last Update : Thu Jan 31 08:56:41 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.02	96	637741	25.00	ug/L	0.00
57) Chlorobenzene-d5	13.63	117	529368	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.42	152	253049	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.02	111	149480	23.34	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.36%			
43) 1,2-Dichloroethane-d4	9.63	65	162209	20.56	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 82.24%			
58) Toluene-d8	11.87	98	540503	23.81	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.24%			
80) p-Bromofluorobenzene	15.02	95	194882	25.22	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.88%			
Target Compounds						Qvalue
13) Acetone	5.73	43	4699	3.19	ug/L	80

(#) = qualifier out of range (m) = manual integration
10M01775.D 8260BWT.M Thu Jan 31 13:40:55 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013113\10M01775.D Vial: 4
Acq On : 31 Jan 2013 13:19 Operator: TMB
Sample : WG419631-04 50ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 13:40 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 01/30/13 HPMS10
Last Update : Thu Jan 31 08:56:41 2013
Response via : Initial Calibration

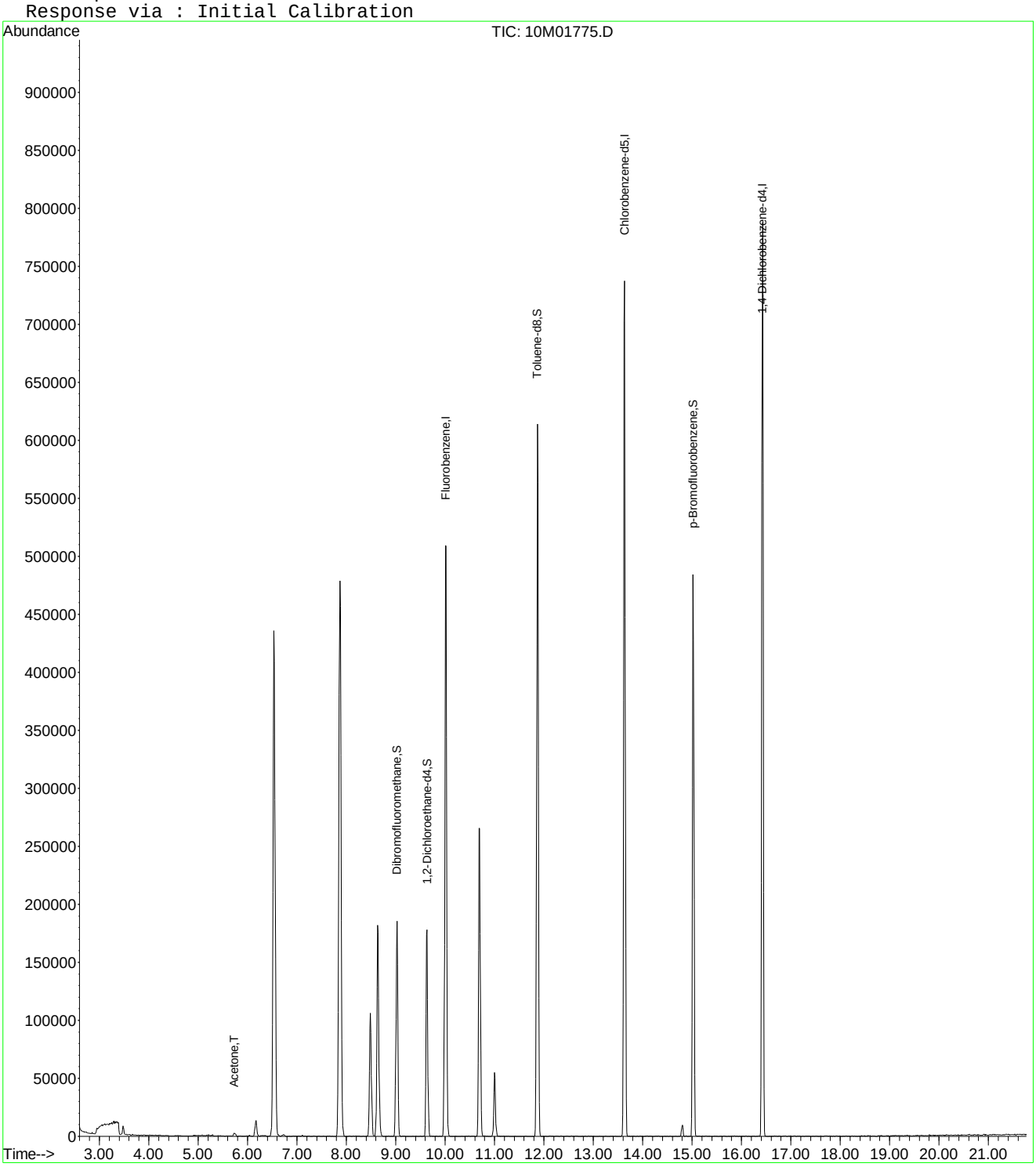

10M01775.D 8260BWT.M Thu Jan 31 13:40:55 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013113\10M01775.D Vial: 4
Acq On : 31 Jan 2013 13:19 Operator: TMB
Sample : WG419631-04 50ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 01 16:00:42 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.02	96	637741	25.00 ug/L	0.00
8) Chlorobenzene-d5	13.63	117	529368	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	16.42	152	253049	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.17	41	19766	50.23 ug/L	100
3) 3-Chloro-1-propene	6.53	41	398802	48.38 ug/L	94
4) 2-Chloro-1,3-butadiene	7.87	53	451138	47.86 ug/L	95
5) Ethyl Acetate	8.49	43	169864	48.75 ug/L	90
6) Methacrylonitrile	8.63	67	92224	49.57 ug/L #	70
10) Methyl methacrylate	10.69	41	158594	47.81 ug/L	89
11) 2-Nitropropane	11.00	43	50227	45.70 ug/L	95
13) Cyclohexanone	14.80	55	6318	43.55 ug/L	86

(#) = qualifier out of range (m) = manual integration
10M01775.D A9FOOWT.M Fri Feb 01 16:00:43 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013113\10M01775.D Vial: 4
Acq On : 31 Jan 2013 13:19 Operator: TMB
Sample : WG419631-04 50ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 1 16:00 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Initial Calibration

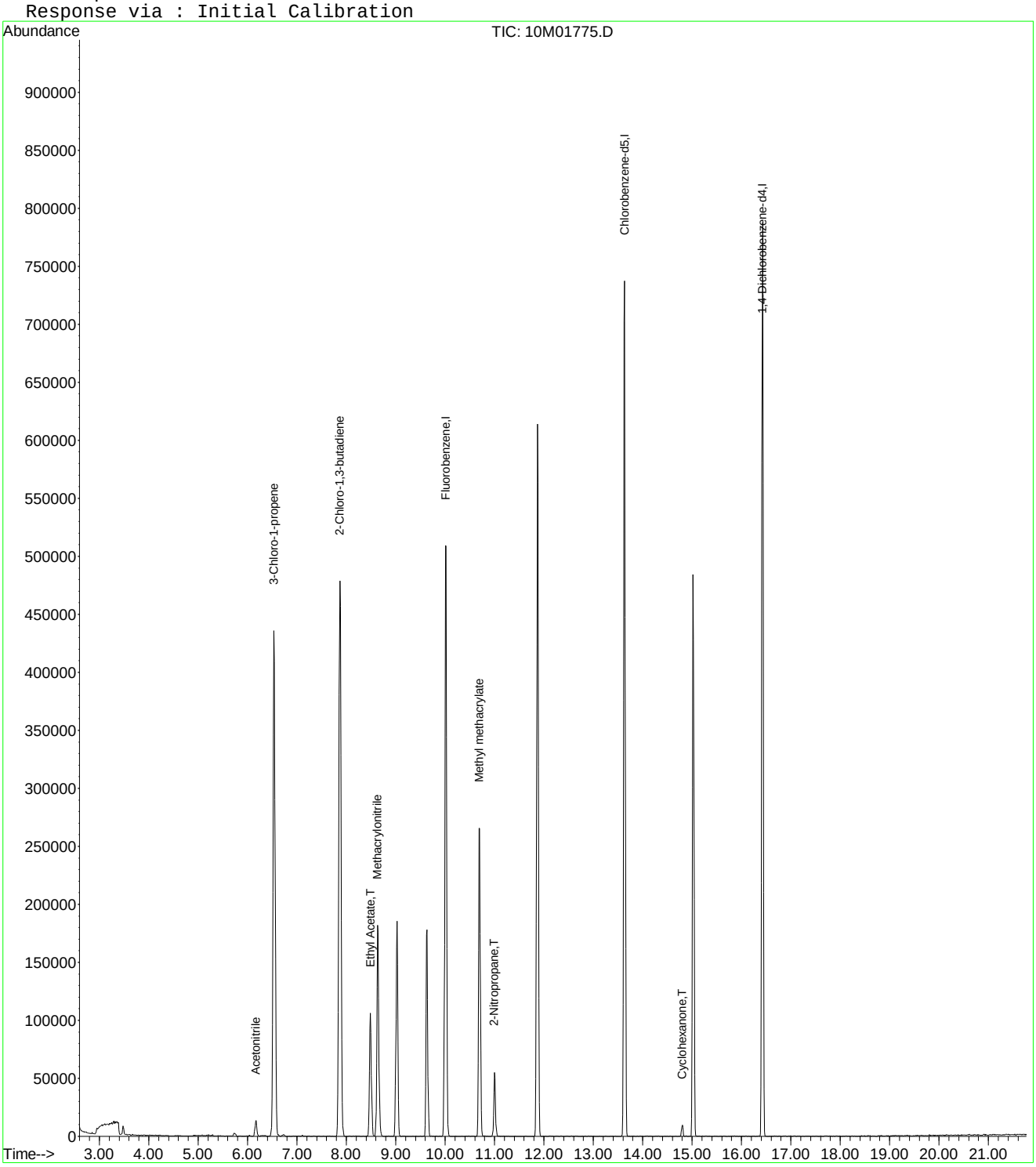

10M01775.D A9FOOWT.M Fri Feb 01 16:00:43 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013113\10M01776.D Vial: 5
Acq On : 31 Jan 2013 13:49 Operator: TMB
Sample : WG419631-05 100ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 14:11:27 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 01/30/13 HPMS10
Last Update : Thu Jan 31 08:56:41 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.02	96	643002	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.63	117	533550	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.42	152	257143	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.02	111	151887	23.52 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.08%		
43) 1,2-Dichloroethane-d4	9.63	65	164937	20.74 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 82.96%		
58) Toluene-d8	11.87	98	544136	23.78 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.12%		
80) p-Bromofluorobenzene	15.02	95	200017	25.47 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.88%		
Target Compounds					Qvalue
3) Chloromethane	3.25	50	1341	0.14 ug/L #	40
13) Acetone	5.74	43	8309	5.59 ug/L #	75
19) Methylene Chloride	6.71	84	1161	0.16 ug/L	67
36) Tetrahydrofuran	9.00	42	1172	0.97 ug/L #	49

(#) = qualifier out of range (m) = manual integration
10M01776.D 8260BWT.M Thu Jan 31 14:11:28 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013113\10M01776.D Vial: 5
Acq On : 31 Jan 2013 13:49 Operator: TMB
Sample : WG419631-05 100ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 14:11 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 01/30/13 HPMS10
Last Update : Thu Jan 31 08:56:41 2013
Response via : Initial Calibration

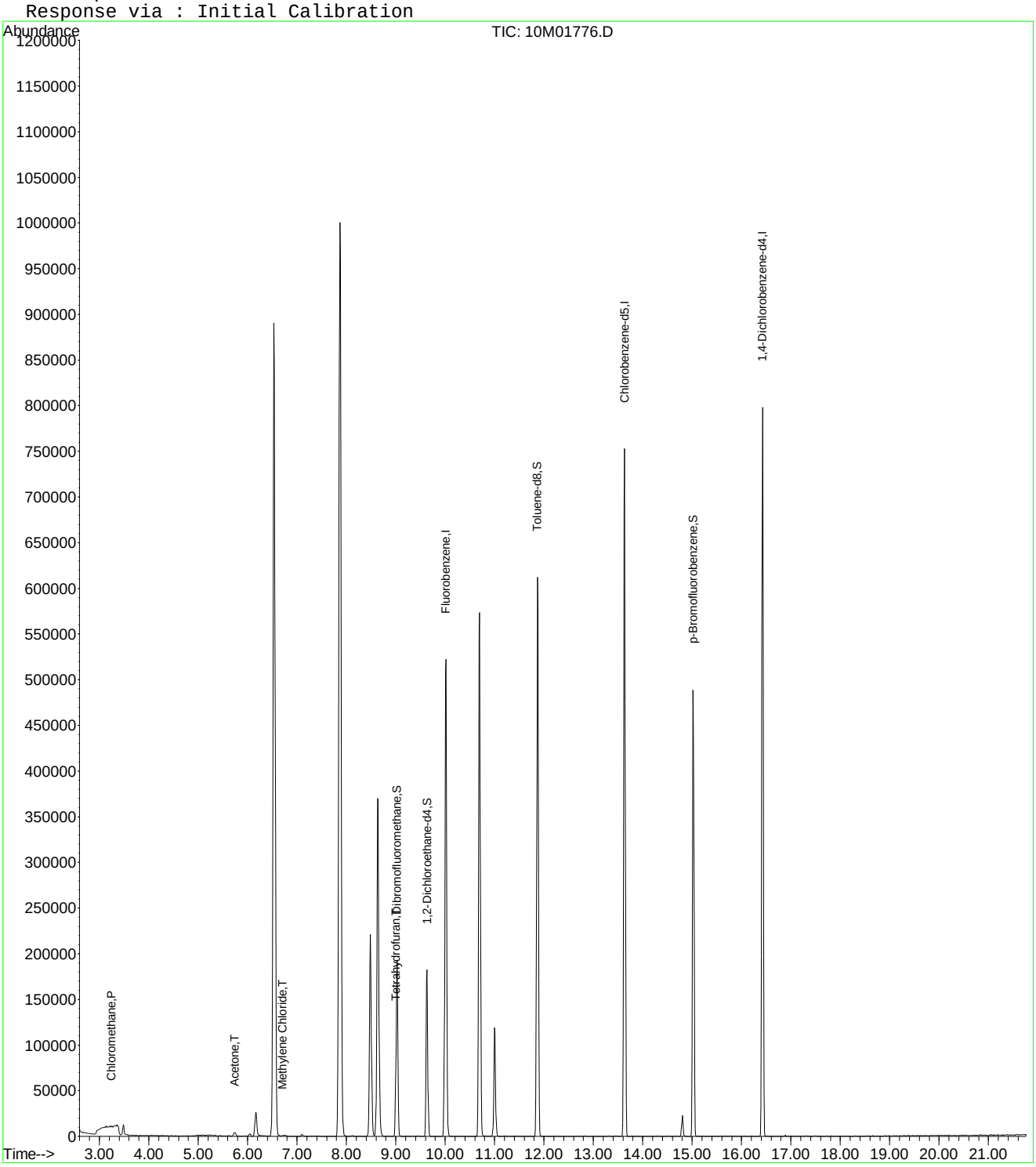

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013113\10M01776.D Vial: 5
Acq On : 31 Jan 2013 13:49 Operator: TMB
Sample : WG419631-05 100ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 01 16:00:43 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.02	96	643002	25.00	ug/L	0.00
8) Chlorobenzene-d5	13.63	117	533550	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	16.42	152	257143	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.16	41	39028	98.38	ug/L	96
3) 3-Chloro-1-propene	6.53	41	813279	97.85	ug/L	93
4) 2-Chloro-1,3-butadiene	7.87	53	953000	100.27	ug/L	94
5) Ethyl Acetate	8.49	43	344336	98.01	ug/L	89
6) Methacrylonitrile	8.63	67	186998	99.69	ug/L #	71
7) Isobutyl Alcohol	8.65	43	8522	111.65	ug/L #	33
10) Methyl methacrylate	10.70	41	329682	98.61	ug/L	88
11) 2-Nitropropane	11.00	43	107655	97.18	ug/L	94
13) Cyclohexanone	14.80	55	13231	89.76	ug/L	94

(#) = qualifier out of range (m) = manual integration
10M01776.D A9FOOWT.M Fri Feb 01 16:00:43 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013113\10M01776.D Vial: 5
Acq On : 31 Jan 2013 13:49 Operator: TMB
Sample : WG419631-05 100ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 1 16:00 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Initial Calibration

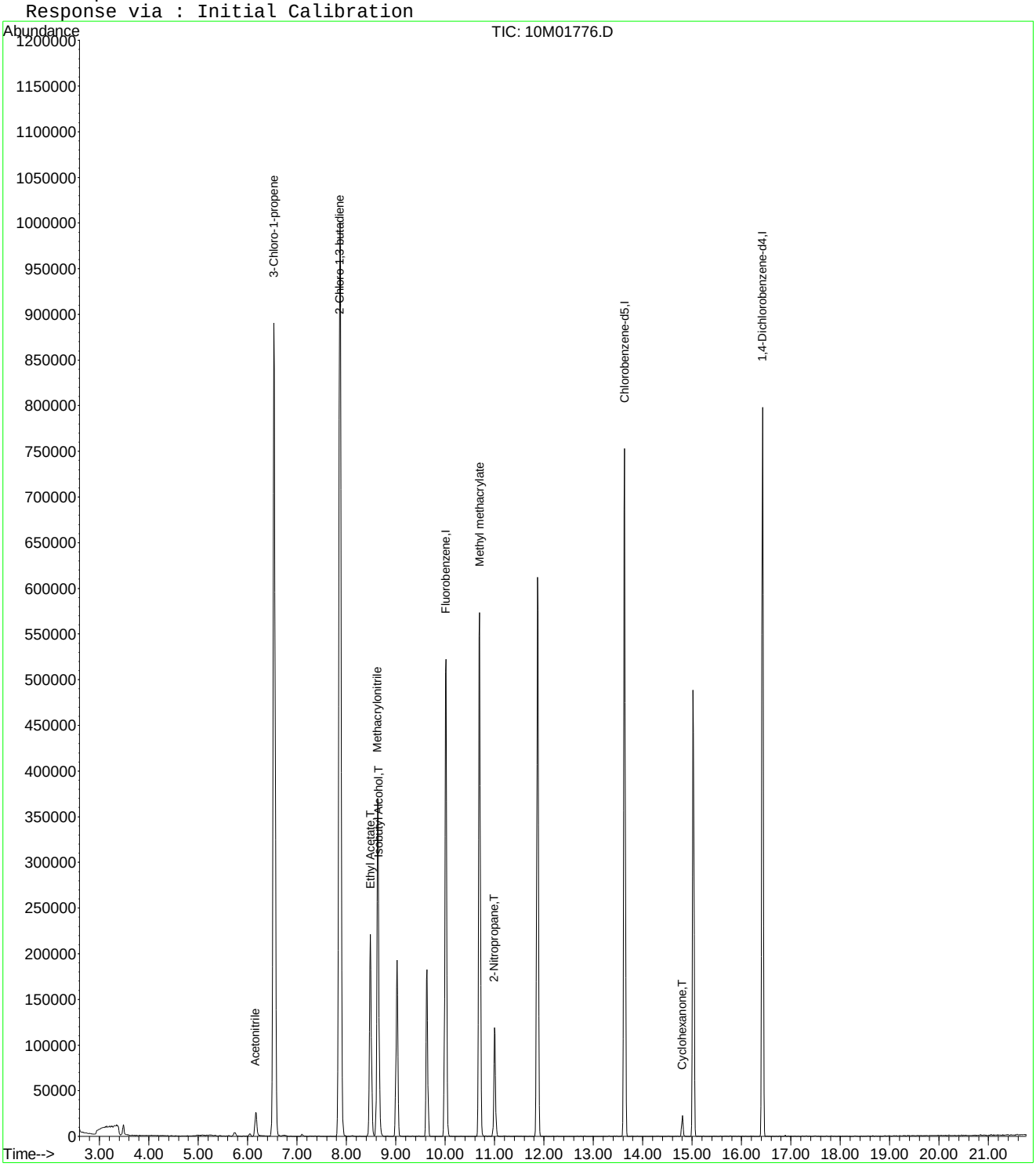

10M01776.D A9FOOWT.M Fri Feb 01 16:00:43 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013113\10M01777.D Vial: 6
Acq On : 31 Jan 2013 14:20 Operator: TMB
Sample : WG419631-06 200ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 14:42:02 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 01/30/13 HPMS10
Last Update : Thu Jan 31 08:56:41 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.02	96	653762	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.63	117	548177	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.42	152	261679	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.02	111	154875	23.59 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.36%		
43) 1,2-Dichloroethane-d4	9.63	65	167598	20.73 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 82.92%		
58) Toluene-d8	11.87	98	553239	23.53 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.12%		
80) p-Bromofluorobenzene	15.02	95	204761	25.63 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.52%		
Target Compounds					Qvalue
3) Chloromethane	3.25	50	3227	0.32 ug/L	93
13) Acetone	5.74	43	15961	10.57 ug/L #	63
15) Tert-Butyl Alcohol	6.07	59	927	1.90 ug/L #	1
18) Methyl acetate	6.53	43	454	0.13 ug/L #	1
19) Methylene Chloride	6.71	84	1002	0.13 ug/L	82
20) Carbon Disulfide	6.74	76	3011	0.14 ug/L	93
36) Tetrahydrofuran	8.99	42	836	0.68 ug/L #	33

(#) = qualifier out of range (m) = manual integration
10M01777.D 8260BWT.M Thu Jan 31 14:42:02 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013113\10M01777.D Vial: 6
Acq On : 31 Jan 2013 14:20 Operator: TMB
Sample : WG419631-06 200ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 14:42 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 01/30/13 HPMS10
Last Update : Thu Jan 31 08:56:41 2013
Response via : Initial Calibration

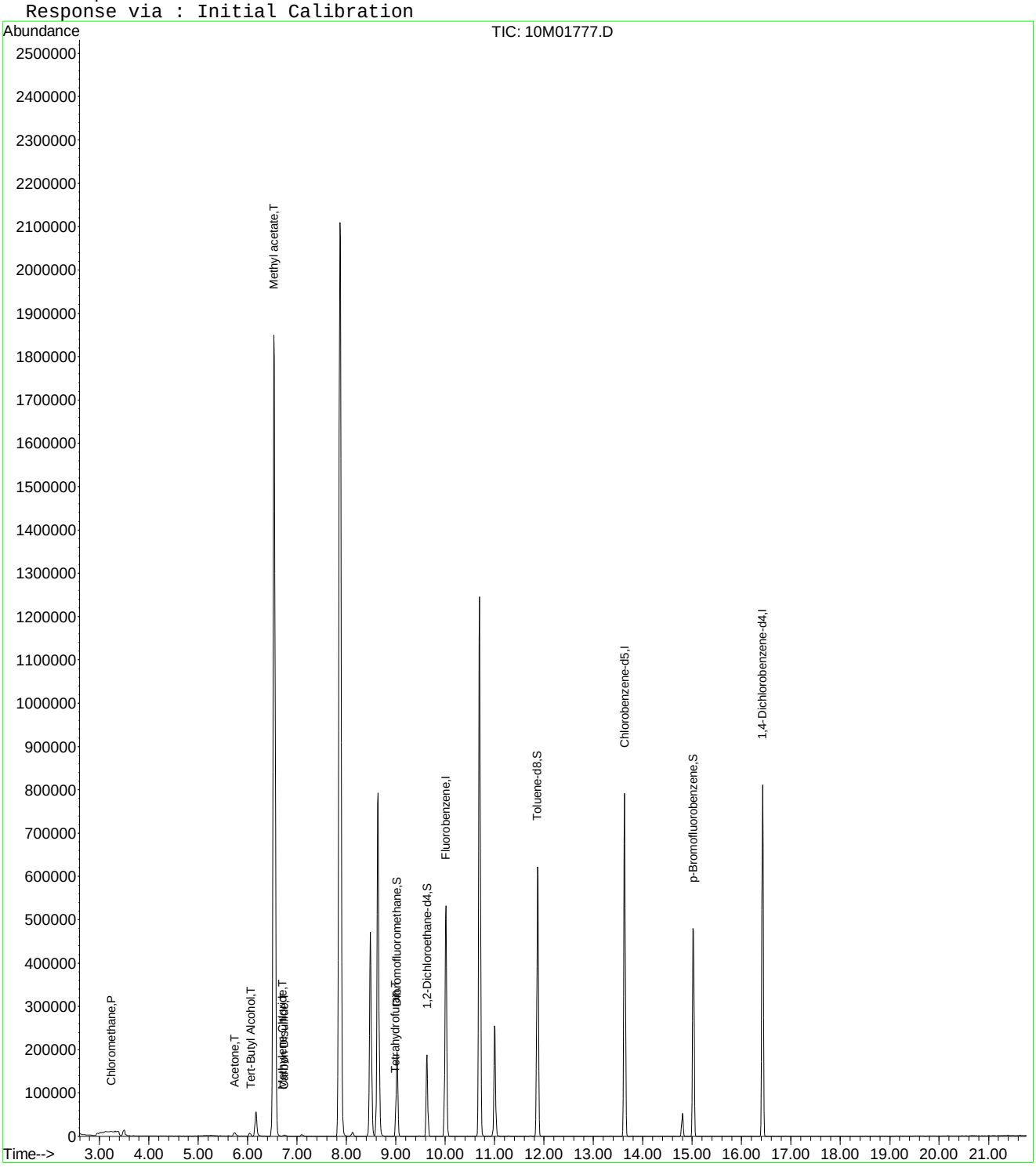

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013113\10M01777.D Vial: 6
Acq On : 31 Jan 2013 14:20 Operator: TMB
Sample : WG419631-06 200ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 01 16:00:44 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.02	96	653762	25.00	ug/L	0.00
8) Chlorobenzene-d5	13.63	117	548177	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	16.42	152	261679	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.16	41	83484	206.97	ug/L	99
3) 3-Chloro-1-propene	6.53	41	1728610	204.56	ug/L	94
4) 2-Chloro-1,3-butadiene	7.87	53	2017385	208.77	ug/L	95
5) Ethyl Acetate	8.49	43	729990	204.37	ug/L	89
6) Methacrylonitrile	8.64	67	394080	206.62	ug/L #	70
7) Isobutyl Alcohol	8.65	43	19619	216.38	ug/L #	45
10) Methyl methacrylate	10.70	41	711894	207.24	ug/L	89
11) 2-Nitropropane	11.00	43	237543	208.70	ug/L	96
13) Cyclohexanone	14.80	55	29507	196.70	ug/L	92

(#) = qualifier out of range (m) = manual integration
10M01777.D A9FOOWT.M Fri Feb 01 16:00:44 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013113\10M01777.D Vial: 6
Acq On : 31 Jan 2013 14:20 Operator: TMB
Sample : WG419631-06 200ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 1 16:00 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Initial Calibration

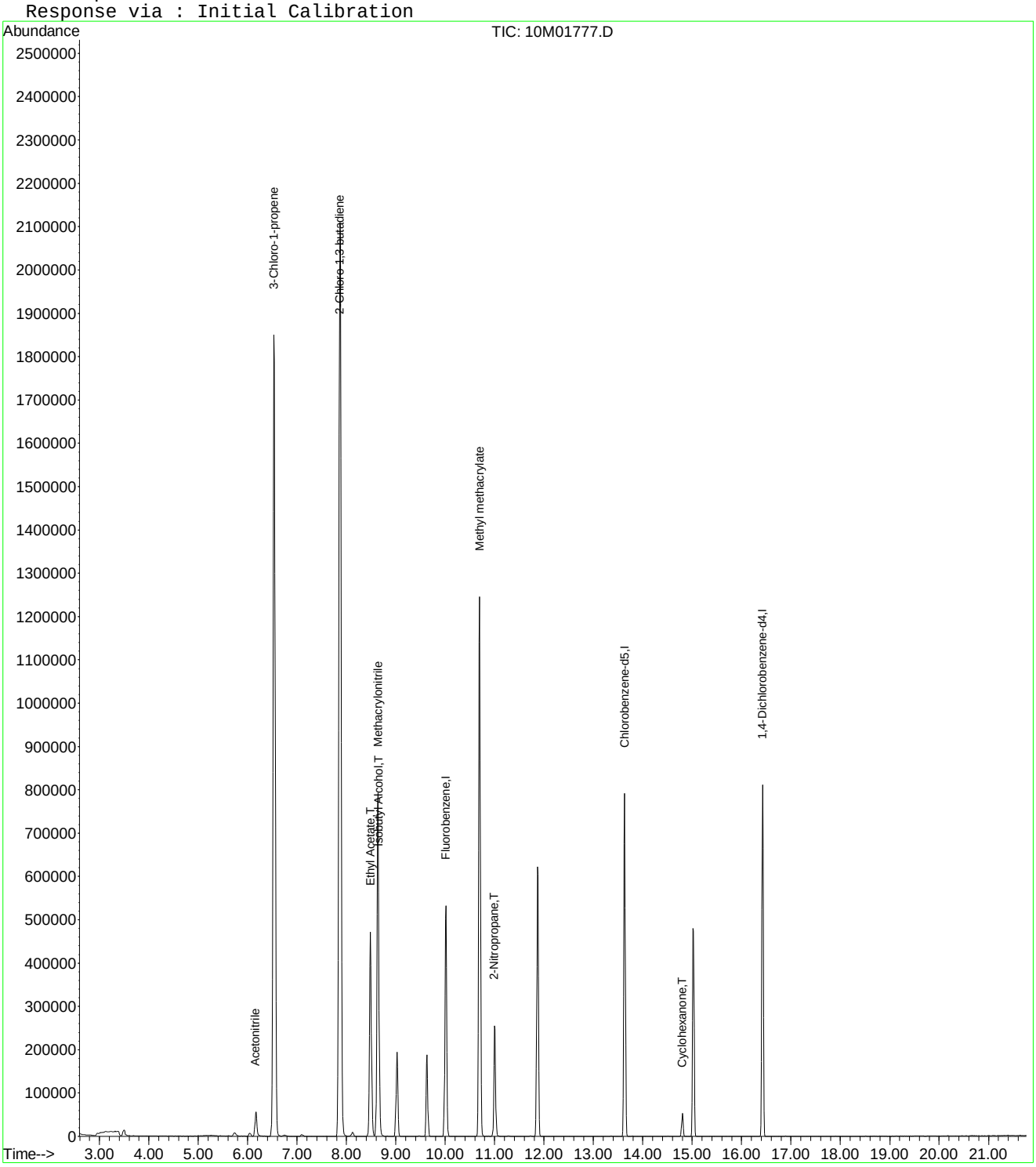

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013113\10M01778.D Vial: 7
Acq On : 31 Jan 2013 14:50 Operator: TMB
Sample : WG419631-07 300ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 15:12:31 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 01/30/13 HPMS10
Last Update : Thu Jan 31 08:56:41 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.02	96	669297	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.63	117	553658	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.42	152	268881	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.02	111	162791	24.22 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.88%		
43) 1,2-Dichloroethane-d4	9.63	65	174669	21.10 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 84.40%		
58) Toluene-d8	11.87	98	567501	23.90 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.60%		
80) p-Bromofluorobenzene	15.02	95	210368	25.62 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.48%		

Target Compounds					Qvalue
3) Chloromethane	3.26	50	1557	0.15 ug/L	97
9) Diethyl ether	5.45	59	1278	0.20 ug/L #	47
13) Acetone	5.74	43	22889	14.81 ug/L #	65
15) Tert-Butyl Alcohol	6.06	59	884	1.77 ug/L #	1
18) Methyl acetate	6.46	43	459	0.13 ug/L #	54
19) Methylene Chloride	6.72	84	1191	0.16 ug/L	84
20) Carbon Disulfide	6.74	76	2828	0.13 ug/L #	74
28) Ethyl-Tert-Butyl ether	8.13	59	6068	0.24 ug/L #	62
30) Propionitrile	8.46	54	193	0.28 ug/L #	1
36) Tetrahydrofuran	8.99	42	1438	1.15 ug/L #	33

(#) = qualifier out of range (m) = manual integration
10M01778.D 8260BWT.M Thu Jan 31 15:12:32 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013113\10M01778.D Vial: 7
Acq On : 31 Jan 2013 14:50 Operator: TMB
Sample : WG419631-07 300ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 15:12 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 01/30/13 HPMS10
Last Update : Thu Jan 31 08:56:41 2013
Response via : Initial Calibration

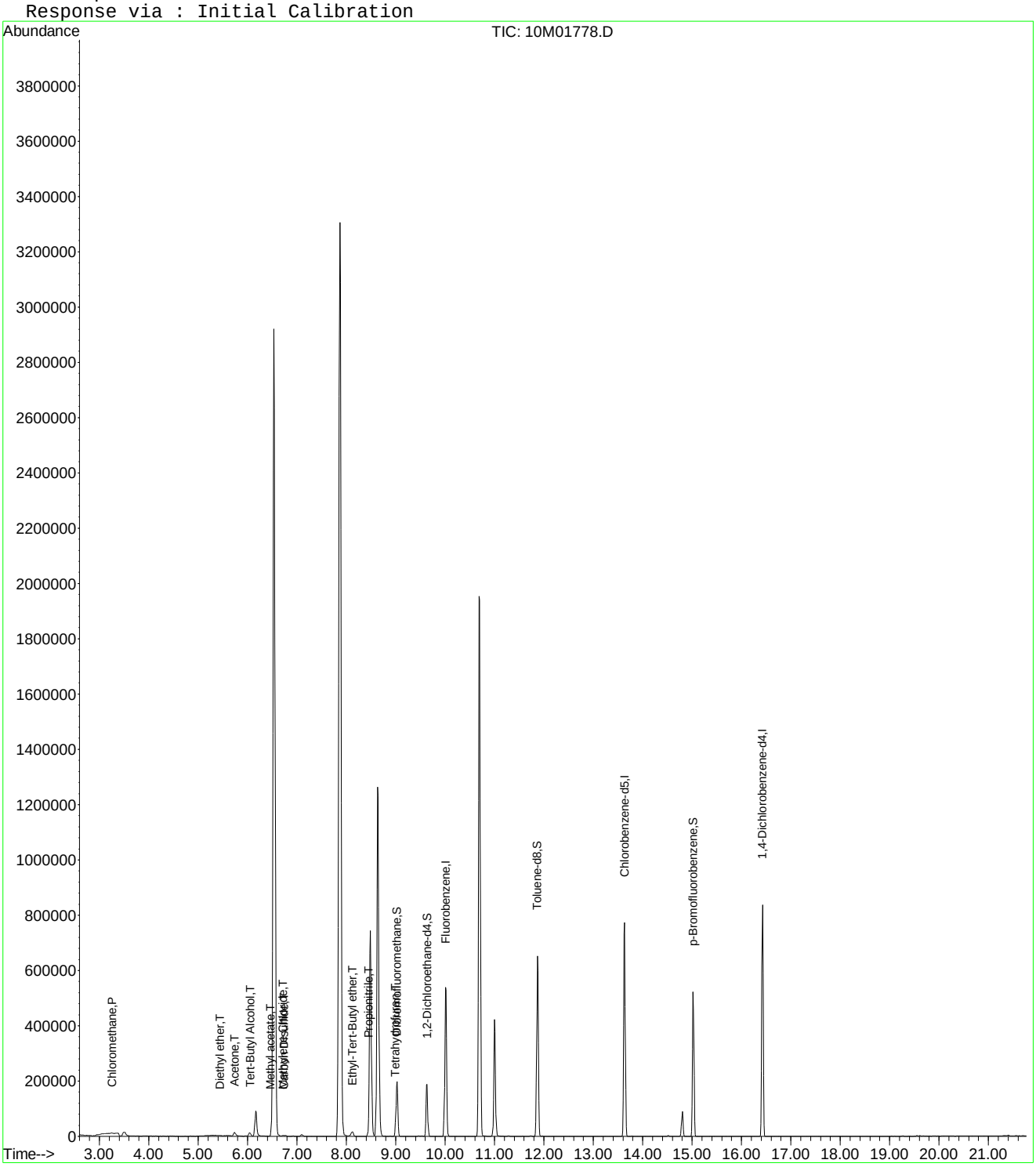

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013113\10M01778.D Vial: 7
Acq On : 31 Jan 2013 14:50 Operator: TMB
Sample : WG419631-07 300ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 01 16:00:44 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.02	96	669297	25.00	ug/L	0.00
8) Chlorobenzene-d5	13.63	117	553658	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	16.42	152	268881	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.16	41	132561	321.01	ug/L	99
3) 3-Chloro-1-propene	6.53	41	2678197	309.58	ug/L	94
4) 2-Chloro-1,3-butadiene	7.87	53	3119576	315.34	ug/L	94
5) Ethyl Acetate	8.49	43	1155909	316.10	ug/L	88
6) Methacrylonitrile	8.63	67	619370	317.21	ug/L #	72
7) Isobutyl Alcohol	8.64	43	33748	311.94	ug/L #	51
10) Methyl methacrylate	10.69	41	1151150	331.80	ug/L	90
11) 2-Nitropropane	11.00	43	389355	338.70	ug/L	96
13) Cyclohexanone	14.80	55	50168	325.47	ug/L	92

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013113\10M01778.D Vial: 7
Acq On : 31 Jan 2013 14:50 Operator: TMB
Sample : WG419631-07 300ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 1 16:00 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Initial Calibration

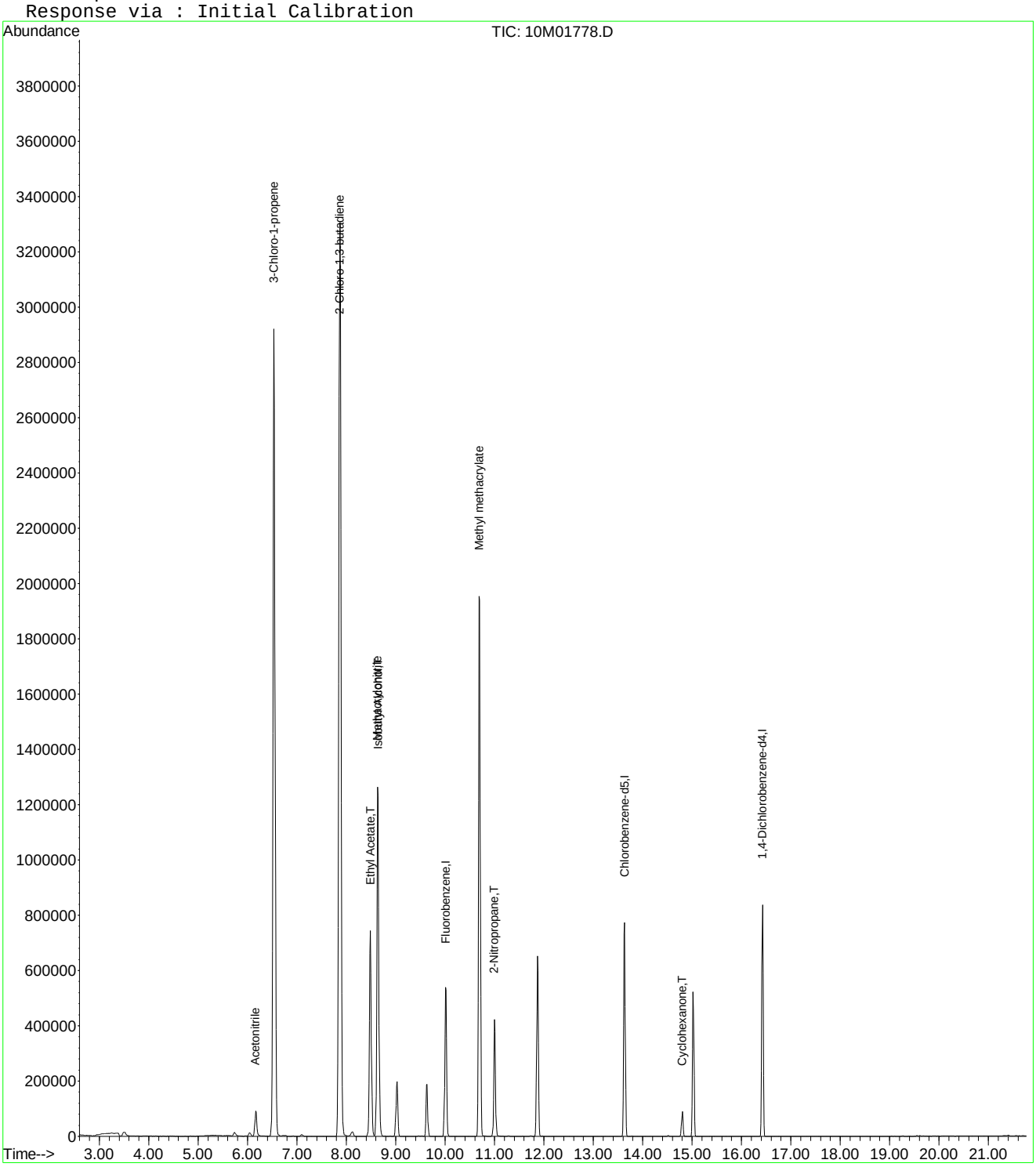

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013113\10M01779.D Vial: 8
Acq On : 31 Jan 2013 15:21 Operator: TMB
Sample : WG419631-08 400ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 15:42:53 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 01/30/13 HPMS10
Last Update : Thu Jan 31 08:56:41 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.01	96	678357	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.63	117	567507	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.43	152	282803	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.03	111	168468	24.73 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.92%		
43) 1,2-Dichloroethane-d4	9.64	65	177306	21.13 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 84.52%		
58) Toluene-d8	11.87	98	577151	23.71 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.84%		
80) p-Bromofluorobenzene	15.02	95	213260	24.70 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		
Target Compounds					Qvalue
3) Chloromethane	3.27	50	1647	0.16 ug/L #	40
9) Diethyl ether	5.46	59	1664	0.26 ug/L #	33
13) Acetone	5.74	43	28832	18.40 ug/L	83
15) Tert-Butyl Alcohol	6.06	59	1062	2.09 ug/L #	1
18) Methyl acetate	6.46	43	1254	0.35 ug/L #	54
20) Carbon Disulfide	6.73	76	6448	0.28 ug/L	98
28) Ethyl-Tert-Butyl ether	8.12	59	4551	0.18 ug/L #	58
36) Tetrahydrofuran	8.98	42	2278	1.79 ug/L #	42

(#) = qualifier out of range (m) = manual integration
10M01779.D 8260BWT.M Thu Jan 31 15:42:53 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013113\10M01779.D Vial: 8
Acq On : 31 Jan 2013 15:21 Operator: TMB
Sample : WG419631-08 400ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 15:42 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 01/30/13 HPMS10
Last Update : Thu Jan 31 08:56:41 2013
Response via : Initial Calibration

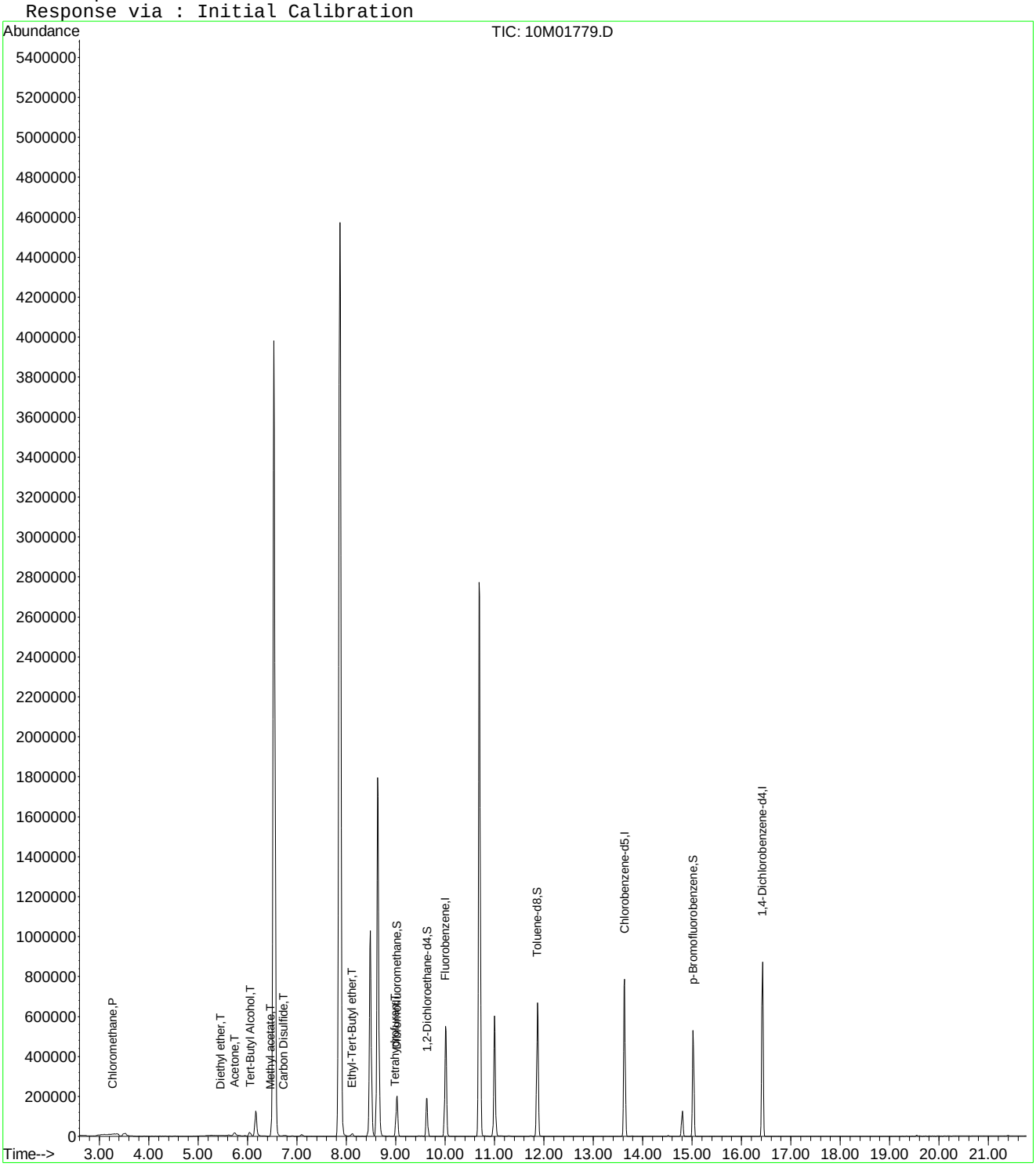

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013113\10M01779.D Vial: 8
Acq On : 31 Jan 2013 15:21 Operator: TMB
Sample : WG419631-08 400ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 01 16:00:45 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.01	96	678357	25.00	ug/L	0.00
8) Chlorobenzene-d5	13.63	117	567507	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	16.43	152	282803	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.16	41	181842	434.47	ug/L	99
3) 3-Chloro-1-propene	6.53	41	3676269	419.27	ug/L	94
4) 2-Chloro-1,3-butadiene	7.87	53	4281357	426.99	ug/L	94
5) Ethyl Acetate	8.49	43	1601730	432.17	ug/L	89
6) Methacrylonitrile	8.63	67	858699	433.91	ug/L #	73
7) Isobutyl Alcohol	8.64	43	47326	386.57	ug/L #	42
10) Methyl methacrylate	10.69	41	1614750	454.07	ug/L	90
11) 2-Nitropropane	11.00	43	549943	466.72	ug/L	98
13) Cyclohexanone	14.80	55	70769	436.52	ug/L	93

(#) = qualifier out of range (m) = manual integration
10M01779.D A9FOOWT.M Fri Feb 01 16:00:45 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013113\10M01779.D Vial: 8
Acq On : 31 Jan 2013 15:21 Operator: TMB
Sample : WG419631-08 400ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 1 16:00 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Initial Calibration

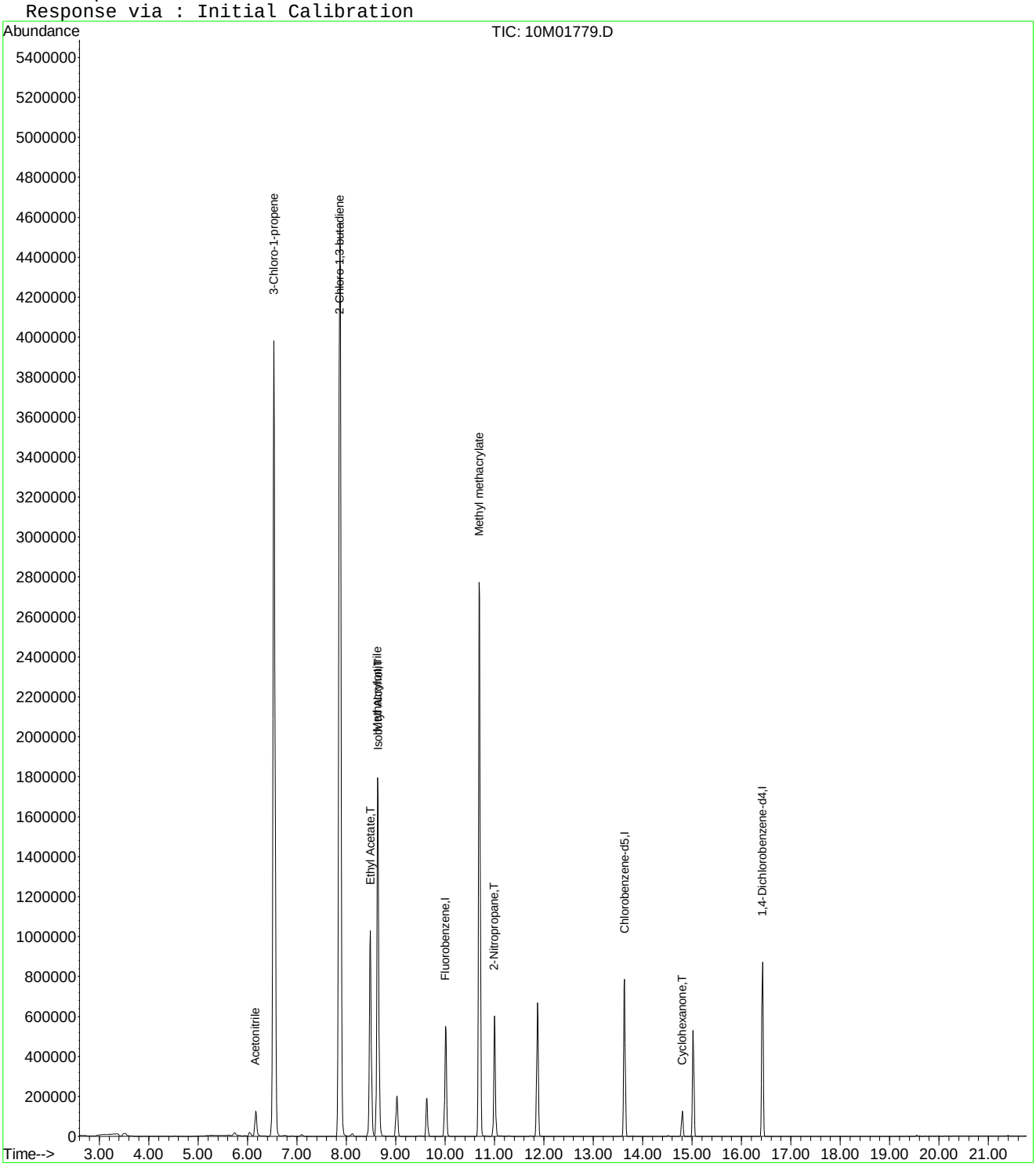

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013113\10M01780.D Vial: 9
Acq On : 31 Jan 2013 15:51 Operator: TMB
Sample : WG419631-09 500ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 16:12:56 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 01/30/13 HPMS10
Last Update : Thu Jan 31 08:56:41 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.01	96	683658	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.63	117	574002	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.42	152	284038	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.02	111	169254	24.65 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.60%		
43) 1,2-Dichloroethane-d4	9.63	65	177365	20.98 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.92%		
58) Toluene-d8	11.88	98	577842	23.47 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.88%		
80) p-Bromofluorobenzene	15.02	95	217259	25.05 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		

Target Compounds					Qvalue
3) Chloromethane	3.26	50	2995	0.29 ug/L #	70
11) Acrolein	5.63	56	195	0.19 ug/L #	14
13) Acetone	5.74	43	34908	22.11 ug/L #	56
18) Methyl acetate	6.46	43	1577	0.43 ug/L #	54
19) Methylene Chloride	6.71	84	1410	0.18 ug/L	81
20) Carbon Disulfide	6.74	76	3171	0.14 ug/L	91
29) 2-Butanone	8.28	43	879	0.43 ug/L #	51
30) Propionitrile	8.44	54	296	0.42 ug/L #	1
36) Tetrahydrofuran	8.99	42	3642	2.84 ug/L #	42
72) Ethylbenzene	13.79	106	1364	0.12 ug/L	48

(#) = qualifier out of range (m) = manual integration
10M01780.D 8260BWT.M Thu Jan 31 16:12:57 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013113\10M01780.D Vial: 9
Acq On : 31 Jan 2013 15:51 Operator: TMB
Sample : WG419631-09 500ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 16:12 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 01/30/13 HPMS10
Last Update : Thu Jan 31 08:56:41 2013
Response via : Initial Calibration

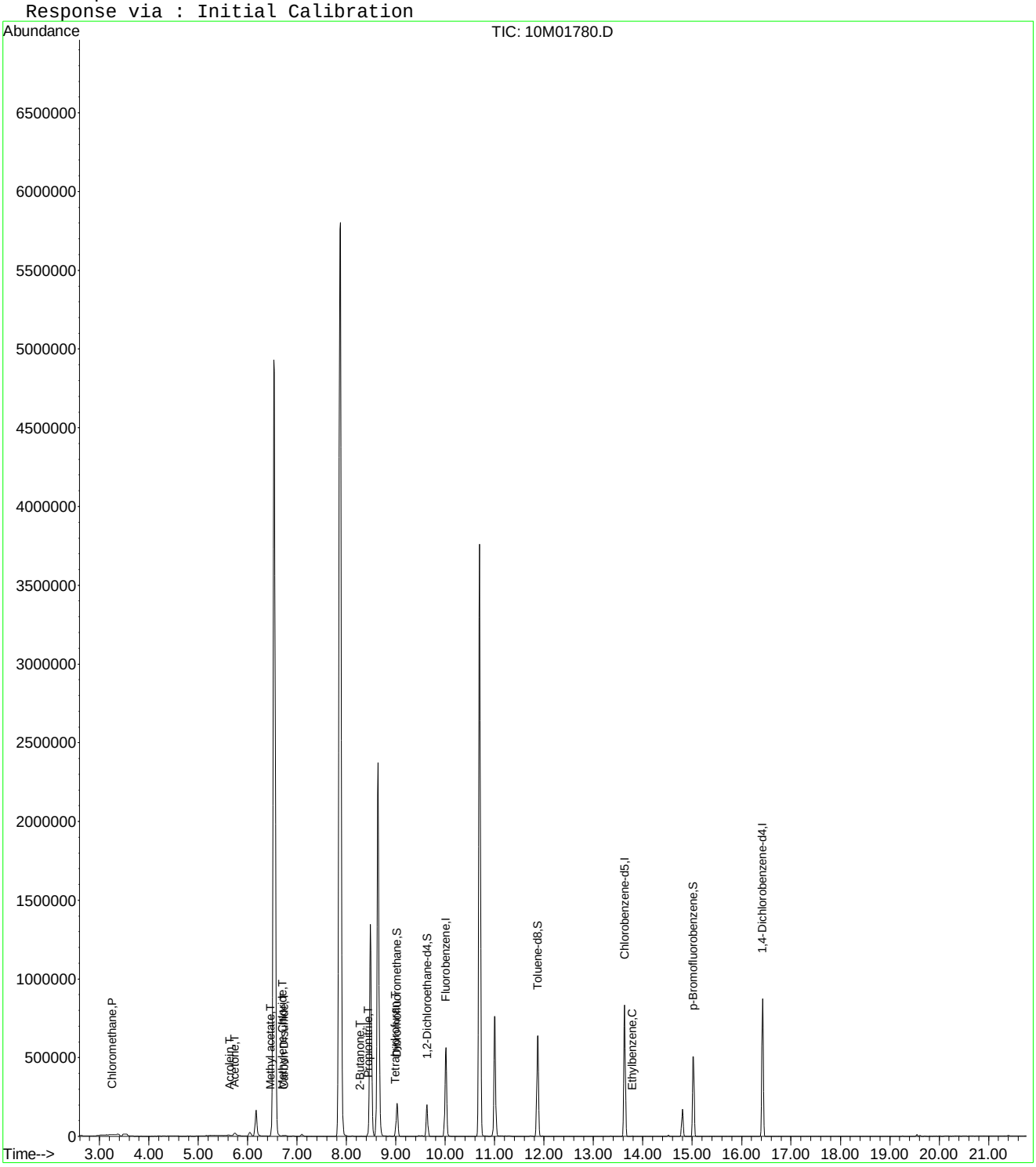

10M01780.D 8260BWT.M Thu Jan 31 16:12:57 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013113\10M01780.D Vial: 9
Acq On : 31 Jan 2013 15:51 Operator: TMB
Sample : WG419631-09 500ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 01 16:00:46 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.01	96	683658	25.00	ug/L	0.00
8) Chlorobenzene-d5	13.63	117	574002	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	16.42	152	284038	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.17	41	239480	567.75	ug/L	99
3) 3-Chloro-1-propene	6.53	41	4704242	532.35	ug/L	94
4) 2-Chloro-1,3-butadiene	7.87	53	5530841	547.33	ug/L	95
5) Ethyl Acetate	8.49	43	2076559	555.94	ug/L	89
6) Methacrylonitrile	8.64	67	1117731	560.42	ug/L #	74
7) Isobutyl Alcohol	8.65	43	72714	504.35	ug/L #	56
10) Methyl methacrylate	10.70	41	2112884	587.42	ug/L	90
11) 2-Nitropropane	11.01	43	726689	609.74	ug/L	98
13) Cyclohexanone	14.80	55	96318	591.52	ug/L	92

(#) = qualifier out of range (m) = manual integration
10M01780.D A9FOOWT.M Fri Feb 01 16:00:46 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013113\10M01780.D Vial: 9
Acq On : 31 Jan 2013 15:51 Operator: TMB
Sample : WG419631-09 500ug/L STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56128 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 1 16:00 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Initial Calibration

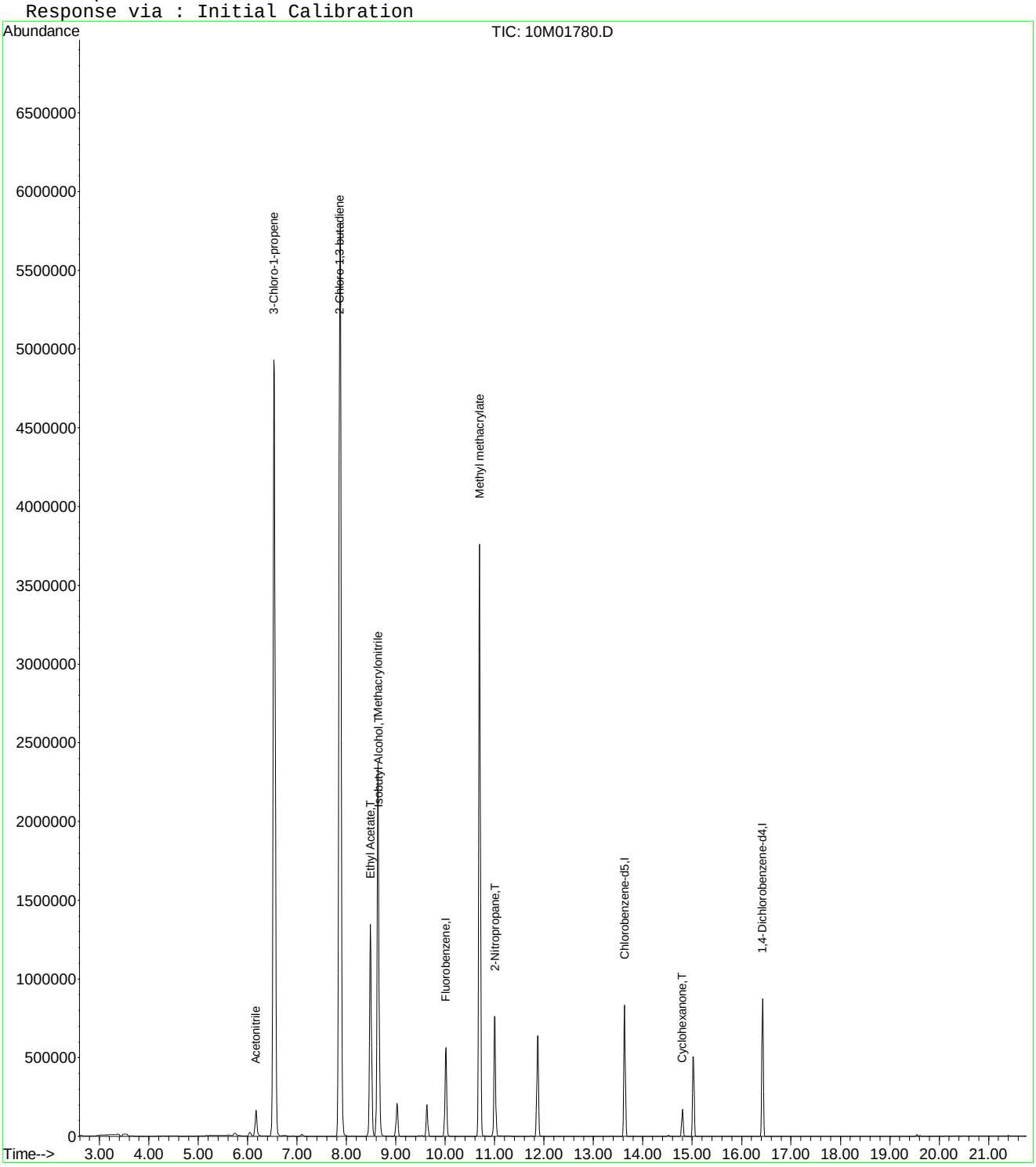

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013113\10M01782.D Vial: 11
Acq On : 31 Jan 2013 16:51 Operator: TMB
Sample : WG419631-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56130 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:13:12 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 01/30/13 HPMS10
Last Update : Thu Jan 31 08:56:41 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.01	96	643790	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.63	117	534681	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.42	152	253386	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.02	111	155662	24.08 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.32%		
43) 1,2-Dichloroethane-d4	9.63	65	168085	21.11 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 84.44%		
58) Toluene-d8	11.87	98	548036	23.90 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.60%		
80) p-Bromofluorobenzene	15.03	95	198788	25.69 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.76%		

Target Compounds					Qvalue
5) 1,3-Butadiene	3.50	54	526851	68.78 ug/L	92
9) Diethyl ether	5.41	59	597463	98.45 ug/L	87
13) Acetone	5.74	43	8052	5.41 ug/L #	67
15) Tert-Butyl Alcohol	6.08	59	440	0.91 ug/L #	1
18) Methyl acetate	6.43	43	9569	2.78 ug/L #	54
19) Methylene Chloride	6.71	84	1485	0.20 ug/L	77
20) Carbon Disulfide	6.75	76	2589	0.12 ug/L #	74
29) 2-Butanone	8.28	43	1628	0.84 ug/L #	51
30) Propionitrile	8.38	54	60023	89.51 ug/L	99
51) 1,4-Dioxane	10.96	88	7441	140.38 ug/L	96
73) m-,p-Xylene	13.79	106	2459	0.20 ug/L	98

(#) = qualifier out of range (m) = manual integration
10M01782.D 8260BWT.M Thu Jan 31 17:13:13 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013113\10M01782.D Vial: 11
Acq On : 31 Jan 2013 16:51 Operator: TMB
Sample : WG419631-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56130 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:13 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 01/30/13 HPMS10
Last Update : Thu Jan 31 08:56:41 2013
Response via : Initial Calibration

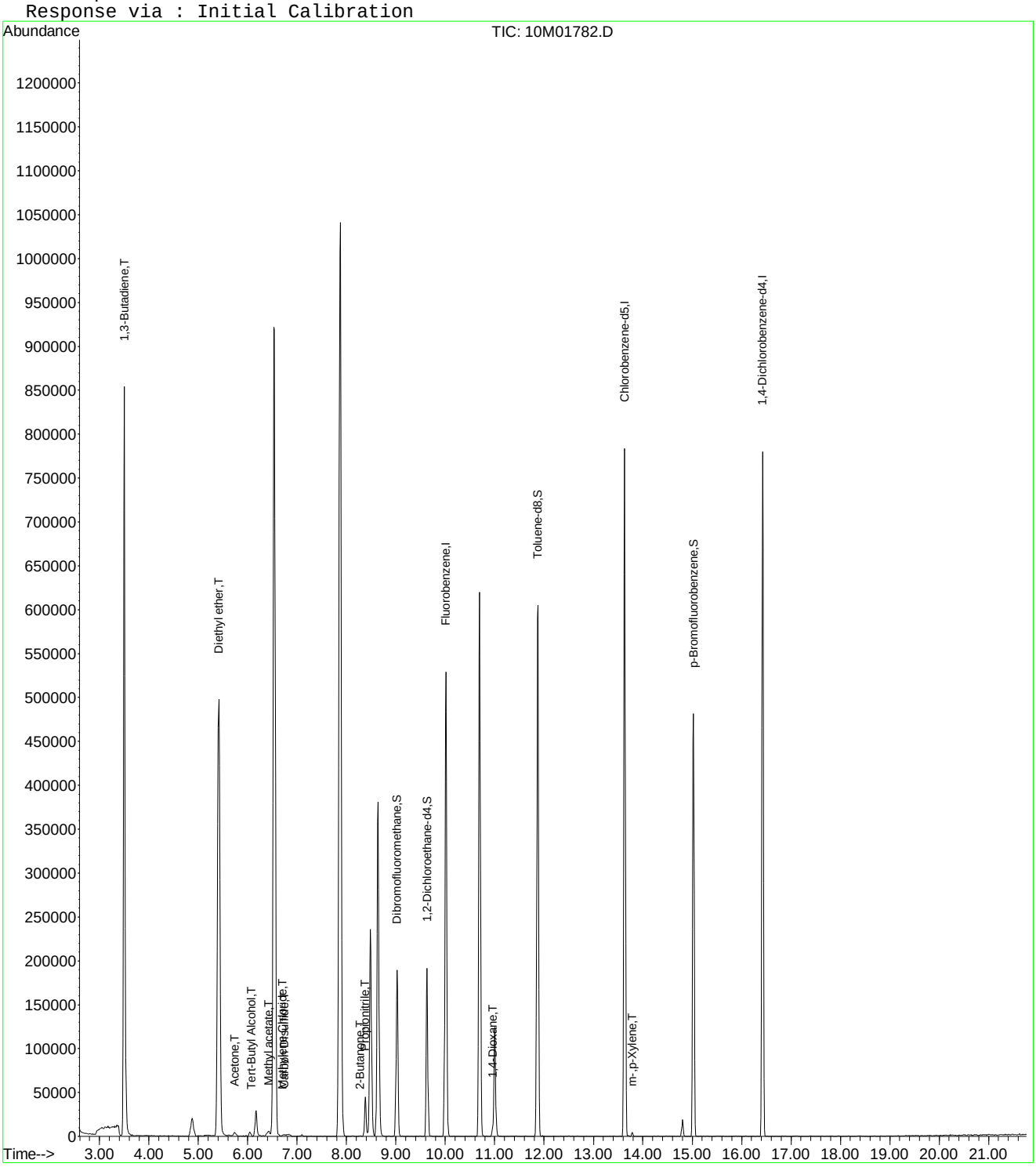

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\013113\10M01782.D Vial: 11
Acq On : 31 Jan 2013 16:51 Operator: TMB
Sample : WG419631-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56130 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 01 16:00:46 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.01	96	643790	25.00	ug/L	0.00
8) Chlorobenzene-d5	13.63	117	534681	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	16.42	152	253386	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.17	41	44211	111.30	ug/L	100
3) 3-Chloro-1-propene	6.53	41	871841	104.77	ug/L	94
4) 2-Chloro-1,3-butadiene	7.87	53	997568	104.83	ug/L	94
5) Ethyl Acetate	8.48	43	377923	107.44	ug/L	90
6) Methacrylonitrile	8.64	67	189601	100.95	ug/L #	69
7) Isobutyl Alcohol	8.65	43	5619m	74.56	ug/L	
10) Methyl methacrylate	10.70	41	347240	103.64	ug/L	88
11) 2-Nitropropane	11.01	43	117227	105.59	ug/L	96
13) Cyclohexanone	14.80	55	11065	76.17	ug/L	93

(#) = qualifier out of range (m) = manual integration
10M01782.D A9FOOWT.M Fri Feb 01 16:32:45 2013 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\013113\10M01782.D Vial: 11
Acq On : 31 Jan 2013 16:51 Operator: TMB
Sample : WG419631-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56130 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 1 16:27 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Initial Calibration

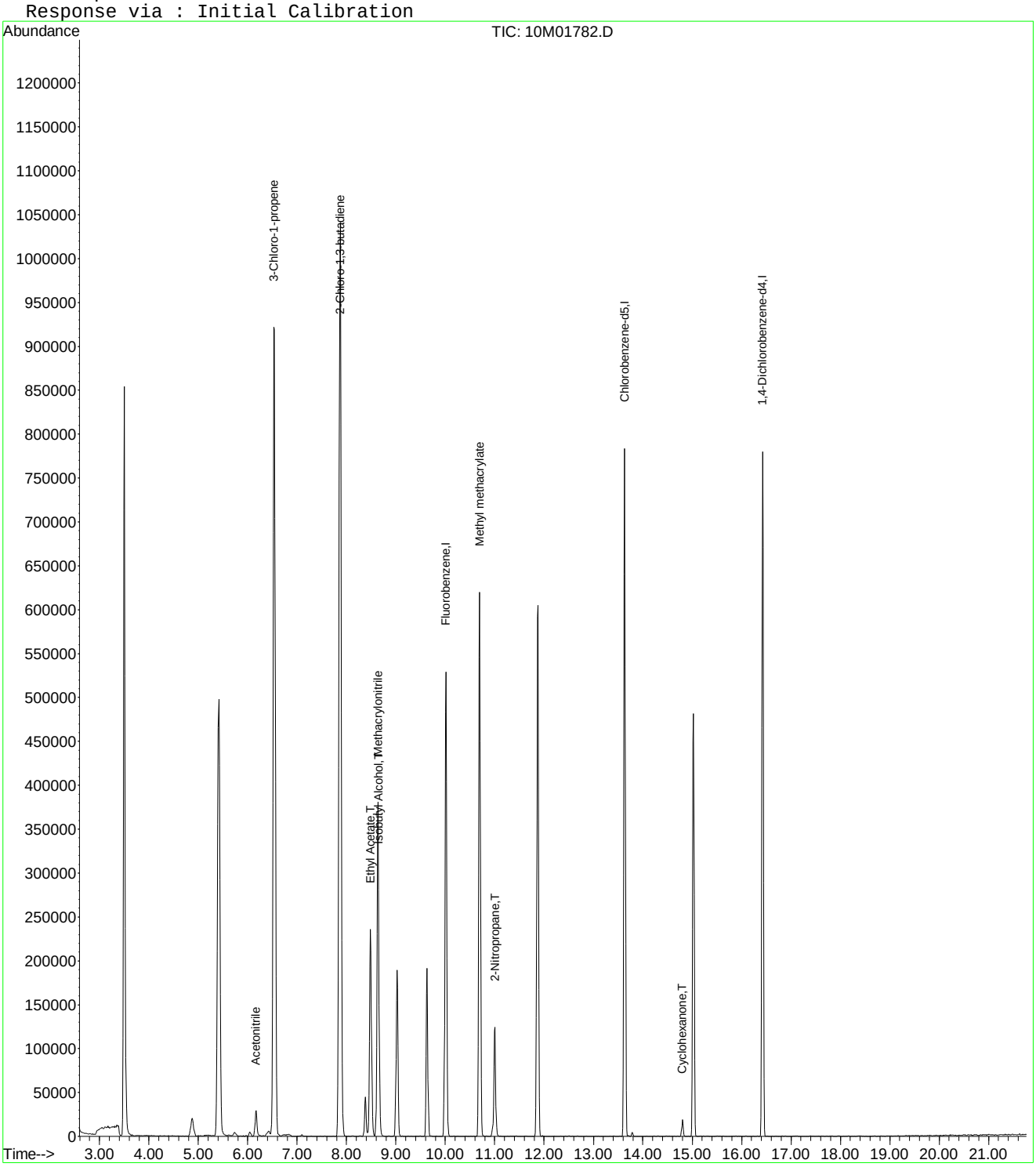

10M01782.D A9FOOWT.M Fri Feb 01 16:32:45 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\013113\10M01782.D Vial: 11
Acq On : 31 Jan 2013 16:51 Operator: TMB
Sample : WG419631-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56130 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2		Acetonitrile	100.0000	111.3043	-11.3	113	0.00
3		3-Chloro-1-propene	100.0000	104.7701	-4.8	107	0.00
4		2-Chloro-1,3-butadiene	100.0000	104.8327	-4.8	105	0.00
5	T	Ethyl Acetate	100.0000	107.4429	-7.4	110	0.00
6		Methacrylonitrile	100.0000	100.9512	-1.0	101	0.00
7	T	Isobutyl Alcohol	100.0000	74.5590	25.4#	69	0.00
8	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
9	T	1-Butanol	-1.0000	0.0000	0.0	0	-9.53#
10		Methyl methacrylate	100.0000	103.6384	-3.6	105	0.00
11	T	2-Nitropropane	100.0000	105.5940	-5.6	109	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	99	0.00
13	T	Cyclohexanone	100.0000	76.1747	23.8	84	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
10M01782.D A9FOOWT.M Fri Feb 01 16:27:55 2013 Page 1

Quantitation Report (Qedit)

```
Data File : C:\MSDCHEM\1\DATA\013113\10M01782.D          Vial: 11
Acq On    : 31 Jan 2013  16:51                        Operator: TMB
Sample    : WG419631-10 100ug/L ALT SRC STD A9/FOO    Inst    : HPMS10
Misc      : 1,1 STD56130                              Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb  1 16:00 2013              Quant Results File: temp.res

Method       : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title        : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update  : Fri Feb 01 15:59:54 2013
Response via : Single Level Calibration
```

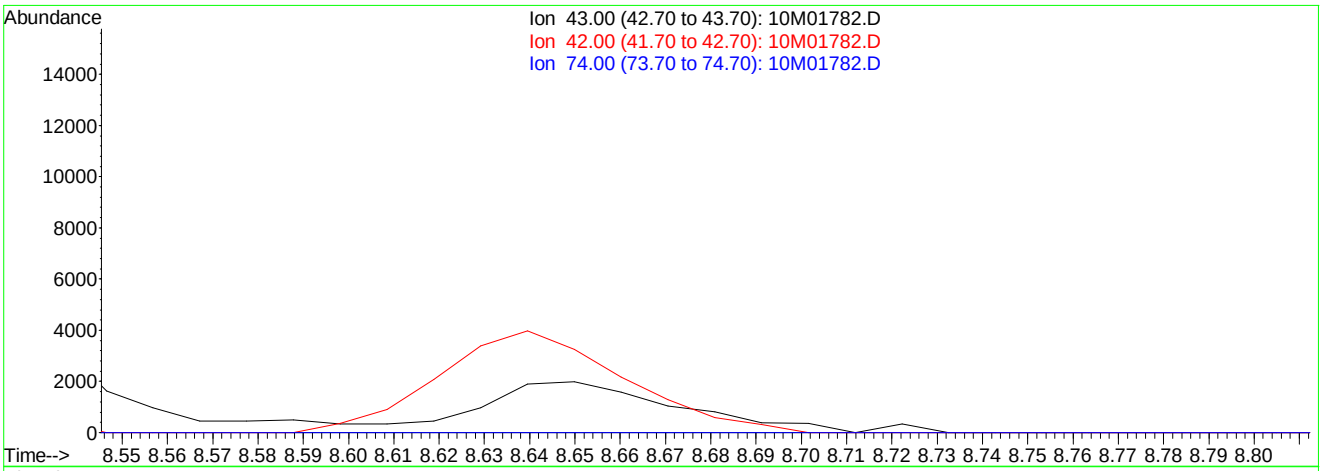

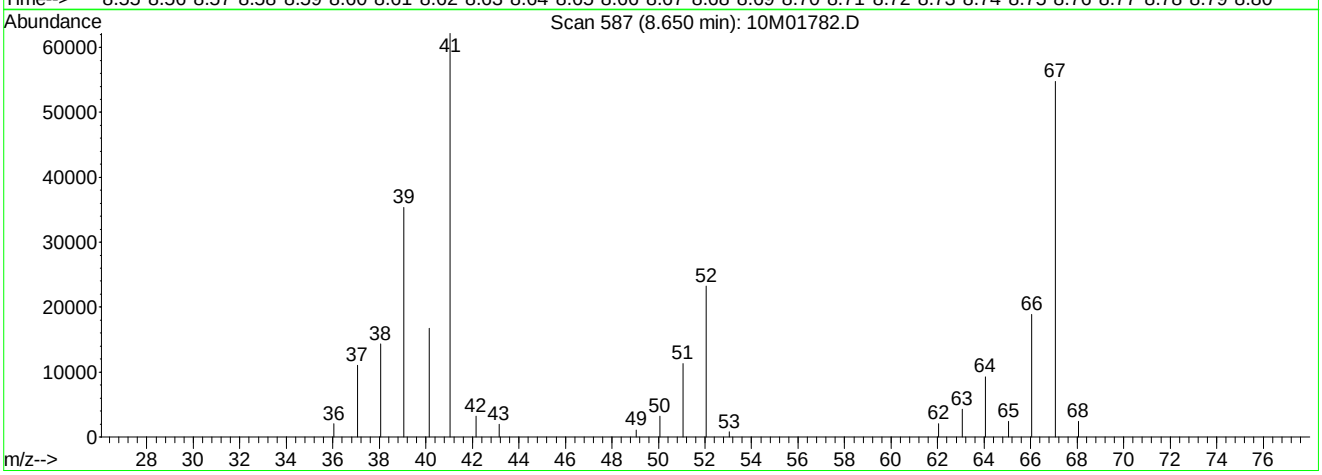

TIC: 10M01782.D

(7) Isobutyl Alcohol (T)

8.65min 0.00ug/L

response 0

Ion	Exp%	Act%
43.00	100	0.00
42.00	89.20	0.00#
74.00	7.20	0.00#
0.00	0.00	0.00

10M01782.D A9FOOWT.M Fri Feb 01 16:27:32 2013

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\013113\10M01782.D Vial: 11
Acq On : 31 Jan 2013 16:51 Operator: TMB
Sample : WG419631-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS10
Misc : 1,1 STD56130 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 1 16:27 2013 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX/BUTADIENE WT SOP: OVL MSV01 01/31/13
Last Update : Fri Feb 01 15:59:54 2013
Response via : Single Level Calibration

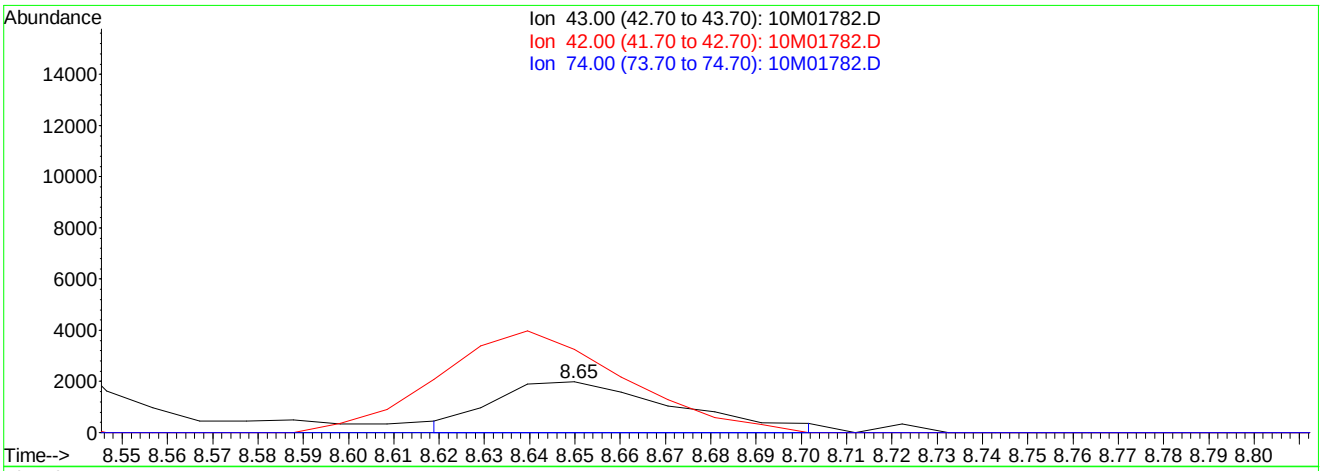

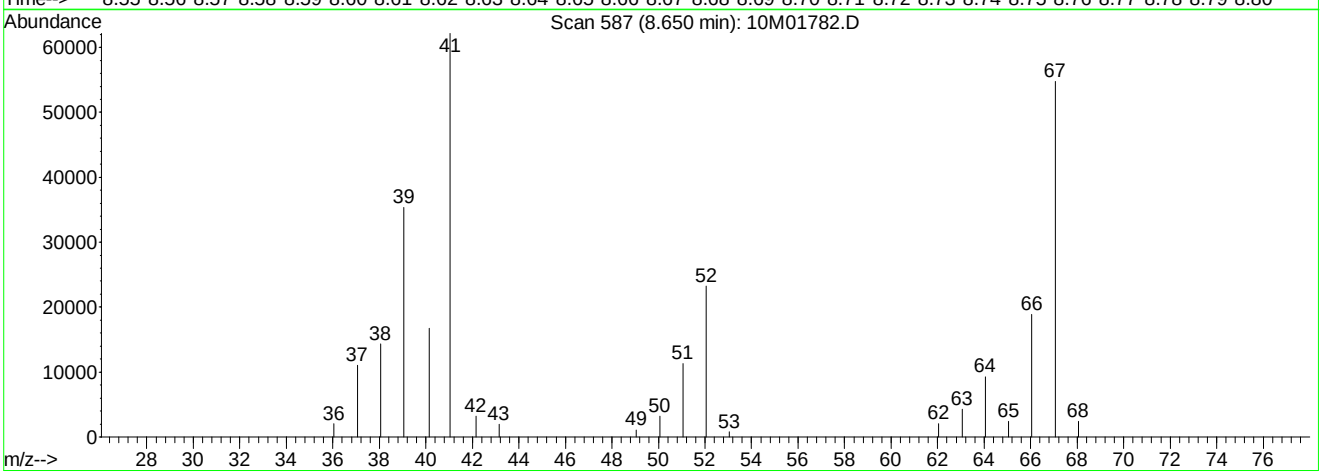

TIC: 10M01782.D

(7) Isobutyl Alcohol (T)

8.65min 74.56ug/L mint

response 5619

Ion	Exp%	Act%
43.00	100	100
42.00	89.20	0.00#
74.00	7.20	0.00#
0.00	0.00	0.00

10M01782.D A9FOOWT.M Fri Feb 01 16:27 2013

Analyst: 02/01/2013 16:40 Supervisor: 02/04/2013 08:22
Tiffany Bailey
#1 - Data system fails to select correct peak

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04738.D Vial: 3
Acq On : 14 May 2013 16:32 Operator: TMB
Sample : WG430035-03 0.4ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 16:54:01 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.74	96	787838	25.00 ug/L	-0.04
57) Chlorobenzene-d5	13.34	117	582783	25.00 ug/L	-0.04
78) 1,4-Dichlorobenzene-d4	16.13	152	314900	25.00 ug/L	-0.04

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.00 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.00 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.00 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.00 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.68	85	3057	0.37 ug/L #	66
4) Vinyl Chloride	3.24	62	4502	0.47 ug/L	100
5) 1,3-Butadiene	3.29	54	4377	Below Cal #	62
6) Bromomethane	4.02	94	2892	0.47 ug/L	97
7) Chloroethane	4.16	64	2302	0.41 ug/L #	42
8) Trichlorofluoromethane	4.63	101	4826	0.34 ug/L	89
10) Isoprene	5.17	67	4693	0.38 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	5.38	101	2696	0.32 ug/L	79
13) Acetone	5.46	43	1409	0.60 ug/L #	46
14) 1,1-Dichloroethene	5.68	96	3257	0.40 ug/L	83
16) Dimethyl Sulfide	5.92	62	3507	0.36 ug/L	98
17) Iodomethane	6.16	142	192	4.00 ug/L #	29
18) Methyl acetate	6.19	43	690	0.16 ug/L #	54
19) Methylene Chloride	6.43	84	4449	0.49 ug/L	96
20) Carbon Disulfide	6.45	76	11818	0.46 ug/L	99
22) Methyl Tert Butyl Ether	6.66	73	7396	0.34 ug/L #	78
23) trans-1,2-Dichloroethene	6.87	96	3609	0.40 ug/L	88
24) n-Hexane	6.97	57	4587	0.39 ug/L #	71
27) 1,1-Dichloroethane	7.46	63	5972	0.38 ug/L #	85
29) 2-Butanone	8.01	43	606	0.25 ug/L #	51
31) 2,2-Dichloropropane	8.21	77	5190	0.38 ug/L	81
32) cis-1,2-Dichloroethene	8.27	96	3474	0.36 ug/L	80
33) Chloroform	8.47	83	5835	0.37 ug/L	96
35) Bromochloromethane	8.68	128	1425	0.33 ug/L	96
38) 1,1,1-Trichloroethane	8.97	97	5012	0.35 ug/L	84
39) Cyclohexane	8.99	56	6054	0.41 ug/L #	88
40) 1,1-Dichloropropene	9.16	75	4265	0.35 ug/L	93
41) Carbon Tetrachloride	9.30	117	4228	0.33 ug/L #	87
45) 1,2-Dichloroethane	9.47	62	4091	0.36 ug/L #	77
46) Benzene	9.50	78	14367	0.42 ug/L	94
47) Trichloroethene	10.21	130	3533	0.38 ug/L	94
48) Methylcyclohexane	10.28	83	5580	0.42 ug/L	98
49) 1,2-Dichloropropane	10.42	63	3010	0.34 ug/L	84
50) Bromodichloromethane	10.70	83	3569	0.31 ug/L #	92
52) Dibromomethane	10.77	93	1741	0.36 ug/L	75
53) 2-Chloroethyl Vinyl Ether	11.00	63	631	0.14 ug/L #	42
55) cis-1,3-Dichloropropene	11.30	75	4327	0.32 ug/L	90
56) Dimethyl Disulfide	11.52	79	1244	0.18 ug/L	69
59) Toluene	11.69	91	14380	0.42 ug/L	98
60) Ethyl Methacrylate	11.79	69	2256	0.29 ug/L #	56

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04738.D Vial: 3
Acq On : 14 May 2013 16:32 Operator: TMB
Sample : WG430035-03 0.4ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 16:54:01 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	11.85	75	3856	0.35 ug/L		86
63)	1,1,2-Trichloroethane	12.05	97	2326	0.39 ug/L		86
64)	2-Hexanone	12.01	43	515	0.14 ug/L	#	1
65)	1,3-Dichloropropane	12.34	76	3954	0.37 ug/L		88
66)	Tetrachloroethene	12.44	164	3233	0.43 ug/L		93
67)	Dibromochloromethane	12.69	129	2596	0.35 ug/L		90
68)	1,2-Dibromoethane	12.92	107	2323	0.38 ug/L		87
69)	1-Chlorohexane	13.02	91	4137	0.40 ug/L		94
70)	Chlorobenzene	13.39	112	9484	0.41 ug/L		97
71)	1,1,1,2-Tetrachloroethane	13.41	131	2974	0.36 ug/L		86
72)	Ethylbenzene	13.43	106	5195	0.42 ug/L		95
73)	m-,p-Xylene	13.51	106	12336	0.82 ug/L		96
74)	o-Xylene	14.02	106	5933	0.41 ug/L		99
75)	Styrene	14.06	104	8559	0.35 ug/L		99
76)	Bromoform	14.50	173	1485	0.30 ug/L		82
77)	Isopropylbenzene	14.42	105	15005	0.41 ug/L		96
79)	1,1,2,2-Tetrachloroethane	14.61	83	1906	0.29 ug/L		99
81)	1,2,3-Trichloropropane	14.79	110	738	0.35 ug/L	#	26
82)	trans-1,4-Dichloro-2-Buten	14.84	53	194	0.74 ug/L	#	1
83)	n-Propylbenzene	14.88	91	17190	0.41 ug/L		97
84)	Bromobenzene	15.00	156	4382	0.42 ug/L		59
85)	1,3,5-Trimethylbenzene	15.06	105	11616	0.39 ug/L		97
86)	2-Chlorotoluene	15.13	91	11235	0.41 ug/L		100
87)	4-Chlorotoluene	15.17	91	10554	0.42 ug/L		98
88)	a-Methylstyrene	15.43	118	5003	0.31 ug/L		94
89)	tert-Butylbenzene	15.48	134	2613	0.39 ug/L		92
90)	1,2,4-Trimethylbenzene	15.53	105	12173	0.40 ug/L		98
91)	sec-Butylbenzene	15.74	105	15468	0.42 ug/L		96
92)	p-Isopropyltoluene	15.88	119	12351	0.40 ug/L		99
93)	1,3-Dichlorobenzene	16.05	146	8354	0.46 ug/L		90
94)	1,4-Dichlorobenzene	16.17	146	8644	0.38 ug/L		87
95)	n-Butylbenzene	16.37	91	10306	0.38 ug/L	#	96
96)	1,2-Dichlorobenzene	16.63	146	7077	0.40 ug/L		95
98)	1,2,4-Trichlorobenzene	18.58	180	4798	0.39 ug/L		94
99)	Hexachlorobutadiene	18.74	225	2021	0.39 ug/L	#	83
100)	Naphthalene	18.92	128	7802	0.36 ug/L		91
101)	1,2,3-Trichlorobenzene	19.21	180	4379	0.41 ug/L		94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04738.D Vial: 3
Acq On : 14 May 2013 16:32 Operator: TMB
Sample : WG430035-03 0.4ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 16:54 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration

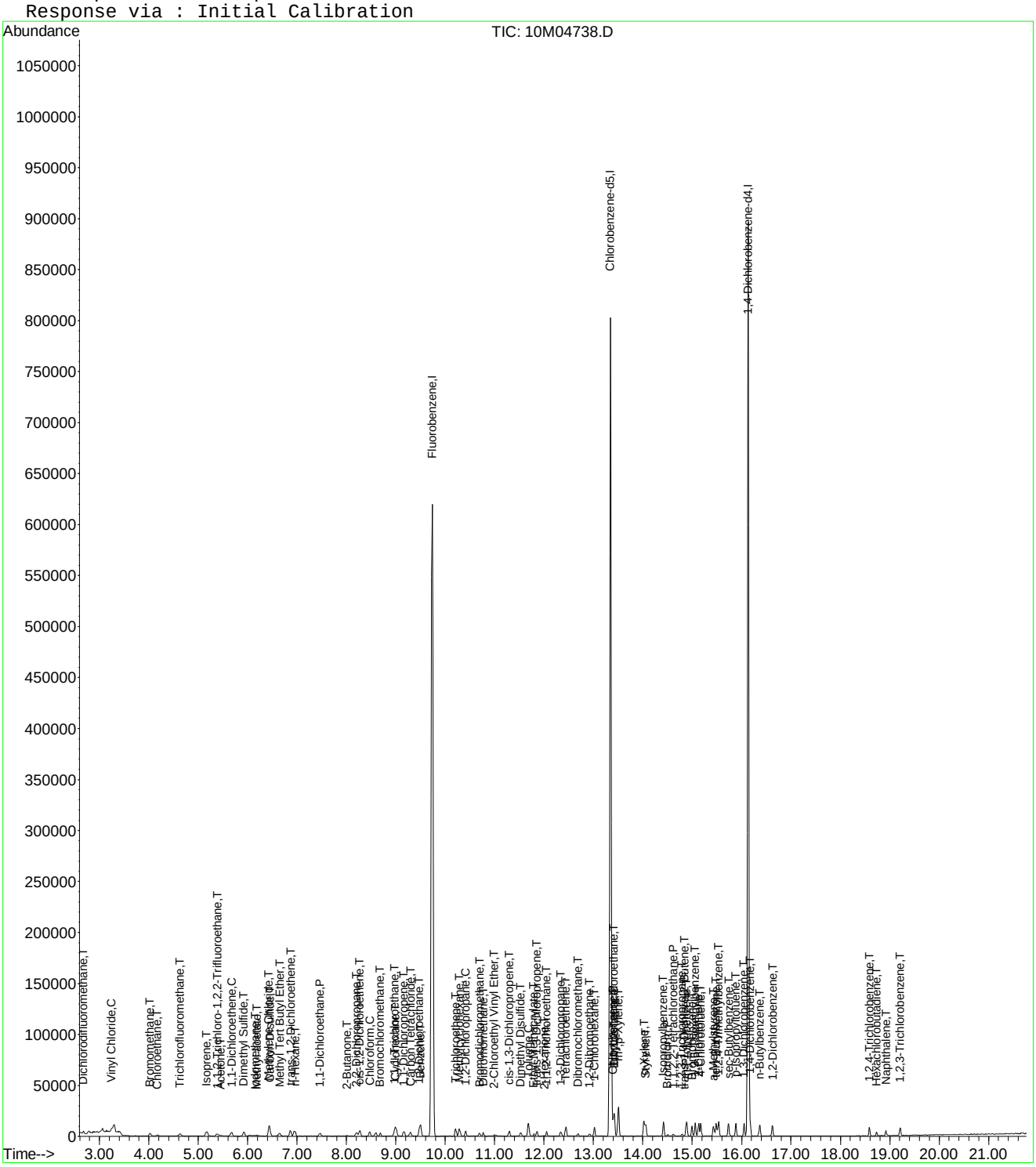

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04739.D Vial: 4
Acq On : 14 May 2013 17:02 Operator: TMB
Sample : WG430035-04 1ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 17:24:22 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.74	96	762151	25.00 ug/L	-0.04
57) Chlorobenzene-d5	13.34	117	569508	25.00 ug/L	-0.04
78) 1,4-Dichlorobenzene-d4	16.13	152	310382	25.00 ug/L	-0.04
System Monitoring Compounds					
37) Dibromofluoromethane	8.74	111	3252	0.40 ug/L	-0.04
Spiked Amount 25.000	Range 86 - 118		Recovery = 1.60%#		
43) 1,2-Dichloroethane-d4	9.35	65	3716	0.44 ug/L	-0.04
Spiked Amount 25.000	Range 80 - 120		Recovery = 1.76%#		
58) Toluene-d8	11.60	98	14872	0.55 ug/L	-0.03
Spiked Amount 25.000	Range 88 - 110		Recovery = 2.20%#		
80) p-Bromofluorobenzene	14.73	95	5418	0.51 ug/L	-0.04
Spiked Amount 25.000	Range 86 - 115		Recovery = 2.04%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.68	85	7241	0.91 ug/L #	86
3) Chloromethane	3.06	50	10130	0.47 ug/L	95
4) Vinyl Chloride	3.25	62	9551	1.04 ug/L	97
5) 1,3-Butadiene	3.29	54	10181	Below Cal	86
6) Bromomethane	4.02	94	6530	1.09 ug/L	94
7) Chloroethane	4.17	64	4878	0.89 ug/L	89
8) Trichlorofluoromethane	4.63	101	13537	0.97 ug/L	95
9) Diethyl ether	5.14	59	28695	4.62 ug/L	99
10) Isoprene	5.17	67	11450	0.97 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	5.37	101	7981	0.99 ug/L	87
13) Acetone	5.46	43	2658	1.17 ug/L #	78
14) 1,1-Dichloroethene	5.66	96	7194	0.92 ug/L	99
15) Tert-Butyl Alcohol	5.78	59	4960	9.33 ug/L #	61
16) Dimethyl Sulfide	5.92	62	9589	1.03 ug/L	89
17) Iodomethane	6.16	142	1081	4.08 ug/L #	29
18) Methyl acetate	6.19	43	2696	0.64 ug/L #	54
19) Methylene Chloride	6.43	84	9636	1.10 ug/L	89
20) Carbon Disulfide	6.45	76	27517	1.10 ug/L	99
21) Acrylonitrile	6.61	53	4253	1.97 ug/L	91
22) Methyl Tert Butyl Ether	6.64	73	19327	0.92 ug/L	99
23) trans-1,2-Dichloroethene	6.86	96	8878	1.02 ug/L	89
24) n-Hexane	6.95	57	11269	0.98 ug/L	87
25) Diisopropyl ether	7.29	45	124083	4.76 ug/L	96
26) Vinyl Acetate	7.44	43	2149	3.87 ug/L #	73
27) 1,1-Dichloroethane	7.46	63	15104	0.98 ug/L	95
28) Ethyl-Tert-Butyl ether	7.83	59	122219	4.75 ug/L	99
29) 2-Butanone	8.01	43	1923	0.81 ug/L #	51
30) Propionitrile	8.11	54	3427	4.49 ug/L #	72
31) 2,2-Dichloropropane	8.21	77	12733	0.96 ug/L	93
32) cis-1,2-Dichloroethene	8.27	96	9468	1.00 ug/L	89
33) Chloroform	8.46	83	14705	0.96 ug/L	99
34) 1-Bromopropane	8.60	122	1733	0.92 ug/L	84
35) Bromochloromethane	8.68	128	4160	0.99 ug/L	91
36) Tetrahydrofuran	8.71	42	7078	4.62 ug/L	99
38) 1,1,1-Trichloroethane	8.97	97	12624	0.91 ug/L	99
39) Cyclohexane	9.00	56	14443	1.01 ug/L	98
40) 1,1-Dichloropropene	9.17	75	11067	0.93 ug/L	96
41) Carbon Tetrachloride	9.29	117	11152	0.90 ug/L	99
42) Tert-Amyl-Methyl ether	9.27	73	97437	4.72 ug/L	99
45) 1,2-Dichloroethane	9.47	62	10423	0.94 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04739.D Vial: 4
Acq On : 14 May 2013 17:02 Operator: TMB
Sample : WG430035-04 1ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 17:24:22 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
46)	Benzene	9.50	78	34112	1.02	ug/L		97
47)	Trichloroethene	10.21	130	9395	1.03	ug/L		94
48)	Methylcyclohexane	10.29	83	12823	0.99	ug/L		98
49)	1,2-Dichloropropane	10.42	63	8222	0.96	ug/L		90
50)	Bromodichloromethane	10.69	83	10180	0.91	ug/L	#	97
52)	Dibromomethane	10.77	93	4421	0.96	ug/L		88
53)	2-Chloroethyl Vinyl Ether	11.00	63	2928	0.68	ug/L	#	72
54)	4-Methyl-2-Pentanone	11.02	58	1392	0.60	ug/L	#	52
55)	cis-1,3-Dichloropropene	11.30	75	11754	0.89	ug/L		89
56)	Dimethyl Disulfide	11.52	79	4049	0.60	ug/L		90
59)	Toluene	11.68	91	36417	1.10	ug/L		95
60)	Ethyl Methacrylate	11.79	69	6671	0.88	ug/L		96
62)	trans-1,3-Dichloropropene	11.85	75	10161	0.93	ug/L		96
63)	1,1,2-Trichloroethane	12.05	97	6107	1.04	ug/L		96
64)	2-Hexanone	12.01	43	2569	0.73	ug/L	#	55
65)	1,3-Dichloropropane	12.34	76	11018	1.06	ug/L		86
66)	Tetrachloroethene	12.44	164	8160	1.12	ug/L		87
67)	Dibromochloromethane	12.68	129	6659	0.91	ug/L		92
68)	1,2-Dibromoethane	12.92	107	6225	1.03	ug/L		97
69)	1-Chlorohexane	13.01	91	10431	1.02	ug/L		99
70)	Chlorobenzene	13.38	112	24773	1.09	ug/L		98
71)	1,1,1,2-Tetrachloroethane	13.43	131	8378	1.04	ug/L		97
72)	Ethylbenzene	13.43	106	12471	1.04	ug/L		95
73)	m-,p-Xylene	13.51	106	30010	2.03	ug/L		95
74)	o-Xylene	14.02	106	14597	1.02	ug/L		99
75)	Styrene	14.06	104	21168	0.90	ug/L		97
76)	Bromoform	14.50	173	4346	0.88	ug/L		93
77)	Isopropylbenzene	14.42	105	36495	1.03	ug/L		100
79)	1,1,2,2-Tetrachloroethane	14.61	83	5636	0.88	ug/L		91
81)	1,2,3-Trichloropropane	14.79	110	2031	0.99	ug/L		57
82)	trans-1,4-Dichloro-2-Buten	14.84	53	1158	1.17	ug/L	#	29
83)	n-Propylbenzene	14.88	91	42642	1.03	ug/L		100
84)	Bromobenzene	15.00	156	11430	1.11	ug/L		48
85)	1,3,5-Trimethylbenzene	15.06	105	28967	0.99	ug/L		100
86)	2-Chlorotoluene	15.13	91	27476	1.03	ug/L		96
87)	4-Chlorotoluene	15.17	91	26237	1.06	ug/L		98
88)	a-Methylstyrene	15.43	118	13607	0.85	ug/L		97
89)	tert-Butylbenzene	15.48	134	6654	1.00	ug/L		91
90)	1,2,4-Trimethylbenzene	15.53	105	29981	1.01	ug/L		97
91)	sec-Butylbenzene	15.73	105	38150	1.06	ug/L		98
92)	p-Isopropyltoluene	15.89	119	30705	1.01	ug/L		100
93)	1,3-Dichlorobenzene	16.05	146	19790	1.10	ug/L		89
94)	1,4-Dichlorobenzene	16.17	146	20687	1.05	ug/L		84
95)	n-Butylbenzene	16.36	91	25875	0.97	ug/L		98
96)	1,2-Dichlorobenzene	16.62	146	18386	1.06	ug/L		92
97)	1,2-Dibromo-3-Chloropropan	17.54	157	850	0.61	ug/L		91
98)	1,2,4-Trichlorobenzene	18.58	180	11874	0.99	ug/L		99
99)	Hexachlorobutadiene	18.74	225	5390	1.05	ug/L		92
100)	Naphthalene	18.92	128	19246	0.89	ug/L		100
101)	1,2,3-Trichlorobenzene	19.21	180	10517	1.01	ug/L		91

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04739.D Vial: 4
Acq On : 14 May 2013 17:02 Operator: TMB
Sample : WG430035-04 1ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 17:24 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration

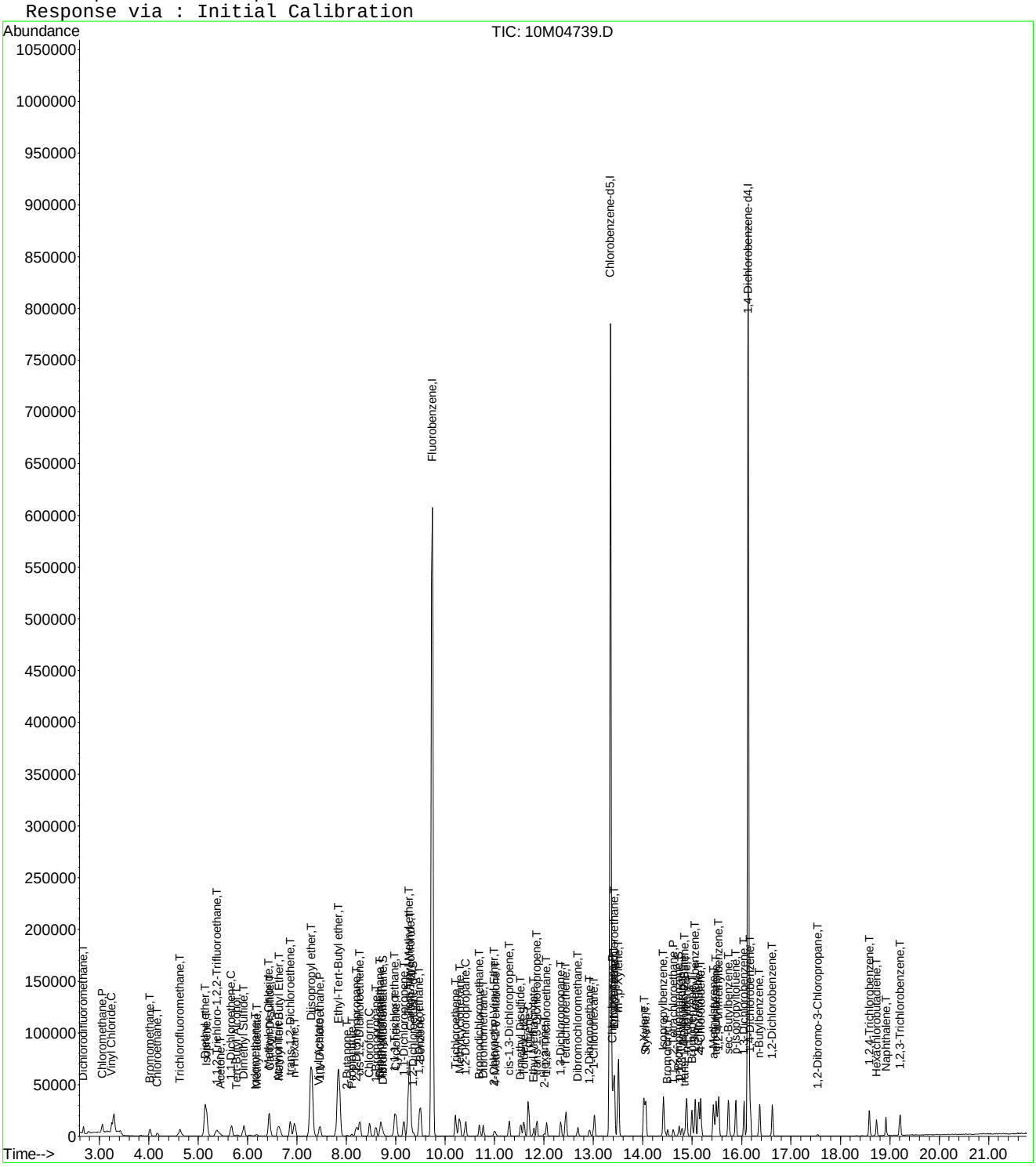

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04740.D Vial: 5
Acq On : 14 May 2013 17:32 Operator: TMB
Sample : WG430035-05 2ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 17:54:21 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.74	96	753404	25.00 ug/L	-0.04
57) Chlorobenzene-d5	13.34	117	563353	25.00 ug/L	-0.04
78) 1,4-Dichlorobenzene-d4	16.13	152	309895	25.00 ug/L	-0.04
System Monitoring Compounds					
37) Dibromofluoromethane	8.74	111	6844	0.86 ug/L	-0.04
Spiked Amount 25.000	Range 86 - 118		Recovery = 3.44%#		
43) 1,2-Dichloroethane-d4	9.35	65	7554	0.90 ug/L	-0.04
Spiked Amount 25.000	Range 80 - 120		Recovery = 3.60%#		
58) Toluene-d8	11.59	98	27991	1.05 ug/L	-0.04
Spiked Amount 25.000	Range 88 - 110		Recovery = 4.20%#		
80) p-Bromofluorobenzene	14.74	95	10146	0.95 ug/L	-0.03
Spiked Amount 25.000	Range 86 - 115		Recovery = 3.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.68	85	12716	1.62 ug/L	93
3) Chloromethane	3.05	50	19530	1.48 ug/L	94
4) Vinyl Chloride	3.25	62	17077	1.88 ug/L	95
5) 1,3-Butadiene	3.29	54	18277	Below Cal	94
6) Bromomethane	4.02	94	13956	2.37 ug/L	95
7) Chloroethane	4.18	64	10191	1.88 ug/L	91
8) Trichlorofluoromethane	4.63	101	24915	1.81 ug/L	98
9) Diethyl ether	5.14	59	146405	23.83 ug/L	97
10) Isoprene	5.17	67	21597	1.84 ug/L	98
11) Acrolein	5.35	56	2857	11.56 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	5.37	101	14914	1.87 ug/L	82
13) Acetone	5.45	43	4432	1.98 ug/L	91
14) 1,1-Dichloroethene	5.67	96	15200	1.96 ug/L	84
15) Tert-Butyl Alcohol	5.77	59	24147	45.94 ug/L	98
16) Dimethyl Sulfide	5.92	62	17409	1.88 ug/L	93
17) Iodomethane	6.15	142	3258	4.27 ug/L #	71
18) Methyl acetate	6.19	43	6196	1.50 ug/L	97
19) Methylene Chloride	6.43	84	17024	1.96 ug/L	91
20) Carbon Disulfide	6.45	76	52008	2.10 ug/L	100
21) Acrylonitrile	6.61	53	22126	10.34 ug/L	87
22) Methyl Tert Butyl Ether	6.64	73	37611	1.82 ug/L	99
23) trans-1,2-Dichloroethene	6.86	96	16114	1.88 ug/L	94
24) n-Hexane	6.95	57	20992	1.85 ug/L	97
25) Diisopropyl ether	7.29	45	624521	24.24 ug/L	96
26) Vinyl Acetate	7.45	43	6891	4.35 ug/L #	73
27) 1,1-Dichloroethane	7.46	63	28211	1.86 ug/L	98
28) Ethyl-Tert-Butyl ether	7.83	59	618097	24.31 ug/L	99
29) 2-Butanone	8.00	43	3882	1.64 ug/L	88
30) Propionitrile	8.10	54	17857	23.66 ug/L	94
31) 2,2-Dichloropropane	8.21	77	24397	1.86 ug/L	87
32) cis-1,2-Dichloroethene	8.27	96	17440	1.87 ug/L	92
33) Chloroform	8.46	83	28040	1.86 ug/L	99
34) 1-Bromopropane	8.60	122	3482	1.86 ug/L	97
35) Bromochloromethane	8.69	128	8369	2.01 ug/L	94
36) Tetrahydrofuran	8.71	42	35253	23.28 ug/L	98
38) 1,1,1-Trichloroethane	8.97	97	25113	1.84 ug/L	91
39) Cyclohexane	8.99	56	27148	1.93 ug/L	100
40) 1,1-Dichloropropene	9.16	75	21168	1.80 ug/L	93
41) Carbon Tetrachloride	9.29	117	21475	1.76 ug/L	95
42) Tert-Amyl-Methyl ether	9.27	73	498517	24.43 ug/L	100

(#) = qualifier out of range (m) = manual integration
10M04740.D 8260WT.M Tue May 14 17:54:23 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04740.D Vial: 5
Acq On : 14 May 2013 17:32 Operator: TMB
Sample : WG430035-05 2ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 17:54:21 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.47	62	19898	1.81 ug/L	98
46)	Benzene	9.50	78	64752	1.96 ug/L	100
47)	Trichloroethene	10.21	130	18631	2.07 ug/L	96
48)	Methylcyclohexane	10.28	83	25228	1.97 ug/L	95
49)	1,2-Dichloropropane	10.41	63	16036	1.89 ug/L	93
50)	Bromodichloromethane	10.69	83	19912	1.80 ug/L	99
51)	1,4-Dioxane	10.69	88	2285	40.86 ug/L	86
52)	Dibromomethane	10.77	93	9114	2.00 ug/L	90
53)	2-Chloroethyl Vinyl Ether	10.99	63	6058	1.42 ug/L	93
54)	4-Methyl-2-Pentanone	11.02	58	3434	1.50 ug/L	87
55)	cis-1,3-Dichloropropene	11.30	75	22691	1.74 ug/L	93
56)	Dimethyl Disulfide	11.53	79	8712	1.30 ug/L	91
59)	Toluene	11.68	91	67759	2.07 ug/L	99
60)	Ethyl Methacrylate	11.79	69	13152	1.76 ug/L	96
62)	trans-1,3-Dichloropropene	11.85	75	20023	1.86 ug/L	94
63)	1,1,2-Trichloroethane	12.05	97	12421	2.14 ug/L	96
64)	2-Hexanone	12.01	43	5588	1.61 ug/L #	55
65)	1,3-Dichloropropane	12.34	76	20523	2.00 ug/L	90
66)	Tetrachloroethene	12.44	164	15480	2.15 ug/L	87
67)	Dibromochloromethane	12.68	129	14266	1.97 ug/L	96
68)	1,2-Dibromoethane	12.92	107	11543	1.94 ug/L	93
69)	1-Chlorohexane	13.02	91	21020	2.08 ug/L	92
70)	Chlorobenzene	13.38	112	45492	2.03 ug/L	99
71)	1,1,1,2-Tetrachloroethane	13.43	131	16468	2.06 ug/L	95
72)	Ethylbenzene	13.43	106	24052	2.03 ug/L	98
73)	m-,p-Xylene	13.51	106	58510	4.01 ug/L	99
74)	o-Xylene	14.02	106	27766	1.97 ug/L	98
75)	Styrene	14.06	104	43386	1.86 ug/L	95
76)	Bromoform	14.50	173	9065	1.86 ug/L	97
77)	Isopropylbenzene	14.42	105	70685	2.02 ug/L	99
79)	1,1,2,2-Tetrachloroethane	14.61	83	11563	1.80 ug/L	98
81)	1,2,3-Trichloropropane	14.79	110	4245	2.07 ug/L #	32
82)	trans-1,4-Dichloro-2-Buten	14.84	53	2823	1.90 ug/L	97
83)	n-Propylbenzene	14.88	91	82462	1.99 ug/L	99
84)	Bromobenzene	15.00	156	20981	2.04 ug/L	55
85)	1,3,5-Trimethylbenzene	15.06	105	57801	1.97 ug/L	100
86)	2-Chlorotoluene	15.13	91	54812	2.06 ug/L	100
87)	4-Chlorotoluene	15.17	91	50206	2.04 ug/L	99
88)	a-Methylstyrene	15.43	118	27616	1.74 ug/L	99
89)	tert-Butylbenzene	15.48	134	12850	1.93 ug/L	94
90)	1,2,4-Trimethylbenzene	15.53	105	60280	2.03 ug/L	99
91)	sec-Butylbenzene	15.73	105	70672	1.97 ug/L	98
92)	p-Isopropyltoluene	15.89	119	59315	1.96 ug/L	99
93)	1,3-Dichlorobenzene	16.05	146	39233	2.18 ug/L	91
94)	1,4-Dichlorobenzene	16.17	146	38996	2.07 ug/L	98
95)	n-Butylbenzene	16.36	91	51145	1.92 ug/L	98
96)	1,2-Dichlorobenzene	16.62	146	35850	2.08 ug/L	91
97)	1,2-Dibromo-3-Chloropropan	17.54	157	2146	1.54 ug/L	61
98)	1,2,4-Trichlorobenzene	18.58	180	23440	1.95 ug/L	97
99)	Hexachlorobutadiene	18.73	225	9968	1.94 ug/L	95
100)	Naphthalene	18.92	128	38242	1.77 ug/L	99
101)	1,2,3-Trichlorobenzene	19.21	180	20955	2.01 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04740.D Vial: 5
Acq On : 14 May 2013 17:32 Operator: TMB
Sample : WG430035-05 2ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 17:54 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration

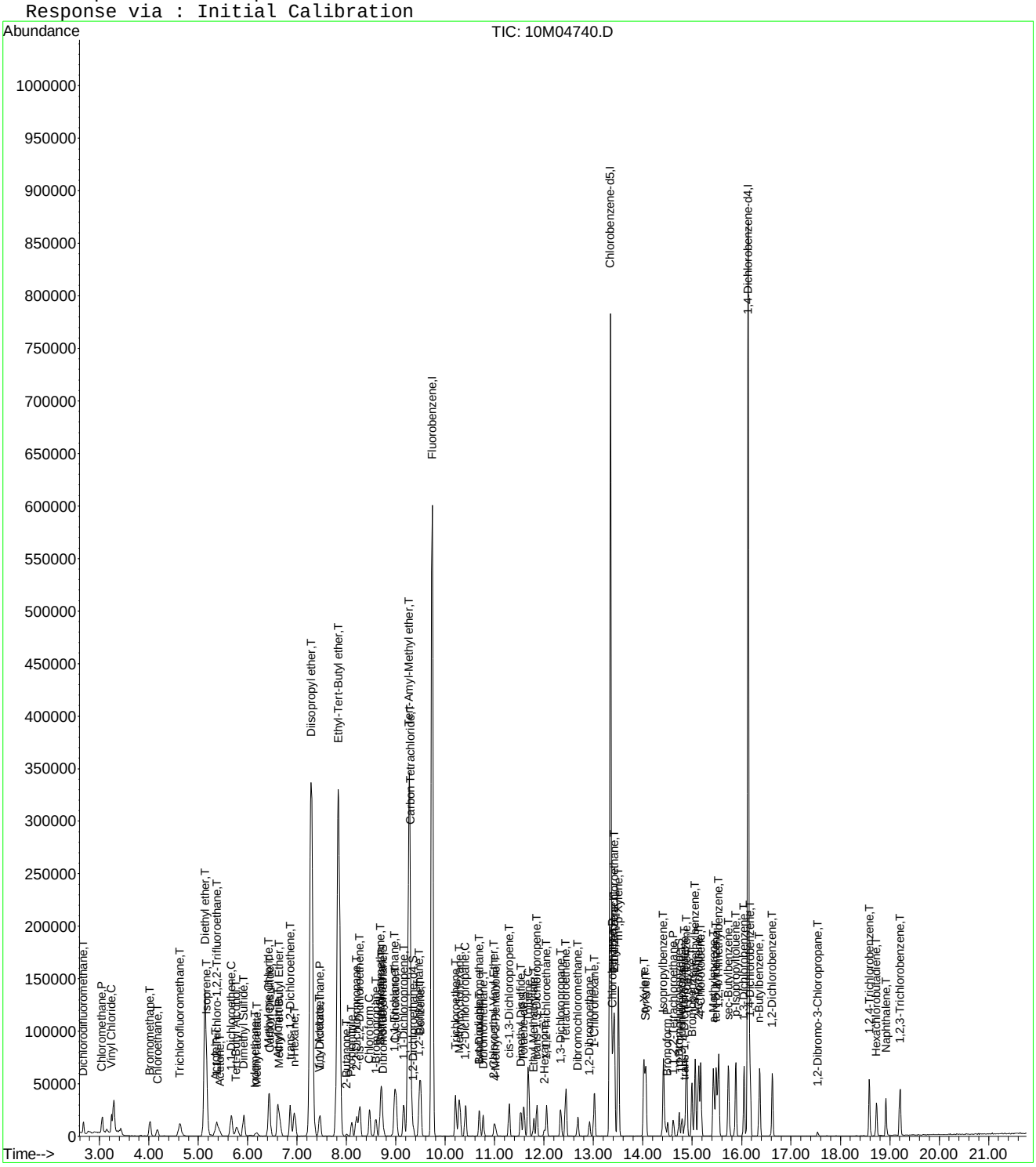

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04741.D Vial: 6
Acq On : 14 May 2013 18:03 Operator: TMB
Sample : WG430035-06 5ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 18:24:50 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.74	96	770975	25.00 ug/L	-0.04
57) Chlorobenzene-d5	13.34	117	585068	25.00 ug/L	-0.04
78) 1,4-Dichlorobenzene-d4	16.13	152	323298	25.00 ug/L	-0.04
System Monitoring Compounds					
37) Dibromofluoromethane	8.74	111	19127	2.35 ug/L	-0.04
Spiked Amount 25.000	Range 86 - 118		Recovery = 9.40%#		
43) 1,2-Dichloroethane-d4	9.35	65	19239	2.24 ug/L	-0.04
Spiked Amount 25.000	Range 80 - 120		Recovery = 8.96%#		
58) Toluene-d8	11.59	98	69027	2.50 ug/L	-0.04
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.00%#		
80) p-Bromofluorobenzene	14.74	95	26940	2.43 ug/L	-0.03
Spiked Amount 25.000	Range 86 - 115		Recovery = 9.72%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.68	85	32631	4.07 ug/L	92
3) Chloromethane	3.06	50	41878	3.75 ug/L	99
4) Vinyl Chloride	3.25	62	37884	4.07 ug/L	97
5) 1,3-Butadiene	3.29	54	33713	2.27 ug/L	95
6) Bromomethane	4.02	94	30811	5.10 ug/L	99
7) Chloroethane	4.17	64	25361	4.57 ug/L	97
8) Trichlorofluoromethane	4.63	101	62889	4.46 ug/L	99
9) Diethyl ether	5.14	59	286767	45.61 ug/L	97
10) Isoprene	5.17	67	55944	4.67 ug/L	95
11) Acrolein	5.36	56	6289	24.87 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	5.38	101	37104	4.54 ug/L	82
13) Acetone	5.46	43	10223	4.46 ug/L	99
14) 1,1-Dichloroethene	5.67	96	37733	4.76 ug/L	86
15) Tert-Butyl Alcohol	5.78	59	48372	89.94 ug/L	96
16) Dimethyl Sulfide	5.92	62	44851	4.74 ug/L	94
17) Iodomethane	6.16	142	16123	5.37 ug/L	88
18) Methyl acetate	6.20	43	17719	4.18 ug/L	96
19) Methylene Chloride	6.43	84	41478	4.67 ug/L	93
20) Carbon Disulfide	6.45	76	131313	5.17 ug/L	100
21) Acrylonitrile	6.60	53	47103	21.52 ug/L	95
22) Methyl Tert Butyl Ether	6.64	73	95363	4.50 ug/L	100
23) trans-1,2-Dichloroethene	6.86	96	41024	4.68 ug/L	95
24) n-Hexane	6.95	57	54878	4.73 ug/L	99
25) Diisopropyl ether	7.29	45	1225758	46.49 ug/L	96
26) Vinyl Acetate	7.45	43	28605	6.48 ug/L	96
27) 1,1-Dichloroethane	7.46	63	71341	4.59 ug/L	98
28) Ethyl-Tert-Butyl ether	7.83	59	1210381	46.52 ug/L	99
29) 2-Butanone	8.01	43	9992	4.14 ug/L	96
30) Propionitrile	8.10	54	35086	45.43 ug/L	96
31) 2,2-Dichloropropane	8.22	77	61239	4.56 ug/L	90
32) cis-1,2-Dichloroethene	8.27	96	44957	4.71 ug/L	89
33) Chloroform	8.47	83	71486	4.63 ug/L	98
34) 1-Bromopropane	8.60	122	8861	4.64 ug/L	99
35) Bromochloromethane	8.69	128	21064	4.94 ug/L	93
36) Tetrahydrofuran	8.71	42	65992	42.59 ug/L	95
38) 1,1,1-Trichloroethane	8.97	97	62411	4.46 ug/L	95
39) Cyclohexane	9.00	56	68699	4.77 ug/L	99
40) 1,1-Dichloropropene	9.16	75	54328	4.52 ug/L	96
41) Carbon Tetrachloride	9.29	117	56869	4.55 ug/L	98
42) Tert-Amyl-Methyl ether	9.27	73	982318	47.05 ug/L	99

(#) = qualifier out of range (m) = manual integration
10M04741.D 8260WT.M Tue May 14 18:24:52 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04741.D Vial: 6
Acq On : 14 May 2013 18:03 Operator: TMB
Sample : WG430035-06 5ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 18:24:50 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.47	62	49711	4.41 ug/L		96
46)	Benzene	9.50	78	160483	4.74 ug/L		99
47)	Trichloroethene	10.21	130	44671	4.86 ug/L		94
48)	Methylcyclohexane	10.28	83	61000	4.65 ug/L		96
49)	1,2-Dichloropropane	10.42	63	39984	4.60 ug/L		93
50)	Bromodichloromethane	10.69	83	50736	4.48 ug/L		99
51)	1,4-Dioxane	10.69	88	4889	85.44 ug/L		93
52)	Dibromomethane	10.77	93	22313	4.78 ug/L		87
53)	2-Chloroethyl Vinyl Ether	10.99	63	16482	3.76 ug/L		98
54)	4-Methyl-2-Pentanone	11.02	58	9254	3.95 ug/L		100
55)	cis-1,3-Dichloropropene	11.30	75	60969	4.56 ug/L		91
56)	Dimethyl Disulfide	11.53	79	26170	3.83 ug/L		94
59)	Toluene	11.68	91	170852	5.03 ug/L		100
60)	Ethyl Methacrylate	11.79	69	35542	4.58 ug/L		98
62)	trans-1,3-Dichloropropene	11.85	75	52365	4.68 ug/L		97
63)	1,1,2-Trichloroethane	12.05	97	30556	5.06 ug/L		95
64)	2-Hexanone	12.00	43	14631	4.06 ug/L	#	53
65)	1,3-Dichloropropane	12.34	76	52965	4.98 ug/L		89
66)	Tetrachloroethene	12.44	164	38277	5.12 ug/L		88
67)	Dibromochloromethane	12.68	129	36730	4.87 ug/L		99
68)	1,2-Dibromoethane	12.92	107	31500	5.09 ug/L		97
69)	1-Chlorohexane	13.02	91	53932	5.13 ug/L		95
70)	Chlorobenzene	13.38	112	114571	4.93 ug/L		100
71)	1,1,1,2-Tetrachloroethane	13.43	131	42179	5.08 ug/L		96
72)	Ethylbenzene	13.43	106	61119	4.95 ug/L		100
73)	m-,p-Xylene	13.51	106	149173	9.84 ug/L		100
74)	o-Xylene	14.02	106	72583	4.96 ug/L		100
75)	Styrene	14.06	104	113837	4.69 ug/L		94
76)	Bromoform	14.50	173	24153	4.78 ug/L		100
77)	Isopropylbenzene	14.42	105	183198	5.05 ug/L		100
79)	1,1,2,2-Tetrachloroethane	14.61	83	31558	4.72 ug/L		98
81)	1,2,3-Trichloropropane	14.79	110	10504	4.92 ug/L		47
82)	trans-1,4-Dichloro-2-Buten	14.84	53	8922	4.43 ug/L	#	7
83)	n-Propylbenzene	14.88	91	213088	4.93 ug/L		99
84)	Bromobenzene	15.00	156	54178	5.06 ug/L		54
85)	1,3,5-Trimethylbenzene	15.06	105	151781	4.97 ug/L		99
86)	2-Chlorotoluene	15.13	91	137630	4.95 ug/L		98
87)	4-Chlorotoluene	15.17	91	126746	4.93 ug/L		98
88)	a-Methylstyrene	15.43	118	77502	4.67 ug/L		99
89)	tert-Butylbenzene	15.48	134	33824	4.88 ug/L		91
90)	1,2,4-Trimethylbenzene	15.53	105	154073	4.96 ug/L		99
91)	sec-Butylbenzene	15.73	105	184686	4.93 ug/L		97
92)	p-Isopropyltoluene	15.89	119	154831	4.90 ug/L		97
93)	1,3-Dichlorobenzene	16.05	146	98714	5.25 ug/L		92
94)	1,4-Dichlorobenzene	16.17	146	100497	5.24 ug/L		95
95)	n-Butylbenzene	16.36	91	132798	4.78 ug/L		97
96)	1,2-Dichlorobenzene	16.62	146	90909	5.05 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	17.54	157	6342	4.38 ug/L		77
98)	1,2,4-Trichlorobenzene	18.58	180	61203	4.88 ug/L		98
99)	Hexachlorobutadiene	18.74	225	25553	4.77 ug/L		96
100)	Naphthalene	18.92	128	101574	4.51 ug/L		99
101)	1,2,3-Trichlorobenzene	19.21	180	54250	4.99 ug/L		94

(#) = qualifier out of range (m) = manual integration
10M04741.D 8260WT.M Tue May 14 18:24:52 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04741.D Vial: 6
Acq On : 14 May 2013 18:03 Operator: TMB
Sample : WG430035-06 5ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 18:24 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration

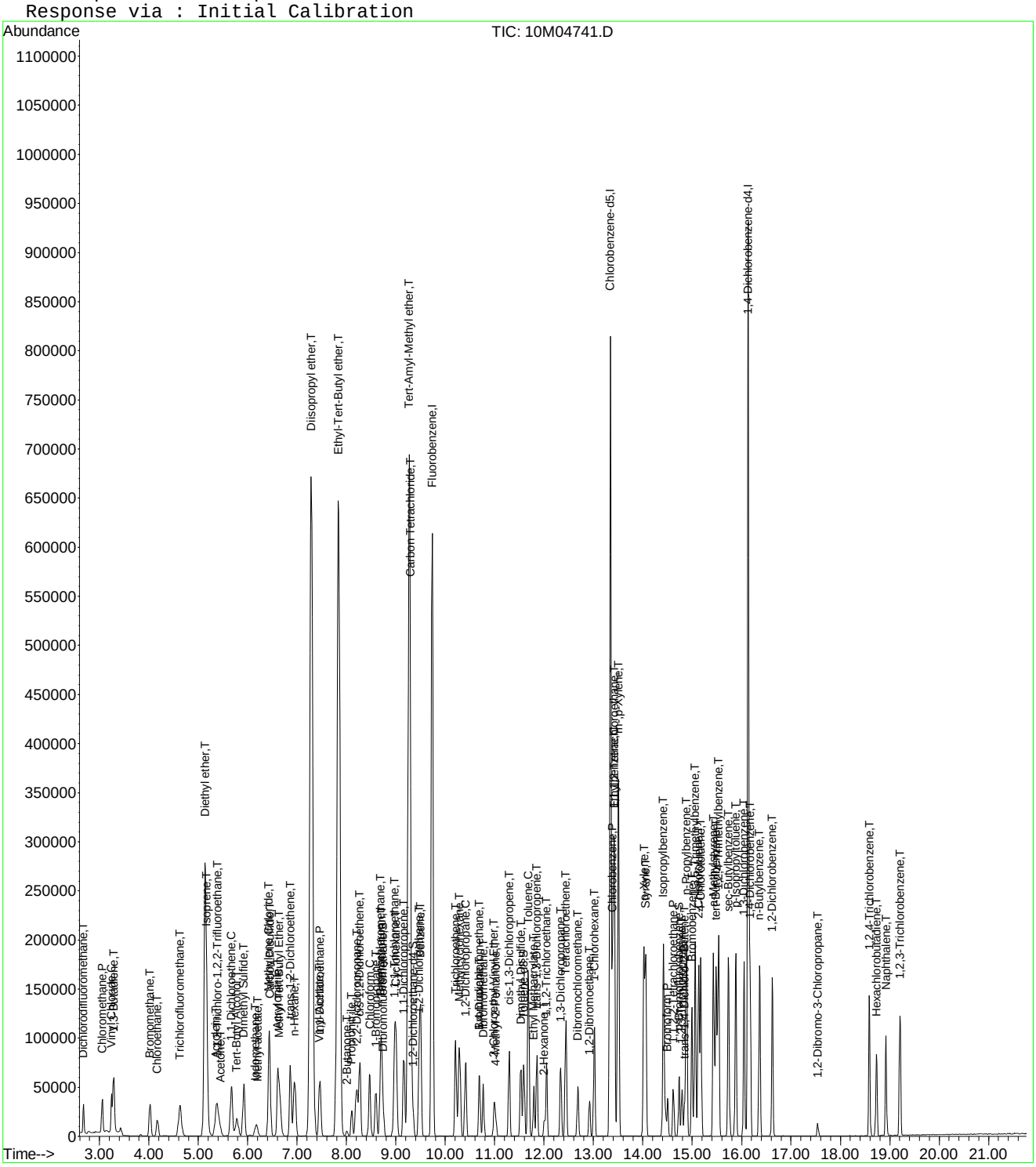

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04742.D Vial: 7
Acq On : 14 May 2013 18:33 Operator: TMB
Sample : WG430035-07 20ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 18:54:59 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.74	96	793860	25.00 ug/L	-0.04
57) Chlorobenzene-d5	13.34	117	602254	25.00 ug/L	-0.04
78) 1,4-Dichlorobenzene-d4	16.13	152	338968	25.00 ug/L	-0.04
System Monitoring Compounds					
37) Dibromofluoromethane	8.74	111	82196	9.81 ug/L	-0.04
Spiked Amount 25.000	Range 86 - 118		Recovery = 39.24%#		
43) 1,2-Dichloroethane-d4	9.35	65	78598	8.88 ug/L	-0.04
Spiked Amount 25.000	Range 80 - 120		Recovery = 35.52%#		
58) Toluene-d8	11.59	98	287021	10.11 ug/L	-0.04
Spiked Amount 25.000	Range 88 - 110		Recovery = 40.44%#		
80) p-Bromofluorobenzene	14.73	95	112055	9.63 ug/L	-0.04
Spiked Amount 25.000	Range 86 - 115		Recovery = 38.52%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.68	85	154808	18.77 ug/L	95
3) Chloromethane	3.06	50	172511	16.79 ug/L	99
4) Vinyl Chloride	3.25	62	160873	16.77 ug/L	99
5) 1,3-Butadiene	3.29	54	144808	30.76 ug/L	99
6) Bromomethane	4.02	94	96071	15.46 ug/L	100
7) Chloroethane	4.18	64	106632	18.64 ug/L	98
8) Trichlorofluoromethane	4.63	101	258909	17.85 ug/L	100
9) Diethyl ether	5.14	59	472007	72.90 ug/L	98
10) Isoprene	5.17	67	233105	18.90 ug/L	95
11) Acrolein	5.36	56	11630	44.67 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.38	101	151690	18.01 ug/L	81
13) Acetone	5.46	43	40761	17.26 ug/L	92
14) 1,1-Dichloroethene	5.67	96	150025	18.39 ug/L	87
15) Tert-Butyl Alcohol	5.79	59	78746	142.19 ug/L	98
16) Dimethyl Sulfide	5.92	62	189669	19.47 ug/L	93
17) Iodomethane	6.16	142	171598	18.34 ug/L	89
18) Methyl acetate	6.19	43	75004	17.18 ug/L	99
19) Methylene Chloride	6.43	84	167523	18.31 ug/L	92
20) Carbon Disulfide	6.45	76	523491	20.03 ug/L	100
21) Acrylonitrile	6.60	53	82432	36.57 ug/L	95
22) Methyl Tert Butyl Ether	6.65	73	388010	17.78 ug/L	99
23) trans-1,2-Dichloroethene	6.86	96	167804	18.60 ug/L	91
24) n-Hexane	6.95	57	213958	17.90 ug/L	99
25) Diisopropyl ether	7.29	45	2038152	75.08 ug/L	96
26) Vinyl Acetate	7.45	43	166160	19.56 ug/L	99
27) 1,1-Dichloroethane	7.46	63	287674	17.97 ug/L	100
28) Ethyl-Tert-Butyl ether	7.83	59	2009206	75.00 ug/L	99
29) 2-Butanone	8.01	43	44239	17.78 ug/L	98
30) Propionitrile	8.10	54	60184	75.69 ug/L	98
31) 2,2-Dichloropropane	8.21	77	236802	17.12 ug/L	88
32) cis-1,2-Dichloroethene	8.27	96	183319	18.65 ug/L	88
33) Chloroform	8.46	83	284869	17.91 ug/L	99
34) 1-Bromopropane	8.60	122	37420	19.01 ug/L	99
35) Bromochloromethane	8.68	128	86165	19.61 ug/L	94
36) Tetrahydrofuran	8.71	42	112884	70.76 ug/L	95
38) 1,1,1-Trichloroethane	8.97	97	254186	17.65 ug/L	94
39) Cyclohexane	9.00	56	281089	18.96 ug/L	100
40) 1,1-Dichloropropene	9.16	75	220984	17.86 ug/L	95
41) Carbon Tetrachloride	9.29	117	231742	18.02 ug/L	99
42) Tert-Amyl-Methyl ether	9.27	73	1646537	76.58 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04742.D Vial: 7
Acq On : 14 May 2013 18:33 Operator: TMB
Sample : WG430035-07 20ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 18:54:59 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.47	62	201790	17.40 ug/L	96
46)	Benzene	9.50	78	643860	18.48 ug/L	100
47)	Trichloroethene	10.21	130	178002	18.81 ug/L	95
48)	Methylcyclohexane	10.28	83	250967	18.59 ug/L	95
49)	1,2-Dichloropropane	10.41	63	163537	18.26 ug/L	91
50)	Bromodichloromethane	10.70	83	214550	18.42 ug/L	99
51)	1,4-Dioxane	10.69	88	8825	149.77 ug/L	89
52)	Dibromomethane	10.77	93	91212	18.97 ug/L	87
53)	2-Chloroethyl Vinyl Ether	10.99	63	79543	17.64 ug/L	99
54)	4-Methyl-2-Pentanone	11.02	58	42423	17.60 ug/L	96
55)	cis-1,3-Dichloropropene	11.30	75	253147	18.38 ug/L	90
56)	Dimethyl Disulfide	11.53	79	131638	18.69 ug/L	97
59)	Toluene	11.68	91	695228	19.87 ug/L	99
60)	Ethyl Methacrylate	11.79	69	161356	20.22 ug/L	100
62)	trans-1,3-Dichloropropene	11.85	75	224609	19.49 ug/L	95
63)	1,1,2-Trichloroethane	12.05	97	126443	20.34 ug/L	97
64)	2-Hexanone	12.01	43	66705	18.00 ug/L #	56
65)	1,3-Dichloropropane	12.34	76	216470	19.76 ug/L	88
66)	Tetrachloroethene	12.44	164	154931	20.12 ug/L	87
67)	Dibromochloromethane	12.68	129	161761	20.84 ug/L	100
68)	1,2-Dibromoethane	12.92	107	132281	20.76 ug/L	99
69)	1-Chlorohexane	13.02	91	221212	20.45 ug/L	93
70)	Chlorobenzene	13.39	112	467604	19.54 ug/L	100
71)	1,1,1,2-Tetrachloroethane	13.43	131	176893	20.71 ug/L	96
72)	Ethylbenzene	13.43	106	253405	19.96 ug/L	100
73)	m-,p-Xylene	13.51	106	611423	39.17 ug/L	99
74)	o-Xylene	14.03	106	301553	20.01 ug/L	97
75)	Styrene	14.06	104	506970	20.28 ug/L	92
76)	Bromoform	14.50	173	112113	21.57 ug/L	98
77)	Isopropylbenzene	14.42	105	746207	19.97 ug/L	100
79)	1,1,2,2-Tetrachloroethane	14.61	83	138341	19.74 ug/L	99
81)	1,2,3-Trichloropropane	14.79	110	45458	20.29 ug/L	43
82)	trans-1,4-Dichloro-2-Buten	14.84	53	40952	17.18 ug/L #	16
83)	n-Propylbenzene	14.88	91	878859	19.41 ug/L	99
84)	Bromobenzene	15.00	156	218698	19.47 ug/L	56
85)	1,3,5-Trimethylbenzene	15.06	105	626852	19.56 ug/L	99
86)	2-Chlorotoluene	15.13	91	564649	19.36 ug/L	98
87)	4-Chlorotoluene	15.17	91	518286	19.24 ug/L	97
88)	a-Methylstyrene	15.43	118	354868	20.40 ug/L	99
89)	tert-Butylbenzene	15.48	134	144108	19.84 ug/L	91
90)	1,2,4-Trimethylbenzene	15.53	105	647517	19.89 ug/L	100
91)	sec-Butylbenzene	15.73	105	762339	19.41 ug/L	98
92)	p-Isopropyltoluene	15.89	119	647063	19.54 ug/L	97
93)	1,3-Dichlorobenzene	16.05	146	407845	20.70 ug/L	91
94)	1,4-Dichlorobenzene	16.17	146	407093	20.52 ug/L	92
95)	n-Butylbenzene	16.36	91	552313	18.97 ug/L	97
96)	1,2-Dichlorobenzene	16.62	146	380866	20.20 ug/L	91
97)	1,2-Dibromo-3-Chloropropan	17.54	157	28752	18.92 ug/L	77
98)	1,2,4-Trichlorobenzene	18.58	180	257957	19.62 ug/L	97
99)	Hexachlorobutadiene	18.73	225	101430	18.07 ug/L	97
100)	Naphthalene	18.92	128	455664	19.30 ug/L	100
101)	1,2,3-Trichlorobenzene	19.21	180	226274	19.86 ug/L	94

(#) = qualifier out of range (m) = manual integration
10M04742.D 8260WT.M Tue May 14 18:55:00 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04742.D Vial: 7
Acq On : 14 May 2013 18:33 Operator: TMB
Sample : WG430035-07 20ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 18:54 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration

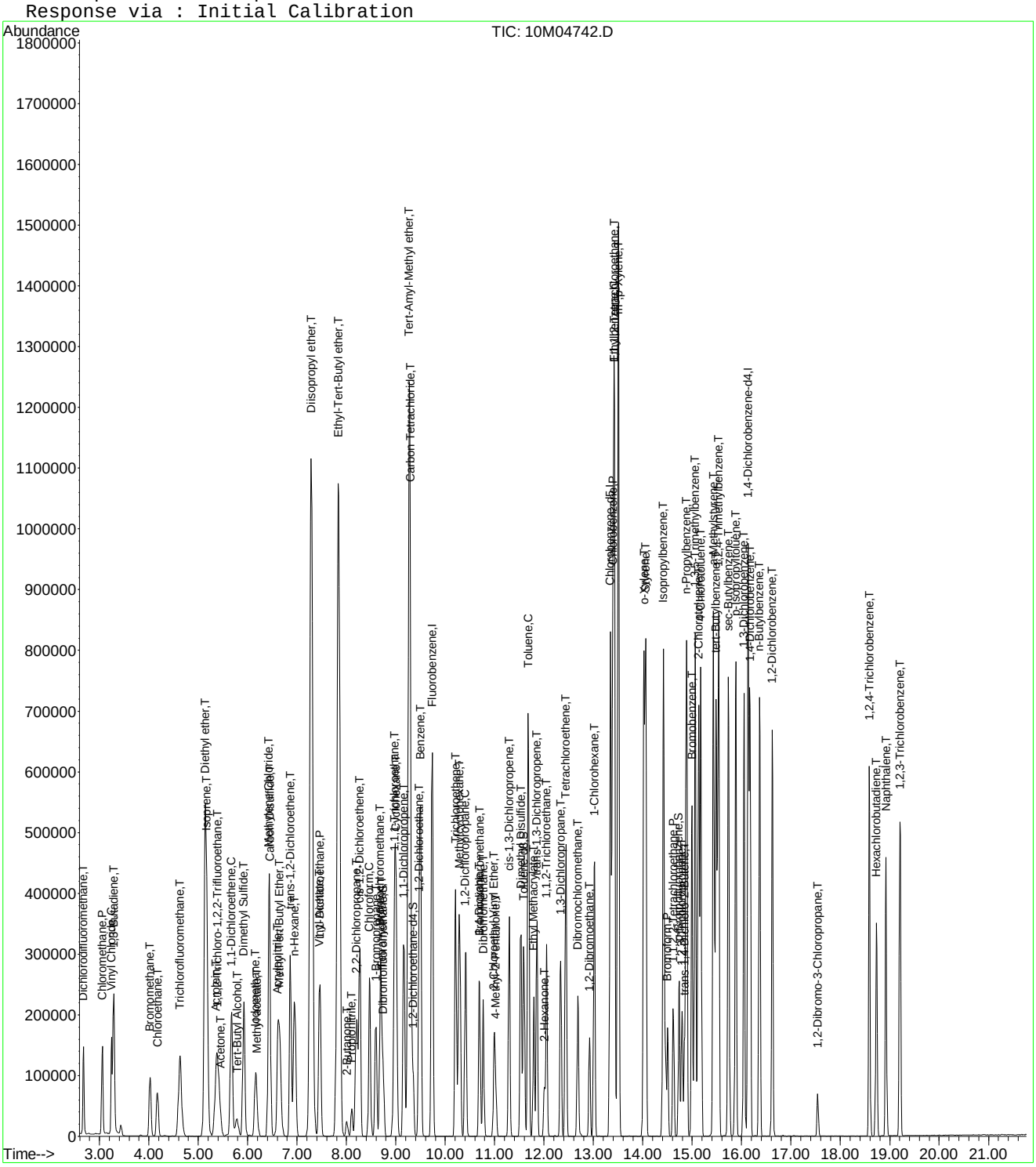

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04743.D Vial: 8
Acq On : 14 May 2013 19:03 Operator: TMB
Sample : WG430035-08 50ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 19:25:00 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.74	96	799646	25.00 ug/L	-0.04
57) Chlorobenzene-d5	13.34	117	611257	25.00 ug/L	-0.04
78) 1,4-Dichlorobenzene-d4	16.13	152	337548	25.00 ug/L	-0.04
System Monitoring Compounds					
37) Dibromofluoromethane	8.74	111	205488	24.35 ug/L	-0.04
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.40%		
43) 1,2-Dichloroethane-d4	9.35	65	192434	21.58 ug/L	-0.04
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.32%		
58) Toluene-d8	11.59	98	710974	24.69 ug/L	-0.04
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.76%		
80) p-Bromofluorobenzene	14.74	95	280082	24.18 ug/L	-0.03
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.72%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.68	85	373024	44.91 ug/L	94
3) Chloromethane	3.06	50	412856	40.70 ug/L	99
4) Vinyl Chloride	3.25	62	382285	39.56 ug/L	99
5) 1,3-Butadiene	3.28	54	239185	55.62 ug/L	99
6) Bromomethane	4.02	94	236723	37.81 ug/L	100
7) Chloroethane	4.18	64	266355	46.23 ug/L	98
8) Trichlorofluoromethane	4.63	101	640537	43.83 ug/L	99
9) Diethyl ether	5.14	59	593119	90.94 ug/L	98
10) Isoprene	5.17	67	620083	49.90 ug/L	95
11) Acrolein	5.36	56	15587	59.43 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	5.38	101	381313	44.94 ug/L	82
13) Acetone	5.46	43	102037	42.90 ug/L	93
14) 1,1-Dichloroethene	5.67	96	380803	46.34 ug/L	88
15) Tert-Butyl Alcohol	5.78	59	98741	177.00 ug/L	97
16) Dimethyl Sulfide	5.92	62	503788	51.35 ug/L	93
17) Iodomethane	6.16	142	552000	49.83 ug/L	88
18) Methyl acetate	6.19	43	200869	45.68 ug/L	96
19) Methylene Chloride	6.43	84	431516	46.81 ug/L	92
20) Carbon Disulfide	6.45	76	1381055	52.46 ug/L	100
21) Acrylonitrile	6.61	53	108054	47.60 ug/L	97
22) Methyl Tert Butyl Ether	6.65	73	980406	44.61 ug/L	99
23) trans-1,2-Dichloroethene	6.86	96	427741	47.06 ug/L	91
24) n-Hexane	6.96	57	554747	46.08 ug/L	100
25) Diisopropyl ether	7.29	45	2554151	93.41 ug/L	95
26) Vinyl Acetate	7.45	43	480881	49.36 ug/L	98
27) 1,1-Dichloroethane	7.46	63	745783	46.25 ug/L	99
28) Ethyl-Tert-Butyl ether	7.83	59	2503927	92.78 ug/L	99
29) 2-Butanone	8.01	43	110497	44.10 ug/L	97
30) Propionitrile	8.10	54	76348	95.32 ug/L	98
31) 2,2-Dichloropropane	8.21	77	592365	42.51 ug/L	87
32) cis-1,2-Dichloroethene	8.27	96	465863	47.05 ug/L	88
33) Chloroform	8.47	83	724328	45.22 ug/L	100
34) 1-Bromopropane	8.60	122	98267	49.57 ug/L	99
35) Bromochloromethane	8.69	128	218062	49.26 ug/L	95
36) Tetrahydrofuran	8.71	42	145109	90.30 ug/L	97
38) 1,1,1-Trichloroethane	8.97	97	643816	44.37 ug/L	93
39) Cyclohexane	9.00	56	728920	48.80 ug/L	100
40) 1,1-Dichloropropene	9.17	75	558108	44.77 ug/L	94
41) Carbon Tetrachloride	9.29	117	583822	45.08 ug/L	99
42) Tert-Amyl-Methyl ether	9.27	73	2038985	94.15 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04743.D Vial: 8
Acq On : 14 May 2013 19:03 Operator: TMB
Sample : WG430035-08 50ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 19:25:00 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.47	62	498971	42.71 ug/L		95
46)	Benzene	9.50	78	1633537	46.53 ug/L		99
47)	Trichloroethene	10.21	130	444833	46.67 ug/L		95
48)	Methylcyclohexane	10.28	83	629846	46.32 ug/L		96
49)	1,2-Dichloropropane	10.42	63	416566	46.18 ug/L		92
50)	Bromodichloromethane	10.70	83	545767	46.51 ug/L		99
51)	1,4-Dioxane	10.69	88	10610	178.77 ug/L		87
52)	Dibromomethane	10.77	93	227791	47.04 ug/L		87
53)	2-Chloroethyl Vinyl Ether	10.99	63	209136	46.03 ug/L		98
54)	4-Methyl-2-Pentanone	11.02	58	107432	44.24 ug/L		99
55)	cis-1,3-Dichloropropene	11.30	75	648052	46.71 ug/L		89
56)	Dimethyl Disulfide	11.53	79	367117	51.75 ug/L		96
59)	Toluene	11.68	91	1760008	49.57 ug/L		100
60)	Ethyl Methacrylate	11.79	69	437159	53.98 ug/L		100
62)	trans-1,3-Dichloropropene	11.85	75	573848	49.07 ug/L		94
63)	1,1,2-Trichloroethane	12.05	97	315539	50.00 ug/L		97
64)	2-Hexanone	12.01	43	169771	45.15 ug/L	#	56
65)	1,3-Dichloropropane	12.34	76	544957	49.02 ug/L		87
66)	Tetrachloroethene	12.44	164	387724	49.62 ug/L		87
67)	Dibromochloromethane	12.68	129	414675	52.65 ug/L		99
68)	1,2-Dibromoethane	12.92	107	329275	50.90 ug/L		98
69)	1-Chlorohexane	13.02	91	575090	52.39 ug/L		92
70)	Chlorobenzene	13.39	112	1190438	49.00 ug/L		100
71)	1,1,1,2-Tetrachloroethane	13.43	131	452006	52.15 ug/L		95
72)	Ethylbenzene	13.43	106	643013	49.90 ug/L		100
73)	m-,p-Xylene	13.51	106	1567542	98.95 ug/L		97
74)	o-Xylene	14.02	106	771550	50.44 ug/L		97
75)	Styrene	14.06	104	1325710	52.26 ug/L		92
76)	Bromoform	14.50	173	289062	54.81 ug/L		99
77)	Isopropylbenzene	14.42	105	1897950	50.04 ug/L		100
79)	1,1,2,2-Tetrachloroethane	14.61	83	352197	50.47 ug/L		100
81)	1,2,3-Trichloropropane	14.79	110	108579	48.67 ug/L		46
82)	trans-1,4-Dichloro-2-Buten	14.84	53	109369	44.97 ug/L	#	16
83)	n-Propylbenzene	14.88	91	2214685	49.11 ug/L		99
84)	Bromobenzene	15.00	156	551384	49.29 ug/L		55
85)	1,3,5-Trimethylbenzene	15.06	105	1575042	49.35 ug/L		98
86)	2-Chlorotoluene	15.13	91	1414314	48.70 ug/L		97
87)	4-Chlorotoluene	15.17	91	1311889	48.91 ug/L		97
88)	a-Methylstyrene	15.43	118	940972	54.32 ug/L		100
89)	tert-Butylbenzene	15.48	134	357821	49.47 ug/L		81
90)	1,2,4-Trimethylbenzene	15.53	105	1617692	49.90 ug/L		98
91)	sec-Butylbenzene	15.73	105	1897365	48.51 ug/L		97
92)	p-Isopropyltoluene	15.89	119	1611309	48.85 ug/L		97
93)	1,3-Dichlorobenzene	16.05	146	1012262	51.61 ug/L		92
94)	1,4-Dichlorobenzene	16.17	146	1009721	51.24 ug/L		91
95)	n-Butylbenzene	16.36	91	1380201	47.61 ug/L		96
96)	1,2-Dichlorobenzene	16.62	146	934625	49.77 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	17.54	157	75195	49.70 ug/L		78
98)	1,2,4-Trichlorobenzene	18.58	180	639951	48.88 ug/L		97
99)	Hexachlorobutadiene	18.73	225	246438	44.08 ug/L		98
100)	Naphthalene	18.92	128	1140271	48.50 ug/L		100
101)	1,2,3-Trichlorobenzene	19.21	180	557463	49.13 ug/L		96

(#) = qualifier out of range (m) = manual integration
10M04743.D 8260WT.M Tue May 14 19:25:02 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04743.D Vial: 8
Acq On : 14 May 2013 19:03 Operator: TMB
Sample : WG430035-08 50ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 19:25 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration

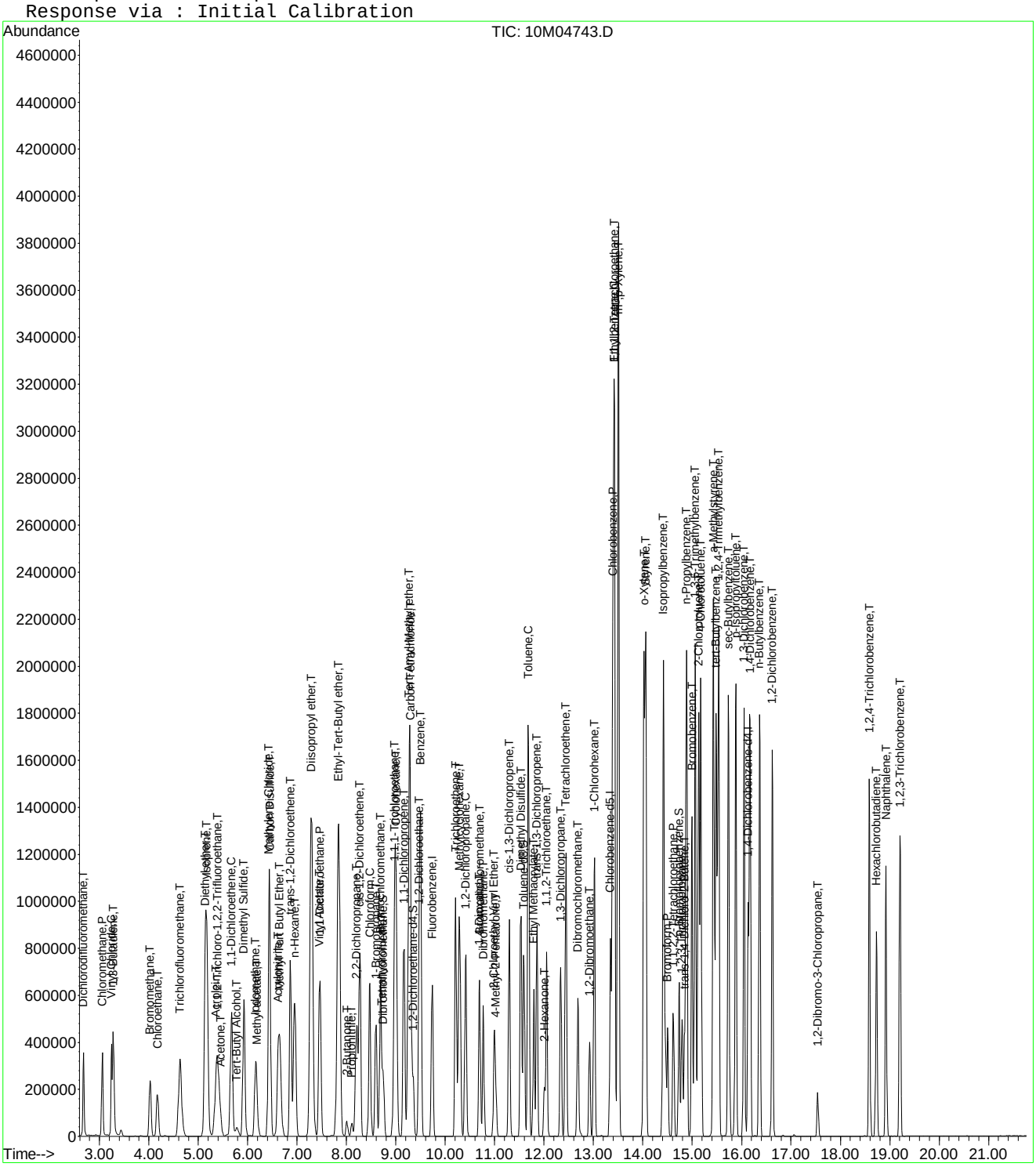

10M04743.D 8260WT.M Tue May 14 19:25:02 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04744.D Vial: 9
Acq On : 14 May 2013 19:33 Operator: TMB
Sample : WG430035-09 100ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 19:55:14 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.74	96	838705	25.00 ug/L	-0.04
57) Chlorobenzene-d5	13.35	117	633030	25.00 ug/L	-0.04
78) 1,4-Dichlorobenzene-d4	16.14	152	334989	25.00 ug/L	-0.04
System Monitoring Compounds					
37) Dibromofluoromethane	8.75	111	426824	48.22 ug/L	-0.04
Spiked Amount 25.000	Range 86 - 118		Recovery = 192.88%#		
43) 1,2-Dichloroethane-d4	9.35	65	403428	43.13 ug/L	-0.05
Spiked Amount 25.000	Range 80 - 120		Recovery = 172.52%#		
58) Toluene-d8	11.59	98	1484065	49.76 ug/L	-0.04
Spiked Amount 25.000	Range 88 - 110		Recovery = 199.04%#		
80) p-Bromofluorobenzene	14.73	95	572645	49.82 ug/L	-0.04
Spiked Amount 25.000	Range 86 - 115		Recovery = 199.28%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.67	85	776365	89.11 ug/L	94
3) Chloromethane	3.05	50	822074	77.80 ug/L	98
4) Vinyl Chloride	3.24	62	751284	74.13 ug/L	99
5) 1,3-Butadiene	3.27	54	382187	90.38 ug/L	99
6) Bromomethane	4.02	94	504929	76.90 ug/L	99
7) Chloroethane	4.17	64	537934	89.02 ug/L	99
8) Trichlorofluoromethane	4.63	101	1338924	87.36 ug/L	100
9) Diethyl ether	5.14	59	1325152	193.73 ug/L	98
10) Isoprene	5.17	67	1324891	101.65 ug/L	94
11) Acrolein	5.36	56	35963	130.74 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.38	101	813861	91.45 ug/L	82
13) Acetone	5.45	43	215623	86.44 ug/L	90
14) 1,1-Dichloroethene	5.67	96	811220	94.13 ug/L	86
15) Tert-Butyl Alcohol	5.78	59	223688	382.30 ug/L	96
16) Dimethyl Sulfide	5.93	62	1053958	102.42 ug/L	92
17) Iodomethane	6.16	142	1177053	97.20 ug/L	88
18) Methyl acetate	6.19	43	442506	95.95 ug/L	97
19) Methylene Chloride	6.42	84	890103	92.06 ug/L	92
20) Carbon Disulfide	6.44	76	2856736	103.47 ug/L	99
21) Acrylonitrile	6.61	53	241182	101.29 ug/L	97
22) Methyl Tert Butyl Ether	6.64	73	2053835	89.09 ug/L	98
23) trans-1,2-Dichloroethene	6.87	96	889070	93.26 ug/L	91
24) n-Hexane	6.95	57	1166730	92.40 ug/L	100
25) Diisopropyl ether	7.29	45	5566373	194.09 ug/L	96
26) Vinyl Acetate	7.44	43	1070056	100.63 ug/L	98
27) 1,1-Dichloroethane	7.47	63	1546667	91.45 ug/L	99
28) Ethyl-Tert-Butyl ether	7.84	59	5452213	192.63 ug/L	98
29) 2-Butanone	8.00	43	237701	90.45 ug/L	97
30) Propionitrile	8.11	54	167194	199.02 ug/L	98
31) 2,2-Dichloropropane	8.21	77	1219596	83.45 ug/L	86
32) cis-1,2-Dichloroethene	8.27	96	967350	93.14 ug/L	88
33) Chloroform	8.47	83	1477100	87.91 ug/L	99
34) 1-Bromopropane	8.60	122	200683	96.52 ug/L	98
35) Bromochloromethane	8.69	128	450135	96.95 ug/L	95
36) Tetrahydrofuran	8.71	42	320976	190.44 ug/L	97
38) 1,1,1-Trichloroethane	8.97	97	1322460	86.90 ug/L	94
39) Cyclohexane	9.00	56	1532092	97.79 ug/L	99
40) 1,1-Dichloropropene	9.16	75	1162831	88.94 ug/L	94
41) Carbon Tetrachloride	9.29	117	1206917	88.84 ug/L	98
42) Tert-Amyl-Methyl ether	9.27	73	4471153	196.85 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04744.D Vial: 9
Acq On : 14 May 2013 19:33 Operator: TMB
Sample : WG430035-09 100ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 19:55:14 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.46	62	1024526	83.61 ug/L		94
46)	Benzene	9.50	78	3362796	91.33 ug/L		100
47)	Trichloroethene	10.21	130	918783	91.91 ug/L		95
48)	Methylcyclohexane	10.29	83	1333305	93.49 ug/L		96
49)	1,2-Dichloropropane	10.41	63	867911	91.74 ug/L		90
50)	Bromodichloromethane	10.69	83	1131873	91.97 ug/L		99
51)	1,4-Dioxane	10.69	88	23207	372.80 ug/L		89
52)	Dibromomethane	10.77	93	473805	93.29 ug/L		88
53)	2-Chloroethyl Vinyl Ether	10.99	63	450539	94.55 ug/L		99
54)	4-Methyl-2-Pentanone	11.02	58	231670	90.95 ug/L		99
55)	cis-1,3-Dichloropropene	11.29	75	1346245	92.52 ug/L		89
56)	Dimethyl Disulfide	11.53	79	784289	105.41 ug/L		97
59)	Toluene	11.68	91	3609525	98.17 ug/L		99
60)	Ethyl Methacrylate	11.80	69	915313	109.13 ug/L		99
62)	trans-1,3-Dichloropropene	11.86	75	1184942	97.84 ug/L		94
63)	1,1,2-Trichloroethane	12.05	97	648881	99.29 ug/L		98
64)	2-Hexanone	12.00	43	358994	92.18 ug/L	#	56
65)	1,3-Dichloropropane	12.33	76	1120171	97.30 ug/L		87
66)	Tetrachloroethene	12.45	164	802175	99.13 ug/L		88
67)	Dibromochloromethane	12.68	129	850465	104.26 ug/L		100
68)	1,2-Dibromoethane	12.92	107	677808	101.18 ug/L		98
69)	1-Chlorohexane	13.02	91	1183351	104.10 ug/L		92
70)	Chlorobenzene	13.39	112	2448826	97.34 ug/L		99
71)	1,1,1,2-Tetrachloroethane	13.42	131	937793	104.47 ug/L		96
72)	Ethylbenzene	13.42	106	1342794	100.61 ug/L		97
73)	m-,p-Xylene	13.50	106	3169159	193.17 ug/L		94
74)	o-Xylene	14.02	106	1586773	100.17 ug/L		96
75)	Styrene	14.06	104	2706229	103.01 ug/L		92
76)	Bromoform	14.50	173	599963	109.84 ug/L		99
77)	Isopropylbenzene	14.42	105	3820420	97.26 ug/L		99
79)	1,1,2,2-Tetrachloroethane	14.62	83	721766	104.21 ug/L		99
81)	1,2,3-Trichloropropane	14.79	110	220141	99.43 ug/L		48
82)	trans-1,4-Dichloro-2-Buten	14.84	53	224430	92.27 ug/L	#	15
83)	n-Propylbenzene	14.89	91	4378299	97.83 ug/L		97
84)	Bromobenzene	15.00	156	1114488	100.38 ug/L		57
85)	1,3,5-Trimethylbenzene	15.06	105	3120404	98.52 ug/L		97
86)	2-Chlorotoluene	15.13	91	3014306	104.59 ug/L		98
87)	4-Chlorotoluene	15.18	91	2438748	91.62 ug/L		96
88)	a-Methylstyrene	15.43	118	1848945	107.56 ug/L		98
89)	tert-Butylbenzene	15.49	134	712797	99.29 ug/L		91
90)	1,2,4-Trimethylbenzene	15.54	105	3144404	97.74 ug/L		97
91)	sec-Butylbenzene	15.73	105	3708317	95.53 ug/L		96
92)	p-Isopropyltoluene	15.88	119	3121391	95.36 ug/L		96
93)	1,3-Dichlorobenzene	16.05	146	1962860	100.83 ug/L		93
94)	1,4-Dichlorobenzene	16.17	146	1963323	100.48 ug/L		92
95)	n-Butylbenzene	16.36	91	2666749	92.68 ug/L		96
96)	1,2-Dichlorobenzene	16.62	146	1823409	97.84 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	17.54	157	152013	101.24 ug/L		78
98)	1,2,4-Trichlorobenzene	18.59	180	1245614	95.86 ug/L		97
99)	Hexachlorobutadiene	18.73	225	477018	85.97 ug/L		97
100)	Naphthalene	18.93	128	2228695	95.52 ug/L		99
101)	1,2,3-Trichlorobenzene	19.21	180	1076978	95.65 ug/L		96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04744.D Vial: 9
Acq On : 14 May 2013 19:33 Operator: TMB
Sample : WG430035-09 100ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 19:55 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration

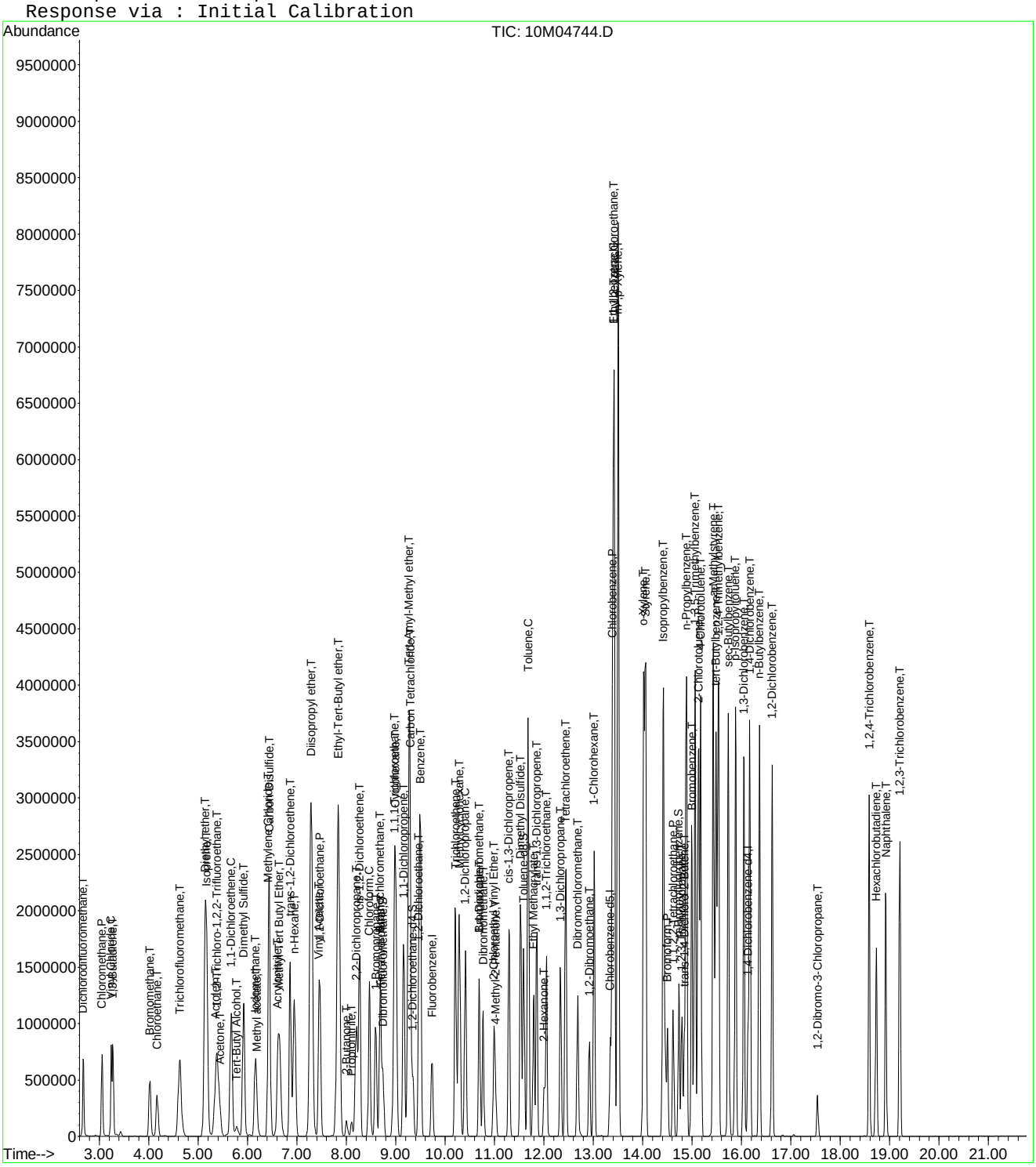

10M04744.D 8260WT.M Tue May 14 19:55:16 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04745.D Vial: 10
Acq On : 14 May 2013 20:03 Operator: TMB
Sample : WG430035-10 200ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 20:25:29 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.74	96	865148	25.00 ug/L	-0.04
57) Chlorobenzene-d5	13.35	117	648523	25.00 ug/L	-0.04
78) 1,4-Dichlorobenzene-d4	16.14	152	314803	25.00 ug/L	-0.04
System Monitoring Compounds					
37) Dibromofluoromethane	8.75	111	873251	95.63 ug/L	-0.04
Spiked Amount 25.000	Range 86 - 118		Recovery = 382.52%#		
43) 1,2-Dichloroethane-d4	9.36	65	804721	83.40 ug/L	-0.04
Spiked Amount 25.000	Range 80 - 120		Recovery = 333.60%#		
58) Toluene-d8	11.59	98	3030947	99.19 ug/L	-0.04
Spiked Amount 25.000	Range 88 - 110		Recovery = 396.76%#		
80) p-Bromofluorobenzene	14.73	95	1125377	104.19 ug/L	-0.04
Spiked Amount 25.000	Range 86 - 115		Recovery = 416.76%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.68	85	1546447	172.07 ug/L	94
3) Chloromethane	3.05	50	1738202	160.10 ug/L	99
4) Vinyl Chloride	3.24	62	1473917	140.99 ug/L	100
5) 1,3-Butadiene	3.28	54	757806	193.87 ug/L	99
6) Bromomethane	4.02	94	1130835	166.96 ug/L	100
7) Chloroethane	4.17	64	1146587	183.94 ug/L	98
8) Trichlorofluoromethane	4.62	101	2731672	172.78 ug/L	99
9) Diethyl ether	5.13	59	10457	1.48 ug/L	90
10) Isoprene	5.17	67	2721548	202.43 ug/L	94
11) Acrolein	5.37	56	1998	7.04 ug/L	86
12) 1,1,2-Trichloro-1,2,2-Trif	5.38	101	1647724	179.49 ug/L	82
13) Acetone	5.46	43	442252	171.87 ug/L	88
14) 1,1-Dichloroethene	5.67	96	1692745	190.41 ug/L	86
15) Tert-Butyl Alcohol	5.78	59	4625	7.66 ug/L #	61
16) Dimethyl Sulfide	5.92	62	2232385	210.32 ug/L	92
17) Iodomethane	6.16	142	2543680	199.27 ug/L	87
18) Methyl acetate	6.19	43	911432	191.59 ug/L	96
19) Methylene Chloride	6.43	84	1880836	188.58 ug/L	92
20) Carbon Disulfide	6.44	76	5938413	208.51 ug/L	99
21) Acrylonitrile	6.63	53	41249	16.79 ug/L #	36
22) Methyl Tert Butyl Ether	6.64	73	4253661	178.88 ug/L	98
23) trans-1,2-Dichloroethene	6.87	96	1873786	190.55 ug/L	92
24) n-Hexane	6.95	57	2405744	184.70 ug/L	100
26) Vinyl Acetate	7.44	43	2316967	207.21 ug/L	98
27) 1,1-Dichloroethane	7.46	63	3234914	185.43 ug/L	100
28) Ethyl-Tert-Butyl ether	7.85	59	11136	0.38 ug/L #	61
29) 2-Butanone	8.00	43	488598	180.23 ug/L	95
30) Propionitrile	8.11	54	2285	2.64 ug/L #	57
31) 2,2-Dichloropropane	8.21	77	2522328	167.31 ug/L	85
32) cis-1,2-Dichloroethene	8.27	96	2033018	189.76 ug/L	87
33) Chloroform	8.47	83	3071185	177.20 ug/L	99
34) 1-Bromopropane	8.60	122	424691	198.01 ug/L	98
35) Bromochloromethane	8.68	128	959781	200.41 ug/L	95
36) Tetrahydrofuran	8.73	42	3709	2.13 ug/L	91
38) 1,1,1-Trichloroethane	8.97	97	2742512	174.71 ug/L	95
39) Cyclohexane	8.99	56	3199505	197.98 ug/L	99
40) 1,1-Dichloropropene	9.16	75	2423470	179.69 ug/L	94
41) Carbon Tetrachloride	9.29	117	2477293	176.78 ug/L	99
42) Tert-Amyl-Methyl ether	9.26	73	4669	0.20 ug/L	89
45) 1,2-Dichloroethane	9.47	62	2111190	167.02 ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04745.D Vial: 10
Acq On : 14 May 2013 20:03 Operator: TMB
Sample : WG430035-10 200ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 20:25:29 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
46)	Benzene	9.50	78	6898616	181.64	ug/L		98
47)	Trichloroethene	10.21	130	1914643	185.68	ug/L		95
48)	Methylcyclohexane	10.29	83	2728630	185.48	ug/L		96
49)	1,2-Dichloropropane	10.41	63	1853468	189.93	ug/L		89
50)	Bromodichloromethane	10.69	83	2365740	186.35	ug/L		100
51)	1,4-Dioxane	10.69	88	3196	49.77	ug/L	#	14
52)	Dibromomethane	10.77	93	993476	189.63	ug/L		89
53)	2-Chloroethyl Vinyl Ether	10.99	63	959201	195.15	ug/L		98
54)	4-Methyl-2-Pentanone	11.02	58	484212	184.28	ug/L		100
55)	cis-1,3-Dichloropropene	11.30	75	2833132	188.76	ug/L		88
56)	Dimethyl Disulfide	11.53	79	1692199	220.49	ug/L		97
59)	Toluene	11.68	91	7185823	190.76	ug/L		97
60)	Ethyl Methacrylate	11.79	69	1886929	219.60	ug/L		99
62)	trans-1,3-Dichloropropene	11.86	75	2461271	198.36	ug/L		93
63)	1,1,2-Trichloroethane	12.05	97	1347065	201.20	ug/L		98
64)	2-Hexanone	12.00	43	734263	184.04	ug/L	#	55
65)	1,3-Dichloropropane	12.34	76	2308984	195.76	ug/L		88
66)	Tetrachloroethene	12.45	164	1630295	196.65	ug/L		89
67)	Dibromochloromethane	12.68	129	1761967	210.84	ug/L		99
68)	1,2-Dibromoethane	12.92	107	1390868	202.66	ug/L		98
69)	1-Chlorohexane	13.02	91	2429837	208.64	ug/L		93
70)	Chlorobenzene	13.39	112	4919975	190.89	ug/L		98
71)	1,1,1,2-Tetrachloroethane	13.42	131	1875318	203.92	ug/L		95
72)	Ethylbenzene	13.42	106	2695947	197.17	ug/L		91
73)	m-,p-Xylene	13.51	106	6092576	362.49	ug/L		88
74)	o-Xylene	14.03	106	3138999	193.43	ug/L		94
75)	Styrene	14.06	104	5232713	194.43	ug/L		95
76)	Bromoform	14.50	173	1177034	210.34	ug/L		98
77)	Isopropylbenzene	14.42	105	7214391	179.27	ug/L		96
79)	1,1,2,2-Tetrachloroethane	14.62	83	1418715	217.98	ug/L		99
81)	1,2,3-Trichloropropane	14.79	110	426747	205.11	ug/L		47
82)	trans-1,4-Dichloro-2-Buten	14.84	53	444714	193.84	ug/L	#	8
83)	n-Propylbenzene	14.89	91	8209607	195.20	ug/L		95
84)	Bromobenzene	15.00	156	2149712	206.04	ug/L		59
85)	1,3,5-Trimethylbenzene	15.06	105	5790513	194.55	ug/L		95
86)	2-Chlorotoluene	15.13	91	5505318	203.27	ug/L		96
87)	4-Chlorotoluene	15.17	91	4780900	191.14	ug/L		95
88)	a-Methylstyrene	15.43	118	3454923	213.87	ug/L		97
89)	tert-Butylbenzene	15.48	134	1335445	197.96	ug/L		79
90)	1,2,4-Trimethylbenzene	15.54	105	5722332	189.29	ug/L		95
91)	sec-Butylbenzene	15.73	105	6707396	183.86	ug/L		95
92)	p-Isopropyltoluene	15.89	119	5678605	184.60	ug/L		95
93)	1,3-Dichlorobenzene	16.05	146	3611761	197.43	ug/L		95
94)	1,4-Dichlorobenzene	16.18	146	3601560	196.22	ug/L		94
95)	n-Butylbenzene	16.36	91	4862059	179.82	ug/L		95
96)	1,2-Dichlorobenzene	16.62	146	3359303	191.82	ug/L		94
97)	1,2-Dibromo-3-Chloropropan	17.54	157	296406	210.07	ug/L		78
98)	1,2,4-Trichlorobenzene	18.59	180	2310175	189.19	ug/L		98
99)	Hexachlorobutadiene	18.73	225	888763	170.44	ug/L		97
100)	Naphthalene	18.93	128	4124404	188.11	ug/L		98
101)	1,2,3-Trichlorobenzene	19.21	180	2016301	190.55	ug/L		97

(#) = qualifier out of range (m) = manual integration
10M04745.D 8260WT.M Tue May 14 20:25:30 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04745.D Vial: 10
Acq On : 14 May 2013 20:03 Operator: TMB
Sample : WG430035-10 200ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 20:25 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration

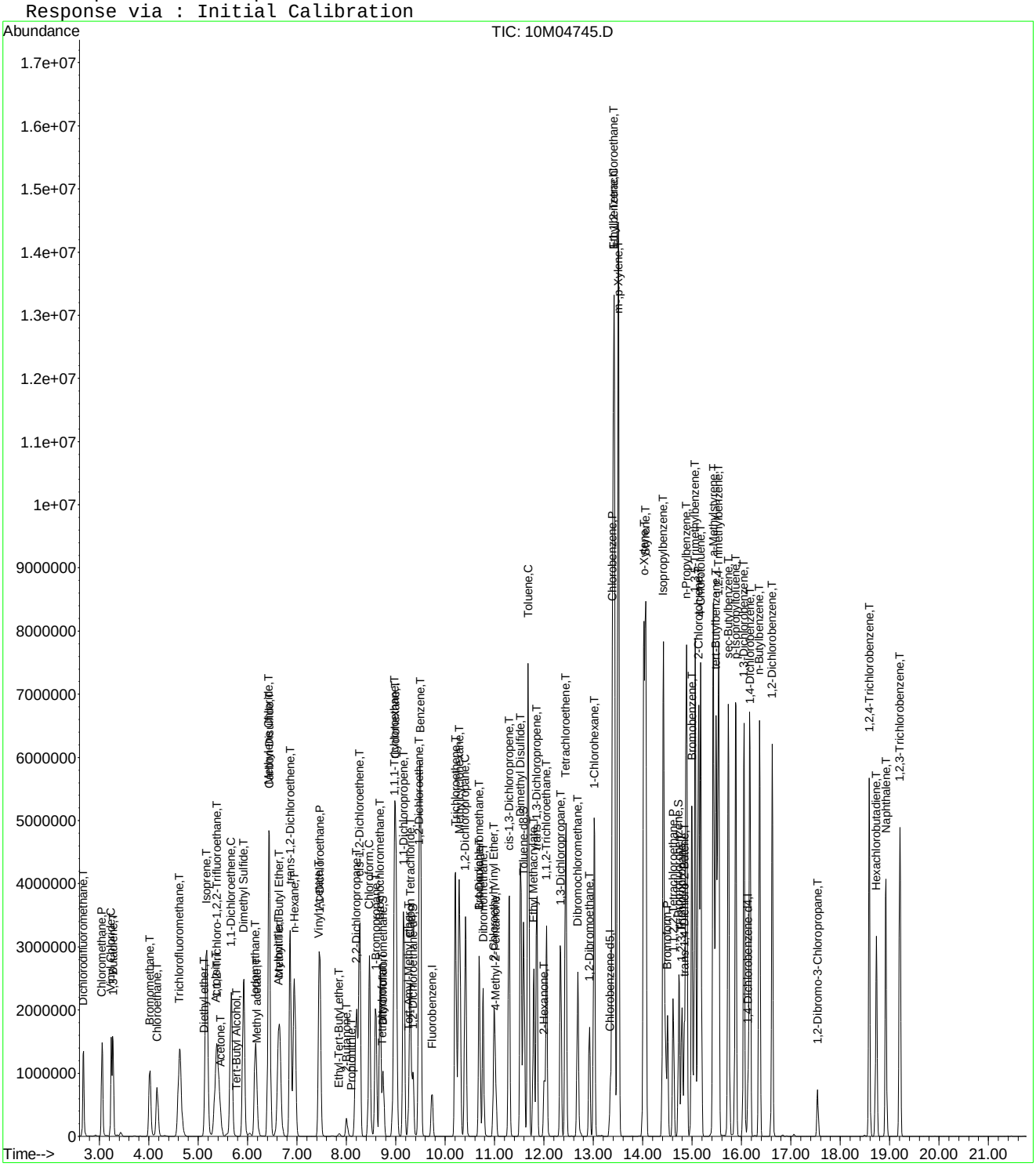

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04746.D Vial: 11
Acq On : 14 May 2013 20:33 Operator: TMB
Sample : WG430035-11 300ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 20:55:27 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.74	96	868275	25.00 ug/L	-0.04
57) Chlorobenzene-d5	13.34	117	661021	25.00 ug/L	-0.04
78) 1,4-Dichlorobenzene-d4	16.13	152	291029	25.00 ug/L	-0.04
System Monitoring Compounds					
37) Dibromofluoromethane	8.74	111	1303884	142.28 ug/L	-0.04
Spiked Amount 25.000	Range 86 - 118		Recovery = 569.12%#		
43) 1,2-Dichloroethane-d4	9.35	65	1212135	125.17 ug/L	-0.04
Spiked Amount 25.000	Range 80 - 120		Recovery = 500.68%#		
58) Toluene-d8	11.59	98	4488983	144.13 ug/L	-0.04
Spiked Amount 25.000	Range 88 - 110		Recovery = 576.52%#		
80) p-Bromofluorobenzene	14.74	95	1606747	160.91 ug/L	-0.03
Spiked Amount 25.000	Range 86 - 115		Recovery = 643.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.68	85	2379215	263.77 ug/L	94
3) Chloromethane	3.05	50	2725752	250.49 ug/L	100
4) Vinyl Chloride	3.24	62	2103664	200.51 ug/L	100
5) 1,3-Butadiene	3.27	54	1100203	310.48 ug/L	99
6) Bromomethane	4.01	94	1773981	260.98 ug/L	100
7) Chloroethane	4.17	64	1739225	278.02 ug/L	99
8) Trichlorofluoromethane	4.62	101	4141440	261.00 ug/L	99
9) Diethyl ether	5.14	59	2057879	290.60 ug/L	98
10) Isoprene	5.17	67	4129069	306.02 ug/L	94
11) Acrolein	5.36	56	58995	207.17 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	5.37	101	2575083	279.51 ug/L	83
13) Acetone	5.46	43	653157	252.91 ug/L	86
14) 1,1-Dichloroethene	5.66	96	2596255	290.99 ug/L	85
15) Tert-Butyl Alcohol	5.80	59	300768	496.54 ug/L	97
16) Dimethyl Sulfide	5.92	62	3365275	315.90 ug/L	91
17) Iodomethane	6.16	142	3631293	281.76 ug/L	86
18) Methyl acetate	6.19	43	1447372	303.16 ug/L	96
19) Methylene Chloride	6.43	84	2797854	279.52 ug/L	92
20) Carbon Disulfide	6.44	76	8731529	305.48 ug/L	98
21) Acrylonitrile	6.60	53	413735	167.84 ug/L	98
22) Methyl Tert Butyl Ether	6.64	73	6454237	270.45 ug/L	96
23) trans-1,2-Dichloroethene	6.86	96	2829516	286.71 ug/L	92
24) n-Hexane	6.95	57	3762406	287.82 ug/L	100
25) Diisopropyl ether	7.29	45	8493277	286.06 ug/L	95
26) Vinyl Acetate	7.45	43	3680106	325.80 ug/L	98
27) 1,1-Dichloroethane	7.46	63	4856003	277.34 ug/L	99
28) Ethyl-Tert-Butyl ether	7.83	59	8232523	280.95 ug/L	97
29) 2-Butanone	8.00	43	762666	280.32 ug/L	95
30) Propionitrile	8.11	54	255792	294.12 ug/L	98
31) 2,2-Dichloropropane	8.21	77	3760579	248.55 ug/L	85
32) cis-1,2-Dichloroethene	8.27	96	3050456	283.71 ug/L	88
33) Chloroform	8.46	83	4575853	263.07 ug/L	98
34) 1-Bromopropane	8.60	122	632996	294.07 ug/L	99
35) Bromochloromethane	8.68	128	1453547	302.41 ug/L	97
36) Tetrahydrofuran	8.71	42	497635	285.20 ug/L	96
38) 1,1,1-Trichloroethane	8.97	97	4080477	259.01 ug/L	95
39) Cyclohexane	9.00	56	4935498	304.30 ug/L	99
40) 1,1-Dichloropropene	9.16	75	3665977	270.83 ug/L	94
41) Carbon Tetrachloride	9.29	117	3673479	261.20 ug/L	99
42) Tert-Amyl-Methyl ether	9.27	73	6741430	286.69 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04746.D Vial: 11
Acq On : 14 May 2013 20:33 Operator: TMB
Sample : WG430035-11 300ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 20:55:27 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.47	62	3161660	249.22 ug/L		92
46)	Benzene	9.50	78	9973829	261.66 ug/L		96
47)	Trichloroethene	10.21	130	2864645	276.82 ug/L		95
48)	Methylcyclohexane	10.28	83	4243939	287.44 ug/L		97
49)	1,2-Dichloropropane	10.41	63	2829603	288.92 ug/L		89
50)	Bromodichloromethane	10.70	83	3547613	278.44 ug/L		99
51)	1,4-Dioxane	10.69	88	37151	576.48 ug/L		83
52)	Dibromomethane	10.77	93	1496961	284.70 ug/L		90
53)	2-Chloroethyl Vinyl Ether	10.99	63	1456112	295.18 ug/L		99
54)	4-Methyl-2-Pentanone	11.02	58	717803	272.20 ug/L		100
55)	cis-1,3-Dichloropropene	11.30	75	4243427	281.70 ug/L		88
56)	Dimethyl Disulfide	11.53	79	2558516	332.16 ug/L		98
59)	Toluene	11.68	91	10113880	263.41 ug/L		95
60)	Ethyl Methacrylate	11.79	69	2785494	318.04 ug/L		99
62)	trans-1,3-Dichloropropene	11.85	75	3615291	285.86 ug/L		93
63)	1,1,2-Trichloroethane	12.05	97	1991931	291.89 ug/L		99
64)	2-Hexanone	12.01	43	1058259	260.24 ug/L	#	89
65)	1,3-Dichloropropane	12.34	76	3429890	285.30 ug/L		88
66)	Tetrachloroethene	12.44	164	2414302	285.72 ug/L		91
67)	Dibromochloromethane	12.68	129	2604275	305.74 ug/L		99
68)	1,2-Dibromoethane	12.92	107	2065446	295.26 ug/L		98
69)	1-Chlorohexane	13.02	91	3591186	302.53 ug/L		94
70)	Chlorobenzene	13.39	112	6952269	264.65 ug/L		97
71)	1,1,1,2-Tetrachloroethane	13.43	131	2617651	279.26 ug/L		96
72)	Ethylbenzene	13.43	106	3862462	277.15 ug/L		84
73)	m-,p-Xylene	13.51	106	8218259	479.72 ug/L		82
74)	o-Xylene	14.03	106	4457855	269.51 ug/L		91
75)	Styrene	14.06	104	7150762	260.67 ug/L		98
76)	Bromoform	14.50	173	1602978	281.04 ug/L		98
77)	Isopropylbenzene	14.42	105	9879795	240.86 ug/L		94
79)	1,1,2,2-Tetrachloroethane	14.61	83	1964479	326.48 ug/L		100
81)	1,2,3-Trichloropropane	14.80	110	583636	303.43 ug/L		48
82)	trans-1,4-Dichloro-2-Buten	14.84	53	629869	296.61 ug/L	#	20
83)	n-Propylbenzene	14.88	91	11052655	284.27 ug/L		93
84)	Bromobenzene	15.00	156	2971845	308.11 ug/L		60
85)	1,3,5-Trimethylbenzene	15.06	105	8006522	290.97 ug/L		94
86)	2-Chlorotoluene	15.13	91	7172097	286.44 ug/L		96
87)	4-Chlorotoluene	15.17	91	6863401	296.81 ug/L		95
88)	a-Methylstyrene	15.43	118	4785469	320.43 ug/L		98
89)	tert-Butylbenzene	15.49	134	1841569	295.28 ug/L		80
90)	1,2,4-Trimethylbenzene	15.53	105	7714825	276.04 ug/L		93
91)	sec-Butylbenzene	15.73	105	9067734	268.87 ug/L		94
92)	p-Isopropyltoluene	15.89	119	7721539	271.52 ug/L		94
93)	1,3-Dichlorobenzene	16.05	146	4869191	287.91 ug/L		98
94)	1,4-Dichlorobenzene	16.17	146	4859464	286.42 ug/L		96
95)	n-Butylbenzene	16.36	91	6611201	264.48 ug/L		94
96)	1,2-Dichlorobenzene	16.63	146	4522427	279.33 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	17.54	157	431437	330.74 ug/L		79
98)	1,2,4-Trichlorobenzene	18.59	180	3310167	293.23 ug/L		99
99)	Hexachlorobutadiene	18.74	225	1247602	258.81 ug/L		97
100)	Naphthalene	18.92	128	5857974	288.99 ug/L		96
101)	1,2,3-Trichlorobenzene	19.21	180	2868660	293.25 ug/L		98

(#) = qualifier out of range (m) = manual integration
10M04746.D 8260WT.M Tue May 14 20:55:28 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04746.D Vial: 11
Acq On : 14 May 2013 20:33 Operator: TMB
Sample : WG430035-11 300ug/L STD 8260 Inst : HPMS10
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 20:55 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/13/13 HPMS10
Last Update : Thu Apr 25 17:02:04 2013
Response via : Initial Calibration

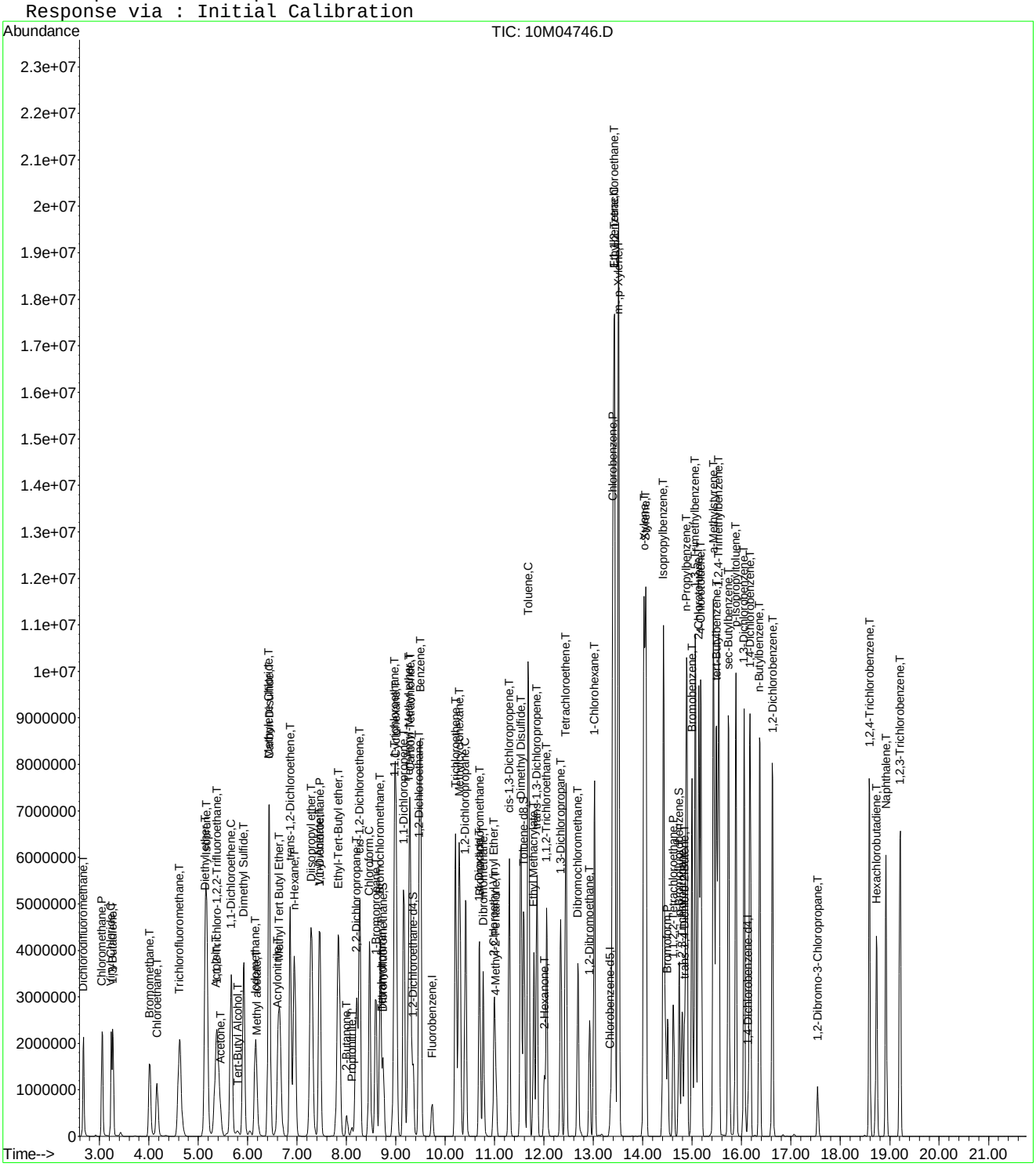

10M04746.D 8260WT.M Tue May 14 20:55:29 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04750.D Vial: 15
Acq On : 14 May 2013 22:35 Operator: TMB
Sample : WG430035-12 50ug/L ALT SRC STD 8260 Inst : HPMS10
Misc : 1,1 STD57878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 22:57:14 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Tue May 14 21:17:27 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.74	96	832608	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.35	117	639262	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.14	152	345937	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	8.75	111	211020	25.84 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.36%		
43) 1,2-Dichloroethane-d4	9.36	65	194671	24.13 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.52%		
58) Toluene-d8	11.59	98	753085	24.66 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.64%		
80) p-Bromofluorobenzene	14.73	95	295515	25.01 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.04%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.67	85	528718	69.77 ug/L	99
3) Chloromethane	3.05	50	416538	48.60 ug/L	100
4) Vinyl Chloride	3.24	62	365175	42.34 ug/L	99
5) 1,3-Butadiene	3.27	54	161973	32.35 ug/L	99
6) Bromomethane	4.01	94	278683	46.85 ug/L	99
7) Chloroethane	4.16	64	274964	50.00 ug/L	100
8) Trichlorofluoromethane	4.62	101	692397	51.30 ug/L	99
9) Diethyl ether	5.14	59	665866	104.85 ug/L	100
10) Isoprene	5.16	67	504078	39.88 ug/L	100
11) Acrolein	5.36	56	79307	252.04 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.38	101	457378	56.20 ug/L	94
13) Acetone	5.46	43	82210	38.46 ug/L	93
14) 1,1-Dichloroethene	5.67	96	387437	47.57 ug/L	97
15) Tert-Butyl Alcohol	5.79	59	95785	184.07 ug/L	97
16) Dimethyl Sulfide	5.92	62	484616	47.18 ug/L	99
17) Iodomethane	6.15	142	269371	26.03 ug/L	98
18) Methyl acetate	6.19	43	237050	59.79 ug/L	100
19) Methylene Chloride	6.42	84	441116	48.02 ug/L	100
20) Carbon Disulfide	6.44	76	1045216	36.64 ug/L	100
21) Acrylonitrile	6.61	53	349938	160.10 ug/L	96
22) Methyl Tert Butyl Ether	6.65	73	1048197	51.19 ug/L	100
23) trans-1,2-Dichloroethene	6.87	96	453385	50.01 ug/L	99
24) n-Hexane	6.95	57	473895	40.73 ug/L	100
25) Diisopropyl ether	7.29	45	2678051	99.04 ug/L	100
26) Vinyl Acetate	7.44	43	511714	47.75 ug/L	100
27) 1,1-Dichloroethane	7.47	63	773849	49.63 ug/L	100
28) Ethyl-Tert-Butyl ether	7.84	59	2638000	99.30 ug/L	100
29) 2-Butanone	8.00	43	120788	52.03 ug/L	99
30) Propionitrile	8.11	54	81219	103.47 ug/L	99
31) 2,2-Dichloropropane	8.21	77	559962	43.69 ug/L	100
32) cis-1,2-Dichloroethene	8.27	96	497412	51.27 ug/L	97
33) Chloroform	8.47	83	755696	49.47 ug/L	100
34) 1-Bromopropane	8.59	122	494815	249.08 ug/L	99
35) Bromochloromethane	8.69	128	228958	51.16 ug/L	99
36) Tetrahydrofuran	8.72	42	158761	103.82 ug/L	99
38) 1,1,1-Trichloroethane	8.97	97	677913	50.63 ug/L	100
39) Cyclohexane	9.00	56	667118	43.77 ug/L	100
40) 1,1-Dichloropropene	9.16	75	584214	49.90 ug/L	99
41) Carbon Tetrachloride	9.29	117	604321	50.61 ug/L	100
42) Tert-Amyl-Methyl ether	9.27	73	2167265	100.40 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04750.D Vial: 15
Acq On : 14 May 2013 22:35 Operator: TMB
Sample : WG430035-12 50ug/L ALT SRC STD 8260 Inst : HPMS10
Misc : 1,1 STD57878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 22:57:14 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Tue May 14 21:17:27 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	9.46	62	528822	49.92	ug/L	100
46)	Benzene	9.50	78	1714821	49.48	ug/L	100
47)	Trichloroethene	10.21	130	507344	53.32	ug/L	100
48)	Methylcyclohexane	10.29	83	624003	47.16	ug/L	100
49)	1,2-Dichloropropane	10.41	63	452401	52.03	ug/L	98
50)	Bromodichloromethane	10.69	83	558321	50.71	ug/L	99
51)	1,4-Dioxane	10.69	88	11102	196.25	ug/L	98
52)	Dibromomethane	10.77	93	244372	51.05	ug/L	99
53)	2-Chloroethyl Vinyl Ether	10.99	63	227967	52.96	ug/L	99
54)	4-Methyl-2-Pentanone	11.02	58	121471	54.45	ug/L	99
55)	cis-1,3-Dichloropropene	11.30	75	714946	54.85	ug/L	99
56)	Dimethyl Disulfide	11.53	79	378309	56.52	ug/L	100
59)	Toluene	11.68	91	1853453	49.90	ug/L	100
60)	Ethyl Methacrylate	11.80	69	471524	55.52	ug/L	100
62)	trans-1,3-Dichloropropene	11.86	75	580274	49.45	ug/L	100
63)	1,1,2-Trichloroethane	12.05	97	353730	53.16	ug/L	100
64)	2-Hexanone	12.00	43	182963	52.41	ug/L	98
65)	1,3-Dichloropropane	12.33	76	587116	51.27	ug/L	99
66)	Tetrachloroethene	12.45	164	410178	48.94	ug/L	99
67)	Dibromochloromethane	12.68	129	435201	53.19	ug/L	98
68)	1,2-Dibromoethane	12.92	107	357370	52.68	ug/L	99
69)	1-Chlorohexane	13.02	91	598904	50.83	ug/L	98
70)	Chlorobenzene	13.39	112	1158521	46.18	ug/L	100
71)	1,1,1,2-Tetrachloroethane	13.43	131	485525	53.22	ug/L	99
72)	Ethylbenzene	13.42	106	677516	50.21	ug/L	99
73)	m-,p-Xylene	13.50	106	1575588	96.37	ug/L	99
74)	o-Xylene	14.02	106	744233	47.25	ug/L	100
75)	Styrene	14.06	104	1378907	54.54	ug/L	99
76)	Bromoform	14.50	173	307809	55.56	ug/L	99
77)	Isopropylbenzene	14.42	105	1848706	47.87	ug/L	99
79)	1,1,2,2-Tetrachloroethane	14.62	83	379616	55.07	ug/L	99
81)	1,2,3-Trichloropropane	14.79	110	117053	51.01	ug/L	98
82)	trans-1,4-Dichloro-2-Buten	14.84	53	83779	35.12	ug/L	95
83)	n-Propylbenzene	14.89	91	2108520	46.20	ug/L	100
84)	Bromobenzene	15.00	156	576147	48.66	ug/L	99
85)	1,3,5-Trimethylbenzene	15.06	105	1703212	53.05	ug/L	100
86)	2-Chlorotoluene	15.13	91	1428755	47.78	ug/L	99
87)	4-Chlorotoluene	15.18	91	1196850	43.90	ug/L	100
88)	a-Methylstyrene	15.43	118	959227	51.84	ug/L	99
89)	tert-Butylbenzene	15.49	134	348427	47.64	ug/L	95
90)	1,2,4-Trimethylbenzene	15.54	105	1714444	52.46	ug/L	99
91)	sec-Butylbenzene	15.73	105	1855143	47.82	ug/L	100
92)	p-Isopropyltoluene	15.88	119	1588447	48.77	ug/L	100
93)	1,3-Dichlorobenzene	16.05	146	969369	46.16	ug/L	100
94)	1,4-Dichlorobenzene	16.17	146	1041224	52.69	ug/L	100
95)	n-Butylbenzene	16.36	91	1474765	52.97	ug/L	100
96)	1,2-Dichlorobenzene	16.62	146	890572	45.70	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	17.54	157	77101	52.80	ug/L	100
98)	1,2,4-Trichlorobenzene	18.59	180	622309	47.65	ug/L	99
99)	Hexachlorobutadiene	18.73	225	265103	50.16	ug/L	99
100)	Naphthalene	18.93	128	1112840	49.71	ug/L	100
101)	1,2,3-Trichlorobenzene	19.21	180	541392	47.30	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051413\10M04750.D Vial: 15
Acq On : 14 May 2013 22:35 Operator: TMB
Sample : WG430035-12 50ug/L ALT SRC STD 8260 Inst : HPMS10
Misc : 1,1 STD57878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 14 22:57 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Tue May 14 21:17:27 2013
Response via : Initial Calibration

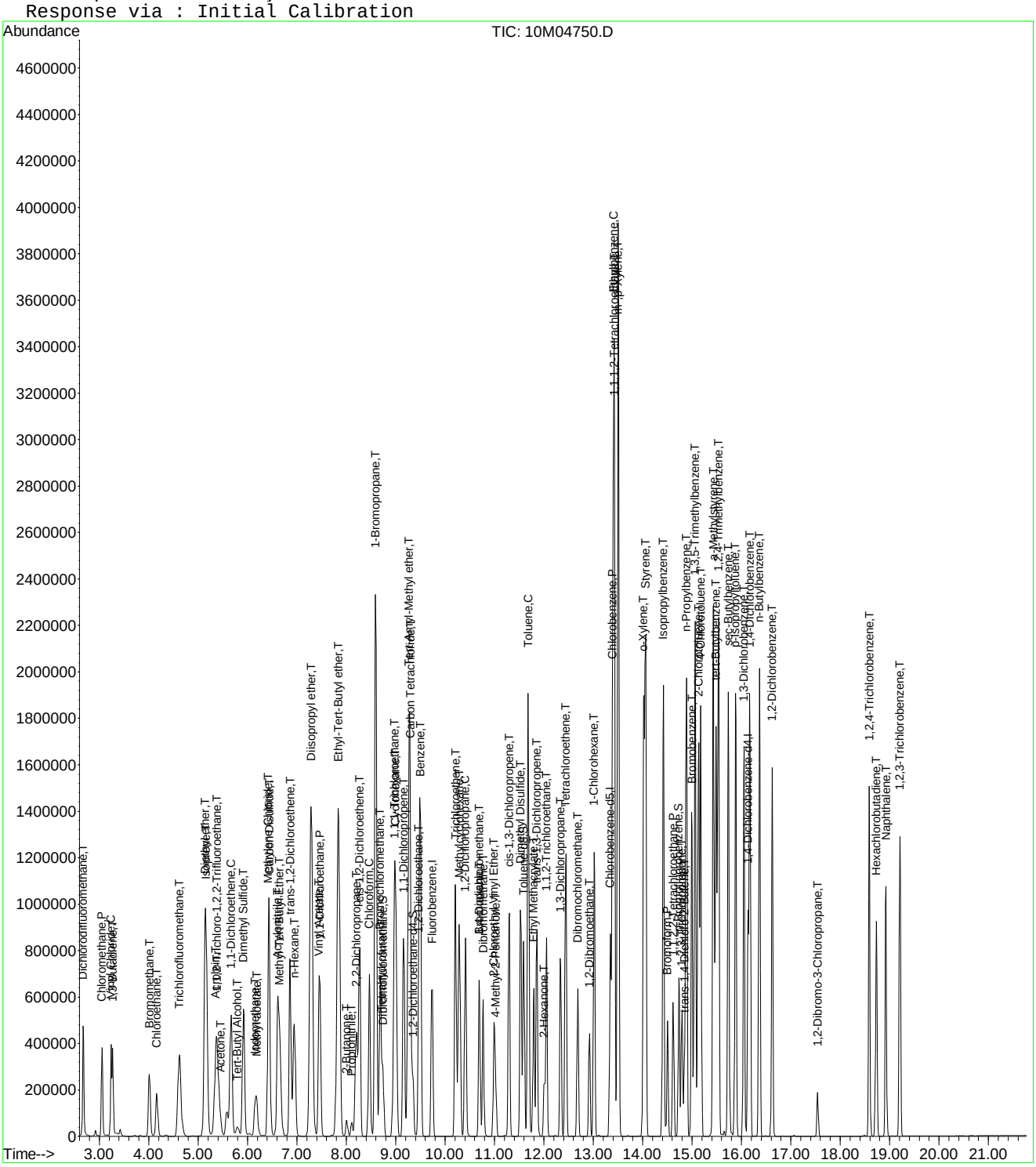

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051513\11M91901.D Vial: 2
Acq On : 15 May 2013 16:25 Operator: FJB
Sample : WG430143-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 17:06:30 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.08	96	727974	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.71	117	497904	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.51	152	275806	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	11.94	98	445	0.0158 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	15.11	95	192	0.0171 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.92	85	2854	0.4692 ug/L	94
3) Chloromethane	3.33	50	5042	0.6242 ug/L	82
4) Vinyl Chloride	3.54	62	4603	0.4732 ug/L	97
5) 1,3-Butadiene	3.58	54	3015	0.8160 ug/L #	59
6) Bromomethane	4.37	94	1937	0.3908 ug/L	81
7) Chloroethane	4.52	64	1865	0.4066 ug/L #	62
8) Trichlorofluoromethane	4.97	101	5222	0.3854 ug/L	90
10) Isoprene	5.53	67	4422	0.3925 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.75	101	2237	0.2912 ug/L	81
13) Acetone	5.82	43	15466	7.1029 ug/L	92
14) 1,1-Dichloroethene	6.05	61	4172	0.3523 ug/L	97
16) Dimethyl Sulfide	6.29	62	2611	0.3148 ug/L	83
18) Methyl acetate	6.56	43	2299	0.5785 ug/L #	70
19) Methylene Chloride	6.78	84	4271	0.4369 ug/L	89
20) Carbon Disulfide	6.81	76	11676	0.4843 ug/L #	54
22) Methyl Tert Butyl Ether	7.00	73	4668	0.2068 ug/L	97
23) trans-1,2-Dichloroethene	7.23	96	2976	0.3374 ug/L	91
24) n-Hexane	7.31	57	4425	0.4651 ug/L #	63
27) 1,1-Dichloroethane	7.82	63	4444	0.3122 ug/L #	88
29) 2-Butanone	8.35	43	844	0.3965 ug/L #	49
31) 2,2-Dichloropropane	8.56	77	5655	0.4122 ug/L	81
32) cis-1,2-Dichloroethene	8.62	96	3078	0.3152 ug/L	93
33) Chloroform	8.83	83	5025	0.3175 ug/L	88
35) Bromochloromethane	9.04	130	905	0.1572 ug/L	94
38) 1,1,1-Trichloroethane	9.32	97	4496	0.3106 ug/L #	80
39) Cyclohexane	9.36	56	4925	0.3959 ug/L	84
40) 1,1-Dichloropropene	9.51	75	4146	0.3457 ug/L	83
41) Carbon Tetrachloride	9.65	117	3862	0.3117 ug/L #	92
45) 1,2-Dichloroethane	9.81	62	2842	0.2554 ug/L #	62
46) Benzene	9.85	78	14164	0.4267 ug/L	92
47) Trichloroethene	10.56	130	2825	0.3144 ug/L	87
48) Methylcyclohexane	10.64	83	5527	0.4095 ug/L	90
49) 1,2-Dichloropropane	10.76	63	2384	0.2938 ug/L	87
51) Bromodichloromethane	11.05	83	2831	0.2363 ug/L #	87
52) Dibromomethane	11.13	93	960	0.1820 ug/L	90
53) 2-Chloroethyl Vinyl Ether	11.33	63	503	0.1244 ug/L #	44
55) cis-1,3-Dichloropropene	11.64	75	3843	0.2889 ug/L	95
56) Dimethyl Disulfide	11.89	79	1755	0.2340 ug/L	86
59) Toluene	12.04	91	14185	0.4175 ug/L	98
60) Ethyl Methacrylate	12.14	69	1941	0.2359 ug/L	86

(#) = qualifier out of range (m) = manual integration
11M91901.D 8260BWT.M Wed May 15 17:06:30 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051513\11M91901.D Vial: 2
Acq On : 15 May 2013 16:25 Operator: FJB
Sample : WG430143-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 17:06:30 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
62)	trans-1,3-Dichloropropene	12.20	75	3086	0.2665 ug/L	84
63)	1,1,2-Trichloroethane	12.41	97	1573	0.2301 ug/L	99
64)	2-Hexanone	12.37	43	731	0.2353 ug/L #	71
65)	1,3-Dichloropropane	12.70	76	2894	0.2473 ug/L	94
66)	Tetrachloroethene	12.81	164	2452	0.3363 ug/L	93
67)	Dibromochloromethane	13.05	129	1878	0.2311 ug/L	94
68)	1,2-Dibromoethane	13.29	107	1774	0.2602 ug/L	87
69)	1-Chlorohexane	13.38	91	4505	0.4235 ug/L	93
70)	Chlorobenzene	13.75	112	8082	0.3545 ug/L	99
71)	1,1,1,2-Tetrachloroethane	13.78	131	2102	0.2456 ug/L	89
72)	Ethylbenzene	13.78	106	4209	0.3230 ug/L	85
73)	m-,p-Xylene	13.87	106	10521	0.6993 ug/L	90
74)	o-Xylene	14.38	106	4853	0.3222 ug/L	83
75)	Styrene	14.42	104	9608	0.4161 ug/L	73
76)	Bromoform	14.88	173	913	0.1741 ug/L #	60
77)	Isopropylbenzene	14.79	105	13359	0.3727 ug/L	94
79)	1,1,2,2-Tetrachloroethane	14.98	83	1446	0.1838 ug/L	92
83)	n-Propylbenzene	15.25	91	15913	0.3626 ug/L	91
84)	Bromobenzene	15.36	156	3366	0.3311 ug/L	76
85)	1,3,5-Trimethylbenzene	15.43	105	10835	0.3637 ug/L	92
86)	2-Chlorotoluene	15.50	91	9258	0.3396 ug/L	83
87)	4-Chlorotoluene	15.54	91	9668	0.3710 ug/L	89
88)	a-Methylstyrene	15.80	118	4897	0.3154 ug/L	89
89)	tert-Butylbenzene	15.86	134	1932	0.2844 ug/L #	42
90)	1,2,4-Trimethylbenzene	15.90	105	11791	0.3909 ug/L	93
91)	sec-Butylbenzene	16.10	105	13396	0.3749 ug/L	91
92)	p-Isopropyltoluene	16.25	119	11757	0.3960 ug/L	99
93)	1,3-Dichlorobenzene	16.43	146	6373	0.3539 ug/L	99
94)	1,4-Dichlorobenzene	16.54	146	6716	0.3433 ug/L #	45
95)	n-Butylbenzene	16.74	91	12069	0.4453 ug/L #	90
96)	1,2-Dichlorobenzene	17.00	146	6024	0.3444 ug/L	97
98)	1,2,4-Trichlorobenzene	18.97	180	4391	0.3751 ug/L	86
99)	Hexachlorobutadiene	19.12	225	1718	0.3803 ug/L #	80
100)	Naphthalene	19.31	128	8920	0.3953 ug/L #	91
101)	1,2,3-Trichlorobenzene	19.60	180	3737	0.3509 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M91901.D 8260BWT.M Wed May 15 17:06:30 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051513\11M91901.D Vial: 2
Acq On : 15 May 2013 16:25 Operator: FJB
Sample : WG430143-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 17:06 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration

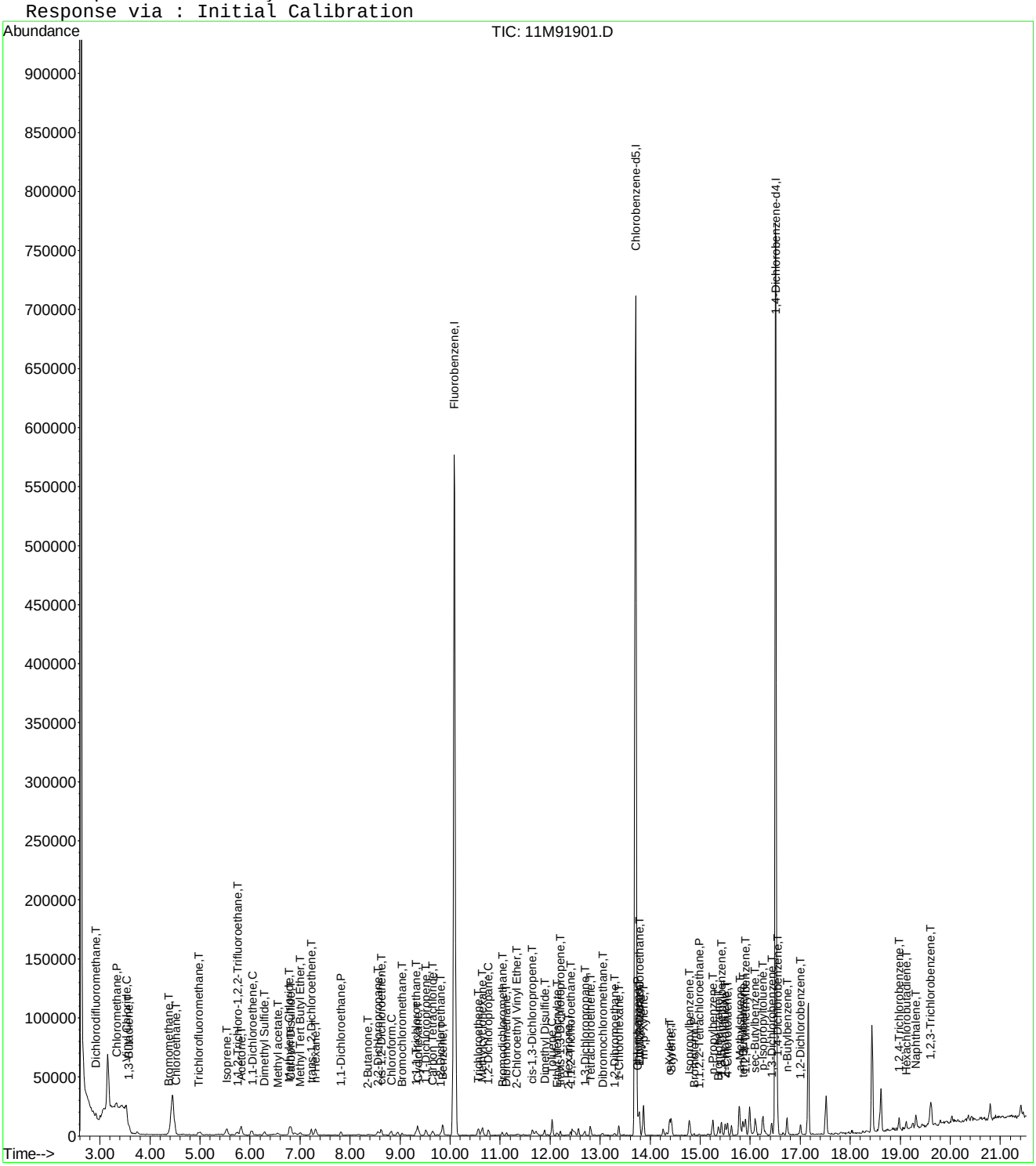

11M91901.D 8260BWT.M Wed May 15 17:06:31 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91902.D Vial: 3
Acq On : 15 May 2013 16:57 Operator: FJB
Sample : WG430143-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 17:19:13 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.08	96	725449	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.71	117	510705	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.51	152	287087	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.92	85	2903	0.4789 ug/L #	85
3) Chloromethane	3.33	50	4638	0.5762 ug/L #	65
4) Vinyl Chloride	3.54	62	4456	0.4597 ug/L	99
5) 1,3-Butadiene	3.58	54	4249	1.1540 ug/L #	41
6) Bromomethane	4.36	94	2518	0.5098 ug/L	73
7) Chloroethane	4.52	64	1880	0.4113 ug/L #	62
8) Trichlorofluoromethane	4.98	101	5263	0.3898 ug/L	99
10) Isoprene	5.53	67	4880	0.4346 ug/L	86
12) 1,1,2-Trichloro-1,2,2-Trif	5.75	101	2193	0.2864 ug/L	79
13) Acetone	5.82	43	1338	0.6166 ug/L #	45
14) 1,1-Dichloroethene	6.03	61	4846	0.4106 ug/L	98
16) Dimethyl Sulfide	6.29	62	3387	0.4098 ug/L	76
19) Methylene Chloride	6.78	84	4489	0.4608 ug/L	92
20) Carbon Disulfide	6.81	76	11378	0.4736 ug/L #	80
22) Methyl Tert Butyl Ether	7.00	73	8399	0.3734 ug/L #	80
23) trans-1,2-Dichloroethene	7.23	96	3437	0.3910 ug/L	98
24) n-Hexane	7.31	57	4492	0.4737 ug/L #	63
26) Vinyl Acetate	7.81	43	1516	0.2022 ug/L #	70
27) 1,1-Dichloroethane	7.81	63	5587	0.3939 ug/L #	86
31) 2,2-Dichloropropane	8.57	77	6103	0.4465 ug/L	88
32) cis-1,2-Dichloroethene	8.62	96	3356	0.3448 ug/L	93
33) Chloroform	8.82	83	6040	0.3830 ug/L	94
35) Bromochloromethane	9.04	130	1731	0.3018 ug/L	91
38) 1,1,1-Trichloroethane	9.34	97	5198	0.3603 ug/L #	83
39) Cyclohexane	9.36	56	5231	0.4219 ug/L	95
40) 1,1-Dichloropropene	9.51	75	5185	0.4339 ug/L	83
41) Carbon Tetrachloride	9.65	117	4849	0.3927 ug/L	94
45) 1,2-Dichloroethane	9.81	62	4168	0.3759 ug/L #	77
46) Benzene	9.85	78	15230	0.4604 ug/L	98
47) Trichloroethene	10.57	130	3417	0.3816 ug/L	91
48) Methylcyclohexane	10.65	83	5652	0.4203 ug/L	97
49) 1,2-Dichloropropane	10.76	63	3141	0.3885 ug/L	100
51) Bromodichloromethane	11.04	83	4079	0.3417 ug/L #	94
52) Dibromomethane	11.12	93	1662	0.3162 ug/L	89
53) 2-Chloroethyl Vinyl Ether	11.33	63	1055	0.2618 ug/L #	44
54) 4-Methyl-2-Pentanone	11.36	58	487	0.2325 ug/L #	31
55) cis-1,3-Dichloropropene	11.64	75	5211	0.3931 ug/L	92
56) Dimethyl Disulfide	11.88	79	2126	0.2845 ug/L	90
59) Toluene	12.04	91	14507	0.4163 ug/L	98
60) Ethyl Methacrylate	12.14	69	2412	0.2858 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91902.D Vial: 3
Acq On : 15 May 2013 16:57 Operator: FJB
Sample : WG430143-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 17:19:13 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
62)	trans-1,3-Dichloropropene	12.20	75	4449	0.3746 ug/L #	77
63)	1,1,2-Trichloroethane	12.41	97	2316	0.3304 ug/L	85
64)	2-Hexanone	12.36	43	847	0.2658 ug/L #	72
65)	1,3-Dichloropropane	12.69	76	4414	0.3678 ug/L	79
66)	Tetrachloroethene	12.80	164	2970	0.3971 ug/L	96
67)	Dibromochloromethane	13.05	129	2611	0.3133 ug/L	93
68)	1,2-Dibromoethane	13.28	107	1986	0.2840 ug/L	64
69)	1-Chlorohexane	13.37	91	4795	0.4394 ug/L	97
70)	Chlorobenzene	13.75	112	10006	0.4279 ug/L	100
71)	1,1,1,2-Tetrachloroethane	13.78	131	2945	0.3355 ug/L	99
72)	Ethylbenzene	13.78	106	5196	0.3887 ug/L	94
73)	m-,p-Xylene	13.87	106	12088	0.7833 ug/L	91
74)	o-Xylene	14.38	106	5605	0.3627 ug/L	77
75)	Styrene	14.42	104	8458	0.3571 ug/L #	71
76)	Bromoform	14.87	173	1581	0.2939 ug/L	74
77)	Isopropylbenzene	14.79	105	14820	0.4031 ug/L	96
79)	1,1,2,2-Tetrachloroethane	14.98	83	2627	0.3208 ug/L	91
83)	n-Propylbenzene	15.25	91	18421	0.4033 ug/L	94
84)	Bromobenzene	15.36	156	4135	0.3908 ug/L	70
85)	1,3,5-Trimethylbenzene	15.43	105	12385	0.3994 ug/L	93
86)	2-Chlorotoluene	15.50	91	12068	0.4252 ug/L	93
87)	4-Chlorotoluene	15.54	91	11323	0.4174 ug/L	94
88)	a-Methylstyrene	15.80	118	5889	0.3644 ug/L	95
89)	tert-Butylbenzene	15.86	134	2202	0.3114 ug/L	69
90)	1,2,4-Trimethylbenzene	15.90	105	13012	0.4144 ug/L	89
91)	sec-Butylbenzene	16.10	105	16501	0.4436 ug/L	90
92)	p-Isopropyltoluene	16.25	119	12258	0.3967 ug/L	95
93)	1,3-Dichlorobenzene	16.43	146	7463	0.3982 ug/L	97
94)	1,4-Dichlorobenzene	16.54	146	7736	0.3799 ug/L #	57
95)	n-Butylbenzene	16.74	91	11984	0.4248 ug/L	94
96)	1,2-Dichlorobenzene	17.00	146	6957	0.3821 ug/L	98
98)	1,2,4-Trichlorobenzene	18.97	180	5069	0.4160 ug/L	87
99)	Hexachlorobutadiene	19.12	225	1970	0.4189 ug/L #	76
100)	Naphthalene	19.31	128	10535	0.4485 ug/L #	95
101)	1,2,3-Trichlorobenzene	19.60	180	4519	0.4076 ug/L	85

(#) = qualifier out of range (m) = manual integration
11M91902.D 8260BWT.M Wed May 15 17:19:14 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91902.D Vial: 3
Acq On : 15 May 2013 16:57 Operator: FJB
Sample : WG430143-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 17:19 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration

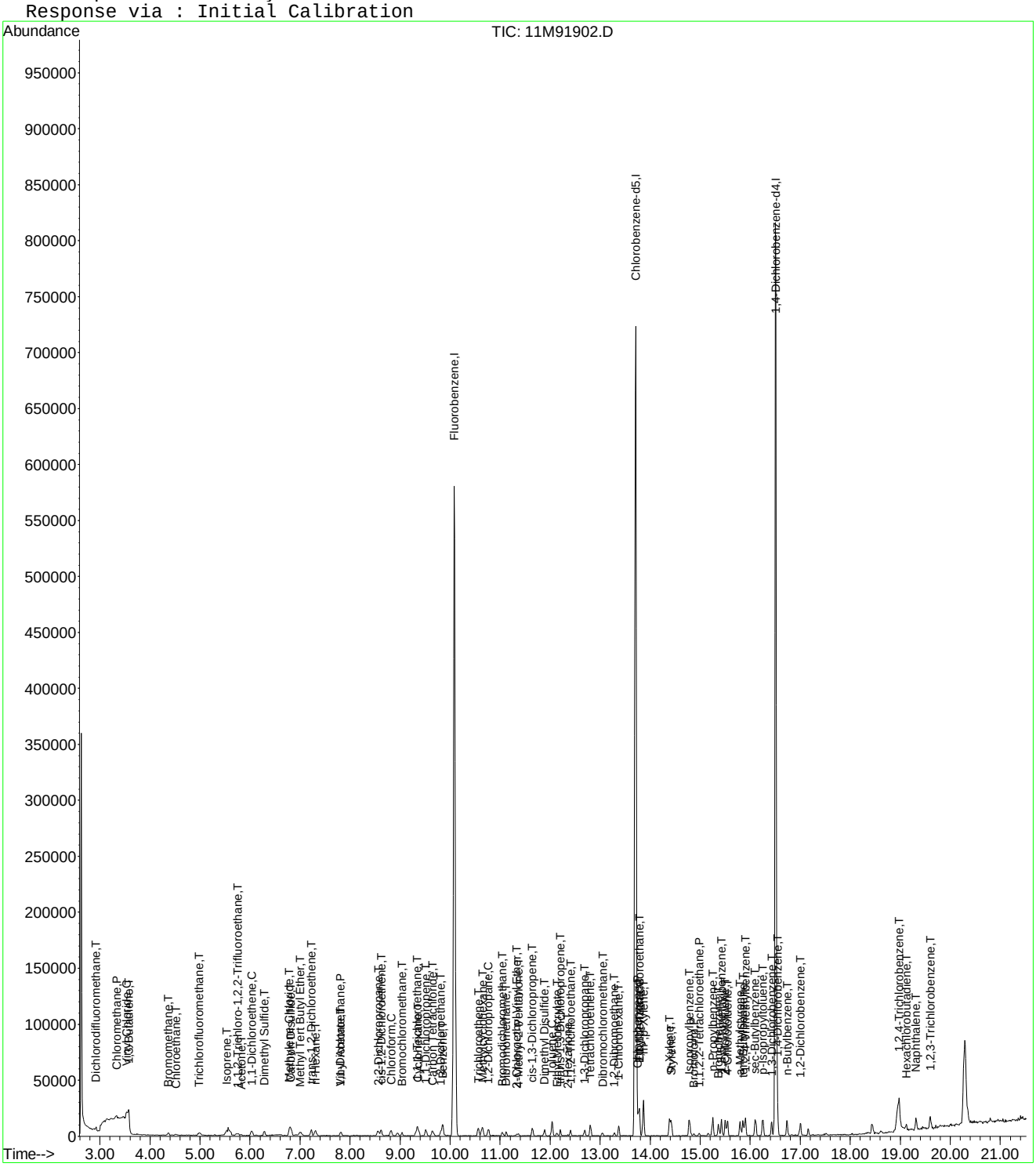

11M91902.D 8260BWT.M Wed May 15 17:19:14 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91903.D Vial: 4
Acq On : 15 May 2013 17:48 Operator: FJB
Sample : WG430143-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 18:10:05 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.08	96	731561	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.71	117	512740	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.51	152	291852	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.10	111	3815	0.4557 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.84%#	
43) 1,2-Dichloroethane-d4	9.70	65	3929	0.4352 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.76%#	
58) Toluene-d8	11.95	98	14459	0.4978 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.00%#	
80) p-Bromofluorobenzene	15.11	95	5300	0.4450 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.80%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.92	85	6935	1.1345 ug/L	93
3) Chloromethane	3.33	50	9827	1.2106 ug/L	94
4) Vinyl Chloride	3.54	62	10928	1.1179 ug/L	100
5) 1,3-Butadiene	3.58	54	8910	2.3996 ug/L	80
6) Bromomethane	4.37	94	5691	1.1425 ug/L	98
7) Chloroethane	4.52	64	5095	1.1053 ug/L	99
8) Trichlorofluoromethane	4.97	101	12826	0.9420 ug/L	99
9) Diethyl ether	5.50	59	24922	4.3079 ug/L	93
10) Isoprene	5.53	67	11024	0.9736 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	5.74	101	7283	0.9433 ug/L	96
13) Acetone	5.82	43	2560	1.1699 ug/L #	45
14) 1,1-Dichloroethene	6.04	61	10909	0.9166 ug/L	97
15) Tert-Butyl Alcohol	6.13	59	5745	10.4526 ug/L #	69
16) Dimethyl Sulfide	6.29	62	8363	1.0034 ug/L	86
17) Iodomethane	6.52	142	1828	0.2432 ug/L #	64
18) Methyl acetate	6.56	43	2357	0.5902 ug/L #	73
19) Methylene Chloride	6.78	84	9722	0.9896 ug/L	82
20) Carbon Disulfide	6.81	76	26251	1.0836 ug/L	94
21) Acrylonitrile	6.97	53	4087	1.9929 ug/L	91
22) Methyl Tert Butyl Ether	7.01	73	19717	0.8693 ug/L	93
23) trans-1,2-Dichloroethene	7.22	96	8334	0.9401 ug/L	98
24) n-Hexane	7.31	57	9781	1.0229 ug/L #	88
25) Diisopropyl ether	7.64	45	113291	5.3073 ug/L	95
26) Vinyl Acetate	7.81	43	4739	0.6269 ug/L #	70
27) 1,1-Dichloroethane	7.82	63	13287	0.9290 ug/L	97
28) Ethyl-Tert-Butyl ether	8.19	59	118478	5.0514 ug/L	99
29) 2-Butanone	8.35	43	1082	0.5058 ug/L #	49
30) Propionitrile	8.45	54	2556	3.4859 ug/L #	60
31) 2,2-Dichloropropane	8.56	77	13461	0.9765 ug/L	99
32) cis-1,2-Dichloroethene	8.62	96	8799	0.8965 ug/L	99
33) Chloroform	8.82	83	14858	0.9343 ug/L	96
34) 1-Bromopropane	8.94	122	1614	0.8858 ug/L	76
35) Bromochloromethane	9.04	130	4374	0.7562 ug/L	92
36) Tetrahydrofuran	9.07	42	5527	3.9048 ug/L	95
38) 1,1,1-Trichloroethane	9.33	97	13454	0.9248 ug/L #	94
39) Cyclohexane	9.36	56	11819	0.9453 ug/L	92
40) 1,1-Dichloropropene	9.51	75	11404	0.9463 ug/L	95
41) Carbon Tetrachloride	9.65	117	11368	0.9130 ug/L	95
42) Tert-Amyl-Methyl ether	9.63	73	109144	4.8988 ug/L	99
45) 1,2-Dichloroethane	9.81	62	10492	0.9383 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91903.D Vial: 4
Acq On : 15 May 2013 17:48 Operator: FJB
Sample : WG430143-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 18:10:05 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	9.85	78	34061	1.0211 ug/L		98
47)	Trichloroethene	10.57	130	8091	0.8960 ug/L		93
48)	Methylcyclohexane	10.64	83	13397	0.9878 ug/L		95
49)	1,2-Dichloropropane	10.76	63	7444	0.9130 ug/L		97
51)	Bromodichloromethane	11.05	83	10414	0.8650 ug/L		94
52)	Dibromomethane	11.12	93	4273	0.8062 ug/L		92
53)	2-Chloroethyl Vinyl Ether	11.32	63	3073	0.7562 ug/L		92
54)	4-Methyl-2-Pentanone	11.36	58	1713	0.8109 ug/L	#	50
55)	cis-1,3-Dichloropropene	11.64	75	12446	0.9310 ug/L		98
56)	Dimethyl Disulfide	11.89	79	6468	0.8583 ug/L		92
59)	Toluene	12.05	91	34819	0.9952 ug/L		98
60)	Ethyl Methacrylate	12.14	69	6266	0.7396 ug/L		93
62)	trans-1,3-Dichloropropene	12.21	75	10651	0.8931 ug/L		93
63)	1,1,2-Trichloroethane	12.41	97	5875	0.8347 ug/L		97
64)	2-Hexanone	12.36	43	2220	0.6940 ug/L		88
65)	1,3-Dichloropropane	12.70	76	10549	0.8754 ug/L		94
66)	Tetrachloroethene	12.80	164	6587	0.8772 ug/L		99
67)	Dibromochloromethane	13.05	129	6430	0.7684 ug/L		94
68)	1,2-Dibromoethane	13.29	107	5652	0.8051 ug/L		99
69)	1-Chlorohexane	13.37	91	10799	0.9858 ug/L		99
70)	Chlorobenzene	13.75	112	22520	0.9592 ug/L		100
71)	1,1,1,2-Tetrachloroethane	13.78	131	7130	0.8091 ug/L		93
72)	Ethylbenzene	13.78	106	12397	0.9238 ug/L		95
73)	m-,p-Xylene	13.87	106	29022	1.8732 ug/L		90
74)	o-Xylene	14.38	106	14934	0.9627 ug/L		99
75)	Styrene	14.42	104	21203	0.8917 ug/L		85
76)	Bromoform	14.88	173	3713	0.6874 ug/L		98
77)	Isopropylbenzene	14.79	105	35674	0.9666 ug/L		94
79)	1,1,2,2-Tetrachloroethane	14.98	83	6514	0.7825 ug/L		89
81)	1,2,3-Trichloropropane	15.16	110	1800	0.6883 ug/L		68
82)	trans-1,4-Dichloro-2-Buten	15.21	53	1510	0.6963 ug/L		59
83)	n-Propylbenzene	15.25	91	43744	0.9420 ug/L		98
84)	Bromobenzene	15.36	156	9103	0.8463 ug/L		70
85)	1,3,5-Trimethylbenzene	15.43	105	29896	0.9483 ug/L		89
86)	2-Chlorotoluene	15.50	91	26978	0.9351 ug/L		90
87)	4-Chlorotoluene	15.54	91	27647	1.0025 ug/L		88
88)	a-Methylstyrene	15.80	118	14246	0.8670 ug/L		96
89)	tert-Butylbenzene	15.86	134	5686	0.7909 ug/L	#	72
90)	1,2,4-Trimethylbenzene	15.90	105	31244	0.9788 ug/L		90
91)	sec-Butylbenzene	16.11	105	36338	0.9609 ug/L		93
92)	p-Isopropyltoluene	16.25	119	29347	0.9342 ug/L		97
93)	1,3-Dichlorobenzene	16.43	146	17760	0.9321 ug/L		95
94)	1,4-Dichlorobenzene	16.54	146	18187	0.8786 ug/L	#	60
95)	n-Butylbenzene	16.74	91	29838	1.0404 ug/L		93
96)	1,2-Dichlorobenzene	17.01	146	16710	0.9027 ug/L		90
97)	1,2-Dibromo-3-Chloropropan	17.92	75	1257	0.8189 ug/L		79
98)	1,2,4-Trichlorobenzene	18.97	180	11537	0.9315 ug/L		99
99)	Hexachlorobutadiene	19.12	225	4385	0.9173 ug/L		93
100)	Naphthalene	19.31	128	23191	0.9711 ug/L		98
101)	1,2,3-Trichlorobenzene	19.60	180	10519	0.9333 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M91903.D 8260BWT.M Wed May 15 18:10:06 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91903.D Vial: 4
Acq On : 15 May 2013 17:48 Operator: FJB
Sample : WG430143-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 18:10 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration

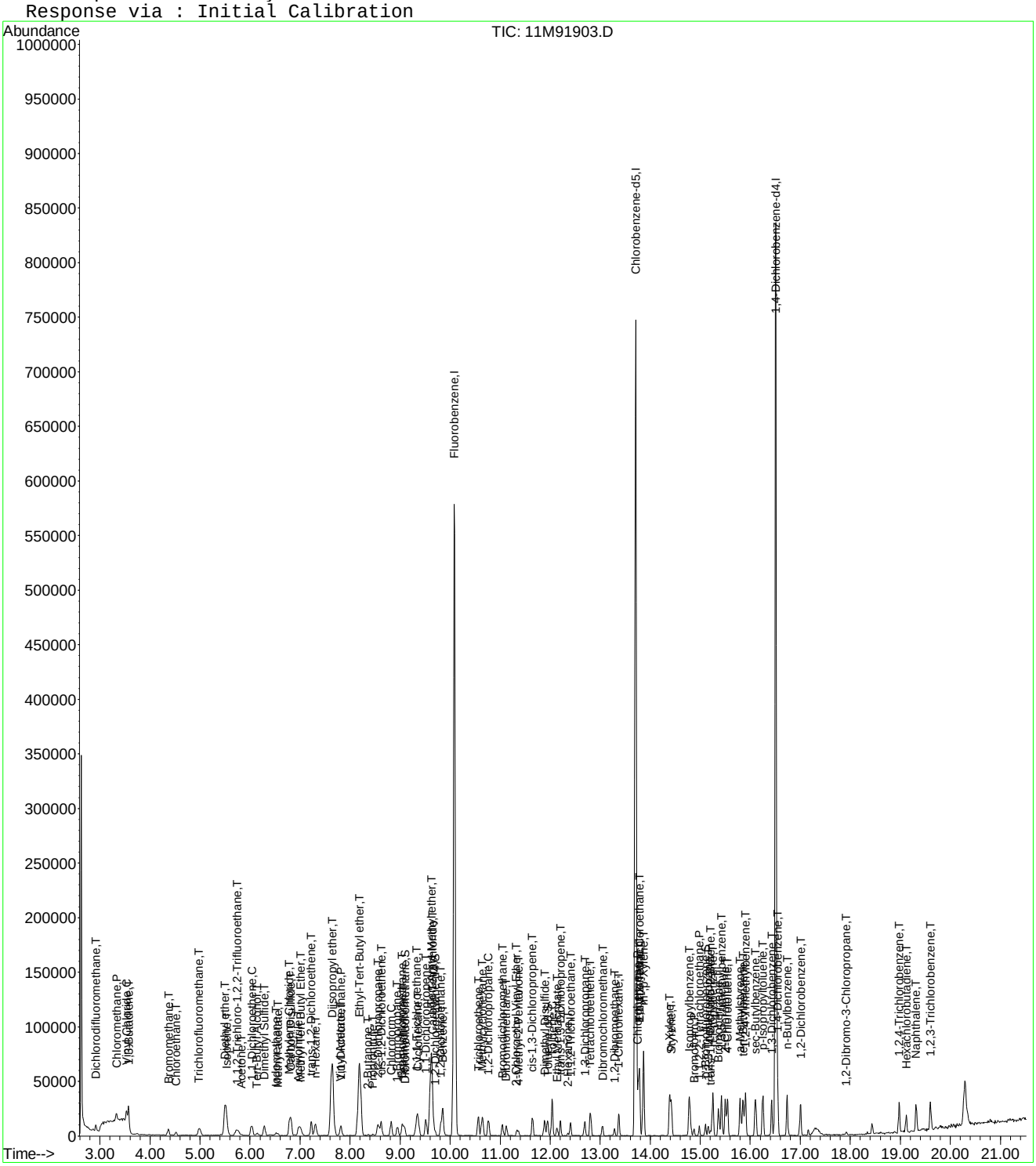

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91904.D Vial: 5
Acq On : 15 May 2013 18:20 Operator: FJB
Sample : WG430143-05 2ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 18:42:40 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.08	96	727215	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.71	117	514386	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.51	152	288759	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.10	111	7318	0.8793 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.52%#	
43) 1,2-Dichloroethane-d4	9.70	65	8434	0.9397 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.76%#	
58) Toluene-d8	11.94	98	29974	1.0288 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.12%#	
80) p-Bromofluorobenzene	15.11	95	11422	0.9693 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.88%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.92	85	13065	2.1500 ug/L	93
3) Chloromethane	3.33	50	18446	2.2859 ug/L	100
4) Vinyl Chloride	3.54	62	19967	2.0547 ug/L	97
5) 1,3-Butadiene	3.58	54	18792	5.0913 ug/L	89
6) Bromomethane	4.36	94	11379	2.2981 ug/L	100
7) Chloroethane	4.52	64	9794	2.1374 ug/L	93
8) Trichlorofluoromethane	4.98	101	27056	1.9990 ug/L	99
9) Diethyl ether	5.50	59	122281	21.2632 ug/L	97
10) Isoprene	5.53	67	23989	2.1314 ug/L	95
11) Acrolein	5.72	56	2800	7.8682 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	5.74	101	16009	2.0858 ug/L	96
13) Acetone	5.82	43	3616	1.6624 ug/L	97
14) 1,1-Dichloroethene	6.04	61	23178	1.9591 ug/L	94
15) Tert-Butyl Alcohol	6.14	59	34713	63.5351 ug/L	90
16) Dimethyl Sulfide	6.29	62	16729	2.0192 ug/L	90
17) Iodomethane	6.52	142	7121	0.9530 ug/L	92
18) Methyl acetate	6.54	43	5774	1.4545 ug/L #	88
19) Methylene Chloride	6.78	84	18536	1.8981 ug/L	87
20) Carbon Disulfide	6.81	76	56396	2.3418 ug/L	95
21) Acrylonitrile	6.96	53	20228	9.9224 ug/L	92
22) Methyl Tert Butyl Ether	7.00	73	42207	1.8720 ug/L	96
23) trans-1,2-Dichloroethene	7.22	96	17083	1.9386 ug/L	99
24) n-Hexane	7.31	57	20562	2.1633 ug/L #	93
25) Diisopropyl ether	7.64	45	540075	25.4521 ug/L	95
26) Vinyl Acetate	7.80	43	14296	1.9023 ug/L	93
27) 1,1-Dichloroethane	7.82	63	28723	2.0203 ug/L	98
28) Ethyl-Tert-Butyl ether	8.19	59	588824	25.2548 ug/L	99
29) 2-Butanone	8.35	43	3650	1.7164 ug/L	81
30) Propionitrile	8.45	54	17253	23.6707 ug/L	96
31) 2,2-Dichloropropane	8.56	77	28530	2.0820 ug/L	95
32) cis-1,2-Dichloroethene	8.62	96	19118	1.9595 ug/L	98
33) Chloroform	8.82	83	30830	1.9501 ug/L	95
34) 1-Bromopropane	8.94	122	3429	1.8933 ug/L	92
35) Bromochloromethane	9.04	130	10305	1.7922 ug/L	96
36) Tetrahydrofuran	9.07	42	31922	22.6875 ug/L	91
38) 1,1,1-Trichloroethane	9.33	97	27737	1.9179 ug/L	95
39) Cyclohexane	9.36	56	26941	2.1678 ug/L	98
40) 1,1-Dichloropropene	9.51	75	23614	1.9712 ug/L	100
41) Carbon Tetrachloride	9.65	117	25013	2.0208 ug/L	98
42) Tert-Amyl-Methyl ether	9.62	73	572983	25.8713 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M91904.D 8260BWT.M Wed May 15 18:42:41 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91904.D Vial: 5
Acq On : 15 May 2013 18:20 Operator: FJB
Sample : WG430143-05 2ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 18:42:40 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	9.81	62	20330	1.8290	ug/L		97
46)	Benzene	9.85	78	68970	2.0800	ug/L		99
47)	Trichloroethene	10.57	130	17000	1.8938	ug/L		91
48)	Methylcyclohexane	10.64	83	28612	2.1223	ug/L		99
49)	1,2-Dichloropropane	10.76	63	15871	1.9582	ug/L		100
50)	1,4-Dioxane	11.03	88	3490	49.7143	ug/L		83
51)	Bromodichloromethane	11.04	83	22552	1.8845	ug/L		98
52)	Dibromomethane	11.13	93	9665	1.8345	ug/L		96
53)	2-Chloroethyl Vinyl Ether	11.33	63	7203	1.7830	ug/L		97
54)	4-Methyl-2-Pentanone	11.36	58	3581	1.7052	ug/L		92
55)	cis-1,3-Dichloropropene	11.64	75	26057	1.9607	ug/L		97
56)	Dimethyl Disulfide	11.88	79	13304	1.7760	ug/L		97
59)	Toluene	12.04	91	72496	2.0655	ug/L		100
60)	Ethyl Methacrylate	12.14	69	15140	1.7813	ug/L		86
62)	trans-1,3-Dichloropropene	12.20	75	22916	1.9154	ug/L		96
63)	1,1,2-Trichloroethane	12.41	97	12571	1.7803	ug/L		95
64)	2-Hexanone	12.36	43	5251	1.6362	ug/L		91
65)	1,3-Dichloropropane	12.69	76	22557	1.8659	ug/L		92
66)	Tetrachloroethene	12.80	164	14775	1.9613	ug/L		98
67)	Dibromochloromethane	13.05	129	15163	1.8062	ug/L		94
68)	1,2-Dibromoethane	13.29	107	12482	1.7722	ug/L		99
69)	1-Chlorohexane	13.37	91	23305	2.1206	ug/L		98
70)	Chlorobenzene	13.75	112	47166	2.0026	ug/L		99
71)	1,1,1,2-Tetrachloroethane	13.78	131	15726	1.7788	ug/L		97
72)	Ethylbenzene	13.78	106	25567	1.8990	ug/L		95
73)	m-,p-Xylene	13.87	106	61376	3.9487	ug/L		92
74)	o-Xylene	14.38	106	30145	1.9370	ug/L		94
75)	Styrene	14.42	104	44721	1.8748	ug/L		92
76)	Bromoform	14.88	173	8782	1.6206	ug/L		98
77)	Isopropylbenzene	14.79	105	74123	2.0019	ug/L		96
79)	1,1,2,2-Tetrachloroethane	14.98	83	14781	1.7946	ug/L		95
81)	1,2,3-Trichloropropane	15.16	110	4307	1.6646	ug/L		91
82)	trans-1,4-Dichloro-2-Buten	15.21	53	3670	1.7105	ug/L	#	1
83)	n-Propylbenzene	15.25	91	91434	1.9902	ug/L		94
84)	Bromobenzene	15.36	156	20398	1.9167	ug/L		88
85)	1,3,5-Trimethylbenzene	15.43	105	61313	1.9656	ug/L		93
86)	2-Chlorotoluene	15.50	91	54825	1.9207	ug/L		90
87)	4-Chlorotoluene	15.54	91	56966	2.0877	ug/L		90
88)	a-Methylstyrene	15.80	118	29764	1.8309	ug/L		96
89)	tert-Butylbenzene	15.85	134	13208	1.8568	ug/L		81
90)	1,2,4-Trimethylbenzene	15.90	105	64598	2.0454	ug/L		96
91)	sec-Butylbenzene	16.11	105	76851	2.0541	ug/L		97
92)	p-Isopropyltoluene	16.25	119	61582	1.9814	ug/L		99
93)	1,3-Dichlorobenzene	16.43	146	37963	2.0138	ug/L		97
94)	1,4-Dichlorobenzene	16.54	146	37805	1.8460	ug/L		81
95)	n-Butylbenzene	16.74	91	58442	2.0597	ug/L		95
96)	1,2-Dichlorobenzene	17.01	146	35203	1.9222	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	17.92	75	2236	1.4723	ug/L		86
98)	1,2,4-Trichlorobenzene	18.97	180	24219	1.9763	ug/L		99
99)	Hexachlorobutadiene	19.12	225	9031	1.9094	ug/L		93
100)	Naphthalene	19.31	128	48805	2.0656	ug/L		98
101)	1,2,3-Trichlorobenzene	19.60	180	21032	1.8860	ug/L		100

(#) = qualifier out of range (m) = manual integration
11M91904.D 8260BWT.M Wed May 15 18:42:41 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91904.D Vial: 5
Acq On : 15 May 2013 18:20 Operator: FJB
Sample : WG430143-05 2ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 18:42 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration

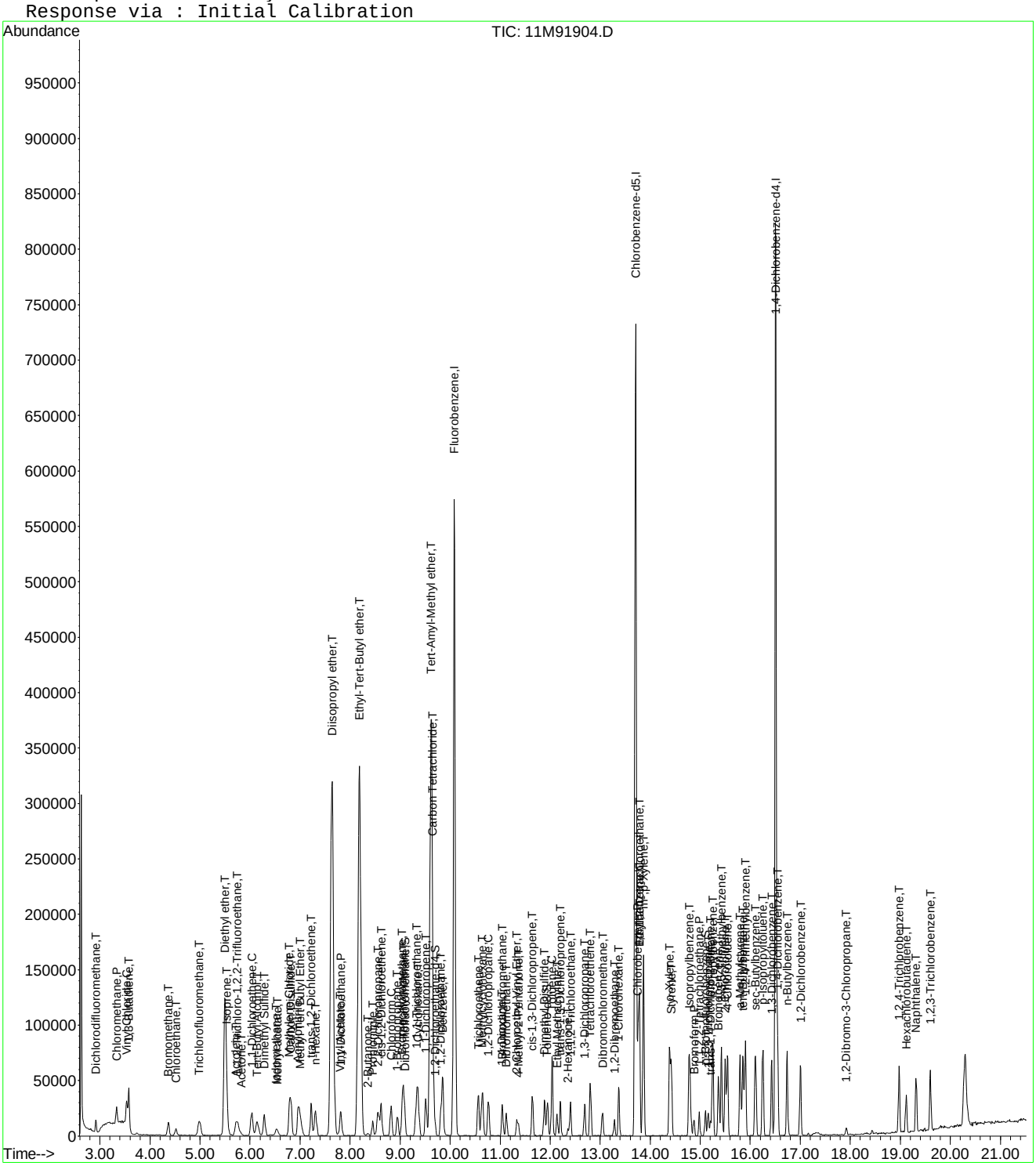

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91905.D Vial: 6
Acq On : 15 May 2013 18:52 Operator: FJB
Sample : WG430143-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 19:14:01 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.08	96	725930	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.71	117	516083	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.51	152	292633	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.10	111	21958	2.6429 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.56%#		
43) 1,2-Dichloroethane-d4	9.70	65	22645	2.5277 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.12%#		
58) Toluene-d8	11.94	98	78389	2.6816 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.72%#		
80) p-Bromofluorobenzene	15.10	95	29213	2.4464 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 9.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.92	85	34084	5.6189 ug/L	97
3) Chloromethane	3.33	50	43822	5.4403 ug/L	97
4) Vinyl Chloride	3.53	62	44807	4.6191 ug/L	100
5) 1,3-Butadiene	3.58	54	40666	11.0370 ug/L	96
6) Bromomethane	4.36	94	25931	5.2463 ug/L	99
7) Chloroethane	4.52	64	24212	5.2933 ug/L	99
8) Trichlorofluoromethane	4.98	101	68380	5.0610 ug/L	98
9) Diethyl ether	5.50	59	243224	42.3686 ug/L	96
10) Isoprene	5.53	67	58772	5.2310 ug/L	96
11) Acrolein	5.73	56	5483	15.4348 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	5.75	101	38575	5.0348 ug/L	96
13) Acetone	5.81	43	9542	4.3946 ug/L	88
14) 1,1-Dichloroethene	6.03	61	57966	4.9082 ug/L	97
15) Tert-Butyl Alcohol	6.14	59	50974	93.4627 ug/L	94
16) Dimethyl Sulfide	6.29	62	42334	5.1188 ug/L	88
17) Iodomethane	6.51	142	28989	3.8866 ug/L	97
18) Methyl acetate	6.55	43	15986	4.0341 ug/L	96
19) Methylene Chloride	6.78	84	43598	4.4724 ug/L	85
20) Carbon Disulfide	6.81	76	135180	5.6231 ug/L	96
21) Acrylonitrile	6.96	53	44591	21.9118 ug/L	100
22) Methyl Tert Butyl Ether	7.00	73	105838	4.7024 ug/L	99
23) trans-1,2-Dichloroethene	7.22	96	42432	4.8238 ug/L	99
24) n-Hexane	7.30	57	49403	5.2067 ug/L	97
25) Diisopropyl ether	7.64	45	1060819	50.0817 ug/L	94
26) Vinyl Acetate	7.80	43	40546	5.4049 ug/L	97
27) 1,1-Dichloroethane	7.82	63	70970	5.0006 ug/L	98
28) Ethyl-Tert-Butyl ether	8.19	59	1158083	49.7584 ug/L	99
29) 2-Butanone	8.34	43	9157	4.3136 ug/L	96
30) Propionitrile	8.45	54	32472	44.6296 ug/L	100
31) 2,2-Dichloropropane	8.56	77	65944	4.8208 ug/L	98
32) cis-1,2-Dichloroethene	8.62	96	45888	4.7117 ug/L	99
33) Chloroform	8.82	83	74875	4.7446 ug/L	96
34) 1-Bromopropane	8.94	122	8999	4.9774 ug/L	97
35) Bromochloromethane	9.04	130	26435	4.6055 ug/L	98
36) Tetrahydrofuran	9.07	42	61693	43.9238 ug/L	89
38) 1,1,1-Trichloroethane	9.33	97	69399	4.8072 ug/L	97
39) Cyclohexane	9.36	56	64771	5.2209 ug/L	98
40) 1,1-Dichloropropene	9.51	75	59851	5.0049 ug/L	97
41) Carbon Tetrachloride	9.65	117	62436	5.0531 ug/L	99
42) Tert-Amyl-Methyl ether	9.62	73	1100922	49.7968 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M91905.D 8260BWT.M Wed May 15 19:14:02 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91905.D Vial: 6
Acq On : 15 May 2013 18:52 Operator: FJB
Sample : WG430143-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 19:14:01 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	9.81	62	51970	4.6837	ug/L		97
46)	Benzene	9.85	78	166567	5.0322	ug/L		100
47)	Trichloroethene	10.56	130	42286	4.7189	ug/L		93
48)	Methylcyclohexane	10.64	83	70482	5.2372	ug/L		97
49)	1,2-Dichloropropane	10.76	63	38131	4.7131	ug/L		99
50)	1,4-Dioxane	11.04	88	6066	86.5618	ug/L		93
51)	Bromodichloromethane	11.04	83	55683	4.6612	ug/L		95
52)	Dibromomethane	11.13	93	23612	4.4897	ug/L		97
53)	2-Chloroethyl Vinyl Ether	11.33	63	19111	4.7390	ug/L		97
54)	4-Methyl-2-Pentanone	11.36	58	9219	4.3977	ug/L		95
55)	cis-1,3-Dichloropropene	11.64	75	65242	4.9180	ug/L		97
56)	Dimethyl Disulfide	11.89	79	34587	4.6252	ug/L		100
59)	Toluene	12.04	91	175329	4.9788	ug/L		99
60)	Ethyl Methacrylate	12.14	69	39065	4.5810	ug/L		86
62)	trans-1,3-Dichloropropene	12.20	75	57579	4.7969	ug/L		99
63)	1,1,2-Trichloroethane	12.41	97	32225	4.5487	ug/L		98
64)	2-Hexanone	12.36	43	14225	4.4180	ug/L		90
65)	1,3-Dichloropropane	12.69	76	57058	4.7044	ug/L		87
66)	Tetrachloroethene	12.80	164	35819	4.7392	ug/L		99
67)	Dibromochloromethane	13.05	129	39044	4.6356	ug/L		97
68)	1,2-Dibromoethane	13.29	107	32150	4.5498	ug/L		98
69)	1-Chlorohexane	13.37	91	55997	5.0785	ug/L		100
70)	Chlorobenzene	13.75	112	116889	4.9466	ug/L		99
71)	1,1,1,2-Tetrachloroethane	13.78	131	41059	4.6290	ug/L		98
72)	Ethylbenzene	13.78	106	63080	4.6699	ug/L		95
73)	m-,p-Xylene	13.87	106	151565	9.7191	ug/L		94
74)	o-Xylene	14.38	106	75713	4.8490	ug/L		97
75)	Styrene	14.42	104	116404	4.8638	ug/L		93
76)	Bromoform	14.88	173	23715	4.3620	ug/L		97
77)	Isopropylbenzene	14.79	105	186666	5.0249	ug/L		96
79)	1,1,2,2-Tetrachloroethane	14.98	83	38487	4.6110	ug/L		98
81)	1,2,3-Trichloropropane	15.16	110	12005	4.5784	ug/L		79
82)	trans-1,4-Dichloro-2-Buten	15.20	53	10515	4.8358	ug/L	#	37
83)	n-Propylbenzene	15.25	91	226660	4.8682	ug/L		96
84)	Bromobenzene	15.36	156	50019	4.6378	ug/L		85
85)	1,3,5-Trimethylbenzene	15.43	105	155887	4.9313	ug/L		95
86)	2-Chlorotoluene	15.50	91	137375	4.7489	ug/L		93
87)	4-Chlorotoluene	15.54	91	140094	5.0663	ug/L		90
88)	a-Methylstyrene	15.80	118	78438	4.7611	ug/L		93
89)	tert-Butylbenzene	15.85	134	32287	4.4788	ug/L		94
90)	1,2,4-Trimethylbenzene	15.90	105	159058	4.9696	ug/L		94
91)	sec-Butylbenzene	16.11	105	191832	5.0594	ug/L		97
92)	p-Isopropyltoluene	16.25	119	156268	4.9612	ug/L		100
93)	1,3-Dichlorobenzene	16.43	146	92768	4.8557	ug/L		94
94)	1,4-Dichlorobenzene	16.54	146	95224	4.5882	ug/L		91
95)	n-Butylbenzene	16.74	91	145398	5.0565	ug/L		94
96)	1,2-Dichlorobenzene	17.01	146	88181	4.7512	ug/L		95
97)	1,2-Dibromo-3-Chloropropan	17.92	75	6384	4.1479	ug/L		78
98)	1,2,4-Trichlorobenzene	18.97	180	61148	4.9237	ug/L		98
99)	Hexachlorobutadiene	19.12	225	21904	4.5698	ug/L		94
100)	Naphthalene	19.31	128	124748	5.2099	ug/L		100
101)	1,2,3-Trichlorobenzene	19.60	180	56354	4.9866	ug/L		97

(#) = qualifier out of range (m) = manual integration
11M91905.D 8260BWT.M Wed May 15 19:14:02 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91905.D Vial: 6
Acq On : 15 May 2013 18:52 Operator: FJB
Sample : WG430143-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 19:14 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration

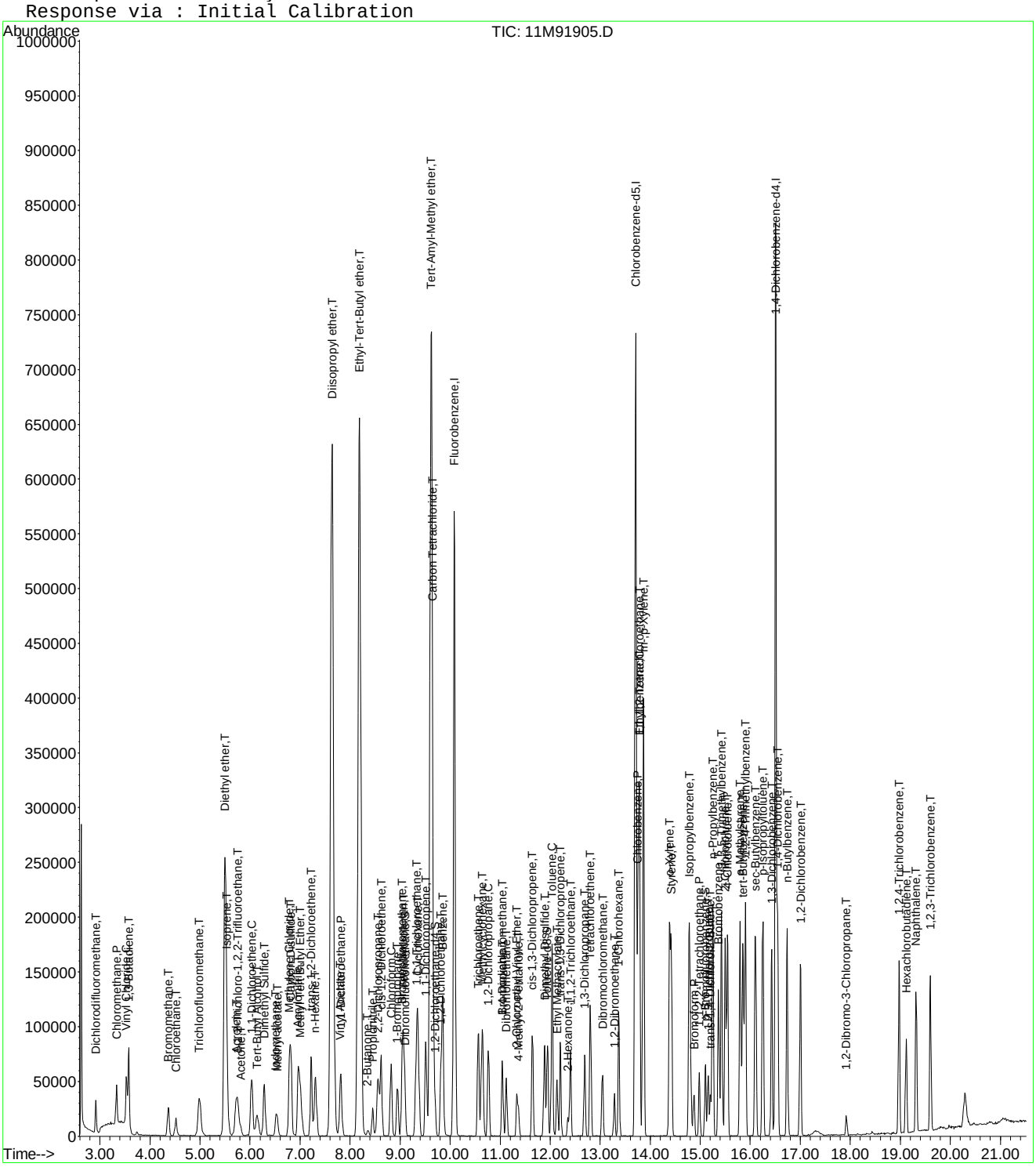

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91906.D Vial: 7
Acq On : 15 May 2013 19:23 Operator: FJB
Sample : WG430143-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 19:45:02 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.08	96	731621	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.71	117	522960	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.51	152	302758	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.10	111	89414	10.6785 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 42.72%#		
43) 1,2-Dichloroethane-d4	9.70	65	92004	10.1897 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.76%#		
58) Toluene-d8	11.94	98	320929	10.8342 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.32%#		
80) p-Bromofluorobenzene	15.11	95	119982	9.7116 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 38.84%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.92	85	157516	25.7654 ug/L	96
3) Chloromethane	3.33	50	176725	21.7690 ug/L	97
4) Vinyl Chloride	3.53	62	183305	18.7497 ug/L	99
5) 1,3-Butadiene	3.58	54	147049	39.5996 ug/L	98
6) Bromomethane	4.36	94	98183	19.7095 ug/L	98
7) Chloroethane	4.52	64	99452	21.5733 ug/L	97
8) Trichlorofluoromethane	4.98	101	264172	19.4000 ug/L	99
9) Diethyl ether	5.50	59	391506	67.6682 ug/L	97
10) Isoprene	5.53	67	253947	22.4267 ug/L	97
11) Acrolein	5.72	56	9574	26.7415 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	5.74	101	150075	19.4354 ug/L	99
13) Acetone	5.81	43	36392	16.6300 ug/L	94
14) 1,1-Dichloroethene	6.03	61	227807	19.1393 ug/L	96
15) Tert-Butyl Alcohol	6.14	59	79812	145.2000 ug/L	92
16) Dimethyl Sulfide	6.29	62	181711	21.8008 ug/L	90
17) Iodomethane	6.52	142	181920	24.2003 ug/L	98
18) Methyl acetate	6.55	43	69038	17.2864 ug/L	96
19) Methylene Chloride	6.78	84	171053	17.4106 ug/L	86
20) Carbon Disulfide	6.81	76	577289	23.8268 ug/L	98
21) Acrylonitrile	6.96	53	71906	35.0595 ug/L	99
22) Methyl Tert Butyl Ether	7.00	73	421112	18.5646 ug/L	99
23) trans-1,2-Dichloroethene	7.23	96	168498	19.0065 ug/L	98
24) n-Hexane	7.31	57	213623	22.3393 ug/L	99
25) Diisopropyl ether	7.64	45	1661097	77.8111 ug/L	94
26) Vinyl Acetate	7.80	43	188248	24.8989 ug/L	98
27) 1,1-Dichloroethane	7.82	63	273170	19.0979 ug/L	99
28) Ethyl-Tert-Butyl ether	8.19	59	1818028	77.5060 ug/L	98
29) 2-Butanone	8.35	43	37822	17.6783 ug/L	91
30) Propionitrile	8.45	54	53734	73.2777 ug/L	99
31) 2,2-Dichloropropane	8.56	77	256997	18.6415 ug/L	99
32) cis-1,2-Dichloroethene	8.62	96	185558	18.9044 ug/L	97
33) Chloroform	8.82	83	299369	18.8225 ug/L	95
34) 1-Bromopropane	8.95	122	38364	21.0543 ug/L	99
35) Bromochloromethane	9.04	130	109585	18.9435 ug/L	98
36) Tetrahydrofuran	9.07	42	101093	71.4157 ug/L	91
38) 1,1,1-Trichloroethane	9.33	97	275036	18.9032 ug/L	97
39) Cyclohexane	9.36	56	271887	21.7451 ug/L	98
40) 1,1-Dichloropropene	9.51	75	234837	19.4850 ug/L	98
41) Carbon Tetrachloride	9.65	117	246071	19.7603 ug/L	99
42) Tert-Amyl-Methyl ether	9.62	73	1758583	78.9253 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91906.D Vial: 7
Acq On : 15 May 2013 19:23 Operator: FJB
Sample : WG430143-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 19:45:02 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.81	62	206273	18.4454 ug/L		97
46)	Benzene	9.85	78	653293	19.5834 ug/L		100
47)	Trichloroethene	10.57	130	166113	18.3932 ug/L		93
48)	Methylcyclohexane	10.64	83	297470	21.9318 ug/L		96
49)	1,2-Dichloropropane	10.76	63	152531	18.7065 ug/L		99
50)	1,4-Dioxane	11.04	88	10197	144.3792 ug/L		94
51)	Bromodichloromethane	11.04	83	228520	18.9804 ug/L		97
52)	Dibromomethane	11.13	93	97091	18.3179 ug/L		99
53)	2-Chloroethyl Vinyl Ether	11.33	63	77314	19.0226 ug/L		99
54)	4-Methyl-2-Pentanone	11.36	58	37793	17.8880 ug/L		98
55)	cis-1,3-Dichloropropene	11.64	75	269829	20.1818 ug/L		98
56)	Dimethyl Disulfide	11.89	79	165071	21.9027 ug/L		96
59)	Toluene	12.04	91	691497	19.3782 ug/L		97
60)	Ethyl Methacrylate	12.14	69	178323	20.6364 ug/L		86
62)	trans-1,3-Dichloropropene	12.20	75	242338	19.9238 ug/L		99
63)	1,1,2-Trichloroethane	12.41	97	133740	18.6297 ug/L		98
64)	2-Hexanone	12.36	43	60002	18.3903 ug/L		90
65)	1,3-Dichloropropane	12.69	76	227265	18.4915 ug/L		87
66)	Tetrachloroethene	12.80	164	144138	18.8201 ug/L		96
67)	Dibromochloromethane	13.05	129	165315	19.3693 ug/L		99
68)	1,2-Dibromoethane	13.29	107	133955	18.7077 ug/L		98
69)	1-Chlorohexane	13.37	91	243633	21.8051 ug/L		98
70)	Chlorobenzene	13.75	112	468142	19.5508 ug/L		99
71)	1,1,1,2-Tetrachloroethane	13.78	131	169105	18.8141 ug/L		100
72)	Ethylbenzene	13.78	106	258140	18.8593 ug/L		100
73)	m-,p-Xylene	13.87	106	607657	38.4538 ug/L		98
74)	o-Xylene	14.38	106	303059	19.1540 ug/L		98
75)	Styrene	14.42	104	493480	20.3482 ug/L		94
76)	Bromoform	14.88	173	107114	19.4429 ug/L		98
77)	Isopropylbenzene	14.79	105	739517	19.6452 ug/L		98
79)	1,1,2,2-Tetrachloroethane	14.98	83	160693	18.6084 ug/L		98
81)	1,2,3-Trichloropropane	15.16	110	47902	17.6578 ug/L		83
82)	trans-1,4-Dichloro-2-Buten	15.20	53	46148	20.5134 ug/L	#	1
83)	n-Propylbenzene	15.25	91	892226	18.5222 ug/L		97
84)	Bromobenzene	15.36	156	202013	18.1046 ug/L		87
85)	1,3,5-Trimethylbenzene	15.43	105	628200	19.2077 ug/L		95
86)	2-Chlorotoluene	15.50	91	545669	18.2324 ug/L		93
87)	4-Chlorotoluene	15.54	91	552896	19.3259 ug/L		93
88)	a-Methylstyrene	15.80	118	367625	21.5682 ug/L		95
89)	tert-Butylbenzene	15.85	134	129310	17.3377 ug/L		94
90)	1,2,4-Trimethylbenzene	15.90	105	644788	19.4720 ug/L		97
91)	sec-Butylbenzene	16.10	105	756161	19.2760 ug/L		99
92)	p-Isopropyltoluene	16.25	119	625585	19.1970 ug/L		99
93)	1,3-Dichlorobenzene	16.43	146	376930	19.0698 ug/L		94
94)	1,4-Dichlorobenzene	16.54	146	382877	17.8312 ug/L		94
95)	n-Butylbenzene	16.74	91	572310	19.2375 ug/L		97
96)	1,2-Dichlorobenzene	17.01	146	359639	18.7293 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	17.92	75	28222	17.7235 ug/L		90
98)	1,2,4-Trichlorobenzene	18.97	180	253338	19.7169 ug/L		99
99)	Hexachlorobutadiene	19.12	225	89458	18.0394 ug/L		95
100)	Naphthalene	19.31	128	536411	21.6533 ug/L		99
101)	1,2,3-Trichlorobenzene	19.60	180	231552	19.8041 ug/L		100

(#) = qualifier out of range (m) = manual integration
11M91906.D 8260BWT.M Wed May 15 19:45:02 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91906.D Vial: 7
Acq On : 15 May 2013 19:23 Operator: FJB
Sample : WG430143-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 19:45 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration

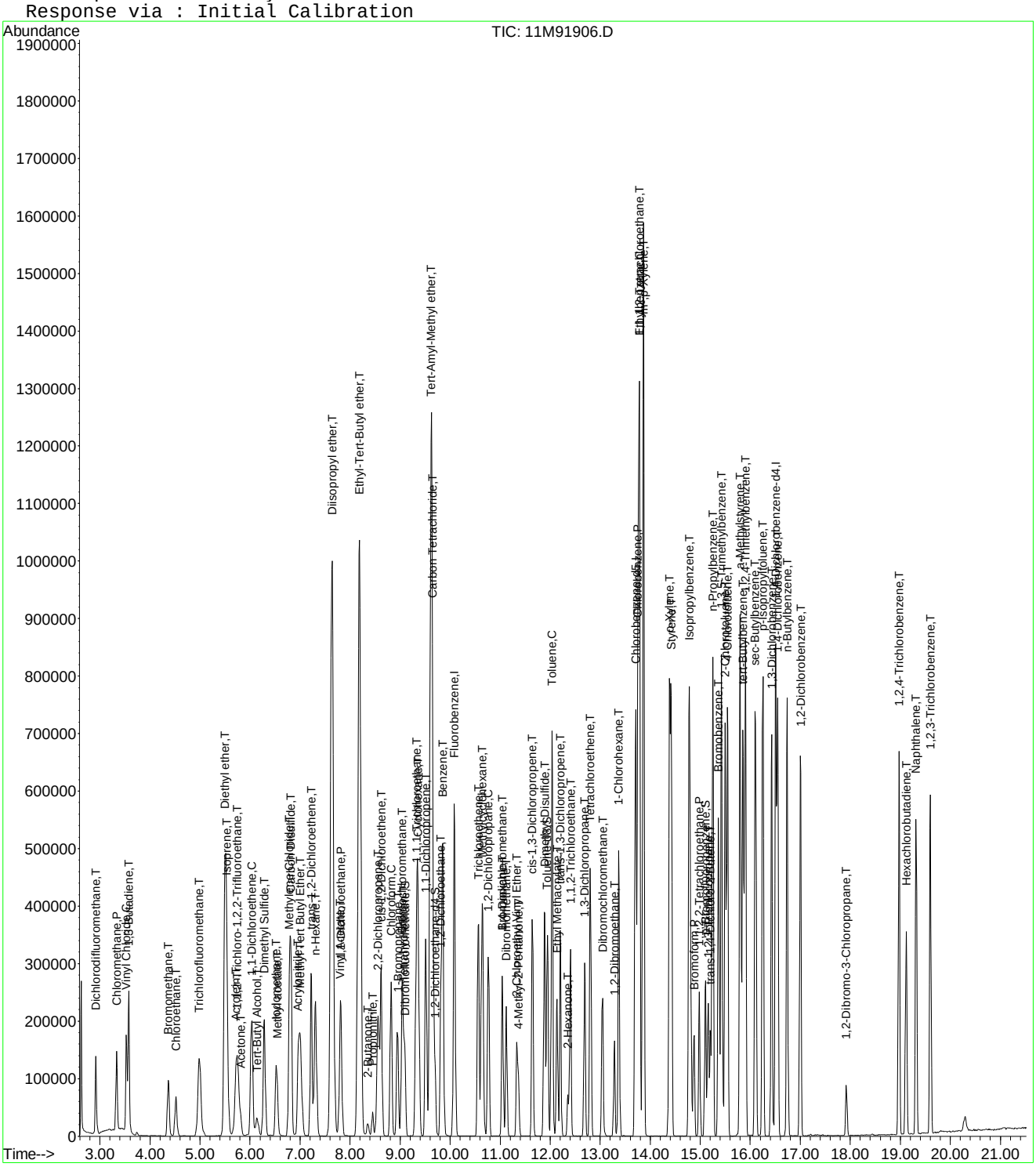

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91907.D Vial: 8
Acq On : 15 May 2013 19:54 Operator: FJB
Sample : WG430143-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 20:16:23 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.08	96	740966	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.71	117	532754	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.51	152	309664	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.10	111	223186	26.3183 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.28%		
43) 1,2-Dichloroethane-d4	9.70	65	223136	24.4012 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.60%		
58) Toluene-d8	11.94	98	780342	25.8591 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.44%		
80) p-Bromofluorobenzene	15.11	95	303732	24.0364 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.16%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.92	85	430788	69.5768 ug/L	95
3) Chloromethane	3.33	50	430857	52.4036 ug/L	98
4) Vinyl Chloride	3.53	62	473870	47.8593 ug/L	100
5) 1,3-Butadiene	3.57	54	245056	65.1601 ug/L	98
6) Bromomethane	4.36	94	252180	49.9847 ug/L	99
7) Chloroethane	4.52	64	267100	57.2091 ug/L	96
8) Trichlorofluoromethane	4.98	101	712937	51.6957 ug/L	100
9) Diethyl ether	5.50	59	494009	84.3081 ug/L	97
10) Isoprene	5.53	67	655890	57.1928 ug/L	96
11) Acrolein	5.72	56	12230	33.7293 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.74	101	406289	51.9527 ug/L	99
13) Acetone	5.81	43	95481	43.0816 ug/L	96
14) 1,1-Dichloroethene	6.03	61	620987	51.5146 ug/L	96
15) Tert-Butyl Alcohol	6.14	59	101190	181.7707 ug/L	92
16) Dimethyl Sulfide	6.29	62	453793	53.7573 ug/L	91
17) Iodomethane	6.52	142	569978	74.8664 ug/L	98
18) Methyl acetate	6.54	43	173379	42.8648 ug/L	93
19) Methylene Chloride	6.78	84	456326	45.8612 ug/L	83
20) Carbon Disulfide	6.81	76	1447229	58.9790 ug/L	97
21) Acrylonitrile	6.96	53	95287	45.8735 ug/L	100
22) Methyl Tert Butyl Ether	7.00	73	1077246	46.8910 ug/L	100
23) trans-1,2-Dichloroethene	7.23	96	454620	50.6342 ug/L	97
24) n-Hexane	7.31	57	528189	54.5380 ug/L	99
25) Diisopropyl ether	7.64	45	2090265	96.6798 ug/L	94
26) Vinyl Acetate	7.80	43	500933	65.4209 ug/L	96
27) 1,1-Dichloroethane	7.82	63	725169	50.0587 ug/L	98
28) Ethyl-Tert-Butyl ether	8.19	59	2291005	96.4382 ug/L	98
29) 2-Butanone	8.35	43	99762	46.0414 ug/L	90
30) Propionitrile	8.45	54	69323	93.3443 ug/L	95
31) 2,2-Dichloropropane	8.56	77	689951	49.4151 ug/L	100
32) cis-1,2-Dichloroethene	8.62	96	487913	49.0811 ug/L	99
33) Chloroform	8.82	83	791894	49.1615 ug/L	95
34) 1-Bromopropane	8.95	122	97503	52.8352 ug/L	99
35) Bromochloromethane	9.04	130	287009	48.9884 ug/L	98
36) Tetrahydrofuran	9.07	42	127591	88.9981 ug/L	92
38) 1,1,1-Trichloroethane	9.33	97	743787	50.4757 ug/L	95
39) Cyclohexane	9.36	56	688339	54.3581 ug/L	98
40) 1,1-Dichloropropene	9.51	75	622845	51.0273 ug/L	99
41) Carbon Tetrachloride	9.65	117	670062	53.1295 ug/L	99
42) Tert-Amyl-Methyl ether	9.63	73	2198834	97.4392 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91907.D Vial: 8
Acq On : 15 May 2013 19:54 Operator: FJB
Sample : WG430143-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 20:16:23 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	9.81	62	539584	47.6423	ug/L		97
46)	Benzene	9.85	78	1677304	49.6455	ug/L		98
47)	Trichloroethene	10.57	130	445836	48.7434	ug/L		93
48)	Methylcyclohexane	10.64	83	737244	53.6698	ug/L		97
49)	1,2-Dichloropropane	10.76	63	401873	48.6644	ug/L		100
50)	1,4-Dioxane	11.04	88	12922	180.6550	ug/L		96
51)	Bromodichloromethane	11.04	83	614219	50.3725	ug/L		97
52)	Dibromomethane	11.13	93	255548	47.6054	ug/L		98
53)	2-Chloroethyl Vinyl Ether	11.33	63	209542	50.9061	ug/L		99
54)	4-Methyl-2-Pentanone	11.36	58	103441	48.3428	ug/L		99
55)	cis-1,3-Dichloropropene	11.64	75	708079	52.2927	ug/L		98
56)	Dimethyl Disulfide	11.89	79	429180	56.2282	ug/L		95
59)	Toluene	12.04	91	1778657	48.9280	ug/L		95
60)	Ethyl Methacrylate	12.14	69	460777	52.3431	ug/L		86
62)	trans-1,3-Dichloropropene	12.20	75	637946	51.4844	ug/L		100
63)	1,1,2-Trichloroethane	12.41	97	342997	46.9003	ug/L		98
64)	2-Hexanone	12.36	43	156393	47.0525	ug/L		89
65)	1,3-Dichloropropane	12.69	76	584602	46.6918	ug/L		87
66)	Tetrachloroethene	12.80	164	389597	49.9345	ug/L		96
67)	Dibromochloromethane	13.05	129	445472	51.2345	ug/L		99
68)	1,2-Dibromoethane	13.29	107	347837	47.6847	ug/L		100
69)	1-Chlorohexane	13.37	91	611932	53.7609	ug/L		98
70)	Chlorobenzene	13.75	112	1223201	50.1448	ug/L		98
71)	1,1,1,2-Tetrachloroethane	13.78	131	461285	50.3777	ug/L		99
72)	Ethylbenzene	13.78	106	698146	50.0678	ug/L		93
73)	m-,p-Xylene	13.87	106	1602414	99.5398	ug/L		92
74)	o-Xylene	14.38	106	810328	50.2731	ug/L		98
75)	Styrene	14.42	104	1334069	53.9980	ug/L		93
76)	Bromoform	14.88	173	296708	52.8670	ug/L		99
77)	Isopropylbenzene	14.79	105	1916831	49.9844	ug/L		99
79)	1,1,2,2-Tetrachloroethane	14.98	83	418749	47.4102	ug/L		96
81)	1,2,3-Trichloropropane	15.16	110	124125	44.7350	ug/L		84
82)	trans-1,4-Dichloro-2-Buten	15.20	53	120730	52.4694	ug/L	#	1
83)	n-Propylbenzene	15.25	91	2259094	45.8520	ug/L		99
84)	Bromobenzene	15.36	156	537572	47.1032	ug/L		88
85)	1,3,5-Trimethylbenzene	15.43	105	1635928	48.9042	ug/L		98
86)	2-Chlorotoluene	15.50	91	1413611	46.1795	ug/L		94
87)	4-Chlorotoluene	15.54	91	1433615	48.9929	ug/L		95
88)	a-Methylstyrene	15.80	118	944879	54.1989	ug/L		92
89)	tert-Butylbenzene	15.85	134	356498	46.7326	ug/L		92
90)	1,2,4-Trimethylbenzene	15.90	105	1669733	49.2999	ug/L		100
91)	sec-Butylbenzene	16.11	105	1957514	48.7880	ug/L		98
92)	p-Isopropyltoluene	16.25	119	1655051	49.6551	ug/L		96
93)	1,3-Dichlorobenzene	16.43	146	999833	49.4558	ug/L		94
94)	1,4-Dichlorobenzene	16.54	146	1006539	45.8308	ug/L		94
95)	n-Butylbenzene	16.74	91	1509956	49.6233	ug/L		98
96)	1,2-Dichlorobenzene	17.01	146	944158	48.0733	ug/L		94
97)	1,2-Dibromo-3-Chloropropan	17.92	75	74430	45.6998	ug/L		87
98)	1,2,4-Trichlorobenzene	18.97	180	670068	50.9873	ug/L		99
99)	Hexachlorobutadiene	19.12	225	245008	48.3046	ug/L		96
100)	Naphthalene	19.31	128	1346045	53.1241	ug/L		98
101)	1,2,3-Trichlorobenzene	19.60	180	607088	50.7649	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91907.D Vial: 8
Acq On : 15 May 2013 19:54 Operator: FJB
Sample : WG430143-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 20:16 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration

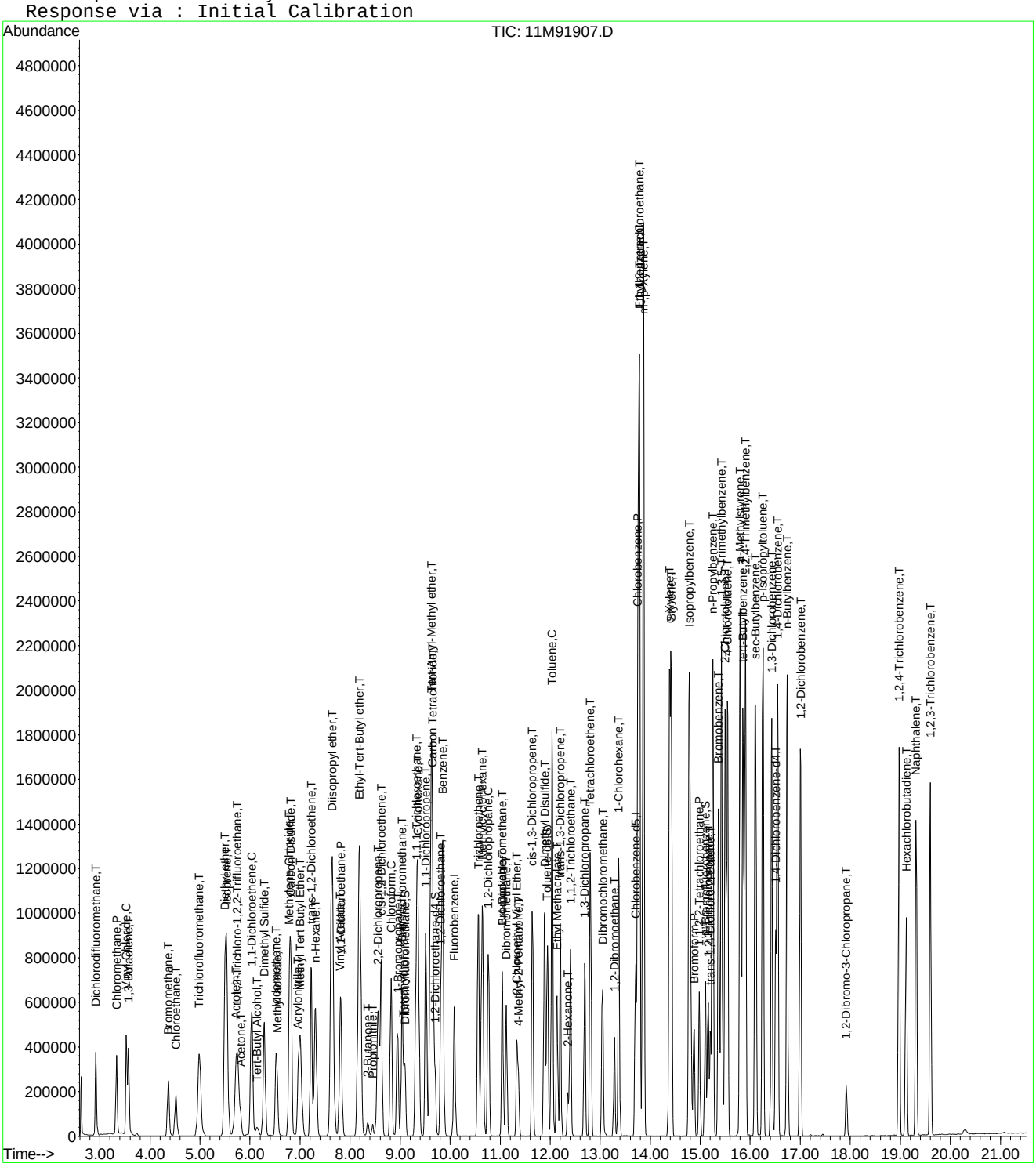

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91908.D Vial: 9
Acq On : 15 May 2013 20:26 Operator: FJB
Sample : WG430143-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 20:47:45 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.08	96	748317	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.71	117	540293	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.51	152	314329	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.10	111	468518	54.7053 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 218.84%#		
43) 1,2-Dichloroethane-d4	9.70	65	466384	50.5008 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 202.00%#		
58) Toluene-d8	11.94	98	1613456	52.7208 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 210.88%#		
80) p-Bromofluorobenzene	15.10	95	638661	49.7915 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 199.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.92	85	853264	136.4573 ug/L	96
3) Chloromethane	3.33	50	832896	100.3070 ug/L	95
4) Vinyl Chloride	3.53	62	889160	88.9200 ug/L	99
5) 1,3-Butadiene	3.57	54	362725	95.5007 ug/L	97
6) Bromomethane	4.36	94	524992	103.0367 ug/L	100
7) Chloroethane	4.52	64	546875	115.9823 ug/L	97
8) Trichlorofluoromethane	4.98	101	1436174	103.1153 ug/L	99
9) Diethyl ether	5.49	59	1055178	178.3088 ug/L	96
10) Isoprene	5.53	67	1357029	117.1688 ug/L	97
11) Acrolein	5.72	56	28616	78.1452 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.74	101	831678	105.3031 ug/L	99
13) Acetone	5.81	43	205138	91.6502 ug/L	94
14) 1,1-Dichloroethene	6.03	61	1251535	102.8024 ug/L	95
15) Tert-Butyl Alcohol	6.14	59	223389	397.3385 ug/L	93
16) Dimethyl Sulfide	6.29	62	935959	109.7865 ug/L	90
17) Iodomethane	6.52	142	1160518	150.9362 ug/L	99
18) Methyl acetate	6.55	43	381793	93.4641 ug/L	93
19) Methylene Chloride	6.78	84	936340	93.1787 ug/L	82
20) Carbon Disulfide	6.81	76	2812979	113.5114 ug/L	96
21) Acrylonitrile	6.96	53	209250	99.7484 ug/L	98
22) Methyl Tert Butyl Ether	7.00	73	2233430	96.2631 ug/L	99
23) trans-1,2-Dichloroethene	7.22	96	923482	101.8443 ug/L	96
24) n-Hexane	7.31	57	1076599	110.0718 ug/L	99
25) Diisopropyl ether	7.64	45	4134183	189.3376 ug/L	94
26) Vinyl Acetate	7.80	43	1105696	142.9833 ug/L	96
27) 1,1-Dichloroethane	7.82	63	1468712	100.3898 ug/L	97
28) Ethyl-Tert-Butyl ether	8.19	59	4520037	188.3985 ug/L	94
29) 2-Butanone	8.35	43	220950	100.9694 ug/L	90
30) Propionitrile	8.45	54	150759	201.0048 ug/L	98
31) 2,2-Dichloropropane	8.56	77	1415369	100.3746 ug/L	98
32) cis-1,2-Dichloroethene	8.62	96	999888	99.5946 ug/L	98
33) Chloroform	8.82	83	1590432	97.7655 ug/L	96
34) 1-Bromopropane	8.95	122	203636	109.2629 ug/L	99
35) Bromochloromethane	9.04	130	600252	101.4481 ug/L	99
36) Tetrahydrofuran	9.07	42	282731	195.2750 ug/L	91
38) 1,1,1-Trichloroethane	9.33	97	1512415	101.6289 ug/L	96
39) Cyclohexane	9.36	56	1392569	108.8908 ug/L	97
40) 1,1-Dichloropropene	9.51	75	1252782	101.6274 ug/L	100
41) Carbon Tetrachloride	9.65	117	1373583	107.8421 ug/L	99
42) Tert-Amyl-Methyl ether	9.63	73	4359901	191.3068 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91908.D Vial: 9
Acq On : 15 May 2013 20:26 Operator: FJB
Sample : WG430143-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 20:47:45 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	9.81	62	1109919	97.0370	ug/L		97
46)	Benzene	9.85	78	3184462	93.3291	ug/L		95
47)	Trichloroethene	10.57	130	910142	98.5287	ug/L		94
48)	Methylcyclohexane	10.64	83	1510216	108.8606	ug/L		97
49)	1,2-Dichloropropane	10.76	63	830327	99.5600	ug/L		100
50)	1,4-Dioxane	11.03	88	29122	403.1382	ug/L		100
51)	Bromodichloromethane	11.04	83	1278351	103.8085	ug/L		97
52)	Dibromomethane	11.13	93	535391	98.7570	ug/L		98
53)	2-Chloroethyl Vinyl Ether	11.33	63	440377	105.9342	ug/L		100
54)	4-Methyl-2-Pentanone	11.36	58	226515	104.8210	ug/L		98
55)	cis-1,3-Dichloropropene	11.64	75	1449615	106.0046	ug/L		96
56)	Dimethyl Disulfide	11.89	79	904293	117.3103	ug/L		93
59)	Toluene	12.04	91	3313076	89.8656	ug/L		90
60)	Ethyl Methacrylate	12.14	69	985842	110.4265	ug/L		86
62)	trans-1,3-Dichloropropene	12.20	75	1328853	105.7465	ug/L		98
63)	1,1,2-Trichloroethane	12.41	97	743868	100.2948	ug/L		98
64)	2-Hexanone	12.36	43	342852	101.7113	ug/L		89
65)	1,3-Dichloropropane	12.69	76	1234235	97.2022	ug/L		87
66)	Tetrachloroethene	12.80	164	801600	101.3072	ug/L		97
67)	Dibromochloromethane	13.05	129	960562	108.9344	ug/L		99
68)	1,2-Dibromoethane	13.29	107	752873	101.7706	ug/L		99
69)	1-Chlorohexane	13.37	91	1245709	107.9139	ug/L		99
70)	Chlorobenzene	13.75	112	2437219	98.5191	ug/L		93
71)	1,1,1,2-Tetrachloroethane	13.78	131	991976	106.8238	ug/L		99
72)	Ethylbenzene	13.78	106	1464945	103.5931	ug/L		75
73)	m-,p-Xylene	13.87	106	3080267	188.6722	ug/L		74
74)	o-Xylene	14.38	106	1671118	102.2302	ug/L		89
75)	Styrene	14.42	104	2646295	105.6172	ug/L		88
76)	Bromoform	14.88	173	661357	116.1954	ug/L		99
77)	Isopropylbenzene	14.79	105	3565490	91.6785	ug/L		93
79)	1,1,2,2-Tetrachloroethane	14.98	83	900141	100.4002	ug/L		98
81)	1,2,3-Trichloropropane	15.16	110	271040	96.2337	ug/L		82
82)	trans-1,4-Dichloro-2-Buten	15.20	53	260920	111.7131	ug/L	#	1
83)	n-Propylbenzene	15.25	91	4003344	80.0484	ug/L		91
84)	Bromobenzene	15.36	156	1120493	96.7229	ug/L		90
85)	1,3,5-Trimethylbenzene	15.43	105	3119237	91.8622	ug/L		97
86)	2-Chlorotoluene	15.50	91	2721131	87.5739	ug/L		99
87)	4-Chlorotoluene	15.54	91	2723358	91.6878	ug/L		100
88)	a-Methylstyrene	15.80	118	1898892	107.3052	ug/L		89
89)	tert-Butylbenzene	15.86	134	751947	97.1084	ug/L		88
90)	1,2,4-Trimethylbenzene	15.90	105	3147429	91.5506	ug/L		93
91)	sec-Butylbenzene	16.11	105	3619909	88.8816	ug/L		92
92)	p-Isopropyltoluene	16.25	119	3134623	92.6497	ug/L		91
93)	1,3-Dichlorobenzene	16.43	146	1993061	97.1219	ug/L		90
94)	1,4-Dichlorobenzene	16.54	146	2010239	90.1738	ug/L		90
95)	n-Butylbenzene	16.74	91	2866054	92.7923	ug/L		96
96)	1,2-Dichlorobenzene	17.01	146	1905879	95.6007	ug/L		90
97)	1,2-Dibromo-3-Chloropropan	17.92	75	164777	99.6710	ug/L		87
98)	1,2,4-Trichlorobenzene	18.97	180	1367610	102.5207	ug/L		97
99)	Hexachlorobutadiene	19.12	225	509174	98.8964	ug/L		95
100)	Naphthalene	19.31	128	2606393	101.3393	ug/L	#	95
101)	1,2,3-Trichlorobenzene	19.60	180	1236693	101.8780	ug/L		97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91908.D Vial: 9
Acq On : 15 May 2013 20:26 Operator: FJB
Sample : WG430143-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 20:47 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration

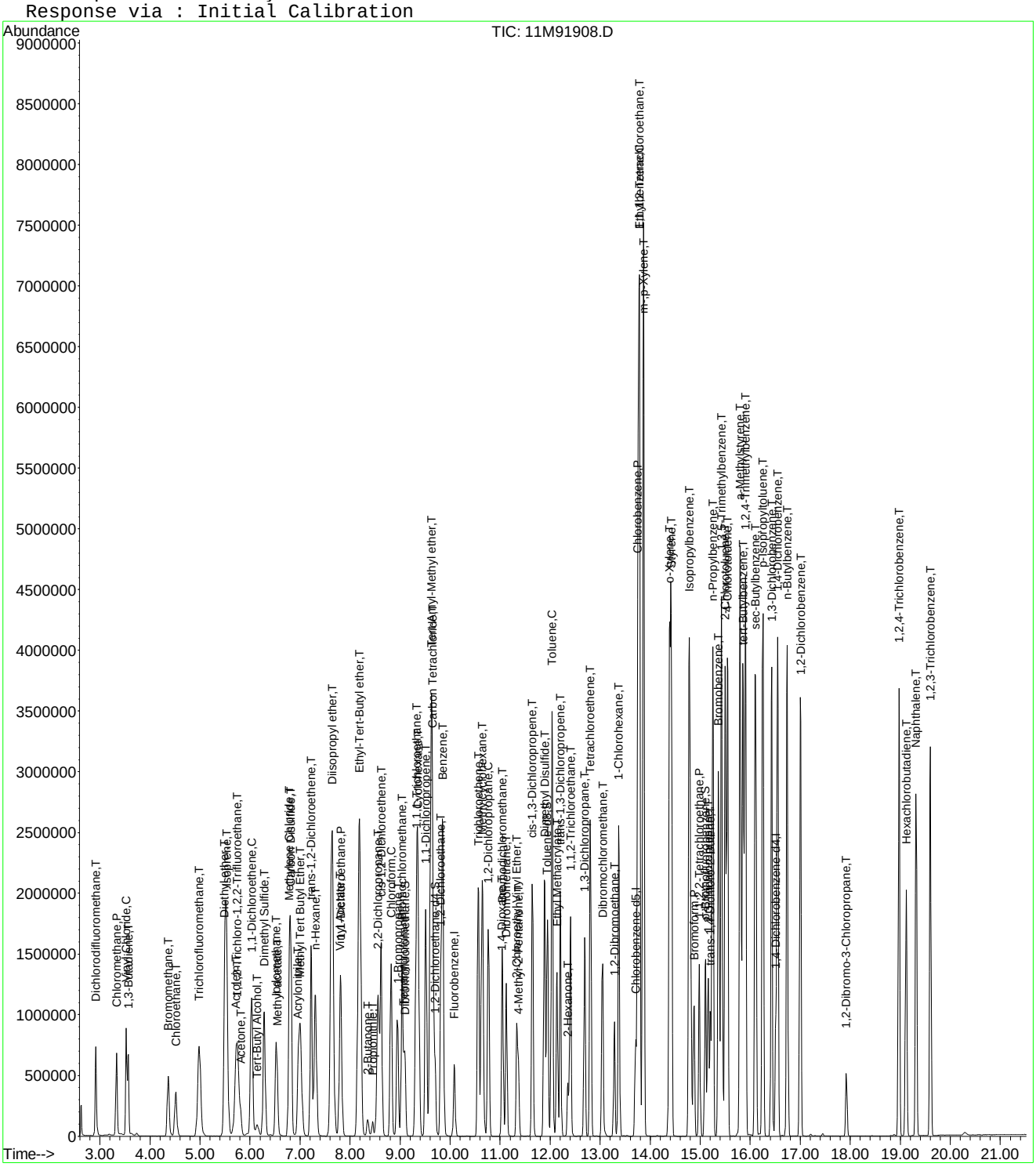

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91909.D Vial: 10
Acq On : 15 May 2013 20:57 Operator: FJB
Sample : WG430143-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 21:19:06 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.08	96	732502	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.71	117	537280	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.51	152	301531	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.10	111	919116	109.6353 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 438.56%#		
43) 1,2-Dichloroethane-d4	9.70	65	910481	100.7170 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 402.88%#		
58) Toluene-d8	11.94	98	2938704	96.5628 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 386.24%#		
80) p-Bromofluorobenzene	15.11	95	1241669	100.9122 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 403.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.92	85	1632143	266.6542 ug/L	97
3) Chloromethane	3.33	50	1628635	200.3738 ug/L	94
4) Vinyl Chloride	3.53	62	1561200	159.4979 ug/L	97
5) 1,3-Butadiene	3.56	54	676633	181.9949 ug/L	96
6) Bromomethane	4.36	94	1135692	227.7071 ug/L	100
7) Chloroethane	4.52	64	1081268	234.2685 ug/L	96
8) Trichlorofluoromethane	4.98	101	2758189	202.3099 ug/L	98
9) Diethyl ether	5.50	59	12352	2.1324 ug/L	82
10) Isoprene	5.52	67	2600384	229.3703 ug/L	98
11) Acrolein	5.72	56	2151	6.0008 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	5.74	101	1639142	212.0212 ug/L	98
13) Acetone	5.81	43	417318	190.4719 ug/L	92
14) 1,1-Dichloroethene	6.03	61	2385652	200.1908 ug/L	92
15) Tert-Butyl Alcohol	6.14	59	6724	12.2181 ug/L #	68
16) Dimethyl Sulfide	6.28	62	1835921	220.0000 ug/L	90
17) Iodomethane	6.52	142	2217390	294.6188 ug/L	100
18) Methyl acetate	6.55	43	762655	190.7313 ug/L	91
19) Methylene Chloride	6.78	84	1826477	185.6838 ug/L	80
20) Carbon Disulfide	6.81	76	4807650	198.1904 ug/L	91
21) Acrylonitrile	6.99	53	39269	19.1235 ug/L #	36
22) Methyl Tert Butyl Ether	7.00	73	4190990	184.5359 ug/L	97
23) trans-1,2-Dichloroethene	7.22	96	1798969	202.6789 ug/L	94
24) n-Hexane	7.30	57	2100939	219.4383 ug/L	99
25) Diisopropyl ether	7.64	45	4498	0.2104 ug/L #	89
26) Vinyl Acetate	7.80	43	2081842	275.0262 ug/L	96
27) 1,1-Dichloroethane	7.82	63	2770011	193.4244 ug/L	95
28) Ethyl-Tert-Butyl ether	8.20	59	5044	0.2148 ug/L #	44
29) 2-Butanone	8.35	43	430905	201.1657 ug/L	89
30) Propionitrile	8.46	54	3112	4.2388 ug/L #	60
31) 2,2-Dichloropropane	8.56	77	2663244	192.9488 ug/L	97
32) cis-1,2-Dichloroethene	8.62	96	1924618	195.8420 ug/L	97
33) Chloroform	8.82	83	2942260	184.7687 ug/L	100
34) 1-Bromopropane	8.95	122	400323	219.4348 ug/L	100
35) Bromochloromethane	9.04	130	1175289	202.9233 ug/L	99
36) Tetrahydrofuran	9.07	42	4470	3.1540 ug/L	99
38) 1,1,1-Trichloroethane	9.33	97	2902277	199.2333 ug/L	98
39) Cyclohexane	9.36	56	2706723	216.2195 ug/L	97
40) 1,1-Dichloropropene	9.51	75	2368196	196.2591 ug/L	97
41) Carbon Tetrachloride	9.65	117	2546587	204.2532 ug/L	99
42) Tert-Amyl-Methyl ether	9.62	73	6954	0.3117 ug/L #	90

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91909.D Vial: 10
Acq On : 15 May 2013 20:57 Operator: FJB
Sample : WG430143-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 21:19:06 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.81	62	2086512	186.3561 ug/L		97
46)	Benzene	9.85	78	5259887	157.4832 ug/L		86
47)	Trichloroethene	10.57	130	1753202	193.8932 ug/L		94
48)	Methylcyclohexane	10.64	83	2863233	210.8459 ug/L		99
49)	1,2-Dichloropropane	10.76	63	1591302	194.9238 ug/L		97
50)	1,4-Dioxane	11.03	88	3505	49.5676 ug/L	#	31
51)	Bromodichloromethane	11.04	83	2377591	197.2408 ug/L		100
52)	Dibromomethane	11.13	93	1044763	196.8753 ug/L		98
53)	2-Chloroethyl Vinyl Ether	11.33	63	867446	213.1723 ug/L		99
54)	4-Methyl-2-Pentanone	11.36	58	457652	216.3533 ug/L		99
55)	cis-1,3-Dichloropropene	11.64	75	2636969	196.9943 ug/L		91
56)	Dimethyl Disulfide	11.89	79	1788067	236.9669 ug/L		86
59)	Toluene	12.04	91	5143069	140.2857 ug/L		79
60)	Ethyl Methacrylate	12.14	69	1897160	213.6971 ug/L		87
62)	trans-1,3-Dichloropropene	12.20	75	2401368	192.1659 ug/L		95
63)	1,1,2-Trichloroethane	12.41	97	1395763	189.2444 ug/L		98
64)	2-Hexanone	12.36	43	677362	202.0747 ug/L	#	22
65)	1,3-Dichloropropane	12.69	76	2247348	177.9824 ug/L		90
66)	Tetrachloroethene	12.80	164	1552414	197.2962 ug/L		98
67)	Dibromochloromethane	13.05	129	1802663	205.5810 ug/L		99
68)	1,2-Dibromoethane	13.29	107	1423163	193.4567 ug/L		100
69)	1-Chlorohexane	13.37	91	2356581	205.2918 ug/L		98
70)	Chlorobenzene	13.75	112	4029222	163.7856 ug/L		82
71)	1,1,1,2-Tetrachloroethane	13.78	131	1901852	205.9549 ug/L		99
72)	Ethylbenzene	13.78	106	2741406	194.9448 ug/L		48
73)	m-,p-Xylene	13.87	106	4761166	293.2659 ug/L		60
74)	o-Xylene	14.38	106	3028363	186.2982 ug/L		72
75)	Styrene	14.42	104	4292420	172.2771 ug/L		76
76)	Bromoform	14.88	173	1231165	217.5194 ug/L		99
77)	Isopropylbenzene	14.79	105	5347735	138.2760 ug/L	#	77
79)	1,1,2,2-Tetrachloroethane	14.98	83	1615594	187.8489 ug/L		99
81)	1,2,3-Trichloropropane	15.16	110	506246	187.3735 ug/L		83
82)	trans-1,4-Dichloro-2-Buten	15.20	53	510933	228.0412 ug/L	#	1
83)	n-Propylbenzene	15.25	91	5702234	118.8577 ug/L	#	73
84)	Bromobenzene	15.36	156	2056820	185.0840 ug/L		96
85)	1,3,5-Trimethylbenzene	15.43	105	4765465	146.3006 ug/L		85
86)	2-Chlorotoluene	15.55	91	3313136	111.1520 ug/L		81
87)	4-Chlorotoluene	15.55	91	3313136	116.2782 ug/L		83
88)	a-Methylstyrene	15.80	118	3338332	196.6539 ug/L		82
89)	tert-Butylbenzene	15.86	134	1423783	191.6751 ug/L		76
90)	1,2,4-Trimethylbenzene	15.90	105	4748041	143.9701 ug/L		78
91)	sec-Butylbenzene	16.11	105	5345887	136.8316 ug/L	#	78
92)	p-Isopropyltoluene	16.25	119	4727911	145.6735 ug/L	#	77
93)	1,3-Dichlorobenzene	16.43	146	3326909	169.0012 ug/L		81
94)	1,4-Dichlorobenzene	16.54	146	3320752	155.2823 ug/L		82
95)	n-Butylbenzene	16.74	91	4385301	148.0060 ug/L	#	86
96)	1,2-Dichlorobenzene	17.01	146	3217921	168.2649 ug/L		83
97)	1,2-Dibromo-3-Chloropropan	17.92	75	304694	192.1271 ug/L		88
98)	1,2,4-Trichlorobenzene	18.97	180	2408820	188.2375 ug/L		93
99)	Hexachlorobutadiene	19.12	225	947358	191.8143 ug/L		96
100)	Naphthalene	19.31	128	4017811	162.8471 ug/L	#	87
101)	1,2,3-Trichlorobenzene	19.60	180	2193647	188.3813 ug/L		93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91909.D Vial: 10
Acq On : 15 May 2013 20:57 Operator: FJB
Sample : WG430143-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 21:19 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration

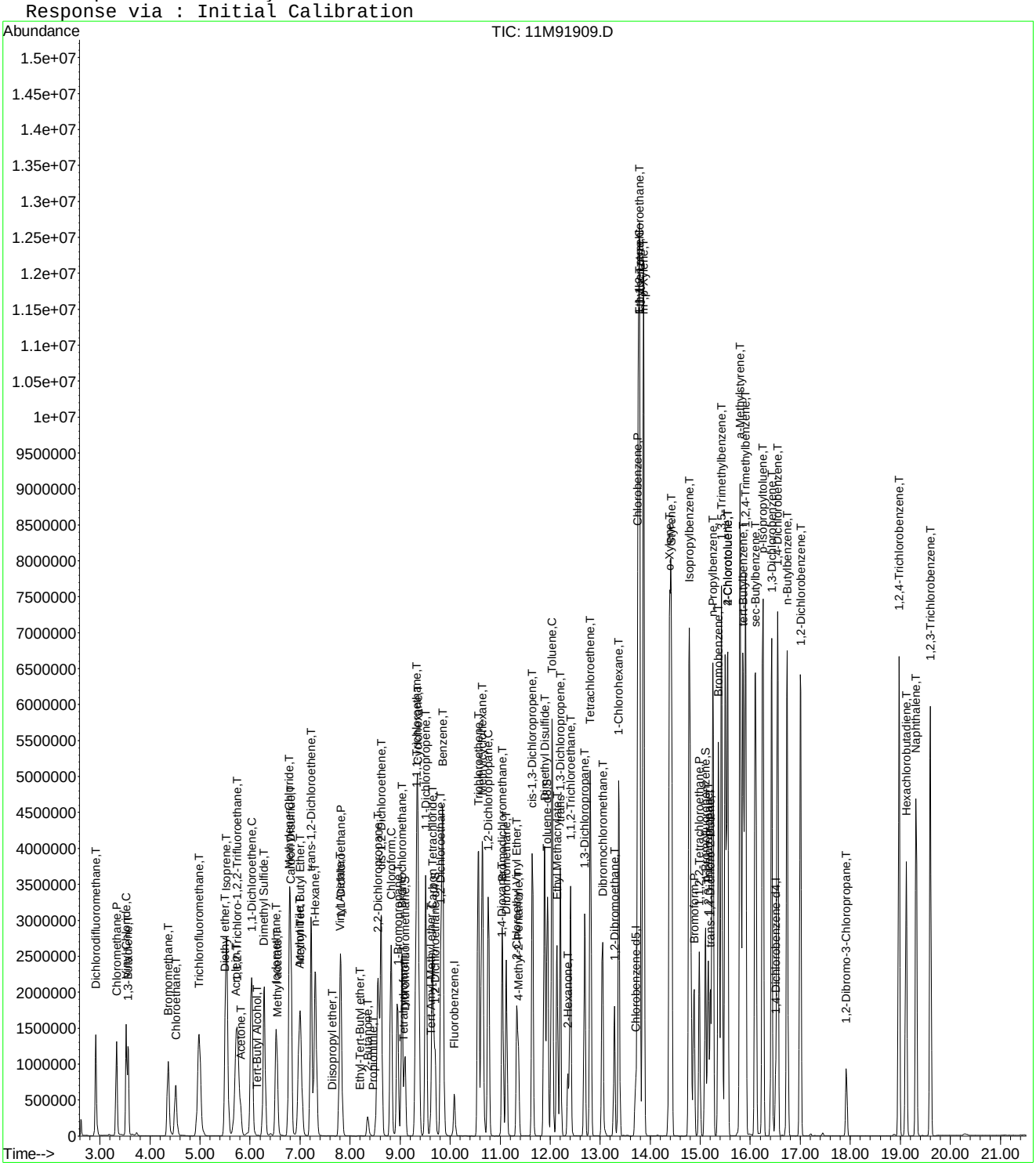

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91910.D Vial: 11
Acq On : 15 May 2013 21:28 Operator: FJB
Sample : WG430143-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 21:50:47 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.08	96	714694	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.71	117	533280	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.51	152	289901	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.10	111	1308299	159.9469 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 639.80%#		
43) 1,2-Dichloroethane-d4	9.70	65	1262610	143.1494 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 572.60%#		
58) Toluene-d8	11.94	98	3896983	129.0113 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 516.04%#		
80) p-Bromofluorobenzene	15.11	95	1761846	148.9319 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 595.72%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.92	85	2238592	374.8468 ug/L	97
3) Chloromethane	3.33	50	2345398	295.7483 ug/L	90
4) Vinyl Chloride	3.53	62	1874169	196.2429 ug/L	94
5) 1,3-Butadiene	3.56	54	844980	232.9384 ug/L	95
6) Bromomethane	4.36	94	1635437	336.0767 ug/L	99
7) Chloroethane	4.51	64	1550069	344.2075 ug/L	95
8) Trichlorofluoromethane	4.97	101	3872415	291.1143 ug/L	97
9) Diethyl ether	5.50	59	1493223	264.2026 ug/L	95
10) Isoprene	5.52	67	3736702	337.8134 ug/L	99
11) Acrolein	5.72	56	41595	118.9323 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.74	101	2354040	312.0794 ug/L	99
13) Acetone	5.81	43	549224	256.9225 ug/L	91
14) 1,1-Dichloroethene	6.03	61	3344388	287.6354 ug/L	91
15) Tert-Butyl Alcohol	6.15	59	276350	514.6640 ug/L	93
16) Dimethyl Sulfide	6.28	62	2577527	316.5634 ug/L	90
17) Iodomethane	6.52	142	3098292	421.9194 ug/L	98
18) Methyl acetate	6.55	43	1031352	264.3562 ug/L	91
19) Methylene Chloride	6.78	84	2589313	269.7945 ug/L	79
20) Carbon Disulfide	6.81	76	6011577	253.9960 ug/L #	85
21) Acrylonitrile	6.96	53	310078	154.7665 ug/L	91
22) Methyl Tert Butyl Ether	7.00	73	5637405	254.4089 ug/L	95
23) trans-1,2-Dichloroethene	7.22	96	2534947	292.7133 ug/L	92
24) n-Hexane	7.30	57	2906458	311.1370 ug/L	98
25) Diisopropyl ether	7.64	45	5577109	267.4371 ug/L	94
26) Vinyl Acetate	7.80	43	2815853	381.2633 ug/L	95
27) 1,1-Dichloroethane	7.82	63	3850974	275.6062 ug/L	92
28) Ethyl-Tert-Butyl ether	8.19	59	5980637	261.0048 ug/L	91
29) 2-Butanone	8.35	43	576246	275.7205 ug/L	89
30) Propionitrile	8.45	54	201474	281.2598 ug/L	99
31) 2,2-Dichloropropane	8.56	77	3708181	275.3472 ug/L	94
32) cis-1,2-Dichloroethene	8.62	96	2723110	283.9979 ug/L	96
33) Chloroform	8.82	83	4036575	259.8060 ug/L	98
34) 1-Bromopropane	8.95	122	581580	326.7331 ug/L	100
35) Bromochloromethane	9.04	130	1668811	295.3134 ug/L	99
36) Tetrahydrofuran	9.07	42	369334	267.0902 ug/L	89
38) 1,1,1-Trichloroethane	9.33	97	4052242	285.1065 ug/L	98
39) Cyclohexane	9.36	56	3774236	309.0074 ug/L	96
40) 1,1-Dichloropropene	9.51	75	3274145	278.0986 ug/L	94
41) Carbon Tetrachloride	9.65	117	3609832	296.7468 ug/L	98
42) Tert-Amyl-Methyl ether	9.63	73	5659136	259.9976 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91910.D Vial: 11
Acq On : 15 May 2013 21:28 Operator: FJB
Sample : WG430143-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 21:50:47 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.81	62	2831126	259.1616 ug/L		97
46)	Benzene	9.85	78	6507969	199.7064 ug/L	#	76
47)	Trichloroethene	10.57	130	2480388	281.1505 ug/L		93
48)	Methylcyclohexane	10.64	83	3953142	298.3593 ug/L		99
49)	1,2-Dichloropropane	10.76	63	2278658	286.0752 ug/L		96
50)	1,4-Dioxane	11.04	88	39895	578.2515 ug/L		95
51)	Bromodichloromethane	11.04	83	3295147	280.1709 ug/L		97
52)	Dibromomethane	11.13	93	1459541	281.8892 ug/L		98
53)	2-Chloroethyl Vinyl Ether	11.33	63	1136561	286.2659 ug/L		98
54)	4-Methyl-2-Pentanone	11.36	58	603182	292.2572 ug/L		98
55)	cis-1,3-Dichloropropene	11.64	75	3543247	271.2931 ug/L	#	86
56)	Dimethyl Disulfide	11.89	79	2481306	337.0333 ug/L		79
59)	Toluene	12.04	91	6168295	169.5124 ug/L		72
60)	Ethyl Methacrylate	12.14	69	2497542	283.4346 ug/L		88
62)	trans-1,3-Dichloropropene	12.20	75	3199877	257.9860 ug/L		90
63)	1,1,2-Trichloroethane	12.41	97	1958603	267.5489 ug/L		97
64)	2-Hexanone	12.36	43	878086	263.9207 ug/L	#	22
65)	1,3-Dichloropropane	12.69	76	3031817	241.9107 ug/L		92
66)	Tetrachloroethene	12.80	164	2219270	284.1625 ug/L		98
67)	Dibromochloromethane	13.05	129	2521977	289.7710 ug/L		97
68)	1,2-Dibromoethane	13.29	107	1977302	270.7993 ug/L		99
69)	1-Chlorohexane	13.37	91	3209500	281.6904 ug/L		95
70)	Chlorobenzene	13.75	112	5030692	206.0287 ug/L	#	71
71)	1,1,1,2-Tetrachloroethane	13.78	131	2683219	292.7500 ug/L		99
72)	Ethylbenzene	13.78	106	3696749	264.8522 ug/L	#	35
73)	m-,p-Xylene	13.87	106	5702346	353.8727 ug/L		56
74)	o-Xylene	14.38	106	4084677	253.1651 ug/L		62
75)	Styrene	14.42	104	5332129	215.6112 ug/L	#	64
76)	Bromoform	14.88	173	1718190	305.8428 ug/L		98
77)	Isopropylbenzene	14.79	105	6372012	165.9965 ug/L	#	63
79)	1,1,2,2-Tetrachloroethane	14.98	83	2206894	266.8948 ug/L		99
81)	1,2,3-Trichloropropane	15.16	110	705747	271.6926 ug/L		82
82)	trans-1,4-Dichloro-2-Buten	15.20	53	684522	317.7745 ug/L	#	1
83)	n-Propylbenzene	15.25	91	6688539	145.0093 ug/L	#	59
84)	Bromobenzene	15.36	156	2850971	266.8380 ug/L		99
85)	1,3,5-Trimethylbenzene	15.43	105	5753972	183.7345 ug/L		76
86)	2-Chlorotoluene	15.50	91	4770920	166.4801 ug/L	#	58
87)	4-Chlorotoluene	15.50	91	4770920	174.1581 ug/L	#	61
88)	a-Methylstyrene	15.80	118	4265680	261.3627 ug/L		75
89)	tert-Butylbenzene	15.86	134	2048783	286.8799 ug/L		63
90)	1,2,4-Trimethylbenzene	15.90	105	5721046	180.4328 ug/L	#	66
91)	sec-Butylbenzene	16.11	105	6357746	169.2591 ug/L	#	65
92)	p-Isopropyltoluene	16.25	119	5648130	181.0081 ug/L	#	63
93)	1,3-Dichlorobenzene	16.43	146	4243080	224.1880 ug/L	#	72
94)	1,4-Dichlorobenzene	16.55	146	4196556	204.1083 ug/L	#	72
95)	n-Butylbenzene	16.74	91	5288923	185.6648 ug/L	#	75
96)	1,2-Dichlorobenzene	17.01	146	4119302	224.0392 ug/L	#	74
97)	1,2-Dibromo-3-Chloropropan	17.92	75	429431	281.6439 ug/L		88
98)	1,2,4-Trichlorobenzene	18.97	180	3333395	270.9386 ug/L		85
99)	Hexachlorobutadiene	19.12	225	1420989	299.2539 ug/L		96
100)	Naphthalene	19.31	128	4931316	207.8910 ug/L	#	78
101)	1,2,3-Trichlorobenzene	19.60	180	3067147	273.9604 ug/L		88

(#) = qualifier out of range (m) = manual integration
11M91910.D 8260BWT.M Wed May 15 21:50:48 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051513\11M91910.D Vial: 11
Acq On : 15 May 2013 21:28 Operator: FJB
Sample : WG430143-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD57872 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 15 21:50 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Wed May 15 17:06:03 2013
Response via : Initial Calibration

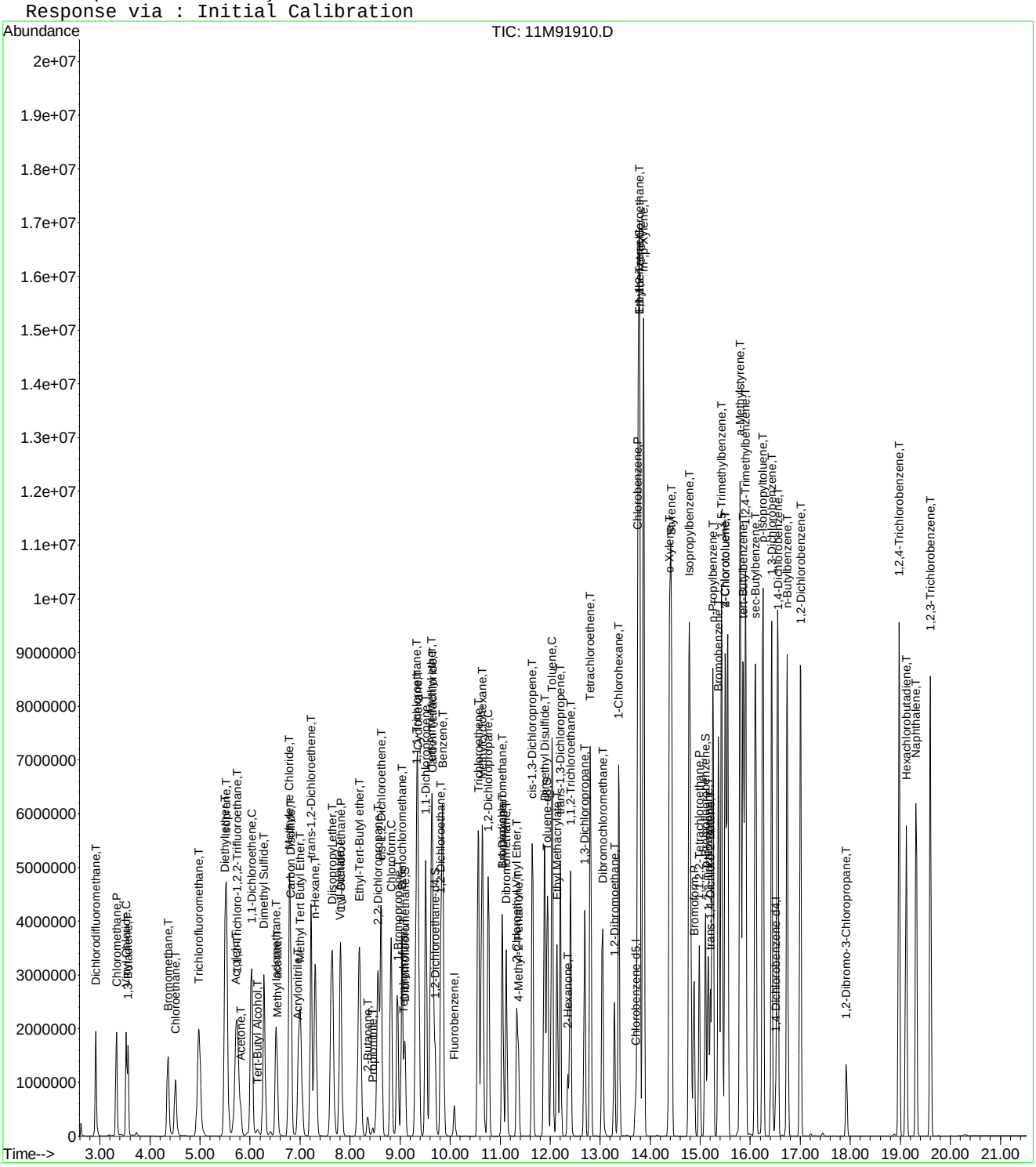

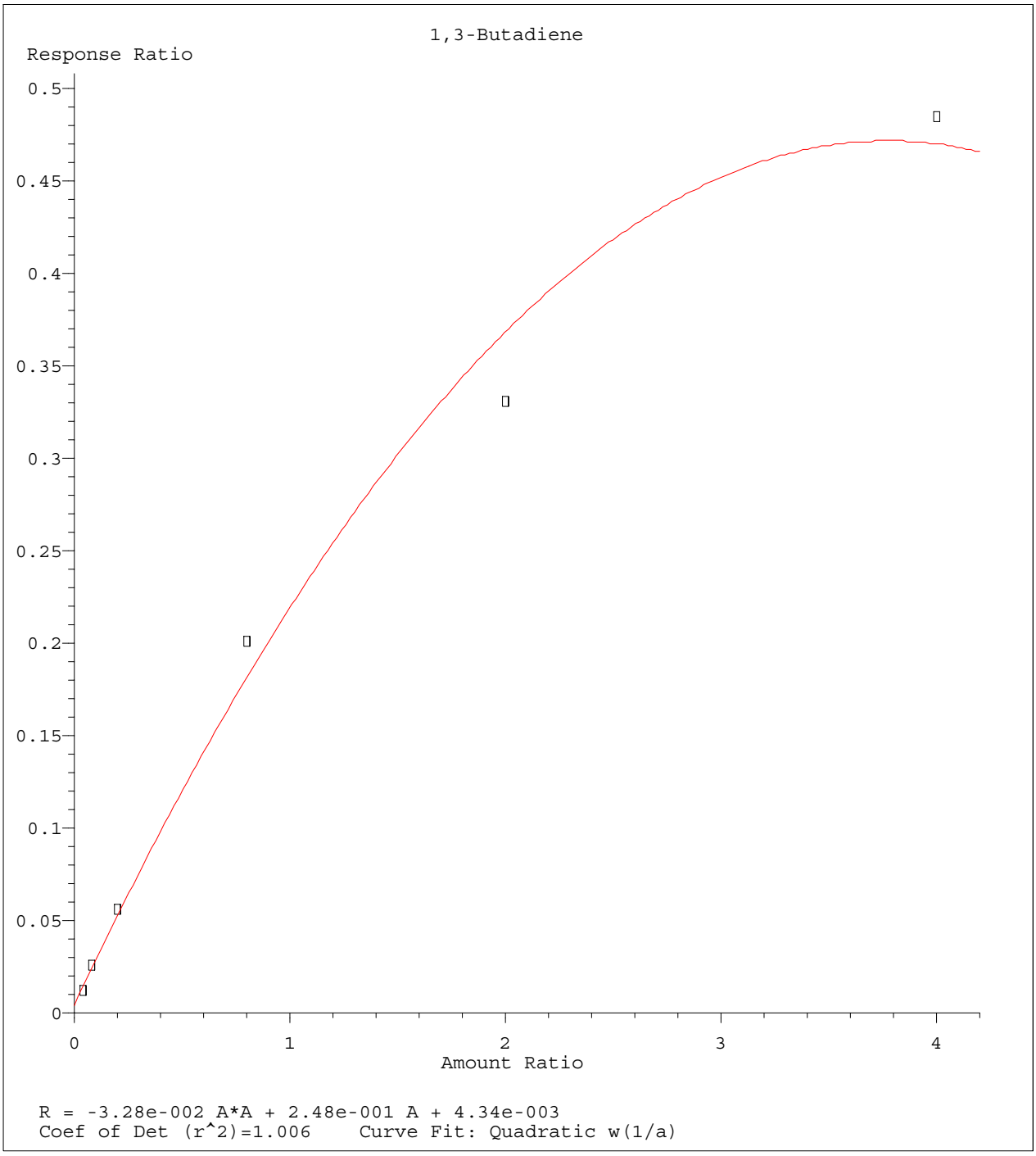

Method Name: C:\MSDCHEM\1\METHODS\8260BWT.M
Calibration Table Last Updated: Thu May 16 11:19:39 2013

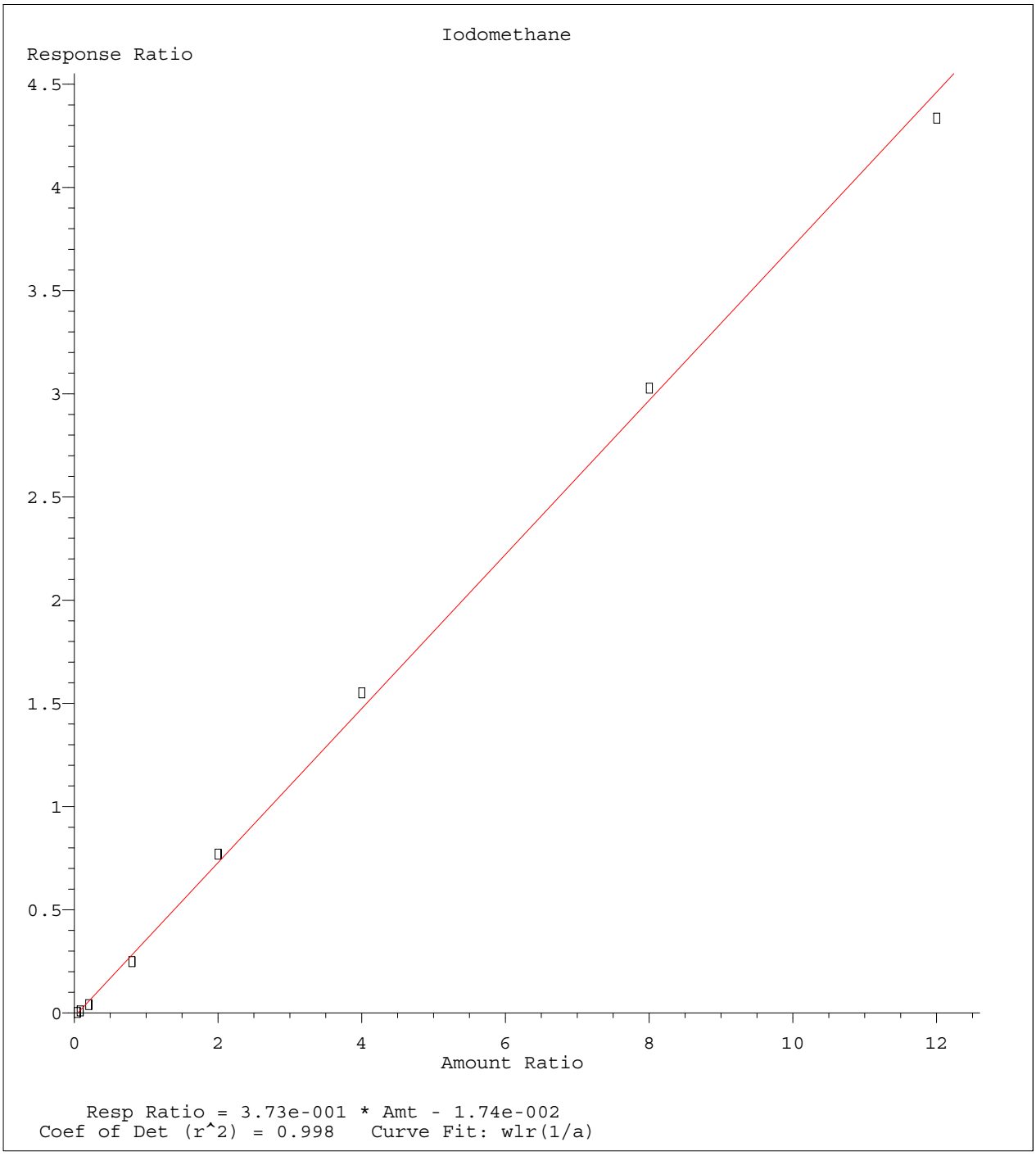

Method Name: C:\MSDCHEM\1\METHODS\8260BWT.M
Calibration Table Last Updated: Thu May 16 11:19:39 2013

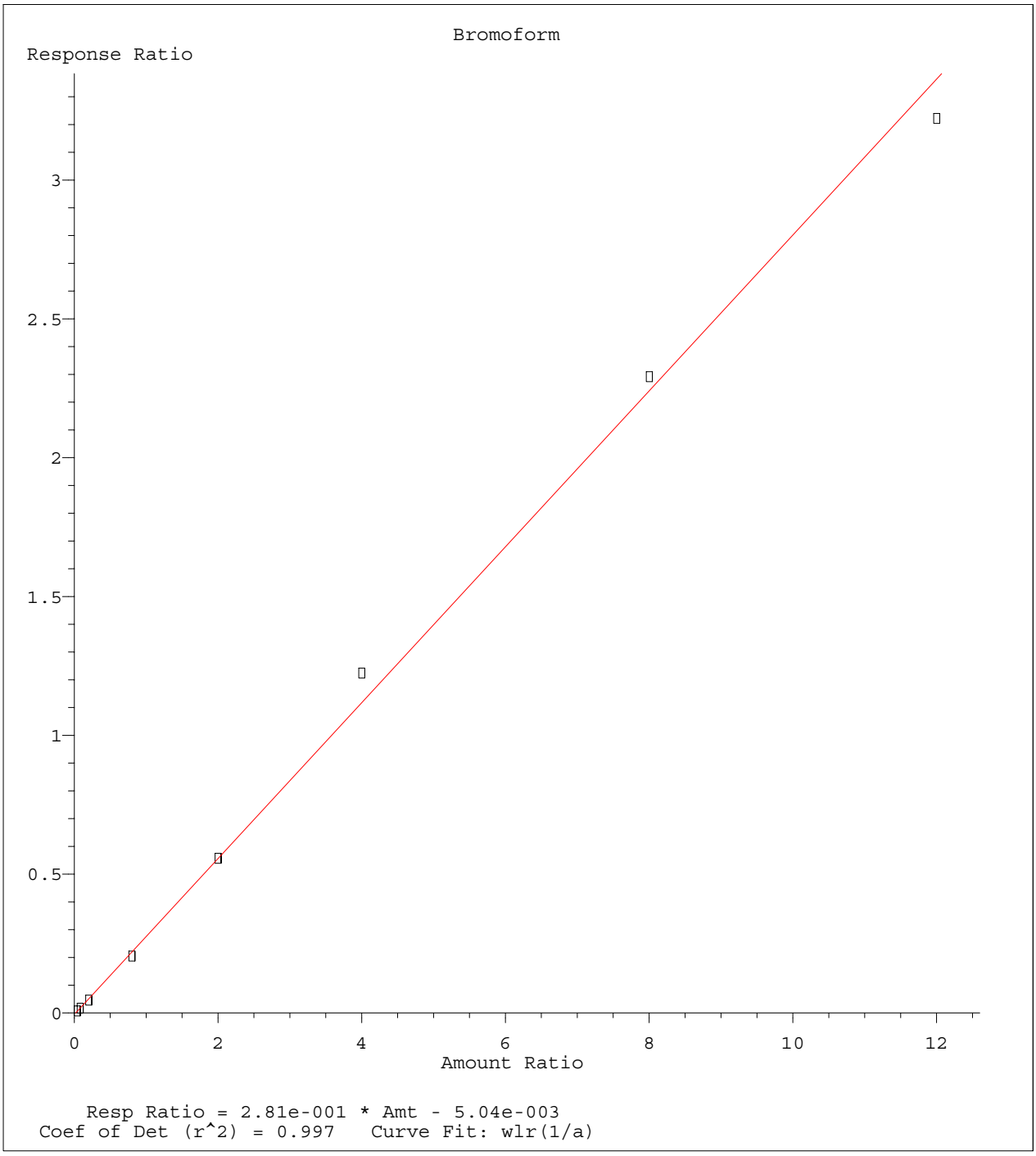

Method Name: C:\MSDCHEM\1\METHODS\8260BWT.M
Calibration Table Last Updated: Thu May 16 11:19:39 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051613\11M91919.D Vial: 6
Acq On : 16 May 2013 12:55 Operator: FJB
Sample : WG430143-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD57930 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 16 13:16:58 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.08	96	680821	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.71	117	485903	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.51	152	285074	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.10	111	202463	25.2727 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.08%		
43) 1,2-Dichloroethane-d4	9.70	65	191399	23.4006 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.60%		
58) Toluene-d8	11.94	98	736199	26.4347 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.72%		
80) p-Bromofluorobenzene	15.10	95	318827	28.2245 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.92	85	586231	83.1198 ug/L	95
3) Chloromethane	3.33	50	513881	63.5068 ug/L	97
4) Vinyl Chloride	3.53	62	352232	39.7118 ug/L	100
5) 1,3-Butadiene	3.56	54	117440	18.8646 ug/L	95
6) Bromomethane	4.35	94	255855	50.2286 ug/L	99
7) Chloroethane	4.51	64	283538	59.7108 ug/L	99
8) Trichlorofluoromethane	4.97	101	723897	57.4780 ug/L	100
9) Diethyl ether	5.50	59	538916	116.3795 ug/L	96
10) Isoprene	5.52	67	593641	51.3101 ug/L	96
11) Acrolein	5.72	56	62009	268.1695 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	438922	61.9553 ug/L	96
13) Acetone	5.81	43	64940	36.4246 ug/L	86
14) 1,1-Dichloroethene	6.03	61	577519	52.8496 ug/L	96
15) Tert-Butyl Alcohol	6.15	59	88821	175.7037 ug/L	94
16) Dimethyl Sulfide	6.28	62	457071	55.9474 ug/L	90
17) Iodomethane	6.51	142	431698	43.6370 ug/L	97
18) Methyl acetate	6.55	43	167712	54.5718 ug/L	92
19) Methylene Chloride	6.78	84	442139	51.0110 ug/L	84
20) Carbon Disulfide	6.81	76	1277309	51.4676 ug/L	98
21) Acrylonitrile	6.96	53	98852	57.6345 ug/L	96
22) Methyl Tert Butyl Ether	7.00	73	1058409	54.5099 ug/L	100
23) trans-1,2-Dichloroethene	7.22	96	449106	55.5357 ug/L	97
24) n-Hexane	7.30	57	498489	52.1789 ug/L	99
25) Diisopropyl ether	7.64	45	2070431	106.3683 ug/L	94
26) Vinyl Acetate	7.80	43	518848	59.6012 ug/L	97
27) 1,1-Dichloroethane	7.82	63	705149	54.3674 ug/L	98
28) Ethyl-Tert-Butyl ether	8.19	59	2219020	105.2559 ug/L	98
29) 2-Butanone	8.35	43	96657	52.6055 ug/L	90
30) Propionitrile	8.45	54	65841	106.7245 ug/L	97
31) 2,2-Dichloropropane	8.56	77	654823	51.5900 ug/L	99
32) cis-1,2-Dichloroethene	8.62	96	480291	55.4844 ug/L	99
33) Chloroform	8.82	83	777517	54.9165 ug/L	94
34) 1-Bromopropane	8.94	122	450726	258.8201 ug/L	100
35) Bromochloromethane	9.04	130	281322	56.8848 ug/L	97
36) Tetrahydrofuran	9.07	42	125230	107.0536 ug/L	92
38) 1,1,1-Trichloroethane	9.33	97	729214	55.9511 ug/L	95
39) Cyclohexane	9.36	56	615469	50.0991 ug/L	98
40) 1,1-Dichloropropene	9.51	75	604029	54.2376 ug/L	99
41) Carbon Tetrachloride	9.65	117	646583	55.4569 ug/L	99
42) Tert-Amyl-Methyl ether	9.63	73	2114180	105.0453 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051613\11M91919.D Vial: 6
Acq On : 16 May 2013 12:55 Operator: FJB
Sample : WG430143-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD57930 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 16 13:16:58 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.81	62	538601	55.6498 ug/L		97
46)	Benzene	9.85	78	1640476	53.4367 ug/L		99
47)	Trichloroethene	10.57	130	467587	58.7239 ug/L		94
48)	Methylcyclohexane	10.64	83	699563	52.7619 ug/L		96
49)	1,2-Dichloropropane	10.76	63	404845	55.5887 ug/L		100
50)	1,4-Dioxane	11.03	88	12283	198.9216 ug/L		93
51)	Bromodichloromethane	11.04	83	584291	55.1646 ug/L		96
52)	Dibromomethane	11.13	93	250026	55.6940 ug/L		98
53)	2-Chloroethyl Vinyl Ether	11.33	63	204201	56.5047 ug/L		98
54)	4-Methyl-2-Pentanone	11.36	58	100068	54.2301 ug/L		99
55)	cis-1,3-Dichloropropene	11.64	75	731974	59.6152 ug/L		97
56)	Dimethyl Disulfide	11.88	79	416839	56.7922 ug/L		94
59)	Toluene	12.04	91	1738068	55.0936 ug/L		95
60)	Ethyl Methacrylate	12.14	69	447310	59.2884 ug/L		86
62)	trans-1,3-Dichloropropene	12.20	75	604331	55.6331 ug/L		100
63)	1,1,2-Trichloroethane	12.41	97	348305	57.5165 ug/L		98
64)	2-Hexanone	12.36	43	150761	57.1768 ug/L	#	23
65)	1,3-Dichloropropane	12.69	76	588000	56.5467 ug/L		87
66)	Tetrachloroethene	12.80	164	380657	55.4336 ug/L		96
67)	Dibromochloromethane	13.05	129	428071	57.4390 ug/L		100
68)	1,2-Dibromoethane	13.29	107	343740	57.4931 ug/L		100
69)	1-Chlorohexane	13.37	91	592973	54.8604 ug/L		99
70)	Chlorobenzene	13.75	112	1114750	53.1092 ug/L		98
71)	1,1,1,2-Tetrachloroethane	13.78	131	458855	58.2780 ug/L		99
72)	Ethylbenzene	13.78	106	677972	55.6793 ug/L		94
73)	m-,p-Xylene	13.87	106	1515012	109.9451 ug/L		92
74)	o-Xylene	14.38	106	725837	51.8584 ug/L		99
75)	Styrene	14.42	104	1299630	61.5883 ug/L		94
76)	Bromoform	14.88	173	283802	52.4870 ug/L		98
77)	Isopropylbenzene	14.79	105	1746451	52.7658 ug/L		100
79)	1,1,2,2-Tetrachloroethane	14.98	83	406917	55.4981 ug/L		96
81)	1,2,3-Trichloropropane	15.16	110	119307	53.2374 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	15.20	53	89958	42.9496 ug/L		49
83)	n-Propylbenzene	15.25	91	2045384	48.1009 ug/L		100
84)	Bromobenzene	15.36	156	519220	52.3375 ug/L		92
85)	1,3,5-Trimethylbenzene	15.43	105	1651763	57.1801 ug/L		98
86)	2-Chlorotoluene	15.50	91	1282910	48.1434 ug/L		96
87)	4-Chlorotoluene	15.54	91	1286420	47.9872 ug/L		94
88)	a-Methylstyrene	15.80	118	918737	58.9783 ug/L		92
89)	tert-Butylbenzene	15.85	134	323410	51.2916 ug/L		93
90)	1,2,4-Trimethylbenzene	15.90	105	1681888	57.2951 ug/L		99
91)	sec-Butylbenzene	16.10	105	1800388	51.1638 ug/L		98
92)	p-Isopropyltoluene	16.25	119	1536535	53.7216 ug/L		97
93)	1,3-Dichlorobenzene	16.43	146	904709	52.0105 ug/L		94
94)	1,4-Dichlorobenzene	16.54	146	981670	54.0673 ug/L		94
95)	n-Butylbenzene	16.74	91	1536618	57.2786 ug/L		99
96)	1,2-Dichlorobenzene	17.01	146	845445	49.9616 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	17.92	75	68531	51.6398 ug/L		87
98)	1,2,4-Trichlorobenzene	18.97	180	662667	55.8941 ug/L		99
99)	Hexachlorobutadiene	19.12	225	251912	56.1528 ug/L		94
100)	Naphthalene	19.31	128	1293138	56.4872 ug/L		99
101)	1,2,3-Trichlorobenzene	19.60	180	596227	54.4759 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M91919.D 8260BWT.M Fri May 17 10:50:57 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051613\11M91919.D Vial: 6
Acq On : 16 May 2013 12:55 Operator: FJB
Sample : WG430143-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD57930 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 16 13:16 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration

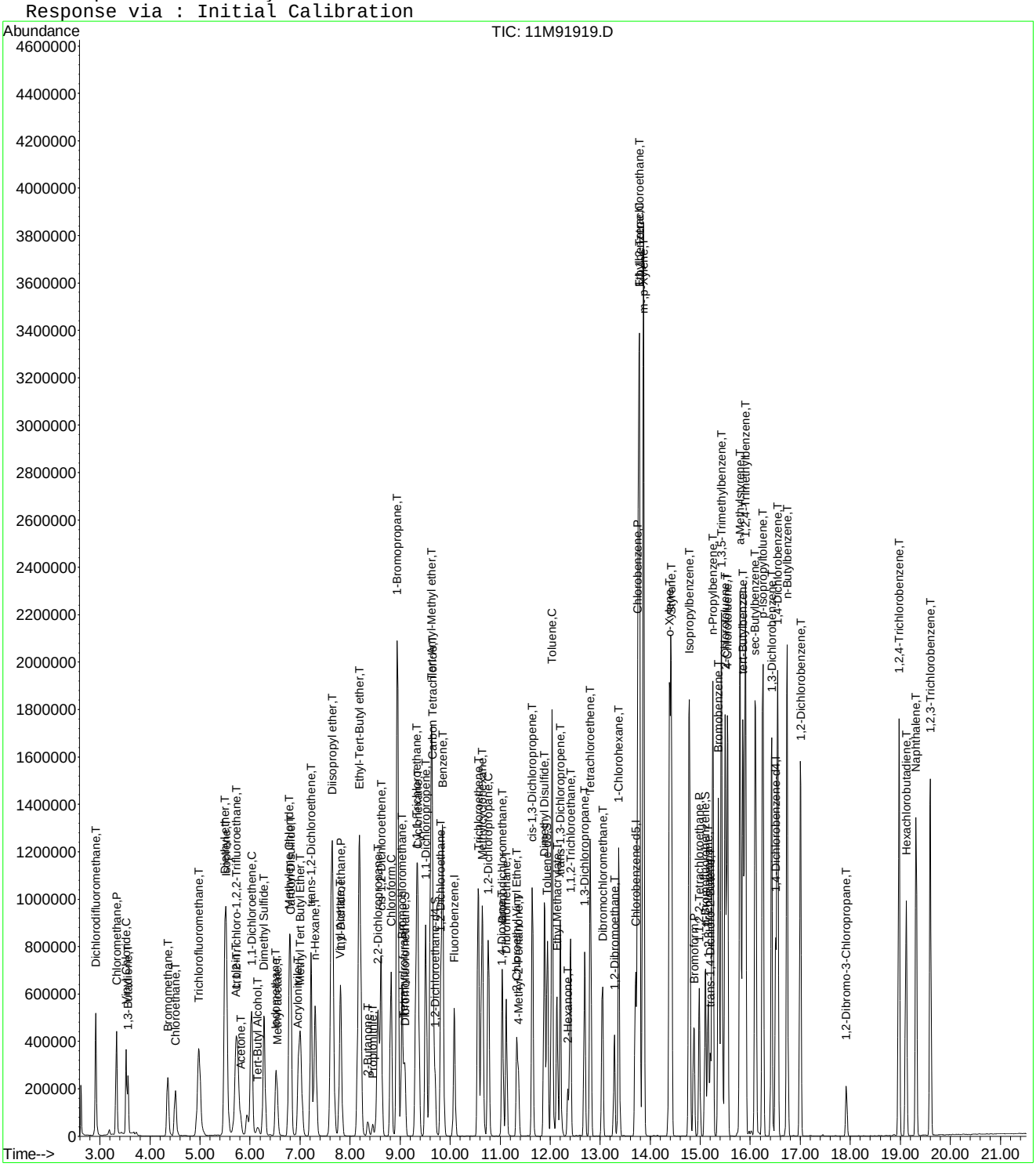

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051613\11M91919.D Vial: 6
Acq On : 16 May 2013 12:55 Operator: FJB
Sample : WG430143-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD57930 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/09/13 HPMS11
Last Update : Fri May 10 16:18:55 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	90	-0.01
2	T	Dichlorodifluoromethane	50.0000	83.1198	-66.2#	172	0.00
3	P	Chloromethane	50.0000	63.5068	-27.0#	133	0.00
4	C	Vinyl Chloride	50.0000	39.7118	20.6#	78	0.00
5	T	1,3-Butadiene	50.0000	18.8646	62.3#	67	0.00
6	T	Bromomethane	50.0000	50.2286	-0.5	125	-0.01
7	T	Chloroethane	50.0000	59.7108	-19.4	120	-0.01
8	T	Trichlorofluoromethane	50.0000	57.4780	-15.0	103	-0.01
9	T	Diethyl ether	100.0000	116.3795	-16.4	92	0.00
10	T	Isoprene	50.0000	51.3101	-2.6	99	-0.01
11	T	Acrolein	50.0000	268.1695	-436.3#	296	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	61.9553	-23.9	108	-0.02
13	T	Acetone	50.0000	36.4246	27.2#	59	0.00
14	C	1,1-Dichloroethene	50.0000	52.8496	-5.7	94	-0.01
15	T	Tert-Butyl Alcohol	200.0000	175.7037	12.1	81	0.00
16	T	Dimethyl Sulfide	50.0000	55.9475	-11.9	106	-0.01
17	T	Iodomethane	50.0000	43.6369	12.7	100	-0.01
18	T	Methyl acetate	50.0000	54.5718	-9.1	81	0.00
19	T	Methylene Chloride	50.0000	51.0110	-2.0	95	-0.01
20	T	Carbon Disulfide	50.0000	51.4676	-2.9	98	-0.01
21	T	Acrylonitrile	50.0000	57.6345	-15.3	91	-0.01
22	T	Methyl Tert Butyl Ether	50.0000	54.5099	-9.0	89	-0.01
23	T	trans-1,2-Dichloroethene	50.0000	55.5357	-11.1	97	-0.01
24	T	n-Hexane	50.0000	52.1789	-4.4	100	-0.01
25	T	Diisopropyl ether	100.0000	106.3683	-6.4	94	0.00
26	T	Vinyl Acetate	50.0000	59.6012	-19.2	121	0.00
27	P	1,1-Dichloroethane	50.0000	54.3674	-8.7	94	-0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	105.2559	-5.3	92	0.00
29	T	2-Butanone	50.0000	52.6055	-5.2	88	0.00
30	T	Propionitrile	100.0000	106.7245	-6.7	85	-0.01
31	T	2,2-Dichloropropane	50.0000	51.5900	-3.2	92	-0.01
32	T	cis-1,2-Dichloroethene	50.0000	55.4844	-11.0	95	-0.01
33	C	Chloroform	50.0000	54.9165	-9.8	95	-0.01
34	T	1-Bromopropane	50.0000	258.8201	-417.6#	456	-0.01
35	T	Bromochloromethane	50.0000	56.8848	-13.8	92	-0.01
36	T	Tetrahydrofuran	100.0000	107.0536	-7.1	86	0.00
37	S	Dibromofluoromethane	25.0000	25.2727	-1.1	92	0.00
38	T	1,1,1-Trichloroethane	50.0000	55.9511	-11.9	95	-0.01
39	T	Cyclohexane	50.0000	50.0991	-0.2	95	-0.01
40	T	1,1-Dichloropropene	50.0000	54.2376	-8.5	94	-0.01
41	T	Carbon Tetrachloride	50.0000	55.4569	-10.9	96	-0.01
42	T	Tert-Amyl-Methyl ether	100.0000	105.0453	-5.0	91	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.4006	6.4	83	-0.01
44	T	Heptane	-1.0000	0.0000	0.0	93	-0.01
45	T	1,2-Dichloroethane	50.0000	55.6499	-11.3	90	-0.01
46	T	Benzene	50.0000	53.4367	-6.9	95	0.00
47	T	Trichloroethene	50.0000	58.7239	-17.4	101	0.00
48	T	Methylcyclohexane	50.0000	52.7619	-5.5	98	-0.01
49	C	1,2-Dichloropropane	50.0000	55.5887	-11.2	96	-0.01
50	T	1,4-Dioxane	200.0000	198.9216	0.5	85	-0.01
51	T	Bromodichloromethane	50.0000	55.1647	-10.3	91	-0.01
52	T	Dibromomethane	50.0000	55.6940	-11.4	89	-0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	56.5047	-13.0	93	-0.01
54	T	4-Methyl-2-Pentanone	50.0000	54.2301	-8.5	87	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051613\11M91919.D Vial: 6
Acq On : 16 May 2013 12:55 Operator: FJB
Sample : WG430143-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD57930 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/09/13 HPMS11
Last Update : Fri May 10 16:18:55 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	59.6152	-19.2	99	-0.01
56	T	Dimethyl Disulfide	50.0000	56.7922	-13.6	105	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	91	-0.01
58	S	Toluene-d8	25.0000	26.4347	-5.7	96	-0.01
59	C	Toluene	50.0000	55.0936	-10.2	93	-0.01
60	T	Ethyl Methacrylate	50.0000	59.2884	-18.6	94	0.00
61	T	Paraldehyde	-1.0000	0.0000	0.0	0	-12.25#
62	T	trans-1,3-Dichloropropene	50.0000	55.6331	-11.3	89	-0.01
63	T	1,1,2-Trichloroethane	50.0000	57.5165	-15.0	92	-0.01
64	T	2-Hexanone	50.0000	57.1768	-14.4	86	0.00
65	T	1,3-Dichloropropane	50.0000	56.5467	-13.1	91	-0.01
66	T	Tetrachloroethene	50.0000	55.4336	-10.9	94	-0.01
67	T	Dibromochloromethane	50.0000	57.4390	-14.9	91	-0.01
68	T	1,2-Dibromoethane	50.0000	57.4931	-15.0	90	-0.01
69	T	1-Chlorohexane	50.0000	54.8604	-9.7	98	-0.01
70	P	Chlorobenzene	50.0000	53.1092	-6.2	86	-0.01
71	T	1,1,1,2-Tetrachloroethane	50.0000	58.2780	-16.6	95	-0.01
72	C	Ethylbenzene	50.0000	55.6793	-11.4	92	-0.01
73	T	m-,p-Xylene	100.0000	109.9451	-9.9	90	-0.01
74	T	o-Xylene	50.0000	51.8584	-3.7	85	-0.01
75	T	Styrene	50.0000	61.5883	-23.2	92	-0.01
76	P	Bromoform	50.0000	52.4870	-5.0	93	-0.01
77	T	Isopropylbenzene	50.0000	52.7658	-5.5	87	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	93	-0.01
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.4981	-11.0	91	-0.01
80	S	p-Bromofluorobenzene	25.0000	28.2245	-12.9	106	-0.01
81	T	1,2,3-Trichloropropane	50.0000	53.2374	-6.5	85	-0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	42.9496	14.1	71	-0.01
83	T	n-Propylbenzene	50.0000	48.1009	3.8	87	-0.01
84	T	Bromobenzene	50.0000	52.3375	-4.7	92	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	57.1801	-14.4	96	-0.01
86	T	2-Chlorotoluene	50.0000	48.1435	3.7	84	-0.01
87	T	4-Chlorotoluene	50.0000	47.9872	4.0	88	-0.01
88	T	a-Methylstyrene	50.0000	58.9783	-18.0	97	-0.01
89	T	tert-Butylbenzene	50.0000	51.2916	-2.6	86	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	57.2951	-14.6	95	-0.01
91	T	sec-Butylbenzene	50.0000	51.1638	-2.3	87	-0.01
92	T	p-Isopropyltoluene	50.0000	53.7216	-7.4	88	-0.01
93	T	1,3-Dichlorobenzene	50.0000	52.0105	-4.0	87	-0.01
94	T	1,4-Dichlorobenzene	50.0000	54.0673	-8.1	94	-0.01
95	T	n-Butylbenzene	50.0000	57.2786	-14.6	97	0.00
96	T	1,2-Dichlorobenzene	50.0000	49.9616	0.1	86	-0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	51.6398	-3.3	87	-0.01
98	T	1,2,4-Trichlorobenzene	50.0000	55.8941	-11.8	97	-0.01
99	T	Hexachlorobutadiene	50.0000	56.1528	-12.3	103	-0.01
100	T	Naphthalene	50.0000	56.4872	-13.0	93	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	54.4759	-9.0	99	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 1
11M91919.D 8260_WT.M Thu May 16 13:18:54 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115124.D Vial: 4
Acq On : 2 Apr 2013 9:08 Operator: FJB
Sample : WG425306-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 09:31:07 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 07:16:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	602903	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.72	117	432992	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	210231	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.52	98	1165	0.0478 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.20%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.60	85	1580	0.2621 ug/L #	69
3) Chloromethane	2.97	50	2276	0.3411 ug/L	100
4) Vinyl Chloride	3.15	62	1967	0.3542 ug/L #	61
5) 1,3-Butadiene	3.19	54	1488	0.4259 ug/L #	53
6) Bromomethane	3.89	94	1092	0.2446 ug/L #	59
7) Chloroethane	4.03	64	1203	0.2308 ug/L #	46
8) Trichlorofluoromethane	4.50	101	3392	0.3150 ug/L #	76
10) Isoprene	5.05	67	2297	0.2281 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	5.28	101	850	0.1393 ug/L #	29
14) 1,1-Dichloroethene	5.57	61	3413	0.3036 ug/L #	68
16) Dimethyl Sulfide	5.85	62	1834	0.2407 ug/L	82
17) Iodomethane	6.09	142	1815	0.2446 ug/L #	34
19) Methylene Chloride	6.41	84	1767	0.2677 ug/L	85
20) Carbon Disulfide	6.41	76	6710	0.2921 ug/L	91
22) Methyl Tert Butyl Ether	6.64	73	2609	0.2313 ug/L #	48
23) trans-1,2-Dichloroethene	6.88	96	1829	0.2696 ug/L	99
24) n-Hexane	6.98	57	2526	0.2671 ug/L	90
26) Vinyl Acetate	7.55	43	2100	0.3378 ug/L #	78
27) 1,1-Dichloroethane	7.56	63	3747	0.2731 ug/L	78
31) 2,2-Dichloropropane	8.42	77	3303	0.3267 ug/L	88
32) cis-1,2-Dichloroethene	8.50	96	2067	0.2861 ug/L	84
33) Chloroform	8.74	83	3326	0.2788 ug/L #	86
35) Bromochloromethane	8.99	130	868	0.2420 ug/L #	11
38) 1,1,1-Trichloroethane	9.33	97	2796	0.2706 ug/L #	69
39) Cyclohexane	9.35	56	3715	0.2775 ug/L	97
40) 1,1-Dichloropropene	9.55	75	2644	0.2705 ug/L	93
42) Carbon Tetrachloride	9.71	117	2397	0.2625 ug/L #	82
45) 1,2-Dichloroethane	9.91	62	1900	0.2679 ug/L #	41
46) Benzene	9.95	78	9602	0.3480 ug/L	94
47) Trichloroethene	10.82	130	1937	0.2801 ug/L #	66
48) Methylcyclohexane	10.91	83	2654	0.2863 ug/L	92
49) 1,2-Dichloropropane	11.07	63	1888	0.2636 ug/L #	55
51) Bromodichloromethane	11.40	83	2106	0.2614 ug/L	87
52) Dibromomethane	11.49	93	621	0.2281 ug/L #	9
55) cis-1,3-Dichloropropene	12.17	75	2398	0.2627 ug/L #	72
59) Toluene	12.64	91	9917	0.3429 ug/L	98
60) Ethyl Methacrylate	12.83	69	649	0.1523 ug/L #	9
62) trans-1,3-Dichloropropene	12.88	75	1895	0.2567 ug/L #	51
63) 1,1,2-Trichloroethane	13.12	97	755	0.1988 ug/L #	62
65) 1,3-Dichloropropane	13.47	76	1718	0.2424 ug/L	87

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115124.D Vial: 4
Acq On : 2 Apr 2013 9:08 Operator: FJB
Sample : WG425306-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 09:31:07 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 07:16:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
66)	Tetrachloroethene	13.59	166	2200	0.2989 ug/L #	84
67)	Dibromochloromethane	13.89	129	1102	0.2291 ug/L #	62
68)	1,2-Dibromoethane	14.18	107	669	0.1762 ug/L	99
69)	1-Chlorohexane	14.35	91	3492	0.4059 ug/L	70
70)	Chlorobenzene	14.77	112	5847	0.3135 ug/L	85
71)	1,1,1,2-Tetrachloroethane	14.82	131	1547	0.2573 ug/L #	33
72)	Ethylbenzene	14.83	106	3157	0.3087 ug/L	83
73)	m-,p-Xylene	14.94	106	7556	0.6183 ug/L	90
74)	o-Xylene	15.60	106	3806	0.3196 ug/L	94
75)	Styrene	15.64	104	9125	0.4836 ug/L	87
77)	Isopropylbenzene	16.11	105	9322	0.3137 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.36	83	709	0.1800 ug/L #	18
83)	n-Propylbenzene	16.71	91	11750	0.3404 ug/L #	95
84)	Bromobenzene	16.81	156	1930	0.2772 ug/L	89
85)	1,3,5-Trimethylbenzene	16.94	105	7417	0.3111 ug/L	97
86)	2-Chlorotoluene	16.99	91	8442	0.3405 ug/L	91
87)	4-Chlorotoluene	17.06	91	6902	0.3203 ug/L	95
88)	a-Methylstyrene	17.41	118	3304	0.2630 ug/L	98
89)	tert-Butylbenzene	17.47	134	1217	0.2575 ug/L	65
90)	1,2,4-Trimethylbenzene	17.53	105	11063	0.4539 ug/L #	69
91)	sec-Butylbenzene	17.79	105	9945	0.3527 ug/L #	83
92)	p-Isopropyltoluene	17.99	119	7395	0.3111 ug/L	99
93)	1,3-Dichlorobenzene	18.16	146	4016	0.2915 ug/L	98
94)	1,4-Dichlorobenzene	18.32	146	4039	0.2909 ug/L	87
95)	n-Butylbenzene	18.61	91	7446	0.3591 ug/L	96
96)	1,2-Dichlorobenzene	18.90	146	3437	0.2919 ug/L	79
98)	1,2,4-Trichlorobenzene	21.42	180	2187	0.2807 ug/L	85
99)	Hexachlorobutadiene	21.61	225	1003	0.2956 ug/L #	44
100)	Naphthalene	21.83	128	3661	0.3054 ug/L #	68
101)	1,2,3-Trichlorobenzene	22.19	180	1741	0.2663 ug/L #	85

(#) = qualifier out of range (m) = manual integration
6M115124.D 8260_WT.M Tue Apr 02 17:15:36 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115124.D Vial: 4
Acq On : 2 Apr 2013 9:08 Operator: FJB
Sample : WG425306-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 2 9:31 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 14:38:02 2013
Response via : Initial Calibration

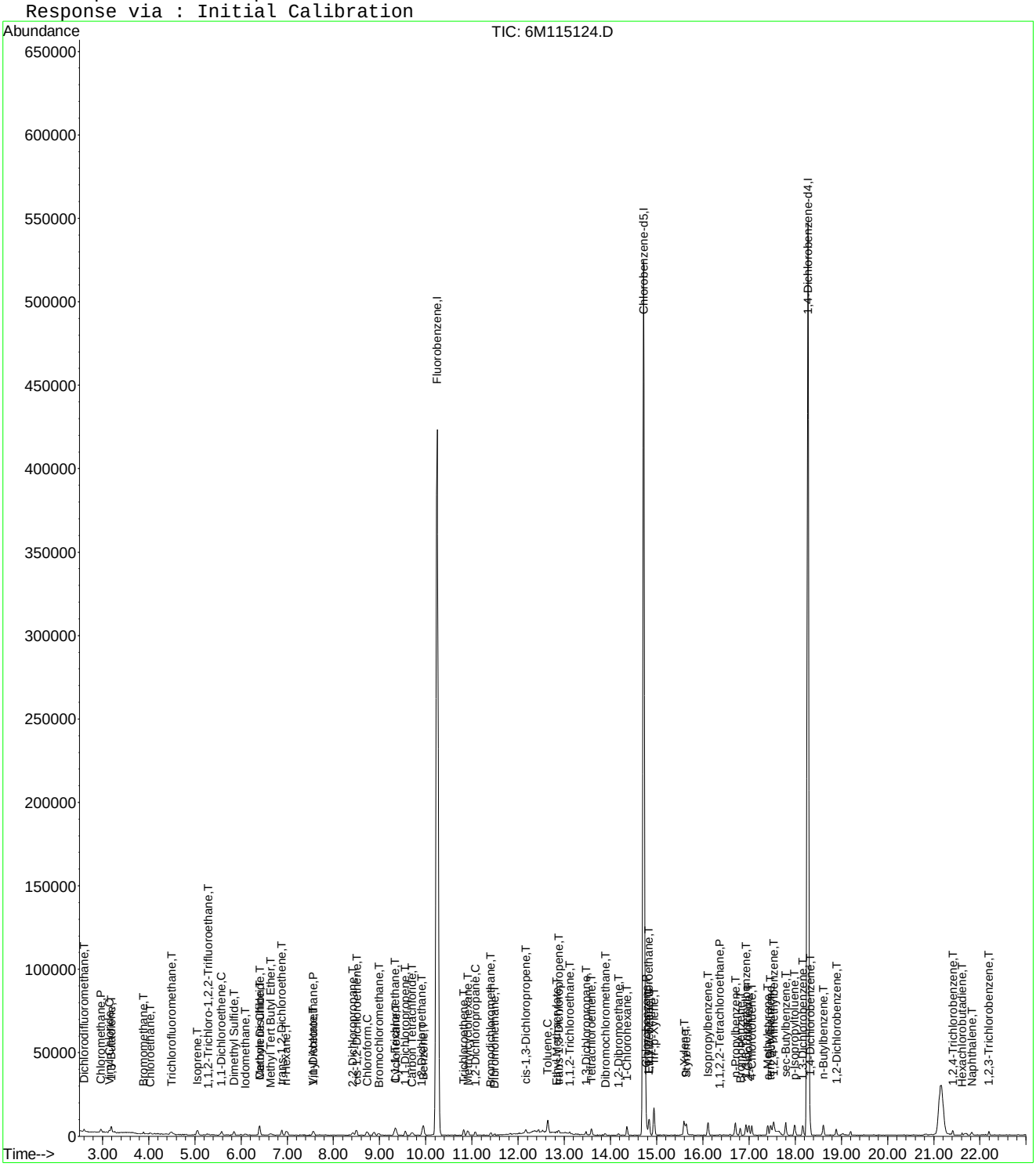

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115125.D Vial: 5
Acq On : 2 Apr 2013 9:38 Operator: FJB
Sample : WG425306-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:16:54 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 14:38:02 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.24	96	590309	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.72	117	426573	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	207530	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.53	98	474	0.0194 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.08%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.61	85	1540	0.2890 ug/L #	70
3) Chloromethane	2.96	50	2542	0.4405 ug/L	94
4) Vinyl Chloride	3.15	62	2021	0.3896 ug/L	82
5) 1,3-Butadiene	3.19	54	1615	Below Cal #	71
6) Bromomethane	3.88	94	1584	0.3689 ug/L	83
7) Chloroethane	4.04	64	1682	0.3530 ug/L #	47
8) Trichlorofluoromethane	4.51	101	3256	0.3182 ug/L #	86
10) Isoprene	5.06	67	2979	0.3172 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	5.30	101	1007	0.2708 ug/L #	36
14) 1,1-Dichloroethene	5.57	61	3611	0.3508 ug/L	90
16) Dimethyl Sulfide	5.84	62	2659	0.3706 ug/L	94
17) Iodomethane	6.10	142	2174	0.3055 ug/L #	49
19) Methylene Chloride	6.40	84	2345	0.3838 ug/L	84
20) Carbon Disulfide	6.40	76	8598	0.3969 ug/L #	88
22) Methyl Tert Butyl Ether	6.65	73	3330	0.3087 ug/L #	49
23) trans-1,2-Dichloroethene	6.88	96	2483	0.3766 ug/L	97
24) n-Hexane	7.00	57	2456	0.2709 ug/L	91
26) Vinyl Acetate	7.56	43	2596	0.3096 ug/L #	77
27) 1,1-Dichloroethane	7.57	63	4945	0.3848 ug/L	87
31) 2,2-Dichloropropane	8.44	77	3934	0.3766 ug/L	98
32) cis-1,2-Dichloroethene	8.50	96	2492	0.3554 ug/L	89
33) Chloroform	8.73	83	4642	0.3944 ug/L	90
35) Bromochloromethane	8.98	130	1141	0.3194 ug/L	93
38) 1,1,1-Trichloroethane	9.31	97	3948	0.3782 ug/L	73
39) Cyclohexane	9.35	56	3873	0.3189 ug/L	87
40) 1,1-Dichloropropene	9.55	75	3256	0.3476 ug/L	90
42) Carbon Tetrachloride	9.71	117	2937	0.3157 ug/L #	82
45) 1,2-Dichloroethane	9.92	62	2527	0.3685 ug/L #	53
46) Benzene	9.95	78	11008	0.4138 ug/L	94
47) Trichloroethene	10.82	130	2456	0.3617 ug/L	95
48) Methylcyclohexane	10.90	83	2717	0.4441 ug/L #	84
49) 1,2-Dichloropropane	11.07	63	2744	0.3959 ug/L #	64
51) Bromodichloromethane	11.41	83	2970	0.3650 ug/L	94
52) Dibromomethane	11.49	93	798	0.2941 ug/L	69
53) 2-Chloroethyl Vinyl Ether	11.82	63	406	0.1537 ug/L #	43
55) cis-1,3-Dichloropropene	12.16	75	3062	0.3331 ug/L #	85
56) Dimethyl Disulfide	12.44	79	842	1.0978 ug/L #	48
59) Toluene	12.64	91	13385	0.4748 ug/L	91
60) Ethyl Methacrylate	12.84	69	925	0.2156 ug/L	65
62) trans-1,3-Dichloropropene	12.88	75	2168	0.2910 ug/L #	51

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115125.D Vial: 5
Acq On : 2 Apr 2013 9:38 Operator: FJB
Sample : WG425306-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:16:54 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 14:38:02 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.11	97	947	0.4284 ug/L		91
65)	1,3-Dichloropropane	13.47	76	2466	0.3648 ug/L		95
66)	Tetrachloroethene	13.58	166	2855	0.3970 ug/L		86
67)	Dibromochloromethane	13.89	129	1450	0.5028 ug/L		95
68)	1,2-Dibromoethane	14.18	107	1094	0.2901 ug/L		78
69)	1-Chlorohexane	14.36	91	3340	0.3997 ug/L		84
70)	Chlorobenzene	14.78	112	7302	0.4046 ug/L		82
71)	1,1,1,2-Tetrachloroethane	14.83	131	2157	0.3552 ug/L	#	68
72)	Ethylbenzene	14.84	106	3924	0.4029 ug/L		91
73)	m-,p-Xylene	14.94	106	9714	0.8301 ug/L		97
74)	o-Xylene	15.60	106	4366	0.3843 ug/L		89
75)	Styrene	15.64	104	9039	0.4680 ug/L		93
76)	Bromoform	16.18	173	218	0.5299 ug/L	#	35
77)	Isopropylbenzene	16.11	105	11152	0.3907 ug/L		95
79)	1,1,2,2-Tetrachloroethane	16.36	83	947	0.4376 ug/L		89
83)	n-Propylbenzene	16.71	91	13936	0.4187 ug/L	#	91
84)	Bromobenzene	16.81	156	2759	0.4004 ug/L		91
85)	1,3,5-Trimethylbenzene	16.93	105	9252	0.3999 ug/L		92
86)	2-Chlorotoluene	16.99	91	10241	0.4315 ug/L		95
87)	4-Chlorotoluene	17.06	91	8665	0.4189 ug/L		98
88)	a-Methylstyrene	17.40	118	4372	0.3586 ug/L		95
89)	tert-Butylbenzene	17.47	134	1601	0.3484 ug/L		81
90)	1,2,4-Trimethylbenzene	17.54	105	11220	0.4623 ug/L		77
91)	sec-Butylbenzene	17.79	105	12139	0.4378 ug/L		91
92)	p-Isopropyltoluene	17.99	119	9269	0.3970 ug/L		99
93)	1,3-Dichlorobenzene	18.17	146	5398	0.4027 ug/L		98
94)	1,4-Dichlorobenzene	18.32	146	5726	0.4272 ug/L		83
95)	n-Butylbenzene	18.61	91	8824	0.4296 ug/L		91
96)	1,2-Dichlorobenzene	18.89	146	4509	0.3920 ug/L		87
98)	1,2,4-Trichlorobenzene	21.42	180	3013	0.3848 ug/L		93
99)	Hexachlorobutadiene	21.62	225	876	0.3635 ug/L		84
100)	Naphthalene	21.82	128	4528	0.3837 ug/L	#	69
101)	1,2,3-Trichlorobenzene	22.20	180	2505	0.3921 ug/L		94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115125.D Vial: 5
Acq On : 2 Apr 2013 9:38 Operator: FJB
Sample : WG425306-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 2 17:16 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

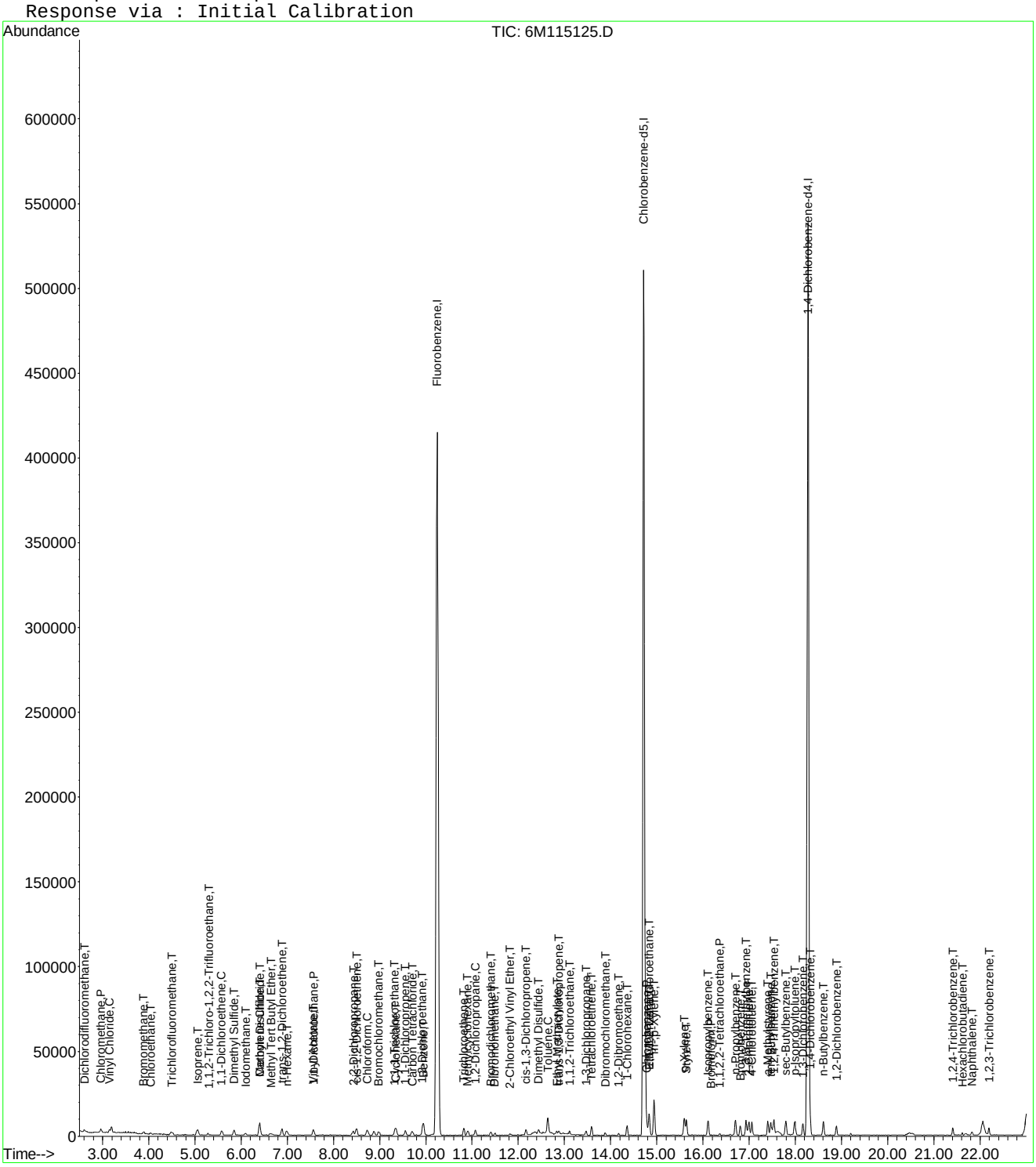

6M115125.D 8260_WT.M Tue Apr 02 17:17:49 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115126.D Vial: 6
Acq On : 2 Apr 2013 10:08 Operator: FJB
Sample : WG425306-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:16:55 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.24	96	588900	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.72	117	430603	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	209001	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.06	111	2763	0.4189 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.68%#	
43) 1,2-Dichloroethane-d4	9.78	65	2295	0.3999 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.60%#	
58) Toluene-d8	12.53	98	11353	0.4599 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.84%#	
80) p-Bromofluorobenzene	16.49	95	3851	0.4572 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.61	85	3555	0.6688 ug/L #	70
3) Chloromethane	2.96	50	5082	0.8828 ug/L	98
4) Vinyl Chloride	3.15	62	4621	0.8928 ug/L	92
5) 1,3-Butadiene	3.19	54	3628	Below Cal	89
6) Bromomethane	3.89	94	3440	0.8031 ug/L	85
7) Chloroethane	4.04	64	3755	0.7899 ug/L #	78
8) Trichlorofluoromethane	4.50	101	7937	0.7776 ug/L #	92
9) Diethyl ether	5.03	59	17355	4.4856 ug/L	94
10) Isoprene	5.06	67	6567	0.7010 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	5.27	101	4087	0.7618 ug/L	89
13) Acetone	5.35	43	377	0.3999 ug/L #	45
14) 1,1-Dichloroethene	5.58	61	8043	0.7833 ug/L	93
15) Tert-Butyl Alcohol	5.70	59	632	3.1303 ug/L #	61
16) Dimethyl Sulfide	5.84	62	6268	0.8758 ug/L	96
17) Iodomethane	6.10	142	5016	0.7066 ug/L	96
18) Methyl acetate	6.15	43	1741	0.7167 ug/L #	65
19) Methylene Chloride	6.39	84	5221	0.8565 ug/L	93
20) Carbon Disulfide	6.40	76	17332	0.8020 ug/L	99
21) Acrylonitrile	6.60	53	5024	4.2336 ug/L	92
22) Methyl Tert Butyl Ether	6.64	73	9083	0.8441 ug/L	81
23) trans-1,2-Dichloroethene	6.88	96	5226	0.7945 ug/L	96
24) n-Hexane	7.00	57	6162	0.6813 ug/L	100
25) Diisopropyl ether	7.37	45	105615	4.7533 ug/L	99
26) Vinyl Acetate	7.57	43	6108	0.7302 ug/L #	77
27) 1,1-Dichloroethane	7.57	63	10870	0.8478 ug/L	93
28) Ethyl-Tert-Butyl ether	8.02	59	77788	4.5071 ug/L	98
29) 2-Butanone	8.20	43	602	0.4493 ug/L #	57
30) Propionitrile	8.31	54	1329	5.3227 ug/L #	57
31) 2,2-Dichloropropane	8.43	77	8168	0.7839 ug/L	97
32) cis-1,2-Dichloroethene	8.51	96	5643	0.8066 ug/L	93
33) Chloroform	8.73	83	10402	0.8860 ug/L	96
34) 1-Bromopropane	8.89	122	909	0.8929 ug/L	79
35) Bromochloromethane	8.98	130	3003	0.8425 ug/L	96
36) Tetrahydrofuran	9.02	42	3530	4.2524 ug/L	89
38) 1,1,1-Trichloroethane	9.33	97	8426	0.8090 ug/L	98
39) Cyclohexane	9.36	56	8800	0.7264 ug/L	98
40) 1,1-Dichloropropene	9.56	75	7266	0.7775 ug/L	96
41) Tert-Amyl-Methyl ether	9.70	73	52367	4.3762 ug/L	96
42) Carbon Tetrachloride	9.70	117	7187	0.7743 ug/L	95
45) 1,2-Dichloroethane	9.92	62	5976	0.8736 ug/L #	89

(#) = qualifier out of range (m) = manual integration
6M115126.D 8260_WT.M Tue Apr 02 17:18:17 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115126.D Vial: 6
Acq On : 2 Apr 2013 10:08 Operator: FJB
Sample : WG425306-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:16:55 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	9.95	78	23502	0.8857 ug/L		98
47)	Trichloroethene	10.83	130	5502	0.8123 ug/L		95
48)	Methylcyclohexane	10.92	83	6265	0.8093 ug/L		92
49)	1,2-Dichloropropane	11.07	63	5582	0.8073 ug/L		98
51)	Bromodichloromethane	11.41	83	6805	0.8383 ug/L		98
52)	Dibromomethane	11.50	93	2069	0.7645 ug/L		91
53)	2-Chloroethyl Vinyl Ether	11.81	63	1464	0.5557 ug/L	#	43
55)	cis-1,3-Dichloropropene	12.17	75	7294	0.7953 ug/L		93
56)	Dimethyl Disulfide	12.44	79	2545	1.4364 ug/L		81
59)	Toluene	12.64	91	24811	0.8718 ug/L		92
60)	Ethyl Methacrylate	12.83	69	3307	0.7636 ug/L		85
62)	trans-1,3-Dichloropropene	12.88	75	5515	0.7334 ug/L		87
63)	1,1,2-Trichloroethane	13.11	97	2679	0.8654 ug/L		98
64)	2-Hexanone	13.08	43	1187	0.6098 ug/L	#	24
65)	1,3-Dichloropropane	13.47	76	5283	0.7742 ug/L		91
66)	Tetrachloroethene	13.59	166	5751	0.7922 ug/L		97
67)	Dibromochloromethane	13.88	129	3837	0.9217 ug/L		94
68)	1,2-Dibromoethane	14.18	107	2933	0.7704 ug/L		95
69)	1-Chlorohexane	14.36	91	6526	0.7736 ug/L		99
70)	Chlorobenzene	14.78	112	15994	0.8779 ug/L	#	68
71)	1,1,1,2-Tetrachloroethane	14.83	131	4808	0.7844 ug/L		84
72)	Ethylbenzene	14.84	106	8154	0.8293 ug/L		90
73)	m-,p-Xylene	14.94	106	20423	1.7289 ug/L		99
74)	o-Xylene	15.59	106	9433	0.8225 ug/L		90
75)	Styrene	15.65	104	16663	0.8547 ug/L		98
76)	Bromoform	16.17	173	1925	1.0691 ug/L	#	59
77)	Isopropylbenzene	16.11	105	23939	0.8309 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.37	83	2794	0.8830 ug/L		91
81)	1,2,3-Trichloropropane	16.60	110	619	0.9003 ug/L	#	53
83)	n-Propylbenzene	16.71	91	28729	0.8571 ug/L		97
84)	Bromobenzene	16.80	156	5835	0.8408 ug/L		96
85)	1,3,5-Trimethylbenzene	16.93	105	19279	0.8275 ug/L		98
86)	2-Chlorotoluene	16.99	91	20904	0.8745 ug/L		99
87)	4-Chlorotoluene	17.06	91	18427	0.8846 ug/L		98
88)	a-Methylstyrene	17.40	118	9463	0.7708 ug/L		95
89)	tert-Butylbenzene	17.47	134	3589	0.7756 ug/L		85
90)	1,2,4-Trimethylbenzene	17.52	105	21268	0.8701 ug/L		94
91)	sec-Butylbenzene	17.79	105	23091	0.8270 ug/L		99
92)	p-Isopropyltoluene	17.99	119	19579	0.8326 ug/L		100
93)	1,3-Dichlorobenzene	18.17	146	12050	0.8926 ug/L		97
94)	1,4-Dichlorobenzene	18.32	146	12353	0.9152 ug/L		94
95)	n-Butylbenzene	18.61	91	17072	0.8254 ug/L		96
96)	1,2-Dichlorobenzene	18.89	146	10629	0.9176 ug/L		98
98)	1,2,4-Trichlorobenzene	21.42	180	6905	0.8757 ug/L		96
99)	Hexachlorobutadiene	21.62	225	2706	0.8894 ug/L		88
100)	Naphthalene	21.82	128	9640	0.8111 ug/L		90
101)	1,2,3-Trichlorobenzene	22.20	180	5665	0.8806 ug/L		97

(#) = qualifier out of range (m) = manual integration
6M115126.D 8260_WT.M Tue Apr 02 17:18:17 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115126.D Vial: 6
Acq On : 2 Apr 2013 10:08 Operator: FJB
Sample : WG425306-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 2 17:16 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

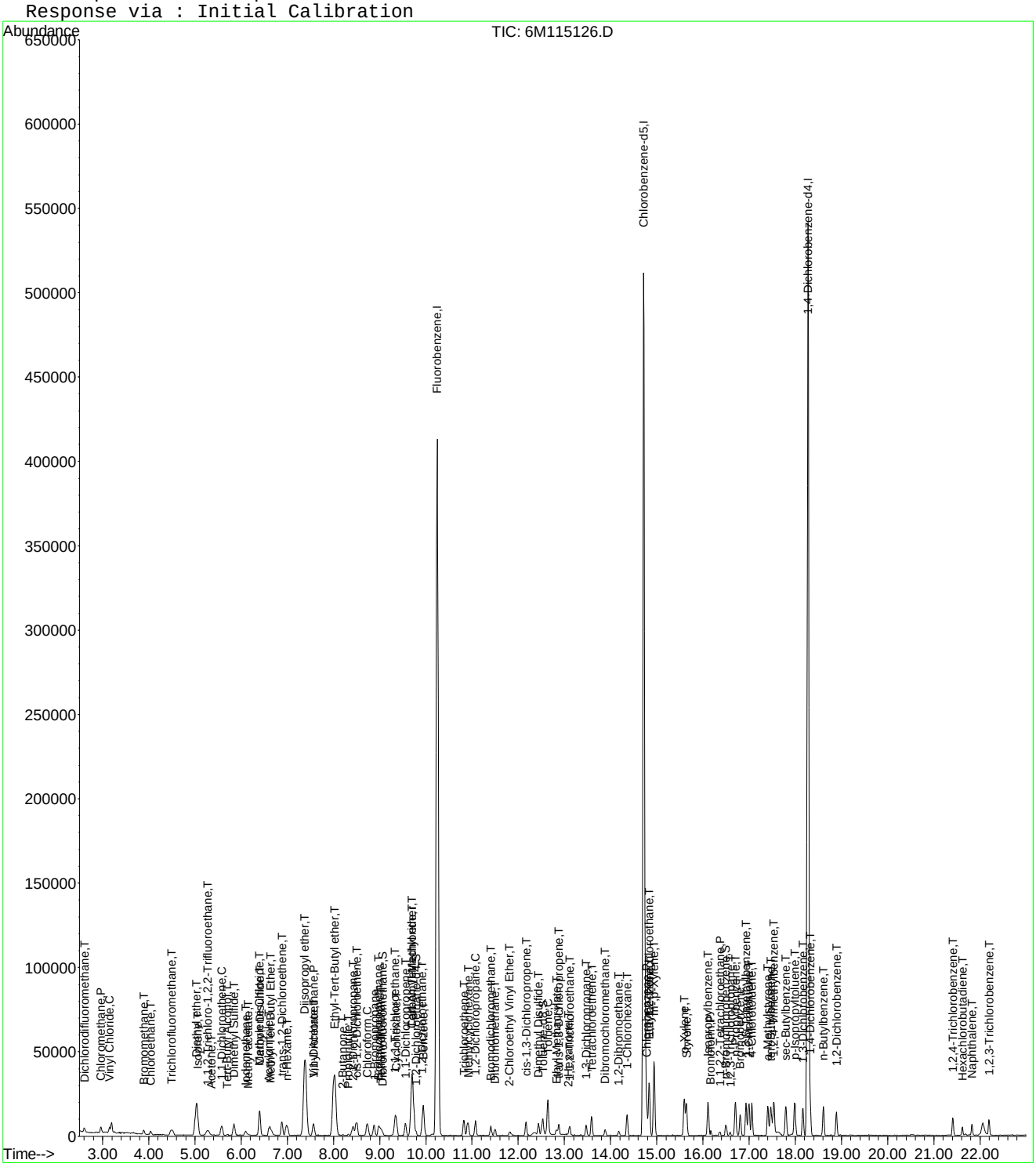

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115127.D Vial: 7
Acq On : 2 Apr 2013 10:39 Operator: FJB
Sample : WG425306-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:16:56 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	600364	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.72	117	435066	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	211806	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.05	111	6650	0.9889 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.96%#	
43) 1,2-Dichloroethane-d4	9.79	65	5597	0.9566 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.84%#	
58) Toluene-d8	12.52	98	24774	0.9932 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.96%#	
80) p-Bromofluorobenzene	16.50	95	8165	0.9566 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.61	85	11174	2.0621 ug/L	98
3) Chloromethane	2.97	50	12469	2.1247 ug/L	98
4) Vinyl Chloride	3.15	62	12236	2.3190 ug/L	93
5) 1,3-Butadiene	3.19	54	10225	0.8376 ug/L	94
6) Bromomethane	3.88	94	8255	1.8905 ug/L	100
7) Chloroethane	4.04	64	9973	2.0578 ug/L	96
8) Trichlorofluoromethane	4.50	101	21992	2.1135 ug/L	97
9) Diethyl ether	5.03	59	90944	23.0568 ug/L	97
10) Isoprene	5.05	67	19617	2.0540 ug/L	98
11) Acrolein	5.25	56	2577	21.1765 ug/L	81
12) 1,1,2-Trichloro-1,2,2-Trif	5.28	101	13173	2.1690 ug/L	97
13) Acetone	5.36	43	1709	1.7781 ug/L #	45
14) 1,1-Dichloroethene	5.58	61	22074	2.1088 ug/L	97
15) Tert-Butyl Alcohol	5.72	59	7799	37.8903 ug/L #	84
16) Dimethyl Sulfide	5.85	62	14506	1.9881 ug/L	100
17) Iodomethane	6.10	142	13933	1.9253 ug/L	98
18) Methyl acetate	6.15	43	4804	1.9398 ug/L #	65
19) Methylene Chloride	6.40	84	13137	2.1139 ug/L	99
20) Carbon Disulfide	6.41	76	46758	2.1223 ug/L	100
21) Acrylonitrile	6.60	53	26633	22.0143 ug/L	97
22) Methyl Tert Butyl Ether	6.64	73	21195	1.9320 ug/L	98
23) trans-1,2-Dichloroethene	6.89	96	13631	2.0327 ug/L	98
24) n-Hexane	6.99	57	18847	2.0442 ug/L	97
25) Diisopropyl ether	7.38	45	543776	24.0058 ug/L	100
26) Vinyl Acetate	7.56	43	15923	1.8673 ug/L	93
27) 1,1-Dichloroethane	7.57	63	27360	2.0933 ug/L	99
28) Ethyl-Tert-Butyl ether	8.01	59	407607	23.1661 ug/L	99
29) 2-Butanone	8.20	43	2444	1.7894 ug/L #	57
30) Propionitrile	8.32	54	9350	23.0344 ug/L	94
31) 2,2-Dichloropropane	8.42	77	22340	2.1030 ug/L	100
32) cis-1,2-Dichloroethene	8.50	96	14798	2.0748 ug/L	87
33) Chloroform	8.74	83	25104	2.0974 ug/L	99
34) 1-Bromopropane	8.88	122	2733	2.0252 ug/L	93
35) Bromochloromethane	8.98	130	7465	2.0544 ug/L	93
36) Tetrahydrofuran	9.02	42	18871	22.2988 ug/L	98
38) 1,1,1-Trichloroethane	9.33	97	22155	2.0866 ug/L	98
39) Cyclohexane	9.36	56	26635	2.1567 ug/L	99
40) 1,1-Dichloropropene	9.55	75	19977	2.0968 ug/L	99
41) Tert-Amyl-Methyl ether	9.71	73	277194	22.7221 ug/L	98
42) Carbon Tetrachloride	9.71	117	20032	2.1169 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115127.D Vial: 7
Acq On : 2 Apr 2013 10:39 Operator: FJB
Sample : WG425306-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:16:56 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.92	62	14344	2.0567 ug/L		97
46)	Benzene	9.95	78	56972	2.1060 ug/L		98
47)	Trichloroethene	10.82	130	14072	2.0380 ug/L		98
48)	Methylcyclohexane	10.91	83	19017	2.0825 ug/L		98
49)	1,2-Dichloropropane	11.06	63	13982	1.9837 ug/L		100
50)	1,4-Dioxane	11.42	88	205	47.8195 ug/L	#	18
51)	Bromodichloromethane	11.41	83	16357	1.9765 ug/L		97
52)	Dibromomethane	11.49	93	5581	2.0227 ug/L		92
53)	2-Chloroethyl Vinyl Ether	11.82	63	4290	1.5972 ug/L		82
54)	4-Methyl-2-Pentanone	11.84	58	1529	1.2790 ug/L	#	39
55)	cis-1,3-Dichloropropene	12.17	75	17312	1.8515 ug/L		98
56)	Dimethyl Disulfide	12.44	79	6855	2.2662 ug/L		98
59)	Toluene	12.65	91	59516	2.0698 ug/L		98
60)	Ethyl Methacrylate	12.83	69	7394	1.6899 ug/L		94
62)	trans-1,3-Dichloropropene	12.88	75	13237	1.7423 ug/L		100
63)	1,1,2-Trichloroethane	13.12	97	7369	2.0358 ug/L		97
64)	2-Hexanone	13.09	43	3499	1.7792 ug/L		89
65)	1,3-Dichloropropane	13.47	76	13370	1.9393 ug/L		98
66)	Tetrachloroethene	13.59	166	15246	2.0786 ug/L		95
67)	Dibromochloromethane	13.88	129	9080	1.8306 ug/L		94
68)	1,2-Dibromoethane	14.18	107	6939	1.8039 ug/L		96
69)	1-Chlorohexane	14.36	91	16995	1.9939 ug/L		98
70)	Chlorobenzene	14.78	112	37449	2.0345 ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.83	131	12514	2.0208 ug/L		97
72)	Ethylbenzene	14.83	106	20487	2.0623 ug/L		95
73)	m-,p-Xylene	14.94	106	50062	4.1946 ug/L		98
74)	o-Xylene	15.60	106	24133	2.0826 ug/L		99
75)	Styrene	15.64	104	38822	1.9710 ug/L		99
76)	Bromoform	16.17	173	4853	1.9794 ug/L		93
77)	Isopropylbenzene	16.11	105	61419	2.1099 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.36	83	7599	2.0214 ug/L		99
81)	1,2,3-Trichloropropane	16.59	110	1996	2.0950 ug/L		88
82)	trans-1,4-Dichloro-2-Buten	16.67	53	1922	1.5228 ug/L		86
83)	n-Propylbenzene	16.71	91	72078	2.1219 ug/L		98
84)	Bromobenzene	16.81	156	14514	2.0638 ug/L		99
85)	1,3,5-Trimethylbenzene	16.94	105	49521	2.0974 ug/L		99
86)	2-Chlorotoluene	17.00	91	51979	2.1457 ug/L		97
87)	4-Chlorotoluene	17.06	91	42849	2.0297 ug/L		98
88)	a-Methylstyrene	17.40	118	24037	1.9319 ug/L		98
89)	tert-Butylbenzene	17.48	134	9952	2.1222 ug/L		98
90)	1,2,4-Trimethylbenzene	17.53	105	52708	2.1277 ug/L		88
91)	sec-Butylbenzene	17.79	105	60931	2.1532 ug/L		98
92)	p-Isopropyltoluene	17.99	119	50165	2.1051 ug/L		100
93)	1,3-Dichlorobenzene	18.17	146	28155	2.0579 ug/L		100
94)	1,4-Dichlorobenzene	18.32	146	27619	2.0191 ug/L		84
95)	n-Butylbenzene	18.61	91	44279	2.1124 ug/L		97
96)	1,2-Dichlorobenzene	18.89	146	23653	2.0149 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	20.07	75	779	1.9137 ug/L		84
98)	1,2,4-Trichlorobenzene	21.42	180	15814	1.9791 ug/L		99
99)	Hexachlorobutadiene	21.62	225	7377	2.2079 ug/L		98
100)	Naphthalene	21.83	128	22824	1.8949 ug/L		99
101)	1,2,3-Trichlorobenzene	22.19	180	13221	2.0279 ug/L		100

(#) = qualifier out of range (m) = manual integration
6M115127.D 8260_WT.M Tue Apr 02 17:19:15 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115127.D Vial: 7
Acq On : 2 Apr 2013 10:39 Operator: FJB
Sample : WG425306-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 2 17:16 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

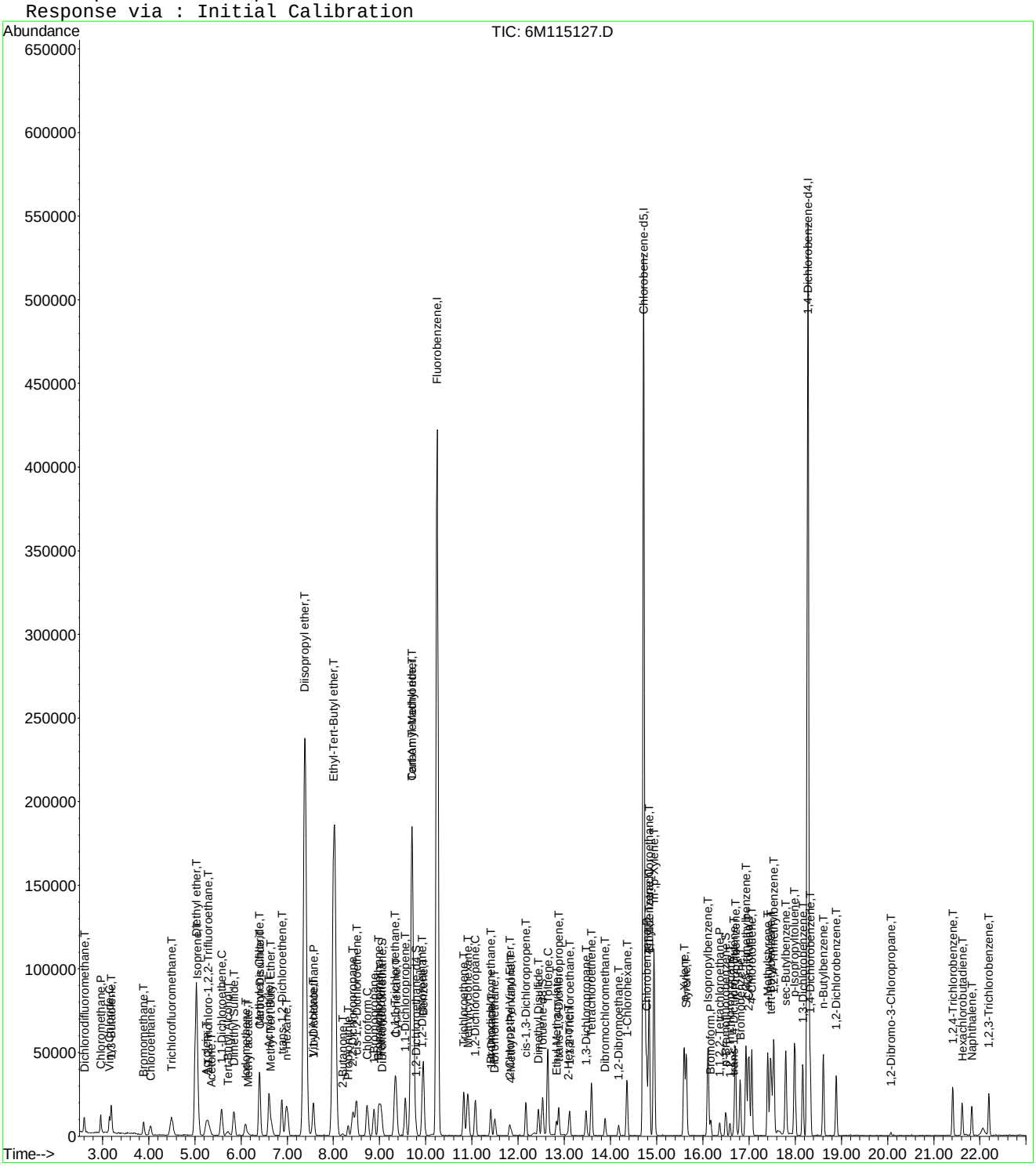

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115128.D Vial: 8
Acq On : 2 Apr 2013 11:10 Operator: FJB
Sample : WG425306-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:19:41 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	603412	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.72	117	437628	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	216636	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.05	111	18039	2.6689 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.68%#		
43) 1,2-Dichloroethane-d4	9.79	65	15426	2.6232 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.48%#		
58) Toluene-d8	12.52	98	64307	2.5630 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.24%#		
80) p-Bromofluorobenzene	16.50	95	22862	2.6187 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.48%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.60	85	27815	5.1071 ug/L	99
3) Chloromethane	2.97	50	31080	5.2692 ug/L	99
4) Vinyl Chloride	3.15	62	28244	5.3258 ug/L	97
5) 1,3-Butadiene	3.19	54	23132	4.4104 ug/L	99
6) Bromomethane	3.89	94	21513	4.9018 ug/L	100
7) Chloroethane	4.04	64	26599	5.4606 ug/L	99
8) Trichlorofluoromethane	4.49	101	57829	5.5295 ug/L	99
9) Diethyl ether	5.03	59	209538	52.8554 ug/L	99
10) Isoprene	5.06	67	51062	5.3194 ug/L	99
11) Acrolein	5.25	56	5863	47.9358 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	5.27	101	33970	5.3915 ug/L	98
13) Acetone	5.36	43	4568	4.7287 ug/L	90
14) 1,1-Dichloroethene	5.58	61	57351	5.4512 ug/L	100
15) Tert-Butyl Alcohol	5.72	59	20876	100.9108 ug/L	96
16) Dimethyl Sulfide	5.85	62	37886	5.1662 ug/L	99
17) Iodomethane	6.09	142	37074	5.0971 ug/L	97
18) Methyl acetate	6.14	43	14014	5.6300 ug/L #	87
19) Methylene Chloride	6.40	84	33473	5.3589 ug/L	99
20) Carbon Disulfide	6.41	76	119634	5.4027 ug/L	99
21) Acrylonitrile	6.60	53	60948	50.1238 ug/L	99
22) Methyl Tert Butyl Ether	6.65	73	57198	5.1875 ug/L	98
23) trans-1,2-Dichloroethene	6.89	96	35499	5.2671 ug/L	99
24) n-Hexane	6.99	57	49679	5.3610 ug/L	99
25) Diisopropyl ether	7.39	45	1220421	53.6051 ug/L	99
26) Vinyl Acetate	7.56	43	41826	4.8802 ug/L	96
27) 1,1-Dichloroethane	7.56	63	70736	5.3845 ug/L	100
28) Ethyl-Tert-Butyl ether	8.02	59	924762	52.2927 ug/L	100
29) 2-Butanone	8.20	43	6764	4.9273 ug/L #	72
30) Propionitrile	8.32	54	21502	49.7142 ug/L	99
31) 2,2-Dichloropropane	8.42	77	56035	5.2482 ug/L	96
32) cis-1,2-Dichloroethene	8.50	96	38872	5.4228 ug/L	97
33) Chloroform	8.74	83	64476	5.3596 ug/L	99
34) 1-Bromopropane	8.89	122	8032	5.3216 ug/L	98
35) Bromochloromethane	8.98	130	19857	5.4371 ug/L	100
36) Tetrahydrofuran	9.01	42	43555	51.2064 ug/L	99
38) 1,1,1-Trichloroethane	9.33	97	56768	5.3194 ug/L	99
39) Cyclohexane	9.35	56	69412	5.5920 ug/L	98
40) 1,1-Dichloropropene	9.55	75	51682	5.3973 ug/L	99
41) Tert-Amyl-Methyl ether	9.71	73	629558	51.3454 ug/L	99
42) Carbon Tetrachloride	9.71	117	51599	5.4251 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M115128.D 8260_WT.M Tue Apr 02 17:19:42 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115128.D Vial: 8
Acq On : 2 Apr 2013 11:10 Operator: FJB
Sample : WG425306-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:19:41 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	9.92	62	36924	5.2677	ug/L	98
46)	Benzene	9.95	78	144967	5.3316	ug/L	100
47)	Trichloroethene	10.82	130	36940	5.3228	ug/L	99
48)	Methylcyclohexane	10.91	83	49569	5.1370	ug/L	98
49)	1,2-Dichloropropane	11.07	63	36866	5.2039	ug/L	99
50)	1,4-Dioxane	11.43	88	1871	102.5537	ug/L	98
51)	Bromodichloromethane	11.41	83	42893	5.1568	ug/L	100
52)	Dibromomethane	11.49	93	14837	5.3501	ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.81	63	12254	4.5393	ug/L	96
54)	4-Methyl-2-Pentanone	11.85	58	5576	4.6407	ug/L	93
55)	cis-1,3-Dichloropropene	12.17	75	47852	5.0919	ug/L	99
56)	Dimethyl Disulfide	12.44	79	19443	4.6987	ug/L	97
59)	Toluene	12.65	91	152802	5.2830	ug/L	98
60)	Ethyl Methacrylate	12.83	69	21617	4.9116	ug/L	99
62)	trans-1,3-Dichloropropene	12.88	75	37912	4.9610	ug/L	98
63)	1,1,2-Trichloroethane	13.12	97	19603	5.0780	ug/L	98
64)	2-Hexanone	13.09	43	9057	4.5784	ug/L	94
65)	1,3-Dichloropropane	13.47	76	35998	5.1908	ug/L	99
66)	Tetrachloroethene	13.59	166	39109	5.3008	ug/L	100
67)	Dibromochloromethane	13.88	129	25350	4.6469	ug/L	98
68)	1,2-Dibromoethane	14.18	107	19254	4.9761	ug/L	99
69)	1-Chlorohexane	14.36	91	44943	5.2421	ug/L	98
70)	Chlorobenzene	14.78	112	97180	5.2485	ug/L	95
71)	1,1,1,2-Tetrachloroethane	14.83	131	32854	5.2742	ug/L	98
72)	Ethylbenzene	14.84	106	52978	5.3017	ug/L	97
73)	m-,p-Xylene	14.94	106	129685	10.8024	ug/L	99
74)	o-Xylene	15.60	106	60977	5.2313	ug/L	97
75)	Styrene	15.64	104	100792	5.0872	ug/L	99
76)	Bromoform	16.18	173	13987	4.8128	ug/L	97
77)	Isopropylbenzene	16.11	105	159720	5.4547	ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.36	83	20831	5.0701	ug/L	99
81)	1,2,3-Trichloropropane	16.59	110	5583	5.1172	ug/L	99
82)	trans-1,4-Dichloro-2-Buten	16.67	53	6377	4.9398	ug/L	87
83)	n-Propylbenzene	16.70	91	188103	5.4141	ug/L	100
84)	Bromobenzene	16.80	156	37504	5.2139	ug/L	97
85)	1,3,5-Trimethylbenzene	16.94	105	129042	5.3436	ug/L	100
86)	2-Chlorotoluene	17.00	91	133182	5.3753	ug/L	99
87)	4-Chlorotoluene	17.06	91	112464	5.2084	ug/L	100
88)	a-Methylstyrene	17.41	118	65787	5.1694	ug/L	96
89)	tert-Butylbenzene	17.48	134	26495	5.5240	ug/L	99
90)	1,2,4-Trimethylbenzene	17.53	105	133976	5.2877	ug/L	99
91)	sec-Butylbenzene	17.79	105	156271	5.3993	ug/L	100
92)	p-Isopropyltoluene	17.99	119	131291	5.3867	ug/L	99
93)	1,3-Dichlorobenzene	18.17	146	73783	5.2728	ug/L	99
94)	1,4-Dichlorobenzene	18.32	146	73809	5.2756	ug/L	96
95)	n-Butylbenzene	18.61	91	113903	5.3127	ug/L	100
96)	1,2-Dichlorobenzene	18.89	146	63399	5.2803	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	20.07	75	2924	5.0918	ug/L	92
98)	1,2,4-Trichlorobenzene	21.42	180	41868	5.1228	ug/L	99
99)	Hexachlorobutadiene	21.62	225	18612	5.2862	ug/L	97
100)	Naphthalene	21.83	128	60669	4.9245	ug/L	99
101)	1,2,3-Trichlorobenzene	22.19	180	33934	5.0888	ug/L	98

(#) = qualifier out of range (m) = manual integration
6M115128.D 8260_WT.M Tue Apr 02 17:19:42 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115128.D Vial: 8
Acq On : 2 Apr 2013 11:10 Operator: FJB
Sample : WG425306-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 2 17:19 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

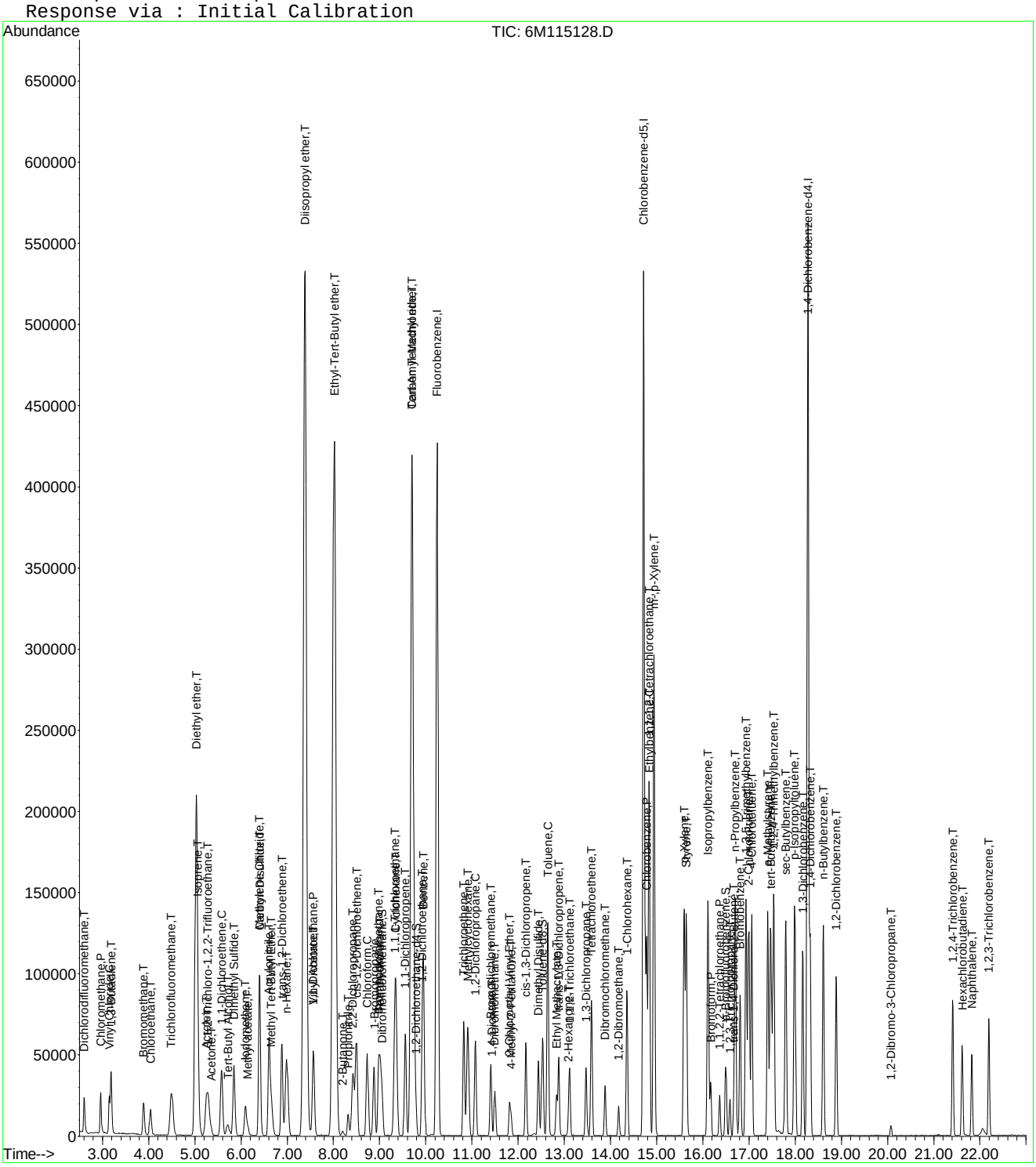

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115129.D Vial: 9
Acq On : 2 Apr 2013 11:41 Operator: FJB
Sample : WG425306-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:19:44 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	619440	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.72	117	444717	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	225152	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.05	111	72975	10.5173 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 42.08%#		
43) 1,2-Dichloroethane-d4	9.79	65	64495	10.6836 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 42.72%#		
58) Toluene-d8	12.52	98	261698	10.2638 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.04%#		
80) p-Bromofluorobenzene	16.50	95	92677	10.2142 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 40.84%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.60	85	119575	21.3871 ug/L	99
3) Chloromethane	2.97	50	118374	19.5494 ug/L	100
4) Vinyl Chloride	3.15	62	110074	20.2191 ug/L	99
5) 1,3-Butadiene	3.18	54	86016	21.6397 ug/L	99
6) Bromomethane	3.89	94	89344	19.8305 ug/L	99
7) Chloroethane	4.04	64	104160	20.8299 ug/L	99
8) Trichlorofluoromethane	4.50	101	225562	21.0099 ug/L	100
9) Diethyl ether	5.03	59	338976	83.2933 ug/L	99
10) Isoprene	5.05	67	202212	20.5203 ug/L	99
11) Acrolein	5.25	56	9543	76.0046 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.26	101	131254	19.9865 ug/L	99
13) Acetone	5.36	43	19656	19.8211 ug/L	98
14) 1,1-Dichloroethene	5.57	61	222215	20.5751 ug/L	100
15) Tert-Butyl Alcohol	5.71	59	33733	158.8400 ug/L	99
16) Dimethyl Sulfide	5.85	62	154450	20.5160 ug/L	100
17) Iodomethane	6.09	142	151894	20.3429 ug/L	99
18) Methyl acetate	6.15	43	52338	20.4822 ug/L	97
19) Methylene Chloride	6.40	84	130799	20.3986 ug/L	100
20) Carbon Disulfide	6.41	76	466401	20.5178 ug/L	100
21) Acrylonitrile	6.60	53	100452	80.4745 ug/L	97
22) Methyl Tert Butyl Ether	6.65	73	232410	20.5326 ug/L	100
23) trans-1,2-Dichloroethene	6.89	96	141342	20.4286 ug/L	98
24) n-Hexane	6.99	57	195572	20.5587 ug/L	99
25) Diisopropyl ether	7.38	45	1941058	83.0520 ug/L	100
26) Vinyl Acetate	7.56	43	182071	20.6943 ug/L	99
27) 1,1-Dichloroethane	7.56	63	273901	20.3103 ug/L	100
28) Ethyl-Tert-Butyl ether	8.02	59	1495692	82.3888 ug/L	100
29) 2-Butanone	8.21	43	27377	19.4270 ug/L	99
30) Propionitrile	8.32	54	35675	78.9186 ug/L	97
31) 2,2-Dichloropropane	8.43	77	223678	20.4074 ug/L	100
32) cis-1,2-Dichloroethene	8.50	96	150192	20.4101 ug/L	99
33) Chloroform	8.74	83	249417	20.1963 ug/L	100
34) 1-Bromopropane	8.88	122	31836	19.6546 ug/L	100
35) Bromochloromethane	8.98	130	76888	20.5083 ug/L	100
36) Tetrahydrofuran	9.02	42	73192	83.8233 ug/L	99
38) 1,1,1-Trichloroethane	9.33	97	222287	20.2904 ug/L	99
39) Cyclohexane	9.35	56	268477	21.0694 ug/L	100
40) 1,1-Dichloropropene	9.55	75	199613	20.3066 ug/L	99
41) Tert-Amyl-Methyl ether	9.71	73	1030122	81.8406 ug/L	99
42) Carbon Tetrachloride	9.71	117	201040	20.5904 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115129.D Vial: 9
Acq On : 2 Apr 2013 11:41 Operator: FJB
Sample : WG425306-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:19:44 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.92	62	148767	20.6742 ug/L	100
46)	Benzene	9.95	78	558026	19.9922 ug/L	100
47)	Trichloroethene	10.82	130	143397	20.1278 ug/L	99
48)	Methylcyclohexane	10.91	83	195349	19.2507 ug/L	98
49)	1,2-Dichloropropane	11.07	63	146657	20.1658 ug/L	98
50)	1,4-Dioxane	11.42	88	3639	157.5799 ug/L	88
51)	Bromodichloromethane	11.41	83	171575	20.0940 ug/L	99
52)	Dibromomethane	11.49	93	60286	21.1762 ug/L	98
53)	2-Chloroethyl Vinyl Ether	11.81	63	53438	19.2829 ug/L	99
54)	4-Methyl-2-Pentanone	11.85	58	23341	18.9233 ug/L	96
55)	cis-1,3-Dichloropropene	12.17	75	200843	20.8187 ug/L	100
56)	Dimethyl Disulfide	12.44	79	91293	18.1640 ug/L	99
59)	Toluene	12.64	91	577179	19.6373 ug/L	100
60)	Ethyl Methacrylate	12.83	69	89983	20.1190 ug/L	98
62)	trans-1,3-Dichloropropene	12.88	75	158571	20.4193 ug/L	99
63)	1,1,2-Trichloroethane	13.12	97	79470	19.7021 ug/L	99
64)	2-Hexanone	13.09	43	39302	19.5510 ug/L	98
65)	1,3-Dichloropropane	13.47	76	144049	20.4403 ug/L	99
66)	Tetrachloroethene	13.59	166	148907	19.8610 ug/L	99
67)	Dibromochloromethane	13.88	129	108008	18.7028 ug/L	100
68)	1,2-Dibromoethane	14.18	107	79164	20.1336 ug/L	99
69)	1-Chlorohexane	14.35	91	174392	20.0166 ug/L	99
70)	Chlorobenzene	14.78	112	374738	19.9162 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.83	131	129857	20.5143 ug/L	100
72)	Ethylbenzene	14.84	106	204290	20.1180 ug/L	98
73)	m-,p-Xylene	14.94	106	494797	40.5584 ug/L	99
74)	o-Xylene	15.60	106	241115	20.3557 ug/L	100
75)	Styrene	15.64	104	398234	19.7793 ug/L	100
76)	Bromoform	16.17	173	59432	18.6599 ug/L	100
77)	Isopropylbenzene	16.11	105	614762	20.6603 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.36	83	84886	19.2751 ug/L	99
81)	1,2,3-Trichloropropane	16.59	110	23358	19.5320 ug/L	99
82)	trans-1,4-Dichloro-2-Buten	16.67	53	26944	20.0822 ug/L	93
83)	n-Propylbenzene	16.70	91	727817	20.1562 ug/L	100
84)	Bromobenzene	16.80	156	150069	20.0737 ug/L	100
85)	1,3,5-Trimethylbenzene	16.94	105	499601	19.9057 ug/L	100
86)	2-Chlorotoluene	17.00	91	513646	19.9469 ug/L	100
87)	4-Chlorotoluene	17.06	91	435202	19.3927 ug/L	100
88)	a-Methylstyrene	17.41	118	268181	20.2762 ug/L	100
89)	tert-Butylbenzene	17.48	134	100609	20.1828 ug/L	99
90)	1,2,4-Trimethylbenzene	17.53	105	513159	19.4870 ug/L	100
91)	sec-Butylbenzene	17.79	105	593198	19.7205 ug/L	100
92)	p-Isopropyltoluene	17.99	119	508888	20.0891 ug/L	100
93)	1,3-Dichlorobenzene	18.17	146	289657	19.9170 ug/L	100
94)	1,4-Dichlorobenzene	18.32	146	287285	19.7574 ug/L	100
95)	n-Butylbenzene	18.61	91	445435	19.9903 ug/L	99
96)	1,2-Dichlorobenzene	18.89	146	249711	20.0110 ug/L	100
97)	1,2-Dibromo-3-Chloropropan	20.07	75	13234	19.7469 ug/L	94
98)	1,2,4-Trichlorobenzene	21.41	180	172421	20.2987 ug/L	100
99)	Hexachlorobutadiene	21.61	225	72843	19.6046 ug/L	99
100)	Naphthalene	21.83	128	261360	20.4121 ug/L	100
101)	1,2,3-Trichlorobenzene	22.19	180	140663	20.2963 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115129.D Vial: 9
Acq On : 2 Apr 2013 11:41 Operator: FJB
Sample : WG425306-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 2 17:19 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

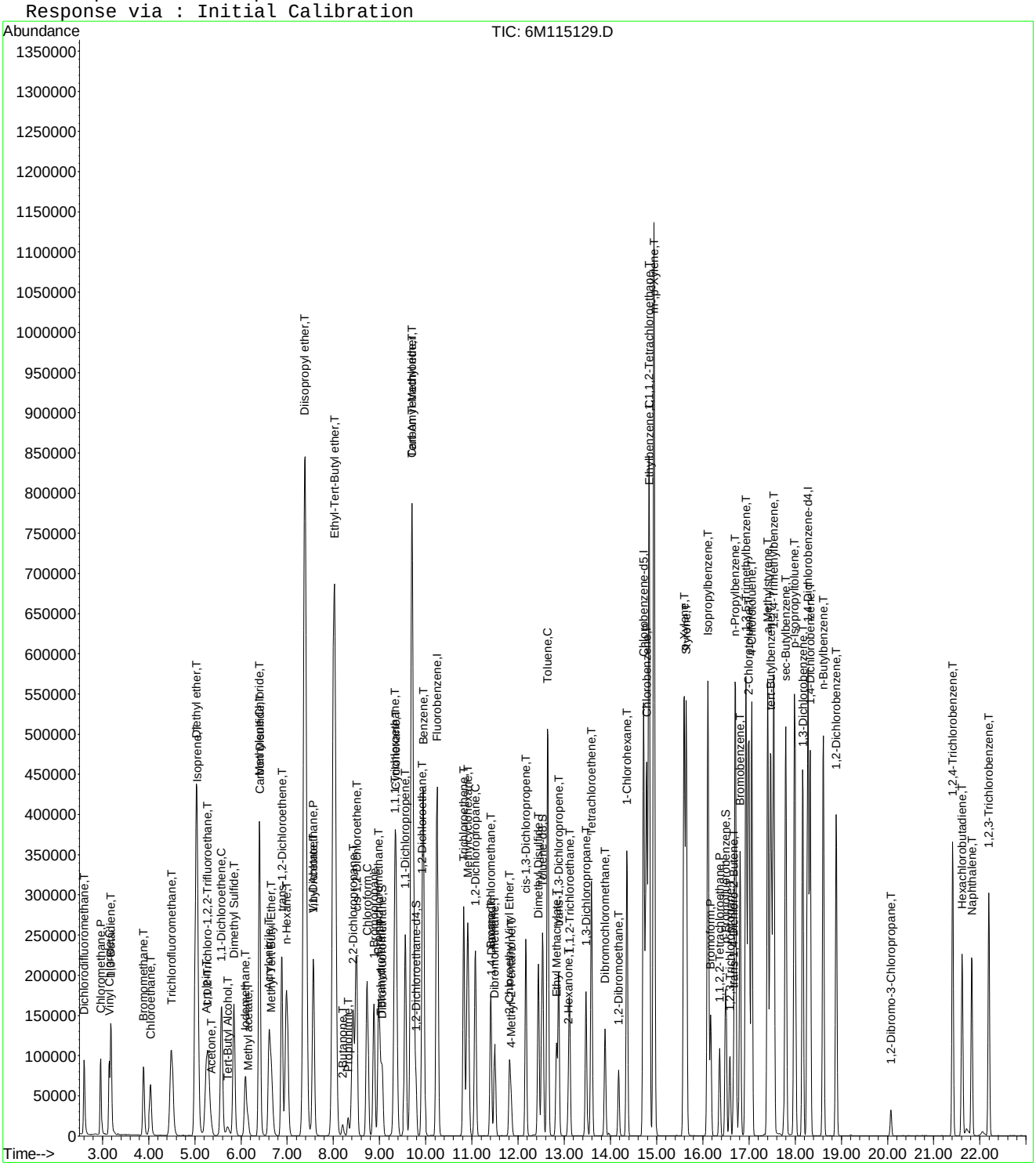

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115130.D Vial: 10
Acq On : 2 Apr 2013 12:13 Operator: FJB
Sample : WG425306-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:19:45 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.24	96	632737	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.72	117	454997	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	232088	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.06	111	178883	25.2393 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.96%		
43) 1,2-Dichloroethane-d4	9.79	65	153752	24.9338 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.72%		
58) Toluene-d8	12.53	98	641626	24.5960 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.40%		
80) p-Bromofluorobenzene	16.49	95	231718	24.7751 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.12%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.61	85	315981	55.3285 ug/L	100
3) Chloromethane	2.96	50	312026	50.4481 ug/L	100
4) Vinyl Chloride	3.15	62	290308	52.2050 ug/L	100
5) 1,3-Butadiene	3.18	54	204772	55.0991 ug/L	100
6) Bromomethane	3.89	94	246797	53.6270 ug/L	100
7) Chloroethane	4.04	64	273161	53.4787 ug/L	100
8) Trichlorofluoromethane	4.50	101	598691	54.5929 ug/L	100
9) Diethyl ether	5.03	59	442092	106.3481 ug/L	100
10) Isoprene	5.05	67	541319	53.7782 ug/L	100
11) Acrolein	5.25	56	13472	105.0421 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.28	101	349589	51.9363 ug/L	100
13) Acetone	5.36	43	52717	52.0426 ug/L	100
14) 1,1-Dichloroethene	5.58	61	587954	53.2951 ug/L	100
15) Tert-Butyl Alcohol	5.72	59	47929	220.9425 ug/L	100
16) Dimethyl Sulfide	5.84	62	415960	54.0919 ug/L	100
17) Iodomethane	6.10	142	415226	54.4418 ug/L	100
18) Methyl acetate	6.15	43	139123	53.3009 ug/L	100
19) Methylene Chloride	6.40	84	341608	52.1555 ug/L	100
20) Carbon Disulfide	6.41	76	1231482	53.0365 ug/L	100
21) Acrylonitrile	6.61	53	134910	105.8083 ug/L	100
22) Methyl Tert Butyl Ether	6.65	73	629695	54.4623 ug/L	100
23) trans-1,2-Dichloroethene	6.89	96	373716	52.8792 ug/L	100
24) n-Hexane	6.99	57	525758	54.1067 ug/L	100
25) Diisopropyl ether	7.39	45	2493132	104.4318 ug/L	100
26) Vinyl Acetate	7.56	43	472357	52.5600 ug/L	100
27) 1,1-Dichloroethane	7.57	63	717625	52.0950 ug/L	100
28) Ethyl-Tert-Butyl ether	8.02	59	1945837	104.9321 ug/L	100
29) 2-Butanone	8.20	43	74494	51.7509 ug/L	100
30) Propionitrile	8.31	54	47812	102.8205 ug/L	100
31) 2,2-Dichloropropane	8.43	77	601397	53.7158 ug/L	100
32) cis-1,2-Dichloroethene	8.50	96	397219	52.8450 ug/L	100
33) Chloroform	8.73	83	663605	52.6056 ug/L	100
34) 1-Bromopropane	8.89	122	86502	51.7636 ug/L	100
35) Bromochloromethane	8.99	130	205983	53.7871 ug/L	100
36) Tetrahydrofuran	9.02	42	96611	108.3188 ug/L	100
38) 1,1,1-Trichloroethane	9.33	97	594365	53.1137 ug/L	100
39) Cyclohexane	9.36	56	715042	54.9354 ug/L	100
40) 1,1-Dichloropropene	9.56	75	536834	53.4645 ug/L	100
41) Tert-Amyl-Methyl ether	9.70	73	1361113	105.8645 ug/L	100
42) Carbon Tetrachloride	9.70	117	542728	54.4179 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M115130.D 8260_WT.M Tue Apr 02 17:19:45 2013 Page 1

Data File : C:\MSDCHEM\1\DATA\040213\6M115130.D Vial: 10
Acq On : 2 Apr 2013 12:13 Operator: FJB
Sample : WG425306-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:19:45 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	9.92	62	392265	53.3677	ug/L	100
46)	Benzene	9.95	78	1472135	51.6333	ug/L	100
47)	Trichloroethene	10.83	130	386163	53.0643	ug/L	100
48)	Methylcyclohexane	10.92	83	535394	51.3732	ug/L	100
49)	1,2-Dichloropropane	11.07	63	395369	53.2221	ug/L	100
50)	1,4-Dioxane	11.42	88	5371	209.4303	ug/L	100
51)	Bromodichloromethane	11.41	83	473775	54.3200	ug/L	100
52)	Dibromomethane	11.49	93	160576	55.2189	ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.81	63	144084	50.8994	ug/L	100
54)	4-Methyl-2-Pentanone	11.85	58	65675	52.1258	ug/L	100
55)	cis-1,3-Dichloropropene	12.17	75	554004	56.2195	ug/L	100
56)	Dimethyl Disulfide	12.44	79	266445	50.1696	ug/L	100
59)	Toluene	12.64	91	1520174	50.5521	ug/L	100
60)	Ethyl Methacrylate	12.83	69	255212	55.7727	ug/L	100
62)	trans-1,3-Dichloropropene	12.88	75	442138	55.6480	ug/L	100
63)	1,1,2-Trichloroethane	13.11	97	215155	51.8298	ug/L	100
64)	2-Hexanone	13.08	43	108014	52.5183	ug/L	100
65)	1,3-Dichloropropane	13.47	76	396232	54.9544	ug/L	100
66)	Tetrachloroethene	13.59	166	398092	51.8972	ug/L	100
67)	Dibromochloromethane	13.88	129	305378	51.2539	ug/L	100
68)	1,2-Dibromoethane	14.18	107	220872	54.9046	ug/L	100
69)	1-Chlorohexane	14.36	91	475494	53.3437	ug/L	100
70)	Chlorobenzene	14.78	112	999553	51.9231	ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.83	131	356267	55.0101	ug/L	100
72)	Ethylbenzene	14.84	106	547316	52.6807	ug/L	100
73)	m-,p-Xylene	14.94	106	1330116	106.5659	ug/L	100
74)	o-Xylene	15.60	106	646941	53.3829	ug/L	100
75)	Styrene	15.65	104	1083401	52.5942	ug/L	100
76)	Bromoform	16.18	173	170934	51.6220	ug/L	100
77)	Isopropylbenzene	16.11	105	1635850	53.7338	ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.36	83	234722	51.3575	ug/L	100
81)	1,2,3-Trichloropropane	16.59	110	65274	52.3475	ug/L	99
82)	trans-1,4-Dichloro-2-Buten	16.67	53	76422	55.2573	ug/L	100
83)	n-Propylbenzene	16.71	91	1963953	52.7645	ug/L	100
84)	Bromobenzene	16.81	156	407214	52.8424	ug/L	100
85)	1,3,5-Trimethylbenzene	16.93	105	1360881	52.6014	ug/L	100
86)	2-Chlorotoluene	16.99	91	1358098	51.1643	ug/L	100
87)	4-Chlorotoluene	17.06	91	1211927	52.3899	ug/L	100
88)	a-Methylstyrene	17.40	118	741301	54.3721	ug/L	100
89)	tert-Butylbenzene	17.47	134	272951	53.1193	ug/L	100
90)	1,2,4-Trimethylbenzene	17.54	105	1385704	51.0488	ug/L	100
91)	sec-Butylbenzene	17.79	105	1605980	51.7942	ug/L	100
92)	p-Isopropyltoluene	18.00	119	1380616	52.8731	ug/L	100
93)	1,3-Dichlorobenzene	18.17	146	782199	52.1770	ug/L	100
94)	1,4-Dichlorobenzene	18.32	146	775279	51.7246	ug/L	100
95)	n-Butylbenzene	18.61	91	1204558	52.4428	ug/L	100
96)	1,2-Dichlorobenzene	18.89	146	681808	53.0051	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	20.07	75	36762	51.9884	ug/L	100
98)	1,2,4-Trichlorobenzene	21.42	180	468443	53.5005	ug/L	100
99)	Hexachlorobutadiene	21.62	225	200049	52.0494	ug/L	100
100)	Naphthalene	21.82	128	727397	55.1116	ug/L	100
101)	1,2,3-Trichlorobenzene	22.20	180	387986	54.3095	ug/L	100

(#) = qualifier out of range (m) = manual integration
6M115130.D 8260_WT.M Tue Apr 02 17:19:46 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115130.D Vial: 10
Acq On : 2 Apr 2013 12:13 Operator: FJB
Sample : WG425306-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 2 17:19 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

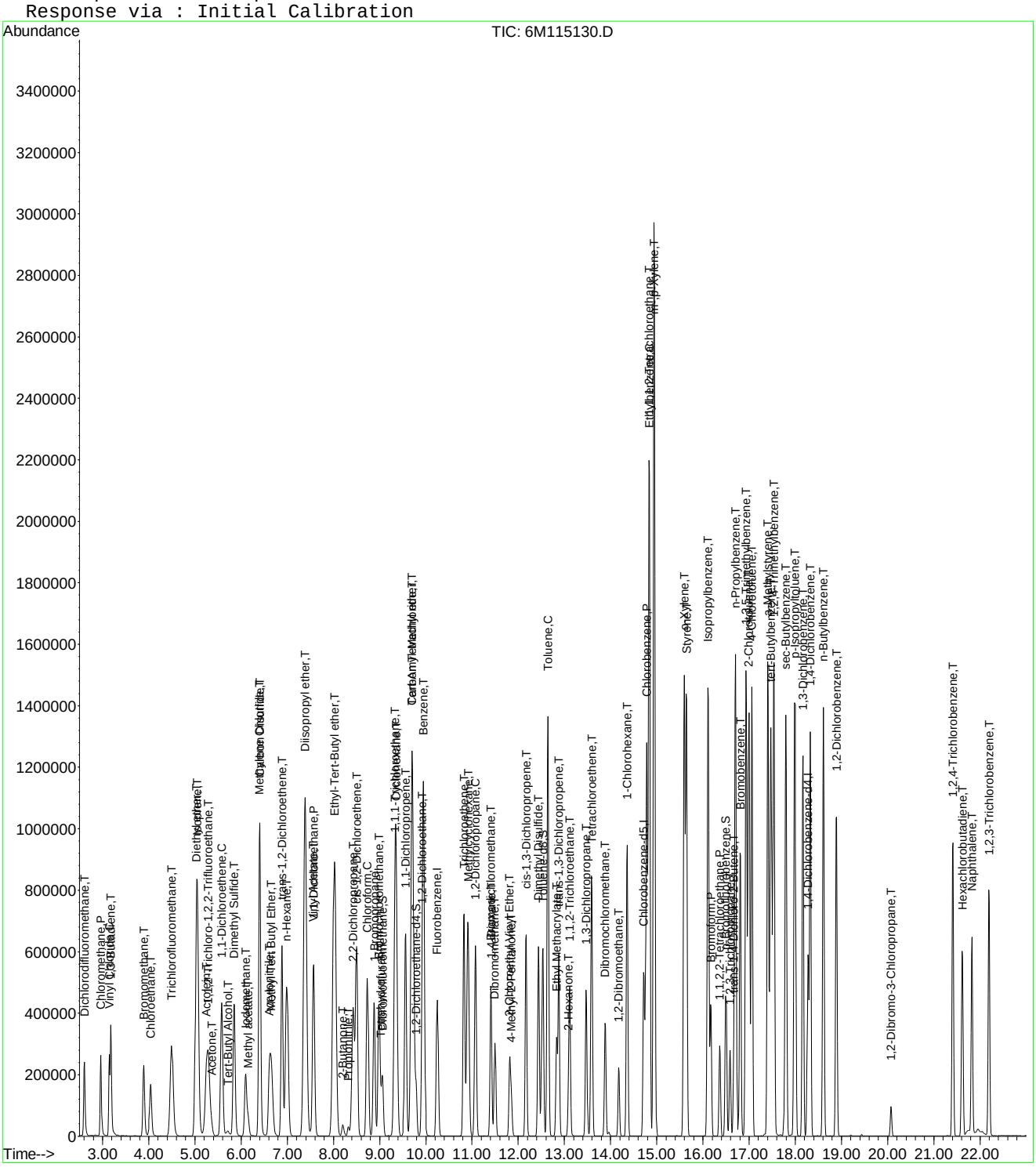

6M115130.D 8260_WT.M Tue Apr 02 17:19:46 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115131.D Vial: 11
Acq On : 2 Apr 2013 12:45 Operator: FJB
Sample : WG425306-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:19:46 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	661649	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.73	117	473928	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	18.27	152	235785	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.06	111	383146	51.6972 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 206.80%#		
43) 1,2-Dichloroethane-d4	9.79	65	326783	50.6783 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 202.72%#		
58) Toluene-d8	12.53	98	1363748	50.1895 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 200.76%#		
80) p-Bromofluorobenzene	16.49	95	490292	51.5997 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 206.40%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.61	85	677652	113.4724 ug/L	100
3) Chloromethane	2.96	50	664721	102.7753 ug/L	100
4) Vinyl Chloride	3.14	62	615732	105.8865 ug/L	99
5) 1,3-Butadiene	3.18	54	350970	95.9384 ug/L	97
6) Bromomethane	3.89	94	530855	110.3102 ug/L	100
7) Chloroethane	4.04	64	586829	109.8675 ug/L	100
8) Trichlorofluoromethane	4.50	101	1288076	112.3234 ug/L	100
9) Diethyl ether	5.03	59	919122	211.4393 ug/L	98
10) Isoprene	5.05	67	1144007	108.6868 ug/L	99
11) Acrolein	5.25	56	28819	214.8848 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.27	101	753939	106.9960 ug/L	100
13) Acetone	5.36	43	111071	104.8586 ug/L	95
14) 1,1-Dichloroethene	5.58	61	1270912	110.1679 ug/L	99
15) Tert-Butyl Alcohol	5.72	59	101162	445.9580 ug/L	98
16) Dimethyl Sulfide	5.84	62	848896	105.5677 ug/L	99
17) Iodomethane	6.10	142	887487	111.2771 ug/L	99
18) Methyl acetate	6.15	43	289970	106.2391 ug/L	100
19) Methylene Chloride	6.40	84	720106	105.1391 ug/L	96
20) Carbon Disulfide	6.41	76	2581232	106.3089 ug/L	100
21) Acrylonitrile	6.61	53	285237	213.9326 ug/L	100
22) Methyl Tert Butyl Ether	6.65	73	1352196	111.8409 ug/L	100
23) trans-1,2-Dichloroethene	6.89	96	802532	108.5929 ug/L	99
24) n-Hexane	6.99	57	1112559	109.4923 ug/L	99
25) Diisopropyl ether	7.39	45	5103672	204.4400 ug/L	99
26) Vinyl Acetate	7.56	43	985280	104.8432 ug/L	99
27) 1,1-Dichloroethane	7.57	63	1524235	105.8148 ug/L	100
28) Ethyl-Tert-Butyl ether	8.02	59	4061571	209.4554 ug/L	99
29) 2-Butanone	8.20	43	157133	104.3903 ug/L	98
30) Propionitrile	8.32	54	100635	204.6093 ug/L	99
31) 2,2-Dichloropropane	8.43	77	1276888	109.0660 ug/L	99
32) cis-1,2-Dichloroethene	8.50	96	846939	107.7512 ug/L	99
33) Chloroform	8.73	83	1400904	106.2004 ug/L	99
34) 1-Bromopropane	8.89	122	181210	103.3864 ug/L	100
35) Bromochloromethane	8.99	130	441769	110.3159 ug/L	99
36) Tetrahydrofuran	9.02	42	201641	216.1980 ug/L	99
38) 1,1,1-Trichloroethane	9.33	97	1269930	108.5247 ug/L	100
39) Cyclohexane	9.36	56	1506180	110.6606 ug/L	99
40) 1,1-Dichloropropene	9.56	75	1152805	109.7935 ug/L	99
41) Tert-Amyl-Methyl ether	9.70	73	2895332	215.3527 ug/L	99
42) Carbon Tetrachloride	9.70	117	1166943	111.8934 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M115131.D 8260_WT.M Tue Apr 02 17:19:47 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115131.D Vial: 11
Acq On : 2 Apr 2013 12:45 Operator: FJB
Sample : WG425306-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:19:46 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.92	62	823284	107.1135 ug/L	100
46)	Benzene	9.95	78	3123321	104.7597 ug/L	100
47)	Trichloroethene	10.83	130	830421	109.1254 ug/L	99
48)	Methylcyclohexane	10.91	83	1137358	104.1946 ug/L	99
49)	1,2-Dichloropropane	11.07	63	835552	107.5619 ug/L	100
50)	1,4-Dioxane	11.42	88	11933	398.8058 ug/L	96
51)	Bromodichloromethane	11.41	83	998770	109.5087 ug/L	99
52)	Dibromomethane	11.49	93	339840	111.7577 ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.81	63	312292	105.5003 ug/L	100
54)	4-Methyl-2-Pentanone	11.85	58	138867	105.4016 ug/L	98
55)	cis-1,3-Dichloropropene	12.18	75	1161610	112.7274 ug/L	100
56)	Dimethyl Disulfide	12.44	79	571128	101.8624 ug/L	99
59)	Toluene	12.65	91	3181714	101.5787 ug/L	99
60)	Ethyl Methacrylate	12.83	69	524278	109.9964 ug/L	99
62)	trans-1,3-Dichloropropene	12.88	75	924782	111.7448 ug/L	100
63)	1,1,2-Trichloroethane	13.11	97	442823	102.2313 ug/L	100
64)	2-Hexanone	13.08	43	226557	105.7558 ug/L	98
65)	1,3-Dichloropropane	13.47	76	816863	108.7673 ug/L	99
66)	Tetrachloroethene	13.59	166	853287	106.7952 ug/L	100
67)	Dibromochloromethane	13.88	129	635432	102.1453 ug/L	100
68)	1,2-Dibromoethane	14.18	107	455938	108.8103 ug/L	99
69)	1-Chlorohexane	14.36	91	998274	107.5187 ug/L	99
70)	Chlorobenzene	14.78	112	2081060	103.7853 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.83	131	742345	110.0446 ug/L	99
72)	Ethylbenzene	14.84	106	1146586	105.9537 ug/L	98
73)	m-,p-Xylene	14.95	106	2729850	209.9731 ug/L	97
74)	o-Xylene	15.60	106	1345346	106.5780 ug/L	98
75)	Styrene	15.65	104	2223756	103.6411 ug/L	99
76)	Bromoform	16.18	173	353595	102.0661 ug/L	99
77)	Isopropylbenzene	16.12	105	3364884	106.1135 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.36	83	474425	101.9726 ug/L	100
81)	1,2,3-Trichloropropane	16.59	110	130269	102.4929 ug/L	98
82)	trans-1,4-Dichloro-2-Buten	16.67	53	151415	107.7648 ug/L	97
83)	n-Propylbenzene	16.71	91	4000020	105.7814 ug/L	99
84)	Bromobenzene	16.81	156	836845	106.8910 ug/L	100
85)	1,3,5-Trimethylbenzene	16.93	105	2807408	106.8118 ug/L	100
86)	2-Chlorotoluene	17.00	91	2764870	102.5290 ug/L	99
87)	4-Chlorotoluene	17.06	91	2470022	105.1014 ug/L	99
88)	a-Methylstyrene	17.40	118	1493566	107.8307 ug/L	96
89)	tert-Butylbenzene	17.48	134	562168	107.6888 ug/L	100
90)	1,2,4-Trimethylbenzene	17.54	105	2803224	101.6505 ug/L	99
91)	sec-Butylbenzene	17.79	105	3282060	104.1895 ug/L	99
92)	p-Isopropyltoluene	18.00	119	2832658	106.7806 ug/L	100
93)	1,3-Dichlorobenzene	18.17	146	1582263	103.8909 ug/L	99
94)	1,4-Dichlorobenzene	18.32	146	1568534	103.0078 ug/L	100
95)	n-Butylbenzene	18.61	91	2454641	105.1920 ug/L	99
96)	1,2-Dichlorobenzene	18.89	146	1362389	104.2541 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	20.07	75	73201	101.2023 ug/L	99
98)	1,2,4-Trichlorobenzene	21.42	180	944125	106.1372 ug/L	99
99)	Hexachlorobutadiene	21.62	225	409430	104.7458 ug/L	100
100)	Naphthalene	21.83	128	1455072	108.5156 ug/L	99
101)	1,2,3-Trichlorobenzene	22.19	180	780195	107.4977 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M115131.D 8260_WT.M Tue Apr 02 17:19:47 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115131.D Vial: 11
Acq On : 2 Apr 2013 12:45 Operator: FJB
Sample : WG425306-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 2 17:19 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

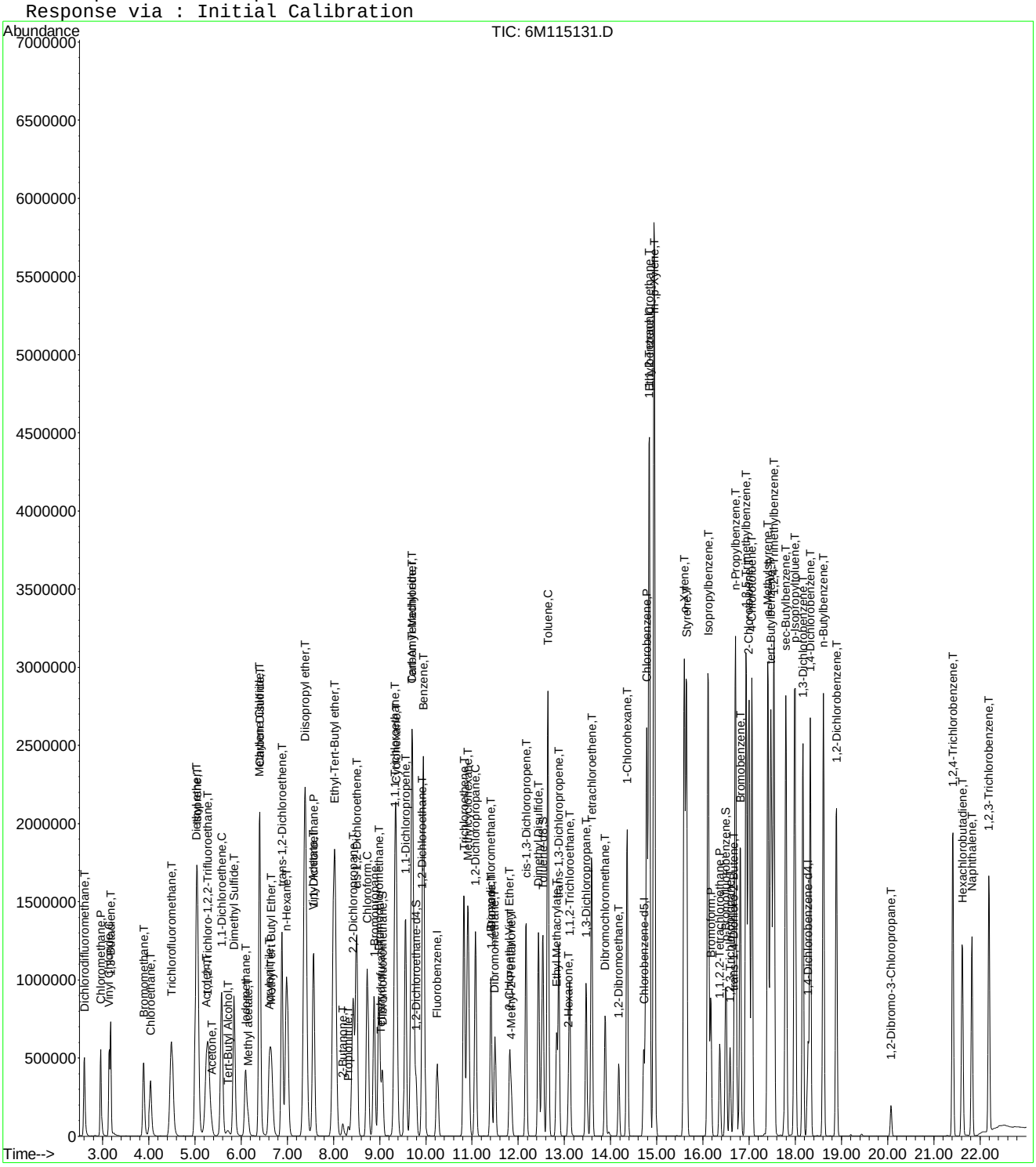

6M115131.D 8260_WT.M Tue Apr 02 17:19:47 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115132.D Vial: 12
Acq On : 2 Apr 2013 13:17 Operator: FJB
Sample : WG425306-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:19:48 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	701873	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.73	117	493846	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	18.28	152	244966	25.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.06	111	790815	100.5882 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 402.36%#		
43) 1,2-Dichloroethane-d4	9.79	65	661566	96.7175 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 386.88%#		
58) Toluene-d8	12.53	98	2791678	98.5972 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 394.40%#		
80) p-Bromofluorobenzene	16.49	95	997263	101.0213 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 404.08%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.61	85	1289364	203.5299 ug/L	100
3) Chloromethane	2.96	50	1286205	187.4687 ug/L	99
4) Vinyl Chloride	3.14	62	1161908	188.3604 ug/L	99
5) 1,3-Butadiene	3.18	54	645163	187.4424 ug/L	99
6) Bromomethane	3.88	94	1075706	210.7183 ug/L	100
7) Chloroethane	4.04	64	1149017	202.7931 ug/L	99
8) Trichlorofluoromethane	4.50	101	2484987	204.2782 ug/L	100
9) Diethyl ether	5.03	59	1101679	238.9113 ug/L	97
10) Isoprene	5.05	67	2258366	202.2608 ug/L	98
11) Acrolein	5.25	56	35956	252.7361 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.27	101	1487505	198.9074 ug/L	99
13) Acetone	5.36	43	223052	198.5083 ug/L	96
14) 1,1-Dichloroethene	5.57	61	2477555	202.4567 ug/L	98
15) Tert-Butyl Alcohol	5.72	59	122361	508.4973 ug/L	98
16) Dimethyl Sulfide	5.84	62	1710818	200.5623 ug/L	97
17) Iodomethane	6.10	142	1785016	210.9866 ug/L	98
18) Methyl acetate	6.15	43	584317	201.8129 ug/L	99
19) Methylene Chloride	6.40	84	1427521	196.4804 ug/L	93
20) Carbon Disulfide	6.41	76	4991161	193.7820 ug/L	99
21) Acrylonitrile	6.61	53	360937	255.1946 ug/L	97
22) Methyl Tert Butyl Ether	6.65	73	2758504	215.0819 ug/L	100
23) trans-1,2-Dichloroethene	6.89	96	1599956	204.0874 ug/L	97
24) n-Hexane	6.99	57	2185397	202.7496 ug/L	99
25) Diisopropyl ether	7.39	45	6161093	232.6537 ug/L	99
26) Vinyl Acetate	7.56	43	1931662	193.7675 ug/L	98
27) 1,1-Dichloroethane	7.57	63	3012202	197.1277 ug/L	99
28) Ethyl-Tert-Butyl ether	8.02	59	4968852	241.5588 ug/L	99
29) 2-Butanone	8.20	43	310389	194.3874 ug/L	95
30) Propionitrile	8.32	54	123396	236.1465 ug/L	99
31) 2,2-Dichloropropane	8.43	77	2505202	201.7197 ug/L	97
32) cis-1,2-Dichloroethene	8.50	96	1700429	203.9377 ug/L	97
33) Chloroform	8.73	83	2778832	198.5862 ug/L	99
34) 1-Bromopropane	8.89	122	366916	197.0573 ug/L	100
35) Bromochloromethane	8.99	130	883269	207.9241 ug/L	100
36) Tetrahydrofuran	9.02	42	244703	247.3326 ug/L	98
38) 1,1,1-Trichloroethane	9.33	97	2492483	200.7937 ug/L	99
39) Cyclohexane	9.36	56	2954601	204.6370 ug/L	97
40) 1,1-Dichloropropene	9.56	75	2294408	205.9969 ug/L	98
41) Tert-Amyl-Methyl ether	9.70	73	3572415	250.4857 ug/L	98
42) Carbon Tetrachloride	9.70	117	2310759	208.8712 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M115132.D 8260_WT.M Tue Apr 02 17:19:48 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115132.D Vial: 12
Acq On : 2 Apr 2013 13:17 Operator: FJB
Sample : WG425306-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:19:48 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.92	62	1621825	198.9151 ug/L	99
46)	Benzene	9.95	78	6086147	192.4373 ug/L	100
47)	Trichloroethene	10.83	130	1658068	205.3992 ug/L	98
48)	Methylcyclohexane	10.92	83	2291187	197.7201 ug/L	99
49)	1,2-Dichloropropane	11.07	63	1684971	204.4781 ug/L	99
50)	1,4-Dioxane	11.42	88	15476	478.4369 ug/L	98
51)	Bromodichloromethane	11.41	83	2000438	206.7651 ug/L	100
52)	Dibromomethane	11.49	93	694565	215.3203 ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.82	63	642403	204.5830 ug/L	100
54)	4-Methyl-2-Pentanone	11.85	58	283450	202.8120 ug/L	98
55)	cis-1,3-Dichloropropene	12.18	75	2357343	215.6558 ug/L	100
56)	Dimethyl Disulfide	12.44	79	1185950	198.5044 ug/L	100
59)	Toluene	12.64	91	6174353	189.1708 ug/L	98
60)	Ethyl Methacrylate	12.83	69	1076835	216.8137 ug/L	97
62)	trans-1,3-Dichloropropene	12.88	75	1866707	216.4636 ug/L	99
63)	1,1,2-Trichloroethane	13.11	97	899791	199.1733 ug/L	100
64)	2-Hexanone	13.08	43	446334	199.9436 ug/L	97
65)	1,3-Dichloropropane	13.47	76	1651064	210.9765 ug/L	97
66)	Tetrachloroethene	13.59	166	1688215	202.7708 ug/L	99
67)	Dibromochloromethane	13.88	129	1299027	200.1606 ug/L	100
68)	1,2-Dibromoethane	14.18	107	934879	214.1118 ug/L	100
69)	1-Chlorohexane	14.36	91	1979036	204.5543 ug/L	97
70)	Chlorobenzene	14.78	112	4065980	194.5974 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.83	131	1458588	207.4992 ug/L	99
72)	Ethylbenzene	14.84	106	2241098	198.7427 ug/L	92
73)	m-,p-Xylene	14.95	106	5170054	381.6284 ug/L	91
74)	o-Xylene	15.60	106	2641941	200.8526 ug/L	96
75)	Styrene	15.65	104	4329579	193.6472 ug/L	98
76)	Bromoform	16.18	173	723425	199.9529 ug/L	99
77)	Isopropylbenzene	16.12	105	6424931	194.4418 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.36	83	957058	197.8049 ug/L	100
81)	1,2,3-Trichloropropane	16.59	110	260742	197.1308 ug/L	99
82)	trans-1,4-Dichloro-2-Buten	16.67	53	300630	205.9448 ug/L	95
83)	n-Propylbenzene	16.71	91	7442809	189.4499 ug/L	96
84)	Bromobenzene	16.81	156	1654228	203.3771 ug/L	100
85)	1,3,5-Trimethylbenzene	16.94	105	5393442	197.5105 ug/L	98
86)	2-Chlorotoluene	16.99	91	5287940	188.7422 ug/L	96
87)	4-Chlorotoluene	17.06	91	4806283	196.8463 ug/L	98
88)	a-Methylstyrene	17.41	118	2955645	205.3906 ug/L	96
89)	tert-Butylbenzene	17.47	134	1107313	204.1668 ug/L	97
90)	1,2,4-Trimethylbenzene	17.54	105	5387720	188.0474 ug/L	97
91)	sec-Butylbenzene	17.79	105	6221286	190.0938 ug/L	98
92)	p-Isopropyltoluene	18.00	119	5391132	195.6089 ug/L	98
93)	1,3-Dichlorobenzene	18.17	146	3096341	195.6852 ug/L	99
94)	1,4-Dichlorobenzene	18.32	146	3051978	192.9158 ug/L	99
95)	n-Butylbenzene	18.61	91	4648823	191.7557 ug/L	98
96)	1,2-Dichlorobenzene	18.89	146	2673837	196.9414 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	20.07	75	148763	197.2690 ug/L	98
98)	1,2,4-Trichlorobenzene	21.42	180	1855399	200.7639 ug/L	99
99)	Hexachlorobutadiene	21.62	225	799094	196.6770 ug/L	99
100)	Naphthalene	21.82	128	2917776	209.4450 ug/L	99
101)	1,2,3-Trichlorobenzene	22.20	180	1524604	202.1917 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M115132.D 8260_WT.M Tue Apr 02 17:19:49 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115132.D Vial: 12
Acq On : 2 Apr 2013 13:17 Operator: FJB
Sample : WG425306-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 2 17:19 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

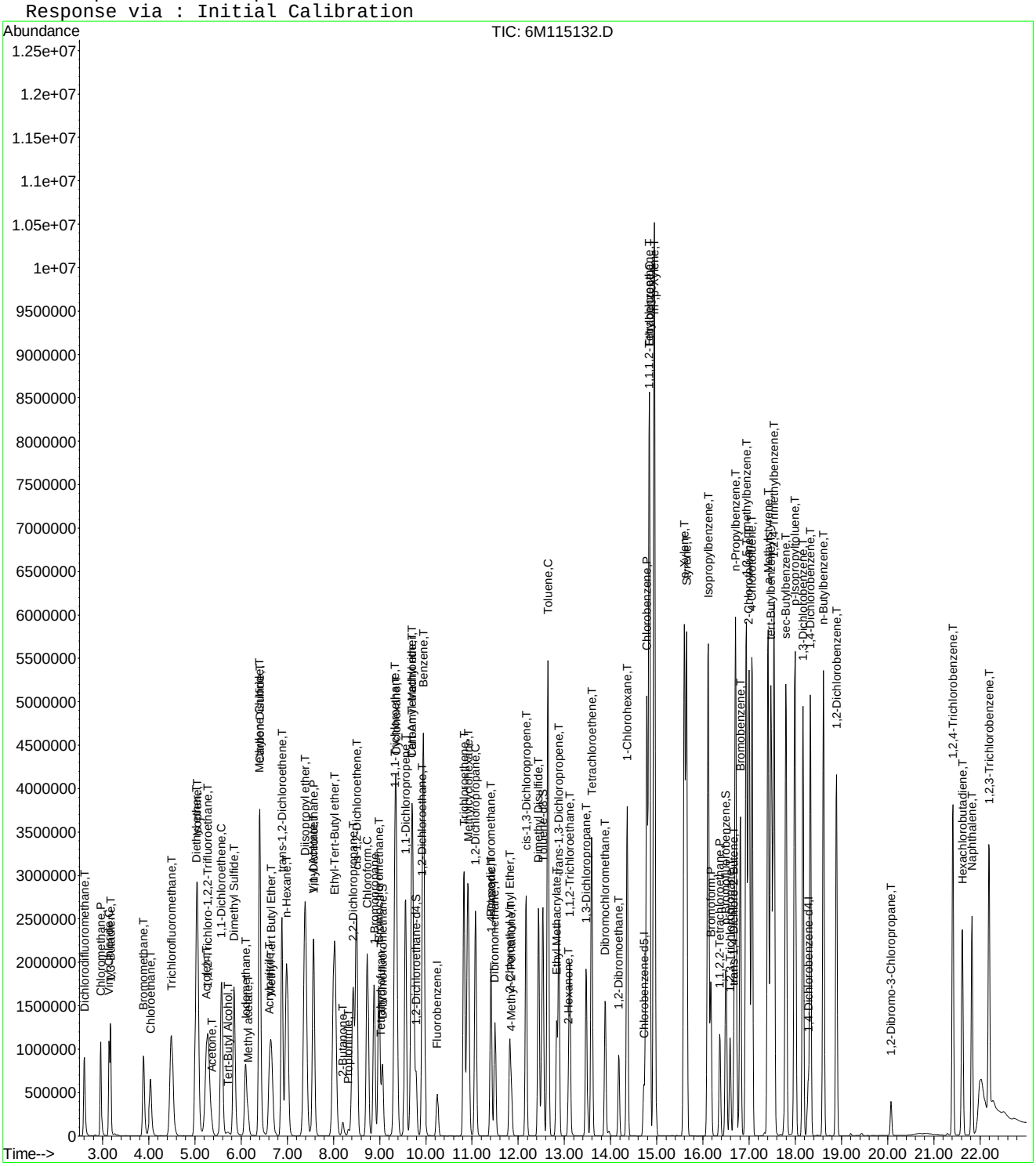

6M115132.D 8260_WT.M Tue Apr 02 17:19:49 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115133.D Vial: 13
Acq On : 2 Apr 2013 13:49 Operator: FJB
Sample : WG425306-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:19:49 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.24	96	727154	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.73	117	508450	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.28	152	245391	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.06	111	1227542	150.7095 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 602.84%#		
43) 1,2-Dichloroethane-d4	9.78	65	1007361	142.1507 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 568.60%#		
58) Toluene-d8	12.53	98	4292427	147.2466 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 589.00%#		
80) p-Bromofluorobenzene	16.49	95	1523122	154.0228 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 616.08%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.61	85	1871330	285.1249 ug/L	100
3) Chloromethane	2.96	50	2021854	284.4464 ug/L	99
4) Vinyl Chloride	3.14	62	1635192	255.8696 ug/L	99
5) 1,3-Butadiene	3.17	54	936137	314.2904 ug/L	98
6) Bromomethane	3.88	94	1666809	315.1568 ug/L	100
7) Chloroethane	4.03	64	1731106	294.9053 ug/L	98
8) Trichlorofluoromethane	4.49	101	3694073	293.1133 ug/L	100
9) Diethyl ether	5.03	59	1384741	289.8560 ug/L	97
10) Isoprene	5.05	67	3499555	302.5257 ug/L	96
11) Acrolein	5.25	56	47147	319.8763 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.27	101	2261593	291.8515 ug/L	99
13) Acetone	5.36	43	342677	294.3674 ug/L	93
14) 1,1-Dichloroethene	5.57	61	3751352	295.8890 ug/L	97
15) Tert-Butyl Alcohol	5.73	59	143800	576.8152 ug/L	93
16) Dimethyl Sulfide	5.84	62	2661839	301.2031 ug/L	95
17) Iodomethane	6.10	142	2716574	309.9320 ug/L	97
18) Methyl acetate	6.15	43	923174	307.7628 ug/L	97
19) Methylene Chloride	6.39	84	2164649	287.5785 ug/L	89
20) Carbon Disulfide	6.40	76	7567848	283.6066 ug/L	99
21) Acrylonitrile	6.61	53	471792	321.9755 ug/L	97
22) Methyl Tert Butyl Ether	6.65	73	4269070	321.2889 ug/L	99
23) trans-1,2-Dichloroethene	6.88	96	2458208	302.6627 ug/L	96
24) n-Hexane	6.99	57	3368922	301.6843 ug/L	98
25) Diisopropyl ether	7.39	45	7761132	282.8846 ug/L	98
26) Vinyl Acetate	7.56	43	2851719	276.1142 ug/L	97
27) 1,1-Dichloroethane	7.57	63	4585328	289.6451 ug/L	99
28) Ethyl-Tert-Butyl ether	8.02	59	6349346	297.9394 ug/L	98
29) 2-Butanone	8.20	43	492473	297.6982 ug/L	95
30) Propionitrile	8.32	54	162442	299.4337 ug/L	98
31) 2,2-Dichloropropane	8.43	77	3780796	293.8468 ug/L	97
32) cis-1,2-Dichloroethene	8.50	96	2613287	302.5229 ug/L	96
33) Chloroform	8.73	83	4210541	290.4403 ug/L	99
34) 1-Bromopropane	8.89	122	574967	297.8983 ug/L	100
35) Bromochloromethane	8.99	130	1320994	300.1545 ug/L	100
36) Tetrahydrofuran	9.02	42	314104	306.4415 ug/L	95
38) 1,1,1-Trichloroethane	9.33	97	3751607	291.7208 ug/L	99
39) Cyclohexane	9.36	56	4476453	299.2619 ug/L	96
40) 1,1-Dichloropropene	9.56	75	3507248	303.9406 ug/L	97
41) Tert-Amyl-Methyl ether	9.71	73	4568134	309.1662 ug/L	98
42) Carbon Tetrachloride	9.70	117	3479682	303.5957 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115133.D Vial: 13
Acq On : 2 Apr 2013 13:49 Operator: FJB
Sample : WG425306-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:19:49 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.92	62	2423865	286.9487 ug/L	99
46)	Benzene	9.96	78	9027127	275.5043 ug/L	100
47)	Trichloroethene	10.83	130	2543679	304.1522 ug/L	97
48)	Methylcyclohexane	10.92	83	3571279	297.3885 ug/L	98
49)	1,2-Dichloropropane	11.07	63	2559826	299.8450 ug/L	99
50)	1,4-Dioxane	11.42	88	20320	595.3740 ug/L	97
51)	Bromodichloromethane	11.41	83	3035838	302.8746 ug/L	100
52)	Dibromomethane	11.50	93	1064202	318.4405 ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.82	63	1007277	309.6300 ug/L	100
54)	4-Methyl-2-Pentanone	11.85	58	440943	304.5312 ug/L	97
55)	cis-1,3-Dichloropropene	12.17	75	3591213	317.1113 ug/L	99
56)	Dimethyl Disulfide	12.44	79	1868148	301.3348 ug/L	99
59)	Toluene	12.64	91	9025039	268.5684 ug/L	95
60)	Ethyl Methacrylate	12.83	69	1693105	331.1043 ug/L	95
62)	trans-1,3-Dichloropropene	12.88	75	2848678	320.8451 ug/L	99
63)	1,1,2-Trichloroethane	13.11	97	1382099	297.0559 ug/L	100
64)	2-Hexanone	13.08	43	688884	299.7347 ug/L	96
65)	1,3-Dichloropropane	13.48	76	2519437	312.6921 ug/L	96
66)	Tetrachloroethene	13.59	166	2579458	300.9188 ug/L	99
67)	Dibromochloromethane	13.89	129	1993563	298.2353 ug/L	100
68)	1,2-Dibromoethane	14.18	107	1441664	320.6953 ug/L	100
69)	1-Chlorohexane	14.36	91	3034174	304.6062 ug/L	96
70)	Chlorobenzene	14.78	112	6032276	280.4119 ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.83	131	2167578	299.5035 ug/L	98
72)	Ethylbenzene	14.84	106	3341209	287.7910 ug/L	85
73)	m-,p-Xylene	14.95	106	7409974	531.2582 ug/L	83
74)	o-Xylene	15.60	106	3956446	292.1480 ug/L	92
75)	Styrene	15.65	104	6399852	278.0217 ug/L	97
76)	Bromoform	16.18	173	1110278	297.8379 ug/L	99
77)	Isopropylbenzene	16.12	105	9240416	271.6164 ug/L	95
79)	1,1,2,2-Tetrachloroethane	16.36	83	1452507	299.5779 ug/L	100
81)	1,2,3-Trichloropropane	16.59	110	395594	298.3844 ug/L	98
82)	trans-1,4-Dichloro-2-Buten	16.67	53	453611	310.2053 ug/L	91
83)	n-Propylbenzene	16.71	91	10438626	265.2455 ug/L	93
84)	Bromobenzene	16.81	156	2482494	304.6786 ug/L	100
85)	1,3,5-Trimethylbenzene	16.94	105	7814739	285.6840 ug/L	97
86)	2-Chlorotoluene	16.99	91	7655574	272.7768 ug/L	92
87)	4-Chlorotoluene	17.07	91	7036646	287.6940 ug/L	99
88)	a-Methylstyrene	17.41	118	4423717	306.8759 ug/L	96
89)	tert-Butylbenzene	17.47	134	1659418	305.4343 ug/L	94
90)	1,2,4-Trimethylbenzene	17.54	105	7756658	270.2614 ug/L	95
91)	sec-Butylbenzene	17.79	105	8923259	272.1814 ug/L	96
92)	p-Isopropyltoluene	17.99	119	7762903	281.1771 ug/L	97
93)	1,3-Dichlorobenzene	18.17	146	4567043	288.1319 ug/L	98
94)	1,4-Dichlorobenzene	18.32	146	4485218	283.0200 ug/L	98
95)	n-Butylbenzene	18.61	91	6722904	276.8275 ug/L	96
96)	1,2-Dichlorobenzene	18.89	146	3948209	290.3016 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	20.07	75	226751	299.7879 ug/L	97
98)	1,2,4-Trichlorobenzene	21.42	180	2771678	299.3907 ug/L	99
99)	Hexachlorobutadiene	21.62	225	1207299	296.5763 ug/L	99
100)	Naphthalene	21.82	128	4363391	312.6723 ug/L	99
101)	1,2,3-Trichlorobenzene	22.20	180	2319656	307.0980 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M115133.D 8260_WT.M Tue Apr 02 17:19:50 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115133.D Vial: 13
Acq On : 2 Apr 2013 13:49 Operator: FJB
Sample : WG425306-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD57020 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 2 17:19 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

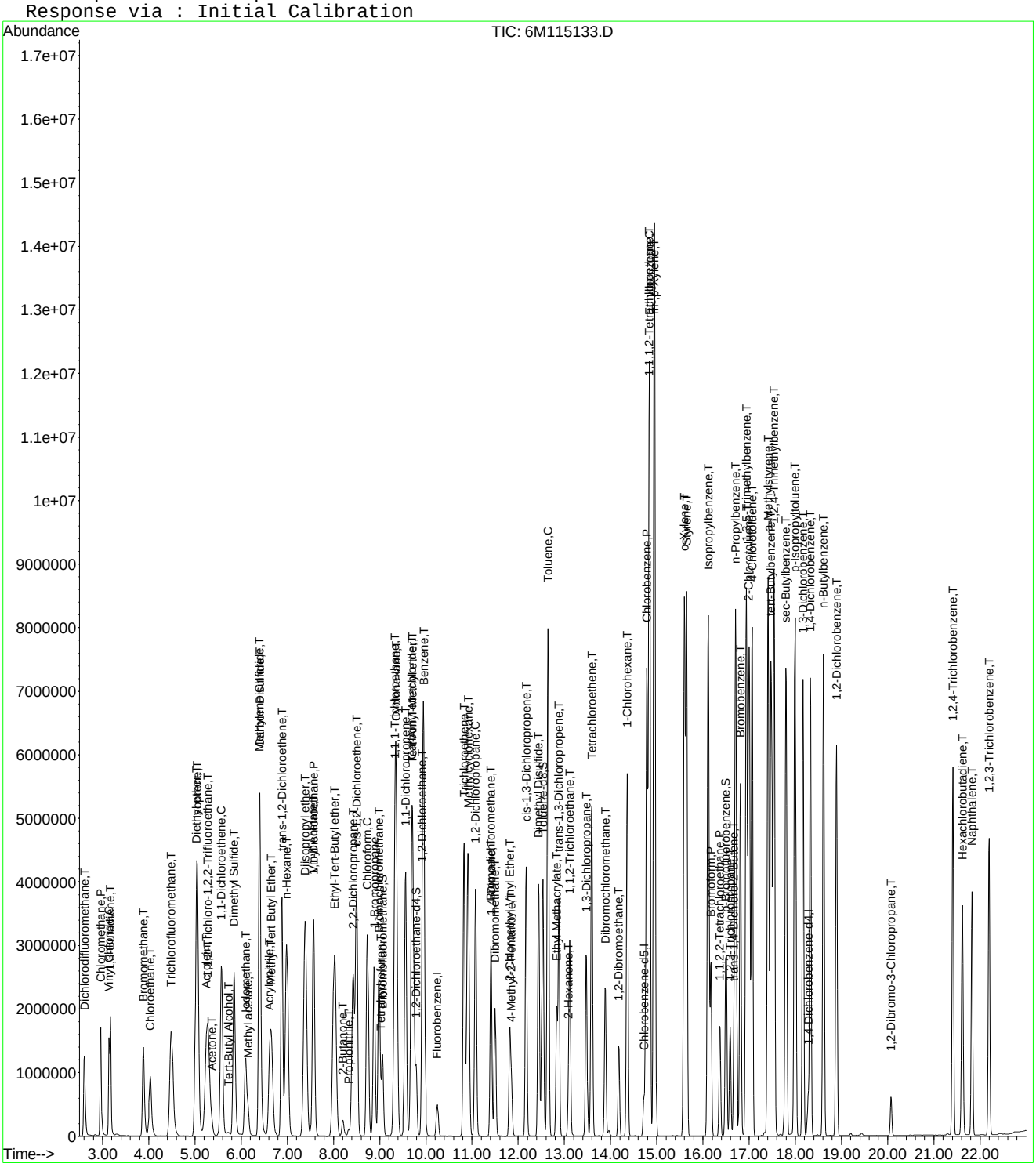

6M115133.D 8260_WT.M Tue Apr 02 17:19:50 2013 Page 3

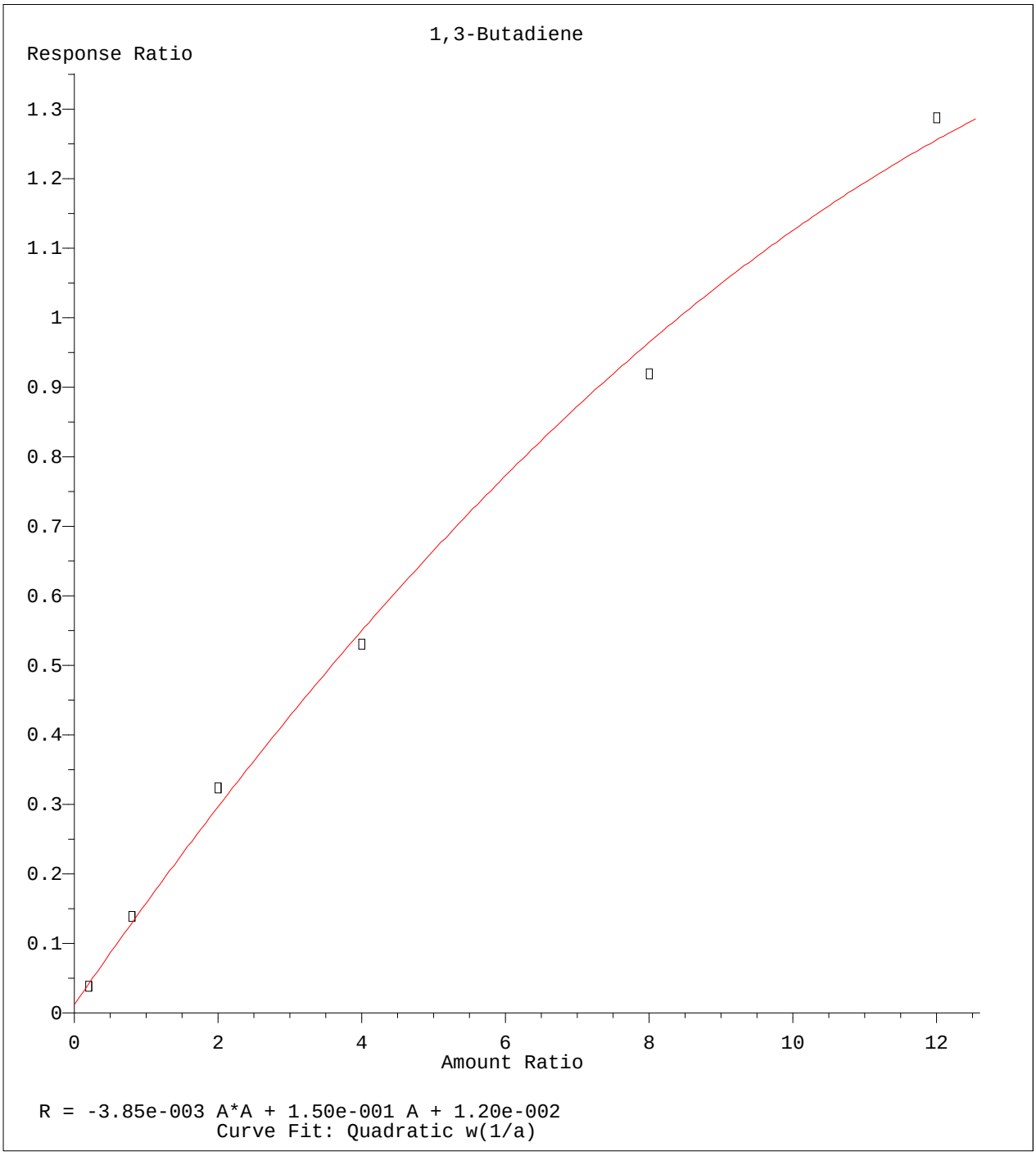

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Tue Apr 02 17:16:38 2013

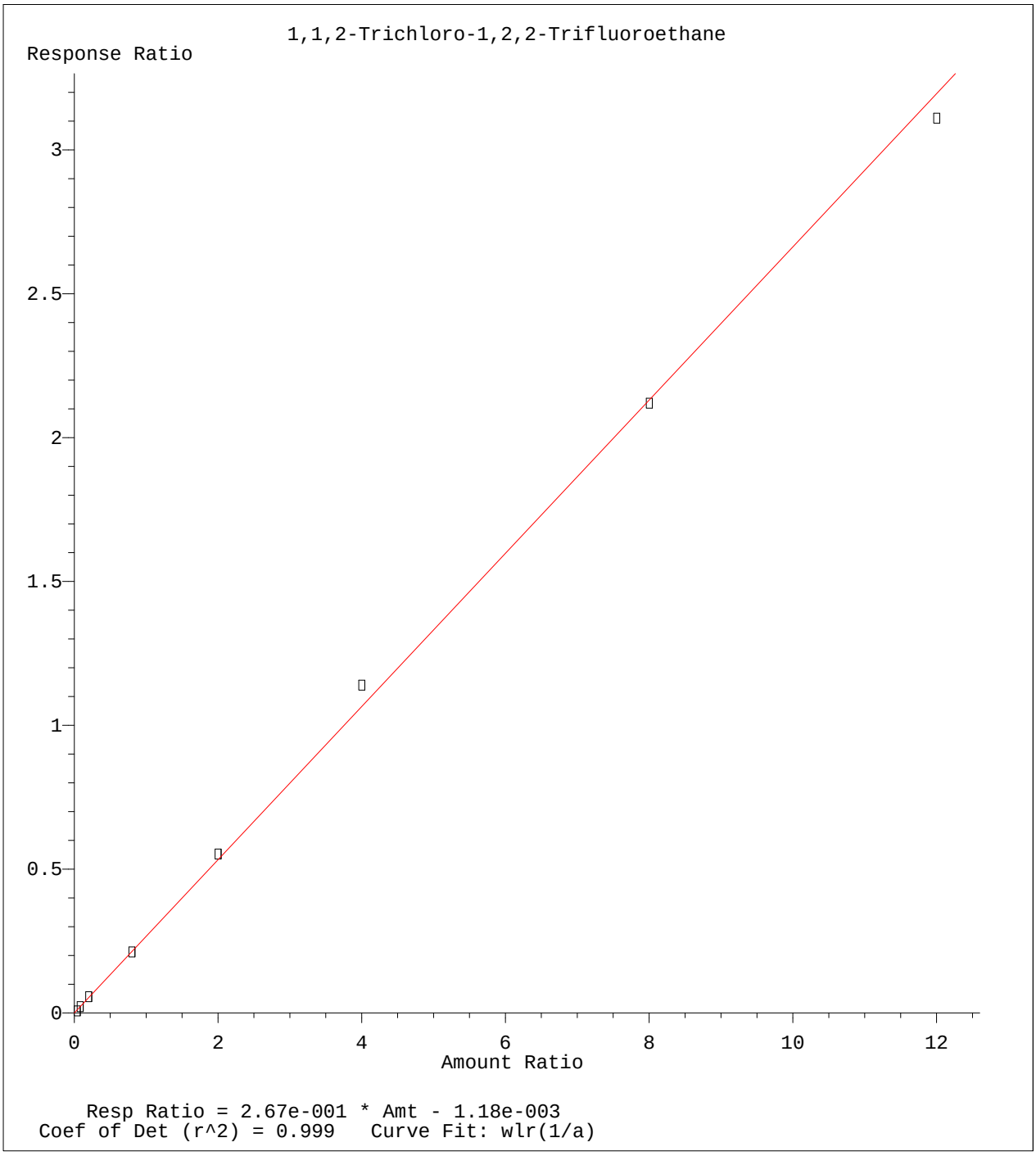

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Tue Apr 02 17:16:38 2013

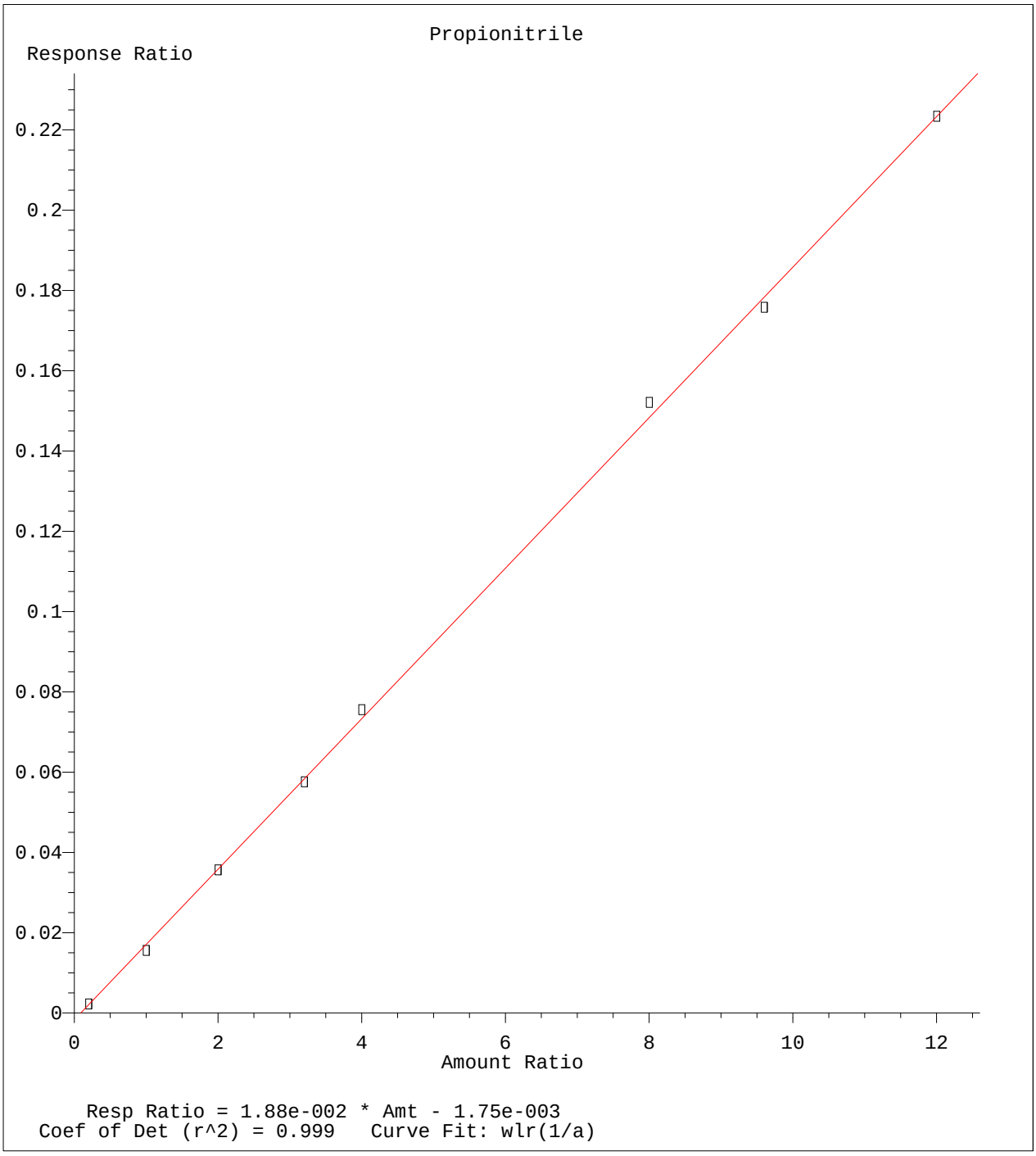

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Tue Apr 02 17:16:38 2013

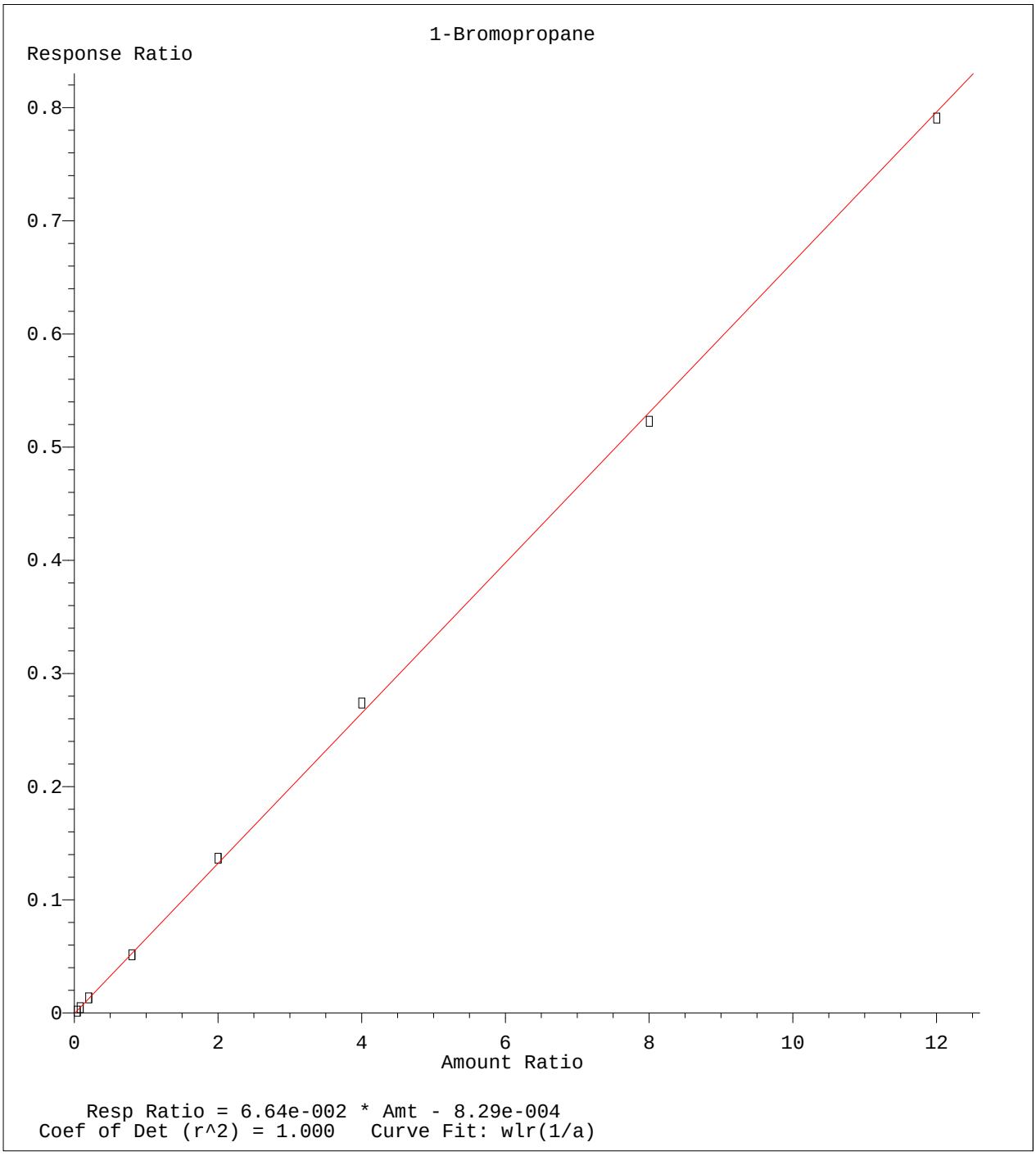

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Tue Apr 02 17:16:38 2013

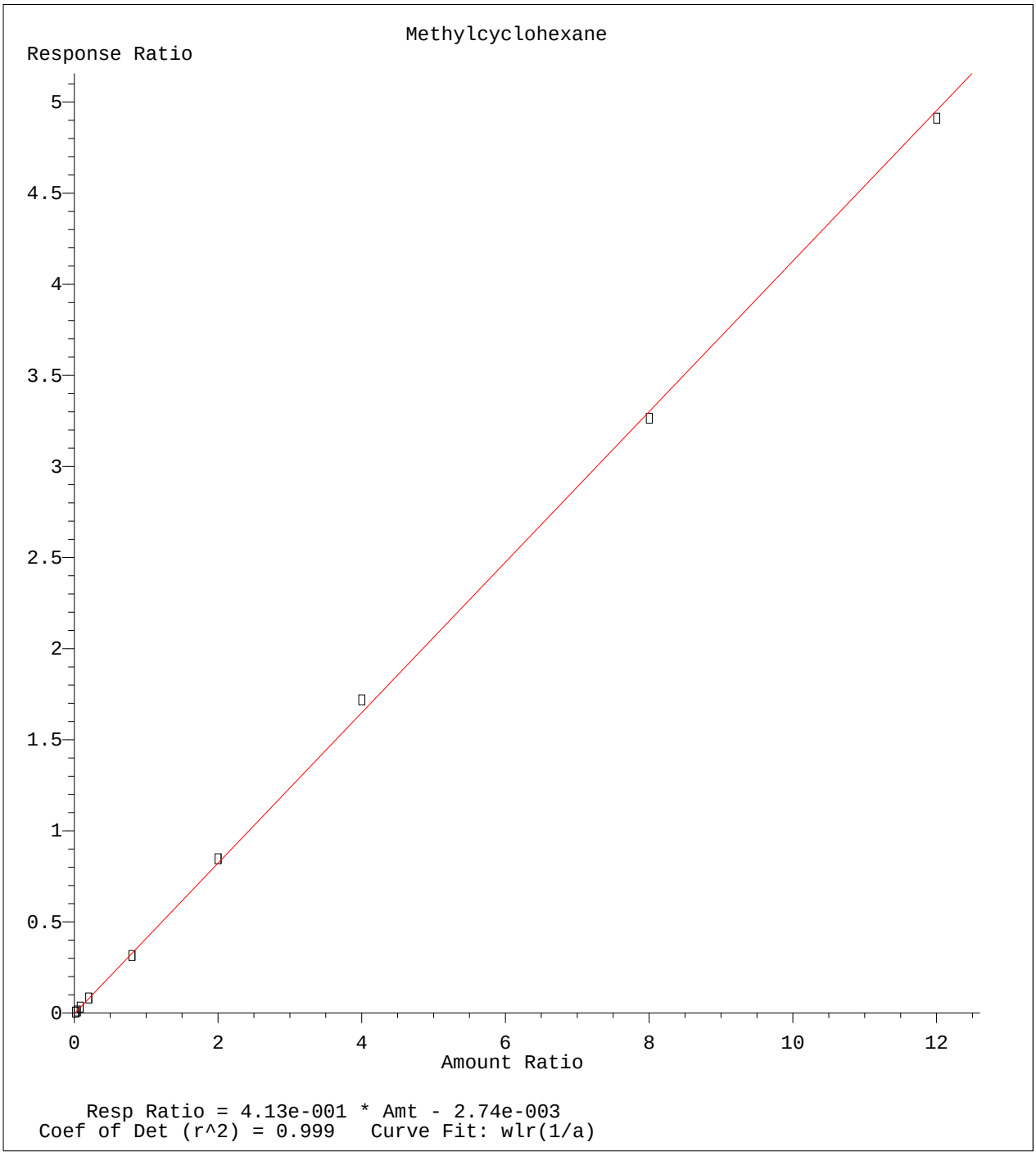

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Tue Apr 02 17:16:38 2013

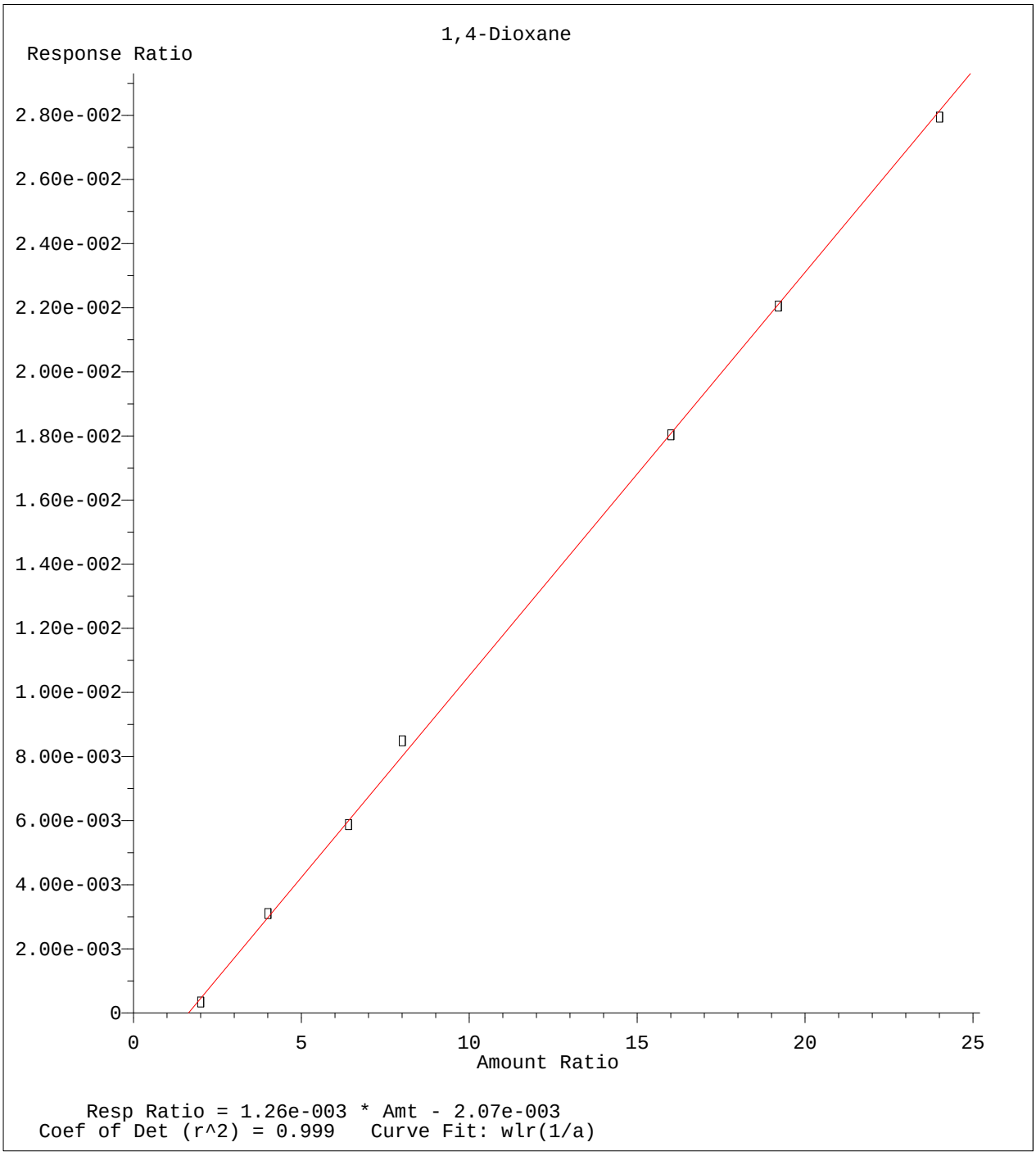

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Tue Apr 02 17:16:38 2013

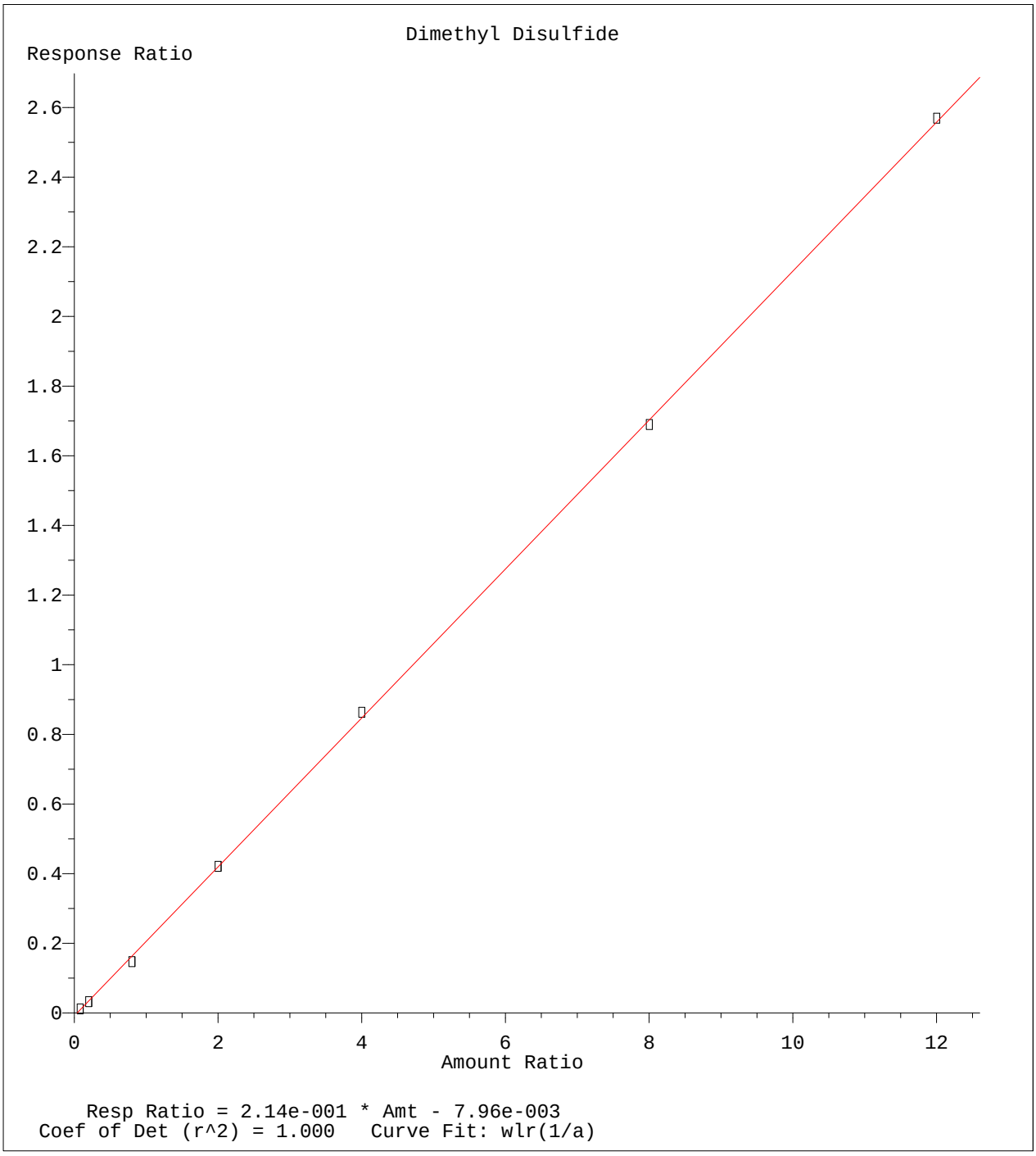

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Tue Apr 02 17:16:38 2013

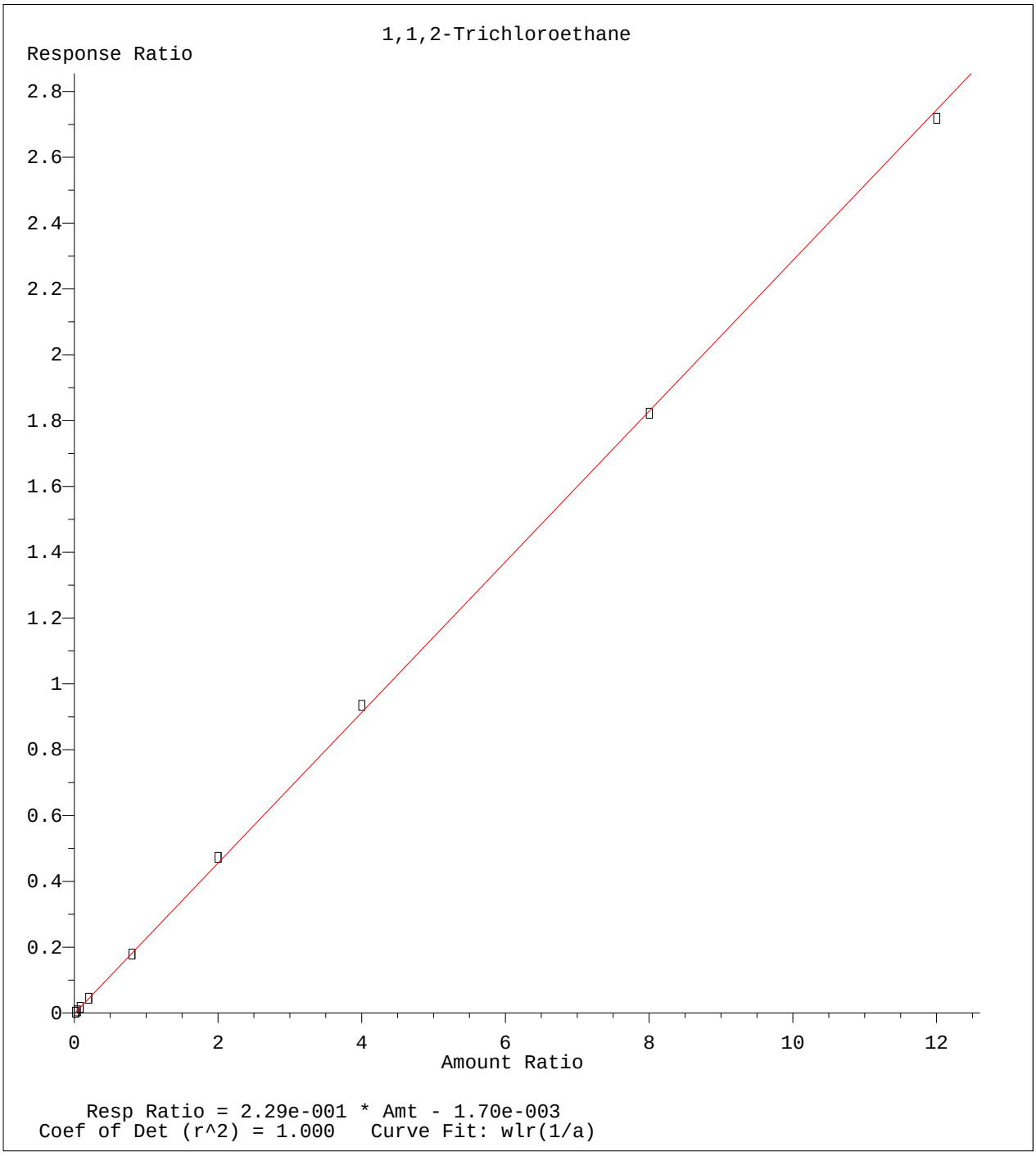

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Tue Apr 02 17:16:38 2013

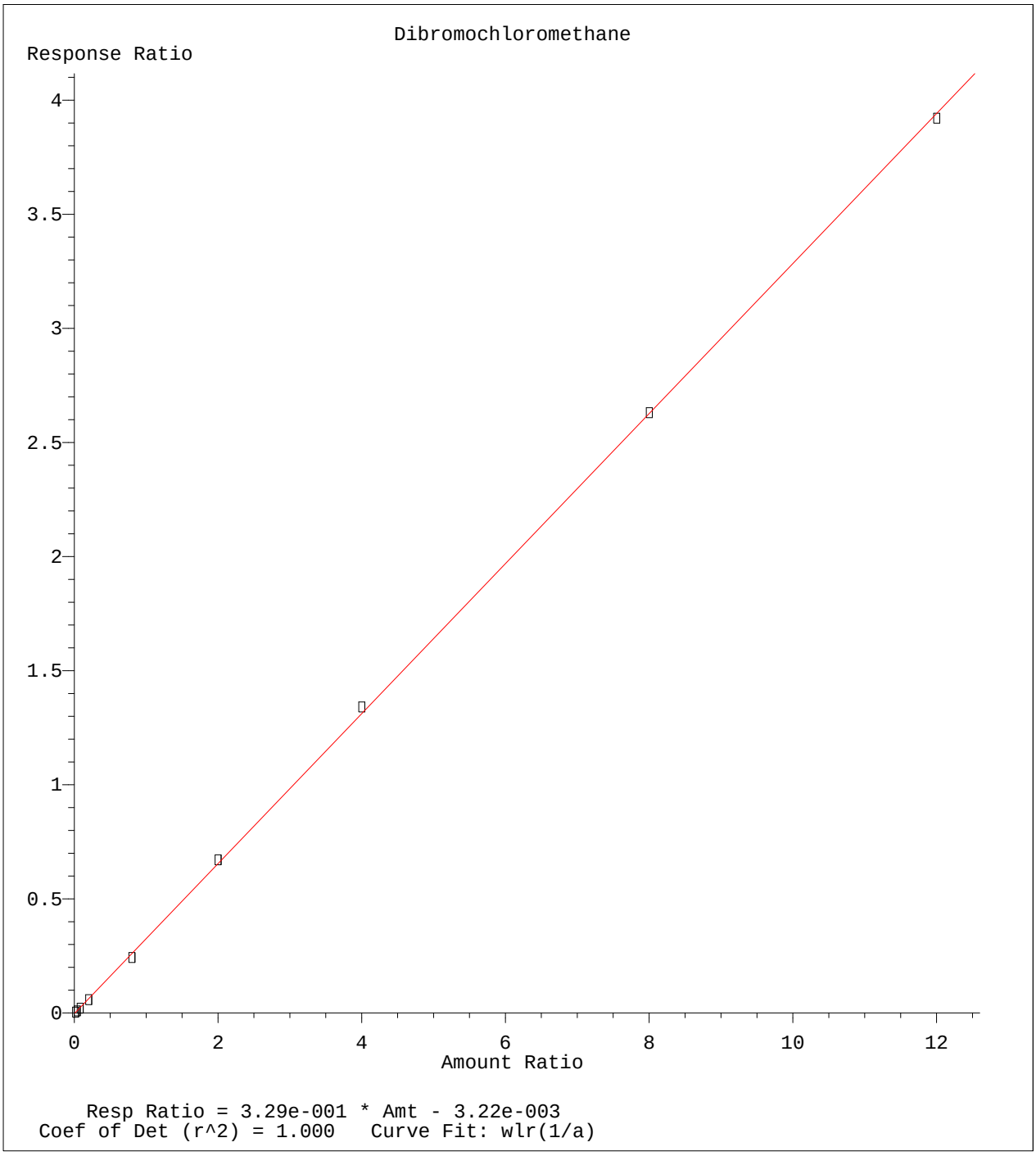

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Tue Apr 02 17:16:38 2013

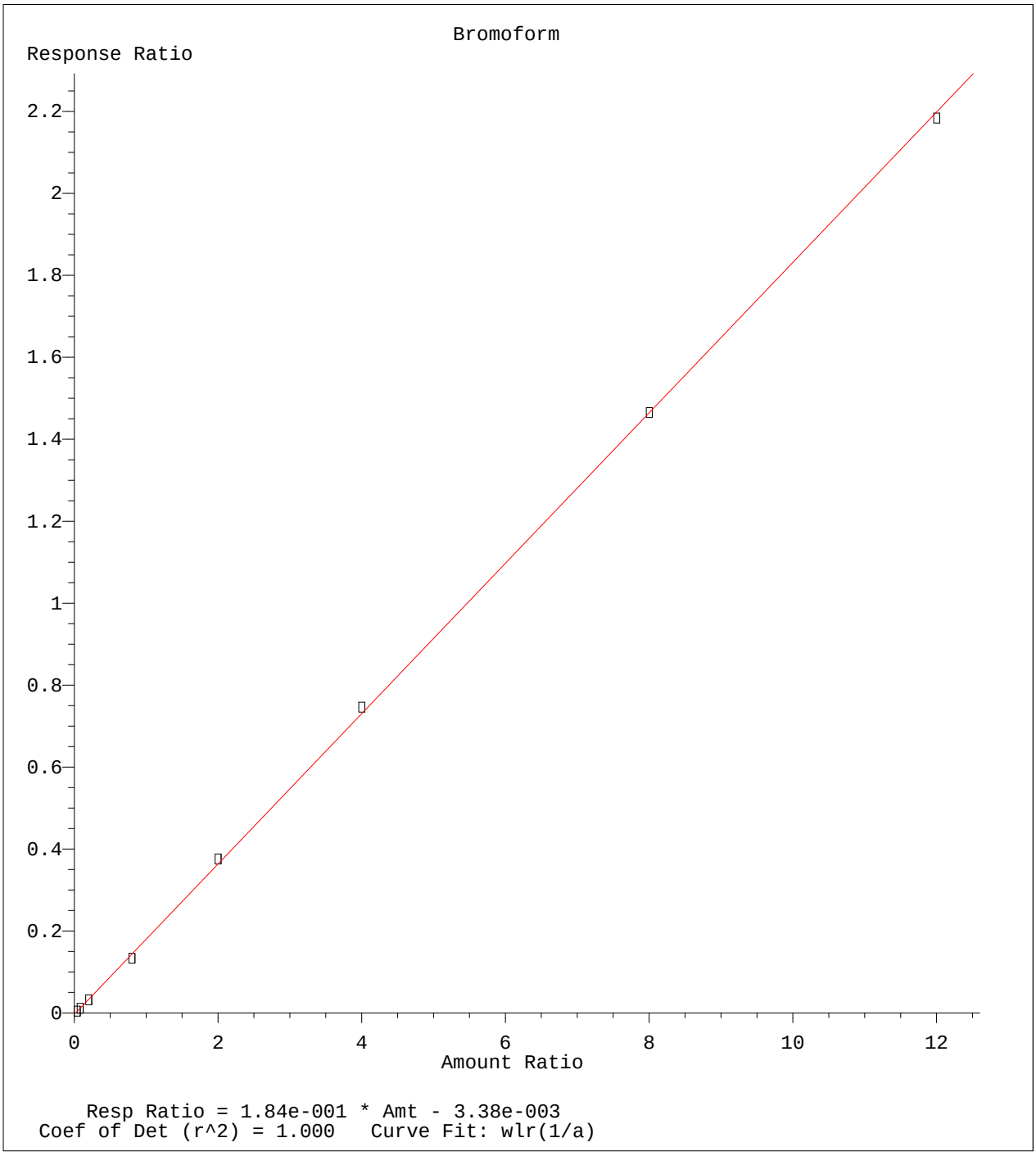

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Tue Apr 02 17:16:38 2013

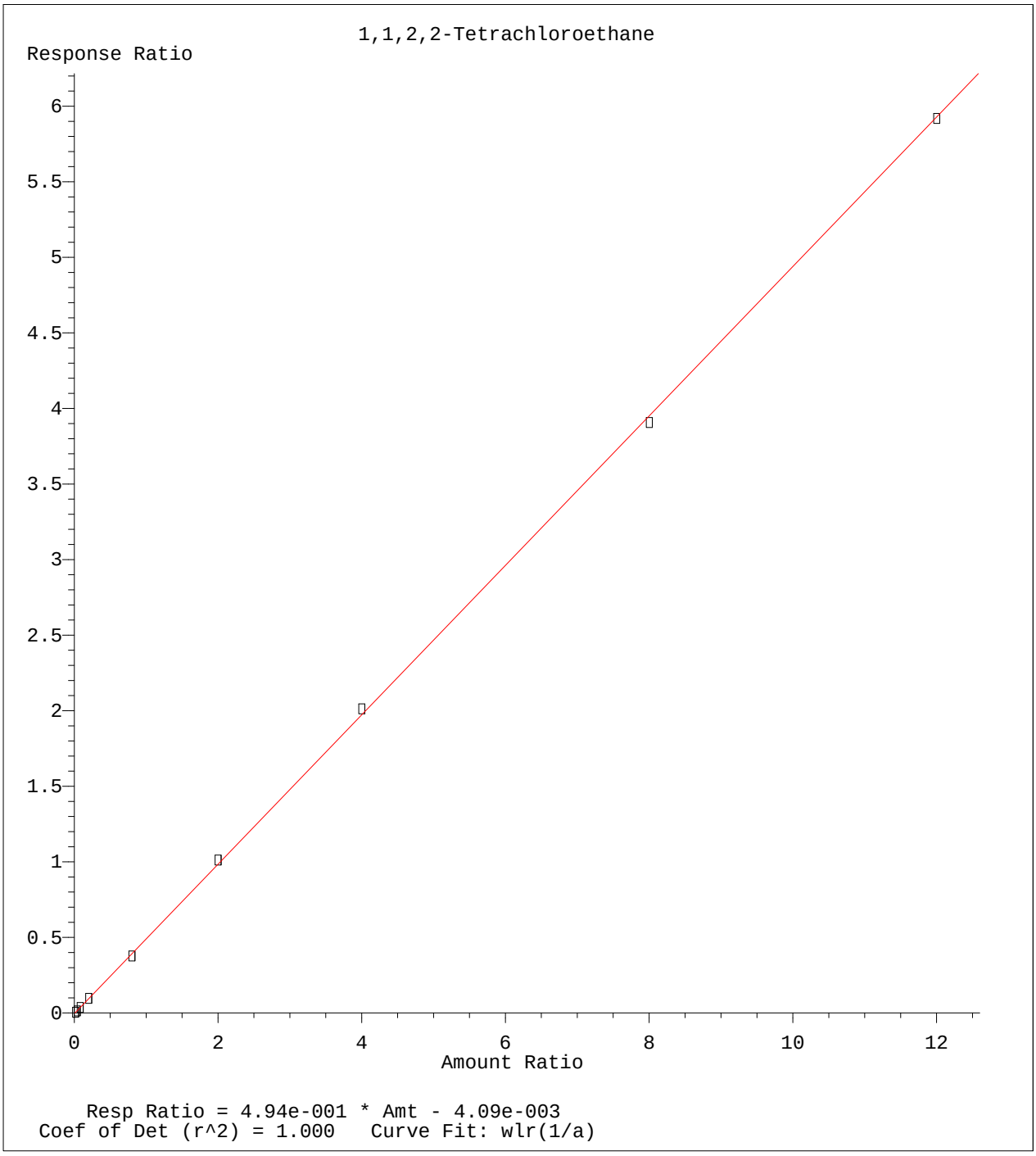

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Tue Apr 02 17:16:38 2013

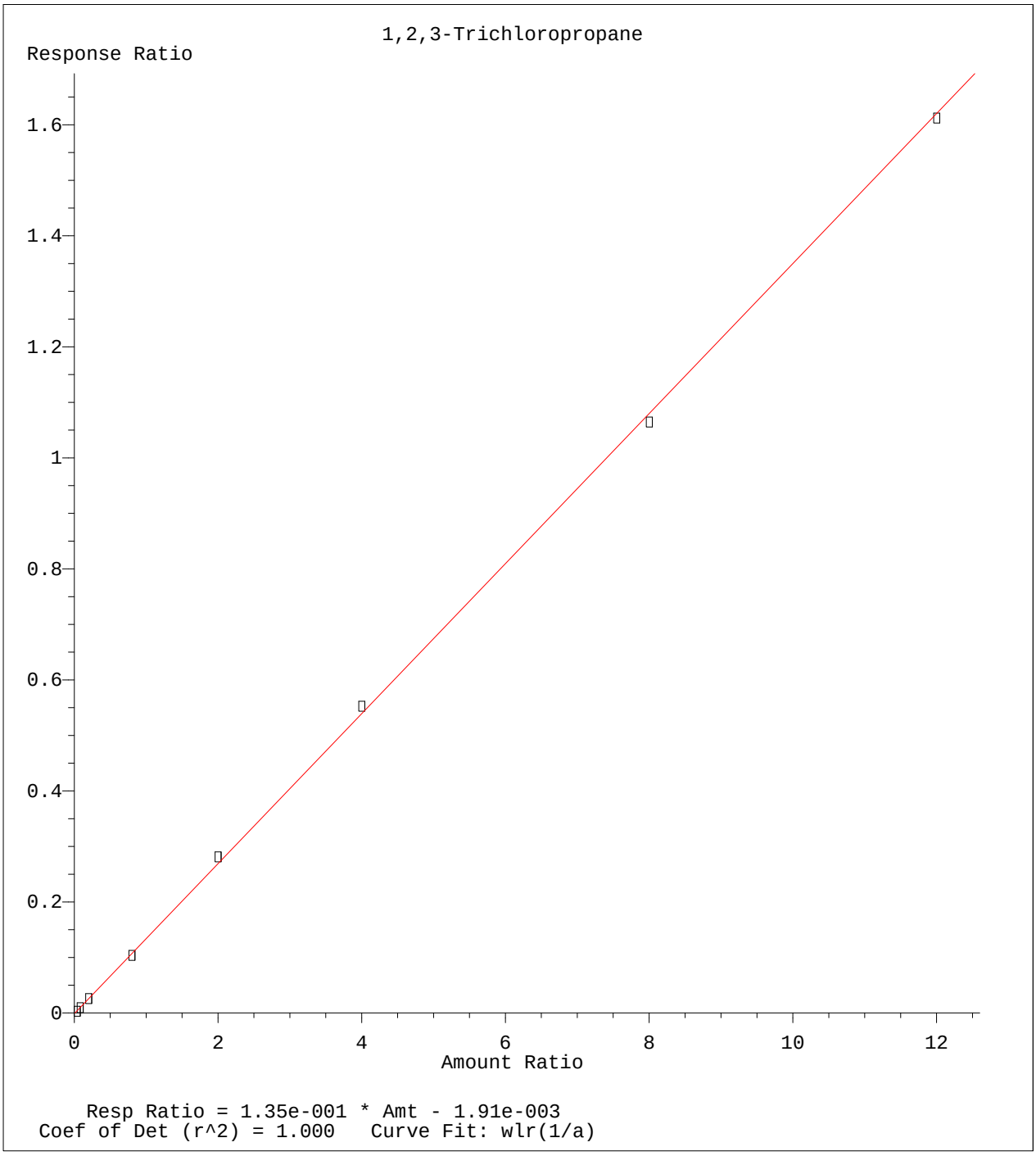

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Tue Apr 02 17:16:38 2013

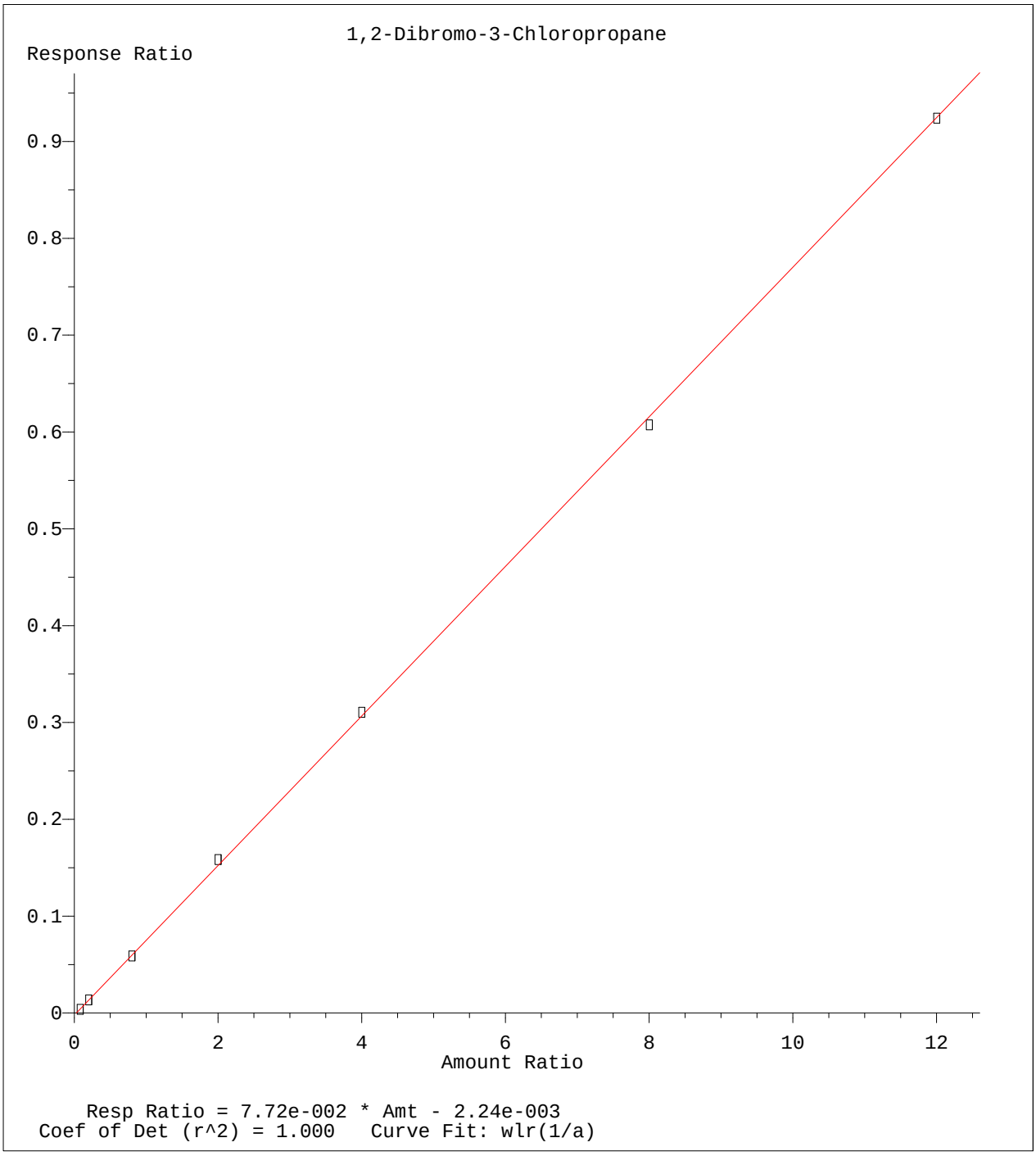

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Tue Apr 02 17:16:38 2013

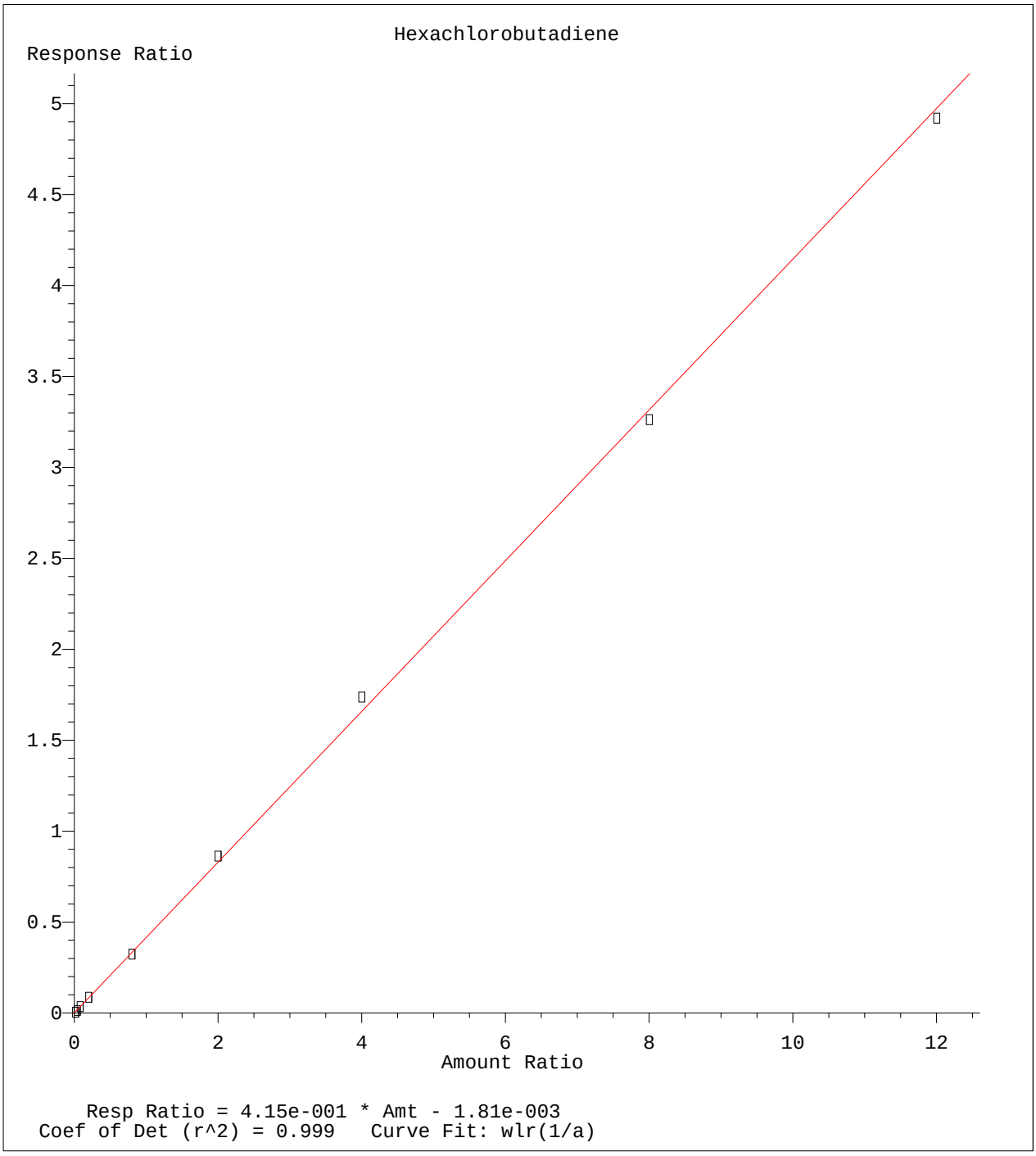

Method Name: C:\MSDCHEM\1\METHODS\8260_WT.M
Calibration Table Last Updated: Tue Apr 02 17:16:38 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115135.D Vial: 15
Acq On : 2 Apr 2013 15:29 Operator: FJB
Sample : WG425306-12 50ug/L ALT SRC 8260 Inst : HPMS6
Misc : 1,1 STD57021 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:19:52 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.24	96	770629	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.73	117	533876	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	268489	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.06	111	208141	24.1125 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.44%		
43) 1,2-Dichloroethane-d4	9.78	65	171352	22.8157 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.28%		
58) Toluene-d8	12.53	98	786636	25.6995 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.80%		
80) p-Bromofluorobenzene	16.49	95	285616	26.3976 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.60%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.61	85	439105	63.1298 ug/L	100
3) Chloromethane	2.96	50	357931	47.5150 ug/L	99
4) Vinyl Chloride	3.14	62	292094	43.1274 ug/L	100
5) 1,3-Butadiene	3.17	54	152847	32.1417 ug/L	98
6) Bromomethane	3.88	94	266147	47.4836 ug/L	100
7) Chloroethane	4.03	64	317606	51.0539 ug/L	97
8) Trichlorofluoromethane	4.49	101	626761	46.9260 ug/L	100
9) Diethyl ether	5.03	59	388120	76.6586 ug/L	98
10) Isoprene	5.05	67	540462	44.0855 ug/L	95
11) Acrolein	5.25	56	55675	356.4259 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.27	101	415692	50.7090 ug/L	98
13) Acetone	5.36	43	51042	41.3727 ug/L	100
14) 1,1-Dichloroethene	5.57	61	619916	46.1376 ug/L	97
15) Tert-Butyl Alcohol	5.73	59	58027	219.6286 ug/L	99
16) Dimethyl Sulfide	5.84	62	478656	51.1072 ug/L	95
17) Iodomethane	6.09	142	474033	51.0311 ug/L	96
18) Methyl acetate	6.15	43	150757	47.4232 ug/L	97
19) Methylene Chloride	6.39	84	384977	48.2597 ug/L	92
20) Carbon Disulfide	6.40	76	1187543	41.9927 ug/L	100
21) Acrylonitrile	6.61	53	241009	155.1982 ug/L	100
22) Methyl Tert Butyl Ether	6.65	73	738390	52.4360 ug/L	98
23) trans-1,2-Dichloroethene	6.88	96	428179	49.7447 ug/L	97
24) n-Hexane	6.99	57	527578	44.5789 ug/L	97
25) Diisopropyl ether	7.39	45	2504980	86.1528 ug/L	99
26) Vinyl Acetate	7.56	43	571142	52.1804 ug/L	99
27) 1,1-Dichloroethane	7.57	63	785374	46.8116 ug/L	100
28) Ethyl-Tert-Butyl ether	8.02	59	2037598	90.2191 ug/L	99
29) 2-Butanone	8.20	43	84953	48.4567 ug/L	96
30) Propionitrile	8.32	54	53594	94.8166 ug/L	98
31) 2,2-Dichloropropane	8.43	77	634108	46.5031 ug/L	98
32) cis-1,2-Dichloroethene	8.50	96	451001	49.2640 ug/L	96
33) Chloroform	8.73	83	714278	46.4908 ug/L	99
34) 1-Bromopropane	8.89	122	93387	45.9196 ug/L	99
35) Bromochloromethane	8.99	130	236913	50.7942 ug/L	100
36) Tetrahydrofuran	9.02	42	104052	95.7868 ug/L	95
38) 1,1,1-Trichloroethane	9.33	97	633792	46.5027 ug/L	99
39) Cyclohexane	9.36	56	727762	45.9079 ug/L	98
40) 1,1-Dichloropropene	9.55	75	597001	48.8178 ug/L	97
41) Tert-Amyl-Methyl ether	9.70	73	1545733	98.7117 ug/L	98
42) Carbon Tetrachloride	9.70	117	567074	46.6849 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M115135.D 8260_WT.M Tue Apr 02 17:19:52 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115135.D Vial: 15
Acq On : 2 Apr 2013 15:29 Operator: FJB
Sample : WG425306-12 50ug/L ALT SRC 8260 Inst : HPMS6
Misc : 1,1 STD57021 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 17:19:52 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	9.92	62	427091	47.7087	ug/L	99
46)	Benzene	9.95	78	1678592	48.3398	ug/L	98
47)	Trichloroethene	10.83	130	472212	53.2779	ug/L	95
48)	Methylcyclohexane	10.91	83	592307	46.6798	ug/L	98
49)	1,2-Dichloropropane	11.07	63	456010	50.4013	ug/L	97
50)	1,4-Dioxane	11.42	88	5864	191.9908	ug/L	93
51)	Bromodichloromethane	11.41	83	500249	47.0925	ug/L	99
52)	Dibromomethane	11.50	93	182615	51.5610	ug/L	99
53)	2-Chloroethyl Vinyl Ether	11.81	63	165923	48.1262	ug/L	100
54)	4-Methyl-2-Pentanone	11.85	58	77121	50.2577	ug/L	97
55)	cis-1,3-Dichloropropene	12.17	75	658063	54.8301	ug/L	99
56)	Dimethyl Disulfide	12.44	79	312884	48.4053	ug/L	99
59)	Toluene	12.64	91	1728999	49.0014	ug/L	100
60)	Ethyl Methacrylate	12.83	69	309946	57.7264	ug/L	95
62)	trans-1,3-Dichloropropene	12.88	75	478971	51.3770	ug/L	99
63)	1,1,2-Trichloroethane	13.11	97	254831	52.3159	ug/L	100
64)	2-Hexanone	13.08	43	121555	50.3700	ug/L	96
65)	1,3-Dichloropropane	13.47	76	455380	53.8264	ug/L	96
66)	Tetrachloroethene	13.59	166	452756	50.3029	ug/L	97
67)	Dibromochloromethane	13.88	129	335046	47.9408	ug/L	100
68)	1,2-Dibromoethane	14.18	107	255163	54.0573	ug/L	100
69)	1-Chlorohexane	14.36	91	551453	52.7248	ug/L	95
70)	Chlorobenzene	14.78	112	1051701	46.5603	ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.83	131	400120	52.6533	ug/L	98
72)	Ethylbenzene	14.84	106	614587	50.4156	ug/L	98
73)	m-,p-Xylene	14.94	106	1438683	98.2340	ug/L	98
74)	o-Xylene	15.60	106	675839	47.5279	ug/L	97
75)	Styrene	15.65	104	1216657	50.3367	ug/L	98
76)	Bromoform	16.18	173	194422	50.0544	ug/L	99
77)	Isopropylbenzene	16.12	105	1695978	47.4780	ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.36	83	276080	52.2135	ug/L	100
81)	1,2,3-Trichloropropane	16.59	110	72454	50.2421	ug/L	97
82)	trans-1,4-Dichloro-2-Buten	16.67	53	69146	43.2180	ug/L	94
83)	n-Propylbenzene	16.71	91	1980025	45.9841	ug/L	99
84)	Bromobenzene	16.81	156	453609	50.8824	ug/L	100
85)	1,3,5-Trimethylbenzene	16.93	105	1548751	51.7470	ug/L	99
86)	2-Chlorotoluene	16.99	91	1406546	45.8053	ug/L	99
87)	4-Chlorotoluene	17.06	91	1226277	45.8232	ug/L	99
88)	a-Methylstyrene	17.41	118	844316	53.5319	ug/L	100
89)	tert-Butylbenzene	17.47	134	285632	48.0508	ug/L	98
90)	1,2,4-Trimethylbenzene	17.54	105	1562360	49.7534	ug/L	100
91)	sec-Butylbenzene	17.79	105	1663889	46.3865	ug/L	100
92)	p-Isopropyltoluene	17.99	119	1450741	48.0262	ug/L	99
93)	1,3-Dichlorobenzene	18.17	146	805358	46.4384	ug/L	100
94)	1,4-Dichlorobenzene	18.32	146	862441	49.7388	ug/L	99
95)	n-Butylbenzene	18.61	91	1359423	51.1610	ug/L	99
96)	1,2-Dichlorobenzene	18.89	146	701139	47.1179	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	20.07	75	42041	51.4016	ug/L	96
98)	1,2,4-Trichlorobenzene	21.42	180	527602	52.0876	ug/L	99
99)	Hexachlorobutadiene	21.62	225	222999	50.1583	ug/L	99
100)	Naphthalene	21.82	128	829554	54.3303	ug/L	100
101)	1,2,3-Trichlorobenzene	22.20	180	436319	52.7946	ug/L	100

(#) = qualifier out of range (m) = manual integration
6M115135.D 8260_WT.M Tue Apr 02 17:19:52 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040213\6M115135.D Vial: 15
Acq On : 2 Apr 2013 15:29 Operator: FJB
Sample : WG425306-12 50ug/L ALT SRC 8260 Inst : HPMS6
Misc : 1,1 STD57021 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 2 17:19 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

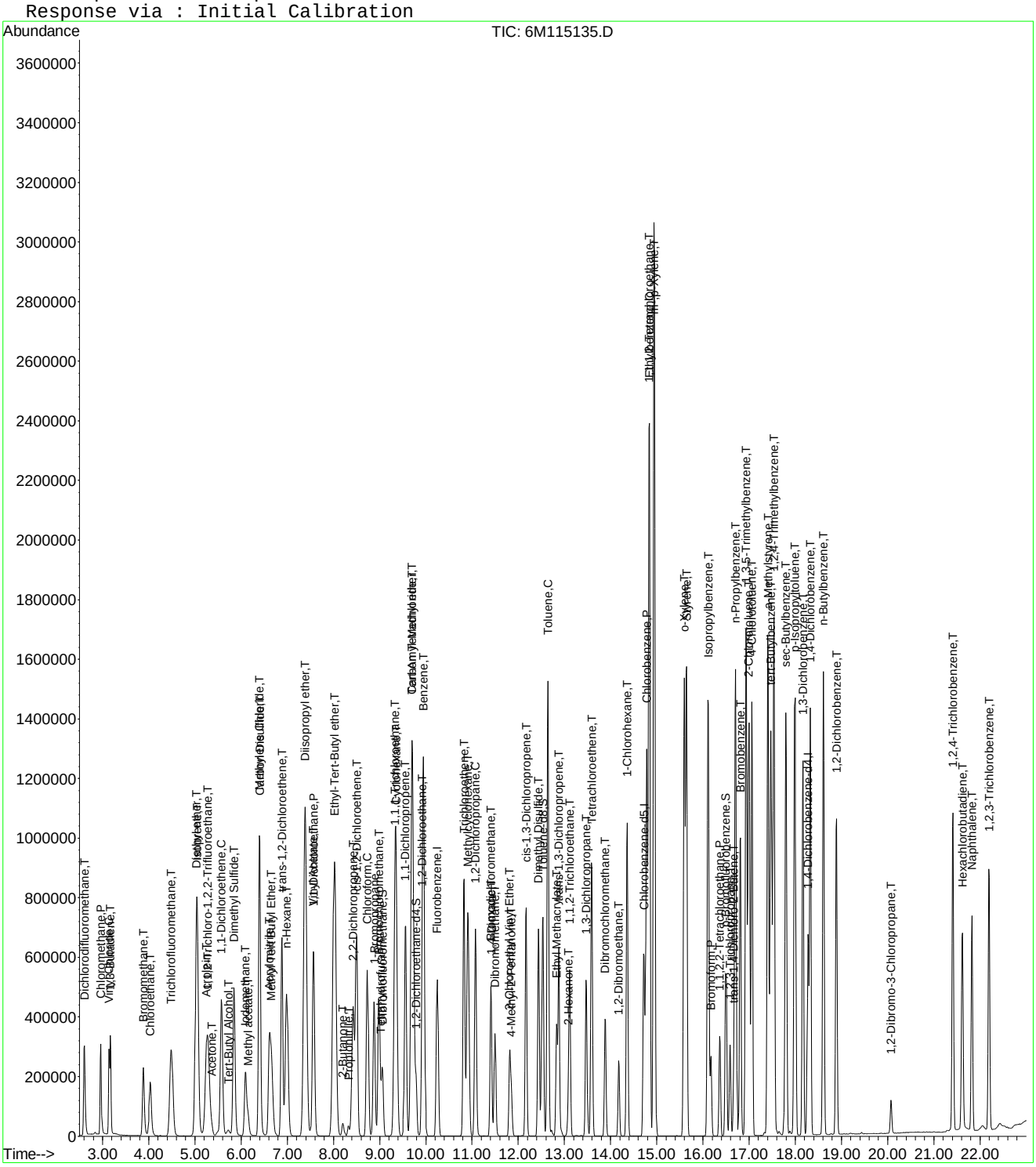

6M115135.D 8260_WT.M Tue Apr 02 17:19:53 2013 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040213\6M115135.D Vial: 15
Acq On : 2 Apr 2013 15:29 Operator: FJB
Sample : WG425306-12 50ug/L ALT SRC 8260 Inst : HPMS6
Misc : 1,1 STD57021 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	122	0.00
2	T	Dichlorodifluoromethane	50.0000	63.1298	-26.3#	139	0.00
3	P	Chloromethane	50.0000	47.5150	5.0	115	0.00
4	C	Vinyl Chloride	50.0000	43.1274	13.7	101	-0.01
5	T	1,3-Butadiene	50.0000	32.1417	35.7#	75	-0.01
6	T	Bromomethane	50.0000	47.4836	5.0	108	-0.01
7	T	Chloroethane	50.0000	51.0539	-2.1	116	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9260	6.1	105	-0.01
9	T	Diethyl ether	100.0000	76.6586	23.3#	88	0.00
10	T	Isoprene	50.0000	44.0855	11.8	100	0.00
11	T	Acrolein	100.0000	356.4259	-256.4#	413	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.7090	-1.4	119	-0.01
13	T	Acetone	50.0000	41.3727	17.3	97	0.00
14	C	1,1-Dichloroethene	50.0000	46.1376	7.7	105	-0.01
15	T	Tert-Butyl Alcohol	200.0000	219.6286	-9.8	121	0.00
16	T	Dimethyl Sulfide	50.0000	51.1072	-2.2	115	0.00
17	T	Iodomethane	50.0000	51.0311	-2.1	114	-0.01
18	T	Methyl acetate	50.0000	47.4232	5.2	108	0.00
19	T	Methylene Chloride	50.0000	48.2597	3.5	113	0.00
20	T	Carbon Disulfide	50.0000	41.9928	16.0	96	0.00
21	T	Acrylonitrile	100.0000	155.1982	-55.2#	179	0.00
22	T	Methyl Tert Butyl Ether	50.0000	52.4360	-4.9	117	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.7447	0.5	115	0.00
24	T	n-Hexane	50.0000	44.5789	10.8	100	0.00
25	T	Diisopropyl ether	100.0000	86.1528	13.8	100	0.00
26	T	Vinyl Acetate	50.0000	52.1804	-4.4	121	0.00
27	P	1,1-Dichloroethane	50.0000	46.8116	6.4	109	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	90.2191	9.8	105	0.00
29	T	2-Butanone	50.0000	48.4567	3.1	114	0.00
30	T	Propionitrile	100.0000	94.8166	5.2	112	0.01
31	T	2,2-Dichloropropane	50.0000	46.5031	7.0	105	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.2640	1.5	114	0.00
33	C	Chloroform	50.0000	46.4908	7.0	108	0.00
34		1-Bromopropane	50.0000	45.9196	8.2	108	0.00
35	T	Bromochloromethane	50.0000	50.7942	-1.6	115	0.00
36	T	Tetrahydrofuran	100.0000	95.7868	4.2	108	0.00
37	S	Dibromofluoromethane	25.0000	24.1125	3.5	116	0.00
38	T	1,1,1-Trichloroethane	50.0000	46.5027	7.0	107	0.00
39	T	Cyclohexane	50.0000	45.9079	8.2	102	0.00
40	T	1,1-Dichloropropene	50.0000	48.8178	2.4	111	-0.01
41	T	Tert-Amyl-Methyl ether	100.0000	98.7117	1.3	114	0.00
42	T	Carbon Tetrachloride	50.0000	46.6849	6.6	104	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.8157	8.7	111	0.00
44		Heptane	-1.0000	0.0000	0.0	107	0.00
45	T	1,2-Dichloroethane	50.0000	47.7087	4.6	109	0.00
46	T	Benzene	50.0000	48.3398	3.3	114	0.00
47	T	Trichloroethene	50.0000	53.2779	-6.6	122	0.00
48	T	Methylcyclohexane	50.0000	46.6798	6.6	111	0.00
49	C	1,2-Dichloropropane	50.0000	50.4013	-0.8	115	0.00
50	T	1,4-Dioxane	200.0000	191.9908	4.0	109	0.00
51	T	Bromodichloromethane	50.0000	47.0925	5.8	106	0.00
52	T	Dibromomethane	50.0000	51.5611	-3.1	114	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	48.1262	3.7	115	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.2577	-0.5	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040213\6M115135.D Vial: 15
Acq On : 2 Apr 2013 15:29 Operator: FJB
Sample : WG425306-12 50ug/L ALT SRC 8260 Inst : HPMS6
Misc : 1,1 STD57021 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.8301	-9.7	119	0.00
56	T	Dimethyl Disulfide	50.0000	48.4053	3.2	117	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	117	0.00
58	S	Toluene-d8	25.0000	25.6995	-2.8	123	0.00
59	C	Toluene	50.0000	49.0014	2.0	114	0.00
60	T	Ethyl Methacrylate	50.0000	57.7265	-15.5	121	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	113	0.00
62	T	trans-1,3-Dichloropropene	50.0000	51.3770	-2.8	108	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.3159	-4.6	118	0.00
64	T	2-Hexanone	50.0000	50.3700	-0.7	113	0.00
65	T	1,3-Dichloropropane	50.0000	53.8264	-7.7	115	0.00
66	T	Tetrachloroethene	50.0000	50.3029	-0.6	114	0.00
67	T	Dibromochloromethane	50.0000	47.9408	4.1	110	0.00
68	T	1,2-Dibromoethane	50.0000	54.0573	-8.1	116	0.00
69	T	1-Chlorohexane	50.0000	52.7248	-5.4	116	0.00
70	P	Chlorobenzene	50.0000	46.5603	6.9	105	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.6533	-5.3	112	0.00
72	C	Ethylbenzene	50.0000	50.4156	-0.8	112	0.00
73	T	m-,p-Xylene	100.0000	98.2340	1.8	108	0.00
74	T	o-Xylene	50.0000	47.5279	4.9	104	0.00
75	T	Styrene	50.0000	50.3367	-0.7	112	0.00
76	P	Bromoform	50.0000	50.0544	-0.1	114	0.00
77	T	Isopropylbenzene	50.0000	47.4780	5.0	104	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	116	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	52.2135	-4.4	118	0.00
80	S	p-Bromofluorobenzene	25.0000	26.3976	-5.6	123	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.2421	-0.5	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	43.2180	13.6	90	0.00
83	T	n-Propylbenzene	50.0000	45.9841	8.0	101	0.00
84	T	Bromobenzene	50.0000	50.8824	-1.8	111	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.7470	-3.5	114	0.00
86	T	2-Chlorotoluene	50.0000	45.8053	8.4	104	0.00
87	T	4-Chlorotoluene	50.0000	45.8232	8.4	101	0.00
88	T	a-Methylstyrene	50.0000	53.5319	-7.1	114	0.00
89	T	tert-Butylbenzene	50.0000	48.0508	3.9	105	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.7534	0.5	113	0.00
91	T	sec-Butylbenzene	50.0000	46.3865	7.2	104	0.00
92	T	p-Isopropyltoluene	50.0000	48.0262	3.9	105	0.00
93	T	1,3-Dichlorobenzene	50.0000	46.4384	7.1	103	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.7388	0.5	111	0.00
95	T	n-Butylbenzene	50.0000	51.1610	-2.3	113	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.1179	5.8	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	51.4016	-2.8	114	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	52.0876	-4.2	113	0.00
99	T	Hexachlorobutadiene	50.0000	50.1583	-0.3	111	0.00
100	T	Naphthalene	50.0000	54.3303	-8.7	114	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	52.7946	-5.6	112	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M115135.D 8260_WT.M Tue Apr 02 17:20:02 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061213\10M05673.D Vial: 3
Acq On : 12 Jun 2013 10:40 Operator: TMB
Sample : WG433809-02 50ug/L CCV STD 8260 Inst : HPMS10
Misc : 1,1 STD58374 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 12 11:02:45 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.72	96	627680	25.00 ug/L	-0.02
57) Chlorobenzene-d5	13.32	117	485507	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	16.11	152	265327	25.00 ug/L	-0.02
System Monitoring Compounds					
37) Dibromofluoromethane	8.72	111	168887	27.44 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.76%		
43) 1,2-Dichloroethane-d4	9.33	65	151613	24.93 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.72%		
58) Toluene-d8	11.58	98	569885	24.57 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.28%		
80) p-Bromofluorobenzene	14.72	95	220153	24.30 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.67	85	344402	60.29 ug/L	96
3) Chloromethane	3.04	50	451087	64.88 ug/L	98
4) Vinyl Chloride	3.23	62	378953	59.64 ug/L	99
5) 1,3-Butadiene	3.27	54	278565	83.00 ug/L	98
6) Bromomethane	4.00	94	210975	51.20 ug/L	100
7) Chloroethane	4.16	64	243694	58.78 ug/L	98
8) Trichlorofluoromethane	4.61	101	558520	54.89 ug/L	99
9) Diethyl ether	5.12	59	482504	100.78 ug/L	94
10) Isoprene	5.16	67	480219	50.40 ug/L	93
11) Acrolein	5.35	56	31030	136.22 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.37	101	331994	54.11 ug/L	99
13) Acetone	5.44	43	88523	54.93 ug/L	98
14) 1,1-Dichloroethene	5.66	96	316793	51.59 ug/L	96
15) Tert-Butyl Alcohol	5.76	59	64811	165.21 ug/L	97
16) Dimethyl Sulfide	5.90	62	382133	49.34 ug/L	92
17) Iodomethane	6.14	142	398632	46.71 ug/L	100
18) Methyl acetate	6.17	43	175257	58.64 ug/L	92
19) Methylene Chloride	6.41	84	352034	50.83 ug/L	85
20) Carbon Disulfide	6.43	76	1049865	48.82 ug/L	100
21) Acrylonitrile	6.60	53	91441	55.49 ug/L	98
22) Methyl Tert Butyl Ether	6.63	73	808390	52.37 ug/L	97
23) trans-1,2-Dichloroethene	6.84	96	351821	51.48 ug/L	95
24) n-Hexane	6.94	57	459449	52.38 ug/L	98
25) Diisopropyl ether	7.27	45	2292280	112.45 ug/L	97
26) Vinyl Acetate	7.43	43	453091	55.53 ug/L	96
27) 1,1-Dichloroethane	7.44	63	640058	54.45 ug/L	99
28) Ethyl-Tert-Butyl ether	7.83	59	2067988	103.26 ug/L	97
29) 2-Butanone	7.99	43	95266	54.44 ug/L	94
30) Propionitrile	8.09	54	59565	100.66 ug/L	100
31) 2,2-Dichloropropane	8.19	77	543939	56.30 ug/L	91
32) cis-1,2-Dichloroethene	8.26	96	384349	52.55 ug/L	93
33) Chloroform	8.46	83	610416	53.00 ug/L	99
34) 1-Bromopropane	8.58	122	74792	49.94 ug/L	100
35) Bromochloromethane	8.67	128	182049	53.96 ug/L	93
36) Tetrahydrofuran	8.69	42	118047	102.39 ug/L	91
38) 1,1,1-Trichloroethane	8.95	97	538707	53.37 ug/L	96
39) Cyclohexane	8.98	56	588172	51.19 ug/L	92
40) 1,1-Dichloropropene	9.15	75	468260	53.06 ug/L	98
41) Carbon Tetrachloride	9.27	117	502718	55.85 ug/L	100
42) Tert-Amyl-Methyl ether	9.25	73	1556126	95.63 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061213\10M05673.D Vial: 3
Acq On : 12 Jun 2013 10:40 Operator: TMB
Sample : WG433809-02 50ug/L CCV STD 8260 Inst : HPMS10
Misc : 1,1 STD58374 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 12 11:02:45 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.45	62	429396	53.77 ug/L	96
46)	Benzene	9.48	78	1355741	51.89 ug/L	100
47)	Trichloroethene	10.19	130	377679	52.66 ug/L	98
48)	Methylcyclohexane	10.27	83	474819	47.60 ug/L	95
49)	1,2-Dichloropropane	10.40	63	362728	55.33 ug/L	98
50)	Bromodichloromethane	10.68	83	470510	56.69 ug/L	99
51)	1,4-Dioxane	10.68	88	6569	154.03 ug/L	91
52)	Dibromomethane	10.75	93	189246	52.44 ug/L	99
53)	2-Chloroethyl Vinyl Ether	10.98	63	168686	51.98 ug/L	100
54)	4-Methyl-2-Pentanone	11.00	58	90101	53.58 ug/L	95
55)	cis-1,3-Dichloropropene	11.28	75	560623	57.05 ug/L	94
56)	Dimethyl Disulfide	11.52	79	278424	46.52 ug/L	98
59)	Toluene	11.67	91	1461283	51.80 ug/L	100
60)	Ethyl Methacrylate	11.77	69	311868	48.35 ug/L	99
62)	trans-1,3-Dichloropropene	11.84	75	489066	54.87 ug/L	99
63)	1,1,2-Trichloroethane	12.03	97	260402	51.53 ug/L	100
64)	2-Hexanone	11.99	43	144764	54.61 ug/L	97
65)	1,3-Dichloropropane	12.32	76	455758	52.40 ug/L	88
66)	Tetrachloroethene	12.42	164	330557	51.94 ug/L	99
67)	Dibromochloromethane	12.67	129	359104	57.79 ug/L	98
68)	1,2-Dibromoethane	12.90	107	280628	54.47 ug/L	99
69)	1-Chlorohexane	13.00	91	420674	47.01 ug/L	92
70)	Chlorobenzene	13.38	112	1032016	54.17 ug/L	100
71)	1,1,1,2-Tetrachloroethane	13.41	131	397435	57.36 ug/L	99
72)	Ethylbenzene	13.41	106	565091	55.14 ug/L	94
73)	m-,p-Xylene	13.49	106	1354281	109.06 ug/L	94
74)	o-Xylene	14.01	106	672219	56.19 ug/L	96
75)	Styrene	14.04	104	1154835	60.15 ug/L	99
76)	Bromoform	14.49	173	246282	58.53 ug/L	99
77)	Isopropylbenzene	14.40	105	1644827	56.08 ug/L	100
79)	1,1,2,2-Tetrachloroethane	14.61	83	296642	56.11 ug/L	100
81)	1,2,3-Trichloropropane	14.78	110	93077	52.89 ug/L	95
82)	trans-1,4-Dichloro-2-Buten	14.82	53	89285	48.52 ug/L	81
83)	n-Propylbenzene	14.86	91	1860011	53.14 ug/L	99
84)	Bromobenzene	14.98	156	476970	52.52 ug/L	99
85)	1,3,5-Trimethylbenzene	15.04	105	1379412	56.02 ug/L	99
86)	2-Chlorotoluene	15.11	91	1165665	50.83 ug/L	99
87)	4-Chlorotoluene	15.15	91	1147077	54.86 ug/L	99
88)	a-Methylstyrene	15.41	118	700304	49.35 ug/L	99
89)	tert-Butylbenzene	15.47	134	307598	54.84 ug/L	90
90)	1,2,4-Trimethylbenzene	15.51	105	1414631	56.43 ug/L	99
91)	sec-Butylbenzene	15.72	105	1659659	55.78 ug/L	100
92)	p-Isopropyltoluene	15.87	119	1414844	56.64 ug/L	100
93)	1,3-Dichlorobenzene	16.03	146	882266	54.78 ug/L	100
94)	1,4-Dichlorobenzene	16.16	146	888281	53.37 ug/L	100
95)	n-Butylbenzene	16.35	91	1198369	56.12 ug/L	99
96)	1,2-Dichlorobenzene	16.61	146	813690	54.44 ug/L	100
97)	1,2-Dibromo-3-Chloropropan	17.52	157	66500	59.37 ug/L	100
98)	1,2,4-Trichlorobenzene	18.57	180	552435	55.15 ug/L	99
99)	Hexachlorobutadiene	18.72	225	224558	55.39 ug/L	100
100)	Naphthalene	18.90	128	940128	54.76 ug/L	100
101)	1,2,3-Trichlorobenzene	19.19	180	461947	52.62 ug/L	99

(#) = qualifier out of range (m) = manual integration
10M05673.D 8260WT.M Wed Jun 12 11:02:46 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061213\10M05673.D Vial: 3
Acq On : 12 Jun 2013 10:40 Operator: TMB
Sample : WG433809-02 50ug/L CCV STD 8260 Inst : HPMS10
Misc : 1,1 STD58374 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 12 11:02 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Initial Calibration

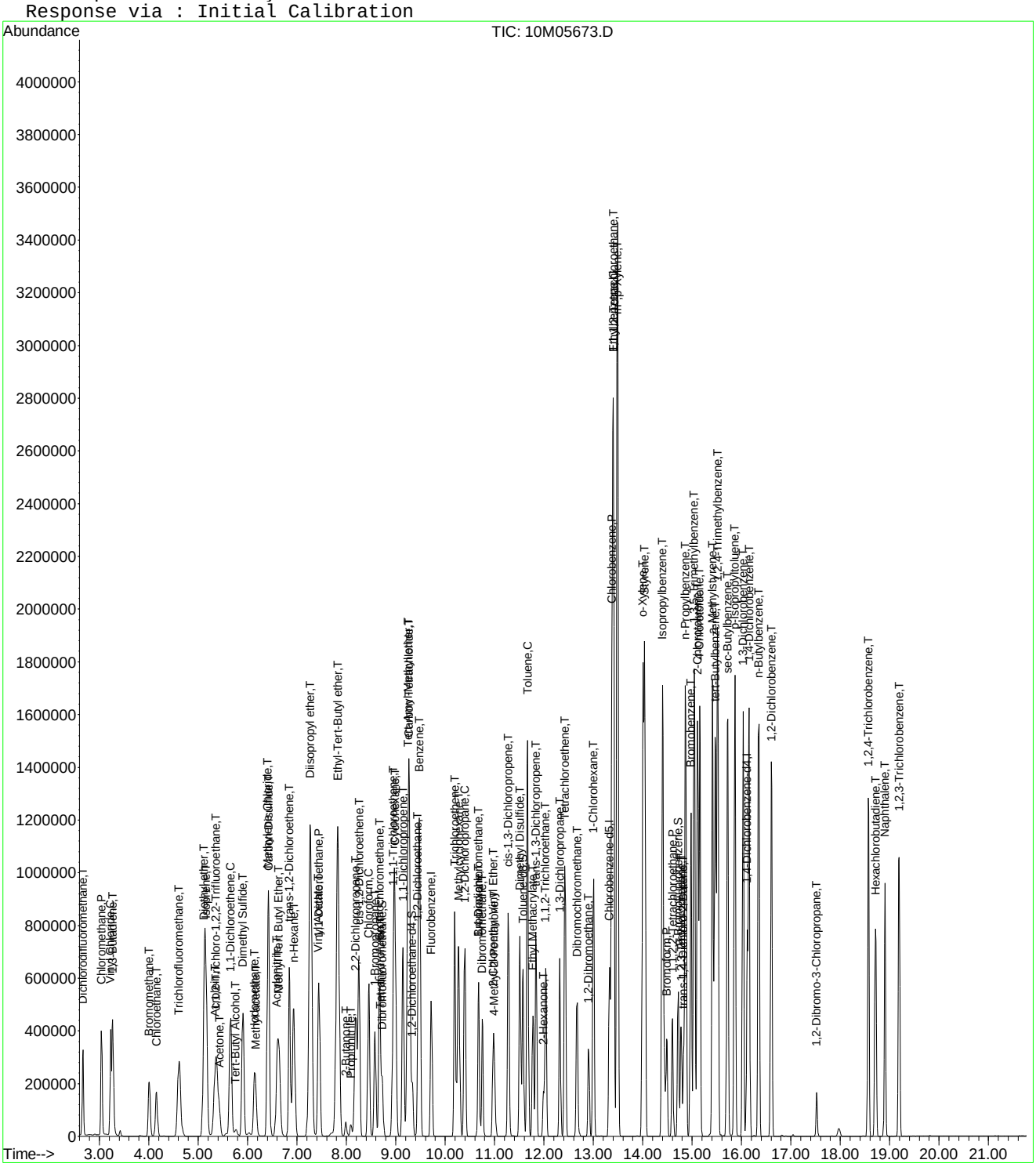

Continuing Calibration Area and RT check

Instrument: HPMS10
Initial cal date: 14 May 2013 19:03
CCV date: 12 Jun 2013 10:40
CCV Filename: 10M05673.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	799646	9.74	611257	13.34	337548	16.13
CCV	627680	9.72	485507	13.32	265327	16.11

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061213\10M05673.D Vial: 3
Acq On : 12 Jun 2013 10:40 Operator: TMB
Sample : WG433809-02 50ug/L CCV STD 8260 Inst : HPMS10
Misc : 1,1 STD58374 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	78	-0.02
2	T	Dichlorodifluoromethane	0.2275	0.2743	-20.6	92	0.00
3	P	Chloromethane	0.2769	0.3593	-29.8#	109	-0.02
4	C	Vinyl Chloride	0.2531	0.3019	-19.3	99	-0.02
5	T	1,3-Butadiene	0.1755	0.2219	-26.4#	116	0.00
6	T	Bromomethane	0.1786	0.1681	5.9	89	-0.02
7	T	Chloroethane	0.1651	0.1941	-17.6	91	-0.02
8	T	Trichlorofluoromethane	0.4053	0.4449	-9.8	87	-0.02
9	T	Diethyl ether	0.1907	0.1922	-0.8	81	-0.02
10	T	Isoprene	0.3795	0.3825	-0.8	77	0.00
11	T	Acrolein	0.0091	0.0247	-172.5#	199#	-0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2444	0.2645	-8.2	87	-0.02
13	T	Acetone	0.0642	0.0705	-9.9	87	-0.02
14	C	1,1-Dichloroethene	0.2446	0.2524	-3.2	83	-0.02
15	T	Tert-Butyl Alcohol	0.0156	0.0129	17.3	66	-0.02
16	T	Dimethyl Sulfide	0.3085	0.3044	1.3	76	-0.02
17	T	Iodomethane	0.2630	0.3175	-20.7	72	-0.02
18	T	Methyl acetate	0.1190	0.1396	-17.3	87	-0.02
19	T	Methylene Chloride	0.2758	0.2804	-1.7	82	-0.02
20	T	Carbon Disulfide	0.8566	0.8363	2.4	76	-0.02
21	T	Acrylonitrile	0.0656	0.0728	-11.0	85	-0.02
22	T	Methyl Tert Butyl Ether	0.6148	0.6440	-4.7	82	-0.02
23	T	trans-1,2-Dichloroethene	0.2722	0.2803	-3.0	82	-0.02
24	T	n-Hexane	0.3494	0.3660	-4.8	83	-0.02
25	T	Diisopropyl ether	0.8119	0.9130	-12.4	90	-0.02
26	T	Vinyl Acetate	0.2925	0.3609	-23.4	94	-0.02
27	P	1,1-Dichloroethane	0.4682	0.5099	-8.9	86	-0.02
28	T	Ethyl-Tert-Butyl ether	0.7977	0.8237	-3.3	83	0.00
29	T	2-Butanone	0.0697	0.0759	-8.9	86	-0.02
30	T	Propionitrile	0.0236	0.0237	-0.6	78	0.00
31	T	2,2-Dichloropropane	0.3848	0.4333	-12.6	92	-0.02
32	T	cis-1,2-Dichloroethene	0.2913	0.3062	-5.1	83	0.00
33	C	Chloroform	0.4587	0.4863	-6.0	84	-0.02
34	T	1-Bromopropane	0.0597	0.0596	0.1	76	-0.02
35	T	Bromochloromethane	0.1344	0.1450	-7.9	83	-0.02
36	T	Tetrahydrofuran	0.0459	0.0470	-2.4	81	-0.02
37	S	Dibromofluoromethane	0.2452	0.2691	-9.7	82	-0.02
38	T	1,1,1-Trichloroethane	0.4020	0.4291	-6.7	84	-0.02
39	T	Cyclohexane	0.4576	0.4685	-2.4	81	-0.02
40	T	1,1-Dichloropropene	0.3515	0.3730	-6.1	84	-0.02
41	T	Carbon Tetrachloride	0.3585	0.4005	-11.7	86	-0.02
42	T	Tert-Amyl-Methyl ether	0.6481	0.6198	4.4	76	-0.02
43	S	1,2-Dichloroethane-d4	0.2422	0.2415	0.3	79	-0.02
44		Heptane	0.0000	0.0000	0.0	79	0.00
45	T	1,2-Dichloroethane	0.3181	0.3421	-7.5	86	-0.02
46	T	Benzene	1.0406	1.0800	-3.8	83	-0.02
47	T	Trichloroethene	0.2857	0.3009	-5.3	85	-0.02
48	T	Methylcyclohexane	0.3973	0.3782	4.8	75	0.00
49	C	1,2-Dichloropropane	0.2611	0.2889	-10.7	87	-0.02
50	T	Bromodichloromethane	0.3306	0.3748	-13.4	86	-0.02
51	T	1,4-Dioxane	0.0017	0.0013	22.9	62	0.00
52	T	Dibromomethane	0.1437	0.1508	-4.9	83	-0.02
53	T	2-Chloroethyl Vinyl Ether	0.1293	0.1344	-4.0	81	0.00
54	T	4-Methyl-2-Pentanone	0.0670	0.0718	-7.2	84	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061213\10M05673.D Vial: 3
Acq On : 12 Jun 2013 10:40 Operator: TMB
Sample : WG433809-02 50ug/L CCV STD 8260 Inst : HPMS10
Misc : 1,1 STD58374 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3914	0.4466	-14.1	87	-0.02
56	T	Dimethyl Disulfide	0.2010	0.2218	-10.4	76	-0.02
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	79	-0.02
58	S	Toluene-d8	1.1943	1.1738	1.7	80	0.00
59	C	Toluene	1.4525	1.5049	-3.6	83	0.00
60	T	Ethyl Methacrylate	0.3322	0.3212	3.3	71	-0.02
61	T	Paraldehyde	0.0000	0.0000	0.0	0#	-11.96#
62	T	trans-1,3-Dichloropropene	0.4589	0.5037	-9.7	85	-0.02
63	T	1,1,2-Trichloroethane	0.2602	0.2682	-3.1	83	-0.02
64	T	2-Hexanone	0.1365	0.1491	-9.2	85	-0.02
65	T	1,3-Dichloropropane	0.4479	0.4694	-4.8	84	-0.02
66	T	Tetrachloroethene	0.3277	0.3404	-3.9	85	-0.02
67	T	Dibromochloromethane	0.3200	0.3698	-15.6	87	0.00
68	T	1,2-Dibromoethane	0.2653	0.2890	-8.9	85	-0.02
69	T	1-Chlorohexane	0.4608	0.4332	6.0	73	-0.02
70	P	Chlorobenzene	0.9810	1.0628	-8.3	87	-0.02
71	T	1,1,1,2-Tetrachloroethane	0.3568	0.4093	-14.7	88	-0.02
72	C	Ethylbenzene	0.5277	0.5820	-10.3	88	-0.02
73	T	m-,p-Xylene	0.6394	0.6974	-9.1	86	-0.02
74	T	o-Xylene	0.6160	0.6923	-12.4	87	-0.02
75	T	Styrene	0.9887	1.1893	-20.3	87	-0.02
76	P	Bromoform	0.2167	0.2536	-17.1	85	0.00
77	T	Isopropylbenzene	1.5102	1.6939	-12.2	87	-0.02
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	79	-0.02
79	P	1,1,2,2-Tetrachloroethane	0.4981	0.5590	-12.2	84	0.00
80	S	p-Bromofluorobenzene	0.8538	0.8297	2.8	79	-0.02
81	T	1,2,3-Trichloropropane	0.1658	0.1754	-5.8	86	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1478	0.1683	-13.8	82	-0.02
83	T	n-Propylbenzene	3.2980	3.5051	-6.3	84	-0.02
84	T	Bromobenzene	0.8556	0.8988	-5.0	87	-0.02
85	T	1,3,5-Trimethylbenzene	2.3203	2.5995	-12.0	88	-0.02
86	T	2-Chlorotoluene	2.1610	2.1967	-1.7	82	-0.02
87	T	4-Chlorotoluene	1.9702	2.1616	-9.7	87	-0.02
88	T	a-Methylstyrene	1.3372	1.3197	1.3	74	-0.02
89	T	tert-Butylbenzene	0.5285	0.5797	-9.7	86	0.00
90	T	1,2,4-Trimethylbenzene	2.3619	2.6658	-12.9	87	-0.02
91	T	sec-Butylbenzene	2.8036	3.1276	-11.6	87	0.00
92	T	p-Isopropyltoluene	2.3536	2.6662	-13.3	88	-0.02
93	T	1,3-Dichlorobenzene	1.5176	1.6626	-9.6	87	-0.02
94	T	1,4-Dichlorobenzene	1.5681	1.6739	-6.7	88	-0.02
95	T	n-Butylbenzene	2.0120	2.2583	-12.2	87	0.00
96	T	1,2-Dichlorobenzene	1.4082	1.5334	-8.9	87	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1055	0.1253	-18.8	88	-0.02
98	T	1,2,4-Trichlorobenzene	0.9438	1.0411	-10.3	86	0.00
99	T	Hexachlorobutadiene	0.3820	0.4232	-10.8	91	0.00
100	T	Naphthalene	1.6178	1.7716	-9.5	82	-0.02
101	T	1,2,3-Trichlorobenzene	0.8272	0.8705	-5.2	83	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
10M05673.D 8260WT.M Wed Jun 12 11:20:20 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061213\10M05673.D Vial: 3
Acq On : 12 Jun 2013 10:40 Operator: TMB
Sample : WG433809-02 50ug/L CCV STD 8260 Inst : HPMS10
Misc : 1,1 STD58374 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	78	-0.02
2	T	Dichlorodifluoromethane	50.0000	60.2851	-20.6	92	0.00
3	P	Chloromethane	50.0000	64.8761	-29.8#	109	-0.02
4	C	Vinyl Chloride	50.0000	59.6391	-19.3	99	-0.02
5	T	1,3-Butadiene	50.0000	83.0040	-66.0#	116	0.00
6	T	Bromomethane	50.0000	51.1965	-2.4	89	-0.02
7	T	Chloroethane	50.0000	58.7831	-17.6	91	-0.02
8	T	Trichlorofluoromethane	50.0000	54.8882	-9.8	87	-0.02
9	T	Diethyl ether	100.0000	100.7829	-0.8	81	-0.02
10	T	Isoprene	50.0000	50.4012	-0.8	77	0.00
11	T	Acrolein	50.0000	136.2215	-172.4#	199	-0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.1111	-8.2	87	-0.02
13	T	Acetone	50.0000	54.9275	-9.9	87	-0.02
14	C	1,1-Dichloroethene	50.0000	51.5906	-3.2	83	-0.02
15	T	Tert-Butyl Alcohol	200.0000	165.2128	17.4	66	-0.02
16	T	Dimethyl Sulfide	50.0000	49.3438	1.3	76	-0.02
17	T	Iodomethane	50.0000	46.7105	6.6	72	-0.02
18	T	Methyl acetate	50.0000	58.6370	-17.3	87	-0.02
19	T	Methylene Chloride	50.0000	50.8310	-1.7	82	-0.02
20	T	Carbon Disulfide	50.0000	48.8178	2.4	76	-0.02
21	T	Acrylonitrile	50.0000	55.4940	-11.0	85	-0.02
22	T	Methyl Tert Butyl Ether	50.0000	52.3690	-4.7	82	-0.02
23	T	trans-1,2-Dichloroethene	50.0000	51.4772	-3.0	82	-0.02
24	T	n-Hexane	50.0000	52.3807	-4.8	83	-0.02
25	T	Diisopropyl ether	100.0000	112.4480	-12.4	90	-0.02
26	T	Vinyl Acetate	50.0000	55.5340	-11.1	94	-0.02
27	P	1,1-Dichloroethane	50.0000	54.4503	-8.9	86	-0.02
28	T	Ethyl-Tert-Butyl ether	100.0000	103.2597	-3.3	83	0.00
29	T	2-Butanone	50.0000	54.4391	-8.9	86	-0.02
30	T	Propionitrile	100.0000	100.6563	-0.7	78	0.00
31	T	2,2-Dichloropropane	50.0000	56.2966	-12.6	92	-0.02
32	T	cis-1,2-Dichloroethene	50.0000	52.5482	-5.1	83	0.00
33	C	Chloroform	50.0000	53.0025	-6.0	84	-0.02
34	T	1-Bromopropane	50.0000	49.9416	0.1	76	-0.02
35	T	Bromochloromethane	50.0000	53.9616	-7.9	83	-0.02
36	T	Tetrahydrofuran	100.0000	102.3939	-2.4	81	-0.02
37	S	Dibromofluoromethane	25.0000	27.4356	-9.7	82	-0.02
38	T	1,1,1-Trichloroethane	50.0000	53.3740	-6.7	84	-0.02
39	T	Cyclohexane	50.0000	51.1950	-2.4	81	-0.02
40	T	1,1-Dichloropropene	50.0000	53.0577	-6.1	84	-0.02
41	T	Carbon Tetrachloride	50.0000	55.8513	-11.7	86	-0.02
42	T	Tert-Amyl-Methyl ether	100.0000	95.6263	4.4	76	-0.02
43	S	1,2-Dichloroethane-d4	25.0000	24.9289	0.3	79	-0.02
44		Heptane	-1.0000	0.0000	0.0	79	0.00
45	T	1,2-Dichloroethane	50.0000	53.7710	-7.5	86	-0.02
46	T	Benzene	50.0000	51.8914	-3.8	83	-0.02
47	T	Trichloroethene	50.0000	52.6554	-5.3	85	-0.02
48	T	Methylcyclohexane	50.0000	47.6047	4.8	75	0.00
49	C	1,2-Dichloropropane	50.0000	55.3320	-10.7	87	-0.02
50	T	Bromodichloromethane	50.0000	56.6882	-13.4	86	-0.02
51	T	1,4-Dioxane	200.0000	154.0313	23.0	62	0.00
52	T	Dibromomethane	50.0000	52.4430	-4.9	83	-0.02
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.9788	-4.0	81	0.00
54	T	4-Methyl-2-Pentanone	50.0000	53.5757	-7.2	84	-0.02

(#) = Out of Range
10M05673.D 8260WT.M Wed Jun 12 11:20:22 2013 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061213\10M05673.D Vial: 3
Acq On : 12 Jun 2013 10:40 Operator: TMB
Sample : WG433809-02 50ug/L CCV STD 8260 Inst : HPMS10
Misc : 1,1 STD58374 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	57.0527	-14.1	87	-0.02
56	T	Dimethyl Disulfide	50.0000	46.5204	7.0	76	-0.02
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	79	-0.02
58	S	Toluene-d8	25.0000	24.5701	1.7	80	0.00
59	C	Toluene	50.0000	51.8037	-3.6	83	0.00
60	T	Ethyl Methacrylate	50.0000	48.3476	3.3	71	-0.02
61	T	Paraldehyde	-1.0000	0.0000	0.0	0	-11.96#
62	T	trans-1,3-Dichloropropene	50.0000	54.8721	-9.7	85	-0.02
63	T	1,1,2-Trichloroethane	50.0000	51.5319	-3.1	83	-0.02
64	T	2-Hexanone	50.0000	54.6054	-9.2	85	-0.02
65	T	1,3-Dichloropropane	50.0000	52.4023	-4.8	84	-0.02
66	T	Tetrachloroethene	50.0000	51.9356	-3.9	85	-0.02
67	T	Dibromochloromethane	50.0000	57.7871	-15.6	87	0.00
68	T	1,2-Dibromoethane	50.0000	54.4662	-8.9	85	-0.02
69	T	1-Chlorohexane	50.0000	47.0128	6.0	73	-0.02
70	P	Chlorobenzene	50.0000	54.1688	-8.3	87	-0.02
71	T	1,1,1,2-Tetrachloroethane	50.0000	57.3554	-14.7	88	-0.02
72	C	Ethylbenzene	50.0000	55.1403	-10.3	88	-0.02
73	T	m-,p-Xylene	100.0000	109.0634	-9.1	86	-0.02
74	T	o-Xylene	50.0000	56.1939	-12.4	87	-0.02
75	T	Styrene	50.0000	60.1463	-20.3	87	-0.02
76	P	Bromoform	50.0000	58.5298	-17.1	85	0.00
77	T	Isopropylbenzene	50.0000	56.0846	-12.2	87	-0.02
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	79	-0.02
79	P	1,1,2,2-Tetrachloroethane	50.0000	56.1123	-12.2	84	0.00
80	S	p-Bromofluorobenzene	25.0000	24.2957	2.8	79	-0.02
81	T	1,2,3-Trichloropropane	50.0000	52.8875	-5.8	86	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	48.5217	3.0	82	-0.02
83	T	n-Propylbenzene	50.0000	53.1406	-6.3	84	-0.02
84	T	Bromobenzene	50.0000	52.5247	-5.0	87	-0.02
85	T	1,3,5-Trimethylbenzene	50.0000	56.0153	-12.0	88	-0.02
86	T	2-Chlorotoluene	50.0000	50.8254	-1.7	82	-0.02
87	T	4-Chlorotoluene	50.0000	54.8590	-9.7	87	-0.02
88	T	a-Methylstyrene	50.0000	49.3464	1.3	74	-0.02
89	T	tert-Butylbenzene	50.0000	54.8351	-9.7	86	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	56.4338	-12.9	87	-0.02
91	T	sec-Butylbenzene	50.0000	55.7778	-11.6	87	0.00
92	T	p-Isopropyltoluene	50.0000	56.6424	-13.3	88	-0.02
93	T	1,3-Dichlorobenzene	50.0000	54.7792	-9.6	87	-0.02
94	T	1,4-Dichlorobenzene	50.0000	53.3745	-6.7	88	-0.02
95	T	n-Butylbenzene	50.0000	56.1206	-12.2	87	0.00
96	T	1,2-Dichlorobenzene	50.0000	54.4445	-8.9	87	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	59.3734	-18.7	88	-0.02
98	T	1,2,4-Trichlorobenzene	50.0000	55.1489	-10.3	86	0.00
99	T	Hexachlorobutadiene	50.0000	55.3931	-10.8	91	0.00
100	T	Naphthalene	50.0000	54.7559	-9.5	82	-0.02
101	T	1,2,3-Trichlorobenzene	50.0000	52.6210	-5.2	83	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
10M05673.D 8260WT.M Wed Jun 12 11:20:22 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061013\11M92734.D Vial: 3
Acq On : 10 Jun 2013 12:28 Operator: FJB
Sample : WG433467-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD58277 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 10 12:49:50 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	624646	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.70	117	432792	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.49	152	245364	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.09	111	171162	23.2869 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.16%		
43) 1,2-Dichloroethane-d4	9.69	65	156068	20.7970 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.20%		
58) Toluene-d8	11.93	98	645634	26.0277 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.12%		
80) p-Bromofluorobenzene	15.09	95	253448	26.0680 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	391938	60.5692 ug/L	94
3) Chloromethane	3.32	50	422424	56.8991 ug/L	98
4) Vinyl Chloride	3.53	62	414665	50.9550 ug/L	99
5) 1,3-Butadiene	3.57	54	219468	46.4881 ug/L	96
6) Bromomethane	4.36	94	226164	48.3927 ug/L	100
7) Chloroethane	4.51	64	243603	55.9144 ug/L	97
8) Trichlorofluoromethane	4.97	101	608657	52.6740 ug/L	100
9) Diethyl ether	5.49	59	445356	104.8243 ug/L	98
10) Isoprene	5.52	67	501159	47.2121 ug/L	96
11) Acrolein	5.70	56	25534	120.3573 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.74	101	358760	55.1943 ug/L	99
13) Acetone	5.80	43	63753	38.9746 ug/L	96
14) 1,1-Dichloroethene	6.02	61	531868	53.0491 ug/L	95
15) Tert-Butyl Alcohol	6.13	59	60966	131.4474 ug/L	93
16) Dimethyl Sulfide	6.28	62	329678	43.9831 ug/L	90
17) Iodomethane	6.51	142	402937	44.3724 ug/L	95
18) Methyl acetate	6.53	43	125818	44.6217 ug/L	96
19) Methylene Chloride	6.77	84	394318	49.5850 ug/L	84
20) Carbon Disulfide	6.80	76	1088150	47.7888 ug/L	97
21) Acrylonitrile	6.95	53	70738	44.9520 ug/L	98
22) Methyl Tert Butyl Ether	6.99	73	858651	48.1989 ug/L	99
23) trans-1,2-Dichloroethene	7.22	96	396087	53.3842 ug/L	97
24) n-Hexane	7.30	57	414273	47.2634 ug/L	98
25) Diisopropyl ether	7.63	45	1837043	102.8655 ug/L	94
26) Vinyl Acetate	7.79	43	403766	50.5526 ug/L	96
27) 1,1-Dichloroethane	7.81	63	638259	53.6356 ug/L	98
28) Ethyl-Tert-Butyl ether	8.18	59	1896097	98.0268 ug/L	99
29) 2-Butanone	8.34	43	71105	42.1791 ug/L	91
30) Propionitrile	8.44	54	45028	79.5517 ug/L	99
31) 2,2-Dichloropropane	8.55	77	617346	53.0113 ug/L	99
32) cis-1,2-Dichloroethene	8.61	96	422949	53.2542 ug/L	100
33) Chloroform	8.81	83	679029	52.2733 ug/L	95
34) 1-Bromopropane	8.94	122	74113	46.3851 ug/L	100
35) Bromochloromethane	9.03	130	239267	52.7320 ug/L	97
36) Tetrahydrofuran	9.06	42	89342	83.2430 ug/L	93
38) 1,1,1-Trichloroethane	9.32	97	623813	52.1684 ug/L	95
39) Cyclohexane	9.35	56	533858	47.3640 ug/L	99
40) 1,1-Dichloropropene	9.50	75	536626	52.5186 ug/L	99
41) Carbon Tetrachloride	9.64	117	566509	52.9587 ug/L	100
42) Tert-Amyl-Methyl ether	9.61	73	1741749	94.3233 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M92734.D 8260BWT.M Mon Jun 10 12:49:51 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061013\11M92734.D Vial: 3
Acq On : 10 Jun 2013 12:28 Operator: FJB
Sample : WG433467-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD58277 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 10 12:49:50 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.80	62	426445	48.0241 ug/L		98
46)	Benzene	9.84	78	1472898	52.2927 ug/L		99
47)	Trichloroethene	10.56	130	387491	53.0411 ug/L		94
48)	Methylcyclohexane	10.63	83	562989	46.2799 ug/L		97
49)	1,2-Dichloropropane	10.75	63	354738	53.0890 ug/L		97
50)	1,4-Dioxane	11.03	88	7445	131.4138 ug/L		98
51)	Bromodichloromethane	11.03	83	513052	52.7949 ug/L		96
52)	Dibromomethane	11.12	93	202385	49.1360 ug/L		99
53)	2-Chloroethyl Vinyl Ether	11.32	63	165933	50.0448 ug/L		99
54)	4-Methyl-2-Pentanone	11.35	58	75479	44.5831 ug/L		99
55)	cis-1,3-Dichloropropene	11.63	75	603521	53.5738 ug/L		98
56)	Dimethyl Disulfide	11.87	79	301036	44.7031 ug/L		98
59)	Toluene	12.03	91	1547728	55.0807 ug/L		95
60)	Ethyl Methacrylate	12.13	69	323344	48.1167 ug/L		86
62)	trans-1,3-Dichloropropene	12.19	75	526219	54.3870 ug/L		99
63)	1,1,2-Trichloroethane	12.40	97	274232	50.8418 ug/L		99
64)	2-Hexanone	12.35	43	109983	46.8303 ug/L		79
65)	1,3-Dichloropropane	12.68	76	475657	51.3563 ug/L		85
66)	Tetrachloroethene	12.79	164	337654	55.2054 ug/L		96
67)	Dibromochloromethane	13.04	129	357745	53.8933 ug/L		99
68)	1,2-Dibromoethane	13.28	107	271663	51.0137 ug/L		100
69)	1-Chlorohexane	13.36	91	477382	49.5862 ug/L		98
70)	Chlorobenzene	13.74	112	1054650	56.4119 ug/L		98
71)	1,1,1,2-Tetrachloroethane	13.77	131	388824	55.4437 ug/L		99
72)	Ethylbenzene	13.77	106	594176	54.7857 ug/L		97
73)	m-,p-Xylene	13.86	106	1389824	113.2374 ug/L		95
74)	o-Xylene	14.37	106	691660	55.4809 ug/L		100
75)	Styrene	14.41	104	1140533	60.6815 ug/L		94
76)	Bromoform	14.87	173	225229	46.8150 ug/L		99
77)	Isopropylbenzene	14.78	105	1641866	55.6935 ug/L		100
79)	1,1,2,2-Tetrachloroethane	14.97	83	305889	48.4711 ug/L		97
81)	1,2,3-Trichloropropane	15.15	110	89964	46.6408 ug/L		82
82)	trans-1,4-Dichloro-2-Buten	15.19	53	76119	42.2240 ug/L	#	39
83)	n-Propylbenzene	15.24	91	1951159	53.3111 ug/L		100
84)	Bromobenzene	15.35	156	447071	52.3582 ug/L		93
85)	1,3,5-Trimethylbenzene	15.42	105	1398987	56.2675 ug/L		98
86)	2-Chlorotoluene	15.49	91	1238900	54.0162 ug/L		95
87)	4-Chlorotoluene	15.53	91	1216735	52.7334 ug/L		95
88)	a-Methylstyrene	15.79	118	723983	53.9978 ug/L		92
89)	tert-Butylbenzene	15.84	134	296453	54.6255 ug/L		93
90)	1,2,4-Trimethylbenzene	15.89	105	1435546	56.8178 ug/L		98
91)	sec-Butylbenzene	16.09	105	1638826	54.1099 ug/L		99
92)	p-Isopropyltoluene	16.24	119	1393198	56.5934 ug/L		97
93)	1,3-Dichlorobenzene	16.42	146	839489	56.0717 ug/L		94
94)	1,4-Dichlorobenzene	16.53	146	841234	53.8310 ug/L		94
95)	n-Butylbenzene	16.73	91	1246655	53.9908 ug/L		98
96)	1,2-Dichlorobenzene	16.99	146	770824	52.9241 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	17.91	75	46744	40.9233 ug/L		94
98)	1,2,4-Trichlorobenzene	18.96	180	530040	51.9429 ug/L		99
99)	Hexachlorobutadiene	19.11	225	191418	49.5738 ug/L		94
100)	Naphthalene	19.30	128	907880	46.0766 ug/L		99
101)	1,2,3-Trichlorobenzene	19.59	180	448332	47.5926 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M92734.D 8260BWT.M Mon Jun 10 12:49:51 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061013\11M92734.D Vial: 3
Acq On : 10 Jun 2013 12:28 Operator: FJB
Sample : WG433467-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD58277 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 10 12:49 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration

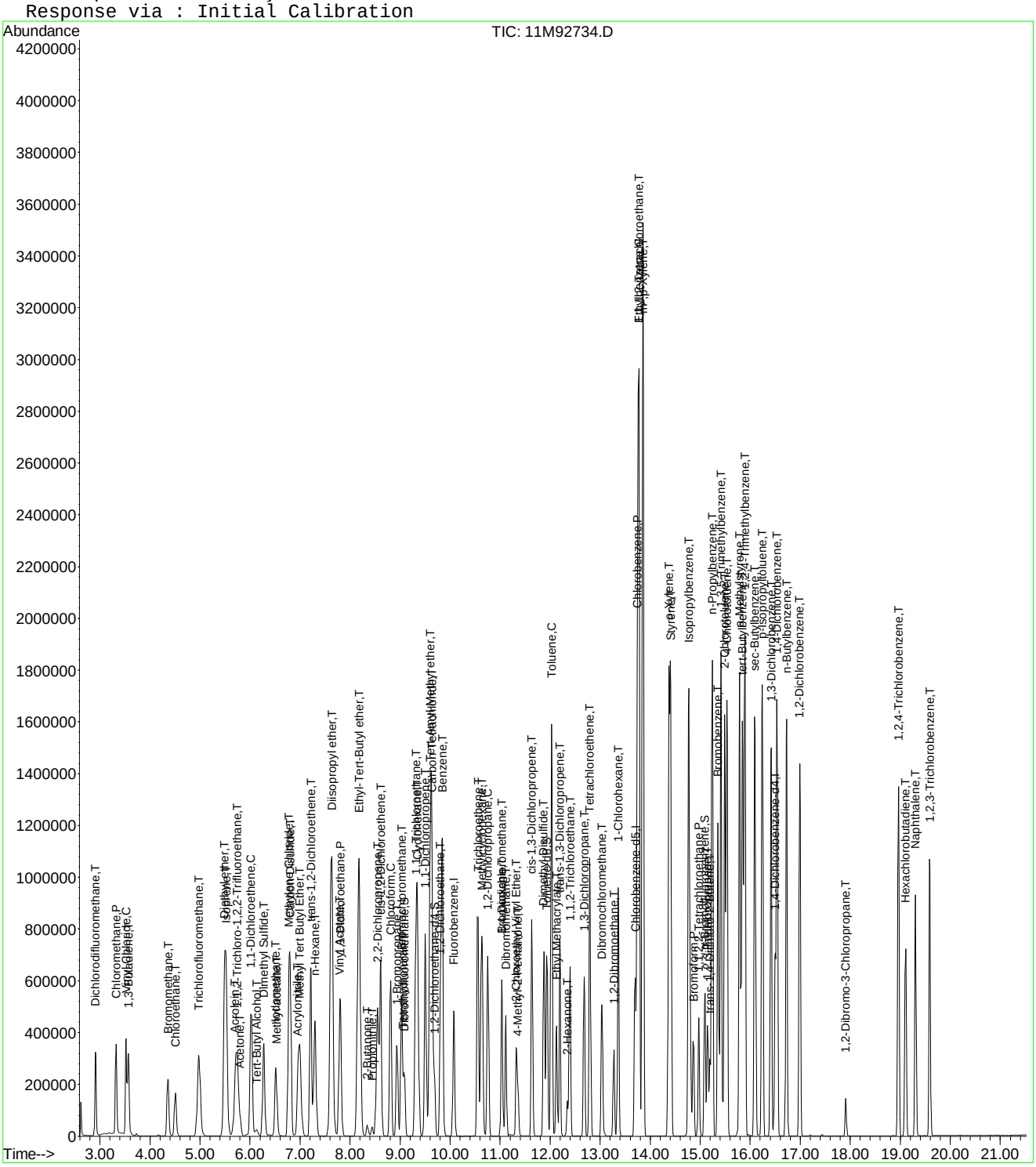

11M92734.D 8260BWT.M Mon Jun 10 12:49:52 2013 Page 3

Continuing Calibration Area and RT check

Instrument: hpms11
Initial cal date: 15 May 2013 19:54
CCV date: 10 Jun 2013 12:28
CCV Filename: 11M92734.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	740966	10.08	532754	13.71	309664	16.51
CCV	624646	10.07	432792	13.70	245364	16.49

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061013\11M92734.D Vial: 3
Acq On : 10 Jun 2013 12:28 Operator: FJB
Sample : WG433467-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD58277 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	84	-0.01
2	T	Dichlorodifluoromethane	0.2590	0.3137	-21.1	91	-0.01
3	P	Chloromethane	0.2971	0.3381	-13.8	98	-0.01
4	C	Vinyl Chloride	0.3257	0.3319	-1.9	88	0.00
5	T	1,3-Butadiene	0.2409	0.1757	27.1#	90	0.00
6	T	Bromomethane	0.1870	0.1810	3.2	90	0.00
7	T	Chloroethane	0.1744	0.1950	-11.8	91	-0.01
8	T	Trichlorofluoromethane	0.4625	0.4872	-5.3	85	-0.01
9	T	Diethyl ether	0.1700	0.1782	-4.8	90	-0.01
10	T	Isoprene	0.4248	0.4012	5.6	76	-0.01
11	T	Acrolein	0.0085	0.0204	-140.8#	209#	-0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2601	0.2872	-10.4	88	0.00
13	T	Acetone	0.0655	0.0510	22.1	67	-0.01
14	C	1,1-Dichloroethene	0.4013	0.4257	-6.1	86	-0.01
15	T	Tert-Butyl Alcohol	0.0186	0.0122	34.3#	60	-0.01
16	T	Dimethyl Sulfide	0.3000	0.2639	12.0	73	-0.01
17	T	Iodomethane	0.2759	0.3225	-16.9	71	0.00
18	T	Methyl acetate	0.1129	0.1007	10.8	73	-0.01
19	T	Methylene Chloride	0.3183	0.3156	0.8	86	-0.01
20	T	Carbon Disulfide	0.9113	0.8710	4.4	75	-0.01
21	T	Acrylonitrile	0.0630	0.0566	10.1	74	-0.01
22	T	Methyl Tert Butyl Ether	0.7130	0.6873	3.6	80	-0.01
23	T	trans-1,2-Dichloroethene	0.2969	0.3171	-6.8	87	-0.01
24	T	n-Hexane	0.3508	0.3316	5.5	78	-0.01
25	T	Diisopropyl ether	0.7148	0.7352	-2.9	88	-0.01
26	T	Vinyl Acetate	0.3197	0.3232	-1.1	81	-0.01
27	P	1,1-Dichloroethane	0.4763	0.5109	-7.3	88	-0.01
28	T	Ethyl-Tert-Butyl ether	0.7741	0.7589	2.0	83	-0.01
29	T	2-Butanone	0.0675	0.0569	15.6	71	0.00
30	T	Propionitrile	0.0227	0.0180	20.4	65	-0.01
31	T	2,2-Dichloropropane	0.4661	0.4942	-6.0	89	-0.01
32	T	cis-1,2-Dichloroethene	0.3179	0.3386	-6.5	87	-0.01
33	C	Chloroform	0.5199	0.5435	-4.5	86	-0.01
34	T	1-Bromopropane	0.0640	0.0593	7.2	76	-0.01
35	T	Bromochloromethane	0.1816	0.1915	-5.5	83	-0.01
36	T	Tetrahydrofuran	0.0430	0.0358	16.8	70	-0.01
37	S	Dibromofluoromethane	0.2942	0.2740	6.9	77	-0.01
38	T	1,1,1-Trichloroethane	0.4786	0.4993	-4.3	84	-0.01
39	T	Cyclohexane	0.4511	0.4273	5.3	78	-0.01
40	T	1,1-Dichloropropene	0.4089	0.4295	-5.0	86	-0.01
41	T	Carbon Tetrachloride	0.4281	0.4535	-5.9	85	-0.01
42	T	Tert-Amyl-Methyl ether	0.7390	0.6971	5.7	79	-0.02
43	S	1,2-Dichloroethane-d4	0.3003	0.2498	16.8	70	-0.01
44	T	Heptane	0.0000	0.0000	0.0	0#	-0.01
45	T	1,2-Dichloroethane	0.3554	0.3413	4.0	79	-0.01
46	T	Benzene	1.1273	1.1790	-4.6	88	0.00
47	T	Trichloroethene	0.2924	0.3102	-6.1	87	-0.01
48	T	Methylcyclohexane	0.4869	0.4507	7.4	76	-0.01
49	C	1,2-Dichloropropane	0.2674	0.2839	-6.2	88	-0.01
50	T	1,4-Dioxane	0.0023	0.0015	34.4#	58	-0.01
51	T	Bromodichloromethane	0.3889	0.4107	-5.6	84	-0.01
52	T	Dibromomethane	0.1649	0.1620	1.7	79	-0.01
53	T	2-Chloroethyl Vinyl Ether	0.1327	0.1328	-0.1	79	-0.01
54	T	4-Methyl-2-Pentanone	0.0678	0.0604	10.8	73	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061013\11M92734.D Vial: 3
Acq On : 10 Jun 2013 12:28 Operator: FJB
Sample : WG433467-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD58277 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4509	0.4831	-7.1	85	-0.01
56	T	Dimethyl Disulfide	0.2695	0.2410	10.6	70	-0.02
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	81	-0.01
58	S	Toluene-d8	1.4329	1.4918	-4.1	83	-0.01
59	C	Toluene	1.6231	1.7881	-10.2	87	0.00
60	T	Ethyl Methacrylate	0.3882	0.3736	3.8	70	-0.01
61	T	Paraldehyde	0.0000	0.0000	0.0	0#	-12.25#
62	T	trans-1,3-Dichloropropene	0.5589	0.6079	-8.8	82	-0.01
63	T	1,1,2-Trichloroethane	0.3116	0.3168	-1.7	80	-0.01
64	T	2-Hexanone	0.1357	0.1271	6.3	70	-0.01
65	T	1,3-Dichloropropane	0.5350	0.5495	-2.7	81	-0.01
66	T	Tetrachloroethene	0.3533	0.3901	-10.4	87	-0.01
67	T	Dibromochloromethane	0.3834	0.4133	-7.8	80	-0.01
68	T	1,2-Dibromoethane	0.3076	0.3139	-2.0	78	-0.01
69	T	1-Chlorohexane	0.5561	0.5515	0.8	78	-0.01
70	P	Chlorobenzene	1.0799	1.2184	-12.8	86	-0.01
71	T	1,1,1,2-Tetrachloroethane	0.4051	0.4492	-10.9	84	-0.01
72	C	Ethylbenzene	0.6265	0.6865	-9.6	85	-0.01
73	T	m-,p-Xylene	0.7090	0.8028	-13.2	87	0.00
74	T	o-Xylene	0.7201	0.7991	-11.0	85	-0.01
75	T	Styrene	1.0857	1.3177	-21.4	85	-0.01
76	P	Bromoform	0.2525	0.2602	-3.1	76	0.00
77	T	Isopropylbenzene	1.7029	1.8968	-11.4	86	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	79	-0.02
79	P	1,1,2,2-Tetrachloroethane	0.6430	0.6233	3.1	73	-0.01
80	S	p-Bromofluorobenzene	0.9906	1.0330	-4.3	83	-0.02
81	T	1,2,3-Trichloropropane	0.1965	0.1833	6.7	72	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1837	0.1551	15.6	63	-0.01
83	T	n-Propylbenzene	3.7291	3.9760	-6.6	86	0.00
84	T	Bromobenzene	0.8700	0.9110	-4.7	83	-0.01
85	T	1,3,5-Trimethylbenzene	2.5333	2.8508	-12.5	86	0.00
86	T	2-Chlorotoluene	2.3369	2.5246	-8.0	88	-0.01
87	T	4-Chlorotoluene	2.3509	2.4794	-5.5	85	0.00
88	T	a-Methylstyrene	1.3661	1.4753	-8.0	77	-0.01
89	T	tert-Butylbenzene	0.5530	0.6041	-9.3	83	-0.01
90	T	1,2,4-Trimethylbenzene	2.5743	2.9253	-13.6	86	0.00
91	T	sec-Butylbenzene	3.0859	3.3396	-8.2	84	-0.02
92	T	p-Isopropyltoluene	2.5083	2.8390	-13.2	84	0.00
93	T	1,3-Dichlorobenzene	1.5255	1.7107	-12.1	84	-0.01
94	T	1,4-Dichlorobenzene	1.5923	1.7143	-7.7	84	-0.01
95	T	n-Butylbenzene	2.3526	2.5404	-8.0	83	0.00
96	T	1,2-Dichlorobenzene	1.4840	1.5708	-5.8	82	-0.02
97	T	1,2-Dibromo-3-Chloropropane	0.1164	0.0953	18.2	63	-0.01
98	T	1,2,4-Trichlorobenzene	1.0397	1.0801	-3.9	79	-0.01
99	T	Hexachlorobutadiene	0.3934	0.3901	0.9	78	-0.01
100	T	Naphthalene	2.0076	1.8501	7.8	67	-0.01
101	T	1,2,3-Trichlorobenzene	0.9598	0.9136	4.8	74	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M92734.D 8260BWT.M Mon Jun 10 13:00:10 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061013\11M92734.D Vial: 3
Acq On : 10 Jun 2013 12:28 Operator: FJB
Sample : WG433467-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD58277 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	84	-0.01
2	T	Dichlorodifluoromethane	50.0000	60.5692	-21.1	91	-0.01
3	P	Chloromethane	50.0000	56.8991	-13.8	98	-0.01
4	C	Vinyl Chloride	50.0000	50.9550	-1.9	88	0.00
5	T	1,3-Butadiene	50.0000	46.4881	7.0	90	0.00
6	T	Bromomethane	50.0000	48.3927	3.2	90	0.00
7	T	Chloroethane	50.0000	55.9144	-11.8	91	-0.01
8	T	Trichlorofluoromethane	50.0000	52.6740	-5.3	85	-0.01
9	T	Diethyl ether	100.0000	104.8243	-4.8	90	-0.01
10	T	Isoprene	50.0000	47.2121	5.6	76	-0.01
11	T	Acrolein	50.0000	120.3573	-140.7#	209	-0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.1943	-10.4	88	0.00
13	T	Acetone	50.0000	38.9746	22.1	67	-0.01
14	C	1,1-Dichloroethene	50.0000	53.0491	-6.1	86	-0.01
15	T	Tert-Butyl Alcohol	200.0000	131.4474	34.3#	60	-0.01
16	T	Dimethyl Sulfide	50.0000	43.9831	12.0	73	-0.01
17	T	Iodomethane	50.0000	44.3724	11.3	71	0.00
18	T	Methyl acetate	50.0000	44.6217	10.8	73	-0.01
19	T	Methylene Chloride	50.0000	49.5850	0.8	86	-0.01
20	T	Carbon Disulfide	50.0000	47.7888	4.4	75	-0.01
21	T	Acrylonitrile	50.0000	44.9520	10.1	74	-0.01
22	T	Methyl Tert Butyl Ether	50.0000	48.1989	3.6	80	-0.01
23	T	trans-1,2-Dichloroethene	50.0000	53.3842	-6.8	87	-0.01
24	T	n-Hexane	50.0000	47.2634	5.5	78	-0.01
25	T	Diisopropyl ether	100.0000	102.8655	-2.9	88	-0.01
26	T	Vinyl Acetate	50.0000	50.5526	-1.1	81	-0.01
27	P	1,1-Dichloroethane	50.0000	53.6356	-7.3	88	-0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	98.0268	2.0	83	-0.01
29	T	2-Butanone	50.0000	42.1791	15.6	71	0.00
30	T	Propionitrile	100.0000	79.5517	20.4	65	-0.01
31	T	2,2-Dichloropropane	50.0000	53.0114	-6.0	89	-0.01
32	T	cis-1,2-Dichloroethene	50.0000	53.2542	-6.5	87	-0.01
33	C	Chloroform	50.0000	52.2733	-4.5	86	-0.01
34	T	1-Bromopropane	50.0000	46.3851	7.2	76	-0.01
35	T	Bromochloromethane	50.0000	52.7320	-5.5	83	-0.01
36	T	Tetrahydrofuran	100.0000	83.2430	16.8	70	-0.01
37	S	Dibromofluoromethane	25.0000	23.2869	6.9	77	-0.01
38	T	1,1,1-Trichloroethane	50.0000	52.1683	-4.3	84	-0.01
39	T	Cyclohexane	50.0000	47.3640	5.3	78	-0.01
40	T	1,1-Dichloropropene	50.0000	52.5186	-5.0	86	-0.01
41	T	Carbon Tetrachloride	50.0000	52.9587	-5.9	85	-0.01
42	T	Tert-Amyl-Methyl ether	100.0000	94.3233	5.7	79	-0.02
43	S	1,2-Dichloroethane-d4	25.0000	20.7970	16.8	70	-0.01
44	T	Heptane	-1.0000	0.0000	0.0	0	-0.01
45	T	1,2-Dichloroethane	50.0000	48.0241	4.0	79	-0.01
46	T	Benzene	50.0000	52.2927	-4.6	88	0.00
47	T	Trichloroethene	50.0000	53.0411	-6.1	87	-0.01
48	T	Methylcyclohexane	50.0000	46.2799	7.4	76	-0.01
49	C	1,2-Dichloropropane	50.0000	53.0890	-6.2	88	-0.01
50	T	1,4-Dioxane	200.0000	131.4139	34.3#	58	-0.01
51	T	Bromodichloromethane	50.0000	52.7949	-5.6	84	-0.01
52	T	Dibromomethane	50.0000	49.1360	1.7	79	-0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	50.0448	-0.1	79	-0.01
54	T	4-Methyl-2-Pentanone	50.0000	44.5831	10.8	73	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061013\11M92734.D Vial: 3
Acq On : 10 Jun 2013 12:28 Operator: FJB
Sample : WG433467-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD58277 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.5739	-7.1	85	-0.01
56	T	Dimethyl Disulfide	50.0000	44.7031	10.6	70	-0.02
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	81	-0.01
58	S	Toluene-d8	25.0000	26.0277	-4.1	83	-0.01
59	C	Toluene	50.0000	55.0807	-10.2	87	0.00
60	T	Ethyl Methacrylate	50.0000	48.1167	3.8	70	-0.01
61	T	Paraldehyde	-1.0000	0.0000	0.0	0	-12.25#
62	T	trans-1,3-Dichloropropene	50.0000	54.3871	-8.8	82	-0.01
63	T	1,1,2-Trichloroethane	50.0000	50.8418	-1.7	80	-0.01
64	T	2-Hexanone	50.0000	46.8303	6.3	70	-0.01
65	T	1,3-Dichloropropane	50.0000	51.3563	-2.7	81	-0.01
66	T	Tetrachloroethene	50.0000	55.2054	-10.4	87	-0.01
67	T	Dibromochloromethane	50.0000	53.8933	-7.8	80	-0.01
68	T	1,2-Dibromoethane	50.0000	51.0137	-2.0	78	-0.01
69	T	1-Chlorohexane	50.0000	49.5862	0.8	78	-0.01
70	P	Chlorobenzene	50.0000	56.4119	-12.8	86	-0.01
71	T	1,1,1,2-Tetrachloroethane	50.0000	55.4437	-10.9	84	-0.01
72	C	Ethylbenzene	50.0000	54.7857	-9.6	85	-0.01
73	T	m-,p-Xylene	100.0000	113.2374	-13.2	87	0.00
74	T	o-Xylene	50.0000	55.4808	-11.0	85	-0.01
75	T	Styrene	50.0000	60.6815	-21.4	85	-0.01
76	P	Bromoform	50.0000	46.8150	6.4	76	0.00
77	T	Isopropylbenzene	50.0000	55.6935	-11.4	86	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	79	-0.02
79	P	1,1,2,2-Tetrachloroethane	50.0000	48.4711	3.1	73	-0.01
80	S	p-Bromofluorobenzene	25.0000	26.0680	-4.3	83	-0.02
81	T	1,2,3-Trichloropropane	50.0000	46.6408	6.7	72	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	42.2240	15.6	63	-0.01
83	T	n-Propylbenzene	50.0000	53.3111	-6.6	86	0.00
84	T	Bromobenzene	50.0000	52.3582	-4.7	83	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	56.2675	-12.5	86	0.00
86	T	2-Chlorotoluene	50.0000	54.0162	-8.0	88	-0.01
87	T	4-Chlorotoluene	50.0000	52.7334	-5.5	85	0.00
88	T	a-Methylstyrene	50.0000	53.9978	-8.0	77	-0.01
89	T	tert-Butylbenzene	50.0000	54.6255	-9.3	83	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	56.8178	-13.6	86	0.00
91	T	sec-Butylbenzene	50.0000	54.1099	-8.2	84	-0.02
92	T	p-Isopropyltoluene	50.0000	56.5934	-13.2	84	0.00
93	T	1,3-Dichlorobenzene	50.0000	56.0717	-12.1	84	-0.01
94	T	1,4-Dichlorobenzene	50.0000	53.8310	-7.7	84	-0.01
95	T	n-Butylbenzene	50.0000	53.9908	-8.0	83	0.00
96	T	1,2-Dichlorobenzene	50.0000	52.9241	-5.8	82	-0.02
97	T	1,2-Dibromo-3-Chloropropane	50.0000	40.9233	18.2	63	-0.01
98	T	1,2,4-Trichlorobenzene	50.0000	51.9429	-3.9	79	-0.01
99	T	Hexachlorobutadiene	50.0000	49.5738	0.9	78	-0.01
100	T	Naphthalene	50.0000	46.0766	7.8	67	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	47.5926	4.8	74	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M92734.D 8260BWT.M Mon Jun 10 13:00:16 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061113\11M92760.D Vial: 2
Acq On : 11 Jun 2013 12:11 Operator: FJB
Sample : WG433685-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD58374 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 12:33:31 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.08	96	609475	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.70	117	415692	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.49	152	232159	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.09	111	166705	23.2451 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.00%		
43) 1,2-Dichloroethane-d4	9.69	65	146958	20.0705 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 80.28%		
58) Toluene-d8	11.93	98	631757	26.5160 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.08%		
80) p-Bromofluorobenzene	15.09	95	243871	26.5096 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.92	85	399857	63.3311 ug/L	95
3) Chloromethane	3.32	50	428046	59.0915 ug/L	97
4) Vinyl Chloride	3.53	62	424024	53.4021 ug/L	99
5) 1,3-Butadiene	3.58	54	293663	Below Cal	95
6) Bromomethane	4.36	94	222677	48.8326 ug/L	100
7) Chloroethane	4.51	64	255381	60.0769 ug/L	98
8) Trichlorofluoromethane	4.97	101	614566	54.5093 ug/L	100
9) Diethyl ether	5.49	59	427302	103.0784 ug/L	98
10) Isoprene	5.52	67	574240	55.4433 ug/L	98
11) Acrolein	5.71	56	22994	111.0826 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	360834	56.8952 ug/L	98
13) Acetone	5.80	43	57785	36.2055 ug/L	96
14) 1,1-Dichloroethene	6.02	61	556502	56.8878 ug/L	98
15) Tert-Butyl Alcohol	6.13	59	42716	94.3915 ug/L	93
16) Dimethyl Sulfide	6.28	62	379427	51.8802 ug/L	90
17) Iodomethane	6.51	142	447970	50.3968 ug/L	95
18) Methyl acetate	6.53	43	122466	44.5140 ug/L	93
19) Methylene Chloride	6.77	84	389476	50.1953 ug/L	88
20) Carbon Disulfide	6.80	76	1260688	56.7444 ug/L	98
21) Acrylonitrile	6.95	53	66547	43.3414 ug/L	96
22) Methyl Tert Butyl Ether	6.99	73	781332	44.9505 ug/L	99
23) trans-1,2-Dichloroethene	7.22	96	397386	54.8925 ug/L	99
24) n-Hexane	7.30	57	483353	56.5172 ug/L	97
25) Diisopropyl ether	7.63	45	1879244	107.8479 ug/L	95
26) Vinyl Acetate	7.79	43	381134	48.9068 ug/L	97
27) 1,1-Dichloroethane	7.81	63	658260	56.6933 ug/L	99
28) Ethyl-Tert-Butyl ether	8.18	59	1810744	95.9443 ug/L	99
29) 2-Butanone	8.34	43	61139	37.1701 ug/L	96
30) Propionitrile	8.44	54	39287	71.1367 ug/L	89
31) 2,2-Dichloropropane	8.55	77	631377	55.5657 ug/L	100
32) cis-1,2-Dichloroethene	8.61	96	425600	54.9219 ug/L	97
33) Chloroform	8.81	83	676162	53.3483 ug/L	96
34) 1-Bromopropane	8.94	122	79105	50.7419 ug/L	100
35) Bromochloromethane	9.03	130	228969	51.7186 ug/L	93
36) Tetrahydrofuran	9.06	42	79669	76.0780 ug/L	98
38) 1,1,1-Trichloroethane	9.32	97	616659	52.8538 ug/L	96
39) Cyclohexane	9.35	56	610187	55.4835 ug/L	98
40) 1,1-Dichloropropene	9.50	75	551286	55.2964 ug/L	97
41) Carbon Tetrachloride	9.64	117	556203	53.2895 ug/L	99
42) Tert-Amyl-Methyl ether	9.62	73	1609163	89.3124 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M92760.D 8260BWT.M Tue Jun 11 12:33:31 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061113\11M92760.D Vial: 2
Acq On : 11 Jun 2013 12:11 Operator: FJB
Sample : WG433685-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD58374 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 12:33:31 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	9.80	62	411787	47.5277	ug/L		99
46)	Benzene	9.84	78	1491199	54.2603	ug/L		99
47)	Trichloroethene	10.56	130	380403	53.3671	ug/L		94
48)	Methylcyclohexane	10.63	83	621107	52.3283	ug/L		97
49)	1,2-Dichloropropane	10.75	63	357458	54.8277	ug/L		96
50)	1,4-Dioxane	11.02	88	4390	79.4180	ug/L		97
51)	Bromodichloromethane	11.03	83	495541	52.2623	ug/L		96
52)	Dibromomethane	11.12	93	187997	46.7790	ug/L		98
53)	2-Chloroethyl Vinyl Ether	11.32	63	151334	46.7779	ug/L		98
54)	4-Methyl-2-Pentanone	11.35	58	64283	38.9151	ug/L		97
55)	cis-1,3-Dichloropropene	11.63	75	597434	54.3536	ug/L		98
56)	Dimethyl Disulfide	11.87	79	315463	48.0116	ug/L		96
59)	Toluene	12.03	91	1555361	57.6293	ug/L		95
60)	Ethyl Methacrylate	12.13	69	305417	47.3186	ug/L		88
62)	trans-1,3-Dichloropropene	12.19	75	502765	54.1005	ug/L		98
63)	1,1,2-Trichloroethane	12.40	97	251841	48.6113	ug/L		98
64)	2-Hexanone	12.35	43	93040	41.2457	ug/L		73
65)	1,3-Dichloropropane	12.68	76	445372	50.0646	ug/L		87
66)	Tetrachloroethene	12.79	164	334086	56.8690	ug/L		96
67)	Dibromochloromethane	13.04	129	327654	51.3907	ug/L		100
68)	1,2-Dibromoethane	13.28	107	246065	48.1076	ug/L		100
69)	1-Chlorohexane	13.36	91	517448	55.9589	ug/L		100
70)	Chlorobenzene	13.74	112	1047889	58.3560	ug/L		98
71)	1,1,1,2-Tetrachloroethane	13.77	131	376869	55.9497	ug/L		99
72)	Ethylbenzene	13.77	106	595393	57.1562	ug/L		96
73)	m-,p-Xylene	13.86	106	1387331	117.6841	ug/L		95
74)	o-Xylene	14.37	106	683772	57.1044	ug/L		99
75)	Styrene	14.41	104	1119662	62.0216	ug/L		94
76)	Bromoform	14.86	173	200389	43.3983	ug/L		99
77)	Isopropylbenzene	14.78	105	1649093	58.2397	ug/L		100
79)	1,1,2,2-Tetrachloroethane	14.97	83	273070	45.7318	ug/L		96
81)	1,2,3-Trichloropropane	15.15	110	77280	42.3438	ug/L		86
82)	trans-1,4-Dichloro-2-Buten	15.19	53	73482	43.0797	ug/L	#	34
83)	n-Propylbenzene	15.24	91	1960010	56.5990	ug/L		100
84)	Bromobenzene	15.35	156	432345	53.5136	ug/L		90
85)	1,3,5-Trimethylbenzene	15.42	105	1403227	59.6481	ug/L		97
86)	2-Chlorotoluene	15.49	91	1201292	55.3556	ug/L		96
87)	4-Chlorotoluene	15.53	91	1219742	55.8705	ug/L		94
88)	a-Methylstyrene	15.79	118	756290	59.6158	ug/L		92
89)	tert-Butylbenzene	15.84	134	297844	58.0035	ug/L		93
90)	1,2,4-Trimethylbenzene	15.89	105	1430932	59.8566	ug/L		98
91)	sec-Butylbenzene	16.10	105	1664711	58.0909	ug/L		99
92)	p-Isopropyltoluene	16.24	119	1405602	60.3449	ug/L		97
93)	1,3-Dichlorobenzene	16.42	146	823183	58.1100	ug/L		94
94)	1,4-Dichlorobenzene	16.53	146	823873	55.7187	ug/L		94
95)	n-Butylbenzene	16.73	91	1276379	58.4223	ug/L		98
96)	1,2-Dichlorobenzene	16.99	146	733559	53.2302	ug/L		94
97)	1,2-Dibromo-3-Chloropropan	17.91	75	40471	37.4467	ug/L		93
98)	1,2,4-Trichlorobenzene	18.96	180	508792	52.6966	ug/L		99
99)	Hexachlorobutadiene	19.11	225	200182	54.7923	ug/L		93
100)	Naphthalene	19.30	128	805914	43.2281	ug/L		99
101)	1,2,3-Trichlorobenzene	19.59	180	414095	46.4585	ug/L		99

(#) = qualifier out of range (m) = manual integration
11M92760.D 8260BWT.M Tue Jun 11 12:33:31 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061113\11M92760.D Vial: 2
Acq On : 11 Jun 2013 12:11 Operator: FJB
Sample : WG433685-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD58374 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 12:33 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration

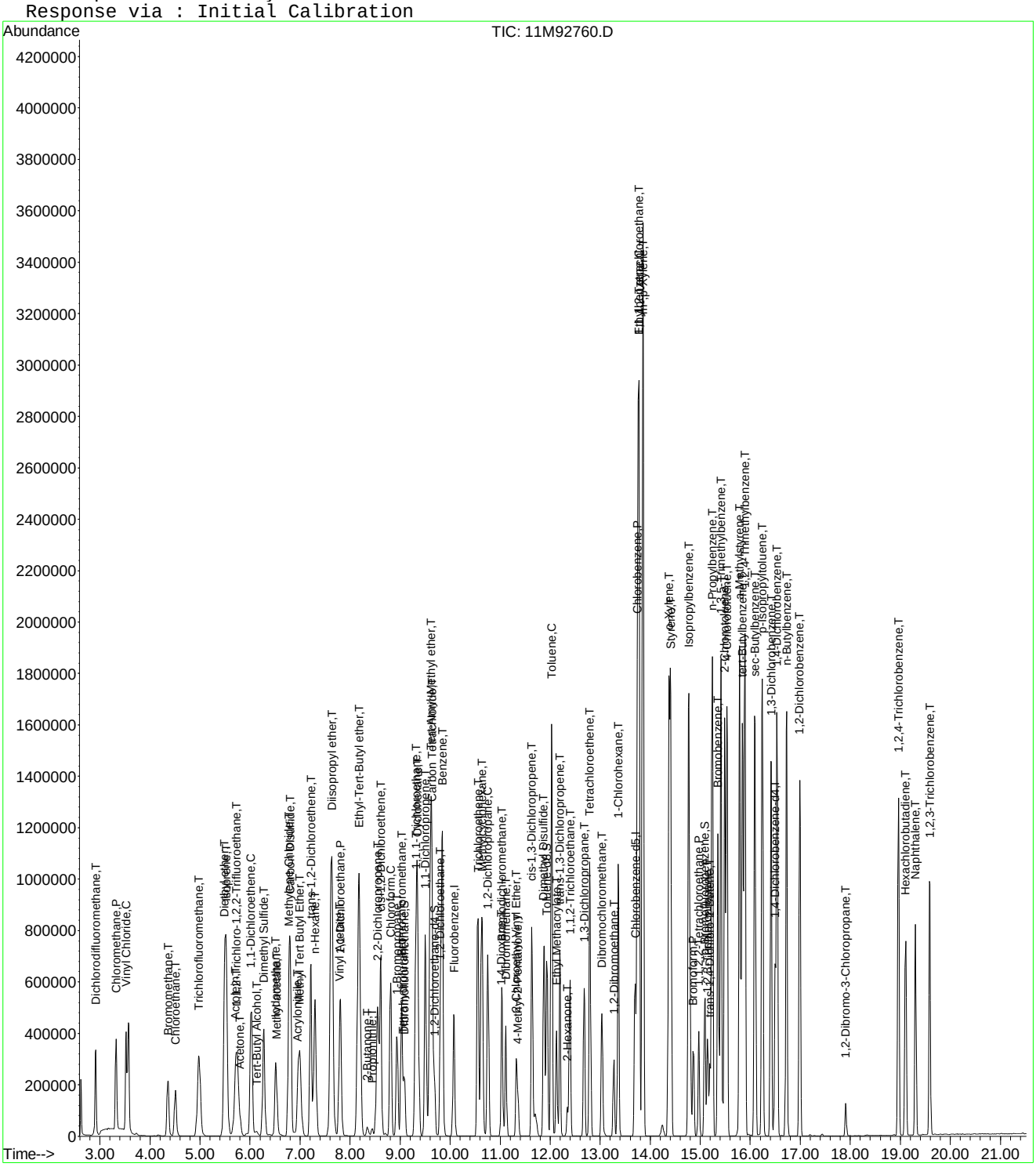

Continuing Calibration Area and RT check

Instrument: hpms11
Initial cal date: 15 May 2013 19:54
CCV date: 11 Jun 2013 12:11
CCV Filename: 11M92760.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	740966	10.08	532754	13.71	309664	16.51
CCV	609475	10.08	415692	13.70	232159	16.49

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061113\11M92760.D Vial: 2
Acq On : 11 Jun 2013 12:11 Operator: FJB
Sample : WG433685-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD58374 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	82	0.00
2	T	Dichlorodifluoromethane	0.2590	0.3280	-26.7#	93	0.00
3	P	Chloromethane	0.2971	0.3512	-18.2	99	-0.01
4	C	Vinyl Chloride	0.3257	0.3479	-6.8	89	0.00
5	T	1,3-Butadiene	0.2409	0.2409	-0.0	120	0.01
6	T	Bromomethane	0.1870	0.1827	2.3	88	0.00
7	T	Chloroethane	0.1744	0.2095	-20.2	96	-0.01
8	T	Trichlorofluoromethane	0.4625	0.5042	-9.0	86	-0.01
9	T	Diethyl ether	0.1700	0.1753	-3.1	86	-0.01
10	T	Isoprene	0.4248	0.4711	-10.9	88	-0.01
11	T	Acrolein	0.0085	0.0189	-122.1#	188#	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2601	0.2960	-13.8	89	-0.01
13	T	Acetone	0.0655	0.0474	27.6#	61	-0.01
14	C	1,1-Dichloroethene	0.4013	0.4565	-13.8	90	-0.01
15	T	Tert-Butyl Alcohol	0.0186	0.0088	52.8#	42#	-0.01
16	T	Dimethyl Sulfide	0.3000	0.3113	-3.8	84	-0.01
17	T	Iodomethane	0.2759	0.3675	-33.2#	79	0.00
18	T	Methyl acetate	0.1129	0.1005	11.0	71	-0.01
19	T	Methylene Chloride	0.3183	0.3195	-0.4	85	-0.01
20	T	Carbon Disulfide	0.9113	1.0342	-13.5	87	-0.01
21	T	Acrylonitrile	0.0630	0.0546	13.3	70	-0.01
22	T	Methyl Tert Butyl Ether	0.7130	0.6410	10.1	73	-0.01
23	T	trans-1,2-Dichloroethene	0.2969	0.3260	-9.8	87	-0.01
24	T	n-Hexane	0.3508	0.3965	-13.0	92	-0.01
25	T	Diisopropyl ether	0.7148	0.7709	-7.8	90	-0.01
26	T	Vinyl Acetate	0.3197	0.3127	2.2	76	-0.01
27	P	1,1-Dichloroethane	0.4763	0.5400	-13.4	91	-0.01
28	T	Ethyl-Tert-Butyl ether	0.7741	0.7428	4.1	79	-0.01
29	T	2-Butanone	0.0675	0.0502	25.7#	61	0.00
30	T	Propionitrile	0.0227	0.0161	28.8#	57	-0.01
31	T	2,2-Dichloropropane	0.4661	0.5180	-11.1	92	-0.01
32	T	cis-1,2-Dichloroethene	0.3179	0.3492	-9.8	87	-0.01
33	C	Chloroform	0.5199	0.5547	-6.7	85	-0.01
34	T	1-Bromopropane	0.0640	0.0649	-1.5	81	-0.01
35	T	Bromochloromethane	0.1816	0.1878	-3.4	80	-0.01
36	T	Tetrahydrofuran	0.0430	0.0327	23.9	62	-0.01
37	S	Dibromofluoromethane	0.2942	0.2735	7.0	75	-0.01
38	T	1,1,1-Trichloroethane	0.4786	0.5059	-5.7	83	-0.01
39	T	Cyclohexane	0.4511	0.5006	-11.0	89	-0.01
40	T	1,1-Dichloropropene	0.4089	0.4523	-10.6	89	-0.01
41	T	Carbon Tetrachloride	0.4281	0.4563	-6.6	83	-0.01
42	T	Tert-Amyl-Methyl ether	0.7390	0.6601	10.7	73	-0.01
43	S	1,2-Dichloroethane-d4	0.3003	0.2411	19.7	66	-0.01
44	T	Heptane	0.0000	0.0000	0.0	0#	-0.01
45	T	1,2-Dichloroethane	0.3554	0.3378	4.9	76	-0.01
46	T	Benzene	1.1273	1.2233	-8.5	89	0.00
47	T	Trichloroethene	0.2924	0.3121	-6.7	85	-0.01
48	T	Methylcyclohexane	0.4869	0.5095	-4.7	84	-0.01
49	C	1,2-Dichloropropane	0.2674	0.2933	-9.7	89	-0.01
50	T	1,4-Dioxane	0.0023	0.0009	60.4#	34#	-0.02
51	T	Bromodichloromethane	0.3889	0.4065	-4.5	81	-0.01
52	T	Dibromomethane	0.1649	0.1542	6.4	74	-0.01
53	T	2-Chloroethyl Vinyl Ether	0.1327	0.1242	6.4	72	-0.01
54	T	4-Methyl-2-Pentanone	0.0678	0.0527	22.2	62	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061113\11M92760.D Vial: 2
Acq On : 11 Jun 2013 12:11 Operator: FJB
Sample : WG433685-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD58374 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4509	0.4901	-8.7	84	-0.01
56	T	Dimethyl Disulfide	0.2695	0.2588	4.0	74	-0.02
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	78	-0.01
58	S	Toluene-d8	1.4329	1.5198	-6.1	81	-0.01
59	C	Toluene	1.6231	1.8708	-15.3	87	0.00
60	T	Ethyl Methacrylate	0.3882	0.3674	5.4	66	-0.01
61	T	Paraldehyde	0.0000	0.0000	0.0	0#	-12.25#
62	T	trans-1,3-Dichloropropene	0.5589	0.6047	-8.2	79	-0.01
63	T	1,1,2-Trichloroethane	0.3116	0.3029	2.8	73	-0.01
64	T	2-Hexanone	0.1357	0.1119	17.5	59	-0.01
65	T	1,3-Dichloropropane	0.5350	0.5357	-0.1	76	-0.01
66	T	Tetrachloroethene	0.3533	0.4018	-13.7	86	-0.01
67	T	Dibromochloromethane	0.3834	0.3941	-2.8	74	-0.01
68	T	1,2-Dibromoethane	0.3076	0.2960	3.8	71	-0.01
69	T	1-Chlorohexane	0.5561	0.6224	-11.9	85	-0.01
70	P	Chlorobenzene	1.0799	1.2604	-16.7	86	-0.01
71	T	1,1,1,2-Tetrachloroethane	0.4051	0.4533	-11.9	82	-0.01
72	C	Ethylbenzene	0.6265	0.7161	-14.3	85	-0.01
73	T	m-,p-Xylene	0.7090	0.8344	-17.7	87	0.00
74	T	o-Xylene	0.7201	0.8225	-14.2	84	-0.01
75	T	Styrene	1.0857	1.3467	-24.0	84	-0.01
76	P	Bromoform	0.2525	0.2410	4.5	68	-0.02
77	T	Isopropylbenzene	1.7029	1.9835	-16.5	86	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	75	-0.02
79	P	1,1,2,2-Tetrachloroethane	0.6430	0.5881	8.5	65	-0.01
80	S	p-Bromofluorobenzene	0.9906	1.0505	-6.0	80	-0.02
81	T	1,2,3-Trichloropropane	0.1965	0.1664	15.3	62	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1837	0.1583	13.8	61	-0.01
83	T	n-Propylbenzene	3.7291	4.2213	-13.2	87	0.00
84	T	Bromobenzene	0.8700	0.9311	-7.0	80	-0.01
85	T	1,3,5-Trimethylbenzene	2.5333	3.0221	-19.3	86	0.00
86	T	2-Chlorotoluene	2.3369	2.5872	-10.7	85	-0.01
87	T	4-Chlorotoluene	2.3509	2.6269	-11.7	85	0.00
88	T	a-Methylstyrene	1.3661	1.6288	-19.2	80	-0.01
89	T	tert-Butylbenzene	0.5530	0.6415	-16.0	84	-0.01
90	T	1,2,4-Trimethylbenzene	2.5743	3.0818	-19.7	86	0.00
91	T	sec-Butylbenzene	3.0859	3.5853	-16.2	85	-0.01
92	T	p-Isopropyltoluene	2.5083	3.0272	-20.7	85	0.00
93	T	1,3-Dichlorobenzene	1.5255	1.7729	-16.2	82	-0.01
94	T	1,4-Dichlorobenzene	1.5923	1.7744	-11.4	82	-0.01
95	T	n-Butylbenzene	2.3526	2.7489	-16.8	85	0.00
96	T	1,2-Dichlorobenzene	1.4840	1.5799	-6.5	78	-0.02
97	T	1,2-Dibromo-3-Chloropropane	0.1164	0.0872	25.1#	54	-0.01
98	T	1,2,4-Trichlorobenzene	1.0397	1.0958	-5.4	76	-0.01
99	T	Hexachlorobutadiene	0.3934	0.4311	-9.6	82	-0.01
100	T	Naphthalene	2.0076	1.7357	13.5	60	-0.01
101	T	1,2,3-Trichlorobenzene	0.9598	0.8918	7.1	68	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M92760.D 8260BWT.M Wed Jun 12 08:30:56 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061113\11M92760.D Vial: 2
Acq On : 11 Jun 2013 12:11 Operator: FJB
Sample : WG433685-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD58374 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	82	0.00
2	T	Dichlorodifluoromethane	50.0000	63.3311	-26.7#	93	0.00
3	P	Chloromethane	50.0000	59.0915	-18.2	99	-0.01
4	C	Vinyl Chloride	50.0000	53.4021	-6.8	89	0.00
5	T	1,3-Butadiene	50.0000	-25.0000	150.0#	120	0.01
6	T	Bromomethane	50.0000	48.8326	2.3	88	0.00
7	T	Chloroethane	50.0000	60.0769	-20.2	96	-0.01
8	T	Trichlorofluoromethane	50.0000	54.5093	-9.0	86	-0.01
9	T	Diethyl ether	100.0000	103.0784	-3.1	86	-0.01
10	T	Isoprene	50.0000	55.4433	-10.9	88	-0.01
11	T	Acrolein	50.0000	111.0826	-122.2#	188	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	56.8952	-13.8	89	-0.01
13	T	Acetone	50.0000	36.2055	27.6#	61	-0.01
14	C	1,1-Dichloroethene	50.0000	56.8878	-13.8	90	-0.01
15	T	Tert-Butyl Alcohol	200.0000	94.3915	52.8#	42	-0.01
16	T	Dimethyl Sulfide	50.0000	51.8802	-3.8	84	-0.01
17	T	Iodomethane	50.0000	50.3968	-0.8	79	0.00
18	T	Methyl acetate	50.0000	44.5140	11.0	71	-0.01
19	T	Methylene Chloride	50.0000	50.1953	-0.4	85	-0.01
20	T	Carbon Disulfide	50.0000	56.7444	-13.5	87	-0.01
21	T	Acrylonitrile	50.0000	43.3414	13.3	70	-0.01
22	T	Methyl Tert Butyl Ether	50.0000	44.9505	10.1	73	-0.01
23	T	trans-1,2-Dichloroethene	50.0000	54.8925	-9.8	87	-0.01
24	T	n-Hexane	50.0000	56.5172	-13.0	92	-0.01
25	T	Diisopropyl ether	100.0000	107.8479	-7.8	90	-0.01
26	T	Vinyl Acetate	50.0000	48.9068	2.2	76	-0.01
27	P	1,1-Dichloroethane	50.0000	56.6934	-13.4	91	-0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	95.9443	4.1	79	-0.01
29	T	2-Butanone	50.0000	37.1701	25.7#	61	0.00
30	T	Propionitrile	100.0000	71.1367	28.9#	57	-0.01
31	T	2,2-Dichloropropane	50.0000	55.5657	-11.1	92	-0.01
32	T	cis-1,2-Dichloroethene	50.0000	54.9219	-9.8	87	-0.01
33	C	Chloroform	50.0000	53.3483	-6.7	85	-0.01
34	T	1-Bromopropane	50.0000	50.7418	-1.5	81	-0.01
35	T	Bromochloromethane	50.0000	51.7186	-3.4	80	-0.01
36	T	Tetrahydrofuran	100.0000	76.0781	23.9	62	-0.01
37	S	Dibromofluoromethane	25.0000	23.2451	7.0	75	-0.01
38	T	1,1,1-Trichloroethane	50.0000	52.8537	-5.7	83	-0.01
39	T	Cyclohexane	50.0000	55.4835	-11.0	89	-0.01
40	T	1,1-Dichloropropene	50.0000	55.2964	-10.6	89	-0.01
41	T	Carbon Tetrachloride	50.0000	53.2895	-6.6	83	-0.01
42	T	Tert-Amyl-Methyl ether	100.0000	89.3124	10.7	73	-0.01
43	S	1,2-Dichloroethane-d4	25.0000	20.0705	19.7	66	-0.01
44	T	Heptane	-1.0000	0.0000	0.0	0	-0.01
45	T	1,2-Dichloroethane	50.0000	47.5277	4.9	76	-0.01
46	T	Benzene	50.0000	54.2603	-8.5	89	0.00
47	T	Trichloroethene	50.0000	53.3670	-6.7	85	-0.01
48	T	Methylcyclohexane	50.0000	52.3284	-4.7	84	-0.01
49	C	1,2-Dichloropropane	50.0000	54.8277	-9.7	89	-0.01
50	T	1,4-Dioxane	200.0000	79.4180	60.3#	34	-0.02
51	T	Bromodichloromethane	50.0000	52.2623	-4.5	81	-0.01
52	T	Dibromomethane	50.0000	46.7790	6.4	74	-0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	46.7779	6.4	72	-0.01
54	T	4-Methyl-2-Pentanone	50.0000	38.9151	22.2	62	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061113\11M92760.D Vial: 2
Acq On : 11 Jun 2013 12:11 Operator: FJB
Sample : WG433685-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD58374 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.3536	-8.7	84	-0.01
56	T	Dimethyl Disulfide	50.0000	48.0116	4.0	74	-0.02
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	78	-0.01
58	S	Toluene-d8	25.0000	26.5160	-6.1	81	-0.01
59	C	Toluene	50.0000	57.6293	-15.3	87	0.00
60	T	Ethyl Methacrylate	50.0000	47.3186	5.4	66	-0.01
61	T	Paraldehyde	-1.0000	0.0000	0.0	0	-12.25#
62	T	trans-1,3-Dichloropropene	50.0000	54.1005	-8.2	79	-0.01
63	T	1,1,2-Trichloroethane	50.0000	48.6113	2.8	73	-0.01
64	T	2-Hexanone	50.0000	41.2457	17.5	59	-0.01
65	T	1,3-Dichloropropane	50.0000	50.0646	-0.1	76	-0.01
66	T	Tetrachloroethene	50.0000	56.8690	-13.7	86	-0.01
67	T	Dibromochloromethane	50.0000	51.3907	-2.8	74	-0.01
68	T	1,2-Dibromoethane	50.0000	48.1076	3.8	71	-0.01
69	T	1-Chlorohexane	50.0000	55.9589	-11.9	85	-0.01
70	P	Chlorobenzene	50.0000	58.3560	-16.7	86	-0.01
71	T	1,1,1,2-Tetrachloroethane	50.0000	55.9496	-11.9	82	-0.01
72	C	Ethylbenzene	50.0000	57.1562	-14.3	85	-0.01
73	T	m-,p-Xylene	100.0000	117.6841	-17.7	87	0.00
74	T	o-Xylene	50.0000	57.1044	-14.2	84	-0.01
75	T	Styrene	50.0000	62.0216	-24.0	84	-0.01
76	P	Bromoform	50.0000	43.3983	13.2	68	-0.02
77	T	Isopropylbenzene	50.0000	58.2397	-16.5	86	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	75	-0.02
79	P	1,1,2,2-Tetrachloroethane	50.0000	45.7318	8.5	65	-0.01
80	S	p-Bromofluorobenzene	25.0000	26.5096	-6.0	80	-0.02
81	T	1,2,3-Trichloropropane	50.0000	42.3438	15.3	62	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	43.0797	13.8	61	-0.01
83	T	n-Propylbenzene	50.0000	56.5990	-13.2	87	0.00
84	T	Bromobenzene	50.0000	53.5136	-7.0	80	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	59.6482	-19.3	86	0.00
86	T	2-Chlorotoluene	50.0000	55.3556	-10.7	85	-0.01
87	T	4-Chlorotoluene	50.0000	55.8705	-11.7	85	0.00
88	T	a-Methylstyrene	50.0000	59.6158	-19.2	80	-0.01
89	T	tert-Butylbenzene	50.0000	58.0035	-16.0	84	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	59.8566	-19.7	86	0.00
91	T	sec-Butylbenzene	50.0000	58.0909	-16.2	85	-0.01
92	T	p-Isopropyltoluene	50.0000	60.3449	-20.7	85	0.00
93	T	1,3-Dichlorobenzene	50.0000	58.1099	-16.2	82	-0.01
94	T	1,4-Dichlorobenzene	50.0000	55.7187	-11.4	82	-0.01
95	T	n-Butylbenzene	50.0000	58.4222	-16.8	85	0.00
96	T	1,2-Dichlorobenzene	50.0000	53.2302	-6.5	78	-0.02
97	T	1,2-Dibromo-3-Chloropropane	50.0000	37.4467	25.1#	54	-0.01
98	T	1,2,4-Trichlorobenzene	50.0000	52.6966	-5.4	76	-0.01
99	T	Hexachlorobutadiene	50.0000	54.7923	-9.6	82	-0.01
100	T	Naphthalene	50.0000	43.2281	13.5	60	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	46.4585	7.1	68	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M92760.D 8260BWT.M Wed Jun 12 08:30:57 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061013\6M117404.D Vial: 3
Acq On : 10 Jun 2013 16:41 Operator: ADC
Sample : WG433588-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD58079 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 10 17:05:00 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	504251	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.72	117	410938	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	215662	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.06	111	146616	25.9576 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.84%		
43) 1,2-Dichloroethane-d4	9.79	65	125825	25.6042 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.40%		
58) Toluene-d8	12.52	98	553476	23.4916 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.96%		
80) p-Bromofluorobenzene	16.50	95	226854	26.1025 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.40%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.61	85	179946	39.5373 ug/L	100
3) Chloromethane	2.97	50	175661	35.6374 ug/L	100
4) Vinyl Chloride	3.15	62	201946	45.5685 ug/L	100
5) 1,3-Butadiene	3.19	54	185957	63.6777 ug/L	96
6) Bromomethane	3.90	94	142997	38.9895 ug/L	99
7) Chloroethane	4.04	64	191883	47.1384 ug/L	97
8) Trichlorofluoromethane	4.50	101	469695	53.7435 ug/L	99
9) Diethyl ether	5.03	59	352536	106.4135 ug/L	99
10) Isoprene	5.05	67	422276	52.6412 ug/L	98
11) Acrolein	5.25	56	13892	135.9166 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	5.27	101	263581	49.1424 ug/L	98
13) Acetone	5.36	43	44341	54.9275 ug/L	95
14) 1,1-Dichloroethene	5.57	61	458947	52.2015 ug/L	99
15) Tert-Butyl Alcohol	5.71	59	30761	177.9336 ug/L	98
16) Dimethyl Sulfide	5.85	62	286963	46.8256 ug/L	98
17) Iodomethane	6.09	142	257429	42.3528 ug/L	95
18) Methyl acetate	6.14	43	101381	48.7381 ug/L	98
19) Methylene Chloride	6.40	84	261465	50.0913 ug/L	97
20) Carbon Disulfide	6.41	76	955147	51.6171 ug/L	100
21) Acrylonitrile	6.60	53	54062	53.2040 ug/L	97
22) Methyl Tert Butyl Ether	6.64	73	481234	52.2274 ug/L	98
23) trans-1,2-Dichloroethene	6.89	96	284608	50.5321 ug/L	99
24) n-Hexane	6.99	57	445369	57.5124 ug/L	99
25) Diisopropyl ether	7.39	45	2056495	108.0915 ug/L	99
26) Vinyl Acetate	7.56	43	379841	53.0351 ug/L	99
27) 1,1-Dichloroethane	7.56	63	539424	49.1367 ug/L	99
28) Ethyl-Tert-Butyl ether	8.02	59	1639114	110.9143 ug/L	99
29) 2-Butanone	8.20	43	53289	46.4527 ug/L	100
30) Propionitrile	8.32	54	32208	87.2718 ug/L	100
31) 2,2-Dichloropropane	8.43	77	500846	56.1334 ug/L	99
32) cis-1,2-Dichloroethene	8.50	96	300982	50.2448 ug/L	99
33) Chloroform	8.74	83	520268	51.7518 ug/L	100
34) 1-Bromopropane	8.89	122	63195	47.4783 ug/L	99
35) Bromochloromethane	8.98	130	154094	50.4905 ug/L	99
36) Tetrahydrofuran	9.02	42	68985	97.0529 ug/L	99
38) 1,1,1-Trichloroethane	9.33	97	499393	55.9980 ug/L	98
39) Cyclohexane	9.36	56	584077	56.3076 ug/L	99
40) 1,1-Dichloropropene	9.55	75	413245	51.6428 ug/L	96
41) Tert-Amyl-Methyl ether	9.71	73	1139494	111.2103 ug/L	100
42) Carbon Tetrachloride	9.71	117	459476	57.8094 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M117404.D 8260_WT.M Mon Jun 10 17:05:01 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061013\6M117404.D Vial: 3
Acq On : 10 Jun 2013 16:41 Operator: ADC
Sample : WG433588-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD58079 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 10 17:05:00 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	9.92	62	313493	53.5184	ug/L	96
46)	Benzene	9.95	78	1135848	49.9895	ug/L	99
47)	Trichloroethene	10.82	130	298600	51.4871	ug/L	96
48)	Methylcyclohexane	10.91	83	452291	54.4476	ug/L	97
49)	1,2-Dichloropropane	11.07	63	287653	48.5887	ug/L	94
50)	1,4-Dioxane	11.42	88	3854	192.6583	ug/L	94
51)	Bromodichloromethane	11.41	83	371075	53.3858	ug/L	100
52)	Dibromomethane	11.49	93	120079	51.8145	ug/L	98
53)	2-Chloroethyl Vinyl Ether	11.81	63	110053	48.7838	ug/L	99
54)	4-Methyl-2-Pentanone	11.85	58	49573	49.3712	ug/L	97
55)	cis-1,3-Dichloropropene	12.17	75	411344	52.3788	ug/L	100
56)	Dimethyl Disulfide	12.44	79	224042	52.8832	ug/L	98
59)	Toluene	12.65	91	1192362	43.9022	ug/L	99
60)	Ethyl Methacrylate	12.83	69	191422	46.3175	ug/L	98
62)	trans-1,3-Dichloropropene	12.88	75	328286	45.7484	ug/L	100
63)	1,1,2-Trichloroethane	13.12	97	158138	42.2136	ug/L	98
64)	2-Hexanone	13.09	43	81178	43.7020	ug/L	97
65)	1,3-Dichloropropane	13.47	76	285029	43.7698	ug/L	95
66)	Tetrachloroethene	13.59	166	323293	46.6648	ug/L	98
67)	Dibromochloromethane	13.88	129	234369	43.5901	ug/L	99
68)	1,2-Dibromoethane	14.18	107	161333	44.4042	ug/L	100
69)	1-Chlorohexane	14.36	91	395764	49.1594	ug/L	96
70)	Chlorobenzene	14.78	112	762676	43.8659	ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.83	131	278492	47.6115	ug/L	98
72)	Ethylbenzene	14.84	106	432144	46.0547	ug/L	99
73)	m-,p-Xylene	14.94	106	1044681	92.6712	ug/L	98
74)	o-Xylene	15.60	106	508415	46.4502	ug/L	99
75)	Styrene	15.64	104	826780	44.4397	ug/L	97
76)	Bromoform	16.18	173	131148	43.9223	ug/L	100
77)	Isopropylbenzene	16.11	105	1326983	48.2616	ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.36	83	164453	38.7741	ug/L	99
81)	1,2,3-Trichloropropane	16.59	110	47033	40.6709	ug/L	95
82)	trans-1,4-Dichloro-2-Buten	16.67	53	57180	44.4933	ug/L	94
83)	n-Propylbenzene	16.71	91	1584269	45.8056	ug/L	100
84)	Bromobenzene	16.80	156	312591	43.6531	ug/L	100
85)	1,3,5-Trimethylbenzene	16.94	105	1110251	46.1825	ug/L	98
86)	2-Chlorotoluene	17.00	91	1102091	44.6820	ug/L	99
87)	4-Chlorotoluene	17.06	91	943566	43.8957	ug/L	99
88)	a-Methylstyrene	17.41	118	612713	48.3635	ug/L	99
89)	tert-Butylbenzene	17.48	134	214087	44.8371	ug/L	94
90)	1,2,4-Trimethylbenzene	17.53	105	1118046	44.3255	ug/L	98
91)	sec-Butylbenzene	17.79	105	1325969	46.0207	ug/L	99
92)	p-Isopropyltoluene	17.99	119	1138503	46.9218	ug/L	99
93)	1,3-Dichlorobenzene	18.16	146	619968	44.5052	ug/L	100
94)	1,4-Dichlorobenzene	18.32	146	610152	43.8083	ug/L	100
95)	n-Butylbenzene	18.61	91	1009416	47.2942	ug/L	98
96)	1,2-Dichlorobenzene	18.89	146	527032	44.0932	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	20.07	75	25121	38.4231	ug/L	98
98)	1,2,4-Trichlorobenzene	21.41	180	363873	44.7229	ug/L	99
99)	Hexachlorobutadiene	21.61	225	170220	47.6708	ug/L	99
100)	Naphthalene	21.82	128	511931	41.7409	ug/L	100
101)	1,2,3-Trichlorobenzene	22.19	180	288503	43.4599	ug/L	99

(#) = qualifier out of range (m) = manual integration
6M117404.D 8260_WT.M Mon Jun 10 17:05:01 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061013\6M117404.D Vial: 3
Acq On : 10 Jun 2013 16:41 Operator: ADC
Sample : WG433588-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD58079 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 10 17:05 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

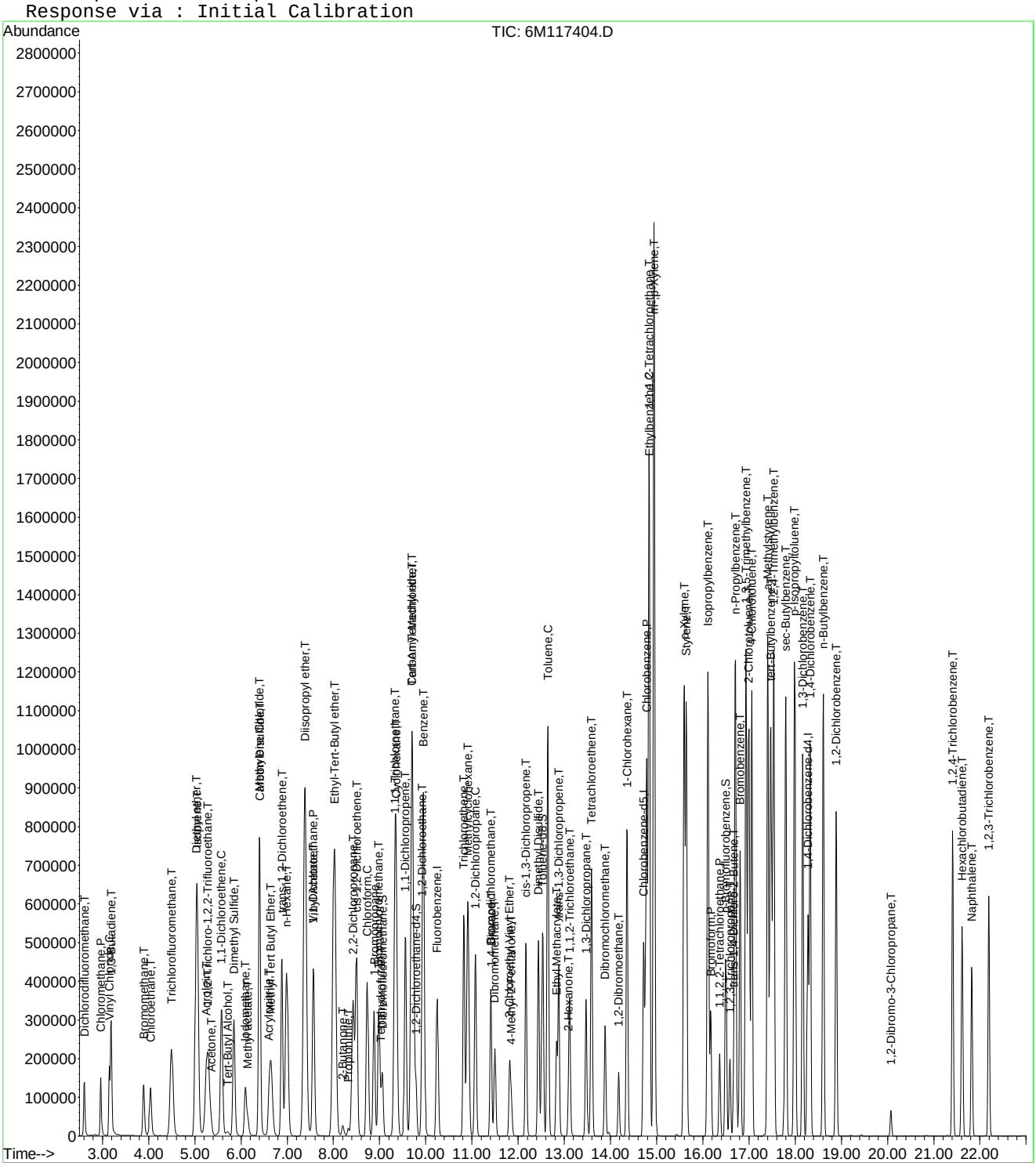

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061013\6M117404.D Vial: 3
Acq On : 10 Jun 2013 16:41 Operator: ADC
Sample : WG433588-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD58079 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	80	0.00
2	T	Dichlorodifluoromethane	0.2256	0.1784	20.9#	57	0.00
3	P	Chloromethane	0.2444	0.1742	28.7#	56	0.00
4	C	Vinyl Chloride	0.2197	0.2002	8.9	70	0.00
5	T	1,3-Butadiene	0.1470	0.1844	-25.5#	91	0.01
6	T	Bromomethane	0.1818	0.1418	22.0#	58	0.00
7	T	Chloroethane	0.2018	0.1903	5.7	70	0.00
8	T	Trichlorofluoromethane	0.4333	0.4657	-7.5	78	0.00
9	T	Diethyl ether	0.1643	0.1748	-6.4	80	0.00
10	T	Isoprene	0.3977	0.4187	-5.3	78	0.00
11	T	Acrolein	0.0051	0.0069	-35.9#	103	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2599	0.2614	-0.6	75	0.00
13	T	Acetone	0.0400	0.0440	-9.9	84	0.00
14	C	1,1-Dichloroethene	0.4359	0.4551	-4.4	78	0.00
15	T	Tert-Butyl Alcohol	0.0086	0.0076	11.0	64	0.00
16	T	Dimethyl Sulfide	0.3038	0.2845	6.3	69	0.00
17	T	Iodomethane	0.3014	0.2553	15.3	62	0.00
18	T	Methyl acetate	0.1031	0.1005	2.5	73	0.00
19	T	Methylene Chloride	0.2588	0.2593	-0.2	77	0.00
20	T	Carbon Disulfide	0.9174	0.9471	-3.2	78	0.00
21	T	Acrylonitrile	0.0504	0.0268	46.8#	40#	0.00
22	T	Methyl Tert Butyl Ether	0.4568	0.4772	-4.5	76	0.00
23	T	trans-1,2-Dichloroethene	0.2792	0.2822	-1.1	76	0.00
24	T	n-Hexane	0.3839	0.4416	-15.0	85	0.00
25	T	Diisopropyl ether	0.9433	1.0196	-8.1	82	0.00
26	T	Vinyl Acetate	0.3551	0.3766	-6.1	80	0.00
27	P	1,1-Dichloroethane	0.5443	0.5349	1.7	75	0.00
28	T	Ethyl-Tert-Butyl ether	0.7327	0.8126	-10.9	84	0.00
29	T	2-Butanone	0.0569	0.0528	7.1	72	0.00
30	T	Propionitrile	0.0172	0.0160	7.1	67	0.00
31	T	2,2-Dichloropropane	0.4424	0.4966	-12.3	83	0.00
32	T	cis-1,2-Dichloroethene	0.2970	0.2984	-0.5	76	0.00
33	C	Chloroform	0.4984	0.5159	-3.5	78	0.00
34		1-Bromopropane	0.0618	0.0627	-1.4	73	0.00
35	T	Bromochloromethane	0.1513	0.1528	-1.0	75	0.00
36	T	Tetrahydrofuran	0.0352	0.0342	3.0	71	0.00
37	S	Dibromofluoromethane	0.2800	0.2908	-3.8	82	0.00
38	T	1,1,1-Trichloroethane	0.4421	0.4952	-12.0	84	0.00
39	T	Cyclohexane	0.5143	0.5792	-12.6	82	0.00
40	T	1,1-Dichloropropene	0.3967	0.4098	-3.3	77	0.00
41	T	Tert-Amyl-Methyl ether	0.5080	0.5649	-11.2	84	0.00
42	T	Carbon Tetrachloride	0.3941	0.4556	-15.6	85	0.00
43	S	1,2-Dichloroethane-d4	0.2436	0.2495	-2.4	82	0.00
44		Heptane	0.0000	0.0000	0.0	85	0.00
45	T	1,2-Dichloroethane	0.2904	0.3109	-7.0	80	0.00
46	T	Benzene	1.1265	1.1263	0.0	77	0.00
47	T	Trichloroethene	0.2875	0.2961	-3.0	77	0.00
48	T	Methylcyclohexane	0.3805	0.4485	-17.9	84	0.00
49	C	1,2-Dichloropropane	0.2935	0.2852	2.8	73	0.00
50	T	1,4-Dioxane	0.0009	0.0010	-5.5	72	0.00
51	T	Bromodichloromethane	0.3446	0.3680	-6.8	78	0.00
52	T	Dibromomethane	0.1149	0.1191	-3.6	75	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1119	0.1091	2.4	76	0.00
54	T	4-Methyl-2-Pentanone	0.0498	0.0492	1.2	75	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061013\6M117404.D Vial: 3
Acq On : 10 Jun 2013 16:41 Operator: ADC
Sample : WG433588-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD58079 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3893	0.4079	-4.8	74	0.00
56	T	Dimethyl Disulfide	0.1914	0.2221	-16.1	84	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	90	0.00
58	S	Toluene-d8	1.4333	1.3469	6.0	86	0.00
59	C	Toluene	1.6523	1.4508	12.2	78	0.00
60	T	Ethyl Methacrylate	0.2514	0.2329	7.4	75	0.00
61		Paraldehyde	0.0000	0.0000	0.0	78	0.00
62	T	trans-1,3-Dichloropropene	0.4366	0.3994	8.5	74	0.00
63	T	1,1,2-Trichloroethane	0.2086	0.1924	7.8	73	0.00
64	T	2-Hexanone	0.1130	0.0988	12.6	75	0.00
65	T	1,3-Dichloropropane	0.3962	0.3468	12.5	72	0.00
66	T	Tetrachloroethene	0.4215	0.3934	6.7	81	0.00
67	T	Dibromochloromethane	0.2906	0.2852	1.9	77	0.00
68	T	1,2-Dibromoethane	0.2210	0.1963	11.2	73	0.00
69	T	1-Chlorohexane	0.4898	0.4815	1.7	83	0.00
70	P	Chlorobenzene	1.0577	0.9280	12.3	76	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3559	0.3388	4.8	78	0.00
72	C	Ethylbenzene	0.5708	0.5258	7.9	79	0.00
73	T	m-,p-Xylene	0.6858	0.6355	7.3	79	0.00
74	T	o-Xylene	0.6659	0.6186	7.1	79	0.00
75	T	Styrene	1.1318	1.0060	11.1	76	0.00
76	P	Bromoform	0.1647	0.1596	3.1	77	0.00
77	T	Isopropylbenzene	1.6727	1.6146	3.5	81	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	93	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4456	0.3813	14.4	70	0.00
80	S	p-Bromofluorobenzene	1.0075	1.0519	-4.4	98	0.00
81	T	1,2,3-Trichloropropane	0.1246	0.1090	12.5	72	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1490	0.1326	11.0	75	0.00
83	T	n-Propylbenzene	4.0094	3.6730	8.4	81	0.00
84	T	Bromobenzene	0.8301	0.7247	12.7	77	0.00
85	T	1,3,5-Trimethylbenzene	2.7868	2.5741	7.6	82	0.00
86	T	2-Chlorotoluene	2.8592	2.5551	10.6	81	0.00
87	T	4-Chlorotoluene	2.4918	2.1876	12.2	78	0.00
88	T	a-Methylstyrene	1.4686	1.4205	3.3	83	0.00
89	T	tert-Butylbenzene	0.5535	0.4964	10.3	78	0.00
90	T	1,2,4-Trimethylbenzene	2.9240	2.5921	11.3	81	0.00
91	T	sec-Butylbenzene	3.3400	3.0742	8.0	83	0.00
92	T	p-Isopropyltoluene	2.8127	2.6395	6.2	82	0.00
93	T	1,3-Dichlorobenzene	1.6148	1.4374	11.0	79	0.00
94	T	1,4-Dichlorobenzene	1.6145	1.4146	12.4	79	0.00
95	T	n-Butylbenzene	2.4742	2.3403	5.4	84	0.00
96	T	1,2-Dichlorobenzene	1.3856	1.2219	11.8	77	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0709	0.0582	17.9	68	0.00
98	T	1,2,4-Trichlorobenzene	0.9432	0.8436	10.6	78	0.00
99	T	Hexachlorobutadiene	0.3933	0.3947	-0.3	85	0.00
100	T	Naphthalene	1.4217	1.1869	16.5	70	0.00
101	T	1,2,3-Trichlorobenzene	0.7695	0.6689	13.1	74	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M117404.D 8260_WT.M Tue Jun 11 09:03:06 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061013\6M117404.D Vial: 3
Acq On : 10 Jun 2013 16:41 Operator: ADC
Sample : WG433588-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD58079 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	80	0.00
2	T	Dichlorodifluoromethane	50.0000	39.5373	20.9#	57	0.00
3	P	Chloromethane	50.0000	35.6374	28.7#	56	0.00
4	C	Vinyl Chloride	50.0000	45.5685	8.9	70	0.00
5	T	1,3-Butadiene	50.0000	63.6777	-27.4#	91	0.01
6	T	Bromomethane	50.0000	38.9895	22.0#	58	0.00
7	T	Chloroethane	50.0000	47.1384	5.7	70	0.00
8	T	Trichlorofluoromethane	50.0000	53.7435	-7.5	78	0.00
9	T	Diethyl ether	100.0000	106.4136	-6.4	80	0.00
10	T	Isoprene	50.0000	52.6412	-5.3	78	0.00
11	T	Acrolein	100.0000	135.9166	-35.9#	103	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.1424	1.7	75	0.00
13	T	Acetone	50.0000	54.9275	-9.9	84	0.00
14	C	1,1-Dichloroethene	50.0000	52.2015	-4.4	78	0.00
15	T	Tert-Butyl Alcohol	200.0000	177.9336	11.0	64	0.00
16	T	Dimethyl Sulfide	50.0000	46.8256	6.3	69	0.00
17	T	Iodomethane	50.0000	42.3528	15.3	62	0.00
18	T	Methyl acetate	50.0000	48.7381	2.5	73	0.00
19	T	Methylene Chloride	50.0000	50.0913	-0.2	77	0.00
20	T	Carbon Disulfide	50.0000	51.6171	-3.2	78	0.00
21	T	Acrylonitrile	100.0000	53.2040	46.8#	40	0.00
22	T	Methyl Tert Butyl Ether	50.0000	52.2274	-4.5	76	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.5321	-1.1	76	0.00
24	T	n-Hexane	50.0000	57.5124	-15.0	85	0.00
25	T	Diisopropyl ether	100.0000	108.0915	-8.1	82	0.00
26	T	Vinyl Acetate	50.0000	53.0351	-6.1	80	0.00
27	P	1,1-Dichloroethane	50.0000	49.1367	1.7	75	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	110.9143	-10.9	84	0.00
29	T	2-Butanone	50.0000	46.4527	7.1	72	0.00
30	T	Propionitrile	100.0000	87.2718	12.7	67	0.00
31	T	2,2-Dichloropropane	50.0000	56.1334	-12.3	83	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.2448	-0.5	76	0.00
33	C	Chloroform	50.0000	51.7518	-3.5	78	0.00
34		1-Bromopropane	50.0000	47.4783	5.0	73	0.00
35	T	Bromochloromethane	50.0000	50.4905	-1.0	75	0.00
36	T	Tetrahydrofuran	100.0000	97.0529	2.9	71	0.00
37	S	Dibromofluoromethane	25.0000	25.9576	-3.8	82	0.00
38	T	1,1,1-Trichloroethane	50.0000	55.9980	-12.0	84	0.00
39	T	Cyclohexane	50.0000	56.3076	-12.6	82	0.00
40	T	1,1-Dichloropropene	50.0000	51.6428	-3.3	77	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	111.2103	-11.2	84	0.00
42	T	Carbon Tetrachloride	50.0000	57.8094	-15.6	85	0.00
43	S	1,2-Dichloroethane-d4	25.0000	25.6042	-2.4	82	0.00
44		Heptane	-1.0000	0.0000	0.0	85	0.00
45	T	1,2-Dichloroethane	50.0000	53.5184	-7.0	80	0.00
46	T	Benzene	50.0000	49.9895	0.0	77	0.00
47	T	Trichloroethene	50.0000	51.4871	-3.0	77	0.00
48	T	Methylcyclohexane	50.0000	54.4476	-8.9	84	0.00
49	C	1,2-Dichloropropane	50.0000	48.5887	2.8	73	0.00
50	T	1,4-Dioxane	200.0000	192.6583	3.7	72	0.00
51	T	Bromodichloromethane	50.0000	53.3858	-6.8	78	0.00
52	T	Dibromomethane	50.0000	51.8145	-3.6	75	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	48.7838	2.4	76	0.00
54	T	4-Methyl-2-Pentanone	50.0000	49.3713	1.3	75	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061013\6M117404.D Vial: 3
Acq On : 10 Jun 2013 16:41 Operator: ADC
Sample : WG433588-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD58079 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.3788	-4.8	74	0.00
56	T	Dimethyl Disulfide	50.0000	52.8832	-5.8	84	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	90	0.00
58	S	Toluene-d8	25.0000	23.4916	6.0	86	0.00
59	C	Toluene	50.0000	43.9022	12.2	78	0.00
60	T	Ethyl Methacrylate	50.0000	46.3175	7.4	75	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	78	0.00
62	T	trans-1,3-Dichloropropene	50.0000	45.7484	8.5	74	0.00
63	T	1,1,2-Trichloroethane	50.0000	42.2136	15.6	73	0.00
64	T	2-Hexanone	50.0000	43.7020	12.6	75	0.00
65	T	1,3-Dichloropropane	50.0000	43.7698	12.5	72	0.00
66	T	Tetrachloroethene	50.0000	46.6648	6.7	81	0.00
67	T	Dibromochloromethane	50.0000	43.5901	12.8	77	0.00
68	T	1,2-Dibromoethane	50.0000	44.4042	11.2	73	0.00
69	T	1-Chlorohexane	50.0000	49.1594	1.7	83	0.00
70	P	Chlorobenzene	50.0000	43.8659	12.3	76	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	47.6115	4.8	78	0.00
72	C	Ethylbenzene	50.0000	46.0547	7.9	79	0.00
73	T	m-,p-Xylene	100.0000	92.6712	7.3	79	0.00
74	T	o-Xylene	50.0000	46.4502	7.1	79	0.00
75	T	Styrene	50.0000	44.4397	11.1	76	0.00
76	P	Bromoform	50.0000	43.9223	12.2	77	0.00
77	T	Isopropylbenzene	50.0000	48.2616	3.5	81	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	93	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	38.7741	22.5#	70	0.00
80	S	p-Bromofluorobenzene	25.0000	26.1025	-4.4	98	0.00
81	T	1,2,3-Trichloropropane	50.0000	40.6709	18.7	72	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	44.4933	11.0	75	0.00
83	T	n-Propylbenzene	50.0000	45.8056	8.4	81	0.00
84	T	Bromobenzene	50.0000	43.6531	12.7	77	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	46.1825	7.6	82	0.00
86	T	2-Chlorotoluene	50.0000	44.6820	10.6	81	0.00
87	T	4-Chlorotoluene	50.0000	43.8957	12.2	78	0.00
88	T	a-Methylstyrene	50.0000	48.3635	3.3	83	0.00
89	T	tert-Butylbenzene	50.0000	44.8371	10.3	78	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	44.3255	11.3	81	0.00
91	T	sec-Butylbenzene	50.0000	46.0207	8.0	83	0.00
92	T	p-Isopropyltoluene	50.0000	46.9218	6.2	82	0.00
93	T	1,3-Dichlorobenzene	50.0000	44.5052	11.0	79	0.00
94	T	1,4-Dichlorobenzene	50.0000	43.8083	12.4	79	0.00
95	T	n-Butylbenzene	50.0000	47.2942	5.4	84	0.00
96	T	1,2-Dichlorobenzene	50.0000	44.0932	11.8	77	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	38.4231	23.2#	68	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	44.7229	10.6	78	0.00
99	T	Hexachlorobutadiene	50.0000	47.6709	4.7	85	0.00
100	T	Naphthalene	50.0000	41.7409	16.5	70	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	43.4599	13.1	74	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M117404.D 8260_WT.M Tue Jun 11 09:03:04 2013 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\013113\10M01772.D          Vial: 1
Acq On    : 31 Jan 2013  11:53                       Operator: TMB
Sample    : WG419631-01 50ng BFB STD A9/FOO          Inst    : HPMS10
Misc      : 1,1 STD56031                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : BFB (SOP:OVL MSV01)
```

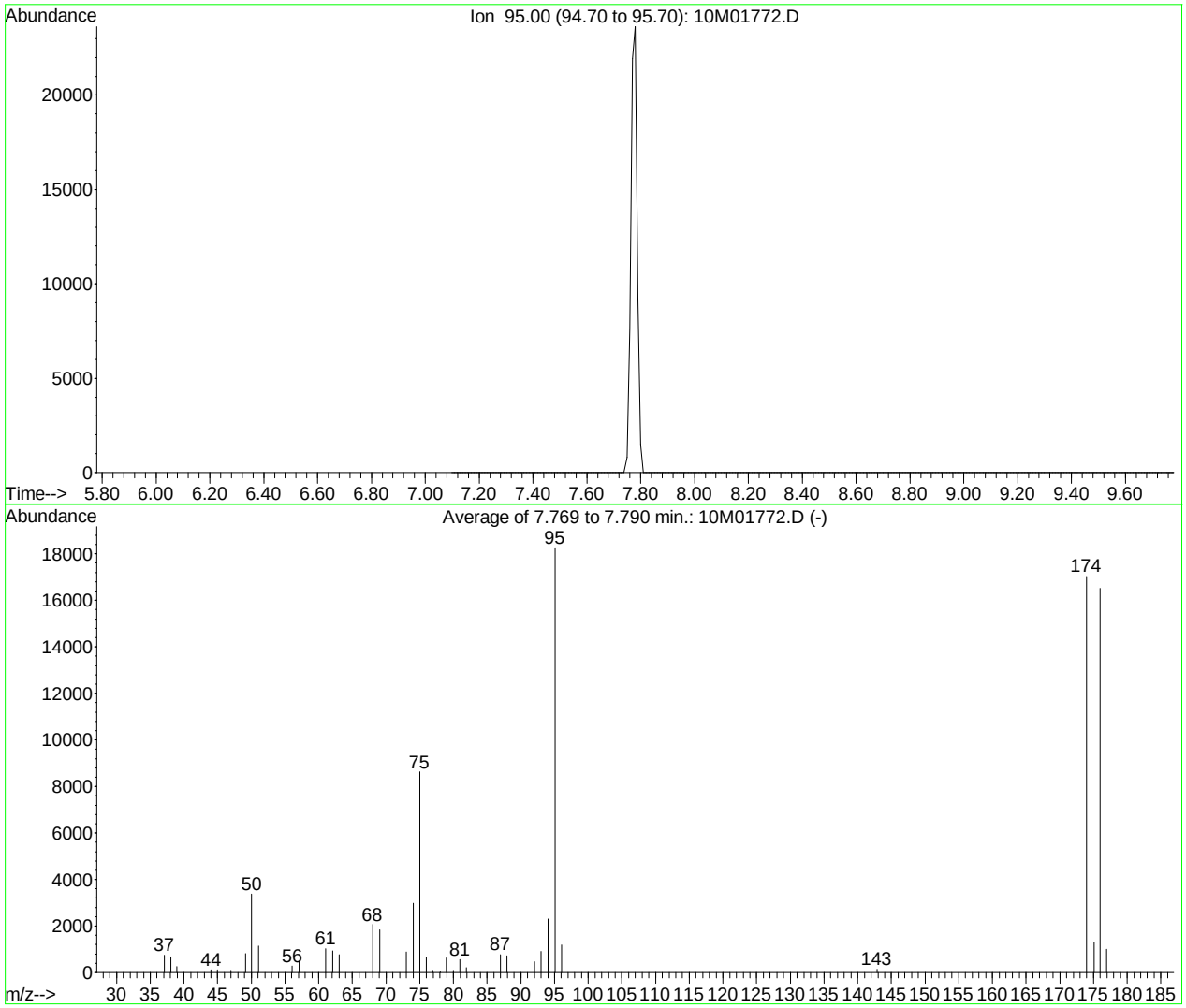

AutoFind: Scans 66, 67, 68; Background Corrected with Scan 61

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.5	3385	PASS
75	95	30	60	47.2	8623	PASS
95	95	100	100	100.0	18256	PASS
96	95	5	9	6.6	1198	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	93.3	17040	PASS
175	174	5	9	7.6	1300	PASS
176	174	95	101	96.9	16512	PASS
177	176	5	9	6.1	1009	PASS

10M01772.D BFB.M Thu Jan 31 12:03:58 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\040213\6M115121.D          Vial: 1
Acq On    :  2 Apr 2013   7:26                        Operator: FJB
Sample    : WG425306-01 BFB 50ng 8260                 Inst    : HPMS6
Misc      : 1,1 STD57083                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:OVLMSV01  04/02/13 - HPMS6
```

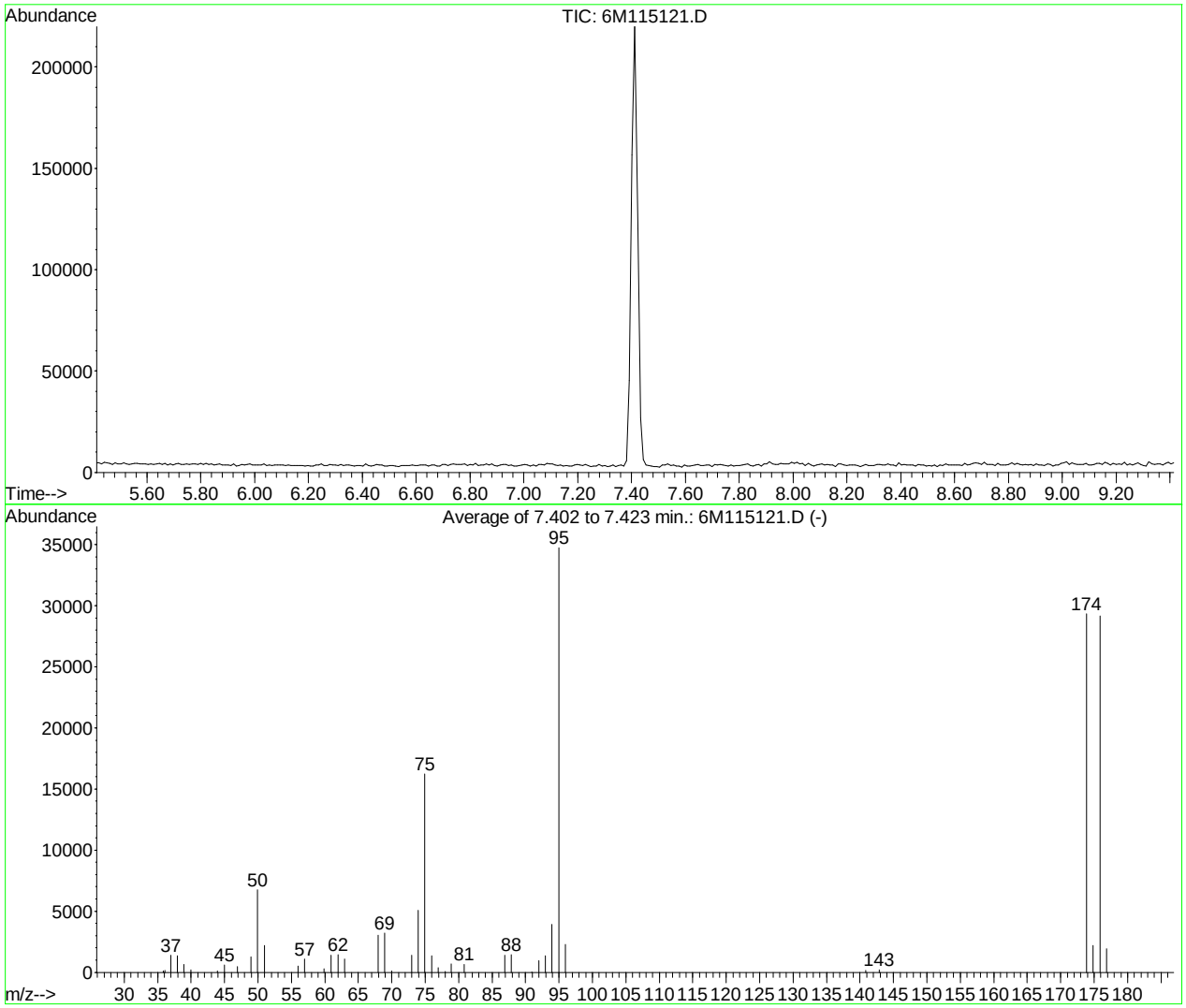

AutoFind: Scans 227, 228, 229; Background Corrected with Scan 222

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.4	6758	PASS
75	95	30	60	46.7	16243	PASS
95	95	100	100	100.0	34754	PASS
96	95	5	9	6.6	2297	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	84.4	29349	PASS
175	174	5	9	7.5	2203	PASS
176	174	95	101	99.4	29170	PASS
177	176	5	9	6.5	1907	PASS

6M115121.D 8260_WT.M Tue Apr 02 17:21:44 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\051513\11M91900.D          Vial: 1
Acq On    : 15 May 2013  16:00                       Operator: FJB
Sample    : WG430143-01 BFB 50ng 8260                Inst    : hpms11
Misc      : 1,1 STD57627                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

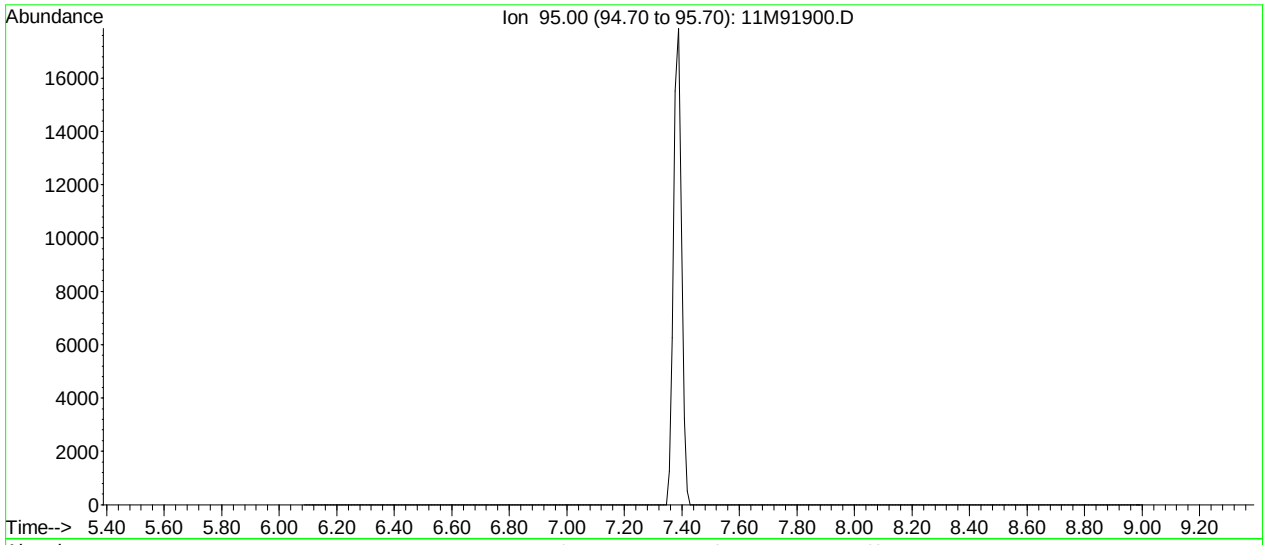

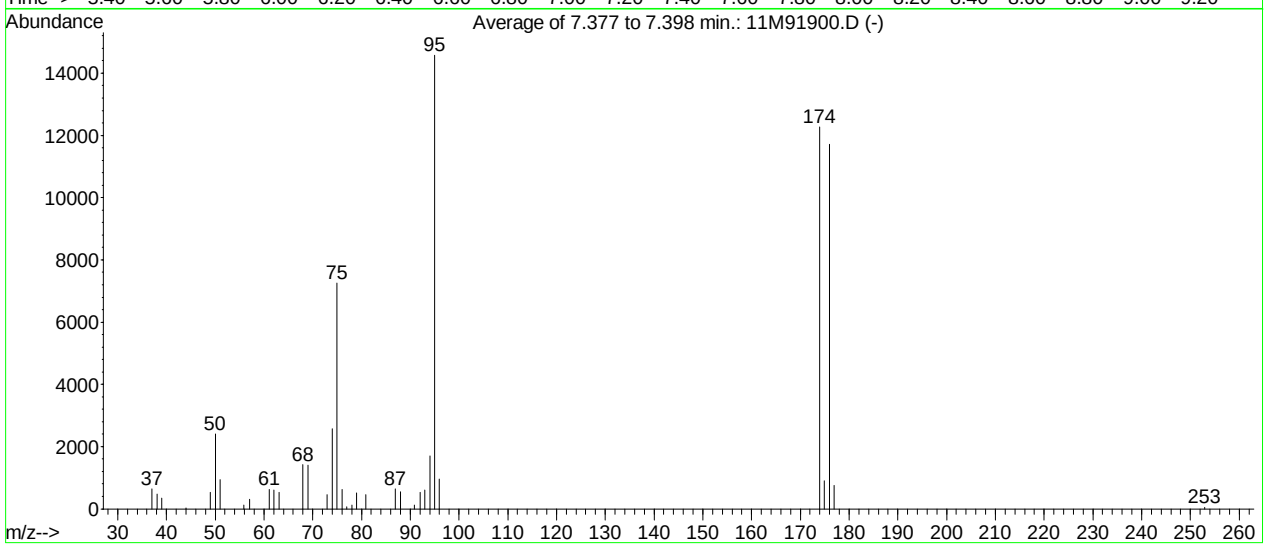

AutoFind: Scans 126, 127, 128; Background Corrected with Scan 121

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.5	2409	PASS
75	95	30	60	49.7	7247	PASS
95	95	100	100	100.0	14579	PASS
96	95	5	9	6.5	954	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	84.2	12269	PASS
175	174	5	9	7.3	893	PASS
176	174	95	101	95.4	11707	PASS
177	176	5	9	6.4	752	PASS

11M91900.D BFB.M Wed May 15 17:06:55 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\061013\11M92732.D          Vial: 1
Acq On    : 10 Jun 2013  11:29                        Operator: FJB
Sample    : WG433467-01 BFB 50ng 8260                 Inst    : hpms11
Misc      : 1,1 PURGED STD58184                       Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

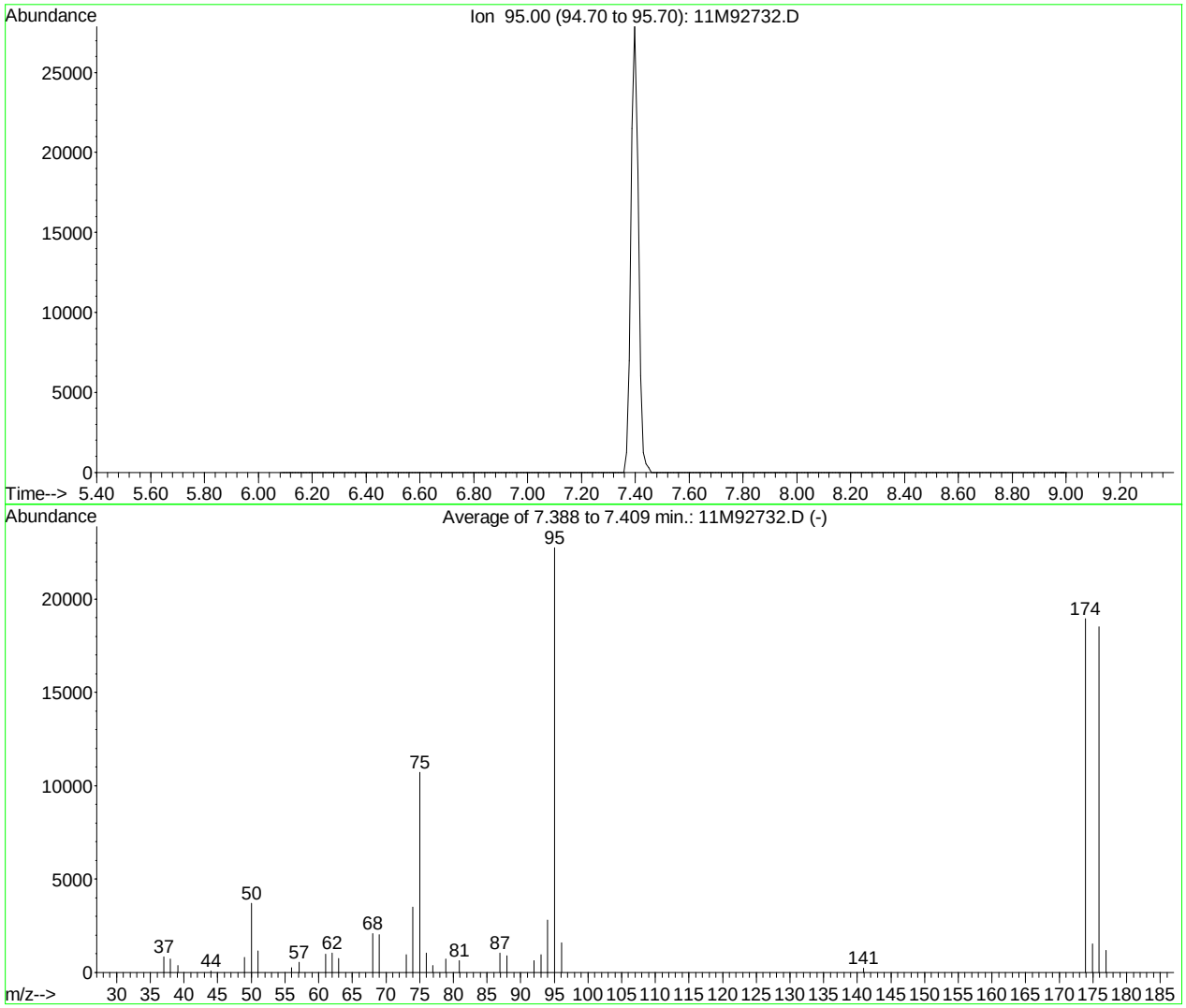

AutoFind: Scans 127, 128, 129; Background Corrected with Scan 122

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.2	3689	PASS
75	95	30	60	47.0	10707	PASS
95	95	100	100	100.0	22760	PASS
96	95	5	9	6.9	1569	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	83.2	18944	PASS
175	174	5	9	8.1	1525	PASS
176	174	95	101	97.7	18509	PASS
177	176	5	9	6.4	1178	PASS

11M92732.D BFB.M Mon Jun 10 12:17:18 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\061013\6M117402.D          Vial: 1
Acq On    : 10 Jun 2013  15:44                       Operator: ADC
Sample    : WG433588-01 50ng BFB                     Inst    : HPMS6
Misc      : 1,1 STD57627                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:OVLMSV01  04/02/13 - HPMS6
```

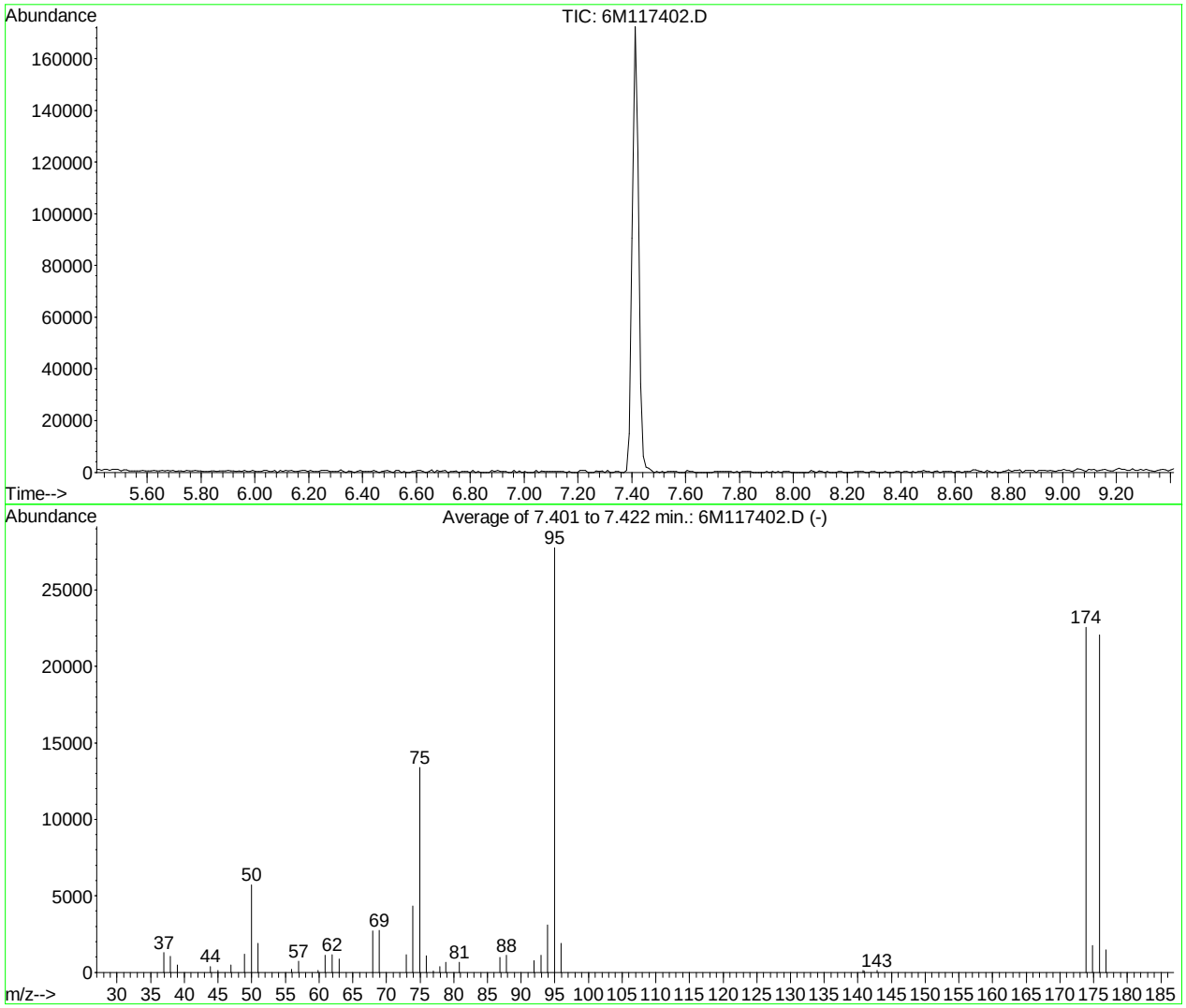

AutoFind: Scans 227, 228, 229; Background Corrected with Scan 223

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.6	5718	PASS
75	95	30	60	48.2	13381	PASS
95	95	100	100	100.0	27765	PASS
96	95	5	9	6.9	1905	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	81.3	22572	PASS
175	174	5	9	7.7	1748	PASS
176	174	95	101	97.8	22077	PASS
177	176	5	9	6.6	1454	PASS

6M117402.D 8260_WT.M Mon Jun 10 17:17:40 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\061113\11M92759.D          Vial: 1
Acq On    : 11 Jun 2013  11:46                        Operator: FJB
Sample    : WG433685-01 BFB 50ng 8260                 Inst    : hpms11
Misc      : 1,1 STD58184                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

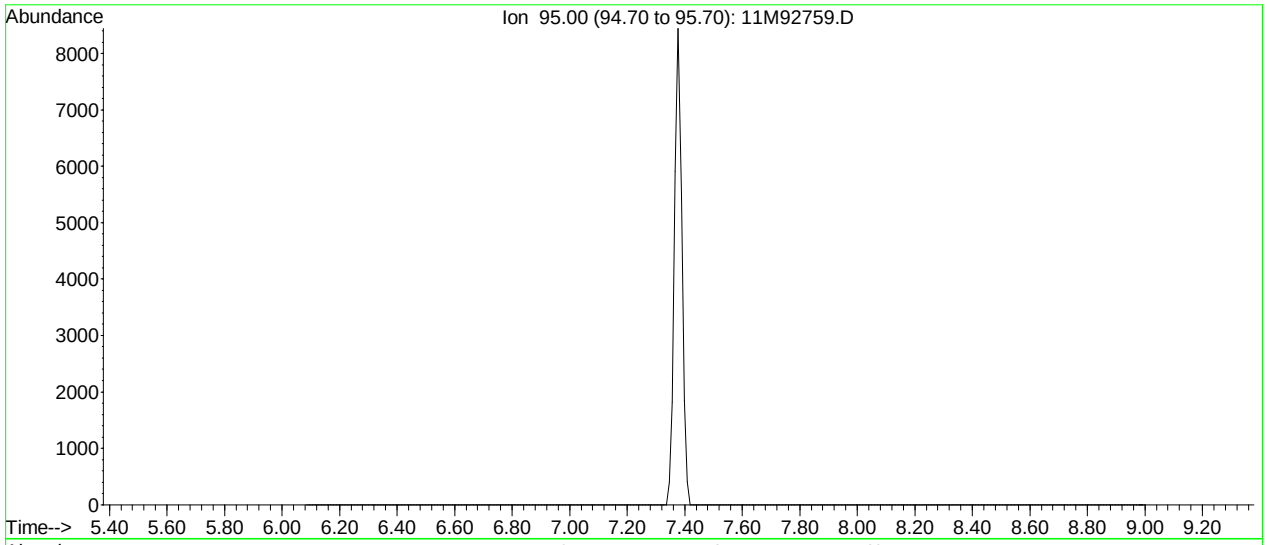

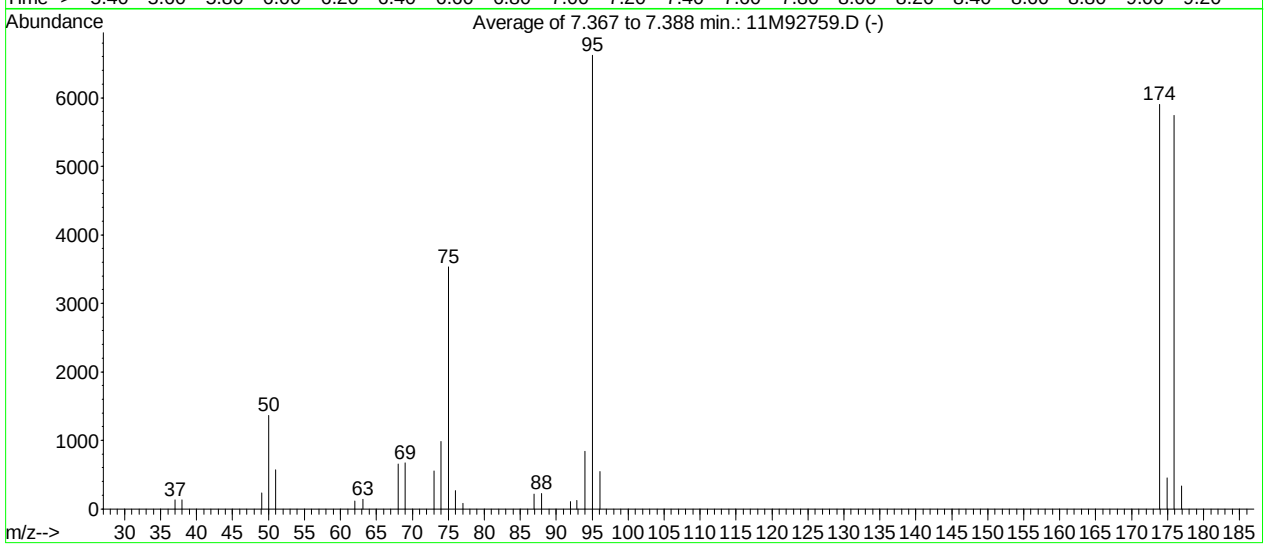

AutoFind: Scans 125, 126, 127; Background Corrected with Scan 120

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.6	1365	PASS
75	95	30	60	53.3	3533	PASS
95	95	100	100	100.0	6623	PASS
96	95	5	9	8.2	546	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	89.1	5902	PASS
175	174	5	9	7.6	450	PASS
176	174	95	101	97.3	5745	PASS
177	176	5	9	5.8	335	PASS

11M92759.D BFB.M Tue Jun 11 11:56:26 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\061213\10M05671.D          Vial: 1
Acq On    : 12 Jun 2013   9:44                       Operator: TMB
Sample    : WG433809-01 50ng BFB STD 8260            Inst    : HPMS10
Misc      : 1,1 STD58184                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : BFB (SOP:OVL MSV01)
```

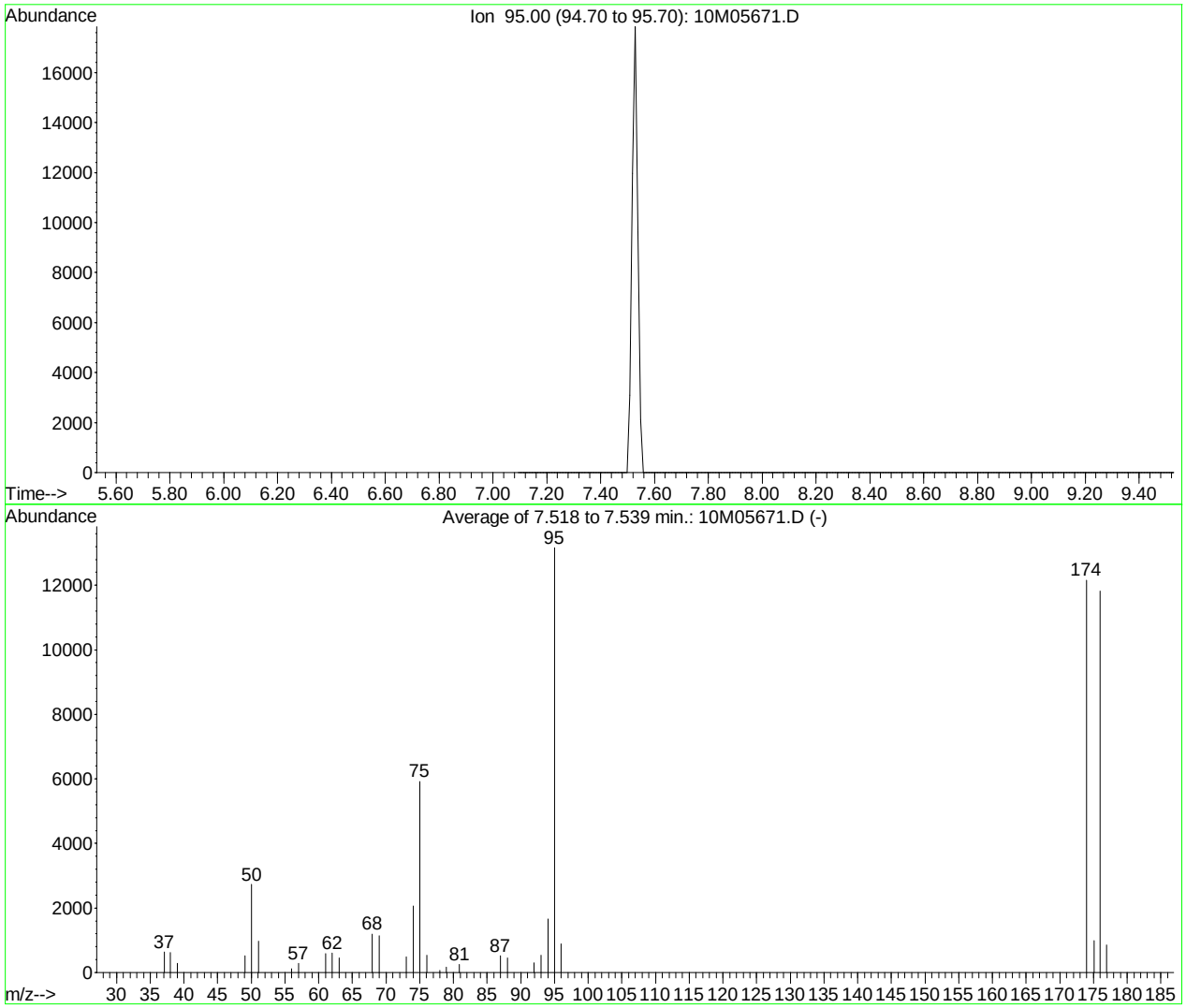

AutoFind: Scans 42, 43, 44; Background Corrected with Scan 38

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.8	2731	PASS
75	95	30	60	45.0	5919	PASS
95	95	100	100	100.0	13157	PASS
96	95	5	9	6.7	883	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	92.4	12160	PASS
175	174	5	9	8.1	986	PASS
176	174	95	101	97.2	11820	PASS
177	176	5	9	7.3	860	PASS

10M05671.D BFB.M Wed Jun 12 09:55:15 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\10M05675.D Vial: 5
Acq On : 12 Jun 2013 11:41 Operator: TMB
Sample : WG433810-01 VBLK0612 BLANK STD 8260 Inst : HPMS10
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 12 13:55:10 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.72	96	609311	25.00 ug/L	-0.02
57) Chlorobenzene-d5	13.33	117	464511	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.11	152	247720	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	8.73	111	152451	25.51 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.04%		
43) 1,2-Dichloroethane-d4	9.33	65	149617	25.34 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.36%		
58) Toluene-d8	11.58	98	533594	24.05 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.20%		
80) p-Bromofluorobenzene	14.72	95	201784	23.85 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.40%		

Target Compounds					Qvalue
3) Chloromethane	3.04	50	1825	0.27 ug/L #	58
6) Bromomethane	4.00	94	876	Below Cal	98
13) Acetone	5.43	43	435	0.28 ug/L #	42

(#) = qualifier out of range (m) = manual integration
10M05675.D 8260WT.M Wed Jun 12 13:55:11 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\10M05675.D Vial: 5
Acq On : 12 Jun 2013 11:41 Operator: TMB
Sample : WG433810-01 VBLK0612 BLANK STD 8260 Inst : HPMS10
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 12 13:55 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Initial Calibration

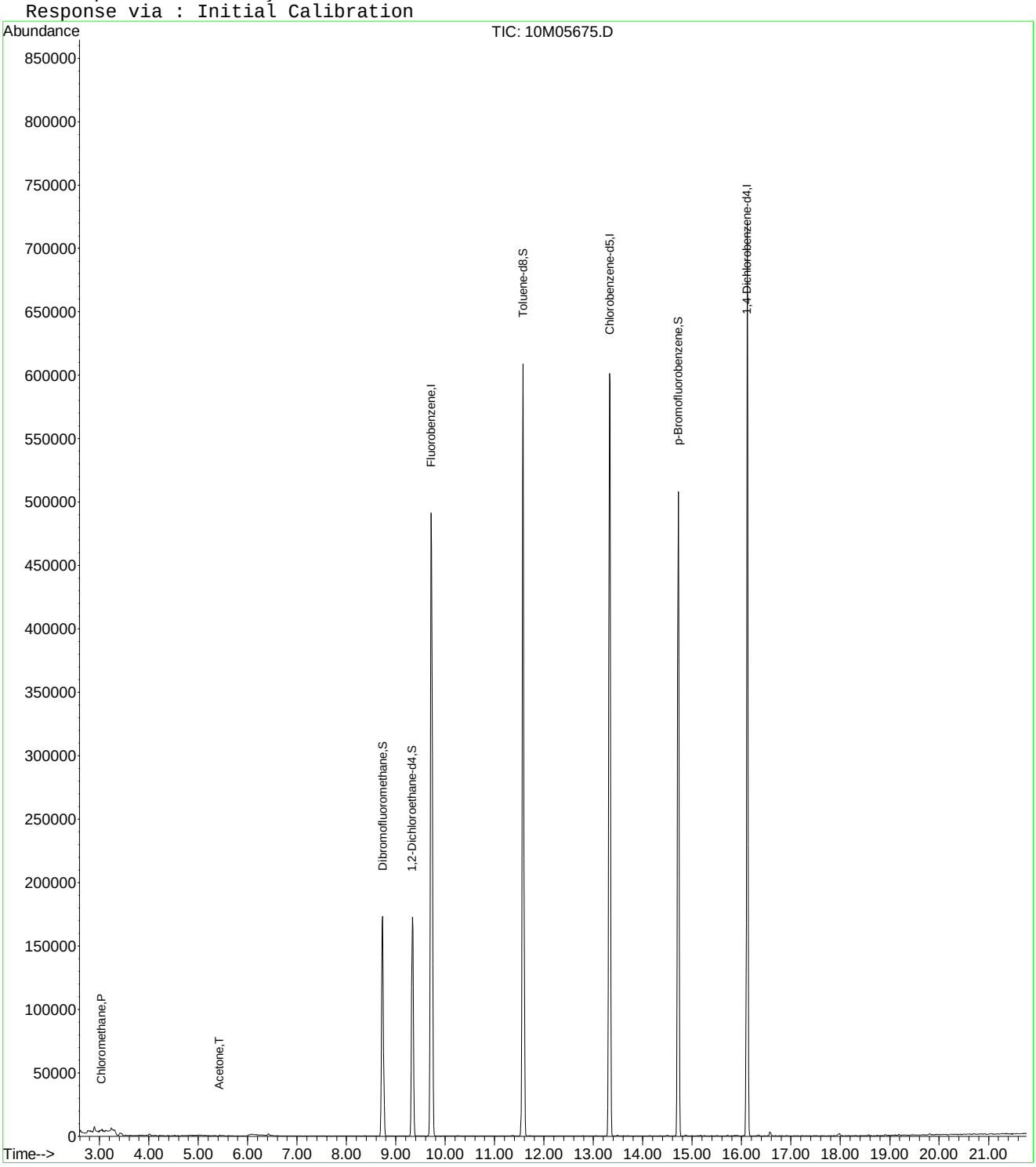

10M05675.D 8260WT.M Wed Jun 12 13:55:11 2013 Page 2

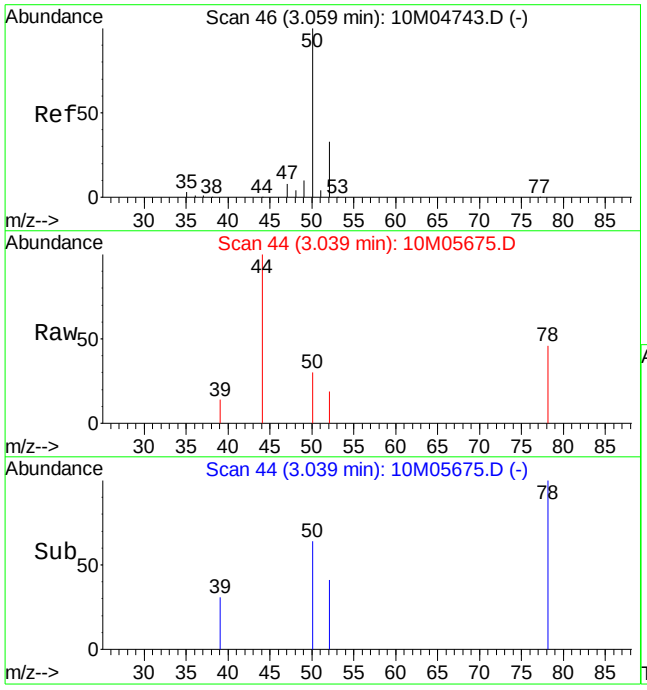

#3
Chloromethane
Concen: 0.27 ug/L
RT: 3.04 min Scan# 44
Delta R.T. -0.02 min
Lab File: 10M05675.D
Acq: 12 Jun 2013 11:41

Tgt Ion: 50 Resp: 1825

Ion	Ratio	Lower	Upper
50	100		
52	57.9	20.3	47.3#

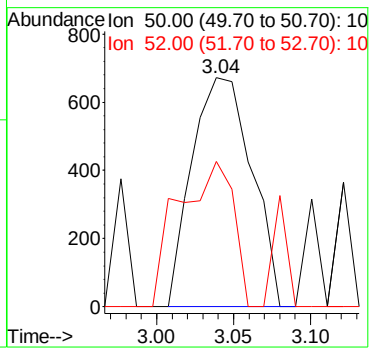

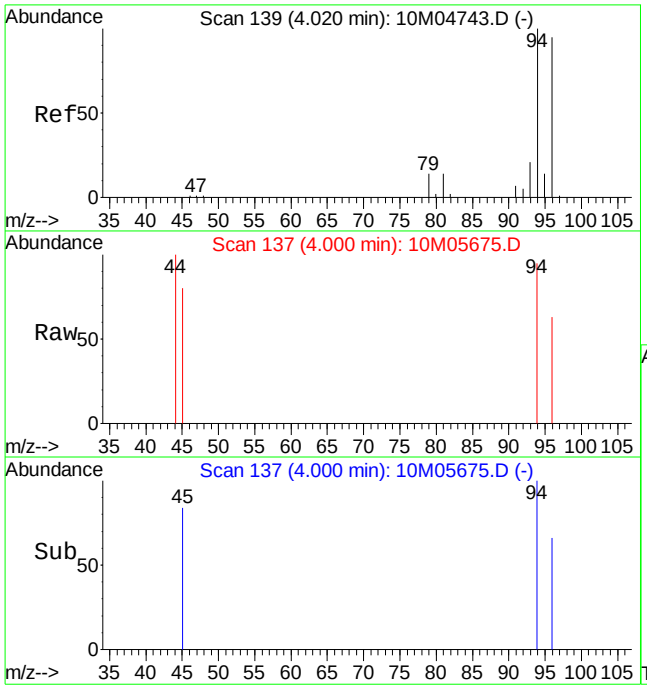

#6
Bromomethane
Concen: Below Cal
RT: 4.00 min Scan# 137
Delta R.T. -0.02 min
Lab File: 10M05675.D
Acq: 12 Jun 2013 11:41

Tgt Ion: 94 Resp: 876

Ion	Ratio	Lower	Upper
94	100		
96	92.6	57.0	133.0

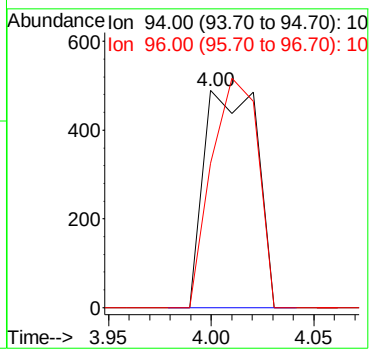

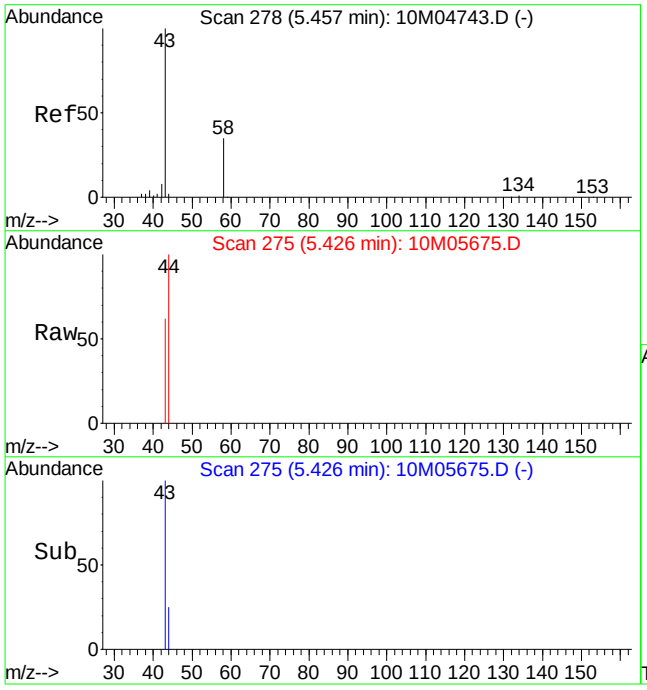

#13
Acetone
Concen: 0.28 ug/L
RT: 5.43 min Scan# 275
Delta R.T. -0.03 min
Lab File: 10M05675.D
Acq: 12 Jun 2013 11:41

Tgt Ion: 43 Resp: 435

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.6	45.6#

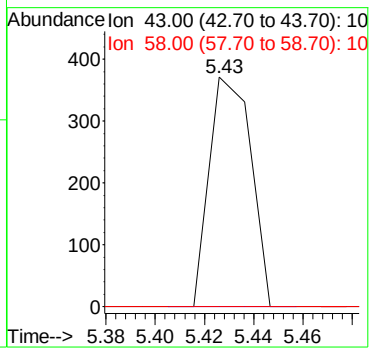

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\11M92736.D Vial: 5
Acq On : 10 Jun 2013 13:30 Operator: FJB
Sample : WG433470-01 VBLK0610 BLANK 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 09:05:48 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	585464	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.70	117	399532	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.49	152	221545	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.09	111	157995	22.9341 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.72%		
43) 1,2-Dichloroethane-d4	9.69	65	144995	20.6145 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 82.44%		
58) Toluene-d8	11.93	98	601004	26.2455 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.00%		
80) p-Bromofluorobenzene	15.09	95	232276	26.4589 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.84%		

Target Compounds

					Qvalue
3) Chloromethane	3.31	50	2368	0.3403 ug/L #	47
6) Bromomethane	4.37	94	884	0.2018 ug/L	89
13) Acetone	5.82	43	437	0.2850 ug/L #	45
19) Methylene Chloride	6.77	84	2547	0.3417 ug/L	79

(#) = qualifier out of range (m) = manual integration
11M92736.D 8260BWT.M Tue Jun 11 09:05:49 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\11M92736.D Vial: 5
Acq On : 10 Jun 2013 13:30 Operator: FJB
Sample : WG433470-01 VBLK0610 BLANK 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 9:05 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration

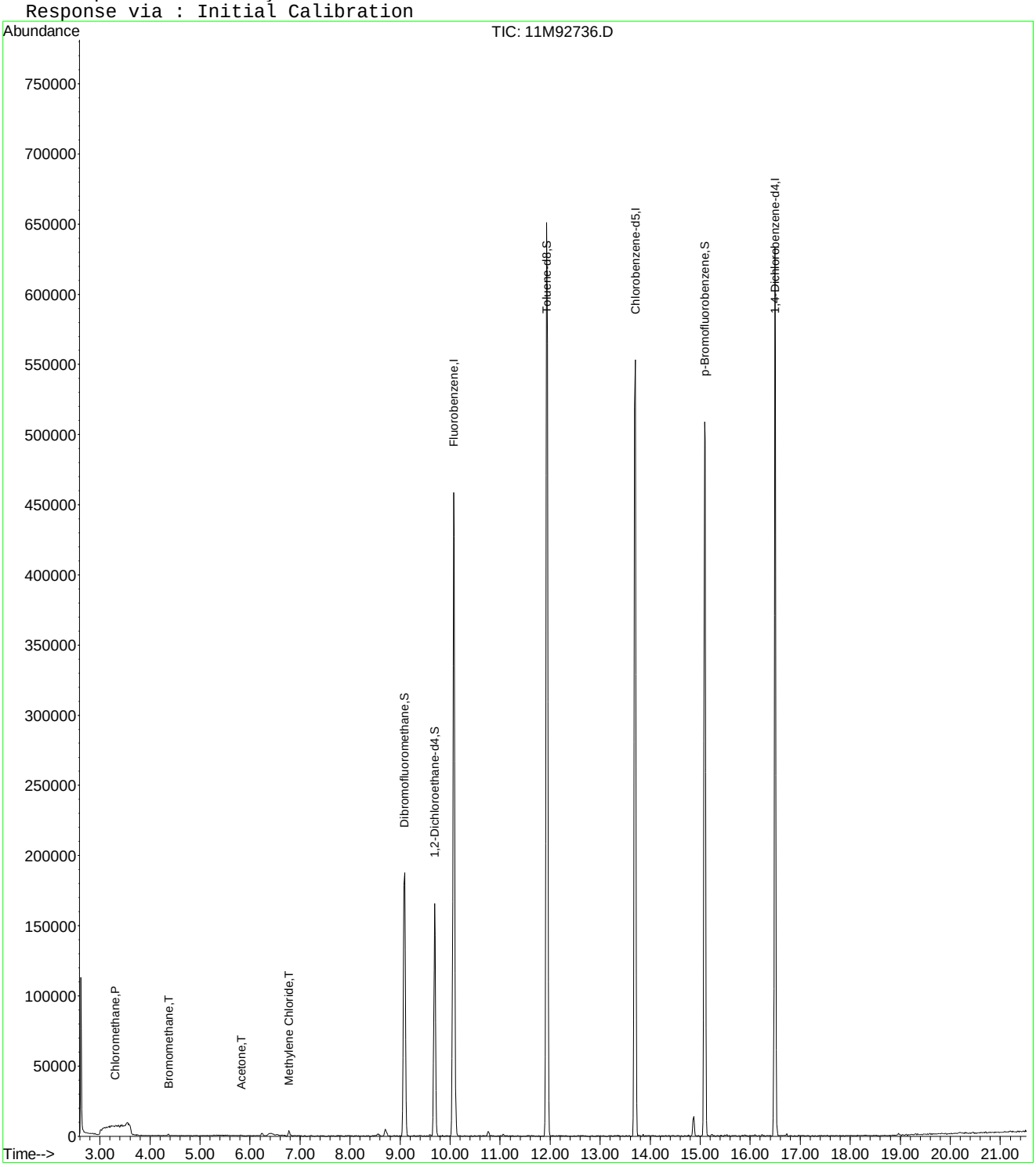

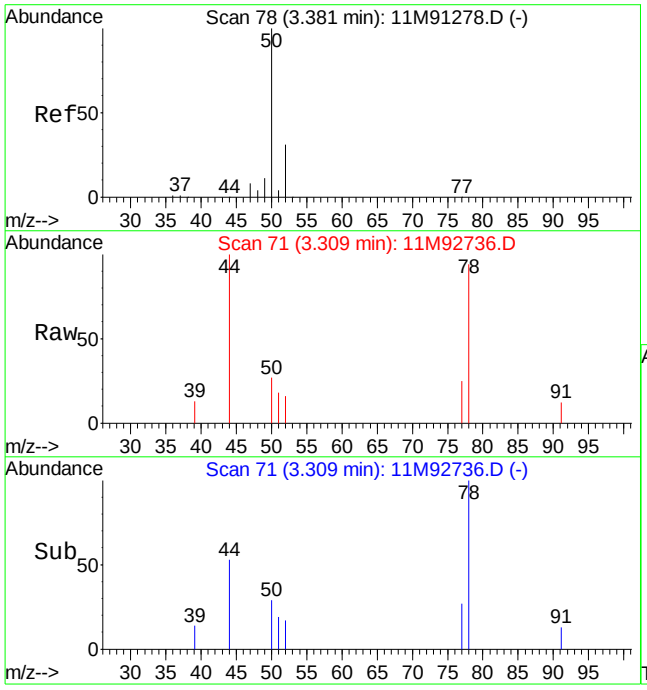

#3
Chloromethane
Concen: 0.34 ug/L
RT: 3.31 min Scan# 71
Delta R.T. -0.02 min
Lab File: 11M92736.D
Acq: 10 Jun 2013 13:30

Tgt Ion: 50 Resp: 2368

Ion	Ratio	Lower	Upper
50	100		
52	62.0	19.4	45.2#

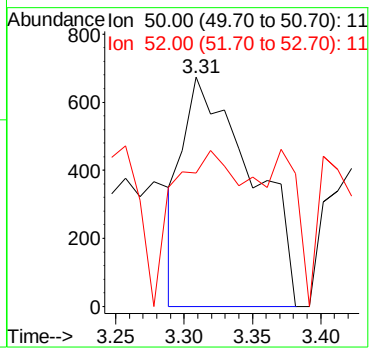

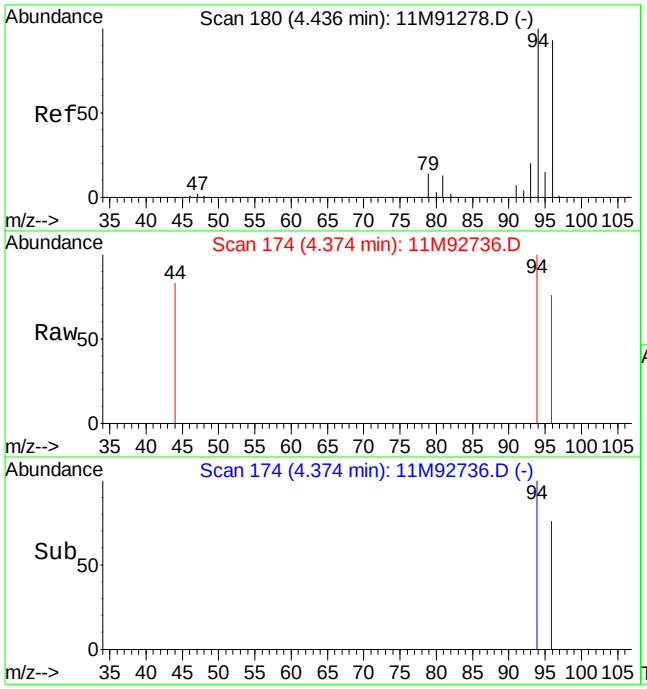

#6
Bromomethane
Concen: 0.20 ug/L
RT: 4.37 min Scan# 174
Delta R.T. 0.01 min
Lab File: 11M92736.D
Acq: 10 Jun 2013 13:30

Tgt Ion: 94 Resp: 884

Ion	Ratio	Lower	Upper
94	100		
96	84.2	56.7	132.3

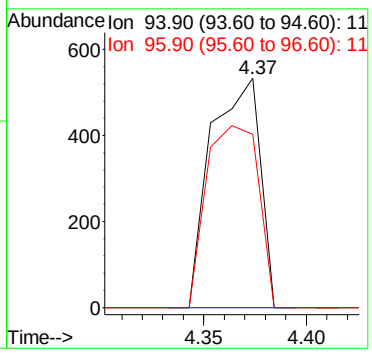

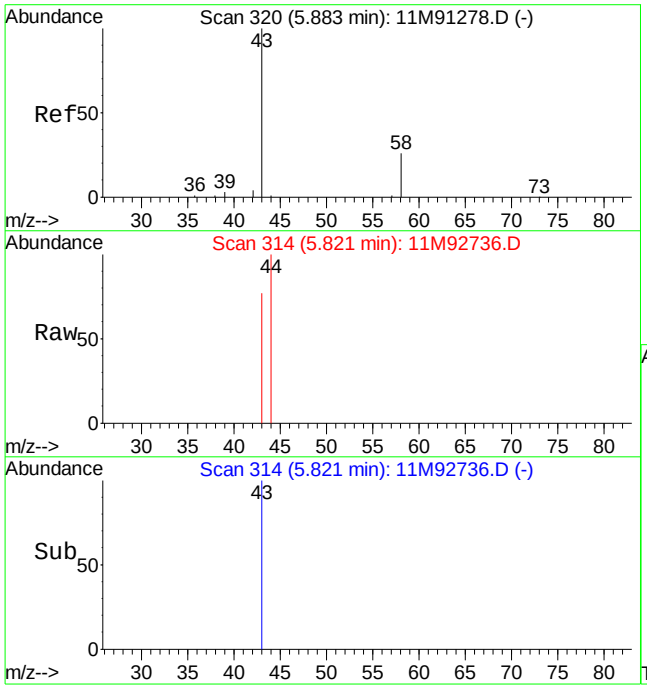

#13
Acetone
Concen: 0.29 ug/L
RT: 5.82 min Scan# 314
Delta R.T. 0.01 min
Lab File: 11M92736.D
Acq: 10 Jun 2013 13:30

Tgt Ion: 43 Resp: 437

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.6	41.2#

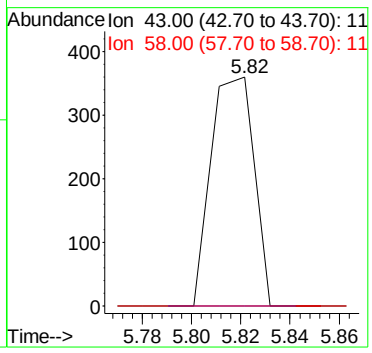

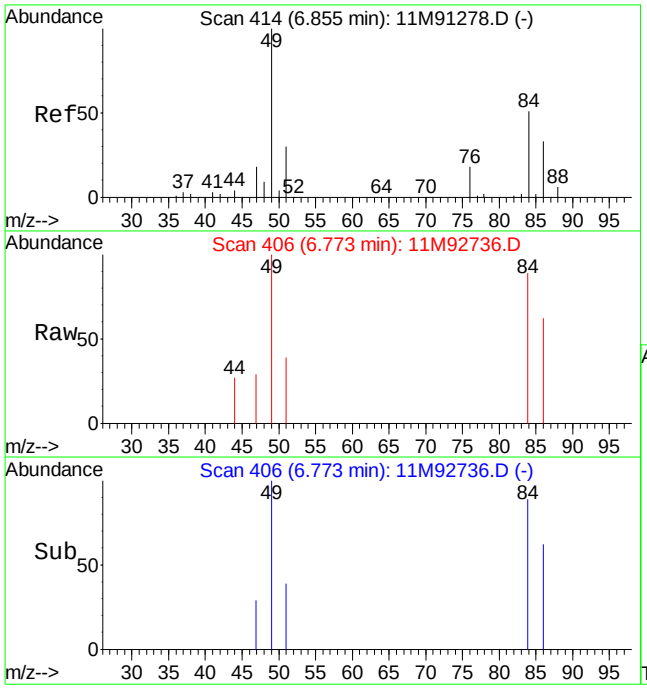

#19
Methylene Chloride
Concen: 0.34 ug/L
RT: 6.77 min Scan# 406
Delta R.T. -0.01 min
Lab File: 11M92736.D
Acq: 10 Jun 2013 13:30

Tgt Ion: 84 Resp: 2547

Ion	Ratio	Lower	Upper
84	100		
49	99.3	73.4	171.4

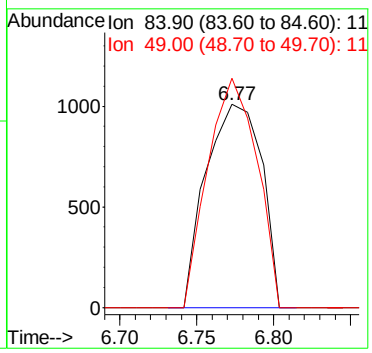

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061113\11M92762.D Vial: 4
Acq On : 11 Jun 2013 13:15 Operator: FJB
Sample : WG433686-01 VBLK0611 BLANK 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 12 08:48:22 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	567638	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.70	117	383621	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.49	152	206485	25.00 ug/L	-0.02
System Monitoring Compounds					
37) Dibromofluoromethane	9.09	111	151913	22.7437 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.96%		
43) 1,2-Dichloroethane-d4	9.69	65	141397	20.7343 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 82.92%		
58) Toluene-d8	11.93	98	583010	26.5157 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.08%		
80) p-Bromofluorobenzene	15.09	95	223554	27.3227 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.28%		
Target Compounds					Qvalue
6) Bromomethane	4.36	94	947	0.2230 ug/L	86

(#) = qualifier out of range (m) = manual integration
11M92762.D 8260BWT.M Wed Jun 12 08:48:23 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061113\11M92762.D Vial: 4
Acq On : 11 Jun 2013 13:15 Operator: FJB
Sample : WG433686-01 VBLK0611 BLANK 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 12 8:48 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration

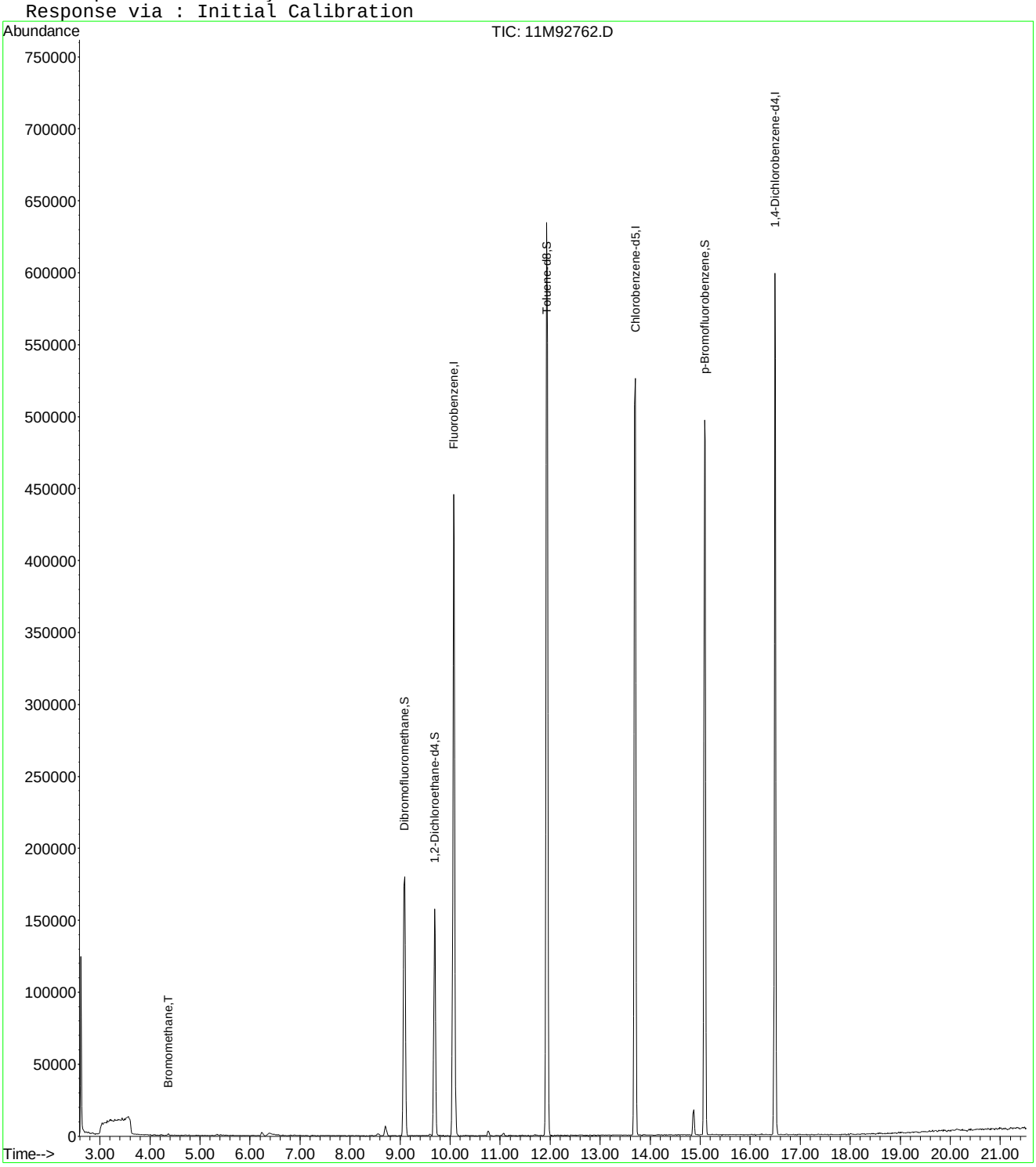

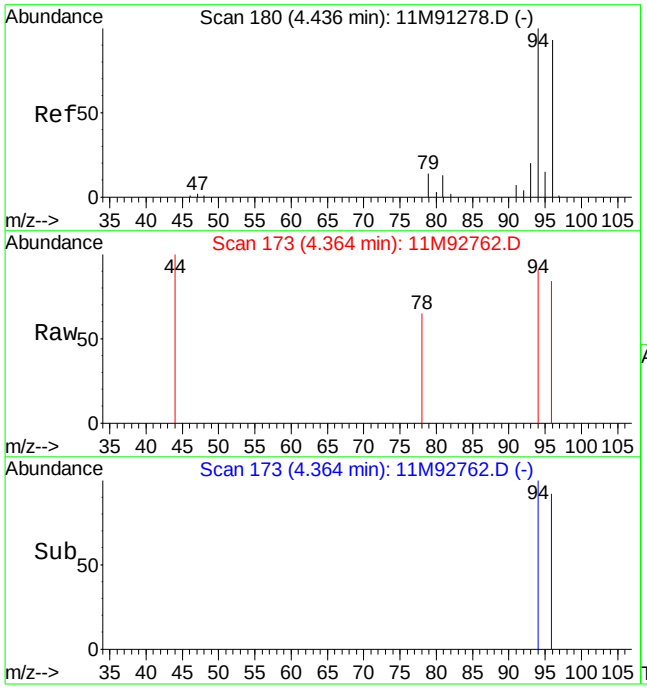

#6
Bromomethane
Concen: 0.22 ug/L
RT: 4.36 min Scan# 173
Delta R.T. 0.00 min
Lab File: 11M92762.D
Acq: 11 Jun 2013 13:15

Tgt Ion: 94 Resp: 947

Ion	Ratio	Lower	Upper
94	100		
96	80.7	56.7	132.3

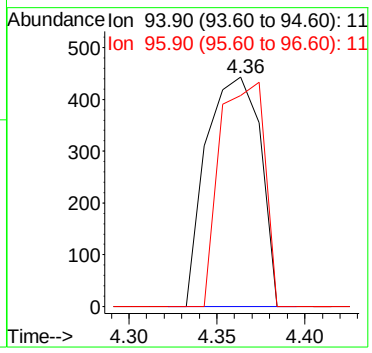

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117406.D Vial: 4
Acq On : 10 Jun 2013 17:43 Operator: ADC
Sample : WG433591-01 VBLK 0610 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:28:54 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	472470	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.72	117	392850	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	198141	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.05	111	141547	26.7459 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.00%		
43) 1,2-Dichloroethane-d4	9.79	65	120965	26.2710 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.08%		
58) Toluene-d8	12.52	98	527268	23.4097 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.64%		
80) p-Bromofluorobenzene	16.50	95	211759	26.5202 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.08%		

Target Compounds					Qvalue
99) Hexachlorobutadiene	21.61	225	392	0.2284 ug/L #	19

(#) = qualifier out of range (m) = manual integration
6M117406.D 8260_WT.M Tue Jun 11 16:28:55 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061013\6M117406.D Vial: 4
Acq On : 10 Jun 2013 17:43 Operator: ADC
Sample : WG433591-01 VBLK 0610 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 11 16:28 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

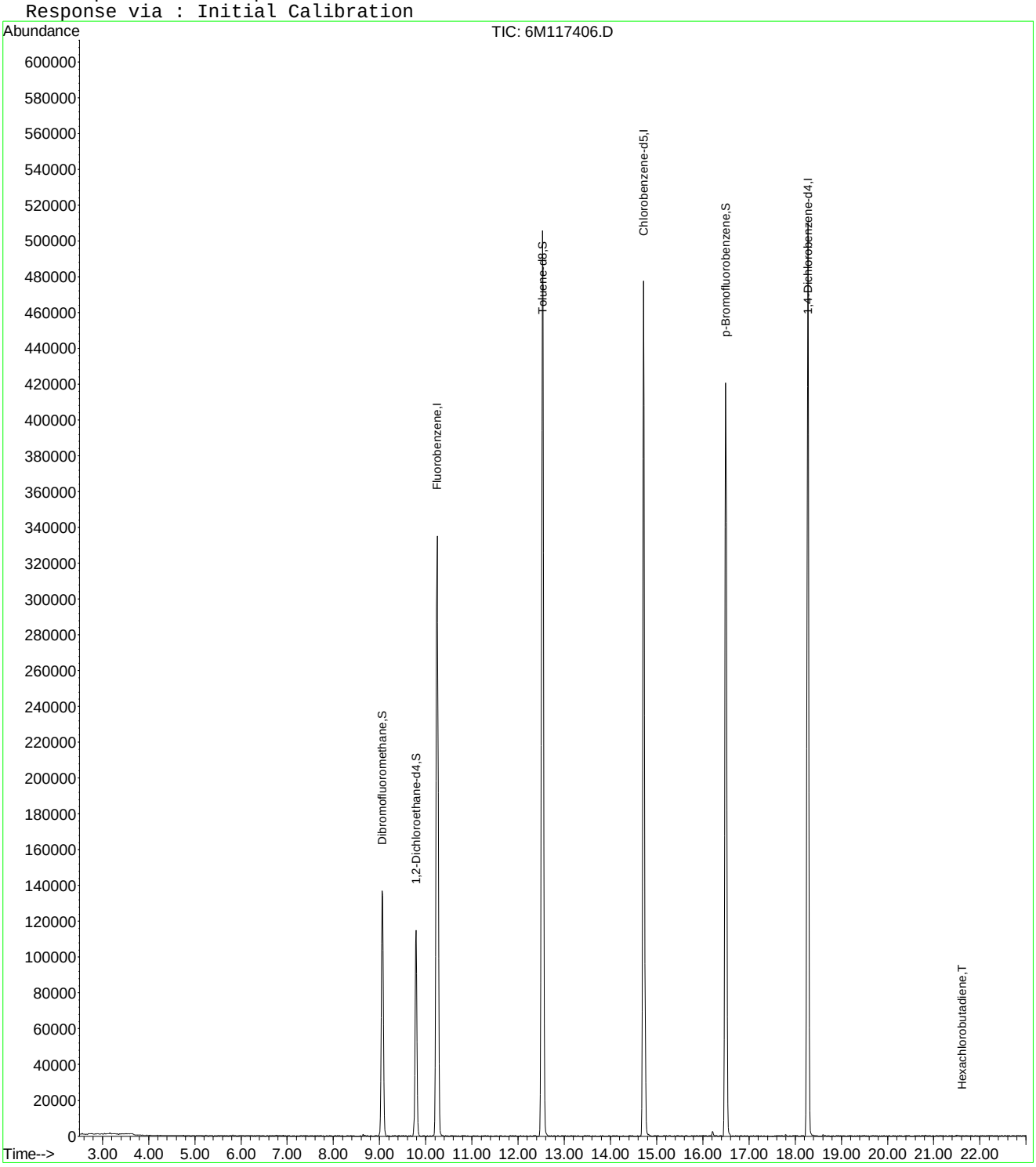

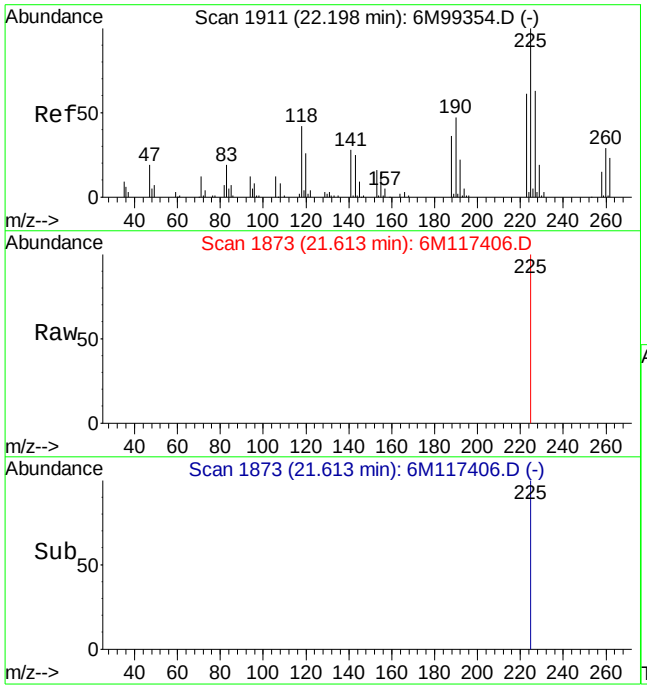

#99
Hexachlorobutadiene
Concen: 0.23 ug/L
RT: 21.61 min Scan# 1873
Delta R.T. -0.01 min
Lab File: 6M117406.D
Acq: 10 Jun 2013 17:43

Tgt Ion:225 Resp: 392

Ion	Ratio	Lower	Upper
225	100		
223	0.0	37.1	86.5#
227	0.0	38.5	89.7#

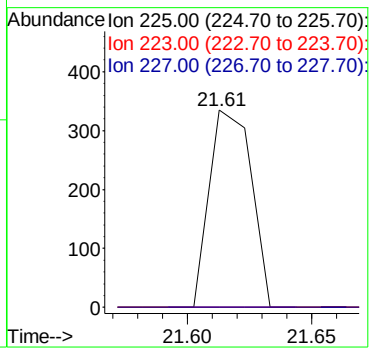

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\10M05696.D Vial: 26
Acq On : 12 Jun 2013 22:20 Operator: TMB
Sample : WG433810-04 VBLK0612 BLANK STD 624 Inst : HPMS10
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:17:56 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.73	96	564220	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.32	117	425487	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	16.11	152	226598	25.00 ug/L	-0.02
System Monitoring Compounds					
37) Dibromofluoromethane	8.73	111	143688	25.97 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.88%		
43) 1,2-Dichloroethane-d4	9.33	65	140852	25.76 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.04%		
58) Toluene-d8	11.58	98	495442	24.37 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.48%		
80) p-Bromofluorobenzene	14.72	95	185439	23.96 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.84%		
Target Compounds					Qvalue
92) p-Isopropyltoluene	15.92	119	3535	0.17 ug/L	96

(#) = qualifier out of range (m) = manual integration
10M05696.D 8260WT.M Thu Jun 13 08:17:57 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\10M05696.D Vial: 26
Acq On : 12 Jun 2013 22:20 Operator: TMB
Sample : WG433810-04 VBLK0612 BLANK STD 624 Inst : HPMS10
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:17 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Initial Calibration

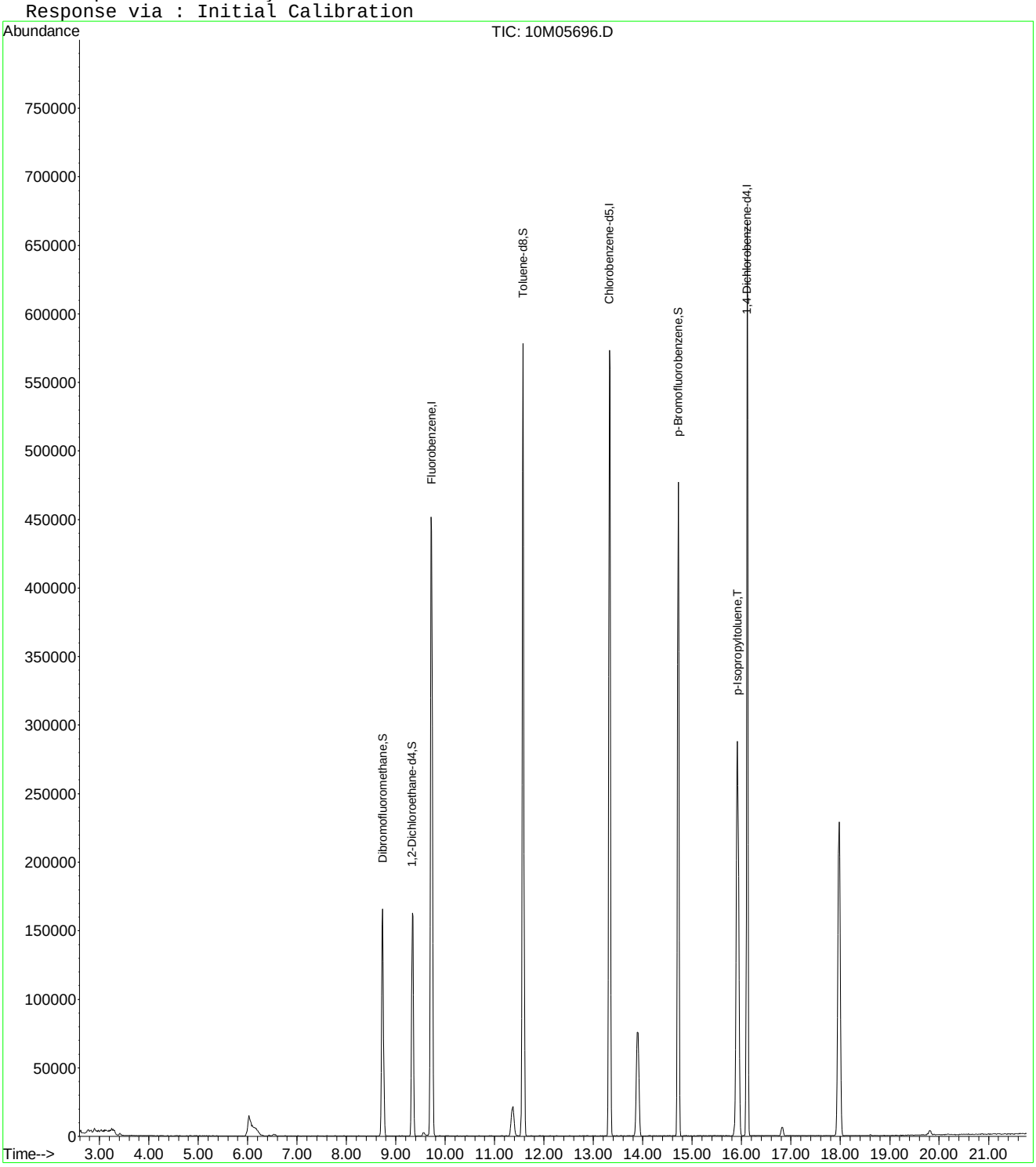

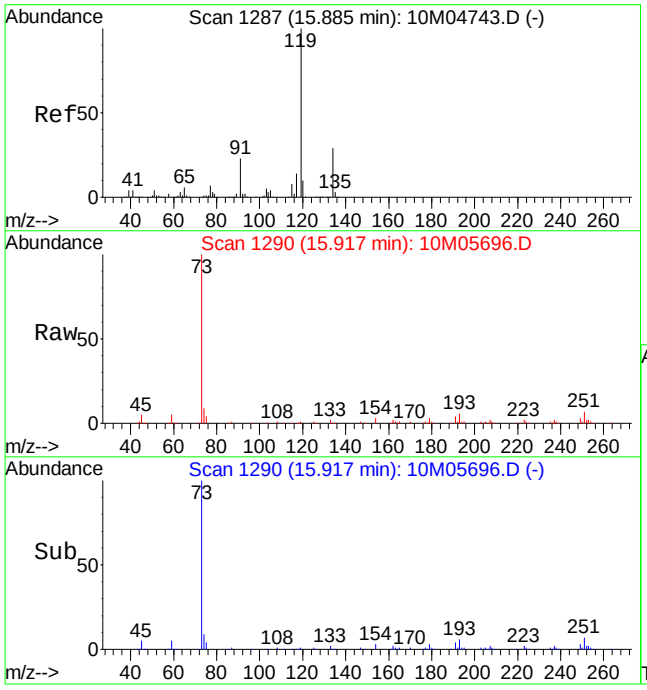

#92
p-Isopropyltoluene
Concen: 0.17 ug/L
RT: 15.92 min Scan# 1290
Delta R.T. 0.03 min
Lab File: 10M05696.D
Acq: 12 Jun 2013 22:20

Tgt Ion:119 Resp: 3535

Ion	Ratio	Lower	Upper
119	100		
134	31.0	17.4	40.6

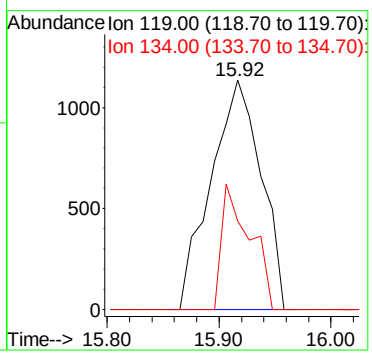

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061113\11M92793.D Vial: 35
Acq On : 12 Jun 2013 5:31 Operator: FJB
Sample : WG433686-04 624 BLANK Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 12 08:49:18 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	475584	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.70	117	320438	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.49	152	174520	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.09	111	126858	22.6688 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.68%		
43) 1,2-Dichloroethane-d4	9.69	65	118572	20.7527 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.00%		
58) Toluene-d8	11.93	98	495160	26.9607 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 107.84%		
80) p-Bromofluorobenzene	15.09	95	185109	26.7677 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.08%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M92793.D 8260BWT.M Wed Jun 12 08:49:18 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061113\11M92793.D Vial: 35
Acq On : 12 Jun 2013 5:31 Operator: FJB
Sample : WG433686-04 624 BLANK Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 12 8:49 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration

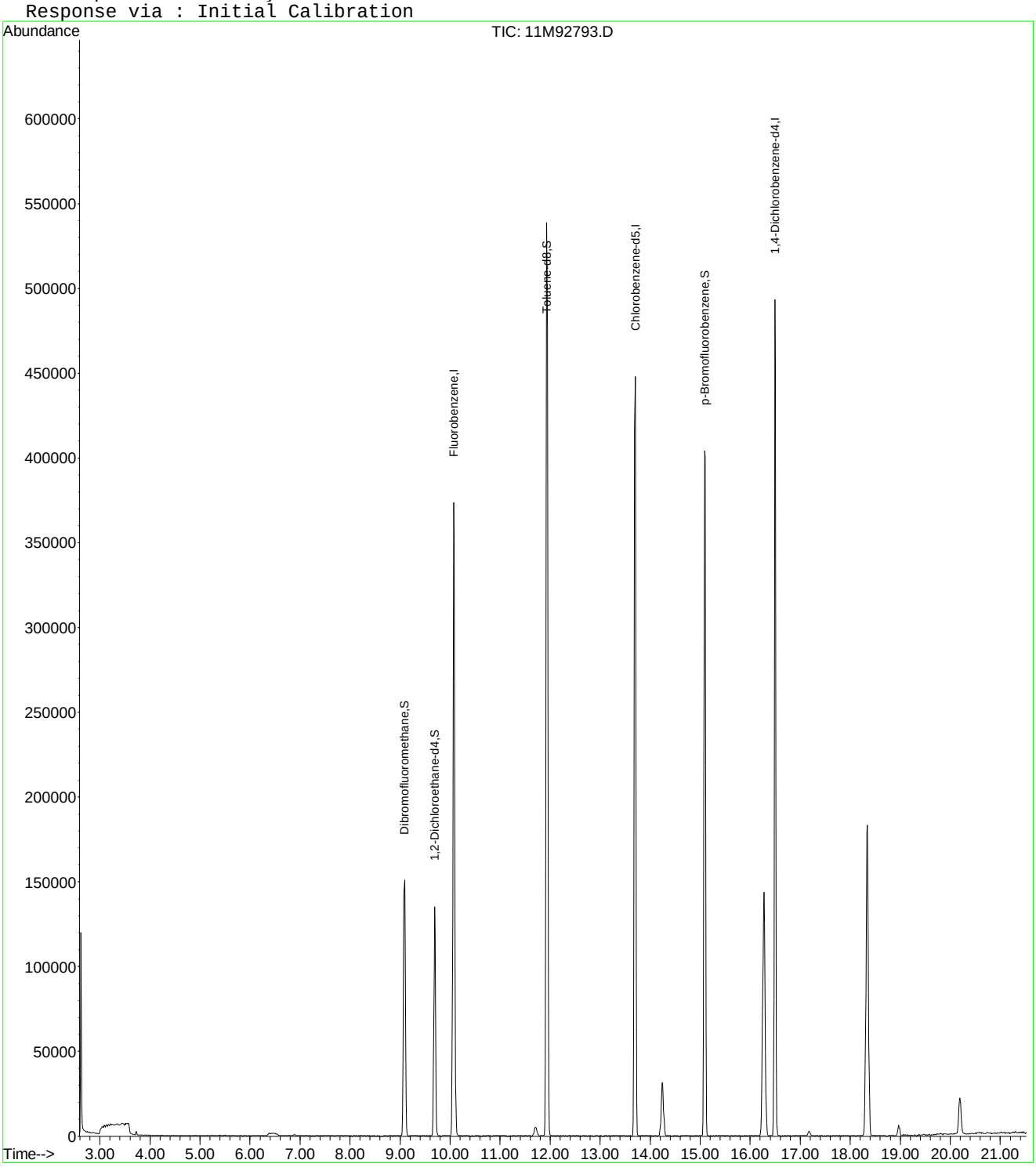

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\10M05676.D Vial: 6
Acq On : 12 Jun 2013 12:11 Operator: TMB
Sample : L13060399-03 WG433810-02 20ug/L LCS STD Inst : HPMS10
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 09:14:31 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.72	96	623545	25.00 ug/L	-0.02
57) Chlorobenzene-d5	13.32	117	484207	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	16.11	152	264477	25.00 ug/L	-0.02
System Monitoring Compounds					
37) Dibromofluoromethane	8.72	111	163433	26.73 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.92%		
43) 1,2-Dichloroethane-d4	9.33	65	152258	25.20 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.80%		
58) Toluene-d8	11.58	98	559790	24.20 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.80%		
80) p-Bromofluorobenzene	14.72	95	214313	23.73 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.92%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.67	85	102323	18.03 ug/L	96
3) Chloromethane	3.04	50	163417	23.66 ug/L	97
4) Vinyl Chloride	3.23	62	129652	20.54 ug/L	100
5) 1,3-Butadiene	3.26	54	69425	17.15 ug/L	99
6) Bromomethane	4.00	94	79372	19.12 ug/L	100
7) Chloroethane	4.16	64	91720	22.27 ug/L	97
8) Trichlorofluoromethane	4.61	101	215387	21.31 ug/L	100
9) Diethyl ether	5.12	59	481686	101.28 ug/L	95
10) Isoprene	5.15	67	184756	19.52 ug/L	93
11) Acrolein	5.34	56	43399	191.78 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	5.37	101	135243	22.19 ug/L	92
13) Acetone	5.44	43	28163	17.59 ug/L	92
14) 1,1-Dichloroethene	5.65	96	111580	18.29 ug/L	94
15) Tert-Butyl Alcohol	5.77	59	71542	183.58 ug/L	97
16) Dimethyl Sulfide	5.90	62	163387	21.24 ug/L	93
17) Iodomethane	6.14	142	92974	12.77 ug/L	99
18) Methyl acetate	6.17	43	73083	24.61 ug/L	93
19) Methylene Chloride	6.41	84	132940	19.32 ug/L	85
20) Carbon Disulfide	6.43	76	389408	18.23 ug/L	99
21) Acrylonitrile	6.59	53	38024	23.23 ug/L	98
22) Methyl Tert Butyl Ether	6.63	73	328018	21.39 ug/L	98
23) trans-1,2-Dichloroethene	6.84	96	133631	19.68 ug/L	93
24) n-Hexane	6.94	57	173892	19.96 ug/L	98
25) Diisopropyl ether	7.28	45	2293560	113.26 ug/L	97
26) Vinyl Acetate	7.43	43	177472	23.80 ug/L	95
27) 1,1-Dichloroethane	7.45	63	242596	20.77 ug/L	99
28) Ethyl-Tert-Butyl ether	7.82	59	2173366	109.24 ug/L	96
29) 2-Butanone	7.99	43	41435	23.83 ug/L	95
30) Propionitrile	8.09	54	62794	106.82 ug/L	99
31) 2,2-Dichloropropane	8.20	77	193276	20.14 ug/L	91
32) cis-1,2-Dichloroethene	8.25	96	147595	20.31 ug/L	94
33) Chloroform	8.46	83	235070	20.55 ug/L	99
34) 1-Bromopropane	8.58	122	35113	23.60 ug/L	99
35) Bromochloromethane	8.67	128	68707	20.50 ug/L	92
36) Tetrahydrofuran	8.69	42	125473	109.56 ug/L	91
38) 1,1,1-Trichloroethane	8.96	97	208406	20.79 ug/L	97
39) Cyclohexane	8.98	56	230139	20.16 ug/L	94
40) 1,1-Dichloropropene	9.15	75	177092	20.20 ug/L	99
41) Carbon Tetrachloride	9.28	117	193266	21.61 ug/L	99
42) Tert-Amyl-Methyl ether	9.26	73	1612034	99.72 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\10M05676.D Vial: 6
Acq On : 12 Jun 2013 12:11 Operator: TMB
Sample : L13060399-03 WG433810-02 20ug/L LCS STD Inst : HPMS10
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 09:14:31 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.45	62	167995	21.18 ug/L	96
46)	Benzene	9.48	78	520195	20.04 ug/L	99
47)	Trichloroethene	10.19	130	156661	21.99 ug/L	98
48)	Methylcyclohexane	10.27	83	192043	19.38 ug/L	94
49)	1,2-Dichloropropane	10.40	63	139166	21.37 ug/L	99
50)	Bromodichloromethane	10.68	83	169912	20.61 ug/L	100
51)	1,4-Dioxane	10.67	88	6372	150.40 ug/L	84
52)	Dibromomethane	10.75	93	71943	20.07 ug/L	99
53)	2-Chloroethyl Vinyl Ether	10.98	63	64096	19.88 ug/L	99
54)	4-Methyl-2-Pentanone	11.00	58	36065	21.59 ug/L	95
55)	cis-1,3-Dichloropropene	11.28	75	216881	22.22 ug/L	93
56)	Dimethyl Disulfide	11.51	79	112786	19.42 ug/L	98
59)	Toluene	11.67	91	556842	19.79 ug/L	100
60)	Ethyl Methacrylate	11.77	69	136758	21.26 ug/L	97
62)	trans-1,3-Dichloropropene	11.85	75	174623	19.64 ug/L	100
63)	1,1,2-Trichloroethane	12.03	97	102355	20.31 ug/L	99
64)	2-Hexanone	11.99	43	58480	22.12 ug/L	94
65)	1,3-Dichloropropane	12.32	76	175218	20.20 ug/L	88
66)	Tetrachloroethene	12.42	164	125172	19.72 ug/L	100
67)	Dibromochloromethane	12.67	129	132354	21.36 ug/L	100
68)	1,2-Dibromoethane	12.91	107	106769	20.78 ug/L	99
69)	1-Chlorohexane	13.00	91	178869	20.04 ug/L	92
70)	Chlorobenzene	13.37	112	358041	18.84 ug/L	100
71)	1,1,1,2-Tetrachloroethane	13.41	131	152212	22.03 ug/L	98
72)	Ethylbenzene	13.41	106	208364	20.39 ug/L	95
73)	m-,p-Xylene	13.49	106	482605	38.97 ug/L	97
74)	o-Xylene	14.01	106	226787	19.01 ug/L	97
75)	Styrene	14.05	104	417221	21.79 ug/L	99
76)	Bromoform	14.49	173	87397	20.83 ug/L	99
77)	Isopropylbenzene	14.40	105	564742	19.31 ug/L	100
79)	1,1,2,2-Tetrachloroethane	14.60	83	110310	20.93 ug/L	100
81)	1,2,3-Trichloropropane	14.78	110	35176	20.05 ug/L	95
82)	trans-1,4-Dichloro-2-Buten	14.82	53	26311	14.85 ug/L	72
83)	n-Propylbenzene	14.87	91	627304	17.98 ug/L	99
84)	Bromobenzene	14.98	156	177440	19.60 ug/L	98
85)	1,3,5-Trimethylbenzene	15.04	105	523839	21.34 ug/L	99
86)	2-Chlorotoluene	15.11	91	400808	17.53 ug/L	98
87)	4-Chlorotoluene	15.15	91	391534	18.79 ug/L	98
88)	a-Methylstyrene	15.41	118	292725	20.69 ug/L	100
89)	tert-Butylbenzene	15.47	134	106451	19.04 ug/L	86
90)	1,2,4-Trimethylbenzene	15.51	105	531128	21.26 ug/L	98
91)	sec-Butylbenzene	15.72	105	571296	19.26 ug/L	99
92)	p-Isopropyltoluene	15.87	119	489495	19.66 ug/L	99
93)	1,3-Dichlorobenzene	16.03	146	305128	19.01 ug/L	98
94)	1,4-Dichlorobenzene	16.16	146	325078	19.60 ug/L	100
95)	n-Butylbenzene	16.35	91	447209	21.01 ug/L	99
96)	1,2-Dichlorobenzene	16.61	146	280464	18.83 ug/L	100
97)	1,2-Dibromo-3-Chloropropan	17.52	157	21752	19.48 ug/L	98
98)	1,2,4-Trichlorobenzene	18.57	180	194121	19.44 ug/L	99
99)	Hexachlorobutadiene	18.72	225	84090	20.81 ug/L	99
100)	Naphthalene	18.90	128	324360	18.95 ug/L	99
101)	1,2,3-Trichlorobenzene	19.19	180	162134	18.53 ug/L	99

(#) = qualifier out of range (m) = manual integration
10M05676.D 8260WT.M Thu Jun 13 09:14:31 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\10M05676.D Vial: 6
Acq On : 12 Jun 2013 12:11 Operator: TMB
Sample : L13060399-03 WG433810-02 20ug/L LCS STD Inst : HPMS10
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 9:14 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Initial Calibration

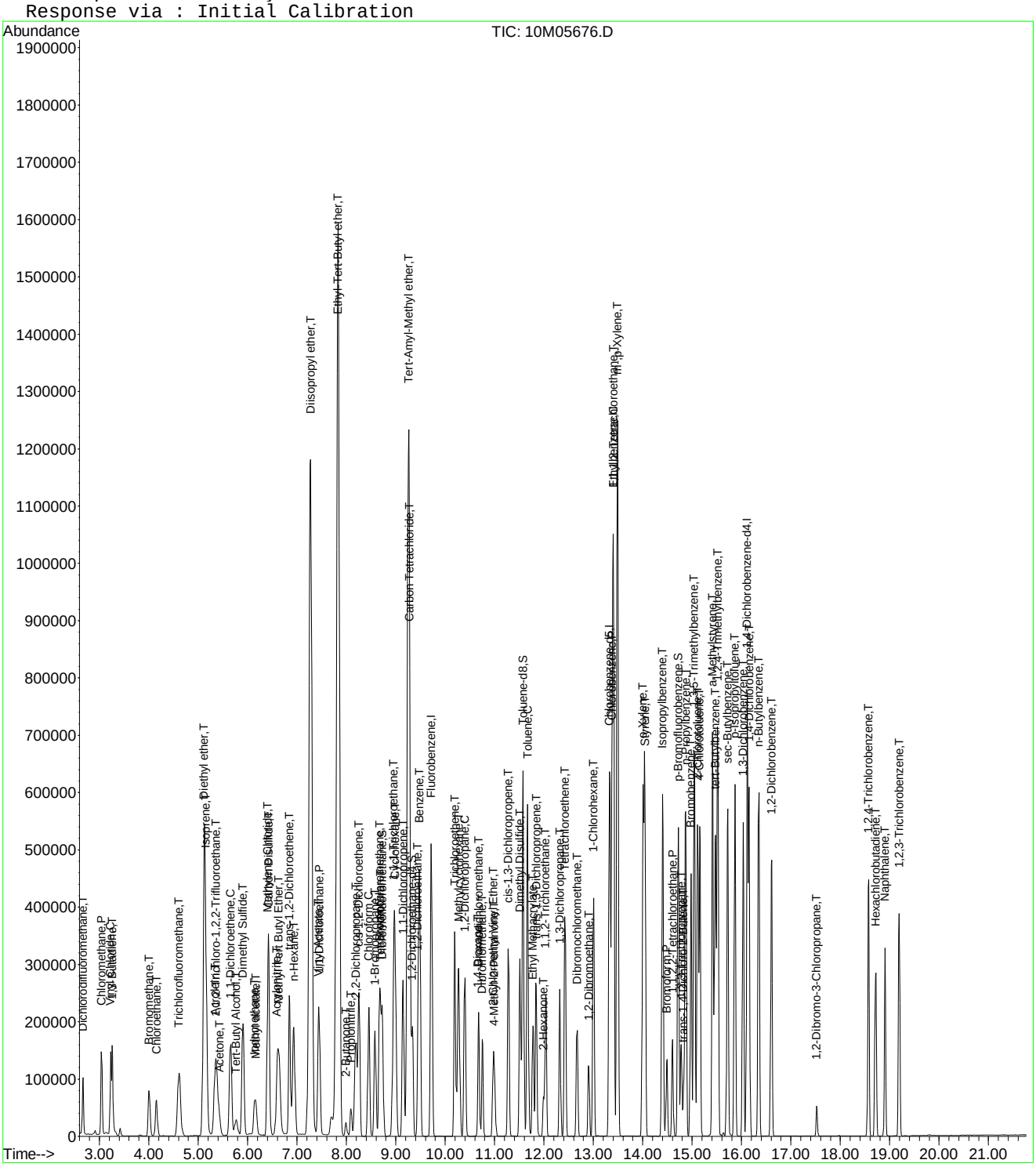

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061013\11M92737.D Vial: 6
Acq On : 10 Jun 2013 14:02 Operator: FJB
Sample : WG433470-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 10 14:23:57 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	588891	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.70	117	408501	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.49	152	229797	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.09	111	162526	23.4545 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.80%		
43) 1,2-Dichloroethane-d4	9.69	65	147484	20.8464 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.40%		
58) Toluene-d8	11.93	98	614610	26.2504 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.00%		
80) p-Bromofluorobenzene	15.09	95	240278	26.3875 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	126385	20.7171 ug/L	94
3) Chloromethane	3.32	50	141931	20.2784 ug/L	98
4) Vinyl Chloride	3.53	62	143836	18.7480 ug/L	99
5) 1,3-Butadiene	3.56	54	33621	5.4856 ug/L	91
6) Bromomethane	4.35	94	74578	16.9265 ug/L	99
7) Chloroethane	4.51	64	90297	21.9843 ug/L	99
8) Trichlorofluoromethane	4.97	101	223390	20.5063 ug/L	100
9) Diethyl ether	5.49	59	405423	101.2190 ug/L	98
10) Isoprene	5.52	67	154841	15.4726 ug/L	96
11) Acrolein	5.71	56	30039	150.1890 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	135144	22.0539 ug/L	96
13) Acetone	5.81	43	16039	10.4006 ug/L	94
14) 1,1-Dichloroethene	6.02	61	181408	19.1924 ug/L	95
15) Tert-Butyl Alcohol	6.13	59	40604	92.8607 ug/L	92
16) Dimethyl Sulfide	6.28	62	125994	17.8297 ug/L	88
17) Iodomethane	6.51	142	122068	15.0503 ug/L	94
18) Methyl acetate	6.53	43	45562	17.1398 ug/L	95
19) Methylene Chloride	6.77	84	141959	18.9350 ug/L	82
20) Carbon Disulfide	6.80	76	332208	15.4756 ug/L	98
21) Acrylonitrile	6.95	53	23775	16.0256 ug/L	98
22) Methyl Tert Butyl Ether	6.99	73	309148	18.4071 ug/L	98
23) trans-1,2-Dichloroethene	7.22	96	144027	20.5904 ug/L	98
24) n-Hexane	7.30	57	125927	15.2390 ug/L	98
25) Diisopropyl ether	7.63	45	1702922	101.1450 ug/L	93
26) Vinyl Acetate	7.79	43	122111	16.2169 ug/L	96
27) 1,1-Dichloroethane	7.81	63	233261	20.7921 ug/L	99
28) Ethyl-Tert-Butyl ether	8.18	59	1741045	95.4758 ug/L	98
29) 2-Butanone	8.34	43	24236	15.2495 ug/L	95
30) Propionitrile	8.44	54	37312	69.9221 ug/L	98
31) 2,2-Dichloropropane	8.55	77	206289	18.7895 ug/L	99
32) cis-1,2-Dichloroethene	8.61	96	157799	21.0751 ug/L	98
33) Chloroform	8.81	83	252979	20.6574 ug/L	94
34) 1-Bromopropane	8.94	122	31080	20.6331 ug/L	99
35) Bromochloromethane	9.03	130	86424	20.2034 ug/L	96
36) Tetrahydrofuran	9.06	42	78218	77.3032 ug/L	93
38) 1,1,1-Trichloroethane	9.32	97	230244	20.4240 ug/L	95
39) Cyclohexane	9.35	56	181084	17.0413 ug/L	99
40) 1,1-Dichloropropene	9.50	75	196696	20.4191 ug/L	97
41) Carbon Tetrachloride	9.64	117	206868	20.5127 ug/L	98
42) Tert-Amyl-Methyl ether	9.61	73	1612176	92.6072 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M92737.D 8260BWT.M Mon Jun 10 14:23:58 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061013\11M92737.D Vial: 6
Acq On : 10 Jun 2013 14:02 Operator: FJB
Sample : WG433470-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 10 14:23:57 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.80	62	161631	19.3072 ug/L	97
46)	Benzene	9.84	78	557772	21.0051 ug/L	99
47)	Trichloroethene	10.56	130	154372	22.4140 ug/L	94
48)	Methylcyclohexane	10.63	83	200310	17.4660 ug/L	96
49)	1,2-Dichloropropane	10.75	63	132726	21.0694 ug/L	98
50)	1,4-Dioxane	11.02	88	2710	50.7393 ug/L	97
51)	Bromodichloromethane	11.03	83	180725	19.7264 ug/L	96
52)	Dibromomethane	11.12	93	73555	18.9423 ug/L	98
53)	2-Chloroethyl Vinyl Ether	11.32	63	56672	18.1298 ug/L	98
54)	4-Methyl-2-Pentanone	11.35	58	26004	16.2923 ug/L	98
55)	cis-1,3-Dichloropropene	11.63	75	227163	21.3893 ug/L	98
56)	Dimethyl Disulfide	11.87	79	108888	17.1514 ug/L	96
59)	Toluene	12.03	91	597220	22.5178 ug/L	97
60)	Ethyl Methacrylate	12.13	69	125212	19.7407 ug/L	85
62)	trans-1,3-Dichloropropene	12.19	75	180892	19.8077 ug/L	98
63)	1,1,2-Trichloroethane	12.40	97	105525	20.7274 ug/L	100
64)	2-Hexanone	12.35	43	36594	16.5081 ug/L	66
65)	1,3-Dichloropropane	12.68	76	177936	20.3540 ug/L	84
66)	Tetrachloroethene	12.79	164	124262	21.5245 ug/L	95
67)	Dibromochloromethane	13.04	129	125513	20.0326 ug/L	99
68)	1,2-Dibromoethane	13.28	107	99803	19.8557 ug/L	100
69)	1-Chlorohexane	13.36	91	188339	20.7263 ug/L	99
70)	Chlorobenzene	13.74	112	369476	20.9380 ug/L	99
71)	1,1,1,2-Tetrachloroethane	13.77	131	144558	21.8387 ug/L	100
72)	Ethylbenzene	13.77	106	219049	21.3983 ug/L	99
73)	m-,p-Xylene	13.86	106	503098	43.4279 ug/L	98
74)	o-Xylene	14.37	106	236321	20.0835 ug/L	98
75)	Styrene	14.41	104	412374	23.2448 ug/L	96
76)	Bromoform	14.86	173	77272	17.3020 ug/L	98
77)	Isopropylbenzene	14.78	105	580602	20.8656 ug/L	97
79)	1,1,2,2-Tetrachloroethane	14.97	83	111658	18.8919 ug/L	95
81)	1,2,3-Trichloropropane	15.15	110	31474	17.4227 ug/L	86
82)	trans-1,4-Dichloro-2-Buten	15.19	53	21100	12.4973 ug/L	52
83)	n-Propylbenzene	15.24	91	687161	20.0470 ug/L	97
84)	Bromobenzene	15.35	156	164734	20.5996 ug/L	92
85)	1,3,5-Trimethylbenzene	15.42	105	540411	23.2078 ug/L	96
86)	2-Chlorotoluene	15.49	91	441120	20.5358 ug/L	93
87)	4-Chlorotoluene	15.53	91	423608	19.6029 ug/L	93
88)	a-Methylstyrene	15.79	118	289980	23.0931 ug/L	93
89)	tert-Butylbenzene	15.84	134	100031	19.6807 ug/L	94
90)	1,2,4-Trimethylbenzene	15.89	105	554180	23.4199 ug/L	96
91)	sec-Butylbenzene	16.09	105	582212	20.5254 ug/L	99
92)	p-Isopropyltoluene	16.24	119	489788	21.2436 ug/L	99
93)	1,3-Dichlorobenzene	16.42	146	290994	20.7529 ug/L	96
94)	1,4-Dichlorobenzene	16.53	146	313387	21.4123 ug/L	95
95)	n-Butylbenzene	16.73	91	472479	21.8485 ug/L	97
96)	1,2-Dichlorobenzene	16.99	146	266935	19.5691 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	17.91	75	15931	14.8920 ug/L	90
98)	1,2,4-Trichlorobenzene	18.96	180	193800	20.2786 ug/L	97
99)	Hexachlorobutadiene	19.11	225	71626	19.8064 ug/L	92
100)	Naphthalene	19.30	128	322519	17.4773 ug/L	99
101)	1,2,3-Trichlorobenzene	19.59	180	164747	18.6734 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M92737.D 8260BWT.M Mon Jun 10 14:23:58 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061013\11M92737.D Vial: 6
Acq On : 10 Jun 2013 14:02 Operator: FJB
Sample : WG433470-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 10 14:23 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration

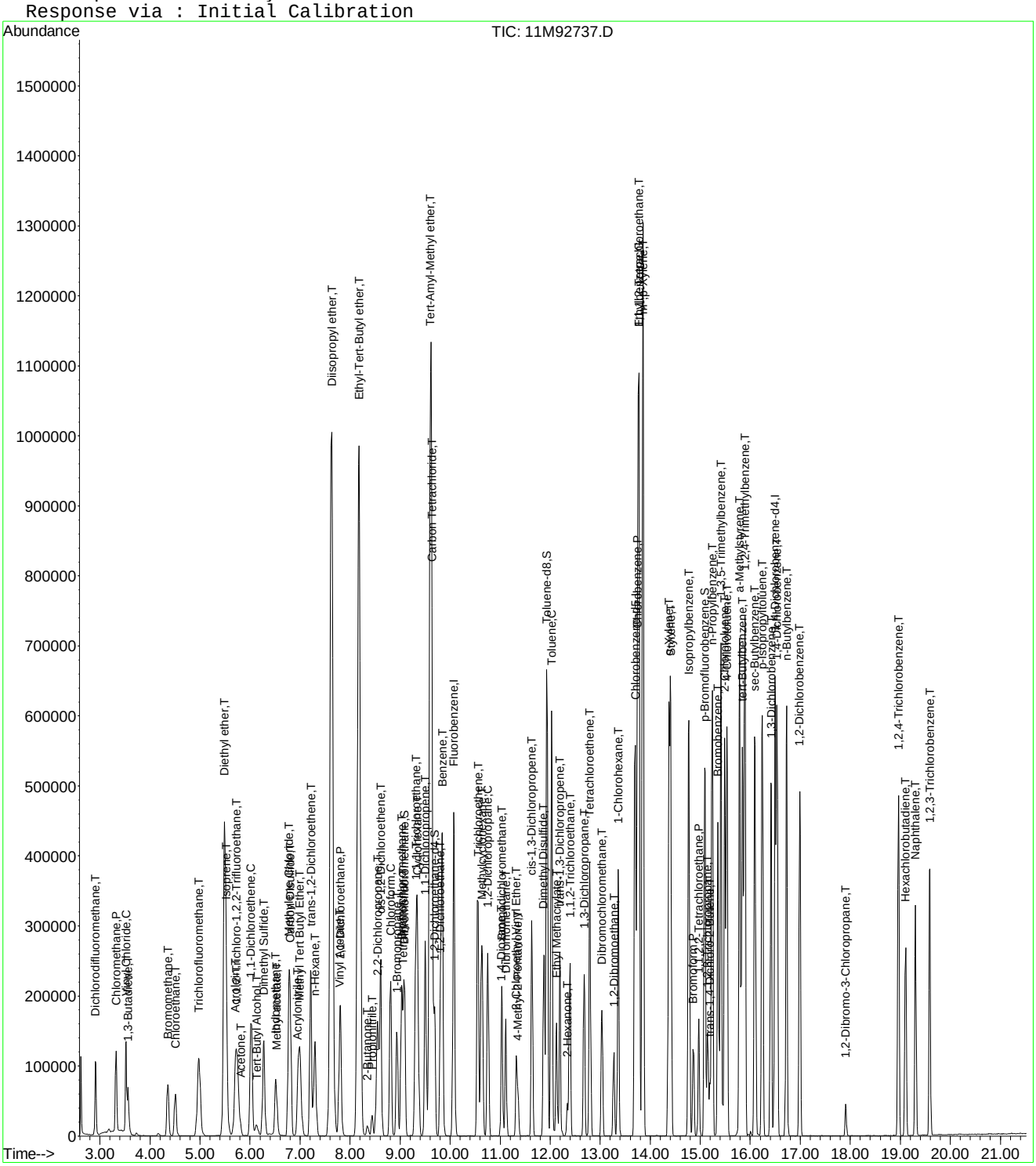

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061113\11M92763.D Vial: 5
Acq On : 11 Jun 2013 13:46 Operator: FJB
Sample : WG433686-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 14:08:52 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	569941	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.70	117	394966	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.49	152	221712	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	9.09	111	156106	23.2771 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.12%		
43) 1,2-Dichloroethane-d4	9.69	65	146728	21.4291 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.72%		
58) Toluene-d8	11.93	98	588929	26.0155 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.08%		
80) p-Bromofluorobenzene	15.09	95	231898	26.3959 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.60%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	117647	19.9260 ug/L	94
3) Chloromethane	3.32	50	137017	20.2272 ug/L	99
4) Vinyl Chloride	3.52	62	135850	18.2959 ug/L	99
5) 1,3-Butadiene	3.56	54	19219	3.0144 ug/L	81
6) Bromomethane	4.35	94	69373	16.2686 ug/L	100
7) Chloroethane	4.51	64	85866	21.6006 ug/L	100
8) Trichlorofluoromethane	4.97	101	211791	20.0879 ug/L	100
9) Diethyl ether	5.49	59	403002	103.9599 ug/L	97
10) Isoprene	5.52	67	145818	15.0554 ug/L	98
11) Acrolein	5.71	56	30231	156.1745 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.74	101	133598	22.5265 ug/L	97
13) Acetone	5.80	43	15719	10.5320 ug/L	94
14) 1,1-Dichloroethene	6.02	61	173267	18.9406 ug/L	95
15) Tert-Butyl Alcohol	6.13	59	35791	84.5750 ug/L	92
16) Dimethyl Sulfide	6.27	62	122101	17.8533 ug/L	89
17) Iodomethane	6.51	142	108396	13.9052 ug/L	94
18) Methyl acetate	6.53	43	47264	18.3712 ug/L	96
19) Methylene Chloride	6.77	84	136506	18.8131 ug/L	86
20) Carbon Disulfide	6.80	76	311759	15.0058 ug/L	98
21) Acrylonitrile	6.95	53	25114	17.4911 ug/L	99
22) Methyl Tert Butyl Ether	6.99	73	306292	18.8435 ug/L	99
23) trans-1,2-Dichloroethene	7.21	96	137883	20.3675 ug/L	97
24) n-Hexane	7.30	57	131298	16.4173 ug/L	97
25) Diisopropyl ether	7.63	45	1693084	103.9042 ug/L	94
26) Vinyl Acetate	7.79	43	128469	17.6285 ug/L	97
27) 1,1-Dichloroethane	7.81	63	227027	20.9092 ug/L	99
28) Ethyl-Tert-Butyl ether	8.18	59	1717998	97.3444 ug/L	99
29) 2-Butanone	8.34	43	23556	15.3145 ug/L	94
30) Propionitrile	8.44	54	37134	71.9023 ug/L	99
31) 2,2-Dichloropropane	8.55	77	207693	19.5464 ug/L	100
32) cis-1,2-Dichloroethene	8.61	96	153970	21.2474 ug/L	99
33) Chloroform	8.81	83	242160	20.4314 ug/L	95
34) 1-Bromopropane	8.93	122	28430	19.5014 ug/L	100
35) Bromochloromethane	9.03	130	84654	20.4476 ug/L	95
36) Tetrahydrofuran	9.06	42	79891	81.5819 ug/L	95
38) 1,1,1-Trichloroethane	9.32	97	219455	20.1142 ug/L	96
39) Cyclohexane	9.35	56	178944	17.3998 ug/L	100
40) 1,1-Dichloropropene	9.50	75	188825	20.2537 ug/L	97
41) Carbon Tetrachloride	9.64	117	196127	20.0942 ug/L	99
42) Tert-Amyl-Methyl ether	9.61	73	1587903	94.2457 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M92763.D 8260BWT.M Tue Jun 11 14:08:53 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061113\11M92763.D Vial: 5
Acq On : 11 Jun 2013 13:46 Operator: FJB
Sample : WG433686-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 14:08:52 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	9.80	62	159494	19.6854	ug/L	97
46)	Benzene	9.84	78	536145	20.8619	ug/L	100
47)	Trichloroethene	10.56	130	146808	22.0244	ug/L	94
48)	Methylcyclohexane	10.63	83	203003	18.2894	ug/L	96
49)	1,2-Dichloropropane	10.75	63	130489	21.4030	ug/L	97
50)	1,4-Dioxane	11.03	88	1885	36.4663	ug/L	98
51)	Bromodichloromethane	11.03	83	177859	20.0591	ug/L	95
52)	Dibromomethane	11.12	93	72372	19.2573	ug/L	98
53)	2-Chloroethyl Vinyl Ether	11.32	63	55947	18.4930	ug/L	97
54)	4-Methyl-2-Pentanone	11.35	58	26247	16.9913	ug/L	98
55)	cis-1,3-Dichloropropene	11.63	75	226802	22.0654	ug/L	99
56)	Dimethyl Disulfide	11.87	79	109510	17.8229	ug/L	96
59)	Toluene	12.03	91	573112	22.3493	ug/L	97
60)	Ethyl Methacrylate	12.13	69	126670	20.6550	ug/L	87
62)	trans-1,3-Dichloropropene	12.19	75	181439	20.5485	ug/L	97
63)	1,1,2-Trichloroethane	12.40	97	103991	21.1260	ug/L	99
64)	2-Hexanone	12.35	43	38191	17.8189	ug/L	73
65)	1,3-Dichloropropane	12.68	76	180214	21.3210	ug/L	86
66)	Tetrachloroethene	12.79	164	116984	20.9583	ug/L	96
67)	Dibromochloromethane	13.04	129	124214	20.5046	ug/L	99
68)	1,2-Dibromoethane	13.28	107	98582	20.2849	ug/L	99
69)	1-Chlorohexane	13.36	91	183432	20.8780	ug/L	99
70)	Chlorobenzene	13.74	112	354974	20.8055	ug/L	100
71)	1,1,1,2-Tetrachloroethane	13.77	131	138727	21.6760	ug/L	99
72)	Ethylbenzene	13.77	106	209441	21.1609	ug/L	98
73)	m-,p-Xylene	13.86	106	476063	42.5024	ug/L	96
74)	o-Xylene	14.37	106	224016	19.6902	ug/L	96
75)	Styrene	14.41	104	397528	23.1759	ug/L	95
76)	Bromoform	14.86	173	77080	17.8362	ug/L	99
77)	Isopropylbenzene	14.78	105	558176	20.7471	ug/L	97
79)	1,1,2,2-Tetrachloroethane	14.97	83	114214	20.0290	ug/L	95
81)	1,2,3-Trichloropropane	15.15	110	32496	18.6444	ug/L	83
82)	trans-1,4-Dichloro-2-Buten	15.19	53	20683	12.6970	ug/L	58
83)	n-Propylbenzene	15.24	91	661809	20.0115	ug/L	97
84)	Bromobenzene	15.35	156	158958	20.6021	ug/L	89
85)	1,3,5-Trimethylbenzene	15.42	105	522524	23.2580	ug/L	96
86)	2-Chlorotoluene	15.49	91	428611	20.6811	ug/L	93
87)	4-Chlorotoluene	15.53	91	404274	19.3904	ug/L	92
88)	a-Methylstyrene	15.79	118	272600	22.5007	ug/L	92
89)	tert-Butylbenzene	15.84	134	98102	20.0050	ug/L	96
90)	1,2,4-Trimethylbenzene	15.89	105	530454	23.2347	ug/L	96
91)	sec-Butylbenzene	16.09	105	563134	20.5768	ug/L	99
92)	p-Isopropyltoluene	16.24	119	473889	21.3035	ug/L	99
93)	1,3-Dichlorobenzene	16.42	146	280576	20.7396	ug/L	95
94)	1,4-Dichlorobenzene	16.53	146	303838	21.5169	ug/L	95
95)	n-Butylbenzene	16.73	91	469780	22.5159	ug/L	96
96)	1,2-Dichlorobenzene	16.99	146	258854	19.6686	ug/L	95
97)	1,2-Dibromo-3-Chloropropan	17.91	75	15785	15.2936	ug/L	91
98)	1,2,4-Trichlorobenzene	18.96	180	193835	21.0219	ug/L	97
99)	Hexachlorobutadiene	19.11	225	70798	20.2914	ug/L	94
100)	Naphthalene	19.30	128	332996	18.7030	ug/L	100
101)	1,2,3-Trichlorobenzene	19.59	180	164223	19.2928	ug/L	99

(#) = qualifier out of range (m) = manual integration
11M92763.D 8260BWT.M Tue Jun 11 14:08:53 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061113\11M92763.D Vial: 5
Acq On : 11 Jun 2013 13:46 Operator: FJB
Sample : WG433686-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 14:08 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration

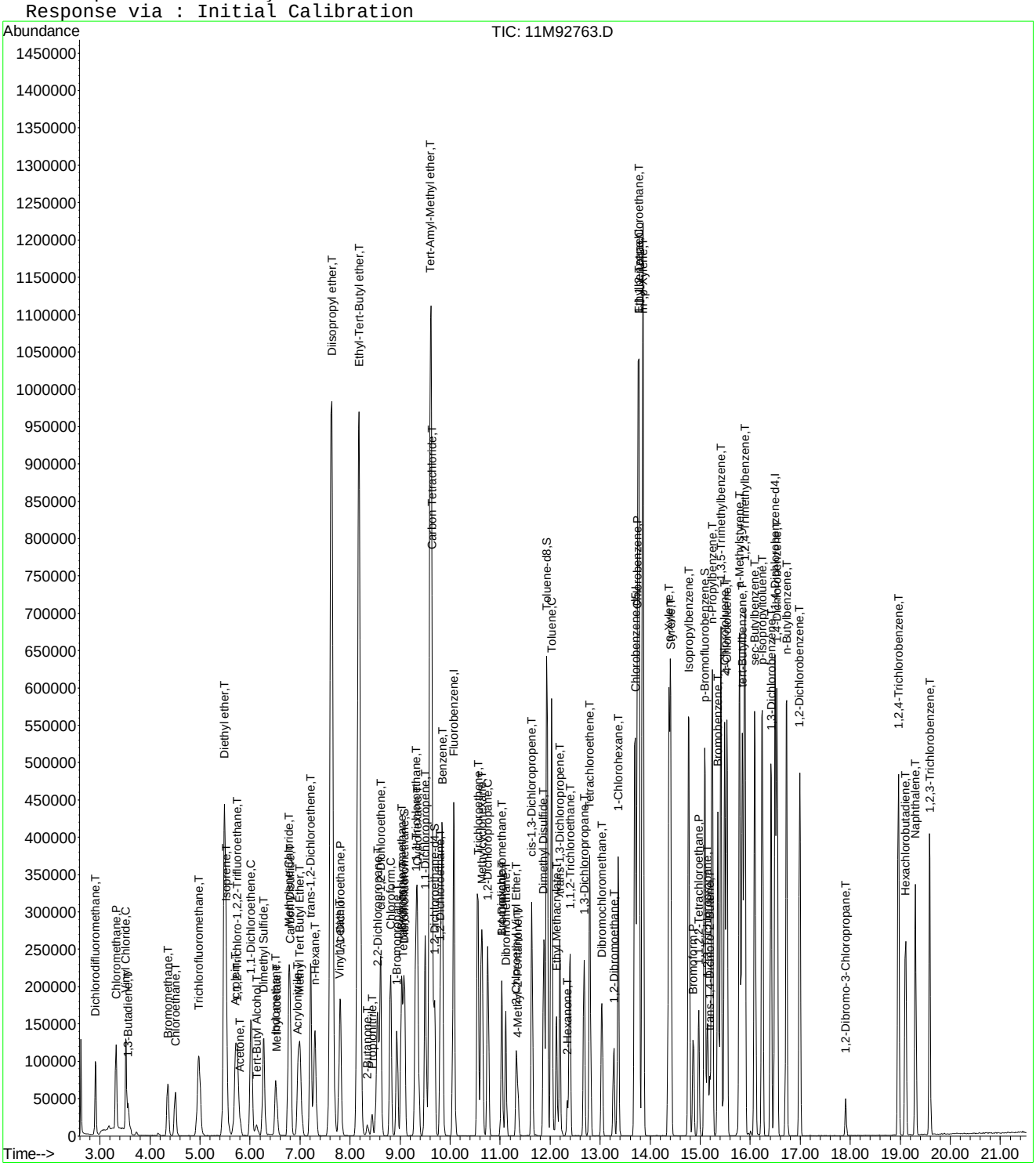

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061013\6M117407.D Vial: 5
Acq On : 10 Jun 2013 18:14 Operator: ADC
Sample : WG433591-02 20ug/L LCS 8260 Inst : HPMS6
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 10 18:37:02 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	479163	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.72	117	392746	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.27	152	204494	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.06	111	140682	26.2111 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.84%		
43) 1,2-Dichloroethane-d4	9.79	65	121608	26.0417 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.16%		
58) Toluene-d8	12.53	98	530682	23.5675 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.28%		
80) p-Bromofluorobenzene	16.49	95	216279	26.2448 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.96%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.61	85	117382	27.1412 ug/L	100
3) Chloromethane	2.96	50	88545	18.9042 ug/L	100
4) Vinyl Chloride	3.15	62	88659	21.0531 ug/L	100
5) 1,3-Butadiene	3.19	54	29343	8.2811 ug/L	95
6) Bromomethane	3.89	94	56551	16.2265 ug/L	98
7) Chloroethane	4.04	64	91558	23.6700 ug/L	98
8) Trichlorofluoromethane	4.50	101	214934	25.8808 ug/L	100
9) Diethyl ether	5.03	59	325876	103.5164 ug/L	99
10) Isoprene	5.06	67	134395	17.6310 ug/L	96
11) Acrolein	5.25	56	18596	191.4655 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	5.28	101	121992	23.9921 ug/L	97
13) Acetone	5.36	43	11643	15.1779 ug/L	95
14) 1,1-Dichloroethene	5.58	61	189428	22.6740 ug/L	99
15) Tert-Butyl Alcohol	5.71	59	22862	139.1666 ug/L	96
16) Dimethyl Sulfide	5.84	62	114542	19.6692 ug/L	99
17) Iodomethane	6.09	142	74437	12.8877 ug/L	96
18) Methyl acetate	6.15	43	40531	20.5052 ug/L	97
19) Methylene Chloride	6.40	84	113858	22.9549 ug/L	96
20) Carbon Disulfide	6.41	76	302868	17.2243 ug/L	100
21) Acrylonitrile	6.61	53	20342	21.0673 ug/L	95
22) Methyl Tert Butyl Ether	6.64	73	195517	22.3301 ug/L	99
23) trans-1,2-Dichloroethene	6.89	96	123627	23.0992 ug/L	100
24) n-Hexane	6.99	57	141147	19.1812 ug/L	99
25) Diisopropyl ether	7.39	45	1894229	104.7755 ug/L	99
26) Vinyl Acetate	7.56	43	122787	18.0417 ug/L	99
27) 1,1-Dichloroethane	7.56	63	231544	22.1959 ug/L	100
28) Ethyl-Tert-Butyl ether	8.02	59	1479487	105.3545 ug/L	99
29) 2-Butanone	8.21	43	19390	17.7875 ug/L	98
30) Propionitrile	8.32	54	29799	85.0330 ug/L	100
31) 2,2-Dichloropropane	8.43	77	199400	23.5183 ug/L	99
32) cis-1,2-Dichloroethene	8.50	96	129101	22.6800 ug/L	99
33) Chloroform	8.73	83	224605	23.5116 ug/L	99
34) 1-Bromopropane	8.89	122	25860	20.6235 ug/L	98
35) Bromochloromethane	8.99	130	65672	22.6447 ug/L	99
36) Tetrahydrofuran	9.02	42	62756	92.9121 ug/L	100
38) 1,1,1-Trichloroethane	9.33	97	214142	25.2694 ug/L	99
39) Cyclohexane	9.36	56	203523	20.6478 ug/L	99
40) 1,1-Dichloropropene	9.55	75	173371	22.8004 ug/L	97
41) Tert-Amyl-Methyl ether	9.70	73	1030149	105.8026 ug/L	99
42) Carbon Tetrachloride	9.70	117	192882	25.5382 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M117407.D 8260_WT.M Mon Jun 10 18:37:02 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061013\6M117407.D Vial: 5
Acq On : 10 Jun 2013 18:14 Operator: ADC
Sample : WG433591-02 20ug/L LCS 8260 Inst : HPMS6
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 10 18:37:02 2013 Quant Results File: 8260_WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.92	62	136822	24.5807 ug/L		96
46)	Benzene	9.95	78	481203	22.2869 ug/L		99
47)	Trichloroethene	10.83	130	136345	24.7406 ug/L		95
48)	Methylcyclohexane	10.91	83	164917	20.9945 ug/L		98
49)	1,2-Dichloropropane	11.07	63	126023	22.4016 ug/L		94
50)	1,4-Dioxane	11.43	88	719	70.8117 ug/L	#	18
51)	Bromodichloromethane	11.41	83	152324	23.0619 ug/L		100
52)	Dibromomethane	11.49	93	50956	23.1389 ug/L		100
53)	2-Chloroethyl Vinyl Ether	11.82	63	39075	18.2279 ug/L		97
54)	4-Methyl-2-Pentanone	11.85	58	17913	18.7742 ug/L		98
55)	cis-1,3-Dichloropropene	12.18	75	179987	24.1188 ug/L		100
56)	Dimethyl Disulfide	12.44	79	86494	22.0379 ug/L		97
59)	Toluene	12.64	91	511769	19.7159 ug/L		100
60)	Ethyl Methacrylate	12.83	69	76134	19.2751 ug/L		98
62)	trans-1,3-Dichloropropene	12.88	75	132568	19.3298 ug/L		100
63)	1,1,2-Trichloroethane	13.11	97	68821	19.3234 ug/L		99
64)	2-Hexanone	13.09	43	28371	15.9809 ug/L		98
65)	1,3-Dichloropropane	13.47	76	121441	19.5126 ug/L		95
66)	Tetrachloroethene	13.58	166	134889	20.3720 ug/L		98
67)	Dibromochloromethane	13.88	129	96638	18.9451 ug/L		100
68)	1,2-Dibromoethane	14.18	107	68717	19.7892 ug/L		100
69)	1-Chlorohexane	14.36	91	162170	21.0768 ug/L		96
70)	Chlorobenzene	14.78	112	301978	18.1730 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.83	131	120993	21.6433 ug/L		99
72)	Ethylbenzene	14.84	106	183329	20.4428 ug/L		99
73)	m-,p-Xylene	14.94	106	431143	40.0172 ug/L		98
74)	o-Xylene	15.60	106	198751	18.9996 ug/L		99
75)	Styrene	15.65	104	350557	19.7153 ug/L		98
76)	Bromoform	16.18	173	54194	19.2519 ug/L		97
77)	Isopropylbenzene	16.11	105	525666	20.0037 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.36	83	69042	17.2827 ug/L		99
81)	1,2,3-Trichloropropane	16.59	110	20081	18.5069 ug/L		96
82)	trans-1,4-Dichloro-2-Buten	16.67	53	18100	14.8533 ug/L		89
83)	n-Propylbenzene	16.71	91	611549	18.6472 ug/L		100
84)	Bromobenzene	16.80	156	132743	19.5499 ug/L		99
85)	1,3,5-Trimethylbenzene	16.93	105	484799	21.2672 ug/L		97
86)	2-Chlorotoluene	17.00	91	441605	18.8817 ug/L		98
87)	4-Chlorotoluene	17.06	91	369512	18.1289 ug/L		98
88)	a-Methylstyrene	17.40	118	251025	20.8963 ug/L		99
89)	tert-Butylbenzene	17.47	134	85616	18.9101 ug/L		93
90)	1,2,4-Trimethylbenzene	17.54	105	485344	20.2926 ug/L		97
91)	sec-Butylbenzene	17.79	105	521398	19.0846 ug/L		98
92)	p-Isopropyltoluene	17.99	119	448226	19.4819 ug/L		99
93)	1,3-Dichlorobenzene	18.17	146	240041	18.1727 ug/L		100
94)	1,4-Dichlorobenzene	18.32	146	255280	19.3298 ug/L		100
95)	n-Butylbenzene	18.61	91	431290	21.3108 ug/L		97
96)	1,2-Dichlorobenzene	18.88	146	205549	18.1361 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	20.07	75	10379	17.1501 ug/L		93
98)	1,2,4-Trichlorobenzene	21.42	180	150213	19.4707 ug/L		100
99)	Hexachlorobutadiene	21.61	225	72135	21.3654 ug/L		99
100)	Naphthalene	21.83	128	205060	17.6329 ug/L		100
101)	1,2,3-Trichlorobenzene	22.19	180	119304	18.9534 ug/L		100

(#) = qualifier out of range (m) = manual integration
6M117407.D 8260_WT.M Mon Jun 10 18:37:03 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061013\6M117407.D Vial: 5
Acq On : 10 Jun 2013 18:14 Operator: ADC
Sample : WG433591-02 20ug/L LCS 8260 Inst : HPMS6
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 10 18:37 2013 Quant Results File: 8260_WT.RES

Method : C:\MSDCHEM\1\METHODS\8260_WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 04/02/13 - HPMS6
Last Update : Tue Apr 02 17:16:38 2013
Response via : Initial Calibration

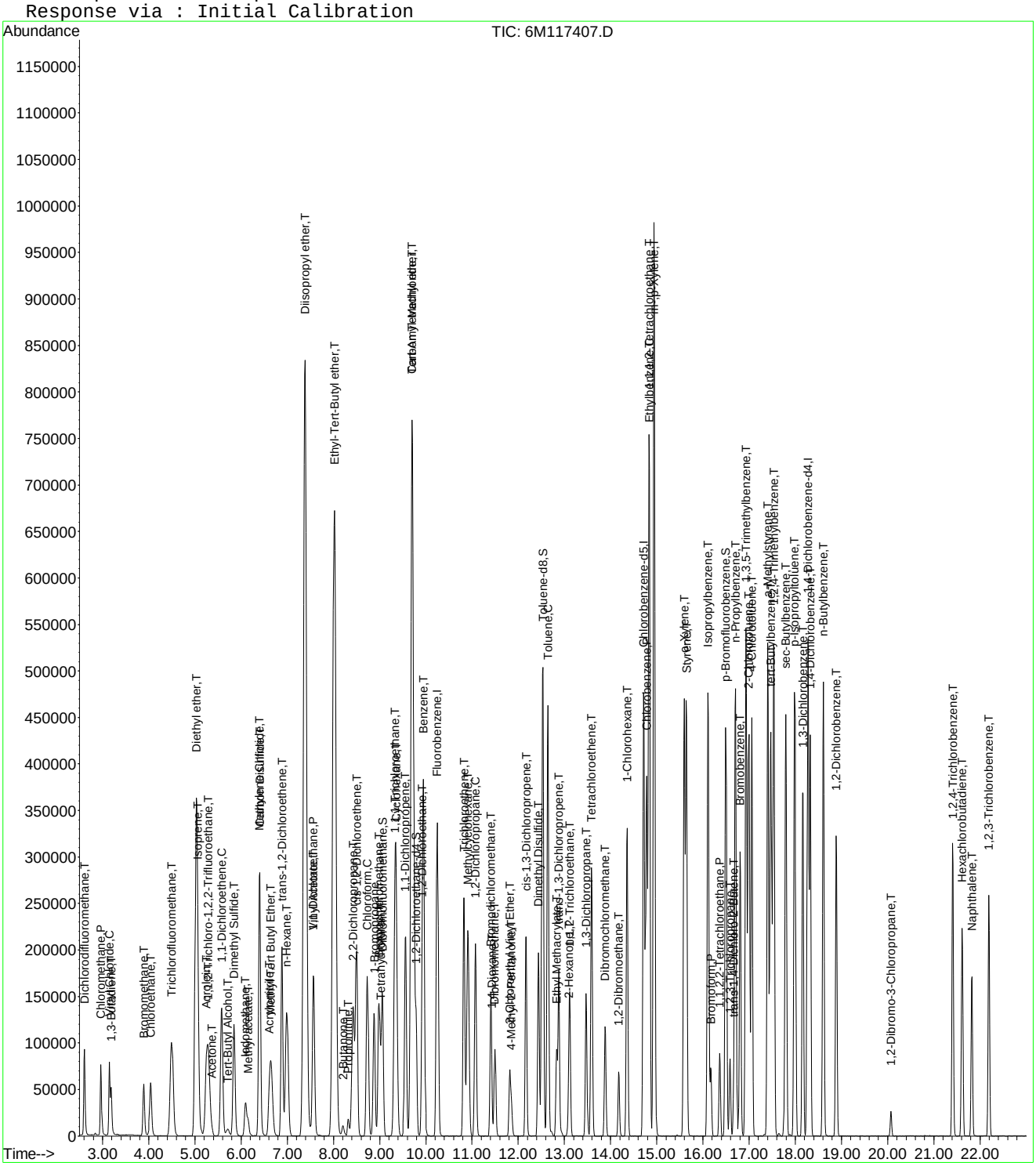

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061213\10M05677.D Vial: 7
Acq On : 12 Jun 2013 12:41 Operator: TMB
Sample : WG433810-03 20ug/L LCSDUP STD 8260 Inst : HPMS10
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 12 13:03:47 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.72	96	657136	25.00 ug/L	-0.02
57) Chlorobenzene-d5	13.32	117	509618	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	16.11	152	277144	25.00 ug/L	-0.02
System Monitoring Compounds					
37) Dibromofluoromethane	8.72	111	167674	26.02 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.08%		
43) 1,2-Dichloroethane-d4	9.33	65	154444	24.26 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.04%		
58) Toluene-d8	11.58	98	570149	23.42 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.68%		
80) p-Bromofluorobenzene	14.72	95	218777	23.11 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.44%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.67	85	99451	16.63 ug/L	95
3) Chloromethane	3.04	50	157322	21.61 ug/L	99
4) Vinyl Chloride	3.23	62	127682	19.19 ug/L	98
5) 1,3-Butadiene	3.26	54	69877	16.22 ug/L	99
6) Bromomethane	4.00	94	80921	18.48 ug/L	99
7) Chloroethane	4.16	64	89934	20.72 ug/L	99
8) Trichlorofluoromethane	4.61	101	212928	19.99 ug/L	99
9) Diethyl ether	5.13	59	493763	98.51 ug/L	94
10) Isoprene	5.15	67	189110	18.96 ug/L	92
11) Acrolein	5.34	56	44013	184.56 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.36	101	135762	21.14 ug/L	92
13) Acetone	5.44	43	29020	17.20 ug/L	86
14) 1,1-Dichloroethene	5.65	96	111691	17.37 ug/L	95
15) Tert-Butyl Alcohol	5.77	59	75018	182.66 ug/L	98
16) Dimethyl Sulfide	5.90	62	168645	20.80 ug/L	91
17) Iodomethane	6.14	142	106010	13.62 ug/L	100
18) Methyl acetate	6.17	43	76175	24.34 ug/L	94
19) Methylene Chloride	6.41	84	132063	18.21 ug/L	83
20) Carbon Disulfide	6.43	76	405319	18.00 ug/L	100
21) Acrylonitrile	6.59	53	40396	23.42 ug/L	99
22) Methyl Tert Butyl Ether	6.63	73	340288	21.06 ug/L	98
23) trans-1,2-Dichloroethene	6.84	96	134471	18.79 ug/L	94
24) n-Hexane	6.94	57	185639	20.22 ug/L	98
25) Diisopropyl ether	7.28	45	2359894	110.58 ug/L	97
26) Vinyl Acetate	7.43	43	182203	23.27 ug/L	96
27) 1,1-Dichloroethane	7.45	63	241944	19.66 ug/L	98
28) Ethyl-Tert-Butyl ether	7.82	59	2185534	104.24 ug/L	97
29) 2-Butanone	7.99	43	43451	23.72 ug/L	95
30) Propionitrile	8.09	54	65694	106.04 ug/L	98
31) 2,2-Dichloropropane	8.20	77	198921	19.67 ug/L	90
32) cis-1,2-Dichloroethene	8.26	96	149818	19.56 ug/L	96
33) Chloroform	8.45	83	232772	19.31 ug/L	100
34) 1-Bromopropane	8.58	122	36196	23.09 ug/L	99
35) Bromochloromethane	8.67	128	69334	19.63 ug/L	91
36) Tetrahydrofuran	8.69	42	130210	107.88 ug/L	91
38) 1,1,1-Trichloroethane	8.96	97	206377	19.53 ug/L	96
39) Cyclohexane	8.98	56	235544	19.58 ug/L	94
40) 1,1-Dichloropropene	9.15	75	177538	19.21 ug/L	99
41) Carbon Tetrachloride	9.28	117	188310	19.98 ug/L	99
42) Tert-Amyl-Methyl ether	9.26	73	1657991	97.32 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061213\10M05677.D Vial: 7
Acq On : 12 Jun 2013 12:41 Operator: TMB
Sample : WG433810-03 20ug/L LCSDUP STD 8260 Inst : HPMS10
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 12 13:03:47 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.45	62	170218	20.36 ug/L	96
46)	Benzene	9.48	78	518056	18.94 ug/L	100
47)	Trichloroethene	10.19	130	157163	20.93 ug/L	98
48)	Methylcyclohexane	10.27	83	199911	19.14 ug/L	94
49)	1,2-Dichloropropane	10.40	63	142177	20.72 ug/L	97
50)	Bromodichloromethane	10.68	83	171883	19.78 ug/L	99
51)	1,4-Dioxane	10.67	88	7558	169.28 ug/L	87
52)	Dibromomethane	10.75	93	72351	19.15 ug/L	99
53)	2-Chloroethyl Vinyl Ether	10.98	63	65896	19.39 ug/L	99
54)	4-Methyl-2-Pentanone	11.00	58	38804	22.04 ug/L	94
55)	cis-1,3-Dichloropropene	11.28	75	220659	21.45 ug/L	93
56)	Dimethyl Disulfide	11.51	79	116865	19.11 ug/L	98
59)	Toluene	11.67	91	556651	18.80 ug/L	99
60)	Ethyl Methacrylate	11.77	69	140663	20.77 ug/L	98
62)	trans-1,3-Dichloropropene	11.84	75	175678	18.78 ug/L	100
63)	1,1,2-Trichloroethane	12.04	97	102360	19.30 ug/L	98
64)	2-Hexanone	11.99	43	61006	21.92 ug/L	93
65)	1,3-Dichloropropane	12.32	76	175220	19.19 ug/L	86
66)	Tetrachloroethene	12.42	164	126684	18.96 ug/L	99
67)	Dibromochloromethane	12.67	129	130994	20.08 ug/L	98
68)	1,2-Dibromoethane	12.91	107	107921	19.96 ug/L	99
69)	1-Chlorohexane	13.00	91	184374	19.63 ug/L	91
70)	Chlorobenzene	13.37	112	359757	17.99 ug/L	100
71)	1,1,1,2-Tetrachloroethane	13.41	131	149192	20.51 ug/L	100
72)	Ethylbenzene	13.41	106	206939	19.24 ug/L	96
73)	m-,p-Xylene	13.49	106	482497	37.02 ug/L	97
74)	o-Xylene	14.00	106	229391	18.27 ug/L	97
75)	Styrene	14.05	104	422884	20.98 ug/L	98
76)	Bromoform	14.49	173	87988	19.92 ug/L	99
77)	Isopropylbenzene	14.40	105	566142	18.39 ug/L	99
79)	1,1,2,2-Tetrachloroethane	14.60	83	112339	20.34 ug/L	99
81)	1,2,3-Trichloropropane	14.78	110	36377	19.79 ug/L	93
82)	trans-1,4-Dichloro-2-Buten	14.82	53	26836	14.47 ug/L	80
83)	n-Propylbenzene	14.87	91	630329	17.24 ug/L	99
84)	Bromobenzene	14.98	156	176431	18.60 ug/L	98
85)	1,3,5-Trimethylbenzene	15.04	105	522715	20.32 ug/L	99
86)	2-Chlorotoluene	15.11	91	400070	16.70 ug/L	100
87)	4-Chlorotoluene	15.16	91	397590	18.20 ug/L	99
88)	a-Methylstyrene	15.41	118	302719	20.42 ug/L	99
89)	tert-Butylbenzene	15.47	134	105882	18.07 ug/L	97
90)	1,2,4-Trimethylbenzene	15.51	105	531605	20.30 ug/L	98
91)	sec-Butylbenzene	15.72	105	567714	18.27 ug/L	99
92)	p-Isopropyltoluene	15.87	119	490055	18.78 ug/L	100
93)	1,3-Dichlorobenzene	16.03	146	301960	17.95 ug/L	100
94)	1,4-Dichlorobenzene	16.15	146	327029	18.81 ug/L	100
95)	n-Butylbenzene	16.35	91	447909	20.08 ug/L	99
96)	1,2-Dichlorobenzene	16.61	146	280112	17.94 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	17.53	157	22660	19.37 ug/L	99
98)	1,2,4-Trichlorobenzene	18.57	180	198261	18.95 ug/L	99
99)	Hexachlorobutadiene	18.72	225	82916	19.58 ug/L	99
100)	Naphthalene	18.90	128	329333	18.36 ug/L	99
101)	1,2,3-Trichlorobenzene	19.19	180	164455	17.93 ug/L	99

(#) = qualifier out of range (m) = manual integration
10M05677.D 8260WT.M Wed Jun 12 13:03:47 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061213\10M05677.D Vial: 7
Acq On : 12 Jun 2013 12:41 Operator: TMB
Sample : WG433810-03 20ug/L LCSDUP STD 8260 Inst : HPMS10
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 12 13:03 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 WT (SOP: OVL MSV01) 05/14/13 HPMS10
Last Update : Wed May 15 09:01:37 2013
Response via : Initial Calibration

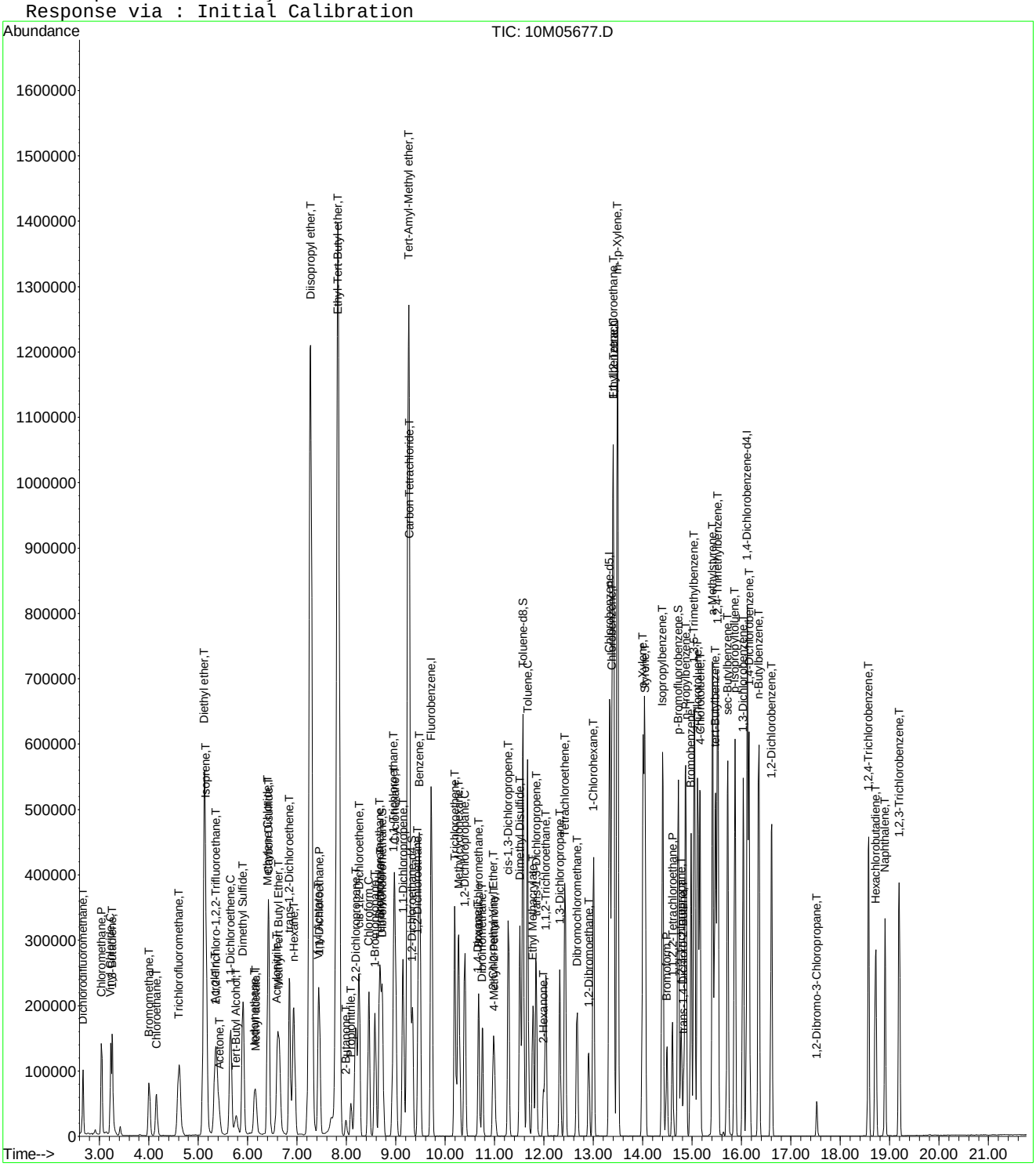

10M05677.D 8260WT.M Wed Jun 12 13:03:48 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061113\11M92764.D Vial: 6
Acq On : 11 Jun 2013 14:18 Operator: FJB
Sample : WG433686-03 20ug/L LCS DUP 8260 Inst : hpms11
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 14:40:12 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	576266	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.70	117	396926	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.49	152	222874	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.08	111	155747	22.9686 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.88%		
43) 1,2-Dichloroethane-d4	9.69	65	143384	20.7109 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 82.84%		
58) Toluene-d8	11.93	98	597930	26.2827 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.12%		
80) p-Bromofluorobenzene	15.09	95	235503	26.6665 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.68%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	120515	20.1877 ug/L	92
3) Chloromethane	3.32	50	133785	19.5333 ug/L	96
4) Vinyl Chloride	3.52	62	133787	17.8203 ug/L	100
5) 1,3-Butadiene	3.56	54	14136	2.0607 ug/L	84
6) Bromomethane	4.35	94	70947	16.4551 ug/L	99
7) Chloroethane	4.51	64	86796	21.5949 ug/L	97
8) Trichlorofluoromethane	4.97	101	216857	20.3427 ug/L	100
9) Diethyl ether	5.48	59	412130	105.1477 ug/L	97
10) Isoprene	5.52	67	147645	15.0767 ug/L	98
11) Acrolein	5.71	56	31466	160.7704 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	133926	22.3340 ug/L	97
13) Acetone	5.80	43	19164	12.6993 ug/L	97
14) 1,1-Dichloroethene	6.02	61	176956	19.1316 ug/L	97
15) Tert-Butyl Alcohol	6.13	59	56466	131.9660 ug/L	91
16) Dimethyl Sulfide	6.28	62	120980	17.4952 ug/L	91
17) Iodomethane	6.51	142	110212	13.9764 ug/L	95
18) Methyl acetate	6.53	43	48878	18.7900 ug/L	96
19) Methylene Chloride	6.77	84	138264	18.8462 ug/L	86
20) Carbon Disulfide	6.80	76	314546	14.9738 ug/L	99
21) Acrylonitrile	6.95	53	25343	17.4568 ug/L	95
22) Methyl Tert Butyl Ether	6.99	73	300216	18.2669 ug/L	99
23) trans-1,2-Dichloroethene	7.21	96	139104	20.3223 ug/L	99
24) n-Hexane	7.29	57	130772	16.1720 ug/L	97
25) Diisopropyl ether	7.62	45	1735992	105.3681 ug/L	94
26) Vinyl Acetate	7.79	43	124581	16.9074 ug/L	96
27) 1,1-Dichloroethane	7.81	63	228357	20.8009 ug/L	99
28) Ethyl-Tert-Butyl ether	8.18	59	1757272	98.4768 ug/L	99
29) 2-Butanone	8.34	43	24877	15.9958 ug/L	94
30) Propionitrile	8.44	54	42380	81.1594 ug/L	100
31) 2,2-Dichloropropane	8.55	77	206258	19.1983 ug/L	99
32) cis-1,2-Dichloroethene	8.61	96	149752	20.4385 ug/L	98
33) Chloroform	8.81	83	245638	20.4974 ug/L	95
34) 1-Bromopropane	8.94	122	28241	19.1591 ug/L	98
35) Bromochloromethane	9.03	130	84351	20.1508 ug/L	95
36) Tetrahydrofuran	9.05	42	84157	84.9950 ug/L	94
38) 1,1,1-Trichloroethane	9.32	97	220586	19.9959 ug/L	96
39) Cyclohexane	9.35	56	181596	17.4639 ug/L	99
40) 1,1-Dichloropropene	9.50	75	191300	20.2940 ug/L	97
41) Carbon Tetrachloride	9.64	117	197677	20.0308 ug/L	99
42) Tert-Amyl-Methyl ether	9.61	73	1626932	95.5023 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061113\11M92764.D Vial: 6
Acq On : 11 Jun 2013 14:18 Operator: FJB
Sample : WG433686-03 20ug/L LCS DUP 8260 Inst : hpms11
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 14:40:12 2013 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.80	62	158937	19.4013 ug/L	98
46)	Benzene	9.84	78	544677	20.9613 ug/L	99
47)	Trichloroethene	10.55	130	148421	22.0220 ug/L	94
48)	Methylcyclohexane	10.63	83	206393	18.3907 ug/L	96
49)	1,2-Dichloropropane	10.75	63	131927	21.4014 ug/L	95
50)	1,4-Dioxane	11.02	88	5645	108.0069 ug/L	98
51)	Bromodichloromethane	11.03	83	178550	19.9160 ug/L	95
52)	Dibromomethane	11.12	93	72145	18.9862 ug/L	98
53)	2-Chloroethyl Vinyl Ether	11.32	63	55370	18.1014 ug/L	96
54)	4-Methyl-2-Pentanone	11.35	58	26650	17.0629 ug/L	98
55)	cis-1,3-Dichloropropene	11.63	75	224117	21.5648 ug/L	98
56)	Dimethyl Disulfide	11.87	79	108010	17.3858 ug/L	95
59)	Toluene	12.03	91	576270	22.3615 ug/L	98
60)	Ethyl Methacrylate	12.13	69	126031	20.4493 ug/L	86
62)	trans-1,3-Dichloropropene	12.19	75	181007	20.3983 ug/L	99
63)	1,1,2-Trichloroethane	12.40	97	102748	20.7705 ug/L	98
64)	2-Hexanone	12.35	43	39725	18.4431 ug/L	77
65)	1,3-Dichloropropane	12.68	76	176730	20.8056 ug/L	85
66)	Tetrachloroethene	12.79	164	119628	21.3261 ug/L	96
67)	Dibromochloromethane	13.04	129	122453	20.1141 ug/L	100
68)	1,2-Dibromoethane	13.28	107	98356	20.1385 ug/L	99
69)	1-Chlorohexane	13.36	91	184392	20.8837 ug/L	99
70)	Chlorobenzene	13.74	112	354177	20.6563 ug/L	99
71)	1,1,1,2-Tetrachloroethane	13.77	131	141096	21.9373 ug/L	100
72)	Ethylbenzene	13.77	106	210560	21.1689 ug/L	97
73)	m-,p-Xylene	13.86	106	483062	42.9144 ug/L	97
74)	o-Xylene	14.37	106	226638	19.8222 ug/L	97
75)	Styrene	14.41	104	402645	23.3583 ug/L	96
76)	Bromoform	14.86	173	76689	17.6626 ug/L	99
77)	Isopropylbenzene	14.77	105	562039	20.7875 ug/L	98
79)	1,1,2,2-Tetrachloroethane	14.97	83	111398	19.4334 ug/L	97
81)	1,2,3-Trichloropropane	15.15	110	32413	18.4998 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	15.19	53	21178	12.9331 ug/L	57
83)	n-Propylbenzene	15.24	91	670754	20.1762 ug/L	97
84)	Bromobenzene	15.35	156	160277	20.6648 ug/L	90
85)	1,3,5-Trimethylbenzene	15.42	105	528790	23.4141 ug/L	95
86)	2-Chlorotoluene	15.49	91	432993	20.7836 ug/L	93
87)	4-Chlorotoluene	15.53	91	406110	19.3769 ug/L	92
88)	a-Methylstyrene	15.79	118	274951	22.5764 ug/L	92
89)	tert-Butylbenzene	15.84	134	99746	20.2342 ug/L	96
90)	1,2,4-Trimethylbenzene	15.89	105	540173	23.5370 ug/L	95
91)	sec-Butylbenzene	16.09	105	571371	20.7689 ug/L	98
92)	p-Isopropyltoluene	16.24	119	479445	21.4409 ug/L	99
93)	1,3-Dichlorobenzene	16.42	146	279594	20.5593 ug/L	94
94)	1,4-Dichlorobenzene	16.53	146	304546	21.4546 ug/L	95
95)	n-Butylbenzene	16.72	91	477070	22.7461 ug/L	96
96)	1,2-Dichlorobenzene	16.99	146	254711	19.2529 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	17.91	75	16431	15.8365 ug/L	93
98)	1,2,4-Trichlorobenzene	18.96	180	192261	20.7424 ug/L	98
99)	Hexachlorobutadiene	19.11	225	71112	20.2751 ug/L	94
100)	Naphthalene	19.30	128	334669	18.6990 ug/L	99
101)	1,2,3-Trichlorobenzene	19.58	180	165380	19.3274 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M92764.D 8260BWT.M Tue Jun 11 14:40:13 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061113\11M92764.D Vial: 6
Acq On : 11 Jun 2013 14:18 Operator: FJB
Sample : WG433686-03 20ug/L LCS DUP 8260 Inst : hpms11
Misc : 1,1 STD58291 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 11 14:40 2013 Quant Results File: 8260BWT.RES

Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 05/15/13 HPMS11
Last Update : Thu May 16 11:19:39 2013
Response via : Initial Calibration

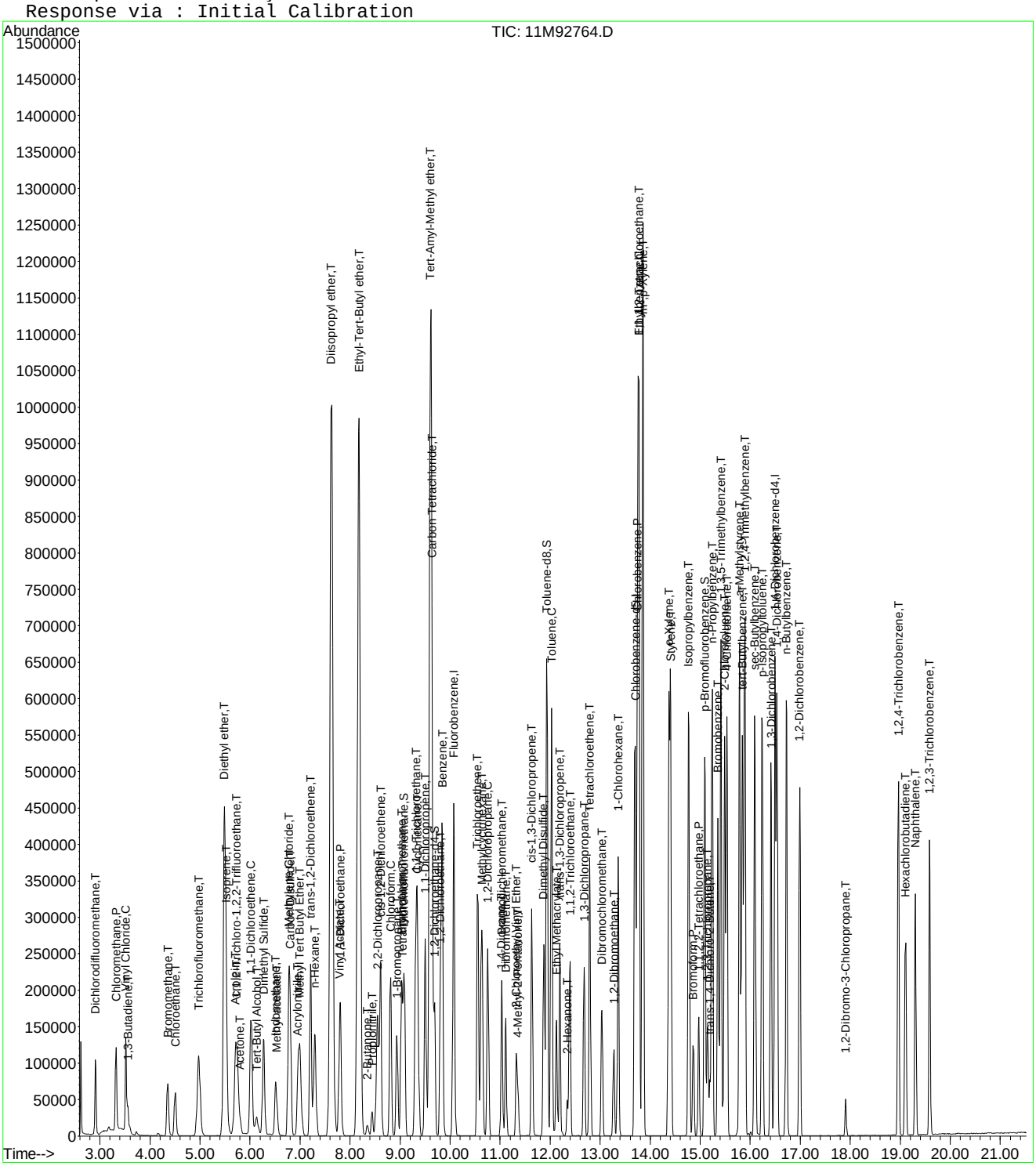

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac Laboratories
Case Narrative

Login Number: L13060134
Department: Volatiles - GC
Analyst: Franci Bolden

Analysis RSK-175

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes/Sample Duplicates: The MS/MSD results were not associated with this sample delivery group (SDG), due to insufficient volume of sample. Microbac Laboratories recommends site specific MS/MSD samples to avoid possible data qualifications.

SAMPLES

Samples: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration

is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

Narrative ID: 65643
Approved By: Michael Albertson

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-16	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW08-060313	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/02/2013 13:25
Workgroup #:	WG433492	**Analyst:**	QX	**Run Date:**	06/10/2013 12:05
Collect Date:	06/03/2013 13:10	**Dilution:**	1	**File ID:**	16G38561
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	10.6		5.00	2.00	1.00
Ethene	74-85-1	1.29	J	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:	
y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:		
Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 040213
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 45406

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD56793 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG425333, WG425112, WG425390

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G37318	WG425333-01 0.667umol/mol ICAL RSK17	NA	1	1	STD55748	04/02/13 09:57
16G37319	WG425333-02 1.67umol/mol ICAL RSK175	NA	1	1	STD55748	04/02/13 10:06
16G37320	WG425333-03 6.67umol/mol ICAL RSK175	NA	1	1	STD55748	04/02/13 10:16
16G37321	WG425333-04 16.67umol/mol ICAL RSK17	NA	1	1	STD55748	04/02/13 10:25
16G37322	WG425333-05 66.67umol/mol ICAL RSK17	NA	1	1	STD55748	04/02/13 10:34
16G37323	WG425333-06 133umol/mol ICAL RSK175	NA	1	1	STD55748	04/02/13 10:44
16G37324	WG425333-07 266umol/mol ICAL RSK175	NA	1	1	STD55748	04/02/13 10:53
16G37325	WG425333-08 400umol/mol ICAL RSK175	NA	1	1	STD55748	04/02/13 11:03
16G37326	WG425333-09 533umol/mol ICAL RSK175	NA	1	1	STD55748	04/02/13 11:12
16G37328	WG425333-02 1.67umol/mol ICAL RSK175	NA	1	1		04/02/13 13:06
16G37329	WG425333-03 6.67umol/mol ICAL RSK175	NA	1	1		04/02/13 13:16
16G37330	WG425333-04 16.67umol/mol ICAL RSK17	NA	1	1		04/02/13 13:25
16G37331	WG425333-10 133umol/mol ICV RSK175	NA	1	1	STD56793	04/02/13 13:58
16G37332	WG425333-10 133umol/mol ICV RSK175	NA	1	1	STD56793	04/02/13 14:21
16G37333	WG425212-01 BLANK RSK175	NA	1	1		04/02/13 14:40
16G37334	WG425212-02 67umol/mol LCS RSK175	NA	1	1	STD56793	04/02/13 14:59
16G37335	L13031013-07 C RSK175	<2	1	1		04/02/13 15:12
16G37336	L13031022-07 C 10X RSK175	<2	1	10		04/02/13 15:22
16G37337	L13031022-09 C 10X RSK175	<2	1	10		04/02/13 15:31
16G37338	L13031022-11 C 5X RSK175	<2	1	5		04/02/13 15:41
16G37339	WG425212-03 L13031079-01 REF B RSK17	<2	1	1		04/02/13 15:51
16G37340	WG425212-04 L13031079-06 MS B RSK17	<2	1	1	STD56793	04/02/13 16:00
16G37341	WG425212-05 L13031079-07 MS B RSK17	<2	1	1	STD56793	04/02/13 16:10
16G37342	L13031079-02 A RSK175	3	1	1		04/02/13 16:19
16G37343	WG425333-11 133umol/mol CCV RSK175	NA	1	1	STD55748	04/02/13 16:29
16G37344	L13031079-03 A RSK175	<2	1	1		04/02/13 16:38
16G37345	L13031052-01 A RSK175	<2	1	1		04/02/13 16:48
16G37346	L13031062-01 A RSK175	<2	1	1		04/02/13 16:58
16G37347	L13031063-01 A RSK175	<2	1	1		04/02/13 17:08
16G37348	L13031116-01 A RSK175	4	1	1		04/02/13 17:17
16G37349	L13031116-02 A RSK175	3	1	1		04/02/13 17:27
16G37350	L13031098-01 A RSK175	<2	1	1		04/02/13 17:37
16G37351	L13031102-01 A RSK175	<2	1	1		04/02/13 17:46
16G37352	L13031102-02 A RSK175	<2	1	1		04/02/13 17:56

Approved: April 04, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 040213
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 45406

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD56793 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG425333, WG425112, WG425390

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G37353	L13031143-01 A RSK175	<2	1	1		04/02/13 18:05
16G37354	WG425333-12 133umol/mol CCV RSK175	NA	1	1	STD55748	04/02/13 18:15
16G37355	L13031071-01 A RSK175	<2	1	1		04/02/13 18:25
16G37356	L13031022-13 A RSK175	<2	1	1		04/02/13 18:34
16G37357	WG425333-13 133umol/mol CCV RSK175	NA	1	1	STD55748	04/02/13 18:44
16G37358	WG425390-01 BLANK RSK175	NA	1	1		04/02/13 18:54
16G37359	WG425390-02 67umol/mol LCS RSK175	NA	1	1	STD56793	04/02/13 19:03
16G37360	WG425390-03 L13031080-01 REF A RSK17	<2	1	1		04/02/13 19:13
16G37361	WG425390-04 L13031080-03 MS A RSK17	<2	1	1	STD56793	04/02/13 19:23
16G37362	WG425390-05 L13031080-05 MSD A RSK1	<2	1	1	STD56793	04/02/13 19:32
16G37363	L13031080-07 A RSK175	<2	1	1		04/02/13 19:42
16G37364	L13031080-09 A RSK175	<2	1	1		04/02/13 19:51
16G37365	L13031080-11 A RSK175	<2	1	1		04/02/13 20:01
16G37366	L13031148-01 A RSK175	<2	1	1		04/02/13 20:11
16G37367	L13031148-02 A RSK175	<2	1	1		04/02/13 20:20
16G37368	WG425333-14 133umol/mol CCV RSK175	NA	1	1	STD55748	04/02/13 20:30
16G37369	L13031148-03 A RSK175	<2	1	1		04/02/13 20:39
16G37370	L13031148-04 A RSK175	<2	1	1		04/02/13 20:49
16G37371	L13031148-05 A RSK175	<2	1	1		04/02/13 20:58
16G37372	L13031148-06 A RSK175	<2	1	1		04/02/13 21:08
16G37373	L13031148-07 A RSK175	<2	1	1		04/02/13 21:17
16G37374	L13031148-08 A RSK175	<2	1	1		04/02/13 21:27
16G37375	L13031148-09 A RSK175	<2	1	1		04/02/13 21:36
16G37376	L13031148-10 A RSK175	<2	1	1		04/02/13 21:45
16G37377	L13031072-01 A RSK175	<2	1	1		04/02/13 21:54
16G37378	L13031073-01 A RSK175	<2	1	1		04/02/13 22:04
16G37379	WG425333-15 133umol/mol CCV RSK175	NA	1	1	STD55748	04/02/13 22:13
16G37380	L13031078-01 A RSK175	<2	1	1		04/02/13 22:22
16G37381	L13031077-01 A RSK175	<2	1	1		04/02/13 22:31
16G37382	WG425333-16 133umol/mol CCV RSK175	NA	1	1	STD55748	04/02/13 22:40

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: April 04, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 040213
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 45406

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD56793 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG425333, WG425112, WG425390

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2 File ID: 16G37319				
	DNR RR			
3 File ID: 16G37320				
	DNR RR			
4 File ID: 16G37321				
	DNR RR			
13 File ID: 16G37331				
	DNR RR			
24 File ID: 16G37342				
	rr 5x methane			
26 File ID: 16G37344				
	rr 5x methane			
27 File ID: 16G37345				
	dnr rr st			
28 File ID: 16G37346				
	dnr rr st			
29 File ID: 16G37347				
	dnr rr st			
30 File ID: 16G37348				
	rr 10x methane			
31 File ID: 16G37349				
	rr 10x methane			
32 File ID: 16G37350				
	dnr rr st			

Approved: April 04, 2013

Page: 3

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 040213
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 45406

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD56793 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG425333, WG425112, WG425390

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
33 File ID: 16G37351				
	dnr rr st			
46 File ID: 16G37364				
	rr 20x methane			
47 File ID: 16G37365				
	rr 25x methane			
48 File ID: 16G37366				
	dnr rr st			
49 File ID: 16G37367				
	dnr rr st			

Approved: April 04, 2013

Page: 4

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 061013
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 46282

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD56793 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG433492

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G38558	WG433489-01 133umol/mol CCV RSK175	NA	1	1	STD55748	06/10/13 11:24
16G38559	WG433492-01 BLANK RSK175	NA	1	1		06/10/13 11:45
16G38560	WG433492-02 67umol/mol LCS RSK175	NA	1	1	STD56793	06/10/13 11:56
16G38561	L13060134-16 B RSK175	<2	1	1		06/10/13 12:05
16G38562	L13060343-04 REF A RSK175	<2	1	1		06/10/13 12:14
16G38563	L13060343-05 MS A RSK175	<2	1	1	STD56793	06/10/13 12:23
16G38564	L13060343-06 MSD A RSK175	<2	1	1	STD56793	06/10/13 12:32
16G38565	L13060343-01 A RSK175	<2	1	1		06/10/13 12:41
16G38566	L13060343-02 A RSK175	<2	1	1		06/10/13 12:50
16G38567	L13060343-03 A RSK175	<2	1	1		06/10/13 12:59
16G38568	L13060343-07 A RSK175	<2	1	1		06/10/13 13:08
16G38569	WG433489-02 133umol/mol CCV RSK175	NA	1	1	STD55748	06/10/13 13:17
16G38570	L13060343-08 A RSK175	<2	1	1		06/10/13 13:27
16G38571	L13060343-09 A RSK175	<2	1	1		06/10/13 13:36
16G38572	L13060343-10 A RSK175	<2	1	1		06/10/13 13:45
16G38573	L13060343-11 A RSK175	<2	1	1		06/10/13 13:54
16G38574	L13060343-12 A RSK175	<2	1	1		06/10/13 14:08
16G38575	L13060337-01 A RSK175	<2	1	1		06/10/13 14:17
16G38576	L13060343-10 B RSK175	<2	1	1		06/10/13 14:33
16G38577	WG433489-03 133umol/mol CCV RSK175	NA	1	1	STD55748	06/10/13 14:45

Comments

Seq.	Rerun	Dil.	Reason	Analytes
15	X	1	Carry-over contamination	
File ID: 16G38572				

Approved: June 14, 2013

Page: 1

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B167647

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG425333-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG425333-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG425333-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG425333-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG425333-08	15	mL	15	mL					5.47	mL	5.47	mL	40
WG425333-09	15	mL	15	mL					5.47	mL	5.47	mL	40
WG425333-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG425333-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG425333-04	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B167648

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG425333-10	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B171332

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG433489-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG433489-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG433489-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L13060343-06	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
WG433492-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L13060343-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG433492-05	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L13060343-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L13060343-10	15	mL	15	mL					5.47	mL	5.47	mL	40
WG433492-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG433492-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L13060134-16	15	mL	15	mL					5.47	mL	5.47	mL	40
L13060343-09	15	mL	15	mL					5.47	mL	5.47	mL	40
L13060343-11	15	mL	15	mL					5.47	mL	5.47	mL	40
WG433492-04	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L13060343-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L13060343-12	15	mL	15	mL					5.47	mL	5.47	mL	40
L13060343-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L13060343-05	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L13060343-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L13060337-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L13060343-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2013
Analyst: QX
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 53717
Analytical Workgroups: WG433492

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	X
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	QX
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:

Secondary Reviewer:
14-JUN-2013

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-14-2013 09:10:48

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG433492

Login Number: L13060134

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-060313	16	06/03/13					06/10/2013	7	14		06/10/13	7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2918260
Report generated 06/14/2013 13:49

METHOD BLANK SUMMARY

Login Number: L13060134
Blank File ID: 16G38559
Prep Date: 06/10/13 11:45
Analyzed Date: 06/10/13 11:45
Analyst: QX

Work Group: WG433492
Blank Sample ID: WG433492-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG433492-02	16G38560	06/10/13 11:56	01
67WW08-060313	L13060134-16	16G38561	06/10/13 12:05	02

Report Name: BLANK_SUMMARY
PDF File ID: 2918261
Report generated 06/14/2013 13:49

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13060134 Prep Date: 06/10/13 11:45 Sample ID: WG433492-01
Instrument ID: HP16 Run Date: 06/10/13 11:45 Prep Method: 5021
File ID: 16G38559 Analyst: QX Method: RSK175
Workgroup (AAB#): WG433492 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 02-APR-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Methane	1.00	5.00	3.03	1	*
Ethene	1.00	5.00	1.00	1	U
Ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 2918262
14-JUN-2013 13:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13060134 Run Date: 06/10/2013 Sample ID: WG433492-02
Instrument ID: HP16 Run Time: 11:56 Prep Method: 5021
File ID: 16G38560 Analyst: QX Method: RSK175
Workgroup (AAB#): WG433492 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD56793 Cal ID: HP16-02-APR-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Methane	114	98.7	86.4	85 - 115	
Ethene	200	184	92.3	85 - 115	
Ethane	214	200	93.3	85 - 115	

LCS - Modified 03/06/2008
PDF File ID: 2926698
Report generated: 06/14/2013 14:34

Calibration Table Report
Method: RSK2EXT.M
Title: RSK175 HP16 (SOP: OVL RSK01) 040213
Last Calibration: Tue Apr 02 13:41:57 2013
Curve: WG425333
Calibration Files

Compound	0.67 16G37318.D	1.67 16G37328.D	6.67 16G37329.D	16.7 16G37330.D	66.7 16G37322.D	133 16G37323.D	266 16G37324.D	400 16G37325.D	533 16G37326.D	Avg	%RSD
methane			225468.037	179463.975	186372.433	167962.818	180532.553	179368.723	166712.437	183697.000	10.738
ethene		303583.784	298295.906	276525.918	317673.425	287845.657	308471.555	305743.710	283796.271	297742.000	4.670
acetylene		211867.163	224540.452	240333.485	273646.691	245434.113	260599.834	251928.796	232259.633	242576.000	8.194
ethane	265361.084	325947.024	313924.900	289698.844	330731.933	300502.936	322811.339	320484.291	297978.706	307493.000	6.857
propane	401579.085	488084.731	469435.960	426550.003	491900.003	447504.565	476658.561	473159.114	437234.132	456901.000	6.686
Signal #2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
carbon dioxide		6606.415	6633.056	6573.566	6547.482	6174.033	6389.216	6257.252	5676.281	6357.160	5.078

Thu Apr 04 13:28:10 2013

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13060134 Run Date: 04/02/2013 Sample ID: WG425333-10
Instrument ID: HP16 Run Time: 14:21 Method: RSK175
File ID: 16G37332 Analyst: QX QC Key: DOD4
ICal Workgroup: WG425333 Cal ID: HP16 - 02-APR-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
methane		228	211	ug/L	170000	7.30	15	
ethene		398	399	ug/L	298000	0.100	15	
ethane		427	430	ug/L	310000	0.700	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 2918264
Report generated 06/14/2013 13:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13060134
Run Date: 06/10/2013
Sample ID: WG433489-01
Instrument ID: HP16
Run Time: 11:24
Method: RSK175
File ID: 16G38558
Analyst: QX
QC Key: DOD4
Workgroup (AAB#): WG433492
Cal ID: HP16 - 02-APR-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	216	ug/L	175000	4.96	15	
ethene		398	399	ug/L	298000	0.0674	15	
ethane		427	426	ug/L	307000	0.135	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 2918265
Report generated 06/14/2013 13:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13060134
Run Date: 06/10/2013
Sample ID: WG433489-02
Instrument ID: HP16
Run Time: 13:17
Method: RSK175
File ID: 16G38569
Analyst: QX
QC Key: DOD4
Workgroup (AAB#): WG433492
Cal ID: HP16 - 02-APR-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	222	ug/L	179000	2.56	15	
ethene		398	413	ug/L	309000	3.74	15	
ethane		427	445	ug/L	320000	4.16	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 2918265
Report generated 06/14/2013 13:49

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\061013\16G38561.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\061013\16G38561.D\TCD2B.CH
Acq On : 10 Jun 2013 12:05 Operator: QX
Sample : L13060134-16 B RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jun 10 12:10:21 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	1140265	6.207	umol/
2) T	ethene	1.04	128925	0.433	umol/
3) T	acetylene	1.12	3892	0.016	umol/
4) T	ethane	1.37	96036	0.312	umol/
5) T	propane	3.82	20712	0.045	umol/
7) T	carbon dioxide	0.19	280562868	44133.348	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G38561.D RSK2EXT.M Mon Jun 10 12:10:21 2013 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\061013\16G38561.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\061013\16G38561.D\TCD2B.CH
Acq On : 10 Jun 2013 12:05 Operator: QX
Sample : L13060134-16 B RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jun 10 12:10 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

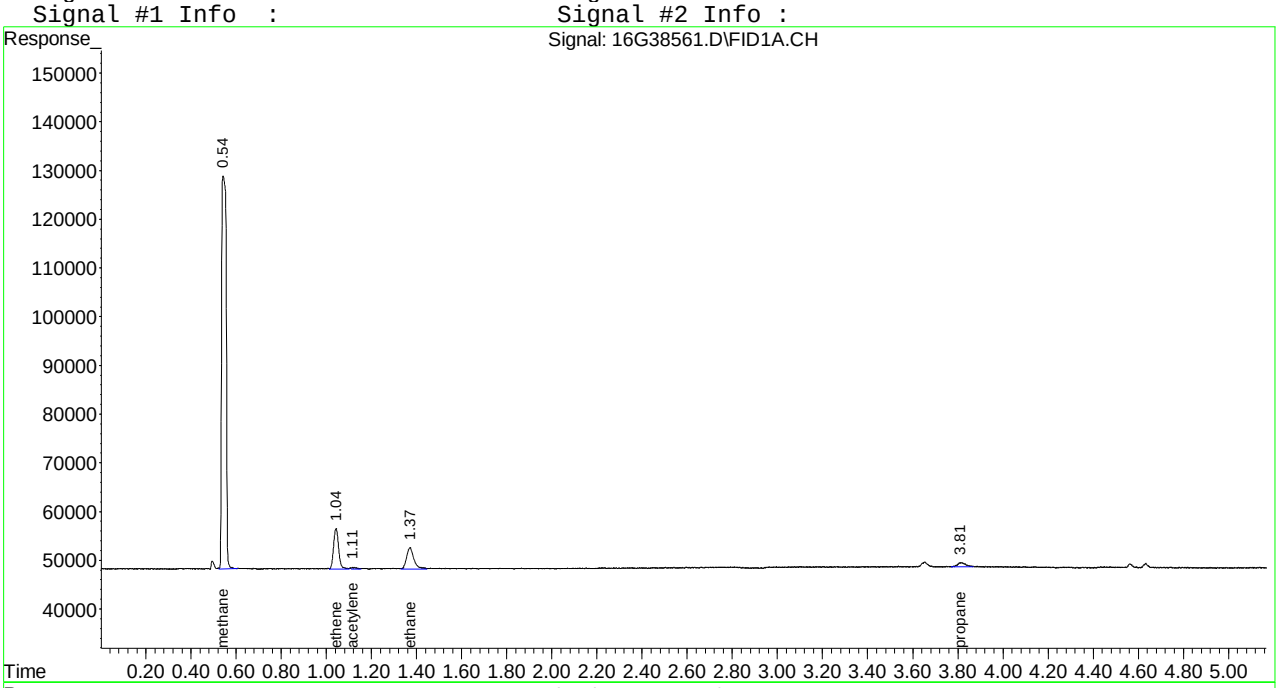

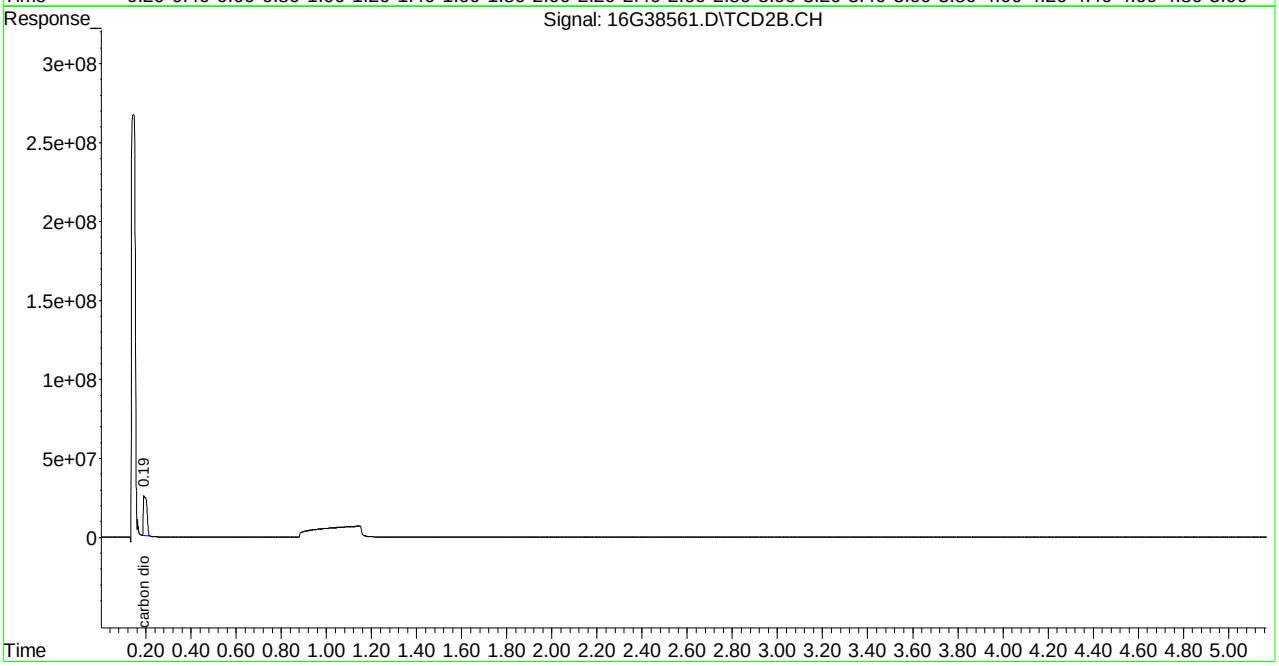

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37318.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37318.D\TCD2B.CH
Acq On : 02 Apr 2013 9:57 Operator: QX
Sample : WG425333-01 0.667umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 12:21:02 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:03:45 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	449273	N.D.	umol/
2) T	ethene	1.05	150309	0.525	umol/
3) T	acetylene	1.12	62943	N.D.	umol/
4) T	ethane	1.37	176996	0.577	umol/
5) T	propane	3.82	267853	0.585	umol/
7) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37318.D RSK2EXT.M Tue Apr 02 12:23:03 2013 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37318.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37318.D\TCD2B.CH
Acq On : 02 Apr 2013 9:57 Operator: QX
Sample : WG425333-01 0.667umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 2 12:21 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:03:45 2013
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

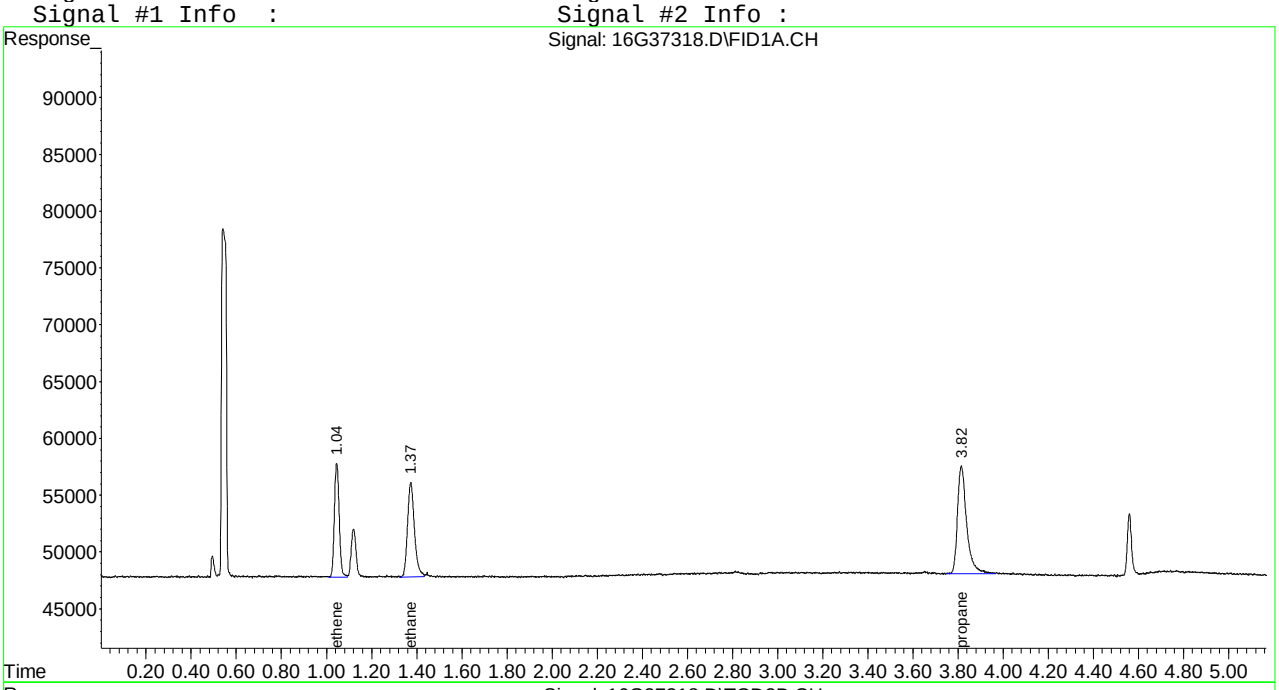

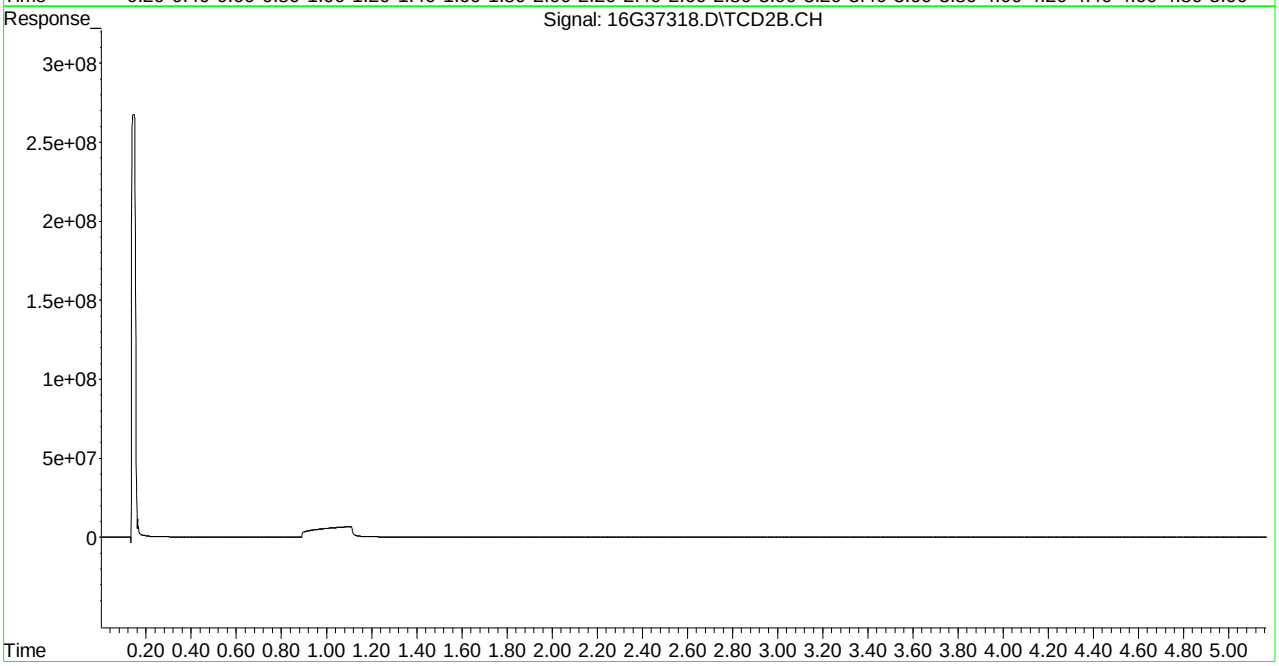

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37322.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37322.D\TCD2B.CH
Acq On : 02 Apr 2013 10:34 Operator: QX
Sample : WG425333-05 66.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 12:22:53 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:22:40 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	12425450	47.775	umol/
2) T	ethene	1.04	21179287	73.988	umol/
3) T	acetylene	1.12	18244025	83.207	umol/
4) T	ethane	1.37	22049898	71.902	umol/
5) T	propane	3.82	32794973	71.637	umol/
7) T	carbon dioxide	0.20	43671705	6.338	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37322.D RSK2EXT.M Tue Apr 02 12:22:53 2013 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37322.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37322.D\TCD2B.CH
Acq On    : 02 Apr 2013  10:34                        Operator: QX
Sample    : WG425333-05 66.67umol/mol ICAL RSK175     Inst    : HP16
Misc      : 1,1 STD55748                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e
Quant Time: Apr  2 12:22 2013  Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 12:22:40 2013
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

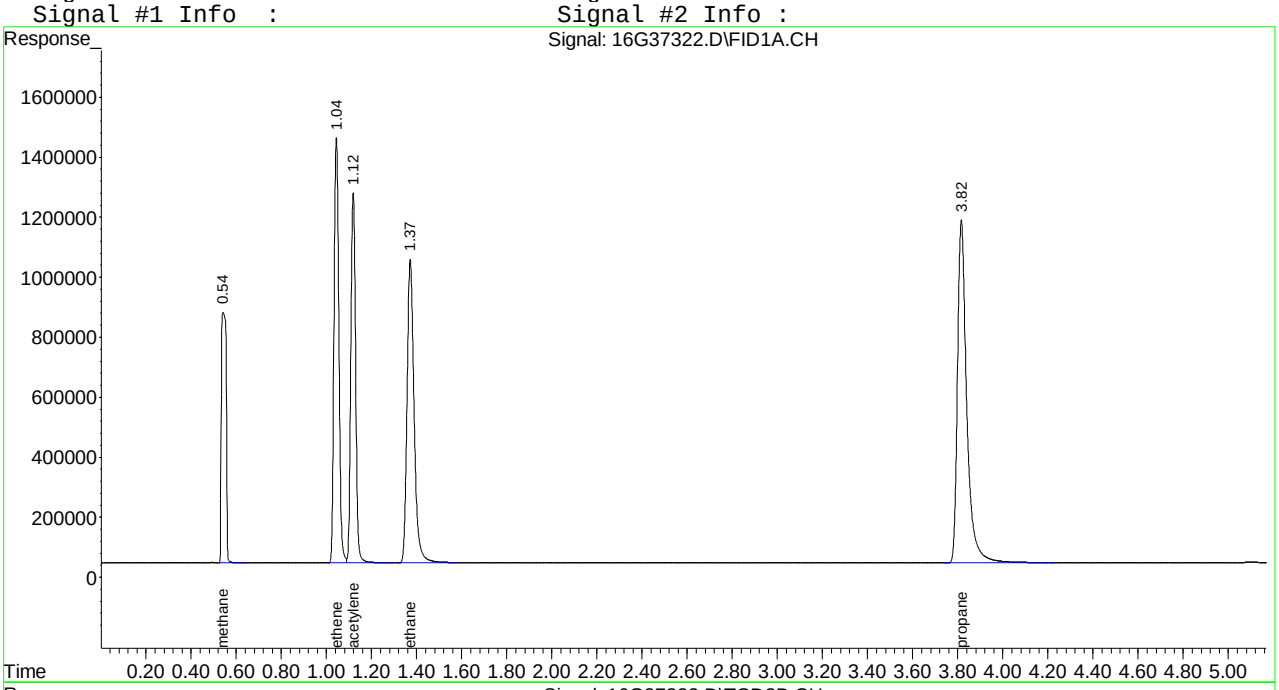

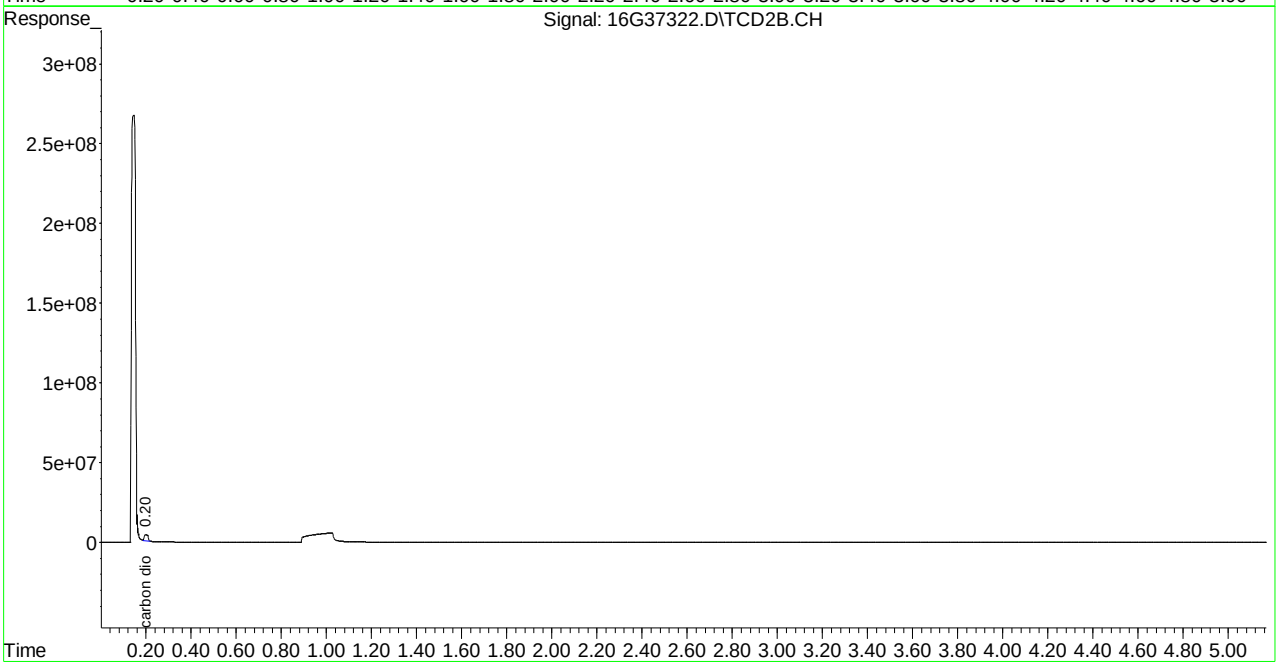

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37323.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37323.D\TCD2B.CH
Acq On : 02 Apr 2013 10:44 Operator: QX
Sample : WG425333-06 133umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 12:22:54 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:22:40 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	22339055	85.892	umol/
2) T	ethene	1.04	38283472	133.740	umol/
3) T	acetylene	1.12	32642737	148.876	umol/
4) T	ethane	1.37	39966891	130.326	umol/
5) T	propane	3.81	59518107	130.010	umol/
7) T	carbon dioxide	0.20	82318385	11.946	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37323.D RSK2EXT.M Tue Apr 02 12:22:54 2013 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37323.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37323.D\TCD2B.CH
Acq On    : 02 Apr 2013  10:44                        Operator: QX
Sample    : WG425333-06 133umol/mol ICAL RSK175       Inst    : HP16
Misc      : 1,1 STD55748                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e
Quant Time: Apr  2 12:22 2013  Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 12:22:40 2013
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

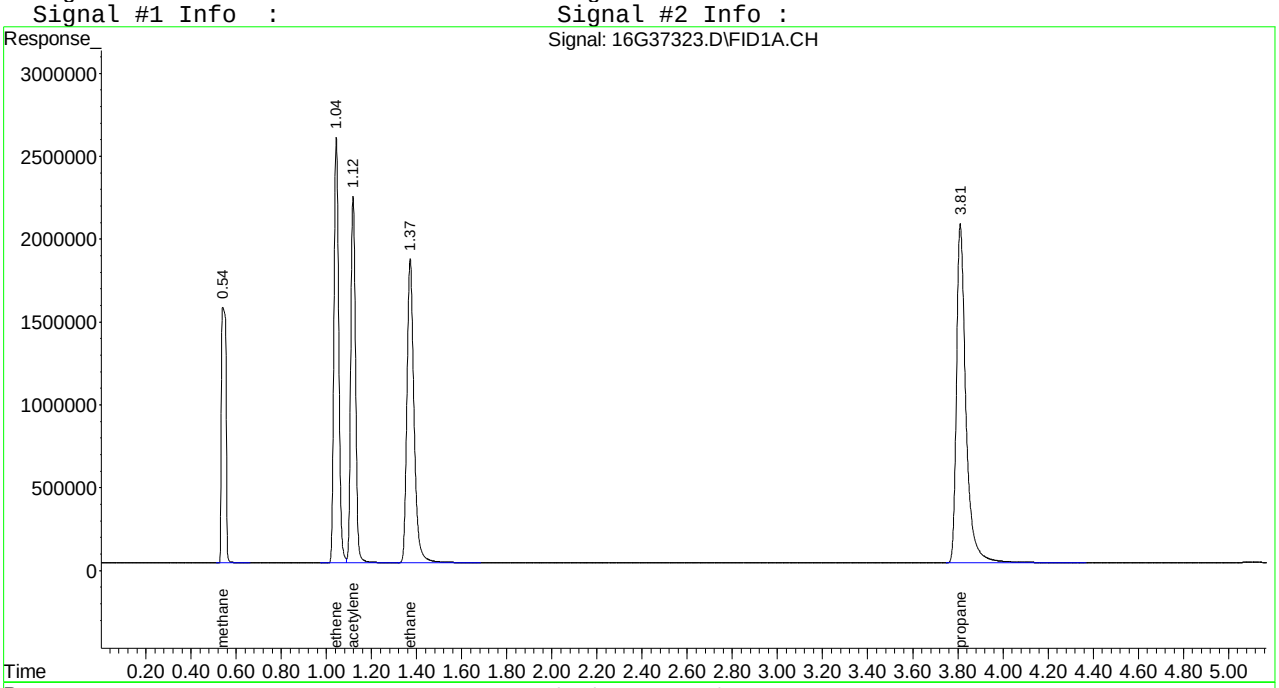

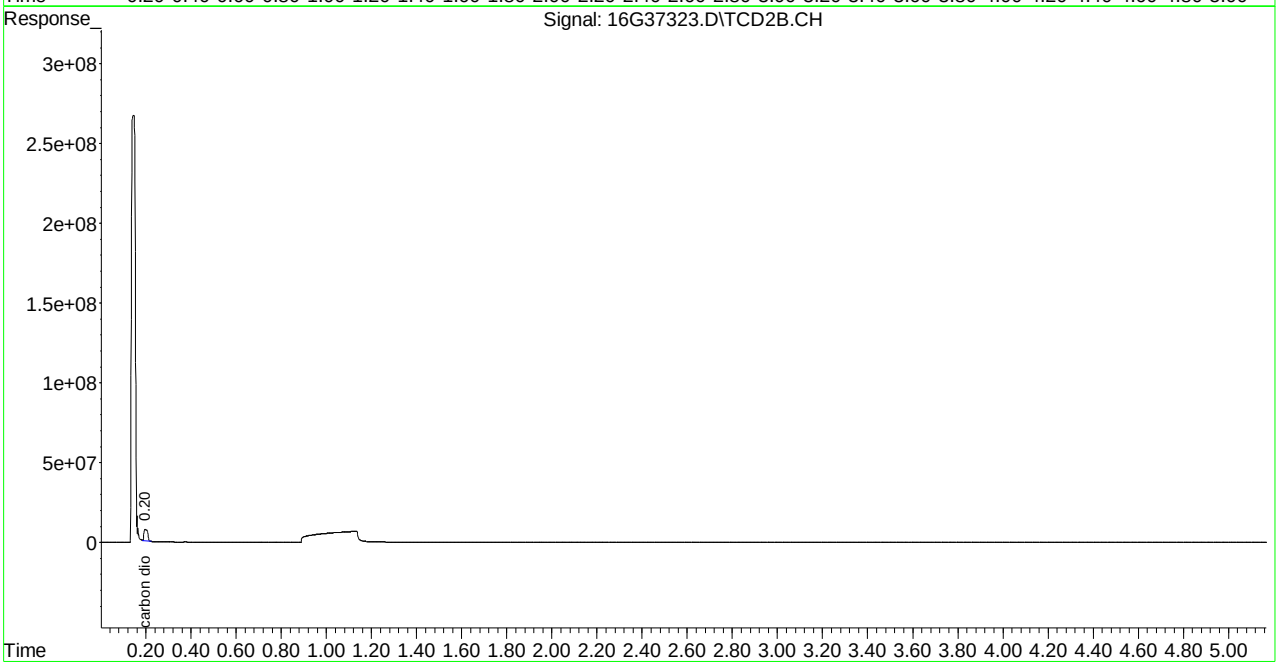

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37324.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37324.D\TCD2B.CH
Acq On : 02 Apr 2013 10:53 Operator: QX
Sample : WG425333-07 266umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 12:22:54 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:22:40 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	48021659	184.639	umol/
2) T	ethene	1.04	82053434	286.647	umol/
3) T	acetylene	1.12	69319556	316.151	umol/
4) T	ethane	1.37	85867816	280.002	umol/
5) T	propane	3.81	126791177	276.960	umol/
7) T	carbon dioxide	0.20	170374835	24.724	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37324.D RSK2EXT.M Tue Apr 02 12:22:55 2013 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37324.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37324.D\TCD2B.CH
Acq On    : 02 Apr 2013  10:53                        Operator: QX
Sample    : WG425333-07 266umol/mol ICAL RSK175       Inst    : HP16
Misc      : 1,1 STD55748                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e
Quant Time: Apr  2 12:22 2013  Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 12:22:40 2013
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

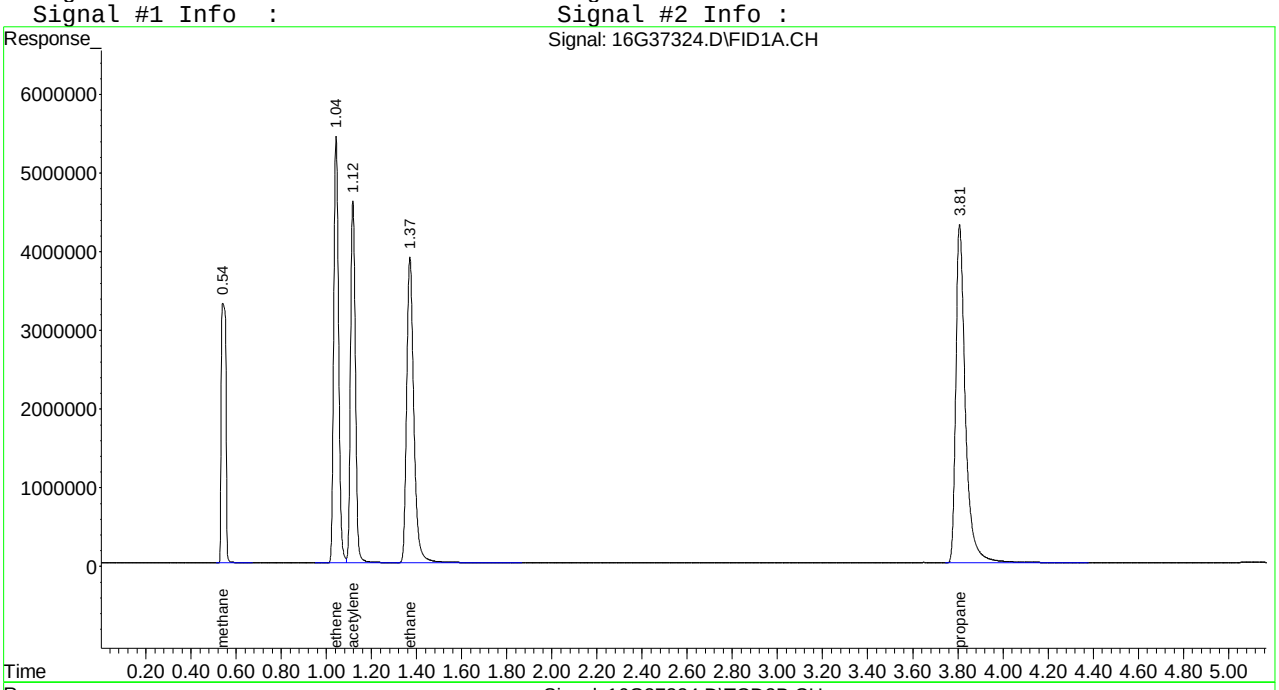

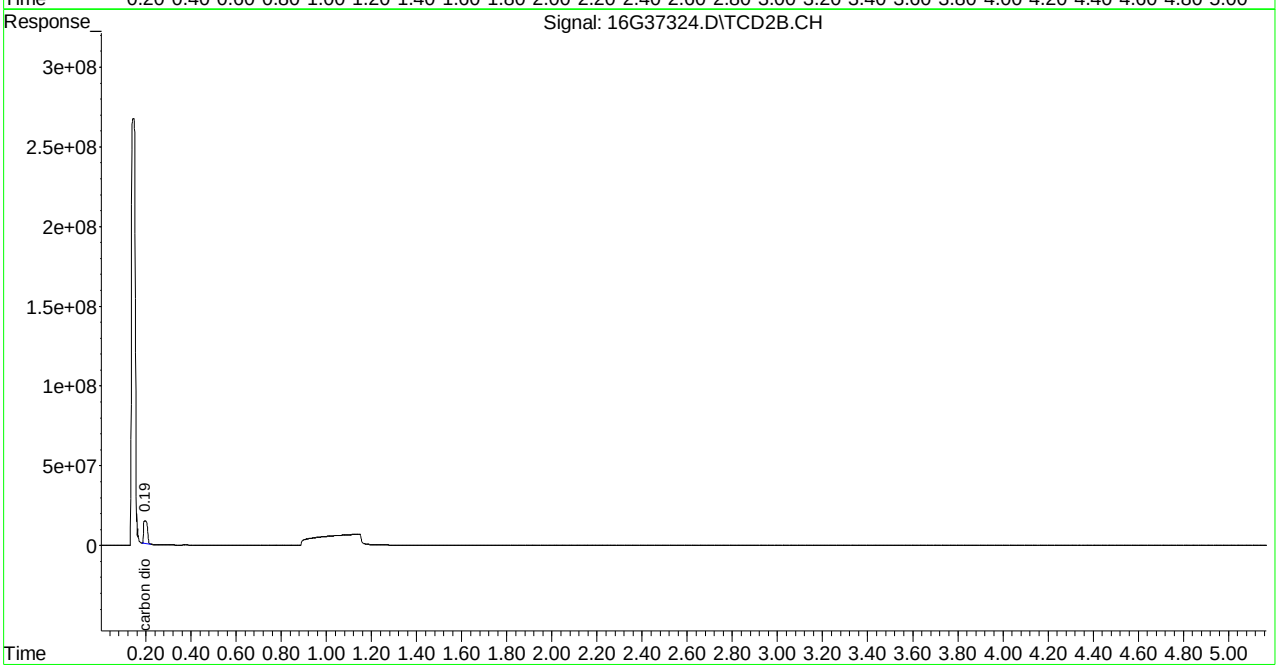

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37325.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37325.D\TCD2B.CH
Acq On : 02 Apr 2013 11:03 Operator: QX
Sample : WG425333-08 400umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 12:22:55 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:22:40 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	71747489	275.863	umol/
2) T	ethene	1.04	122297484	427.236	umol/
3) T	acetylene	1.12	100771518	459.596	umol/
4) T	ethane	1.37	128193716	418.021	umol/
5) T	propane	3.81	189263646	413.424	umol/
7) T	carbon dioxide	0.19	250290098	36.321	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37325.D RSK2EXT.M Tue Apr 02 12:22:55 2013 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37325.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37325.D\TCD2B.CH
Acq On : 02 Apr 2013 11:03 Operator: QX
Sample : WG425333-08 400umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 2 12:22 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:22:40 2013
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

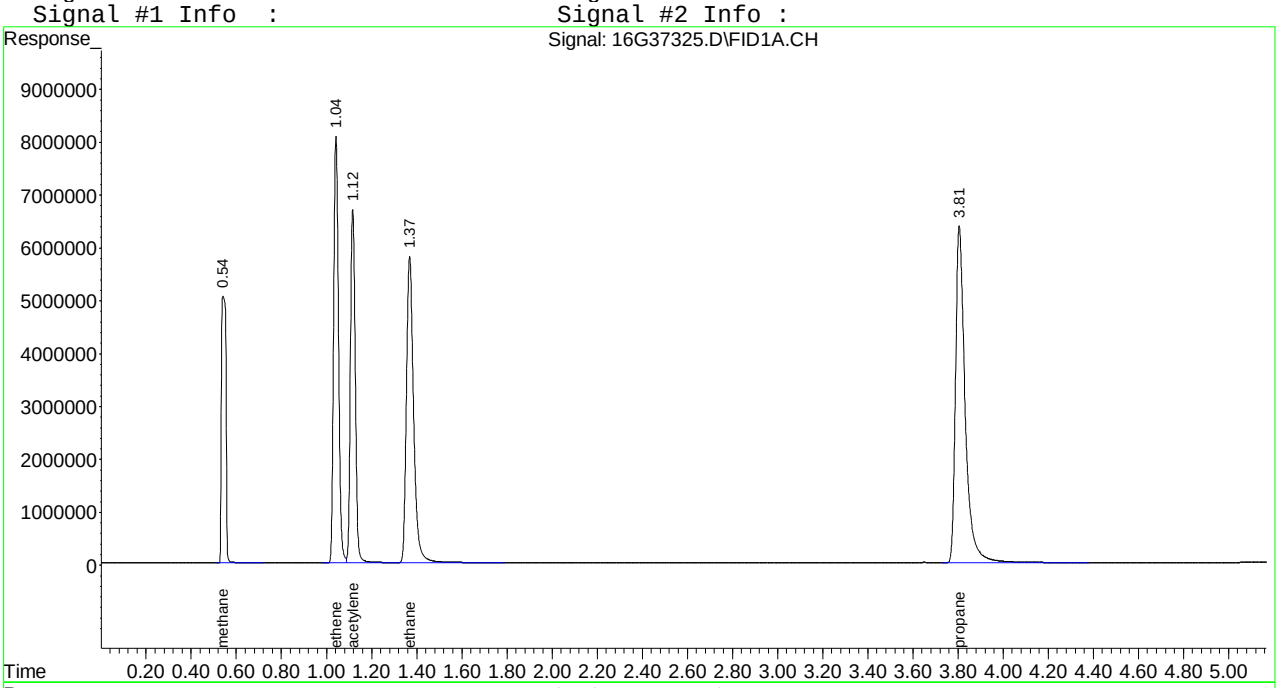

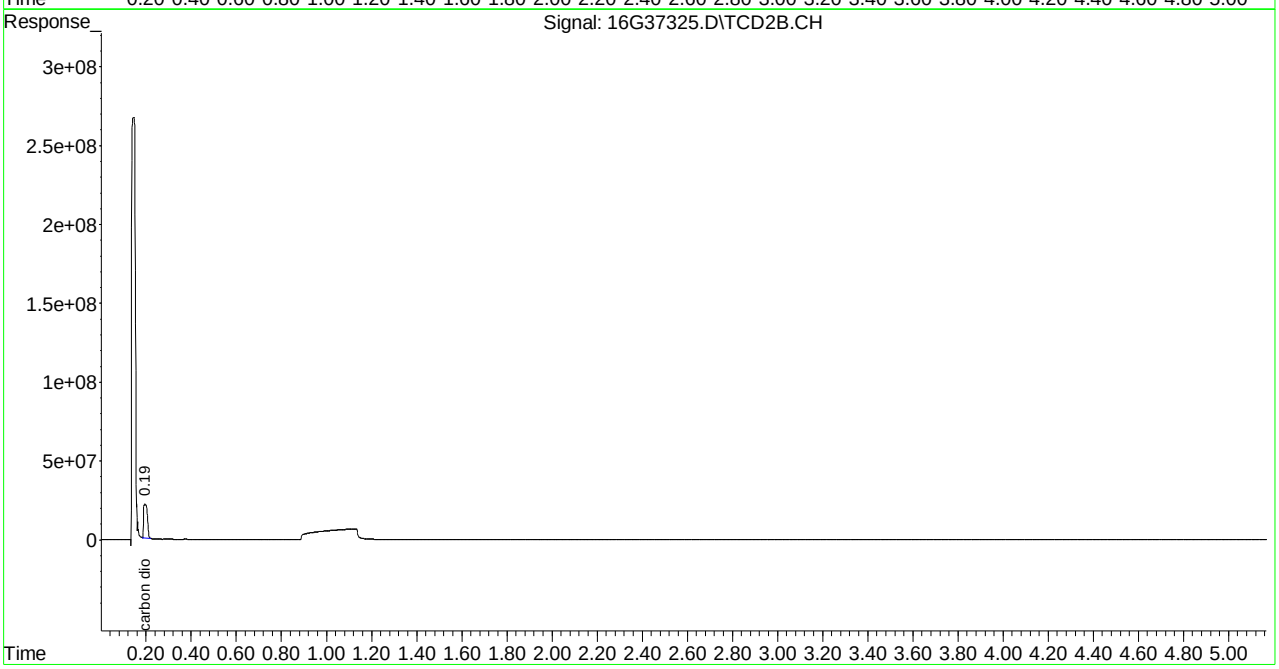

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37326.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37326.D\TCD2B.CH
Acq On : 02 Apr 2013 11:12 Operator: QX
Sample : WG425333-09 533umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 12:22:56 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:22:40 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	88857729	341.650	umol/
2) T	ethene	1.04	151263412	528.426	umol/
3) T	acetylene	1.12	123794384	564.598	umol/
4) T	ethane	1.37	158822651	517.898	umol/
5) T	propane	3.80	233045792	509.061	umol/
7) T	carbon dioxide	0.19	302733085	43.932	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37326.D RSK2EXT.M Tue Apr 02 12:22:56 2013 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37326.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37326.D\TCD2B.CH
Acq On : 02 Apr 2013 11:12 Operator: QX
Sample : WG425333-09 533umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 2 12:22 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:22:40 2013
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

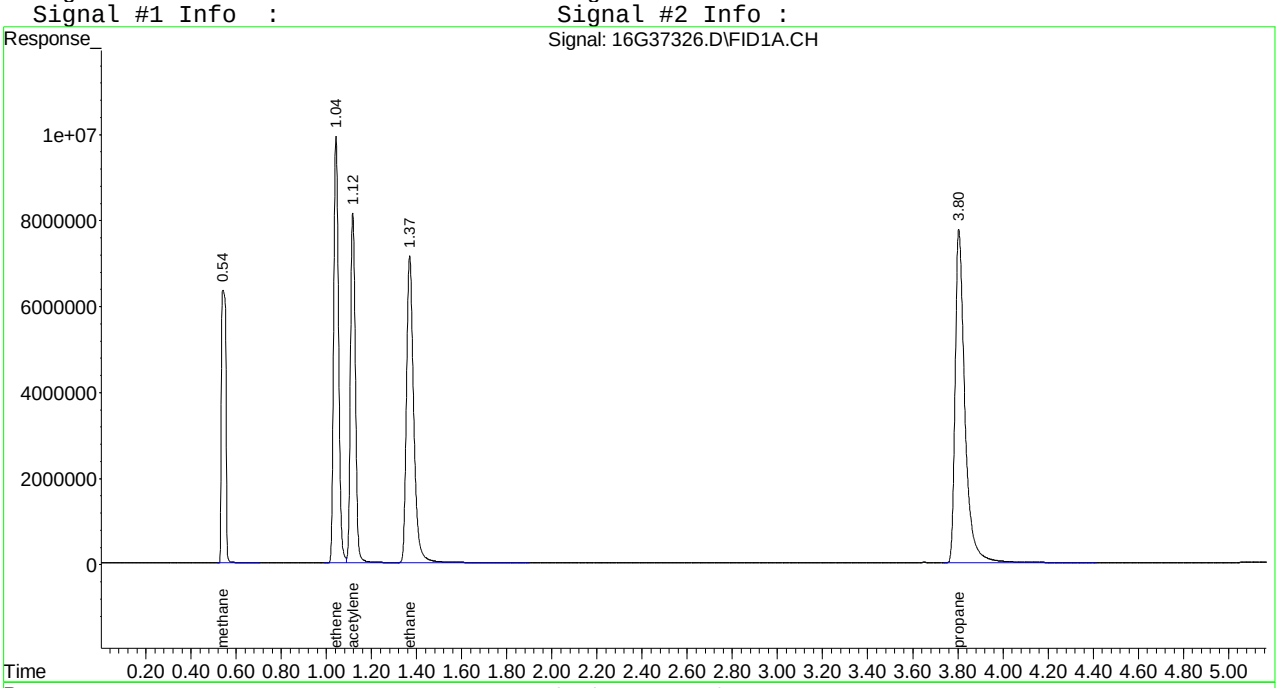

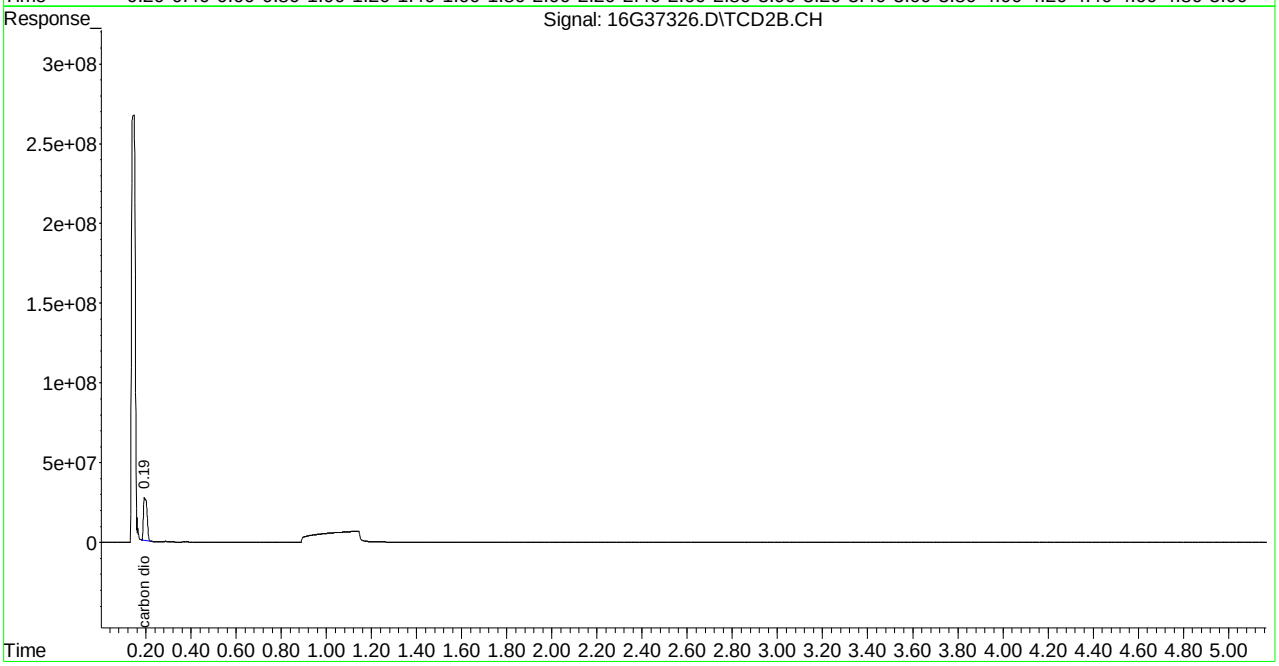

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\040213\16G37328.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDchem\1\DATA\040213\16G37328.D\TCD2B.CH
Acq On : 02 Apr 2013 13:06 Operator: QX
Sample : WG425333-02 1.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 13:11:44 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:28:53 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	647515	3.107	umol/
2) T	ethene	1.04	506985	1.725	umol/
3) T	acetylene	1.11	353818	1.506	umol/
4) T	ethane	1.37	544332	1.775	umol/
5) T	propane	3.81	815101	1.780	umol/
7) T	carbon dioxide	0.19	13212829	7.367	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37328.D RSK2EXT.M Tue Apr 02 13:11:44 2013 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\040213\16G37328.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDchem\1\DATA\040213\16G37328.D\TCD2B.CH
Acq On : 02 Apr 2013 13:06 Operator: QX
Sample : WG425333-02 1.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 2 13:11 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:28:53 2013
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

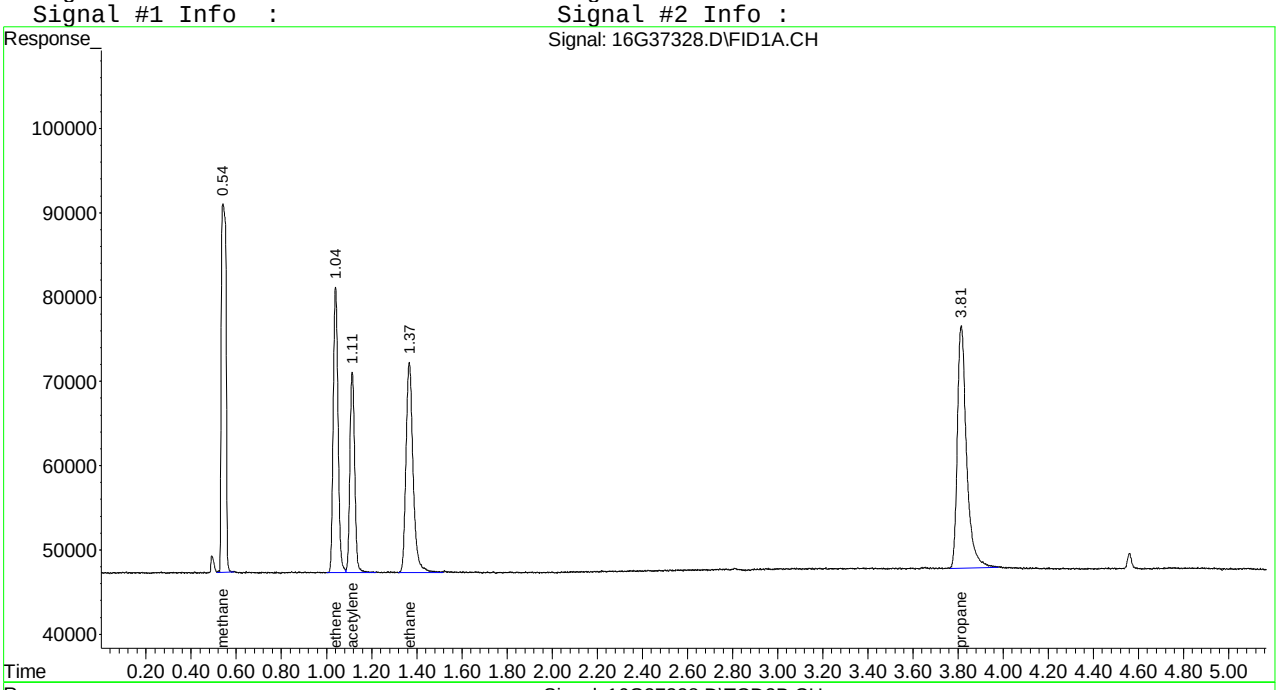

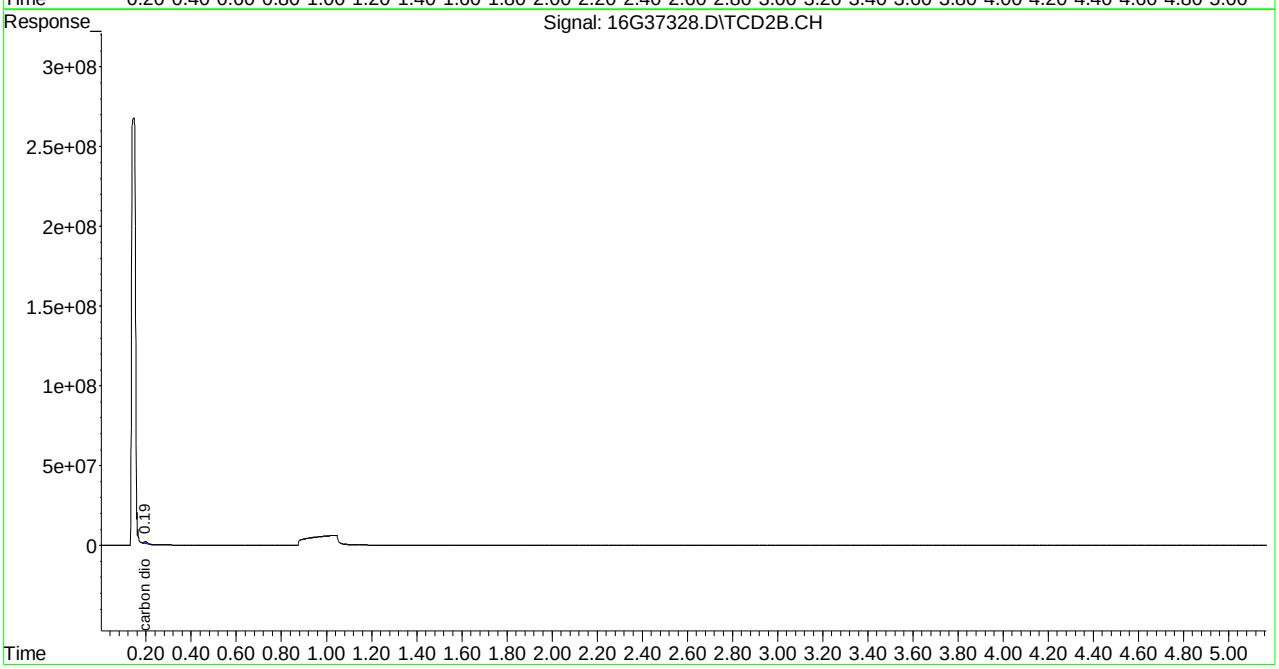

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\040213\16G37329.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\040213\16G37329.D\TCD2B.CH
Acq On : 02 Apr 2013 13:16 Operator: QX
Sample : WG425333-03 6.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 13:21:21 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:28:53 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	1503872	7.216	umol/
2) T	ethene	1.05	1989634	6.771	umol/
3) T	acetylene	1.12	1497685	6.377	umol/
4) T	ethane	1.37	2093879	6.828	umol/
5) T	propane	3.81	3131138	6.840	umol/
7) T	carbon dioxide	0.20	22088076	12.316	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37329.D RSK2EXT.M Tue Apr 02 13:21:22 2013 Page 1

Signal #1 : C:\MSDchem\1\DATA\040213\16G37329.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\040213\16G37329.D\TCD2B.CH
Acq On : 02 Apr 2013 13:16 Operator: QX
Sample : WG425333-03 6.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 2 13:21 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:28:53 2013
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

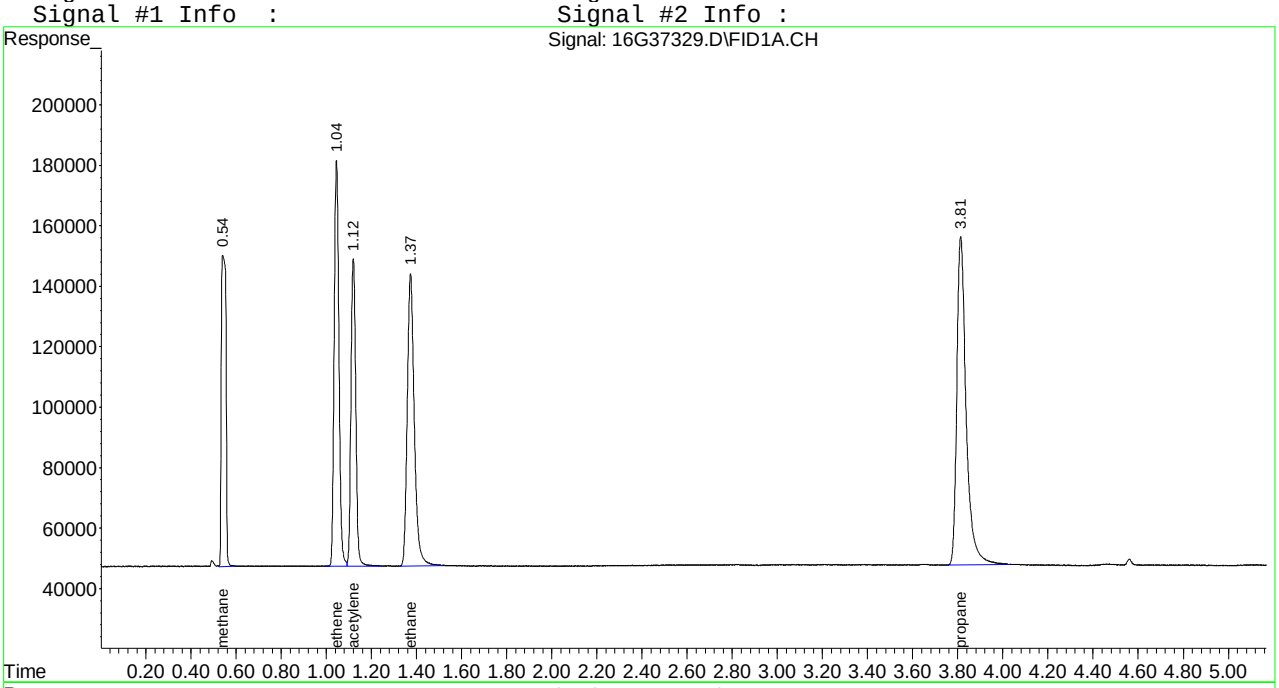

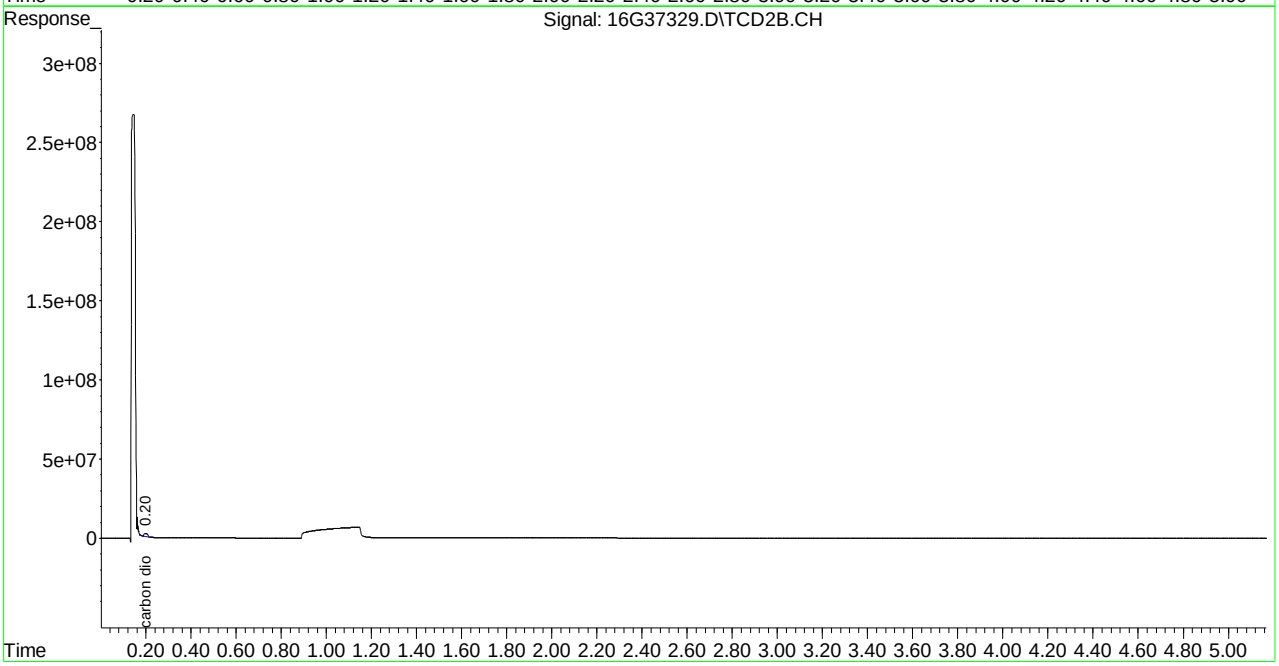

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\040213\16G37330.D\FID1A.CH Vial: 13
Signal #2 : C:\MSDchem\1\DATA\040213\16G37330.D\TCD2B.CH
Acq On    : 02 Apr 2013  13:25                        Operator: QX
Sample    : WG425333-04 16.67umol/mol ICAL RSK175     Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e
Quant Time: Apr 02 13:31:08 2013  Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 12:28:53 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	2991664	14.356	umol/
2) T	ethene	1.05	4609687	15.686	umol/
3) T	acetylene	1.12	4006359	17.058	umol/
4) T	ethane	1.37	4829280	15.748	umol/
5) T	propane	3.81	7110589	15.532	umol/
7) T	carbon dioxide	0.20	32834962	18.308	umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\040213\16G37330.D\FID1A.CH Vial: 13
Signal #2 : C:\MSDchem\1\DATA\040213\16G37330.D\TCD2B.CH
Acq On : 02 Apr 2013 13:25 Operator: QX
Sample : WG425333-04 16.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 2 13:31 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:28:53 2013
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

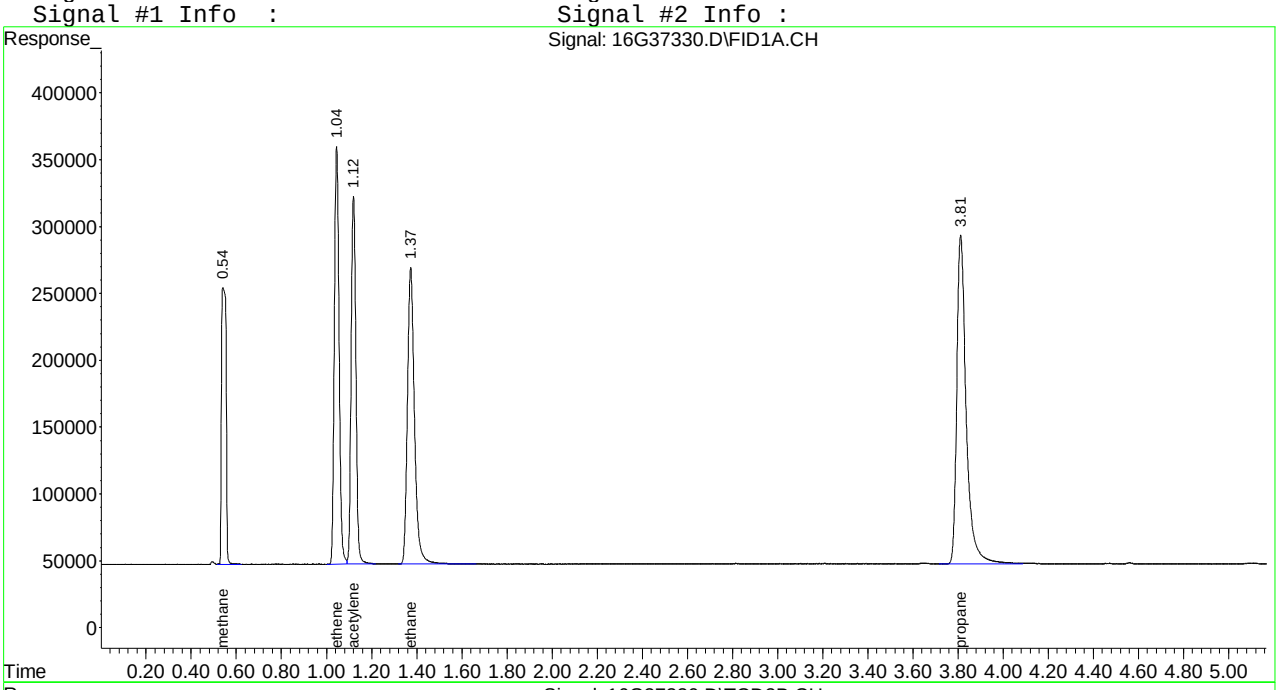

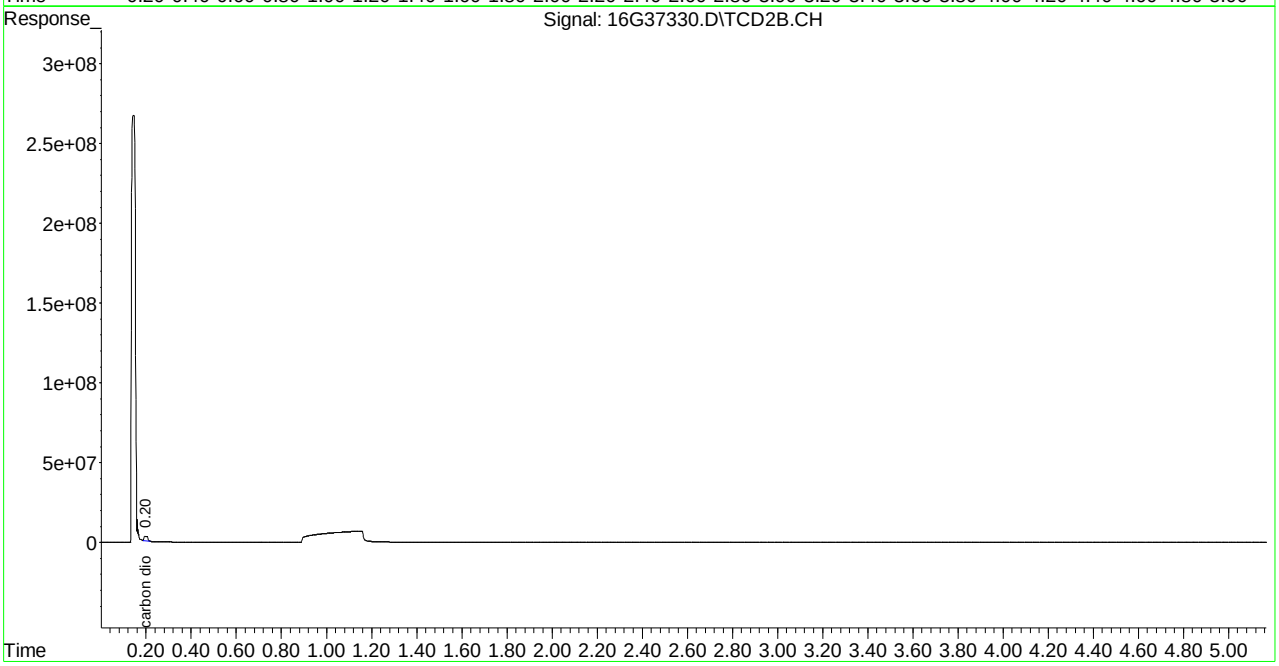

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\040213\16G37332.D\FID1A.CH Vial: 15
Signal #2 : C:\MSDchem\1\DATA\040213\16G37332.D\TCD2B.CH
Acq On : 02 Apr 2013 14:21 Operator: QX
Sample : WG425333-10 133umol/mol ICV RSK175 Inst : HP16
Misc : 1,1 STD56793 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 14:27:08 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	22654019	123.323	umol/
2) T	ethene	1.04	39629849	133.101	umol/
3) T	acetylene	1.12	38327610	158.002	umol/
4) T	ethane	1.37	41187146	133.945	umol/
5) T	propane	3.81	60773891	133.013	umol/
7) T	carbon dioxide	0.20	91935377	14461.700	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37332.D RSK2EXT.M Tue Apr 02 14:27:08 2013 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\040213\16G37332.D\FID1A.CH Vial: 15
Signal #2 : C:\MSDchem\1\DATA\040213\16G37332.D\TCD2B.CH
Acq On : 02 Apr 2013 14:21 Operator: QX
Sample : WG425333-10 133umol/mol ICV RSK175 Inst : HP16
Misc : 1,1 STD56793 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 2 14:27 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

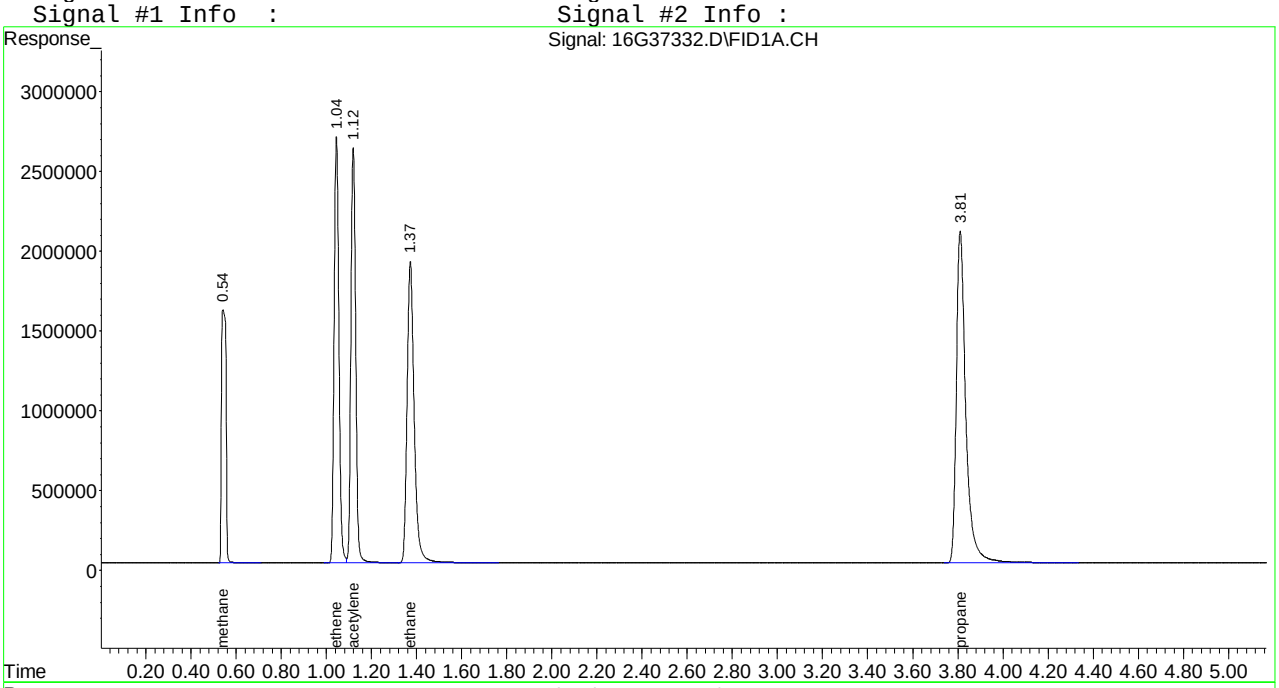

Evaluate Continuing Calibration Report

```
Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37332.D\FID1A.CH Vial: 15
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37332.D\TCD2B.CH
Acq On    : 02 Apr 2013  14:21                      Operator: QX
Sample    : WG425333-10 133umol/mol ICV RSK175      Inst    : HP16
Misc      : 1,1 STD56793                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e

Method       : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	123.323	7.3	101	0.00
2	T	ethene	133.000	133.101	-0.1	104	0.00
3	T	acetylene	133.000	158.002	-18.8#	117	0.00
4	T	ethane	133.000	133.945	-0.7	103	0.00
5	T	propane	133.000	133.013	-0.0	102	0.00

Signal #2

7	T	carbon dioxide	13333.000	14461.700	-8.5	112	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G37332.D RSK2EXT.M Tue Apr 02 14:30:57 2013 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37332.D\FID1A.CH Vial: 15
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37332.D\TCD2B.CH
Acq On    : 02 Apr 2013  14:21                      Operator: QX
Sample    : WG425333-10 133umol/mol ICV RSK175      Inst    : HP16
Misc      : 1,1 STD56793                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e

Method       : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\061013\16G38558.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\061013\16G38558.D\TCD2B.CH
Acq On : 10 Jun 2013 11:24 Operator: QX
Sample : WG433489-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jun 10 11:29:56 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	23219953	126.403	umol/
2) T	ethene	1.04	39626398	133.090	umol/
3) T	acetylene	1.12	39004690	160.794	umol/
4) T	ethane	1.37	40841263	132.820	umol/
5) T	propane	3.81	60193243	131.743	umol/
7) T	carbon dioxide	0.20	90941365	14305.339	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G38558.D RSK2EXT.M Mon Jun 10 11:29:56 2013 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\061013\16G38558.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\061013\16G38558.D\TCD2B.CH
Acq On    : 10 Jun 2013  11:24                        Operator: QX
Sample    : WG433489-01 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD55748                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e
Quant Time: Jun 10 11:29 2013  Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

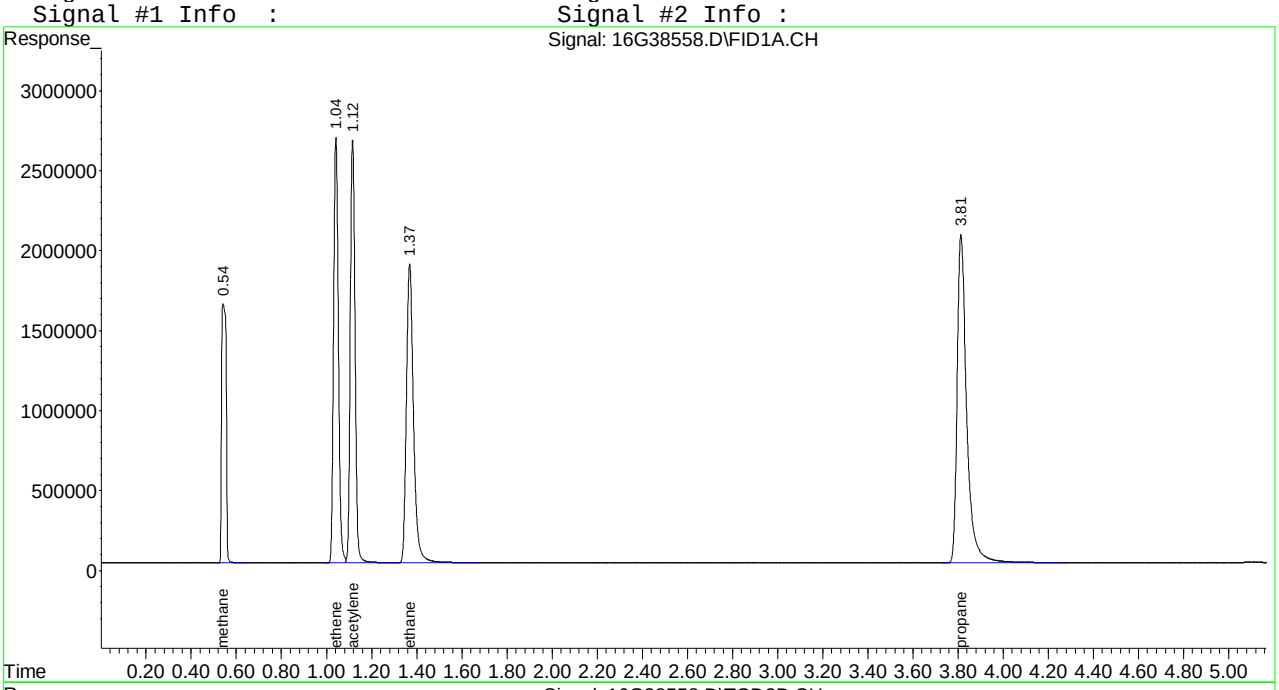

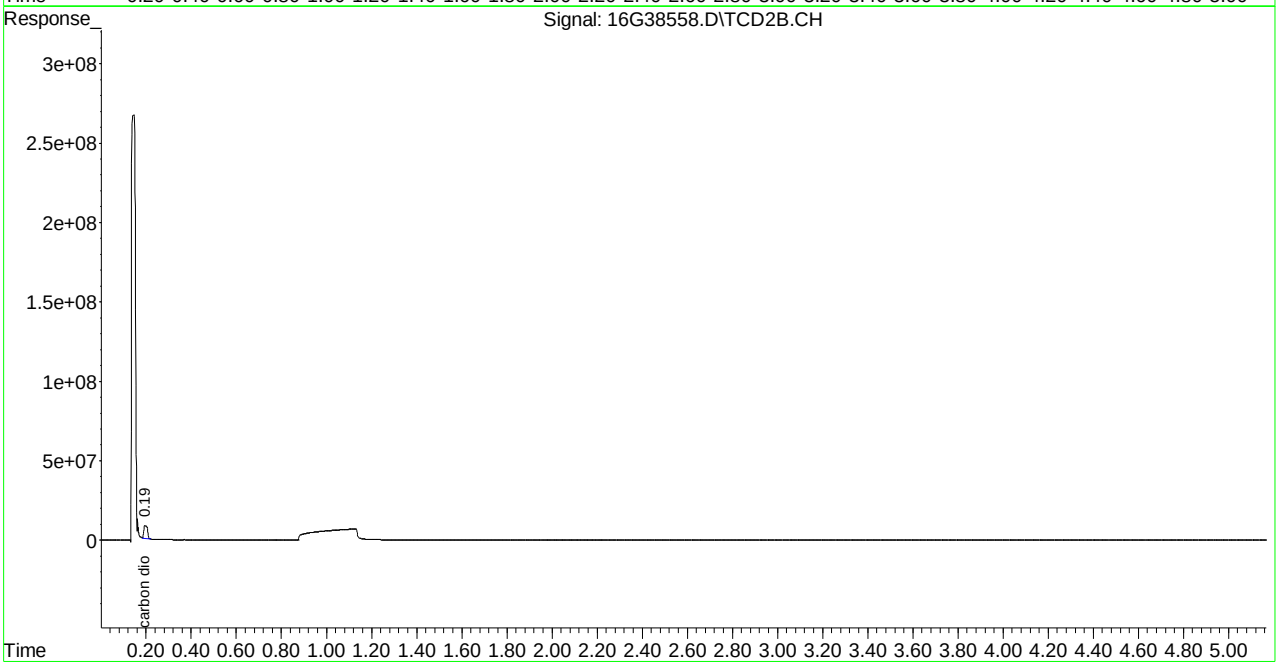

Evaluate Continuing Calibration Report

```
Signal #1 : C:\MSDCHEM\1\DATA\061013\16G38558.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\061013\16G38558.D\TCD2B.CH
Acq On    : 10 Jun 2013  11:24                      Operator: QX
Sample    : WG433489-01 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD55748                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e

Method       : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	126.403	5.0	104	0.00
2	T	ethene	133.000	133.090	-0.1	104	0.00
3	T	acetylene	133.000	160.794	-20.9#	119	0.00
4	T	ethane	133.000	132.820	0.1	102	0.00
5	T	propane	133.000	131.743	0.9	101	0.00
		Signal #2					
7	T	carbon dioxide	13333.000	14305.339	-7.3	110	0.00

```
---------------------------------------------------------------------------
(#) = Out of Range            SPCC's out = 0  CCC's out = 0
16G38558.D  RSK2EXT.M      Mon Jun 10 11:40:44 2013                    Page 1
```

```
Signal #1 : C:\MSDCHEM\1\DATA\061013\16G38558.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\061013\16G38558.D\TCD2B.CH
Acq On    : 10 Jun 2013  11:24                      Operator: QX
Sample    : WG433489-01 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD55748                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e

Method       : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\061013\16G38569.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\061013\16G38569.D\TCD2B.CH
Acq On    : 10 Jun 2013  13:17                        Operator: QX
Sample    : WG433489-02 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD55748                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e
Quant Time: Jun 10 13:23:10 2013  Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.54	23807163	129.600 umol/
2) T	ethene	1.04	41082662	137.981 umol/
3) T	acetylene	1.12	38510107	158.755 umol/
4) T	ethane	1.37	42598145	138.534 umol/
5) T	propane	3.82	63557070	139.105 umol/
7) T	carbon dioxide	0.19	297716701	46831.695 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G38569.D RSK2EXT.M Mon Jun 10 13:23:10 2013 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\061013\16G38569.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\061013\16G38569.D\TCD2B.CH
Acq On    : 10 Jun 2013  13:17                        Operator: QX
Sample    : WG433489-02 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD55748                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e
Quant Time: Jun 10 13:23 2013  Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

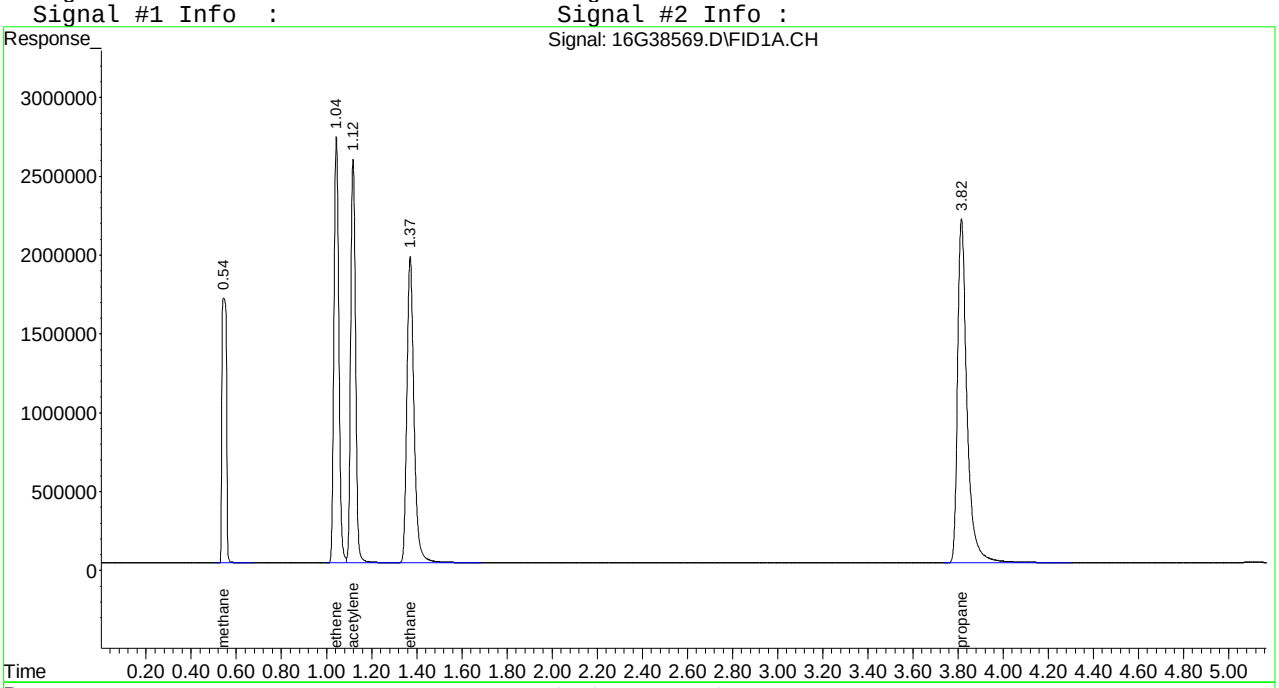

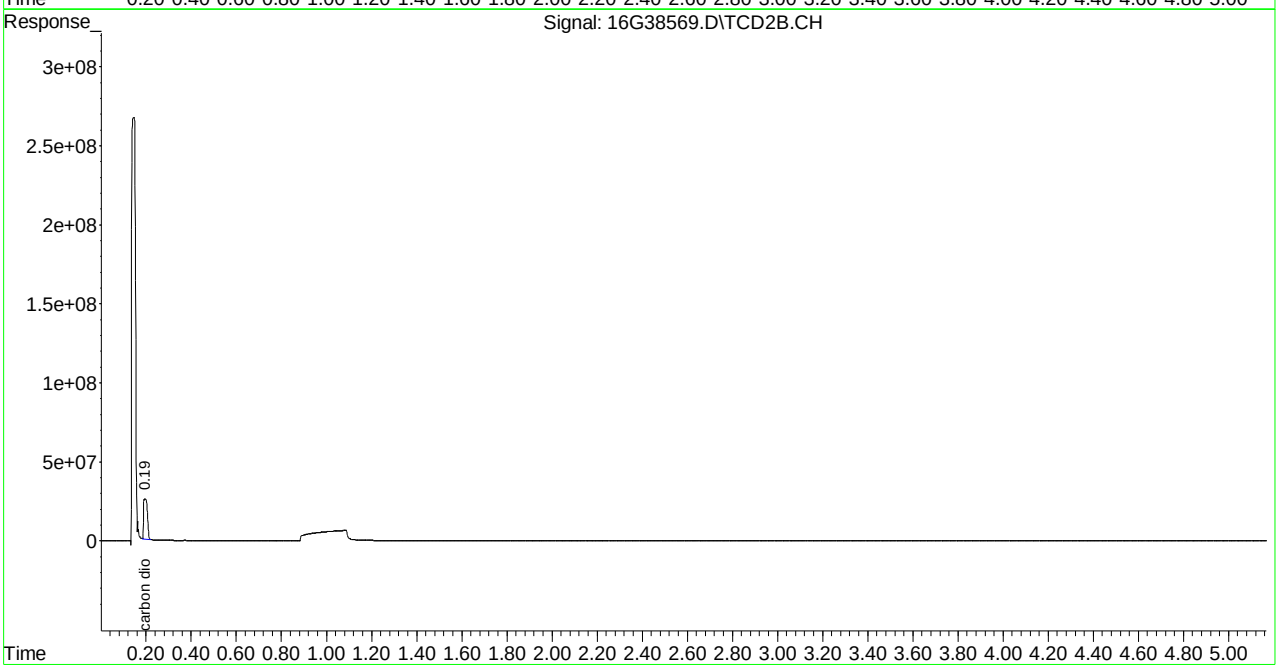

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L13060134 **Run Date:** 06/10/2013 **Sample ID:** WG433489-01
Instrument: HP16 **Run Time:** 11:24 **Method:** RSK175
Workgroup (AAB#): WG433492 **File ID:** 16G38558

RT Standard	Analysis Date	File ID	Analyst
WG418215-01	01/10/2013	16G35943	MDA
WG417838-01	01/03/2013	16G35924	FJB
WG417763-01	01/02/2013	16G35907	FJB

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.59	.59	.59	.54	0.510	0.570
ETHENE	1.13	1.14	1.14	1.04	1.010	1.070
ETHANE	1.49	1.5	1.5	1.37	1.340	1.400
PROPANE	3.9	3.9	3.91	3.81	3.780	3.840
CARBON DIOXIDE	.2	.19	.19	.2	0.170	0.230
ACETYLENE	1.21	1.22	1.23	1.12	1.090	1.150

RT_WIN - Modified 01/06/2010
PDF File ID: 2918266
Report generated 06/14/2013 13:49

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\061013\16G38559.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\061013\16G38559.D\TCD2B.CH
Acq On    : 10 Jun 2013  11:45                        Operator: QX
Sample    : WG433492-01 BLANK RSK175                  Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e
Quant Time: Jun 10 11:51:04 2013  Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	325652	1.773	umol/
2) T	ethene	1.04	3278	0.011	umol/
3) T	acetylene	1.12	3008	0.012	umol/
4) T	ethane	1.37	2546	0.008	umol/
5) T	propane	0.00	0	N.D.	umol/
7) T	carbon dioxide	0.00	0	N.D.	umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\061013\16G38559.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\061013\16G38559.D\TCD2B.CH
Acq On : 10 Jun 2013 11:45 Operator: QX
Sample : WG433492-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jun 10 11:51 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

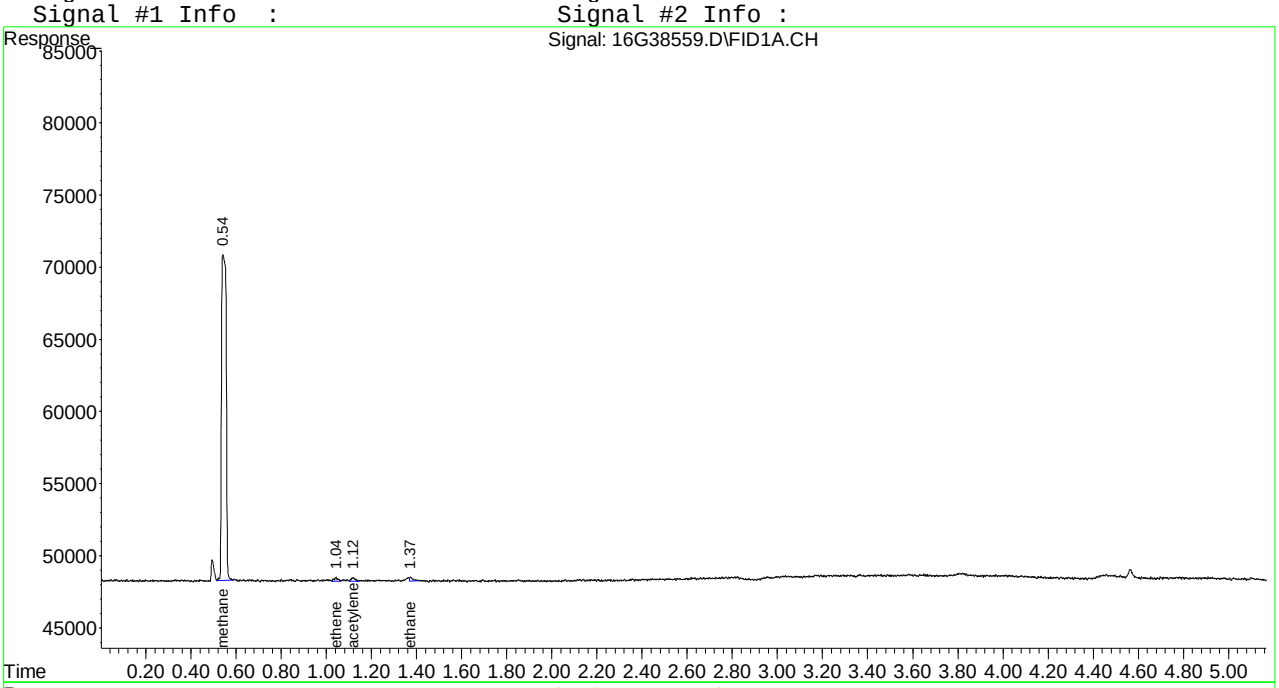

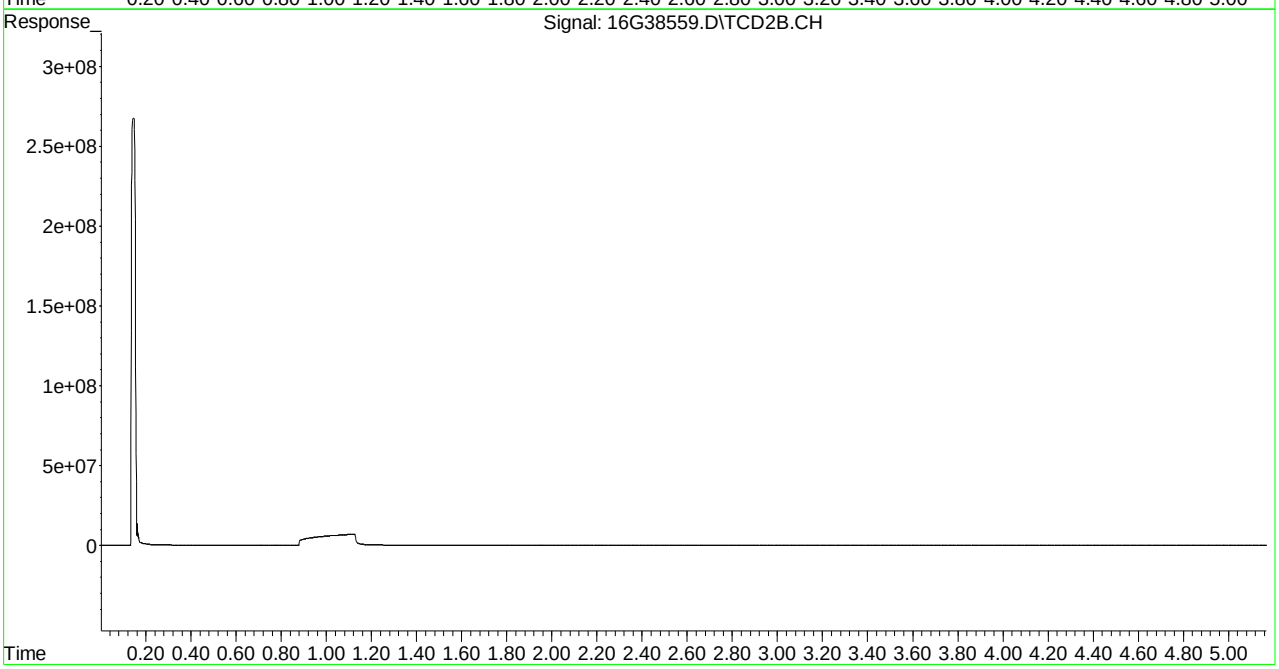

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\061013\16G38560.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\061013\16G38560.D\TCD2B.CH
Acq On : 10 Jun 2013 11:56 Operator: QX
Sample : WG433492-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD56793 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jun 10 12:01:25 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	10583181	57.612	umol/
2) T	ethene	1.04	18329253	61.561	umol/
3) T	acetylene	1.12	17643807	72.735	umol/
4) T	ethane	1.37	19132604	62.221	umol/
5) T	propane	3.81	28872058	63.191	umol/
7) T	carbon dioxide	0.20	31254382	4916.404	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G38560.D RSK2EXT.M Mon Jun 10 12:01:25 2013 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\061013\16G38560.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\061013\16G38560.D\TCD2B.CH
Acq On    : 10 Jun 2013  11:56                        Operator: QX
Sample    : WG433492-02 67umol/mol LCS RSK175         Inst    : HP16
Misc      : 1,1 STD56793                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e
Quant Time: Jun 10 12:01 2013  Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

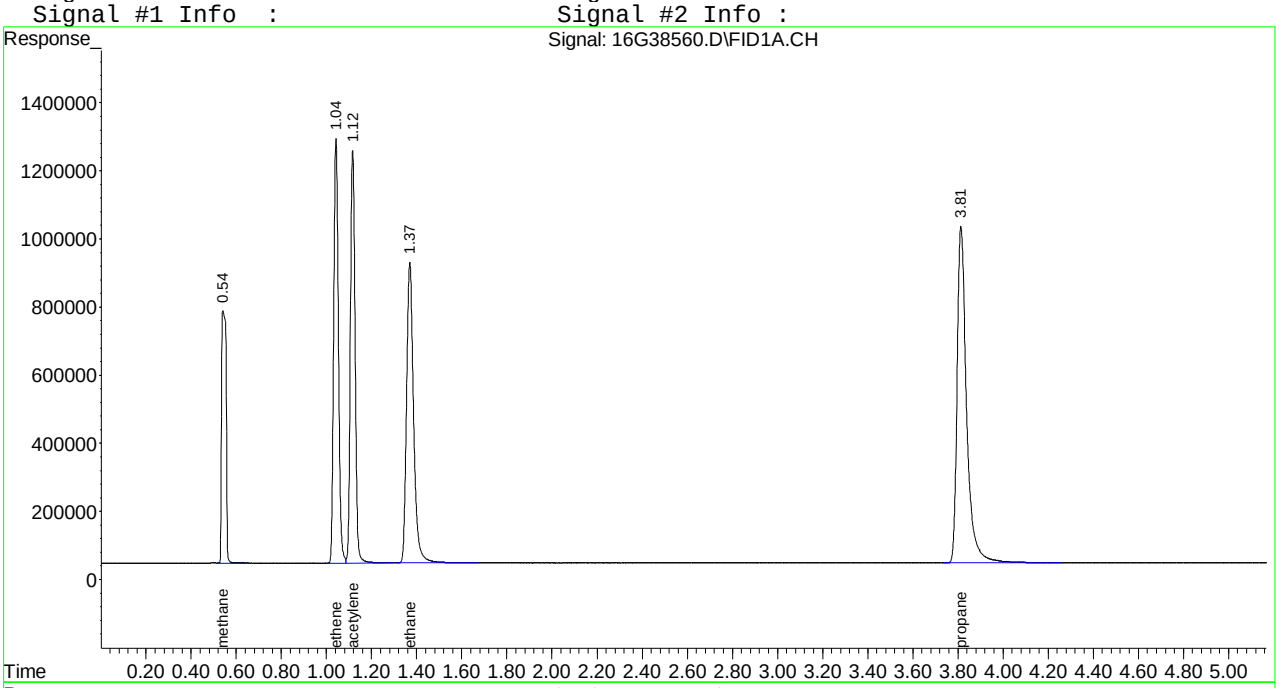

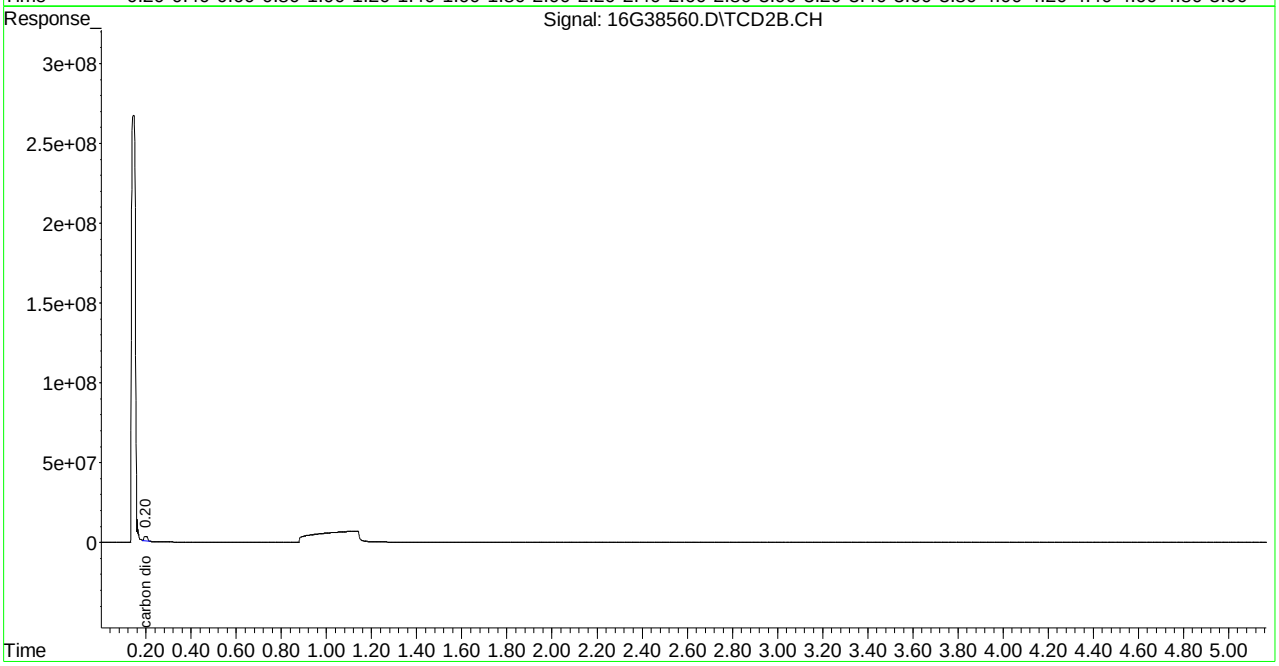

2.2 General Chemistry Data

2.2.1 Method 9056

2.2.1.1 Summary Data

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-16	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-060313	**Prep Method:**	9056	**Prep Date:**	06/05/2013 08:57
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	05/01/2013 13:02
Workgroup #:	WG432972	**Analyst:**	JBK	**Run Date:**	06/05/2013 17:48
Collect Date:	06/03/2013 13:10	**Dilution:**	50	**File ID:**	I1_060513-32
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1440	J	20.0	10.0	5.00
Sulfate	14808-79-8	300		100	50.0	25.0

J	Estimated value ; the analyte concentration was greater than the highest standard

Generated at Jun 17, 2013 09:06

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-16	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-060313	**Prep Method:**	9056	**Prep Date:**	06/06/2013 16:53
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	05/01/2013 13:02
Workgroup #:	WG433268	**Analyst:**	JBK	**Run Date:**	06/06/2013 21:44
Collect Date:	06/03/2013 13:10	**Dilution:**	100	**File ID:**	I1_060613-19
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1320		40.0	20.0	10.0

2.2.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(-c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 050113 ICAL IC1.SEQ
Analyst1: JBK Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 14

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#: RGT26018

Column 1 ID: AG14A Column 2 ID: AS14A

Workgroups: WG428777 (ICAL) WG428971 (LOD/LOQ)

Internal STD: NA Surrogate STD: NA Calibration STD 01-MAY-2013

CCV STD: STD57462 LCS STD: STD57462 MS/MSD STD: STD57462

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_050113-01	WG428777-01 STD 6	1	1		05/01/13 11:30
2	I1_050113-02	WG428777-02 STD 5	1	1		05/01/13 11:48
3	I1_050113-03	WG428777-03 STD 4	1	1		05/01/13 12:07
4	I1_050113-04	WG428777-04 STD 3	1	1		05/01/13 12:25
5	I1_050113-05	WG428777-05 STD 2	1	1		05/01/13 12:44
6	I1_050113-06	WG428777-06 STD 1	1	1		05/01/13 13:02
7	I1_050113-07	STD NR	1	1		05/01/13 13:21
8	I1_050113-08	L13040001-01 (F,CL,BR,SO4)	1	1		05/01/13 13:39
9	I1_050113-09	L13040001-01 (NO2,NO3)	1	1		05/01/13 13:57
10	I1_050113-10	L13040003-01 (F,CL,BR,SO4)	1	1		05/01/13 14:16
11	I1_050113-11	L13040003-01 (NO2,NO3)	1	1		05/01/13 14:34
12	I1_050113-12	LCR TEST LEVEL 6	1	1		05/01/13 14:53
13	I1_050113-13	LCR TEST LEVEL 0	1	1		05/01/13 15:11
14	I1_050113-14	WG428777-07 ALT STD	1	1		05/01/13 15:29
15	I1_050113-15	END	1	1		05/01/13 15:48

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 03-MAY-13

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 060513 IC1.SEQ
Analyst1: KRB Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 14

Maintenance Log ID: 46231 Syringe Filter Lot#: 00159090
Eluent ID#:

Column 1 ID: AG14A Column 2 ID: AS14A

Workgroups: WG432972

Internal STD: NA Surrogate STD: NA Calibration STD 01-MAY-2013

CCV STD: STD57462 LCS STD: STD57462 MS/MSD STD: STD57462

Comments: 1541 (ALL), 1602 (ALL), 0134 (ALL) were analyzed at dilutions due to concentrations of target analyte(s) greater than or near the ICAL.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_060513-01	ELUENT	1	1		06/05/13 08:17
2	I1_060513-02	DI WATER	1	1		06/05/13 08:36
3	I1_060513-03	WG432976-01 ANION CCV	1	1		06/05/13 08:54
4	I1_060513-04	WG432976-02 ANION CCB	1	1		06/05/13 09:12
5	I1_060513-05	WG432972-01 ANION BLANK	1	1		06/05/13 09:31
6	I1_060513-06	WG432972-02 ANION LCS	1	1		06/05/13 09:49
7	I1_060513-07	L13051243-04 (SO4)	1	1		06/05/13 10:08
8	I1_060513-08	L13060058-01 (SO4)	1	1		06/05/13 10:26
9	I1_060513-09	L13060058-03 (SO4)	1	1		06/05/13 10:45
10	I1_060513-10	L13060058-05 (SO4)	1	1		06/05/13 11:03
11	I1_060513-11	L13060058-07 (SO4)	1	1		06/05/13 11:22
12	I1_060513-12	L13060058-09 (SO4)	1	1		06/05/13 11:40
13	I1_060513-13	L13060058-11 (SO4)	1	1		06/05/13 11:58
14	I1_060513-14	L13051541-04 1/10 (Cl, SO4)	1	10		06/05/13 12:17
15	I1_060513-15	WG432976-03 ANION CCV	1	1		06/05/13 12:35
16	I1_060513-16	WG432976-04 ANION CCB	1	1		06/05/13 12:53
17	I1_060513-17	L13051541-06 1/5 (Cl, SO4)	1	5		06/05/13 13:12
18	I1_060513-18	L13051589-01 (SO4)	2	1		06/05/13 13:30
19	I1_060513-19	L13051589-02 1/2 (SO4)	2	2		06/05/13 13:49
20	I1_060513-20	L13051589-03 (SO4)	2	1		06/05/13 14:07
21	I1_060513-21	L13051589-04 (SO4)	2	1		06/05/13 14:26
22	I1_060513-22	L13051589-05 1/2 (SO4)	2	2		06/05/13 14:44
23	I1_060513-23	L13051589-06 (SO4)	2	1		06/05/13 15:02
24	I1_060513-24	L13051570-01 (SO4)	1	1		06/05/13 15:21
25	I1_060513-25	WG432972-04 DUP 1570-01	2	1		06/05/13 15:39
26	I1_060513-26	WG432972-05 MS 1570-01	2	1		06/05/13 15:58
27	I1_060513-27	WG432976-05 ANION CCV	1	1		06/05/13 16:16
28	I1_060513-28	WG432976-06 ANION CCB	1	1		06/05/13 16:34
29	I1_060513-29	WG432972-06 SD 1570-01	2	1		06/05/13 16:52
30	I1_060513-30	L13051602-04 1/75 (Cl, SO4)	1	75		06/05/13 17:11
31	I1_060513-31	L13051602-07 1/25 (Cl, SO4)	1	25		06/05/13 17:29
32	I1_060513-32	L13060134-16 1/50 (Cl, SO4)	1	50		06/05/13 17:48
33	I1_060513-33	L13051541-06 1/10 RR CL	1	10		06/05/13 18:06

Page: 1 Approved: 06-JUN-13

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 060513 IC1.SEQ
Analyst1: KRB Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 14

Maintenance Log ID: 46231 Syringe Filter Lot#: 00159090
Eluent ID#:

Column 1 ID: AG14A Column 2 ID: AS14A

Workgroups: WG432972

Internal STD: NA Surrogate STD: NA 01-MAY-2013

CCV STD: STD57462 LCS STD: STD57462 STD57462

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I1_060513-34	WG432976-07 ANION CCV	1	1		06/05/13 18:25
35	I1_060513-35	WG432976-08 ANION CCB	1	1		06/05/13 18:43
36	I1_060513-36	END	1	1		06/05/13 19:01

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X		Over Calibration Range	Cl
	L13051541-06 1/5 (Cl, SO4): Report SO4 only.			
32	X		Over Calibration Range	Cl
	L13060134-16 1/50 (Cl, SO4): Report SO4 only.			
33				
	L13051541-06 1/10 RR CL: Report CL.			

Page: 2 Approved: 06-JUN-13

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 060613 IC1.SEQ
Analyst1: KRB Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 14

Maintenance Log ID: 46249 Syringe Filter Lot#: 00159090
Eluent ID#:

Column 1 ID: AG14A Column 2 ID: AS14A

Workgroups: WG433268

Internal STD: NA Surrogate STD: NA Calibration STD 01-MAY-2013

CCV STD: STD57462 LCS STD: STD57462 MS/MSD STD: STD57462

Comments: 06-0224 (ALL), 0100 (ALL), and 0173 (ALL) were analyzed at dilutions only due to high concentrations of the target analyte(s) greater than the ICAL.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_060613-01	ELUENT	1	1		06/06/13 16:13
2	I1_060613-02	DI WATER	1	1		06/06/13 16:32
3	I1_060613-03	WG433275-01 ANION CCV	1	1		06/06/13 16:50
4	I1_060613-04	WG433275-02 ANION CCB	1	1		06/06/13 17:08
5	I1_060613-05	WG433268-01 ANION BLANK	1	1		06/06/13 17:27
6	I1_060613-06	WG433268-02 ANION LCS	1	1		06/06/13 17:45
7	I1_060613-07	L13060224-01 1/50 (CL,SO4)	1	50		06/06/13 18:04
8	I1_060613-08	L13060224-01 1/500 RR CL	1	500		06/06/13 18:22
9	I1_060613-09	L13060224-07 1/50 (CL,SO4)	1	50		06/06/13 18:40
10	I1_060613-10	L13060224-07 1/500 RR CL	1	500		06/06/13 18:59
11	I1_060613-11	WG433268-04 DUP 1/500 0224-07	1	500		06/06/13 19:17
12	I1_060613-12	WG433268-05 MS 1/500 0224-07	1	500		06/06/13 19:35
13	I1_060613-13	WG433268-06 SD 1/500 0224-07	1	500		06/06/13 19:54
14	I1_060613-14	L13060100-02 1/2500 (ALL)	18	2500		06/06/13 20:12
15	I1_060613-15	L13060049-01 (NO3)	7	1		06/06/13 20:31
16	I1_060613-16	COLUMN RINSE	1	1		06/06/13 20:49
17	I1_060613-17	WG433275-03 ANION CCV	1	1		06/06/13 21:08
18	I1_060613-18	WG433275-04 ANION CCB	1	1		06/06/13 21:26
19	I1_060613-19	L13060134-16 1/100 (CL)	1	100		06/06/13 21:44
20	I1_060613-20	WG433275-05 ANION CCV	1	1		06/06/13 22:03
21	I1_060613-21	WG433275-06 ANION CCB	1	1		06/06/13 22:21
22	I1_060613-22	END	1	1		06/06/13 22:40

Comments

Seq.	Rerun	Dil.	Reason	Analytes
19				
	L13060134-16 1/100 (CL): Report Cl only.			

Page: 1 Approved: 07-JUN-13

Microbac Laboratories Inc.

Data Checklist

Date: 01-MAY-2013
Analyst: JBK
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 52904
Analytical Workgroups: WG428777 (ICAL) WG428971 (LOD/LOQ)

ANALYTICAL	
System Performance Check	NA
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	JBK
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
03-MAY-2013

Secondary Reviewer:
03-MAY-2013

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-07-2013 16:19:43

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUN-2013
Analyst: KRB
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 53623
Analytical Workgroups: 05-1243, 1541, 1570, 1589, 1602, 06-0058, 0134

ANALYTICAL	
System Performance Check	NA
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	KRB
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	JBK

Primary Reviewer:
06-JUN-2013

Secondary Reviewer:
06-JUN-2013

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-06-2013 11:20:05

Microbac Laboratories Inc.

Data Checklist

Date: 06-JUN-2013
Analyst: KRB
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 53656
Analytical Workgroups: 06-0049, 0100, 0134, 0224

ANALYTICAL	
System Performance Check	NA
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	KRB
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	JBK

Primary Reviewer:
07-JUN-2013

Secondary Reviewer:
07-JUN-2013

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-07-2013 11:53:04

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG432972

Login Number: L13060134

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-060313	16	06/03/13					06/05/2013	1.8	2		06/05/13	2.2	2	*

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2911933
Report generated 06/07/2013 15:43

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG433268

Login Number: L13060134

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-060313	16	06/03/13					06/06/2013	3.2	2	*	06/06/13	3.4	2	*

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2911933
Report generated 06/07/2013 15:43

METHOD BLANK SUMMARY

Login Number: L13060134
Blank File ID: I1_060513-05
Prep Date: 06/05/13 08:57
Analyzed Date: 06/05/13 09:31
Analyst: JBK

Work Group: WG432972
Blank Sample ID: WG432972-01
Instrument ID: IC1
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG432972-02	I1_060513-06	06/05/13 09:49	01
DUP	WG432972-04	I1_060513-25	06/05/13 15:39	01
67WW08-060313	L13060134-16	I1_060513-32	06/05/13 17:48	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 2911934
Report generated 06/07/2013 15:46

METHOD BLANK SUMMARY

Login Number: L13060134
Blank File ID: I1_060613-05
Prep Date: 06/06/13 16:53
Analyzed Date: 06/06/13 17:27
Analyst: JBK

Work Group: WG433268
Blank Sample ID: WG433268-01
Instrument ID: IC1
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG433268-02	I1_060613-06	06/06/13 17:45	01
DUP	WG433268-04	I1_060613-11	06/06/13 19:17	DL01
67WW08-060313	L13060134-16	I1_060613-19	06/06/13 21:44	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 2911934
Report generated 06/07/2013 15:46

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13060134 Prep Date: 06/05/13 08:57 Sample ID: WG432972-01
Instrument ID: IC1 Run Date: 06/05/13 09:31 Prep Method: 9056
File ID: I1 060513-05 Analyst: JBK Method: 9056
Workgroup (AAB#): WG432972 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1-01-MAY-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2911935
07-JUN-2013 15:43

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13060134 Prep Date: 06/06/13 16:53 Sample ID: WG433268-01
Instrument ID: IC1 Run Date: 06/06/13 17:27 Prep Method: 9056
File ID: I1 060613-05 Analyst: JBK Method: 9056
Workgroup (AAB#): WG433268 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1 - 01-MAY-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 2911935
07-JUN-2013 15:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13060134 Run Date: 06/05/2013 Sample ID: WG432972-02
Instrument ID: IC1 Run Time: 09:49 Prep Method: 9056
File ID: I1 060513-06 Analyst: JBK Method: 9056
Workgroup (AAB#): WG432972 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD57462 Cal ID: IC1 - 01-MAY-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	8.08	101	90 - 110	
Sulfate	40.0	39.0	97.6	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 2911936
Report generated: 06/07/2013 15:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13060134 Run Date: 06/06/2013 Sample ID: WG433268-02
Instrument ID: IC1 Run Time: 17:45 Prep Method: 9056
File ID: I1 060613-06 Analyst: JBK Method: 9056
Workgroup (AAB#): WG433268 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD57462 Cal ID: IC1-01-MAY-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	7.83	97.9	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 2911936
Report generated: 06/07/2013 15:43

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L13060134
Analytical Method: 9056
ICAL Workgroup: WG428777

Instrument ID: IC1
Initial Calibration Date: 01-MAY-13 13:02
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.481	6.54	0.99800	
Sulfate		7.488	11.1	0.99600	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 2911937
Report generated 06/07/2013 15:43

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L13060134
Analytical Method: 9056

Instrument ID: IC1
Initial Calibration Date: 01-MAY-13 13:02
Column ID: F

Analyte	WG428777-01			WG428777-02			WG428777-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.78200000	5.019	12.0	2.19700000	5.462	8.00	1.43500000	5.575
Sulfate	120	19.0270000	6.307	60.0	8.71800000	6.882	40.0	5.40200000	7.405

INT_CAL - Modified 03/06/2008
PDF File ID: 2911937
Report generated 06/07/2013 15:43

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L13060134

Analytical Method: 9056

Instrument ID: IC1

Initial Calibration Date: 01-MAY-13 13:02

Column ID: F

Analyte	WG428777-04			WG428777-05			WG428777-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.679000000	5.891	1.00	0.172000000	5.814	0.200	0.0390000000	5.128
Sulfate	20.0	2.59500000	7.707	5.00	0.608000000	8.224	1.00	0.119000000	8.403

INT_CAL - Modified 03/06/2008
PDF File ID: 2911937
Report generated 06/07/2013 15:43

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13060134 Run Date: 05/01/2013 Sample ID: WG428777-07
Instrument ID: IC1 Run Time: 15:29 Method: 9056
File ID: I1 050113-14 Analyst: JBK QC Key: DOD4
ICal Workgroup: WG428777 Cal ID: IC1 - 01-MAY-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.86	mg/L	5.67	1.80	10	
Sulfate		40.0	39.3	mg/L	7.42	1.80	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 2911938
Report generated 06/07/2013 15:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13060134
Run Date: 06/05/2013
Sample ID: WG432976-02
Instrument ID: IC1
Run Time: 09:12
Method: 9056
File ID: I1 060513-04
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG432972
Cal ID: IC1 - 01-MAY-13
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2911940
Report generated 06/07/2013 15:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13060134
Run Date: 06/05/2013
Sample ID: WG432976-04
Instrument ID: IC1
Run Time: 12:53
Method: 9056
File ID: I1 060513-16
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG432972
Cal ID: IC1 - 01-MAY-13
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2911940
Report generated 06/07/2013 15:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13060134
Run Date: 06/05/2013
Sample ID: WG432976-06
Instrument ID: IC1
Run Time: 16:34
Method: 9056
File ID: I1 060513-28
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG432972
Cal ID: IC1 - 01-MAY-13
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2911940
Report generated 06/07/2013 15:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13060134
Run Date: 06/05/2013
Sample ID: WG432976-08
Instrument ID: IC1
Run Time: 18:43
Method: 9056
File ID: I1 060513-35
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG432972
Cal ID: IC1 - 01-MAY-13
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2911940
Report generated 06/07/2013 15:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13060134
Run Date: 06/06/2013
Sample ID: WG433275-02
Instrument ID: IC1
Run Time: 17:08
Method: 9056
File ID: I1 060613-04
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG433268
Cal ID: IC1 - 01-MAY-13
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2911940
Report generated 06/07/2013 15:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13060134
Run Date: 06/06/2013
Sample ID: WG433275-04
Instrument ID: IC1
Run Time: 21:26
Method: 9056
File ID: I1 060613-18
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG433268
Cal ID: IC1 - 01-MAY-13
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2911940
Report generated 06/07/2013 15:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13060134
Run Date: 06/06/2013
Sample ID: WG433275-06
Instrument ID: IC1
Run Time: 22:21
Method: 9056
File ID: I1 060613-21
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG433268
Cal ID: IC1 - 01-MAY-13
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2911940
Report generated 06/07/2013 15:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13060134
Run Date: 06/05/2013
Sample ID: WG432976-01
Instrument ID: IC1
Run Time: 08:54
Method: 9056
File ID: I1 060513-03
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG432972
Cal ID: IC1 - 01-MAY-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Sulfate		40.0	39.0	mg/L	7.47	2.52	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 2911939
Report generated 06/07/2013 15:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13060134
Run Date: 06/05/2013
Sample ID: WG432976-03
Instrument ID: IC1
Run Time: 12:35
Method: 9056
File ID: I1 060513-15
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG432972
Cal ID: IC1 - 01-MAY-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Sulfate		40.0	39.0	mg/L	7.46	2.45	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 2911939
Report generated 06/07/2013 15:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13060134
Run Date: 06/05/2013
Sample ID: WG432976-05
Instrument ID: IC1
Run Time: 16:16
Method: 9056
File ID: I1 060513-27
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG432972
Cal ID: IC1 - 01-MAY-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Sulfate		40.0	39.2	mg/L	7.43	2.09	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 2911939
Report generated 06/07/2013 15:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13060134
Run Date: 06/05/2013
Sample ID: WG432976-07
Instrument ID: IC1
Run Time: 18:25
Method: 9056
File ID: I1 060513-34
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG432972
Cal ID: IC1 - 01-MAY-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Sulfate		40.0	39.0	mg/L	7.46	2.40	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 2911939
Report generated 06/07/2013 15:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13060134
Run Date: 06/06/2013
Sample ID: WG433275-01
Instrument ID: IC1
Run Time: 16:50
Method: 9056
File ID: I1 060613-03
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG433268
Cal ID: IC1 - 01-MAY-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.98	mg/L	5.58	0.263	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 2911939
Report generated 06/07/2013 15:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13060134
Run Date: 06/06/2013
Sample ID: WG433275-03
Instrument ID: IC1
Run Time: 21:08
Method: 9056
File ID: I1 060613-17
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG433268
Cal ID: IC1 - 01-MAY-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.48	mg/L	5.95	6.48	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 2911939
Report generated 06/07/2013 15:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13060134
Run Date: 06/06/2013
Sample ID: WG433275-05
Instrument ID: IC1
Run Time: 22:03
Method: 9056
File ID: I1 060613-20
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG433268
Cal ID: IC1 - 01-MAY-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.96	mg/L	5.59	0.500	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 2911939
Report generated 06/07/2013 15:43

2.2.1.3 Sample Data

32 L13060134-16 1/50 (Cl, SO4)

1,50 JBK

Sample Name:	**L13060134-16 1/50 (Cl, SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/5/2013 17:48**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

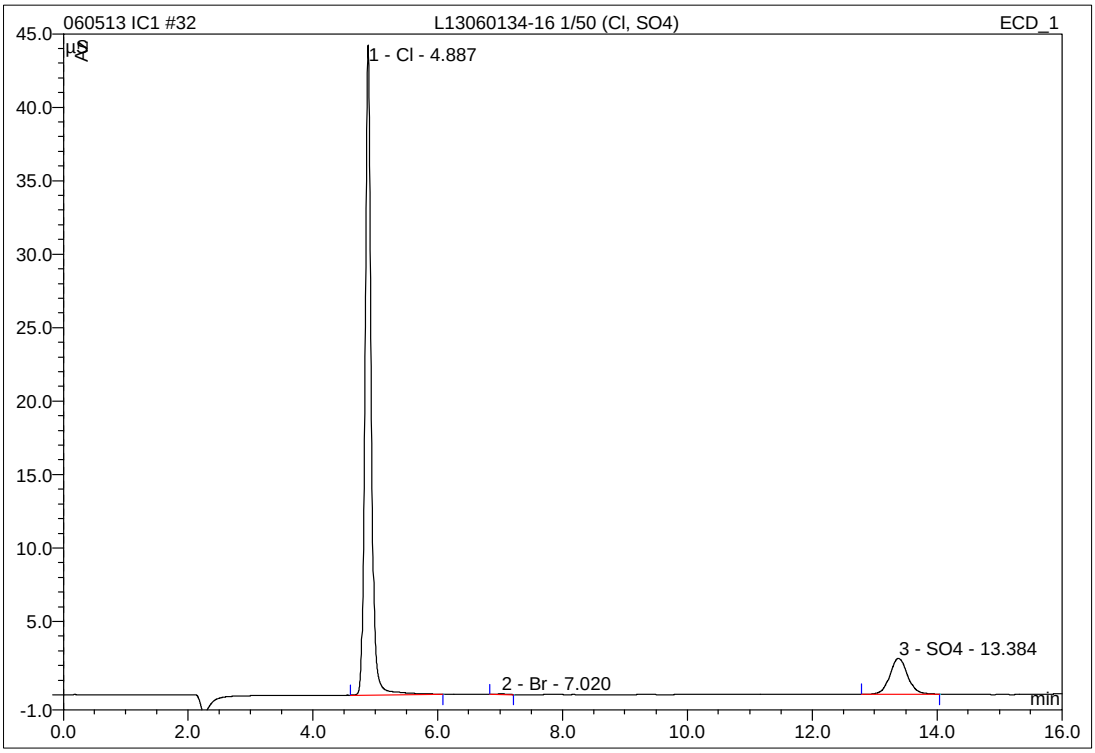

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.89	Cl	44.238	5.184	86.43	28.895	BMB
2	7.02	Br	0.050	0.008	0.14	0.157	BMB
3	13.38	SO4	2.447	0.806	13.43	5.995	BMB
Total:			46.736	5.998	100.00	35.047	

19 L13060134-16 1/100 (CL)

1,100 JBK

Sample Name:	**L13060134-16 1/100 (CL)**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/6/2013 21:44**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

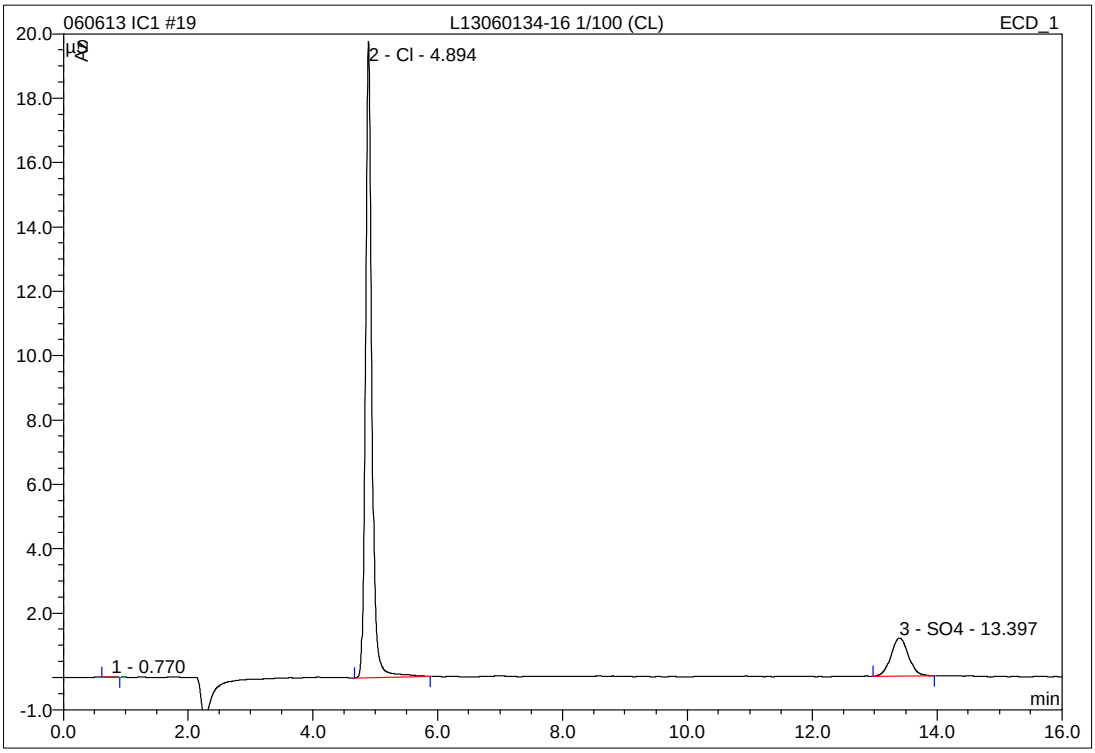

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	0.77	n.a.	0.011	0.002	0.06	n.a.	BMB
2	4.89	Cl	19.767	2.366	86.00	13.181	BMB
3	13.40	SO4	1.180	0.383	13.94	2.933	BMB
Total:			20.958	2.751	100.00	16.114	

2.2.1.4 Standards Data

1 WG428777-01 STD 6

1,1 JBK STD57462

Sample Name:	**WG428777-01 STD 6**	*Injection Volume:*	**20.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/1/2013 11:30**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

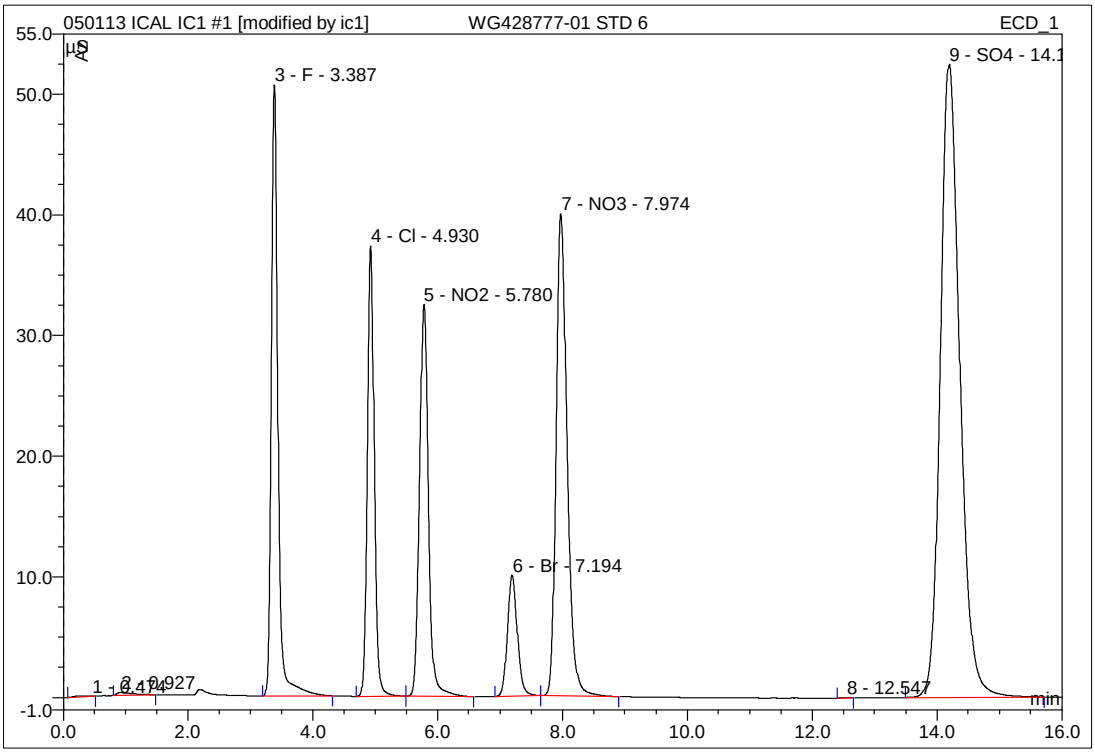

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	0.47	n.a.	0.018	0.017	0.04	n.a.	BMB
2	0.93	n.a.	0.234	0.071	0.16	n.a.	BMB
3	3.39	F	50.653	6.293	13.80	25.453	BMB*
4	4.93	Cl	37.272	4.782	10.48	26.650	BMb
5	5.78	NO2	32.440	5.392	11.82	15.298	bMB
6	7.19	Br	10.038	1.851	4.06	25.298	BMb
7	7.97	NO3	39.962	8.168	17.91	18.403	bMB
8	12.55	n.a.	0.036	0.004	0.01	n.a.	BMB
9	14.20	SO4	52.461	19.027	41.72	138.135	BMB
Total:			223.114	45.605	100.00	249.238	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2 WG428777-02 STD 5

1,1 JBK STD57462

Sample Name:	**WG428777-02 STD 5**	*Injection Volume:*	**20.0**
Vial Number:	**10**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/1/2013 11:48**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

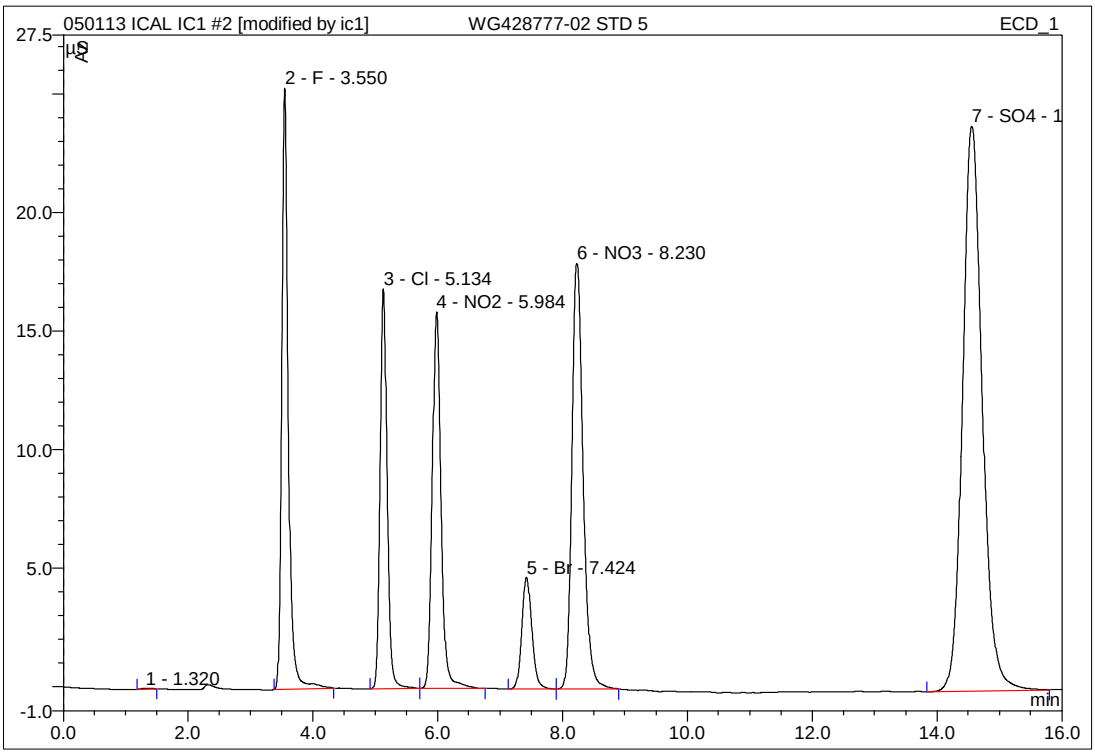

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	1.32	n.a.	0.030	0.006	0.03	n.a.	BMB
2	3.55	F	25.351	3.123	14.70	12.653	BMB*
3	5.13	Cl	16.875	2.197	10.34	12.238	BMb*
4	5.98	NO2	15.873	2.597	12.22	7.376	bMB
5	7.42	Br	4.713	0.884	4.16	12.101	BMB
6	8.23	NO3	17.941	3.721	17.52	8.389	BMB
7	14.56	SO4	23.811	8.718	41.04	63.375	BMB
Total:			104.594	21.246	100.00	116.132	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG428777-03 STD 4

1,1 JBK STD57462

Sample Name:	**WG428777-03 STD 4**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/1/2013 12:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

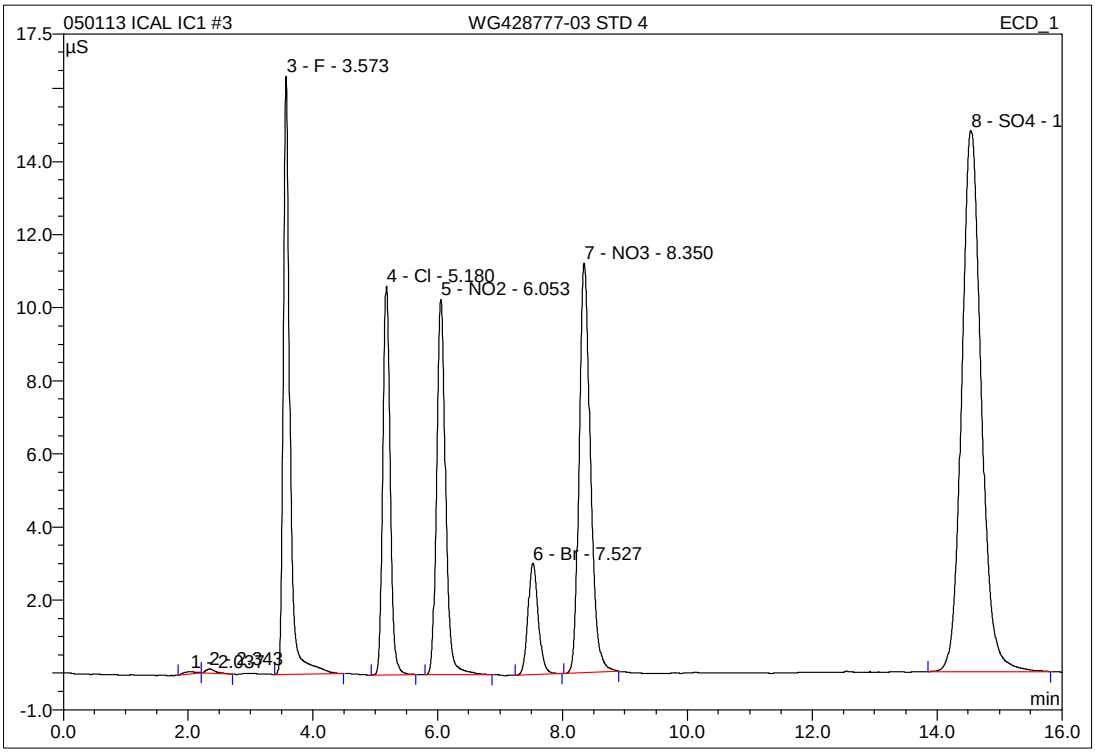

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.04	n.a.	0.059	0.014	0.10	n.a.	BMb
2	2.34	n.a.	0.112	0.020	0.15	n.a.	bMB
3	3.57	F	16.362	2.031	14.97	8.246	BMB
4	5.18	Cl	10.640	1.435	10.57	7.986	BMB
5	6.05	NO2	10.278	1.722	12.68	4.893	BMB
6	7.53	Br	3.050	0.587	4.33	8.058	BMB
7	8.35	NO3	11.219	2.361	17.40	5.326	BMB
8	14.55	SO4	14.804	5.402	39.80	39.325	BMB
Total:			66.523	13.572	100.00	73.834	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG428777-03 STD 4

1,1 JBK STD57462

Sample Name:	**WG428777-03 STD 4**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/1/2013 12:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

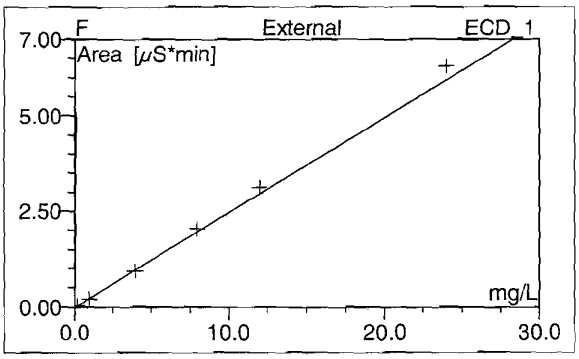

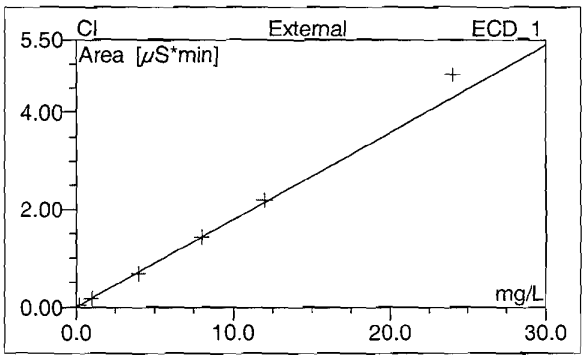

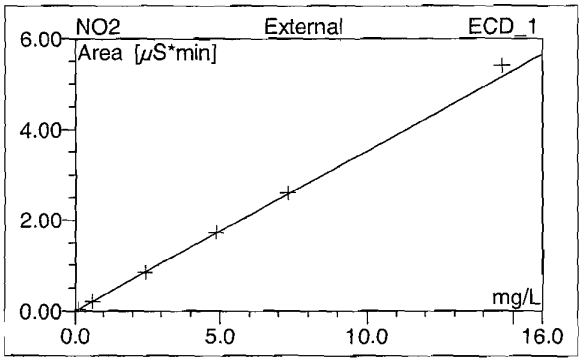

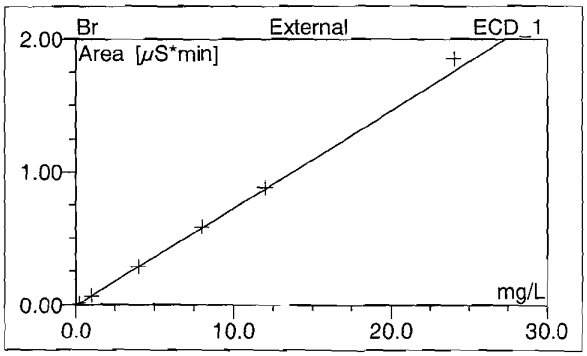

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.04	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	2.34	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	3.57	F	YYLOff	6	99.8055	-0.0112	0.2477	0.0000
4	5.18	Cl	YYLOff	6	99.8014	0.0026	0.1793	0.0000
5	6.05	NO2	YYLOff	6	99.9530	-0.0045	0.3527	0.0000
6	7.53	Br	YYLOff	6	99.9278	-0.0033	0.0733	0.0000
7	8.35	NO3	YYLOff	6	99.7419	-0.0034	0.4440	0.0000
8	14.55	SO4	YYLOff	6	99.6160	-0.0209	0.1379	0.0000
Average:					99.8076	-0.0068	0.2392	0.0000

3 WG428777-03 STD 4

1,1 JBK STD57462

Sample Name:	**WG428777-03 STD 4**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/1/2013 12:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

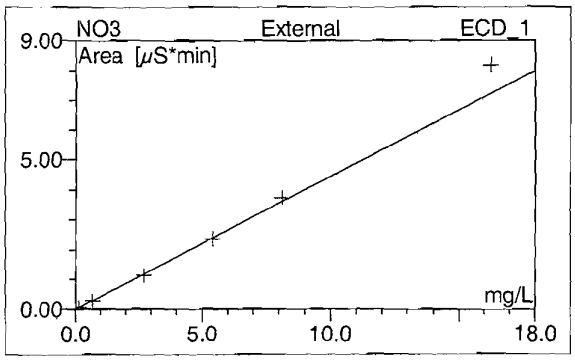

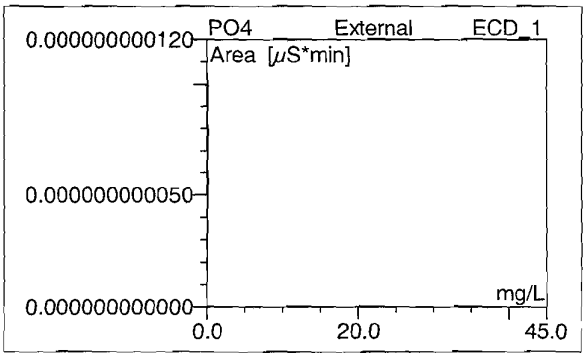

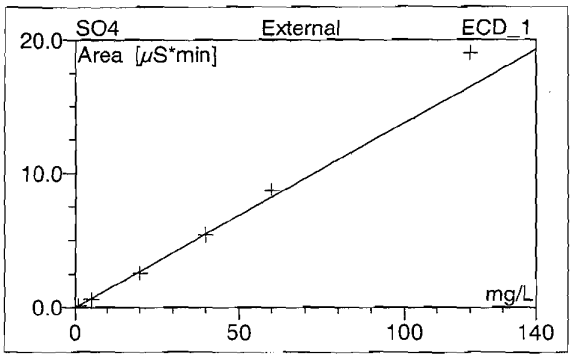

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.04	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	2.34	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	3.57	F	YYLOff	6	99.8055	-0.0112	0.2477	0.0000
4	5.18	Cl	YYLOff	6	99.8014	0.0026	0.1793	0.0000
5	6.05	NO2	YYLOff	6	99.9530	-0.0045	0.3527	0.0000
6	7.53	Br	YYLOff	6	99.9278	-0.0033	0.0733	0.0000
7	8.35	NO3	YYLOff	6	99.7419	-0.0034	0.4440	0.0000
8	14.55	SO4	YYLOff	6	99.6160	-0.0209	0.1379	0.0000
Average:					99.8076	-0.0068	0.2392	0.0000

4 WG428777-04 STD 3

1,1 JBK STD57462

Sample Name:	**WG428777-04 STD 3**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/1/2013 12:25**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

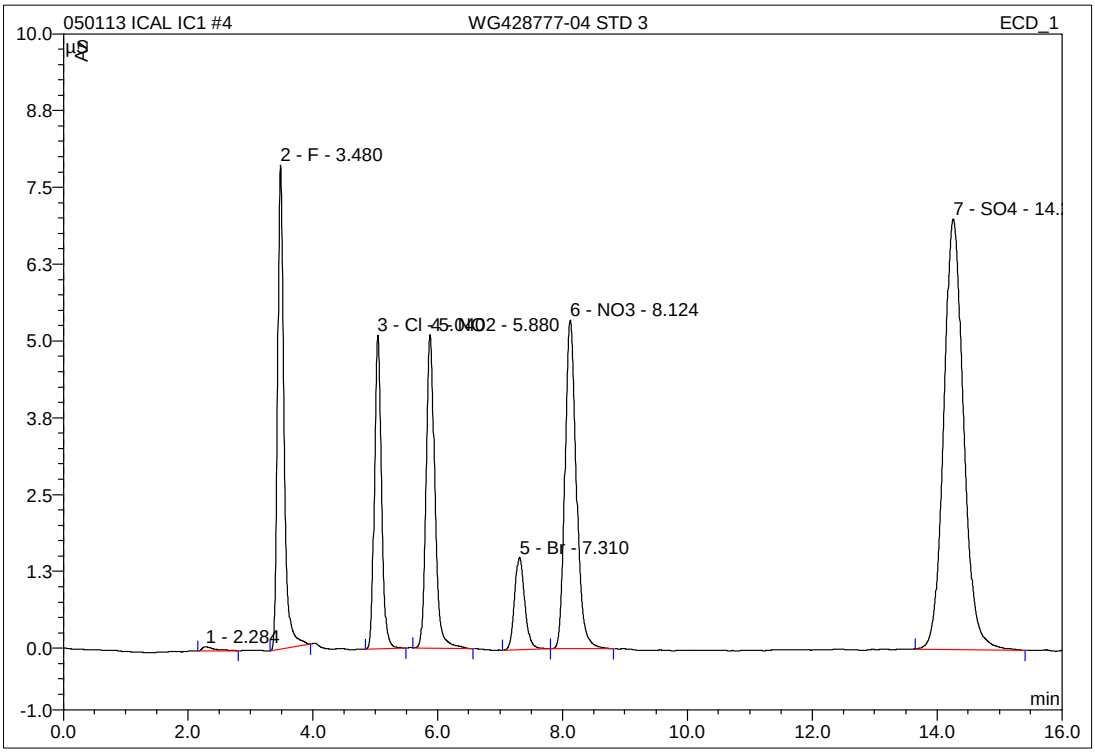

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.28	n.a.	0.069	0.017	0.26	n.a.	BMB
2	3.48	F	7.874	0.933	14.39	3.812	BMB
3	5.04	Cl	5.105	0.679	10.48	3.774	BMB
4	5.88	NO2	5.102	0.833	12.86	2.375	BMB
5	7.31	Br	1.503	0.286	4.42	3.954	BMB
6	8.12	NO3	5.349	1.137	17.55	2.569	BMB
7	14.26	SO4	7.006	2.595	40.04	18.968	BMB
Total:			32.008	6.481	100.00	35.452	

5 WG428777-05 STD 2

1,1 JBK STD57462

Sample Name:	**WG428777-05 STD 2**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/1/2013 12:44**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

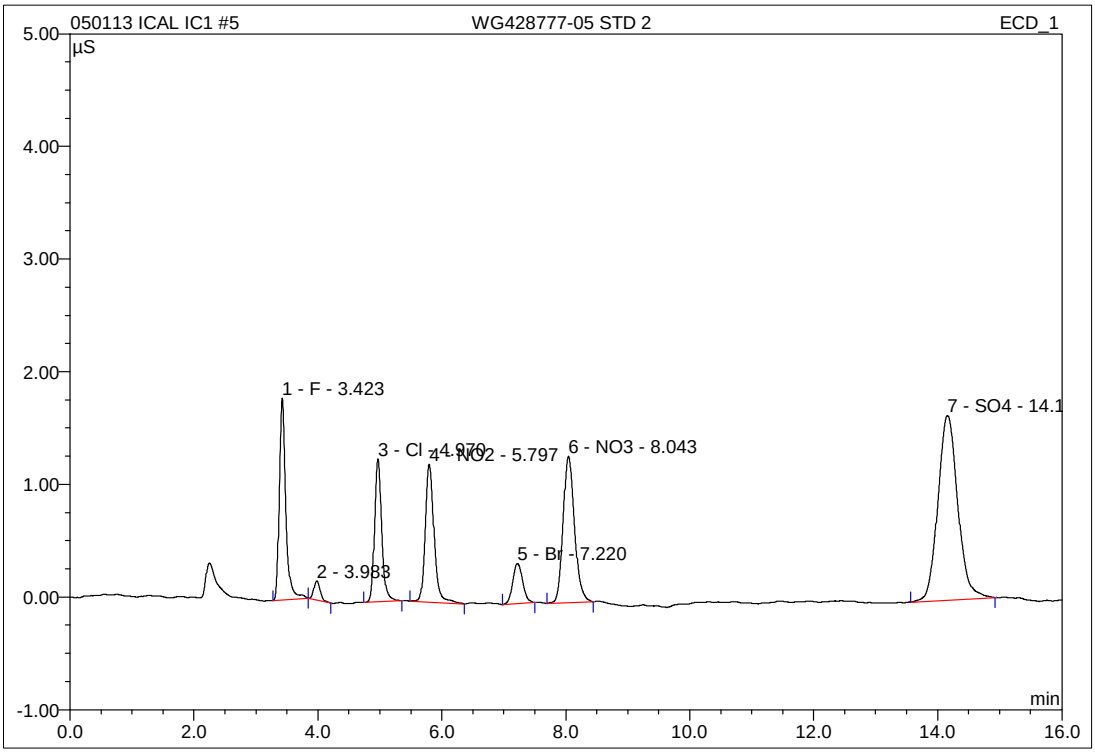

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.42	F	1.790	0.217	13.88	0.923	BMb
2	3.98	n.a.	0.169	0.020	1.28	n.a.	bMB
3	4.97	Cl	1.270	0.172	11.01	0.947	BMB
4	5.80	NO2	1.222	0.203	12.96	0.588	BMB
5	7.22	Br	0.354	0.066	4.22	0.947	BMB
6	8.04	NO3	1.300	0.279	17.81	0.636	BMB
7	14.16	SO4	1.638	0.608	38.82	4.560	BMB
Total:			7.744	1.566	100.00	8.600	

6 WG428777-06 STD 1

1,1 JBK STD57462

Sample Name:	**WG428777-06 STD 1**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/1/2013 13:02**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

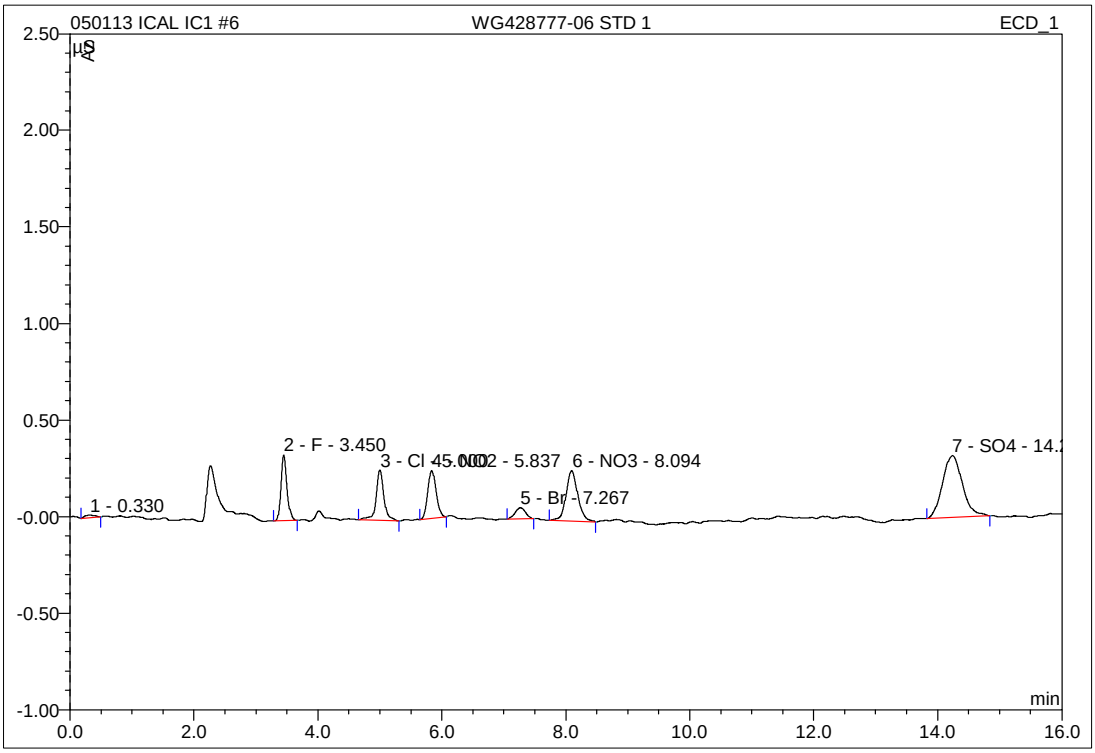

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	0.33	n.a.	0.015	0.002	0.81	n.a.	BMB
2	3.45	F	0.340	0.039	12.67	0.203	BMB
3	5.00	Cl	0.261	0.039	12.67	0.203	BMB
4	5.84	NO2	0.246	0.039	12.58	0.123	BMB
5	7.27	Br	0.058	0.011	3.73	0.202	BMB
6	8.09	NO3	0.261	0.058	18.74	0.138	BMB
7	14.23	SO4	0.321	0.119	38.80	1.018	BMB
Total:			1.502	0.308	100.00	1.886	

14 WG428777-07 ALT STD

1,1 JBK STD57463

Sample Name:	**WG428777-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**21**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/1/2013 15:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

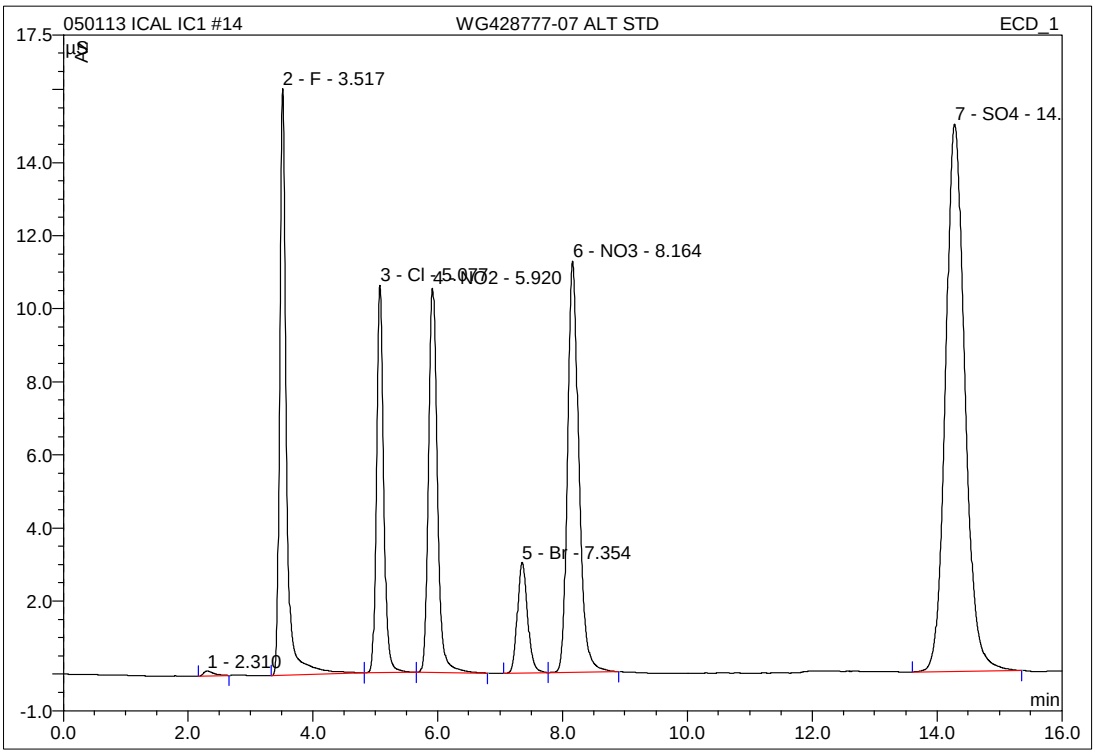

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.31	n.a.	0.134	0.025	0.18	n.a.	BMB
2	3.52	F	16.052	2.015	14.91	8.182	BMB
3	5.08	Cl	10.603	1.412	10.44	7.857	BMb
4	5.92	NO2	10.523	1.729	12.79	4.914	bMB
5	7.35	Br	3.027	0.574	4.25	7.876	BMB
6	8.16	NO3	11.248	2.371	17.54	5.346	BMB
7	14.28	SO4	14.987	5.393	39.89	39.261	BMB
Total:			66.574	13.518	100.00	73.437	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

14 WG428777-07 ALT STD

1,1 JBK STD57463

Sample Name:	**WG428777-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**21**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/1/2013 15:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG428777-07 ALT S	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	8.1817	2.27	PASS
Cl	8.00	7.8571	-1.79	PASS
NO2-N	4.8714	4.9141	0.88	PASS
Br	8.00	7.8764	-1.55	PASS
NO3-N	5.4216	5.3464	-1.39	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	39.2614	-1.85	PASS

3 WG432976-01 ANION CCV

1,1 JBK STD57462 _____ psi @ _____

Sample Name:	**WG432976-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/5/2013 8:54**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

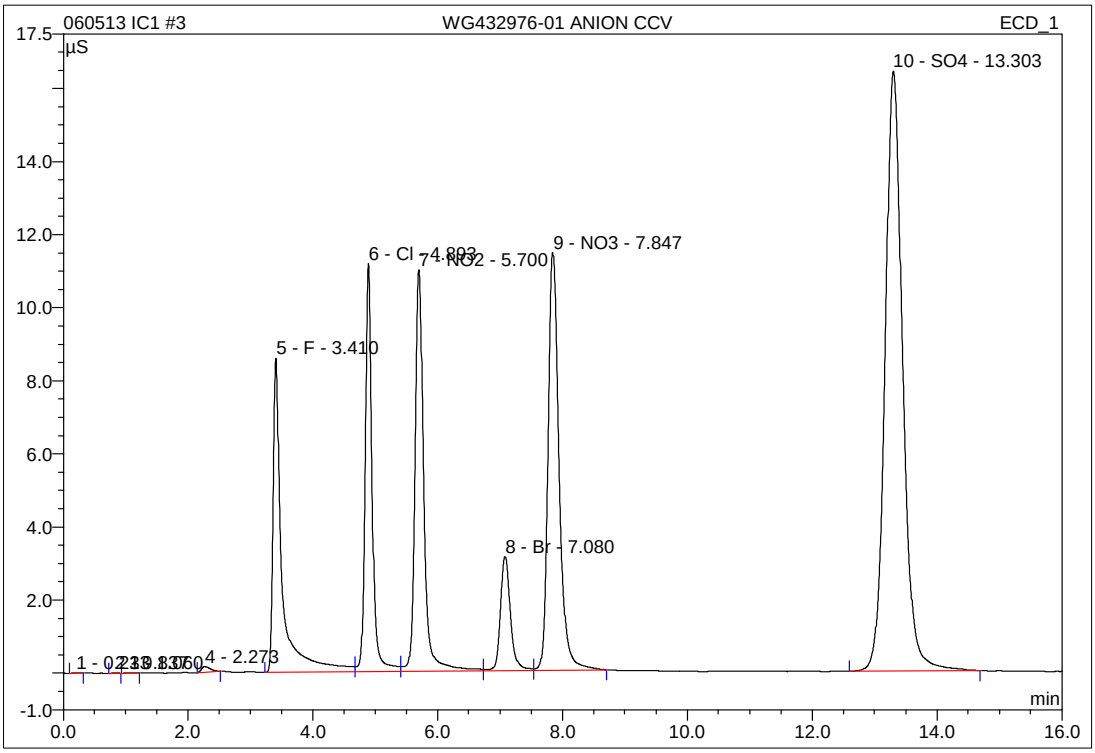

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	0.21	n.a.	0.012	0.001	0.01	n.a.	BMB
2	0.84	n.a.	0.010	0.001	0.01	n.a.	BMB
3	1.06	n.a.	0.015	0.002	0.02	n.a.	BMB
4	2.27	n.a.	0.157	0.025	0.20	n.a.	BMB
5	3.41	F	8.598	1.441	11.11	5.864	BM
6	4.89	Cl	11.166	1.453	11.20	8.087	M
7	5.70	NO2	10.992	1.789	13.79	5.084	M
8	7.08	Br	3.115	0.577	4.45	7.915	M
9	7.85	NO3	11.425	2.321	17.90	5.236	MB
10	13.30	SO4	16.412	5.356	41.31	38.993	BMB
Total:			61.903	12.967	100.00	71.178	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG432976-01 ANION CCV

1,1 JBK STD57462 _____ psi @ _____

Sample Name:	**WG432976-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/5/2013 8:54**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG432976-01 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	5.8637	-26.70	FAIL
Cl	8.00	8.0868	1.09	PASS
NO2-N	4.8714	5.0837	4.36	PASS
Br	8.00	7.9152	-1.06	PASS
NO3-N	5.4216	5.2355	-3.43	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.9932	-2.52	PASS

15 WG432976-03 ANION CCV

1,1 JBK STD57462

Sample Name:	**WG432976-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/5/2013 12:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

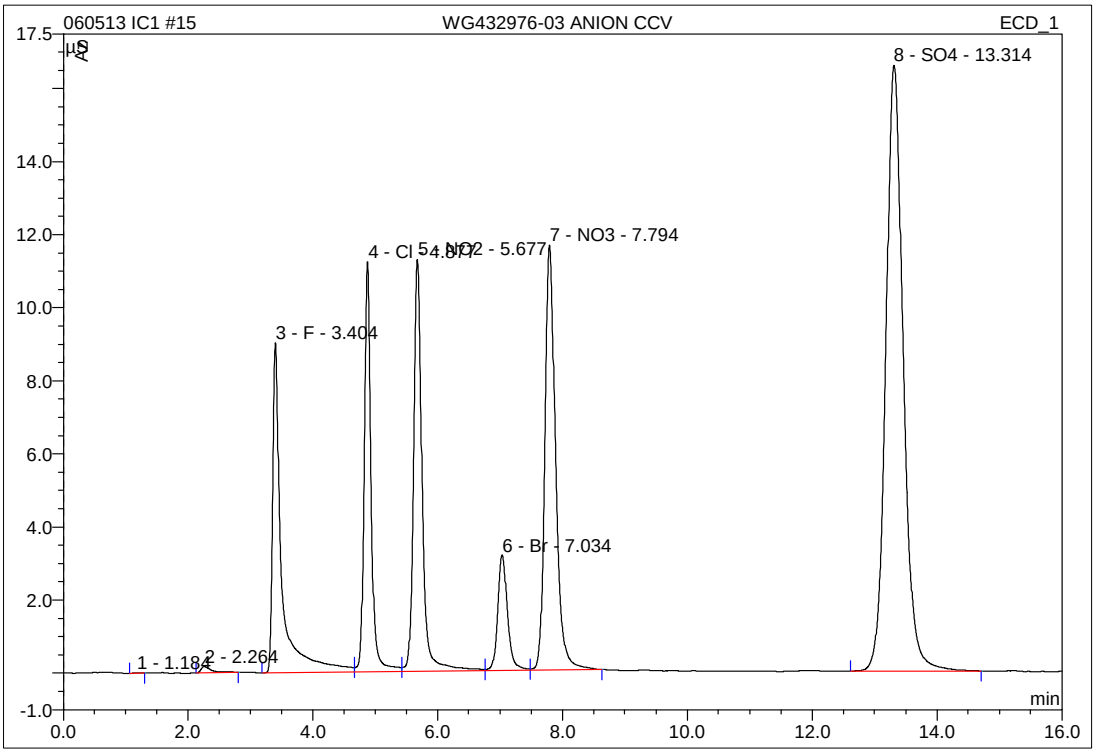

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	1.18	n.a.	0.014	0.002	0.01	n.a.	BMB
2	2.26	n.a.	0.175	0.035	0.27	n.a.	BMB
3	3.40	F	9.033	1.515	11.61	6.163	BM
4	4.88	Cl	11.225	1.449	11.10	8.067	M
5	5.68	NO2	11.276	1.798	13.78	5.111	M
6	7.03	Br	3.162	0.574	4.39	7.871	M
7	7.79	NO3	11.623	2.320	17.77	5.232	MB
8	13.31	SO4	16.579	5.360	41.06	39.021	BMB
Total:			63.088	13.053	100.00	71.466	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

15 WG432976-03 ANION CCV

1,1 JBK STD57462

Sample Name:	**WG432976-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/5/2013 12:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG432976-03 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	6.1631	-22.96	FAIL
Cl	8.00	8.0673	0.84	PASS
NO2-N	4.8714	5.1111	4.92	PASS
Br	8.00	7.8712	-1.61	PASS
NO3-N	5.4216	5.2323	-3.49	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	39.0209	-2.45	PASS

27 WG432976-05 ANION CCV

1,1 JBK STD57462

Sample Name:	**WG432976-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/5/2013 16:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

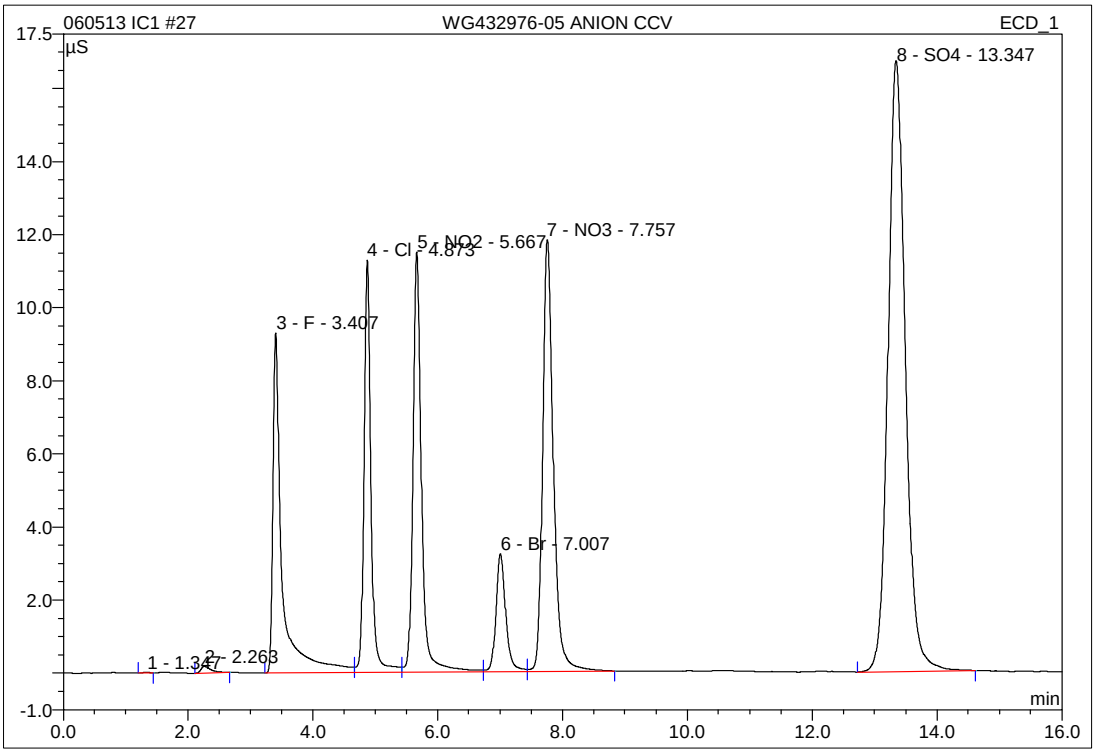

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	1.35	n.a.	0.013	0.002	0.01	n.a.	BMB
2	2.26	n.a.	0.185	0.034	0.25	n.a.	BMB
3	3.41	F	9.317	1.567	11.84	6.370	BM
4	4.87	Cl	11.282	1.469	11.11	8.179	M
5	5.67	NO2	11.501	1.827	13.81	5.193	M
6	7.01	Br	3.230	0.590	4.46	8.098	M
7	7.76	NO3	11.814	2.360	17.84	5.322	MB
8	13.35	SO4	16.724	5.380	40.67	39.164	BMB
Total:			64.066	13.228	100.00	72.327	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

27 WG432976-05 ANION CCV

1,1 JBK STD57462

Sample Name:	**WG432976-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/5/2013 16:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG432976-05 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	6.3702	-20.37	FAIL
Cl	8.00	8.1790	2.24	PASS
NO2-N	4.8714	5.1932	6.61	PASS
Br	8.00	8.0985	1.23	PASS
NO3-N	5.4216	5.3220	-1.84	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	39.1645	-2.09	PASS

34 WG432976-07 ANION CCV

1,1 JBK STD57462

Sample Name:	**WG432976-07 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/5/2013 18:25**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

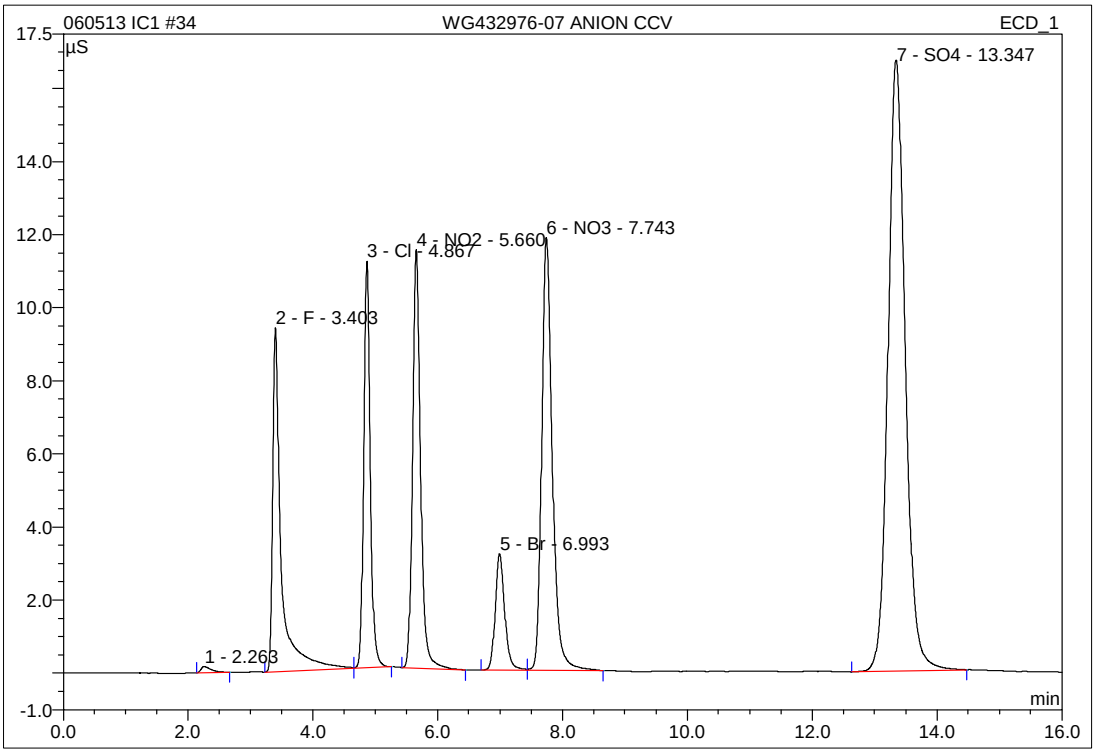

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.26	n.a.	0.170	0.031	0.24	n.a.	BMB
2	3.40	F	9.406	1.478	11.50	6.012	BM
3	4.87	Cl	11.125	1.359	10.58	7.567	MB
4	5.66	NO2	11.449	1.708	13.29	4.854	BMB
5	6.99	Br	3.191	0.565	4.40	7.753	BM
6	7.74	NO3	11.852	2.344	18.24	5.286	MB
7	13.35	SO4	16.735	5.362	41.74	39.040	BMB
Total:			63.928	12.847	100.00	70.512	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

34 WG432976-07 ANION CCV

1,1 JBK STD57462

Sample Name:	**WG432976-07 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/5/2013 18:25**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG432976-07 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	6.0119	-24.85	FAIL
Cl	8.00	7.5667	-5.42	PASS
NO2-N	4.8714	4.8536	-0.37	PASS
Br	8.00	7.7532	-3.09	PASS
NO3-N	5.4216	5.2865	-2.49	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	39.0399	-2.40	PASS

3 WG433275-01 ANION CCV

1,1 JBK STD57462 _____ psi @ _____

Sample Name:	**WG433275-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/6/2013 16:50**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

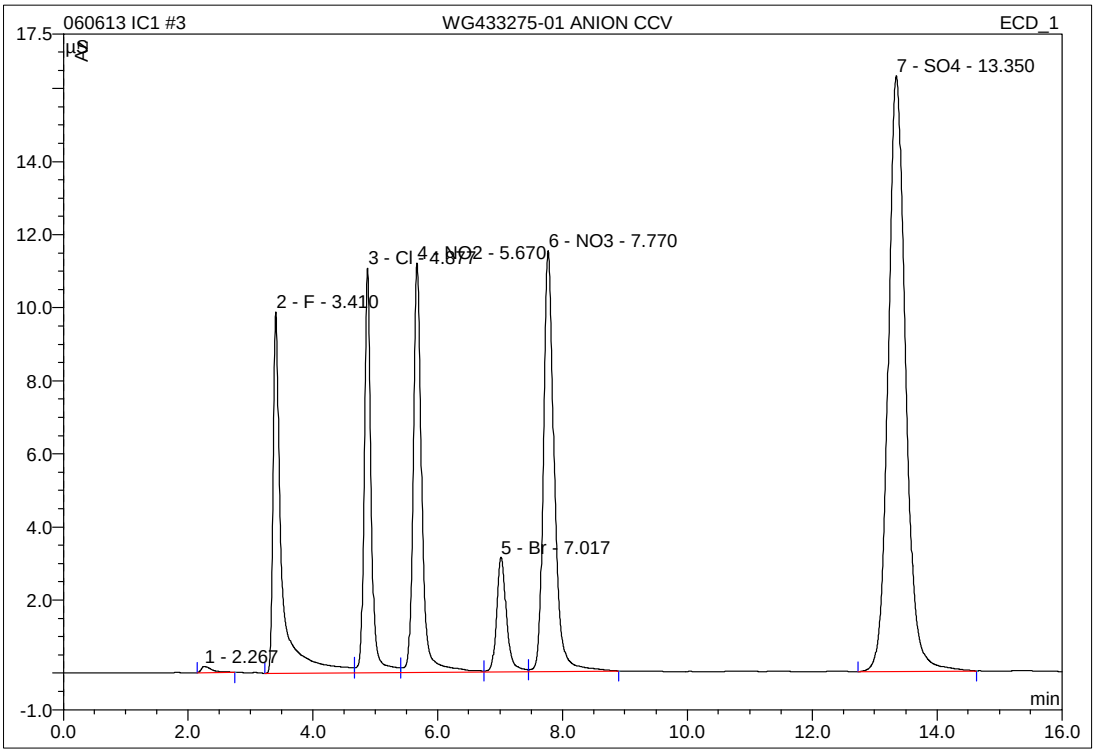

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.27	n.a.	0.171	0.033	0.26	n.a.	BMB
2	3.41	F	9.880	1.582	12.14	6.432	BM
3	4.88	Cl	11.076	1.433	11.00	7.979	M
4	5.67	NO2	11.206	1.790	13.73	5.087	M
5	7.02	Br	3.136	0.574	4.40	7.874	M
6	7.77	NO3	11.513	2.328	17.86	5.251	MB
7	13.35	SO4	16.305	5.295	40.62	38.549	BMB
Total:			63.287	13.035	100.00	71.172	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG433275-01 ANION CCV

1,1 JBK STD57462 _____ psi @ _____

Sample Name:	**WG433275-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/6/2013 16:50**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG433275-01 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	6.4324	-19.59	FAIL
Cl	8.00	7.9788	-0.26	PASS
NO2-N	4.8714	5.0869	4.42	PASS
Br	8.00	7.8742	-1.57	PASS
NO3-N	5.4216	5.2509	-3.15	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.5486	-3.63	PASS

17 WG433275-03 ANION CCV

1,1 JBK STD57462

Sample Name:	**WG433275-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/6/2013 21:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

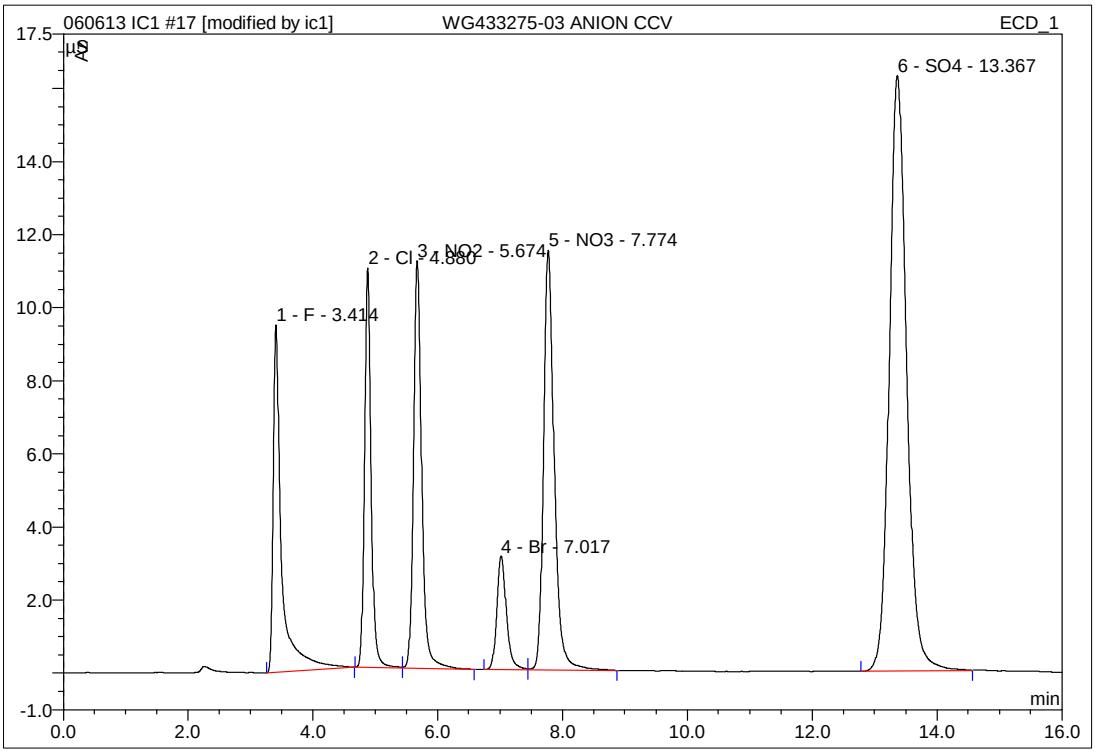

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.41	F	9.510	1.460	11.58	5.940	BMB*
2	4.88	Cl	10.932	1.344	10.66	7.482	BM
3	5.67	NO2	11.153	1.700	13.49	4.833	MB
4	7.02	Br	3.112	0.558	4.42	7.655	BM
5	7.77	NO3	11.487	2.291	18.17	5.167	MB
6	13.37	SO4	16.292	5.253	41.67	38.249	BMB
Total:			62.486	12.606	100.00	69.326	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

17 WG433275-03 ANION CCV

1,1 JBK STD57462

Sample Name:	**WG433275-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/6/2013 21:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG433275-03 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	5.9401	-25.75	FAIL
Cl	8.00	7.4822	-6.47	PASS
NO2-N	4.8714	4.8328	-0.79	PASS
Br	8.00	7.6555	-4.31	PASS
NO3-N	5.4216	5.1669	-4.70	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.2486	-4.38	PASS

20 WG433275-05 ANION CCV

1,1 JBK STD57462

Sample Name:	**WG433275-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/6/2013 22:03**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

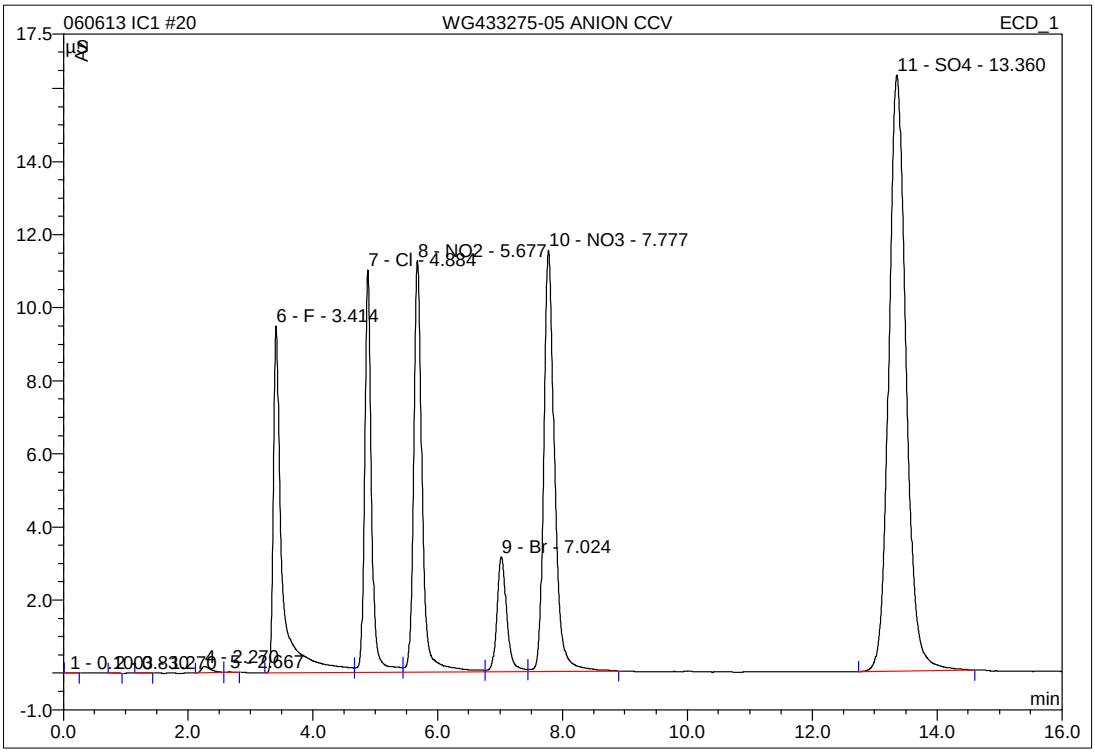

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	0.10	n.a.	0.011	0.001	0.01	n.a.	BMB
2	0.83	n.a.	0.011	0.001	0.01	n.a.	BMB
3	1.27	n.a.	0.008	0.001	0.01	n.a.	BMB
4	2.27	n.a.	0.175	0.030	0.23	n.a.	BMb
5	2.67	n.a.	0.011	0.001	0.01	n.a.	bMB
6	3.41	F	9.482	1.534	11.85	6.237	BM
7	4.88	Cl	11.019	1.430	11.05	7.960	M
8	5.68	NO2	11.252	1.789	13.83	5.085	M
9	7.02	Br	3.138	0.574	4.43	7.872	M
10	7.78	NO3	11.522	2.317	17.91	5.227	MB
11	13.36	SO4	16.320	5.258	40.64	38.283	BMB

Total:		62.949	12.937	100.00	70.663

20 WG433275-05 ANION CCV

1,1 JBK STD57462

Sample Name:	**WG433275-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/6/2013 22:03**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG433275-05 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	6.2375	-22.03	FAIL
Cl	8.00	7.9597	-0.50	PASS
NO2-N	4.8714	5.0845	4.37	PASS
Br	8.00	7.8720	-1.60	PASS
NO3-N	5.4216	5.2265	-3.60	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.2826	-4.29	PASS

4 WG432976-02 ANION CCB

1,1 JBK

Sample Name:	**WG432976-02 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/5/2013 9:12**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

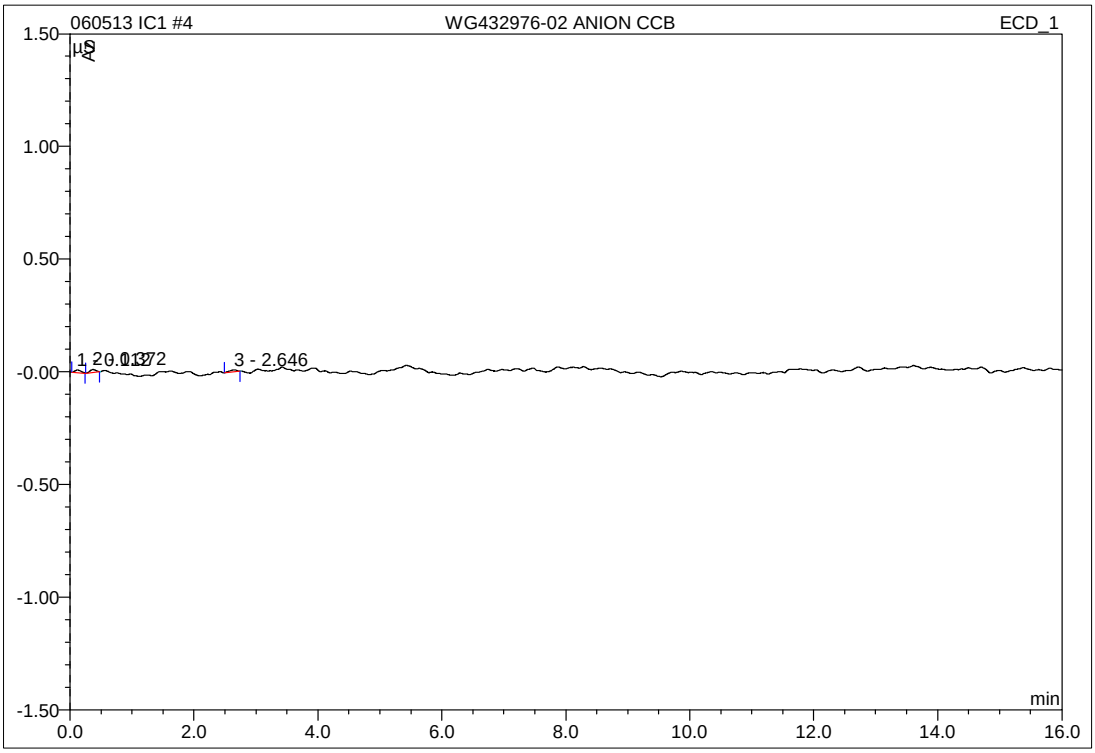

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	0.11	n.a.	0.012	0.001	34.72	n.a.	BMB
2	0.37	n.a.	0.013	0.001	36.28	n.a.	BMB
3	2.65	n.a.	0.009	0.001	29.01	n.a.	BMB
Total:			0.034	0.004	100.00	0.000	

16 WG432976-04 ANION CCB

1,1 JBK

Sample Name:	**WG432976-04 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/5/2013 12:53**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

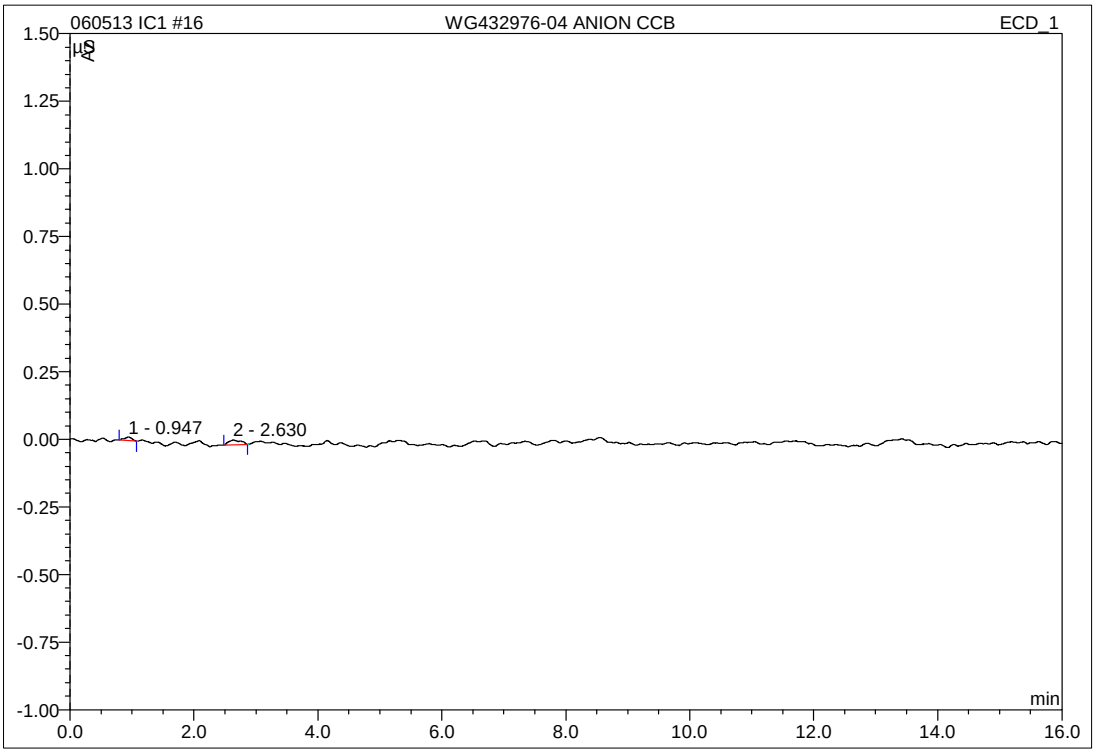

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	0.95	n.a.	0.014	0.002	31.88	n.a.	BMB
2	2.63	n.a.	0.018	0.004	68.12	n.a.	BMB
Total:			0.031	0.006	100.00	0.000	

28 WG432976-06 ANION CCB

1,1 JBK

Sample Name:	**WG432976-06 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/5/2013 16:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

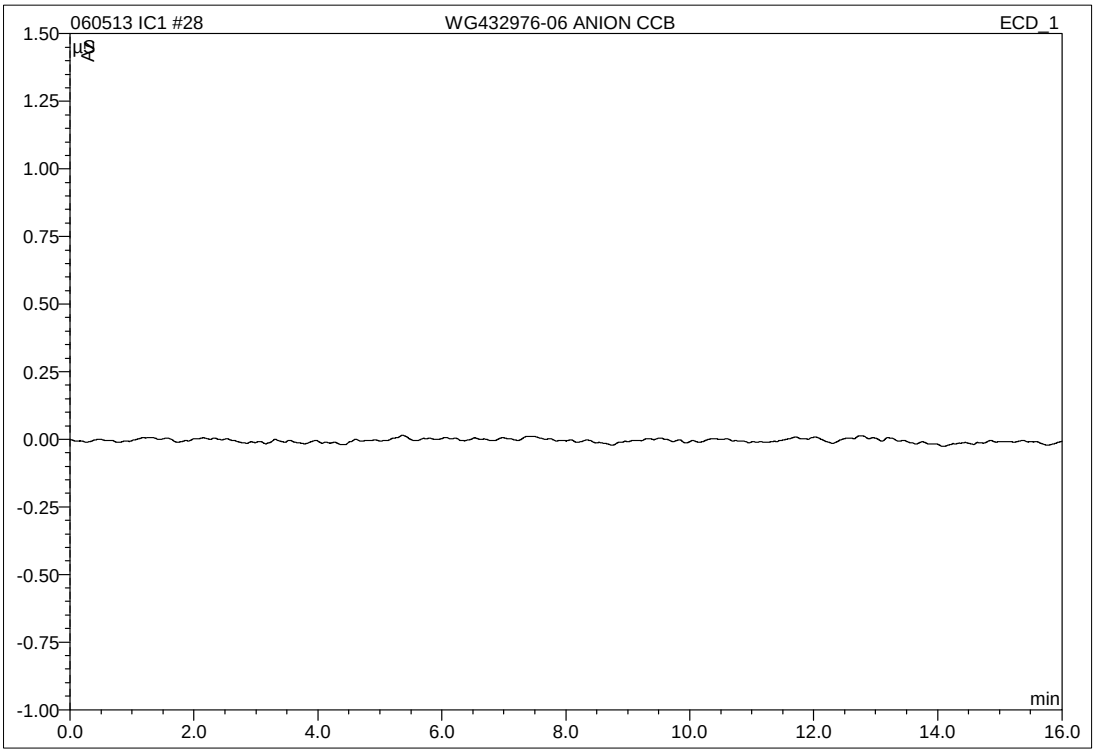

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

35 WG432976-08 ANION CCB

1,1 JBK

Sample Name:	**WG432976-08 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/5/2013 18:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

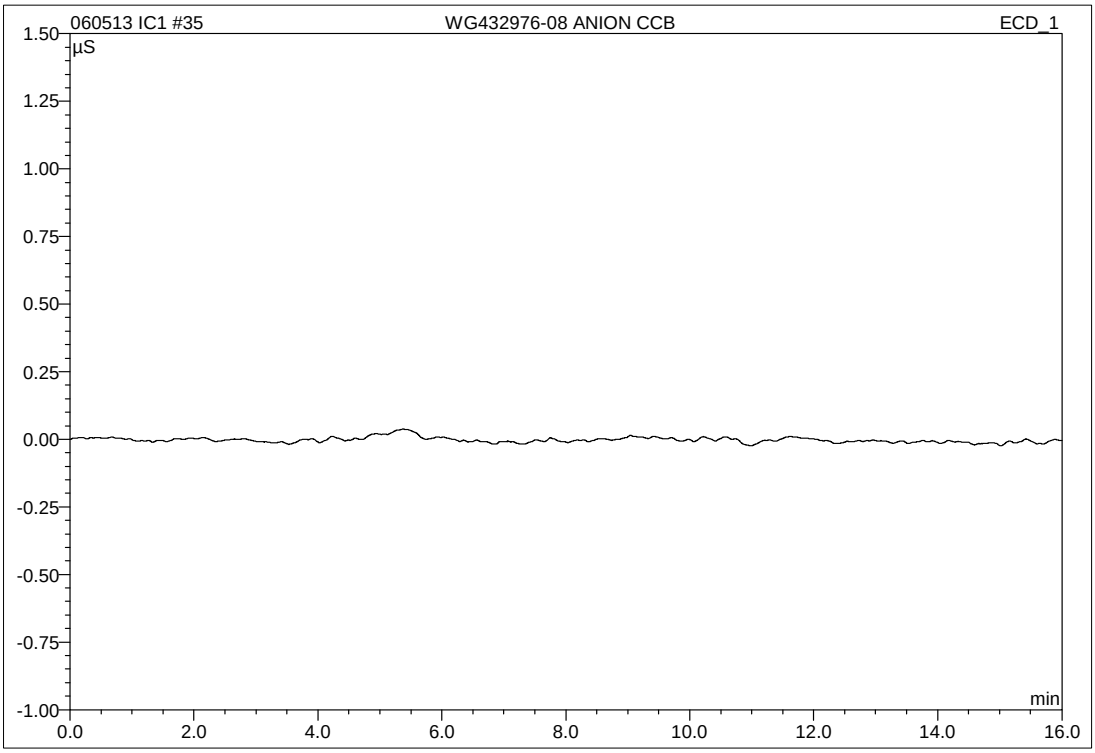

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

4 WG433275-02 ANION CCB

1,1 JBK

Sample Name:	**WG433275-02 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/6/2013 17:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

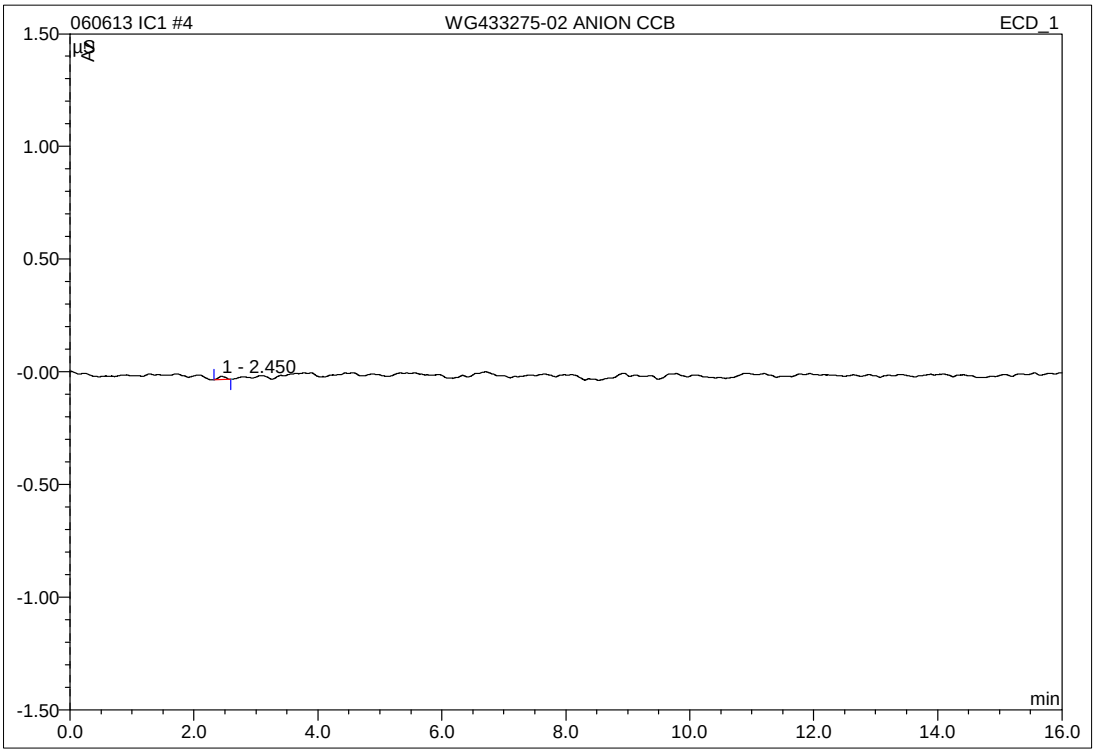

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.45	n.a.	0.014	0.002	100.00	n.a.	BMB
Total:			0.014	0.002	100.00	0.000	

18 WG433275-04 ANION CCB

1,1 JBK

Sample Name:	**WG433275-04 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/6/2013 21:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

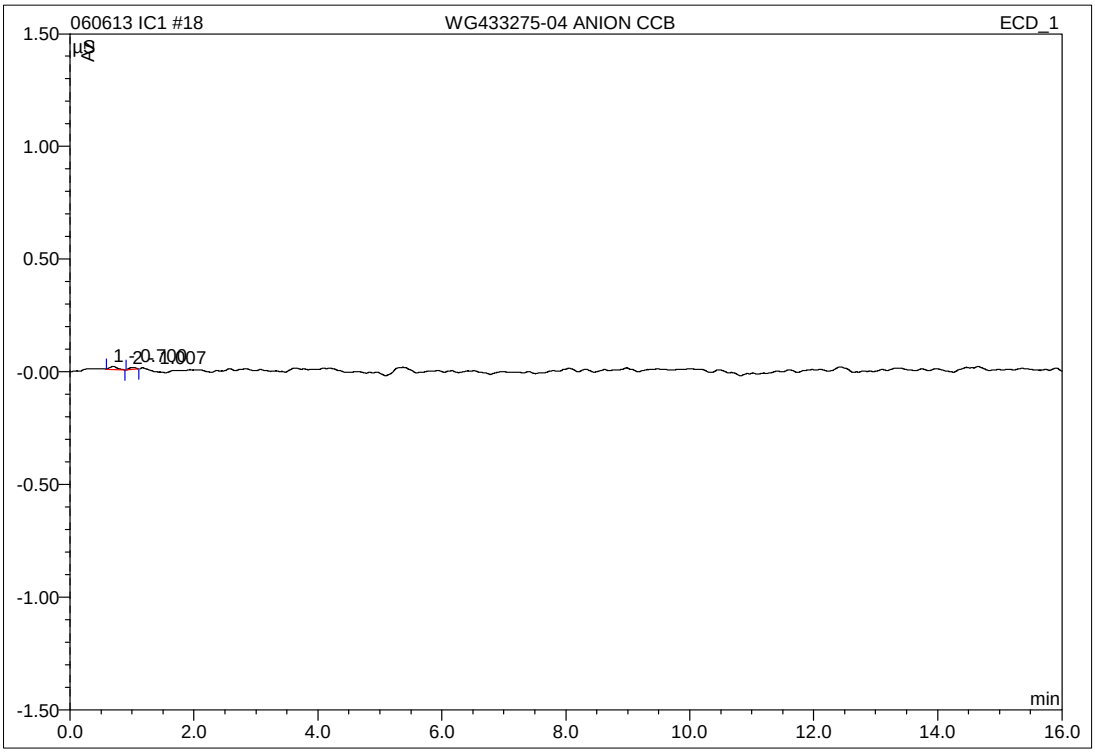

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	0.70	n.a.	0.015	0.002	64.81	n.a.	BMB
2	1.01	n.a.	0.009	0.001	35.19	n.a.	BMB
Total:			0.024	0.003	100.00	0.000	

21 WG433275-06 ANION CCB

1,1 JBK

Sample Name:	**WG433275-06 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/6/2013 22:21**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

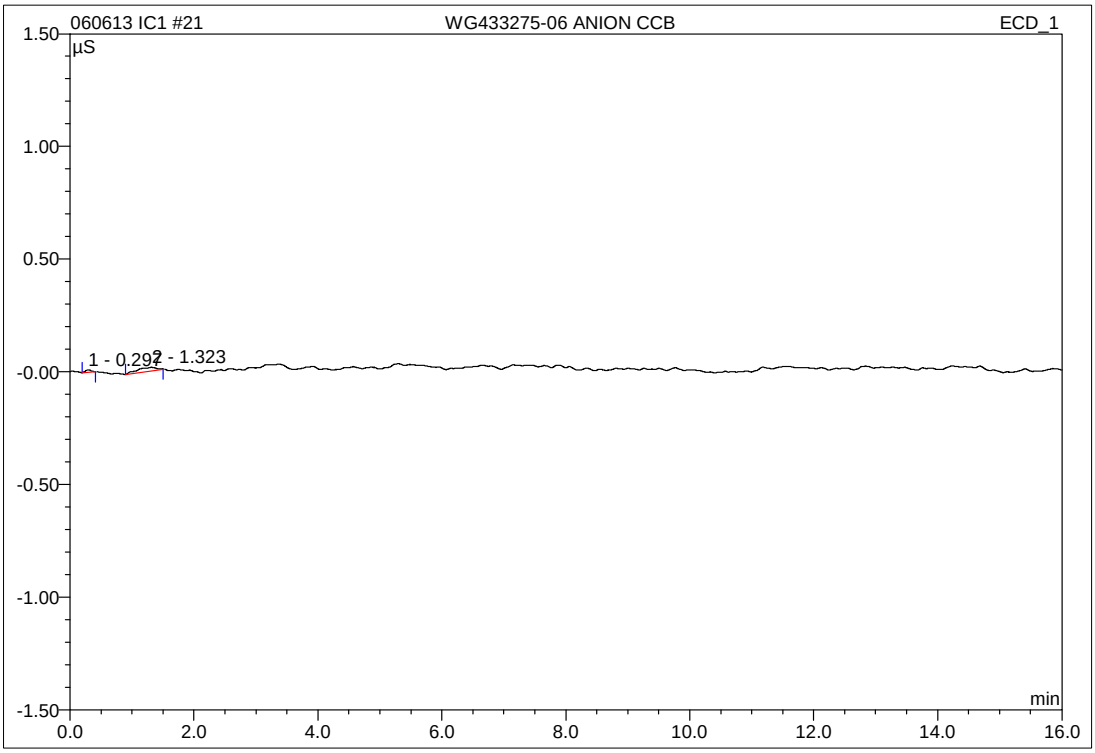

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	0.30	n.a.	0.011	0.001	14.96	n.a.	BMB
2	1.32	n.a.	0.015	0.006	85.04	n.a.	BMB
Total:			0.026	0.007	100.00	0.000	

RETENTION TIME WINDOWS

Lab Name: Microbac Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	9/28/2011	9/28/2011	9/29/2011
File #	WG377440-01	WG377440-07	WG377498-01
Time	13:32	23:58	13:53

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.457	3.467	3.447	0.030
Cl	4.910	4.910	4.880	0.052
NO2-N	5.734	5.730	5.690	0.073
Br	7.110	7.097	7.047	0.100
NO3-N	7.870	7.857	7.800	0.112
PO4-P	10.834	10.843	10.754	0.147
SO4	13.124	13.137	13.007	0.215

Instrument ID: IC2

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	8/3/2010	8/3/2010	8/4/2010
File #	WG338645-02	WG338692-07	WG338870-02
Time	12:15	22:42	12:00

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.387	3.377	3.367	0.030
Cl	4.867	4.864	4.837	0.050
NO2-N	5.724	5.717	5.684	0.064
Br	7.174	7.160	7.117	0.089
NO3-N	8.020	8.007	7.954	0.105
PO4-P	10.640	10.607	10.580	0.090
SO4	12.580	12.574	12.507	0.122

2.2.1.5 Raw QC Data

5 WG432972-01 ANION BLANK

1,1 JBK

Sample Name:	**WG432972-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/5/2013 9:31**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

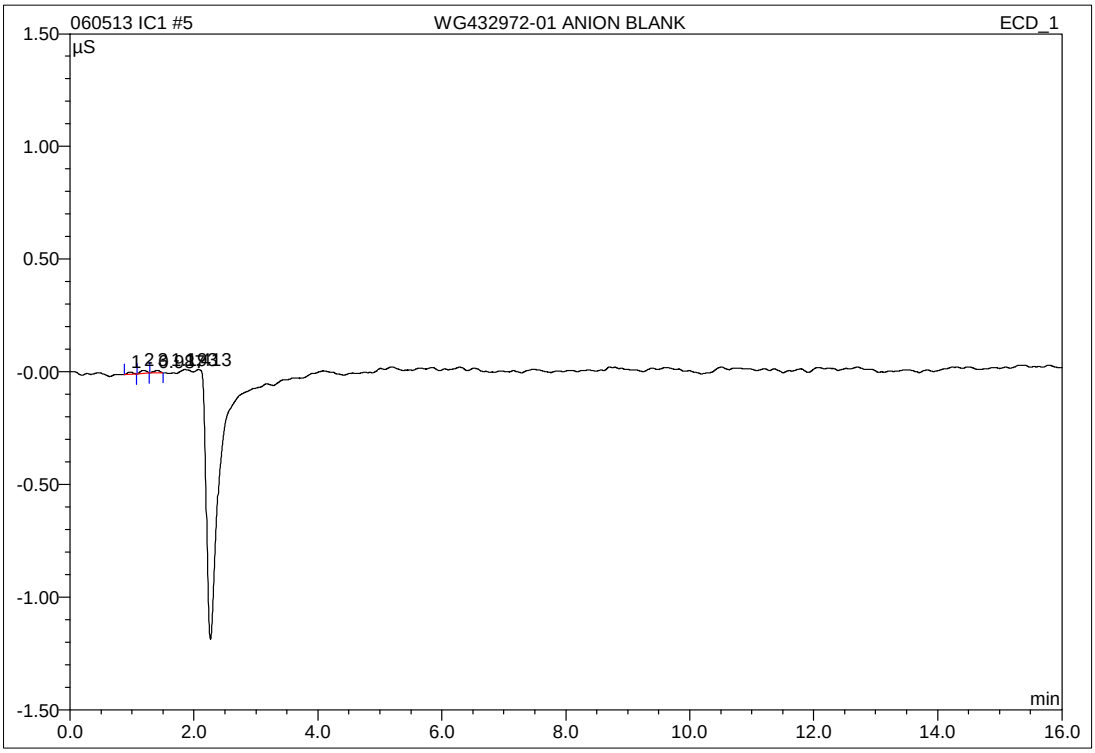

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	0.99	n.a.	0.010	0.001	29.78	n.a.	BMB
2	1.19	n.a.	0.013	0.001	40.63	n.a.	BMB
3	1.41	n.a.	0.009	0.001	29.59	n.a.	BMB
Total:			0.032	0.004	100.00	0.000	

5 WG433268-01 ANION BLANK

1,1 JBK

Sample Name:	**WG433268-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/6/2013 17:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

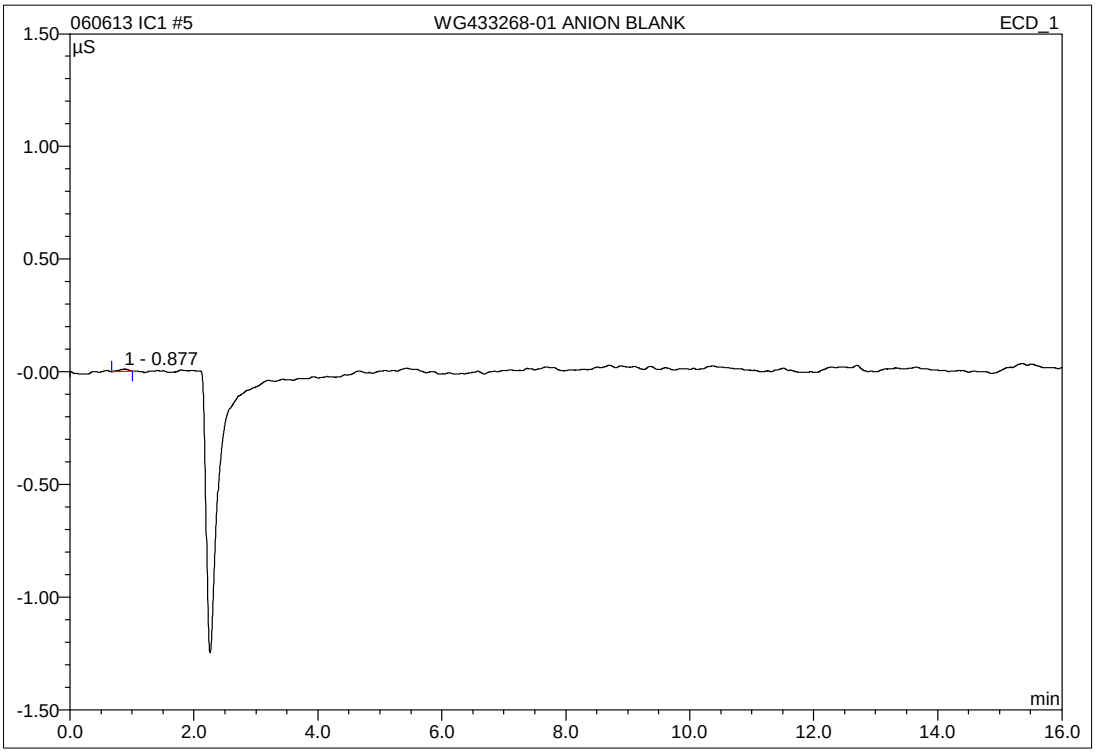

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	0.88	n.a.	0.010	0.002	100.00	n.a.	BMB
Total:			0.010	0.002	100.00	0.000	

6 WG432972-02 ANION LCS

1,1 JBK

Sample Name:	**WG432972-02 ANION LCS**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/5/2013 9:49**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

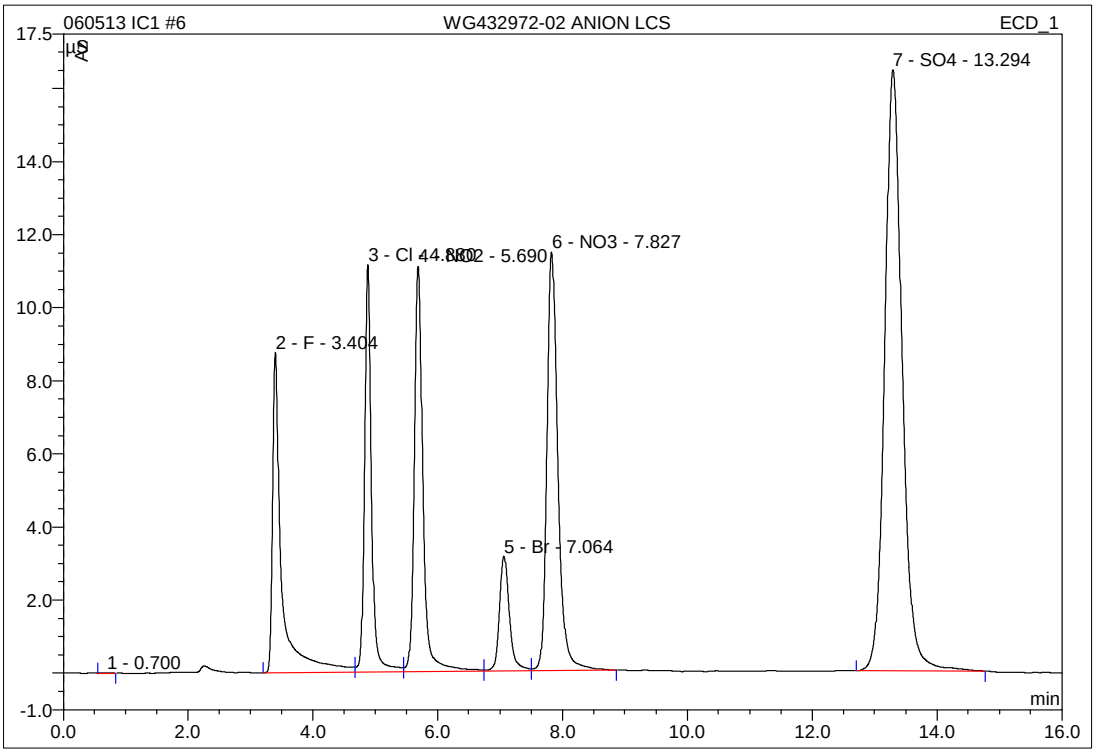

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	0.70	n.a.	0.012	0.002	0.01	n.a.	BMB
2	3.40	F	8.769	1.473	11.32	5.991	BM
3	4.88	Cl	11.153	1.451	11.16	8.076	M
4	5.69	NO2	11.088	1.787	13.74	5.079	M
5	7.06	Br	3.142	0.586	4.51	8.040	M
6	7.83	NO3	11.462	2.344	18.02	5.286	MB
7	13.29	SO4	16.454	5.362	41.23	39.035	BMB
Total:			62.079	13.004	100.00	71.506	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

6 WG433268-02 ANION LCS

1,1 JBK

Sample Name:	**WG433268-02 ANION LCS**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/6/2013 17:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

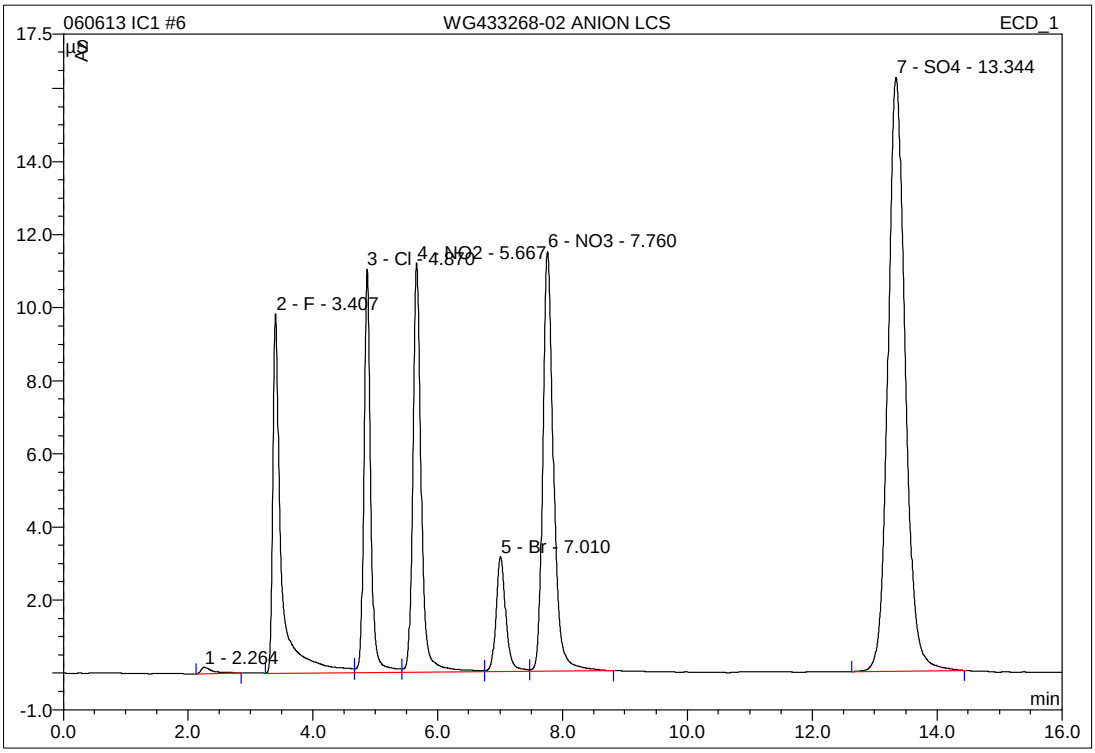

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.26	n.a.	0.175	0.037	0.29	n.a.	BMB
2	3.41	F	9.832	1.558	12.12	6.335	BM
3	4.87	Cl	11.033	1.406	10.94	7.828	M
4	5.67	NO2	11.199	1.755	13.65	4.988	M
5	7.01	Br	3.135	0.571	4.44	7.829	M
6	7.76	NO3	11.482	2.298	17.88	5.183	MB
7	13.34	SO4	16.257	5.228	40.68	38.065	BMB
Total:			63.113	12.853	100.00	70.228	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.2.2 Ferrous Iron Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-16	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW08-060313	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	04/22/2013 15:00
Workgroup #:	WG433068	**Analyst:**	TMM	**Run Date:**	06/06/2013 20:13
Collect Date:	06/03/2013 13:10	**Dilution:**	1	**File ID:**	1V.1306062013-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.0795		0.0400	0.0400	0.0200

2.2.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 06-JUN-2013
Analyst: TMM
Analyst: NA
Method: FERROUS
Instrument: UV-120-1V
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG433068

Calibration/Linearity	4/23/13
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TMM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
10-JUN-2013

Secondary Reviewer:
15-JUN-2013

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-15-2013 08:48:17

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM3500Fe-B-1997 AAB#: WG433068

Login Number: L13060134

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-060313	16	06/03/13					06/06/2013	3.3	7		06/06/13	3.3	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2927105
Report generated 06/14/2013 10:34

METHOD BLANK SUMMARY

Login Number: L13060134
Blank File ID: 1V.1306062013-02
Prep Date: 06/06/13 20:13
Analyzed Date: 06/06/13 20:13
Analyst: TMM

Work Group: WG433068
Blank Sample ID: WG433068-01
Instrument ID: UV-120-1V
Method: SM3500Fe-B-1997

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG433068-02	1V.1306062013-03	06/06/13 20:13	
LCS2	WG433068-03	1V.1306062013-04	06/06/13 20:13	
67WW08-060313	L13060134-16	1V.1306062013-05	06/06/13 20:13	
DUP	WG433068-05	1V.1306062013-07	06/06/13 20:13	

Report Name: BLANK_SUMMARY
PDF File ID: 2927106
Report generated 06/14/2013 10:34

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13060134 Prep Date: 06/06/13 20:13 Sample ID: WG433068-01
Instrument ID: UV-120-1V Run Date: 06/06/13 20:13 Prep Method: SM3500Fe-B-1997
File ID: 1V.1306062013-02 Analyst: TMM Method: SM3500Fe-B-1997
Workgroup (AAB#): WG433068 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-120 - 22-APR-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Ferrous - Laboratory	0.0200	0.0400	0.0200	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2927108
14-JUN-2013 10:34

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13060134 Analyst: TMM Prep Method: SM3500Fe-B-1997
Instrument ID: UV-120-1V Matrix: Water Method: SM3500Fe-B-1997
Workgroup (AAB#): WG433068 Units: mg/L
QC Key: DOD4 Lot #: STD57525

Sample ID: WG433068-02 LCS File ID: 1V.1306062013-03 Run Date: 06/06/2013 20:13
Sample ID: WG433068-03 LCS2 File ID: 1V.1306062013-04 Run Date: 06/06/2013 20:13

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Iron, Ferrous - Laboratory	0.200	0.185	92.6	0.200	0.184	92.1	0.535	75 - 125	25	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2927109
Report generated: 06/14/2013 10:34

2.2.2.3 Raw Data

Wg-427693

Curves

Parameter: Ferrous Iron

Spectrophotometer: UV-120-1V

Calibration (Curve) standard stock: Std 57527

Concentration: 100mg/L

Recipe for preparation of curve standards found in:
SOP: 3500 Revision: 5 Page: 8

Second Source Stock: Std 57525 (concentration: 100mg/L)

Daily Preparation: 2(100)/100

concentration = =0.2

Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance
0	50	10cm	510	0.001
0.04				0.038
0.08				0.080
0.2				0.203
0.4				0.416
0.6				0.601
2nd Source				
0.2				0.199

Analyst: Tammy Morris Date/Time: 4/22/13 @ 1500

DCN#95142

Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG427693
Analytical Method: FERROUS
Instrument ID: UV-120-1V

Analyst: TMM
Initial Calibration Date: 04/22/2013

Analyte: FERROUS IRON
Number of Points: 6
Slope: 1.01203
Y-Intercept: 0.000519693
Coef. Of Correlation (R^2): 0.999400
Coef. Of Correlation (R): 0.999700

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00100	0.00	0.00	0.000519693
0.0400	0.0380	0.00160	0.00152	0.0410010
0.0800	0.0800	0.00640	0.00640	0.0814822
0.200	0.203	0.0400	0.0406	0.202926
0.400	0.416	0.160	0.166	0.405332
0.600	0.601	0.360	0.361	0.607739

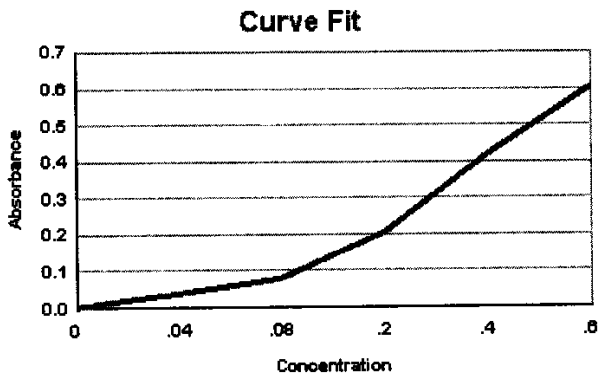

WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 04/23/2013 09:14

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG427693
File ID: 1V.1304221500-07
CCV ID: WG427693-07
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 04/22/2013
Run Time: 15:00
Analyst: TMM
Cal ID: UV-120 - 22-APR-13 15:00:06

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.2	0.196	0.995	2.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 04/23/2013 09:14

[redacted]

WORKGROUP: WG433068

Ferrous Iron

SM 3500Fe-B

SOP K3500 Revision # 5

Instrument: UV-120-IV

Curve Reference: 4/23/13

CCV: Std 57527
Daily Dilution: 3(100)/1000
Daily Dilution: = 0.3

RGTS: 27067
RGTS: 27071
RGTS: 26880

LCS: Std 57525
Daily Dilution: 2(100)/1000 Tmm 6/6/13
Daily Dilution: _____

Spike: Std 57525
Daily Dilution: 0.1(100)/50
Daily Dilution: = 0.2

Sample	Blank	Volume (mL)	Dilution	Cell Size (nm)	Absorbance
CCV: 0.3 mg/L	yes ✓	50		10cm	0.298
BLANK	✓	50		↓	0.001
LCS: 0.2 mg/L	✓	50			0.188
LCS DUP: (0.2 mg/L)	✓	50			0.187
06-134-016	✓	50			0.081
06-161-01	✓	50		↓	0.074
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
DUP: 06-134-06	✓	50		10cm	0.080
MS: (0.2) ↓	✓	50		↓	0.290
MSD: (___)		50			
CCV: (0.3)	✓	50		↓	0.298

Analyst: Tammy Moore Date/Time: 6/6/2013

*Samples were analyzed in the laboratory and not immediately in the field.

DCN#95882

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG433068 **Analyst:** TMM
Analyte: FERROUS IRON **Date:** 06/06/2013

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG433068-01	50	50	0.00100	1.012	0.0005197	0.00047460	0.00047460	1	mg/L
WG433068-02	50	50	0.188	1.012	0.0005197	0.18525	0.18525	1	mg/L
WG433068-03	50	50	0.187	1.012	0.0005197	0.18426	0.18426	1	mg/L
L13060134-16	50	50	0.0810	1.012	0.0005197	0.079524	0.079524	1	mg/L
WG433068-04	50	50	0.0810	1.012	0.0005197	0.079524	0.079524	1	mg/L
L13060161-01	50	50	0.0740	1.012	0.0005197	0.072607	72.607	1	ug/L
WG433068-05	50	50	0.0800	1.012	0.0005197	0.078535	0.078535	1	mg/L
WG433068-06	50	50	0.290	1.012	0.0005197	0.28604	0.28604	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 06/10/2013 07:06

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG433437
File ID: 1V.1306062013-01
CCV ID: WG433437-01
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 06/06/2013
Run Time: 20:13
Analyst: TMM
Cal ID: UV-120 - 06-JUN-13

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.294	0.993	2.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 06/10/2013 07:07

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG433437
File ID: 1V.1306062013-09
CCV ID: WG433437-02
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 06/06/2013
Run Time: 20:13
Analyst: TMM
Cal ID: UV-120 - 06-JUN-13

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.294	0.993	2.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 06/10/2013 07:07

[redacted]

2.2.3 Total Organic Carbon Data

2.2.3.1 Summary Data

Microbac

Lab Report #: L13060134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13060134-16	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-060313	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	08/06/2012 08:11
Workgroup #:	WG433259	**Analyst:**	BAF	**Run Date:**	06/07/2013 23:25
Collect Date:	06/03/2013 13:10	**Dilution:**	1	**File ID:**	TC06072013.045
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		10.3		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L13060134-16	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-060313	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	08/06/2012 08:11
Workgroup #:	WG433259	**Analyst:**	BAF	**Run Date:**	06/07/2013 23:25
Collect Date:	06/03/2013 13:10	**Dilution:**	1	**File ID:**	TC06072013.045
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	3.61		2.00	1.00	0.500

2.2.3.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 07-JUN-2013
Analyst: BAF
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG433259 WG433262 WG433257

Calibration/Linearity	8-1-2012
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BAF
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
11-JUN-2013
Brice Fenton

Secondary Reviewer:
13-JUN-2013
Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-13-2013 14:29:20

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG433259

Login Number: L13060134

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-060313	16	06/03/13					06/07/2013	4.4	28		06/07/13	4.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2920862
Report generated 06/11/2013 14:36

METHOD BLANK SUMMARY

Login Number: L13060134
Blank File ID: TC06072013.033
Prep Date: 06/07/13 21:04
Analyzed Date: 06/07/13 21:04
Analyst: BAF

Work Group: WG433259
Blank Sample ID: WG433259-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG433259-02	TC06072013.034	06/07/13 21:16	01
LCS2	WG433259-03	TC06072013.035	06/07/13 21:26	01
DUP	WG433259-05	TC06072013.041	06/07/13 22:34	01
67WW08-060313	L13060134-16	TC06072013.045	06/07/13 23:25	01
67WW08-060313	L13060134-16	TC06072013.045	06/07/13 23:25	01

Report Name: BLANK_SUMMARY
PDF File ID: 2920863
Report generated 06/11/2013 14:36

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13060134 Prep Date: 06/07/13 21:04 Sample ID: WG433259-01
Instrument ID: TOC-VWP Run Date: 06/07/13 21:04 Prep Method: 415.1
File ID: TC06072013.033 Analyst: BAF Method: 415.1
Workgroup (AAB#): WG433259 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-06-AUG-12

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 2920864
11-JUN-2013 14:36

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13060134 Analyst: BAF Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG433259 Units: mg/L
QC Key: DOD4 Lot #: STD57523

Sample ID: WG433259-02 LCS File ID: TC06072013.034 Run Date: 06/07/2013 21:16
Sample ID: WG433259-03 LCS2 File ID: TC06072013.035 Run Date: 06/07/2013 21:26

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	23.3	93.3	25.0	23.1	92.4	0.991	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2920865
Report generated: 06/11/2013 14:36

2.2.3.3 Raw Data

~~wg 405365~~ wg405562

TC/TIC Curves

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L

see below

MS (TOC): 1

Calibration Curve Date: _____

Reagent: R6+17495 R6+17230

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 14

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full

☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate

☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC curve		26			51		
2	TIC curve		27			52		
3	TC ICV		28	TC Curve		53		
4	TIC ICV		29	std 52016		54		
5			30	see SOP for		55	curve points	
6			31			56		
7			32	TC ICV		57		
8			33	std 50986		58		
9			34	5/200(1000)=25		59		
10			35			60		
11			36			61		
12			37	TIC Curve		62		
13			38	std 50244		63		
14			39	see SOP for		64	curve pts	
15			40			65		
16			41	TIC ICV		66		
17			42	std 53128		67		
18			43	5/200(1000)=25		68		
19			44			69		
20			45			70		
21	all points		46	analyzed in		71	duplicate	
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: Deana Dason Date/Time: 8/1/12

DCN#91827

C:\TOC3201\Data\08-01-2012-DIH-TOC.t32

	Analysi	Sample Name	Result	Status	Date / Time	Vial
1	TC	TCCURVE		Completed	8/1/2012 12:49:06 PM	0, 1,
2	IC	TICCURVE		Completed	8/1/2012 2:02:12 PM	0, 6,
3	TC	TC ICV	TC:24.96mg/L	Completed	8/1/2012 2:15:51 PM	11
4	IC	TIC ICV	IC:23.44mg/L	Completed	8/1/2012 2:27:54 PM	12

8/1/2012 4:43:37 PM 1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-08-01-2012.2012_08_01_11_45_23.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	9.931	500uL	1	*******		8/1/2012 11:49:07 AM
2	9.253	500uL	1	*******		8/1/2012 11:52:47 AM

Acid Add. 0.000%
Mean Area 9.592

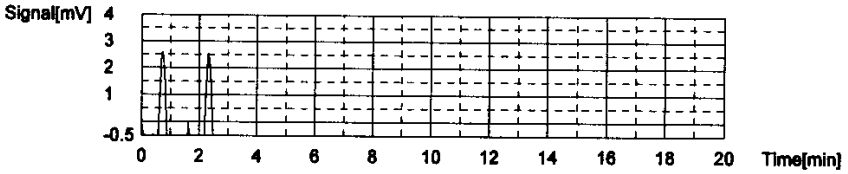

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	50.85	500uL	1	*******		8/1/2012 11:58:18 AM
2	41.17	500uL	1	*******		8/1/2012 12:02:20 PM

Acid Add. 0.000%
Mean Area 46.01

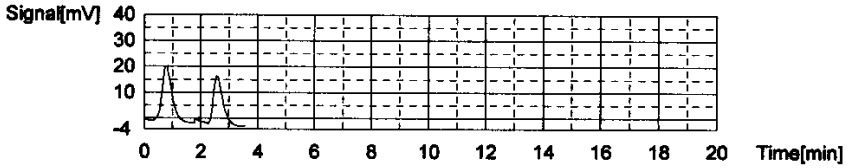

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	191.8	500uL	1	*******		8/1/2012 12:08:22 PM
2	190.2	500uL	1	*******		8/1/2012 12:12:44 PM

Acid Add. 0.000%
Mean Area 191.0

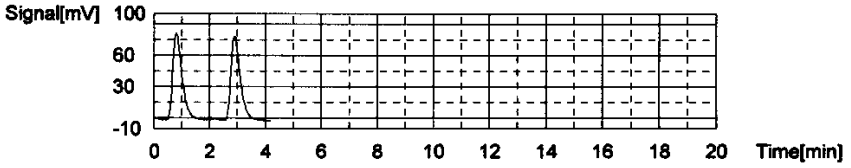

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	377.0	500uL	1	*******		8/1/2012 12:18:49 PM
2	378.7	500uL	1	*******		8/1/2012 12:23:25 PM

Acid Add. 0.000%
Mean Area 377.9

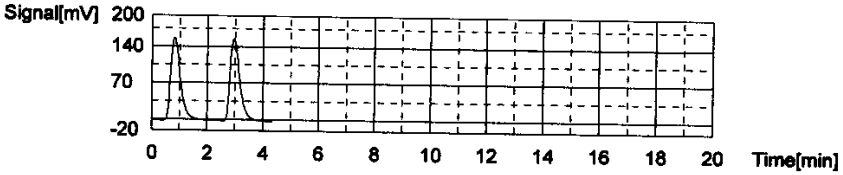

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	962.3	500uL	1	*******		8/1/2012 12:29:55 PM
2	953.1	500uL	1	*******		8/1/2012 12:35:22 PM

Acid Add. 0.000%
Mean Area 957.7

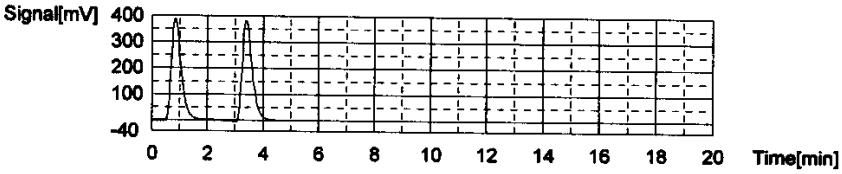

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1952	500uL	1	*******		8/1/2012 12:43:44 PM
2	1908	500uL	1	*******		8/1/2012 12:49:06 PM

Acid Add. 0.000%
Mean Area 1930

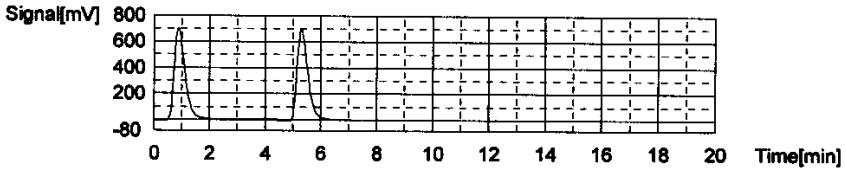

Slope: 38.46
Intercept 2.031
r^2 0.999915
Zero Shift No

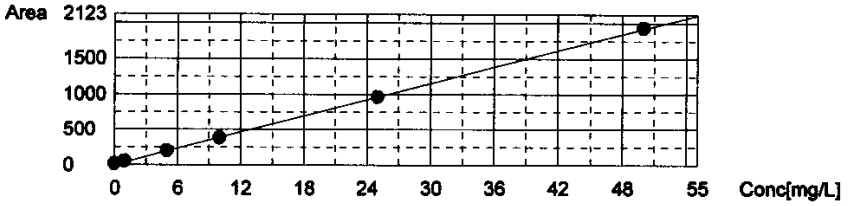

Cal. Curve

Sample Name: TICCURVE
Sample ID:
Cal. Curve: TICCURVE-08-01-2012.2012_08_01_12_49_06.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	7.630	500uL	1	*******		8/1/2012 12:53:06 PM
2	7.558	500uL	1	*******		8/1/2012 12:57:02 PM

Acid Add. 10.00%
Mean Area 7.594

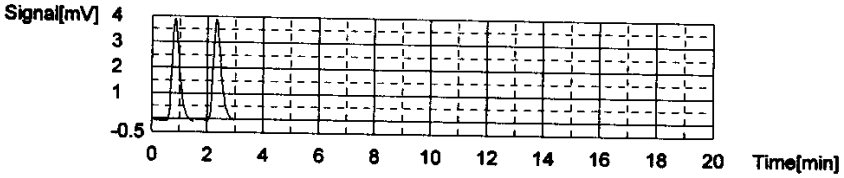

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	34.30	500uL	1	*******		8/1/2012 1:04:33 PM
2	34.42	500uL	1	*******		8/1/2012 1:08:55 PM

Acid Add. 10.00%
Mean Area 34.36

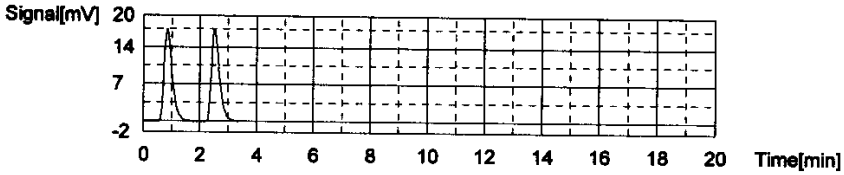

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	149.6	500uL	1	*******		8/1/2012 1:16:46 PM
2	147.7	500uL	1	*******		8/1/2012 1:21:22 PM

Acid Add. 10.00%
Mean Area 148.7

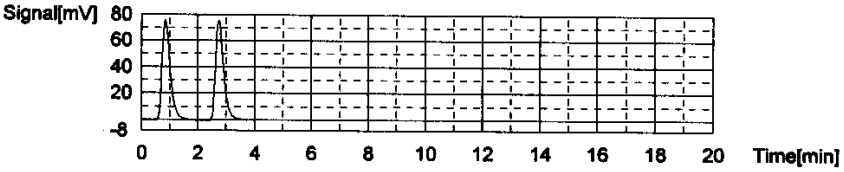

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	299.8	500uL	1	*******		8/1/2012 1:29:18 PM
2	298.0	500uL	1	*******		8/1/2012 1:34:07 PM

Acid Add. 10.00%
Mean Area 298.9

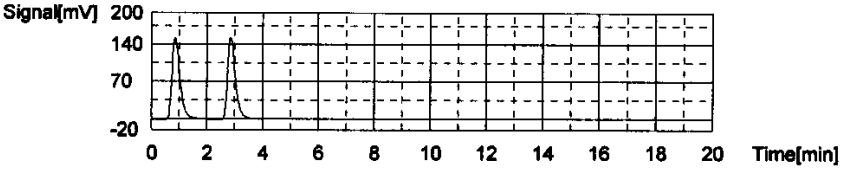

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	746.0	500uL	1	*******		8/1/2012 1:42:39 PM
2	739.9	500uL	1	*******		8/1/2012 1:47:36 PM

Acid Add. 10.00%
Mean Area 743.0

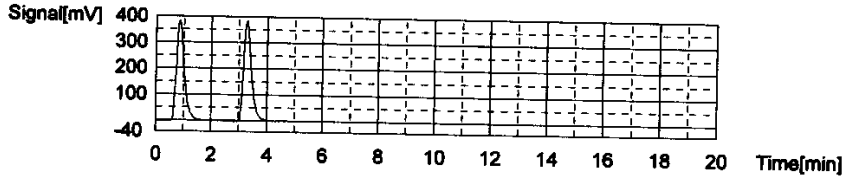

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1467	500uL	1	*******		8/1/2012 1:56:37 PM
2	1456	500uL	1	*******		8/1/2012 2:02:12 PM

Acid Add. 10.00%
Mean Area 1462

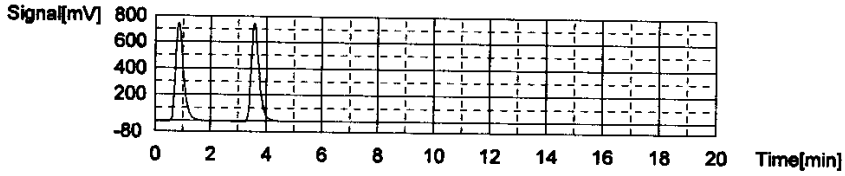

Slope: 29.16
Intercept 6.703
r^2 0.999949
Zero Shift No

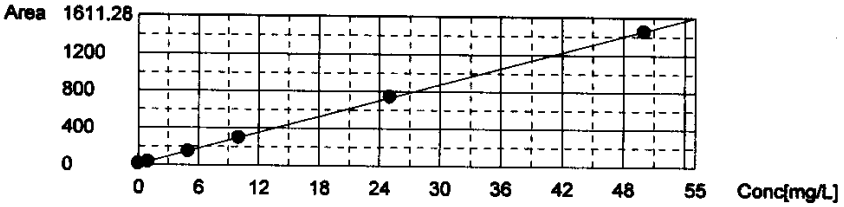

Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-08-01-2012.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:24.96mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	966.2	25.07mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	8/1/2012 2:10:01 PM
2	958.0	24.86mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	8/1/2012 2:15:51 PM

Mean Area 962.1
Mean Conc. 24.96mg/L

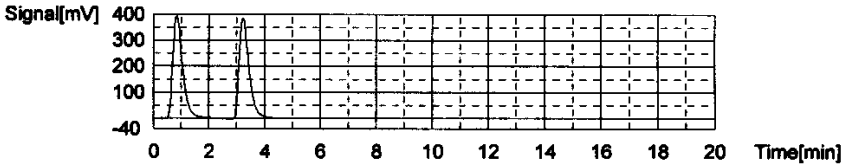

Sample

Sample Name:	TIC ICV
Sample ID:	
Origin:	TICCURVE-08-01-2012.cal
Status	Completed
Chk. Result	

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:23.44mg/L

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	689.0	23.40mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	8/1/2012 2:22:39 PM
2	691.3	23.48mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	8/1/2012 2:27:54 PM

Mean Area 690.2
Mean Conc. 23.44mg/L

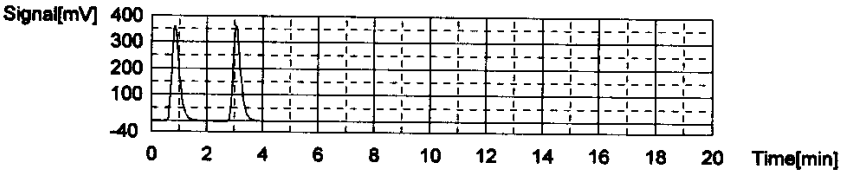

WORKGROUP: WG433257

433259

(433262)

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 53579 (5/200)(1000) = 25mg/L

LCS (TOC): Std 57523 (5/200)(1000) = 25mg/L

CCV (TIC): Std 56127 (5/200)(1000) = 25mg/L

MS (TOC): Std 57523 0.4/40 (1000) = 10

Calibration Curve Date: 8-1-2012

Reagent: RGT26254 RGT27239

☑ SM5310-C : Matrix 2 WG 433262

☑ EPA 415.1/9060A(mod): Matrix 1 WG 433257 WG 433259

SOP: K 4151 Rev. 15

Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full

☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate

☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution
1	TIC 25	
2	CCV 25	
~~3~~ 0	BLK	
4	LCS 25	
~~5~~ 4	LCSDUP	
6	05-1593-02	
7	03	
8	05-1602-04	
9	07	
10	06-122-01	
11	02	
12	03	
13	05-1548-01	
14	CCV	
~~15~~ 0	CCB	
16	DUP 1548-01	
17	MS 04	
18	MSD 07	
19	10	
20	13	
21	16	
22	19	
23	22	
24	25	
25	28	

Position	Sample ID	Dilution
26	CCV	
~~27~~ 0	CCB	
28	06-202-01	1/30
29	06-265-01	
30	02	
31	03	
32	04	
~~33~~ 0	BLK	
34	LCS 25	
~~35~~ 34	LCSDUP	
36	06-268-01	
37	02	
38	CCV	
~~39~~ 0	CCB	
40	06-012-01	
41	DUP 01	
42	MS 02	
43	MSD 03	
44	04	
45	06-134-16	
46	06-173-01	
47	02	
48	03	
49	04	
50	CCV	

Position	Sample ID	Dilution
~~51~~ 0	CCB	
52	06-228-01	
53	02	
54	03	
~~55~~ 0	BLK	
56	LCS	
57	LCSDUP	
58	06-248-05	
59	DUP	
60	MS	
61	05-1201-05	1/2
62	CCV	
~~63~~ 0	CCB	
64	05-1201-05 DUP	1/2
~~64~~ 65	06-100-02	1/500 *
66	06-280-01	1/10 *
67	02	1/10 *
68	06-281-01	1/10 *
~~69~~ 3	06-278-01	
~~70~~ 2	CCV	
~~71~~ 0	CCB	
72		
73		
74		
75		

Analyst: Brice Jenton

Date/Time: 6/7/13/ 1055

DCN#95919

C:\TOC3201\Data\06-07-2013-BAF-TOC.t32

	Analy	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC 25	!!Error!! TOC:-0.2973mg/L TC:25.39mg/L IC:25.69mg	Complete	6/7/2013 2:38:29 PM	1
2	TOC	CCV 25	!!Error!! TOC:21.81mg/L TC:21.75mg/L IC:-0.05543m	Complete	6/7/2013 2:50:33 PM	2
3	TOC	WG433257-01 BLK	TOC:0.3384mg/L TC:0.3478mg/L IC:0.00948mg/L	Complete	6/7/2013 2:59:24 PM	0
4	TOC	WG433257-02 LCS	!!Error!! TOC:22.97mg/L TC:22.93mg/L IC:-0.04737m	Complete	6/7/2013 3:11:48 PM	4
5	TOC	WG433257-03 LCSDUP	!!Error!! TOC:23.32mg/L TC:23.27mg/L IC:-0.04919m	Complete	6/7/2013 3:22:31 PM	4
6	TOC	L13051593-02	TOC:0.9657mg/L TC:6.582mg/L IC:5.617mg/L	Complete	6/7/2013 3:34:48 PM	6
7	TOC	L13051593-03	TOC:0.5134mg/L TC:6.377mg/L IC:5.864mg/L	Complete	6/7/2013 3:46:56 PM	7
8	TOC		!!Error!! TOC:-5.636mg/L TC:75.06mg/L IC:80.70mg	Complete	6/7/2013 4:01:47 PM	8
9	TOC	L13051602-07	TOC:4.635mg/L TC:40.27mg/L IC:35.64mg/L	Complete	6/7/2013 4:16:10 PM	9
10	TOC		!!Error!! TOC:-19.41mg/L TC:76.75mg/L IC:96.16mg	Complete	6/7/2013 4:31:49 PM	10
11	TOC	L13060122-02	TOC:1.490mg/L TC:25.67mg/L IC:24.18mg/L	Complete	6/7/2013 4:46:41 PM	11
12	TOC	L13060122-03	TOC:1.158mg/L TC:45.37mg/L IC:44.21mg/L	Complete	6/7/2013 5:01:39 PM	12
13	TOC	L13051548-01	TOC:0.3390mg/L TC:8.483mg/L IC:8.144mg/L	Complete	6/7/2013 5:14:03 PM	13
14	TOC	CCV	TOC:21.70mg/L TC:21.71mg/L IC:0.01620mg/L	Complete	6/7/2013 5:26:07 PM	14
15	TOC	CCB	TOC:0.3203mg/L TC:0.3452mg/L IC:0.02491mg/L	Complete	6/7/2013 5:35:04 PM	0
16	TOC	WG433257-05 DUP	TOC:0.5445mg/L TC:7.355mg/L IC:6.810mg/L	Complete	6/7/2013 5:47:29 PM	16
17	TOC	L13051548-04 MS	TOC:9.533mg/L TC:17.72mg/L IC:8.185mg/L	Complete	6/7/2013 6:00:15 PM	17
18	TOC	L13051548-07 MSD	TOC:9.369mg/L TC:16.34mg/L IC:6.971mg/L	Complete	6/7/2013 6:12:41 PM	18
19	TOC	L13051548-10	TOC:0.6296mg/L TC:3.894mg/L IC:3.264mg/L	Complete	6/7/2013 6:24:36 PM	19
20	TOC	L13051548-13	TOC:0.7405mg/L TC:5.191mg/L IC:4.451mg/L	Complete	6/7/2013 6:36:42 PM	20
21	TOC	L13051548-16	TOC:0.7542mg/L TC:5.503mg/L IC:4.749mg/L	Complete	6/7/2013 6:49:04 PM	21
22	TOC	L13051548-19	TOC:0.6094mg/L TC:5.194mg/L IC:4.585mg/L	Complete	6/7/2013 7:01:08 PM	22
23	TOC	L13051548-22	TOC:0.5990mg/L TC:4.947mg/L IC:4.348mg/L	Complete	6/7/2013 7:13:13 PM	23
24	TOC	L13051548-25	TOC:0.7407mg/L TC:0.8489mg/L IC:0.1082mg/L	Complete	6/7/2013 7:24:38 PM	24
25	TOC	L13051548-28	TOC:1.846mg/L TC:1.937mg/L IC:0.09096mg/L	Complete	6/7/2013 7:36:04 PM	25
26	TOC	CCV	!!Error!! TOC:21.83mg/L TC:21.80mg/L IC:-0.02560m	Complete	6/7/2013 7:48:12 PM	26
27	TOC	CCB	TOC:0.3243mg/L TC:0.3359mg/L IC:0.01157mg/L	Complete	6/7/2013 7:57:09 PM	0
28	TOC	L13060202-01 (30)	TOC:13.51mg/L TC:13.74mg/L IC:0.2296mg/L	Complete	6/7/2013 8:11:30 PM	28
29	TOC	L13060265-01	TOC:0.9538mg/L TC:1.964mg/L IC:1.010mg/L	Complete	6/7/2013 8:23:10 PM	29
30	TOC	L13060265-02	TOC:0.7682mg/L TC:2.680mg/L IC:1.912mg/L	Complete	6/7/2013 8:34:57 PM	30
31	TOC	L13060265-03	TOC:1.432mg/L TC:4.710mg/L IC:3.278mg/L	Complete	6/7/2013 8:47:18 PM	31
32	TOC	L13060265-04	TOC:1.031mg/L TC:4.840mg/L IC:3.810mg/L	Complete	6/7/2013 8:59:25 PM	32
33	TOC	WG433259-01 BLK	TOC:0.3195mg/L TC:0.3416mg/L IC:0.02210mg/L	Complete	6/7/2013 9:08:21 PM	0
34	TOC	WG433259-02 LCS	!!Error!! TOC:23.33mg/L TC:23.31mg/L IC:-0.01795m	Complete	6/7/2013 9:20:28 PM	34
35	TOC	WG433259-03 LCSDUP	!!Error!! TOC:23.10mg/L TC:23.08mg/L IC:-0.02128m	Complete	6/7/2013 9:31:07 PM	34
36	TOC	L13060268-01	TOC:3.625mg/L TC:4.323mg/L IC:0.6981mg/L	Complete	6/7/2013 9:43:12 PM	36
37	TOC	L13060268-02	TOC:3.767mg/L TC:4.365mg/L IC:0.5972mg/L	Complete	6/7/2013 9:55:17 PM	37
38	TOC	CCV	!!Error!! TOC:22.33mg/L TC:22.31mg/L IC:-0.02598m	Complete	6/7/2013 10:07:19 P	38
39	TOC	CCB	TOC:0.3236mg/L TC:0.3354mg/L IC:0.01178mg/L	Complete	6/7/2013 10:16:13 P	0
40	TOC	L13060012-01	TOC:0.5755mg/L TC:1.441mg/L IC:0.8654mg/L	Complete	6/7/2013 10:27:51 P	40
41	TOC	WG433259-05 DUP	TOC:0.5278mg/L TC:1.444mg/L IC:0.9165mg/L	Complete	6/7/2013 10:39:26 P	41
42	TOC	L13060012-02 MS	TOC:9.586mg/L TC:10.87mg/L IC:1.286mg/L	Complete	6/7/2013 10:51:30 P	42
43	TOC	L13060012-03 MSD	TOC:9.754mg/L TC:11.14mg/L IC:1.384mg/L	Complete	6/7/2013 11:03:35 P	43
44	TOC	L13060012-04	TOC:0.8197mg/L TC:3.543mg/L IC:2.723mg/L	Complete	6/7/2013 11:15:33 P	44
45	TOC	L13060134-16	TOC:3.609mg/L TC:13.95mg/L IC:10.34mg/L	Complete	6/7/2013 11:30:24 P	45
46	TOC	L13060173-01	TOC:0.5686mg/L TC:2.065mg/L IC:1.496mg/L	Complete	6/7/2013 11:42:09 P	46
47	TOC	L13060173-02	TOC:0.5828mg/L TC:1.833mg/L IC:1.250mg/L	Complete	6/7/2013 11:53:48 P	47
48	TOC	L13060173-03	TOC:0.5546mg/L TC:2.935mg/L IC:2.380mg/L	Complete	6/8/2013 12:05:40 A	48
49	TOC	L13060173-04	TOC:0.8506mg/L TC:2.597mg/L IC:1.746mg/L	Complete	6/8/2013 12:17:31 A	49
50	TOC	CCV	!!Error!! TOC:22.00mg/L TC:21.99mg/L IC:-0.00883m	Complete	6/8/2013 12:29:45 A	50
51	TOC	CCB	TOC:0.3196mg/L TC:0.3333mg/L IC:0.01370mg/L	Complete	6/8/2013 12:38:39 A	0
52	TOC	L13060228-01	TOC:0.6723mg/L TC:2.090mg/L IC:1.418mg/L	Complete	6/8/2013 12:50:20 A	52
53	TOC	L13060223-02	TOC:0.8159mg/L TC:3.345mg/L IC:2.530mg/L	Complete	6/8/2013 1:02:22 AM	53
54	TOC	L13060223-03	TOC:0.7602mg/L TC:1.673mg/L IC:0.9124mg/L	Complete	6/8/2013 1:14:02 AM	54
55	TOC	WG433262-01 BLK	TOC:0.3012mg/L TC:0.3233mg/L IC:0.02205mg/L	Complete	6/8/2013 1:30:21 AM	0
56	TOC	WG4332620-02 LCS	!!Error!! TOC:23.18mg/L TC:23.17mg/L IC:-0.00749m	Complete	6/8/2013 1:51:54 AM	56
57	TOC	WG433262-03 LCSDUP	!!Error!! TOC:22.89mg/L TC:22.89mg/L IC:-0.00465m	Complete	6/8/2013 2:12:50 AM	57
58	TOC	L13060248-05	TOC:5.242mg/L TC:6.007mg/L IC:0.7641mg/L	Complete	6/8/2013 2:33:36 AM	58
59	TOC	WG433262-05 DUP	TOC:5.555mg/L TC:6.555mg/L IC:1.000mg/L	Complete	6/8/2013 2:54:26 AM	59
60	TOC	WG433262-06 MS	TOC:15.36mg/L TC:16.51mg/L IC:1.149mg/L	Complete	6/8/2013 3:15:53 AM	60
61	TOC	L13051201-05 (2)	TOC:44.17mg/L TC:44.17mg/L IC:0.00077mg/L	Complete	6/8/2013 3:38:04 AM	61
62	TOC	CCV	!!Error!! TOC:22.60mg/L TC:22.59mg/L IC:-0.01281m	Complete	6/8/2013 3:50:10 AM	62
63	TOC	CCB	TOC:0.3240mg/L TC:0.3408mg/L IC:0.01685mg/L	Complete	6/8/2013 3:59:04 AM	0
64	TOC	L13051201-05 (2)	!!Error!! TOC:42.23mg/L TC:42.22mg/L IC:-0.00346m	Complete	6/8/2013 4:20:38 AM	64
65	TOC	L13060100-02 (500)	!!Error!! TOC:0.4188mg/L TC:0.4024mg/L IC:-0.0163	Complete	6/8/2013 4:31:55 AM	65
66	TOC	L13060280-01 (10)	TOC:11.25mg/L TC:11.29mg/L IC:0.04511mg/L	Complete	6/8/2013 4:44:10 AM	66
67	TOC	L13060280-02 (10)	TOC:34.93mg/L TC:36.84mg/L IC:1.915mg/L	Complete	6/8/2013 4:58:17 AM	67

6/10/2013 9:44:38 AM 1/2

C:\TOC3201\Data\06-07-2013-BAF-TOC.t32

	Analy	Sample Name	Result	Status	Date / Time	Vial
68	TOC	L13060281-01 (10)	TOC:4.002mg/L TC:4.084mg/L IC:0.08173mg/L	Complete	6/8/2013 5:10:51 AM	68
69	TOC	L13060278-01	!!Error!! TOC:0.6193mg/L TC:0.5948mg/L IC:-0.0244	Complete	6/8/2013 5:22:13 AM	3
70	TOC	CCV	TOC:22.50mg/L TC:22.54mg/L IC:0.03853mg/L	Complete	6/8/2013 5:34:29 AM	2
71	TOC	CCB	TOC:0.3250mg/L TC:0.3468mg/L IC:0.02179mg/L	Complete	6/8/2013 5:43:27 AM	0

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC 25
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-0.2973mg/L TC:25.39mg/L IC:25.69mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	978.7	25.39mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_26	6/7/2013 2:33:18 PM

Mean Area 978.7
Mean Conc. 25.39mg/L

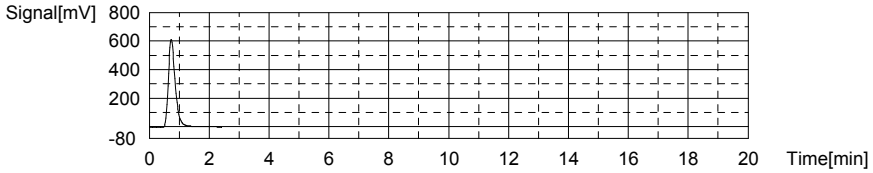

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	755.9	25.69mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 2:38:29 PM

Mean Area 755.9
Mean Conc. 25.69mg/L

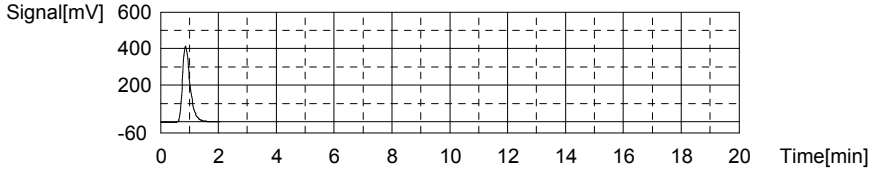

Sample

Sample Name: CCV 25
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:21.81mg/L TC:21.75mg/L IC:-0.05543mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	838.6	21.75mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 2:46:15 PM

Mean Area 838.6
Mean Conc. 21.75mg/L

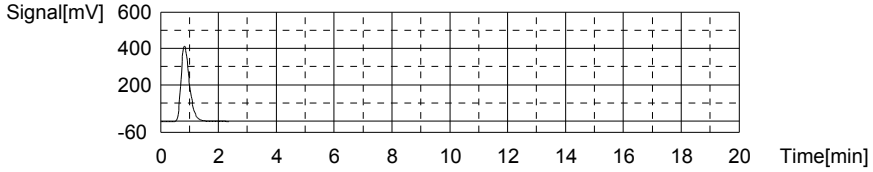

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.087	-0.05543mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 2:50:33 PM

Mean Area 5.087
Mean Conc. -0.05543mg/L

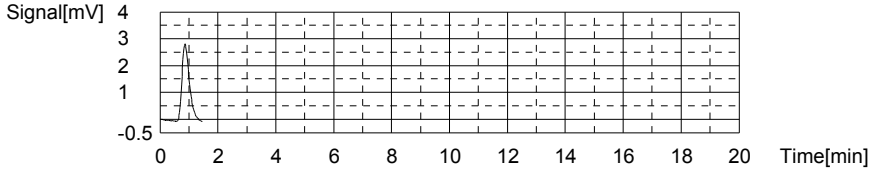

Sample

Sample Name: WG433257-01 BLK
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.3384mg/L TC:0.3478mg/L IC:0.00948mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.41	0.3478mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 2:55:34 PM

Mean Area 15.41
Mean Conc. 0.3478mg/L

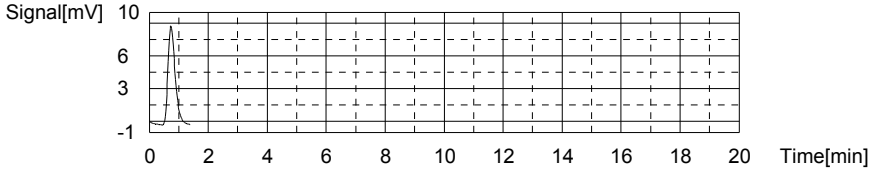

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.980	0.00948mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 2:59:24 PM

Mean Area 6.980
Mean Conc. 0.00948mg/L

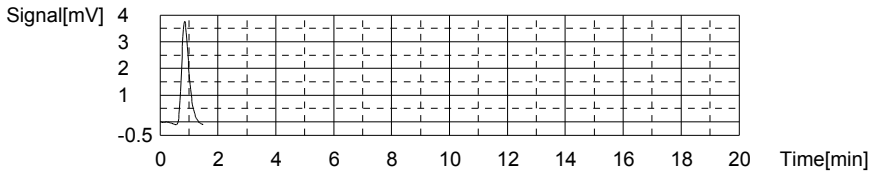

Sample

Sample Name: WG433257-02 LCS
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:22.97mg/L TC:22.93mg/L IC:-0.04737mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	883.8	22.93mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 3:07:25 PM

Mean Area 883.8
Mean Conc. 22.93mg/L

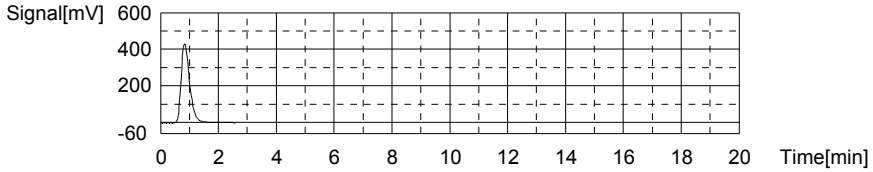

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.322	-0.04737mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 3:11:48 PM

Mean Area 5.322
Mean Conc. -0.04737mg/L

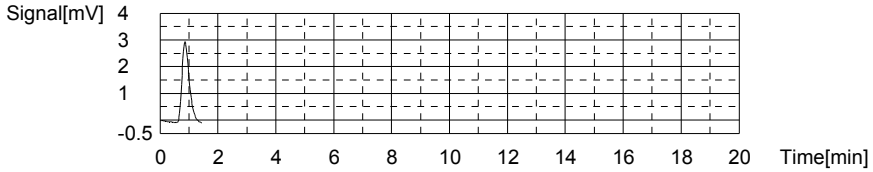

Sample

Sample Name: WG433257-03 LCSDUP
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.32mg/L TC:23.27mg/L IC:-0.04919mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	896.9	23.27mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 3:18:10 PM

Mean Area 896.9
Mean Conc. 23.27mg/L

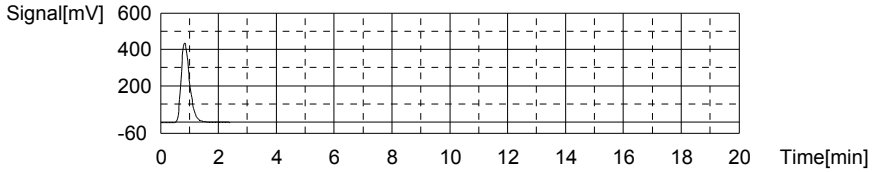

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.269	-0.04919mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 3:22:31 PM

Mean Area 5.269
Mean Conc. -0.04919mg/L

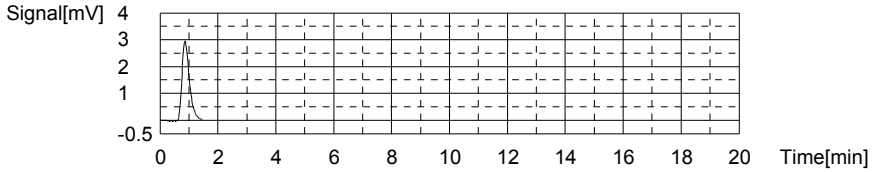

Sample

Sample Name: L13051593-02
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9657mg/L TC:6.582mg/L IC:5.617mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	255.2	6.582mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 3:29:54 PM

Mean Area 255.2
Mean Conc. 6.582mg/L

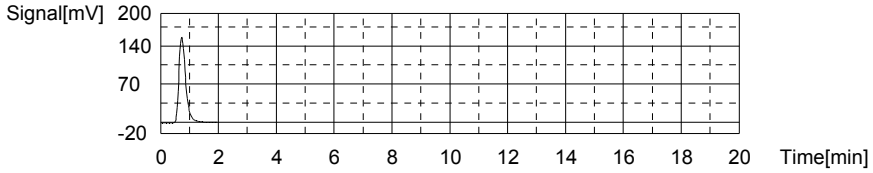

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	170.5	5.617mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 3:34:48 PM

Mean Area 170.5
Mean Conc. 5.617mg/L

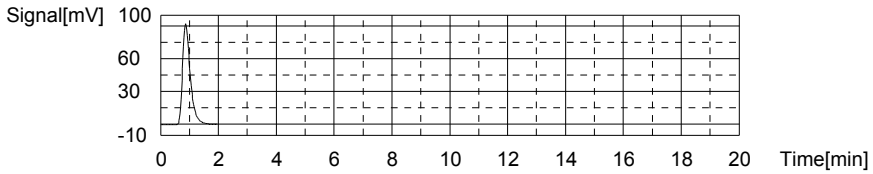

Sample

Sample Name: L13051593-03
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.5134mg/L TC:6.377mg/L IC:5.864mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	247.3	6.377mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 3:42:02 PM

Mean Area 247.3
Mean Conc. 6.377mg/L

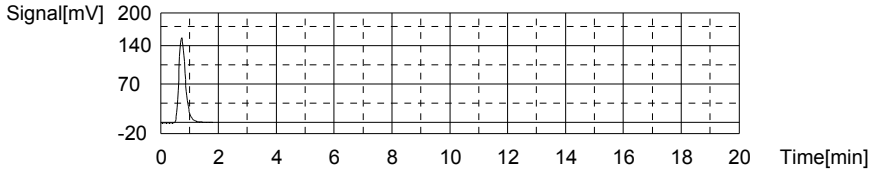

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	177.7	5.864mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 3:46:56 PM

Mean Area 177.7
Mean Conc. 5.864mg/L

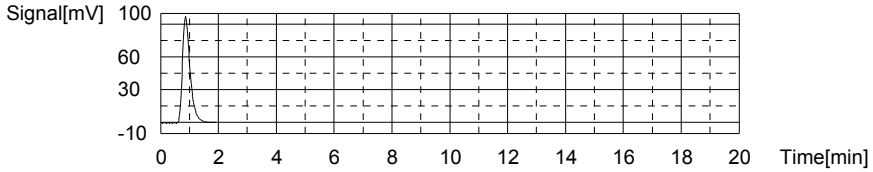

Sample

Sample Name:
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-5.636mg/L TC:75.06mg/L IC:80.70mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2889	75.06mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_26	6/7/2013 3:55:16 PM

Mean Area 2889
Mean Conc. 75.06mg/L

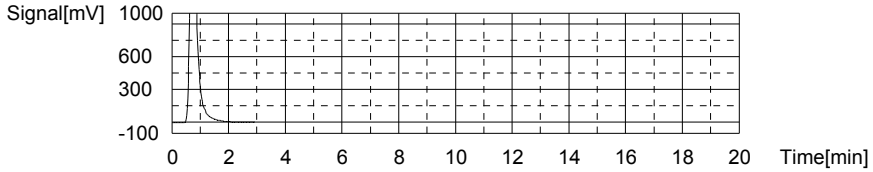

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2360	80.70mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_06	6/7/2013 4:01:47 PM

Mean Area 2360
Mean Conc. 80.70mg/L

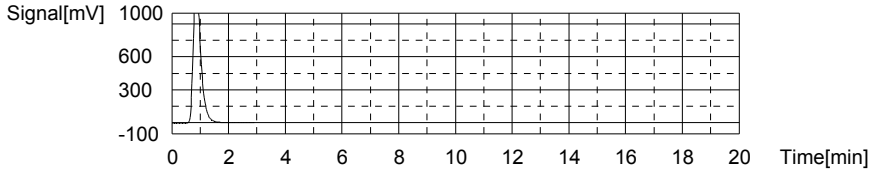

Sample

Sample Name: L13051602-07
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.635mg/L TC:40.27mg/L IC:35.64mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1551	40.27mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_26	6/7/2013 4:10:12 PM

Mean Area 1551
Mean Conc. 40.27mg/L

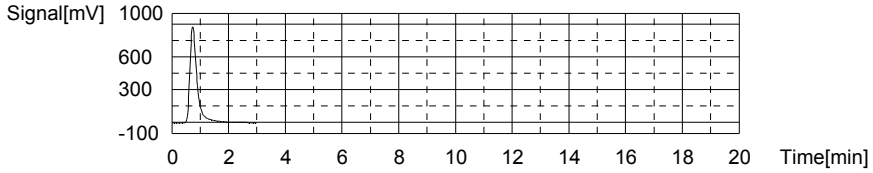

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1046	35.64mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_06	6/7/2013 4:16:10 PM

Mean Area 1046
Mean Conc. 35.64mg/L

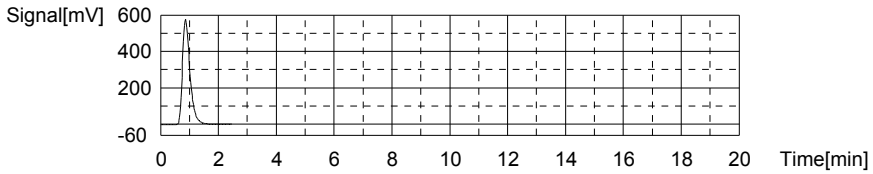

Sample

Sample Name:
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-19.41mg/L TC:76.75mg/L IC:96.16mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2954	76.75mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 4:25:11 PM

Mean Area 2954
Mean Conc. 76.75mg/L

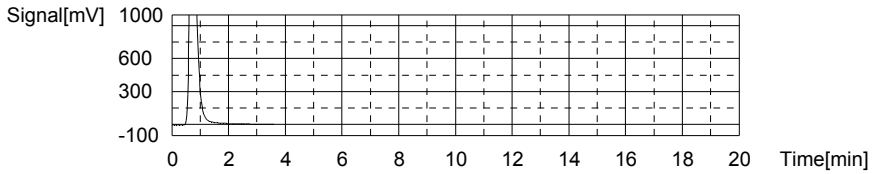

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2811	96.16mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 4:31:49 PM

Mean Area 2811
Mean Conc. 96.16mg/L

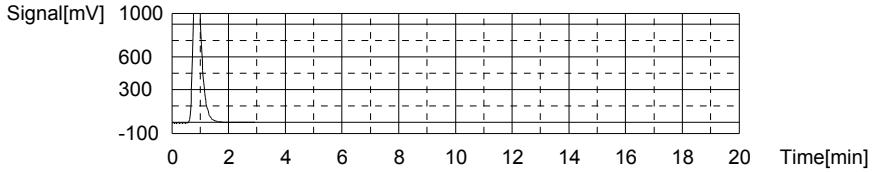

Sample

Sample Name: L13060122-02
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.490mg/L TC:25.67mg/L IC:24.18mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	989.4	25.67mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_26	6/7/2013 4:40:52 PM

Mean Area 989.4
Mean Conc. 25.67mg/L

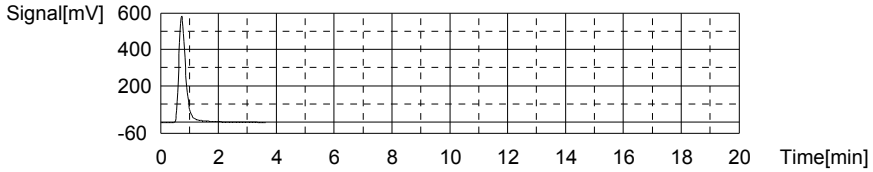

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	711.9	24.18mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_06	6/7/2013 4:46:41 PM

Mean Area 711.9
Mean Conc. 24.18mg/L

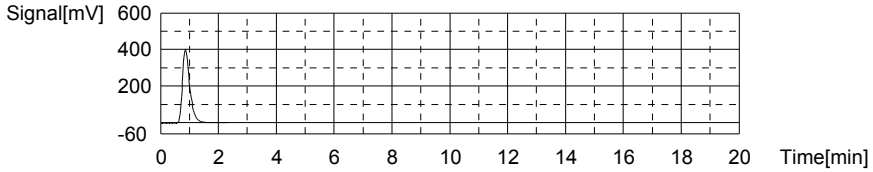

Sample

Sample Name: L13060122-03
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.158mg/L TC:45.37mg/L IC:44.21mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1747	45.37mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_26	6/7/2013 4:55:35 PM

Mean Area 1747
Mean Conc. 45.37mg/L

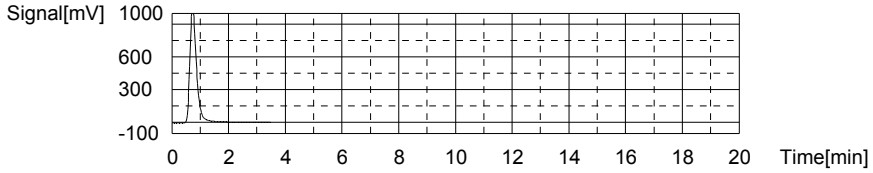

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1296	44.21mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_06	6/7/2013 5:01:39 PM

Mean Area 1296
Mean Conc. 44.21mg/L

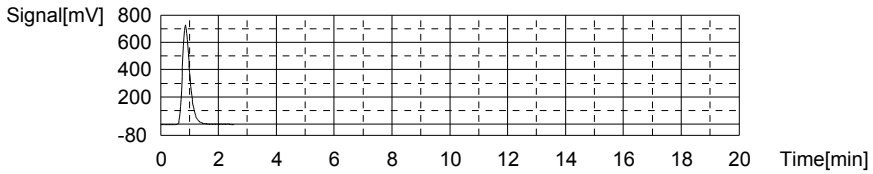

Sample

Sample Name: L13051548-01
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.3390mg/L TC:8.483mg/L IC:8.144mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	328.3	8.483mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 5:08:59 PM

Mean Area 328.3
Mean Conc. 8.483mg/L

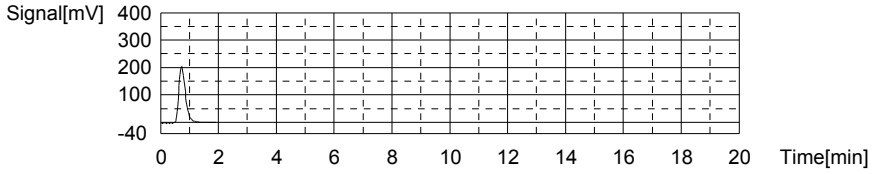

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	244.2	8.144mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 5:14:03 PM

Mean Area 244.2
Mean Conc. 8.144mg/L

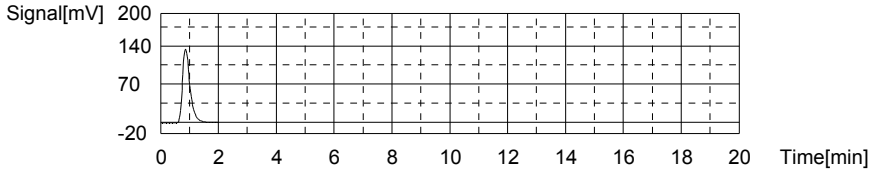

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:21.70mg/L TC:21.71mg/L IC:0.01620mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	837.1	21.71mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 5:21:45 PM

Mean Area 837.1
Mean Conc. 21.71mg/L

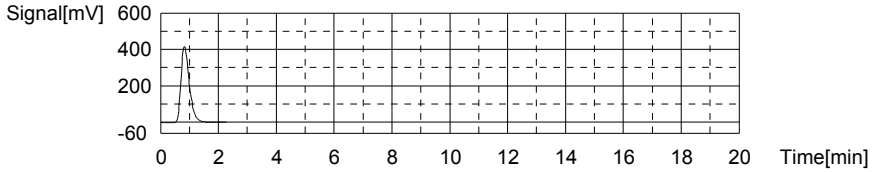

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.176	0.01620mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 5:26:07 PM

Mean Area 7.176
Mean Conc. 0.01620mg/L

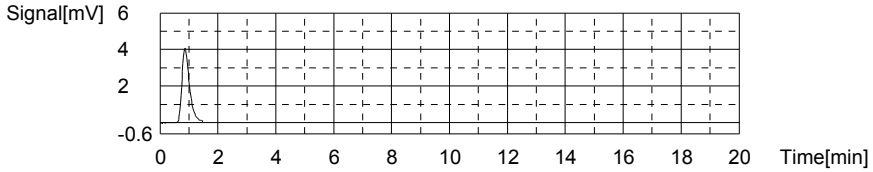

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.3203mg/L TC:0.3452mg/L IC:0.02491mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.31	0.3452mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 5:31:09 PM

Mean Area 15.31
Mean Conc. 0.3452mg/L

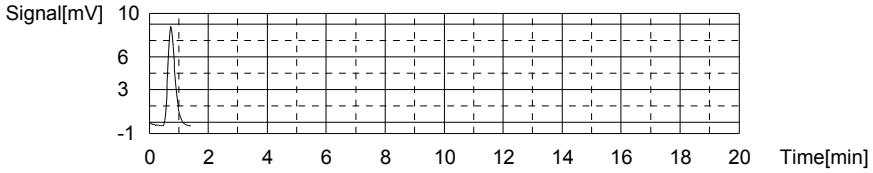

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.430	0.02491mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 5:35:04 PM

Mean Area 7.430
Mean Conc. 0.02491mg/L

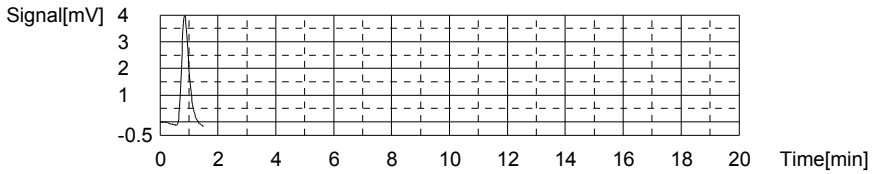

Sample

Sample Name: WG433257-05 DUP
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.5445mg/L TC:7.355mg/L IC:6.810mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	284.9	7.355mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 5:42:30 PM

Mean Area 284.9
Mean Conc. 7.355mg/L

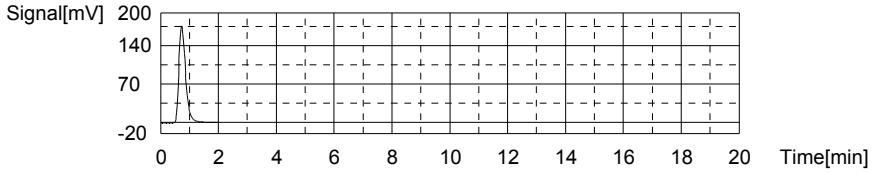

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	205.3	6.810mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 5:47:29 PM

Mean Area 205.3
Mean Conc. 6.810mg/L

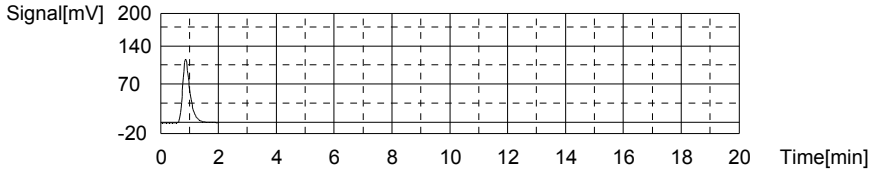

Sample

Sample Name: L13051548-04 MS
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.533mg/L TC:17.72mg/L IC:8.185mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	683.5	17.72mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 5:55:08 PM

Mean Area 683.5
Mean Conc. 17.72mg/L

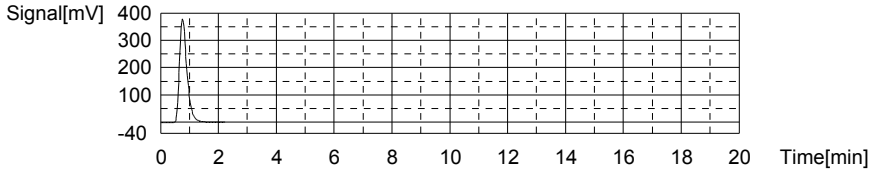

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	245.4	8.185mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 6:00:15 PM

Mean Area 245.4
Mean Conc. 8.185mg/L

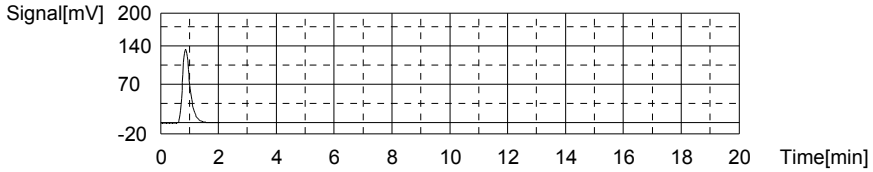

Sample

Sample Name: L13051548-07 MSD
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.369mg/L TC:16.34mg/L IC:6.971mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	630.5	16.34mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 6:07:43 PM

Mean Area 630.5
Mean Conc. 16.34mg/L

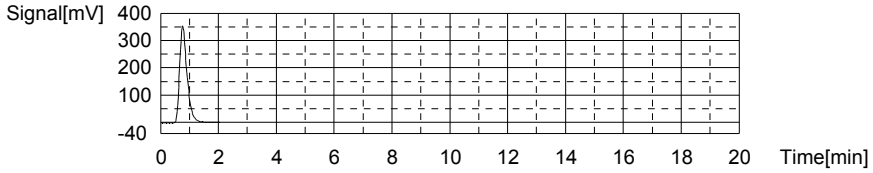

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	210.0	6.971mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 6:12:41 PM

Mean Area 210.0
Mean Conc. 6.971mg/L

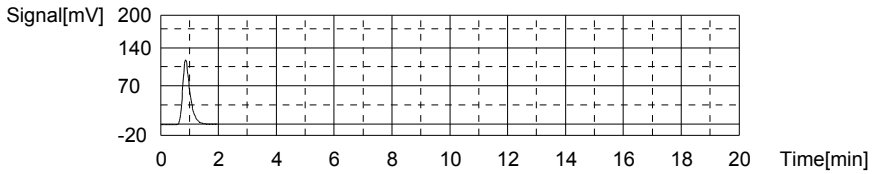

Sample

Sample Name: L13051548-10
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.6296mg/L TC:3.894mg/L IC:3.264mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	151.8	3.894mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 6:19:48 PM

Mean Area 151.8
Mean Conc. 3.894mg/L

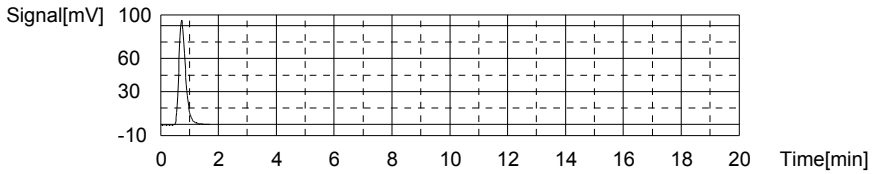

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	101.9	3.264mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 6:24:36 PM

Mean Area 101.9
Mean Conc. 3.264mg/L

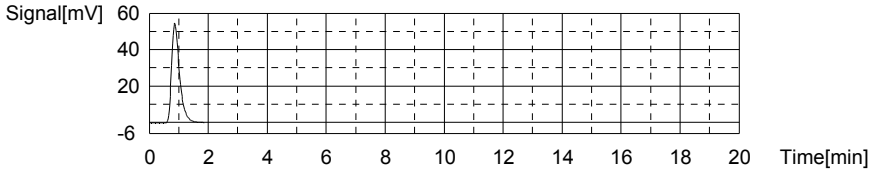

Sample

Sample Name: L13051548-13
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.7405mg/L TC:5.191mg/L IC:4.451mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	201.7	5.191mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_26	6/7/2013 6:31:50 PM

Mean Area 201.7
Mean Conc. 5.191mg/L

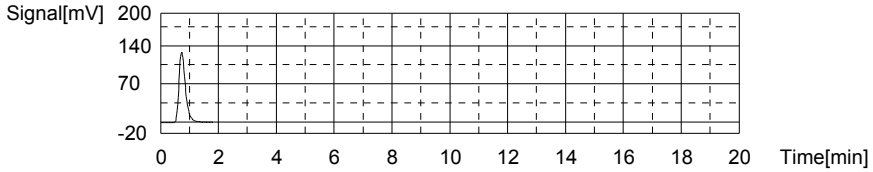

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	136.5	4.451mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_06	6/7/2013 6:36:42 PM

Mean Area 136.5
Mean Conc. 4.451mg/L

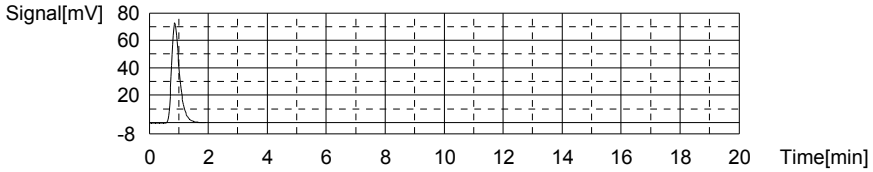

Sample

Sample Name: L13051548-16
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.7542mg/L TC:5.503mg/L IC:4.749mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	213.7	5.503mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_26	6/7/2013 6:44:04 PM

Mean Area 213.7
Mean Conc. 5.503mg/L

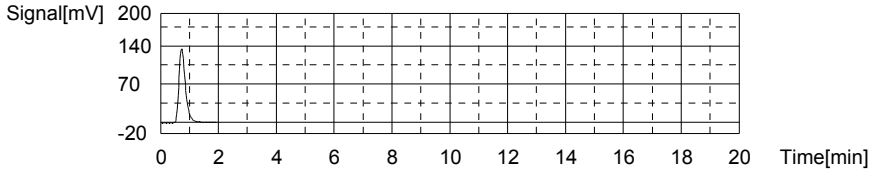

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	145.2	4.749mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_06	6/7/2013 6:49:04 PM

Mean Area 145.2
Mean Conc. 4.749mg/L

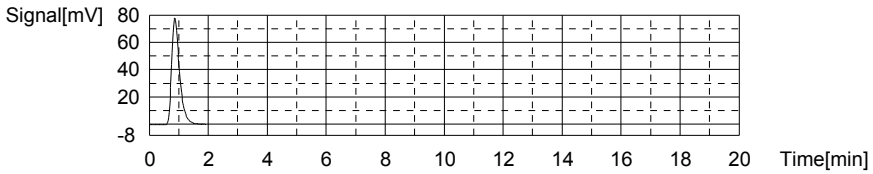

Sample

Sample Name: L13051548-19
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.6094mg/L TC:5.194mg/L IC:4.585mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	201.8	5.194mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 6:56:14 PM

Mean Area 201.8
Mean Conc. 5.194mg/L

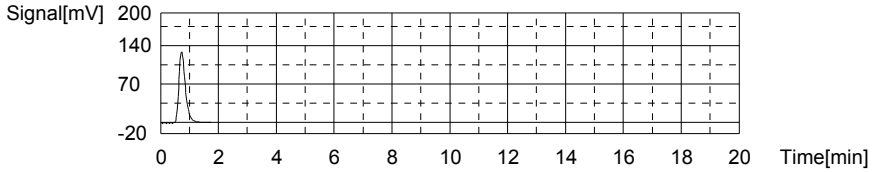

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	140.4	4.585mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 7:01:08 PM

Mean Area 140.4
Mean Conc. 4.585mg/L

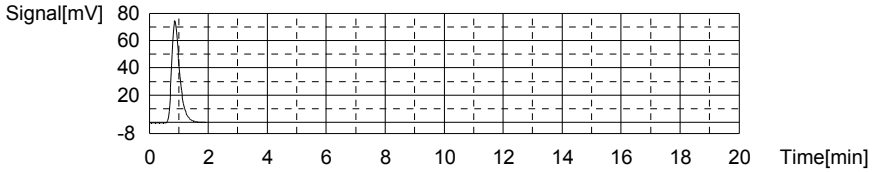

Sample

Sample Name: L13051548-22
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.5990mg/L TC:4.947mg/L IC:4.348mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	192.3	4.947mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 7:08:17 PM

Mean Area 192.3
Mean Conc. 4.947mg/L

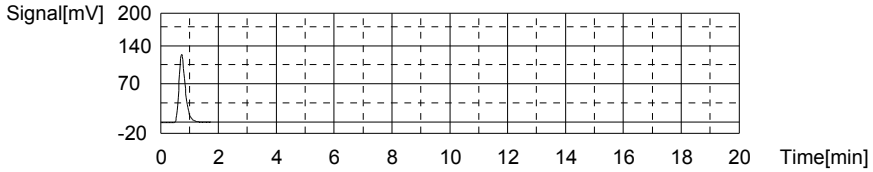

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	133.5	4.348mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 7:13:13 PM

Mean Area 133.5
Mean Conc. 4.348mg/L

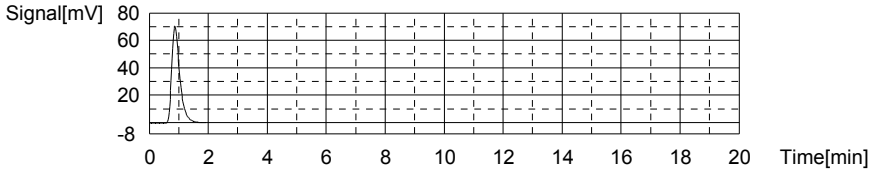

Sample

Sample Name: L13051548-25
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.7407mg/L TC:0.8489mg/L IC:0.1082mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	34.68	0.8489mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 7:20:10 PM

Mean Area 34.68
Mean Conc. 0.8489mg/L

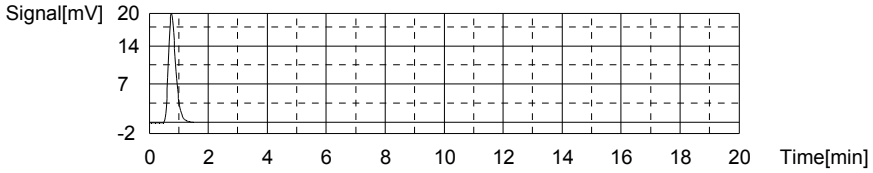

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.859	0.1082mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 7:24:38 PM

Mean Area 9.859
Mean Conc. 0.1082mg/L

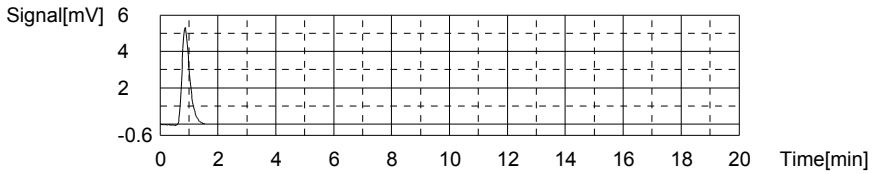

Sample

Sample Name: L13051548-28
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.846mg/L TC:1.937mg/L IC:0.09096mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	76.52	1.937mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 7:31:42 PM

Mean Area 76.52
Mean Conc. 1.937mg/L

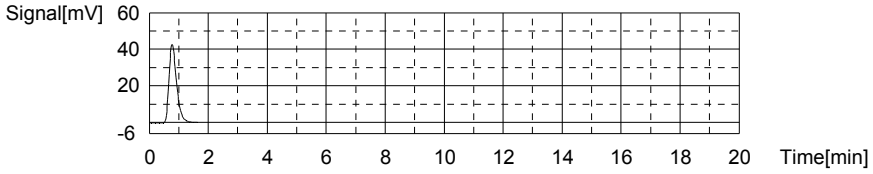

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.356	0.09096mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 7:36:04 PM

Mean Area 9.356
Mean Conc. 0.09096mg/L

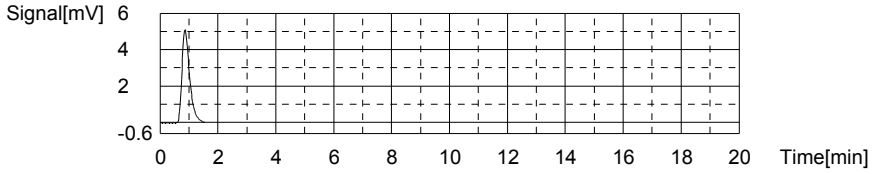

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:21.83mg/L TC:21.80mg/L IC:-0.02560mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	840.6	21.80mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 7:43:50 PM

Mean Area 840.6
Mean Conc. 21.80mg/L

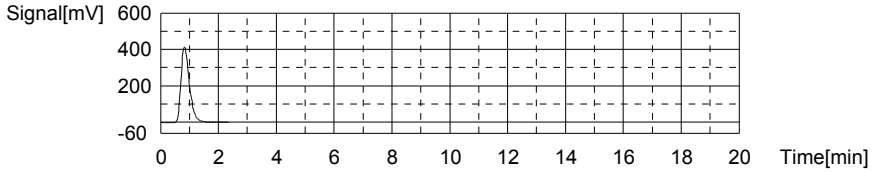

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.957	-0.02560mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 7:48:12 PM

Mean Area 5.957
Mean Conc. -0.02560mg/L

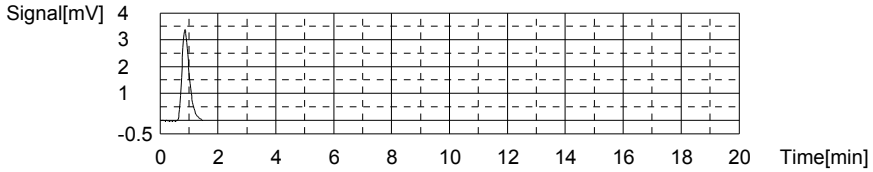

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.3243mg/L TC:0.3359mg/L IC:0.01157mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.95	0.3359mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 7:53:14 PM

Mean Area 14.95
Mean Conc. 0.3359mg/L

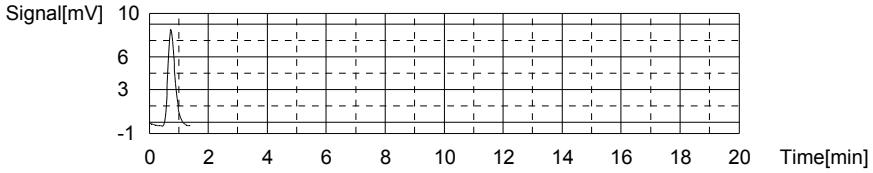

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.041	0.01157mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 7:57:09 PM

Mean Area 7.041
Mean Conc. 0.01157mg/L

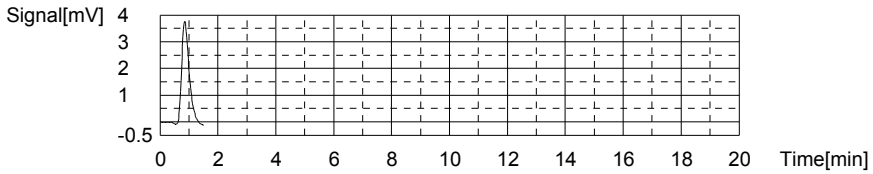

Sample

Sample Name: L13060202-01 (30)
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.51mg/L TC:13.74mg/L IC:0.2296mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	530.3	13.74mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 8:07:02 PM

Mean Area 530.3
Mean Conc. 13.74mg/L

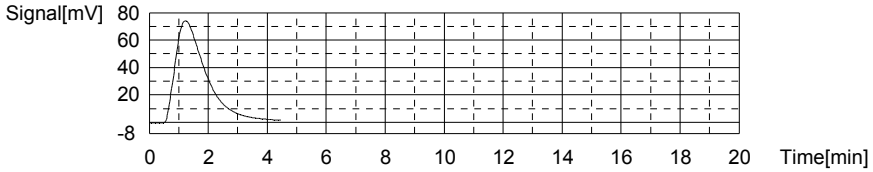

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.40	0.2296mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 8:11:30 PM

Mean Area 13.40
Mean Conc. 0.2296mg/L

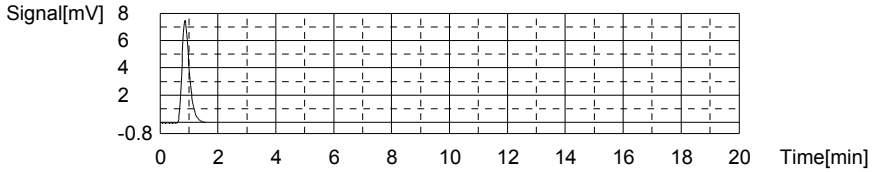

Sample

Sample Name: L13060265-01
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9538mg/L TC:1.964mg/L IC:1.010mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	77.58	1.964mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_26	6/7/2013 8:18:36 PM

Mean Area 77.58
Mean Conc. 1.964mg/L

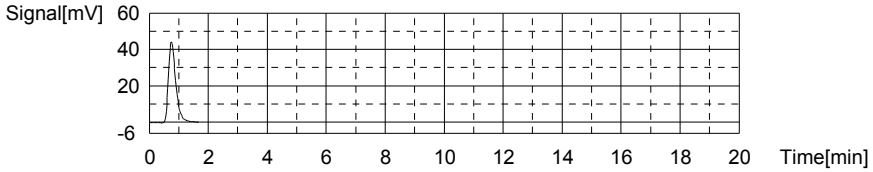

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	36.17	1.010mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_06	6/7/2013 8:23:10 PM

Mean Area 36.17
Mean Conc. 1.010mg/L

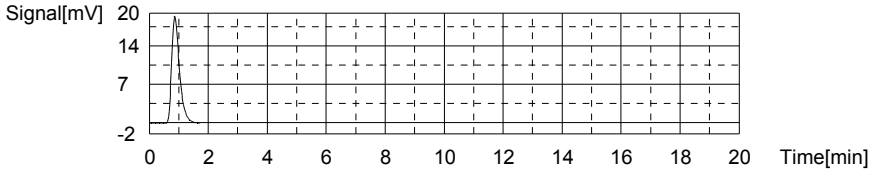

Sample

Sample Name: L13060265-02
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.7682mg/L TC:2.680mg/L IC:1.912mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	105.1	2.680mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_26	6/7/2013 8:30:17 PM

Mean Area 105.1
Mean Conc. 2.680mg/L

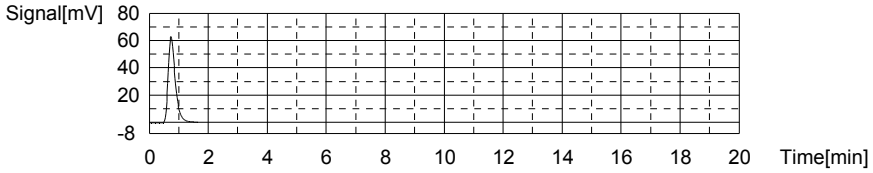

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	62.45	1.912mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_06	6/7/2013 8:34:57 PM

Mean Area 62.45
Mean Conc. 1.912mg/L

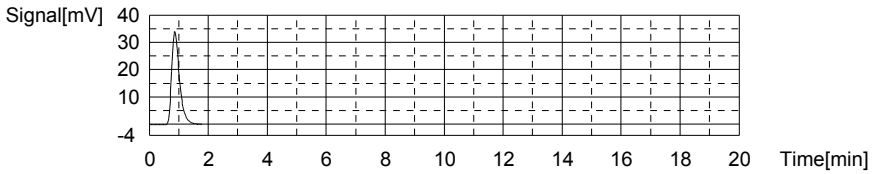

Sample

Sample Name: L13060265-03
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.432mg/L TC:4.710mg/L IC:3.278mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	183.2	4.710mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 8:42:34 PM

Mean Area 183.2
Mean Conc. 4.710mg/L

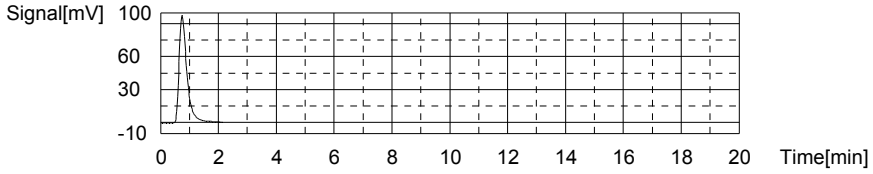

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	102.3	3.278mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 8:47:18 PM

Mean Area 102.3
Mean Conc. 3.278mg/L

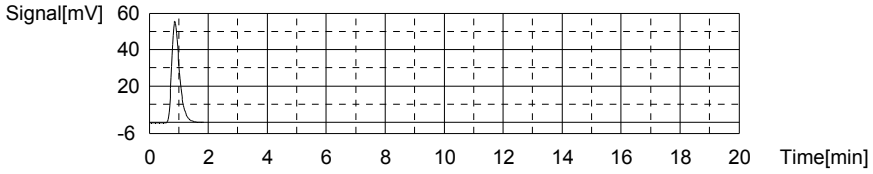

Sample

Sample Name: L13060265-04
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.031mg/L TC:4.840mg/L IC:3.810mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	188.2	4.840mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 8:54:38 PM

Mean Area 188.2
Mean Conc. 4.840mg/L

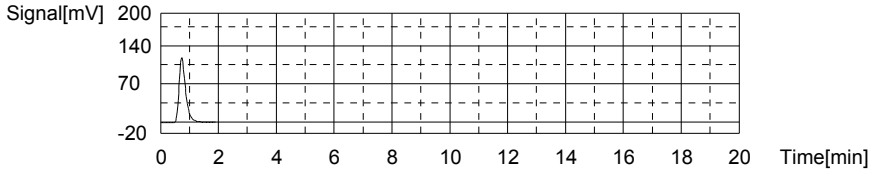

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	117.8	3.810mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 8:59:25 PM

Mean Area 117.8
Mean Conc. 3.810mg/L

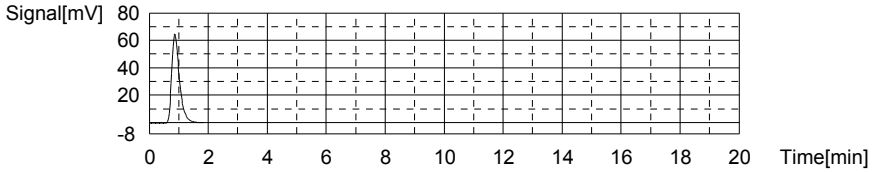

Sample

Sample Name: WG433259-01 BLK
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.3195mg/L TC:0.3416mg/L IC:0.02210mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.17	0.3416mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 9:04:27 PM

Mean Area 15.17
Mean Conc. 0.3416mg/L

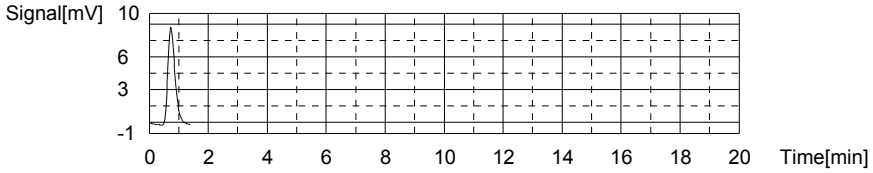

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.348	0.02210mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 9:08:21 PM

Mean Area 7.348
Mean Conc. 0.02210mg/L

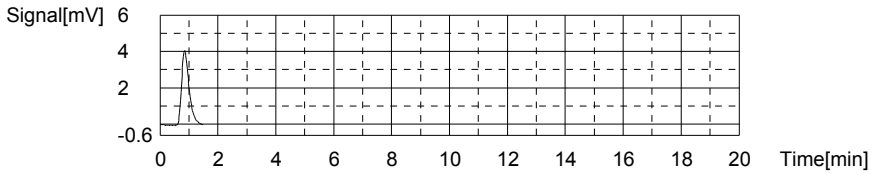

Sample

Sample Name: WG433259-02 LCS
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.33mg/L TC:23.31mg/L IC:-0.01795mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	898.7	23.31mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 9:16:03 PM

Mean Area 898.7
Mean Conc. 23.31mg/L

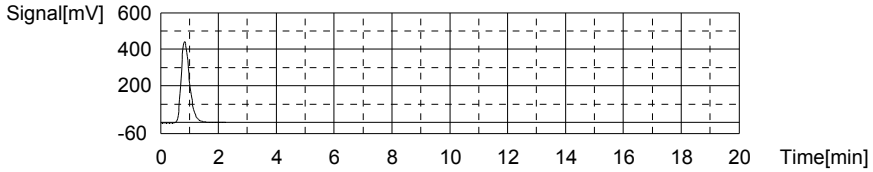

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.180	-0.01795mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 9:20:28 PM

Mean Area 6.180
Mean Conc. -0.01795mg/L

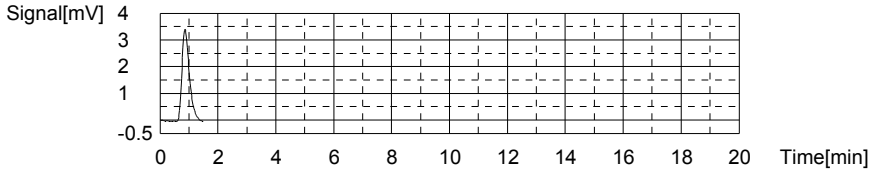

Sample

Sample Name: WG433259-03 LCSDUP
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.10mg/L TC:23.08mg/L IC:-0.02128mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	889.7	23.08mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 9:26:49 PM

Mean Area 889.7
Mean Conc. 23.08mg/L

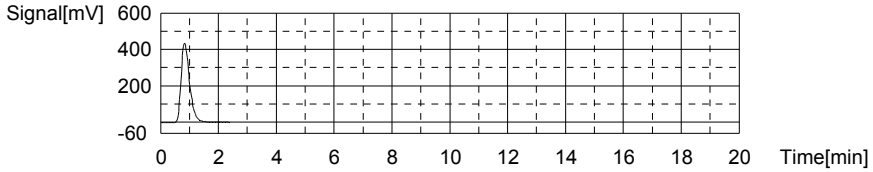

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.083	-0.02128mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 9:31:07 PM

Mean Area 6.083
Mean Conc. -0.02128mg/L

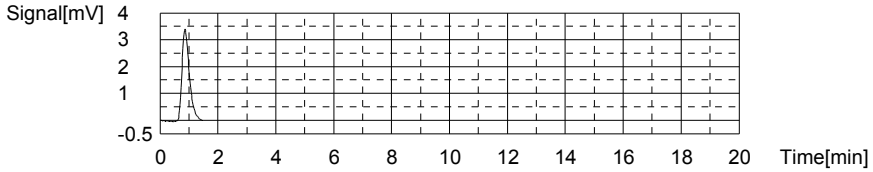

Sample

Sample Name: L13060268-01
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.625mg/L TC:4.323mg/L IC:0.6981mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	168.3	4.323mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 9:38:41 PM

Mean Area 168.3
Mean Conc. 4.323mg/L

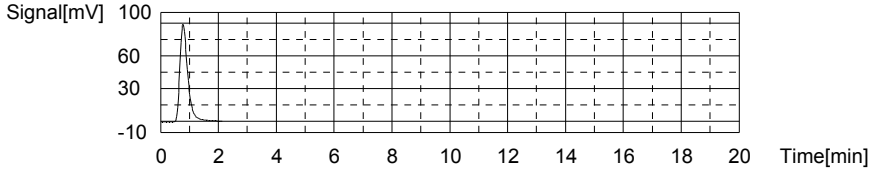

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	27.06	0.6981mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 9:43:12 PM

Mean Area 27.06
Mean Conc. 0.6981mg/L

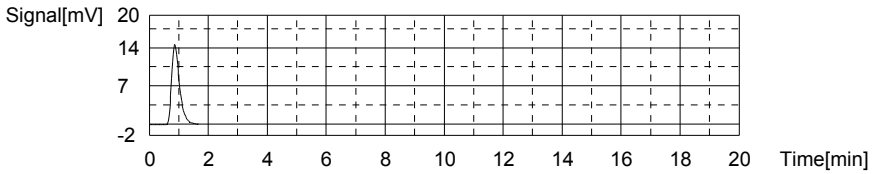

Sample

Sample Name: L13060268-02
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.767mg/L TC:4.365mg/L IC:0.5972mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	169.9	4.365mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 9:50:45 PM

Mean Area 169.9
Mean Conc. 4.365mg/L

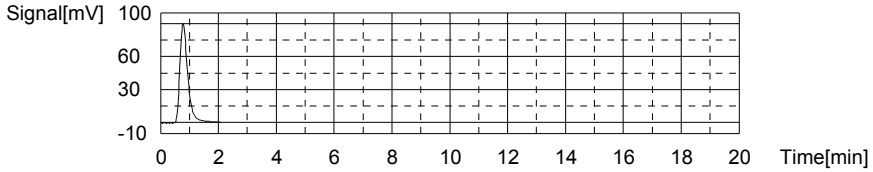

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	24.12	0.5972mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 9:55:17 PM

Mean Area 24.12
Mean Conc. 0.5972mg/L

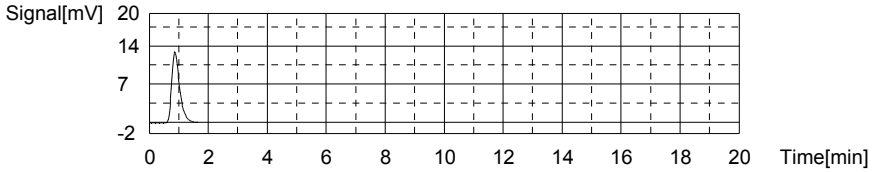

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:22.33mg/L TC:22.31mg/L IC:-0.02598mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	860.0	22.31mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 10:03:00 PM

Mean Area 860.0
Mean Conc. 22.31mg/L

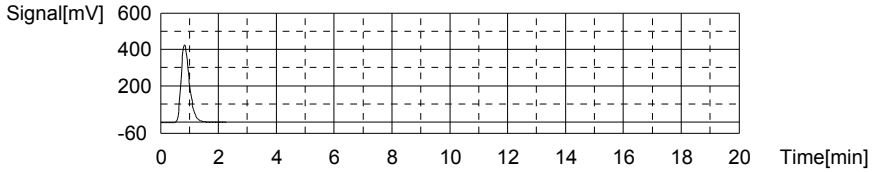

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.946	-0.02598mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 10:07:19 PM

Mean Area 5.946
Mean Conc. -0.02598mg/L

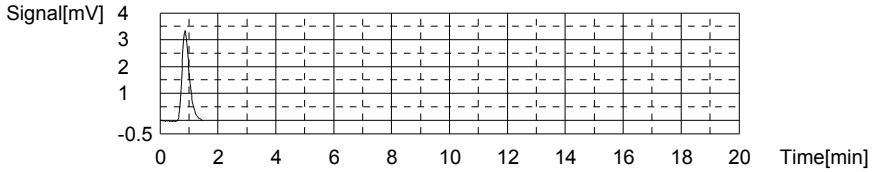

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.3236mg/L TC:0.3354mg/L IC:0.01178mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.93	0.3354mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 10:12:22 PM

Mean Area 14.93
Mean Conc. 0.3354mg/L

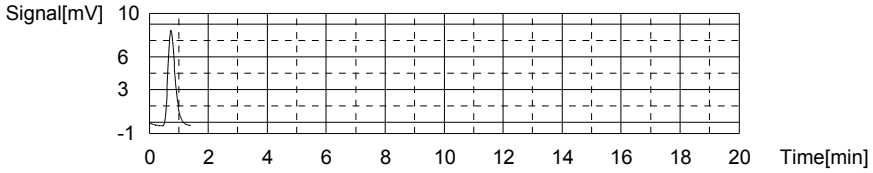

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.047	0.01178mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 10:16:13 PM

Mean Area 7.047
Mean Conc. 0.01178mg/L

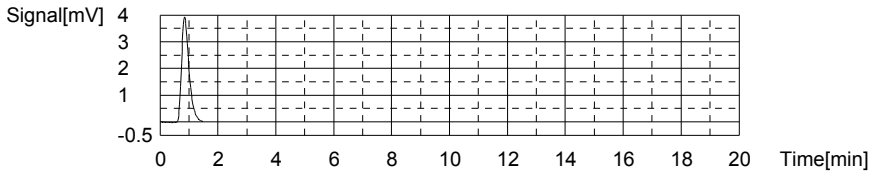

Sample

Sample Name: L13060012-01
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.5755mg/L TC:1.441mg/L IC:0.8654mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	57.45	1.441mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 10:23:15 PM

Mean Area 57.45
Mean Conc. 1.441mg/L

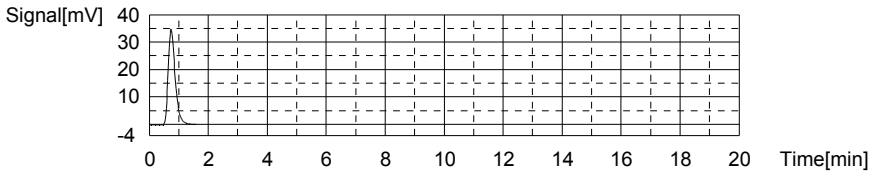

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	31.94	0.8654mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 10:27:51 PM

Mean Area 31.94
Mean Conc. 0.8654mg/L

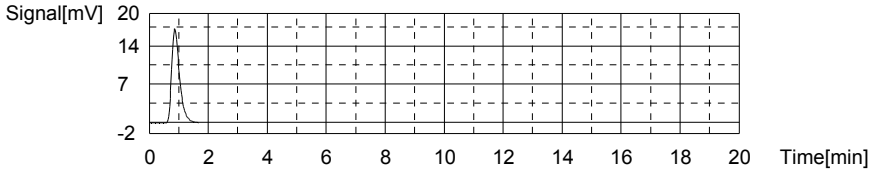

Sample

Sample Name: WG433259-05 DUP
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.5278mg/L TC:1.444mg/L IC:0.9165mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	57.58	1.444mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_26	6/7/2013 10:34:51 PM

Mean Area 57.58
Mean Conc. 1.444mg/L

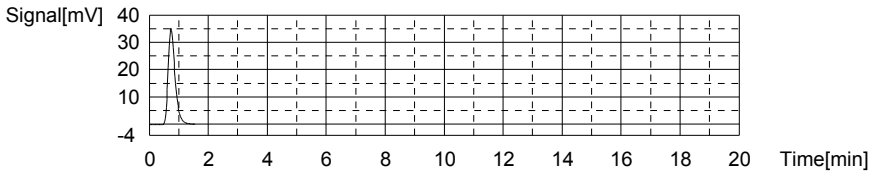

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	33.43	0.9165mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_06	6/7/2013 10:39:26 PM

Mean Area 33.43
Mean Conc. 0.9165mg/L

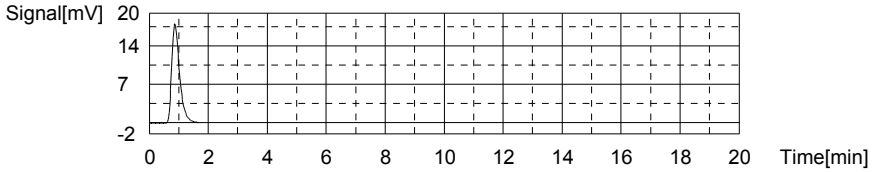

Sample

Sample Name: L13060012-02 MS
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.586mg/L TC:10.87mg/L IC:1.286mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	420.2	10.87mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_26	6/7/2013 10:46:53 PM

Mean Area 420.2
Mean Conc. 10.87mg/L

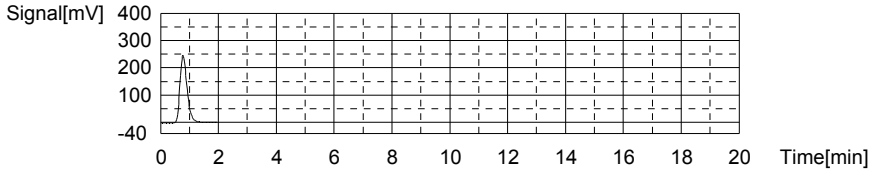

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	44.21	1.286mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_06	6/7/2013 10:51:30 PM

Mean Area 44.21
Mean Conc. 1.286mg/L

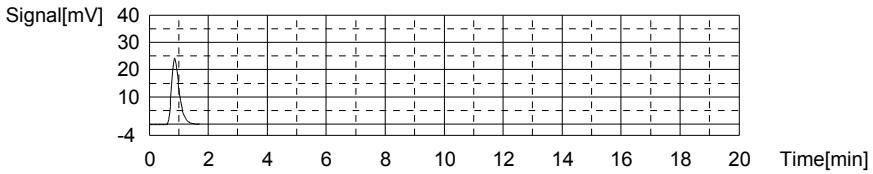

Sample

Sample Name: L13060012-03 MSD
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.754mg/L TC:11.14mg/L IC:1.384mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	430.4	11.14mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 10:58:58 PM

Mean Area 430.4
Mean Conc. 11.14mg/L

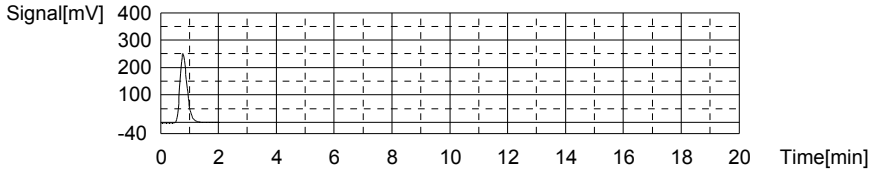

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	47.06	1.384mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 11:03:35 PM

Mean Area 47.06
Mean Conc. 1.384mg/L

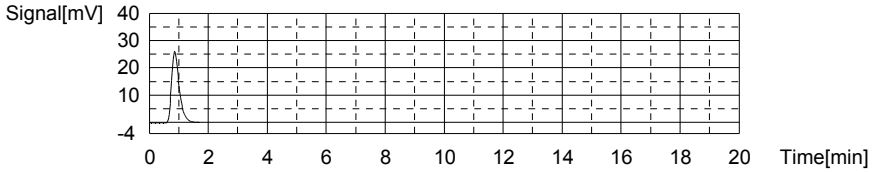

Sample

Sample Name: L13060012-04
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.8197mg/L TC:3.543mg/L IC:2.723mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	138.3	3.543mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 11:10:52 PM

Mean Area 138.3
Mean Conc. 3.543mg/L

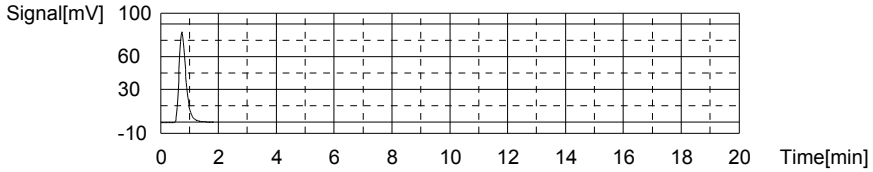

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	86.12	2.723mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 11:15:33 PM

Mean Area 86.12
Mean Conc. 2.723mg/L

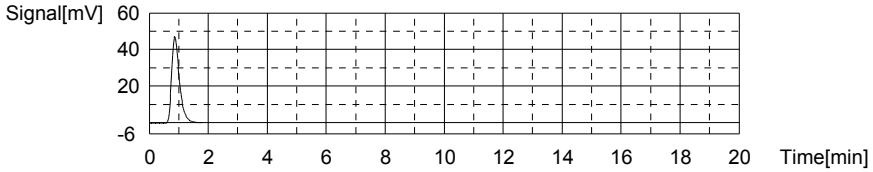

Sample

Sample Name: L13060134-16
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.609mg/L TC:13.95mg/L IC:10.34mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	538.6	13.95mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 11:25:17 PM

Mean Area 538.6
Mean Conc. 13.95mg/L

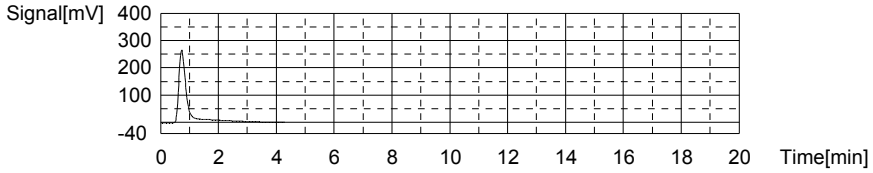

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	308.3	10.34mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 11:30:24 PM

Mean Area 308.3
Mean Conc. 10.34mg/L

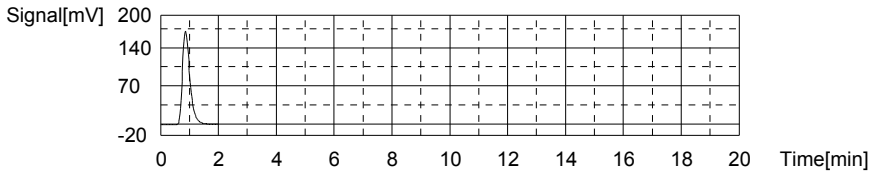

Sample

Sample Name: L13060173-01
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.5686mg/L TC:2.065mg/L IC:1.496mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	81.44	2.065mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 11:37:29 PM

Mean Area 81.44
Mean Conc. 2.065mg/L

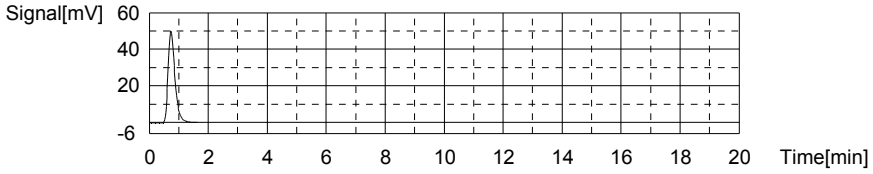

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	50.33	1.496mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 11:42:09 PM

Mean Area 50.33
Mean Conc. 1.496mg/L

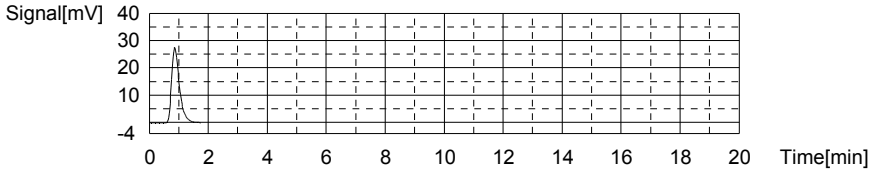

Sample

Sample Name: L13060173-02
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.5828mg/L TC:1.833mg/L IC:1.250mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	72.53	1.833mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/7/2013 11:49:13 PM

Mean Area 72.53
Mean Conc. 1.833mg/L

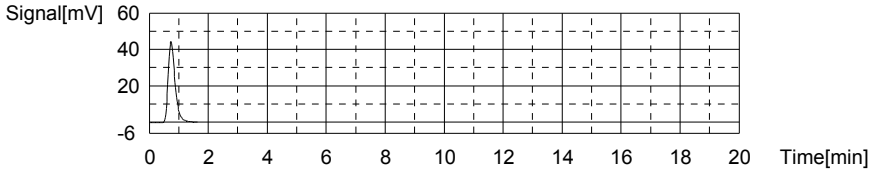

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	43.16	1.250mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/7/2013 11:53:48 PM

Mean Area 43.16
Mean Conc. 1.250mg/L

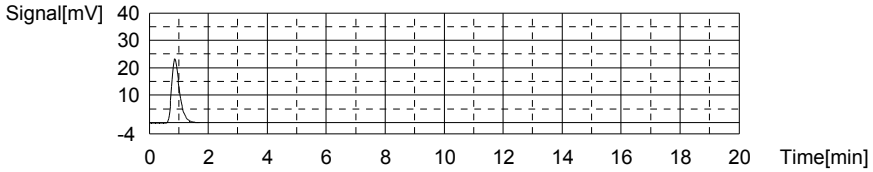

Sample

Sample Name: L13060173-03
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.5546mg/L TC:2.935mg/L IC:2.380mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	114.9	2.935mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 12:00:58 AM

Mean Area 114.9
Mean Conc. 2.935mg/L

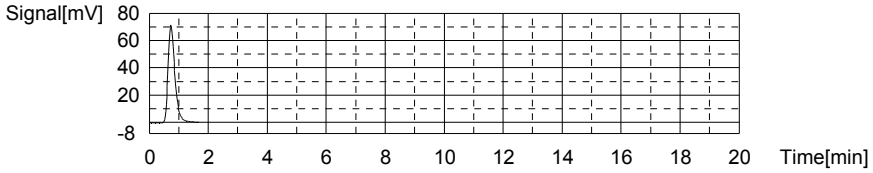

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	76.11	2.380mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 12:05:40 AM

Mean Area 76.11
Mean Conc. 2.380mg/L

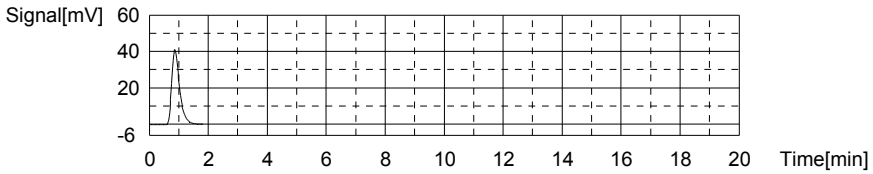

Sample

Sample Name: L13060173-04
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.8506mg/L TC:2.597mg/L IC:1.746mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	101.9	2.597mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 12:12:50 AM

Mean Area 101.9
Mean Conc. 2.597mg/L

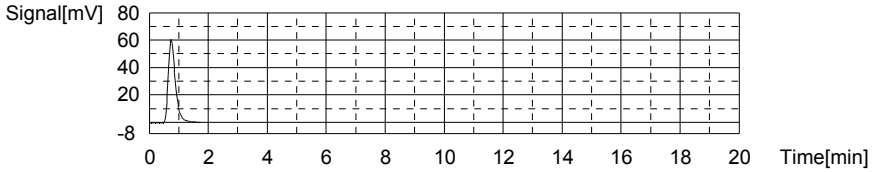

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	57.62	1.746mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 12:17:31 AM

Mean Area 57.62
Mean Conc. 1.746mg/L

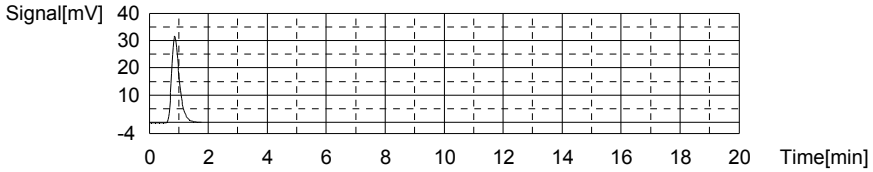

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:22.00mg/L TC:21.99mg/L IC:-0.00883mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	847.9	21.99mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 12:25:27 AM

Mean Area 847.9
Mean Conc. 21.99mg/L

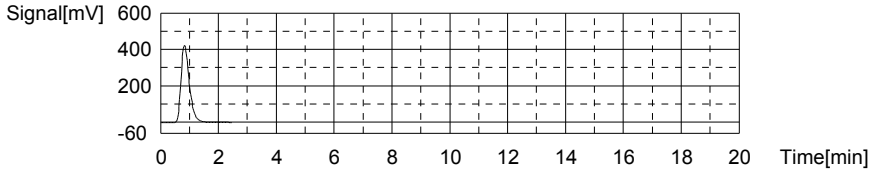

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.446	-0.00883mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 12:29:45 AM

Mean Area 6.446
Mean Conc. -0.00883mg/L

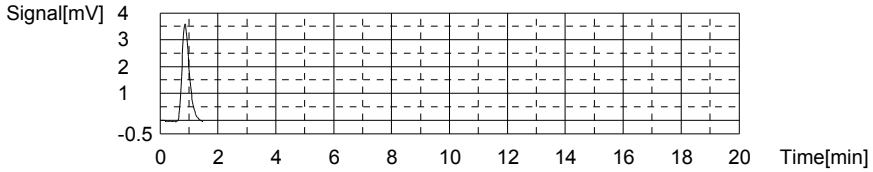

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.3196mg/L TC:0.3333mg/L IC:0.01370mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.85	0.3333mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 12:34:47 AM

Mean Area 14.85
Mean Conc. 0.3333mg/L

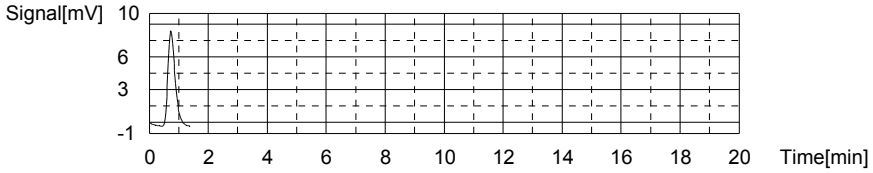

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.103	0.01370mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 12:38:39 AM

Mean Area 7.103
Mean Conc. 0.01370mg/L

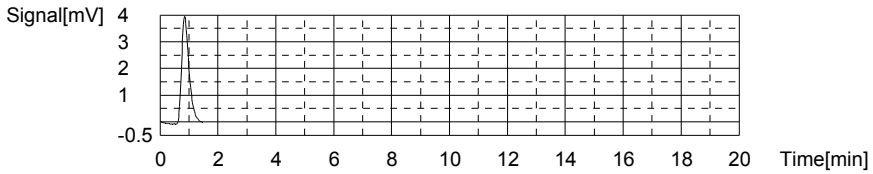

Sample

Sample Name: L13060228-01
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.6723mg/L TC:2.090mg/L IC:1.418mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	82.42	2.090mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 12:45:44 AM

Mean Area 82.42
Mean Conc. 2.090mg/L

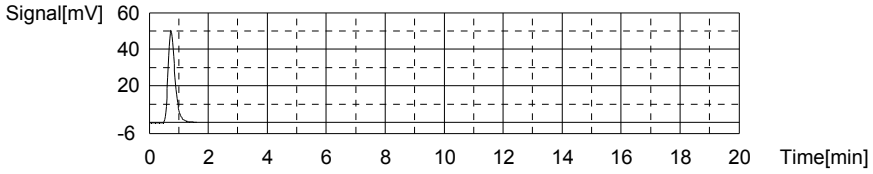

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	48.05	1.418mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 12:50:20 AM

Mean Area 48.05
Mean Conc. 1.418mg/L

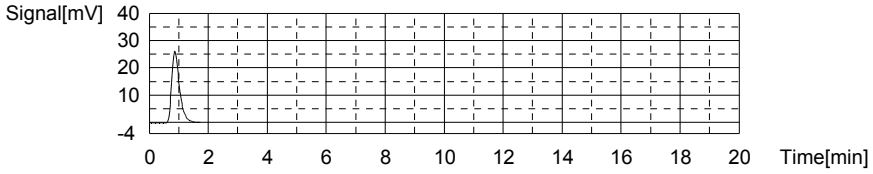

Sample

Sample Name: L13060223-02
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.8159mg/L TC:3.345mg/L IC:2.530mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	130.7	3.345mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 12:57:38 AM

Mean Area 130.7
Mean Conc. 3.345mg/L

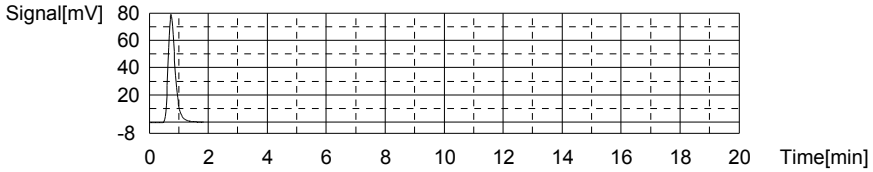

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	80.47	2.530mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 1:02:22 AM

Mean Area 80.47
Mean Conc. 2.530mg/L

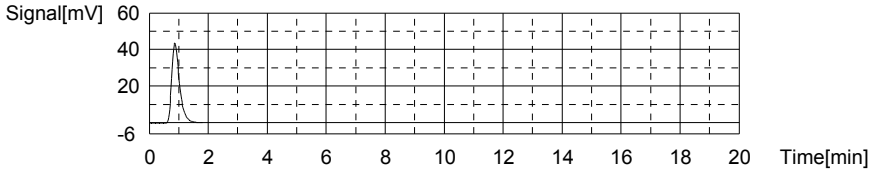

Sample

Sample Name: L13060223-03
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.7602mg/L TC:1.673mg/L IC:0.9124mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	66.36	1.673mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 1:09:32 AM

Mean Area 66.36
Mean Conc. 1.673mg/L

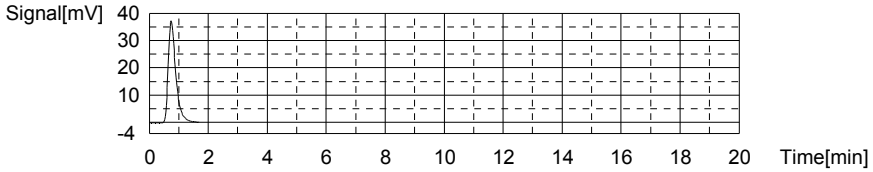

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	33.31	0.9124mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 1:14:02 AM

Mean Area 33.31
Mean Conc. 0.9124mg/L

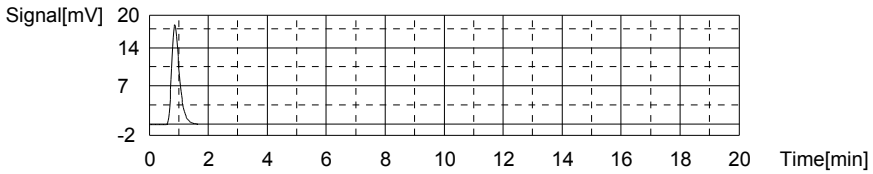

Sample

Sample Name: WG433262-01 BLK
Sample ID: <Untitled>
Origin: TOC-08-01-2012A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.3012mg/L TC:0.3233mg/L IC:0.02205mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.51	0.3244mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 1:19:03 AM
2	14.42	0.3221mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 1:22:34 AM

Mean Area 14.47
Mean Conc. 0.3233mg/L

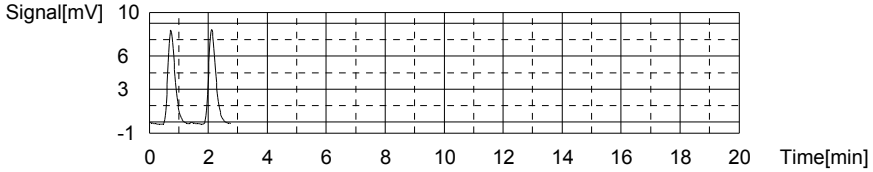

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.327	0.02138mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 1:26:28 AM
2	7.366	0.02272mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 1:30:21 AM

Mean Area 7.347
Mean Conc. 0.02205mg/L

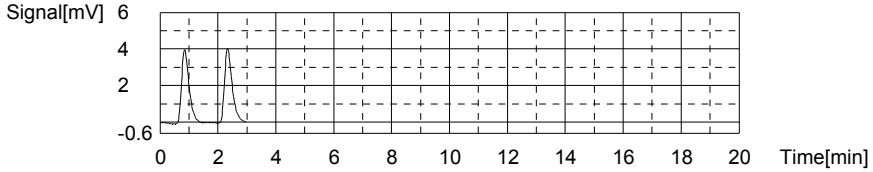

Sample

Sample Name: WG4332620-02 LCS
Sample ID: <Untitled>
Origin: TOC-08-01-2012A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.18mg/L TC:23.17mg/L IC:-0.00749mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	892.3	23.15mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_26	6/8/2013 1:38:06 AM
2	893.9	23.19mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_26	6/8/2013 1:43:34 AM

Mean Area 893.1
Mean Conc. 23.17mg/L

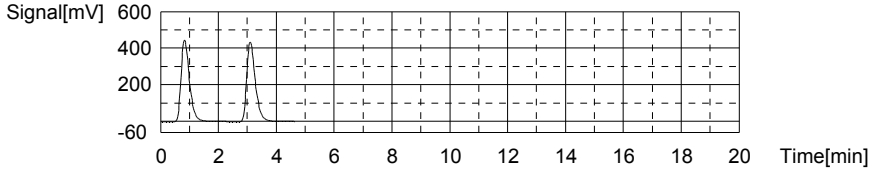

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.514	-0.00650mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_06	6/8/2013 1:47:50 AM
2	6.456	-0.00849mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_06	6/8/2013 1:51:54 AM

Mean Area 6.485
Mean Conc. -0.00749mg/L

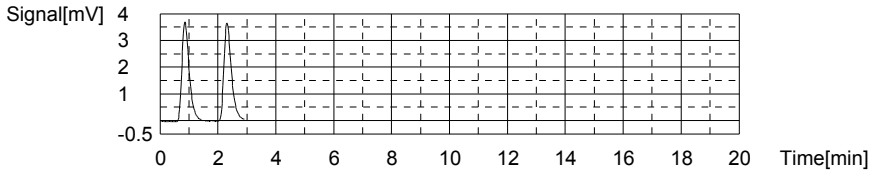

Sample

Sample Name: WG433262-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-08-01-2012A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:22.89mg/L TC:22.89mg/L IC:-0.00465mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	878.2	22.78mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_26	6/8/2013 1:59:51 AM
2	886.5	23.00mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_26	6/8/2013 2:04:27 AM

Mean Area 882.4
Mean Conc. 22.89mg/L

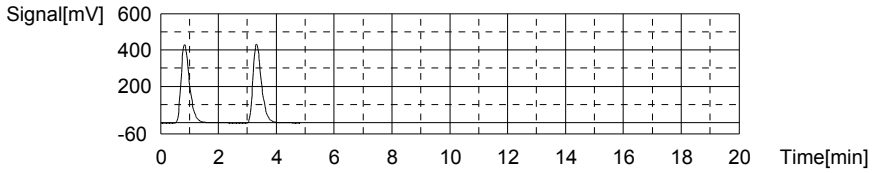

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.596	-0.00369mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 2:08:45 AM
2	6.540	-0.00561mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 2:12:50 AM

Mean Area 6.568
Mean Conc. -0.00465mg/L

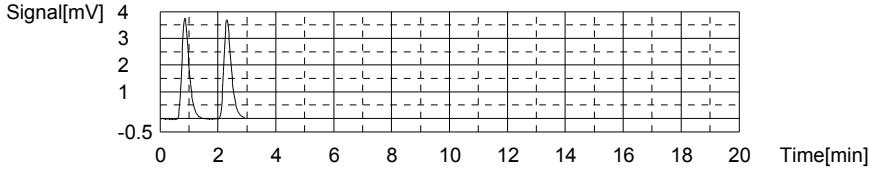

Sample

Sample Name: L13060248-05
Sample ID: <Untitled>
Origin: TOC-08-01-2012A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.242mg/L TC:6.007mg/L IC:0.7641mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	233.1	6.008mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 2:20:26 AM
2	233.0	6.005mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 2:24:43 AM

Mean Area 233.1
Mean Conc. 6.007mg/L

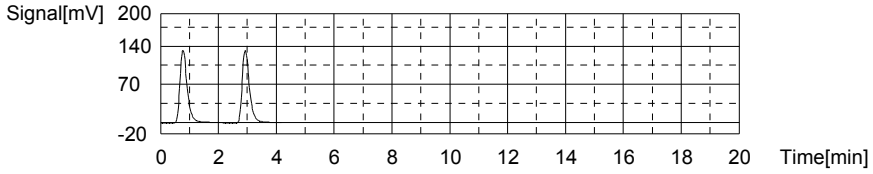

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	29.44	0.7797mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 2:29:17 AM
2	28.53	0.7485mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 2:33:36 AM

Mean Area 28.98
Mean Conc. 0.7641mg/L

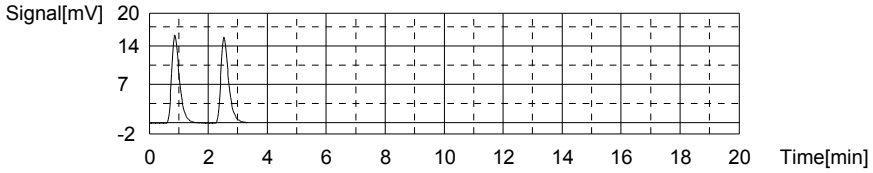

Sample

Sample Name: WG433262-05 DUP
Sample ID: <Untitled>
Origin: TOC-08-01-2012A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.555mg/L TC:6.555mg/L IC:1.000mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	240.9	6.211mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 2:40:59 AM
2	267.4	6.900mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 2:45:32 AM

Mean Area 254.2
Mean Conc. 6.555mg/L

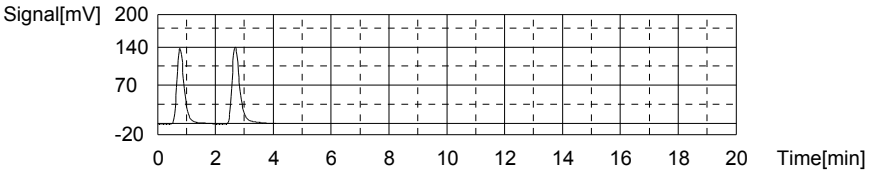

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	35.80	0.9978mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 2:50:07 AM
2	35.94	1.003mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 2:54:26 AM

Mean Area 35.87
Mean Conc. 1.000mg/L

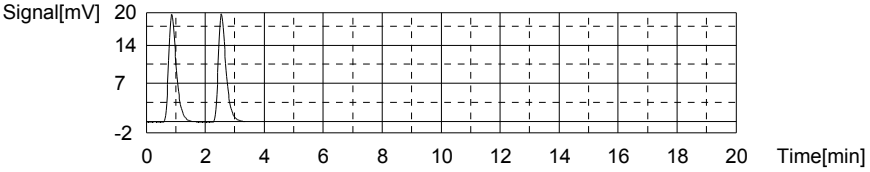

Sample

Sample Name: WG433262-06 MS
Sample ID: <Untitled>
Origin: TOC-08-01-2012A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.36mg/L TC:16.51mg/L IC:1.149mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	606.5	15.72mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 3:02:07 AM
2	667.3	17.30mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 3:06:54 AM

Mean Area 636.9
Mean Conc. 16.51mg/L

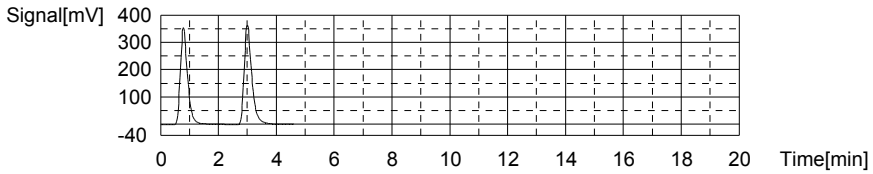

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	40.16	1.147mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 3:11:32 AM
2	40.27	1.151mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 3:15:53 AM

Mean Area 40.22
Mean Conc. 1.149mg/L

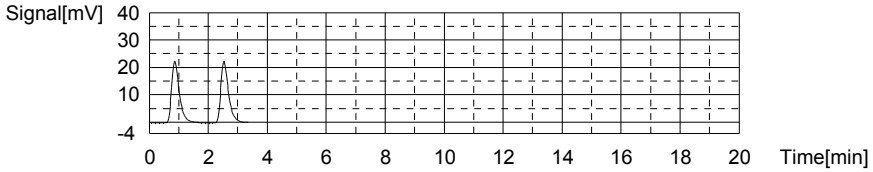

Sample

Sample Name: L13051201-05 (2)
Sample ID: <Untitled>
Origin: TOC-08-01-2012A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:44.17mg/L TC:44.17mg/L IC:0.00077mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1757	45.63mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 3:23:56 AM
2	1645	42.72mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 3:29:46 AM

Mean Area 1701
Mean Conc. 44.17mg/L

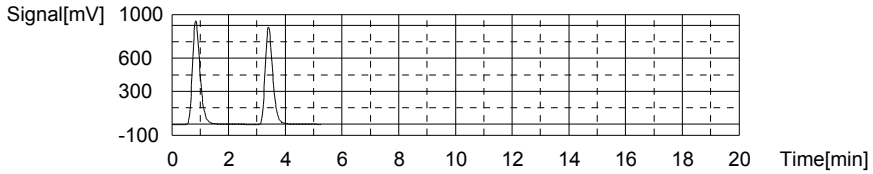

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.313	-0.01339mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 3:34:06 AM
2	7.139	0.01493mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 3:38:04 AM

Mean Area 6.726
Mean Conc. 0.00077mg/L

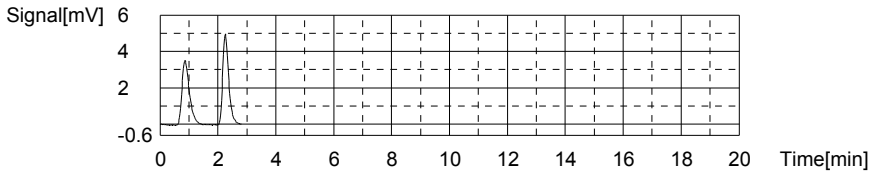

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:22.60mg/L TC:22.59mg/L IC:-0.01281mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	870.7	22.59mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 3:45:52 AM

Mean Area 870.7
Mean Conc. 22.59mg/L

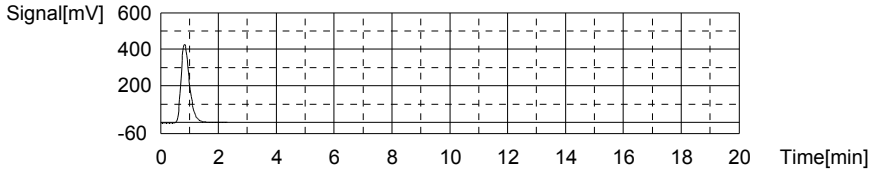

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.330	-0.01281mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 3:50:10 AM

Mean Area 6.330
Mean Conc. -0.01281mg/L

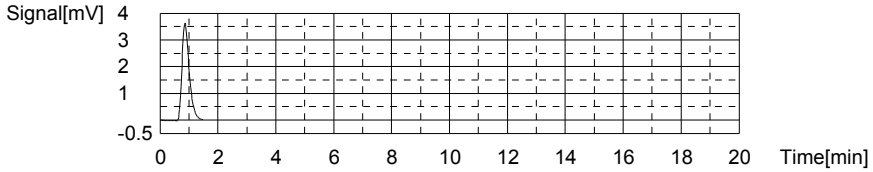

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.3240mg/L TC:0.3408mg/L IC:0.01685mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.14	0.3408mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 3:55:13 AM

Mean Area 15.14
Mean Conc. 0.3408mg/L

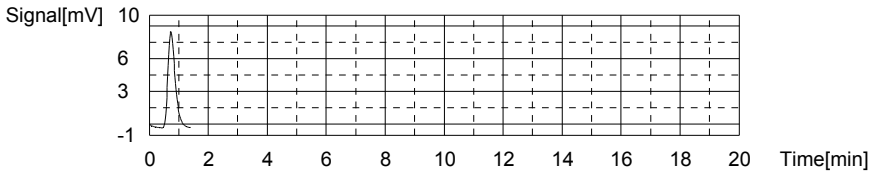

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.195	0.01685mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 3:59:04 AM

Mean Area 7.195
Mean Conc. 0.01685mg/L

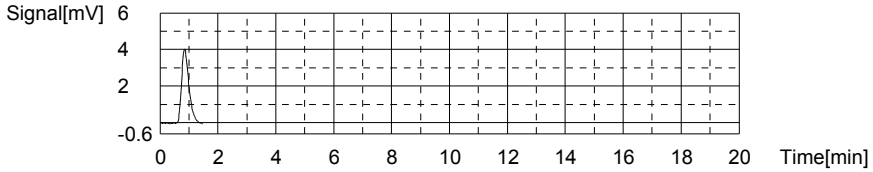

Sample

Sample Name: L13051201-05 (2)
Sample ID: <Untitled>
Origin: TOC-08-01-2012A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:42.23mg/L TC:42.22mg/L IC:-0.00346mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1633	42.41mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 4:07:11 AM
2	1619	42.04mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 4:12:18 AM

Mean Area 1626
Mean Conc. 42.22mg/L

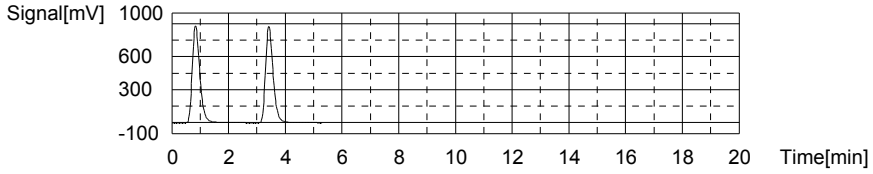

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.220	-0.01658mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 4:16:39 AM
2	6.985	0.00965mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 4:20:38 AM

Mean Area 6.603
Mean Conc. -0.00346mg/L

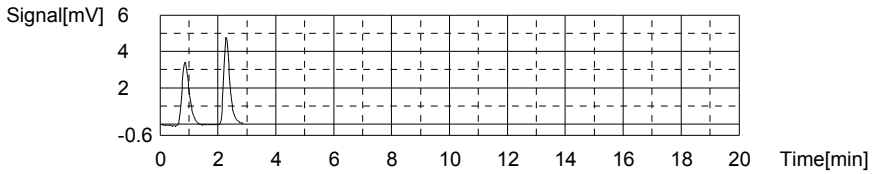

Sample

Sample Name: L13060100-02 (500)
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.4188mg/L TC:0.4024mg/L IC:-0.01637mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.51	0.4024mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 4:27:33 AM

Mean Area 17.51
Mean Conc. 0.4024mg/L

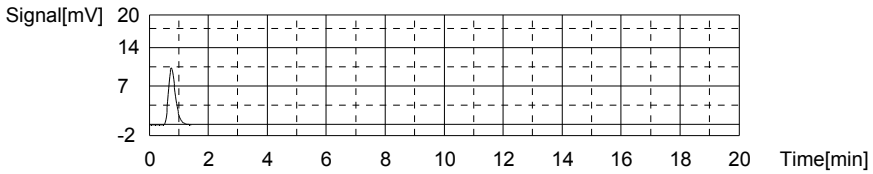

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.226	-0.01637mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 4:31:55 AM

Mean Area 6.226
Mean Conc. -0.01637mg/L

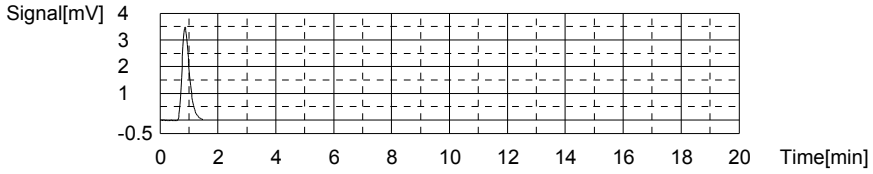

Sample

Sample Name: L13060280-01 (10)
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:11.25mg/L TC:11.29mg/L IC:0.04511mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	436.3	11.29mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 4:39:48 AM

Mean Area 436.3
Mean Conc. 11.29mg/L

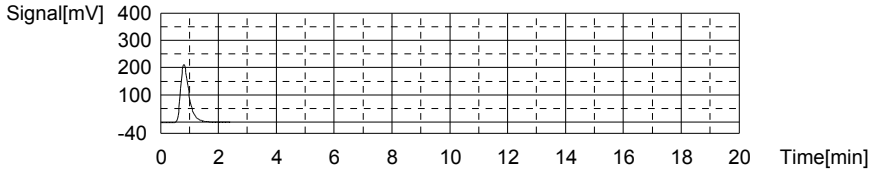

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.019	0.04511mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 4:44:10 AM

Mean Area 8.019
Mean Conc. 0.04511mg/L

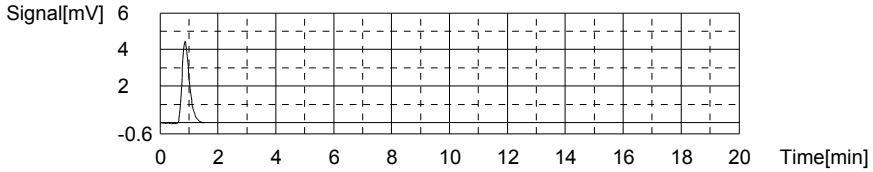

Sample

Sample Name: L13060280-02 (10)
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:34.93mg/L TC:36.84mg/L IC:1.915mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1419	36.84mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 4:53:37 AM

Mean Area 1419
Mean Conc. 36.84mg/L

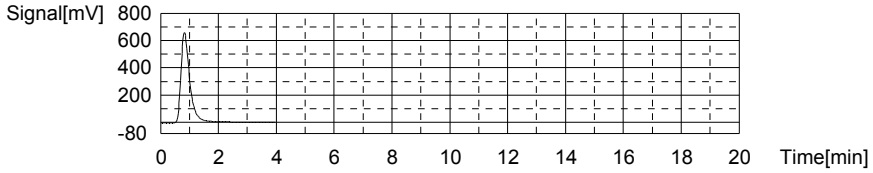

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	62.54	1.915mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 4:58:17 AM

Mean Area 62.54
Mean Conc. 1.915mg/L

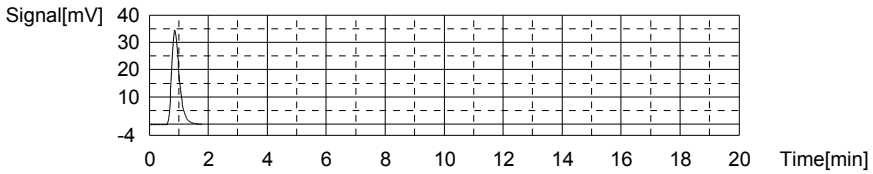

Sample

Sample Name: L13060281-01 (10)
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.002mg/L TC:4.084mg/L IC:0.08173mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	159.1	4.084mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 5:06:25 AM

Mean Area 159.1
Mean Conc. 4.084mg/L

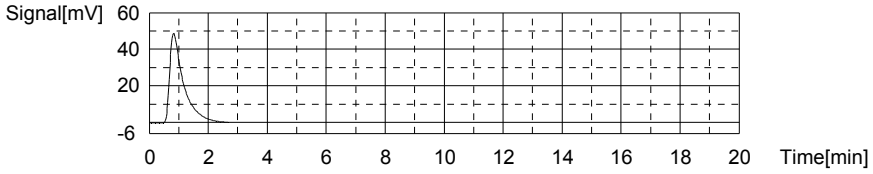

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.087	0.08173mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 5:10:51 AM

Mean Area 9.087
Mean Conc. 0.08173mg/L

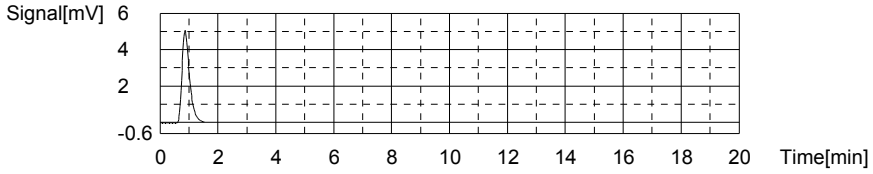

Sample

Sample Name: L13060278-01
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.6193mg/L TC:0.5948mg/L IC:-0.02443mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	24.91	0.5948mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 5:17:51 AM

Mean Area 24.91
Mean Conc. 0.5948mg/L

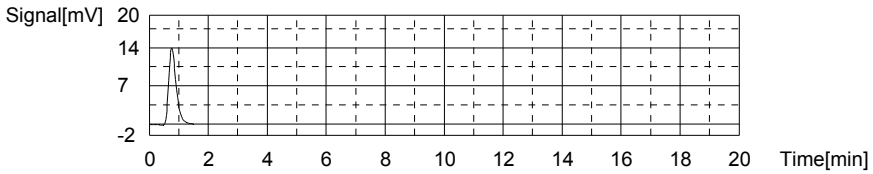

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.991	-0.02443mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 5:22:13 AM

Mean Area 5.991
Mean Conc. -0.02443mg/L

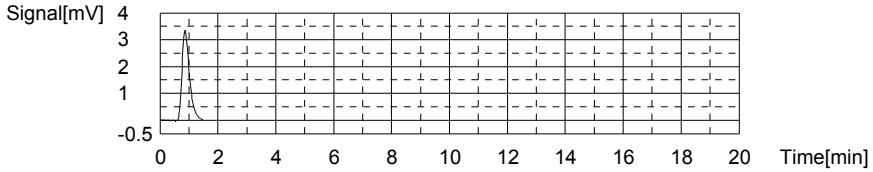

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:22.50mg/L TC:22.54mg/L IC:0.03853mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	868.9	22.54mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 5:30:09 AM

Mean Area 868.9
Mean Conc. 22.54mg/L

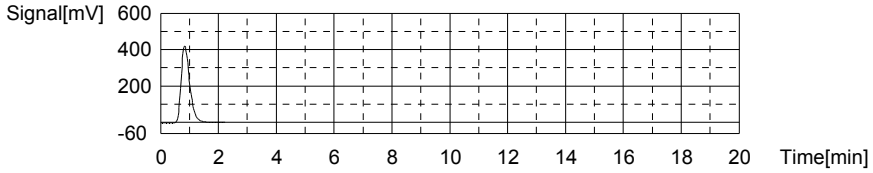

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.827	0.03853mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 5:34:29 AM

Mean Area 7.827
Mean Conc. 0.03853mg/L

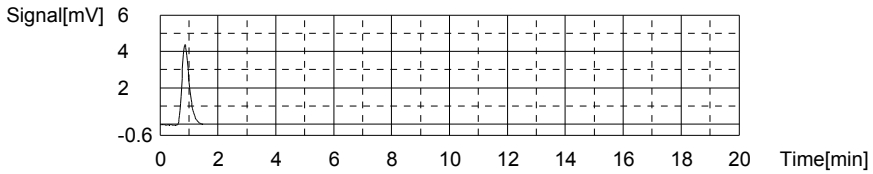

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-08-01-2012.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.3250mg/L TC:0.3468mg/L IC:0.02179mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.37	0.3468mg/L	500uL	1		TCCURVE-08-01-2012.2012_08_01_11_45_2	6/8/2013 5:39:31 AM

Mean Area 15.37
Mean Conc. 0.3468mg/L

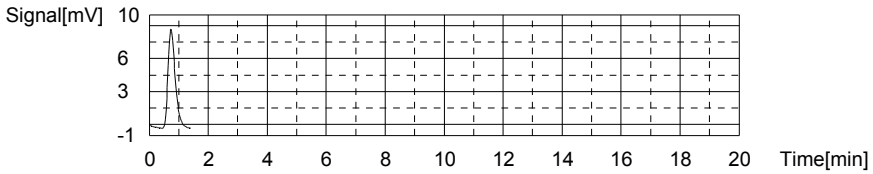

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.339	0.02179mg/L	500uL	1		TICCURVE-08-01-2012.2012_08_01_12_49_0	6/8/2013 5:43:27 AM

Mean Area 7.339
Mean Conc. 0.02179mg/L

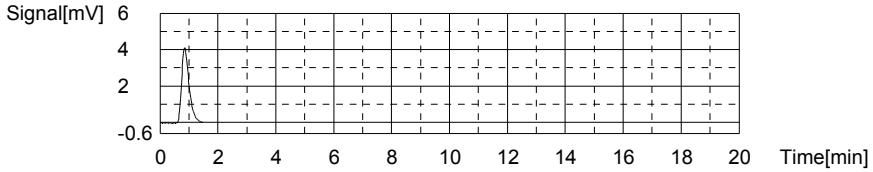

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
June 17, 2013

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AJF - AMANDA J. FICKIESEN
AML - TONY M. LONG
AZH - AFTER HOURS
BAF - BRICE A. FENTON
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CRW - CHRISTINA R. WILSON
CSH - CHRIS S. HILL
CTB - CHRIS T. BUCINA
DAK - DEAN A. K
DCM - DAVID C. MERCKLE
DDE - DEBRA D. ELLIOTT
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLR - DIANNA L. RAUCH
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EDL - ERIN D. LONG
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HJR - HOLLY J. REED
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JKS - JANE K. SCHAAD
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
LKN - LINDA K. NEDEFF
LSB - LESLIE S. BUCINA
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RS - ROSEMARY SCOTT
RWC - RODNEY W. CAMPBELL
SEP - SUZANNE J. PAUGH
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
TPA - TYLER P. AMRINE
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
June 17, 2013

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL).
ND, H1	Not detected; Sample analysis performed past holding time.
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Analyte was not detected. The concentration is below the reported LOD.
UB	Analyte was not detected. The concentration is below the reported LOQ, however the reported result is associated with a c
UJ	Undetected; the analyte was analyzed for, but not detected.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Erin Long	Project Manager:	Dave Wacker	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205	pH:		Program:	
Turn Around Time:	14-day				
Project Name/Location:	Longhorn				
Project Number:	60256135.0002JA				

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC-8260	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
67	Equipment Rinse-053113			5/31/13	0630		✓	W	3	✓					
67	67WW06-053113			5/31/13	1000		✓	W	3	✓					
67	67WW06-053113-FD			5/31/13	1000		✓	W	3	✓					
67	67WW13-053113			5/31/13	1400		✓	W	3	✓					
67	67WW05-053113			5/31/13	1420		✓	W	3	✓					
67	67WW01-053113			5/31/13	1435		✓	W	3	✓					
67	67WW02-053113			5/31/13	1450		✓	W	3	✓					
67	67WW07-053113			5/31/13	1505		✓	W	3	✓					
67	67WW10-060113			6/1/13	0940		✓	W	3	✓					
67	67WW10-060113-MS			6/1/13	0940		✓	W	3	✓					
67	67WW10-060113-MD			6/1/13	0940		✓	W	3	✓					
67	67WW11-060113			6/1/13	1050		✓	W	3	✓					
67	67WW11-060113-FD			6/1/13	1050		✓	W	3	✓					
67	67WW12-060113			6/1/13	1200		✓	W	3	✓					

Comments:

Microbac OVD
Received: 06/04/2013 09:54
By: ROSEMARY SCOTT
221000036867

	Date	Time		Date	Time	Relinquished by: (Signature)
(Signature) Scott Beesinger	6/3/13	1400	Rec			
Relinquished by: (Signature)	Date	Time	Re (Si		Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Erin Long	Project Manager: Dave Wacker	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: 14-day			
Project Name/Location: Longhorn			
Project Number: 60256135.0002JA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp	Grab	Matrix	Number of Containers	VOC-8260	Anions-9056	TIC TOC E415.1	Gases RSK175	Ferrous Iron SM3500-FeB	qPCR			SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
67	67WW09-060113			6/1/13	1355		✓	W	3	✓												
67	67WW08-060313			6/3/13	1310		✓	W	11	✓	✓	✓	✓	✓	✓							
	TRIP BLANK			6/3/13			✓	W	2	✓												

ERPIMS REQUIRED FIELDS

Comments:

Microbac OVD
Received: 06/04/2013 09:54
By: ROSEMARY SCOTT
221000036867

	Date	Time		Date	Time	Relinquished by: (Signature)
(Signature) Scott Beesinger	6/3/13	1400				
Relinquished by: (Signature)	Date	Time		Time	Remarks:	

•Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

SUB-CONTRACTED ANALYSES

Attn: Robert Brooks

L#: L13060135

Shipped To: Microbac
505 E. Broadway Ave.
Maryville, TN 37804
865-977-1200 x 1229

From: Microbac Laboratories Inc.
158 Starlite Park
Marietta, OH 45750
(740) 373-4071

Shipped Via: Fedex

Report To: E. Long

P.O. #:

TAT Required:

See Chain of Custody for ID's, date and time collected.

Microbac Workorder Number	Number of Samples	Analyses
L13060135	1 set	DHC/VCRA
ef: SUB PCR ep:	Date: 04Jun13 Wgt: 25.05 LBS DV: 0.00	SHIPPING: 30.07 SPECIAL: 2.71 HANDLING: 0.00 TOTAL: 32.78
	Svcs: PRIORITY OVERNIGHT TRCK: 4729 3631 2990	

Level: 1 2 3 4

Internal COC: YES / NO

Relinquished By	Date/Time	Comments
Cara Strickler	6/4/13 @1600	
Received By	**Date/Time**	**Cooler Temp**

Form 7-1
Revised 07/18/11

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13060134
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 14-JUN-2013

Samplenum	Container ID	Products
L13060134-01	198700	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:09	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:32	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:09	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:32	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:09	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:32	TMB	CLS	

Samplenum	Container ID	Products
L13060134-02	198701	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:09	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:32	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:09	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:32	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		04-JUN-2013 16:09	CLS		<2

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13060134
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 14-JUN-2013

Samplenum	Container ID	Products
L13060134-03	198702	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:09	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:32	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:09	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:32	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:09	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:32	TMB	CLS	

Samplenum	Container ID	Products
L13060134-04	198703	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:09	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:32	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:09	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:32	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:09	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:32	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13060134
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 14-JUN-2013

Samplenum	Container ID	Products
L13060134-05	198704	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:32	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:32	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Samplenum	Container ID	Products
L13060134-06	198705	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13060134
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 14-JUN-2013

Samplenum	Container ID	Products
L13060134-07	198706	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Samplenum	Container ID	Products
L13060134-08	198707	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13060134
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 14-JUN-2013

Samplenum	Container ID	Products
L13060134-09	198708	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Samplenum	Container ID	Products
L13060134-10	198709	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13060134
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 14-JUN-2013

Samplenum	Container ID	Products
L13060134-11	198710	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Samplenum	Container ID	Products
L13060134-12	198711	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13060134
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 14-JUN-2013

Samplenum	Container ID	Products
L13060134-13	198712	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Samplenum	Container ID	Products
L13060134-14	198713	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13060134
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 14-JUN-2013

Samplenum	Container ID	Products
L13060134-15	198714	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:34	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Samplenum	Container ID	Products
L13060134-16	198715	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:33	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13060134
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 14-JUN-2013

Samplenum	Container ID	Products
L13060134-16	198716	826-LOW 9056 FERROUS RSK175

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	05-JUN-2013 08:41	KDW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	05-JUN-2013 08:41	KDW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	05-JUN-2013 08:41	KDW	CLS	

Samplenum	Container ID	Products
L13060134-16	198717	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	04-JUN-2013 16:10	CLS		
2	STORE	SEM	A1	06-JUN-2013 14:50	CLS	JBK	
3	ANALYZ	A1	SEM	06-JUN-2013 15:43	JBK	CLS	

Comments:Products cancelled.

4	STORE	SEM	A1	11-JUN-2013 14:38	RS	JBK	

Comments:Products cancelled.

Samplenum	Container ID	Products
L13060134-16	198718	TOC TIC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-JUN-2013 16:10	CLS		
2	ANALYZ	W1	WET	07-JUN-2013 08:30	DIH	RS	
3	STORE	WET	A1	07-JUN-2013 11:33	RS	DIH	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13060134
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 14-JUN-2013

Samplenum	Container ID	Products
L13060134-16	198719	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	A1	04-JUN-2013 16:10	CLS		
2	ANALYZ	A1	WET	06-JUN-2013 07:32	TMM	AZH	
3	STORE	WET	A1	10-JUN-2013 07:41	AZH	TMM	

Comments:Products cancelled.

Samplenum	Container ID	Products
L13060134-17	198720	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:34	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-JUN-2013 16:10	CLS		<2
2	ANALYZ	V1	ORG4	04-JUN-2013 16:34	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - April 25, 2013

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Nitroguanidine
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL KNITRO-C-WUV-VIS

Nitrocellulose

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL HPLCOS-HPLC-UV

Nitroguanidine

OVL KNITRO-C-S/UV-VIS

Nitrocellulose

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac Laboratories, Inc.

Knoxville Division
505 E. Broadway Avenue Maryville, TN 37804 865.977.1200
Tri-Cities Division
2109 W. Market Street Johnson City, TN 37064 423.926.6385
Nashville Division
2631 Grandview Avenue Nashville, TN 37211 615.242.1480

CHEMISTRY · MICROBIOLOGY · FOOD SAFETY · CONSUMER PRODUCTS ·WATER · AIR · WASTES · FOOD · PHARMACEUTICALS · NUTRACEUTICALS

CERTIFICATE OF ANALYSIS

Erin Long
Microbac Ohio Valley
158 Starlite Drive
Marietta, OH 45750

Date Reported: 6/7/2013
Date Received: 6/5/2013
Cust #: R9027
PO#:

Workorder: **1310546** **Project:** DHc/vcrA Projects

Analyte	Result	Units	Qualifier	Reporting Limit	Analyst	Analyzed	Method
L13060135 Sample A Sampled: 06/03/2013 13:10							
1310546-01 (Water)							
Molecular - PCR							
Analyzed By: Microbac Knoxville Division							
Dehalococcoides ethenogenes	<1	CEQ/ml			RWB	06/07/2013 10:25	QPCR
L13060135 Sample B Dup Sampled: 06/03/2013 13:10							
1310546-02 (Water)							
Molecular - PCR							
Analyzed By: Microbac Knoxville Division							
Dehalococcoides ethenogenes	<1	CEQ/ml			RWB	06/07/2013 10:25	QPCR

The data and information on this, and other accompanying documents, represent only the sample(s) analyzed and is rendered upon condition that it is not to be reproduced wholly or in part for advertising or other purposes without approval from the laboratory.
USDA-EPA-NIOSH Testing Food Sanitation Consulting Chemical and Microbiological Analyses and Research

MEMBER

www.microbac.com tennessee@microbac.com

Microbac Laboratories, Inc.

Knoxville Division
505 E. Broadway Avenue Maryville, TN 37804 865.977.1200
Tri-Cities Division
2109 W. Market Street Johnson City, TN 37064 423.926.6385
Nashville Division
2631 Grandview Avenue Nashville, TN 37211 615.242.1480

CHEMISTRY · MICROBIOLOGY · FOOD SAFETY · CONSUMER PRODUCTS ·WATER · AIR · WASTES · FOOD · PHARMACEUTICALS · NUTRACEUTICALS

CERTIFICATE OF ANALYSIS

Erin Long
Microbac Ohio Valley
158 Starlite Drive
Marietta, OH 45750

Date Reported: 6/7/2013
Date Received: 6/5/2013
Cust #: R9027
PO#:

Workorder: **1310546** **Project:** DHc/vcrA Projects

Certifications

Code	Description	Number	Expires
A2LA	ISO 17025 KNX food	3131.01	05/31/2013
EPA			
Nelac	State of Florida	E87966	06/30/2013
TN_DW	State of Tennessee	TN02017	04/30/2014
USDA	US Department of Agriculture		11/30/2013

Notes and Definitions

Z9	<1
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Microbac Laboratories, Inc.

ROBBY BROOKS, MOLECULAR MANAGER

Thank you for your business. For any feedback, please contact Ashley Morris, at ashley.morris@microbac.com. You may also contact Sean Hyde, Chief Operating Officer at sean.hyde@microbac.com or James Nokes, President, at james.nokes@microbac.com.

As regulatory limits change frequently, Microbac advises the recipient of this report to confirm such limits with the appropriate Federal, state, or local authorities before acting in reliance on the regulatory limits provided.

The data and information on this, and other accompanying documents, represent only the sample(s) analyzed and is rendered upon condition that it is not to be reproduced wholly or in part for advertising or other purposes without approval from the laboratory.
USDA-EPA-NIOSH Testing Food Sanitation Consulting Chemical and Microbiological Analyses and Research

MEMBER

www.microbac.com tennessee@microbac.com

1310546-01
Microbac Ohio Valley

Sampled: 06/03/2013 13:10

SUB-CONTRAC

Attn: Robert Brooks

L#: L13060135

Shipped To: Microbac
505 E. Broadway Ave.
Maryville, TN 37804
865-977-1200 x 1229

From: Microbac Laboratories Inc.
158 Starlite Park
Marietta, OH 45750
(740) 373-4071

Shipped Via: Fedex

Report To: E. Long

P.O. #:

TAT Required:

See Chain of Custody for ID's, date and time collected.

Microbac Workorder Number	Number of Samples	Analyses
L13060135	1 set	DHC/VCRA

Ref: SUB PCR
Dep:
Date: 04Jun13
Wgt: 25.05 LBS
DV: 0.00
SHIPPING: 30.07
SPECIAL: 2.71
HANDLING: 0.00
TOTAL: 32.78
Svcs: PRIORITY OVERNIGHT
TRCK: 4729 3631 2990

Level: 1 2 3 4

Internal COC: YES / NO

Relinquished By	Date/Time	Comments
Cara Strickler	6/4/13 @1600	
Received By	**Date/Time**	**Cooler Temp**
MNB	6/5/13 1000	2.1

Fedex

1310546

Form 7-1
Revised 07/18/11

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Erin Long	Project Manager:	Dave Wacker	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205	pH:		Program:	
Turn Around Time:	14-day				
Project Name/Location:	Longhorn				
Project Number:	60256135.0002JA				

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC-8260	Anions-9056	TIC TOC E415.1	Gases RSK175	Ferrous Iron SM3500-FeB	% PCR			SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
67	67WW09-060113			6/1/13	1355		✓	W	3	✓												
67	67WW08-060313			6/3/13	1310		✓	W	11	✓	✓	✓	✓	✓	✓							
	TRIP BLANK			6/3/13			✓	W	2	✓												

ERPIMS REQUIRED FIELDS

Comments:

Microbac OVD
Received: 06/04/2013 09:54
By: ROSEMARY SCOTT 221000036867

(Signature) Scott Beesinger	Date 6/3/13	Time 1400	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Time		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00733289

Microbac

Microbac Laboratories, Inc.
Knoxville/Nashville Divisions

COOLER INSPECTION FORM # 10001.1

Client Name: Microbac Ohio Date/Time Received: 6/5/13 1000

Work Order: 1310546 No. of Samples: 1

Received By: MNB Checklist Completed By: / MNB

Carrier: FedEx(✓) UPS(✓) MNB Client(_) Field Services(_) Other(_): _____

After-Hours Receipt?	Yes ☐	No ☑	
Shipping container in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on samples?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody includes proper client information?	Yes ☑	No ☐	
Chain of custody includes proper collection information and signatures?	Yes ☑	No ☐	
Chain of custody includes dates and times of sample collection?	Yes ☑	No ☐	
Chain of custody includes proper sample descriptions?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Chain of custody identifies proper sample matrix?	Yes ☑	No ☐	
Chain of custody identifies proper number of samples?	Yes ☑	No ☐	
Chain of custody includes required analysis?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Samples are in proper containers/bottles?	Yes ☑	No ☐	
Sample containers are intact?	Yes ☑	No ☐	
Sufficient sample volume collected for requested analysis?	Yes ☑	No ☐	
VOA vials for aqueous samples have zero headspace?	Yes ☐	No ☐	Not Present ☑
Samples received within holding times?	Yes ☑	No ☐	
Samples received on ice?	Yes ☑	No ☐	
Sample properly preserved?	Yes ☑	No ☐	

If No, adjusted by? _____ Date/Time: _____

Remarks: _____

ANY "NO" EVALUATION REQUIRES CLIENT NOTIFICATION (excluding After-Hours Receipt).

Comments: _____

Microbac

Laboratory Report Number: L13080031

Linda Raabe
AECOM Technical Services, Inc.
112 East Pecan
San Antonio, TX 78205

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Tony Long – Team Chemist/Data Specialist
(740) 373-4071
Tony.Long@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on August 06 2013

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L13080031
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0018664	H	5.0		J2265016957	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L13080031
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
67DPT09A(31-35)310713	L13080031-01	07/31/2013 14:30	08/01/2013 10:18
67DPT13A(26-30)310713	L13080031-02	07/31/2013 15:55	08/01/2013 10:18

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L13080031
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 13
2.0 Full Sample Data Package 21
2.1 Volatiles Data 22
2.1.1 Volatiles GCMS Data (8260) 23
2.1.1.1 Summary Data 24
2.1.1.2 QC Summary Data 32
2.1.1.3 Sample Data 62
2.1.1.4 Standards Data 81
2.1.1.5 Raw QC Data 157
3.0 Attachments 173

1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13080031
Project Name:		**Method:**	8260
Prep Batch Number(s):	439851	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-08-05 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2013-08-05 19:35:09

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13080031
Project Name:		**Method:**	8260
Prep Batch Number(s):	439851	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-08-05 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13080031
Project Name:		**Method:**	8260
Prep Batch Number(s):	439851	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-08-05 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13080031
Project Name:		**Method:**	8260
Prep Batch Number(s):	439851	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-08-05 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13080031
Project Name:		**Method:**	8260
Prep Batch Number(s):	439851	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-08-05 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13080031
Project Name:		**Method:**	8260
Prep Batch Number(s):	439851	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-08-05 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Styrene and 1,3,5-trimethylbenzene were outside the control limits in the Alternate Source analyzed 07-29-13 on HPMS11.

2) p-Isopropyltoluene and styrene were outside the control limits in the CCV analyzed 08-01-13 on HPMS11.

1.2 Certificate of Analysis

Microbac

Lab Report #: L13080031
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13080031-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67DPT09A(31-35)310713	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/29/2013 15:39
Workgroup #:	WG439851	**Analyst:**	TMB	**Run Date:**	08/01/2013 18:10
Collect Date:	07/31/2013 14:30	**Dilution:**	1	**File ID:**	11M93814
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.32	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13080031
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	113	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13080031
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13080031
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13080031-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67DPT13A(26-30)310713	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/29/2013 15:39
Workgroup #:	WG439851	**Analyst:**	TMB	**Run Date:**	08/01/2013 18:41
Collect Date:	07/31/2013 15:55	**Dilution:**	1	**File ID:**	11M93815
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.79	J	10.0	5.00	2.50
Benzene	71-43-2	0.136	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.446	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.138	J	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	27.8		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	11.2		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	140		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.447	J	1.00	0.500	0.250

Microbac

Lab Report #: L13080031
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	5.78		1.00	0.500	0.250
Trichloroethene	79-01-6	1.28		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.484	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	99.9	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13080031
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13080031
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L13080031
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13080031-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67DPT09A(31-35)310713	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/29/2013 15:39
Workgroup #:	WG439851	**Analyst:**	TMB	**Run Date:**	08/01/2013 18:10
Collect Date:	07/31/2013 14:30	**Dilution:**	1	**File ID:**	11M93814
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.32	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13080031
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	113	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13080031
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13080031
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13080031-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67DPT13A(26-30)310713	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/29/2013 15:39
Workgroup #:	WG439851	**Analyst:**	TMB	**Run Date:**	08/01/2013 18:41
Collect Date:	07/31/2013 15:55	**Dilution:**	1	**File ID:**	11M93815
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.79	J	10.0	5.00	2.50
Benzene	71-43-2	0.136	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.446	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.138	J	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	27.8		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	11.2		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	140		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.447	J	1.00	0.500	0.250

Microbac

Lab Report #: L13080031
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	5.78		1.00	0.500	0.250
Trichloroethene	79-01-6	1.28		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.484	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	99.9	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13080031
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13080031
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 070513
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 624 SOP: MSV10 Rev: 9
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 46617

Internal Standard: STD58366 Surrogate Standard: STD58741
CCV: STD58742 LCS: STD58742 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG436576; WG436578

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M93286	WG436576-01 BFB 50ng 8260	NA	1	1	STD58740	07/05/13 15:53
11M93287	WG436576-01 BFB 50ng 8260	NA	1	1	STD58740	07/05/13 16:05
11M93288	WG436576-02 5ug/L STD A9	NA	1	1	STD58742	07/05/13 16:29
11M93289	WG436576-03 20ug/L STD A9	NA	1	1	STD58742	07/05/13 17:00
11M93290	WG436576-04 50ug/L STD A9	NA	1	1	STD58742	07/05/13 17:32
11M93291	WG436576-05 100ug/L STD A9	NA	1	1	STD58742	07/05/13 18:03
11M93292	WG436576-06 200ug/L STD A9	NA	1	1	STD58742	07/05/13 18:35
11M93293	WG436576-07 300ug/L STD A9	NA	1	1	STD58742	07/05/13 19:06
11M93294	WG436576-08 400ug/L STD A9	NA	1	1	STD58742	07/05/13 19:38
11M93295	WG436576-09 500ug/L STD A9	NA	1	1	STD58742	07/05/13 20:09
11M93296	RINSE	NA	1	1		07/05/13 20:41
11M93297	RINSE	NA	1	1		07/05/13 21:12
11M93298	WG436576-10 100ug/L STD A9	NA	1	1	STD58743	07/05/13 21:43
11M93299	WG436578-01 VBLK0705 BLANK 8260	NA	1	1		07/05/13 22:15
11M93300	L13010006-01 2.5uL/50mL MDL	NA	1	1	STD58742	07/05/13 22:46
11M93301	L13010006-02 2.5uL/50mL MDL	NA	1	1	STD58742	07/05/13 23:18
11M93302	L13010006-03 2.5uL/50mL MDL	NA	1	1	STD58742	07/05/13 23:49
11M93303	L13010006-04 2.5uL/50mL MDL	NA	1	1	STD58742	07/06/13 00:20
11M93304	L13010006-05 2.5uL/50mL MDL	NA	1	1	STD58742	07/06/13 00:52
11M93305	L13010006-06 2.5uL/50mL MDL	NA	1	1	STD58742	07/06/13 01:23
11M93306	L13010006-07 2.5uL/50mL MDL	NA	1	1	STD58742	07/06/13 01:55
11M93307	L13070001-01 1.25uL/50mL LOD	NA	1	1	STD58742	07/06/13 02:26
11M93308	L13070003-01 2.5uL/50mL LOQ	NA	1	1	STD58742	07/06/13 02:57
11M93309	rinse	NA	1	1		07/08/13 12:52
11M93310	rinse	NA	1	1		07/08/13 13:24
11M93311	rinse	NA	1	1		07/08/13 13:55
11M93312	rinse	NA	1	1		07/08/13 14:27
11M93313	rinse	NA	1	1		07/08/13 14:58
11M93314	rinse	NA	1	1		07/08/13 15:30
11M93315	rinse	NA	1	1		07/08/13 16:01
11M93316	rinse	NA	1	1		07/08/13 16:33
11M93317	rinse	NA	1	1		07/08/13 17:04
11M93318	rinse	NA	1	1		07/08/13 17:36

Approved: July 15, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS11	Dataset:	070513		
Analyst1:	FJB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	16
Method:	624	SOP:	MSV10	Rev:	9
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	13
Maintenance Log ID:	46617				

Internal Standard: STD58366 Surrogate Standard: STD58741

CCV: STD58742 LCS: STD58742 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG436576; WG436578

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 11M93286				
	Tune failed, DNR.			

Approved: July 15, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 072913
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 624 SOP: MSV10 Rev: 9
Method: 5050C/535A SOP: PAT01 Rev: 13
Maintenance Log ID: 46846

Internal Standard: STD58953 Surrogate Standard: STD58963
CCV: NA LCS: STD59088 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG439392

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M93708	RINSE	NA	1	1		07/29/13 08:47
11M93709	RINSE	NA	1	1		07/29/13 09:36
11M93710	WG439392-01 50ng BFB STD 8260	NA	1	1	STD58740	07/29/13 10:15
11M93711	WG439392-01 50ng BFB STD 8260	NA	1	1	STD58740	07/29/13 10:28
11M93712	WG439392-02 0.3ug/L STD 8260	NA	1	1	STD59089	07/29/13 10:52
11M93713	WG439392-03 0.4ug/L STD 8260	NA	1	1	STD59089	07/29/13 11:24
11M93714	WG439392-04 1ug/L STD 8260	NA	1	1	STD59089	07/29/13 11:59
11M93715	WG439392-05 2ug/L STD 8260	NA	1	1	STD59089	07/29/13 12:31
11M93716	WG439392-06 5ug/L STD 8260	NA	1	1	STD59089	07/29/13 13:02
11M93717	WG439392-07 20ug/L STD 8260	NA	1	1	STD59089	07/29/13 13:34
11M93718	WG439392-08 50ug/L STD 8260	NA	1	1	STD59089	07/29/13 14:05
11M93719	WG439392-09 100ug/L STD 8260	NA	1	1	STD59089	07/29/13 14:36
11M93720	WG439392-10 200ug/L STD 8260	NA	1	1	STD59089	07/29/13 15:08
11M93721	WG439392-11 300ug/L STD 8260	NA	1	1	STD59089	07/29/13 15:39
11M93722	RINSE	NA	1	1		07/29/13 16:11
11M93723	RINSE	NA	1	1		07/29/13 16:42
11M93724	WG439392-12 20ug/L ALT SRC STD 8260	NA	1	1	STD59088	07/29/13 17:14
11M93725	RINSE	NA	1	1		07/29/13 17:45

Approved: July 30, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 080113
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 624 SOP: MSV10 Rev: 10
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 46898

Internal Standard: STD58953 Surrogate Standard: STD58963
CCV: STD59319; STD59338 LCS: STD59321; STD59338 MS/MSD: STD59339

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG439851

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M93801	WG439850-01 50ng BFB STD 8260	NA	1	1	STD58740	08/01/13 11:26
11M93802	WG439850-02 50ug/L CCV STD 8260	NA	1	1	STD59319	08/01/13 11:51
11M93803	WG439852-01 100ug/L A9 CCV STD 8260	NA	1	1	STD59338	08/01/13 12:23
11M93804	WG439851-01 VBLK0801 BLANK STD 826	NA	1	1		08/01/13 12:54
11M93805	WG439851-02 20ug/L LCS STD 8260	NA	1	1	STD59321	08/01/13 13:26
11M93806	WG439851-03 100ug/L A9 LCS STD 8260	NA	1	1	STD59238	08/01/13 13:57
11M93807	L13071523-04 A MS 826-A9-SPE	5	1	1	STD59339	08/01/13 14:29
11M93808	L13071523-05 A MSD 826-A9-SPE	2	1	1	STD59339	08/01/13 15:01
11M93809	L13071499-01 A 826-SPE	<2	1	1		08/01/13 15:32
11M93810	L13080045-02 A TB 826-SPE	<2	1	1		08/01/13 16:03
11M93811	L13071294-06 A TB 826-SPE	<2	1	1		08/01/13 16:35
11M93812	L13071294-04 A 826-SPE1	<2	1	1		08/01/13 17:07
11M93813	L13071294-02 A 5X 826-SPE	<2	1	5		08/01/13 17:38
11M93814	L13080031-01 A 826-LOW	<2	1	1		08/01/13 18:10
11M93815	L13080031-02 A 826-LOW	<2	1	1		08/01/13 18:41
11M93816	L13071600-01 A 8260	<2	1	1		08/01/13 19:12
11M93817	L13071575-01 B 826-SPE	<2	1	1		08/01/13 19:44
11M93818	L13071523-01 A 826-A9-SPE	<2	1	1		08/01/13 20:15
11M93819	L13071523-02 REF A 826-A9-SPE	<2	1	1		08/01/13 20:47
11M93820	L13071523-03 A 826-A9-SPE	<2	1	1		08/01/13 21:18
11M93821	L13071524-01 A 826-A9-SPE	6	1	1		08/01/13 21:50
11M93822	L13071524-02 A 826-A9-SPE	7	1	1		08/01/13 22:21
11M93823	L13071524-03 A 826-A9-SPE	6	1	1		08/01/13 22:52
11M93824	L13080045-01 A 10X 826-SPE	<2	1	10		08/01/13 23:24
11M93825	RINSE	NA	1	1		08/01/13 23:55
11M93826	WG439851-08 20ug/L LCSDUP STD	NA	2	1	STD59321	08/02/13 00:26
11M93827	RINSE	NA	2	1		08/02/13 00:58
11M93828	WG439851-07 VBLK0801 BLANK STD 624	NA	2	1		08/02/13 01:29
11M93829	L13071594-01 B 500X 624-SPE1 D1	5	2	500		08/02/13 02:01
11M93830	L13071589-01 B 624-SPE	<2	2	1		08/02/13 02:32
11M93831	CCV	NA	1	1		08/02/13 03:03
11M93832	RINSE	NA	1	1		08/02/13 03:35
11M93833	RINSE	NA	1	1		08/02/13 04:06
11M93834	RINSE	NA	1	1		08/02/13 04:37

Approved: August 02, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 080113
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 624 SOP: MSV10 Rev: 10
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 46898

Internal Standard: STD58953 Surrogate Standard: STD58963
CCV: STD59319; STD59338 LCS: STD59321; STD59338 MS/MSD: STD59339

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG439851

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M93835	RINSE	NA	1	1		08/02/13 05:09

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13	X	2.5	Analyzed too dilute	
File ID: 11M93813				
	DNR.			
24	X	2.5	Analyzed too dilute	
File ID: 11M93824				

Approved: August 02, 2013

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2013
Analyst: FJB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 54325
Analytical Workgroups: WG436576; WG436578

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
10-JUL-2013
Tiffany Bailey

Secondary Reviewer:
15-JUL-2013

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-15-2013 08:15:56

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUL-2013
Analyst: TMB
Analyst: NA
Method: 8260B/OVAP/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 54747
Analytical Workgroups: WG439392

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
30-JUL-2013
Tiffany Bailey

Secondary Reviewer:
30-JUL-2013

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-30-2013 13:36:35

Microbac Laboratories Inc.

Data Checklist

Date: 01-AUG-2013
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 54845
Analytical Workgroups: WG439851

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
02-AUG-2013
Tiffany Bailey

Secondary Reviewer:
02-AUG-2013

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-05-2013 08:57:18

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG439851

Login Number: L13080031

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67DPT09A(31-35)310713	01	07/31/13					08/01/2013	1.2	14		08/01/13	1.2	14	
67DPT13A(26-30)310713	02	07/31/13					08/01/2013	1.1	14		08/01/13	1.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3019196
Report generated 08/05/2013 15:01

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L13080031
Instrument Id: HPMS11
Workgroup (AAB#): WG439851

Method: 8260
CAL ID: HPMS11-29-JUL-13
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L13080031-01	1.00	01	103	107	113	106
L13080031-02	1.00	01	99.9	103	108	107
WG439851-01	1.00	01	100	104	112	109
WG439851-02	1.00	01	101	108	113	111
WG439851-03	1.00	02	101	108	115	112
WG439851-07	1.00	01	102	106	110	108
WG439851-08	1.00	01	102	104	109	108

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3016817
Report generated: 08/05/2013 15:01

METHOD BLANK SUMMARY

Login Number: L13080031
Blank File ID: 11M93804
Prep Date: 08/01/13 12:54
Analyzed Date: 08/01/13 12:54
Analyst: TMB

Work Group: WG439851
Blank Sample ID: WG439851-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG439851-02	11M93805	08/01/13 13:26	01
LCS	WG439851-03	11M93806	08/01/13 13:57	02
67DPT09A(31-35)310713	L13080031-01	11M93814	08/01/13 18:10	01
67DPT13A(26-30)310713	L13080031-02	11M93815	08/01/13 18:41	01
LCS	WG439851-08	11M93826	08/02/13 00:26	01

Report Name: BLANK_SUMMARY
PDF File ID: 3019197
Report generated 08/05/2013 15:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13080031 Prep Date: 08/01/13 12:54 Sample ID: WG439851-01
Instrument ID: HPMS11 Run Date: 08/01/13 12:54 Prep Method: 5030B/5030C/503
File ID: 11M93804 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG439851 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-29-JUL-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 3019198
05-AUG-2013 15:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13080031 Prep Date: 08/01/13 12:54 Sample ID: WG439851-01
Instrument ID: HPMS11 Run Date: 08/01/13 12:54 Prep Method: 5030B/5030C/503
File ID: 11M93804 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG439851 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-29-JUL-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	85 - 115	PASS
1,2-Dichloroethane-d4	100	70 - 120	PASS
Toluene-d8	109	85 - 120	PASS
4-Bromofluorobenzene	112	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3019198
05-AUG-2013 15:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13080031 | Run Date: 08/01/2013 | Sample ID: WG439851-02
Instrument ID: HPMS11 | Run Time: 13:26 | Prep Method: 5030B/5030C/503
File ID: 11M93805 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG439851 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD59321 | Cal ID: HPMS11-29-JUL-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	19.2	96.0	40 - 140	
Benzene	20.0	21.9	110	80 - 120	
Bromobenzene	20.0	21.7	108	75 - 125	
Bromochloromethane	20.0	20.8	104	65 - 130	
Bromodichloromethane	20.0	20.8	104	75 - 120	
Bromoform	20.0	20.9	104	70 - 130	
Bromomethane	20.0	16.9	84.3	30 - 145	
2-Butanone	20.0	23.1	116	30 - 150	
n-Butylbenzene	20.0	22.9	115	70 - 135	
sec-Butylbenzene	20.0	21.2	106	70 - 125	
tert-Butylbenzene	20.0	20.1	100	70 - 130	
Carbon disulfide	20.0	21.0	105	35 - 160	
Carbon tetrachloride	20.0	20.9	105	65 - 140	
Chlorobenzene	20.0	19.8	98.9	80 - 120	
Chlorodibromomethane	20.0	20.3	102	60 - 135	
Chloroethane	20.0	20.6	103	60 - 135	
Chloroform	20.0	21.0	105	65 - 135	
Chloromethane	20.0	19.0	94.8	40 - 125	
2-Chlorotoluene	20.0	23.4	117	75 - 125	
4-Chlorotoluene	20.0	16.0	80.0	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	21.3	106	50 - 130	
1,2-Dibromoethane	20.0	21.4	107	80 - 120	
Dibromomethane	20.0	21.6	108	75 - 125	
1,2-Dichlorobenzene	20.0	19.3	96.5	70 - 120	
1,3-Dichlorobenzene	20.0	19.7	98.7	75 - 125	
1,4-Dichlorobenzene	20.0	21.1	105	75 - 125	
Dichlorodifluoromethane	20.0	15.4	77.2	30 - 155	
1,1-Dichloroethane	20.0	20.9	105	70 - 135	
1,2-Dichloroethane	20.0	22.0	110	70 - 130	
1,1-Dichloroethene	20.0	19.3	96.6	70 - 130	
cis-1,2-Dichloroethene	20.0	20.8	104	70 - 125	
trans-1,2-Dichloroethene	20.0	20.6	103	60 - 140	
1,2-Dichloropropane	20.0	21.9	110	75 - 125	
1,3-Dichloropropane	20.0	21.5	108	75 - 125	
2,2-Dichloropropane	20.0	19.8	99.0	70 - 135	
cis-1,3-Dichloropropene	20.0	22.9	115	70 - 130	
trans-1,3-Dichloropropene	20.0	21.1	106	55 - 140	
1,1-Dichloropropene	20.0	21.1	105	75 - 130	
Ethylbenzene	20.0	21.1	106	75 - 125	
2-Hexanone	20.0	21.8	109	55 - 130	
Hexachlorobutadiene	20.0	18.9	94.7	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 3016811
Report generated: 08/05/2013 15:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13080031 Run Date: 08/01/2013 Sample ID: WG439851-02
Instrument ID: HPMS11 Run Time: 13:26 Prep Method: 5030B/5030C/503
File ID: 11M93805 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG439851 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD59321 Cal ID: HPMS11-29-JUL-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.7	108	75 - 125	
p-Isopropyltoluene	20.0	21.8	109	75 - 130	
4-Methyl-2-pentanone	20.0	22.2	111	60 - 135	
Methylene chloride	20.0	20.0	100	55 - 140	
Naphthalene	20.0	23.3	116	55 - 140	
n-Propylbenzene	20.0	20.7	104	70 - 130	
Styrene	20.0	23.9	119	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.4	107	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	21.7	109	65 - 130	
Tetrachloroethene	20.0	20.2	101	45 - 150	
Toluene	20.0	21.8	109	75 - 120	
1,2,3-Trichlorobenzene	20.0	20.9	104	55 - 140	
1,2,4-Trichlorobenzene	20.0	20.8	104	65 - 135	
1,1,1-Trichloroethane	20.0	20.9	104	65 - 130	
1,1,2-Trichloroethane	20.0	22.0	110	75 - 125	
Trichloroethene	20.0	22.4	112	70 - 125	
Trichlorofluoromethane	20.0	20.0	100	60 - 145	
1,2,3-Trichloropropane	20.0	21.1	105	75 - 125	
1,2,4-Trimethylbenzene	20.0	23.5	118	75 - 130	
1,3,5-Trimethylbenzene	20.0	24.1	120	75 - 130	
Vinyl chloride	20.0	18.1	90.6	50 - 145	
o-Xylene	20.0	20.5	103	80 - 120	
m-,p-Xylene	40.0	43.9	110	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	108	85 - 115	PASS
1,2-Dichloroethane-d4	101	70 - 120	PASS
Toluene-d8	111	85 - 120	PASS
4-Bromofluorobenzene	113	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 3016811
Report generated: 08/05/2013 15:01

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13080031
Instrument: HPMS11
Analyst: FJB
Workgroup: WG436576

Tune ID: WG436576-01
Run Date: 07/05/2013
Run Time: 16:05
File ID: 11M93287
Cal ID: HPMS11 - 05-JUL-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.2	2381	PASS
75.0	95.0	30.0	60.0	48.3	5438	PASS
95.0	95.0	100	100	100	11255	PASS
96.0	95.0	5.00	9.00	7.24	815	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	92.7	10439	PASS
175	174	5.00	9.00	6.86	716	PASS
176	174	95.0	101	96.7	10098	PASS
177	176	5.00	9.00	7.34	741	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG436576-02	STD	01	07/05/2013 16:29	
WG436576-03	STD	01	07/05/2013 17:00	
WG436576-04	STD	01	07/05/2013 17:32	
WG436576-05	STD-CCV	01	07/05/2013 18:03	
WG436576-06	STD	01	07/05/2013 18:35	
WG436576-07	STD	01	07/05/2013 19:06	
WG436576-08	STD	01	07/05/2013 19:38	
WG436576-09	STD	01	07/05/2013 20:09	
WG436576-10	SSCV	01	07/05/2013 21:43	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3019199
Report generated 08/05/2013 15:01

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13080031
Instrument: HPMS11
Analyst: TMB
Workgroup: WG439392

Tune ID: WG439392-01
Run Date: 07/29/2013
Run Time: 10:28
File ID: 11M93711
Cal ID: HPMS11 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	3523	PASS
75.0	95.0	30.0	60.0	45.4	7366	PASS
95.0	95.0	100	100	100	16219	PASS
96.0	95.0	5.00	9.00	7.14	1158	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	88.0	14273	PASS
175	174	5.00	9.00	7.79	1112	PASS
176	174	95.0	101	97.7	13940	PASS
177	176	5.00	9.00	6.90	962	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG439392-02	STD	01	07/29/2013 10:52	
WG439392-03	STD	01	07/29/2013 11:24	
WG439392-04	STD	01	07/29/2013 11:59	
WG439392-05	STD	01	07/29/2013 12:31	
WG439392-06	STD	01	07/29/2013 13:02	
WG439392-07	STD	01	07/29/2013 13:34	
WG439392-08	STD-CCV	01	07/29/2013 14:05	
WG439392-09	STD	01	07/29/2013 14:36	
WG439392-10	STD	01	07/29/2013 15:08	
WG439392-11	STD	01	07/29/2013 15:39	
WG439392-12	SSCV	01	07/29/2013 17:14	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3019199
Report generated 08/05/2013 15:01

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13080031
Instrument: HPMS11
Analyst: TMB
Workgroup: WG439850

Tune ID: WG439850-01
Run Date: 08/01/2013
Run Time: 11:26
File ID: 11M93801
Cal ID: HPMS11 - 29-JUL-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.1	3563	PASS
75.0	95.0	30.0	60.0	46.9	7575	PASS
95.0	95.0	100	100	100	16140	PASS
96.0	95.0	5.00	9.00	6.44	1040	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	91.3	14730	PASS
175	174	5.00	9.00	7.30	1075	PASS
176	174	95.0	101	99.6	14673	PASS
177	176	5.00	9.00	6.49	953	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG439850-02	CCV	01	08/01/2013 11:51	
WG439852-01	CCV	01	08/01/2013 12:23	
WG439851-01	BLANK	01	08/01/2013 12:54	
WG439851-02	LCS	01	08/01/2013 13:26	
L13080031-01	67DPT09A(31-35)310713	01	08/01/2013 18:10	
L13080031-02	67DPT13A(26-30)310713	01	08/01/2013 18:41	
WG439851-08	LCS	01	08/02/2013 00:26	*
WG439851-07	BLANK2	01	08/02/2013 01:29	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3019199
Report generated 08/05/2013 15:01

Calibration Table Report
Method: A9WTR.M
Title: Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Calibration: Mon Jul 08 16:30:11 2013
Curve: WG436576
Calibration Files

	Compound	5 11M93288.D	20 11M93289.D	50 11M93290.D	100 11M93291.D	200 11M93292.D	300 11M93293.D	400 11M93294.D	500 11M93295.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.028	0.028	0.030	0.027	0.027	0.031	0.032	0.032	0.029	7.790		
T	3-Chloro-1-propene	0.205	0.516	0.516	0.502	0.491	0.474	0.443	0.419	0.446	23.193		1.000
T	2-Chloro-1,3-butadiene	0.461	0.489	0.498	0.484	0.477	0.466	0.438	0.415	0.466	5.925		
T	Methacrylonitrile	0.168	0.147	0.164	0.149	0.153	0.161	0.163	0.159	0.158	4.680		
T	Isobutyl Alcohol			0.011	0.008	0.008	0.008	0.010	0.010	0.009	13.201		
T	1-Butanol			0.001	0.001	0.001	0.001	0.001		0.001	14.545		
T	Cyclohexanone			0.033	0.024	0.039	0.043	0.045	0.048	0.039	22.706		0.998
T	2-Nitropropane			0.061	0.058	0.061	0.068	0.071	0.069	0.065	8.328		
T	Ethyl Acetate	0.143	0.211	0.228	0.210	0.215	0.227	0.228	0.220	0.210	13.350		
T	Methyl methacrylate	0.147	0.192	0.213	0.202	0.208	0.219	0.219	0.210	0.201	11.761		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											

Wed Jul 10 12:42:50 2013

Calibration Table Report
Method: 8260WTR.M
Title: 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Calibration: Tue Jul 30 08:47:23 2013
Curve: WG439392
Calibration Files

	Compound	0.3 11M93712.D	0.4 11M93713.D	1 11M93714.D	2 11M93715.D	5 11M93716.D	20 11M93717.D	50 11M93718.D	100 11M93719.D	200 11M93720.D	300 11M93721.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.225	0.235	0.241	0.229	0.284	0.251	0.229	0.260	0.230	0.243	7.974		
P	Chloromethane			0.404	0.390	0.370	0.397	0.359	0.325	0.356	0.338	0.367	7.693		
C	Vinyl Chloride		0.385	0.360	0.324	0.316	0.328	0.291	0.272	0.301	0.287	0.318	11.412		
T	1,3-Butadiene				0.322	0.301	0.314	0.285	0.225	0.218	0.189	0.265	20.088		1.000
T	Bromomethane			0.191	0.165	0.163	0.163	0.154	0.157	0.187	0.185	0.170	8.481		
T	Chloroethane		0.170	0.207	0.202	0.199	0.214	0.190	0.181	0.203	0.195	0.196	6.970		
T	Trichlorofluoromethane		0.406	0.441	0.425	0.420	0.462	0.415	0.389	0.438	0.402	0.422	5.326		
T	Diethyl ether			0.199	0.196	0.208	0.212	0.195	0.208		0.210	0.204	3.528		
T	Isoprene		0.301	0.355	0.368	0.360	0.374	0.381	0.359	0.381	0.350	0.359	6.802		
T	Acrolein			0.026	0.024	0.025	0.027	0.024	0.027		0.029	0.026	7.043		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane		0.205	0.254	0.262	0.262	0.274	0.247	0.230	0.265	0.242	0.249	8.498		
T	Acetone			0.068	0.074	0.063	0.058	0.053	0.058	0.063	0.064	0.063	10.308		
C	1,1-Dichloroethene		0.415	0.457	0.435	0.424	0.463	0.423	0.405	0.447	0.415	0.431	4.693		
T	Tert-Butyl Alcohol			0.013	0.012	0.014	0.013	0.011	0.012		0.012	0.013	8.126		
T	Dimethyl Sulfide		0.268	0.257	0.262	0.267	0.286	0.294	0.286	0.296	0.281	0.277	5.161		
T	Iodomethane			0.141	0.188	0.236	0.275	0.287	0.272	0.286	0.266	0.244	21.705	0.999	
T	Methyl acetate			0.158	0.190	0.187	0.182	0.176	0.177	0.178	0.178	0.178	5.374		
T	Methylene Chloride		0.270	0.299	0.289	0.282	0.298	0.265	0.258	0.279	0.266	0.278	5.321		
T	Carbon Disulfide		0.792	0.893	0.832	0.828	0.844	0.846	0.783	0.760	0.645	0.803	8.842		
T	Acrylonitrile			0.064	0.067	0.071	0.075	0.074	0.079		0.088	0.074	10.737		
T	Methyl Tert Butyl Ether		0.494	0.537	0.541	0.575	0.624	0.566	0.561	0.603	0.577	0.564	6.745		
T	trans-1,2-Dichloroethene		0.282	0.277	0.278	0.278	0.293	0.267	0.257	0.283	0.267	0.276	3.874		
T	n-Hexane		0.335	0.379	0.375	0.395	0.405	0.407	0.380	0.402	0.357	0.382	6.251		
T	Diisopropyl ether			1.153	1.128	1.184	1.169	1.081	1.074		0.947	1.105	7.364		
T	Vinyl Acetate			0.290	0.333	0.349	0.369	0.373	0.382	0.377	0.360	0.354	8.606		
P	1,1-Dichloroethane		0.515	0.578	0.558	0.570	0.587	0.526	0.506	0.540	0.497	0.542	6.092		
T	Ethyl-Tert-Butyl ether			0.805	0.825	0.865	0.861	0.793	0.818		0.760	0.818	4.541		
T	2-Butanone				0.070	0.082	0.081	0.079	0.081	0.083	0.083	0.080	5.417		
T	Propionitrile			0.021	0.024	0.025	0.026	0.024	0.025		0.026	0.024	7.388		
T	2,2-Dichloropropane		0.419	0.458	0.457	0.448	0.466	0.422	0.407	0.444	0.412	0.437	5.089		
T	cis-1,2-Dichloroethene		0.299	0.295	0.294	0.307	0.322	0.289	0.284	0.306	0.288	0.298	3.973		
C	Chloroform	0.514	0.490	0.509	0.498	0.513	0.527	0.472	0.456	0.482	0.442	0.490	5.577		
T	1-Bromopropane			0.043	0.046	0.053	0.052	0.055	0.052	0.056	0.053	0.051	8.515		
T	Bromochloromethane		0.136	0.168	0.168	0.172	0.181	0.161	0.159	0.172	0.166	0.165	7.624		
T	Tetrahydrofuran			0.052	0.052	0.055	0.056	0.054	0.056		0.059	0.055	4.700		
S	Dibromofluoromethane			0.214	0.236	0.247	0.260	0.260	0.253	0.261	0.252	0.248	6.511		
T	1,1,1-Trichloroethane		0.394	0.435	0.440	0.448	0.460	0.422	0.406	0.442	0.409	0.428	5.103		
T	Cyclohexane		0.456	0.512	0.508	0.510	0.527	0.541	0.507	0.537	0.478	0.508	5.337		
T	1,1-Dichloropropene		0.320	0.370	0.383	0.383	0.413	0.374	0.359	0.393	0.366	0.374	6.849		
T	Carbon Tetrachloride		0.328	0.428	0.387	0.397	0.422	0.385	0.367	0.402	0.372	0.388	7.820		
T	Tert-Amyl-Methyl ether			0.591	0.587	0.637	0.637	0.588	0.615		0.584	0.6055	3.9183		
S	1,2-Dichloroethane-d4			0.254	0.254	0.267	0.269	0.269	0.256	0.262	0.253	0.2605	2.72394		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.295	0.333	0.351	0.357	0.373	0.329	0.326	0.344	0.323	0.3368	6.65733		
T	Benzene		1.079	1.203	1.152	1.165	1.194	1.052	0.983	0.937	0.778	1.0605	13.2809		
T	Trichloroethene		0.258	0.281	0.284	0.279	0.289	0.265	0.258	0.282	0.265	0.2736	4.34809		
T	Methylcyclohexane		0.307	0.377	0.361	0.376	0.391	0.402	0.377	0.399	0.357	0.3719	7.76212		
C	1,2-Dichloropropane		0.275	0.294	0.324	0.314	0.335	0.299	0.295	0.317	0.302	0.3059	5.88308		
T	1,4-Dioxane				0.001	0.001	0.001	0.001	0.001		0.002	0.0013	14.7118		
T	Bromodichloromethane		0.337	0.362	0.35	0.368	0.388	0.354	0.349	0.37	0.348	0.3584	4.25455		
T	Dibromomethane		0.106	0.125	0.14	0.142	0.15	0.133	0.135	0.146	0.141	0.1352	9.85543		
T	2-Chloroethyl Vinyl Ether				0.091	0.105	0.116	0.125	0.131	0.137	0.134	0.1199	14.1063		
T	4-Methyl-2-Pentanone				0.048	0.053	0.062	0.065	0.066	0.071	0.071	0.0622	14.155		
T	cis-1,3-Dichloropropene		0.34	0.381	0.395	0.415	0.456	0.422	0.417	0.434	0.4	0.4068	8.19615		
T	Dimethyl Disulfide					0.163	0.204	0.223	0.228	0.242	0.231	0.2151	13.3371		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.127	1.065	1.16	1.182	1.201	1.123	1.112	1.014	1.123	5.47157		

C	Toluene		1.268	1.508	1.478	1.556	1.568	1.389	1.281	1.153		1.4001	10.8967		
T	Ethyl Methacrylate			0.204	0.213	0.259	0.299	0.305	0.31	0.32	0.305	0.277	16.5627	0.999	
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene		0.353	0.408	0.433	0.466	0.506	0.458	0.455	0.47	0.436	0.4429	9.80976		
T	1,1,2-Trichloroethane		0.223	0.24	0.237	0.244	0.26	0.227	0.228	0.242	0.235	0.2375	4.76871		
T	2-Hexanone				0.122	0.137	0.152	0.156	0.162	0.168	0.165	0.1517	10.9848		
T	1,3-Dichloropropane		0.355	0.448	0.43	0.441	0.46	0.414	0.412	0.427	0.404	0.4213	7.25475		
T	Tetrachloroethene		0.29	0.322	0.317	0.308	0.32	0.294	0.281	0.304	0.284	0.3023	5.17981		
T	Dibromochloromethane		0.301	0.303	0.307	0.309	0.33	0.305	0.304	0.324	0.309	0.3103	3.19436		
T	1,2-Dibromoethane		0.22	0.221	0.232	0.229	0.255	0.229	0.231	0.248	0.24	0.2341	4.95217		
T	1-Chlorohexane		0.337	0.376	0.392	0.403	0.438	0.453	0.433	0.443	0.401	0.4085	9.14246		
P	Chlorobenzene		0.896	1.073	1.021	1.031	1.024	0.913	0.869	0.841	0.714	0.9314	12.4309		
T	1,1,1,2-Tetrachloroethane		0.327	0.357	0.355	0.353	0.371	0.342	0.336	0.357	0.336	0.3483	4.00382		
C	Ethylbenzene		0.469	0.525	0.507	0.535	0.561	0.507	0.497	0.52	0.473	0.5106	5.67554		
T	m-,p-Xylene		0.558	0.626	0.608	0.649	0.671	0.604	0.56	0.51	0.416	0.5778	13.5561		
T	o-Xylene		0.47	0.556	0.589	0.61	0.656	0.601	0.584	0.599	0.539	0.5782	9.04454		
T	Styrene	0.808	0.721	0.828	0.89	0.978	1.111	1.008	0.963	0.909	0.759	0.8974	13.4677		
P	Bromoform			0.157	0.173	0.181	0.218	0.197	0.199	0.212	0.203	0.1925	10.7402		
T	Isopropylbenzene		1.251	1.396	1.444	1.504	1.636	1.462	1.345	1.187	0.946	1.3523	14.9801		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.465	0.45	0.489	0.497	0.539	0.481	0.493	0.536	0.528	0.4976	6.25732		
S	p-Bromofluorobenzene			0.739	0.758	0.78	0.838	0.857	0.828	0.887	0.867	0.8193	6.59815		
T	1,2,3-Trichloropropane			0.125	0.134	0.155	0.151	0.139	0.143	0.157	0.156	0.145	8.1291		
T	trans-1,4-Dichloro-2-Butene			0.109	0.117	0.162	0.18	0.183	0.184	0.204	0.204	0.1679	21.6509	0.998	
T	n-Propylbenzene		2.754	3.248	3.239	3.457	3.683	3.275	2.93	2.527		3.1391	12.0651		
T	Bromobenzene	0.516	0.63	0.772	0.784	0.766	0.818	0.741	0.729	0.785	0.741	0.7282	12.3577		
T	1,3,5-Trimethylbenzene		1.788	2.07	2.179	2.348	2.538	2.308	2.157	2.026	1.684	2.1221	12.6643		
T	2-Chlorotoluene		1.896	2.376	2.125	2.156	2.215	1.912	1.786	1.997	1.633	2.0108	11.4711		
T	4-Chlorotoluene		1.578	1.929	2.226	2.319	2.355	2.121	1.992	1.527	1.262	1.9231	20.0747		1.003
T	a-Methylstyrene				1.004	1.087	1.223	1.306	1.266	1.245	1.107	1.1769	9.4469		
T	tert-Butylbenzene		0.379	0.416	0.47	0.493	0.532	0.487	0.466	0.516	0.491	0.4724	10.1409		
T	1,2,4-Trimethylbenzene			2.207	2.302	2.551	2.628	2.361	2.19	2.006	1.653	2.2374	13.8098		
T	sec-Butylbenzene		2.259	2.623	2.696	2.845	3.041	2.727	2.487	2.262	1.839	2.5311	14.3771		
T	p-Isopropyltoluene		1.705	2.078	2.132	2.321	2.564	2.308	2.125	1.979	1.648	2.0955	13.9607		
T	1,3-Dichlorobenzene		1.339	1.513	1.484	1.495	1.557	1.403	1.34	1.325	1.166	1.4025	8.77572		
T	1,4-Dichlorobenzene	1.463	1.471	1.576	1.527	1.55	1.574	1.408	1.347	1.321	1.154	1.4391	9.36339		
T	n-Butylbenzene		1.927	1.981	1.968	2.11	2.304	2.092	1.931	1.815	1.511	1.9597	11.1655		
T	1,2-Dichlorobenzene	1.394	1.376	1.381	1.352	1.341	1.421	1.283	1.231	1.237	1.099	1.3115	7.5483		
T	1,2-Dibromo-3-Chloropropane				0.068	0.077	0.084	0.076	0.08	0.09	0.092	0.0811	10.3658		
T	1,2,4-Trichlorobenzene		0.795	0.864	0.845	0.914	0.978	0.896	0.873	0.913	0.867	0.8829	5.7754		
T	Hexachlorobutadiene		0.355	0.357	0.339	0.357	0.371	0.343	0.326	0.355	0.349	0.3502	3.74018		
T	Naphthalene		1.189	1.231	1.29	1.444	1.708	1.56	1.538	1.5	1.339	1.4221	12.0678		
T	1,2,3-Trichlorobenzene	0.702	0.705	0.767	0.769	0.817	0.878	0.79	0.765	0.802	0.781	0.7775	6.59803		

Tue Jul 30 09:01:39 2013

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13080031 Run Date: 07/29/2013 Sample ID: WG439392-12
Instrument ID: HPMS11 Run Time: 17:14 Method: 8260B
File ID: 11M93724 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG439392 Cal ID: HPMS11 - 29-JUL-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	20.0	20.1	ug/L	0.492	0.300	20	
1,1-Dichloroethene	CCC	20.0	18.9	ug/L	0.408	5.50	20	
1,2-Dichloropropane	CCC	20.0	21.1	ug/L	0.323	5.40	20	
Ethylbenzene	CCC	20.0	21.4	ug/L	0.546	7.00	20	
Toluene	CCC	20.0	22.2	ug/L	1.55	10.9	20	
Vinyl Chloride	CCC	20.0	16.8	ug/L	0.267	16.2	20	
Bromoform	SPCC	20.0	20.6	ug/L	0.198	3.00	20	
Chlorobenzene	SPCC	20.0	19.9	ug/L	0.926	0.600	20	
Chloromethane	SPCC	20.0	18.7	ug/L	0.343	6.50	20	
1,1-Dichloroethane	SPCC	20.0	20.3	ug/L	0.549	1.30	20	
1,1,2,2-Tetrachloroethane	SPCC	20.0	21.2	ug/L	0.527	5.80	20	
Acetone		20.0	16.6	ug/L	0.0518	17.2	20	
Benzene		20.0	21.3	ug/L	1.13	6.60	20	
Bromobenzene		20.0	21.6	ug/L	0.785	7.80	20	
Bromochloromethane		20.0	20.2	ug/L	0.166	1.00	20	
Bromodichloromethane		20.0	19.7	ug/L	0.353	1.50	20	
Bromomethane		20.0	18.6	ug/L	0.158	7.10	20	
2-Butanone		20.0	21.0	ug/L	0.0838	5.00	20	
n-Butylbenzene		20.0	23.5	ug/L	2.30	17.6	20	
sec-Butylbenzene		20.0	21.8	ug/L	2.76	9.10	20	
tert-Butylbenzene		20.0	19.9	ug/L	0.470	0.400	20	
Carbon Disulfide		20.0	20.9	ug/L	0.840	4.70	20	
Carbon Tetrachloride		20.0	20.2	ug/L	0.391	0.900	20	
Dibromochloromethane		20.0	20.3	ug/L	0.315	1.30	20	
Chloroethane		20.0	20.0	ug/L	0.196	0.100	20	
2-Chlorotoluene		20.0	20.2	ug/L	2.04	1.20	20	
4-Chlorotoluene		20.0	18.8	ug/L	2.10	6.00	20	
1,2-Dibromo-3-Chloropropane		20.0	19.6	ug/L	0.0795	2.00	20	
1,2-Dibromoethane		20.0	21.5	ug/L	0.251	7.40	20	
Dibromomethane		20.0	20.5	ug/L	0.138	2.30	20	
1,2-Dichlorobenzene		20.0	19.3	ug/L	1.27	3.30	20	
1,3-Dichlorobenzene		20.0	19.8	ug/L	1.39	0.900	20	
1,4-Dichlorobenzene		20.0	21.1	ug/L	1.52	5.30	20	
Dichlorodifluoromethane		20.0	16.5	ug/L	0.200	17.6	20	
1,2-Dichloroethane		20.0	20.4	ug/L	0.344	2.20	20	
cis-1,2-Dichloroethene		20.0	20.7	ug/L	0.309	3.50	20	
trans-1,2-Dichloroethene		20.0	20.3	ug/L	0.280	1.60	20	
1,3-Dichloropropane		20.0	21.3	ug/L	0.449	6.50	20	
2,2-Dichloropropane		20.0	19.6	ug/L	0.429	1.80	20	
cis-1,3-Dichloropropene		20.0	22.5	ug/L	0.458	12.6	20	
trans-1,3-Dichloropropene		20.0	21.0	ug/L	0.466	5.20	20	
1,1-Dichloropropene		20.0	20.8	ug/L	0.389	4.20	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3016813
Report generated 08/05/2013 15:01

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13080031 Run Date: 07/29/2013 Sample ID: WG439392-12
Instrument ID: HPMS11 Run Time: 17:14 Method: 8260B
File ID: 11M93724 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG439392 Cal ID: HPMS11 - 29-JUL-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		20.0	21.2	ug/L	0.161	6.00	20	
Hexachlorobutadiene		20.0	21.3	ug/L	0.373	6.40	20	
Isopropylbenzene		20.0	21.9	ug/L	1.48	9.60	20	
p-Isopropyltoluene		20.0	22.7	ug/L	2.37	13.3	20	
4-Methyl-2-Pentanone		20.0	21.7	ug/L	0.0674	8.40	20	
Methylene Chloride		20.0	19.7	ug/L	0.275	1.40	20	
Naphthalene		20.0	23.6	ug/L	1.68	17.9	20	
n-Propylbenzene		20.0	20.9	ug/L	3.28	4.60	20	
Styrene		20.0	24.1	ug/L	1.08	20.5	20	*
1,1,1,2-Tetrachloroethane		20.0	21.4	ug/L	0.373	6.90	20	
Tetrachloroethene		20.0	21.0	ug/L	0.317	4.80	20	
1,2,3-Trichlorobenzene		20.0	21.7	ug/L	0.844	8.50	20	
1,2,4-Trichlorobenzene		20.0	21.6	ug/L	0.955	8.20	20	
1,1,1-Trichloroethane		20.0	20.9	ug/L	0.447	4.30	20	
1,1,2-Trichloroethane		20.0	21.5	ug/L	0.256	7.60	20	
Trichloroethene		20.0	22.1	ug/L	0.302	10.4	20	
Trichlorofluoromethane		20.0	20.2	ug/L	0.425	0.800	20	
1,2,3-Trichloropropane		20.0	20.6	ug/L	0.149	2.90	20	
1,2,4-Trimethylbenzene		20.0	23.5	ug/L	2.62	17.3	20	
1,3,5-Trimethylbenzene		20.0	24.2	ug/L	2.57	21.1	20	*
o-Xylene		20.0	20.7	ug/L	0.598	3.40	20	
m-,p-Xylene		40.0	44.3	ug/L	0.640	10.7	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3016813
Report generated 08/05/2013 15:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13080031 Run Date: 08/01/2013 Sample ID: WG439850-02
Instrument ID: HPMS11 Run Time: 11:51 Method: 8260B
File ID: 11M93802 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG439851 Cal ID: HPMS11 - 29-JUL-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.6	ug/L	0.507	3.30	20	
1,1-Dichloroethene	CCC	50.0	53.5	ug/L	0.462	6.95	20	
1,2-Dichloropropane	CCC	50.0	51.7	ug/L	0.316	3.35	20	
Ethylbenzene	CCC	50.0	54.6	ug/L	0.558	9.28	20	
Toluene	CCC	50.0	54.8	ug/L	1.53	9.62	20	
Vinyl Chloride	CCC	50.0	58.9	ug/L	0.375	17.7	20	
Bromoform	SPCC	50.0	49.7	ug/L	0.191	0.549	20	
Chlorobenzene	SPCC	50.0	52.9	ug/L	0.986	5.87	20	
Chloromethane	SPCC	50.0	56.8	ug/L	0.417	13.5	20	
1,1-Dichloroethane	SPCC	50.0	52.9	ug/L	0.574	5.85	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	48.2	ug/L	0.480	3.57	20	
Xylenes		150	171	ug/L	0.657	13.8	20	
Acetone		50.0	45.5	ug/L	0.0569	9.04	20	
Benzene		50.0	54.3	ug/L	1.15	8.55	20	
Bromobenzene		50.0	54.5	ug/L	0.794	9.02	20	
Bromochloromethane		50.0	49.9	ug/L	0.164	0.226	20	
Bromodichloromethane		50.0	51.6	ug/L	0.370	3.26	20	
Bromomethane		50.0	48.5	ug/L	0.165	3.05	20	
2-Butanone		50.0	50.1	ug/L	0.0799	0.220	20	
n-Butylbenzene		50.0	57.7	ug/L	2.26	15.4	20	
sec-Butylbenzene		50.0	58.4	ug/L	2.96	16.8	20	
tert-Butylbenzene		50.0	55.7	ug/L	0.526	11.4	20	
Carbon Disulfide		50.0	52.7	ug/L	0.847	5.48	20	
Carbon Tetrachloride		50.0	53.2	ug/L	0.412	6.35	20	
Dibromochloromethane		50.0	50.0	ug/L	0.310	0.0294	20	
Chloroethane		50.0	53.3	ug/L	0.209	6.57	20	
2-Chlorotoluene		50.0	59.8	ug/L	2.40	19.6	20	
4-Chlorotoluene		50.0	47.4	ug/L	2.03	5.12	20	
1,2-Dibromo-3-Chloropropane		50.0	46.2	ug/L	0.0750	7.54	20	
1,2-Dibromoethane		50.0	49.2	ug/L	0.230	1.62	20	
Dibromomethane		50.0	49.9	ug/L	0.135	0.135	20	
1,2-Dichlorobenzene		50.0	50.9	ug/L	1.34	1.84	20	
1,3-Dichlorobenzene		50.0	53.7	ug/L	1.51	7.43	20	
1,4-Dichlorobenzene		50.0	52.5	ug/L	1.51	5.01	20	
Dichlorodifluoromethane		50.0	56.5	ug/L	0.274	13.1	20	
1,2-Dichloroethane		50.0	50.2	ug/L	0.338	0.439	20	
cis-1,2-Dichloroethene		50.0	52.9	ug/L	0.315	5.78	20	
trans-1,2-Dichloroethene		50.0	52.3	ug/L	0.289	4.68	20	
1,3-Dichloropropane		50.0	49.7	ug/L	0.419	0.577	20	
2,2-Dichloropropane		50.0	53.6	ug/L	0.469	7.28	20	
cis-1,3-Dichloropropene		50.0	54.0	ug/L	0.439	7.91	20	
trans-1,3-Dichloropropene		50.0	53.4	ug/L	0.473	6.74	20	

CCV - Modified 03/05/2008
PDF File ID: 3016816
Report generated 08/05/2013 15:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13080031 Run Date: 08/01/2013 Sample ID: WG439850-02
Instrument ID: HPMS11 Run Time: 11:51 Method: 8260B
File ID: 11M93802 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG439851 Cal ID: HPMS11 - 29-JUL-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	54.9	ug/L	0.410	9.78	20	
2-Hexanone		50.0	50.1	ug/L	0.152	0.204	20	
Hexachlorobutadiene		50.0	49.3	ug/L	0.345	1.37	20	
Isopropylbenzene		50.0	58.7	ug/L	1.59	17.4	20	
p-Isopropyltoluene		50.0	60.1	ug/L	2.52	20.2	20	*
4-Methyl-2-Pentanone		50.0	50.7	ug/L	0.0631	1.45	20	
Methylene Chloride		50.0	50.5	ug/L	0.281	0.976	20	
Naphthalene		50.0	53.4	ug/L	1.52	6.72	20	
n-Propylbenzene		50.0	57.3	ug/L	3.60	14.5	20	
Styrene		50.0	60.7	ug/L	1.09	21.3	20	*
1,1,1,2-Tetrachloroethane		50.0	52.0	ug/L	0.362	3.91	20	
Tetrachloroethene		50.0	52.5	ug/L	0.318	5.03	20	
1,2,3-Trichlorobenzene		50.0	49.5	ug/L	0.769	1.08	20	
1,2,4-Trichlorobenzene		50.0	51.2	ug/L	0.904	2.34	20	
1,1,1-Trichloroethane		50.0	53.2	ug/L	0.456	6.48	20	
1,1,2-Trichloroethane		50.0	49.3	ug/L	0.234	1.41	20	
Trichloroethene		50.0	51.8	ug/L	0.283	3.53	20	
Trichlorofluoromethane		50.0	53.1	ug/L	0.448	6.16	20	
1,2,3-Trichloropropane		50.0	46.7	ug/L	0.135	6.59	20	
1,2,4-Trimethylbenzene		50.0	58.2	ug/L	2.60	16.4	20	
1,3,5-Trimethylbenzene		50.0	59.7	ug/L	2.53	19.3	20	
o-Xylene		50.0	56.5	ug/L	0.654	13.1	20	
m-,p-Xylene		100	114	ug/L	0.659	14.1	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3016816
Report generated 08/05/2013 15:01

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13080031
Instrument ID: HPMS11
Workgroup (AAB#): WG439851

ICAL CCV Number: WG439392-08
CAL ID: HPMS11-29-JUL-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG439392-08	NA	NA	324990	599873	763056
Upper Limit	NA	NA	649980	1199746	1526112
Lower Limit	NA	NA	162495	299937	381528
L13080031-01	1.00	01	271950	525122	639371
L13080031-02	1.00	01	278116	525225	649477
WG439851-01	1.00	01	270109	519156	671618
WG439851-02	1.00	01	297534	549370	694778
WG439851-03	1.00	02	272486	524686	686126
WG439851-08	1.00	01	285673	522152	660104

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3019200
Report generated 08/05/2013 15:01

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13080031
Instrument ID: HPMS11
Workgroup (AAB#): WG439851

ICAL CCV Number: WG439392-08
CAL ID: HPMS11-29-JUL-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG439392-08	NA	NA	16.49	13.69	10.07
Upper Limit	NA	NA	16.99	14.19	10.57
Lower Limit	NA	NA	15.99	13.19	9.57
L13080031-01	1.00	01	16.49	13.69	10.07
L13080031-02	1.00	01	16.49	13.69	10.07
WG439851-01	1.00	01	16.49	13.69	10.07
WG439851-02	1.00	01	16.49	13.69	10.07
WG439851-03	1.00	02	16.49	13.69	10.07
WG439851-08	1.00	01	16.49	13.69	10.07

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3019201
Report generated: 08/05/2013 15:01

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\080113\11M93814.D Vial: 14
Acq On : 1 Aug 2013 18:10 Operator: TMB
Sample : L13080031-01 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 02 08:17:27 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	639371	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	525122	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	271950	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.08	111	169677	26.7582 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.04%		
43) 1,2-Dichloroethane-d4	9.69	65	171261	25.7043 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.80%		
58) Toluene-d8	11.93	98	623810	26.4456 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.80%		
80) p-Bromofluorobenzene	15.09	95	251894	28.2626 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 113.04%		

Target Compounds

					Qvalue
3) Chloromethane	3.31	50	2701	0.2875 ug/L #	62
5) 1,3-Butadiene	3.58	54	201	Below Cal #	1
11) Acrolein	5.70	56	694	1.0439 ug/L #	13
13) Acetone	5.80	43	8521	5.3235 ug/L #	1
18) Methyl acetate	6.47	43	6451	1.4145 ug/L #	58
24) n-Hexane	7.29	57	6406	0.6562 ug/L #	63
29) 2-Butanone	8.35	43	2015	0.9878 ug/L #	49
39) Cyclohexane	9.35	56	4900	0.3768 ug/L #	10

(#) = qualifier out of range (m) = manual integration
11M93814.D 8260WTR.M Fri Aug 02 08:17:28 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\080113\11M93814.D Vial: 14
Acq On : 1 Aug 2013 18:10 Operator: TMB
Sample : L13080031-01 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 2 8:17 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration

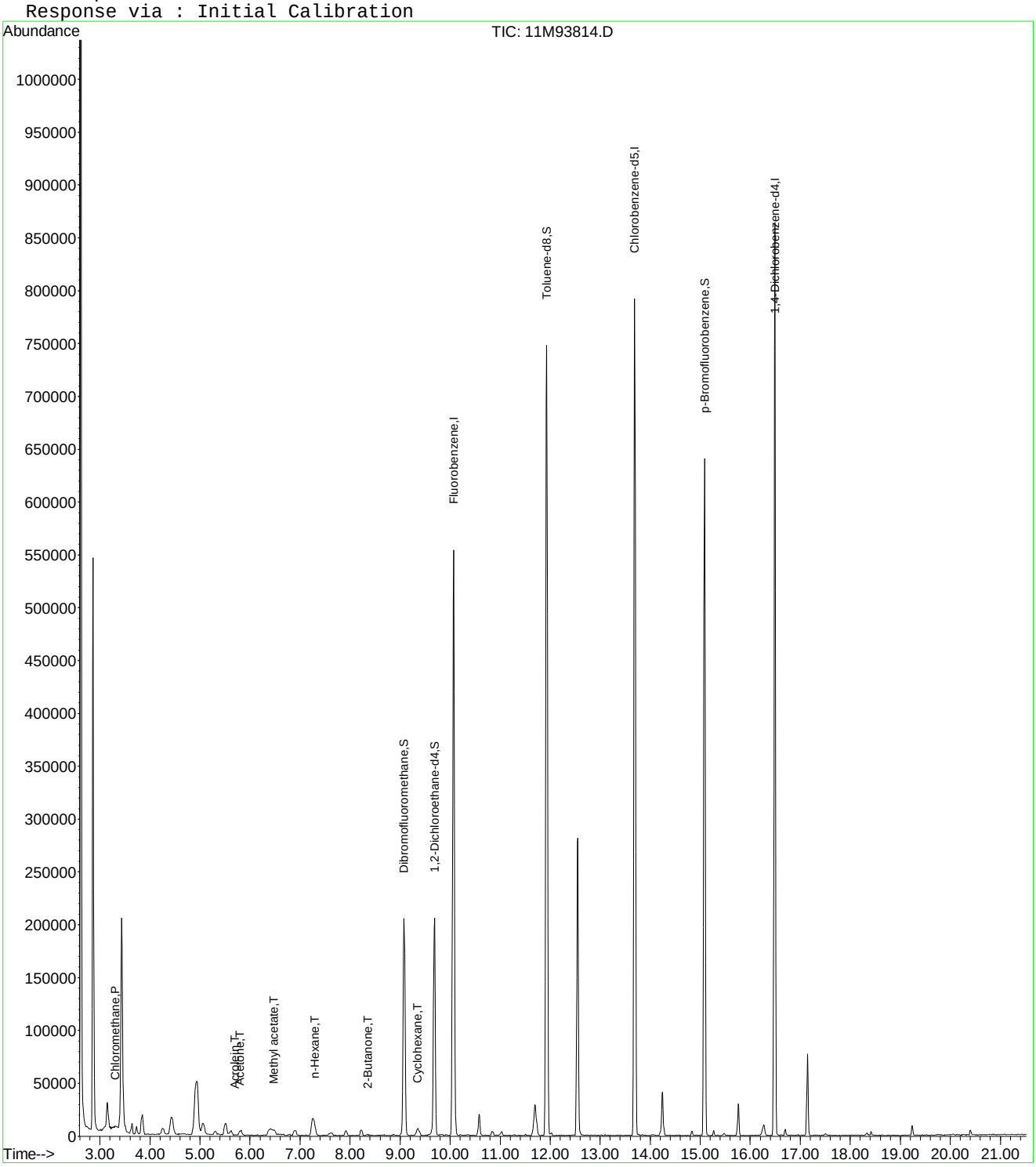

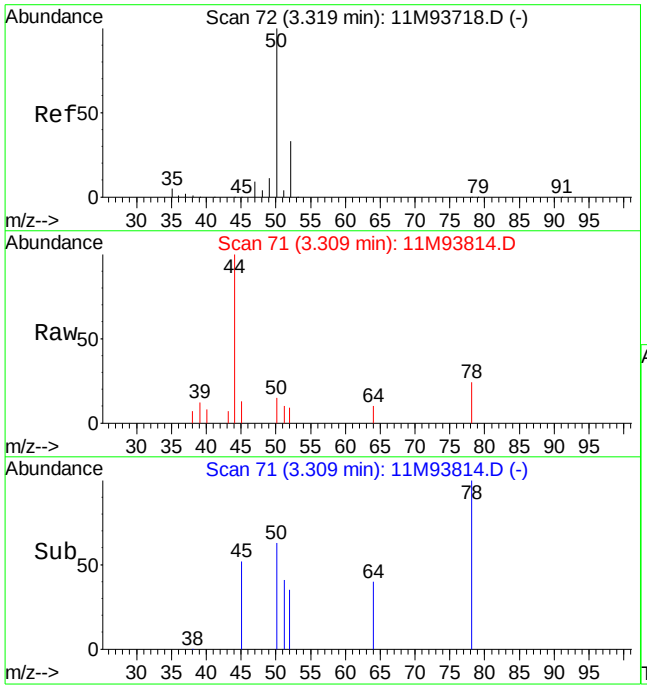

#3
Chloromethane
Concen: 0.29 ug/L
RT: 3.31 min Scan# 71
Delta R.T. -0.01 min
Lab File: 11M93814.D
Acq: 1 Aug 2013 18:10

Tgt Ion: 50 Resp: 2701

Ion	Ratio	Lower	Upper
50	100		
52	53.6	19.4	45.2#

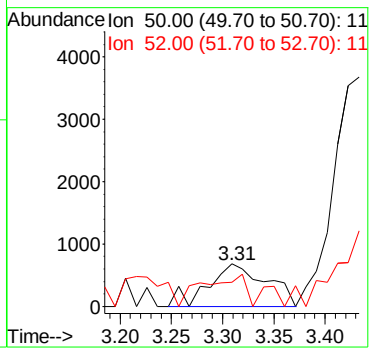

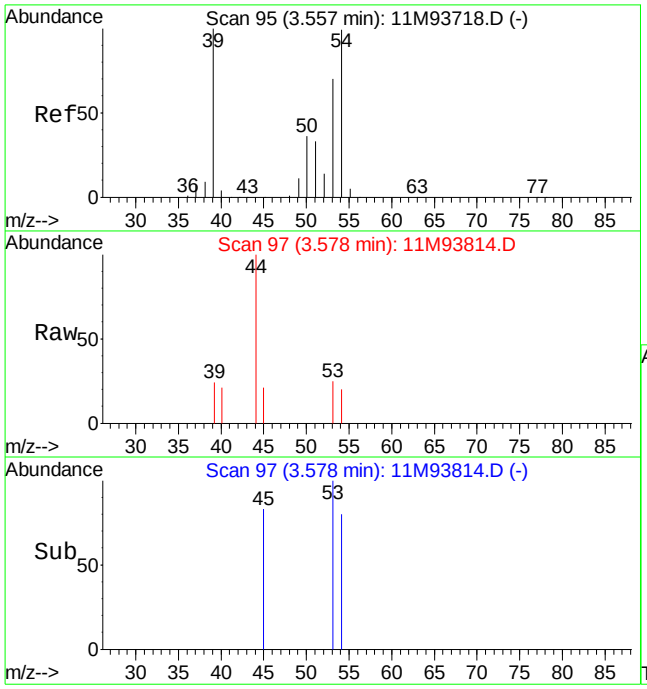

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.58 min Scan# 97
Delta R.T. 0.02 min
Lab File: 11M93814.D
Acq: 1 Aug 2013 18:10

Tgt Ion: 54 Resp: 201

Ion	Ratio	Lower	Upper
54	100		
39	620.4	47.9	111.9#
53	125.4	39.7	92.7#

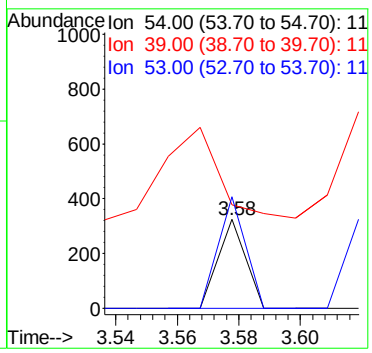

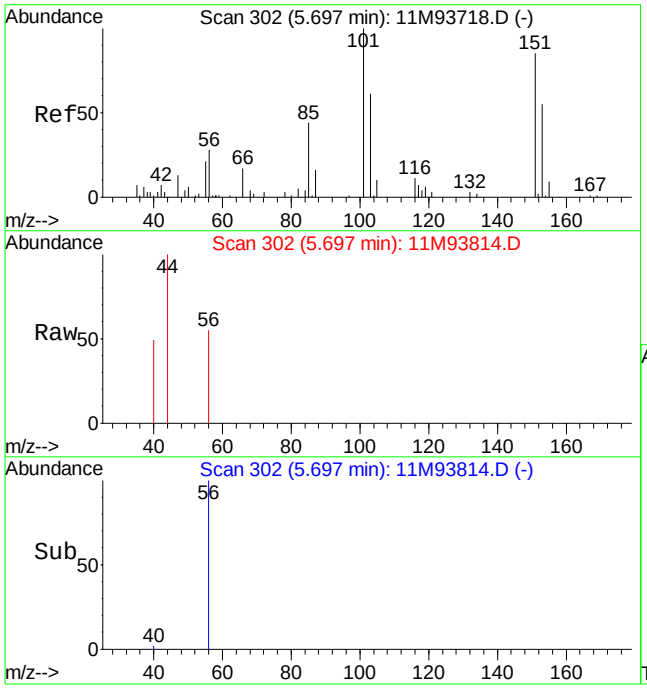

#11
Acrolein
Concen: 1.04 ug/L
RT: 5.70 min Scan# 302
Delta R.T. 0.00 min
Lab File: 11M93814.D
Acq: 1 Aug 2013 18:10

Tgt Ion: 56 Resp: 694

Ion	Ratio	Lower	Upper
56	100		
55	0.0	43.4	101.4#

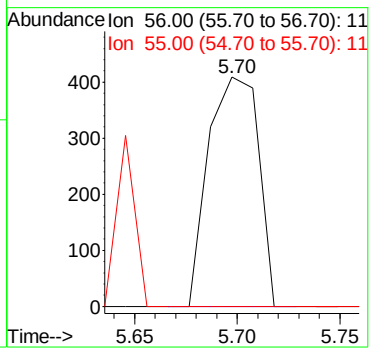

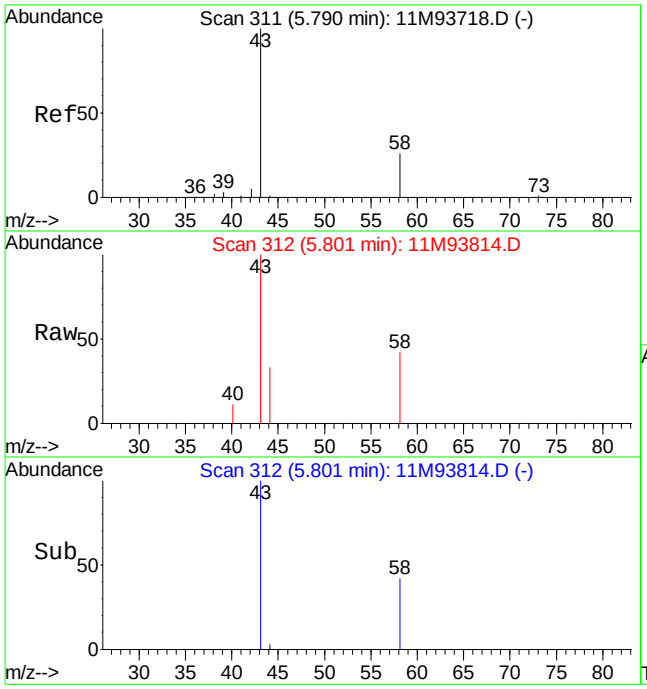

#13
Acetone
Concen: 5.32 ug/L
RT: 5.80 min Scan# 312
Delta R.T. 0.01 min
Lab File: 11M93814.D
Acq: 1 Aug 2013 18:10

Tgt Ion: 43 Resp: 8521

Ion	Ratio	Lower	Upper
43	100		
58	83.0	17.6	41.2#

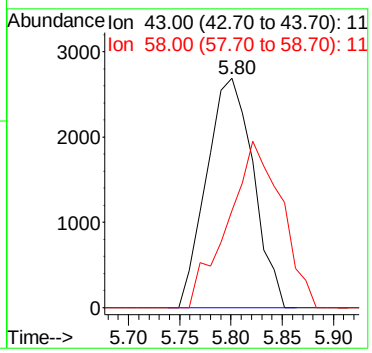

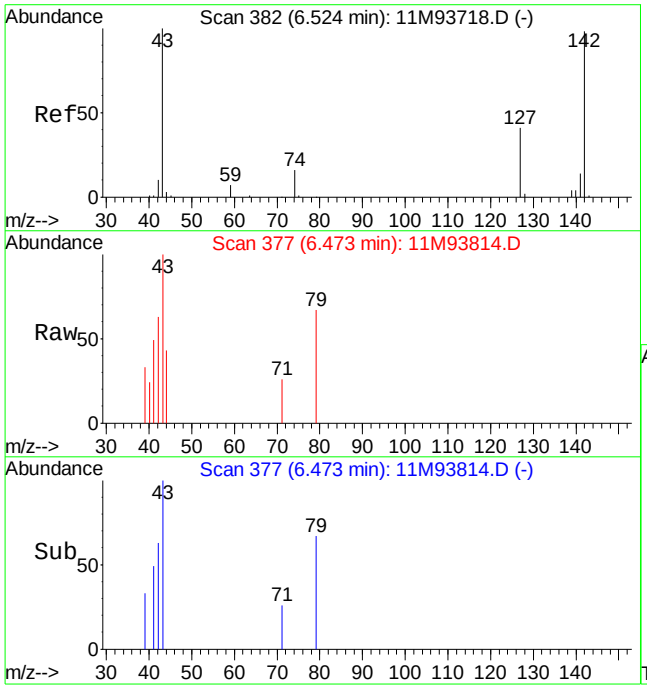

#18
Methyl acetate
Concen: 1.41 ug/L
RT: 6.47 min Scan# 377
Delta R.T. -0.05 min
Lab File: 11M93814.D
Acq: 1 Aug 2013 18:10

Tgt Ion: 43 Resp: 6451

Ion	Ratio	Lower	Upper
43	100		
74	0.0	14.2	33.2#
59	0.0	5.8	13.6#

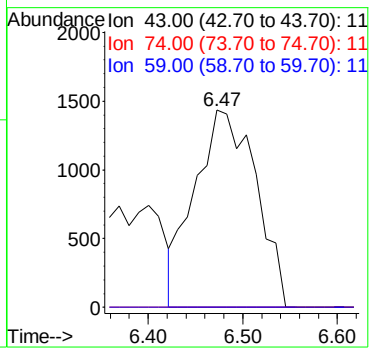

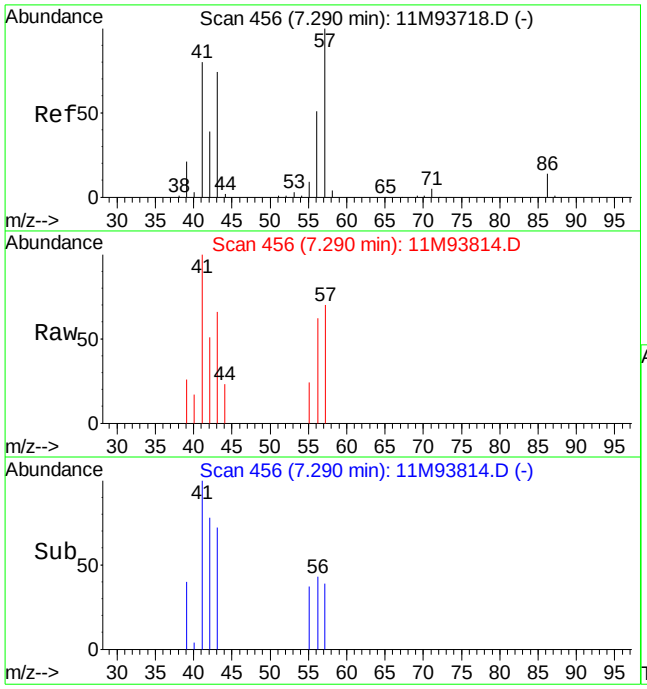

#24
n-Hexane
Concen: 0.66 ug/L
RT: 7.29 min Scan# 456
Delta R.T. -0.00 min
Lab File: 11M93814.D
Acq: 1 Aug 2013 18:10

Tgt Ion: 57 Resp: 6406

Ion	Ratio	Lower	Upper
57	100		
86	0.0	11.8	27.6#
71	0.0	3.7	8.7#

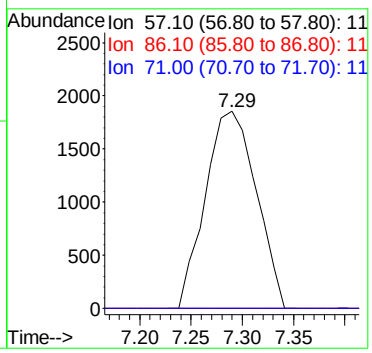

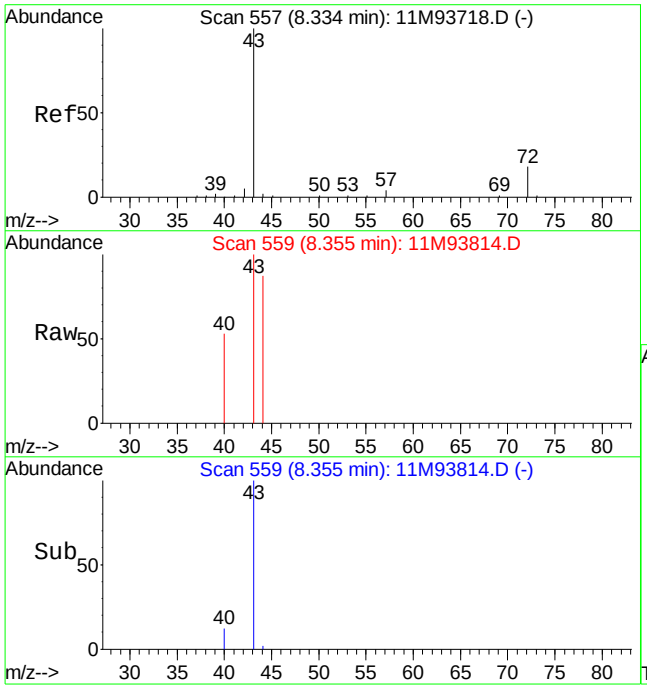

#29
2-Butanone
Concen: 0.99 ug/L
RT: 8.35 min Scan# 559
Delta R.T. 0.02 min
Lab File: 11M93814.D
Acq: 1 Aug 2013 18:10

Tgt Ion: 43 Resp: 2015

Ion	Ratio	Lower	Upper
43	100		
72	0.0	15.8	36.8#

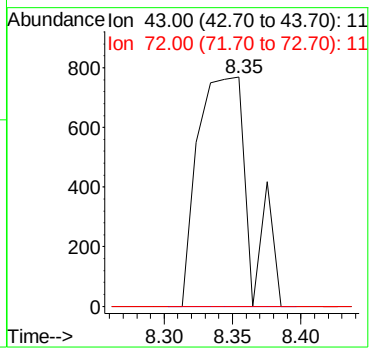

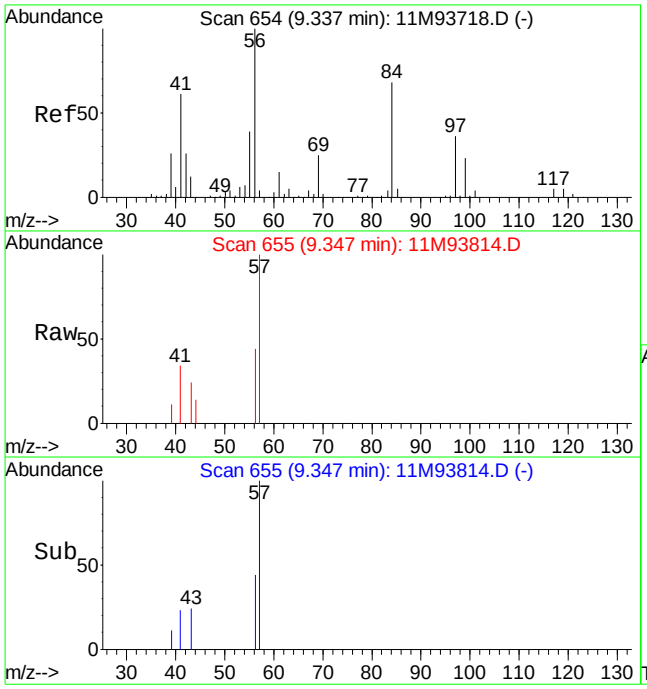

#39
Cyclohexane
Concen: 0.38 ug/L
RT: 9.35 min Scan# 655
Delta R.T. 0.01 min
Lab File: 11M93814.D
Acq: 1 Aug 2013 18:10

Tgt Ion: 56 Resp: 4900

Ion	Ratio	Lower	Upper
56	100		
69	0.0	20.6	48.2#
84	0.0	60.1	140.3#

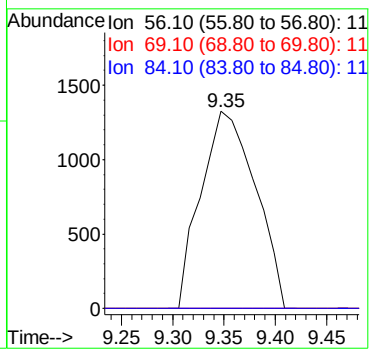

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\080113\11M93815.D Vial: 15
Acq On : 1 Aug 2013 18:41 Operator: TMB
Sample : L13080031-02 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 02 08:17:30 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	649477	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	525225	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	278116	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.08	111	165548	25.7008 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.80%		
43) 1,2-Dichloroethane-d4	9.69	65	169115	24.9872 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.96%		
58) Toluene-d8	11.93	98	631707	26.7751 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 107.12%		
80) p-Bromofluorobenzene	15.09	95	246327	27.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.12%		

Target Compounds					Qvalue
3) Chloromethane	3.31	50	2561	0.2683 ug/L	84
4) Vinyl Chloride	3.52	62	4000	0.4838 ug/L	97
5) 1,3-Butadiene	3.57	54	640	Below Cal #	54
13) Acetone	5.80	43	4539	2.7916 ug/L #	63
14) 1,1-Dichloroethene	6.02	61	1574352	140.4498 ug/L	91
18) Methyl acetate	6.48	43	13348	2.8813 ug/L #	58
24) n-Hexane	7.29	57	12876	1.2985 ug/L #	79
27) 1,1-Dichloroethane	7.80	63	391354	27.7967 ug/L	97
29) 2-Butanone	8.33	43	1228	0.5926 ug/L #	49
32) cis-1,2-Dichloroethene	8.60	96	3462	0.4469 ug/L	97
33) Chloroform	8.81	83	5685	0.4462 ug/L	87
39) Cyclohexane	9.35	56	3812	0.2886 ug/L #	10
45) 1,2-Dichloroethane	9.80	62	97719	11.1699 ug/L	96
46) Benzene	9.83	78	3760	0.1365 ug/L	85
47) Trichloroethene	10.55	130	9083	1.2781 ug/L	95
50) 1,4-Dioxane	11.01	88	6497	198.6644 ug/L #	57
63) 1,1,2-Trichloroethane	12.39	97	28825	5.7762 ug/L	94
93) 1,3-Dichlorobenzene	16.52	146	2206	0.1414 ug/L #	1
94) 1,4-Dichlorobenzene	16.52	146	2206	0.1378 ug/L #	1

(#) = qualifier out of range (m) = manual integration
11M93815.D 8260WTR.M Fri Aug 02 08:17:31 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\080113\11M93815.D Vial: 15
Acq On : 1 Aug 2013 18:41 Operator: TMB
Sample : L13080031-02 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 2 8:17 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration

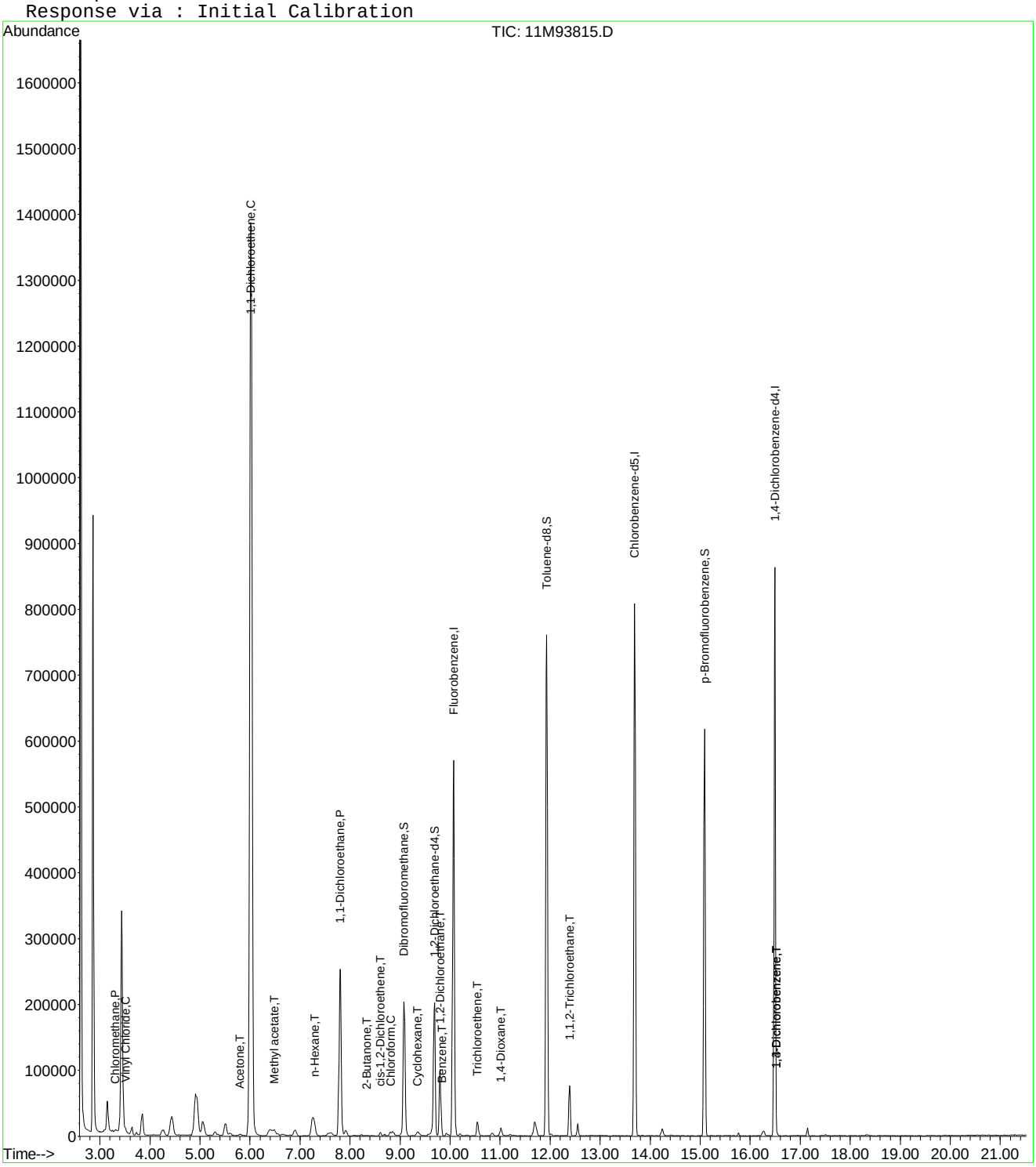

11M93815.D 8260WTR.M Fri Aug 02 08:17:31 2013 Page 2

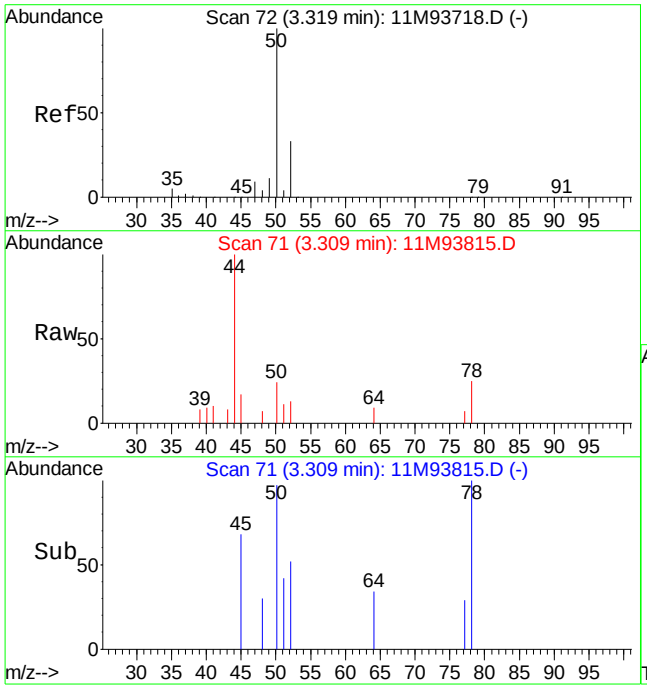

#3
Chloromethane
Concen: 0.27 ug/L
RT: 3.31 min Scan# 71
Delta R.T. -0.01 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion: 50 Resp: 2561

Ion	Ratio	Lower	Upper
50	100		
52	41.0	19.4	45.2

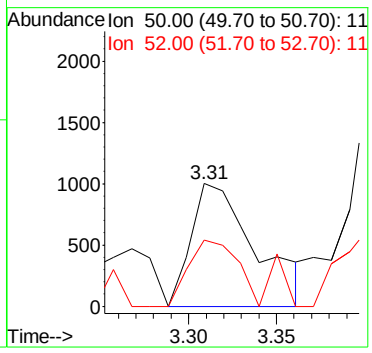

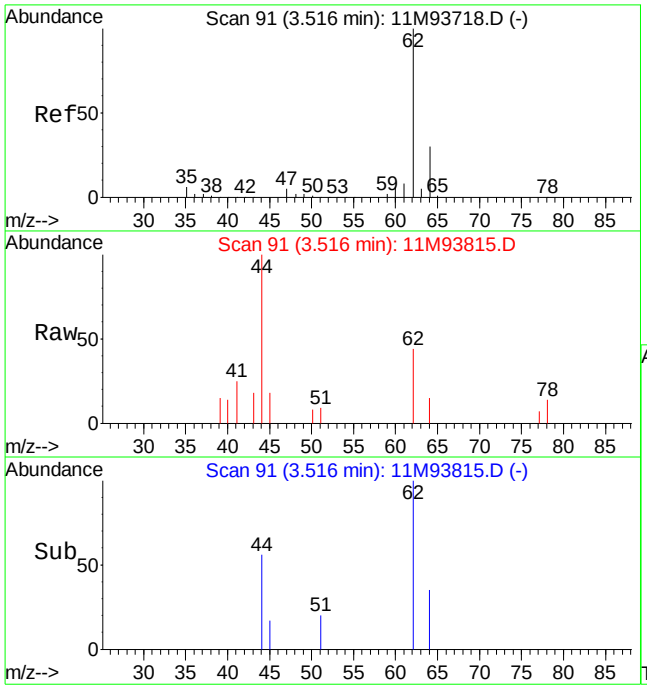

#4
Vinyl Chloride
Concen: 0.48 ug/L
RT: 3.52 min Scan# 91
Delta R.T. 0.00 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion: 62 Resp: 4000

Ion	Ratio	Lower	Upper
62	100		
64	35.1	19.9	46.5

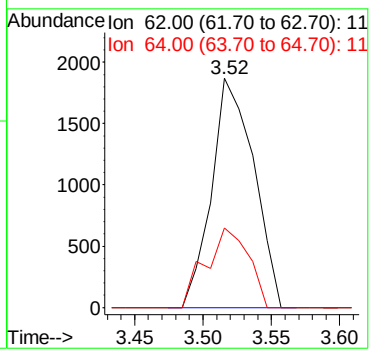

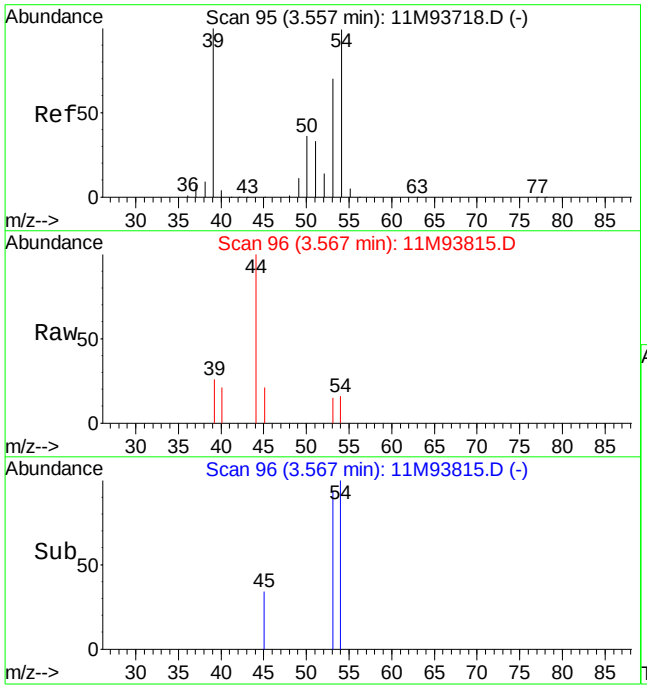

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.57 min Scan# 96
Delta R.T. 0.01 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion: 54 Resp: 640

Ion	Ratio	Lower	Upper
54	100		
39	152.2	47.9	111.9#
53	63.7	39.7	92.7

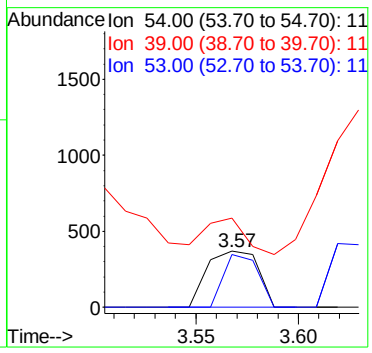

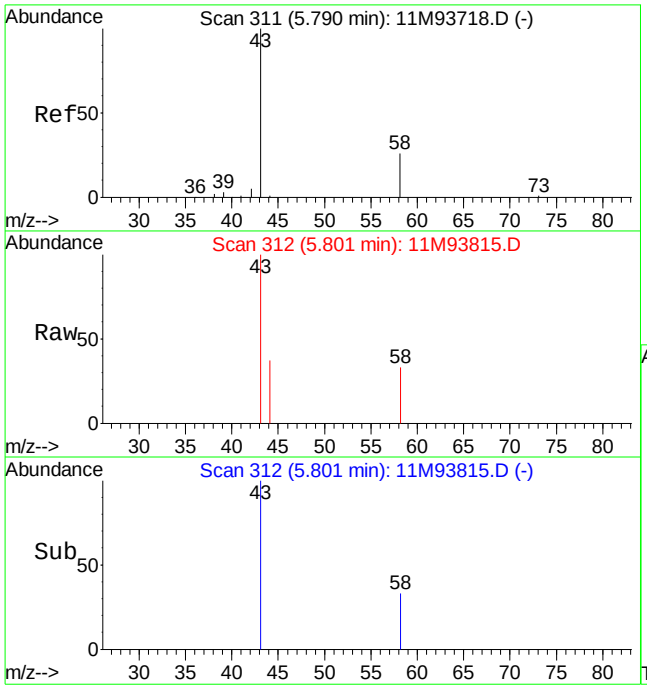

#13
Acetone
Concen: 2.79 ug/L
RT: 5.80 min Scan# 312
Delta R.T. 0.01 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion: 43 Resp: 4539

Ion	Ratio	Lower	Upper
43	100		
58	49.4	17.6	41.2#

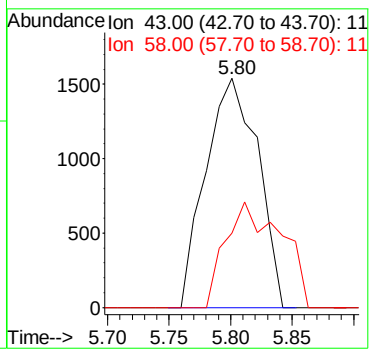

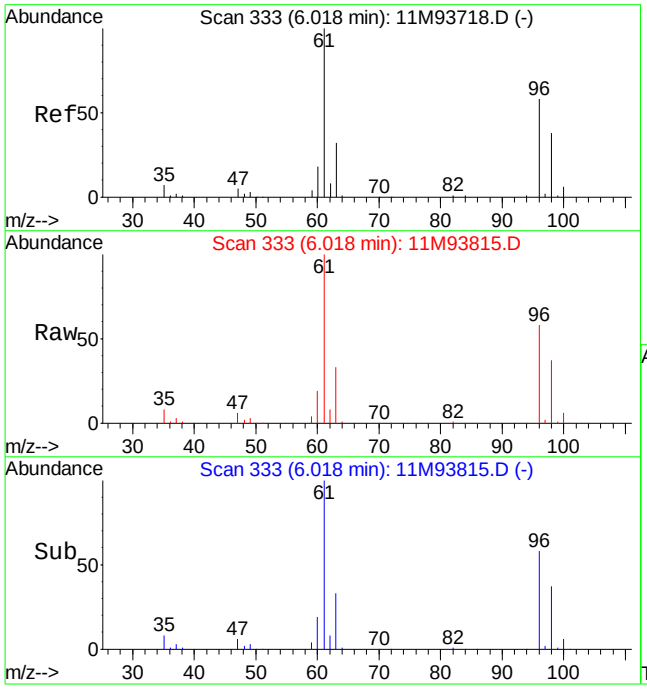

#14
1,1-Dichloroethene
Concen: 140.45 ug/L
RT: 6.02 min Scan# 333
Delta R.T. 0.00 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion: 61 Resp: 1574352

Ion	Ratio	Lower	Upper
61	100		
96	56.5	37.9	88.5

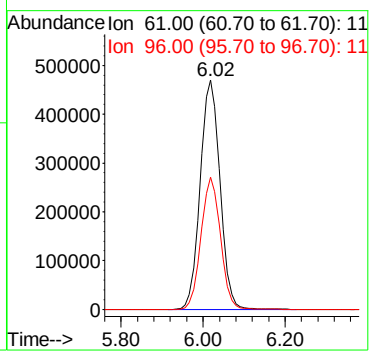

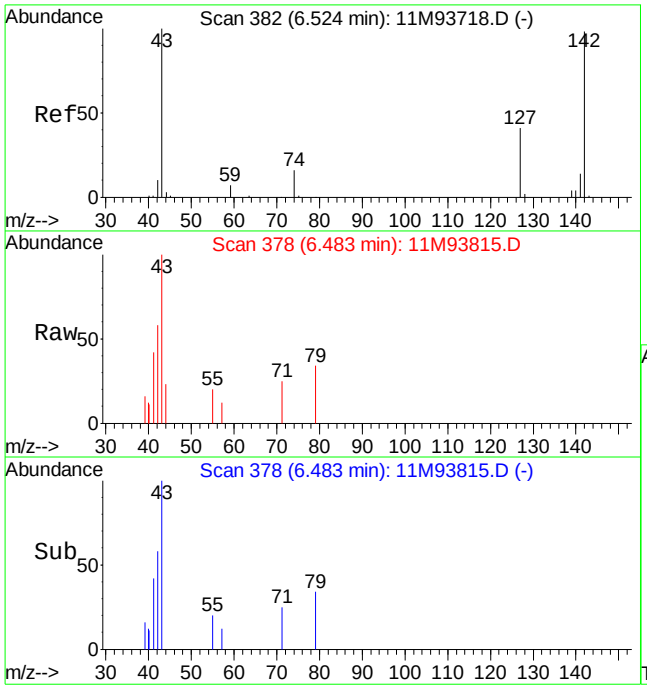

#18
Methyl acetate
Concen: 2.88 ug/L
RT: 6.48 min Scan# 378
Delta R.T. -0.04 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion: 43 Resp: 13348

Ion	Ratio	Lower	Upper
43	100		
74	0.0	14.2	33.2#
59	0.0	5.8	13.6#

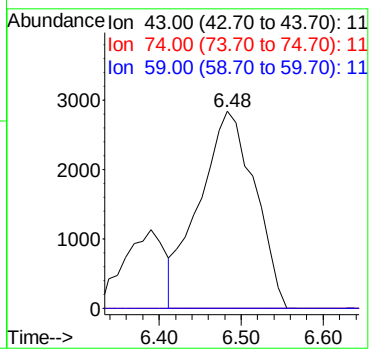

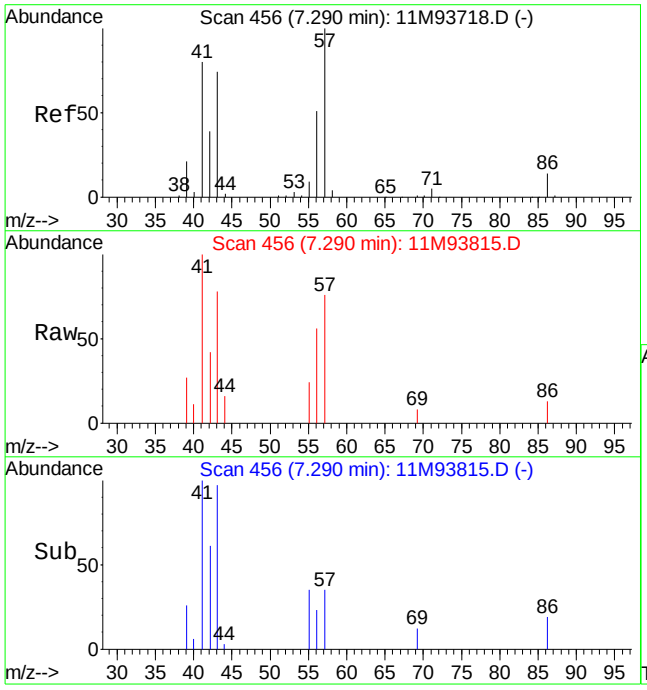

#24
n-Hexane
Concen: 1.30 ug/L
RT: 7.29 min Scan# 456
Delta R.T. 0.00 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion: 57 Resp: 12876

Ion	Ratio	Lower	Upper
57	100		
86	10.0	11.8	27.6#
71	0.0	3.7	8.7#

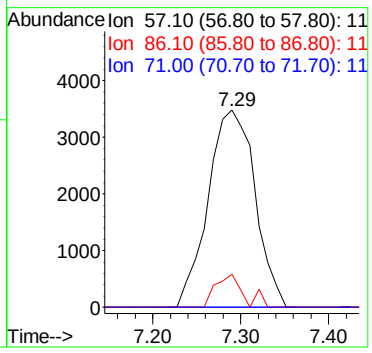

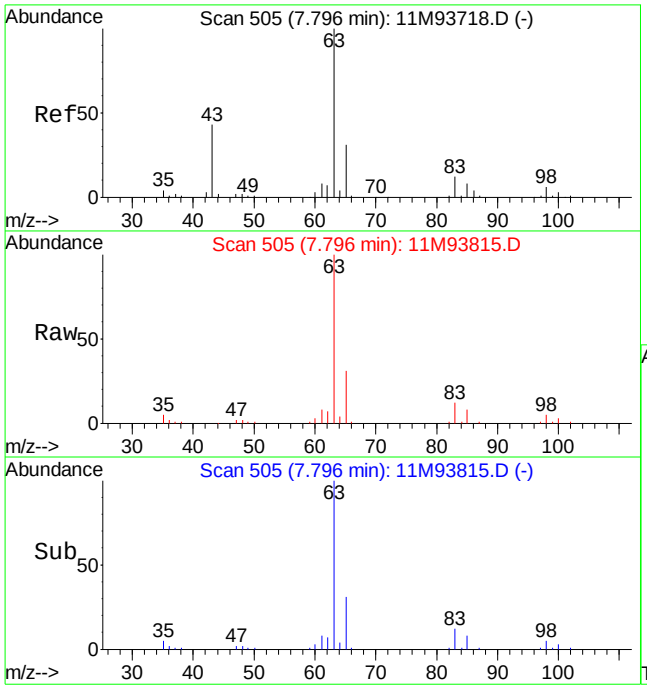

#27
1,1-Dichloroethane
Concen: 27.80 ug/L
RT: 7.80 min Scan# 505
Delta R.T. 0.00 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion: 63 Resp: 391354

Ion	Ratio	Lower	Upper
63	100		
65	30.7	19.1	44.5
83	12.3	8.6	20.2

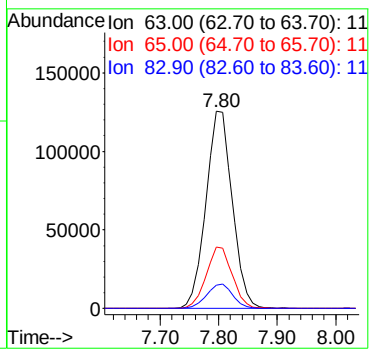

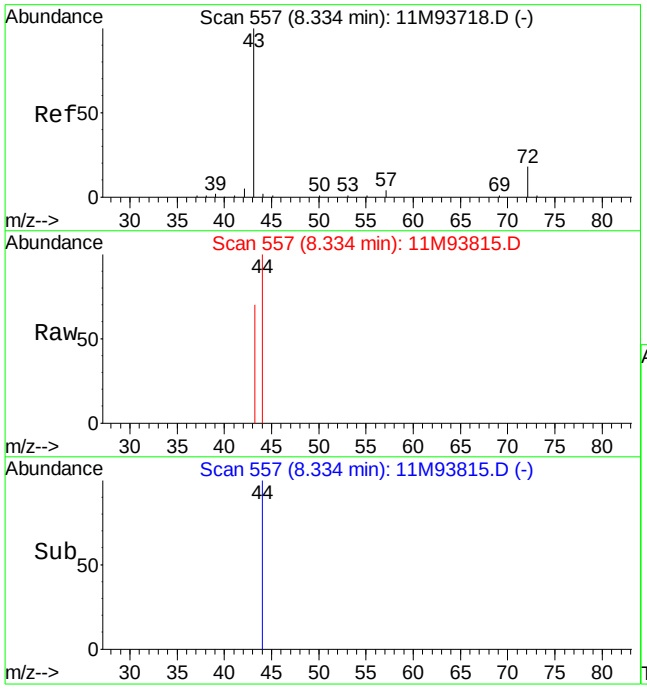

#29
2-Butanone
Concen: 0.59 ug/L
RT: 8.33 min Scan# 557
Delta R.T. 0.00 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion: 43 Resp: 1228

Ion	Ratio	Lower	Upper
43	100		
72	0.0	15.8	36.8#

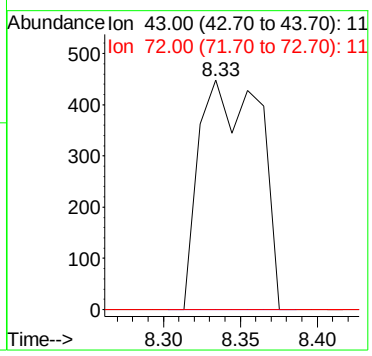

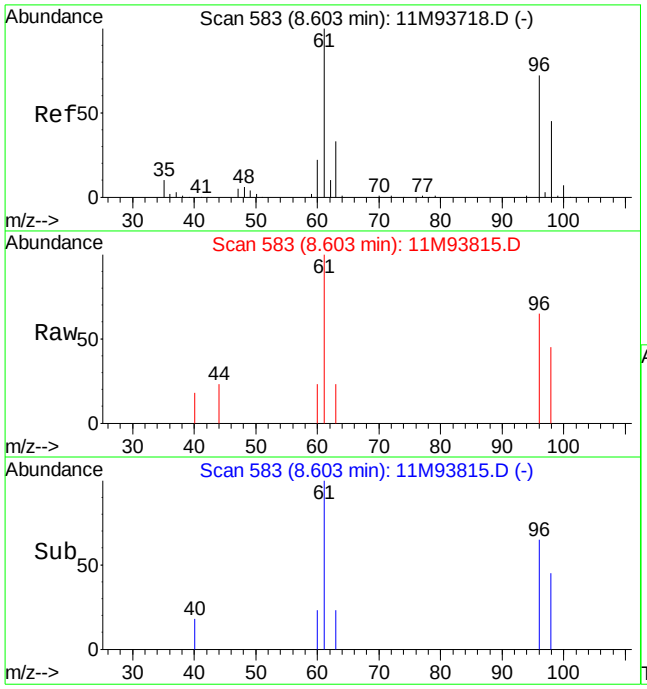

#32
cis-1,2-Dichloroethene
Concen: 0.45 ug/L
RT: 8.60 min Scan# 583
Delta R.T. 0.00 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion: 96 Resp: 3462

Ion	Ratio	Lower	Upper
96	100		
61	139.3	81.5	190.1

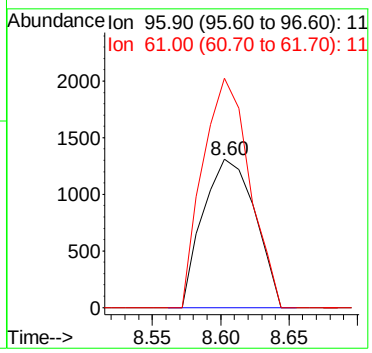

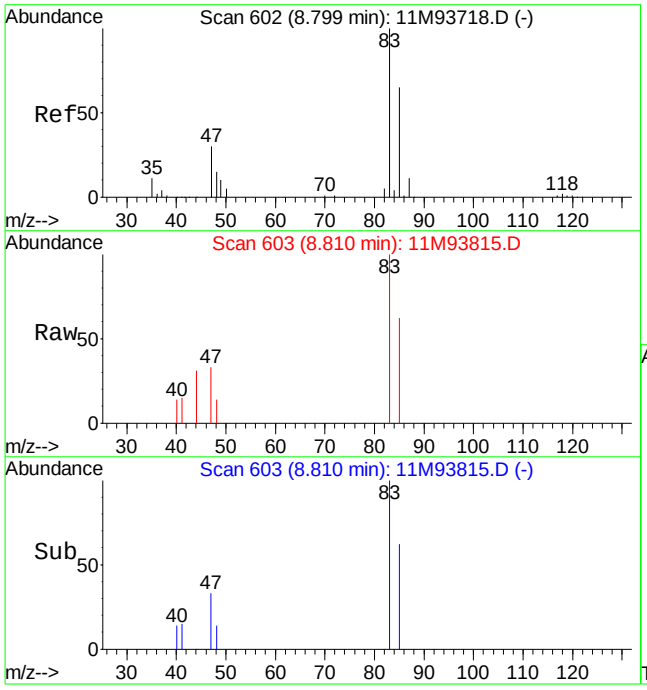

#33
Chloroform
Concen: 0.45 ug/L
RT: 8.81 min Scan# 603
Delta R.T. 0.01 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion: 83 Resp: 5685

Ion	Ratio	Lower	Upper
83	100		
85	57.5	40.7	94.9

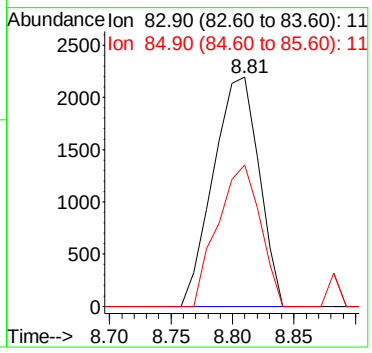

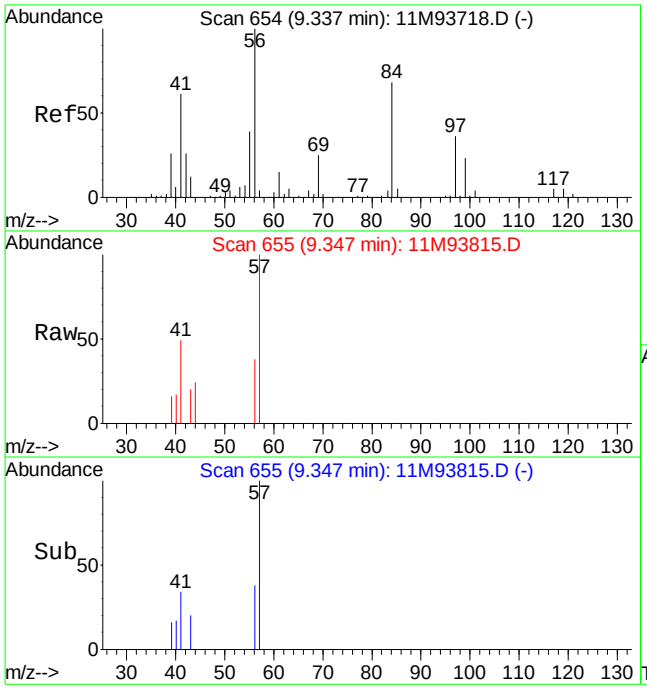

#39
Cyclohexane
Concen: 0.29 ug/L
RT: 9.35 min Scan# 655
Delta R.T. 0.01 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion: 56 Resp: 3812

Ion	Ratio	Lower	Upper
56	100		
69	0.0	20.6	48.2#
84	0.0	60.1	140.3#

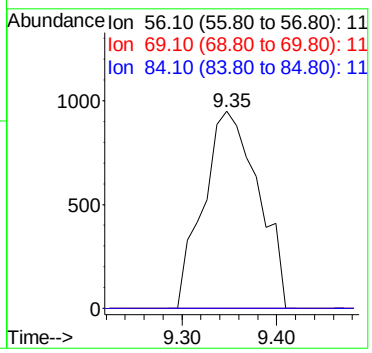

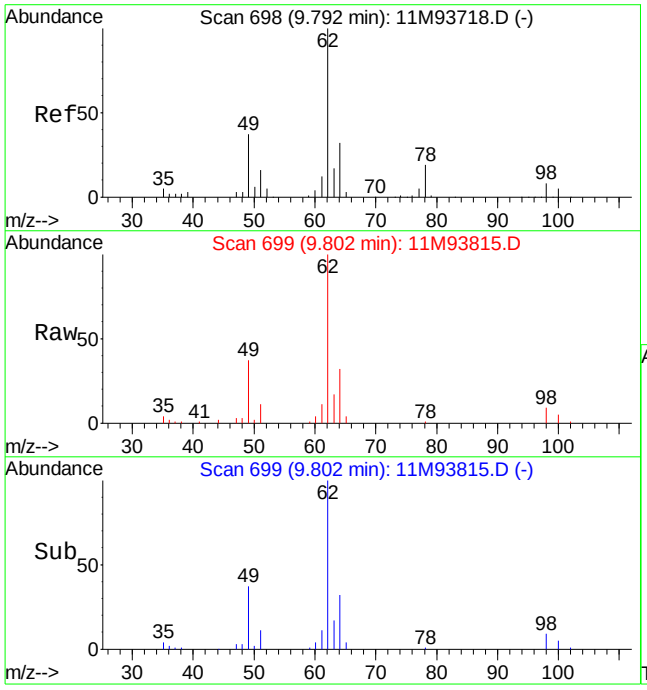

#45
1,2-Dichloroethane
Concen: 11.17 ug/L
RT: 9.80 min Scan# 699
Delta R.T. 0.00 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion: 62 Resp: 97719

Ion	Ratio	Lower	Upper
62	100		
64	31.6	20.0	46.6
49	36.1	20.3	47.3

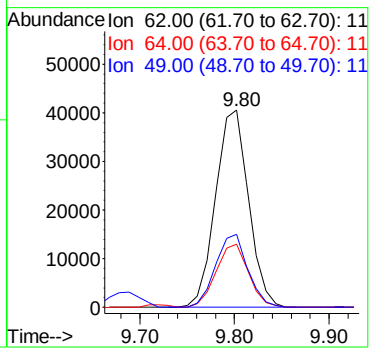

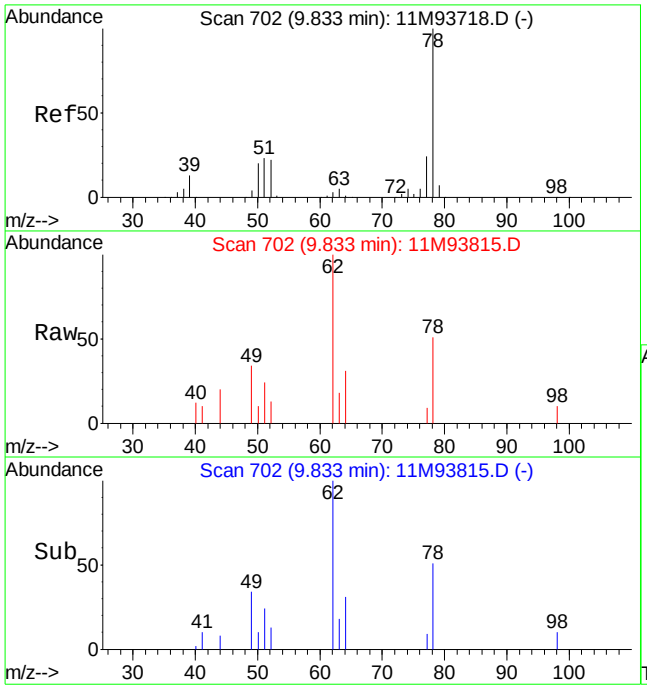

#46
Benzene
Concen: 0.14 ug/L
RT: 9.83 min Scan# 702
Delta R.T. 0.00 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion: 78 Resp: 3760

Ion	Ratio	Lower	Upper
78	100		
77	16.5	14.5	33.7

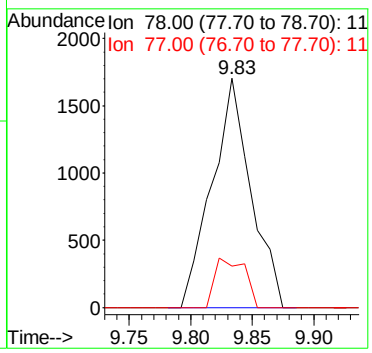

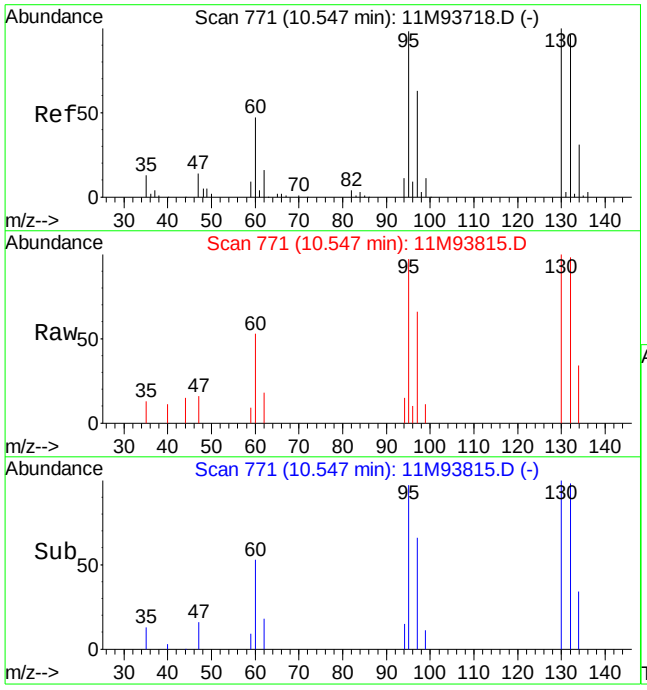

#47
Trichloroethene
Concen: 1.28 ug/L
RT: 10.55 min Scan# 771
Delta R.T. 0.00 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion:130 Resp: 9083

Ion	Ratio	Lower	Upper
130	100		
132	98.6	58.1	135.7
95	97.3	53.2	124.0

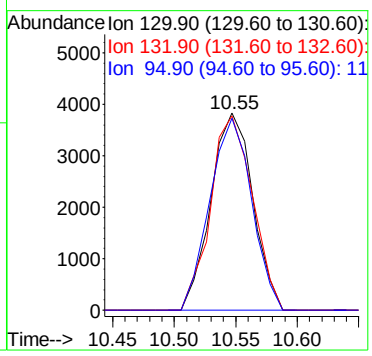

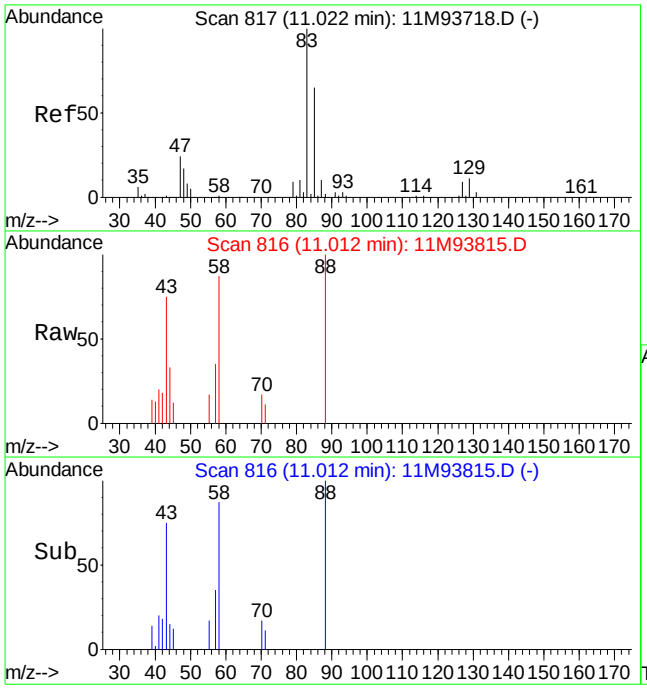

#50
1,4-Dioxane
Concen: 198.66 ug/L
RT: 11.01 min Scan# 816
Delta R.T. -0.01 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion: 88 Resp: 6497

Ion	Ratio	Lower	Upper
88	100		
58	86.3	33.2	77.6#

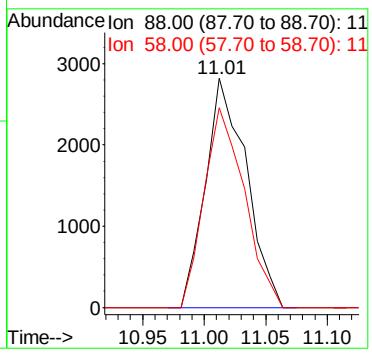

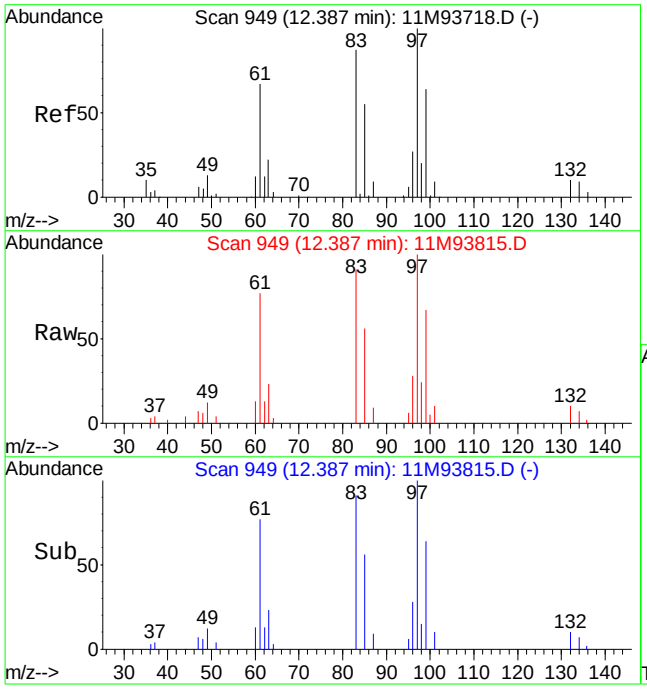

#63
1,1,2-Trichloroethane
Concen: 5.78 ug/L
RT: 12.39 min Scan# 949
Delta R.T. 0.00 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion: 97 Resp: 28825

Ion	Ratio	Lower	Upper
97	100		
83	88.7	49.7	116.1

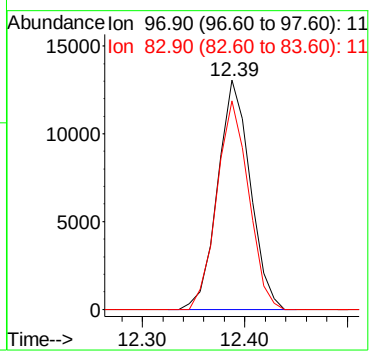

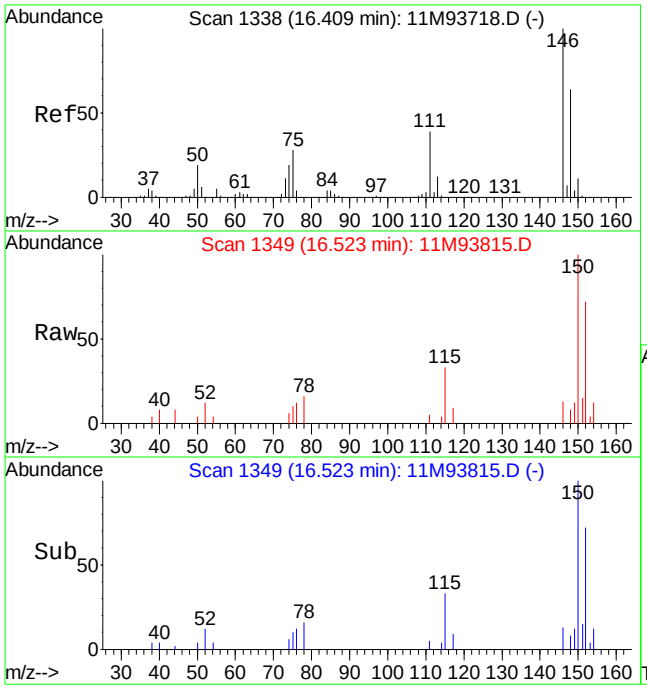

#93
1,3-Dichlorobenzene
Concen: 0.14 ug/L
RT: 16.52 min Scan# 1349
Delta R.T. 0.11 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion:146 Resp: 2206

Ion	Ratio	Lower	Upper
146	100		
111	187.8	22.3	52.1#

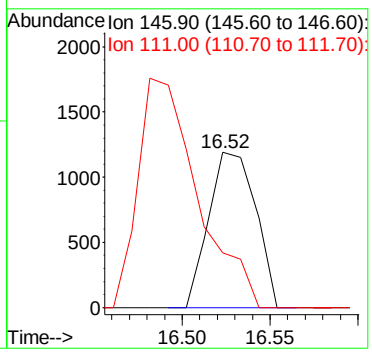

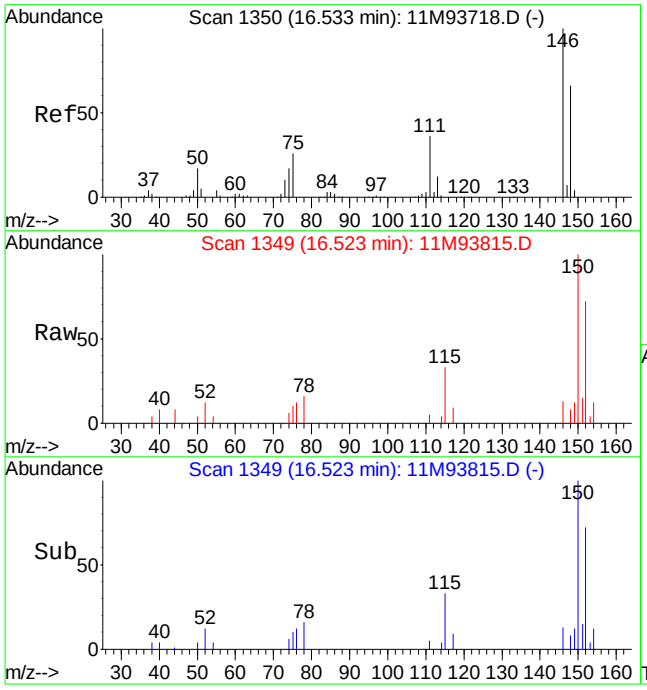

#94
1,4-Dichlorobenzene
Concen: 0.14 ug/L
RT: 16.52 min Scan# 1349
Delta R.T. -0.01 min
Lab File: 11M93815.D
Acq: 1 Aug 2013 18:41

Tgt Ion:146 Resp: 2206

Ion	Ratio	Lower	Upper
146	100		
111	187.8	22.0	51.2#

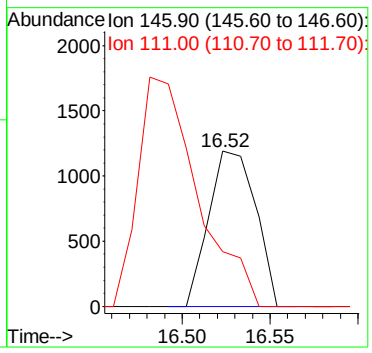

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93288.D Vial: 2
Acq On : 5 Jul 2013 16:29 Operator: FJB
Sample : WG436576-02 5ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 08 16:30:29 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:28:49 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	799330	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	607565	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	316122	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.23	41	4466	4.7464 ug/L	93
3) 3-Chloro-1-propene	6.60	41	32708	4.4710 ug/L	91
4) 2-Chloro-1,3-butadiene	7.93	53	73725	4.9491 ug/L	97
5) Methacrylonitrile	8.70	41	26806	5.3097 ug/L	73
6) Isobutyl Alcohol	8.54	43	22909	77.9340 ug/L #	5
8) Cyclohexanone	14.87	55	2193	20.7907 ug/L #	77
10) Ethyl Acetate	8.54	43	22909	3.4069 ug/L	95
11) Methyl methacrylate	10.75	41	23526	3.6533 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M93288.D A9WTR.M Mon Jul 08 16:30:30 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93288.D Vial: 2
Acq On : 5 Jul 2013 16:29 Operator: FJB
Sample : WG436576-02 5ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 8 16:30 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

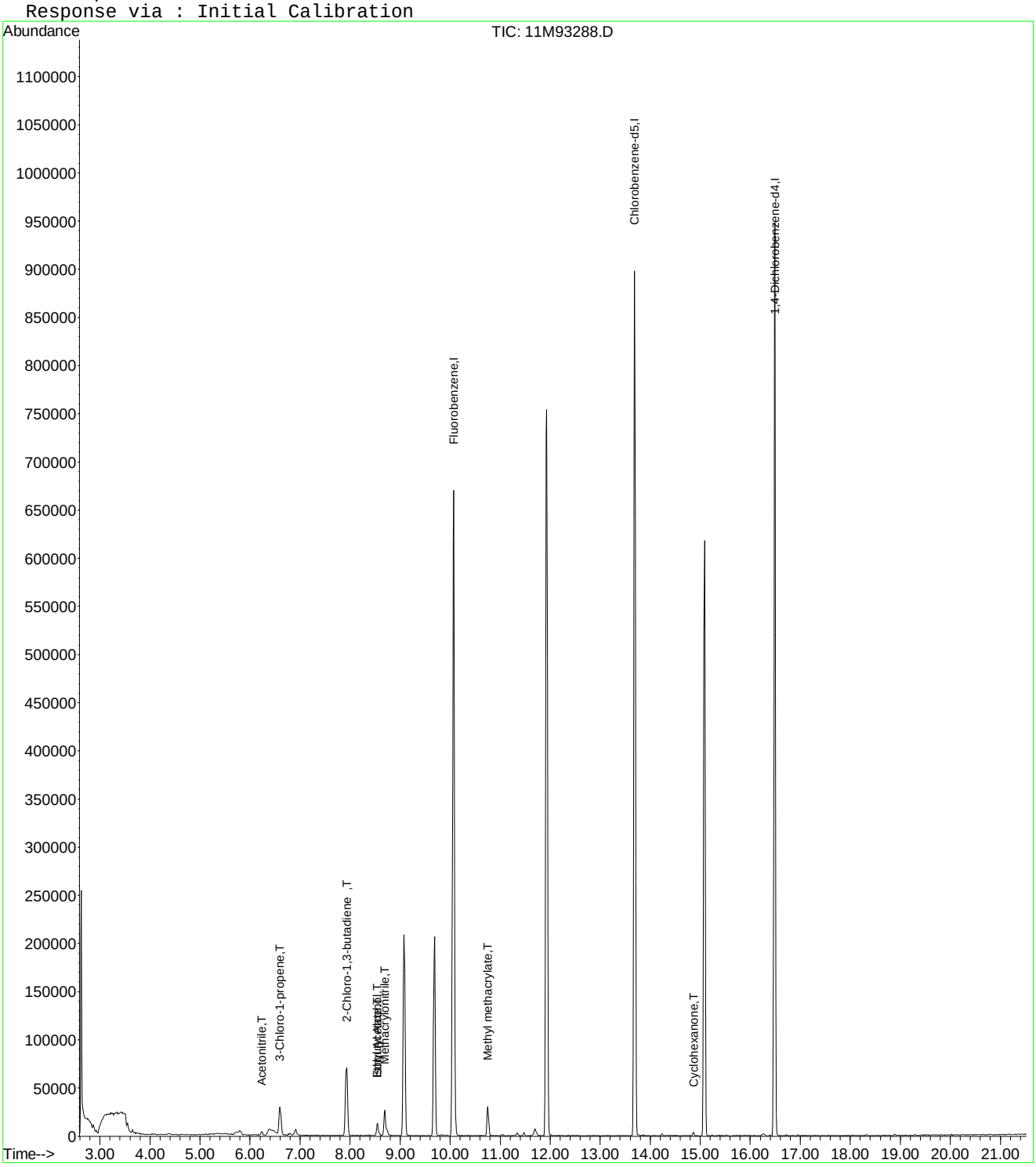

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93289.D Vial: 3
Acq On : 5 Jul 2013 17:00 Operator: FJB
Sample : WG436576-03 20ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 08 16:30:30 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	772779	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	587435	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	310532	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	17042	18.7342 ug/L	96
3) 3-Chloro-1-propene	6.60	41	319041	21.4888 ug/L	91
4) 2-Chloro-1,3-butadiene	7.92	53	302140	20.9794 ug/L	97
5) Methacrylonitrile	8.69	41	91118	18.6687 ug/L	93
6) Isobutyl Alcohol	8.71	43	4852	17.0731 ug/L	78
8) Cyclohexanone	14.86	55	20382	36.5034 ug/L	88
9) 2-Nitropropane	11.05	43	32123	16.0820 ug/L	95
10) Ethyl Acetate	8.54	43	130618	20.0919 ug/L	98
11) Methyl methacrylate	10.75	41	118674	19.0618 ug/L	92

(#) = qualifier out of range (m) = manual integration
11M93289.D A9WTR.M Mon Jul 08 16:30:30 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93289.D Vial: 3
Acq On : 5 Jul 2013 17:00 Operator: FJB
Sample : WG436576-03 20ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 8 16:30 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

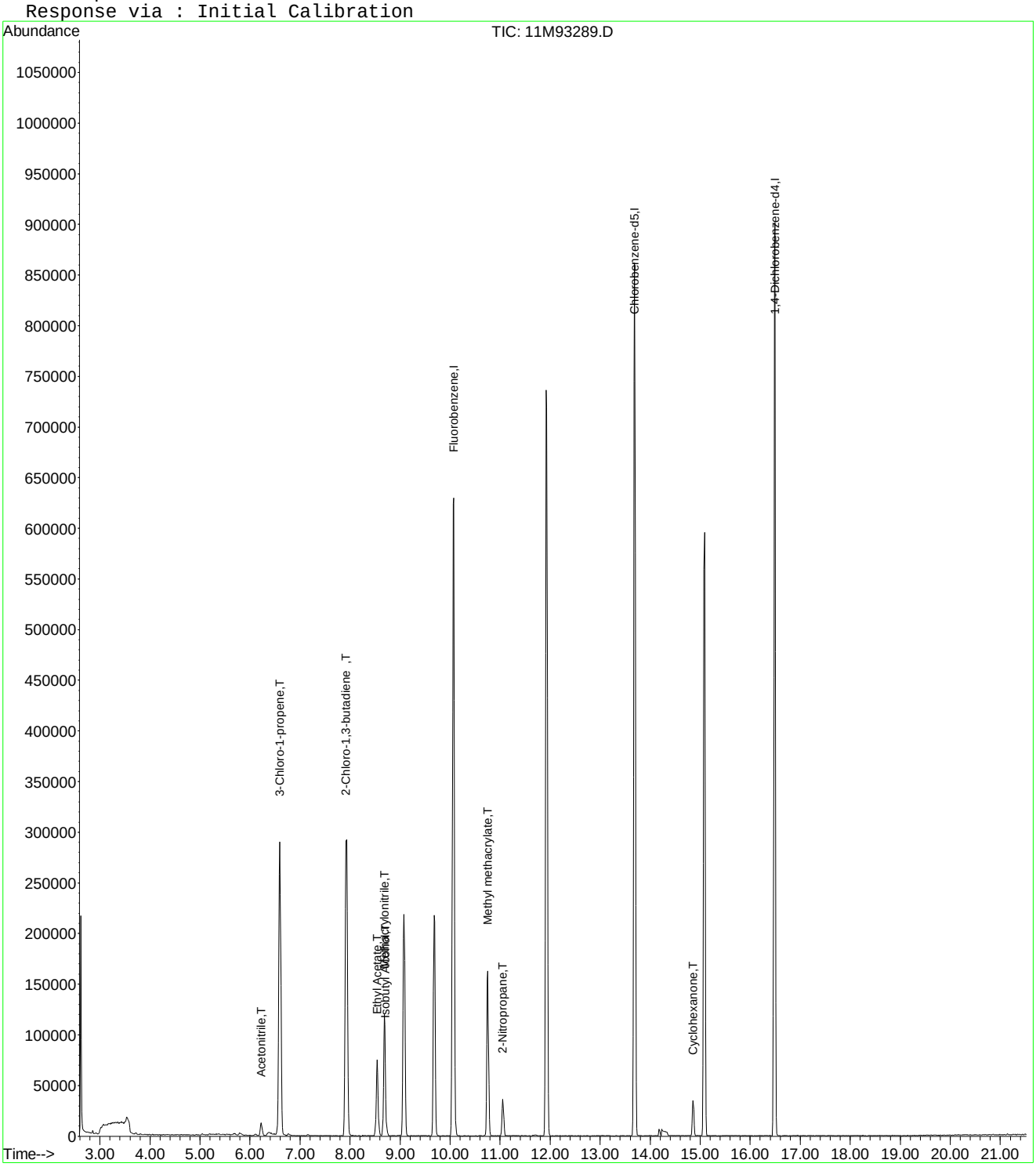

11M93289.D A9WTR.M Mon Jul 08 16:30:31 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93290.D Vial: 4
Acq On : 5 Jul 2013 17:32 Operator: FJB
Sample : WG436576-04 50ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 08 16:30:31 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	744214	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	569810	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	308299	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	44575	50.8820 ug/L	97
3) 3-Chloro-1-propene	6.60	41	768519	50.4910 ug/L	92
4) 2-Chloro-1,3-butadiene	7.92	53	741039	53.4297 ug/L	97
5) Methacrylonitrile	8.69	41	244186	51.9504 ug/L	92
6) Isobutyl Alcohol	8.71	43	16550	60.4710 ug/L	98
7) 1-Butanol	9.60	56	1504	55.9056 ug/L	85
8) Cyclohexanone	14.86	55	49383	62.3119 ug/L	94
9) 2-Nitropropane	11.05	43	90076	46.8262 ug/L	99
10) Ethyl Acetate	8.54	43	339372	54.2066 ug/L	97
11) Methyl methacrylate	10.75	41	317053	52.8807 ug/L	92

(#) = qualifier out of range (m) = manual integration
11M93290.D A9WTR.M Mon Jul 08 16:30:31 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93290.D Vial: 4
Acq On : 5 Jul 2013 17:32 Operator: FJB
Sample : WG436576-04 50ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 8 16:30 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

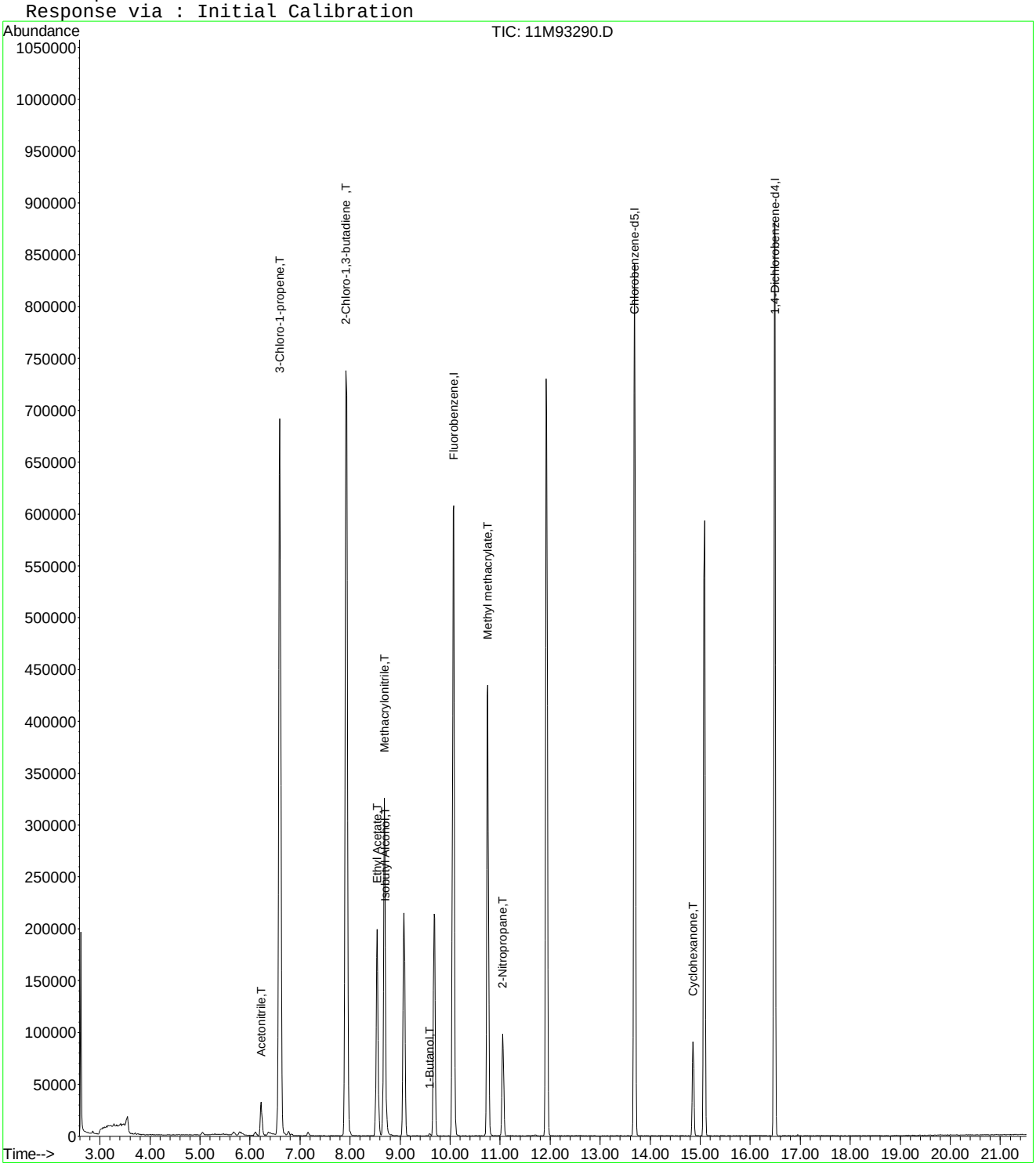

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93291.D Vial: 5
Acq On : 5 Jul 2013 18:03 Operator: FJB
Sample : WG436576-05 100ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 08 16:30:32 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	751500	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	578771	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	304611	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	81017	91.5836 ug/L	98
3) 3-Chloro-1-propene	6.60	41	1509087	97.9187 ug/L	92
4) 2-Chloro-1,3-butadiene	7.92	53	1453426	103.7776 ug/L	99
5) Methacrylonitrile	8.69	41	447590	94.3012 ug/L	93
6) Isobutyl Alcohol	8.71	43	24861	89.9573 ug/L	80
7) 1-Butanol	9.59	56	2894	106.5306 ug/L #	78
8) Cyclohexanone	14.86	55	72768	81.3827 ug/L	91
9) 2-Nitropropane	11.05	43	174231	89.6963 ug/L	99
10) Ethyl Acetate	8.54	43	630836	99.7841 ug/L	99
11) Methyl methacrylate	10.74	41	608256	100.4664 ug/L	92

(#) = qualifier out of range (m) = manual integration
11M93291.D A9WTR.M Mon Jul 08 16:30:32 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93291.D Vial: 5
Acq On : 5 Jul 2013 18:03 Operator: FJB
Sample : WG436576-05 100ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 8 16:30 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

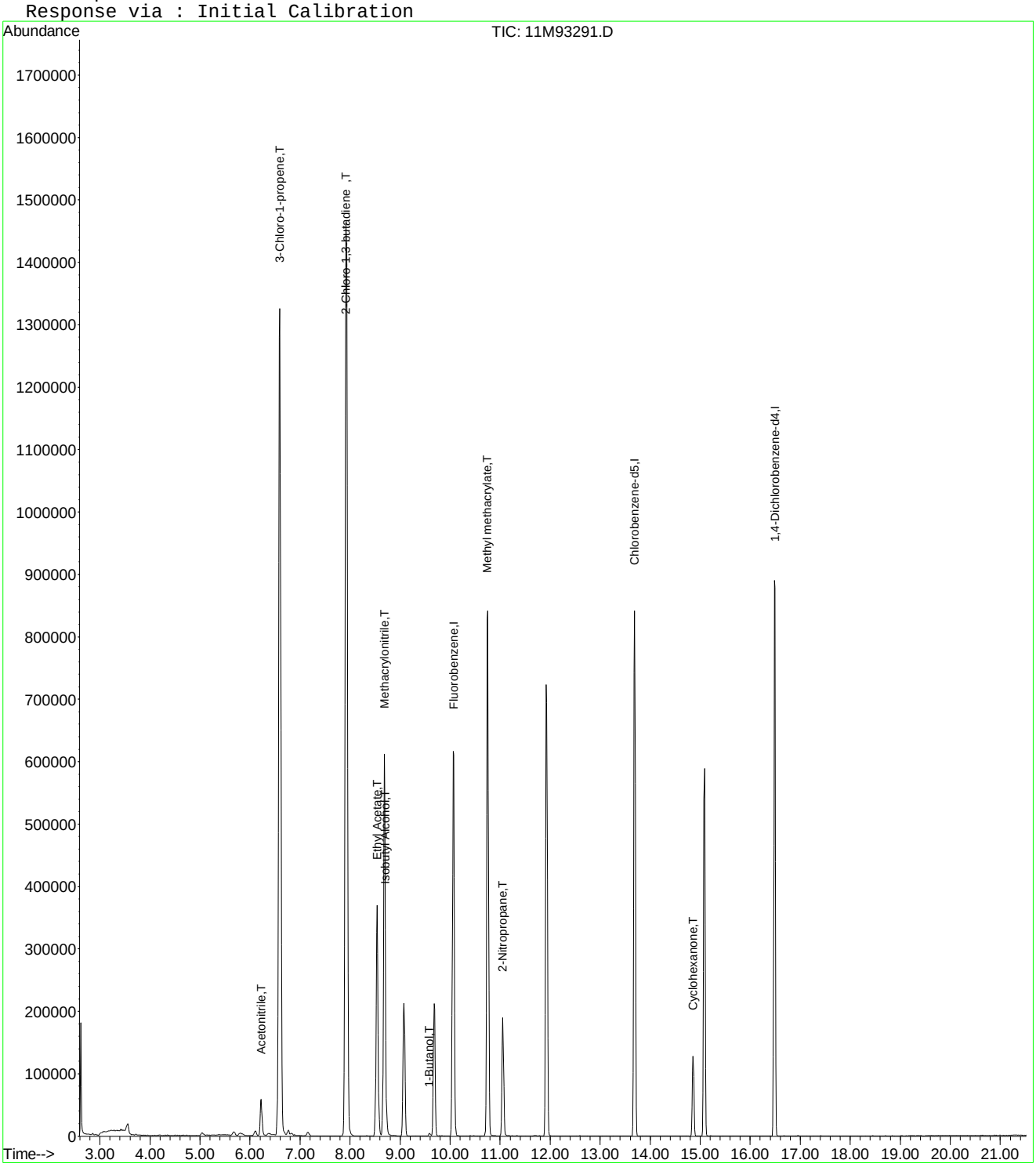

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93292.D Vial: 6
Acq On : 5 Jul 2013 18:35 Operator: FJB
Sample : WG436576-06 200ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 08 16:30:32 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	749695	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	573420	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	304608	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	163779	185.5855 ug/L	100
3) 3-Chloro-1-propene	6.60	41	2942825	198.7926 ug/L	94
4) 2-Chloro-1,3-butadiene	7.92	53	2860757	204.7557 ug/L	100
5) Methacrylonitrile	8.69	41	917419	193.7532 ug/L	93
6) Isobutyl Alcohol	8.70	43	48706	176.6626 ug/L	77
7) 1-Butanol	9.58	56	4781	176.4165 ug/L #	55
8) Cyclohexanone	14.86	55	233169	203.6560 ug/L	92
9) 2-Nitropropane	11.05	43	367000	189.3911 ug/L	99
10) Ethyl Acetate	8.54	43	1287352	204.1204 ug/L	99
11) Methyl methacrylate	10.74	41	1249323	206.8490 ug/L	93

(#) = qualifier out of range (m) = manual integration
11M93292.D A9WTR.M Mon Jul 08 16:30:33 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93292.D Vial: 6
Acq On : 5 Jul 2013 18:35 Operator: FJB
Sample : WG436576-06 200ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 8 16:30 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

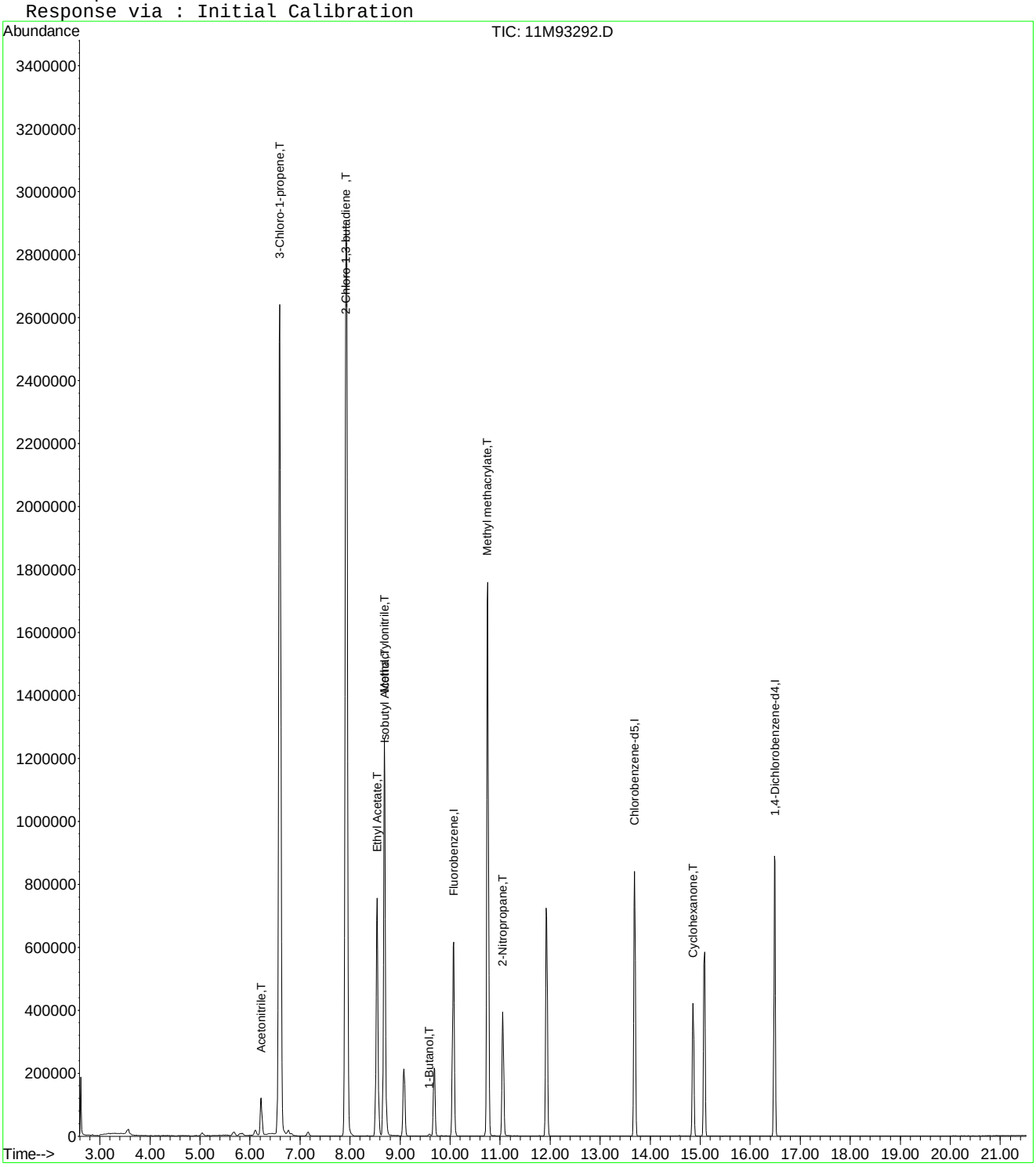

11M93292.D A9WTR.M Mon Jul 08 16:30:33 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93293.D Vial: 7
Acq On : 5 Jul 2013 19:06 Operator: FJB
Sample : WG436576-07 300ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 08 16:30:33 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	750508	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	580552	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	312506	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	277584	314.2024 ug/L	97
3) 3-Chloro-1-propene	6.60	41	4268114	303.3711 ug/L	97
4) 2-Chloro-1,3-butadiene	7.92	53	4192766	299.7678 ug/L	98
5) Methacrylonitrile	8.69	41	1447753	305.4252 ug/L	95
6) Isobutyl Alcohol	8.71	43	73643	266.8228 ug/L	70
7) 1-Butanol	9.58	56	6581	242.5725 ug/L	86
8) Cyclohexanone	14.86	55	385405	305.1560 ug/L	92
9) 2-Nitropropane	11.05	43	610041	314.4718 ug/L	99
10) Ethyl Acetate	8.54	43	2040861	323.2450 ug/L	100
11) Methyl methacrylate	10.74	41	1976571	326.9042 ug/L	94

(#) = qualifier out of range (m) = manual integration
11M93293.D A9WTR.M Mon Jul 08 16:30:34 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93293.D Vial: 7
Acq On : 5 Jul 2013 19:06 Operator: FJB
Sample : WG436576-07 300ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 8 16:30 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

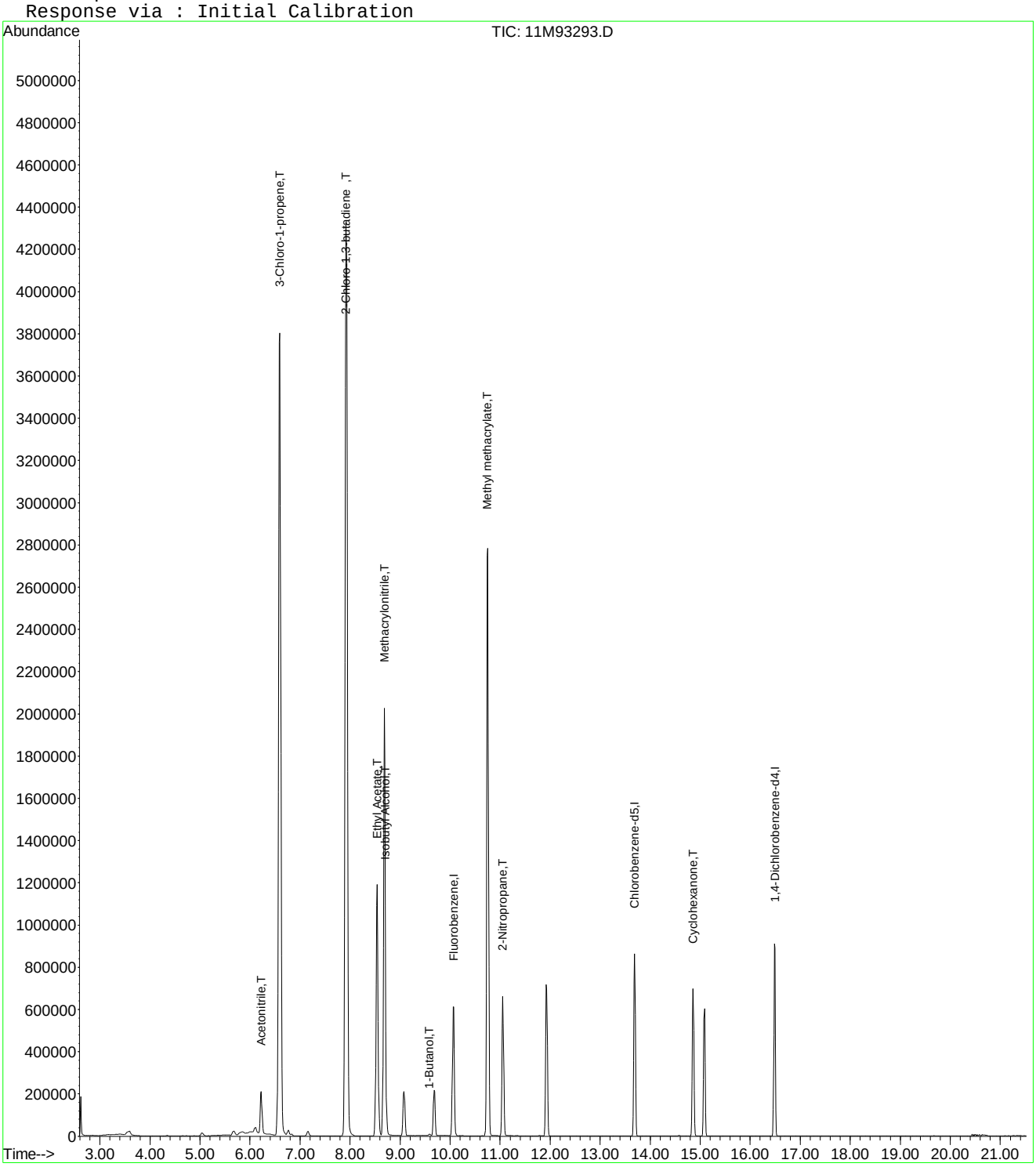

11M93293.D A9WTR.M Mon Jul 08 16:30:34 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93294.D Vial: 8
Acq On : 5 Jul 2013 19:38 Operator: FJB
Sample : WG436576-08 400ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 08 16:30:34 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	757108	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	583224	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	313010	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	393523	441.5529 ug/L	98
3) 3-Chloro-1-propene	6.59	41	5369145	398.6563 ug/L	99
4) 2-Chloro-1,3-butadiene	7.92	53	5309477	376.2995 ug/L	96
5) Methacrylonitrile	8.69	41	1972246	412.4477 ug/L	95
6) Isobutyl Alcohol	8.71	43	116475	418.3325 ug/L	78
7) 1-Butanol	9.59	56	12326	450.3699 ug/L	92
8) Cyclohexanone	14.86	55	542194	397.0233 ug/L	92
9) 2-Nitropropane	11.05	43	857913	438.3929 ug/L	98
10) Ethyl Acetate	8.54	43	2766766	434.3984 ug/L	99
11) Methyl methacrylate	10.74	41	2654994	435.2803 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M93294.D A9WTR.M Mon Jul 08 16:30:34 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93294.D Vial: 8
Acq On : 5 Jul 2013 19:38 Operator: FJB
Sample : WG436576-08 400ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 8 16:30 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

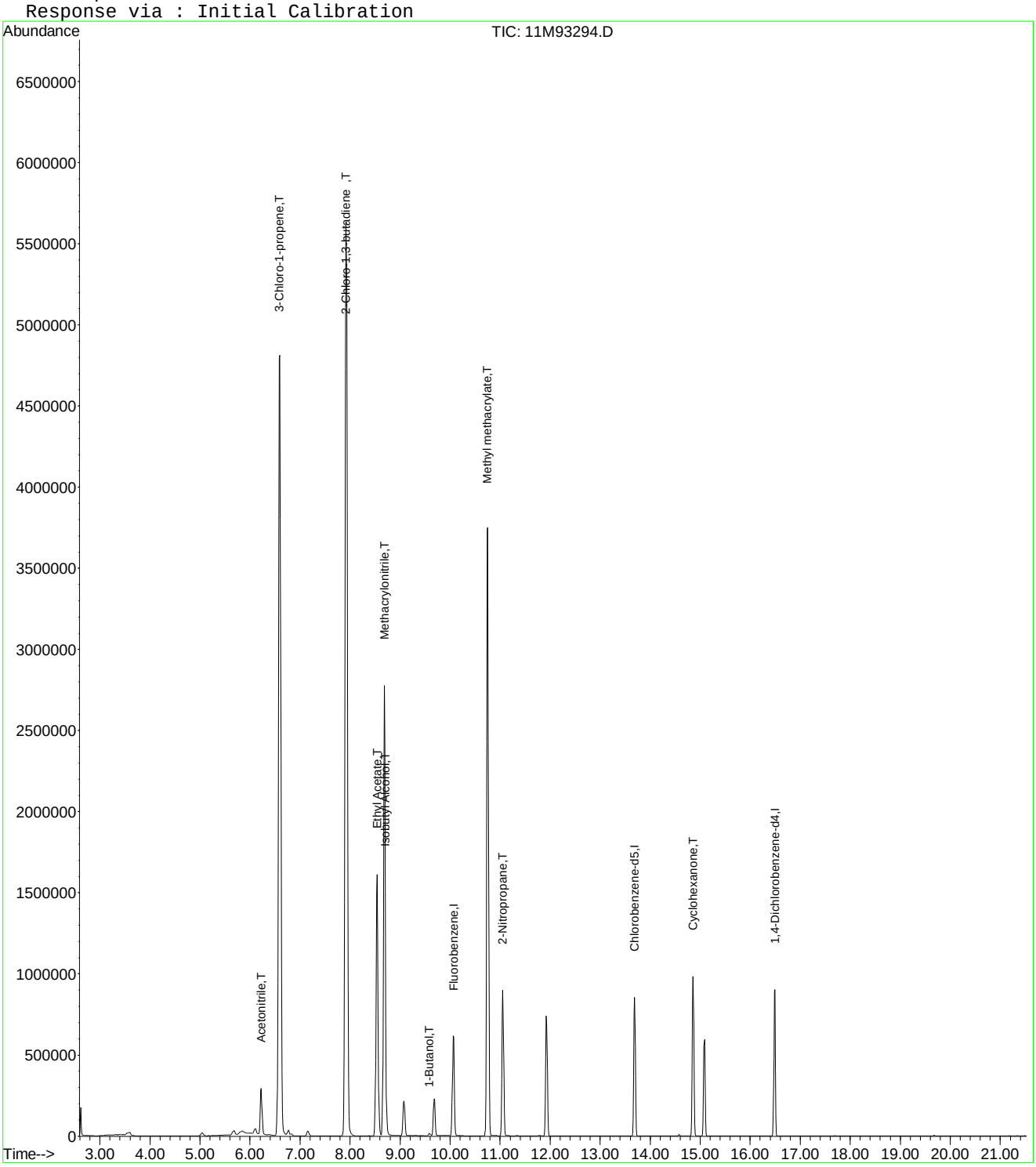

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93295.D Vial: 9
Acq On : 5 Jul 2013 20:09 Operator: FJB
Sample : WG436576-09 500ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 08 16:30:35 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	751002	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	583696	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	314454	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	486833	550.6927 ug/L	99
3) 3-Chloro-1-propene	6.59	41	6288596	499.7960 ug/L	97
4) 2-Chloro-1,3-butadiene	7.92	53	6235758	445.5412 ug/L	93
5) Methacrylonitrile	8.69	41	2382607	502.3160 ug/L	95
6) Isobutyl Alcohol	8.71	43	148096	536.2273 ug/L	79
7) 1-Butanol	9.59	56	16854	620.8218 ug/L #	86
8) Cyclohexanone	14.86	55	725098	500.1693 ug/L	93
9) 2-Nitropropane	11.05	43	1043703	537.6676 ug/L	98
10) Ethyl Acetate	8.54	43	3310477	523.9902 ug/L	98
11) Methyl methacrylate	10.74	41	3151746	520.9229 ug/L	96

(#) = qualifier out of range (m) = manual integration
11M93295.D A9WTR.M Mon Jul 08 16:30:35 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93295.D Vial: 9
Acq On : 5 Jul 2013 20:09 Operator: FJB
Sample : WG436576-09 500ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 8 16:30 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

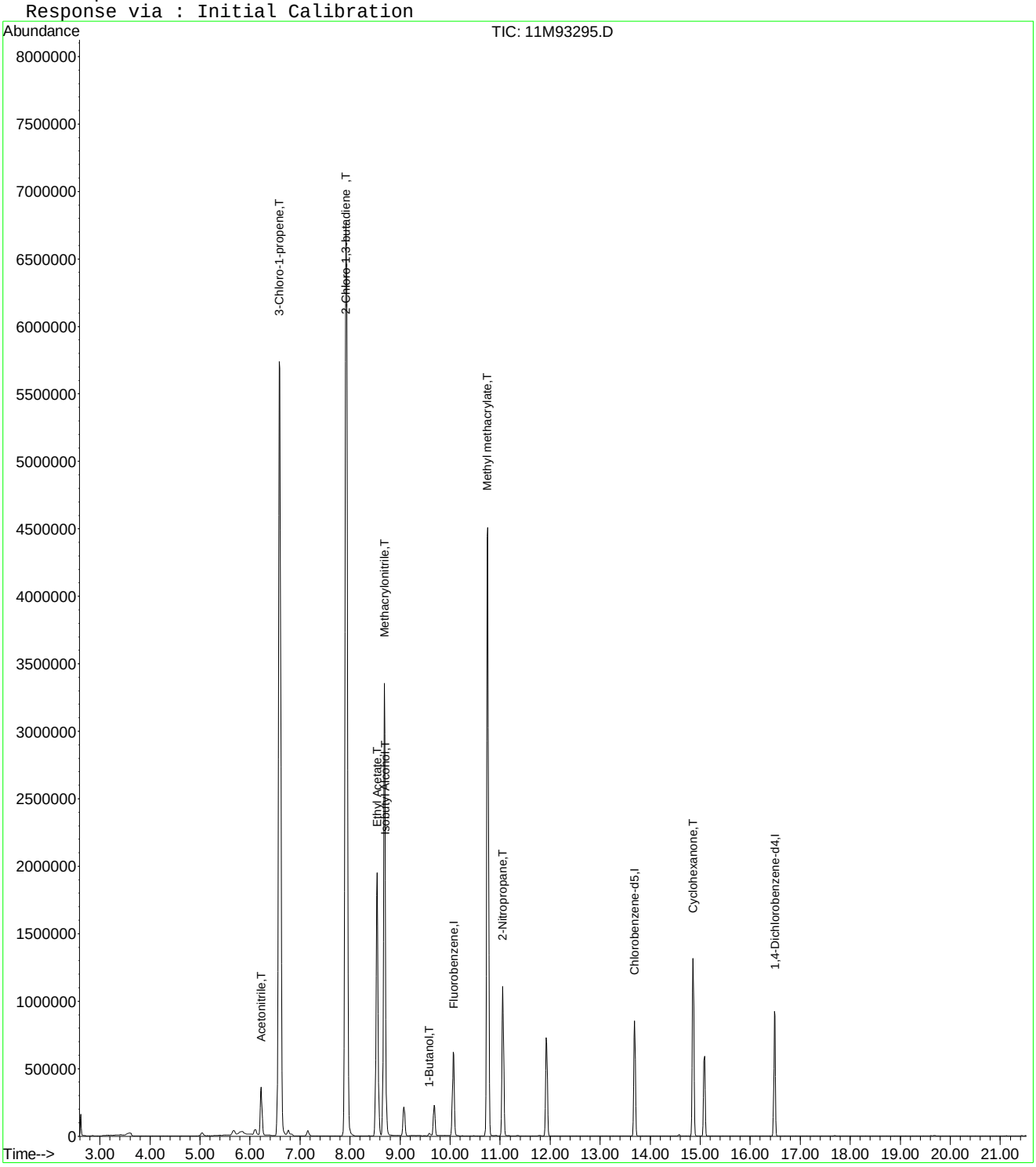

11M93295.D A9WTR.M Mon Jul 08 16:30:35 2013 Page 2

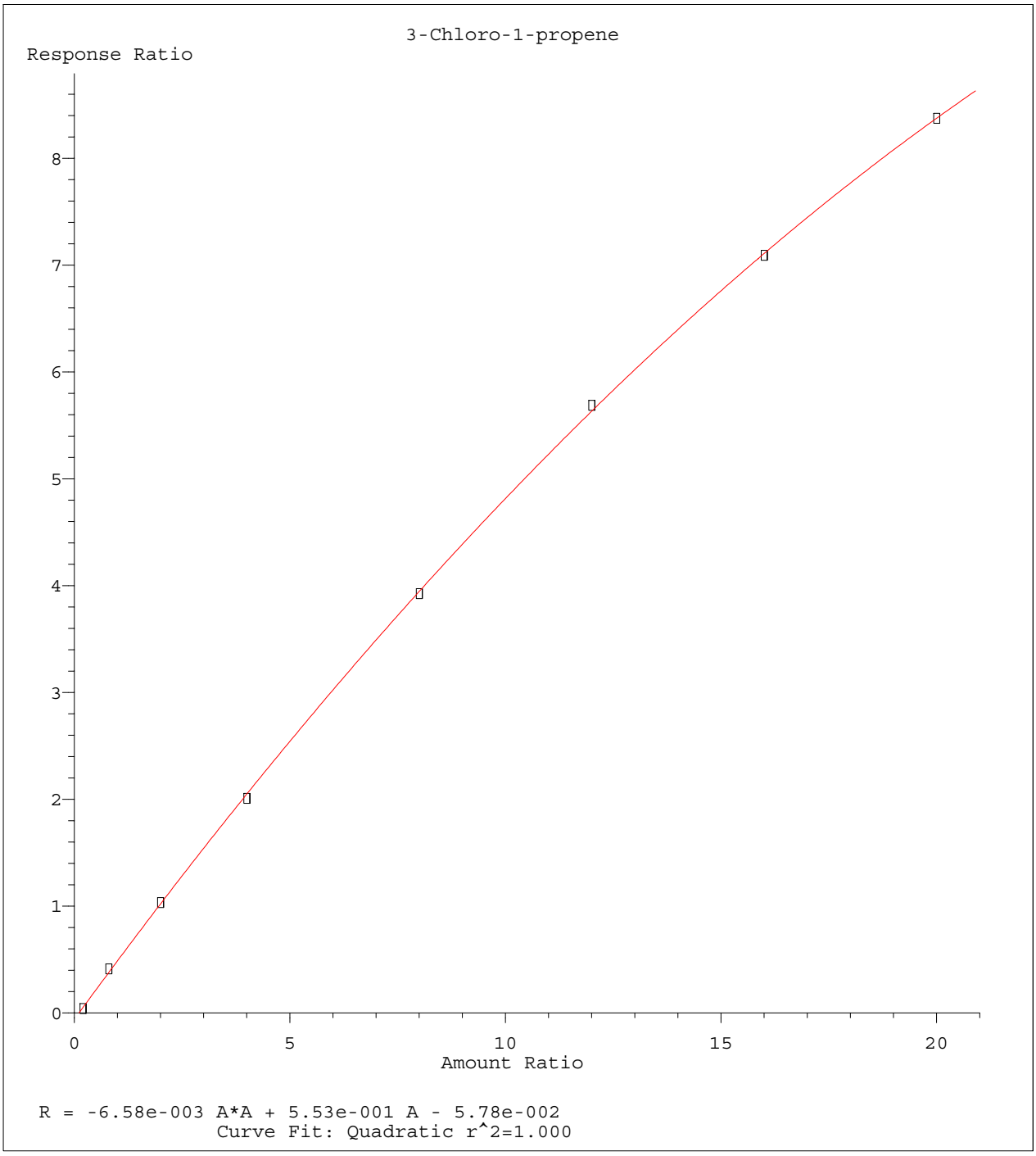

Method Name: C:\MSDCHEM\1\METHODS\A9WTR.M
Calibration Table Last Updated: Mon Jul 08 16:30:11 2013

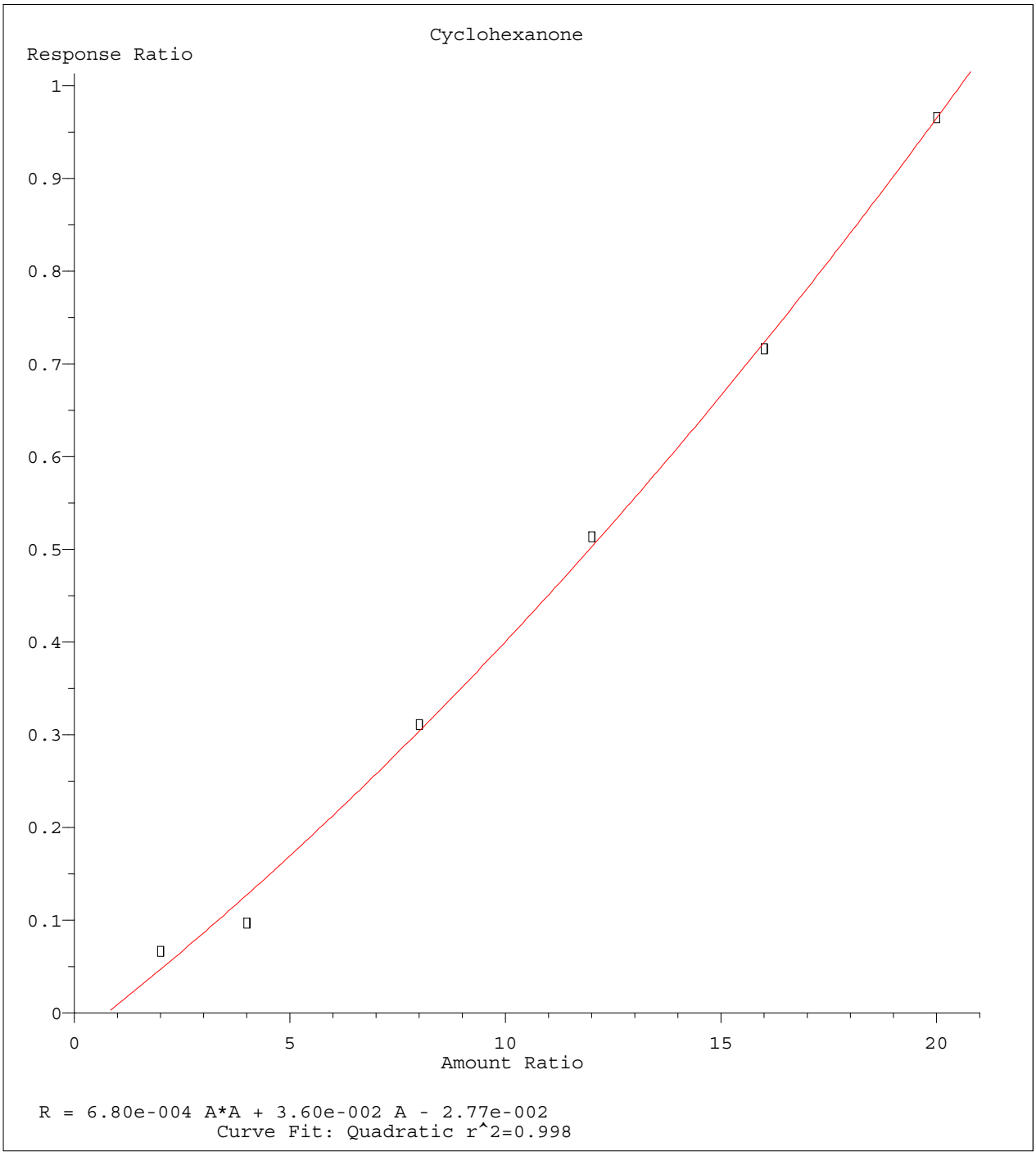

Method Name: C:\MSDCHEM\1\METHODS\A9WTR.M
Calibration Table Last Updated: Mon Jul 08 16:30:11 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93298.D Vial: 12
Acq On : 5 Jul 2013 21:43 Operator: FJB
Sample : WG436576-10 100ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58743 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 08 16:30:35 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	723684	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	554162	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	297351	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	78575	92.2371 ug/L	98
3) 3-Chloro-1-propene	6.60	41	1312879	88.3030 ug/L	92
4) 2-Chloro-1,3-butadiene	7.92	53	1064186	78.9057 ug/L	98
5) Methacrylonitrile	8.69	41	469125	102.6373 ug/L	94
6) Isobutyl Alcohol	8.71	43	24111	90.5968 ug/L	71
7) 1-Butanol	9.59	56	2440	93.2708 ug/L #	57
8) Cyclohexanone	14.86	55	41866	56.8995 ug/L	92
9) 2-Nitropropane	11.05	43	186414	99.6570 ug/L	99
10) Ethyl Acetate	8.54	43	677677	111.3134 ug/L	99
11) Methyl methacrylate	10.75	41	644624	110.5658 ug/L	92

(#) = qualifier out of range (m) = manual integration
11M93298.D A9WTR.M Mon Jul 08 16:30:36 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93298.D Vial: 12
Acq On : 5 Jul 2013 21:43 Operator: FJB
Sample : WG436576-10 100ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58743 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 8 16:30 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

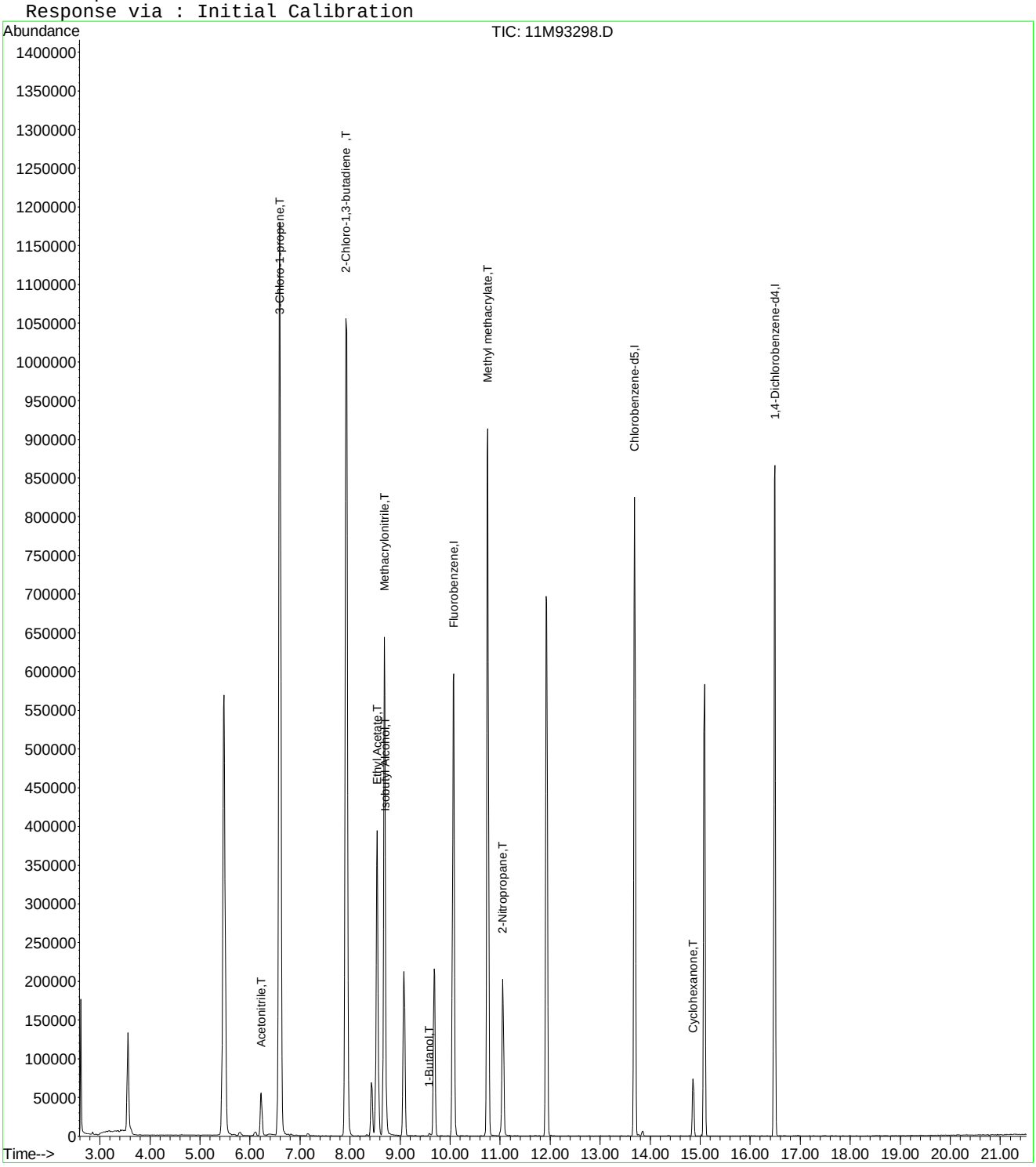

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070513\11M93298.D Vial: 12
Acq On : 5 Jul 2013 21:43 Operator: FJB
Sample : WG436576-10 100ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58743 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	96	0.00
2	T	Acetonitrile	100.0000	92.2371	7.8	97	0.00
3	T	3-Chloro-1-propene	100.0000	88.3030	11.7	87	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	78.9057	21.1	73	-0.01
5	T	Methacrylonitrile	100.0000	102.6373	-2.6	105	-0.01
6	T	Isobutyl Alcohol	100.0000	90.5968	9.4	97	0.00
7	T	1-Butanol	100.0000	93.2708	6.7	84	0.00
8	T	Cyclohexanone	100.0000	56.8995	43.1	58	0.00
9	T	2-Nitropropane	100.0000	99.6569	0.3	107	0.00
10	T	Ethyl Acetate	100.0000	111.3134	-11.3	107	-0.01
11	T	Methyl methacrylate	100.0000	110.5658	-10.6	106	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	-0.01
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M93298.D A9WTR.M Tue Jul 16 08:51:24 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93712.D Vial: 2
Acq On : 29 Jul 2013 10:52 Operator: TMB
Sample : WG439392-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:30 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	751377	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	571919	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	298595	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.00%#
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.00%#
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.00%#
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.00%#

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	2.92	85	1624	0.2227 ug/L #	68
3) Chloromethane	3.33	50	4398	0.3983 ug/L	95
4) Vinyl Chloride	3.54	62	3143	0.3286 ug/L	77
5) 1,3-Butadiene	3.58	54	3011	Below Cal #	39
6) Bromomethane	4.37	94	799	0.1560 ug/L #	27
7) Chloroethane	4.51	64	1212	0.2060 ug/L #	43
8) Trichlorofluoromethane	4.97	101	3940	0.3106 ug/L	88
10) Isoprene	5.50	67	2417	0.2242 ug/L #	66
12) 1,1,2-Trichloro-1,2,2-Trif	5.75	101	1883	0.2516 ug/L	77
13) Acetone	5.81	43	1290	0.6858 ug/L #	45
14) 1,1-Dichloroethene	6.02	61	4419	0.3408 ug/L	76
16) Dimethyl Sulfide	6.28	62	2729	0.3273 ug/L	89
18) Methyl acetate	6.53	43	740	0.1381 ug/L #	58
19) Methylene Chloride	6.77	84	2566	0.3067 ug/L	68
20) Carbon Disulfide	6.80	76	7225	0.2995 ug/L	98
22) Methyl Tert Butyl Ether	6.99	73	3418	0.2016 ug/L #	56
23) trans-1,2-Dichloroethene	7.21	96	2219	0.2678 ug/L	78
24) n-Hexane	7.28	57	3178	0.2770 ug/L #	63
27) 1,1-Dichloroethane	7.80	63	4735	0.2907 ug/L #	79
32) cis-1,2-Dichloroethene	8.60	96	2542	0.2836 ug/L	99
33) Chloroform	8.81	83	4634	0.3144 ug/L	91
35) Bromochloromethane	9.03	130	1372	0.2771 ug/L #	48
38) 1,1,1-Trichloroethane	9.30	97	2745	0.2133 ug/L #	54
39) Cyclohexane	9.35	56	3838	0.2512 ug/L #	63
40) 1,1-Dichloropropene	9.49	75	2993	0.2665 ug/L	100
41) Carbon Tetrachloride	9.62	117	1712	0.1469 ug/L #	48
45) 1,2-Dichloroethane	9.80	62	2637	0.2605 ug/L #	84
46) Benzene	9.83	78	11357	0.3563 ug/L	96
47) Trichloroethene	10.55	130	2333	0.2838 ug/L	82
48) Methylcyclohexane	10.63	83	2768	0.2476 ug/L #	77
49) 1,2-Dichloropropane	10.75	63	2188	0.2380 ug/L	85
51) Bromodichloromethane	11.02	83	2632	0.2444 ug/L #	90
52) Dibromomethane	11.10	93	909	0.2236 ug/L	89
55) cis-1,3-Dichloropropene	11.63	75	2394	0.1958 ug/L	97
56) Dimethyl Disulfide	11.87	79	786	0.1216 ug/L	91
59) Toluene	12.02	91	9686	0.3024 ug/L	98
60) Ethyl Methacrylate	12.13	69	801	0.2786 ug/L #	1
63) 1,1,2-Trichloroethane	12.39	97	1149	0.2114 ug/L	78
65) 1,3-Dichloropropane	12.68	76	2583	0.2680 ug/L	97
66) Tetrachloroethene	12.79	164	2000	0.2892 ug/L	90

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93712.D Vial: 2
Acq On : 29 Jul 2013 10:52 Operator: TMB
Sample : WG439392-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:30 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
67)	Dibromochloromethane	13.04	129	1045	0.1472 ug/L		99
68)	1,2-Dibromoethane	13.28	107	986	0.1841 ug/L		94
69)	1-Chlorohexane	13.35	91	1915	0.2049 ug/L	#	41
70)	Chlorobenzene	13.74	112	6597	0.3096 ug/L		97
71)	1,1,1,2-Tetrachloroethane	13.77	131	1768	0.2219 ug/L		100
72)	Ethylbenzene	13.77	106	3322	0.2844 ug/L		82
73)	m-,p-Xylene	13.86	106	8284	0.6267 ug/L		98
74)	o-Xylene	14.37	106	2970	0.2245 ug/L		48
75)	Styrene	14.40	104	5546	0.2701 ug/L		80
77)	Isopropylbenzene	14.76	105	8542	0.2761 ug/L		96
79)	1,1,2,2-Tetrachloroethane	14.96	83	1028	0.1730 ug/L		68
83)	n-Propylbenzene	15.23	91	11207	0.2989 ug/L		90
84)	Bromobenzene	15.35	156	1849	0.2126 ug/L	#	11
85)	1,3,5-Trimethylbenzene	15.41	105	6399	0.2525 ug/L		93
86)	2-Chlorotoluene	15.49	91	7930	0.3302 ug/L		92
87)	4-Chlorotoluene	15.53	91	5899	0.3243 ug/L		94
88)	a-Methylstyrene	15.79	118	2984	0.2123 ug/L		96
89)	tert-Butylbenzene	15.83	134	1380	0.2446 ug/L	#	72
90)	1,2,4-Trimethylbenzene	15.88	105	7503	0.2808 ug/L		82
91)	sec-Butylbenzene	16.09	105	8832	0.2922 ug/L		96
92)	p-Isopropyltoluene	16.23	119	6493	0.2594 ug/L		86
93)	1,3-Dichlorobenzene	16.41	146	5320	0.3176 ug/L		92
94)	1,4-Dichlorobenzene	16.52	146	5243	0.3050 ug/L	#	1
95)	n-Butylbenzene	16.72	91	6596	0.2818 ug/L	#	91
96)	1,2-Dichlorobenzene	16.99	146	4994	0.3188 ug/L		86
98)	1,2,4-Trichlorobenzene	18.95	180	2786	0.2642 ug/L	#	77
99)	Hexachlorobutadiene	19.11	225	1272	0.3041 ug/L	#	43
100)	Naphthalene	19.29	128	3746	0.2206 ug/L	#	68
101)	1,2,3-Trichlorobenzene	19.58	180	2514	0.2707 ug/L		81

(#) = qualifier out of range (m) = manual integration
11M93712.D 8260WTR.M Tue Jul 30 09:07:30 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93712.D Vial: 2
Acq On : 29 Jul 2013 10:52 Operator: TMB
Sample : WG439392-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:07 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration

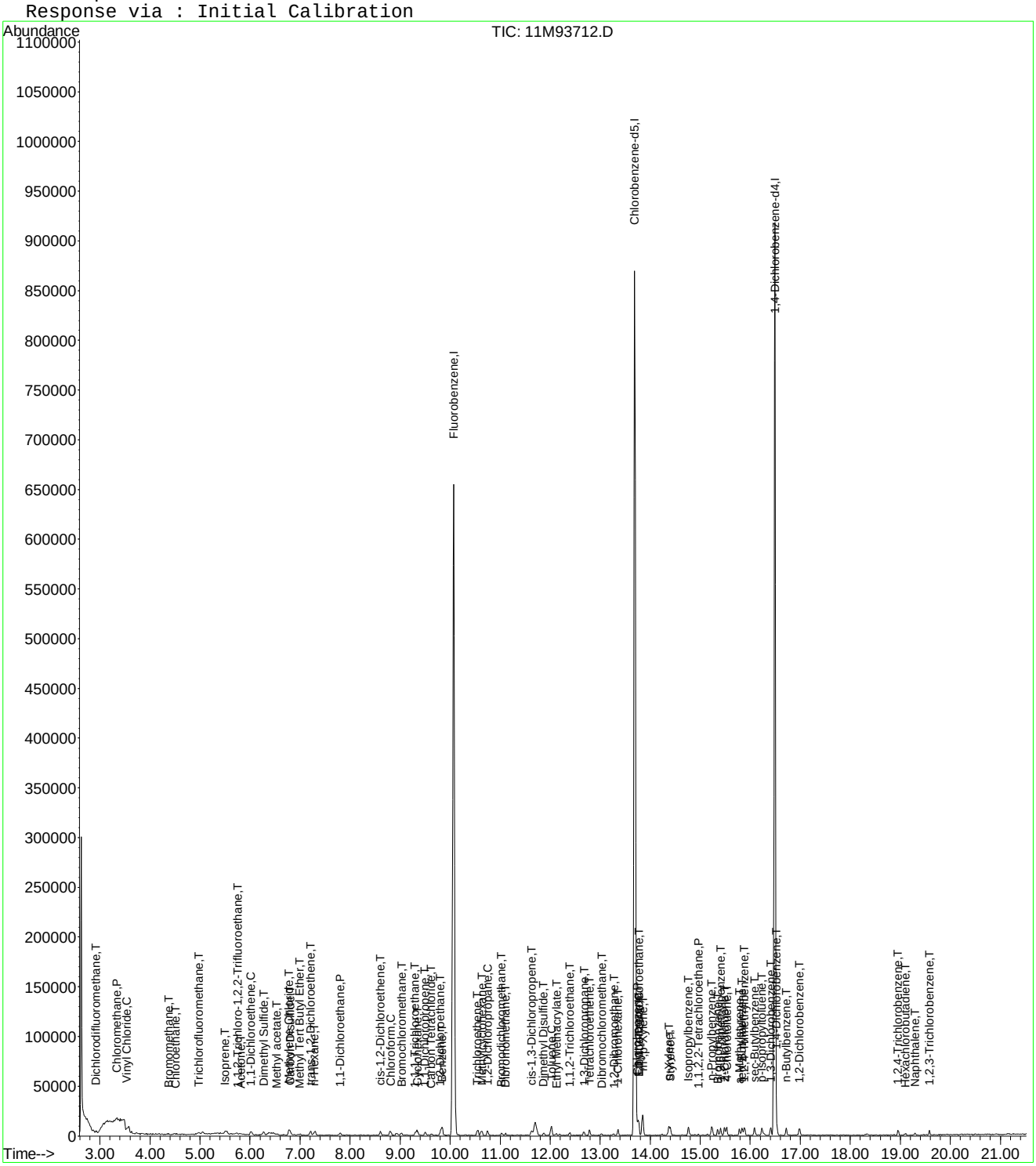

11M93712.D 8260WTR.M Tue Jul 30 09:07:31 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93713.D Vial: 3
Acq On : 29 Jul 2013 11:24 Operator: TMB
Sample : WG439392-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:31 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	730728	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	565981	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	298605	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	2626	0.3702 ug/L #	68
3) Chloromethane	3.32	50	5860	0.5457 ug/L	88
4) Vinyl Chloride	3.53	62	4502	0.4840 ug/L	87
5) 1,3-Butadiene	3.58	54	3832	Below Cal #	68
6) Bromomethane	4.35	94	2046	0.4106 ug/L	96
7) Chloroethane	4.50	64	1984	0.3467 ug/L #	43
8) Trichlorofluoromethane	4.97	101	4751	0.3851 ug/L	94
10) Isoprene	5.52	67	3517	0.3355 ug/L	80
12) 1,1,2-Trichloro-1,2,2-Trif	5.74	101	2398	0.3295 ug/L	97
13) Acetone	5.81	43	970	0.5302 ug/L #	45
14) 1,1-Dichloroethene	6.02	61	4852	0.3847 ug/L	82
16) Dimethyl Sulfide	6.26	62	3131	0.3861 ug/L	96
17) Iodomethane	6.50	142	694	0.6006 ug/L #	30
18) Methyl acetate	6.53	43	1305	0.2504 ug/L #	58
19) Methylene Chloride	6.76	84	3152	0.3874 ug/L #	42
20) Carbon Disulfide	6.80	76	9259	0.3946 ug/L	97
22) Methyl Tert Butyl Ether	6.99	73	5771	0.3500 ug/L #	80
23) trans-1,2-Dichloroethene	7.21	96	3293	0.4086 ug/L	93
24) n-Hexane	7.29	57	3922	0.3515 ug/L #	63
26) Vinyl Acetate	7.78	43	2695	0.2604 ug/L #	70
27) 1,1-Dichloroethane	7.81	63	6019	0.3800 ug/L #	89
31) 2,2-Dichloropropane	8.54	77	4893	0.3832 ug/L #	76
32) cis-1,2-Dichloroethene	8.61	96	3493	0.4007 ug/L	96
33) Chloroform	8.80	83	5724	0.3993 ug/L	90
35) Bromochloromethane	9.02	130	1591	0.3305 ug/L #	43
38) 1,1,1-Trichloroethane	9.31	97	4609	0.3682 ug/L #	89
39) Cyclohexane	9.35	56	5335	0.3590 ug/L #	69
40) 1,1-Dichloropropene	9.49	75	3741	0.3426 ug/L	95
41) Carbon Tetrachloride	9.64	117	3833	0.3382 ug/L	82
45) 1,2-Dichloroethane	9.79	62	3454	0.3509 ug/L	95
46) Benzene	9.83	78	12621	0.4072 ug/L	98
47) Trichloroethene	10.55	130	3016	0.3772 ug/L	91
48) Methylcyclohexane	10.63	83	3589	0.3302 ug/L #	64
49) 1,2-Dichloropropane	10.74	63	3220	0.3601 ug/L	82
51) Bromodichloromethane	11.02	83	3940	0.3762 ug/L #	86
52) Dibromomethane	11.11	93	1236	0.3127 ug/L	95
53) 2-Chloroethyl Vinyl Ether	11.33	63	670	0.1912 ug/L #	44
55) cis-1,3-Dichloropropene	11.63	75	3978	0.3346 ug/L	93
56) Dimethyl Disulfide	11.87	79	1177	0.1872 ug/L	97
59) Toluene	12.03	91	11479	0.3622 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M93713.D 8260WTR.M Tue Jul 30 09:07:31 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93713.D Vial: 3
Acq On : 29 Jul 2013 11:24 Operator: TMB
Sample : WG439392-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:31 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
60)	Ethyl Methacrylate	12.12	69	1209	0.3380 ug/L #	21
62)	trans-1,3-Dichloropropene	12.19	75	3196	0.3188 ug/L	87
63)	1,1,2-Trichloroethane	12.39	97	2022	0.3760 ug/L	93
64)	2-Hexanone	12.35	43	717	0.2087 ug/L #	65
65)	1,3-Dichloropropane	12.68	76	3219	0.3375 ug/L #	49
66)	Tetrachloroethene	12.79	164	2622	0.3831 ug/L	87
67)	Dibromochloromethane	13.03	129	2728	0.3883 ug/L	84
68)	1,2-Dibromoethane	13.27	107	1995	0.3765 ug/L	86
69)	1-Chlorohexane	13.36	91	3052	0.3300 ug/L	68
70)	Chlorobenzene	13.74	112	8115	0.3848 ug/L	94
71)	1,1,1,2-Tetrachloroethane	13.76	131	2962	0.3756 ug/L	95
72)	Ethylbenzene	13.76	106	4251	0.3678 ug/L	93
73)	m-,p-Xylene	13.85	106	10098	0.7720 ug/L	95
74)	o-Xylene	14.36	106	4259	0.3254 ug/L	81
75)	Styrene	14.40	104	6531	0.3215 ug/L	87
76)	Bromoform	14.86	173	1177	0.2701 ug/L #	28
77)	Isopropylbenzene	14.77	105	11332	0.3701 ug/L	95
79)	1,1,2,2-Tetrachloroethane	14.96	83	2223	0.3740 ug/L	92
81)	1,2,3-Trichloropropane	15.14	110	477	0.2755 ug/L #	36
82)	trans-1,4-Dichloro-2-Buten	15.18	53	220	0.8035 ug/L #	12
83)	n-Propylbenzene	15.23	91	13158	0.3509 ug/L	93
84)	Bromobenzene	15.35	156	3008	0.3458 ug/L	59
85)	1,3,5-Trimethylbenzene	15.41	105	8543	0.3371 ug/L	89
86)	2-Chlorotoluene	15.49	91	9058	0.3771 ug/L	88
87)	4-Chlorotoluene	15.53	91	7537	0.3836 ug/L	93
88)	a-Methylstyrene	15.78	118	3607	0.2566 ug/L	97
89)	tert-Butylbenzene	15.84	134	1813	0.3213 ug/L	86
90)	1,2,4-Trimethylbenzene	15.88	105	8405	0.3145 ug/L	93
91)	sec-Butylbenzene	16.09	105	10794	0.3570 ug/L	97
92)	p-Isopropyltoluene	16.23	119	8145	0.3254 ug/L	98
93)	1,3-Dichlorobenzene	16.41	146	6399	0.3820 ug/L	99
94)	1,4-Dichlorobenzene	16.52	146	7028	0.4089 ug/L #	62
95)	n-Butylbenzene	16.72	91	9205	0.3933 ug/L #	84
96)	1,2-Dichlorobenzene	16.99	146	6574	0.4197 ug/L	97
98)	1,2,4-Trichlorobenzene	18.96	180	3800	0.3603 ug/L	99
99)	Hexachlorobutadiene	19.10	225	1694	0.4049 ug/L #	71
100)	Naphthalene	19.29	128	5680	0.3344 ug/L #	68
101)	1,2,3-Trichlorobenzene	19.58	180	3368	0.3627 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M93713.D 8260WTR.M Tue Jul 30 09:07:32 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93713.D Vial: 3
Acq On : 29 Jul 2013 11:24 Operator: TMB
Sample : WG439392-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:07 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration

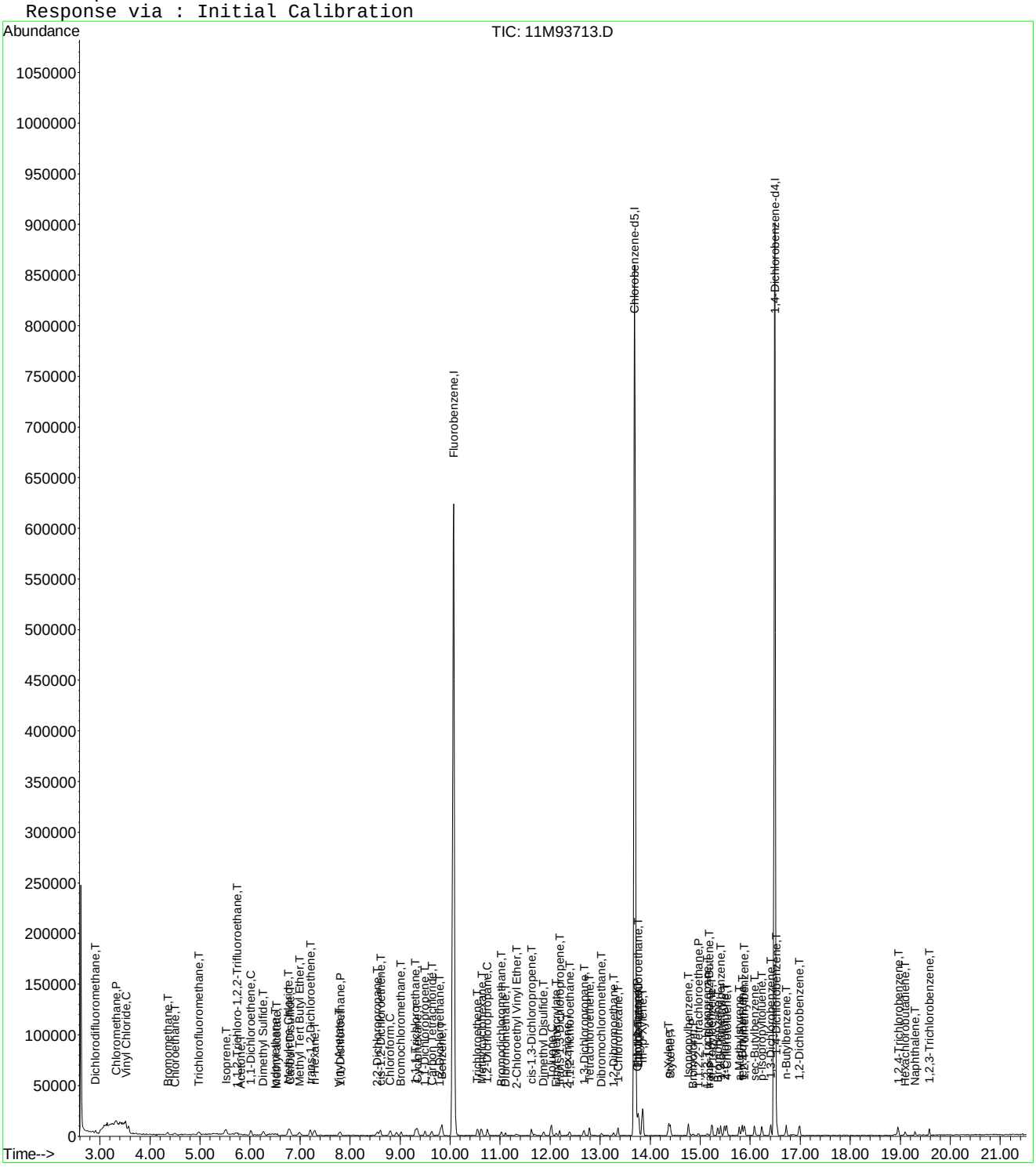

11M93713.D 8260WTR.M Tue Jul 30 09:07:32 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93714.D Vial: 4
Acq On : 29 Jul 2013 11:59 Operator: TMB
Sample : WG439392-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:32 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	715815	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	548094	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	294093	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.08	111	3063	0.4315 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.72%#	
43) 1,2-Dichloroethane-d4	9.69	65	3634	0.4872 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.96%#	
58) Toluene-d8	11.93	98	12352	0.5017 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.00%#	
80) p-Bromofluorobenzene	15.09	95	4349	0.4512 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.80%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	6738	0.9698 ug/L	98
3) Chloromethane	3.32	50	11563	1.0993 ug/L	87
4) Vinyl Chloride	3.53	62	10317	1.1323 ug/L	87
5) 1,3-Butadiene	3.57	54	8941	0.5666 ug/L #	73
6) Bromomethane	4.35	94	5456	1.1179 ug/L	98
7) Chloroethane	4.51	64	5941	1.0599 ug/L	84
8) Trichlorofluoromethane	4.96	101	12619	1.0442 ug/L	97
9) Diethyl ether	5.48	59	28488	4.8810 ug/L	73
10) Isoprene	5.51	67	10151	0.9884 ug/L	81
11) Acrolein	5.70	56	1859	2.4976 ug/L #	64
12) 1,1,2-Trichloro-1,2,2-Trif	5.71	101	7264	1.0190 ug/L	98
13) Acetone	5.81	43	1936	1.0803 ug/L #	45
14) 1,1-Dichloroethene	6.02	61	13079	1.0587 ug/L	86
15) Tert-Butyl Alcohol	6.12	59	3848	10.6231 ug/L #	87
16) Dimethyl Sulfide	6.27	62	7357	0.9262 ug/L	76
17) Iodomethane	6.50	142	4041	1.0263 ug/L	89
18) Methyl acetate	6.53	43	4528	0.8868 ug/L #	64
19) Methylene Chloride	6.77	84	8551	1.0728 ug/L #	52
20) Carbon Disulfide	6.80	76	25575	1.1127 ug/L #	90
21) Acrylonitrile	6.95	53	4590	2.1668 ug/L	91
22) Methyl Tert Butyl Ether	6.99	73	15372	0.9518 ug/L	90
23) trans-1,2-Dichloroethene	7.21	96	7943	1.0060 ug/L	84
24) n-Hexane	7.30	57	10862	0.9939 ug/L #	84
25) Diisopropyl ether	7.62	45	165111	5.2177 ug/L #	87
26) Vinyl Acetate	7.79	43	8305	0.8193 ug/L #	70
27) 1,1-Dichloroethane	7.81	63	16550	1.0666 ug/L	94
28) Ethyl-Tert-Butyl ether	8.17	59	115178	4.9159 ug/L	89
29) 2-Butanone	8.34	43	2035	0.8911 ug/L #	49
30) Propionitrile	8.44	54	2969	4.2359 ug/L #	60
31) 2,2-Dichloropropane	8.55	77	13108	1.0479 ug/L	98
32) cis-1,2-Dichloroethene	8.60	96	8445	0.9890 ug/L	70
33) Chloroform	8.80	83	14581	1.0384 ug/L	93
34) 1-Bromopropane	8.92	122	1244	0.8472 ug/L	80
35) Bromochloromethane	9.03	130	4806	1.0191 ug/L #	56
36) Tetrahydrofuran	9.05	42	7400	4.7183 ug/L #	65
38) 1,1,1-Trichloroethane	9.32	97	12444	1.0149 ug/L #	90
39) Cyclohexane	9.34	56	14660	1.0070 ug/L	74
40) 1,1-Dichloropropene	9.50	75	10606	0.9914 ug/L	98
41) Carbon Tetrachloride	9.63	117	12254	1.1039 ug/L	93
42) Tert-Amyl-Methyl ether	9.61	73	84680	4.8847 ug/L #	72

(#) = qualifier out of range (m) = manual integration
11M93714.D 8260WTR.M Tue Jul 30 09:07:33 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93714.D Vial: 4
Acq On : 29 Jul 2013 11:59 Operator: TMB
Sample : WG439392-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:32 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.80	62	9536	0.9890 ug/L		89
46)	Benzene	9.83	78	34447	1.1344 ug/L		96
47)	Trichloroethene	10.55	130	8054	1.0283 ug/L		90
48)	Methylcyclohexane	10.63	83	10799	1.0142 ug/L	#	70
49)	1,2-Dichloropropane	10.74	63	8405	0.9596 ug/L		91
51)	Bromodichloromethane	11.03	83	10377	1.0113 ug/L		90
52)	Dibromomethane	11.10	93	3574	0.9229 ug/L		89
53)	2-Chloroethyl Vinyl Ether	11.31	63	2517	0.7333 ug/L	#	58
54)	4-Methyl-2-Pentanone	11.35	58	1233	0.6922 ug/L	#	31
55)	cis-1,3-Dichloropropene	11.63	75	10910	0.9368 ug/L		98
56)	Dimethyl Disulfide	11.87	79	3537	0.5742 ug/L		99
59)	Toluene	12.03	91	33067	1.0773 ug/L		95
60)	Ethyl Methacrylate	12.12	69	4478	0.8247 ug/L		73
62)	trans-1,3-Dichloropropene	12.19	75	8946	0.9214 ug/L		88
63)	1,1,2-Trichloroethane	12.40	97	5272	1.0124 ug/L		98
64)	2-Hexanone	12.35	43	1834	0.5513 ug/L		76
65)	1,3-Dichloropropane	12.68	76	9831	1.0643 ug/L		75
66)	Tetrachloroethene	12.78	164	7062	1.0655 ug/L		93
67)	Dibromochloromethane	13.03	129	6649	0.9774 ug/L		93
68)	1,2-Dibromoethane	13.27	107	4854	0.9459 ug/L		99
69)	1-Chlorohexane	13.36	91	8248	0.9210 ug/L		72
70)	Chlorobenzene	13.73	112	23529	1.1522 ug/L		98
71)	1,1,1,2-Tetrachloroethane	13.77	131	7819	1.0239 ug/L		99
72)	Ethylbenzene	13.76	106	11507	1.0280 ug/L		90
73)	m-,p-Xylene	13.84	106	27445	2.1666 ug/L		96
74)	o-Xylene	14.36	106	12180	0.9609 ug/L		95
75)	Styrene	14.40	104	18142	0.9221 ug/L		85
76)	Bromoform	14.86	173	3446	0.8167 ug/L		96
77)	Isopropylbenzene	14.77	105	30601	1.0321 ug/L		100
79)	1,1,2,2-Tetrachloroethane	14.96	83	5298	0.9051 ug/L		99
81)	1,2,3-Trichloropropane	15.15	110	1468	0.8609 ug/L		79
82)	trans-1,4-Dichloro-2-Buten	15.19	53	1284	1.2580 ug/L	#	73
83)	n-Propylbenzene	15.23	91	38209	1.0347 ug/L		92
84)	Bromobenzene	15.35	156	9082	1.0602 ug/L		86
85)	1,3,5-Trimethylbenzene	15.41	105	24351	0.9755 ug/L		93
86)	2-Chlorotoluene	15.48	91	27950	1.1816 ug/L		89
87)	4-Chlorotoluene	15.53	91	22697	0.9450 ug/L		91
88)	a-Methylstyrene	15.78	118	10571	0.7635 ug/L		87
89)	tert-Butylbenzene	15.84	134	4896	0.8810 ug/L		83
90)	1,2,4-Trimethylbenzene	15.88	105	25965	0.9865 ug/L		95
91)	sec-Butylbenzene	16.09	105	30851	1.0361 ug/L		94
92)	p-Isopropyltoluene	16.23	119	24441	0.9915 ug/L		96
93)	1,3-Dichlorobenzene	16.41	146	17802	1.0790 ug/L		97
94)	1,4-Dichlorobenzene	16.52	146	18538	1.0950 ug/L	#	59
95)	n-Butylbenzene	16.72	91	23301	1.0107 ug/L		93
96)	1,2-Dichlorobenzene	16.99	146	16246	1.0531 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	17.91	75	517	0.5417 ug/L		87
98)	1,2,4-Trichlorobenzene	18.96	180	10169	0.9791 ug/L		93
99)	Hexachlorobutadiene	19.11	225	4202	1.0199 ug/L		90
100)	Naphthalene	19.30	128	14485	0.8659 ug/L		100
101)	1,2,3-Trichlorobenzene	19.58	180	9023	0.9865 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M93714.D 8260WTR.M Tue Jul 30 09:07:33 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93714.D Vial: 4
Acq On : 29 Jul 2013 11:59 Operator: TMB
Sample : WG439392-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:07 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration

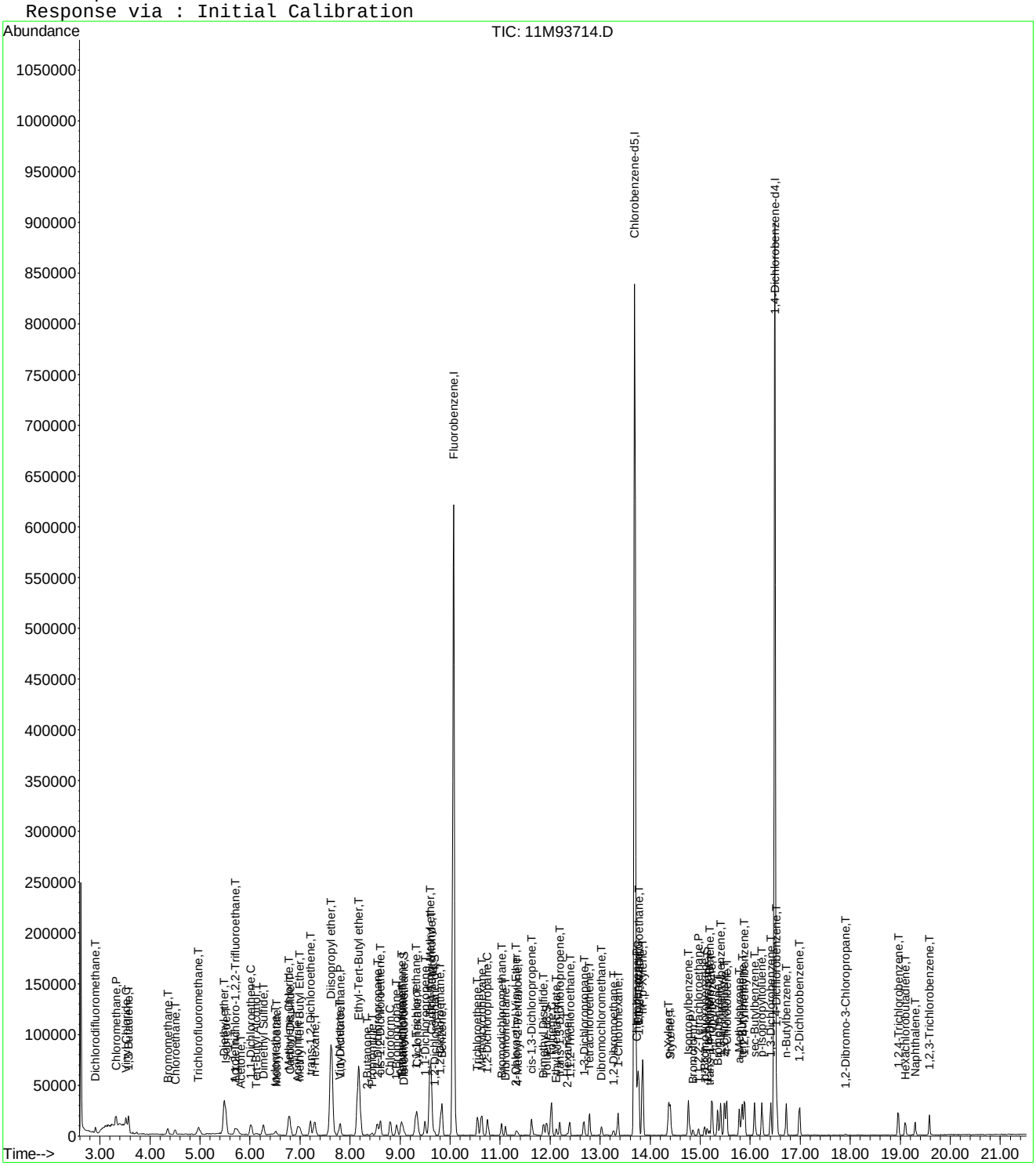

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93715.D Vial: 5
Acq On : 29 Jul 2013 12:31 Operator: TMB
Sample : WG439392-05 2ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:34 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	728128	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	555552	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	301495	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.08	111	6865	0.9506 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.80%#	
43) 1,2-Dichloroethane-d4	9.68	65	7408	0.9763 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.92%#	
58) Toluene-d8	11.93	98	23670	0.9485 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.80%#	
80) p-Bromofluorobenzene	15.09	95	9142	0.9252 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.72%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	14039	1.9864 ug/L	100
3) Chloromethane	3.32	50	22736	2.1249 ug/L	79
4) Vinyl Chloride	3.53	62	18894	2.0386 ug/L	94
5) 1,3-Butadiene	3.57	54	18730	1.7677 ug/L #	71
6) Bromomethane	4.35	94	9587	1.9310 ug/L	99
7) Chloroethane	4.50	64	11785	2.0669 ug/L	95
8) Trichlorofluoromethane	4.96	101	24783	2.0162 ug/L	100
9) Diethyl ether	5.48	59	142417	23.9883 ug/L	78
10) Isoprene	5.51	67	21425	2.0508 ug/L	81
11) Acrolein	5.70	56	8643	11.4155 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	15265	2.1051 ug/L	94
13) Acetone	5.79	43	4309	2.3639 ug/L #	66
14) 1,1-Dichloroethene	6.02	61	25340	2.0164 ug/L	90
15) Tert-Butyl Alcohol	6.12	59	17932	48.6672 ug/L #	63
16) Dimethyl Sulfide	6.27	62	15256	1.8882 ug/L	81
17) Iodomethane	6.51	142	10965	1.8797 ug/L	97
18) Methyl acetate	6.52	43	11092	2.1357 ug/L #	73
19) Methylene Chloride	6.76	84	16860	2.0795 ug/L	60
20) Carbon Disulfide	6.80	76	48477	2.0735 ug/L	95
21) Acrylonitrile	6.95	53	24389	11.3187 ug/L	92
22) Methyl Tert Butyl Ether	6.98	73	31505	1.9177 ug/L	85
23) trans-1,2-Dichloroethene	7.21	96	16192	2.0162 ug/L	83
24) n-Hexane	7.29	57	21828	1.9635 ug/L #	82
25) Diisopropyl ether	7.62	45	821302	25.5151 ug/L	86
26) Vinyl Acetate	7.78	43	19397	1.8811 ug/L #	87
27) 1,1-Dichloroethane	7.80	63	32491	2.0585 ug/L	97
28) Ethyl-Tert-Butyl ether	8.17	59	600542	25.1981 ug/L	89
29) 2-Butanone	8.33	43	4105	1.7671 ug/L #	62
30) Propionitrile	8.43	54	17776	24.9323 ug/L	98
31) 2,2-Dichloropropane	8.54	77	26615	2.0917 ug/L	96
32) cis-1,2-Dichloroethene	8.60	96	17145	1.9739 ug/L	73
33) Chloroform	8.80	83	29030	2.0324 ug/L	95
34) 1-Bromopropane	8.93	122	2671	1.7882 ug/L	94
35) Bromochloromethane	9.02	130	9761	2.0347 ug/L #	55
36) Tetrahydrofuran	9.05	42	37530	23.5250 ug/L	73
38) 1,1,1-Trichloroethane	9.32	97	25603	2.0527 ug/L	97
39) Cyclohexane	9.34	56	29586	1.9980 ug/L	73
40) 1,1-Dichloropropene	9.49	75	22328	2.0519 ug/L	91
41) Carbon Tetrachloride	9.64	117	22568	1.9986 ug/L	97
42) Tert-Amyl-Methyl ether	9.61	73	427171	24.2242 ug/L #	78

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93715.D Vial: 5
Acq On : 29 Jul 2013 12:31 Operator: TMB
Sample : WG439392-05 2ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:34 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.79	62	20449	2.0850 ug/L		89
46)	Benzene	9.83	78	67117	2.1730 ug/L		99
47)	Trichloroethene	10.55	130	16555	2.0778 ug/L		95
48)	Methylcyclohexane	10.63	83	21015	1.9402 ug/L	#	76
49)	1,2-Dichloropropane	10.75	63	18846	2.1152 ug/L		81
50)	1,4-Dioxane	11.02	88	1380	37.6394 ug/L	#	60
51)	Bromodichloromethane	11.02	83	20409	1.9554 ug/L		98
52)	Dibromomethane	11.10	93	8178	2.0761 ug/L		98
53)	2-Chloroethyl Vinyl Ether	11.32	63	5302	1.5185 ug/L	#	73
54)	4-Methyl-2-Pentanone	11.34	58	2768	1.5277 ug/L	#	55
55)	cis-1,3-Dichloropropene	11.63	75	23004	1.9418 ug/L		94
56)	Dimethyl Disulfide	11.87	79	8556	1.3656 ug/L		90
59)	Toluene	12.03	91	65692	2.1114 ug/L		98
60)	Ethyl Methacrylate	12.12	69	9457	1.5387 ug/L	#	58
62)	trans-1,3-Dichloropropene	12.19	75	19240	1.9551 ug/L		100
63)	1,1,2-Trichloroethane	12.39	97	10536	1.9960 ug/L		91
64)	2-Hexanone	12.34	43	5436	1.6120 ug/L		91
65)	1,3-Dichloropropane	12.68	76	19133	2.0435 ug/L		73
66)	Tetrachloroethene	12.79	164	14106	2.0997 ug/L		97
67)	Dibromochloromethane	13.03	129	13639	1.9780 ug/L		97
68)	1,2-Dibromoethane	13.27	107	10310	1.9821 ug/L		95
69)	1-Chlorohexane	13.36	91	17432	1.9204 ug/L		69
70)	Chlorobenzene	13.73	112	45391	2.1930 ug/L		99
71)	1,1,1,2-Tetrachloroethane	13.76	131	15794	2.0405 ug/L		94
72)	Ethylbenzene	13.76	106	22536	1.9862 ug/L		91
73)	m-,p-Xylene	13.84	106	54016	4.2070 ug/L		89
74)	o-Xylene	14.37	106	26178	2.0375 ug/L		95
75)	Styrene	14.40	104	39549	1.9832 ug/L		95
76)	Bromoform	14.86	173	7670	1.7934 ug/L		96
77)	Isopropylbenzene	14.77	105	64160	2.1350 ug/L		96
79)	1,1,2,2-Tetrachloroethane	14.96	83	11796	1.9657 ug/L		93
81)	1,2,3-Trichloropropane	15.15	110	3223	1.8437 ug/L		91
82)	trans-1,4-Dichloro-2-Buten	15.19	53	2833	1.8879 ug/L		89
83)	n-Propylbenzene	15.23	91	78114	2.0634 ug/L		95
84)	Bromobenzene	15.35	156	18906	2.1528 ug/L		88
85)	1,3,5-Trimethylbenzene	15.41	105	52561	2.0538 ug/L		92
86)	2-Chlorotoluene	15.48	91	51260	2.1138 ug/L		99
87)	4-Chlorotoluene	15.53	91	53690	2.0388 ug/L		83
88)	a-Methylstyrene	15.78	118	24220	1.7065 ug/L		97
89)	tert-Butylbenzene	15.84	134	11335	1.9896 ug/L		87
90)	1,2,4-Trimethylbenzene	15.88	105	55532	2.0581 ug/L		97
91)	sec-Butylbenzene	16.09	105	65028	2.1304 ug/L		98
92)	p-Isopropyltoluene	16.23	119	51434	2.0353 ug/L		99
93)	1,3-Dichlorobenzene	16.41	146	35783	2.1156 ug/L		99
94)	1,4-Dichlorobenzene	16.53	146	36842	2.1228 ug/L		86
95)	n-Butylbenzene	16.72	91	47458	2.0081 ug/L		91
96)	1,2-Dichlorobenzene	16.99	146	32617	2.0623 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	17.90	75	1647	1.6832 ug/L		78
98)	1,2,4-Trichlorobenzene	18.96	180	20391	1.9151 ug/L		94
99)	Hexachlorobutadiene	19.10	225	8171	1.9345 ug/L		89
100)	Naphthalene	19.29	128	31108	1.8139 ug/L		98
101)	1,2,3-Trichlorobenzene	19.58	180	18559	1.9792 ug/L		92

(#) = qualifier out of range (m) = manual integration
11M93715.D 8260WTR.M Tue Jul 30 09:07:34 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93715.D Vial: 5
Acq On : 29 Jul 2013 12:31 Operator: TMB
Sample : WG439392-05 2ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:07 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration

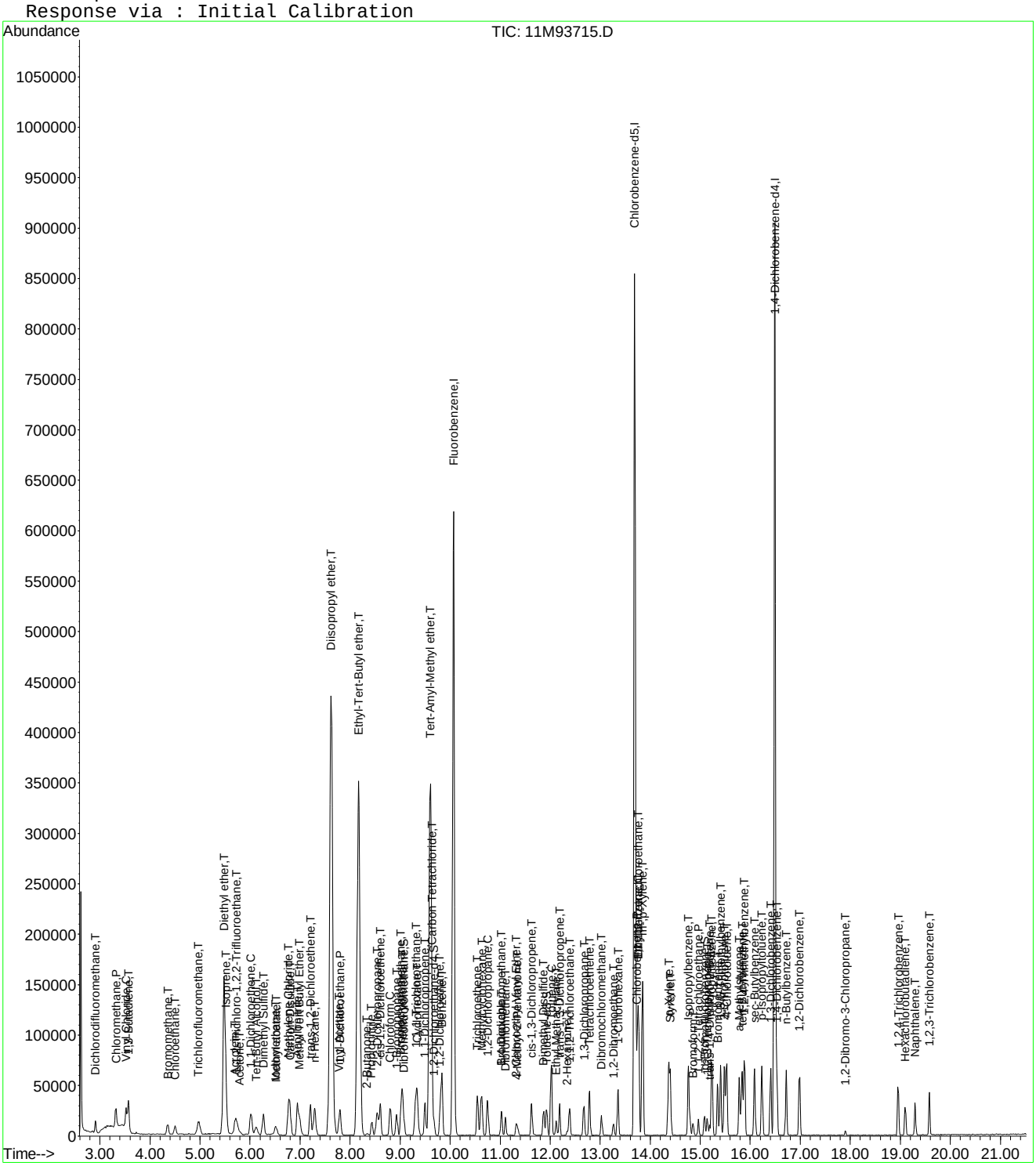

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93716.D Vial: 6
Acq On : 29 Jul 2013 13:02 Operator: TMB
Sample : WG439392-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:35 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	717471	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	553081	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	301430	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.08	111	17751	2.4946 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 9.96%#		
43) 1,2-Dichloroethane-d4	9.68	65	19131	2.5588 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.24%#		
58) Toluene-d8	11.93	98	64135	2.5815 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.32%#		
80) p-Bromofluorobenzene	15.09	95	23507	2.3795 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 9.52%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	32834	4.7148 ug/L	100
3) Chloromethane	3.32	50	53130	5.0393 ug/L	82
4) Vinyl Chloride	3.53	62	45327	4.9633 ug/L	93
5) 1,3-Butadiene	3.57	54	43198	4.9127 ug/L #	73
6) Bromomethane	4.35	94	23351	4.7733 ug/L	94
7) Chloroethane	4.50	64	28562	5.0837 ug/L	100
8) Trichlorofluoromethane	4.97	101	60272	4.9761 ug/L	100
9) Diethyl ether	5.48	59	298869	51.0884 ug/L	79
10) Isoprene	5.51	67	51717	5.0240 ug/L	81
11) Acrolein	5.70	56	18256	24.4704 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	37639	5.2677 ug/L	97
13) Acetone	5.80	43	9030	5.0274 ug/L	88
14) 1,1-Dichloroethene	6.02	61	60818	4.9115 ug/L	94
15) Tert-Butyl Alcohol	6.12	59	41144	113.3229 ug/L	94
16) Dimethyl Sulfide	6.27	62	38330	4.8145 ug/L	76
17) Iodomethane	6.50	142	33898	4.7975 ug/L	92
18) Methyl acetate	6.52	43	26770	5.2310 ug/L #	82
19) Methylene Chloride	6.76	84	40419	5.0593 ug/L #	53
20) Carbon Disulfide	6.80	76	118796	5.1568 ug/L	99
21) Acrylonitrile	6.94	53	51167	24.0987 ug/L	92
22) Methyl Tert Butyl Ether	6.99	73	82502	5.0964 ug/L	86
23) trans-1,2-Dichloroethene	7.21	96	39849	5.0356 ug/L	81
24) n-Hexane	7.29	57	56685	5.1748 ug/L #	85
25) Diisopropyl ether	7.62	45	1699287	53.5754 ug/L	87
26) Vinyl Acetate	7.78	43	50013	4.9222 ug/L #	91
27) 1,1-Dichloroethane	7.80	63	81861	5.2633 ug/L	98
28) Ethyl-Tert-Butyl ether	8.17	59	1241787	52.8781 ug/L	90
29) 2-Butanone	8.33	43	11709	5.1152 ug/L #	77
30) Propionitrile	8.43	54	36163	51.4750 ug/L	97
31) 2,2-Dichloropropane	8.54	77	64268	5.1260 ug/L	98
32) cis-1,2-Dichloroethene	8.60	96	44073	5.1496 ug/L	78
33) Chloroform	8.80	83	73632	5.2316 ug/L	98
34) 1-Bromopropane	8.93	122	7663	5.2065 ug/L	99
35) Bromochloromethane	9.03	130	24749	5.2356 ug/L #	59
36) Tetrahydrofuran	9.05	42	79468	50.5529 ug/L #	72
38) 1,1,1-Trichloroethane	9.31	97	64214	5.2248 ug/L	96
39) Cyclohexane	9.34	56	73205	5.0171 ug/L	73
40) 1,1-Dichloropropene	9.49	75	55010	5.1304 ug/L	96
41) Carbon Tetrachloride	9.64	117	56935	5.1170 ug/L	97
42) Tert-Amyl-Methyl ether	9.61	73	913758	52.5874 ug/L #	80

(#) = qualifier out of range (m) = manual integration
11M93716.D 8260WTR.M Tue Jul 30 09:07:36 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93716.D Vial: 6
Acq On : 29 Jul 2013 13:02 Operator: TMB
Sample : WG439392-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:35 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.79	62	51163	5.2940 ug/L		90
46)	Benzene	9.83	78	167154	5.4922 ug/L		99
47)	Trichloroethene	10.55	130	40044	5.1007 ug/L		95
48)	Methylcyclohexane	10.63	83	53964	5.0562 ug/L	#	77
49)	1,2-Dichloropropane	10.74	63	44999	5.1256 ug/L		86
50)	1,4-Dioxane	11.01	88	3612	99.9803 ug/L	#	68
51)	Bromodichloromethane	11.02	83	52842	5.1380 ug/L		97
52)	Dibromomethane	11.10	93	20434	5.2645 ug/L		95
53)	2-Chloroethyl Vinyl Ether	11.32	63	15013	4.3637 ug/L		85
54)	4-Methyl-2-Pentanone	11.34	58	7623	4.2697 ug/L		80
55)	cis-1,3-Dichloropropene	11.63	75	59507	5.0977 ug/L		98
56)	Dimethyl Disulfide	11.87	79	23320	3.7772 ug/L		99
59)	Toluene	12.03	91	172089	5.5559 ug/L		99
60)	Ethyl Methacrylate	12.12	69	28700	4.3510 ug/L		67
62)	trans-1,3-Dichloropropene	12.19	75	51601	5.2668 ug/L		95
63)	1,1,2-Trichloroethane	12.39	97	27038	5.1452 ug/L		96
64)	2-Hexanone	12.34	43	15108	4.5003 ug/L		88
65)	1,3-Dichloropropane	12.68	76	48749	5.2300 ug/L		75
66)	Tetrachloroethene	12.79	164	34040	5.0896 ug/L		100
67)	Dibromochloromethane	13.03	129	34229	4.9863 ug/L		99
68)	1,2-Dibromoethane	13.27	107	25340	4.8933 ug/L		92
69)	1-Chlorohexane	13.36	91	44572	4.9323 ug/L	#	65
70)	Chlorobenzene	13.73	112	114023	5.5334 ug/L		100
71)	1,1,1,2-Tetrachloroethane	13.76	131	39101	5.0743 ug/L		96
72)	Ethylbenzene	13.76	106	59218	5.2425 ug/L		95
73)	m-,p-Xylene	13.84	106	143545	11.2297 ug/L		94
74)	o-Xylene	14.37	106	67448	5.2730 ug/L		97
75)	Styrene	14.40	104	108134	5.4467 ug/L		96
76)	Bromoform	14.86	173	20000	4.6974 ug/L		98
77)	Isopropylbenzene	14.77	105	166367	5.5608 ug/L		97
79)	1,1,2,2-Tetrachloroethane	14.96	83	29977	4.9964 ug/L		96
81)	1,2,3-Trichloropropane	15.14	110	9350	5.3498 ug/L		75
82)	trans-1,4-Dichloro-2-Buten	15.19	53	9754	4.7635 ug/L	#	21
83)	n-Propylbenzene	15.23	91	208418	5.5067 ug/L		96
84)	Bromobenzene	15.35	156	46199	5.2616 ug/L		83
85)	1,3,5-Trimethylbenzene	15.41	105	141574	5.5332 ug/L		96
86)	2-Chlorotoluene	15.48	91	129995	5.3618 ug/L		97
87)	4-Chlorotoluene	15.53	91	139804	5.1563 ug/L		84
88)	a-Methylstyrene	15.78	118	65557	4.6199 ug/L		92
89)	tert-Butylbenzene	15.84	134	29734	5.2202 ug/L		83
90)	1,2,4-Trimethylbenzene	15.88	105	153780	5.7005 ug/L		96
91)	sec-Butylbenzene	16.09	105	171526	5.6205 ug/L		98
92)	p-Isopropyltoluene	16.23	119	139936	5.5386 ug/L		99
93)	1,3-Dichlorobenzene	16.41	146	90124	5.3295 ug/L		99
94)	1,4-Dichlorobenzene	16.53	146	93447	5.3855 ug/L		94
95)	n-Butylbenzene	16.72	91	127198	5.3832 ug/L		94
96)	1,2-Dichlorobenzene	16.99	146	80829	5.1118 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	17.90	75	4635	4.7378 ug/L		88
98)	1,2,4-Trichlorobenzene	18.95	180	55113	5.1772 ug/L		96
99)	Hexachlorobutadiene	19.10	225	21524	5.0971 ug/L		91
100)	Naphthalene	19.29	128	87043	5.0766 ug/L		100
101)	1,2,3-Trichlorobenzene	19.58	180	49228	5.2510 ug/L		96

(#) = qualifier out of range (m) = manual integration
11M93716.D 8260WTR.M Tue Jul 30 09:07:36 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93716.D Vial: 6
Acq On : 29 Jul 2013 13:02 Operator: TMB
Sample : WG439392-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:07 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration

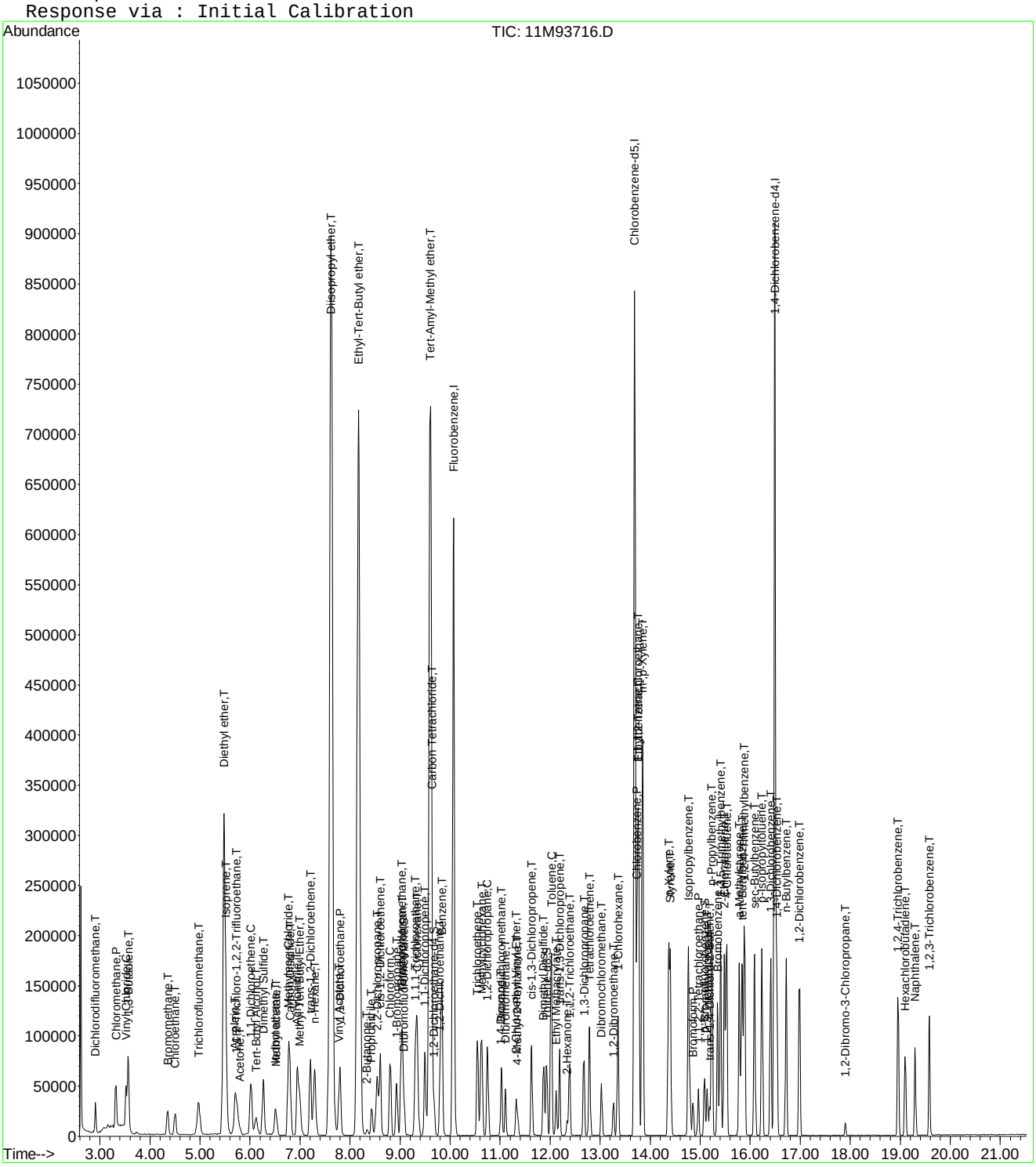

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93717.D Vial: 7
Acq On : 29 Jul 2013 13:34 Operator: TMB
Sample : WG439392-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:36 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	730831	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	576000	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	313537	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.08	111	76061	10.4938 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.96%#		
43) 1,2-Dichloroethane-d4	9.69	65	78689	10.3323 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.32%#		
58) Toluene-d8	11.93	98	272380	10.5272 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 42.12%#		
80) p-Bromofluorobenzene	15.09	95	105073	10.2255 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 40.92%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	166034	23.4057 ug/L	98
3) Chloromethane	3.32	50	231964	21.5993 ug/L	99
4) Vinyl Chloride	3.52	62	191617	20.5983 ug/L	93
5) 1,3-Butadiene	3.57	54	183715	22.7548 ug/L #	77
6) Bromomethane	4.35	94	95463	19.1572 ug/L	100
7) Chloroethane	4.50	64	124978	21.8380 ug/L	99
8) Trichlorofluoromethane	4.97	101	270124	21.8939 ug/L	100
9) Diethyl ether	5.48	59	495237	83.1078 ug/L	79
10) Isoprene	5.51	67	218692	20.8561 ug/L	78
11) Acrolein	5.70	56	31129	40.9626 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	160066	21.9924 ug/L	99
13) Acetone	5.79	43	34063	18.6176 ug/L	94
14) 1,1-Dichloroethene	6.02	61	270766	21.4664 ug/L	91
15) Tert-Butyl Alcohol	6.12	59	61475	166.2254 ug/L	92
16) Dimethyl Sulfide	6.27	62	167300	20.6300 ug/L	82
17) Iodomethane	6.50	142	160834	20.4641 ug/L	94
18) Methyl acetate	6.52	43	106424	20.4157 ug/L	86
19) Methylene Chloride	6.76	84	174111	21.3953 ug/L	58
20) Carbon Disulfide	6.80	76	493454	21.0286 ug/L	99
21) Acrylonitrile	6.94	53	87693	40.5468 ug/L	95
22) Methyl Tert Butyl Ether	6.98	73	364582	22.1095 ug/L	85
23) trans-1,2-Dichloroethene	7.21	96	171423	21.2660 ug/L	80
24) n-Hexane	7.29	57	236667	21.2106 ug/L	90
25) Diisopropyl ether	7.62	45	2733288	84.6001 ug/L	87
26) Vinyl Acetate	7.78	43	215615	20.8327 ug/L #	90
27) 1,1-Dichloroethane	7.80	63	343355	21.6727 ug/L	97
28) Ethyl-Tert-Butyl ether	8.17	59	2014293	84.2051 ug/L	90
29) 2-Butanone	8.33	43	47366	20.3141 ug/L	82
30) Propionitrile	8.43	54	59826	83.6006 ug/L	100
31) 2,2-Dichloropropane	8.54	77	272534	21.3400 ug/L	99
32) cis-1,2-Dichloroethene	8.60	96	188339	21.6036 ug/L	80
33) Chloroform	8.80	83	308329	21.5064 ug/L	97
34) 1-Bromopropane	8.93	122	30133	20.0992 ug/L	100
35) Bromochloromethane	9.02	130	105746	21.9614 ug/L #	58
36) Tetrahydrofuran	9.05	42	130980	81.7986 ug/L	74
38) 1,1,1-Trichloroethane	9.31	97	269020	21.4888 ug/L	96
39) Cyclohexane	9.34	56	307994	20.7224 ug/L	74
40) 1,1-Dichloropropene	9.49	75	241177	22.0818 ug/L	96
41) Carbon Tetrachloride	9.63	117	246842	21.7794 ug/L	99
42) Tert-Amyl-Methyl ether	9.61	73	1489112	84.1327 ug/L #	82

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93717.D Vial: 7
Acq On : 29 Jul 2013 13:34 Operator: TMB
Sample : WG439392-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:36 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	9.79	62	217945	22.1392	ug/L		89
46)	Benzene	9.83	78	698134	22.5192	ug/L		100
47)	Trichloroethene	10.55	130	168851	21.1144	ug/L		93
48)	Methylcyclohexane	10.63	83	228611	21.0285	ug/L	#	77
49)	1,2-Dichloropropane	10.74	63	195585	21.8708	ug/L		86
50)	1,4-Dioxane	11.01	88	5665	153.9408	ug/L	#	66
51)	Bromodichloromethane	11.03	83	226670	21.6371	ug/L		99
52)	Dibromomethane	11.10	93	87670	22.1739	ug/L		98
53)	2-Chloroethyl Vinyl Ether	11.31	63	68103	19.4329	ug/L		88
54)	4-Methyl-2-Pentanone	11.34	58	36451	20.0431	ug/L		82
55)	cis-1,3-Dichloropropene	11.63	75	266816	22.4390	ug/L		98
56)	Dimethyl Disulfide	11.87	79	119012	18.9243	ug/L		94
59)	Toluene	12.03	91	722331	22.3926	ug/L		98
60)	Ethyl Methacrylate	12.12	69	137933	19.4802	ug/L		73
62)	trans-1,3-Dichloropropene	12.19	75	233057	22.8411	ug/L		97
63)	1,1,2-Trichloroethane	12.39	97	120034	21.9330	ug/L		99
64)	2-Hexanone	12.34	43	69962	20.0105	ug/L		86
65)	1,3-Dichloropropane	12.68	76	211799	21.8186	ug/L		74
66)	Tetrachloroethene	12.79	164	147440	21.1676	ug/L		95
67)	Dibromochloromethane	13.03	129	152176	21.2861	ug/L		100
68)	1,2-Dibromoethane	13.27	107	117486	21.7845	ug/L		99
69)	1-Chlorohexane	13.36	91	201871	21.4499	ug/L		69
70)	Chlorobenzene	13.73	112	471693	21.9798	ug/L		100
71)	1,1,1,2-Tetrachloroethane	13.76	131	171154	21.3275	ug/L		99
72)	Ethylbenzene	13.76	106	258422	21.9676	ug/L		96
73)	m-,p-Xylene	13.84	106	617960	46.4203	ug/L		95
74)	o-Xylene	14.37	106	302305	22.6935	ug/L		96
75)	Styrene	14.40	104	511772	24.7521	ug/L		96
76)	Bromoform	14.86	173	100426	22.6486	ug/L		97
77)	Isopropylbenzene	14.77	105	753793	24.1930	ug/L		97
79)	1,1,2,2-Tetrachloroethane	14.96	83	135103	21.6487	ug/L		97
81)	1,2,3-Trichloropropane	15.14	110	37928	20.8633	ug/L		84
82)	trans-1,4-Dichloro-2-Buten	15.19	53	45096	18.7225	ug/L	#	19
83)	n-Propylbenzene	15.23	91	923725	23.4636	ug/L		97
84)	Bromobenzene	15.35	156	205236	22.4719	ug/L		86
85)	1,3,5-Trimethylbenzene	15.41	105	636501	23.9163	ug/L		96
86)	2-Chlorotoluene	15.48	91	555663	22.0340	ug/L		96
87)	4-Chlorotoluene	15.53	91	590655	21.1296	ug/L		85
88)	a-Methylstyrene	15.78	118	306672	20.7772	ug/L		93
89)	tert-Butylbenzene	15.84	134	133527	22.5374	ug/L		94
90)	1,2,4-Trimethylbenzene	15.88	105	659277	23.4951	ug/L		97
91)	sec-Butylbenzene	16.09	105	762737	24.0280	ug/L		98
92)	p-Isopropyltoluene	16.23	119	643135	24.4718	ug/L		100
93)	1,3-Dichlorobenzene	16.41	146	390590	22.2058	ug/L		98
94)	1,4-Dichlorobenzene	16.53	146	394822	21.8755	ug/L		97
95)	n-Butylbenzene	16.72	91	577848	23.5110	ug/L		95
96)	1,2-Dichlorobenzene	16.99	146	356336	21.6651	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	17.90	75	21117	20.7519	ug/L		84
98)	1,2,4-Trichlorobenzene	18.95	180	245216	22.1454	ug/L		98
99)	Hexachlorobutadiene	19.10	225	93180	21.2138	ug/L		94
100)	Naphthalene	19.29	128	428329	24.0166	ug/L		99
101)	1,2,3-Trichlorobenzene	19.58	180	220129	22.5738	ug/L		98

(#) = qualifier out of range (m) = manual integration
11M93717.D 8260WTR.M Tue Jul 30 09:07:37 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93717.D Vial: 7
Acq On : 29 Jul 2013 13:34 Operator: TMB
Sample : WG439392-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:07 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration

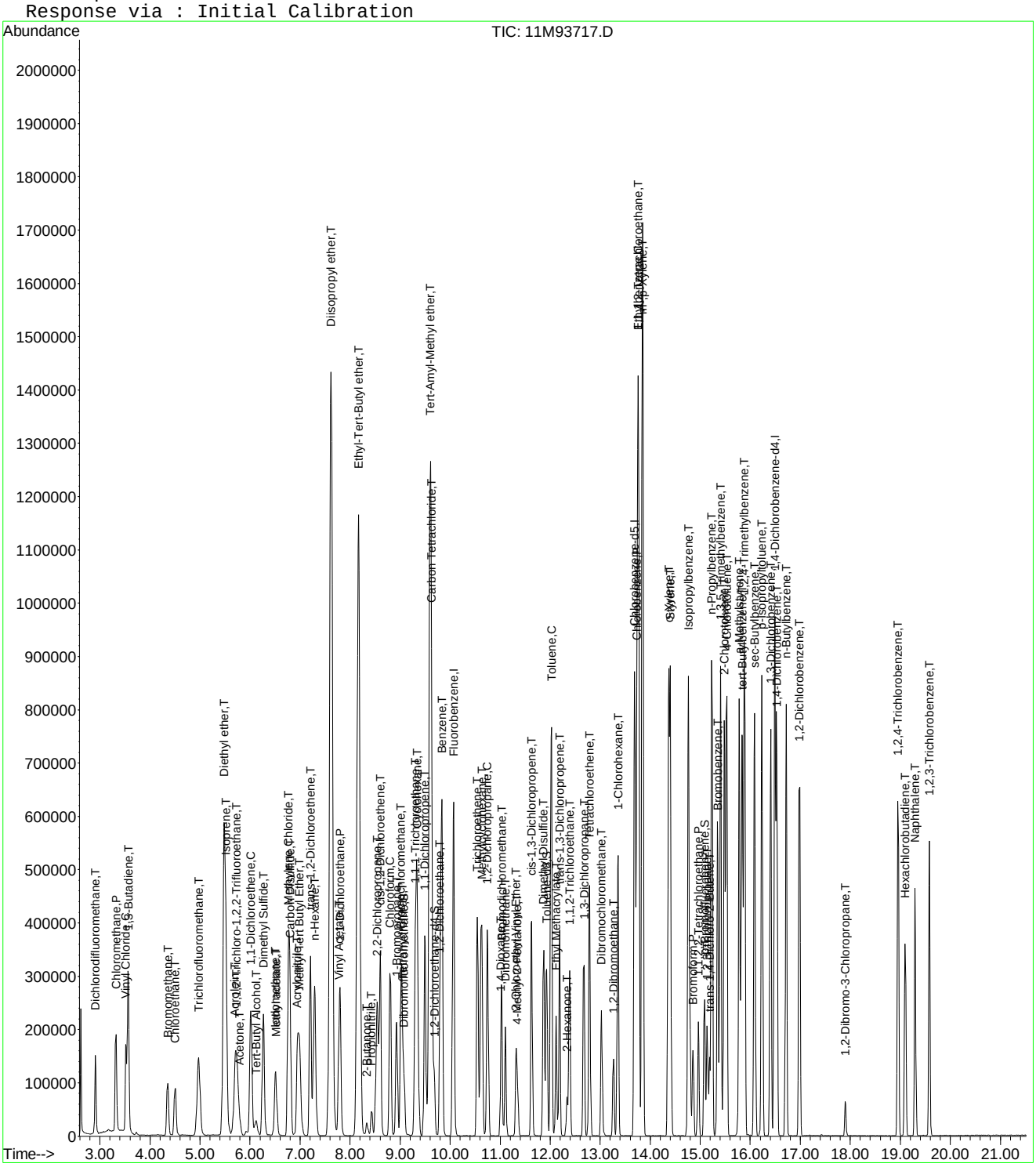

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93718.D Vial: 8
Acq On : 29 Jul 2013 14:05 Operator: TMB
Sample : WG439392-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:38 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	763056	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	599873	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	324990	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.08	111	198665	26.2514 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.00%		
43) 1,2-Dichloroethane-d4	9.69	65	205353	25.8253 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.32%		
58) Toluene-d8	11.93	98	720638	26.7435 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.96%		
80) p-Bromofluorobenzene	15.09	95	278415	26.1401 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	383316	51.7538 ug/L	98
3) Chloromethane	3.32	50	547630	48.8391 ug/L	99
4) Vinyl Chloride	3.52	62	444260	45.7398 ug/L	95
5) 1,3-Butadiene	3.56	54	435181	54.2543 ug/L	80
6) Bromomethane	4.35	94	235276	45.2205 ug/L	100
7) Chloroethane	4.50	64	290118	48.5528 ug/L	100
8) Trichlorofluoromethane	4.97	101	633913	49.2097 ug/L	99
9) Diethyl ether	5.48	59	594195	95.5032 ug/L	79
10) Isoprene	5.51	67	581967	53.1567 ug/L	78
11) Acrolein	5.70	56	36887	46.4896 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	377057	49.6182 ug/L	98
13) Acetone	5.79	43	81061	42.4340 ug/L	98
14) 1,1-Dichloroethene	6.02	61	645545	49.0177 ug/L	92
15) Tert-Butyl Alcohol	6.12	59	69593	180.2291 ug/L	93
16) Dimethyl Sulfide	6.27	62	447962	52.9059 ug/L	81
17) Iodomethane	6.50	142	438737	52.6366 ug/L	95
18) Methyl acetate	6.52	43	268278	49.2912 ug/L	87
19) Methylene Chloride	6.77	84	404424	47.5982 ug/L	57
20) Carbon Disulfide	6.80	76	1291398	52.7090 ug/L	98
21) Acrylonitrile	6.95	53	112402	49.7767 ug/L	96
22) Methyl Tert Butyl Ether	6.98	73	863507	50.1546 ug/L	86
23) trans-1,2-Dichloroethene	7.21	96	407773	48.4503 ug/L	81
24) n-Hexane	7.29	57	620800	53.2878 ug/L	89
25) Diisopropyl ether	7.62	45	3300809	97.8513 ug/L	87
26) Vinyl Acetate	7.78	43	569484	52.6997 ug/L	90
27) 1,1-Dichloroethane	7.80	63	802816	48.5341 ug/L	97
28) Ethyl-Tert-Butyl ether	8.17	59	2421765	96.9635 ug/L	90
29) 2-Butanone	8.33	43	120476	49.4871 ug/L	83
30) Propionitrile	8.43	54	73201	97.9709 ug/L	98
31) 2,2-Dichloropropane	8.54	77	644445	48.3303 ug/L	99
32) cis-1,2-Dichloroethene	8.60	96	440800	48.4271 ug/L	78
33) Chloroform	8.80	83	720907	48.1606 ug/L	97
34) 1-Bromopropane	8.93	122	83818	53.5470 ug/L	99
35) Bromochloromethane	9.02	130	245089	48.7507 ug/L #	58
36) Tetrahydrofuran	9.05	42	164673	98.4972 ug/L	74
38) 1,1,1-Trichloroethane	9.31	97	643392	49.2226 ug/L	96
39) Cyclohexane	9.34	56	825102	53.1700 ug/L	74
40) 1,1-Dichloropropene	9.49	75	571515	50.1172 ug/L	96
41) Carbon Tetrachloride	9.63	117	587809	49.6733 ug/L	99
42) Tert-Amyl-Methyl ether	9.61	73	1793451	97.0483 ug/L #	82

(#) = qualifier out of range (m) = manual integration
11M93718.D 8260WTR.M Tue Jul 30 09:07:39 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93718.D Vial: 8
Acq On : 29 Jul 2013 14:05 Operator: TMB
Sample : WG439392-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:38 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	9.79	62	501971	48.8376	ug/L		90
46)	Benzene	9.83	78	1605598	49.6033	ug/L		100
47)	Trichloroethene	10.55	130	405177	48.5267	ug/L		95
48)	Methylcyclohexane	10.63	83	613635	54.0606	ug/L	#	78
49)	1,2-Dichloropropane	10.74	63	455862	48.8228	ug/L		87
50)	1,4-Dioxane	11.02	88	8012	208.5237	ug/L		72
51)	Bromodichloromethane	11.02	83	539766	49.3482	ug/L		98
52)	Dibromomethane	11.10	93	202774	49.1206	ug/L		97
53)	2-Chloroethyl Vinyl Ether	11.31	63	191135	52.2364	ug/L		89
54)	4-Methyl-2-Pentanone	11.34	58	98762	52.0123	ug/L		81
55)	cis-1,3-Dichloropropene	11.63	75	644750	51.9331	ug/L		99
56)	Dimethyl Disulfide	11.87	79	340682	51.8847	ug/L		93
59)	Toluene	12.03	91	1666880	49.6175	ug/L		96
60)	Ethyl Methacrylate	12.12	69	366046	49.3826	ug/L		71
62)	trans-1,3-Dichloropropene	12.19	75	549947	51.7535	ug/L		97
63)	1,1,2-Trichloroethane	12.39	97	271904	47.7059	ug/L		96
64)	2-Hexanone	12.34	43	187619	51.5272	ug/L	#	24
65)	1,3-Dichloropropane	12.68	76	496203	49.0824	ug/L		75
66)	Tetrachloroethene	12.79	164	352825	48.6384	ug/L		96
67)	Dibromochloromethane	13.03	129	365733	49.1221	ug/L		99
68)	1,2-Dibromoethane	13.27	107	275022	48.9658	ug/L		99
69)	1-Chlorohexane	13.36	91	543272	55.4285	ug/L		70
70)	Chlorobenzene	13.73	112	1095152	49.0008	ug/L		99
71)	1,1,1,2-Tetrachloroethane	13.76	131	410026	49.0599	ug/L		99
72)	Ethylbenzene	13.76	106	608854	49.6969	ug/L		98
73)	m-,p-Xylene	13.84	106	1449254	104.5334	ug/L		99
74)	o-Xylene	14.37	106	721618	52.0149	ug/L		97
75)	Styrene	14.40	104	1209147	56.1537	ug/L		94
76)	Bromoform	14.86	173	235930	51.0907	ug/L		98
77)	Isopropylbenzene	14.77	105	1754552	54.0714	ug/L		99
79)	1,1,2,2-Tetrachloroethane	14.96	83	312338	48.2847	ug/L		98
81)	1,2,3-Trichloropropane	15.14	110	90636	48.0998	ug/L		83
82)	trans-1,4-Dichloro-2-Buten	15.19	53	118936	46.5401	ug/L	#	1
83)	n-Propylbenzene	15.23	91	2128907	52.1707	ug/L		98
84)	Bromobenzene	15.35	156	481647	50.8784	ug/L		87
85)	1,3,5-Trimethylbenzene	15.41	105	1499851	54.3702	ug/L		97
86)	2-Chlorotoluene	15.48	91	1242868	47.5473	ug/L		93
87)	4-Chlorotoluene	15.53	91	1378653	49.7220	ug/L		85
88)	a-Methylstyrene	15.78	118	848989	55.4923	ug/L		93
89)	tert-Butylbenzene	15.84	134	316447	51.5293	ug/L		94
90)	1,2,4-Trimethylbenzene	15.88	105	1534505	52.7591	ug/L		99
91)	sec-Butylbenzene	16.09	105	1772749	53.8776	ug/L		100
92)	p-Isopropyltoluene	16.23	119	1499935	55.0625	ug/L		98
93)	1,3-Dichlorobenzene	16.41	146	912227	50.0341	ug/L		97
94)	1,4-Dichlorobenzene	16.53	146	914997	48.9098	ug/L		97
95)	n-Butylbenzene	16.72	91	1359551	53.3669	ug/L		97
96)	1,2-Dichlorobenzene	16.99	146	833908	48.9145	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	17.90	75	49576	47.0020	ug/L		89
98)	1,2,4-Trichlorobenzene	18.95	180	582332	50.7370	ug/L		98
99)	Hexachlorobutadiene	19.10	225	222987	48.9771	ug/L		92
100)	Naphthalene	19.29	128	1013833	54.8428	ug/L		99
101)	1,2,3-Trichlorobenzene	19.58	180	513793	50.8318	ug/L		98

(#) = qualifier out of range (m) = manual integration
11M93718.D 8260WTR.M Tue Jul 30 09:07:39 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93718.D Vial: 8
Acq On : 29 Jul 2013 14:05 Operator: TMB
Sample : WG439392-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:07 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration

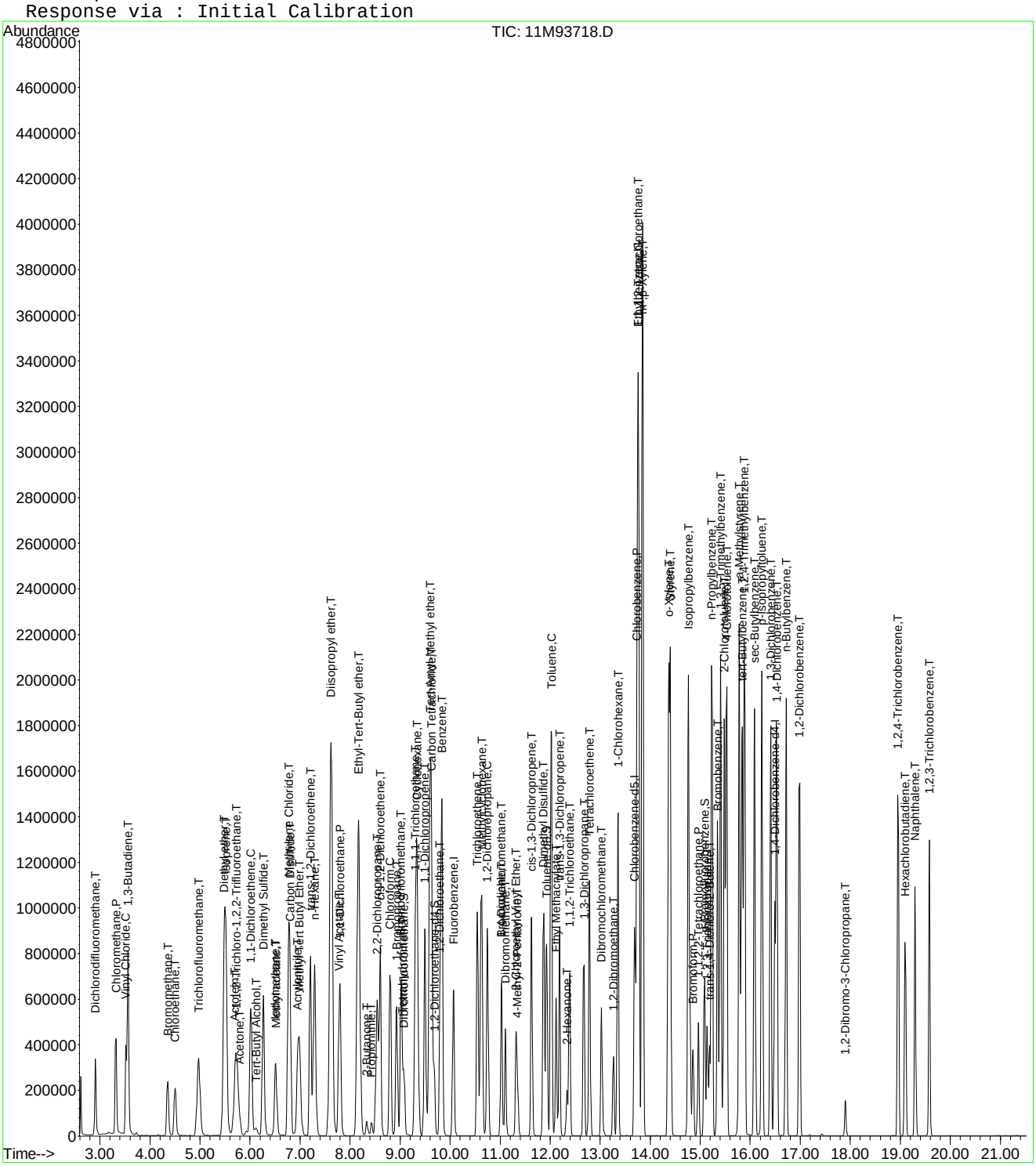

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93719.D Vial: 9
Acq On : 29 Jul 2013 14:36 Operator: TMB
Sample : WG439392-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:40 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	788584	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	620253	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	334704	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.08	111	398345	50.9329 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 203.72%#		
43) 1,2-Dichloroethane-d4	9.68	65	404334	49.2031 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 196.80%#		
58) Toluene-d8	11.93	98	1393323	50.0085 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 200.04%#		
80) p-Bromofluorobenzene	15.09	95	554301	50.5323 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 202.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	723601	94.5351 ug/L	98
3) Chloromethane	3.32	50	1025011	88.4540 ug/L	98
4) Vinyl Chloride	3.52	62	856486	85.3269 ug/L	95
5) 1,3-Butadiene	3.56	54	710532	89.7184 ug/L	88
6) Bromomethane	4.35	94	495145	92.0871 ug/L	100
7) Chloroethane	4.50	64	572407	92.6943 ug/L	99
8) Trichlorofluoromethane	4.97	101	1225581	92.0601 ug/L	100
9) Diethyl ether	5.48	59	1309366	203.6379 ug/L	79
10) Isoprene	5.51	67	1132214	100.0684 ug/L	77
11) Acrolein	5.70	56	84575	103.1415 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	724111	92.2035 ug/L	98
13) Acetone	5.79	43	181881	92.1294 ug/L	97
14) 1,1-Dichloroethene	6.02	61	1276474	93.7879 ug/L	92
15) Tert-Butyl Alcohol	6.12	59	150048	376.0087 ug/L	93
16) Dimethyl Sulfide	6.27	62	902689	103.1596 ug/L	81
17) Iodomethane	6.50	142	858999	99.2603 ug/L	94
18) Methyl acetate	6.52	43	558959	99.3741 ug/L	87
19) Methylene Chloride	6.76	84	812585	92.5403 ug/L	57
20) Carbon Disulfide	6.79	76	2469882	97.5459 ug/L	98
21) Acrylonitrile	6.94	53	247816	106.1916 ug/L	99
22) Methyl Tert Butyl Ether	6.98	73	1770133	99.4853 ug/L	85
23) trans-1,2-Dichloroethene	7.21	96	809717	93.0935 ug/L	81
24) n-Hexane	7.29	57	1197842	99.4910 ug/L	89
25) Diisopropyl ether	7.62	45	6774278	194.3201 ug/L	90
26) Vinyl Acetate	7.78	43	1204189	107.8276 ug/L	91
27) 1,1-Dichloroethane	7.80	63	1597657	93.4593 ug/L	98
28) Ethyl-Tert-Butyl ether	8.17	59	5162532	200.0081 ug/L	90
29) 2-Butanone	8.33	43	254129	101.0077 ug/L	84
30) Propionitrile	8.43	54	158889	205.7702 ug/L	96
31) 2,2-Dichloropropane	8.54	77	1282473	93.0658 ug/L	100
32) cis-1,2-Dichloroethene	8.60	96	895245	95.1694 ug/L	79
33) Chloroform	8.80	83	1438838	93.0108 ug/L	98
34) 1-Bromopropane	8.93	122	164328	101.5823 ug/L	98
35) Bromochloromethane	9.02	130	502123	96.6442 ug/L #	58
36) Tetrahydrofuran	9.05	42	354343	205.0850 ug/L	74
38) 1,1,1-Trichloroethane	9.31	97	1279681	94.7325 ug/L	96
39) Cyclohexane	9.34	56	1600130	99.7753 ug/L	74
40) 1,1-Dichloropropene	9.49	75	1132781	96.1199 ug/L	97
41) Carbon Tetrachloride	9.63	117	1159167	94.7854 ug/L	100
42) Tert-Amyl-Methyl ether	9.61	73	3879356	203.1264 ug/L #	81

(#) = qualifier out of range (m) = manual integration
11M93719.D 8260WTR.M Tue Jul 30 09:07:41 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93719.D Vial: 9
Acq On : 29 Jul 2013 14:36 Operator: TMB
Sample : WG439392-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:40 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	9.79	62	1028772	96.8509	ug/L		90
46)	Benzene	9.83	78	3100770	92.6941	ug/L		98
47)	Trichloroethene	10.55	130	812879	94.2043	ug/L		94
48)	Methylcyclohexane	10.63	83	1189907	101.4361	ug/L	#	78
49)	1,2-Dichloropropane	10.74	63	929222	96.2979	ug/L		86
50)	1,4-Dioxane	11.02	88	16462	414.5773	ug/L		75
51)	Bromodichloromethane	11.02	83	1099436	97.2622	ug/L		98
52)	Dibromomethane	11.10	93	424266	99.4484	ug/L		98
53)	2-Chloroethyl Vinyl Ether	11.31	63	412717	109.1424	ug/L		89
54)	4-Methyl-2-Pentanone	11.34	58	209706	106.8650	ug/L		82
55)	cis-1,3-Dichloropropene	11.62	75	1313871	102.4034	ug/L		98
56)	Dimethyl Disulfide	11.87	79	719850	106.0818	ug/L		92
59)	Toluene	12.03	91	3177629	91.4797	ug/L		94
60)	Ethyl Methacrylate	12.12	69	768406	100.0874	ug/L		71
62)	trans-1,3-Dichloropropene	12.19	75	1127997	102.6638	ug/L		98
63)	1,1,2-Trichloroethane	12.39	97	565624	95.9788	ug/L		95
64)	2-Hexanone	12.34	43	401813	106.7270	ug/L		78
65)	1,3-Dichloropropane	12.68	76	1022430	97.8115	ug/L		76
66)	Tetrachloroethene	12.79	164	698172	93.0836	ug/L		96
67)	Dibromochloromethane	13.03	129	754576	98.0180	ug/L		99
68)	1,2-Dibromoethane	13.27	107	574300	98.8906	ug/L		99
69)	1-Chlorohexane	13.36	91	1074081	105.9847	ug/L		69
70)	Chlorobenzene	13.73	112	2156871	93.3347	ug/L		97
71)	1,1,1,2-Tetrachloroethane	13.76	131	833968	96.5062	ug/L		99
72)	Ethylbenzene	13.76	106	1233490	97.3739	ug/L		91
73)	m-,p-Xylene	13.84	106	2776309	193.6729	ug/L		88
74)	o-Xylene	14.37	106	1448455	100.9754	ug/L		98
75)	Styrene	14.40	104	2388415	107.2752	ug/L		90
76)	Bromoform	14.86	173	493566	103.3700	ug/L		99
77)	Isopropylbenzene	14.77	105	3335848	99.4256	ug/L		98
79)	1,1,2,2-Tetrachloroethane	14.96	83	660298	99.1138	ug/L		98
81)	1,2,3-Trichloropropane	15.14	110	191158	98.5017	ug/L		82
82)	trans-1,4-Dichloro-2-Buten	15.19	53	246977	93.1153	ug/L	#	1
83)	n-Propylbenzene	15.23	91	3922696	93.3391	ug/L		98
84)	Bromobenzene	15.34	156	976332	100.1408	ug/L		87
85)	1,3,5-Trimethylbenzene	15.41	105	2888089	101.6559	ug/L		100
86)	2-Chlorotoluene	15.48	91	2391291	88.8265	ug/L		90
87)	4-Chlorotoluene	15.53	91	2666394	102.3397	ug/L		88
88)	a-Methylstyrene	15.78	118	1695058	107.5783	ug/L		91
89)	tert-Butylbenzene	15.84	134	624097	98.6767	ug/L		92
90)	1,2,4-Trimethylbenzene	15.88	105	2932062	97.8838	ug/L		99
91)	sec-Butylbenzene	16.09	105	3330154	98.2730	ug/L		97
92)	p-Isopropyltoluene	16.23	119	2844676	101.3970	ug/L		95
93)	1,3-Dichlorobenzene	16.41	146	1793618	95.5217	ug/L		95
94)	1,4-Dichlorobenzene	16.53	146	1803246	93.5923	ug/L		96
95)	n-Butylbenzene	16.72	91	2585516	98.5447	ug/L		99
96)	1,2-Dichlorobenzene	16.99	146	1647606	93.8386	ug/L		95
97)	1,2-Dibromo-3-Chloropropan	17.90	75	106906	98.4137	ug/L		89
98)	1,2,4-Trichlorobenzene	18.95	180	1168616	98.8633	ug/L		99
99)	Hexachlorobutadiene	19.10	225	436096	93.0047	ug/L		94
100)	Naphthalene	19.29	128	2058921	108.1438	ug/L		98
101)	1,2,3-Trichlorobenzene	19.58	180	1023759	98.3453	ug/L		100

(#) = qualifier out of range (m) = manual integration
11M93719.D 8260WTR.M Tue Jul 30 09:07:41 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93719.D Vial: 9
Acq On : 29 Jul 2013 14:36 Operator: TMB
Sample : WG439392-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:07 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration

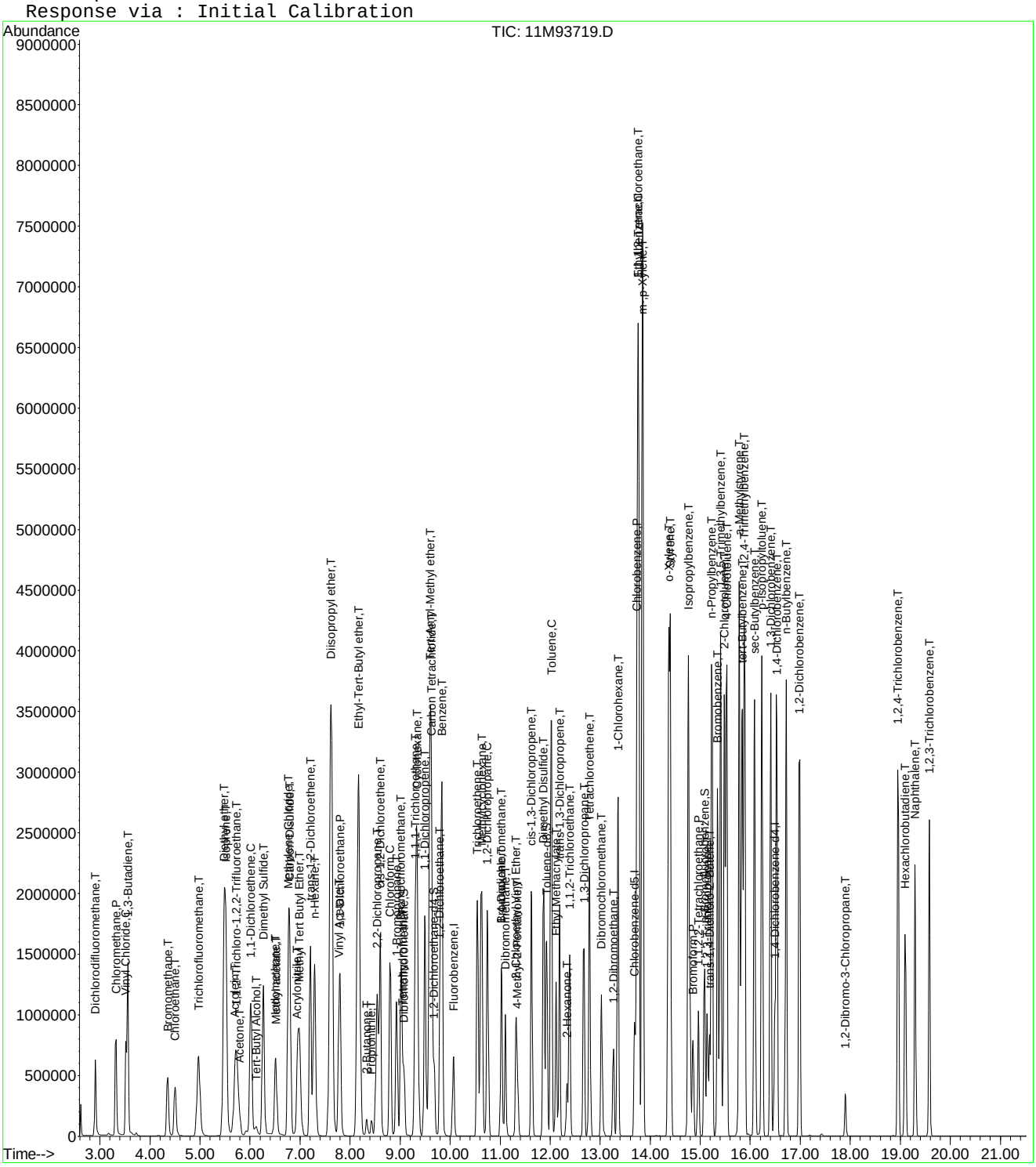

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93720.D Vial: 10
Acq On : 29 Jul 2013 15:08 Operator: TMB
Sample : WG439392-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:41 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	801930	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	636866	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	328084	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.08	111	837873	105.3486 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 421.40%#		
43) 1,2-Dichloroethane-d4	9.69	65	840792	100.6125 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 402.44%#		
58) Toluene-d8	11.93	98	2833101	99.0319 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 396.12%#		
80) p-Bromofluorobenzene	15.09	95	1164596	108.3114 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 433.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	1667452	214.2195 ug/L	96
3) Chloromethane	3.32	50	2283921	193.8123 ug/L	97
4) Vinyl Chloride	3.52	62	1928010	188.8802 ug/L	98
5) 1,3-Butadiene	3.56	54	1397666	200.8734 ug/L	89
6) Bromomethane	4.35	94	1196733	218.8644 ug/L	100
7) Chloroethane	4.50	64	1304502	207.7325 ug/L	98
8) Trichlorofluoromethane	4.97	101	2810638	207.6089 ug/L	99
9) Diethyl ether	5.49	59	19335	2.9570 ug/L #	71
10) Isoprene	5.51	67	2441695	212.2127 ug/L	76
11) Acrolein	5.70	56	1170	1.4031 ug/L	69
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	1698193	212.6380 ug/L	98
13) Acetone	5.79	43	402001	200.2394 ug/L	99
14) 1,1-Dichloroethene	6.02	61	2866655	207.1200 ug/L	93
15) Tert-Butyl Alcohol	6.10	59	5341	13.1614 ug/L #	37
16) Dimethyl Sulfide	6.27	62	1901092	213.6418 ug/L	80
17) Iodomethane	6.50	142	1832332	207.6438 ug/L	95
18) Methyl acetate	6.52	43	1142708	199.7745 ug/L	89
19) Methylene Chloride	6.76	84	1791801	200.6612 ug/L	60
20) Carbon Disulfide	6.79	76	4878741	189.4751 ug/L	95
21) Acrylonitrile	6.98	53	43625	18.3826 ug/L #	34
22) Methyl Tert Butyl Ether	6.98	73	3866967	213.7150 ug/L	84
23) trans-1,2-Dichloroethene	7.21	96	1814401	205.1309 ug/L	83
24) n-Hexane	7.29	57	2579684	210.6990 ug/L	90
25) Diisopropyl ether	7.63	45	7135	0.2013 ug/L #	65
26) Vinyl Acetate	7.78	43	2421583	213.2289 ug/L	91
27) 1,1-Dichloroethane	7.80	63	3463781	199.2513 ug/L	98
28) Ethyl-Tert-Butyl ether	8.19	59	5418	0.2064 ug/L #	67
29) 2-Butanone	8.33	43	529987	207.1461 ug/L	85
30) Propionitrile	8.43	54	1128	1.4365 ug/L #	60
31) 2,2-Dichloropropane	8.54	77	2847067	203.1660 ug/L	98
32) cis-1,2-Dichloroethene	8.60	96	1960459	204.9391 ug/L	79
33) Chloroform	8.80	83	3089867	196.4141 ug/L	99
34) 1-Bromopropane	8.93	122	357986	217.6125 ug/L	99
35) Bromochloromethane	9.02	130	1103804	208.9149 ug/L #	58
36) Tetrahydrofuran	9.04	42	2035	1.1582 ug/L #	35
38) 1,1,1-Trichloroethane	9.31	97	2834878	206.3684 ug/L	95
39) Cyclohexane	9.34	56	3446178	211.3085 ug/L	75
40) 1,1-Dichloropropene	9.49	75	2522487	210.4785 ug/L	98
41) Carbon Tetrachloride	9.64	117	2581506	207.5775 ug/L	99
42) Tert-Amyl-Methyl ether	9.60	73	5139	0.2646 ug/L #	98

(#) = qualifier out of range (m) = manual integration
11M93720.D 8260WTR.M Tue Jul 30 09:07:42 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93720.D Vial: 10
Acq On : 29 Jul 2013 15:08 Operator: TMB
Sample : WG439392-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:41 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.79	62	2204644	204.0959 ug/L		89
46)	Benzene	9.83	78	6012999	176.7605 ug/L		90
47)	Trichloroethene	10.55	130	1809188	206.1768 ug/L		95
48)	Methylcyclohexane	10.63	83	2560574	214.6487 ug/L	#	78
49)	1,2-Dichloropropane	10.74	63	2034414	207.3234 ug/L		87
50)	1,4-Dioxane	11.02	88	4004	99.1582 ug/L	#	60
51)	Bromodichloromethane	11.03	83	2371986	206.3468 ug/L		99
52)	Dibromomethane	11.11	93	934466	215.3945 ug/L		99
53)	2-Chloroethyl Vinyl Ether	11.31	63	877294	228.1381 ug/L		89
54)	4-Methyl-2-Pentanone	11.34	58	452722	226.8650 ug/L		82
55)	cis-1,3-Dichloropropene	11.63	75	2786048	213.5313 ug/L		95
56)	Dimethyl Disulfide	11.87	79	1551138	224.7815 ug/L		88
59)	Toluene	12.03	91	5875362	164.7316 ug/L		85
60)	Ethyl Methacrylate	12.12	69	1630313	206.6376 ug/L		71
62)	trans-1,3-Dichloropropene	12.19	75	2396674	212.4414 ug/L		100
63)	1,1,2-Trichloroethane	12.39	97	1235037	204.1024 ug/L		96
64)	2-Hexanone	12.34	43	856364	221.5284 ug/L	#	25
65)	1,3-Dichloropropane	12.68	76	2177245	202.8545 ug/L		74
66)	Tetrachloroethene	12.79	164	1551068	201.4013 ug/L		97
67)	Dibromochloromethane	13.03	129	1648379	208.5359 ug/L		100
68)	1,2-Dibromoethane	13.27	107	1262558	211.7328 ug/L		100
69)	1-Chlorohexane	13.36	91	2258729	217.0655 ug/L		68
70)	Chlorobenzene	13.73	112	4286372	180.6465 ug/L		91
71)	1,1,1,2-Tetrachloroethane	13.76	131	1819342	205.0412 ug/L		100
72)	Ethylbenzene	13.76	106	2648548	203.6271 ug/L		66
73)	m-,p-Xylene	13.84	106	5199417	353.2455 ug/L		68
74)	o-Xylene	14.37	106	3051040	207.1473 ug/L		84
75)	Styrene	14.40	104	4631575	202.5998 ug/L		80
76)	Bromoform	14.86	173	1080687	220.4296 ug/L		100
77)	Isopropylbenzene	14.77	105	6048947	175.5870 ug/L		87
79)	1,1,2,2-Tetrachloroethane	14.96	83	1408070	215.6225 ug/L		99
81)	1,2,3-Trichloropropane	15.14	110	411933	216.5478 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	15.19	53	535080	204.9457 ug/L	#	1
83)	n-Propylbenzene	15.23	91	6631619	160.9810 ug/L		83
84)	Bromobenzene	15.35	156	2060859	215.6441 ug/L		89
85)	1,3,5-Trimethylbenzene	15.41	105	5318048	190.9634 ug/L		91
86)	2-Chlorotoluene	15.48	91	5241639	198.6338 ug/L		93
87)	4-Chlorotoluene	15.53	91	4007271	185.2049 ug/L		91
88)	a-Methylstyrene	15.78	118	3267848	211.5816 ug/L		86
89)	tert-Butylbenzene	15.84	134	1355417	218.6309 ug/L		85
90)	1,2,4-Trimethylbenzene	15.88	105	5264959	179.3117 ug/L		87
91)	sec-Butylbenzene	16.09	105	5936294	178.7151 ug/L		88
92)	p-Isopropyltoluene	16.23	119	5194453	188.8896 ug/L		87
93)	1,3-Dichlorobenzene	16.41	146	3478036	188.9654 ug/L		88
94)	1,4-Dichlorobenzene	16.53	146	3466572	183.5530 ug/L		89
95)	n-Butylbenzene	16.72	91	4763333	185.2135 ug/L		94
96)	1,2-Dichlorobenzene	16.99	146	3247873	188.7136 ug/L		90
97)	1,2-Dibromo-3-Chloropropan	17.90	75	236691	222.2855 ug/L		89
98)	1,2,4-Trichlorobenzene	18.95	180	2397005	206.8750 ug/L		97
99)	Hexachlorobutadiene	19.10	225	931924	202.7586 ug/L		95
100)	Naphthalene	19.29	128	3937156	210.9700 ug/L	#	93
101)	1,2,3-Trichlorobenzene	19.58	180	2104832	206.2763 ug/L		97

(#) = qualifier out of range (m) = manual integration
11M93720.D 8260WTR.M Tue Jul 30 09:07:42 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93720.D Vial: 10
Acq On : 29 Jul 2013 15:08 Operator: TMB
Sample : WG439392-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:07 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration

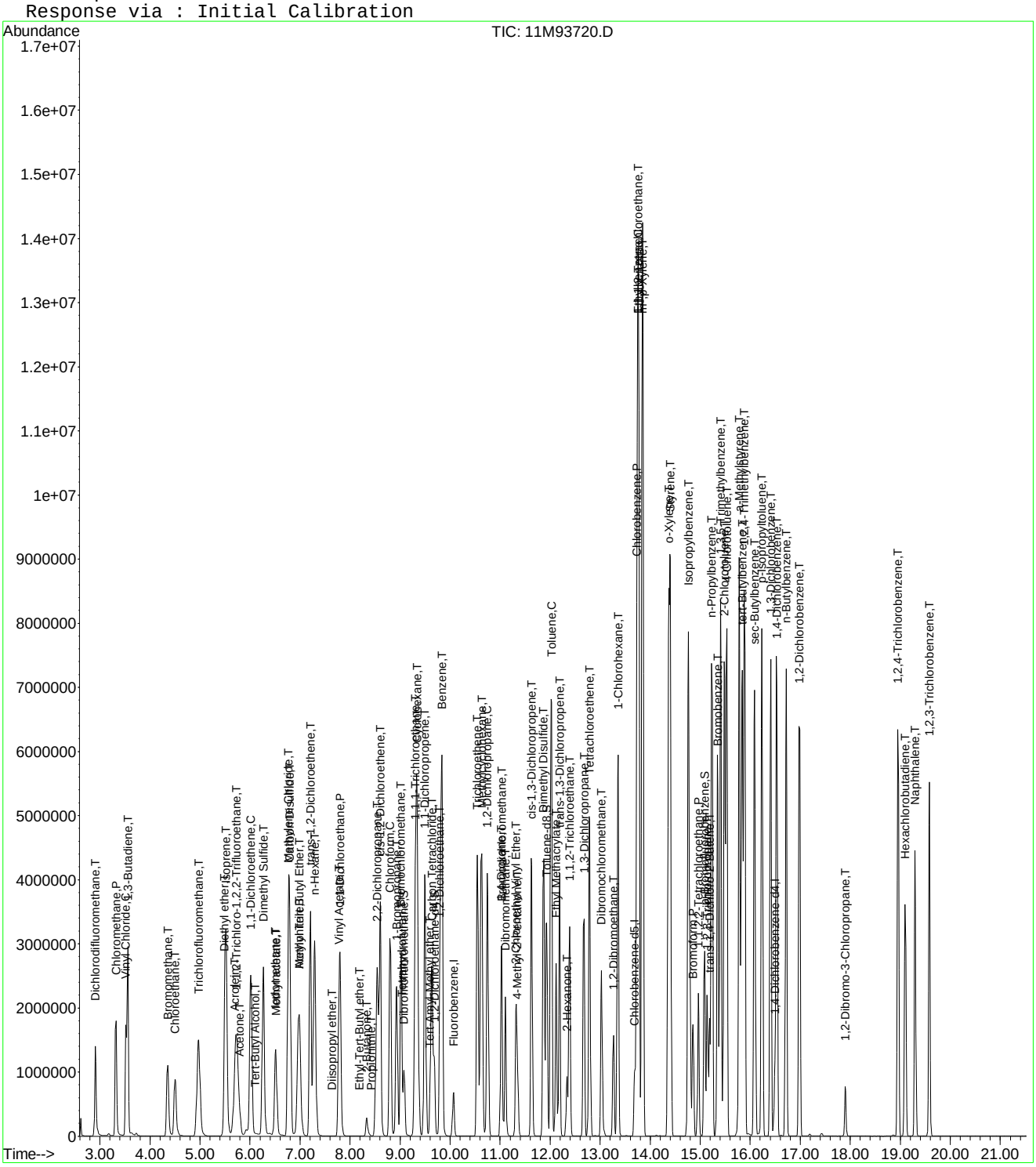

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93721.D Vial: 11
Acq On : 29 Jul 2013 15:39 Operator: TMB
Sample : WG439392-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:43 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	833646	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	661595	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	332629	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.08	111	1261294	152.5533 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 610.20%#		
43) 1,2-Dichloroethane-d4	9.68	65	1263199	145.4086 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 581.64%#		
58) Toluene-d8	11.93	98	4023486	135.3852 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 541.56%#		
80) p-Bromofluorobenzene	15.09	95	1731012	158.7903 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 635.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	2298003	283.9952 ug/L	95
3) Chloromethane	3.32	50	3381254	276.0151 ug/L	93
4) Vinyl Chloride	3.52	62	2875594	270.9939 ug/L	99
5) 1,3-Butadiene	3.55	54	1885895	304.6025 ug/L	89
6) Bromomethane	4.34	94	1849355	325.3516 ug/L	100
7) Chloroethane	4.50	64	1947784	298.3701 ug/L	98
8) Trichlorofluoromethane	4.96	101	4019840	285.6305 ug/L	98
9) Diethyl ether	5.48	59	2101255	309.1310 ug/L	79
10) Isoprene	5.51	67	3498913	292.5283 ug/L	76
11) Acrolein	5.70	56	146104	168.5465 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	5.72	101	2425631	292.1685 ug/L	98
13) Acetone	5.79	43	644993	309.0525 ug/L	94
14) 1,1-Dichloroethene	6.01	61	4151809	288.5617 ug/L	95
15) Tert-Butyl Alcohol	6.13	59	240723	570.6261 ug/L	94
16) Dimethyl Sulfide	6.27	62	2808361	303.5924 ug/L	82
17) Iodomethane	6.50	142	2664845	290.2917 ug/L	95
18) Methyl acetate	6.52	43	1783644	299.9630 ug/L	88
19) Methylene Chloride	6.76	84	2664126	287.0008 ug/L	65
20) Carbon Disulfide	6.79	76	6457195	241.2365 ug/L	91
21) Acrylonitrile	6.94	53	441367	178.9069 ug/L	97
22) Methyl Tert Butyl Ether	6.98	73	5773095	306.9220 ug/L #	82
23) trans-1,2-Dichloroethene	7.21	96	2671379	290.5281 ug/L	85
24) n-Hexane	7.29	57	3573201	280.7425 ug/L	91
25) Diisopropyl ether	7.62	45	9472111	257.0205 ug/L	95
26) Vinyl Acetate	7.78	43	3597373	304.7101 ug/L	92
27) 1,1-Dichloroethane	7.80	63	4968442	274.9323 ug/L	97
28) Ethyl-Tert-Butyl ether	8.17	59	7605568	278.7294 ug/L	90
29) 2-Butanone	8.33	43	831558	312.6504 ug/L	86
30) Propionitrile	8.43	54	262631	321.7370 ug/L	86
31) 2,2-Dichloropropane	8.54	77	4121019	282.8868 ug/L	97
32) cis-1,2-Dichloroethene	8.60	96	2885391	290.1526 ug/L	81
33) Chloroform	8.80	83	4426037	270.6467 ug/L	98
34) 1-Bromopropane	8.93	122	532337	311.2858 ug/L	99
35) Bromochloromethane	9.02	130	1657963	301.8610 ug/L #	59
36) Tetrahydrofuran	9.05	42	587077	321.4189 ug/L	75
38) 1,1,1-Trichloroethane	9.31	97	4092307	286.5708 ug/L	93
39) Cyclohexane	9.34	56	4776998	281.7663 ug/L	76
40) 1,1-Dichloropropene	9.49	75	3663106	294.0242 ug/L	100
41) Carbon Tetrachloride	9.63	117	3721881	287.8885 ug/L	98
42) Tert-Amyl-Methyl ether	9.61	73	5842337	289.3740 ug/L #	79

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93721.D Vial: 11
Acq On : 29 Jul 2013 15:39 Operator: TMB
Sample : WG439392-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:07:43 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	9.79	62	3233123	287.9207 ug/L #	87
46) Benzene	9.83	78	7786592	220.1893 ug/L	82
47) Trichloroethene	10.55	130	2655885	291.1523 ug/L	94
48) Methylcyclohexane	10.63	83	3567005	287.6401 ug/L #	79
49) 1,2-Dichloropropane	10.74	63	3022918	296.3399 ug/L	88
50) 1,4-Dioxane	11.02	88	30380	723.7307 ug/L	82
51) Bromodichloromethane	11.03	83	3476693	290.9423 ug/L	98
52) Dibromomethane	11.10	93	1409727	312.5798 ug/L	99
53) 2-Chloroethyl Vinyl Ether	11.31	63	1342593	335.8550 ug/L	90
54) 4-Methyl-2-Pentanone	11.34	58	707514	341.0561 ug/L	82
55) cis-1,3-Dichloropropene	11.63	75	4003950	295.2000 ug/L	91
56) Dimethyl Disulfide	11.87	79	2315460	322.7768 ug/L	84
59) Toluene	12.03	91	7376453	199.0883 ug/L	77
60) Ethyl Methacrylate	12.12	69	2424146	295.6978 ug/L	71
62) trans-1,3-Dichloropropene	12.19	75	3462432	295.4386 ug/L	97
63) 1,1,2-Trichloroethane	12.39	97	1866002	296.8493 ug/L	95
64) 2-Hexanone	12.34	43	1310700	326.3850 ug/L #	25
65) 1,3-Dichloropropane	12.68	76	3208666	287.7780 ug/L	74
66) Tetrachloroethene	12.79	164	2256116	281.9997 ug/L	99
67) Dibromochloromethane	13.03	129	2453269	298.7617 ug/L	98
68) 1,2-Dibromoethane	13.27	107	1908826	308.1477 ug/L	100
69) 1-Chlorohexane	13.36	91	3181284	294.2965 ug/L #	67
70) Chlorobenzene	13.73	112	5671360	230.0821 ug/L	83
71) 1,1,1,2-Tetrachloroethane	13.76	131	2665839	289.2121 ug/L	100
72) Ethylbenzene	13.76	106	3756902	278.0439 ug/L	49
73) m-,p-Xylene	13.84	106	6602756	431.8203 ug/L	61
74) o-Xylene	14.37	106	4277500	279.5614 ug/L	73
75) Styrene	14.40	104	6029774	253.9026 ug/L #	70
76) Bromoform	14.86	173	1614948	317.0913 ug/L	99
77) Isopropylbenzene	14.77	105	7510688	209.8690 ug/L #	76
79) 1,1,2,2-Tetrachloroethane	14.96	83	2106153	318.1154 ug/L	99
81) 1,2,3-Trichloropropane	15.14	110	621615	322.3099 ug/L	84
82) trans-1,4-Dichloro-2-Buten	15.19	53	812953	306.7671 ug/L #	1
83) n-Propylbenzene	15.23	91	8050739	192.7594 ug/L #	71
84) Bromobenzene	15.35	156	2956685	305.1541 ug/L	92
85) 1,3,5-Trimethylbenzene	15.41	105	6723181	238.1210 ug/L	83
86) 2-Chlorotoluene	15.49	91	6518826	243.6578 ug/L	83
87) 4-Chlorotoluene	15.53	91	5037252	Below Cal	80
88) a-Methylstyrene	15.78	118	4417638	282.1182 ug/L	81
89) tert-Butylbenzene	15.84	134	1960102	311.8474 ug/L	79
90) 1,2,4-Trimethylbenzene	15.88	105	6599891	221.7049 ug/L	76
91) sec-Butylbenzene	16.09	105	7342236	218.0214 ug/L #	79
92) p-Isopropyltoluene	16.23	119	6577213	235.9039 ug/L #	78
93) 1,3-Dichlorobenzene	16.41	146	4653991	249.4012 ug/L	81
94) 1,4-Dichlorobenzene	16.53	146	4606222	240.5642 ug/L	82
95) n-Butylbenzene	16.72	91	6031448	231.3174 ug/L #	87
96) 1,2-Dichlorobenzene	16.99	146	4386568	251.3935 ug/L	83
97) 1,2-Dibromo-3-Chloropropan	17.90	75	368449	341.2964 ug/L	90
98) 1,2,4-Trichlorobenzene	18.95	180	3461073	294.6284 ug/L	93
99) Hexachlorobutadiene	19.10	225	1393742	299.0929 ug/L	95
100) Naphthalene	19.29	128	5346217	282.5592 ug/L #	87
101) 1,2,3-Trichlorobenzene	19.58	180	3117786	301.3721 ug/L	94

(#) = qualifier out of range (m) = manual integration
11M93721.D 8260WTR.M Tue Jul 30 09:07:44 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93721.D Vial: 11
Acq On : 29 Jul 2013 15:39 Operator: TMB
Sample : WG439392-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:07 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration

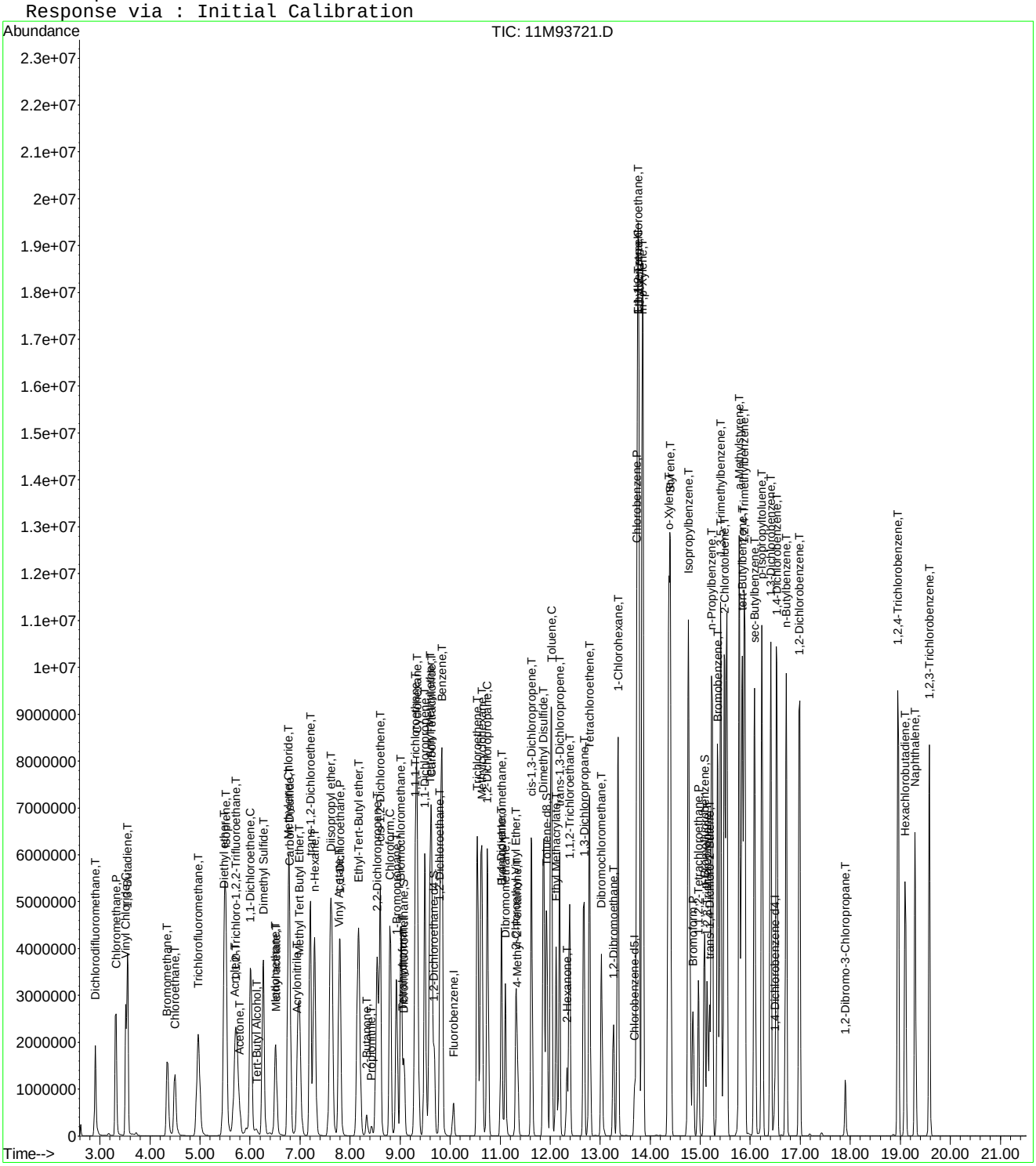

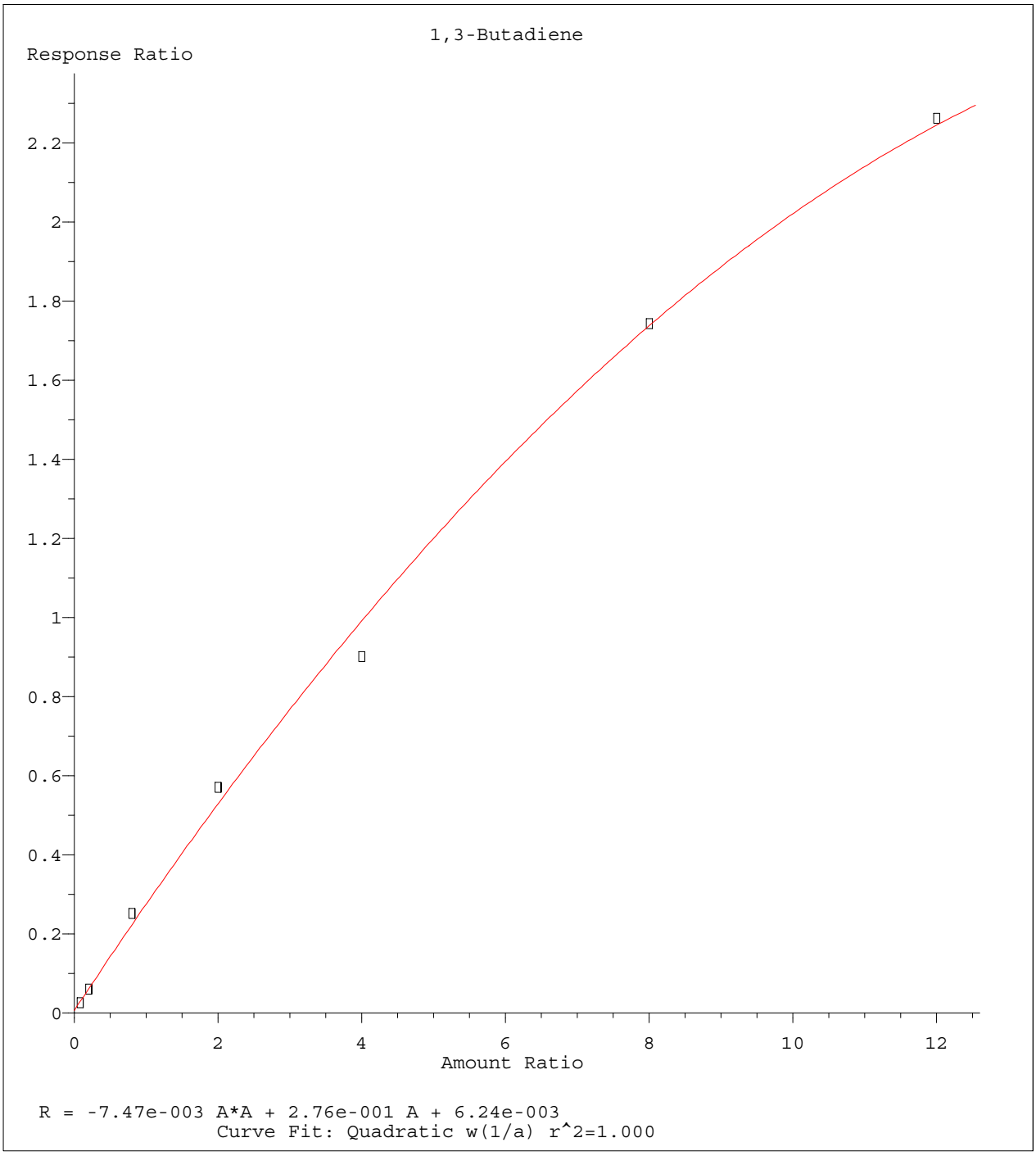

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jul 29 16:21:32 2013

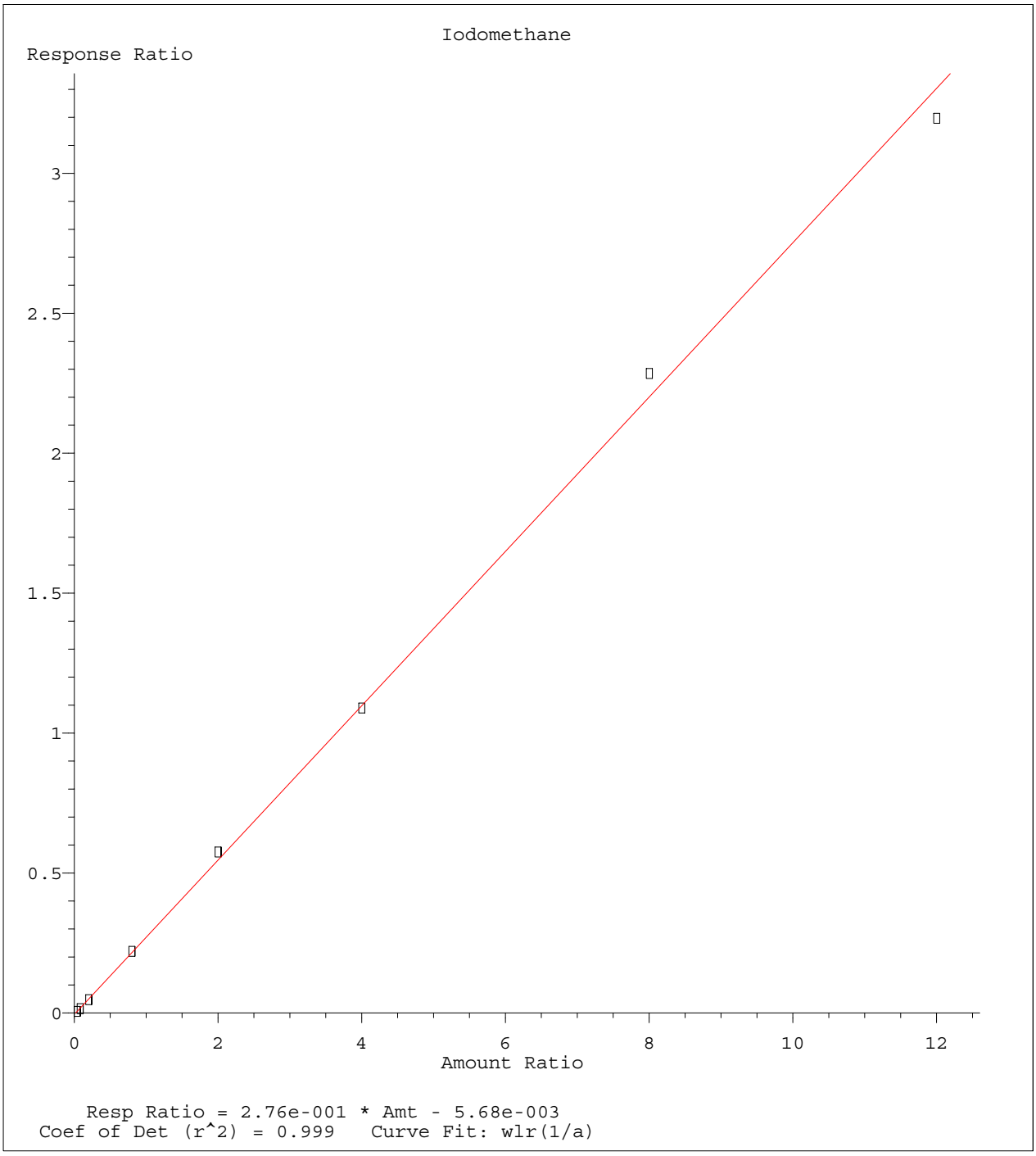

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jul 29 16:21:32 2013

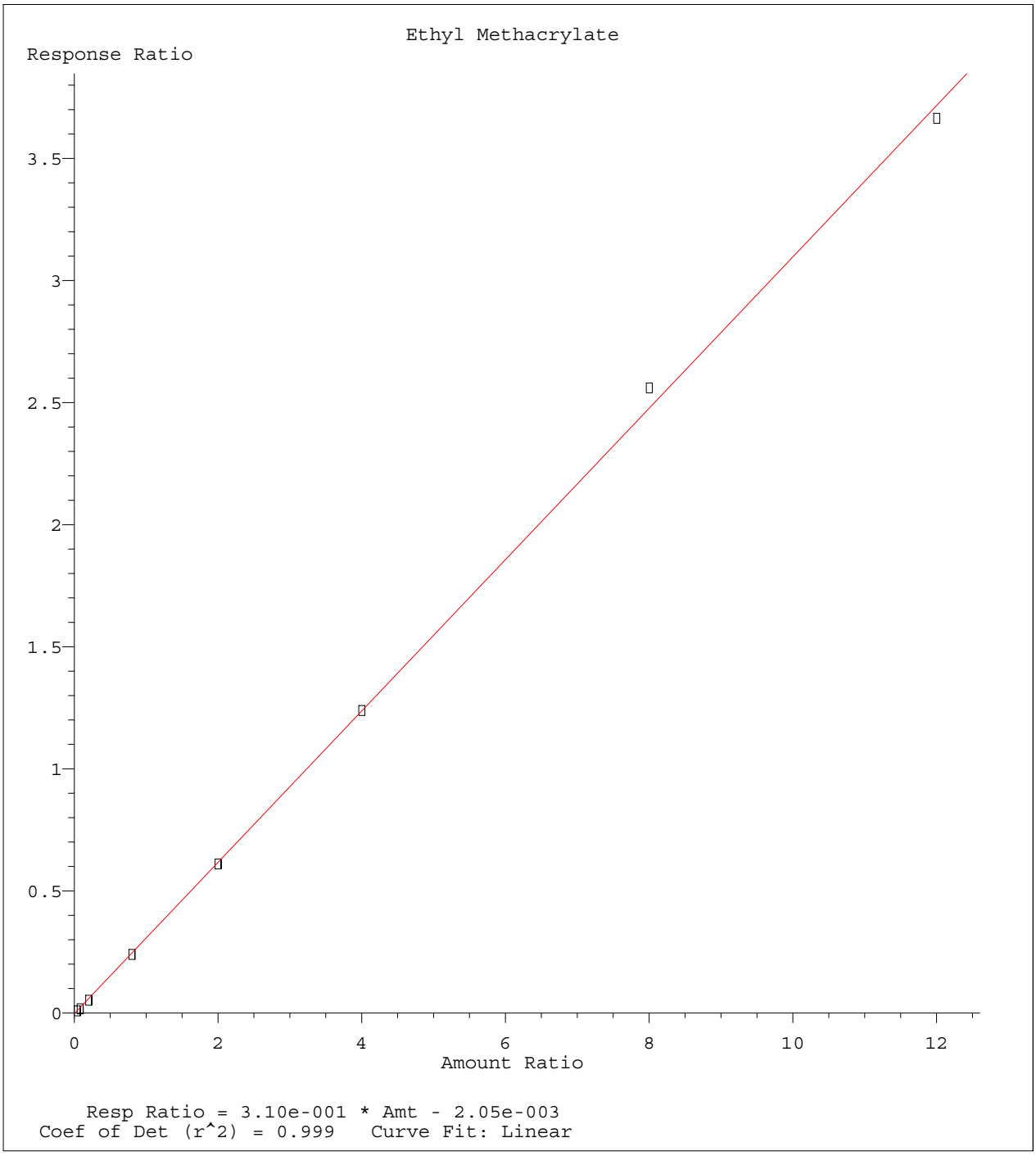

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jul 29 16:21:32 2013

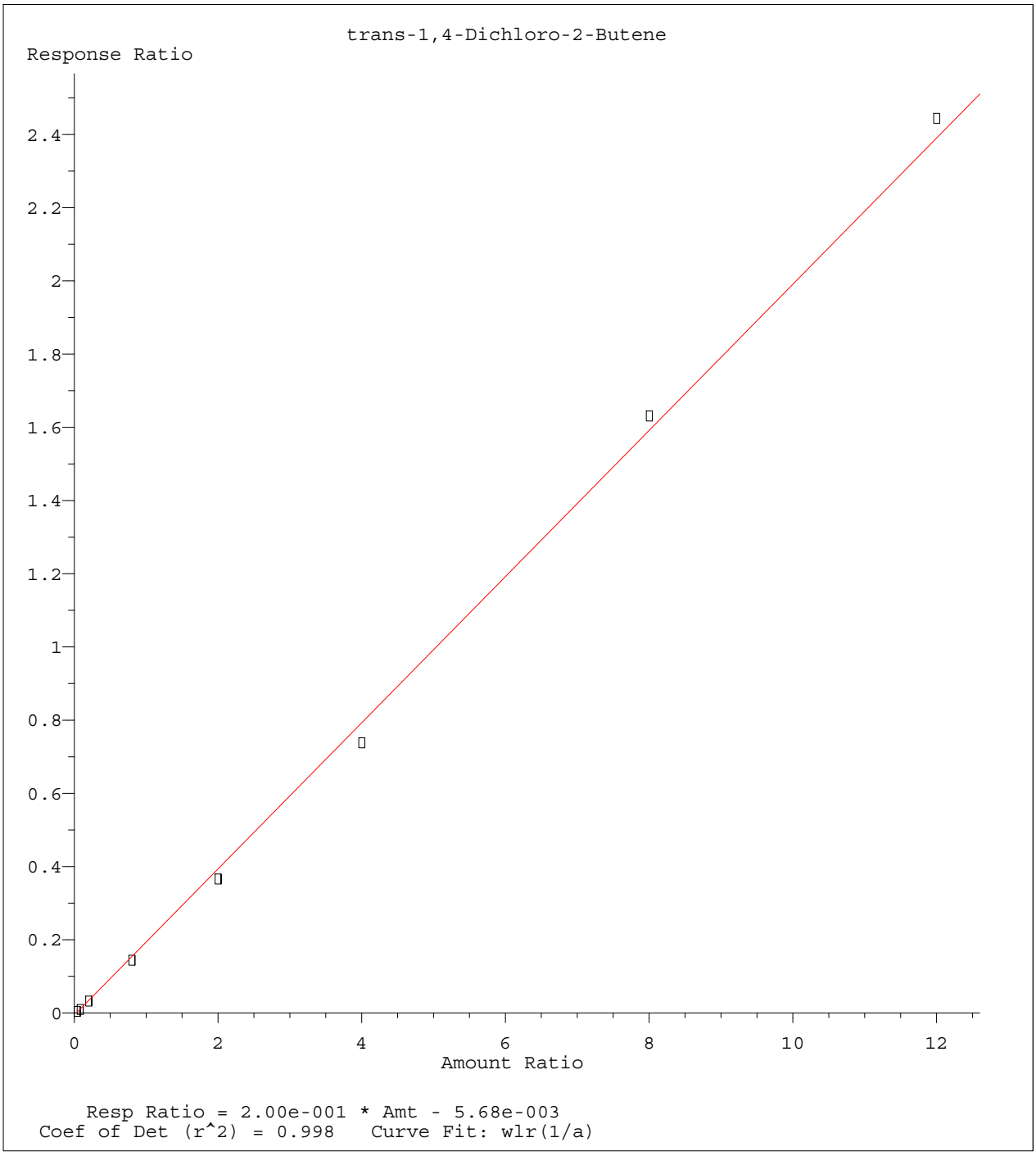

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jul 29 16:21:32 2013

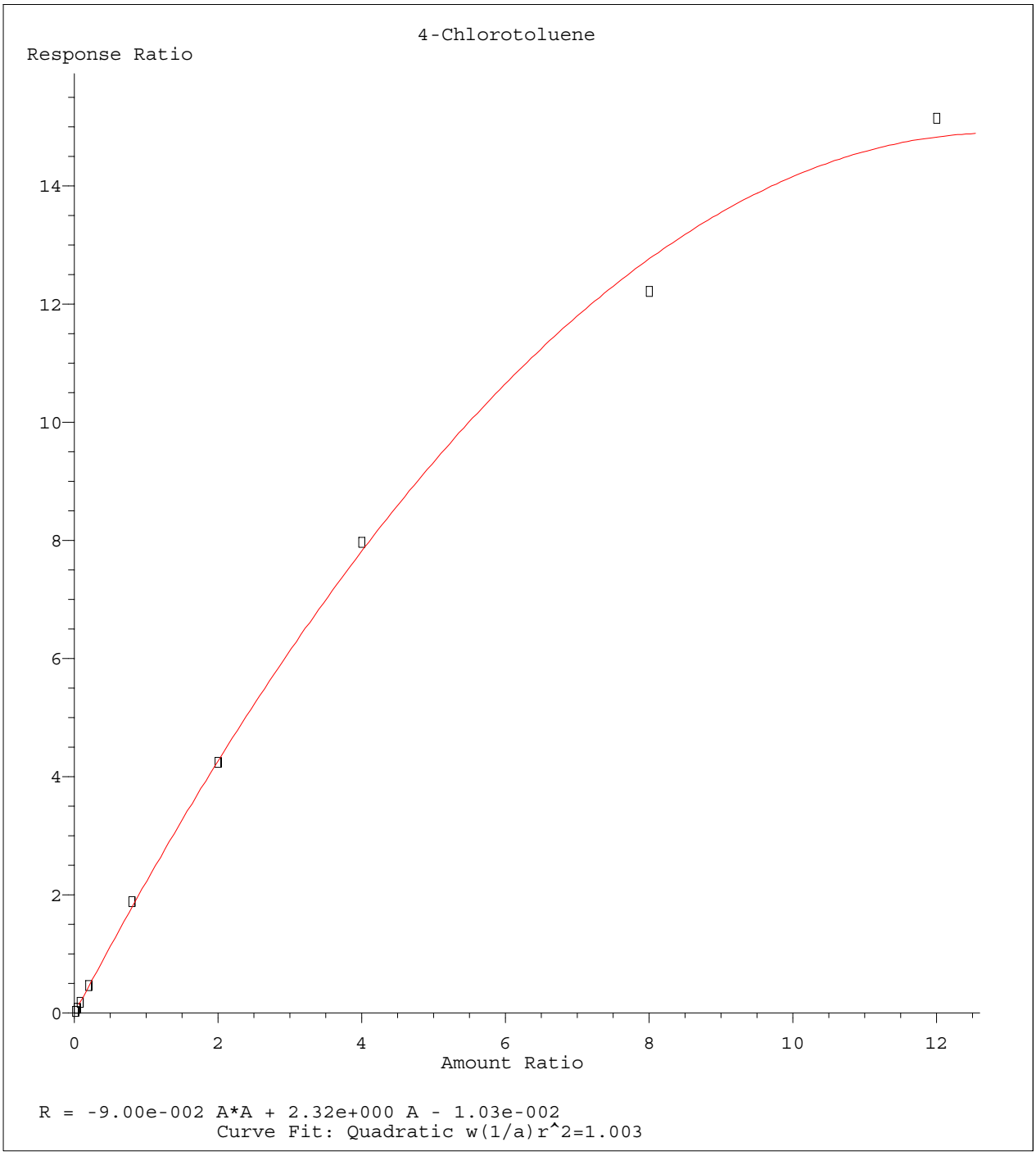

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jul 29 16:21:32 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93724.D Vial: 14
Acq On : 29 Jul 2013 17:14 Operator: TMB
Sample : WG439392-12 20ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD59088 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:18:46 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	827661	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	635200	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	346643	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.08	111	210082	25.5931 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.36%		
43) 1,2-Dichloroethane-d4	9.68	65	207591	24.0689 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.28%		
58) Toluene-d8	11.93	98	788611	27.6384 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 110.56%#		
80) p-Bromofluorobenzene	15.09	95	316310	27.8429 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.36%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	132380	16.4783 ug/L	97
3) Chloromethane	3.32	50	227336	18.6919 ug/L	99
4) Vinyl Chloride	3.52	62	176628	16.7657 ug/L	94
5) 1,3-Butadiene	3.56	54	153083	16.4748 ug/L	90
6) Bromomethane	4.35	94	104830	18.5758 ug/L	100
7) Chloroethane	4.50	64	129512	19.9827 ug/L	100
8) Trichlorofluoromethane	4.96	101	281652	20.1576 ug/L	99
9) Diethyl ether	5.48	59	683561	101.2909 ug/L	80
10) Isoprene	5.51	67	258967	21.8076 ug/L	80
11) Acrolein	5.70	56	82071	95.3622 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	184886	22.4306 ug/L	94
13) Acetone	5.80	43	34326	16.5665 ug/L	90
14) 1,1-Dichloroethene	6.02	61	270116	18.9095 ug/L	93
15) Tert-Butyl Alcohol	6.12	59	71177	169.9428 ug/L #	90
16) Dimethyl Sulfide	6.27	62	212932	23.1851 ug/L	83
17) Iodomethane	6.50	142	86746	10.0156 ug/L	92
18) Methyl acetate	6.52	43	108288	18.3429 ug/L	89
19) Methylene Chloride	6.76	84	181745	19.7206 ug/L	60
20) Carbon Disulfide	6.79	76	556486	20.9403 ug/L	99
21) Acrylonitrile	6.94	53	48477	19.7921 ug/L	98
22) Methyl Tert Butyl Ether	6.98	73	385919	20.6654 ug/L	84
23) trans-1,2-Dichloroethene	7.21	96	185556	20.3262 ug/L	80
24) n-Hexane	7.29	57	274719	21.7405 ug/L	89
25) Diisopropyl ether	7.62	45	3661473	100.0705 ug/L	87
26) Vinyl Acetate	7.78	43	337634	28.8056 ug/L #	90
27) 1,1-Dichloroethane	7.80	63	363366	20.2525 ug/L	97
28) Ethyl-Tert-Butyl ether	8.17	59	2710581	100.0559 ug/L	90
29) 2-Butanone	8.33	43	55479	21.0099 ug/L	84
30) Propionitrile	8.43	54	78622	97.0126 ug/L	97
31) 2,2-Dichloropropane	8.54	77	284070	19.6410 ug/L	100
32) cis-1,2-Dichloroethene	8.60	96	204458	20.7088 ug/L	80
33) Chloroform	8.80	83	325736	20.0624 ug/L	96
34) 1-Bromopropane	8.93	122	39773	23.4256 ug/L	95
35) Bromochloromethane	9.02	130	110188	20.2067 ug/L #	59
36) Tetrahydrofuran	9.05	42	178933	98.6725 ug/L	73
38) 1,1,1-Trichloroethane	9.31	97	295858	20.8678 ug/L	98
39) Cyclohexane	9.34	56	354955	21.0881 ug/L	75
40) 1,1-Dichloropropene	9.49	75	257693	20.8337 ug/L	97
41) Carbon Tetrachloride	9.63	117	259028	20.1808 ug/L	99
42) Tert-Amyl-Methyl ether	9.61	73	2006221	100.0877 ug/L #	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93724.D Vial: 14
Acq On : 29 Jul 2013 17:14 Operator: TMB
Sample : WG439392-12 20ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD59088 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:18:46 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	9.79	62	227782	20.4315	ug/L	89
46)	Benzene	9.83	78	748197	21.3105	ug/L	100
47)	Trichloroethene	10.55	130	199942	22.0772	ug/L	94
48)	Methylcyclohexane	10.63	83	269711	21.9065	ug/L	78
49)	1,2-Dichloropropane	10.74	63	213529	21.0838	ug/L	85
50)	1,4-Dioxane	11.02	88	7725	185.3604	ug/L	71
51)	Bromodichloromethane	11.02	83	233681	19.6967	ug/L	98
52)	Dibromomethane	11.10	93	91615	20.4608	ug/L	96
53)	2-Chloroethyl Vinyl Ether	11.31	63	86386	21.7661	ug/L	88
54)	4-Methyl-2-Pentanone	11.34	58	44633	21.6709	ug/L	81
55)	cis-1,3-Dichloropropene	11.63	75	303202	22.5159	ug/L	99
56)	Dimethyl Disulfide	11.87	79	140497	19.7270	ug/L	99
59)	Toluene	12.03	91	789269	22.1873	ug/L	98
60)	Ethyl Methacrylate	12.12	69	164037	20.9947	ug/L	78
62)	trans-1,3-Dichloropropene	12.19	75	236659	21.0325	ug/L	97
63)	1,1,2-Trichloroethane	12.39	97	129932	21.5289	ug/L	96
64)	2-Hexanone	12.34	43	81708	21.1921	ug/L	85
65)	1,3-Dichloropropane	12.68	76	227979	21.2966	ug/L	77
66)	Tetrachloroethene	12.79	164	160961	20.9551	ug/L	97
67)	Dibromochloromethane	13.03	129	159793	20.2684	ug/L	99
68)	1,2-Dibromoethane	13.27	107	127711	21.4735	ug/L	98
69)	1-Chlorohexane	13.36	91	243110	23.4243	ug/L	72
70)	Chlorobenzene	13.73	112	470418	19.8775	ug/L	99
71)	1,1,1,2-Tetrachloroethane	13.76	131	189268	21.3866	ug/L	98
72)	Ethylbenzene	13.76	106	277579	21.3970	ug/L	95
73)	m-,p-Xylene	13.84	106	650214	44.2910	ug/L	97
74)	o-Xylene	14.37	106	303727	20.6753	ug/L	96
75)	Styrene	14.40	104	549652	24.1066	ug/L	96
76)	Bromoform	14.86	173	100766	20.6073	ug/L	98
77)	Isopropylbenzene	14.77	105	752841	21.9106	ug/L	98
79)	1,1,2,2-Tetrachloroethane	14.96	83	146018	21.1631	ug/L	97
81)	1,2,3-Trichloropropane	15.14	110	41363	20.5798	ug/L	85
82)	trans-1,4-Dichloro-2-Buten	15.18	53	37698	14.3298	ug/L	96
83)	n-Propylbenzene	15.23	91	910130	20.9103	ug/L	97
84)	Bromobenzene	15.34	156	217700	21.5601	ug/L	86
85)	1,3,5-Trimethylbenzene	15.41	105	712849	24.2269	ug/L	95
86)	2-Chlorotoluene	15.48	91	564523	20.2474	ug/L	96
87)	4-Chlorotoluene	15.53	91	582929	18.8037	ug/L	85
88)	a-Methylstyrene	15.78	118	365662	22.4078	ug/L	94
89)	tert-Butylbenzene	15.84	134	130423	19.9111	ug/L	91
90)	1,2,4-Trimethylbenzene	15.88	105	727547	23.4519	ug/L	95
91)	sec-Butylbenzene	16.09	105	765513	21.8123	ug/L	99
92)	p-Isopropyltoluene	16.23	119	658120	22.6504	ug/L	100
93)	1,3-Dichlorobenzene	16.41	146	385600	19.8284	ug/L	98
94)	1,4-Dichlorobenzene	16.52	146	420303	21.0633	ug/L	98
95)	n-Butylbenzene	16.72	91	638999	23.5161	ug/L	96
96)	1,2-Dichlorobenzene	16.99	146	351568	19.3338	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	17.90	75	22058	19.6064	ug/L	90
98)	1,2,4-Trichlorobenzene	18.95	180	264841	21.6335	ug/L	100
99)	Hexachlorobutadiene	19.10	225	103381	21.2884	ug/L	92
100)	Naphthalene	19.29	128	465123	23.5889	ug/L	100
101)	1,2,3-Trichlorobenzene	19.58	180	233918	21.6969	ug/L	98

(#) = qualifier out of range (m) = manual integration
11M93724.D 8260WTR.M Tue Jul 30 09:18:46 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072913\11M93724.D Vial: 14
Acq On : 29 Jul 2013 17:14 Operator: TMB
Sample : WG439392-12 20ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD59088 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:18 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration

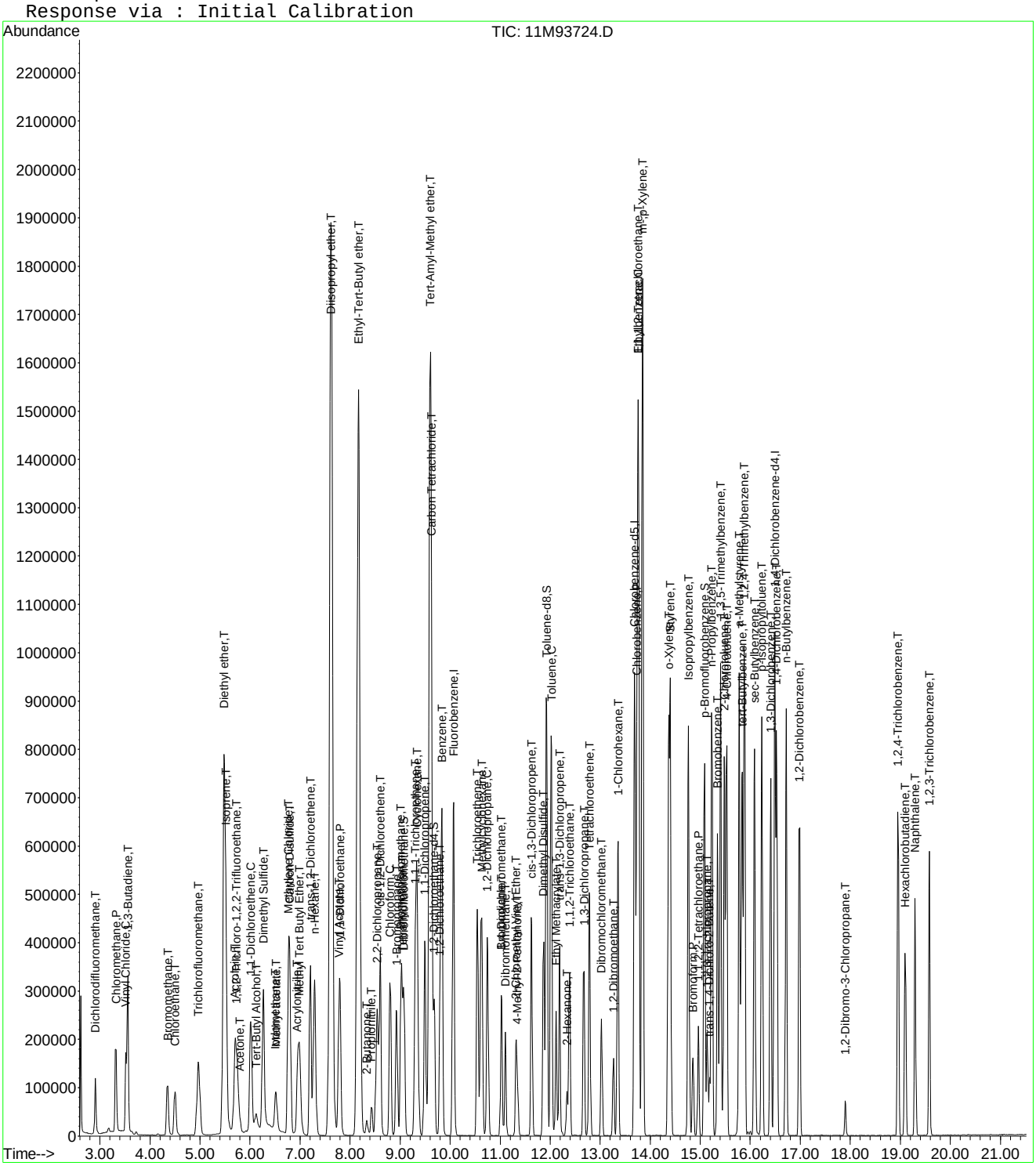

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\072913\11M93724.D Vial: 14
Acq On : 29 Jul 2013 17:14 Operator: TMB
Sample : WG439392-12 20ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD59088 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	113	0.00
2	T	Dichlorodifluoromethane	20.0000	16.4783	17.6	80	0.00
3	P	Chloromethane	20.0000	18.6918	6.5	98	0.00
4	C	Vinyl Chloride	20.0000	16.7657	16.2	92	0.00
5	T	1,3-Butadiene	20.0000	16.4748	17.6	83	0.00
6	T	Bromomethane	20.0000	18.5758	7.1	110	0.00
7	T	Chloroethane	20.0000	19.9827	0.1	104	-0.01
8	T	Trichlorofluoromethane	20.0000	20.1576	-0.8	104	-0.01
9	T	Diethyl ether	80.0000	101.2909	-26.6#	138	0.00
10	T	Isoprene	20.0000	21.8076	-9.0	118	0.00
11	T	Acrolein	40.0000	95.3622	-138.4#	264	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	20.0000	22.4307	-12.2	116	0.00
13	T	Acetone	20.0000	16.5665	17.2	101	0.01
14	C	1,1-Dichloroethene	20.0000	18.9095	5.5	100	0.00
15	T	Tert-Butyl Alcohol	160.0000	169.9428	-6.2	116	0.00
16	T	Dimethyl Sulfide	20.0000	23.1851	-15.9	127	0.00
17	T	Iodomethane	20.0000	10.0156	49.9#	54	0.00
18	T	Methyl acetate	20.0000	18.3429	8.3	102	0.00
19	T	Methylene Chloride	20.0000	19.7206	1.4	104	-0.01
20	T	Carbon Disulfide	20.0000	20.9403	-4.7	113	-0.01
21	T	Acrylonitrile	40.0000	19.7921	50.5#	55	-0.01
22	T	Methyl Tert Butyl Ether	20.0000	20.6654	-3.3	106	0.00
23	T	trans-1,2-Dichloroethene	20.0000	20.3262	-1.6	108	0.00
24	T	n-Hexane	20.0000	21.7404	-8.7	116	0.00
25	T	Diisopropyl ether	80.0000	100.0705	-25.1#	134	0.00
26	T	Vinyl Acetate	20.0000	28.8056	-44.0#	157	0.00
27	P	1,1-Dichloroethane	20.0000	20.2525	-1.3	106	0.00
28	T	Ethyl-Tert-Butyl ether	80.0000	100.0559	-25.1#	135	0.00
29	T	2-Butanone	20.0000	21.0099	-5.0	117	0.00
30	T	Propionitrile	80.0000	97.0126	-21.3	131	0.00
31	T	2,2-Dichloropropane	20.0000	19.6410	1.8	104	0.00
32	T	cis-1,2-Dichloroethene	20.0000	20.7088	-3.5	109	0.00
33	C	Chloroform	20.0000	20.0624	-0.3	106	0.00
34	T	1-Bromopropane	20.0000	23.4256	-17.1	132	0.00
35	T	Bromochloromethane	20.0000	20.2067	-1.0	104	-0.01
36	T	Tetrahydrofuran	80.0000	98.6725	-23.3	137	0.00
37	S	Dibromofluoromethane	10.0000	25.5931	-155.9#	276	0.00
38	T	1,1,1-Trichloroethane	20.0000	20.8678	-4.3	110	-0.01
39	T	Cyclohexane	20.0000	21.0880	-5.4	115	0.00
40	T	1,1-Dichloropropene	20.0000	20.8336	-4.2	107	0.00
41	T	Carbon Tetrachloride	20.0000	20.1808	-0.9	105	-0.01
42	T	Tert-Amyl-Methyl ether	80.0000	100.0877	-25.1#	135	0.00
43	S	1,2-Dichloroethane-d4	10.0000	24.0689	-140.7#	264	-0.01
44	T	Heptane	-1.0000	0.0000	0.0	113	0.00
45	T	1,2-Dichloroethane	20.0000	20.4315	-2.2	105	-0.01
46	T	Benzene	20.0000	21.3105	-6.6	107	0.00
47	T	Trichloroethene	20.0000	22.0772	-10.4	118	0.00
48	T	Methylcyclohexane	20.0000	21.9065	-9.5	118	0.00
49	C	1,2-Dichloropropane	20.0000	21.0838	-5.4	109	0.00
50	T	1,4-Dioxane	160.0000	185.3604	-15.9	136	0.00
51	T	Bromodichloromethane	20.0000	19.6967	1.5	103	-0.01
52	T	Dibromomethane	20.0000	20.4608	-2.3	104	0.00
53	T	2-Chloroethyl Vinyl Ether	20.0000	21.7661	-8.8	127	0.00
54	T	4-Methyl-2-Pentanone	20.0000	21.6709	-8.4	122	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\072913\11M93724.D Vial: 14
Acq On : 29 Jul 2013 17:14 Operator: TMB
Sample : WG439392-12 20ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD59088 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	20.0000	22.5159	-12.6	114	0.00
56	T	Dimethyl Disulfide	20.0000	19.7270	1.4	118	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	110	0.00
58	S	Toluene-d8	10.0000	27.6384	-176.4#	290	0.00
59	C	Toluene	20.0000	22.1873	-10.9	109	0.00
60	T	Ethyl Methacrylate	20.0000	20.9947	-5.0	119	0.00
61	T	Paraldehyde	-1.0000	0.0000	0.0	0	-12.25#
62	T	trans-1,3-Dichloropropene	20.0000	21.0325	-5.2	102	0.00
63	T	1,1,2-Trichloroethane	20.0000	21.5289	-7.6	108	0.00
64	T	2-Hexanone	20.0000	21.1921	-6.0	117	0.00
65	T	1,3-Dichloropropane	20.0000	21.2966	-6.5	108	0.00
66	T	Tetrachloroethene	20.0000	20.9551	-4.8	109	0.00
67	T	Dibromochloromethane	20.0000	20.2684	-1.3	105	0.00
68	T	1,2-Dibromoethane	20.0000	21.4735	-7.4	109	0.00
69	T	1-Chlorohexane	20.0000	23.4243	-17.1	120	0.00
70	P	Chlorobenzene	20.0000	19.8775	0.6	100	-0.01
71	T	1,1,1,2-Tetrachloroethane	20.0000	21.3866	-6.9	111	-0.01
72	C	Ethylbenzene	20.0000	21.3970	-7.0	107	0.00
73	T	m-,p-Xylene	40.0000	44.2910	-10.7	105	0.00
74	T	o-Xylene	20.0000	20.6753	-3.4	100	0.00
75	T	Styrene	20.0000	24.1066	-20.5	107	0.00
76	P	Bromoform	20.0000	20.6073	-3.0	100	0.00
77	T	Isopropylbenzene	20.0000	21.9106	-9.6	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	111	0.00
79	P	1,1,2,2-Tetrachloroethane	20.0000	21.1631	-5.8	108	0.00
80	S	p-Bromofluorobenzene	10.0000	27.8429	-178.4#	301	0.00
81	T	1,2,3-Trichloropropane	20.0000	20.5798	-2.9	109	0.00
82	T	trans-1,4-Dichloro-2-Butene	20.0000	14.3298	28.4#	84	-0.01
83	T	n-Propylbenzene	20.0000	20.9103	-4.6	99	0.00
84	T	Bromobenzene	20.0000	21.5601	-7.8	106	-0.01
85	T	1,3,5-Trimethylbenzene	20.0000	24.2269	-21.1	112	0.00
86	T	2-Chlorotoluene	20.0000	20.2474	-1.2	102	0.00
87	T	4-Chlorotoluene	20.0000	18.8037	6.0	99	0.00
88	T	a-Methylstyrene	20.0000	22.4078	-12.0	119	0.00
89	T	tert-Butylbenzene	20.0000	19.9111	0.4	98	0.00
90	T	1,2,4-Trimethylbenzene	20.0000	23.4519	-17.3	110	0.00
91	T	sec-Butylbenzene	20.0000	21.8123	-9.1	100	0.00
92	T	p-Isopropyltoluene	20.0000	22.6504	-13.3	102	0.00
93	T	1,3-Dichlorobenzene	20.0000	19.8284	0.9	99	0.00
94	T	1,4-Dichlorobenzene	20.0000	21.0633	-5.3	106	-0.01
95	T	n-Butylbenzene	20.0000	23.5161	-17.6	111	0.00
96	T	1,2-Dichlorobenzene	20.0000	19.3337	3.3	99	0.00
97	T	1,2-Dibromo-3-Chloropropane	20.0000	19.6064	2.0	104	0.00
98	T	1,2,4-Trichlorobenzene	20.0000	21.6335	-8.2	108	-0.01
99	T	Hexachlorobutadiene	20.0000	21.2884	-6.4	111	0.00
100	T	Naphthalene	20.0000	23.5889	-17.9	109	0.00
101	T	1,2,3-Trichlorobenzene	20.0000	21.6969	-8.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M93724.D 8260WTR.M Tue Jul 30 09:18:51 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\080113\11M93802.D Vial: 2
Acq On : 1 Aug 2013 11:51 Operator: TMB
Sample : WG439850-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD59319 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 01 12:13:28 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	732033	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	564248	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	299699	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.08	111	186149	25.6399 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.56%		
43) 1,2-Dichloroethane-d4	9.69	65	180423	23.6516 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.60%		
58) Toluene-d8	11.93	98	704568	27.7980 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 111.20%#		
80) p-Bromofluorobenzene	15.09	95	279942	28.5014 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 114.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.92	85	401775	56.5450 ug/L	97
3) Chloromethane	3.32	50	610638	56.7662 ug/L	100
4) Vinyl Chloride	3.53	62	548578	58.8737 ug/L	95
5) 1,3-Butadiene	3.57	54	442971	57.8408 ug/L	80
6) Bromomethane	4.35	94	241956	48.4753 ug/L	99
7) Chloroethane	4.51	64	305450	53.2851 ug/L	99
8) Trichlorofluoromethane	4.97	101	655969	53.0799 ug/L	100
9) Diethyl ether	5.48	59	570923	95.6516 ug/L	78
10) Isoprene	5.52	67	566824	53.9677 ug/L	78
11) Acrolein	5.70	56	33265	43.7015 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	385721	52.9094 ug/L	100
13) Acetone	5.80	43	83344	45.4781 ug/L	98
14) 1,1-Dichloroethene	6.02	61	675608	53.4745 ug/L	91
15) Tert-Butyl Alcohol	6.12	59	68660	185.3484 ug/L	92
16) Dimethyl Sulfide	6.27	62	416031	51.2171 ug/L	81
17) Iodomethane	6.50	142	406251	50.8226 ug/L	94
18) Methyl acetate	6.53	43	206843	39.6142 ug/L	87
19) Methylene Chloride	6.77	84	411538	50.4881 ug/L #	56
20) Carbon Disulfide	6.80	76	1239650	52.7411 ug/L	98
21) Acrylonitrile	6.95	53	104028	48.0207 ug/L	99
22) Methyl Tert Butyl Ether	6.98	73	807571	48.8935 ug/L	86
23) trans-1,2-Dichloroethene	7.21	96	422600	52.3399 ug/L	79
24) n-Hexane	7.30	57	600016	53.6864 ug/L	89
25) Diisopropyl ether	7.62	45	3269080	101.0177 ug/L	88
26) Vinyl Acetate	7.79	43	710685	68.5535 ug/L #	90
27) 1,1-Dichloroethane	7.81	63	839823	52.9230 ug/L	97
28) Ethyl-Tert-Butyl ether	8.17	59	2347853	97.9880 ug/L	89
29) 2-Butanone	8.33	43	117033	50.1102 ug/L	81
30) Propionitrile	8.44	54	67745	94.5112 ug/L	98
31) 2,2-Dichloropropane	8.54	77	686174	53.6406 ug/L	100
32) cis-1,2-Dichloroethene	8.60	96	461830	52.8877 ug/L	78
33) Chloroform	8.81	83	741685	51.6486 ug/L	97
34) 1-Bromopropane	8.93	122	79257	52.7790 ug/L	98
35) Bromochloromethane	9.03	130	240604	49.8868 ug/L #	56
36) Tetrahydrofuran	9.05	42	145368	90.6350 ug/L	74
38) 1,1,1-Trichloroethane	9.32	97	667599	53.2391 ug/L	95
39) Cyclohexane	9.34	56	801430	53.8333 ug/L	73
40) 1,1-Dichloropropene	9.50	75	600496	54.8902 ug/L	96
41) Carbon Tetrachloride	9.64	117	603654	53.1742 ug/L	99
42) Tert-Amyl-Methyl ether	9.61	73	1688691	95.2520 ug/L #	81

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\080113\11M93802.D Vial: 2
Acq On : 1 Aug 2013 11:51 Operator: TMB
Sample : WG439850-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD59319 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 01 12:13:28 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.80	62	495190	50.2196 ug/L		88
46)	Benzene	9.83	78	1685345	54.2736 ug/L		100
47)	Trichloroethene	10.55	130	414652	51.7661 ug/L		94
48)	Methylcyclohexane	10.63	83	585295	53.7491 ug/L	#	77
49)	1,2-Dichloropropane	10.75	63	462864	51.6735 ug/L		85
50)	1,4-Dioxane	11.02	88	7711	209.1948 ug/L		71
51)	Bromodichloromethane	11.03	83	541746	51.6282 ug/L		98
52)	Dibromomethane	11.10	93	197746	49.9326 ug/L		99
53)	2-Chloroethyl Vinyl Ether	11.32	63	185077	52.7243 ug/L		87
54)	4-Methyl-2-Pentanone	11.34	58	92402	50.7251 ug/L		81
55)	cis-1,3-Dichloropropene	11.63	75	642609	53.9542 ug/L		99
56)	Dimethyl Disulfide	11.87	79	316301	50.2130 ug/L		94
59)	Toluene	12.02	91	1731925	54.8087 ug/L		97
60)	Ethyl Methacrylate	12.12	69	325415	46.6820 ug/L		70
62)	trans-1,3-Dichloropropene	12.19	75	533441	53.3697 ug/L		99
63)	1,1,2-Trichloroethane	12.39	97	264263	49.2927 ug/L		96
64)	2-Hexanone	12.34	43	171595	50.1018 ug/L		82
65)	1,3-Dichloropropane	12.68	76	472718	49.7116 ug/L		74
66)	Tetrachloroethene	12.79	164	358328	52.5158 ug/L		95
67)	Dibromochloromethane	13.03	129	350058	49.9853 ug/L		99
68)	1,2-Dibromoethane	13.27	107	259883	49.1918 ug/L		99
69)	1-Chlorohexane	13.36	91	525000	56.9461 ug/L		69
70)	Chlorobenzene	13.74	112	1112843	52.9361 ug/L		99
71)	1,1,1,2-Tetrachloroethane	13.77	131	408447	51.9566 ug/L		100
72)	Ethylbenzene	13.76	106	629669	54.6409 ug/L		98
73)	m-,p-Xylene	13.84	106	1488030	114.1068 ug/L		99
74)	o-Xylene	14.37	106	737802	56.5391 ug/L		97
75)	Styrene	14.40	104	1228474	60.6533 ug/L		93
76)	Bromoform	14.86	173	215988	49.7253 ug/L		98
77)	Isopropylbenzene	14.76	105	1792358	58.7240 ug/L		99
79)	1,1,2,2-Tetrachloroethane	14.96	83	287620	48.2157 ug/L		98
81)	1,2,3-Trichloropropane	15.14	110	81162	46.7068 ug/L		84
82)	trans-1,4-Dichloro-2-Buten	15.19	53	107114	45.4678 ug/L	#	6
83)	n-Propylbenzene	15.23	91	2155155	57.2708 ug/L		98
84)	Bromobenzene	15.35	156	475850	54.5079 ug/L		86
85)	1,3,5-Trimethylbenzene	15.41	105	1517510	59.6526 ug/L		97
86)	2-Chlorotoluene	15.49	91	1441478	59.7990 ug/L		97
87)	4-Chlorotoluene	15.53	91	1217579	47.4413 ug/L		95
88)	a-Methylstyrene	15.78	118	810950	57.4791 ug/L		93
89)	tert-Butylbenzene	15.84	134	315532	55.7162 ug/L		93
90)	1,2,4-Trimethylbenzene	15.88	105	1560982	58.1984 ug/L		98
91)	sec-Butylbenzene	16.09	105	1771285	58.3760 ug/L		99
92)	p-Isopropyltoluene	16.23	119	1510363	60.1242 ug/L		99
93)	1,3-Dichlorobenzene	16.41	146	903152	53.7166 ug/L		96
94)	1,4-Dichlorobenzene	16.53	146	905836	52.5062 ug/L		97
95)	n-Butylbenzene	16.72	91	1356062	57.7220 ug/L		96
96)	1,2-Dichlorobenzene	16.99	146	800505	50.9176 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	17.91	75	44965	46.2279 ug/L		85
98)	1,2,4-Trichlorobenzene	18.96	180	541603	51.1705 ug/L		99
99)	Hexachlorobutadiene	19.10	225	207048	49.3139 ug/L		95
100)	Naphthalene	19.29	128	909671	53.3608 ug/L		99
101)	1,2,3-Trichlorobenzene	19.58	180	461001	49.4577 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M93802.D 8260WTR.M Thu Aug 01 12:13:28 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\080113\11M93802.D Vial: 2
Acq On : 1 Aug 2013 11:51 Operator: TMB
Sample : WG439850-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD59319 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 1 12:13 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration

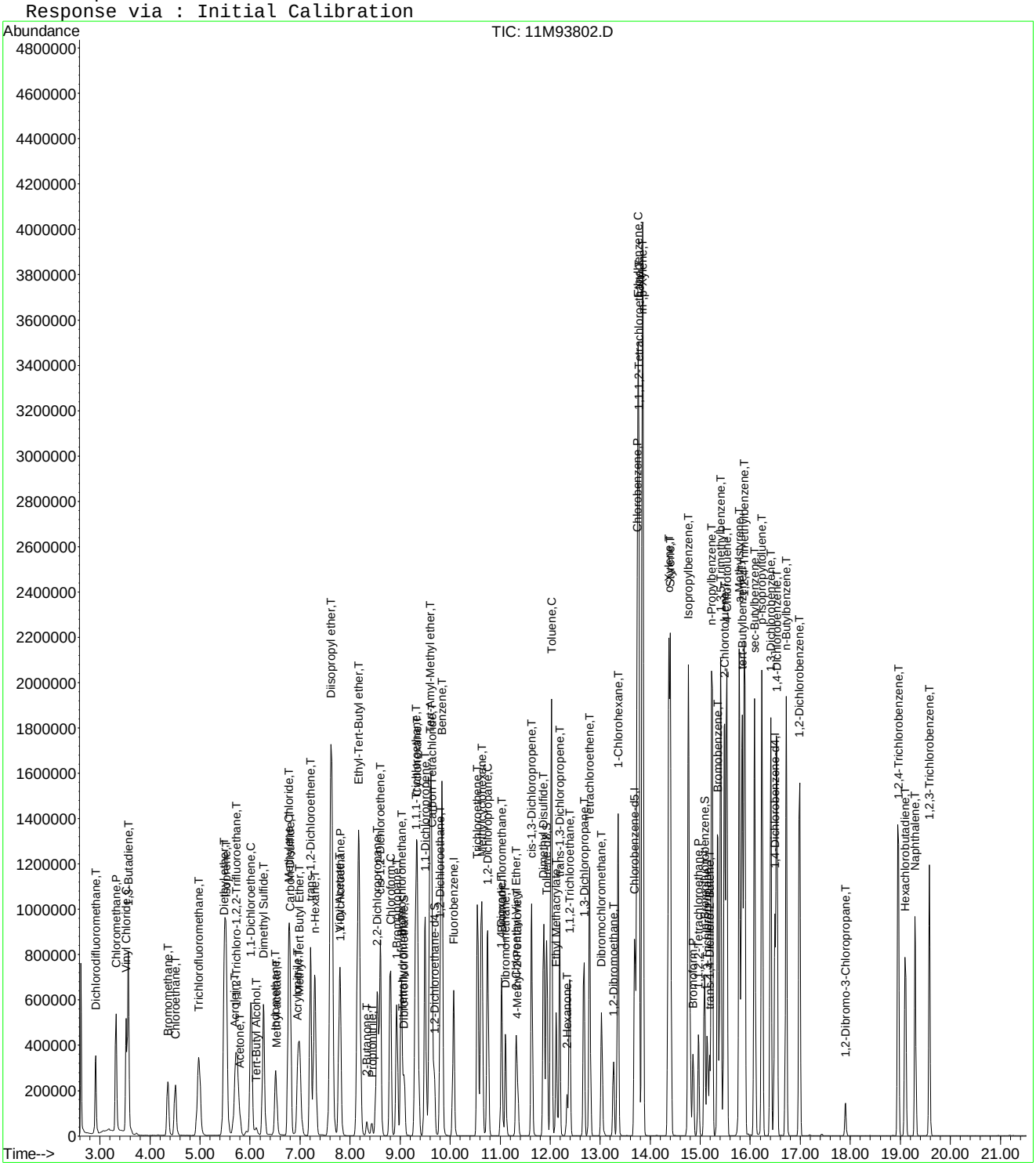

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\080113\11M93802.D Vial: 2
Acq On : 1 Aug 2013 11:51 Operator: TMB
Sample : WG439850-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD59319 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	96	0.00
2	T	Dichlorodifluoromethane	0.2427	0.2744	-13.1	105	0.01
3	P	Chloromethane	0.3674	0.4171	-13.5	112	0.00
4	C	Vinyl Chloride	0.3182	0.3747	-17.7	123	0.01
5	T	1,3-Butadiene	0.2648	0.3026	-14.3	102	0.01
6	T	Bromomethane	0.1705	0.1653	3.1	103	0.00
7	T	Chloroethane	0.1958	0.2086	-6.6	105	0.00
8	T	Trichlorofluoromethane	0.4220	0.4481	-6.2	103	0.00
9	T	Diethyl ether	0.2038	0.1950	4.3	96	0.00
10	T	Isoprene	0.3587	0.3872	-7.9	97	0.01
11	T	Acrolein	0.0260	0.0227	12.6	90	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2490	0.2635	-5.8	102	0.00
13	T	Acetone	0.0626	0.0569	9.0	103	0.01
14	C	1,1-Dichloroethene	0.4315	0.4615	-6.9	105	0.00
15	T	Tert-Butyl Alcohol	0.0127	0.0117	7.4	99	0.00
16	T	Dimethyl Sulfide	0.2774	0.2842	-2.4	93	0.00
17	T	Iodomethane	0.2441	0.2775	-13.7	93	0.00
18	T	Methyl acetate	0.1783	0.1413	20.8	77	0.01
19	T	Methylene Chloride	0.2784	0.2811	-1.0	102	0.00
20	T	Carbon Disulfide	0.8027	0.8467	-5.5	96	0.00
21	T	Acrylonitrile	0.0740	0.0711	4.0	93	0.00
22	T	Methyl Tert Butyl Ether	0.5641	0.5516	2.2	94	0.00
23	T	trans-1,2-Dichloroethene	0.2757	0.2887	-4.7	104	0.00
24	T	n-Hexane	0.3817	0.4098	-7.4	97	0.01
25	T	Diisopropyl ether	1.1052	1.1164	-1.0	99	0.00
26	T	Vinyl Acetate	0.3540	0.4854	-37.1#	125	0.01
27	P	1,1-Dichloroethane	0.5419	0.5736	-5.8	105	0.01
28	T	Ethyl-Tert-Butyl ether	0.8183	0.8018	2.0	97	0.00
29	T	2-Butanone	0.0798	0.0799	-0.2	97	0.00
30	T	Propionitrile	0.0245	0.0231	5.5	93	0.01
31	T	2,2-Dichloropropane	0.4369	0.4687	-7.3	106	0.00
32	T	cis-1,2-Dichloroethene	0.2982	0.3154	-5.8	105	0.00
33	C	Chloroform	0.4904	0.5066	-3.3	103	0.01
34	T	1-Bromopropane	0.0513	0.0541	-5.6	95	0.00
35	T	Bromochloromethane	0.1647	0.1643	0.2	98	0.00
36	T	Tetrahydrofuran	0.0548	0.0497	9.3	88	0.00
37	S	Dibromofluoromethane	0.2479	0.2543	-2.6	94	0.00
38	T	1,1,1-Trichloroethane	0.4283	0.4560	-6.5	104	0.00
39	T	Cyclohexane	0.5084	0.5474	-7.7	97	0.00
40	T	1,1-Dichloropropene	0.3736	0.4102	-9.8	105	0.01
41	T	Carbon Tetrachloride	0.3877	0.4123	-6.3	103	0.00
42	T	Tert-Amyl-Methyl ether	0.6055	0.5767	4.7	94	0.00
43	S	1,2-Dichloroethane-d4	0.2605	0.2465	5.4	88	0.00
44	T	Heptane	0.0000	0.0000	0.0	97	0.00
45	T	1,2-Dichloroethane	0.3367	0.3382	-0.4	99	0.00
46	T	Benzene	1.0605	1.1511	-8.5	105	0.00
47	T	Trichloroethene	0.2736	0.2832	-3.5	102	0.00
48	T	Methylcyclohexane	0.3719	0.3998	-7.5	95	0.00
49	C	1,2-Dichloropropane	0.3059	0.3161	-3.3	102	0.01
50	T	1,4-Dioxane	0.0013	0.0013	-4.8	96	0.00
51	T	Bromodichloromethane	0.3584	0.3700	-3.3	100	0.00
52	T	Dibromomethane	0.1353	0.1351	0.1	98	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1199	0.1264	-5.4	97	0.01
54	T	4-Methyl-2-Pentanone	0.0622	0.0631	-1.4	94	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\080113\11M93802.D Vial: 2
Acq On : 1 Aug 2013 11:51 Operator: TMB
Sample : WG439850-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD59319 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4068	0.4389	-7.9	100	0.00
56	T	Dimethyl Disulfide	0.2151	0.2160	-0.4	93	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	94	0.00
58	S	Toluene-d8	1.1230	1.2487	-11.2	98	0.00
59	C	Toluene	1.4001	1.5347	-9.6	104	0.00
60	T	Ethyl Methacrylate	0.2770	0.2884	-4.1	89	0.00
61	T	Paraldehyde	0.0000	0.0000	0.0	0#	-12.25#
62	T	trans-1,3-Dichloropropene	0.4429	0.4727	-6.7	97	0.00
63	T	1,1,2-Trichloroethane	0.2375	0.2342	1.4	97	0.00
64	T	2-Hexanone	0.1518	0.1521	-0.2	91	0.00
65	T	1,3-Dichloropropane	0.4213	0.4189	0.6	95	0.00
66	T	Tetrachloroethene	0.3023	0.3175	-5.0	102	0.00
67	T	Dibromochloromethane	0.3103	0.3102	0.0	96	0.00
68	T	1,2-Dibromoethane	0.2341	0.2303	1.6	94	0.00
69	T	1-Chlorohexane	0.4085	0.4652	-13.9	97	0.00
70	P	Chlorobenzene	0.9314	0.9861	-5.9	102	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3483	0.3619	-3.9	100	0.00
72	C	Ethylbenzene	0.5106	0.5580	-9.3	103	0.00
73	T	m-,p-Xylene	0.5778	0.6593	-14.1	103	0.00
74	T	o-Xylene	0.5782	0.6538	-13.1	102	0.00
75	T	Styrene	0.8974	1.0886	-21.3	102	0.00
76	P	Bromoform	0.1925	0.1914	0.6	92	0.00
77	T	Isopropylbenzene	1.3523	1.5883	-17.4	102	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	92	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4976	0.4799	3.6	92	0.00
80	S	p-Bromofluorobenzene	0.8193	0.9341	-14.0	101	0.00
81	T	1,2,3-Trichloropropane	0.1450	0.1354	6.6	90	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1679	0.1787	-6.4	90	0.00
83	T	n-Propylbenzene	3.1391	3.5955	-14.5	101	0.00
84	T	Bromobenzene	0.7282	0.7939	-9.0	99	0.00
85	T	1,3,5-Trimethylbenzene	2.1221	2.5317	-19.3	101	0.00
86	T	2-Chlorotoluene	2.0108	2.4049	-19.6	116	0.00
87	T	4-Chlorotoluene	1.9231	2.0313	-5.6	88	0.00
88	T	a-Methylstyrene	1.1769	1.3529	-15.0	96	0.00
89	T	tert-Butylbenzene	0.4724	0.5264	-11.4	100	0.00
90	T	1,2,4-Trimethylbenzene	2.2374	2.6043	-16.4	102	0.00
91	T	sec-Butylbenzene	2.5311	2.9551	-16.8	100	0.00
92	T	p-Isopropyltoluene	2.0955	2.5198	-20.2	101	0.00
93	T	1,3-Dichlorobenzene	1.4025	1.5068	-7.4	99	0.00
94	T	1,4-Dichlorobenzene	1.4391	1.5112	-5.0	99	0.00
95	T	n-Butylbenzene	1.9597	2.2624	-15.4	100	0.00
96	T	1,2-Dichlorobenzene	1.3115	1.3355	-1.8	96	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0811	0.0750	7.5	91	0.01
98	T	1,2,4-Trichlorobenzene	0.8829	0.9036	-2.3	93	0.00
99	T	Hexachlorobutadiene	0.3502	0.3454	1.4	93	0.00
100	T	Naphthalene	1.4221	1.5176	-6.7	90	0.00
101	T	1,2,3-Trichlorobenzene	0.7775	0.7691	1.1	90	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M93802.D 8260WTR.M Thu Aug 01 12:21:09 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\080113\11M93802.D Vial: 2
Acq On : 1 Aug 2013 11:51 Operator: TMB
Sample : WG439850-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD59319 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	96	0.00
2	T	Dichlorodifluoromethane	50.0000	56.5450	-13.1	105	0.01
3	P	Chloromethane	50.0000	56.7662	-13.5	112	0.00
4	C	Vinyl Chloride	50.0000	58.8737	-17.7	123	0.01
5	T	1,3-Butadiene	50.0000	57.8408	-15.7	102	0.01
6	T	Bromomethane	50.0000	48.4753	3.0	103	0.00
7	T	Chloroethane	50.0000	53.2851	-6.6	105	0.00
8	T	Trichlorofluoromethane	50.0000	53.0799	-6.2	103	0.00
9	T	Diethyl ether	100.0000	95.6516	4.3	96	0.00
10	T	Isoprene	50.0000	53.9677	-7.9	97	0.01
11	T	Acrolein	50.0000	43.7015	12.6	90	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.9094	-5.8	102	0.00
13	T	Acetone	50.0000	45.4781	9.0	103	0.01
14	C	1,1-Dichloroethene	50.0000	53.4745	-6.9	105	0.00
15	T	Tert-Butyl Alcohol	200.0000	185.3484	7.3	99	0.00
16	T	Dimethyl Sulfide	50.0000	51.2171	-2.4	93	0.00
17	T	Iodomethane	50.0000	50.8226	-1.6	93	0.00
18	T	Methyl acetate	50.0000	39.6142	20.8	77	0.01
19	T	Methylene Chloride	50.0000	50.4881	-1.0	102	0.00
20	T	Carbon Disulfide	50.0000	52.7411	-5.5	96	0.00
21	T	Acrylonitrile	50.0000	48.0207	4.0	93	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.8935	2.2	94	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.3399	-4.7	104	0.00
24	T	n-Hexane	50.0000	53.6864	-7.4	97	0.01
25	T	Diisopropyl ether	100.0000	101.0177	-1.0	99	0.00
26	T	Vinyl Acetate	50.0000	68.5535	-37.1#	125	0.01
27	P	1,1-Dichloroethane	50.0000	52.9230	-5.8	105	0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	97.9880	2.0	97	0.00
29	T	2-Butanone	50.0000	50.1102	-0.2	97	0.00
30	T	Propionitrile	100.0000	94.5112	5.5	93	0.01
31	T	2,2-Dichloropropane	50.0000	53.6406	-7.3	106	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.8877	-5.8	105	0.00
33	C	Chloroform	50.0000	51.6486	-3.3	103	0.01
34	T	1-Bromopropane	50.0000	52.7790	-5.6	95	0.00
35	T	Bromochloromethane	50.0000	49.8869	0.2	98	0.00
36	T	Tetrahydrofuran	100.0000	90.6351	9.4	88	0.00
37	S	Dibromofluoromethane	25.0000	25.6399	-2.6	94	0.00
38	T	1,1,1-Trichloroethane	50.0000	53.2391	-6.5	104	0.00
39	T	Cyclohexane	50.0000	53.8333	-7.7	97	0.00
40	T	1,1-Dichloropropene	50.0000	54.8902	-9.8	105	0.01
41	T	Carbon Tetrachloride	50.0000	53.1742	-6.3	103	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	95.2520	4.7	94	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.6516	5.4	88	0.00
44	T	Heptane	-1.0000	0.0000	0.0	97	0.00
45	T	1,2-Dichloroethane	50.0000	50.2196	-0.4	99	0.00
46	T	Benzene	50.0000	54.2736	-8.5	105	0.00
47	T	Trichloroethene	50.0000	51.7661	-3.5	102	0.00
48	T	Methylcyclohexane	50.0000	53.7491	-7.5	95	0.00
49	C	1,2-Dichloropropane	50.0000	51.6735	-3.3	102	0.01
50	T	1,4-Dioxane	200.0000	209.1948	-4.6	96	0.00
51	T	Bromodichloromethane	50.0000	51.6282	-3.3	100	0.00
52	T	Dibromomethane	50.0000	49.9327	0.1	98	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.7243	-5.4	97	0.01
54	T	4-Methyl-2-Pentanone	50.0000	50.7251	-1.5	94	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\080113\11M93802.D Vial: 2
Acq On : 1 Aug 2013 11:51 Operator: TMB
Sample : WG439850-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD59319 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.9542	-7.9	100	0.00
56	T	Dimethyl Disulfide	50.0000	50.2131	-0.4	93	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	94	0.00
58	S	Toluene-d8	25.0000	27.7980	-11.2	98	0.00
59	C	Toluene	50.0000	54.8087	-9.6	104	0.00
60	T	Ethyl Methacrylate	50.0000	46.6820	6.6	89	0.00
61	T	Paraldehyde	-1.0000	0.0000	0.0	0	-12.25#
62	T	trans-1,3-Dichloropropene	50.0000	53.3697	-6.7	97	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.2927	1.4	97	0.00
64	T	2-Hexanone	50.0000	50.1018	-0.2	91	0.00
65	T	1,3-Dichloropropane	50.0000	49.7116	0.6	95	0.00
66	T	Tetrachloroethene	50.0000	52.5158	-5.0	102	0.00
67	T	Dibromochloromethane	50.0000	49.9853	0.0	96	0.00
68	T	1,2-Dibromoethane	50.0000	49.1918	1.6	94	0.00
69	T	1-Chlorohexane	50.0000	56.9461	-13.9	97	0.00
70	P	Chlorobenzene	50.0000	52.9361	-5.9	102	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.9566	-3.9	100	0.00
72	C	Ethylbenzene	50.0000	54.6409	-9.3	103	0.00
73	T	m-,p-Xylene	100.0000	114.1068	-14.1	103	0.00
74	T	o-Xylene	50.0000	56.5391	-13.1	102	0.00
75	T	Styrene	50.0000	60.6533	-21.3	102	0.00
76	P	Bromoform	50.0000	49.7253	0.5	92	0.00
77	T	Isopropylbenzene	50.0000	58.7240	-17.4	102	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	92	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	48.2157	3.6	92	0.00
80	S	p-Bromofluorobenzene	25.0000	28.5014	-14.0	101	0.00
81	T	1,2,3-Trichloropropane	50.0000	46.7068	6.6	90	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	45.4678	9.1	90	0.00
83	T	n-Propylbenzene	50.0000	57.2708	-14.5	101	0.00
84	T	Bromobenzene	50.0000	54.5078	-9.0	99	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	59.6526	-19.3	101	0.00
86	T	2-Chlorotoluene	50.0000	59.7990	-19.6	116	0.00
87	T	4-Chlorotoluene	50.0000	47.4412	5.1	88	0.00
88	T	a-Methylstyrene	50.0000	57.4791	-15.0	96	0.00
89	T	tert-Butylbenzene	50.0000	55.7162	-11.4	100	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	58.1984	-16.4	102	0.00
91	T	sec-Butylbenzene	50.0000	58.3760	-16.8	100	0.00
92	T	p-Isopropyltoluene	50.0000	60.1242	-20.2	101	0.00
93	T	1,3-Dichlorobenzene	50.0000	53.7166	-7.4	99	0.00
94	T	1,4-Dichlorobenzene	50.0000	52.5062	-5.0	99	0.00
95	T	n-Butylbenzene	50.0000	57.7220	-15.4	100	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.9176	-1.8	96	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	46.2278	7.5	91	0.01
98	T	1,2,4-Trichlorobenzene	50.0000	51.1705	-2.3	93	0.00
99	T	Hexachlorobutadiene	50.0000	49.3139	1.4	93	0.00
100	T	Naphthalene	50.0000	53.3608	-6.7	90	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	49.4577	1.1	90	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M93802.D 8260WTR.M Thu Aug 01 12:21:11 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\080113\11M93803.D Vial: 3
Acq On : 1 Aug 2013 12:23 Operator: TMB
Sample : WG439852-01 100ug/L A9 CCV STD 8260 Inst : hpms11
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 01 12:45:14 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	719191	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	556792	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	289949	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.08	111	187922	26.3463 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.40%		
43) 1,2-Dichloroethane-d4	9.69	65	183030	24.4218 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.68%		
58) Toluene-d8	11.93	98	684505	27.3681 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 109.48%		
80) p-Bromofluorobenzene	15.09	95	269523	28.3634 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 113.44%		

Target Compounds

					Qvalue
3) Chloromethane	3.32	50	1628	0.1540 ug/L #	12
6) Bromomethane	4.35	94	1367	0.2788 ug/L	74
9) Diethyl ether	5.47	59	4171	0.7113 ug/L #	47
13) Acetone	5.80	43	5337	2.9642 ug/L	79
15) Tert-Butyl Alcohol	6.13	59	1540	4.2315 ug/L #	1
18) Methyl acetate	6.53	43	1772	0.3454 ug/L #	1
19) Methylene Chloride	6.76	84	4794	0.5986 ug/L #	41
20) Carbon Disulfide	6.80	76	3083	0.1335 ug/L #	75
29) 2-Butanone	8.33	43	787	0.3430 ug/L #	49
36) Tetrahydrofuran	9.04	42	760	0.4823 ug/L #	28
50) 1,4-Dioxane	11.01	88	231	6.3788 ug/L #	42
60) Ethyl Methacrylate	12.12	69	261	0.2035 ug/L	91
64) 2-Hexanone	12.36	43	744	0.2201 ug/L #	3
87) 4-Chlorotoluene	15.53	91	1109	0.1523 ug/L	99
95) n-Butylbenzene	16.72	91	2790	0.1228 ug/L #	64
98) 1,2,4-Trichlorobenzene	18.96	180	1967	0.1921 ug/L	85
99) Hexachlorobutadiene	19.10	225	1745	0.4296 ug/L #	61
100) Naphthalene	19.29	128	6488	0.3934 ug/L #	87
101) 1,2,3-Trichlorobenzene	19.59	180	2905	0.3221 ug/L	78

(#) = qualifier out of range (m) = manual integration
11M93803.D 8260WTR.M Thu Aug 01 12:45:15 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\080113\11M93803.D Vial: 3
Acq On : 1 Aug 2013 12:23 Operator: TMB
Sample : WG439852-01 100ug/L A9 CCV STD 8260 Inst : hpms11
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 1 12:45 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration

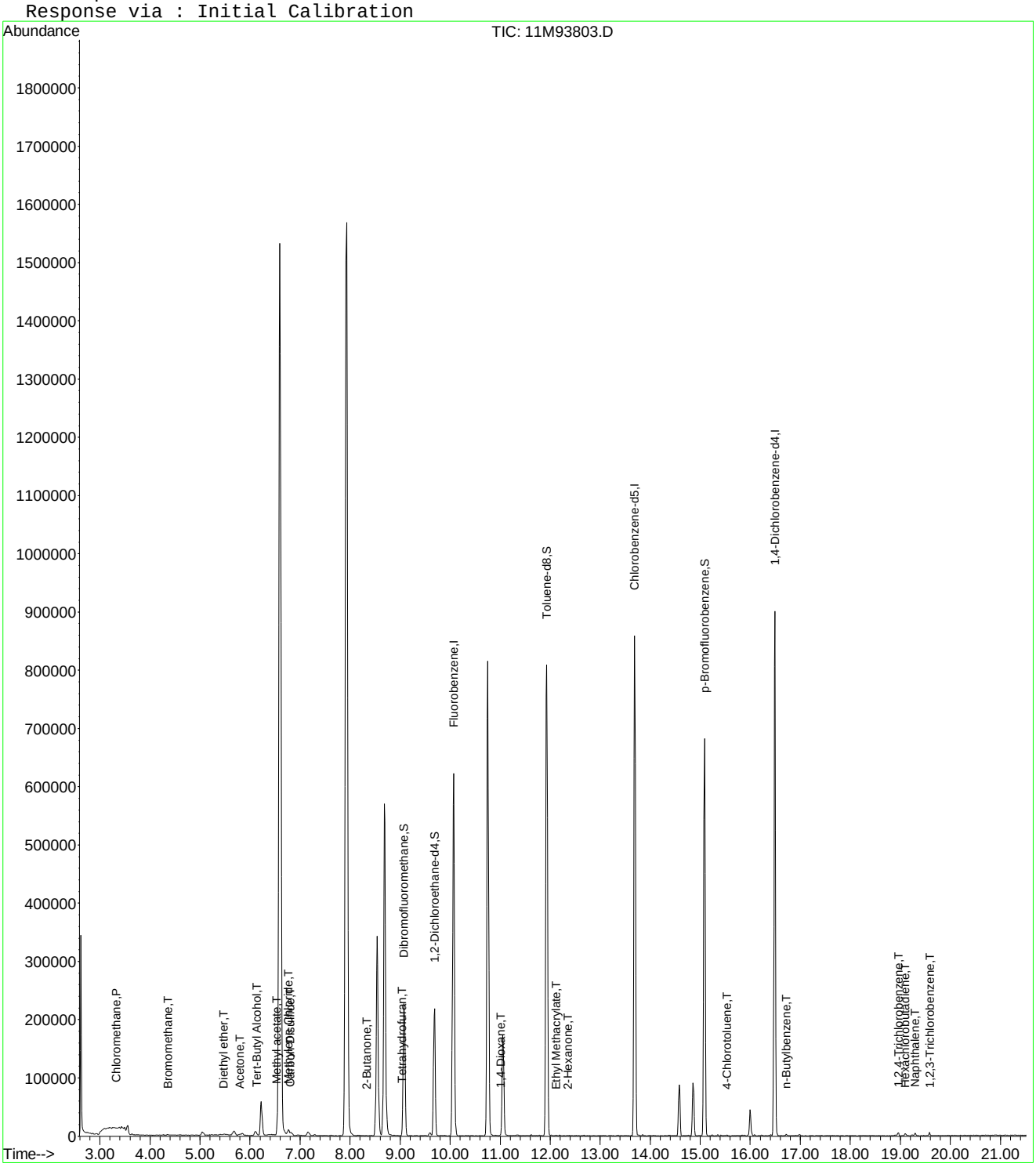

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\080113\11M93803.D Vial: 3
Acq On : 1 Aug 2013 12:23 Operator: TMB
Sample : WG439852-01 100ug/L A9 CCV STD 8260 Inst : hpms11
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 01 13:05:36 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	719191	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	556792	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	289949	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	80312	94.8651 ug/L	98
3) 3-Chloro-1-propene	6.60	41	1747793	119.1906 ug/L	87
4) 2-Chloro-1,3-butadiene	7.93	53	1574918	117.5042 ug/L	93
5) Methacrylonitrile	8.69	41	437309	96.2742 ug/L	86
6) Isobutyl Alcohol	8.71	43	24244	91.6657 ug/L	90
7) 1-Butanol	9.58	56	2494	95.9306 ug/L #	67
8) Cyclohexanone	14.86	55	49942	64.2659 ug/L #	93
9) 2-Nitropropane	11.05	43	164674	88.5847 ug/L	99
10) Ethyl Acetate	8.54	43	602100	99.5172 ug/L	96
11) Methyl methacrylate	10.75	41	594747	102.6482 ug/L	86

(#) = qualifier out of range (m) = manual integration
11M93803.D A9WTR.M Thu Aug 01 13:05:36 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\080113\11M93803.D Vial: 3
Acq On : 1 Aug 2013 12:23 Operator: TMB
Sample : WG439852-01 100ug/L A9 CCV STD 8260 Inst : hpms11
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 1 13:05 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

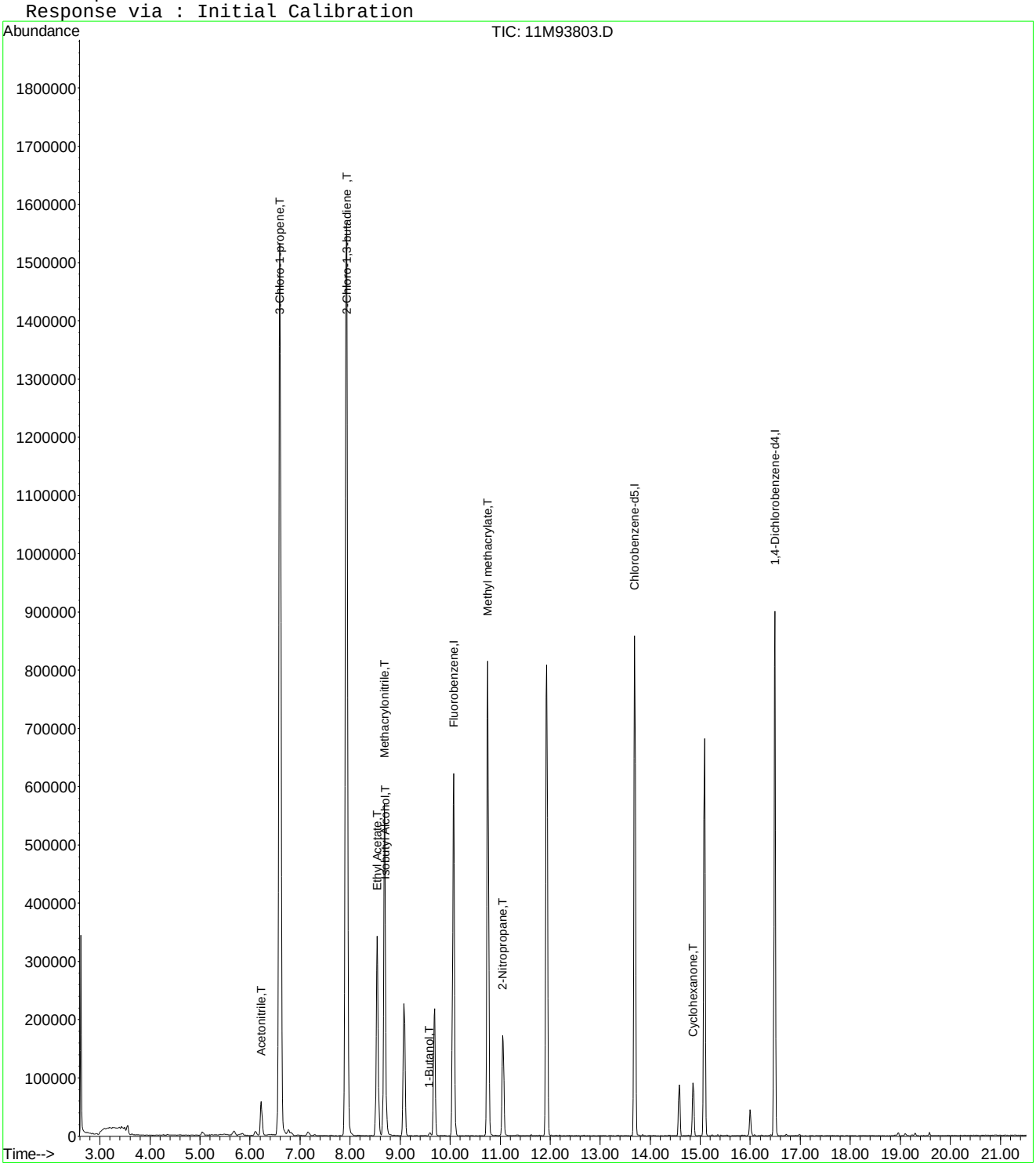

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\080113\11M93803.D Vial: 3
Acq On : 1 Aug 2013 12:23 Operator: TMB
Sample : WG439852-01 100ug/L A9 CCV STD 8260 Inst : hpms11
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 01 13:57:18 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	719191	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	556792	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	289949	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	80312	94.8651 ug/L	98
3) 3-Chloro-1-propene	6.60	41	1747793	119.1906 ug/L	87
4) 2-Chloro-1,3-butadiene	7.93	53	1574918	117.5042 ug/L	93
5) Methacrylonitrile	8.69	41	437309	96.2742 ug/L	86
6) Isobutyl Alcohol	8.71	43	24244	91.6657 ug/L	90
7) 1-Butanol	9.58	56	2494	95.9306 ug/L #	67
8) Cyclohexanone	14.86	55	49942	64.2659 ug/L #	93
9) 2-Nitropropane	11.05	43	164674	88.5847 ug/L	99
10) Ethyl Acetate	8.54	43	602100	99.5172 ug/L	96
11) Methyl methacrylate	10.75	41	594747	102.6482 ug/L	86

(#) = qualifier out of range (m) = manual integration
11M93803.D A9WTR.M Thu Aug 01 13:57:18 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\080113\11M93803.D Vial: 3
Acq On : 1 Aug 2013 12:23 Operator: TMB
Sample : WG439852-01 100ug/L A9 CCV STD 8260 Inst : hpms11
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 1 13:57 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

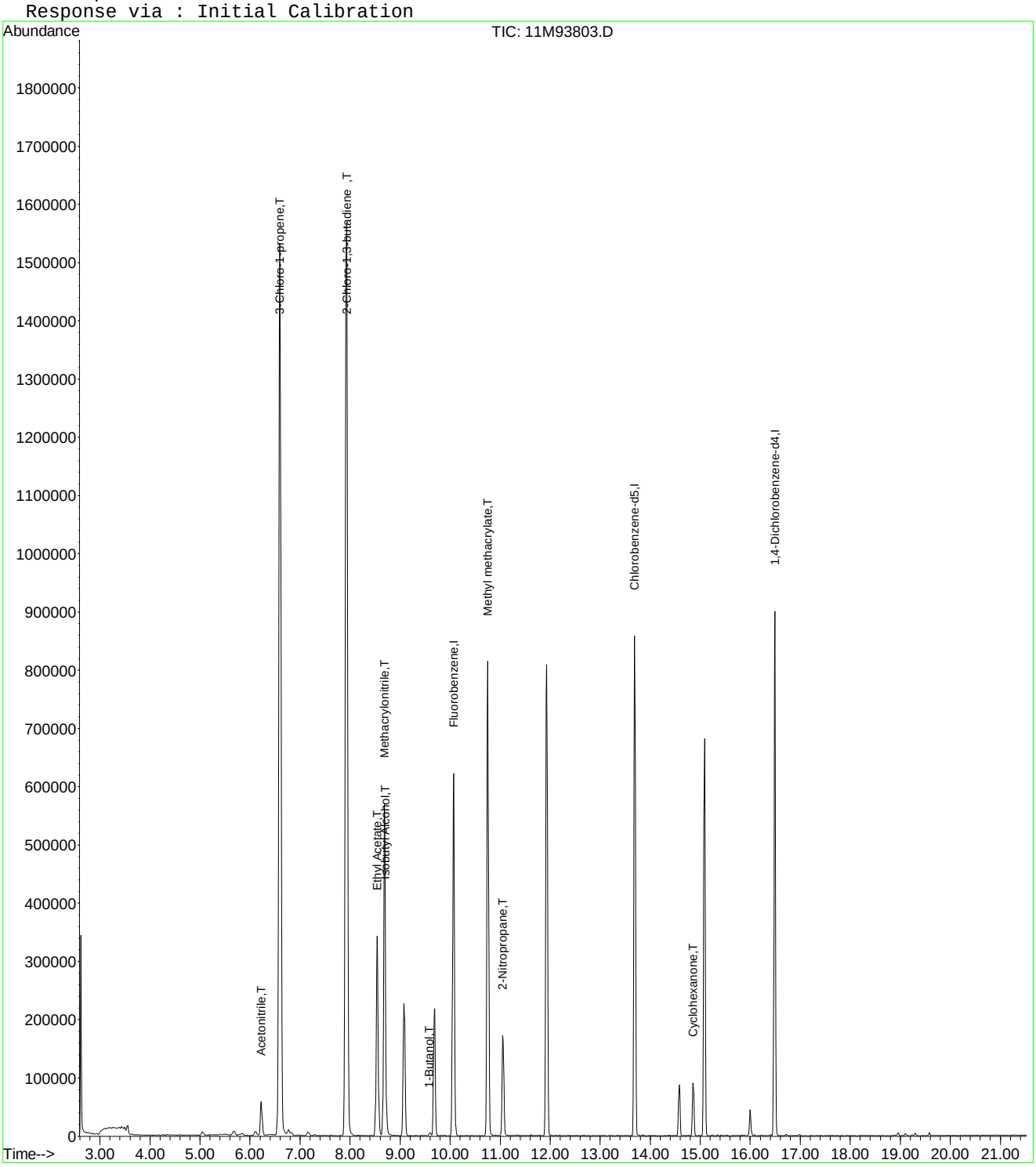

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\080113\11M93803.D Vial: 3
Acq On : 1 Aug 2013 12:23 Operator: TMB
Sample : WG439852-01 100ug/L A9 CCV STD 8260 Inst : hpms11
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	96	0.00
2	T	Acetonitrile	100.0000	94.8651	5.1	99	0.00
3	T	3-Chloro-1-propene	100.0000	119.1906	-19.2	116	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	117.5042	-17.5	108	0.00
5	T	Methacrylonitrile	100.0000	96.2742	3.7	98	-0.01
6	T	Isobutyl Alcohol	100.0000	91.6657	8.3	98	0.00
7	T	1-Butanol	100.0000	95.9306	4.1	86	-0.01
8	T	Cyclohexanone	100.0000	64.2659	35.7	69	0.00
9	T	2-Nitropropane	100.0000	88.5847	11.4	95	0.00
10	T	Ethyl Acetate	100.0000	99.5172	0.5	95	-0.01
11	T	Methyl methacrylate	100.0000	102.6482	-2.6	98	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	-0.01
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M93803.D A9WTR.M Thu Aug 01 13:05:40 2013 Page 1

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\070513\11M93287.D          Vial: 1
Acq On    :  5 Jul 2013  16:05                        Operator: FJB
Sample    : WG436576-01 BFB 50ng 8260                 Inst    : hpms11
Misc      : 1,1 STD58740                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

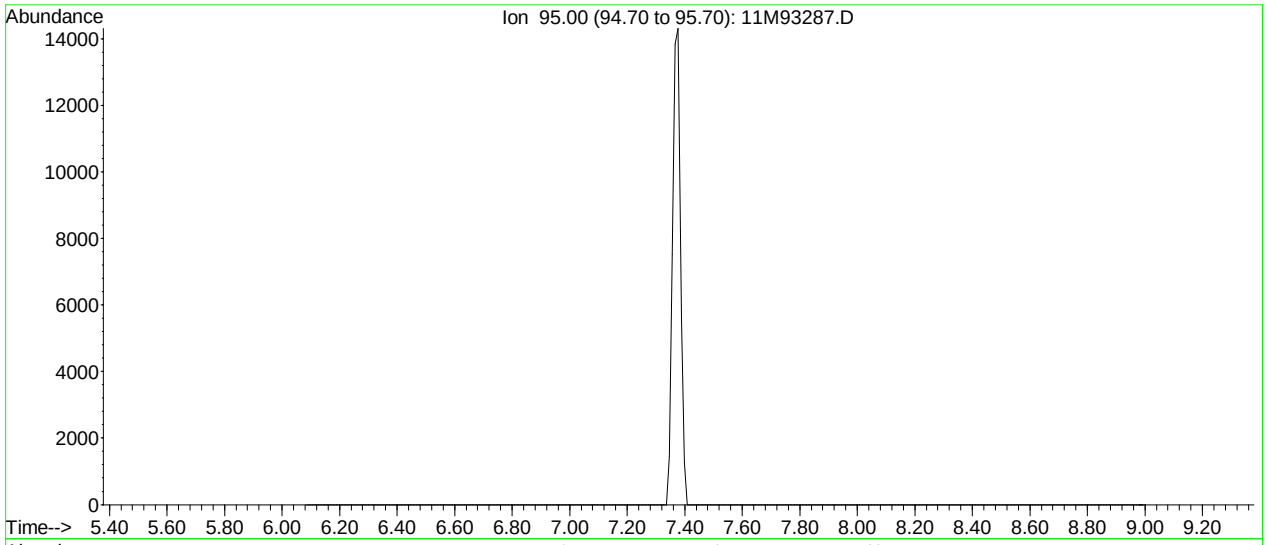

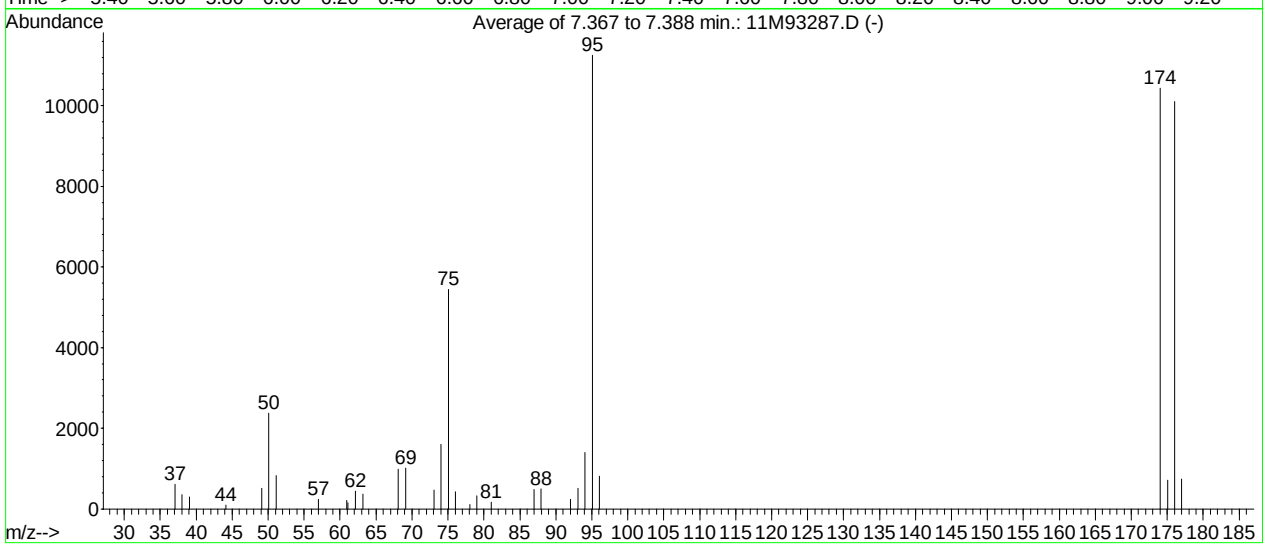

AutoFind: Scans 125, 126, 127; Background Corrected with Scan 120

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.2	2381	PASS
75	95	30	60	48.3	5438	PASS
95	95	100	100	100.0	11255	PASS
96	95	5	9	7.2	815	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	92.7	10439	PASS
175	174	5	9	6.9	716	PASS
176	174	95	101	96.7	10098	PASS
177	176	5	9	7.3	741	PASS

11M93287.D BFB.M Wed Jul 10 12:39:50 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\072913\11M93711.D          Vial: 2
Acq On    : 29 Jul 2013  10:28                       Operator: TMB
Sample    : WG439392-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD58740                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

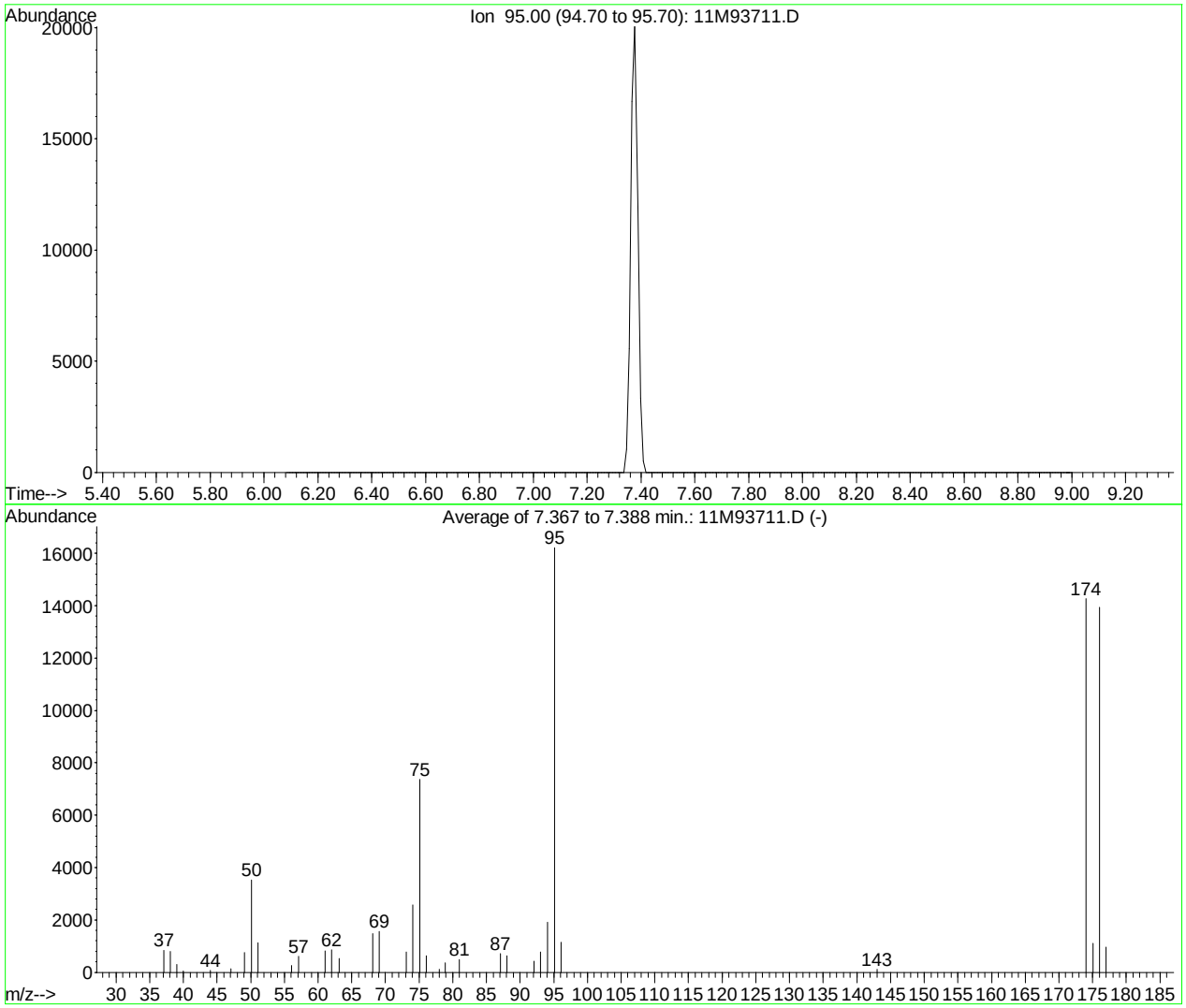

AutoFind: Scans 125, 126, 127; Background Corrected with Scan 120

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	3523	PASS
75	95	30	60	45.4	7366	PASS
95	95	100	100	100.0	16219	PASS
96	95	5	9	7.1	1158	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	88.0	14273	PASS
175	174	5	9	7.8	1112	PASS
176	174	95	101	97.7	13940	PASS
177	176	5	9	6.9	962	PASS

11M93711.D BFB.M Mon Jul 29 10:39:21 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\080113\11M93801.D          Vial: 1
Acq On    :  1 Aug 2013  11:26                       Operator: TMB
Sample    : WG439850-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD58740                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

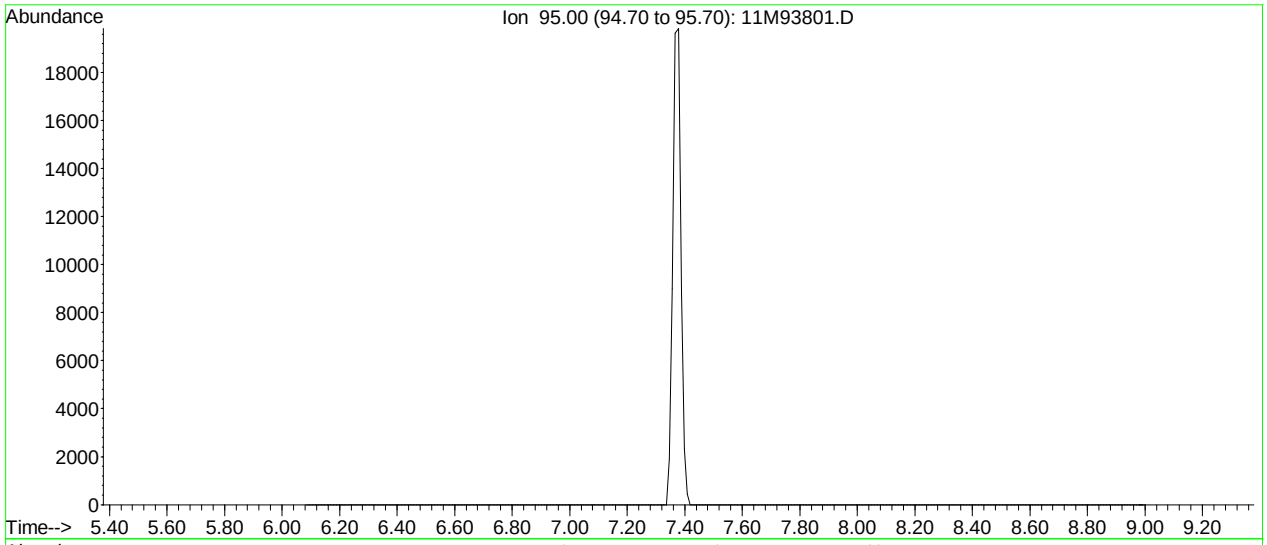

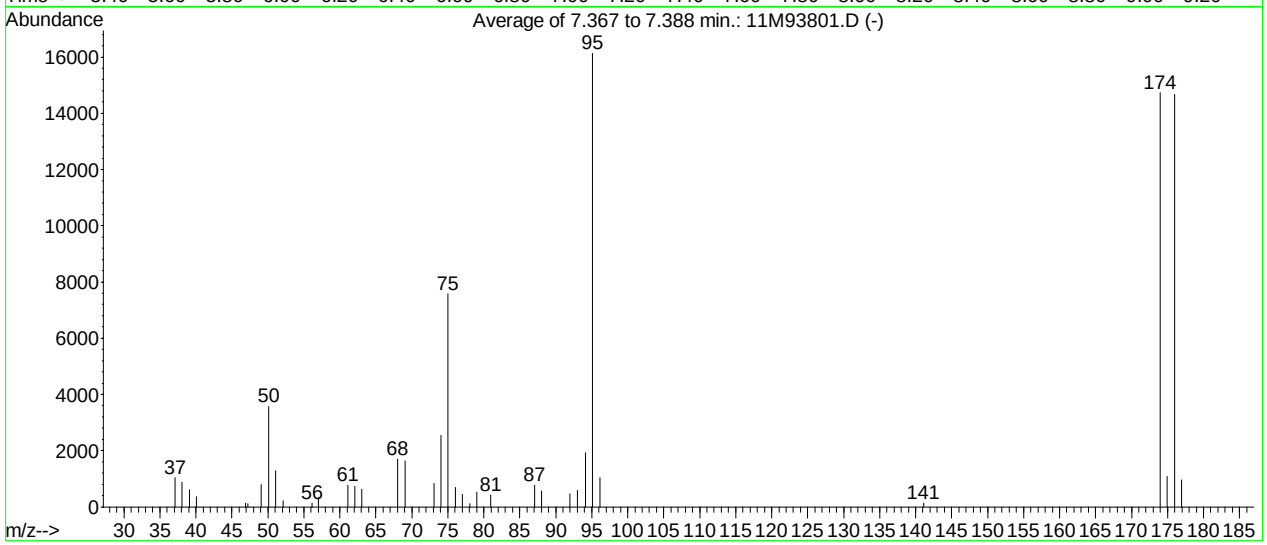

AutoFind: Scans 125, 126, 127; Background Corrected with Scan 120

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.1	3563	PASS
75	95	30	60	46.9	7575	PASS
95	95	100	100	100.0	16140	PASS
96	95	5	9	6.4	1040	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	91.3	14730	PASS
175	174	5	9	7.3	1075	PASS
176	174	95	101	99.6	14673	PASS
177	176	5	9	6.5	953	PASS

11M93801.D BFB.M Thu Aug 01 11:36:45 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\080113\11M93804.D Vial: 4
Acq On : 1 Aug 2013 12:54 Operator: TMB
Sample : WG439851-01 VBLK0801 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 02 08:17:13 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	671618	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	519156	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	270109	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.08	111	172884	25.9549 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.80%		
43) 1,2-Dichloroethane-d4	9.69	65	175603	25.0905 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.36%		
58) Toluene-d8	11.93	98	636700	27.3022 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 109.20%		
80) p-Bromofluorobenzene	15.09	95	248231	28.0415 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.16%		

Target Compounds					Qvalue
3) Chloromethane	3.30	50	3171	0.3213 ug/L #	42
87) 4-Chlorotoluene	15.54	91	226	0.1201 ug/L #	36

(#) = qualifier out of range (m) = manual integration
11M93804.D 8260WTR.M Fri Aug 02 08:17:14 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\080113\11M93804.D Vial: 4
Acq On : 1 Aug 2013 12:54 Operator: TMB
Sample : WG439851-01 VBLK0801 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 2 8:17 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration

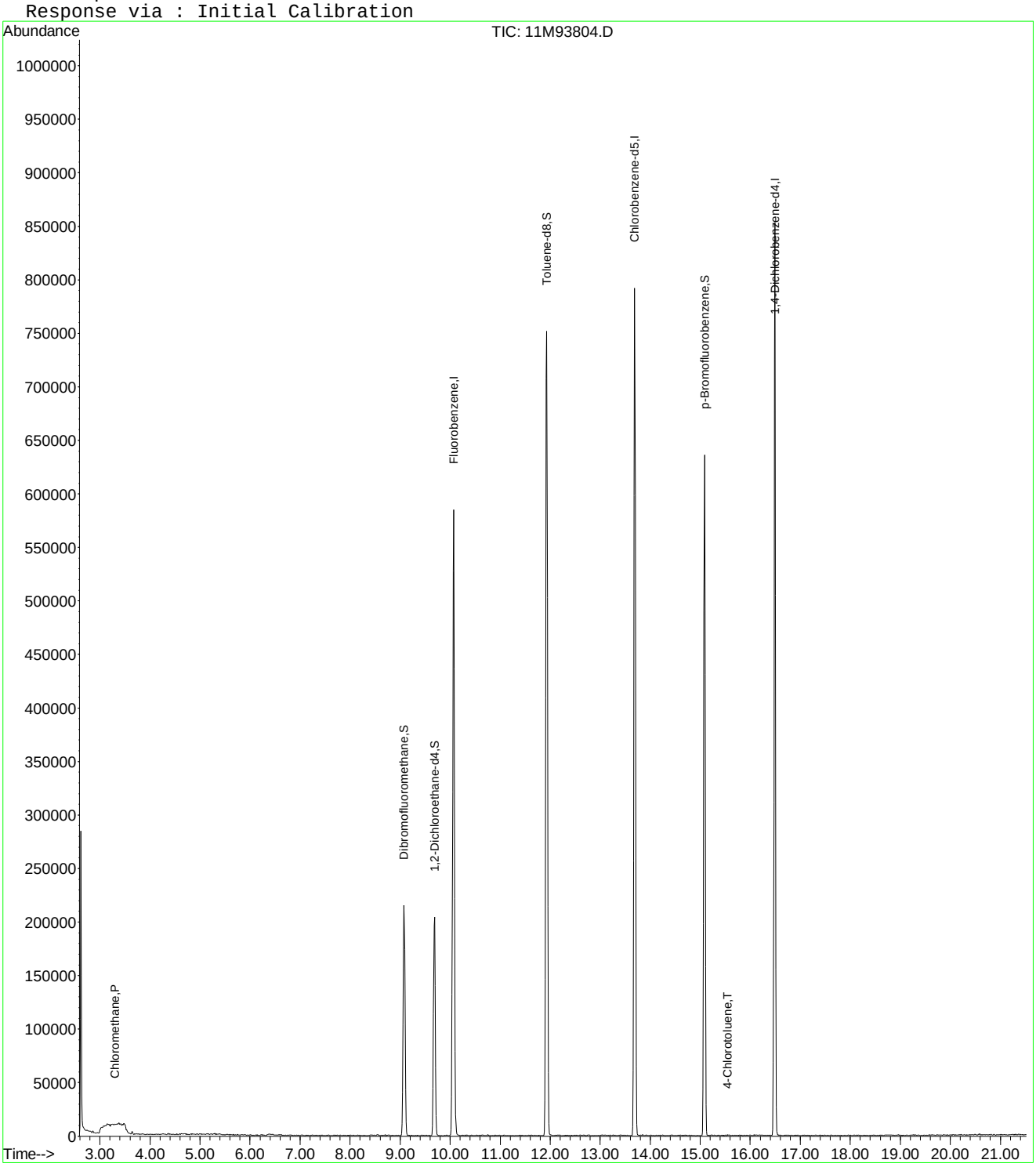

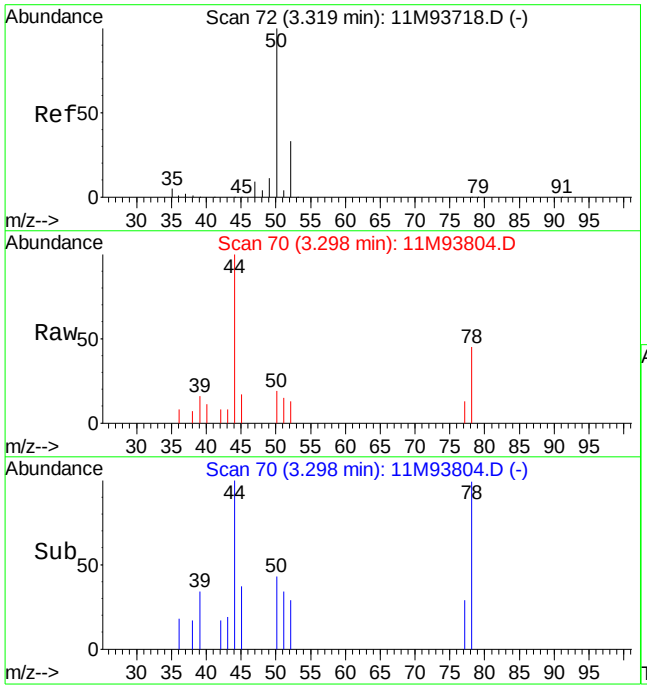

#3
Chloromethane
Concen: 0.32 ug/L
RT: 3.30 min Scan# 70
Delta R.T. -0.02 min
Lab File: 11M93804.D
Acq: 1 Aug 2013 12:54

Tgt Ion: 50 Resp: 3171

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.4	45.2#

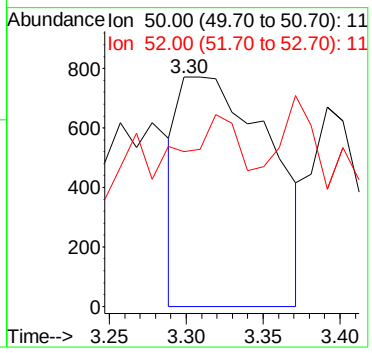

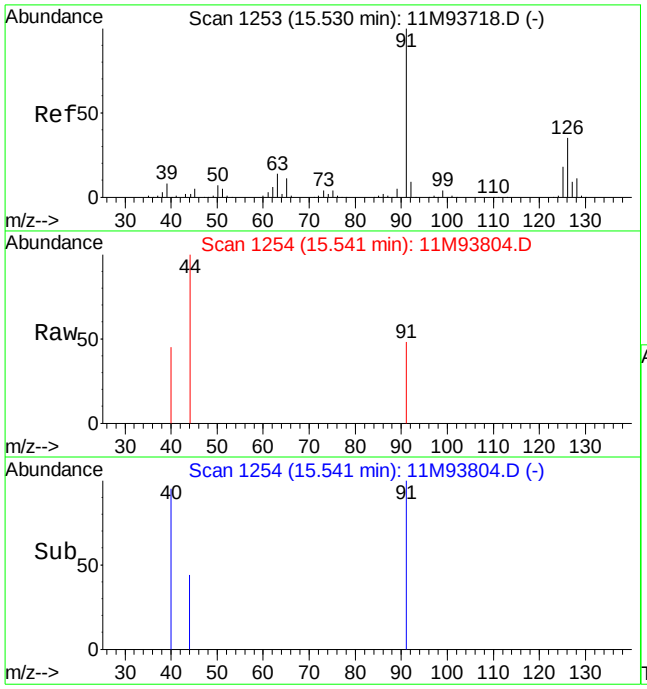

#87
4-Chlorotoluene
Concen: 0.12 ug/L
RT: 15.54 min Scan# 1254
Delta R.T. 0.01 min
Lab File: 11M93804.D
Acq: 1 Aug 2013 12:54

Tgt Ion: 91 Resp: 226

Ion	Ratio	Lower	Upper
91	100		
126	0.0	23.5	54.7#

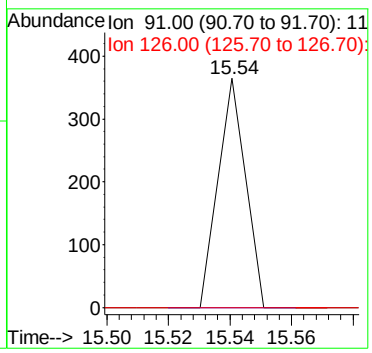

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\080113\11M93804.D Vial: 4
Acq On : 1 Aug 2013 12:54 Operator: TMB
Sample : WG439851-01 VBLK0801 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 01 13:57:30 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	671618	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	519156	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	270109	25.00 ug/L	0.00

Target Compounds					Qvalue
6) Isobutyl Alcohol	8.56	43	1200	4.8585 ug/L #	1
8) Cyclohexanone	15.08	55	537	19.4820 ug/L #	19

(#) = qualifier out of range (m) = manual integration
11M93804.D A9WTR.M Thu Aug 01 13:57:31 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\080113\11M93804.D Vial: 4
Acq On : 1 Aug 2013 12:54 Operator: TMB
Sample : WG439851-01 VBLK0801 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 1 13:57 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

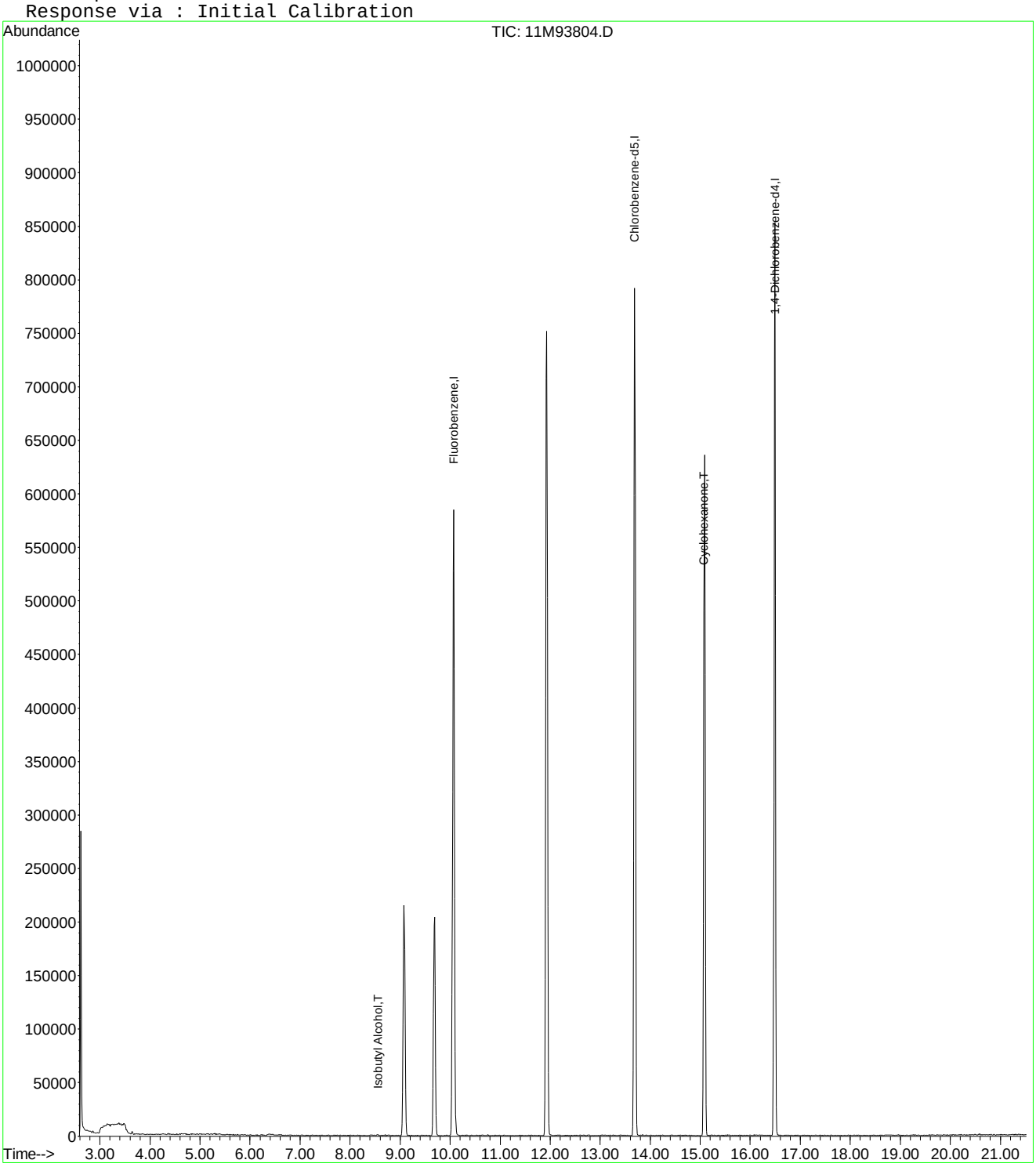

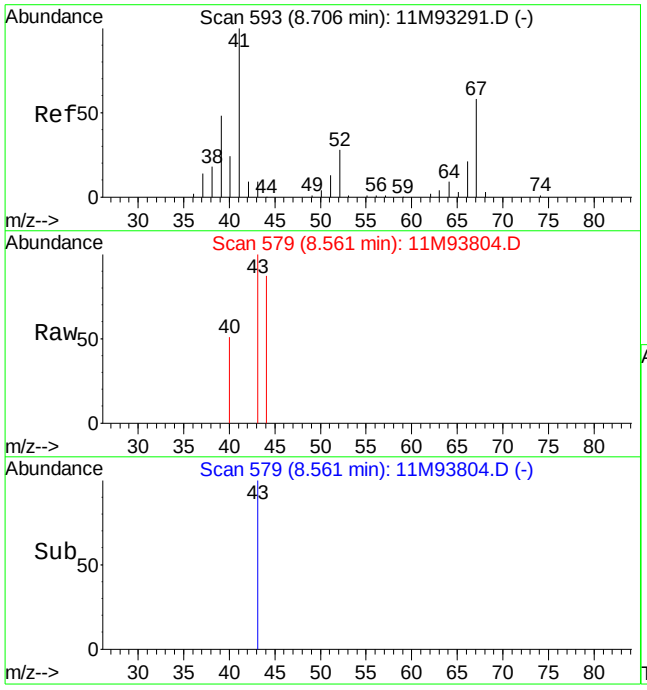

#6
Isobutyl Alcohol
Concen: 4.86 ug/L
RT: 8.56 min Scan# 579
Delta R.T. -0.14 min
Lab File: 11M93804.D
Acq: 1 Aug 2013 12:54

Tgt Ion: 43 Resp: 1200

Ion	Ratio	Lower	Upper
43	100		
42	0.0	61.1	141.1#

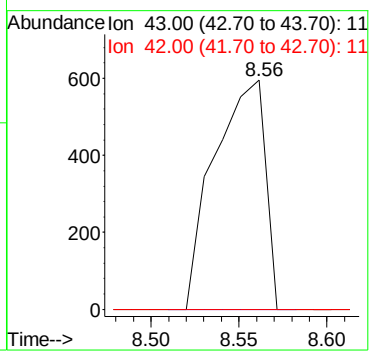

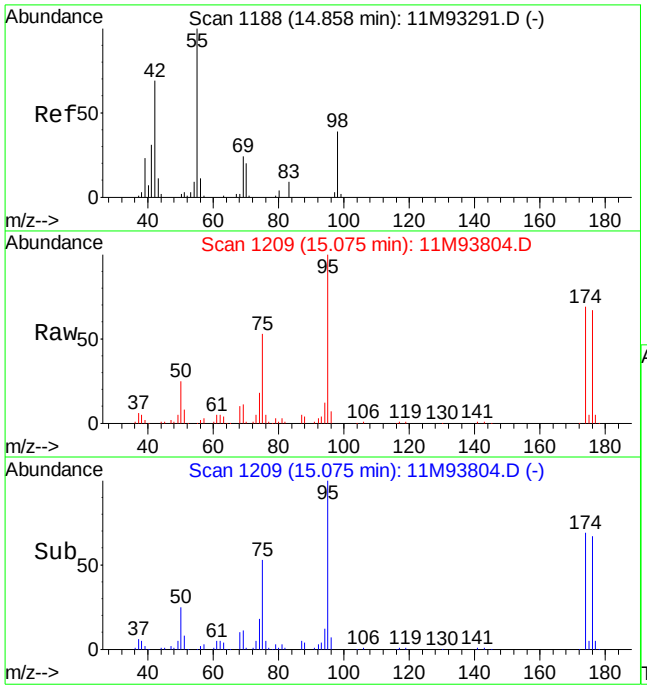

#8
Cyclohexanone
Concen: 19.48 ug/L
RT: 15.08 min Scan# 1209
Delta R.T. 0.21 min
Lab File: 11M93804.D
Acq: 1 Aug 2013 12:54

Tgt Ion: 55 Resp: 537

Ion	Ratio	Lower	Upper
55	100		
42	0.0	59.5	89.3#
98	0.0	35.8	53.6#

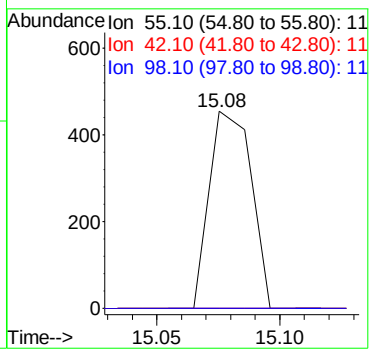

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\080113\11M93805.D Vial: 5
Acq On : 1 Aug 2013 13:26 Operator: TMB
Sample : WG439851-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD59321 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 01 13:47:56 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	694778	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	549370	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	297534	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.08	111	186093	27.0067 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.04%		
43) 1,2-Dichloroethane-d4	9.69	65	182509	25.2080 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.84%		
58) Toluene-d8	11.93	98	682347	27.6504 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 110.60%#		
80) p-Bromofluorobenzene	15.09	95	276656	28.3718 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 113.48%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	104120	15.4394 ug/L	98
3) Chloromethane	3.32	50	193676	18.9700 ug/L	96
4) Vinyl Chloride	3.52	62	160230	18.1180 ug/L	96
5) 1,3-Butadiene	3.56	54	147884	19.1012 ug/L	89
6) Bromomethane	4.35	94	79835	16.8524 ug/L	99
7) Chloroethane	4.50	64	111965	20.5794 ug/L	100
8) Trichlorofluoromethane	4.97	101	235112	20.0450 ug/L	99
9) Diethyl ether	5.48	59	611058	107.8653 ug/L	79
10) Isoprene	5.51	67	219276	21.9969 ug/L	77
11) Acrolein	5.70	56	93262	129.0916 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	152228	22.0008 ug/L	95
13) Acetone	5.79	43	33410	19.2083 ug/L	96
14) 1,1-Dichloroethene	6.02	61	231635	19.3171 ug/L	90
15) Tert-Butyl Alcohol	6.12	59	83094	236.3411 ug/L #	91
16) Dimethyl Sulfide	6.27	62	185200	24.0223 ug/L	79
17) Iodomethane	6.50	142	128203	17.2418 ug/L	96
18) Methyl acetate	6.52	43	98039	19.7831 ug/L	89
19) Methylene Chloride	6.77	84	154725	19.9997 ug/L #	53
20) Carbon Disulfide	6.80	76	468172	20.9865 ug/L	99
21) Acrylonitrile	6.94	53	43219	21.0202 ug/L	98
22) Methyl Tert Butyl Ether	6.98	73	332333	21.1996 ug/L	86
23) trans-1,2-Dichloroethene	7.21	96	157986	20.6161 ug/L	79
24) n-Hexane	7.29	57	217110	20.4676 ug/L	89
25) Diisopropyl ether	7.62	45	3340115	108.7472 ug/L	87
26) Vinyl Acetate	7.78	43	297502	30.2362 ug/L #	90
27) 1,1-Dichloroethane	7.80	63	315221	20.9294 ug/L	96
28) Ethyl-Tert-Butyl ether	8.17	59	2443475	107.4471 ug/L	89
29) 2-Butanone	8.33	43	51253	23.1218 ug/L	84
30) Propionitrile	8.43	54	76416	112.3246 ug/L	94
31) 2,2-Dichloropropane	8.54	77	240354	19.7968 ug/L	99
32) cis-1,2-Dichloroethene	8.60	96	172690	20.8365 ug/L	77
33) Chloroform	8.80	83	285857	20.9736 ug/L	96
34) 1-Bromopropane	8.93	122	34078	23.9102 ug/L	96
35) Bromochloromethane	9.02	130	95002	20.7539 ug/L #	56
36) Tetrahydrofuran	9.05	42	167561	110.0740 ug/L	74
38) 1,1,1-Trichloroethane	9.31	97	248676	20.8946 ug/L	96
39) Cyclohexane	9.34	56	296470	20.9822 ug/L	74
40) 1,1-Dichloropropene	9.49	75	219023	21.0940 ug/L	96
41) Carbon Tetrachloride	9.63	117	225460	20.9251 ug/L	99
42) Tert-Amyl-Methyl ether	9.61	73	1797806	106.8443 ug/L #	81

(#) = qualifier out of range (m) = manual integration
11M93805.D 8260WTR.M Thu Aug 01 13:47:57 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\080113\11M93805.D Vial: 5
Acq On : 1 Aug 2013 13:26 Operator: TMB
Sample : WG439851-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD59321 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 01 13:47:56 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.79	62	205585	21.9674 ug/L		90
46)	Benzene	9.83	78	646225	21.9264 ug/L		100
47)	Trichloroethene	10.55	130	170040	22.3665 ug/L		93
48)	Methylcyclohexane	10.63	83	220411	21.3263 ug/L	#	78
49)	1,2-Dichloropropane	10.74	63	186487	21.9355 ug/L		83
50)	1,4-Dioxane	11.01	88	7176	205.1197 ug/L	#	65
51)	Bromodichloromethane	11.03	83	207628	20.8479 ug/L		96
52)	Dibromomethane	11.10	93	81105	21.5779 ug/L		99
53)	2-Chloroethyl Vinyl Ether	11.31	63	74106	22.2432 ug/L		86
54)	4-Methyl-2-Pentanone	11.34	58	38424	22.2243 ug/L		79
55)	cis-1,3-Dichloropropene	11.63	75	259097	22.9206 ug/L		100
56)	Dimethyl Disulfide	11.87	79	119010	19.9060 ug/L		99
59)	Toluene	12.03	91	672017	21.8427 ug/L		98
60)	Ethyl Methacrylate	12.12	69	143179	21.1866 ug/L		75
62)	trans-1,3-Dichloropropene	12.19	75	205422	21.1086 ug/L		96
63)	1,1,2-Trichloroethane	12.39	97	114637	21.9622 ug/L		97
64)	2-Hexanone	12.34	43	72715	21.8061 ug/L	#	24
65)	1,3-Dichloropropane	12.68	76	199466	21.5441 ug/L		73
66)	Tetrachloroethene	12.79	164	133903	20.1560 ug/L		96
67)	Dibromochloromethane	13.03	129	138493	20.3112 ug/L		99
68)	1,2-Dibromoethane	13.27	107	109862	21.3583 ug/L		98
69)	1-Chlorohexane	13.36	91	201329	22.4293 ug/L	#	68
70)	Chlorobenzene	13.74	112	404753	19.7748 ug/L		99
71)	1,1,1,2-Tetrachloroethane	13.76	131	163653	21.3813 ug/L		100
72)	Ethylbenzene	13.76	106	237256	21.1460 ug/L		94
73)	m-,p-Xylene	13.84	106	558021	43.9497 ug/L		96
74)	o-Xylene	14.37	106	260472	20.5010 ug/L		96
75)	Styrene	14.40	104	471125	23.8907 ug/L		96
76)	Bromoform	14.86	173	88318	20.8835 ug/L		100
77)	Isopropylbenzene	14.77	105	643510	21.6546 ug/L		97
79)	1,1,2,2-Tetrachloroethane	14.96	83	128594	21.7140 ug/L		98
81)	1,2,3-Trichloropropane	15.14	110	36333	21.0609 ug/L		91
82)	trans-1,4-Dichloro-2-Buten	15.19	53	32719	14.4820 ug/L		89
83)	n-Propylbenzene	15.23	91	774185	20.7228 ug/L		96
84)	Bromobenzene	15.35	156	188061	21.6988 ug/L		85
85)	1,3,5-Trimethylbenzene	15.41	105	607589	24.0578 ug/L		95
86)	2-Chlorotoluene	15.48	91	561160	23.4488 ug/L		93
87)	4-Chlorotoluene	15.53	91	427083	15.9952 ug/L		93
88)	a-Methylstyrene	15.78	118	309769	22.1158 ug/L		93
89)	tert-Butylbenzene	15.84	134	112926	20.0854 ug/L		94
90)	1,2,4-Trimethylbenzene	15.88	105	626398	23.5241 ug/L		95
91)	sec-Butylbenzene	16.09	105	637748	21.1711 ug/L		98
92)	p-Isopropyltoluene	16.23	119	543503	21.7931 ug/L		100
93)	1,3-Dichlorobenzene	16.41	146	329434	19.7363 ug/L		98
94)	1,4-Dichlorobenzene	16.53	146	360868	21.0697 ug/L		97
95)	n-Butylbenzene	16.72	91	535133	22.9441 ug/L		95
96)	1,2-Dichlorobenzene	16.99	146	301378	19.3092 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	17.91	75	20559	21.2902 ug/L		83
98)	1,2,4-Trichlorobenzene	18.96	180	218723	20.8153 ug/L		99
99)	Hexachlorobutadiene	19.10	225	78924	18.9346 ug/L		95
100)	Naphthalene	19.29	128	394000	23.2800 ug/L		99
101)	1,2,3-Trichlorobenzene	19.58	180	193165	20.8741 ug/L		100

(#) = qualifier out of range (m) = manual integration
11M93805.D 8260WTR.M Thu Aug 01 13:47:57 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\080113\11M93805.D Vial: 5
Acq On : 1 Aug 2013 13:26 Operator: TMB
Sample : WG439851-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD59321 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 1 13:47 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration

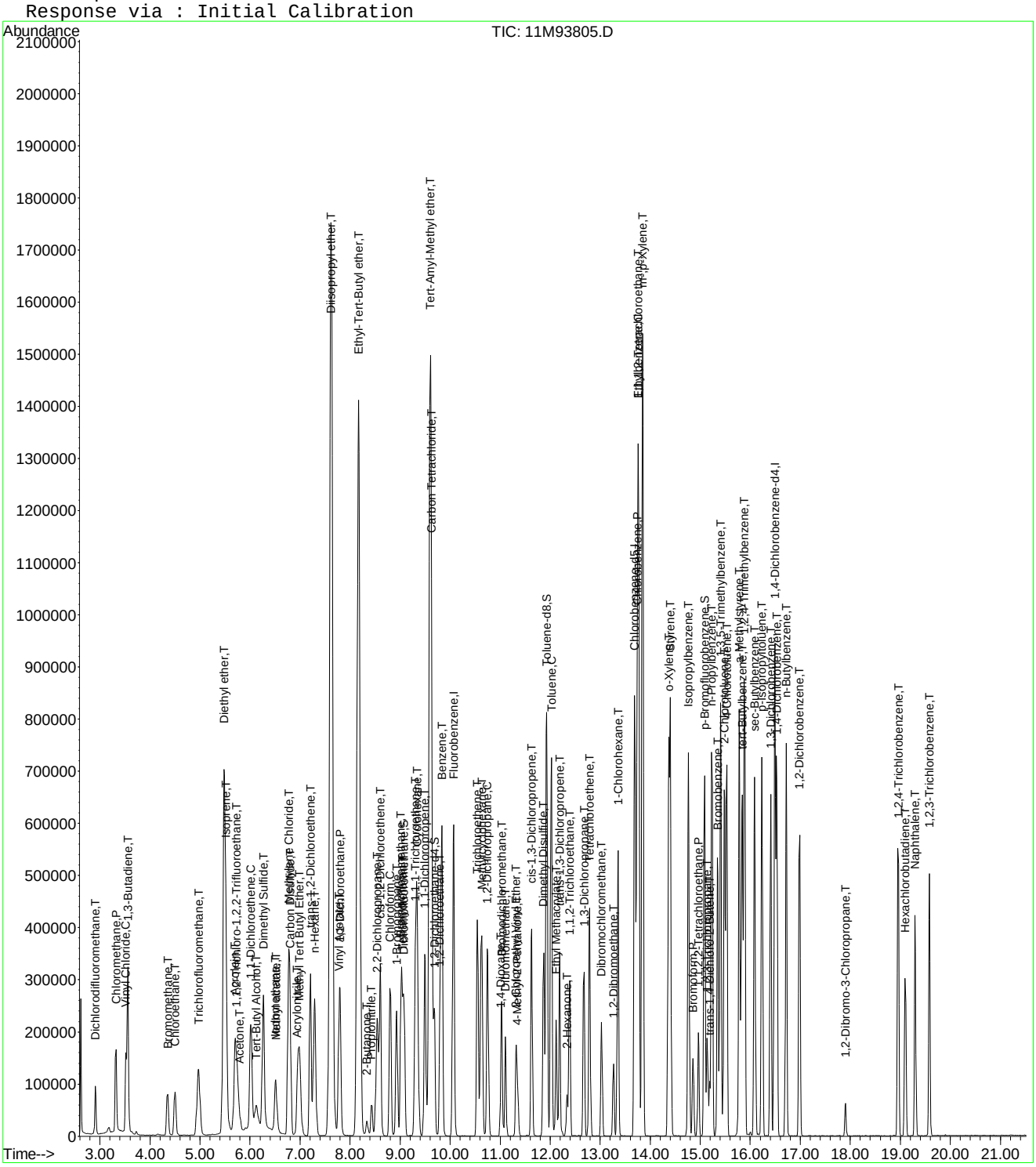

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\080113\11M93826.D Vial: 26
Acq On : 2 Aug 2013 00:26 Operator: TMB
Sample : WG439851-08 20ug/L 624 LCS Inst : hpms11
Misc : 2,1 STD59321 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 02 09:02:59 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	660104	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	522152	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	285673	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.08	111	170918	26.1073 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.44%		
43) 1,2-Dichloroethane-d4	9.69	65	175718	25.5449 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.16%		
58) Toluene-d8	11.93	98	633525	27.0102 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 108.04%		
80) p-Bromofluorobenzene	15.09	95	254727	27.2076 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.84%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	172206	26.8768 ug/L	97
3) Chloromethane	3.32	50	232056	23.9231 ug/L	100
4) Vinyl Chloride	3.52	62	166838	19.8562 ug/L	95
5) 1,3-Butadiene	3.56	54	126417	17.0904 ug/L	86
6) Bromomethane	4.34	94	73153	16.2530 ug/L	99
7) Chloroethane	4.50	64	114833	22.2152 ug/L	100
8) Trichlorofluoromethane	4.97	101	241300	21.6532 ug/L	98
9) Diethyl ether	5.48	59	571127	106.1123 ug/L	79
10) Isoprene	5.51	67	199252	21.0381 ug/L	75
11) Acrolein	5.70	56	78787	114.7840 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.72	101	149144	22.6873 ug/L	95
13) Acetone	5.80	43	31524	19.0760 ug/L	88
14) 1,1-Dichloroethene	6.02	61	231249	20.2979 ug/L	89
15) Tert-Butyl Alcohol	6.12	59	72631	217.4329 ug/L #	82
16) Dimethyl Sulfide	6.27	62	169060	23.0807 ug/L	77
17) Iodomethane	6.50	142	118260	16.7550 ug/L	93
18) Methyl acetate	6.52	43	98565	20.9340 ug/L	86
19) Methylene Chloride	6.77	84	151489	20.6100 ug/L #	52
20) Carbon Disulfide	6.79	76	431504	20.3589 ug/L	99
21) Acrylonitrile	6.94	53	41513	21.2511 ug/L	98
22) Methyl Tert Butyl Ether	6.99	73	311687	20.9270 ug/L	86
23) trans-1,2-Dichloroethene	7.21	96	153166	21.0370 ug/L	78
24) n-Hexane	7.29	57	179022	17.7634 ug/L	88
25) Diisopropyl ether	7.62	45	3152581	108.0330 ug/L	87
26) Vinyl Acetate	7.78	43	198401	21.2234 ug/L #	90
27) 1,1-Dichloroethane	7.80	63	303318	21.1969 ug/L	97
28) Ethyl-Tert-Butyl ether	8.17	59	2286512	105.8264 ug/L	89
29) 2-Butanone	8.33	43	50179	23.8264 ug/L	83
30) Propionitrile	8.44	54	72234	111.7547 ug/L	99
31) 2,2-Dichloropropane	8.54	77	195638	16.9602 ug/L	98
32) cis-1,2-Dichloroethene	8.60	96	168680	21.4217 ug/L	80
33) Chloroform	8.80	83	272296	21.0280 ug/L	97
34) 1-Bromopropane	8.93	122	30103	22.2306 ug/L	99
35) Bromochloromethane	9.02	130	92854	21.3502 ug/L #	56
36) Tetrahydrofuran	9.05	42	163595	113.1138 ug/L #	72
38) 1,1,1-Trichloroethane	9.31	97	239472	21.1781 ug/L	94
39) Cyclohexane	9.34	56	280778	20.9154 ug/L	73
40) 1,1-Dichloropropene	9.49	75	210155	21.3031 ug/L	96
41) Carbon Tetrachloride	9.64	117	215062	21.0085 ug/L	99
42) Tert-Amyl-Methyl ether	9.61	73	1685203	105.4131 ug/L #	79

(#) = qualifier out of range (m) = manual integration
11M93826.D 8260WTR.M Mon Aug 05 10:50:06 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\080113\11M93826.D Vial: 26
Acq On : 2 Aug 2013 00:26 Operator: TMB
Sample : WG439851-08 20ug/L 624 LCS Inst : hpms11
Misc : 2,1 STD59321 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 02 09:02:59 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.79	62	200461	22.5450 ug/L		89
46)	Benzene	9.83	78	624822	22.3138 ug/L		99
47)	Trichloroethene	10.55	130	168628	23.3459 ug/L		94
48)	Methylcyclohexane	10.63	83	200632	20.4322 ug/L	#	77
49)	1,2-Dichloropropane	10.74	63	179015	22.1627 ug/L		85
50)	1,4-Dioxane	11.02	88	7126	214.3899 ug/L	#	63
51)	Bromodichloromethane	11.03	83	195866	20.6999 ug/L		99
52)	Dibromomethane	11.11	93	77976	21.8351 ug/L		99
53)	2-Chloroethyl Vinyl Ether	11.32	63	69345	21.9075 ug/L		89
54)	4-Methyl-2-Pentanone	11.34	58	36250	22.0683 ug/L		82
55)	cis-1,3-Dichloropropene	11.63	75	242947	22.6208 ug/L		99
56)	Dimethyl Disulfide	11.87	79	106750	18.7933 ug/L		99
59)	Toluene	12.03	91	643409	22.0029 ug/L		98
60)	Ethyl Methacrylate	12.12	69	134456	20.9350 ug/L		73
62)	trans-1,3-Dichloropropene	12.19	75	192689	20.8323 ug/L		96
63)	1,1,2-Trichloroethane	12.39	97	111339	22.4423 ug/L		96
64)	2-Hexanone	12.34	43	71153	22.4499 ug/L		81
65)	1,3-Dichloropropane	12.68	76	196465	22.3261 ug/L		74
66)	Tetrachloroethene	12.79	164	128653	20.3752 ug/L		96
67)	Dibromochloromethane	13.03	129	134143	20.6987 ug/L		100
68)	1,2-Dibromoethane	13.27	107	106501	21.7842 ug/L		100
69)	1-Chlorohexane	13.36	91	181929	21.3245 ug/L	#	65
70)	Chlorobenzene	13.73	112	388340	19.9619 ug/L		100
71)	1,1,1,2-Tetrachloroethane	13.77	131	153527	21.1039 ug/L		99
72)	Ethylbenzene	13.76	106	227823	21.3637 ug/L		96
73)	m-,p-Xylene	13.85	106	527429	43.7056 ug/L		95
74)	o-Xylene	14.37	106	247719	20.5136 ug/L		95
75)	Styrene	14.40	104	453892	24.2166 ug/L		96
76)	Bromoform	14.86	173	85441	21.2563 ug/L		99
77)	Isopropylbenzene	14.77	105	610615	21.6188 ug/L		97
79)	1,1,2,2-Tetrachloroethane	14.96	83	118317	20.8081 ug/L		99
81)	1,2,3-Trichloropropane	15.14	110	34790	21.0038 ug/L		97
82)	trans-1,4-Dichloro-2-Buten	15.19	53	28612	13.2535 ug/L		92
83)	n-Propylbenzene	15.23	91	728594	20.3122 ug/L		96
84)	Bromobenzene	15.35	156	180489	21.6898 ug/L		85
85)	1,3,5-Trimethylbenzene	15.41	105	568591	23.4484 ug/L		96
86)	2-Chlorotoluene	15.48	91	533327	23.2111 ug/L		93
87)	4-Chlorotoluene	15.53	91	401461	15.6537 ug/L		94
88)	a-Methylstyrene	15.78	118	287220	21.3573 ug/L		93
89)	tert-Butylbenzene	15.84	134	107859	19.9807 ug/L		95
90)	1,2,4-Trimethylbenzene	15.88	105	587060	22.9621 ug/L		95
91)	sec-Butylbenzene	16.09	105	608558	21.0409 ug/L		98
92)	p-Isopropyltoluene	16.23	119	511226	21.3500 ug/L		100
93)	1,3-Dichlorobenzene	16.41	146	311480	19.4354 ug/L		98
94)	1,4-Dichlorobenzene	16.53	146	340011	20.6762 ug/L		97
95)	n-Butylbenzene	16.72	91	493381	22.0323 ug/L		95
96)	1,2-Dichlorobenzene	16.99	146	289893	19.3445 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	17.90	75	19429	20.9554 ug/L		83
98)	1,2,4-Trichlorobenzene	18.95	180	203829	20.2032 ug/L		99
99)	Hexachlorobutadiene	19.10	225	73580	18.3855 ug/L		94
100)	Naphthalene	19.29	128	379762	23.3704 ug/L		99
101)	1,2,3-Trichlorobenzene	19.58	180	183806	20.6875 ug/L		98

(#) = qualifier out of range (m) = manual integration
11M93826.D 8260WTR.M Mon Aug 05 10:50:06 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\080113\11M93826.D Vial: 26
Acq On : 2 Aug 2013 00:26 Operator: TMB
Sample : WG439851-08 20ug/L 624 LCS Inst : hpms11
Misc : 2,1 STD59321 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 2 9:02 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 07/29/13 HPMS11
Last Update : Tue Jul 30 08:47:23 2013
Response via : Initial Calibration

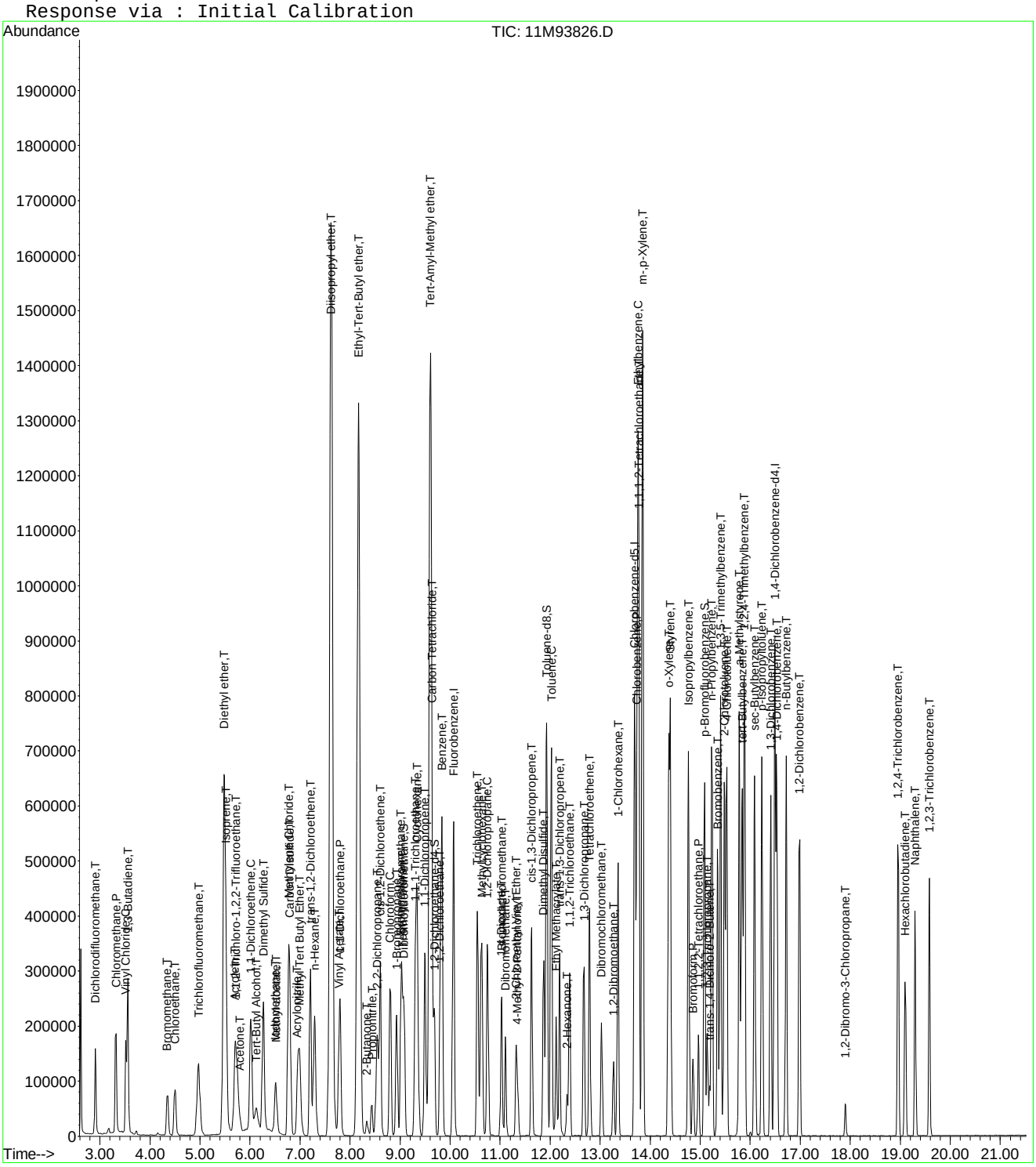

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
August 6, 2013

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AJF - AMANDA J. FICKIESEN
AML - TONY M. LONG
AZH - AFTER HOURS
BAF - BRICE A. FENTON
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CRW - CHRISTINA R. WILSON
CSH - CHRIS S. HILL
CTB - CHRIS T. BUCINA
DAK - DEAN A. K
DCM - DAVID C. MERCKLE
DDE - DEBRA D. ELLIOTT
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLR - DIANNA L. RAUCH
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EDL - ERIN D. LONG
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HJR - HOLLY J. REED
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JKS - JANE K. SCHAAD
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
LKN - LINDA K. NEDEFF
LSB - LESLIE S. BUCINA
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RNP - RICK N. PETTY
RS - ROSEMARY SCOTT
RWC - RODNEY W. CAMPBELL
SAV - SARAH A. VANDENBERG
SEP - SUZANNE J. PAUGH
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
TPA - TYLER P. AMRINE
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
August 06, 2013

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL).
ND, H1	Not detected; Sample analysis performed past holding time.
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Analyte was not detected. The concentration is below the reported LOD.
UB	Analyte was not detected. The concentration is below the reported LOQ, however the reported result is associated with a c
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Analyte was not detected. The concentration is below the reported LOD. One or more quaility control criteria failed. See n
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

COC No. A 36453

158 Starlite Drive
Marietta, OH 45750

Microbac

CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071
Fax: 740-373-4835

Company Name: AECOM

Project Contact: David Wacker / Linda Raabe

Contact Phone #: 210-296-2000

Turn Around Requirements: 48-Hour TAT

Location: LHAAP-67

Project ID: 60256135

Sampler (print): R MORGAN

Signature: Randy Morgan

Program: ☐ CWA ☐ RCRA ☐ DOD ☐ AFCEE ☐ Other _____

ADDITIONAL REQUIREMENTS

Sample I.D. No.	Comp	Grab	Date	Time	Matrix*	NUMBER OF CONTAINERS	Hold	VOC 82608	TOTAL # (LAB USE)
67DPT09A(31-35)310713		X	7/31/13	1430	GW	3		X	
67DPT13A(26-30)310713		X	7/31/13	1555	GW	3		X	

Microbac OVD
Received: 08/01/2013 10:18
By: CARA STRICKLER
221000039715
Cara Strickler

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Randy Morgan	7/31/13	1750					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:
						associated in cooler w/ TB280713

*Water (W), Soil (S), Solid Waste (SD), Unknown (X)

Page 1 of 1

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13080031
Account: 2551
Project: 2551.096
Samples: 2
Due Date: 05-AUG-2013

Samplenum	Container ID	Products
L13080031-01	225770	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-AUG-2013 11:58	JKT		<2
2	ANALYZ	V1	ORG4	01-AUG-2013 12:04	KDW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-AUG-2013 11:58	JKT		<2
2	ANALYZ	V1	ORG4	01-AUG-2013 12:04	KDW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-AUG-2013 11:58	JKT		<2
2	ANALYZ	V1	ORG4	01-AUG-2013 12:04	KDW	CLS	

Samplenum	Container ID	Products
L13080031-02	225771	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-AUG-2013 11:58	JKT		<2
2	ANALYZ	V1	ORG4	01-AUG-2013 12:04	KDW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-AUG-2013 11:58	JKT		<2
2	ANALYZ	V1	ORG4	01-AUG-2013 12:04	KDW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-AUG-2013 11:58	JKT		<2
2	ANALYZ	V1	ORG4	01-AUG-2013 12:04	KDW	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - April 25, 2013

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Nitroguanidine
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL KNITRO-C-WUV-VIS

Nitrocellulose

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL HPLCOS-HPLC-UV

Nitroguanidine

OVL KNITRO-C-S/UV-VIS

Nitrocellulose

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L13081329

Linda Raabe
AECOM Technical Services, Inc.
112 East Pecan
San Antonio, TX 78205

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Tony Long – Team Chemist/Data Specialist
(740) 373-4071
Tony.Long@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on September 06 2013

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L13081329
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110709	H	2.0		J2317153521	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L13081329
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
67DPT13B(26-30)-240813	L13081329-01	08/24/2013 08:15	08/27/2013 09:56

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L13081329
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 13
2.0 Full Sample Data Package 19
2.1 Volatiles Data 20
2.1.1 Volatiles GCMS Data (8260) 21
2.1.1.1 Summary Data 22
2.1.1.2 QC Summary Data 30
2.1.1.3 Sample Data 92
2.1.1.4 Standards Data 112
2.1.1.5 Raw QC Data 268
3.0 Attachments 297

1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13081329
Project Name:		**Method:**	8260
Prep Batch Number(s):	442932,443009	**Reviewer Name:**	Michelle Taylor
LRC Date:	2013-09-06 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michelle Taylor	Michelle Taylor	Data Specialist	2013-09-06 14:57:03

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13081329
Project Name:		**Method:**	8260
Prep Batch Number(s):	442932,443009	**Reviewer Name:**	Michelle Taylor
LRC Date:	2013-09-06 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13081329
Project Name:		**Method:**	8260
Prep Batch Number(s):	442932,443009	**Reviewer Name:**	Michelle Taylor
LRC Date:	2013-09-06 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			1
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13081329
Project Name:		**Method:**	8260
Prep Batch Number(s):	442932,443009	**Reviewer Name:**	Michelle Taylor
LRC Date:	2013-09-06 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?		X			3
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13081329
Project Name:		**Method:**	8260
Prep Batch Number(s):	442932,443009	**Reviewer Name:**	Michelle Taylor
LRC Date:	2013-09-06 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13081329
Project Name:		**Method:**	8260
Prep Batch Number(s):	442932,443009	**Reviewer Name:**	Michelle Taylor
LRC Date:	2013-09-06 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Chloromethane and dichlorodifluoromethane exceeded the upper advisory limits in the LCS/LCSD analyzed 08/29/13 on HPMS6. Vinyl chloride exceeded the upper advisory limit in the LCS analyzed 08/29/13 on HPMS6.
2) Chloromethane and acetone was below the lower control limits in the CCV analyzed 08/28/13 on HPMS11.
3) Acetone was below the lower control limit in the ICV analyzed 08/22/13 on HPMS11. Bromomethane, trichloroethene, and dichlorodifluoromethane exceeded the upper control limits in the ICV analyzed 08/22/13 on HPMS11. Dichlorodifluoromethane exceeded the upper control limit in the ICV analyzed 07/26/13 on HPMS6.

1.2 Certificate of Analysis

Microbac

Lab Report #: L13081329
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13081329-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67DPT13B(26-30)-240813	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/21/2013 20:41
Workgroup #:	WG442932	**Analyst:**	FJB	**Run Date:**	08/29/2013 03:26
Collect Date:	08/24/2013 08:15	**Dilution:**	1	**File ID:**	11M94695
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.20	Q	10.0	5.00	2.50
Benzene	71-43-2	0.269	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	2.49		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.287	J	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	103		1.00	0.500	0.250
cis-1,2-Dichloroethene	156-59-2	1.25		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200

Microbac

Lab Report #: L13081329
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	4.16		1.00	0.500	0.250
Trichloroethene	79-01-6	1.39		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.277	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	86.7	70	120	
Toluene-d8	111	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13081329
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13081329
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13081329-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67DPT13B(26-30)-240813	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/26/2013 20:12
Workgroup #:	WG443009	**Analyst:**	FJB	**Run Date:**	08/29/2013 12:53
Collect Date:	08/24/2013 08:15	**Dilution:**	10	**File ID:**	6M119436
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1-Dichloroethene	75-35-4	518		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	94.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13081329
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L13081329
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13081329-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67DPT13B(26-30)-240813	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/21/2013 20:41
Workgroup #:	WG442932	**Analyst:**	FJB	**Run Date:**	08/29/2013 03:26
Collect Date:	08/24/2013 08:15	**Dilution:**	1	**File ID:**	11M94695
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.20	Q	10.0	5.00	2.50
Benzene	71-43-2	0.269	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	2.49		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.287	J	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	103		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	468	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.25		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13081329
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	4.16		1.00	0.500	0.250
Trichloroethene	79-01-6	1.39		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.277	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	86.7	70	120	
Toluene-d8	111	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L13081329
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13081329
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Certificate of Analysis

Sample #:	L13081329-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67DPT13B(26-30)-240813	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/26/2013 20:12
Workgroup #:	WG443009	**Analyst:**	FJB	**Run Date:**	08/29/2013 12:53
Collect Date:	08/24/2013 08:15	**Dilution:**	10	**File ID:**	6M119436
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	Q	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	Q	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	1.96	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	Q	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	16.0		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	115		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	518		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L13081329
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	Q	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	Q	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	Q	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
Trichloroethene	79-01-6	5.00	U	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	94.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13081329
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13081329
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Tony Long

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 061213
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13

Maintenance Log ID: 46389

Internal Standard: STD58238 Surrogate Standard: STD58238
CCV: STD58272 LCS: STD58120 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG433881 (A9 ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M117459	WG433881-01 50ng BFB	NA	1	1	STD57627	06/12/13 15:44
6M117460	WG433881-02 5ug/L A9STD 8260	NA	1	1	STD58272	06/12/13 16:07
6M117461	WG433881-03 20ug/L A9STD 8260	NA	1	1	STD58272	06/12/13 16:38
6M117462	WG433881-04 50ug/L A9STD 8260	NA	1	1	STD58272	06/12/13 17:09
6M117463	WG433881-05 100ug/L A9STD 8260	NA	1	1	STD58272	06/12/13 17:39
6M117464	WG433881-06 200ug/L A9STD 8260	NA	1	1	STD58272	06/12/13 18:11
6M117465	WG433881-07 300ug/L A9STD 8260	NA	1	1	STD58272	06/12/13 18:42
6M117466	WG433881-08 400ug/L A9STD 8260	NA	1	1	STD58272	06/12/13 19:13
6M117467	WG433881-09 500ug/L A9STD 8260	NA	1	1	STD58272	06/12/13 19:44
6M117468	RINSE	NA	1	1		06/12/13 20:15
6M117469	WG433881-10 100ug/L A9ALT 8260	NA	1	1	STD58272	06/12/13 20:47
6M117470	RINSE	NA	1	1		06/12/13 21:18
6M117471	RINSE	NA	1	1		06/12/13 21:49
6M117472	RINSE	NA	1	1		06/12/13 22:20
6M117473	RINSE	NA	1	1		06/12/13 22:51
6M117474	RINSE	NA	1	1		06/12/13 23:22
6M117475	RINSE	NA	1	1		06/12/13 23:54
6M117476	RINSE	NA	1	1		06/13/13 00:25
6M117477	RINSE	NA	1	1		06/13/13 00:56
6M117478	RINSE	NA	1	1		06/13/13 01:27
6M117479	RINSE	NA	1	1		06/13/13 01:58
6M117480	RINSE	NA	1	1		06/13/13 02:29
6M117481	RINSE	NA	1	1		06/13/13 11:34
6M117482	RINSE	NA	1	1		06/13/13 12:06
6M117483	RINSE	NA	1	1		06/13/13 12:52
6M117484	RINSE	NA	1	1		06/13/13 13:23

Approved: June 18, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 070513
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 624 SOP: MSV10 Rev: 9
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 46617

Internal Standard: STD58366 Surrogate Standard: STD58741
CCV: STD58742 LCS: STD58742 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG436576; WG436578

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M93286	WG436576-01 BFB 50ng 8260	NA	1	1	STD58740	07/05/13 15:53
11M93287	WG436576-01 BFB 50ng 8260	NA	1	1	STD58740	07/05/13 16:05
11M93288	WG436576-02 5ug/L STD A9	NA	1	1	STD58742	07/05/13 16:29
11M93289	WG436576-03 20ug/L STD A9	NA	1	1	STD58742	07/05/13 17:00
11M93290	WG436576-04 50ug/L STD A9	NA	1	1	STD58742	07/05/13 17:32
11M93291	WG436576-05 100ug/L STD A9	NA	1	1	STD58742	07/05/13 18:03
11M93292	WG436576-06 200ug/L STD A9	NA	1	1	STD58742	07/05/13 18:35
11M93293	WG436576-07 300ug/L STD A9	NA	1	1	STD58742	07/05/13 19:06
11M93294	WG436576-08 400ug/L STD A9	NA	1	1	STD58742	07/05/13 19:38
11M93295	WG436576-09 500ug/L STD A9	NA	1	1	STD58742	07/05/13 20:09
11M93296	RINSE	NA	1	1		07/05/13 20:41
11M93297	RINSE	NA	1	1		07/05/13 21:12
11M93298	WG436576-10 100ug/L STD A9	NA	1	1	STD58743	07/05/13 21:43
11M93299	WG436578-01 VBLK0705 BLANK 8260	NA	1	1		07/05/13 22:15
11M93300	L13010006-01 2.5uL/50mL MDL	NA	1	1	STD58742	07/05/13 22:46
11M93301	L13010006-02 2.5uL/50mL MDL	NA	1	1	STD58742	07/05/13 23:18
11M93302	L13010006-03 2.5uL/50mL MDL	NA	1	1	STD58742	07/05/13 23:49
11M93303	L13010006-04 2.5uL/50mL MDL	NA	1	1	STD58742	07/06/13 00:20
11M93304	L13010006-05 2.5uL/50mL MDL	NA	1	1	STD58742	07/06/13 00:52
11M93305	L13010006-06 2.5uL/50mL MDL	NA	1	1	STD58742	07/06/13 01:23
11M93306	L13010006-07 2.5uL/50mL MDL	NA	1	1	STD58742	07/06/13 01:55
11M93307	L13070001-01 1.25uL/50mL LOD	NA	1	1	STD58742	07/06/13 02:26
11M93308	L13070003-01 2.5uL/50mL LOQ	NA	1	1	STD58742	07/06/13 02:57
11M93309	rinse	NA	1	1		07/08/13 12:52
11M93310	rinse	NA	1	1		07/08/13 13:24
11M93311	rinse	NA	1	1		07/08/13 13:55
11M93312	rinse	NA	1	1		07/08/13 14:27
11M93313	rinse	NA	1	1		07/08/13 14:58
11M93314	rinse	NA	1	1		07/08/13 15:30
11M93315	rinse	NA	1	1		07/08/13 16:01
11M93316	rinse	NA	1	1		07/08/13 16:33
11M93317	rinse	NA	1	1		07/08/13 17:04
11M93318	rinse	NA	1	1		07/08/13 17:36

Approved: July 15, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS11	Dataset:	070513		
Analyst1:	FJB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	16
Method:	624	SOP:	MSV10	Rev:	9
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	13
Maintenance Log ID:	46617				

Internal Standard: STD58366 Surrogate Standard: STD58741

CCV: STD58742 LCS: STD58742 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG436576; WG436578

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 11M93286				
	Tune failed, DNR.			

Approved: July 15, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 072613
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Method: 624 SOP: MSV10 Rev: 9
Maintenance Log ID: 46832

Internal Standard: STD59276 Surrogate Standard: STD59276
CCV: STD59089 LCS: STD59088 MS/MSD: STD59088

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG439230

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M118372	WG439230-01 BFB 50ng 8260	NA	1	1	STD58740	07/26/13 14:44
6M118373	RINSE	NA	1	1		07/26/13 15:07
6M118374	WG439230-02 0.3ug/L STD 8260	NA	1	1	STD59089	07/26/13 15:38
6M118375	WG439230-03 0.4ug/L STD 8260	NA	1	1	STD59089	07/26/13 16:08
6M118376	WG439230-04 1.0ug/L STD 8260	NA	1	1	STD59089	07/26/13 16:39
6M118377	WG439230-05 2.0ug/L STD 8260	NA	1	1	STD59089	07/26/13 17:10
6M118378	WG439230-06 5.0ug/L STD 8260	NA	1	1	STD59089	07/26/13 17:40
6M118379	WG439230-07 20.0ug/L STD 8260	NA	1	1	STD59089	07/26/13 18:10
6M118380	WG439230-08 50.0ug/L STD 8260	NA	1	1	STD59089	07/26/13 18:41
6M118381	WG439230-09 100.0ug/L STD 8260	NA	1	1	STD59089	07/26/13 19:11
6M118382	WG439230-10 200.0ug/L STD 8260	NA	1	1	STD59089	07/26/13 19:42
6M118383	WG439230-11 300.0ug/L STD 8260	NA	1	1	STD59089	07/26/13 20:12
6M118384	RINSE	NA	1	1		07/26/13 20:43
6M118385	WG439230-12 50.0ug/L ALT SRC 8260	NA	1	1	STD59088	07/26/13 21:13

Approved: July 29, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 082113
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 16 / 0
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 13 / 0
Method: 624 SOP: MSV10 Rev: 10
Maintenance Log ID: 47163

Internal Standard: STD59447 Surrogate Standard: STD59399
CCV: NA LCS: STD59457 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG442178

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M94449	WG442178-01 50ng BFB STD 8260	NA	1	1	STD59350	08/21/13 15:00
11M94450	RINSE	NA	1	1		08/21/13 15:27
11M94451	WG442178-02 0.3ug/L STD 8260	NA	1	1	STD59582	08/21/13 15:58
11M94452	WG442178-03 0.4ug/L STD 8260	NA	1	1	STD59582	08/21/13 16:30
11M94453	WG442178-04 1.0ug/L STD 8260	NA	1	1	STD59582	08/21/13 17:01
11M94454	WG442178-05 2.0ug/L STD 8260	NA	1	1	STD59582	08/21/13 17:32
11M94455	WG442178-06 5.0ug/L STD 8260	NA	1	1	STD59582	08/21/13 18:04
11M94456	WG442178-07 20.0ug/L STD 8260	NA	1	1	STD59582	08/21/13 18:35
11M94457	WG442178-08 50.0ug/L STD 8260	NA	1	1	STD59582	08/21/13 19:06
11M94458	WG442178-09 100.0ug/L STD 8260	NA	1	1	STD59582	08/21/13 19:38
11M94459	WG442178-10 200.0ug/L STD 8260	NA	1	1	STD59582	08/21/13 20:09
11M94460	WG442178-11 300.0ug/L STD 8260	NA	1	1	STD59582	08/21/13 20:41
11M94461	RINSE	NA	1	1		08/21/13 21:12
11M94462	WG442178-12 50.0ug/L ALT 8260	NA	1	1	STD59457	08/21/13 21:44

Approved: August 27, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 082213
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Method: 624 SOP: MSV10 Rev: 10
Maintenance Log ID: 47181

Internal Standard: STD59447 Surrogate Standard: STD59399
CCV: STD59582, STD59338 LCS: STD59457, STD59238 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG442275, WG442339

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M94463	WG442274-01 50ng BFB STD 8260	NA	1	1	STD59350	08/22/13 09:39
11M94464	WG442274-01 50ng BFB STD 8260	NA	1	1	STD59350	08/22/13 09:51
11M94465	WG442274-01 50ng BFB STD 8260	NA	1	1	STD59350	08/22/13 10:17
11M94466	WG442274-01 50ng BFB STD 8260	NA	1	1	STD59350	08/22/13 11:48
11M94467	WG442274-02 50.0ug/L STD 8260	NA	1	1	STD59582	08/22/13 12:15
11M94468	WG442437-01 100.0ug/L A9STD 8260	NA	1	1	STD59338	08/22/13 12:47
11M94469	WG442275-01 VBLK 0822 8260	NA	1	1		08/22/13 13:18
11M94470	WG442178-12 20.0ug/L ALT 8260	NA	1	1	STD59457	08/22/13 13:50
11M94471	WG442275-02 20.0ug/L LCS 8260	NA	1	1	STD59457	08/22/13 14:21
11M94472	WG442275-03 20.0ug/L LCSdup 8260	NA	1	1	STD59457	08/22/13 15:01
11M94473	WG442275-04 100.0ug/L A9 LCS 8260	NA	1	1	STD59238	08/22/13 15:32
11M94474	WG442275-05 100.0ug/L A9 LCSDUP 8260	NA	1	1	STD59238	08/22/13 16:04
11M94475	L13080711-17 A 826-LOW	<2	1	1		08/22/13 16:35
11M94476	L13081011-01 A 826-A9-SPE	7	1	1		08/22/13 17:07
11M94477	L13080711-39 A 826-LOW	<2	1	1		08/22/13 17:38
11M94478	L13080711-40 A 826-LOW	<2	1	1		08/22/13 18:10
11M94479	L13081011-02 A 826-A9-SPE	7	1	1		08/22/13 18:41
11M94480	L13081011-03 A 826-A9-SPE	7	1	1		08/22/13 19:13
11M94481	L13081011-04 A 826-A9-SPE	7	1	1		08/22/13 19:44
11M94482	L13081011-05 A 826-A9-SPE	7	1	1		08/22/13 20:16
11M94483	L13081011-06 A 826-A9-SPE	7	1	1		08/22/13 20:47
11M94484	L13081011-07 A 826-A9-SPE	7	1	1		08/22/13 21:18
11M94485	L13080633-02 B 826-SPE	<2	1	1		08/22/13 21:50
11M94486	L13080633-03 A 100X 826-SPE	<2	1	100		08/22/13 22:21
11M94487	L13080633-04 A 100X 826-SPE	<2	1	100		08/22/13 22:53
11M94488	L13080633-05 A 100X 826-SPE	7	1	100		08/22/13 23:24
11M94489	WG442339-01 20ug/L LCS 624	NA	2	1	STD59678	08/22/13 23:55
11M94490	WG442339-02 20ug/L LCSDUP 624	NA	2	1	STD59678	08/23/13 00:27
11M94491	RINSE W/AF	NA	2	1		08/23/13 00:58
11M94492	WG442339-03 624-BLK	NA	2	1		08/23/13 01:29
11M94493	L13081124-02 A 624-SPE	<2	2	1		08/23/13 02:01
11M94494	L13081124-01 A 624-SPE	7	2	1		08/23/13 02:32
11M94495	L13081065-01 A 624-SPE	7	2	1		08/23/13 03:04
11M94496	L13081065-02 A 624-SPE	7	2	1		08/23/13 03:35

Approved: August 28, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 082213
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Method: 624 SOP: MSV10 Rev: 10
Maintenance Log ID: 47181

Internal Standard: STD59447 Surrogate Standard: STD59399
CCV: STD59582, STD59338 LCS: STD59457, STD59238 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG442275, WG442339

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M94497	L13081065-04 A 624-SPE	7	2	1		08/23/13 04:06
11M94498	L13081064-02 A 624-SPE	7	2	1		08/23/13 04:38
11M94499	L13081111-01 A 624-SPE1	<2	2	1		08/23/13 05:09
11M94500	L13081110-01 A 624-SPE	<2	2	1		08/23/13 05:40
11M94501	L13081065-03 A 624-SPE	7	2	1		08/23/13 06:12
11M94502	L13081065-05 A 624-SPE	7	2	1		08/23/13 06:43
11M94503	L13081065-07 A 624-SPE	7	2	1		08/23/13 07:14
11M94504	L13081064-03 A 624-SPE	7	2	1		08/23/13 07:46
11M94505	L13081064-04 A 624-SPE	7	2	1		08/23/13 08:17
11M94506	L13081064-05 A 624-SPE	7	2	1		08/23/13 08:49
11M94507	L13081064-06 A 624-SPE	7	2	1		08/23/13 09:20
11M94508	RINSE	NA	2	1		08/23/13 09:51
11M94509	RINSE	NA	2	1		08/23/13 10:23

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10 File ID: 11M94472				
Narrative: Low SS				
19 File ID: 11M94481	X	1	Surrogate standard failure	
20 File ID: 11M94482	X	1	Surrogate standard failure	
22 File ID: 11M94484	X	1	Surrogate standard failure	
23 File ID: 11M94485	X	1	Surrogate standard failure	
25 File ID: 11M94487	X	2	Analyzed too dilute	

Approved: August 28, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 082813
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 5030B/5030C/505A SOP: PAT01 Rev: 13
Method: 624 SOP: MSV10 Rev: 10
Maintenance Log ID: 47197

Internal Standard: STD59447 Surrogate Standard: STD59794
CCV: STD59677 LCS: STD59678 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG442932

Comments: 11M94671 is skipped because the purged BFB leaked and had no peaks.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M94666	WG442931-01 BFB 50ng 8260	NA	1	1	STD59350	08/28/13 12:17
11M94667	WG442931-01 BFB 50ng 8260	NA	1	1	STD59350	08/28/13 12:29
11M94668	WG442931-01 BFB 50ng 8260	NA	1	1	STD59350	08/28/13 13:44
11M94669	WG442931-01 BFB 50ng 8260	NA	1	1	STD59350	08/28/13 14:00
11M94670	WG442931-01 BFB 50ng 8260	NA	1	1	STD59350	08/28/13 14:27
11M94672	WG442931-01 BFB 50ng 8260	NA	1	1	STD59350	08/28/13 15:28
11M94673	WG442931-02 50ug/L CCV 8260	NA	1	1	STD59677	08/28/13 15:55
11M94674	WG442XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	08/28/13 16:26
11M94675	WG442932-01 VBLK0828 BLANK 8260	NA	1	1		08/28/13 16:58
11M94676	WG442932-02 20ug/L LCS 8260	NA	1	1	STD59678	08/28/13 17:29
11M94677	WG442932-03 20ug/L LCS DUP 8260	NA	1	1	STD59678	08/28/13 18:01
11M94678	L13080781-07 10X B 826-LOW D1	<2	1	10		08/28/13 18:32
11M94679	L13080921-02 25X B 826-SPE D1	<2	1	25		08/28/13 19:04
11M94680	L13080921-03 200X B 826-SPE D1	<2	1	200		08/28/13 19:35
11M94681	L13080921-04 25X B 826-SPE D1	<2	1	25		08/28/13 20:07
11M94682	L13080921-06 100X B 826-SPE D1	<2	1	100		08/28/13 20:38
11M94683	L13080781-08 B 826-LOW	<2	1	1		08/28/13 21:10
11M94684	L13080781-10 B 826-LOW	<2	1	1		08/28/13 21:41
11M94685	L13080982-06 FB A 826-LOW	<2	1	1		08/28/13 22:13
11M94686	L13080982-07 TB A 826-LOW	<2	1	1		08/28/13 22:44
11M94687	L13080921-08 A 826-SPE	<2	1	1		08/28/13 23:16
11M94688	L13080921-10 A 826-SPE	<2	1	1		08/28/13 23:47
11M94689	L13080921-11 A 826-SPE	<2	1	1		08/29/13 00:18
11M94690	L13080982-01 A 826-LOW	<2	1	1		08/29/13 00:50
11M94691	L13080982-02 A 826-LOW	<2	1	1		08/29/13 01:21
11M94692	L13080982-03 A 826-LOW	<2	1	1		08/29/13 01:52
11M94693	L13080982-04 A 826-LOW	<2	1	1		08/29/13 02:24
11M94694	L13080982-05 A 826-LOW	<2	1	1		08/29/13 02:55
11M94695	L13081329-01 A 826-LOW	<2	1	1		08/29/13 03:26

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			

Approved: August 29, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 082813
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 5030B/5030C/505A SOP: PAT01 Rev: 13
Method: 624 SOP: MSV10 Rev: 10
Maintenance Log ID: 47197

Internal Standard: STD59447 Surrogate Standard: STD59794
CCV: STD59677 LCS: STD59678 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG442932

Comments: 11M94671 is skipped because the purged BFB leaked and had no peaks.

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 11M94666				
2	X			
File ID: 11M94667				
	Change the Septa and Bake for 1 hour			
3	X			
File ID: 11M94668				
4	X			
File ID: 11M94669				
	Change the Liner			
5	X			
File ID: 11M94670				
6				
File ID: 11M94672				
	Purged BFB passed.			
12	X	50	Over Calibration Range	12-dcb
File ID: 11M94678				
13	X	200	Over Calibration Range	2-but
File ID: 11M94679				
29	X	10	Over Calibration Range	11-dce
File ID: 11M94695				

Approved: August 29, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 082913
Analyst1: FJB Analyst2: ADC
Method: 8260B SOP: MSV01 Rev: 16
Method: 5030B/50300C/5035A SOP: PAT01 Rev: 13
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Maintenance Log ID: 47211

Internal Standard: STD59713 Surrogate Standard: STD59713
CCV: STD59810 LCS: STD59830 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG443009, WG443168

Comments: Raise voltage before second WG. Rerun entire 2nd WG due to L13080873-01 foaming when run straight. Not reporting unless needed for confirmation only.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M119424	WG443008-01 BFB 50ng 8260	NA	1	1	STD59350	08/29/13 06:46
6M119425	WG443008-02 50ug/L CCV 8260	NA	1	1	STD59810	08/29/13 07:09
6M119426	WG443008-02 50ug/L CCV 8260	NA	1	1	STD59749	08/29/13 07:40
6M119427	WG443XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	08/29/13 08:11
6M119428	WG443009-01 VBLK0829 BLANK 8260	NA	1	1		08/29/13 08:41
6M119429	WG443009-02 20ug/L LCS 8260	NA	1	1	STD59830	08/29/13 09:12
6M119430	WG443009-03 20ug/L LCSDUP 8260	NA	1	1	STD59830	08/29/13 09:47
6M119431	L13080781-07 C 50X 826-LOW D2	<2	1	50		08/29/13 10:17
6M119432	L13080921-02 C 200X 826-SPE D2	<2	1	200		08/29/13 10:48
6M119433	L13080921-13 A 10X 826-SPE	5	1	10		08/29/13 11:21
6M119434	L13080973-11 B 10X 8260 D1	<2	1	10		08/29/13 11:52
6M119435	L13081219-01 A 826-LOW	5	1	1		08/29/13 12:22
6M119436	L13081329-01 B 10X 826-LOW D1	<2	1	10		08/29/13 12:53
6M119437	L13081219-04 TB A 826-LOW	<2	1	1		08/29/13 13:24
6M119438	L13081122-03 TB A 826-SPE	<2	1	1		08/29/13 13:55
6M119439	L13080921-12 A 25X 826-SPE	<2	1	25		08/29/13 14:25
6M119440	L13081130-01 A 8260	<2	1	1		08/29/13 14:57
6M119441	L13080921-12 B 826-SPE	<2	1	1		08/29/13 15:28
6M119442	L13080873-01 A 10X 826-SPE1	<2	1	10		08/29/13 15:59
6M119443	L13081122-01 A 826-SPE	<2	1	1		08/29/13 16:30
6M119444	L13081122-02 A 826-SPE	<2	1	1		08/29/13 17:00
6M119445	L13081219-05 A 826-LOW	5	1	1		08/29/13 17:31
6M119446	L13081219-03 A 826-LOW	<2	1	1		08/29/13 18:01
6M119447	L13081219-02 A 826-LOW	<2	1	1		08/29/13 18:32
6M119448	WG443167-01 BFB 50ng 8260	NA	1	1	STD59350	08/29/13 19:33
6M119449	WG443167-01 BFB 50ng 8260	NA	1	1	STD59350	08/29/13 19:48
6M119450	WG443167-01 BFB 50ng 8260	NA	1	1	STD59350	08/29/13 20:13
6M119451	WG443167-02 50ug/L CCV 8260	NA	1	1	STD59810	08/29/13 20:38
6M119452	WG443167-02 50ug/L CCV 8260	NA	1	1	STD59810	08/29/13 21:09
6M119453	WG443167-01 BFB 50ng 8260	NA	1	1	STD59350	08/29/13 21:40
6M119454	WG443167-02 50ug/L CCV 8260	NA	1	1	STD59810	08/29/13 22:06
6M119455	WG443XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	08/29/13 22:38
6M119456	WG443168-01 VBLK0829 BLANK 8260	NA	1	1		08/29/13 23:09

Approved: August 30, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 082913
Analyst1: FJB Analyst2: ADC
Method: 8260B SOP: MSV01 Rev: 16
Method: 5030B/50300C/5035A SOP: PAT01 Rev: 13
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Maintenance Log ID: 47211

Internal Standard: STD59713 Surrogate Standard: STD59713
CCV: STD59810 LCS: STD59830 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG443009, WG443168

Comments: Raise voltage before second WG. Rerun entire 2nd WG due to L13080873-01 foaming when run straight. Not reporting unless needed for confirmation only.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M119457	WG443168-02 20ug/L LCS 8260	NA	1	1	STD59830	08/29/13 23:40
6M119458	WG443168-03 20ug/L LCSDUP 8260	NA	1	1	STD59830	08/30/13 00:11
6M119459	RINSE	NA	1	1		08/30/13 00:42
6M119460	L13080873-01 B 826-SPE1	<2	1	1		08/30/13 01:13
6M119461	L13081024-12 A 826-SPE	<2	1	1		08/30/13 01:44
6M119462	L13081024-13 A 826-SPE	<2	1	1		08/30/13 02:15
6M119463	L13081024-34 A 826-SPE	<2	1	1		08/30/13 02:46
6M119464	L13081024-08 A 826-SPE	<2	1	1		08/30/13 03:17
6M119465	L13081024-10 A 826-SPE	<2	1	1		08/30/13 03:48
6M119466	L13081024-23 A 826-SPE	<2	1	1		08/30/13 04:20
6M119467	L13081024-32 A 826-SPE	<2	1	1		08/30/13 04:51
6M119468	L13081024-22 A 826-SPE	<2	1	1		08/30/13 05:22
6M119469	L13081024-25 A 826-SPE	<2	1	1		08/30/13 05:53
6M119470	L13081024-03 A 50X 826-SPE	<2	1	50		08/30/13 06:25
6M119471	L13081024-09 A 5X 826-SPE	6	1	5		08/30/13 06:56
6M119472	L13081024-14 A 5X 826-SPE	6	1	5		08/30/13 07:27
6M119473	L13081024-17 A 10X 826-SPE	6	1	10		08/30/13 07:58
6M119474	L13081024-20 A 5X 826-SPE	<2	1	5		08/30/13 08:29
6M119475	L13081024-21 A 5X 826-SPE	<2	1	5		08/30/13 09:00

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M119425				
	Vc was high, DNR.			
4				
File ID: 6M119427				
	Not needed, DNR.			
16	X	1	Analyzed too dilute	
File ID: 6M119439				
	Rerun is in this WG.			
19				
File ID: 6M119442				

Approved: August 30, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS6	Dataset:	082913		
Analyst1:	FJB	Analyst2:	ADC		
Method:	8260B	SOP:	MSV01	Rev:	16
Method:	5030B/50300C/5035A	SOP:	PAT01	Rev:	13
Method:	OVAP	SOP:	MSV01/PAT01	Rev:	0
Maintenance Log ID:	47211				

Internal Standard: STD59713 Surrogate Standard: STD59713

CCV: STD59810 LCS: STD59830 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG443009, WG443168

Comments: Raise voltage before second WG. Rerun entire 2nd WG due to L13080873-01 foaming when run straight. Not reporting unless needed for confirmation only.

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Cannot rerun straight. Tried to run straight at beginning of PM WG and the instrument got foamed. Second WG is not reportable.	
20	X			
File ID: 6M119443				
			Tune failed, DNR.	
49	X			
File ID: 6M119448				
			Tune failed, DNR.	
50	X			
File ID: 6M119449				
			Tune failed, DNR.	
51	X			
File ID: 6M119450				
			Tune failed, DNR. Purged BFB.	
25				
File ID: 6M119451				
			DNR. VC was high.	
52	X			
File ID: 6M119452				
			DNR. VC was high.	
28				
File ID: 6M119455				
			Not needed. DNR.	
34	X	1	Carry-over contamination	
File ID: 6M119461				
			1,4-dioxane carry over. DNR.	
35	X		Carry-over contamination	
File ID: 6M119462				
			1,4-dioxane carry over. dnr.	
36	X	1	Carry-over contamination	
File ID: 6M119463				
			1,4-dioxane carry over. DNR.	
37	X	1	Carry-over contamination	
File ID: 6M119464				

Approved: August 30, 2013

Page: 3

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS6	Dataset:	082913		
Analyst1:	FJB	Analyst2:	ADC		
Method:	8260B	SOP:	MSV01	Rev:	16
Method:	5030B/50300C/5035A	SOP:	PAT01	Rev:	13
Method:	OVAP	SOP:	MSV01/PAT01	Rev:	0
Maintenance Log ID:	47211				

Internal Standard: STD59713 Surrogate Standard: STD59713

CCV: STD59810 LCS: STD59830 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG443009, WG443168

Comments: Raise voltage before second WG. Rerun entire 2nd WG due to L13080873-01 foaming when run straight. Not reporting unless needed for confirmation only.

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			1,4-dioxane carry over. DNR.	
38	X	1	Carry-over contamination	
File ID: 6M119465				
			1,4-dioxane carry over. DNR.	
39	X	2	Over Calibration Range	PCE
File ID: 6M119466				
40	X	1	Carry-over contamination	
File ID: 6M119467				
			1,4-dioxane carry over. DNR.	
41	X	1	Carry-over contamination	
File ID: 6M119468				
			1,4-dioxane carry over.	
42	X	1	Carry-over contamination	
File ID: 6M119469				
			1,4-dioxane carry over.	
43	X	10	Analyzed too dilute	
File ID: 6M119470				
44	X	5		
File ID: 6M119471				
45	X	5		
File ID: 6M119472				
46	X	10		
File ID: 6M119473				
47	X	5		
File ID: 6M119474				
48	X	5		
File ID: 6M119475				

Approved: August 30, 2013

Page: 4

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS6	Dataset:	082913		
Analyst1:	FJB	Analyst2:	ADC		
Method:	8260B	SOP:	MSV01	Rev:	16
Method:	5030B/50300C/5035A	SOP:	PAT01	Rev:	13
Method:	OVAP	SOP:	MSV01/PAT01	Rev:	0
Maintenance Log ID:	47211				

Internal Standard: STD59713 Surrogate Standard: STD59713

CCV: STD59810 LCS: STD59830 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG443009, WG443168

Comments: Raise voltage before second WG. Rerun entire 2nd WG due to L13080873-01 foaming when run straight. Not reporting unless needed for confirmation only.

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: August 30, 2013

Page: 5

Microbac Laboratories Inc.

Data Checklist

Date: 12-JUN-2013
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS6
Curve Workgroup: WG433881
Runlog ID: 53878
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	NA
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	NA
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
18-JUN-2013

Secondary Reviewer:
18-JUN-2013

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-18-2013 16:35:52

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2013
Analyst: FJB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 54325
Analytical Workgroups: WG436576; WG436578

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
10-JUL-2013
Tiffany Bailey

Secondary Reviewer:
15-JUL-2013

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-15-2013 08:15:56

Microbac Laboratories Inc.

Data Checklist

Date: 26-JUL-2013
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS6
Curve Workgroup: WG439230
Runlog ID: 54723
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	NA
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-JUL-2013

Secondary Reviewer:
29-JUL-2013

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-29-2013 13:41:41

Microbac Laboratories Inc.

Data Checklist

Date: 21-AUG-2013
Analyst: ADC
Analyst: NA
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 55287
Analytical Workgroups: WG442178

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 27-AUG-2013

Secondary Reviewer: 27-AUG-2013

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-27-2013 14:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 22-AUG-2013
Analyst: ADC
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 55300
Analytical Workgroups: WG442275, WG442339

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 28-AUG-2013

Secondary Reviewer: 28-AUG-2013

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-28-2013 12:24:37

Microbac Laboratories Inc.

Data Checklist

Date: 28-AUG-2013
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 55342
Analytical Workgroups: WG442932

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 28-AUG-2013

Secondary Reviewer: 29-AUG-2013

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-29-2013 10:35:10

Microbac Laboratories Inc.

Data Checklist

Date: 29-AUG-2013
Analyst: FJB
Analyst: ADC
Method: 8260B
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 55373
Analytical Workgroups: WG443009, WG443168

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB/FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-AUG-2013
Tiffany Bailey

Secondary Reviewer:
30-AUG-2013

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-30-2013 14:13:04

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG442932

Login Number: L13081329

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67DPT13B(26-30)-240813	01	08/24/13					08/29/2013	4.8	14		08/29/13	4.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3057719
Report generated 09/06/2013 10:10

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG443009

Login Number: L13081329

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67DPT13B(26-30)-240813	01	08/24/13					08/29/2013	5.2	14		08/29/13	5.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3057719
Report generated 09/06/2013 10:10

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L13081329
Instrument Id: HPMS11
Workgroup (AAB#): WG442932

Method: 8260
CAL ID: HPMS11-21-AUG-13
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L13081329-01	1.00	01	86.7	102	104	111
WG442932-01	1.00	01	86.5	99.1	103	111
WG442932-02	1.00	01	88.3	104	106	114
WG442932-03	1.00	01	90.1	105	103	113

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3057727
Report generated: 09/06/2013 10:10

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L13081329
Instrument Id: HPMS6
Workgroup (AAB#): WG443009

Method: 8260
CAL ID: HPMS6-26-JUL-13
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L13081329-01	10.0	DL01	104	112	94.7	106
WG443009-01	1.00	01	100	110	96.7	106
WG443009-02	1.00	01	101	108	93.8	106
WG443009-03	1.00	01	104	109	94.2	106

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3057727
Report generated: 09/06/2013 10:10

METHOD BLANK SUMMARY

Login Number: L13081329
Blank File ID: 11M94675
Prep Date: 08/28/13 16:58
Analyzed Date: 08/28/13 16:58
Analyst: FJB

Work Group: WG442932
Blank Sample ID: WG442932-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG442932-02	11M94676	08/28/13 17:29	01
LCS2	WG442932-03	11M94677	08/28/13 18:01	01
67DPT13B(26-30)-240813	L13081329-01	11M94695	08/29/13 03:26	01

Report Name: BLANK_SUMMARY
PDF File ID: 3057720
Report generated 09/06/2013 10:10

METHOD BLANK SUMMARY

Login Number: L13081329
Blank File ID: 6M119428
Prep Date: 08/29/13 08:41
Analyzed Date: 08/29/13 08:41
Analyst: FJB

Work Group: WG443009
Blank Sample ID: WG443009-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG443009-02	6M119429	08/29/13 09:12	01
LCS2	WG443009-03	6M119430	08/29/13 09:47	01
67DPT13B(26-30)-240813	L13081329-01	6M119436	08/29/13 12:53	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 3057720
Report generated 09/06/2013 10:10

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13081329 Prep Date: 08/28/13 16:58 Sample ID: WG442932-01
Instrument ID: HPMS11 Run Date: 08/28/13 16:58 Prep Method: 5030B/5030C/503
File ID: 11M94675 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG442932 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-21-AUG-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.791	1	J
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 3057721
06-SEP-2013 10:10

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13081329 Prep Date: 08/28/13 16:58 Sample ID: WG442932-01
Instrument ID: HPMS11 Run Date: 08/28/13 16:58 Prep Method: 5030B/5030C/503
File ID: 11M94675 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG442932 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-21-AUG-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	99.1	85 - 115	PASS
1,2-Dichloroethane-d4	86.5	70 - 120	PASS
Toluene-d8	111	85 - 120	PASS
4-Bromofluorobenzene	103	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3057721
06-SEP-2013 10:10

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13081329 Prep Date: 08/29/13 08:41 Sample ID: WG443009-01
Instrument ID: HPMS6 Run Date: 08/29/13 08:41 Prep Method: 5030B/5030C/503
File ID: 6M119428 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG443009 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-26-JUL-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.325	1	J
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 3057721
06-SEP-2013 10:10

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13081329 Prep Date: 08/29/13 08:41 Sample ID: WG443009-01
Instrument ID: HPMS6 Run Date: 08/29/13 08:41 Prep Method: 5030B/5030C/503
File ID: 6M119428 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG443009 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-26-JUL-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	100	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	96.7	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3057721
06-SEP-2013 10:10

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13081329 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG443009 Units: ug/L
QC Key: DOD4 Lot #: STD59678

Sample ID: WG443009-02 LCS File ID: 6M119429 Run Date: 08/29/2013 09:12
Sample ID: WG443009-03 LCS2 File ID: 6M119430 Run Date: 08/29/2013 09:47

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.3	106	20.0	21.3	106	0.151	80 - 130	30	
1,1,1-Trichloroethane	20.0	21.7	108	20.0	21.2	106	2.01	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.5	92.7	20.0	18.8	94.0	1.36	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.0	99.8	20.0	19.9	99.6	0.177	75 - 125	30	
1,1-Dichloroethane	20.0	20.0	99.8	20.0	20.0	99.9	0.0561	70 - 135	30	
1,1-Dichloroethene	20.0	19.3	96.5	20.0	19.1	95.7	0.781	70 - 130	30	
1,1-Dichloropropene	20.0	20.5	103	20.0	19.9	99.6	3.00	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	15.6	77.9	20.0	15.0	74.8	4.01	55 - 140	30	
1,2,3-Trichloropropane	20.0	18.3	91.3	20.0	19.5	97.3	6.36	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	16.6	83.2	20.0	16.0	79.9	4.15	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.4	97.2	20.0	18.9	94.4	2.90	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	14.9	74.5	20.0	15.5	77.6	4.14	50 - 130	30	
1,2-Dibromoethane	20.0	19.3	96.5	20.0	19.5	97.4	0.953	80 - 120	30	
1,2-Dichlorobenzene	20.0	17.9	89.5	20.0	17.8	89.1	0.449	70 - 120	30	
1,2-Dichloroethane	20.0	20.2	101	20.0	20.6	103	1.92	70 - 130	30	
1,2-Dichloropropane	20.0	20.2	101	20.0	19.9	99.4	1.84	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	19.0	95.2	20.0	18.5	92.3	3.03	75 - 130	30	
1,3-Dichlorobenzene	20.0	18.4	92.0	20.0	17.9	89.3	2.96	75 - 125	30	
1,3-Dichloropropane	20.0	18.8	94.2	20.0	19.0	94.9	0.756	75 - 125	30	
1,4-Dichlorobenzene	20.0	19.9	99.4	20.0	19.3	96.5	2.91	75 - 125	30	
2,2-Dichloropropane	20.0	19.7	98.4	20.0	19.4	96.8	1.66	70 - 135	30	
2-Butanone	20.0	14.7	73.3	20.0	14.2	71.2	2.92	30 - 150	30	
2-Chlorotoluene	20.0	18.0	90.2	20.0	17.4	87.1	3.43	75 - 125	30	
2-Hexanone	20.0	12.9	64.6	20.0	13.0	64.9	0.538	55 - 130	30	
4-Chlorotoluene	20.0	16.7	83.4	20.0	16.4	81.9	1.80	75 - 130	30	
4-Methyl-2-pentanone	20.0	16.3	81.6	20.0	16.3	81.5	0.211	60 - 135	30	
Acetone	20.0	10.6	53.2	20.0	11.4	56.9	6.82	40 - 140	30	
Benzene	20.0	20.6	103	20.0	20.3	102	1.39	80 - 120	30	
Bromobenzene	20.0	20.3	102	20.0	20.1	101	1.13	75 - 125	30	
Bromochloromethane	20.0	21.2	106	20.0	21.7	108	1.97	65 - 130	30	
Bromodichloromethane	20.0	19.9	99.3	20.0	20.1	100	1.16	75 - 120	30	
Bromoform	20.0	22.3	112	20.0	22.5	113	0.840	70 - 130	30	
Bromomethane	20.0	18.0	90.0	20.0	17.1	85.7	4.92	30 - 145	30	
Carbon disulfide	20.0	20.1	100	20.0	19.9	99.5	0.893	35 - 160	30	
Carbon tetrachloride	20.0	23.0	115	20.0	22.5	112	2.44	65 - 140	30	
Chlorobenzene	20.0	18.7	93.5	20.0	18.4	92.1	1.44	80 - 120	30	
Chloroethane	20.0	22.5	112	20.0	22.6	113	0.427	60 - 135	30	
Chloroform	20.0	20.9	105	20.0	20.9	105	0.100	65 - 135	30	
Chloromethane	20.0	30.5	153	20.0	30.1	150	1.61	40 - 125	30	*
cis-1,2-Dichloroethene	20.0	21.7	108	20.0	21.5	108	0.681	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3057722
Report generated: 09/06/2013 10:10

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13081329 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG443009 Units: ug/L
QC Key: DOD4 Lot #: STD59678

Sample ID: WG443009-02 LCS File ID: 6M119429 Run Date: 08/29/2013 09:12
Sample ID: WG443009-03 LCS2 File ID: 6M119430 Run Date: 08/29/2013 09:47

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	20.5	103	20.0	20.5	103	0.0124	70 - 130	30	
Chlorodibromomethane	20.0	20.8	104	20.0	20.7	104	0.619	60 - 135	30	
Dibromomethane	20.0	21.9	109	20.0	22.1	111	1.12	75 - 125	30	
Dichlorodifluoromethane	20.0	31.6	158	20.0	32.2	161	1.84	30 - 155	30	*
Ethylbenzene	20.0	19.9	99.3	20.0	19.4	96.8	2.59	75 - 125	30	
Hexachlorobutadiene	20.0	17.6	88.1	20.0	17.4	87.2	1.00	50 - 140	30	
Isopropylbenzene	20.0	18.2	91.2	20.0	18.1	90.4	0.955	75 - 125	30	
m-,p-Xylene	40.0	39.1	97.8	40.0	38.7	96.8	1.05	75 - 130	30	
Methylene chloride	20.0	20.3	101	20.0	20.5	103	1.12	55 - 140	30	
n-Butylbenzene	20.0	18.7	93.3	20.0	17.9	89.7	3.96	70 - 135	30	
n-Propylbenzene	20.0	17.3	86.7	20.0	16.9	84.4	2.62	70 - 130	30	
Naphthalene	20.0	14.8	73.9	20.0	14.2	71.1	3.85	55 - 140	30	
o-Xylene	20.0	18.0	89.8	20.0	17.8	89.2	0.630	80 - 120	30	
p-Isopropyltoluene	20.0	17.6	88.1	20.0	16.9	84.7	3.96	75 - 130	30	
sec-Butylbenzene	20.0	17.4	87.2	20.0	16.8	84.1	3.58	70 - 125	30	
Styrene	20.0	19.7	98.6	20.0	19.7	98.3	0.280	65 - 135	30	
tert-Butylbenzene	20.0	18.6	93.2	20.0	17.8	88.9	4.71	70 - 130	30	
Tetrachloroethene	20.0	20.9	105	20.0	20.1	100	3.94	45 - 150	30	
Toluene	20.0	20.0	100	20.0	19.6	97.8	2.28	75 - 120	30	
trans-1,2-Dichloroethene	20.0	22.1	111	20.0	21.7	108	2.13	60 - 140	30	
trans-1,3-Dichloropropene	20.0	17.9	89.6	20.0	17.7	88.4	1.33	55 - 140	30	
Trichloroethene	20.0	23.5	117	20.0	23.0	115	2.28	70 - 125	30	
Trichlorofluoromethane	20.0	24.2	121	20.0	23.6	118	2.36	60 - 145	30	
Vinyl chloride	20.0	31.4	157	20.0	28.7	144	9.07	50 - 145	30	*

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	101	104	70 - 120	PASS
Dibromofluoromethane	108	109	85 - 115	PASS
4-Bromofluorobenzene	93.8	94.2	75 - 120	PASS
Toluene-d8	106	106	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3057722
Report generated: 09/06/2013 10:10

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13081329 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG442932 Units: ug/L
QC Key: DOD4 Lot #: STD59678

Sample ID: WG442932-02 LCS File ID: 11M94676 Run Date: 08/28/2013 17:29
Sample ID: WG442932-03 LCS2 File ID: 11M94677 Run Date: 08/28/2013 18:01

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	19.4	97.0	20.0	19.3	96.3	0.664	80 - 130	30	
1,1,1-Trichloroethane	20.0	17.1	85.4	20.0	16.7	83.7	1.95	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	22.5	113	20.0	22.5	113	0.0714	65 - 130	30	
1,1,2-Trichloroethane	20.0	22.0	110	20.0	22.1	111	0.560	75 - 125	30	
1,1-Dichloroethane	20.0	19.6	98.0	20.0	19.7	98.3	0.282	70 - 135	30	
1,1-Dichloroethene	20.0	15.8	79.2	20.0	15.8	79.1	0.143	70 - 130	30	
1,1-Dichloropropene	20.0	18.9	94.7	20.0	18.8	93.8	0.914	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	21.0	105	20.0	21.2	106	0.837	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.9	99.4	20.0	18.9	94.5	5.11	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	20.9	105	20.0	20.5	103	2.11	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	21.3	107	20.0	20.6	103	3.63	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	17.9	89.6	20.0	17.4	86.8	3.15	50 - 130	30	
1,2-Dibromoethane	20.0	21.0	105	20.0	21.0	105	0.270	80 - 120	30	
1,2-Dichlorobenzene	20.0	19.5	97.5	20.0	19.1	95.4	2.19	70 - 120	30	
1,2-Dichloroethane	20.0	16.9	84.3	20.0	16.5	82.6	2.12	70 - 130	30	
1,2-Dichloropropane	20.0	21.4	107	20.0	20.4	102	4.83	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	21.7	109	20.0	21.3	107	1.70	75 - 130	30	
1,3-Dichlorobenzene	20.0	19.2	96.0	20.0	18.4	92.1	4.09	75 - 125	30	
1,3-Dichloropropane	20.0	20.9	104	20.0	20.9	104	0.111	75 - 125	30	
1,4-Dichlorobenzene	20.0	20.6	103	20.0	20.0	99.9	2.95	75 - 125	30	
2,2-Dichloropropane	20.0	15.1	75.6	20.0	15.3	76.4	1.05	70 - 135	30	
2-Butanone	20.0	20.4	102	20.0	21.4	107	5.04	30 - 150	30	
2-Chlorotoluene	20.0	21.3	107	20.0	20.7	103	3.06	75 - 125	30	
2-Hexanone	20.0	19.4	96.8	20.0	19.4	97.0	0.237	55 - 130	30	
4-Chlorotoluene	20.0	16.1	80.7	20.0	16.1	80.4	0.478	75 - 130	30	
4-Methyl-2-pentanone	20.0	21.4	107	20.0	22.1	110	3.04	60 - 135	30	
Acetone	20.0	11.6	57.8	20.0	12.4	61.8	6.73	40 - 140	30	
Benzene	20.0	20.7	103	20.0	20.2	101	2.26	80 - 120	30	
Bromobenzene	20.0	20.4	102	20.0	20.1	101	1.31	75 - 125	30	
Bromochloromethane	20.0	20.9	104	20.0	20.8	104	0.452	65 - 130	30	
Bromodichloromethane	20.0	17.4	87.2	20.0	17.3	86.6	0.667	75 - 120	30	
Bromoform	20.0	19.3	96.6	20.0	19.1	95.4	1.31	70 - 130	30	
Bromomethane	20.0	17.6	88.2	20.0	16.6	83.1	6.00	30 - 145	30	
Carbon disulfide	20.0	21.4	107	20.0	21.1	106	1.26	35 - 160	30	
Carbon tetrachloride	20.0	16.7	83.6	20.0	16.3	81.5	2.44	65 - 140	30	
Chlorobenzene	20.0	19.4	97.1	20.0	19.2	95.8	1.36	80 - 120	30	
Chloroethane	20.0	19.3	96.7	20.0	18.6	92.9	4.00	60 - 135	30	
Chloroform	20.0	18.5	92.6	20.0	18.0	90.2	2.60	65 - 135	30	
Chloromethane	20.0	11.3	56.5	20.0	11.6	58.0	2.64	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.8	104	20.0	20.6	103	0.610	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3057722
Report generated: 09/06/2013 10:10

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13081329 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG442932 Units: ug/L
QC Key: DOD4 Lot #: STD59678

Sample ID: WG442932-02 LCS File ID: 11M94676 Run Date: 08/28/2013 17:29
Sample ID: WG442932-03 LCS2 File ID: 11M94677 Run Date: 08/28/2013 18:01

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.1	106	20.0	21.0	105	0.513	70 - 130	30	
Chlorodibromomethane	20.0	18.5	92.5	20.0	18.4	91.8	0.738	60 - 135	30	
Dibromomethane	20.0	19.5	97.7	20.0	18.8	94.1	3.70	75 - 125	30	
Dichlorodifluoromethane	20.0	10.5	52.7	20.0	9.88	49.4	6.44	30 - 155	30	
Ethylbenzene	20.0	20.6	103	20.0	20.2	101	1.54	75 - 125	30	
Hexachlorobutadiene	20.0	18.5	92.3	20.0	18.6	93.2	0.947	50 - 140	30	
Isopropylbenzene	20.0	20.0	100	20.0	20.0	99.8	0.492	75 - 125	30	
m-,p-Xylene	40.0	41.5	104	40.0	40.8	102	1.75	75 - 130	30	
Methylene chloride	20.0	19.2	95.9	20.0	19.5	97.6	1.71	55 - 140	30	
n-Butylbenzene	20.0	21.3	107	20.0	21.1	105	1.27	70 - 135	30	
n-Propylbenzene	20.0	19.3	96.4	20.0	18.8	94.0	2.49	70 - 130	30	
Naphthalene	20.0	22.3	111	20.0	22.5	112	0.882	55 - 140	30	
o-Xylene	20.0	19.6	98.2	20.0	19.4	97.0	1.26	80 - 120	30	
p-Isopropyltoluene	20.0	20.4	102	20.0	19.9	99.4	2.33	75 - 130	30	
sec-Butylbenzene	20.0	19.9	99.5	20.0	19.5	97.7	1.75	70 - 125	30	
Styrene	20.0	22.5	112	20.0	22.0	110	2.19	65 - 135	30	
tert-Butylbenzene	20.0	20.0	100	20.0	20.0	99.8	0.394	70 - 130	30	
Tetrachloroethene	20.0	20.4	102	20.0	19.9	99.7	2.42	45 - 150	30	
Toluene	20.0	21.0	105	20.0	20.4	102	3.02	75 - 120	30	
trans-1,2-Dichloroethene	20.0	21.5	108	20.0	21.0	105	2.53	60 - 140	30	
trans-1,3-Dichloropropene	20.0	19.0	95.1	20.0	18.7	93.6	1.57	55 - 140	30	
Trichloroethene	20.0	22.9	114	20.0	22.7	113	0.916	70 - 125	30	
Trichlorofluoromethane	20.0	15.0	74.9	20.0	14.3	71.5	4.59	60 - 145	30	
Vinyl chloride	20.0	14.3	71.4	20.0	14.3	71.3	0.0688	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	88.3	90.1	70 - 120	PASS
Dibromofluoromethane	104	105	85 - 115	PASS
4-Bromofluorobenzene	106	103	75 - 120	PASS
Toluene-d8	114	113	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3057722
Report generated: 09/06/2013 10:10

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13081329
Instrument: HPMS11
Analyst: FJB
Workgroup: WG436576

Tune ID: WG436576-01
Run Date: 07/05/2013
Run Time: 16:05
File ID: 11M93287
Cal ID: HPMS11 - 05-JUL-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.2	2381	PASS
75.0	95.0	30.0	60.0	48.3	5438	PASS
95.0	95.0	100	100	100	11255	PASS
96.0	95.0	5.00	9.00	7.24	815	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	92.7	10439	PASS
175	174	5.00	9.00	6.86	716	PASS
176	174	95.0	101	96.7	10098	PASS
177	176	5.00	9.00	7.34	741	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG436576-02	STD	01	07/05/2013 16:29	
WG436576-03	STD	01	07/05/2013 17:00	
WG436576-04	STD	01	07/05/2013 17:32	
WG436576-05	STD-CCV	01	07/05/2013 18:03	
WG436576-06	STD	01	07/05/2013 18:35	
WG436576-07	STD	01	07/05/2013 19:06	
WG436576-08	STD	01	07/05/2013 19:38	
WG436576-09	STD	01	07/05/2013 20:09	
WG436576-10	SSCV	01	07/05/2013 21:43	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3057724
Report generated 09/06/2013 10:10

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13081329
Instrument: HPMS11
Analyst: ADC
Workgroup: WG442178

Tune ID: WG442178-01
Run Date: 08/21/2013
Run Time: 15:00
File ID: 11M94449
Cal ID: HPMS11 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.0	3314	PASS
75.0	95.0	30.0	60.0	51.4	8124	PASS
95.0	95.0	100	100	100	15792	PASS
96.0	95.0	5.00	9.00	7.00	1106	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	85.5	13507	PASS
175	174	5.00	9.00	5.00	676	PASS
176	174	95.0	101	96.8	13081	PASS
177	176	5.00	9.00	6.46	845	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG442178-02	STD	01	08/21/2013 15:58	
WG442178-03	STD	01	08/21/2013 16:30	
WG442178-04	STD	01	08/21/2013 17:01	
WG442178-05	STD	01	08/21/2013 17:32	
WG442178-06	STD	01	08/21/2013 18:04	
WG442178-07	STD	01	08/21/2013 18:35	
WG442178-08	STD-CCV	01	08/21/2013 19:06	
WG442178-09	STD	01	08/21/2013 19:38	
WG442178-10	STD	01	08/21/2013 20:09	
WG442178-11	STD	01	08/21/2013 20:41	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3057724
Report generated 09/06/2013 10:10

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13081329
Instrument: HPMS11
Analyst: ADC
Workgroup: WG442274

Tune ID: WG442274-01
Run Date: 08/22/2013
Run Time: 11:48
File ID: 11M94466
Cal ID: HPMS11 - 21-AUG-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.4	3725	PASS
75.0	95.0	30.0	60.0	52.4	9552	PASS
95.0	95.0	100	100	100	18222	PASS
96.0	95.0	5.00	9.00	6.13	1117	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	90.9	16570	PASS
175	174	5.00	9.00	8.33	1381	PASS
176	174	95.0	101	97.7	16194	PASS
177	176	5.00	9.00	7.00	1133	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG442178-12	SSCV	01	08/22/2013 13:50	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3057724
Report generated 09/06/2013 10:10

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13081329
Instrument: HPMS11
Analyst: FJB
Workgroup: WG442931

Tune ID: WG442931-01
Run Date: 08/28/2013
Run Time: 15:28
File ID: 11M94672
Cal ID: HPMS11 - 21-AUG-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.3	4470	PASS
75.0	95.0	30.0	60.0	47.9	12370	PASS
95.0	95.0	100	100	100	25810	PASS
96.0	95.0	5.00	9.00	7.31	1886	PASS
173	174	0	2.00	0.413	103	PASS
174	95.0	50.0	100	96.5	24912	PASS
175	174	5.00	9.00	7.70	1917	PASS
176	174	95.0	101	96.3	24000	PASS
177	176	5.00	9.00	7.13	1711	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG442931-02	CCV	01	08/28/2013 15:55	
WG442932-01	BLANK	01	08/28/2013 16:58	
WG442932-02	LCS	01	08/28/2013 17:29	
WG442932-03	LCS2	01	08/28/2013 18:01	
L13081329-01	67DPT13B(26-30)-240813	01	08/29/2013 03:26	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3057724
Report generated 09/06/2013 10:10

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13081329
Instrument: HPMS6
Analyst: ADC
Workgroup: WG433881

Tune ID: WG433881-01
Run Date: 06/12/2013
Run Time: 15:44
File ID: 6M117459
Cal ID: HPMS6 - 12-JUN-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.8	4373	PASS
75.0	95.0	30.0	60.0	42.3	11034	PASS
95.0	95.0	100	100	100	26101	PASS
96.0	95.0	5.00	9.00	6.46	1685	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	91.4	23858	PASS
175	174	5.00	9.00	7.29	1739	PASS
176	174	95.0	101	96.3	22975	PASS
177	176	5.00	9.00	6.33	1455	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG433881-02	STD	01	06/12/2013 16:07	
WG433881-03	STD	01	06/12/2013 16:38	
WG433881-04	STD	01	06/12/2013 17:09	
WG433881-05	STD-CCV	01	06/12/2013 17:39	
WG433881-06	STD	01	06/12/2013 18:11	
WG433881-07	STD	01	06/12/2013 18:42	
WG433881-08	STD	01	06/12/2013 19:13	
WG433881-09	STD	01	06/12/2013 19:44	
WG433881-10	SSCV	01	06/12/2013 20:47	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3057724
Report generated 09/06/2013 10:10

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13081329
Instrument: HPMS6
Analyst: ADC
Workgroup: WG439230

Tune ID: WG439230-01
Run Date: 07/26/2013
Run Time: 14:44
File ID: 6M118372
Cal ID: HPMS6 - 26-JUL-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.5	8035	PASS
75.0	95.0	30.0	60.0	47.6	15647	PASS
95.0	95.0	100	100	100	32856	PASS
96.0	95.0	5.00	9.00	6.72	2209	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	82.3	27046	PASS
175	174	5.00	9.00	7.67	2074	PASS
176	174	95.0	101	100	27149	PASS
177	176	5.00	9.00	6.98	1895	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG439230-02	STD	01	07/26/2013 15:38	
WG439230-03	STD	01	07/26/2013 16:08	
WG439230-04	STD	01	07/26/2013 16:39	
WG439230-05	STD	01	07/26/2013 17:10	
WG439230-06	STD	01	07/26/2013 17:40	
WG439230-07	STD	01	07/26/2013 18:10	
WG439230-08	STD-CCV	01	07/26/2013 18:41	
WG439230-09	STD	01	07/26/2013 19:11	
WG439230-10	STD	01	07/26/2013 19:42	
WG439230-11	STD	01	07/26/2013 20:12	
WG439230-12	SSCV	01	07/26/2013 21:13	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3057724
Report generated 09/06/2013 10:10

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13081329
Instrument: HPMS6
Analyst: FJB
Workgroup: WG443008

Tune ID: WG443008-01
Run Date: 08/29/2013
Run Time: 06:46
File ID: 6M119424
Cal ID: HPMS6 - 26-JUL-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	26.1	4206	PASS
75.0	95.0	30.0	60.0	47.5	7642	PASS
95.0	95.0	100	100	100	16091	PASS
96.0	95.0	5.00	9.00	6.71	1080	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	94.3	15177	PASS
175	174	5.00	9.00	7.47	1134	PASS
176	174	95.0	101	99.5	15105	PASS
177	176	5.00	9.00	7.78	1175	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG443008-02	CCV	01	08/29/2013 07:40	
WG443009-01	BLANK	01	08/29/2013 08:41	
WG443009-02	LCS	01	08/29/2013 09:12	
WG443009-03	LCS2	01	08/29/2013 09:47	
L13081329-01	67DPT13B(26-30)-240813	DL01	08/29/2013 12:53	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3057724
Report generated 09/06/2013 10:10

Calibration Table Report
Method: A9WTR.M
Title: Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Calibration: Mon Jul 08 16:30:11 2013
Curve: WG436576
Calibration Files

	Compound	5 11M93288.D	20 11M93289.D	50 11M93290.D	100 11M93291.D	200 11M93292.D	300 11M93293.D	400 11M93294.D	500 11M93295.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.028	0.028	0.030	0.027	0.027	0.031	0.032	0.032	0.029	7.790		
T	3-Chloro-1-propene	0.205	0.516	0.516	0.502	0.491	0.474	0.443	0.419	0.446	23.193		1.000
T	2-Chloro-1,3-butadiene	0.461	0.489	0.498	0.484	0.477	0.466	0.438	0.415	0.466	5.925		
T	Methacrylonitrile	0.168	0.147	0.164	0.149	0.153	0.161	0.163	0.159	0.158	4.680		
T	Isobutyl Alcohol			0.011	0.008	0.008	0.008	0.010	0.010	0.009	13.201		
T	1-Butanol			0.001	0.001	0.001	0.001	0.001		0.001	14.545		
T	Cyclohexanone			0.033	0.024	0.039	0.043	0.045	0.048	0.039	22.706		0.998
T	2-Nitropropane			0.061	0.058	0.061	0.068	0.071	0.069	0.065	8.328		
T	Ethyl Acetate	0.143	0.211	0.228	0.210	0.215	0.227	0.228	0.220	0.210	13.350		
T	Methyl methacrylate	0.147	0.192	0.213	0.202	0.208	0.219	0.219	0.210	0.201	11.761		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											

Wed Jul 10 12:42:50 2013

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Calibration: Fri Aug 23 12:13:25 2013
Curve: WG442178
Calibration Files

	Compound	0.3	0.4	1	2	5	20	50	100	200	300	Avg	%RSD	Linear	Quadratic
		11M94451.D	11M94452.D	11M94453.D	11M94454.D	11M94455.D	11M94456.D	11M94457.D	11M94458.D	11M94459.D	11M94460.D				
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.233	0.221	0.216	0.246	0.291	0.328	0.250	0.272	0.289	0.261	14.281		
P	Chloromethane			0.636	0.400	0.424	0.405	0.428	0.354	0.354	0.377	0.422	21.581	0.997	
C	Vinyl Chloride		0.450	0.311	0.281	0.334	0.307	0.344	0.285	0.295	0.322	0.326	15.728	0.997	
T	1,3-Butadiene				0.237	0.248	0.258	0.299	0.240	0.245	0.259	0.255	8.181		
T	Bromomethane			0.109	0.109	0.120	0.124	0.157	0.148	0.166		0.133	17.502	0.995	
T	Chloroethane		0.110	0.169	0.145	0.166	0.170	0.190	0.158	0.166	0.183	0.162	14.609		
T	Trichlorofluoromethane		0.572	0.580	0.503	0.561	0.579	0.648	0.508	0.543	0.584	0.564	7.754		
T	Diethyl ether			0.182	0.164	0.179	0.183	0.197	0.170		0.194	0.181	6.509		
T	Isoprene		0.220	0.275	0.266	0.294	0.328	0.364	0.298	0.315	0.346	0.301	14.625		
T	Acrolein			0.012	0.018	0.018	0.021	0.024	0.021		0.025	0.020	22.267	0.991	
T	1,1,2-Trichloro-1,2,2-Trifluoroe		0.096	0.135	0.231	0.266	0.266	0.303	0.236	0.260	0.290	0.231	30.349	0.994	
T	Acetone				0.080	0.085	0.078	0.089	0.075	0.079	0.086	0.082	5.899		
C	1,1-Dichloroethene		0.418	0.465	0.430	0.454	0.469	0.517	0.428	0.444	0.483	0.456	6.778		
T	Tert-Butyl Alcohol			0.014	0.012	0.014	0.015	0.015	0.014		0.015	0.014	6.637		
T	Dimethyl Sulfide		0.183	0.197	0.197	0.212	0.226	0.261	0.224	0.227	0.246	0.219	11.397		
T	Iodomethane			0.169	0.194	0.239	0.286	0.335	0.282	0.275	0.286	0.258	21.087	0.997	
T	Methyl acetate			0.060	0.087	0.104	0.098	0.116	0.101	0.101	0.115	0.098	18.375	0.996	
T	Methylene Chloride		0.257	0.266	0.247	0.260	0.253	0.281	0.238	0.234	0.260	0.255	5.654		
T	Carbon Disulfide		0.643	0.684	0.684	0.709	0.735	0.814	0.678	0.628	0.671	0.694	7.966		
T	Acrylonitrile			0.054	0.051	0.050	0.061	0.069	0.061			0.058	12.560		
T	Methyl Tert Butyl Ether		0.523	0.587	0.548	0.586	0.630	0.720	0.619	0.586	0.655	0.606	9.688		
T	trans-1,2-Dichloroethene		0.233	0.226	0.214	0.238	0.261	0.291	0.242	0.244	0.275	0.247	9.882		
T	n-Hexane		0.268	0.326	0.282	0.303	0.348	0.387	0.284	0.309	0.332	0.315	11.842		
T	Diisopropyl ether			0.958	0.874	0.878	0.890	0.912	0.765		0.846	0.875	6.834		
T	Vinyl Acetate				0.104	0.147	0.219	0.337	0.304	0.281	0.320	0.244	36.897	0.994	
P	1,1-Dichloroethane		0.453	0.529	0.464	0.508	0.499	0.559	0.464	0.469	0.517	0.496	7.252		
T	Ethyl-Tert-Butyl ether			0.807	0.779	0.808	0.887	0.876	0.722		0.811	0.813	6.928		
T	2-Butanone				0.050	0.060	0.071	0.074	0.065	0.064	0.076	0.066	13.641		
T	Propionitrile			0.017	0.017	0.020	0.022	0.021	0.019		0.024	0.020	13.181		
T	2,2-Dichloropropane		0.266	0.411	0.412	0.473	0.514	0.582	0.469	0.480	0.545	0.461	19.958	0.995	
T	cis-1,2-Dichloroethene		0.256	0.257	0.268	0.274	0.278	0.329	0.273	0.265	0.324	0.281	9.666		
C	Chloroform	0.529	0.590	0.496	0.533	0.532	0.541	0.603	0.510	0.502	0.544	0.538	6.509		
T	1-Bromopropane			0.030	0.045	0.048	0.052	0.057	0.049	0.055	0.054	0.049	17.740	0.998	
T	Bromochloromethane		0.140	0.136	0.160	0.153	0.161	0.180	0.175	0.173	0.173	0.161	9.810		
T	Tetrahydrofuran			0.041	0.039	0.040	0.041	0.043	0.044		0.044	0.042	4.464		
S	Dibromofluoromethane			0.256	0.303	0.299	0.277	0.310	0.294	0.295	0.296	0.291	5.918		
T	1,1,1-Trichloroethane		0.489	0.556	0.536	0.533	0.548	0.621	0.549	0.554	0.566	0.550	6.273		
T	Cyclohexane		0.407	0.396	0.410	0.399	0.431	0.467	0.431	0.461	0.437	0.427	6.004		
T	1,1-Dichloropropene		0.309	0.431	0.386	0.369	0.391	0.442	0.407	0.416	0.411	0.396	9.991		
T	Carbon Tetrachloride		0.432	0.544	0.489	0.517	0.538	0.595	0.511	0.521	0.524	0.519	8.435		
T	Tert-Amyl-Methyl ether			0.631	0.604	0.612	0.659	0.644	0.611		0.62	0.626	3.185		
S	1,2-Dichloroethane-d4			0.319	0.332	0.353	0.324	0.359	0.329	0.33	0.347	0.336	4.232		
T	Heptane											0.000	0.000		
T	1,2-Dichloroethane		0.385	0.409	0.398	0.415	0.432	0.464	0.414	0.406	0.413	0.415	5.347		
T	Benzene		1.054	1.012	1.032	1.009	1.044	1.06	0.99	0.927	0.86	0.999	6.599		
T	Trichloroethene		0.238	0.269	0.277	0.286	0.272	0.307	0.282	0.276	0.298	0.278	7.024		
T	Methylcyclohexane		0.287	0.332	0.312	0.358	0.355	0.392	0.343	0.354	0.367	0.344	8.989		
C	1,2-Dichloropropane		0.242	0.249	0.272	0.254	0.239	0.278	0.242	0.257	0.32	0.261	9.917		
T	1,4-Dioxane				0.001	0.001	0.001	0.001	0.001			0.001	17.819	0.994	
T	Bromodichloromethane		0.384	0.388	0.372	0.402	0.421	0.459	0.4	0.405	0.476	0.412	8.495		
T	Dibromomethane		0.107	0.135	0.128	0.146	0.142	0.154	0.139	0.14	0.176	0.141	13.171		
T	2-Chloroethyl Vinyl Ether				0.077	0.097	0.102	0.119	0.113	0.112		0.103	14.520	0.999	
T	4-Methyl-2-Pentanone					0.053	0.053	0.062	0.06	0.06		0.058	7.419		
T	cis-1,3-Dichloropropene		0.374	0.374	0.33	0.402	0.422	0.461	0.414	0.409	0.495	0.409	11.872		

T	Dimethyl Disulfide					0.162	0.202	0.231	0.216	0.219		0.206	12.999	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.151	1.293	1.267	1.195	1.239	1.174	1.17	1.125	1.202	4.896	
C	Toluene		1.352	1.348	1.439	1.456	1.463	1.463	1.353	1.239		1.389	5.754	
T	Ethyl Methacrylate			0.178	0.214	0.244	0.273	0.291	0.291	0.289	0.286	0.258	16.515	1.000
T	Paraldehyde											0.000	0.000	
T	trans-1,3-Dichloropropene		0.351	0.406	0.458	0.467	0.524	0.561	0.526	0.522	0.492	0.478	13.851	
T	1,1,2-Trichloroethane		0.138	0.227	0.216	0.232	0.232	0.241	0.231	0.237	0.239	0.221	14.452	
T	2-Hexanone				0.101	0.12	0.139	0.148	0.153	0.154	0.152	0.138	14.526	
T	1,3-Dichloropropane		0.378	0.384	0.419	0.409	0.426	0.439	0.422	0.419	0.419	0.413	4.822	
T	Tetrachloroethene		0.267	0.315	0.29	0.331	0.335	0.342	0.316	0.325	0.318	0.315	7.449	
T	Dibromochloromethane		0.308	0.324	0.337	0.346	0.368	0.398	0.38	0.379	0.366	0.356	8.247	
T	1,2-Dibromoethane		0.182	0.209	0.201	0.239	0.25	0.265	0.254	0.257	0.26	0.235	12.772	
T	1-Chlorohexane		0.261	0.317	0.378	0.405	0.431	0.448	0.421	0.432	0.42	0.390	15.950	1.000
P	Chlorobenzene		0.954	0.956	0.958	0.987	0.997	1.003	0.93	0.894	0.808	0.943	6.452	
T	1,1,1,2-Tetrachloroethane		0.316	0.398	0.406	0.402	0.413	0.434	0.412	0.419	0.4	0.400	8.376	
C	Ethylbenzene		0.449	0.467	0.497	0.524	0.525	0.557	0.526	0.531	0.514	0.510	6.631	
T	m-,p-Xylene		0.585	0.582	0.622	0.624	0.644	0.65	0.602	0.561	0.478	0.594	8.889	
T	o-Xylene		0.528	0.534	0.591	0.604	0.631	0.649	0.618	0.611	0.581	0.594	6.916	
T	Styrene	0.883	0.828	0.865	0.951	1.001	1.069	1.089	1.029	0.97	0.855	0.954	9.782	
P	Bromoform			0.17	0.211	0.215	0.233	0.246	0.24	0.239	0.231	0.223	11.057	
T	Isopropylbenzene		1.358	1.504	1.576	1.647	1.708	1.728	1.567	1.383	1.121	1.510	12.914	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.302	0.344	0.39	0.416	0.418	0.466	0.457	0.473		0.408	14.854	
S	p-Bromofluorobenzene			0.792	0.848	0.941	0.883	0.965	0.942	0.98	0.966	0.915	7.308	
T	1,2,3-Trichloropropane			0.111	0.155	0.14	0.161	0.173	0.169	0.175	0.175	0.157	14.190	
T	trans-1,4-Dichloro-2-Butene			0.055	0.106	0.148	0.164	0.196	0.197	0.209	0.196	0.159	34.046	0.998
T	n-Propylbenzene		2.9	2.954	3.303	3.392	3.534	3.708	3.316	2.899		3.251	9.376	
T	Bromobenzene	0.661	0.7	0.721	0.78	0.765	0.797	0.845	0.804	0.822	0.799	0.769	7.549	
T	1,3,5-Trimethylbenzene		2.237	2.157	2.376	2.476	2.644	2.816	2.59	2.385	2.01	2.410	10.496	
T	2-Chlorotoluene		1.985	2.212	2.171	2.167	2.191	2.316	2.064	2.264	1.905	2.142	6.187	
T	4-Chlorotoluene		2.309	1.774	2.321	2.363	2.392	2.514	2.334	1.792		2.225	12.588	
T	a-Methylstyrene				0.985	1.047	1.246	1.341	1.3	1.273	1.183	1.196	11.160	
T	tert-Butylbenzene		0.326	0.434	0.429	0.482	0.492	0.532	0.507	0.523	0.527	0.472	14.111	
T	1,2,4-Trimethylbenzene			2.347	2.537	2.576	2.709	2.999	2.625	2.361	1.968	2.515	12.022	
T	sec-Butylbenzene		2.622	2.668	2.873	2.888	2.97	3.281	2.851	2.562	2.157	2.764	11.322	
T	p-Isopropyltoluene		2.133	2.3	2.402	2.489	2.625	2.806	2.551	2.298	1.947	2.395	10.876	
T	1,3-Dichlorobenzene		1.376	1.423	1.471	1.467	1.511	1.579	1.47	1.412	1.304	1.446	5.482	
T	1,4-Dichlorobenzene	1.577	1.518	1.485	1.521	1.538	1.513	1.594	1.49	1.407	1.292	1.493	5.864	
T	n-Butylbenzene		1.936	1.947	2.022	2.155	2.263	2.455	2.232	2.038	1.751	2.089	10.070	
T	1,2-Dichlorobenzene	1.299	1.289	1.269	1.288	1.324	1.337	1.45	1.355	1.289	1.209	1.311	4.827	
T	1,2-Dibromo-3-Chloropropane				0.076	0.092	0.084	0.108	0.102	0.104	0.102	0.095	12.597	
T	1,2,4-Trichlorobenzene		0.832	0.878	0.92	0.976	0.993	1.135	1.011	0.976	0.955	0.964	8.957	
T	Hexachlorobutadiene		0.396	0.38	0.405	0.395	0.419	0.483	0.428	0.428	0.422	0.417	7.087	
T	Naphthalene		1.293	1.431	1.51	1.533	1.625	1.905	1.703	1.575	1.475	1.561	11.154	
T	1,2,3-Trichlorobenzene	0.805	0.767	0.815	0.837	0.804	0.863	0.979	0.883	0.849	0.843	0.845	6.850	

Tue Aug 27 10:37:50 2013

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 06/12/13 - HPMS6
Last Calibration: Thu Jun 13 09:13:08 2013
Curve: WG433881
Calibration Files

Compound	5 6M117460.D	20 6M117461.D	50 6M117462.D	100 6M117463.D	200 6M117464.D	300 6M117465.D	400 6M117466.D	500 6M117467.D	Avg	%RSD	Linear
Fluorobenzene	ISTD										
Acetonitrile		0.010	0.012	0.012	0.012	0.012	0.013	0.011	0.012	8.243	
3-Chloro-1-propene	0.405	0.409	0.425	0.417	0.404	0.398	0.389	0.348	0.399	5.912	
2-Chloro-1,3-butadiene	0.423	0.421	0.447	0.444	0.434	0.433	0.418	0.419	0.430	2.674	
Ethyl Acetate	0.071	0.081	0.088	0.086	0.087	0.088	0.091	0.094	0.086	8.286	
Methacrylonitrile	0.037	0.044	0.048	0.047	0.047	0.047	0.048	0.050	0.046	8.123	
Isobutyl Alcohol		0.003	0.003	0.003	0.003	0.003	0.003	0.004	0.003	10.378	
1-Butanol				0.001	0.001	0.001	0.001	0.001	0.001	15.044	0.996
Methyl methacrylate	0.076	0.093	0.102	0.099	0.100	0.100	0.101	0.103	0.097	9.217	
2-Nitropropane		0.023	0.028	0.028	0.029	0.030	0.031	0.032	0.029	9.776	
Chlorobenzene-d5	ISTD										
1,4-Dichlorobenzene-d4	ISTD										
Cyclohexanone		0.024	0.025	0.024	0.024	0.024	0.024	0.025	0.024	1.414	

Thu Jun 13 09:15:50 2013

Calibration Table Report
Method: 8260WTR.M
Title: 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Calibration: Sat Jul 27 15:01:31 2013
Curve: WG439230
Calibration Files

Compound	0.3 6M118374.D	0.4 6M118375.D	1 6M118376.D	2 6M118377.D	5 6M118378.D	20 6M118379.D	50 6M118380.D	100 6M118381.D	200 6M118382.D	300 6M118383.D	Avg	%RSD	R^2 Linear	R^2 Quadratic
Fluorobenzene	ISTD													
Dichlorodifluoromethane			0.220	0.196	0.202	0.242	0.255	0.242	0.245	0.252	0.232	9.815		
Chloromethane		0.430	0.336	0.326	0.322	0.326	0.333	0.343	0.337	0.335	0.343	9.735		
Vinyl Chloride		0.289	0.275	0.275	0.270	0.277	0.285	0.273	0.258	0.248	0.272	4.690		
1,3-Butadiene					0.226	0.226	0.201	0.138	0.120	0.100	0.169	33.126		1.004
Bromomethane			0.092	0.100	0.105	0.124	0.154	0.167	0.172	0.171	0.136	25.095		1.000
Chloroethane		0.230	0.210	0.221	0.227	0.224	0.232	0.229	0.224	0.221	0.224	2.920		
Trichlorofluoromethane		0.407	0.438	0.420	0.438	0.442	0.467	0.451	0.454	0.456	0.441	4.265		
Diethyl ether			0.150	0.159	0.180	0.180	0.175	0.172		0.175	0.170	6.574		
Isoprene			0.389	0.352	0.376	0.383	0.407	0.393	0.400	0.391	0.386	4.339		
Acrolein				0.004	0.004	0.004	0.004	0.005			0.004	8.320		
1,1,2-Trichloro-1,2,2-Trifluoroe			0.239	0.227	0.238	0.246	0.263	0.250	0.256	0.262	0.248	5.075		
Acetone					0.066	0.049	0.040	0.040	0.042	0.041	0.046	21.458	0.999	
1,1-Dichloroethene		0.499	0.501	0.503	0.506	0.516	0.535	0.531	0.521	0.520	0.515	2.575		
Tert-Butyl Alcohol				0.008	0.010	0.010	0.009	0.009		0.009	0.009	7.314		
Dimethyl Sulfide		0.245	0.264	0.266	0.278	0.277	0.288	0.283	0.283	0.277	0.273	4.795		
Iodomethane				0.081	0.108	0.166	0.228	0.246	0.257	0.249	0.191	38.121	0.997	
Methyl acetate				0.209	0.185	0.151	0.147	0.143	0.140	0.138	0.159	17.132		1.000
Methylene Chloride		0.279	0.253	0.251	0.258	0.244	0.251	0.252	0.246	0.246	0.253	4.127		
Carbon Disulfide		0.887	0.815	0.823	0.853	0.846	0.860	0.845	0.827	0.791	0.839	3.359		
Acrylonitrile			0.048	0.051	0.060	0.058	0.062	0.061		0.068	0.058	11.497		
Methyl Tert Butyl Ether		0.358	0.381	0.406	0.434	0.426	0.449	0.450	0.449	0.450	0.423	8.069		
trans-1,2-Dichloroethene		0.264	0.267	0.284	0.278	0.282	0.292	0.297	0.291	0.292	0.283	4.092		
n-Hexane			0.493	0.452	0.449	0.449	0.467	0.447	0.450	0.443	0.456	3.601		
Diisopropyl ether			1.125	1.151	1.283	1.259	1.223	1.176		1.147	1.195	5.067		
Vinyl Acetate					0.333	0.350	0.353	0.329	0.322	0.328	0.336	3.883		
1,1-Dichloroethane		0.560	0.575	0.590	0.590	0.584	0.603	0.601	0.585	0.582	0.585	2.229		
Ethyl-Tert-Butyl ether			0.699	0.727	0.822	0.809	0.785	0.770		0.770	0.769	5.670		
2-Butanone					0.076	0.067	0.065	0.062	0.064	0.061	0.066	8.255		
Propionitrile			0.017	0.018	0.019	0.019	0.019	0.018		0.019	0.018	4.020		
2,2-Dichloropropane		0.463	0.436	0.430	0.436	0.440	0.457	0.451	0.442	0.442	0.444	2.431		
cis-1,2-Dichloroethene		0.257	0.275	0.286	0.298	0.294	0.305	0.308	0.303	0.304	0.292	5.792		
Chloroform	0.493	0.477	0.462	0.483	0.482	0.475	0.490	0.494	0.483	0.482	0.482	1.967		
1-Bromopropane			0.043	0.050	0.056	0.055	0.058	0.058	0.057	0.057	0.054	9.611		
Bromochloromethane		0.138	0.147	0.149	0.155	0.150	0.156	0.158	0.156	0.154	0.152	4.204		
Tetrahydrofuran			0.043	0.042	0.047	0.046	0.043	0.043		0.043	0.044	4.215		
Dibromofluoromethane			0.327	0.270	0.263	0.238	0.253	0.249	0.252	0.246	0.262	10.641		
1,1,1-Trichloroethane		0.445	0.444	0.450	0.458	0.448	0.476	0.473	0.467	0.466	0.458	2.694		
Cyclohexane		0.729	0.678	0.625	0.635	0.619	0.656	0.625	0.633	0.614	0.646	5.723		
1,1-Dichloropropene		0.339	0.368	0.384	0.386	0.389	0.407	0.403	0.401	0.399	0.386	5.536		
Tert-Amyl-Methyl ether			0.415	0.431	0.487	0.480	0.468	0.465		0.477	0.460	5.900		
Carbon Tetrachloride		0.367	0.391	0.4	0.402	0.405	0.435	0.438	0.441	0.442	0.4136	6.4104		
1,2-Dichloroethane-d4				0.236	0.227	0.215	0.224	0.221	0.22	0.213	0.2223	3.5119		
Heptane											0	0		
1,2-Dichloroethane		0.239	0.294	0.306	0.313	0.306	0.318	0.317	0.311	0.31	0.3015	8.1738		
Benzene		1.08	1.05	1.055	1.066	1.046	1.082	1.083	1.034	0.996	1.0547	2.6618		
Trichloroethene		0.277	0.277	0.29	0.298	0.297	0.311	0.311	0.307	0.305	0.2969	4.3904		
Methylcyclohexane		0.395	0.39	0.375	0.382	0.372	0.393	0.377	0.387	0.385	0.384	2.0398		
1,2-Dichloropropane		0.259	0.3	0.302	0.3	0.303	0.317	0.316	0.31	0.309	0.3018	5.7592		
1,4-Dioxane				0	0.001	0.001	0.001	0.001		0.001	0.0008	25.515	0.996	
Bromodichloromethane		0.303	0.312	0.325	0.326	0.32	0.335	0.34	0.336	0.337	0.3261	3.8506		
Dibromomethane		0.069	0.087	0.099	0.11	0.108	0.111	0.113	0.112	0.113	0.1024	14.945		
2-Chloroethyl Vinyl Ether					0.093	0.098	0.102	0.099	0.102	0.1	0.099	3.307		
4-Methyl-2-Pentanone					0.048	0.049	0.051	0.049	0.05	0.049	0.0493	2.1049		
cis-1,3-Dichloropropene		0.299	0.328	0.35	0.365	0.368	0.385	0.388	0.383	0.38	0.3606	8.3476		
Dimethyl Disulfide				0.147	0.149	0.161	0.183	0.187	0.192	0.189	0.1727	11.321		
Chlorobenzene-d5	ISTD													
Toluene-d8				1.531	1.401	1.254	1.317	1.309	1.313	1.259	1.3404	7.2305		
Toluene		1.621	1.655	1.716	1.673	1.629	1.693	1.665	1.578	1.487	1.6355	4.2081		
Ethyl Methacrylate			0.196	0.204	0.233	0.241	0.253	0.25	0.254	0.247	0.2349	9.5645		
Paraldehyde											0	0		
trans-1,3-Dichloropropene			0.325	0.351	0.383	0.397	0.434	0.439	0.441	0.44	0.4013	11.224		
1,1,2-Trichloroethane		0.187	0.199	0.203	0.209	0.206	0.214	0.214	0.214	0.215	0.2067	4.4575		
2-Hexanone					0.154	0.145	0.149	0.14	0.139	0.133	0.1432	5.368		
1,3-Dichloropropane		0.318	0.328	0.344	0.363	0.359	0.375	0.377	0.375	0.372	0.3567	6.1522		
Tetrachloroethene		0.44	0.447	0.456	0.458	0.449	0.478	0.476	0.472	0.473	0.4611	3.0679		
Dibromochloromethane		0.246	0.252	0.27	0.28	0.285	0.309	0.315	0.319	0.321	0.2888	9.944		
1,2-Dibromoethane			0.171	0.19	0.201	0.207	0.217	0.221	0.221	0.221	0.2061	8.784		
1-Chlorohexane			0.491	0.488	0.495	0.492	0.514	0.508	0.505	0.491	0.498	1.9613		
Chlorobenzene	1.003	1.018	1.004	1.075	1.056	1.042	1.09	1.089	1.046	1.008	1.0431	3.2614		
1,1,1,2-Tetrachloroethane		0.335	0.352	0.356	0.365	0.371	0.393	0.397	0.391	0.385	0.3719	5.731		
Ethylbenzene		0.581	0.559	0.603	0.604	0.592	0.63	0.633	0.609	0.601	0.6011	3.8102		
m-,p-Xylene		0.701	0.706	0.731	0.728	0.717	0.758	0.748	0.695	0.648	0.7148	4.5537		
o-Xylene		0.659	0.665	0.699	0.706	0.692	0.728	0.727	0.701	0.685	0.6957	3.4393		
Styrene		0.945	1.017	1.08	1.113	1.102	1.16	1.155	1.104	1.051	1.0809	6.3053		
Bromoform			0.118	0.125	0.137	0.144	0.162	0.168	0.172	0.173	0.1499	14.526		
Isopropylbenzene		1.809	1.81	1.845	1.841	1.807	1.895	1.856	1.715	1.587	1.7962	5.1492		
1,4-Dichlorobenzene-d4	ISTD													
1,1,2,2-Tetrachloroethane		0.342	0.388	0.387	0.405	0.403	0.409	0.411	0.406	0.415	0.3962	5.6677		
p-Bromofluorobenzene				1.113	0.99	0.896	0.923	0.918	0.919	0.897	0.9509	8.22		

1,2,3-Trichloropropane			0.077	0.115	0.124	0.114	0.122	0.124	0.121	0.123	0.1148	13.69
trans-1,4-Dichloro-2-Butene				0.124	0.14	0.142	0.164	0.168	0.172	0.167	0.1537	11.98
n-Propylbenzene		4.303	4.286	4.29	4.298	4.143	4.33	4.244	3.841	3.566	4.1446	6.3854
Bromobenzene	0.703	0.716	0.819	0.856	0.859	0.854	0.897	0.897	0.877	0.885	0.8361	8.4837
1,3,5-Trimethylbenzene		3.194	3.015	3.143	3.07	3.012	3.148	3.124	2.91	2.804	3.0468	4.1439
2-Chlorotoluene		3.006	2.925	2.841	2.966	2.836	2.981	2.99	2.86	2.801	2.9118	2.6769
4-Chlorotoluene		2.676	2.528	2.617	2.487	2.452	2.531	2.516	2.369	2.303	2.4977	4.5942
a-Methylstyrene			1.504	1.558	1.614	1.571	1.65	1.626	1.576	1.535	1.5793	3.073
tert-Butylbenzene		0.524	0.591	0.63	0.635	0.617	0.657	0.65	0.636	0.642	0.6204	6.5993
1,2,4-Trimethylbenzene		3.192	3.117	3.121	3.061	3.025	3.144	3.113	2.901	2.774	3.0498	4.36
sec-Butylbenzene		3.757	3.716	3.687	3.687	3.576	3.769	3.666	3.393	3.223	3.6083	5.1027
p-Isopropyltoluene		3.271	3.095	3.133	3.136	3.069	3.233	3.163	2.965	2.83	3.0995	4.3464
1,3-Dichlorobenzene		1.626	1.704	1.748	1.721	1.7	1.775	1.769	1.691	1.662	1.7109	2.8616
1,4-Dichlorobenzene	1.576	1.677	1.616	1.684	1.707	1.67	1.743	1.729	1.656	1.621	1.6678	3.1485
n-Butylbenzene		2.842	2.682	2.545	2.667	2.596	2.711	2.656	2.489	2.397	2.6205	5.017
1,2-Dichlorobenzene	1.33	1.291	1.397	1.437	1.467	1.427	1.481	1.47	1.421	1.407	1.4128	4.3332
1,2-Dibromo-3-Chloropropane				0.045	0.058	0.06	0.064	0.065	0.066	0.065	0.0605	12.631
1,2,4-Trichlorobenzene		0.973	0.981	0.961	1.003	1.001	1.045	1.04	1.008	1.008	1.0024	2.7953
Hexachlorobutadiene		0.536	0.459	0.489	0.519	0.485	0.514	0.507	0.498	0.506	0.5016	4.4688
Naphthalene		1.37	1.347	1.382	1.438	1.41	1.479	1.462	1.432	1.414	1.4149	3.0491
1,2,3-Trichlorobenzene	0.821	0.76	0.768	0.804	0.84	0.809	0.845	0.832	0.817	0.816	0.8112	3.4468

Mon Jul 29 10:53:09 2013

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13081329 Run Date: 08/22/2013 Sample ID: WG442178-12
Instrument ID: HPMS11 Run Time: 13:50 Method: 8260B
File ID: 11M94470 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG442178 Cal ID: HPMS11 - 21-AUG-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	20.0	21.7	ug/L	0.583	8.40	20	
1,1-Dichloroethene	CCC	20.0	20.0	ug/L	0.457	0.100	20	
1,2-Dichloropropane	CCC	20.0	20.7	ug/L	0.270	3.40	20	
Ethylbenzene	CCC	20.0	21.6	ug/L	0.551	8.10	20	
Toluene	CCC	20.0	21.6	ug/L	1.50	8.20	20	
Vinyl Chloride	CCC	20.0	21.8	ug/L	0.339	9.00	20	
Bromoform	SPCC	20.0	20.5	ug/L	0.228	2.50	20	
Chlorobenzene	SPCC	20.0	19.8	ug/L	0.933	1.10	20	
Chloromethane	SPCC	20.0	20.4	ug/L	0.389	2.00	20	
1,1-Dichloroethane	SPCC	20.0	21.4	ug/L	0.531	7.10	20	
1,1,2,2-Tetrachloroethane	SPCC	20.0	21.0	ug/L	0.429	5.10	20	
Acetone		20.0	13.5	ug/L	0.0554	32.3	20	*
Benzene		20.0	21.0	ug/L	1.05	4.90	20	
Bromobenzene		20.0	21.4	ug/L	0.822	6.90	20	
Bromochloromethane		20.0	21.5	ug/L	0.173	7.50	20	
Bromodichloromethane		20.0	20.6	ug/L	0.423	2.80	20	
Bromomethane		20.0	24.9	ug/L	0.193	24.5	20	*
2-Butanone		20.0	19.4	ug/L	0.0636	3.20	20	
n-Butylbenzene		20.0	22.9	ug/L	2.40	14.7	20	
sec-Butylbenzene		20.0	21.1	ug/L	2.92	5.60	20	
tert-Butylbenzene		20.0	20.8	ug/L	0.491	3.90	20	
Carbon Disulfide		20.0	21.7	ug/L	0.753	8.50	20	
Carbon Tetrachloride		20.0	21.2	ug/L	0.549	5.80	20	
Dibromochloromethane		20.0	20.7	ug/L	0.369	3.70	20	
Chloroethane		20.0	22.4	ug/L	0.181	11.8	20	
2-Chlorotoluene		20.0	20.2	ug/L	2.16	1.10	20	
4-Chlorotoluene		20.0	20.5	ug/L	2.28	2.70	20	
1,2-Dibromo-3-Chloropropane		20.0	20.1	ug/L	0.0961	0.700	20	
1,2-Dibromoethane		20.0	21.7	ug/L	0.256	8.60	20	
Dibromomethane		20.0	20.4	ug/L	0.144	2.20	20	
1,2-Dichlorobenzene		20.0	20.1	ug/L	1.32	0.600	20	
1,3-Dichlorobenzene		20.0	20.0	ug/L	1.45	0.100	20	
1,4-Dichlorobenzene		20.0	20.9	ug/L	1.56	4.60	20	
Dichlorodifluoromethane		20.0	28.9	ug/L	0.377	44.7	20	*
1,2-Dichloroethane		20.0	20.8	ug/L	0.431	3.90	20	
cis-1,2-Dichloroethene		20.0	21.1	ug/L	0.296	5.60	20	
trans-1,2-Dichloroethene		20.0	23.0	ug/L	0.285	15.2	20	
1,3-Dichloropropane		20.0	21.4	ug/L	0.441	6.80	20	
2,2-Dichloropropane		20.0	18.9	ug/L	0.484	5.30	20	
cis-1,3-Dichloropropene		20.0	22.3	ug/L	0.455	11.3	20	
trans-1,3-Dichloropropene		20.0	21.2	ug/L	0.507	5.90	20	
1,1-Dichloropropene		20.0	21.1	ug/L	0.418	5.70	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3057723
Report generated 09/06/2013 10:10

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13081329 Run Date: 08/22/2013 Sample ID: WG442178-12
Instrument ID: HPMS11 Run Time: 13:50 Method: 8260B
File ID: 11M94470 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG442178 Cal ID: HPMS11 - 21-AUG-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		20.0	17.8	ug/L	0.123	11.0	20	
Hexachlorobutadiene		20.0	21.9	ug/L	0.458	9.70	20	
Isopropylbenzene		20.0	21.8	ug/L	1.65	9.00	20	
p-Isopropyltoluene		20.0	22.1	ug/L	2.64	10.4	20	
4-Methyl-2-Pentanone		20.0	19.0	ug/L	0.0546	5.10	20	
Methylene Chloride		20.0	20.4	ug/L	0.260	2.00	20	
Naphthalene		20.0	23.1	ug/L	1.81	15.6	20	
n-Propylbenzene		20.0	20.6	ug/L	3.34	2.80	20	
Styrene		20.0	22.5	ug/L	1.07	12.5	20	
1,1,1,2-Tetrachloroethane		20.0	21.8	ug/L	0.435	8.80	20	
Tetrachloroethene		20.0	21.4	ug/L	0.337	6.90	20	
1,2,3-Trichlorobenzene		20.0	21.7	ug/L	0.916	8.50	20	
1,2,4-Trichlorobenzene		20.0	22.2	ug/L	1.07	10.8	20	
1,1,1-Trichloroethane		20.0	21.5	ug/L	0.591	7.40	20	
1,1,2-Trichloroethane		20.0	22.6	ug/L	0.250	13.1	20	
Trichloroethene		20.0	24.0	ug/L	0.334	20.1	20	*
Trichlorofluoromethane		20.0	21.8	ug/L	0.614	8.80	20	
1,2,3-Trichloropropane		20.0	21.1	ug/L	0.166	5.30	20	
1,2,4-Trimethylbenzene		20.0	23.1	ug/L	2.90	15.5	20	
1,3,5-Trimethylbenzene		20.0	23.6	ug/L	2.84	17.9	20	
o-Xylene		20.0	19.9	ug/L	0.591	0.600	20	
m-,p-Xylene		40.0	42.7	ug/L	0.634	6.70	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3057723
Report generated 09/06/2013 10:10

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13081329 Run Date: 07/26/2013 Sample ID: WG439230-12
Instrument ID: HPMS6 Run Time: 21:13 Method: 8260B
File ID: 6M118385 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG439230 Cal ID: HPMS6 - 26-JUL-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.4	ug/L	0.486	0.700	20	
1,1-Dichloroethene	CCC	50.0	48.4	ug/L	0.498	3.20	20	
1,2-Dichloropropane	CCC	50.0	52.7	ug/L	0.318	5.30	20	
Ethylbenzene	CCC	50.0	52.0	ug/L	0.626	4.10	20	
Toluene	CCC	50.0	51.3	ug/L	1.68	2.50	20	
Vinyl Chloride	CCC	50.0	45.6	ug/L	0.248	8.80	20	
Bromoform	SPCC	50.0	54.6	ug/L	0.164	9.10	20	
Chlorobenzene	SPCC	50.0	48.4	ug/L	1.01	3.20	20	
Chloromethane	SPCC	50.0	51.5	ug/L	0.353	2.90	20	
1,1-Dichloroethane	SPCC	50.0	50.1	ug/L	0.587	0.200	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.6	ug/L	0.409	3.20	20	
Acetone		50.0	46.6	ug/L	0.0402	6.70	20	
Benzene		50.0	50.9	ug/L	1.07	1.80	20	
Bromobenzene		50.0	53.0	ug/L	0.886	5.90	20	
Bromochloromethane		50.0	50.6	ug/L	0.153	1.20	20	
Bromodichloromethane		50.0	49.7	ug/L	0.324	0.700	20	
Bromomethane		50.0	47.8	ug/L	0.150	4.30	20	
2-Butanone		50.0	52.0	ug/L	0.0685	4.10	20	
n-Butylbenzene		50.0	52.0	ug/L	2.72	3.90	20	
sec-Butylbenzene		50.0	48.0	ug/L	3.46	4.10	20	
tert-Butylbenzene		50.0	49.0	ug/L	0.608	2.00	20	
Carbon Disulfide		50.0	50.4	ug/L	0.845	0.800	20	
Carbon Tetrachloride		50.0	51.6	ug/L	0.427	3.10	20	
Dibromochloromethane		50.0	52.4	ug/L	0.303	4.80	20	
Chloroethane		50.0	52.3	ug/L	0.235	4.60	20	
2-Chlorotoluene		50.0	48.8	ug/L	2.84	2.40	20	
4-Chlorotoluene		50.0	45.6	ug/L	2.28	8.80	20	
1,2-Dibromo-3-Chloropropane		50.0	52.5	ug/L	0.0635	5.10	20	
1,2-Dibromoethane		50.0	52.1	ug/L	0.215	4.20	20	
Dibromomethane		50.0	53.5	ug/L	0.110	7.00	20	
1,2-Dichlorobenzene		50.0	47.6	ug/L	1.35	4.70	20	
1,3-Dichlorobenzene		50.0	47.4	ug/L	1.62	5.30	20	
1,4-Dichlorobenzene		50.0	51.2	ug/L	1.71	2.30	20	
Dichlorodifluoromethane		50.0	68.0	ug/L	0.315	36.0	20	*
1,2-Dichloroethane		50.0	52.2	ug/L	0.315	4.50	20	
cis-1,2-Dichloroethene		50.0	52.4	ug/L	0.306	4.80	20	
trans-1,2-Dichloroethene		50.0	52.0	ug/L	0.294	4.00	20	
1,3-Dichloropropane		50.0	52.4	ug/L	0.374	4.80	20	
2,2-Dichloropropane		50.0	47.1	ug/L	0.418	5.90	20	
cis-1,3-Dichloropropene		50.0	54.8	ug/L	0.395	9.70	20	
trans-1,3-Dichloropropene		50.0	50.4	ug/L	0.405	0.900	20	
1,1-Dichloropropene		50.0	51.5	ug/L	0.398	3.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3057723
Report generated 09/06/2013 10:10

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13081329 Run Date: 07/26/2013 Sample ID: WG439230-12
Instrument ID: HPMS6 Run Time: 21:13 Method: 8260B
File ID: 6M118385 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG439230 Cal ID: HPMS6 - 26-JUL-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	49.2	ug/L	0.141	1.50	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.523	4.20	20	
Isopropylbenzene		50.0	48.5	ug/L	1.74	3.00	20	
p-Isopropyltoluene		50.0	48.2	ug/L	2.99	3.60	20	
4-Methyl-2-Pentanone		50.0	52.2	ug/L	0.0515	4.40	20	
Methylene Chloride		50.0	48.8	ug/L	0.247	2.40	20	
Naphthalene		50.0	50.7	ug/L	1.43	1.30	20	
n-Propylbenzene		50.0	47.4	ug/L	3.93	5.10	20	
Styrene		50.0	53.0	ug/L	1.15	5.90	20	
1,1,1,2-Tetrachloroethane		50.0	53.8	ug/L	0.400	7.60	20	
Tetrachloroethene		50.0	51.5	ug/L	0.475	3.00	20	
1,2,3-Trichlorobenzene		50.0	50.9	ug/L	0.827	1.90	20	
1,2,4-Trichlorobenzene		50.0	50.7	ug/L	1.02	1.40	20	
1,1,1-Trichloroethane		50.0	51.0	ug/L	0.468	2.00	20	
1,1,2-Trichloroethane		50.0	53.1	ug/L	0.220	6.30	20	
Trichloroethene		50.0	56.7	ug/L	0.337	13.5	20	
Trichlorofluoromethane		50.0	53.6	ug/L	0.473	7.10	20	
1,2,3-Trichloropropane		50.0	53.1	ug/L	0.122	6.20	20	
1,2,4-Trimethylbenzene		50.0	52.1	ug/L	3.18	4.30	20	
1,3,5-Trimethylbenzene		50.0	52.6	ug/L	3.20	5.10	20	
o-Xylene		50.0	48.0	ug/L	0.668	4.00	20	
m-,p-Xylene		100	101	ug/L	0.725	1.50	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3057723
Report generated 09/06/2013 10:10

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13081329 Run Date: 08/28/2013 Sample ID: WG442931-02
Instrument ID: HPMS11 Run Time: 15:55 Method: 8260B
File ID: 11M94673 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG442932 Cal ID: HPMS11 - 21-AUG-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.0	ug/L	0.517	3.99	20	
1,1-Dichloroethene	CCC	50.0	45.9	ug/L	0.419	8.15	20	
1,2-Dichloropropane	CCC	50.0	52.7	ug/L	0.275	5.35	20	
Ethylbenzene	CCC	50.0	53.2	ug/L	0.542	6.36	20	
Toluene	CCC	50.0	52.7	ug/L	1.46	5.41	20	
Vinyl Chloride	CCC	50.0	47.4	ug/L	0.294	5.21	20	
Bromoform	SPCC	50.0	49.2	ug/L	0.219	1.56	20	
Chlorobenzene	SPCC	50.0	52.5	ug/L	0.990	4.97	20	
Chloromethane	SPCC	50.0	37.8	ug/L	0.284	24.3	20	*
1,1-Dichloroethane	SPCC	50.0	52.0	ug/L	0.515	3.96	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	56.1	ug/L	0.458	12.2	20	
Xylenes		150	164	ug/L	0.651	9.35	20	
Acetone		50.0	38.7	ug/L	0.0635	22.5	20	*
Benzene		50.0	52.5	ug/L	1.05	5.02	20	
Bromobenzene		50.0	53.3	ug/L	0.820	6.60	20	
Bromochloromethane		50.0	53.8	ug/L	0.174	7.62	20	
Bromodichloromethane		50.0	46.5	ug/L	0.383	7.06	20	
Bromomethane		50.0	46.8	ug/L	0.146	6.46	20	
2-Butanone		50.0	49.0	ug/L	0.0645	1.99	20	
n-Butylbenzene		50.0	53.9	ug/L	2.25	7.79	20	
sec-Butylbenzene		50.0	54.9	ug/L	3.04	9.85	20	
tert-Butylbenzene		50.0	57.4	ug/L	0.542	14.7	20	
Carbon Disulfide		50.0	47.2	ug/L	0.655	5.63	20	
Carbon Tetrachloride		50.0	44.5	ug/L	0.462	11.0	20	
Dibromochloromethane		50.0	48.6	ug/L	0.346	2.76	20	
Chloroethane		50.0	53.3	ug/L	0.172	6.57	20	
2-Chlorotoluene		50.0	54.0	ug/L	2.31	8.08	20	
4-Chlorotoluene		50.0	46.1	ug/L	2.05	7.86	20	
1,2-Dibromo-3-Chloropropane		50.0	45.2	ug/L	0.0862	9.69	20	
1,2-Dibromoethane		50.0	52.7	ug/L	0.248	5.45	20	
Dibromomethane		50.0	48.9	ug/L	0.138	2.21	20	
1,2-Dichlorobenzene		50.0	53.5	ug/L	1.40	7.04	20	
1,3-Dichlorobenzene		50.0	53.8	ug/L	1.56	7.59	20	
1,4-Dichlorobenzene		50.0	52.2	ug/L	1.56	4.36	20	
Dichlorodifluoromethane		50.0	48.3	ug/L	0.252	3.41	20	
1,2-Dichloroethane		50.0	41.3	ug/L	0.343	17.4	20	
cis-1,2-Dichloroethene		50.0	54.2	ug/L	0.304	8.41	20	
trans-1,2-Dichloroethene		50.0	56.1	ug/L	0.278	12.3	20	
1,3-Dichloropropane		50.0	50.6	ug/L	0.418	1.22	20	
2,2-Dichloropropane		50.0	42.7	ug/L	0.439	14.6	20	
cis-1,3-Dichloropropene		50.0	51.7	ug/L	0.423	3.32	20	
trans-1,3-Dichloropropene		50.0	50.4	ug/L	0.483	0.900	20	

CCV - Modified 03/05/2008
PDF File ID: 3057725
Report generated 09/06/2013 10:10

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13081329 Run Date: 08/28/2013 Sample ID: WG442931-02
Instrument ID: HPMS11 Run Time: 15:55 Method: 8260B
File ID: 11M94673 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG442932 Cal ID: HPMS11 - 21-AUG-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.3	ug/L	0.398	0.632	20	
2-Hexanone		50.0	45.6	ug/L	0.126	8.75	20	
Hexachlorobutadiene		50.0	48.8	ug/L	0.407	2.38	20	
Isopropylbenzene		50.0	54.5	ug/L	1.65	9.02	20	
p-Isopropyltoluene		50.0	55.4	ug/L	2.65	10.8	20	
4-Methyl-2-Pentanone		50.0	49.1	ug/L	0.0565	1.74	20	
Methylene Chloride		50.0	51.3	ug/L	0.262	2.63	20	
Naphthalene		50.0	55.1	ug/L	1.72	10.2	20	
n-Propylbenzene		50.0	53.2	ug/L	3.46	6.42	20	
Styrene		50.0	56.9	ug/L	1.09	13.8	20	
1,1,1,2-Tetrachloroethane		50.0	49.3	ug/L	0.394	1.48	20	
Tetrachloroethene		50.0	52.7	ug/L	0.333	5.45	20	
1,2,3-Trichlorobenzene		50.0	52.0	ug/L	0.878	4.00	20	
1,2,4-Trichlorobenzene		50.0	53.3	ug/L	1.03	6.69	20	
1,1,1-Trichloroethane		50.0	45.2	ug/L	0.497	9.62	20	
1,1,2-Trichloroethane		50.0	53.5	ug/L	0.237	7.01	20	
Trichloroethene		50.0	53.8	ug/L	0.300	7.62	20	
Trichlorofluoromethane		50.0	42.3	ug/L	0.477	15.4	20	
1,2,3-Trichloropropane		50.0	48.4	ug/L	0.152	3.23	20	
1,2,4-Trimethylbenzene		50.0	53.2	ug/L	2.67	6.34	20	
1,3,5-Trimethylbenzene		50.0	54.2	ug/L	2.61	8.34	20	
o-Xylene		50.0	55.1	ug/L	0.655	10.2	20	
m-,p-Xylene		100	109	ug/L	0.647	8.92	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3057725
Report generated 09/06/2013 10:10

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13081329 Run Date: 08/29/2013 Sample ID: WG443008-02
Instrument ID: HPMS6 Run Time: 07:40 Method: 8260B
File ID: 6M119426 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG443009 Cal ID: HPMS6 - 26-JUL-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.6	ug/L	0.497	3.12	20	
1,1-Dichloroethene	CCC	50.0	48.9	ug/L	0.503	2.19	20	
1,2-Dichloropropane	CCC	50.0	48.1	ug/L	0.290	3.81	20	
Ethylbenzene	CCC	50.0	50.3	ug/L	0.605	0.674	20	
Toluene	CCC	50.0	49.8	ug/L	1.63	0.363	20	
Vinyl Chloride	CCC	50.0	57.6	ug/L	0.314	15.2	20	
Bromoform	SPCC	50.0	57.6	ug/L	0.173	15.2	20	
Chlorobenzene	SPCC	50.0	50.1	ug/L	1.05	0.268	20	
Chloromethane	SPCC	50.0	45.4	ug/L	0.312	9.17	20	
1,1-Dichloroethane	SPCC	50.0	50.0	ug/L	0.586	0.0184	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.5	ug/L	0.361	8.94	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3057725
Report generated 09/06/2013 10:10

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13081329
Instrument ID: HPMS11
Workgroup (AAB#): WG442932

ICAL CCV Number: WG442178-08
CAL ID: HPMS11 - 21-AUG-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG442178-08	NA	NA	264881	485611	615379
Upper Limit	NA	NA	529762	971222	1230758
Lower Limit	NA	NA	132441	242806	307690
L13081329-01	1.00	01	327601	597729	771675
WG442932-01	1.00	01	337502	616957	807400
WG442932-02	1.00	01	349500	628669	806721
WG442932-03	1.00	01	355801	636233	816589

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3057726
Report generated 09/06/2013 10:10

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13081329
Instrument ID: HPMS6
Workgroup (AAB#): WG443009

ICAL CCV Number: WG439230-08
CAL ID: HPMS6-26-JUL-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG439230-08	NA	NA	292007	585843	849520
Upper Limit	NA	NA	584014	1171686	1699040
Lower Limit	NA	NA	146004	292922	424760
L13081329-01	10.0	DL01	201452	409062	560887
WG443009-01	1.00	01	216797	449217	616204
WG443009-02	1.00	01	236509	461637	634447
WG443009-03	1.00	01	245777	473303	648508

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3057726
Report generated 09/06/2013 10:10

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13081329
Instrument ID: HPMS6
Workgroup (AAB#): WG443009

ICAL CCV Number: WG439230-08
CAL ID: HPMS6-26-JUL-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG439230-08	NA	NA	18.24	14.69	10.21
Upper Limit	NA	NA	18.74	15.19	10.71
Lower Limit	NA	NA	17.74	14.19	9.71
L13081329-01	10.0	DL01	18.23	14.68	10.21
WG443009-01	1.00	01	18.23	14.68	10.2
WG443009-02	1.00	01	18.23	14.68	10.2
WG443009-03	1.00	01	18.23	14.68	10.2

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3057728
Report generated: 09/06/2013 10:10

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13081329
Instrument ID: HPMS11
Workgroup (AAB#): WG442932

ICAL CCV Number: WG442178-08
CAL ID: HPMS11-21-AUG-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG442178-08	NA	NA	16.49	13.69	10.07
Upper Limit	NA	NA	16.99	14.19	10.57
Lower Limit	NA	NA	15.99	13.19	9.57
L13081329-01	1.00	01	16.48	13.68	10.06
WG442932-01	1.00	01	16.48	13.68	10.06
WG442932-02	1.00	01	16.48	13.68	10.06
WG442932-03	1.00	01	16.48	13.68	10.06

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3057728
Report generated: 09/06/2013 10:10

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082813\11M94695.D Vial: 24
Acq On : 29 Aug 2013 3:26 Operator: FJB
Sample : L13081329-01 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 29 09:20:47 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Fri Aug 23 12:13:25 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.06	96	771675	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.68	117	597729	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.48	152	327601	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.08	111	228665	25.4474 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.80%		
43) 1,2-Dichloroethane-d4	9.68	65	225120	21.6765 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.72%		
58) Toluene-d8	11.92	98	798382	27.7891 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 111.16%#		
80) p-Bromofluorobenzene	15.08	95	310396	25.8980 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.60%		

Target Compounds

					Qvalue
3) Chloromethane	3.31	50	1734	Below Cal #	1
4) Vinyl Chloride	3.52	62	3692	0.2774 ug/L #	1
5) 1,3-Butadiene	3.58	54	5161	0.6554 ug/L	86
10) Isoprene	5.52	67	1380	0.1487 ug/L	79
13) Acetone	5.79	43	13153	5.2035 ug/L #	27
14) 1,1-Dichloroethene	6.02	61	6588541	467.7069 ug/L	84
21) Acrylonitrile	6.95	53	3779	2.1252 ug/L	90
27) 1,1-Dichloroethane	7.80	63	285985	18.6894 ug/L	99
29) 2-Butanone	8.33	43	4807	2.3678 ug/L #	68
30) Propionitrile	8.44	54	2515	4.0927 ug/L #	59
32) cis-1,2-Dichloroethene	8.60	96	10848	1.2526 ug/L	72
33) Chloroform	8.80	83	41416	2.4938 ug/L	97
45) 1,2-Dichloroethane	9.79	62	1321305	103.1159 ug/L	96
46) Benzene	9.83	78	8296	0.2691 ug/L	84
47) Trichloroethene	10.55	130	11982	1.3942 ug/L	92
50) 1,4-Dioxane	11.02	88	11944	306.2889 ug/L	88
59) Toluene	12.01	91	5190	0.1563 ug/L	97
63) 1,1,2-Trichloroethane	12.39	97	22032	4.1624 ug/L	99
94) 1,4-Dichlorobenzene	16.52	146	5614	0.2869 ug/L #	1

(#) = qualifier out of range (m) = manual integration
11M94695.D 8260WT.M Thu Aug 29 09:20:47 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082813\11M94695.D Vial: 24
Acq On : 29 Aug 2013 3:26 Operator: FJB
Sample : L13081329-01 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 29 9:20 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Fri Aug 23 12:13:25 2013
Response via : Initial Calibration

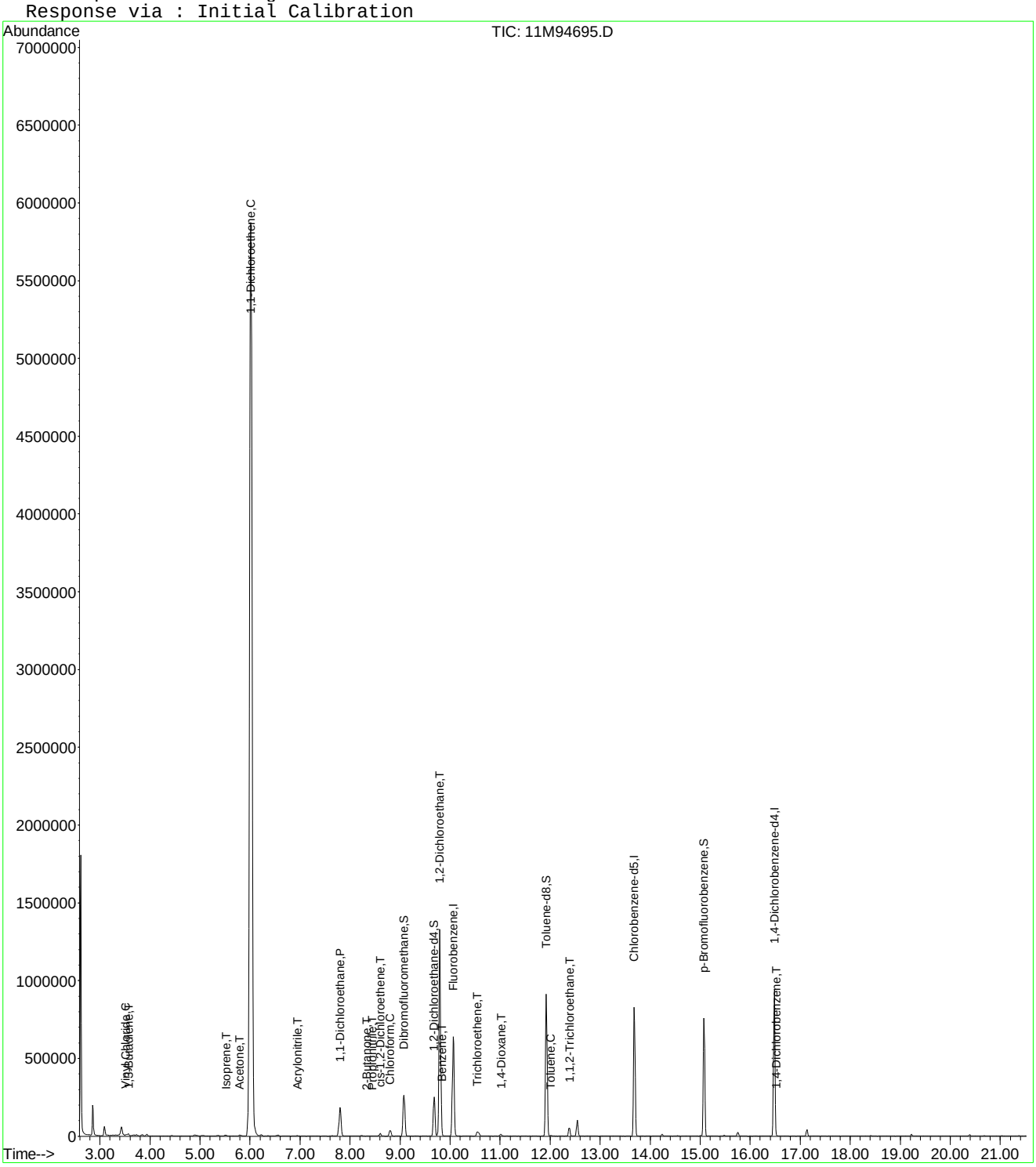

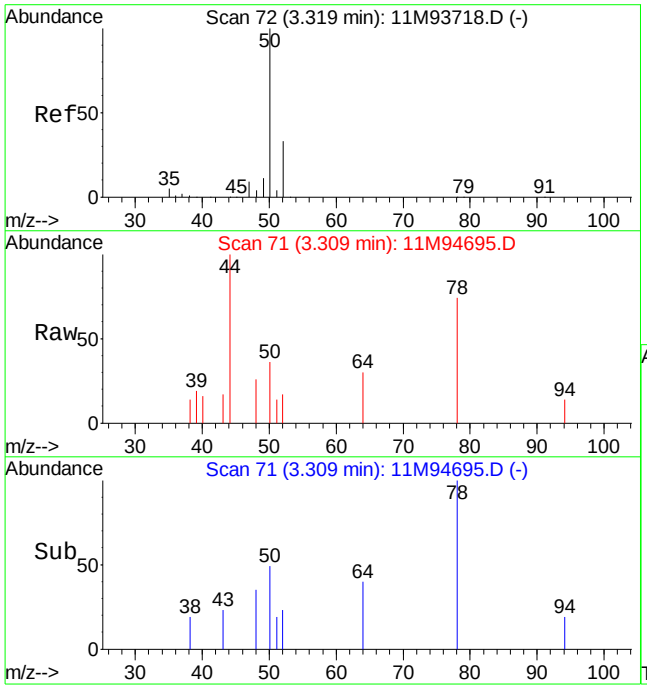

#3
Chloromethane
Concen: Below Cal
RT: 3.31 min Scan# 71
Delta R.T. 0.00 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion: 50 Resp: 1734

Ion	Ratio	Lower	Upper
50	100		
52	108.7	20.3	47.3#

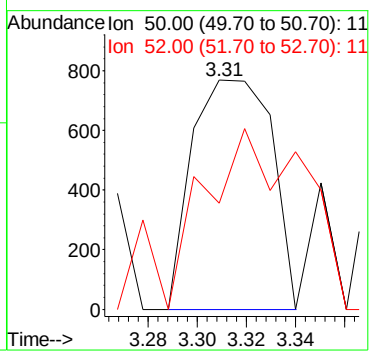

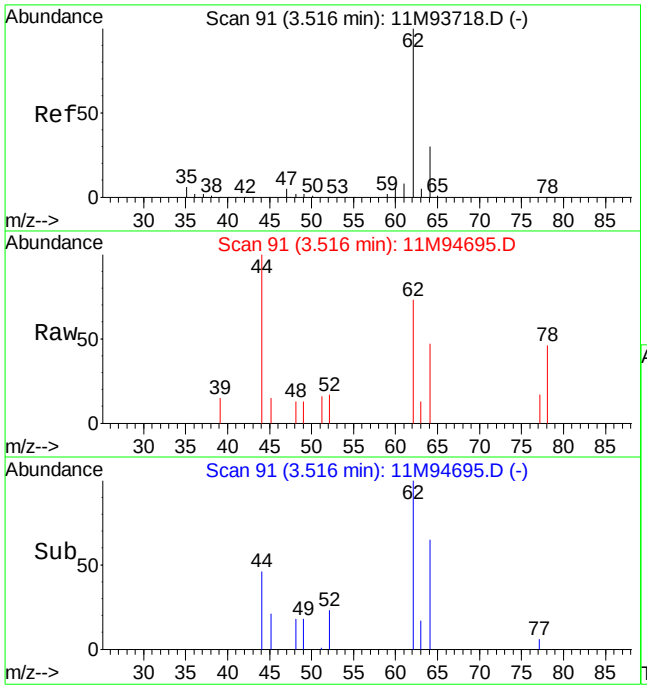

#4
Vinyl Chloride
Concen: 0.28 ug/L
RT: 3.52 min Scan# 91
Delta R.T. 0.00 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion: 62 Resp: 3692

Ion	Ratio	Lower	Upper
62	100		
64	158.6	19.0	44.4#

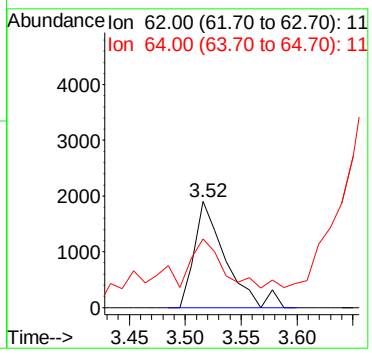

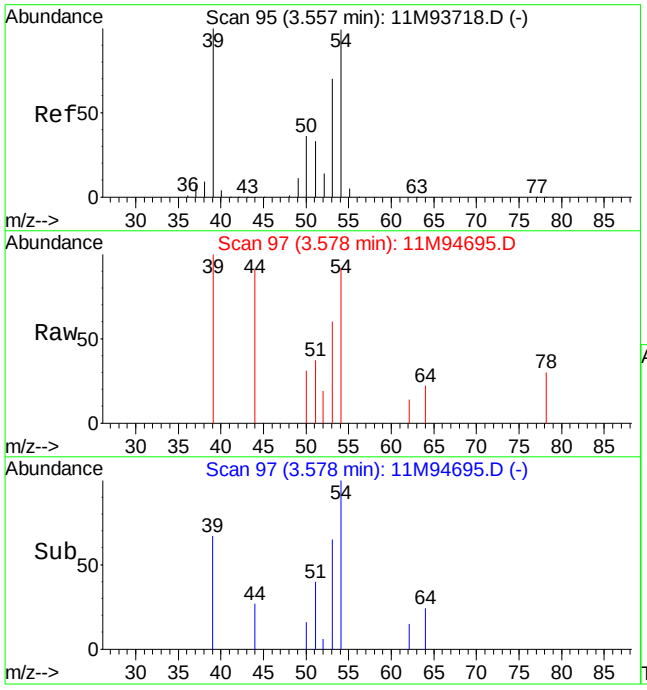

#5
1,3-Butadiene
Concen: 0.66 ug/L
RT: 3.58 min Scan# 97
Delta R.T. 0.02 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion: 54 Resp: 5161

Ion	Ratio	Lower	Upper
54	100		
39	111.8	58.4	136.2
53	79.8	42.0	98.0

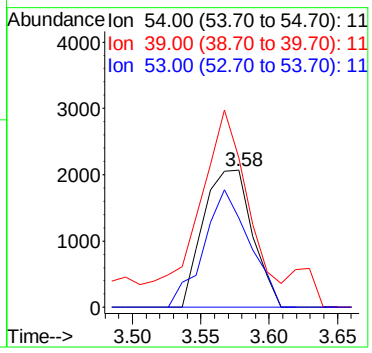

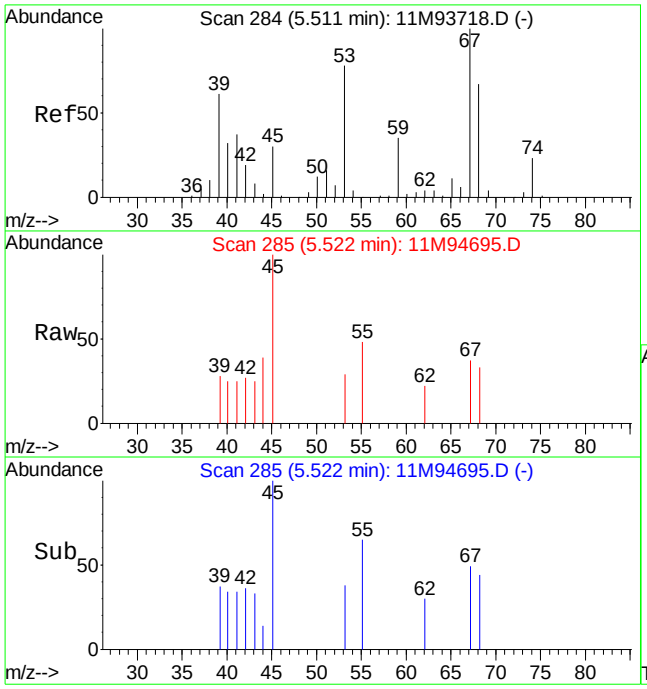

#10
Isoprene
Concen: 0.15 ug/L
RT: 5.52 min Scan# 285
Delta R.T. 0.01 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion: 67 Resp: 1380

Ion	Ratio	Lower	Upper
67	100		
53	70.5	54.2	126.4

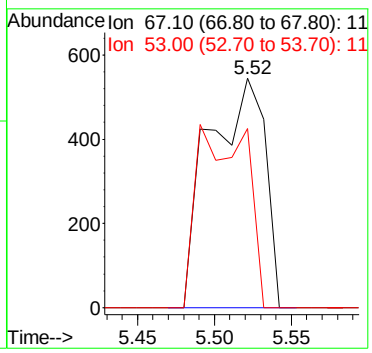

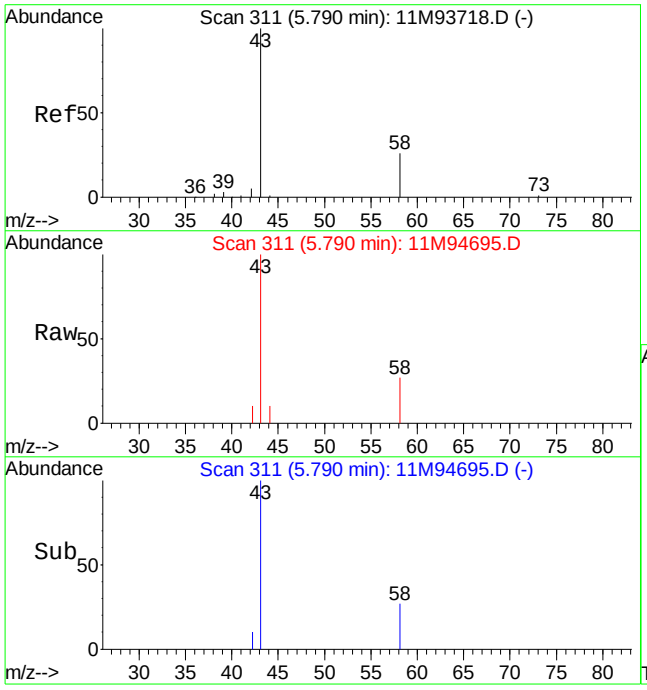

#13
Acetone
Concen: 5.20 ug/L
RT: 5.79 min Scan# 311
Delta R.T. 0.00 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion: 43 Resp: 13153

Ion	Ratio	Lower	Upper
43	100		
58	58.6	13.9	32.3#

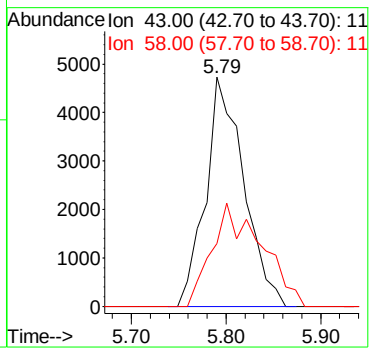

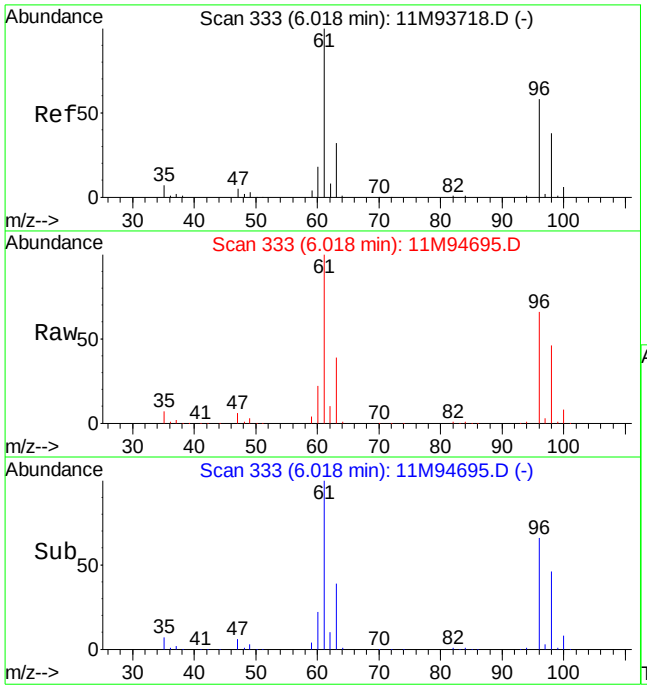

#14
1,1-Dichloroethene
Concen: 467.71 ug/L
RT: 6.02 min Scan# 333
Delta R.T. 0.00 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion: 61 Resp: 6588541

Ion	Ratio	Lower	Upper
61	100		
96	63.5	31.4	73.4

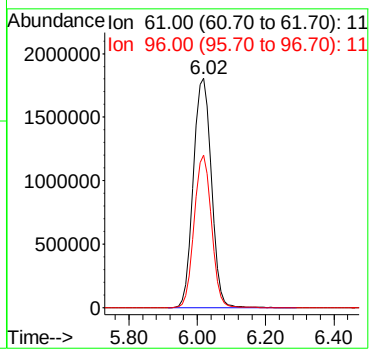

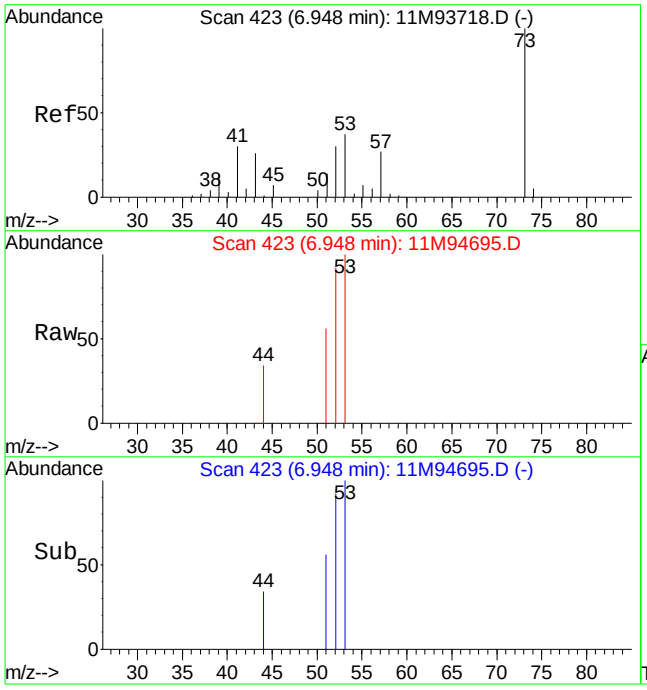

#21
Acrylonitrile
Concen: 2.13 ug/L
RT: 6.95 min Scan# 423
Delta R.T. 0.01 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion: 53 Resp: 3779

Ion	Ratio	Lower	Upper
53	100		
52	89.1	48.4	112.8

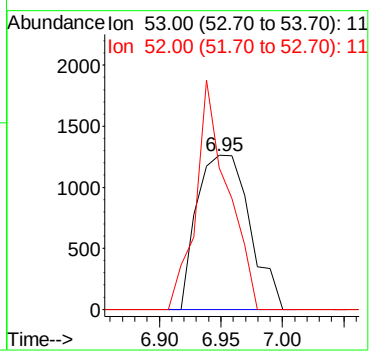

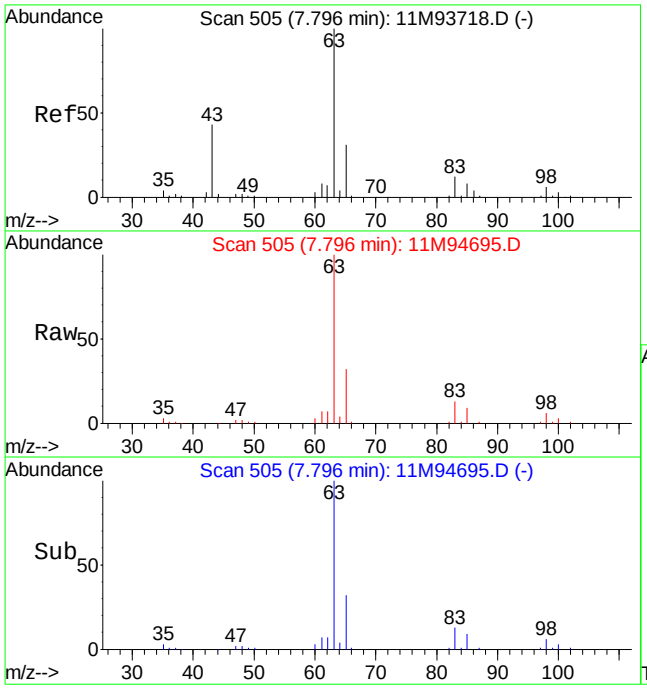

#27
1,1-Dichloroethane
Concen: 18.69 ug/L
RT: 7.80 min Scan# 505
Delta R.T. 0.00 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion: 63 Resp: 285985

Ion	Ratio	Lower	Upper
63	100		
65	31.1	18.2	42.4
83	12.9	8.0	18.6

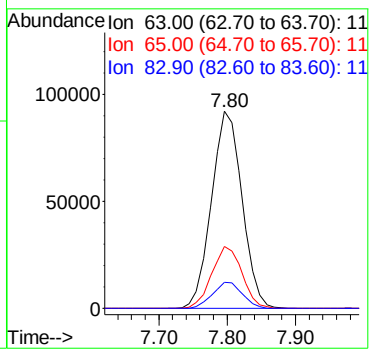

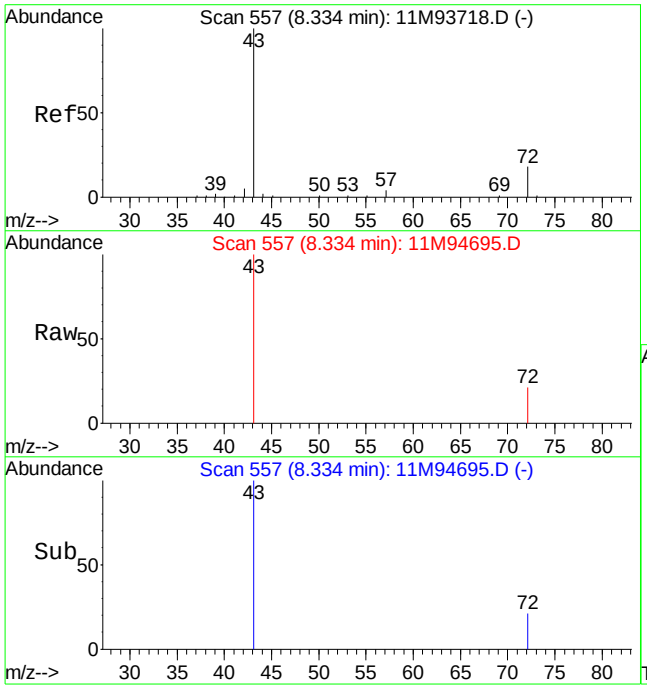

#29
2-Butanone
Concen: 2.37 ug/L
RT: 8.33 min Scan# 557
Delta R.T. 0.00 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion: 43 Resp: 4807

Ion	Ratio	Lower	Upper
43	100		
72	4.3	11.0	25.8#

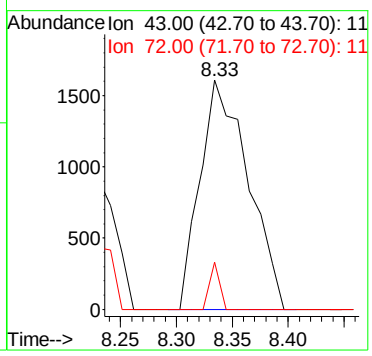

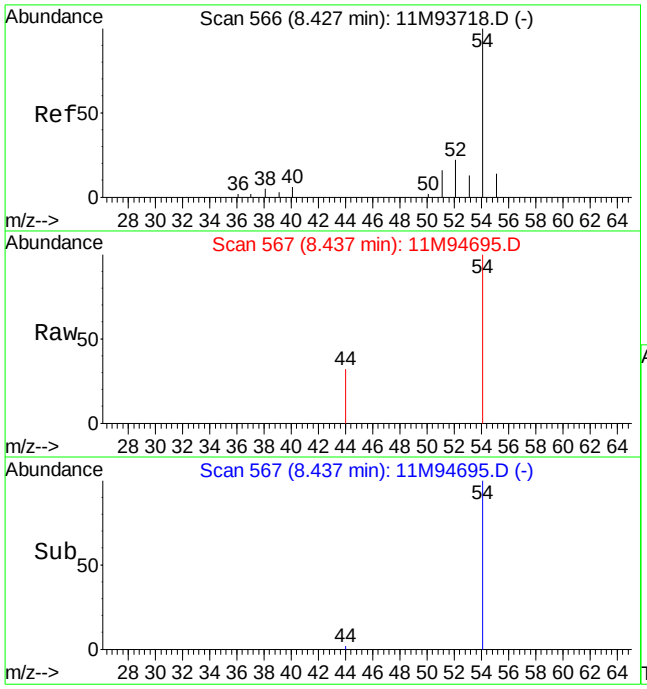

#30
Propionitrile
Concen: 4.09 ug/L
RT: 8.44 min Scan# 567
Delta R.T. 0.01 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion: 54 Resp: 2515

Ion	Ratio	Lower	Upper
54	100		
55	0.0	11.1	25.9#

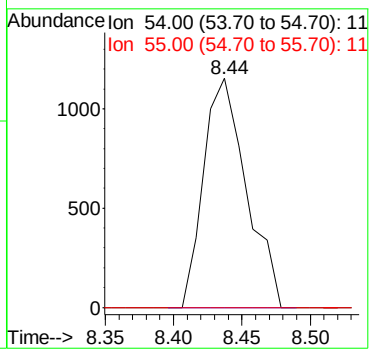

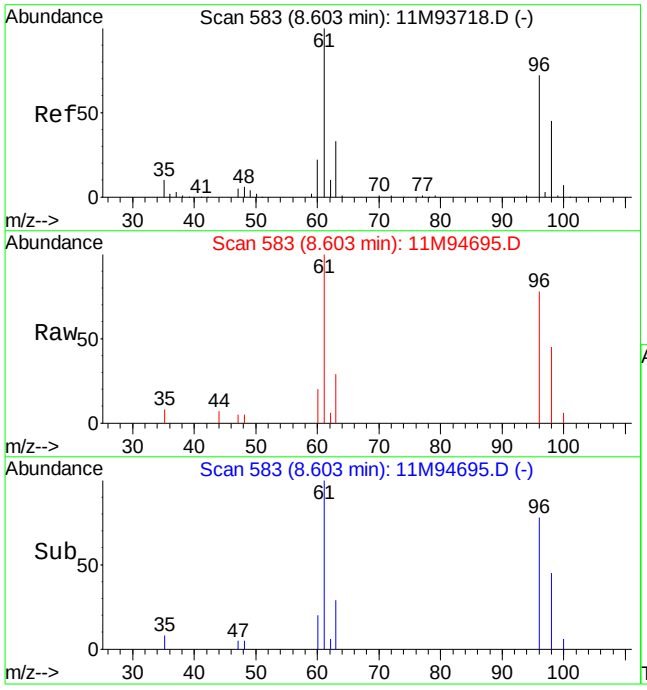

#32
cis-1,2-Dichloroethene
Concen: 1.25 ug/L
RT: 8.60 min Scan# 583
Delta R.T. 0.00 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion: 96 Resp: 10848

Ion	Ratio	Lower	Upper
96	100		
61	126.9	99.2	231.4

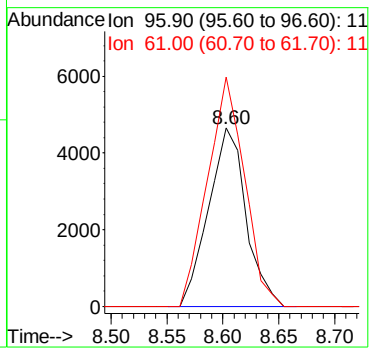

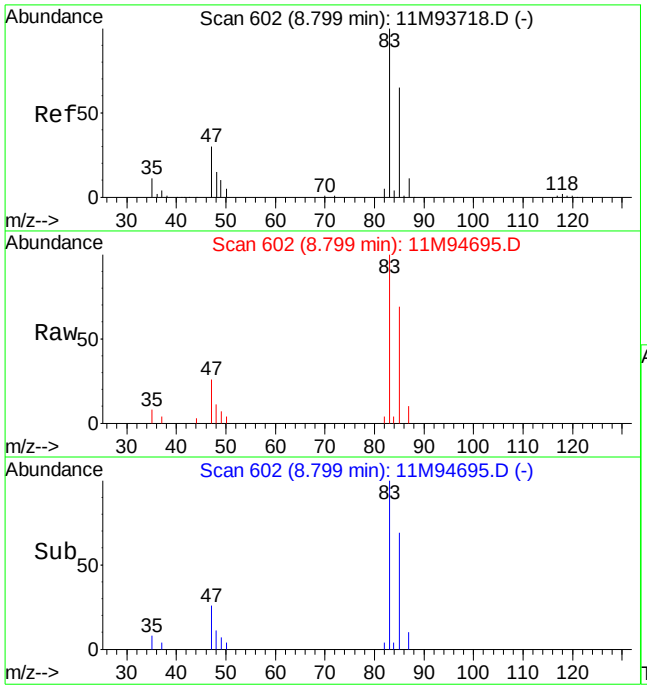

#33
Chloroform
Concen: 2.49 ug/L
RT: 8.80 min Scan# 602
Delta R.T. 0.00 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion: 83 Resp: 41416

Ion	Ratio	Lower	Upper
83	100		
85	67.0	39.0	91.0

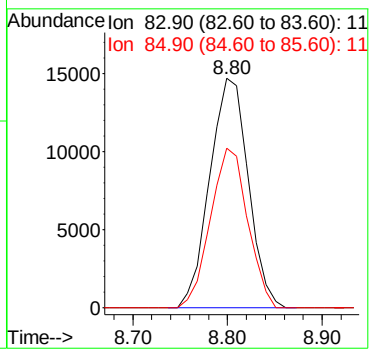

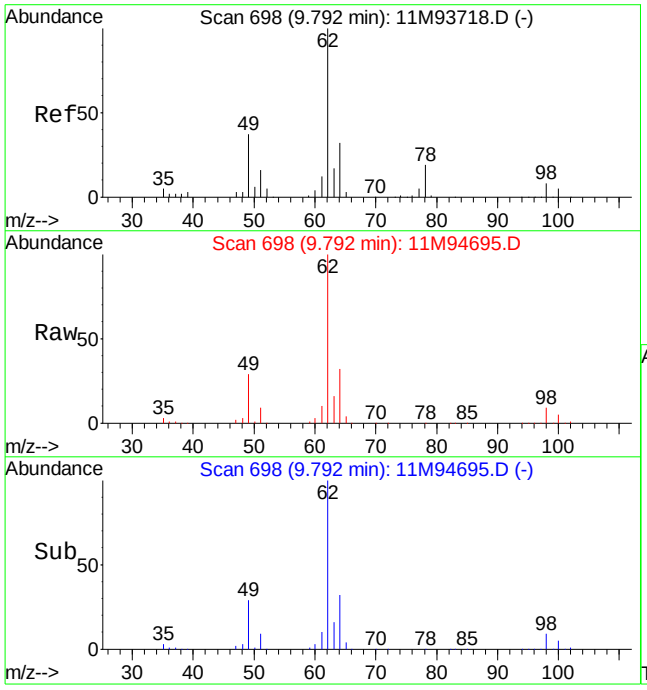

#45
1,2-Dichloroethane
Concen: 103.12 ug/L
RT: 9.79 min Scan# 698
Delta R.T. 0.00 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion: 62 Resp: 1321305

Ion	Ratio	Lower	Upper
62	100		
64	32.2	18.8	43.8
49	28.4	19.4	45.4

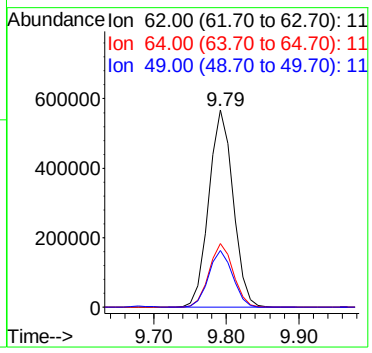

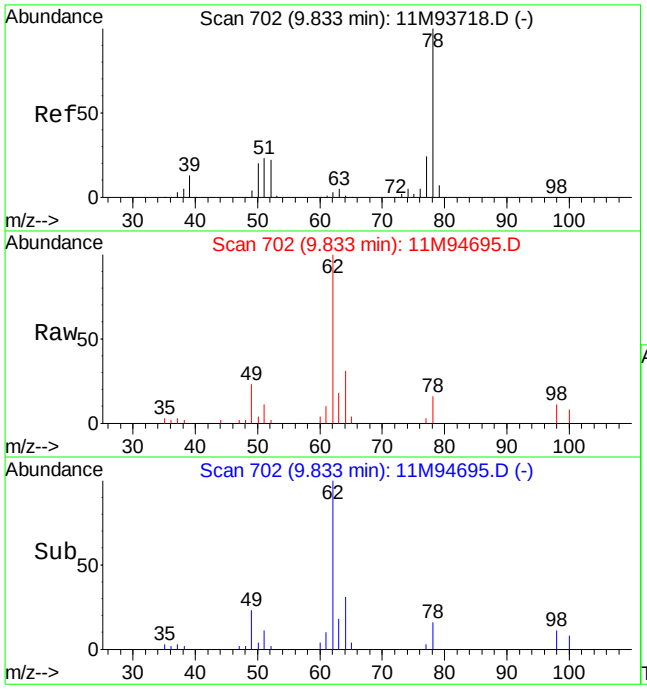

#46
Benzene
Concen: 0.27 ug/L
RT: 9.83 min Scan# 702
Delta R.T. 0.00 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion: 78 Resp: 8296

Ion	Ratio	Lower	Upper
78	100		
77	16.3	14.5	33.9

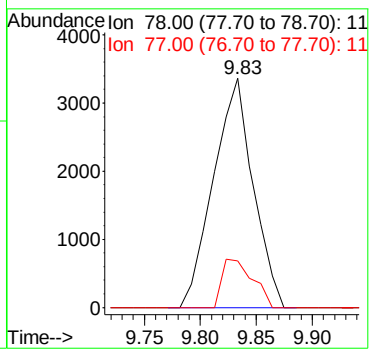

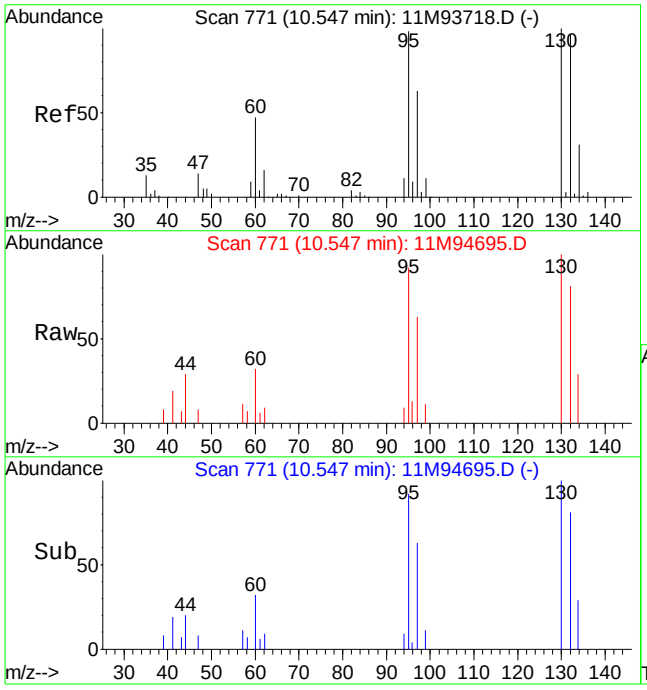

#47
Trichloroethene
Concen: 1.39 ug/L
RT: 10.55 min Scan# 771
Delta R.T. 0.00 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion:130 Resp: 11982

Ion	Ratio	Lower	Upper
130	100		
132	87.5	57.9	135.1
95	94.2	60.4	140.8

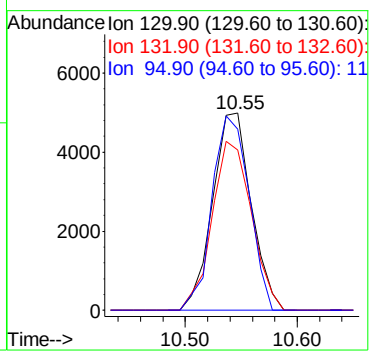

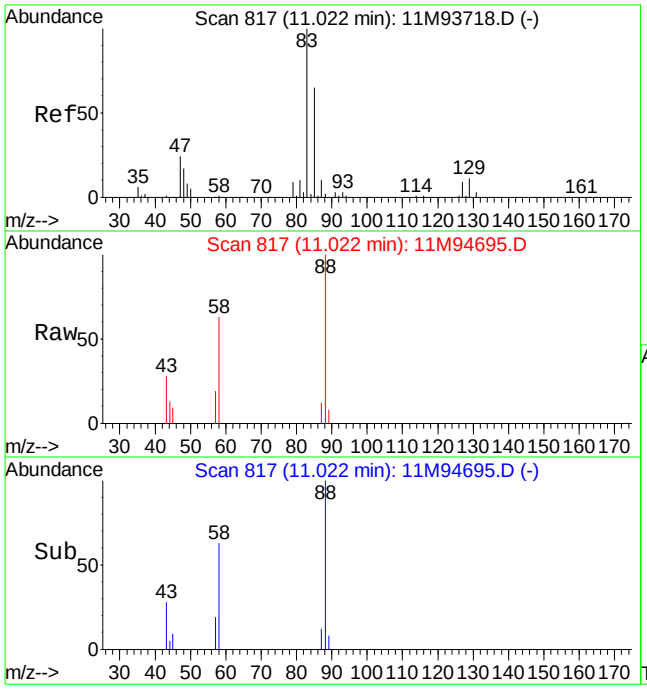

#50
1,4-Dioxane
Concen: 306.29 ug/L
RT: 11.02 min Scan# 817
Delta R.T. 0.00 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion: 88 Resp: 11944

Ion	Ratio	Lower	Upper
88	100		
58	70.6	36.8	85.8

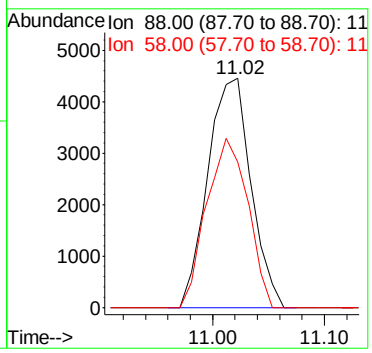

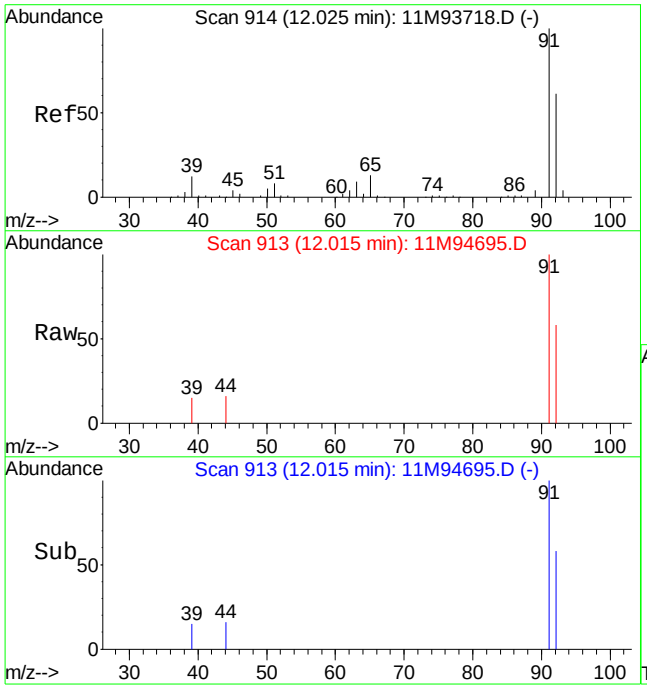

#59
Toluene
Concen: 0.16 ug/L
RT: 12.01 min Scan# 913
Delta R.T. -0.01 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion: 91 Resp: 5190

Ion	Ratio	Lower	Upper
91	100		
92	57.8	35.9	83.9

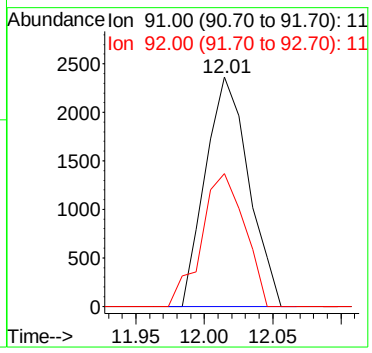

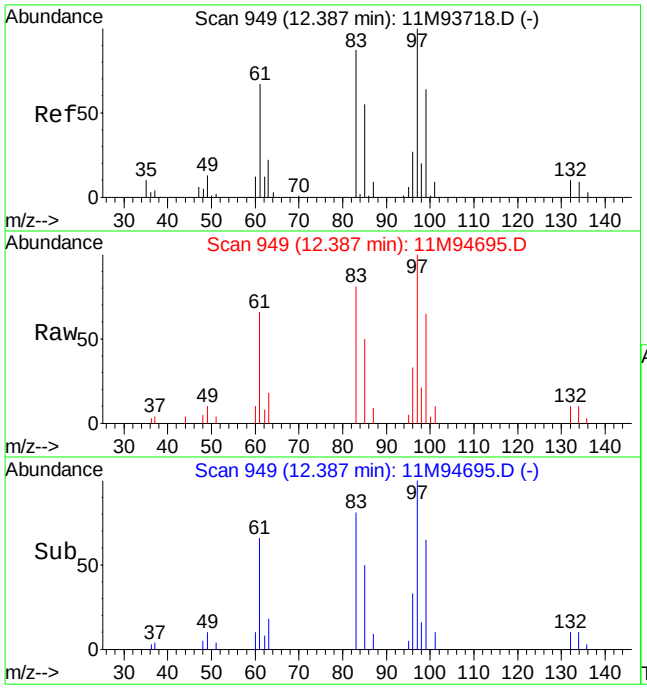

#63
1,1,2-Trichloroethane
Concen: 4.16 ug/L
RT: 12.39 min Scan# 949
Delta R.T. 0.00 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion: 97 Resp: 22032

Ion	Ratio	Lower	Upper
97	100		
83	81.9	48.7	113.5

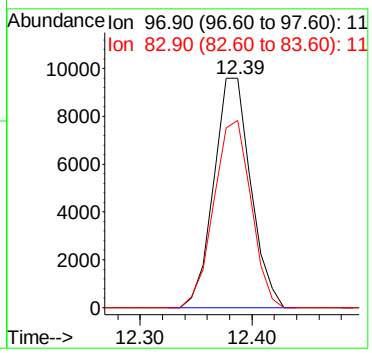

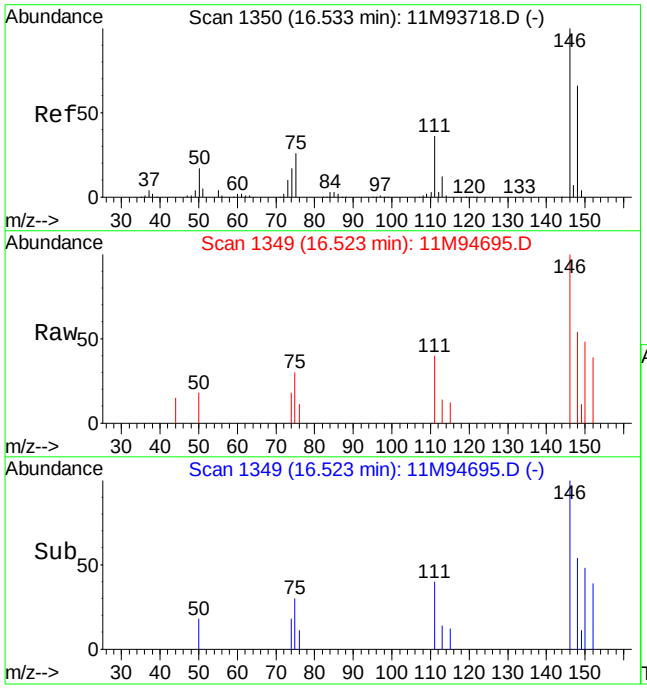

#94
1,4-Dichlorobenzene
Concen: 0.29 ug/L
RT: 16.52 min Scan# 1349
Delta R.T. -0.01 min
Lab File: 11M94695.D
Acq: 29 Aug 2013 3:26

Tgt Ion:146 Resp: 5614

Ion	Ratio	Lower	Upper
146	100		
111	110.1	24.5	57.3#

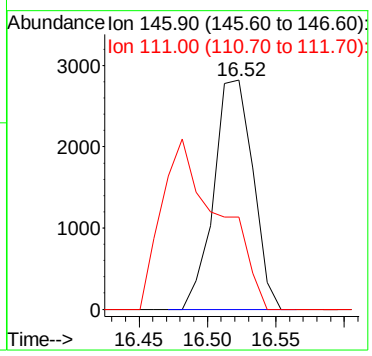

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082913\6M119436.D Vial: 13
Acq On : 29 Aug 2013 12:53 Operator: FJB
Sample : L13081329-01 B 10X 826-LOW D1 Inst : HPMS6
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 15:34:40 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	560887	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.68	117	409062	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.23	152	201452	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.01	111	165328	28.0875 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.36%		
43) 1,2-Dichloroethane-d4	9.74	65	129804	26.0261 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.12%		
58) Toluene-d8	12.48	98	582000	26.5368 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.16%		
80) p-Bromofluorobenzene	16.45	95	181344	23.6678 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.68%		

Target Compounds

					Qvalue
5) 1,3-Butadiene	3.26	54	332	Below Cal #	45
13) Acetone	5.32	43	211	Below Cal #	44
14) 1,1-Dichloroethene	5.53	61	598674	51.8477 ug/L	95
15) Tert-Butyl Alcohol	5.53	59	20602	100.1003 ug/L #	52
27) 1,1-Dichloroethane	7.52	63	21076	1.6045 ug/L	97
33) Chloroform	8.68	83	2124	0.1965 ug/L #	91
36) Tetrahydrofuran	8.98	42	838	0.8525 ug/L #	51
45) 1,2-Dichloroethane	9.88	62	77741	11.4929 ug/L	86
63) 1,1,2-Trichloroethane	13.07	97	705	0.2084 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M119436.D 8260WTR.M Thu Aug 29 15:34:40 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082913\6M119436.D Vial: 13
Acq On : 29 Aug 2013 12:53 Operator: FJB
Sample : L13081329-01 B 10X 826-LOW D1 Inst : HPMS6
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 15:34 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

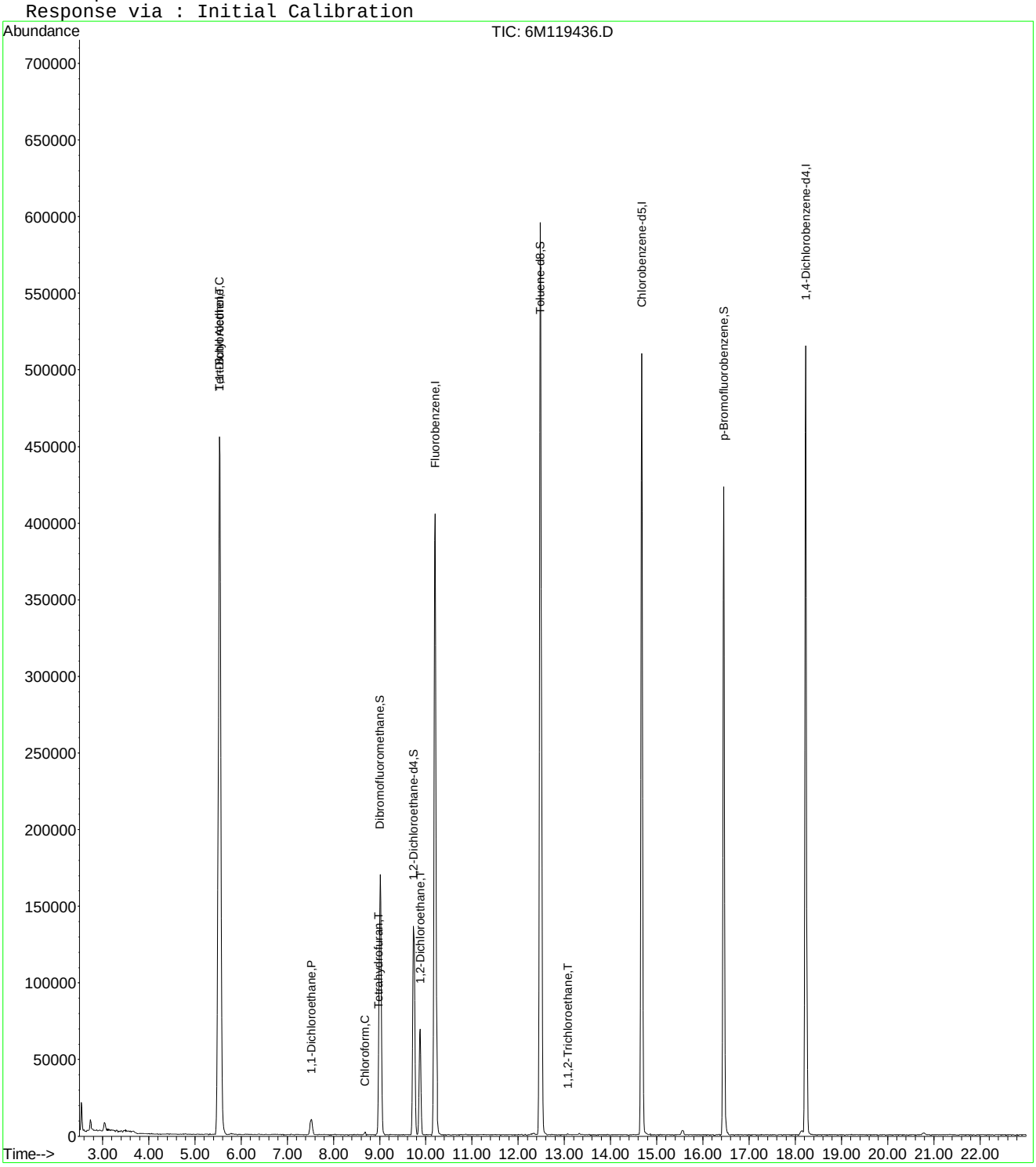

6M119436.D 8260WTR.M Thu Aug 29 15:34:40 2013 Page 2

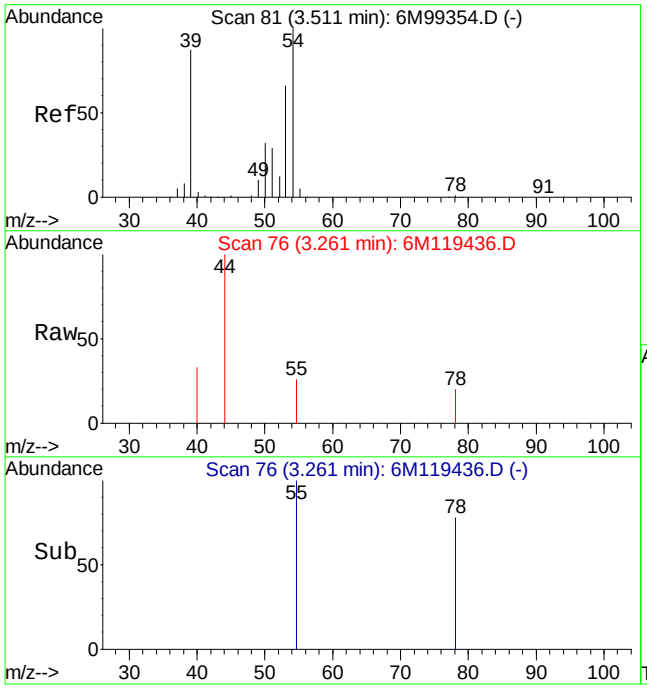

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.26 min Scan# 76
Delta R.T. 0.09 min
Lab File: 6M119436.D
Acq: 29 Aug 2013 12:53

Tgt Ion: 54 Resp: 332

Ion	Ratio	Lower	Upper
54	100		
39	66.3	61.1	142.7
53	0.0	41.6	97.0#

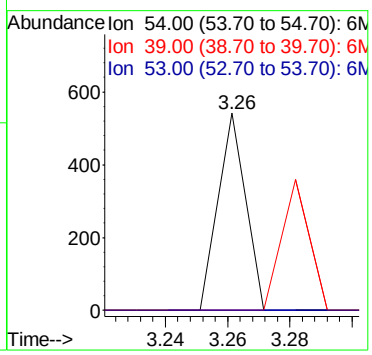

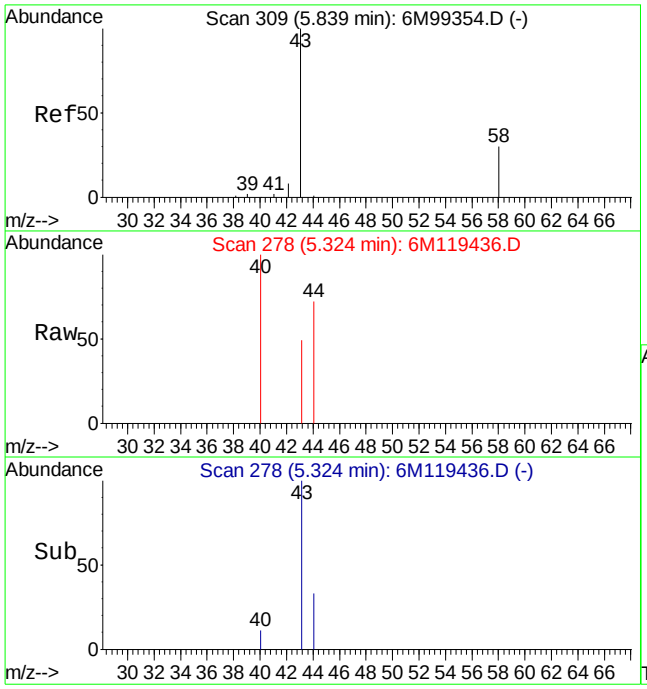

#13
Acetone
Concen: Below Cal
RT: 5.32 min Scan# 278
Delta R.T. -0.01 min
Lab File: 6M119436.D
Acq: 29 Aug 2013 12:53

Tgt Ion: 43 Resp: 211

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.4	43.0#

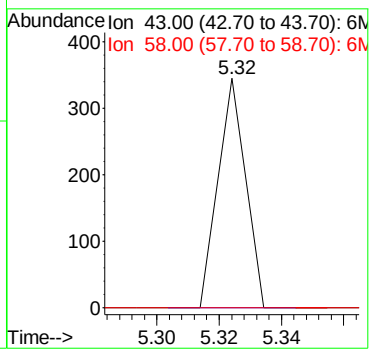

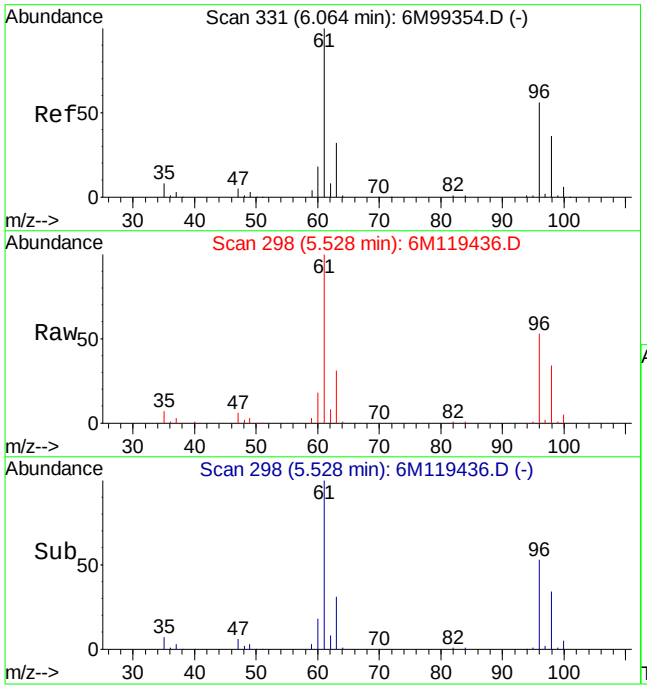

#14
1,1-Dichloroethene
Concen: 51.85 ug/L
RT: 5.53 min Scan# 298
Delta R.T. -0.01 min
Lab File: 6M119436.D
Acq: 29 Aug 2013 12:53

Tgt Ion: 61 Resp: 598674

Ion	Ratio	Lower	Upper
61	100		
96	53.5	29.9	69.9

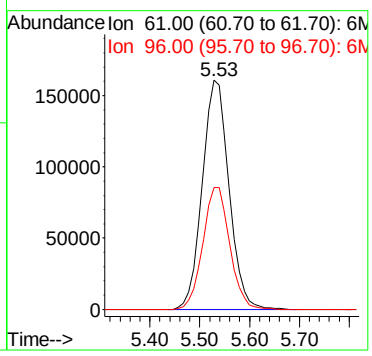

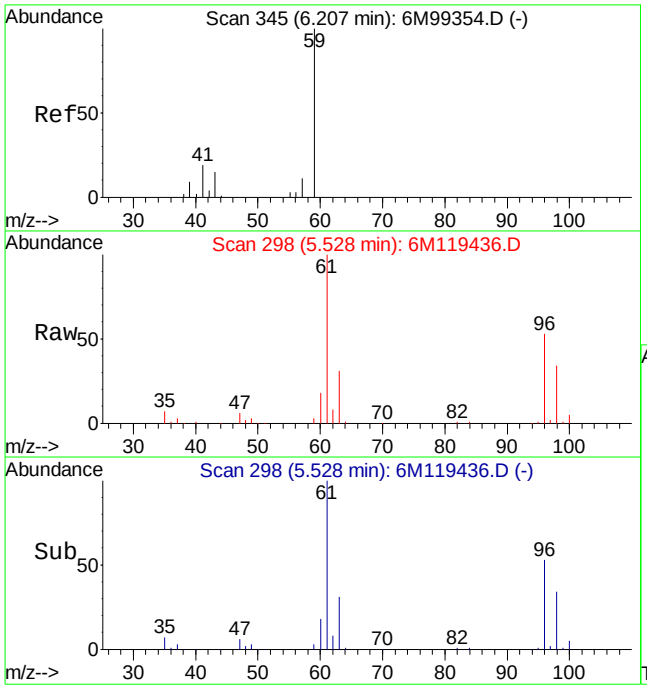

#15
Tert-Butyl Alcohol
Concen: 100.10 ug/L
RT: 5.53 min Scan# 298
Delta R.T. -0.15 min
Lab File: 6M119436.D
Acq: 29 Aug 2013 12:53

Tgt Ion: 59 Resp: 20602

Ion	Ratio	Lower	Upper
59	100		
41	0.0	18.1	42.3#
57	0.0	6.4	15.0#

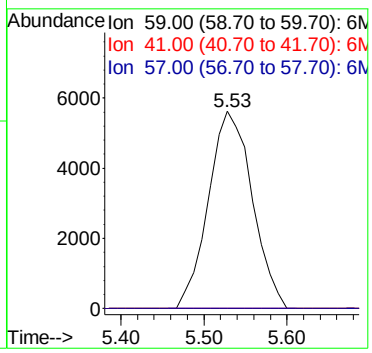

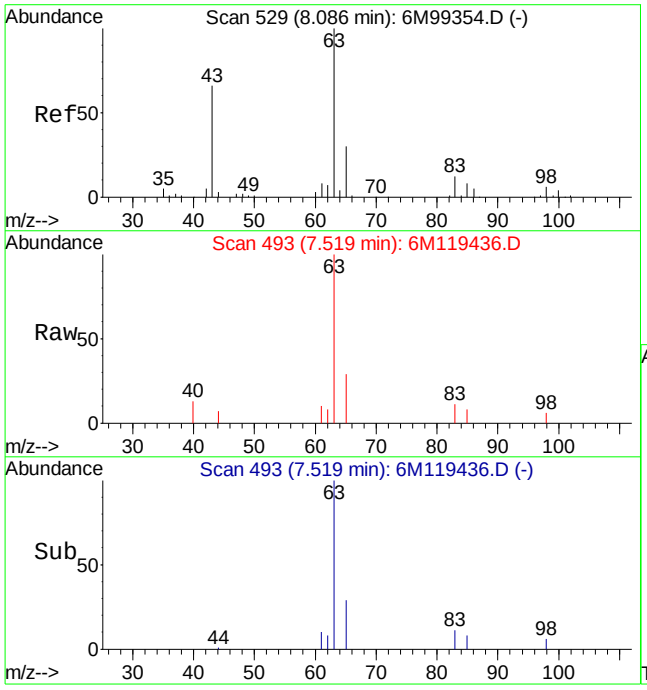

#27
1,1-Dichloroethane
Concen: 1.60 ug/L
RT: 7.52 min Scan# 493
Delta R.T. -0.01 min
Lab File: 6M119436.D
Acq: 29 Aug 2013 12:53

Tgt Ion: 63 Resp: 21076

Ion	Ratio	Lower	Upper
63	100		
65	28.8	18.2	42.6

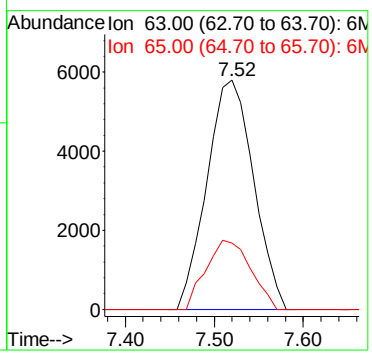

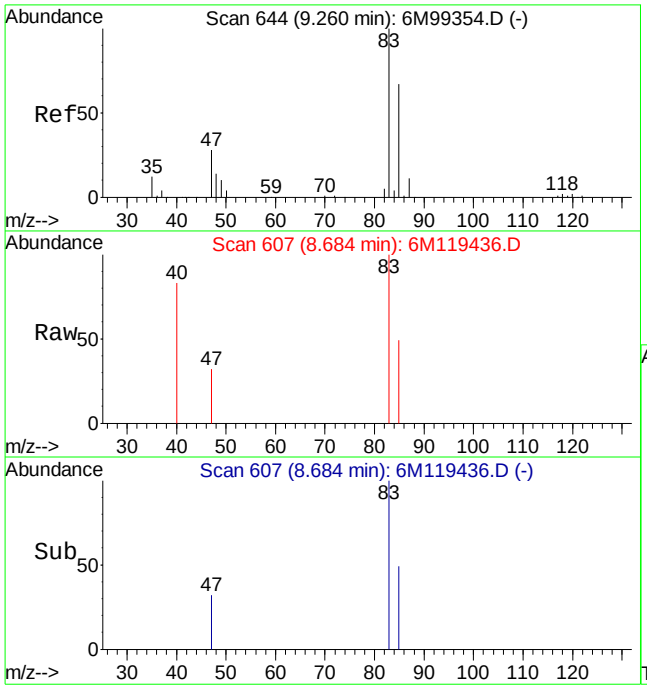

#33
Chloroform
Concen: 0.20 ug/L
RT: 8.68 min Scan# 607
Delta R.T. -0.01 min
Lab File: 6M119436.D
Acq: 29 Aug 2013 12:53

Tgt Ion: 83 Resp: 2124

Ion	Ratio	Lower	Upper
83	100		
85	65.0	38.9	90.7
47	18.0	20.2	47.0#

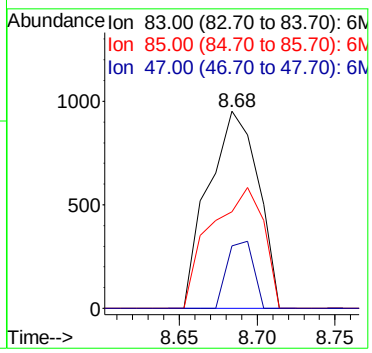

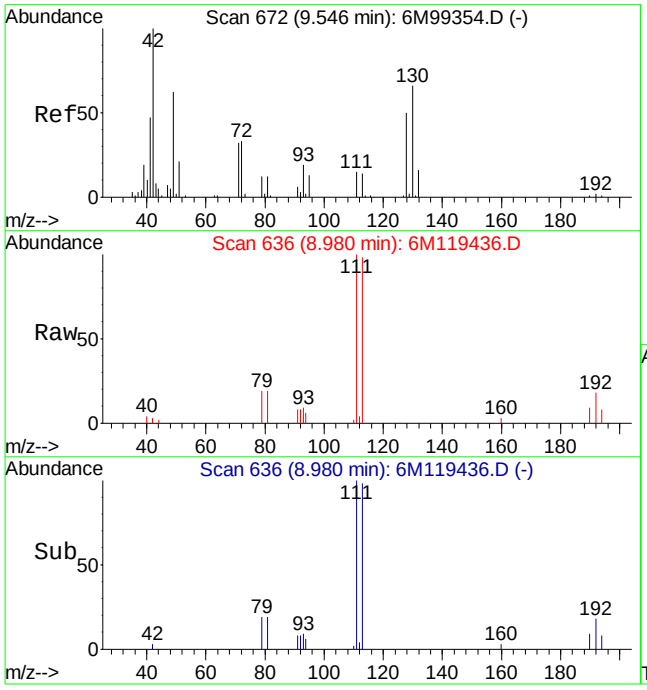

#36
Tetrahydrofuran
Concen: 0.85 ug/L
RT: 8.98 min Scan# 636
Delta R.T. -0.01 min
Lab File: 6M119436.D
Acq: 29 Aug 2013 12:53

Tgt Ion: 42 Resp: 838

Ion	Ratio	Lower	Upper
42	100		
72	0.0	14.6	34.2#
71	0.0	14.2	33.2#

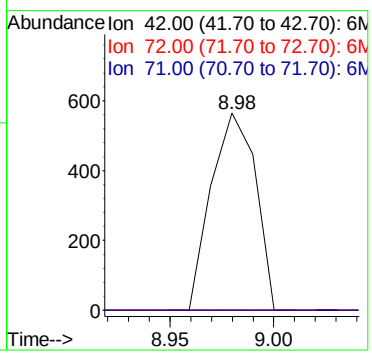

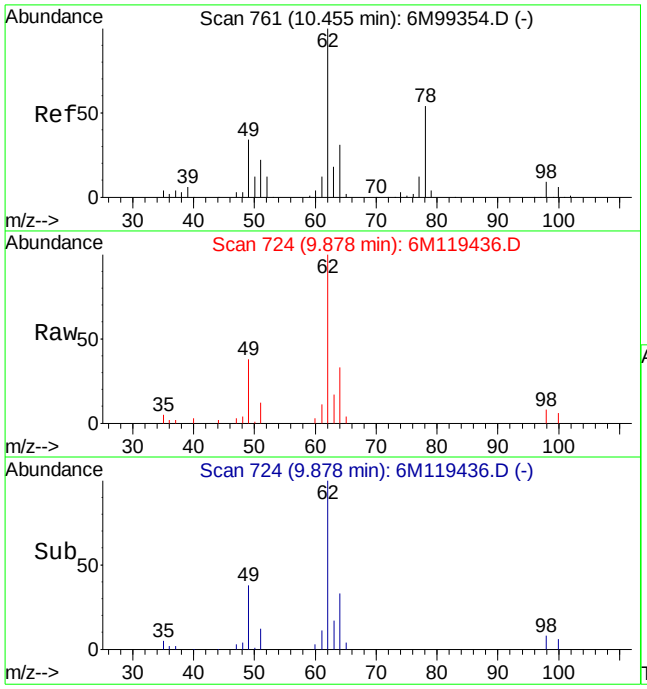

#45
1,2-Dichloroethane
Concen: 11.49 ug/L
RT: 9.88 min Scan# 724
Delta R.T. -0.01 min
Lab File: 6M119436.D
Acq: 29 Aug 2013 12:53

Tgt Ion: 62 Resp: 77741

Ion	Ratio	Lower	Upper
62	100		
49	37.5	28.9	67.3
98	7.7	4.4	10.4

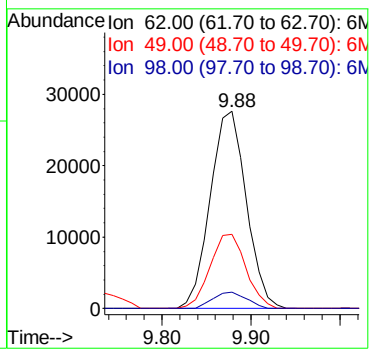

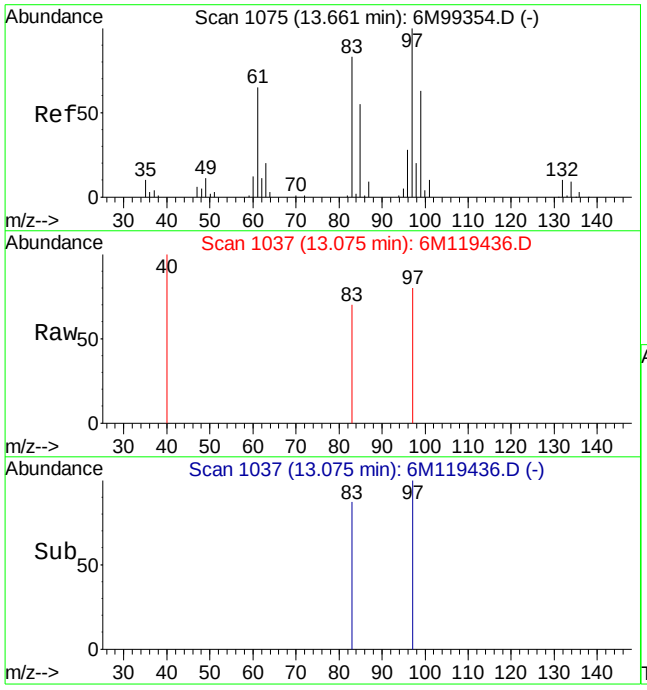

#63
1,1,2-Trichloroethane
Concen: 0.21 ug/L
RT: 13.07 min Scan# 1037
Delta R.T. -0.01 min
Lab File: 6M119436.D
Acq: 29 Aug 2013 12:53

Tgt Ion: 97 Resp: 705

Ion	Ratio	Lower	Upper
97	100		
83	68.4	49.7	116.1
99	0.0	37.8	88.2#

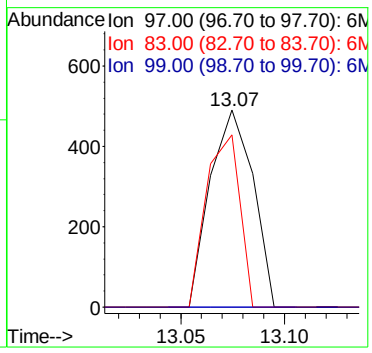

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93288.D Vial: 2
Acq On : 5 Jul 2013 16:29 Operator: FJB
Sample : WG436576-02 5ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 08 16:30:29 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:28:49 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	799330	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	607565	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	316122	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.23	41	4466	4.7464 ug/L	93
3) 3-Chloro-1-propene	6.60	41	32708	4.4710 ug/L	91
4) 2-Chloro-1,3-butadiene	7.93	53	73725	4.9491 ug/L	97
5) Methacrylonitrile	8.70	41	26806	5.3097 ug/L	73
6) Isobutyl Alcohol	8.54	43	22909	77.9340 ug/L #	5
8) Cyclohexanone	14.87	55	2193	20.7907 ug/L #	77
10) Ethyl Acetate	8.54	43	22909	3.4069 ug/L	95
11) Methyl methacrylate	10.75	41	23526	3.6533 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M93288.D A9WTR.M Mon Jul 08 16:30:30 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93288.D Vial: 2
Acq On : 5 Jul 2013 16:29 Operator: FJB
Sample : WG436576-02 5ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 8 16:30 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

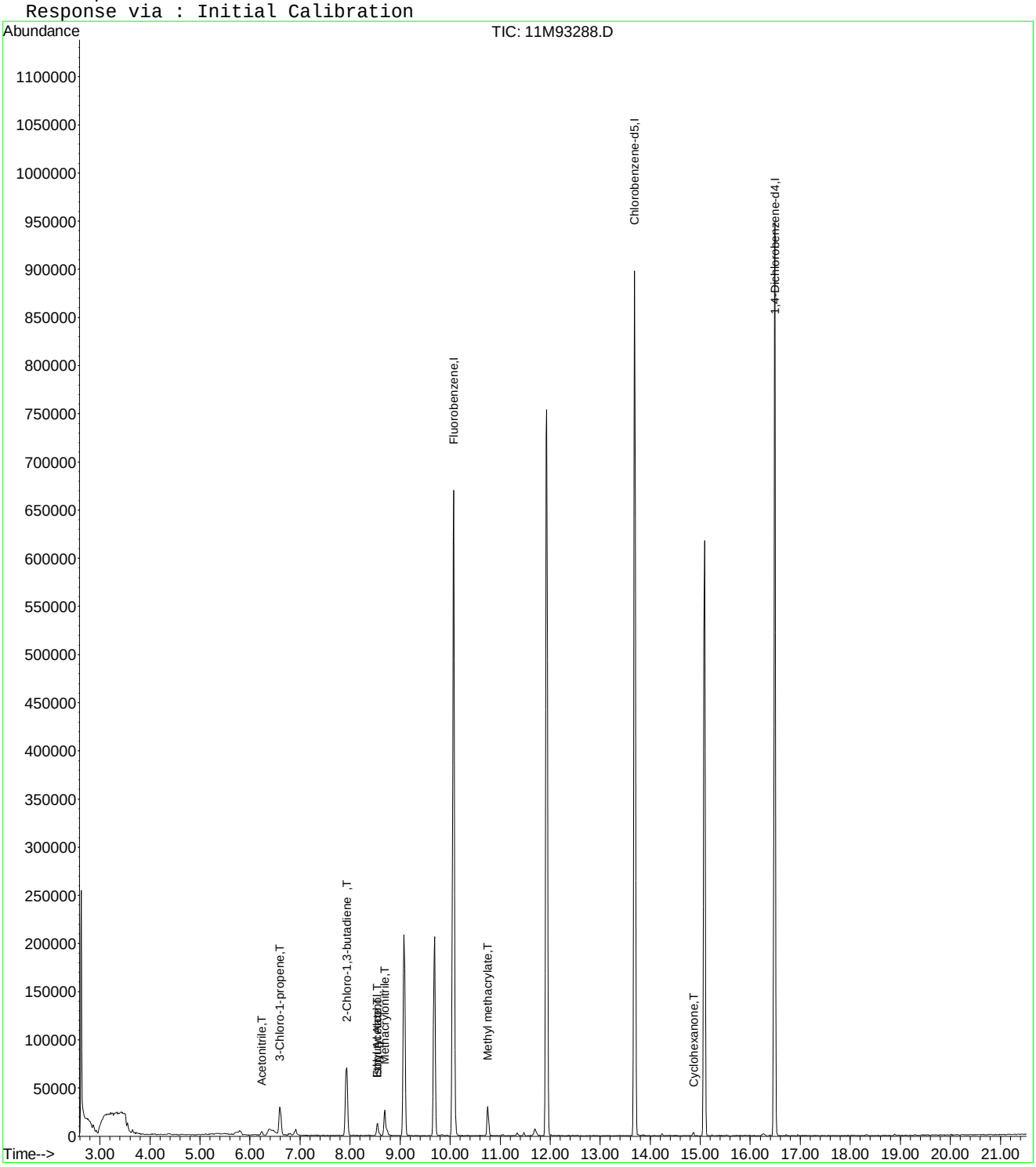

11M93288.D A9WTR.M Mon Jul 08 16:30:30 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93289.D Vial: 3
Acq On : 5 Jul 2013 17:00 Operator: FJB
Sample : WG436576-03 20ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 08 16:30:30 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	772779	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	587435	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	310532	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	17042	18.7342 ug/L	96
3) 3-Chloro-1-propene	6.60	41	319041	21.4888 ug/L	91
4) 2-Chloro-1,3-butadiene	7.92	53	302140	20.9794 ug/L	97
5) Methacrylonitrile	8.69	41	91118	18.6687 ug/L	93
6) Isobutyl Alcohol	8.71	43	4852	17.0731 ug/L	78
8) Cyclohexanone	14.86	55	20382	36.5034 ug/L	88
9) 2-Nitropropane	11.05	43	32123	16.0820 ug/L	95
10) Ethyl Acetate	8.54	43	130618	20.0919 ug/L	98
11) Methyl methacrylate	10.75	41	118674	19.0618 ug/L	92

(#) = qualifier out of range (m) = manual integration
11M93289.D A9WTR.M Mon Jul 08 16:30:30 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93289.D Vial: 3
Acq On : 5 Jul 2013 17:00 Operator: FJB
Sample : WG436576-03 20ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 8 16:30 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

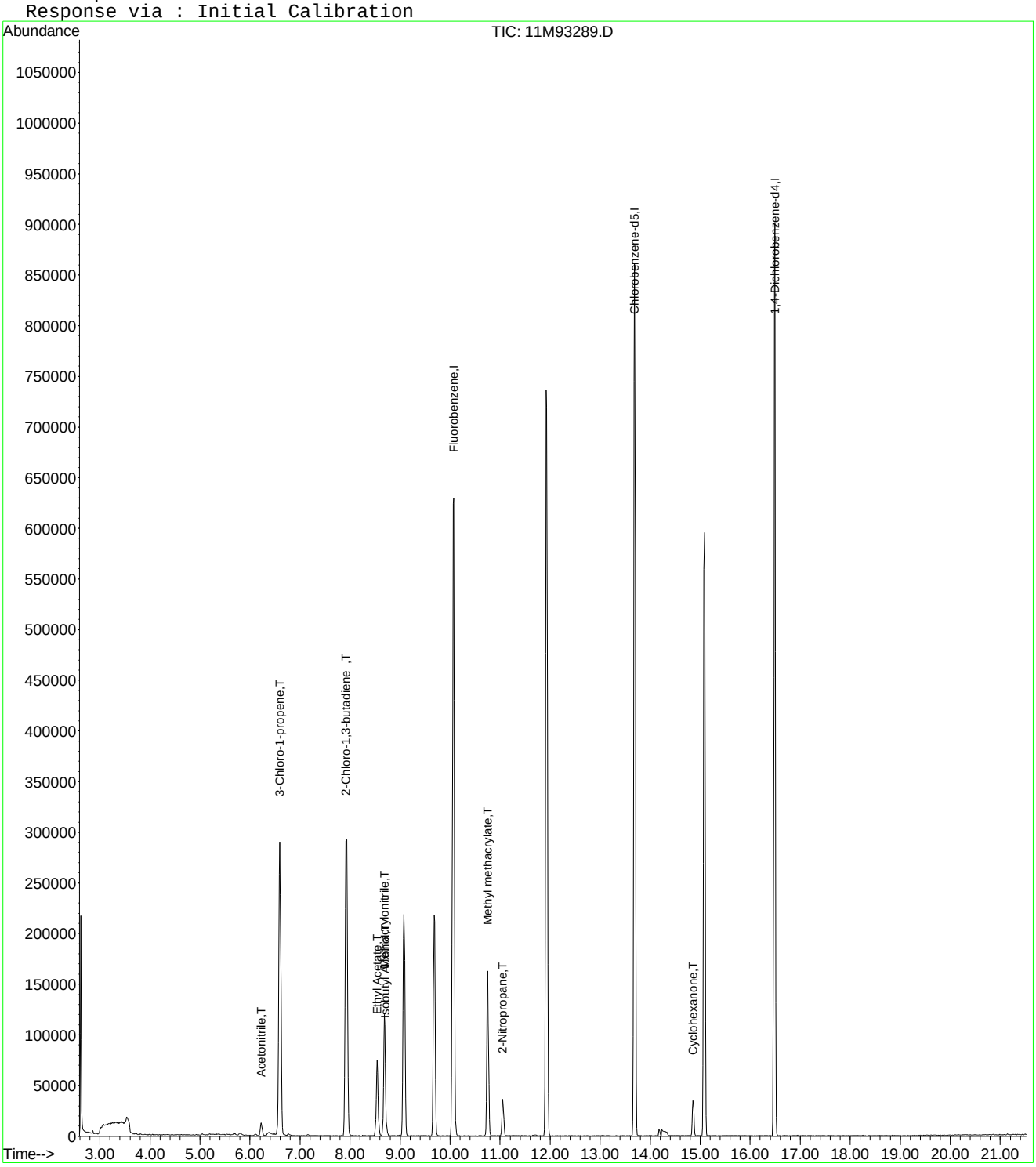

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93290.D Vial: 4
Acq On : 5 Jul 2013 17:32 Operator: FJB
Sample : WG436576-04 50ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 08 16:30:31 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	744214	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	569810	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	308299	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	44575	50.8820 ug/L	97
3) 3-Chloro-1-propene	6.60	41	768519	50.4910 ug/L	92
4) 2-Chloro-1,3-butadiene	7.92	53	741039	53.4297 ug/L	97
5) Methacrylonitrile	8.69	41	244186	51.9504 ug/L	92
6) Isobutyl Alcohol	8.71	43	16550	60.4710 ug/L	98
7) 1-Butanol	9.60	56	1504	55.9056 ug/L	85
8) Cyclohexanone	14.86	55	49383	62.3119 ug/L	94
9) 2-Nitropropane	11.05	43	90076	46.8262 ug/L	99
10) Ethyl Acetate	8.54	43	339372	54.2066 ug/L	97
11) Methyl methacrylate	10.75	41	317053	52.8807 ug/L	92

(#) = qualifier out of range (m) = manual integration
11M93290.D A9WTR.M Mon Jul 08 16:30:31 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93290.D Vial: 4
Acq On : 5 Jul 2013 17:32 Operator: FJB
Sample : WG436576-04 50ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 8 16:30 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

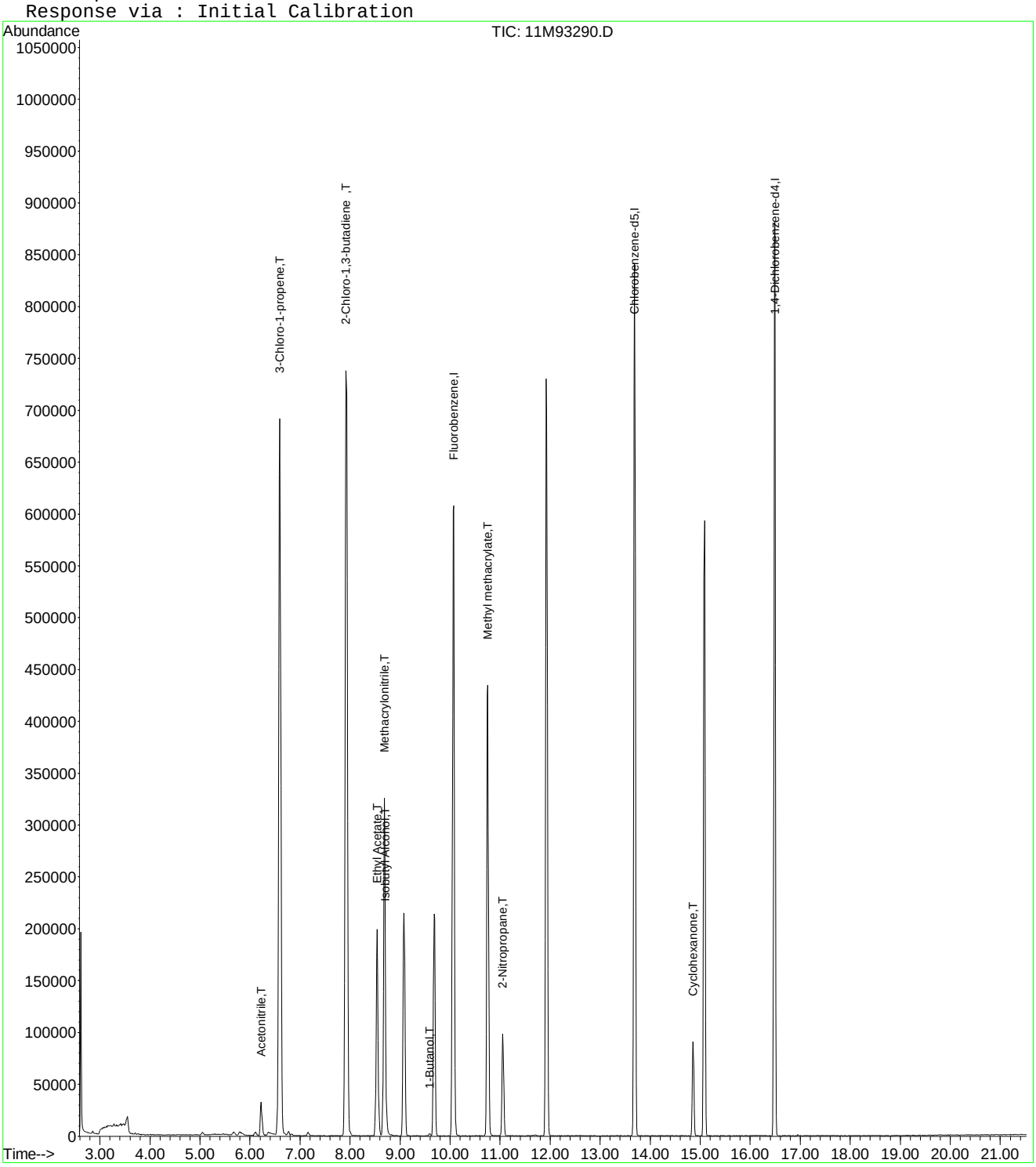

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93291.D Vial: 5
Acq On : 5 Jul 2013 18:03 Operator: FJB
Sample : WG436576-05 100ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 08 16:30:32 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	751500	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	578771	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	304611	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	81017	91.5836 ug/L	98
3) 3-Chloro-1-propene	6.60	41	1509087	97.9187 ug/L	92
4) 2-Chloro-1,3-butadiene	7.92	53	1453426	103.7776 ug/L	99
5) Methacrylonitrile	8.69	41	447590	94.3012 ug/L	93
6) Isobutyl Alcohol	8.71	43	24861	89.9573 ug/L	80
7) 1-Butanol	9.59	56	2894	106.5306 ug/L #	78
8) Cyclohexanone	14.86	55	72768	81.3827 ug/L	91
9) 2-Nitropropane	11.05	43	174231	89.6963 ug/L	99
10) Ethyl Acetate	8.54	43	630836	99.7841 ug/L	99
11) Methyl methacrylate	10.74	41	608256	100.4664 ug/L	92

(#) = qualifier out of range (m) = manual integration
11M93291.D A9WTR.M Mon Jul 08 16:30:32 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93291.D Vial: 5
Acq On : 5 Jul 2013 18:03 Operator: FJB
Sample : WG436576-05 100ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 8 16:30 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

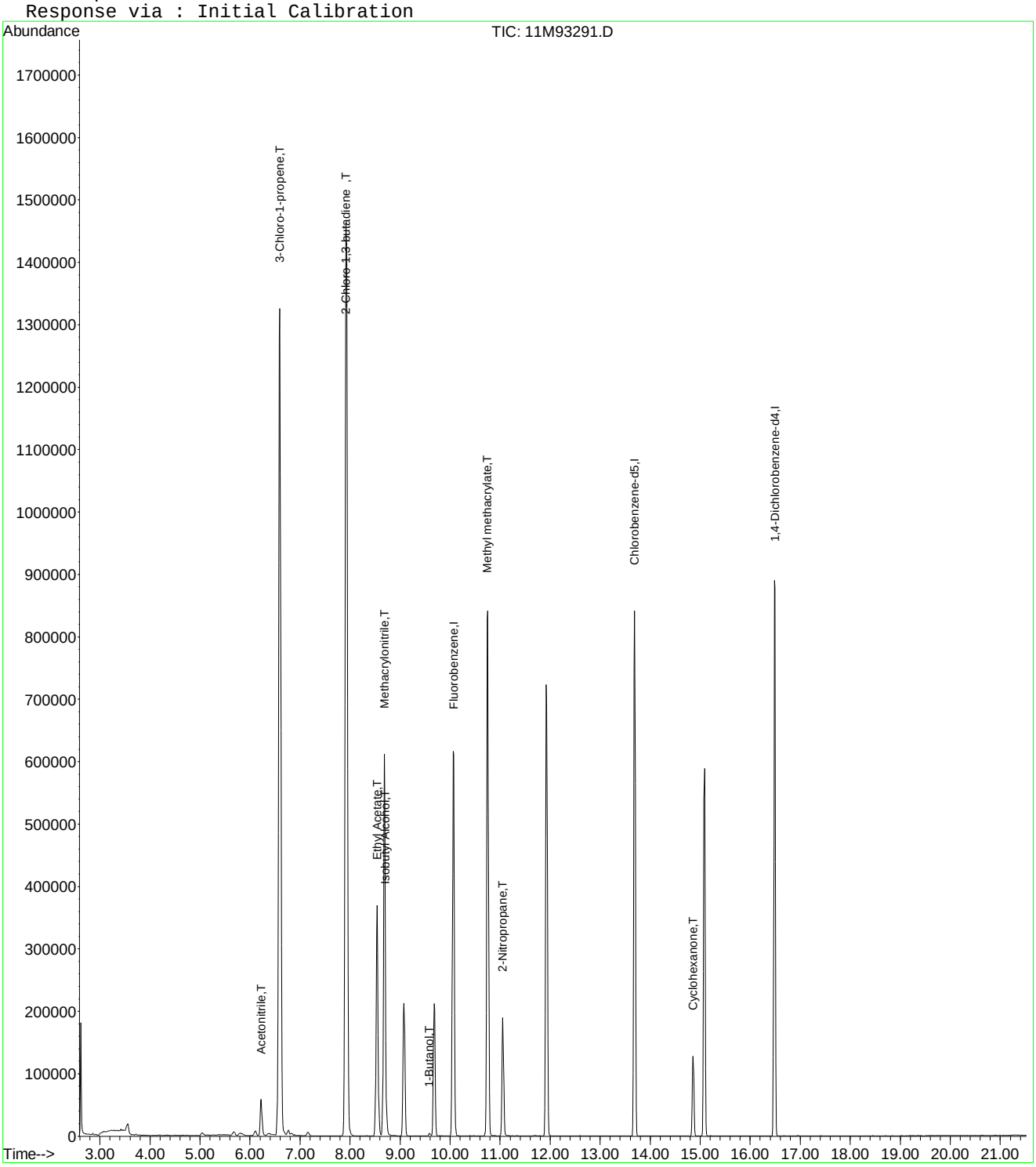

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93292.D Vial: 6
Acq On : 5 Jul 2013 18:35 Operator: FJB
Sample : WG436576-06 200ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 08 16:30:32 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	749695	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	573420	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	304608	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	163779	185.5855 ug/L	100
3) 3-Chloro-1-propene	6.60	41	2942825	198.7926 ug/L	94
4) 2-Chloro-1,3-butadiene	7.92	53	2860757	204.7557 ug/L	100
5) Methacrylonitrile	8.69	41	917419	193.7532 ug/L	93
6) Isobutyl Alcohol	8.70	43	48706	176.6626 ug/L	77
7) 1-Butanol	9.58	56	4781	176.4165 ug/L #	55
8) Cyclohexanone	14.86	55	233169	203.6560 ug/L	92
9) 2-Nitropropane	11.05	43	367000	189.3911 ug/L	99
10) Ethyl Acetate	8.54	43	1287352	204.1204 ug/L	99
11) Methyl methacrylate	10.74	41	1249323	206.8490 ug/L	93

(#) = qualifier out of range (m) = manual integration
11M93292.D A9WTR.M Mon Jul 08 16:30:33 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93292.D Vial: 6
Acq On : 5 Jul 2013 18:35 Operator: FJB
Sample : WG436576-06 200ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 8 16:30 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

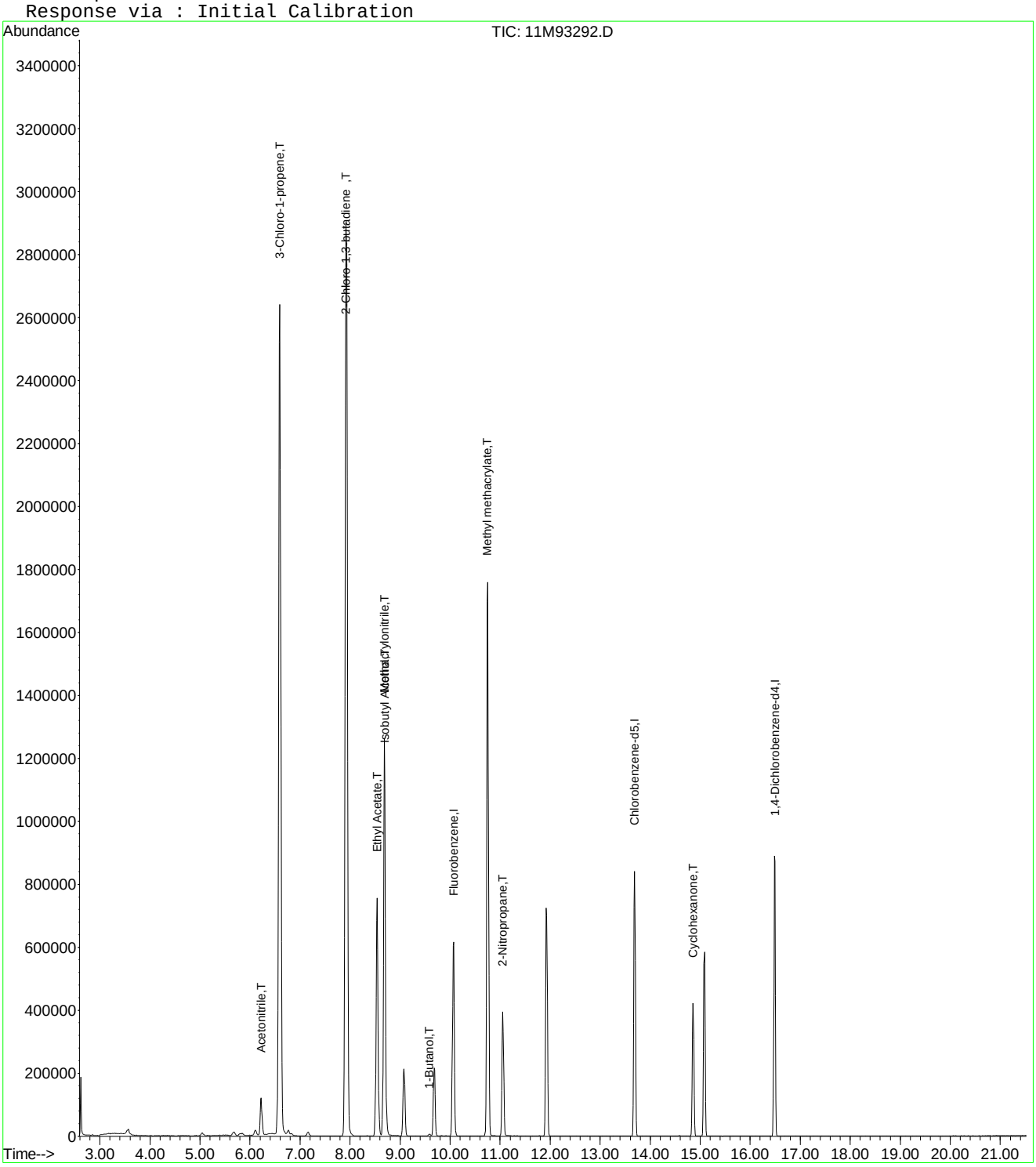

11M93292.D A9WTR.M Mon Jul 08 16:30:33 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93293.D Vial: 7
Acq On : 5 Jul 2013 19:06 Operator: FJB
Sample : WG436576-07 300ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 08 16:30:33 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	750508	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	580552	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	312506	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	277584	314.2024 ug/L	97
3) 3-Chloro-1-propene	6.60	41	4268114	303.3711 ug/L	97
4) 2-Chloro-1,3-butadiene	7.92	53	4192766	299.7678 ug/L	98
5) Methacrylonitrile	8.69	41	1447753	305.4252 ug/L	95
6) Isobutyl Alcohol	8.71	43	73643	266.8228 ug/L	70
7) 1-Butanol	9.58	56	6581	242.5725 ug/L	86
8) Cyclohexanone	14.86	55	385405	305.1560 ug/L	92
9) 2-Nitropropane	11.05	43	610041	314.4718 ug/L	99
10) Ethyl Acetate	8.54	43	2040861	323.2450 ug/L	100
11) Methyl methacrylate	10.74	41	1976571	326.9042 ug/L	94

(#) = qualifier out of range (m) = manual integration
11M93293.D A9WTR.M Mon Jul 08 16:30:34 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93293.D Vial: 7
Acq On : 5 Jul 2013 19:06 Operator: FJB
Sample : WG436576-07 300ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 8 16:30 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

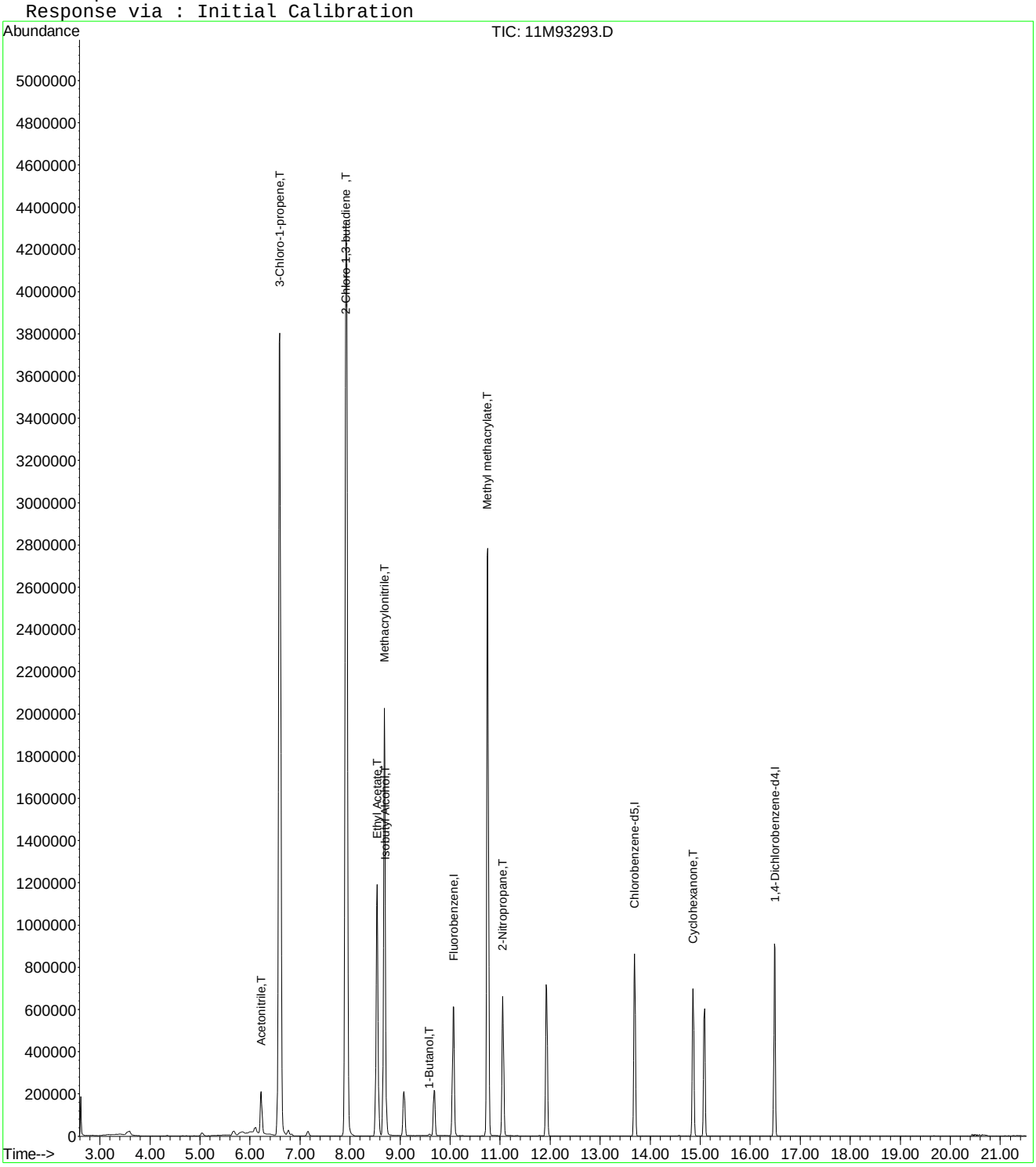

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93294.D Vial: 8
Acq On : 5 Jul 2013 19:38 Operator: FJB
Sample : WG436576-08 400ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 08 16:30:34 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	757108	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	583224	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	313010	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	393523	441.5529 ug/L	98
3) 3-Chloro-1-propene	6.59	41	5369145	398.6563 ug/L	99
4) 2-Chloro-1,3-butadiene	7.92	53	5309477	376.2995 ug/L	96
5) Methacrylonitrile	8.69	41	1972246	412.4477 ug/L	95
6) Isobutyl Alcohol	8.71	43	116475	418.3325 ug/L	78
7) 1-Butanol	9.59	56	12326	450.3699 ug/L	92
8) Cyclohexanone	14.86	55	542194	397.0233 ug/L	92
9) 2-Nitropropane	11.05	43	857913	438.3929 ug/L	98
10) Ethyl Acetate	8.54	43	2766766	434.3984 ug/L	99
11) Methyl methacrylate	10.74	41	2654994	435.2803 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M93294.D A9WTR.M Mon Jul 08 16:30:34 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93294.D Vial: 8
Acq On : 5 Jul 2013 19:38 Operator: FJB
Sample : WG436576-08 400ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 8 16:30 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

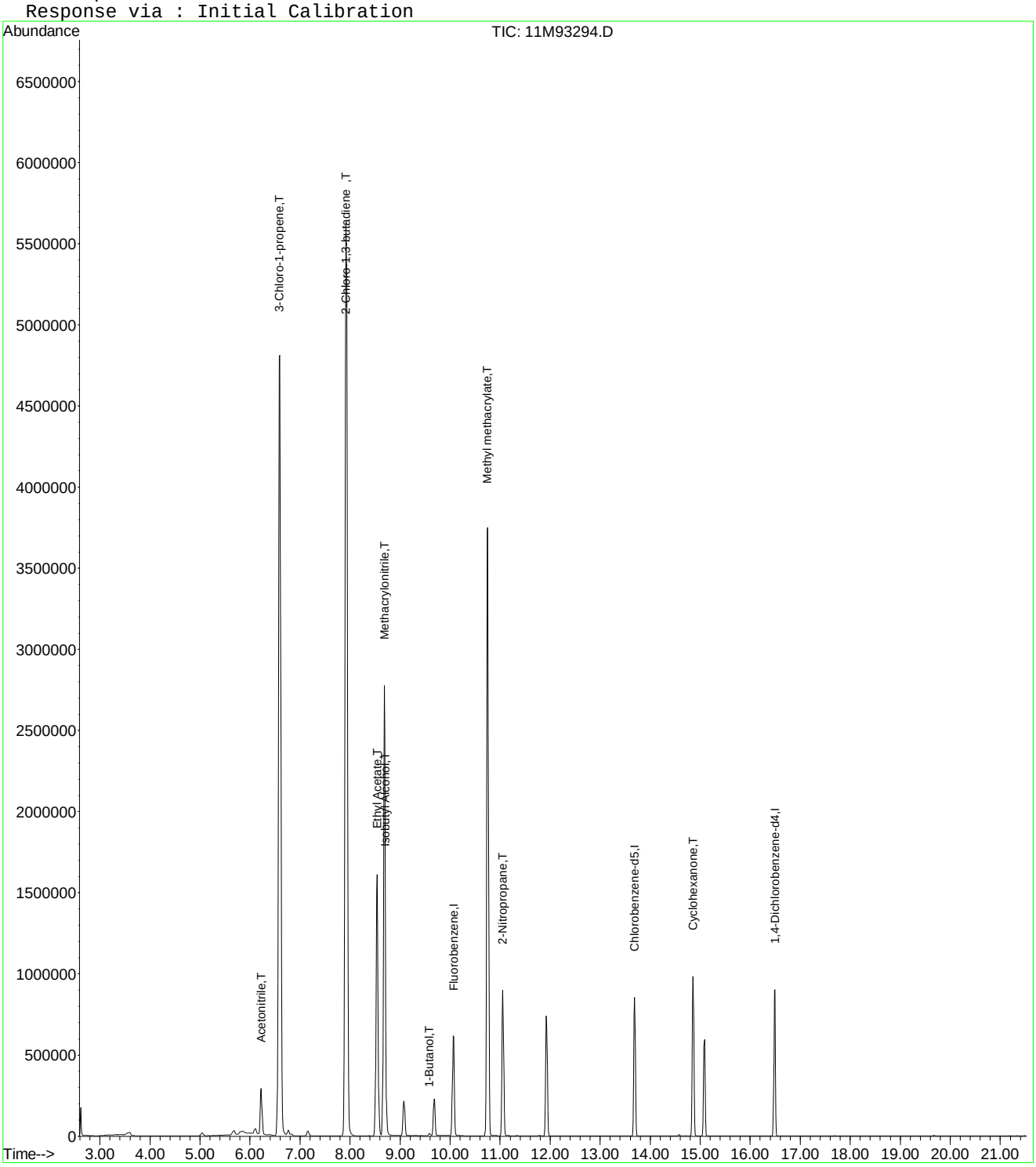

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93295.D Vial: 9
Acq On : 5 Jul 2013 20:09 Operator: FJB
Sample : WG436576-09 500ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 08 16:30:35 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	751002	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	583696	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	314454	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	486833	550.6927 ug/L	99
3) 3-Chloro-1-propene	6.59	41	6288596	499.7960 ug/L	97
4) 2-Chloro-1,3-butadiene	7.92	53	6235758	445.5412 ug/L	93
5) Methacrylonitrile	8.69	41	2382607	502.3160 ug/L	95
6) Isobutyl Alcohol	8.71	43	148096	536.2273 ug/L	79
7) 1-Butanol	9.59	56	16854	620.8218 ug/L #	86
8) Cyclohexanone	14.86	55	725098	500.1693 ug/L	93
9) 2-Nitropropane	11.05	43	1043703	537.6676 ug/L	98
10) Ethyl Acetate	8.54	43	3310477	523.9902 ug/L	98
11) Methyl methacrylate	10.74	41	3151746	520.9229 ug/L	96

(#) = qualifier out of range (m) = manual integration
11M93295.D A9WTR.M Mon Jul 08 16:30:35 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93295.D Vial: 9
Acq On : 5 Jul 2013 20:09 Operator: FJB
Sample : WG436576-09 500ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58742 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 8 16:30 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

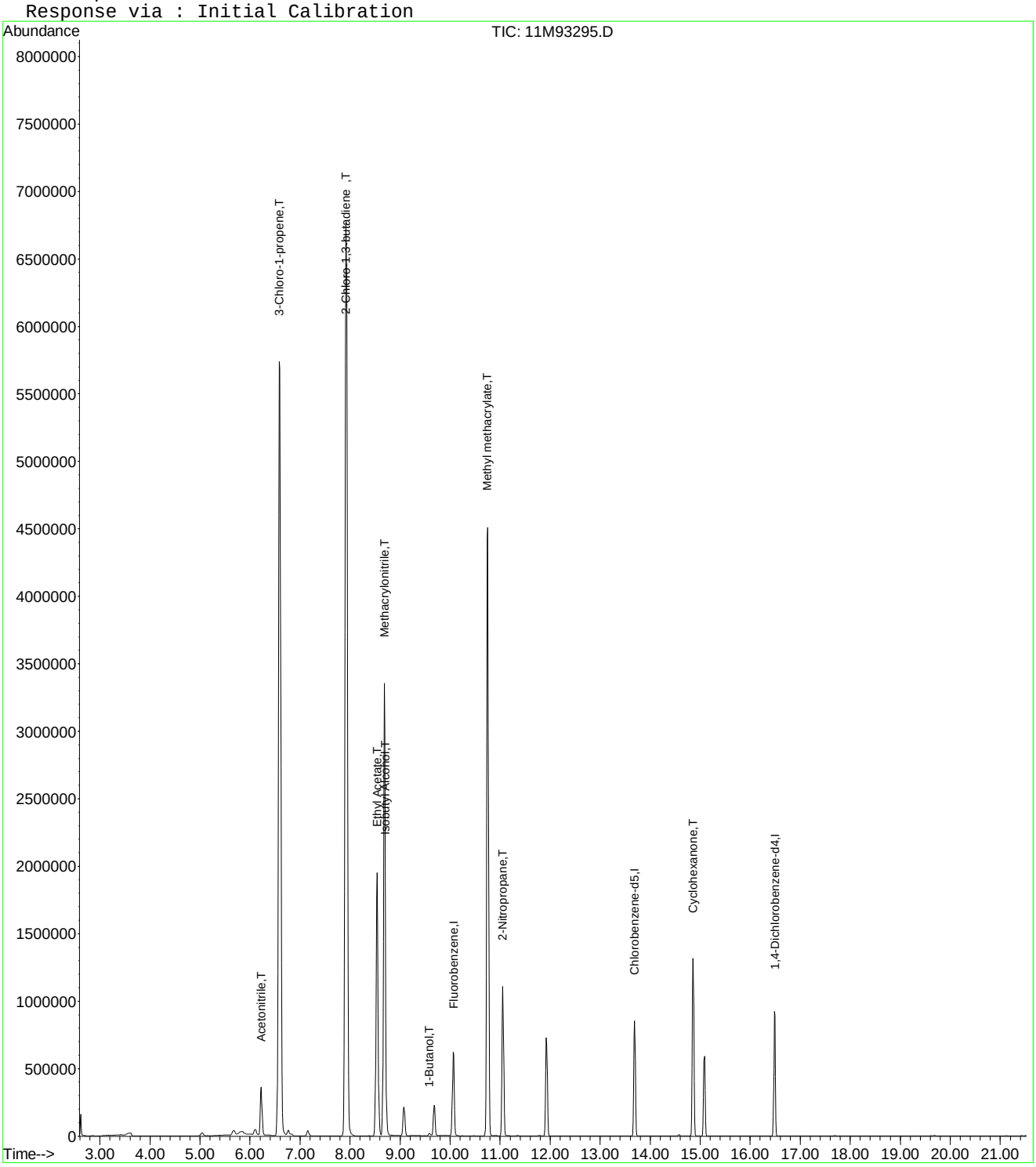

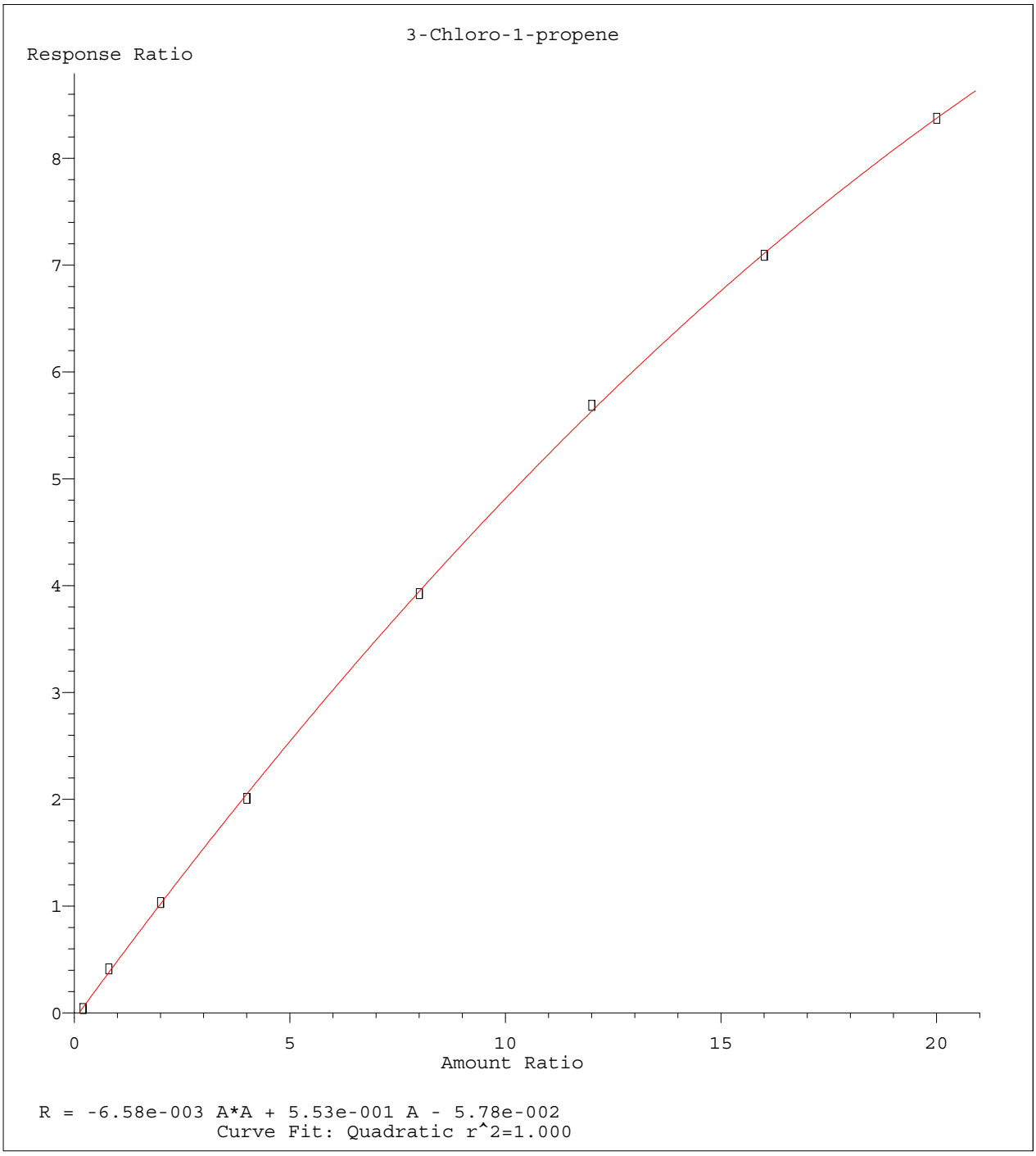

Method Name: C:\MSDCHEM\1\METHODS\A9WTR.M
Calibration Table Last Updated: Mon Jul 08 16:30:11 2013

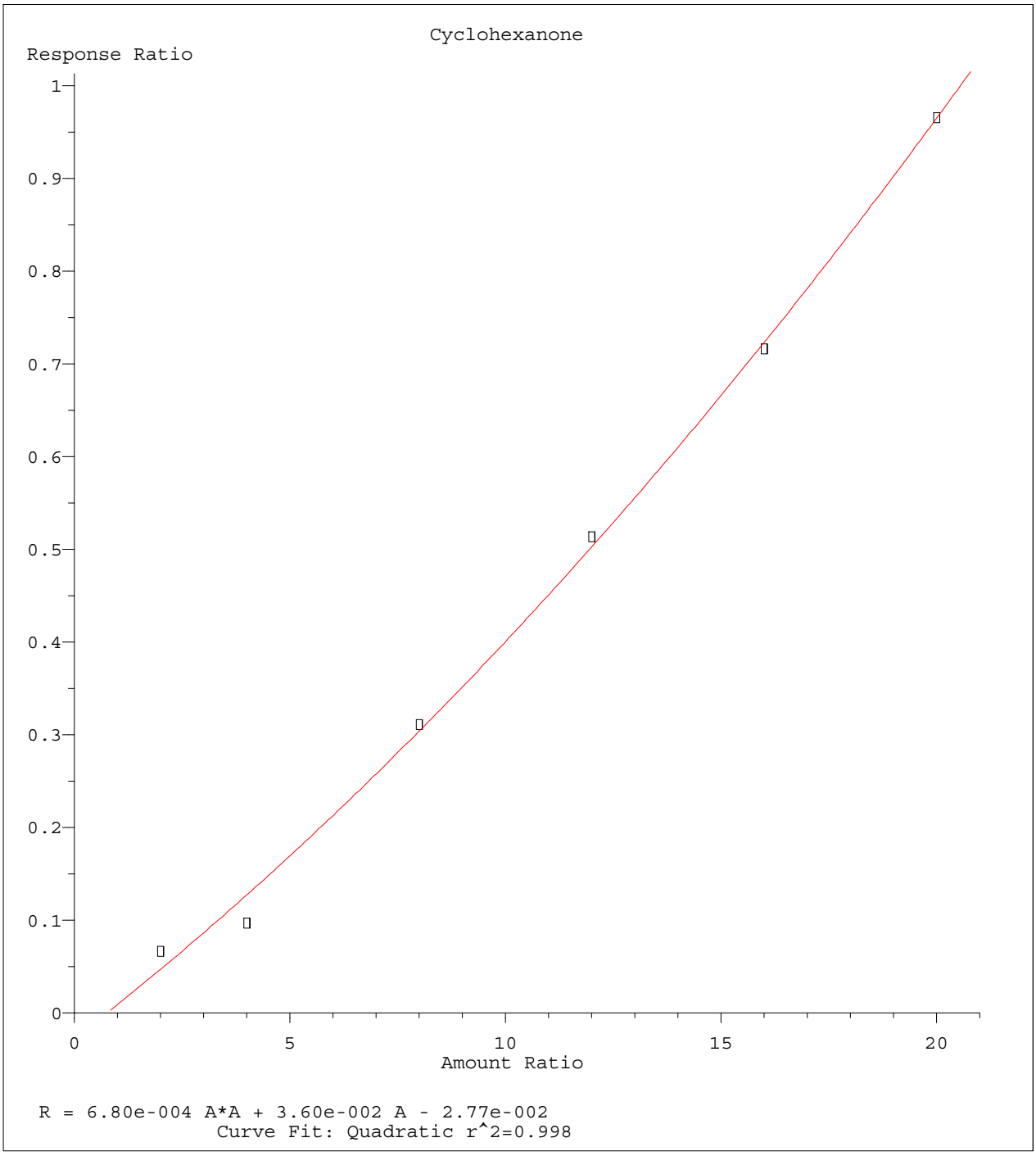

Method Name: C:\MSDCHEM\1\METHODS\A9WTR.M
Calibration Table Last Updated: Mon Jul 08 16:30:11 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93298.D Vial: 12
Acq On : 5 Jul 2013 21:43 Operator: FJB
Sample : WG436576-10 100ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58743 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 08 16:30:35 2013 Quant Results File: A9WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	723684	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.69	117	554162	25.00 ug/L	-0.01
13) 1,4-Dichlorobenzene-d4	16.49	152	297351	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	78575	92.2371 ug/L	98
3) 3-Chloro-1-propene	6.60	41	1312879	88.3030 ug/L	92
4) 2-Chloro-1,3-butadiene	7.92	53	1064186	78.9057 ug/L	98
5) Methacrylonitrile	8.69	41	469125	102.6373 ug/L	94
6) Isobutyl Alcohol	8.71	43	24111	90.5968 ug/L	71
7) 1-Butanol	9.59	56	2440	93.2708 ug/L #	57
8) Cyclohexanone	14.86	55	41866	56.8995 ug/L	92
9) 2-Nitropropane	11.05	43	186414	99.6570 ug/L	99
10) Ethyl Acetate	8.54	43	677677	111.3134 ug/L	99
11) Methyl methacrylate	10.75	41	644624	110.5658 ug/L	92

(#) = qualifier out of range (m) = manual integration
11M93298.D A9WTR.M Mon Jul 08 16:30:36 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070513\11M93298.D Vial: 12
Acq On : 5 Jul 2013 21:43 Operator: FJB
Sample : WG436576-10 100ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58743 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 8 16:30 2013 Quant Results File: A9WTR.RES

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Initial Calibration

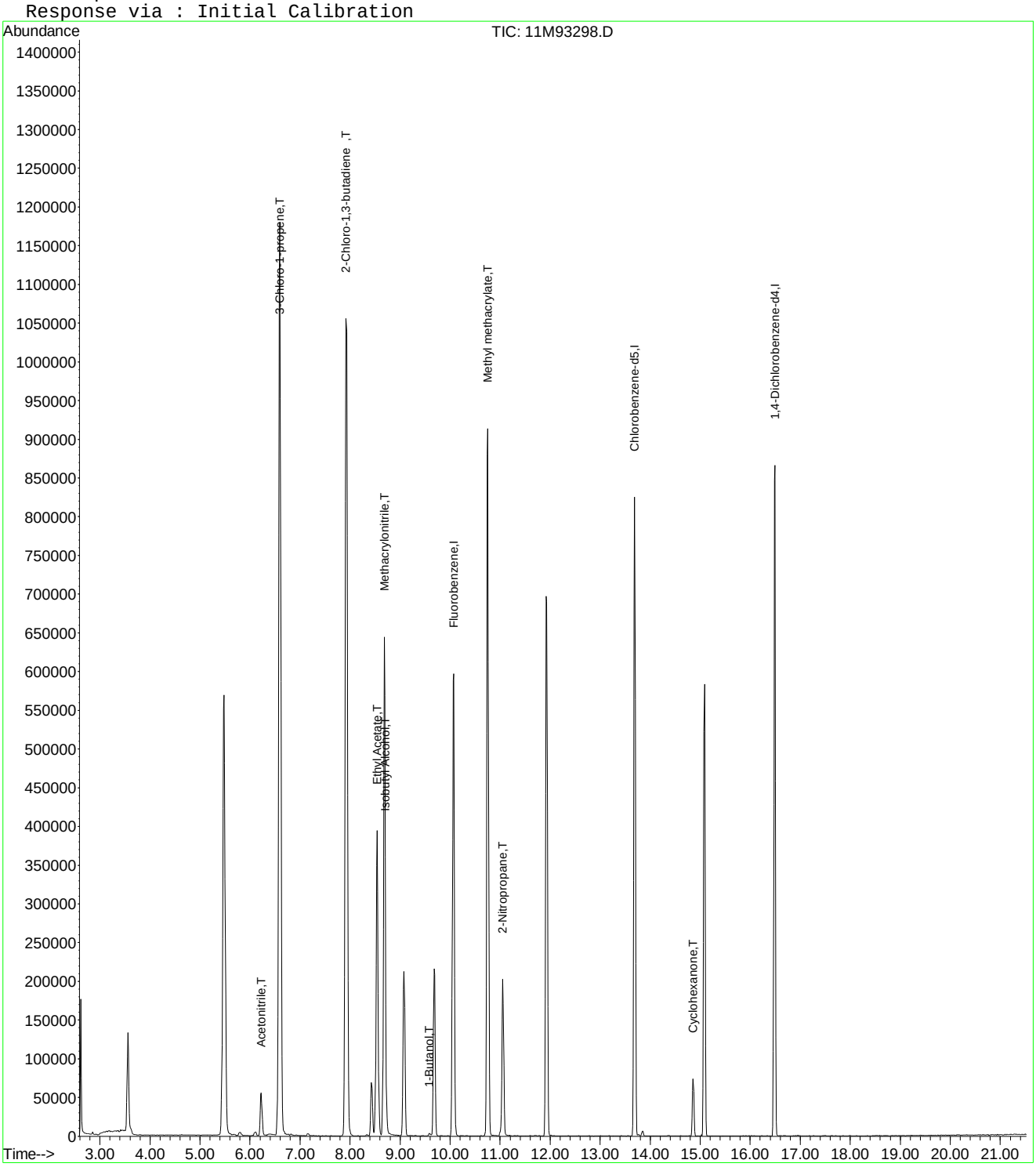

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070513\11M93298.D Vial: 12
Acq On : 5 Jul 2013 21:43 Operator: FJB
Sample : WG436576-10 100ug/L STD A9 Inst : hpms11
Misc : 1,1 STD58743 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9WTR.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 07/05/13 HPMS11
Last Update : Mon Jul 08 16:30:11 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	96	0.00
2	T	Acetonitrile	100.0000	92.2371	7.8	97	0.00
3	T	3-Chloro-1-propene	100.0000	88.3030	11.7	87	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	78.9057	21.1	73	-0.01
5	T	Methacrylonitrile	100.0000	102.6373	-2.6	105	-0.01
6	T	Isobutyl Alcohol	100.0000	90.5968	9.4	97	0.00
7	T	1-Butanol	100.0000	93.2708	6.7	84	0.00
8	T	Cyclohexanone	100.0000	56.8995	43.1	58	0.00
9	T	2-Nitropropane	100.0000	99.6569	0.3	107	0.00
10	T	Ethyl Acetate	100.0000	111.3134	-11.3	107	-0.01
11	T	Methyl methacrylate	100.0000	110.5658	-10.6	106	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	-0.01
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M93298.D A9WTR.M Tue Jul 16 08:51:24 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94451.D Vial: 3
Acq On : 21 Aug 2013 15:58 Operator: ADC
Sample : WG442178-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:10:11 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:08:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	645420	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	502085	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	275291	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	2108	0.3133 ug/L #	68
3) Chloromethane	3.32	50	5890	Below Cal #	72
4) Vinyl Chloride	3.52	62	2849	0.2475 ug/L #	76
5) 1,3-Butadiene	3.57	54	1741	0.2643 ug/L #	43
6) Bromomethane	4.35	94	470	0.7387 ug/L #	45
7) Chloroethane	4.51	64	763	0.1828 ug/L #	43
8) Trichlorofluoromethane	4.98	101	4842	0.3323 ug/L	93
10) Isoprene	5.51	67	1379	0.1776 ug/L	83
12) 1,1,2-Trichloro-1,2,2-Trif	5.71	101	1525	0.5412 ug/L	68
13) Acetone	5.80	43	2796	1.3225 ug/L	95
14) 1,1-Dichloroethene	6.01	61	3571	0.3031 ug/L	95
16) Dimethyl Sulfide	6.28	62	1777	0.3141 ug/L	82
17) Iodomethane	6.48	142	210	0.4707 ug/L #	26
19) Methylene Chloride	6.78	84	2582	0.3921 ug/L	73
20) Carbon Disulfide	6.79	76	5488	0.3064 ug/L	95
22) Methyl Tert Butyl Ether	6.99	73	4049	0.2587 ug/L	84
23) trans-1,2-Dichloroethene	7.21	96	1828	0.2864 ug/L	88
24) n-Hexane	7.28	57	2388	0.2934 ug/L #	69
27) 1,1-Dichloroethane	7.80	63	3328	0.2600 ug/L #	72
31) 2,2-Dichloropropane	8.53	77	933	0.2940 ug/L #	42
32) cis-1,2-Dichloroethene	8.60	96	1994	0.2753 ug/L	94
33) Chloroform	8.80	83	4097	0.2950 ug/L	93
35) Bromochloromethane	9.02	130	868	0.2086 ug/L #	44
38) 1,1,1-Trichloroethane	9.31	97	4041	0.2845 ug/L #	83
39) Cyclohexane	9.35	56	3528	0.3204 ug/L #	64
40) 1,1-Dichloropropene	9.50	75	2525	0.2471 ug/L #	54
41) Carbon Tetrachloride	9.63	117	3808	0.2843 ug/L #	91
45) 1,2-Dichloroethane	9.80	62	2984	0.2784 ug/L #	73
46) Benzene	9.84	78	9610	0.3727 ug/L	93
47) Trichloroethene	10.55	130	2069	0.2878 ug/L	93
48) Methylcyclohexane	10.63	83	2860	0.3217 ug/L #	75
49) 1,2-Dichloropropane	10.74	63	1806	0.2676 ug/L	74
51) Bromodichloromethane	11.03	83	2991	0.2813 ug/L #	79
52) Dibromomethane	11.10	93	814	0.2243 ug/L	100
53) 2-Chloroethyl Vinyl Ether	11.31	63	548	0.8561 ug/L #	47
55) cis-1,3-Dichloropropene	11.62	75	2833	0.2683 ug/L	92
56) Dimethyl Disulfide	11.87	79	783	0.1473 ug/L	76
59) Toluene	12.03	91	8609	0.3086 ug/L	89
60) Ethyl Methacrylate	12.13	69	434	0.5455 ug/L #	58
62) trans-1,3-Dichloropropene	12.19	75	2272	0.2365 ug/L #	54

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94451.D Vial: 3
Acq On : 21 Aug 2013 15:58 Operator: ADC
Sample : WG442178-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:10:11 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:08:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	12.38	97	1229	0.2764 ug/L		66
65)	1,3-Dichloropropane	12.67	76	2436	0.2938 ug/L		96
66)	Tetrachloroethene	12.79	164	2024	0.3195 ug/L		72
67)	Dibromochloromethane	13.03	129	1680	0.2349 ug/L		93
68)	1,2-Dibromoethane	13.28	107	1139	0.2411 ug/L		80
69)	1-Chlorohexane	13.36	91	2182	0.4329 ug/L		77
70)	Chlorobenzene	13.73	112	6145	0.3245 ug/L		91
71)	1,1,1,2-Tetrachloroethane	13.77	131	2393	0.2979 ug/L		94
72)	Ethylbenzene	13.77	106	2494	0.2435 ug/L		53
73)	m-,p-Xylene	13.86	106	6975	0.5844 ug/L		83
74)	o-Xylene	14.37	106	2915	0.2443 ug/L		63
75)	Styrene	14.39	104	5321	0.2777 ug/L		95
76)	Bromoform	14.85	173	820	0.1832 ug/L	#	64
77)	Isopropylbenzene	14.77	105	9379	0.3092 ug/L		99
79)	1,1,2,2-Tetrachloroethane	14.96	83	1189	0.2646 ug/L		68
83)	n-Propylbenzene	15.23	91	11187	0.3125 ug/L		95
84)	Bromobenzene	15.35	156	2185	0.2579 ug/L		75
85)	1,3,5-Trimethylbenzene	15.42	105	7663	0.2887 ug/L		95
86)	2-Chlorotoluene	15.53	91	6959	0.2951 ug/L		98
87)	4-Chlorotoluene	15.53	91	6959	0.2840 ug/L		82
88)	a-Methylstyrene	15.78	118	3044	0.2311 ug/L		89
89)	tert-Butylbenzene	15.84	134	1479	0.2843 ug/L		80
90)	1,2,4-Trimethylbenzene	15.88	105	7582	0.2737 ug/L		90
91)	sec-Butylbenzene	16.09	105	9918	0.3259 ug/L		84
92)	p-Isopropyltoluene	16.23	119	7673	0.2910 ug/L		99
93)	1,3-Dichlorobenzene	16.41	146	4158	0.2611 ug/L		92
94)	1,4-Dichlorobenzene	16.53	146	5211	0.3169 ug/L	#	1
95)	n-Butylbenzene	16.72	91	7622	0.3314 ug/L	#	89
96)	1,2-Dichlorobenzene	16.99	146	4292	0.2973 ug/L		92
98)	1,2,4-Trichlorobenzene	18.95	180	3265	0.3076 ug/L		89
99)	Hexachlorobutadiene	19.10	225	1121	0.2440 ug/L		83
100)	Naphthalene	19.29	128	4536	0.2639 ug/L		97
101)	1,2,3-Trichlorobenzene	19.58	180	2658	0.2858 ug/L		79

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94451.D Vial: 3
Acq On : 21 Aug 2013 15:58 Operator: ADC
Sample : WG442178-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 8:10 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:08:38 2013
Response via : Initial Calibration

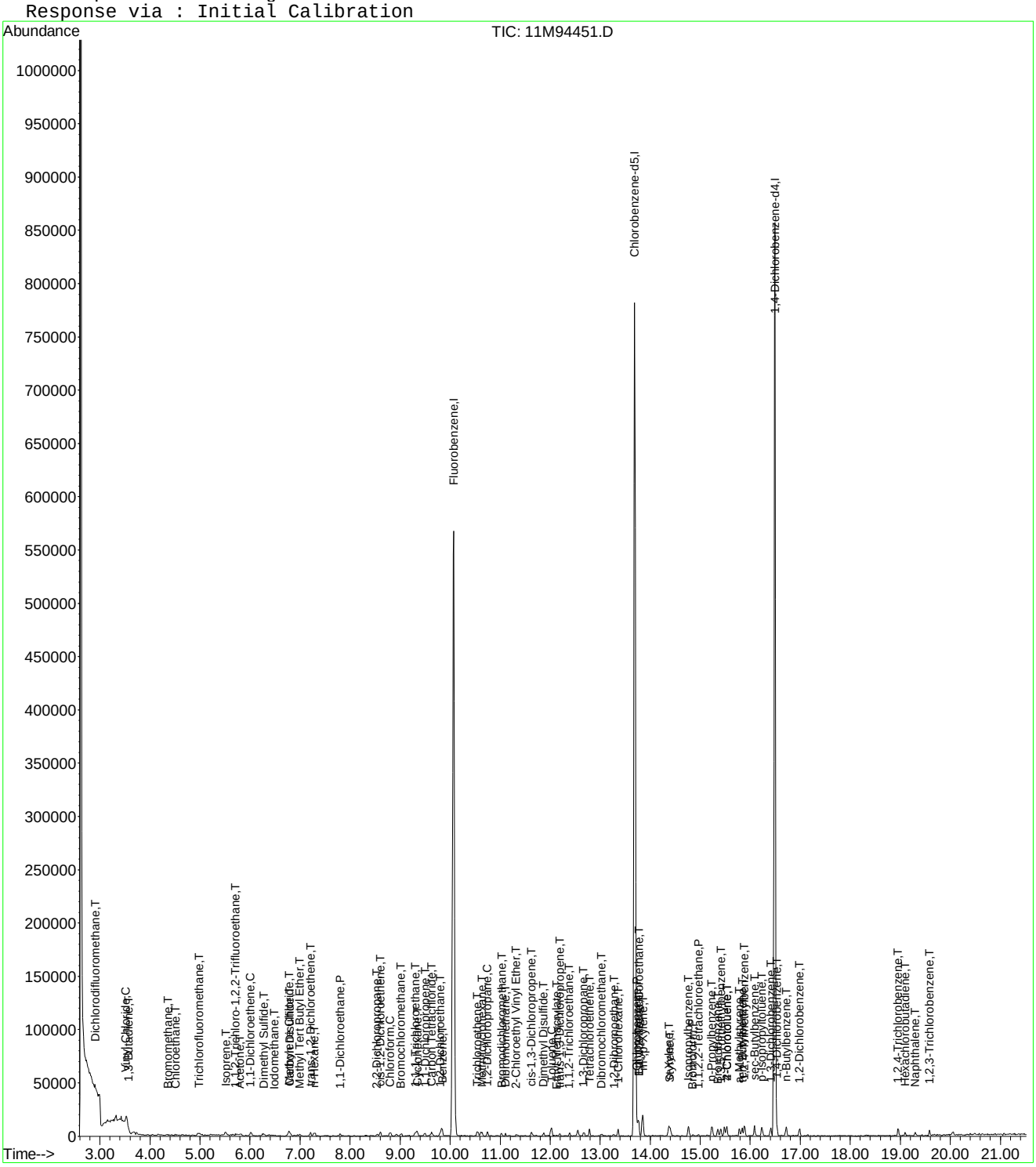

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94452.D Vial: 4
Acq On : 21 Aug 2013 16:30 Operator: ADC
Sample : WG442178-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:10:12 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:08:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	623106	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	484634	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	267065	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	2318	0.3568 ug/L #	68
4) Vinyl Chloride	3.53	62	4487	0.4726 ug/L	100
5) 1,3-Butadiene	3.58	54	2634	0.4142 ug/L #	54
6) Bromomethane	4.37	94	415	0.7289 ug/L #	22
7) Chloroethane	4.51	64	1092	0.2710 ug/L	81
8) Trichlorofluoromethane	4.95	101	5702	0.4054 ug/L	95
10) Isoprene	5.52	67	2195	0.2929 ug/L	81
12) 1,1,2-Trichloro-1,2,2-Trif	5.71	101	958	0.4659 ug/L #	3
13) Acetone	5.80	43	2383	1.1675 ug/L	90
14) 1,1-Dichloroethene	6.01	61	4171	0.3667 ug/L	88
16) Dimethyl Sulfide	6.26	62	1820	0.3332 ug/L	92
17) Iodomethane	6.49	142	650	0.5333 ug/L #	26
19) Methylene Chloride	6.76	84	2564	0.4033 ug/L	95
20) Carbon Disulfide	6.80	76	6406	0.3704 ug/L #	85
22) Methyl Tert Butyl Ether	6.99	73	5213	0.3451 ug/L #	78
23) trans-1,2-Dichloroethene	7.21	96	2327	0.3776 ug/L	83
24) n-Hexane	7.29	57	2670	0.3397 ug/L #	69
27) 1,1-Dichloroethane	7.81	63	4514	0.3653 ug/L #	73
31) 2,2-Dichloropropane	8.56	77	2655	0.4303 ug/L #	55
32) cis-1,2-Dichloroethene	8.59	96	2552	0.3649 ug/L	98
33) Chloroform	8.80	83	5884	0.4388 ug/L	96
35) Bromochloromethane	9.03	130	1399	0.3482 ug/L	89
38) 1,1,1-Trichloroethane	9.32	97	4873	0.3554 ug/L #	88
39) Cyclohexane	9.35	56	4060	0.3819 ug/L #	22
40) 1,1-Dichloropropene	9.50	75	3078	0.3121 ug/L	82
41) Carbon Tetrachloride	9.64	117	4306	0.3330 ug/L	86
45) 1,2-Dichloroethane	9.79	62	3841	0.3712 ug/L	86
46) Benzene	9.83	78	10510	0.4222 ug/L	96
47) Trichloroethene	10.55	130	2372	0.3418 ug/L	88
48) Methylcyclohexane	10.62	83	2863	0.3336 ug/L	91
49) 1,2-Dichloropropane	10.74	63	2414	0.3704 ug/L	97
51) Bromodichloromethane	11.03	83	3826	0.3727 ug/L #	92
52) Dibromomethane	11.09	93	1068	0.3049 ug/L	92
53) 2-Chloroethyl Vinyl Ether	11.32	63	238	0.7530 ug/L #	47
55) cis-1,3-Dichloropropene	11.62	75	3729	0.3658 ug/L #	68
56) Dimethyl Disulfide	11.87	79	971	0.1892 ug/L #	33
59) Toluene	12.03	91	10483	0.3893 ug/L	99
60) Ethyl Methacrylate	12.12	69	912	0.6337 ug/L #	55
62) trans-1,3-Dichloropropene	12.19	75	2723	0.2936 ug/L	86
63) 1,1,2-Trichloroethane	12.39	97	1073	0.2500 ug/L #	45

(#) = qualifier out of range (m) = manual integration
11M94452.D 8260WT.M Thu Aug 22 08:11:19 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94452.D Vial: 4
Acq On : 21 Aug 2013 16:30 Operator: ADC
Sample : WG442178-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:10:12 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:08:38 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
65)	1,3-Dichloropropane	12.68	76	2930	0.3662 ug/L		93
66)	Tetrachloroethene	12.79	164	2070	0.3385 ug/L		95
67)	Dibromochloromethane	13.03	129	2389	0.3460 ug/L		84
68)	1,2-Dibromoethane	13.28	107	1414	0.3101 ug/L		92
69)	1-Chlorohexane	13.36	91	2027	0.4234 ug/L		97
70)	Chlorobenzene	13.74	112	7397	0.4046 ug/L		93
71)	1,1,1,2-Tetrachloroethane	13.76	131	2449	0.3158 ug/L		97
72)	Ethylbenzene	13.76	106	3479	0.3519 ug/L		83
73)	m-,p-Xylene	13.84	106	9079	0.7881 ug/L		95
74)	o-Xylene	14.37	106	4092	0.3553 ug/L		94
75)	Styrene	14.40	104	6420	0.3471 ug/L		94
76)	Bromoform	14.86	173	1121	0.2594 ug/L		88
77)	Isopropylbenzene	14.77	105	10528	0.3596 ug/L		98
79)	1,1,2,2-Tetrachloroethane	14.97	83	1290	0.2959 ug/L		68
81)	1,2,3-Trichloropropane	15.14	110	666	0.3963 ug/L		87
83)	n-Propylbenzene	15.24	91	12393	0.3569 ug/L		96
84)	Bromobenzene	15.34	156	2990	0.3638 ug/L		87
85)	1,3,5-Trimethylbenzene	15.41	105	9559	0.3713 ug/L		94
86)	2-Chlorotoluene	15.49	91	8483	0.3708 ug/L		100
87)	4-Chlorotoluene	15.53	91	9868	0.4152 ug/L		93
88)	a-Methylstyrene	15.78	118	3770	0.2950 ug/L		94
89)	tert-Butylbenzene	15.83	134	1393	0.2760 ug/L	#	18
90)	1,2,4-Trimethylbenzene	15.89	105	9416	0.3504 ug/L		85
91)	sec-Butylbenzene	16.09	105	11204	0.3795 ug/L		96
92)	p-Isopropyltoluene	16.23	119	9114	0.3563 ug/L		97
93)	1,3-Dichlorobenzene	16.42	146	5881	0.3807 ug/L		88
94)	1,4-Dichlorobenzene	16.53	146	6486	0.4065 ug/L		76
95)	n-Butylbenzene	16.72	91	8271	0.3707 ug/L	#	91
96)	1,2-Dichlorobenzene	16.99	146	5506	0.3932 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	17.91	75	205	0.2011 ug/L		94
98)	1,2,4-Trichlorobenzene	18.95	180	3555	0.3452 ug/L		87
99)	Hexachlorobutadiene	19.10	225	1692	0.3796 ug/L	#	57
100)	Naphthalene	19.29	128	5524	0.3312 ug/L	#	66
101)	1,2,3-Trichlorobenzene	19.59	180	3279	0.3634 ug/L		91

(#) = qualifier out of range (m) = manual integration
11M94452.D 8260WT.M Thu Aug 22 08:11:19 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94452.D Vial: 4
Acq On : 21 Aug 2013 16:30 Operator: ADC
Sample : WG442178-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 8:10 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:08:38 2013
Response via : Initial Calibration

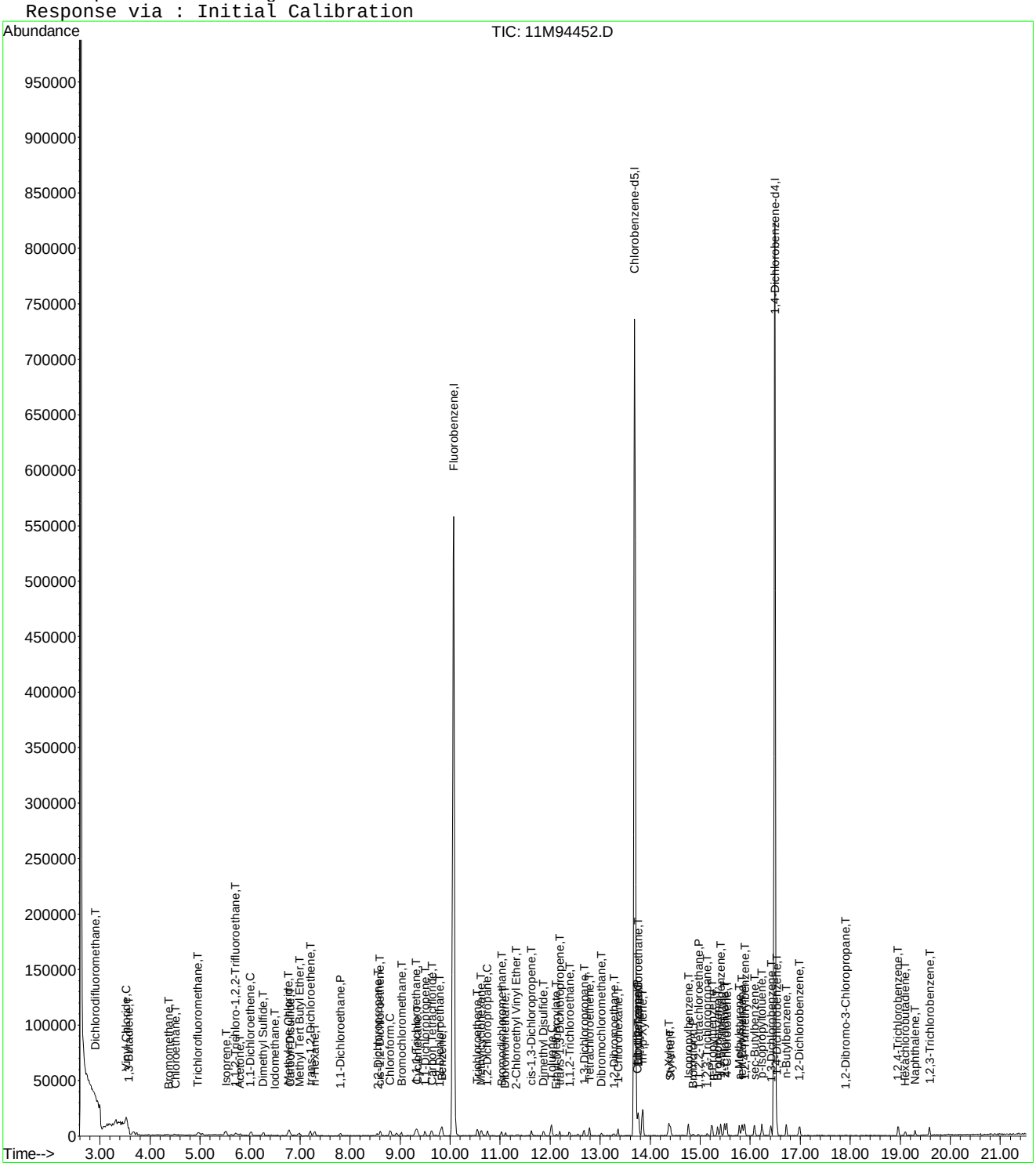

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94453.D Vial: 5
Acq On : 21 Aug 2013 17:01 Operator: ADC
Sample : WG442178-04 1.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:13:35 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	597980	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	483119	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	268669	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.08	111	3057	0.4390 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.76%#	
43) 1,2-Dichloroethane-d4	9.68	65	3820	0.4747 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.88%#	
58) Toluene-d8	11.93	98	11125	0.4791 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.92%#	
80) p-Bromofluorobenzene	15.09	95	4257	0.4331 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.72%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	5287	0.8481 ug/L	93
3) Chloromethane	3.32	50	15221	1.0815 ug/L	84
4) Vinyl Chloride	3.52	62	7446	0.8968 ug/L	100
5) 1,3-Butadiene	3.57	54	6209	1.0175 ug/L #	69
6) Bromomethane	4.35	94	2610	1.3117 ug/L	86
7) Chloroethane	4.51	64	4037	1.0438 ug/L	91
8) Trichlorofluoromethane	4.98	101	13881	1.0283 ug/L	92
9) Diethyl ether	5.48	59	21799	5.0285 ug/L	82
10) Isoprene	5.51	67	6580	0.9148 ug/L	97
11) Acrolein	5.70	56	702	3.1331 ug/L #	54
12) 1,1,2-Trichloro-1,2,2-Trif	5.71	101	3222	0.8173 ug/L #	1
13) Acetone	5.81	43	2791	1.4249 ug/L	83
14) 1,1-Dichloroethene	6.03	61	11115	1.0182 ug/L	90
15) Tert-Butyl Alcohol	6.13	59	3426	10.1566 ug/L #	58
16) Dimethyl Sulfide	6.27	62	4702	0.8970 ug/L	93
17) Iodomethane	6.49	142	4040	1.0316 ug/L	78
18) Methyl acetate	6.53	43	1426	1.0011 ug/L #	66
19) Methylene Chloride	6.76	84	6363	1.0428 ug/L	98
20) Carbon Disulfide	6.80	76	16365	0.9861 ug/L	98
21) Acrylonitrile	6.95	53	3241	2.3521 ug/L	86
22) Methyl Tert Butyl Ether	6.99	73	14047	0.9688 ug/L	95
23) trans-1,2-Dichloroethene	7.21	96	5403	0.9136 ug/L	90
24) n-Hexane	7.29	57	7787	1.0325 ug/L #	89
25) Diisopropyl ether	7.62	45	114544	5.4750 ug/L	96
26) Vinyl Acetate	7.79	43	838	1.9465 ug/L #	76
27) 1,1-Dichloroethane	7.80	63	12661	1.0677 ug/L	97
28) Ethyl-Tert-Butyl ether	8.17	59	96495	4.9638 ug/L	96
29) 2-Butanone	8.33	43	1092	0.6941 ug/L #	59
30) Propionitrile	8.45	54	2066	4.3387 ug/L #	59
31) 2,2-Dichloropropane	8.54	77	9841	1.0205 ug/L	91
32) cis-1,2-Dichloroethene	8.60	96	6151	0.9166 ug/L	97
33) Chloroform	8.80	83	11853	0.9210 ug/L	99
34) 1-Bromopropane	8.93	122	713	0.9905 ug/L	86
35) Bromochloromethane	9.02	130	3243	0.8410 ug/L	88
36) Tetrahydrofuran	9.05	42	4954	4.9849 ug/L #	80
38) 1,1,1-Trichloroethane	9.32	97	13295	1.0103 ug/L #	96
39) Cyclohexane	9.35	56	9473	0.9285 ug/L	90
40) 1,1-Dichloropropene	9.49	75	10314	1.0896 ug/L	95
41) Carbon Tetrachloride	9.64	117	13002	1.0477 ug/L	94
42) Tert-Amyl-Methyl ether	9.61	73	75465	5.0393 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94453.D Vial: 5
Acq On : 21 Aug 2013 17:01 Operator: ADC
Sample : WG442178-04 1.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:13:35 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.80	62	9780	0.9849 ug/L		95
46)	Benzene	9.83	78	24209	1.0134 ug/L		97
47)	Trichloroethene	10.55	130	6439	0.9669 ug/L		96
48)	Methylcyclohexane	10.63	83	7940	0.9639 ug/L		93
49)	1,2-Dichloropropane	10.75	63	5947	0.9510 ug/L		93
51)	Bromodichloromethane	11.02	83	9284	0.9425 ug/L	#	97
52)	Dibromomethane	11.10	93	3230	0.9607 ug/L		88
53)	2-Chloroethyl Vinyl Ether	11.32	63	1483	1.2158 ug/L		99
54)	4-Methyl-2-Pentanone	11.35	58	695	0.5049 ug/L	#	36
55)	cis-1,3-Dichloropropene	11.62	75	8955	0.9152 ug/L		97
56)	Dimethyl Disulfide	11.87	79	3638	0.7386 ug/L		96
59)	Toluene	12.03	91	26058	0.9707 ug/L		97
60)	Ethyl Methacrylate	12.13	69	3434	1.0865 ug/L		98
62)	trans-1,3-Dichloropropene	12.19	75	7854	0.8495 ug/L		97
63)	1,1,2-Trichloroethane	12.39	97	4381	1.0240 ug/L		85
64)	2-Hexanone	12.35	43	1811	0.6782 ug/L	#	59
65)	1,3-Dichloropropane	12.68	76	7412	0.9292 ug/L		95
66)	Tetrachloroethene	12.79	164	6087	0.9986 ug/L		92
67)	Dibromochloromethane	13.03	129	6263	0.9099 ug/L		89
68)	1,2-Dibromoethane	13.27	107	4045	0.8898 ug/L		100
69)	1-Chlorohexane	13.36	91	6118	0.9204 ug/L		85
70)	Chlorobenzene	13.73	112	18473	1.0137 ug/L		96
71)	1,1,1,2-Tetrachloroethane	13.77	131	7687	0.9943 ug/L		88
72)	Ethylbenzene	13.77	106	9029	0.9162 ug/L		87
73)	m-,p-Xylene	13.84	106	22493	1.9586 ug/L		95
74)	o-Xylene	14.37	106	10320	0.8989 ug/L		96
75)	Styrene	14.40	104	16718	0.9067 ug/L		98
76)	Bromoform	14.85	173	3278	0.7610 ug/L		100
77)	Isopropylbenzene	14.77	105	29058	0.9957 ug/L		94
79)	1,1,2,2-Tetrachloroethane	14.96	83	3702	0.8440 ug/L		98
81)	1,2,3-Trichloropropane	15.14	110	1192	0.7050 ug/L		92
82)	trans-1,4-Dichloro-2-Buten	15.19	53	588	1.2023 ug/L	#	1
83)	n-Propylbenzene	15.23	91	31750	0.9088 ug/L		97
84)	Bromobenzene	15.35	156	7745	0.9366 ug/L		86
85)	1,3,5-Trimethylbenzene	15.41	105	23176	0.8947 ug/L		98
86)	2-Chlorotoluene	15.48	91	23774	1.0330 ug/L		90
87)	4-Chlorotoluene	15.53	91	19069	0.7975 ug/L		96
88)	a-Methylstyrene	15.78	118	11044	0.8589 ug/L		94
89)	tert-Butylbenzene	15.84	134	4666	0.9189 ug/L		85
90)	1,2,4-Trimethylbenzene	15.88	105	25223	0.9331 ug/L		97
91)	sec-Butylbenzene	16.09	105	28671	0.9654 ug/L		96
92)	p-Isopropyltoluene	16.23	119	24715	0.9604 ug/L		97
93)	1,3-Dichlorobenzene	16.41	146	15294	0.9842 ug/L		100
94)	1,4-Dichlorobenzene	16.53	146	15956	0.9942 ug/L	#	66
95)	n-Butylbenzene	16.72	91	20925	0.9322 ug/L		98
96)	1,2-Dichlorobenzene	16.99	146	13633	0.9678 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	17.90	75	509	0.4963 ug/L		85
98)	1,2,4-Trichlorobenzene	18.95	180	9431	0.9103 ug/L		90
99)	Hexachlorobutadiene	19.11	225	4086	0.9113 ug/L		96
100)	Naphthalene	19.29	128	15380	0.9167 ug/L		97
101)	1,2,3-Trichlorobenzene	19.58	180	8758	0.9649 ug/L		92

(#) = qualifier out of range (m) = manual integration
11M94453.D 8260WT.M Thu Aug 22 08:13:51 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94453.D Vial: 5
Acq On : 21 Aug 2013 17:01 Operator: ADC
Sample : WG442178-04 1.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 8:13 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration

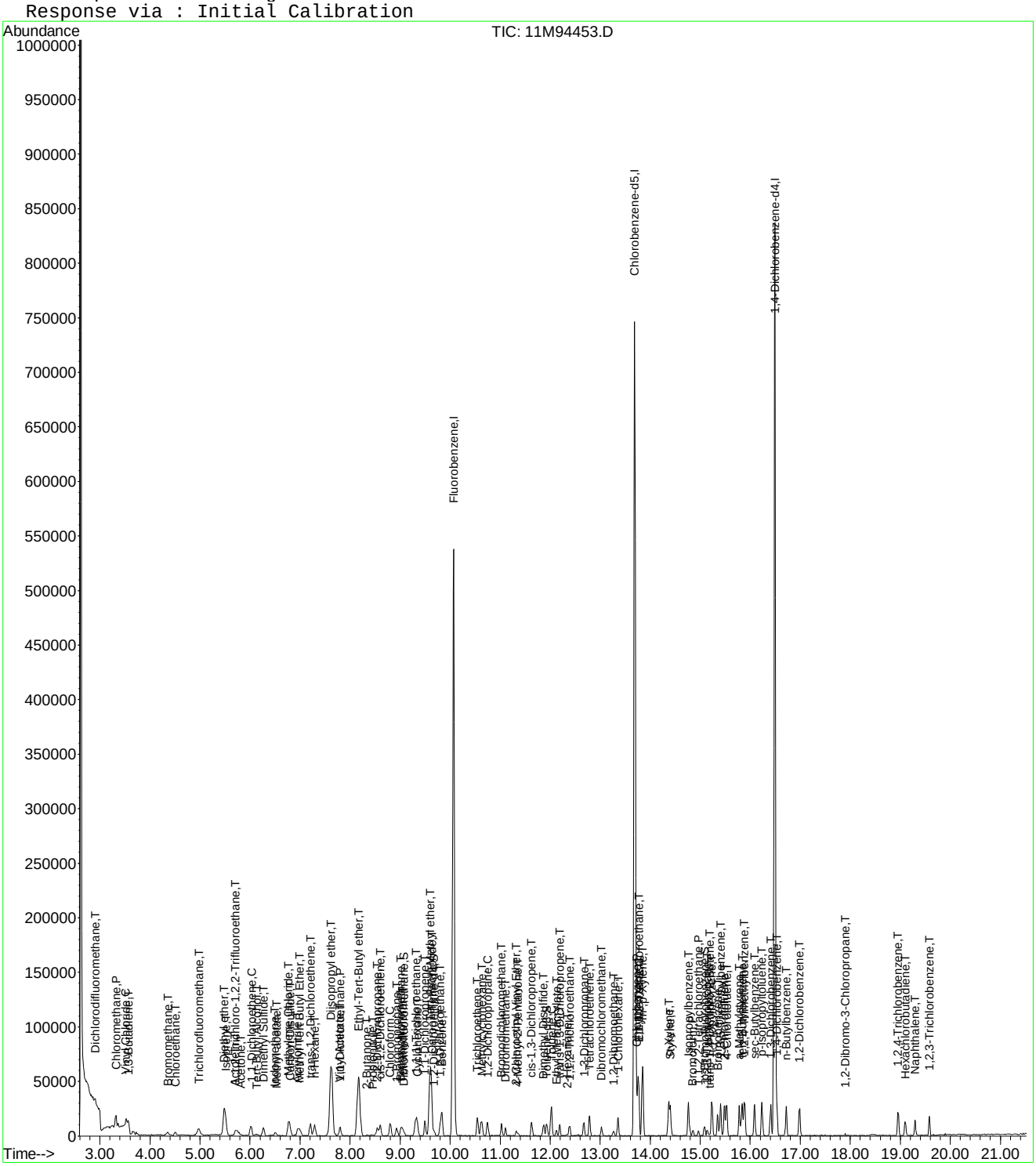

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94454.D Vial: 6
Acq On : 21 Aug 2013 17:32 Operator: ADC
Sample : WG442178-05 2.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:13:56 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	674927	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	473301	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	264371	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.09	111	8181	1.0409 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.16%#	
43) 1,2-Dichloroethane-d4	9.69	65	8974	0.9880 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.96%#	
58) Toluene-d8	11.93	98	24472	1.0757 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.32%#	
80) p-Bromofluorobenzene	15.09	95	8968	0.9272 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.72%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	11657	1.6567 ug/L	92
3) Chloromethane	3.31	50	21585	1.5234 ug/L	84
4) Vinyl Chloride	3.52	62	15199	1.7100 ug/L	97
5) 1,3-Butadiene	3.57	54	12802	1.8587 ug/L	81
6) Bromomethane	4.34	94	5890	1.9991 ug/L	98
7) Chloroethane	4.50	64	7815	1.7903 ug/L	94
8) Trichlorofluoromethane	4.97	101	27163	1.7828 ug/L	98
9) Diethyl ether	5.48	59	110520	22.5879 ug/L	95
10) Isoprene	5.52	67	14350	1.7676 ug/L	96
11) Acrolein	5.69	56	5967	11.3563 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	12468	2.0116 ug/L	96
13) Acetone	5.80	43	4338	1.9622 ug/L	96
14) 1,1-Dichloroethene	6.02	61	23201	1.8831 ug/L	95
15) Tert-Butyl Alcohol	6.12	59	16516	43.3808 ug/L #	90
16) Dimethyl Sulfide	6.27	62	10625	1.7958 ug/L	92
17) Iodomethane	6.50	142	10492	1.7983 ug/L	99
18) Methyl acetate	6.55	43	4676	2.0484 ug/L #	66
19) Methylene Chloride	6.76	84	13314	1.9333 ug/L	99
20) Carbon Disulfide	6.79	76	36928	1.9715 ug/L	100
21) Acrylonitrile	6.94	53	17285	11.1139 ug/L	99
22) Methyl Tert Butyl Ether	6.99	73	29580	1.8076 ug/L	98
23) trans-1,2-Dichloroethene	7.21	96	11556	1.7312 ug/L	90
24) n-Hexane	7.29	57	15212	1.7870 ug/L #	93
25) Diisopropyl ether	7.62	45	589598	24.9686 ug/L	98
26) Vinyl Acetate	7.78	43	5632	2.5100 ug/L #	76
27) 1,1-Dichloroethane	7.81	63	25028	1.8701 ug/L	98
28) Ethyl-Tert-Butyl ether	8.17	59	525797	23.9640 ug/L	99
29) 2-Butanone	8.34	43	2713	1.5279 ug/L #	59
30) Propionitrile	8.43	54	11265	20.9597 ug/L	90
31) 2,2-Dichloropropane	8.54	77	22257	1.8200 ug/L	95
32) cis-1,2-Dichloroethene	8.60	96	14491	1.9132 ug/L	96
33) Chloroform	8.80	83	28794	1.9823 ug/L	98
34) 1-Bromopropane	8.92	122	2422	2.0994 ug/L	97
35) Bromochloromethane	9.03	130	8635	1.9840 ug/L	97
36) Tetrahydrofuran	9.05	42	26197	23.3553 ug/L	96
38) 1,1,1-Trichloroethane	9.32	97	28927	1.9476 ug/L	97
39) Cyclohexane	9.35	56	22125	1.9214 ug/L	99
40) 1,1-Dichloropropene	9.50	75	20844	1.9509 ug/L	94
41) Carbon Tetrachloride	9.64	117	26383	1.8836 ug/L	97
42) Tert-Amyl-Methyl ether	9.61	73	407759	24.1246 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94454.D Vial: 6
Acq On : 21 Aug 2013 17:32 Operator: ADC
Sample : WG442178-05 2.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:13:56 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.79	62	21510	1.9193 ug/L		98
46)	Benzene	9.83	78	55702	2.0659 ug/L		98
47)	Trichloroethene	10.55	130	14962	1.9906 ug/L		99
48)	Methylcyclohexane	10.63	83	16826	1.8098 ug/L		94
49)	1,2-Dichloropropane	10.75	63	14709	2.0839 ug/L		87
50)	1,4-Dioxane	11.02	88	1109	50.5682 ug/L		77
51)	Bromodichloromethane	11.02	83	20063	1.8046 ug/L		97
52)	Dibromomethane	11.10	93	6895	1.8170 ug/L		95
53)	2-Chloroethyl Vinyl Ether	11.32	63	4179	2.0344 ug/L		89
54)	4-Methyl-2-Pentanone	11.34	58	2319	1.4927 ug/L	#	71
55)	cis-1,3-Dichloropropene	11.62	75	17840	1.6155 ug/L		94
56)	Dimethyl Disulfide	11.87	79	7682	1.3818 ug/L		98
59)	Toluene	12.03	91	54477	2.0714 ug/L		95
60)	Ethyl Methacrylate	12.12	69	8116	1.9563 ug/L		96
62)	trans-1,3-Dichloropropene	12.19	75	17331	1.9134 ug/L		98
63)	1,1,2-Trichloroethane	12.39	97	8177	1.9510 ug/L		92
64)	2-Hexanone	12.34	43	3840	1.4678 ug/L		80
65)	1,3-Dichloropropane	12.68	76	15860	2.0294 ug/L		96
66)	Tetrachloroethene	12.79	164	10977	1.8381 ug/L		90
67)	Dibromochloromethane	13.03	129	12746	1.8902 ug/L		98
68)	1,2-Dibromoethane	13.27	107	7600	1.7064 ug/L		94
69)	1-Chlorohexane	13.36	91	14308	1.9499 ug/L		93
70)	Chlorobenzene	13.73	112	36266	2.0314 ug/L		97
71)	1,1,1,2-Tetrachloroethane	13.76	131	15371	2.0295 ug/L		97
72)	Ethylbenzene	13.76	106	18804	1.9477 ug/L		92
73)	m-,p-Xylene	13.84	106	47112	4.1875 ug/L		98
74)	o-Xylene	14.37	106	22396	1.9913 ug/L		99
75)	Styrene	14.40	104	35999	1.9930 ug/L		93
76)	Bromoform	14.86	173	7991	1.8936 ug/L		96
77)	Isopropylbenzene	14.77	105	59656	2.0866 ug/L		97
79)	1,1,2,2-Tetrachloroethane	14.96	83	8243	1.9099 ug/L		93
81)	1,2,3-Trichloropropane	15.14	110	3287	1.9757 ug/L		70
82)	trans-1,4-Dichloro-2-Buten	15.19	53	2243	1.9873 ug/L	#	1
83)	n-Propylbenzene	15.23	91	69861	2.0322 ug/L		96
84)	Bromobenzene	15.34	156	16493	2.0270 ug/L		99
85)	1,3,5-Trimethylbenzene	15.41	105	50261	1.9719 ug/L		98
86)	2-Chlorotoluene	15.48	91	45915	2.0274 ug/L		97
87)	4-Chlorotoluene	15.53	91	49096	2.0867 ug/L		97
88)	a-Methylstyrene	15.78	118	20840	1.6472 ug/L		99
89)	tert-Butylbenzene	15.83	134	9075	1.8163 ug/L		69
90)	1,2,4-Trimethylbenzene	15.88	105	53656	2.0173 ug/L		98
91)	sec-Butylbenzene	16.09	105	60772	2.0795 ug/L		96
92)	p-Isopropyltoluene	16.23	119	50797	2.0060 ug/L		97
93)	1,3-Dichlorobenzene	16.41	146	31110	2.0346 ug/L		97
94)	1,4-Dichlorobenzene	16.52	146	32169	2.0369 ug/L		83
95)	n-Butylbenzene	16.72	91	42762	1.9360 ug/L		97
96)	1,2-Dichlorobenzene	16.99	146	27241	1.9652 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	17.91	75	1597	1.5824 ug/L		97
98)	1,2,4-Trichlorobenzene	18.95	180	19465	1.9094 ug/L		96
99)	Hexachlorobutadiene	19.10	225	8570	1.9425 ug/L		98
100)	Naphthalene	19.29	128	31934	1.9343 ug/L		98
101)	1,2,3-Trichlorobenzene	19.58	180	17707	1.9826 ug/L		98

(#) = qualifier out of range (m) = manual integration
11M94454.D 8260WT.M Thu Aug 22 08:14:27 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94454.D Vial: 6
Acq On : 21 Aug 2013 17:32 Operator: ADC
Sample : WG442178-05 2.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 8:13 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration

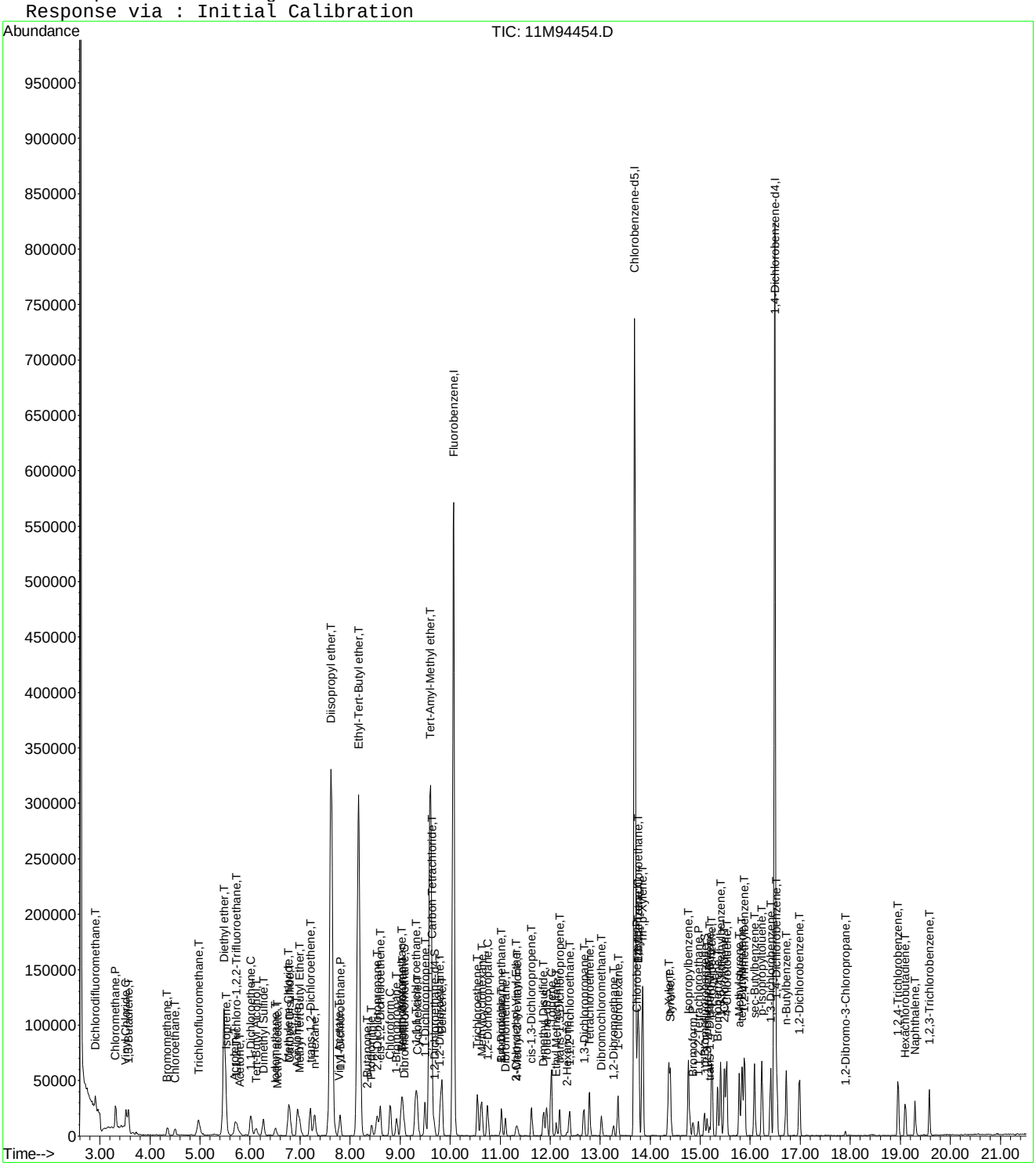

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94455.D Vial: 7
Acq On : 21 Aug 2013 18:04 Operator: ADC
Sample : WG442178-06 5.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:14:33 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	634757	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	486667	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	276703	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.08	111	18970	2.5665 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.28%#		
43) 1,2-Dichloroethane-d4	9.69	65	22377	2.6194 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.48%#		
58) Toluene-d8	11.93	98	61648	2.6355 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.56%#		
80) p-Bromofluorobenzene	15.09	95	26036	2.5719 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.28%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	31241	4.7209 ug/L	100
3) Chloromethane	3.32	50	53796	5.0961 ug/L	96
4) Vinyl Chloride	3.52	62	42352	5.2807 ug/L	98
5) 1,3-Butadiene	3.56	54	31525	4.8668 ug/L	91
6) Bromomethane	4.35	94	15293	4.4202 ug/L	98
7) Chloroethane	4.50	64	21017	5.1193 ug/L	100
8) Trichlorofluoromethane	4.97	101	71221	4.9704 ug/L	97
9) Diethyl ether	5.48	59	227034	49.3372 ug/L	96
10) Isoprene	5.51	67	37347	4.8913 ug/L	94
11) Acrolein	5.70	56	11452	21.2244 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	33725	5.1750 ug/L	98
13) Acetone	5.79	43	10820	5.2038 ug/L	97
14) 1,1-Dichloroethene	6.01	61	57577	4.9689 ug/L	100
15) Tert-Butyl Alcohol	6.11	59	35177	98.2427 ug/L	95
16) Dimethyl Sulfide	6.27	62	26888	4.8321 ug/L	94
17) Iodomethane	6.50	142	30285	4.6041 ug/L	100
18) Methyl acetate	6.53	43	13188	5.2404 ug/L	87
19) Methylene Chloride	6.76	84	33002	5.0953 ug/L	91
20) Carbon Disulfide	6.80	76	89970	5.1073 ug/L	98
21) Acrylonitrile	6.94	53	31531	21.5569 ug/L	92
22) Methyl Tert Butyl Ether	6.99	73	74438	4.8366 ug/L	100
23) trans-1,2-Dichloroethene	7.20	96	30270	4.8217 ug/L	98
24) n-Hexane	7.29	57	38471	4.8053 ug/L	96
25) Diisopropyl ether	7.62	45	1115135	50.2128 ug/L	99
26) Vinyl Acetate	7.78	43	18653	4.2175 ug/L	96
27) 1,1-Dichloroethane	7.80	63	64441	5.1197 ug/L	99
28) Ethyl-Tert-Butyl ether	8.17	59	1025359	49.6897 ug/L	99
29) 2-Butanone	8.33	43	7612	4.5582 ug/L	95
30) Propionitrile	8.43	54	25486	50.4203 ug/L	90
31) 2,2-Dichloropropane	8.54	77	60055	4.8029 ug/L	99
32) cis-1,2-Dichloroethene	8.60	96	34810	4.8866 ug/L	94
33) Chloroform	8.81	83	67581	4.9470 ug/L	99
34) 1-Bromopropane	8.93	122	6074	4.8671 ug/L	94
35) Bromochloromethane	9.02	130	19389	4.7368 ug/L	95
36) Tetrahydrofuran	9.05	42	50676	48.0380 ug/L	97
38) 1,1,1-Trichloroethane	9.31	97	67697	4.8465 ug/L	100
39) Cyclohexane	9.34	56	50702	4.6818 ug/L	98
40) 1,1-Dichloropropene	9.49	75	46859	4.6634 ug/L	98
41) Carbon Tetrachloride	9.63	117	65651	4.9836 ug/L	98
42) Tert-Amyl-Methyl ether	9.61	73	777425	48.9062 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M94455.D 8260WT.M Thu Aug 22 08:14:59 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94455.D Vial: 7
Acq On : 21 Aug 2013 18:04 Operator: ADC
Sample : WG442178-06 5.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:14:33 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.80	62	52732	5.0029 ug/L		98
46)	Benzene	9.83	78	128104	5.0519 ug/L		99
47)	Trichloroethene	10.55	130	36260	5.1294 ug/L		98
48)	Methylcyclohexane	10.63	83	45411	5.1936 ug/L		99
49)	1,2-Dichloropropane	10.74	63	32210	4.8521 ug/L		96
50)	1,4-Dioxane	11.01	88	2679	98.2078 ug/L		85
51)	Bromodichloromethane	11.02	83	51014	4.8788 ug/L		100
52)	Dibromomethane	11.10	93	18489	5.1807 ug/L		99
53)	2-Chloroethyl Vinyl Ether	11.32	63	12368	4.9663 ug/L		97
54)	4-Methyl-2-Pentanone	11.35	58	6700	4.5855 ug/L		94
55)	cis-1,3-Dichloropropene	11.62	75	51092	4.9193 ug/L		96
56)	Dimethyl Disulfide	11.87	79	20559	3.9321 ug/L		84
59)	Toluene	12.03	91	141740	5.2413 ug/L		98
60)	Ethyl Methacrylate	12.12	69	23705	4.6906 ug/L		96
62)	trans-1,3-Dichloropropene	12.19	75	45417	4.8764 ug/L		99
63)	1,1,2-Trichloroethane	12.39	97	22567	5.2365 ug/L		97
64)	2-Hexanone	12.34	43	11701	4.3498 ug/L		92
65)	1,3-Dichloropropane	12.68	76	39799	4.9528 ug/L		96
66)	Tetrachloroethene	12.79	164	32240	5.2504 ug/L		98
67)	Dibromochloromethane	13.03	129	33664	4.8551 ug/L		97
68)	1,2-Dibromoethane	13.27	107	23256	5.0782 ug/L		99
69)	1-Chlorohexane	13.36	91	39402	4.9232 ug/L		98
70)	Chlorobenzene	13.73	112	96049	5.2324 ug/L		98
71)	1,1,1,2-Tetrachloroethane	13.77	131	39167	5.0295 ug/L		100
72)	Ethylbenzene	13.76	106	50987	5.1361 ug/L		96
73)	m-,p-Xylene	13.84	106	121520	10.5045 ug/L		92
74)	o-Xylene	14.37	106	58832	5.0873 ug/L		100
75)	Styrene	14.40	104	97474	5.2482 ug/L		94
76)	Bromoform	14.86	173	20930	4.8235 ug/L		98
77)	Isopropylbenzene	14.77	105	160316	5.4534 ug/L		100
79)	1,1,2,2-Tetrachloroethane	14.96	83	23004	5.0924 ug/L		96
81)	1,2,3-Trichloropropane	15.14	110	7732	4.4403 ug/L		95
82)	trans-1,4-Dichloro-2-Buten	15.19	53	8214	4.6308 ug/L	#	7
83)	n-Propylbenzene	15.23	91	187692	5.2164 ug/L		99
84)	Bromobenzene	15.34	156	42363	4.9744 ug/L		97
85)	1,3,5-Trimethylbenzene	15.41	105	137047	5.1373 ug/L		100
86)	2-Chlorotoluene	15.48	91	119896	5.0582 ug/L		99
87)	4-Chlorotoluene	15.53	91	130743	5.3092 ug/L		99
88)	a-Methylstyrene	15.78	118	57950	4.3762 ug/L		99
89)	tert-Butylbenzene	15.84	134	26678	5.1014 ug/L		88
90)	1,2,4-Trimethylbenzene	15.88	105	142576	5.1215 ug/L		98
91)	sec-Butylbenzene	16.09	105	159803	5.2245 ug/L		98
92)	p-Isopropyltoluene	16.23	119	137756	5.1976 ug/L		100
93)	1,3-Dichlorobenzene	16.41	146	81195	5.0734 ug/L		99
94)	1,4-Dichlorobenzene	16.52	146	85111	5.1490 ug/L		97
95)	n-Butylbenzene	16.72	91	119278	5.1595 ug/L		99
96)	1,2-Dichlorobenzene	16.99	146	73260	5.0495 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	17.90	75	5072	4.8017 ug/L		87
98)	1,2,4-Trichlorobenzene	18.95	180	53994	5.0605 ug/L		97
99)	Hexachlorobutadiene	19.10	225	21840	4.7297 ug/L		99
100)	Naphthalene	19.29	128	84842	4.9100 ug/L		99
101)	1,2,3-Trichlorobenzene	19.58	180	44503	4.7608 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M94455.D 8260WT.M Thu Aug 22 08:15:00 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94455.D Vial: 7
Acq On : 21 Aug 2013 18:04 Operator: ADC
Sample : WG442178-06 5.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 8:14 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration

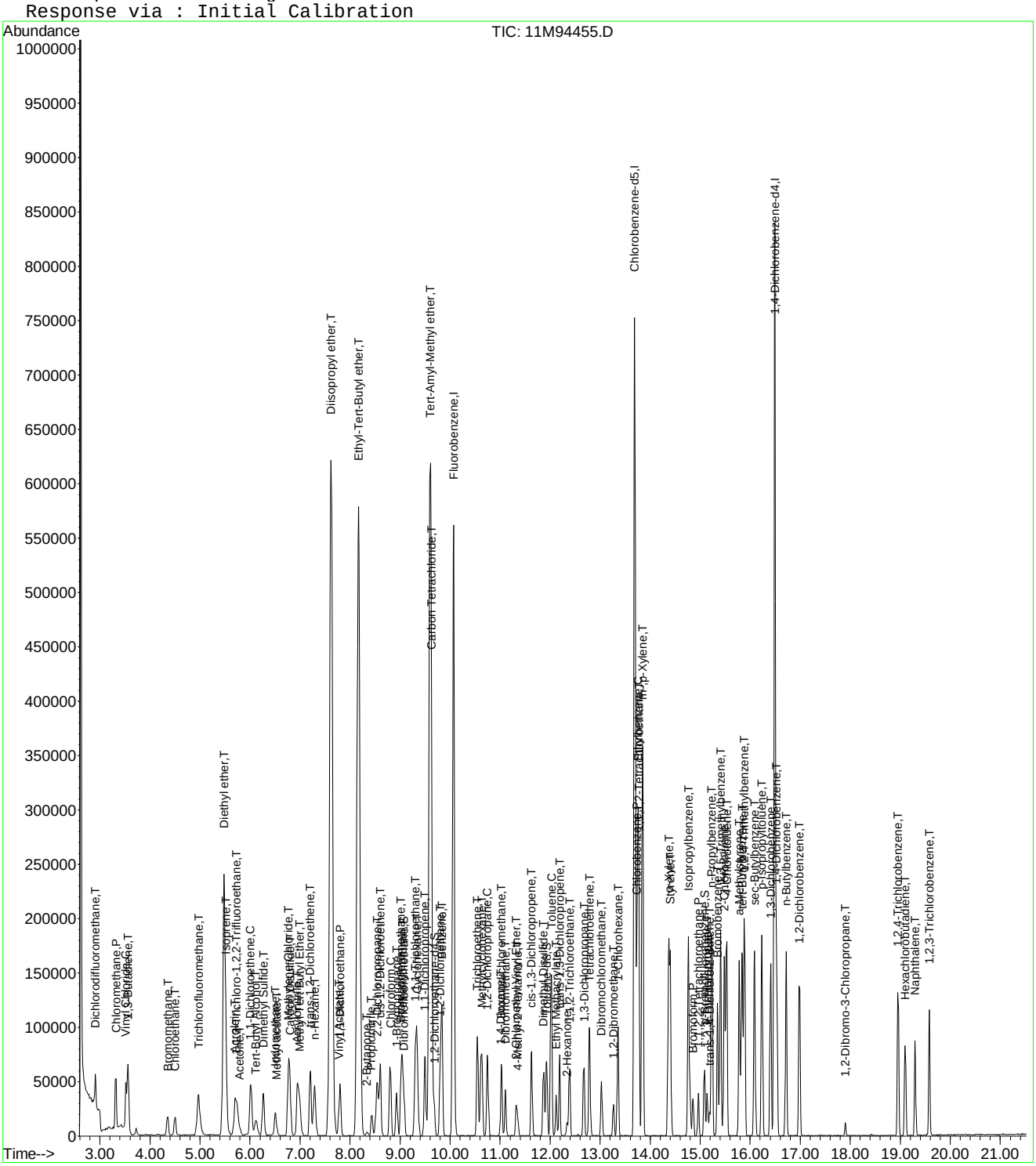

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94456.D Vial: 8
Acq On : 21 Aug 2013 18:35 Operator: ADC
Sample : WG442178-07 20.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:15:13 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	635589	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	481986	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	273067	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.08	111	70383	9.5097 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 38.04%#		
43) 1,2-Dichloroethane-d4	9.68	65	82387	9.6315 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 38.52%#		
58) Toluene-d8	11.93	98	230311	9.9414 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 39.76%#		
80) p-Bromofluorobenzene	15.09	95	96456	9.6551 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 38.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	147828	22.3092 ug/L	97
3) Chloromethane	3.31	50	206106	21.3131 ug/L	98
4) Vinyl Chloride	3.52	62	156320	19.7583 ug/L	99
5) 1,3-Butadiene	3.56	54	131066	20.2072 ug/L	91
6) Bromomethane	4.35	94	63219	16.2965 ug/L	98
7) Chloroethane	4.50	64	86199	20.9686 ug/L	99
8) Trichlorofluoromethane	4.97	101	294536	20.5283 ug/L	99
9) Diethyl ether	5.48	59	371569	80.6407 ug/L	98
10) Isoprene	5.51	67	166635	21.7956 ug/L	98
11) Acrolein	5.70	56	21075	37.4377 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	135465	19.7790 ug/L	99
13) Acetone	5.79	43	39885	19.1574 ug/L	99
14) 1,1-Dichloroethene	6.02	61	238442	20.5506 ug/L	98
15) Tert-Butyl Alcohol	6.12	59	60065	167.5306 ug/L	98
16) Dimethyl Sulfide	6.27	62	115125	20.6621 ug/L	95
17) Iodomethane	6.50	142	145346	20.3896 ug/L	100
18) Methyl acetate	6.52	43	49722	18.4833 ug/L	95
19) Methylene Chloride	6.76	84	128811	19.8615 ug/L	98
20) Carbon Disulfide	6.79	76	373559	21.1779 ug/L	99
21) Acrylonitrile	6.94	53	61556	42.0290 ug/L	95
22) Methyl Tert Butyl Ether	6.98	73	320484	20.7963 ug/L	99
23) trans-1,2-Dichloroethene	7.21	96	132693	21.1089 ug/L	97
24) n-Hexane	7.29	57	176745	22.0480 ug/L	100
25) Diisopropyl ether	7.62	45	1810096	81.3992 ug/L	99
26) Vinyl Acetate	7.78	43	111381	16.0533 ug/L	98
27) 1,1-Dichloroethane	7.80	63	253747	20.1331 ug/L	98
28) Ethyl-Tert-Butyl ether	8.17	59	1804363	87.3264 ug/L	100
29) 2-Butanone	8.33	43	36277	21.6949 ug/L	97
30) Propionitrile	8.44	54	43740	86.4198 ug/L	99
31) 2,2-Dichloropropane	8.54	77	261194	20.1126 ug/L	99
32) cis-1,2-Dichloroethene	8.60	96	141407	19.8245 ug/L	99
33) Chloroform	8.80	83	274866	20.0942 ug/L	100
34) 1-Bromopropane	8.93	122	26650	19.8432 ug/L	92
35) Bromochloromethane	9.02	130	81872	19.9753 ug/L	100
36) Tetrahydrofuran	9.05	42	82870	78.4533 ug/L	98
38) 1,1,1-Trichloroethane	9.31	97	278424	19.9064 ug/L	99
39) Cyclohexane	9.34	56	219100	20.2050 ug/L	98
40) 1,1-Dichloropropene	9.49	75	199023	19.7810 ug/L	99
41) Carbon Tetrachloride	9.64	117	273525	20.7364 ug/L	97
42) Tert-Amyl-Methyl ether	9.61	73	1341246	84.2646 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M94456.D 8260WT.M Thu Aug 22 08:15:14 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94456.D Vial: 8
Acq On : 21 Aug 2013 18:35 Operator: ADC
Sample : WG442178-07 20.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:15:13 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.79	62	219520	20.7996 ug/L	99
46)	Benzene	9.83	78	530788	20.9049 ug/L	98
47)	Trichloroethene	10.55	130	138533	19.5714 ug/L	99
48)	Methylcyclohexane	10.63	83	180704	20.6399 ug/L	99
49)	1,2-Dichloropropane	10.74	63	121385	18.2615 ug/L	98
50)	1,4-Dioxane	11.02	88	4467	150.1031 ug/L	74
51)	Bromodichloromethane	11.02	83	213907	20.4306 ug/L	99
52)	Dibromomethane	11.10	93	72019	20.1537 ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.31	63	51777	18.6364 ug/L	99
54)	4-Methyl-2-Pentanone	11.34	58	26990	18.4477 ug/L	98
55)	cis-1,3-Dichloropropene	11.62	75	214379	20.6140 ug/L	99
56)	Dimethyl Disulfide	11.87	79	102501	19.5784 ug/L	98
59)	Toluene	12.03	91	563944	21.0563 ug/L	98
60)	Ethyl Methacrylate	12.12	69	105096	19.3616 ug/L	100
62)	trans-1,3-Dichloropropene	12.19	75	201864	21.8845 ug/L	99
63)	1,1,2-Trichloroethane	12.39	97	89598	20.9923 ug/L	99
64)	2-Hexanone	12.34	43	53677	20.1480 ug/L	100
65)	1,3-Dichloropropane	12.68	76	164418	20.6599 ug/L	97
66)	Tetrachloroethene	12.79	164	129080	21.2252 ug/L	99
67)	Dibromochloromethane	13.03	129	141832	20.6541 ug/L	100
68)	1,2-Dibromoethane	13.27	107	96239	21.2190 ug/L	99
69)	1-Chlorohexane	13.36	91	166372	20.4082 ug/L	96
70)	Chlorobenzene	13.73	112	384266	21.1365 ug/L	100
71)	1,1,1,2-Tetrachloroethane	13.77	131	159296	20.6540 ug/L	99
72)	Ethylbenzene	13.76	106	202412	20.5876 ug/L	92
73)	m-,p-Xylene	13.84	106	496573	43.3421 ug/L	97
74)	o-Xylene	14.37	106	243180	21.2323 ug/L	99
75)	Styrene	14.40	104	412076	22.4023 ug/L	98
76)	Bromoform	14.86	173	89767	20.8885 ug/L	95
77)	Isopropylbenzene	14.77	105	658675	22.6235 ug/L	99
79)	1,1,2,2-Tetrachloroethane	14.96	83	91216	20.4613 ug/L	99
81)	1,2,3-Trichloropropane	15.14	110	35083	20.4155 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	15.19	53	35788	17.2709 ug/L	89
83)	n-Propylbenzene	15.23	91	771908	21.7390 ug/L	98
84)	Bromobenzene	15.35	156	174108	20.7166 ug/L	98
85)	1,3,5-Trimethylbenzene	15.41	105	577560	21.9383 ug/L	98
86)	2-Chlorotoluene	15.48	91	478655	20.4624 ug/L	99
87)	4-Chlorotoluene	15.53	91	522634	21.5058 ug/L	99
88)	a-Methylstyrene	15.78	118	272133	20.8242 ug/L	100
89)	tert-Butylbenzene	15.84	134	107436	20.8176 ug/L	97
90)	1,2,4-Trimethylbenzene	15.88	105	591882	21.5441 ug/L	97
91)	sec-Butylbenzene	16.09	105	648761	21.4926 ug/L	99
92)	p-Isopropyltoluene	16.23	119	573529	21.9275 ug/L	100
93)	1,3-Dichlorobenzene	16.41	146	330016	20.8954 ug/L	98
94)	1,4-Dichlorobenzene	16.52	146	330477	20.2592 ug/L	99
95)	n-Butylbenzene	16.72	91	494435	21.6719 ug/L	100
96)	1,2-Dichlorobenzene	16.99	146	292136	20.4037 ug/L	100
97)	1,2-Dibromo-3-Chloropropan	17.90	75	18389	17.6408 ug/L	97
98)	1,2,4-Trichlorobenzene	18.95	180	216981	20.6070 ug/L	99
99)	Hexachlorobutadiene	19.10	225	91433	20.0647 ug/L	98
100)	Naphthalene	19.29	128	355092	20.8237 ug/L	100
101)	1,2,3-Trichlorobenzene	19.58	180	188570	20.4413 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M94456.D 8260WT.M Thu Aug 22 08:15:14 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94456.D Vial: 8
Acq On : 21 Aug 2013 18:35 Operator: ADC
Sample : WG442178-07 20.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 8:15 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration

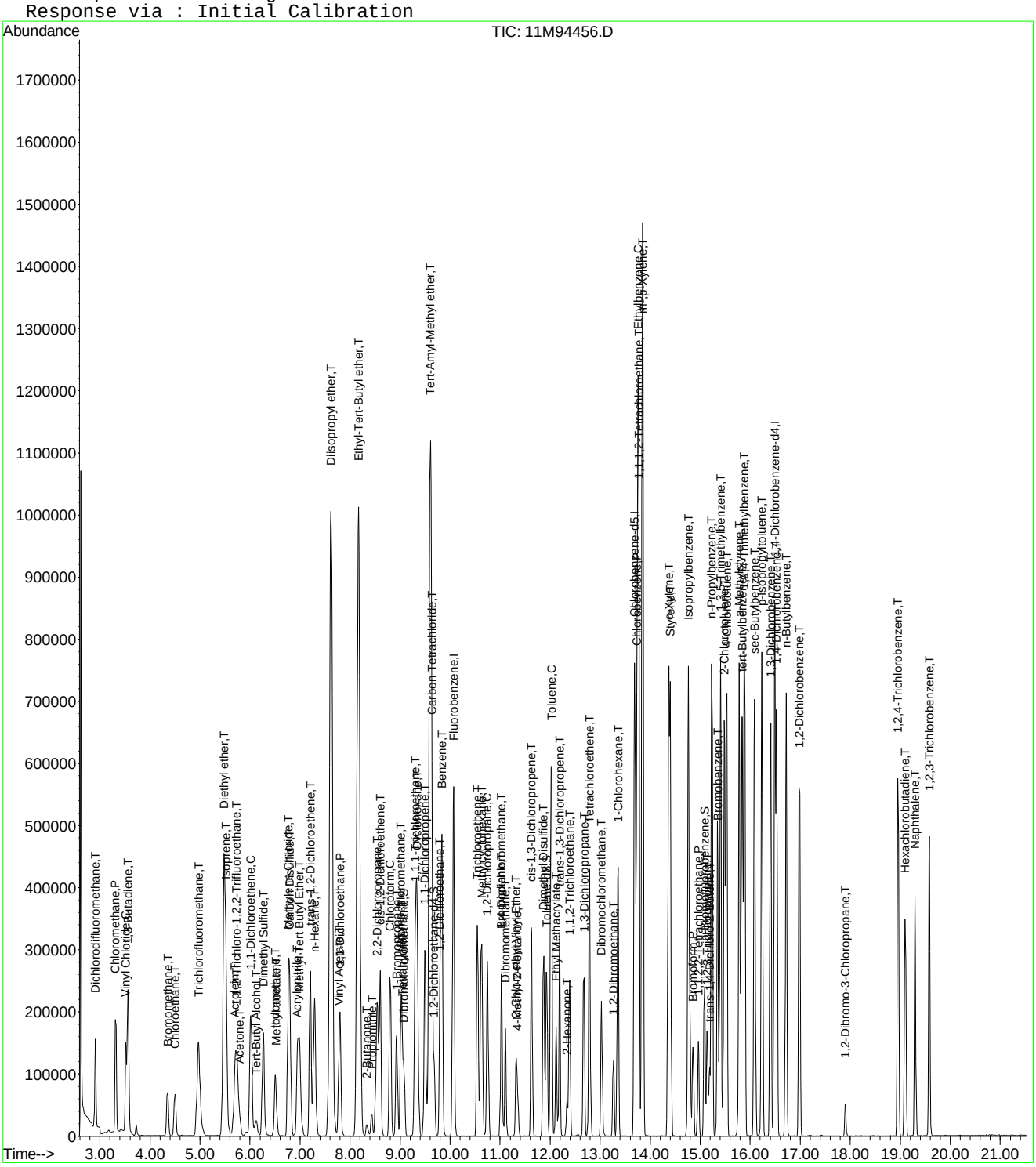

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94457.D Vial: 9
Acq On : 21 Aug 2013 19:06 Operator: ADC
Sample : WG442178-08 50.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:15:14 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	615379	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	485611	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	264881	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.08	111	190974	26.6507 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.60%		
43) 1,2-Dichloroethane-d4	9.69	65	220667	26.6443 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.56%		
58) Toluene-d8	11.93	98	601884	25.7865 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.16%		
80) p-Bromofluorobenzene	15.09	95	255541	26.3697 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.48%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	404112	62.9886 ug/L	100
3) Chloromethane	3.31	50	527257	57.3676 ug/L	100
4) Vinyl Chloride	3.52	62	423297	55.4564 ug/L	100
5) 1,3-Butadiene	3.56	54	367569	58.5312 ug/L	100
6) Bromomethane	4.35	94	193296	50.1174 ug/L	100
7) Chloroethane	4.50	64	234322	58.8727 ug/L	100
8) Trichlorofluoromethane	4.96	101	797604	57.4162 ug/L	100
9) Diethyl ether	5.48	59	483997	108.4904 ug/L	100
10) Isoprene	5.51	67	448538	60.5948 ug/L	100
11) Acrolein	5.70	56	29039	52.4861 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.72	101	373073	55.6604 ug/L	100
13) Acetone	5.79	43	109010	54.0788 ug/L	100
14) 1,1-Dichloroethene	6.02	61	636082	56.6225 ug/L	100
15) Tert-Butyl Alcohol	6.12	59	73549	211.8767 ug/L	100
16) Dimethyl Sulfide	6.27	62	320624	59.4340 ug/L	100
17) Iodomethane	6.50	142	412385	58.8969 ug/L	100
18) Methyl acetate	6.52	43	142649	53.8827 ug/L	100
19) Methylene Chloride	6.76	84	346045	55.1095 ug/L	100
20) Carbon Disulfide	6.79	76	1002322	58.6901 ug/L	100
21) Acrylonitrile	6.94	53	84636	59.6853 ug/L	100
22) Methyl Tert Butyl Ether	6.98	73	885998	59.3809 ug/L	100
23) trans-1,2-Dichloroethene	7.21	96	358343	58.8777 ug/L	100
24) n-Hexane	7.29	57	476486	61.3912 ug/L	100
25) Diisopropyl ether	7.62	45	2245734	104.3062 ug/L	100
26) Vinyl Acetate	7.78	43	414333	56.4699 ug/L	100
27) 1,1-Dichloroethane	7.80	63	688240	56.4007 ug/L	100
28) Ethyl-Tert-Butyl ether	8.17	59	2155902	107.7667 ug/L	100
29) 2-Butanone	8.33	43	91212	56.3393 ug/L	100
30) Propionitrile	8.43	54	51128	104.3343 ug/L	100
31) 2,2-Dichloropropane	8.54	77	716884	56.6038 ug/L	100
32) cis-1,2-Dichloroethene	8.60	96	405318	58.6896 ug/L	100
33) Chloroform	8.80	83	742368	56.0536 ug/L	100
34) 1-Bromopropane	8.93	122	69613	52.7903 ug/L	100
35) Bromochloromethane	9.02	130	222031	55.9508 ug/L	100
36) Tetrahydrofuran	9.05	42	105184	102.8484 ug/L	100
38) 1,1,1-Trichloroethane	9.31	97	763793	56.4021 ug/L	100
39) Cyclohexane	9.34	56	574165	54.6875 ug/L	100
40) 1,1-Dichloropropene	9.49	75	543493	55.7921 ug/L	100
41) Carbon Tetrachloride	9.64	117	732068	57.3219 ug/L	100
42) Tert-Amyl-Methyl ether	9.61	73	1585507	102.8818 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M94457.D 8260WT.M Thu Aug 22 08:15:15 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94457.D Vial: 9
Acq On : 21 Aug 2013 19:06 Operator: ADC
Sample : WG442178-08 50.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:15:14 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.79	62	570706	55.8504 ug/L	100
46)	Benzene	9.83	78	1304745	53.0746 ug/L	100
47)	Trichloroethene	10.55	130	378377	55.2112 ug/L	100
48)	Methylcyclohexane	10.63	83	482576	56.9297 ug/L	100
49)	1,2-Dichloropropane	10.74	63	342268	53.1827 ug/L	100
50)	1,4-Dioxane	11.02	88	6527	216.2443 ug/L	100
51)	Bromodichloromethane	11.02	83	565481	55.7838 ug/L	100
52)	Dibromomethane	11.10	93	189336	54.7235 ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.31	63	146924	53.3286 ug/L	100
54)	4-Methyl-2-Pentanone	11.34	58	75902	53.5829 ug/L	100
55)	cis-1,3-Dichloropropene	11.63	75	567412	56.3523 ug/L	100
56)	Dimethyl Disulfide	11.87	79	284655	56.1566 ug/L	100
59)	Toluene	12.03	91	1421352	52.6737 ug/L	100
60)	Ethyl Methacrylate	12.12	69	282804	50.9250 ug/L	100
62)	trans-1,3-Dichloropropene	12.19	75	544783	58.6202 ug/L	100
63)	1,1,2-Trichloroethane	12.39	97	234028	54.4221 ug/L	100
64)	2-Hexanone	12.34	43	143718	53.5428 ug/L	100
65)	1,3-Dichloropropane	12.68	76	426390	53.1778 ug/L	100
66)	Tetrachloroethene	12.79	164	331968	54.1794 ug/L	100
67)	Dibromochloromethane	13.03	129	386415	55.8511 ug/L	100
68)	1,2-Dibromoethane	13.27	107	257770	56.4095 ug/L	100
69)	1-Chlorohexane	13.36	91	435179	52.6987 ug/L	100
70)	Chlorobenzene	13.73	112	974385	53.1959 ug/L	100
71)	1,1,1,2-Tetrachloroethane	13.76	131	421764	54.2769 ug/L	100
72)	Ethylbenzene	13.76	106	541367	54.6521 ug/L	100
73)	m-,p-Xylene	13.84	106	1263277	109.4387 ug/L	100
74)	o-Xylene	14.37	106	630449	54.6344 ug/L	100
75)	Styrene	14.40	104	1058098	57.0935 ug/L	100
76)	Bromoform	14.86	173	238666	55.1222 ug/L	100
77)	Isopropylbenzene	14.77	105	1678659	57.2264 ug/L	100
79)	1,1,2,2-Tetrachloroethane	14.96	83	246737	57.0578 ug/L	100
81)	1,2,3-Trichloropropane	15.14	110	91399	54.8306 ug/L	100
82)	trans-1,4-Dichloro-2-Buten	15.19	53	103612	49.7027 ug/L	100
83)	n-Propylbenzene	15.23	91	1964559	57.0371 ug/L	100
84)	Bromobenzene	15.35	156	447877	54.9385 ug/L	100
85)	1,3,5-Trimethylbenzene	15.41	105	1491772	58.4153 ug/L	100
86)	2-Chlorotoluene	15.48	91	1226722	54.0628 ug/L	100
87)	4-Chlorotoluene	15.53	91	1331604	56.4874 ug/L	100
88)	a-Methylstyrene	15.78	118	710464	56.0464 ug/L	100
89)	tert-Butylbenzene	15.84	134	281818	56.2947 ug/L	100
90)	1,2,4-Trimethylbenzene	15.88	105	1588752	59.6166 ug/L	100
91)	sec-Butylbenzene	16.09	105	1738242	59.3654 ug/L	100
92)	p-Isopropyltoluene	16.23	119	1486371	58.5842 ug/L	100
93)	1,3-Dichlorobenzene	16.41	146	836548	54.6041 ug/L	100
94)	1,4-Dichlorobenzene	16.53	146	844349	53.3607 ug/L	100
95)	n-Butylbenzene	16.72	91	1300477	58.7638 ug/L	100
96)	1,2-Dichlorobenzene	16.99	146	768161	55.3089 ug/L	100
97)	1,2-Dibromo-3-Chloropropan	17.90	75	57368	56.7347 ug/L	100
98)	1,2,4-Trichlorobenzene	18.95	180	601505	58.8913 ug/L	100
99)	Hexachlorobutadiene	19.10	225	255639	57.8328 ug/L	100
100)	Naphthalene	19.29	128	1009298	61.0174 ug/L	100
101)	1,2,3-Trichlorobenzene	19.58	180	518768	57.9734 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M94457.D 8260WT.M Thu Aug 22 08:15:15 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94457.D Vial: 9
Acq On : 21 Aug 2013 19:06 Operator: ADC
Sample : WG442178-08 50.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 8:15 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration

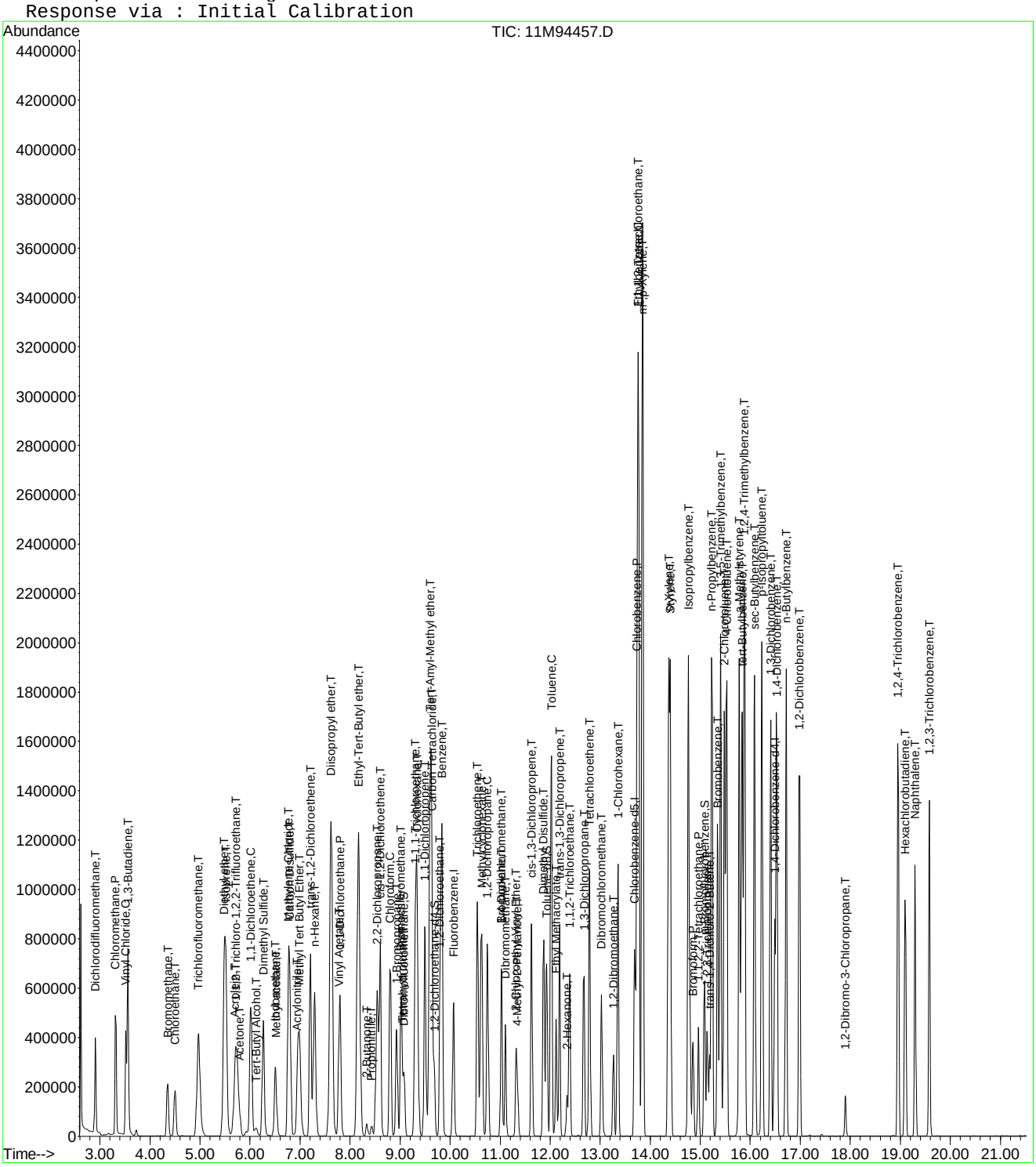

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94458.D Vial: 10
Acq On : 21 Aug 2013 19:38 Operator: ADC
Sample : WG442178-09 100.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:15:16 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	720447	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	529722	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	285969	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.08	111	423086	50.4318 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 201.72%#		
43) 1,2-Dichloroethane-d4	9.68	65	473549	48.8397 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 195.36%#		
58) Toluene-d8	11.93	98	1243427	48.8361 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 195.36%#		
80) p-Bromofluorobenzene	15.09	95	538626	51.4830 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 205.92%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	721753	96.0926 ug/L	99
3) Chloromethane	3.31	50	1018882	95.1087 ug/L	100
4) Vinyl Chloride	3.52	62	821791	92.0338 ug/L	99
5) 1,3-Butadiene	3.56	54	691329	94.0317 ug/L	96
6) Bromomethane	4.35	94	425319	93.6448 ug/L	99
7) Chloroethane	4.50	64	453992	97.4294 ug/L	99
8) Trichlorofluoromethane	4.96	101	1464956	90.0767 ug/L	100
9) Diethyl ether	5.48	59	982009	188.0204 ug/L	100
10) Isoprene	5.51	67	858319	99.0433 ug/L	98
11) Acrolein	5.70	56	60778	92.3554 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	679391	86.3982 ug/L	99
13) Acetone	5.79	43	216500	91.7401 ug/L	98
14) 1,1-Dichloroethene	6.01	61	1234449	93.8621 ug/L	99
15) Tert-Butyl Alcohol	6.11	59	159404	392.2350 ug/L	98
16) Dimethyl Sulfide	6.27	62	646636	102.3857 ug/L	98
17) Iodomethane	6.50	142	813716	98.9633 ug/L	100
18) Methyl acetate	6.52	43	290517	93.3991 ug/L	98
19) Methylene Chloride	6.76	84	684569	93.1218 ug/L	100
20) Carbon Disulfide	6.79	76	1953161	97.6869 ug/L	99
21) Acrylonitrile	6.94	53	176533	106.3357 ug/L	100
22) Methyl Tert Butyl Ether	6.98	73	1784798	102.1748 ug/L	100
23) trans-1,2-Dichloroethene	7.21	96	697433	97.8802 ug/L	95
24) n-Hexane	7.29	57	817569	89.9748 ug/L	99
25) Diisopropyl ether	7.62	45	4409177	174.9243 ug/L	99
26) Vinyl Acetate	7.78	43	876186	100.5232 ug/L	99
27) 1,1-Dichloroethane	7.80	63	1337060	93.5914 ug/L	99
28) Ethyl-Tert-Butyl ether	8.17	59	4159111	177.5810 ug/L	98
29) 2-Butanone	8.33	43	187053	98.6881 ug/L	97
30) Propionitrile	8.43	54	107977	188.2090 ug/L	99
31) 2,2-Dichloropropane	8.54	77	1351576	91.0177 ug/L	99
32) cis-1,2-Dichloroethene	8.60	96	786321	97.2536 ug/L	99
33) Chloroform	8.80	83	1469606	94.7819 ug/L	99
34) 1-Bromopropane	8.93	122	140410	90.6329 ug/L	99
35) Bromochloromethane	9.02	130	503411	108.3567 ug/L	99
36) Tetrahydrofuran	9.05	42	251589	210.1261 ug/L	99
38) 1,1,1-Trichloroethane	9.31	97	1582840	99.8383 ug/L	99
39) Cyclohexane	9.34	56	1241387	100.9948 ug/L	99
40) 1,1-Dichloropropene	9.49	75	1173607	102.9063 ug/L	98
41) Carbon Tetrachloride	9.64	117	1471453	98.4139 ug/L	98
42) Tert-Amyl-Methyl ether	9.61	73	3523236	195.2777 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M94458.D 8260WT.M Thu Aug 22 08:15:16 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94458.D Vial: 10
Acq On : 21 Aug 2013 19:38 Operator: ADC
Sample : WG442178-09 100.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:15:16 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	9.79	62	1193964	99.8036	ug/L	99
46)	Benzene	9.83	78	2854277	99.1739	ug/L	98
47)	Trichloroethene	10.55	130	813906	101.4419	ug/L	100
48)	Methylcyclohexane	10.63	83	987332	99.4894	ug/L	98
49)	1,2-Dichloropropane	10.74	63	698430	92.6974	ug/L	98
50)	1,4-Dioxane	11.02	88	14604	394.8766	ug/L	100
51)	Bromodichloromethane	11.03	83	1151540	97.0308	ug/L	100
52)	Dibromomethane	11.10	93	400222	98.8058	ug/L	99
53)	2-Chloroethyl Vinyl Ether	11.31	63	325077	100.1895	ug/L	100
54)	4-Methyl-2-Pentanone	11.34	58	172496	104.0141	ug/L	96
55)	cis-1,3-Dichloropropene	11.63	75	1192283	101.1424	ug/L	99
56)	Dimethyl Disulfide	11.87	79	621544	104.7357	ug/L	99
59)	Toluene	12.03	91	2866801	97.3936	ug/L	98
60)	Ethyl Methacrylate	12.12	69	616848	101.3568	ug/L	99
62)	trans-1,3-Dichloropropene	12.19	75	1114862	109.9728	ug/L	98
63)	1,1,2-Trichloroethane	12.39	97	488591	104.1582	ug/L	98
64)	2-Hexanone	12.34	43	324666	110.8837	ug/L	94
65)	1,3-Dichloropropane	12.68	76	894446	102.2630	ug/L	99
66)	Tetrachloroethene	12.79	164	670438	100.3084	ug/L	100
67)	Dibromochloromethane	13.03	129	805402	106.7164	ug/L	100
68)	1,2-Dibromoethane	13.27	107	539141	108.1589	ug/L	100
69)	1-Chlorohexane	13.36	91	891492	98.8105	ug/L	97
70)	Chlorobenzene	13.73	112	1970444	98.6171	ug/L	98
71)	1,1,1,2-Tetrachloroethane	13.76	131	873571	103.0586	ug/L	100
72)	Ethylbenzene	13.76	106	1115244	103.2110	ug/L	93
73)	m-,p-Xylene	13.84	106	2551623	202.6419	ug/L	89
74)	o-Xylene	14.37	106	1308660	103.9641	ug/L	95
75)	Styrene	14.40	104	2181008	107.8844	ug/L	99
76)	Bromoform	14.86	173	508388	107.6395	ug/L	98
77)	Isopropylbenzene	14.77	105	3320708	103.7779	ug/L	98
79)	1,1,2,2-Tetrachloroethane	14.96	83	523185	112.0644	ug/L	97
81)	1,2,3-Trichloropropane	15.14	110	193126	107.3134	ug/L	96
82)	trans-1,4-Dichloro-2-Buten	15.19	53	225239	99.1376	ug/L	99
83)	n-Propylbenzene	15.23	91	3793244	102.0081	ug/L	97
84)	Bromobenzene	15.35	156	920148	104.5461	ug/L	97
85)	1,3,5-Trimethylbenzene	15.41	105	2962960	107.4687	ug/L	98
86)	2-Chlorotoluene	15.48	91	2360517	96.3587	ug/L	96
87)	4-Chlorotoluene	15.53	91	2669494	104.8907	ug/L	98
88)	a-Methylstyrene	15.78	118	1486705	108.6331	ug/L	100
89)	tert-Butylbenzene	15.84	134	579912	107.2983	ug/L	96
90)	1,2,4-Trimethylbenzene	15.88	105	3002475	104.3572	ug/L	98
91)	sec-Butylbenzene	16.09	105	3260958	103.1574	ug/L	99
92)	p-Isopropyltoluene	16.23	119	2918023	106.5304	ug/L	99
93)	1,3-Dichlorobenzene	16.41	146	1681584	101.6680	ug/L	98
94)	1,4-Dichlorobenzene	16.53	146	1704199	99.7589	ug/L	98
95)	n-Butylbenzene	16.72	91	2552704	106.8413	ug/L	98
96)	1,2-Dichlorobenzene	16.99	146	1550164	103.3837	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	17.90	75	117170	107.3316	ug/L	98
98)	1,2,4-Trichlorobenzene	18.95	180	1156720	104.8992	ug/L	98
99)	Hexachlorobutadiene	19.10	225	489204	102.5107	ug/L	98
100)	Naphthalene	19.29	128	1947817	109.0723	ug/L	100
101)	1,2,3-Trichlorobenzene	19.58	180	1010309	104.5782	ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94458.D Vial: 10
Acq On : 21 Aug 2013 19:38 Operator: ADC
Sample : WG442178-09 100.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 8:15 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration

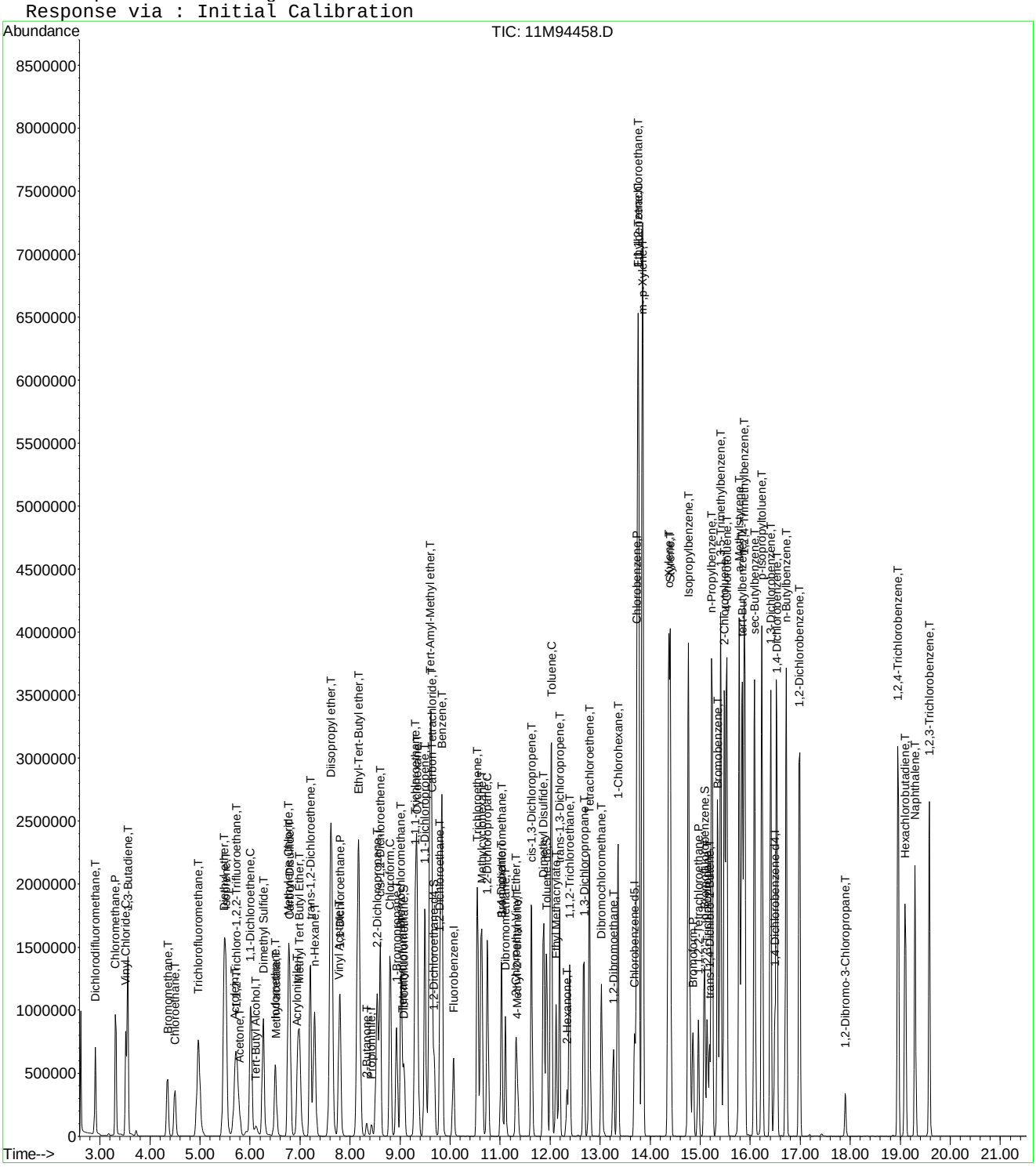

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94459.D Vial: 11
Acq On : 21 Aug 2013 20:09 Operator: ADC
Sample : WG442178-10 200.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:15:17 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	724701	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	531325	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	275242	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.08	111	854603	101.2705 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.08%#		
43) 1,2-Dichloroethane-d4	9.69	65	955164	97.9330 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 391.72%#		
58) Toluene-d8	11.93	98	2486470	97.3625 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 389.44%#		
80) p-Bromofluorobenzene	15.09	95	1078693	107.1221 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 428.48%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	1576818	208.7017 ug/L	98
3) Chloromethane	3.31	50	2052455	191.1076 ug/L	99
4) Vinyl Chloride	3.52	62	1708146	190.2917 ug/L	99
5) 1,3-Butadiene	3.56	54	1422371	192.3294 ug/L	96
6) Bromomethane	4.35	94	963950	210.2103 ug/L	98
7) Chloroethane	4.50	64	961213	205.0711 ug/L	99
8) Trichlorofluoromethane	4.97	101	3146199	192.3168 ug/L	99
9) Diethyl ether	5.48	59	9987	1.9009 ug/L	79
10) Isoprene	5.51	67	1827262	209.6141 ug/L	99
11) Acrolein	5.70	56	2888	6.1482 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	1509498	190.4426 ug/L	100
13) Acetone	5.79	43	460316	193.9102 ug/L	96
14) 1,1-Dichloroethene	6.02	61	2576736	194.7736 ug/L	99
16) Dimethyl Sulfide	6.27	62	1317197	207.3354 ug/L	97
17) Iodomethane	6.50	142	1592986	192.1816 ug/L	100
18) Methyl acetate	6.52	43	585273	186.6039 ug/L	97
19) Methylene Chloride	6.76	84	1358466	183.7072 ug/L	97
20) Carbon Disulfide	6.80	76	3638465	180.9087 ug/L	98
21) Acrylonitrile	6.98	53	39045	23.3809 ug/L #	30
22) Methyl Tert Butyl Ether	6.98	73	3398715	193.4251 ug/L	100
23) trans-1,2-Dichloroethene	7.21	96	1414684	197.3762 ug/L	92
24) n-Hexane	7.29	57	1793091	196.1742 ug/L	99
25) Diisopropyl ether	7.64	45	3425	0.1351 ug/L #	42
26) Vinyl Acetate	7.78	43	1627590	184.0825 ug/L	99
27) 1,1-Dichloroethane	7.80	63	2721175	189.3584 ug/L	98
28) Ethyl-Tert-Butyl ether	8.17	59	5175	0.2197 ug/L	79
29) 2-Butanone	8.33	43	370449	194.2996 ug/L	95
30) Propionitrile	8.44	54	1775	3.0757 ug/L #	59
31) 2,2-Dichloropropane	8.54	77	2782244	186.0274 ug/L	98
32) cis-1,2-Dichloroethene	8.60	96	1538158	189.1254 ug/L	100
33) Chloroform	8.80	83	2910401	186.6038 ug/L	97
34) 1-Bromopropane	8.93	122	321439	205.7073 ug/L	100
35) Bromochloromethane	9.02	130	1003249	214.6767 ug/L	98
36) Tetrahydrofuran	9.05	42	3171	2.6329 ug/L #	46
38) 1,1,1-Trichloroethane	9.31	97	3213928	201.5300 ug/L	98
39) Cyclohexane	9.34	56	2671509	216.0685 ug/L	100
40) 1,1-Dichloropropene	9.49	75	2409950	210.0731 ug/L	96
41) Carbon Tetrachloride	9.64	117	3017786	200.6512 ug/L	98
42) Tert-Amyl-Methyl ether	9.60	73	6820	0.3758 ug/L #	87
45) 1,2-Dichloroethane	9.79	62	2351815	195.4345 ug/L	96

(#) = qualifier out of range (m) = manual integration
11M94459.D 8260WT.M Thu Aug 22 08:15:18 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94459.D Vial: 11
Acq On : 21 Aug 2013 20:09 Operator: ADC
Sample : WG442178-10 200.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:15:17 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	9.83	78	5374282	185.6372 ug/L		94
47)	Trichloroethene	10.55	130	1598304	198.0367 ug/L		99
48)	Methylcyclohexane	10.63	83	2053928	205.7510 ug/L		98
49)	1,2-Dichloropropane	10.74	63	1487441	196.2582 ug/L		98
50)	1,4-Dioxane	11.03	88	3491	109.2361 ug/L	#	20
51)	Bromodichloromethane	11.03	83	2347226	196.6204 ug/L		98
52)	Dibromomethane	11.10	93	809732	198.7312 ug/L		99
53)	2-Chloroethyl Vinyl Ether	11.31	63	647864	197.8448 ug/L		99
54)	4-Methyl-2-Pentanone	11.34	58	349893	209.7451 ug/L		98
55)	cis-1,3-Dichloropropene	11.63	75	2372437	200.0745 ug/L		97
56)	Dimethyl Disulfide	11.87	79	1270512	212.8359 ug/L		96
59)	Toluene	12.03	91	5267068	178.3977 ug/L		93
60)	Ethyl Methacrylate	12.12	69	1229960	201.0250 ug/L		100
62)	trans-1,3-Dichloropropene	12.19	75	2218548	218.1830 ug/L		97
63)	1,1,2-Trichloroethane	12.39	97	1006337	213.8844 ug/L		98
64)	2-Hexanone	12.34	43	653178	222.4079 ug/L	#	35
65)	1,3-Dichloropropane	12.68	76	1781666	203.0852 ug/L		98
66)	Tetrachloroethene	12.79	164	1380567	205.9321 ug/L		100
67)	Dibromochloromethane	13.03	129	1612001	212.9471 ug/L		99
68)	1,2-Dibromoethane	13.27	107	1091237	218.2563 ug/L		99
69)	1-Chlorohexane	13.36	91	1838100	202.9271 ug/L		99
70)	Chlorobenzene	13.73	112	3801495	189.6839 ug/L		94
71)	1,1,1,2-Tetrachloroethane	13.76	131	1780213	209.3851 ug/L		100
72)	Ethylbenzene	13.76	106	2256358	208.1861 ug/L		74
73)	m-,p-Xylene	13.84	106	4766139	377.3699 ug/L		68
74)	o-Xylene	14.37	106	2596183	205.6267 ug/L		84
75)	Styrene	14.40	104	4124926	203.4255 ug/L		94
76)	Bromoform	14.86	173	1013788	213.9987 ug/L		100
77)	Isopropylbenzene	14.77	105	5876927	183.1101 ug/L		90
79)	1,1,2,2-Tetrachloroethane	14.96	83	1040719	231.6062 ug/L		97
81)	1,2,3-Trichloropropane	15.14	110	386393	223.0728 ug/L		97
82)	trans-1,4-Dichloro-2-Buten	15.19	53	459817	209.2313 ug/L		96
83)	n-Propylbenzene	15.23	91	6384262	178.3770 ug/L		87
84)	Bromobenzene	15.35	156	1809165	213.5662 ug/L		99
85)	1,3,5-Trimethylbenzene	15.41	105	5252650	197.9424 ug/L		92
86)	2-Chlorotoluene	15.49	91	4984666	211.4094 ug/L		98
87)	4-Chlorotoluene	15.53	91	3945696	161.0780 ug/L		79
88)	a-Methylstyrene	15.78	118	2803805	212.8578 ug/L		97
89)	tert-Butylbenzene	15.84	134	1151879	221.4328 ug/L		87
90)	1,2,4-Trimethylbenzene	15.88	105	5198130	187.7130 ug/L		89
91)	sec-Butylbenzene	16.09	105	5641687	185.4251 ug/L		93
92)	p-Isopropyltoluene	16.23	119	5061041	191.9680 ug/L		92
93)	1,3-Dichlorobenzene	16.41	146	3109876	195.3499 ug/L		94
94)	1,4-Dichlorobenzene	16.53	146	3098446	188.4429 ug/L		94
95)	n-Butylbenzene	16.72	91	4486896	195.1142 ug/L		94
96)	1,2-Dichlorobenzene	16.99	146	2837907	196.6422 ug/L		94
97)	1,2-Dibromo-3-Chloropropan	17.90	75	228031	217.0248 ug/L		97
98)	1,2,4-Trichlorobenzene	18.95	180	2148873	202.4693 ug/L		96
99)	Hexachlorobutadiene	19.10	225	942519	205.1982 ug/L		99
100)	Naphthalene	19.29	128	3469123	201.8321 ug/L	#	96
101)	1,2,3-Trichlorobenzene	19.58	180	1869032	201.0056 ug/L		98

(#) = qualifier out of range (m) = manual integration
11M94459.D 8260WT.M Thu Aug 22 08:15:18 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94459.D Vial: 11
Acq On : 21 Aug 2013 20:09 Operator: ADC
Sample : WG442178-10 200.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 8:15 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration

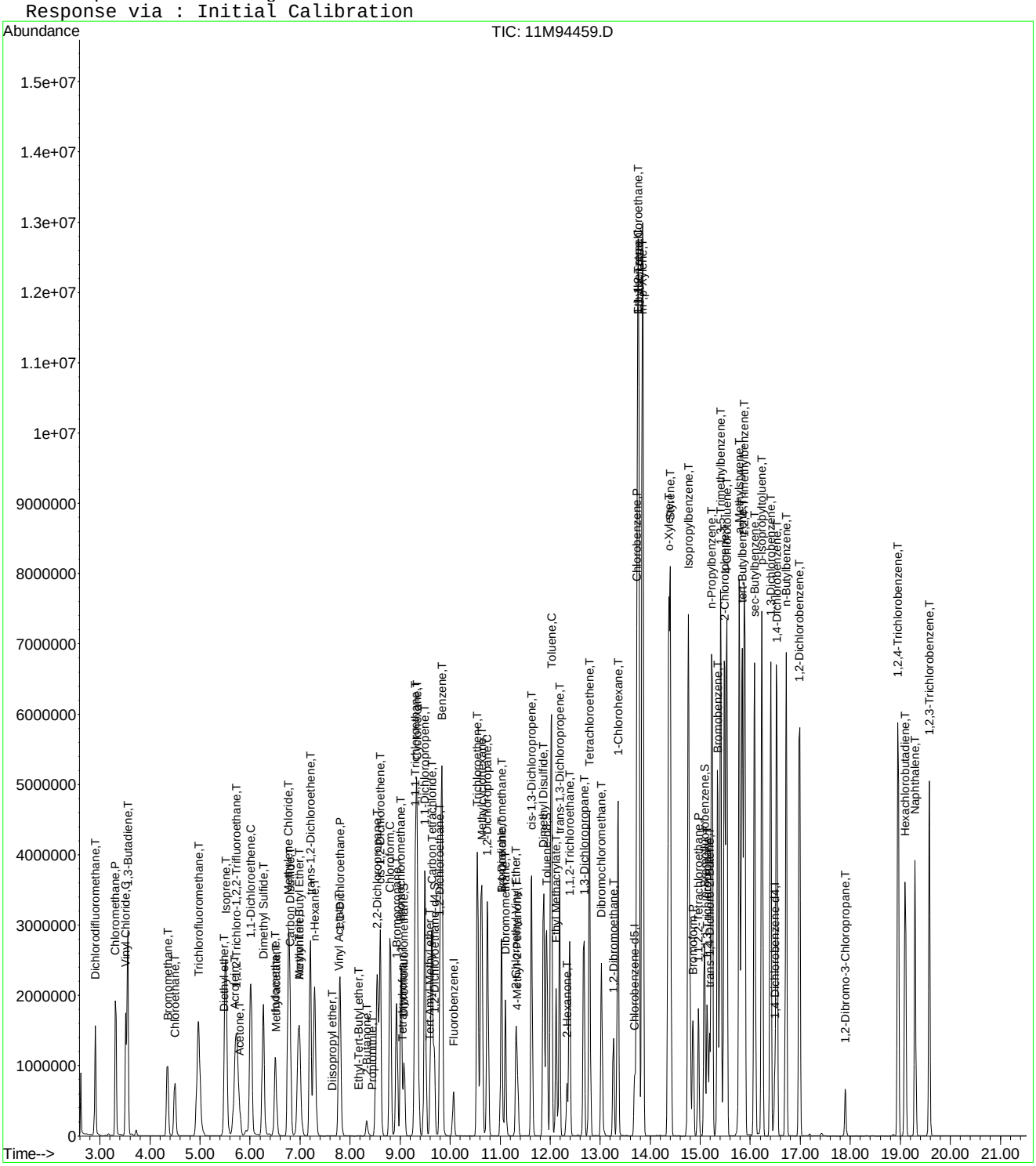

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94460.D Vial: 12
Acq On : 21 Aug 2013 20:41 Operator: ADC
Sample : WG442178-11 300.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:15:19 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	634566	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	581202	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	293965	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.08	111	1126204	152.4115 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 609.64%#		
43) 1,2-Dichloroethane-d4	9.69	65	1319337	154.4859 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 617.96%#		
58) Toluene-d8	11.93	98	3922033	140.3954 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 561.60%#		
80) p-Bromofluorobenzene	15.09	95	1704618	158.4992 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 634.00%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	2198480	332.3142 ug/L	98
3) Chloromethane	3.31	50	2868409	305.4021 ug/L	97
4) Vinyl Chloride	3.52	62	2455700	312.4996 ug/L	96
5) 1,3-Butadiene	3.55	54	1970574	304.3039 ug/L	95
6) Bromomethane	4.34	94	1459461	363.0195 ug/L	99
7) Chloroethane	4.50	64	1396619	340.2867 ug/L	97
8) Trichlorofluoromethane	4.96	101	4450726	310.7020 ug/L	98
9) Diethyl ether	5.48	59	1478098	321.3053 ug/L	99
10) Isoprene	5.51	67	2635378	345.2586 ug/L	97
11) Acrolein	5.70	56	94742	162.0070 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.72	101	2206140	317.6500 ug/L	100
13) Acetone	5.79	43	655855	315.5255 ug/L	95
14) 1,1-Dichloroethene	6.01	61	3674207	317.1800 ug/L	98
15) Tert-Butyl Alcohol	6.13	59	224922	628.3538 ug/L	98
16) Dimethyl Sulfide	6.27	62	1874837	337.0298 ug/L	96
17) Iodomethane	6.50	142	2180189	300.1345 ug/L	99
18) Methyl acetate	6.52	43	872400	317.3411 ug/L	96
19) Methylene Chloride	6.76	84	1978058	305.4911 ug/L	90
20) Carbon Disulfide	6.79	76	5105921	289.9329 ug/L	96
21) Acrylonitrile	6.94	53	281433	192.4657 ug/L	94
22) Methyl Tert Butyl Ether	6.98	73	4990075	324.3300 ug/L	98
23) trans-1,2-Dichloroethene	7.21	96	2097099	334.1461 ug/L	90
24) n-Hexane	7.29	57	2527697	315.8251 ug/L	99
25) Diisopropyl ether	7.62	45	6439561	290.0509 ug/L	97
26) Vinyl Acetate	7.78	43	2434391	313.1436 ug/L	99
27) 1,1-Dichloroethane	7.80	63	3935706	312.7755 ug/L	96
28) Ethyl-Tert-Butyl ether	8.17	59	6174656	299.3188 ug/L	96
29) 2-Butanone	8.33	43	578215	346.3497 ug/L	95
30) Propionitrile	8.43	54	185074	366.2517 ug/L	98
31) 2,2-Dichloropropane	8.54	77	4147770	316.5647 ug/L	97
32) cis-1,2-Dichloroethene	8.60	96	2465439	346.1986 ug/L	95
33) Chloroform	8.80	83	4145011	303.5117 ug/L	95
34) 1-Bromopropane	8.93	122	412218	301.0692 ug/L	100
35) Bromochloromethane	9.02	130	1319064	322.3474 ug/L	97
36) Tetrahydrofuran	9.05	42	331647	314.4776 ug/L	97
38) 1,1,1-Trichloroethane	9.31	97	4309485	308.6107 ug/L	97
39) Cyclohexane	9.34	56	3330249	307.6052 ug/L	98
40) 1,1-Dichloropropene	9.49	75	3127451	311.3400 ug/L	97
41) Carbon Tetrachloride	9.64	117	3993015	303.2049 ug/L	97
42) Tert-Amyl-Methyl ether	9.61	73	4722221	297.1546 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94460.D Vial: 12
Acq On : 21 Aug 2013 20:41 Operator: ADC
Sample : WG442178-11 300.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 08:15:19 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.79	62	3143958	298.3711 ug/L		96
46)	Benzene	9.83	78	6547726	258.2957 ug/L		90
47)	Trichloroethene	10.55	130	2268488	320.9998 ug/L		100
48)	Methylcyclohexane	10.63	83	2790871	319.2850 ug/L		99
49)	1,2-Dichloropropane	10.74	63	2440025	367.6753 ug/L		94
50)	1,4-Dioxane	11.02	88	28202	841.6703 ug/L		96
51)	Bromodichloromethane	11.03	83	3628177	347.0916 ug/L		97
52)	Dibromomethane	11.10	93	1336419	374.5842 ug/L		98
53)	2-Chloroethyl Vinyl Ether	11.31	63	1135720	395.4201 ug/L		99
54)	4-Methyl-2-Pentanone	11.34	58	606930	415.5059 ug/L		99
55)	cis-1,3-Dichloropropene	11.63	75	3766700	362.7774 ug/L		94
56)	Dimethyl Disulfide	11.87	79	2039008	390.0921 ug/L		96
59)	Toluene	12.03	91	7371863	228.2605 ug/L		85
60)	Ethyl Methacrylate	12.12	69	1993283	297.5983 ug/L		93
62)	trans-1,3-Dichloropropene	12.19	75	3427968	308.1925 ug/L		93
63)	1,1,2-Trichloroethane	12.39	97	1666090	323.7184 ug/L		97
64)	2-Hexanone	12.34	43	1057241	329.0984 ug/L	#	34
65)	1,3-Dichloropropane	12.68	76	2923732	304.6651 ug/L		95
66)	Tetrachloroethene	12.79	164	2218507	302.5244 ug/L		100
67)	Dibromochloromethane	13.03	129	2552161	308.2106 ug/L		98
68)	1,2-Dibromoethane	13.27	107	1811766	331.2707 ug/L		100
69)	1-Chlorohexane	13.36	91	2927086	295.3385 ug/L		97
70)	Chlorobenzene	13.74	112	5637219	257.1426 ug/L		88
71)	1,1,1,2-Tetrachloroethane	13.77	131	2789350	299.9231 ug/L		100
72)	Ethylbenzene	13.76	106	3583296	302.2453 ug/L		51
73)	m-,p-Xylene	13.84	106	6661658	482.1877 ug/L		56
74)	o-Xylene	14.37	106	4050297	293.2677 ug/L		68
75)	Styrene	14.40	104	5960626	268.7289 ug/L		90
76)	Bromoform	14.86	173	1607878	310.2774 ug/L		100
77)	Isopropylbenzene	14.77	105	7817173	222.6614 ug/L	#	78
79)	1,1,2,2-Tetrachloroethane	14.96	83	1735476	361.6216 ug/L		96
81)	1,2,3-Trichloropropane	15.14	110	617824	333.9651 ug/L		95
82)	trans-1,4-Dichloro-2-Buten	15.19	53	692921	294.8372 ug/L		95
83)	n-Propylbenzene	15.23	91	8264126	216.1943 ug/L	#	74
84)	Bromobenzene	15.35	156	2817495	311.4129 ug/L		98
85)	1,3,5-Trimethylbenzene	15.41	105	7091776	250.2272 ug/L		80
86)	2-Chlorotoluene	15.49	91	6721267	266.9060 ug/L		91
87)	4-Chlorotoluene	15.53	91	5289449	202.1818 ug/L	#	64
88)	a-Methylstyrene	15.78	118	4171569	296.5243 ug/L		95
89)	tert-Butylbenzene	15.84	134	1859714	334.7344 ug/L		72
90)	1,2,4-Trimethylbenzene	15.88	105	6940809	234.6801 ug/L		76
91)	sec-Butylbenzene	16.09	105	7609035	234.1575 ug/L		83
92)	p-Isopropyltoluene	16.23	119	6869201	243.9576 ug/L		82
93)	1,3-Dichlorobenzene	16.41	146	4599399	270.5143 ug/L		89
94)	1,4-Dichlorobenzene	16.53	146	4557061	259.5014 ug/L		89
95)	n-Butylbenzene	16.72	91	6177233	251.5105 ug/L		86
96)	1,2-Dichlorobenzene	16.99	146	4264303	276.6595 ug/L		90
97)	1,2-Dibromo-3-Chloropropan	17.90	75	361324	321.9818 ug/L		93
98)	1,2,4-Trichlorobenzene	18.95	180	3367586	297.0887 ug/L		93
99)	Hexachlorobutadiene	19.10	225	1488398	303.4042 ug/L		99
100)	Naphthalene	19.29	128	5202533	283.4031 ug/L	#	92
101)	1,2,3-Trichlorobenzene	19.58	180	2973272	299.3954 ug/L		96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082113\11M94460.D Vial: 12
Acq On : 21 Aug 2013 20:41 Operator: ADC
Sample : WG442178-11 300.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD59582 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 8:15 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration

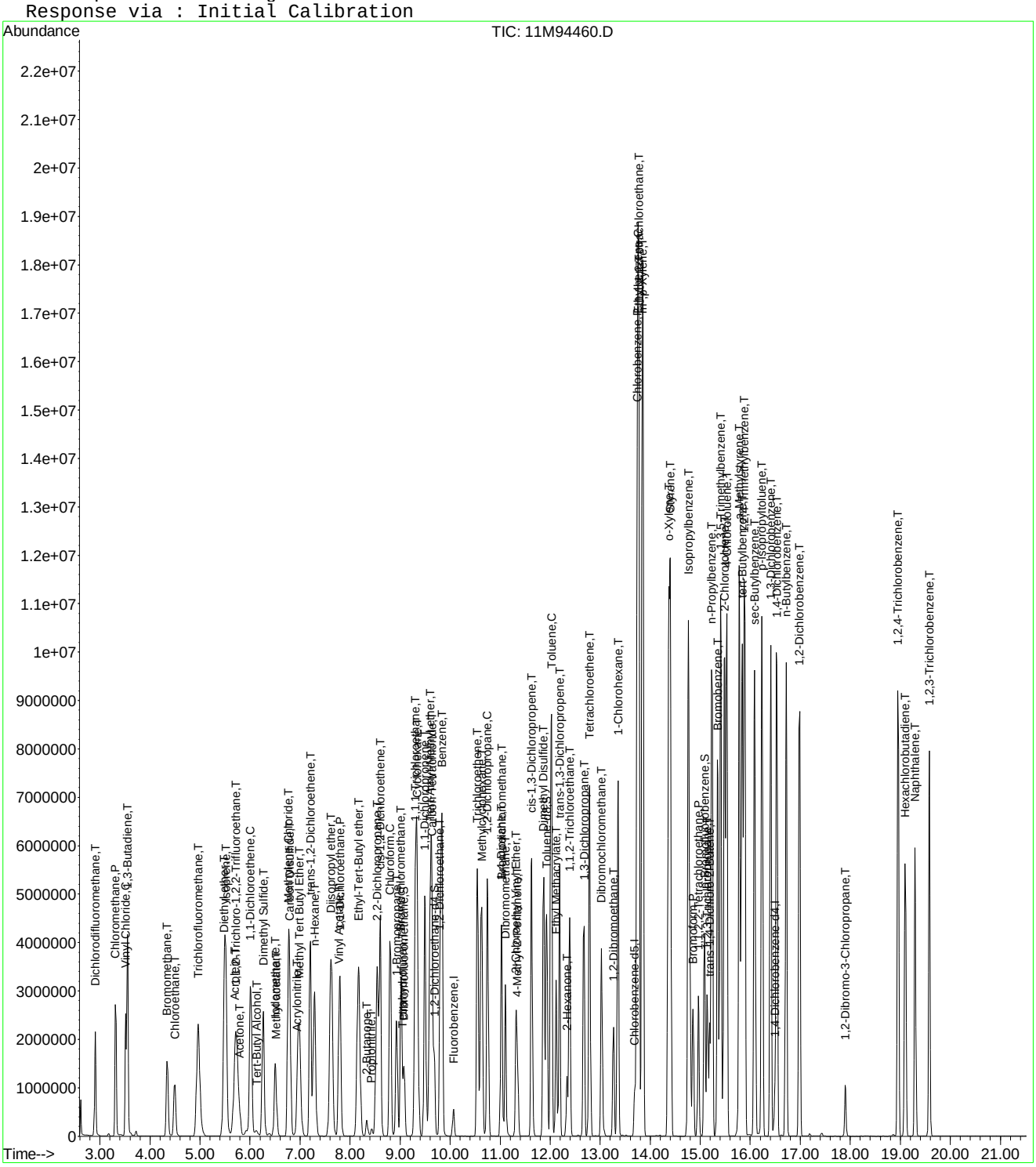

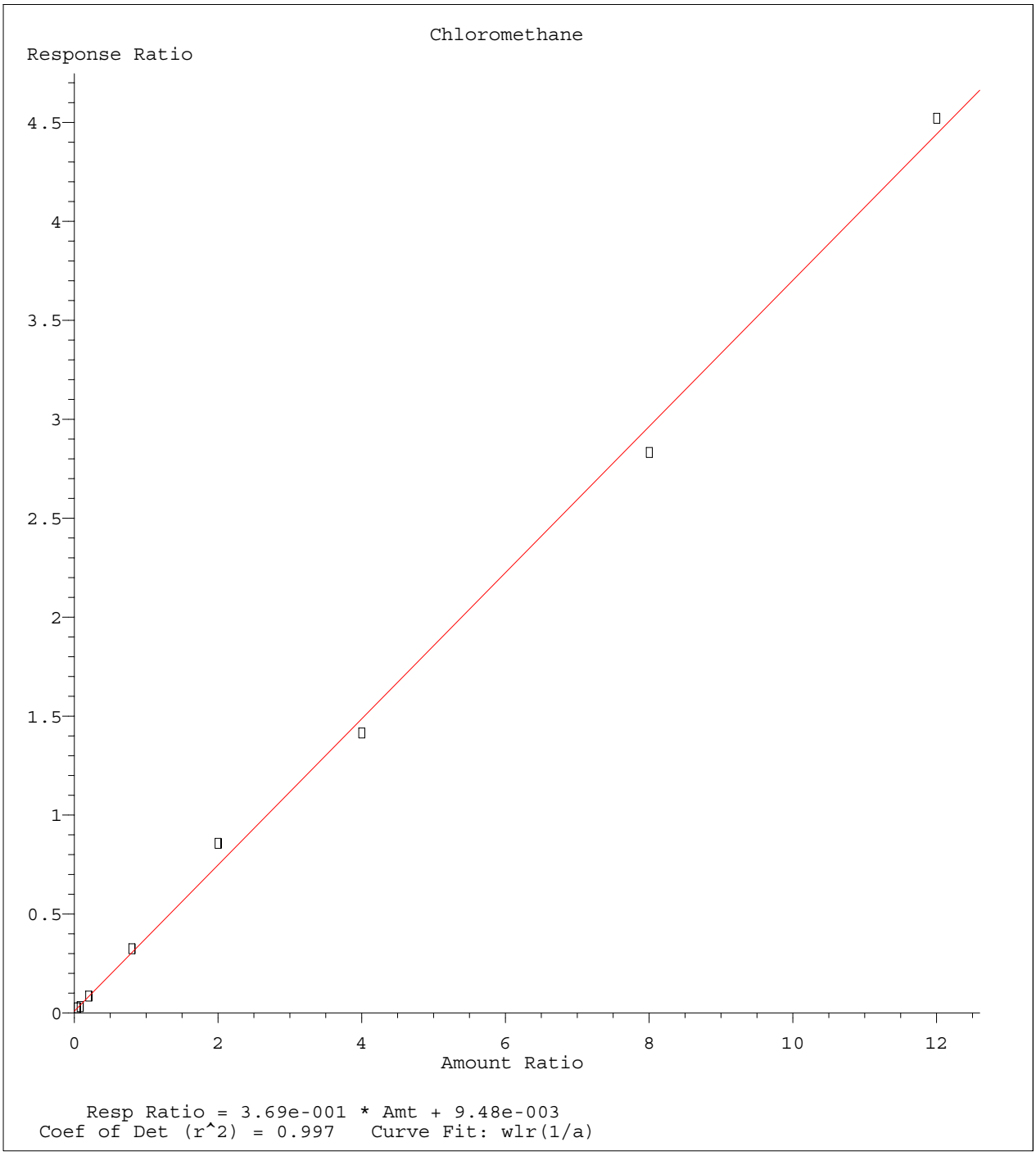

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Aug 23 12:13:25 2013

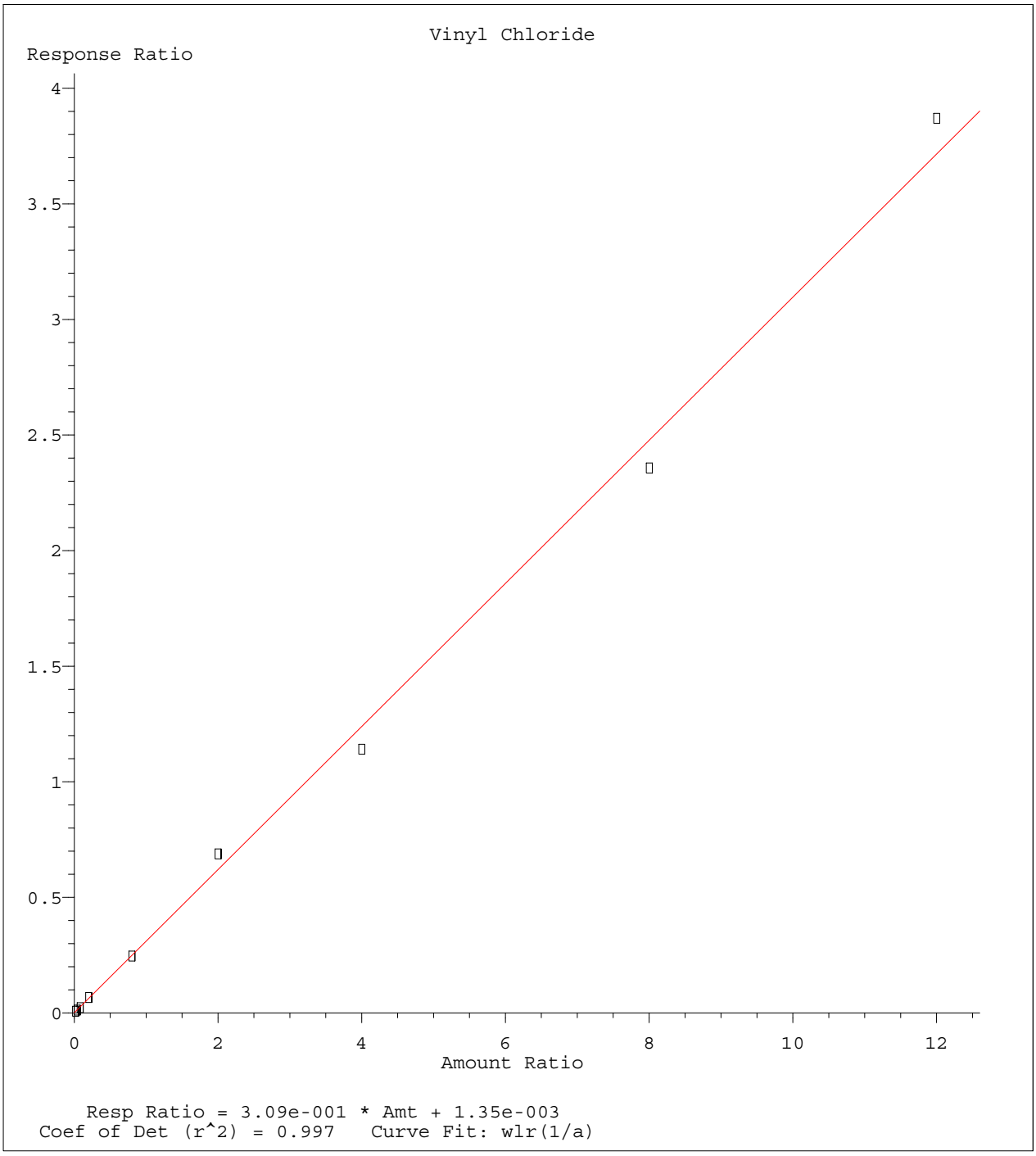

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Aug 23 12:13:25 2013

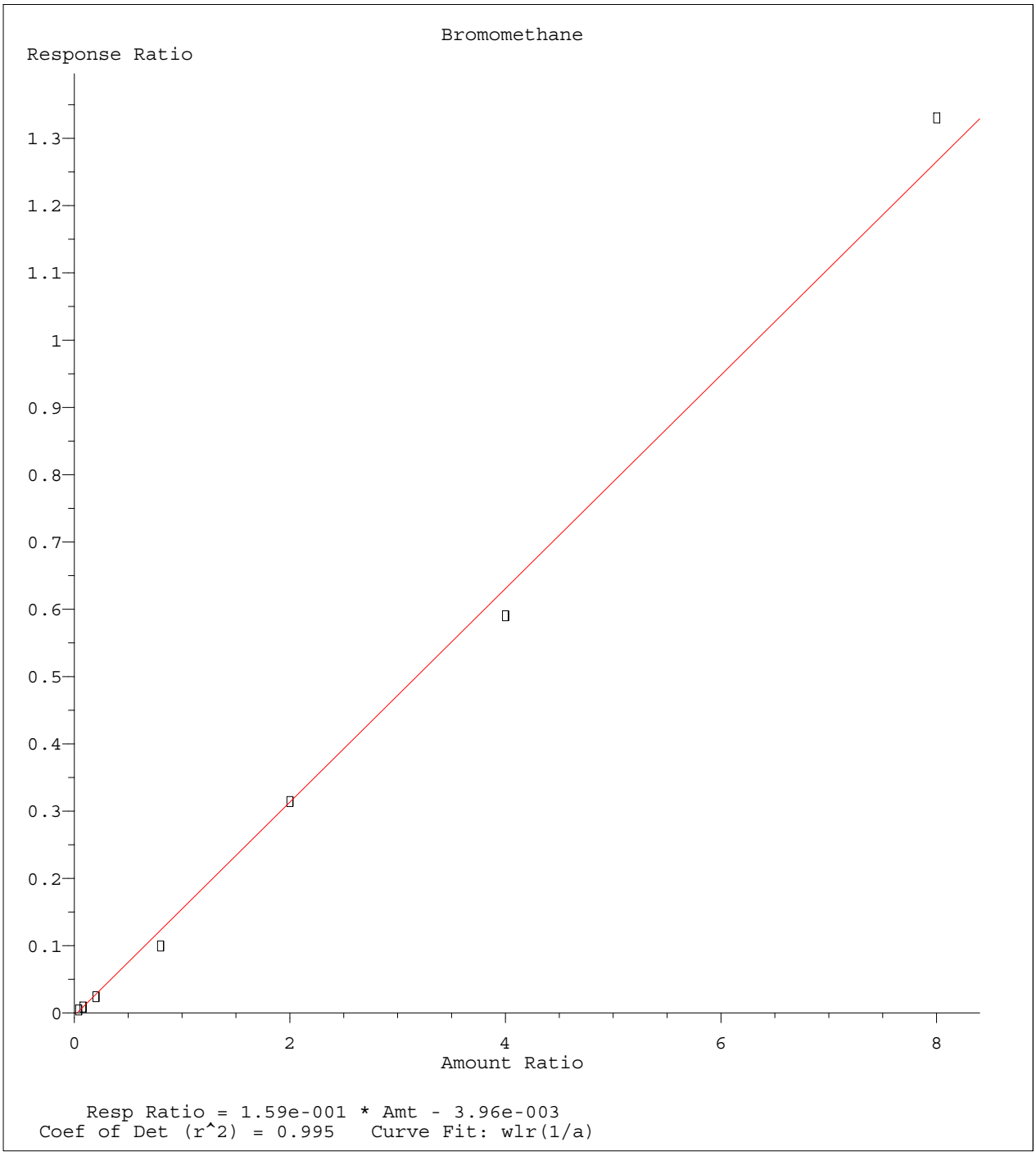

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Aug 23 12:13:25 2013

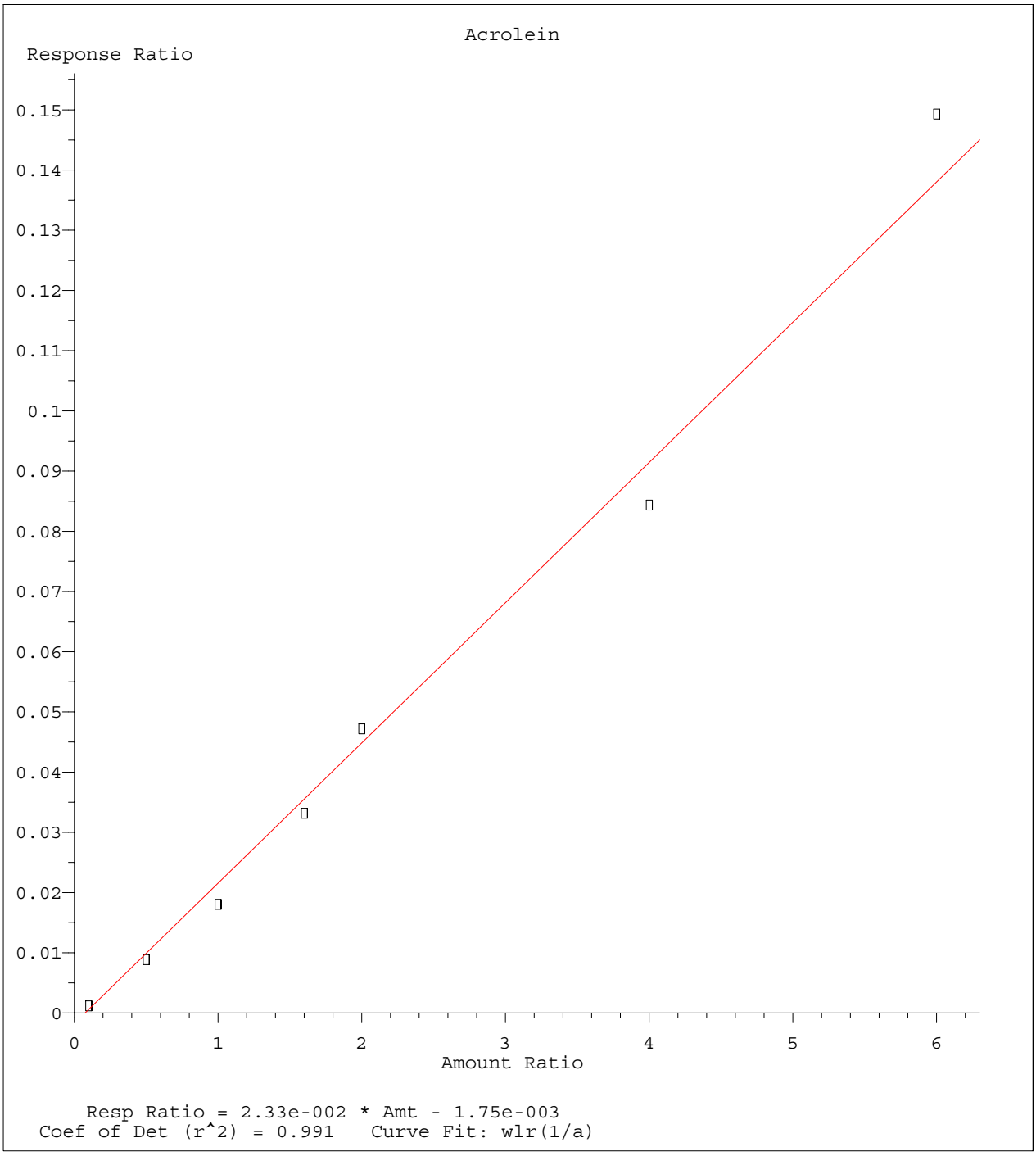

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Aug 23 12:13:25 2013

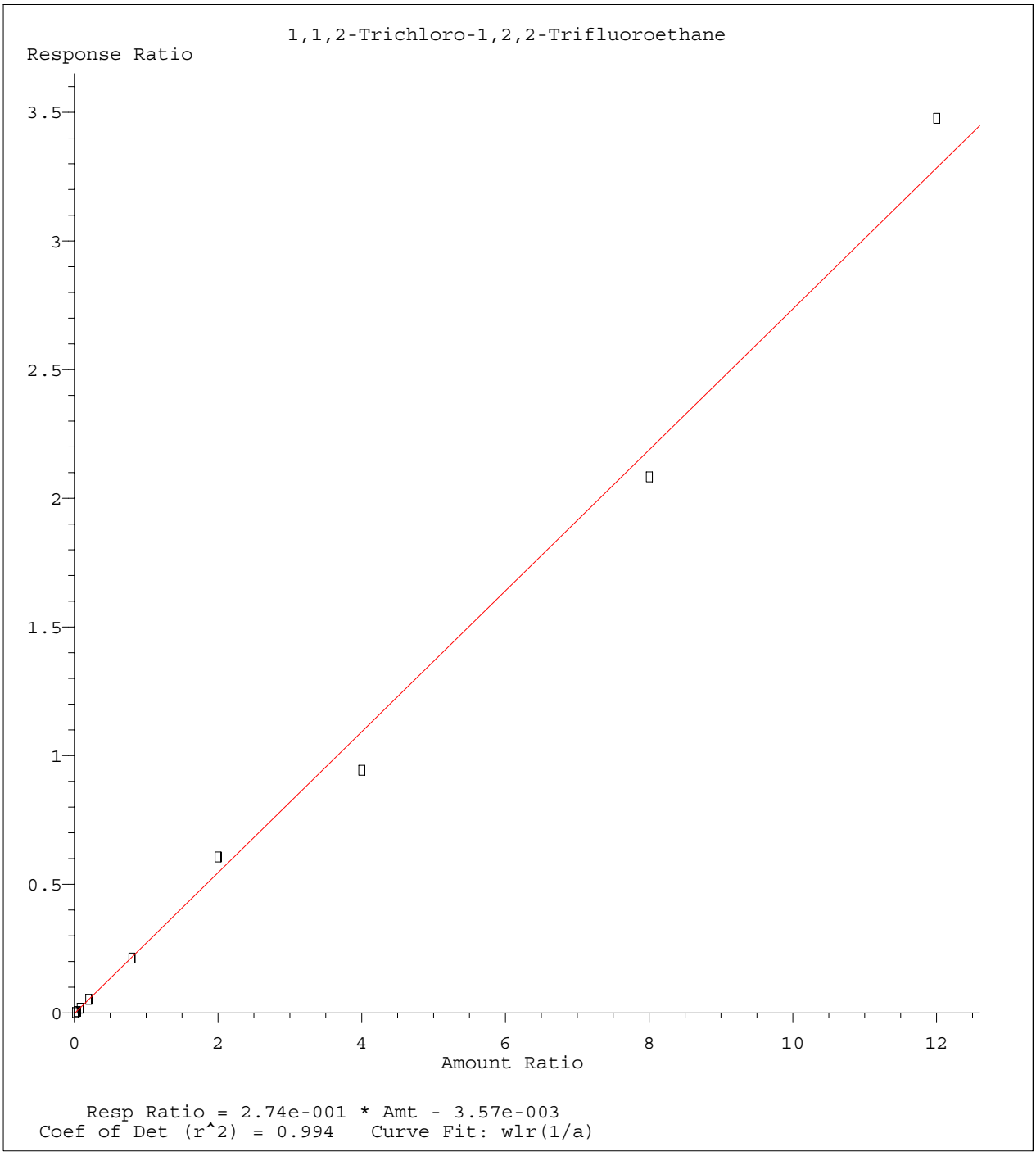

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Aug 23 12:13:25 2013

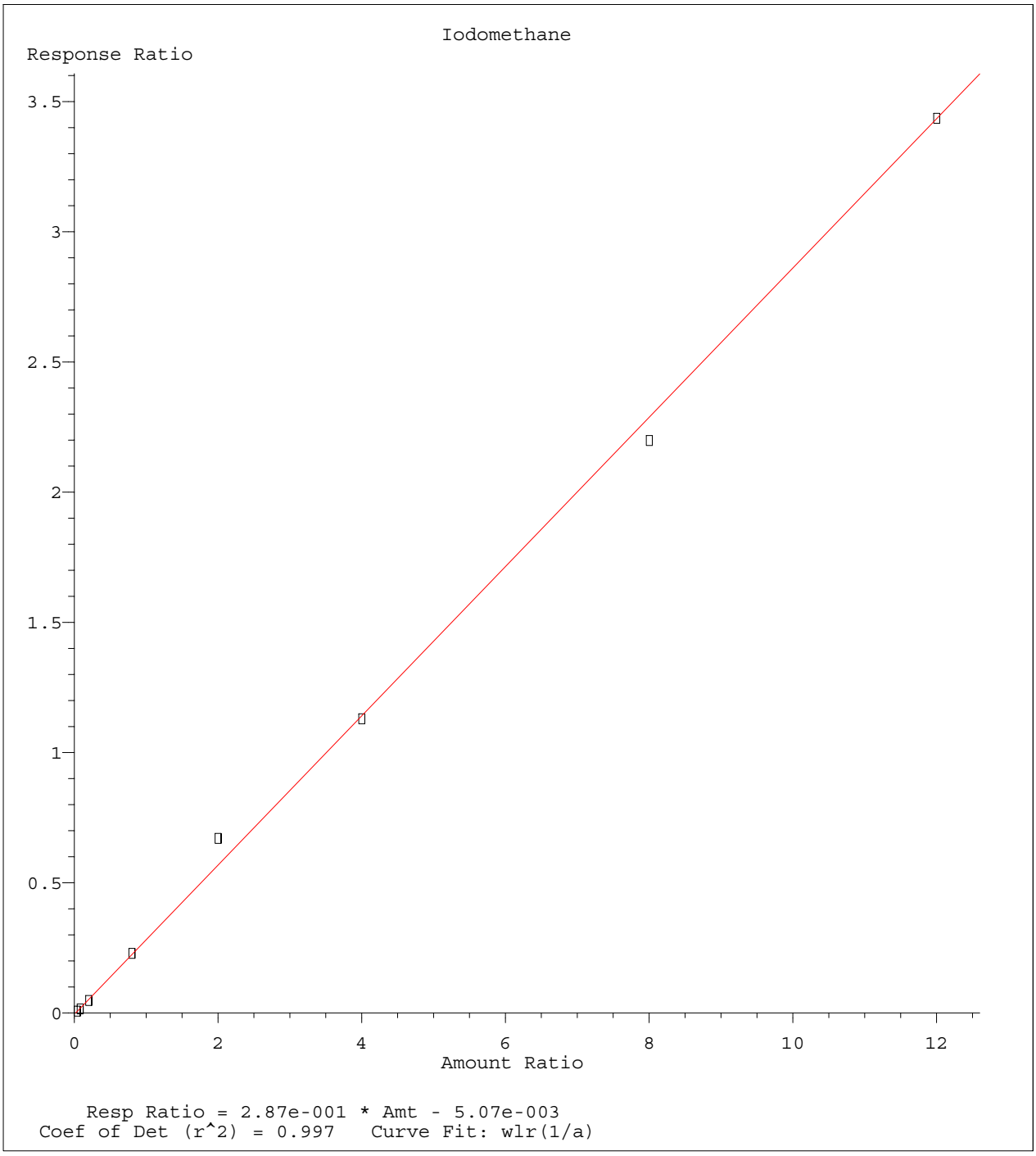

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Aug 23 12:13:25 2013

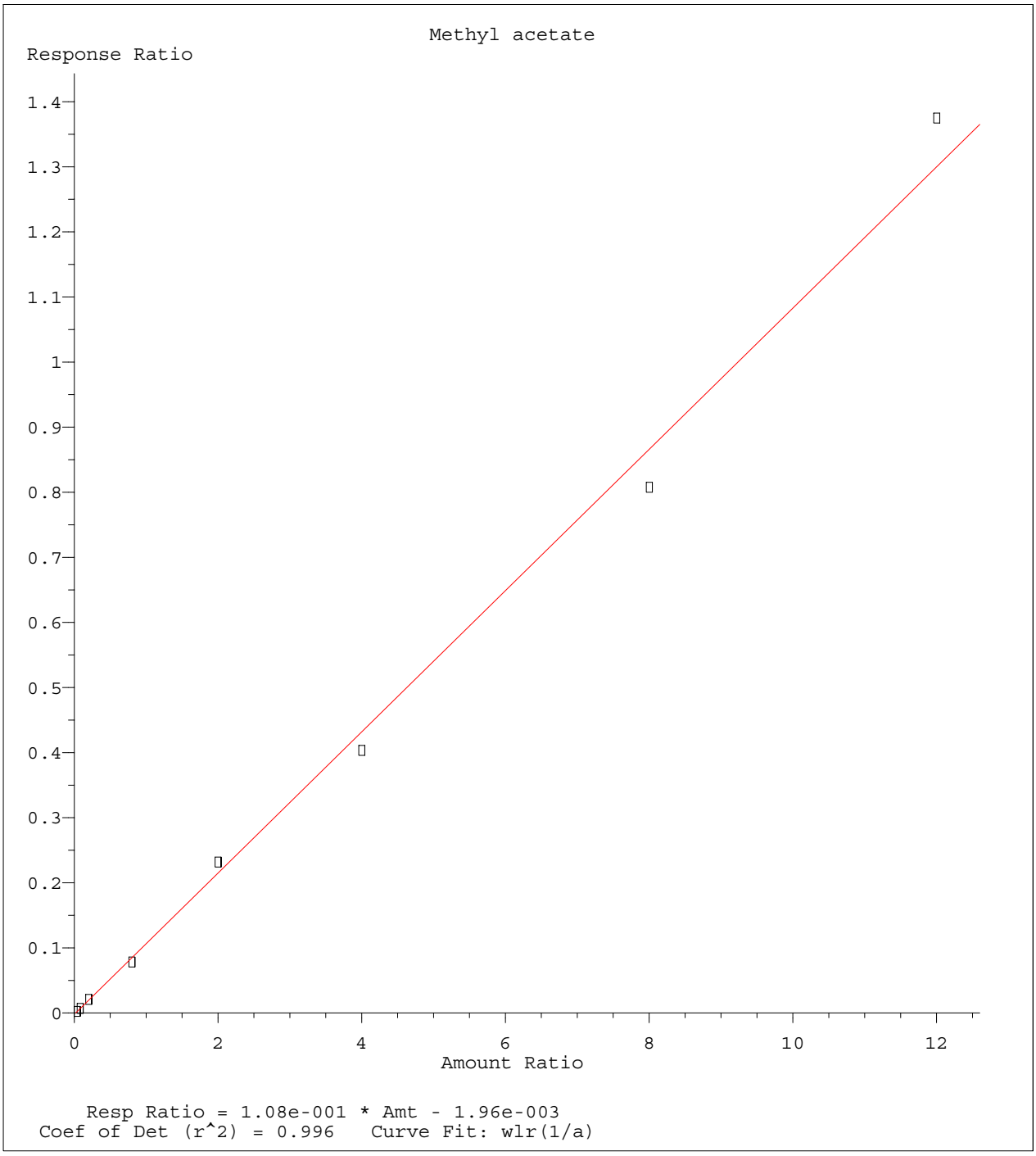

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Aug 23 12:13:25 2013

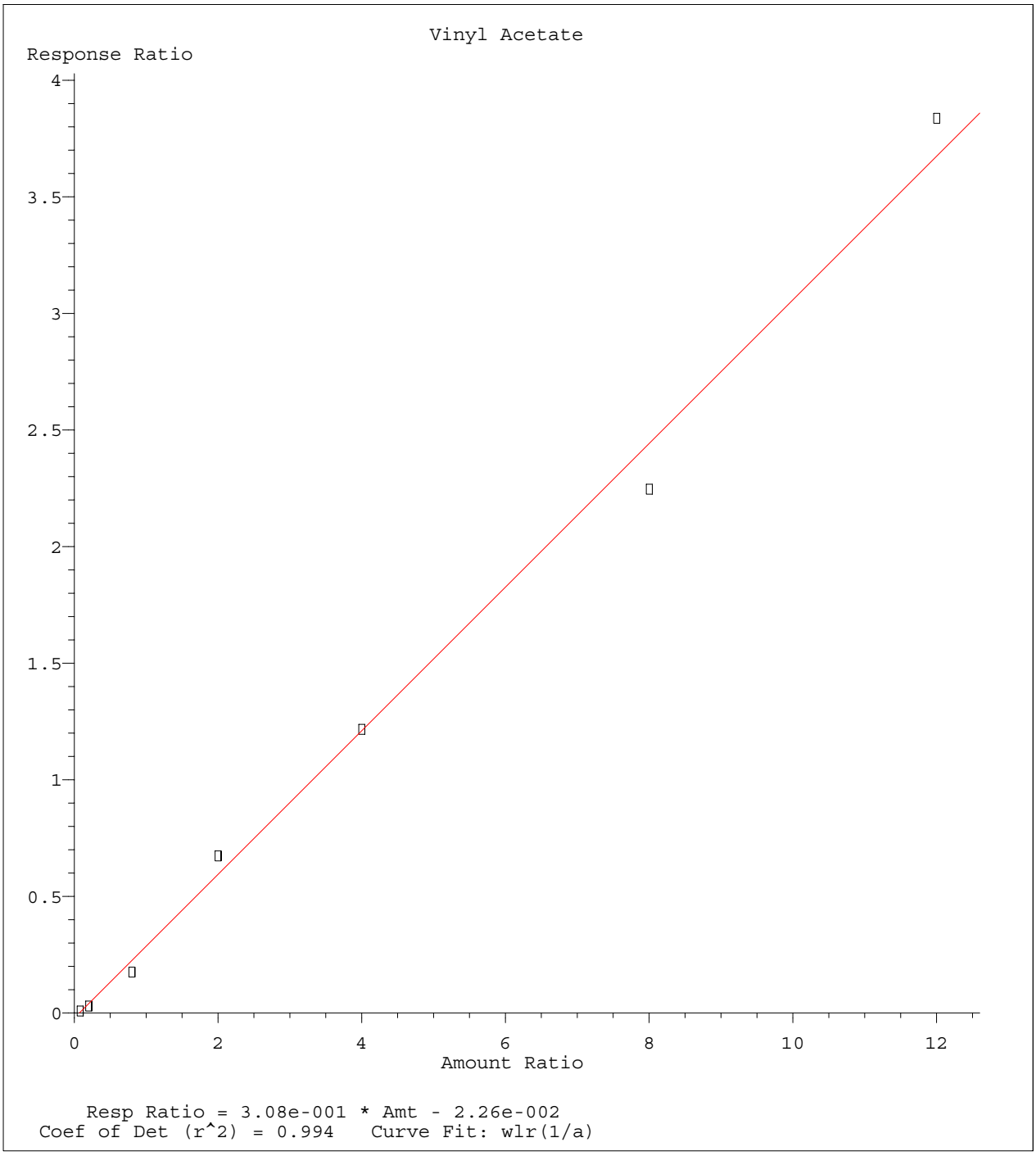

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Aug 23 12:13:25 2013

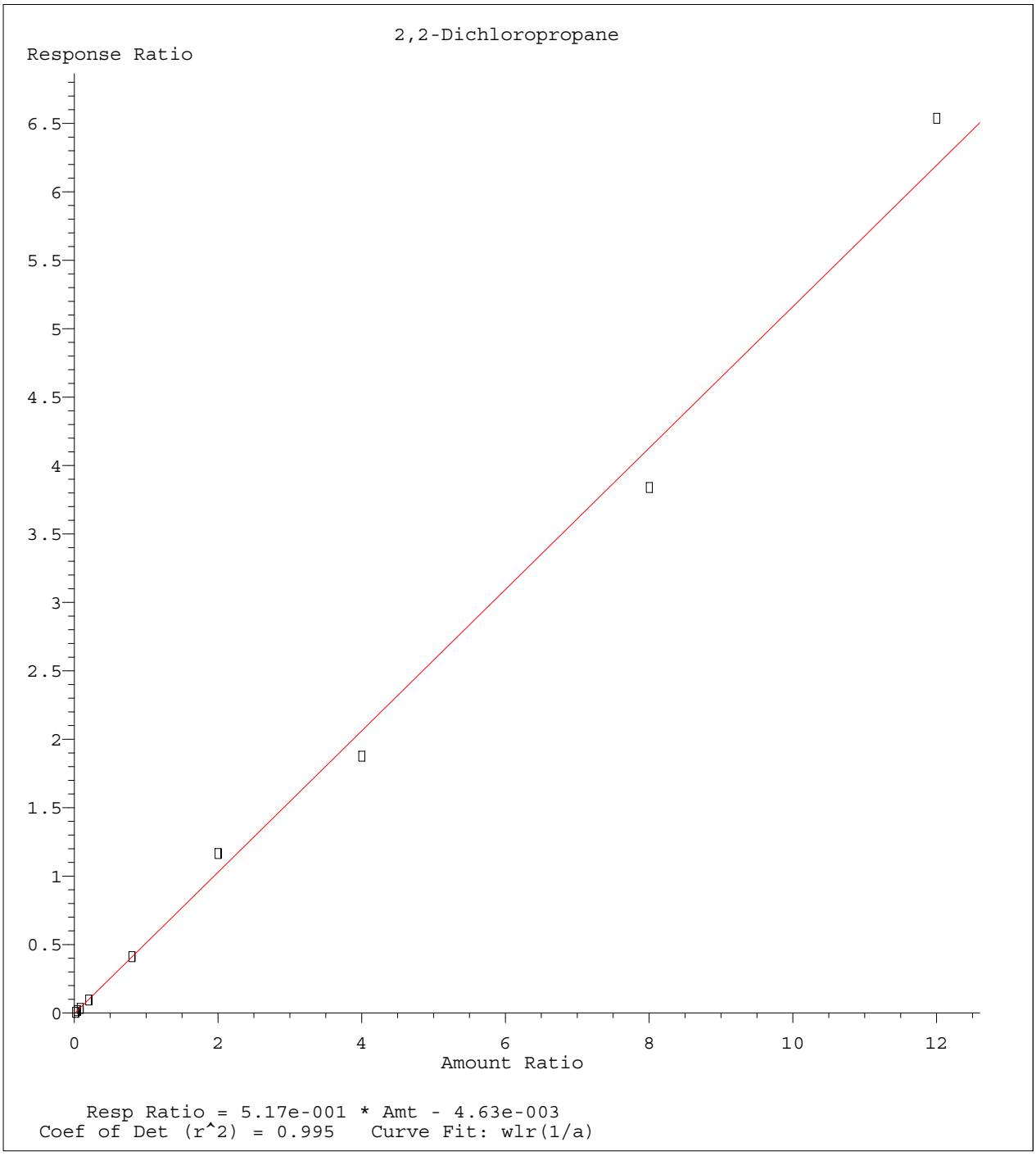

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Aug 23 12:13:25 2013

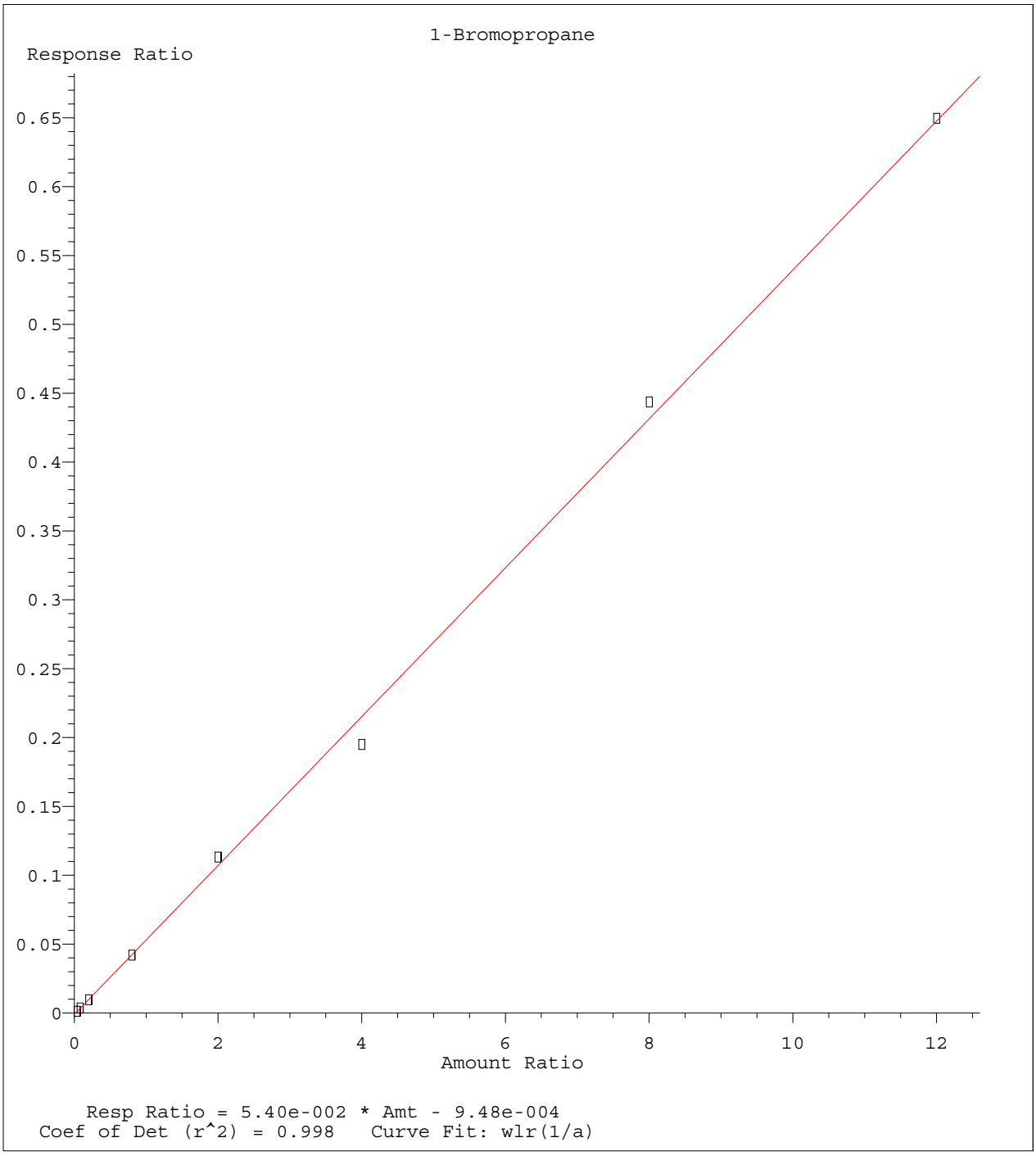

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Aug 23 12:13:25 2013

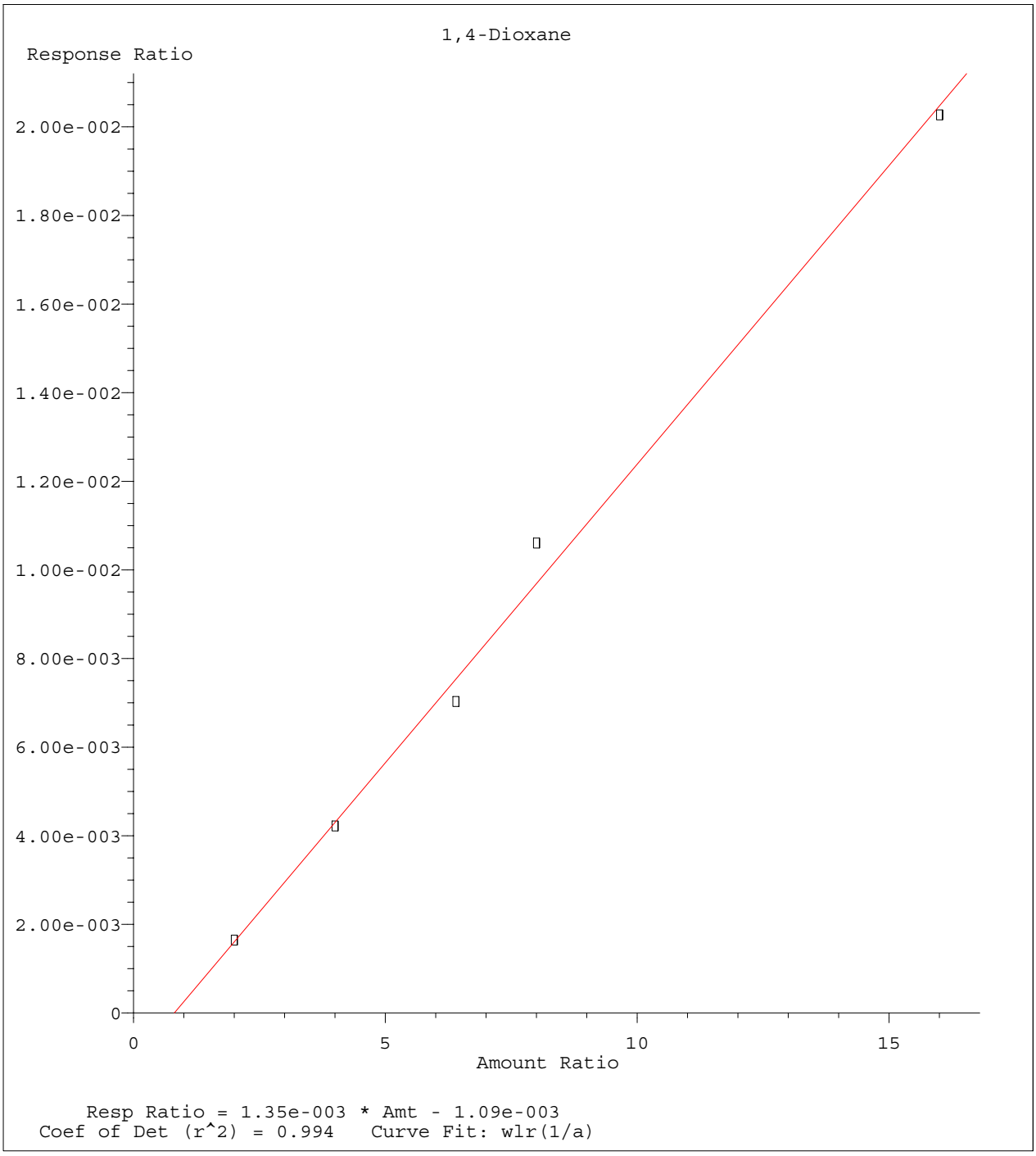

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Aug 23 12:13:25 2013

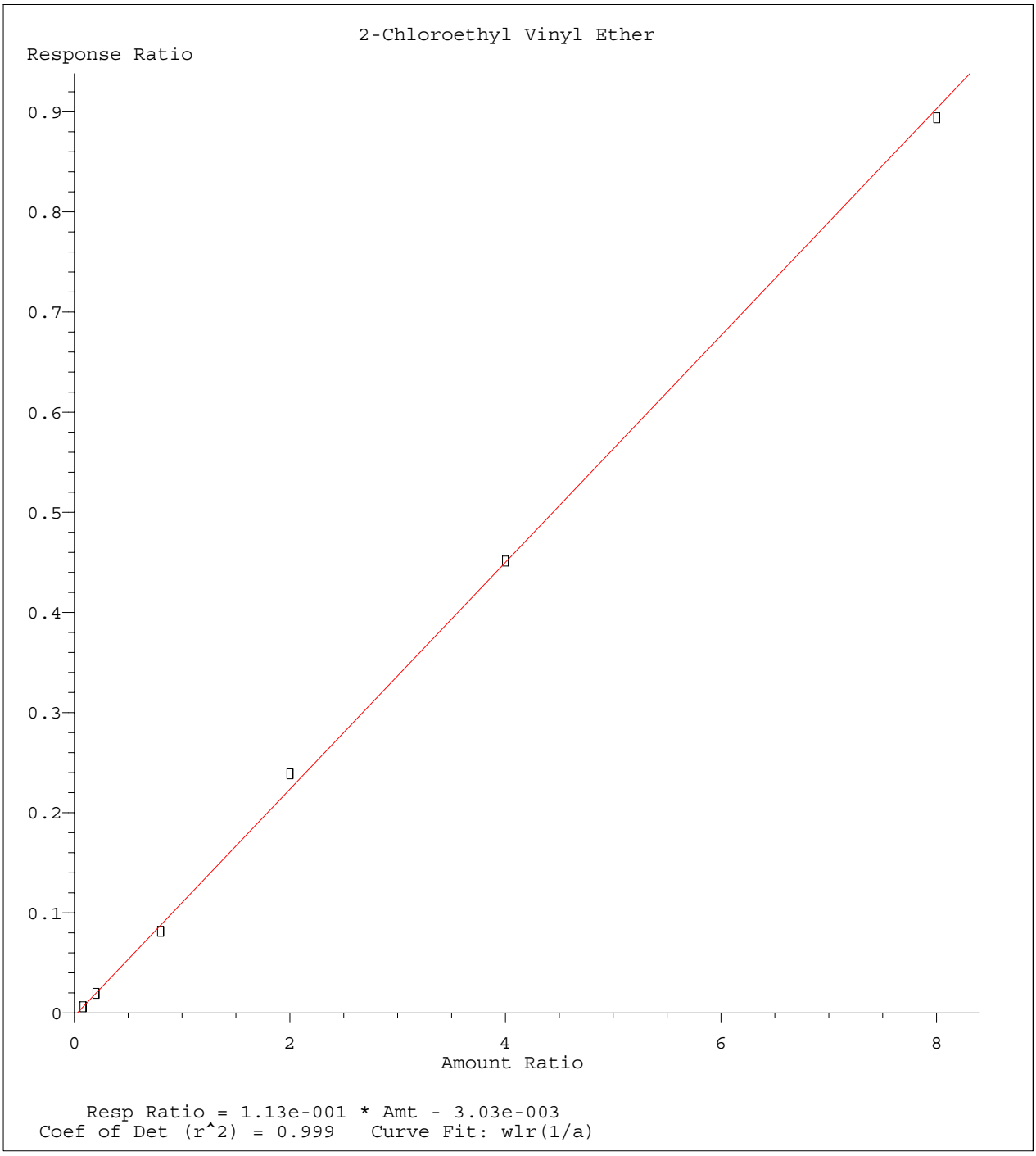

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Aug 23 12:13:25 2013

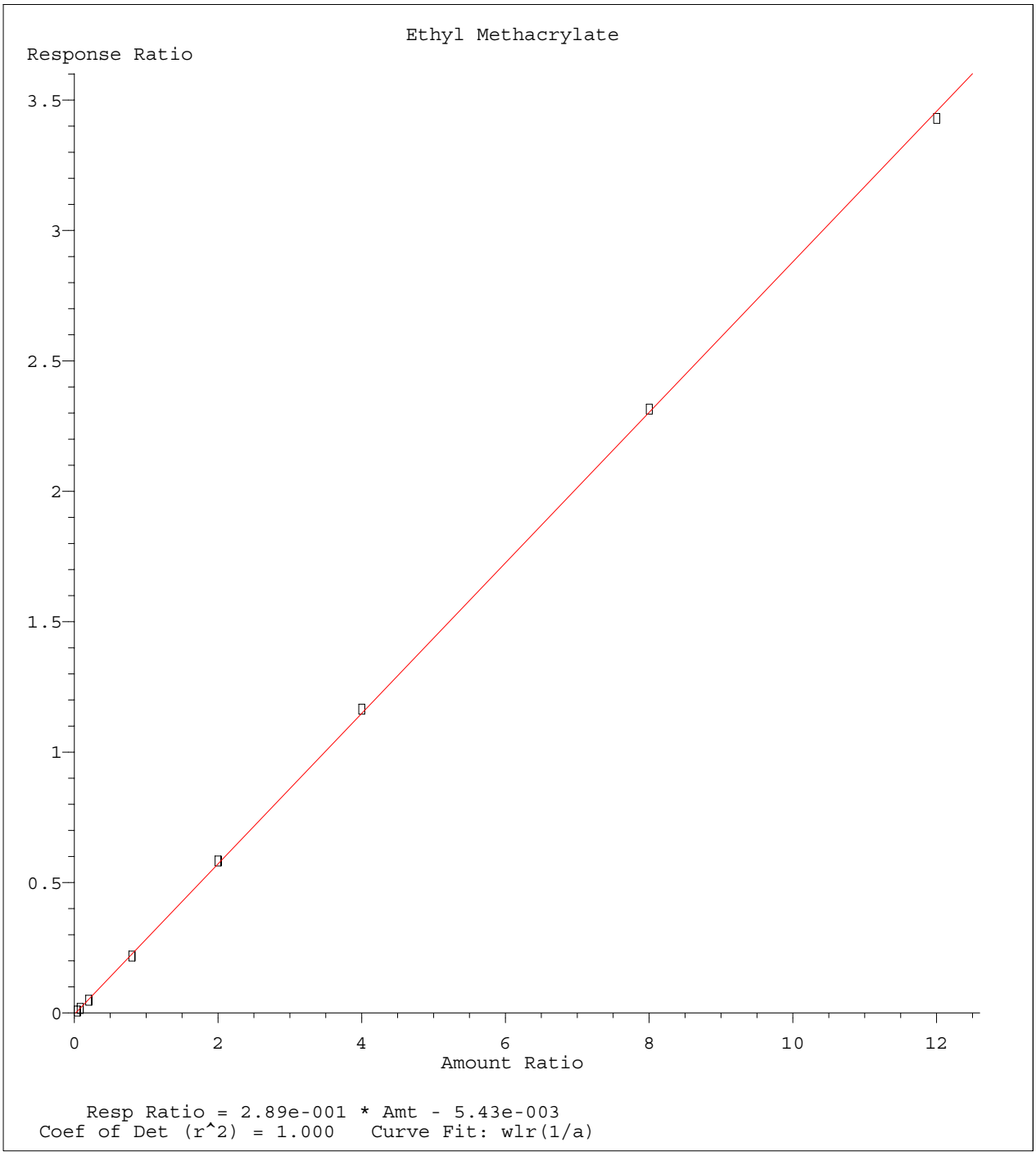

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Aug 23 12:13:25 2013

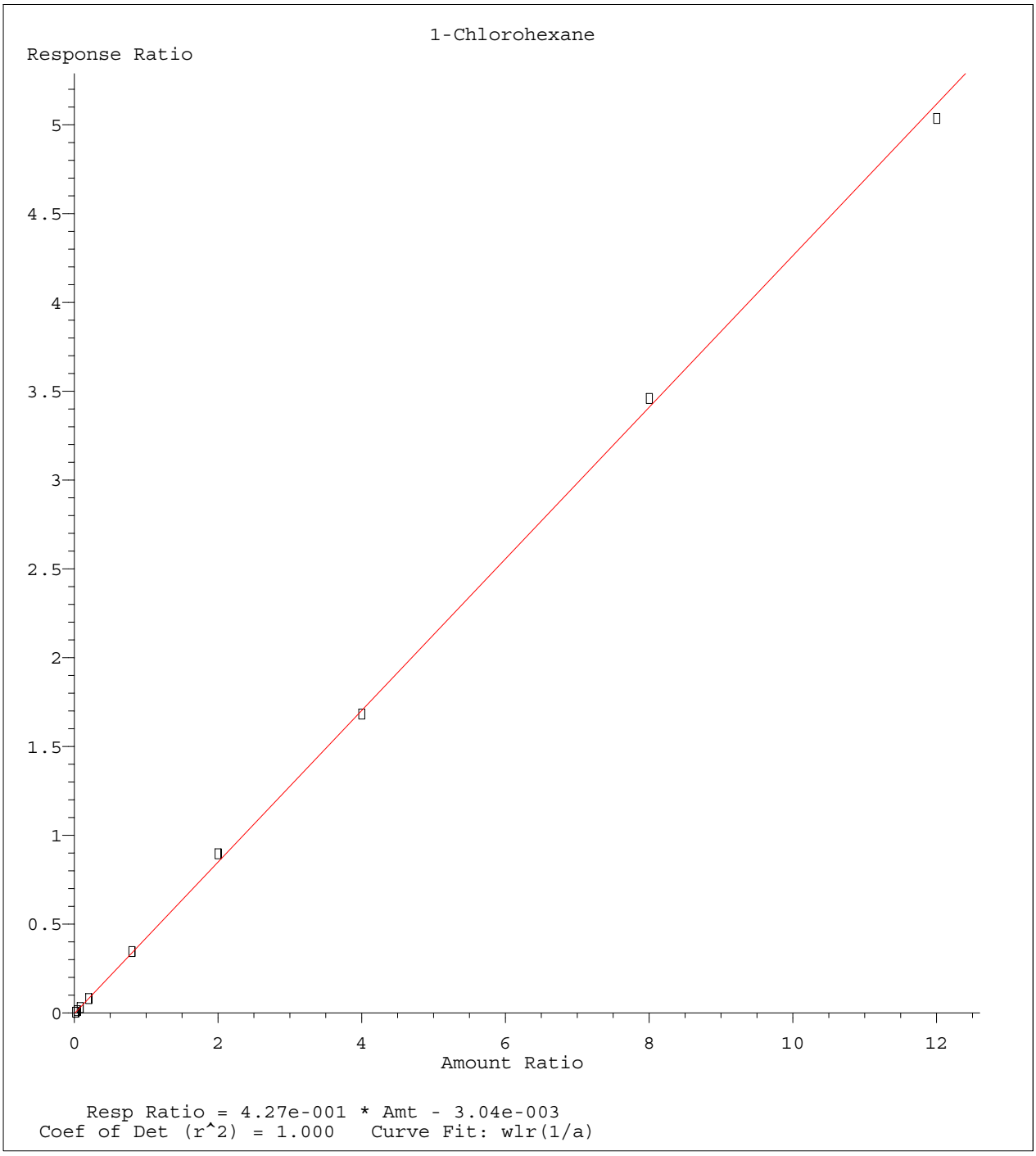

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Aug 23 12:13:25 2013

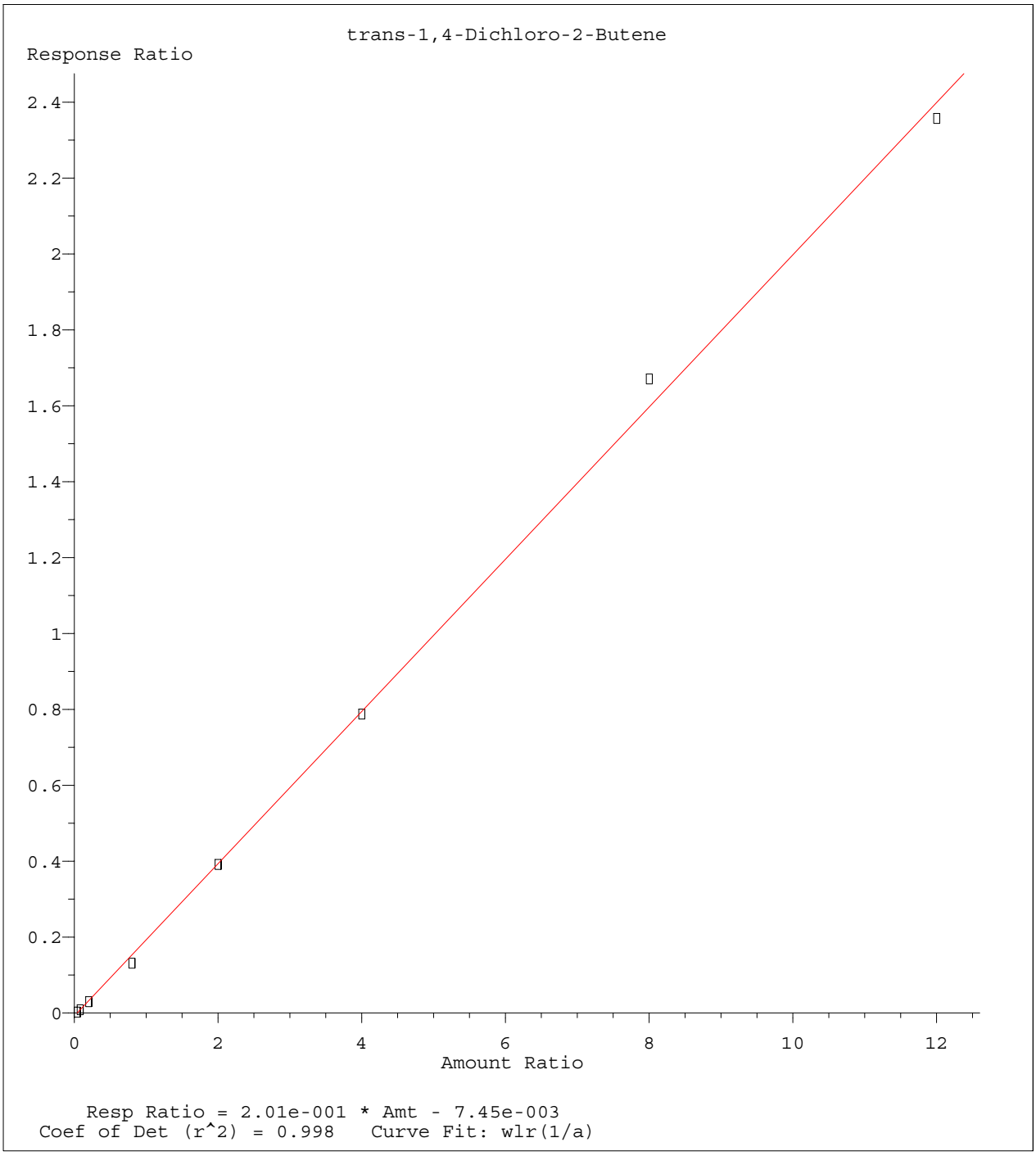

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Aug 23 12:13:25 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082213\11M94470.D Vial: 5
Acq On : 22 Aug 2013 13:50 Operator: ADC
Sample : WG442178-12 20.0ug/L ALT 8260 Inst : hpms11
Misc : 1,1 STD59457 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 14:11:50 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.07	96	593798	25.00 ug/L	0.00
57) Chlorobenzene-d5	13.69	117	460609	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	16.49	152	252741	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.08	111	153890	22.2561 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.04%		
43) 1,2-Dichloroethane-d4	9.68	65	172965	21.6436 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.56%		
58) Toluene-d8	11.93	98	517122	23.3577 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.44%		
80) p-Bromofluorobenzene	15.09	95	221253	23.9282 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.72%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	179181	28.9439 ug/L	99
3) Chloromethane	3.32	50	184589	20.4049 ug/L	98
4) Vinyl Chloride	3.52	62	161094	21.8060 ug/L	100
5) 1,3-Butadiene	3.56	54	61678	10.1785 ug/L	98
6) Bromomethane	4.35	94	91511	24.9070 ug/L	98
7) Chloroethane	4.50	64	85839	22.3506 ug/L	97
8) Trichlorofluoromethane	4.97	101	291796	21.7686 ug/L	99
9) Diethyl ether	5.48	59	454365	105.5498 ug/L	97
10) Isoprene	5.51	67	159170	22.2844 ug/L	96
11) Acrolein	5.70	56	49953	92.1013 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	147299	22.9672 ug/L	96
13) Acetone	5.79	43	26320	13.5316 ug/L #	71
14) 1,1-Dichloroethene	6.02	61	217108	20.0289 ug/L	99
15) Tert-Butyl Alcohol	6.12	59	62498	186.5849 ug/L	97
16) Dimethyl Sulfide	6.27	62	138864	26.6767 ug/L	98
17) Iodomethane	6.50	142	145532	21.8208 ug/L	96
18) Methyl acetate	6.52	43	50785	20.1650 ug/L	98
19) Methylene Chloride	6.77	84	123566	20.3937 ug/L	94
20) Carbon Disulfide	6.79	76	357653	21.7032 ug/L	100
21) Acrylonitrile	6.94	53	27061	19.7770 ug/L	93
22) Methyl Tert Butyl Ether	6.98	73	333198	23.1430 ug/L	98
23) trans-1,2-Dichloroethene	7.21	96	135313	23.0407 ug/L	93
24) n-Hexane	7.29	57	143681	19.1849 ug/L	99
25) Diisopropyl ether	7.62	45	2074264	99.8435 ug/L	98
26) Vinyl Acetate	7.78	43	85090	13.4612 ug/L	98
27) 1,1-Dichloroethane	7.80	63	252171	21.4162 ug/L	99
28) Ethyl-Tert-Butyl ether	8.17	59	1997692	103.4875 ug/L	99
29) 2-Butanone	8.33	43	30234	19.3535 ug/L	98
30) Propionitrile	8.43	54	47354	100.1449 ug/L	98
31) 2,2-Dichloropropane	8.54	77	229707	18.9461 ug/L	99
32) cis-1,2-Dichloroethene	8.60	96	140800	21.1287 ug/L	99
33) Chloroform	8.80	83	277012	21.6764 ug/L	99
34) 1-Bromopropane	8.93	122	27796	22.1021 ug/L	96
35) Bromochloromethane	9.02	130	82355	21.5073 ug/L	92
36) Tetrahydrofuran	9.05	42	92505	93.7383 ug/L	95
38) 1,1,1-Trichloroethane	9.31	97	280643	21.4772 ug/L	99
39) Cyclohexane	9.34	56	203820	20.1188 ug/L	97
40) 1,1-Dichloropropene	9.49	75	198760	21.1452 ug/L	99
41) Carbon Tetrachloride	9.64	117	260764	21.1603 ug/L	98
42) Tert-Amyl-Methyl ether	9.61	73	1529903	102.8817 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M94470.D 8260WT.M Thu Aug 22 14:11:51 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082213\11M94470.D Vial: 5
Acq On : 22 Aug 2013 13:50 Operator: ADC
Sample : WG442178-12 20.0ug/L ALT 8260 Inst : hpms11
Misc : 1,1 STD59457 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 14:11:50 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.79	62	204931	20.7838 ug/L		98
46)	Benzene	9.83	78	497602	20.9772 ug/L		99
47)	Trichloroethene	10.55	130	158871	24.0243 ug/L		99
48)	Methylcyclohexane	10.63	83	180791	22.1031 ug/L		96
49)	1,2-Dichloropropane	10.74	63	128362	20.6702 ug/L		99
50)	1,4-Dioxane	11.02	88	5231	183.0276 ug/L		77
51)	Bromodichloromethane	11.02	83	201012	20.5502 ug/L		99
52)	Dibromomethane	11.10	93	68258	20.4455 ug/L		96
53)	2-Chloroethyl Vinyl Ether	11.31	63	48657	18.7420 ug/L		97
54)	4-Methyl-2-Pentanone	11.34	58	25956	18.9895 ug/L		99
55)	cis-1,3-Dichloropropene	11.62	75	216257	22.2581 ug/L		100
56)	Dimethyl Disulfide	11.87	79	105888	21.6488 ug/L		90
59)	Toluene	12.03	91	553753	21.6354 ug/L		98
60)	Ethyl Methacrylate	12.12	69	101769	19.6125 ug/L		90
62)	trans-1,3-Dichloropropene	12.19	75	186717	21.1818 ug/L		99
63)	1,1,2-Trichloroethane	12.39	97	92268	22.6212 ug/L		99
64)	2-Hexanone	12.34	43	45293	17.7901 ug/L		86
65)	1,3-Dichloropropane	12.68	76	162448	21.3597 ug/L		94
66)	Tetrachloroethene	12.79	164	124248	21.3788 ug/L		98
67)	Dibromochloromethane	13.03	129	136040	20.7301 ug/L		99
68)	1,2-Dibromoethane	13.27	107	94184	21.7297 ug/L		100
69)	1-Chlorohexane	13.36	91	167535	21.4951 ug/L		97
70)	Chlorobenzene	13.73	112	343827	19.7899 ug/L		100
71)	1,1,1,2-Tetrachloroethane	13.76	131	160312	21.7504 ug/L		98
72)	Ethylbenzene	13.76	106	203136	21.6201 ug/L		98
73)	m-,p-Xylene	13.84	106	467508	42.6990 ug/L		95
74)	o-Xylene	14.37	106	217581	19.8789 ug/L		98
75)	Styrene	14.40	104	395528	22.5006 ug/L		96
76)	Bromoform	14.86	173	84159	20.4924 ug/L		100
77)	Isopropylbenzene	14.77	105	606366	21.7934 ug/L		98
79)	1,1,2,2-Tetrachloroethane	14.96	83	86747	21.0237 ug/L		100
81)	1,2,3-Trichloropropane	15.14	110	33497	21.0602 ug/L		96
82)	trans-1,4-Dichloro-2-Buten	15.19	53	22253	11.9077 ug/L	#	1
83)	n-Propylbenzene	15.23	91	675722	20.5606 ug/L		99
84)	Bromobenzene	15.35	156	166236	21.3707 ug/L		99
85)	1,3,5-Trimethylbenzene	15.41	105	574493	23.5768 ug/L		99
86)	2-Chlorotoluene	15.48	91	437682	20.2156 ug/L		100
87)	4-Chlorotoluene	15.53	91	461999	20.5396 ug/L		100
88)	a-Methylstyrene	15.78	118	269803	22.3063 ug/L		99
89)	tert-Butylbenzene	15.84	134	99291	20.7866 ug/L		96
90)	1,2,4-Trimethylbenzene	15.88	105	587172	23.0915 ug/L		97
91)	sec-Butylbenzene	16.09	105	590268	21.1275 ug/L		98
92)	p-Isopropyltoluene	16.23	119	534704	22.0872 ug/L		98
93)	1,3-Dichlorobenzene	16.41	146	292210	19.9896 ug/L		98
94)	1,4-Dichlorobenzene	16.52	146	315710	20.9104 ug/L		98
95)	n-Butylbenzene	16.72	91	484439	22.9415 ug/L		100
96)	1,2-Dichlorobenzene	16.99	146	266503	20.1103 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	17.90	75	19427	20.1354 ug/L		98
98)	1,2,4-Trichlorobenzene	18.95	180	215870	22.1503 ug/L		99
99)	Hexachlorobutadiene	19.10	225	92532	21.9389 ug/L		97
100)	Naphthalene	19.29	128	364998	23.1260 ug/L		99
101)	1,2,3-Trichlorobenzene	19.58	180	185258	21.6974 ug/L		98

(#) = qualifier out of range (m) = manual integration
11M94470.D 8260WT.M Thu Aug 22 14:11:51 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082213\11M94470.D Vial: 5
Acq On : 22 Aug 2013 13:50 Operator: ADC
Sample : WG442178-12 20.0ug/L ALT 8260 Inst : hpms11
Misc : 1,1 STD59457 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 22 14:11 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Initial Calibration

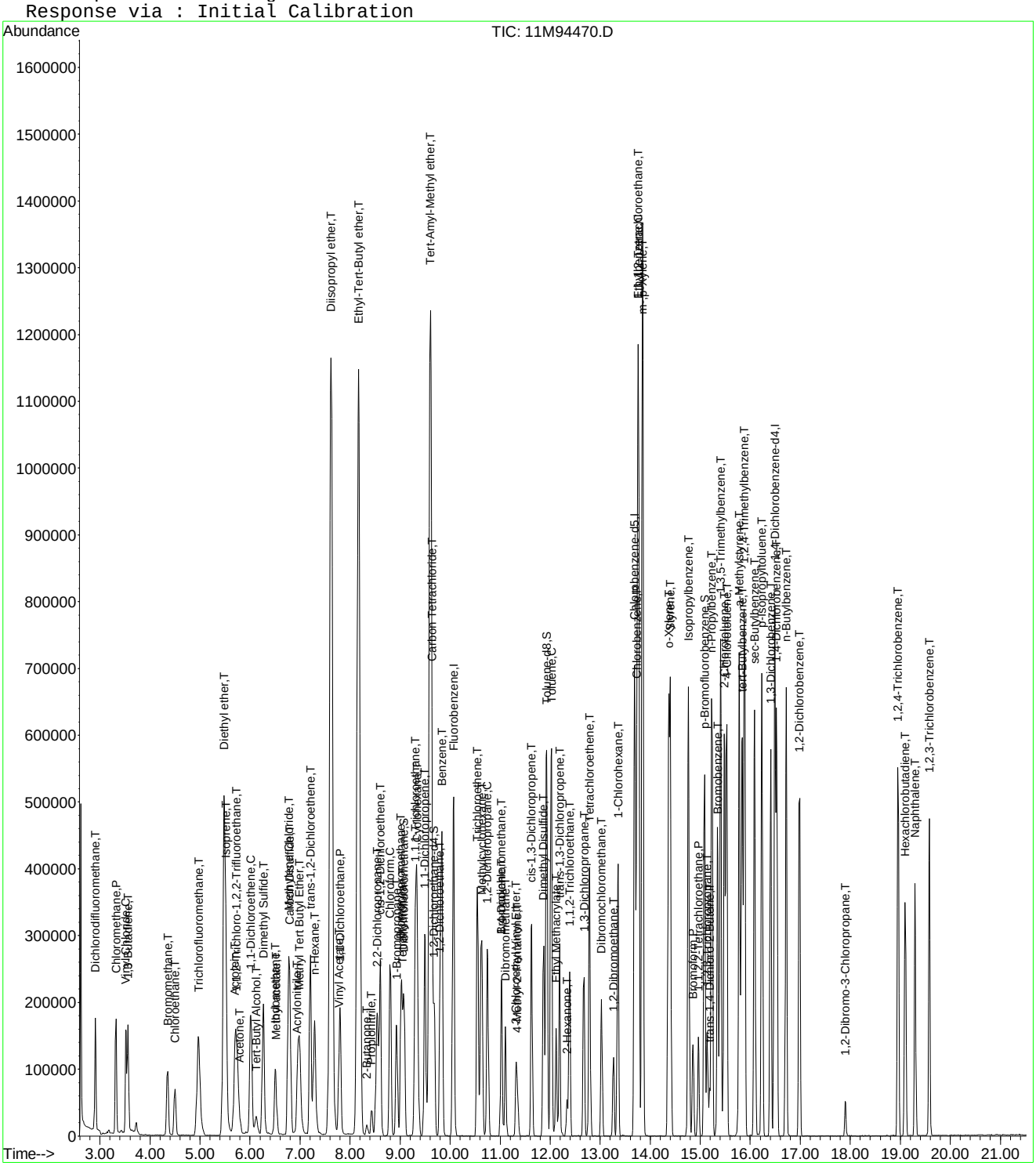

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\082213\11M94470.D Vial: 5
Acq On : 22 Aug 2013 13:50 Operator: ADC
Sample : WG442178-12 20.0ug/L ALT 8260 Inst : hpms11
Misc : 1,1 STD59457 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	93	0.00
2	T	Dichlorodifluoromethane	20.0000	28.9439	-44.7#	121	0.00
3	P	Chloromethane	20.0000	20.4049	-2.0	90	0.01
4	C	Vinyl Chloride	20.0000	21.8060	-9.0	103	0.00
5	T	1,3-Butadiene	20.0000	10.1785	49.1#	47	0.00
6	T	Bromomethane	20.0000	24.9070	-24.5	145	0.00
7	T	Chloroethane	20.0000	22.3506	-11.8	100	0.00
8	T	Trichlorofluoromethane	20.0000	21.7686	-8.8	99	0.01
9	T	Diethyl ether	80.0000	105.5498	-31.9#	122	0.00
10	T	Isoprene	20.0000	22.2844	-11.4	96	0.00
11	T	Acrolein	40.0000	92.1013	-130.3#	237	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	20.0000	22.9672	-14.8	109	0.01
13	T	Acetone	20.0000	13.5316	32.3#	66	0.00
14	C	1,1-Dichloroethene	20.0000	20.0288	-0.1	91	0.00
15	T	Tert-Butyl Alcohol	160.0000	186.5849	-16.6	104	0.00
16	T	Dimethyl Sulfide	20.0000	26.6767	-33.4#	121	0.00
17	T	Iodomethane	20.0000	21.8208	-9.1	100	0.00
18	T	Methyl acetate	20.0000	20.1650	-0.8	102	0.00
19	T	Methylene Chloride	20.0000	20.3937	-2.0	96	0.01
20	T	Carbon Disulfide	20.0000	21.7032	-8.5	96	0.00
21	T	Acrylonitrile	40.0000	19.7770	50.6#	44	0.00
22	T	Methyl Tert Butyl Ether	20.0000	23.1430	-15.7	104	0.00
23	T	trans-1,2-Dichloroethene	20.0000	23.0407	-15.2	102	0.00
24	T	n-Hexane	20.0000	19.1849	4.1	81	0.00
25	T	Diisopropyl ether	80.0000	99.8435	-24.8	115	0.00
26	T	Vinyl Acetate	20.0000	13.4612	32.7#	76	0.00
27	P	1,1-Dichloroethane	20.0000	21.4163	-7.1	99	0.00
28	T	Ethyl-Tert-Butyl ether	80.0000	103.4875	-29.4#	111	0.00
29	T	2-Butanone	20.0000	19.3535	3.2	83	0.00
30	T	Propionitrile	80.0000	100.1449	-25.2#	108	0.00
31	T	2,2-Dichloropropane	20.0000	18.9461	5.3	88	0.00
32	T	cis-1,2-Dichloroethene	20.0000	21.1287	-5.6	100	0.00
33	C	Chloroform	20.0000	21.6764	-8.4	101	0.00
34	T	1-Bromopropane	20.0000	22.1021	-10.5	104	0.00
35	T	Bromochloromethane	20.0000	21.5073	-7.5	101	0.00
36	T	Tetrahydrofuran	80.0000	93.7383	-17.2	112	0.00
37	S	Dibromofluoromethane	10.0000	22.2561	-122.6#	219	0.00
38	T	1,1,1-Trichloroethane	20.0000	21.4772	-7.4	101	0.00
39	T	Cyclohexane	20.0000	20.1188	-0.6	93	0.00
40	T	1,1-Dichloropropene	20.0000	21.1452	-5.7	100	0.00
41	T	Carbon Tetrachloride	20.0000	21.1603	-5.8	95	0.00
42	T	Tert-Amyl-Methyl ether	80.0000	102.8817	-28.6#	114	0.00
43	S	1,2-Dichloroethane-d4	10.0000	21.6436	-116.4#	210	-0.01
44	T	Heptane	-1.0000	0.0000	0.0	87	0.00
45	T	1,2-Dichloroethane	20.0000	20.7838	-3.9	93	0.00
46	T	Benzene	20.0000	20.9772	-4.9	94	0.00
47	T	Trichloroethene	20.0000	24.0243	-20.1	115	0.00
48	T	Methylcyclohexane	20.0000	22.1031	-10.5	100	0.00
49	C	1,2-Dichloropropane	20.0000	20.6702	-3.4	106	0.00
50	T	1,4-Dioxane	160.0000	183.0276	-14.4	117	0.00
51	T	Bromodichloromethane	20.0000	20.5502	-2.8	94	0.00
52	T	Dibromomethane	20.0000	20.4455	-2.2	95	0.00
53	T	2-Chloroethyl Vinyl Ether	20.0000	18.7420	6.3	94	0.00
54	T	4-Methyl-2-Pentanone	20.0000	18.9895	5.1	96	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\082213\11M94470.D Vial: 5
Acq On : 22 Aug 2013 13:50 Operator: ADC
Sample : WG442178-12 20.0ug/L ALT 8260 Inst : hpms11
Misc : 1,1 STD59457 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Thu Aug 22 08:13:31 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	20.0000	22.2581	-11.3	101	-0.01
56	T	Dimethyl Disulfide	20.0000	21.6488	-8.2	103	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
58	S	Toluene-d8	10.0000	23.3577	-133.6#	225	0.00
59	C	Toluene	20.0000	21.6354	-8.2	98	0.00
60	T	Ethyl Methacrylate	20.0000	19.6125	1.9	97	0.00
61	T	Paraldehyde	-1.0000	0.0000	0.0	0	-12.25#
62	T	trans-1,3-Dichloropropene	20.0000	21.1819	-5.9	92	0.00
63	T	1,1,2-Trichloroethane	20.0000	22.6212	-13.1	103	0.00
64	T	2-Hexanone	20.0000	17.7901	11.0	84	0.00
65	T	1,3-Dichloropropane	20.0000	21.3596	-6.8	99	0.00
66	T	Tetrachloroethene	20.0000	21.3788	-6.9	96	0.00
67	T	Dibromochloromethane	20.0000	20.7301	-3.7	96	0.00
68	T	1,2-Dibromoethane	20.0000	21.7296	-8.6	98	0.00
69	T	1-Chlorohexane	20.0000	21.4951	-7.5	101	0.00
70	P	Chlorobenzene	20.0000	19.7899	1.1	89	0.00
71	T	1,1,1,2-Tetrachloroethane	20.0000	21.7504	-8.8	101	0.00
72	C	Ethylbenzene	20.0000	21.6201	-8.1	100	0.00
73	T	m-,p-Xylene	40.0000	42.6990	-6.7	94	0.00
74	T	o-Xylene	20.0000	19.8789	0.6	89	0.00
75	T	Styrene	20.0000	22.5006	-12.5	96	0.00
76	P	Bromoform	20.0000	20.4924	-2.5	94	0.00
77	T	Isopropylbenzene	20.0000	21.7934	-9.0	92	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	93	0.00
79	P	1,1,2,2-Tetrachloroethane	20.0000	21.0238	-5.1	95	0.00
80	S	p-Bromofluorobenzene	10.0000	23.9281	-139.3#	229	0.00
81	T	1,2,3-Trichloropropane	20.0000	21.0602	-5.3	95	0.00
82	T	trans-1,4-Dichloro-2-Butene	20.0000	11.9077	40.5#	62	0.00
83	T	n-Propylbenzene	20.0000	20.5606	-2.8	88	0.00
84	T	Bromobenzene	20.0000	21.3707	-6.9	95	0.00
85	T	1,3,5-Trimethylbenzene	20.0000	23.5768	-17.9	99	0.00
86	T	2-Chlorotoluene	20.0000	20.2156	-1.1	91	0.00
87	T	4-Chlorotoluene	20.0000	20.5396	-2.7	88	0.00
88	T	a-Methylstyrene	20.0000	22.3063	-11.5	99	0.00
89	T	tert-Butylbenzene	20.0000	20.7866	-3.9	92	0.00
90	T	1,2,4-Trimethylbenzene	20.0000	23.0915	-15.5	99	0.00
91	T	sec-Butylbenzene	20.0000	21.1275	-5.6	91	0.00
92	T	p-Isopropyltoluene	20.0000	22.0872	-10.4	93	0.00
93	T	1,3-Dichlorobenzene	20.0000	19.9896	0.1	89	0.00
94	T	1,4-Dichlorobenzene	20.0000	20.9104	-4.6	96	-0.01
95	T	n-Butylbenzene	20.0000	22.9415	-14.7	98	0.00
96	T	1,2-Dichlorobenzene	20.0000	20.1104	-0.6	91	0.00
97	T	1,2-Dibromo-3-Chloropropane	20.0000	20.1354	-0.7	106	0.00
98	T	1,2,4-Trichlorobenzene	20.0000	22.1503	-10.8	99	0.00
99	T	Hexachlorobutadiene	20.0000	21.9389	-9.7	101	0.00
100	T	Naphthalene	20.0000	23.1260	-15.6	103	0.00
101	T	1,2,3-Trichlorobenzene	20.0000	21.6974	-8.5	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M94470.D 8260WT.M Thu Aug 22 14:18:04 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117460.D Vial: 2
Acq On : 12 Jun 2013 16:07 Operator: ADC
Sample : WG433881-02 5ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 09:13:30 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:03:26 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.24	96	635246	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.73	117	460819	25.00 ug/L	0.01
12) 1,4-Dichlorobenzene-d4	18.27	152	226317	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.82	41	701	2.3695 ug/L #	58
3) 3-Chloro-1-propene	6.21	41	51486	5.0745 ug/L	100
4) 2-Chloro-1,3-butadiene	7.71	53	53718	4.9196 ug/L	99
5) Ethyl Acetate	8.47	43	9046	4.1528 ug/L #	88
6) Methacrylonitrile	8.62	67	4764	4.0709 ug/L	95
9) Methyl methacrylate	11.12	41	9665	3.9314 ug/L	94
10) 2-Nitropropane	11.48	43	1924	2.6240 ug/L #	73
13) Cyclohexanone	16.23	55	375	1.7021 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M117460.D A9FOOWT.M Thu Jun 13 09:13:30 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117460.D Vial: 2
Acq On : 12 Jun 2013 16:07 Operator: ADC
Sample : WG433881-02 5ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 9:13 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration

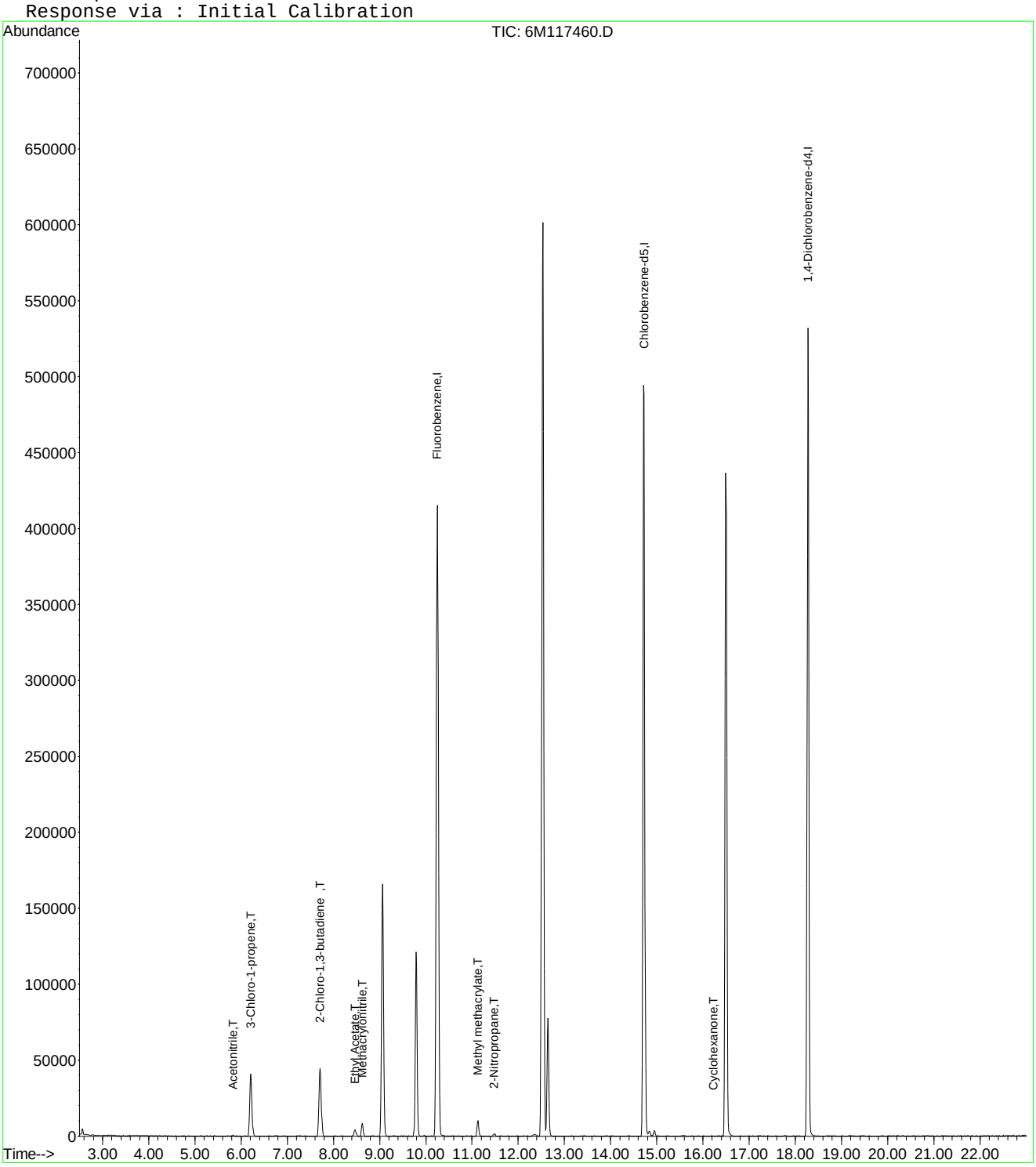

6M117460.D A9FOOWT.M Thu Jun 13 09:13:31 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117461.D Vial: 3
Acq On : 12 Jun 2013 16:38 Operator: ADC
Sample : WG433881-03 20ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 09:13:32 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	633710	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.72	117	468945	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	18.27	152	237092	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.81	41	5150	17.4502 ug/L	80
3) 3-Chloro-1-propene	6.21	41	207380	20.4891 ug/L	100
4) 2-Chloro-1,3-butadiene	7.71	53	213265	19.5784 ug/L	100
5) Ethyl Acetate	8.46	43	40890	18.8173 ug/L	99
6) Methacrylonitrile	8.62	67	22556	19.3211 ug/L	98
7) Isobutyl Alcohol	8.64	43	2652	31.7036 ug/L #	85
9) Methyl methacrylate	11.12	41	47025	19.1746 ug/L	99
10) 2-Nitropropane	11.48	43	11897	16.2645 ug/L	96
13) Cyclohexanone	16.22	55	4554	19.7308 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M117461.D A9FOOWT.M Thu Jun 13 09:13:33 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117461.D Vial: 3
Acq On : 12 Jun 2013 16:38 Operator: ADC
Sample : WG433881-03 20ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 9:13 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration

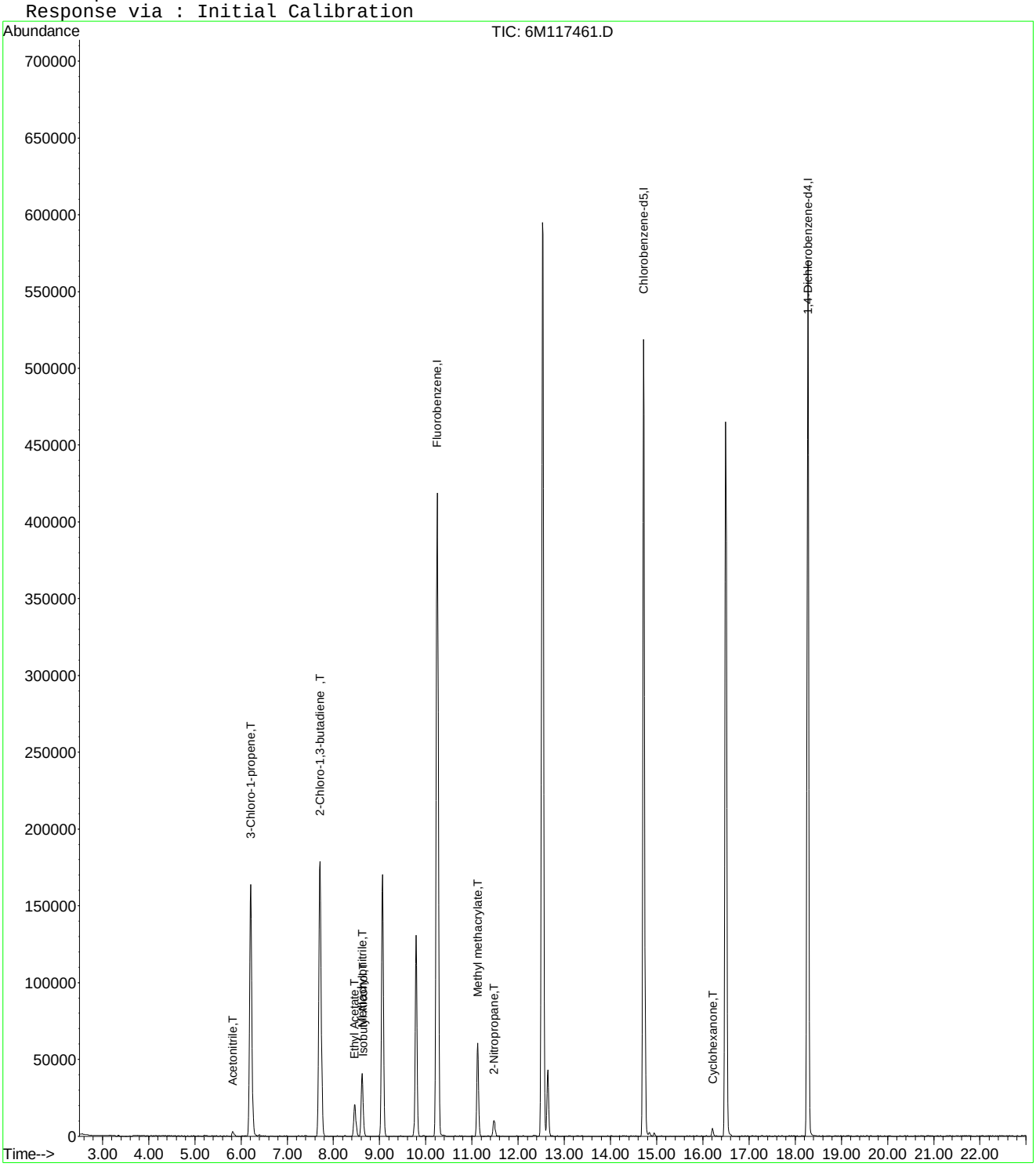

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117462.D Vial: 4
Acq On : 12 Jun 2013 17:09 Operator: ADC
Sample : WG433881-04 50ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 09:13:33 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	643649	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.72	117	474161	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	18.27	152	239863	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.82	41	15166	50.5949 ug/L	95
3) 3-Chloro-1-propene	6.20	41	547154	53.2240 ug/L	99
4) 2-Chloro-1,3-butadiene	7.70	53	575206	51.9904 ug/L	100
5) Ethyl Acetate	8.46	43	112736	51.0792 ug/L	100
6) Methacrylonitrile	8.61	67	61557	51.9146 ug/L	98
7) Isobutyl Alcohol	8.64	43	8633	101.6105 ug/L #	85
8) 1-Butanol	9.70	41	658	65.4625 ug/L #	37
9) Methyl methacrylate	11.12	41	130690	52.4663 ug/L	100
10) 2-Nitropropane	11.48	43	35478	47.7534 ug/L	99
13) Cyclohexanone	16.21	55	11954	51.1940 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M117462.D A9FOOWT.M Thu Jun 13 09:13:34 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117462.D Vial: 4
Acq On : 12 Jun 2013 17:09 Operator: ADC
Sample : WG433881-04 50ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 9:13 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration

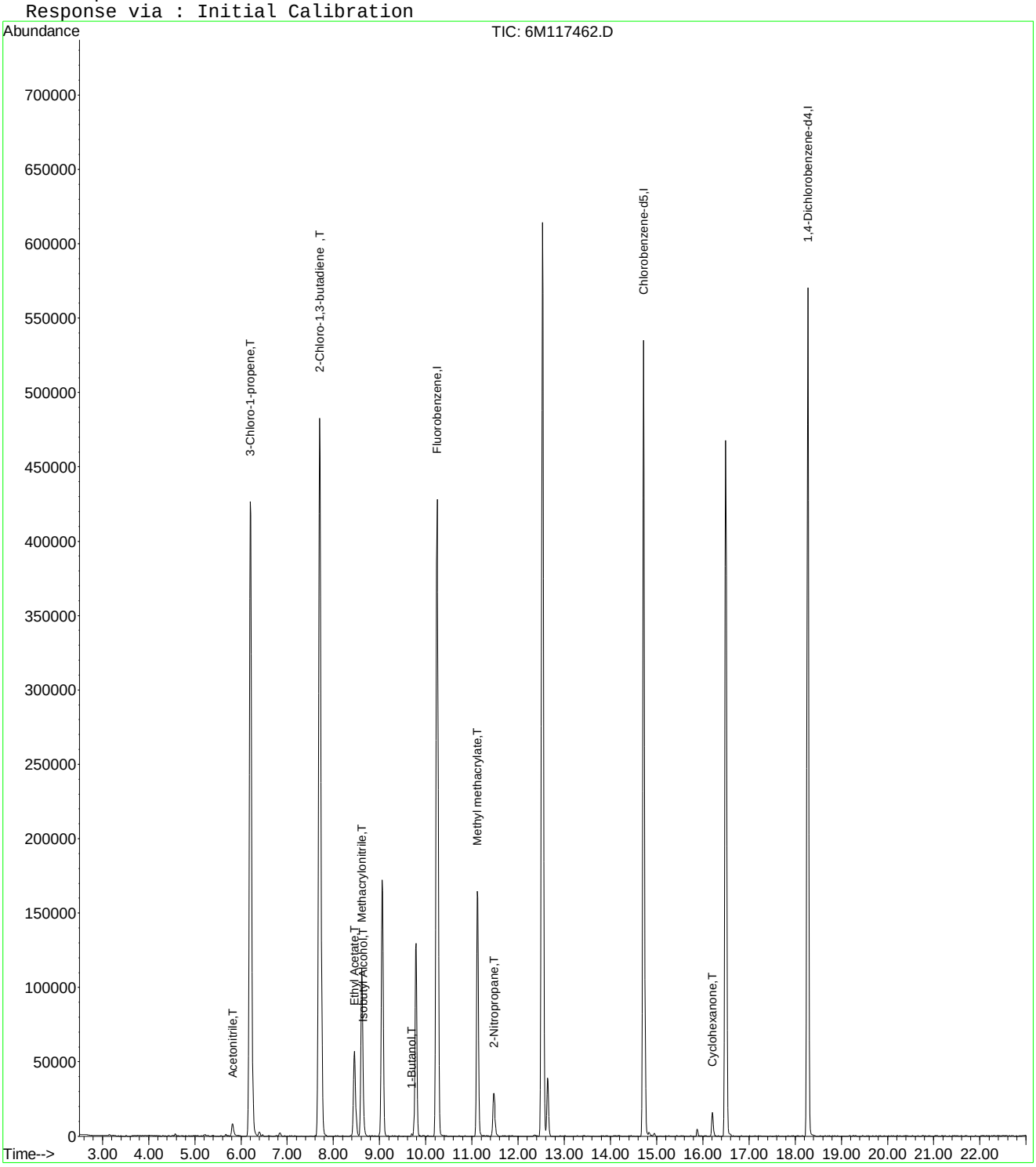

6M117462.D A9FOOWT.M Thu Jun 13 09:13:35 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117463.D Vial: 5
Acq On : 12 Jun 2013 17:39 Operator: ADC
Sample : WG433881-05 100ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 09:13:35 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.24	96	649971	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.72	117	477465	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	18.27	152	240591	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.81	41	29970	99.0096 ug/L	100
3) 3-Chloro-1-propene	6.21	41	1083531	104.3745 ug/L	100
4) 2-Chloro-1,3-butadiene	7.71	53	1155253	103.4026 ug/L	100
5) Ethyl Acetate	8.46	43	222400	99.7864 ug/L	100
6) Methacrylonitrile	8.62	67	121449	101.4287 ug/L	100
7) Isobutyl Alcohol	8.64	43	16831	196.1742 ug/L #	100
8) 1-Butanol	9.70	41	2494	111.6228 ug/L	100
9) Methyl methacrylate	11.12	41	257401	102.3302 ug/L	100
10) 2-Nitropropane	11.48	43	73677	98.2046 ug/L	100
13) Cyclohexanone	16.21	55	23437	100.0673 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M117463.D A9FOOWT.M Thu Jun 13 09:13:35 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117463.D Vial: 5
Acq On : 12 Jun 2013 17:39 Operator: ADC
Sample : WG433881-05 100ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 9:13 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration

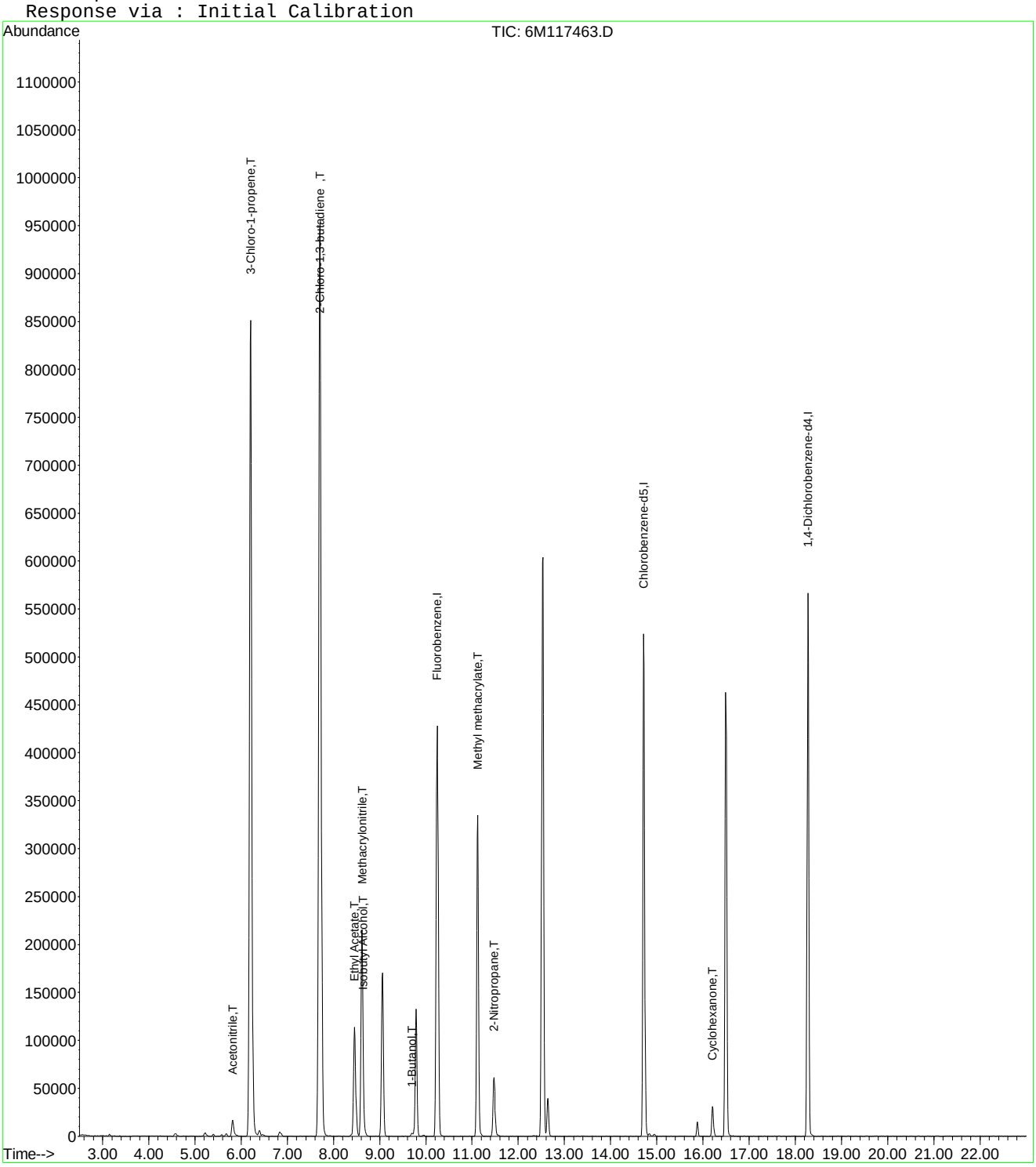

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117464.D Vial: 6
Acq On : 12 Jun 2013 18:11 Operator: ADC
Sample : WG433881-06 200ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 09:13:36 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.24	96	656617	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.73	117	481723	25.00 ug/L	0.01
12) 1,4-Dichlorobenzene-d4	18.27	152	241526	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.81	41	62853	205.5410 ug/L	96
3) 3-Chloro-1-propene	6.21	41	2119993	202.1479 ug/L	99
4) 2-Chloro-1,3-butadiene	7.71	53	2279604	201.9741 ug/L	99
5) Ethyl Acetate	8.46	43	457903	203.3724 ug/L	99
6) Methacrylonitrile	8.62	67	247327	204.4657 ug/L	99
7) Isobutyl Alcohol	8.64	43	33971	391.9423 ug/L #	91
8) 1-Butanol	9.69	41	5678	190.5072 ug/L	94
9) Methyl methacrylate	11.12	41	525946	206.9743 ug/L	100
10) 2-Nitropropane	11.48	43	153866	203.0133 ug/L	100
13) Cyclohexanone	16.21	55	47248	200.9505 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M117464.D A9FOOWT.M Thu Jun 13 09:13:36 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117464.D Vial: 6
Acq On : 12 Jun 2013 18:11 Operator: ADC
Sample : WG433881-06 200ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 9:13 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration

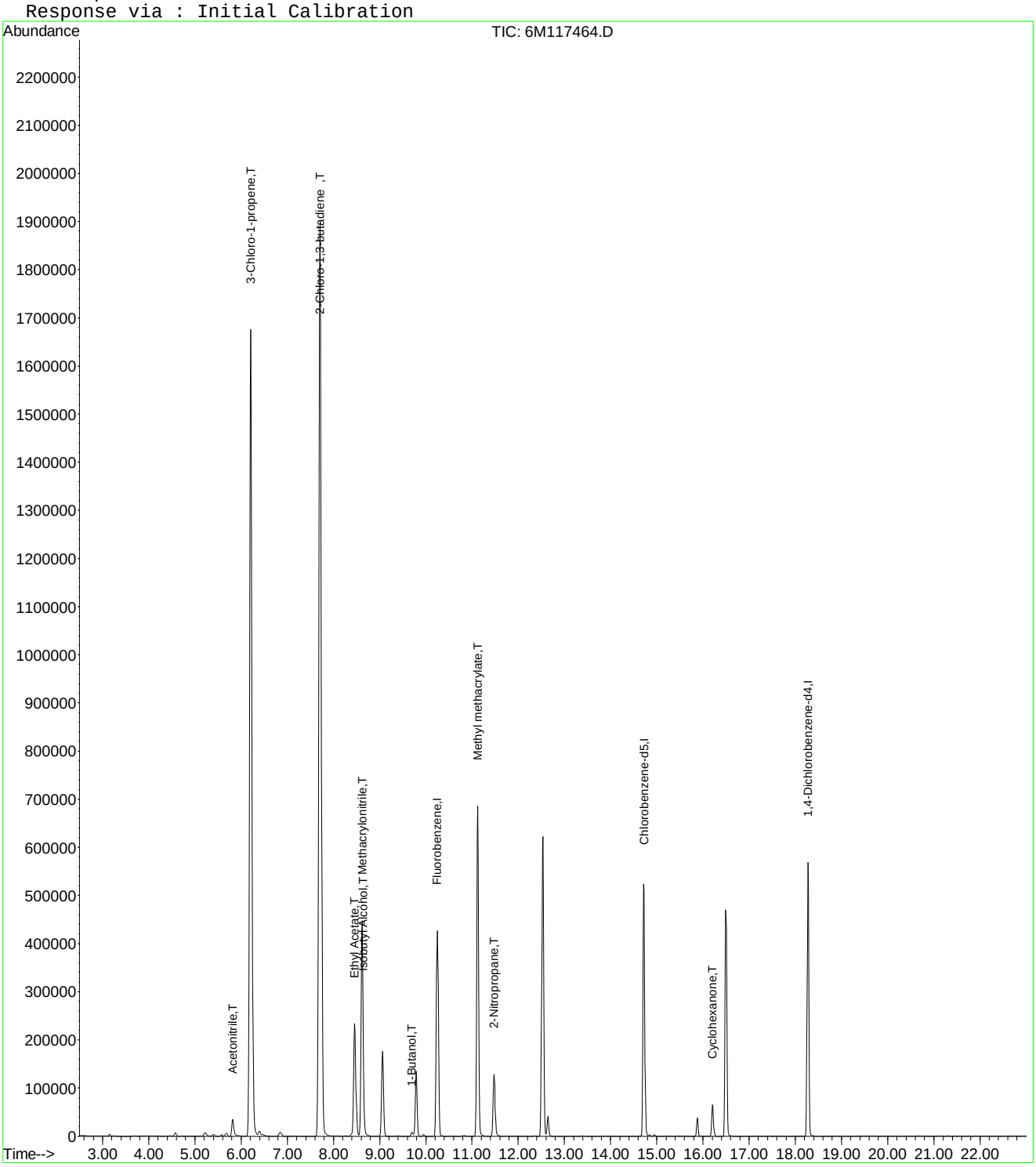

6M117464.D A9FOOWT.M Thu Jun 13 09:13:36 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117465.D Vial: 7
Acq On : 12 Jun 2013 18:42 Operator: ADC
Sample : WG433881-07 300ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 09:13:36 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.24	96	658158	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.72	117	485144	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	18.27	152	242694	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.81	41	98453	321.2058 ug/L	93
3) 3-Chloro-1-propene	6.21	41	3147094	299.3825 ug/L	99
4) 2-Chloro-1,3-butadiene	7.71	53	3416641	302.0075 ug/L	99
5) Ethyl Acetate	8.46	43	694748	307.8420 ug/L	99
6) Methacrylonitrile	8.62	67	372247	307.0168 ug/L	99
7) Isobutyl Alcohol	8.64	43	54821	631.0193 ug/L #	90
8) 1-Butanol	9.70	41	9761	291.9104 ug/L	94
9) Methyl methacrylate	11.12	41	789065	309.7919 ug/L	100
10) 2-Nitropropane	11.48	43	239726	315.5578 ug/L	100
13) Cyclohexanone	16.21	55	69527	294.2821 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M117465.D A9FOOWT.M Thu Jun 13 09:13:37 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117465.D Vial: 7
Acq On : 12 Jun 2013 18:42 Operator: ADC
Sample : WG433881-07 300ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 9:13 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration

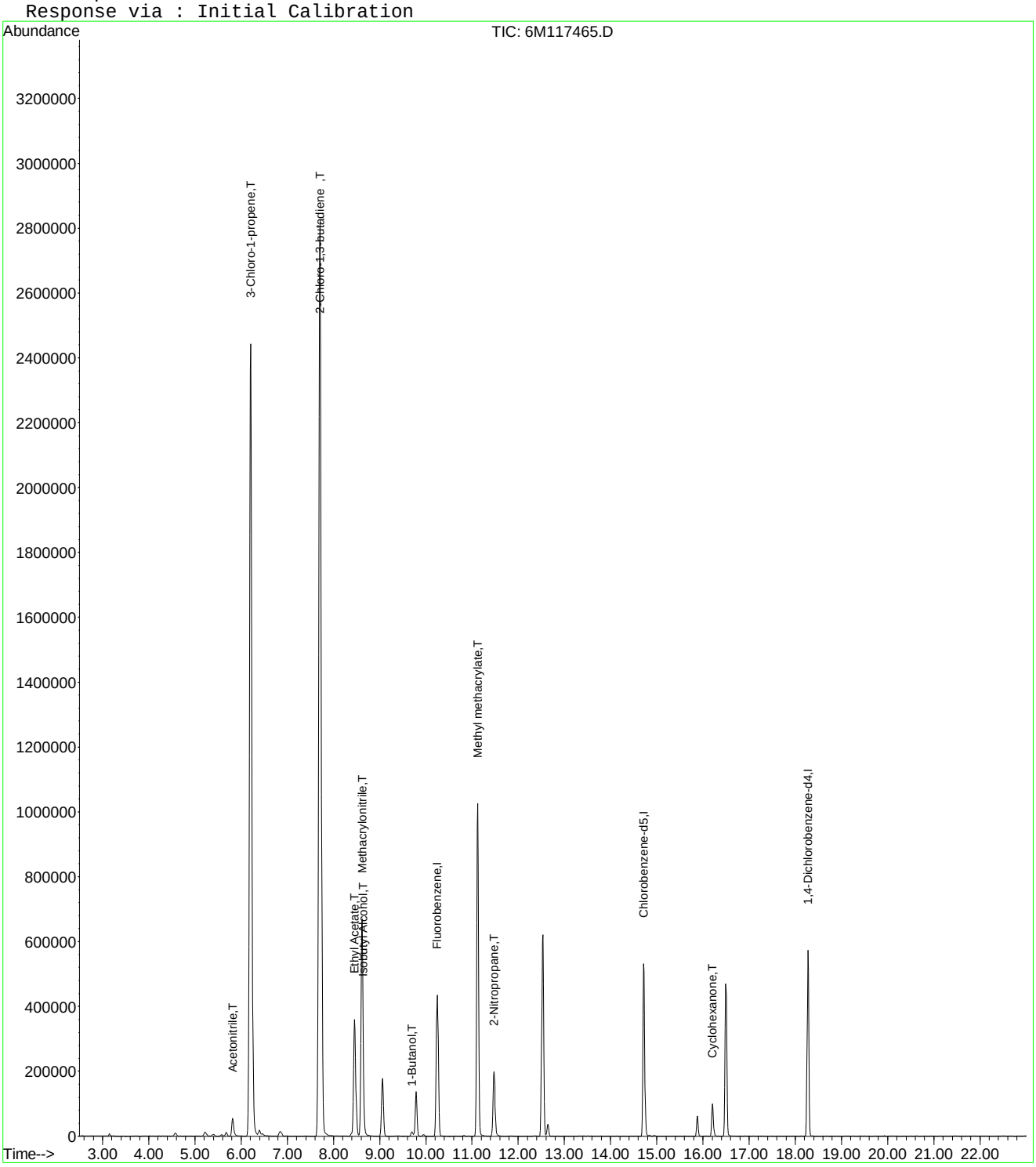

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117466.D Vial: 8
Acq On : 12 Jun 2013 19:13 Operator: ADC
Sample : WG433881-08 400ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 09:13:37 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.24	96	672591	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.73	117	491968	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	18.27	152	247920	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.81	41	138924	443.5175 ug/L	93
3) 3-Chloro-1-propene	6.21	41	4181259	389.2269 ug/L	99
4) 2-Chloro-1,3-butadiene	7.71	53	4496834	388.9594 ug/L	98
5) Ethyl Acetate	8.46	43	982928	426.1881 ug/L	100
6) Methacrylonitrile	8.62	67	518592	418.5389 ug/L	98
7) Isobutyl Alcohol	8.64	43	75191	846.9167 ug/L #	85
8) 1-Butanol	9.69	41	14333	398.1663 ug/L	94
9) Methyl methacrylate	11.12	41	1089819	418.6883 ug/L	100
10) 2-Nitropropane	11.48	43	333963	430.1711 ug/L	100
13) Cyclohexanone	16.21	55	96181	398.5173 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M117466.D A9FOOWT.M Thu Jun 13 09:13:37 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117466.D Vial: 8
Acq On : 12 Jun 2013 19:13 Operator: ADC
Sample : WG433881-08 400ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 9:13 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration

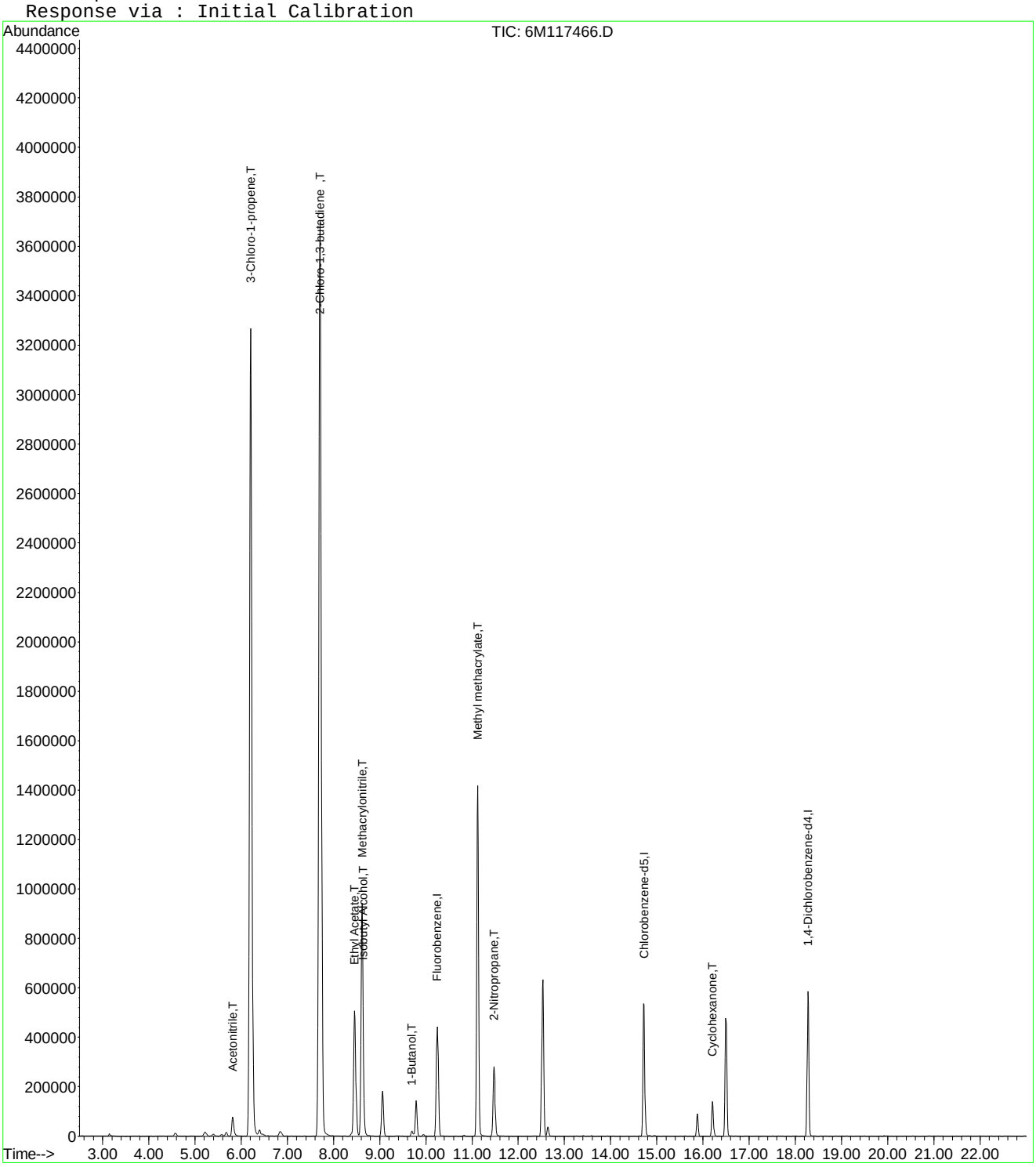

6M117466.D A9FOOWT.M Thu Jun 13 09:13:37 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117467.D Vial: 9
Acq On : 12 Jun 2013 19:44 Operator: ADC
Sample : WG433881-09 500ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 09:13:38 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	683407	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.72	117	495707	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	18.27	152	253828	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.82	41	146135	459.1551 ug/L	92
3) 3-Chloro-1-propene	6.21	41	4751777	435.3349 ug/L	98
4) 2-Chloro-1,3-butadiene	7.71	53	5723030	487.1863 ug/L	98
5) Ethyl Acetate	8.46	43	1289634	550.3231 ug/L	99
6) Methacrylonitrile	8.62	67	676775	537.5588 ug/L	98
7) Isobutyl Alcohol	8.65	43	101056	1120.2335 ug/L #	87
8) 1-Butanol	9.70	41	19132	507.7933 ug/L	96
9) Methyl methacrylate	11.13	41	1412493	534.0653 ug/L	100
10) 2-Nitropropane	11.48	43	436741	553.6540 ug/L	100
13) Cyclohexanone	16.21	55	124404	503.4592 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M117467.D A9FOOWT.M Thu Jun 13 09:13:38 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117467.D Vial: 9
Acq On : 12 Jun 2013 19:44 Operator: ADC
Sample : WG433881-09 500ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 9:13 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration

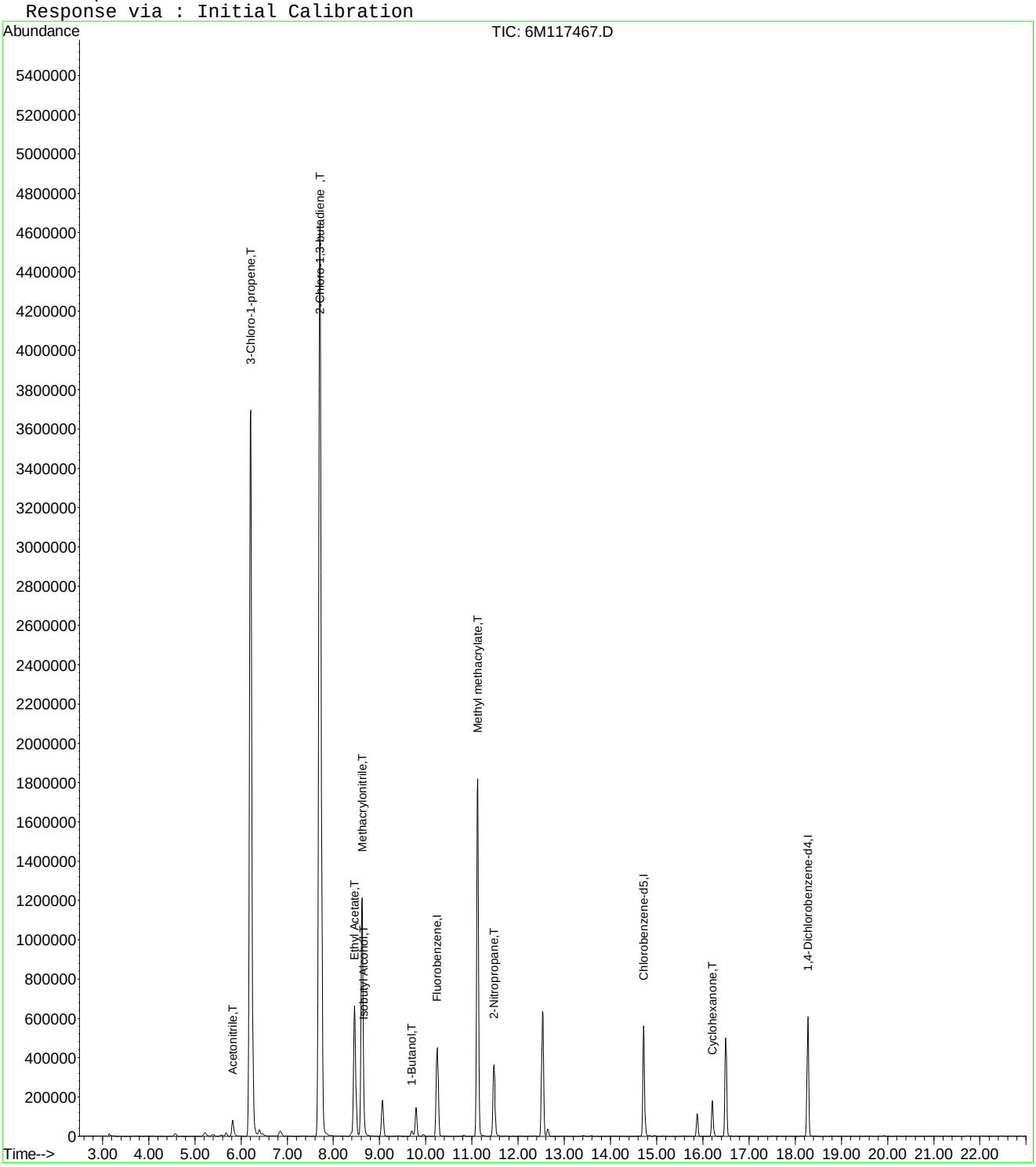

6M117467.D A9FOOWT.M Thu Jun 13 09:13:38 2013 Page 2

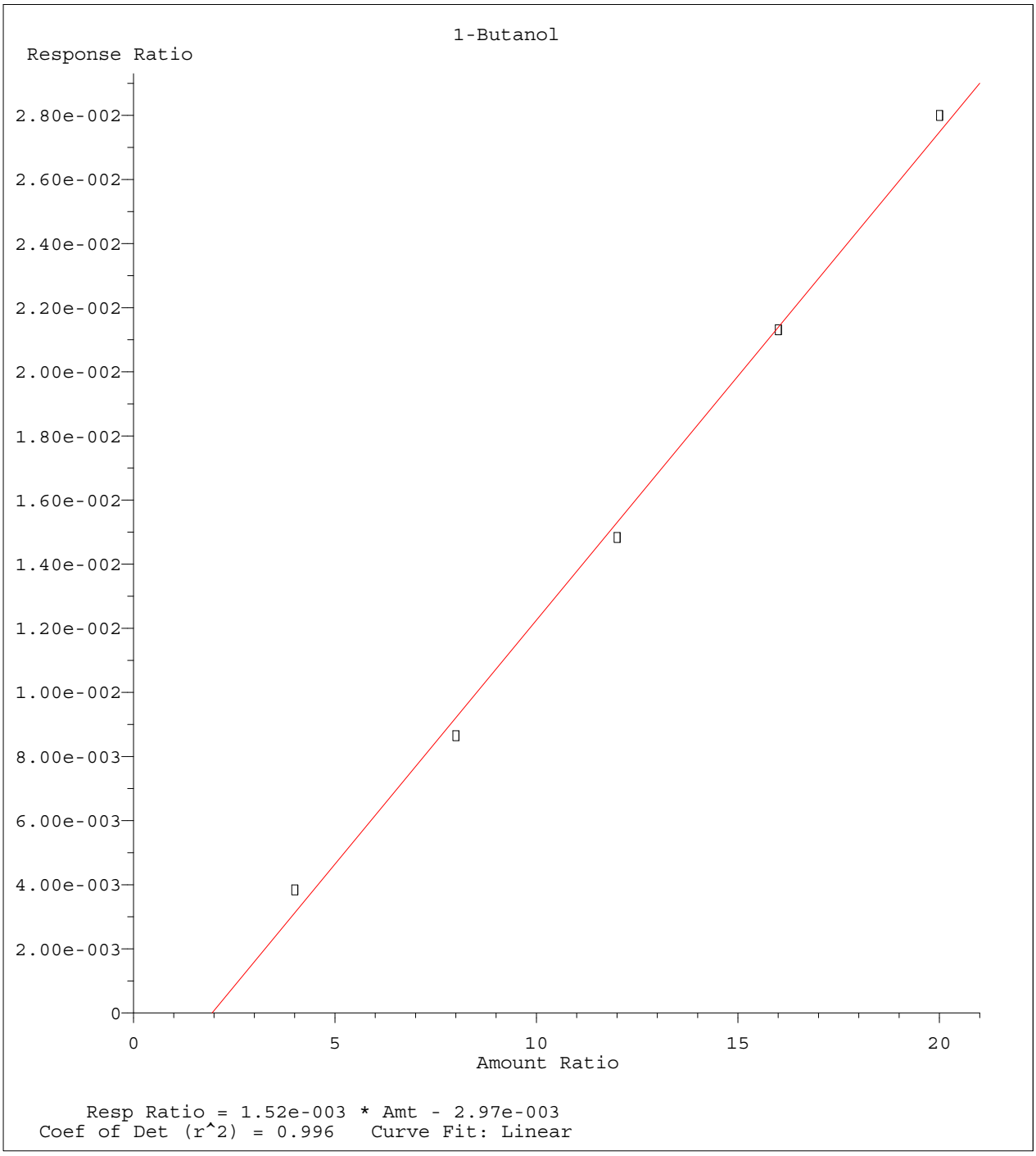

Method Name: C:\MSDCHEM\1\METHODS\A9FOOWT.M
Calibration Table Last Updated: Thu Jun 13 09:13:08 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117469.D Vial: 11
Acq On : 12 Jun 2013 20:47 Operator: ADC
Sample : WG433881-10 100ug/L A9ALT 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 09:13:39 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	637027	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.72	117	479128	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	18.27	152	241197	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.82	41	29976	101.0416 ug/L	98
3) 3-Chloro-1-propene	6.21	41	1017838	100.0386 ug/L	100
4) 2-Chloro-1,3-butadiene	7.70	53	1273042	116.2608 ug/L	99
5) Ethyl Acetate	8.46	43	231445	105.9548 ug/L	99
6) Methacrylonitrile	8.62	67	119430	101.7693 ug/L	98
7) Isobutyl Alcohol	8.64	43	16497	196.1883 ug/L #	98
8) 1-Butanol	9.71	41	2348	109.1429 ug/L	97
9) Methyl methacrylate	11.13	41	267789	108.6231 ug/L	98
10) 2-Nitropropane	11.47	43	71866	97.7371 ug/L	99
13) Cyclohexanone	16.21	55	39850	169.7172 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M117469.D A9FOOWT.M Thu Jun 13 09:13:39 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117469.D Vial: 11
Acq On : 12 Jun 2013 20:47 Operator: ADC
Sample : WG433881-10 100ug/L A9ALT 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 9:13 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration

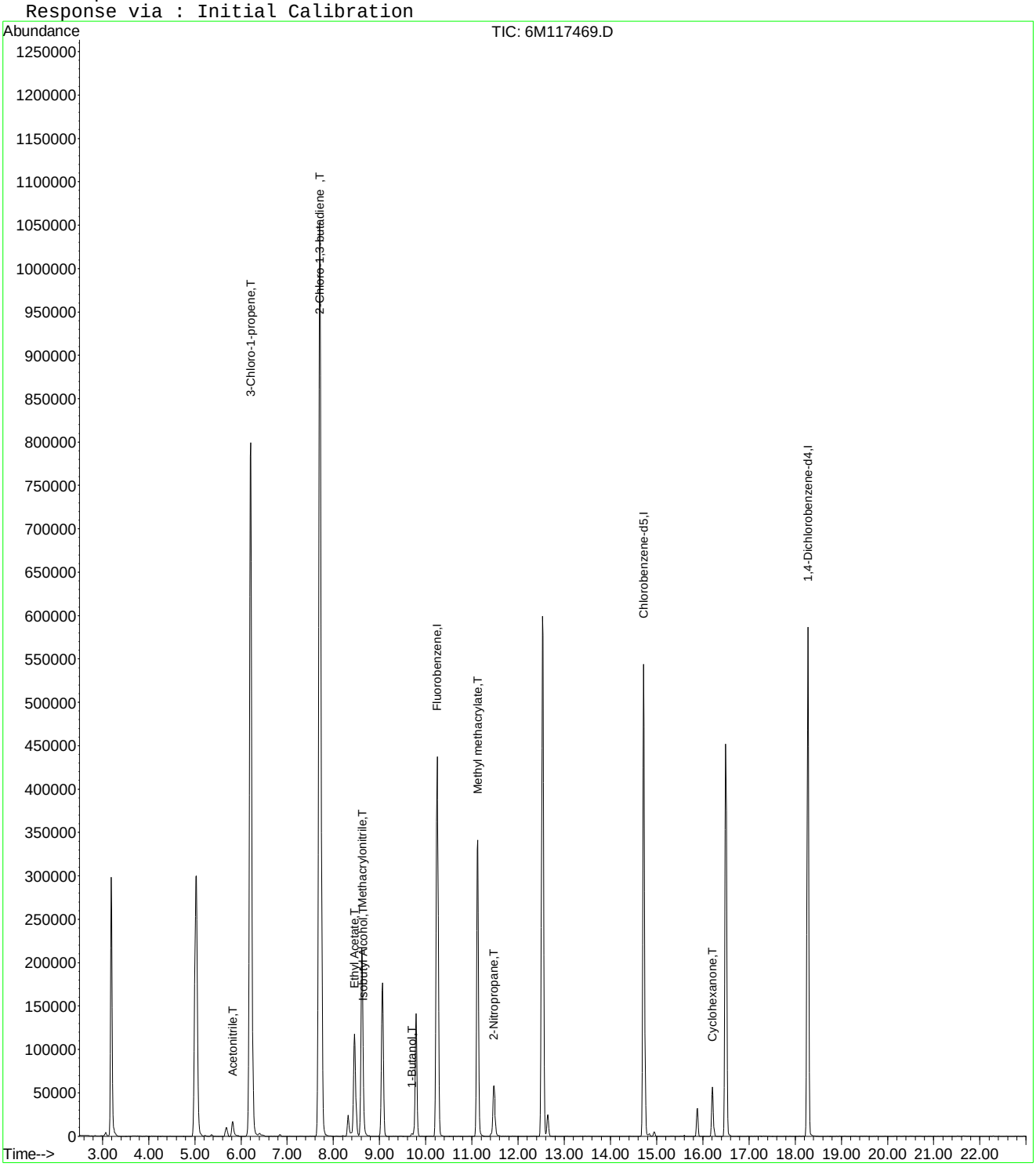

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061213\6M117469.D Vial: 11
Acq On : 12 Jun 2013 20:47 Operator: ADC
Sample : WG433881-10 100ug/L A9ALT 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	98	0.00
2	T	Acetonitrile	100.0000	101.0416	-1.0	100	0.00
3	T	3-Chloro-1-propene	100.0000	100.0386	-0.0	94	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	116.2608	-16.3	110	0.00
5	T	Ethyl Acetate	100.0000	105.9548	-6.0	104	0.00
6	T	Methacrylonitrile	100.0000	101.7693	-1.8	98	0.00
7	T	Isobutyl Alcohol	200.0000	196.1883	1.9	98	0.00
8	T	1-Butanol	100.0000	109.1429	-9.1	94	0.00
9	T	Methyl methacrylate	100.0000	108.6231	-8.6	104	0.00
10	T	2-Nitropropane	100.0000	97.7371	2.3	98	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	169.7172	-69.7	170	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M117469.D A9FOOWT.M Thu Jun 13 09:15:16 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118374.D Vial: 3
Acq On : 26 Jul 2013 15:38 Operator: adc
Sample : WG439230-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 14:48:21 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 14:47:52 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	860199	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	608517	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	290701	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.02	111	3747	0.4305 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.72%#	
43) 1,2-Dichloroethane-d4	9.75	65	3354	0.4350 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.76%#	
58) Toluene-d8	12.50	98	26450	0.8254 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 3.32%#	
80) p-Bromofluorobenzene	16.46	95	9641	0.8983 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 3.60%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.60	85	1837	0.2092 ug/L #	63
3) Chloromethane	2.94	50	5551	0.4848 ug/L	86
4) Vinyl Chloride	3.13	62	2499	0.2545 ug/L	99
5) 1,3-Butadiene	3.17	54	4946	0.7148 ug/L	95
6) Bromomethane	3.86	94	735	0.1387 ug/L	67
7) Chloroethane	4.01	64	2009	0.2513 ug/L #	56
8) Trichlorofluoromethane	4.46	101	3652	0.2274 ug/L #	89
10) Isoprene	5.02	67	3827	0.2734 ug/L	95
11) Acrolein	5.17	56	195	1.2791 ug/L #	1
12) 1,1,2-Trichloro-1,2,2-Trif	5.24	101	1840	0.2036 ug/L #	62
13) Acetone	5.33	43	5139	3.7057 ug/L #	44
14) 1,1-Dichloroethene	5.54	61	4827	0.2624 ug/L	94
16) Dimethyl Sulfide	5.81	62	2741	0.2770 ug/L	82
18) Methyl acetate	6.14	43	4500	0.8873 ug/L #	74
19) Methylene Chloride	6.36	84	2801	0.3243 ug/L	90
20) Carbon Disulfide	6.37	76	8697	0.2938 ug/L	95
22) Methyl Tert Butyl Ether	6.63	73	3439	0.2226 ug/L	100
23) trans-1,2-Dichloroethene	6.85	96	2587	0.2576 ug/L	97
24) n-Hexane	6.95	57	6344	0.3948 ug/L	95
26) Vinyl Acetate	7.54	43	5820	0.4785 ug/L #	84
27) 1,1-Dichloroethane	7.53	63	5323	0.2567 ug/L	89
29) 2-Butanone	8.16	43	1452	0.6542 ug/L #	66
31) 2,2-Dichloropropane	8.38	77	4118	0.2617 ug/L	93
32) cis-1,2-Dichloroethene	8.47	96	2843	0.2707 ug/L	83
33) Chloroform	8.69	83	5089	0.3019 ug/L	86
35) Bromochloromethane	8.95	130	1294	0.2404 ug/L	81
36) Tetrahydrofuran	8.98	42	663	0.4453 ug/L #	51
38) 1,1,1-Trichloroethane	9.28	97	4395	0.2685 ug/L	83
39) Cyclohexane	9.32	56	7805	0.3460 ug/L #	61
40) 1,1-Dichloropropene	9.52	75	3930	0.2803 ug/L	75
42) Carbon Tetrachloride	9.66	117	3735	0.2496 ug/L #	87
45) 1,2-Dichloroethane	9.89	62	2955	0.2701 ug/L #	69
46) Benzene	9.92	78	11016	0.2959 ug/L	97
47) Trichloroethene	10.79	130	2603	0.2434 ug/L	92
48) Methylcyclohexane	10.89	83	4438	0.3283 ug/L	74
49) 1,2-Dichloropropane	11.04	63	2862	0.2626 ug/L #	67
51) Bromodichloromethane	11.38	83	3055	0.2647 ug/L	98
52) Dibromomethane	11.46	93	742	0.1938 ug/L	83
55) cis-1,3-Dichloropropene	12.14	75	3145	0.2376 ug/L #	81
56) Dimethyl Disulfide	12.41	79	1366	0.2166 ug/L #	45

(#) = qualifier out of range (m) = manual integration
6M118374.D 8260WTR.M Sat Jul 27 14:56:15 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118374.D Vial: 3
Acq On : 26 Jul 2013 15:38 Operator: adc
Sample : WG439230-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 14:48:21 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 14:47:52 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
59)	Toluene	12.61	91	12965	0.3147 ug/L	94
60)	Ethyl Methacrylate	12.82	69	973	0.1578 ug/L #	1
62)	trans-1,3-Dichloropropene	12.86	75	1620	0.1534 ug/L #	49
63)	1,1,2-Trichloroethane	13.09	97	1414	0.2712 ug/L #	67
64)	2-Hexanone	13.04	43	832	0.2290 ug/L #	31
65)	1,3-Dichloropropane	13.45	76	1898	0.2078 ug/L #	1
66)	Tetrachloroethene	13.55	166	3193	0.2742 ug/L	89
67)	Dibromochloromethane	13.85	129	1353	0.1798 ug/L	96
68)	1,2-Dibromoethane	14.16	107	692	0.1308 ug/L	95
69)	1-Chlorohexane	14.33	91	3817	0.3051 ug/L	72
70)	Chlorobenzene	14.75	112	7326	0.2762 ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.80	131	2148	0.2247 ug/L #	44
72)	Ethylbenzene	14.81	106	4217	0.2750 ug/L	88
73)	m-,p-Xylene	14.91	106	10146	0.5501 ug/L	86
74)	o-Xylene	15.56	106	4910	0.2772 ug/L	96
75)	Styrene	15.62	104	6468	0.2290 ug/L	96
77)	Isopropylbenzene	16.08	105	12807	0.2776 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.33	83	1098	0.2308 ug/L #	67
83)	n-Propylbenzene	16.68	91	14767	0.2933 ug/L #	94
84)	Bromobenzene	16.78	156	2452	0.2350 ug/L	95
85)	1,3,5-Trimethylbenzene	16.91	105	11591	0.3166 ug/L	90
86)	2-Chlorotoluene	16.96	91	10149	0.2928 ug/L	95
87)	4-Chlorotoluene	17.03	91	8965	0.3046 ug/L	96
88)	a-Methylstyrene	17.38	118	4922	0.2565 ug/L	93
89)	tert-Butylbenzene	17.43	134	2008	0.2630 ug/L	83
90)	1,2,4-Trimethylbenzene	17.49	105	11441	0.3129 ug/L	85
91)	sec-Butylbenzene	17.76	105	13250	0.3023 ug/L	96
92)	p-Isopropyltoluene	17.96	119	11363	0.3023 ug/L	95
93)	1,3-Dichlorobenzene	18.14	146	5522	0.2675 ug/L	90
94)	1,4-Dichlorobenzene	18.29	146	5497	0.2712 ug/L #	39
95)	n-Butylbenzene	18.58	91	10174	0.3227 ug/L	95
96)	1,2-Dichlorobenzene	18.86	146	4638	0.2693 ug/L	94
98)	1,2,4-Trichlorobenzene	21.39	180	3359	0.2764 ug/L	87
99)	Hexachlorobutadiene	21.59	225	1631	0.2728 ug/L	98
100)	Naphthalene	21.79	128	4889	0.2843 ug/L #	68
101)	1,2,3-Trichlorobenzene	22.16	180	2863	0.2914 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M118374.D 8260WTR.M Sat Jul 27 14:56:15 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118374.D Vial: 3
Acq On : 26 Jul 2013 15:38 Operator: adc
Sample : WG439230-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 14:48 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 14:55:30 2013
Response via : Initial Calibration

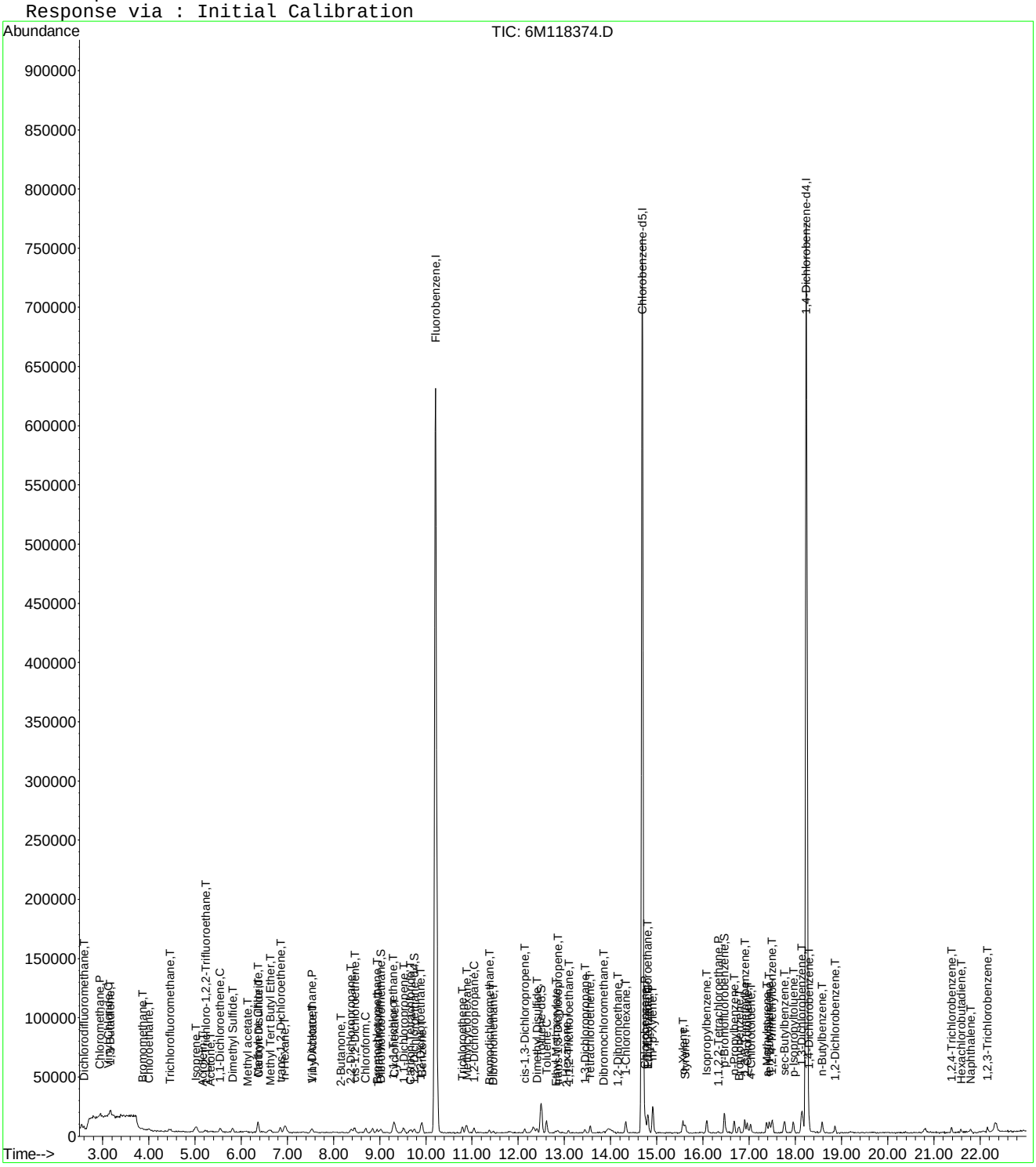

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118375.D Vial: 4
Acq On : 26 Jul 2013 16:08 Operator: adc
Sample : WG439230-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 14:48:22 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 14:47:52 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	822631	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	578589	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	282306	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.01	111	2062	0.2477 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.00%#	
43) 1,2-Dichloroethane-d4	9.75	65	1547	0.2098 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.84%#	
58) Toluene-d8	12.50	98	14986	0.4918 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.96%#	
80) p-Bromofluorobenzene	16.46	95	5224	0.5012 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	2972	0.3540 ug/L #	63
3) Chloromethane	2.94	50	5665	0.5174 ug/L	87
4) Vinyl Chloride	3.13	62	3807	0.4054 ug/L	94
5) 1,3-Butadiene	3.18	54	4344	0.6564 ug/L	90
6) Bromomethane	3.86	94	1189	0.2347 ug/L	95
7) Chloroethane	4.00	64	3032	0.3966 ug/L #	51
8) Trichlorofluoromethane	4.46	101	5352	0.3484 ug/L #	90
10) Isoprene	5.03	67	5280	0.3944 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	5.25	101	2688	0.3110 ug/L	85
13) Acetone	5.33	43	1166	0.8792 ug/L #	44
14) 1,1-Dichloroethene	5.55	61	6563	0.3731 ug/L	98
16) Dimethyl Sulfide	5.80	62	3231	0.3415 ug/L	99
18) Methyl acetate	6.12	43	1623	0.3346 ug/L #	74
19) Methylene Chloride	6.36	84	3671	0.4445 ug/L	92
20) Carbon Disulfide	6.37	76	11676	0.4125 ug/L	98
22) Methyl Tert Butyl Ether	6.62	73	4706	0.3185 ug/L #	73
23) trans-1,2-Dichloroethene	6.84	96	3470	0.3613 ug/L	97
24) n-Hexane	6.95	57	7491	0.4875 ug/L	65
26) Vinyl Acetate	7.53	43	6248	0.5372 ug/L #	84
27) 1,1-Dichloroethane	7.53	63	7370	0.3716 ug/L	92
29) 2-Butanone	8.18	43	3106	1.4632 ug/L #	66
31) 2,2-Dichloropropane	8.38	77	6095	0.4051 ug/L #	49
32) cis-1,2-Dichloroethene	8.47	96	3383	0.3369 ug/L	98
33) Chloroform	8.70	83	6276	0.3894 ug/L	97
35) Bromochloromethane	8.95	130	1818	0.3531 ug/L	95
36) Tetrahydrofuran	9.00	42	392	0.2753 ug/L #	51
38) 1,1,1-Trichloroethane	9.28	97	5855	0.3741 ug/L	84
39) Cyclohexane	9.31	56	9597	0.4448 ug/L #	75
40) 1,1-Dichloropropene	9.53	75	4465	0.3330 ug/L	75
42) Carbon Tetrachloride	9.67	117	4837	0.3380 ug/L	94
45) 1,2-Dichloroethane	9.89	62	3141	0.3002 ug/L #	93
46) Benzene	9.92	78	14214	0.3992 ug/L	97
47) Trichloroethene	10.79	130	3650	0.3569 ug/L	96
48) Methylcyclohexane	10.88	83	5194	0.4018 ug/L	71
49) 1,2-Dichloropropane	11.04	63	3406	0.3268 ug/L	100
51) Bromodichloromethane	11.38	83	3992	0.3617 ug/L	92
52) Dibromomethane	11.46	93	905	0.2471 ug/L	89
53) 2-Chloroethyl Vinyl Ether	11.79	63	643	0.1924 ug/L #	44
55) cis-1,3-Dichloropropene	12.14	75	3937	0.3110 ug/L	94
56) Dimethyl Disulfide	12.41	79	1854	0.3074 ug/L #	45

(#) = qualifier out of range (m) = manual integration
6M118375.D 8260WTR.M Sat Jul 27 14:56:40 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118375.D Vial: 4
Acq On : 26 Jul 2013 16:08 Operator: adc
Sample : WG439230-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 14:48:22 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 14:47:52 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
59)	Toluene	12.61	91	15010	0.3831 ug/L		97
60)	Ethyl Methacrylate	12.81	69	1462	0.2493 ug/L	#	1
62)	trans-1,3-Dichloropropene	12.87	75	1990	0.1982 ug/L	#	49
63)	1,1,2-Trichloroethane	13.07	97	1734	0.3498 ug/L	#	83
65)	1,3-Dichloropropane	13.44	76	2943	0.3388 ug/L	#	13
66)	Tetrachloroethene	13.56	166	4077	0.3683 ug/L		98
67)	Dibromochloromethane	13.86	129	2281	0.3188 ug/L		93
68)	1,2-Dibromoethane	14.14	107	1095	0.2176 ug/L		96
69)	1-Chlorohexane	14.32	91	4633	0.3895 ug/L		68
70)	Chlorobenzene	14.75	112	9424	0.3737 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.80	131	3103	0.3414 ug/L	#	40
72)	Ethylbenzene	14.81	106	5374	0.3686 ug/L		88
73)	m-,p-Xylene	14.91	106	12979	0.7401 ug/L		88
74)	o-Xylene	15.56	106	6100	0.3622 ug/L		88
75)	Styrene	15.62	104	8752	0.3259 ug/L		86
76)	Bromoform	16.14	173	615	0.1640 ug/L	#	35
77)	Isopropylbenzene	16.09	105	16751	0.3819 ug/L		97
79)	1,1,2,2-Tetrachloroethane	16.33	83	1545	0.3344 ug/L		72
83)	n-Propylbenzene	16.68	91	19436	0.3975 ug/L	#	96
84)	Bromobenzene	16.78	156	3232	0.3190 ug/L		99
85)	1,3,5-Trimethylbenzene	16.90	105	14428	0.4059 ug/L		96
86)	2-Chlorotoluene	16.96	91	13577	0.4033 ug/L		94
87)	4-Chlorotoluene	17.03	91	12089	0.4229 ug/L		93
88)	a-Methylstyrene	17.37	118	6664	0.3577 ug/L		91
89)	tert-Butylbenzene	17.44	134	2367	0.3192 ug/L		53
90)	1,2,4-Trimethylbenzene	17.50	105	14418	0.4061 ug/L		99
91)	sec-Butylbenzene	17.76	105	16972	0.3987 ug/L		95
92)	p-Isopropyltoluene	17.96	119	14775	0.4047 ug/L		97
93)	1,3-Dichlorobenzene	18.14	146	7343	0.3663 ug/L		98
94)	1,4-Dichlorobenzene	18.29	146	7575	0.3848 ug/L		86
95)	n-Butylbenzene	18.58	91	12838	0.4194 ug/L		90
96)	1,2-Dichlorobenzene	18.85	146	5831	0.3486 ug/L		93
98)	1,2,4-Trichlorobenzene	21.38	180	4396	0.3725 ug/L	#	93
99)	Hexachlorobutadiene	21.59	225	2423	0.4174 ug/L		83
100)	Naphthalene	21.79	128	6188	0.3705 ug/L	#	68
101)	1,2,3-Trichlorobenzene	22.17	180	3435	0.3600 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M118375.D 8260WTR.M Sat Jul 27 14:56:40 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118375.D Vial: 4
Acq On : 26 Jul 2013 16:08 Operator: adc
Sample : WG439230-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 14:48 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 14:55:30 2013
Response via : Initial Calibration

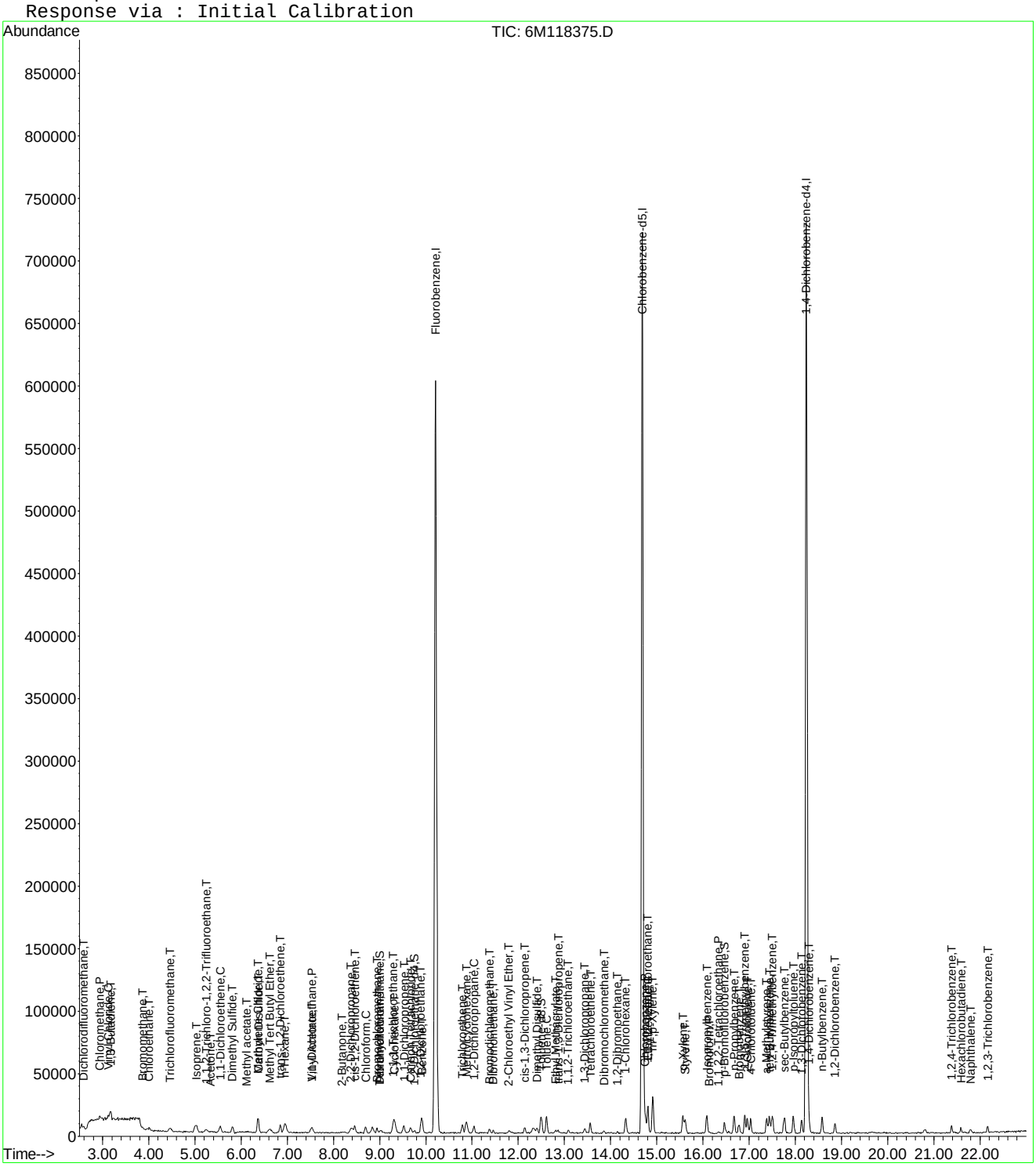

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118376.D Vial: 5
Acq On : 26 Jul 2013 16:39 Operator: adc
Sample : WG439230-04 1.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 14:58:45 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 14:58:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	828241	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	577022	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	277907	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.02	111	5421	0.6237 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.48%#	
43) 1,2-Dichloroethane-d4	9.75	65	4304	0.5844 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.32%#	
58) Toluene-d8	12.50	98	24511	0.7923 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.16%#	
80) p-Bromofluorobenzene	16.46	95	9052	0.8564 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.44%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	7294	0.9501 ug/L	92
3) Chloromethane	2.94	50	11125	0.9788 ug/L	90
4) Vinyl Chloride	3.13	62	9107	1.0094 ug/L	97
5) 1,3-Butadiene	3.17	54	9337	Below Cal	96
6) Bromomethane	3.86	94	3062	1.3196 ug/L	92
7) Chloroethane	4.00	64	6972	0.9382 ug/L	89
8) Trichlorofluoromethane	4.47	101	14510	0.9922 ug/L #	97
9) Diethyl ether	5.00	59	24918	4.4202 ug/L	96
10) Isoprene	5.03	67	12890	1.0074 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	5.24	101	7904	0.9630 ug/L	94
14) 1,1-Dichloroethene	5.54	61	16611	0.9742 ug/L	97
15) Tert-Butyl Alcohol	5.68	59	2660	8.7524 ug/L #	60
16) Dimethyl Sulfide	5.80	62	8731	0.9639 ug/L	94
17) Iodomethane	6.07	142	2096	2.2418 ug/L #	34
19) Methylene Chloride	6.36	84	8388	0.9993 ug/L	98
20) Carbon Disulfide	6.36	76	27005	0.9721 ug/L	100
21) Acrylonitrile	6.58	53	3957	2.0482 ug/L	98
22) Methyl Tert Butyl Ether	6.62	73	12616	0.9012 ug/L	82
23) trans-1,2-Dichloroethene	6.84	96	8858	0.9448 ug/L	99
24) n-Hexane	6.96	57	16330	1.0804 ug/L	80
25) Diisopropyl ether	7.36	45	186435	4.7096 ug/L	97
26) Vinyl Acetate	7.53	43	12475	1.1215 ug/L #	84
27) 1,1-Dichloroethane	7.52	63	19034	0.9813 ug/L	99
28) Ethyl-Tert-Butyl ether	7.98	59	115757	4.5449 ug/L	100
29) 2-Butanone	8.18	43	3552	1.6284 ug/L #	66
30) Propionitrile	8.29	54	2880	4.7022 ug/L #	57
31) 2,2-Dichloropropane	8.40	77	14444	0.9817 ug/L	74
32) cis-1,2-Dichloroethene	8.47	96	9114	0.9412 ug/L	91
33) Chloroform	8.69	83	15299	0.9583 ug/L	98
34) 1-Bromopropane	8.85	122	1425	0.7941 ug/L	93
35) Bromochloromethane	8.95	130	4858	0.9678 ug/L	98
36) Tetrahydrofuran	8.99	42	7107	4.8961 ug/L #	86
38) 1,1,1-Trichloroethane	9.29	97	14707	0.9682 ug/L	96
39) Cyclohexane	9.31	56	22461	1.0495 ug/L	89
40) 1,1-Dichloropropene	9.52	75	12196	0.9527 ug/L	90
41) Tert-Amyl-Methyl ether	9.67	73	68750	4.5069 ug/L	96
42) Carbon Tetrachloride	9.67	117	12942	0.9446 ug/L	98
45) 1,2-Dichloroethane	9.89	62	9732	0.9743 ug/L #	93
46) Benzene	9.92	78	34791	0.9957 ug/L	98
47) Trichloroethene	10.79	130	9193	0.9346 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M118376.D 8260WTR.M Sat Jul 27 14:58:46 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118376.D Vial: 5
Acq On : 26 Jul 2013 16:39 Operator: adc
Sample : WG439230-04 1.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 14:58:45 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 14:58:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
48)	Methylcyclohexane	10.88	83	12909	1.0146 ug/L		93
49)	1,2-Dichloropropane	11.04	63	9951	0.9952 ug/L		91
51)	Bromodichloromethane	11.38	83	10321	0.9555 ug/L		98
52)	Dibromomethane	11.46	93	2870	0.8459 ug/L		90
53)	2-Chloroethyl Vinyl Ether	11.79	63	2235	0.6816 ug/L	#	44
54)	4-Methyl-2-Pentanone	11.81	58	868	0.5311 ug/L	#	45
55)	cis-1,3-Dichloropropene	12.13	75	10867	0.9096 ug/L		98
56)	Dimethyl Disulfide	12.41	79	4264	0.7452 ug/L	#	67
59)	Toluene	12.60	91	38207	1.0122 ug/L		98
60)	Ethyl Methacrylate	12.80	69	4533	0.8362 ug/L	#	41
62)	trans-1,3-Dichloropropene	12.85	75	7507	0.8106 ug/L		93
63)	1,1,2-Trichloroethane	13.08	97	4596	0.9632 ug/L		93
64)	2-Hexanone	13.06	43	3093	0.9356 ug/L	#	31
65)	1,3-Dichloropropane	13.44	76	7567	0.9190 ug/L		70
66)	Tetrachloroethene	13.55	166	10317	0.9694 ug/L		97
67)	Dibromochloromethane	13.85	129	5827	0.8741 ug/L		99
68)	1,2-Dibromoethane	14.15	107	3947	0.8297 ug/L		99
69)	1-Chlorohexane	14.32	91	11324	0.9851 ug/L		89
70)	Chlorobenzene	14.75	112	23172	0.9625 ug/L		78
71)	1,1,1,2-Tetrachloroethane	14.80	131	8134	0.9476 ug/L	#	73
72)	Ethylbenzene	14.81	106	12896	0.9295 ug/L		89
73)	m-,p-Xylene	14.91	106	32607	1.9764 ug/L		94
74)	o-Xylene	15.57	106	15346	0.9557 ug/L		95
75)	Styrene	15.61	104	23482	0.9412 ug/L		96
76)	Bromoform	16.15	173	2721	0.7862 ug/L	#	80
77)	Isopropylbenzene	16.08	105	41771	1.0076 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.33	83	4312	0.9790 ug/L		93
81)	1,2,3-Trichloropropane	16.56	110	857	0.6715 ug/L		66
82)	trans-1,4-Dichloro-2-Buten	16.65	53	727	0.4254 ug/L		97
83)	n-Propylbenzene	16.68	91	47643	1.0341 ug/L		98
84)	Bromobenzene	16.77	156	9099	0.9789 ug/L		97
85)	1,3,5-Trimethylbenzene	16.90	105	33513	0.9895 ug/L		98
86)	2-Chlorotoluene	16.96	91	32517	1.0046 ug/L		98
87)	4-Chlorotoluene	17.03	91	28098	1.0120 ug/L		97
88)	a-Methylstyrene	17.37	118	16722	0.9525 ug/L		99
89)	tert-Butylbenzene	17.44	134	6572	0.9530 ug/L		87
90)	1,2,4-Trimethylbenzene	17.51	105	34645	1.0219 ug/L		99
91)	sec-Butylbenzene	17.76	105	41312	1.0299 ug/L		98
92)	p-Isopropyltoluene	17.95	119	34401	0.9984 ug/L		99
93)	1,3-Dichlorobenzene	18.14	146	18947	0.9962 ug/L		95
94)	1,4-Dichlorobenzene	18.29	146	17959	0.9687 ug/L		97
95)	n-Butylbenzene	18.58	91	29812	1.0234 ug/L		97
96)	1,2-Dichlorobenzene	18.85	146	15534	0.9891 ug/L		98
98)	1,2,4-Trichlorobenzene	21.39	180	10910	0.9791 ug/L		98
99)	Hexachlorobutadiene	21.58	225	5098	0.9143 ug/L		93
100)	Naphthalene	21.79	128	14976	0.9522 ug/L		92
101)	1,2,3-Trichlorobenzene	22.17	180	8537	0.9467 ug/L		98

(#) = qualifier out of range (m) = manual integration
6M118376.D 8260WTR.M Sat Jul 27 14:58:46 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118376.D Vial: 5
Acq On : 26 Jul 2013 16:39 Operator: adc
Sample : WG439230-04 1.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 14:58 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 14:58:23 2013
Response via : Initial Calibration

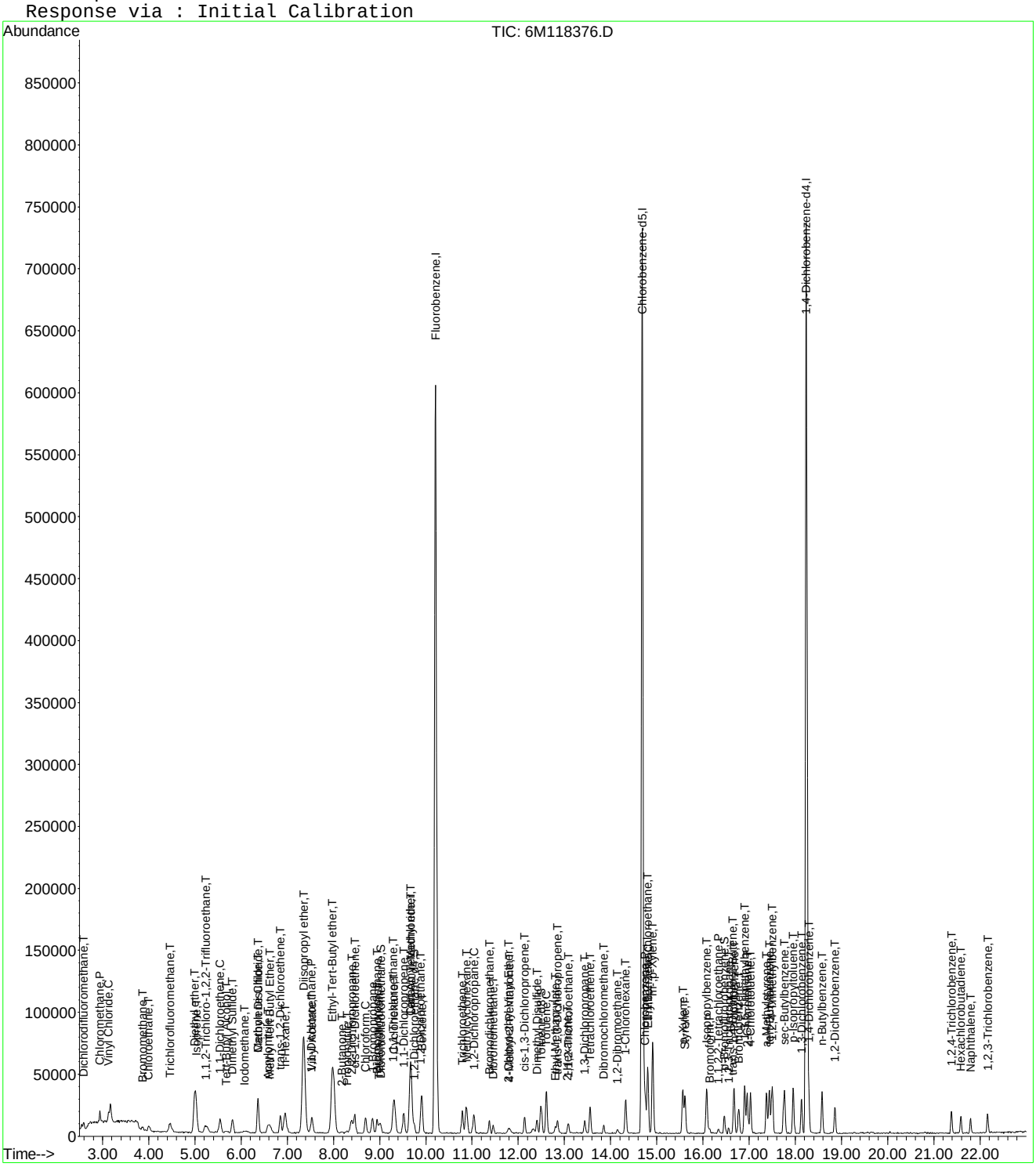

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118377.D Vial: 6
Acq On : 26 Jul 2013 17:10 Operator: adc
Sample : WG439230-05 2.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:00:44 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:00:20 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	821956	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	576536	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	282251	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.02	111	8861	1.0273 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.12%#	
43) 1,2-Dichloroethane-d4	9.75	65	7760	1.0617 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.24%#	
58) Toluene-d8	12.49	98	35301	1.1420 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.56%#	
80) p-Bromofluorobenzene	16.47	95	12568	1.1707 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.68%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	12894	1.6924 ug/L	99
3) Chloromethane	2.95	50	21430	1.8998 ug/L	97
4) Vinyl Chloride	3.13	62	18101	2.0216 ug/L	97
5) 1,3-Butadiene	3.17	54	16192	Below Cal	98
6) Bromomethane	3.86	94	6554	2.0051 ug/L	97
7) Chloroethane	4.01	64	14534	1.9708 ug/L	97
8) Trichlorofluoromethane	4.46	101	27588	1.9009 ug/L	99
9) Diethyl ether	5.00	59	130741	23.3697 ug/L	99
10) Isoprene	5.02	67	23158	1.8237 ug/L	95
11) Acrolein	5.22	56	1606	11.7732 ug/L #	50
12) 1,1,2-Trichloro-1,2,2-Trif	5.24	101	14945	1.8347 ug/L	98
13) Acetone	5.33	43	5764	1.3108 ug/L #	58
14) 1,1-Dichloroethene	5.54	61	33044	1.9528 ug/L	98
15) Tert-Butyl Alcohol	5.69	59	13477	44.6834 ug/L #	74
16) Dimethyl Sulfide	5.81	62	17465	1.9430 ug/L	98
17) Iodomethane	6.06	142	5342	2.7771 ug/L	98
18) Methyl acetate	6.12	43	13773	1.8645 ug/L #	76
19) Methylene Chloride	6.37	84	16524	1.9836 ug/L	100
20) Carbon Disulfide	6.37	76	54135	1.9636 ug/L	98
21) Acrylonitrile	6.57	53	21065	10.9868 ug/L	93
22) Methyl Tert Butyl Ether	6.62	73	26706	1.9224 ug/L	96
23) trans-1,2-Dichloroethene	6.85	96	18649	2.0044 ug/L	98
24) n-Hexane	6.95	57	29745	1.9829 ug/L	93
25) Diisopropyl ether	7.35	45	946282	24.0872 ug/L	100
26) Vinyl Acetate	7.53	43	19078	1.7282 ug/L #	90
27) 1,1-Dichloroethane	7.53	63	38773	2.0142 ug/L	99
28) Ethyl-Tert-Butyl ether	7.98	59	597263	23.6295 ug/L	100
29) 2-Butanone	8.18	43	5361	2.4765 ug/L #	66
30) Propionitrile	8.29	54	14466	23.7994 ug/L	97
31) 2,2-Dichloropropane	8.39	77	28257	1.9352 ug/L	85
32) cis-1,2-Dichloroethene	8.46	96	18779	1.9541 ug/L	97
33) Chloroform	8.70	83	31734	2.0029 ug/L	99
34) 1-Bromopropane	8.84	122	3276	1.8397 ug/L	100
35) Bromochloromethane	8.94	130	9794	1.9661 ug/L	98
36) Tetrahydrofuran	8.99	42	34852	24.1937 ug/L	96
38) 1,1,1-Trichloroethane	9.29	97	29558	1.9608 ug/L	99
39) Cyclohexane	9.32	56	41117	1.9359 ug/L	95
40) 1,1-Dichloropropene	9.52	75	25282	1.9900 ug/L	97
41) Tert-Amyl-Methyl ether	9.68	73	353859	23.3744 ug/L	98
42) Carbon Tetrachloride	9.67	117	26330	1.9364 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M118377.D 8260WTR.M Sat Jul 27 15:00:45 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118377.D Vial: 6
Acq On : 26 Jul 2013 17:10 Operator: adc
Sample : WG439230-05 2.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:00:44 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:00:20 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.88	62	20118	2.0295 ug/L		98
46)	Benzene	9.91	78	69400	2.0014 ug/L		100
47)	Trichloroethene	10.79	130	19047	1.9511 ug/L		95
48)	Methylcyclohexane	10.87	83	24672	1.9540 ug/L		94
49)	1,2-Dichloropropane	11.03	63	19852	2.0006 ug/L		96
50)	1,4-Dioxane	11.39	88	642	32.7113 ug/L	#	45
51)	Bromodichloromethane	11.37	83	21350	1.9916 ug/L		94
52)	Dibromomethane	11.46	93	6524	1.9376 ug/L		99
53)	2-Chloroethyl Vinyl Ether	11.79	63	5547	1.7047 ug/L		86
54)	4-Methyl-2-Pentanone	11.82	58	2736	1.6868 ug/L	#	58
55)	cis-1,3-Dichloropropene	12.14	75	23001	1.9401 ug/L		99
56)	Dimethyl Disulfide	12.40	79	9655	1.7002 ug/L		99
59)	Toluene	12.61	91	79165	2.0990 ug/L		97
60)	Ethyl Methacrylate	12.80	69	9416	1.7383 ug/L		81
62)	trans-1,3-Dichloropropene	12.85	75	16204	1.7511 ug/L		97
63)	1,1,2-Trichloroethane	13.08	97	9348	1.9607 ug/L		99
64)	2-Hexanone	13.07	43	5868	1.7764 ug/L		77
65)	1,3-Dichloropropane	13.44	76	15870	1.9291 ug/L		83
66)	Tetrachloroethene	13.56	166	21030	1.9776 ug/L		99
67)	Dibromochloromethane	13.85	129	12470	1.8723 ug/L		94
68)	1,2-Dibromoethane	14.15	107	8769	1.8448 ug/L		98
69)	1-Chlorohexane	14.33	91	22517	1.9605 ug/L		94
70)	Chlorobenzene	14.74	112	49597	2.0618 ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.80	131	16438	1.9166 ug/L		90
72)	Ethylbenzene	14.80	106	27799	2.0054 ug/L		95
73)	m-,p-Xylene	14.91	106	67434	4.0909 ug/L		97
74)	o-Xylene	15.56	106	32233	2.0091 ug/L		96
75)	Styrene	15.61	104	49792	1.9975 ug/L		97
76)	Bromoform	16.14	173	5779	1.6712 ug/L		92
77)	Isopropylbenzene	16.08	105	85081	2.0540 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.33	83	8743	1.9544 ug/L		99
81)	1,2,3-Trichloropropane	16.56	110	2601	2.0065 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.64	53	2789	1.6068 ug/L		85
83)	n-Propylbenzene	16.67	91	96860	2.0700 ug/L		98
84)	Bromobenzene	16.77	156	19319	2.0465 ug/L		99
85)	1,3,5-Trimethylbenzene	16.91	105	70978	2.0634 ug/L		100
86)	2-Chlorotoluene	16.96	91	64156	1.9515 ug/L		98
87)	4-Chlorotoluene	17.03	91	59094	2.0956 ug/L		96
88)	a-Methylstyrene	17.38	118	35178	1.9729 ug/L		98
89)	tert-Butylbenzene	17.44	134	14230	2.0317 ug/L		94
90)	1,2,4-Trimethylbenzene	17.50	105	70474	2.0467 ug/L		99
91)	sec-Butylbenzene	17.76	105	83244	2.0434 ug/L		99
92)	p-Isopropyltoluene	17.96	119	70750	2.0218 ug/L		99
93)	1,3-Dichlorobenzene	18.13	146	39466	2.0432 ug/L		99
94)	1,4-Dichlorobenzene	18.28	146	38021	2.0192 ug/L		86
95)	n-Butylbenzene	18.58	91	57467	1.9424 ug/L		99
96)	1,2-Dichlorobenzene	18.86	146	32438	2.0337 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	20.04	75	1007	1.4747 ug/L		94
98)	1,2,4-Trichlorobenzene	21.38	180	21702	1.9176 ug/L		98
99)	Hexachlorobutadiene	21.59	225	11037	1.9489 ug/L		98
100)	Naphthalene	21.79	128	31209	1.9537 ug/L		98
101)	1,2,3-Trichlorobenzene	22.17	180	18155	1.9824 ug/L		98

(#) = qualifier out of range (m) = manual integration
6M118377.D 8260WTR.M Sat Jul 27 15:00:45 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118377.D Vial: 6
Acq On : 26 Jul 2013 17:10 Operator: adc
Sample : WG439230-05 2.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:00 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:00:20 2013
Response via : Initial Calibration

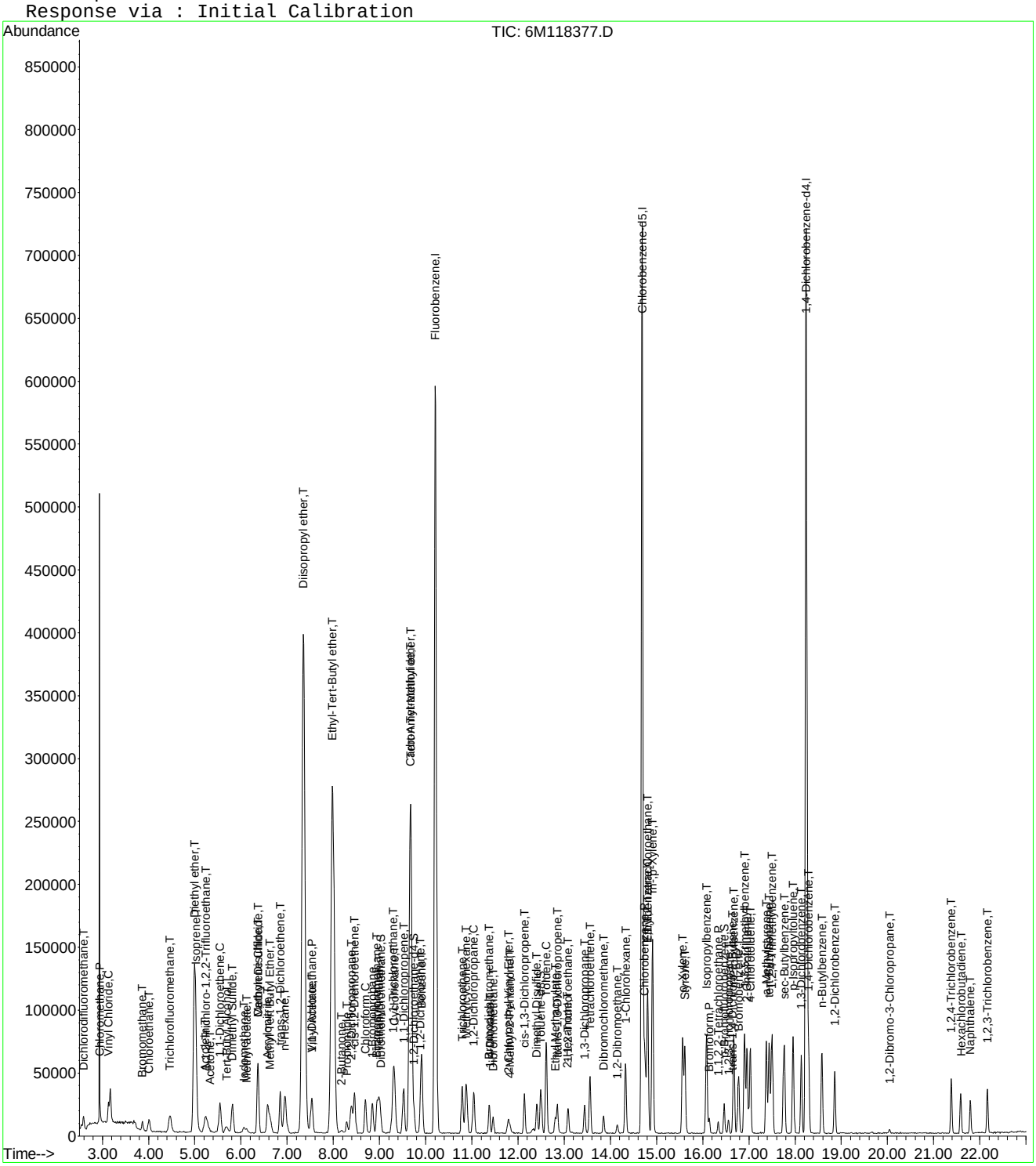

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118378.D Vial: 7
Acq On : 26 Jul 2013 17:40 Operator: adc
Sample : WG439230-06 5.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:01:47 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	825359	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	583155	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	287083	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.02	111	21692	2.5044 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.00%#		
43) 1,2-Dichloroethane-d4	9.74	65	18758	2.5559 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.24%#		
58) Toluene-d8	12.49	98	81690	2.6128 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.44%#		
80) p-Bromofluorobenzene	16.46	95	28419	2.6027 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.40%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	33340	4.3579 ug/L	100
3) Chloromethane	2.94	50	53098	4.6878 ug/L	99
4) Vinyl Chloride	3.13	62	44540	4.9540 ug/L	99
5) 1,3-Butadiene	3.17	54	37348	3.9171 ug/L	100
6) Bromomethane	3.86	94	17293	4.0831 ug/L	98
7) Chloroethane	4.01	64	37439	5.0557 ug/L	99
8) Trichlorofluoromethane	4.47	101	72366	4.9658 ug/L	99
9) Diethyl ether	5.00	59	296313	52.7470 ug/L	99
10) Isoprene	5.02	67	62009	4.8630 ug/L	100
11) Acrolein	5.22	56	3146	22.9676 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	5.24	101	39363	4.8125 ug/L	99
13) Acetone	5.33	43	10821	5.0819 ug/L	80
14) 1,1-Dichloroethene	5.55	61	83530	4.9160 ug/L	98
15) Tert-Butyl Alcohol	5.68	59	32983	108.9052 ug/L	95
16) Dimethyl Sulfide	5.81	62	45929	5.0885 ug/L	99
17) Iodomethane	6.06	142	17808	4.2789 ug/L	100
18) Methyl acetate	6.12	43	30496	5.3562 ug/L #	90
19) Methylene Chloride	6.36	84	42566	5.0886 ug/L	99
20) Carbon Disulfide	6.37	76	140763	5.0848 ug/L	100
21) Acrylonitrile	6.57	53	49695	25.8124 ug/L	96
22) Methyl Tert Butyl Ether	6.61	73	71651	5.1363 ug/L	95
23) trans-1,2-Dichloroethene	6.84	96	45962	4.9195 ug/L	98
24) n-Hexane	6.96	57	74172	4.9242 ug/L	96
25) Diisopropyl ether	7.36	45	2117371	53.6745 ug/L	99
26) Vinyl Acetate	7.53	43	54899	4.9526 ug/L	98
27) 1,1-Dichloroethane	7.53	63	97424	5.0401 ug/L	99
28) Ethyl-Tert-Butyl ether	7.99	59	1357327	53.4786 ug/L	100
29) 2-Butanone	8.17	43	12546	5.7717 ug/L	87
30) Propionitrile	8.28	54	31642	51.8427 ug/L	100
31) 2,2-Dichloropropane	8.39	77	72035	4.9129 ug/L	93
32) cis-1,2-Dichloroethene	8.47	96	49219	5.1005 ug/L	99
33) Chloroform	8.69	83	79543	4.9996 ug/L	99
34) 1-Bromopropane	8.85	122	9185	5.1366 ug/L	97
35) Bromochloromethane	8.95	130	25591	5.1160 ug/L	98
36) Tetrahydrofuran	8.99	42	77520	53.5912 ug/L	99
38) 1,1,1-Trichloroethane	9.30	97	75578	4.9930 ug/L	100
39) Cyclohexane	9.32	56	104797	4.9138 ug/L	98
40) 1,1-Dichloropropene	9.52	75	63778	4.9993 ug/L	96
41) Tert-Amyl-Methyl ether	9.67	73	804668	52.9337 ug/L	99
42) Carbon Tetrachloride	9.67	117	66405	4.8634 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M118378.D 8260WTR.M Sat Jul 27 15:01:48 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118378.D Vial: 7
Acq On : 26 Jul 2013 17:40 Operator: adc
Sample : WG439230-06 5.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:01:47 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.89	62	51628	5.1868 ug/L	98
46)	Benzene	9.92	78	175901	5.0519 ug/L	99
47)	Trichloroethene	10.79	130	49244	5.0237 ug/L	98
48)	Methylcyclohexane	10.88	83	63127	4.9791 ug/L	99
49)	1,2-Dichloropropane	11.03	63	49501	4.9680 ug/L	98
50)	1,4-Dioxane	11.39	88	2934	108.3899 ug/L	95
51)	Bromodichloromethane	11.38	83	53850	5.0026 ug/L	99
52)	Dibromomethane	11.46	93	18157	5.3702 ug/L	96
53)	2-Chloroethyl Vinyl Ether	11.79	63	15372	4.7046 ug/L	100
54)	4-Methyl-2-Pentanone	11.82	58	7927	4.8669 ug/L	93
55)	cis-1,3-Dichloropropene	12.13	75	60239	5.0600 ug/L	100
56)	Dimethyl Disulfide	12.41	79	24677	4.3277 ug/L	97
59)	Toluene	12.61	91	195127	5.1149 ug/L	99
60)	Ethyl Methacrylate	12.80	69	27220	4.9682 ug/L	89
62)	trans-1,3-Dichloropropene	12.85	75	44663	4.7718 ug/L	99
63)	1,1,2-Trichloroethane	13.08	97	24336	5.0465 ug/L	98
64)	2-Hexanone	13.06	43	17970	5.3783 ug/L	80
65)	1,3-Dichloropropane	13.44	76	42365	5.0913 ug/L	95
66)	Tetrachloroethene	13.55	166	53363	4.9612 ug/L	100
67)	Dibromochloromethane	13.85	129	32714	4.8560 ug/L	98
68)	1,2-Dibromoethane	14.15	107	23450	4.8774 ug/L	96
69)	1-Chlorohexane	14.33	91	57755	4.9716 ug/L	97
70)	Chlorobenzene	14.75	112	123204	5.0636 ug/L	96
71)	1,1,1,2-Tetrachloroethane	14.80	131	42603	4.9110 ug/L	97
72)	Ethylbenzene	14.81	106	70411	5.0218 ug/L	96
73)	m-,p-Xylene	14.91	106	169809	10.1845 ug/L	98
74)	o-Xylene	15.57	106	82308	5.0720 ug/L	99
75)	Styrene	15.61	104	129817	5.1487 ug/L	100
76)	Bromoform	16.15	173	15996	4.5732 ug/L	98
77)	Isopropylbenzene	16.08	105	214663	5.1234 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.33	83	23249	5.1095 ug/L	99
81)	1,2,3-Trichloropropane	16.56	110	7106	5.3896 ug/L	96
82)	trans-1,4-Dichloro-2-Buten	16.64	53	8037	4.5524 ug/L	91
83)	n-Propylbenzene	16.68	91	246788	5.1853 ug/L	99
84)	Bromobenzene	16.77	156	49324	5.1370 ug/L	97
85)	1,3,5-Trimethylbenzene	16.90	105	176276	5.0383 ug/L	100
86)	2-Chlorotoluene	16.96	91	170309	5.0933 ug/L	99
87)	4-Chlorotoluene	17.03	91	142783	4.9781 ug/L	98
88)	a-Methylstyrene	17.37	118	92655	5.1089 ug/L	99
89)	tert-Butylbenzene	17.44	134	36486	5.1217 ug/L	98
90)	1,2,4-Trimethylbenzene	17.50	105	175736	5.0179 ug/L	98
91)	sec-Butylbenzene	17.76	105	211698	5.1091 ug/L	98
92)	p-Isopropyltoluene	17.95	119	180039	5.0584 ug/L	99
93)	1,3-Dichlorobenzene	18.14	146	98822	5.0300 ug/L	99
94)	1,4-Dichlorobenzene	18.29	146	97998	5.1168 ug/L	94
95)	n-Butylbenzene	18.58	91	153121	5.0885 ug/L	99
96)	1,2-Dichlorobenzene	18.85	146	84227	5.1917 ug/L	100
97)	1,2-Dibromo-3-Chloropropan	20.04	75	3311	4.7673 ug/L	98
98)	1,2,4-Trichlorobenzene	21.38	180	57613	5.0051 ug/L	99
99)	Hexachlorobutadiene	21.59	225	29822	5.1774 ug/L	94
100)	Naphthalene	21.78	128	82578	5.0824 ug/L	99
101)	1,2,3-Trichlorobenzene	22.16	180	48211	5.1757 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M118378.D 8260WTR.M Sat Jul 27 15:01:48 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118378.D Vial: 7
Acq On : 26 Jul 2013 17:40 Operator: adc
Sample : WG439230-06 5.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:01 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

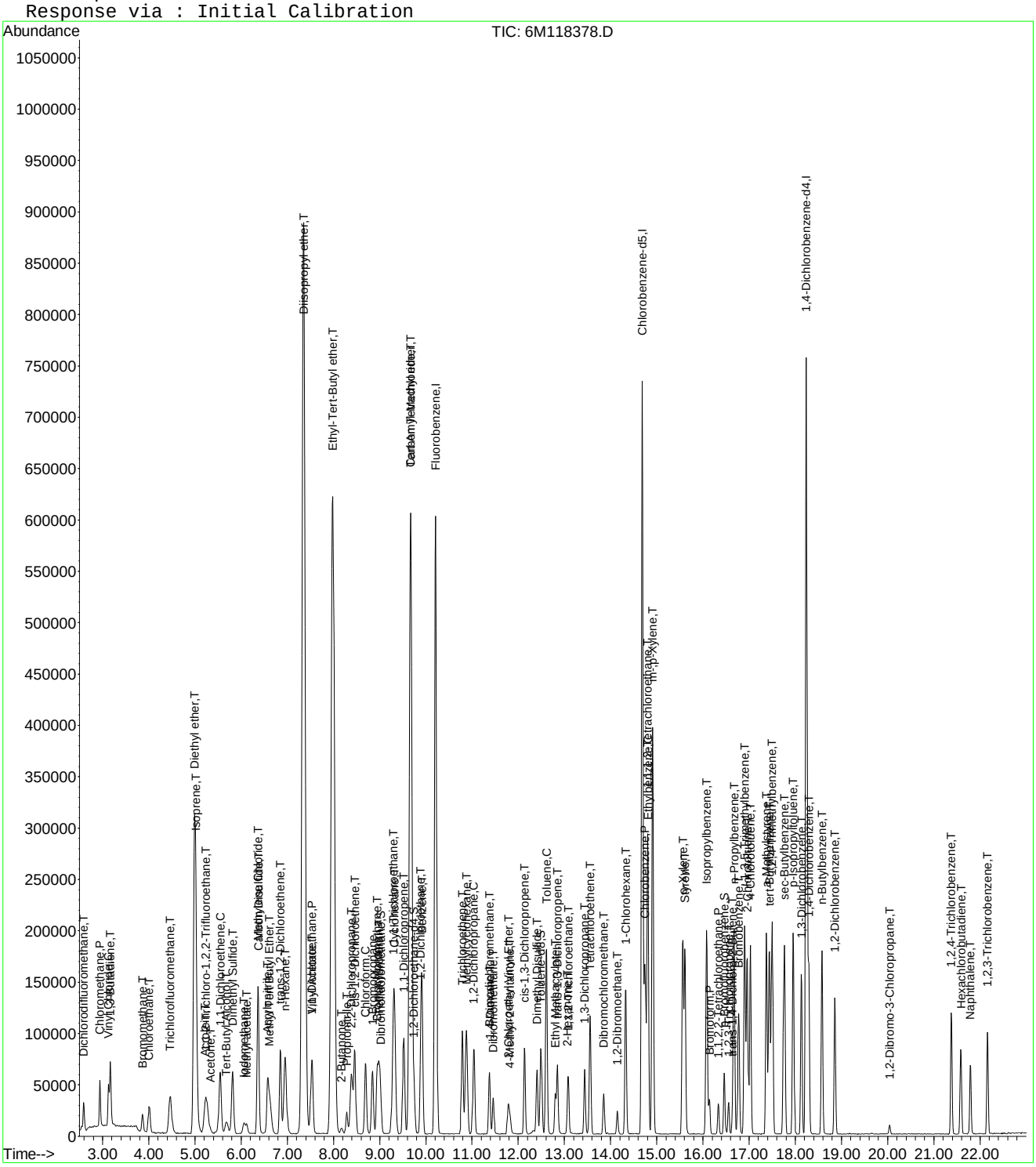

6M118378.D 8260WTR.M Sat Jul 27 15:01:48 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118379.D Vial: 8
Acq On : 26 Jul 2013 18:10 Operator: adc
Sample : WG439230-07 20.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:01:59 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	838581	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	584933	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	290250	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.02	111	79983	9.0886 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 36.36%#		
43) 1,2-Dichloroethane-d4	9.75	65	72240	9.6879 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 38.76%#		
58) Toluene-d8	12.50	98	293299	9.3523 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 37.40%#		
80) p-Bromofluorobenzene	16.46	95	104049	9.4253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 37.72%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	162288	20.8783 ug/L	99
3) Chloromethane	2.94	50	218917	19.0225 ug/L	100
4) Vinyl Chloride	3.13	62	186016	20.3636 ug/L	100
5) 1,3-Butadiene	3.17	54	151550	23.6467 ug/L	100
6) Bromomethane	3.86	94	83298	16.5629 ug/L	99
7) Chloroethane	4.00	64	150098	19.9492 ug/L	99
8) Trichlorofluoromethane	4.46	101	296278	20.0101 ug/L	100
9) Diethyl ether	5.00	59	483433	84.6996 ug/L	99
10) Isoprene	5.02	67	256714	19.8152 ug/L	99
11) Acrolein	5.23	56	5362	38.5284 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	5.25	101	165173	19.8754 ug/L	100
13) Acetone	5.33	43	32562	20.9869 ug/L	85
14) 1,1-Dichloroethene	5.55	61	346352	20.0626 ug/L	100
15) Tert-Butyl Alcohol	5.69	59	52470	170.5168 ug/L	96
16) Dimethyl Sulfide	5.81	62	186061	20.2888 ug/L	100
17) Iodomethane	6.06	142	111420	15.3641 ug/L	99
18) Methyl acetate	6.12	43	101243	19.8897 ug/L	97
19) Methylene Chloride	6.36	84	163746	19.2667 ug/L	99
20) Carbon Disulfide	6.37	76	567224	20.1670 ug/L	100
21) Acrylonitrile	6.57	53	78382	40.0710 ug/L	96
22) Methyl Tert Butyl Ether	6.62	73	285845	20.1679 ug/L	98
23) trans-1,2-Dichloroethene	6.85	96	188901	19.9002 ug/L	100
24) n-Hexane	6.96	57	300986	19.6669 ug/L	99
25) Diisopropyl ether	7.35	45	3378560	84.2947 ug/L	100
26) Vinyl Acetate	7.53	43	235020	20.8678 ug/L	100
27) 1,1-Dichloroethane	7.53	63	391815	19.9506 ug/L	100
28) Ethyl-Tert-Butyl ether	7.99	59	2170588	84.1726 ug/L	100
29) 2-Butanone	8.17	43	45165	20.4502 ug/L	97
30) Propionitrile	8.28	54	51856	83.6220 ug/L	97
31) 2,2-Dichloropropane	8.40	77	295296	19.8222 ug/L	99
32) cis-1,2-Dichloroethene	8.47	96	197376	20.1312 ug/L	99
33) Chloroform	8.70	83	318400	19.6971 ug/L	100
34) 1-Bromopropane	8.84	122	36999	20.3650 ug/L	99
35) Bromochloromethane	8.95	130	100471	19.7690 ug/L	98
36) Tetrahydrofuran	8.99	42	123282	83.8836 ug/L	99
38) 1,1,1-Trichloroethane	9.29	97	300767	19.5568 ug/L	99
39) Cyclohexane	9.31	56	415144	19.1588 ug/L	99
40) 1,1-Dichloropropene	9.52	75	260982	20.1349 ug/L	99
41) Tert-Amyl-Methyl ether	9.67	73	1289120	83.4655 ug/L	100
42) Carbon Tetrachloride	9.67	117	272029	19.6089 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M118379.D 8260WTR.M Sat Jul 27 15:02:00 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118379.D Vial: 8
Acq On : 26 Jul 2013 18:10 Operator: adc
Sample : WG439230-07 20.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:01:59 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	9.89	62	205468	20.3167	ug/L	99
46)	Benzene	9.92	78	701848	19.8392	ug/L	99
47)	Trichloroethene	10.79	130	198929	19.9739	ug/L	99
48)	Methylcyclohexane	10.88	83	249875	19.3978	ug/L	100
49)	1,2-Dichloropropane	11.04	63	203225	20.0744	ug/L	100
50)	1,4-Dioxane	11.39	88	4884	170.3053	ug/L	94
51)	Bromodichloromethane	11.38	83	214932	19.6522	ug/L	99
52)	Dibromomethane	11.46	93	72269	21.0376	ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.78	63	65573	19.7523	ug/L	100
54)	4-Methyl-2-Pentanone	11.82	58	33006	19.9450	ug/L	98
55)	cis-1,3-Dichloropropene	12.13	75	246561	20.3845	ug/L	99
56)	Dimethyl Disulfide	12.41	79	108233	18.6820	ug/L	100
59)	Toluene	12.61	91	762453	19.9254	ug/L	99
60)	Ethyl Methacrylate	12.80	69	112928	20.5489	ug/L	96
62)	trans-1,3-Dichloropropene	12.85	75	185602	19.7696	ug/L	99
63)	1,1,2-Trichloroethane	13.08	97	96420	19.9336	ug/L	99
64)	2-Hexanone	13.06	43	67677	20.1938	ug/L	96
65)	1,3-Dichloropropane	13.44	76	167781	20.1021	ug/L	98
66)	Tetrachloroethene	13.55	166	210218	19.4848	ug/L	99
67)	Dibromochloromethane	13.85	129	133482	19.7537	ug/L	100
68)	1,2-Dibromoethane	14.14	107	96735	20.0590	ug/L	99
69)	1-Chlorohexane	14.33	91	230111	19.7480	ug/L	100
70)	Chlorobenzene	14.75	112	487459	19.9733	ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.80	131	173810	19.9747	ug/L	100
72)	Ethylbenzene	14.81	106	276989	19.6952	ug/L	98
73)	m-,p-Xylene	14.91	106	671345	40.1423	ug/L	98
74)	o-Xylene	15.56	106	323618	19.8816	ug/L	99
75)	Styrene	15.60	104	515585	20.3864	ug/L	99
76)	Bromoform	16.15	173	67489	19.2363	ug/L	99
77)	Isopropylbenzene	16.07	105	845757	20.1245	ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.33	83	93682	20.3641	ug/L	100
81)	1,2,3-Trichloropropane	16.55	110	26381	19.7907	ug/L	99
82)	trans-1,4-Dichloro-2-Buten	16.64	53	33038	18.5093	ug/L	98
83)	n-Propylbenzene	16.68	91	962099	19.9944	ug/L	100
84)	Bromobenzene	16.77	156	198296	20.4269	ug/L	100
85)	1,3,5-Trimethylbenzene	16.90	105	699486	19.7747	ug/L	99
86)	2-Chlorotoluene	16.96	91	658585	19.4810	ug/L	100
87)	4-Chlorotoluene	17.02	91	569362	19.6341	ug/L	100
88)	a-Methylstyrene	17.37	118	364839	19.8972	ug/L	100
89)	tert-Butylbenzene	17.44	134	143281	19.8934	ug/L	97
90)	1,2,4-Trimethylbenzene	17.50	105	702406	19.8374	ug/L	99
91)	sec-Butylbenzene	17.76	105	830248	19.8184	ug/L	100
92)	p-Isopropyltoluene	17.96	119	712720	19.8062	ug/L	100
93)	1,3-Dichlorobenzene	18.14	146	394845	19.8783	ug/L	100
94)	1,4-Dichlorobenzene	18.29	146	387862	20.0306	ug/L	99
95)	n-Butylbenzene	18.58	91	602731	19.8113	ug/L	100
96)	1,2-Dichlorobenzene	18.85	146	331349	20.2013	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	20.04	75	14009	19.9506	ug/L	96
98)	1,2,4-Trichlorobenzene	21.38	180	232546	19.9819	ug/L	100
99)	Hexachlorobutadiene	21.59	225	112732	19.3577	ug/L	99
100)	Naphthalene	21.79	128	327362	19.9282	ug/L	100
101)	1,2,3-Trichlorobenzene	22.16	180	187817	19.9430	ug/L	100

(#) = qualifier out of range (m) = manual integration
6M118379.D 8260WTR.M Sat Jul 27 15:02:00 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118379.D Vial: 8
Acq On : 26 Jul 2013 18:10 Operator: adc
Sample : WG439230-07 20.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:01 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

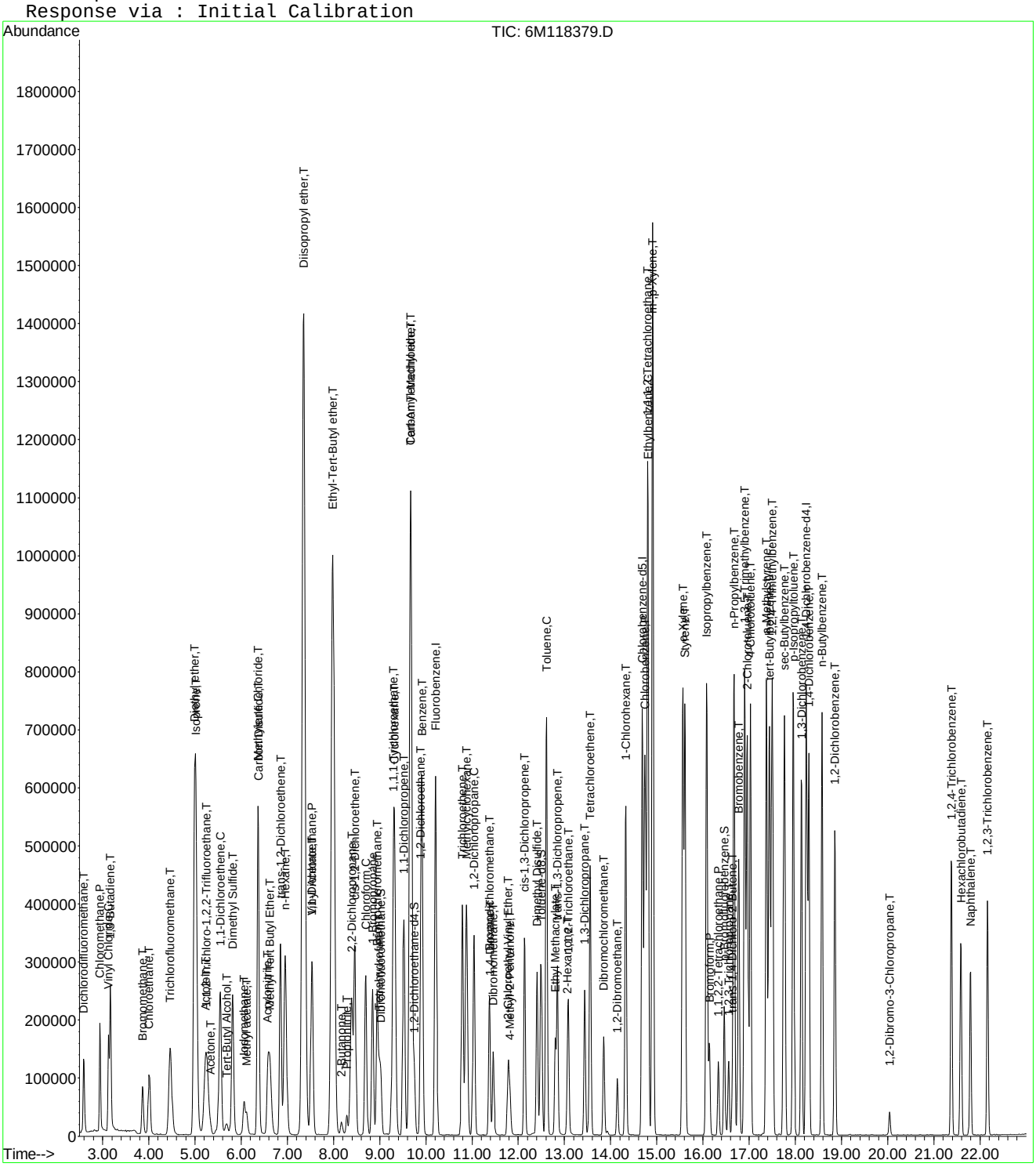

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118380.D Vial: 9
Acq On : 26 Jul 2013 18:41 Operator: adc
Sample : WG439230-08 50.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:01 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	849520	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	585843	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	292007	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.02	111	214906	24.1056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.44%		
43) 1,2-Dichloroethane-d4	9.74	65	190359	25.1998 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.80%		
58) Toluene-d8	12.49	98	771296	24.5558 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.24%		
80) p-Bromofluorobenzene	16.46	95	269522	24.2677 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.08%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	433550	55.0580 ug/L	100
3) Chloromethane	2.94	50	565355	48.4931 ug/L	100
4) Vinyl Chloride	3.13	62	484852	52.3944 ug/L	100
5) 1,3-Butadiene	3.17	54	341687	59.0978 ug/L	100
6) Bromomethane	3.86	94	261631	49.2188 ug/L	100
7) Chloroethane	4.01	64	394760	51.7912 ug/L	100
8) Trichlorofluoromethane	4.46	101	793191	52.8808 ug/L	100
9) Diethyl ether	5.00	59	595216	102.9416 ug/L	100
10) Isoprene	5.02	67	691277	52.6710 ug/L	100
11) Acrolein	5.22	56	7528	53.3955 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.24	101	446348	53.0178 ug/L	100
13) Acetone	5.33	43	68478	46.8228 ug/L	100
14) 1,1-Dichloroethene	5.54	61	908276	51.9349 ug/L	100
15) Tert-Butyl Alcohol	5.68	59	63802	204.6736 ug/L	100
16) Dimethyl Sulfide	5.81	62	488554	52.5879 ug/L	100
17) Iodomethane	6.06	142	387106	47.5177 ug/L	100
18) Methyl acetate	6.12	43	250430	50.3222 ug/L	100
19) Methylene Chloride	6.36	84	426428	49.5282 ug/L	100
20) Carbon Disulfide	6.36	76	1461654	51.2982 ug/L	100
21) Acrylonitrile	6.57	53	104797	52.8852 ug/L	100
22) Methyl Tert Butyl Ether	6.61	73	762920	53.1349 ug/L	100
23) trans-1,2-Dichloroethene	6.84	96	495918	51.5708 ug/L	100
24) n-Hexane	6.96	57	793423	51.1760 ug/L	100
25) Diisopropyl ether	7.34	45	4154821	102.3275 ug/L	100
26) Vinyl Acetate	7.53	43	600566	52.6385 ug/L	100
27) 1,1-Dichloroethane	7.53	63	1023962	51.4672 ug/L	100
28) Ethyl-Tert-Butyl ether	7.99	59	2666984	102.0904 ug/L	100
29) 2-Butanone	8.17	43	109604	48.9885 ug/L	100
30) Propionitrile	8.28	54	63945	101.7887 ug/L	100
31) 2,2-Dichloropropane	8.40	77	776931	51.4811 ug/L	100
32) cis-1,2-Dichloroethene	8.47	96	518559	52.2091 ug/L	100
33) Chloroform	8.69	83	832235	50.8214 ug/L	100
34) 1-Bromopropane	8.85	122	97749	53.1103 ug/L	100
35) Bromochloromethane	8.95	130	265828	51.6316 ug/L	100
36) Tetrahydrofuran	8.99	42	147056	98.7715 ug/L	100
38) 1,1,1-Trichloroethane	9.30	97	808223	51.8765 ug/L	100
39) Cyclohexane	9.32	56	1113961	50.7470 ug/L	100
40) 1,1-Dichloropropene	9.52	75	692329	52.7258 ug/L	100
41) Tert-Amyl-Methyl ether	9.67	73	1590641	101.6616 ug/L	100
42) Carbon Tetrachloride	9.67	117	738971	52.5821 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M118380.D 8260WTR.M Sat Jul 27 15:02:02 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118380.D Vial: 9
Acq On : 26 Jul 2013 18:41 Operator: adc
Sample : WG439230-08 50.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:01 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.89	62	540233	52.7306 ug/L	100
46)	Benzene	9.92	78	1838561	51.3015 ug/L	100
47)	Trichloroethene	10.79	130	528000	52.3324 ug/L	100
48)	Methylcyclohexane	10.88	83	667449	51.1470 ug/L	100
49)	1,2-Dichloropropane	11.04	63	538224	52.4806 ug/L	100
50)	1,4-Dioxane	11.39	88	6193	210.3000 ug/L	100
51)	Bromodichloromethane	11.38	83	569883	51.4359 ug/L	100
52)	Dibromomethane	11.46	93	189075	54.3314 ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.78	63	172596	51.3211 ug/L	100
54)	4-Methyl-2-Pentanone	11.82	58	86587	51.6495 ug/L	100
55)	cis-1,3-Dichloropropene	12.13	75	653607	53.3412 ug/L	100
56)	Dimethyl Disulfide	12.41	79	311467	53.0697 ug/L	100
59)	Toluene	12.61	91	1983414	51.7526 ug/L	100
60)	Ethyl Methacrylate	12.80	69	296874	53.9366 ug/L	100
62)	trans-1,3-Dichloropropene	12.85	75	508370	54.0655 ug/L	100
63)	1,1,2-Trichloroethane	13.08	97	250935	51.7971 ug/L	100
64)	2-Hexanone	13.05	43	174893	52.1043 ug/L	100
65)	1,3-Dichloropropane	13.44	76	439723	52.6021 ug/L	100
66)	Tetrachloroethene	13.55	166	560474	51.8687 ug/L	100
67)	Dibromochloromethane	13.85	129	362188	53.5162 ug/L	100
68)	1,2-Dibromoethane	14.15	107	254722	52.7372 ug/L	100
69)	1-Chlorohexane	14.33	91	602256	51.6049 ug/L	100
70)	Chlorobenzene	14.75	112	1276758	52.2330 ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.80	131	460193	52.8045 ug/L	100
72)	Ethylbenzene	14.81	106	738109	52.4013 ug/L	100
73)	m-,p-Xylene	14.91	106	1775651	106.0080 ug/L	100
74)	o-Xylene	15.56	106	852539	52.2946 ug/L	100
75)	Styrene	15.61	104	1359507	53.6719 ug/L	100
76)	Bromoform	16.14	173	189798	54.0139 ug/L	100
77)	Isopropylbenzene	16.08	105	2220690	52.7586 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.33	83	238918	51.6223 ug/L	100
81)	1,2,3-Trichloropropane	16.56	110	71050	52.9801 ug/L	99
82)	trans-1,4-Dichloro-2-Buten	16.64	53	95580	53.2259 ug/L	97
83)	n-Propylbenzene	16.68	91	2528630	52.2340 ug/L	100
84)	Bromobenzene	16.77	156	524055	53.6593 ug/L	100
85)	1,3,5-Trimethylbenzene	16.90	105	1838511	51.6625 ug/L	100
86)	2-Chlorotoluene	16.96	91	1741089	51.1918 ug/L	100
87)	4-Chlorotoluene	17.03	91	1478329	50.6726 ug/L	100
88)	a-Methylstyrene	17.37	118	963629	52.2372 ug/L	100
89)	tert-Butylbenzene	17.44	134	383484	52.9232 ug/L	100
90)	1,2,4-Trimethylbenzene	17.49	105	1836156	51.5449 ug/L	100
91)	sec-Butylbenzene	17.76	105	2201377	52.2317 ug/L	100
92)	p-Isopropyltoluene	17.95	119	1887960	52.1498 ug/L	100
93)	1,3-Dichlorobenzene	18.13	146	1036688	51.8776 ug/L	100
94)	1,4-Dichlorobenzene	18.29	146	1017992	52.2566 ug/L	100
95)	n-Butylbenzene	18.58	91	1583276	51.7279 ug/L	100
96)	1,2-Dichlorobenzene	18.85	146	865079	52.4238 ug/L	100
97)	1,2-Dibromo-3-Chloropropan	20.04	75	37567	53.1783 ug/L	100
98)	1,2,4-Trichlorobenzene	21.38	180	610417	52.1355 ug/L	100
99)	Hexachlorobutadiene	21.58	225	300240	51.2453 ug/L	100
100)	Naphthalene	21.78	128	863842	52.2701 ug/L	100
101)	1,2,3-Trichlorobenzene	22.16	180	493488	52.0849 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M118380.D 8260WTR.M Sat Jul 27 15:02:02 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118380.D Vial: 9
Acq On : 26 Jul 2013 18:41 Operator: adc
Sample : WG439230-08 50.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

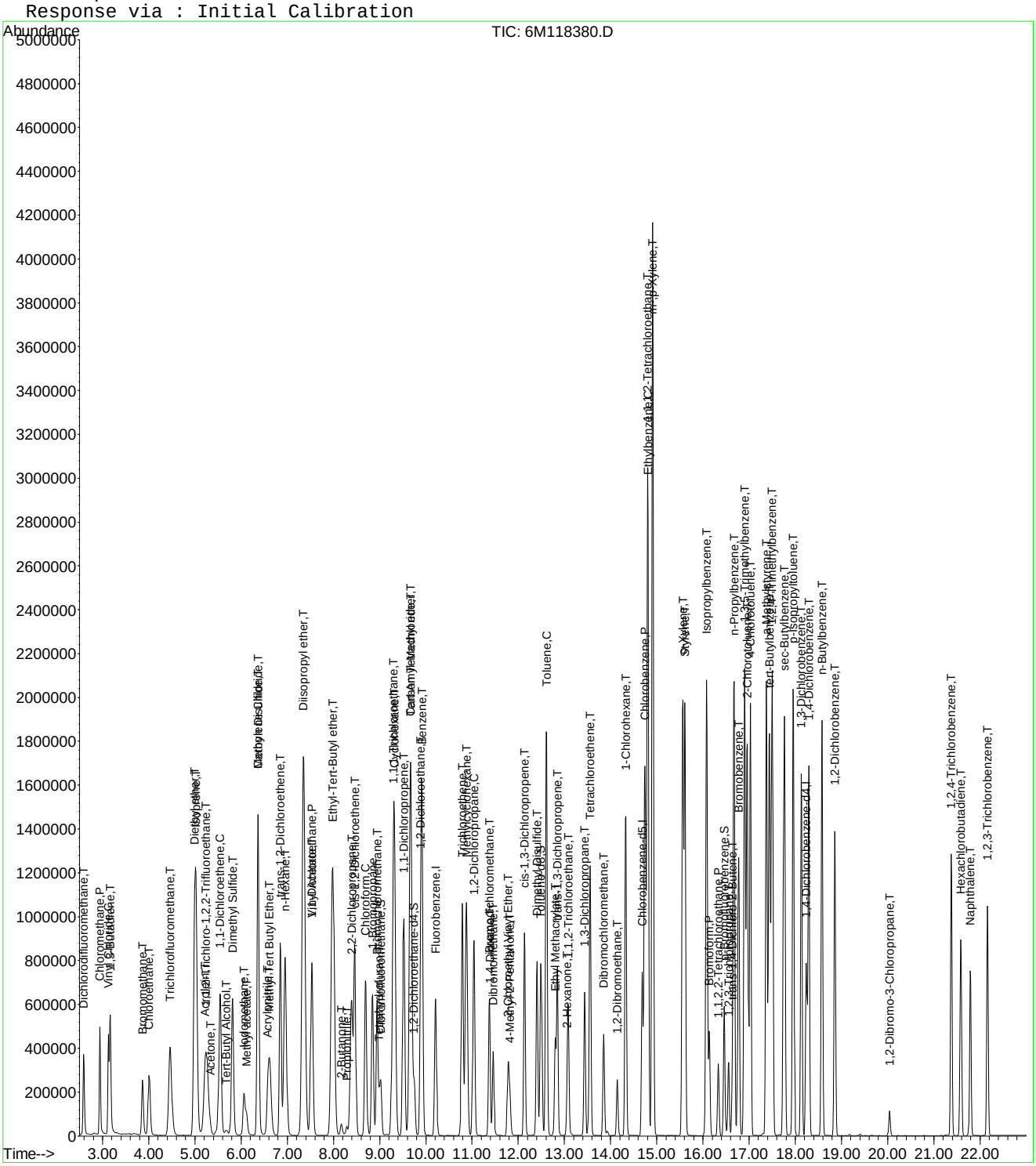

6M118380.D 8260WTR.M Sat Jul 27 15:02:02 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118381.D Vial: 10
Acq On : 26 Jul 2013 19:11 Operator: adc
Sample : WG439230-09 100.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:03 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	863128	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	595272	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	296315	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.02	111	430104	47.4833 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 189.92%#		
43) 1,2-Dichloroethane-d4	9.76	65	381470	49.7030 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 198.80%#		
58) Toluene-d8	12.49	98	1558399	48.8290 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 195.32%#		
80) p-Bromofluorobenzene	16.46	95	543763	48.2484 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 193.00%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	834683	104.3280 ug/L	99
3) Chloromethane	2.94	50	1184271	99.9790 ug/L	99
4) Vinyl Chloride	3.13	62	942853	100.2808 ug/L	99
5) 1,3-Butadiene	3.16	54	477494	86.3296 ug/L	99
6) Bromomethane	3.86	94	576024	103.6824 ug/L	100
7) Chloroethane	4.01	64	791047	102.1464 ug/L	100
8) Trichlorofluoromethane	4.47	101	1558771	102.2824 ug/L	100
9) Diethyl ether	5.00	59	1186352	201.9428 ug/L	99
10) Isoprene	5.02	67	1356190	101.7041 ug/L	100
11) Acrolein	5.22	56	15876	110.8319 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.24	101	864390	101.0546 ug/L	99
13) Acetone	5.32	43	139586	96.9839 ug/L	100
14) 1,1-Dichloroethene	5.54	61	1834566	103.2459 ug/L	100
15) Tert-Butyl Alcohol	5.68	59	122854	387.8960 ug/L	96
16) Dimethyl Sulfide	5.81	62	976186	103.4199 ug/L	99
17) Iodomethane	6.06	142	850211	100.2448 ug/L	99
18) Methyl acetate	6.11	43	494806	99.7060 ug/L	99
19) Methylene Chloride	6.37	84	868830	99.3208 ug/L	97
20) Carbon Disulfide	6.37	76	2918150	100.8007 ug/L	99
21) Acrylonitrile	6.57	53	211810	105.2035 ug/L	99
22) Methyl Tert Butyl Ether	6.61	73	1554125	106.5332 ug/L	100
23) trans-1,2-Dichloroethene	6.84	96	1026105	105.0229 ug/L	98
24) n-Hexane	6.96	57	1542479	97.9218 ug/L	100
25) Diisopropyl ether	7.35	45	8123366	196.9131 ug/L	99
26) Vinyl Acetate	7.53	43	1134641	97.8812 ug/L	100
27) 1,1-Dichloroethane	7.53	63	2075052	102.6535 ug/L	100
28) Ethyl-Tert-Butyl ether	7.99	59	5318413	200.3757 ug/L	100
29) 2-Butanone	8.17	43	213731	94.0228 ug/L	98
30) Propionitrile	8.28	54	127293	199.4324 ug/L	99
31) 2,2-Dichloropropane	8.40	77	1555713	101.4597 ug/L	100
32) cis-1,2-Dichloroethene	8.47	96	1062211	105.2585 ug/L	99
33) Chloroform	8.69	83	1704158	102.4256 ug/L	100
34) 1-Bromopropane	8.85	122	200467	107.2033 ug/L	99
35) Bromochloromethane	8.95	130	546476	104.4682 ug/L	100
36) Tetrahydrofuran	8.99	42	294741	194.8444 ug/L	99
38) 1,1,1-Trichloroethane	9.30	97	1632595	103.1374 ug/L	100
39) Cyclohexane	9.32	56	2157305	96.7275 ug/L	99
40) 1,1-Dichloropropene	9.52	75	1391818	104.3258 ug/L	100
41) Tert-Amyl-Methyl ether	9.67	73	3210795	201.9742 ug/L	99
42) Carbon Tetrachloride	9.67	117	1512470	105.9243 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M118381.D 8260WTR.M Sat Jul 27 15:02:03 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118381.D Vial: 10
Acq On : 26 Jul 2013 19:11 Operator: adc
Sample : WG439230-09 100.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:03 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.89	62	1094535	105.1500 ug/L	100
46)	Benzene	9.92	78	3738656	102.6752 ug/L	100
47)	Trichloroethene	10.79	130	1073876	104.7584 ug/L	100
48)	Methylcyclohexane	10.88	83	1302679	98.2511 ug/L	99
49)	1,2-Dichloropropane	11.04	63	1091933	104.7926 ug/L	100
50)	1,4-Dioxane	11.39	88	11765	383.2975 ug/L	89
51)	Bromodichloromethane	11.38	83	1173163	104.2167 ug/L	100
52)	Dibromomethane	11.46	93	389688	110.2128 ug/L	99
53)	2-Chloroethyl Vinyl Ether	11.78	63	343246	100.4544 ug/L	99
54)	4-Methyl-2-Pentanone	11.82	58	168917	99.1711 ug/L	99
55)	cis-1,3-Dichloropropene	12.13	75	1340600	107.6822 ug/L	100
56)	Dimethyl Disulfide	12.41	79	646501	108.4181 ug/L	100
59)	Toluene	12.61	91	3964215	101.7986 ug/L	99
60)	Ethyl Methacrylate	12.80	69	594163	106.2387 ug/L	98
62)	trans-1,3-Dichloropropene	12.85	75	1045042	109.3805 ug/L	100
63)	1,1,2-Trichloroethane	13.08	97	508641	103.3287 ug/L	100
64)	2-Hexanone	13.05	43	332897	97.6061 ug/L	98
65)	1,3-Dichloropropane	13.44	76	897122	105.6188 ug/L	97
66)	Tetrachloroethene	13.55	166	1133800	103.2648 ug/L	100
67)	Dibromochloromethane	13.85	129	750316	109.1091 ug/L	99
68)	1,2-Dibromoethane	14.15	107	525211	107.0164 ug/L	100
69)	1-Chlorohexane	14.33	91	1210412	102.0726 ug/L	98
70)	Chlorobenzene	14.75	112	2592177	104.3679 ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.80	131	945230	106.7417 ug/L	99
72)	Ethylbenzene	14.81	106	1506270	105.2423 ug/L	97
73)	m-,p-Xylene	14.91	106	3562479	209.3143 ug/L	96
74)	o-Xylene	15.57	106	1731472	104.5259 ug/L	99
75)	Styrene	15.61	104	2751037	106.8878 ug/L	99
76)	Bromoform	16.14	173	400429	112.1516 ug/L	100
77)	Isopropylbenzene	16.08	105	4419855	103.3425 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.33	83	486818	103.6562 ug/L	99
81)	1,2,3-Trichloropropane	16.56	110	146876	107.9293 ug/L	95
82)	trans-1,4-Dichloro-2-Buten	16.64	53	199613	109.5429 ug/L	96
83)	n-Propylbenzene	16.68	91	5030223	102.3987 ug/L	99
84)	Bromobenzene	16.77	156	1062894	107.2500 ug/L	99
85)	1,3,5-Trimethylbenzene	16.90	105	3702388	102.5252 ug/L	99
86)	2-Chlorotoluene	16.96	91	3543747	102.6789 ug/L	100
87)	4-Chlorotoluene	17.03	91	2982663	100.7502 ug/L	100
88)	a-Methylstyrene	17.37	118	1927300	102.9577 ug/L	100
89)	tert-Butylbenzene	17.44	134	770790	104.8273 ug/L	100
90)	1,2,4-Trimethylbenzene	17.50	105	3690223	102.0864 ug/L	99
91)	sec-Butylbenzene	17.76	105	4345523	101.6065 ug/L	99
92)	p-Isopropyltoluene	17.96	119	3749079	102.0527 ug/L	99
93)	1,3-Dichlorobenzene	18.13	146	2097238	103.4235 ug/L	99
94)	1,4-Dichlorobenzene	18.29	146	2049391	103.6719 ug/L	99
95)	n-Butylbenzene	18.58	91	3148099	101.3576 ug/L	99
96)	1,2-Dichlorobenzene	18.85	146	1741858	104.0221 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	20.04	75	77455	108.0481 ug/L	97
98)	1,2,4-Trichlorobenzene	21.38	180	1232280	103.7184 ug/L	100
99)	Hexachlorobutadiene	21.58	225	601461	101.1656 ug/L	100
100)	Naphthalene	21.78	128	1733026	103.3389 ug/L	100
101)	1,2,3-Trichlorobenzene	22.16	180	986316	102.5866 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M118381.D 8260WTR.M Sat Jul 27 15:02:03 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118381.D Vial: 10
Acq On : 26 Jul 2013 19:11 Operator: adc
Sample : WG439230-09 100.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

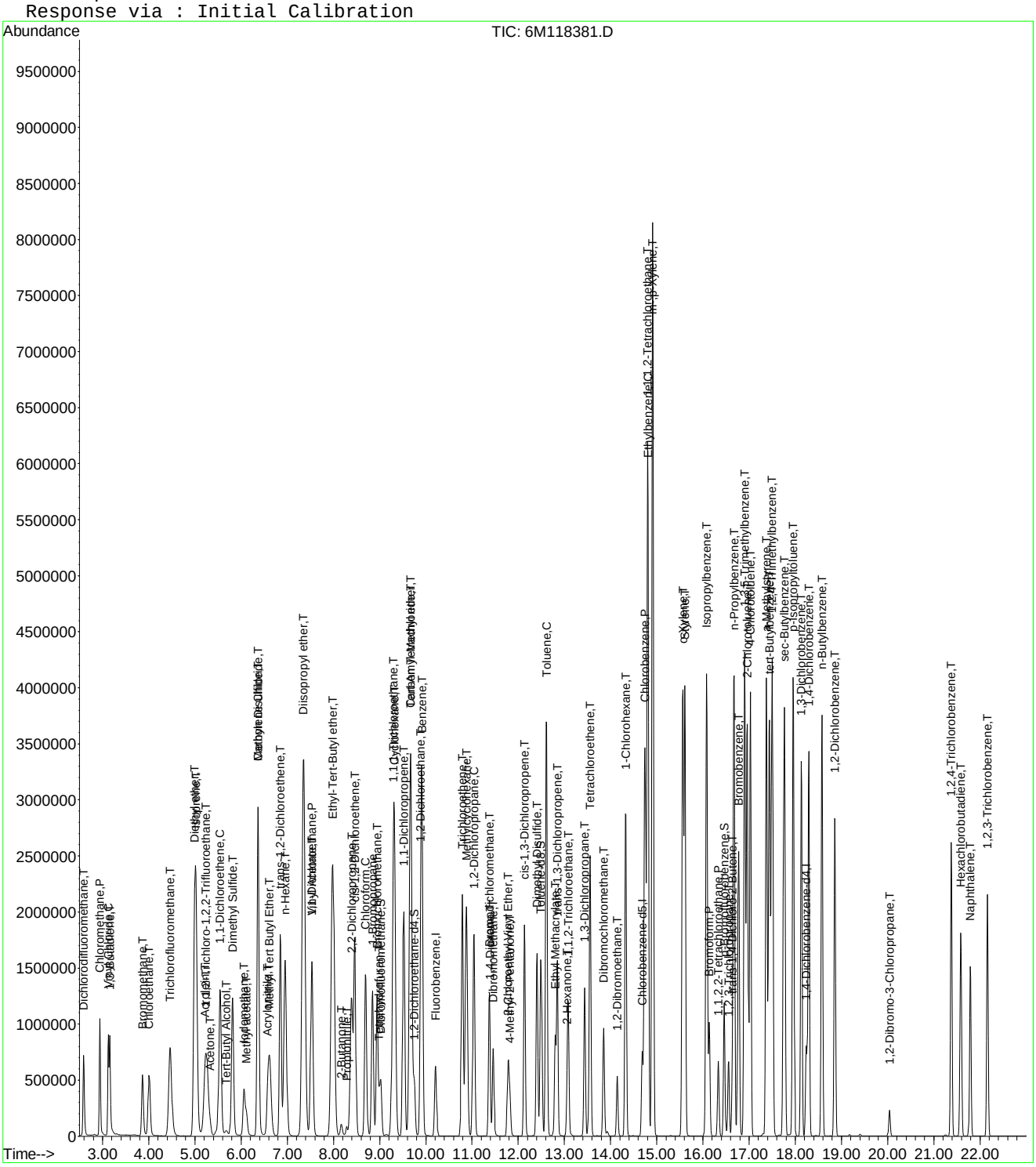

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118382.D Vial: 11
Acq On : 26 Jul 2013 19:42 Operator: adc
Sample : WG439230-10 200.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:04 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.22	96	870943	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	593719	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	294912	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.02	111	879599	96.2360 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 384.96%#		
43) 1,2-Dichloroethane-d4	9.75	65	765550	98.8510 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 395.40%#		
58) Toluene-d8	12.49	98	3118048	97.9527 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.80%#		
80) p-Bromofluorobenzene	16.47	95	1084019	96.6433 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 386.56%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	1707511	211.5087 ug/L	100
3) Chloromethane	2.95	50	2349381	196.5606 ug/L	99
4) Vinyl Chloride	3.12	62	1799074	189.6306 ug/L	99
5) 1,3-Butadiene	3.15	54	837832	185.2999 ug/L	93
6) Bromomethane	3.87	94	1195540	204.8308 ug/L	100
7) Chloroethane	4.01	64	1557791	199.3497 ug/L	100
8) Trichlorofluoromethane	4.47	101	3164307	205.7703 ug/L	99
9) Diethyl ether	5.00	59	6047	1.0201 ug/L	83
10) Isoprene	5.02	67	2785410	207.0107 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.24	101	1783255	206.6072 ug/L	100
13) Acetone	5.33	43	295138	206.5355 ug/L	99
14) 1,1-Dichloroethene	5.54	61	3631779	202.5557 ug/L	99
15) Tert-Butyl Alcohol	5.67	59	1819	5.6917 ug/L #	15
16) Dimethyl Sulfide	5.82	62	1974453	207.3021 ug/L	98
17) Iodomethane	6.06	142	1792703	207.1529 ug/L	99
18) Methyl acetate	6.11	43	975859	199.3956 ug/L	98
19) Methylene Chloride	6.37	84	1714096	194.1897 ug/L	94
20) Carbon Disulfide	6.37	76	5760842	197.2093 ug/L	99
21) Acrylonitrile	6.61	53	37606	18.5108 ug/L #	31
22) Methyl Tert Butyl Ether	6.61	73	3131851	212.7579 ug/L	99
23) trans-1,2-Dichloroethene	6.85	96	2025507	205.4524 ug/L	98
24) n-Hexane	6.96	57	3137772	197.4090 ug/L	99
26) Vinyl Acetate	7.53	43	2240124	191.5131 ug/L	99
27) 1,1-Dichloroethane	7.53	63	4078106	199.9351 ug/L	99
29) 2-Butanone	8.16	43	447150	194.9416 ug/L	100
30) Propionitrile	8.16	54	1795	2.7870 ug/L #	81
31) 2,2-Dichloropropane	8.39	77	3078240	198.9537 ug/L	98
32) cis-1,2-Dichloroethene	8.46	96	2112811	207.4877 ug/L	98
33) Chloroform	8.70	83	3366548	200.5252 ug/L	99
34) 1-Bromopropane	8.85	122	399805	211.8843 ug/L	99
35) Bromochloromethane	8.95	130	1088439	206.2066 ug/L	99
36) Tetrahydrofuran	8.97	42	840	0.5503 ug/L #	51
38) 1,1,1-Trichloroethane	9.30	97	3254664	203.7649 ug/L	100
39) Cyclohexane	9.32	56	4409823	195.9500 ug/L	98
40) 1,1-Dichloropropene	9.52	75	2790525	207.2911 ug/L	99
41) Tert-Amyl-Methyl ether	9.52	73	392697	24.4808 ug/L #	53
42) Carbon Tetrachloride	9.67	117	3074005	213.3531 ug/L	100
45) 1,2-Dichloroethane	9.89	62	2169853	206.5834 ug/L	98
46) Benzene	9.92	78	7204835	196.0919 ug/L	99
47) Trichloroethene	10.79	130	2136182	206.5183 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118382.D Vial: 11
Acq On : 26 Jul 2013 19:42 Operator: adc
Sample : WG439230-10 200.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:04 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methylcyclohexane	10.88	83	2697760	201.6457 ug/L	98
49)	1,2-Dichloropropane	11.03	63	2160910	205.5212 ug/L	99
50)	1,4-Dioxane	11.38	88	3784	129.9414 ug/L #	48
51)	Bromodichloromethane	11.37	83	2341425	206.1317 ug/L	100
52)	Dibromomethane	11.46	93	782792	219.4051 ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.78	63	711793	206.4442 ug/L	100
54)	4-Methyl-2-Pentanone	11.82	58	348968	203.0407 ug/L	98
55)	cis-1,3-Dichloropropene	12.14	75	2665149	212.1542 ug/L	100
56)	Dimethyl Disulfide	12.41	79	1338930	222.5236 ug/L	100
59)	Toluene	12.61	91	7497342	193.0307 ug/L	97
60)	Ethyl Methacrylate	12.80	69	1205529	216.1171 ug/L	95
62)	trans-1,3-Dichloropropene	12.85	75	2094749	219.8227 ug/L	100
63)	1,1,2-Trichloroethane	13.09	97	1018509	207.4479 ug/L	100
64)	2-Hexanone	13.06	43	659473	193.8647 ug/L	96
65)	1,3-Dichloropropane	13.44	76	1778966	209.9867 ug/L	96
66)	Tetrachloroethene	13.56	166	2243345	204.8549 ug/L	99
67)	Dibromochloromethane	13.85	129	1515647	220.9781 ug/L	99
68)	1,2-Dibromoethane	14.15	107	1049859	214.4777 ug/L	99
69)	1-Chlorohexane	14.33	91	2400288	202.9428 ug/L	98
70)	Chlorobenzene	14.75	112	4966009	200.4677 ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.80	131	1858861	210.4640 ug/L	100
72)	Ethylbenzene	14.81	106	2891435	202.5515 ug/L	90
73)	m-,p-Xylene	14.91	106	6606639	389.1900 ug/L	87
74)	o-Xylene	15.57	106	3330907	201.6068 ug/L	95
75)	Styrene	15.61	104	5245493	204.3396 ug/L	98
76)	Bromoform	16.14	173	817176	229.4722 ug/L	100
77)	Isopropylbenzene	16.08	105	8146486	190.9746 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.33	83	957340	204.8122 ug/L	100
81)	1,2,3-Trichloropropane	16.56	110	284634	210.1535 ug/L	98
82)	trans-1,4-Dichloro-2-Buten	16.64	53	404708	223.1509 ug/L	94
83)	n-Propylbenzene	16.68	91	9061637	185.3425 ug/L	96
84)	Bromobenzene	16.77	156	2068115	209.6733 ug/L	100
85)	1,3,5-Trimethylbenzene	16.91	105	6864769	191.0011 ug/L	97
86)	2-Chlorotoluene	16.97	91	6747918	196.4489 ug/L	99
87)	4-Chlorotoluene	17.03	91	5589463	189.7025 ug/L	98
88)	a-Methylstyrene	17.37	118	3719369	199.6366 ug/L	99
89)	tert-Butylbenzene	17.45	134	1500352	205.0183 ug/L	96
90)	1,2,4-Trimethylbenzene	17.50	105	6844197	190.2388 ug/L	97
91)	sec-Butylbenzene	17.76	105	8005001	188.0624 ug/L	97
92)	p-Isopropyltoluene	17.96	119	6995429	191.3266 ug/L	97
93)	1,3-Dichlorobenzene	18.13	146	3990507	197.7246 ug/L	97
94)	1,4-Dichlorobenzene	18.29	146	3906053	198.5343 ug/L	98
95)	n-Butylbenzene	18.58	91	5871668	189.9462 ug/L	97
96)	1,2-Dichlorobenzene	18.86	146	3352626	201.1681 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	20.04	75	155013	217.2686 ug/L	99
98)	1,2,4-Trichlorobenzene	21.38	180	2377657	201.0744 ug/L	99
99)	Hexachlorobutadiene	21.58	225	1175865	198.7212 ug/L	99
100)	Naphthalene	21.79	128	3378019	202.3867 ug/L	100
101)	1,2,3-Trichlorobenzene	22.16	180	1927582	201.4414 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M118382.D 8260WTR.M Sat Jul 27 15:02:05 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118382.D Vial: 11
Acq On : 26 Jul 2013 19:42 Operator: adc
Sample : WG439230-10 200.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

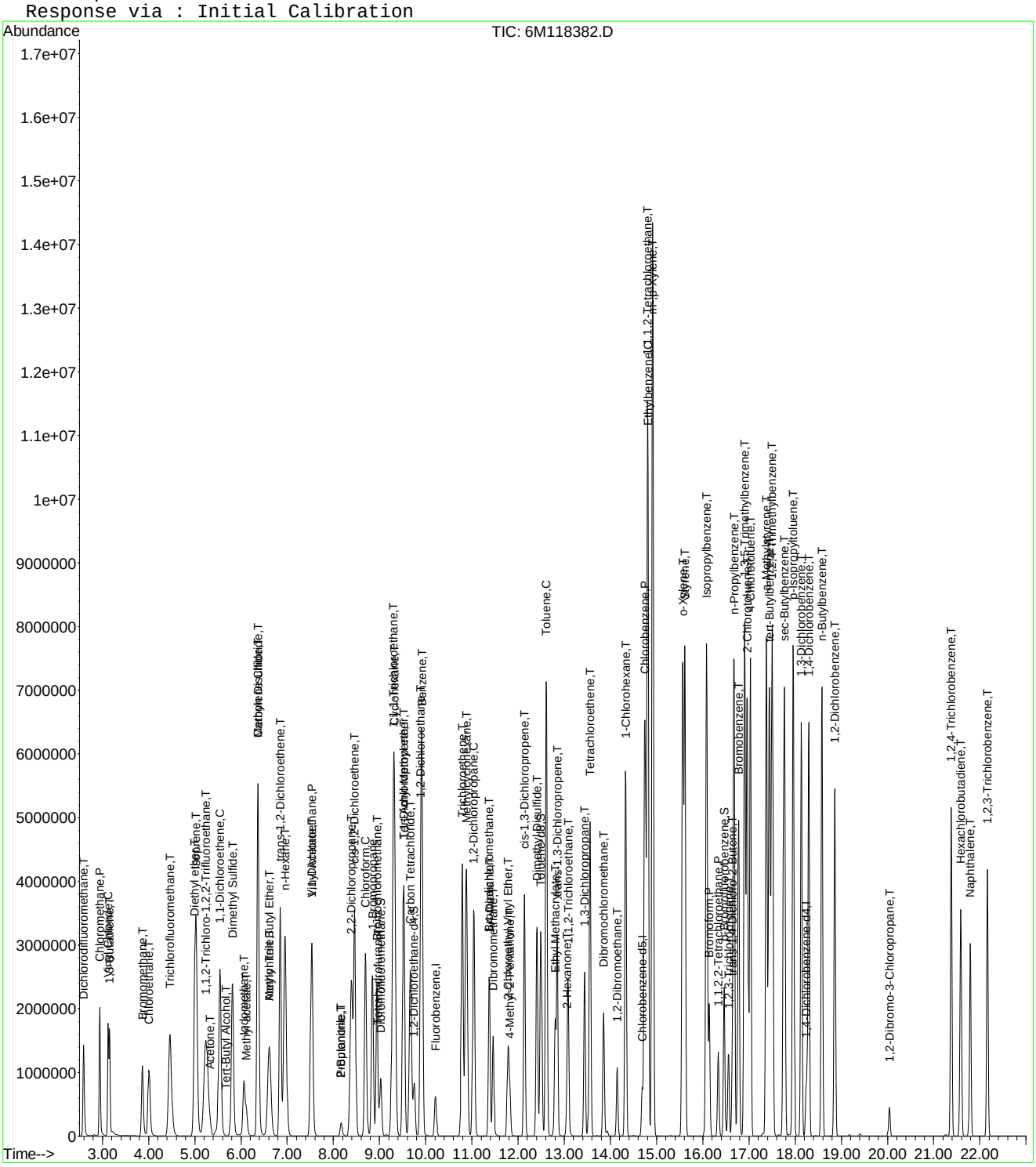

6M118382.D 8260WTR.M Sat Jul 27 15:02:05 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118383.D Vial: 12
Acq On : 26 Jul 2013 20:12 Operator: adc
Sample : WG439230-11 300.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:06 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.22	96	867795	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	590883	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	286016	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.02	111	1282068	140.7786 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 563.12%#		
43) 1,2-Dichloroethane-d4	9.75	65	1107213	143.4865 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 573.96%#		
58) Toluene-d8	12.49	98	4463573	140.8951 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 563.60%#		
80) p-Bromofluorobenzene	16.47	95	1539629	141.5314 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 566.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	2621286	325.8755 ug/L	100
3) Chloromethane	2.95	50	3486011	292.7146 ug/L	98
4) Vinyl Chloride	3.12	62	2580206	272.9520 ug/L	98
5) 1,3-Butadiene	3.15	54	1042750	Below Cal	98
6) Bromomethane	3.86	94	1780899	296.2071 ug/L	100
7) Chloroethane	4.00	64	2305038	296.0445 ug/L	99
8) Trichlorofluoromethane	4.46	101	4749285	309.9595 ug/L	99
9) Diethyl ether	4.99	59	1822170	308.5046 ug/L	97
10) Isoprene	5.02	67	4069965	303.5756 ug/L	98
11) Acrolein	5.22	56	38126	264.7299 ug/L	79
12) 1,1,2-Trichloro-1,2,2-Trif	5.23	101	2733426	317.8424 ug/L	100
13) Acetone	5.33	43	423247	298.5889 ug/L	97
14) 1,1-Dichloroethene	5.54	61	5414550	303.0819 ug/L	98
15) Tert-Butyl Alcohol	5.68	59	183119	575.0657 ug/L	94
16) Dimethyl Sulfide	5.81	62	2881402	303.6221 ug/L	96
17) Iodomethane	6.06	142	2592212	299.6644 ug/L	98
18) Methyl acetate	6.11	43	1436033	300.4680 ug/L	98
19) Methylene Chloride	6.36	84	2565648	291.7163 ug/L	89
20) Carbon Disulfide	6.37	76	8232353	282.8382 ug/L	98
21) Acrylonitrile	6.57	53	351539	173.6661 ug/L	94
22) Methyl Tert Butyl Ether	6.61	73	4681401	319.1780 ug/L	99
23) trans-1,2-Dichloroethene	6.85	96	3045915	310.0758 ug/L	96
24) n-Hexane	6.95	57	4609788	291.0711 ug/L	98
25) Diisopropyl ether	7.35	45	11940019	287.8735 ug/L	98
26) Vinyl Acetate	7.53	43	3415765	293.0805 ug/L	99
27) 1,1-Dichloroethane	7.53	63	6061332	298.2436 ug/L	99
28) Ethyl-Tert-Butyl ether	7.98	59	8016254	300.3950 ug/L	99
29) 2-Butanone	8.16	43	636581	278.5335 ug/L	98
30) Propionitrile	8.29	54	194521	303.1209 ug/L	100
31) 2,2-Dichloropropane	8.39	77	4603522	298.6155 ug/L	97
32) cis-1,2-Dichloroethene	8.46	96	3170321	312.4694 ug/L	96
33) Chloroform	8.70	83	5017231	299.9307 ug/L	99
34) 1-Bromopropane	8.85	122	590419	314.0389 ug/L	100
35) Bromochloromethane	8.95	130	1605450	305.2586 ug/L	100
36) Tetrahydrofuran	8.98	42	442906	291.2171 ug/L	97
38) 1,1,1-Trichloroethane	9.29	97	4855367	305.0829 ug/L	100
39) Cyclohexane	9.32	56	6398428	285.3448 ug/L	96
40) 1,1-Dichloropropene	9.52	75	4159181	310.0809 ug/L	97
41) Tert-Amyl-Methyl ether	9.68	73	4963551	310.5516 ug/L	99
42) Carbon Tetrachloride	9.67	117	4599230	320.3702 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M118383.D 8260WTR.M Sat Jul 27 15:02:06 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118383.D Vial: 12
Acq On : 26 Jul 2013 20:12 Operator: adc
Sample : WG439230-11 300.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:06 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.89	62	3225056	308.1591 ug/L	97
46)	Benzene	9.92	78	10368483	283.2196 ug/L	98
47)	Trichloroethene	10.79	130	3171175	307.6898 ug/L	100
48)	Methylcyclohexane	10.88	83	4004669	300.4173 ug/L	98
49)	1,2-Dichloropropane	11.03	63	3220182	307.3782 ug/L	99
50)	1,4-Dioxane	11.38	88	18880	604.9960 ug/L	91
51)	Bromodichloromethane	11.37	83	3510249	310.1523 ug/L	99
52)	Dibromomethane	11.46	93	1175497	330.6698 ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.78	63	1039145	302.4807 ug/L	99
54)	4-Methyl-2-Pentanone	11.82	58	508335	296.8384 ug/L	99
55)	cis-1,3-Dichloropropene	12.14	75	3962203	316.5479 ug/L	99
56)	Dimethyl Disulfide	12.41	79	1964136	327.6139 ug/L	100
59)	Toluene	12.61	91	10547089	272.8545 ug/L	93
60)	Ethyl Methacrylate	12.80	69	1751881	315.5699 ug/L	93
62)	trans-1,3-Dichloropropene	12.84	75	3120486	329.0351 ug/L	99
63)	1,1,2-Trichloroethane	13.09	97	1521526	311.3888 ug/L	100
64)	2-Hexanone	13.06	43	941676	278.1524 ug/L	96
65)	1,3-Dichloropropane	13.44	76	2639925	313.1088 ug/L	94
66)	Tetrachloroethene	13.56	166	3354424	307.7852 ug/L	98
67)	Dibromochloromethane	13.85	129	2275858	333.4078 ug/L	99
68)	1,2-Dibromoethane	14.15	107	1566959	321.6535 ug/L	99
69)	1-Chlorohexane	14.33	91	3479477	295.5995 ug/L	97
70)	Chlorobenzene	14.75	112	7150681	290.0438 ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.80	131	2732070	310.8152 ug/L	99
72)	Ethylbenzene	14.81	106	4260648	299.9004 ug/L	80
73)	m-,p-Xylene	14.91	106	9191083	544.0356 ug/L	79
74)	o-Xylene	15.57	106	4858471	295.4757 ug/L	91
75)	Styrene	15.61	104	7452420	291.7044 ug/L	94
76)	Bromoform	16.14	173	1225478	345.7796 ug/L	100
77)	Isopropylbenzene	16.08	105	11254864	265.1093 ug/L	93
79)	1,1,2,2-Tetrachloroethane	16.33	83	1424497	314.2341 ug/L	100
81)	1,2,3-Trichloropropane	16.56	110	420918	320.4420 ug/L	96
82)	trans-1,4-Dichloro-2-Buten	16.64	53	572501	325.4881 ug/L	91
83)	n-Propylbenzene	16.68	91	12240881	258.1566 ug/L	92
84)	Bromobenzene	16.77	156	3037979	317.5817 ug/L	100
85)	1,3,5-Trimethylbenzene	16.91	105	9625393	276.1407 ug/L	94
86)	2-Chlorotoluene	16.97	91	9612183	288.5387 ug/L	94
87)	4-Chlorotoluene	17.03	91	7903174	276.5710 ug/L	95
88)	a-Methylstyrene	17.38	118	5268588	291.5863 ug/L	100
89)	tert-Butylbenzene	17.45	134	2205038	310.6831 ug/L	92
90)	1,2,4-Trimethylbenzene	17.51	105	9522150	272.9064 ug/L	93
91)	sec-Butylbenzene	17.76	105	11063091	267.9904 ug/L	94
92)	p-Isopropyltoluene	17.96	119	9713899	273.9408 ug/L	94
93)	1,3-Dichlorobenzene	18.13	146	5705305	291.4832 ug/L	96
94)	1,4-Dichlorobenzene	18.29	146	5563911	291.5948 ug/L	96
95)	n-Butylbenzene	18.58	91	8226019	274.3854 ug/L	95
96)	1,2-Dichlorobenzene	18.86	146	4830717	298.8737 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	20.03	75	224448	324.3745 ug/L	99
98)	1,2,4-Trichlorobenzene	21.38	180	3460387	301.7410 ug/L	99
99)	Hexachlorobutadiene	21.58	225	1735891	302.4902 ug/L	99
100)	Naphthalene	21.79	128	4852060	299.7424 ug/L	99
101)	1,2,3-Trichlorobenzene	22.16	180	2800026	301.7171 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M118383.D 8260WTR.M Sat Jul 27 15:02:06 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118383.D Vial: 12
Acq On : 26 Jul 2013 20:12 Operator: adc
Sample : WG439230-11 300.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

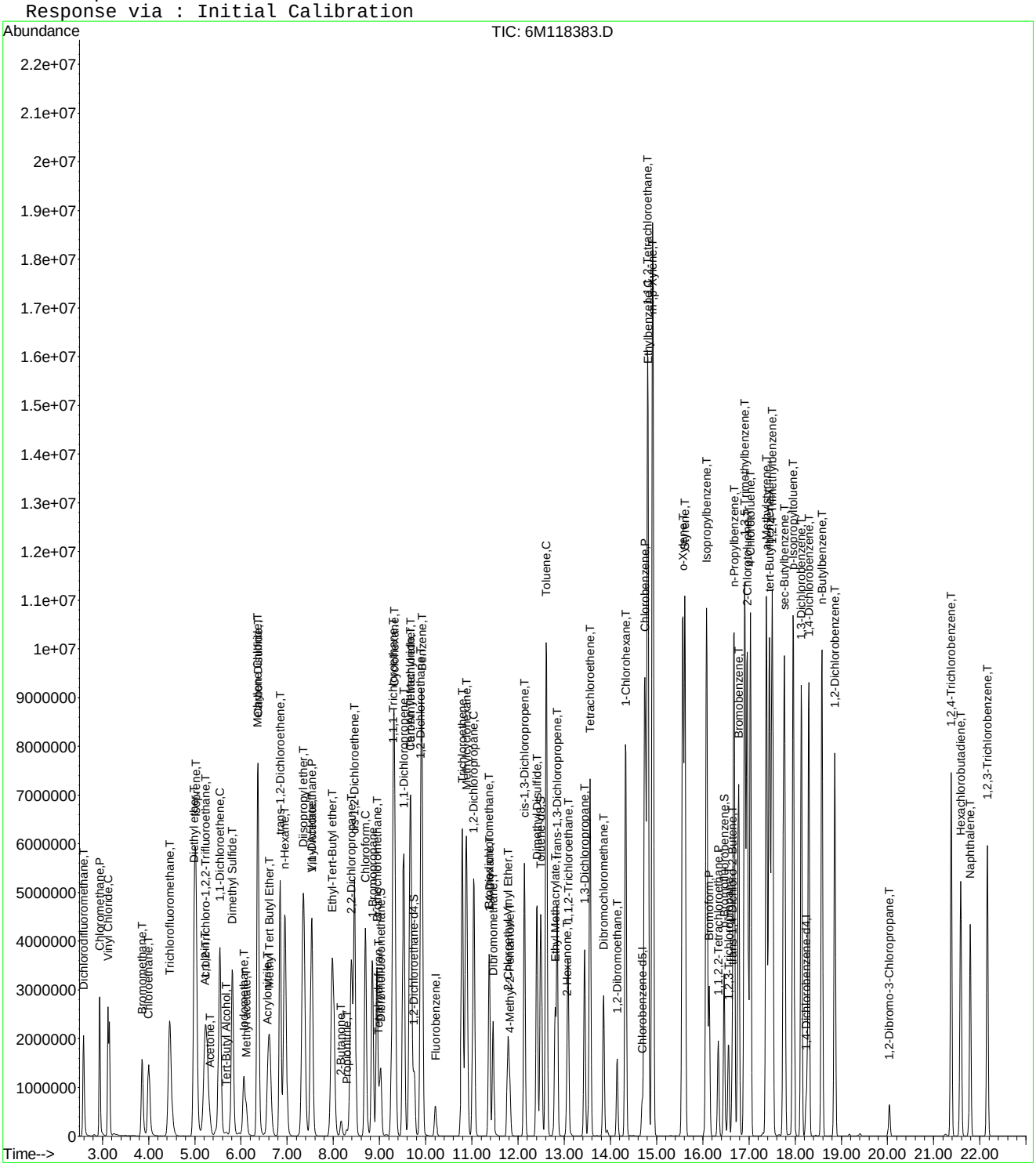

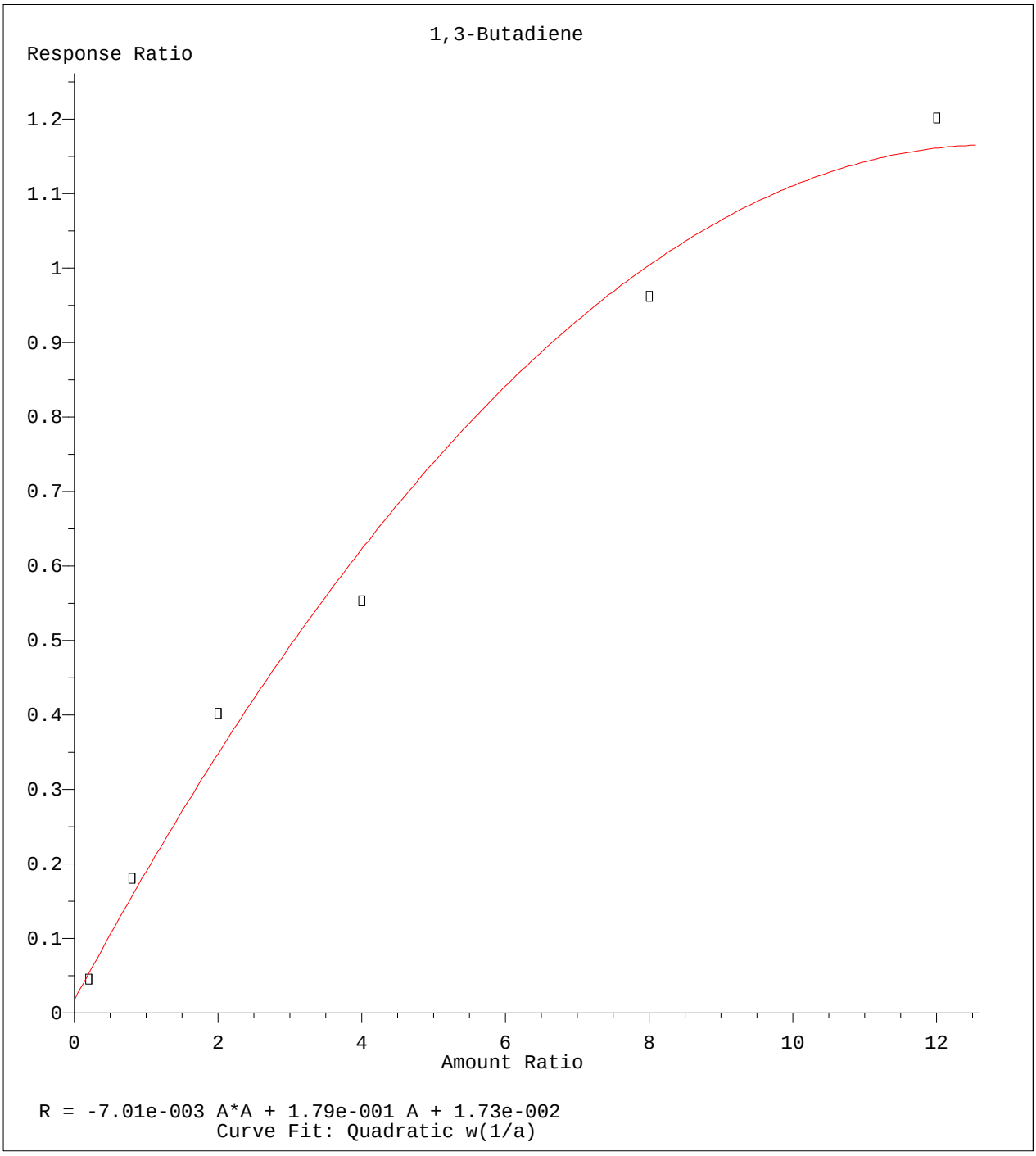

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Sat Jul 27 15:01:31 2013

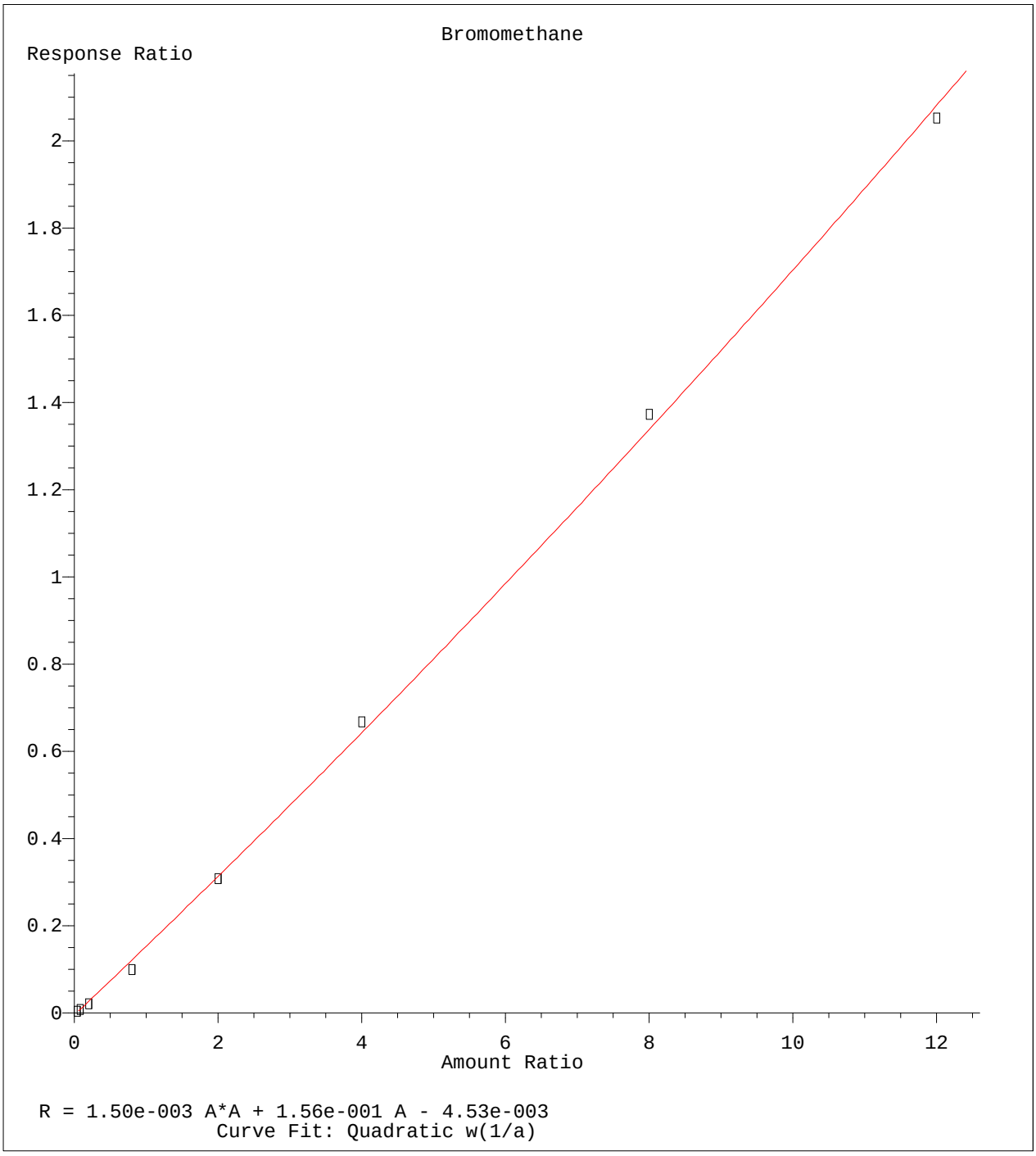

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Sat Jul 27 15:01:31 2013

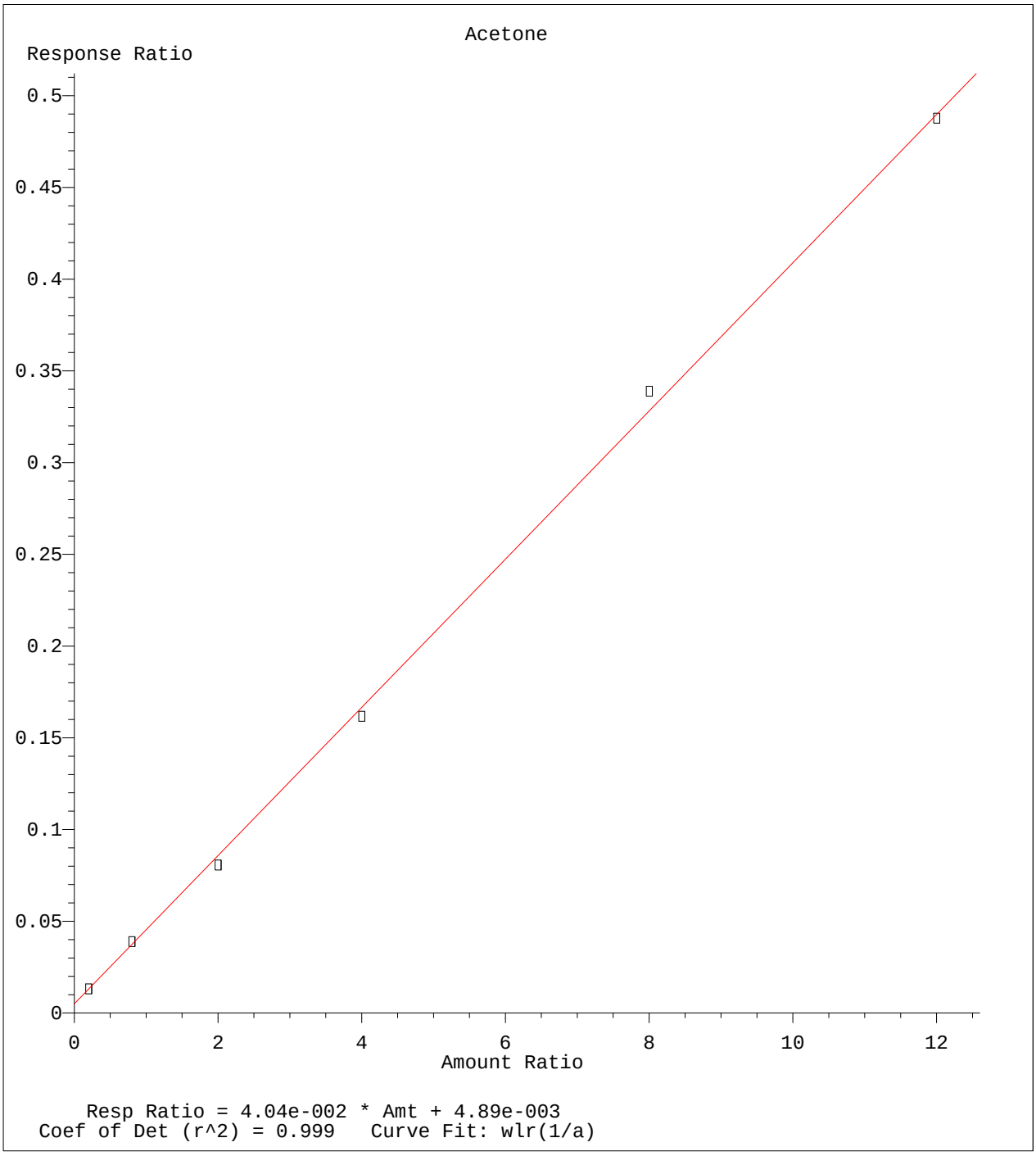

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Sat Jul 27 15:01:31 2013

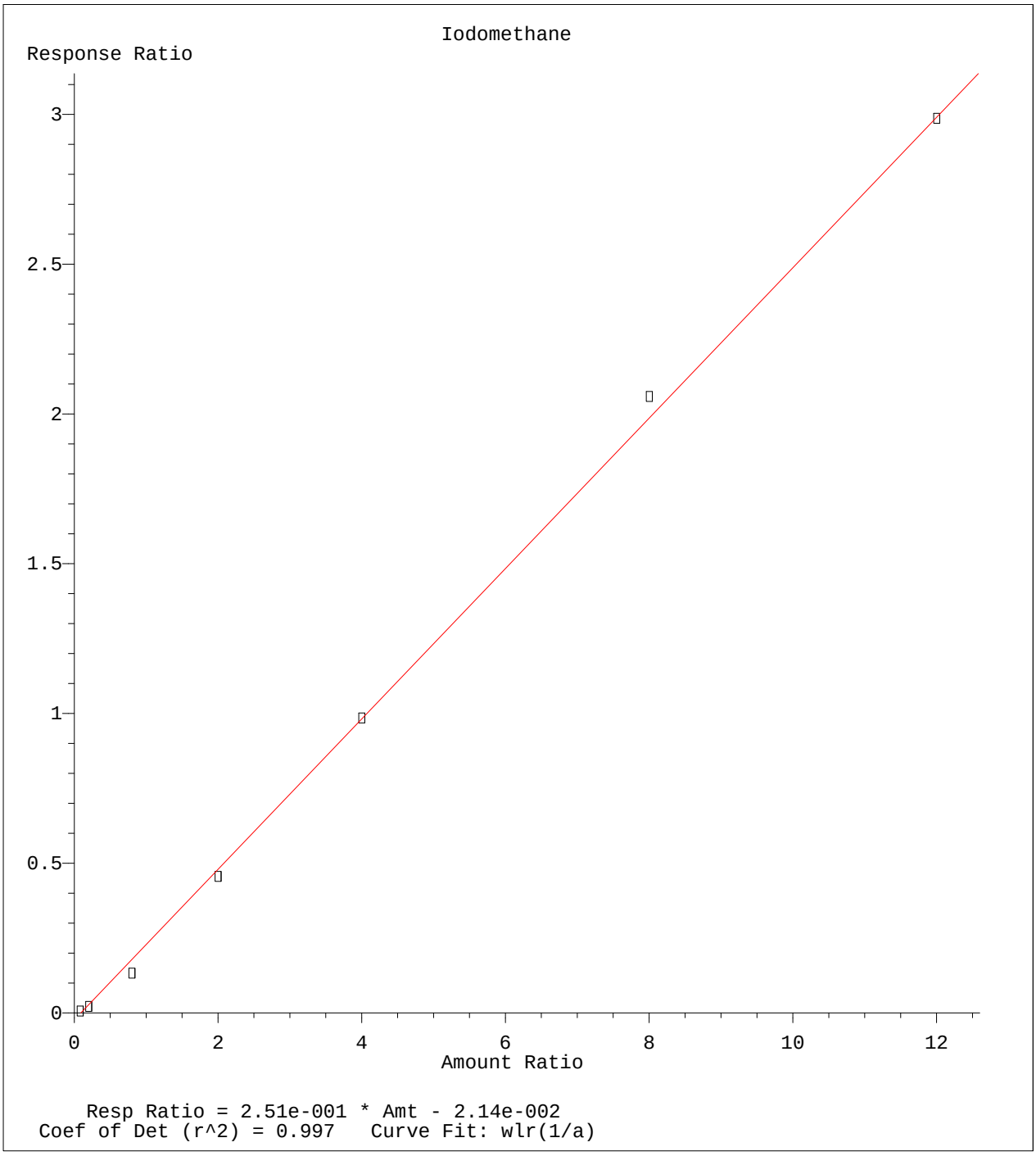

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Sat Jul 27 15:01:31 2013

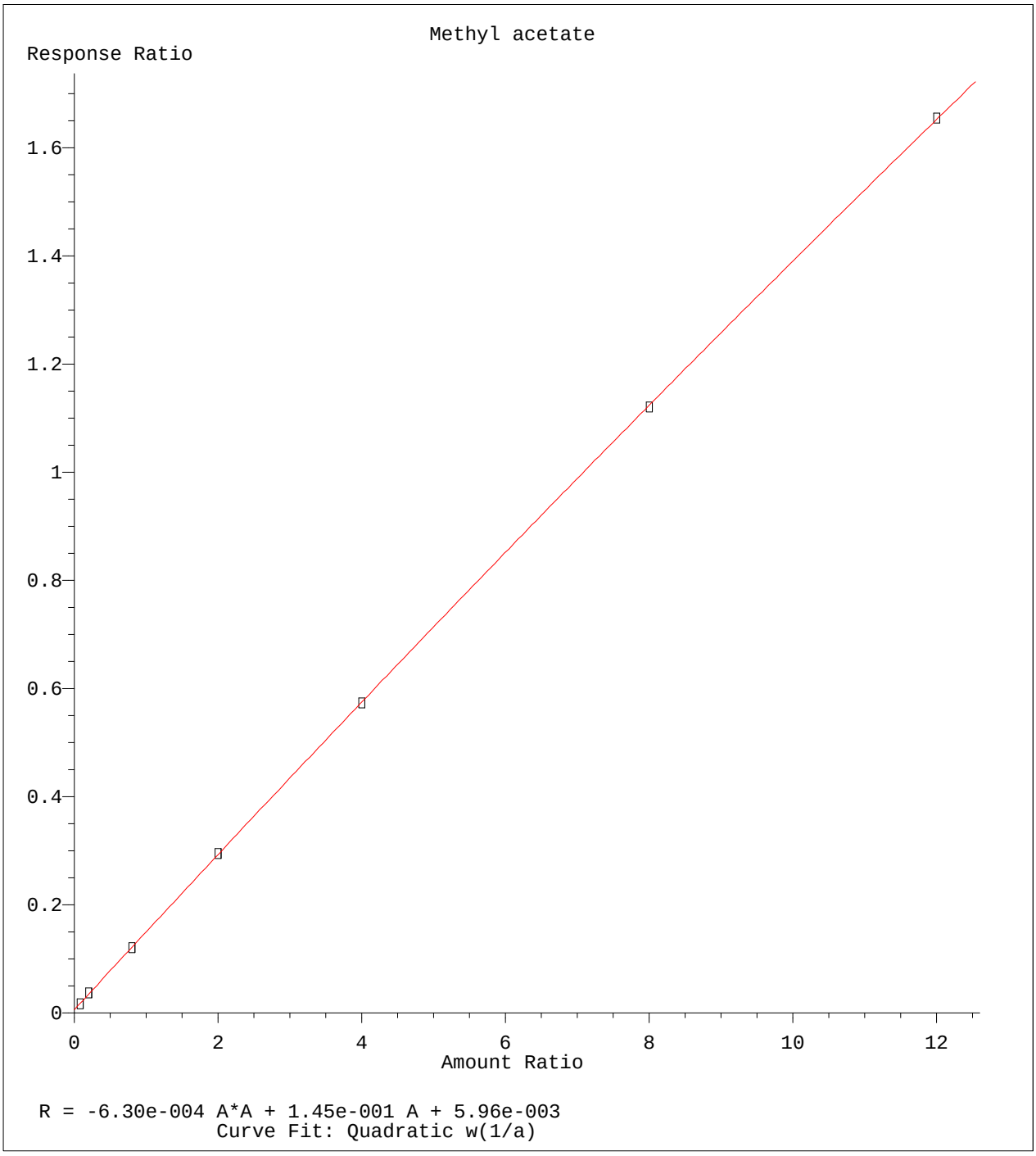

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Sat Jul 27 15:01:31 2013

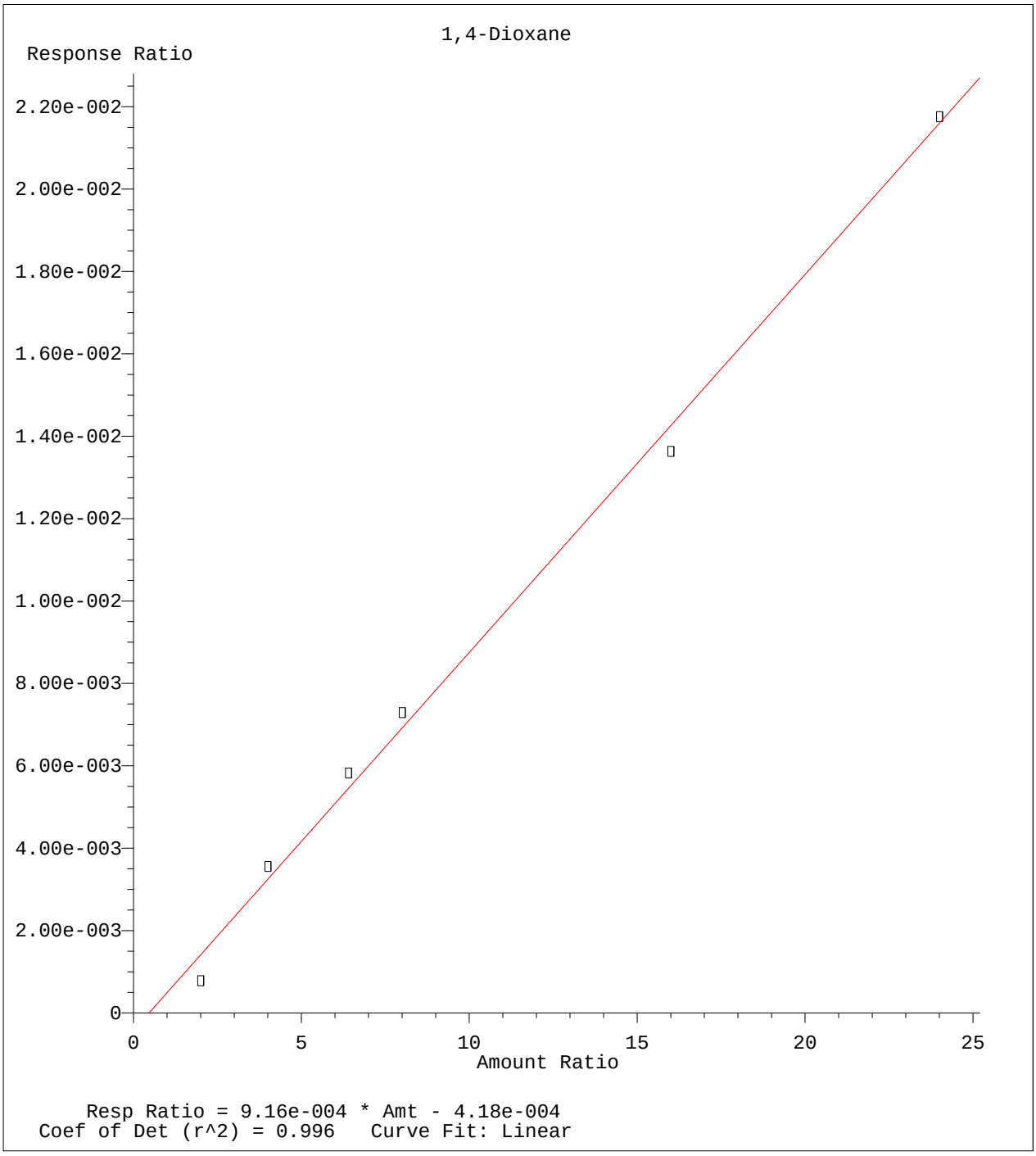

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Sat Jul 27 15:01:31 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118385.D Vial: 14
Acq On : 26 Jul 2013 21:13 Operator: adc
Sample : WG439230-12 50.0ug/L ALT SRC 8260 Inst : HPMS6
Misc : 1,1 STD59088 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:09 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	832401	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	577587	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	285017	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.02	111	201724	23.0923 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.36%		
43) 1,2-Dichloroethane-d4	9.75	65	175290	23.6822 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.72%		
58) Toluene-d8	12.49	98	735770	23.7596 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.04%		
80) p-Bromofluorobenzene	16.46	95	253339	23.3700 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.48%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	524524	67.9810 ug/L	100
3) Chloromethane	2.94	50	588013	51.4739 ug/L	99
4) Vinyl Chloride	3.12	62	413267	45.5771 ug/L	100
5) 1,3-Butadiene	3.15	54	186969	30.3271 ug/L	98
6) Bromomethane	3.85	94	248898	47.8323 ug/L	100
7) Chloroethane	4.00	64	390766	52.3215 ug/L	99
8) Trichlorofluoromethane	4.46	101	787171	53.5587 ug/L	99
9) Diethyl ether	4.99	59	598541	105.6456 ug/L	98
10) Isoprene	5.02	67	697525	54.2401 ug/L	99
11) Acrolein	5.22	56	16500	119.4401 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	5.24	101	483817	58.6503 ug/L	97
13) Acetone	5.32	43	66851	46.6392 ug/L	94
14) 1,1-Dichloroethene	5.54	61	829363	48.3979 ug/L	100
15) Tert-Butyl Alcohol	5.69	59	59723	195.5286 ug/L	97
16) Dimethyl Sulfide	5.80	62	519168	57.0324 ug/L	97
17) Iodomethane	6.06	142	286057	36.3596 ug/L	99
18) Methyl acetate	6.11	43	217685	44.4790 ug/L	99
19) Methylene Chloride	6.37	84	411540	48.7821 ug/L	95
20) Carbon Disulfide	6.37	76	1407049	50.3974 ug/L	100
21) Acrylonitrile	6.57	53	101063	52.0497 ug/L	99
22) Methyl Tert Butyl Ether	6.61	73	716842	50.9525 ug/L	99
23) trans-1,2-Dichloroethene	6.84	96	489831	51.9853 ug/L	98
24) n-Hexane	6.96	57	774108	50.9570 ug/L	98
25) Diisopropyl ether	7.35	45	3970793	99.8064 ug/L	100
26) Vinyl Acetate	7.53	43	704572	63.0244 ug/L	100
27) 1,1-Dichloroethane	7.53	63	976669	50.0997 ug/L	100
28) Ethyl-Tert-Butyl ether	7.99	59	2563002	100.1278 ug/L	100
29) 2-Butanone	8.17	43	114088	52.0413 ug/L	99
30) Propionitrile	8.28	54	63410	103.0129 ug/L	99
31) 2,2-Dichloropropane	8.39	77	695928	47.0621 ug/L	99
32) cis-1,2-Dichloroethene	8.46	96	509968	52.4001 ug/L	97
33) Chloroform	8.69	83	808204	50.3689 ug/L	99
34) 1-Bromopropane	8.85	122	102977	57.1016 ug/L	99
35) Bromochloromethane	8.95	130	255291	50.6047 ug/L	99
36) Tetrahydrofuran	8.98	42	148474	101.7748 ug/L	100
38) 1,1,1-Trichloroethane	9.30	97	778214	50.9776 ug/L	100
39) Cyclohexane	9.32	56	1088357	50.6002 ug/L	99
40) 1,1-Dichloropropene	9.52	75	663065	51.5357 ug/L	99
41) Tert-Amyl-Methyl ether	9.67	73	1536825	100.2421 ug/L	99
42) Carbon Tetrachloride	9.67	117	709989	51.5588 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M118385.D 8260WTR.M Sat Jul 27 15:02:10 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118385.D Vial: 14
Acq On : 26 Jul 2013 21:13 Operator: adc
Sample : WG439230-12 50.0ug/L ALT SRC 8260 Inst : HPMS6
Misc : 1,1 STD59088 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:09 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.89	62	524299	52.2277 ug/L	99
46)	Benzene	9.92	78	1786759	50.8814 ug/L	100
47)	Trichloroethene	10.79	130	560945	56.7411 ug/L	99
48)	Methylcyclohexane	10.88	83	683279	53.4369 ug/L	98
49)	1,2-Dichloropropane	11.04	63	529115	52.6535 ug/L	99
50)	1,4-Dioxane	11.39	88	5379	187.7098 ug/L	97
51)	Bromodichloromethane	11.38	83	539036	49.6523 ug/L	100
52)	Dibromomethane	11.46	93	182456	53.5076 ug/L	99
53)	2-Chloroethyl Vinyl Ether	11.78	63	176112	53.4435 ug/L	99
54)	4-Methyl-2-Pentanone	11.82	58	85783	52.2223 ug/L	99
55)	cis-1,3-Dichloropropene	12.13	75	658299	54.8290 ug/L	100
56)	Dimethyl Disulfide	12.41	79	321689	55.9386 ug/L	100
59)	Toluene	12.60	91	1936913	51.2617 ug/L	100
60)	Ethyl Methacrylate	12.80	69	290180	53.4740 ug/L	98
62)	trans-1,3-Dichloropropene	12.85	75	467682	50.4492 ug/L	100
63)	1,1,2-Trichloroethane	13.08	97	253756	53.1281 ug/L	100
64)	2-Hexanone	13.05	43	162920	49.2311 ug/L	99
65)	1,3-Dichloropropane	13.44	76	431844	52.3980 ug/L	98
66)	Tetrachloroethene	13.55	166	548902	51.5239 ug/L	100
67)	Dibromochloromethane	13.85	129	349691	52.4082 ug/L	99
68)	1,2-Dibromoethane	14.15	107	248211	52.1238 ug/L	98
69)	1-Chlorohexane	14.33	91	620124	53.8955 ug/L	98
70)	Chlorobenzene	14.75	112	1166775	48.4158 ug/L	96
71)	1,1,1,2-Tetrachloroethane	14.80	131	462135	53.7853 ug/L	99
72)	Ethylbenzene	14.80	106	722818	52.0492 ug/L	99
73)	m-,p-Xylene	14.91	106	1675600	101.4647 ug/L	99
74)	o-Xylene	15.57	106	771145	47.9780 ug/L	99
75)	Styrene	15.61	104	1322884	52.9726 ug/L	98
76)	Bromoform	16.14	173	189050	54.5701 ug/L	99
77)	Isopropylbenzene	16.08	105	2011954	48.4827 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.33	83	233115	51.6038 ug/L	99
81)	1,2,3-Trichloropropane	16.56	110	69490	53.0877 ug/L	96
82)	trans-1,4-Dichloro-2-Buten	16.64	53	73499	41.9334 ug/L	95
83)	n-Propylbenzene	16.67	91	2241123	47.4303 ug/L	100
84)	Bromobenzene	16.77	156	504848	52.9604 ug/L	100
85)	1,3,5-Trimethylbenzene	16.90	105	1826145	52.5735 ug/L	99
86)	2-Chlorotoluene	16.96	91	1619314	48.7790 ug/L	99
87)	4-Chlorotoluene	17.03	91	1298365	45.5955 ug/L	100
88)	a-Methylstyrene	17.37	118	966365	53.6703 ug/L	95
89)	tert-Butylbenzene	17.44	134	346427	48.9816 ug/L	96
90)	1,2,4-Trimethylbenzene	17.50	105	1812653	52.1330 ug/L	99
91)	sec-Butylbenzene	17.76	105	1972572	47.9507 ug/L	100
92)	p-Isopropyltoluene	17.96	119	1702850	48.1902 ug/L	100
93)	1,3-Dichlorobenzene	18.13	146	924015	47.3733 ug/L	100
94)	1,4-Dichlorobenzene	18.29	146	973016	51.1728 ug/L	100
95)	n-Butylbenzene	18.58	91	1552235	51.9575 ug/L	100
96)	1,2-Dichlorobenzene	18.85	146	767365	47.6428 ug/L	100
97)	1,2-Dibromo-3-Chloropropan	20.04	75	36219	52.5275 ug/L	96
98)	1,2,4-Trichlorobenzene	21.38	180	579441	50.7036 ug/L	99
99)	Hexachlorobutadiene	21.58	225	297898	52.0926 ug/L	99
100)	Naphthalene	21.78	128	817300	50.6667 ug/L	100
101)	1,2,3-Trichlorobenzene	22.16	180	471132	50.9448 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M118385.D 8260WTR.M Sat Jul 27 15:02:10 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118385.D Vial: 14
Acq On : 26 Jul 2013 21:13 Operator: adc
Sample : WG439230-12 50.0ug/L ALT SRC 8260 Inst : HPMS6
Misc : 1,1 STD59088 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

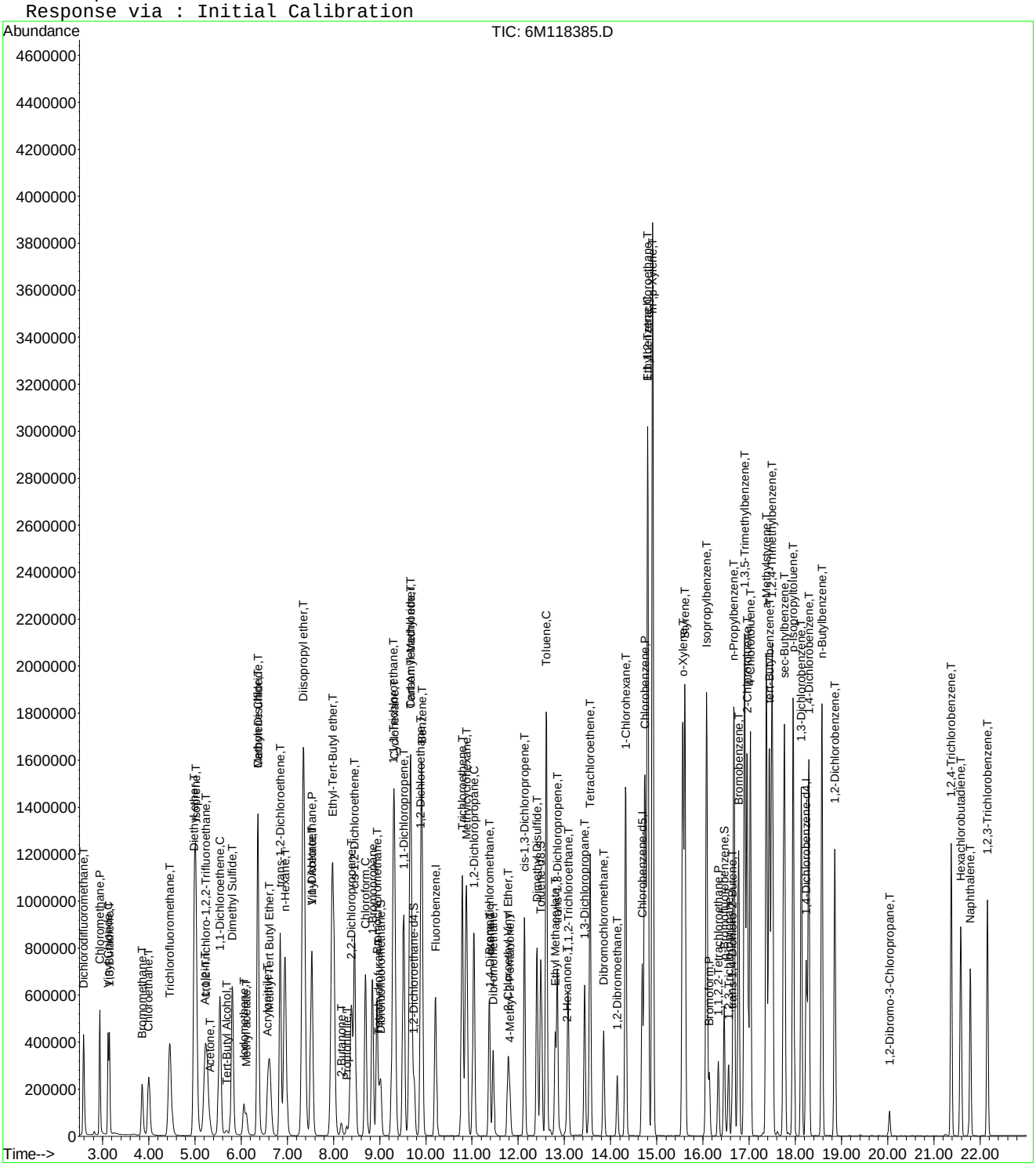

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\072613\6M118385.D Vial: 14
Acq On : 26 Jul 2013 21:13 Operator: adc
Sample : WG439230-12 50.0ug/L ALT SRC 8260 Inst : HPMS6
Misc : 1,1 STD59088 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	98	0.00
2	T	Dichlorodifluoromethane	50.0000	67.9810	-36.0#	121	0.00
3	P	Chloromethane	50.0000	51.4739	-2.9	104	0.00
4	C	Vinyl Chloride	50.0000	45.5772	8.8	85	0.00
5	T	1,3-Butadiene	50.0000	30.3271	39.3#	55	-0.02
6	T	Bromomethane	50.0000	47.8323	4.3	95	0.00
7	T	Chloroethane	50.0000	52.3215	-4.6	99	0.00
8	T	Trichlorofluoromethane	50.0000	53.5587	-7.1	99	0.00
9	T	Diethyl ether	100.0000	105.6456	-5.6	101	0.00
10	T	Isoprene	50.0000	54.2401	-8.5	101	0.00
11	T	Acrolein	50.0000	119.4401	-138.9#	219	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	58.6503	-17.3	108	0.00
13	T	Acetone	50.0000	46.6392	6.7	98	0.00
14	C	1,1-Dichloroethene	50.0000	48.3979	3.2	91	0.00
15	T	Tert-Butyl Alcohol	200.0000	195.5286	2.2	94	0.01
16	T	Dimethyl Sulfide	50.0000	57.0324	-14.1	106	0.00
17	T	Iodomethane	50.0000	36.3596	27.3#	74	0.00
18	T	Methyl acetate	50.0000	44.4790	11.0	87	0.00
19	T	Methylene Chloride	50.0000	48.7821	2.4	97	0.00
20	T	Carbon Disulfide	50.0000	50.3974	-0.8	96	0.00
21	T	Acrylonitrile	50.0000	52.0497	-4.1	96	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.9524	-1.9	94	0.00
23	T	trans-1,2-Dichloroethene	50.0000	51.9853	-4.0	99	0.00
24	T	n-Hexane	50.0000	50.9571	-1.9	98	0.00
25	T	Diisopropyl ether	100.0000	99.8064	0.2	96	0.00
26	T	Vinyl Acetate	50.0000	63.0244	-26.0#	117	0.00
27	P	1,1-Dichloroethane	50.0000	50.0997	-0.2	95	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	100.1278	-0.1	96	0.00
29	T	2-Butanone	50.0000	52.0413	-4.1	104	0.00
30	T	Propionitrile	100.0000	103.0129	-3.0	99	0.00
31	T	2,2-Dichloropropane	50.0000	47.0621	5.9	90	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.4001	-4.8	98	0.00
33	C	Chloroform	50.0000	50.3689	-0.7	97	0.00
34		1-Bromopropane	50.0000	57.1016	-14.2	105	0.00
35	T	Bromochloromethane	50.0000	50.6047	-1.2	96	0.00
36	T	Tetrahydrofuran	100.0000	101.7748	-1.8	101	0.00
37	S	Dibromofluoromethane	25.0000	23.0923	7.6	94	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.9776	-2.0	96	0.00
39	T	Cyclohexane	50.0000	50.6002	-1.2	98	0.00
40	T	1,1-Dichloropropene	50.0000	51.5357	-3.1	96	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.2421	-0.2	97	0.00
42	T	Carbon Tetrachloride	50.0000	51.5588	-3.1	96	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.6822	5.3	92	0.00
44		Heptane	-1.0000	0.0000	0.0	96	0.00
45	T	1,2-Dichloroethane	50.0000	52.2277	-4.5	97	0.00
46	T	Benzene	50.0000	50.8813	-1.8	97	0.00
47	T	Trichloroethene	50.0000	56.7411	-13.5	106	0.00
48	T	Methylcyclohexane	50.0000	53.4369	-6.9	102	0.00
49	C	1,2-Dichloropropane	50.0000	52.6535	-5.3	98	0.00
50	T	1,4-Dioxane	200.0000	187.7098	6.1	87	0.00
51	T	Bromodichloromethane	50.0000	49.6523	0.7	95	0.00
52	T	Dibromomethane	50.0000	53.5076	-7.0	96	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	53.4435	-6.9	102	0.00
54	T	4-Methyl-2-Pentanone	50.0000	52.2223	-4.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\072613\6M118385.D Vial: 14
Acq On : 26 Jul 2013 21:13 Operator: adc
Sample : WG439230-12 50.0ug/L ALT SRC 8260 Inst : HPMS6
Misc : 1,1 STD59088 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.8290	-9.7	101	0.00
56	T	Dimethyl Disulfide	50.0000	55.9386	-11.9	103	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	99	0.00
58	S	Toluene-d8	25.0000	23.7596	5.0	95	0.00
59	C	Toluene	50.0000	51.2617	-2.5	98	0.00
60	T	Ethyl Methacrylate	50.0000	53.4740	-6.9	98	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	97	0.00
62	T	trans-1,3-Dichloropropene	50.0000	50.4492	-0.9	92	0.00
63	T	1,1,2-Trichloroethane	50.0000	53.1281	-6.3	101	0.00
64	T	2-Hexanone	50.0000	49.2311	1.5	93	0.00
65	T	1,3-Dichloropropane	50.0000	52.3980	-4.8	98	0.00
66	T	Tetrachloroethene	50.0000	51.5239	-3.0	98	0.00
67	T	Dibromochloromethane	50.0000	52.4082	-4.8	97	0.00
68	T	1,2-Dibromoethane	50.0000	52.1238	-4.2	97	0.00
69	T	1-Chlorohexane	50.0000	53.8955	-7.8	103	0.00
70	P	Chlorobenzene	50.0000	48.4158	3.2	91	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	53.7853	-7.6	100	0.00
72	C	Ethylbenzene	50.0000	52.0493	-4.1	98	0.00
73	T	m-,p-Xylene	100.0000	101.4647	-1.5	94	0.00
74	T	o-Xylene	50.0000	47.9780	4.0	90	0.00
75	T	Styrene	50.0000	52.9726	-5.9	97	0.00
76	P	Bromoform	50.0000	54.5701	-9.1	100	0.00
77	T	Isopropylbenzene	50.0000	48.4827	3.0	91	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	98	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	51.6038	-3.2	98	0.00
80	S	p-Bromofluorobenzene	25.0000	23.3700	6.5	94	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.0877	-6.2	98	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	41.9334	16.1	77	0.00
83	T	n-Propylbenzene	50.0000	47.4303	5.1	89	0.00
84	T	Bromobenzene	50.0000	52.9603	-5.9	96	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.5735	-5.1	99	0.00
86	T	2-Chlorotoluene	50.0000	48.7790	2.4	93	0.00
87	T	4-Chlorotoluene	50.0000	45.5955	8.8	88	0.00
88	T	a-Methylstyrene	50.0000	53.6703	-7.3	100	0.00
89	T	tert-Butylbenzene	50.0000	48.9816	2.0	90	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.1330	-4.3	99	0.00
91	T	sec-Butylbenzene	50.0000	47.9507	4.1	90	0.00
92	T	p-Isopropyltoluene	50.0000	48.1902	3.6	90	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.3733	5.3	89	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.1728	-2.3	96	0.00
95	T	n-Butylbenzene	50.0000	51.9575	-3.9	98	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.6428	4.7	89	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.5275	-5.1	96	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.7036	-1.4	95	0.00
99	T	Hexachlorobutadiene	50.0000	52.0926	-4.2	99	0.00
100	T	Naphthalene	50.0000	50.6668	-1.3	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.9448	-1.9	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M118385.D 8260WTR.M Sat Jul 27 15:02:17 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082813\11M94673.D Vial: 2
Acq On : 28 Aug 2013 15:55 Operator: FJB
Sample : WG442931-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD59677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 28 16:17:02 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Fri Aug 23 12:13:25 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.06	96	852923	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.68	117	664586	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.48	152	361317	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.08	111	252659	25.4391 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.76%		
43) 1,2-Dichloroethane-d4	9.68	65	245997	21.4304 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.72%		
58) Toluene-d8	11.92	98	884005	27.6740 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 110.68%#		
80) p-Bromofluorobenzene	15.08	95	348244	26.3446 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.36%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	429434	48.2936 ug/L	97
3) Chloromethane	3.31	50	484643	37.8289 ug/L	99
4) Vinyl Chloride	3.52	62	501565	47.3938 ug/L	99
5) 1,3-Butadiene	3.56	54	347077	39.8756 ug/L	99
6) Bromomethane	4.35	94	249798	46.7713 ug/L	100
7) Chloroethane	4.50	64	293936	53.2828 ug/L	98
8) Trichlorofluoromethane	4.97	101	814428	42.2993 ug/L	99
9) Diethyl ether	5.48	59	588564	95.1865 ug/L	94
10) Isoprene	5.51	67	517185	50.4097 ug/L	87
11) Acrolein	5.70	56	32370	42.5790 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	447409	48.2042 ug/L	99
13) Acetone	5.79	43	108258	38.7484 ug/L	86
14) 1,1-Dichloroethene	6.02	61	715049	45.9246 ug/L	88
15) Tert-Butyl Alcohol	6.12	59	82691	171.8690 ug/L	96
16) Dimethyl Sulfide	6.27	62	363964	48.6777 ug/L	84
17) Iodomethane	6.50	142	385427	39.8599 ug/L	87
18) Methyl acetate	6.52	43	161181	44.0100 ug/L	95
19) Methylene Chloride	6.77	84	446593	51.3143 ug/L	87
20) Carbon Disulfide	6.80	76	1116885	47.1844 ug/L	99
21) Acrylonitrile	6.94	53	106630	54.2531 ug/L	96
22) Methyl Tert Butyl Ether	6.98	73	1020890	49.3658 ug/L	100
23) trans-1,2-Dichloroethene	7.21	96	473592	56.1421 ug/L	85
24) n-Hexane	7.29	57	507639	47.1893 ug/L	98
25) Diisopropyl ether	7.62	45	2927390	98.0992 ug/L	96
26) Vinyl Acetate	7.78	43	509645	50.3213 ug/L	96
27) 1,1-Dichloroethane	7.80	63	879118	51.9786 ug/L	99
28) Ethyl-Tert-Butyl ether	8.17	59	2630102	94.8551 ug/L	98
29) 2-Butanone	8.33	43	109962	49.0044 ug/L	95
30) Propionitrile	8.43	54	69132	101.7842 ug/L	99
31) 2,2-Dichloropropane	8.54	77	748657	42.7046 ug/L	99
32) cis-1,2-Dichloroethene	8.60	96	518839	54.2039 ug/L	88
33) Chloroform	8.80	83	881233	48.0073 ug/L	100
34) 1-Bromopropane	8.93	122	85078	46.6013 ug/L	98
35) Bromochloromethane	9.02	130	295973	53.8118 ug/L	94
36) Tetrahydrofuran	9.05	42	136344	96.1871 ug/L	97
38) 1,1,1-Trichloroethane	9.31	97	848172	45.1894 ug/L	97
39) Cyclohexane	9.34	56	685884	47.1340 ug/L	97
40) 1,1-Dichloropropene	9.49	75	679350	50.3159 ug/L	95
41) Carbon Tetrachloride	9.63	117	787914	44.5124 ug/L	98
42) Tert-Amyl-Methyl ether	9.61	73	2028129	94.9508 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082813\11M94673.D Vial: 2
Acq On : 28 Aug 2013 15:55 Operator: FJB
Sample : WG442931-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD59677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 28 16:17:02 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Fri Aug 23 12:13:25 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.79	62	584953	41.3017 ug/L		96
46)	Benzene	9.83	78	1789176	52.5106 ug/L		100
47)	Trichloroethene	10.55	130	511125	53.8099 ug/L		98
48)	Methylcyclohexane	10.63	83	591898	50.3794 ug/L		95
49)	1,2-Dichloropropane	10.74	63	469874	52.6767 ug/L		85
50)	1,4-Dioxane	11.01	88	8771	210.2739 ug/L		87
51)	Bromodichloromethane	11.02	83	652938	46.4723 ug/L		99
52)	Dibromomethane	11.10	93	234478	48.8963 ug/L		96
53)	2-Chloroethyl Vinyl Ether	11.31	63	192124	50.3510 ug/L		100
54)	4-Methyl-2-Pentanone	11.34	58	96459	49.1302 ug/L		99
55)	cis-1,3-Dichloropropene	11.62	75	720923	51.6577 ug/L		100
56)	Dimethyl Disulfide	11.86	79	324844	46.2370 ug/L		91
59)	Toluene	12.01	91	1946438	52.7072 ug/L		99
60)	Ethyl Methacrylate	12.12	69	346679	45.6643 ug/L		87
62)	trans-1,3-Dichloropropene	12.18	75	641651	50.4499 ug/L		94
63)	1,1,2-Trichloroethane	12.39	97	314893	53.5067 ug/L		99
64)	2-Hexanone	12.32	43	167592	45.6227 ug/L	#	48
65)	1,3-Dichloropropane	12.67	76	555340	50.6081 ug/L		88
66)	Tetrachloroethene	12.78	164	442135	52.7267 ug/L		94
67)	Dibromochloromethane	13.03	129	460382	48.6221 ug/L		100
68)	1,2-Dibromoethane	13.26	107	329743	52.7269 ug/L		99
69)	1-Chlorohexane	13.35	91	539810	47.7818 ug/L		89
70)	Chlorobenzene	13.73	112	1315739	52.4874 ug/L		100
71)	1,1,1,2-Tetrachloroethane	13.76	131	523833	49.2579 ug/L		99
72)	Ethylbenzene	13.76	106	720902	53.1776 ug/L		97
73)	m-,p-Xylene	13.84	106	1720715	108.9228 ug/L		88
74)	o-Xylene	14.36	106	870234	55.1048 ug/L		89
75)	Styrene	14.39	104	1443621	56.9182 ug/L		90
76)	Bromoform	14.85	173	291646	49.2186 ug/L		98
77)	Isopropylbenzene	14.75	105	2188261	54.5093 ug/L		98
79)	1,1,2,2-Tetrachloroethane	14.95	83	330840	56.0868 ug/L		96
81)	1,2,3-Trichloropropane	15.14	110	110023	48.3868 ug/L		86
82)	trans-1,4-Dichloro-2-Buten	15.18	53	102422	36.2744 ug/L	#	1
83)	n-Propylbenzene	15.23	91	2500090	53.2121 ug/L		97
84)	Bromobenzene	15.34	156	592738	53.3020 ug/L		95
85)	1,3,5-Trimethylbenzene	15.40	105	1887083	54.1724 ug/L		95
86)	2-Chlorotoluene	15.48	91	1672702	54.0422 ug/L		96
87)	4-Chlorotoluene	15.52	91	1481423	46.0700 ug/L		84
88)	a-Methylstyrene	15.77	118	892632	51.6227 ug/L		94
89)	tert-Butylbenzene	15.83	134	391732	57.3655 ug/L		83
90)	1,2,4-Trimethylbenzene	15.88	105	1932746	53.1677 ug/L		96
91)	sec-Butylbenzene	16.08	105	2193763	54.9257 ug/L		99
92)	p-Isopropyltoluene	16.22	119	1917667	55.4100 ug/L		98
93)	1,3-Dichlorobenzene	16.40	146	1124208	53.7951 ug/L		96
94)	1,4-Dichlorobenzene	16.52	146	1126237	52.1785 ug/L		97
95)	n-Butylbenzene	16.71	91	1626975	53.8952 ug/L		97
96)	1,2-Dichlorobenzene	16.98	146	1013925	53.5193 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	17.89	75	62285	45.1570 ug/L		86
98)	1,2,4-Trichlorobenzene	18.95	180	743215	53.3444 ug/L		98
99)	Hexachlorobutadiene	19.09	225	294294	48.8080 ug/L		96
100)	Naphthalene	19.28	128	1243099	55.0938 ug/L		99
101)	1,2,3-Trichlorobenzene	19.57	180	634740	52.0012 ug/L		98

(#) = qualifier out of range (m) = manual integration
11M94673.D 8260WT.M Wed Aug 28 16:17:03 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082813\11M94673.D Vial: 2
Acq On : 28 Aug 2013 15:55 Operator: FJB
Sample : WG442931-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD59677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 28 16:17 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Fri Aug 23 12:13:25 2013
Response via : Initial Calibration

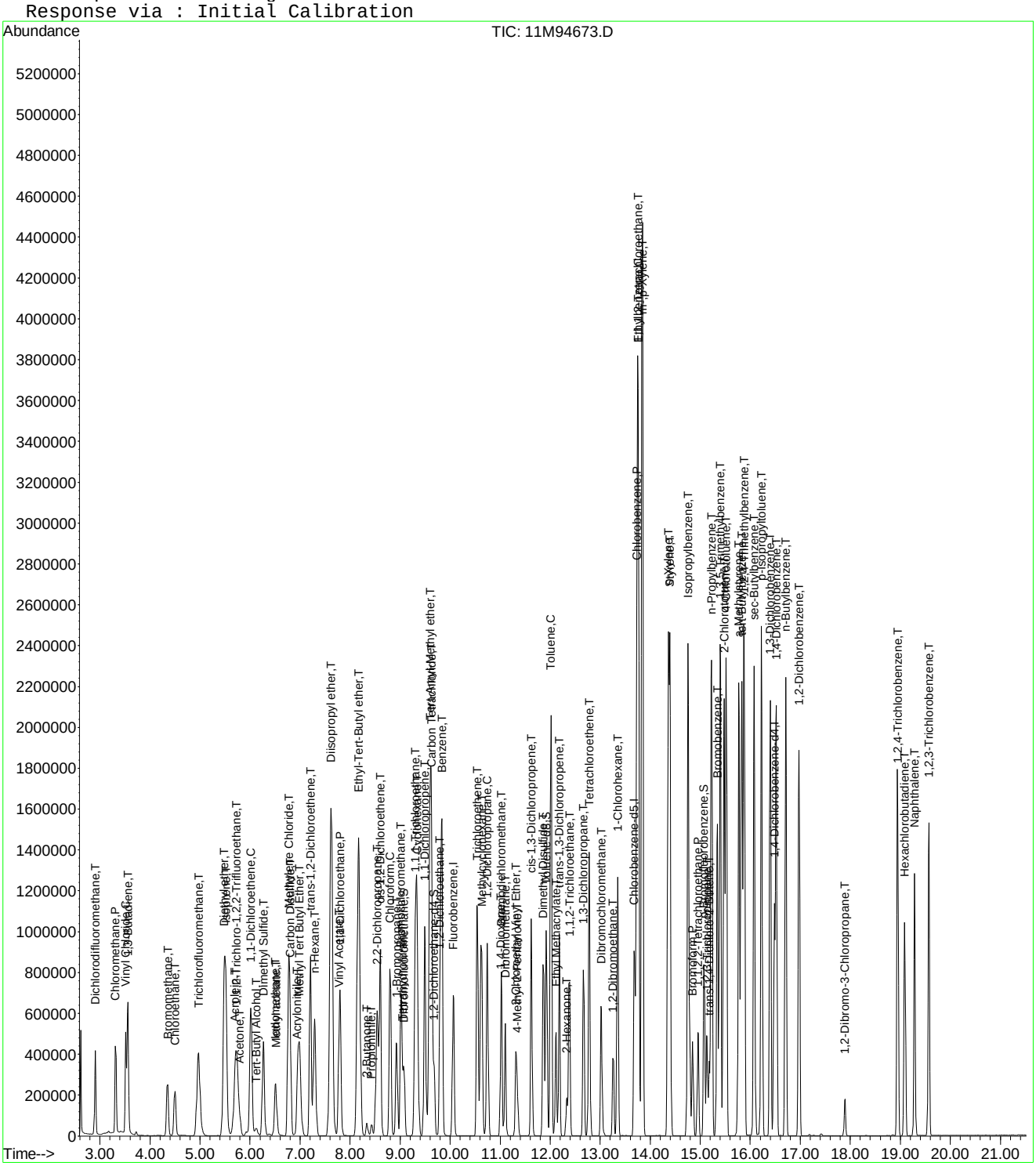

Continuing Calibration Area and RT check

Instrument: hpms11
Initial cal date: 21 Aug 2013 19:06
CCV date: 28 Aug 2013 15:55
CCV Filename: 11M94673.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	615379	10.07	485611	13.69	264881	16.49
CCV	852923	10.06	664586	13.68	361317	16.48

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\082813\11M94673.D Vial: 2
Acq On : 28 Aug 2013 15:55 Operator: FJB
Sample : WG442931-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD59677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Fri Aug 23 12:13:25 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	139	-0.01
2	T	Dichlorodifluoromethane	0.2606	0.2517	3.4	106	0.00
3	P	Chloromethane	0.4222	0.2841	32.7#	92	0.00
4	C	Vinyl Chloride	0.3256	0.2940	9.7	118	0.00
5	T	1,3-Butadiene	0.2551	0.2035	20.2	94	0.00
6	T	Bromomethane	0.1334	0.1464	-9.8	129	0.00
7	T	Chloroethane	0.1617	0.1723	-6.6	125	0.00
8	T	Trichlorofluoromethane	0.5644	0.4774	15.4	102	0.01
9	T	Diethyl ether	0.1812	0.1725	4.8	122	0.00
10	T	Isoprene	0.3007	0.3032	-0.8	115	0.00
11	T	Acrolein	0.0197	0.0190	3.6	111	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2314	0.2623	-13.3	120	0.01
13	T	Acetone	0.0819	0.0635	22.5	99	0.00
14	C	1,1-Dichloroethene	0.4564	0.4192	8.1	112	0.00
15	T	Tert-Butyl Alcohol	0.0141	0.0121	14.0	112	0.00
16	T	Dimethyl Sulfide	0.2192	0.2134	2.6	114	0.00
17	T	Iodomethane	0.2583	0.2259	12.5	93	0.00
18	T	Methyl acetate	0.0975	0.0945	3.1	113	0.00
19	T	Methylene Chloride	0.2551	0.2618	-2.6	129	0.01
20	T	Carbon Disulfide	0.6938	0.6547	5.6	111	0.01
21	T	Acrylonitrile	0.0576	0.0625	-8.5	126	0.00
22	T	Methyl Tert Butyl Ether	0.6061	0.5985	1.3	115	0.00
23	T	trans-1,2-Dichloroethene	0.2473	0.2776	-12.3	132	0.00
24	T	n-Hexane	0.3153	0.2976	5.6	107	0.00
25	T	Diisopropyl ether	0.8747	0.8580	1.9	130	0.00
26	T	Vinyl Acetate	0.2445	0.2988	-22.2	123	0.00
27	P	1,1-Dichloroethane	0.4957	0.5154	-4.0	128	0.00
28	T	Ethyl-Tert-Butyl ether	0.8127	0.7709	5.1	122	0.00
29	T	2-Butanone	0.0658	0.0645	2.0	121	0.00
30	T	Propionitrile	0.0199	0.0203	-1.8	135	0.00
31	T	2,2-Dichloropropane	0.4614	0.4389	4.9	104	0.00
32	T	cis-1,2-Dichloroethene	0.2806	0.3041	-8.4	128	0.00
33	C	Chloroform	0.5380	0.5166	4.0	119	0.00
34	T	1-Bromopropane	0.0487	0.0499	-2.4	122	0.00
35	T	Bromochloromethane	0.1612	0.1735	-7.6	133	0.00
36	T	Tetrahydrofuran	0.0415	0.0400	3.8	130	0.00
37	S	Dibromofluoromethane	0.2911	0.2962	-1.8	132	0.00
38	T	1,1,1-Trichloroethane	0.5502	0.4972	9.6	111	0.00
39	T	Cyclohexane	0.4265	0.4021	5.7	119	0.00
40	T	1,1-Dichloropropene	0.3957	0.3982	-0.6	125	0.00
41	T	Carbon Tetrachloride	0.5188	0.4619	11.0	108	-0.01
42	T	Tert-Amyl-Methyl ether	0.6261	0.5945	5.1	128	0.00
43	S	1,2-Dichloroethane-d4	0.3365	0.2884	14.3	111	-0.01
44	T	Heptane	0.0000	0.0000	0.0	117	0.00
45	T	1,2-Dichloroethane	0.4151	0.3429	17.4	102	0.00
46	T	Benzene	0.9987	1.0489	-5.0	137	0.00
47	T	Trichloroethene	0.2784	0.2996	-7.6	135	0.00
48	T	Methylcyclohexane	0.3444	0.3470	-0.8	123	0.00
49	C	1,2-Dichloropropane	0.2615	0.2754	-5.4	137	0.00
50	T	1,4-Dioxane	0.0011	0.0013	-16.2	134	-0.01
51	T	Bromodichloromethane	0.4118	0.3828	7.1	115	0.00
52	T	Dibromomethane	0.1406	0.1375	2.2	124	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1034	0.1126	-8.9	131	0.00
54	T	4-Methyl-2-Pentanone	0.0575	0.0566	1.7	127	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\082813\11M94673.D Vial: 2
Acq On : 28 Aug 2013 15:55 Operator: FJB
Sample : WG442931-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD59677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Fri Aug 23 12:13:25 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4091	0.4226	-3.3	127	-0.01
56	T	Dimethyl Disulfide	0.2059	0.1904	7.5	114	-0.01
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	137	-0.01
58	S	Toluene-d8	1.2016	1.3302	-10.7	147	-0.01
59	C	Toluene	1.3892	1.4644	-5.4	137	-0.01
60	T	Ethyl Methacrylate	0.2582	0.2608	-1.0	123	0.00
61	T	Paraldehyde	0.0000	0.0000	0.0	0#	-12.25#
62	T	trans-1,3-Dichloropropene	0.4784	0.4827	-0.9	118	-0.01
63	T	1,1,2-Trichloroethane	0.2214	0.2369	-7.0	135	0.00
64	T	2-Hexanone	0.1382	0.1261	8.8	117	-0.01
65	T	1,3-Dichloropropane	0.4128	0.4178	-1.2	130	-0.01
66	T	Tetrachloroethene	0.3154	0.3326	-5.5	133	-0.01
67	T	Dibromochloromethane	0.3562	0.3464	2.8	119	0.00
68	T	1,2-Dibromoethane	0.2352	0.2481	-5.5	128	-0.01
69	T	1-Chlorohexane	0.3903	0.4061	-4.0	124	0.00
70	P	Chlorobenzene	0.9430	0.9899	-5.0	135	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3941	1.5	124	0.00
72	C	Ethylbenzene	0.5100	0.5424	-6.4	133	0.00
73	T	m-,p-Xylene	0.5943	0.6473	-8.9	136	0.00
74	T	o-Xylene	0.5941	0.6547	-10.2	138	-0.01
75	T	Styrene	0.9541	1.0861	-13.8	136	-0.01
76	P	Bromoform	0.2229	0.2194	1.6	122	-0.01
77	T	Isopropylbenzene	1.5101	1.6463	-9.0	130	-0.01
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	136	-0.01
79	P	1,1,2,2-Tetrachloroethane	0.4081	0.4578	-12.2	134	0.00
80	S	p-Bromofluorobenzene	0.9146	0.9638	-5.4	136	-0.01
81	T	1,2,3-Trichloropropane	0.1573	0.1523	3.2	120	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1588	0.1417	10.8	99	-0.01
83	T	n-Propylbenzene	3.2508	3.4597	-6.4	127	0.00
84	T	Bromobenzene	0.7694	0.8203	-6.6	132	-0.01
85	T	1,3,5-Trimethylbenzene	2.4103	2.6114	-8.3	126	-0.01
86	T	2-Chlorotoluene	2.1416	2.3147	-8.1	136	0.00
87	T	4-Chlorotoluene	2.2249	2.0500	7.9	111	-0.01
88	T	a-Methylstyrene	1.1964	1.2353	-3.2	126	-0.01
89	T	tert-Butylbenzene	0.4725	0.5421	-14.7	139	-0.01
90	T	1,2,4-Trimethylbenzene	2.5152	2.6746	-6.3	122	0.00
91	T	sec-Butylbenzene	2.7635	3.0358	-9.9	126	-0.01
92	T	p-Isopropyltoluene	2.3946	2.6537	-10.8	129	-0.01
93	T	1,3-Dichlorobenzene	1.4460	1.5557	-7.6	134	-0.01
94	T	1,4-Dichlorobenzene	1.4934	1.5585	-4.4	133	-0.01
95	T	n-Butylbenzene	2.0887	2.2515	-7.8	125	-0.01
96	T	1,2-Dichlorobenzene	1.3108	1.4031	-7.0	132	-0.01
97	T	1,2-Dibromo-3-Chloropropane	0.0954	0.0862	9.7	109	-0.01
98	T	1,2,4-Trichlorobenzene	0.9640	1.0285	-6.7	124	0.00
99	T	Hexachlorobutadiene	0.4172	0.4073	2.4	115	-0.01
100	T	Naphthalene	1.5612	1.7202	-10.2	123	-0.01
101	T	1,2,3-Trichlorobenzene	0.8446	0.8784	-4.0	122	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M94673.D 8260WT.M Wed Aug 28 16:18:16 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\082813\11M94673.D Vial: 2
Acq On : 28 Aug 2013 15:55 Operator: FJB
Sample : WG442931-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD59677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Fri Aug 23 12:13:25 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	139	-0.01
2	T	Dichlorodifluoromethane	50.0000	48.2936	3.4	106	0.00
3	P	Chloromethane	50.0000	37.8289	24.3	92	0.00
4	C	Vinyl Chloride	50.0000	47.3938	5.2	118	0.00
5	T	1,3-Butadiene	50.0000	39.8756	20.2	94	0.00
6	T	Bromomethane	50.0000	46.7713	6.5	129	0.00
7	T	Chloroethane	50.0000	53.2828	-6.6	125	0.00
8	T	Trichlorofluoromethane	50.0000	42.2993	15.4	102	0.01
9	T	Diethyl ether	100.0000	95.1865	4.8	122	0.00
10	T	Isoprene	50.0000	50.4098	-0.8	115	0.00
11	T	Acrolein	50.0000	42.5790	14.8	111	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	48.2042	3.6	120	0.01
13	T	Acetone	50.0000	38.7484	22.5	99	0.00
14	C	1,1-Dichloroethene	50.0000	45.9246	8.2	112	0.00
15	T	Tert-Butyl Alcohol	200.0000	171.8690	14.1	112	0.00
16	T	Dimethyl Sulfide	50.0000	48.6777	2.6	114	0.00
17	T	Iodomethane	50.0000	39.8599	20.3	93	0.00
18	T	Methyl acetate	50.0000	44.0100	12.0	113	0.00
19	T	Methylene Chloride	50.0000	51.3143	-2.6	129	0.01
20	T	Carbon Disulfide	50.0000	47.1844	5.6	111	0.01
21	T	Acrylonitrile	50.0000	54.2531	-8.5	126	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.3658	1.3	115	0.00
23	T	trans-1,2-Dichloroethene	50.0000	56.1421	-12.3	132	0.00
24	T	n-Hexane	50.0000	47.1893	5.6	107	0.00
25	T	Diisopropyl ether	100.0000	98.0992	1.9	130	0.00
26	T	Vinyl Acetate	50.0000	50.3213	-0.6	123	0.00
27	P	1,1-Dichloroethane	50.0000	51.9786	-4.0	128	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	94.8551	5.1	122	0.00
29	T	2-Butanone	50.0000	49.0044	2.0	121	0.00
30	T	Propionitrile	100.0000	101.7842	-1.8	135	0.00
31	T	2,2-Dichloropropane	50.0000	42.7046	14.6	104	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.2039	-8.4	128	0.00
33	C	Chloroform	50.0000	48.0073	4.0	119	0.00
34	T	1-Bromopropane	50.0000	46.6013	6.8	122	0.00
35	T	Bromochloromethane	50.0000	53.8118	-7.6	133	0.00
36	T	Tetrahydrofuran	100.0000	96.1871	3.8	130	0.00
37	S	Dibromofluoromethane	25.0000	25.4391	-1.8	132	0.00
38	T	1,1,1-Trichloroethane	50.0000	45.1894	9.6	111	0.00
39	T	Cyclohexane	50.0000	47.1340	5.7	119	0.00
40	T	1,1-Dichloropropene	50.0000	50.3159	-0.6	125	0.00
41	T	Carbon Tetrachloride	50.0000	44.5124	11.0	108	-0.01
42	T	Tert-Amyl-Methyl ether	100.0000	94.9508	5.0	128	0.00
43	S	1,2-Dichloroethane-d4	25.0000	21.4304	14.3	111	-0.01
44	T	Heptane	-1.0000	0.0000	0.0	117	0.00
45	T	1,2-Dichloroethane	50.0000	41.3017	17.4	102	0.00
46	T	Benzene	50.0000	52.5106	-5.0	137	0.00
47	T	Trichloroethene	50.0000	53.8099	-7.6	135	0.00
48	T	Methylcyclohexane	50.0000	50.3794	-0.8	123	0.00
49	C	1,2-Dichloropropane	50.0000	52.6767	-5.4	137	0.00
50	T	1,4-Dioxane	200.0000	210.2739	-5.1	134	-0.01
51	T	Bromodichloromethane	50.0000	46.4723	7.1	115	0.00
52	T	Dibromomethane	50.0000	48.8963	2.2	124	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	50.3510	-0.7	131	0.00
54	T	4-Methyl-2-Pentanone	50.0000	49.1302	1.7	127	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\082813\11M94673.D Vial: 2
Acq On : 28 Aug 2013 15:55 Operator: FJB
Sample : WG442931-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD59677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Fri Aug 23 12:13:25 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.6577	-3.3	127	-0.01
56	T	Dimethyl Disulfide	50.0000	46.2371	7.5	114	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	137	-0.01
58	S	Toluene-d8	25.0000	27.6740	-10.7	147	-0.01
59	C	Toluene	50.0000	52.7072	-5.4	137	-0.01
60	T	Ethyl Methacrylate	50.0000	45.6643	8.7	123	0.00
61	T	Paraldehyde	-1.0000	0.0000	0.0	0	-12.25#
62	T	trans-1,3-Dichloropropene	50.0000	50.4499	-0.9	118	-0.01
63	T	1,1,2-Trichloroethane	50.0000	53.5067	-7.0	135	0.00
64	T	2-Hexanone	50.0000	45.6227	8.8	117	-0.01
65	T	1,3-Dichloropropane	50.0000	50.6081	-1.2	130	-0.01
66	T	Tetrachloroethene	50.0000	52.7267	-5.5	133	-0.01
67	T	Dibromochloromethane	50.0000	48.6221	2.8	119	0.00
68	T	1,2-Dibromoethane	50.0000	52.7269	-5.5	128	-0.01
69	T	1-Chlorohexane	50.0000	47.7818	4.4	124	0.00
70	P	Chlorobenzene	50.0000	52.4874	-5.0	135	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.2579	1.5	124	0.00
72	C	Ethylbenzene	50.0000	53.1776	-6.4	133	0.00
73	T	m-,p-Xylene	100.0000	108.9227	-8.9	136	0.00
74	T	o-Xylene	50.0000	55.1048	-10.2	138	-0.01
75	T	Styrene	50.0000	56.9183	-13.8	136	-0.01
76	P	Bromoform	50.0000	49.2186	1.6	122	-0.01
77	T	Isopropylbenzene	50.0000	54.5093	-9.0	130	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	136	-0.01
79	P	1,1,2,2-Tetrachloroethane	50.0000	56.0868	-12.2	134	0.00
80	S	p-Bromofluorobenzene	25.0000	26.3446	-5.4	136	-0.01
81	T	1,2,3-Trichloropropane	50.0000	48.3868	3.2	120	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	36.2744	27.5#	99	-0.01
83	T	n-Propylbenzene	50.0000	53.2121	-6.4	127	0.00
84	T	Bromobenzene	50.0000	53.3020	-6.6	132	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	54.1724	-8.3	126	-0.01
86	T	2-Chlorotoluene	50.0000	54.0422	-8.1	136	0.00
87	T	4-Chlorotoluene	50.0000	46.0700	7.9	111	-0.01
88	T	a-Methylstyrene	50.0000	51.6227	-3.2	126	-0.01
89	T	tert-Butylbenzene	50.0000	57.3655	-14.7	139	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	53.1677	-6.3	122	0.00
91	T	sec-Butylbenzene	50.0000	54.9257	-9.9	126	-0.01
92	T	p-Isopropyltoluene	50.0000	55.4100	-10.8	129	-0.01
93	T	1,3-Dichlorobenzene	50.0000	53.7952	-7.6	134	-0.01
94	T	1,4-Dichlorobenzene	50.0000	52.1785	-4.4	133	-0.01
95	T	n-Butylbenzene	50.0000	53.8952	-7.8	125	-0.01
96	T	1,2-Dichlorobenzene	50.0000	53.5193	-7.0	132	-0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	45.1570	9.7	109	-0.01
98	T	1,2,4-Trichlorobenzene	50.0000	53.3444	-6.7	124	0.00
99	T	Hexachlorobutadiene	50.0000	48.8080	2.4	115	-0.01
100	T	Naphthalene	50.0000	55.0938	-10.2	123	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	52.0012	-4.0	122	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M94673.D 8260WT.M Wed Aug 28 16:18:18 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082913\6M119426.D Vial: 3
Acq On : 29 Aug 2013 7:40 Operator: FJB
Sample : WG443008-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD59749 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 08:03:30 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	705399	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.68	117	501962	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.23	152	260159	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.01	111	199850	26.9968 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.00%		
43) 1,2-Dichloroethane-d4	9.74	65	158733	25.3063 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.24%		
58) Toluene-d8	12.48	98	720969	26.7892 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 107.16%		
80) p-Bromofluorobenzene	16.46	95	234335	23.6824 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.72%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.58	85	174513	26.6899 ug/L	98
3) Chloromethane	2.94	50	439659	45.4165 ug/L	100
4) Vinyl Chloride	3.12	62	442439	57.5795 ug/L	99
5) 1,3-Butadiene	3.16	54	373898	81.9503 ug/L	96
6) Bromomethane	3.86	94	172584	39.3937 ug/L	98
7) Chloroethane	4.00	64	301868	47.6956 ug/L	98
8) Trichlorofluoromethane	4.46	101	682030	54.7599 ug/L	100
9) Diethyl ether	4.98	59	465485	96.9529 ug/L	97
10) Isoprene	5.01	67	511018	46.8916 ug/L	96
11) Acrolein	5.20	56	9425	80.5092 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	5.22	101	403259	57.6861 ug/L	100
13) Acetone	5.32	43	51789	42.3765 ug/L	98
14) 1,1-Dichloroethene	5.53	61	710186	48.9049 ug/L	94
15) Tert-Butyl Alcohol	5.67	59	27101	104.7012 ug/L	96
16) Dimethyl Sulfide	5.80	62	313438	40.6316 ug/L	96
17) Iodomethane	6.05	142	255269	38.1750 ug/L	98
18) Methyl acetate	6.10	43	129804	30.9166 ug/L	99
19) Methylene Chloride	6.35	84	358935	50.2067 ug/L	89
20) Carbon Disulfide	6.36	76	1056262	44.6445 ug/L	100
21) Acrylonitrile	6.55	53	73598	44.7291 ug/L	99
22) Methyl Tert Butyl Ether	6.60	73	546415	45.8313 ug/L	97
23) trans-1,2-Dichloroethene	6.84	96	427399	53.5261 ug/L	89
24) n-Hexane	6.94	57	533229	41.4204 ug/L	97
25) Diisopropyl ether	7.34	45	3126744	92.7409 ug/L	99
26) Vinyl Acetate	7.51	43	571668	60.3428 ug/L	98
27) 1,1-Dichloroethane	7.51	63	826160	50.0092 ug/L	100
28) Ethyl-Tert-Butyl ether	7.97	59	1972361	90.9264 ug/L	99
29) 2-Butanone	8.15	43	72428	38.9864 ug/L	98
30) Propionitrile	8.28	54	37182	71.2795 ug/L	99
31) 2,2-Dichloropropane	8.38	77	646592	51.5982 ug/L	94
32) cis-1,2-Dichloroethene	8.45	96	441276	53.5053 ug/L	90
33) Chloroform	8.69	83	701065	51.5582 ug/L	98
34) 1-Bromopropane	8.83	122	74291	48.6118 ug/L	97
35) Bromochloromethane	8.94	130	226251	52.9229 ug/L	100
36) Tetrahydrofuran	8.97	42	89907	72.7246 ug/L	95
38) 1,1,1-Trichloroethane	9.28	97	692335	53.5173 ug/L	97
39) Cyclohexane	9.31	56	742048	40.7109 ug/L	96
40) 1,1-Dichloropropene	9.51	75	559049	51.2743 ug/L	94
41) Tert-Amyl-Methyl ether	9.67	73	1181230	90.9197 ug/L	100
42) Carbon Tetrachloride	9.66	117	668535	57.2893 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M119426.D 8260WTR.M Thu Aug 29 08:03:30 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082913\6M119426.D Vial: 3
Acq On : 29 Aug 2013 7:40 Operator: FJB
Sample : WG443008-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD59749 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 08:03:30 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.87	62	413073	48.5564 ug/L	99
46)	Benzene	9.90	78	1501070	50.4419 ug/L	96
47)	Trichloroethene	10.78	130	446539	53.3009 ug/L	96
48)	Methylcyclohexane	10.87	83	464805	42.8955 ug/L	92
49)	1,2-Dichloropropane	11.02	63	409557	48.0938 ug/L	97
50)	1,4-Dioxane	11.37	88	3814	158.9210 ug/L	89
51)	Bromodichloromethane	11.36	83	465637	50.6136 ug/L	100
52)	Dibromomethane	11.45	93	153212	53.0210 ug/L	99
53)	2-Chloroethyl Vinyl Ether	11.77	63	127245	45.5664 ug/L	99
54)	4-Methyl-2-Pentanone	11.81	58	58156	41.7779 ug/L	96
55)	cis-1,3-Dichloropropene	12.13	75	508996	50.0264 ug/L	98
56)	Dimethyl Disulfide	12.40	79	216599	44.4457 ug/L	96
59)	Toluene	12.60	91	1635910	49.8183 ug/L	99
60)	Ethyl Methacrylate	12.79	69	186824	39.6145 ug/L	88
62)	trans-1,3-Dichloropropene	12.83	75	395838	49.1324 ug/L	98
63)	1,1,2-Trichloroethane	13.07	97	199206	47.9907 ug/L	99
64)	2-Hexanone	13.05	43	104306	36.2678 ug/L	98
65)	1,3-Dichloropropane	13.43	76	336584	46.9924 ug/L	87
66)	Tetrachloroethene	13.55	166	481853	52.0445 ug/L	99
67)	Dibromochloromethane	13.84	129	307966	53.1085 ug/L	100
68)	1,2-Dibromoethane	14.14	107	199817	48.2829 ug/L	98
69)	1-Chlorohexane	14.31	91	434322	43.4342 ug/L	92
70)	Chlorobenzene	14.73	112	1049994	50.1342 ug/L	94
71)	1,1,1,2-Tetrachloroethane	14.79	131	399139	53.4522 ug/L	100
72)	Ethylbenzene	14.79	106	607512	50.3370 ug/L	100
73)	m-,p-Xylene	14.90	106	1485928	103.5354 ug/L	98
74)	o-Xylene	15.55	106	697569	49.9390 ug/L	97
75)	Styrene	15.60	104	1091050	50.2714 ug/L	98
76)	Bromoform	16.13	173	173445	57.6085 ug/L	99
77)	Isopropylbenzene	16.07	105	1814865	50.3222 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.32	83	187744	45.5312 ug/L	99
81)	1,2,3-Trichloropropane	16.54	110	55512	46.4612 ug/L	92
82)	trans-1,4-Dichloro-2-Buten	16.63	53	65324	40.8304 ug/L	91
83)	n-Propylbenzene	16.66	91	2064364	47.8639 ug/L	100
84)	Bromobenzene	16.76	156	441079	50.6919 ug/L	99
85)	1,3,5-Trimethylbenzene	16.90	105	1483469	46.7888 ug/L	100
86)	2-Chlorotoluene	16.95	91	1355444	44.7317 ug/L	95
87)	4-Chlorotoluene	17.02	91	1251699	48.1567 ug/L	98
88)	a-Methylstyrene	17.36	118	705392	42.9195 ug/L	95
89)	tert-Butylbenzene	17.43	134	316907	49.0891 ug/L	98
90)	1,2,4-Trimethylbenzene	17.49	105	1499183	47.2373 ug/L	100
91)	sec-Butylbenzene	17.75	105	1764094	46.9803 ug/L	99
92)	p-Isopropyltoluene	17.95	119	1517677	47.0537 ug/L	99
93)	1,3-Dichlorobenzene	18.12	146	878625	49.3503 ug/L	97
94)	1,4-Dichlorobenzene	18.28	146	856789	49.3657 ug/L	97
95)	n-Butylbenzene	18.57	91	1245849	45.6865 ug/L	100
96)	1,2-Dichlorobenzene	18.85	146	716312	48.7225 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	20.03	75	25458	40.4489 ug/L	98
98)	1,2,4-Trichlorobenzene	21.37	180	435248	41.7251 ug/L	99
99)	Hexachlorobutadiene	21.57	225	227224	43.5306 ug/L	99
100)	Naphthalene	21.78	128	544948	37.0108 ug/L	99
101)	1,2,3-Trichlorobenzene	22.15	180	328313	38.8935 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M119426.D 8260WTR.M Thu Aug 29 08:03:30 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082913\6M119426.D Vial: 3
Acq On : 29 Aug 2013 7:40 Operator: FJB
Sample : WG443008-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD59749 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 8:03 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

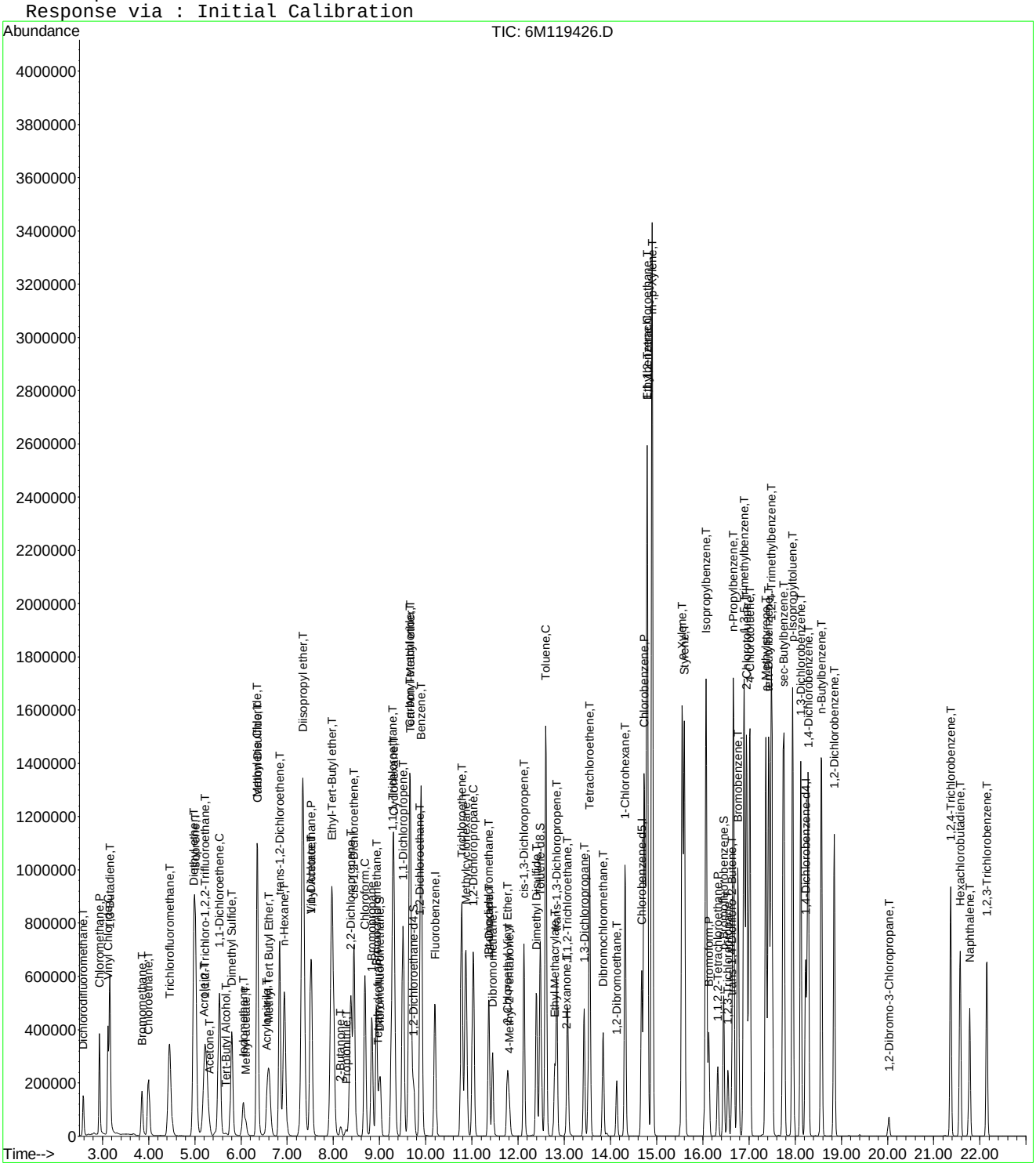

Continuing Calibration Area and RT check

Instrument: HPMS6
Initial cal date: 26 Jul 2013 18:41
CCV date: 29 Aug 2013 7:40
CCV Filename: 6M119426.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	849520	10.21	585843	14.69	292007	18.24
CCV	705399	10.21	501962	14.68	260159	18.23

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\082913\6M119426.D Vial: 3
Acq On : 29 Aug 2013 7:40 Operator: FJB
Sample : WG443008-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD59749 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	83	0.00
2	T	Dichlorodifluoromethane	0.2317	0.1237	46.6#	40#	0.00
3	P	Chloromethane	0.3431	0.3116	9.2	78	0.00
4	C	Vinyl Chloride	0.2723	0.3136	-15.2	91	0.00
5	T	1,3-Butadiene	0.1687	0.2650	-57.1#	109	0.00
6	T	Bromomethane	0.1356	0.1223	9.8	66	0.00
7	T	Chloroethane	0.2243	0.2140	4.6	76	0.00
8	T	Trichlorofluoromethane	0.4414	0.4834	-9.5	86	0.00
9	T	Diethyl ether	0.1702	0.1650	3.1	78	-0.02
10	T	Isoprene	0.3862	0.3622	6.2	74	0.00
11	T	Acrolein	0.0042	0.0067	-61.0#	125	-0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2478	0.2858	-15.4	90	-0.02
13	T	Acetone	0.0463	0.0367	20.7#	76	-0.02
14	C	1,1-Dichloroethene	0.5147	0.5034	2.2	78	0.00
15	T	Tert-Butyl Alcohol	0.0092	0.0048	47.7#	42#	0.00
16	T	Dimethyl Sulfide	0.2734	0.2222	18.7	64	-0.02
17	T	Iodomethane	0.1908	0.1809	5.2	66	0.00
18	T	Methyl acetate	0.1591	0.0920	42.2#	52	-0.02
19	T	Methylene Chloride	0.2534	0.2544	-0.4	84	-0.02
20	T	Carbon Disulfide	0.8385	0.7487	10.7	72	0.00
21	T	Acrylonitrile	0.0583	0.0522	10.5	70	-0.02
22	T	Methyl Tert Butyl Ether	0.4225	0.3873	8.3	72	0.00
23	T	trans-1,2-Dichloroethene	0.2830	0.3030	-7.1	86	0.00
24	T	n-Hexane	0.4562	0.3780	17.2	67	-0.02
25	T	Diisopropyl ether	1.1949	1.1082	7.3	75	0.00
26	T	Vinyl Acetate	0.3358	0.4052	-20.7#	95	-0.02
27	P	1,1-Dichloroethane	0.5855	0.5856	-0.0	81	-0.02
28	T	Ethyl-Tert-Butyl ether	0.7688	0.6990	9.1	74	-0.02
29	T	2-Butanone	0.0658	0.0513	22.0#	66	-0.02
30	T	Propionitrile	0.0185	0.0132	28.7#	58	0.00
31	T	2,2-Dichloropropane	0.4441	0.4583	-3.2	83	-0.02
32	T	cis-1,2-Dichloroethene	0.2923	0.3128	-7.0	85	-0.02
33	C	Chloroform	0.4819	0.4969	-3.1	84	0.00
34		1-Bromopropane	0.0542	0.0527	2.8	76	-0.02
35	T	Bromochloromethane	0.1515	0.1604	-5.8	85	0.00
36	T	Tetrahydrofuran	0.0438	0.0319	27.3#	61	-0.02
37	S	Dibromofluoromethane	0.2624	0.2833	-8.0	93	0.00
38	T	1,1,1-Trichloroethane	0.4585	0.4907	-7.0	86	-0.02
39	T	Cyclohexane	0.6460	0.5260	18.6	67	0.00
40	T	1,1-Dichloropropene	0.3864	0.3963	-2.5	81	0.00
41	T	Tert-Amyl-Methyl ether	0.4605	0.4186	9.1	74	0.00
42	T	Carbon Tetrachloride	0.4136	0.4739	-14.6	90	-0.02
43	S	1,2-Dichloroethane-d4	0.2223	0.2250	-1.2	83	0.00
44		Heptane	0.0000	0.0000	0.0	71	-0.02
45	T	1,2-Dichloroethane	0.3015	0.2928	2.9	76	-0.02
46	T	Benzene	1.0547	1.0640	-0.9	82	-0.02
47	T	Trichloroethene	0.2969	0.3165	-6.6	85	0.00
48	T	Methylcyclohexane	0.3840	0.3295	14.2	70	0.00
49	C	1,2-Dichloropropane	0.3018	0.2903	3.8	76	-0.02
50	T	1,4-Dioxane	0.0008	0.0007	16.0	62	-0.02
51	T	Bromodichloromethane	0.3261	0.3301	-1.2	82	-0.02
52	T	Dibromomethane	0.1024	0.1086	-6.0	81	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0990	0.0902	8.9	74	0.00
54	T	4-Methyl-2-Pentanone	0.0493	0.0412	16.4	67	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\082913\6M119426.D Vial: 3
Acq On : 29 Aug 2013 7:40 Operator: FJB
Sample : WG443008-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD59749 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3606	0.3608	-0.1	78	0.00
56	T	Dimethyl Disulfide	0.1727	0.1535	11.1	70	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	86	0.00
58	S	Toluene-d8	1.3404	1.4363	-7.2	93	0.00
59	C	Toluene	1.6355	1.6295	0.4	82	-0.02
60	T	Ethyl Methacrylate	0.2349	0.1861	20.8#	63	0.00
61		Paraldehyde	0.0000	0.0000	0.0	82	-0.02
62	T	trans-1,3-Dichloropropene	0.4013	0.3943	1.7	78	-0.02
63	T	1,1,2-Trichloroethane	0.2067	0.1984	4.0	79	-0.02
64	T	2-Hexanone	0.1432	0.1039	27.5#	60	0.00
65	T	1,3-Dichloropropane	0.3567	0.3353	6.0	77	0.00
66	T	Tetrachloroethene	0.4611	0.4800	-4.1	86	0.00
67	T	Dibromochloromethane	0.2888	0.3068	-6.2	85	0.00
68	T	1,2-Dibromoethane	0.2061	0.1990	3.4	78	0.00
69	T	1-Chlorohexane	0.4980	0.4326	13.1	72	-0.02
70	P	Chlorobenzene	1.0431	1.0459	-0.3	82	-0.02
71	T	1,1,1,2-Tetrachloroethane	0.3719	0.3976	-6.9	87	0.00
72	C	Ethylbenzene	0.6011	0.6051	-0.7	82	-0.02
73	T	m-,p-Xylene	0.7148	0.7401	-3.5	84	0.00
74	T	o-Xylene	0.6957	0.6948	0.1	82	-0.02
75	T	Styrene	1.0809	1.0868	-0.5	80	0.00
76	P	Bromoform	0.1500	0.1728	-15.2	91	0.00
77	T	Isopropylbenzene	1.7962	1.8078	-0.6	82	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	89	0.00
79	P	1,1,2,2-Tetrachloroethane	0.3962	0.3608	8.9	79	0.00
80	S	p-Bromofluorobenzene	0.9508	0.9007	5.3	87	0.00
81	T	1,2,3-Trichloropropane	0.1148	0.1067	7.1	78	-0.02
82	T	trans-1,4-Dichloro-2-Butene	0.1537	0.1255	18.3	68	0.00
83	T	n-Propylbenzene	4.1446	3.9675	4.3	82	-0.02
84	T	Bromobenzene	0.8361	0.8477	-1.4	84	0.00
85	T	1,3,5-Trimethylbenzene	3.0468	2.8511	6.4	81	0.00
86	T	2-Chlorotoluene	2.9118	2.6050	10.5	78	-0.02
87	T	4-Chlorotoluene	2.4977	2.4056	3.7	85	0.00
88	T	a-Methylstyrene	1.5793	1.3557	14.2	73	0.00
89	T	tert-Butylbenzene	0.6204	0.6091	1.8	83	-0.02
90	T	1,2,4-Trimethylbenzene	3.0498	2.8813	5.5	82	0.00
91	T	sec-Butylbenzene	3.6083	3.3904	6.0	80	0.00
92	T	p-Isopropyltoluene	3.0995	2.9168	5.9	80	0.00
93	T	1,3-Dichlorobenzene	1.7109	1.6886	1.3	85	0.00
94	T	1,4-Dichlorobenzene	1.6678	1.6467	1.3	84	0.00
95	T	n-Butylbenzene	2.6205	2.3944	8.6	79	0.00
96	T	1,2-Dichlorobenzene	1.4128	1.3767	2.6	83	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0605	0.0489	19.1	68	0.00
98	T	1,2,4-Trichlorobenzene	1.0024	0.8365	16.6	71	0.00
99	T	Hexachlorobutadiene	0.5016	0.4367	12.9	76	0.00
100	T	Naphthalene	1.4149	1.0473	26.0#	63	0.00
101	T	1,2,3-Trichlorobenzene	0.8112	0.6310	22.2#	67	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M119426.D 8260WTR.M Thu Aug 29 08:32:31 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\082913\6M119426.D Vial: 3
Acq On : 29 Aug 2013 7:40 Operator: FJB
Sample : WG443008-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD59749 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	83	0.00
2	T	Dichlorodifluoromethane	50.0000	26.6899	46.6#	40	0.00
3	P	Chloromethane	50.0000	45.4165	9.2	78	0.00
4	C	Vinyl Chloride	50.0000	57.5795	-15.2	91	0.00
5	T	1,3-Butadiene	50.0000	81.9503	-63.9#	109	0.00
6	T	Bromomethane	50.0000	39.3937	21.2#	66	0.00
7	T	Chloroethane	50.0000	47.6956	4.6	76	0.00
8	T	Trichlorofluoromethane	50.0000	54.7599	-9.5	86	0.00
9	T	Diethyl ether	100.0000	96.9529	3.0	78	-0.02
10	T	Isoprene	50.0000	46.8916	6.2	74	0.00
11	T	Acrolein	50.0000	80.5092	-61.0#	125	-0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	57.6861	-15.4	90	-0.02
13	T	Acetone	50.0000	42.3765	15.2	76	-0.02
14	C	1,1-Dichloroethene	50.0000	48.9049	2.2	78	0.00
15	T	Tert-Butyl Alcohol	200.0000	104.7012	47.6#	42	0.00
16	T	Dimethyl Sulfide	50.0000	40.6316	18.7	64	-0.02
17	T	Iodomethane	50.0000	38.1750	23.7#	66	0.00
18	T	Methyl acetate	50.0000	30.9166	38.2#	52	-0.02
19	T	Methylene Chloride	50.0000	50.2067	-0.4	84	-0.02
20	T	Carbon Disulfide	50.0000	44.6445	10.7	72	0.00
21	T	Acrylonitrile	50.0000	44.7291	10.5	70	-0.02
22	T	Methyl Tert Butyl Ether	50.0000	45.8313	8.3	72	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.5261	-7.1	86	0.00
24	T	n-Hexane	50.0000	41.4204	17.2	67	-0.02
25	T	Diisopropyl ether	100.0000	92.7409	7.3	75	0.00
26	T	Vinyl Acetate	50.0000	60.3428	-20.7#	95	-0.02
27	P	1,1-Dichloroethane	50.0000	50.0091	-0.0	81	-0.02
28	T	Ethyl-Tert-Butyl ether	100.0000	90.9264	9.1	74	-0.02
29	T	2-Butanone	50.0000	38.9864	22.0#	66	-0.02
30	T	Propionitrile	100.0000	71.2795	28.7#	58	0.00
31	T	2,2-Dichloropropane	50.0000	51.5982	-3.2	83	-0.02
32	T	cis-1,2-Dichloroethene	50.0000	53.5053	-7.0	85	-0.02
33	C	Chloroform	50.0000	51.5582	-3.1	84	0.00
34		1-Bromopropane	50.0000	48.6118	2.8	76	-0.02
35	T	Bromochloromethane	50.0000	52.9229	-5.8	85	0.00
36	T	Tetrahydrofuran	100.0000	72.7246	27.3#	61	-0.02
37	S	Dibromofluoromethane	25.0000	26.9968	-8.0	93	0.00
38	T	1,1,1-Trichloroethane	50.0000	53.5173	-7.0	86	-0.02
39	T	Cyclohexane	50.0000	40.7109	18.6	67	0.00
40	T	1,1-Dichloropropene	50.0000	51.2743	-2.5	81	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	90.9197	9.1	74	0.00
42	T	Carbon Tetrachloride	50.0000	57.2893	-14.6	90	-0.02
43	S	1,2-Dichloroethane-d4	25.0000	25.3063	-1.2	83	0.00
44		Heptane	-1.0000	0.0000	0.0	71	-0.02
45	T	1,2-Dichloroethane	50.0000	48.5564	2.9	76	-0.02
46	T	Benzene	50.0000	50.4419	-0.9	82	-0.02
47	T	Trichloroethene	50.0000	53.3009	-6.6	85	0.00
48	T	Methylcyclohexane	50.0000	42.8955	14.2	70	0.00
49	C	1,2-Dichloropropane	50.0000	48.0938	3.8	76	-0.02
50	T	1,4-Dioxane	200.0000	158.9210	20.5#	62	-0.02
51	T	Bromodichloromethane	50.0000	50.6135	-1.2	82	-0.02
52	T	Dibromomethane	50.0000	53.0210	-6.0	81	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.5664	8.9	74	0.00
54	T	4-Methyl-2-Pentanone	50.0000	41.7779	16.4	67	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\082913\6M119426.D Vial: 3
Acq On : 29 Aug 2013 7:40 Operator: FJB
Sample : WG443008-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD59749 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	50.0264	-0.1	78	0.00
56	T	Dimethyl Disulfide	50.0000	44.4457	11.1	70	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	86	0.00
58	S	Toluene-d8	25.0000	26.7892	-7.2	93	0.00
59	C	Toluene	50.0000	49.8183	0.4	82	-0.02
60	T	Ethyl Methacrylate	50.0000	39.6145	20.8#	63	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	82	-0.02
62	T	trans-1,3-Dichloropropene	50.0000	49.1324	1.7	78	-0.02
63	T	1,1,2-Trichloroethane	50.0000	47.9907	4.0	79	-0.02
64	T	2-Hexanone	50.0000	36.2678	27.5#	60	0.00
65	T	1,3-Dichloropropane	50.0000	46.9924	6.0	77	0.00
66	T	Tetrachloroethene	50.0000	52.0445	-4.1	86	0.00
67	T	Dibromochloromethane	50.0000	53.1085	-6.2	85	0.00
68	T	1,2-Dibromoethane	50.0000	48.2830	3.4	78	0.00
69	T	1-Chlorohexane	50.0000	43.4342	13.1	72	-0.02
70	P	Chlorobenzene	50.0000	50.1342	-0.3	82	-0.02
71	T	1,1,1,2-Tetrachloroethane	50.0000	53.4522	-6.9	87	0.00
72	C	Ethylbenzene	50.0000	50.3370	-0.7	82	-0.02
73	T	m-,p-Xylene	100.0000	103.5354	-3.5	84	0.00
74	T	o-Xylene	50.0000	49.9390	0.1	82	-0.02
75	T	Styrene	50.0000	50.2714	-0.5	80	0.00
76	P	Bromoform	50.0000	57.6085	-15.2	91	0.00
77	T	Isopropylbenzene	50.0000	50.3222	-0.6	82	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	89	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	45.5312	8.9	79	0.00
80	S	p-Bromofluorobenzene	25.0000	23.6824	5.3	87	0.00
81	T	1,2,3-Trichloropropane	50.0000	46.4612	7.1	78	-0.02
82	T	trans-1,4-Dichloro-2-Butene	50.0000	40.8304	18.3	68	0.00
83	T	n-Propylbenzene	50.0000	47.8639	4.3	82	-0.02
84	T	Bromobenzene	50.0000	50.6919	-1.4	84	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	46.7888	6.4	81	0.00
86	T	2-Chlorotoluene	50.0000	44.7317	10.5	78	-0.02
87	T	4-Chlorotoluene	50.0000	48.1567	3.7	85	0.00
88	T	a-Methylstyrene	50.0000	42.9195	14.2	73	0.00
89	T	tert-Butylbenzene	50.0000	49.0891	1.8	83	-0.02
90	T	1,2,4-Trimethylbenzene	50.0000	47.2373	5.5	82	0.00
91	T	sec-Butylbenzene	50.0000	46.9803	6.0	80	0.00
92	T	p-Isopropyltoluene	50.0000	47.0537	5.9	80	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.3503	1.3	85	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.3657	1.3	84	0.00
95	T	n-Butylbenzene	50.0000	45.6865	8.6	79	0.00
96	T	1,2-Dichlorobenzene	50.0000	48.7225	2.6	83	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	40.4489	19.1	68	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	41.7251	16.5	71	0.00
99	T	Hexachlorobutadiene	50.0000	43.5306	12.9	76	0.00
100	T	Naphthalene	50.0000	37.0108	26.0#	63	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	38.8935	22.2#	67	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M119426.D 8260WTR.M Thu Aug 29 08:32:32 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082913\6M119454.D Vial: 2
Acq On : 29 Aug 2013 22:06 Operator: adc
Sample : WG443167-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD59810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 22:30:06 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.20	96	840682	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.68	117	611327	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.23	152	325044	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.01	111	240269	27.2338 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.92%		
43) 1,2-Dichloroethane-d4	9.74	65	194092	25.9641 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.84%		
58) Toluene-d8	12.49	98	858665	26.1978 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.80%		
80) p-Bromofluorobenzene	16.45	95	283863	22.9612 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.84%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	193798	24.8698 ug/L	100
3) Chloromethane	2.93	50	506958	43.9413 ug/L	100
4) Vinyl Chloride	3.12	62	544726	59.4833 ug/L	100
5) 1,3-Butadiene	3.16	54	746576	162.7200 ug/L	97
6) Bromomethane	3.85	94	212460	40.6488 ug/L	100
7) Chloroethane	4.00	64	349876	46.3851 ug/L	99
8) Trichlorofluoromethane	4.46	101	778669	52.4584 ug/L	100
9) Diethyl ether	4.99	59	599070	104.6974 ug/L	97
10) Isoprene	5.01	67	746201	57.4536 ug/L	97
11) Acrolein	5.21	56	11813	84.6696 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	5.23	101	457857	54.9566 ug/L	99
13) Acetone	5.32	43	78214	54.5087 ug/L	92
14) 1,1-Dichloroethene	5.53	61	834606	48.2241 ug/L	94
15) Tert-Butyl Alcohol	5.68	59	31788	103.0464 ug/L	98
16) Dimethyl Sulfide	5.80	62	482865	52.5219 ug/L	96
17) Iodomethane	6.05	142	361085	44.9119 ug/L	96
18) Methyl acetate	6.11	43	200421	40.4276 ug/L	98
19) Methylene Chloride	6.35	84	430548	50.5325 ug/L	90
20) Carbon Disulfide	6.35	76	1584109	56.1804 ug/L	100
21) Acrylonitrile	6.56	53	93341	47.5992 ug/L	99
22) Methyl Tert Butyl Ether	6.60	73	681873	47.9895 ug/L	97
23) trans-1,2-Dichloroethene	6.83	96	508970	53.4845 ug/L	88
24) n-Hexane	6.95	57	741909	48.3564 ug/L	97
25) Diisopropyl ether	7.34	45	3897925	97.0098 ug/L	99
26) Vinyl Acetate	7.52	43	666642	59.0442 ug/L	99
27) 1,1-Dichloroethane	7.52	63	975926	49.5684 ug/L	100
28) Ethyl-Tert-Butyl ether	7.98	59	2472992	95.6598 ug/L	98
29) 2-Butanone	8.16	43	93227	42.1067 ug/L	97
30) Propionitrile	8.27	54	49559	79.7182 ug/L	97
31) 2,2-Dichloropropane	8.38	77	752154	50.3633 ug/L	95
32) cis-1,2-Dichloroethene	8.46	96	527095	53.6264 ug/L	89
33) Chloroform	8.68	83	833175	51.4136 ug/L	98
34) 1-Bromopropane	8.84	122	113403	62.2634 ug/L	97
35) Bromochloromethane	8.94	130	273688	53.7171 ug/L	99
36) Tetrahydrofuran	8.98	42	116783	79.2630 ug/L	95
38) 1,1,1-Trichloroethane	9.29	97	810014	52.5380 ug/L	98
39) Cyclohexane	9.31	56	1035435	47.6656 ug/L	96
40) 1,1-Dichloropropene	9.51	75	652604	50.2230 ug/L	95
41) Tert-Amyl-Methyl ether	9.66	73	1484015	95.8440 ug/L	99
42) Carbon Tetrachloride	9.66	117	781732	56.2096 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M119454.D 8260WTR.M Thu Aug 29 22:30:07 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082913\6M119454.D Vial: 2
Acq On : 29 Aug 2013 22:06 Operator: adc
Sample : WG443167-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD59810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 22:30:06 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	9.88	62	506276	49.9356	ug/L	98
46)	Benzene	9.91	78	1791809	50.5225	ug/L	96
47)	Trichloroethene	10.78	130	525230	52.6051	ug/L	97
48)	Methylcyclohexane	10.87	83	638107	49.4125	ug/L	92
49)	1,2-Dichloropropane	11.03	63	492927	48.5692	ug/L	97
50)	1,4-Dioxane	11.37	88	2369	88.2854	ug/L	68
51)	Bromodichloromethane	11.37	83	563951	51.4356	ug/L	100
52)	Dibromomethane	11.45	93	188935	54.8619	ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.77	63	152352	45.7778	ug/L	100
54)	4-Methyl-2-Pentanone	11.81	58	74274	44.7705	ug/L	98
55)	cis-1,3-Dichloropropene	12.12	75	613071	50.5590	ug/L	98
56)	Dimethyl Disulfide	12.40	79	318453	54.8304	ug/L	97
59)	Toluene	12.60	91	1946321	48.6677	ug/L	100
60)	Ethyl Methacrylate	12.79	69	276471	48.1358	ug/L	89
62)	trans-1,3-Dichloropropene	12.84	75	483143	49.2406	ug/L	98
63)	1,1,2-Trichloroethane	13.07	97	249752	49.4038	ug/L	99
64)	2-Hexanone	13.05	43	130673	37.3074	ug/L	96
65)	1,3-Dichloropropane	13.43	76	417694	47.8839	ug/L	86
66)	Tetrachloroethene	13.54	166	575137	51.0069	ug/L	99
67)	Dibromochloromethane	13.84	129	381504	54.0204	ug/L	100
68)	1,2-Dibromoethane	14.14	107	248366	49.2777	ug/L	99
69)	1-Chlorohexane	14.32	91	607585	49.8913	ug/L	93
70)	Chlorobenzene	14.74	112	1267287	49.6843	ug/L	96
71)	1,1,1,2-Tetrachloroethane	14.79	131	486631	53.5104	ug/L	100
72)	Ethylbenzene	14.80	106	737990	50.2088	ug/L	98
73)	m-,p-Xylene	14.90	106	1778752	101.7663	ug/L	99
74)	o-Xylene	15.56	106	841951	49.4922	ug/L	97
75)	Styrene	15.61	104	1343248	50.8194	ug/L	98
76)	Bromoform	16.13	173	217960	59.4427	ug/L	100
77)	Isopropylbenzene	16.07	105	2178395	49.5963	ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.32	83	243476	47.2603	ug/L	99
81)	1,2,3-Trichloropropane	16.55	110	71831	48.1185	ug/L	89
82)	trans-1,4-Dichloro-2-Buten	16.63	53	92649	46.3498	ug/L	91
83)	n-Propylbenzene	16.67	91	2473316	45.8985	ug/L	100
84)	Bromobenzene	16.76	156	549041	50.5037	ug/L	100
85)	1,3,5-Trimethylbenzene	16.89	105	1784218	45.0410	ug/L	99
86)	2-Chlorotoluene	16.95	91	1719099	45.4079	ug/L	98
87)	4-Chlorotoluene	17.02	91	1466012	45.1430	ug/L	98
88)	a-Methylstyrene	17.36	118	1014317	49.3963	ug/L	100
89)	tert-Butylbenzene	17.43	134	386554	47.9248	ug/L	98
90)	1,2,4-Trimethylbenzene	17.49	105	1834737	46.2701	ug/L	100
91)	sec-Butylbenzene	17.75	105	2119655	45.1810	ug/L	98
92)	p-Isopropyltoluene	17.94	119	1842874	45.7306	ug/L	99
93)	1,3-Dichlorobenzene	18.12	146	1095616	49.2540	ug/L	97
94)	1,4-Dichlorobenzene	18.28	146	1074659	49.5585	ug/L	97
95)	n-Butylbenzene	18.57	91	1516850	44.5207	ug/L	99
96)	1,2-Dichlorobenzene	18.84	146	903773	49.2021	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	20.03	75	33058	42.0393	ug/L	91
98)	1,2,4-Trichlorobenzene	21.37	180	571515	43.8516	ug/L	100
99)	Hexachlorobutadiene	21.57	225	262749	40.2882	ug/L	99
100)	Naphthalene	21.77	128	757332	41.1677	ug/L	99
101)	1,2,3-Trichlorobenzene	22.15	180	445221	42.2145	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082913\6M119454.D Vial: 2
Acq On : 29 Aug 2013 22:06 Operator: adc
Sample : WG443167-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD59810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 22:30 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

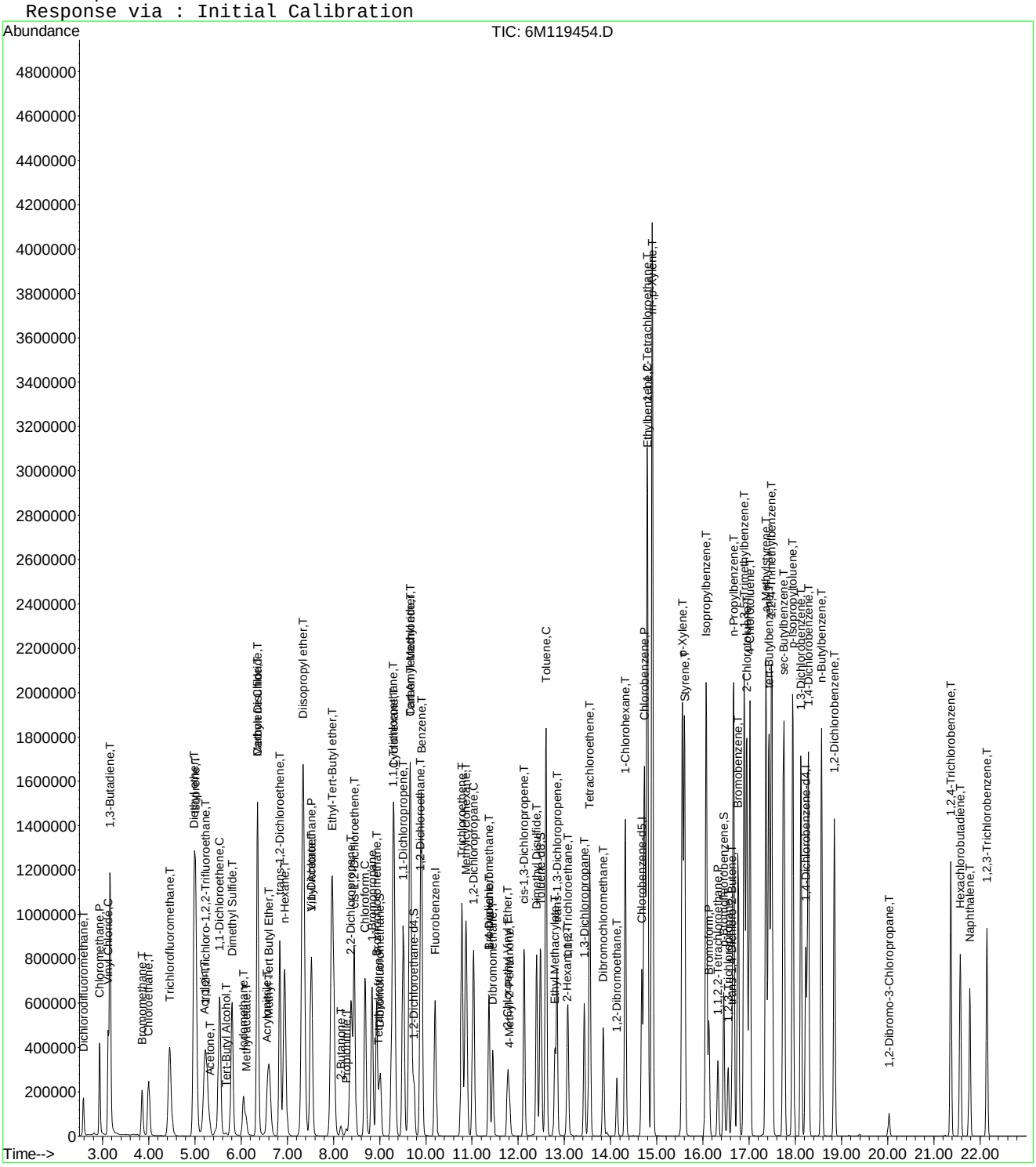

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\082913\6M119454.D Vial: 2
Acq On : 29 Aug 2013 22:06 Operator: adc
Sample : WG443167-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD59810 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	99	0.00
2	T	Dichlorodifluoromethane	0.2317	0.1153	50.3#	45#	0.00
3	P	Chloromethane	0.3431	0.3015	12.1	90	0.00
4	C	Vinyl Chloride	0.2723	0.3240	-19.0	112	0.00
5	T	1,3-Butadiene	0.1687	0.4440	-163.3#	218#	0.00
6	T	Bromomethane	0.1356	0.1264	6.8	81	0.00
7	T	Chloroethane	0.2243	0.2081	7.2	89	0.00
8	T	Trichlorofluoromethane	0.4414	0.4631	-4.9	98	0.00
9	T	Diethyl ether	0.1702	0.1782	-4.7	101	0.00
10	T	Isoprene	0.3862	0.4438	-14.9	108	0.00
11	T	Acrolein	0.0042	0.0070	-69.4#	157	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2478	0.2723	-9.9	103	0.00
13	T	Acetone	0.0463	0.0465	-0.5	114	0.00
14	C	1,1-Dichloroethene	0.5147	0.4964	3.6	92	0.00
15	T	Tert-Butyl Alcohol	0.0092	0.0047	48.4#	50#	0.00
16	T	Dimethyl Sulfide	0.2734	0.2872	-5.0	99	0.00
17	T	Iodomethane	0.1908	0.2148	-12.6	93	0.00
18	T	Methyl acetate	0.1591	0.1192	25.1#	80	0.00
19	T	Methylene Chloride	0.2534	0.2561	-1.1	101	0.00
20	T	Carbon Disulfide	0.8385	0.9422	-12.4	108	0.00
21	T	Acrylonitrile	0.0583	0.0555	4.8	89	0.00
22	T	Methyl Tert Butyl Ether	0.4225	0.4056	4.0	89	0.00
23	T	trans-1,2-Dichloroethene	0.2830	0.3027	-7.0	103	0.00
24	T	n-Hexane	0.4562	0.4412	3.3	94	0.00
25	T	Diisopropyl ether	1.1949	1.1592	3.0	94	0.00
26	T	Vinyl Acetate	0.3358	0.3965	-18.1	111	0.00
27	P	1,1-Dichloroethane	0.5855	0.5804	0.9	95	0.00
28	T	Ethyl-Tert-Butyl ether	0.7688	0.7354	4.3	93	0.00
29	T	2-Butanone	0.0658	0.0554	15.8	85	0.00
30	T	Propionitrile	0.0185	0.0147	20.3#	78	0.00
31	T	2,2-Dichloropropane	0.4441	0.4474	-0.7	97	-0.02
32	T	cis-1,2-Dichloroethene	0.2923	0.3135	-7.3	102	0.00
33	C	Chloroform	0.4819	0.4955	-2.8	100	0.00
34		1-Bromopropane	0.0542	0.0674	-24.5#	116	0.00
35	T	Bromochloromethane	0.1515	0.1628	-7.4	103	0.00
36	T	Tetrahydrofuran	0.0438	0.0347	20.7#	79	0.00
37	S	Dibromofluoromethane	0.2624	0.2858	-8.9	112	0.00
38	T	1,1,1-Trichloroethane	0.4585	0.4818	-5.1	100	0.00
39	T	Cyclohexane	0.6460	0.6158	4.7	93	0.00
40	T	1,1-Dichloropropene	0.3864	0.3881	-0.4	94	0.00
41	T	Tert-Amyl-Methyl ether	0.4605	0.4413	4.2	93	0.00
42	T	Carbon Tetrachloride	0.4136	0.4649	-12.4	106	0.00
43	S	1,2-Dichloroethane-d4	0.2223	0.2309	-3.9	102	0.00
44		Heptane	0.0000	0.0000	0.0	88	0.00
45	T	1,2-Dichloroethane	0.3015	0.3011	0.1	94	0.00
46	T	Benzene	1.0547	1.0657	-1.0	97	0.00
47	T	Trichloroethene	0.2969	0.3124	-5.2	99	0.00
48	T	Methylcyclohexane	0.3840	0.3795	1.2	96	0.00
49	C	1,2-Dichloropropane	0.3018	0.2932	2.9	92	0.00
50	T	1,4-Dioxane	0.0008	0.0004	56.8#	38#	-0.02
51	T	Bromodichloromethane	0.3261	0.3354	-2.9	99	0.00
52	T	Dibromomethane	0.1024	0.1124	-9.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0990	0.0906	8.4	88	0.00
54	T	4-Methyl-2-Pentanone	0.0493	0.0442	10.5	86	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\082913\6M119454.D Vial: 2
Acq On : 29 Aug 2013 22:06 Operator: adc
Sample : WG443167-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD59810 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3606	0.3646	-1.1	94	0.00
56	T	Dimethyl Disulfide	0.1727	0.1894	-9.7	102	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	104	0.00
58	S	Toluene-d8	1.3404	1.4046	-4.8	111	0.00
59	C	Toluene	1.6355	1.5919	2.7	98	0.00
60	T	Ethyl Methacrylate	0.2349	0.2261	3.7	93	0.00
61		Paraldehyde	0.0000	0.0000	0.0	99	0.00
62	T	trans-1,3-Dichloropropene	0.4013	0.3952	1.5	95	0.00
63	T	1,1,2-Trichloroethane	0.2067	0.2043	1.2	100	0.00
64	T	2-Hexanone	0.1432	0.1069	25.4#	75	0.00
65	T	1,3-Dichloropropane	0.3567	0.3416	4.2	95	0.00
66	T	Tetrachloroethene	0.4611	0.4704	-2.0	103	0.00
67	T	Dibromochloromethane	0.2888	0.3120	-8.0	105	0.00
68	T	1,2-Dibromoethane	0.2061	0.2031	1.4	98	0.00
69	T	1-Chlorohexane	0.4980	0.4969	0.2	101	0.00
70	P	Chlorobenzene	1.0431	1.0365	0.6	99	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3719	0.3980	-7.0	106	0.00
72	C	Ethylbenzene	0.6011	0.6036	-0.4	100	0.00
73	T	m-,p-Xylene	0.7148	0.7274	-1.8	100	0.00
74	T	o-Xylene	0.6957	0.6886	1.0	99	0.00
75	T	Styrene	1.0809	1.0986	-1.6	99	0.00
76	P	Bromoform	0.1500	0.1783	-18.9	115	0.00
77	T	Isopropylbenzene	1.7962	1.7817	0.8	98	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	111	0.00
79	P	1,1,2,2-Tetrachloroethane	0.3962	0.3745	5.5	102	0.00
80	S	p-Bromofluorobenzene	0.9508	0.8733	8.2	105	0.00
81	T	1,2,3-Trichloropropane	0.1148	0.1105	3.8	101	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1537	0.1425	7.3	97	0.00
83	T	n-Propylbenzene	4.1446	3.8046	8.2	98	0.00
84	T	Bromobenzene	0.8361	0.8446	-1.0	105	0.00
85	T	1,3,5-Trimethylbenzene	3.0468	2.7446	9.9	97	0.00
86	T	2-Chlorotoluene	2.9118	2.6444	9.2	99	0.00
87	T	4-Chlorotoluene	2.4977	2.2551	9.7	99	0.00
88	T	a-Methylstyrene	1.5793	1.5603	1.2	105	0.00
89	T	tert-Butylbenzene	0.6204	0.5946	4.2	101	0.00
90	T	1,2,4-Trimethylbenzene	3.0498	2.8223	7.5	100	0.00
91	T	sec-Butylbenzene	3.6083	3.2606	9.6	96	0.00
92	T	p-Isopropyltoluene	3.0995	2.8348	8.5	98	0.00
93	T	1,3-Dichlorobenzene	1.7109	1.6853	1.5	106	0.00
94	T	1,4-Dichlorobenzene	1.6678	1.6531	0.9	106	0.00
95	T	n-Butylbenzene	2.6205	2.3333	11.0	96	0.00
96	T	1,2-Dichlorobenzene	1.4128	1.3902	1.6	104	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0605	0.0508	15.9	88	0.00
98	T	1,2,4-Trichlorobenzene	1.0024	0.8791	12.3	94	0.00
99	T	Hexachlorobutadiene	0.5016	0.4042	19.4	88	0.00
100	T	Naphthalene	1.4149	1.1650	17.7	88	0.00
101	T	1,2,3-Trichlorobenzene	0.8112	0.6849	15.6	90	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M119454.D 8260WTR.M Thu Aug 29 22:32:14 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\082913\6M119454.D Vial: 2
Acq On : 29 Aug 2013 22:06 Operator: adc
Sample : WG443167-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD59810 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	99	0.00
2	T	Dichlorodifluoromethane	50.0000	24.8698	50.3#	45	0.00
3	P	Chloromethane	50.0000	43.9413	12.1	90	0.00
4	C	Vinyl Chloride	50.0000	59.4833	-19.0	112	0.00
5	T	1,3-Butadiene	50.0000	162.7200	-225.4#	218	0.00
6	T	Bromomethane	50.0000	40.6488	18.7	81	0.00
7	T	Chloroethane	50.0000	46.3851	7.2	89	0.00
8	T	Trichlorofluoromethane	50.0000	52.4584	-4.9	98	0.00
9	T	Diethyl ether	100.0000	104.6974	-4.7	101	0.00
10	T	Isoprene	50.0000	57.4536	-14.9	108	0.00
11	T	Acrolein	50.0000	84.6696	-69.3#	157	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.9566	-9.9	103	0.00
13	T	Acetone	50.0000	54.5087	-9.0	114	0.00
14	C	1,1-Dichloroethene	50.0000	48.2242	3.6	92	0.00
15	T	Tert-Butyl Alcohol	200.0000	103.0464	48.5#	50	0.00
16	T	Dimethyl Sulfide	50.0000	52.5219	-5.0	99	0.00
17	T	Iodomethane	50.0000	44.9119	10.2	93	0.00
18	T	Methyl acetate	50.0000	40.4277	19.1	80	0.00
19	T	Methylene Chloride	50.0000	50.5325	-1.1	101	0.00
20	T	Carbon Disulfide	50.0000	56.1804	-12.4	108	0.00
21	T	Acrylonitrile	50.0000	47.5992	4.8	89	0.00
22	T	Methyl Tert Butyl Ether	50.0000	47.9895	4.0	89	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.4845	-7.0	103	0.00
24	T	n-Hexane	50.0000	48.3564	3.3	94	0.00
25	T	Diisopropyl ether	100.0000	97.0098	3.0	94	0.00
26	T	Vinyl Acetate	50.0000	59.0442	-18.1	111	0.00
27	P	1,1-Dichloroethane	50.0000	49.5684	0.9	95	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	95.6598	4.3	93	0.00
29	T	2-Butanone	50.0000	42.1067	15.8	85	0.00
30	T	Propionitrile	100.0000	79.7182	20.3#	78	0.00
31	T	2,2-Dichloropropane	50.0000	50.3633	-0.7	97	-0.02
32	T	cis-1,2-Dichloroethene	50.0000	53.6264	-7.3	102	0.00
33	C	Chloroform	50.0000	51.4136	-2.8	100	0.00
34		1-Bromopropane	50.0000	62.2634	-24.5#	116	0.00
35	T	Bromochloromethane	50.0000	53.7171	-7.4	103	0.00
36	T	Tetrahydrofuran	100.0000	79.2630	20.7#	79	0.00
37	S	Dibromofluoromethane	25.0000	27.2338	-8.9	112	0.00
38	T	1,1,1-Trichloroethane	50.0000	52.5380	-5.1	100	0.00
39	T	Cyclohexane	50.0000	47.6656	4.7	93	0.00
40	T	1,1-Dichloropropene	50.0000	50.2230	-0.4	94	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	95.8440	4.2	93	0.00
42	T	Carbon Tetrachloride	50.0000	56.2096	-12.4	106	0.00
43	S	1,2-Dichloroethane-d4	25.0000	25.9641	-3.9	102	0.00
44		Heptane	-1.0000	0.0000	0.0	88	0.00
45	T	1,2-Dichloroethane	50.0000	49.9356	0.1	94	0.00
46	T	Benzene	50.0000	50.5225	-1.0	97	0.00
47	T	Trichloroethene	50.0000	52.6051	-5.2	99	0.00
48	T	Methylcyclohexane	50.0000	49.4125	1.2	96	0.00
49	C	1,2-Dichloropropane	50.0000	48.5692	2.9	92	0.00
50	T	1,4-Dioxane	200.0000	88.2854	55.9#	38	-0.02
51	T	Bromodichloromethane	50.0000	51.4356	-2.9	99	0.00
52	T	Dibromomethane	50.0000	54.8619	-9.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.7778	8.4	88	0.00
54	T	4-Methyl-2-Pentanone	50.0000	44.7705	10.5	86	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\082913\6M119454.D Vial: 2
Acq On : 29 Aug 2013 22:06 Operator: adc
Sample : WG443167-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD59810 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	50.5590	-1.1	94	0.00
56	T	Dimethyl Disulfide	50.0000	54.8304	-9.7	102	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	104	0.00
58	S	Toluene-d8	25.0000	26.1978	-4.8	111	0.00
59	C	Toluene	50.0000	48.6677	2.7	98	0.00
60	T	Ethyl Methacrylate	50.0000	48.1358	3.7	93	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	99	0.00
62	T	trans-1,3-Dichloropropene	50.0000	49.2406	1.5	95	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.4038	1.2	100	0.00
64	T	2-Hexanone	50.0000	37.3074	25.4#	75	0.00
65	T	1,3-Dichloropropane	50.0000	47.8839	4.2	95	0.00
66	T	Tetrachloroethene	50.0000	51.0069	-2.0	103	0.00
67	T	Dibromochloromethane	50.0000	54.0204	-8.0	105	0.00
68	T	1,2-Dibromoethane	50.0000	49.2777	1.4	98	0.00
69	T	1-Chlorohexane	50.0000	49.8913	0.2	101	0.00
70	P	Chlorobenzene	50.0000	49.6843	0.6	99	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	53.5104	-7.0	106	0.00
72	C	Ethylbenzene	50.0000	50.2088	-0.4	100	0.00
73	T	m-,p-Xylene	100.0000	101.7663	-1.8	100	0.00
74	T	o-Xylene	50.0000	49.4922	1.0	99	0.00
75	T	Styrene	50.0000	50.8194	-1.6	99	0.00
76	P	Bromoform	50.0000	59.4427	-18.9	115	0.00
77	T	Isopropylbenzene	50.0000	49.5963	0.8	98	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	111	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.2603	5.5	102	0.00
80	S	p-Bromofluorobenzene	25.0000	22.9612	8.2	105	0.00
81	T	1,2,3-Trichloropropane	50.0000	48.1185	3.8	101	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	46.3498	7.3	97	0.00
83	T	n-Propylbenzene	50.0000	45.8985	8.2	98	0.00
84	T	Bromobenzene	50.0000	50.5037	-1.0	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	45.0410	9.9	97	0.00
86	T	2-Chlorotoluene	50.0000	45.4079	9.2	99	0.00
87	T	4-Chlorotoluene	50.0000	45.1431	9.7	99	0.00
88	T	a-Methylstyrene	50.0000	49.3963	1.2	105	0.00
89	T	tert-Butylbenzene	50.0000	47.9248	4.2	101	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	46.2701	7.5	100	0.00
91	T	sec-Butylbenzene	50.0000	45.1810	9.6	96	0.00
92	T	p-Isopropyltoluene	50.0000	45.7306	8.5	98	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.2540	1.5	106	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.5585	0.9	106	0.00
95	T	n-Butylbenzene	50.0000	44.5207	11.0	96	0.00
96	T	1,2-Dichlorobenzene	50.0000	49.2021	1.6	104	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	42.0393	15.9	88	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	43.8516	12.3	94	0.00
99	T	Hexachlorobutadiene	50.0000	40.2882	19.4	88	0.00
100	T	Naphthalene	50.0000	41.1677	17.7	88	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	42.2145	15.6	90	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M119454.D 8260WTR.M Thu Aug 29 22:32:13 2013 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\061213\6M117459.D          Vial: 1
Acq On    : 12 Jun 2013  15:44                       Operator: ADC
Sample    : WG433881-01 50ng BFB                     Inst    : HPMS6
Misc      : 1,1 STD57627                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

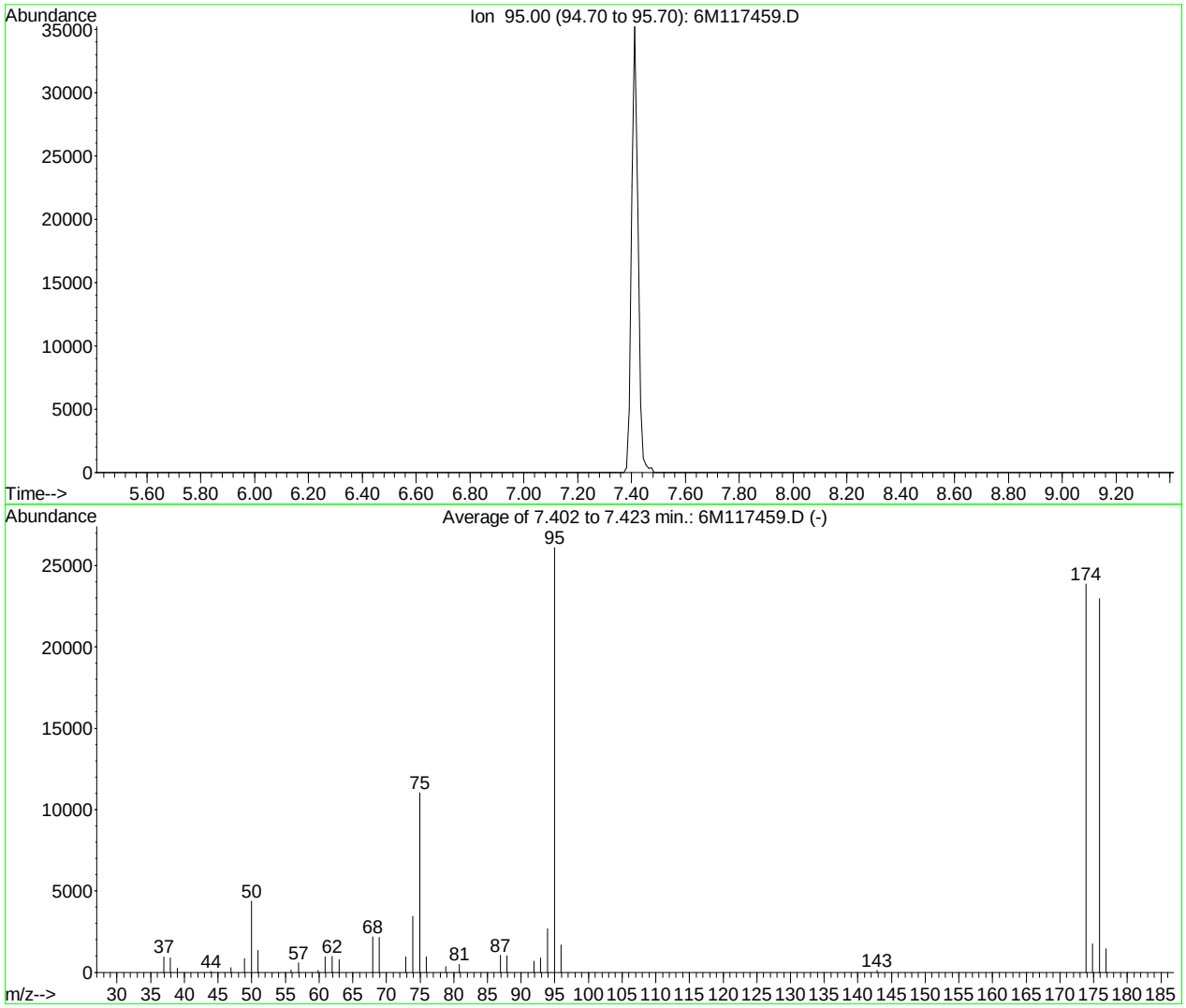

AutoFind: Scans 227, 228, 229; Background Corrected with Scan 222

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.8	4373	PASS
75	95	30	60	42.3	11034	PASS
95	95	100	100	100.0	26101	PASS
96	95	5	9	6.5	1685	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	91.4	23858	PASS
175	174	5	9	7.3	1739	PASS
176	174	95	101	96.3	22975	PASS
177	176	5	9	6.3	1455	PASS

6M117459.D BFB.M Thu Sep 05 09:55:33 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\070513\11M93287.D          Vial: 1
Acq On    :  5 Jul 2013  16:05                        Operator: FJB
Sample    : WG436576-01 BFB 50ng 8260                 Inst    : hpms11
Misc      : 1,1 STD58740                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

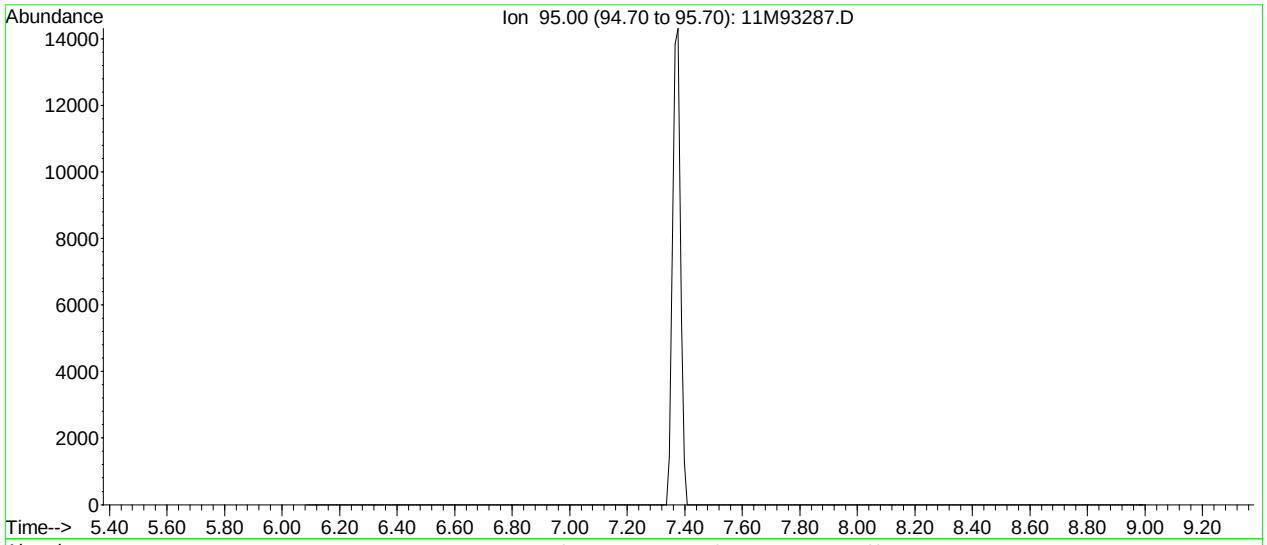

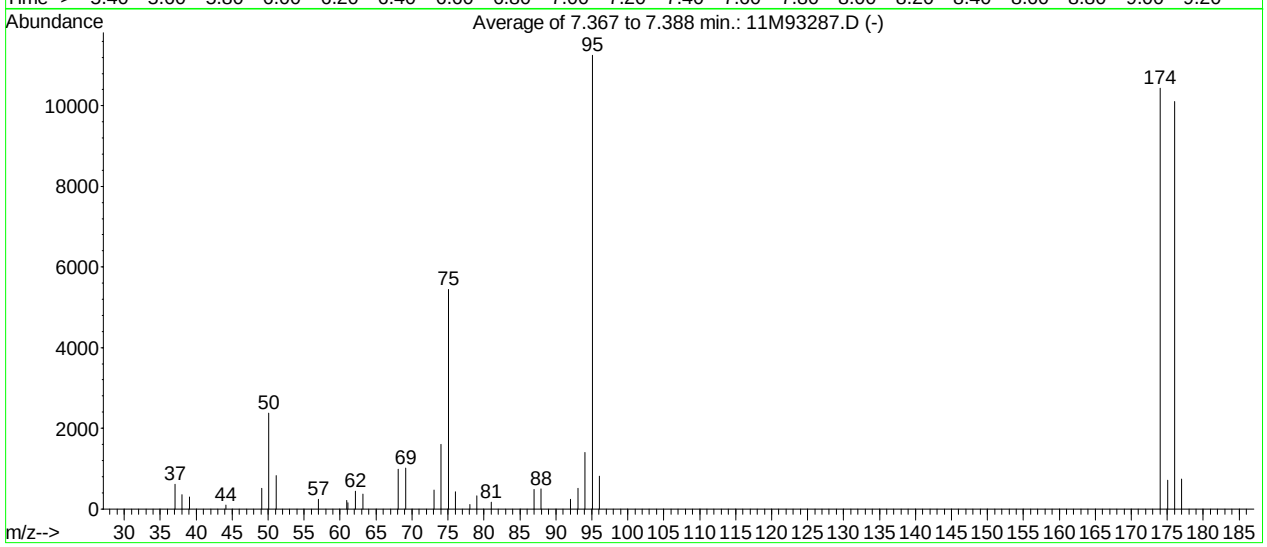

AutoFind: Scans 125, 126, 127; Background Corrected with Scan 120

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.2	2381	PASS
75	95	30	60	48.3	5438	PASS
95	95	100	100	100.0	11255	PASS
96	95	5	9	7.2	815	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	92.7	10439	PASS
175	174	5	9	6.9	716	PASS
176	174	95	101	96.7	10098	PASS
177	176	5	9	7.3	741	PASS

11M93287.D BFB.M Wed Jul 10 12:39:50 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\072613\6M118372.D          Vial: 1
Acq On    : 26 Jul 2013  14:44                        Operator: adc
Sample    : WG439230-01 BFB 50ng 8260                 Inst    : HPMS6
Misc      : 1,1 STD58740                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:OVLMSV01  07/26/13 - HPMS6
```

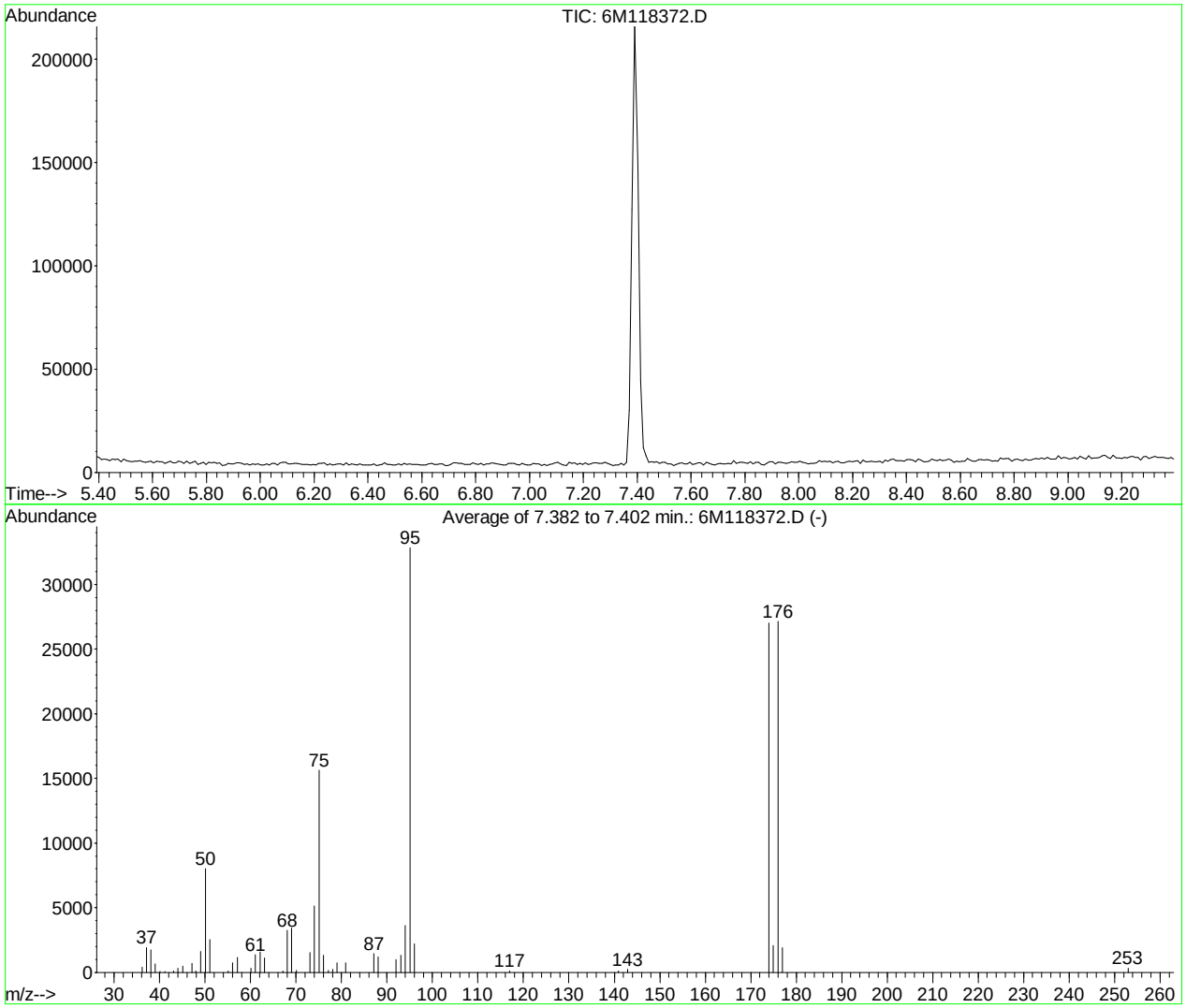

AutoFind: Scans 225, 226, 227; Background Corrected with Scan 220

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.5	8035	PASS
75	95	30	60	47.6	15647	PASS
95	95	100	100	100.0	32856	PASS
96	95	5	9	6.7	2209	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	82.3	27046	PASS
175	174	5	9	7.7	2074	PASS
176	174	95	101	100.4	27149	PASS
177	176	5	9	7.0	1895	PASS

6M118372.D 8260WTR.M Sat Jul 27 15:02:26 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\082113\11M94449.D          Vial: 2
Acq On    : 21 Aug 2013  15:00                       Operator: ADC
Sample    : WG442178-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD59350                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
```

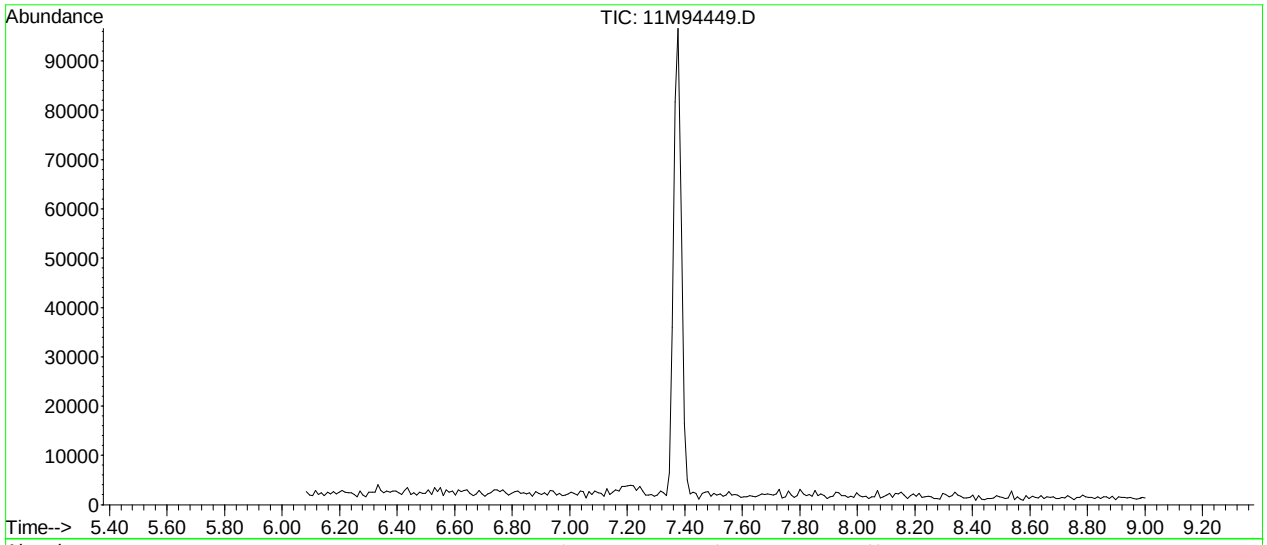

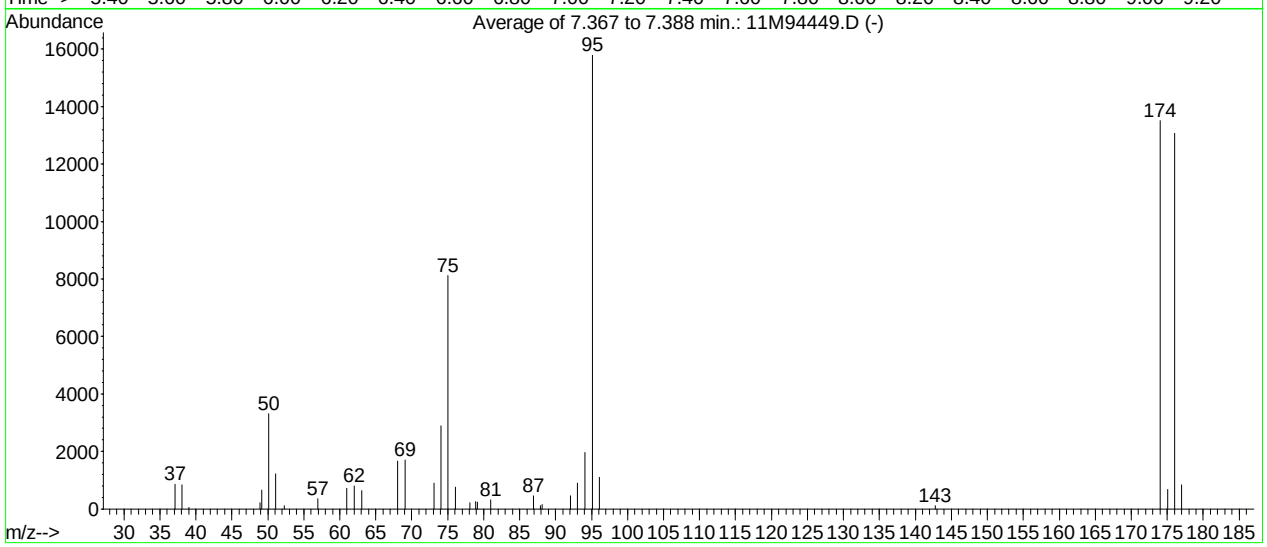

AutoFind: Scans 125, 126, 127; Background Corrected with Scan 120

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.0	3314	PASS
75	95	30	60	51.4	8124	PASS
95	95	100	100	100.0	15792	PASS
96	95	5	9	7.0	1106	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.5	13507	PASS
175	174	5	9	5.0	676	PASS
176	174	95	101	96.8	13081	PASS
177	176	5	9	6.5	845	PASS

11M94449.D 8260WT.M Thu Aug 22 08:15:42 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\082813\11M94672.D          Vial: 1
Acq On    : 28 Aug 2013  15:28                       Operator: FJB
Sample    : WG442931-01 BFB 50ng 8260                Inst    : hpms11
Misc      : 1,1 purged STD59350                      Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

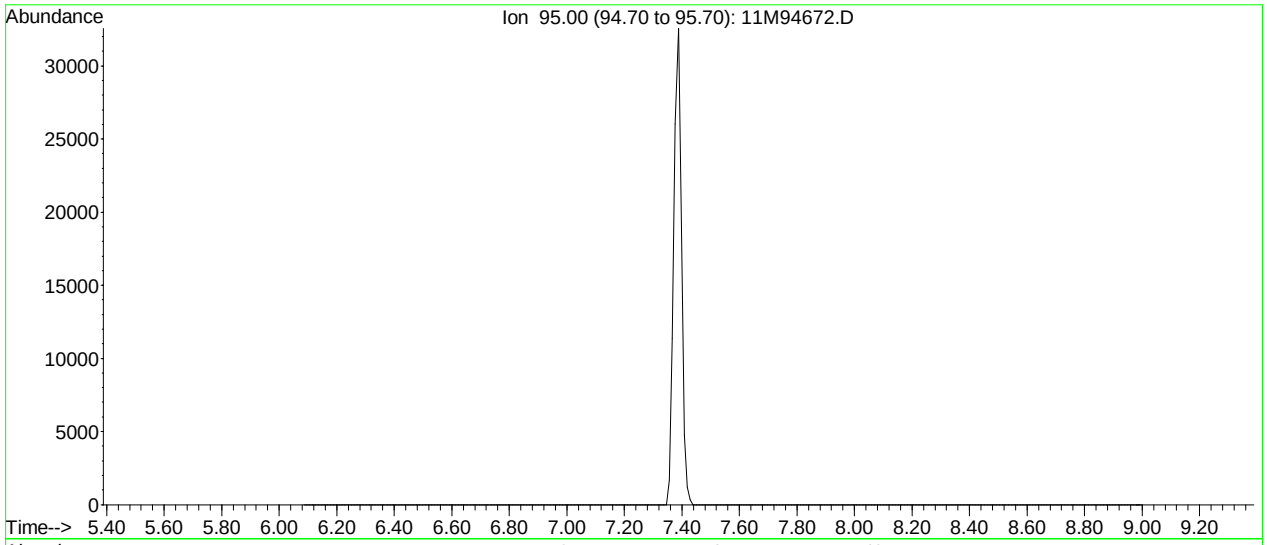

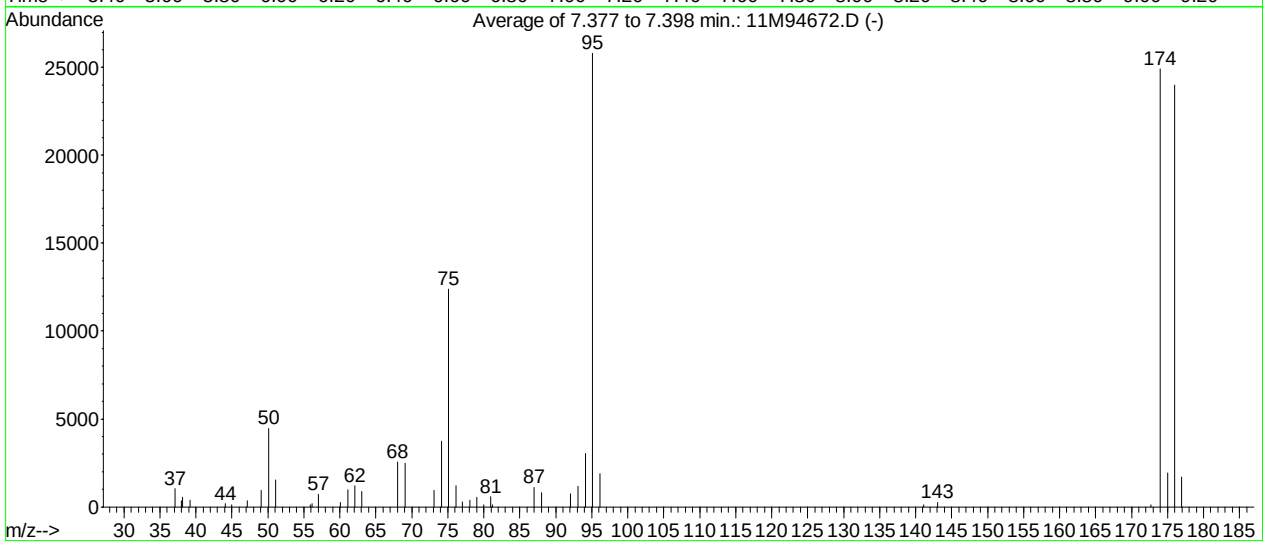

AutoFind: Scans 126, 127, 128; Background Corrected with Scan 121

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.3	4470	PASS
75	95	30	60	47.9	12370	PASS
95	95	100	100	100.0	25810	PASS
96	95	5	9	7.3	1886	PASS
173	174	0.00	2	0.4	103	PASS
174	95	50	100	96.5	24912	PASS
175	174	5	9	7.7	1917	PASS
176	174	95	101	96.3	24000	PASS
177	176	5	9	7.1	1711	PASS

11M94672.D BFB.M Wed Aug 28 16:18:07 2013

BFB

Data File : C:\MSDCHEM\1\DATA\082913\6M119424.D Vial: 1
Acq On : 29 Aug 2013 6:46 Operator: FJB
Sample : WG443008-01 BFB 50ng 8260 Inst : HPMS6
Misc : 1,1 STD59350 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

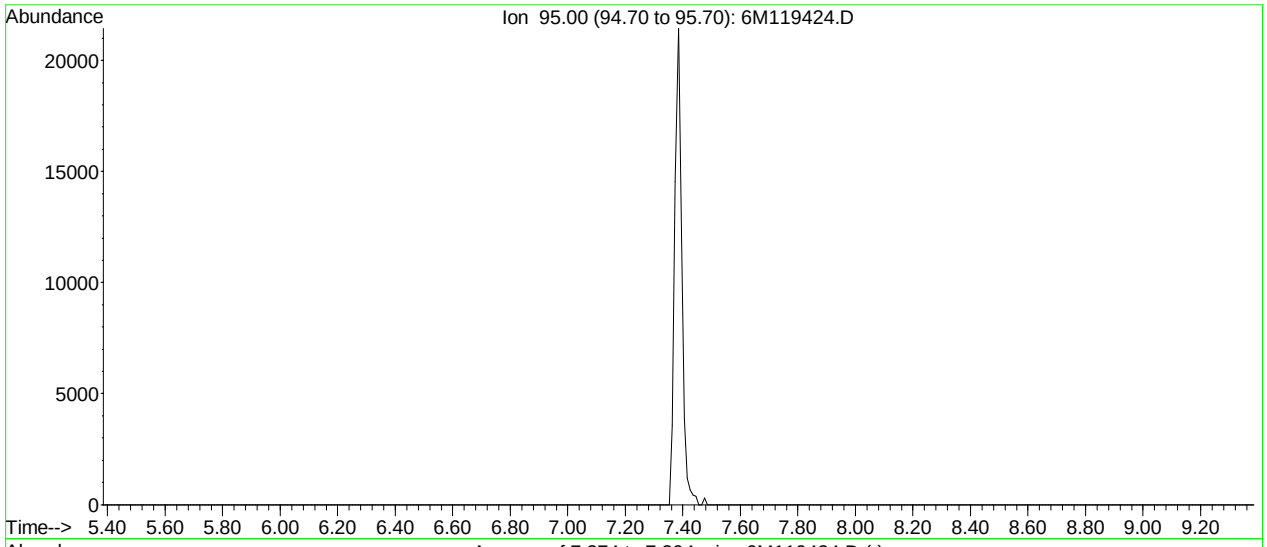

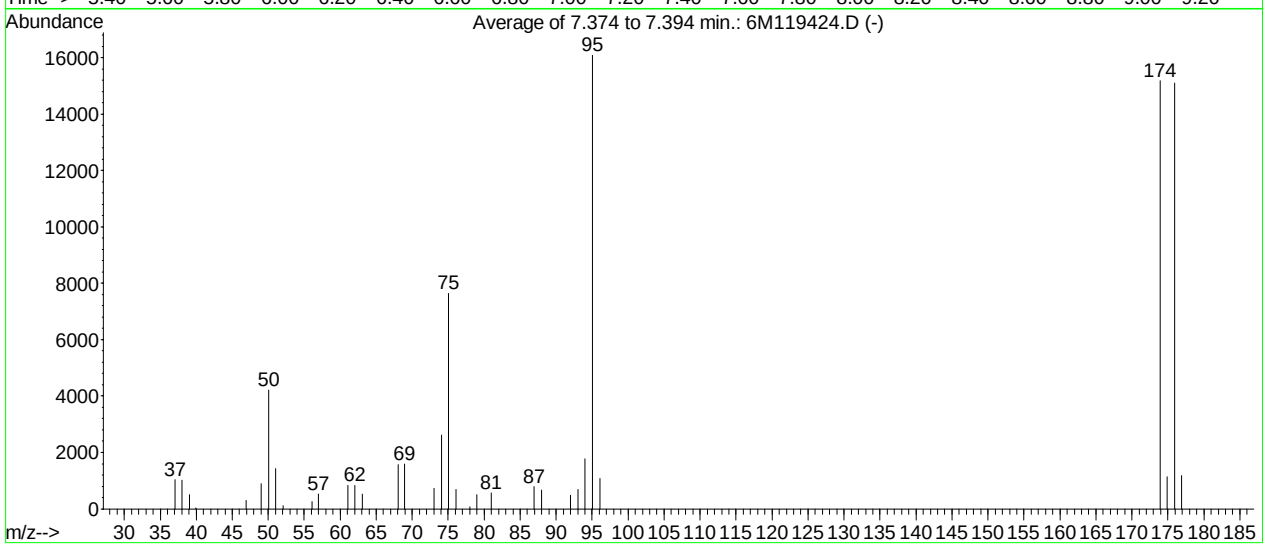

AutoFind: Scans 224, 225, 226; Background Corrected with Scan 220

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	26.1	4206	PASS
75	95	30	60	47.5	7642	PASS
95	95	100	100	100.0	16091	PASS
96	95	5	9	6.7	1080	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	94.3	15177	PASS
175	174	5	9	7.5	1134	PASS
176	174	95	101	99.5	15105	PASS
177	176	5	9	7.8	1175	PASS

6M119424.D BFB.M Thu Aug 29 08:32:17 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082813\11M94675.D Vial: 4
Acq On : 28 Aug 2013 16:58 Operator: FJB
Sample : WG442932-01 VBLK0828 BLANK 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 29 09:20:13 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Fri Aug 23 12:13:25 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.06	96	807400	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.68	117	616957	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.48	152	337502	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.08	111	232989	24.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.12%		
43) 1,2-Dichloroethane-d4	9.68	65	235015	21.6280 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.52%		
58) Toluene-d8	11.92	98	823639	27.7748 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 111.08%#		
80) p-Bromofluorobenzene	15.08	95	318350	25.7825 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.12%		

Target Compounds					Qvalue
3) Chloromethane	3.32	50	1893	Below Cal	87
4) Vinyl Chloride	3.55	62	192	Below Cal #	43
6) Bromomethane	4.35	94	854	0.7907 ug/L	76
13) Acetone	5.81	43	499	0.1887 ug/L #	52

(#) = qualifier out of range (m) = manual integration
11M94675.D 8260WT.M Thu Aug 29 09:20:13 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082813\11M94675.D Vial: 4
Acq On : 28 Aug 2013 16:58 Operator: FJB
Sample : WG442932-01 VBLK0828 BLANK 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 29 9:20 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Fri Aug 23 12:13:25 2013
Response via : Initial Calibration

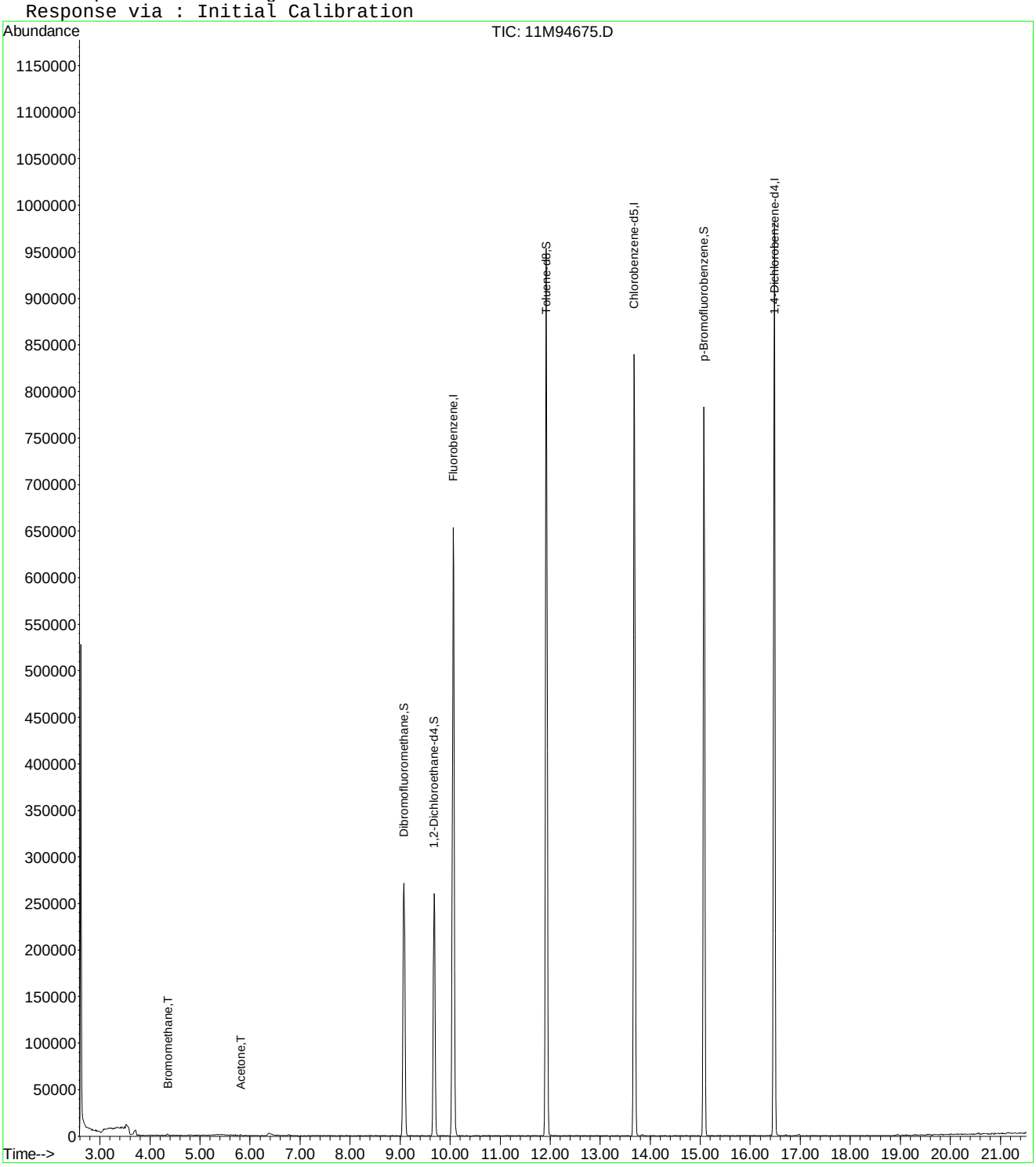

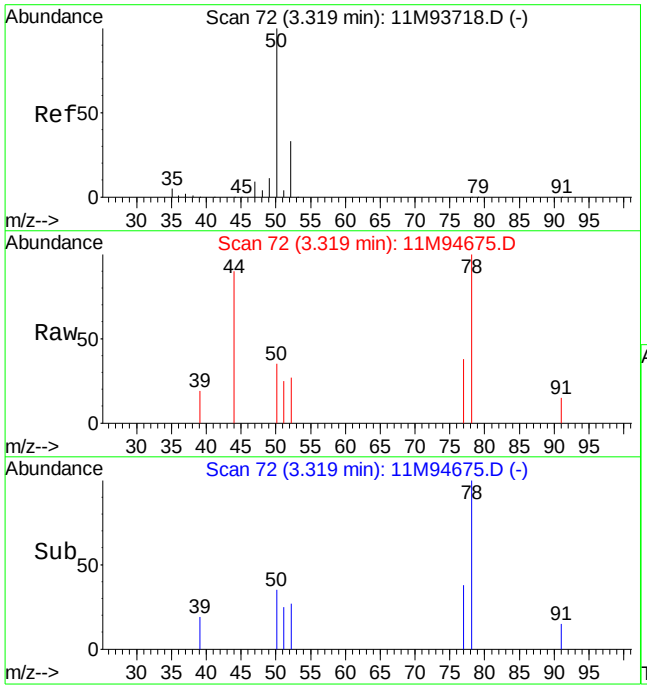

#3
Chloromethane
Concen: Below Cal
RT: 3.32 min Scan# 72
Delta R.T. 0.01 min
Lab File: 11M94675.D
Acq: 28 Aug 2013 16:58

Tgt Ion: 50 Resp: 1893

Ion	Ratio	Lower	Upper
50	100		
52	26.6	20.3	47.3

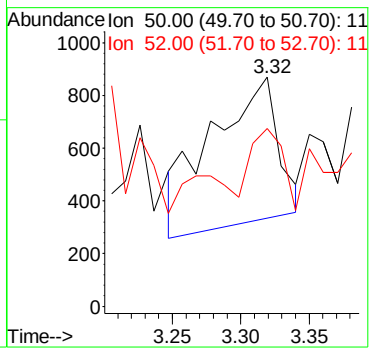

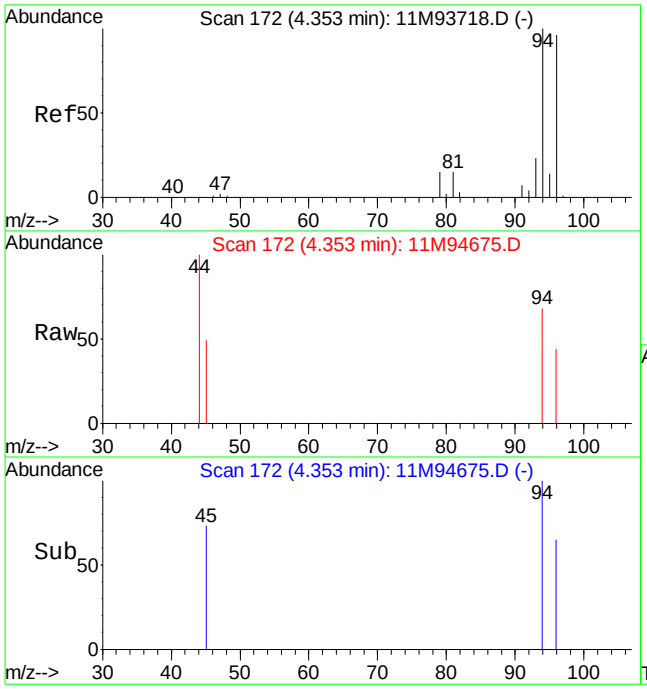

#6
Bromomethane
Concen: 0.79 ug/L
RT: 4.35 min Scan# 172
Delta R.T. 0.00 min
Lab File: 11M94675.D
Acq: 28 Aug 2013 16:58

Tgt Ion: 94 Resp: 854

Ion	Ratio	Lower	Upper
94	100		
96	70.6	56.6	132.0

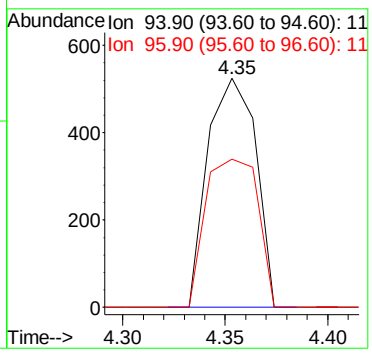

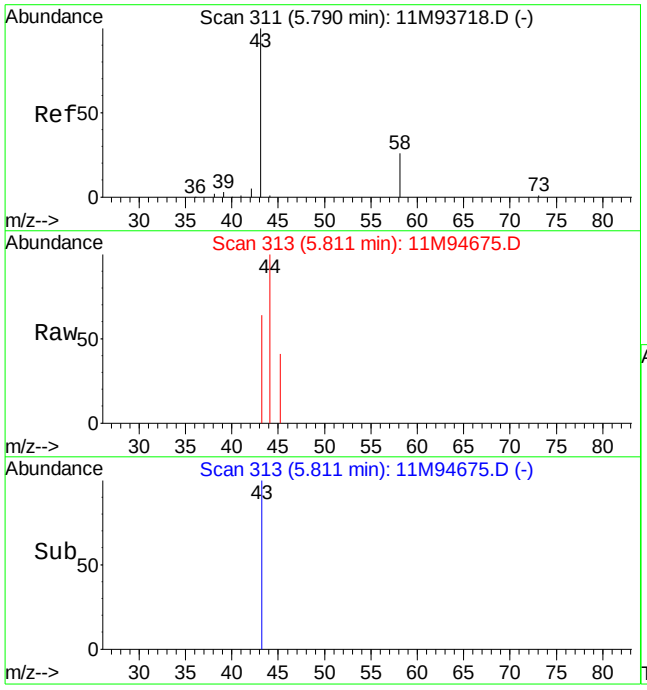

#13
Acetone
Concen: 0.19 ug/L
RT: 5.81 min Scan# 313
Delta R.T. 0.02 min
Lab File: 11M94675.D
Acq: 28 Aug 2013 16:58

Tgt Ion: 43 Resp: 499

Ion	Ratio	Lower	Upper
43	100		
58	0.0	13.9	32.3#

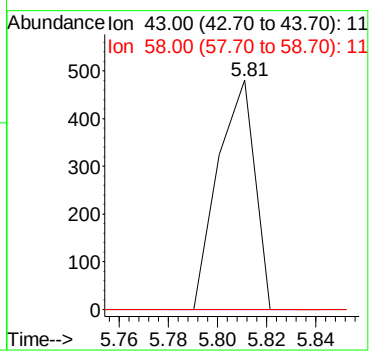

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082913\6M119428.D Vial: 5
Acq On : 29 Aug 2013 8:41 Operator: FJB
Sample : WG443009-01 VBLK0829 BLANK 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 15:34:25 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.20	96	616204	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.68	117	449217	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	18.23	152	216797	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.01	111	177639	27.4699 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.88%		
43) 1,2-Dichloroethane-d4	9.73	65	137473	25.0894 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.36%		
58) Toluene-d8	12.48	98	640194	26.5809 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.32%		
80) p-Bromofluorobenzene	16.45	95	199398	24.1821 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.72%		
Target Compounds					Qvalue
3) Chloromethane	2.93	50	1209	0.1430 ug/L #	70
36) Tetrahydrofuran	8.61	42	1019	0.9436 ug/L #	51
99) Hexachlorobutadiene	21.58	225	1415	0.3253 ug/L #	66

(#) = qualifier out of range (m) = manual integration
6M119428.D 8260WTR.M Thu Aug 29 15:34:26 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082913\6M119428.D Vial: 5
Acq On : 29 Aug 2013 8:41 Operator: FJB
Sample : WG443009-01 VBLK0829 BLANK 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 15:34 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

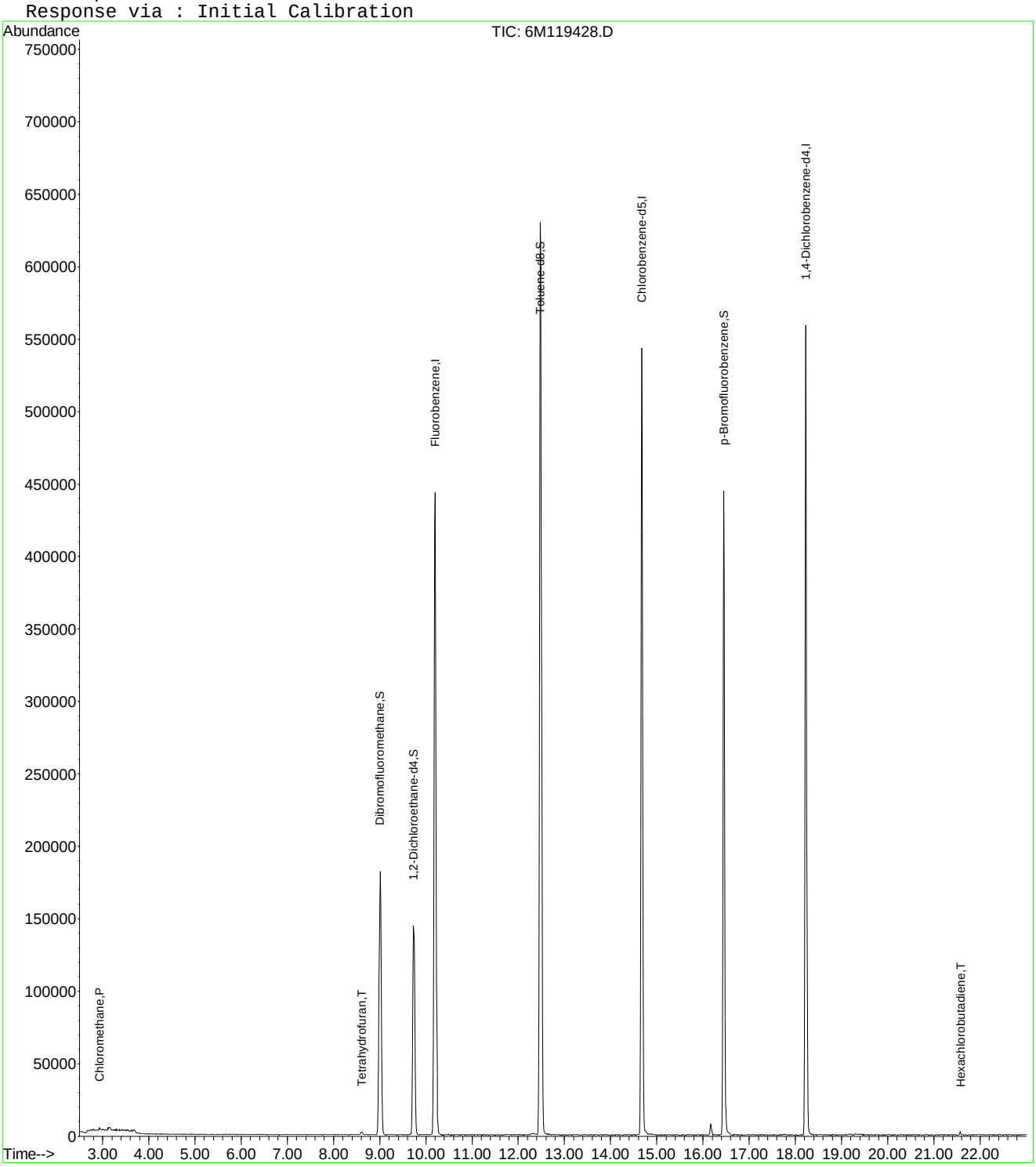

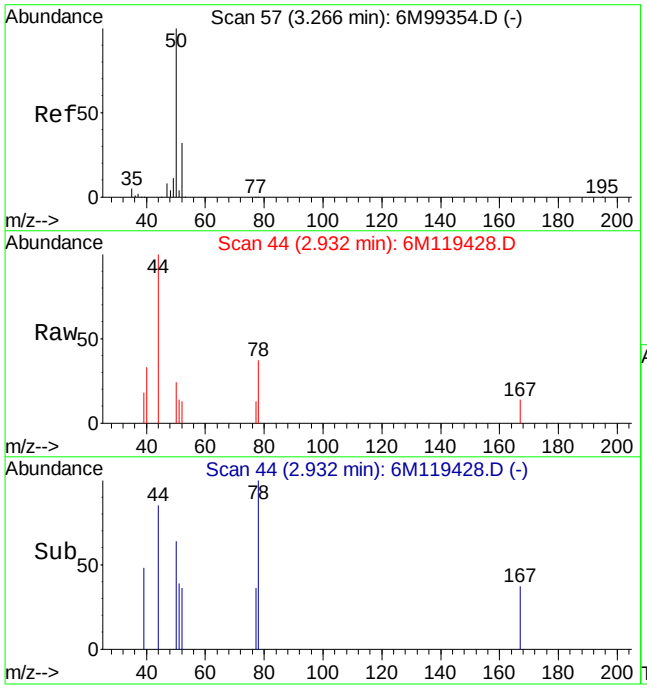

#3
Chloromethane
Concen: 0.14 ug/L
RT: 2.93 min Scan# 44
Delta R.T. -0.01 min
Lab File: 6M119428.D
Acq: 29 Aug 2013 8:41

Tgt Ion: 50 Resp: 1209

Ion	Ratio	Lower	Upper
50	100		
52	15.4	19.3	45.1#

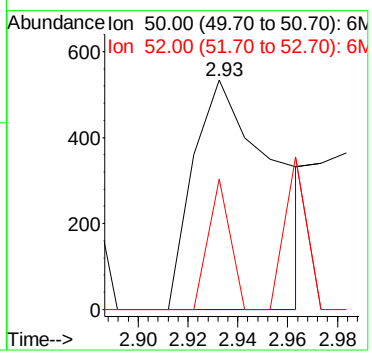

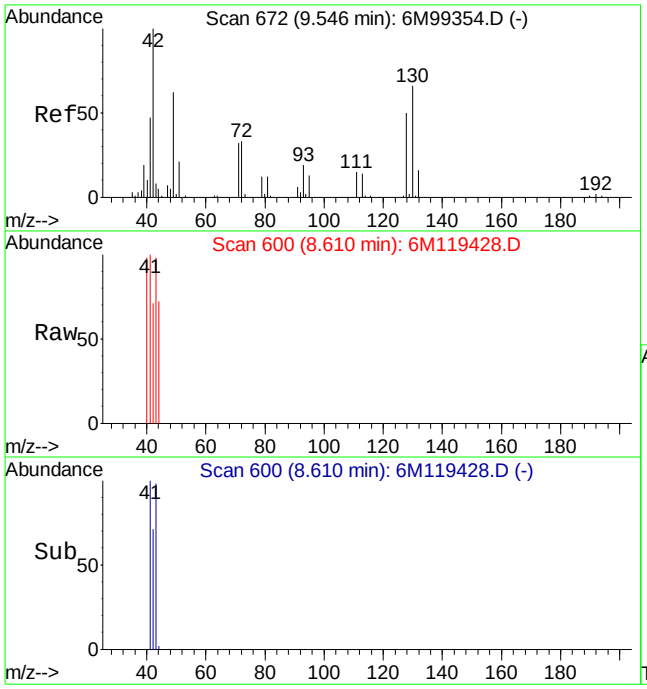

#36
Tetrahydrofuran
Concen: 0.94 ug/L
RT: 8.61 min Scan# 600
Delta R.T. -0.38 min
Lab File: 6M119428.D
Acq: 29 Aug 2013 8:41

Tgt Ion: 42 Resp: 1019

Ion	Ratio	Lower	Upper
42	100		
72	0.0	14.6	34.2#
71	0.0	14.2	33.2#

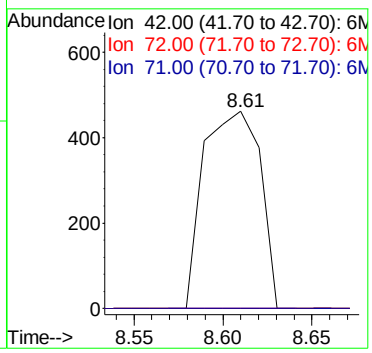

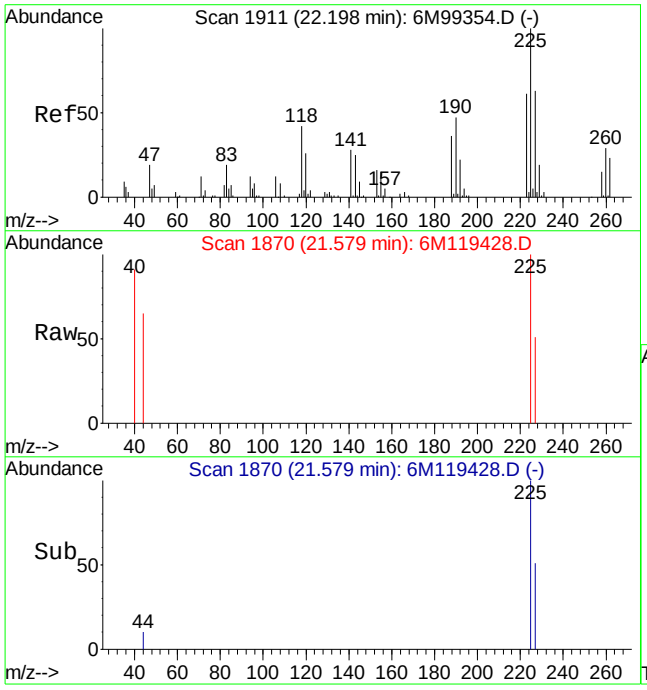

#99
Hexachlorobutadiene
Concen: 0.33 ug/L
RT: 21.58 min Scan# 1870
Delta R.T. -0.00 min
Lab File: 6M119428.D
Acq: 29 Aug 2013 8:41

Tgt Ion:225 Resp: 1415

Ion	Ratio	Lower	Upper
225	100		
223	14.1	38.3	89.3#
227	60.1	38.6	90.0

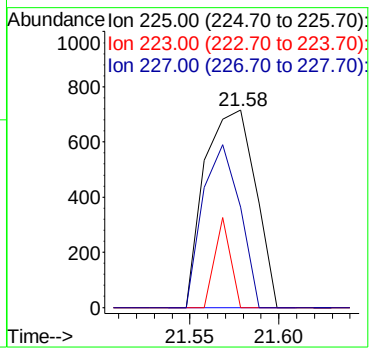

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082813\11M94676.D Vial: 5
Acq On : 28 Aug 2013 17:29 Operator: FJB
Sample : WG442932-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD59678 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 28 17:51:27 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Fri Aug 23 12:13:25 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.06	96	806721	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.68	117	628669	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.48	152	349500	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.08	111	243324	25.9023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.60%		
43) 1,2-Dichloroethane-d4	9.68	65	239636	22.0718 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.28%		
58) Toluene-d8	11.92	98	859758	28.4527 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 113.80%#		
80) p-Bromofluorobenzene	15.08	95	338767	26.4941 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	88658	10.5414 ug/L	96
3) Chloromethane	3.31	50	142212	11.2934 ug/L	99
4) Vinyl Chloride	3.52	62	143659	14.2760 ug/L	97
5) 1,3-Butadiene	3.55	54	140080	17.0155 ug/L	94
6) Bromomethane	4.34	94	87106	17.6374 ug/L	96
7) Chloroethane	4.50	64	100871	19.3324 ug/L	99
8) Trichlorofluoromethane	4.96	101	272620	14.9701 ug/L	99
9) Diethyl ether	5.48	59	557649	95.3518 ug/L	95
10) Isoprene	5.51	67	212160	21.8634 ug/L	87
11) Acrolein	5.70	56	65210	88.5714 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	5.72	101	165022	18.9965 ug/L	97
13) Acetone	5.80	43	30555	11.5628 ug/L #	71
14) 1,1-Dichloroethene	6.01	61	233332	15.8442 ug/L	90
15) Tert-Butyl Alcohol	6.13	59	87768	192.8688 ug/L	94
16) Dimethyl Sulfide	6.27	62	193688	27.3880 ug/L	84
17) Iodomethane	6.50	142	160631	17.8109 ug/L	86
18) Methyl acetate	6.52	43	81001	23.5953 ug/L	95
19) Methylene Chloride	6.77	84	157918	19.1842 ug/L	87
20) Carbon Disulfide	6.79	76	479229	21.4052 ug/L	100
21) Acrylonitrile	6.94	53	42146	22.6719 ug/L	97
22) Methyl Tert Butyl Ether	6.98	73	403638	20.6360 ug/L	100
23) trans-1,2-Dichloroethene	7.21	96	171777	21.5296 ug/L	85
24) n-Hexane	7.29	57	193926	19.0595 ug/L	100
25) Diisopropyl ether	7.62	45	2678207	94.8889 ug/L	95
26) Vinyl Acetate	7.78	43	173782	19.3137 ug/L	95
27) 1,1-Dichloroethane	7.80	63	313458	19.5949 ug/L	98
28) Ethyl-Tert-Butyl ether	8.17	59	2432914	92.7687 ug/L	98
29) 2-Butanone	8.33	43	43254	20.3800 ug/L	93
30) Propionitrile	8.43	54	67150	104.5283 ug/L	97
31) 2,2-Dichloropropane	8.54	77	248319	15.1212 ug/L	100
32) cis-1,2-Dichloroethene	8.60	96	188000	20.7655 ug/L	87
33) Chloroform	8.80	83	321599	18.5233 ug/L	99
34) 1-Bromopropane	8.93	122	39503	23.1002 ug/L	97
35) Bromochloromethane	9.02	130	108623	20.8801 ug/L	94
36) Tetrahydrofuran	9.05	42	130144	97.0714 ug/L	93
38) 1,1,1-Trichloroethane	9.31	97	303141	17.0759 ug/L	99
39) Cyclohexane	9.34	56	288425	20.9558 ug/L	99
40) 1,1-Dichloropropene	9.49	75	241877	18.9405 ug/L	95
41) Carbon Tetrachloride	9.63	117	279766	16.7103 ug/L	98
42) Tert-Amyl-Methyl ether	9.60	73	1917312	94.9035 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082813\11M94676.D Vial: 5
Acq On : 28 Aug 2013 17:29 Operator: FJB
Sample : WG442932-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD59678 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 28 17:51:27 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Fri Aug 23 12:13:25 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.79	62	225932	16.8660 ug/L		98
46)	Benzene	9.83	78	666315	20.6757 ug/L		98
47)	Trichloroethene	10.55	130	205366	22.8586 ug/L		96
48)	Methylcyclohexane	10.62	83	249147	22.4206 ug/L		94
49)	1,2-Dichloropropane	10.74	63	180858	21.4369 ug/L		83
50)	1,4-Dioxane	11.01	88	8760	220.9078 ug/L		95
51)	Bromodichloromethane	11.02	83	231664	17.4328 ug/L		99
52)	Dibromomethane	11.09	93	88618	19.5381 ug/L		99
53)	2-Chloroethyl Vinyl Ether	11.31	63	74554	21.0522 ug/L		99
54)	4-Methyl-2-Pentanone	11.34	58	39770	21.4165 ug/L		99
55)	cis-1,3-Dichloropropene	11.62	75	279016	21.1379 ug/L		99
56)	Dimethyl Disulfide	11.86	79	134117	20.1830 ug/L		82
59)	Toluene	12.01	91	734699	21.0314 ug/L		99
60)	Ethyl Methacrylate	12.12	69	157027	22.1105 ug/L		85
62)	trans-1,3-Dichloropropene	12.18	75	228717	19.0103 ug/L		94
63)	1,1,2-Trichloroethane	12.39	97	122468	21.9987 ug/L		94
64)	2-Hexanone	12.34	43	67287	19.3637 ug/L	#	48
65)	1,3-Dichloropropane	12.67	76	216714	20.8774 ug/L		87
66)	Tetrachloroethene	12.78	164	162124	20.4386 ug/L		95
67)	Dibromochloromethane	13.02	129	165710	18.5009 ug/L		97
68)	1,2-Dibromoethane	13.26	107	124507	21.0465 ug/L		99
69)	1-Chlorohexane	13.35	91	238255	22.3893 ug/L		85
70)	Chlorobenzene	13.73	112	460608	19.4243 ug/L		100
71)	1,1,1,2-Tetrachloroethane	13.76	131	195106	19.3947 ug/L		98
72)	Ethylbenzene	13.76	106	263590	20.5547 ug/L		99
73)	m-,p-Xylene	13.84	106	620497	41.5220 ug/L		95
74)	o-Xylene	14.36	106	293337	19.6358 ug/L		93
75)	Styrene	14.39	104	539758	22.4971 ug/L		87
76)	Bromoform	14.85	173	108315	19.3237 ug/L		98
77)	Isopropylbenzene	14.75	105	761358	20.0488 ug/L		99
79)	1,1,2,2-Tetrachloroethane	14.95	83	128543	22.5285 ug/L		97
81)	1,2,3-Trichloropropane	15.14	110	43739	19.8863 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	15.18	53	28423	11.0696 ug/L	#	1
83)	n-Propylbenzene	15.23	91	875942	19.2740 ug/L		100
84)	Bromobenzene	15.34	156	219487	20.4047 ug/L		96
85)	1,3,5-Trimethylbenzene	15.40	105	731500	21.7091 ug/L		96
86)	2-Chlorotoluene	15.48	91	637901	21.3063 ug/L		93
87)	4-Chlorotoluene	15.52	91	502288	16.1485 ug/L		85
88)	a-Methylstyrene	15.77	118	386223	23.0913 ug/L		93
89)	tert-Butylbenzene	15.83	134	132406	20.0452 ug/L		90
90)	1,2,4-Trimethylbenzene	15.87	105	749360	21.3111 ug/L		99
91)	sec-Butylbenzene	16.08	105	768462	19.8907 ug/L		99
92)	p-Isopropyltoluene	16.22	119	681354	20.3530 ug/L		99
93)	1,3-Dichlorobenzene	16.40	146	387994	19.1939 ug/L		96
94)	1,4-Dichlorobenzene	16.52	146	429649	20.5787 ug/L		98
95)	n-Butylbenzene	16.71	91	622806	21.3286 ug/L		98
96)	1,2-Dichlorobenzene	16.98	146	357445	19.5054 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	17.90	75	23912	17.9225 ug/L		91
98)	1,2,4-Trichlorobenzene	18.94	180	282267	20.9448 ug/L		97
99)	Hexachlorobutadiene	19.09	225	107717	18.4687 ug/L		96
100)	Naphthalene	19.28	128	486469	22.2891 ug/L		98
101)	1,2,3-Trichlorobenzene	19.57	180	248426	21.0405 ug/L		95

(#) = qualifier out of range (m) = manual integration
11M94676.D 8260WT.M Wed Aug 28 17:51:28 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082813\11M94676.D Vial: 5
Acq On : 28 Aug 2013 17:29 Operator: FJB
Sample : WG442932-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD59678 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 28 17:51 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Fri Aug 23 12:13:25 2013
Response via : Initial Calibration

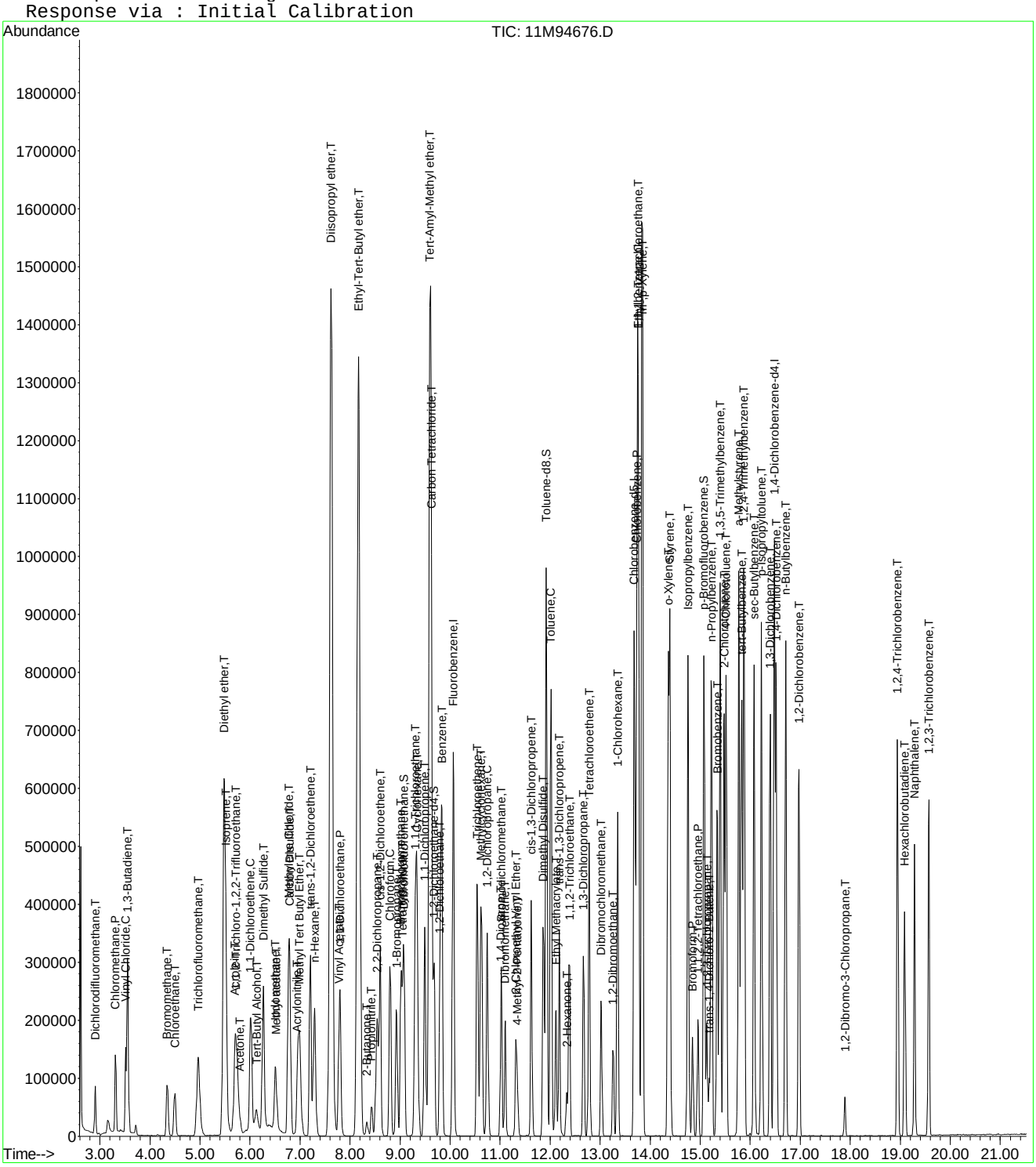

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082913\6M119429.D Vial: 6
Acq On : 29 Aug 2013 9:12 Operator: FJB
Sample : WG443009-02 20ug/L LCS 8260 Inst : HPMS6
Misc : 1,1 STD59830 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 09:46:09 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.20	96	634447	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.68	117	461637	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	18.23	152	236509	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.01	111	179707	26.9906 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.96%		
43) 1,2-Dichloroethane-d4	9.73	65	142694	25.2934 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.16%		
58) Toluene-d8	12.48	98	654982	26.4633 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.84%		
80) p-Bromofluorobenzene	16.45	95	210848	23.4395 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	185868	31.6056 ug/L	98
3) Chloromethane	2.93	50	265925	30.5419 ug/L	99
4) Vinyl Chloride	3.12	62	217276	31.4388 ug/L	99
5) 1,3-Butadiene	3.16	54	155109	33.4017 ug/L	97
6) Bromomethane	3.85	94	68781	18.0008 ug/L	97
7) Chloroethane	3.99	64	127876	22.4641 ug/L	98
8) Trichlorofluoromethane	4.45	101	270711	24.1660 ug/L	99
9) Diethyl ether	4.99	59	408435	94.5840 ug/L	97
10) Isoprene	5.01	67	193018	19.6923 ug/L	97
11) Acrolein	5.21	56	18593	176.5847 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	5.23	101	158813	25.2588 ug/L	97
13) Acetone	5.32	43	14016	10.6359 ug/L	95
14) 1,1-Dichloroethene	5.53	61	252069	19.2992 ug/L	94
15) Tert-Butyl Alcohol	5.67	59	17103	73.4646 ug/L #	95
16) Dimethyl Sulfide	5.80	62	156140	22.5043 ug/L	97
17) Iodomethane	6.05	142	109675	19.3483 ug/L	99
18) Methyl acetate	6.10	43	50962	12.8713 ug/L	98
19) Methylene Chloride	6.34	84	130395	20.2790 ug/L	90
20) Carbon Disulfide	6.35	76	427418	20.0858 ug/L	100
21) Acrylonitrile	6.56	53	26052	17.6037 ug/L	94
22) Methyl Tert Butyl Ether	6.60	73	188990	17.6245 ug/L	97
23) trans-1,2-Dichloroethene	6.83	96	158901	22.1258 ug/L	88
24) n-Hexane	6.94	57	186042	16.0676 ug/L	97
25) Diisopropyl ether	7.33	45	2763910	91.1470 ug/L	99
26) Vinyl Acetate	7.52	43	209932	24.6377 ug/L	99
27) 1,1-Dichloroethane	7.52	63	296667	19.9661 ug/L	100
28) Ethyl-Tert-Butyl ether	7.97	59	1721003	88.2114 ug/L	98
29) 2-Butanone	8.16	43	24505	14.6656 ug/L	100
30) Propionitrile	8.27	54	34162	72.8139 ug/L	95
31) 2,2-Dichloropropane	8.38	77	221769	19.6764 ug/L	98
32) cis-1,2-Dichloroethene	8.45	96	160772	21.6739 ug/L	89
33) Chloroform	8.68	83	256032	20.9350 ug/L	99
34) 1-Bromopropane	8.84	122	35298	25.6800 ug/L	99
35) Bromochloromethane	8.94	130	81658	21.2369 ug/L	100
36) Tetrahydrofuran	8.97	42	81288	73.1061 ug/L	95
38) 1,1,1-Trichloroethane	9.27	97	251975	21.6558 ug/L	98
39) Cyclohexane	9.30	56	279202	17.0309 ug/L	96
40) 1,1-Dichloropropene	9.51	75	201212	20.5184 ug/L	94
41) Tert-Amyl-Methyl ether	9.66	73	1040198	89.0183 ug/L	99
42) Carbon Tetrachloride	9.65	117	241501	23.0095 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M119429.D 8260WTR.M Thu Aug 29 09:46:10 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082913\6M119429.D Vial: 6
Acq On : 29 Aug 2013 9:12 Operator: FJB
Sample : WG443009-02 20ug/L LCS 8260 Inst : HPMS6
Misc : 1,1 STD59830 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 09:46:09 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.88	62	154583	20.2032 ug/L		99
46)	Benzene	9.91	78	551160	20.5924 ug/L		96
47)	Trichloroethene	10.78	130	176961	23.4851 ug/L		95
48)	Methylcyclohexane	10.87	83	180060	18.4755 ug/L		92
49)	1,2-Dichloropropane	11.02	63	155080	20.2474 ug/L		98
50)	1,4-Dioxane	11.38	88	399	28.5595 ug/L	#	62
51)	Bromodichloromethane	11.37	83	164378	19.8656 ug/L		99
52)	Dibromomethane	11.45	93	56824	21.8638 ug/L		99
53)	2-Chloroethyl Vinyl Ether	11.77	63	42469	16.9089 ug/L		98
54)	4-Methyl-2-Pentanone	11.81	58	20443	16.3281 ug/L		98
55)	cis-1,3-Dichloropropene	12.12	75	187938	20.5371 ug/L		99
56)	Dimethyl Disulfide	12.40	79	86630	19.7643 ug/L		96
59)	Toluene	12.60	91	604247	20.0085 ug/L		99
60)	Ethyl Methacrylate	12.79	69	74968	17.2849 ug/L		87
62)	trans-1,3-Dichloropropene	12.84	75	132792	17.9223 ug/L		98
63)	1,1,2-Trichloroethane	13.07	97	76186	19.9572 ug/L		99
64)	2-Hexanone	13.05	43	34152	12.9121 ug/L		99
65)	1,3-Dichloropropane	13.43	76	124060	18.8337 ug/L		86
66)	Tetrachloroethene	13.54	166	177987	20.9035 ug/L		97
67)	Dibromochloromethane	13.84	129	111082	20.8293 ug/L		99
68)	1,2-Dibromoethane	14.13	107	73450	19.2985 ug/L		99
69)	1-Chlorohexane	14.32	91	179447	19.5131 ug/L		93
70)	Chlorobenzene	14.74	112	360115	18.6964 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.79	131	146223	21.2925 ug/L		99
72)	Ethylbenzene	14.80	106	220523	19.8681 ug/L		100
73)	m-,p-Xylene	14.90	106	516494	39.1315 ug/L		98
74)	o-Xylene	15.55	106	230608	17.9514 ug/L		98
75)	Styrene	15.60	104	393641	19.7218 ug/L		97
76)	Bromoform	16.13	173	61875	22.3465 ug/L		99
77)	Isopropylbenzene	16.06	105	605303	18.2498 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.32	83	69513	18.5439 ug/L		100
81)	1,2,3-Trichloropropane	16.54	110	19836	18.2620 ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.63	53	18737	12.8825 ug/L		98
83)	n-Propylbenzene	16.67	91	679650	17.3340 ug/L		100
84)	Bromobenzene	16.76	156	160850	20.3345 ug/L		100
85)	1,3,5-Trimethylbenzene	16.89	105	548643	19.0346 ug/L		99
86)	2-Chlorotoluene	16.94	91	496883	18.0376 ug/L		99
87)	4-Chlorotoluene	17.01	91	394052	16.6764 ug/L		98
88)	a-Methylstyrene	17.36	118	292498	19.5767 ug/L		100
89)	tert-Butylbenzene	17.43	134	109346	18.6315 ug/L		100
90)	1,2,4-Trimethylbenzene	17.48	105	561032	19.4450 ug/L		100
91)	sec-Butylbenzene	17.75	105	595064	17.4321 ug/L		99
92)	p-Isopropyltoluene	17.94	119	516583	17.6176 ug/L		100
93)	1,3-Dichlorobenzene	18.12	146	297903	18.4057 ug/L		96
94)	1,4-Dichlorobenzene	18.28	146	313516	19.8702 ug/L		97
95)	n-Butylbenzene	18.57	91	462709	18.6647 ug/L		100
96)	1,2-Dichlorobenzene	18.84	146	239128	17.8916 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	20.03	75	8520	14.8906 ug/L		85
98)	1,2,4-Trichlorobenzene	21.36	180	157882	16.6489 ug/L		99
99)	Hexachlorobutadiene	21.57	225	83634	17.6244 ug/L		97
100)	Naphthalene	21.77	128	197763	14.7744 ug/L		99
101)	1,2,3-Trichlorobenzene	22.15	180	119496	15.5716 ug/L		100

(#) = qualifier out of range (m) = manual integration
6M119429.D 8260WTR.M Thu Aug 29 09:46:10 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082913\6M119429.D Vial: 6
Acq On : 29 Aug 2013 9:12 Operator: FJB
Sample : WG443009-02 20ug/L LCS 8260 Inst : HPMS6
Misc : 1,1 STD59830 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 9:46 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

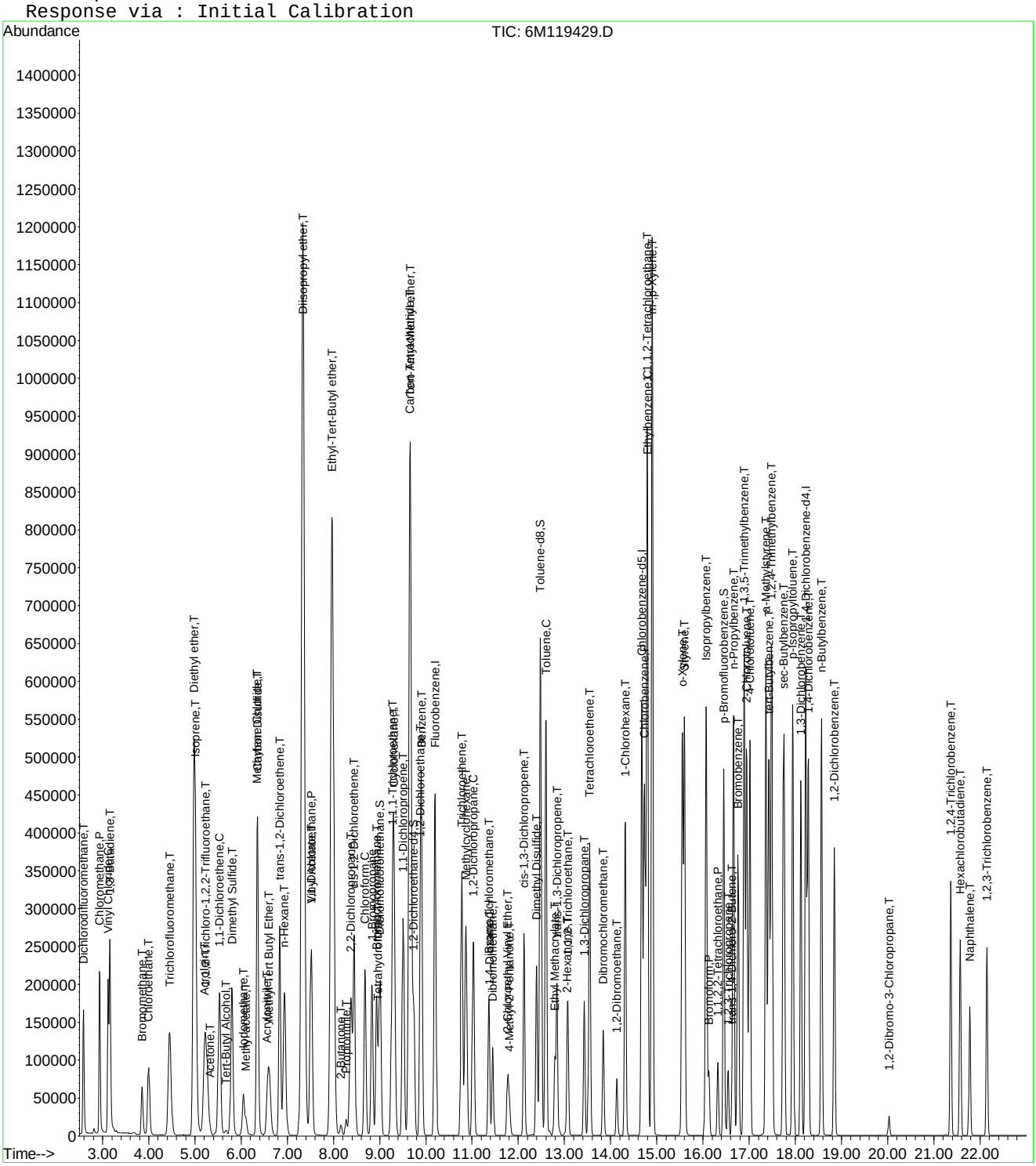

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\082813\11M94677.D Vial: 6
Acq On : 28 Aug 2013 18:01 Operator: FJB
Sample : WG442932-03 20ug/L LCS DUP 8260 Inst : hpms11
Misc : 1,1 STD59678 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 28 18:23:11 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Fri Aug 23 12:13:25 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.06	96	816589	25.00 ug/L	-0.01
57) Chlorobenzene-d5	13.68	117	636233	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	16.48	152	355801	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.08	111	248573	26.1413 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.56%		
43) 1,2-Dichloroethane-d4	9.68	65	247454	22.5165 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.08%		
58) Toluene-d8	11.92	98	867536	28.3687 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 113.48%#		
80) p-Bromofluorobenzene	15.08	95	335974	25.8104 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.24%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.91	85	84140	9.8833 ug/L	97
3) Chloromethane	3.31	50	147595	11.5954 ug/L	96
4) Vinyl Chloride	3.52	62	145317	14.2662 ug/L	99
5) 1,3-Butadiene	3.55	54	137350	16.4823 ug/L	97
6) Bromomethane	4.34	94	82849	16.6104 ug/L	100
7) Chloroethane	4.50	64	98103	18.5747 ug/L	100
8) Trichlorofluoromethane	4.97	101	263582	14.2989 ug/L	98
9) Diethyl ether	5.48	59	592752	100.1292 ug/L	95
10) Isoprene	5.51	67	211190	21.5005 ug/L	85
11) Acrolein	5.70	56	72118	96.5970 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	5.73	101	164958	18.7637 ug/L	94
13) Acetone	5.79	43	33084m	12.3685 ug/L	
14) 1,1-Dichloroethene	6.01	61	235849	15.8216 ug/L	89
15) Tert-Butyl Alcohol	6.13	59	97038	210.6626 ug/L	95
16) Dimethyl Sulfide	6.27	62	197047	27.5263 ug/L	83
17) Iodomethane	6.50	142	179179	19.5823 ug/L	85
18) Methyl acetate	6.52	43	81847	23.5544 ug/L #	91
19) Methylene Chloride	6.76	84	162601	19.5144 ug/L	85
20) Carbon Disulfide	6.79	76	479039	21.1382 ug/L	100
21) Acrylonitrile	6.95	53	41277	21.9361 ug/L	99
22) Methyl Tert Butyl Ether	6.98	73	404606	20.4355 ug/L	99
23) trans-1,2-Dichloroethene	7.21	96	169539	20.9923 ug/L	85
24) n-Hexane	7.29	57	189233	18.3735 ug/L	99
25) Diisopropyl ether	7.62	45	2826160	98.9209 ug/L	95
26) Vinyl Acetate	7.78	43	170736	18.7997 ug/L	97
27) 1,1-Dichloroethane	7.80	63	318189	19.6503 ug/L	99
28) Ethyl-Tert-Butyl ether	8.17	59	2570580	96.8335 ug/L	97
29) 2-Butanone	8.33	43	46045	21.4329 ug/L	96
30) Propionitrile	8.43	54	72099	110.8758 ug/L	98
31) 2,2-Dichloropropane	8.54	77	254051	15.2809 ug/L	98
32) cis-1,2-Dichloroethene	8.60	96	189142	20.6392 ug/L	85
33) Chloroform	8.80	83	317190	18.0486 ug/L	99
34) 1-Bromopropane	8.93	122	40806	23.5648 ug/L	99
35) Bromochloromethane	9.02	130	109456	20.7860 ug/L	92
36) Tetrahydrofuran	9.04	42	140555	103.5698 ug/L	93
38) 1,1,1-Trichloroethane	9.31	97	300911	16.7455 ug/L	98
39) Cyclohexane	9.34	56	277247	19.9002 ug/L	98
40) 1,1-Dichloropropene	9.49	75	242609	18.7683 ug/L	95
41) Carbon Tetrachloride	9.63	117	276372	16.3081 ug/L	97
42) Tert-Amyl-Methyl ether	9.60	73	2033813	99.4536 ug/L	96

(#) = qualifier out of range (m) = manual integration
11M94677.D 8260WT.M Thu Aug 29 10:19:42 2013 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\082813\11M94677.D Vial: 6
Acq On : 28 Aug 2013 18:01 Operator: FJB
Sample : WG442932-03 20ug/L LCS DUP 8260 Inst : hpms11
Misc : 1,1 STD59678 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 28 18:23:11 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Fri Aug 23 12:13:25 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.79	62	223908	16.5129 ug/L		97
46)	Benzene	9.83	78	659375	20.2131 ug/L		99
47)	Trichloroethene	10.55	130	205983	22.6502 ug/L		97
48)	Methylcyclohexane	10.62	83	246623	21.9253 ug/L		94
49)	1,2-Dichloropropane	10.74	63	174435	20.4257 ug/L		87
50)	1,4-Dioxane	11.02	88	10530	258.5469 ug/L		95
51)	Bromodichloromethane	11.02	83	232940	17.3170 ug/L		99
52)	Dibromomethane	11.09	93	86441	18.8278 ug/L		95
53)	2-Chloroethyl Vinyl Ether	11.31	63	76239	21.2610 ug/L		98
54)	4-Methyl-2-Pentanone	11.34	58	41498	22.0769 ug/L		98
55)	cis-1,3-Dichloropropene	11.62	75	280983	21.0297 ug/L		100
56)	Dimethyl Disulfide	11.86	79	134403	19.9816 ug/L		83
59)	Toluene	12.01	91	721410	20.4055 ug/L		99
60)	Ethyl Methacrylate	12.12	69	161452	22.4558 ug/L		86
62)	trans-1,3-Dichloropropene	12.18	75	227868	18.7146 ug/L		94
63)	1,1,2-Trichloroethane	12.39	97	124638	22.1223 ug/L		100
64)	2-Hexanone	12.32	43	68258	19.4096 ug/L	#	84
65)	1,3-Dichloropropane	12.67	76	219078	20.8543 ug/L		86
66)	Tetrachloroethene	12.78	164	160150	19.9498 ug/L		95
67)	Dibromochloromethane	13.02	129	166470	18.3648 ug/L		98
68)	1,2-Dibromoethane	13.26	107	125665	20.9897 ug/L		99
69)	1-Chlorohexane	13.35	91	235668	21.8869 ug/L		88
70)	Chlorobenzene	13.73	112	459833	19.1611 ug/L		99
71)	1,1,1,2-Tetrachloroethane	13.76	131	196147	19.2664 ug/L		99
72)	Ethylbenzene	13.76	106	262684	20.2405 ug/L		99
73)	m-,p-Xylene	13.84	106	617068	40.8016 ug/L		96
74)	o-Xylene	14.36	106	293160	19.3907 ug/L		91
75)	Styrene	14.39	104	534427	22.0101 ug/L		88
76)	Bromoform	14.85	173	108190	19.0720 ug/L		96
77)	Isopropylbenzene	14.75	105	766736	19.9504 ug/L		100
79)	1,1,2,2-Tetrachloroethane	14.95	83	130767	22.5124 ug/L		99
81)	1,2,3-Trichloropropane	15.14	110	42308	18.8950 ug/L		84
82)	trans-1,4-Dichloro-2-Buten	15.18	53	30454	11.6017 ug/L	#	1
83)	n-Propylbenzene	15.23	91	869762	18.7991 ug/L		99
84)	Bromobenzene	15.34	156	220546	20.1401 ug/L		96
85)	1,3,5-Trimethylbenzene	15.40	105	732123	21.3428 ug/L		97
86)	2-Chlorotoluene	15.48	91	629798	20.6632 ug/L		92
87)	4-Chlorotoluene	15.52	91	508903	16.0714 ug/L		87
88)	a-Methylstyrene	15.77	118	380682	22.3569 ug/L		93
89)	tert-Butylbenzene	15.83	134	134263	19.9664 ug/L		88
90)	1,2,4-Trimethylbenzene	15.87	105	735697	20.5520 ug/L		97
91)	sec-Butylbenzene	16.08	105	768764	19.5461 ug/L		99
92)	p-Isopropyltoluene	16.22	119	677654	19.8840 ug/L		99
93)	1,3-Dichlorobenzene	16.40	146	379166	18.4250 ug/L		97
94)	1,4-Dichlorobenzene	16.52	146	424691	19.9810 ug/L		97
95)	n-Butylbenzene	16.71	91	626012	21.0588 ug/L		98
96)	1,2-Dichlorobenzene	16.98	146	356005	19.0828 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	17.89	75	23589	17.3673 ug/L		82
98)	1,2,4-Trichlorobenzene	18.94	180	281370	20.5085 ug/L		97
99)	Hexachlorobutadiene	19.09	225	110702	18.6443 ug/L		96
100)	Naphthalene	19.28	128	499627	22.4866 ug/L		98
101)	1,2,3-Trichlorobenzene	19.57	180	255031	21.2174 ug/L		96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\082813\11M94677.D Vial: 6
Acq On : 28 Aug 2013 18:01 Operator: FJB
Sample : WG442932-03 20ug/L LCS DUP 8260 Inst : hpms11
Misc : 1,1 STD59678 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 29 10:19 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Fri Aug 23 12:13:25 2013
Response via : Initial Calibration

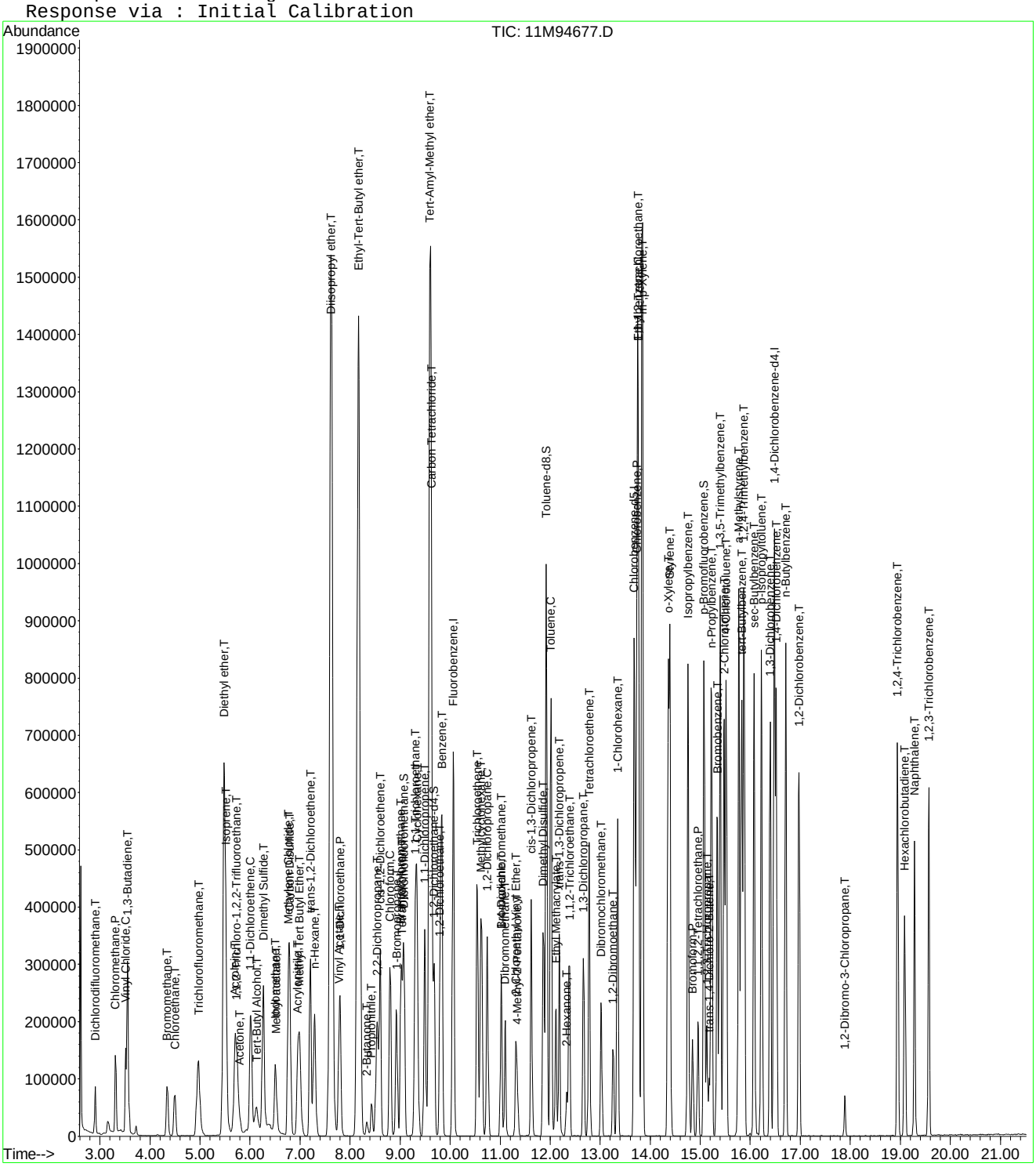

11M94677.D 8260WT.M Thu Aug 29 10:19:43 2013 Page 3

Quantitation Report (Qedit)

```
Data File : C:\MSDCHEM\1\DATA\082813\11M94677.D          Vial: 6
Acq On    : 28 Aug 2013  18:01                       Operator: FJB
Sample    : WG442932-03 20ug/L LCS DUP 8260          Inst    : hpms11
Misc      : 1,1 STD59678                             Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 28 18:23 2013              Quant Results File: temp.res

Method       : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title        : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update  : Fri Aug 23 12:13:25 2013
Response via : Single Level Calibration
```

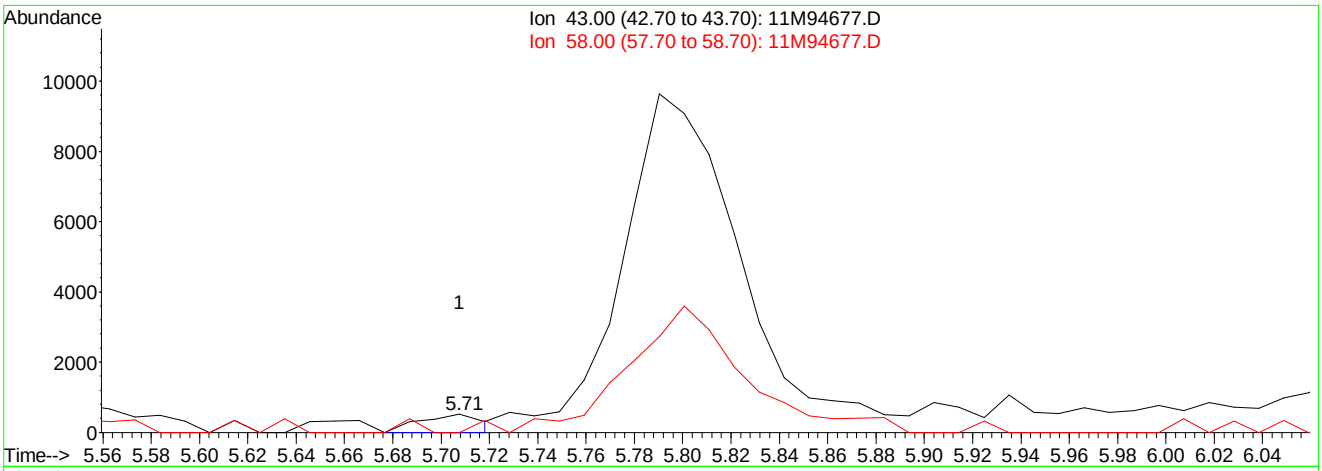

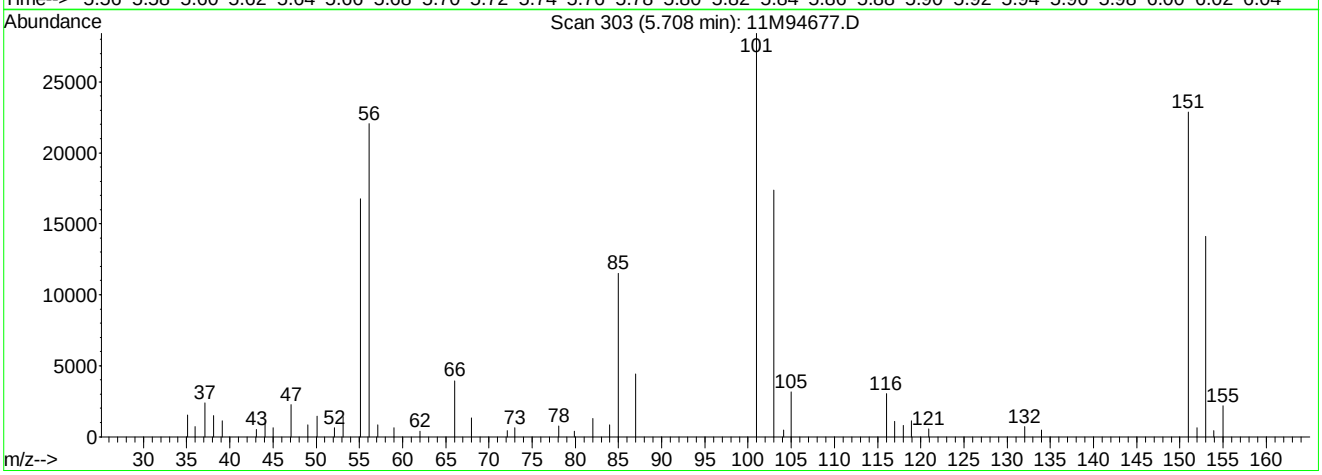

TIC: 11M94677.D

(13) Acetone (T)

5.71min 0.35ug/L

response 948

Ion	Exp%	Act%
43.00	100	100
58.00	23.10	25.32
0.00	0.00	0.00
0.00	0.00	0.00

11M94677.D 8260WT.M Thu Aug 29 10:19:05 2013

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\082813\11M94677.D Vial: 6
Acq On : 28 Aug 2013 18:01 Operator: FJB
Sample : WG442932-03 20ug/L LCS DUP 8260 Inst : hpms11
Misc : 1,1 STD59678 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 29 10:19 2013 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 08/21/13 HPMS11
Last Update : Fri Aug 23 12:13:25 2013
Response via : Single Level Calibration

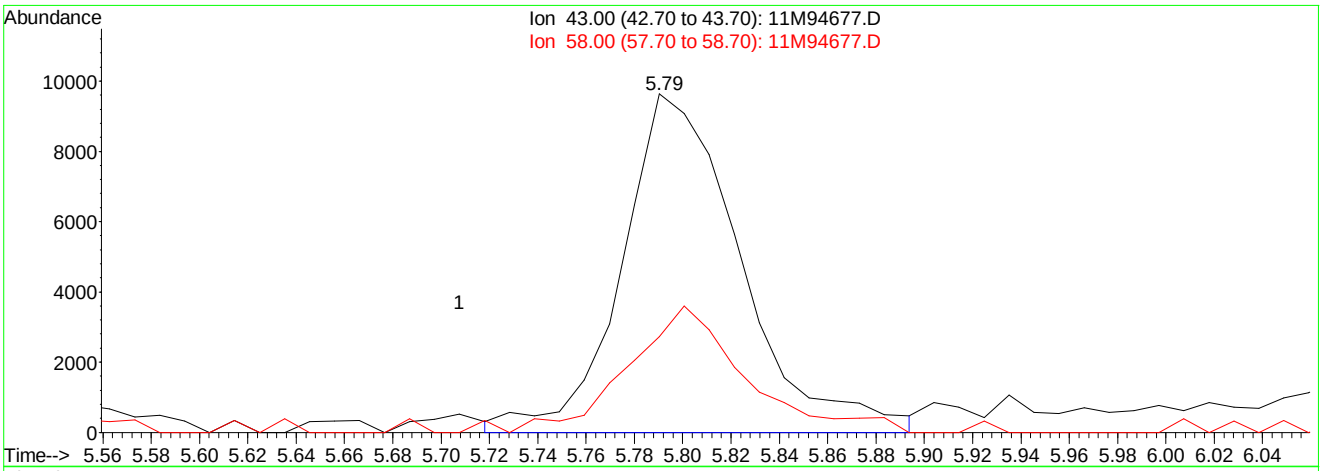

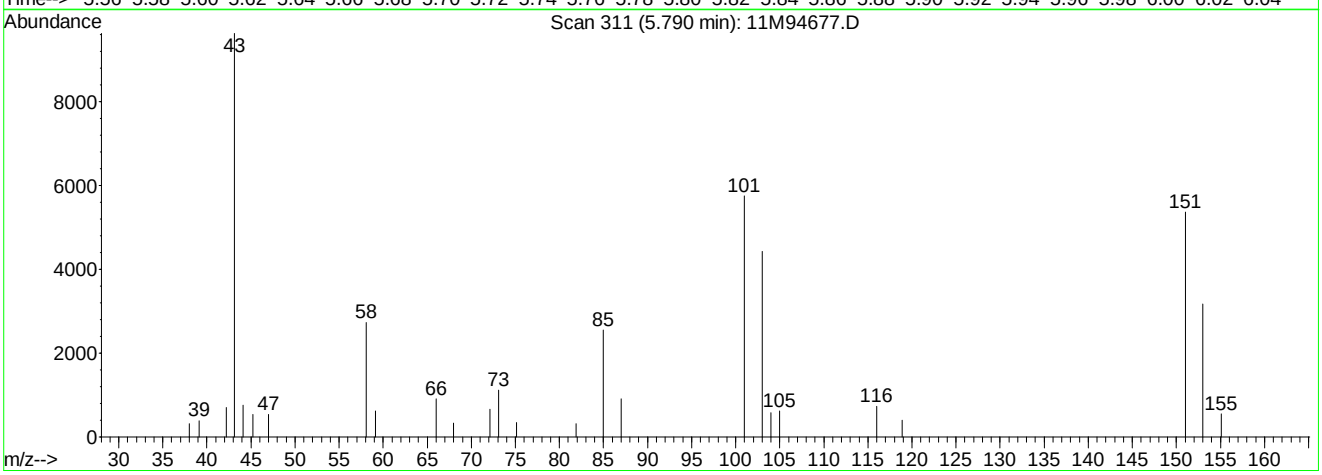

TIC: 11M94677.D

(13) Acetone (T)

5.79min 12.37ug/L mint

response 33084

Ion	Exp%	Act%
43.00	100	100
58.00	23.10	0.73#
0.00	0.00	0.00
0.00	0.00	0.00

11M94677.D 8260WT.M Thu Aug 29

Analyst: 08/29/2013 10:30 Supervisor: 08/29/2013 10:47

#1 - Data system fails to select correct peak

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082913\6M119430.D Vial: 7
Acq On : 29 Aug 2013 9:47 Operator: FJB
Sample : WG443009-03 20ug/L LCSDUP 8260 Inst : HPMS6
Misc : 1,1 STD59830 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 10:10:06 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.20	96	648508	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.68	117	473303	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	18.23	152	245777	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.01	111	185471	27.2523 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.00%		
43) 1,2-Dichloroethane-d4	9.73	65	149320	25.8940 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.56%		
58) Toluene-d8	12.48	98	670389	26.4181 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.68%		
80) p-Bromofluorobenzene	16.45	95	220199	23.5560 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.24%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	193525	32.1941 ug/L	97
3) Chloromethane	2.94	50	267475	30.0539 ug/L	100
4) Vinyl Chloride	3.12	62	202814	28.7099 ug/L	99
5) 1,3-Butadiene	3.15	54	104736	20.7686 ug/L	95
6) Bromomethane	3.85	94	66767	17.1369 ug/L	97
7) Chloroethane	3.99	64	131269	22.5602 ug/L	97
8) Trichlorofluoromethane	4.45	101	270267	23.6032 ug/L	99
9) Diethyl ether	4.99	59	421257	95.4381 ug/L	97
10) Isoprene	5.01	67	195072	19.4703 ug/L	96
11) Acrolein	5.21	56	20343	189.0160 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	5.23	101	160786	25.0181 ug/L	96
13) Acetone	5.31	43	15114	11.3867 ug/L	88
14) 1,1-Dichloroethene	5.53	61	255650	19.1490 ug/L	94
15) Tert-Butyl Alcohol	5.67	59	23674	99.4850 ug/L #	93
16) Dimethyl Sulfide	5.80	62	160086	22.5728 ug/L	97
17) Iodomethane	6.05	142	111978	19.3287 ug/L	97
18) Methyl acetate	6.11	43	52813	13.0644 ug/L	98
19) Methylene Chloride	6.35	84	134790	20.5080 ug/L	90
20) Carbon Disulfide	6.35	76	433008	19.9073 ug/L	100
21) Acrylonitrile	6.56	53	26851	17.7502 ug/L	97
22) Methyl Tert Butyl Ether	6.60	73	196694	17.9453 ug/L	97
23) trans-1,2-Dichloroethene	6.83	96	158998	21.6593 ug/L	89
24) n-Hexane	6.95	57	189271	15.9920 ug/L	97
25) Diisopropyl ether	7.33	45	2849388	91.9285 ug/L	99
26) Vinyl Acetate	7.52	43	215151	24.7027 ug/L	100
27) 1,1-Dichloroethane	7.52	63	303412	19.9773 ug/L	100
28) Ethyl-Tert-Butyl ether	7.98	59	1782213	89.3681 ug/L	98
29) 2-Butanone	8.16	43	24328	14.2440 ug/L	98
30) Propionitrile	8.27	54	32545	67.8634 ug/L	98
31) 2,2-Dichloropropane	8.38	77	222946	19.3519 ug/L	97
32) cis-1,2-Dichloroethene	8.46	96	163219	21.5267 ug/L	90
33) Chloroform	8.68	83	261444	20.9140 ug/L	98
34) 1-Bromopropane	8.83	122	34645	24.6584 ug/L	99
35) Bromochloromethane	8.94	130	85125	21.6586 ug/L	99
36) Tetrahydrofuran	8.98	42	80211	70.5734 ug/L	94
38) 1,1,1-Trichloroethane	9.28	97	252427	21.2243 ug/L	98
39) Cyclohexane	9.30	56	281814	16.8175 ug/L	96
40) 1,1-Dichloropropene	9.51	75	199592	19.9119 ug/L	95
41) Tert-Amyl-Methyl ether	9.66	73	1078158	90.2663 ug/L	99
42) Carbon Tetrachloride	9.66	117	240904	22.4550 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M119430.D 8260WTR.M Thu Aug 29 10:10:07 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082913\6M119430.D Vial: 7
Acq On : 29 Aug 2013 9:47 Operator: FJB
Sample : WG443009-03 20ug/L LCSDUP 8260 Inst : HPMS6
Misc : 1,1 STD59830 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 10:10:06 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.88	62	161079	20.5958 ug/L	98
46)	Benzene	9.91	78	555607	20.3085 ug/L	96
47)	Trichloroethene	10.77	130	176809	22.9561 ug/L	95
48)	Methylcyclohexane	10.87	83	182079	18.2776 ug/L	93
49)	1,2-Dichloropropane	11.03	63	155622	19.8777 ug/L	99
50)	1,4-Dioxane	11.39	88	3306	150.4899 ug/L	81
51)	Bromodichloromethane	11.37	83	169977	20.0969 ug/L	99
52)	Dibromomethane	11.45	93	58739	22.1106 ug/L	98
53)	2-Chloroethyl Vinyl Ether	11.77	63	44218	17.2235 ug/L	100
54)	4-Methyl-2-Pentanone	11.81	58	20852	16.2937 ug/L	97
55)	cis-1,3-Dichloropropene	12.12	75	192127	20.5396 ug/L	98
56)	Dimethyl Disulfide	12.40	79	90028	20.0942 ug/L	97
59)	Toluene	12.60	91	605563	19.5578 ug/L	99
60)	Ethyl Methacrylate	12.79	69	76791	17.2689 ug/L	90
62)	trans-1,3-Dichloropropene	12.84	75	134349	17.6855 ug/L	95
63)	1,1,2-Trichloroethane	13.07	97	77973	19.9219 ug/L	99
64)	2-Hexanone	13.05	43	35204	12.9818 ug/L	97
65)	1,3-Dichloropropane	13.43	76	128160	18.9766 ug/L	88
66)	Tetrachloroethene	13.54	166	175434	20.0958 ug/L	100
67)	Dibromochloromethane	13.84	129	113186	20.7007 ug/L	99
68)	1,2-Dibromoethane	14.13	107	76027	19.4832 ug/L	100
69)	1-Chlorohexane	14.32	91	181813	19.2831 ug/L	93
70)	Chlorobenzene	14.74	112	363946	18.4296 ug/L	97
71)	1,1,1,2-Tetrachloroethane	14.79	131	149692	21.2604 ug/L	99
72)	Ethylbenzene	14.80	106	220308	19.3595 ug/L	99
73)	m-,p-Xylene	14.90	106	523995	38.7213 ug/L	99
74)	o-Xylene	15.55	106	234951	17.8386 ug/L	97
75)	Styrene	15.59	104	402460	19.6667 ug/L	97
76)	Bromoform	16.13	173	63974	22.5351 ug/L	98
77)	Isopropylbenzene	16.06	105	614701	18.0764 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.32	83	73223	18.7970 ug/L	98
81)	1,2,3-Trichloropropane	16.54	110	21968	19.4622 ug/L	88
82)	trans-1,4-Dichloro-2-Buten	16.63	53	19183	12.6918 ug/L	96
83)	n-Propylbenzene	16.67	91	688034	16.8861 ug/L	99
84)	Bromobenzene	16.76	156	165275	20.1061 ug/L	100
85)	1,3,5-Trimethylbenzene	16.89	105	553124	18.4665 ug/L	99
86)	2-Chlorotoluene	16.95	91	498958	17.4299 ug/L	98
87)	4-Chlorotoluene	17.01	91	402179	16.3785 ug/L	98
88)	a-Methylstyrene	17.36	118	296860	19.1194 ug/L	99
89)	tert-Butylbenzene	17.43	134	108403	17.7743 ug/L	99
90)	1,2,4-Trimethylbenzene	17.48	105	566363	18.8896 ug/L	100
91)	sec-Butylbenzene	17.75	105	596641	16.8192 ug/L	100
92)	p-Isopropyltoluene	17.94	119	515970	16.9331 ug/L	99
93)	1,3-Dichlorobenzene	18.12	146	300549	17.8690 ug/L	97
94)	1,4-Dichlorobenzene	18.28	146	316450	19.2998 ug/L	99
95)	n-Butylbenzene	18.57	91	462165	17.9398 ug/L	100
96)	1,2-Dichlorobenzene	18.84	146	247385	17.8114 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	20.03	75	9228	15.5199 ug/L	92
98)	1,2,4-Trichlorobenzene	21.36	180	157400	15.9722 ug/L	99
99)	Hexachlorobutadiene	21.57	225	86043	17.4483 ug/L	99
100)	Naphthalene	21.77	128	197755	14.2167 ug/L	99
101)	1,2,3-Trichlorobenzene	22.15	180	119293	14.9590 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M119430.D 8260WTR.M Thu Aug 29 10:10:07 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\082913\6M119430.D Vial: 7
Acq On : 29 Aug 2013 9:47 Operator: FJB
Sample : WG443009-03 20ug/L LCSDUP 8260 Inst : HPMS6
Misc : 1,1 STD59830 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 10:10 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

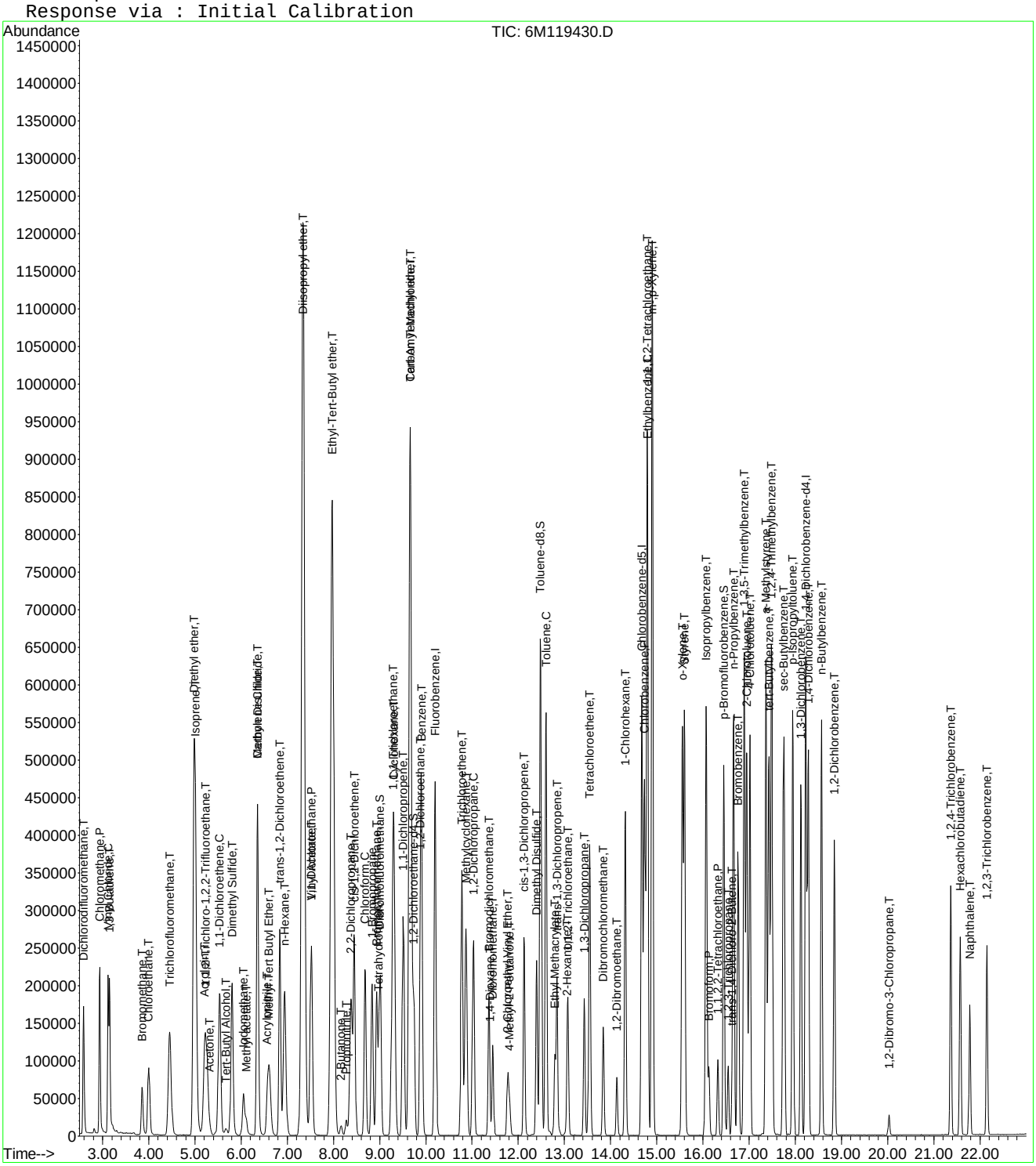

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
September 6, 2013

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE	AJF - AMANDA J. FICKIESEN
AML - TONY M. LONG	AZH - AFTER HOURS
BAF - BRICE A. FENTON	BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CRW - CHRISTINA R. WILSON	CSH - CHRIS S. HILL
CTB - CHRIS T. BUCINA	DAK - DEAN A. K
DCM - DAVID C. MERCKLE	DDE - DEBRA D. ELLIOTT
DEV - DAVID E. VANDENBERG	DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER	DLP - DOROTHY L. PAYNE
DLR - DIANNA L. RAUCH	DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON	EDL - ERIN D. LONG
EPT - ETHAN P. TIDD	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	HJR - HOLLY J. REED
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JKS - JANE K. SCHAAD	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU
KDW - KATHRYN D. WELCH	KEB - KATIE E. BARNES
KHR - KIM H. RHODES	KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER	LKN - LINDA K. NEDEFF
LSB - LESLIE S. BUCINA	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MMB - MAREN M. BEERY	MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PSW - PEGGY S. WEBB
QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN
RNP - RICK N. PETTY	RS - ROSEMARY SCOTT
RWC - RODNEY W. CAMPBELL	SAV - SARAH A. VANDENBERG
SEP - SUZANNE J. PAUGH	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	TPA - TYLER P. AMRINE
VC - VICKI COLLIER	WJB - WILL J. BEASLEY
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
September 06, 2013

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, H1	Not detected; Sample analysis performed past holding time.
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Analyte was not detected. The concentration is below the reported LOD.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

COC No. A 36384

158 Starlite Drive
Marietta, OH 45750

Microbac

CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071
Fax: 740-373-4835

Company Name: AECOM

Project Contact: David Wacker / Linda Raabe

Contact Phone #: 210-296-2000

Turn Around Requirements: Standard

Location: LHAAP 67

Project ID: 60256135

Sampler (print): Robert Lewis

Signature:

Program: ☐ CWA ☐ RCRA ☐ DOD ☐ AFCEE ☐ Other _____

Sample I.D. No.	Comp	Grab	Date	Time	Matrix*	NUMBER OF CONTAINERS	Hold	VOC 8260B	TOTAL # (LAB USE)	ADDITIONAL REQUIREMENTS
67DPT13B(26-30)-240813		X	8/24/13	0815	W	3		X		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinqu (Signat
	8/26/13	1550	UPS	
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Dat

Microbac OVD
Received: 08/27/2013 09:56
By: ROSEMARY SCOTT 221000040921

*Water (W), Soil (S), Solid Waste (SD), Unknown (X)

Page 1 of 1

00733770

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13081329
Account: 2551
Project: 2551.096
Samples: 1
Due Date: 29-AUG-2013

Samplenum	Container ID	Products
L13081329-01	237334	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-AUG-2013 14:35	CLS		<2
2	ANALYZ	V1	ORG4	27-AUG-2013 14:55	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-AUG-2013 14:35	CLS		<2
2	ANALYZ	V1	ORG4	27-AUG-2013 14:55	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-AUG-2013 14:35	CLS		<2
2	ANALYZ	V1	ORG4	27-AUG-2013 14:55	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - April 25, 2013

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Nitroguanidine
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL KNITRO-C-WUV-VIS

Nitrocellulose

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL HPLCOS-HPLC-UV

Nitroguanidine

OVL KNITRO-C-S/UV-VIS

Nitrocellulose

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L13090262

Linda Raabe
AECOM Technical Services, Inc.
112 East Pecan
San Antonio, TX 78205
Site: NO SPE LISTS CREATED

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Kathy Albertson – Team Chemist/Data Specialist
(740) 373-4071
Kathy.Albertson@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on September 16 2013

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L13090262
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110865	I	1.0		J2317153512	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L13090262
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
67DPT13C(23-33)050913	L13090262-01	09/05/2013 10:58	09/06/2013 10:22
TB050913-01	L13090262-02	09/05/2013 00:01	09/06/2013 10:22

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L13090262
PREPARED FOR AECOM Technical Services, Inc.
WORK ID: NO SPE LISTS CREATED

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 13
2.0 Full Sample Data Package 20
2.1 Volatiles Data 21
2.1.1 Volatiles GCMS Data (8260) 22
2.1.1.1 Summary Data 23
2.1.1.2 QC Summary Data 30
2.1.1.3 Sample Data 86
2.1.1.4 Standards Data 99
2.1.1.5 Raw QC Data 234
3.0 Attachments 257

1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13090262
Project Name:		**Method:**	8260
Prep Batch Number(s):	443996,444637	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-09-16 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2013-09-16 18:30:49

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13090262
Project Name:		**Method:**	8260
Prep Batch Number(s):	443996,444637	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-09-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13090262
Project Name:		**Method:**	8260
Prep Batch Number(s):	443996,444637	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-09-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			1
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13090262
Project Name:		**Method:**	8260
Prep Batch Number(s):	443996,444637	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-09-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			3
Was the ICAL curve verified for each analyte?		X			2
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13090262
Project Name:		**Method:**	8260
Prep Batch Number(s):	443996,444637	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-09-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13090262
Project Name:		**Method:**	8260
Prep Batch Number(s):	443996,444637	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-09-16 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) 4-Chlorotoluene and dichlorodifluoromethane were outside the control limits in the LCS/LCSD analyzed 09-09-13 on HPMS6.

2) Dichlorodifluoromethane was outside the control limits in the Alternate Source analyzed 07-26-13 on HPMS6. Acetone and dichlorodifluoromethane were outside the control limits in the Alternate Source analyzed 09-11-13 on HPMS8.

3) Bromomethane, 2-chlorotoluene, 1,2-Dibromo-3-Chloropropane, 2-hexanone, naphthalene and 1,2,3-trichlorobenzene were outside the control limits in the CCV analyzed 09-09-13 on HPMS6.

1.2 Certificate of Analysis

Microbac

Lab Report #: L13090262
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13090262-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67DPT13C(23-33)050913	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/11/2013 14:13
Workgroup #:	WG444637	**Analyst:**	TMB	**Run Date:**	09/13/2013 19:26
Collect Date:	09/05/2013 10:58	**Dilution:**	1	**File ID:**	8M390582
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.45	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.323	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.386	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	2.47		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13090262
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13090262
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13090262-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TB050913-01	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/26/2013 20:12
Workgroup #:	WG443996	**Analyst:**	TMB	**Run Date:**	09/09/2013 14:52
Collect Date:	09/05/2013 00:01	**Dilution:**	1	**File ID:**	6M119762
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13090262
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	99.2	70	120	
Toluene-d8	98.7	85	120	
4-Bromofluorobenzene	95.5	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13090262
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13090262
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L13090262
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13090262-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67DPT13C(23-33)050913	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/11/2013 14:13
Workgroup #:	WG444637	**Analyst:**	TMB	**Run Date:**	09/13/2013 19:26
Collect Date:	09/05/2013 10:58	**Dilution:**	1	**File ID:**	8M390582
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.45	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.323	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.386	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	2.47		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13090262
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13090262
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13090262-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TB050913-01	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/26/2013 20:12
Workgroup #:	WG443996	**Analyst:**	TMB	**Run Date:**	09/09/2013 14:52
Collect Date:	09/05/2013 00:01	**Dilution:**	1	**File ID:**	6M119762
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13090262
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	99.2	70	120	
Toluene-d8	98.7	85	120	
4-Bromofluorobenzene	95.5	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13090262
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13090262
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 061213
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13

Maintenance Log ID: 46389

Internal Standard: STD58238 Surrogate Standard: STD58238
CCV: STD58272 LCS: STD58120 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG433881 (A9 ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M117459	WG433881-01 50ng BFB	NA	1	1	STD57627	06/12/13 15:44
6M117460	WG433881-02 5ug/L A9STD 8260	NA	1	1	STD58272	06/12/13 16:07
6M117461	WG433881-03 20ug/L A9STD 8260	NA	1	1	STD58272	06/12/13 16:38
6M117462	WG433881-04 50ug/L A9STD 8260	NA	1	1	STD58272	06/12/13 17:09
6M117463	WG433881-05 100ug/L A9STD 8260	NA	1	1	STD58272	06/12/13 17:39
6M117464	WG433881-06 200ug/L A9STD 8260	NA	1	1	STD58272	06/12/13 18:11
6M117465	WG433881-07 300ug/L A9STD 8260	NA	1	1	STD58272	06/12/13 18:42
6M117466	WG433881-08 400ug/L A9STD 8260	NA	1	1	STD58272	06/12/13 19:13
6M117467	WG433881-09 500ug/L A9STD 8260	NA	1	1	STD58272	06/12/13 19:44
6M117468	RINSE	NA	1	1		06/12/13 20:15
6M117469	WG433881-10 100ug/L A9ALT 8260	NA	1	1	STD58272	06/12/13 20:47
6M117470	RINSE	NA	1	1		06/12/13 21:18
6M117471	RINSE	NA	1	1		06/12/13 21:49
6M117472	RINSE	NA	1	1		06/12/13 22:20
6M117473	RINSE	NA	1	1		06/12/13 22:51
6M117474	RINSE	NA	1	1		06/12/13 23:22
6M117475	RINSE	NA	1	1		06/12/13 23:54
6M117476	RINSE	NA	1	1		06/13/13 00:25
6M117477	RINSE	NA	1	1		06/13/13 00:56
6M117478	RINSE	NA	1	1		06/13/13 01:27
6M117479	RINSE	NA	1	1		06/13/13 01:58
6M117480	RINSE	NA	1	1		06/13/13 02:29
6M117481	RINSE	NA	1	1		06/13/13 11:34
6M117482	RINSE	NA	1	1		06/13/13 12:06
6M117483	RINSE	NA	1	1		06/13/13 12:52
6M117484	RINSE	NA	1	1		06/13/13 13:23

Approved: June 18, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062413
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 624 SOP: MSV10 Rev: 9
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 46534

Internal Standard: STD58460 Surrogate Standard: STD58460
CCV: STD58742 LCS: STD58743 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG435275 (A9ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M389012	WG435275-01 50NG BFB STD 8260	NA	1	1	STD57627	06/24/13 17:28
8M389013	RINSE	NA	1	1	STD58272	06/24/13 17:56
8M389014	WG435275-02 5ug/L A9STD 8260	NA	1	1	STD58272	06/24/13 18:26
8M389015	WG435275-03 20ug/L A9STD 8260	NA	1	1	STD58272	06/24/13 18:56
8M389016	WG435275-04 50ug/L A9STD 8260	NA	1	1	STD58272	06/24/13 19:26
8M389017	WG435275-05 100ug/L A9STD 8260	NA	1	1	STD58272	06/24/13 19:56
8M389018	WG435275-06 200ug/L A9STD 8260	NA	1	1	STD58272	06/24/13 20:25
8M389019	WG435275-07 300ug/L A9STD 8260	NA	1	1	STD58272	06/24/13 20:55
8M389020	WG435275-08 400ug/L A9STD 8260	NA	1	1	STD58272	06/24/13 21:25
8M389021	WG435275-09 500ug/L A9STD 8260	NA	1	1	STD58272	06/24/13 21:55
8M389022	RINSE	NA	1	1	STD58272	06/24/13 22:25
8M389023	WG435275-10 100ug/L A9 ALT SRC 8260	NA	1	1	STD58120	06/24/13 22:55

Approved: July 03, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 072613
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Method: 624 SOP: MSV10 Rev: 9
Maintenance Log ID: 46832

Internal Standard: STD59276 Surrogate Standard: STD59276
CCV: STD59089 LCS: STD59088 MS/MSD: STD59088

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG439230

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M118372	WG439230-01 BFB 50ng 8260	NA	1	1	STD58740	07/26/13 14:44
6M118373	RINSE	NA	1	1		07/26/13 15:07
6M118374	WG439230-02 0.3ug/L STD 8260	NA	1	1	STD59089	07/26/13 15:38
6M118375	WG439230-03 0.4ug/L STD 8260	NA	1	1	STD59089	07/26/13 16:08
6M118376	WG439230-04 1.0ug/L STD 8260	NA	1	1	STD59089	07/26/13 16:39
6M118377	WG439230-05 2.0ug/L STD 8260	NA	1	1	STD59089	07/26/13 17:10
6M118378	WG439230-06 5.0ug/L STD 8260	NA	1	1	STD59089	07/26/13 17:40
6M118379	WG439230-07 20.0ug/L STD 8260	NA	1	1	STD59089	07/26/13 18:10
6M118380	WG439230-08 50.0ug/L STD 8260	NA	1	1	STD59089	07/26/13 18:41
6M118381	WG439230-09 100.0ug/L STD 8260	NA	1	1	STD59089	07/26/13 19:11
6M118382	WG439230-10 200.0ug/L STD 8260	NA	1	1	STD59089	07/26/13 19:42
6M118383	WG439230-11 300.0ug/L STD 8260	NA	1	1	STD59089	07/26/13 20:12
6M118384	RINSE	NA	1	1		07/26/13 20:43
6M118385	WG439230-12 50.0ug/L ALT SRC 8260	NA	1	1	STD59088	07/26/13 21:13

Approved: July 29, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 090913
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 624 SOP: MSV01 Rev: 10
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 47324

Internal Standard: STD59713 Surrogate Standard: STD59713
CCV: STD59935 LCS: STD60011 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG443996; WG444058

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M119752	rinse	NA	1	1		09/09/13 08:41
6M119753	rinse	NA	1	1		09/09/13 09:22
6M119754	WG443995-01 50ng BFB STD 8260	NA	1	1	STD59881	09/09/13 10:55
6M119755	WG443995-02 50ug/L CCV STD 8260	NA	1	1	STD59935	09/09/13 11:19
6M119756	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD59907	09/09/13 11:49
6M119757	WG443996-01 VBLK0909 BLANK STD 826	NA	1	1		09/09/13 12:20
6M119758	WG443996-02 20ug/L LCS STD 8260	NA	1	1	STD60011	09/09/13 12:50
6M119759	WG443996-03 20ug/L LCSDUP STD 8260	NA	1	1	STD60011	09/09/13 13:20
6M119760	L13081521-14 B 200X 826-SPE D1	<2	1	200		09/09/13 13:51
6M119761	L13090101-01 B 50X 826-LOW 00	<2	1	50		09/09/13 14:21
6M119762	L13090262-02 TB A 826-LOW	<2	1	1		09/09/13 14:52
6M119763	L13090280-04 TB A 826-SPE1	<2	1	1		09/09/13 15:22
6M119764	L13081521-15 TB B 826-SPE	<2	1	1		09/09/13 15:53
6M119765	L13090101-03 TB B 826-LOW	<2	1	1		09/09/13 16:24
6M119766	L13090279-01 TB A 826-LOW	<2	1	1		09/09/13 16:54
6M119767	L13081580-02 C 826-SPE	<2	1	1		09/09/13 17:25
6M119768	L13081521-16 AB B 826-SPE	<2	1	1		09/09/13 17:55
6M119769	L13090197-05 B 826-LOW	<2	1	1		09/09/13 18:26
6M119770	L13090197-06 B 826-LOW	<2	1	1		09/09/13 18:57
6M119771	L13090279-03 A 826-LOW	<2	1	1		09/09/13 19:27
6M119772	L13090279-05 A 826-LOW	<2	1	1		09/09/13 19:58
6M119773	L13090281-01 A 826-SPE	<2	1	1		09/09/13 20:29
6M119774	L13090281-02 A 826-SPE	<2	1	1		09/09/13 20:59
6M119775	L13090262-01 A 826-LOW	<2	1	1		09/09/13 21:30
6M119776	L13090279-02 A 25X 826-LOW	<2	1	25		09/09/13 22:00
6M119777	WG444058-02 20ug/L LCS STD 624	NA	2	1		09/09/13 22:31
6M119778	WG444058-03 20ug/L LCSDUP STD 624	NA	2	1		09/09/13 23:02
6M119779	RINSE	NA	2	1		09/09/13 23:33
6M119780	WG444058-01 VBLK0909 BLANK STD 624	NA	2	1		09/10/13 00:04
6M119781	L13090248-02 A 624-SPE3	6	2	1		09/10/13 00:34
6M119782	L13090127-01 B 50X 624-SPE1 D1	6	2	50		09/10/13 01:05
6M119783	L13090296-01 A 624-SPE	6	2	1		09/10/13 01:36
6M119784	L13090317-01 A 624-SPE	6	2	1		09/10/13 02:07
6M119785	L13090320-01 A 624-SPE	6	2	1		09/10/13 02:38

Approved: September 10, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 090913
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 624 SOP: MSV01 Rev: 10
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 47324

Internal Standard: STD59713 Surrogate Standard: STD59713
CCV: STD59935 LCS: STD60011 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG443996; WG444058

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M119786	L13090320-02 A 624-SPE	6	2	1		09/10/13 03:08
6M119787	L13090321-01 A 624-SPE	6	2	1		09/10/13 03:39
6M119788	L13090321-02 A 624-SPE	6	2	1		09/10/13 04:10
6M119789	L13090320-03 A 624-SPE	6	2	1		09/10/13 04:41
6M119790	L13090320-04 A 624-SPE	6	2	1		09/10/13 05:12
6M119791	L13090320-05 A 624-SPE	6	2	1		09/10/13 05:43
6M119792	L13090320-06 A 624-SPE	6	2	1		09/10/13 06:14
6M119793	L13090326-01 A 624-SPE	<2	2	1		09/10/13 06:45
6M119794	L13090326-02 A 624-SPE	<2	2	1		09/10/13 07:16
6M119795	L13090326-03 A 624-SPE	<2	2	1		09/10/13 07:46
6M119796	L13090300-02 A 624-SPE	6	2	1		09/10/13 08:17
6M119797	L13090321-03 A 624-SPE	6	2	1		09/10/13 08:48
6M119798	L13090321-04 A 624-SPE	6	2	1		09/10/13 09:18
6M119799	L13090321-05 A 624-SPE	6	2	1		09/10/13 09:49
6M119800	L13090321-06 A 624-SPE	6	2	1		09/10/13 10:19
6M119801	ANTIFOAM BLANK	NA	2	1		09/10/13 10:50

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5 File ID: 6M119756				
Not needed, DNR.				
20 File ID: 6M119771	X	1	Surrogate standard failure	
21 File ID: 6M119772	X	1	Surrogate standard failure	
22 File ID: 6M119773	X	1	Surrogate standard failure	
24 File ID: 6M119775	X	1	Surrogate standard failure	
33	X	1		

Approved: September 10, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS6	Dataset:	090913		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	16
Method:	624	SOP:	MSV01	Rev:	10
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	13
Maintenance Log ID:	47324				

Internal Standard: STD59713 Surrogate Standard: STD59713

CCV: STD59935 LCS: STD60011 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG443996; WG444058

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 6M119784				
There were three outliers low in the lcs/lcsdup.				
42	X	100	Over Calibration Range	CIS12-DCE, TCE, PCE
File ID: 6M119793				
43	X	1	Carry-over contamination	
File ID: 6M119794				
Tce carry over, DNR.				
44	X	1	Carry-over contamination	
File ID: 6M119795				
Tce carry over, DNR.				
45	X	1	Carry-over contamination	
File ID: 6M119796				
Tce carry over.				

Approved: September 10, 2013

Page: 3

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 091113
Analyst1: TMB Analyst2: NA
Method: 8260B/OVAP SOP: MSV01 Rev: 16/0
Method: 624 SOP: MSV10 Rev: 10
Method: 5030B/5030C/5035A/OVAP SOP: PAT01 Rev: 13/0
Maintenance Log ID: 47356

Internal Standard: STD60086 Surrogate Standard: STD59446
CCV: STD60047 LCS: STD60011 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG444268; WG444466

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M390509	RINSE	NA	1	1		09/11/13 08:35
8M390510	WG444268-01 50ng BFB STD 8260	NA	1	1	STD59881	09/11/13 09:19
8M390511	WG444268-02 0.3ug/L STD 8260	NA	1	1	STD60047	09/11/13 09:45
8M390512	WG444268-03 0.4ug/L STD 8260	NA	1	1	STD60047	09/11/13 10:15
8M390513	WG444268-04 1ug/L STD 8260	NA	1	1	STD60047	09/11/13 10:45
8M390514	WG444268-05 2ug/L STD 8260	NA	1	1	STD60047	09/11/13 11:14
8M390515	WG444268-06 5ug/L STD 8260	NA	1	1	STD60047	09/11/13 11:45
8M390516	WG444268-07 20ug/L STD 8260	NA	1	1	STD60047	09/11/13 12:14
8M390517	WG444268-08 50ug/L STD 8260	NA	1	1	STD60047	09/11/13 12:44
8M390518	WG444268-09 100ug/L STD 8260	NA	1	1	STD60047	09/11/13 13:14
8M390519	WG444268-10 200ug/L STD 8260	NA	1	1	STD60047	09/11/13 13:43
8M390520	WG444268-11 300ug/L STD 8260	NA	1	1	STD60047	09/11/13 14:13
8M390521	RINSE	NA	1	1		09/11/13 15:28
8M390522	RINSE	NA	1	1		09/11/13 15:58
8M390523	RINSE	NA	1	1		09/11/13 16:27
8M390524	WG444268-12 50ug/L ALT SRC STD 8260	NA	1	1	STD60011	09/11/13 16:57
8M390525	RINSE	NA	1	1		09/11/13 17:29
8M390526	RINSE	NA	1	1		09/11/13 18:00
8M390527	L13070001-01 LOD 826-SPE	NA	1	1	STD60097	09/11/13 18:31

Approved: September 13, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 091313
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13

Maintenance Log ID: 47386

Internal Standard: STD60086 Surrogate Standard: STD60128
CCV: STD60047 LCS: STD60011 MS/MSD: STD60011

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG444637

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M390572	WG444635-01 50ng BFB STD 8260	NA	1	1	STD59881	09/13/13 14:38
8M390573	WG444635-01 50ng BFB STD 8260	NA	1	1	STD59881	09/13/13 14:51
8M390574	WG444635-02 50ug/L CCV STD 8260	NA	1	1	STD60047	09/13/13 15:17
8M390575	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD59907	09/13/13 15:48
8M390576	WG444637-01 VBLK0913 BLANK STD 826	NA	1	1		09/13/13 16:19
8M390577	WG444637-02 20ug/L LCS STD 8260	NA	1	1	STD60011	09/13/13 16:51
8M390578	L13090607-08 A MS 826-LOW	<2	1	1	STD60011	09/13/13 17:22
8M390579	L13090607-09 A MSD 826-LOW	<2	1	1	STD60011	09/13/13 17:53
8M390580	L13090607-26 A TB 826-LOW	<2	1	1		09/13/13 18:24
8M390581	L13090381-02 A TB 826-LOW	<2	1	1		09/13/13 18:55
8M390582	L13090262-01 B 826-SPE	<2	1	1		09/13/13 19:26
8M390583	L13090281-01 B 826-SPE	<2	1	1		09/13/13 19:57
8M390584	L13090607-07 A REF 826-LOW	<2	1	1		09/13/13 20:28
8M390585	L13090381-01 A 826-LOW	3	1	1		09/13/13 20:59
8M390586	L13090607-27 A FB 826-LOW	<2	1	1		09/13/13 21:30
8M390587	L13090607-17 A 826-LOW	<2	1	1		09/13/13 22:01
8M390588	L13090607-18 A 826-LOW	<2	1	1		09/13/13 22:32
8M390589	L13090607-19 A 826-LOW	<2	1	1		09/13/13 23:03
8M390590	L13090607-20 A 826-LOW	<2	1	1		09/13/13 23:34
8M390591	L13090607-28 A 826-LOW	<2	1	1		09/14/13 00:05
8M390592	L13090607-29 A 826-LOW	<2	1	1		09/14/13 00:36
8M390593	L13090607-30 A 826-LOW	<2	1	1		09/14/13 01:07
8M390594	L13090607-31 A 826-LOW	<2	1	1		09/14/13 01:38
8M390595	L13090607-22 A 826-LOW	<2	1	1		09/14/13 02:09
8M390596	L13090607-21 A 826-LOW	<2	1	1		09/14/13 02:39
8M390597	CCV	NA	1	1		09/14/13 03:10
8M390598	RINSE	NA	1	1		09/14/13 03:41
8M390599	RINSE	NA	1	1		09/14/13 04:12
8M390600	ANTIFOAM BLANK	NA	1	1		09/14/13 04:43

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			

Approved: September 16, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 091313
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13

Maintenance Log ID: 47386

Internal Standard: STD60086 Surrogate Standard: STD60128
CCV: STD60047 LCS: STD60011 MS/MSD: STD60011

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG444637

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 8M390572				
	Tune failed, DNR.			
4				
File ID: 8M390575				
	Not needed, DNR.			

Approved: September 16, 2013

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 12-JUN-2013
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS6
Curve Workgroup: WG433881
Runlog ID: 53878
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	NA
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	NA
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
18-JUN-2013

Secondary Reviewer:
18-JUN-2013

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-18-2013 16:35:52

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2013
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS8
Curve Workgroup: WG435275
Runlog ID: 54188
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	NA
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	NA
KOBRA Workgroup Data	NA
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 02-JUL-2013

Secondary Reviewer: 03-JUL-2013

CHECKLIST1 - Modified 03/05/2008

Generated: JUL-03-2013 09:00:14

Microbac Laboratories Inc.

Data Checklist

Date: 26-JUL-2013
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS6
Curve Workgroup: WG439230
Runlog ID: 54723
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	NA
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-JUL-2013

Secondary Reviewer:
29-JUL-2013

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-29-2013 13:41:41

Microbac Laboratories Inc.

Data Checklist

Date: 09-SEP-2013
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 55554
Analytical Workgroups: WG443996; WG444058

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
10-SEP-2013
Tiffany Bailey

Secondary Reviewer:
10-SEP-2013

CHECKLIST1 - Modified 03/05/2008
Generated: SEP-10-2013 12:55:40

Microbac Laboratories Inc.

Data Checklist

Date: 11-SEP-2013
Analyst: TMB
Analyst: NA
Method: 8260B/OVAP/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 55612
Analytical Workgroups: WG444268; WG444466

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
12-SEP-2013
Tiffany Bailey

Secondary Reviewer:
13-SEP-2013

CHECKLIST1 - Modified 03/05/2008
Generated: SEP-13-2013 13:22:11

Microbac Laboratories Inc.

Data Checklist

Date: 13-SEP-2013
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 55655
Analytical Workgroups: WG444637

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
16-SEP-2013
Tiffany Bailey

Secondary Reviewer:
16-SEP-2013

CHECKLIST1 - Modified 03/05/2008
Generated: SEP-16-2013 12:55:22

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG443996

Login Number: L13090262

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
TB050913-01	02	09/05/13					09/09/2013	4.6	14		09/09/13	4.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3084267
Report generated 09/16/2013 14:19

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG444637

Login Number: L13090262

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67DPT13C(23-33)050913	01	09/05/13					09/13/2013	8.4	14		09/13/13	8.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3084267
Report generated 09/16/2013 14:19

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L13090262
Instrument Id: HPMS6
Workgroup (AAB#): WG443996

Method: 8260
CAL ID: HPMS6-26-JUL-13
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L13090262-02	1.00	01	99.2	112	95.5	98.7
WG443996-01	1.00	01	102	113	95.5	99.0
WG443996-02	1.00	01	102	111	93.8	98.6
WG443996-03	1.00	01	101	110	94.1	99.1

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3073230
Report generated: 09/16/2013 14:20

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L13090262
Instrument Id: HPMS8
Workgroup (AAB#): WG444637

Method: 8260
CAL ID: HPMS8-11-SEP-13
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L13090262-01	1.00	02	109	105	101	106
WG444637-01	1.00	01	108	104	100	105
WG444637-02	1.00	01	107	105	99.7	106

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3073230
Report generated: 09/16/2013 14:20

METHOD BLANK SUMMARY

Login Number: L13090262
Blank File ID: 6M119757
Prep Date: 09/09/13 12:20
Analyzed Date: 09/09/13 12:20
Analyst: TMB

Work Group: WG443996
Blank Sample ID: WG443996-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG443996-02	6M119758	09/09/13 12:50	01
LCS2	WG443996-03	6M119759	09/09/13 13:20	01
TB050913-01	L13090262-02	6M119762	09/09/13 14:52	01

Report Name: BLANK_SUMMARY
PDF File ID: 3084268
Report generated 09/16/2013 14:19

METHOD BLANK SUMMARY

Login Number: L13090262
Blank File ID: 8M390576
Prep Date: 09/13/13 16:19
Analyzed Date: 09/13/13 16:19
Analyst: TMB

Work Group: WG444637
Blank Sample ID: WG444637-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG444637-02	8M390577	09/13/13 16:51	01
67DPT13C(23-33)050913	L13090262-01	8M390582	09/13/13 19:26	02

Report Name: BLANK_SUMMARY
PDF File ID: 3084268
Report generated 09/16/2013 14:19

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13090262 Prep Date: 09/09/13 12:20 Sample ID: WG443996-01
Instrument ID: HPMS6 Run Date: 09/09/13 12:20 Prep Method: 5030B/5030C/503
File ID: 6M119757 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG443996 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-26-JUL-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 3084269
16-SEP-2013 14:20

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13090262 Prep Date: 09/09/13 12:20 Sample ID: WG443996-01
Instrument ID: HPMS6 Run Date: 09/09/13 12:20 Prep Method: 5030B/5030C/503
File ID: 6M119757 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG443996 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-26-JUL-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	113	85 - 115	PASS
1,2-Dichloroethane-d4	102	70 - 120	PASS
Toluene-d8	99.0	85 - 120	PASS
4-Bromofluorobenzene	95.5	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3084269
16-SEP-2013 14:20

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13090262 Prep Date: 09/13/13 16:19 Sample ID: WG444637-01
Instrument ID: HPMS8 Run Date: 09/13/13 16:19 Prep Method: 5030B/5030C/503
File ID: 8M390576 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG444637 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-11-SEP-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 3084269
16-SEP-2013 14:20

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13090262 Prep Date: 09/13/13 16:19 Sample ID: WG444637-01
Instrument ID: HPMS8 Run Date: 09/13/13 16:19 Prep Method: 5030B/5030C/503
File ID: 8M390576 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG444637 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-11-SEP-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	85 - 115	PASS
1,2-Dichloroethane-d4	108	70 - 120	PASS
Toluene-d8	105	85 - 120	PASS
4-Bromofluorobenzene	100	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3084269
16-SEP-2013 14:20

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13090262 | Run Date: 09/13/2013 | Sample ID: WG444637-02
Instrument ID: HPMS8 | Run Time: 16:51 | Prep Method: 5030B/5030C/503
File ID: 8M390577 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG444637 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD60011 | Cal ID: HPMS8-11-SEP-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.1	105	40 - 140	
Benzene	20.0	20.9	105	80 - 120	
Bromobenzene	20.0	20.7	103	75 - 125	
Bromochloromethane	20.0	22.0	110	65 - 130	
Bromodichloromethane	20.0	21.0	105	75 - 120	
Bromoform	20.0	21.5	107	70 - 130	
Bromomethane	20.0	24.1	121	30 - 145	
2-Butanone	20.0	24.2	121	30 - 150	
n-Butylbenzene	20.0	21.6	108	70 - 135	
sec-Butylbenzene	20.0	19.8	99.1	70 - 125	
tert-Butylbenzene	20.0	19.9	99.5	70 - 130	
Carbon disulfide	20.0	20.9	105	35 - 160	
Carbon tetrachloride	20.0	21.8	109	65 - 140	
Chlorobenzene	20.0	19.2	96.1	80 - 120	
Chlorodibromomethane	20.0	21.4	107	60 - 135	
Chloroethane	20.0	21.2	106	60 - 135	
Chloroform	20.0	21.0	105	65 - 135	
Chloromethane	20.0	19.9	99.3	40 - 125	
2-Chlorotoluene	20.0	19.0	95.0	75 - 125	
4-Chlorotoluene	20.0	20.2	101	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	22.2	111	50 - 130	
1,2-Dibromoethane	20.0	21.4	107	80 - 120	
Dibromomethane	20.0	22.3	112	75 - 125	
1,2-Dichlorobenzene	20.0	19.2	95.9	70 - 120	
1,3-Dichlorobenzene	20.0	19.4	97.2	75 - 125	
1,4-Dichlorobenzene	20.0	20.0	100	75 - 125	
Dichlorodifluoromethane	20.0	28.7	143	30 - 155	
1,1-Dichloroethane	20.0	20.7	104	70 - 135	
1,2-Dichloroethane	20.0	22.4	112	70 - 130	
1,1-Dichloroethene	20.0	21.1	105	70 - 130	
cis-1,2-Dichloroethene	20.0	22.0	110	70 - 125	
trans-1,2-Dichloroethene	20.0	21.6	108	60 - 140	
1,2-Dichloropropane	20.0	21.1	105	75 - 125	
1,3-Dichloropropane	20.0	21.5	108	75 - 125	
2,2-Dichloropropane	20.0	20.8	104	70 - 135	
cis-1,3-Dichloropropene	20.0	23.6	118	70 - 130	
trans-1,3-Dichloropropene	20.0	21.0	105	55 - 140	
1,1-Dichloropropene	20.0	21.0	105	75 - 130	
Ethylbenzene	20.0	20.1	100	75 - 125	
2-Hexanone	20.0	21.4	107	55 - 130	
Hexachlorobutadiene	20.0	18.9	94.6	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 3083494
Report generated: 09/16/2013 14:20

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13090262 Run Date: 09/13/2013 Sample ID: WG444637-02
Instrument ID: HPMS8 Run Time: 16:51 Prep Method: 5030B/5030C/503
File ID: 8M390577 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG444637 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD60011 Cal ID: HPMS8-11-SEP-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.2	106	75 - 125	
p-Isopropyltoluene	20.0	20.5	103	75 - 130	
4-Methyl-2-pentanone	20.0	23.1	116	60 - 135	
Methylene chloride	20.0	20.8	104	55 - 140	
Naphthalene	20.0	22.8	114	55 - 140	
n-Propylbenzene	20.0	20.3	102	70 - 130	
Styrene	20.0	22.7	114	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.9	109	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	21.2	106	65 - 130	
Tetrachloroethene	20.0	20.9	104	45 - 150	
Toluene	20.0	21.4	107	75 - 120	
1,2,3-Trichlorobenzene	20.0	21.2	106	55 - 140	
1,2,4-Trichlorobenzene	20.0	21.1	106	65 - 135	
1,1,1-Trichloroethane	20.0	22.0	110	65 - 130	
1,1,2-Trichloroethane	20.0	21.5	108	75 - 125	
Trichloroethene	20.0	23.0	115	70 - 125	
Trichlorofluoromethane	20.0	23.6	118	60 - 145	
1,2,3-Trichloropropane	20.0	21.1	106	75 - 125	
1,2,4-Trimethylbenzene	20.0	21.8	109	75 - 130	
1,3,5-Trimethylbenzene	20.0	23.3	116	75 - 130	
Vinyl chloride	20.0	22.1	110	50 - 145	
o-Xylene	20.0	20.2	101	80 - 120	
m-,p-Xylene	40.0	41.6	104	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	105	85 - 115	PASS
1,2-Dichloroethane-d4	107	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	99.7	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 3083494
Report generated: 09/16/2013 14:20

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13090262 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG443996 Units: ug/L
QC Key: DOD4 Lot #: STD60011

Sample ID: WG443996-02 LCS File ID: 6M119758 Run Date: 09/09/2013 12:50
Sample ID: WG443996-03 LCS2 File ID: 6M119759 Run Date: 09/09/2013 13:20

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.0	99.9	20.0	20.4	102	2.08	80 - 130	30	
1,1,1-Trichloroethane	20.0	21.6	108	20.0	22.1	110	2.26	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.2	91.2	20.0	18.1	90.7	0.566	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.3	96.7	20.0	19.5	97.6	0.876	75 - 125	30	
1,1-Dichloroethane	20.0	20.2	101	20.0	20.6	103	2.05	70 - 135	30	
1,1-Dichloroethene	20.0	19.1	95.3	20.0	19.7	98.4	3.21	70 - 130	30	
1,1-Dichloropropene	20.0	20.3	101	20.0	21.0	105	3.58	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	16.7	83.4	20.0	16.9	84.7	1.65	55 - 140	30	
1,2,3-Trichloropropane	20.0	18.3	91.5	20.0	18.4	92.1	0.586	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	16.8	84.2	20.0	17.3	86.7	2.99	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	17.1	85.3	20.0	17.5	87.4	2.41	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	16.4	82.2	20.0	16.8	84.2	2.40	50 - 130	30	
1,2-Dibromoethane	20.0	19.0	95.0	20.0	19.4	97.0	2.08	80 - 120	30	
1,2-Dichlorobenzene	20.0	17.1	85.7	20.0	17.3	86.3	0.697	70 - 120	30	
1,2-Dichloroethane	20.0	20.4	102	20.0	20.4	102	0.0150	70 - 130	30	
1,2-Dichloropropane	20.0	20.6	103	20.0	20.8	104	0.956	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	16.7	83.7	20.0	17.3	86.6	3.37	75 - 130	30	
1,3-Dichlorobenzene	20.0	16.8	83.8	20.0	17.1	85.3	1.76	75 - 125	30	
1,3-Dichloropropane	20.0	18.4	91.9	20.0	18.5	92.4	0.574	75 - 125	30	
1,4-Dichlorobenzene	20.0	18.3	91.4	20.0	18.6	92.8	1.48	75 - 125	30	
2,2-Dichloropropane	20.0	19.5	97.3	20.0	20.2	101	3.81	70 - 135	30	
2-Butanone	20.0	19.3	96.3	20.0	18.0	90.1	6.61	30 - 150	30	
2-Chlorotoluene	20.0	15.7	78.4	20.0	16.1	80.3	2.37	75 - 125	30	
2-Hexanone	20.0	14.1	70.4	20.0	13.7	68.4	2.83	55 - 130	30	
4-Chlorotoluene	20.0	14.8	73.8	20.0	15.5	77.6	4.95	75 - 130	30	*
4-Methyl-2-pentanone	20.0	19.3	96.7	20.0	18.7	93.5	3.34	60 - 135	30	
Acetone	20.0	16.2	81.0	20.0	15.0	75.0	7.67	40 - 140	30	
Benzene	20.0	20.8	104	20.0	21.3	106	2.15	80 - 120	30	
Bromobenzene	20.0	18.6	93.1	20.0	19.0	94.8	1.82	75 - 125	30	
Bromochloromethane	20.0	22.7	114	20.0	22.9	115	0.995	65 - 130	30	
Bromodichloromethane	20.0	20.7	104	20.0	20.8	104	0.456	75 - 120	30	
Bromoform	20.0	22.4	112	20.0	22.2	111	0.603	70 - 130	30	
Bromomethane	20.0	16.2	81.1	20.0	16.9	84.6	4.24	30 - 145	30	
Carbon disulfide	20.0	23.4	117	20.0	23.7	118	0.925	35 - 160	30	
Carbon tetrachloride	20.0	22.6	113	20.0	23.4	117	3.74	65 - 140	30	
Chlorobenzene	20.0	17.4	87.2	20.0	17.8	88.9	1.85	80 - 120	30	
Chloroethane	20.0	21.7	108	20.0	22.5	113	3.92	60 - 135	30	
Chloroform	20.0	21.2	106	20.0	21.5	107	1.04	65 - 135	30	
Chloromethane	20.0	21.3	106	20.0	22.2	111	4.23	40 - 125	30	
cis-1,2-Dichloroethene	20.0	22.4	112	20.0	22.4	112	0.232	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3073225
Report generated: 09/16/2013 14:20

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13090262 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG443996 Units: ug/L
QC Key: DOD4 Lot #: STD60011

Sample ID: WG443996-02 LCS File ID: 6M119758 Run Date: 09/09/2013 12:50
Sample ID: WG443996-03 LCS2 File ID: 6M119759 Run Date: 09/09/2013 13:20

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.6	108	20.0	21.7	108	0.621	70 - 130	30	
Chlorodibromomethane	20.0	20.3	101	20.0	20.3	101	0.113	60 - 135	30	
Dibromomethane	20.0	23.0	115	20.0	23.0	115	0.0945	75 - 125	30	
Dichlorodifluoromethane	20.0	30.6	153	20.0	32.1	161	4.84	30 - 155	30	*
Ethylbenzene	20.0	18.2	91.1	20.0	18.9	94.3	3.51	75 - 125	30	
Hexachlorobutadiene	20.0	17.1	85.4	20.0	18.1	90.4	5.71	50 - 140	30	
Isopropylbenzene	20.0	17.0	84.9	20.0	17.6	87.9	3.57	75 - 125	30	
m-,p-Xylene	40.0	35.9	89.9	40.0	37.1	92.7	3.08	75 - 130	30	
Methylene chloride	20.0	21.3	107	20.0	21.7	108	1.53	55 - 140	30	
n-Butylbenzene	20.0	16.5	82.5	20.0	17.3	86.5	4.75	70 - 135	30	
n-Propylbenzene	20.0	15.2	75.9	20.0	15.8	79.0	4.03	70 - 130	30	
Naphthalene	20.0	15.1	75.6	20.0	15.4	77.1	1.96	55 - 140	30	
o-Xylene	20.0	16.9	84.4	20.0	17.4	87.0	2.98	80 - 120	30	
p-Isopropyltoluene	20.0	15.6	78.0	20.0	16.1	80.5	3.19	75 - 130	30	
sec-Butylbenzene	20.0	15.3	76.4	20.0	15.9	79.6	4.19	70 - 125	30	
Styrene	20.0	18.6	93.2	20.0	19.0	95.0	1.92	65 - 135	30	
tert-Butylbenzene	20.0	16.2	80.8	20.0	16.6	82.8	2.47	70 - 130	30	
Tetrachloroethene	20.0	18.9	94.3	20.0	19.9	99.6	5.45	45 - 150	30	
Toluene	20.0	18.0	90.2	20.0	18.6	92.9	2.92	75 - 120	30	
trans-1,2-Dichloroethene	20.0	22.1	110	20.0	22.8	114	3.15	60 - 140	30	
trans-1,3-Dichloropropene	20.0	17.3	86.5	20.0	17.5	87.7	1.39	55 - 140	30	
Trichloroethene	20.0	23.9	119	20.0	24.3	121	1.62	70 - 125	30	
Trichlorofluoromethane	20.0	23.7	118	20.0	24.5	123	3.54	60 - 145	30	
Vinyl chloride	20.0	22.9	114	20.0	22.8	114	0.166	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	102	101	70 - 120	PASS
Dibromofluoromethane	111	110	85 - 115	PASS
4-Bromofluorobenzene	93.8	94.1	75 - 120	PASS
Toluene-d8	98.6	99.1	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3073225
Report generated: 09/16/2013 14:20

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13090262
Instrument: HPMS6
Analyst: ADC
Workgroup: WG433881

Tune ID: WG433881-01
Run Date: 06/12/2013
Run Time: 15:44
File ID: 6M117459
Cal ID: HPMS6 - 12-JUN-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.8	4373	PASS
75.0	95.0	30.0	60.0	42.3	11034	PASS
95.0	95.0	100	100	100	26101	PASS
96.0	95.0	5.00	9.00	6.46	1685	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	91.4	23858	PASS
175	174	5.00	9.00	7.29	1739	PASS
176	174	95.0	101	96.3	22975	PASS
177	176	5.00	9.00	6.33	1455	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG433881-02	STD	01	06/12/2013 16:07	
WG433881-03	STD	01	06/12/2013 16:38	
WG433881-04	STD	01	06/12/2013 17:09	
WG433881-05	STD-CCV	01	06/12/2013 17:39	
WG433881-06	STD	01	06/12/2013 18:11	
WG433881-07	STD	01	06/12/2013 18:42	
WG433881-08	STD	01	06/12/2013 19:13	
WG433881-09	STD	01	06/12/2013 19:44	
WG433881-10	SSCV	01	06/12/2013 20:47	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3084270
Report generated 09/16/2013 14:20

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13090262
Instrument: HPMS6
Analyst: ADC
Workgroup: WG439230

Tune ID: WG439230-01
Run Date: 07/26/2013
Run Time: 14:44
File ID: 6M118372
Cal ID: HPMS6 - 26-JUL-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.5	8035	PASS
75.0	95.0	30.0	60.0	47.6	15647	PASS
95.0	95.0	100	100	100	32856	PASS
96.0	95.0	5.00	9.00	6.72	2209	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	82.3	27046	PASS
175	174	5.00	9.00	7.67	2074	PASS
176	174	95.0	101	100	27149	PASS
177	176	5.00	9.00	6.98	1895	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG439230-02	STD	01	07/26/2013 15:38	
WG439230-03	STD	01	07/26/2013 16:08	
WG439230-04	STD	01	07/26/2013 16:39	
WG439230-05	STD	01	07/26/2013 17:10	
WG439230-06	STD	01	07/26/2013 17:40	
WG439230-07	STD	01	07/26/2013 18:10	
WG439230-08	STD-CCV	01	07/26/2013 18:41	
WG439230-09	STD	01	07/26/2013 19:11	
WG439230-10	STD	01	07/26/2013 19:42	
WG439230-11	STD	01	07/26/2013 20:12	
WG439230-12	SSCV	01	07/26/2013 21:13	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3084270
Report generated 09/16/2013 14:20

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13090262
Instrument: HPMS6
Analyst: TMB
Workgroup: WG443995

Tune ID: WG443995-01
Run Date: 09/09/2013
Run Time: 10:55
File ID: 6M119754
Cal ID: HPMS6 - 26-JUL-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.2	5932	PASS
75.0	95.0	30.0	60.0	45.6	11635	PASS
95.0	95.0	100	100	100	25534	PASS
96.0	95.0	5.00	9.00	6.72	1716	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	87.2	22264	PASS
175	174	5.00	9.00	7.41	1649	PASS
176	174	95.0	101	99.3	22117	PASS
177	176	5.00	9.00	6.62	1465	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG443995-02	CCV	01	09/09/2013 11:19	
WG443996-01	BLANK	01	09/09/2013 12:20	
WG443996-02	LCS	01	09/09/2013 12:50	
WG443996-03	LCS2	01	09/09/2013 13:20	
L13090262-02	TB050913-01	01	09/09/2013 14:52	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3084270
Report generated 09/16/2013 14:20

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13090262
Instrument: HPMS8
Analyst: ADC
Workgroup: WG435275

Tune ID: WG435275-01
Run Date: 06/24/2013
Run Time: 17:28
File ID: 8M389012
Cal ID: HPMS8 - 24-JUN-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.3	6232	PASS
75.0	95.0	30.0	60.0	46.3	12919	PASS
95.0	95.0	100	100	100	27904	PASS
96.0	95.0	5.00	9.00	6.69	1866	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	81.2	22658	PASS
175	174	5.00	9.00	7.54	1708	PASS
176	174	95.0	101	99.8	22617	PASS
177	176	5.00	9.00	6.19	1400	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG435275-02	STD	01	06/24/2013 18:26	
WG435275-03	STD	01	06/24/2013 18:56	
WG435275-04	STD	01	06/24/2013 19:26	
WG435275-05	STD-CCV	01	06/24/2013 19:56	
WG435275-06	STD	01	06/24/2013 20:25	
WG435275-07	STD	01	06/24/2013 20:55	
WG435275-08	STD	01	06/24/2013 21:25	
WG435275-09	STD	01	06/24/2013 21:55	
WG435275-10	SSCV	01	06/24/2013 22:55	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3084270
Report generated 09/16/2013 14:20

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13090262
Instrument: HPMS8
Analyst: TMB
Workgroup: WG444268

Tune ID: WG444268-01
Run Date: 09/11/2013
Run Time: 09:19
File ID: 8M390510
Cal ID: HPMS8 - 11-SEP-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.8	5098	PASS
75.0	95.0	30.0	60.0	50.5	12397	PASS
95.0	95.0	100	100	100	24560	PASS
96.0	95.0	5.00	9.00	7.07	1737	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	87.2	21420	PASS
175	174	5.00	9.00	7.92	1696	PASS
176	174	95.0	101	101	21552	PASS
177	176	5.00	9.00	6.83	1473	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG444268-02	STD	01	09/11/2013 09:45	
WG444268-03	STD	01	09/11/2013 10:15	
WG444268-04	STD	01	09/11/2013 10:45	
WG444268-05	STD	01	09/11/2013 11:14	
WG444268-06	STD	01	09/11/2013 11:45	
WG444268-07	STD	01	09/11/2013 12:14	
WG444268-08	STD-CCV	01	09/11/2013 12:44	
WG444268-09	STD	01	09/11/2013 13:14	
WG444268-10	STD	01	09/11/2013 13:43	
WG444268-11	STD	01	09/11/2013 14:13	
WG444268-12	SSCV	01	09/11/2013 16:57	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3084270
Report generated 09/16/2013 14:20

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13090262
Instrument: HPMS8
Analyst: TMB
Workgroup: WG444635

Tune ID: WG444635-01
Run Date: 09/13/2013
Run Time: 14:51
File ID: 8M390573
Cal ID: HPMS8 - 11-SEP-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.2	6315	PASS
75.0	95.0	30.0	60.0	51.9	17063	PASS
95.0	95.0	100	100	100	32872	PASS
96.0	95.0	5.00	9.00	6.98	2295	PASS
173	174	0	2.00	0.406	122	PASS
174	95.0	50.0	100	91.3	30013	PASS
175	174	5.00	9.00	7.07	2122	PASS
176	174	95.0	101	96.5	28952	PASS
177	176	5.00	9.00	6.36	1842	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG444635-02	CCV	01	09/13/2013 15:17	
WG444637-01	BLANK	01	09/13/2013 16:19	
WG444637-02	LCS	01	09/13/2013 16:51	
L13090262-01	67DPT13C(23-33)050913	02	09/13/2013 19:26	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3084270
Report generated 09/16/2013 14:20

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 06/12/13 - HPMS6
Last Calibration: Thu Jun 13 09:13:08 2013
Curve: WG433881
Calibration Files

Compound	5 6M117460.D	20 6M117461.D	50 6M117462.D	100 6M117463.D	200 6M117464.D	300 6M117465.D	400 6M117466.D	500 6M117467.D	Avg	%RSD	Linear
Fluorobenzene	ISTD										
Acetonitrile		0.010	0.012	0.012	0.012	0.012	0.013	0.011	0.012	8.243	
3-Chloro-1-propene	0.405	0.409	0.425	0.417	0.404	0.398	0.389	0.348	0.399	5.912	
2-Chloro-1,3-butadiene	0.423	0.421	0.447	0.444	0.434	0.433	0.418	0.419	0.430	2.674	
Ethyl Acetate	0.071	0.081	0.088	0.086	0.087	0.088	0.091	0.094	0.086	8.286	
Methacrylonitrile	0.037	0.044	0.048	0.047	0.047	0.047	0.048	0.050	0.046	8.123	
Isobutyl Alcohol		0.003	0.003	0.003	0.003	0.003	0.003	0.004	0.003	10.378	
1-Butanol				0.001	0.001	0.001	0.001	0.001	0.001	15.044	0.996
Methyl methacrylate	0.076	0.093	0.102	0.099	0.100	0.100	0.101	0.103	0.097	9.217	
2-Nitropropane		0.023	0.028	0.028	0.029	0.030	0.031	0.032	0.029	9.776	
Chlorobenzene-d5	ISTD										
1,4-Dichlorobenzene-d4	ISTD										
Cyclohexanone		0.024	0.025	0.024	0.024	0.024	0.024	0.025	0.024	1.414	

Thu Jun 13 09:15:50 2013

Calibration Table Report
Method: 8260WTR.M
Title: 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Calibration: Sat Jul 27 15:01:31 2013
Curve: WG439230
Calibration Files

Compound	0.3 6M118374.D	0.4 6M118375.D	1 6M118376.D	2 6M118377.D	5 6M118378.D	20 6M118379.D	50 6M118380.D	100 6M118381.D	200 6M118382.D	300 6M118383.D	Avg	%RSD	R^2 Linear	R^2 Quadratic
Fluorobenzene	ISTD													
Dichlorodifluoromethane			0.220	0.196	0.202	0.242	0.255	0.242	0.245	0.252	0.232	9.815		
Chloromethane		0.430	0.336	0.326	0.322	0.326	0.333	0.343	0.337	0.335	0.343	9.735		
Vinyl Chloride		0.289	0.275	0.275	0.270	0.277	0.285	0.273	0.258	0.248	0.272	4.690		
1,3-Butadiene					0.226	0.226	0.201	0.138	0.120	0.100	0.169	33.126		1.004
Bromomethane			0.092	0.100	0.105	0.124	0.154	0.167	0.172	0.171	0.136	25.095		1.000
Chloroethane		0.230	0.210	0.221	0.227	0.224	0.232	0.229	0.224	0.221	0.224	2.920		
Trichlorofluoromethane		0.407	0.438	0.420	0.438	0.442	0.467	0.451	0.454	0.456	0.441	4.265		
Diethyl ether			0.150	0.159	0.180	0.180	0.175	0.172		0.175	0.170	6.574		
Isoprene			0.389	0.352	0.376	0.383	0.407	0.393	0.400	0.391	0.386	4.339		
Acrolein				0.004	0.004	0.004	0.004	0.005			0.004	8.320		
1,1,2-Trichloro-1,2,2-Trifluoroe			0.239	0.227	0.238	0.246	0.263	0.250	0.256	0.262	0.248	5.075		
Acetone					0.066	0.049	0.040	0.040	0.042	0.041	0.046	21.458	0.999	
1,1-Dichloroethene		0.499	0.501	0.503	0.506	0.516	0.535	0.531	0.521	0.520	0.515	2.575		
Tert-Butyl Alcohol				0.008	0.010	0.010	0.009	0.009		0.009	0.009	7.314		
Dimethyl Sulfide		0.245	0.264	0.266	0.278	0.277	0.288	0.283	0.283	0.277	0.273	4.795		
Iodomethane				0.081	0.108	0.166	0.228	0.246	0.257	0.249	0.191	38.121	0.997	
Methyl acetate				0.209	0.185	0.151	0.147	0.143	0.140	0.138	0.159	17.132		1.000
Methylene Chloride		0.279	0.253	0.251	0.258	0.244	0.251	0.252	0.246	0.246	0.253	4.127		
Carbon Disulfide		0.887	0.815	0.823	0.853	0.846	0.860	0.845	0.827	0.791	0.839	3.359		
Acrylonitrile			0.048	0.051	0.060	0.058	0.062	0.061		0.068	0.058	11.497		
Methyl Tert Butyl Ether		0.358	0.381	0.406	0.434	0.426	0.449	0.450	0.449	0.450	0.423	8.069		
trans-1,2-Dichloroethene		0.264	0.267	0.284	0.278	0.282	0.292	0.297	0.291	0.292	0.283	4.092		
n-Hexane			0.493	0.452	0.449	0.449	0.467	0.447	0.450	0.443	0.456	3.601		
Diisopropyl ether			1.125	1.151	1.283	1.259	1.223	1.176		1.147	1.195	5.067		
Vinyl Acetate					0.333	0.350	0.353	0.329	0.322	0.328	0.336	3.883		
1,1-Dichloroethane		0.560	0.575	0.590	0.590	0.584	0.603	0.601	0.585	0.582	0.585	2.229		
Ethyl-Tert-Butyl ether			0.699	0.727	0.822	0.809	0.785	0.770		0.770	0.769	5.670		
2-Butanone					0.076	0.067	0.065	0.062	0.064	0.061	0.066	8.255		
Propionitrile			0.017	0.018	0.019	0.019	0.019	0.018		0.019	0.018	4.020		
2,2-Dichloropropane		0.463	0.436	0.430	0.436	0.440	0.457	0.451	0.442	0.442	0.444	2.431		
cis-1,2-Dichloroethene		0.257	0.275	0.286	0.298	0.294	0.305	0.308	0.303	0.304	0.292	5.792		
Chloroform	0.493	0.477	0.462	0.483	0.482	0.475	0.490	0.494	0.483	0.482	0.482	1.967		
1-Bromopropane			0.043	0.050	0.056	0.055	0.058	0.058	0.057	0.057	0.054	9.611		
Bromochloromethane		0.138	0.147	0.149	0.155	0.150	0.156	0.158	0.156	0.154	0.152	4.204		
Tetrahydrofuran			0.043	0.042	0.047	0.046	0.043	0.043		0.043	0.044	4.215		
Dibromofluoromethane			0.327	0.270	0.263	0.238	0.253	0.249	0.252	0.246	0.262	10.641		
1,1,1-Trichloroethane		0.445	0.444	0.450	0.458	0.448	0.476	0.473	0.467	0.466	0.458	2.694		
Cyclohexane		0.729	0.678	0.625	0.635	0.619	0.656	0.625	0.633	0.614	0.646	5.723		
1,1-Dichloropropene		0.339	0.368	0.384	0.386	0.389	0.407	0.403	0.401	0.399	0.386	5.536		
Tert-Amyl-Methyl ether			0.415	0.431	0.487	0.480	0.468	0.465		0.477	0.460	5.900		
Carbon Tetrachloride		0.367	0.391	0.4	0.402	0.405	0.435	0.438	0.441	0.442	0.4136	6.4104		
1,2-Dichloroethane-d4				0.236	0.227	0.215	0.224	0.221	0.22	0.213	0.2223	3.5119		
Heptane											0	0		
1,2-Dichloroethane		0.239	0.294	0.306	0.313	0.306	0.318	0.317	0.311	0.31	0.3015	8.1738		
Benzene		1.08	1.05	1.055	1.066	1.046	1.082	1.083	1.034	0.996	1.0547	2.6618		
Trichloroethene		0.277	0.277	0.29	0.298	0.297	0.311	0.311	0.307	0.305	0.2969	4.3904		
Methylcyclohexane		0.395	0.39	0.375	0.382	0.372	0.393	0.377	0.387	0.385	0.384	2.0398		
1,2-Dichloropropane		0.259	0.3	0.302	0.3	0.303	0.317	0.316	0.31	0.309	0.3018	5.7592		
1,4-Dioxane				0	0.001	0.001	0.001	0.001		0.001	0.0008	25.515	0.996	
Bromodichloromethane		0.303	0.312	0.325	0.326	0.32	0.335	0.34	0.336	0.337	0.3261	3.8506		
Dibromomethane		0.069	0.087	0.099	0.11	0.108	0.111	0.113	0.112	0.113	0.1024	14.945		
2-Chloroethyl Vinyl Ether					0.093	0.098	0.102	0.099	0.102	0.1	0.099	3.307		
4-Methyl-2-Pentanone					0.048	0.049	0.051	0.049	0.05	0.049	0.0493	2.1049		
cis-1,3-Dichloropropene		0.299	0.328	0.35	0.365	0.368	0.385	0.388	0.383	0.38	0.3606	8.3476		
Dimethyl Disulfide				0.147	0.149	0.161	0.183	0.187	0.192	0.189	0.1727	11.321		
Chlorobenzene-d5	ISTD													
Toluene-d8				1.531	1.401	1.254	1.317	1.309	1.313	1.259	1.3404	7.2305		
Toluene		1.621	1.655	1.716	1.673	1.629	1.693	1.665	1.578	1.487	1.6355	4.2081		
Ethyl Methacrylate			0.196	0.204	0.233	0.241	0.253	0.25	0.254	0.247	0.2349	9.5645		
Paraldehyde											0	0		
trans-1,3-Dichloropropene			0.325	0.351	0.383	0.397	0.434	0.439	0.441	0.44	0.4013	11.224		
1,1,2-Trichloroethane		0.187	0.199	0.203	0.209	0.206	0.214	0.214	0.214	0.215	0.2067	4.4575		
2-Hexanone					0.154	0.145	0.149	0.14	0.139	0.133	0.1432	5.368		
1,3-Dichloropropane		0.318	0.328	0.344	0.363	0.359	0.375	0.377	0.375	0.372	0.3567	6.1522		
Tetrachloroethene		0.44	0.447	0.456	0.458	0.449	0.478	0.476	0.472	0.473	0.4611	3.0679		
Dibromochloromethane		0.246	0.252	0.27	0.28	0.285	0.309	0.315	0.319	0.321	0.2888	9.944		
1,2-Dibromoethane			0.171	0.19	0.201	0.207	0.217	0.221	0.221	0.221	0.2061	8.784		
1-Chlorohexane			0.491	0.488	0.495	0.492	0.514	0.508	0.505	0.491	0.498	1.9613		
Chlorobenzene	1.003	1.018	1.004	1.075	1.056	1.042	1.09	1.089	1.046	1.008	1.0431	3.2614		
1,1,1,2-Tetrachloroethane		0.335	0.352	0.356	0.365	0.371	0.393	0.397	0.391	0.385	0.3719	5.731		
Ethylbenzene		0.581	0.559	0.603	0.604	0.592	0.63	0.633	0.609	0.601	0.6011	3.8102		
m-,p-Xylene		0.701	0.706	0.731	0.728	0.717	0.758	0.748	0.695	0.648	0.7148	4.5537		
o-Xylene		0.659	0.665	0.699	0.706	0.692	0.728	0.727	0.701	0.685	0.6957	3.4393		
Styrene		0.945	1.017	1.08	1.113	1.102	1.16	1.155	1.104	1.051	1.0809	6.3053		
Bromoform			0.118	0.125	0.137	0.144	0.162	0.168	0.172	0.173	0.1499	14.526		
Isopropylbenzene		1.809	1.81	1.845	1.841	1.807	1.895	1.856	1.715	1.587	1.7962	5.1492		
1,4-Dichlorobenzene-d4	ISTD													
1,1,2,2-Tetrachloroethane		0.342	0.388	0.387	0.405	0.403	0.409	0.411	0.406	0.415	0.3962	5.6677		
p-Bromofluorobenzene				1.113	0.99	0.896	0.923	0.918	0.919	0.897	0.9509	8.22		

1,2,3-Trichloropropane			0.077	0.115	0.124	0.114	0.122	0.124	0.121	0.123	0.1148	13.69
trans-1,4-Dichloro-2-Butene				0.124	0.14	0.142	0.164	0.168	0.172	0.167	0.1537	11.98
n-Propylbenzene		4.303	4.286	4.29	4.298	4.143	4.33	4.244	3.841	3.566	4.1446	6.3854
Bromobenzene	0.703	0.716	0.819	0.856	0.859	0.854	0.897	0.897	0.877	0.885	0.8361	8.4837
1,3,5-Trimethylbenzene		3.194	3.015	3.143	3.07	3.012	3.148	3.124	2.91	2.804	3.0468	4.1439
2-Chlorotoluene		3.006	2.925	2.841	2.966	2.836	2.981	2.99	2.86	2.801	2.9118	2.6769
4-Chlorotoluene		2.676	2.528	2.617	2.487	2.452	2.531	2.516	2.369	2.303	2.4977	4.5942
a-Methylstyrene			1.504	1.558	1.614	1.571	1.65	1.626	1.576	1.535	1.5793	3.073
tert-Butylbenzene		0.524	0.591	0.63	0.635	0.617	0.657	0.65	0.636	0.642	0.6204	6.5993
1,2,4-Trimethylbenzene		3.192	3.117	3.121	3.061	3.025	3.144	3.113	2.901	2.774	3.0498	4.36
sec-Butylbenzene		3.757	3.716	3.687	3.687	3.576	3.769	3.666	3.393	3.223	3.6083	5.1027
p-Isopropyltoluene		3.271	3.095	3.133	3.136	3.069	3.233	3.163	2.965	2.83	3.0995	4.3464
1,3-Dichlorobenzene		1.626	1.704	1.748	1.721	1.7	1.775	1.769	1.691	1.662	1.7109	2.8616
1,4-Dichlorobenzene	1.576	1.677	1.616	1.684	1.707	1.67	1.743	1.729	1.656	1.621	1.6678	3.1485
n-Butylbenzene		2.842	2.682	2.545	2.667	2.596	2.711	2.656	2.489	2.397	2.6205	5.017
1,2-Dichlorobenzene	1.33	1.291	1.397	1.437	1.467	1.427	1.481	1.47	1.421	1.407	1.4128	4.3332
1,2-Dibromo-3-Chloropropane				0.045	0.058	0.06	0.064	0.065	0.066	0.065	0.0605	12.631
1,2,4-Trichlorobenzene		0.973	0.981	0.961	1.003	1.001	1.045	1.04	1.008	1.008	1.0024	2.7953
Hexachlorobutadiene		0.536	0.459	0.489	0.519	0.485	0.514	0.507	0.498	0.506	0.5016	4.4688
Naphthalene		1.37	1.347	1.382	1.438	1.41	1.479	1.462	1.432	1.414	1.4149	3.0491
1,2,3-Trichlorobenzene	0.821	0.76	0.768	0.804	0.84	0.809	0.845	0.832	0.817	0.816	0.8112	3.4468

Mon Jul 29 10:53:09 2013

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water - IC: 06/24/13- HPMS8
Last Calibration: Tue Jun 25 15:04:35 2013
Curve: WG435275
Calibration Files

Compound	5 8M389014.D	20 8M389015.D	50 8M389016.D	100 8M389017.D	200 8M389018.D	300 8M389019.D	400 8M389020.D	500 8M389021.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD											
Acetonitrile	0.014	0.013	0.015	0.016	0.015	0.016	0.017	0.017	0.015	8.819		
3-Chloro-1-propene	0.474	0.496	0.527	0.533	0.517	0.509	0.515	0.494	0.508	3.822		
2-Chloro-1,3-butadiene	0.532	0.553	0.590	0.602	0.587	0.587	0.597	0.576	0.578	4.152		
Ethyl Acetate	0.113	0.125	0.125	0.126	0.127	0.133	0.134	0.129	0.127	5.186		
Methacrylonitrile	0.040	0.050	0.050	0.051	0.051	0.054	0.054	0.052	0.050	8.662		
Isobutyl Alcohol		0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	11.229		
1-Butanol			0.001	0.001	0.002	0.002	0.002	0.002	0.002	27.430		0.990
Methyl methacrylate	0.133	0.148	0.154	0.154	0.152	0.158	0.158	0.151	0.151	5.271		
2-Nitropropane	0.015	0.032	0.041	0.048	0.051	0.055	0.057	0.055	0.044	32.674	0.997	
Chlorobenzene-d5	ISTD											
1,4-Dichlorobenzene-d4	ISTD											
Cyclohexanone		0.023	0.021	0.021	0.022	0.025	0.022	0.021	0.022	7.030		

Tue Jul 02 14:38:58 2013

Calibration Table Report
Method: 8260WTR.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Calibration: Wed Sep 11 15:26:24 2013
Curve: WG444268
Calibration Files

	Compound	0.3 8M390511.D	0.4 8M390512.D	1 8M390513.D	2 8M390514.D	5 8M390515.D	20 8M390516.D	50 8M390517.D	100 8M390518.D	200 8M390519.D	300 8M390520.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.238	0.225	0.250	0.238	0.270	0.265	0.238	0.242	0.221	0.243	6.716		
P	Chloromethane			0.317	0.282	0.246	0.249	0.238	0.223	0.220	0.219	0.249	13.747		
C	Vinyl Chloride		0.203	0.215	0.222	0.221	0.222	0.216	0.200	0.199	0.192	0.210	5.524		
T	1,3-Butadiene				0.217	0.207	0.200	0.206	0.188	0.179	0.167	0.195	8.968		
T	Bromomethane			0.181	0.173	0.184	0.173	0.169	0.160	0.161	0.160	0.170	5.578		
T	Chloroethane		0.153	0.163	0.181	0.175	0.179	0.172	0.159	0.158	0.155	0.166	6.368		
T	Trichlorofluoromethane		0.388	0.434	0.475	0.469	0.457	0.448	0.406	0.408	0.390	0.431	7.793		
T	Diethyl ether			0.155	0.163	0.165	0.162	0.160	0.156		0.148	0.158	3.716		
T	Isoprene		0.219	0.284	0.323	0.329	0.319	0.326	0.301	0.300	0.292	0.299	11.368		
T	Acrolein			0.011	0.018	0.019	0.020	0.021	0.021		0.021	0.019	18.227	1.000	
T	1,1,2-Trichloro-1,2,2-Trifluoroe		0.168	0.237	0.258	0.265	0.252	0.245	0.223	0.227	0.215	0.232	12.627		
T	Acetone					0.057	0.051	0.051	0.052	0.051	0.048	0.052	5.806		
C	1,1-Dichloroethene		0.302	0.353	0.370	0.375	0.385	0.383	0.356	0.360	0.348	0.359	7.024		
T	Tert-Butyl Alcohol				0.008	0.009	0.009	0.010	0.009		0.009	0.009	8.393		
T	Dimethyl Sulfide					0.199	0.215	0.219	0.207	0.206	0.202	0.208	3.763		
T	Iodomethane			0.203	0.205	0.242	0.256	0.275	0.258	0.259	0.251	0.244	10.717		
T	Methyl acetate			0.138	0.145	0.146	0.134	0.138	0.130	0.129	0.124	0.136	5.683		
T	Methylene Chloride		0.241	0.257	0.258	0.255	0.248	0.238	0.223	0.223	0.216	0.240	6.782		
T	Carbon Disulfide		0.724	0.715	0.759	0.739	0.706	0.715	0.659	0.650	0.621	0.699	6.499		
T	Acrylonitrile			0.049	0.052	0.053	0.056	0.059	0.059		0.060	0.055	7.689		
T	Methyl Tert Butyl Ether			0.478	0.508	0.527	0.554	0.577	0.547	0.555	0.530	0.534	5.799		
T	trans-1,2-Dichloroethene		0.313	0.343	0.368	0.357	0.370	0.362	0.339	0.341	0.326	0.346	5.585		
T	n-Hexane		0.232	0.279	0.297	0.310	0.308	0.313	0.294	0.294	0.280	0.290	8.598		
T	Diisopropyl ether			0.794	0.855	0.868	0.838	0.814	0.797		0.737	0.815	5.443		
T	Vinyl Acetate			0.276	0.311	0.320	0.301	0.307	0.299	0.285	0.266	0.295	6.189		
P	1,1-Dichloroethane		0.471	0.462	0.500	0.478	0.469	0.451	0.422	0.421	0.403	0.453	6.958		
T	Ethyl-Tert-Butyl ether			0.638	0.703	0.716	0.695	0.689	0.675		0.638	0.679	4.537		
T	2-Butanone				0.064	0.065	0.061	0.063	0.062	0.062	0.060	0.062	3.008		
T	Propionitrile			0.015	0.017	0.018	0.018	0.019	0.019		0.018	0.018	6.331		
T	2,2-Dichloropropane		0.409	0.445	0.466	0.450	0.425	0.424	0.394	0.394	0.378	0.421	6.992		
T	cis-1,2-Dichloroethene		0.192	0.254	0.261	0.267	0.268	0.269	0.254	0.254	0.247	0.252	9.428		
C	Chloroform	0.478	0.494	0.506	0.502	0.494	0.480	0.470	0.440	0.436	0.409	0.471	6.869		
T	1-Bromopropane			0.050	0.051	0.060	0.056	0.057	0.056	0.056	0.056	0.055	6.183		
T	Bromochloromethane		0.157	0.167	0.181	0.185	0.185	0.181	0.170	0.169	0.164	0.173	5.902		
T	Tetrahydrofuran			0.042	0.039	0.043	0.043	0.044	0.044			0.043	5.084		
S	Dibromofluoromethane			0.276	0.283	0.273	0.262	0.260	0.247	0.240	0.235	0.260	6.792		
T	1,1,1-Trichloroethane		0.398	0.459	0.457	0.469	0.455	0.455	0.423	0.422	0.396	0.437	6.337		
T	Cyclohexane			0.334	0.375	0.381	0.385	0.399	0.376	0.379	0.356	0.373	5.263		
T	1,1-Dichloropropene			0.336	0.351	0.357	0.361	0.364	0.344	0.342	0.328	0.348	3.621		
T	Tert-Amyl-Methyl ether			0.524	0.579	0.603	0.585	0.583	0.576		0.554	0.572	4.505		
T	Carbon Tetrachloride		0.392	0.436	0.431	0.445	0.44	0.439	0.403	0.405	0.378	0.41867	5.85488		
S	1,2-Dichloroethane-d4			0.291	0.29	0.281	0.269	0.267	0.253	0.245	0.229	0.26554	8.26718		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.326	0.379	0.349	0.364	0.353	0.355	0.332	0.328	0.305	0.34366	6.61299		
T	Benzene		0.968	1.036	1.052	1.062	1.002	0.976	0.91	0.885	0.81	0.96678	8.72325		
T	Trichloroethene		0.267	0.271	0.282	0.281	0.286	0.289	0.275	0.277	0.269	0.27741	2.84052		
T	Methylcyclohexane					0.365	0.376	0.393	0.375	0.375	0.356	0.3733	3.27808		
T	1,2-Dichloropropane		0.243	0.246	0.25	0.25	0.251	0.248	0.239	0.24	0.227	0.24388	3.13478		
T	Bromodichloromethane		0.321	0.34	0.355	0.357	0.362	0.366	0.349	0.35	0.327	0.34743	4.42751		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.00108	12.1158		
T	Dibromomethane		0.106	0.128	0.144	0.14	0.143	0.144	0.138	0.137	0.13	0.13451	8.98795		
T	2-Chloroethyl Vinyl Ether					0.089	0.104	0.113	0.114	0.116	0.111	0.10771	9.53974		
T	4-Methyl-2-Pentanone					0.042	0.048	0.053	0.051	0.053	0.051	0.0495	8.48908		
T	cis-1,3-Dichloropropene		0.275	0.323	0.37	0.385	0.403	0.417	0.402	0.402	0.381	0.37324	12.2939		
T	Dimethyl Disulfide					0.307	0.383	0.432	0.428	0.434	0.417	0.40028	12.2895		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.104	1.13	1.135	1.14	1.127	1.065	1.026	0.975	1.08767	5.56003		
C	Toluene		1.127	1.235	1.312	1.368	1.359	1.334	1.231	1.173	1.056	1.24381	8.77142		
T	Ethyl Methacrylate			0.187	0.205	0.241	0.264	0.29	0.275	0.278	0.263	0.25031	14.6278		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.414	0.435	0.451	0.47	0.481	0.45	0.445	0.415	0.44505	5.28372		
T	1,1,2-Trichloroethane		0.218	0.254	0.243	0.239	0.235	0.238	0.223	0.223	0.212	0.23169	5.72971		
T	2-Hexanone					0.046	0.055	0.058	0.058	0.059	0.056	0.0555	8.51956		
T	1,3-Dichloropropane		0.345	0.419	0.393	0.415	0.408	0.412	0.386	0.383	0.359	0.39115	6.58816		
T	Tetrachloroethene		0.26	0.303	0.327	0.323	0.311	0.315	0.29	0.295	0.288	0.30139	6.85064		
T	Dibromochloromethane		0.321	0.329	0.34	0.341	0.35	0.367	0.346	0.349	0.331	0.34138	4.02423		
T	1,2-Dibromoethane		0.214	0.23	0.238	0.241	0.24	0.251	0.239	0.239	0.227	0.2354	4.55345		
T	1-Chlorohexane			0.292	0.328	0.371	0.399	0.425	0.401	0.4	0.384	0.37499	11.7059		
P	Chlorobenzene		1.034	1.081	1.053	1.021	0.989	0.975	0.902	0.855	0.773	0.96487	10.5423		
T	1,1,1,2-Tetrachloroethane		0.34	0.414	0.376	0.391	0.389	0.387	0.363	0.35	0.322	0.37022	7.84319		
C	Ethylbenzene		0.49	0.49	0.51	0.536	0.525	0.516	0.487			0.50781	3.82426		
T	m-,p-Xylene		0.524	0.569	0.634	0.652	0.632	0.624	0.571	0.54	0.477	0.58027	10.2294		
T	o-Xylene			0.474	0.518	0.59	0.617	0.626	0.59	0.58	0.546	0.56758	9.11772		
T	Styrene		0.729	0.752	0.84	0.986	1.021	1.039	0.974	0.942	0.854	0.90403	12.679		
P	Bromoform			0.189	0.188	0.207	0.215	0.226	0.218	0.223	0.214	0.20985	6.78753		
T	Isopropylbenzene		1.094	1.244	1.352	1.485	1.558	1.592	1.472	1.393	1.213	1.37813	12.1754		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.445	0.464	0.448	0.453	0.447	0.45	0.425	0.427	0.403	0.44009	4.24512		
S	p-Bromofluorobenzene			0.742	0.744	0.759	0.782	0.794	0.773	0.764	0.737	0.7619	2.69227		

T	1,2,3-Trichloropropane			0.129	0.145	0.153	0.154	0.152	0.143	0.146	0.138	0.14498	5.91005
T	trans-1,4-Dichloro-2-Butene			0.104	0.11	0.133	0.149	0.148	0.143	0.158	0.147	0.13667	14.2765
T	n-Propylbenzene		2.145	2.561	2.806	3.128	3.216	3.131	2.866	2.657	2.251	2.75126	13.9663
T	Bromobenzene	0.683	0.585	0.719	0.749	0.778	0.773	0.758	0.715	0.721	0.692	0.71728	7.88442
T	1,3,5-Trimethylbenzene		1.556	1.844	2.068	2.404	2.453	2.403	2.241	2.15	1.89	2.11209	14.3639
T	2-Chlorotoluene		1.713	2.019	2.108	2.084	2.047	2.072	1.939	1.823	1.613	1.93547	9.24323
T	4-Chlorotoluene		1.495	1.605	1.895	2.039	1.972	1.801	1.674	1.648	1.474	1.73363	11.7569
T	a-Methylstyrene					1.154	1.3	1.362	1.305	1.282	1.19	1.26568	6.15952
T	tert-Butylbenzene			0.38	0.497	0.527	0.535	0.516	0.497	0.503	0.475	0.49138	9.95464
T	1,2,4-Trimethylbenzene			2.043	2.365	2.596	2.54	2.465	2.284	2.167	1.882	2.29265	10.866
T	sec-Butylbenzene			2.318	2.659	2.864	2.894	2.864	2.651	2.528	2.18	2.61989	10.1025
T	p-Isopropyltoluene			1.964	2.304	2.603	2.632	2.6	2.426	2.297	1.983	2.35108	11.3665
T	1,3-Dichlorobenzene		1.309	1.469	1.528	1.585	1.532	1.518	1.435	1.417	1.289	1.45347	7.01555
T	1,4-Dichlorobenzene	1.553	1.605	1.662	1.645	1.616	1.554	1.539	1.446	1.422	1.289	1.53306	7.5795
T	n-Butylbenzene		1.743	1.924	2.041	2.174	2.183	2.162	2.024	1.947	1.696	1.98823	9.04466
T	1,2-Dichlorobenzene	1.274	1.31	1.411	1.423	1.437	1.413	1.422	1.338	1.332	1.209	1.35682	5.65351
T	1,2-Dibromo-3-Chloropropane				0.07	0.08	0.084	0.091	0.089	0.092	0.085	0.08425	8.83173
T	1,2,4-Trichlorobenzene		0.882	0.969	0.971	1.016	1.067	1.101	1.044	1.031	0.931	1.0014	6.90821
T	Hexachlorobutadiene		0.431	0.514	0.513	0.498	0.486	0.486	0.466	0.49	0.46	0.48266	5.51192
T	Naphthalene		1.447	1.424	1.521	1.647	1.946	2.044	1.896	1.823	1.57	1.70218	13.524
T	1,2,3-Trichlorobenzene	0.744	0.802	0.882	0.899	0.962	0.976	0.993	0.936	0.922	0.834	0.89491	8.97988

Thu Sep 12 09:56:34 2013

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13090262 Run Date: 07/26/2013 Sample ID: WG439230-12
Instrument ID: HPMS6 Run Time: 21:13 Method: 8260B
File ID: 6M118385 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG439230 Cal ID: HPMS6 - 26-JUL-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.4	ug/L	0.486	0.700	20	
1,1-Dichloroethene	CCC	50.0	48.4	ug/L	0.498	3.20	20	
1,2-Dichloropropane	CCC	50.0	52.7	ug/L	0.318	5.30	20	
Ethylbenzene	CCC	50.0	52.0	ug/L	0.626	4.10	20	
Toluene	CCC	50.0	51.3	ug/L	1.68	2.50	20	
Vinyl Chloride	CCC	50.0	45.6	ug/L	0.248	8.80	20	
Bromoform	SPCC	50.0	54.6	ug/L	0.164	9.10	20	
Chlorobenzene	SPCC	50.0	48.4	ug/L	1.01	3.20	20	
Chloromethane	SPCC	50.0	51.5	ug/L	0.353	2.90	20	
1,1-Dichloroethane	SPCC	50.0	50.1	ug/L	0.587	0.200	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.6	ug/L	0.409	3.20	20	
Acetone		50.0	46.6	ug/L	0.0402	6.70	20	
Benzene		50.0	50.9	ug/L	1.07	1.80	20	
Bromobenzene		50.0	53.0	ug/L	0.886	5.90	20	
Bromochloromethane		50.0	50.6	ug/L	0.153	1.20	20	
Bromodichloromethane		50.0	49.7	ug/L	0.324	0.700	20	
Bromomethane		50.0	47.8	ug/L	0.150	4.30	20	
2-Butanone		50.0	52.0	ug/L	0.0685	4.10	20	
n-Butylbenzene		50.0	52.0	ug/L	2.72	3.90	20	
sec-Butylbenzene		50.0	48.0	ug/L	3.46	4.10	20	
tert-Butylbenzene		50.0	49.0	ug/L	0.608	2.00	20	
Carbon Disulfide		50.0	50.4	ug/L	0.845	0.800	20	
Carbon Tetrachloride		50.0	51.6	ug/L	0.427	3.10	20	
Dibromochloromethane		50.0	52.4	ug/L	0.303	4.80	20	
Chloroethane		50.0	52.3	ug/L	0.235	4.60	20	
2-Chlorotoluene		50.0	48.8	ug/L	2.84	2.40	20	
4-Chlorotoluene		50.0	45.6	ug/L	2.28	8.80	20	
1,2-Dibromo-3-Chloropropane		50.0	52.5	ug/L	0.0635	5.10	20	
1,2-Dibromoethane		50.0	52.1	ug/L	0.215	4.20	20	
Dibromomethane		50.0	53.5	ug/L	0.110	7.00	20	
1,2-Dichlorobenzene		50.0	47.6	ug/L	1.35	4.70	20	
1,3-Dichlorobenzene		50.0	47.4	ug/L	1.62	5.30	20	
1,4-Dichlorobenzene		50.0	51.2	ug/L	1.71	2.30	20	
Dichlorodifluoromethane		50.0	68.0	ug/L	0.315	36.0	20	*
1,2-Dichloroethane		50.0	52.2	ug/L	0.315	4.50	20	
cis-1,2-Dichloroethene		50.0	52.4	ug/L	0.306	4.80	20	
trans-1,2-Dichloroethene		50.0	52.0	ug/L	0.294	4.00	20	
1,3-Dichloropropane		50.0	52.4	ug/L	0.374	4.80	20	
2,2-Dichloropropane		50.0	47.1	ug/L	0.418	5.90	20	
cis-1,3-Dichloropropene		50.0	54.8	ug/L	0.395	9.70	20	
trans-1,3-Dichloropropene		50.0	50.4	ug/L	0.405	0.900	20	
1,1-Dichloropropene		50.0	51.5	ug/L	0.398	3.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3073226
Report generated 09/16/2013 14:20

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13090262 Run Date: 07/26/2013 Sample ID: WG439230-12
Instrument ID: HPMS6 Run Time: 21:13 Method: 8260B
File ID: 6M118385 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG439230 Cal ID: HPMS6 - 26-JUL-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	49.2	ug/L	0.141	1.50	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.523	4.20	20	
Isopropylbenzene		50.0	48.5	ug/L	1.74	3.00	20	
p-Isopropyltoluene		50.0	48.2	ug/L	2.99	3.60	20	
4-Methyl-2-Pentanone		50.0	52.2	ug/L	0.0515	4.40	20	
Methylene Chloride		50.0	48.8	ug/L	0.247	2.40	20	
Naphthalene		50.0	50.7	ug/L	1.43	1.30	20	
n-Propylbenzene		50.0	47.4	ug/L	3.93	5.10	20	
Styrene		50.0	53.0	ug/L	1.15	5.90	20	
1,1,1,2-Tetrachloroethane		50.0	53.8	ug/L	0.400	7.60	20	
Tetrachloroethene		50.0	51.5	ug/L	0.475	3.00	20	
1,2,3-Trichlorobenzene		50.0	50.9	ug/L	0.827	1.90	20	
1,2,4-Trichlorobenzene		50.0	50.7	ug/L	1.02	1.40	20	
1,1,1-Trichloroethane		50.0	51.0	ug/L	0.468	2.00	20	
1,1,2-Trichloroethane		50.0	53.1	ug/L	0.220	6.30	20	
Trichloroethene		50.0	56.7	ug/L	0.337	13.5	20	
Trichlorofluoromethane		50.0	53.6	ug/L	0.473	7.10	20	
1,2,3-Trichloropropane		50.0	53.1	ug/L	0.122	6.20	20	
1,2,4-Trimethylbenzene		50.0	52.1	ug/L	3.18	4.30	20	
1,3,5-Trimethylbenzene		50.0	52.6	ug/L	3.20	5.10	20	
o-Xylene		50.0	48.0	ug/L	0.668	4.00	20	
m-,p-Xylene		100	101	ug/L	0.725	1.50	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3073226
Report generated 09/16/2013 14:20

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13090262 Run Date: 09/11/2013 Sample ID: WG444268-12
Instrument ID: HPMS8 Run Time: 16:57 Method: 8260B
File ID: 8M390524 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG444268 Cal ID: HPMS8 - 11-SEP-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.2	ug/L	0.454	3.60	20	
1,1-Dichloroethene	CCC	50.0	50.1	ug/L	0.360	0.100	20	
1,2-Dichloropropane	CCC	50.0	51.6	ug/L	0.252	3.20	20	
Ethylbenzene	CCC	50.0	51.3	ug/L	0.521	2.60	20	
Toluene	CCC	50.0	53.9	ug/L	1.34	7.80	20	
Vinyl Chloride	CCC	50.0	53.7	ug/L	0.225	7.40	20	
Bromoform	SPCC	50.0	51.9	ug/L	0.218	3.70	20	
Chlorobenzene	SPCC	50.0	47.2	ug/L	0.911	5.60	20	
Chloromethane	SPCC	50.0	48.6	ug/L	0.243	2.70	20	
1,1-Dichloroethane	SPCC	50.0	48.8	ug/L	0.443	2.40	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.437	0.800	20	
Acetone		50.0	38.4	ug/L	0.0396	23.2	20	*
Benzene		50.0	50.3	ug/L	0.972	0.500	20	
Bromobenzene		50.0	52.3	ug/L	0.750	4.60	20	
Bromochloromethane		50.0	51.9	ug/L	0.180	3.90	20	
Bromodichloromethane		50.0	48.6	ug/L	0.338	2.80	20	
Bromomethane		50.0	58.9	ug/L	0.201	17.9	20	
2-Butanone		50.0	52.0	ug/L	0.0650	4.00	20	
n-Butylbenzene		50.0	55.7	ug/L	2.22	11.4	20	
sec-Butylbenzene		50.0	51.4	ug/L	2.69	2.70	20	
tert-Butylbenzene		50.0	50.1	ug/L	0.492	0.200	20	
Carbon Disulfide		50.0	52.0	ug/L	0.727	4.00	20	
Carbon Tetrachloride		50.0	49.1	ug/L	0.411	1.80	20	
Dibromochloromethane		50.0	50.8	ug/L	0.347	1.60	20	
Chloroethane		50.0	52.0	ug/L	0.173	4.10	20	
2-Chlorotoluene		50.0	49.5	ug/L	1.92	1.00	20	
4-Chlorotoluene		50.0	46.8	ug/L	1.62	6.40	20	
1,2-Dibromo-3-Chloropropane		50.0	49.3	ug/L	0.0830	1.50	20	
1,2-Dibromoethane		50.0	51.8	ug/L	0.244	3.60	20	
Dibromomethane		50.0	50.5	ug/L	0.136	1.00	20	
1,2-Dichlorobenzene		50.0	48.0	ug/L	1.30	4.00	20	
1,3-Dichlorobenzene		50.0	48.3	ug/L	1.41	3.30	20	
1,4-Dichlorobenzene		50.0	49.8	ug/L	1.53	0.400	20	
Dichlorodifluoromethane		50.0	67.0	ug/L	0.326	34.0	20	*
1,2-Dichloroethane		50.0	48.4	ug/L	0.333	3.20	20	
cis-1,2-Dichloroethene		50.0	54.6	ug/L	0.275	9.20	20	
trans-1,2-Dichloroethene		50.0	52.2	ug/L	0.362	4.40	20	
1,3-Dichloropropane		50.0	51.2	ug/L	0.400	2.30	20	
2,2-Dichloropropane		50.0	49.9	ug/L	0.420	0.200	20	
cis-1,3-Dichloropropene		50.0	57.8	ug/L	0.431	15.6	20	
trans-1,3-Dichloropropene		50.0	49.9	ug/L	0.444	0.200	20	
1,1-Dichloropropene		50.0	52.3	ug/L	0.364	4.70	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3073226
Report generated 09/16/2013 14:20

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13090262 Run Date: 09/11/2013 Sample ID: WG444268-12
Instrument ID: HPMS8 Run Time: 16:57 Method: 8260B
File ID: 8M390524 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG444268 Cal ID: HPMS8 - 11-SEP-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.7	ug/L	0.0596	7.40	20	
Hexachlorobutadiene		50.0	54.8	ug/L	0.529	9.70	20	
Isopropylbenzene		50.0	53.9	ug/L	1.48	7.70	20	
p-Isopropyltoluene		50.0	52.6	ug/L	2.48	5.30	20	
4-Methyl-2-Pentanone		50.0	53.6	ug/L	0.0531	7.30	20	
Methylene Chloride		50.0	49.4	ug/L	0.237	1.20	20	
Naphthalene		50.0	57.1	ug/L	1.95	14.3	20	
n-Propylbenzene		50.0	51.1	ug/L	2.81	2.10	20	
Styrene		50.0	57.7	ug/L	1.04	15.4	20	
1,1,1,2-Tetrachloroethane		50.0	51.7	ug/L	0.383	3.50	20	
Tetrachloroethene		50.0	53.7	ug/L	0.324	7.40	20	
1,2,3-Trichlorobenzene		50.0	54.4	ug/L	0.975	8.90	20	
1,2,4-Trichlorobenzene		50.0	55.4	ug/L	1.11	10.8	20	
1,1,1-Trichloroethane		50.0	50.1	ug/L	0.438	0.200	20	
1,1,2-Trichloroethane		50.0	51.9	ug/L	0.240	3.70	20	
Trichloroethene		50.0	57.2	ug/L	0.317	14.4	20	
Trichlorofluoromethane		50.0	52.7	ug/L	0.454	5.50	20	
1,2,3-Trichloropropane		50.0	49.0	ug/L	0.142	2.00	20	
1,2,4-Trimethylbenzene		50.0	54.4	ug/L	2.49	8.80	20	
1,3,5-Trimethylbenzene		50.0	58.4	ug/L	2.47	16.7	20	
o-Xylene		50.0	51.3	ug/L	0.582	2.50	20	
m-,p-Xylene		100	104	ug/L	0.606	4.50	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3073226
Report generated 09/16/2013 14:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13090262 Run Date: 09/09/2013 Sample ID: WG443995-02
Instrument ID: HPMS6 Run Time: 11:19 Method: 8260B
File ID: 6M119755 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG443996 Cal ID: HPMS6 - 26-JUL-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.9	ug/L	0.481	0.284	20	
1,1-Dichloroethene	CCC	50.0	47.9	ug/L	0.493	4.21	20	
1,2-Dichloropropane	CCC	50.0	47.5	ug/L	0.287	4.92	20	
Ethylbenzene	CCC	50.0	45.0	ug/L	0.541	9.97	20	
Toluene	CCC	50.0	43.9	ug/L	1.44	12.2	20	
Vinyl Chloride	CCC	50.0	49.5	ug/L	0.270	0.905	20	
Bromoform	SPCC	50.0	52.2	ug/L	0.157	4.39	20	
Chlorobenzene	SPCC	50.0	44.8	ug/L	0.934	10.5	20	
Chloromethane	SPCC	50.0	42.8	ug/L	0.294	14.4	20	
1,1-Dichloroethane	SPCC	50.0	48.2	ug/L	0.564	3.64	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	40.8	ug/L	0.324	18.3	20	
Xylenes		150	136	ug/L	0.637	9.38	20	
Acetone		50.0	58.9	ug/L	0.0500	17.7	20	
Benzene		50.0	49.7	ug/L	1.05	0.543	20	
Bromobenzene		50.0	44.2	ug/L	0.740	11.5	20	
Bromochloromethane		50.0	52.6	ug/L	0.160	5.29	20	
Bromodichloromethane		50.0	50.1	ug/L	0.327	0.195	20	
Bromomethane		50.0	37.0	ug/L	0.115	26.0	20	*
2-Butanone		50.0	44.1	ug/L	0.0581	11.8	20	
n-Butylbenzene		50.0	40.5	ug/L	2.12	19.0	20	
sec-Butylbenzene		50.0	40.8	ug/L	2.94	18.5	20	
tert-Butylbenzene		50.0	42.1	ug/L	0.522	15.8	20	
Carbon Disulfide		50.0	54.7	ug/L	0.918	9.46	20	
Carbon Tetrachloride		50.0	53.5	ug/L	0.442	6.95	20	
Dibromochloromethane		50.0	48.1	ug/L	0.278	3.71	20	
Chloroethane		50.0	51.4	ug/L	0.231	2.78	20	
2-Chlorotoluene		50.0	39.4	ug/L	2.30	21.1	20	*
4-Chlorotoluene		50.0	40.5	ug/L	2.02	18.9	20	
1,2-Dibromo-3-Chloropropane		50.0	37.8	ug/L	0.0458	24.3	20	*
1,2-Dibromoethane		50.0	45.0	ug/L	0.186	9.96	20	
Dibromomethane		50.0	52.7	ug/L	0.108	5.31	20	
1,2-Dichlorobenzene		50.0	43.3	ug/L	1.22	13.4	20	
1,3-Dichlorobenzene		50.0	43.2	ug/L	1.48	13.5	20	
1,4-Dichlorobenzene		50.0	43.2	ug/L	1.44	13.6	20	
Dichlorodifluoromethane		50.0	54.5	ug/L	0.253	9.03	20	
1,2-Dichloroethane		50.0	47.0	ug/L	0.283	6.03	20	
cis-1,2-Dichloroethene		50.0	52.3	ug/L	0.306	4.65	20	
trans-1,2-Dichloroethene		50.0	52.9	ug/L	0.300	5.82	20	
1,3-Dichloropropane		50.0	42.7	ug/L	0.305	14.7	20	
2,2-Dichloropropane		50.0	49.7	ug/L	0.441	0.691	20	
cis-1,3-Dichloropropene		50.0	49.2	ug/L	0.355	1.55	20	
trans-1,3-Dichloropropene		50.0	44.3	ug/L	0.355	11.4	20	

CCV - Modified 03/05/2008
PDF File ID: 3073228
Report generated 09/16/2013 14:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13090262 Run Date: 09/09/2013 Sample ID: WG443995-02
Instrument ID: HPMS6 Run Time: 11:19 Method: 8260B
File ID: 6M119755 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG443996 Cal ID: HPMS6 - 26-JUL-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	49.3	ug/L	0.381	1.49	20	
2-Hexanone		50.0	34.9	ug/L	0.0999	30.2	20	*
Hexachlorobutadiene		50.0	42.4	ug/L	0.425	15.2	20	
Isopropylbenzene		50.0	44.5	ug/L	1.60	11.0	20	
p-Isopropyltoluene		50.0	41.1	ug/L	2.54	17.9	20	
4-Methyl-2-Pentanone		50.0	43.6	ug/L	0.0430	12.8	20	
Methylene Chloride		50.0	50.6	ug/L	0.256	1.14	20	
Naphthalene		50.0	36.5	ug/L	1.03	27.0	20	*
n-Propylbenzene		50.0	40.9	ug/L	3.39	18.2	20	
Styrene		50.0	45.2	ug/L	0.977	9.58	20	
1,1,1,2-Tetrachloroethane		50.0	47.5	ug/L	0.353	4.97	20	
Tetrachloroethene		50.0	46.2	ug/L	0.426	7.63	20	
1,2,3-Trichlorobenzene		50.0	39.2	ug/L	0.636	21.6	20	*
1,2,4-Trichlorobenzene		50.0	40.6	ug/L	0.814	18.8	20	
1,1,1-Trichloroethane		50.0	50.9	ug/L	0.467	1.82	20	
1,1,2-Trichloroethane		50.0	44.2	ug/L	0.183	11.5	20	
Trichloroethene		50.0	51.8	ug/L	0.307	3.54	20	
Trichlorofluoromethane		50.0	51.4	ug/L	0.454	2.87	20	
1,2,3-Trichloropropane		50.0	41.9	ug/L	0.0962	16.2	20	
1,2,4-Trimethylbenzene		50.0	40.6	ug/L	2.48	18.7	20	
1,3,5-Trimethylbenzene		50.0	40.1	ug/L	2.44	19.8	20	
o-Xylene		50.0	44.6	ug/L	0.621	10.8	20	
m-,p-Xylene		100	91.3	ug/L	0.653	8.70	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3073228
Report generated 09/16/2013 14:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13090262 Run Date: 09/13/2013 Sample ID: WG444635-02
Instrument ID: HPMS8 Run Time: 15:17 Method: 8260B
File ID: 8M390574 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG444637 Cal ID: HPMS8 - 11-SEP-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.2	ug/L	0.492	4.43	20	
1,1-Dichloroethene	CCC	50.0	56.2	ug/L	0.404	12.4	20	
1,2-Dichloropropane	CCC	50.0	51.5	ug/L	0.251	3.07	20	
Ethylbenzene	CCC	50.0	52.4	ug/L	0.532	4.81	20	
Toluene	CCC	50.0	54.5	ug/L	1.36	8.98	20	
Vinyl Chloride	CCC	50.0	55.3	ug/L	0.232	10.5	20	
Bromoform	SPCC	50.0	52.6	ug/L	0.221	5.30	20	
Chlorobenzene	SPCC	50.0	51.5	ug/L	0.993	2.90	20	
Chloromethane	SPCC	50.0	45.9	ug/L	0.229	8.25	20	
1,1-Dichloroethane	SPCC	50.0	52.4	ug/L	0.475	4.75	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.8	ug/L	0.403	8.41	20	
Xylenes		150	167	ug/L	0.642	11.6	20	
Acetone		50.0	57.4	ug/L	0.0591	14.7	20	
Benzene		50.0	51.9	ug/L	1.00	3.71	20	
Bromobenzene		50.0	52.3	ug/L	0.751	4.70	20	
Bromochloromethane		50.0	52.9	ug/L	0.183	5.71	20	
Bromodichloromethane		50.0	53.9	ug/L	0.374	7.77	20	
Bromomethane		50.0	58.3	ug/L	0.199	16.7	20	
2-Butanone		50.0	51.3	ug/L	0.0641	2.53	20	
n-Butylbenzene		50.0	55.3	ug/L	2.20	10.5	20	
sec-Butylbenzene		50.0	55.4	ug/L	2.90	10.7	20	
tert-Butylbenzene		50.0	54.8	ug/L	0.539	9.67	20	
Carbon Disulfide		50.0	52.7	ug/L	0.736	5.32	20	
Carbon Tetrachloride		50.0	56.4	ug/L	0.472	12.8	20	
Dibromochloromethane		50.0	52.8	ug/L	0.361	5.67	20	
Chloroethane		50.0	53.1	ug/L	0.176	6.14	20	
2-Chlorotoluene		50.0	53.1	ug/L	2.06	6.26	20	
4-Chlorotoluene		50.0	53.2	ug/L	1.85	6.43	20	
1,2-Dibromo-3-Chloropropane		50.0	49.2	ug/L	0.0830	1.52	20	
1,2-Dibromoethane		50.0	51.0	ug/L	0.240	2.01	20	
Dibromomethane		50.0	52.7	ug/L	0.142	5.50	20	
1,2-Dichlorobenzene		50.0	51.2	ug/L	1.39	2.50	20	
1,3-Dichlorobenzene		50.0	52.6	ug/L	1.53	5.28	20	
1,4-Dichlorobenzene		50.0	50.1	ug/L	1.53	0.112	20	
Dichlorodifluoromethane		50.0	56.1	ug/L	0.273	12.3	20	
1,2-Dichloroethane		50.0	52.3	ug/L	0.360	4.64	20	
cis-1,2-Dichloroethene		50.0	54.6	ug/L	0.275	9.24	20	
trans-1,2-Dichloroethene		50.0	54.4	ug/L	0.377	8.89	20	
1,3-Dichloropropane		50.0	50.6	ug/L	0.396	1.27	20	
2,2-Dichloropropane		50.0	57.1	ug/L	0.480	14.2	20	
cis-1,3-Dichloropropene		50.0	56.7	ug/L	0.423	13.4	20	
trans-1,3-Dichloropropene		50.0	53.4	ug/L	0.475	6.82	20	

CCV - Modified 03/05/2008
PDF File ID: 3073228
Report generated 09/16/2013 14:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13090262 Run Date: 09/13/2013 Sample ID: WG444635-02
Instrument ID: HPMS8 Run Time: 15:17 Method: 8260B
File ID: 8M390574 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG444637 Cal ID: HPMS8 - 11-SEP-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	54.0	ug/L	0.376	7.94	20	
2-Hexanone		50.0	51.8	ug/L	0.0575	3.68	20	
Hexachlorobutadiene		50.0	51.3	ug/L	0.495	2.59	20	
Isopropylbenzene		50.0	59.5	ug/L	1.64	19.1	20	
p-Isopropyltoluene		50.0	57.1	ug/L	2.68	14.2	20	
4-Methyl-2-Pentanone		50.0	50.1	ug/L	0.0496	0.231	20	
Methylene Chloride		50.0	51.0	ug/L	0.245	1.98	20	
Naphthalene		50.0	52.2	ug/L	1.78	4.46	20	
n-Propylbenzene		50.0	57.3	ug/L	3.15	14.5	20	
Styrene		50.0	57.8	ug/L	1.04	15.6	20	
1,1,1,2-Tetrachloroethane		50.0	53.7	ug/L	0.398	7.38	20	
Tetrachloroethene		50.0	54.1	ug/L	0.326	8.27	20	
1,2,3-Trichlorobenzene		50.0	50.7	ug/L	0.907	1.39	20	
1,2,4-Trichlorobenzene		50.0	52.8	ug/L	1.06	5.55	20	
1,1,1-Trichloroethane		50.0	55.0	ug/L	0.481	9.93	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.227	2.10	20	
Trichloroethene		50.0	53.8	ug/L	0.299	7.64	20	
Trichlorofluoromethane		50.0	56.2	ug/L	0.484	12.4	20	
1,2,3-Trichloropropane		50.0	47.6	ug/L	0.138	4.77	20	
1,2,4-Trimethylbenzene		50.0	54.7	ug/L	2.51	9.43	20	
1,3,5-Trimethylbenzene		50.0	58.1	ug/L	2.46	16.3	20	
o-Xylene		50.0	56.5	ug/L	0.642	13.1	20	
m-,p-Xylene		100	111	ug/L	0.643	10.8	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3073228
Report generated 09/16/2013 14:20

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13090262
Instrument ID: HPMS6
Workgroup (AAB#): WG443996

ICAL CCV Number: WG439230-08
CAL ID: HPMS6-26-JUL-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG439230-08	NA	NA	292007	585843	849520
Upper Limit	NA	NA	584014	1171686	1699040
Lower Limit	NA	NA	146004	292922	424760
L13090262-02	1.00	01	340489	666226	821181
WG443996-01	1.00	01	357506	686997	843816
WG443996-02	1.00	01	380377	702843	873966
WG443996-03	1.00	01	382767	710294	891657

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3084271
Report generated 09/16/2013 14:20

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13090262
Instrument ID: HPMS8
Workgroup (AAB#): WG444637

ICAL CCV Number: WG444268-08
CAL ID: HPMS8 - 11-SEP-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG444268-08	NA	NA	354542	601866	760184
Upper Limit	NA	NA	709084	1203732	1520368
Lower Limit	NA	NA	177271	300933	380092
L13090262-01	1.00	02	298592	518401	655603
WG444637-01	1.00	01	297074	516116	656741
WG444637-02	1.00	01	316464	535409	655375

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3084271
Report generated 09/16/2013 14:20

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13090262
Instrument ID: HPMS6
Workgroup (AAB#): WG443996

ICAL CCV Number: WG439230-08
CAL ID: HPMS6-26-JUL-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG439230-08	NA	NA	18.24	14.69	10.21
Upper Limit	NA	NA	18.74	15.19	10.71
Lower Limit	NA	NA	17.74	14.19	9.71
L13090262-02	1.00	01	18.19	14.63	10.16
WG443996-01	1.00	01	18.18	14.63	10.16
WG443996-02	1.00	01	18.18	14.63	10.16
WG443996-03	1.00	01	18.18	14.63	10.16

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3084272
Report generated: 09/16/2013 14:20

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13090262
Instrument ID: HPMS8
Workgroup (AAB#): WG444637

ICAL CCV Number: WG444268-08
CAL ID: HPMS8 - 11-SEP-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG444268-08	NA	NA	17.95	14.92	11.05
Upper Limit	NA	NA	18.45	15.42	11.55
Lower Limit	NA	NA	17.45	14.42	10.55
L13090262-01	1.00	02	17.95	14.92	11.04
WG444637-01	1.00	01	17.96	14.93	11.05
WG444637-02	1.00	01	17.96	14.93	11.05

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3084272
Report generated: 09/16/2013 14:20

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091313\8M390582.D Vial: 10
Acq On : 13 Sep 2013 19:26 Operator: TMB
Sample : L13090262-01 B 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 16 10:52:32 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	655603	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.92	117	518401	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	17.95	152	298592	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	178556	26.2351 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.96%		
43) 1,2-Dichloroethane-d4	10.64	65	190163	27.3086 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.24%		
58) Toluene-d8	13.03	98	599013	26.5592 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.24%		
80) p-Bromofluorobenzene	16.43	95	229222	25.1896 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.76%		

Target Compounds					Qvalue
3) Chloromethane	3.87	50	1790	0.2737 ug/L	82
13) Acetone	6.58	43	6005	4.4463 ug/L	96
14) 1,1-Dichloroethene	6.80	61	23288	2.4734 ug/L	96
20) Carbon Disulfide	7.65	76	3497	0.1909 ug/L #	74
27) 1,1-Dichloroethane	8.67	63	3835	0.3227 ug/L #	88
29) 2-Butanone	9.22	43	839	0.5119 ug/L #	60
36) Tetrahydrofuran	9.98	42	202	0.1811 ug/L #	46
45) 1,2-Dichloroethane	10.76	62	3480	0.3861 ug/L #	69
56) Dimethyl Disulfide	13.03	94	16843	1.6046 ug/L #	28
59) Toluene	13.13	91	4563	0.1769 ug/L	94
73) m-,p-Xylene	15.09	106	2696	0.2241 ug/L	67

(#) = qualifier out of range (m) = manual integration
8M390582.D 8260WTR.M Mon Sep 16 10:52:33 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091313\8M390582.D Vial: 10
Acq On : 13 Sep 2013 19:26 Operator: TMB
Sample : L13090262-01 B 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 16 10:52 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration

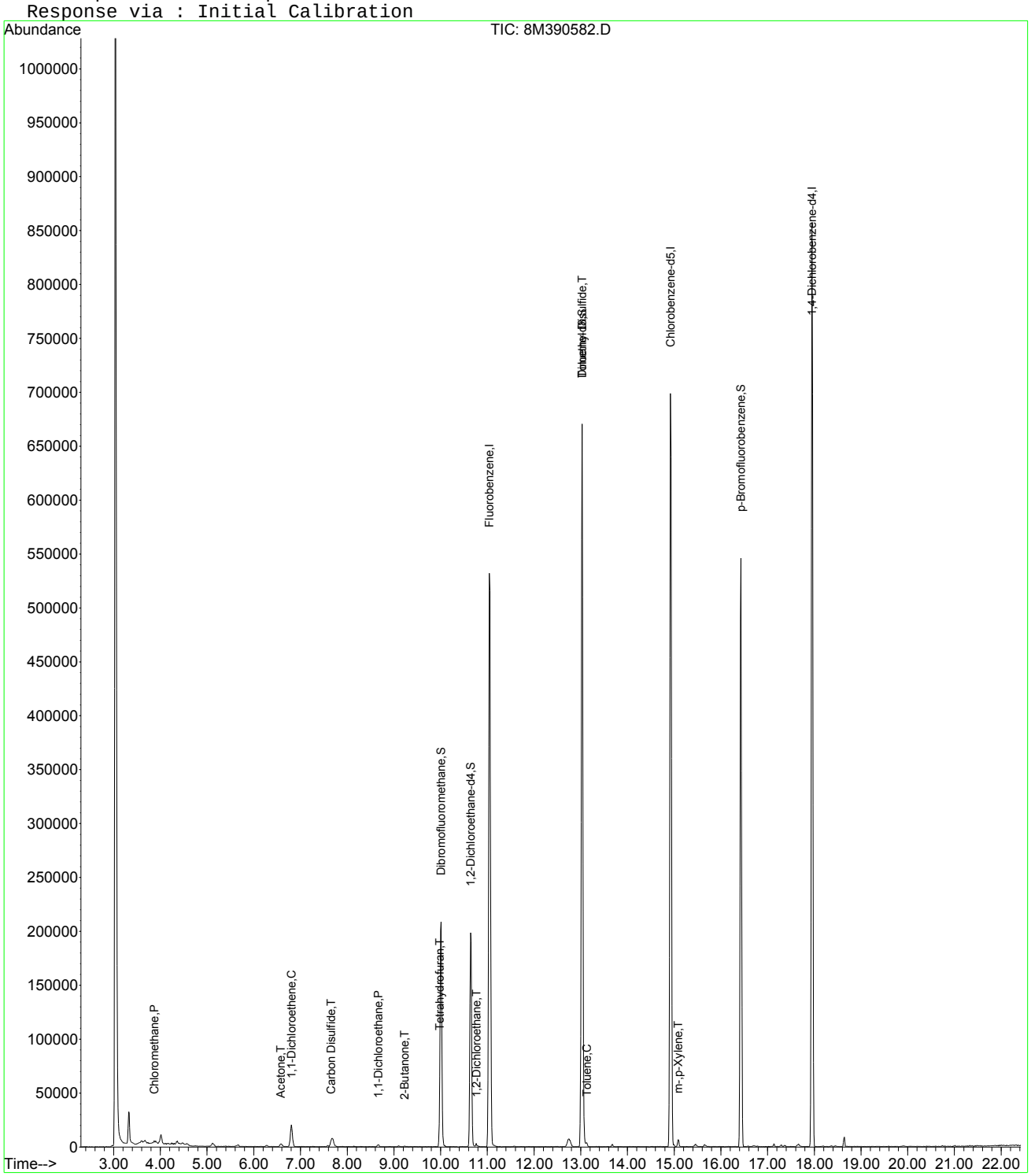

8M390582.D 8260WTR.M Mon Sep 16 10:52:33 2013 Page 2

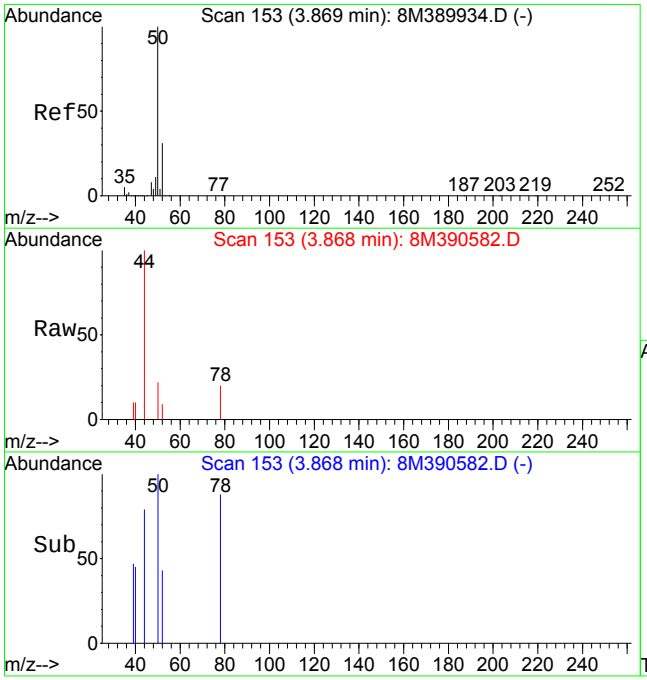

#3
Chloromethane
Concen: 0.27 ug/L
RT: 3.87 min Scan# 153
Delta R.T. -0.01 min
Lab File: 8M390582.D
Acq: 13 Sep 2013 19:26

Tgt Ion: 50 Resp: 1790

Ion	Ratio	Lower	Upper
50	100		
52	22.1	19.3	45.1

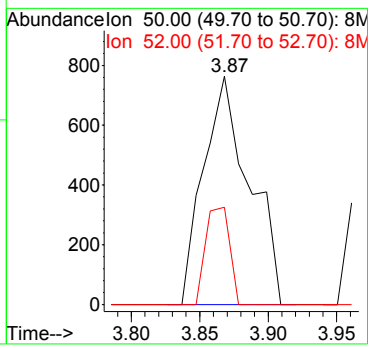

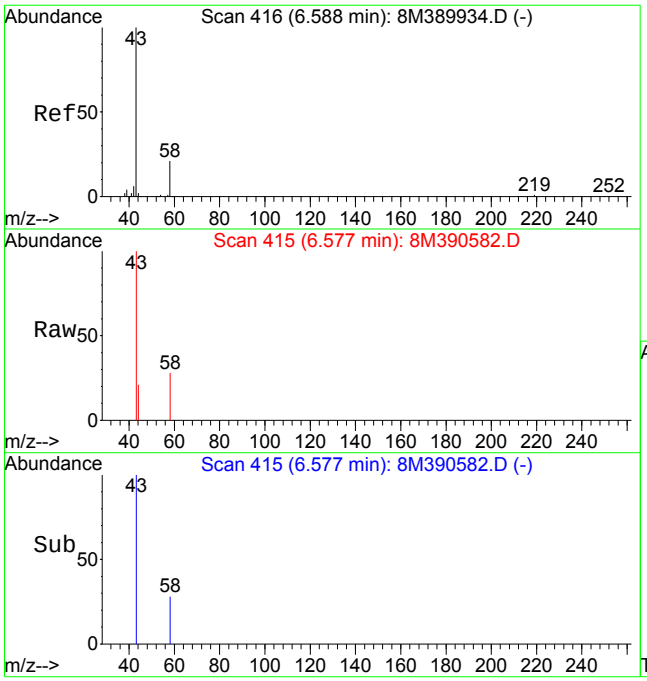

#13
Acetone
Concen: 4.45 ug/L
RT: 6.58 min Scan# 415
Delta R.T. -0.02 min
Lab File: 8M390582.D
Acq: 13 Sep 2013 19:26

Tgt Ion: 43 Resp: 6005

Ion	Ratio	Lower	Upper
43	100		
58	30.7	17.2	40.2

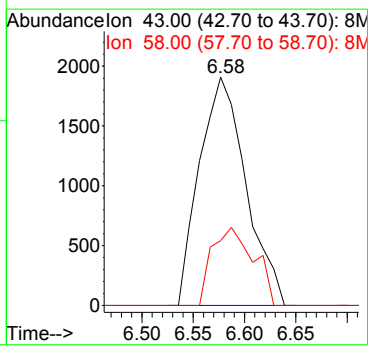

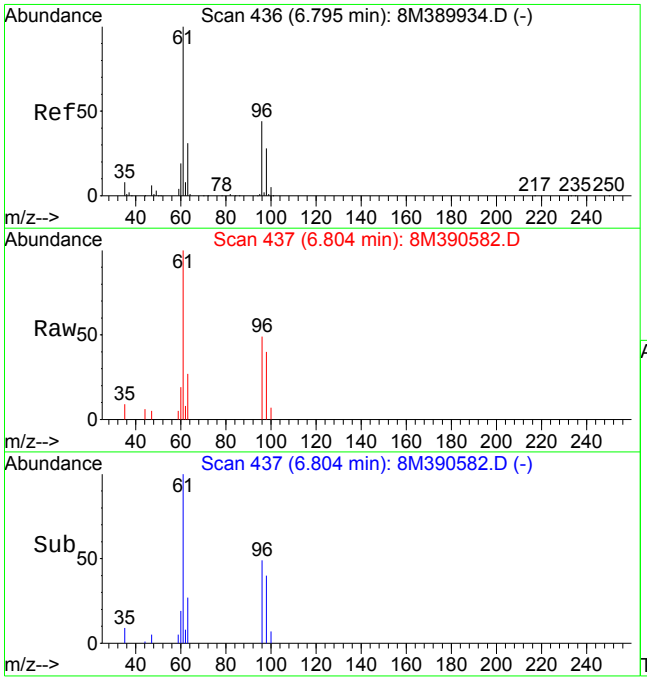

#14
1,1-Dichloroethene
Concen: 2.47 ug/L
RT: 6.80 min Scan# 437
Delta R.T. -0.00 min
Lab File: 8M390582.D
Acq: 13 Sep 2013 19:26

Tgt Ion: 61 Resp: 23288

Ion	Ratio	Lower	Upper
61	100		
96	58.9	33.5	78.3

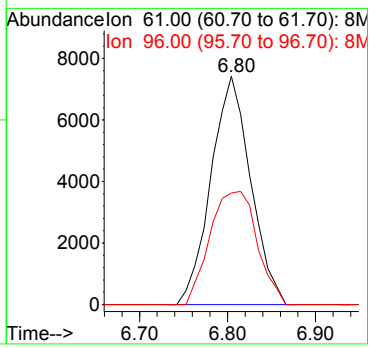

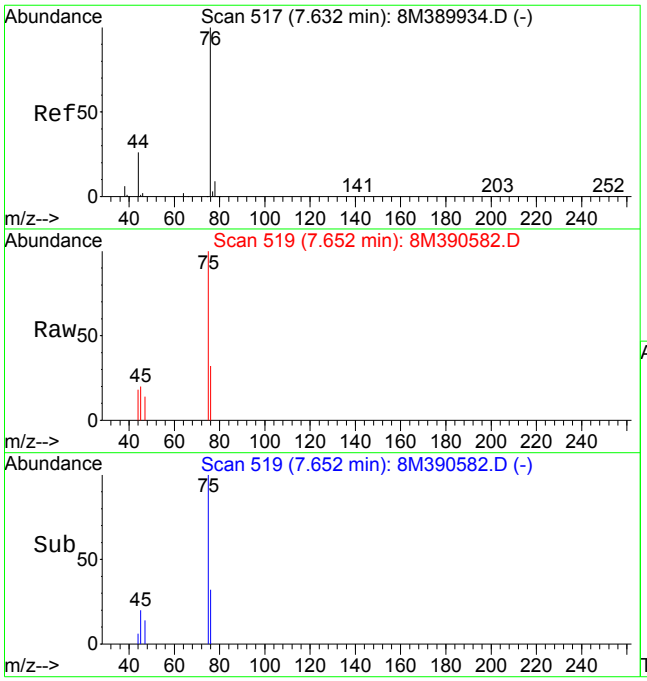

#20
Carbon Disulfide
Concen: 0.19 ug/L
RT: 7.65 min Scan# 519
Delta R.T. 0.01 min
Lab File: 8M390582.D
Acq: 13 Sep 2013 19:26

Tgt Ion: 76 Resp: 3497

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.7	13.3#

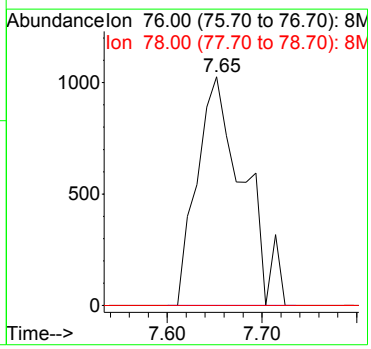

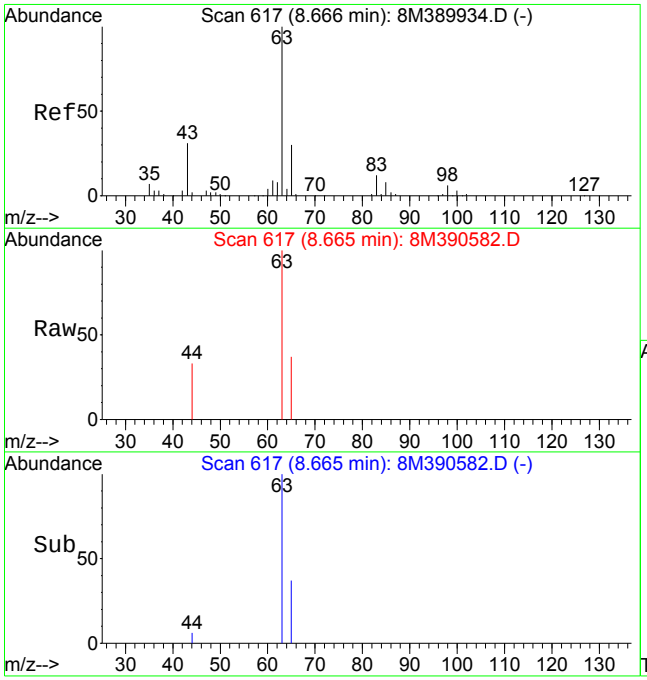

#27
1,1-Dichloroethane
Concen: 0.32 ug/L
RT: 8.67 min Scan# 617
Delta R.T. -0.01 min
Lab File: 8M390582.D
Acq: 13 Sep 2013 19:26

Tgt Ion: 63 Resp: 3835

Ion	Ratio	Lower	Upper
63	100		
65	28.0	18.2	42.4
83	0.0	7.2	16.8#

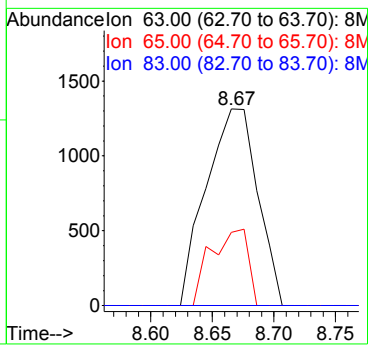

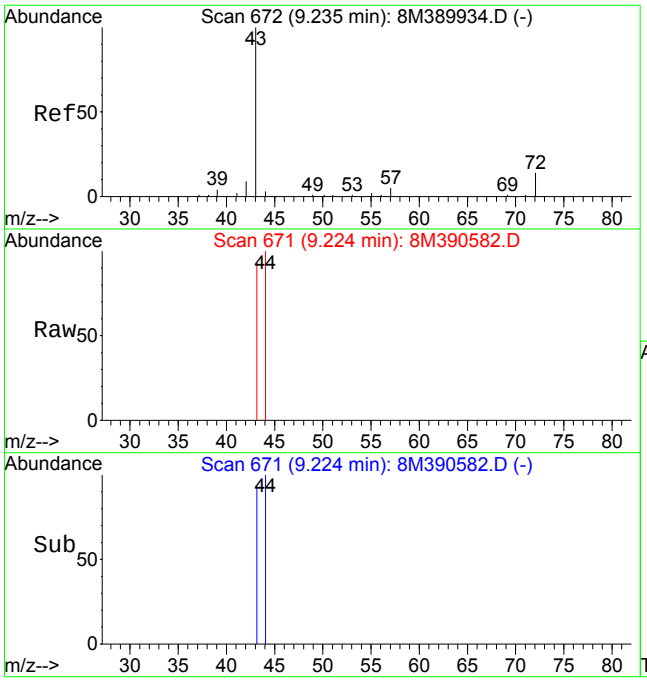

#29
2-Butanone
Concen: 0.51 ug/L
RT: 9.22 min Scan# 671
Delta R.T. -0.02 min
Lab File: 8M390582.D
Acq: 13 Sep 2013 19:26

Tgt Ion: 43 Resp: 839

Ion	Ratio	Lower	Upper
43	100		
72	0.0	10.6	24.8#

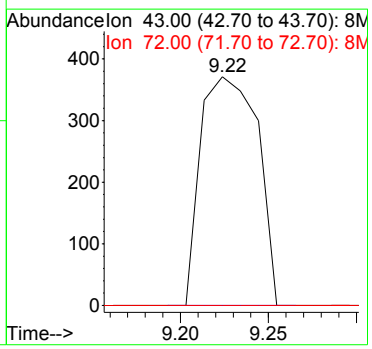

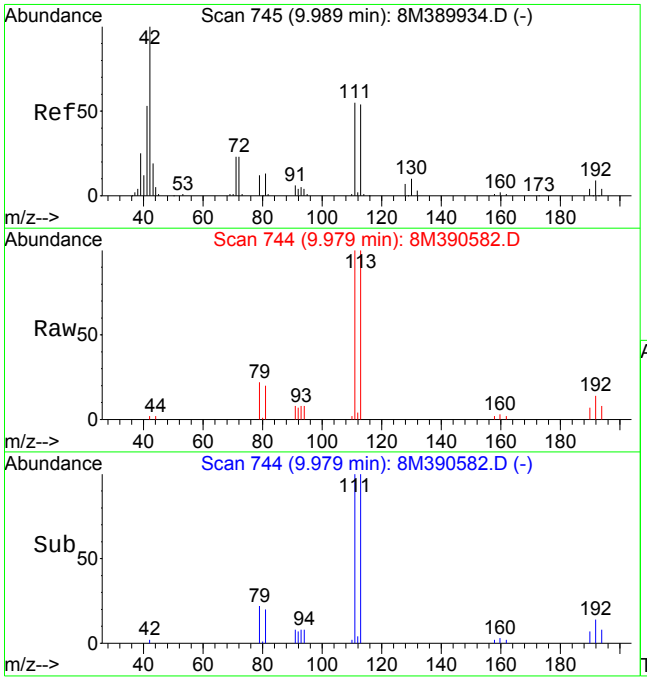

#36
Tetrahydrofuran
Concen: 0.18 ug/L
RT: 9.98 min Scan# 744
Delta R.T. -0.02 min
Lab File: 8M390582.D
Acq: 13 Sep 2013 19:26

Tgt Ion: 42 Resp: 202

Ion	Ratio	Lower	Upper
42	100		
72	0.0	17.6	41.2#
71	0.0	17.2	40.2#

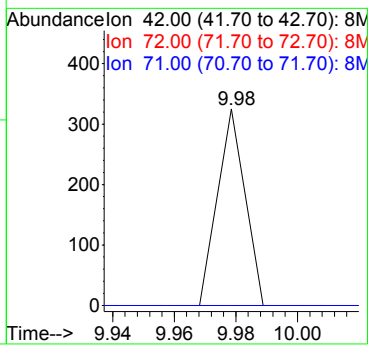

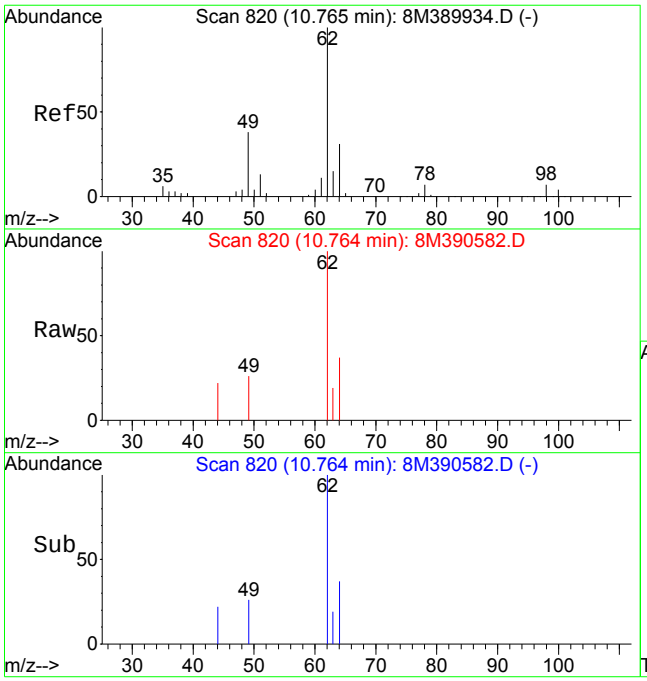

#45
1,2-Dichloroethane
Concen: 0.39 ug/L
RT: 10.76 min Scan# 820
Delta R.T. -0.01 min
Lab File: 8M390582.D
Acq: 13 Sep 2013 19:26

Tgt Ion: 62 Resp: 3480

Ion	Ratio	Lower	Upper
62	100		
64	34.1	18.7	43.7
49	14.1	27.7	64.7#

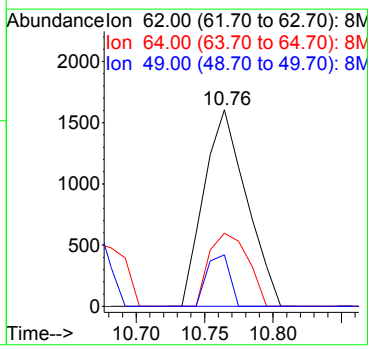

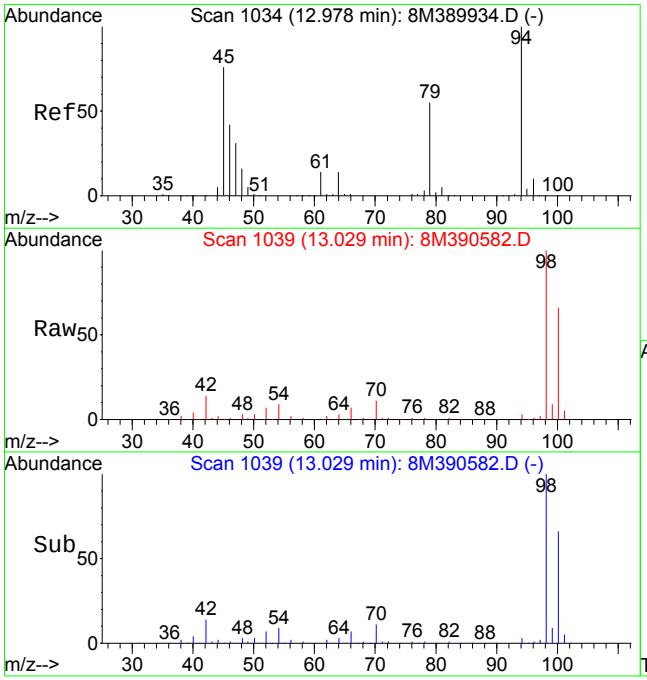

#56
Dimethyl Disulfide
Concen: 1.60 ug/L
RT: 13.03 min Scan# 1039
Delta R.T. 0.04 min
Lab File: 8M390582.D
Acq: 13 Sep 2013 19:26

Tgt Ion: 94 Resp: 16843

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.7	69.3#

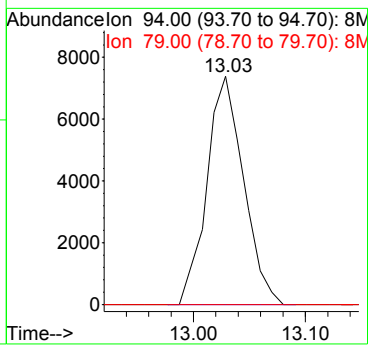

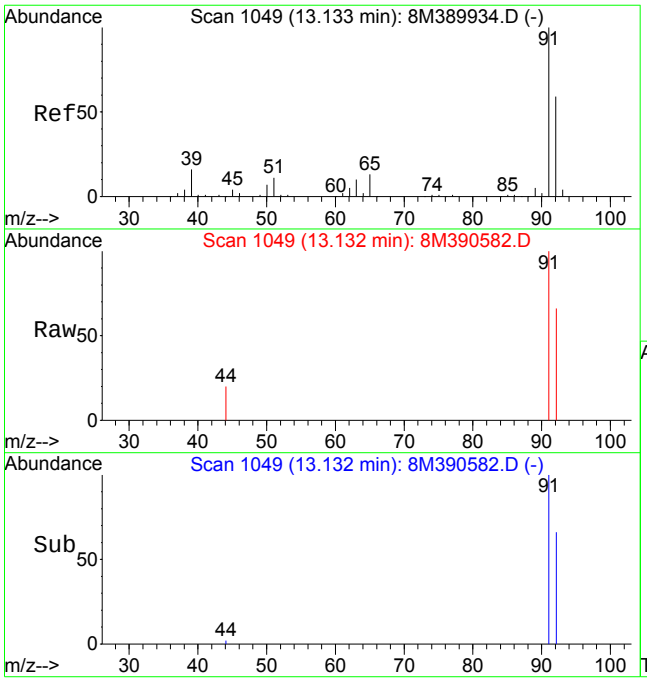

#59
Toluene
Concen: 0.18 ug/L
RT: 13.13 min Scan# 1049
Delta R.T. -0.01 min
Lab File: 8M390582.D
Acq: 13 Sep 2013 19:26

Tgt Ion: 91 Resp: 4563

Ion	Ratio	Lower	Upper
91	100		
92	63.8	35.4	82.6

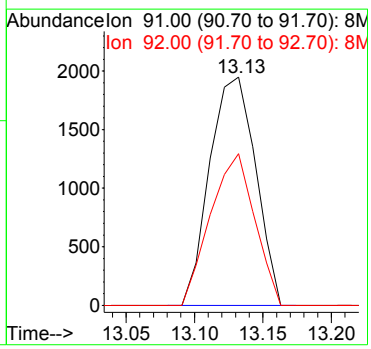

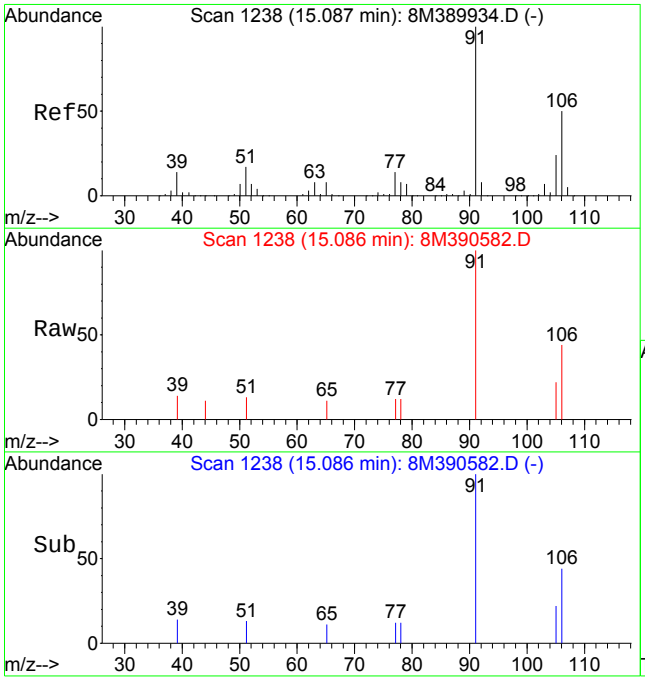

#73
m-,p-Xylene
Concen: 0.22 ug/L
RT: 15.09 min Scan# 1238
Delta R.T. -0.01 min
Lab File: 8M390582.D
Acq: 13 Sep 2013 19:26

Tgt Ion:106 Resp: 2696

Ion	Ratio	Lower	Upper
106	100		
91	236.6	112.7	262.9

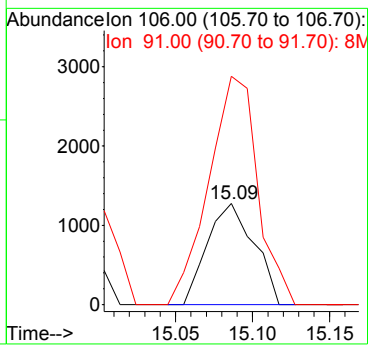

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\090913\6M119762.D Vial: 9
Acq On : 9 Sep 2013 14:52 Operator: TMB
Sample : L13090262-02 TB A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 10 08:17:41 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Fri Aug 30 16:35:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.16	96	821181	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.63	117	666226	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.19	152	340489	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	8.96	111	241947	28.0753 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.32%		
43) 1,2-Dichloroethane-d4	9.70	65	181004	24.7883 ug/L	0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.16%		
58) Toluene-d8	12.44	98	881232	24.6708 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.68%		
80) p-Bromofluorobenzene	16.41	95	309202	23.8763 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.52%		

Target Compounds

					Qvalue
13) Acetone	5.28	43	1015	Below Cal #	44
19) Methylene Chloride	6.31	84	1253	0.1506 ug/L	95
36) Tetrahydrofuran	8.94	42	206	0.1431 ug/L #	51

(#) = qualifier out of range (m) = manual integration
6M119762.D 8260WTR.M Tue Sep 10 08:17:41 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\090913\6M119762.D Vial: 9
Acq On : 9 Sep 2013 14:52 Operator: TMB
Sample : L13090262-02 TB A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 10 8:17 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Fri Aug 30 16:35:03 2013
Response via : Initial Calibration

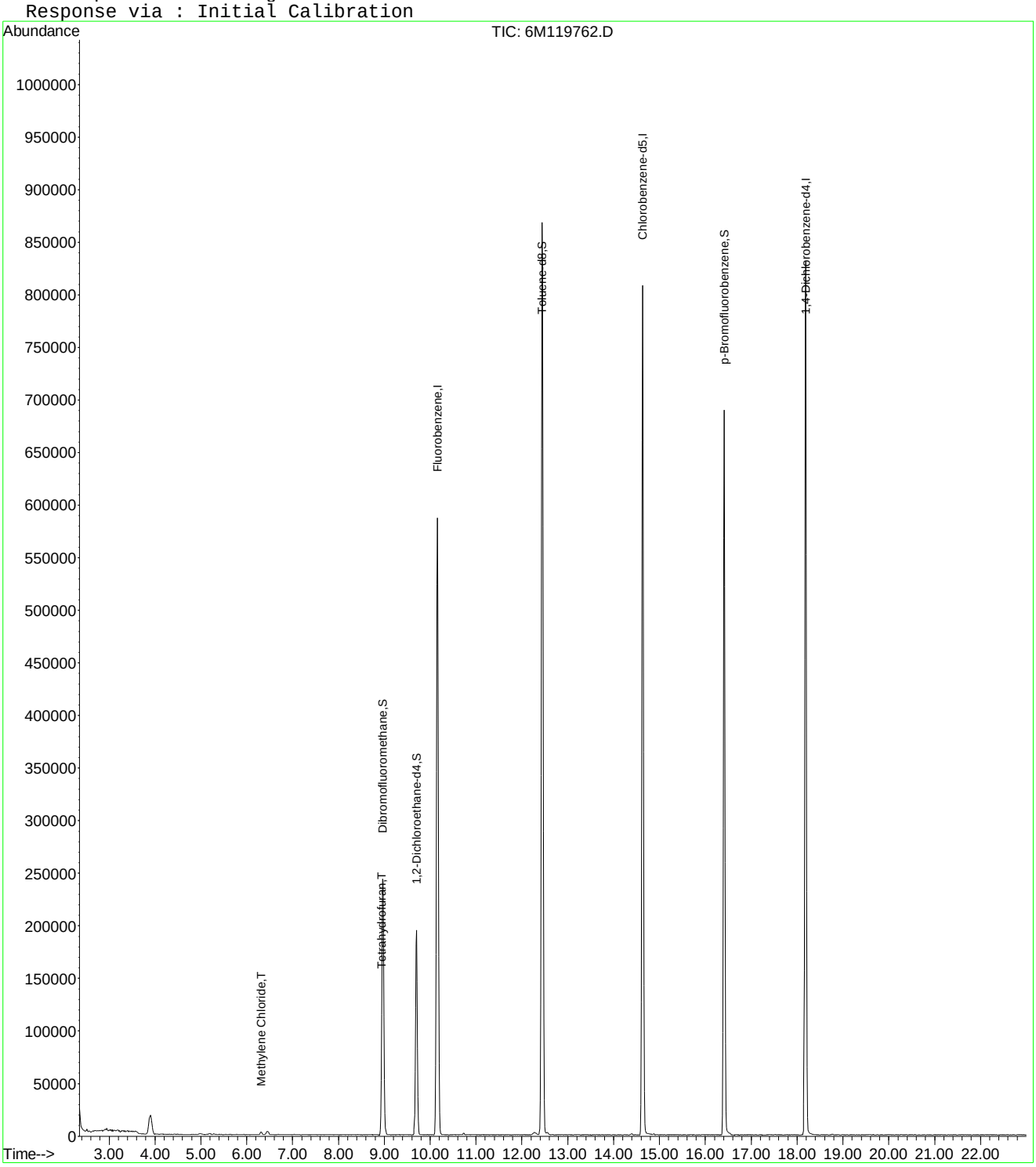

6M119762.D 8260WTR.M Tue Sep 10 08:17:42 2013 Page 2

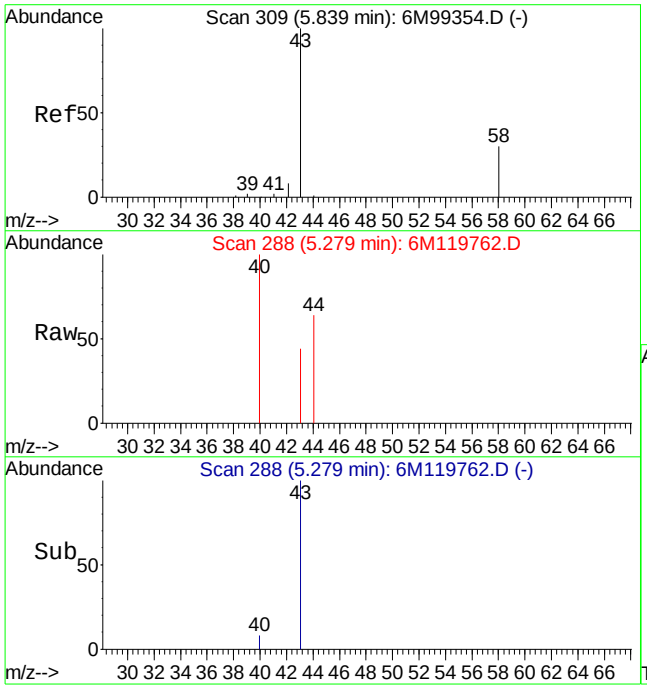

#13
Acetone
Concen: Below Cal
RT: 5.28 min Scan# 288
Delta R.T. 0.01 min
Lab File: 6M119762.D
Acq: 9 Sep 2013 14:52

Tgt Ion: 43 Resp: 1015

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.4	43.0#

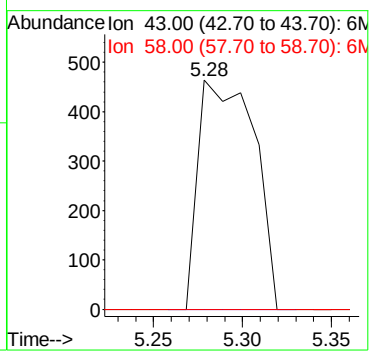

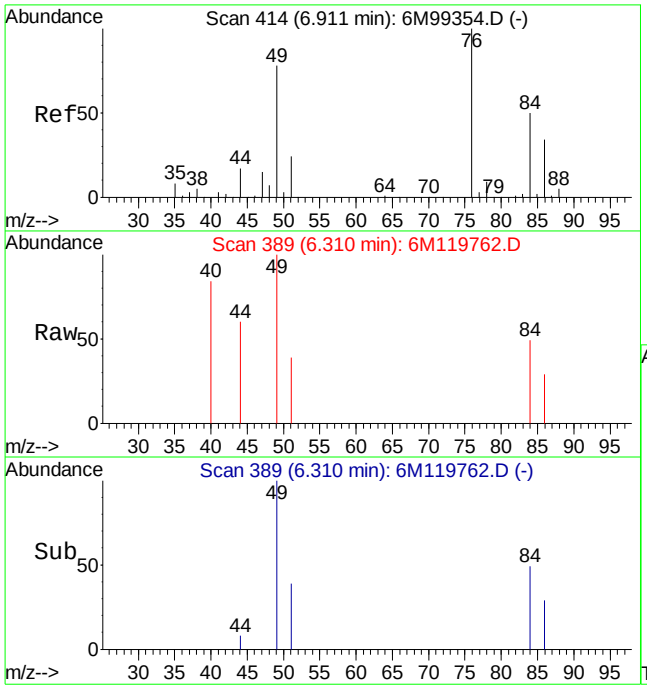

#19
Methylene Chloride
Concen: 0.15 ug/L
RT: 6.31 min Scan# 389
Delta R.T. 0.01 min
Lab File: 6M119762.D
Acq: 9 Sep 2013 14:52

Tgt Ion: 84 Resp: 1253

Ion	Ratio	Lower	Upper
84	100		
49	220.4	127.7	298.1

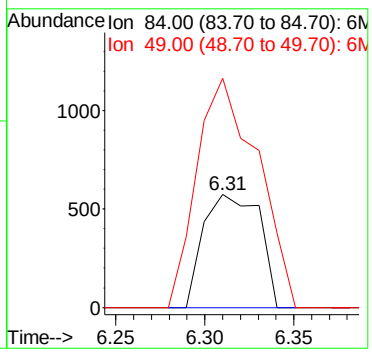

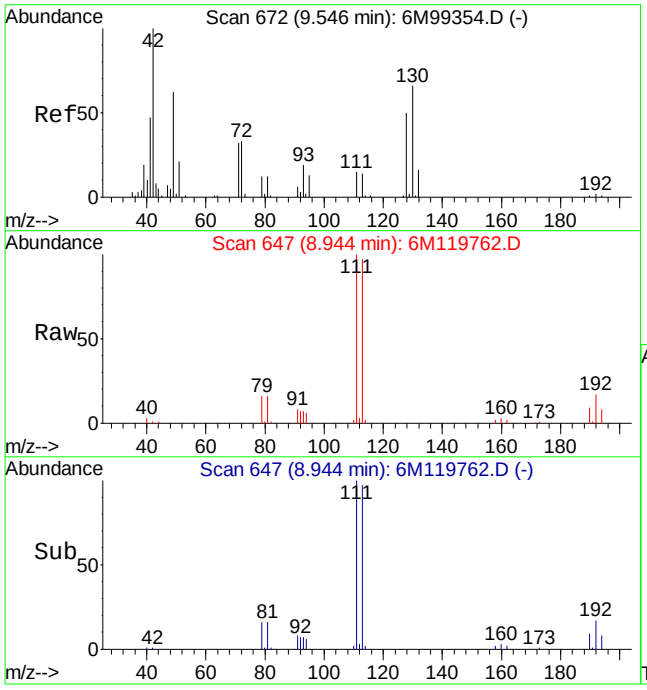

#36
Tetrahydrofuran
Concen: 0.14 ug/L
RT: 8.94 min Scan# 647
Delta R.T. 0.02 min
Lab File: 6M119762.D
Acq: 9 Sep 2013 14:52

Tgt Ion: 42 Resp: 206

Ion	Ratio	Lower	Upper
42	100		
72	0.0	14.6	34.2#
71	0.0	14.2	33.2#

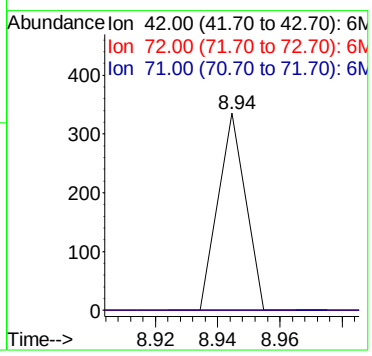

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117460.D Vial: 2
Acq On : 12 Jun 2013 16:07 Operator: ADC
Sample : WG433881-02 5ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 09:13:30 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:03:26 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.24	96	635246	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.73	117	460819	25.00 ug/L	0.01
12) 1,4-Dichlorobenzene-d4	18.27	152	226317	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.82	41	701	2.3695 ug/L #	58
3) 3-Chloro-1-propene	6.21	41	51486	5.0745 ug/L	100
4) 2-Chloro-1,3-butadiene	7.71	53	53718	4.9196 ug/L	99
5) Ethyl Acetate	8.47	43	9046	4.1528 ug/L #	88
6) Methacrylonitrile	8.62	67	4764	4.0709 ug/L	95
9) Methyl methacrylate	11.12	41	9665	3.9314 ug/L	94
10) 2-Nitropropane	11.48	43	1924	2.6240 ug/L #	73
13) Cyclohexanone	16.23	55	375	1.7021 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M117460.D A9FOOWT.M Thu Jun 13 09:13:30 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117460.D Vial: 2
Acq On : 12 Jun 2013 16:07 Operator: ADC
Sample : WG433881-02 5ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 9:13 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration

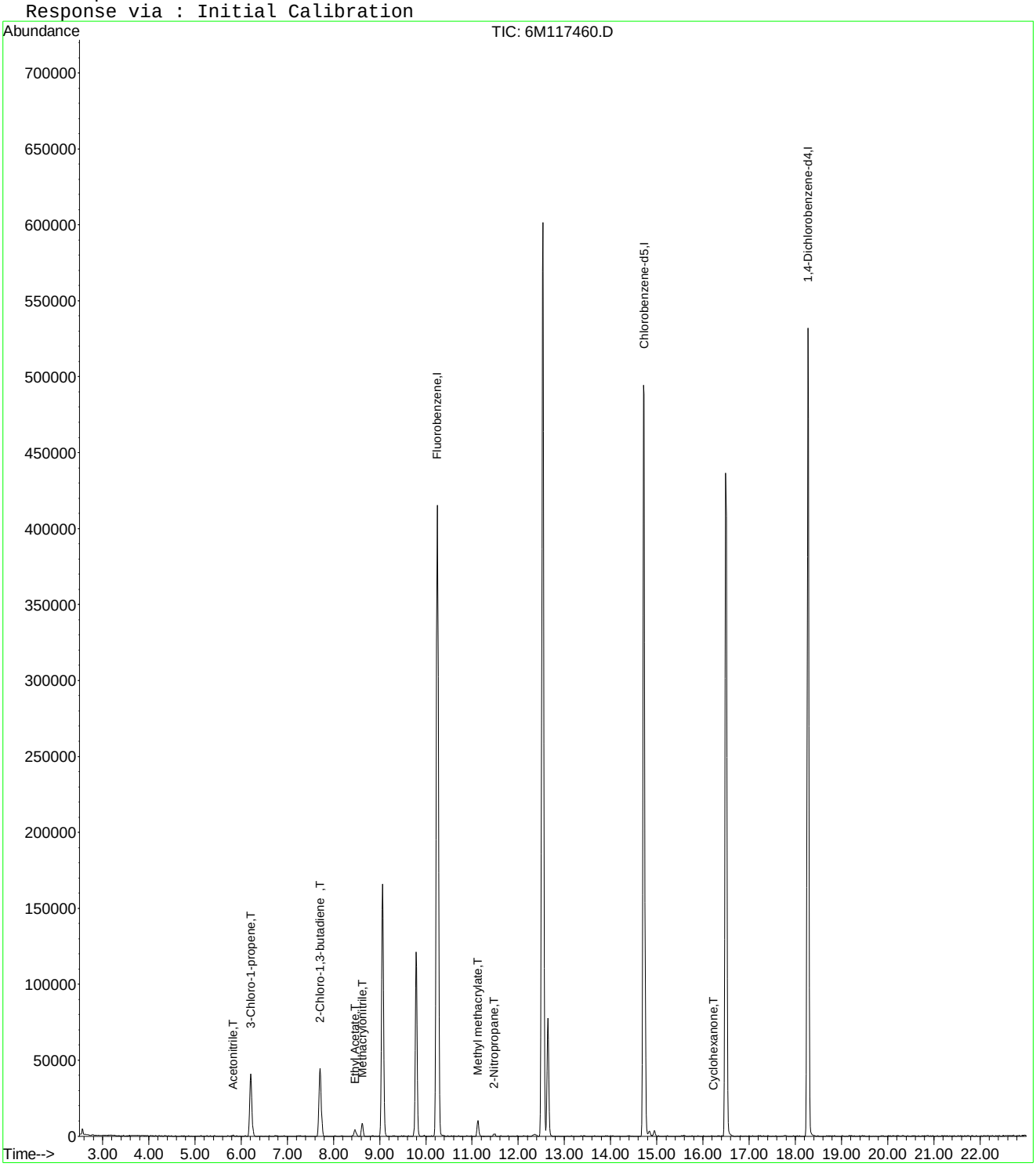

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117461.D Vial: 3
Acq On : 12 Jun 2013 16:38 Operator: ADC
Sample : WG433881-03 20ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 09:13:32 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	633710	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.72	117	468945	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	18.27	152	237092	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.81	41	5150	17.4502 ug/L	80
3) 3-Chloro-1-propene	6.21	41	207380	20.4891 ug/L	100
4) 2-Chloro-1,3-butadiene	7.71	53	213265	19.5784 ug/L	100
5) Ethyl Acetate	8.46	43	40890	18.8173 ug/L	99
6) Methacrylonitrile	8.62	67	22556	19.3211 ug/L	98
7) Isobutyl Alcohol	8.64	43	2652	31.7036 ug/L #	85
9) Methyl methacrylate	11.12	41	47025	19.1746 ug/L	99
10) 2-Nitropropane	11.48	43	11897	16.2645 ug/L	96
13) Cyclohexanone	16.22	55	4554	19.7308 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M117461.D A9FOOWT.M Thu Jun 13 09:13:33 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117461.D Vial: 3
Acq On : 12 Jun 2013 16:38 Operator: ADC
Sample : WG433881-03 20ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 9:13 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration

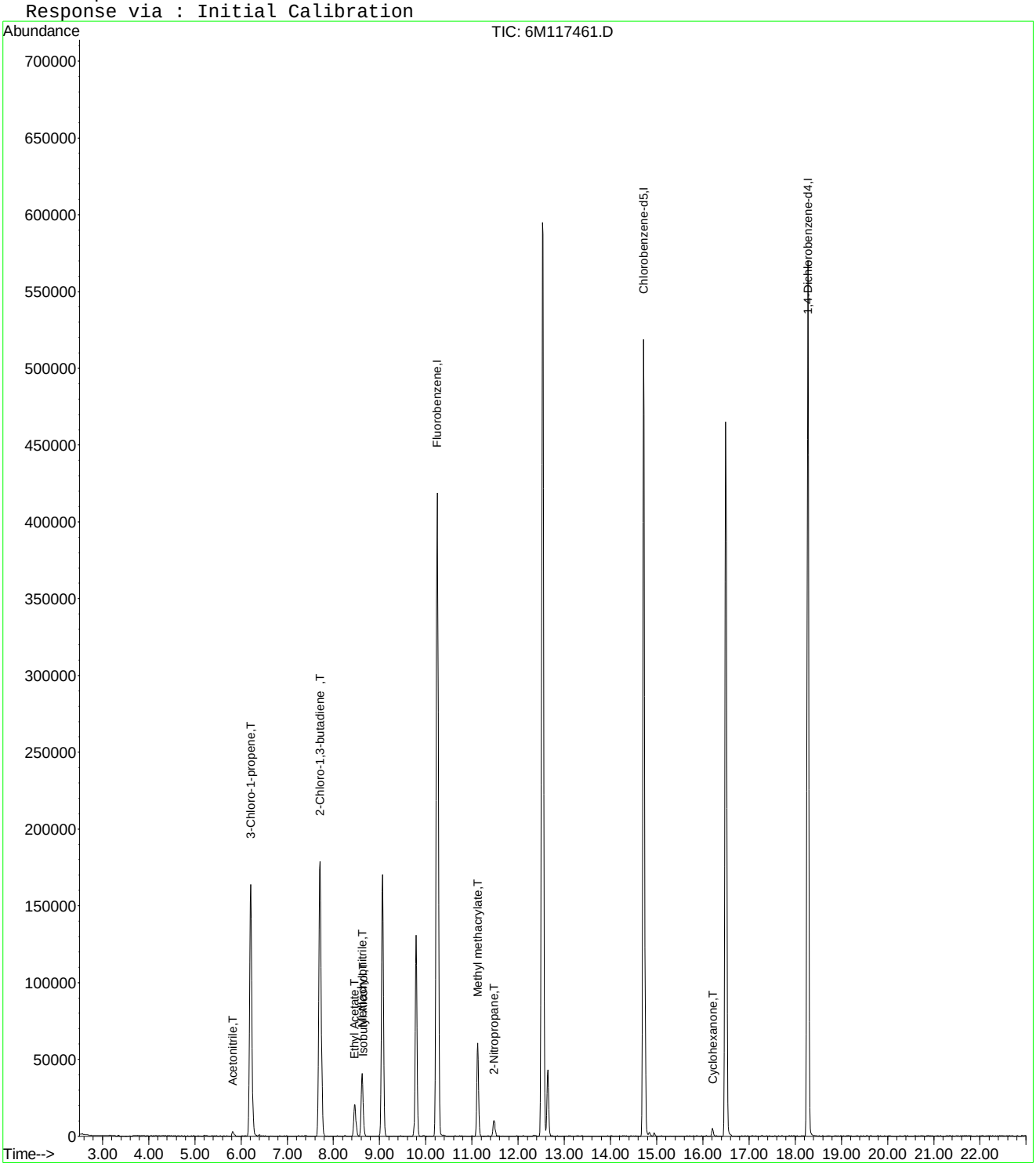

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117462.D Vial: 4
Acq On : 12 Jun 2013 17:09 Operator: ADC
Sample : WG433881-04 50ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 09:13:33 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	643649	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.72	117	474161	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	18.27	152	239863	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.82	41	15166	50.5949 ug/L	95
3) 3-Chloro-1-propene	6.20	41	547154	53.2240 ug/L	99
4) 2-Chloro-1,3-butadiene	7.70	53	575206	51.9904 ug/L	100
5) Ethyl Acetate	8.46	43	112736	51.0792 ug/L	100
6) Methacrylonitrile	8.61	67	61557	51.9146 ug/L	98
7) Isobutyl Alcohol	8.64	43	8633	101.6105 ug/L #	85
8) 1-Butanol	9.70	41	658	65.4625 ug/L #	37
9) Methyl methacrylate	11.12	41	130690	52.4663 ug/L	100
10) 2-Nitropropane	11.48	43	35478	47.7534 ug/L	99
13) Cyclohexanone	16.21	55	11954	51.1940 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M117462.D A9FOOWT.M Thu Jun 13 09:13:34 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117462.D Vial: 4
Acq On : 12 Jun 2013 17:09 Operator: ADC
Sample : WG433881-04 50ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 9:13 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration

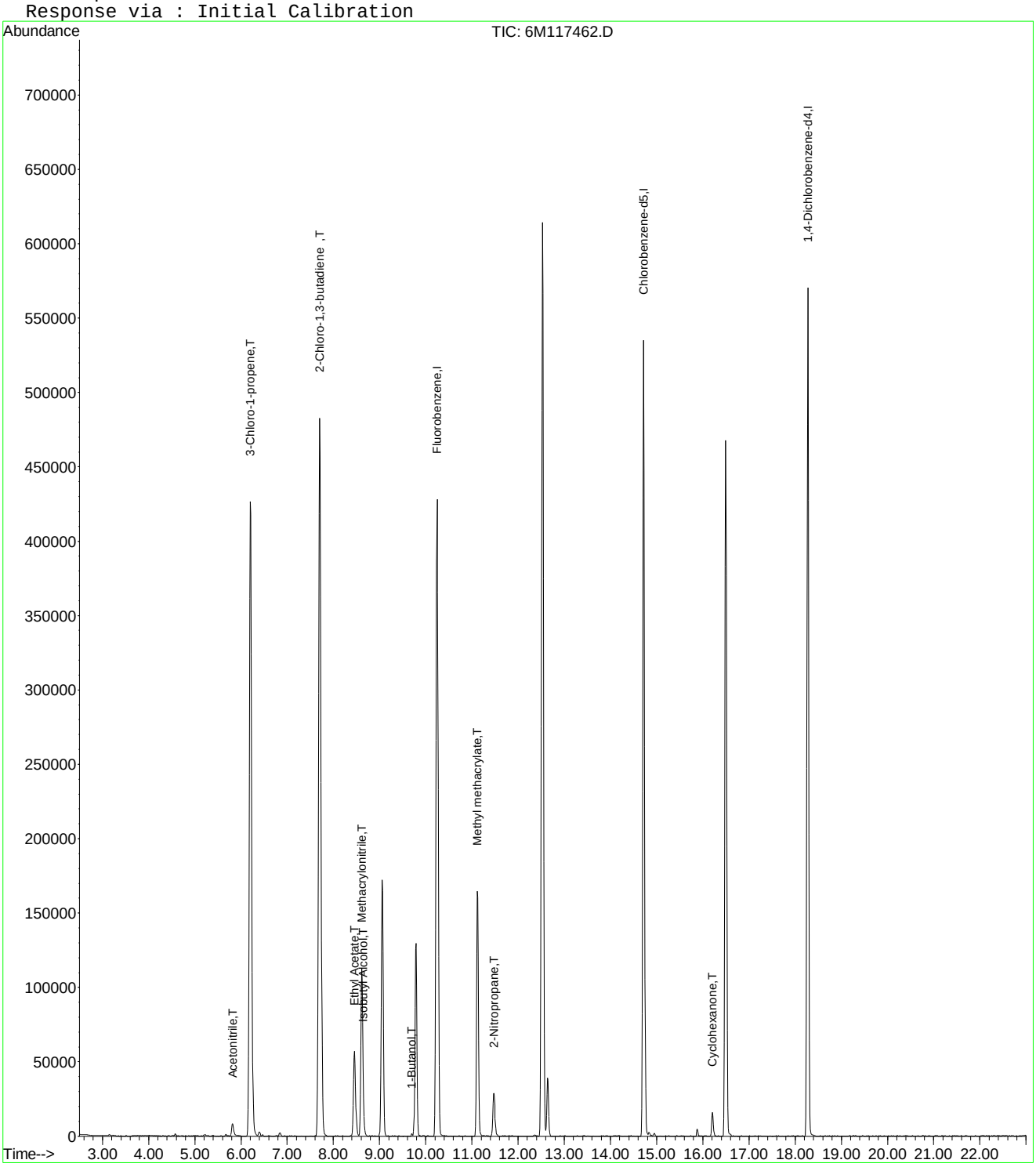

6M117462.D A9FOOWT.M Thu Jun 13 09:13:35 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117463.D Vial: 5
Acq On : 12 Jun 2013 17:39 Operator: ADC
Sample : WG433881-05 100ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 09:13:35 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.24	96	649971	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.72	117	477465	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	18.27	152	240591	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.81	41	29970	99.0096 ug/L	100
3) 3-Chloro-1-propene	6.21	41	1083531	104.3745 ug/L	100
4) 2-Chloro-1,3-butadiene	7.71	53	1155253	103.4026 ug/L	100
5) Ethyl Acetate	8.46	43	222400	99.7864 ug/L	100
6) Methacrylonitrile	8.62	67	121449	101.4287 ug/L	100
7) Isobutyl Alcohol	8.64	43	16831	196.1742 ug/L #	100
8) 1-Butanol	9.70	41	2494	111.6228 ug/L	100
9) Methyl methacrylate	11.12	41	257401	102.3302 ug/L	100
10) 2-Nitropropane	11.48	43	73677	98.2046 ug/L	100
13) Cyclohexanone	16.21	55	23437	100.0673 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M117463.D A9FOOWT.M Thu Jun 13 09:13:35 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117463.D Vial: 5
Acq On : 12 Jun 2013 17:39 Operator: ADC
Sample : WG433881-05 100ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 9:13 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration

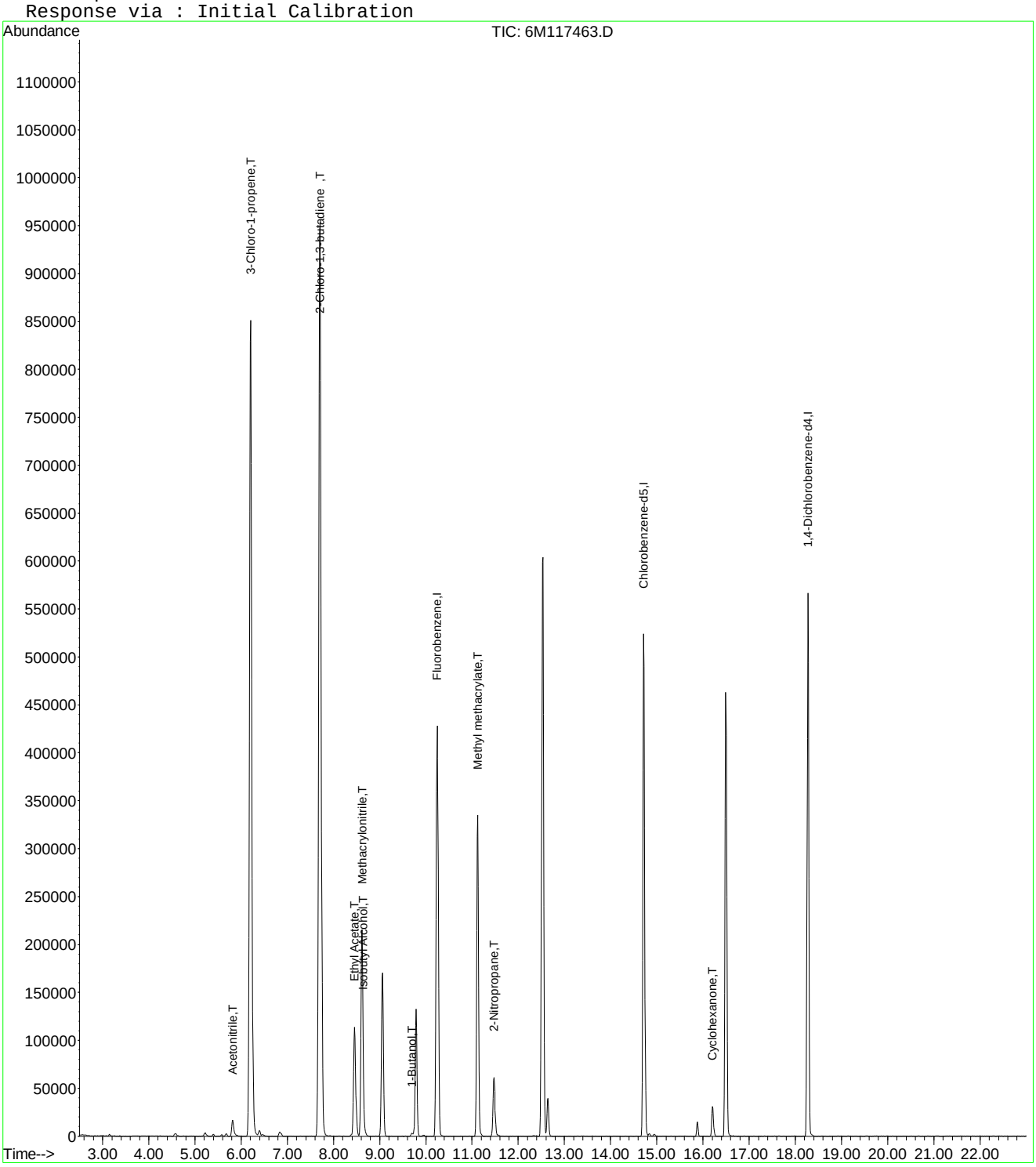

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117464.D Vial: 6
Acq On : 12 Jun 2013 18:11 Operator: ADC
Sample : WG433881-06 200ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 09:13:36 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.24	96	656617	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.73	117	481723	25.00 ug/L	0.01
12) 1,4-Dichlorobenzene-d4	18.27	152	241526	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.81	41	62853	205.5410 ug/L	96
3) 3-Chloro-1-propene	6.21	41	2119993	202.1479 ug/L	99
4) 2-Chloro-1,3-butadiene	7.71	53	2279604	201.9741 ug/L	99
5) Ethyl Acetate	8.46	43	457903	203.3724 ug/L	99
6) Methacrylonitrile	8.62	67	247327	204.4657 ug/L	99
7) Isobutyl Alcohol	8.64	43	33971	391.9423 ug/L #	91
8) 1-Butanol	9.69	41	5678	190.5072 ug/L	94
9) Methyl methacrylate	11.12	41	525946	206.9743 ug/L	100
10) 2-Nitropropane	11.48	43	153866	203.0133 ug/L	100
13) Cyclohexanone	16.21	55	47248	200.9505 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M117464.D A9FOOWT.M Thu Jun 13 09:13:36 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117464.D Vial: 6
Acq On : 12 Jun 2013 18:11 Operator: ADC
Sample : WG433881-06 200ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 9:13 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration

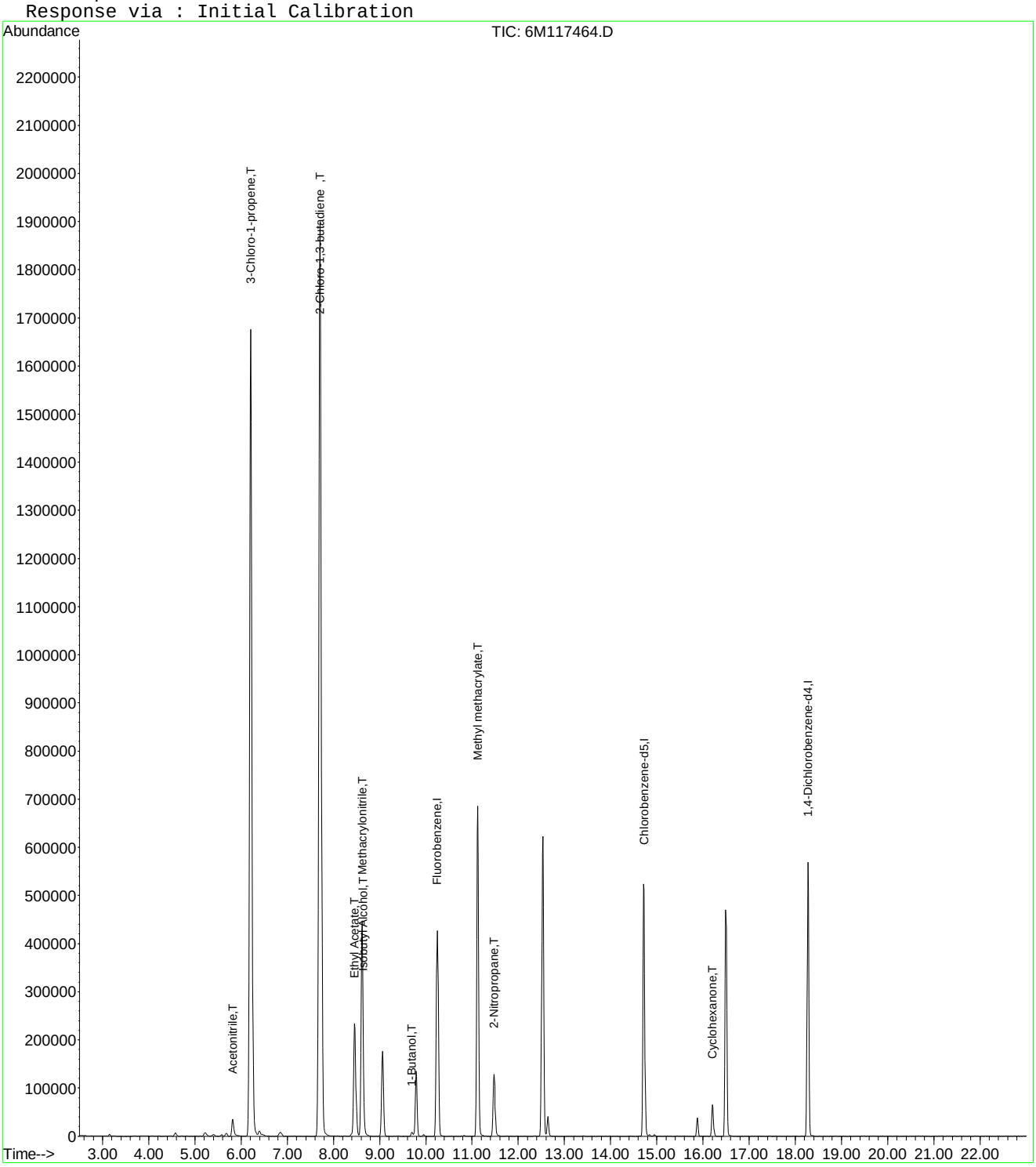

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117465.D Vial: 7
Acq On : 12 Jun 2013 18:42 Operator: ADC
Sample : WG433881-07 300ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 09:13:36 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.24	96	658158	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.72	117	485144	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	18.27	152	242694	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.81	41	98453	321.2058 ug/L	93
3) 3-Chloro-1-propene	6.21	41	3147094	299.3825 ug/L	99
4) 2-Chloro-1,3-butadiene	7.71	53	3416641	302.0075 ug/L	99
5) Ethyl Acetate	8.46	43	694748	307.8420 ug/L	99
6) Methacrylonitrile	8.62	67	372247	307.0168 ug/L	99
7) Isobutyl Alcohol	8.64	43	54821	631.0193 ug/L #	90
8) 1-Butanol	9.70	41	9761	291.9104 ug/L	94
9) Methyl methacrylate	11.12	41	789065	309.7919 ug/L	100
10) 2-Nitropropane	11.48	43	239726	315.5578 ug/L	100
13) Cyclohexanone	16.21	55	69527	294.2821 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M117465.D A9FOOWT.M Thu Jun 13 09:13:37 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117465.D Vial: 7
Acq On : 12 Jun 2013 18:42 Operator: ADC
Sample : WG433881-07 300ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 9:13 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration

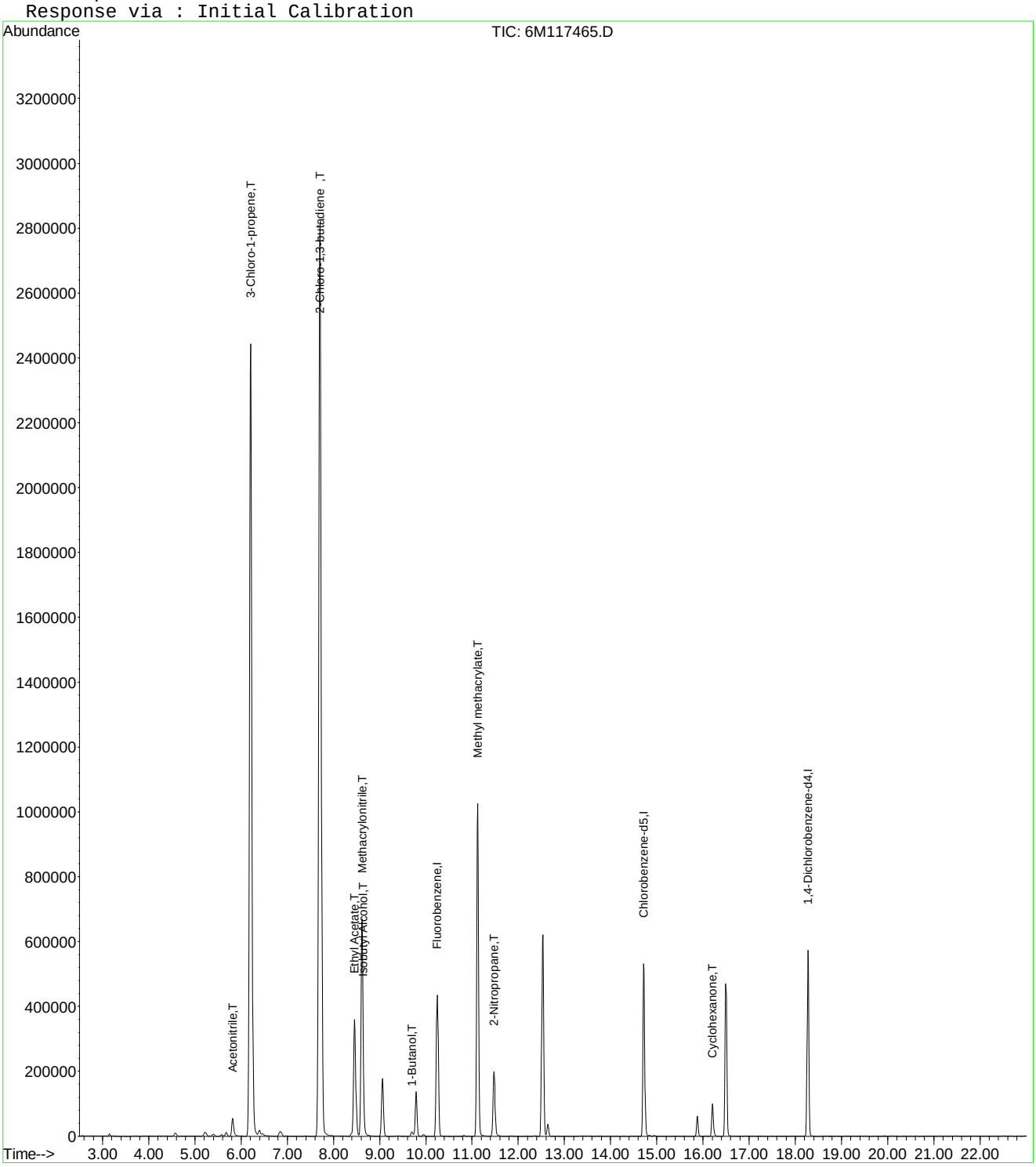

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117466.D Vial: 8
Acq On : 12 Jun 2013 19:13 Operator: ADC
Sample : WG433881-08 400ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 09:13:37 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.24	96	672591	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.73	117	491968	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	18.27	152	247920	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.81	41	138924	443.5175 ug/L	93
3) 3-Chloro-1-propene	6.21	41	4181259	389.2269 ug/L	99
4) 2-Chloro-1,3-butadiene	7.71	53	4496834	388.9594 ug/L	98
5) Ethyl Acetate	8.46	43	982928	426.1881 ug/L	100
6) Methacrylonitrile	8.62	67	518592	418.5389 ug/L	98
7) Isobutyl Alcohol	8.64	43	75191	846.9167 ug/L #	85
8) 1-Butanol	9.69	41	14333	398.1663 ug/L	94
9) Methyl methacrylate	11.12	41	1089819	418.6883 ug/L	100
10) 2-Nitropropane	11.48	43	333963	430.1711 ug/L	100
13) Cyclohexanone	16.21	55	96181	398.5173 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M117466.D A9FOOWT.M Thu Jun 13 09:13:37 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117466.D Vial: 8
Acq On : 12 Jun 2013 19:13 Operator: ADC
Sample : WG433881-08 400ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 9:13 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration

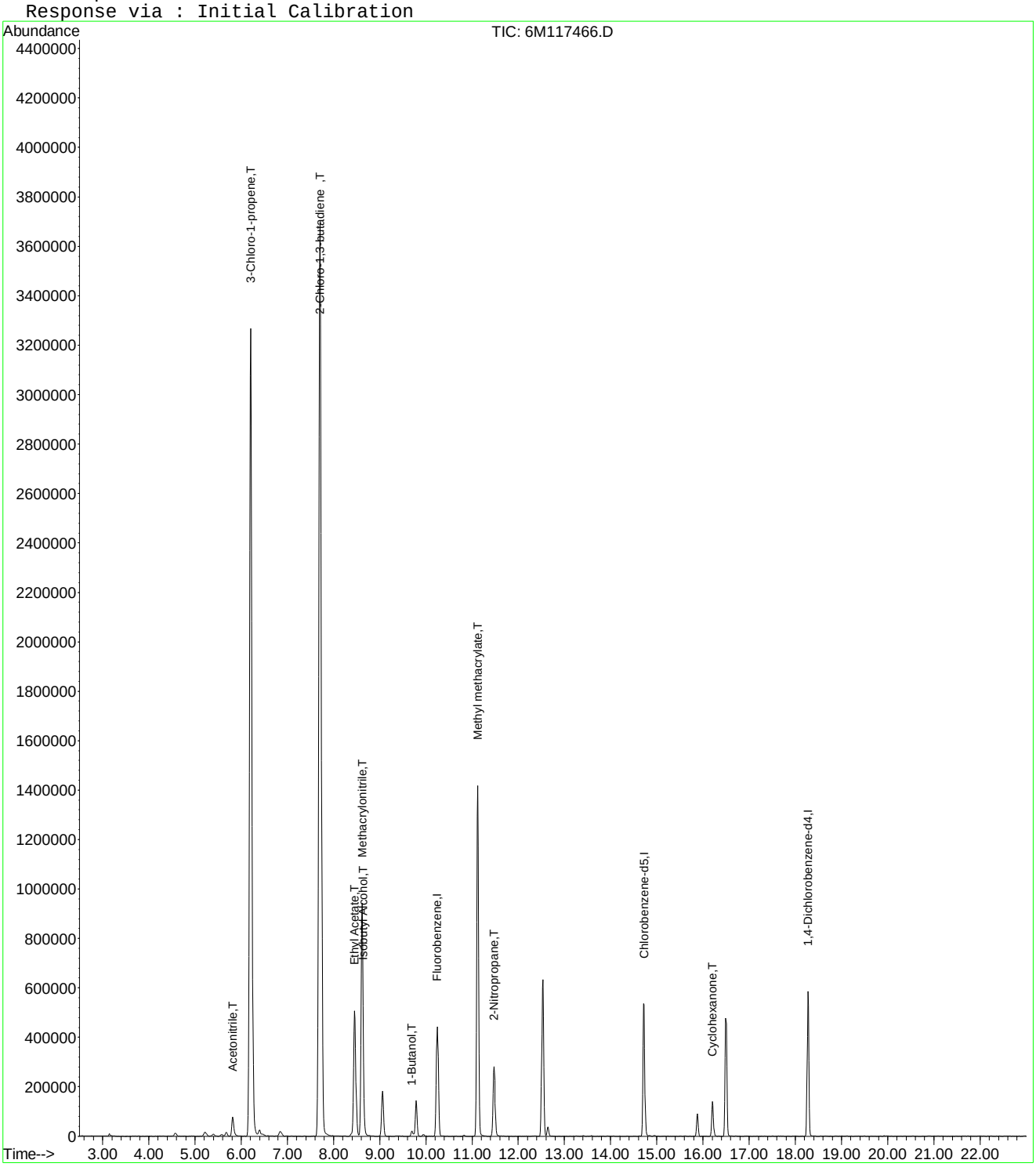

6M117466.D A9FOOWT.M Thu Jun 13 09:13:37 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117467.D Vial: 9
Acq On : 12 Jun 2013 19:44 Operator: ADC
Sample : WG433881-09 500ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 09:13:38 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	683407	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.72	117	495707	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	18.27	152	253828	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.82	41	146135	459.1551 ug/L	92
3) 3-Chloro-1-propene	6.21	41	4751777	435.3349 ug/L	98
4) 2-Chloro-1,3-butadiene	7.71	53	5723030	487.1863 ug/L	98
5) Ethyl Acetate	8.46	43	1289634	550.3231 ug/L	99
6) Methacrylonitrile	8.62	67	676775	537.5588 ug/L	98
7) Isobutyl Alcohol	8.65	43	101056	1120.2335 ug/L #	87
8) 1-Butanol	9.70	41	19132	507.7933 ug/L	96
9) Methyl methacrylate	11.13	41	1412493	534.0653 ug/L	100
10) 2-Nitropropane	11.48	43	436741	553.6540 ug/L	100
13) Cyclohexanone	16.21	55	124404	503.4592 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M117467.D A9FOOWT.M Thu Jun 13 09:13:38 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117467.D Vial: 9
Acq On : 12 Jun 2013 19:44 Operator: ADC
Sample : WG433881-09 500ug/L A9STD 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 9:13 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration

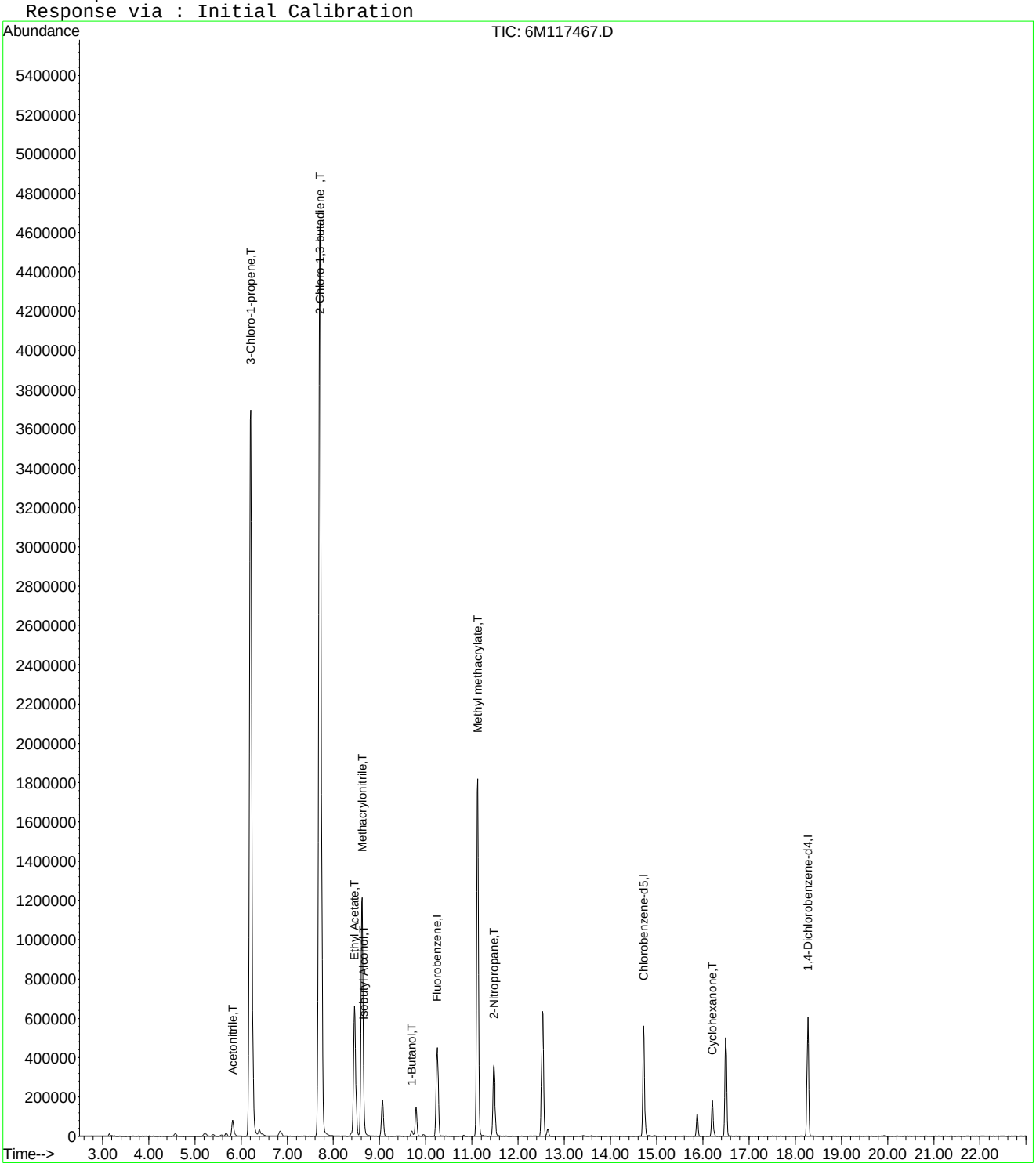

6M117467.D A9FOOWT.M Thu Jun 13 09:13:38 2013 Page 2

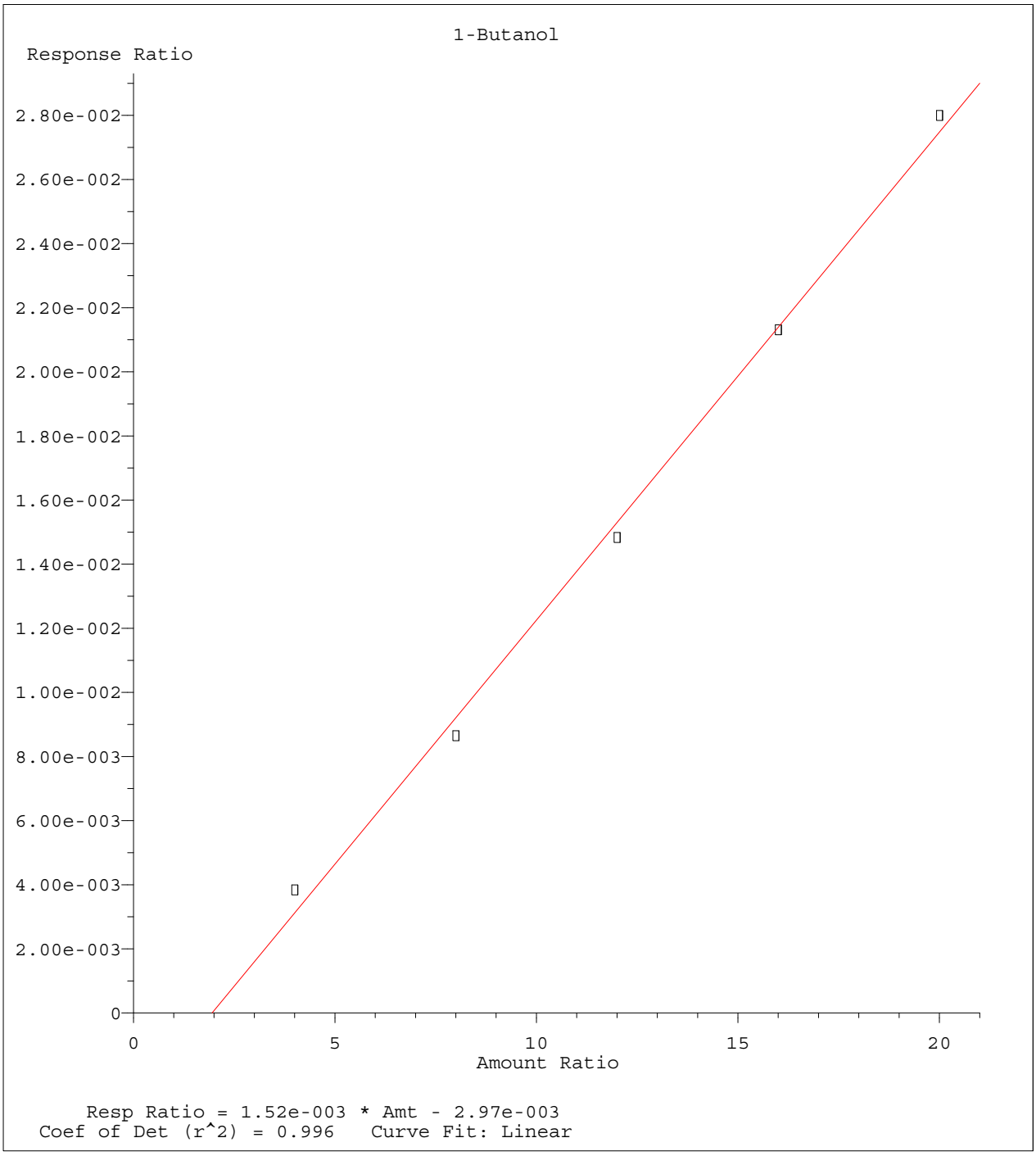

Method Name: C:\MSDCHEM\1\METHODS\A9FOOWT.M
Calibration Table Last Updated: Thu Jun 13 09:13:08 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117469.D Vial: 11
Acq On : 12 Jun 2013 20:47 Operator: ADC
Sample : WG433881-10 100ug/L A9ALT 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 09:13:39 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration
DataAcq Meth : 8260_WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.25	96	637027	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.72	117	479128	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	18.27	152	241197	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.82	41	29976	101.0416 ug/L	98
3) 3-Chloro-1-propene	6.21	41	1017838	100.0386 ug/L	100
4) 2-Chloro-1,3-butadiene	7.70	53	1273042	116.2608 ug/L	99
5) Ethyl Acetate	8.46	43	231445	105.9548 ug/L	99
6) Methacrylonitrile	8.62	67	119430	101.7693 ug/L	98
7) Isobutyl Alcohol	8.64	43	16497	196.1883 ug/L #	98
8) 1-Butanol	9.71	41	2348	109.1429 ug/L	97
9) Methyl methacrylate	11.13	41	267789	108.6231 ug/L	98
10) 2-Nitropropane	11.47	43	71866	97.7371 ug/L	99
13) Cyclohexanone	16.21	55	39850	169.7172 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M117469.D A9FOOWT.M Thu Jun 13 09:13:39 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061213\6M117469.D Vial: 11
Acq On : 12 Jun 2013 20:47 Operator: ADC
Sample : WG433881-10 100ug/L A9ALT 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 13 9:13 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Initial Calibration

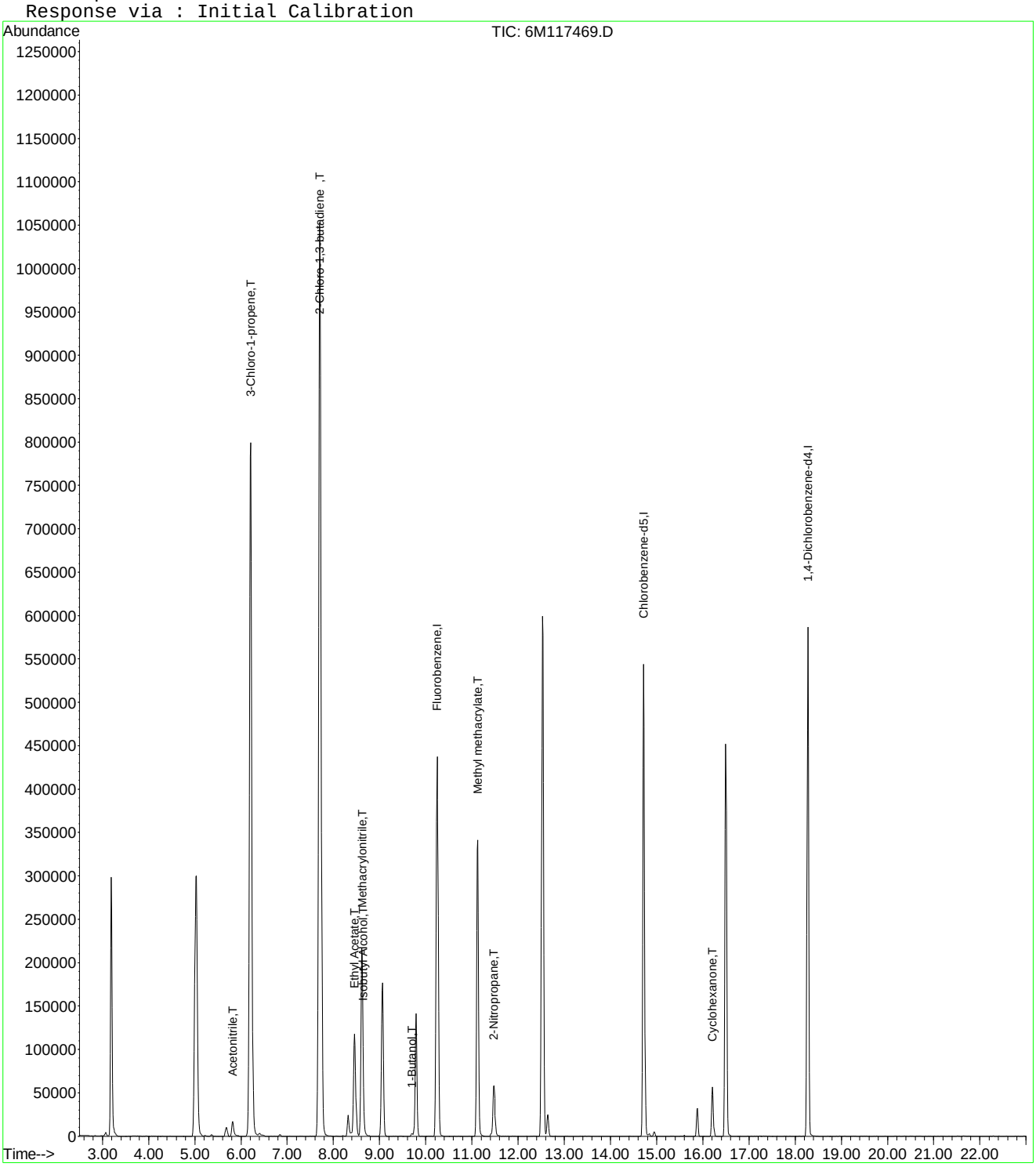

6M117469.D A9FOOWT.M Thu Jun 13 09:13:39 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061213\6M117469.D Vial: 11
Acq On : 12 Jun 2013 20:47 Operator: ADC
Sample : WG433881-10 100ug/L A9ALT 8260 Inst : HPMS6
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/12/13 - HPMS6
Last Update : Thu Jun 13 09:13:08 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	98	0.00
2	T	Acetonitrile	100.0000	101.0416	-1.0	100	0.00
3	T	3-Chloro-1-propene	100.0000	100.0386	-0.0	94	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	116.2608	-16.3	110	0.00
5	T	Ethyl Acetate	100.0000	105.9548	-6.0	104	0.00
6	T	Methacrylonitrile	100.0000	101.7693	-1.8	98	0.00
7	T	Isobutyl Alcohol	200.0000	196.1883	1.9	98	0.00
8	T	1-Butanol	100.0000	109.1429	-9.1	94	0.00
9	T	Methyl methacrylate	100.0000	108.6231	-8.6	104	0.00
10	T	2-Nitropropane	100.0000	97.7371	2.3	98	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	169.7172	-69.7	170	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M117469.D A9FOOWT.M Thu Jun 13 09:15:16 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118374.D Vial: 3
Acq On : 26 Jul 2013 15:38 Operator: adc
Sample : WG439230-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 14:48:21 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 14:47:52 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	860199	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	608517	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	290701	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.02	111	3747	0.4305 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.72%#	
43) 1,2-Dichloroethane-d4	9.75	65	3354	0.4350 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.76%#	
58) Toluene-d8	12.50	98	26450	0.8254 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.32%#	
80) p-Bromofluorobenzene	16.46	95	9641	0.8983 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.60%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.60	85	1837	0.2092 ug/L #	63
3) Chloromethane	2.94	50	5551	0.4848 ug/L	86
4) Vinyl Chloride	3.13	62	2499	0.2545 ug/L	99
5) 1,3-Butadiene	3.17	54	4946	0.7148 ug/L	95
6) Bromomethane	3.86	94	735	0.1387 ug/L	67
7) Chloroethane	4.01	64	2009	0.2513 ug/L #	56
8) Trichlorofluoromethane	4.46	101	3652	0.2274 ug/L #	89
10) Isoprene	5.02	67	3827	0.2734 ug/L	95
11) Acrolein	5.17	56	195	1.2791 ug/L #	1
12) 1,1,2-Trichloro-1,2,2-Trif	5.24	101	1840	0.2036 ug/L #	62
13) Acetone	5.33	43	5139	3.7057 ug/L #	44
14) 1,1-Dichloroethene	5.54	61	4827	0.2624 ug/L	94
16) Dimethyl Sulfide	5.81	62	2741	0.2770 ug/L	82
18) Methyl acetate	6.14	43	4500	0.8873 ug/L #	74
19) Methylene Chloride	6.36	84	2801	0.3243 ug/L	90
20) Carbon Disulfide	6.37	76	8697	0.2938 ug/L	95
22) Methyl Tert Butyl Ether	6.63	73	3439	0.2226 ug/L	100
23) trans-1,2-Dichloroethene	6.85	96	2587	0.2576 ug/L	97
24) n-Hexane	6.95	57	6344	0.3948 ug/L	95
26) Vinyl Acetate	7.54	43	5820	0.4785 ug/L #	84
27) 1,1-Dichloroethane	7.53	63	5323	0.2567 ug/L	89
29) 2-Butanone	8.16	43	1452	0.6542 ug/L #	66
31) 2,2-Dichloropropane	8.38	77	4118	0.2617 ug/L	93
32) cis-1,2-Dichloroethene	8.47	96	2843	0.2707 ug/L	83
33) Chloroform	8.69	83	5089	0.3019 ug/L	86
35) Bromochloromethane	8.95	130	1294	0.2404 ug/L	81
36) Tetrahydrofuran	8.98	42	663	0.4453 ug/L #	51
38) 1,1,1-Trichloroethane	9.28	97	4395	0.2685 ug/L	83
39) Cyclohexane	9.32	56	7805	0.3460 ug/L #	61
40) 1,1-Dichloropropene	9.52	75	3930	0.2803 ug/L	75
42) Carbon Tetrachloride	9.66	117	3735	0.2496 ug/L #	87
45) 1,2-Dichloroethane	9.89	62	2955	0.2701 ug/L #	69
46) Benzene	9.92	78	11016	0.2959 ug/L	97
47) Trichloroethene	10.79	130	2603	0.2434 ug/L	92
48) Methylcyclohexane	10.89	83	4438	0.3283 ug/L	74
49) 1,2-Dichloropropane	11.04	63	2862	0.2626 ug/L #	67
51) Bromodichloromethane	11.38	83	3055	0.2647 ug/L	98
52) Dibromomethane	11.46	93	742	0.1938 ug/L	83
55) cis-1,3-Dichloropropene	12.14	75	3145	0.2376 ug/L #	81
56) Dimethyl Disulfide	12.41	79	1366	0.2166 ug/L #	45

(#) = qualifier out of range (m) = manual integration
6M118374.D 8260WTR.M Sat Jul 27 14:56:15 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118374.D Vial: 3
Acq On : 26 Jul 2013 15:38 Operator: adc
Sample : WG439230-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 14:48:21 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 14:47:52 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
59)	Toluene	12.61	91	12965	0.3147 ug/L	94
60)	Ethyl Methacrylate	12.82	69	973	0.1578 ug/L #	1
62)	trans-1,3-Dichloropropene	12.86	75	1620	0.1534 ug/L #	49
63)	1,1,2-Trichloroethane	13.09	97	1414	0.2712 ug/L #	67
64)	2-Hexanone	13.04	43	832	0.2290 ug/L #	31
65)	1,3-Dichloropropane	13.45	76	1898	0.2078 ug/L #	1
66)	Tetrachloroethene	13.55	166	3193	0.2742 ug/L	89
67)	Dibromochloromethane	13.85	129	1353	0.1798 ug/L	96
68)	1,2-Dibromoethane	14.16	107	692	0.1308 ug/L	95
69)	1-Chlorohexane	14.33	91	3817	0.3051 ug/L	72
70)	Chlorobenzene	14.75	112	7326	0.2762 ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.80	131	2148	0.2247 ug/L #	44
72)	Ethylbenzene	14.81	106	4217	0.2750 ug/L	88
73)	m-,p-Xylene	14.91	106	10146	0.5501 ug/L	86
74)	o-Xylene	15.56	106	4910	0.2772 ug/L	96
75)	Styrene	15.62	104	6468	0.2290 ug/L	96
77)	Isopropylbenzene	16.08	105	12807	0.2776 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.33	83	1098	0.2308 ug/L #	67
83)	n-Propylbenzene	16.68	91	14767	0.2933 ug/L #	94
84)	Bromobenzene	16.78	156	2452	0.2350 ug/L	95
85)	1,3,5-Trimethylbenzene	16.91	105	11591	0.3166 ug/L	90
86)	2-Chlorotoluene	16.96	91	10149	0.2928 ug/L	95
87)	4-Chlorotoluene	17.03	91	8965	0.3046 ug/L	96
88)	a-Methylstyrene	17.38	118	4922	0.2565 ug/L	93
89)	tert-Butylbenzene	17.43	134	2008	0.2630 ug/L	83
90)	1,2,4-Trimethylbenzene	17.49	105	11441	0.3129 ug/L	85
91)	sec-Butylbenzene	17.76	105	13250	0.3023 ug/L	96
92)	p-Isopropyltoluene	17.96	119	11363	0.3023 ug/L	95
93)	1,3-Dichlorobenzene	18.14	146	5522	0.2675 ug/L	90
94)	1,4-Dichlorobenzene	18.29	146	5497	0.2712 ug/L #	39
95)	n-Butylbenzene	18.58	91	10174	0.3227 ug/L	95
96)	1,2-Dichlorobenzene	18.86	146	4638	0.2693 ug/L	94
98)	1,2,4-Trichlorobenzene	21.39	180	3359	0.2764 ug/L	87
99)	Hexachlorobutadiene	21.59	225	1631	0.2728 ug/L	98
100)	Naphthalene	21.79	128	4889	0.2843 ug/L #	68
101)	1,2,3-Trichlorobenzene	22.16	180	2863	0.2914 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M118374.D 8260WTR.M Sat Jul 27 14:56:15 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118374.D Vial: 3
Acq On : 26 Jul 2013 15:38 Operator: adc
Sample : WG439230-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 14:48 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 14:55:30 2013
Response via : Initial Calibration

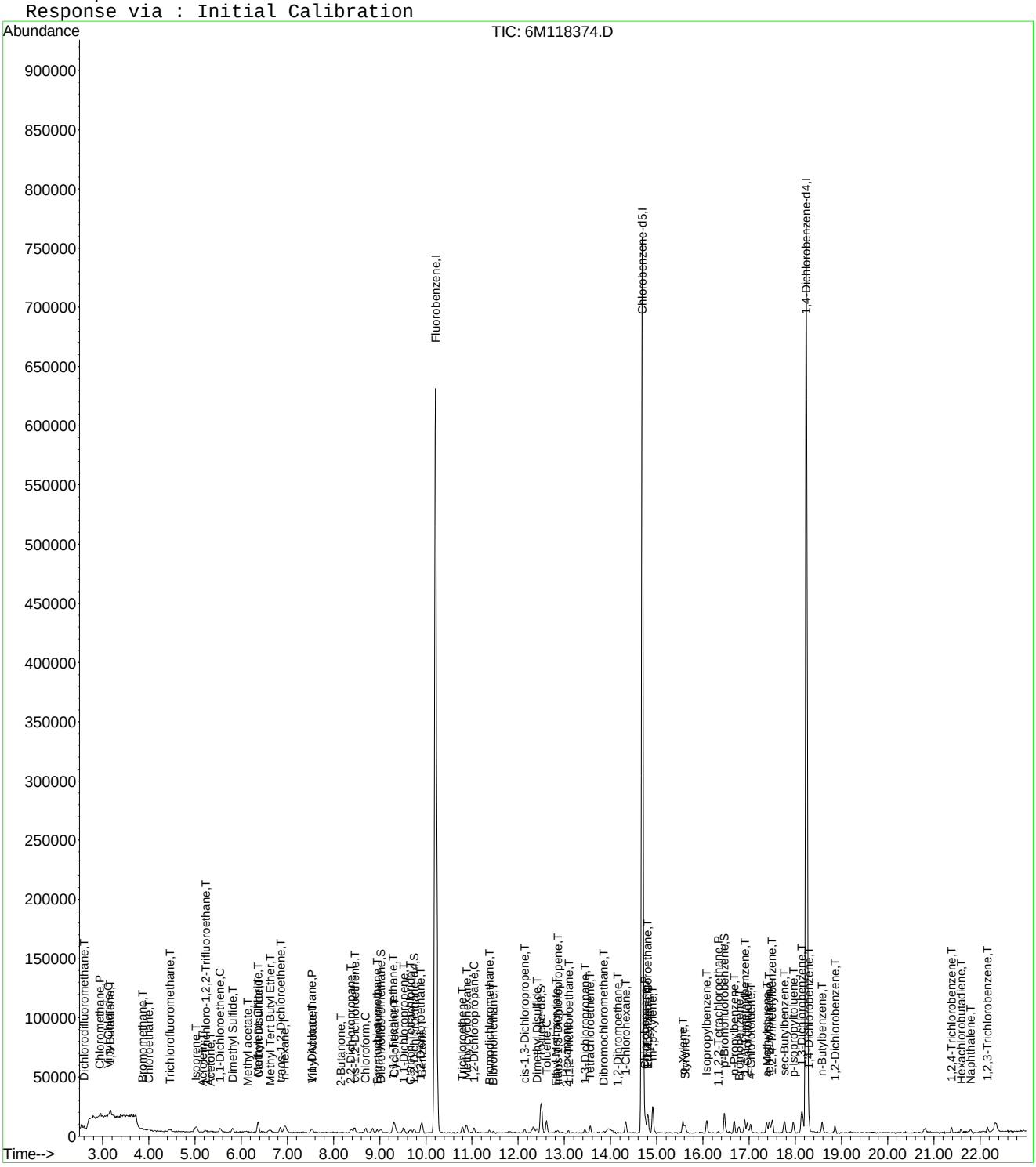

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118375.D Vial: 4
Acq On : 26 Jul 2013 16:08 Operator: adc
Sample : WG439230-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 14:48:22 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 14:47:52 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	822631	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	578589	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	282306	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.01	111	2062	0.2477 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.00%#	
43) 1,2-Dichloroethane-d4	9.75	65	1547	0.2098 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.84%#	
58) Toluene-d8	12.50	98	14986	0.4918 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.96%#	
80) p-Bromofluorobenzene	16.46	95	5224	0.5012 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	2972	0.3540 ug/L #	63
3) Chloromethane	2.94	50	5665	0.5174 ug/L	87
4) Vinyl Chloride	3.13	62	3807	0.4054 ug/L	94
5) 1,3-Butadiene	3.18	54	4344	0.6564 ug/L	90
6) Bromomethane	3.86	94	1189	0.2347 ug/L	95
7) Chloroethane	4.00	64	3032	0.3966 ug/L #	51
8) Trichlorofluoromethane	4.46	101	5352	0.3484 ug/L #	90
10) Isoprene	5.03	67	5280	0.3944 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	5.25	101	2688	0.3110 ug/L	85
13) Acetone	5.33	43	1166	0.8792 ug/L #	44
14) 1,1-Dichloroethene	5.55	61	6563	0.3731 ug/L	98
16) Dimethyl Sulfide	5.80	62	3231	0.3415 ug/L	99
18) Methyl acetate	6.12	43	1623	0.3346 ug/L #	74
19) Methylene Chloride	6.36	84	3671	0.4445 ug/L	92
20) Carbon Disulfide	6.37	76	11676	0.4125 ug/L	98
22) Methyl Tert Butyl Ether	6.62	73	4706	0.3185 ug/L #	73
23) trans-1,2-Dichloroethene	6.84	96	3470	0.3613 ug/L	97
24) n-Hexane	6.95	57	7491	0.4875 ug/L	65
26) Vinyl Acetate	7.53	43	6248	0.5372 ug/L #	84
27) 1,1-Dichloroethane	7.53	63	7370	0.3716 ug/L	92
29) 2-Butanone	8.18	43	3106	1.4632 ug/L #	66
31) 2,2-Dichloropropane	8.38	77	6095	0.4051 ug/L #	49
32) cis-1,2-Dichloroethene	8.47	96	3383	0.3369 ug/L	98
33) Chloroform	8.70	83	6276	0.3894 ug/L	97
35) Bromochloromethane	8.95	130	1818	0.3531 ug/L	95
36) Tetrahydrofuran	9.00	42	392	0.2753 ug/L #	51
38) 1,1,1-Trichloroethane	9.28	97	5855	0.3741 ug/L	84
39) Cyclohexane	9.31	56	9597	0.4448 ug/L #	75
40) 1,1-Dichloropropene	9.53	75	4465	0.3330 ug/L	75
42) Carbon Tetrachloride	9.67	117	4837	0.3380 ug/L	94
45) 1,2-Dichloroethane	9.89	62	3141	0.3002 ug/L #	93
46) Benzene	9.92	78	14214	0.3992 ug/L	97
47) Trichloroethene	10.79	130	3650	0.3569 ug/L	96
48) Methylcyclohexane	10.88	83	5194	0.4018 ug/L	71
49) 1,2-Dichloropropane	11.04	63	3406	0.3268 ug/L	100
51) Bromodichloromethane	11.38	83	3992	0.3617 ug/L	92
52) Dibromomethane	11.46	93	905	0.2471 ug/L	89
53) 2-Chloroethyl Vinyl Ether	11.79	63	643	0.1924 ug/L #	44
55) cis-1,3-Dichloropropene	12.14	75	3937	0.3110 ug/L	94
56) Dimethyl Disulfide	12.41	79	1854	0.3074 ug/L #	45

(#) = qualifier out of range (m) = manual integration
6M118375.D 8260WTR.M Sat Jul 27 14:56:40 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118375.D Vial: 4
Acq On : 26 Jul 2013 16:08 Operator: adc
Sample : WG439230-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 14:48:22 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 14:47:52 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
59)	Toluene	12.61	91	15010	0.3831 ug/L		97
60)	Ethyl Methacrylate	12.81	69	1462	0.2493 ug/L	#	1
62)	trans-1,3-Dichloropropene	12.87	75	1990	0.1982 ug/L	#	49
63)	1,1,2-Trichloroethane	13.07	97	1734	0.3498 ug/L	#	83
65)	1,3-Dichloropropane	13.44	76	2943	0.3388 ug/L	#	13
66)	Tetrachloroethene	13.56	166	4077	0.3683 ug/L		98
67)	Dibromochloromethane	13.86	129	2281	0.3188 ug/L		93
68)	1,2-Dibromoethane	14.14	107	1095	0.2176 ug/L		96
69)	1-Chlorohexane	14.32	91	4633	0.3895 ug/L		68
70)	Chlorobenzene	14.75	112	9424	0.3737 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.80	131	3103	0.3414 ug/L	#	40
72)	Ethylbenzene	14.81	106	5374	0.3686 ug/L		88
73)	m-,p-Xylene	14.91	106	12979	0.7401 ug/L		88
74)	o-Xylene	15.56	106	6100	0.3622 ug/L		88
75)	Styrene	15.62	104	8752	0.3259 ug/L		86
76)	Bromoform	16.14	173	615	0.1640 ug/L	#	35
77)	Isopropylbenzene	16.09	105	16751	0.3819 ug/L		97
79)	1,1,2,2-Tetrachloroethane	16.33	83	1545	0.3344 ug/L		72
83)	n-Propylbenzene	16.68	91	19436	0.3975 ug/L	#	96
84)	Bromobenzene	16.78	156	3232	0.3190 ug/L		99
85)	1,3,5-Trimethylbenzene	16.90	105	14428	0.4059 ug/L		96
86)	2-Chlorotoluene	16.96	91	13577	0.4033 ug/L		94
87)	4-Chlorotoluene	17.03	91	12089	0.4229 ug/L		93
88)	a-Methylstyrene	17.37	118	6664	0.3577 ug/L		91
89)	tert-Butylbenzene	17.44	134	2367	0.3192 ug/L		53
90)	1,2,4-Trimethylbenzene	17.50	105	14418	0.4061 ug/L		99
91)	sec-Butylbenzene	17.76	105	16972	0.3987 ug/L		95
92)	p-Isopropyltoluene	17.96	119	14775	0.4047 ug/L		97
93)	1,3-Dichlorobenzene	18.14	146	7343	0.3663 ug/L		98
94)	1,4-Dichlorobenzene	18.29	146	7575	0.3848 ug/L		86
95)	n-Butylbenzene	18.58	91	12838	0.4194 ug/L		90
96)	1,2-Dichlorobenzene	18.85	146	5831	0.3486 ug/L		93
98)	1,2,4-Trichlorobenzene	21.38	180	4396	0.3725 ug/L	#	93
99)	Hexachlorobutadiene	21.59	225	2423	0.4174 ug/L		83
100)	Naphthalene	21.79	128	6188	0.3705 ug/L	#	68
101)	1,2,3-Trichlorobenzene	22.17	180	3435	0.3600 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M118375.D 8260WTR.M Sat Jul 27 14:56:40 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118375.D Vial: 4
Acq On : 26 Jul 2013 16:08 Operator: adc
Sample : WG439230-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 14:48 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 14:55:30 2013
Response via : Initial Calibration

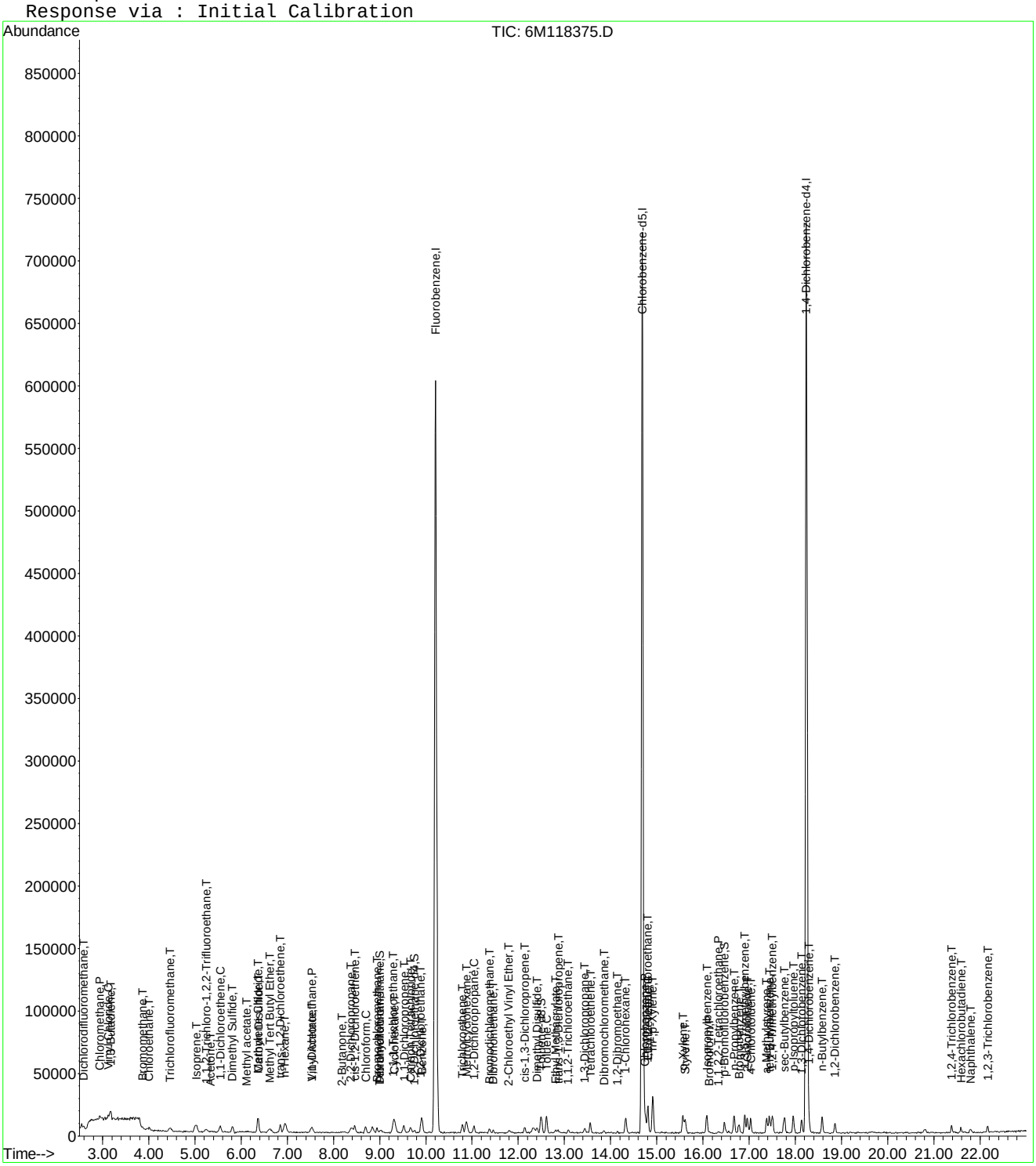

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118376.D Vial: 5
Acq On : 26 Jul 2013 16:39 Operator: adc
Sample : WG439230-04 1.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 14:58:45 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 14:58:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	828241	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	577022	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	277907	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.02	111	5421	0.6237 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.48%#	
43) 1,2-Dichloroethane-d4	9.75	65	4304	0.5844 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.32%#	
58) Toluene-d8	12.50	98	24511	0.7923 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.16%#	
80) p-Bromofluorobenzene	16.46	95	9052	0.8564 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.44%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	7294	0.9501 ug/L	92
3) Chloromethane	2.94	50	11125	0.9788 ug/L	90
4) Vinyl Chloride	3.13	62	9107	1.0094 ug/L	97
5) 1,3-Butadiene	3.17	54	9337	Below Cal	96
6) Bromomethane	3.86	94	3062	1.3196 ug/L	92
7) Chloroethane	4.00	64	6972	0.9382 ug/L	89
8) Trichlorofluoromethane	4.47	101	14510	0.9922 ug/L #	97
9) Diethyl ether	5.00	59	24918	4.4202 ug/L	96
10) Isoprene	5.03	67	12890	1.0074 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	5.24	101	7904	0.9630 ug/L	94
14) 1,1-Dichloroethene	5.54	61	16611	0.9742 ug/L	97
15) Tert-Butyl Alcohol	5.68	59	2660	8.7524 ug/L #	60
16) Dimethyl Sulfide	5.80	62	8731	0.9639 ug/L	94
17) Iodomethane	6.07	142	2096	2.2418 ug/L #	34
19) Methylene Chloride	6.36	84	8388	0.9993 ug/L	98
20) Carbon Disulfide	6.36	76	27005	0.9721 ug/L	100
21) Acrylonitrile	6.58	53	3957	2.0482 ug/L	98
22) Methyl Tert Butyl Ether	6.62	73	12616	0.9012 ug/L	82
23) trans-1,2-Dichloroethene	6.84	96	8858	0.9448 ug/L	99
24) n-Hexane	6.96	57	16330	1.0804 ug/L	80
25) Diisopropyl ether	7.36	45	186435	4.7096 ug/L	97
26) Vinyl Acetate	7.53	43	12475	1.1215 ug/L #	84
27) 1,1-Dichloroethane	7.52	63	19034	0.9813 ug/L	99
28) Ethyl-Tert-Butyl ether	7.98	59	115757	4.5449 ug/L	100
29) 2-Butanone	8.18	43	3552	1.6284 ug/L #	66
30) Propionitrile	8.29	54	2880	4.7022 ug/L #	57
31) 2,2-Dichloropropane	8.40	77	14444	0.9817 ug/L	74
32) cis-1,2-Dichloroethene	8.47	96	9114	0.9412 ug/L	91
33) Chloroform	8.69	83	15299	0.9583 ug/L	98
34) 1-Bromopropane	8.85	122	1425	0.7941 ug/L	93
35) Bromochloromethane	8.95	130	4858	0.9678 ug/L	98
36) Tetrahydrofuran	8.99	42	7107	4.8961 ug/L #	86
38) 1,1,1-Trichloroethane	9.29	97	14707	0.9682 ug/L	96
39) Cyclohexane	9.31	56	22461	1.0495 ug/L	89
40) 1,1-Dichloropropene	9.52	75	12196	0.9527 ug/L	90
41) Tert-Amyl-Methyl ether	9.67	73	68750	4.5069 ug/L	96
42) Carbon Tetrachloride	9.67	117	12942	0.9446 ug/L	98
45) 1,2-Dichloroethane	9.89	62	9732	0.9743 ug/L #	93
46) Benzene	9.92	78	34791	0.9957 ug/L	98
47) Trichloroethene	10.79	130	9193	0.9346 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M118376.D 8260WTR.M Sat Jul 27 14:58:46 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118376.D Vial: 5
Acq On : 26 Jul 2013 16:39 Operator: adc
Sample : WG439230-04 1.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 14:58:45 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 14:58:23 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
48)	Methylcyclohexane	10.88	83	12909	1.0146 ug/L		93
49)	1,2-Dichloropropane	11.04	63	9951	0.9952 ug/L		91
51)	Bromodichloromethane	11.38	83	10321	0.9555 ug/L		98
52)	Dibromomethane	11.46	93	2870	0.8459 ug/L		90
53)	2-Chloroethyl Vinyl Ether	11.79	63	2235	0.6816 ug/L	#	44
54)	4-Methyl-2-Pentanone	11.81	58	868	0.5311 ug/L	#	45
55)	cis-1,3-Dichloropropene	12.13	75	10867	0.9096 ug/L		98
56)	Dimethyl Disulfide	12.41	79	4264	0.7452 ug/L	#	67
59)	Toluene	12.60	91	38207	1.0122 ug/L		98
60)	Ethyl Methacrylate	12.80	69	4533	0.8362 ug/L	#	41
62)	trans-1,3-Dichloropropene	12.85	75	7507	0.8106 ug/L		93
63)	1,1,2-Trichloroethane	13.08	97	4596	0.9632 ug/L		93
64)	2-Hexanone	13.06	43	3093	0.9356 ug/L	#	31
65)	1,3-Dichloropropane	13.44	76	7567	0.9190 ug/L		70
66)	Tetrachloroethene	13.55	166	10317	0.9694 ug/L		97
67)	Dibromochloromethane	13.85	129	5827	0.8741 ug/L		99
68)	1,2-Dibromoethane	14.15	107	3947	0.8297 ug/L		99
69)	1-Chlorohexane	14.32	91	11324	0.9851 ug/L		89
70)	Chlorobenzene	14.75	112	23172	0.9625 ug/L		78
71)	1,1,1,2-Tetrachloroethane	14.80	131	8134	0.9476 ug/L	#	73
72)	Ethylbenzene	14.81	106	12896	0.9295 ug/L		89
73)	m-,p-Xylene	14.91	106	32607	1.9764 ug/L		94
74)	o-Xylene	15.57	106	15346	0.9557 ug/L		95
75)	Styrene	15.61	104	23482	0.9412 ug/L		96
76)	Bromoform	16.15	173	2721	0.7862 ug/L	#	80
77)	Isopropylbenzene	16.08	105	41771	1.0076 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.33	83	4312	0.9790 ug/L		93
81)	1,2,3-Trichloropropane	16.56	110	857	0.6715 ug/L		66
82)	trans-1,4-Dichloro-2-Buten	16.65	53	727	0.4254 ug/L		97
83)	n-Propylbenzene	16.68	91	47643	1.0341 ug/L		98
84)	Bromobenzene	16.77	156	9099	0.9789 ug/L		97
85)	1,3,5-Trimethylbenzene	16.90	105	33513	0.9895 ug/L		98
86)	2-Chlorotoluene	16.96	91	32517	1.0046 ug/L		98
87)	4-Chlorotoluene	17.03	91	28098	1.0120 ug/L		97
88)	a-Methylstyrene	17.37	118	16722	0.9525 ug/L		99
89)	tert-Butylbenzene	17.44	134	6572	0.9530 ug/L		87
90)	1,2,4-Trimethylbenzene	17.51	105	34645	1.0219 ug/L		99
91)	sec-Butylbenzene	17.76	105	41312	1.0299 ug/L		98
92)	p-Isopropyltoluene	17.95	119	34401	0.9984 ug/L		99
93)	1,3-Dichlorobenzene	18.14	146	18947	0.9962 ug/L		95
94)	1,4-Dichlorobenzene	18.29	146	17959	0.9687 ug/L		97
95)	n-Butylbenzene	18.58	91	29812	1.0234 ug/L		97
96)	1,2-Dichlorobenzene	18.85	146	15534	0.9891 ug/L		98
98)	1,2,4-Trichlorobenzene	21.39	180	10910	0.9791 ug/L		98
99)	Hexachlorobutadiene	21.58	225	5098	0.9143 ug/L		93
100)	Naphthalene	21.79	128	14976	0.9522 ug/L		92
101)	1,2,3-Trichlorobenzene	22.17	180	8537	0.9467 ug/L		98

(#) = qualifier out of range (m) = manual integration
6M118376.D 8260WTR.M Sat Jul 27 14:58:46 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118376.D Vial: 5
Acq On : 26 Jul 2013 16:39 Operator: adc
Sample : WG439230-04 1.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 14:58 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 14:58:23 2013
Response via : Initial Calibration

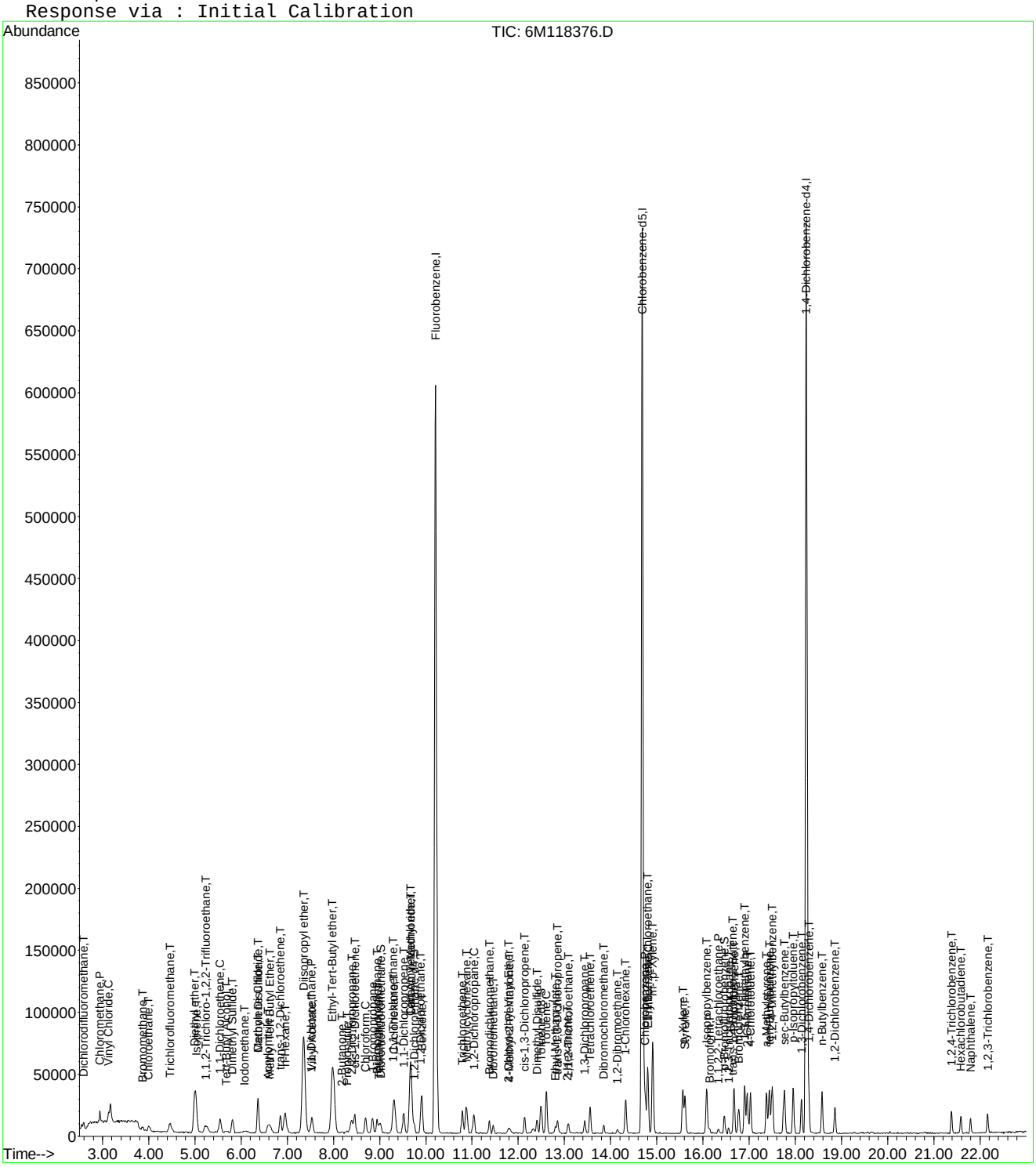

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118377.D Vial: 6
Acq On : 26 Jul 2013 17:10 Operator: adc
Sample : WG439230-05 2.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:00:44 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:00:20 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	821956	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	576536	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	282251	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.02	111	8861	1.0273 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery	= 4.12%#	
43) 1,2-Dichloroethane-d4	9.75	65	7760	1.0617 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery	= 4.24%#	
58) Toluene-d8	12.49	98	35301	1.1420 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 4.56%#	
80) p-Bromofluorobenzene	16.47	95	12568	1.1707 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 4.68%#	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	12894	1.6924 ug/L	99
3) Chloromethane	2.95	50	21430	1.8998 ug/L	97
4) Vinyl Chloride	3.13	62	18101	2.0216 ug/L	97
5) 1,3-Butadiene	3.17	54	16192	Below Cal	98
6) Bromomethane	3.86	94	6554	2.0051 ug/L	97
7) Chloroethane	4.01	64	14534	1.9708 ug/L	97
8) Trichlorofluoromethane	4.46	101	27588	1.9009 ug/L	99
9) Diethyl ether	5.00	59	130741	23.3697 ug/L	99
10) Isoprene	5.02	67	23158	1.8237 ug/L	95
11) Acrolein	5.22	56	1606	11.7732 ug/L #	50
12) 1,1,2-Trichloro-1,2,2-Trif	5.24	101	14945	1.8347 ug/L	98
13) Acetone	5.33	43	5764	1.3108 ug/L #	58
14) 1,1-Dichloroethene	5.54	61	33044	1.9528 ug/L	98
15) Tert-Butyl Alcohol	5.69	59	13477	44.6834 ug/L #	74
16) Dimethyl Sulfide	5.81	62	17465	1.9430 ug/L	98
17) Iodomethane	6.06	142	5342	2.7771 ug/L	98
18) Methyl acetate	6.12	43	13773	1.8645 ug/L #	76
19) Methylene Chloride	6.37	84	16524	1.9836 ug/L	100
20) Carbon Disulfide	6.37	76	54135	1.9636 ug/L	98
21) Acrylonitrile	6.57	53	21065	10.9868 ug/L	93
22) Methyl Tert Butyl Ether	6.62	73	26706	1.9224 ug/L	96
23) trans-1,2-Dichloroethene	6.85	96	18649	2.0044 ug/L	98
24) n-Hexane	6.95	57	29745	1.9829 ug/L	93
25) Diisopropyl ether	7.35	45	946282	24.0872 ug/L	100
26) Vinyl Acetate	7.53	43	19078	1.7282 ug/L #	90
27) 1,1-Dichloroethane	7.53	63	38773	2.0142 ug/L	99
28) Ethyl-Tert-Butyl ether	7.98	59	597263	23.6295 ug/L	100
29) 2-Butanone	8.18	43	5361	2.4765 ug/L #	66
30) Propionitrile	8.29	54	14466	23.7994 ug/L	97
31) 2,2-Dichloropropane	8.39	77	28257	1.9352 ug/L	85
32) cis-1,2-Dichloroethene	8.46	96	18779	1.9541 ug/L	97
33) Chloroform	8.70	83	31734	2.0029 ug/L	99
34) 1-Bromopropane	8.84	122	3276	1.8397 ug/L	100
35) Bromochloromethane	8.94	130	9794	1.9661 ug/L	98
36) Tetrahydrofuran	8.99	42	34852	24.1937 ug/L	96
38) 1,1,1-Trichloroethane	9.29	97	29558	1.9608 ug/L	99
39) Cyclohexane	9.32	56	41117	1.9359 ug/L	95
40) 1,1-Dichloropropene	9.52	75	25282	1.9900 ug/L	97
41) Tert-Amyl-Methyl ether	9.68	73	353859	23.3744 ug/L	98
42) Carbon Tetrachloride	9.67	117	26330	1.9364 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M118377.D 8260WTR.M Sat Jul 27 15:00:45 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118377.D Vial: 6
Acq On : 26 Jul 2013 17:10 Operator: adc
Sample : WG439230-05 2.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:00:44 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:00:20 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	9.88	62	20118	2.0295 ug/L		98
46)	Benzene	9.91	78	69400	2.0014 ug/L		100
47)	Trichloroethene	10.79	130	19047	1.9511 ug/L		95
48)	Methylcyclohexane	10.87	83	24672	1.9540 ug/L		94
49)	1,2-Dichloropropane	11.03	63	19852	2.0006 ug/L		96
50)	1,4-Dioxane	11.39	88	642	32.7113 ug/L	#	45
51)	Bromodichloromethane	11.37	83	21350	1.9916 ug/L		94
52)	Dibromomethane	11.46	93	6524	1.9376 ug/L		99
53)	2-Chloroethyl Vinyl Ether	11.79	63	5547	1.7047 ug/L		86
54)	4-Methyl-2-Pentanone	11.82	58	2736	1.6868 ug/L	#	58
55)	cis-1,3-Dichloropropene	12.14	75	23001	1.9401 ug/L		99
56)	Dimethyl Disulfide	12.40	79	9655	1.7002 ug/L		99
59)	Toluene	12.61	91	79165	2.0990 ug/L		97
60)	Ethyl Methacrylate	12.80	69	9416	1.7383 ug/L		81
62)	trans-1,3-Dichloropropene	12.85	75	16204	1.7511 ug/L		97
63)	1,1,2-Trichloroethane	13.08	97	9348	1.9607 ug/L		99
64)	2-Hexanone	13.07	43	5868	1.7764 ug/L		77
65)	1,3-Dichloropropane	13.44	76	15870	1.9291 ug/L		83
66)	Tetrachloroethene	13.56	166	21030	1.9776 ug/L		99
67)	Dibromochloromethane	13.85	129	12470	1.8723 ug/L		94
68)	1,2-Dibromoethane	14.15	107	8769	1.8448 ug/L		98
69)	1-Chlorohexane	14.33	91	22517	1.9605 ug/L		94
70)	Chlorobenzene	14.74	112	49597	2.0618 ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.80	131	16438	1.9166 ug/L		90
72)	Ethylbenzene	14.80	106	27799	2.0054 ug/L		95
73)	m-,p-Xylene	14.91	106	67434	4.0909 ug/L		97
74)	o-Xylene	15.56	106	32233	2.0091 ug/L		96
75)	Styrene	15.61	104	49792	1.9975 ug/L		97
76)	Bromoform	16.14	173	5779	1.6712 ug/L		92
77)	Isopropylbenzene	16.08	105	85081	2.0540 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.33	83	8743	1.9544 ug/L		99
81)	1,2,3-Trichloropropane	16.56	110	2601	2.0065 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.64	53	2789	1.6068 ug/L		85
83)	n-Propylbenzene	16.67	91	96860	2.0700 ug/L		98
84)	Bromobenzene	16.77	156	19319	2.0465 ug/L		99
85)	1,3,5-Trimethylbenzene	16.91	105	70978	2.0634 ug/L		100
86)	2-Chlorotoluene	16.96	91	64156	1.9515 ug/L		98
87)	4-Chlorotoluene	17.03	91	59094	2.0956 ug/L		96
88)	a-Methylstyrene	17.38	118	35178	1.9729 ug/L		98
89)	tert-Butylbenzene	17.44	134	14230	2.0317 ug/L		94
90)	1,2,4-Trimethylbenzene	17.50	105	70474	2.0467 ug/L		99
91)	sec-Butylbenzene	17.76	105	83244	2.0434 ug/L		99
92)	p-Isopropyltoluene	17.96	119	70750	2.0218 ug/L		99
93)	1,3-Dichlorobenzene	18.13	146	39466	2.0432 ug/L		99
94)	1,4-Dichlorobenzene	18.28	146	38021	2.0192 ug/L		86
95)	n-Butylbenzene	18.58	91	57467	1.9424 ug/L		99
96)	1,2-Dichlorobenzene	18.86	146	32438	2.0337 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	20.04	75	1007	1.4747 ug/L		94
98)	1,2,4-Trichlorobenzene	21.38	180	21702	1.9176 ug/L		98
99)	Hexachlorobutadiene	21.59	225	11037	1.9489 ug/L		98
100)	Naphthalene	21.79	128	31209	1.9537 ug/L		98
101)	1,2,3-Trichlorobenzene	22.17	180	18155	1.9824 ug/L		98

(#) = qualifier out of range (m) = manual integration
6M118377.D 8260WTR.M Sat Jul 27 15:00:45 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118377.D Vial: 6
Acq On : 26 Jul 2013 17:10 Operator: adc
Sample : WG439230-05 2.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:00 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:00:20 2013
Response via : Initial Calibration

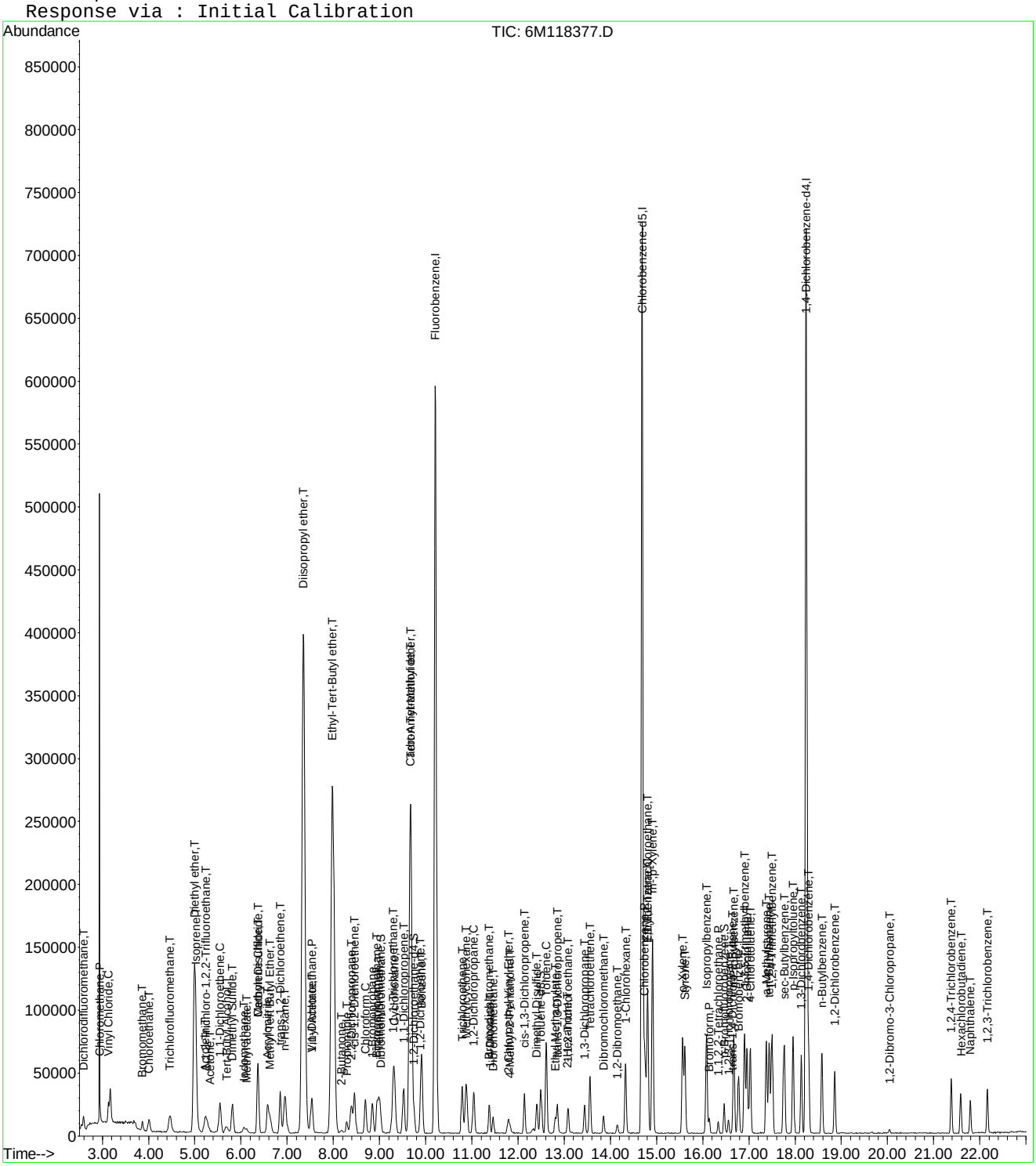

6M118377.D 8260WTR.M Sat Jul 27 15:00:45 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118378.D Vial: 7
Acq On : 26 Jul 2013 17:40 Operator: adc
Sample : WG439230-06 5.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:01:47 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	825359	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	583155	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	287083	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.02	111	21692	2.5044 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.00%#		
43) 1,2-Dichloroethane-d4	9.74	65	18758	2.5559 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.24%#		
58) Toluene-d8	12.49	98	81690	2.6128 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.44%#		
80) p-Bromofluorobenzene	16.46	95	28419	2.6027 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.40%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	33340	4.3579 ug/L	100
3) Chloromethane	2.94	50	53098	4.6878 ug/L	99
4) Vinyl Chloride	3.13	62	44540	4.9540 ug/L	99
5) 1,3-Butadiene	3.17	54	37348	3.9171 ug/L	100
6) Bromomethane	3.86	94	17293	4.0831 ug/L	98
7) Chloroethane	4.01	64	37439	5.0557 ug/L	99
8) Trichlorofluoromethane	4.47	101	72366	4.9658 ug/L	99
9) Diethyl ether	5.00	59	296313	52.7470 ug/L	99
10) Isoprene	5.02	67	62009	4.8630 ug/L	100
11) Acrolein	5.22	56	3146	22.9676 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	5.24	101	39363	4.8125 ug/L	99
13) Acetone	5.33	43	10821	5.0819 ug/L	80
14) 1,1-Dichloroethene	5.55	61	83530	4.9160 ug/L	98
15) Tert-Butyl Alcohol	5.68	59	32983	108.9052 ug/L	95
16) Dimethyl Sulfide	5.81	62	45929	5.0885 ug/L	99
17) Iodomethane	6.06	142	17808	4.2789 ug/L	100
18) Methyl acetate	6.12	43	30496	5.3562 ug/L #	90
19) Methylene Chloride	6.36	84	42566	5.0886 ug/L	99
20) Carbon Disulfide	6.37	76	140763	5.0848 ug/L	100
21) Acrylonitrile	6.57	53	49695	25.8124 ug/L	96
22) Methyl Tert Butyl Ether	6.61	73	71651	5.1363 ug/L	95
23) trans-1,2-Dichloroethene	6.84	96	45962	4.9195 ug/L	98
24) n-Hexane	6.96	57	74172	4.9242 ug/L	96
25) Diisopropyl ether	7.36	45	2117371	53.6745 ug/L	99
26) Vinyl Acetate	7.53	43	54899	4.9526 ug/L	98
27) 1,1-Dichloroethane	7.53	63	97424	5.0401 ug/L	99
28) Ethyl-Tert-Butyl ether	7.99	59	1357327	53.4786 ug/L	100
29) 2-Butanone	8.17	43	12546	5.7717 ug/L	87
30) Propionitrile	8.28	54	31642	51.8427 ug/L	100
31) 2,2-Dichloropropane	8.39	77	72035	4.9129 ug/L	93
32) cis-1,2-Dichloroethene	8.47	96	49219	5.1005 ug/L	99
33) Chloroform	8.69	83	79543	4.9996 ug/L	99
34) 1-Bromopropane	8.85	122	9185	5.1366 ug/L	97
35) Bromochloromethane	8.95	130	25591	5.1160 ug/L	98
36) Tetrahydrofuran	8.99	42	77520	53.5912 ug/L	99
38) 1,1,1-Trichloroethane	9.30	97	75578	4.9930 ug/L	100
39) Cyclohexane	9.32	56	104797	4.9138 ug/L	98
40) 1,1-Dichloropropene	9.52	75	63778	4.9993 ug/L	96
41) Tert-Amyl-Methyl ether	9.67	73	804668	52.9337 ug/L	99
42) Carbon Tetrachloride	9.67	117	66405	4.8634 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118378.D Vial: 7
Acq On : 26 Jul 2013 17:40 Operator: adc
Sample : WG439230-06 5.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:01:47 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	9.89	62	51628	5.1868	ug/L	98
46)	Benzene	9.92	78	175901	5.0519	ug/L	99
47)	Trichloroethene	10.79	130	49244	5.0237	ug/L	98
48)	Methylcyclohexane	10.88	83	63127	4.9791	ug/L	99
49)	1,2-Dichloropropane	11.03	63	49501	4.9680	ug/L	98
50)	1,4-Dioxane	11.39	88	2934	108.3899	ug/L	95
51)	Bromodichloromethane	11.38	83	53850	5.0026	ug/L	99
52)	Dibromomethane	11.46	93	18157	5.3702	ug/L	96
53)	2-Chloroethyl Vinyl Ether	11.79	63	15372	4.7046	ug/L	100
54)	4-Methyl-2-Pentanone	11.82	58	7927	4.8669	ug/L	93
55)	cis-1,3-Dichloropropene	12.13	75	60239	5.0600	ug/L	100
56)	Dimethyl Disulfide	12.41	79	24677	4.3277	ug/L	97
59)	Toluene	12.61	91	195127	5.1149	ug/L	99
60)	Ethyl Methacrylate	12.80	69	27220	4.9682	ug/L	89
62)	trans-1,3-Dichloropropene	12.85	75	44663	4.7718	ug/L	99
63)	1,1,2-Trichloroethane	13.08	97	24336	5.0465	ug/L	98
64)	2-Hexanone	13.06	43	17970	5.3783	ug/L	80
65)	1,3-Dichloropropane	13.44	76	42365	5.0913	ug/L	95
66)	Tetrachloroethene	13.55	166	53363	4.9612	ug/L	100
67)	Dibromochloromethane	13.85	129	32714	4.8560	ug/L	98
68)	1,2-Dibromoethane	14.15	107	23450	4.8774	ug/L	96
69)	1-Chlorohexane	14.33	91	57755	4.9716	ug/L	97
70)	Chlorobenzene	14.75	112	123204	5.0636	ug/L	96
71)	1,1,1,2-Tetrachloroethane	14.80	131	42603	4.9110	ug/L	97
72)	Ethylbenzene	14.81	106	70411	5.0218	ug/L	96
73)	m-,p-Xylene	14.91	106	169809	10.1845	ug/L	98
74)	o-Xylene	15.57	106	82308	5.0720	ug/L	99
75)	Styrene	15.61	104	129817	5.1487	ug/L	100
76)	Bromoform	16.15	173	15996	4.5732	ug/L	98
77)	Isopropylbenzene	16.08	105	214663	5.1234	ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.33	83	23249	5.1095	ug/L	99
81)	1,2,3-Trichloropropane	16.56	110	7106	5.3896	ug/L	96
82)	trans-1,4-Dichloro-2-Buten	16.64	53	8037	4.5524	ug/L	91
83)	n-Propylbenzene	16.68	91	246788	5.1853	ug/L	99
84)	Bromobenzene	16.77	156	49324	5.1370	ug/L	97
85)	1,3,5-Trimethylbenzene	16.90	105	176276	5.0383	ug/L	100
86)	2-Chlorotoluene	16.96	91	170309	5.0933	ug/L	99
87)	4-Chlorotoluene	17.03	91	142783	4.9781	ug/L	98
88)	a-Methylstyrene	17.37	118	92655	5.1089	ug/L	99
89)	tert-Butylbenzene	17.44	134	36486	5.1217	ug/L	98
90)	1,2,4-Trimethylbenzene	17.50	105	175736	5.0179	ug/L	98
91)	sec-Butylbenzene	17.76	105	211698	5.1091	ug/L	98
92)	p-Isopropyltoluene	17.95	119	180039	5.0584	ug/L	99
93)	1,3-Dichlorobenzene	18.14	146	98822	5.0300	ug/L	99
94)	1,4-Dichlorobenzene	18.29	146	97998	5.1168	ug/L	94
95)	n-Butylbenzene	18.58	91	153121	5.0885	ug/L	99
96)	1,2-Dichlorobenzene	18.85	146	84227	5.1917	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	20.04	75	3311	4.7673	ug/L	98
98)	1,2,4-Trichlorobenzene	21.38	180	57613	5.0051	ug/L	99
99)	Hexachlorobutadiene	21.59	225	29822	5.1774	ug/L	94
100)	Naphthalene	21.78	128	82578	5.0824	ug/L	99
101)	1,2,3-Trichlorobenzene	22.16	180	48211	5.1757	ug/L	99

(#) = qualifier out of range (m) = manual integration
6M118378.D 8260WTR.M Sat Jul 27 15:01:48 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118378.D Vial: 7
Acq On : 26 Jul 2013 17:40 Operator: adc
Sample : WG439230-06 5.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:01 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

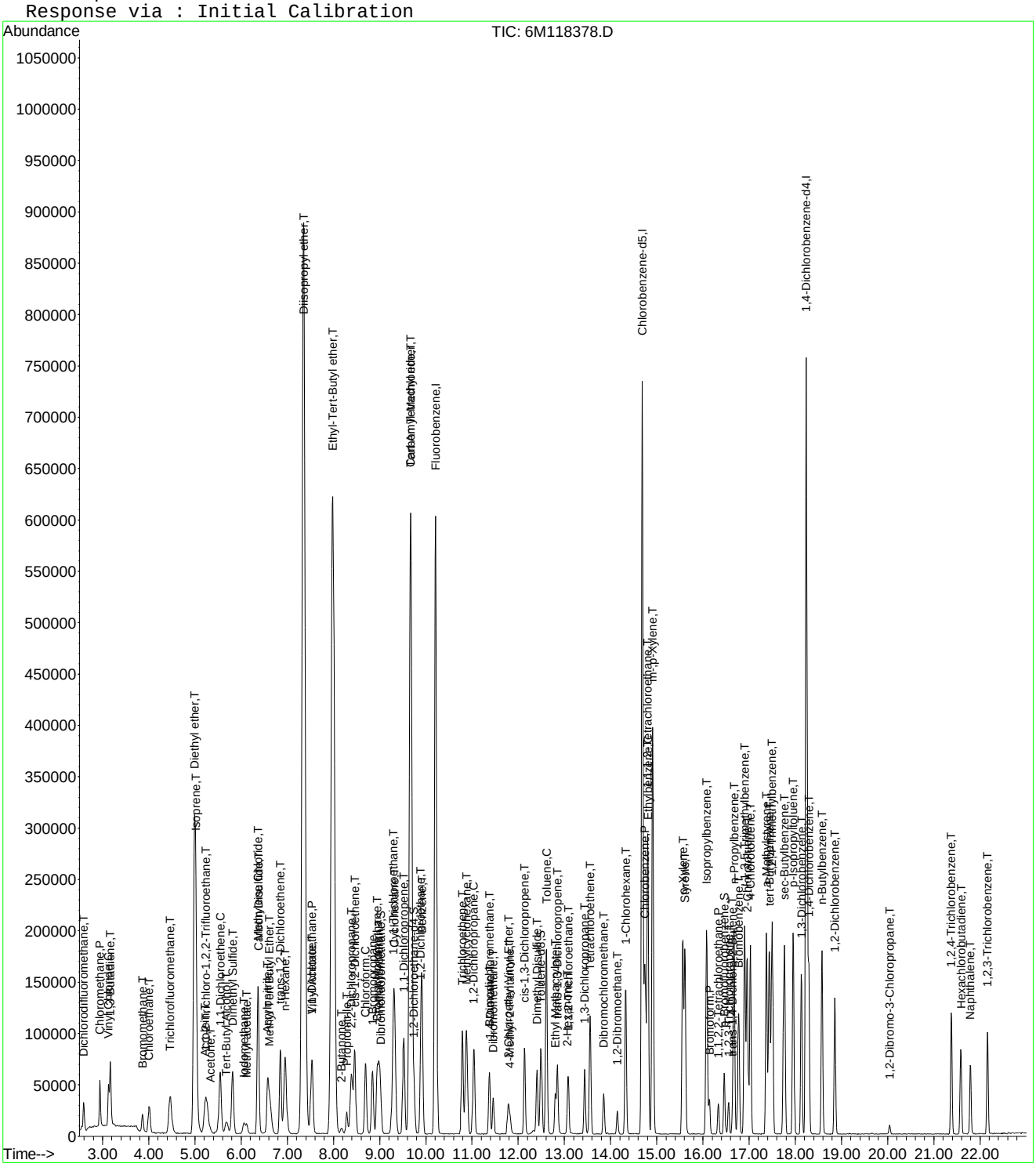

6M118378.D 8260WTR.M Sat Jul 27 15:01:48 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118379.D Vial: 8
Acq On : 26 Jul 2013 18:10 Operator: adc
Sample : WG439230-07 20.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:01:59 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	838581	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	584933	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	290250	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.02	111	79983	9.0886 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 36.36%#		
43) 1,2-Dichloroethane-d4	9.75	65	72240	9.6879 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 38.76%#		
58) Toluene-d8	12.50	98	293299	9.3523 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 37.40%#		
80) p-Bromofluorobenzene	16.46	95	104049	9.4253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 37.72%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	162288	20.8783 ug/L	99
3) Chloromethane	2.94	50	218917	19.0225 ug/L	100
4) Vinyl Chloride	3.13	62	186016	20.3636 ug/L	100
5) 1,3-Butadiene	3.17	54	151550	23.6467 ug/L	100
6) Bromomethane	3.86	94	83298	16.5629 ug/L	99
7) Chloroethane	4.00	64	150098	19.9492 ug/L	99
8) Trichlorofluoromethane	4.46	101	296278	20.0101 ug/L	100
9) Diethyl ether	5.00	59	483433	84.6996 ug/L	99
10) Isoprene	5.02	67	256714	19.8152 ug/L	99
11) Acrolein	5.23	56	5362	38.5284 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	5.25	101	165173	19.8754 ug/L	100
13) Acetone	5.33	43	32562	20.9869 ug/L	85
14) 1,1-Dichloroethene	5.55	61	346352	20.0626 ug/L	100
15) Tert-Butyl Alcohol	5.69	59	52470	170.5168 ug/L	96
16) Dimethyl Sulfide	5.81	62	186061	20.2888 ug/L	100
17) Iodomethane	6.06	142	111420	15.3641 ug/L	99
18) Methyl acetate	6.12	43	101243	19.8897 ug/L	97
19) Methylene Chloride	6.36	84	163746	19.2667 ug/L	99
20) Carbon Disulfide	6.37	76	567224	20.1670 ug/L	100
21) Acrylonitrile	6.57	53	78382	40.0710 ug/L	96
22) Methyl Tert Butyl Ether	6.62	73	285845	20.1679 ug/L	98
23) trans-1,2-Dichloroethene	6.85	96	188901	19.9002 ug/L	100
24) n-Hexane	6.96	57	300986	19.6669 ug/L	99
25) Diisopropyl ether	7.35	45	3378560	84.2947 ug/L	100
26) Vinyl Acetate	7.53	43	235020	20.8678 ug/L	100
27) 1,1-Dichloroethane	7.53	63	391815	19.9506 ug/L	100
28) Ethyl-Tert-Butyl ether	7.99	59	2170588	84.1726 ug/L	100
29) 2-Butanone	8.17	43	45165	20.4502 ug/L	97
30) Propionitrile	8.28	54	51856	83.6220 ug/L	97
31) 2,2-Dichloropropane	8.40	77	295296	19.8222 ug/L	99
32) cis-1,2-Dichloroethene	8.47	96	197376	20.1312 ug/L	99
33) Chloroform	8.70	83	318400	19.6971 ug/L	100
34) 1-Bromopropane	8.84	122	36999	20.3650 ug/L	99
35) Bromochloromethane	8.95	130	100471	19.7690 ug/L	98
36) Tetrahydrofuran	8.99	42	123282	83.8836 ug/L	99
38) 1,1,1-Trichloroethane	9.29	97	300767	19.5568 ug/L	99
39) Cyclohexane	9.31	56	415144	19.1588 ug/L	99
40) 1,1-Dichloropropene	9.52	75	260982	20.1349 ug/L	99
41) Tert-Amyl-Methyl ether	9.67	73	1289120	83.4655 ug/L	100
42) Carbon Tetrachloride	9.67	117	272029	19.6089 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M118379.D 8260WTR.M Sat Jul 27 15:02:00 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118379.D Vial: 8
Acq On : 26 Jul 2013 18:10 Operator: adc
Sample : WG439230-07 20.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:01:59 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	9.89	62	205468	20.3167	ug/L	99
46)	Benzene	9.92	78	701848	19.8392	ug/L	99
47)	Trichloroethene	10.79	130	198929	19.9739	ug/L	99
48)	Methylcyclohexane	10.88	83	249875	19.3978	ug/L	100
49)	1,2-Dichloropropane	11.04	63	203225	20.0744	ug/L	100
50)	1,4-Dioxane	11.39	88	4884	170.3053	ug/L	94
51)	Bromodichloromethane	11.38	83	214932	19.6522	ug/L	99
52)	Dibromomethane	11.46	93	72269	21.0376	ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.78	63	65573	19.7523	ug/L	100
54)	4-Methyl-2-Pentanone	11.82	58	33006	19.9450	ug/L	98
55)	cis-1,3-Dichloropropene	12.13	75	246561	20.3845	ug/L	99
56)	Dimethyl Disulfide	12.41	79	108233	18.6820	ug/L	100
59)	Toluene	12.61	91	762453	19.9254	ug/L	99
60)	Ethyl Methacrylate	12.80	69	112928	20.5489	ug/L	96
62)	trans-1,3-Dichloropropene	12.85	75	185602	19.7696	ug/L	99
63)	1,1,2-Trichloroethane	13.08	97	96420	19.9336	ug/L	99
64)	2-Hexanone	13.06	43	67677	20.1938	ug/L	96
65)	1,3-Dichloropropane	13.44	76	167781	20.1021	ug/L	98
66)	Tetrachloroethene	13.55	166	210218	19.4848	ug/L	99
67)	Dibromochloromethane	13.85	129	133482	19.7537	ug/L	100
68)	1,2-Dibromoethane	14.14	107	96735	20.0590	ug/L	99
69)	1-Chlorohexane	14.33	91	230111	19.7480	ug/L	100
70)	Chlorobenzene	14.75	112	487459	19.9733	ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.80	131	173810	19.9747	ug/L	100
72)	Ethylbenzene	14.81	106	276989	19.6952	ug/L	98
73)	m-,p-Xylene	14.91	106	671345	40.1423	ug/L	98
74)	o-Xylene	15.56	106	323618	19.8816	ug/L	99
75)	Styrene	15.60	104	515585	20.3864	ug/L	99
76)	Bromoform	16.15	173	67489	19.2363	ug/L	99
77)	Isopropylbenzene	16.07	105	845757	20.1245	ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.33	83	93682	20.3641	ug/L	100
81)	1,2,3-Trichloropropane	16.55	110	26381	19.7907	ug/L	99
82)	trans-1,4-Dichloro-2-Buten	16.64	53	33038	18.5093	ug/L	98
83)	n-Propylbenzene	16.68	91	962099	19.9944	ug/L	100
84)	Bromobenzene	16.77	156	198296	20.4269	ug/L	100
85)	1,3,5-Trimethylbenzene	16.90	105	699486	19.7747	ug/L	99
86)	2-Chlorotoluene	16.96	91	658585	19.4810	ug/L	100
87)	4-Chlorotoluene	17.02	91	569362	19.6341	ug/L	100
88)	a-Methylstyrene	17.37	118	364839	19.8972	ug/L	100
89)	tert-Butylbenzene	17.44	134	143281	19.8934	ug/L	97
90)	1,2,4-Trimethylbenzene	17.50	105	702406	19.8374	ug/L	99
91)	sec-Butylbenzene	17.76	105	830248	19.8184	ug/L	100
92)	p-Isopropyltoluene	17.96	119	712720	19.8062	ug/L	100
93)	1,3-Dichlorobenzene	18.14	146	394845	19.8783	ug/L	100
94)	1,4-Dichlorobenzene	18.29	146	387862	20.0306	ug/L	99
95)	n-Butylbenzene	18.58	91	602731	19.8113	ug/L	100
96)	1,2-Dichlorobenzene	18.85	146	331349	20.2013	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	20.04	75	14009	19.9506	ug/L	96
98)	1,2,4-Trichlorobenzene	21.38	180	232546	19.9819	ug/L	100
99)	Hexachlorobutadiene	21.59	225	112732	19.3577	ug/L	99
100)	Naphthalene	21.79	128	327362	19.9282	ug/L	100
101)	1,2,3-Trichlorobenzene	22.16	180	187817	19.9430	ug/L	100

(#) = qualifier out of range (m) = manual integration
6M118379.D 8260WTR.M Sat Jul 27 15:02:00 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118379.D Vial: 8
Acq On : 26 Jul 2013 18:10 Operator: adc
Sample : WG439230-07 20.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:01 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

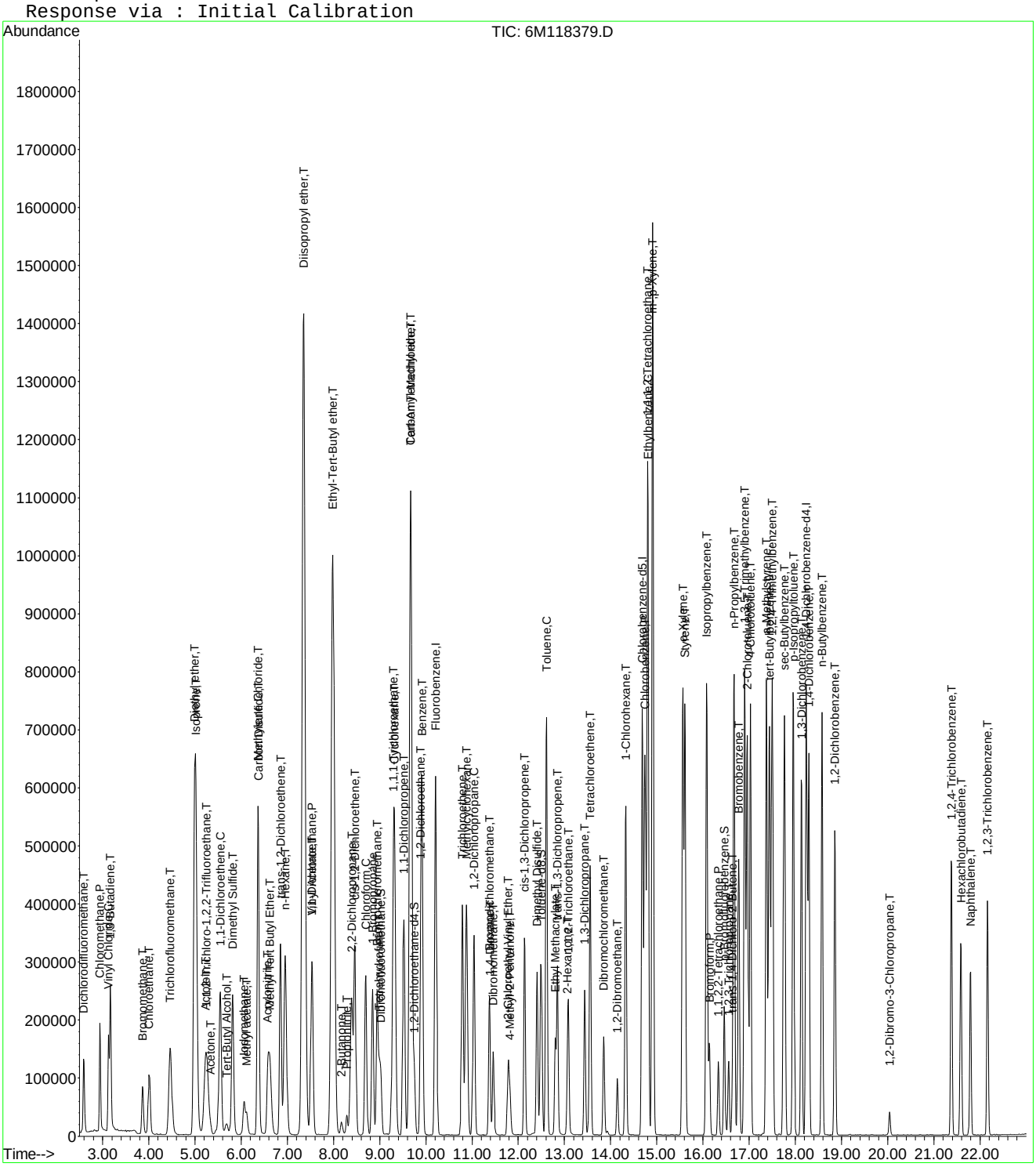

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118380.D Vial: 9
Acq On : 26 Jul 2013 18:41 Operator: adc
Sample : WG439230-08 50.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:01 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	849520	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	585843	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	292007	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.02	111	214906	24.1056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.44%		
43) 1,2-Dichloroethane-d4	9.74	65	190359	25.1998 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.80%		
58) Toluene-d8	12.49	98	771296	24.5558 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.24%		
80) p-Bromofluorobenzene	16.46	95	269522	24.2677 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.08%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	433550	55.0580 ug/L	100
3) Chloromethane	2.94	50	565355	48.4931 ug/L	100
4) Vinyl Chloride	3.13	62	484852	52.3944 ug/L	100
5) 1,3-Butadiene	3.17	54	341687	59.0978 ug/L	100
6) Bromomethane	3.86	94	261631	49.2188 ug/L	100
7) Chloroethane	4.01	64	394760	51.7912 ug/L	100
8) Trichlorofluoromethane	4.46	101	793191	52.8808 ug/L	100
9) Diethyl ether	5.00	59	595216	102.9416 ug/L	100
10) Isoprene	5.02	67	691277	52.6710 ug/L	100
11) Acrolein	5.22	56	7528	53.3955 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.24	101	446348	53.0178 ug/L	100
13) Acetone	5.33	43	68478	46.8228 ug/L	100
14) 1,1-Dichloroethene	5.54	61	908276	51.9349 ug/L	100
15) Tert-Butyl Alcohol	5.68	59	63802	204.6736 ug/L	100
16) Dimethyl Sulfide	5.81	62	488554	52.5879 ug/L	100
17) Iodomethane	6.06	142	387106	47.5177 ug/L	100
18) Methyl acetate	6.12	43	250430	50.3222 ug/L	100
19) Methylene Chloride	6.36	84	426428	49.5282 ug/L	100
20) Carbon Disulfide	6.36	76	1461654	51.2982 ug/L	100
21) Acrylonitrile	6.57	53	104797	52.8852 ug/L	100
22) Methyl Tert Butyl Ether	6.61	73	762920	53.1349 ug/L	100
23) trans-1,2-Dichloroethene	6.84	96	495918	51.5708 ug/L	100
24) n-Hexane	6.96	57	793423	51.1760 ug/L	100
25) Diisopropyl ether	7.34	45	4154821	102.3275 ug/L	100
26) Vinyl Acetate	7.53	43	600566	52.6385 ug/L	100
27) 1,1-Dichloroethane	7.53	63	1023962	51.4672 ug/L	100
28) Ethyl-Tert-Butyl ether	7.99	59	2666984	102.0904 ug/L	100
29) 2-Butanone	8.17	43	109604	48.9885 ug/L	100
30) Propionitrile	8.28	54	63945	101.7887 ug/L	100
31) 2,2-Dichloropropane	8.40	77	776931	51.4811 ug/L	100
32) cis-1,2-Dichloroethene	8.47	96	518559	52.2091 ug/L	100
33) Chloroform	8.69	83	832235	50.8214 ug/L	100
34) 1-Bromopropane	8.85	122	97749	53.1103 ug/L	100
35) Bromochloromethane	8.95	130	265828	51.6316 ug/L	100
36) Tetrahydrofuran	8.99	42	147056	98.7715 ug/L	100
38) 1,1,1-Trichloroethane	9.30	97	808223	51.8765 ug/L	100
39) Cyclohexane	9.32	56	1113961	50.7470 ug/L	100
40) 1,1-Dichloropropene	9.52	75	692329	52.7258 ug/L	100
41) Tert-Amyl-Methyl ether	9.67	73	1590641	101.6616 ug/L	100
42) Carbon Tetrachloride	9.67	117	738971	52.5821 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M118380.D 8260WTR.M Sat Jul 27 15:02:02 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118380.D Vial: 9
Acq On : 26 Jul 2013 18:41 Operator: adc
Sample : WG439230-08 50.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:01 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.89	62	540233	52.7306 ug/L	100
46)	Benzene	9.92	78	1838561	51.3015 ug/L	100
47)	Trichloroethene	10.79	130	528000	52.3324 ug/L	100
48)	Methylcyclohexane	10.88	83	667449	51.1470 ug/L	100
49)	1,2-Dichloropropane	11.04	63	538224	52.4806 ug/L	100
50)	1,4-Dioxane	11.39	88	6193	210.3000 ug/L	100
51)	Bromodichloromethane	11.38	83	569883	51.4359 ug/L	100
52)	Dibromomethane	11.46	93	189075	54.3314 ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.78	63	172596	51.3211 ug/L	100
54)	4-Methyl-2-Pentanone	11.82	58	86587	51.6495 ug/L	100
55)	cis-1,3-Dichloropropene	12.13	75	653607	53.3412 ug/L	100
56)	Dimethyl Disulfide	12.41	79	311467	53.0697 ug/L	100
59)	Toluene	12.61	91	1983414	51.7526 ug/L	100
60)	Ethyl Methacrylate	12.80	69	296874	53.9366 ug/L	100
62)	trans-1,3-Dichloropropene	12.85	75	508370	54.0655 ug/L	100
63)	1,1,2-Trichloroethane	13.08	97	250935	51.7971 ug/L	100
64)	2-Hexanone	13.05	43	174893	52.1043 ug/L	100
65)	1,3-Dichloropropane	13.44	76	439723	52.6021 ug/L	100
66)	Tetrachloroethene	13.55	166	560474	51.8687 ug/L	100
67)	Dibromochloromethane	13.85	129	362188	53.5162 ug/L	100
68)	1,2-Dibromoethane	14.15	107	254722	52.7372 ug/L	100
69)	1-Chlorohexane	14.33	91	602256	51.6049 ug/L	100
70)	Chlorobenzene	14.75	112	1276758	52.2330 ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.80	131	460193	52.8045 ug/L	100
72)	Ethylbenzene	14.81	106	738109	52.4013 ug/L	100
73)	m-,p-Xylene	14.91	106	1775651	106.0080 ug/L	100
74)	o-Xylene	15.56	106	852539	52.2946 ug/L	100
75)	Styrene	15.61	104	1359507	53.6719 ug/L	100
76)	Bromoform	16.14	173	189798	54.0139 ug/L	100
77)	Isopropylbenzene	16.08	105	2220690	52.7586 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.33	83	238918	51.6223 ug/L	100
81)	1,2,3-Trichloropropane	16.56	110	71050	52.9801 ug/L	99
82)	trans-1,4-Dichloro-2-Buten	16.64	53	95580	53.2259 ug/L	97
83)	n-Propylbenzene	16.68	91	2528630	52.2340 ug/L	100
84)	Bromobenzene	16.77	156	524055	53.6593 ug/L	100
85)	1,3,5-Trimethylbenzene	16.90	105	1838511	51.6625 ug/L	100
86)	2-Chlorotoluene	16.96	91	1741089	51.1918 ug/L	100
87)	4-Chlorotoluene	17.03	91	1478329	50.6726 ug/L	100
88)	a-Methylstyrene	17.37	118	963629	52.2372 ug/L	100
89)	tert-Butylbenzene	17.44	134	383484	52.9232 ug/L	100
90)	1,2,4-Trimethylbenzene	17.49	105	1836156	51.5449 ug/L	100
91)	sec-Butylbenzene	17.76	105	2201377	52.2317 ug/L	100
92)	p-Isopropyltoluene	17.95	119	1887960	52.1498 ug/L	100
93)	1,3-Dichlorobenzene	18.13	146	1036688	51.8776 ug/L	100
94)	1,4-Dichlorobenzene	18.29	146	1017992	52.2566 ug/L	100
95)	n-Butylbenzene	18.58	91	1583276	51.7279 ug/L	100
96)	1,2-Dichlorobenzene	18.85	146	865079	52.4238 ug/L	100
97)	1,2-Dibromo-3-Chloropropan	20.04	75	37567	53.1783 ug/L	100
98)	1,2,4-Trichlorobenzene	21.38	180	610417	52.1355 ug/L	100
99)	Hexachlorobutadiene	21.58	225	300240	51.2453 ug/L	100
100)	Naphthalene	21.78	128	863842	52.2701 ug/L	100
101)	1,2,3-Trichlorobenzene	22.16	180	493488	52.0849 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M118380.D 8260WTR.M Sat Jul 27 15:02:02 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118380.D Vial: 9
Acq On : 26 Jul 2013 18:41 Operator: adc
Sample : WG439230-08 50.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

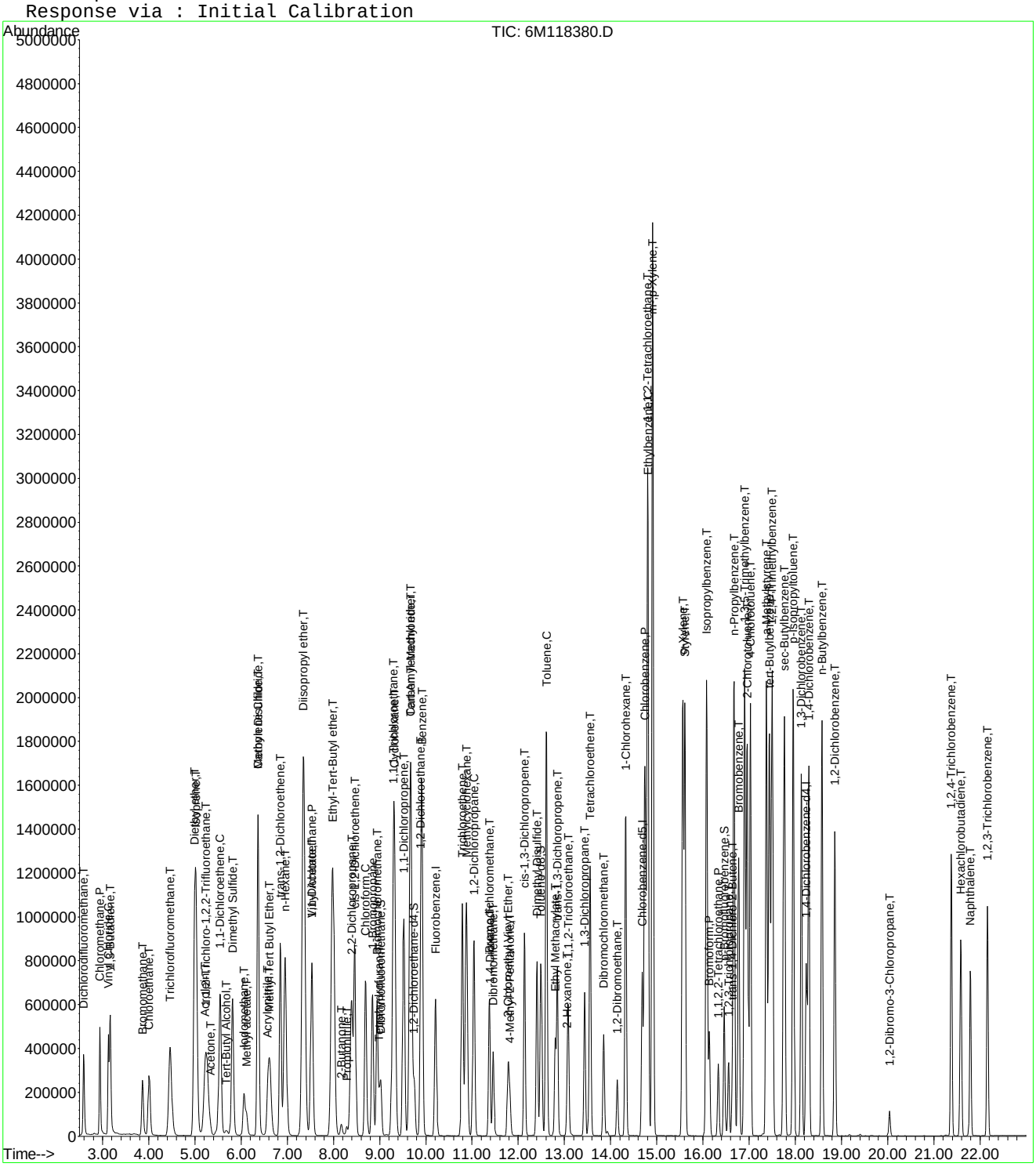

6M118380.D 8260WTR.M Sat Jul 27 15:02:02 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118381.D Vial: 10
Acq On : 26 Jul 2013 19:11 Operator: adc
Sample : WG439230-09 100.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:03 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	863128	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	595272	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	296315	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.02	111	430104	47.4833 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 189.92%#		
43) 1,2-Dichloroethane-d4	9.76	65	381470	49.7030 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 198.80%#		
58) Toluene-d8	12.49	98	1558399	48.8290 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 195.32%#		
80) p-Bromofluorobenzene	16.46	95	543763	48.2484 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 193.00%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	834683	104.3280 ug/L	99
3) Chloromethane	2.94	50	1184271	99.9790 ug/L	99
4) Vinyl Chloride	3.13	62	942853	100.2808 ug/L	99
5) 1,3-Butadiene	3.16	54	477494	86.3296 ug/L	99
6) Bromomethane	3.86	94	576024	103.6824 ug/L	100
7) Chloroethane	4.01	64	791047	102.1464 ug/L	100
8) Trichlorofluoromethane	4.47	101	1558771	102.2824 ug/L	100
9) Diethyl ether	5.00	59	1186352	201.9428 ug/L	99
10) Isoprene	5.02	67	1356190	101.7041 ug/L	100
11) Acrolein	5.22	56	15876	110.8319 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.24	101	864390	101.0546 ug/L	99
13) Acetone	5.32	43	139586	96.9839 ug/L	100
14) 1,1-Dichloroethene	5.54	61	1834566	103.2459 ug/L	100
15) Tert-Butyl Alcohol	5.68	59	122854	387.8960 ug/L	96
16) Dimethyl Sulfide	5.81	62	976186	103.4199 ug/L	99
17) Iodomethane	6.06	142	850211	100.2448 ug/L	99
18) Methyl acetate	6.11	43	494806	99.7060 ug/L	99
19) Methylene Chloride	6.37	84	868830	99.3208 ug/L	97
20) Carbon Disulfide	6.37	76	2918150	100.8007 ug/L	99
21) Acrylonitrile	6.57	53	211810	105.2035 ug/L	99
22) Methyl Tert Butyl Ether	6.61	73	1554125	106.5332 ug/L	100
23) trans-1,2-Dichloroethene	6.84	96	1026105	105.0229 ug/L	98
24) n-Hexane	6.96	57	1542479	97.9218 ug/L	100
25) Diisopropyl ether	7.35	45	8123366	196.9131 ug/L	99
26) Vinyl Acetate	7.53	43	1134641	97.8812 ug/L	100
27) 1,1-Dichloroethane	7.53	63	2075052	102.6535 ug/L	100
28) Ethyl-Tert-Butyl ether	7.99	59	5318413	200.3757 ug/L	100
29) 2-Butanone	8.17	43	213731	94.0228 ug/L	98
30) Propionitrile	8.28	54	127293	199.4324 ug/L	99
31) 2,2-Dichloropropane	8.40	77	1555713	101.4597 ug/L	100
32) cis-1,2-Dichloroethene	8.47	96	1062211	105.2585 ug/L	99
33) Chloroform	8.69	83	1704158	102.4256 ug/L	100
34) 1-Bromopropane	8.85	122	200467	107.2033 ug/L	99
35) Bromochloromethane	8.95	130	546476	104.4682 ug/L	100
36) Tetrahydrofuran	8.99	42	294741	194.8444 ug/L	99
38) 1,1,1-Trichloroethane	9.30	97	1632595	103.1374 ug/L	100
39) Cyclohexane	9.32	56	2157305	96.7275 ug/L	99
40) 1,1-Dichloropropene	9.52	75	1391818	104.3258 ug/L	100
41) Tert-Amyl-Methyl ether	9.67	73	3210795	201.9742 ug/L	99
42) Carbon Tetrachloride	9.67	117	1512470	105.9243 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M118381.D 8260WTR.M Sat Jul 27 15:02:03 2013 Page 1

Data File : C:\MSDCHEM\1\DATA\072613\6M118381.D Vial: 10
Acq On : 26 Jul 2013 19:11 Operator: adc
Sample : WG439230-09 100.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:03 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	9.89	62	1094535	105.1500	ug/L	100
46)	Benzene	9.92	78	3738656	102.6752	ug/L	100
47)	Trichloroethene	10.79	130	1073876	104.7584	ug/L	100
48)	Methylcyclohexane	10.88	83	1302679	98.2511	ug/L	99
49)	1,2-Dichloropropane	11.04	63	1091933	104.7926	ug/L	100
50)	1,4-Dioxane	11.39	88	11765	383.2975	ug/L	89
51)	Bromodichloromethane	11.38	83	1173163	104.2167	ug/L	100
52)	Dibromomethane	11.46	93	389688	110.2128	ug/L	99
53)	2-Chloroethyl Vinyl Ether	11.78	63	343246	100.4544	ug/L	99
54)	4-Methyl-2-Pentanone	11.82	58	168917	99.1711	ug/L	99
55)	cis-1,3-Dichloropropene	12.13	75	1340600	107.6822	ug/L	100
56)	Dimethyl Disulfide	12.41	79	646501	108.4181	ug/L	100
59)	Toluene	12.61	91	3964215	101.7986	ug/L	99
60)	Ethyl Methacrylate	12.80	69	594163	106.2387	ug/L	98
62)	trans-1,3-Dichloropropene	12.85	75	1045042	109.3805	ug/L	100
63)	1,1,2-Trichloroethane	13.08	97	508641	103.3287	ug/L	100
64)	2-Hexanone	13.05	43	332897	97.6061	ug/L	98
65)	1,3-Dichloropropane	13.44	76	897122	105.6188	ug/L	97
66)	Tetrachloroethene	13.55	166	1133800	103.2648	ug/L	100
67)	Dibromochloromethane	13.85	129	750316	109.1091	ug/L	99
68)	1,2-Dibromoethane	14.15	107	525211	107.0164	ug/L	100
69)	1-Chlorohexane	14.33	91	1210412	102.0726	ug/L	98
70)	Chlorobenzene	14.75	112	2592177	104.3679	ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.80	131	945230	106.7417	ug/L	99
72)	Ethylbenzene	14.81	106	1506270	105.2423	ug/L	97
73)	m-,p-Xylene	14.91	106	3562479	209.3143	ug/L	96
74)	o-Xylene	15.57	106	1731472	104.5259	ug/L	99
75)	Styrene	15.61	104	2751037	106.8878	ug/L	99
76)	Bromoform	16.14	173	400429	112.1516	ug/L	100
77)	Isopropylbenzene	16.08	105	4419855	103.3425	ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.33	83	486818	103.6562	ug/L	99
81)	1,2,3-Trichloropropane	16.56	110	146876	107.9293	ug/L	95
82)	trans-1,4-Dichloro-2-Buten	16.64	53	199613	109.5429	ug/L	96
83)	n-Propylbenzene	16.68	91	5030223	102.3987	ug/L	99
84)	Bromobenzene	16.77	156	1062894	107.2500	ug/L	99
85)	1,3,5-Trimethylbenzene	16.90	105	3702388	102.5252	ug/L	99
86)	2-Chlorotoluene	16.96	91	3543747	102.6789	ug/L	100
87)	4-Chlorotoluene	17.03	91	2982663	100.7502	ug/L	100
88)	a-Methylstyrene	17.37	118	1927300	102.9577	ug/L	100
89)	tert-Butylbenzene	17.44	134	770790	104.8273	ug/L	100
90)	1,2,4-Trimethylbenzene	17.50	105	3690223	102.0864	ug/L	99
91)	sec-Butylbenzene	17.76	105	4345523	101.6065	ug/L	99
92)	p-Isopropyltoluene	17.96	119	3749079	102.0527	ug/L	99
93)	1,3-Dichlorobenzene	18.13	146	2097238	103.4235	ug/L	99
94)	1,4-Dichlorobenzene	18.29	146	2049391	103.6719	ug/L	99
95)	n-Butylbenzene	18.58	91	3148099	101.3576	ug/L	99
96)	1,2-Dichlorobenzene	18.85	146	1741858	104.0221	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	20.04	75	77455	108.0481	ug/L	97
98)	1,2,4-Trichlorobenzene	21.38	180	1232280	103.7184	ug/L	100
99)	Hexachlorobutadiene	21.58	225	601461	101.1656	ug/L	100
100)	Naphthalene	21.78	128	1733026	103.3389	ug/L	100
101)	1,2,3-Trichlorobenzene	22.16	180	986316	102.5866	ug/L	100

(#) = qualifier out of range (m) = manual integration
6M118381.D 8260WTR.M Sat Jul 27 15:02:03 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118381.D Vial: 10
Acq On : 26 Jul 2013 19:11 Operator: adc
Sample : WG439230-09 100.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

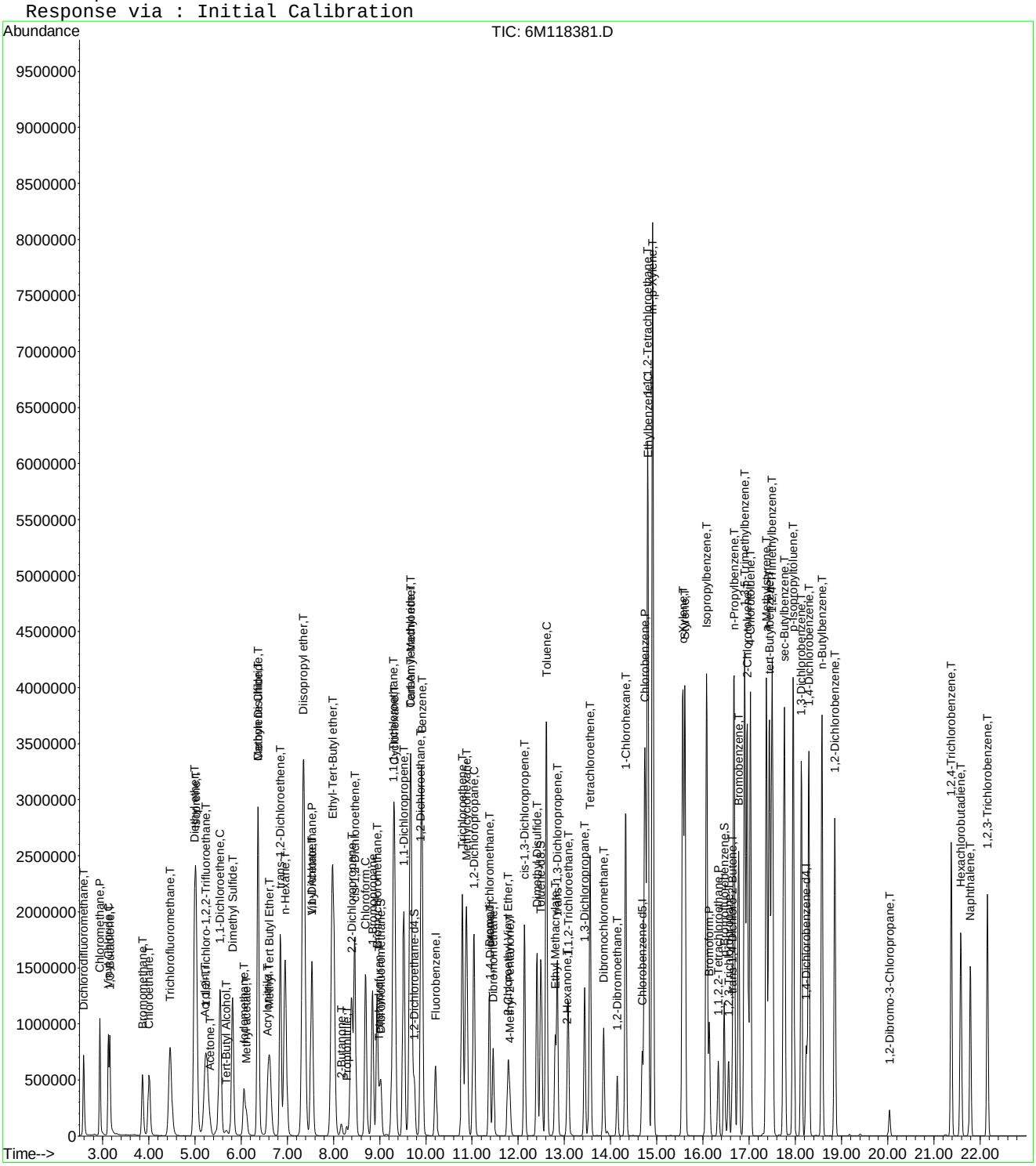

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118382.D Vial: 11
Acq On : 26 Jul 2013 19:42 Operator: adc
Sample : WG439230-10 200.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:04 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.22	96	870943	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	593719	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	294912	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.02	111	879599	96.2360 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 384.96%#		
43) 1,2-Dichloroethane-d4	9.75	65	765550	98.8510 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 395.40%#		
58) Toluene-d8	12.49	98	3118048	97.9527 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.80%#		
80) p-Bromofluorobenzene	16.47	95	1084019	96.6433 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 386.56%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	1707511	211.5087 ug/L	100
3) Chloromethane	2.95	50	2349381	196.5606 ug/L	99
4) Vinyl Chloride	3.12	62	1799074	189.6306 ug/L	99
5) 1,3-Butadiene	3.15	54	837832	185.2999 ug/L	93
6) Bromomethane	3.87	94	1195540	204.8308 ug/L	100
7) Chloroethane	4.01	64	1557791	199.3497 ug/L	100
8) Trichlorofluoromethane	4.47	101	3164307	205.7703 ug/L	99
9) Diethyl ether	5.00	59	6047	1.0201 ug/L	83
10) Isoprene	5.02	67	2785410	207.0107 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.24	101	1783255	206.6072 ug/L	100
13) Acetone	5.33	43	295138	206.5355 ug/L	99
14) 1,1-Dichloroethene	5.54	61	3631779	202.5557 ug/L	99
15) Tert-Butyl Alcohol	5.67	59	1819	5.6917 ug/L #	15
16) Dimethyl Sulfide	5.82	62	1974453	207.3021 ug/L	98
17) Iodomethane	6.06	142	1792703	207.1529 ug/L	99
18) Methyl acetate	6.11	43	975859	199.3956 ug/L	98
19) Methylene Chloride	6.37	84	1714096	194.1897 ug/L	94
20) Carbon Disulfide	6.37	76	5760842	197.2093 ug/L	99
21) Acrylonitrile	6.61	53	37606	18.5108 ug/L #	31
22) Methyl Tert Butyl Ether	6.61	73	3131851	212.7579 ug/L	99
23) trans-1,2-Dichloroethene	6.85	96	2025507	205.4524 ug/L	98
24) n-Hexane	6.96	57	3137772	197.4090 ug/L	99
26) Vinyl Acetate	7.53	43	2240124	191.5131 ug/L	99
27) 1,1-Dichloroethane	7.53	63	4078106	199.9351 ug/L	99
29) 2-Butanone	8.16	43	447150	194.9416 ug/L	100
30) Propionitrile	8.16	54	1795	2.7870 ug/L #	81
31) 2,2-Dichloropropane	8.39	77	3078240	198.9537 ug/L	98
32) cis-1,2-Dichloroethene	8.46	96	2112811	207.4877 ug/L	98
33) Chloroform	8.70	83	3366548	200.5252 ug/L	99
34) 1-Bromopropane	8.85	122	399805	211.8843 ug/L	99
35) Bromochloromethane	8.95	130	1088439	206.2066 ug/L	99
36) Tetrahydrofuran	8.97	42	840	0.5503 ug/L #	51
38) 1,1,1-Trichloroethane	9.30	97	3254664	203.7649 ug/L	100
39) Cyclohexane	9.32	56	4409823	195.9500 ug/L	98
40) 1,1-Dichloropropene	9.52	75	2790525	207.2911 ug/L	99
41) Tert-Amyl-Methyl ether	9.52	73	392697	24.4808 ug/L #	53
42) Carbon Tetrachloride	9.67	117	3074005	213.3531 ug/L	100
45) 1,2-Dichloroethane	9.89	62	2169853	206.5834 ug/L	98
46) Benzene	9.92	78	7204835	196.0919 ug/L	99
47) Trichloroethene	10.79	130	2136182	206.5183 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118382.D Vial: 11
Acq On : 26 Jul 2013 19:42 Operator: adc
Sample : WG439230-10 200.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:04 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methylcyclohexane	10.88	83	2697760	201.6457 ug/L	98
49)	1,2-Dichloropropane	11.03	63	2160910	205.5212 ug/L	99
50)	1,4-Dioxane	11.38	88	3784	129.9414 ug/L #	48
51)	Bromodichloromethane	11.37	83	2341425	206.1317 ug/L	100
52)	Dibromomethane	11.46	93	782792	219.4051 ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.78	63	711793	206.4442 ug/L	100
54)	4-Methyl-2-Pentanone	11.82	58	348968	203.0407 ug/L	98
55)	cis-1,3-Dichloropropene	12.14	75	2665149	212.1542 ug/L	100
56)	Dimethyl Disulfide	12.41	79	1338930	222.5236 ug/L	100
59)	Toluene	12.61	91	7497342	193.0307 ug/L	97
60)	Ethyl Methacrylate	12.80	69	1205529	216.1171 ug/L	95
62)	trans-1,3-Dichloropropene	12.85	75	2094749	219.8227 ug/L	100
63)	1,1,2-Trichloroethane	13.09	97	1018509	207.4479 ug/L	100
64)	2-Hexanone	13.06	43	659473	193.8647 ug/L	96
65)	1,3-Dichloropropane	13.44	76	1778966	209.9867 ug/L	96
66)	Tetrachloroethene	13.56	166	2243345	204.8549 ug/L	99
67)	Dibromochloromethane	13.85	129	1515647	220.9781 ug/L	99
68)	1,2-Dibromoethane	14.15	107	1049859	214.4777 ug/L	99
69)	1-Chlorohexane	14.33	91	2400288	202.9428 ug/L	98
70)	Chlorobenzene	14.75	112	4966009	200.4677 ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.80	131	1858861	210.4640 ug/L	100
72)	Ethylbenzene	14.81	106	2891435	202.5515 ug/L	90
73)	m-,p-Xylene	14.91	106	6606639	389.1900 ug/L	87
74)	o-Xylene	15.57	106	3330907	201.6068 ug/L	95
75)	Styrene	15.61	104	5245493	204.3396 ug/L	98
76)	Bromoform	16.14	173	817176	229.4722 ug/L	100
77)	Isopropylbenzene	16.08	105	8146486	190.9746 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.33	83	957340	204.8122 ug/L	100
81)	1,2,3-Trichloropropane	16.56	110	284634	210.1535 ug/L	98
82)	trans-1,4-Dichloro-2-Buten	16.64	53	404708	223.1509 ug/L	94
83)	n-Propylbenzene	16.68	91	9061637	185.3425 ug/L	96
84)	Bromobenzene	16.77	156	2068115	209.6733 ug/L	100
85)	1,3,5-Trimethylbenzene	16.91	105	6864769	191.0011 ug/L	97
86)	2-Chlorotoluene	16.97	91	6747918	196.4489 ug/L	99
87)	4-Chlorotoluene	17.03	91	5589463	189.7025 ug/L	98
88)	a-Methylstyrene	17.37	118	3719369	199.6366 ug/L	99
89)	tert-Butylbenzene	17.45	134	1500352	205.0183 ug/L	96
90)	1,2,4-Trimethylbenzene	17.50	105	6844197	190.2388 ug/L	97
91)	sec-Butylbenzene	17.76	105	8005001	188.0624 ug/L	97
92)	p-Isopropyltoluene	17.96	119	6995429	191.3266 ug/L	97
93)	1,3-Dichlorobenzene	18.13	146	3990507	197.7246 ug/L	97
94)	1,4-Dichlorobenzene	18.29	146	3906053	198.5343 ug/L	98
95)	n-Butylbenzene	18.58	91	5871668	189.9462 ug/L	97
96)	1,2-Dichlorobenzene	18.86	146	3352626	201.1681 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	20.04	75	155013	217.2686 ug/L	99
98)	1,2,4-Trichlorobenzene	21.38	180	2377657	201.0744 ug/L	99
99)	Hexachlorobutadiene	21.58	225	1175865	198.7212 ug/L	99
100)	Naphthalene	21.79	128	3378019	202.3867 ug/L	100
101)	1,2,3-Trichlorobenzene	22.16	180	1927582	201.4414 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M118382.D 8260WTR.M Sat Jul 27 15:02:05 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118382.D Vial: 11
Acq On : 26 Jul 2013 19:42 Operator: adc
Sample : WG439230-10 200.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

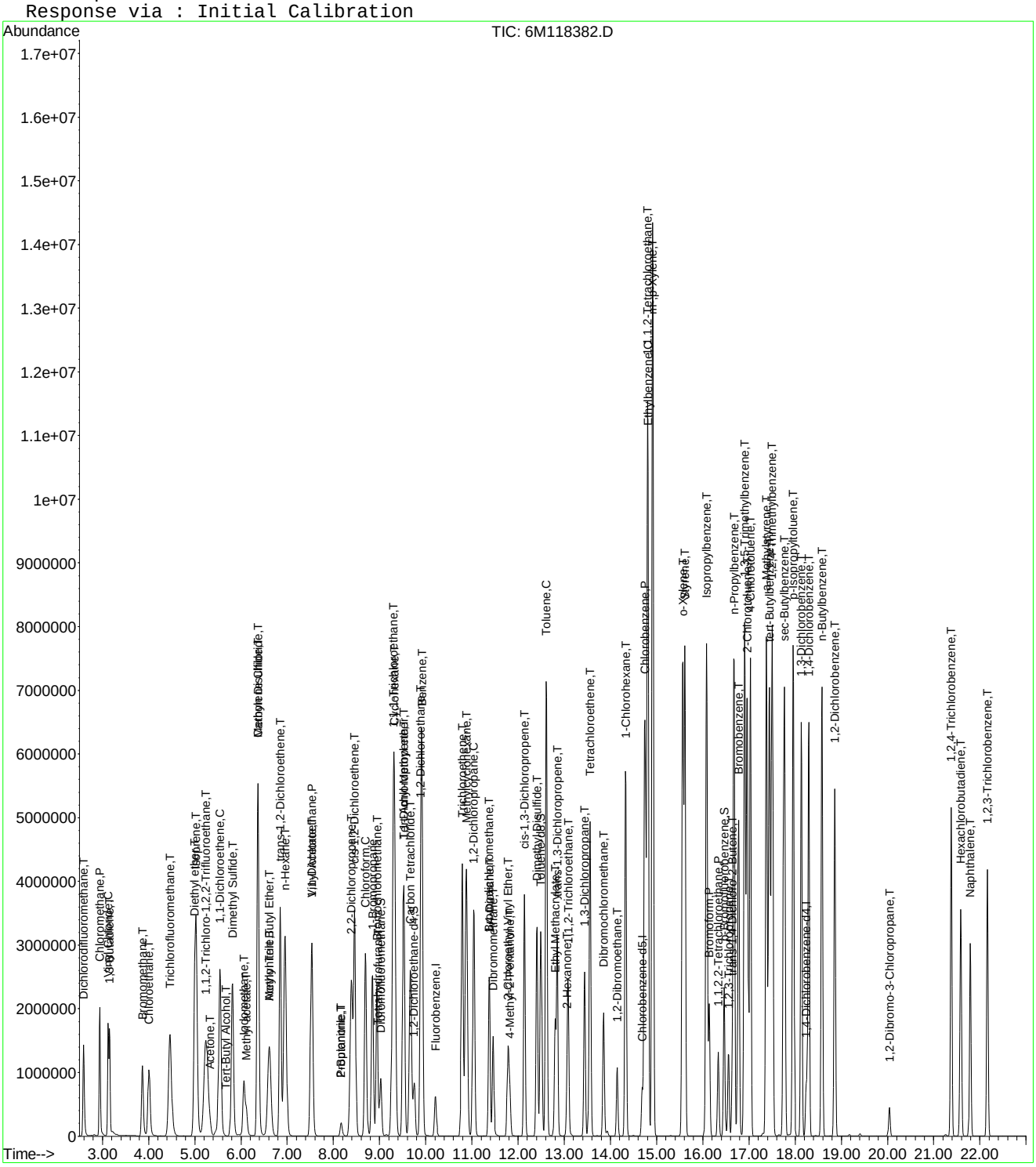

6M118382.D 8260WTR.M Sat Jul 27 15:02:05 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118383.D Vial: 12
Acq On : 26 Jul 2013 20:12 Operator: adc
Sample : WG439230-11 300.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:06 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.22	96	867795	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	590883	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	286016	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.02	111	1282068	140.7786 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 563.12%#		
43) 1,2-Dichloroethane-d4	9.75	65	1107213	143.4865 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 573.96%#		
58) Toluene-d8	12.49	98	4463573	140.8951 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 563.60%#		
80) p-Bromofluorobenzene	16.47	95	1539629	141.5314 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 566.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	2621286	325.8755 ug/L	100
3) Chloromethane	2.95	50	3486011	292.7146 ug/L	98
4) Vinyl Chloride	3.12	62	2580206	272.9520 ug/L	98
5) 1,3-Butadiene	3.15	54	1042750	Below Cal	98
6) Bromomethane	3.86	94	1780899	296.2071 ug/L	100
7) Chloroethane	4.00	64	2305038	296.0445 ug/L	99
8) Trichlorofluoromethane	4.46	101	4749285	309.9595 ug/L	99
9) Diethyl ether	4.99	59	1822170	308.5046 ug/L	97
10) Isoprene	5.02	67	4069965	303.5756 ug/L	98
11) Acrolein	5.22	56	38126	264.7299 ug/L	79
12) 1,1,2-Trichloro-1,2,2-Trif	5.23	101	2733426	317.8424 ug/L	100
13) Acetone	5.33	43	423247	298.5889 ug/L	97
14) 1,1-Dichloroethene	5.54	61	5414550	303.0819 ug/L	98
15) Tert-Butyl Alcohol	5.68	59	183119	575.0657 ug/L	94
16) Dimethyl Sulfide	5.81	62	2881402	303.6221 ug/L	96
17) Iodomethane	6.06	142	2592212	299.6644 ug/L	98
18) Methyl acetate	6.11	43	1436033	300.4680 ug/L	98
19) Methylene Chloride	6.36	84	2565648	291.7163 ug/L	89
20) Carbon Disulfide	6.37	76	8232353	282.8382 ug/L	98
21) Acrylonitrile	6.57	53	351539	173.6661 ug/L	94
22) Methyl Tert Butyl Ether	6.61	73	4681401	319.1780 ug/L	99
23) trans-1,2-Dichloroethene	6.85	96	3045915	310.0758 ug/L	96
24) n-Hexane	6.95	57	4609788	291.0711 ug/L	98
25) Diisopropyl ether	7.35	45	11940019	287.8735 ug/L	98
26) Vinyl Acetate	7.53	43	3415765	293.0805 ug/L	99
27) 1,1-Dichloroethane	7.53	63	6061332	298.2436 ug/L	99
28) Ethyl-Tert-Butyl ether	7.98	59	8016254	300.3950 ug/L	99
29) 2-Butanone	8.16	43	636581	278.5335 ug/L	98
30) Propionitrile	8.29	54	194521	303.1209 ug/L	100
31) 2,2-Dichloropropane	8.39	77	4603522	298.6155 ug/L	97
32) cis-1,2-Dichloroethene	8.46	96	3170321	312.4694 ug/L	96
33) Chloroform	8.70	83	5017231	299.9307 ug/L	99
34) 1-Bromopropane	8.85	122	590419	314.0389 ug/L	100
35) Bromochloromethane	8.95	130	1605450	305.2586 ug/L	100
36) Tetrahydrofuran	8.98	42	442906	291.2171 ug/L	97
38) 1,1,1-Trichloroethane	9.29	97	4855367	305.0829 ug/L	100
39) Cyclohexane	9.32	56	6398428	285.3448 ug/L	96
40) 1,1-Dichloropropene	9.52	75	4159181	310.0809 ug/L	97
41) Tert-Amyl-Methyl ether	9.68	73	4963551	310.5516 ug/L	99
42) Carbon Tetrachloride	9.67	117	4599230	320.3702 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M118383.D 8260WTR.M Sat Jul 27 15:02:06 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118383.D Vial: 12
Acq On : 26 Jul 2013 20:12 Operator: adc
Sample : WG439230-11 300.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:06 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.89	62	3225056	308.1591 ug/L	97
46)	Benzene	9.92	78	10368483	283.2196 ug/L	98
47)	Trichloroethene	10.79	130	3171175	307.6898 ug/L	100
48)	Methylcyclohexane	10.88	83	4004669	300.4173 ug/L	98
49)	1,2-Dichloropropane	11.03	63	3220182	307.3782 ug/L	99
50)	1,4-Dioxane	11.38	88	18880	604.9960 ug/L	91
51)	Bromodichloromethane	11.37	83	3510249	310.1523 ug/L	99
52)	Dibromomethane	11.46	93	1175497	330.6698 ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.78	63	1039145	302.4807 ug/L	99
54)	4-Methyl-2-Pentanone	11.82	58	508335	296.8384 ug/L	99
55)	cis-1,3-Dichloropropene	12.14	75	3962203	316.5479 ug/L	99
56)	Dimethyl Disulfide	12.41	79	1964136	327.6139 ug/L	100
59)	Toluene	12.61	91	10547089	272.8545 ug/L	93
60)	Ethyl Methacrylate	12.80	69	1751881	315.5699 ug/L	93
62)	trans-1,3-Dichloropropene	12.84	75	3120486	329.0351 ug/L	99
63)	1,1,2-Trichloroethane	13.09	97	1521526	311.3888 ug/L	100
64)	2-Hexanone	13.06	43	941676	278.1524 ug/L	96
65)	1,3-Dichloropropane	13.44	76	2639925	313.1088 ug/L	94
66)	Tetrachloroethene	13.56	166	3354424	307.7852 ug/L	98
67)	Dibromochloromethane	13.85	129	2275858	333.4078 ug/L	99
68)	1,2-Dibromoethane	14.15	107	1566959	321.6535 ug/L	99
69)	1-Chlorohexane	14.33	91	3479477	295.5995 ug/L	97
70)	Chlorobenzene	14.75	112	7150681	290.0438 ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.80	131	2732070	310.8152 ug/L	99
72)	Ethylbenzene	14.81	106	4260648	299.9004 ug/L	80
73)	m-,p-Xylene	14.91	106	9191083	544.0356 ug/L	79
74)	o-Xylene	15.57	106	4858471	295.4757 ug/L	91
75)	Styrene	15.61	104	7452420	291.7044 ug/L	94
76)	Bromoform	16.14	173	1225478	345.7796 ug/L	100
77)	Isopropylbenzene	16.08	105	11254864	265.1093 ug/L	93
79)	1,1,2,2-Tetrachloroethane	16.33	83	1424497	314.2341 ug/L	100
81)	1,2,3-Trichloropropane	16.56	110	420918	320.4420 ug/L	96
82)	trans-1,4-Dichloro-2-Buten	16.64	53	572501	325.4881 ug/L	91
83)	n-Propylbenzene	16.68	91	12240881	258.1566 ug/L	92
84)	Bromobenzene	16.77	156	3037979	317.5817 ug/L	100
85)	1,3,5-Trimethylbenzene	16.91	105	9625393	276.1407 ug/L	94
86)	2-Chlorotoluene	16.97	91	9612183	288.5387 ug/L	94
87)	4-Chlorotoluene	17.03	91	7903174	276.5710 ug/L	95
88)	a-Methylstyrene	17.38	118	5268588	291.5863 ug/L	100
89)	tert-Butylbenzene	17.45	134	2205038	310.6831 ug/L	92
90)	1,2,4-Trimethylbenzene	17.51	105	9522150	272.9064 ug/L	93
91)	sec-Butylbenzene	17.76	105	11063091	267.9904 ug/L	94
92)	p-Isopropyltoluene	17.96	119	9713899	273.9408 ug/L	94
93)	1,3-Dichlorobenzene	18.13	146	5705305	291.4832 ug/L	96
94)	1,4-Dichlorobenzene	18.29	146	5563911	291.5948 ug/L	96
95)	n-Butylbenzene	18.58	91	8226019	274.3854 ug/L	95
96)	1,2-Dichlorobenzene	18.86	146	4830717	298.8737 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	20.03	75	224448	324.3745 ug/L	99
98)	1,2,4-Trichlorobenzene	21.38	180	3460387	301.7410 ug/L	99
99)	Hexachlorobutadiene	21.58	225	1735891	302.4902 ug/L	99
100)	Naphthalene	21.79	128	4852060	299.7424 ug/L	99
101)	1,2,3-Trichlorobenzene	22.16	180	2800026	301.7171 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M118383.D 8260WTR.M Sat Jul 27 15:02:06 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118383.D Vial: 12
Acq On : 26 Jul 2013 20:12 Operator: adc
Sample : WG439230-11 300.0ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD59089 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

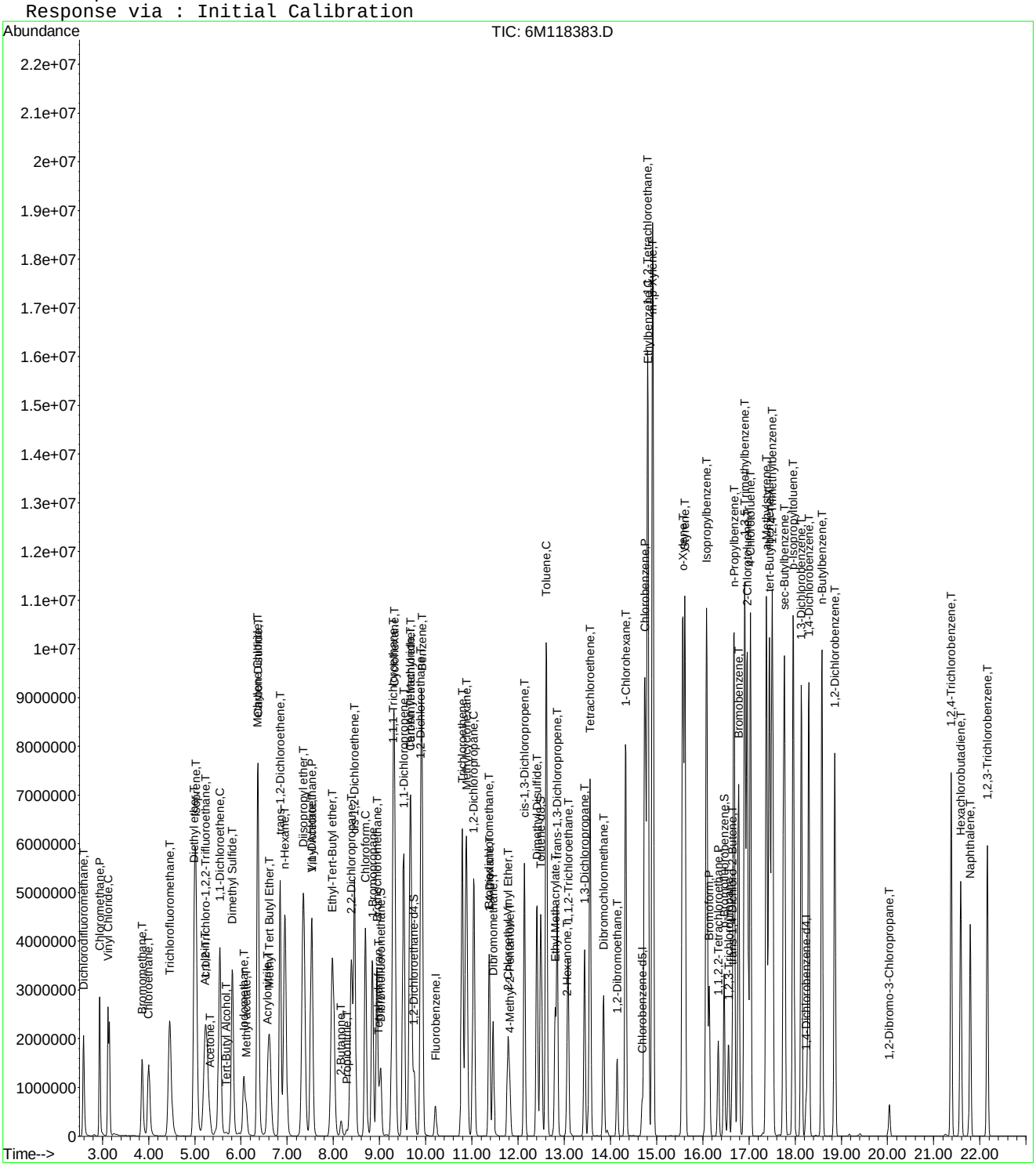

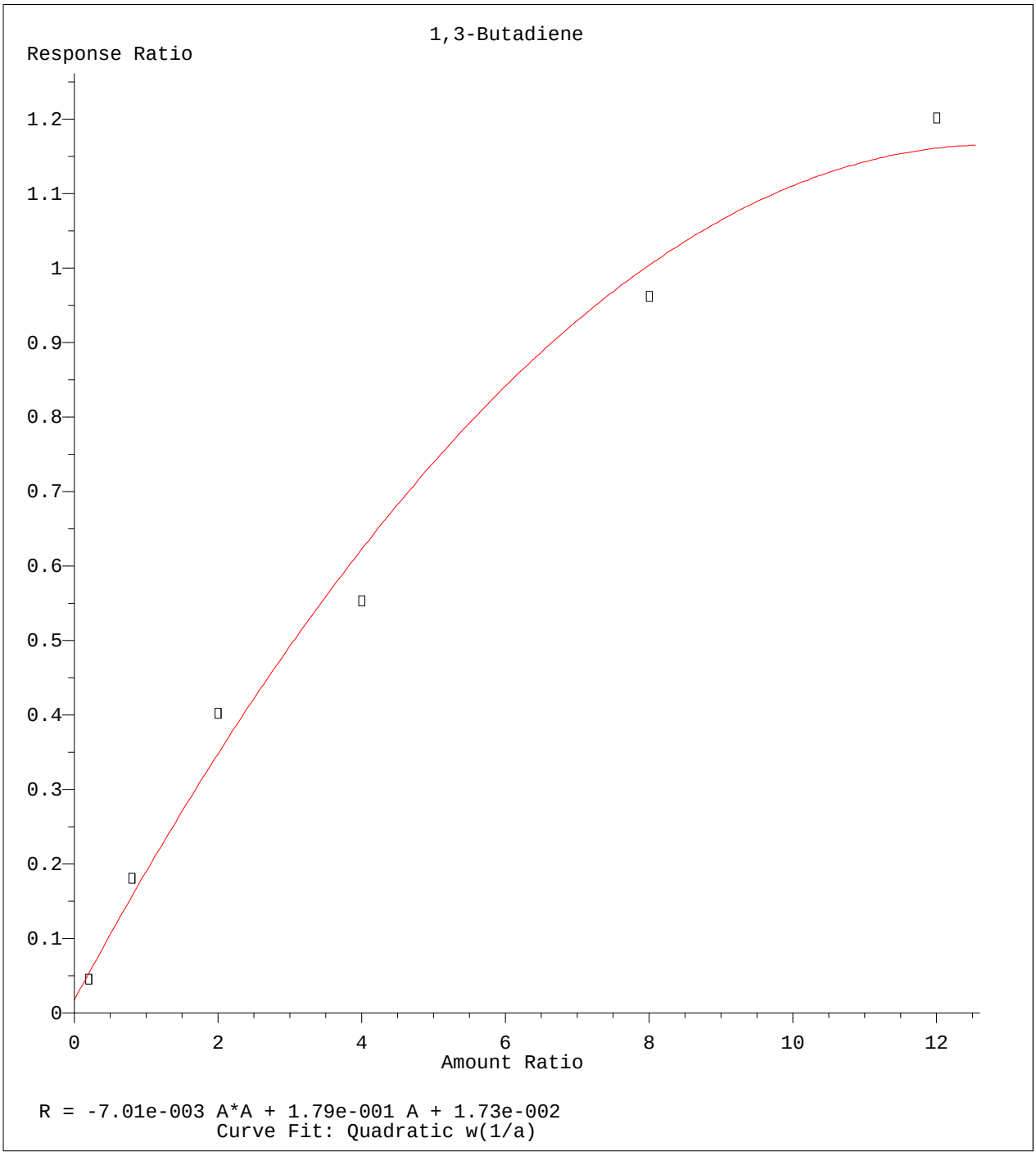

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Sat Jul 27 15:01:31 2013

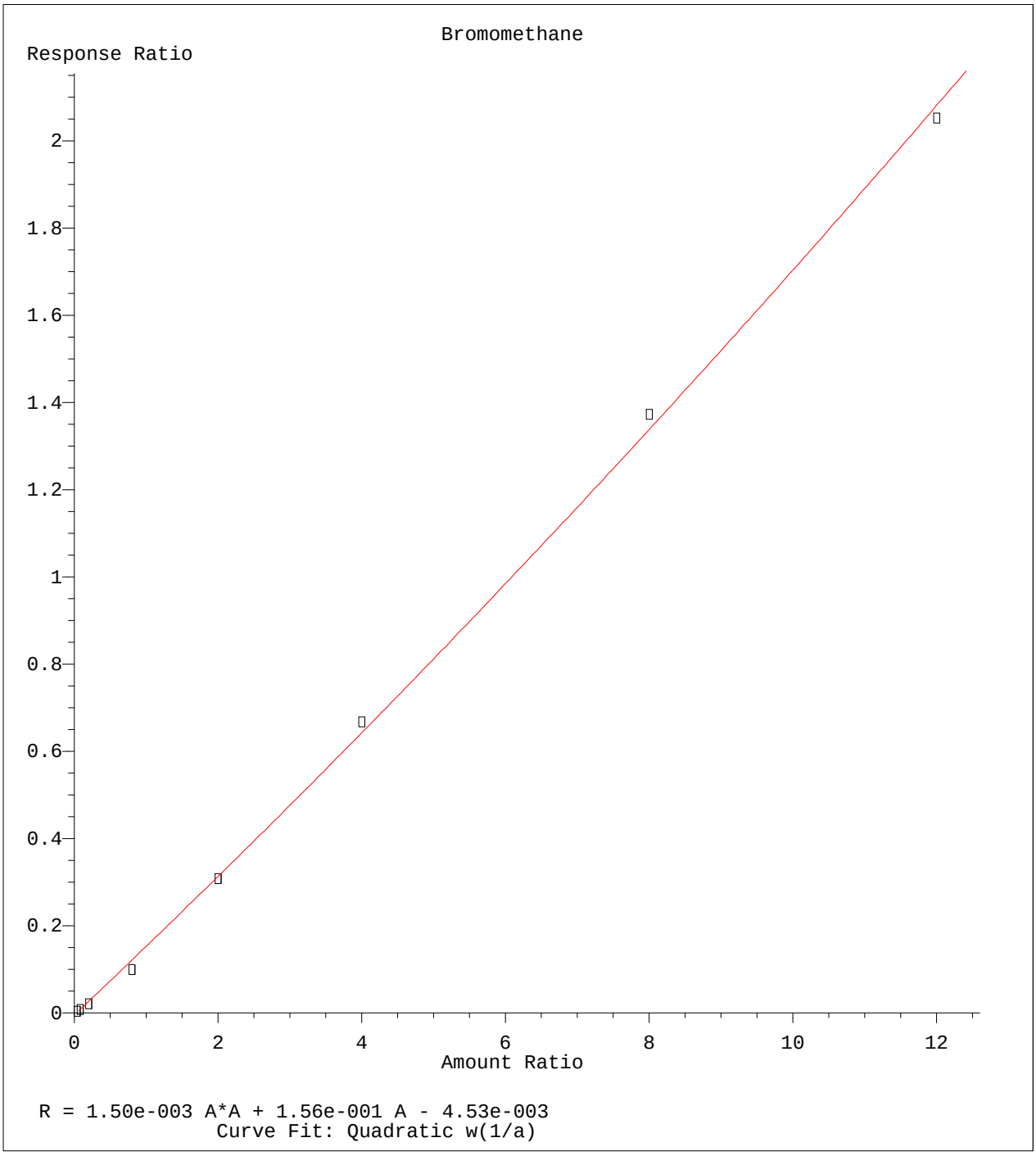

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Sat Jul 27 15:01:31 2013

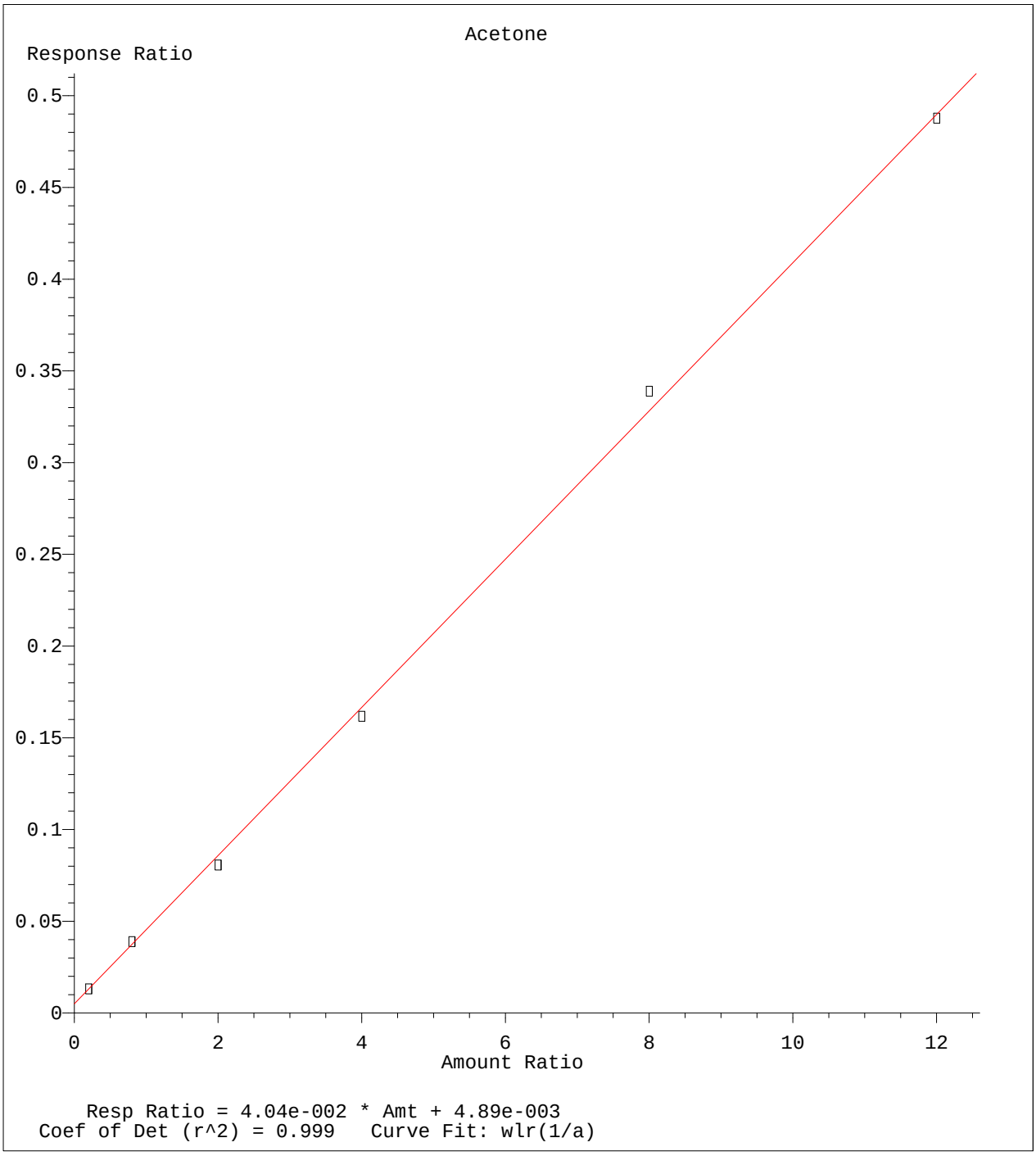

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Sat Jul 27 15:01:31 2013

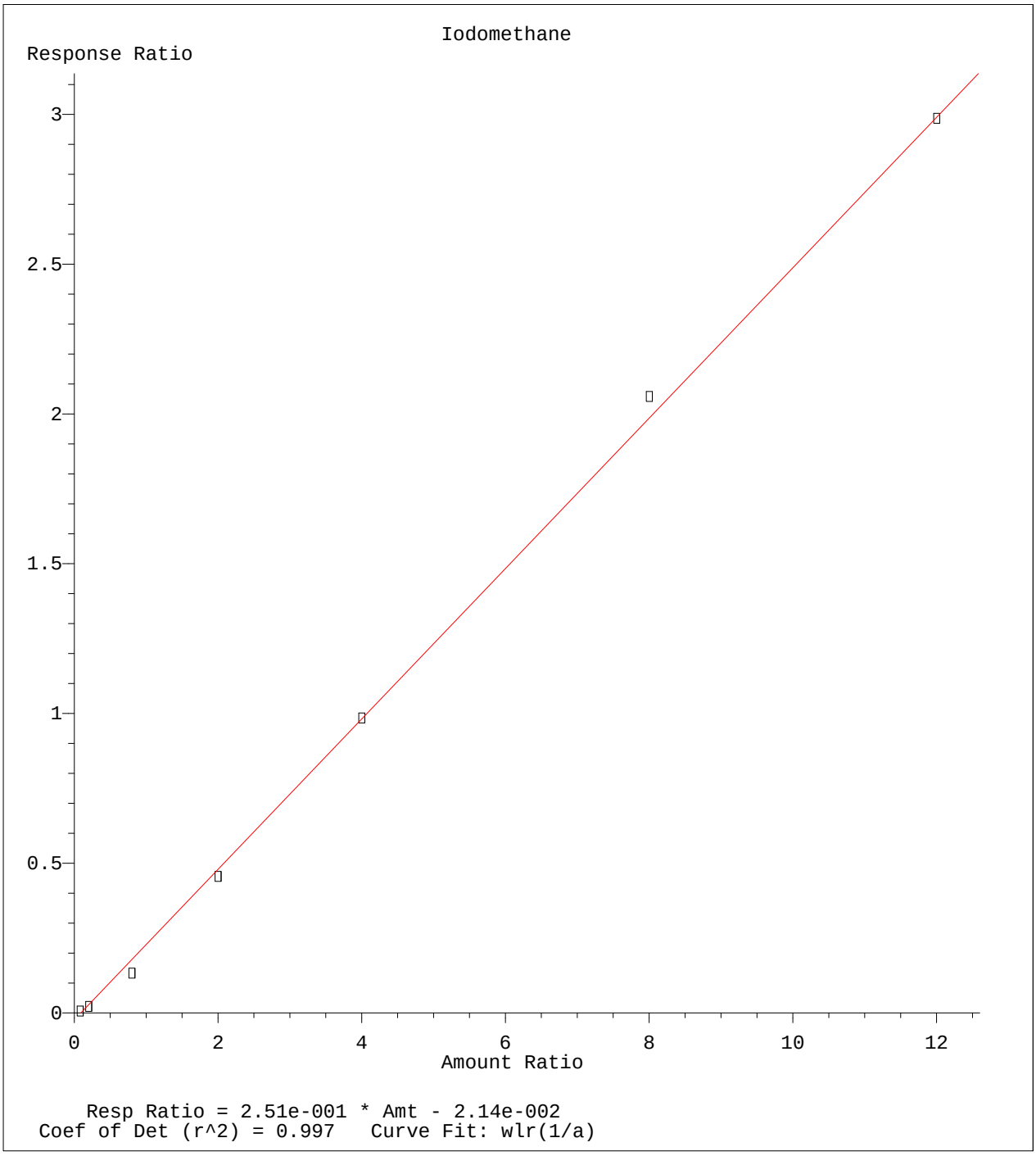

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Sat Jul 27 15:01:31 2013

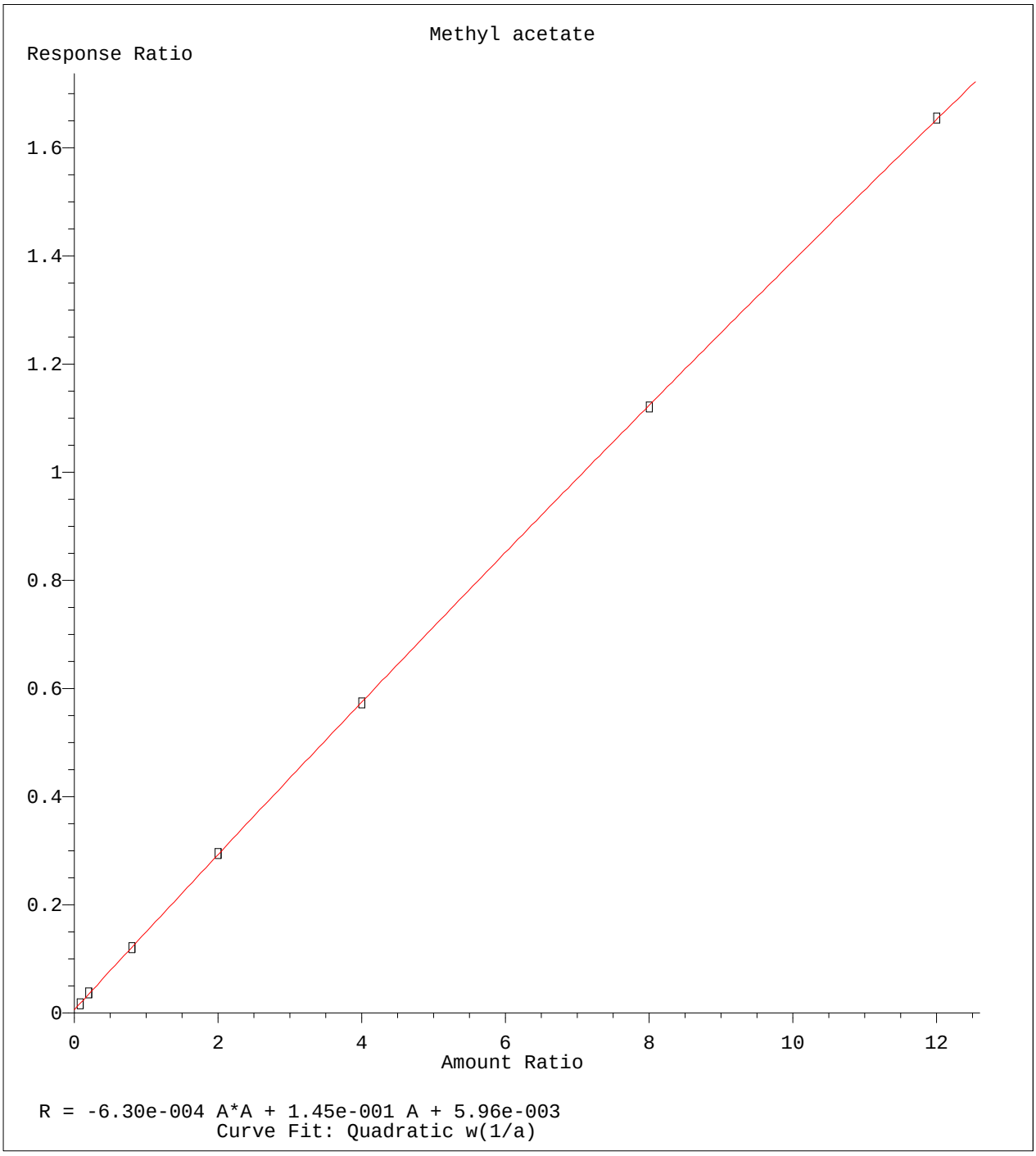

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Sat Jul 27 15:01:31 2013

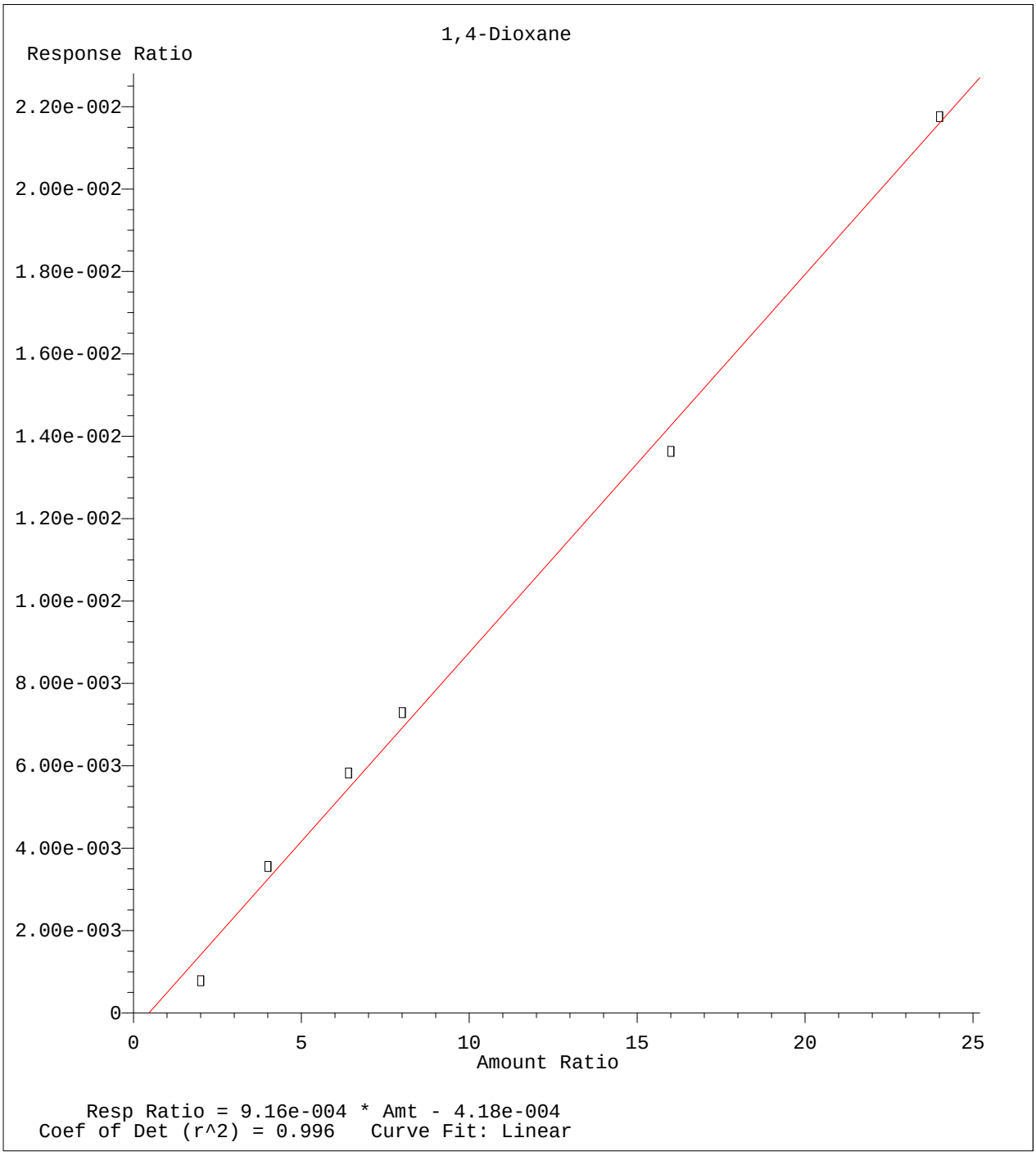

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Sat Jul 27 15:01:31 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118385.D Vial: 14
Acq On : 26 Jul 2013 21:13 Operator: adc
Sample : WG439230-12 50.0ug/L ALT SRC 8260 Inst : HPMS6
Misc : 1,1 STD59088 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:09 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.21	96	832401	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	577587	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.24	152	285017	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.02	111	201724	23.0923 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.36%		
43) 1,2-Dichloroethane-d4	9.75	65	175290	23.6822 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.72%		
58) Toluene-d8	12.49	98	735770	23.7596 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.04%		
80) p-Bromofluorobenzene	16.46	95	253339	23.3700 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.48%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.59	85	524524	67.9810 ug/L	100
3) Chloromethane	2.94	50	588013	51.4739 ug/L	99
4) Vinyl Chloride	3.12	62	413267	45.5771 ug/L	100
5) 1,3-Butadiene	3.15	54	186969	30.3271 ug/L	98
6) Bromomethane	3.85	94	248898	47.8323 ug/L	100
7) Chloroethane	4.00	64	390766	52.3215 ug/L	99
8) Trichlorofluoromethane	4.46	101	787171	53.5587 ug/L	99
9) Diethyl ether	4.99	59	598541	105.6456 ug/L	98
10) Isoprene	5.02	67	697525	54.2401 ug/L	99
11) Acrolein	5.22	56	16500	119.4401 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	5.24	101	483817	58.6503 ug/L	97
13) Acetone	5.32	43	66851	46.6392 ug/L	94
14) 1,1-Dichloroethene	5.54	61	829363	48.3979 ug/L	100
15) Tert-Butyl Alcohol	5.69	59	59723	195.5286 ug/L	97
16) Dimethyl Sulfide	5.80	62	519168	57.0324 ug/L	97
17) Iodomethane	6.06	142	286057	36.3596 ug/L	99
18) Methyl acetate	6.11	43	217685	44.4790 ug/L	99
19) Methylene Chloride	6.37	84	411540	48.7821 ug/L	95
20) Carbon Disulfide	6.37	76	1407049	50.3974 ug/L	100
21) Acrylonitrile	6.57	53	101063	52.0497 ug/L	99
22) Methyl Tert Butyl Ether	6.61	73	716842	50.9525 ug/L	99
23) trans-1,2-Dichloroethene	6.84	96	489831	51.9853 ug/L	98
24) n-Hexane	6.96	57	774108	50.9570 ug/L	98
25) Diisopropyl ether	7.35	45	3970793	99.8064 ug/L	100
26) Vinyl Acetate	7.53	43	704572	63.0244 ug/L	100
27) 1,1-Dichloroethane	7.53	63	976669	50.0997 ug/L	100
28) Ethyl-Tert-Butyl ether	7.99	59	2563002	100.1278 ug/L	100
29) 2-Butanone	8.17	43	114088	52.0413 ug/L	99
30) Propionitrile	8.28	54	63410	103.0129 ug/L	99
31) 2,2-Dichloropropane	8.39	77	695928	47.0621 ug/L	99
32) cis-1,2-Dichloroethene	8.46	96	509968	52.4001 ug/L	97
33) Chloroform	8.69	83	808204	50.3689 ug/L	99
34) 1-Bromopropane	8.85	122	102977	57.1016 ug/L	99
35) Bromochloromethane	8.95	130	255291	50.6047 ug/L	99
36) Tetrahydrofuran	8.98	42	148474	101.7748 ug/L	100
38) 1,1,1-Trichloroethane	9.30	97	778214	50.9776 ug/L	100
39) Cyclohexane	9.32	56	1088357	50.6002 ug/L	99
40) 1,1-Dichloropropene	9.52	75	663065	51.5357 ug/L	99
41) Tert-Amyl-Methyl ether	9.67	73	1536825	100.2421 ug/L	99
42) Carbon Tetrachloride	9.67	117	709989	51.5588 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M118385.D 8260WTR.M Sat Jul 27 15:02:10 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118385.D Vial: 14
Acq On : 26 Jul 2013 21:13 Operator: adc
Sample : WG439230-12 50.0ug/L ALT SRC 8260 Inst : HPMS6
Misc : 1,1 STD59088 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02:09 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.89	62	524299	52.2277 ug/L	99
46)	Benzene	9.92	78	1786759	50.8814 ug/L	100
47)	Trichloroethene	10.79	130	560945	56.7411 ug/L	99
48)	Methylcyclohexane	10.88	83	683279	53.4369 ug/L	98
49)	1,2-Dichloropropane	11.04	63	529115	52.6535 ug/L	99
50)	1,4-Dioxane	11.39	88	5379	187.7098 ug/L	97
51)	Bromodichloromethane	11.38	83	539036	49.6523 ug/L	100
52)	Dibromomethane	11.46	93	182456	53.5076 ug/L	99
53)	2-Chloroethyl Vinyl Ether	11.78	63	176112	53.4435 ug/L	99
54)	4-Methyl-2-Pentanone	11.82	58	85783	52.2223 ug/L	99
55)	cis-1,3-Dichloropropene	12.13	75	658299	54.8290 ug/L	100
56)	Dimethyl Disulfide	12.41	79	321689	55.9386 ug/L	100
59)	Toluene	12.60	91	1936913	51.2617 ug/L	100
60)	Ethyl Methacrylate	12.80	69	290180	53.4740 ug/L	98
62)	trans-1,3-Dichloropropene	12.85	75	467682	50.4492 ug/L	100
63)	1,1,2-Trichloroethane	13.08	97	253756	53.1281 ug/L	100
64)	2-Hexanone	13.05	43	162920	49.2311 ug/L	99
65)	1,3-Dichloropropane	13.44	76	431844	52.3980 ug/L	98
66)	Tetrachloroethene	13.55	166	548902	51.5239 ug/L	100
67)	Dibromochloromethane	13.85	129	349691	52.4082 ug/L	99
68)	1,2-Dibromoethane	14.15	107	248211	52.1238 ug/L	98
69)	1-Chlorohexane	14.33	91	620124	53.8955 ug/L	98
70)	Chlorobenzene	14.75	112	1166775	48.4158 ug/L	96
71)	1,1,1,2-Tetrachloroethane	14.80	131	462135	53.7853 ug/L	99
72)	Ethylbenzene	14.80	106	722818	52.0492 ug/L	99
73)	m-,p-Xylene	14.91	106	1675600	101.4647 ug/L	99
74)	o-Xylene	15.57	106	771145	47.9780 ug/L	99
75)	Styrene	15.61	104	1322884	52.9726 ug/L	98
76)	Bromoform	16.14	173	189050	54.5701 ug/L	99
77)	Isopropylbenzene	16.08	105	2011954	48.4827 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.33	83	233115	51.6038 ug/L	99
81)	1,2,3-Trichloropropane	16.56	110	69490	53.0877 ug/L	96
82)	trans-1,4-Dichloro-2-Buten	16.64	53	73499	41.9334 ug/L	95
83)	n-Propylbenzene	16.67	91	2241123	47.4303 ug/L	100
84)	Bromobenzene	16.77	156	504848	52.9604 ug/L	100
85)	1,3,5-Trimethylbenzene	16.90	105	1826145	52.5735 ug/L	99
86)	2-Chlorotoluene	16.96	91	1619314	48.7790 ug/L	99
87)	4-Chlorotoluene	17.03	91	1298365	45.5955 ug/L	100
88)	a-Methylstyrene	17.37	118	966365	53.6703 ug/L	95
89)	tert-Butylbenzene	17.44	134	346427	48.9816 ug/L	96
90)	1,2,4-Trimethylbenzene	17.50	105	1812653	52.1330 ug/L	99
91)	sec-Butylbenzene	17.76	105	1972572	47.9507 ug/L	100
92)	p-Isopropyltoluene	17.96	119	1702850	48.1902 ug/L	100
93)	1,3-Dichlorobenzene	18.13	146	924015	47.3733 ug/L	100
94)	1,4-Dichlorobenzene	18.29	146	973016	51.1728 ug/L	100
95)	n-Butylbenzene	18.58	91	1552235	51.9575 ug/L	100
96)	1,2-Dichlorobenzene	18.85	146	767365	47.6428 ug/L	100
97)	1,2-Dibromo-3-Chloropropan	20.04	75	36219	52.5275 ug/L	96
98)	1,2,4-Trichlorobenzene	21.38	180	579441	50.7036 ug/L	99
99)	Hexachlorobutadiene	21.58	225	297898	52.0926 ug/L	99
100)	Naphthalene	21.78	128	817300	50.6667 ug/L	100
101)	1,2,3-Trichlorobenzene	22.16	180	471132	50.9448 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M118385.D 8260WTR.M Sat Jul 27 15:02:10 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072613\6M118385.D Vial: 14
Acq On : 26 Jul 2013 21:13 Operator: adc
Sample : WG439230-12 50.0ug/L ALT SRC 8260 Inst : HPMS6
Misc : 1,1 STD59088 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 15:02 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Initial Calibration

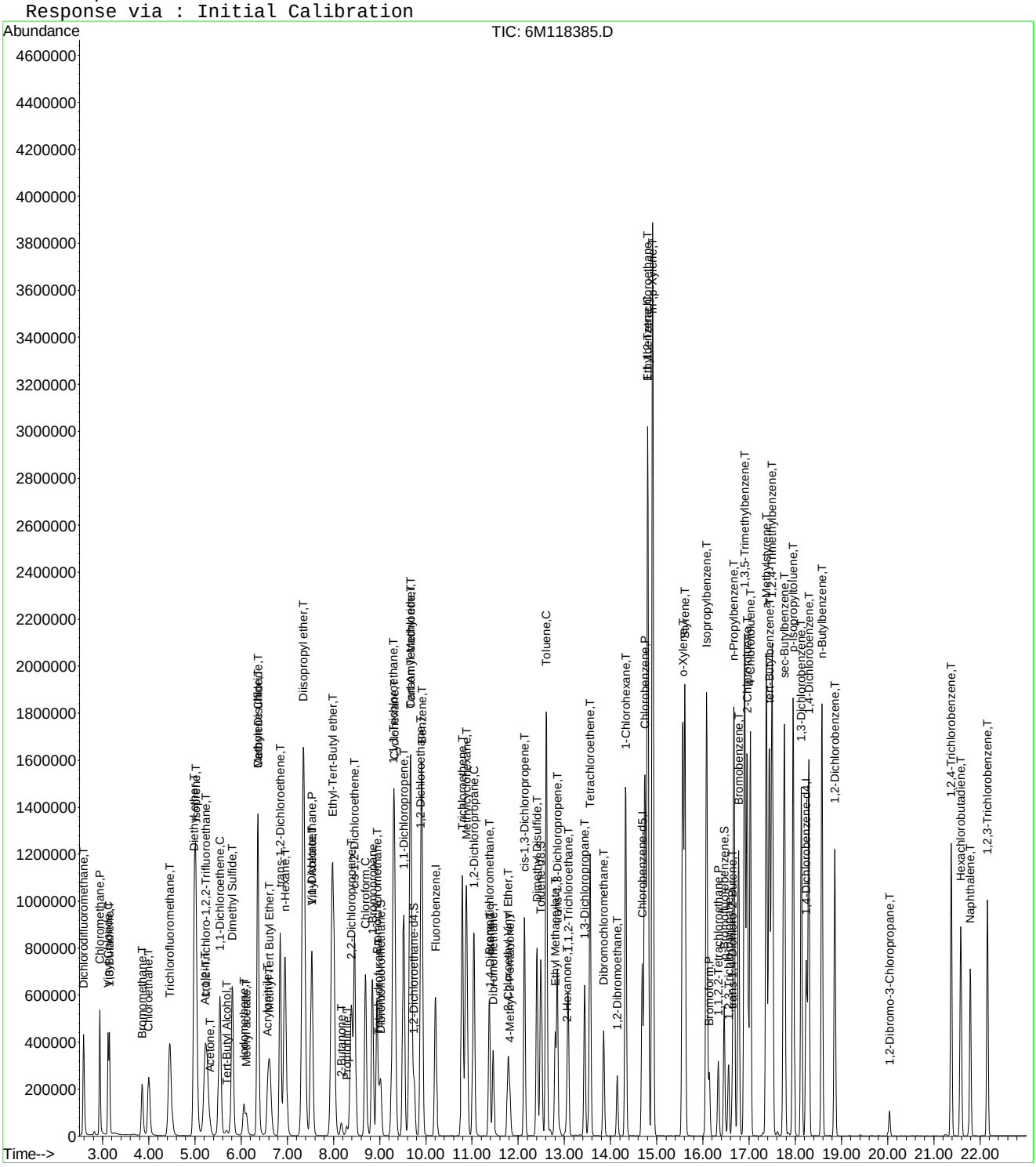

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\072613\6M118385.D Vial: 14
Acq On : 26 Jul 2013 21:13 Operator: adc
Sample : WG439230-12 50.0ug/L ALT SRC 8260 Inst : HPMS6
Misc : 1,1 STD59088 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	98	0.00
2	T	Dichlorodifluoromethane	50.0000	67.9810	-36.0#	121	0.00
3	P	Chloromethane	50.0000	51.4739	-2.9	104	0.00
4	C	Vinyl Chloride	50.0000	45.5772	8.8	85	0.00
5	T	1,3-Butadiene	50.0000	30.3271	39.3#	55	-0.02
6	T	Bromomethane	50.0000	47.8323	4.3	95	0.00
7	T	Chloroethane	50.0000	52.3215	-4.6	99	0.00
8	T	Trichlorofluoromethane	50.0000	53.5587	-7.1	99	0.00
9	T	Diethyl ether	100.0000	105.6456	-5.6	101	0.00
10	T	Isoprene	50.0000	54.2401	-8.5	101	0.00
11	T	Acrolein	50.0000	119.4401	-138.9#	219	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	58.6503	-17.3	108	0.00
13	T	Acetone	50.0000	46.6392	6.7	98	0.00
14	C	1,1-Dichloroethene	50.0000	48.3979	3.2	91	0.00
15	T	Tert-Butyl Alcohol	200.0000	195.5286	2.2	94	0.01
16	T	Dimethyl Sulfide	50.0000	57.0324	-14.1	106	0.00
17	T	Iodomethane	50.0000	36.3596	27.3#	74	0.00
18	T	Methyl acetate	50.0000	44.4790	11.0	87	0.00
19	T	Methylene Chloride	50.0000	48.7821	2.4	97	0.00
20	T	Carbon Disulfide	50.0000	50.3974	-0.8	96	0.00
21	T	Acrylonitrile	50.0000	52.0497	-4.1	96	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.9524	-1.9	94	0.00
23	T	trans-1,2-Dichloroethene	50.0000	51.9853	-4.0	99	0.00
24	T	n-Hexane	50.0000	50.9571	-1.9	98	0.00
25	T	Diisopropyl ether	100.0000	99.8064	0.2	96	0.00
26	T	Vinyl Acetate	50.0000	63.0244	-26.0#	117	0.00
27	P	1,1-Dichloroethane	50.0000	50.0997	-0.2	95	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	100.1278	-0.1	96	0.00
29	T	2-Butanone	50.0000	52.0413	-4.1	104	0.00
30	T	Propionitrile	100.0000	103.0129	-3.0	99	0.00
31	T	2,2-Dichloropropane	50.0000	47.0621	5.9	90	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.4001	-4.8	98	0.00
33	C	Chloroform	50.0000	50.3689	-0.7	97	0.00
34		1-Bromopropane	50.0000	57.1016	-14.2	105	0.00
35	T	Bromochloromethane	50.0000	50.6047	-1.2	96	0.00
36	T	Tetrahydrofuran	100.0000	101.7748	-1.8	101	0.00
37	S	Dibromofluoromethane	25.0000	23.0923	7.6	94	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.9776	-2.0	96	0.00
39	T	Cyclohexane	50.0000	50.6002	-1.2	98	0.00
40	T	1,1-Dichloropropene	50.0000	51.5357	-3.1	96	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.2421	-0.2	97	0.00
42	T	Carbon Tetrachloride	50.0000	51.5588	-3.1	96	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.6822	5.3	92	0.00
44		Heptane	-1.0000	0.0000	0.0	96	0.00
45	T	1,2-Dichloroethane	50.0000	52.2277	-4.5	97	0.00
46	T	Benzene	50.0000	50.8813	-1.8	97	0.00
47	T	Trichloroethene	50.0000	56.7411	-13.5	106	0.00
48	T	Methylcyclohexane	50.0000	53.4369	-6.9	102	0.00
49	C	1,2-Dichloropropane	50.0000	52.6535	-5.3	98	0.00
50	T	1,4-Dioxane	200.0000	187.7098	6.1	87	0.00
51	T	Bromodichloromethane	50.0000	49.6523	0.7	95	0.00
52	T	Dibromomethane	50.0000	53.5076	-7.0	96	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	53.4435	-6.9	102	0.00
54	T	4-Methyl-2-Pentanone	50.0000	52.2223	-4.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\072613\6M118385.D Vial: 14
Acq On : 26 Jul 2013 21:13 Operator: adc
Sample : WG439230-12 50.0ug/L ALT SRC 8260 Inst : HPMS6
Misc : 1,1 STD59088 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Sat Jul 27 15:01:31 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.8290	-9.7	101	0.00
56	T	Dimethyl Disulfide	50.0000	55.9386	-11.9	103	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	99	0.00
58	S	Toluene-d8	25.0000	23.7596	5.0	95	0.00
59	C	Toluene	50.0000	51.2617	-2.5	98	0.00
60	T	Ethyl Methacrylate	50.0000	53.4740	-6.9	98	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	97	0.00
62	T	trans-1,3-Dichloropropene	50.0000	50.4492	-0.9	92	0.00
63	T	1,1,2-Trichloroethane	50.0000	53.1281	-6.3	101	0.00
64	T	2-Hexanone	50.0000	49.2311	1.5	93	0.00
65	T	1,3-Dichloropropane	50.0000	52.3980	-4.8	98	0.00
66	T	Tetrachloroethene	50.0000	51.5239	-3.0	98	0.00
67	T	Dibromochloromethane	50.0000	52.4082	-4.8	97	0.00
68	T	1,2-Dibromoethane	50.0000	52.1238	-4.2	97	0.00
69	T	1-Chlorohexane	50.0000	53.8955	-7.8	103	0.00
70	P	Chlorobenzene	50.0000	48.4158	3.2	91	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	53.7853	-7.6	100	0.00
72	C	Ethylbenzene	50.0000	52.0493	-4.1	98	0.00
73	T	m-,p-Xylene	100.0000	101.4647	-1.5	94	0.00
74	T	o-Xylene	50.0000	47.9780	4.0	90	0.00
75	T	Styrene	50.0000	52.9726	-5.9	97	0.00
76	P	Bromoform	50.0000	54.5701	-9.1	100	0.00
77	T	Isopropylbenzene	50.0000	48.4827	3.0	91	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	98	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	51.6038	-3.2	98	0.00
80	S	p-Bromofluorobenzene	25.0000	23.3700	6.5	94	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.0877	-6.2	98	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	41.9334	16.1	77	0.00
83	T	n-Propylbenzene	50.0000	47.4303	5.1	89	0.00
84	T	Bromobenzene	50.0000	52.9603	-5.9	96	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.5735	-5.1	99	0.00
86	T	2-Chlorotoluene	50.0000	48.7790	2.4	93	0.00
87	T	4-Chlorotoluene	50.0000	45.5955	8.8	88	0.00
88	T	a-Methylstyrene	50.0000	53.6703	-7.3	100	0.00
89	T	tert-Butylbenzene	50.0000	48.9816	2.0	90	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.1330	-4.3	99	0.00
91	T	sec-Butylbenzene	50.0000	47.9507	4.1	90	0.00
92	T	p-Isopropyltoluene	50.0000	48.1902	3.6	90	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.3733	5.3	89	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.1728	-2.3	96	0.00
95	T	n-Butylbenzene	50.0000	51.9575	-3.9	98	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.6428	4.7	89	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.5275	-5.1	96	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.7036	-1.4	95	0.00
99	T	Hexachlorobutadiene	50.0000	52.0926	-4.2	99	0.00
100	T	Naphthalene	50.0000	50.6668	-1.3	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.9448	-1.9	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M118385.D 8260WTR.M Sat Jul 27 15:02:17 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062413\8M389014.D Vial: 3
Acq On : 24 Jun 2013 18:26 Operator: ADC
Sample : WG435275-02 5ug/L A9STD 8260 Inst : HPMS8
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 02 14:50:12 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.84	96	590898	25.00 ug/L	0.00
11) Chlorobenzene-d5	13.68	117	437954	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	16.68	152	242312	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.79	41	1661	4.5814 ug/L #	33
3) 3-Chloro-1-propene	6.19	41	56000	4.6626 ug/L	100
4) 2-Chloro-1,3-butadiene	7.59	53	62855	4.6006 ug/L	99
5) Ethyl Acetate	8.25	43	13358	4.4630 ug/L #	64
6) Methacrylonitrile	8.38	67	4765	4.0026 ug/L	91
7) Isobutyl Alcohol	8.25	43	13358	142.4394 ug/L #	87
9) Methyl methacrylate	10.59	41	15742	4.4059 ug/L	98
10) 2-Nitropropane	10.89	43	1789	6.8014 ug/L	89
13) Cyclohexanone	14.93	55	777	3.6246 ug/L #	38

(#) = qualifier out of range (m) = manual integration
8M389014.D A9FOOWTR.M Tue Jul 02 14:50:12 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062413\8M389014.D Vial: 3
Acq On : 24 Jun 2013 18:26 Operator: ADC
Sample : WG435275-02 5ug/L A9STD 8260 Inst : HPMS8
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 14:50 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Initial Calibration

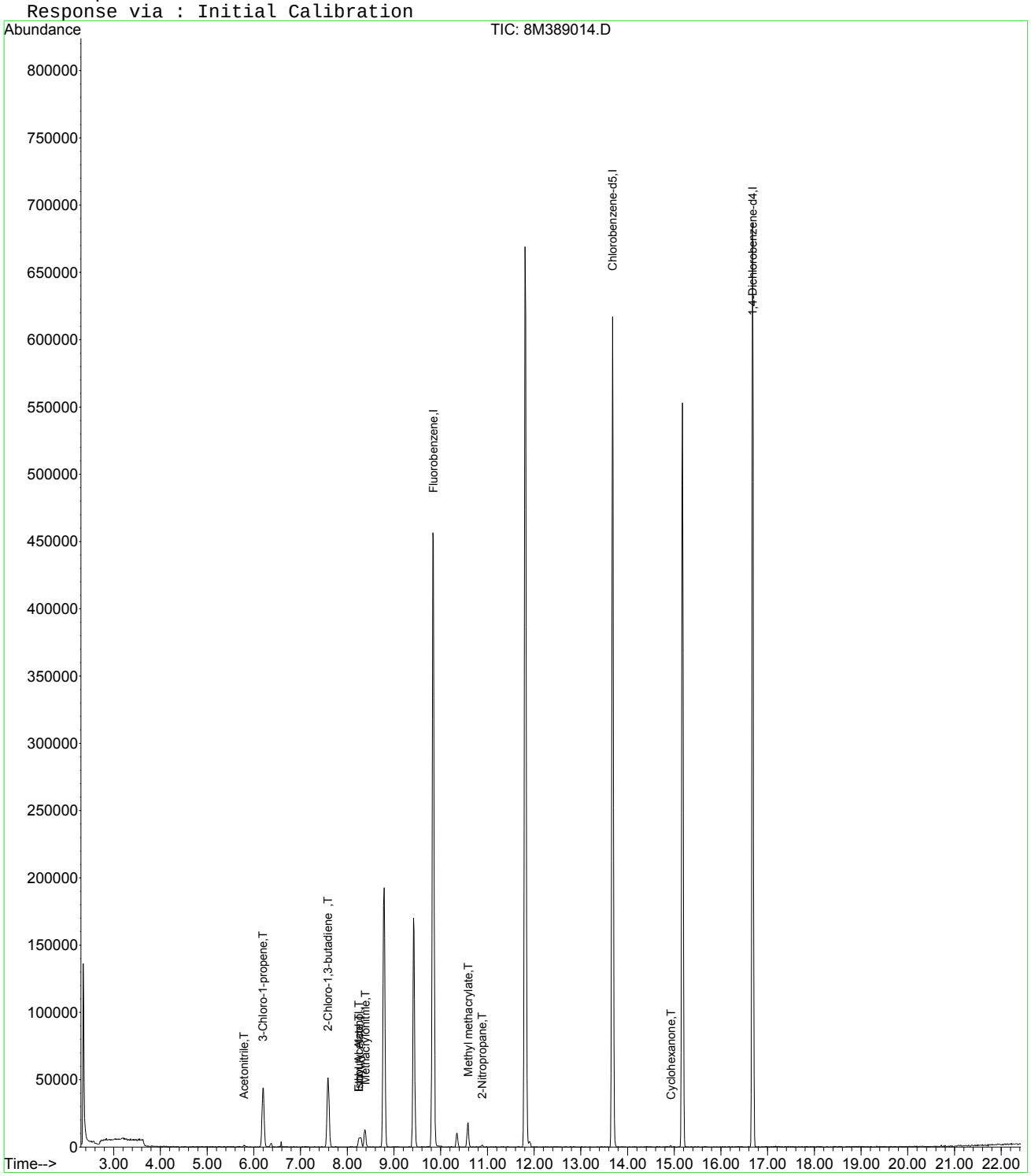

8M389014.D A9FOOWTR.M Tue Jul 02 14:50:12 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062413\8M389015.D Vial: 4
Acq On : 24 Jun 2013 18:56 Operator: ADC
Sample : WG435275-03 20ug/L A9STD 8260 Inst : HPMS8
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 02 14:50:13 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.84	96	519755	25.00 ug/L	0.00
11) Chlorobenzene-d5	13.68	117	391510	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	16.68	152	223966	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.79	41	5453	17.0994 ug/L	52
3) 3-Chloro-1-propene	6.19	41	206348	19.5325 ug/L	99
4) 2-Chloro-1,3-butadiene	7.59	53	229824	19.1244 ug/L	100
5) Ethyl Acetate	8.25	43	52142	19.8054 ug/L	86
6) Methacrylonitrile	8.37	67	20683	19.7517 ug/L	98
7) Isobutyl Alcohol	8.43	43	2751	33.3498 ug/L #	87
9) Methyl methacrylate	10.58	41	61706	19.6342 ug/L	99
10) 2-Nitropropane	10.88	43	13309	17.0026 ug/L	98
13) Cyclohexanone	14.93	55	4133	20.8592 ug/L	94

(#) = qualifier out of range (m) = manual integration
8M389015.D A9FOOWTR.M Tue Jul 02 14:50:13 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062413\8M389015.D Vial: 4
Acq On : 24 Jun 2013 18:56 Operator: ADC
Sample : WG435275-03 20ug/L A9STD 8260 Inst : HPMS8
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 14:50 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Initial Calibration

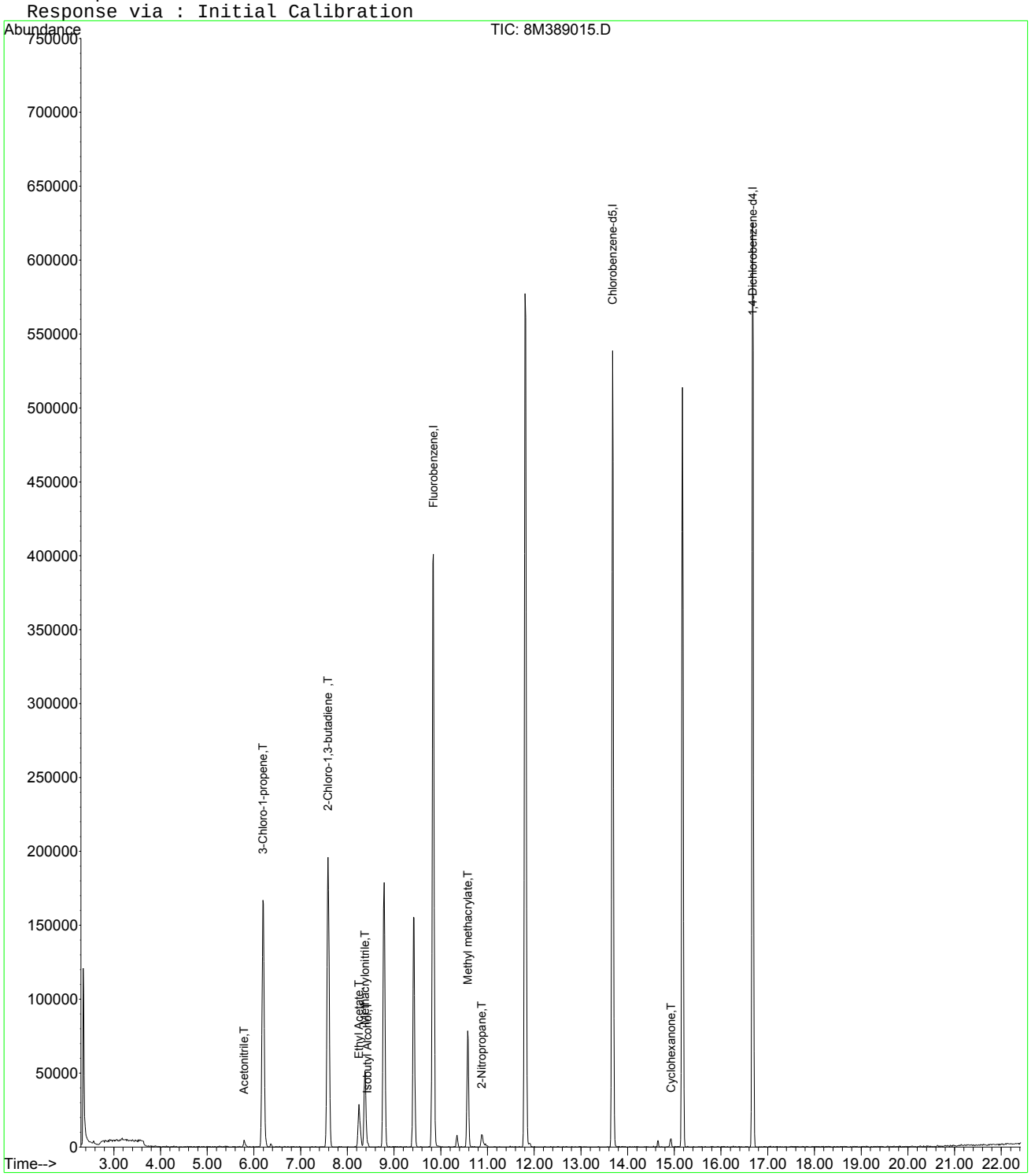

8M389015.D A9FOOWTR.M Tue Jul 02 14:50:14 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062413\8M389016.D Vial: 5
Acq On : 24 Jun 2013 19:26 Operator: ADC
Sample : WG435275-04 50ug/L A9STD 8260 Inst : HPMS8
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 02 14:50:14 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.83	96	494962	25.00 ug/L	0.00
11) Chlorobenzene-d5	13.68	117	373829	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	16.68	152	210562	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.79	41	14460	47.6147 ug/L	81
3) 3-Chloro-1-propene	6.19	41	521373	51.8242 ug/L	100
4) 2-Chloro-1,3-butadiene	7.59	53	584305	51.0575 ug/L	100
5) Ethyl Acetate	8.25	43	123526	49.2698 ug/L	99
6) Methacrylonitrile	8.37	67	49819	49.9588 ug/L	100
7) Isobutyl Alcohol	8.43	43	7320	93.1838 ug/L #	87
8) 1-Butanol	9.36	56	1189	55.6251 ug/L	79
9) Methyl methacrylate	10.58	41	152524	50.9625 ug/L	99
10) 2-Nitropropane	10.88	43	40616	42.5081 ug/L	98
13) Cyclohexanone	14.92	55	8837	47.4395 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M389016.D A9FOOWTR.M Tue Jul 02 14:50:15 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062413\8M389016.D Vial: 5
Acq On : 24 Jun 2013 19:26 Operator: ADC
Sample : WG435275-04 50ug/L A9STD 8260 Inst : HPMS8
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 14:50 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Initial Calibration

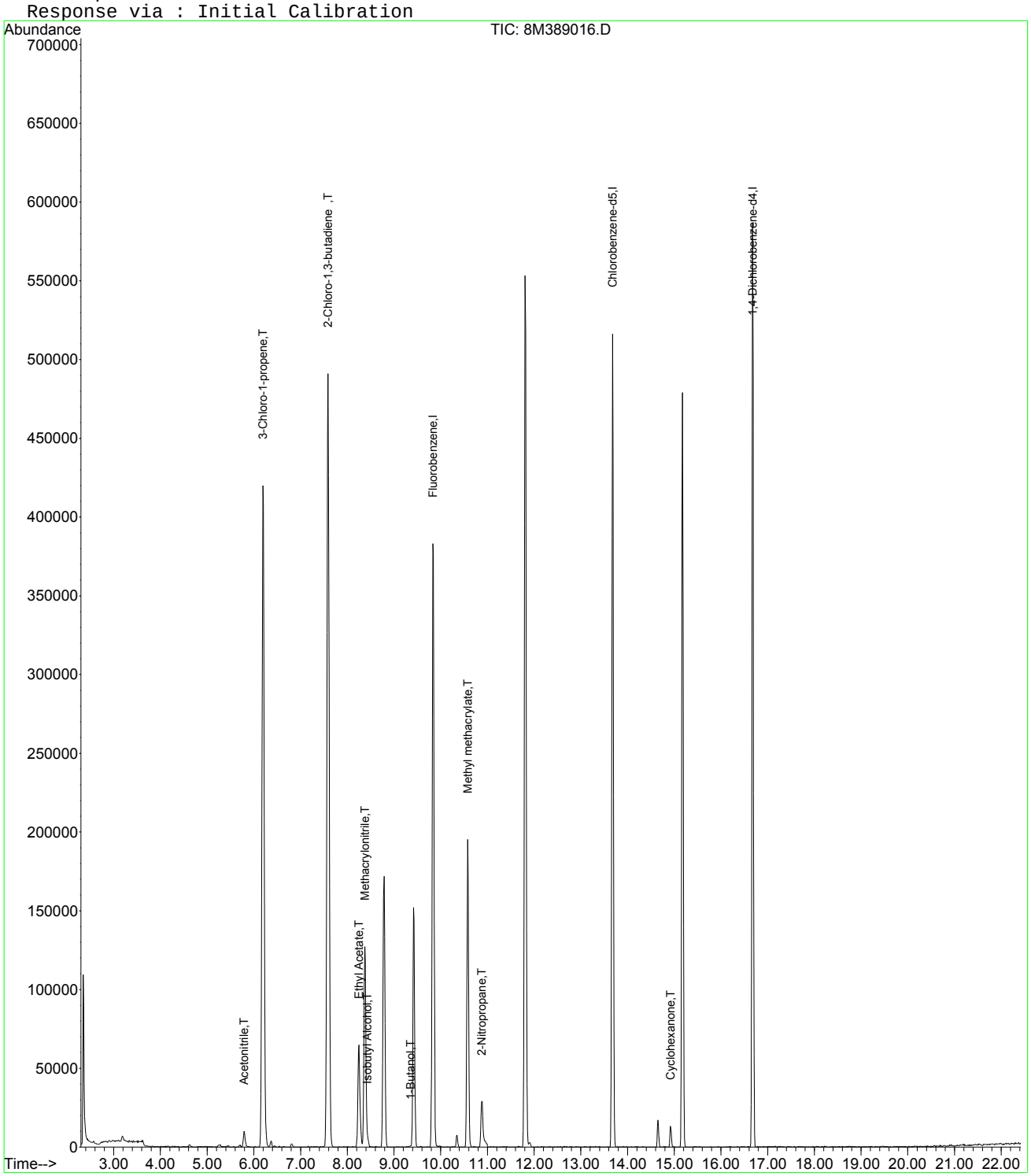

8M389016.D A9FOOWTR.M Tue Jul 02 14:50:15 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062413\8M389017.D Vial: 6
Acq On : 24 Jun 2013 19:56 Operator: ADC
Sample : WG435275-05 100ug/L A9STD 8260 Inst : HPMS8
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 02 14:50:16 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.83	96	476839	25.00 ug/L	0.00
11) Chlorobenzene-d5	13.68	117	361457	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	16.68	152	204031	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.79	41	30306	103.5860 ug/L	100
3) 3-Chloro-1-propene	6.19	41	1017198	104.9517 ug/L	100
4) 2-Chloro-1,3-butadiene	7.59	53	1147833	104.1114 ug/L	100
5) Ethyl Acetate	8.24	43	240965	99.7647 ug/L	100
6) Methacrylonitrile	8.38	67	97115	101.0889 ug/L	100
7) Isobutyl Alcohol	8.43	43	14739	194.7590 ug/L #	100
8) 1-Butanol	9.35	56	2373	88.5757 ug/L	100
9) Methyl methacrylate	10.58	41	292908	101.5884 ug/L	100
10) 2-Nitropropane	10.88	43	91272	91.9139 ug/L	100
13) Cyclohexanone	14.92	55	17241	95.5171 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M389017.D A9FOOWTR.M Tue Jul 02 14:50:16 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062413\8M389017.D Vial: 6
Acq On : 24 Jun 2013 19:56 Operator: ADC
Sample : WG435275-05 100ug/L A9STD 8260 Inst : HPMS8
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 14:50 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Initial Calibration

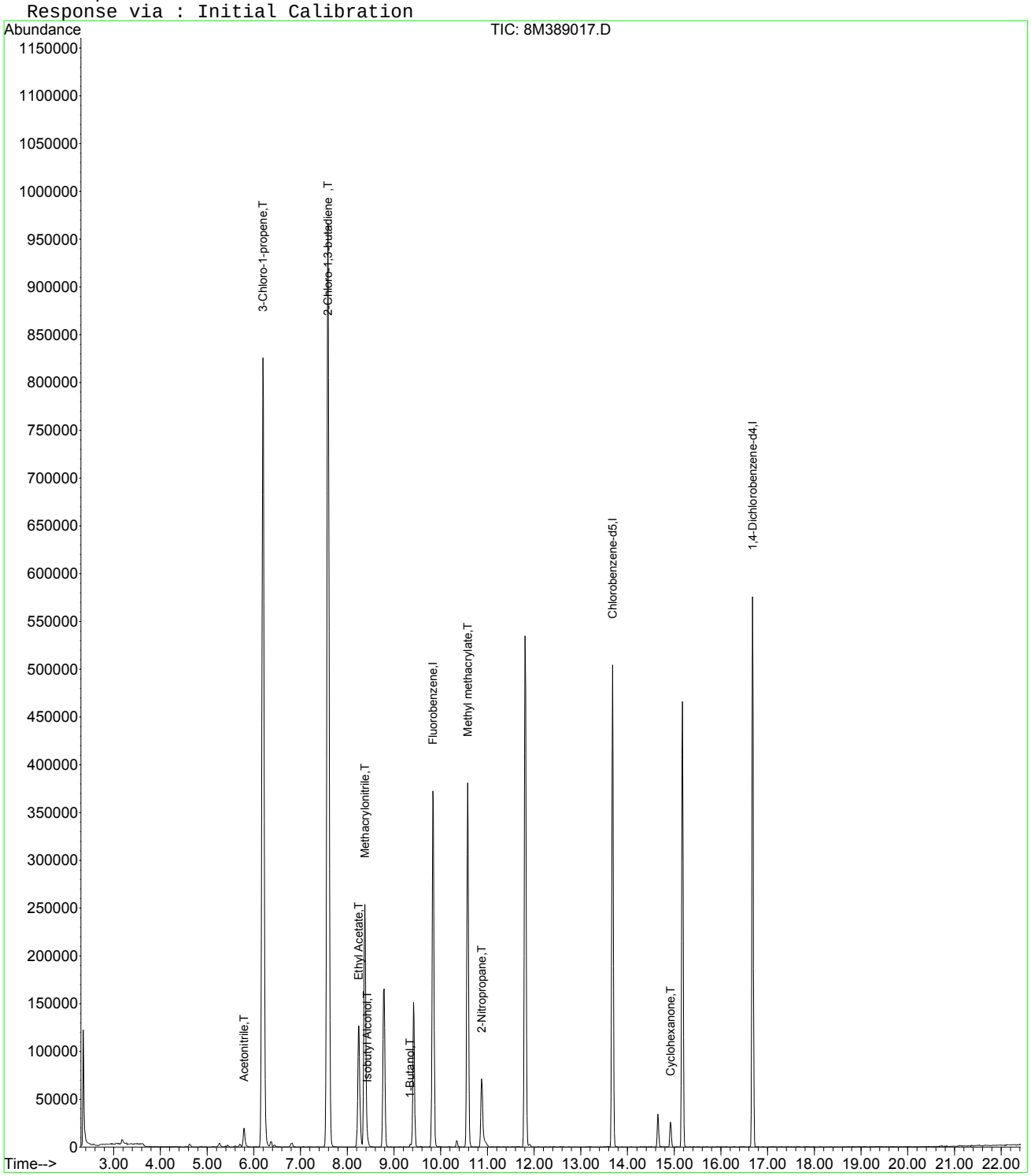

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062413\8M389018.D Vial: 7
Acq On : 24 Jun 2013 20:25 Operator: ADC
Sample : WG435275-06 200ug/L A9STD 8260 Inst : HPMS8
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 02 14:50:17 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.84	96	471157	25.00 ug/L	0.00
11) Chlorobenzene-d5	13.68	117	356302	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	16.68	152	205094	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.79	41	57012	197.2173 ug/L	94
3) 3-Chloro-1-propene	6.19	41	1949200	203.5384 ug/L	99
4) 2-Chloro-1,3-butadiene	7.59	53	2213966	203.2342 ug/L	100
5) Ethyl Acetate	8.25	43	477959	200.2717 ug/L	97
6) Methacrylonitrile	8.37	67	192916	203.2317 ug/L	98
7) Isobutyl Alcohol	8.42	43	27731	370.8525 ug/L #	98
8) 1-Butanol	9.36	56	6009	181.5921 ug/L	90
9) Methyl methacrylate	10.58	41	574357	201.6049 ug/L	100
10) 2-Nitropropane	10.88	43	193793	191.2671 ug/L	98
13) Cyclohexanone	14.92	55	35597	196.1894 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M389018.D A9FOOWTR.M Tue Jul 02 14:50:17 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062413\8M389018.D Vial: 7
Acq On : 24 Jun 2013 20:25 Operator: ADC
Sample : WG435275-06 200ug/L A9STD 8260 Inst : HPMS8
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 14:50 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Initial Calibration

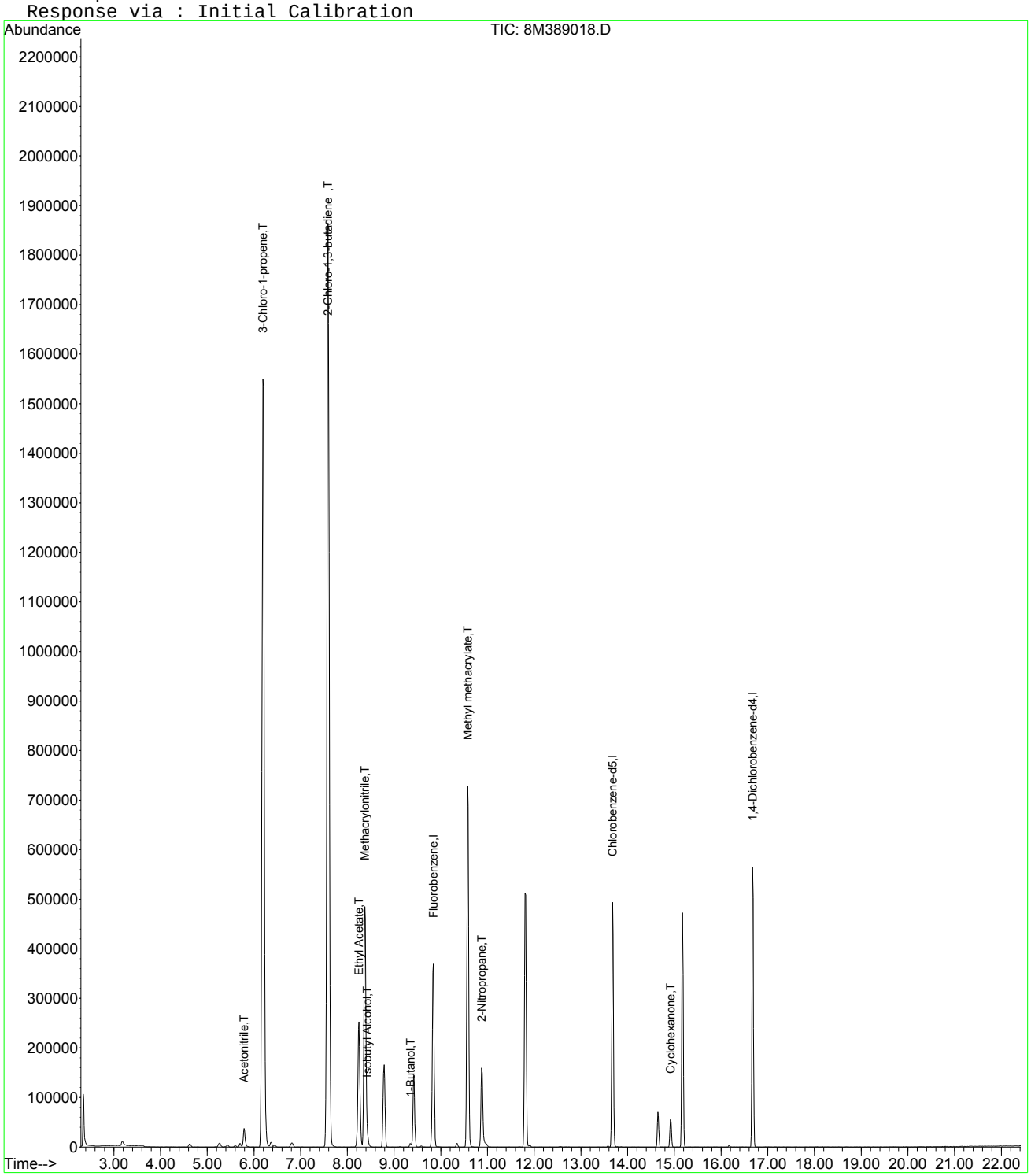

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062413\8M389019.D Vial: 8
Acq On : 24 Jun 2013 20:55 Operator: ADC
Sample : WG435275-07 300ug/L A9STD 8260 Inst : HPMS8
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 02 14:50:18 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.84	96	472735	25.00 ug/L	0.00
11) Chlorobenzene-d5	13.68	117	359444	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	16.68	152	207350	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.79	41	92226	317.9655 ug/L	96
3) 3-Chloro-1-propene	6.19	41	2887337	300.4937 ug/L	99
4) 2-Chloro-1,3-butadiene	7.59	53	3331726	304.8196 ug/L	100
5) Ethyl Acetate	8.25	43	757229	316.2308 ug/L	96
6) Methacrylonitrile	8.38	67	304193	319.3892 ug/L	99
7) Isobutyl Alcohol	8.25	43	757229	10092.7795 ug/L	87
8) 1-Butanol	9.34	56	12866	334.9008 ug/L	99
9) Methyl methacrylate	10.57	41	895839	313.3986 ug/L	99
10) 2-Nitropropane	10.87	43	312634	304.2264 ug/L	98
13) Cyclohexanone	14.92	55	62665	341.6143 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M389019.D A9FOOWTR.M Tue Jul 02 14:50:19 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062413\8M389019.D Vial: 8
Acq On : 24 Jun 2013 20:55 Operator: ADC
Sample : WG435275-07 300ug/L A9STD 8260 Inst : HPMS8
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 14:50 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Initial Calibration

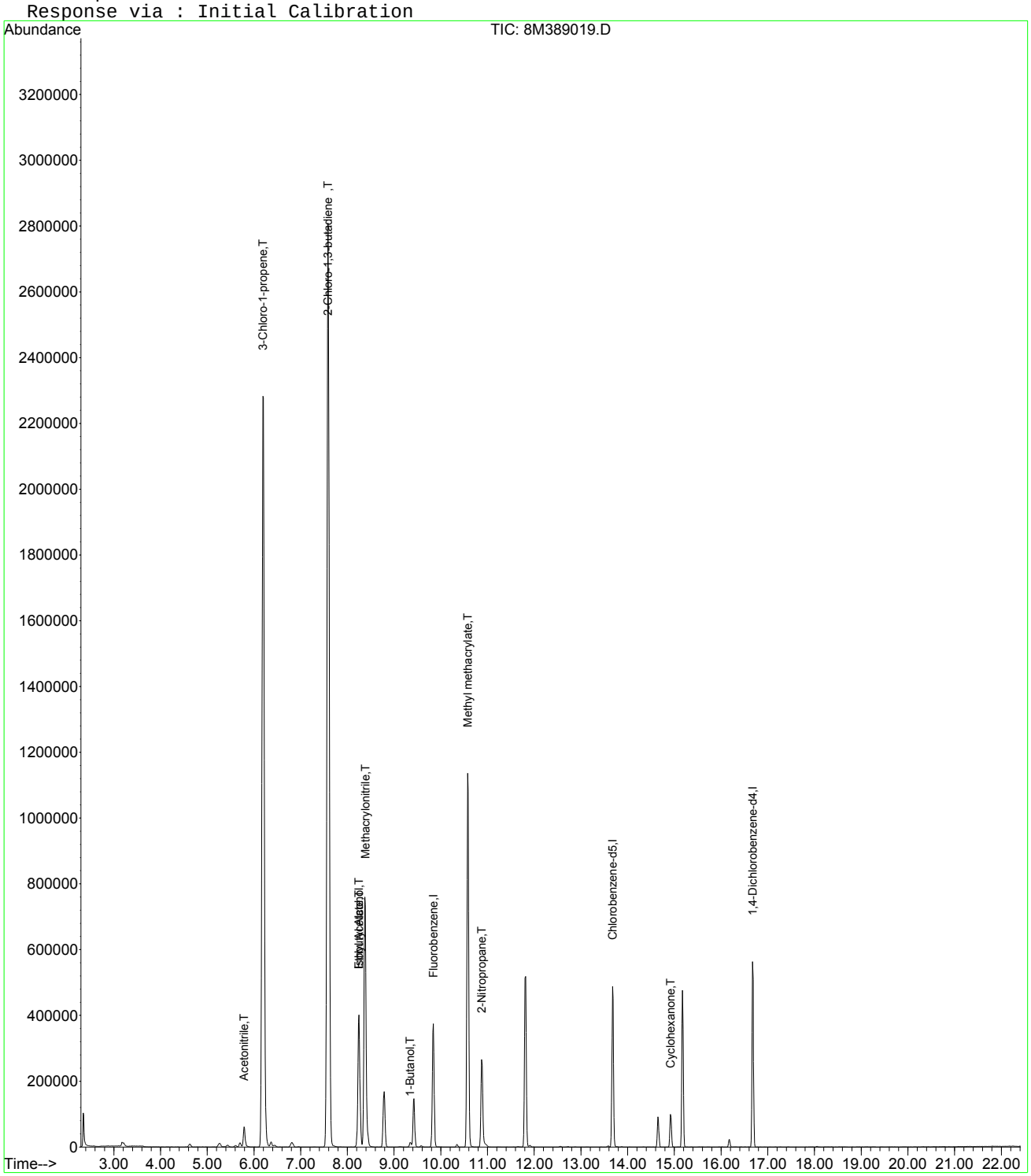

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062413\8M389020.D Vial: 9
Acq On : 24 Jun 2013 21:25 Operator: ADC
Sample : WG435275-08 400ug/L A9STD 8260 Inst : HPMS8
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 02 14:50:19 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.84	96	452167	25.00 ug/L	0.00
11) Chlorobenzene-d5	13.68	117	347958	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	16.68	152	200282	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.79	41	122625	442.0023 ug/L	99
3) 3-Chloro-1-propene	6.19	41	3728640	405.7021 ug/L	99
4) 2-Chloro-1,3-butadiene	7.59	53	4320395	413.2530 ug/L	99
5) Ethyl Acetate	8.25	43	972218	424.4822 ug/L	96
6) Methacrylonitrile	8.37	67	393221	431.6449 ug/L	97
7) Isobutyl Alcohol	8.25	43	972218	13547.7164 ug/L	88
8) 1-Butanol	9.35	56	15211	396.8461 ug/L	96
9) Methyl methacrylate	10.58	41	1146196	419.2227 ug/L	99
10) 2-Nitropropane	10.88	43	409518	414.6244 ug/L	98
13) Cyclohexanone	14.92	55	70357	397.0822 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M389020.D A9FOOWTR.M Tue Jul 02 14:50:20 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062413\8M389020.D Vial: 9
Acq On : 24 Jun 2013 21:25 Operator: ADC
Sample : WG435275-08 400ug/L A9STD 8260 Inst : HPMS8
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 14:50 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Initial Calibration

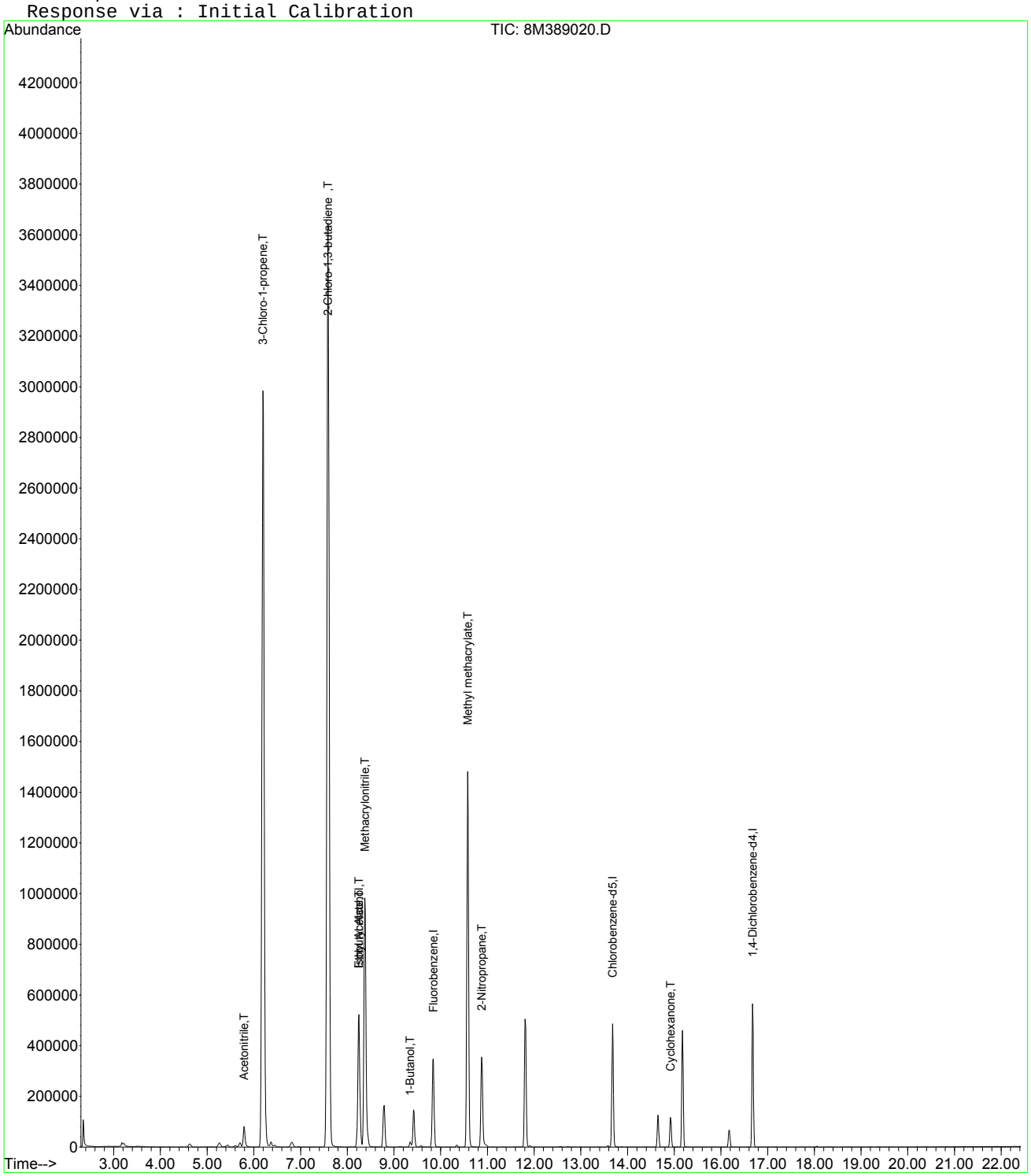

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062413\8M389021.D Vial: 10
Acq On : 24 Jun 2013 21:55 Operator: ADC
Sample : WG435275-09 500ug/L A9STD 8260 Inst : HPMS8
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 02 14:50:21 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.84	96	458052	25.00 ug/L	0.00
11) Chlorobenzene-d5	13.68	117	356494	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	16.68	152	204733	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.79	41	153113	544.8057 ug/L	98
3) 3-Chloro-1-propene	6.19	41	4521301	485.6286 ug/L	98
4) 2-Chloro-1,3-butadiene	7.59	53	5274248	498.0090 ug/L	99
5) Ethyl Acetate	8.25	43	1180301	508.7128 ug/L	96
6) Methacrylonitrile	8.37	67	480770	520.9684 ug/L	97
7) Isobutyl Alcohol	8.25	43	1180301	16236.0095 ug/L	87
8) 1-Butanol	9.35	56	20180	491.1018 ug/L	96
9) Methyl methacrylate	10.58	41	1386553	500.6180 ug/L	98
10) 2-Nitropropane	10.88	43	508152	506.6562 ug/L	97
13) Cyclohexanone	14.92	55	85192	470.3553 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M389021.D A9FOOWTR.M Tue Jul 02 14:50:21 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062413\8M389021.D Vial: 10
Acq On : 24 Jun 2013 21:55 Operator: ADC
Sample : WG435275-09 500ug/L A9STD 8260 Inst : HPMS8
Misc : 1,1 STD58272 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 14:50 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Initial Calibration

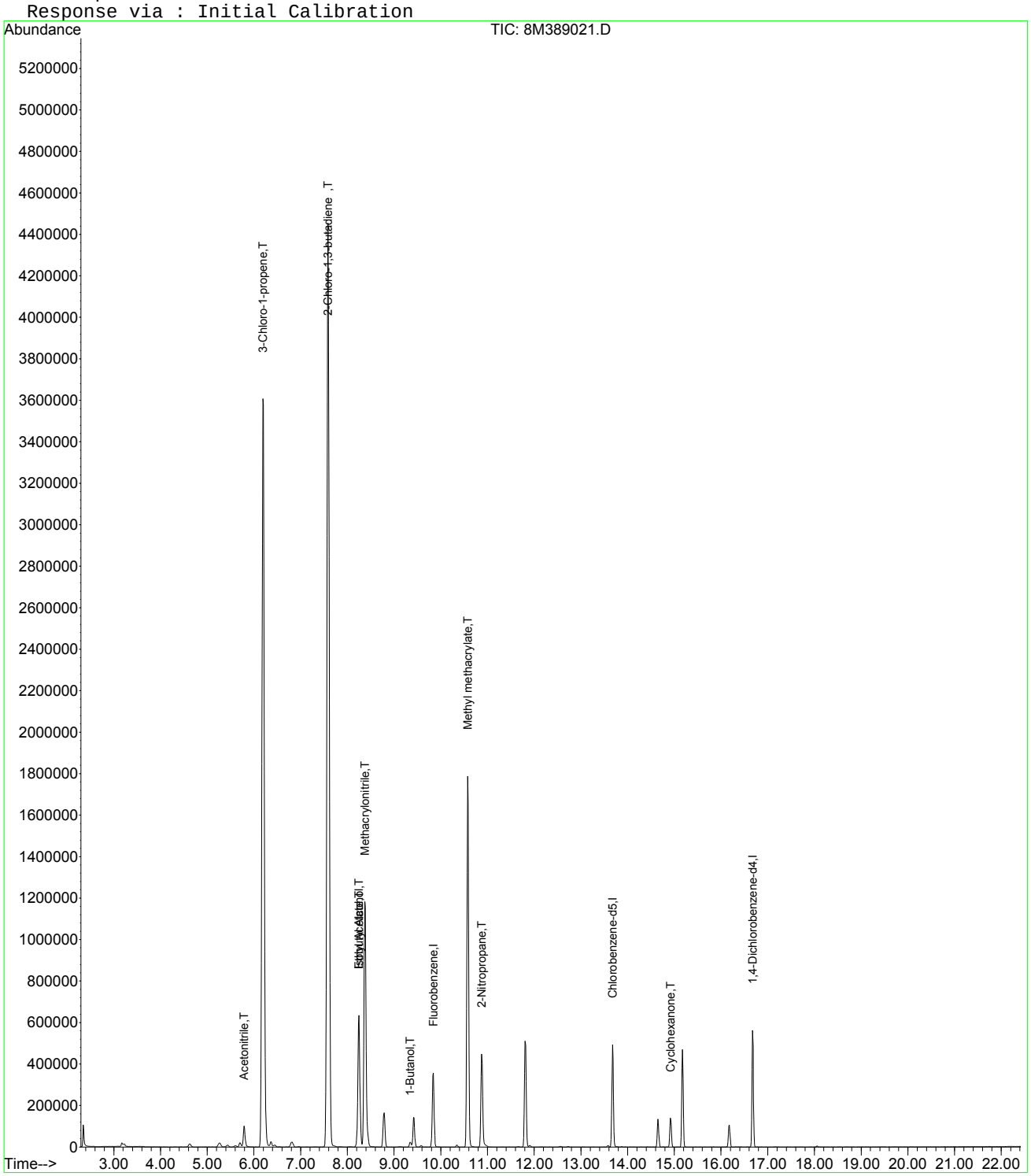

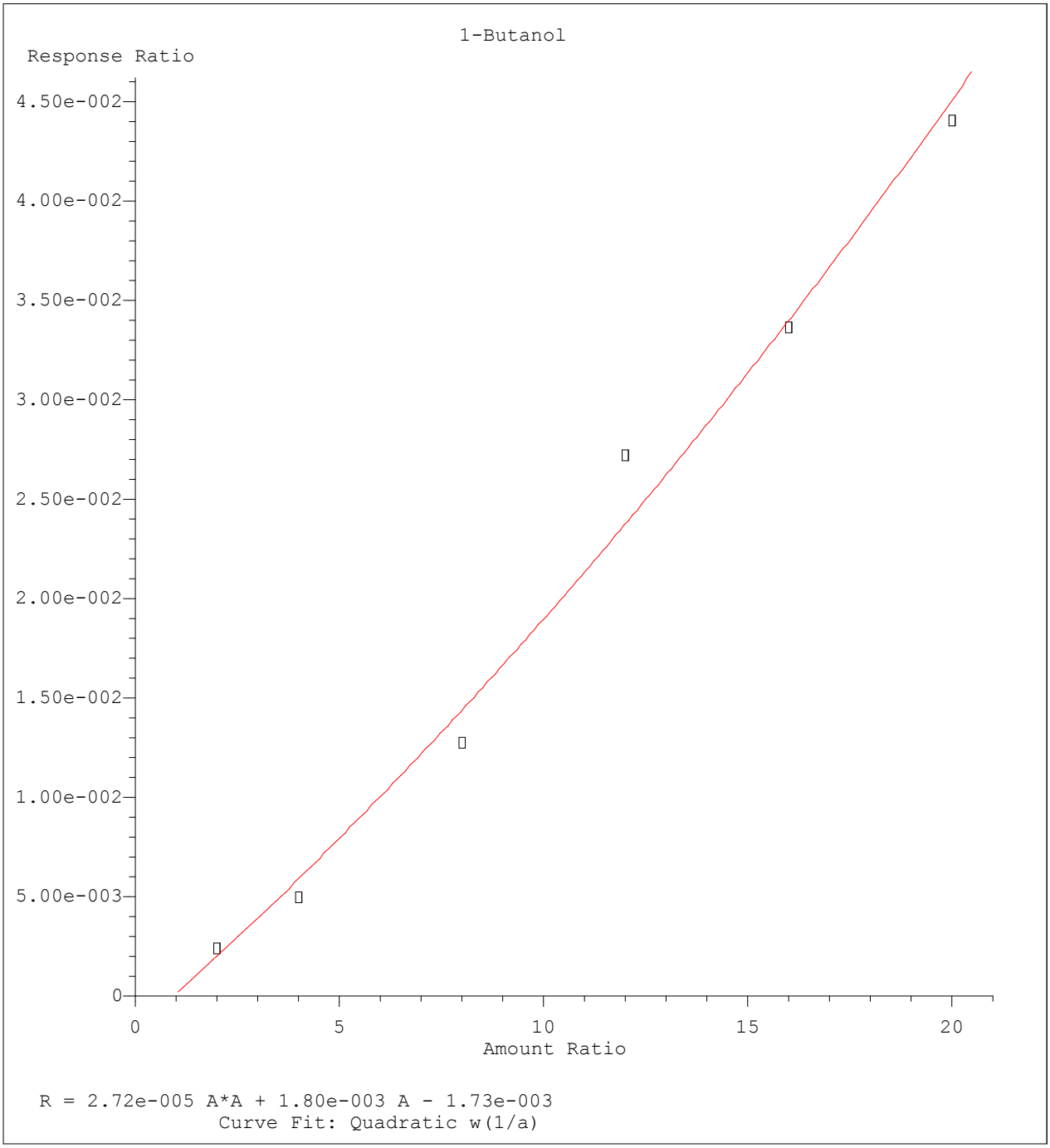

Method Name: C:\MSDCHEM\1\METHODS\A9FOOWTR.M
Calibration Table Last Updated: Tue Jun 25 15:04:35 2013

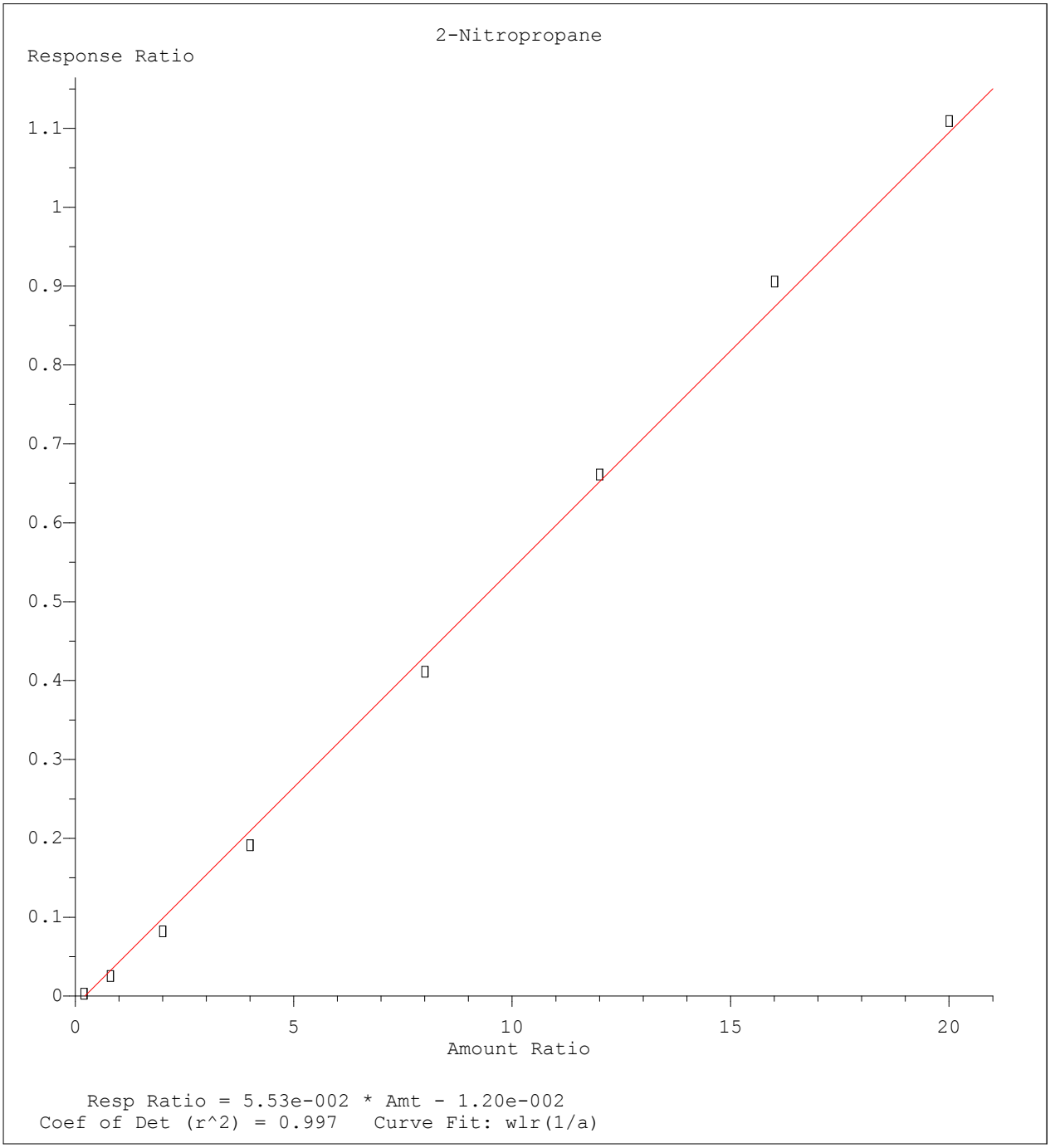

Method Name: C:\MSDCHEM\1\METHODS\A9FOOWTR.M
Calibration Table Last Updated: Tue Jun 25 15:04:35 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062413\8M389023.D Vial: 12
Acq On : 24 Jun 2013 22:55 Operator: ADC
Sample : WG435275-10 100ug/L A9 ALT SRC 8260 Inst : HPMS8
Misc : 1,1 STD58120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 02 14:50:28 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	9.84	96	456641	25.00 ug/L	0.00
11) Chlorobenzene-d5	13.68	117	354215	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	16.68	152	200204	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	5.79	41	27908	99.6089 ug/L	95
3) 3-Chloro-1-propene	6.19	41	1071972	115.4953 ug/L	100
4) 2-Chloro-1,3-butadiene	7.59	53	970221	91.8940 ug/L	99
5) Ethyl Acetate	8.25	43	282560	122.1604 ug/L	97
6) Methacrylonitrile	8.37	67	101841	110.6972 ug/L	99
7) Isobutyl Alcohol	8.43	43	12953	178.7297 ug/L #	87
8) 1-Butanol	9.35	56	2088	83.4836 ug/L	96
9) Methyl methacrylate	10.58	41	307740	111.4535 ug/L	100
10) 2-Nitropropane	10.88	43	95756	100.1756 ug/L	97
13) Cyclohexanone	14.92	55	9912	55.9633 ug/L	94

(#) = qualifier out of range (m) = manual integration
8M389023.D A9FOOWTR.M Tue Jul 02 14:50:28 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062413\8M389023.D Vial: 12
Acq On : 24 Jun 2013 22:55 Operator: ADC
Sample : WG435275-10 100ug/L A9 ALT SRC 8260 Inst : HPMS8
Misc : 1,1 STD58120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 14:50 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Initial Calibration

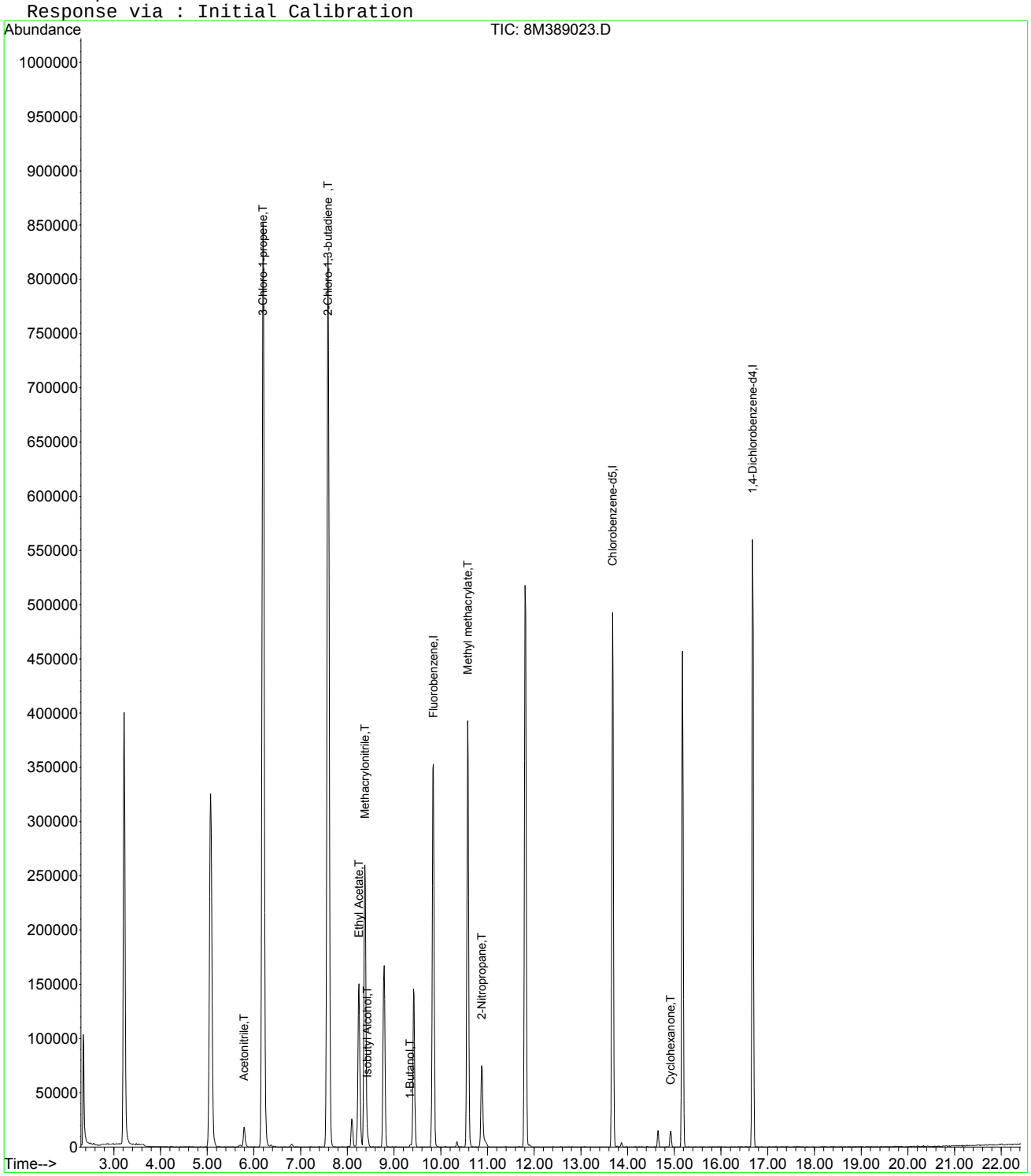

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062413\8M389023.D Vial: 12
Acq On : 24 Jun 2013 22:55 Operator: ADC
Sample : WG435275-10 100ug/L A9 ALT SRC 8260 Inst : HPMS8
Misc : 1,1 STD58120 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 06/24/13- HPMS8
Last Update : Tue Jun 25 15:04:35 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	96	0.00
2	T	Acetonitrile	100.0000	99.6089	0.4	92	0.00
3	T	3-Chloro-1-propene	100.0000	115.4953	-15.5	105	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	91.8940	8.1	85	0.00
5	T	Ethyl Acetate	100.0000	122.1604	-22.2	117	0.00
6	T	Methacrylonitrile	100.0000	110.6972	-10.7	105	0.00
7	T	Isobutyl Alcohol	200.0000	178.7297	10.6	88	0.00
8	T	1-Butanol	100.0000	83.4836	16.5	88	0.00
9	T	Methyl methacrylate	100.0000	111.4535	-11.5	105	0.00
10	T	2-Nitropropane	100.0000	100.1756	-0.2	105	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	98	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	98	0.00
13	T	Cyclohexanone	100.0000	55.9633	44.0	57	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M389023.D A9FOOWTR.M Tue Jul 02 14:50:34 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390511.D Vial: 2
Acq On : 11 Sep 2013 9:45 Operator: TMB
Sample : WG444268-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:32 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	779800	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.92	117	590094	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	17.95	152	327626	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	13.03	98	1015	0.0395 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.16%#	
80) p-Bromofluorobenzene	16.43	95	293	0.0293 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	1305	0.1721 ug/L #	41
3) Chloromethane	3.87	50	2774	0.3566 ug/L #	72
4) Vinyl Chloride	4.12	62	1485	0.2268 ug/L #	44
5) 1,3-Butadiene	4.17	54	1524	0.2506 ug/L #	1
6) Bromomethane	5.05	94	1040	0.1960 ug/L #	56
7) Chloroethane	5.20	64	942	0.1817 ug/L #	44
8) Trichlorofluoromethane	5.70	101	2556	0.1903 ug/L #	75
10) Isoprene	6.28	67	1472	0.1577 ug/L	72
13) Acetone	6.60	43	1177	0.7327 ug/L #	46
14) 1,1-Dichloroethene	6.80	61	2304	0.2057 ug/L	94
16) Dimethyl Sulfide	7.06	62	1167	0.1800 ug/L	83
17) Iodomethane	7.33	142	1186	0.1561 ug/L #	38
18) Methyl acetate	7.32	43	928	0.2193 ug/L #	68
19) Methylene Chloride	7.58	84	2318	0.3096 ug/L	73
20) Carbon Disulfide	7.64	76	8172	0.3750 ug/L	95
22) Methyl Tert Butyl Ether	7.80	73	3953	0.2372 ug/L #	46
23) trans-1,2-Dichloroethene	8.04	61	2997	0.2773 ug/L	97
24) n-Hexane	8.12	57	1692	0.1871 ug/L	82
26) Vinyl Acetate	8.63	43	1961	0.2128 ug/L #	79
27) 1,1-Dichloroethane	8.66	63	3820	0.2702 ug/L #	83
31) 2,2-Dichloropropane	9.44	77	3147	0.2398 ug/L	88
32) cis-1,2-Dichloroethene	9.51	96	2236	0.2846 ug/L	83
33) Chloroform	9.72	83	4473	0.3045 ug/L	93
35) Bromochloromethane	9.96	130	1504	0.2785 ug/L	73
36) Tetrahydrofuran	9.98	42	5001	3.7688 ug/L	92
38) 1,1,1-Trichloroethane	10.25	97	2978	0.2184 ug/L	88
39) Cyclohexane	10.29	56	1927	0.1656 ug/L #	78
40) 1,1-Dichloropropene	10.45	75	1947	0.1794 ug/L #	52
42) Carbon Tetrachloride	10.59	117	2486	0.1904 ug/L #	82
45) 1,2-Dichloroethane	10.77	62	2735	0.2551 ug/L #	59
46) Benzene	10.82	78	10415	0.3454 ug/L	83
47) Trichloroethene	11.56	130	2166	0.2503 ug/L	93
48) Methylcyclohexane	11.65	83	1753	0.1505 ug/L #	81
49) 1,2-Dichloropropane	11.77	63	1980	0.2603 ug/L	94
50) Bromodichloromethane	12.07	83	2952	0.2724 ug/L #	89
52) Dibromomethane	12.16	93	863	0.2057 ug/L	91
53) 2-Chloroethyl Vinyl Ether	12.36	63	408	0.1214 ug/L #	48
55) cis-1,3-Dichloropropene	12.71	75	2986	0.2565 ug/L #	77
56) Dimethyl Disulfide	12.98	94	1841	0.1475 ug/L	87
59) Toluene	13.12	91	8194	0.2791 ug/L	99
62) trans-1,3-Dichloropropene	13.30	75	2549	0.2426 ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390511.D Vial: 2
Acq On : 11 Sep 2013 9:45 Operator: TMB
Sample : WG444268-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:32 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
63)	1,1,2-Trichloroethane	13.51	97	1200	0.2194 ug/L	98
65)	1,3-Dichloropropane	13.82	76	2493	0.2700 ug/L	95
66)	Tetrachloroethene	13.96	164	1682	0.2364 ug/L	91
67)	Dibromochloromethane	14.21	129	1989	0.2468 ug/L	98
68)	1,2-Dibromoethane	14.48	107	1368	0.2462 ug/L	99
69)	1-Chlorohexane	14.55	91	1727	0.1951 ug/L	67
70)	Chlorobenzene	14.97	112	6748	0.2963 ug/L	99
71)	1,1,1,2-Tetrachloroethane	15.00	131	2222	0.2543 ug/L	80
72)	Ethylbenzene	15.00	106	3426	0.2858 ug/L	97
73)	m-,p-Xylene	15.09	106	6855	0.5005 ug/L	84
74)	o-Xylene	15.65	106	2833	0.2115 ug/L	79
75)	Styrene	15.69	104	4783	0.2241 ug/L	85
76)	Bromoform	16.19	173	765	0.1544 ug/L #	27
77)	Isopropylbenzene	16.08	105	7172	0.2205 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.30	83	1416	0.2455 ug/L #	88
83)	n-Propylbenzene	16.59	91	8365	0.2320 ug/L	91
84)	Bromobenzene	16.73	156	2686	0.2857 ug/L	84
85)	1,3,5-Trimethylbenzene	16.76	105	6076	0.2195 ug/L	99
86)	2-Chlorotoluene	16.86	91	6619	0.2610 ug/L	94
87)	4-Chlorotoluene	16.91	91	6078	0.2675 ug/L	98
88)	a-Methylstyrene	17.17	118	3179	0.1917 ug/L	92
89)	tert-Butylbenzene	17.24	134	808	0.1255 ug/L #	1
90)	1,2,4-Trimethylbenzene	17.29	105	6006	0.1999 ug/L	85
91)	sec-Butylbenzene	17.51	105	6641	0.1934 ug/L	86
92)	p-Isopropyltoluene	17.67	119	5616	0.1823 ug/L	91
93)	1,3-Dichlorobenzene	17.87	146	5088	0.2671 ug/L	95
94)	1,4-Dichlorobenzene	17.99	146	6104	0.3038 ug/L #	1
95)	n-Butylbenzene	18.20	91	6231	0.2391 ug/L #	88
96)	1,2-Dichlorobenzene	18.50	146	5007	0.2816 ug/L	91
98)	1,2,4-Trichlorobenzene	20.64	180	3429	0.2613 ug/L	95
99)	Hexachlorobutadiene	20.79	225	1590	0.2514 ug/L #	56
100)	Naphthalene	21.01	128	4865	0.2181 ug/L #	82
101)	1,2,3-Trichlorobenzene	21.32	180	2926	0.2495 ug/L #	87

(#) = qualifier out of range (m) = manual integration
8M390511.D 8260WTR.M Wed Sep 11 15:50:33 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390511.D Vial: 2
Acq On : 11 Sep 2013 9:45 Operator: TMB
Sample : WG444268-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration

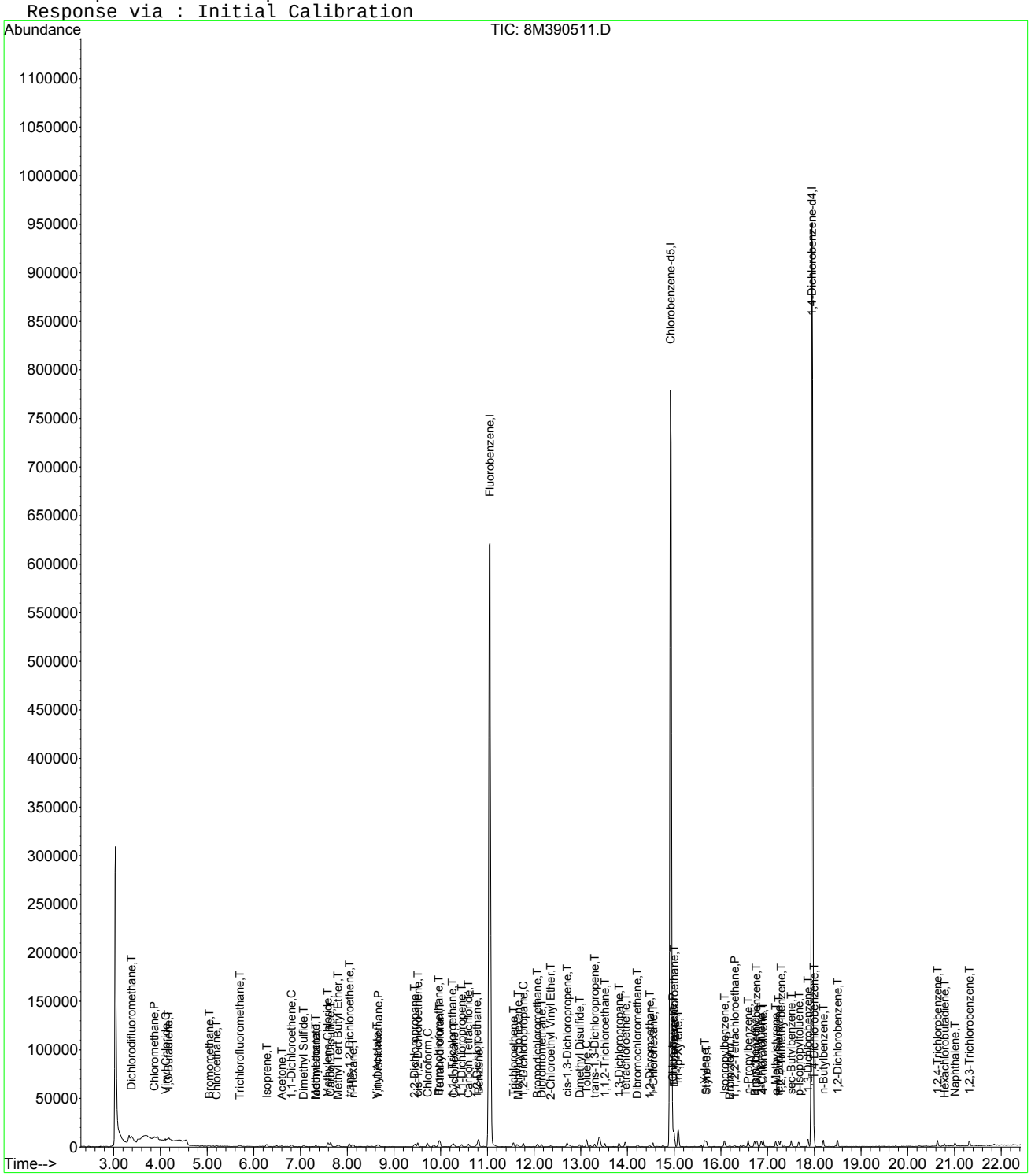

8M390511.D 8260WTR.M Wed Sep 11 15:50:33 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390512.D Vial: 3
Acq On : 11 Sep 2013 10:15 Operator: TMB
Sample : WG444268-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:34 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	752562	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.93	117	569568	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.95	152	313727	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.38	85	2870	0.3922 ug/L #	70
3) Chloromethane	3.87	50	4611	0.6142 ug/L #	67
4) Vinyl Chloride	4.11	62	2441	0.3863 ug/L	91
5) 1,3-Butadiene	4.18	54	2445	0.4166 ug/L #	1
6) Bromomethane	5.03	94	2120	0.4139 ug/L	78
7) Chloroethane	5.21	64	1847	0.3692 ug/L #	44
8) Trichlorofluoromethane	5.70	101	4673	0.3605 ug/L #	89
10) Isoprene	6.28	67	2639	0.2929 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.47	101	2022	0.2892 ug/L	73
13) Acetone	6.61	43	883	0.5696 ug/L #	46
14) 1,1-Dichloroethene	6.80	61	3632	0.3360 ug/L	92
16) Dimethyl Sulfide	7.06	62	1093	0.1746 ug/L #	42
17) Iodomethane	7.32	142	2272	0.3099 ug/L	86
18) Methyl acetate	7.33	43	1352	0.3311 ug/L #	68
19) Methylene Chloride	7.59	84	2904	0.4019 ug/L	91
20) Carbon Disulfide	7.64	76	8721	0.4146 ug/L #	89
22) Methyl Tert Butyl Ether	7.82	73	4826	0.3001 ug/L #	46
23) trans-1,2-Dichloroethene	8.04	61	3767	0.3612 ug/L	87
24) n-Hexane	8.13	57	2790	0.3197 ug/L	71
26) Vinyl Acetate	8.63	43	2653	0.2983 ug/L #	79
27) 1,1-Dichloroethane	8.66	63	5676	0.4161 ug/L #	79
31) 2,2-Dichloropropane	9.44	77	4921	0.3886 ug/L	88
32) cis-1,2-Dichloroethene	9.51	96	2313	0.3051 ug/L	79
33) Chloroform	9.72	83	5943	0.4192 ug/L	98
35) Bromochloromethane	9.96	130	1891	0.3628 ug/L	70
38) 1,1,1-Trichloroethane	10.26	97	4792	0.3642 ug/L	93
39) Cyclohexane	10.29	56	3288	0.2928 ug/L	87
40) 1,1-Dichloropropene	10.45	75	3239	0.3093 ug/L	79
42) Carbon Tetrachloride	10.60	117	4721	0.3746 ug/L	98
45) 1,2-Dichloroethane	10.76	62	3931	0.3800 ug/L #	69
46) Benzene	10.80	78	11655	0.4005 ug/L	91
47) Trichloroethene	11.55	130	3211	0.3845 ug/L	96
48) Methylcyclohexane	11.64	83	3216	0.2862 ug/L	80
49) 1,2-Dichloropropane	11.78	63	2925	0.3984 ug/L	99
50) Bromodichloromethane	12.08	83	3863	0.3694 ug/L #	88
52) Dibromomethane	12.15	93	1276	0.3151 ug/L	88
55) cis-1,3-Dichloropropene	12.71	75	3314	0.2950 ug/L	98
56) Dimethyl Disulfide	12.98	94	2576	0.2138 ug/L	94
59) Toluene	13.13	91	10275	0.3626 ug/L	98
60) Ethyl Methacrylate	13.20	69	1463	0.2565 ug/L	71
62) trans-1,3-Dichloropropene	13.30	75	3336	0.3290 ug/L	89

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390512.D Vial: 3
Acq On : 11 Sep 2013 10:15 Operator: TMB
Sample : WG444268-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:34 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.51	97	1989	0.3768 ug/L		70
65)	1,3-Dichloropropane	13.82	76	3147	0.3531 ug/L		83
66)	Tetrachloroethene	13.96	164	2373	0.3456 ug/L		78
67)	Dibromochloromethane	14.21	129	2924	0.3760 ug/L		90
68)	1,2-Dibromoethane	14.47	107	1947	0.3630 ug/L		96
69)	1-Chlorohexane	14.55	91	2416	0.2828 ug/L		89
70)	Chlorobenzene	14.97	112	9425	0.4288 ug/L		94
71)	1,1,1,2-Tetrachloroethane	15.00	131	3101	0.3677 ug/L		95
72)	Ethylbenzene	14.99	106	4462	0.3857 ug/L		98
73)	m-,p-Xylene	15.08	106	9549	0.7223 ug/L		86
74)	o-Xylene	15.65	106	3630	0.2807 ug/L		72
75)	Styrene	15.68	104	6643	0.3225 ug/L		93
76)	Bromoform	16.19	173	1298	0.2715 ug/L		81
77)	Isopropylbenzene	16.08	105	9969	0.3175 ug/L		98
79)	1,1,2,2-Tetrachloroethane	16.28	83	2232	0.4042 ug/L	#	82
81)	1,2,3-Trichloropropane	16.49	110	432	0.2374 ug/L	#	13
83)	n-Propylbenzene	16.58	91	10765	0.3118 ug/L		93
84)	Bromobenzene	16.72	156	2935	0.3261 ug/L		68
85)	1,3,5-Trimethylbenzene	16.77	105	7812	0.2947 ug/L		97
86)	2-Chlorotoluene	16.86	91	8600	0.3541 ug/L		99
87)	4-Chlorotoluene	16.90	91	7505	0.3450 ug/L		93
88)	a-Methylstyrene	17.17	118	4141	0.2607 ug/L		98
89)	tert-Butylbenzene	17.24	134	1687	0.2736 ug/L		75
90)	1,2,4-Trimethylbenzene	17.29	105	8023	0.2789 ug/L		90
91)	sec-Butylbenzene	17.51	105	9606	0.2922 ug/L		91
92)	p-Isopropyltoluene	17.66	119	7986	0.2707 ug/L		96
93)	1,3-Dichlorobenzene	17.87	146	6571	0.3603 ug/L		91
94)	1,4-Dichlorobenzene	17.99	146	8056	0.4187 ug/L		83
95)	n-Butylbenzene	18.19	91	8748	0.3506 ug/L		89
96)	1,2-Dichlorobenzene	18.50	146	6575	0.3862 ug/L		96
98)	1,2,4-Trichlorobenzene	20.64	180	4429	0.3524 ug/L		98
99)	Hexachlorobutadiene	20.79	225	2164	0.3573 ug/L		92
100)	Naphthalene	21.01	128	7265	0.3401 ug/L	#	83
101)	1,2,3-Trichlorobenzene	21.32	180	4027	0.3586 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390512.D Vial: 3
Acq On : 11 Sep 2013 10:15 Operator: TMB
Sample : WG444268-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration

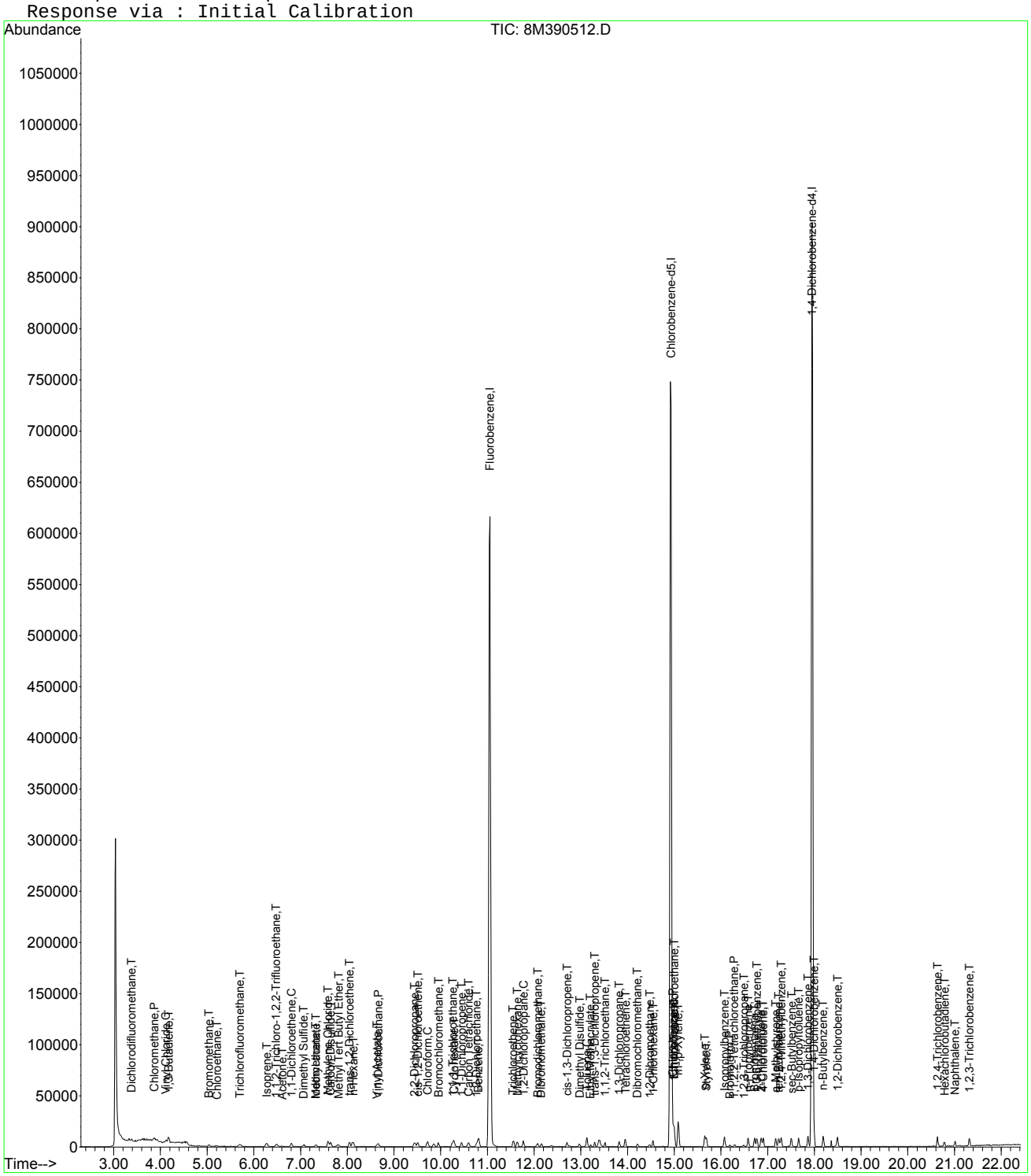

8M390512.D 8260WTR.M Wed Sep 11 15:50:35 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390513.D Vial: 4
Acq On : 11 Sep 2013 10:45 Operator: TMB
Sample : WG444268-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:36 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	731269	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.92	117	554334	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	17.95	152	312434	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	10.01	111	4036	0.5316 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.12%#	
43) 1,2-Dichloroethane-d4	10.65	65	4254	0.5477 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.20%#	
58) Toluene-d8	13.03	98	12242	0.5076 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.04%#	
80) p-Bromofluorobenzene	16.42	95	4635	0.4868 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.96%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	6594	0.9273 ug/L	98
3) Chloromethane	3.87	50	9273	1.2711 ug/L	87
4) Vinyl Chloride	4.12	62	6277	1.0223 ug/L	99
5) 1,3-Butadiene	4.17	54	6282	1.1014 ug/L #	35
6) Bromomethane	5.04	94	5290	1.0629 ug/L	94
7) Chloroethane	5.21	64	4769	0.9811 ug/L	82
8) Trichlorofluoromethane	5.70	101	12690	1.0075 ug/L	98
9) Diethyl ether	6.24	59	22683	4.8983 ug/L	92
10) Isoprene	6.28	67	8321	0.9504 ug/L	83
11) Acrolein	6.47	56	835	2.8575 ug/L #	13
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	6931	1.0201 ug/L	97
13) Acetone	6.58	43	1500	0.9957 ug/L #	46
14) 1,1-Dichloroethene	6.80	61	10323	0.9829 ug/L	95
15) Tert-Butyl Alcohol	6.93	59	1924	7.4681 ug/L #	56
16) Dimethyl Sulfide	7.07	62	5178	0.8515 ug/L	97
17) Iodomethane	7.33	142	5941	0.8340 ug/L	83
18) Methyl acetate	7.33	43	4036	1.0173 ug/L #	68
19) Methylene Chloride	7.58	84	7530	1.0726 ug/L	74
20) Carbon Disulfide	7.64	76	20905	1.0229 ug/L	96
21) Acrylonitrile	7.78	53	3569	2.2082 ug/L	98
22) Methyl Tert Butyl Ether	7.81	73	13968	0.8939 ug/L	80
23) trans-1,2-Dichloroethene	8.05	61	10027	0.9894 ug/L	96
24) n-Hexane	8.12	57	8175	0.9642 ug/L	96
25) Diisopropyl ether	8.46	45	116174	4.8749 ug/L	84
26) Vinyl Acetate	8.62	43	8066	0.9333 ug/L #	79
27) 1,1-Dichloroethane	8.67	63	13519	1.0198 ug/L	96
28) Ethyl-Tert-Butyl ether	9.03	59	93284	4.6960 ug/L	93
29) 2-Butanone	9.21	43	1603	0.8769 ug/L #	60
30) Propionitrile	9.34	54	2251	4.3645 ug/L #	56
31) 2,2-Dichloropropane	9.44	77	13020	1.0582 ug/L	98
32) cis-1,2-Dichloroethene	9.50	96	7421	1.0073 ug/L	97
33) Chloroform	9.72	83	14801	1.0745 ug/L	98
34) 1-Bromopropane	9.87	122	1454	0.8991 ug/L	74
35) Bromochloromethane	9.95	130	4871	0.9617 ug/L	83
36) Tetrahydrofuran	9.98	42	6124	4.9213 ug/L	95
38) 1,1,1-Trichloroethane	10.26	97	13435	1.0509 ug/L	92
39) Cyclohexane	10.28	56	9772	0.8954 ug/L	80
40) 1,1-Dichloropropene	10.44	75	9819	0.9650 ug/L	89
41) Tert-Amyl-Methyl ether	10.55	73	76609	4.5789 ug/L	93
42) Carbon Tetrachloride	10.60	117	12761	1.0420 ug/L	97
45) 1,2-Dichloroethane	10.76	62	11100	1.1042 ug/L	85

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390513.D Vial: 4
Acq On : 11 Sep 2013 10:45 Operator: TMB
Sample : WG444268-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:36 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.81	78	30307	1.0717	ug/L	91
47)	Trichloroethene	11.55	130	7931	0.9774	ug/L	97
48)	Methylcyclohexane	11.64	83	9271	0.8490	ug/L	89
49)	1,2-Dichloropropane	11.77	63	7192	1.0082	ug/L	82
50)	Bromodichloromethane	12.08	83	9937	0.9778	ug/L	93
52)	Dibromomethane	12.16	93	3756	0.9546	ug/L	94
53)	2-Chloroethyl Vinyl Ether	12.36	63	2071	0.6574	ug/L #	48
54)	4-Methyl-2-Pentanone	12.39	58	765	0.5283	ug/L #	40
55)	cis-1,3-Dichloropropene	12.70	75	9451	0.8657	ug/L	97
56)	Dimethyl Disulfide	12.97	94	6757	0.5771	ug/L	99
59)	Toluene	13.13	91	27374	0.9925	ug/L	99
60)	Ethyl Methacrylate	13.21	69	4154	0.7484	ug/L	90
62)	trans-1,3-Dichloropropene	13.30	75	9187	0.9310	ug/L	99
63)	1,1,2-Trichloroethane	13.52	97	5621	1.0942	ug/L	99
64)	2-Hexanone	13.45	58	690	0.5606	ug/L #	1
65)	1,3-Dichloropropane	13.83	76	9301	1.0724	ug/L	95
66)	Tetrachloroethene	13.95	164	6723	1.0060	ug/L	97
67)	Dibromochloromethane	14.21	129	7285	0.9624	ug/L	100
68)	1,2-Dibromoethane	14.47	107	5095	0.9761	ug/L	98
69)	1-Chlorohexane	14.55	91	6479	0.7792	ug/L	94
70)	Chlorobenzene	14.97	112	23980	1.1209	ug/L	99
71)	1,1,1,2-Tetrachloroethane	15.00	131	9176	1.1178	ug/L	89
72)	Ethylbenzene	14.99	106	10862	0.9647	ug/L	92
73)	m-,p-Xylene	15.09	106	25254	1.9628	ug/L	92
74)	o-Xylene	15.65	106	10506	0.8348	ug/L	84
75)	Styrene	15.69	104	16682	0.8322	ug/L	88
76)	Bromoform	16.19	173	4196	0.9018	ug/L	97
77)	Isopropylbenzene	16.08	105	27592	0.9029	ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.29	83	5803	1.0551	ug/L #	93
81)	1,2,3-Trichloropropane	16.48	110	1614	0.8908	ug/L #	78
82)	trans-1,4-Dichloro-2-Buten	16.52	53	1304	0.7635	ug/L #	38
83)	n-Propylbenzene	16.59	91	32011	0.9310	ug/L	97
84)	Bromobenzene	16.72	156	8981	1.0019	ug/L	86
85)	1,3,5-Trimethylbenzene	16.77	105	23040	0.8729	ug/L	99
86)	2-Chlorotoluene	16.87	91	25235	1.0433	ug/L	95
87)	4-Chlorotoluene	16.91	91	20056	0.9257	ug/L	99
88)	a-Methylstyrene	17.18	118	11360	0.7182	ug/L	93
89)	tert-Butylbenzene	17.24	134	4747	0.7730	ug/L	64
90)	1,2,4-Trimethylbenzene	17.29	105	25533	0.8911	ug/L	99
91)	sec-Butylbenzene	17.51	105	28971	0.8848	ug/L	99
92)	p-Isopropyltoluene	17.66	119	24548	0.8355	ug/L	96
93)	1,3-Dichlorobenzene	17.87	146	18360	1.0108	ug/L	96
94)	1,4-Dichlorobenzene	17.99	146	20772	1.0842	ug/L #	68
95)	n-Butylbenzene	18.19	91	24041	0.9675	ug/L	90
96)	1,2-Dichlorobenzene	18.50	146	17635	1.0400	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	19.49	75	588	0.5585	ug/L	94
98)	1,2,4-Trichlorobenzene	20.64	180	12106	0.9673	ug/L	95
99)	Hexachlorobutadiene	20.78	225	6429	1.0658	ug/L	87
100)	Naphthalene	21.01	128	17801	0.8368	ug/L	97
101)	1,2,3-Trichlorobenzene	21.32	180	11020	0.9853	ug/L	97

(#) = qualifier out of range (m) = manual integration
8M390513.D 8260WTR.M Wed Sep 11 15:50:37 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390513.D Vial: 4
Acq On : 11 Sep 2013 10:45 Operator: TMB
Sample : WG444268-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration

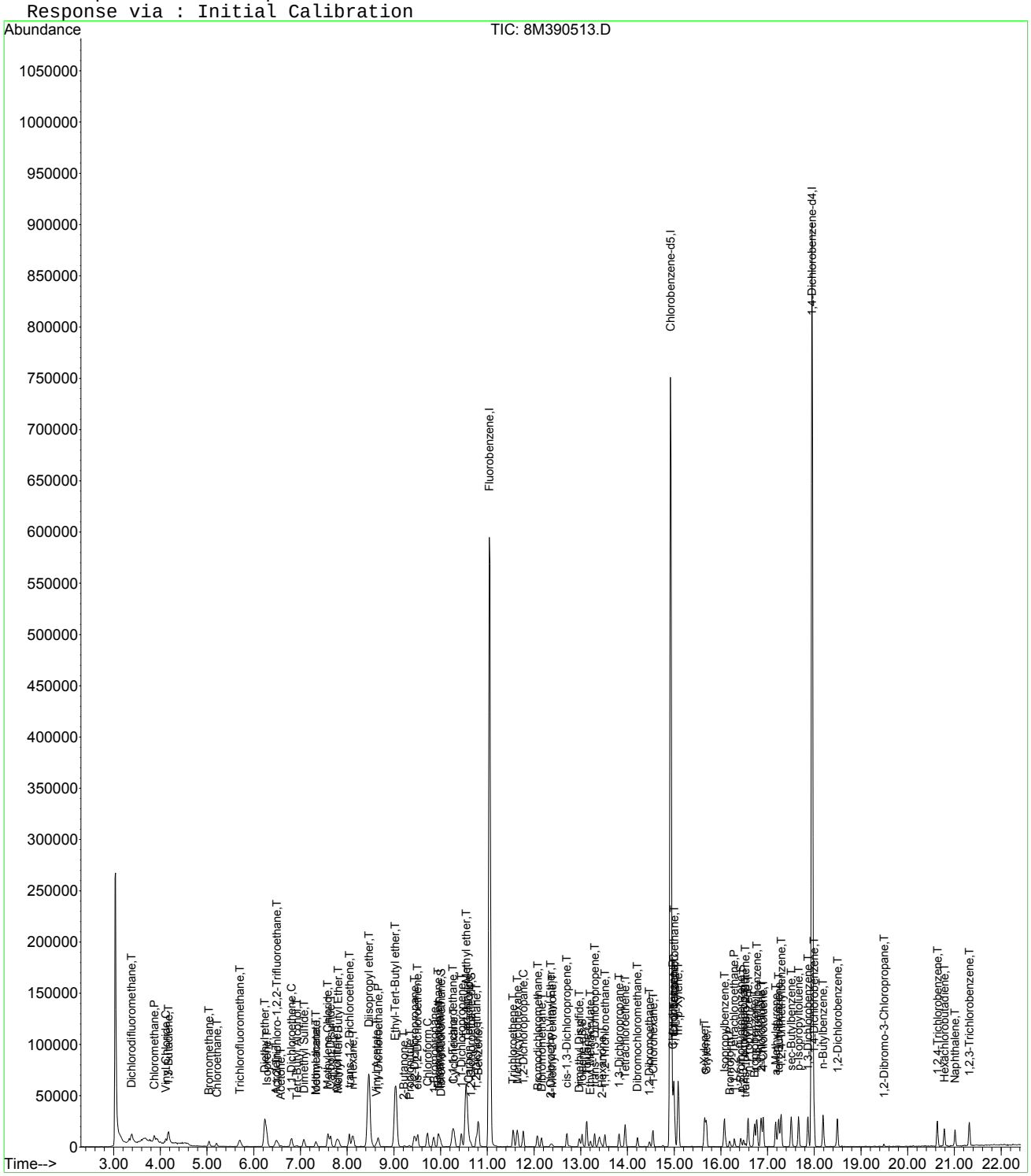

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390514.D Vial: 5
Acq On : 11 Sep 2013 11:14 Operator: TMB
Sample : WG444268-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:38 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	739621	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.93	117	566726	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.95	152	319375	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	10.01	111	8385	1.0921 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.36%#	
43) 1,2-Dichloroethane-d4	10.65	65	8571	1.0910 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.36%#	
58) Toluene-d8	13.03	98	25612	1.0388 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.16%#	
80) p-Bromofluorobenzene	16.43	95	9507	0.9768 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.92%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	14784	2.0555 ug/L	90
3) Chloromethane	3.87	50	16705	2.2640 ug/L	94
4) Vinyl Chloride	4.11	62	13109	2.1110 ug/L	95
5) 1,3-Butadiene	4.17	54	12831	2.2243 ug/L #	52
6) Bromomethane	5.03	94	10261	2.0385 ug/L	99
7) Chloroethane	5.20	64	10690	2.1743 ug/L	91
8) Trichlorofluoromethane	5.70	101	28107	2.2063 ug/L	98
9) Diethyl ether	6.23	59	120589	25.7466 ug/L	92
10) Isoprene	6.28	67	19091	2.1558 ug/L	86
11) Acrolein	6.47	56	6809	12.4098 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	15280	2.2235 ug/L	96
13) Acetone	6.59	43	3824	2.5098 ug/L #	77
14) 1,1-Dichloroethene	6.80	61	21879	2.0598 ug/L	96
15) Tert-Butyl Alcohol	6.91	59	11238	43.1283 ug/L #	82
16) Dimethyl Sulfide	7.07	62	11156	1.8138 ug/L	99
17) Iodomethane	7.33	142	12119	1.6821 ug/L	76
18) Methyl acetate	7.33	43	8565	2.1344 ug/L #	89
19) Methylene Chloride	7.59	84	15285	2.1527 ug/L	66
20) Carbon Disulfide	7.64	76	44928	2.1735 ug/L	98
21) Acrylonitrile	7.76	53	19126	11.6999 ug/L	99
22) Methyl Tert Butyl Ether	7.82	73	30056	1.9017 ug/L	84
23) trans-1,2-Dichloroethene	8.04	61	21752	2.1220 ug/L	96
24) n-Hexane	8.12	57	17595	2.0518 ug/L	95
25) Diisopropyl ether	8.46	45	632411	26.2376 ug/L	92
26) Vinyl Acetate	8.63	43	18415	2.1068 ug/L	94
27) 1,1-Dichloroethane	8.66	63	29579	2.2061 ug/L	99
28) Ethyl-Tert-Butyl ether	9.04	59	519903	25.8766 ug/L	93
29) 2-Butanone	9.22	43	3793	2.0515 ug/L #	73
30) Propionitrile	9.33	54	12619	24.1910 ug/L	91
31) 2,2-Dichloropropane	9.45	77	27602	2.2180 ug/L	93
32) cis-1,2-Dichloroethene	9.51	96	15458	2.0746 ug/L	98
33) Chloroform	9.72	83	29730	2.1339 ug/L	97
34) 1-Bromopropane	9.86	122	3002	1.8353 ug/L	98
35) Bromochloromethane	9.96	130	10699	2.0885 ug/L	83
36) Tetrahydrofuran	9.98	42	28511	22.6532 ug/L	87
38) 1,1,1-Trichloroethane	10.25	97	27023	2.0899 ug/L	99
39) Cyclohexane	10.29	56	22196	2.0109 ug/L	81
40) 1,1-Dichloropropene	10.44	75	20785	2.0196 ug/L	91
41) Tert-Amyl-Methyl ether	10.55	73	428415	25.3171 ug/L	100
42) Carbon Tetrachloride	10.60	117	25484	2.0574 ug/L	96
45) 1,2-Dichloroethane	10.76	62	20656	2.0317 ug/L	90

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390514.D Vial: 5
Acq On : 11 Sep 2013 11:14 Operator: TMB
Sample : WG444268-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:38 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
46)	Benzene	10.81	78	62221	2.1754	ug/L		91
47)	Trichloroethene	11.56	130	16677	2.0320	ug/L		97
48)	Methylcyclohexane	11.64	83	20390	1.8462	ug/L		88
49)	1,2-Dichloropropane	11.77	63	14805	2.0519	ug/L		79
50)	Bromodichloromethane	12.08	83	21016	2.0446	ug/L		98
51)	1,4-Dioxane	12.07	88	668	20.9383	ug/L	#	10
52)	Dibromomethane	12.16	93	8519	2.1407	ug/L		92
53)	2-Chloroethyl Vinyl Ether	12.36	63	4628	1.4524	ug/L		97
54)	4-Methyl-2-Pentanone	12.39	58	1965	1.3418	ug/L	#	82
55)	cis-1,3-Dichloropropene	12.71	75	21869	1.9805	ug/L		98
56)	Dimethyl Disulfide	12.98	94	15697	1.3255	ug/L		98
59)	Toluene	13.13	91	59462	2.1089	ug/L		99
60)	Ethyl Methacrylate	13.20	69	9293	1.6377	ug/L		92
62)	trans-1,3-Dichloropropene	13.30	75	19702	1.9528	ug/L		99
63)	1,1,2-Trichloroethane	13.51	97	11020	2.0982	ug/L		98
64)	2-Hexanone	13.45	58	2121	1.6857	ug/L	#	1
65)	1,3-Dichloropropane	13.82	76	17824	2.0101	ug/L		100
66)	Tetrachloroethene	13.95	164	14822	2.1694	ug/L		97
67)	Dibromochloromethane	14.22	129	15413	1.9917	ug/L		98
68)	1,2-Dibromoethane	14.47	107	10806	2.0250	ug/L		96
69)	1-Chlorohexane	14.55	91	14888	1.7514	ug/L		96
70)	Chlorobenzene	14.97	112	47741	2.1827	ug/L		81
71)	1,1,1,2-Tetrachloroethane	15.00	131	17067	2.0336	ug/L		91
72)	Ethylbenzene	15.00	106	23114	2.0079	ug/L		89
73)	m-,p-Xylene	15.08	106	57488	4.3704	ug/L		96
74)	o-Xylene	15.65	106	23483	1.8251	ug/L		90
75)	Styrene	15.68	104	38085	1.8584	ug/L		90
76)	Bromoform	16.19	173	8525	1.7921	ug/L		97
77)	Isopropylbenzene	16.08	105	61279	1.9615	ug/L		98
79)	1,1,2,2-Tetrachloroethane	16.29	83	11445	2.0357	ug/L		97
81)	1,2,3-Trichloropropane	16.48	110	3701	1.9982	ug/L		95
82)	trans-1,4-Dichloro-2-Buten	16.52	53	2811	1.6100	ug/L		47
83)	n-Propylbenzene	16.58	91	71703	2.0401	ug/L		100
84)	Bromobenzene	16.72	156	19136	2.0883	ug/L		88
85)	1,3,5-Trimethylbenzene	16.77	105	52847	1.9586	ug/L		98
86)	2-Chlorotoluene	16.86	91	53864	2.1785	ug/L		96
87)	4-Chlorotoluene	16.90	91	48422	2.1864	ug/L		98
88)	a-Methylstyrene	17.17	118	26195	1.6201	ug/L		92
89)	tert-Butylbenzene	17.24	134	12693	2.0220	ug/L		91
90)	1,2,4-Trimethylbenzene	17.29	105	60420	2.0629	ug/L		96
91)	sec-Butylbenzene	17.50	105	67944	2.0301	ug/L		97
92)	p-Isopropyltoluene	17.66	119	58856	1.9596	ug/L		98
93)	1,3-Dichlorobenzene	17.87	146	39049	2.1030	ug/L		97
94)	1,4-Dichlorobenzene	17.99	146	42034	2.1463	ug/L		86
95)	n-Butylbenzene	18.19	91	52154	2.0533	ug/L		95
96)	1,2-Dichlorobenzene	18.50	146	36364	2.0979	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.49	75	1792	1.6650	ug/L		79
98)	1,2,4-Trichlorobenzene	20.64	180	24809	1.9393	ug/L		97
99)	Hexachlorobutadiene	20.78	225	13103	2.1250	ug/L		98
100)	Naphthalene	21.01	128	38863	1.7872	ug/L		99
101)	1,2,3-Trichlorobenzene	21.32	180	22958	2.0081	ug/L		97

(#) = qualifier out of range (m) = manual integration
8M390514.D 8260WTR.M Wed Sep 11 15:50:38 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390514.D Vial: 5
Acq On : 11 Sep 2013 11:14 Operator: TMB
Sample : WG444268-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration

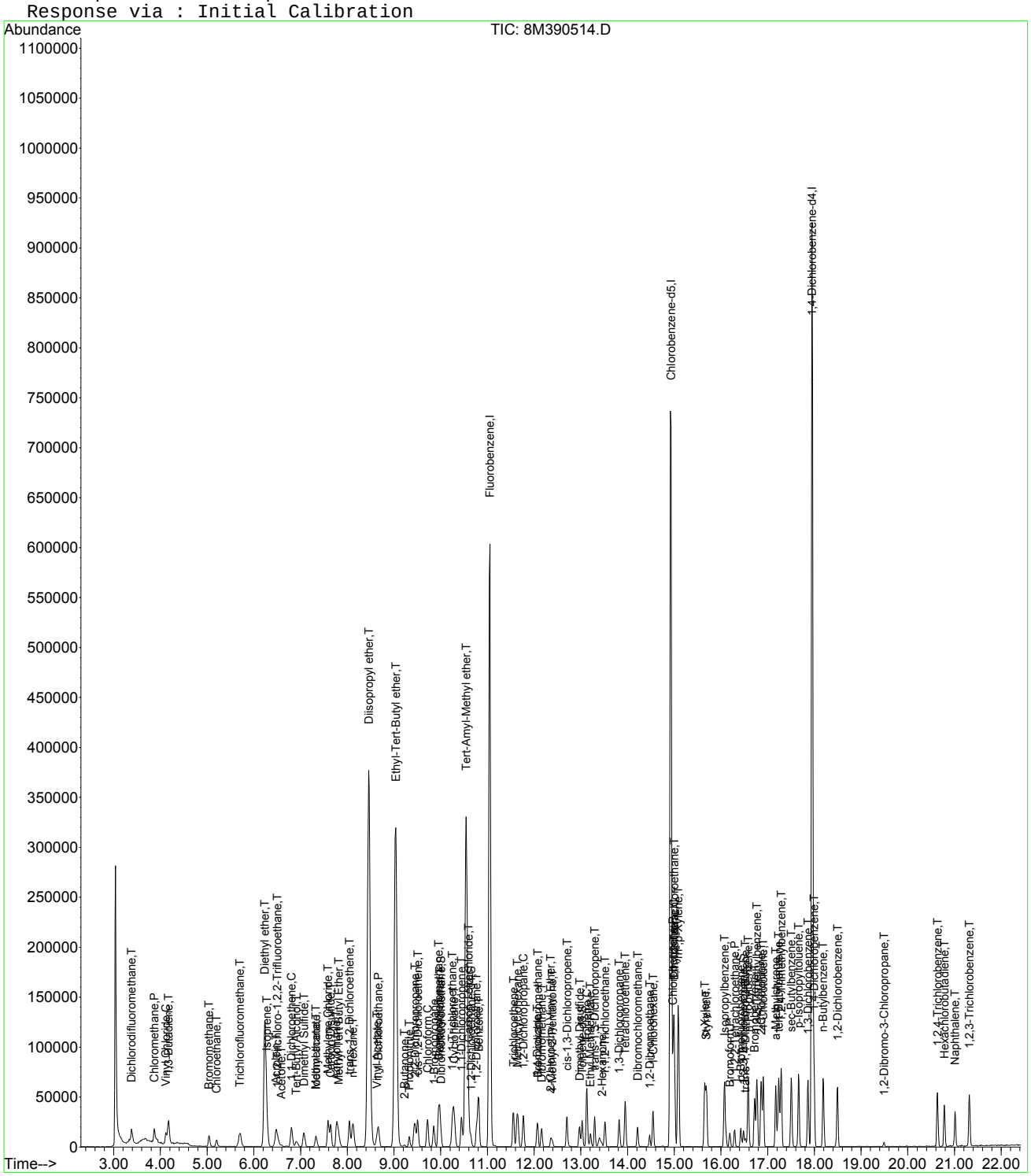

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390515.D Vial: 6
Acq On : 11 Sep 2013 11:45 Operator: TMB
Sample : WG444268-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:39 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	726199	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.93	117	564235	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.96	152	323390	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	19839	2.6316 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.52%#		
43) 1,2-Dichloroethane-d4	10.65	65	20392	2.6437 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.56%#		
58) Toluene-d8	13.03	98	64030	2.6084 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.44%#		
80) p-Bromofluorobenzene	16.43	95	24560	2.4920 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 9.96%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	34639	4.9051 ug/L	97
3) Chloromethane	3.87	50	35759	4.9358 ug/L	98
4) Vinyl Chloride	4.11	62	32146	5.2722 ug/L	97
5) 1,3-Butadiene	4.17	54	30130	5.3196 ug/L #	72
6) Bromomethane	5.04	94	26774	5.4173 ug/L	92
7) Chloroethane	5.20	64	25356	5.2526 ug/L	95
8) Trichlorofluoromethane	5.70	101	68116	5.4456 ug/L	99
9) Diethyl ether	6.23	59	239384	52.0549 ug/L	93
10) Isoprene	6.27	67	47821	5.5000 ug/L	83
11) Acrolein	6.47	56	13458	23.4567 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.48	101	38524	5.7095 ug/L	96
13) Acetone	6.57	43	8240	5.5081 ug/L	93
14) 1,1-Dichloroethene	6.80	61	54479	5.2236 ug/L	96
15) Tert-Butyl Alcohol	6.91	59	25173	98.3925 ug/L	90
16) Dimethyl Sulfide	7.07	62	28847	4.7766 ug/L	98
17) Iodomethane	7.33	142	35159	4.9703 ug/L	84
18) Methyl acetate	7.33	43	21241	5.3911 ug/L	98
19) Methylene Chloride	7.59	84	37095	5.3208 ug/L	73
20) Carbon Disulfide	7.65	76	107299	5.2868 ug/L	99
21) Acrylonitrile	7.77	53	38311	23.8690 ug/L	95
22) Methyl Tert Butyl Ether	7.80	73	76485	4.9288 ug/L	87
23) trans-1,2-Dichloroethene	8.04	61	51798	5.1465 ug/L	91
24) n-Hexane	8.13	57	45043	5.3496 ug/L	93
25) Diisopropyl ether	8.46	45	1261021	53.2844 ug/L	92
26) Vinyl Acetate	8.63	43	46415	5.4083 ug/L	99
27) 1,1-Dichloroethane	8.66	63	69427	5.2737 ug/L	97
28) Ethyl-Tert-Butyl ether	9.04	59	1039371	52.6878 ug/L	93
29) 2-Butanone	9.22	43	9504	5.2353 ug/L	85
30) Propionitrile	9.32	54	25816	50.4047 ug/L	98
31) 2,2-Dichloropropane	9.45	77	65315	5.3454 ug/L	96
32) cis-1,2-Dichloroethene	9.51	96	38844	5.3095 ug/L	96
33) Chloroform	9.72	83	71744	5.2446 ug/L	97
34) 1-Bromopropane	9.85	122	8715	5.4265 ug/L	87
35) Bromochloromethane	9.96	130	26900	5.3481 ug/L	81
36) Tetrahydrofuran	9.98	42	62189	50.3250 ug/L	91
38) 1,1,1-Trichloroethane	10.26	97	68061	5.3610 ug/L	99
39) Cyclohexane	10.29	56	55267	5.0996 ug/L	76
40) 1,1-Dichloropropene	10.44	75	51823	5.1284 ug/L	95
41) Tert-Amyl-Methyl ether	10.54	73	875791	52.7113 ug/L	96
42) Carbon Tetrachloride	10.60	117	64593	5.3112 ug/L	99
45) 1,2-Dichloroethane	10.76	62	52896	5.2989 ug/L	88

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390515.D Vial: 6
Acq On : 11 Sep 2013 11:45 Operator: TMB
Sample : WG444268-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:39 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
46)	Benzene	10.80	78	154243	5.4924	ug/L		91
47)	Trichloroethene	11.56	130	40877	5.0728	ug/L		98
48)	Methylcyclohexane	11.64	83	52971	4.8850	ug/L		88
49)	1,2-Dichloropropane	11.78	63	36328	5.1280	ug/L		79
50)	Bromodichloromethane	12.07	83	51890	5.1416	ug/L		98
51)	1,4-Dioxane	12.06	88	2620	83.6411	ug/L		84
52)	Dibromomethane	12.16	93	20306	5.1970	ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.35	63	12854	4.1085	ug/L		97
54)	4-Methyl-2-Pentanone	12.39	58	6080	4.2285	ug/L		91
55)	cis-1,3-Dichloropropene	12.71	75	55971	5.1624	ug/L		99
56)	Dimethyl Disulfide	12.97	94	44658	3.8408	ug/L		98
59)	Toluene	13.13	91	154370	5.4991	ug/L		99
60)	Ethyl Methacrylate	13.21	69	27167	4.8088	ug/L		91
62)	trans-1,3-Dichloropropene	13.29	75	50902	5.0676	ug/L		98
63)	1,1,2-Trichloroethane	13.51	97	26960	5.1558	ug/L		95
64)	2-Hexanone	13.44	58	5230	4.1750	ug/L	#	1
65)	1,3-Dichloropropane	13.82	76	46794	5.3006	ug/L		90
66)	Tetrachloroethene	13.95	164	36422	5.3544	ug/L		95
67)	Dibromochloromethane	14.22	129	38427	4.9875	ug/L		99
68)	1,2-Dibromoethane	14.47	107	27211	5.1217	ug/L		99
69)	1-Chlorohexane	14.55	91	41837	4.9434	ug/L		98
70)	Chlorobenzene	14.97	112	115178	5.2891	ug/L		89
71)	1,1,1,2-Tetrachloroethane	15.00	131	44111	5.2792	ug/L		98
72)	Ethylbenzene	15.00	106	60523	5.2808	ug/L		95
73)	m-,p-Xylene	15.08	106	147058	11.2290	ug/L		94
74)	o-Xylene	15.65	106	66596	5.1987	ug/L		99
75)	Styrene	15.68	104	111295	5.4547	ug/L		94
76)	Bromoform	16.19	173	23380	4.9365	ug/L		98
77)	Isopropylbenzene	16.08	105	167630	5.3894	ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.29	83	29275	5.1425	ug/L		97
81)	1,2,3-Trichloropropane	16.49	110	9910	5.2841	ug/L		92
82)	trans-1,4-Dichloro-2-Buten	16.53	53	8632	4.8825	ug/L		68
83)	n-Propylbenzene	16.58	91	202320	5.6849	ug/L		99
84)	Bromobenzene	16.73	156	50311	5.4224	ug/L		85
85)	1,3,5-Trimethylbenzene	16.77	105	155465	5.6903	ug/L		97
86)	2-Chlorotoluene	16.86	91	134819	5.3849	ug/L		97
87)	4-Chlorotoluene	16.90	91	131895	5.8815	ug/L		98
88)	a-Methylstyrene	17.17	118	74666	4.5605	ug/L		93
89)	tert-Butylbenzene	17.23	134	34102	5.3650	ug/L		87
90)	1,2,4-Trimethylbenzene	17.29	105	167883	5.6609	ug/L		97
91)	sec-Butylbenzene	17.50	105	185258	5.4665	ug/L		99
92)	p-Isopropyltoluene	17.67	119	168369	5.5361	ug/L		98
93)	1,3-Dichlorobenzene	17.86	146	102521	5.4528	ug/L		99
94)	1,4-Dichlorobenzene	18.00	146	104503	5.2697	ug/L		95
95)	n-Butylbenzene	18.20	91	140627	5.4678	ug/L		97
96)	1,2-Dichlorobenzene	18.50	146	92925	5.2945	ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.49	75	5185	4.7578	ug/L		75
98)	1,2,4-Trichlorobenzene	20.64	180	65732	5.0744	ug/L		98
99)	Hexachlorobutadiene	20.79	225	32201	5.1575	ug/L		98
100)	Naphthalene	21.01	128	106532	4.8383	ug/L		98
101)	1,2,3-Trichlorobenzene	21.32	180	62188	5.3721	ug/L		100

(#) = qualifier out of range (m) = manual integration
8M390515.D 8260WTR.M Wed Sep 11 15:50:40 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390515.D Vial: 6
Acq On : 11 Sep 2013 11:45 Operator: TMB
Sample : WG444268-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration

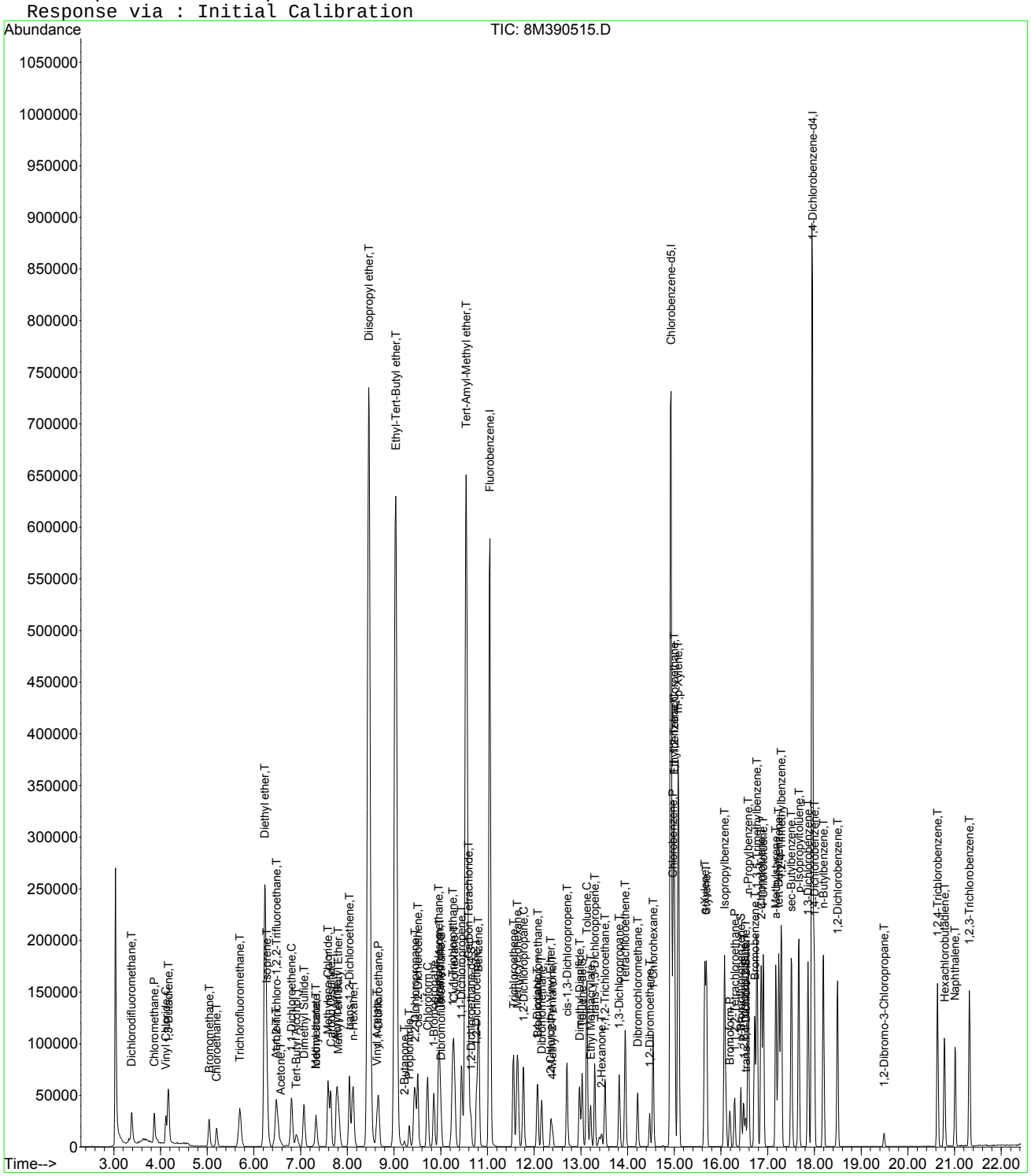

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390516.D Vial: 7
Acq On : 11 Sep 2013 12:14 Operator: TMB
Sample : WG444268-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:41 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	742542	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.93	117	589032	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.95	152	333359	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	77806	10.0935 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 40.36%#		
43) 1,2-Dichloroethane-d4	10.65	65	79839	10.1230 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.48%#		
58) Toluene-d8	13.03	98	268650	10.4832 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.92%#		
80) p-Bromofluorobenzene	16.43	95	104318	10.2681 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.08%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	160655	22.2490 ug/L	98
3) Chloromethane	3.87	50	147751	19.9453 ug/L	99
4) Vinyl Chloride	4.11	62	132013	21.1748 ug/L	96
5) 1,3-Butadiene	4.17	54	118841	20.5204 ug/L	75
6) Bromomethane	5.04	94	102853	20.3526 ug/L	95
7) Chloroethane	5.20	64	106461	21.5682 ug/L	97
8) Trichlorofluoromethane	5.70	101	271765	21.2485 ug/L	99
9) Diethyl ether	6.23	59	383815	81.6250 ug/L	91
10) Isoprene	6.27	67	189749	21.3430 ug/L	86
11) Acrolein	6.47	56	23984	39.7649 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	149632	21.6884 ug/L	98
13) Acetone	6.57	43	30308	19.8138 ug/L	95
14) 1,1-Dichloroethene	6.80	61	228479	21.4251 ug/L	99
15) Tert-Butyl Alcohol	6.91	59	42994	164.3500 ug/L	92
16) Dimethyl Sulfide	7.07	62	127564	20.6579 ug/L	100
17) Iodomethane	7.33	142	152084	21.0264 ug/L	83
18) Methyl acetate	7.33	43	79875	19.8266 ug/L	97
19) Methylene Chloride	7.59	84	147428	20.6812 ug/L	72
20) Carbon Disulfide	7.65	76	419247	20.2023 ug/L	100
21) Acrylonitrile	7.77	53	66626	40.5966 ug/L	100
22) Methyl Tert Butyl Ether	7.80	73	328806	20.7225 ug/L	87
23) trans-1,2-Dichloroethene	8.04	61	219843	21.3623 ug/L	96
24) n-Hexane	8.12	57	183034	21.2597 ug/L	94
25) Diisopropyl ether	8.46	45	1990236	82.2464 ug/L	92
26) Vinyl Acetate	8.63	43	178591	20.3517 ug/L	96
27) 1,1-Dichloroethane	8.66	63	278881	20.7178 ug/L	97
28) Ethyl-Tert-Butyl ether	9.04	59	1652324	81.9160 ug/L	93
29) 2-Butanone	9.22	43	36253	19.5307 ug/L	96
30) Propionitrile	9.32	54	42448	81.0538 ug/L	96
31) 2,2-Dichloropropane	9.44	77	252470	20.2076 ug/L	99
32) cis-1,2-Dichloroethene	9.51	96	159400	21.3086 ug/L	97
33) Chloroform	9.72	83	285017	20.3767 ug/L	96
34) 1-Bromopropane	9.85	122	33347	20.3070 ug/L	96
35) Bromochloromethane	9.96	130	110032	21.3943 ug/L	80
36) Tetrahydrofuran	9.98	42	103190	81.6662 ug/L	90
38) 1,1,1-Trichloroethane	10.26	97	270065	20.8041 ug/L	99
39) Cyclohexane	10.29	56	228619	20.6308 ug/L	77
40) 1,1-Dichloropropene	10.44	75	214625	20.7720 ug/L	96
41) Tert-Amyl-Methyl ether	10.54	73	1390386	81.8414 ug/L	96
42) Carbon Tetrachloride	10.60	117	261309	21.0136 ug/L	98
45) 1,2-Dichloroethane	10.76	62	209688	20.5433 ug/L	87

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390516.D Vial: 7
Acq On : 11 Sep 2013 12:14 Operator: TMB
Sample : WG444268-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:41 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.81	78	595402	20.7349	ug/L	91
47)	Trichloroethene	11.56	130	169935	20.6244	ug/L	98
48)	Methylcyclohexane	11.64	83	223330	20.1423	ug/L	87
49)	1,2-Dichloropropane	11.78	63	149244	20.6033	ug/L	79
50)	Bromodichloromethane	12.08	83	215199	20.8540	ug/L	99
51)	1,4-Dioxane	12.05	88	4979	155.4516	ug/L	76
52)	Dibromomethane	12.16	93	85191	21.3234	ug/L	95
53)	2-Chloroethyl Vinyl Ether	12.35	63	61725	19.2950	ug/L	96
54)	4-Methyl-2-Pentanone	12.39	58	28269	19.2275	ug/L	84
55)	cis-1,3-Dichloropropene	12.71	75	239494	21.6034	ug/L	100
56)	Dimethyl Disulfide	12.97	94	227635	19.1467	ug/L	100
59)	Toluene	13.13	91	640378	21.8516	ug/L	100
60)	Ethyl Methacrylate	13.21	69	124486	21.1077	ug/L	91
62)	trans-1,3-Dichloropropene	13.30	75	221292	21.1036	ug/L	99
63)	1,1,2-Trichloroethane	13.51	97	110772	20.2922	ug/L	98
64)	2-Hexanone	13.45	58	25947	19.8408	ug/L	61
65)	1,3-Dichloropropane	13.82	76	192256	20.8609	ug/L	91
66)	Tetrachloroethene	13.95	164	146421	20.6192	ug/L	94
67)	Dibromochloromethane	14.22	129	164725	20.4797	ug/L	97
68)	1,2-Dibromoethane	14.47	107	113218	20.4130	ug/L	98
69)	1-Chlorohexane	14.55	91	187876	21.2645	ug/L	92
70)	Chlorobenzene	14.97	112	466240	20.5088	ug/L	94
71)	1,1,1,2-Tetrachloroethane	15.00	131	183330	21.0171	ug/L	98
72)	Ethylbenzene	15.00	106	247480	20.6842	ug/L	95
73)	m-,p-Xylene	15.08	106	595750	43.5751	ug/L	95
74)	o-Xylene	15.65	106	290556	21.7271	ug/L	96
75)	Styrene	15.69	104	480994	22.5817	ug/L	94
76)	Bromoform	16.19	173	101134	20.4546	ug/L	98
77)	Isopropylbenzene	16.08	105	734235	22.6124	ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.29	83	119114	20.2980	ug/L	98
81)	1,2,3-Trichloropropane	16.48	110	41087	21.2527	ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.52	53	39634	21.7479	ug/L	95
83)	n-Propylbenzene	16.58	91	857564	23.3756	ug/L	100
84)	Bromobenzene	16.73	156	206153	21.5540	ug/L	88
85)	1,3,5-Trimethylbenzene	16.77	105	654062	23.2238	ug/L	98
86)	2-Chlorotoluene	16.86	91	546011	21.1565	ug/L	99
87)	4-Chlorotoluene	16.90	91	525777	22.7444	ug/L	99
88)	a-Methylstyrene	17.17	118	346655	20.5401	ug/L	97
89)	tert-Butylbenzene	17.23	134	142794	21.7930	ug/L	90
90)	1,2,4-Trimethylbenzene	17.29	105	677280	22.1543	ug/L	97
91)	sec-Butylbenzene	17.50	105	771708	22.0901	ug/L	99
92)	p-Isopropyltoluene	17.67	119	701925	22.3898	ug/L	98
93)	1,3-Dichlorobenzene	17.87	146	408442	21.0742	ug/L	99
94)	1,4-Dichlorobenzene	18.00	146	414306	20.2671	ug/L	99
95)	n-Butylbenzene	18.20	91	582248	21.9618	ug/L	99
96)	1,2-Dichlorobenzene	18.50	146	376791	20.8261	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	19.49	75	22354	19.8988	ug/L	76
98)	1,2,4-Trichlorobenzene	20.64	180	284638	21.3164	ug/L	99
99)	Hexachlorobutadiene	20.79	225	129594	20.1358	ug/L	99
100)	Naphthalene	21.02	128	518895	22.8614	ug/L	99
101)	1,2,3-Trichlorobenzene	21.32	180	260233	21.8077	ug/L	98

(#) = qualifier out of range (m) = manual integration
8M390516.D 8260WTR.M Wed Sep 11 15:50:42 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390516.D Vial: 7
Acq On : 11 Sep 2013 12:14 Operator: TMB
Sample : WG444268-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration

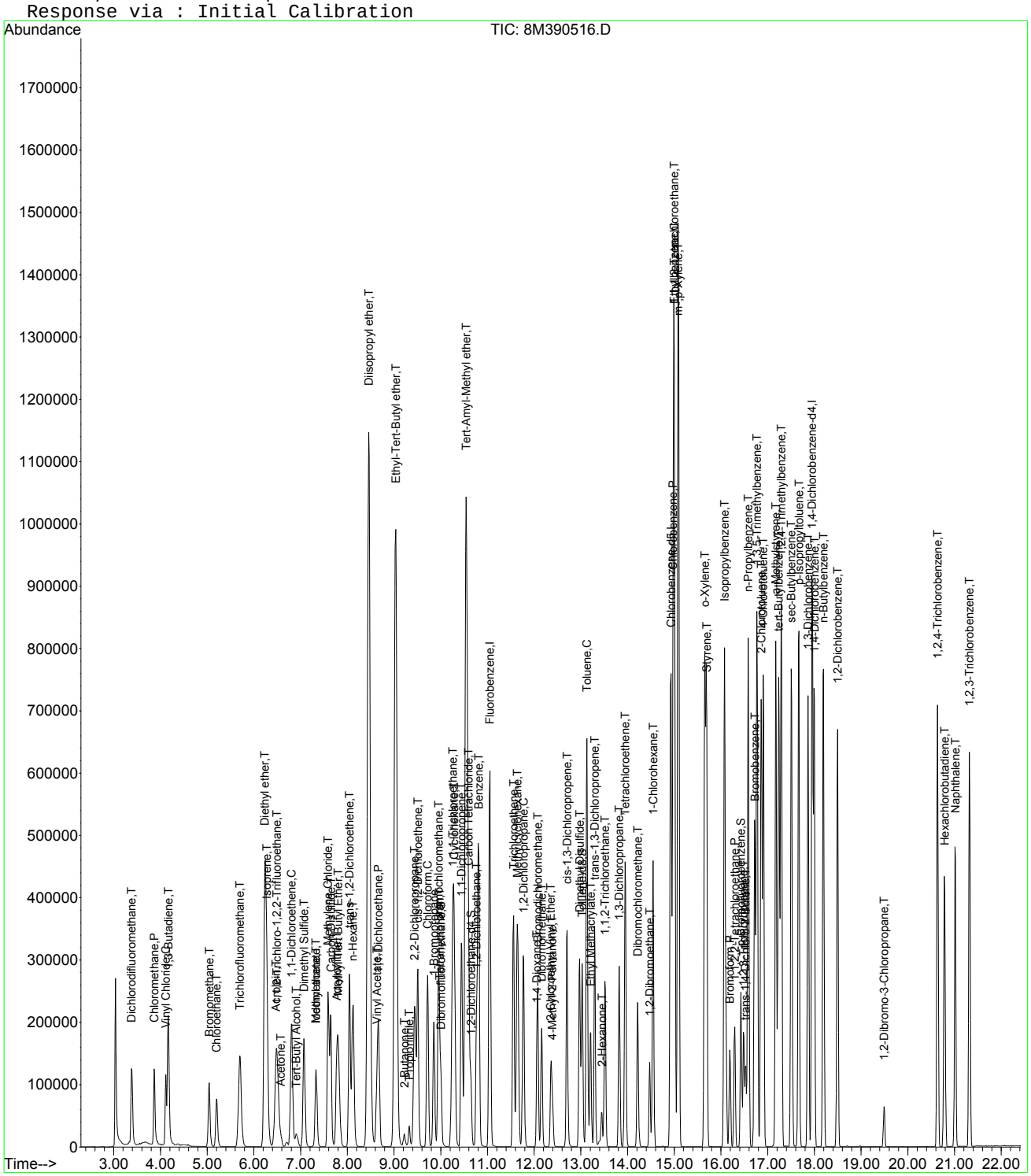

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390517.D Vial: 8
Acq On : 11 Sep 2013 12:44 Operator: TMB
Sample : WG444268-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:43 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	760184	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.92	117	601866	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	17.95	152	354542	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	197560	25.0339 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.12%		
43) 1,2-Dichloroethane-d4	10.64	65	203154	25.1606 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.64%		
58) Toluene-d8	13.03	98	678017	25.8932 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.56%		
80) p-Bromofluorobenzene	16.42	95	281566	26.0589 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.24%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	402427	54.4383 ug/L	99
3) Chloromethane	3.87	50	362056	47.7407 ug/L	99
4) Vinyl Chloride	4.12	62	328568	51.4790 ug/L	96
5) 1,3-Butadiene	4.16	54	312604	52.7248 ug/L	79
6) Bromomethane	5.04	94	256188	49.5182 ug/L	97
7) Chloroethane	5.20	64	261927	51.8331 ug/L	98
8) Trichlorofluoromethane	5.70	101	680582	51.9777 ug/L	100
9) Diethyl ether	6.24	59	487606	101.2914 ug/L	91
10) Isoprene	6.28	67	495639	54.4557 ug/L	86
11) Acrolein	6.47	56	31701	50.9017 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.48	101	372793	52.7804 ug/L	98
13) Acetone	6.58	43	77180	49.2853 ug/L	96
14) 1,1-Dichloroethene	6.80	61	582959	53.3971 ug/L	98
15) Tert-Butyl Alcohol	6.92	59	60114	224.4604 ug/L	93
16) Dimethyl Sulfide	7.07	62	333496	52.7534 ug/L	99
17) Iodomethane	7.33	142	418275	56.4867 ug/L	82
18) Methyl acetate	7.33	43	210487	51.0345 ug/L	95
19) Methylene Chloride	7.59	84	361568	49.5437 ug/L	72
20) Carbon Disulfide	7.64	76	1087694	51.1965 ug/L	100
21) Acrylonitrile	7.77	53	89173	53.0739 ug/L	100
22) Methyl Tert Butyl Ether	7.80	73	876577	53.9628 ug/L	87
23) trans-1,2-Dichloroethene	8.05	61	550526	52.2536 ug/L	95
24) n-Hexane	8.12	57	476548	54.0673 ug/L	95
25) Diisopropyl ether	8.46	45	2475998	99.9459 ug/L	92
26) Vinyl Acetate	8.62	43	466151	51.8883 ug/L	96
27) 1,1-Dichloroethane	8.67	63	686055	49.7836 ug/L	96
28) Ethyl-Tert-Butyl ether	9.04	59	2096033	101.5019 ug/L	92
29) 2-Butanone	9.21	43	95541	50.2766 ug/L	95
30) Propionitrile	9.33	54	56286	104.9830 ug/L	98
31) 2,2-Dichloropropane	9.44	77	645101	50.4352 ug/L	98
32) cis-1,2-Dichloroethene	9.51	96	409044	53.4120 ug/L	99
33) Chloroform	9.72	83	715218	49.9464 ug/L	97
34) 1-Bromopropane	9.85	122	87372	51.9713 ug/L	96
35) Bromochloromethane	9.95	130	275466	52.3177 ug/L	81
36) Tetrahydrofuran	9.97	42	134484	103.9627 ug/L	88
38) 1,1,1-Trichloroethane	10.25	97	691577	52.0384 ug/L	99
39) Cyclohexane	10.29	56	606097	53.4254 ug/L	77
40) 1,1-Dichloropropene	10.44	75	553112	52.2893 ug/L	95
41) Tert-Amyl-Methyl ether	10.55	73	1772125	101.8906 ug/L	95
42) Carbon Tetrachloride	10.60	117	667217	52.4101 ug/L	99
45) 1,2-Dichloroethane	10.76	62	540319	51.7070 ug/L	88

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390517.D Vial: 8
Acq On : 11 Sep 2013 12:44 Operator: TMB
Sample : WG444268-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:43 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.81	78	1484141	50.4859	ug/L	93
47)	Trichloroethene	11.56	130	440052	52.1682	ug/L	98
48)	Methylcyclohexane	11.64	83	597178	52.6099	ug/L	86
49)	1,2-Dichloropropane	11.77	63	377276	50.8746	ug/L	79
50)	Bromodichloromethane	12.07	83	555938	52.6233	ug/L	98
51)	1,4-Dioxane	12.06	88	7621	232.4167	ug/L	78
52)	Dibromomethane	12.16	93	218549	53.4335	ug/L	94
53)	2-Chloroethyl Vinyl Ether	12.36	63	171647	52.4109	ug/L	95
54)	4-Methyl-2-Pentanone	12.39	58	79897	53.0819	ug/L	86
55)	cis-1,3-Dichloropropene	12.70	75	634110	55.8720	ug/L	98
56)	Dimethyl Disulfide	12.97	94	657475	54.0176	ug/L	97
59)	Toluene	13.13	91	1605412	53.6132	ug/L	99
60)	Ethyl Methacrylate	13.20	69	349207	57.9484	ug/L	91
62)	trans-1,3-Dichloropropene	13.30	75	578492	53.9918	ug/L	97
63)	1,1,2-Trichloroethane	13.52	97	286192	51.3092	ug/L	97
64)	2-Hexanone	13.44	58	69538	52.0395	ug/L	78
65)	1,3-Dichloropropane	13.83	76	496110	52.6829	ug/L	91
66)	Tetrachloroethene	13.95	164	379476	52.2989	ug/L	96
67)	Dibromochloromethane	14.22	129	442037	53.7851	ug/L	97
68)	1,2-Dibromoethane	14.48	107	302412	53.3617	ug/L	96
69)	1-Chlorohexane	14.55	91	511777	56.6897	ug/L	89
70)	Chlorobenzene	14.97	112	1173568	50.5218	ug/L	94
71)	1,1,1,2-Tetrachloroethane	15.00	131	466259	52.3126	ug/L	100
72)	Ethylbenzene	14.99	106	621668	50.8507	ug/L	94
73)	m-,p-Xylene	15.09	106	1501452	107.4794	ug/L	97
74)	o-Xylene	15.66	106	753786	55.1644	ug/L	97
75)	Styrene	15.69	104	1250369	57.4505	ug/L	95
76)	Bromoform	16.19	173	271559	53.7522	ug/L	99
77)	Isopropylbenzene	16.08	105	1916616	57.7677	ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.29	83	319272	51.1560	ug/L	97
81)	1,2,3-Trichloropropane	16.48	110	108037	52.5443	ug/L	99
82)	trans-1,4-Dichloro-2-Buten	16.52	53	104981	54.1633	ug/L	90
83)	n-Propylbenzene	16.59	91	2220320	56.9058	ug/L	99
84)	Bromobenzene	16.72	156	537207	52.8111	ug/L	89
85)	1,3,5-Trimethylbenzene	16.77	105	1704189	56.8954	ug/L	98
86)	2-Chlorotoluene	16.87	91	1469190	53.5259	ug/L	99
87)	4-Chlorotoluene	16.91	91	1276863	51.9351	ug/L	99
88)	a-Methylstyrene	17.18	118	966108	53.8239	ug/L	95
89)	tert-Butylbenzene	17.24	134	366157	52.5436	ug/L	90
90)	1,2,4-Trimethylbenzene	17.29	105	1747849	53.7574	ug/L	97
91)	sec-Butylbenzene	17.51	105	2031105	54.6666	ug/L	100
92)	p-Isopropyltoluene	17.66	119	1843342	55.2854	ug/L	99
93)	1,3-Dichlorobenzene	17.87	146	1076434	52.2219	ug/L	99
94)	1,4-Dichlorobenzene	17.99	146	1091367	50.1979	ug/L	100
95)	n-Butylbenzene	18.19	91	1533133	54.3732	ug/L	99
96)	1,2-Dichlorobenzene	18.50	146	1007989	52.3850	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	19.49	75	64323	53.8371	ug/L	80
98)	1,2,4-Trichlorobenzene	20.64	180	780871	54.9850	ug/L	99
99)	Hexachlorobutadiene	20.78	225	344572	50.3395	ug/L	100
100)	Naphthalene	21.01	128	1449573	60.0492	ug/L	100
101)	1,2,3-Trichlorobenzene	21.32	180	703947	55.4667	ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390517.D Vial: 8
Acq On : 11 Sep 2013 12:44 Operator: TMB
Sample : WG444268-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration

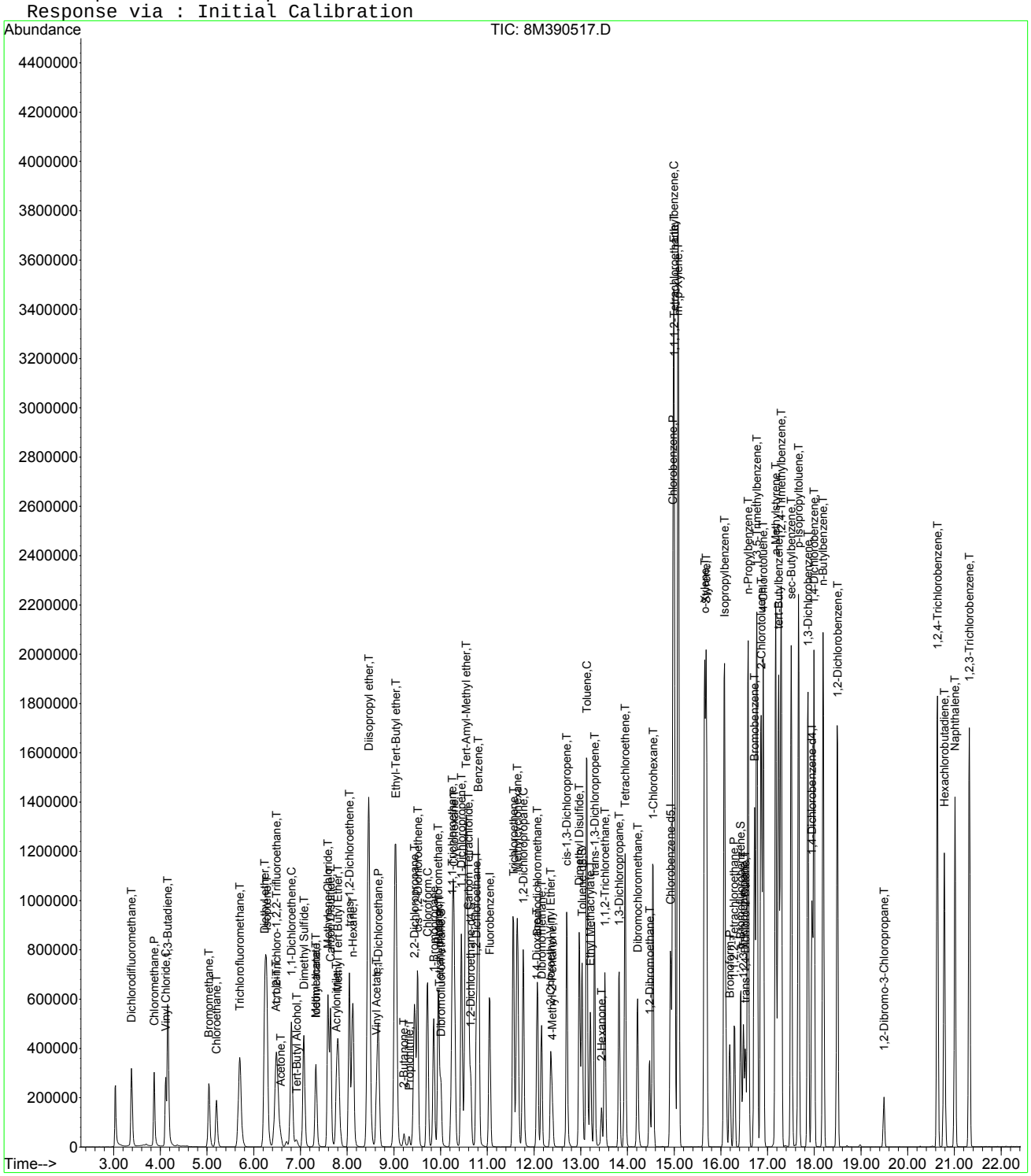

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390518.D Vial: 9
Acq On : 11 Sep 2013 13:14 Operator: TMB
Sample : WG444268-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:45 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	811122	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.92	117	652453	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	17.95	152	386242	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	400035	47.5073 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 190.04%#		
43) 1,2-Dichloroethane-d4	10.64	65	409811	47.5677 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 190.28%#		
58) Toluene-d8	13.03	98	1389766	48.9595 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 195.84%#		
80) p-Bromofluorobenzene	16.42	95	596829	50.7031 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 202.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	772867	97.9839 ug/L	99
3) Chloromethane	3.87	50	723487	89.4080 ug/L	100
4) Vinyl Chloride	4.11	62	647582	95.0893 ug/L	96
5) 1,3-Butadiene	4.16	54	611235	96.6188 ug/L	84
6) Bromomethane	5.04	94	519681	94.1403 ug/L	96
7) Chloroethane	5.20	64	516155	95.7280 ug/L	98
8) Trichlorofluoromethane	5.70	101	1318683	94.3864 ug/L	99
9) Diethyl ether	6.24	59	1009342	196.5053 ug/L	91
10) Isoprene	6.27	67	976839	100.5850 ug/L	85
11) Acrolein	6.47	56	68655	101.7654 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.48	101	722457	95.8626 ug/L	98
13) Acetone	6.58	43	169493	101.4371 ug/L	96
14) 1,1-Dichloroethene	6.81	61	1153494	99.0210 ug/L	98
15) Tert-Butyl Alcohol	6.91	59	116081	406.2167 ug/L	91
16) Dimethyl Sulfide	7.07	62	671243	99.5112 ug/L	100
17) Iodomethane	7.33	142	836332	105.8511 ug/L	83
18) Methyl acetate	7.33	43	420323	95.5112 ug/L	93
19) Methylene Chloride	7.59	84	724688	93.0641 ug/L	72
20) Carbon Disulfide	7.64	76	2137737	94.3019 ug/L	99
21) Acrylonitrile	7.77	53	189809	105.8759 ug/L	99
22) Methyl Tert Butyl Ether	7.80	73	1773990	102.3500 ug/L	88
23) trans-1,2-Dichloroethene	8.05	61	1101040	97.9432 ug/L	95
24) n-Hexane	8.12	57	952513	101.2817 ug/L	96
25) Diisopropyl ether	8.46	45	5168681	195.5361 ug/L	92
26) Vinyl Acetate	8.62	43	969035	101.0916 ug/L	96
27) 1,1-Dichloroethane	8.67	63	1368884	93.0950 ug/L	96
28) Ethyl-Tert-Butyl ether	9.03	59	4379602	198.7665 ug/L	93
29) 2-Butanone	9.21	43	202163	99.7034 ug/L	94
30) Propionitrile	9.33	54	120664	210.9254 ug/L	99
31) 2,2-Dichloropropane	9.44	77	1279096	93.7221 ug/L	98
32) cis-1,2-Dichloroethene	9.50	96	823718	100.8044 ug/L	99
33) Chloroform	9.72	83	1428766	93.5103 ug/L	97
34) 1-Bromopropane	9.86	122	180528	100.6395 ug/L	95
35) Bromochloromethane	9.95	130	550201	97.9342 ug/L	80
36) Tetrahydrofuran	9.97	42	287826	208.5304 ug/L	89
38) 1,1,1-Trichloroethane	10.25	97	1373488	96.8592 ug/L	99
39) Cyclohexane	10.29	56	1221169	100.8821 ug/L	77
40) 1,1-Dichloropropene	10.44	75	1115993	98.8767 ug/L	95
41) Tert-Amyl-Methyl ether	10.55	73	3739750	201.5185 ug/L	93
42) Carbon Tetrachloride	10.60	117	1306060	96.1487 ug/L	99
45) 1,2-Dichloroethane	10.77	62	1078086	96.6907 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M390518.D 8260WTR.M Wed Sep 11 15:50:46 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390518.D Vial: 9
Acq On : 11 Sep 2013 13:14 Operator: TMB
Sample : WG444268-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:45 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.81	78	2951276	94.0886	ug/L	93
47)	Trichloroethene	11.56	130	890901	98.9837	ug/L	98
48)	Methylcyclohexane	11.64	83	1215073	100.3225	ug/L	86
49)	1,2-Dichloropropane	11.77	63	774282	97.8528	ug/L	80
50)	Bromodichloromethane	12.07	83	1132252	100.4448	ug/L	97
51)	1,4-Dioxane	12.06	88	14863	424.8096	ug/L	78
52)	Dibromomethane	12.16	93	446136	102.2268	ug/L	94
53)	2-Chloroethyl Vinyl Ether	12.36	63	369158	105.6404	ug/L	95
54)	4-Methyl-2-Pentanone	12.39	58	166445	103.6380	ug/L	85
55)	cis-1,3-Dichloropropene	12.70	75	1305098	107.7718	ug/L	97
56)	Dimethyl Disulfide	12.97	94	1388882	106.9435	ug/L	98
59)	Toluene	13.13	91	3211465	98.9325	ug/L	98
60)	Ethyl Methacrylate	13.21	69	716457	109.6729	ug/L	90
62)	trans-1,3-Dichloropropene	13.30	75	1174529	101.1218	ug/L	98
63)	1,1,2-Trichloroethane	13.52	97	582635	96.3574	ug/L	98
64)	2-Hexanone	13.44	58	151485	104.5757	ug/L	89
65)	1,3-Dichloropropane	13.83	76	1006515	98.5968	ug/L	90
66)	Tetrachloroethene	13.95	164	758102	96.3798	ug/L	96
67)	Dibromochloromethane	14.22	129	903551	101.4161	ug/L	98
68)	1,2-Dibromoethane	14.48	107	622827	101.3792	ug/L	97
69)	1-Chlorohexane	14.55	91	1045244	106.8050	ug/L	90
70)	Chlorobenzene	14.97	112	2354630	93.5069	ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.00	131	946484	97.9587	ug/L	100
72)	Ethylbenzene	14.99	106	1272033	95.9815	ug/L	96
73)	m-,p-Xylene	15.09	106	2978826	196.7023	ug/L	98
74)	o-Xylene	15.66	106	1540310	103.9846	ug/L	99
75)	Styrene	15.69	104	2541549	107.7220	ug/L	94
76)	Bromoform	16.19	173	567855	103.6861	ug/L	100
77)	Isopropylbenzene	16.08	105	3840471	106.7788	ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.29	83	656067	96.4921	ug/L	98
81)	1,2,3-Trichloropropane	16.48	110	221042	98.6817	ug/L	85
82)	trans-1,4-Dichloro-2-Buten	16.52	53	221511	104.9053	ug/L	79
83)	n-Propylbenzene	16.59	91	4427582	104.1636	ug/L	98
84)	Bromobenzene	16.72	156	1104719	99.6882	ug/L	89
85)	1,3,5-Trimethylbenzene	16.77	105	3462235	106.1022	ug/L	97
86)	2-Chlorotoluene	16.87	91	2995171	100.1650	ug/L	99
87)	4-Chlorotoluene	16.91	91	2586215	96.5583	ug/L	100
88)	a-Methylstyrene	17.18	118	2016007	103.0978	ug/L	96
89)	tert-Butylbenzene	17.24	134	768170	101.1854	ug/L	94
90)	1,2,4-Trimethylbenzene	17.29	105	3528313	99.6114	ug/L	96
91)	sec-Butylbenzene	17.51	105	4096449	101.2059	ug/L	99
92)	p-Isopropyltoluene	17.66	119	3747463	103.1692	ug/L	100
93)	1,3-Dichlorobenzene	17.87	146	2216755	98.7167	ug/L	100
94)	1,4-Dichlorobenzene	17.99	146	2234727	94.3511	ug/L	100
95)	n-Butylbenzene	18.19	91	3127320	101.8089	ug/L	99
96)	1,2-Dichlorobenzene	18.50	146	2067637	98.6357	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	19.49	75	137022	105.2722	ug/L	82
98)	1,2,4-Trichlorobenzene	20.64	180	1612257	104.2094	ug/L	98
99)	Hexachlorobutadiene	20.78	225	720502	96.6211	ug/L	99
100)	Naphthalene	21.01	128	2929166	111.3831	ug/L	100
101)	1,2,3-Trichlorobenzene	21.32	180	1445470	104.5465	ug/L	98

(#) = qualifier out of range (m) = manual integration
8M390518.D 8260WTR.M Wed Sep 11 15:50:46 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390518.D Vial: 9
Acq On : 11 Sep 2013 13:14 Operator: TMB
Sample : WG444268-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration

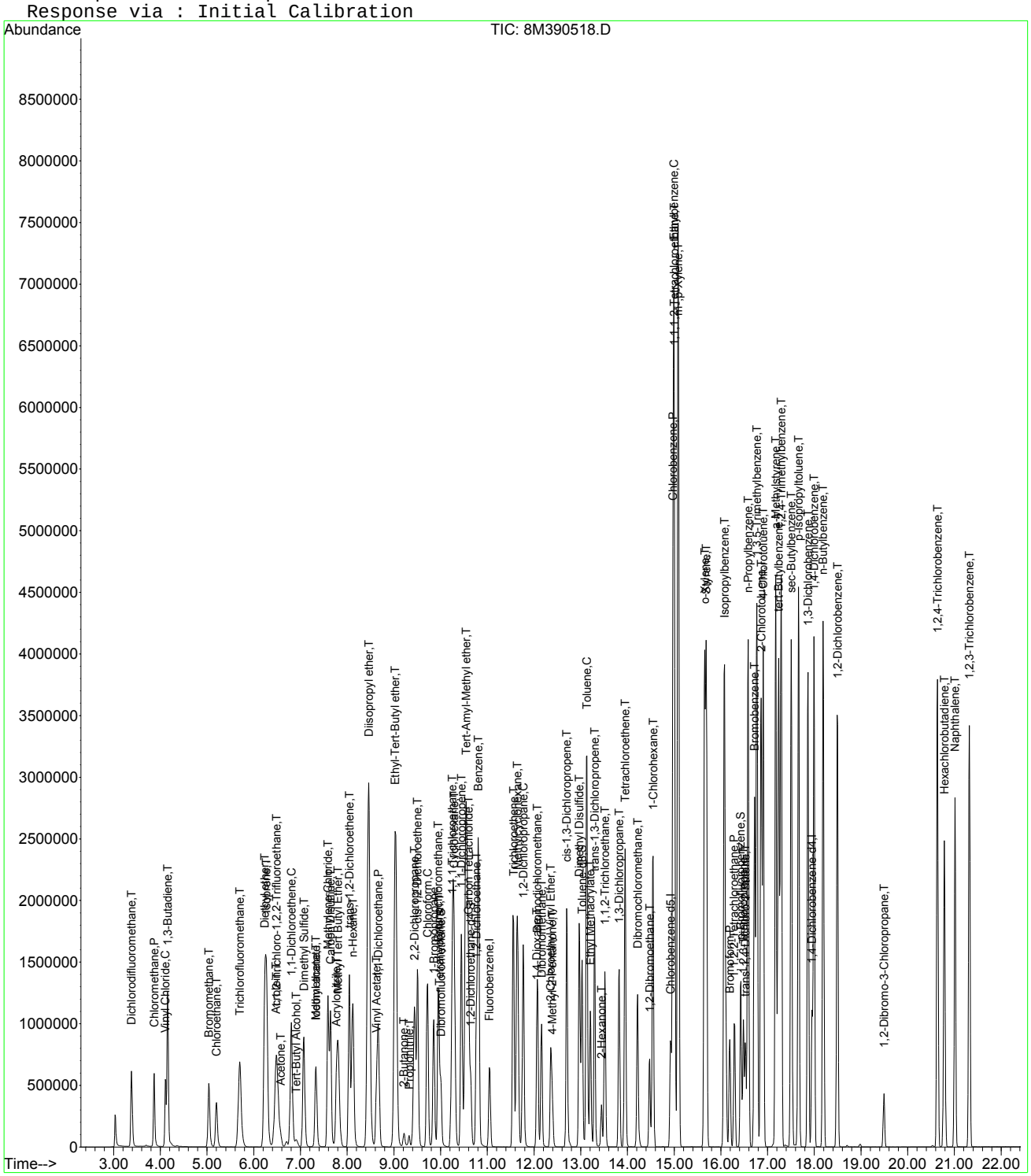

8M390518.D 8260WTR.M Wed Sep 11 15:50:46 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390519.D Vial: 10
Acq On : 11 Sep 2013 13:43 Operator: TMB
Sample : WG444268-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:47 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	874917	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.92	117	708066	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	17.95	152	416692	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	841038	92.5971 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 370.40%#		
43) 1,2-Dichloroethane-d4	10.64	65	856944	92.2147 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 368.84%#		
58) Toluene-d8	13.03	98	2905389	94.3137 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 377.24%#		
80) p-Bromofluorobenzene	16.42	95	1273588	100.2900 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 401.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	1690737	198.7218 ug/L	99
3) Chloromethane	3.87	50	1542842	176.7611 ug/L	99
4) Vinyl Chloride	4.11	62	1392334	189.5395 ug/L	95
5) 1,3-Butadiene	4.16	54	1255726	184.0211 ug/L	87
6) Bromomethane	5.04	94	1127399	189.3371 ug/L	96
7) Chloroethane	5.20	64	1108250	190.5531 ug/L	97
8) Trichlorofluoromethane	5.70	101	2853175	189.3288 ug/L	99
9) Diethyl ether	6.24	59	5233	0.9445 ug/L	85
10) Isoprene	6.27	67	2100736	200.5401 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.48	101	1589622	195.5467 ug/L	98
13) Acetone	6.58	43	354515	196.6975 ug/L	98
14) 1,1-Dichloroethene	6.80	61	2521262	200.6547 ug/L	98
15) Tert-Butyl Alcohol	6.91	59	15000	48.6639 ug/L	86
16) Dimethyl Sulfide	7.07	62	1442171	198.2112 ug/L	99
17) Iodomethane	7.33	142	1809370	212.3066 ug/L	85
18) Methyl acetate	7.33	43	905893	190.8391 ug/L	93
19) Methylene Chloride	7.59	84	1559450	185.6616 ug/L	71
20) Carbon Disulfide	7.64	76	4550486	186.0988 ug/L	99
21) Acrylonitrile	7.81	53	38357	19.8356 ug/L #	33
22) Methyl Tert Butyl Ether	7.80	73	3882333	207.6581 ug/L	88
23) trans-1,2-Dichloroethene	8.05	61	2385856	196.7590 ug/L	95
24) n-Hexane	8.12	57	2061008	203.1698 ug/L	96
26) Vinyl Acetate	8.62	43	1992779	192.7320 ug/L	95
27) 1,1-Dichloroethane	8.67	63	2949903	185.9887 ug/L	96
29) 2-Butanone	9.21	43	433737	198.3143 ug/L	92
30) Propionitrile	9.27	54	449	0.7276 ug/L #	56
31) 2,2-Dichloropropane	9.44	77	2756560	187.2517 ug/L	99
32) cis-1,2-Dichloroethene	9.51	96	1780011	201.9496 ug/L	98
33) Chloroform	9.72	83	3051046	185.1256 ug/L	97
34) 1-Bromopropane	9.85	122	393272	203.2528 ug/L	94
35) Bromochloromethane	9.95	130	1183253	195.2585 ug/L	81
36) Tetrahydrofuran	9.97	42	1144	0.7684 ug/L #	46
38) 1,1,1-Trichloroethane	10.25	97	2955376	193.2183 ug/L	99
39) Cyclohexane	10.29	56	2651531	203.0740 ug/L	78
40) 1,1-Dichloropropene	10.44	75	2393177	196.5742 ug/L	97
42) Carbon Tetrachloride	10.60	117	2835648	193.5316 ug/L	98
45) 1,2-Dichloroethane	10.76	62	2296928	190.9844 ug/L	89
46) Benzene	10.81	78	6196287	183.1379 ug/L	95
47) Trichloroethene	11.56	130	1938168	199.6389 ug/L	97
48) Methylcyclohexane	11.64	83	2627222	201.1000 ug/L	86
49) 1,2-Dichloropropane	11.77	63	1682453	197.1226 ug/L	82

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390519.D Vial: 10
Acq On : 11 Sep 2013 13:43 Operator: TMB
Sample : WG444268-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:47 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
50)	Bromodichloromethane	12.07	83	2448103	201.3416 ug/L	98
51)	1,4-Dioxane	12.06	88	10564	279.9211 ug/L	66
52)	Dibromomethane	12.16	93	962126	204.3848 ug/L	94
53)	2-Chloroethyl Vinyl Ether	12.36	63	812056	215.4383 ug/L	95
54)	4-Methyl-2-Pentanone	12.39	58	371045	214.1875 ug/L	85
55)	cis-1,3-Dichloropropene	12.70	75	2815583	215.5508 ug/L	97
56)	Dimethyl Disulfide	12.97	94	3035437	216.6853 ug/L	96
59)	Toluene	13.13	91	6645255	188.6353 ug/L	96
60)	Ethyl Methacrylate	13.20	69	1573186	221.9038 ug/L	90
62)	trans-1,3-Dichloropropene	13.30	75	2520696	199.9757 ug/L	97
63)	1,1,2-Trichloroethane	13.51	97	1264340	192.6760 ug/L	98
64)	2-Hexanone	13.44	58	336628	214.1346 ug/L	93
65)	1,3-Dichloropropane	13.83	76	2169411	195.8212 ug/L	91
66)	Tetrachloroethene	13.95	164	1668786	195.4945 ug/L	96
67)	Dibromochloromethane	14.22	129	1974901	204.2560 ug/L	98
68)	1,2-Dibromoethane	14.48	107	1353200	202.9639 ug/L	97
69)	1-Chlorohexane	14.55	91	2266116	213.3691 ug/L	89
70)	Chlorobenzene	14.97	112	4841029	177.1471 ug/L	90
71)	1,1,1,2-Tetrachloroethane	15.00	131	1981874	189.0084 ug/L	100
72)	Ethylbenzene	15.00	106	2704746	188.0577 ug/L	96
73)	m-,p-Xylene	15.09	106	6114026	372.0207 ug/L	91
74)	o-Xylene	15.66	106	3285463	204.3775 ug/L	99
75)	Styrene	15.69	104	5334213	208.3300 ug/L	92
76)	Bromoform	16.19	173	1261635	212.2717 ug/L	100
77)	Isopropylbenzene	16.08	105	7888358	202.0984 ug/L	94
79)	1,1,2,2-Tetrachloroethane	16.29	83	1423888	194.1171 ug/L	97
81)	1,2,3-Trichloropropane	16.48	110	485176	200.7730 ug/L	82
82)	trans-1,4-Dichloro-2-Buten	16.52	53	528187	231.8646 ug/L	89
83)	n-Propylbenzene	16.59	91	8856685	193.1368 ug/L	93
84)	Bromobenzene	16.72	156	2404517	201.1241 ug/L	90
85)	1,3,5-Trimethylbenzene	16.77	105	7168712	203.6354 ug/L	94
86)	2-Chlorotoluene	16.86	91	6076061	188.3479 ug/L	98
87)	4-Chlorotoluene	16.91	91	5493661	190.1214 ug/L	98
88)	a-Methylstyrene	17.18	118	4273729	202.5857 ug/L	95
89)	tert-Butylbenzene	17.24	134	1676343	204.6765 ug/L	97
90)	1,2,4-Trimethylbenzene	17.29	105	7225427	189.0819 ug/L	92
91)	sec-Butylbenzene	17.51	105	8427882	193.0016 ug/L	95
92)	p-Isopropyltoluene	17.66	119	7657814	195.4167 ug/L	96
93)	1,3-Dichlorobenzene	17.87	146	4722402	194.9308 ug/L	98
94)	1,4-Dichlorobenzene	17.99	146	4740723	185.5289 ug/L	99
95)	n-Butylbenzene	18.19	91	6489879	195.8368 ug/L	96
96)	1,2-Dichlorobenzene	18.50	146	4439244	196.2967 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.49	75	305472	217.5400 ug/L	85
98)	1,2,4-Trichlorobenzene	20.64	180	3436837	205.9093 ug/L	98
99)	Hexachlorobutadiene	20.78	225	1632062	202.8700 ug/L	99
100)	Naphthalene	21.01	128	6078587	214.2508 ug/L	98
101)	1,2,3-Trichlorobenzene	21.32	180	3074958	206.1504 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M390519.D 8260WTR.M Wed Sep 11 15:50:48 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390519.D Vial: 10
Acq On : 11 Sep 2013 13:43 Operator: TMB
Sample : WG444268-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration

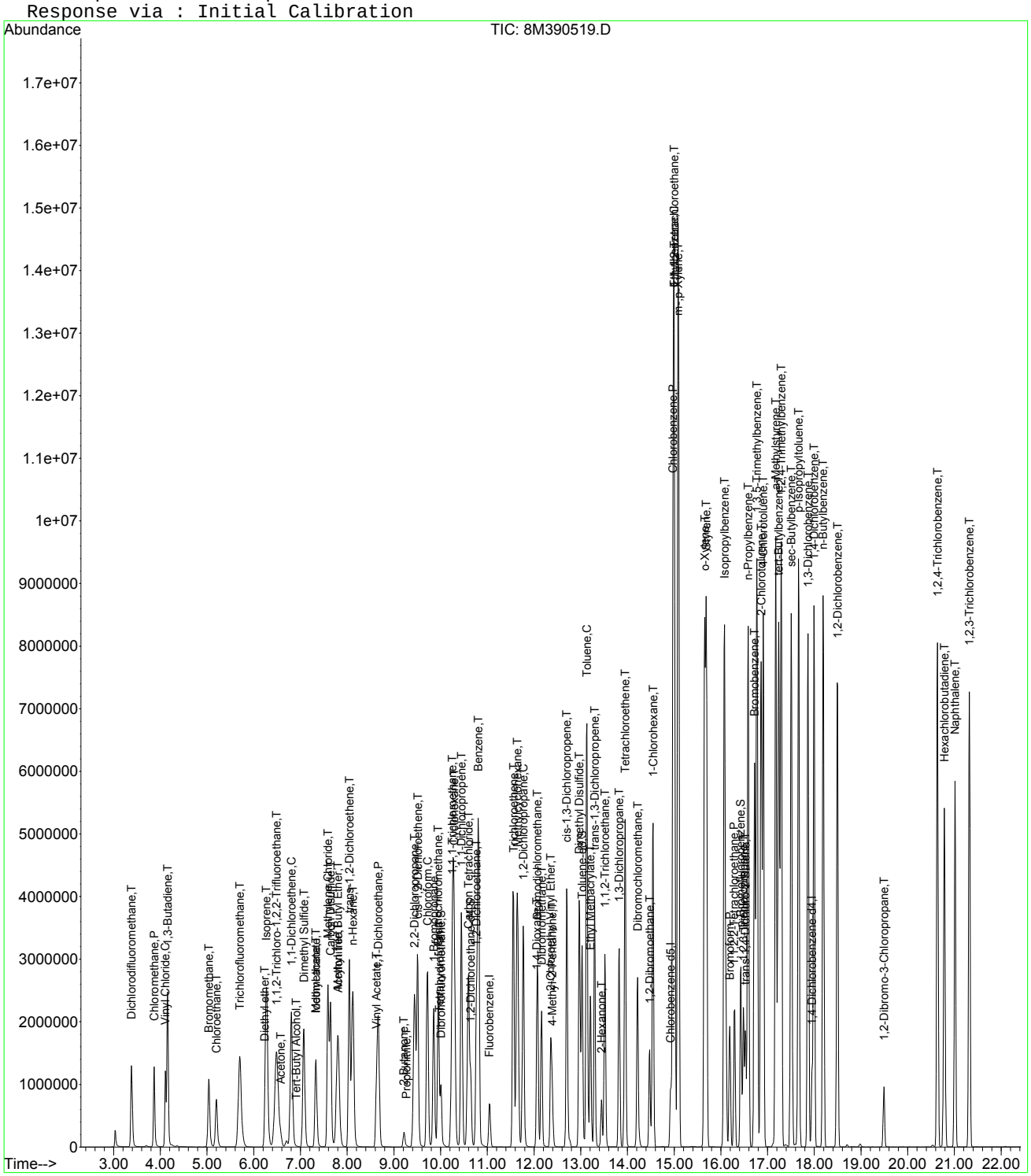

8M390519.D 8260WTR.M Wed Sep 11 15:50:48 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390520.D Vial: 11
Acq On : 11 Sep 2013 14:13 Operator: TMB
Sample : WG444268-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:49 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	930051	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.92	117	760887	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	17.95	152	445442	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	1310988	135.7816 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 543.12%#		
43) 1,2-Dichloroethane-d4	10.64	65	1280058	129.5799 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 518.32%#		
58) Toluene-d8	13.03	98	4450704	134.4476 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 537.80%#		
80) p-Bromofluorobenzene	16.42	95	1968583	145.0128 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 580.04%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.38	85	2465989	272.6595 ug/L	99
3) Chloromethane	3.87	50	2448937	263.9386 ug/L	98
4) Vinyl Chloride	4.11	62	2143527	274.5019 ug/L	95
5) 1,3-Butadiene	4.15	54	1865218	257.1357 ug/L	87
6) Bromomethane	5.04	94	1781723	281.4870 ug/L	96
7) Chloroethane	5.19	64	1730764	279.9473 ug/L	97
8) Trichlorofluoromethane	5.70	101	4356542	271.9508 ug/L	99
9) Diethyl ether	6.23	59	1649597	280.0872 ug/L	90
10) Isoprene	6.27	67	3256112	292.4080 ug/L	84
11) Acrolein	6.47	56	115686	148.8440 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.48	101	2402970	278.0769 ug/L	100
13) Acetone	6.58	43	531163	277.2376 ug/L	99
14) 1,1-Dichloroethene	6.81	61	3885500	290.8964 ug/L	95
15) Tert-Butyl Alcohol	6.92	59	194331	593.0866 ug/L	93
16) Dimethyl Sulfide	7.07	62	2251981	291.1630 ug/L	97
17) Iodomethane	7.32	142	2798658	308.9200 ug/L	87
18) Methyl acetate	7.33	43	1386647	274.7998 ug/L	91
19) Methylene Chloride	7.59	84	2405831	269.4485 ug/L	68
20) Carbon Disulfide	7.64	76	6931003	266.6502 ug/L	98
21) Acrylonitrile	7.77	53	336345	163.6232 ug/L	95
22) Methyl Tert Butyl Ether	7.80	73	5916419	297.6975 ug/L	88
23) trans-1,2-Dichloroethene	8.05	61	3638815	282.2997 ug/L	93
24) n-Hexane	8.12	57	3130443	290.2989 ug/L	98
25) Diisopropyl ether	8.46	45	8225382	271.3831 ug/L	91
26) Vinyl Acetate	8.63	43	2973090	270.4973 ug/L	94
27) 1,1-Dichloroethane	8.67	63	4500840	266.9516 ug/L	95
28) Ethyl-Tert-Butyl ether	9.03	59	7118424	281.7552 ug/L	92
29) 2-Butanone	9.21	43	667155	286.9554 ug/L	90
30) Propionitrile	9.33	54	203423	310.1207 ug/L	96
31) 2,2-Dichloropropane	9.44	77	4223363	269.8838 ug/L	99
32) cis-1,2-Dichloroethene	9.50	96	2752684	293.7898 ug/L	100
33) Chloroform	9.72	83	4562407	260.4186 ug/L	96
34) 1-Bromopropane	9.86	122	629708	306.1560 ug/L	94
35) Bromochloromethane	9.95	130	1827757	283.7337 ug/L	78
36) Tetrahydrofuran	9.97	42	443885	280.4718 ug/L	82
38) 1,1,1-Trichloroethane	10.25	97	4417891	271.7131 ug/L	98
39) Cyclohexane	10.29	56	3976424	286.4906 ug/L	76
40) 1,1-Dichloropropene	10.44	75	3663294	283.0633 ug/L	98
41) Tert-Amyl-Methyl ether	10.55	73	6178073	290.3386 ug/L	92
42) Carbon Tetrachloride	10.60	117	4217124	270.7548 ug/L	98
45) 1,2-Dichloroethane	10.77	62	3402091	266.1072 ug/L	88

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390520.D Vial: 11
Acq On : 11 Sep 2013 14:13 Operator: TMB
Sample : WG444268-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50:49 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.81	78	9040244	251.3547 ug/L		96
47)	Trichloroethene	11.55	130	2997348	290.4363 ug/L		98
48)	Methylcyclohexane	11.64	83	3978630	286.4896 ug/L		86
49)	1,2-Dichloropropane	11.77	63	2537940	279.7274 ug/L		82
50)	Bromodichloromethane	12.07	83	3652045	282.5531 ug/L		97
51)	1,4-Dioxane	12.06	88	23298	580.7456 ug/L		73
52)	Dibromomethane	12.16	93	1454307	290.6249 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.36	63	1240201	309.5202 ug/L		93
54)	4-Methyl-2-Pentanone	12.39	58	565696	307.1926 ug/L		82
55)	cis-1,3-Dichloropropene	12.70	75	4253686	306.3422 ug/L		96
56)	Dimethyl Disulfide	12.97	94	4651870	312.3892 ug/L		96
59)	Toluene	13.13	91	9646166	254.8118 ug/L		93
60)	Ethyl Methacrylate	13.21	69	2400553	315.1009 ug/L		87
62)	trans-1,3-Dichloropropene	13.30	75	3791227	279.8917 ug/L		96
63)	1,1,2-Trichloroethane	13.52	97	1937336	274.7403 ug/L		99
64)	2-Hexanone	13.44	58	514776	304.7253 ug/L		97
65)	1,3-Dichloropropane	13.83	76	3277996	275.3468 ug/L		88
66)	Tetrachloroethene	13.95	164	2631453	286.8687 ug/L		98
67)	Dibromochloromethane	14.22	129	3021146	290.7735 ug/L		98
68)	1,2-Dibromoethane	14.48	107	2069744	288.8864 ug/L		97
69)	1-Chlorohexane	14.55	91	3507729	307.3470 ug/L		88
70)	Chlorobenzene	14.97	112	7060602	240.4317 ug/L		88
71)	1,1,1,2-Tetrachloroethane	15.00	131	2936578	260.6155 ug/L		100
72)	Ethylbenzene	15.00	106	4050877	262.1002 ug/L		85
73)	m-,p-Xylene	15.09	106	8715399	493.4926 ug/L		81
74)	o-Xylene	15.66	106	4983036	288.4590 ug/L		91
75)	Styrene	15.69	104	7795158	283.3088 ug/L		89
76)	Bromoform	16.19	173	1952296	305.6734 ug/L		99
77)	Isopropylbenzene	16.08	105	11078197	264.1185 ug/L		89
79)	1,1,2,2-Tetrachloroethane	16.30	83	2151558	274.3879 ug/L		97
81)	1,2,3-Trichloropropane	16.48	110	735544	284.7336 ug/L	#	42
82)	trans-1,4-Dichloro-2-Buten	16.52	53	786080	322.8029 ug/L	#	41
83)	n-Propylbenzene	16.59	91	12033874	245.4840 ug/L		87
84)	Bromobenzene	16.72	156	3701399	289.6184 ug/L		93
85)	1,3,5-Trimethylbenzene	16.77	105	10100087	268.3868 ug/L		90
86)	2-Chlorotoluene	16.87	91	8623956	250.0743 ug/L		94
87)	4-Chlorotoluene	16.91	91	7879295	255.0824 ug/L		93
88)	a-Methylstyrene	17.18	118	6362963	282.1533 ug/L		94
89)	tert-Butylbenzene	17.24	134	2540494	290.1664 ug/L		94
90)	1,2,4-Trimethylbenzene	17.29	105	10059437	246.2545 ug/L		87
91)	sec-Butylbenzene	17.51	105	11650466	249.5800 ug/L		90
92)	p-Isopropyltoluene	17.66	119	10600984	253.0621 ug/L		92
93)	1,3-Dichlorobenzene	17.87	146	6887989	265.9707 ug/L		96
94)	1,4-Dichlorobenzene	17.99	146	6889106	252.2051 ug/L		96
95)	n-Butylbenzene	18.19	91	9063986	255.8592 ug/L		92
96)	1,2-Dichlorobenzene	18.50	146	6463924	267.3772 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	19.49	75	452054	301.1494 ug/L		89
98)	1,2,4-Trichlorobenzene	20.64	180	4977532	278.9685 ug/L		97
99)	Hexachlorobutadiene	20.78	225	2458317	285.8531 ug/L		99
100)	Naphthalene	21.01	128	8393924	276.7635 ug/L		96
101)	1,2,3-Trichlorobenzene	21.32	180	4459027	279.6463 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M390520.D 8260WTR.M Wed Sep 11 15:50:49 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\8M390520.D Vial: 11
Acq On : 11 Sep 2013 14:13 Operator: TMB
Sample : WG444268-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 15:50 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration

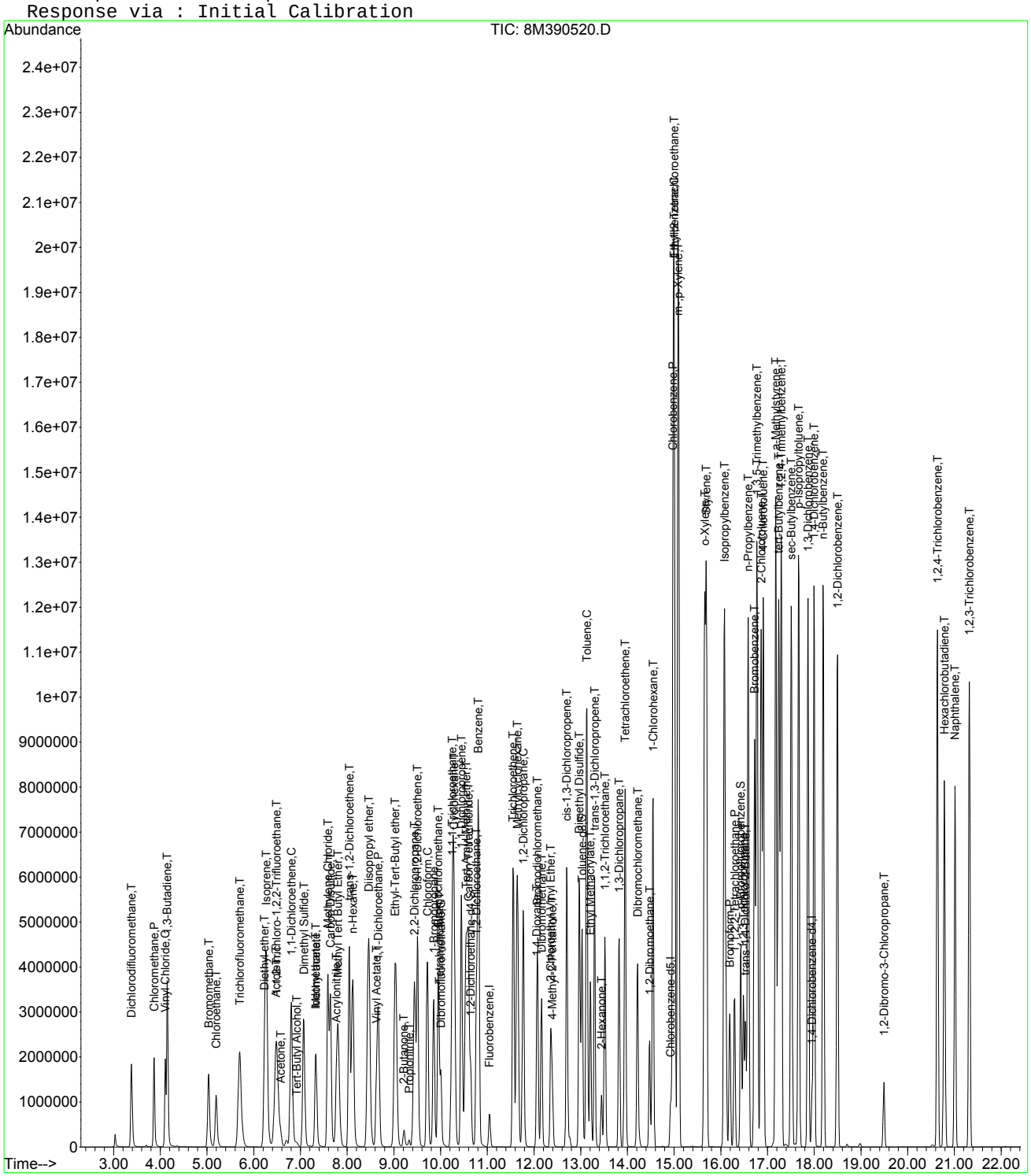

8M390520.D 8260WTR.M Wed Sep 11 15:50:50 2013 Page 3

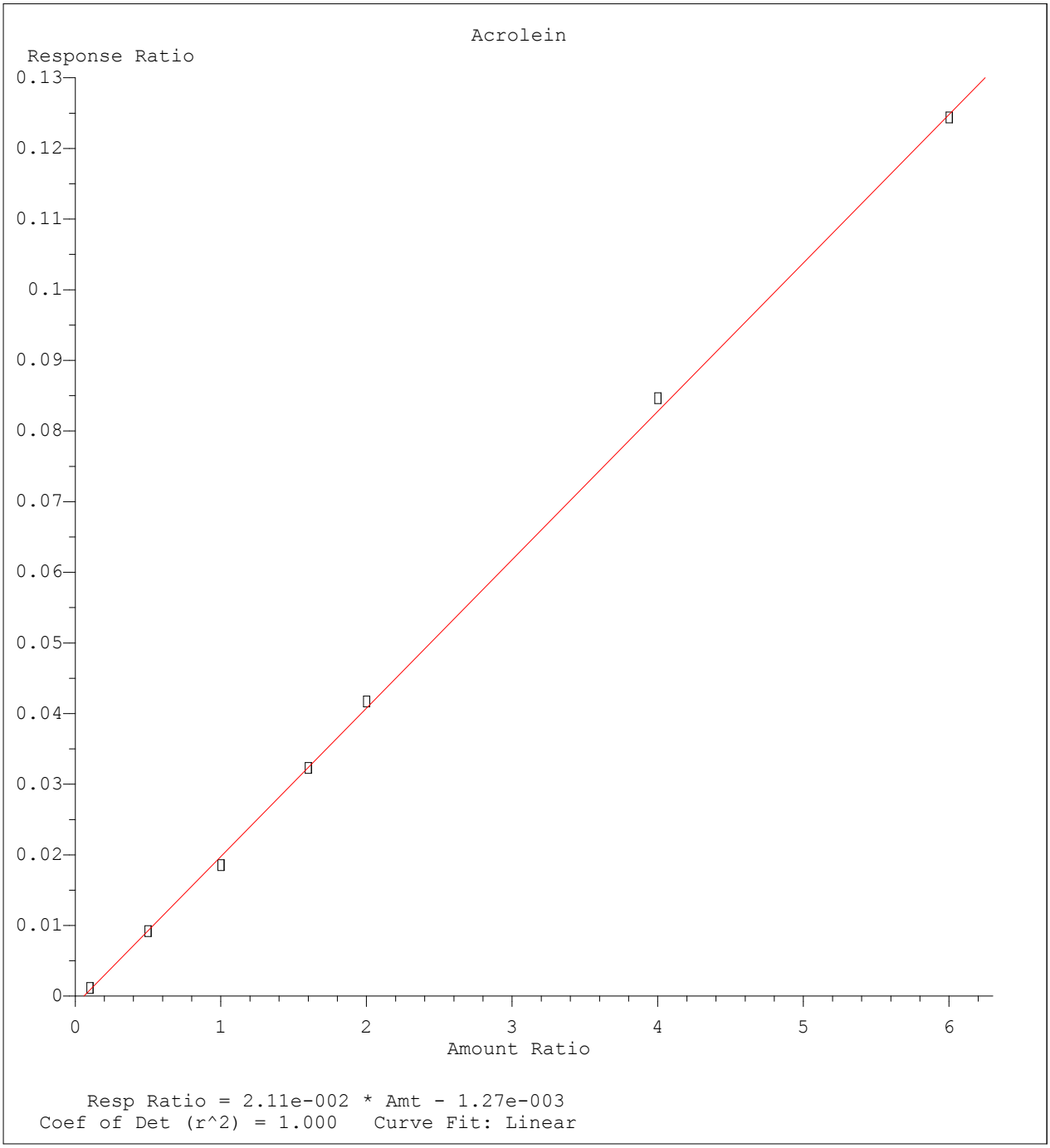

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Wed Sep 11 15:26:24 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091113\8M390524.D Vial: 15
Acq On : 11 Sep 2013 16:57 Operator: TMB
Sample : WG444268-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 17:20:05 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	835378	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.92	117	663917	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	17.95	152	395096	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	207505	23.9273 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.72%		
43) 1,2-Dichloroethane-d4	10.64	65	198186	22.3360 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.36%		
58) Toluene-d8	13.03	98	763856	26.4449 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.76%		
80) p-Bromofluorobenzene	16.42	95	314682	26.1344 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.52%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	544440	67.0198 ug/L	98
3) Chloromethane	3.87	50	405265	48.6282 ug/L	99
4) Vinyl Chloride	4.11	62	376540	53.6848 ug/L	95
5) 1,3-Butadiene	4.16	54	276128	42.3806 ug/L	87
6) Bromomethane	5.04	94	335025	58.9277 ug/L	97
7) Chloroethane	5.20	64	289008	52.0442 ug/L	97
8) Trichlorofluoromethane	5.70	101	758826	52.7369 ug/L	100
9) Diethyl ether	6.24	59	537344	101.5761 ug/L	88
10) Isoprene	6.27	67	561668	56.1556 ug/L	82
11) Acrolein	6.47	56	78383	112.6481 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	450239	58.0074 ug/L	95
13) Acetone	6.58	43	66096	38.4081 ug/L	98
14) 1,1-Dichloroethene	6.80	61	600556	50.0574 ug/L	95
15) Tert-Butyl Alcohol	6.92	59	50429	171.3484 ug/L	89
16) Dimethyl Sulfide	7.07	62	448101	64.5017 ug/L	96
17) Iodomethane	7.33	142	501183	61.5909 ug/L	88
18) Methyl acetate	7.33	43	202766	44.7373 ug/L	92
19) Methylene Chloride	7.59	84	396323	49.4178 ug/L	67
20) Carbon Disulfide	7.64	76	1214265	52.0095 ug/L	100
21) Acrylonitrile	7.77	53	96299	52.1561 ug/L	97
22) Methyl Tert Butyl Ether	7.81	73	991318	55.5332 ug/L	87
23) trans-1,2-Dichloroethene	8.05	61	604496	52.2117 ug/L	92
24) n-Hexane	8.12	57	529846	54.7032 ug/L	98
25) Diisopropyl ether	8.46	45	2632877	96.7121 ug/L	92
26) Vinyl Acetate	8.62	43	671673	68.0356 ug/L	95
27) 1,1-Dichloroethane	8.67	63	739312	48.8192 ug/L	97
28) Ethyl-Tert-Butyl ether	9.03	59	2238028	98.6228 ug/L	92
29) 2-Butanone	9.21	43	108561	51.9859 ug/L	89
30) Propionitrile	9.33	54	60409	102.5312 ug/L	98
31) 2,2-Dichloropropane	9.44	77	701235	49.8891 ug/L	98
32) cis-1,2-Dichloroethene	9.50	96	459455	54.5943 ug/L	98
33) Chloroform	9.72	83	758715	48.2148 ug/L	97
34) 1-Bromopropane	9.85	122	104119	56.3582 ug/L	94
35) Bromochloromethane	9.95	130	300515	51.9377 ug/L	76
36) Tetrahydrofuran	9.97	42	138048	97.1119 ug/L	84
38) 1,1,1-Trichloroethane	10.25	97	731836	50.1110 ug/L	99
39) Cyclohexane	10.28	56	658948	52.8558 ug/L	74
40) 1,1-Dichloropropene	10.44	75	608409	52.3397 ug/L	97
41) Tert-Amyl-Methyl ether	10.55	73	1930976	101.0305 ug/L	92
42) Carbon Tetrachloride	10.60	117	687015	49.1077 ug/L	98
45) 1,2-Dichloroethane	10.76	62	555602	48.3836 ug/L	88

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091113\8M390524.D Vial: 15
Acq On : 11 Sep 2013 16:57 Operator: TMB
Sample : WG444268-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 17:20:05 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.81	78	1624061	50.2728 ug/L	91
47)	Trichloroethene	11.56	130	530263	57.2043 ug/L	99
48)	Methylcyclohexane	11.64	83	682528	54.7167 ug/L	84
49)	1,2-Dichloropropane	11.77	63	420355	51.5815 ug/L	83
50)	Bromodichloromethane	12.07	83	564353	48.6114 ug/L	98
51)	1,4-Dioxane	12.05	88	5819	161.4877 ug/L	81
52)	Dibromomethane	12.16	93	227028	50.5103 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.36	63	197632	54.9134 ug/L	93
54)	4-Methyl-2-Pentanone	12.39	58	88719	53.6374 ug/L	82
55)	cis-1,3-Dichloropropene	12.70	75	720632	57.7802 ug/L	99
56)	Dimethyl Disulfide	12.97	94	758488	56.7075 ug/L	99
59)	Toluene	13.13	91	1780635	53.9071 ug/L	99
60)	Ethyl Methacrylate	13.20	69	392896	59.1047 ug/L	84
62)	trans-1,3-Dichloropropene	13.30	75	589747	49.8979 ug/L	98
63)	1,1,2-Trichloroethane	13.52	97	319129	51.8669 ug/L	99
64)	2-Hexanone	13.44	58	79125	53.6797 ug/L	86
65)	1,3-Dichloropropane	13.83	76	531449	51.1611 ug/L	85
66)	Tetrachloroethene	13.95	164	429919	53.7131 ug/L	98
67)	Dibromochloromethane	14.22	129	460346	50.7778 ug/L	97
68)	1,2-Dibromoethane	14.48	107	323947	51.8192 ug/L	97
69)	1-Chlorohexane	14.55	91	595436	59.7922 ug/L	85
70)	Chlorobenzene	14.97	112	1209009	47.1830 ug/L	97
71)	1,1,1,2-Tetrachloroethane	15.00	131	508771	51.7473 ug/L	99
72)	Ethylbenzene	14.99	106	691764	51.2959 ug/L	97
73)	m-,p-Xylene	15.09	106	1609576	104.4507 ug/L	99
74)	o-Xylene	15.66	106	772585	51.2558 ug/L	98
75)	Styrene	15.69	104	1384835	57.6819 ug/L	98
76)	Bromoform	16.19	173	289001	51.8582 ug/L	99
77)	Isopropylbenzene	16.08	105	1971356	53.8643 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.29	83	344981	49.6016 ug/L	98
81)	1,2,3-Trichloropropane	16.48	110	112330	49.0246 ug/L	89
82)	trans-1,4-Dichloro-2-Buten	16.52	53	79494	36.8039 ug/L	50
83)	n-Propylbenzene	16.59	91	2220698	51.0735 ug/L	98
84)	Bromobenzene	16.72	156	592604	52.2773 ug/L	93
85)	1,3,5-Trimethylbenzene	16.77	105	1947834	58.3548 ug/L	97
86)	2-Chlorotoluene	16.87	91	1513359	49.4758 ug/L	99
87)	4-Chlorotoluene	16.91	91	1282356	46.8048 ug/L	100
88)	a-Methylstyrene	17.18	118	1108659	55.4258 ug/L	98
89)	tert-Butylbenzene	17.24	134	389070	50.1009 ug/L	92
90)	1,2,4-Trimethylbenzene	17.29	105	1971290	54.4063 ug/L	98
91)	sec-Butylbenzene	17.51	105	2126368	51.3563 ug/L	99
92)	p-Isopropyltoluene	17.66	119	1955905	52.6402 ug/L	99
93)	1,3-Dichlorobenzene	17.87	146	1110601	48.3491 ug/L	98
94)	1,4-Dichlorobenzene	17.99	146	1206504	49.7976 ug/L	98
95)	n-Butylbenzene	18.19	91	1750466	55.7088 ug/L	99
96)	1,2-Dichlorobenzene	18.50	146	1029552	48.0137 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.49	75	65603	49.2724 ug/L	85
98)	1,2,4-Trichlorobenzene	20.64	180	876681	55.3951 ug/L	98
99)	Hexachlorobutadiene	20.78	225	418214	54.8267 ug/L	98
100)	Naphthalene	21.01	128	1537231	57.1441 ug/L	100
101)	1,2,3-Trichlorobenzene	21.32	180	770033	54.4461 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M390524.D 8260WTR.M Wed Sep 11 17:20:06 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091113\8M390524.D Vial: 15
Acq On : 11 Sep 2013 16:57 Operator: TMB
Sample : WG444268-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 11 17:20 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration

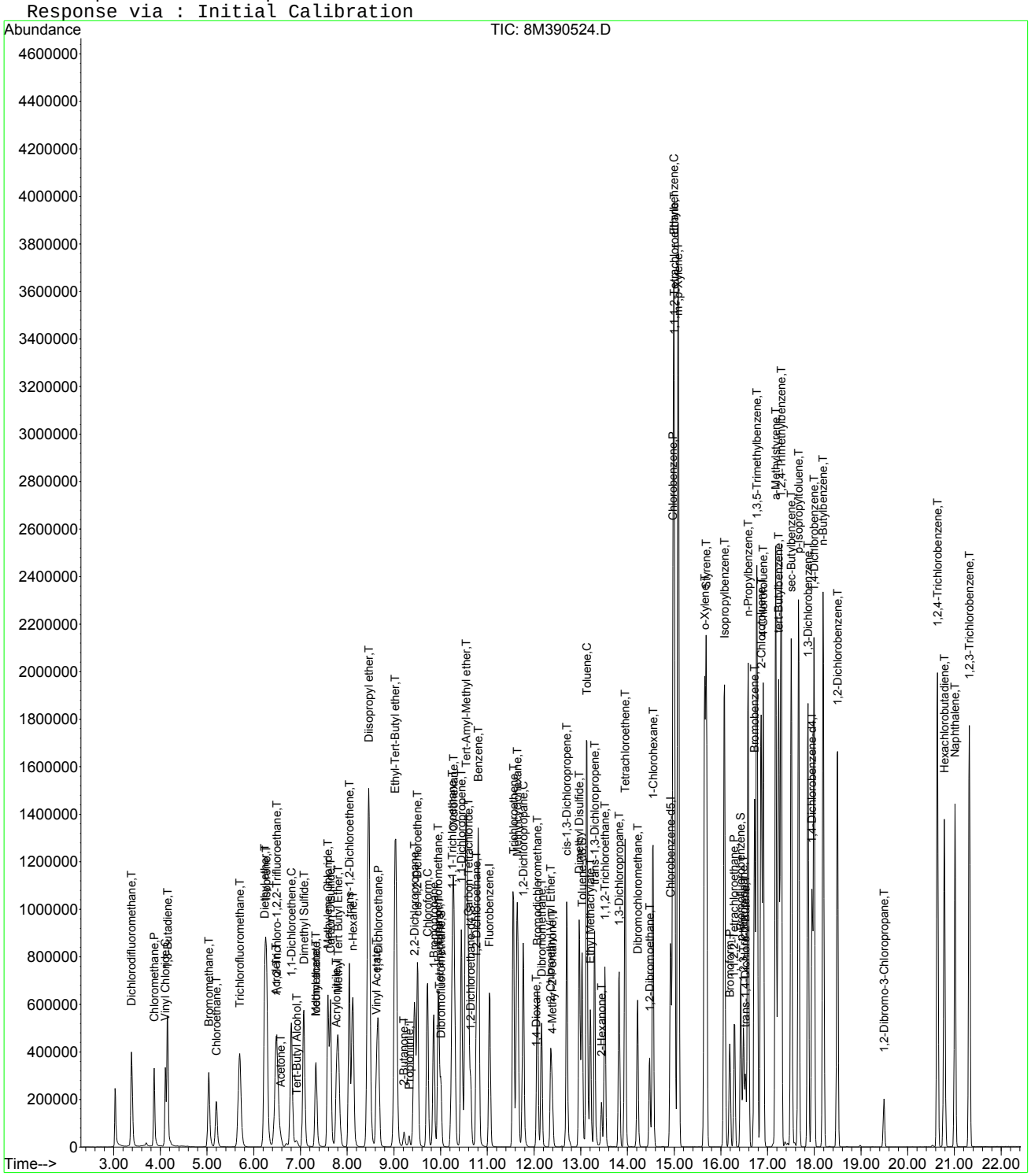

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\091113\8M390524.D Vial: 15
Acq On : 11 Sep 2013 16:57 Operator: TMB
Sample : WG444268-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	110	-0.02
2	T	Dichlorodifluoromethane	50.0000	67.0198	-34.0#	135	-0.01
3	P	Chloromethane	50.0000	48.6282	2.7	112	0.00
4	C	Vinyl Chloride	50.0000	53.6848	-7.4	115	0.00
5	T	1,3-Butadiene	50.0000	42.3806	15.2	88	-0.01
6	T	Bromomethane	50.0000	58.9277	-17.9	131	0.00
7	T	Chloroethane	50.0000	52.0442	-4.1	110	-0.01
8	T	Trichlorofluoromethane	50.0000	52.7369	-5.5	111	-0.01
9	T	Diethyl ether	100.0000	101.5761	-1.6	110	-0.01
10	T	Isoprene	50.0000	56.1556	-12.3	113	-0.01
11	T	Acrolein	50.0000	112.6481	-125.3#	247	-0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	58.0074	-16.0	121	0.01
13	T	Acetone	50.0000	38.4081	23.2	86	-0.02
14	C	1,1-Dichloroethene	50.0000	50.0574	-0.1	103	0.00
15	T	Tert-Butyl Alcohol	200.0000	171.3484	14.3	84	-0.03
16	T	Dimethyl Sulfide	50.0000	64.5017	-29.0#	134	0.00
17	T	Iodomethane	50.0000	61.5909	-23.2	120	0.00
18	T	Methyl acetate	50.0000	44.7373	10.5	96	-0.02
19	T	Methylene Chloride	50.0000	49.4178	1.2	110	-0.01
20	T	Carbon Disulfide	50.0000	52.0095	-4.0	112	0.00
21	T	Acrylonitrile	50.0000	52.1561	-4.3	108	-0.02
22	T	Methyl Tert Butyl Ether	50.0000	55.5332	-11.1	113	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.2117	-4.4	110	0.00
24	T	n-Hexane	50.0000	54.7032	-9.4	111	0.00
25	T	Diisopropyl ether	100.0000	96.7121	3.3	106	-0.02
26	T	Vinyl Acetate	50.0000	68.0356	-36.1#	144	-0.02
27	P	1,1-Dichloroethane	50.0000	48.8192	2.4	108	-0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	98.6228	1.4	107	-0.03
29	T	2-Butanone	50.0000	51.9859	-4.0	114	-0.03
30	T	Propionitrile	100.0000	102.5312	-2.5	107	-0.02
31	T	2,2-Dichloropropane	50.0000	49.8891	0.2	109	-0.01
32	T	cis-1,2-Dichloroethene	50.0000	54.5943	-9.2	112	-0.02
33	C	Chloroform	50.0000	48.2148	3.6	106	-0.01
34		1-Bromopropane	50.0000	56.3582	-12.7	119	-0.01
35	T	Bromochloromethane	50.0000	51.9377	-3.9	109	-0.02
36	T	Tetrahydrofuran	100.0000	97.1119	2.9	103	-0.03
37	S	Dibromofluoromethane	25.0000	23.9273	4.3	105	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.1110	-0.2	106	-0.02
39	T	Cyclohexane	50.0000	52.8558	-5.7	109	-0.02
40	T	1,1-Dichloropropene	50.0000	52.3397	-4.7	110	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	101.0305	-1.0	109	-0.02
42	T	Carbon Tetrachloride	50.0000	49.1077	1.8	103	-0.01
43	S	1,2-Dichloroethane-d4	25.0000	22.3360	10.7	98	-0.02
44		Heptane	-1.0000	0.0000	0.0	0	-2.74#
45	T	1,2-Dichloroethane	50.0000	48.3836	3.2	103	-0.01
46	T	Benzene	50.0000	50.2728	-0.5	109	-0.01
47	T	Trichloroethene	50.0000	57.2043	-14.4	121	-0.01
48	T	Methylcyclohexane	50.0000	54.7167	-9.4	114	0.00
49	C	1,2-Dichloropropane	50.0000	51.5815	-3.2	111	-0.02
50	T	Bromodichloromethane	50.0000	48.6114	2.8	102	-0.02
51	T	1,4-Dioxane	200.0000	161.4877	19.3	76	-0.03
52	T	Dibromomethane	50.0000	50.5103	-1.0	104	-0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	54.9134	-9.8	115	0.00
54	T	4-Methyl-2-Pentanone	50.0000	53.6374	-7.3	111	-0.02
55	T	cis-1,3-Dichloropropene	50.0000	57.7801	-15.6	114	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\091113\8M390524.D Vial: 15
Acq On : 11 Sep 2013 16:57 Operator: TMB
Sample : WG444268-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	50.0000	56.7075	-13.4	115	-0.02
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	110	-0.02
58	S	Toluene-d8	25.0000	26.4449	-5.8	113	0.00
59	C	Toluene	50.0000	53.9071	-7.8	111	0.00
60	T	Ethyl Methacrylate	50.0000	59.1047	-18.2	113	-0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.34#
62	T	trans-1,3-Dichloropropene	50.0000	49.8979	0.2	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	51.8669	-3.7	112	-0.02
64	T	2-Hexanone	50.0000	53.6797	-7.4	114	-0.02
65	T	1,3-Dichloropropane	50.0000	51.1611	-2.3	107	-0.01
66	T	Tetrachloroethene	50.0000	53.7131	-7.4	113	-0.01
67	T	Dibromochloromethane	50.0000	50.7778	-1.6	104	-0.01
68	T	1,2-Dibromoethane	50.0000	51.8192	-3.6	107	-0.01
69	T	1-Chlorohexane	50.0000	59.7922	-19.6	116	0.00
70	P	Chlorobenzene	50.0000	47.1830	5.6	103	-0.02
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.7473	-3.5	109	-0.01
72	C	Ethylbenzene	50.0000	51.2959	-2.6	111	-0.02
73	T	m-,p-Xylene	100.0000	104.4507	-4.5	107	0.00
74	T	o-Xylene	50.0000	51.2558	-2.5	102	0.00
75	T	Styrene	50.0000	57.6819	-15.4	111	-0.02
76	P	Bromoform	50.0000	51.8582	-3.7	106	0.00
77	T	Isopropylbenzene	50.0000	53.8643	-7.7	103	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	111	-0.02
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6016	0.8	108	-0.02
80	S	p-Bromofluorobenzene	25.0000	26.1344	-4.5	112	-0.02
81	T	1,2,3-Trichloropropane	50.0000	49.0246	2.0	104	-0.02
82	T	trans-1,4-Dichloro-2-Butene	50.0000	36.8039	26.4#	76	-0.02
83	T	n-Propylbenzene	50.0000	51.0735	-2.1	100	-0.01
84	T	Bromobenzene	50.0000	52.2773	-4.6	110	-0.02
85	T	1,3,5-Trimethylbenzene	50.0000	58.3548	-16.7	114	0.00
86	T	2-Chlorotoluene	50.0000	49.4758	1.0	103	0.00
87	T	4-Chlorotoluene	50.0000	46.8048	6.4	100	-0.02
88	T	a-Methylstyrene	50.0000	55.4258	-10.9	115	-0.02
89	T	tert-Butylbenzene	50.0000	50.1009	-0.2	106	-0.02
90	T	1,2,4-Trimethylbenzene	50.0000	54.4063	-8.8	113	-0.02
91	T	sec-Butylbenzene	50.0000	51.3563	-2.7	105	-0.02
92	T	p-Isopropyltoluene	50.0000	52.6402	-5.3	106	-0.02
93	T	1,3-Dichlorobenzene	50.0000	48.3491	3.3	103	-0.01
94	T	1,4-Dichlorobenzene	50.0000	49.7976	0.4	111	-0.02
95	T	n-Butylbenzene	50.0000	55.7088	-11.4	114	-0.02
96	T	1,2-Dichlorobenzene	50.0000	48.0137	4.0	102	-0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	49.2724	1.5	102	-0.02
98	T	1,2,4-Trichlorobenzene	50.0000	55.3951	-10.8	112	-0.02
99	T	Hexachlorobutadiene	50.0000	54.8267	-9.7	121	-0.02
100	T	Naphthalene	50.0000	57.1441	-14.3	106	-0.02
101	T	1,2,3-Trichlorobenzene	50.0000	54.4461	-8.9	109	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M390524.D 8260WTR.M Thu Sep 12 08:50:35 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\090913\6M119755.D Vial: 2
Acq On : 9 Sep 2013 11:19 Operator: TMB
Sample : WG443995-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD59935 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 09 11:42:45 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Fri Aug 30 16:35:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.17	96	968948	25.00 ug/L	0.01
57) Chlorobenzene-d5	14.64	117	754988	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	18.18	152	408512	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	8.97	111	277979	27.3372 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.36%		
43) 1,2-Dichloroethane-d4	9.70	65	215132	24.9690 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.88%		
58) Toluene-d8	12.44	98	1016905	25.1220 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.48%		
80) p-Bromofluorobenzene	16.40	95	364570	23.4641 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.84%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.56	85	489607	54.5132 ug/L	96
3) Chloromethane	2.92	50	569430	42.8226 ug/L	100
4) Vinyl Chloride	3.09	62	522967	49.5476 ug/L	100
5) 1,3-Butadiene	3.13	54	546169	88.3343 ug/L	96
6) Bromomethane	3.82	94	222334	37.0238 ug/L	99
7) Chloroethane	3.97	64	446770	51.3901 ug/L	97
8) Trichlorofluoromethane	4.42	101	879988	51.4363 ug/L	100
9) Diethyl ether	4.95	59	649967	98.5555 ug/L	96
10) Isoprene	4.98	67	825750	55.1622 ug/L	95
11) Acrolein	5.17	56	5377	33.4379 ug/L	81
12) 1,1,2-Trichloro-1,2,2-Trif	5.19	101	524081	54.5782 ug/L	99
13) Acetone	5.28	43	96976	58.8669 ug/L	98
14) 1,1-Dichloroethene	5.49	61	955368	47.8944 ug/L	93
15) Tert-Butyl Alcohol	5.63	59	62744	176.4708 ug/L	95
16) Dimethyl Sulfide	5.76	62	540255	50.9853 ug/L	93
17) Iodomethane	6.01	142	315175	34.5291 ug/L	100
18) Methyl acetate	6.07	43	247012	43.3238 ug/L	97
19) Methylene Chloride	6.32	84	496615	50.5708 ug/L	85
20) Carbon Disulfide	6.33	76	1778671	54.7301 ug/L	99
21) Acrylonitrile	6.52	53	109689	48.5312 ug/L	98
22) Methyl Tert Butyl Ether	6.56	73	774249	47.2775 ug/L	96
23) trans-1,2-Dichloroethene	6.81	96	580306	52.9083 ug/L	88
24) n-Hexane	6.91	57	872227	49.3247 ug/L	95
25) Diisopropyl ether	7.31	45	4276693	92.3467 ug/L	98
26) Vinyl Acetate	7.48	43	654573	50.3007 ug/L	97
27) 1,1-Dichloroethane	7.48	63	1093306	48.1794 ug/L	99
28) Ethyl-Tert-Butyl ether	7.94	59	2759577	92.6148 ug/L	98
29) 2-Butanone	8.12	43	112533	44.0982 ug/L	95
30) Propionitrile	8.24	54	67339	93.9794 ug/L	97
31) 2,2-Dichloropropane	8.35	77	854710	49.6544 ug/L	89
32) cis-1,2-Dichloroethene	8.42	96	592767	52.3245 ug/L	89
33) Chloroform	8.64	83	931235	49.8578 ug/L	97
34) 1-Bromopropane	8.80	122	133600	63.6424 ug/L	99
35) Bromochloromethane	8.90	130	309139	52.6431 ug/L	99
36) Tetrahydrofuran	8.94	42	147161	86.6592 ug/L	94
38) 1,1,1-Trichloroethane	9.25	97	904680	50.9105 ug/L	95
39) Cyclohexane	9.27	56	1195573	47.7518 ug/L	94
40) 1,1-Dichloropropene	9.47	75	737699	49.2565 ug/L	91
41) Tert-Amyl-Methyl ether	9.62	73	1677590	94.0035 ug/L	100
42) Carbon Tetrachloride	9.62	117	857131	53.4725 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M119755.D 8260WTR.M Mon Sep 09 11:42:45 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\090913\6M119755.D Vial: 2
Acq On : 9 Sep 2013 11:19 Operator: TMB
Sample : WG443995-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD59935 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 09 11:42:45 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Fri Aug 30 16:35:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.84	62	549068	46.9873 ug/L	98
46)	Benzene	9.87	78	2032724	49.7283 ug/L	96
47)	Trichloroethene	10.74	130	595743	51.7688 ug/L	93
48)	Methylcyclohexane	10.83	83	762879	51.2543 ug/L	93
49)	1,2-Dichloropropane	10.98	63	556099	47.5402 ug/L	98
50)	1,4-Dioxane	11.33	88	6332	189.6986 ug/L	80
51)	Bromodichloromethane	11.32	83	633086	50.0975 ug/L	100
52)	Dibromomethane	11.41	93	208997	52.6538 ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.73	63	143861	37.5043 ug/L	98
54)	4-Methyl-2-Pentanone	11.77	58	83382	43.6073 ug/L	96
55)	cis-1,3-Dichloropropene	12.09	75	687960	49.2246 ug/L	98
56)	Dimethyl Disulfide	12.35	79	367104	54.8399 ug/L	96
59)	Toluene	12.56	91	2169179	43.9193 ug/L	100
60)	Ethyl Methacrylate	12.75	69	307583	43.3625 ug/L	83
62)	trans-1,3-Dichloropropene	12.79	75	536703	44.2910 ug/L	98
63)	1,1,2-Trichloroethane	13.02	97	276201	44.2395 ug/L	99
64)	2-Hexanone	13.00	43	150922	34.8895 ug/L	96
65)	1,3-Dichloropropane	13.39	76	459733	42.6747 ug/L	84
66)	Tetrachloroethene	13.50	166	643172	46.1868 ug/L	98
67)	Dibromochloromethane	13.79	129	419912	48.1449 ug/L	99
68)	1,2-Dibromoethane	14.09	107	280220	45.0185 ug/L	99
69)	1-Chlorohexane	14.27	91	708896	47.1339 ug/L	91
70)	Chlorobenzene	14.69	112	1410435	44.7745 ug/L	95
71)	1,1,1,2-Tetrachloroethane	14.74	131	533626	47.5126 ug/L	99
72)	Ethylbenzene	14.75	106	817171	45.0169 ug/L	98
73)	m-,p-Xylene	14.86	106	1970916	91.3041 ug/L	97
74)	o-Xylene	15.51	106	937546	44.6248 ug/L	97
75)	Styrene	15.56	104	1475874	45.2123 ug/L	97
76)	Bromoform	16.09	173	236350	52.1928 ug/L	99
77)	Isopropylbenzene	16.03	105	2413672	44.4964 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.27	83	264379	40.8323 ug/L	99
81)	1,2,3-Trichloropropane	16.50	110	78595	41.8921 ug/L	88
82)	trans-1,4-Dichloro-2-Buten	16.58	53	99194	39.4848 ug/L	88
83)	n-Propylbenzene	16.62	91	2770595	40.9100 ug/L	100
84)	Bromobenzene	16.72	156	604425	44.2383 ug/L	100
85)	1,3,5-Trimethylbenzene	16.85	105	1997397	40.1201 ug/L	99
86)	2-Chlorotoluene	16.91	91	1876897	39.4465 ug/L	96
87)	4-Chlorotoluene	16.97	91	1654315	40.5330 ug/L	98
88)	a-Methylstyrene	17.32	118	1154226	44.7249 ug/L	99
89)	tert-Butylbenzene	17.39	134	426834	42.1062 ug/L	100
90)	1,2,4-Trimethylbenzene	17.45	105	2024902	40.6320 ug/L	100
91)	sec-Butylbenzene	17.70	105	2403253	40.7594 ug/L	99
92)	p-Isopropyltoluene	17.91	119	2079272	41.0544 ug/L	99
93)	1,3-Dichlorobenzene	18.08	146	1209004	43.2462 ug/L	98
94)	1,4-Dichlorobenzene	18.23	146	1177331	43.2000 ug/L	98
95)	n-Butylbenzene	18.52	91	1734630	40.5101 ug/L	100
96)	1,2-Dichlorobenzene	18.79	146	999897	43.3129 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	19.98	75	37391	37.8341 ug/L	92
98)	1,2,4-Trichlorobenzene	21.32	180	664685	40.5799 ug/L	99
99)	Hexachlorobutadiene	21.52	225	347456	42.3910 ug/L	98
100)	Naphthalene	21.73	128	844138	36.5108 ug/L	99
101)	1,2,3-Trichlorobenzene	22.10	180	519685	39.2070 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M119755.D 8260WTR.M Mon Sep 09 11:42:46 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\090913\6M119755.D Vial: 2
Acq On : 9 Sep 2013 11:19 Operator: TMB
Sample : WG443995-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD59935 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 9 11:42 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Fri Aug 30 16:35:03 2013
Response via : Initial Calibration

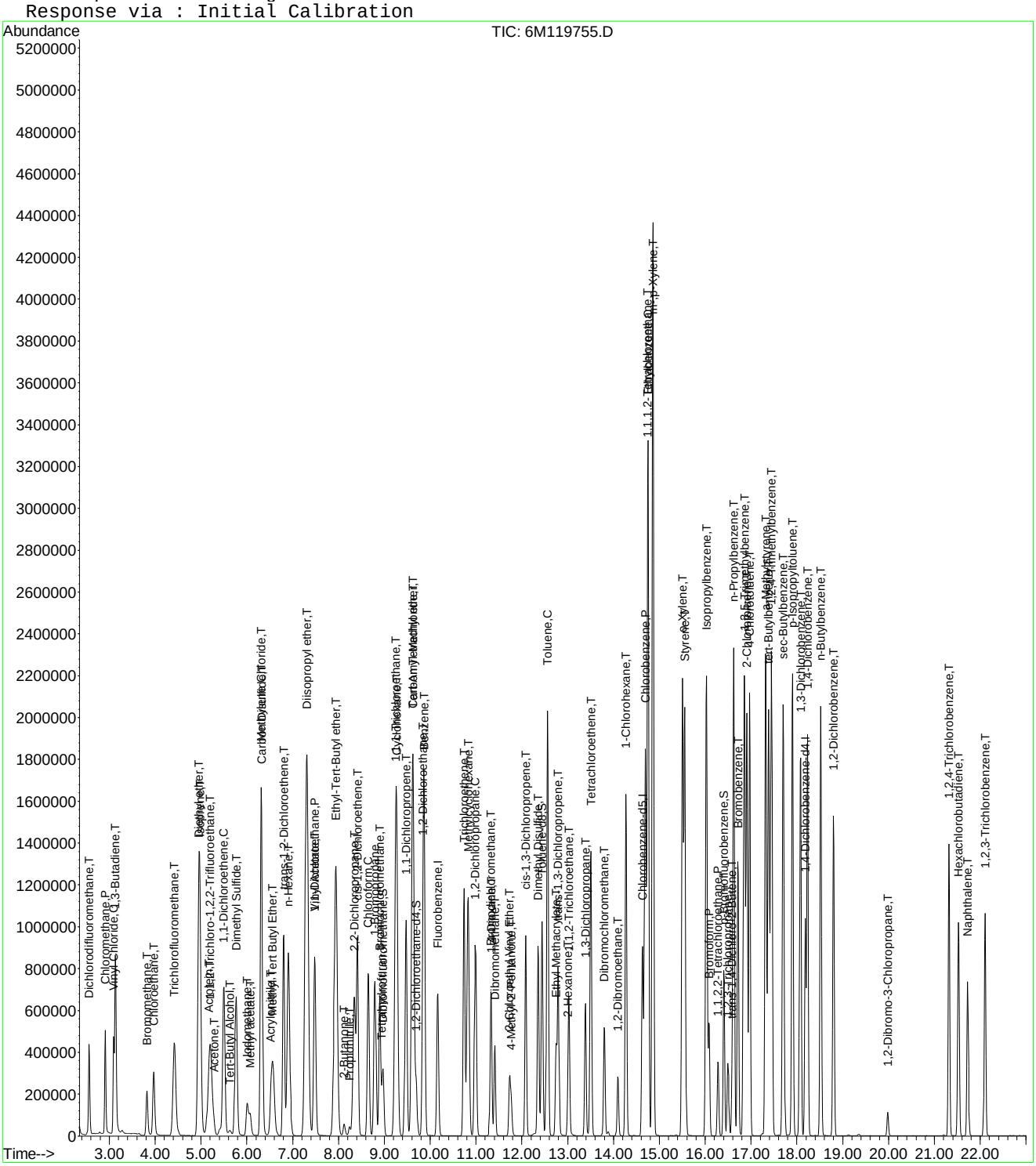

6M119755.D 8260WTR.M Mon Sep 09 11:42:46 2013 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS6
Initial cal date: 26 Jul 2013 18:41
CCV date: 9 Sep 2013 11:19
CCV Filename: 6M119755.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	849520	10.21	585843	14.69	292007	18.24
CCV	968948	10.17	754988	14.64	408512	18.18

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\090913\6M119755.D Vial: 2
Acq On : 9 Sep 2013 11:19 Operator: TMB
Sample : WG443995-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD59935 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Fri Aug 30 16:35:03 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	114	0.01
2	T	Dichlorodifluoromethane	0.2317	0.2526	-9.0	113	0.03
3	P	Chloromethane	0.3431	0.2938	14.4	101	0.03
4	C	Vinyl Chloride	0.2723	0.2699	0.9	108	0.02
5	T	1,3-Butadiene	0.1687	0.2818	-67.1#	160	0.02
6	T	Bromomethane	0.1356	0.1147	15.4	85	0.02
7	T	Chloroethane	0.2243	0.2305	-2.8	113	0.02
8	T	Trichlorofluoromethane	0.4414	0.4541	-2.9	111	0.01
9	T	Diethyl ether	0.1702	0.1677	1.4	109	0.01
10	T	Isoprene	0.3862	0.4261	-10.3	119	0.02
11	T	Acrolein	0.0042	0.0028	33.3#	71	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2478	0.2704	-9.2	117	0.01
13	T	Acetone	0.0463	0.0500	-8.1	142	0.01
14	C	1,1-Dichloroethene	0.5147	0.4930	4.2	105	0.01
15	T	Tert-Butyl Alcohol	0.0092	0.0081	11.8	98	0.01
16	T	Dimethyl Sulfide	0.2734	0.2788	-2.0	111	0.01
17	T	Iodomethane	0.1908	0.1626	14.8	81	0.01
18	T	Methyl acetate	0.1591	0.1275	19.9	99	0.01
19	T	Methylene Chloride	0.2534	0.2563	-1.1	116	0.01
20	T	Carbon Disulfide	0.8385	0.9178	-9.5	122	0.02
21	T	Acrylonitrile	0.0583	0.0566	2.9	105	0.01
22	T	Methyl Tert Butyl Ether	0.4225	0.3995	5.4	101	0.01
23	T	trans-1,2-Dichloroethene	0.2830	0.2994	-5.8	117	0.02
24	T	n-Hexane	0.4562	0.4501	1.4	110	0.01
25	T	Diisopropyl ether	1.1949	1.1034	7.7	103	0.02
26	T	Vinyl Acetate	0.3358	0.3378	-0.6	109	0.01
27	P	1,1-Dichloroethane	0.5855	0.5642	3.6	107	0.01
28	T	Ethyl-Tert-Butyl ether	0.7688	0.7120	7.4	103	0.01
29	T	2-Butanone	0.0658	0.0581	11.8	103	0.01
30	T	Propionitrile	0.0185	0.0174	6.1	105	0.01
31	T	2,2-Dichloropropane	0.4441	0.4411	0.7	110	0.01
32	T	cis-1,2-Dichloroethene	0.2923	0.3059	-4.6	114	0.01
33	C	Chloroform	0.4819	0.4805	0.3	112	0.01
34		1-Bromopropane	0.0542	0.0689	-27.3#	137	0.01
35	T	Bromochloromethane	0.1515	0.1595	-5.3	116	0.01
36	T	Tetrahydrofuran	0.0438	0.0380	13.3	100	0.01
37	S	Dibromofluoromethane	0.2624	0.2869	-9.3	129	0.01
38	T	1,1,1-Trichloroethane	0.4585	0.4668	-1.8	112	0.01
39	T	Cyclohexane	0.6460	0.6169	4.5	107	0.01
40	T	1,1-Dichloropropene	0.3864	0.3807	1.5	107	0.01
41	T	Tert-Amyl-Methyl ether	0.4605	0.4328	6.0	105	0.01
42	T	Carbon Tetrachloride	0.4136	0.4423	-6.9	116	0.01
43	S	1,2-Dichloroethane-d4	0.2223	0.2220	0.1	113	0.01
44		Heptane	0.0000	0.0000	0.0	96	0.01
45	T	1,2-Dichloroethane	0.3015	0.2833	6.0	102	0.01
46	T	Benzene	1.0547	1.0489	0.5	111	0.01
47	T	Trichloroethene	0.2969	0.3074	-3.5	113	0.01
48	T	Methylcyclohexane	0.3840	0.3937	-2.5	114	0.01
49	C	1,2-Dichloropropane	0.3018	0.2870	4.9	103	0.00
50	T	1,4-Dioxane	0.0008	0.0008	-1.2	102	0.00
51	T	Bromodichloromethane	0.3261	0.3267	-0.2	111	0.00
52	T	Dibromomethane	0.1024	0.1079	-5.3	111	0.01
53	T	2-Chloroethyl Vinyl Ether	0.0990	0.0742	25.0#	83	0.01
54	T	4-Methyl-2-Pentanone	0.0493	0.0430	12.8	96	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\090913\6M119755.D Vial: 2
Acq On : 9 Sep 2013 11:19 Operator: TMB
Sample : WG443995-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD59935 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Fri Aug 30 16:35:03 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3606	0.3550	1.6	105	0.01
56	T	Dimethyl Disulfide	0.1727	0.1894	-9.7	118	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	129	0.01
58	S	Toluene-d8	1.3404	1.3469	-0.5	132	0.01
59	C	Toluene	1.6355	1.4366	12.2	109	0.00
60	T	Ethyl Methacrylate	0.2349	0.2037	13.3	104	0.01
61		Paraldehyde	0.0000	0.0000	0.0	110	0.00
62	T	trans-1,3-Dichloropropene	0.4013	0.3554	11.4	106	0.00
63	T	1,1,2-Trichloroethane	0.2067	0.1829	11.5	110	0.00
64	T	2-Hexanone	0.1432	0.0999	30.2#	86	0.01
65	T	1,3-Dichloropropane	0.3567	0.3045	14.7	105	0.01
66	T	Tetrachloroethene	0.4611	0.4260	7.6	115	0.01
67	T	Dibromochloromethane	0.2888	0.2781	3.7	116	0.00
68	T	1,2-Dibromoethane	0.2061	0.1856	10.0	110	0.00
69	T	1-Chlorohexane	0.4980	0.4695	5.7	118	0.00
70	P	Chlorobenzene	1.0431	0.9341	10.5	110	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3719	0.3534	5.0	116	0.00
72	C	Ethylbenzene	0.6011	0.5412	10.0	111	0.00
73	T	m-,p-Xylene	0.7148	0.6526	8.7	111	0.01
74	T	o-Xylene	0.6957	0.6209	10.8	110	0.00
75	T	Styrene	1.0809	0.9774	9.6	109	0.01
76	P	Bromoform	0.1500	0.1565	-4.4	125	0.01
77	T	Isopropylbenzene	1.7962	1.5985	11.0	109	0.01
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	140	0.00
79	P	1,1,2,2-Tetrachloroethane	0.3962	0.3236	18.3	111	0.00
80	S	p-Bromofluorobenzene	0.9508	0.8924	6.1	135	0.00
81	T	1,2,3-Trichloropropane	0.1148	0.0962	16.2	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1537	0.1214	21.0#	104	0.00
83	T	n-Propylbenzene	4.1446	3.3911	18.2	110	0.00
84	T	Bromobenzene	0.8361	0.7398	11.5	115	0.01
85	T	1,3,5-Trimethylbenzene	3.0468	2.4447	19.8	109	0.01
86	T	2-Chlorotoluene	2.9118	2.2972	21.1#	108	0.00
87	T	4-Chlorotoluene	2.4977	2.0248	18.9	112	0.00
88	T	a-Methylstyrene	1.5793	1.4127	10.5	120	0.01
89	T	tert-Butylbenzene	0.6204	0.5224	15.8	111	0.00
90	T	1,2,4-Trimethylbenzene	3.0498	2.4784	18.7	110	0.01
91	T	sec-Butylbenzene	3.6083	2.9415	18.5	109	0.00
92	T	p-Isopropyltoluene	3.0995	2.5449	17.9	110	0.01
93	T	1,3-Dichlorobenzene	1.7109	1.4798	13.5	117	0.01
94	T	1,4-Dichlorobenzene	1.6678	1.4410	13.6	116	0.00
95	T	n-Butylbenzene	2.6205	2.1231	19.0	110	0.00
96	T	1,2-Dichlorobenzene	1.4128	1.2238	13.4	116	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0605	0.0458	24.3#	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0024	0.8135	18.8	109	0.00
99	T	Hexachlorobutadiene	0.5016	0.4253	15.2	116	0.00
100	T	Naphthalene	1.4149	1.0332	27.0#	98	0.00
101	T	1,2,3-Trichlorobenzene	0.8112	0.6361	21.6#	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M119755.D 8260WTR.M Mon Sep 09 11:49:54 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\090913\6M119755.D Vial: 2
Acq On : 9 Sep 2013 11:19 Operator: TMB
Sample : WG443995-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD59935 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Fri Aug 30 16:35:03 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	114	0.01
2	T	Dichlorodifluoromethane	50.0000	54.5132	-9.0	113	0.03
3	P	Chloromethane	50.0000	42.8226	14.4	101	0.03
4	C	Vinyl Chloride	50.0000	49.5476	0.9	108	0.02
5	T	1,3-Butadiene	50.0000	88.3342	-76.7#	160	0.02
6	T	Bromomethane	50.0000	37.0238	26.0#	85	0.02
7	T	Chloroethane	50.0000	51.3901	-2.8	113	0.02
8	T	Trichlorofluoromethane	50.0000	51.4363	-2.9	111	0.01
9	T	Diethyl ether	100.0000	98.5555	1.4	109	0.01
10	T	Isoprene	50.0000	55.1622	-10.3	119	0.02
11	T	Acrolein	50.0000	33.4379	33.1#	71	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.5782	-9.2	117	0.01
13	T	Acetone	50.0000	58.8669	-17.7	142	0.01
14	C	1,1-Dichloroethene	50.0000	47.8944	4.2	105	0.01
15	T	Tert-Butyl Alcohol	200.0000	176.4708	11.8	98	0.01
16	T	Dimethyl Sulfide	50.0000	50.9853	-2.0	111	0.01
17	T	Iodomethane	50.0000	34.5291	30.9#	81	0.01
18	T	Methyl acetate	50.0000	43.3238	13.4	99	0.01
19	T	Methylene Chloride	50.0000	50.5708	-1.1	116	0.01
20	T	Carbon Disulfide	50.0000	54.7301	-9.5	122	0.02
21	T	Acrylonitrile	50.0000	48.5312	2.9	105	0.01
22	T	Methyl Tert Butyl Ether	50.0000	47.2775	5.4	101	0.01
23	T	trans-1,2-Dichloroethene	50.0000	52.9083	-5.8	117	0.02
24	T	n-Hexane	50.0000	49.3247	1.4	110	0.01
25	T	Diisopropyl ether	100.0000	92.3467	7.7	103	0.02
26	T	Vinyl Acetate	50.0000	50.3007	-0.6	109	0.01
27	P	1,1-Dichloroethane	50.0000	48.1794	3.6	107	0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	92.6148	7.4	103	0.01
29	T	2-Butanone	50.0000	44.0981	11.8	103	0.01
30	T	Propionitrile	100.0000	93.9794	6.0	105	0.01
31	T	2,2-Dichloropropane	50.0000	49.6544	0.7	110	0.01
32	T	cis-1,2-Dichloroethene	50.0000	52.3245	-4.6	114	0.01
33	C	Chloroform	50.0000	49.8578	0.3	112	0.01
34		1-Bromopropane	50.0000	63.6424	-27.3#	137	0.01
35	T	Bromochloromethane	50.0000	52.6431	-5.3	116	0.01
36	T	Tetrahydrofuran	100.0000	86.6592	13.3	100	0.01
37	S	Dibromofluoromethane	25.0000	27.3372	-9.3	129	0.01
38	T	1,1,1-Trichloroethane	50.0000	50.9105	-1.8	112	0.01
39	T	Cyclohexane	50.0000	47.7518	4.5	107	0.01
40	T	1,1-Dichloropropene	50.0000	49.2565	1.5	107	0.01
41	T	Tert-Amyl-Methyl ether	100.0000	94.0035	6.0	105	0.01
42	T	Carbon Tetrachloride	50.0000	53.4725	-6.9	116	0.01
43	S	1,2-Dichloroethane-d4	25.0000	24.9690	0.1	113	0.01
44		Heptane	-1.0000	0.0000	0.0	96	0.01
45	T	1,2-Dichloroethane	50.0000	46.9873	6.0	102	0.01
46	T	Benzene	50.0000	49.7283	0.5	111	0.01
47	T	Trichloroethene	50.0000	51.7688	-3.5	113	0.01
48	T	Methylcyclohexane	50.0000	51.2543	-2.5	114	0.01
49	C	1,2-Dichloropropane	50.0000	47.5402	4.9	103	0.00
50	T	1,4-Dioxane	200.0000	189.6986	5.2	102	0.00
51	T	Bromodichloromethane	50.0000	50.0975	-0.2	111	0.00
52	T	Dibromomethane	50.0000	52.6538	-5.3	111	0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	37.5043	25.0#	83	0.01
54	T	4-Methyl-2-Pentanone	50.0000	43.6073	12.8	96	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\090913\6M119755.D Vial: 2
Acq On : 9 Sep 2013 11:19 Operator: TMB
Sample : WG443995-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD59935 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Fri Aug 30 16:35:03 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	49.2246	1.6	105	0.01
56	T	Dimethyl Disulfide	50.0000	54.8399	-9.7	118	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	129	0.01
58	S	Toluene-d8	25.0000	25.1220	-0.5	132	0.01
59	C	Toluene	50.0000	43.9193	12.2	109	0.00
60	T	Ethyl Methacrylate	50.0000	43.3625	13.3	104	0.01
61		Paraldehyde	-1.0000	0.0000	0.0	110	0.00
62	T	trans-1,3-Dichloropropene	50.0000	44.2910	11.4	106	0.00
63	T	1,1,2-Trichloroethane	50.0000	44.2395	11.5	110	0.00
64	T	2-Hexanone	50.0000	34.8895	30.2#	86	0.01
65	T	1,3-Dichloropropane	50.0000	42.6747	14.7	105	0.01
66	T	Tetrachloroethene	50.0000	46.1869	7.6	115	0.01
67	T	Dibromochloromethane	50.0000	48.1449	3.7	116	0.00
68	T	1,2-Dibromoethane	50.0000	45.0185	10.0	110	0.00
69	T	1-Chlorohexane	50.0000	47.1339	5.7	118	0.00
70	P	Chlorobenzene	50.0000	44.7745	10.5	110	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	47.5126	5.0	116	0.00
72	C	Ethylbenzene	50.0000	45.0169	10.0	111	0.00
73	T	m-,p-Xylene	100.0000	91.3041	8.7	111	0.01
74	T	o-Xylene	50.0000	44.6248	10.8	110	0.00
75	T	Styrene	50.0000	45.2123	9.6	109	0.01
76	P	Bromoform	50.0000	52.1928	-4.4	125	0.01
77	T	Isopropylbenzene	50.0000	44.4964	11.0	109	0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	140	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	40.8323	18.3	111	0.00
80	S	p-Bromofluorobenzene	25.0000	23.4641	6.1	135	0.00
81	T	1,2,3-Trichloropropane	50.0000	41.8921	16.2	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.4848	21.0#	104	0.00
83	T	n-Propylbenzene	50.0000	40.9100	18.2	110	0.00
84	T	Bromobenzene	50.0000	44.2383	11.5	115	0.01
85	T	1,3,5-Trimethylbenzene	50.0000	40.1201	19.8	109	0.01
86	T	2-Chlorotoluene	50.0000	39.4464	21.1#	108	0.00
87	T	4-Chlorotoluene	50.0000	40.5330	18.9	112	0.00
88	T	a-Methylstyrene	50.0000	44.7249	10.6	120	0.01
89	T	tert-Butylbenzene	50.0000	42.1062	15.8	111	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	40.6320	18.7	110	0.01
91	T	sec-Butylbenzene	50.0000	40.7594	18.5	109	0.00
92	T	p-Isopropyltoluene	50.0000	41.0544	17.9	110	0.01
93	T	1,3-Dichlorobenzene	50.0000	43.2462	13.5	117	0.01
94	T	1,4-Dichlorobenzene	50.0000	43.2000	13.6	116	0.00
95	T	n-Butylbenzene	50.0000	40.5101	19.0	110	0.00
96	T	1,2-Dichlorobenzene	50.0000	43.3129	13.4	116	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	37.8341	24.3#	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	40.5799	18.8	109	0.00
99	T	Hexachlorobutadiene	50.0000	42.3911	15.2	116	0.00
100	T	Naphthalene	50.0000	36.5108	27.0#	98	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	39.2070	21.6#	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M119755.D 8260WTR.M Mon Sep 09 11:49:55 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091313\8M390574.D Vial: 2
Acq On : 13 Sep 2013 15:17 Operator: TMB
Sample : WG444635-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 13 15:39:39 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	675148	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.92	117	537212	25.00 ug/L	-0.02
78) 1,4-Dichlorobenzene-d4	17.95	152	323620	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	10.01	111	183153	26.1315 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.52%		
43) 1,2-Dichloroethane-d4	10.64	65	185306	25.8408 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.36%		
58) Toluene-d8	13.03	98	637340	27.2690 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 109.08%		
80) p-Bromofluorobenzene	16.43	95	254390	25.7934 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.16%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	368644	56.1493 ug/L	98
3) Chloromethane	3.87	50	308991	45.8753 ug/L	100
4) Vinyl Chloride	4.12	62	313202	55.2521 ug/L	95
5) 1,3-Butadiene	4.16	54	293770	55.7889 ug/L	76
6) Bromomethane	5.04	94	268087	58.3447 ug/L	95
7) Chloroethane	5.20	64	238175	53.0692 ug/L	98
8) Trichlorofluoromethane	5.70	101	653409	56.1877 ug/L	100
9) Diethyl ether	6.24	59	418464	97.8771 ug/L	91
10) Isoprene	6.27	67	445588	55.1228 ug/L	88
11) Acrolein	6.47	56	26362	47.7562 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	351633	56.0550 ug/L	99
13) Acetone	6.58	43	79782	57.3637 ug/L	93
14) 1,1-Dichloroethene	6.81	61	545077	56.2156 ug/L	99
15) Tert-Butyl Alcohol	6.92	59	52865	222.2552 ug/L	90
16) Dimethyl Sulfide	7.07	62	298995	53.2529 ug/L	99
17) Iodomethane	7.33	142	385280	58.5842 ug/L	81
18) Methyl acetate	7.33	43	181867	49.6492 ug/L	95
19) Methylene Chloride	7.59	84	330486	50.9884 ug/L	73
20) Carbon Disulfide	7.64	76	993629	52.6596 ug/L	99
21) Acrylonitrile	7.77	53	76093	50.9932 ug/L	99
22) Methyl Tert Butyl Ether	7.80	73	765721	53.0756 ug/L	87
23) trans-1,2-Dichloroethene	8.05	61	509469	54.4473 ug/L	95
24) n-Hexane	8.12	57	435760	55.6666 ug/L	95
25) Diisopropyl ether	8.46	45	2206547	100.2877 ug/L	91
26) Vinyl Acetate	8.62	43	405825	50.8629 ug/L	96
27) 1,1-Dichloroethane	8.67	63	640998	52.3725 ug/L	97
28) Ethyl-Tert-Butyl ether	9.03	59	1855333	101.1621 ug/L	92
29) 2-Butanone	9.21	43	86525	51.2669 ug/L	95
30) Propionitrile	9.33	54	49928	104.8534 ug/L	96
31) 2,2-Dichloropropane	9.44	77	648526	57.0891 ug/L	98
32) cis-1,2-Dichloroethene	9.50	96	371514	54.6215 ug/L	95
33) Chloroform	9.72	83	664056	52.2144 ug/L	97
34) 1-Bromopropane	9.86	122	81130	54.3366 ug/L	93
35) Bromochloromethane	9.95	130	247170	52.8562 ug/L	80
36) Tetrahydrofuran	9.97	42	151096	131.5163 ug/L	89
38) 1,1,1-Trichloroethane	10.25	97	648773	54.9662 ug/L	99
39) Cyclohexane	10.28	56	529766	52.5787 ug/L	76
40) 1,1-Dichloropropene	10.44	75	507032	53.9703 ug/L	95
41) Tert-Amyl-Methyl ether	10.55	73	1547478	100.1807 ug/L	93
42) Carbon Tetrachloride	10.60	117	637925	56.4205 ug/L	98
45) 1,2-Dichloroethane	10.77	62	485573	52.3206 ug/L	88

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091313\8M390574.D Vial: 2
Acq On : 13 Sep 2013 15:17 Operator: TMB
Sample : WG444635-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 13 15:39:39 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.81	78	1353832	51.8537 ug/L	93
47)	Trichloroethene	11.55	130	403212	53.8214 ug/L	98
48)	Methylcyclohexane	11.64	83	534331	53.0021 ug/L	86
49)	1,2-Dichloropropane	11.77	63	339436	51.5370 ug/L	77
50)	Bromodichloromethane	12.07	83	505595	53.8858 ug/L	98
51)	1,4-Dioxane	12.06	88	6564	225.3947 ug/L	77
52)	Dibromomethane	12.16	93	191611	52.7479 ug/L	95
53)	2-Chloroethyl Vinyl Ether	12.36	63	146262	50.2847 ug/L	94
54)	4-Methyl-2-Pentanone	12.39	58	66994	50.1154 ug/L	84
55)	cis-1,3-Dichloropropene	12.70	75	571542	56.7019 ug/L	99
56)	Dimethyl Disulfide	12.97	94	585933	54.2031 ug/L	98
59)	Toluene	13.13	91	1456358	54.4888 ug/L	99
60)	Ethyl Methacrylate	13.21	69	298144	55.4292 ug/L	91
62)	trans-1,3-Dichloropropene	13.30	75	510761	53.4075 ug/L	98
63)	1,1,2-Trichloroethane	13.52	97	243709	48.9512 ug/L	99
64)	2-Hexanone	13.44	58	61828	51.8382 ug/L	91
65)	1,3-Dichloropropane	13.83	76	425584	50.6327 ug/L	92
66)	Tetrachloroethene	13.95	164	350609	54.1359 ug/L	95
67)	Dibromochloromethane	14.22	129	387574	52.8338 ug/L	97
68)	1,2-Dibromoethane	14.48	107	258011	51.0062 ug/L	96
69)	1-Chlorohexane	14.55	91	471355	58.4959 ug/L	89
70)	Chlorobenzene	14.97	112	1066772	51.4513 ug/L	94
71)	1,1,1,2-Tetrachloroethane	15.00	131	427114	53.6880 ug/L	99
72)	Ethylbenzene	15.00	106	571862	52.4064 ug/L	94
73)	m-,p-Xylene	15.09	106	1381662	110.8076 ug/L	97
74)	o-Xylene	15.66	106	689480	56.5309 ug/L	95
75)	Styrene	15.69	104	1122661	57.7907 ug/L	92
76)	Bromoform	16.19	173	237409	52.6482 ug/L	100
77)	Isopropylbenzene	16.08	105	1763299	59.5429 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.30	83	260880	45.7940 ug/L	96
81)	1,2,3-Trichloropropane	16.48	110	89359	47.6128 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	16.52	53	101137	57.1658 ug/L	97
83)	n-Propylbenzene	16.59	91	2039180	57.2571 ug/L	99
84)	Bromobenzene	16.72	156	486053	52.3479 ug/L	88
85)	1,3,5-Trimethylbenzene	16.77	105	1589667	58.1431 ug/L	98
86)	2-Chlorotoluene	16.87	91	1331137	53.1302 ug/L	100
87)	4-Chlorotoluene	16.91	91	1194273	53.2173 ug/L	100
88)	a-Methylstyrene	17.18	118	875239	53.4205 ug/L	95
89)	tert-Butylbenzene	17.24	134	348804	54.8361 ug/L	92
90)	1,2,4-Trimethylbenzene	17.29	105	1623897	54.7173 ug/L	97
91)	sec-Butylbenzene	17.51	105	1877662	55.3656 ug/L	99
92)	p-Isopropyltoluene	17.66	119	1737770	57.0991 ug/L	99
93)	1,3-Dichlorobenzene	17.87	146	990447	52.6415 ug/L	99
94)	1,4-Dichlorobenzene	17.99	146	993363	50.0558 ug/L	99
95)	n-Butylbenzene	18.19	91	1422487	55.2696 ug/L	99
96)	1,2-Dichlorobenzene	18.50	146	900112	51.2484 ug/L	100
97)	1,2-Dibromo-3-Chloropropan	19.49	75	53698	49.2386 ug/L	75
98)	1,2,4-Trichlorobenzene	20.64	180	684108	52.7742 ug/L	98
99)	Hexachlorobutadiene	20.78	225	320481	51.2936 ug/L	99
100)	Naphthalene	21.01	128	1150806	52.2278 ug/L	100
101)	1,2,3-Trichlorobenzene	21.32	180	587281	50.6956 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M390574.D 8260WTR.M Fri Sep 13 15:39:40 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091313\8M390574.D Vial: 2
Acq On : 13 Sep 2013 15:17 Operator: TMB
Sample : WG444635-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 13 15:39 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration

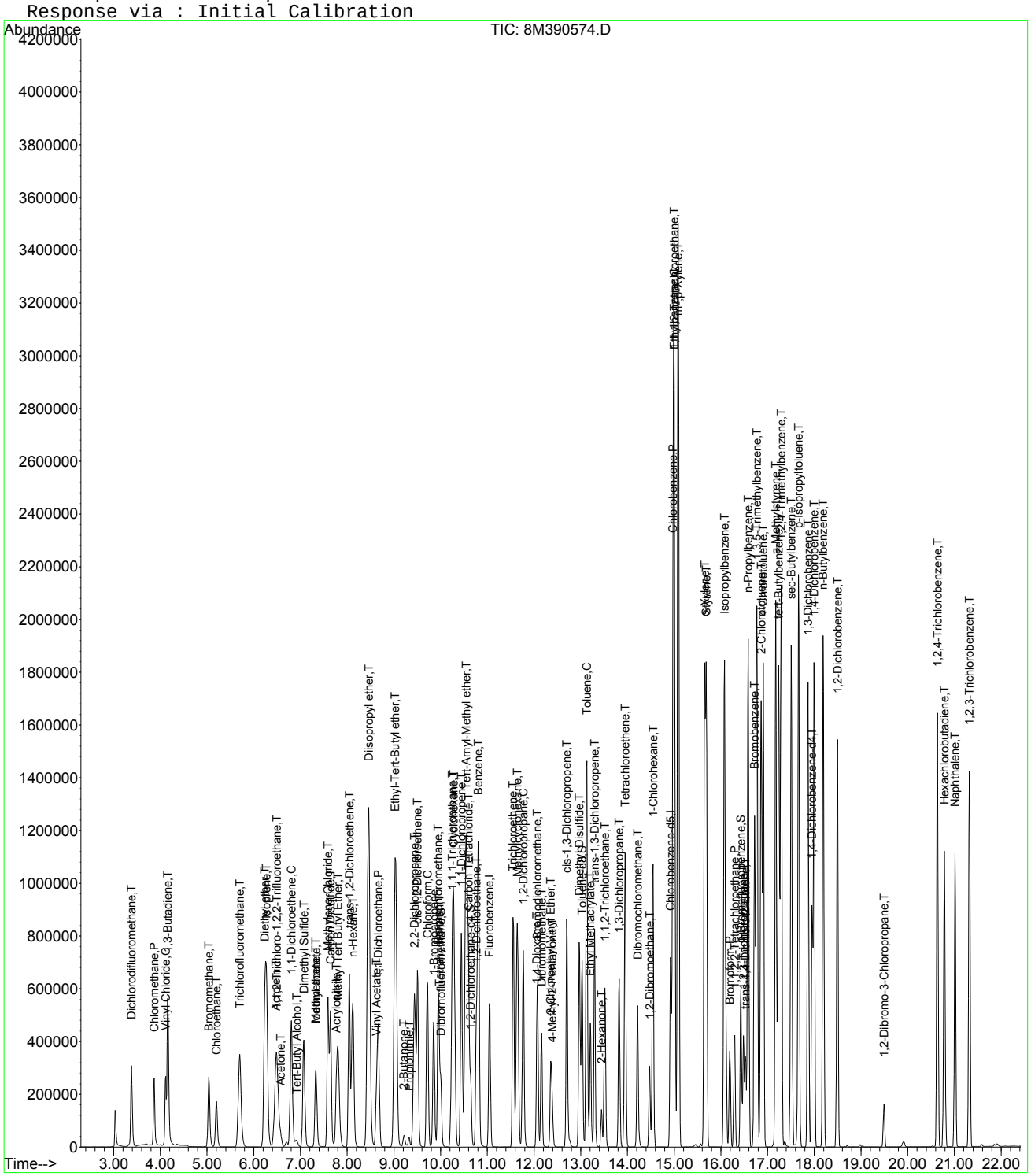

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 11 Sep 2013 12:44
CCV date: 13 Sep 2013 15:17
CCV Filename: 8M390574.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	760184	11.05	601866	14.92	354542	17.95
CCV	675148	11.04	537212	14.92	323620	17.95

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\091313\8M390574.D Vial: 2
Acq On : 13 Sep 2013 15:17 Operator: TMB
Sample : WG444635-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	89	-0.02
2	T	Dichlorodifluoromethane	0.2431	0.2730	-12.3	92	0.00
3	P	Chloromethane	0.2494	0.2288	8.3	85	0.00
4	C	Vinyl Chloride	0.2099	0.2319	-10.5	95	0.00
5	T	1,3-Butadiene	0.1950	0.2176	-11.6	94	0.00
6	T	Bromomethane	0.1701	0.1985	-16.7	105	0.00
7	T	Chloroethane	0.1662	0.1764	-6.1	91	0.00
8	T	Trichlorofluoromethane	0.4306	0.4839	-12.4	96	0.00
9	T	Diethyl ether	0.1583	0.1550	2.1	86	0.00
10	T	Isoprene	0.2993	0.3300	-10.2	90	0.00
11	T	Acrolein	0.0188	0.0195	-4.1	83	-0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2323	0.2604	-12.1	94	0.01
13	T	Acetone	0.0515	0.0591	-14.7	103	-0.02
14	C	1,1-Dichloroethene	0.3590	0.4037	-12.4	94	0.00
15	T	Tert-Butyl Alcohol	0.0088	0.0098	-11.1	88	-0.03
16	T	Dimethyl Sulfide	0.2079	0.2214	-6.5	90	0.00
17	T	Iodomethane	0.2435	0.2853	-17.2	92	0.00
18	T	Methyl acetate	0.1356	0.1347	0.7	86	-0.02
19	T	Methylene Chloride	0.2400	0.2448	-2.0	91	0.00
20	T	Carbon Disulfide	0.6987	0.7359	-5.3	91	0.00
21	T	Acrylonitrile	0.0553	0.0563	-2.0	85	-0.02
22	T	Methyl Tert Butyl Ether	0.5342	0.5671	-6.2	87	-0.02
23	T	trans-1,2-Dichloroethene	0.3465	0.3773	-8.9	93	0.00
24	T	n-Hexane	0.2899	0.3227	-11.3	91	0.00
25	T	Diisopropyl ether	0.8147	0.8171	-0.3	89	-0.02
26	T	Vinyl Acetate	0.2954	0.3005	-1.7	87	-0.02
27	P	1,1-Dichloroethane	0.4532	0.4747	-4.7	93	0.00
28	T	Ethyl-Tert-Butyl ether	0.6791	0.6870	-1.2	89	-0.03
29	T	2-Butanone	0.0625	0.0641	-2.5	91	-0.03
30	T	Propionitrile	0.0176	0.0185	-4.9	89	-0.02
31	T	2,2-Dichloropropane	0.4206	0.4803	-14.2	101	0.00
32	T	cis-1,2-Dichloroethene	0.2519	0.2751	-9.2	91	-0.02
33	C	Chloroform	0.4709	0.4918	-4.4	93	0.00
34		1-Bromopropane	0.0553	0.0601	-8.7	93	0.00
35	T	Bromochloromethane	0.1732	0.1830	-5.7	90	-0.02
36	T	Tetrahydrofuran	0.0425	0.0560	-31.5#	112	-0.03
37	S	Dibromofluoromethane	0.2595	0.2713	-4.5	93	0.00
38	T	1,1,1-Trichloroethane	0.4371	0.4805	-9.9	94	-0.02
39	T	Cyclohexane	0.3731	0.3923	-5.2	87	-0.02
40	T	1,1-Dichloropropene	0.3479	0.3755	-7.9	92	0.00
41	T	Tert-Amyl-Methyl ether	0.5720	0.5730	-0.2	87	-0.02
42	T	Carbon Tetrachloride	0.4187	0.4724	-12.8	96	0.00
43	S	1,2-Dichloroethane-d4	0.2655	0.2745	-3.4	91	-0.02
44		Heptane	0.0000	0.0000	0.0	0#	-2.74#
45	T	1,2-Dichloroethane	0.3437	0.3596	-4.6	90	0.00
46	T	Benzene	0.9668	1.0026	-3.7	91	0.00
47	T	Trichloroethene	0.2774	0.2986	-7.6	92	-0.02
48	T	Methylcyclohexane	0.3733	0.3957	-6.0	89	0.00
49	C	1,2-Dichloropropane	0.2439	0.2514	-3.1	90	-0.02
50	T	Bromodichloromethane	0.3474	0.3744	-7.8	91	-0.02
51	T	1,4-Dioxane	0.0011	0.0012	-13.0	86	-0.02
52	T	Dibromomethane	0.1345	0.1419	-5.5	88	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1077	0.1083	-0.6	85	0.00
54	T	4-Methyl-2-Pentanone	0.0495	0.0496	-0.2	84	-0.02
55	T	cis-1,3-Dichloropropene	0.3732	0.4233	-13.4	90	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\091313\8M390574.D Vial: 2
Acq On : 13 Sep 2013 15:17 Operator: TMB
Sample : WG444635-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	0.4003	0.4339	-8.4	89	-0.02
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	89	-0.02
58	S	Toluene-d8	1.0877	1.1864	-9.1	94	0.00
59	C	Toluene	1.2438	1.3555	-9.0	91	0.00
60	T	Ethyl Methacrylate	0.2503	0.2775	-10.9	85	-0.02
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.34#
62	T	trans-1,3-Dichloropropene	0.4451	0.4754	-6.8	88	0.00
63	T	1,1,2-Trichloroethane	0.2317	0.2268	2.1	85	-0.02
64	T	2-Hexanone	0.0555	0.0575	-3.7	89	-0.02
65	T	1,3-Dichloropropane	0.3912	0.3961	-1.3	86	0.00
66	T	Tetrachloroethene	0.3014	0.3263	-8.3	92	0.00
67	T	Dibromochloromethane	0.3414	0.3607	-5.7	88	0.00
68	T	1,2-Dibromoethane	0.2354	0.2401	-2.0	85	0.00
69	T	1-Chlorohexane	0.3750	0.4387	-17.0	92	0.00
70	P	Chlorobenzene	0.9649	0.9929	-2.9	91	-0.02
71	T	1,1,1,2-Tetrachloroethane	0.3702	0.3975	-7.4	92	0.00
72	C	Ethylbenzene	0.5078	0.5323	-4.8	92	0.00
73	T	m-,p-Xylene	0.5803	0.6430	-10.8	92	0.00
74	T	o-Xylene	0.5676	0.6417	-13.1	91	0.00
75	T	Styrene	0.9040	1.0449	-15.6	90	-0.02
76	P	Bromoform	0.2099	0.2210	-5.3	87	0.00
77	T	Isopropylbenzene	1.3781	1.6412	-19.1	92	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	91	-0.02
79	P	1,1,2,2-Tetrachloroethane	0.4401	0.4031	8.4	82	0.00
80	S	p-Bromofluorobenzene	0.7619	0.7861	-3.2	90	0.00
81	T	1,2,3-Trichloropropane	0.1450	0.1381	4.8	83	-0.02
82	T	trans-1,4-Dichloro-2-Butene	0.1367	0.1563	-14.3	96	-0.02
83	T	n-Propylbenzene	2.7513	3.1506	-14.5	92	0.00
84	T	Bromobenzene	0.7173	0.7510	-4.7	90	-0.02
85	T	1,3,5-Trimethylbenzene	2.1121	2.4561	-16.3	93	0.00
86	T	2-Chlorotoluene	1.9355	2.0566	-6.3	91	0.00
87	T	4-Chlorotoluene	1.7336	1.8452	-6.4	94	-0.02
88	T	a-Methylstyrene	1.2657	1.3523	-6.8	91	-0.02
89	T	tert-Butylbenzene	0.4914	0.5389	-9.7	95	-0.02
90	T	1,2,4-Trimethylbenzene	2.2927	2.5090	-9.4	93	-0.02
91	T	sec-Butylbenzene	2.6199	2.9010	-10.7	92	-0.02
92	T	p-Isopropyltoluene	2.3511	2.6849	-14.2	94	-0.02
93	T	1,3-Dichlorobenzene	1.4535	1.5303	-5.3	92	0.00
94	T	1,4-Dichlorobenzene	1.5331	1.5348	-0.1	91	-0.02
95	T	n-Butylbenzene	1.9882	2.1978	-10.5	93	-0.02
96	T	1,2-Dichlorobenzene	1.3568	1.3907	-2.5	89	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0843	0.0830	1.5	83	-0.02
98	T	1,2,4-Trichlorobenzene	1.0014	1.0570	-5.5	88	-0.02
99	T	Hexachlorobutadiene	0.4827	0.4951	-2.6	93	-0.02
100	T	Naphthalene	1.7022	1.7780	-4.5	79	-0.02
101	T	1,2,3-Trichlorobenzene	0.8949	0.9074	-1.4	83	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M390574.D 8260WTR.M Fri Sep 13 15:40:14 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\091313\8M390574.D Vial: 2
Acq On : 13 Sep 2013 15:17 Operator: TMB
Sample : WG444635-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	89	-0.02
2	T	Dichlorodifluoromethane	50.0000	56.1493	-12.3	92	0.00
3	P	Chloromethane	50.0000	45.8753	8.2	85	0.00
4	C	Vinyl Chloride	50.0000	55.2521	-10.5	95	0.00
5	T	1,3-Butadiene	50.0000	55.7889	-11.6	94	0.00
6	T	Bromomethane	50.0000	58.3447	-16.7	105	0.00
7	T	Chloroethane	50.0000	53.0692	-6.1	91	0.00
8	T	Trichlorofluoromethane	50.0000	56.1877	-12.4	96	0.00
9	T	Diethyl ether	100.0000	97.8771	2.1	86	0.00
10	T	Isoprene	50.0000	55.1228	-10.2	90	0.00
11	T	Acrolein	50.0000	47.7562	4.5	83	-0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	56.0550	-12.1	94	0.01
13	T	Acetone	50.0000	57.3637	-14.7	103	-0.02
14	C	1,1-Dichloroethene	50.0000	56.2156	-12.4	94	0.00
15	T	Tert-Butyl Alcohol	200.0000	222.2552	-11.1	88	-0.03
16	T	Dimethyl Sulfide	50.0000	53.2529	-6.5	90	0.00
17	T	Iodomethane	50.0000	58.5842	-17.2	92	0.00
18	T	Methyl acetate	50.0000	49.6492	0.7	86	-0.02
19	T	Methylene Chloride	50.0000	50.9884	-2.0	91	0.00
20	T	Carbon Disulfide	50.0000	52.6596	-5.3	91	0.00
21	T	Acrylonitrile	50.0000	50.9932	-2.0	85	-0.02
22	T	Methyl Tert Butyl Ether	50.0000	53.0756	-6.2	87	-0.02
23	T	trans-1,2-Dichloroethene	50.0000	54.4472	-8.9	93	0.00
24	T	n-Hexane	50.0000	55.6666	-11.3	91	0.00
25	T	Diisopropyl ether	100.0000	100.2877	-0.3	89	-0.02
26	T	Vinyl Acetate	50.0000	50.8629	-1.7	87	-0.02
27	P	1,1-Dichloroethane	50.0000	52.3725	-4.7	93	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	101.1621	-1.2	89	-0.03
29	T	2-Butanone	50.0000	51.2669	-2.5	91	-0.03
30	T	Propionitrile	100.0000	104.8534	-4.9	89	-0.02
31	T	2,2-Dichloropropane	50.0000	57.0891	-14.2	101	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.6215	-9.2	91	-0.02
33	C	Chloroform	50.0000	52.2144	-4.4	93	0.00
34		1-Bromopropane	50.0000	54.3366	-8.7	93	0.00
35	T	Bromochloromethane	50.0000	52.8562	-5.7	90	-0.02
36	T	Tetrahydrofuran	100.0000	131.5163	-31.5#	112	-0.03
37	S	Dibromofluoromethane	25.0000	26.1315	-4.5	93	0.00
38	T	1,1,1-Trichloroethane	50.0000	54.9663	-9.9	94	-0.02
39	T	Cyclohexane	50.0000	52.5787	-5.2	87	-0.02
40	T	1,1-Dichloropropene	50.0000	53.9703	-7.9	92	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.1807	-0.2	87	-0.02
42	T	Carbon Tetrachloride	50.0000	56.4205	-12.8	96	0.00
43	S	1,2-Dichloroethane-d4	25.0000	25.8408	-3.4	91	-0.02
44		Heptane	-1.0000	0.0000	0.0	0	-2.74#
45	T	1,2-Dichloroethane	50.0000	52.3206	-4.6	90	0.00
46	T	Benzene	50.0000	51.8537	-3.7	91	0.00
47	T	Trichloroethene	50.0000	53.8214	-7.6	92	-0.02
48	T	Methylcyclohexane	50.0000	53.0022	-6.0	89	0.00
49	C	1,2-Dichloropropane	50.0000	51.5370	-3.1	90	-0.02
50	T	Bromodichloromethane	50.0000	53.8858	-7.8	91	-0.02
51	T	1,4-Dioxane	200.0000	225.3947	-12.7	86	-0.02
52	T	Dibromomethane	50.0000	52.7479	-5.5	88	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	50.2848	-0.6	85	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.1154	-0.2	84	-0.02
55	T	cis-1,3-Dichloropropene	50.0000	56.7019	-13.4	90	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\091313\8M390574.D Vial: 2
Acq On : 13 Sep 2013 15:17 Operator: TMB
Sample : WG444635-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60047 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	50.0000	54.2031	-8.4	89	-0.02
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	89	-0.02
58	S	Toluene-d8	25.0000	27.2690	-9.1	94	0.00
59	C	Toluene	50.0000	54.4888	-9.0	91	0.00
60	T	Ethyl Methacrylate	50.0000	55.4292	-10.9	85	-0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.34#
62	T	trans-1,3-Dichloropropene	50.0000	53.4075	-6.8	88	0.00
63	T	1,1,2-Trichloroethane	50.0000	48.9512	2.1	85	-0.02
64	T	2-Hexanone	50.0000	51.8382	-3.7	89	-0.02
65	T	1,3-Dichloropropane	50.0000	50.6327	-1.3	86	0.00
66	T	Tetrachloroethene	50.0000	54.1359	-8.3	92	0.00
67	T	Dibromochloromethane	50.0000	52.8338	-5.7	88	0.00
68	T	1,2-Dibromoethane	50.0000	51.0062	-2.0	85	0.00
69	T	1-Chlorohexane	50.0000	58.4959	-17.0	92	0.00
70	P	Chlorobenzene	50.0000	51.4513	-2.9	91	-0.02
71	T	1,1,1,2-Tetrachloroethane	50.0000	53.6880	-7.4	92	0.00
72	C	Ethylbenzene	50.0000	52.4064	-4.8	92	0.00
73	T	m-,p-Xylene	100.0000	110.8076	-10.8	92	0.00
74	T	o-Xylene	50.0000	56.5309	-13.1	91	0.00
75	T	Styrene	50.0000	57.7907	-15.6	90	-0.02
76	P	Bromoform	50.0000	52.6482	-5.3	87	0.00
77	T	Isopropylbenzene	50.0000	59.5429	-19.1	92	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	91	-0.02
79	P	1,1,2,2-Tetrachloroethane	50.0000	45.7940	8.4	82	0.00
80	S	p-Bromofluorobenzene	25.0000	25.7934	-3.2	90	0.00
81	T	1,2,3-Trichloropropane	50.0000	47.6129	4.8	83	-0.02
82	T	trans-1,4-Dichloro-2-Butene	50.0000	57.1658	-14.3	96	-0.02
83	T	n-Propylbenzene	50.0000	57.2571	-14.5	92	0.00
84	T	Bromobenzene	50.0000	52.3479	-4.7	90	-0.02
85	T	1,3,5-Trimethylbenzene	50.0000	58.1431	-16.3	93	0.00
86	T	2-Chlorotoluene	50.0000	53.1302	-6.3	91	0.00
87	T	4-Chlorotoluene	50.0000	53.2173	-6.4	94	-0.02
88	T	a-Methylstyrene	50.0000	53.4205	-6.8	91	-0.02
89	T	tert-Butylbenzene	50.0000	54.8361	-9.7	95	-0.02
90	T	1,2,4-Trimethylbenzene	50.0000	54.7173	-9.4	93	-0.02
91	T	sec-Butylbenzene	50.0000	55.3656	-10.7	92	-0.02
92	T	p-Isopropyltoluene	50.0000	57.0991	-14.2	94	-0.02
93	T	1,3-Dichlorobenzene	50.0000	52.6415	-5.3	92	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.0559	-0.1	91	-0.02
95	T	n-Butylbenzene	50.0000	55.2696	-10.5	93	-0.02
96	T	1,2-Dichlorobenzene	50.0000	51.2484	-2.5	89	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	49.2386	1.5	83	-0.02
98	T	1,2,4-Trichlorobenzene	50.0000	52.7742	-5.5	88	-0.02
99	T	Hexachlorobutadiene	50.0000	51.2936	-2.6	93	-0.02
100	T	Naphthalene	50.0000	52.2278	-4.5	79	-0.02
101	T	1,2,3-Trichlorobenzene	50.0000	50.6957	-1.4	83	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\061213\6M117459.D          Vial: 1
Acq On    : 12 Jun 2013  15:44                       Operator: ADC
Sample    : WG433881-01 50ng BFB                     Inst    : HPMS6
Misc      : 1,1 STD57627                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

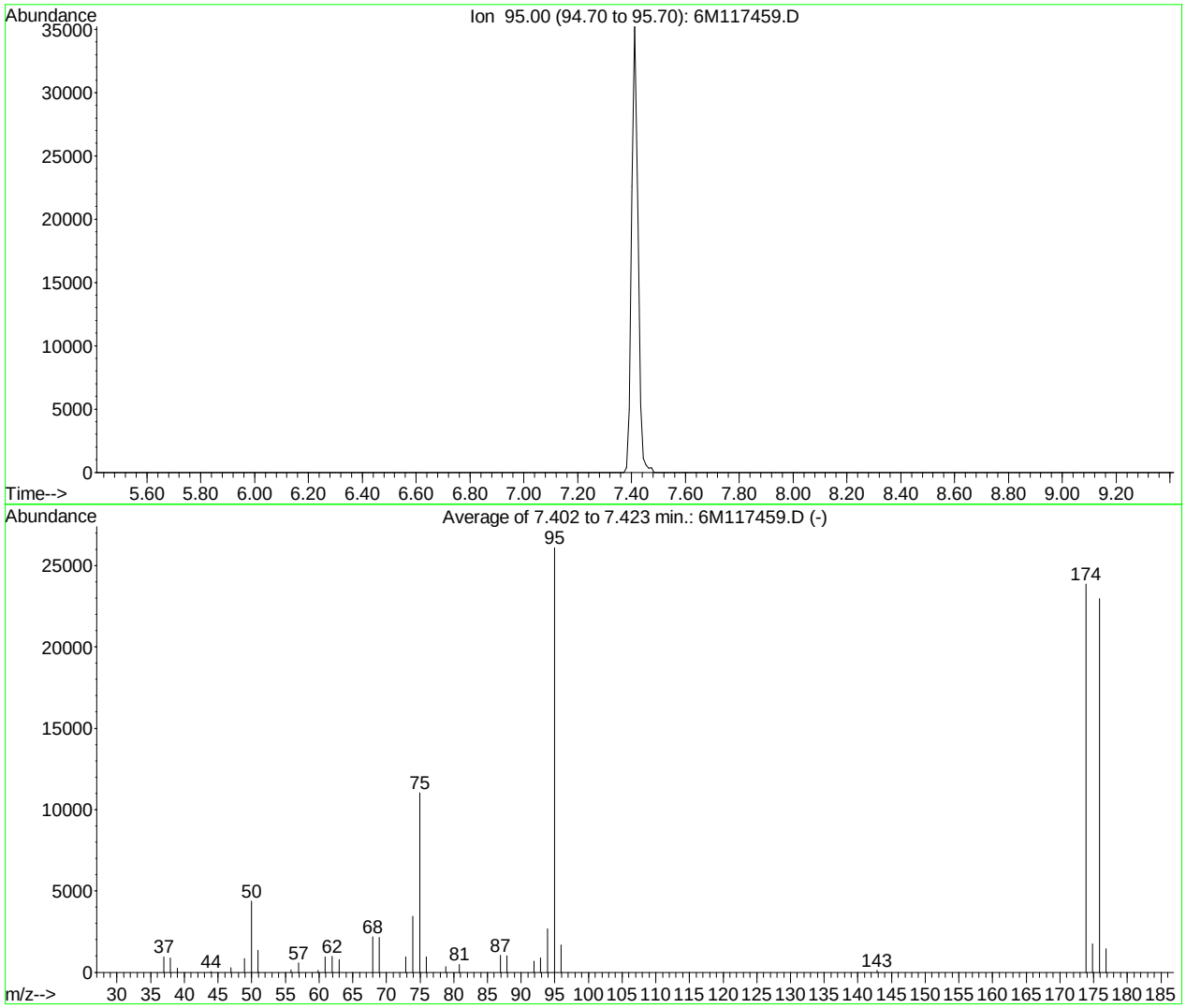

AutoFind: Scans 227, 228, 229; Background Corrected with Scan 222

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.8	4373	PASS
75	95	30	60	42.3	11034	PASS
95	95	100	100	100.0	26101	PASS
96	95	5	9	6.5	1685	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	91.4	23858	PASS
175	174	5	9	7.3	1739	PASS
176	174	95	101	96.3	22975	PASS
177	176	5	9	6.3	1455	PASS

6M117459.D BFB.M Thu Sep 05 09:55:33 2013

CLPBFB

```
Data File : C:\MSDCHEM\1\DATA\062413\8M389012.D          Vial: 1
Acq On    : 24 Jun 2013  17:28                        Operator: ADC
Sample    : WG435275-01 50NG BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD57627                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title     : A9-FOO Water - IC: 06/24/13- HPMS8
```

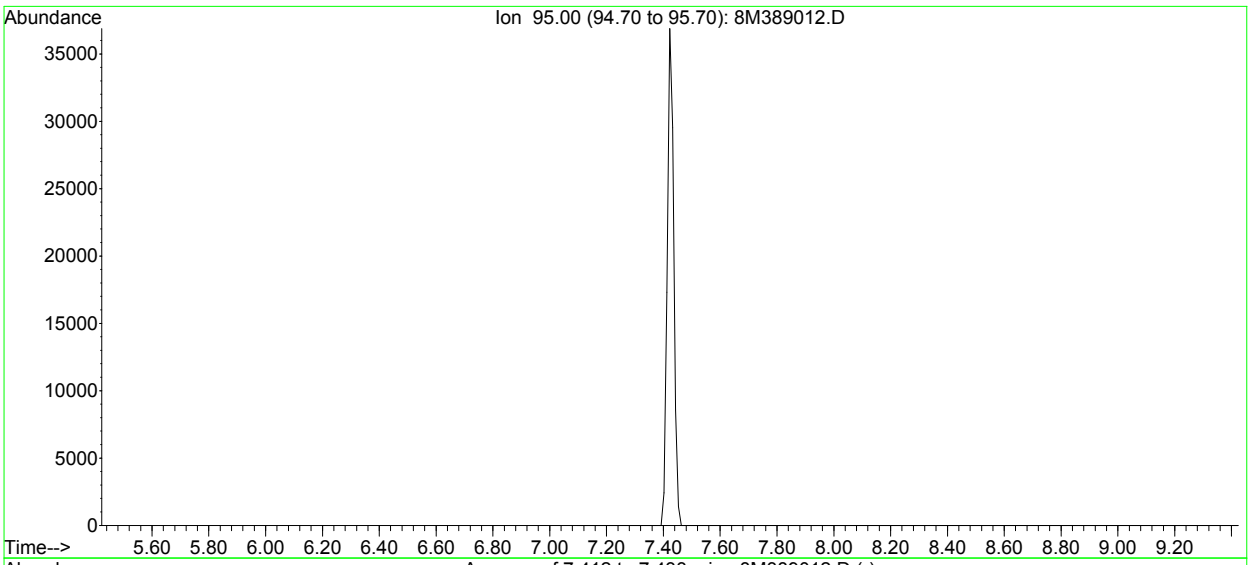

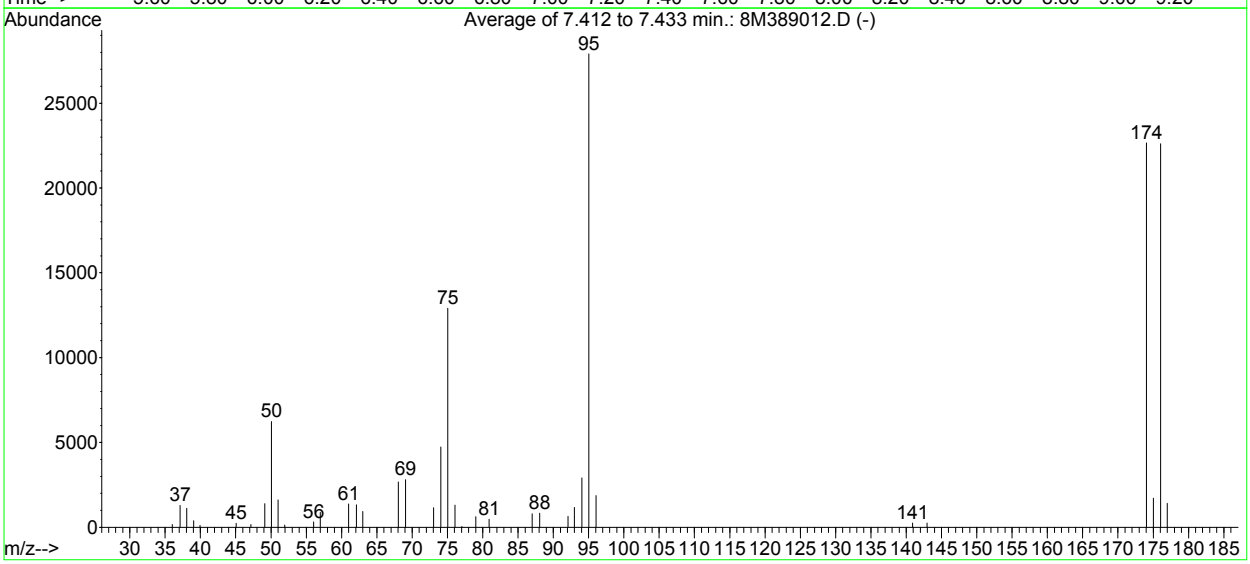

AutoFind: Scans 32, 33, 34; Background Corrected with Scan 28

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.3	6232	PASS
75	95	30	60	46.3	12919	PASS
95	95	100	100	100.0	27904	PASS
96	95	5	9	6.7	1866	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	81.2	22658	PASS
175	174	5	9	7.5	1708	PASS
176	174	95	101	99.8	22617	PASS
177	176	5	9	6.2	1400	PASS

8M389012.D A9FOOWTR.M Tue Jul 02 14:51:48 2013

BFB

Data File : C:\MSDCHEM\1\DATA\072613\6M118372.D Vial: 1
Acq On : 26 Jul 2013 14:44 Operator: adc
Sample : WG439230-01 BFB 50ng 8260 Inst : HPMS6
Misc : 1,1 STD58740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6

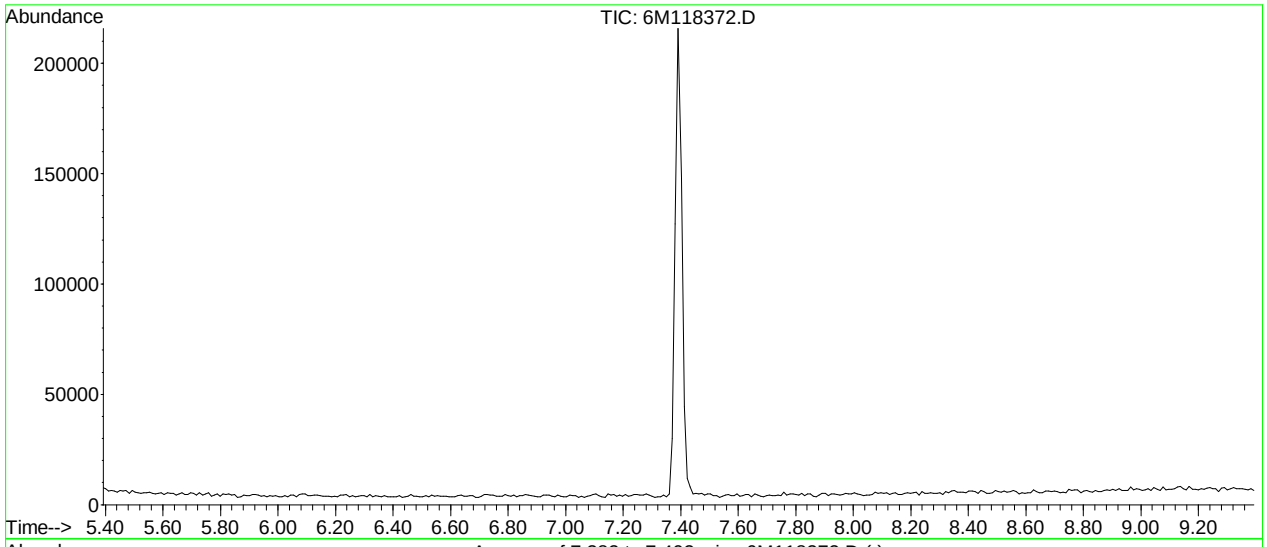

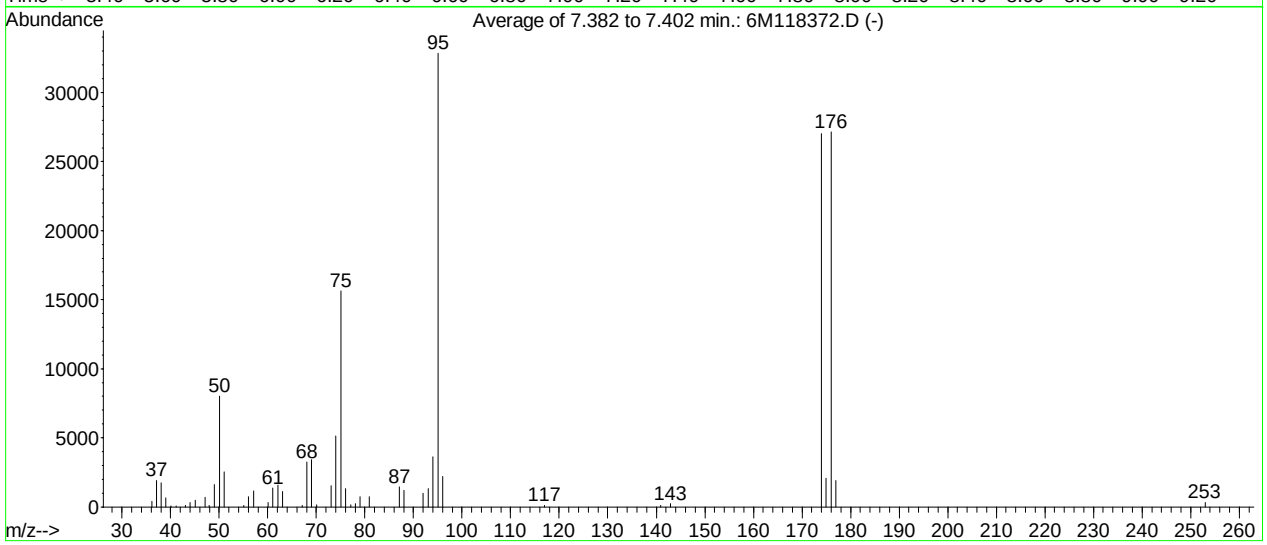

AutoFind: Scans 225, 226, 227; Background Corrected with Scan 220

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.5	8035	PASS
75	95	30	60	47.6	15647	PASS
95	95	100	100	100.0	32856	PASS
96	95	5	9	6.7	2209	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	82.3	27046	PASS
175	174	5	9	7.7	2074	PASS
176	174	95	101	100.4	27149	PASS
177	176	5	9	7.0	1895	PASS

6M118372.D 8260WTR.M Sat Jul 27 15:02:26 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\090913\6M119754.D          Vial: 1
Acq On    :  9 Sep 2013  10:55                       Operator: TMB
Sample    : WG443995-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 1,1 STD59881                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

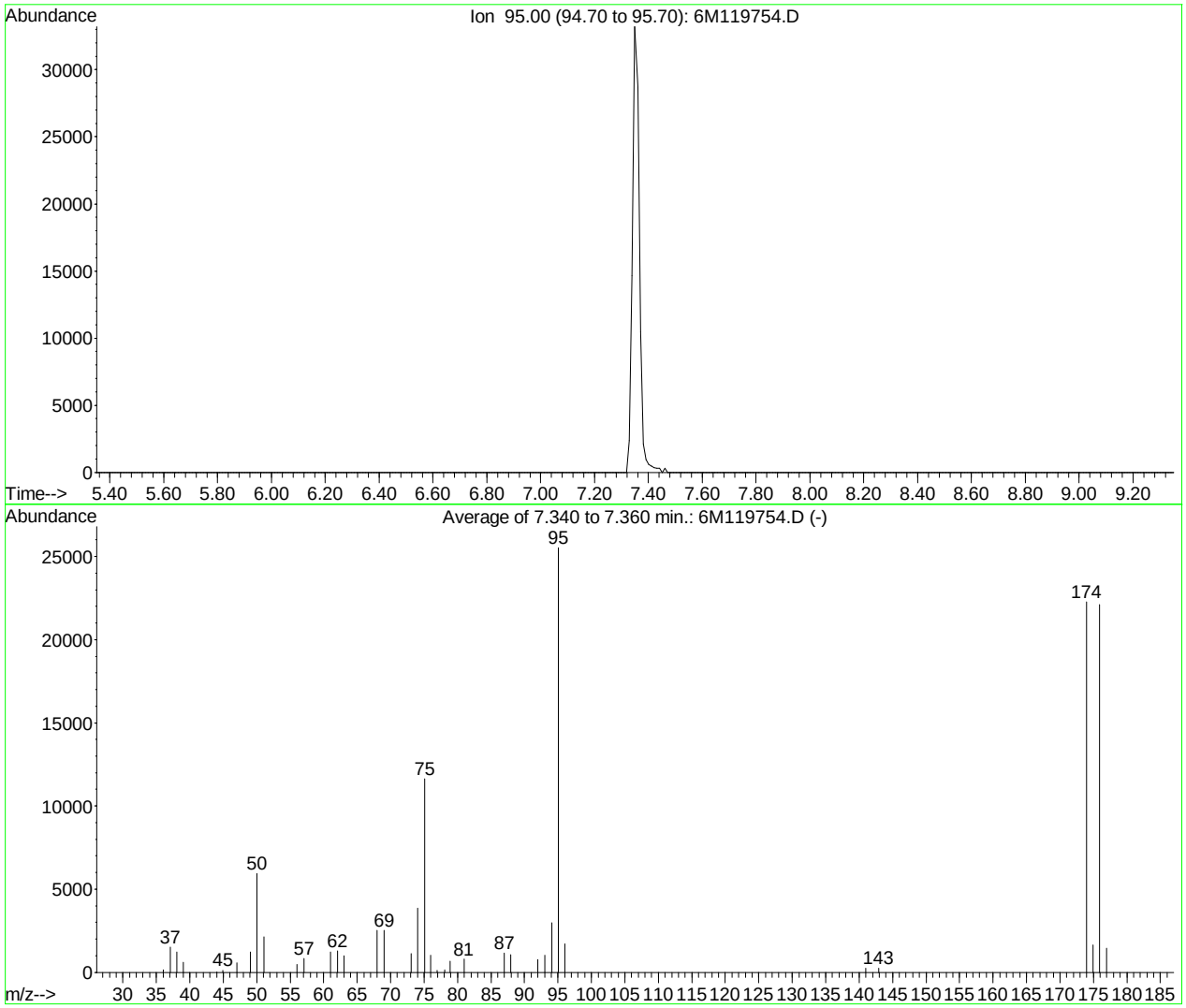

AutoFind: Scans 221, 222, 223; Background Corrected with Scan 217

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.2	5932	PASS
75	95	30	60	45.6	11635	PASS
95	95	100	100	100.0	25534	PASS
96	95	5	9	6.7	1716	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	87.2	22264	PASS
175	174	5	9	7.4	1649	PASS
176	174	95	101	99.3	22117	PASS
177	176	5	9	6.6	1465	PASS

6M119754.D BFB.M Mon Sep 09 11:11:19 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\091113\8M390510.D          Vial: 1
Acq On    : 11 Sep 2013   9:19                        Operator: TMB
Sample    : WG444268-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD59881                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

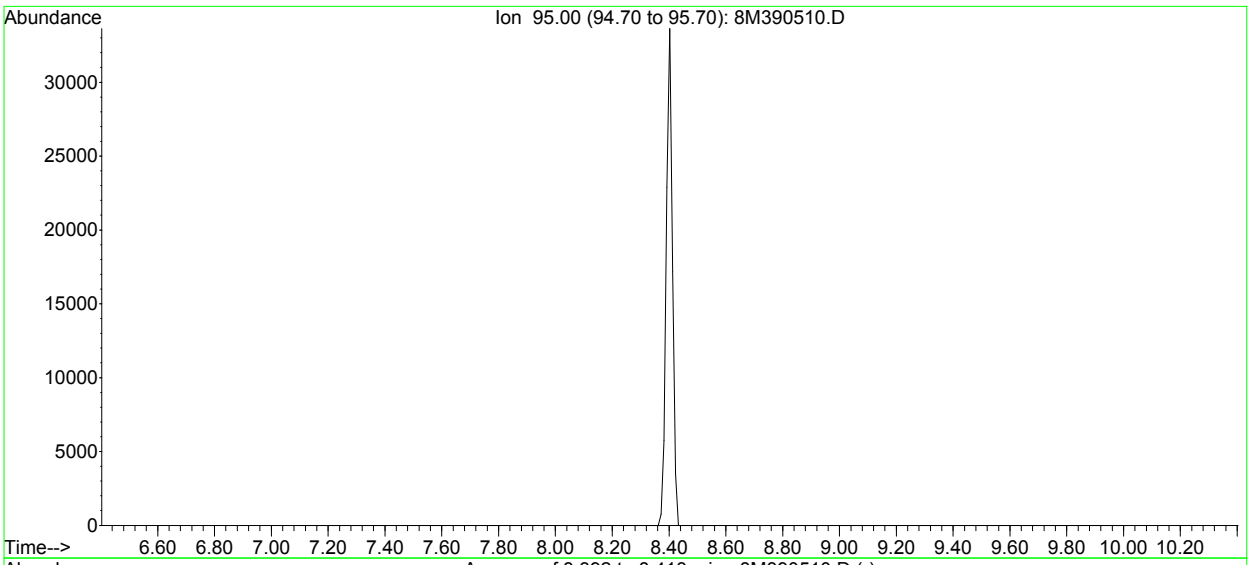

AutoFind: Scans 128, 129, 130; Background Corrected with Scan 123

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.8	5098	PASS
75	95	30	60	50.5	12397	PASS
95	95	100	100	100.0	24560	PASS
96	95	5	9	7.1	1737	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	87.2	21420	PASS
175	174	5	9	7.9	1696	PASS
176	174	95	101	100.6	21552	PASS
177	176	5	9	6.8	1473	PASS

8M390510.D BFB.M Wed Sep 11 10:07:37 2013

BFB

Data File : C:\MSDCHEM\1\DATA\091313\8M390573.D Vial: 2
Acq On : 13 Sep 2013 14:51 Operator: TMB
Sample : WG444635-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD59881 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

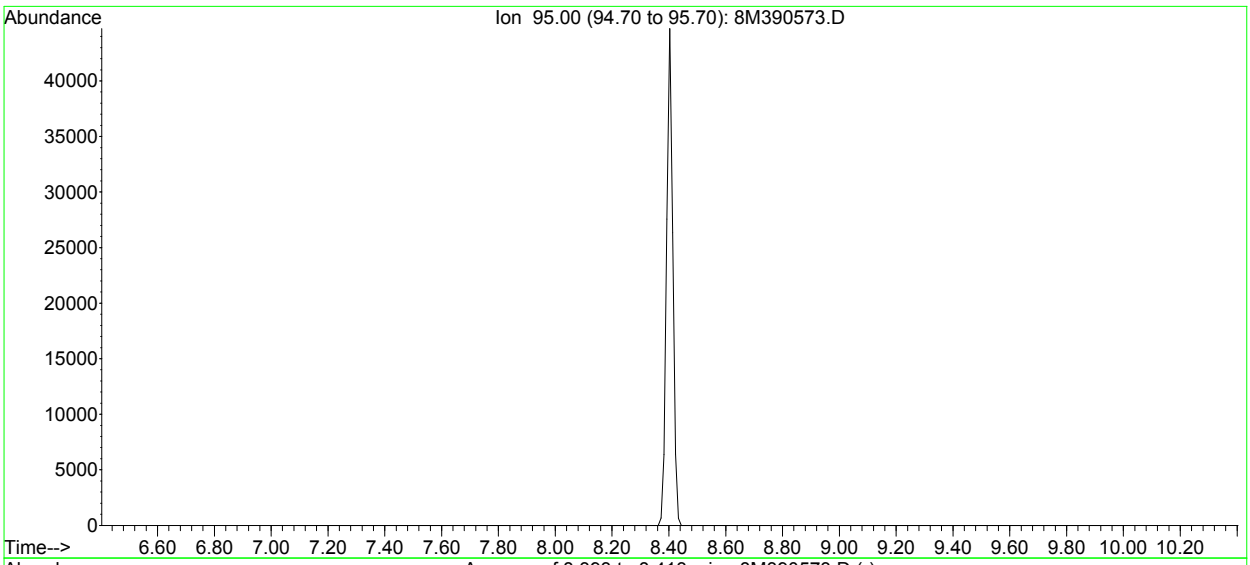

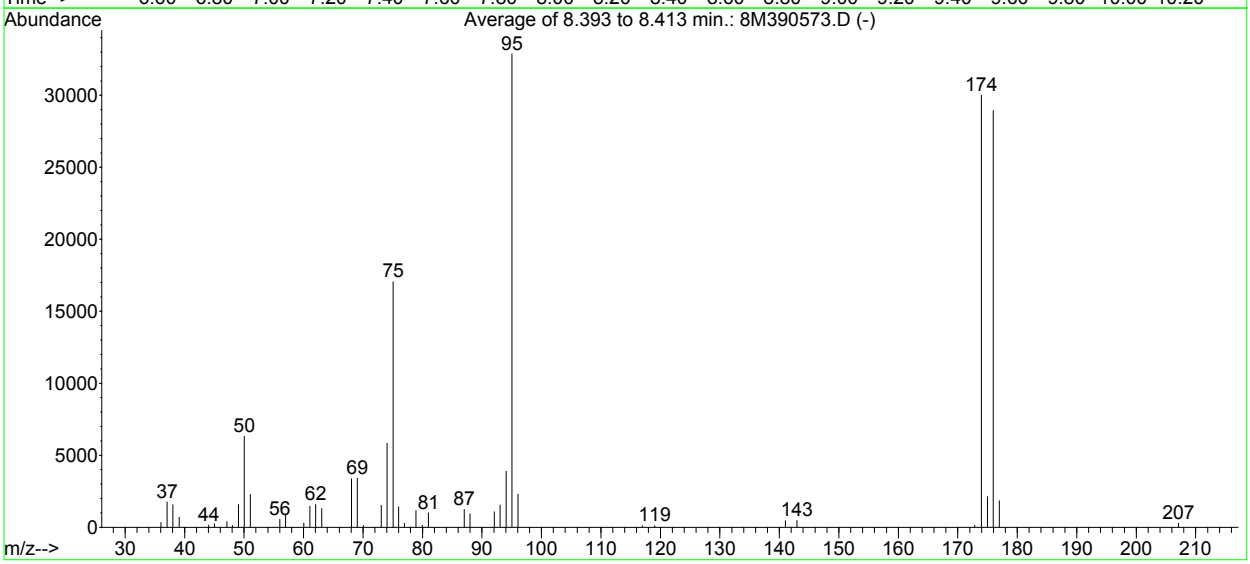

AutoFind: Scans 128, 129, 130; Background Corrected with Scan 123

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.2	6315	PASS
75	95	30	60	51.9	17063	PASS
95	95	100	100	100.0	32872	PASS
96	95	5	9	7.0	2295	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	91.3	30013	PASS
175	174	5	9	7.1	2122	PASS
176	174	95	101	96.5	28952	PASS
177	176	5	9	6.4	1842	PASS

8M390573.D BFB.M Fri Sep 13 15:02:39 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\090913\6M119757.D Vial: 4
Acq On : 9 Sep 2013 12:20 Operator: TMB
Sample : WG443996-01 VBLK0909 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 10 08:17:33 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Fri Aug 30 16:35:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.16	96	843816	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.63	117	686997	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.18	152	357506	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	8.97	111	251190	28.3659 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.48%		
43) 1,2-Dichloroethane-d4	9.70	65	191348	25.5019 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.00%		
58) Toluene-d8	12.44	98	911605	24.7495 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.00%		
80) p-Bromofluorobenzene	16.41	95	324557	23.8690 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.48%		

Target Compounds					Qvalue
3) Chloromethane	2.85	50	2521	0.2177 ug/L #	73

(#) = qualifier out of range (m) = manual integration
6M119757.D 8260WTR.M Tue Sep 10 08:17:33 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\090913\6M119757.D Vial: 4
Acq On : 9 Sep 2013 12:20 Operator: TMB
Sample : WG443996-01 VBLK0909 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 10 8:17 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Fri Aug 30 16:35:03 2013
Response via : Initial Calibration

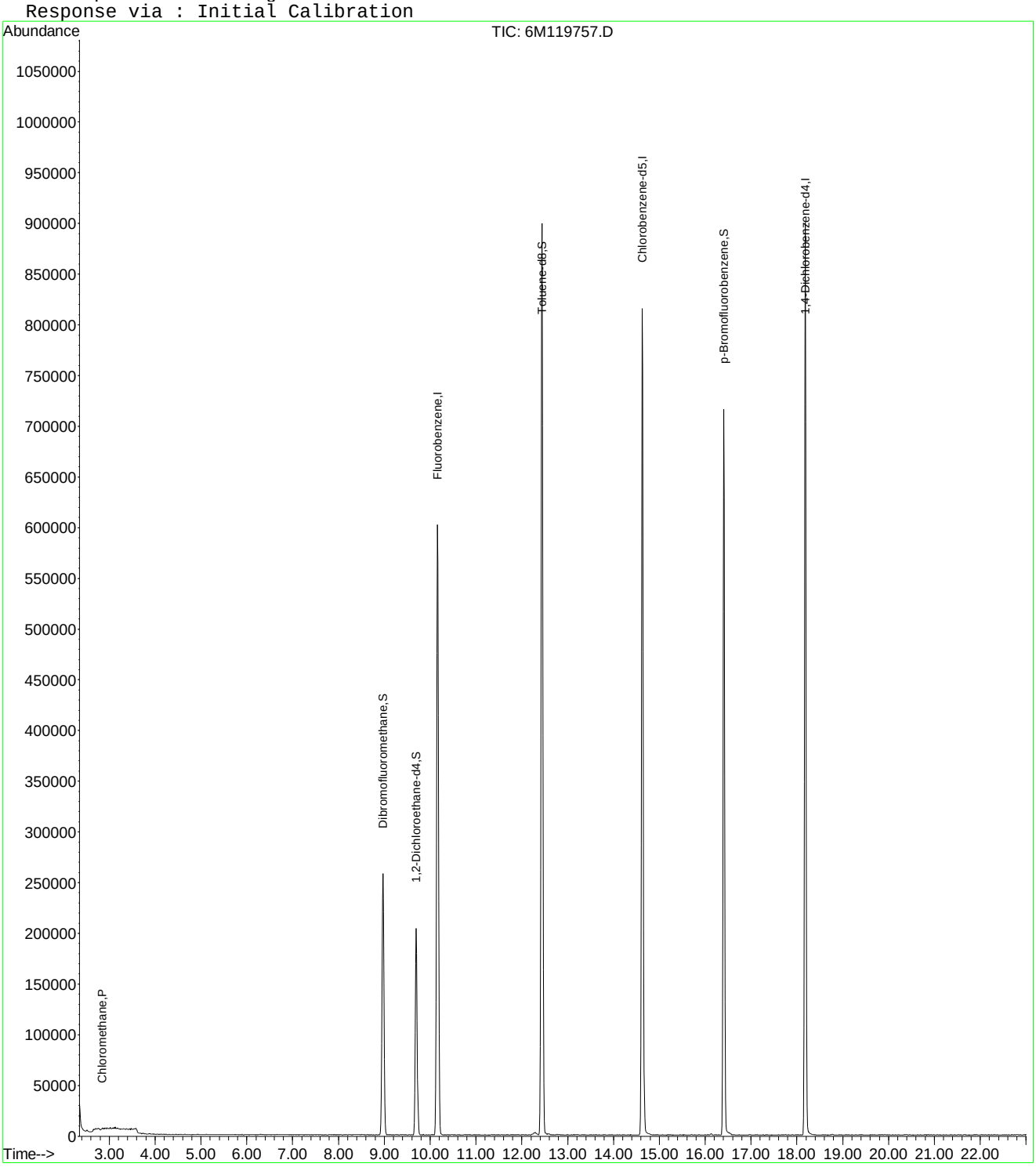

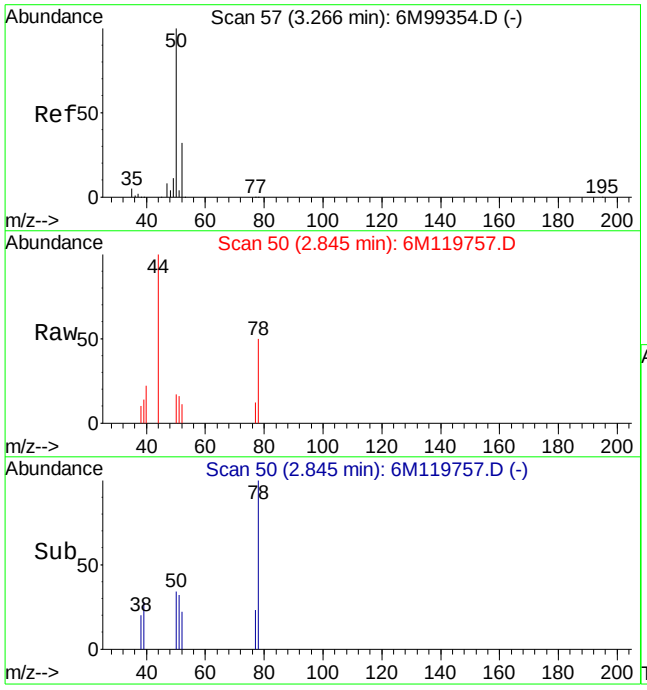

#3
Chloromethane
Concen: 0.22 ug/L
RT: 2.85 min Scan# 50
Delta R.T. -0.04 min
Lab File: 6M119757.D
Acq: 9 Sep 2013 12:20

Tgt Ion: 50 Resp: 2521

Ion	Ratio	Lower	Upper
50	100		
52	47.4	19.3	45.1#

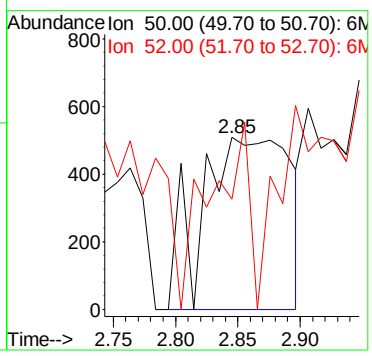

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091313\8M390576.D Vial: 4
Acq On : 13 Sep 2013 16:19 Operator: TMB
Sample : WG444637-01 VBLK0913 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 16 10:52:23 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	656741	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.93	117	516116	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.96	152	297074	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	10.01	111	176492	25.8869 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.56%		
43) 1,2-Dichloroethane-d4	10.65	65	188198	26.9796 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.92%		
58) Toluene-d8	13.03	98	588479	26.2076 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.84%		
80) p-Bromofluorobenzene	16.43	95	227255	25.1011 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.40%		

Target Compounds					Qvalue
3) Chloromethane	3.89	50	1121	0.1711 ug/L	85
36) Tetrahydrofuran	9.97	42	482	0.4313 ug/L #	46
56) Dimethyl Disulfide	13.03	94	16685	1.5867 ug/L #	28
99) Hexachlorobutadiene	20.78	225	998	0.1740 ug/L #	39

(#) = qualifier out of range (m) = manual integration
8M390576.D 8260WTR.M Mon Sep 16 10:52:24 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091313\8M390576.D Vial: 4
Acq On : 13 Sep 2013 16:19 Operator: TMB
Sample : WG444637-01 VBLK0913 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 16 10:52 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration

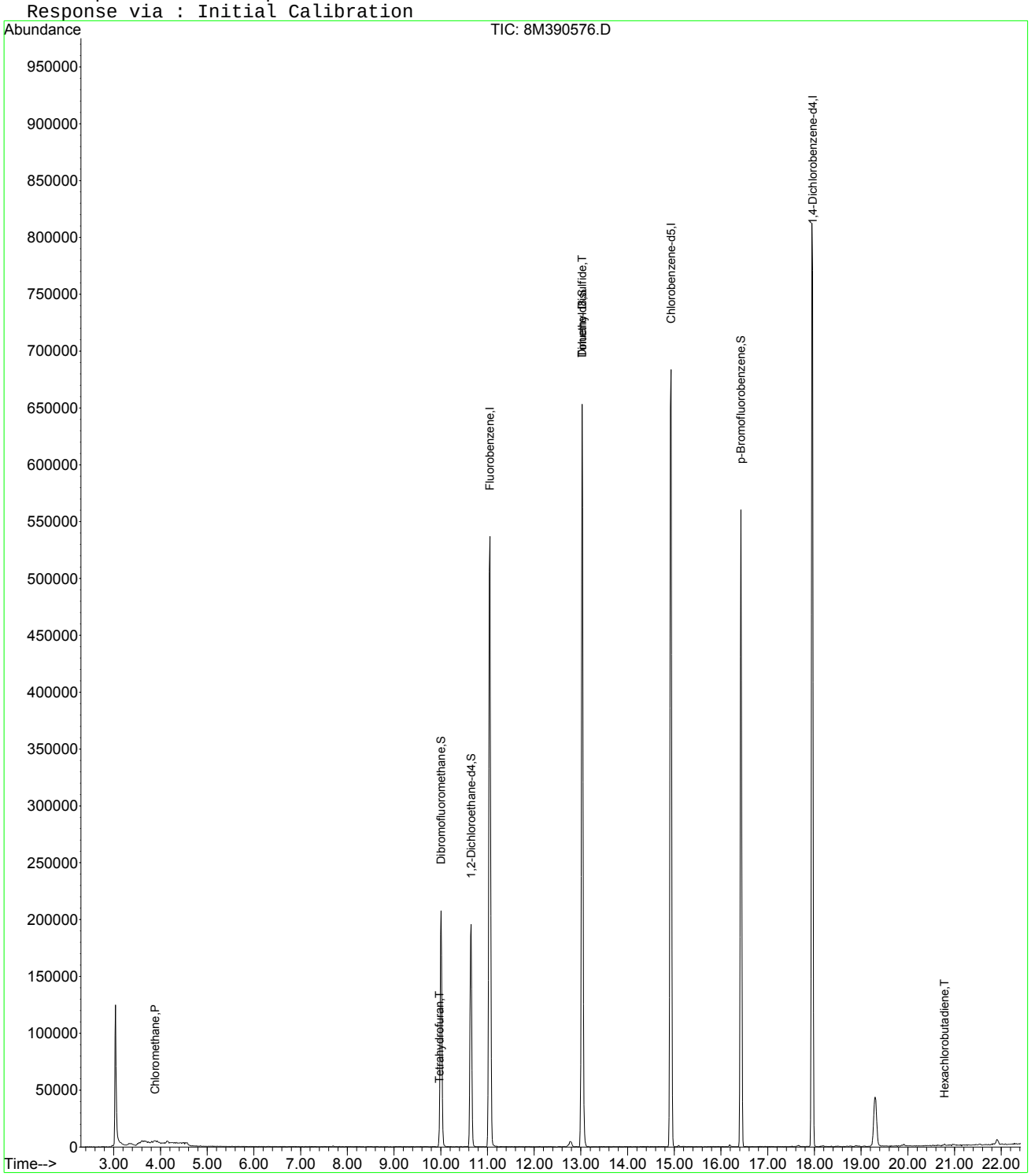

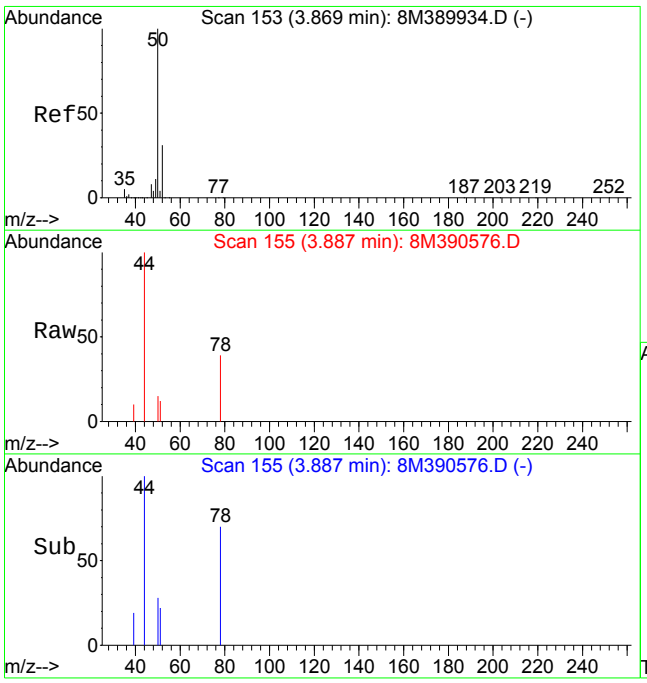

#3
Chloromethane
Concen: 0.17 ug/L
RT: 3.89 min Scan# 155
Delta R.T. 0.01 min
Lab File: 8M390576.D
Acq: 13 Sep 2013 16:19

Tgt Ion: 50 Resp: 1121

Ion	Ratio	Lower	Upper
50	100		
52	23.7	19.3	45.1

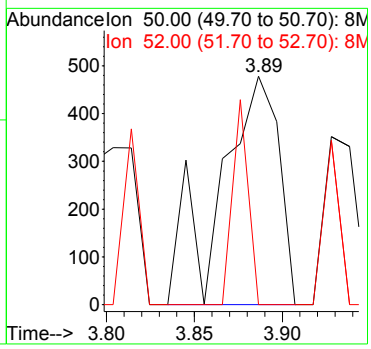

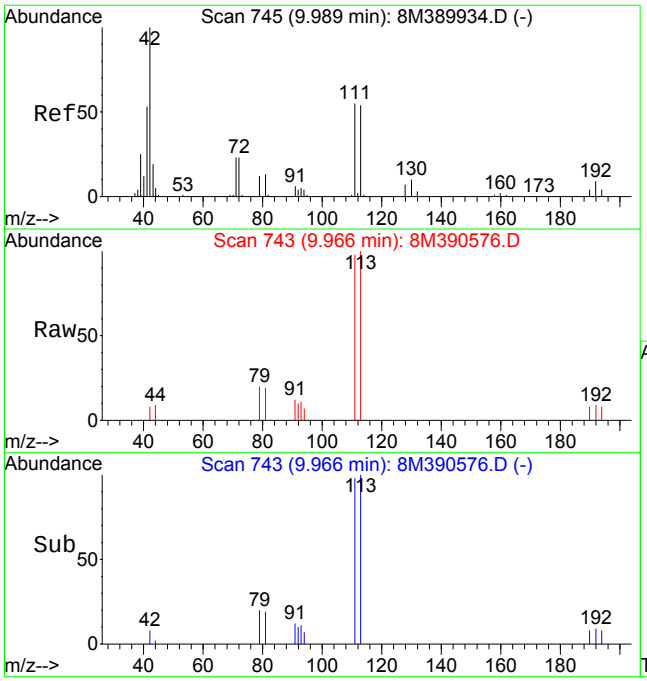

#36
Tetrahydrofuran
Concen: 0.43 ug/L
RT: 9.97 min Scan# 743
Delta R.T. -0.03 min
Lab File: 8M390576.D
Acq: 13 Sep 2013 16:19

Tgt Ion: 42 Resp: 482

Ion	Ratio	Lower	Upper
42	100		
72	0.0	17.6	41.2#
71	0.0	17.2	40.2#

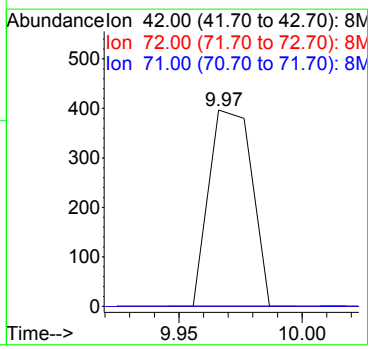

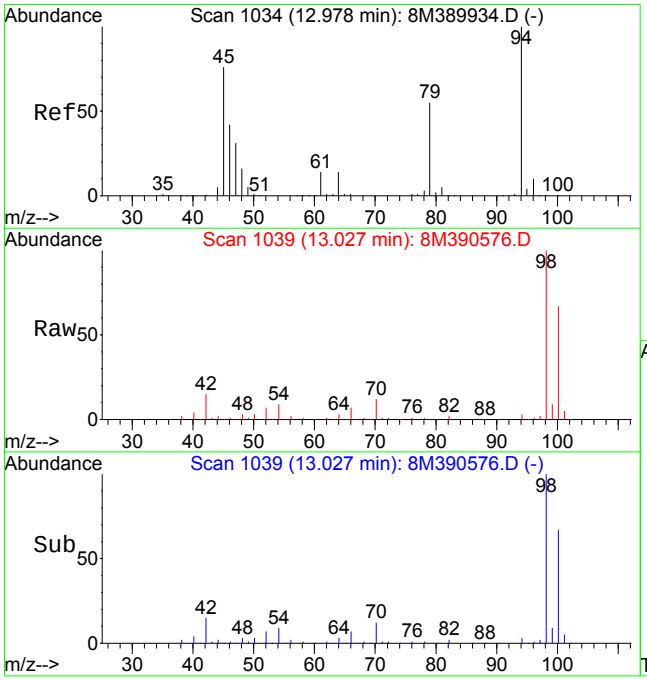

#56
Dimethyl Disulfide
Concen: 1.59 ug/L
RT: 13.03 min Scan# 1039
Delta R.T. 0.04 min
Lab File: 8M390576.D
Acq: 13 Sep 2013 16:19

Tgt Ion: 94 Resp: 16685

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.7	69.3#

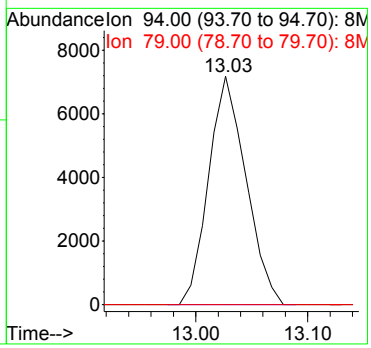

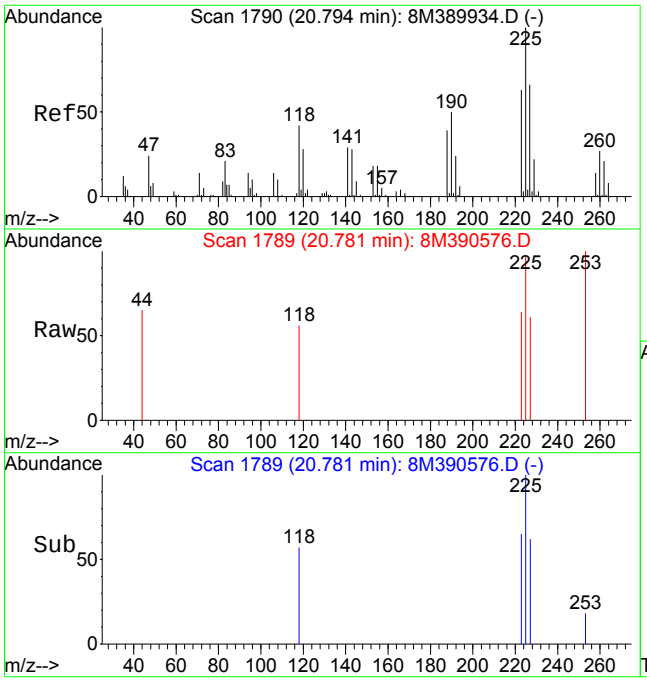

#99
Hexachlorobutadiene
Concen: 0.17 ug/L
RT: 20.78 min Scan# 1789
Delta R.T. -0.02 min
Lab File: 8M390576.D
Acq: 13 Sep 2013 16:19

Tgt Ion:225 Resp: 998

Ion	Ratio	Lower	Upper
225	100		
223	21.4	38.3	89.5#
190	0.0	28.2	65.8#

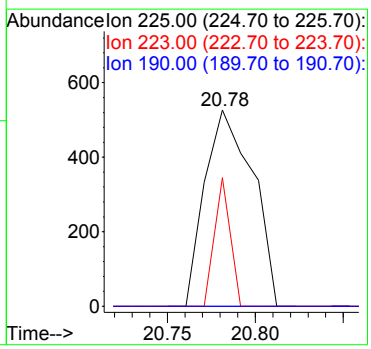

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\090913\6M119758.D Vial: 5
Acq On : 9 Sep 2013 12:50 Operator: TMB
Sample : WG443996-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 09 13:13:52 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Fri Aug 30 16:35:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.16	96	873966	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.63	117	702843	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.18	152	380377	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	8.97	111	255066	27.8100 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	9.70	65	199051	25.6134 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.44%		
58) Toluene-d8	12.45	98	928858	24.6494 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.60%		
80) p-Bromofluorobenzene	16.41	95	339128	23.4410 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.56	85	248127	30.6291 ug/L	96
3) Chloromethane	2.92	50	255416	21.2954 ug/L	100
4) Vinyl Chloride	3.09	62	217600	22.8567 ug/L	100
5) 1,3-Butadiene	3.12	54	142508	21.0006 ug/L	96
6) Bromomethane	3.83	94	84873	16.2112 ug/L	98
7) Chloroethane	3.96	64	169893	21.6659 ug/L	96
8) Trichlorofluoromethane	4.42	101	365175	23.6647 ug/L	100
9) Diethyl ether	4.94	59	666163	111.9891 ug/L	96
10) Isoprene	4.97	67	312923	23.1759 ug/L	94
11) Acrolein	5.17	56	16442	113.3598 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	5.21	101	223850	25.8455 ug/L	97
13) Acetone	5.28	43	27157	16.1902 ug/L	95
14) 1,1-Dichloroethene	5.49	61	343066	19.0677 ug/L	93
15) Tert-Butyl Alcohol	5.63	59	47288	147.4544 ug/L	92
16) Dimethyl Sulfide	5.76	62	251976	26.3640 ug/L	92
17) Iodomethane	6.01	142	111452	14.8319 ug/L	100
18) Methyl acetate	6.06	43	92833	17.3672 ug/L	97
19) Methylene Chloride	6.32	84	188997	21.3374 ug/L	84
20) Carbon Disulfide	6.32	76	687138	23.4412 ug/L	100
21) Acrylonitrile	6.52	53	43667	21.4199 ug/L	98
22) Methyl Tert Butyl Ether	6.56	73	318186	21.5407 ug/L	96
23) trans-1,2-Dichloroethene	6.80	96	218354	22.0716 ug/L	88
24) n-Hexane	6.91	57	304928	19.1178 ug/L	95
25) Diisopropyl ether	7.30	45	4129818	98.8667 ug/L	98
26) Vinyl Acetate	7.48	43	288907	24.6139 ug/L	98
27) 1,1-Dichloroethane	7.48	63	413607	20.2075 ug/L	100
28) Ethyl-Tert-Butyl ether	7.93	59	2691983	100.1650 ug/L	98
29) 2-Butanone	8.12	43	44320	19.2551 ug/L	95
30) Propionitrile	8.23	54	60472	93.5678 ug/L	100
31) 2,2-Dichloropropane	8.34	77	301982	19.4503 ug/L	90
32) cis-1,2-Dichloroethene	8.41	96	228417	22.3540 ug/L	87
33) Chloroform	8.65	83	357901	21.2443 ug/L	97
34) 1-Bromopropane	8.79	122	50008	26.4110 ug/L	99
35) Bromochloromethane	8.89	130	120345	22.7207 ug/L	99
36) Tetrahydrofuran	8.93	42	139243	90.9078 ug/L	93
38) 1,1,1-Trichloroethane	9.24	97	346159	21.5970 ug/L	95
39) Cyclohexane	9.26	56	435838	19.2994 ug/L	94
40) 1,1-Dichloropropene	9.46	75	273966	20.2809 ug/L	91
41) Tert-Amyl-Methyl ether	9.62	73	1636679	101.6781 ug/L	100
42) Carbon Tetrachloride	9.62	117	326254	22.5655 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M119758.D 8260WTR.M Mon Sep 09 13:13:52 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\090913\6M119758.D Vial: 5
Acq On : 9 Sep 2013 12:50 Operator: TMB
Sample : WG443996-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 09 13:13:52 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Fri Aug 30 16:35:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.83	62	215038	20.4021 ug/L	97
46)	Benzene	9.86	78	768488	20.8434 ug/L	95
47)	Trichloroethene	10.73	130	247708	23.8647 ug/L	91
48)	Methylcyclohexane	10.82	83	281728	20.9851 ug/L	92
49)	1,2-Dichloropropane	10.99	63	217737	20.6370 ug/L	99
50)	1,4-Dioxane	11.33	88	2794	98.6251 ug/L	94
51)	Bromodichloromethane	11.32	83	236473	20.7463 ug/L	100
52)	Dibromomethane	11.40	93	82379	23.0098 ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.73	63	56960	16.4632 ug/L	99
54)	4-Methyl-2-Pentanone	11.76	58	33355	19.3399 ug/L	96
55)	cis-1,3-Dichloropropene	12.09	75	271793	21.5607 ug/L	98
56)	Dimethyl Disulfide	12.35	79	135374	22.4207 ug/L	96
59)	Toluene	12.56	91	829863	18.0488 ug/L	100
60)	Ethyl Methacrylate	12.75	69	119391	18.0803 ug/L	83
62)	trans-1,3-Dichloropropene	12.79	75	195048	17.2904 ug/L	98
63)	1,1,2-Trichloroethane	13.03	97	112420	19.3424 ug/L	99
64)	2-Hexanone	13.01	43	56665	14.0715 ug/L	96
65)	1,3-Dichloropropane	13.38	76	184297	18.3766 ug/L	83
66)	Tetrachloroethene	13.50	166	244427	18.8548 ug/L	99
67)	Dibromochloromethane	13.79	129	164468	20.2561 ug/L	100
68)	1,2-Dibromoethane	14.09	107	110094	18.9993 ug/L	98
69)	1-Chlorohexane	14.27	91	266361	19.0241 ug/L	90
70)	Chlorobenzene	14.69	112	511639	17.4471 ug/L	96
71)	1,1,1,2-Tetrachloroethane	14.74	131	208895	19.9794 ug/L	99
72)	Ethylbenzene	14.75	106	307769	18.2125 ug/L	99
73)	m-,p-Xylene	14.86	106	722252	35.9412 ug/L	98
74)	o-Xylene	15.51	106	330185	16.8820 ug/L	97
75)	Styrene	15.55	104	566241	18.6333 ug/L	96
76)	Bromoform	16.08	173	94320	22.3739 ug/L	98
77)	Isopropylbenzene	16.02	105	857076	16.9726 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.27	83	109974	18.2414 ug/L	99
81)	1,2,3-Trichloropropane	16.50	110	31974	18.3031 ug/L	90
82)	trans-1,4-Dichloro-2-Buten	16.58	53	28023	11.9798 ug/L	92
83)	n-Propylbenzene	16.62	91	957126	15.1780 ug/L	100
84)	Bromobenzene	16.71	156	236952	18.6255 ug/L	100
85)	1,3,5-Trimethylbenzene	16.85	105	776089	16.7417 ug/L	99
86)	2-Chlorotoluene	16.91	91	695044	15.6881 ug/L	96
87)	4-Chlorotoluene	16.97	91	561113	14.7649 ug/L	98
88)	a-Methylstyrene	17.32	118	434995	18.1023 ug/L	99
89)	tert-Butylbenzene	17.39	134	152481	16.1545 ug/L	99
90)	1,2,4-Trimethylbenzene	17.44	105	791732	17.0621 ug/L	100
91)	sec-Butylbenzene	17.70	105	838602	15.2748 ug/L	99
92)	p-Isopropyltoluene	17.90	119	735844	15.6036 ug/L	100
93)	1,3-Dichlorobenzene	18.07	146	436150	16.7551 ug/L	96
94)	1,4-Dichlorobenzene	18.24	146	463824	18.2780 ug/L	98
95)	n-Butylbenzene	18.52	91	657551	16.4921 ug/L	99
96)	1,2-Dichlorobenzene	18.80	146	368232	17.1306 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	19.98	75	15130	16.4417 ug/L	93
98)	1,2,4-Trichlorobenzene	21.32	180	256795	16.8373 ug/L	99
99)	Hexachlorobutadiene	21.52	225	130366	17.0816 ug/L	99
100)	Naphthalene	21.73	128	325691	15.1288 ug/L	99
101)	1,2,3-Trichlorobenzene	22.11	180	205760	16.6715 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\090913\6M119758.D Vial: 5
Acq On : 9 Sep 2013 12:50 Operator: TMB
Sample : WG443996-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 9 13:13 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Fri Aug 30 16:35:03 2013
Response via : Initial Calibration

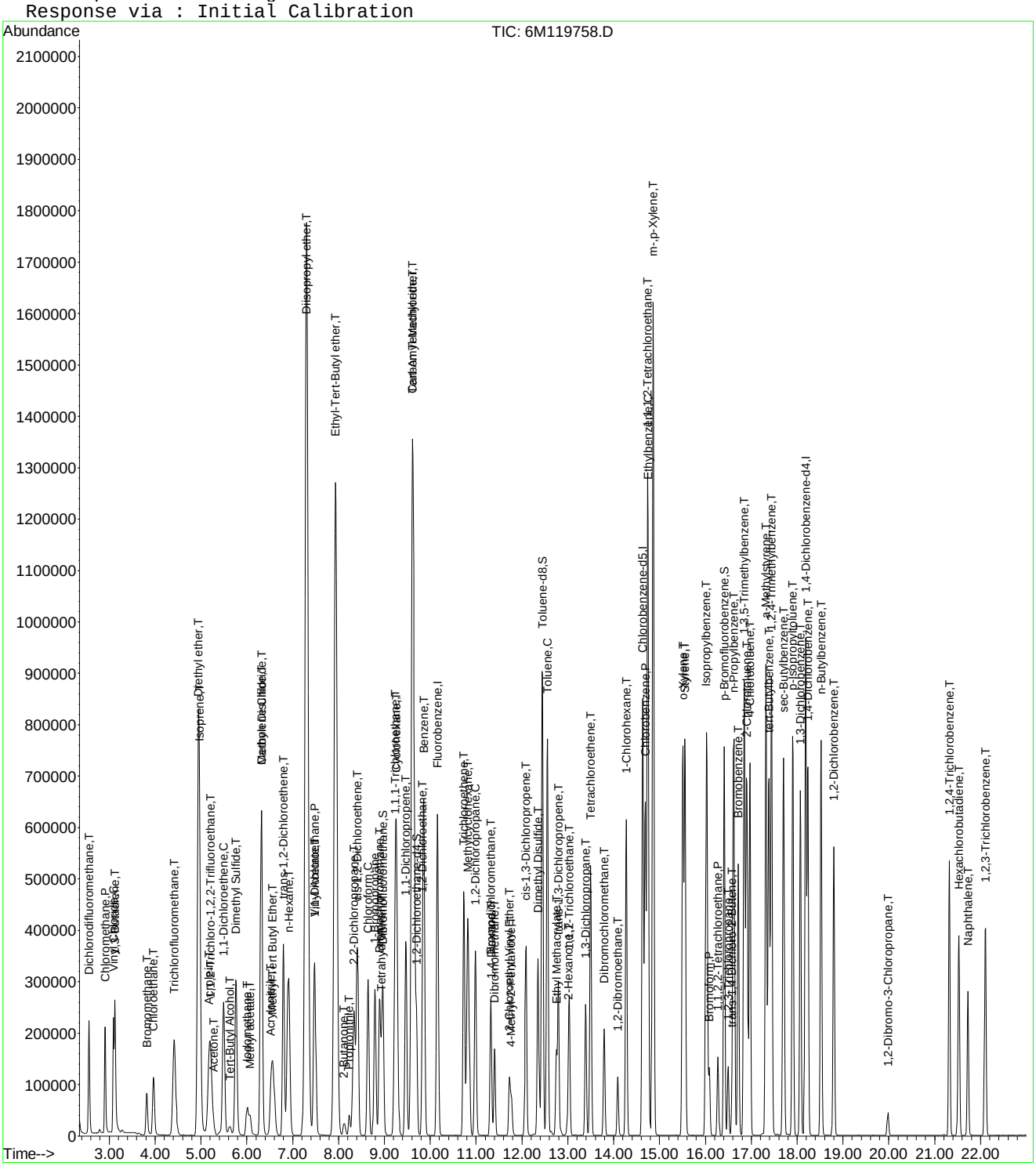

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091313\8M390577.D Vial: 5
Acq On : 13 Sep 2013 16:51 Operator: TMB
Sample : WG444637-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 13 17:13:39 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	655375	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.93	117	535409	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.96	152	316464	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	178045	26.1691 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.68%		
43) 1,2-Dichloroethane-d4	10.65	65	186705	26.8214 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.28%		
58) Toluene-d8	13.03	98	617329	26.5018 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.00%		
80) p-Bromofluorobenzene	16.43	95	240384	24.9244 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.68%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	182731	28.6720 ug/L	97
3) Chloromethane	3.86	50	129821	19.8558 ug/L	100
4) Vinyl Chloride	4.11	62	121579	22.0949 ug/L	95
5) 1,3-Butadiene	4.15	54	101525	19.8620 ug/L	79
6) Bromomethane	5.03	94	107507	24.1030 ug/L	97
7) Chloroethane	5.20	64	92478	21.2273 ug/L	97
8) Trichlorofluoromethane	5.69	101	266508	23.6089 ug/L	99
9) Diethyl ether	6.23	59	441206	106.3099 ug/L	91
10) Isoprene	6.27	67	172345	21.9637 ug/L	87
11) Acrolein	6.47	56	62145	113.8257 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.48	101	143484	23.5633 ug/L	94
13) Acetone	6.57	43	28485	21.0988 ug/L	85
14) 1,1-Dichloroethene	6.80	61	198302	21.0686 ug/L	99
15) Tert-Butyl Alcohol	6.90	59	47335	205.0101 ug/L	88
16) Dimethyl Sulfide	7.07	62	144219	26.4613 ug/L	99
17) Iodomethane	7.33	142	156254	24.4762 ug/L	80
18) Methyl acetate	7.33	43	74782	21.0312 ug/L	94
19) Methylene Chloride	7.59	84	131031	20.8258 ug/L	72
20) Carbon Disulfide	7.64	76	383052	20.9132 ug/L	100
21) Acrylonitrile	7.76	53	32666	22.5514 ug/L	96
22) Methyl Tert Butyl Ether	7.80	73	334643	23.8954 ug/L	87
23) trans-1,2-Dichloroethene	8.04	61	195747	21.5508 ug/L	95
24) n-Hexane	8.11	57	151426	19.9277 ug/L	95
25) Diisopropyl ether	8.46	45	2226272	104.2370 ug/L	92
26) Vinyl Acetate	8.63	43	215273	27.7947 ug/L	96
27) 1,1-Dichloroethane	8.66	63	246139	20.7175 ug/L	97
28) Ethyl-Tert-Butyl ether	9.03	59	1912502	107.4254 ug/L	93
29) 2-Butanone	9.22	43	39613	24.1792 ug/L	97
30) Propionitrile	9.32	54	52918	114.4856 ug/L	95
31) 2,2-Dichloropropane	9.44	77	229748	20.8347 ug/L	98
32) cis-1,2-Dichloroethene	9.51	96	145259	22.0009 ug/L	96
33) Chloroform	9.72	83	258948	20.9753 ug/L	97
34) 1-Bromopropane	9.85	122	32952	22.7354 ug/L	93
35) Bromochloromethane	9.94	130	99683	21.9599 ug/L	79
36) Tetrahydrofuran	9.98	42	123591	110.8211 ug/L	89
38) 1,1,1-Trichloroethane	10.25	97	252308	22.0213 ug/L	99
39) Cyclohexane	10.29	56	200051	20.4539 ug/L	77
40) 1,1-Dichloropropene	10.44	75	191287	20.9756 ug/L	95
41) Tert-Amyl-Methyl ether	10.54	73	1640967	109.4381 ug/L	93
42) Carbon Tetrachloride	10.60	117	239650	21.8350 ug/L	98
45) 1,2-Dichloroethane	10.76	62	201818	22.4020 ug/L	87

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091313\8M390577.D Vial: 5
Acq On : 13 Sep 2013 16:51 Operator: TMB
Sample : WG444637-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 13 17:13:39 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.80	78	529925	20.9092	ug/L	93
47)	Trichloroethene	11.56	130	167084	22.9755	ug/L	98
48)	Methylcyclohexane	11.64	83	197351	20.1665	ug/L	86
49)	1,2-Dichloropropane	11.76	63	134843	21.0911	ug/L	77
50)	Bromodichloromethane	12.07	83	191117	20.9836	ug/L	98
51)	1,4-Dioxane	12.06	88	3410	120.6253	ug/L	74
52)	Dibromomethane	12.16	93	78656	22.3062	ug/L	95
53)	2-Chloroethyl Vinyl Ether	12.35	63	62672	22.1967	ug/L	97
54)	4-Methyl-2-Pentanone	12.38	58	29990	23.1111	ug/L	84
55)	cis-1,3-Dichloropropene	12.70	75	230528	23.5604	ug/L	99
56)	Dimethyl Disulfide	12.97	94	242561	23.1157	ug/L	99
59)	Toluene	13.13	91	569234	21.3693	ug/L	99
60)	Ethyl Methacrylate	13.21	69	129284	24.1167	ug/L	89
62)	trans-1,3-Dichloropropene	13.29	75	199942	20.9773	ug/L	98
63)	1,1,2-Trichloroethane	13.52	97	106909	21.5460	ug/L	98
64)	2-Hexanone	13.45	58	25449	21.4090	ug/L	82
65)	1,3-Dichloropropane	13.82	76	180473	21.5436	ug/L	92
66)	Tetrachloroethene	13.95	164	134612	20.8548	ug/L	96
67)	Dibromochloromethane	14.21	129	156439	21.3975	ug/L	98
68)	1,2-Dibromoethane	14.47	107	107794	21.3816	ug/L	96
69)	1-Chlorohexane	14.55	91	181194	22.5622	ug/L	90
70)	Chlorobenzene	14.97	112	397009	19.2125	ug/L	94
71)	1,1,1,2-Tetrachloroethane	15.00	131	173569	21.8910	ug/L	100
72)	Ethylbenzene	15.00	106	218529	20.0938	ug/L	92
73)	m-,p-Xylene	15.08	106	516489	41.5613	ug/L	95
74)	o-Xylene	15.65	106	245200	20.1718	ug/L	98
75)	Styrene	15.69	104	439695	22.7102	ug/L	95
76)	Bromoform	16.19	173	96549	21.4830	ug/L	99
77)	Isopropylbenzene	16.08	105	624809	21.1695	ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.29	83	117828	21.1508	ug/L	99
81)	1,2,3-Trichloropropane	16.49	110	38731	21.1036	ug/L	81
82)	trans-1,4-Dichloro-2-Buten	16.53	53	30413	17.5791	ug/L	78
83)	n-Propylbenzene	16.58	91	707579	20.3170	ug/L	99
84)	Bromobenzene	16.73	156	187919	20.6965	ug/L	87
85)	1,3,5-Trimethylbenzene	16.77	105	622505	23.2834	ug/L	99
86)	2-Chlorotoluene	16.86	91	465624	19.0049	ug/L	99
87)	4-Chlorotoluene	16.90	91	443221	20.1967	ug/L	99
88)	a-Methylstyrene	17.17	118	346539	21.6294	ug/L	98
89)	tert-Butylbenzene	17.23	134	123733	19.8921	ug/L	89
90)	1,2,4-Trimethylbenzene	17.29	105	633450	21.8268	ug/L	98
91)	sec-Butylbenzene	17.50	105	657050	19.8122	ug/L	100
92)	p-Isopropyltoluene	17.67	119	610321	20.5072	ug/L	99
93)	1,3-Dichlorobenzene	17.86	146	357603	19.4361	ug/L	99
94)	1,4-Dichlorobenzene	18.00	146	388822	20.0359	ug/L	100
95)	n-Butylbenzene	18.20	91	543496	21.5946	ug/L	99
96)	1,2-Dichlorobenzene	18.50	146	329344	19.1754	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.49	75	23635	22.1623	ug/L	77
98)	1,2,4-Trichlorobenzene	20.64	180	267553	21.1066	ug/L	98
99)	Hexachlorobutadiene	20.79	225	115620	18.9236	ug/L	100
100)	Naphthalene	21.01	128	491777	22.8233	ug/L	99
101)	1,2,3-Trichlorobenzene	21.32	180	240423	21.2232	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091313\8M390577.D Vial: 5
Acq On : 13 Sep 2013 16:51 Operator: TMB
Sample : WG444637-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 13 17:13 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09/11/13 HPMS 8
Last Update : Wed Sep 11 15:26:24 2013
Response via : Initial Calibration

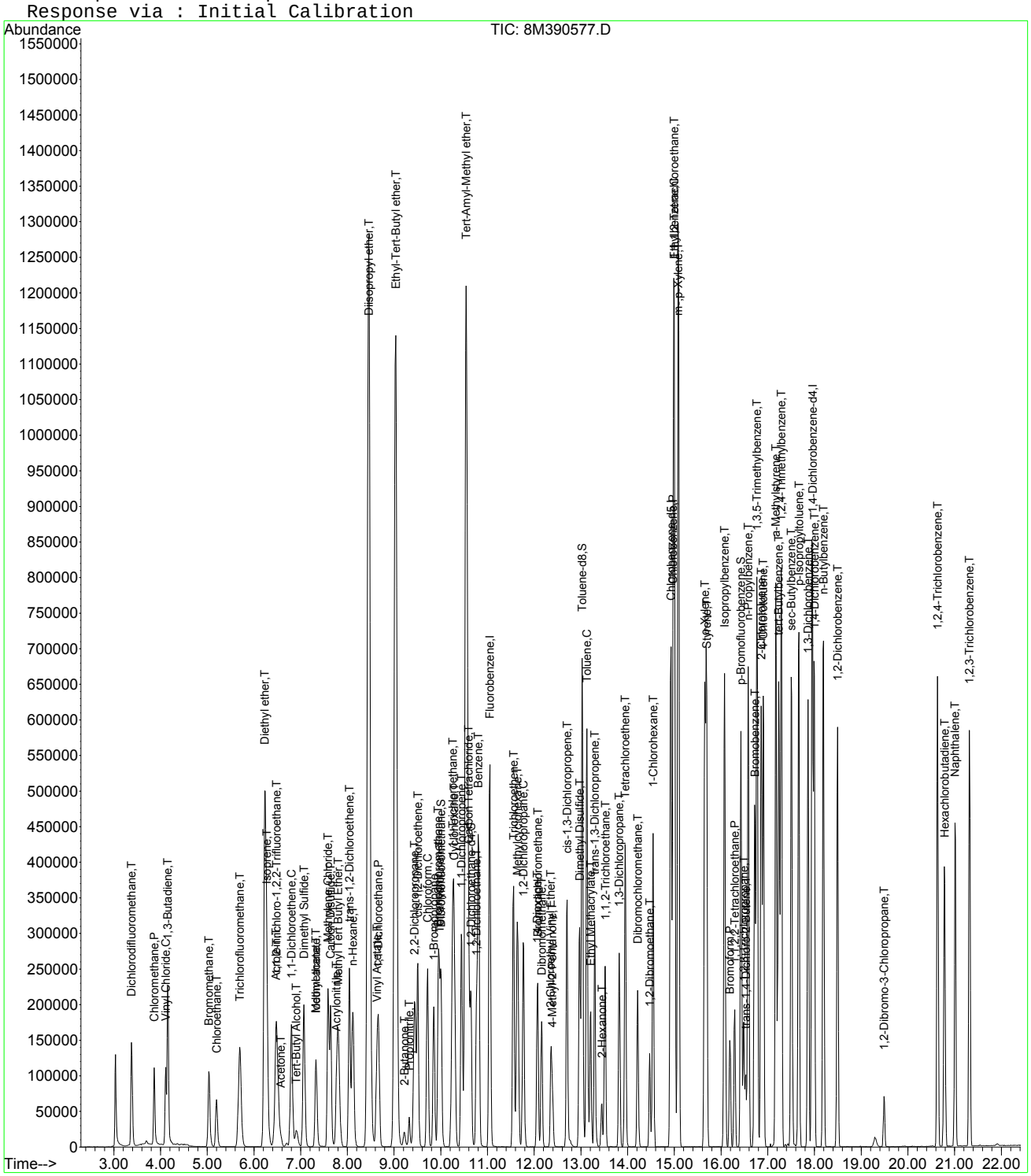

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\090913\6M119759.D Vial: 6
Acq On : 9 Sep 2013 13:20 Operator: TMB
Sample : WG443996-03 20ug/L LCSDUP STD 8260 Inst : HPMS6
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 09 13:44:00 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Fri Aug 30 16:35:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.16	96	891657	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.63	117	710294	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.18	152	382767	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	8.97	111	256770	27.4403 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.76%		
43) 1,2-Dichloroethane-d4	9.70	65	200202	25.2504 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.00%		
58) Toluene-d8	12.44	98	943613	24.7782 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.12%		
80) p-Bromofluorobenzene	16.40	95	342509	23.5269 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.12%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.56	85	265710	32.1488 ug/L	97
3) Chloromethane	2.92	50	271854	22.2162 ug/L	99
4) Vinyl Chloride	3.09	62	221636	22.8187 ug/L	99
5) 1,3-Butadiene	3.12	54	122787	17.2428 ug/L	95
6) Bromomethane	3.82	94	90543	16.9135 ug/L	97
7) Chloroethane	3.97	64	180264	22.5324 ug/L	95
8) Trichlorofluoromethane	4.42	101	386006	24.5183 ug/L	100
9) Diethyl ether	4.95	59	663996	109.4101 ug/L	95
10) Isoprene	4.97	67	323534	23.4863 ug/L	95
11) Acrolein	5.17	56	16776	113.3677 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	5.20	101	237977	26.9314 ug/L	97
13) Acetone	5.28	43	25983	14.9947 ug/L	94
14) 1,1-Dichloroethene	5.49	61	361426	19.6896 ug/L	92
15) Tert-Butyl Alcohol	5.64	59	50463	154.2327 ug/L	97
16) Dimethyl Sulfide	5.76	62	253445	25.9916 ug/L	92
17) Iodomethane	6.01	142	131364	16.8043 ug/L	99
18) Methyl acetate	6.06	43	91655	16.7716 ug/L	97
19) Methylene Chloride	6.32	84	195800	21.6668 ug/L	84
20) Carbon Disulfide	6.32	76	707564	23.6591 ug/L	100
21) Acrylonitrile	6.52	53	42892	20.6223 ug/L	100
22) Methyl Tert Butyl Ether	6.56	73	314272	20.8537 ug/L	95
23) trans-1,2-Dichloroethene	6.80	96	229896	22.7772 ug/L	87
24) n-Hexane	6.91	57	323515	19.8807 ug/L	95
25) Diisopropyl ether	7.31	45	4158425	97.5764 ug/L	98
26) Vinyl Acetate	7.48	43	299593	25.0178 ug/L	97
27) 1,1-Dichloroethane	7.48	63	430711	20.6257 ug/L	100
28) Ethyl-Tert-Butyl ether	7.93	59	2699532	98.4530 ug/L	98
29) 2-Butanone	8.12	43	42326	18.0240 ug/L	97
30) Propionitrile	8.24	54	62680	95.0600 ug/L	100
31) 2,2-Dichloropropane	8.34	77	320065	20.2060 ug/L	90
32) cis-1,2-Dichloroethene	8.41	96	233582	22.4059 ug/L	88
33) Chloroform	8.64	83	368977	21.4672 ug/L	97
34) 1-Bromopropane	8.80	122	51889	26.8607 ug/L	99
35) Bromochloromethane	8.90	130	124009	22.9479 ug/L	98
36) Tetrahydrofuran	8.93	42	136521	87.3623 ug/L	93
38) 1,1,1-Trichloroethane	9.24	97	361227	22.0900 ug/L	96
39) Cyclohexane	9.27	56	455041	19.7500 ug/L	94
40) 1,1-Dichloropropene	9.47	75	289696	21.0198 ug/L	90
41) Tert-Amyl-Methyl ether	9.62	73	1640651	99.9026 ug/L	99
42) Carbon Tetrachloride	9.61	117	345543	23.4255 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M119759.D 8260WTR.M Mon Sep 09 13:44:00 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\090913\6M119759.D Vial: 6
Acq On : 9 Sep 2013 13:20 Operator: TMB
Sample : WG443996-03 20ug/L LCSDUP STD 8260 Inst : HPMS6
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 09 13:44:00 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Fri Aug 30 16:35:03 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	9.83	62	219358	20.3991 ug/L	98
46)	Benzene	9.86	78	801086	21.2964 ug/L	95
47)	Trichloroethene	10.74	130	256857	24.2551 ug/L	92
48)	Methylcyclohexane	10.82	83	296729	21.6639 ug/L	91
49)	1,2-Dichloropropane	10.98	63	224278	20.8352 ug/L	98
50)	1,4-Dioxane	11.33	88	5155	169.1389 ug/L	99
51)	Bromodichloromethane	11.32	83	242362	20.8411 ug/L	99
52)	Dibromomethane	11.40	93	84126	23.0315 ug/L	100
53)	2-Chloroethyl Vinyl Ether	11.73	63	58208	16.4901 ug/L	98
54)	4-Methyl-2-Pentanone	11.77	58	32912	18.7044 ug/L	95
55)	cis-1,3-Dichloropropene	12.09	75	279021	21.6950 ug/L	98
56)	Dimethyl Disulfide	12.35	79	136085	22.0913 ug/L	96
59)	Toluene	12.55	91	863548	18.5844 ug/L	100
60)	Ethyl Methacrylate	12.75	69	117260	17.5713 ug/L	84
62)	trans-1,3-Dichloropropene	12.79	75	199868	17.5318 ug/L	99
63)	1,1,2-Trichloroethane	13.02	97	114611	19.5125 ug/L	99
64)	2-Hexanone	13.00	43	55665	13.6781 ug/L	93
65)	1,3-Dichloropropane	13.38	76	187322	18.4823 ug/L	83
66)	Tetrachloroethene	13.50	166	260868	19.9120 ug/L	98
67)	Dibromochloromethane	13.79	129	166399	20.2789 ug/L	99
68)	1,2-Dibromoethane	14.09	107	113598	19.3983 ug/L	98
69)	1-Chlorohexane	14.27	91	275628	19.4794 ug/L	91
70)	Chlorobenzene	14.69	112	526721	17.7730 ug/L	95
71)	1,1,1,2-Tetrachloroethane	14.74	131	215539	20.3986 ug/L	99
72)	Ethylbenzene	14.75	106	322143	18.8631 ug/L	98
73)	m-,p-Xylene	14.86	106	752707	37.0638 ug/L	98
74)	o-Xylene	15.51	106	343776	17.3925 ug/L	96
75)	Styrene	15.56	104	583333	18.9944 ug/L	96
76)	Bromoform	16.08	173	94747	22.2394 ug/L	99
77)	Isopropylbenzene	16.03	105	897666	17.5899 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.27	83	110040	18.1384 ug/L	99
81)	1,2,3-Trichloropropane	16.50	110	32364	18.4107 ug/L	88
82)	trans-1,4-Dichloro-2-Buten	16.58	53	27390	11.6361 ug/L	95
83)	n-Propylbenzene	16.62	91	1002730	15.8019 ug/L	100
84)	Bromobenzene	16.71	156	242823	18.9678 ug/L	100
85)	1,3,5-Trimethylbenzene	16.84	105	807770	17.3163 ug/L	99
86)	2-Chlorotoluene	16.91	91	716184	16.0643 ug/L	99
87)	4-Chlorotoluene	16.97	91	593287	15.5141 ug/L	98
88)	a-Methylstyrene	17.31	118	443590	18.3447 ug/L	99
89)	tert-Butylbenzene	17.38	134	157278	16.5587 ug/L	97
90)	1,2,4-Trimethylbenzene	17.45	105	816182	17.4792 ug/L	100
91)	sec-Butylbenzene	17.70	105	880005	15.9288 ug/L	99
92)	p-Isopropyltoluene	17.91	119	764482	16.1097 ug/L	99
93)	1,3-Dichlorobenzene	18.08	146	446672	17.0522 ug/L	96
94)	1,4-Dichlorobenzene	18.23	146	473688	18.5502 ug/L	98
95)	n-Butylbenzene	18.52	91	693848	17.2938 ug/L	99
96)	1,2-Dichlorobenzene	18.79	146	373137	17.2504 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	19.98	75	15595	16.8412 ug/L	98
98)	1,2,4-Trichlorobenzene	21.32	180	266250	17.3482 ug/L	99
99)	Hexachlorobutadiene	21.52	225	138898	18.0859 ug/L	100
100)	Naphthalene	21.72	128	334226	15.4283 ug/L	99
101)	1,2,3-Trichlorobenzene	22.10	180	210491	16.9483 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M119759.D 8260WTR.M Mon Sep 09 13:44:01 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\090913\6M119759.D Vial: 6
Acq On : 9 Sep 2013 13:20 Operator: TMB
Sample : WG443996-03 20ug/L LCSDUP STD 8260 Inst : HPMS6
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 9 13:44 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:OVLMSV01 07/26/13 - HPMS6
Last Update : Fri Aug 30 16:35:03 2013
Response via : Initial Calibration

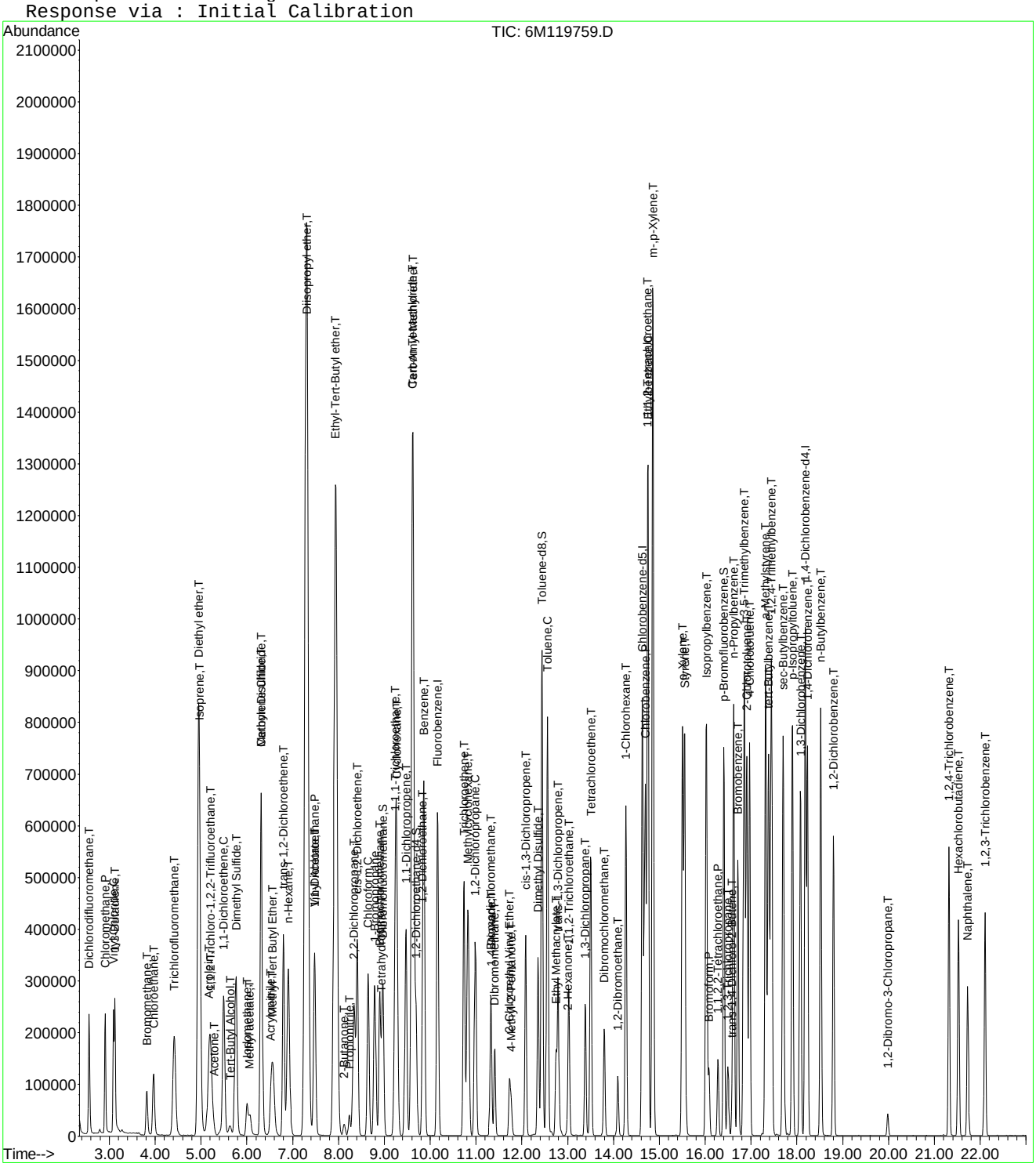

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
September 16, 2013

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AJF - AMANDA J. FICKIESEN	AML - TONY M. LONG
AZH - AFTER HOURS	BAF - BRICE A. FENTON
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER	CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS	CRW - CHRISTINA R. WILSON
CSH - CHRIS S. HILL	CTB - CHRIS T. BUCINA
DAK - DEAN A. K	DCM - DAVID C. MERCKLE
DDE - DEBRA D. ELLIOTT	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLR - DIANNA L. RAUCH
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
EDL - ERIN D. LONG	EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
HJR - HOLLY J. REED	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JKS - JANE K. SCHAAD
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
LKN - LINDA K. NEDEFF	LSB - LESLIE S. BUCINA
MDA - MIKE D. ALBERTSON	MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING	MLW - MATTHEW L. WARREN
MMB - MAREN M. BEERY	MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PSW - PEGGY S. WEBB
QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN
RNP - RICK N. PETTY	RS - ROSEMARY SCOTT
RWC - RODNEY W. CAMPBELL	SAV - SARAH A. VANDENBERG
SEP - SUZANNE J. PAUGH	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	TPA - TYLER P. AMRINE
VC - VICKI COLLIER	WJB - WILL J. BEASLEY
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
September 16, 2013

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, H1	Not detected; Sample analysis performed past holding time.
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Analyte was not detected. The concentration is below the reported LOD.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Tony Long	Project Manager: Dave Wacker	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Robert J Quderka	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature:	Fed Ex Airbill No: UPS J231 715 3512	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program: LHAAP	
Turn Around Time: 48 Hrs			
Project Name/Location: Longhorn			
Project Number: 60256135		ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp-	Grab	Matrix	Number of Containers	VOCs 8260B	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	67DPT13C(23-33)050913			9/5/13	1058		X	SW	3	X	N		TB050913-01		
	TB050913-01			9/5/13	0000		X	TB	2	X	TB				

Microbac OVD
Received: 09/06/2013 10:22
By: ROSEMARY SCOTT 221000041398

Comments:

(Signature)	Date 9/5/13	Time 1700	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

▪Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13090262
Account: 2551
Project: 2551.096
Samples: 2
Due Date: 10-SEP-2013

Samplenum	Container ID	Products
L13090262-01	241316	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	06-SEP-2013 15:44	RS		
2	ANALYZ	V1	ORG4	06-SEP-2013 15:52	ADC	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	06-SEP-2013 15:44	RS		
2	ANALYZ	V1	ORG4	06-SEP-2013 15:52	ADC	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	06-SEP-2013 15:44	RS		
2	ANALYZ	V1	ORG4	06-SEP-2013 15:52	ADC	CLS	

Samplenum	Container ID	Products
L13090262-01	241628	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		06-SEP-2013 17:03	RS		<2

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		06-SEP-2013 17:03	RS		<2

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		06-SEP-2013 17:03	RS		<2

Samplenum	Container ID	Products
L13090262-02	241317	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	06-SEP-2013 15:44	RS		
2	ANALYZ	V1	ORG4	06-SEP-2013 15:52	ADC	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	06-SEP-2013 15:44	RS		
2	ANALYZ	V1	ORG4	06-SEP-2013 15:52	ADC	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13090262
Account: 2551
Project: 2551.096
Samples: 2
Due Date: 10-SEP-2013

Samplenum	Container ID	Products
L13090262-02	241629	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		06-SEP-2013 17:03	RS		<2

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		06-SEP-2013 17:03	RS		<2

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - April 25, 2013

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Nitroguanidine
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL KNITRO-C-WUV-VIS

Nitrocellulose

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL HPLCOS-HPLC-UV

Nitroguanidine

OVL KNITRO-C-S/UV-VIS

Nitrocellulose

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L13100060

Linda Raabe
AECOM Technical Services, Inc.
112 East Pecan
San Antonio, TX 78205

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Kathy Albertson – Team Chemist/Data Specialist
(740) 373-4071
Kathy.Albertson@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on October 15 2013

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
The following samples were received broken and/or damaged: 67WW09-092813-MSD: 1 of 3 vials received broken. CLS	Proceed with login. KRA

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0018507	I	4.0		J2317155832	X
0018498	I	4.0		J2317155823	X
0018492	I	4.0		J2317155814	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	No
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
67WW09A-092713	L13100060-01	09/27/2013 14:05	10/01/2013 10:17
67WW09A-092713-FD	L13100060-02	09/27/2013 14:05	10/01/2013 10:17
67WW10-092713	L13100060-03	09/27/2013 15:10	10/01/2013 10:17
EQUIPMENT RINSE-092713	L13100060-04	09/27/2013 15:25	10/01/2013 10:17
67WW07-092713	L13100060-05	09/27/2013 15:35	10/01/2013 10:17
67WW02-092713	L13100060-06	09/27/2013 16:00	10/01/2013 10:17
67WW05-092813	L13100060-07	09/28/2013 07:35	10/01/2013 10:17
67WW06-092813	L13100060-08	09/28/2013 08:55	10/01/2013 10:17
67WW09-092813	L13100060-09	09/28/2013 10:15	10/01/2013 10:17
67WW09-092813-MS	L13100060-10	09/28/2013 10:15	10/01/2013 10:17
67WW09-092813-MSD	L13100060-11	09/28/2013 10:15	10/01/2013 10:17
TRIP BLANK	L13100060-12	09/28/2013 00:01	10/01/2013 10:17

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L13100060
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 13
2.0 Full Sample Data Package 48
2.1 Volatiles Data 49
2.1.1 Volatiles GCMS Data (8260) 50
2.1.1.1 Summary Data 51
2.1.1.2 QC Summary Data 86
2.1.1.3 Sample Data 146
2.1.1.4 Standards Data 203
2.1.1.5 Raw QC Data 347
3.0 Attachments 378

1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100060
Project Name:		**Method:**	8260
Prep Batch Number(s):	447417,448051	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-10-15 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2013-10-15 18:34:39

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100060
Project Name:		**Method:**	8260
Prep Batch Number(s):	447417,448051	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-10-15 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100060
Project Name:		**Method:**	8260
Prep Batch Number(s):	447417,448051	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-10-15 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100060
Project Name:		**Method:**	8260
Prep Batch Number(s):	447417,448051	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-10-15 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100060
Project Name:		**Method:**	8260
Prep Batch Number(s):	447417,448051	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-10-15 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100060
Project Name:		**Method:**	8260
Prep Batch Number(s):	447417,448051	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-10-15 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Acetone was outside the control limits in the Alternate Source analyzed 09-17-13 on HPMS11.
Dichlorodifluoromethane was outside the control limits in the Alternate Source analyzed 10-01-13 on HPMS8.

2) Acetone was outside the control limits in the CCV analyzed 10-06-13 on HPMS8.
Bromomethane was outside the control limits in the CCV analyzed 10-10-13 on HPMS11.

1.2 Certificate of Analysis

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09A-092713	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/01/2013 19:25
Workgroup #:	WG447417	**Analyst:**	MES	**Run Date:**	10/07/2013 03:17
Collect Date:	09/27/2013 14:05	**Dilution:**	1	**File ID:**	8M391293
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	96.0	85	120	
4-Bromofluorobenzene	91.6	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09A-092713-FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/01/2013 19:25
Workgroup #:	WG447417	**Analyst:**	MES	**Run Date:**	10/07/2013 03:48
Collect Date:	09/27/2013 14:05	**Dilution:**	1	**File ID:**	8M391294
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	97.8	85	120	
4-Bromofluorobenzene	93.3	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW10-092713	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/01/2013 19:25
Workgroup #:	WG447417	**Analyst:**	MES	**Run Date:**	10/06/2013 23:10
Collect Date:	09/27/2013 15:10	**Dilution:**	1	**File ID:**	8M391285
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.362	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	96.2	85	120	
4-Bromofluorobenzene	91.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	EQUIPMENT RINSE-092713	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/01/2013 19:25
Workgroup #:	WG447417	**Analyst:**	MES	**Run Date:**	10/06/2013 23:41
Collect Date:	09/27/2013 15:25	**Dilution:**	1	**File ID:**	8M391286
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.146	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	97.9	85	120	
4-Bromofluorobenzene	93.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW07-092713	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/01/2013 19:25
Workgroup #:	WG447417	**Analyst:**	MES	**Run Date:**	10/07/2013 00:12
Collect Date:	09/27/2013 15:35	**Dilution:**	1	**File ID:**	8M391287
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.77		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	96.1	85	120	
4-Bromofluorobenzene	90.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW02-092713	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/01/2013 19:25
Workgroup #:	WG447417	**Analyst:**	MES	**Run Date:**	10/07/2013 00:43
Collect Date:	09/27/2013 16:00	**Dilution:**	1	**File ID:**	8M391288
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.508	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	91.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW05-092813	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/17/2013 19:37
Workgroup #:	WG448051	**Analyst:**	FJB	**Run Date:**	10/10/2013 19:53
Collect Date:	09/28/2013 07:35	**Dilution:**	1	**File ID:**	11M95900
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.0	85	115	
1,2-Dichloroethane-d4	90.0	70	120	
Toluene-d8	97.2	85	120	
4-Bromofluorobenzene	89.4	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW06-092813	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/17/2013 19:37
Workgroup #:	WG448051	**Analyst:**	FJB	**Run Date:**	10/10/2013 20:24
Collect Date:	09/28/2013 08:55	**Dilution:**	1	**File ID:**	11M95901
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.77		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.966	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.4	85	115	
1,2-Dichloroethane-d4	89.7	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	90.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09-092813	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/01/2013 19:25
Workgroup #:	WG447417	**Analyst:**	MES	**Run Date:**	10/07/2013 01:14
Collect Date:	09/28/2013 10:15	**Dilution:**	1	**File ID:**	8M391289
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	3.97		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.414	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	17.5		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	92.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09-092813-MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/01/2013 19:25
Workgroup #:	WG447417	**Analyst:**	MES	**Run Date:**	10/07/2013 01:45
Collect Date:	09/28/2013 10:15	**Dilution:**	1	**File ID:**	8M391290
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.2	Q	10.0	5.00	2.50
Benzene	71-43-2	20.4		1.00	0.250	0.125
Bromobenzene	108-86-1	18.9		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.9		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.4		1.00	0.500	0.250
Bromoform	75-25-2	20.5		2.00	1.00	0.500
Bromomethane	74-83-9	23.0		2.00	1.00	0.500
2-Butanone	78-93-3	19.2		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.7		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	17.7		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.9		1.00	0.500	0.250
Carbon disulfide	75-15-0	20.3		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	21.5		1.00	0.500	0.250
Chlorobenzene	108-90-7	18.6		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.6		1.00	0.500	0.250
Chloroethane	75-00-3	20.3		2.00	1.00	0.500
Chloroform	67-66-3	21.8		1.00	0.250	0.125
Chloromethane	74-87-3	22.4		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.3		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	17.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	18.3		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.8		1.00	0.500	0.250
Dibromomethane	74-95-3	21.8		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	18.5		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.4		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.4		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	23.5		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	23.6		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.1		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	33.4		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.1		1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	20.8		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.3		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	18.4		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.3		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.0		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.4		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.9		1.00	0.500	0.250
2-Hexanone	591-78-6	18.2		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	17.5		1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.5		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	18.2		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.8		10.0	5.00	2.50
Methylene chloride	75-09-2	20.1		1.00	0.500	0.250
Naphthalene	91-20-3	19.7		1.00	0.400	0.200
n-Propylbenzene	103-65-1	17.7		1.00	0.250	0.125
Styrene	100-42-5	21.1		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.7		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.9		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.2		1.00	0.500	0.250
Toluene	108-88-3	19.4		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.1		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.7		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	22.0		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.0		1.00	0.500	0.250
Trichloroethene	79-01-6	22.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	21.2		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.6		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.9		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	21.3		1.00	0.500	0.250
o-Xylene	95-47-6	18.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	37.9		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	95.6	85	120	
4-Bromofluorobenzene	90.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09-092813-MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/01/2013 19:25
Workgroup #:	WG447417	**Analyst:**	MES	**Run Date:**	10/07/2013 02:16
Collect Date:	09/28/2013 10:15	**Dilution:**	1	**File ID:**	8M391291
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.1	Q	10.0	5.00	2.50
Benzene	71-43-2	20.5		1.00	0.250	0.125
Bromobenzene	108-86-1	19.5		1.00	0.250	0.125
Bromochloromethane	74-97-5	22.0		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.6		1.00	0.500	0.250
Bromoform	75-25-2	21.1		2.00	1.00	0.500
Bromomethane	74-83-9	24.0		2.00	1.00	0.500
2-Butanone	78-93-3	20.5		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.5		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.5		1.00	0.500	0.250
Carbon disulfide	75-15-0	21.0		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	22.0		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.0		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	21.1		1.00	0.500	0.250
Chloroethane	75-00-3	20.8		2.00	1.00	0.500
Chloroform	67-66-3	21.6		1.00	0.250	0.125
Chloromethane	74-87-3	23.2		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.5		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.2		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	20.3		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.2		1.00	0.500	0.250
Dibromomethane	74-95-3	22.2		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.1		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.8		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.0		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.8		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	23.9		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	22.9		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	34.3		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	22.0		1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	21.2		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.5		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.7		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	18.3		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.5		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.5		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.4		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.7		1.00	0.500	0.250
2-Hexanone	591-78-6	18.5		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.4		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.1		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.0		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.1		10.0	5.00	2.50
Methylene chloride	75-09-2	20.3		1.00	0.500	0.250
Naphthalene	91-20-3	20.3		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.3		1.00	0.250	0.125
Styrene	100-42-5	21.5		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	21.0		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	18.8		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.2		1.00	0.500	0.250
Toluene	108-88-3	20.0		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.5		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.5		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	22.4		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.3		1.00	0.500	0.250
Trichloroethene	79-01-6	22.6		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	22.1		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.6		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.6		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.6		1.00	0.500	0.250
Vinyl chloride	75-01-4	22.2		1.00	0.500	0.250
o-Xylene	95-47-6	19.1		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	39.4		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	97.8	85	120	
4-Bromofluorobenzene	93.1	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/17/2013 19:37
Workgroup #:	WG448051	**Analyst:**	FJB	**Run Date:**	10/10/2013 18:18
Collect Date:	09/28/2013 00:01	**Dilution:**	1	**File ID:**	11M95897
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	85	115	
1,2-Dichloroethane-d4	91.1	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	88.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09A-092713	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/01/2013 19:25
Workgroup #:	WG447417	**Analyst:**	MES	**Run Date:**	10/07/2013 03:17
Collect Date:	09/27/2013 14:05	**Dilution:**	1	**File ID:**	8M391293
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	96.0	85	120	
4-Bromofluorobenzene	91.6	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09A-092713-FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/01/2013 19:25
Workgroup #:	WG447417	**Analyst:**	MES	**Run Date:**	10/07/2013 03:48
Collect Date:	09/27/2013 14:05	**Dilution:**	1	**File ID:**	8M391294
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	97.8	85	120	
4-Bromofluorobenzene	93.3	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW10-092713	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/01/2013 19:25
Workgroup #:	WG447417	**Analyst:**	MES	**Run Date:**	10/06/2013 23:10
Collect Date:	09/27/2013 15:10	**Dilution:**	1	**File ID:**	8M391285
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.362	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	96.2	85	120	
4-Bromofluorobenzene	91.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	EQUIPMENT RINSE-092713	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/01/2013 19:25
Workgroup #:	WG447417	**Analyst:**	MES	**Run Date:**	10/06/2013 23:41
Collect Date:	09/27/2013 15:25	**Dilution:**	1	**File ID:**	8M391286
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.146	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	97.9	85	120	
4-Bromofluorobenzene	93.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW07-092713	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/01/2013 19:25
Workgroup #:	WG447417	**Analyst:**	MES	**Run Date:**	10/07/2013 00:12
Collect Date:	09/27/2013 15:35	**Dilution:**	1	**File ID:**	8M391287
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.77		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	96.1	85	120	
4-Bromofluorobenzene	90.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW02-092713	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/01/2013 19:25
Workgroup #:	WG447417	**Analyst:**	MES	**Run Date:**	10/07/2013 00:43
Collect Date:	09/27/2013 16:00	**Dilution:**	1	**File ID:**	8M391288
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.508	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	91.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW05-092813	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/17/2013 19:37
Workgroup #:	WG448051	**Analyst:**	FJB	**Run Date:**	10/10/2013 19:53
Collect Date:	09/28/2013 07:35	**Dilution:**	1	**File ID:**	11M95900
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.0	85	115	
1,2-Dichloroethane-d4	90.0	70	120	
Toluene-d8	97.2	85	120	
4-Bromofluorobenzene	89.4	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW06-092813	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/17/2013 19:37
Workgroup #:	WG448051	**Analyst:**	FJB	**Run Date:**	10/10/2013 20:24
Collect Date:	09/28/2013 08:55	**Dilution:**	1	**File ID:**	11M95901
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.77		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.966	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.4	85	115	
1,2-Dichloroethane-d4	89.7	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	90.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09-092813	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/01/2013 19:25
Workgroup #:	WG447417	**Analyst:**	MES	**Run Date:**	10/07/2013 01:14
Collect Date:	09/28/2013 10:15	**Dilution:**	1	**File ID:**	8M391289
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	3.97		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.414	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	17.5		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	92.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09-092813-MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/01/2013 19:25
Workgroup #:	WG447417	**Analyst:**	MES	**Run Date:**	10/07/2013 01:45
Collect Date:	09/28/2013 10:15	**Dilution:**	1	**File ID:**	8M391290
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.2	Q	10.0	5.00	2.50
Benzene	71-43-2	20.4		1.00	0.250	0.125
Bromobenzene	108-86-1	18.9		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.9		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.4		1.00	0.500	0.250
Bromoform	75-25-2	20.5		2.00	1.00	0.500
Bromomethane	74-83-9	23.0		2.00	1.00	0.500
2-Butanone	78-93-3	19.2		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.7		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	17.7		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.9		1.00	0.500	0.250
Carbon disulfide	75-15-0	20.3		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	21.5		1.00	0.500	0.250
Chlorobenzene	108-90-7	18.6		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.6		1.00	0.500	0.250
Chloroethane	75-00-3	20.3		2.00	1.00	0.500
Chloroform	67-66-3	21.8		1.00	0.250	0.125
Chloromethane	74-87-3	22.4		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.3		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	17.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	18.3		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.8		1.00	0.500	0.250
Dibromomethane	74-95-3	21.8		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	18.5		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.4		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.4		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	23.5		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	23.6		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.1		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	33.4		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.1		1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	20.8		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.3		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	18.4		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.3		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.0		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.4		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.9		1.00	0.500	0.250
2-Hexanone	591-78-6	18.2		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	17.5		1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.5		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	18.2		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.8		10.0	5.00	2.50
Methylene chloride	75-09-2	20.1		1.00	0.500	0.250
Naphthalene	91-20-3	19.7		1.00	0.400	0.200
n-Propylbenzene	103-65-1	17.7		1.00	0.250	0.125
Styrene	100-42-5	21.1		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.7		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.9		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.2		1.00	0.500	0.250
Toluene	108-88-3	19.4		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.1		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.7		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	22.0		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.0		1.00	0.500	0.250
Trichloroethene	79-01-6	22.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	21.2		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.6		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.9		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	21.3		1.00	0.500	0.250
o-Xylene	95-47-6	18.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	37.9		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	95.6	85	120	
4-Bromofluorobenzene	90.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09-092813-MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/01/2013 19:25
Workgroup #:	WG447417	**Analyst:**	MES	**Run Date:**	10/07/2013 02:16
Collect Date:	09/28/2013 10:15	**Dilution:**	1	**File ID:**	8M391291
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.1	Q	10.0	5.00	2.50
Benzene	71-43-2	20.5		1.00	0.250	0.125
Bromobenzene	108-86-1	19.5		1.00	0.250	0.125
Bromochloromethane	74-97-5	22.0		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.6		1.00	0.500	0.250
Bromoform	75-25-2	21.1		2.00	1.00	0.500
Bromomethane	74-83-9	24.0		2.00	1.00	0.500
2-Butanone	78-93-3	20.5		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.5		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.5		1.00	0.500	0.250
Carbon disulfide	75-15-0	21.0		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	22.0		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.0		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	21.1		1.00	0.500	0.250
Chloroethane	75-00-3	20.8		2.00	1.00	0.500
Chloroform	67-66-3	21.6		1.00	0.250	0.125
Chloromethane	74-87-3	23.2		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.5		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.2		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	20.3		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.2		1.00	0.500	0.250
Dibromomethane	74-95-3	22.2		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.1		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.8		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.0		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.8		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	23.9		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	22.9		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	34.3		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	22.0		1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	21.2		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.5		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.7		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	18.3		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.5		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.5		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.4		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.7		1.00	0.500	0.250
2-Hexanone	591-78-6	18.5		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.4		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.1		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.0		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.1		10.0	5.00	2.50
Methylene chloride	75-09-2	20.3		1.00	0.500	0.250
Naphthalene	91-20-3	20.3		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.3		1.00	0.250	0.125
Styrene	100-42-5	21.5		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	21.0		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	18.8		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.2		1.00	0.500	0.250
Toluene	108-88-3	20.0		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.5		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.5		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	22.4		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.3		1.00	0.500	0.250
Trichloroethene	79-01-6	22.6		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	22.1		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.6		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.6		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.6		1.00	0.500	0.250
Vinyl chloride	75-01-4	22.2		1.00	0.500	0.250
o-Xylene	95-47-6	19.1		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	39.4		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	97.8	85	120	
4-Bromofluorobenzene	93.1	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100060-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/17/2013 19:37
Workgroup #:	WG448051	**Analyst:**	FJB	**Run Date:**	10/10/2013 18:18
Collect Date:	09/28/2013 00:01	**Dilution:**	1	**File ID:**	11M95897
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	85	115	
1,2-Dichloroethane-d4	91.1	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	88.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100060
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 091013
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 624 SOP: MSV10 Rev: 10
Method: OVAP/5030B/5030C/5035A SOP: MSV01/PAT01 Rev: 0/13
Maintenance Log ID: 47421

Internal Standard: STD59445 Surrogate Standard: STD59446
CCV: STD59907 LCS: STD60074 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG444230

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M390485	BFB CHECK AFTER TUNE	NA	1	1	STD59881	09/10/13 14:38
8M390486	BFB CHECK	NA	1	1	STD59881	09/10/13 14:55
8M390487	WG444230-01 50ng BFB	NA	1	1	STD59881	09/10/13 15:11
8M390488	RINSE	NA	1	1		09/10/13 15:38
8M390489	GRO STD	NA	1	1		09/10/13 16:08
8M390490	GRO STD	NA	1	1		09/10/13 16:38
8M390491	GRO STD	NA	1	1		09/10/13 17:08
8M390492	CCV	NA	1	1		09/10/13 17:37
8M390493	CCV	NA	1	1		09/10/13 18:07
8M390494	CCV	NA	1	1		09/10/13 18:37
8M390495	RINSE	NA	1	1		09/10/13 19:06
8M390496	RINSE	NA	1	1		09/10/13 19:36
8M390497	WG444230-02 5ug/L STD A9/FOO	NA	1	1	STD59907	09/10/13 20:06
8M390498	WG444230-03 20ug/L STD A9/FOO	NA	1	1	STD59907	09/10/13 20:36
8M390499	WG444230-04 50ug/L STD A9/FOO	NA	1	1	STD59907	09/10/13 21:06
8M390500	WG444230-05 100ug/L STD A9/FOO	NA	1	1	STD59907	09/10/13 21:35
8M390501	WG444230-06 200ug/L STD A9/FOO	NA	1	1	STD59907	09/10/13 22:05
8M390502	WG444230-07 300ug/L STD A9/FOO	NA	1	1	STD59907	09/10/13 22:35
8M390503	WG444230-08 400ug/L STD A9/FOO	NA	1	1	STD59907	09/10/13 23:04
8M390504	WG444230-09 500ug/L STD A9/FOO	NA	1	1	STD59907	09/10/13 23:34
8M390505	RINSE	NA	1	1		09/11/13 00:04
8M390506	RINSE	NA	1	1		09/11/13 00:34
8M390507	WG444230-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD60074	09/11/13 01:03
8M390508	RINSE	NA	1	1		09/11/13 01:33

Approved: September 19, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 091113
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Method: 624 SOP: MSV10 Rev: 10
Maintenance Log ID: 47364

Internal Standard: STD59447 Surrogate Standard: STD59627
CCV: STD59907 LCS: STD60074, STD60011 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG444293, WG444332

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M95056	WG444293-01 BFB 50ng 8260	NA	1	1	STD59881	09/11/13 12:00
11M95057	WG444293-02 5ug/L STD A9FOO	NA	1	1	STD59907	09/11/13 12:27
11M95058	WG444293-03 20ug/L STD A9FOO	NA	1	1	STD59907	09/11/13 12:58
11M95059	WG444293-04 50ug/L STD A9FOO	NA	1	1	STD59907	09/11/13 13:30
11M95060	WG444293-05 100ug/L STD A9FOO	NA	1	1	STD59907	09/11/13 14:02
11M95061	WG444293-06 200ug/L STD A9FOO	NA	1	1	STD59907	09/11/13 14:33
11M95062	WG444293-07 300ug/L STD A9FOO	NA	1	1	STD59907	09/11/13 15:05
11M95063	WG444293-08 400ug/L STD A9FOO	NA	1	1	STD59907	09/11/13 15:36
11M95064	WG444293-09 500ug/L STD A9FOO	NA	1	1	STD59907	09/11/13 16:08
11M95065	RINSE	NA	1	1		09/11/13 16:39
11M95066	WG444293-02 5ug/L STD A9FOO	NA	1	1	STD59907	09/11/13 17:14
11M95067	WG444293-10 100ug/L ALT SRC A9FOO	NA	1	1	STD60074	09/11/13 17:46
11M95068	WG444332-01 20ug/L LCS 624	NA	2	1	STD60011	09/11/13 18:17
11M95069	WG444332-02 20ug/L LCS DUP 624	NA	2	1	STD60011	09/11/13 18:49
11M95070	WG444332-03 100ug/L LCS A9	NA	2	1	STD60074	09/11/13 19:20
11M95071	WG444332-04 100ug/L LCS A9	NA	2	1	STD60074	09/11/13 19:52
11M95072	RINSE	NA	2	1		09/11/13 20:23
11M95073	WG444332-05 BLANK 624	NA	2	1		09/11/13 20:55
11M95074	L13090322-02 TB A 624-SPE	6	2	1		09/11/13 21:26
11M95075	L13090322-01 EB A 624-SPE	NA	2	1		09/11/13 21:57
11M95076	L13090300-02 B 624-SPE	6	2	1		09/11/13 22:29
11M95077	L13090322-03 A 624-SPE	7	2	1		09/11/13 23:00
11M95078	L13090335-01 5X B 624-SPE D1	<2	2	5		09/11/13 23:31
11M95079	L13090317-01 B 624-SPE	<2	2	1		09/12/13 00:03
11M95080	L13090347-05 5X B 624-SPE A1	<2	2	5		09/12/13 00:34
11M95081	L13090430-01 A 624-SPE	6	2	1		09/12/13 01:05
11M95082	L13090319-01 A 624-SPE	<2	2	1		09/12/13 08:10
11M95084	CCV	NA	1	1		09/12/13 18:05
11M95085	CCV	NA	1	1		09/12/13 18:37
11M95086	CCV	NA	1	1		09/12/13 19:09
11M95087	CCV	NA	1	1		09/12/13 19:40
11M95088	GRO	NA	1	1		09/12/13 20:12
11M95089	GRO	NA	1	1		09/12/13 20:43
11M95090	RINSE	NA	1	1		09/12/13 21:15

Approved: September 13, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 091113
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Method: 624 SOP: MSV10 Rev: 10
Maintenance Log ID: 47364

Internal Standard: STD59447 Surrogate Standard: STD59627
CCV: STD59907 LCS: STD60074, STD60011 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG444293, WG444332

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M95091	RINSE	NA	1	1		09/12/13 21:46
11M95092	RINSE	NA	1	1		09/12/13 22:17
11M95093	RINSE	NA	1	1		09/12/13 22:49

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 11M95057				
	Some compounds did not show up.			
27	X	50		
File ID: 11M95082				
	Antifoam was added, but it still foamed the instrument very badly, all the way to the vent of the inlet on the GC. This run is not usable at all. Analyze at 50X only. Do Not run more concentrated than 50X again.			

Approved: September 13, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 091713
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 16 / 0
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 13 / 0
Method: 624 SOP: MSV10 Rev: 10
Maintenance Log ID: 47428

Internal Standard: STD60179 Surrogate Standard: STD60186
CCV: NA LCS: STD60011 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG444955

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M95111	purge 2 ml	NA	1	1		09/17/13 09:20
11M95112	10mL new vent valve	NA	1	1		09/17/13 10:38
11M95113	CCV - Archon	NA	1	1		09/17/13 11:34
11M95114	rinse	NA	1	1		09/17/13 12:17
11M95115	WG444955-01 BFB 50ng 8260	NA	1	1	STD59881	09/17/13 13:21
11M95116	WG444955-01 BFB 50ng 8260	NA	1	1	STD59881	09/17/13 13:49
11M95117	WG444955-02 0.3ug/L STD 8260	NA	1	1	STD60178	09/17/13 14:40
11M95118	WG444955-03 0.4ug/L STD 8260	NA	1	1	STD60178	09/17/13 15:25
11M95119	WG444955-04 1ug/L STD 8260	NA	1	1	STD60178	09/17/13 15:56
11M95120	WG444955-05 2ug/L STD 8260	NA	1	1	STD60178	09/17/13 16:28
11M95121	WG444955-06 5ug/L STD 8260	NA	1	1	STD60178	09/17/13 16:59
11M95122	WG444955-07 20ug/L STD 8260	NA	1	1	STD60178	09/17/13 17:31
11M95123	WG444955-08 50ug/L STD 8260	NA	1	1	STD60178	09/17/13 18:03
11M95124	WG444955-09 100ug/L STD 8260	NA	1	1	STD60178	09/17/13 18:34
11M95125	WG444955-10 200ug/L STD 8260	NA	1	1	STD60178	09/17/13 19:06
11M95126	WG444955-11 300ug/L STD 8260	NA	1	1	STD60178	09/17/13 19:37
11M95127	RINSE	NA	1	1		09/17/13 20:08
11M95128	WG444955-12 20ug/L ALT SRC 8260	NA	1	1	STD60011	09/17/13 20:40
11M95129	RINSE	NA	1	1		09/17/13 21:11
11M95130	A9 LCS CHECK	NA	1	1		09/17/13 21:43
11M95131	RINSE	NA	1	1		09/17/13 22:14

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 11M95115				
Instrument may have still had moisture in it from running things while troubleshooting.				

Approved: September 19, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100113
Analyst1: TMB Analyst2: MDA
Method: 8260B SOP: MSV01 Rev: 17
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 624 SOP: MSV10 Rev: 10
Maintenance Log ID: 47628

Internal Standard: STD60086 Surrogate Standard: STD60234
CCV: STD60466 LCS: STD60459 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG446788; WG446860

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M391089	RINSE	NA	1	1		10/01/13 13:08
8M391090	RINSE	NA	1	1		10/01/13 13:48
8M391091	WG446788-01 50ng BFB STD 8260	NA	1	1	STD59881	10/01/13 14:20
8M391092	WG446788-02 0.3ug/L STD 8260	NA	1	1	STD60466	10/01/13 14:46
8M391093	WG446788-03 0.4ug/L STD 8260	NA	1	1	STD60466	10/01/13 15:17
8M391094	WG446788-04 1ug/L STD 8260	NA	1	1	STD60466	10/01/13 15:48
8M391095	WG446788-05 2ug/L STD 8260	NA	1	1	STD60466	10/01/13 16:19
8M391096	WG446788-06 5ug/L STD 8260	NA	1	1	STD60466	10/01/13 16:50
8M391097	WG446788-07 20ug/L STD 8260	NA	1	1	STD60466	10/01/13 17:21
8M391098	WG446788-08 50ug/L STD 8260	NA	1	1	STD60466	10/01/13 17:52
8M391099	WG446788-09 100ug/L STD 8260	NA	1	1	STD60466	10/01/13 18:23
8M391100	WG446788-10 200ug/L STD 8260	NA	1	1	STD60466	10/01/13 18:54
8M391101	WG446788-11 300ug/L STD 8260	NA	1	1	STD60466	10/01/13 19:25
8M391102	RINSE	NA	1	1		10/01/13 19:56
8M391103	RINSE	NA	1	1		10/01/13 20:27
8M391104	WG446788-12 50ug/L ALT SRC STD 8260	NA	1	1	STD60459	10/01/13 20:58
8M391105	WG446859-01 50ng BFB	NA	1	1	STD59881	10/01/13 21:28
8M391106	WG446859-02 50ug/L CCV 8260	NA	1	1	STD60466	10/01/13 22:06
8M391107	WGXXXXXX-01 100ug/L CCV APP-IX	NA	1	1	STD60074	10/01/13 22:46
8M391108	WG446860-01 EXT BLANK 8260 100X	NA	7	50		10/01/13 23:17
8M391109	WG446860-02 EXT LCS 8260 100X	NA	7	50	STD60459	10/01/13 23:48
8M391110	WG446860-03 EXT LCSD 8260 100X	NA	7	50	STD60459	10/02/13 00:19
8M391111	RINSE	NA	1	1		10/02/13 00:50
8M391112	L13091399-32 C 826-SPE 100X	NA	7	50		10/02/13 01:21
8M391113	L13091399-35 C 826-SPE 100X	NA	7	50		10/02/13 01:51
8M391114	L13091399-36 C 826-SPE 100X	NA	7	50		10/02/13 02:22
8M391115	L13091399-38 C 826-SPE 100X	NA	7	50		10/02/13 02:53
8M391116	L13091399-39 C 826-SPE 100X	NA	7	50		10/02/13 03:24
8M391117	L13091399-40 C 826-SPE 100X	NA	7	50		10/02/13 03:55
8M391118	L13091399-41 C 826-SPE 100X	NA	7	50		10/02/13 04:26
8M391119	L13091399-42 C 826-SPE 100X	NA	7	50		10/02/13 04:57
8M391120	L13091399-43 C 826-SPE 100X	NA	7	50		10/02/13 05:28
8M391121	L13091399-44 C 826-SPE 100X	NA	7	50		10/02/13 05:59
8M391122	L13091399-45 C 826-SPE 100X	NA	7	50		10/02/13 06:30

Approved: October 04, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100113
Analyst1: TMB Analyst2: MDA
Method: 8260B SOP: MSV01 Rev: 17
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 624 SOP: MSV10 Rev: 10
Maintenance Log ID: 47628

Internal Standard: STD60086 Surrogate Standard: STD60234
CCV: STD60466 LCS: STD60459 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG446788; WG446860

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M391123	L13091399-49 C 826-SPE 100X	NA	7	50		10/02/13 07:01
8M391124	L13091399-37 C 826-SPE 100X	NA	7	50		10/02/13 07:32
8M391125	L13091399-46 C 826-SPE 100X	NA	7	50		10/02/13 08:03
8M391126	L13091399-47 C 826-SPE 100X	NA	7	50		10/02/13 08:34
8M391127	L13091399-48 C 826-SPE 100X	NA	7	50		10/02/13 09:05
8M391128	RINSE	NA	1	1		10/02/13 09:36

Approved: October 04, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100613
Analyst1: MES Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 17
Method: 624 SOP: MSV10 Rev: 10
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 47680

Internal Standard: STD60086 Surrogate Standard: STD60128
CCV: STD60466; STD60223 LCS: STD60522; STD60074 MS/MSD: STD60522

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG447417

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M391268	WG447416-01 BFB 50ng 8260	NA	1	1	STD60561	10/06/13 14:29
8M391269	WG447416-01 BFB 50ng 8260	NA	1	1	STD60561	10/06/13 14:43
8M391270	WG447416-01 BFB 50ng 8260	NA	1	1	STD60561	10/06/13 15:11
8M391271	WG447416-01 BFB 50ng 8260	NA	1	1	STD60561	10/06/13 15:57
8M391272	WG447416-01 BFB 50ng 8260	NA	1	1	STD60561	10/06/13 16:28
8M391273	WG447416-02 50ug/L CCV 8260	NA	1	1	STD60466	10/06/13 16:56
8M391274	WG447425-01 100ug/L CCV A9	NA	1	1	STD60223	10/06/13 17:28
8M391275	WG447417-01 BLANK 1006	NA	1	1		10/06/13 17:59
8M391276	WG447417-02 20ug/L LCS 8260	NA	1	1	STD60522	10/06/13 18:30
8M391277	WG447417-03 100ug/L APPIX LCS	NA	1	1	STD60074	10/06/13 19:02
8M391278	L13100240-01 A 826-SPE	6	1	1		10/06/13 19:33
8M391279	L13100240-06 A 826-SPE	6	1	1		10/06/13 20:04
8M391280	L13100240-02 A 826-SPE	6	1	1		10/06/13 20:35
8M391281	L13100240-07 A 826-SPE	6	1	1		10/06/13 21:06
8M391282	L13100240-03 A 826-SPE	6	1	1		10/06/13 21:37
8M391283	L13100240-04 A 826-SPE	6	1	1		10/06/13 22:08
8M391284	L13100240-05 A 826-SPE	6	1	1		10/06/13 22:39
8M391285	L13100060-03 A 826-LOW	<2	1	1		10/06/13 23:10
8M391286	L13100060-04 A 826-LOW	<2	1	1		10/06/13 23:41
8M391287	L13100060-05 A 826-LOW	<2	1	1		10/07/13 00:12
8M391288	L13100060-06 A 826-LOW	<2	1	1		10/07/13 00:43
8M391289	L13100060-09 A 826-LOW	<2	1	1		10/07/13 01:14
8M391290	L13100060-10 MS A 826-LOW	<2	1	1	STD60522	10/07/13 01:45
8M391291	L13100060-11 MSD A 826-LOW	<2	1	1	STD60522	10/07/13 02:16
8M391292	L13091614-03 B 10X 826-SPE D1	<2	1	10		10/07/13 02:47
8M391293	L13100060-01 A 826-LOW	<2	1	1		10/07/13 03:17
8M391294	L13100060-02 A 826-LOW	<2	1	1		10/07/13 03:48
8M391295	WG447417-06 624 BLANK	NA	2	1		10/07/13 04:19
8M391296	L13100165-06 B 50X 624-SPE D1	<2	2	50		10/07/13 04:50
8M391297	L13100165-09 B 10X 624-SPE D1	<2	2	10		10/07/13 05:21
8M391298	L13100268-01 B 200X 624-SPE12 D1	6	2	200		10/07/13 05:52
8M391299	RINSE	NA	1	1		10/07/13 06:23
8M391300	L13091030-01 B 826-REF-BLK	NA	1	1		10/07/13 06:54
8M391301	L13091030-02 B 826-REF-BLK	NA	1	1		10/07/13 07:25

Approved: October 10, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100613
Analyst1: MES Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 17
Method: 624 SOP: MSV10 Rev: 10
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 47680

Internal Standard: STD60086 Surrogate Standard: STD60128
CCV: STD60466; STD60223 LCS: STD60522; STD60074 MS/MSD: STD60522

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG447417

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M391268				
	Tune failed, DNR.			
2	X			
File ID: 8M391269				
	Tune failed, DNR.			
3	X			
File ID: 8M391270				
	Tune failed, DNR. Purged BFB.			
4	X			
File ID: 8M391271				
	Tune failed, DNR.			
11	X	1	Carry-over contamination	
File ID: 8M391278				
	14-DIOXANE carry over.			

Approved: October 10, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 101013
Analyst1: FJB Analyst2: ADC
Method: 8260B SOP: MSV01 Rev: 17
Method: 5030C/5035A SOP: PAT01 Rev: 13
Method: 624 SOP: MSV10 Rev: 10
Maintenance Log ID: 47743

Internal Standard: STD60179 Surrogate Standard: STD60186
CCV: STD60466 LCS: STD60522 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG448051, WG448208

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M95880	WG448050-01 BFB 50ng 8260	NA	1	1	STD60561	10/10/13 07:44
11M95881	WG448050-01 BFB 50ng 8260	NA	1	1	STD60561	10/10/13 08:00
11M95882	WG448050-01 BFB 50ng 8260	NA	1	1	STD60561	10/10/13 10:32
11M95883	WG448050-02 50ug/L CCV 8260	NA	1	1	STD60466	10/10/13 10:58
11M95884	WG448XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	10/10/13 11:30
11M95885	WG448051-01 VBLK1010 BLANK 8260	NA	1	1		10/10/13 12:01
11M95886	WG448051-02 20ug/L LCS 8260	NA	1	1	STD60522	10/10/13 12:32
11M95887	WG448051-03 20ug/L LCS DUP 8260	NA	1	1	STD60522	10/10/13 13:04
11M95888	L13091674-01 10X B 826-SPE	<2	1	10		10/10/13 13:35
11M95889	L13091674-02 10X B 826-SPE	<2	1	10		10/10/13 14:07
11M95890	L13091674-04 10X B 826-SPE	<2	1	10		10/10/13 14:38
11M95891	L13091674-05 10X B 826-SPE	<2	1	10		10/10/13 15:10
11M95892	L13091674-06 10X B 826-SPE	<2	1	10		10/10/13 15:41
11M95893	L13091667-02 TB A 826-SPE	<2	1	1		10/10/13 16:13
11M95894	L13100514-19 TB A 826-SPE	<2	1	1		10/10/13 16:44
11M95895	L13100275-42 TB A 826-SPE	<2	1	1		10/10/13 17:16
11M95896	L13100275-79 TB A 826-SPE	<2	1	1		10/10/13 17:47
11M95897	L13100060-12 TB A 826-LOW	<2	1	1		10/10/13 18:18
11M95898	L13100062-01 EB A 826-SPE	<2	1	1		10/10/13 18:50
11M95899	L13100062-02 TB A 826-SPE	<2	1	1		10/10/13 19:21
11M95900	L13100060-07 A 826-LOW	<2	1	1		10/10/13 19:53
11M95901	L13100060-08 A 826-LOW	<2	1	1		10/10/13 20:24
11M95902	L13100062-16 A 826-SPE	<2	1	1		10/10/13 20:56
11M95903	L13100062-17 A 826-SPE	<2	1	1		10/10/13 21:27
11M95904	L13100062-24 A 826-SPE	<2	1	1		10/10/13 21:58
11M95905	L13091667-01 A 826-SPE	<2	1	1		10/10/13 22:30
11M95906	WG448208-01 20ug/L LCS 624	NA	2	1	STD60522	10/10/13 23:01
11M95907	WG448208-02 20ug/L LCSDUP 624	NA	2	1	STD60522	10/10/13 23:32
11M95908	RINSE	NA	2	1		10/11/13 00:04
11M95909	WG448208-03 BLK-624	NA	2	1		10/11/13 00:35
11M95910	L13100419-12 A 624-SPE	<2	2	1		10/11/13 01:07
11M95911	L13100632-01 A 624-SPE	6	2	1		10/11/13 01:38
11M95912	L13100378-01 A 624-SPE	<2	2	1		10/11/13 02:10
11M95913	L13100378-02 A 624-SPE	<2	2	1		10/11/13 02:41

Approved: October 15, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 101013
Analyst1: FJB Analyst2: ADC
Method: 8260B SOP: MSV01 Rev: 17
Method: 5030C/5035A SOP: PAT01 Rev: 13
Method: 624 SOP: MSV10 Rev: 10
Maintenance Log ID: 47743

Internal Standard: STD60179 Surrogate Standard: STD60186
CCV: STD60466 LCS: STD60522 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG448051, WG448208

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M95914	L13100378-03 A 624-SPE	<2	2	1		10/11/13 03:12
11M95915	L13100378-04 A 624-SPE	<2	2	1		10/11/13 03:44
11M95916	L13100378-05 A 624-SPE	<2	2	1		10/11/13 04:15
11M95917	L13100419-01 A 624-SPE	<2	2	1		10/11/13 04:47
11M95918	L13100419-02 A 624-SPE	<2	2	1		10/11/13 05:18
11M95919	L13100419-03 A 624-SPE	<2	2	1		10/11/13 05:49
11M95920	L13100419-04 A 624-SPE	<2	2	1		10/11/13 06:21
11M95921	L13100419-05 A 624-SPE	<2	2	1		10/11/13 06:52
11M95922	L13100419-06 A 624-SPE	<2	2	1		10/11/13 07:24
11M95923	L13100419-07 A 624-SPE	<2	2	1		10/11/13 07:55
11M95924	L13100419-08 A 624-SPE	<2	2	1		10/11/13 08:26
11M95925	L13100419-09 A 624-SPE	<2	2	1		10/11/13 08:58
11M95926	L13100419-10 A 624-SPE	<2	2	1		10/11/13 09:29
11M95927	L13100419-11 A 624-SPE	<2	2	1		10/11/13 10:00

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14 File ID: 11M95893				
	dnr rr st			
41 File ID: 11M95920				
	rr 20x			
42 File ID: 11M95921				
	dnr rr st			
43 File ID: 11M95922				
	rr 20x			
44 File ID: 11M95923				
	dnr rr st			
45 File ID: 11M95924				
	dnr rr st			

Approved: October 15, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS11	Dataset:	101013		
Analyst1:	FJB	Analyst2:	ADC		
Method:	8260B	SOP:	MSV01	Rev:	17
Method:	5030C/5035A	SOP:	PAT01	Rev:	13
Method:	624	SOP:	MSV10	Rev:	10
Maintenance Log ID:	47743				

Internal Standard: STD60179 Surrogate Standard: STD60186

CCV: STD60466 LCS: STD60522 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG448051, WG448208

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
46				
File ID: 11M95925				
	rr 10x			
47				
File ID: 11M95926				
	dnr rr st			
48				
File ID: 11M95927				
	dnr rr st			

Approved: October 15, 2013

Page: 3

Microbac Laboratories Inc.

Data Checklist

Date: 10-SEP-2013
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 55721
Analytical Workgroups: WG444230

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
18-SEP-2013
Tiffany Bailey

Secondary Reviewer:
19-SEP-2013

CHECKLIST1 - Modified 03/05/2008
Generated: SEP-19-2013 09:08:31

Microbac Laboratories Inc.

Data Checklist

Date: 11-SEP-2013
Analyst: FJB
Analyst: NA
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 55626
Analytical Workgroups: WG444293, WG444332

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 13-SEP-2013

Secondary Reviewer: 13-SEP-2013

CHECKLIST1 - Modified 03/05/2008
Generated: SEP-13-2013 13:30:54

Microbac Laboratories Inc.

Data Checklist

Date: 17-SEP-2013
Analyst: FJB
Analyst: NA
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 55744
Analytical Workgroups: WG444955

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 19-SEP-2013

Secondary Reviewer: 19-SEP-2013

CHECKLIST1 - Modified 03/05/2008

Generated: SEP-19-2013 12:24:39

Microbac Laboratories Inc.

Data Checklist

Date: 01-OCT-2013
Analyst: TMB
Analyst: MDA
Method: 8260B/OVAP/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 56121
Analytical Workgroups: WG446788; WG446860

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
04-OCT-2013
Tiffany Bailey

Secondary Reviewer:
04-OCT-2013

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-04-2013 14:59:35

Microbac Laboratories Inc.

Data Checklist

Date: 06-OCT-2013
Analyst: MES
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 56231
Analytical Workgroups: WG447417

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD/TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
10-OCT-2013
Tiffany Bailey

Secondary Reviewer:
10-OCT-2013

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-10-2013 14:10:32

Microbac Laboratories Inc.

Data Checklist

Date: 10-OCT-2013
Analyst: FJB
Analyst: ADC
Method: 8260/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 56335
Analytical Workgroups: WG448051, WG448208

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	FJB
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 15-OCT-2013

Secondary Reviewer: 15-OCT-2013

CHECKLIST1 - Modified 03/05/2008

Generated: OCT-15-2013 09:14:21

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG447417

Login Number: L13100060

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW09A-092713	01	09/27/13					10/07/2013	9.6	14		10/07/13	9.6	14	
67WW09A-092713-FD	02	09/27/13					10/07/2013	9.6	14		10/07/13	9.6	14	
67WW10-092713	03	09/27/13					10/06/2013	9.3	14		10/06/13	9.3	14	
EQUIPMENT RINSE-092713	04	09/27/13					10/06/2013	9.3	14		10/06/13	9.3	14	
67WW07-092713	05	09/27/13					10/07/2013	9.4	14		10/07/13	9.4	14	
67WW02-092713	06	09/27/13					10/07/2013	9.4	14		10/07/13	9.4	14	
67WW09-092813	09	09/28/13					10/07/2013	8.6	14		10/07/13	8.6	14	
67WW09-092813-MS	10	09/28/13					10/07/2013	8.6	14		10/07/13	8.6	14	
67WW09-092813-MSD	11	09/28/13					10/07/2013	8.7	14		10/07/13	8.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3141907
Report generated 10/15/2013 14:03

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG448051

Login Number: L13100060

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW05-092813	07	09/28/13					10/10/2013	12.5	14		10/10/13	12.5	14	
67WW06-092813	08	09/28/13					10/10/2013	12.5	14		10/10/13	12.5	14	
TRIP BLANK	12	09/28/13					10/10/2013	12.8	14		10/10/13	12.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3141907
Report generated 10/15/2013 14:03

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L13100060
Instrument Id: HPMS8
Workgroup (AAB#): WG447417

Method: 8260
CAL ID: HPMS8-01-OCT-13
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L13100060-01	1.00	01	104	101	91.6	96.0
L13100060-02	1.00	01	109	103	93.3	97.8
L13100060-03	1.00	01	108	104	91.4	96.2
L13100060-04	1.00	01	107	103	93.1	97.9
L13100060-05	1.00	01	109	106	90.9	96.1
L13100060-06	1.00	01	112	107	91.8	98.3
L13100060-09	1.00	01	111	106	92.4	97.5
L13100060-10	1.00	01	106	106	90.8	95.6
L13100060-11	1.00	01	107	104	93.1	97.8
WG447417-01	1.00	01	105	101	94.8	98.5
WG447417-02	1.00	01	101	103	95.1	98.1
WG447417-03	1.00	01	104	104	97.8	99.4
WG447417-06	1.00	01	106	103	92.5	98.3

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3130472
Report generated: 10/15/2013 14:04

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L13100060
Instrument Id: HPMS11
Workgroup (AAB#): WG448051

Method: 8260
CAL ID: HPMS11-17-SEP-13
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L13100060-07	1.00	01	90.0	99.0	89.4	97.2
L13100060-08	1.00	01	89.7	96.4	90.7	98.3
L13100060-12	1.00	01	91.1	99.2	88.9	97.5
WG448051-01	1.00	01	87.9	97.0	90.1	95.7
WG448051-02	1.00	01	90.3	98.0	85.9	97.2
WG448051-03	1.00	01	86.1	98.1	88.3	99.0

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3130472
Report generated: 10/15/2013 14:04

METHOD BLANK SUMMARY

Login Number: L13100060
Blank File ID: 11M95885
Prep Date: 10/10/13 12:01
Analyzed Date: 10/10/13 12:01
Analyst: FJB

Work Group: WG448051
Blank Sample ID: WG448051-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG448051-02	11M95886	10/10/13 12:32	01
LCS2	WG448051-03	11M95887	10/10/13 13:04	01
TRIP BLANK	L13100060-12	11M95897	10/10/13 18:18	01
67WW05-092813	L13100060-07	11M95900	10/10/13 19:53	01
67WW06-092813	L13100060-08	11M95901	10/10/13 20:24	01

Report Name: BLANK_SUMMARY
PDF File ID: 3141908
Report generated 10/15/2013 14:03

METHOD BLANK SUMMARY

Login Number: L13100060
Blank File ID: 8M391275
Prep Date: 10/06/13 17:59
Analyzed Date: 10/06/13 17:59
Analyst: MES

Work Group: WG447417
Blank Sample ID: WG447417-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG447417-02	8M391276	10/06/13 18:30	01
LCS	WG447417-03	8M391277	10/06/13 19:02	01
67WW10-092713	L13100060-03	8M391285	10/06/13 23:10	01
EQUIPMENT RINSE-092713	L13100060-04	8M391286	10/06/13 23:41	01
67WW07-092713	L13100060-05	8M391287	10/07/13 00:12	01
67WW02-092713	L13100060-06	8M391288	10/07/13 00:43	01
67WW09-092813	L13100060-09	8M391289	10/07/13 01:14	01
67WW09-092813-MS	L13100060-10	8M391290	10/07/13 01:45	01
67WW09-092813-MSD	L13100060-11	8M391291	10/07/13 02:16	01
67WW09A-092713	L13100060-01	8M391293	10/07/13 03:17	01
67WW09A-092713-FD	L13100060-02	8M391294	10/07/13 03:48	01

Report Name: BLANK_SUMMARY
PDF File ID: 3141908
Report generated 10/15/2013 14:03

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13100060 Prep Date: 10/10/13 12:01 Sample ID: WG448051-01
Instrument ID: HPMS11 Run Date: 10/10/13 12:01 Prep Method: 5030B/5030C/503
File ID: 11M95885 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG448051 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-17-SEP-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 3141909
15-OCT-2013 14:03

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13100060 Prep Date: 10/10/13 12:01 Sample ID: WG448051-01
Instrument ID: HPMS11 Run Date: 10/10/13 12:01 Prep Method: 5030B/5030C/503
File ID: 11M95885 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG448051 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11 - 17-SEP-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.0	85 - 115	PASS
1,2-Dichloroethane-d4	87.9	70 - 120	PASS
Toluene-d8	95.7	85 - 120	PASS
4-Bromofluorobenzene	90.1	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3141909
15-OCT-2013 14:03

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13100060 Prep Date: 10/06/13 17:59 Sample ID: WG447417-01
Instrument ID: HPMS8 Run Date: 10/06/13 17:59 Prep Method: 5030B/5030C/503
File ID: 8M391275 Analyst: MES Method: 8260B
Workgroup (AAB#): WG447417 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-01-OCT-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 3141909
15-OCT-2013 14:03

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13100060 Prep Date: 10/06/13 17:59 Sample ID: WG447417-01
Instrument ID: HPMS8 Run Date: 10/06/13 17:59 Prep Method: 5030B/5030C/503
File ID: 8M391275 Analyst: MES Method: 8260B
Workgroup (AAB#): WG447417 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-01-OCT-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	85 - 115	PASS
1,2-Dichloroethane-d4	105	70 - 120	PASS
Toluene-d8	98.5	85 - 120	PASS
4-Bromofluorobenzene	94.8	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3141909
15-OCT-2013 14:03

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13100060 | Run Date: 10/06/2013 | Sample ID: WG447417-02
Instrument ID: HPMS8 | Run Time: 18:30 | Prep Method: 5030B/5030C/503
File ID: 8M391276 | Analyst: MES | Method: 8260B
Workgroup (AAB#): WG447417 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD60522 | Cal ID: HPMS8-01-OCT-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.0	99.9	40 - 140	
Benzene	20.0	20.3	102	80 - 120	
Bromobenzene	20.0	19.1	95.7	75 - 125	
Bromochloromethane	20.0	20.8	104	65 - 130	
Bromodichloromethane	20.0	20.4	102	75 - 120	
Bromoform	20.0	18.7	93.6	70 - 130	
Bromomethane	20.0	24.0	120	30 - 145	
2-Butanone	20.0	21.4	107	30 - 150	
n-Butylbenzene	20.0	20.2	101	70 - 135	
sec-Butylbenzene	20.0	19.0	94.8	70 - 125	
tert-Butylbenzene	20.0	18.2	90.9	70 - 130	
Carbon disulfide	20.0	21.2	106	35 - 160	
Carbon tetrachloride	20.0	21.6	108	65 - 140	
Chlorobenzene	20.0	18.6	92.8	80 - 120	
Chlorodibromomethane	20.0	19.8	99.0	60 - 135	
Chloroethane	20.0	21.2	106	60 - 135	
Chloroform	20.0	20.7	104	65 - 135	
Chloromethane	20.0	23.1	115	40 - 125	
2-Chlorotoluene	20.0	19.5	97.5	75 - 125	
4-Chlorotoluene	20.0	17.4	87.2	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.0	94.9	50 - 130	
1,2-Dibromoethane	20.0	18.8	94.2	80 - 120	
Dibromomethane	20.0	20.4	102	75 - 125	
1,2-Dichlorobenzene	20.0	18.4	91.9	70 - 120	
1,3-Dichlorobenzene	20.0	18.6	93.0	75 - 125	
1,4-Dichlorobenzene	20.0	19.4	97.2	75 - 125	
Dichlorodifluoromethane	20.0	30.0	150	30 - 155	
1,1-Dichloroethane	20.0	20.3	102	70 - 135	
1,2-Dichloroethane	20.0	21.2	106	70 - 130	
1,1-Dichloroethene	20.0	20.7	104	70 - 130	
cis-1,2-Dichloroethene	20.0	21.4	107	70 - 125	
trans-1,2-Dichloroethene	20.0	21.5	107	60 - 140	
1,2-Dichloropropane	20.0	20.3	102	75 - 125	
1,3-Dichloropropane	20.0	18.8	93.9	75 - 125	
2,2-Dichloropropane	20.0	20.9	105	70 - 135	
cis-1,3-Dichloropropene	20.0	21.6	108	70 - 130	
trans-1,3-Dichloropropene	20.0	18.3	91.3	55 - 140	
1,1-Dichloropropene	20.0	20.4	102	75 - 130	
Ethylbenzene	20.0	19.2	96.1	75 - 125	
2-Hexanone	20.0	18.5	92.5	55 - 130	
Hexachlorobutadiene	20.0	18.6	93.2	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 3130468
Report generated: 10/15/2013 14:03

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13100060 Run Date: 10/06/2013 Sample ID: WG447417-02
Instrument ID: HPMS8 Run Time: 18:30 Prep Method: 5030B/5030C/503
File ID: 8M391276 Analyst: MES Method: 8260B
Workgroup (AAB#): WG447417 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD60522 Cal ID: HPMS8-01-OCT-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	19.9	99.5	75 - 125	
p-Isopropyltoluene	20.0	19.4	97.2	75 - 130	
4-Methyl-2-pentanone	20.0	19.9	99.6	60 - 135	
Methylene chloride	20.0	19.9	99.5	55 - 140	
Naphthalene	20.0	18.8	93.9	55 - 140	
n-Propylbenzene	20.0	18.7	93.6	70 - 130	
Styrene	20.0	21.0	105	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.9	99.3	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	17.9	89.4	65 - 130	
Tetrachloroethene	20.0	19.4	96.8	45 - 150	
Toluene	20.0	19.9	99.6	75 - 120	
1,2,3-Trichlorobenzene	20.0	18.7	93.5	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.0	94.9	65 - 135	
1,1,1-Trichloroethane	20.0	21.5	108	65 - 130	
1,1,2-Trichloroethane	20.0	19.4	96.9	75 - 125	
Trichloroethene	20.0	22.2	111	70 - 125	
Trichlorofluoromethane	20.0	23.4	117	60 - 145	
1,2,3-Trichloropropane	20.0	18.3	91.6	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.6	103	75 - 130	
1,3,5-Trimethylbenzene	20.0	21.2	106	75 - 130	
Vinyl chloride	20.0	22.1	111	50 - 145	
o-Xylene	20.0	19.0	95.1	80 - 120	
m-,p-Xylene	40.0	38.8	97.0	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	103	85 - 115	PASS
1,2-Dichloroethane-d4	101	70 - 120	PASS
Toluene-d8	98.1	85 - 120	PASS
4-Bromofluorobenzene	95.1	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 3130468
Report generated: 10/15/2013 14:03

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13100060 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG448051 Units: ug/L
QC Key: DOD4 Lot #: STD60522

Sample ID: WG448051-02 LCS File ID: 11M95886 Run Date: 10/10/2013 12:32
Sample ID: WG448051-03 LCS2 File ID: 11M95887 Run Date: 10/10/2013 13:04

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	19.7	98.6	20.0	19.8	99.2	0.530	80 - 130	30	
1,1,1-Trichloroethane	20.0	19.7	98.7	20.0	19.4	96.8	2.03	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	19.8	99.1	20.0	19.0	94.9	4.34	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.7	98.3	20.0	18.9	94.6	3.84	75 - 125	30	
1,1-Dichloroethane	20.0	19.9	99.5	20.0	19.2	96.0	3.66	70 - 135	30	
1,1-Dichloroethene	20.0	18.3	91.3	20.0	18.0	89.9	1.53	70 - 130	30	
1,1-Dichloropropene	20.0	19.6	97.8	20.0	19.0	94.8	3.08	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	18.1	90.4	20.0	17.9	89.7	0.792	55 - 140	30	
1,2,3-Trichloropropane	20.0	18.5	92.5	20.0	17.5	87.3	5.74	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	18.9	94.7	20.0	18.8	94.0	0.740	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.1	100	20.0	20.3	101	0.956	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	17.6	88.0	20.0	16.3	81.4	7.77	50 - 130	30	
1,2-Dibromoethane	20.0	18.9	94.3	20.0	18.4	92.2	2.24	80 - 120	30	
1,2-Dichlorobenzene	20.0	17.9	89.7	20.0	18.0	89.9	0.319	70 - 120	30	
1,2-Dichloroethane	20.0	18.6	93.2	20.0	17.9	89.4	4.12	70 - 130	30	
1,2-Dichloropropane	20.0	19.2	96.0	20.0	18.8	94.1	1.95	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.0	99.8	20.0	20.1	101	0.907	75 - 130	30	
1,3-Dichlorobenzene	20.0	18.1	90.7	20.0	18.5	92.6	2.13	75 - 125	30	
1,3-Dichloropropane	20.0	19.2	95.8	20.0	18.5	92.4	3.54	75 - 125	30	
1,4-Dichlorobenzene	20.0	18.8	94.1	20.0	18.9	94.4	0.253	75 - 125	30	
2,2-Dichloropropane	20.0	19.3	96.4	20.0	18.4	92.0	4.65	70 - 135	30	
2-Butanone	20.0	20.1	100	20.0	18.2	91.2	9.73	30 - 150	30	
2-Chlorotoluene	20.0	19.6	98.1	20.0	19.8	99.1	1.07	75 - 125	30	
2-Hexanone	20.0	17.7	88.4	20.0	16.5	82.6	6.84	55 - 130	30	
4-Chlorotoluene	20.0	17.2	85.8	20.0	17.1	85.6	0.241	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.8	98.8	20.0	19.0	95.0	3.85	60 - 135	30	
Acetone	20.0	14.5	72.7	20.0	13.9	69.5	4.52	40 - 140	30	
Benzene	20.0	20.6	103	20.0	20.2	101	2.20	80 - 120	30	
Bromobenzene	20.0	18.4	92.0	20.0	18.1	90.5	1.57	75 - 125	30	
Bromochloromethane	20.0	21.3	107	20.0	20.1	101	5.81	65 - 130	30	
Bromodichloromethane	20.0	19.3	96.6	20.0	18.9	94.7	1.94	75 - 120	30	
Bromoform	20.0	18.7	93.6	20.0	17.7	88.3	5.83	70 - 130	30	
Bromomethane	20.0	13.6	67.9	20.0	13.4	67.0	1.35	30 - 145	30	
Carbon disulfide	20.0	20.1	100	20.0	19.6	98.2	2.27	35 - 160	30	
Carbon tetrachloride	20.0	21.0	105	20.0	20.4	102	3.02	65 - 140	30	
Chlorobenzene	20.0	19.2	95.8	20.0	18.9	94.6	1.30	80 - 120	30	
Chloroethane	20.0	19.2	95.9	20.0	19.4	97.0	1.11	60 - 135	30	
Chloroform	20.0	19.5	97.5	20.0	19.5	97.3	0.261	65 - 135	30	
Chloromethane	20.0	20.0	99.9	20.0	18.0	89.8	10.7	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.3	101	20.0	20.0	100	1.26	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3141910
Report generated: 10/15/2013 14:04

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13100060 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG448051 Units: ug/L
QC Key: DOD4 Lot #: STD60522

Sample ID: WG448051-02 LCS File ID: 11M95886 Run Date: 10/10/2013 12:32
Sample ID: WG448051-03 LCS2 File ID: 11M95887 Run Date: 10/10/2013 13:04

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.2	106	20.0	20.3	101	4.27	70 - 130	30	
Chlorodibromomethane	20.0	20.0	100	20.0	19.6	97.8	2.26	60 - 135	30	
Dibromomethane	20.0	19.8	99.0	20.0	18.6	92.9	6.32	75 - 125	30	
Dichlorodifluoromethane	20.0	23.5	118	20.0	23.5	118	0.0363	30 - 155	30	
Ethylbenzene	20.0	19.3	96.6	20.0	19.3	96.4	0.161	75 - 125	30	
Hexachlorobutadiene	20.0	16.5	82.5	20.0	17.4	87.2	5.61	50 - 140	30	
Isopropylbenzene	20.0	19.9	99.6	20.0	19.8	99.0	0.666	75 - 125	30	
m-,p-Xylene	40.0	39.7	99.3	40.0	39.6	99.1	0.252	75 - 130	30	
Methylene chloride	20.0	19.2	95.8	20.0	19.1	95.4	0.453	55 - 140	30	
n-Butylbenzene	20.0	18.9	94.3	20.0	19.1	95.6	1.40	70 - 135	30	
n-Propylbenzene	20.0	17.3	86.6	20.0	17.4	87.1	0.600	70 - 130	30	
Naphthalene	20.0	19.2	96.2	20.0	19.1	95.3	0.869	55 - 140	30	
o-Xylene	20.0	18.4	92.1	20.0	18.0	90.2	2.06	80 - 120	30	
p-Isopropyltoluene	20.0	18.3	91.3	20.0	18.2	91.1	0.192	75 - 130	30	
sec-Butylbenzene	20.0	17.8	89.2	20.0	18.0	89.9	0.783	70 - 125	30	
Styrene	20.0	20.5	102	20.0	20.6	103	0.493	65 - 135	30	
tert-Butylbenzene	20.0	17.3	86.6	20.0	17.3	86.5	0.142	70 - 130	30	
Tetrachloroethene	20.0	19.8	98.8	20.0	19.4	97.0	1.89	45 - 150	30	
Toluene	20.0	21.0	105	20.0	20.8	104	1.04	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.5	102	20.0	19.9	99.7	2.57	60 - 140	30	
trans-1,3-Dichloropropene	20.0	18.7	93.7	20.0	18.6	92.9	0.938	55 - 140	30	
Trichloroethene	20.0	21.3	107	20.0	21.1	106	1.07	70 - 125	30	
Trichlorofluoromethane	20.0	20.6	103	20.0	20.1	101	2.49	60 - 145	30	
Vinyl chloride	20.0	20.2	101	20.0	19.5	97.3	3.80	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	90.3	86.1	70 - 120	PASS
Dibromofluoromethane	98.0	98.1	85 - 115	PASS
4-Bromofluorobenzene	85.9	88.3	75 - 120	PASS
Toluene-d8	97.2	99.0	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3141910
Report generated: 10/15/2013 14:04

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L13100060 Cal ID: HPMS8- 01-OCT-13 Worknum: WG447417

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L13100060-09 File ID: 8M391289 Dil: 1 Method: 5035A

Sample ID: L13100060-10 MS File ID: 8M391290 Dil: 1 Matrix: 8260B

Sample ID: L13100060-11 MSD File ID: 8M391291 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	20.7	103	20.0	21.0	105	1.56	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	22.0	110	20.0	22.4	112	1.91	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	17.9	89.7	20.0	18.8	94.2	4.92	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	20.0	100	20.0	20.3	102	1.48	75 - 125	30	
1,1-Dichloroethane	3.97	20.0	23.6	98.4	20.0	23.9	99.9	1.27	70 - 135	30	
1,1-Dichloroethene	17.5	20.0	33.4	79.4	20.0	34.3	84.1	2.77	70 - 130	30	
1,1-Dichloropropene	U	20.0	19.4	97.1	20.0	20.4	102	4.88	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	19.1	95.5	20.0	19.5	97.6	2.23	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	18.6	93.2	20.0	19.6	98.2	5.28	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	18.7	93.3	20.0	19.5	97.3	4.22	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	19.9	99.7	20.0	20.6	103	3.25	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	18.3	91.7	20.0	20.3	102	10.4	50 - 130	30	
1,2-Dibromoethane	U	20.0	19.8	99.2	20.0	20.2	101	1.57	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	18.5	92.3	20.0	19.1	95.5	3.46	70 - 120	30	
1,2-Dichloroethane	0.414	20.0	23.1	113	20.0	22.9	113	0.658	70 - 130	30	
1,2-Dichloropropane	U	20.0	20.3	101	20.0	20.5	102	0.917	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	20.0	100	20.0	20.6	103	2.65	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	18.4	92	20.0	18.8	94.2	2.35	75 - 125	30	
1,3-Dichloropropane	U	20.0	19.2	95.9	20.0	19.7	98.7	2.89	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	19.4	97.1	20.0	20.0	100	3.08	75 - 125	30	
2,2-Dichloropropane	U	20.0	18.4	92	20.0	18.3	91.7	0.377	70 - 135	30	
2-Butanone	U	20.0	19.2	96.2	20.0	20.5	103	6.30	30 - 150	30	
2-Chlorotoluene	U	20.0	18.3	91.4	20.0	18.5	92.6	1.32	75 - 125	30	
2-Hexanone	U	20.0	18.2	91	20.0	18.5	92.6	1.76	55 - 130	30	
4-Chlorotoluene	U	20.0	17.4	87.2	20.0	18.2	91	4.26	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	18.8	94.1	20.0	20.1	101	6.69	60 - 135	30	
Acetone	U	20.0	20.2	101	20.0	21.1	106	4.53	40 - 140	30	
Benzene	U	20.0	20.4	102	20.0	20.5	102	0.290	80 - 120	30	
Bromobenzene	U	20.0	18.9	94.6	20.0	19.5	97.3	2.81	75 - 125	30	
Bromochloromethane	U	20.0	21.9	110	20.0	22.0	110	0.317	65 - 130	30	
Bromodichloromethane	U	20.0	21.4	107	20.0	21.6	108	0.763	75 - 120	30	
Bromoform	U	20.0	20.5	103	20.0	21.1	106	2.92	70 - 130	30	
Bromomethane	U	20.0	23.0	115	20.0	24.0	120	4.25	30 - 145	30	
Carbon disulfide	U	20.0	20.3	102	20.0	21.0	105	3.37	35 - 160	30	
Carbon tetrachloride	U	20.0	21.5	108	20.0	22.0	110	2.07	65 - 140	30	
Chlorobenzene	U	20.0	18.6	93.1	20.0	19.0	94.9	1.82	80 - 120	30	
Chloroethane	U	20.0	20.3	101	20.0	20.8	104	2.63	60 - 135	30	
Chloroform	U	20.0	21.8	109	20.0	21.6	108	0.642	65 - 135	30	
Chloromethane	U	20.0	22.4	112	20.0	23.2	116	3.65	40 - 125	30	
cis-1,2-Dichloroethene	U	20.0	21.1	106	20.0	22.0	110	3.98	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	21.3	107	20.0	21.5	107	0.673	70 - 130	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 3130469
Report generated 10/15/2013 14:04

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L13100060 Cal ID: HPMS8 01-OCT-13 Worknum: WG447417

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L13100060-09 File ID: 8M391289 Dil: 1 Method: 5035A

Sample ID: L13100060-10 MS File ID: 8M391290 Dil: 1 Matrix: 8260B

Sample ID: L13100060-11 MSD File ID: 8M391291 Dil: 1 Units: Water

ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	20.6	103	20.0	21.1	106	2.58	60 - 135	30	
Dibromomethane	U	20.0	21.8	109	20.0	22.2	111	1.51	75 - 125	30	
Dichlorodifluoromethane	U	20.0	23.5	118	20.0	25.8	129	9.05	30 - 155	30	
Ethylbenzene	U	20.0	18.9	94.6	20.0	19.7	98.7	4.18	75 - 125	30	
Hexachlorobutadiene	U	20.0	17.5	87.5	20.0	18.4	91.9	4.84	50 - 140	30	
Isopropylbenzene	U	20.0	19.5	97.7	20.0	20.1	101	3.01	75 - 125	30	
m-,p-Xylene	U	40.0	37.9	94.7	40.0	39.4	98.6	3.98	75 - 130	30	
Methylene chloride	U	20.0	20.1	101	20.0	20.3	101	0.967	55 - 140	30	
n-Butylbenzene	U	20.0	18.7	93.5	20.0	19.5	97.6	4.28	70 - 135	30	
n-Propylbenzene	U	20.0	17.7	88.3	20.0	18.3	91.4	3.46	70 - 130	30	
Naphthalene	U	20.0	19.7	98.5	20.0	20.3	102	3.13	55 - 140	30	
o-Xylene	U	20.0	18.6	92.9	20.0	19.1	95.6	2.84	80 - 120	30	
p-Isopropyltoluene	U	20.0	18.2	91.2	20.0	19.0	95.2	4.29	75 - 130	30	
sec-Butylbenzene	U	20.0	17.7	88.3	20.0	18.5	92.4	4.59	70 - 125	30	
Styrene	U	20.0	21.1	106	20.0	21.5	107	1.73	65 - 135	30	
tert-Butylbenzene	U	20.0	17.9	89.3	20.0	18.5	92.4	3.46	70 - 130	30	
Tetrachloroethene	U	20.0	19.2	96.1	20.0	19.2	96	0.0344	45 - 150	30	
Toluene	U	20.0	19.4	97.2	20.0	20.0	100	2.90	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	20.8	104	20.0	21.2	106	1.60	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	18.0	90.2	20.0	18.5	92.5	2.53	55 - 140	30	
Trichloroethene	U	20.0	22.1	110	20.0	22.6	113	2.11	70 - 125	30	
Trichlorofluoromethane	U	20.0	21.2	106	20.0	22.1	110	4.33	60 - 145	30	
Vinyl chloride	U	20.0	21.3	106	20.0	22.2	111	4.27	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 3130469
Report generated 10/15/2013 14:04

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13100060
Instrument: HPMS11
Analyst: FJB
Workgroup: WG444293

Tune ID: WG444293-01
Run Date: 09/11/2013
Run Time: 12:00
File ID: 11M95056
Cal ID: HPMS11 - 11-SEP-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.7	3684	PASS
75.0	95.0	30.0	60.0	53.4	9479	PASS
95.0	95.0	100	100	100	17767	PASS
96.0	95.0	5.00	9.00	7.09	1259	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	81.2	14433	PASS
175	174	5.00	9.00	7.58	1094	PASS
176	174	95.0	101	97.0	14006	PASS
177	176	5.00	9.00	6.89	965	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG444293-03	STD	01	09/11/2013 12:58	
WG444293-04	STD	01	09/11/2013 13:30	
WG444293-05	STD-CCV	01	09/11/2013 14:02	
WG444293-06	STD	01	09/11/2013 14:33	
WG444293-07	STD	01	09/11/2013 15:05	
WG444293-08	STD	01	09/11/2013 15:36	
WG444293-09	STD	01	09/11/2013 16:08	
WG444293-02	STD	01	09/11/2013 17:14	
WG444293-10	SSCV	01	09/11/2013 17:46	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3141911
Report generated 10/15/2013 14:04

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13100060
Instrument: HPMS11
Analyst: FJB
Workgroup: WG444955

Tune ID: WG444955-01
Run Date: 09/17/2013
Run Time: 13:49
File ID: 11M95116
Cal ID: HPMS11 - 17-SEP-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.3	4291	PASS
75.0	95.0	30.0	60.0	50.5	11218	PASS
95.0	95.0	100	100	100	22205	PASS
96.0	95.0	5.00	9.00	6.76	1502	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	80.1	17778	PASS
175	174	5.00	9.00	6.95	1235	PASS
176	174	95.0	101	97.6	17358	PASS
177	176	5.00	9.00	6.06	1052	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG444955-02	STD	01	09/17/2013 14:40	
WG444955-03	STD	01	09/17/2013 15:25	
WG444955-04	STD	01	09/17/2013 15:56	
WG444955-05	STD	01	09/17/2013 16:28	
WG444955-06	STD	01	09/17/2013 16:59	
WG444955-07	STD	01	09/17/2013 17:31	
WG444955-08	STD-CCV	01	09/17/2013 18:03	
WG444955-09	STD	01	09/17/2013 18:34	
WG444955-10	STD	01	09/17/2013 19:06	
WG444955-11	STD	01	09/17/2013 19:37	
WG444955-12	SSCV	01	09/17/2013 20:40	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3141911
Report generated 10/15/2013 14:04

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13100060
Instrument: HPMS11
Analyst: FJB
Workgroup: WG448050

Tune ID: WG448050-01
Run Date: 10/10/2013
Run Time: 10:32
File ID: 11M95882
Cal ID: HPMS11 - 17-SEP-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.6	5554	PASS
75.0	95.0	30.0	60.0	50.4	15882	PASS
95.0	95.0	100	100	100	31528	PASS
96.0	95.0	5.00	9.00	6.51	2054	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	91.0	28685	PASS
175	174	5.00	9.00	7.31	2097	PASS
176	174	95.0	101	97.5	27973	PASS
177	176	5.00	9.00	6.36	1780	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG448050-02	CCV	01	10/10/2013 10:58	
WG448051-01	BLANK	01	10/10/2013 12:01	
WG448051-02	LCS	01	10/10/2013 12:32	
WG448051-03	LCS2	01	10/10/2013 13:04	
L13100060-12	TRIP BLANK	01	10/10/2013 18:18	
L13100060-07	67WW05-092813	01	10/10/2013 19:53	
L13100060-08	67WW06-092813	01	10/10/2013 20:24	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3141911
Report generated 10/15/2013 14:04

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13100060
Instrument: HPMS8
Analyst: TMB
Workgroup: WG444230

Tune ID: WG444230-01
Run Date: 09/10/2013
Run Time: 15:11
File ID: 8M390487
Cal ID: HPMS8 - 10-SEP-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.8	4960	PASS
75.0	95.0	30.0	60.0	49.7	12441	PASS
95.0	95.0	100	100	100	25013	PASS
96.0	95.0	5.00	9.00	6.54	1635	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.3	21596	PASS
175	174	5.00	9.00	8.33	1799	PASS
176	174	95.0	101	96.8	20906	PASS
177	176	5.00	9.00	6.60	1379	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG444230-02	STD	01	09/10/2013 20:06	
WG444230-03	STD	01	09/10/2013 20:36	
WG444230-04	STD	01	09/10/2013 21:06	
WG444230-05	STD-CCV	01	09/10/2013 21:35	
WG444230-06	STD	01	09/10/2013 22:05	
WG444230-07	STD	01	09/10/2013 22:35	
WG444230-08	STD	01	09/10/2013 23:04	
WG444230-09	STD	01	09/10/2013 23:34	
WG444230-10	SSCV	01	09/11/2013 01:03	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3141911
Report generated 10/15/2013 14:04

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13100060
Instrument: HPMS8
Analyst: TMB
Workgroup: WG446788

Tune ID: WG446788-01
Run Date: 10/01/2013
Run Time: 14:20
File ID: 8M391091
Cal ID: HPMS8 - 01-OCT-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.5	7918	PASS
75.0	95.0	30.0	60.0	49.5	21146	PASS
95.0	95.0	100	100	100	42690	PASS
96.0	95.0	5.00	9.00	7.05	3011	PASS
173	174	0	2.00	0.354	149	PASS
174	95.0	50.0	100	98.5	42045	PASS
175	174	5.00	9.00	6.93	2912	PASS
176	174	95.0	101	97.4	40970	PASS
177	176	5.00	9.00	7.32	2999	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG446788-02	STD	01	10/01/2013 14:46	
WG446788-03	STD	01	10/01/2013 15:17	
WG446788-04	STD	01	10/01/2013 15:48	
WG446788-05	STD	01	10/01/2013 16:19	
WG446788-06	STD	01	10/01/2013 16:50	
WG446788-07	STD	01	10/01/2013 17:21	
WG446788-08	STD-CCV	01	10/01/2013 17:52	
WG446788-09	STD	01	10/01/2013 18:23	
WG446788-10	STD	01	10/01/2013 18:54	
WG446788-11	STD	01	10/01/2013 19:25	
WG446788-12	SSCV	01	10/01/2013 20:58	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3141911
Report generated 10/15/2013 14:04

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13100060
Instrument: HPMS8
Analyst: MES
Workgroup: WG447416

Tune ID: WG447416-01
Run Date: 10/06/2013
Run Time: 16:28
File ID: 8M391272
Cal ID: HPMS8 - 01-OCT-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.9	6082	PASS
75.0	95.0	30.0	60.0	48.6	17482	PASS
95.0	95.0	100	100	100	35952	PASS
96.0	95.0	5.00	9.00	6.43	2311	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	99.6	35818	PASS
175	174	5.00	9.00	7.43	2660	PASS
176	174	95.0	101	97.3	34861	PASS
177	176	5.00	9.00	7.40	2581	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG447416-02	CCV	01	10/06/2013 16:56	
WG447425-01	CCV	01	10/06/2013 17:28	
WG447417-01	BLANK	01	10/06/2013 17:59	
WG447417-02	LCS	01	10/06/2013 18:30	
L13100060-03	67WW10-092713	01	10/06/2013 23:10	
L13100060-04	EQUIPMENT RINSE-092713	01	10/06/2013 23:41	
L13100060-05	67WW07-092713	01	10/07/2013 00:12	
L13100060-06	67WW02-092713	01	10/07/2013 00:43	
L13100060-09	67WW09-092813	01	10/07/2013 01:14	
L13100060-10	67WW09-092813-MS	01	10/07/2013 01:45	
L13100060-11	67WW09-092813-MSD	01	10/07/2013 02:16	
L13100060-01	67WW09A-092713	01	10/07/2013 03:17	
L13100060-02	67WW09A-092713-FD	01	10/07/2013 03:48	
WG447417-06	BLANK2	01	10/07/2013 04:19	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3141911
Report generated 10/15/2013 14:04

Calibration Table Report
Method: A9WT.M
Title: Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Calibration: Fri Sep 13 10:49:32 2013
Curve: WG444293
Calibration Files

Compound	5 11M95066.D	20 11M95058.D	50 11M95059.D	100 11M95060.D	200 11M95061.D	300 11M95062.D	400 11M95063.D	500 11M95064.D	Avg	%RSD
Fluorobenzene	ISTD									
Acetonitrile	0.023	0.021	0.019	0.021	0.022	0.022	0.021	0.021	0.021	5.909
3-Chloro-1-propene	0.431	0.405	0.426	0.439	0.427	0.419	0.398	0.380	0.416	4.764
2-Chloro-1,3-butadiene	0.436	0.428	0.455	0.474	0.459	0.447	0.419	0.400	0.440	5.405
Methacrylonitrile	0.145	0.135	0.132	0.138	0.134	0.133	0.122	0.119	0.132	6.356
Isobutyl Alcohol			0.006	0.006	0.005	0.005	0.005	0.005	0.005	11.091
1-Butanol			0.001	0.002	0.002	0.002	0.002		0.002	11.071
Cyclohexanone			0.030	0.033	0.034	0.035	0.032	0.030	0.032	5.835
2-Nitropropane			0.051	0.058	0.061	0.064	0.060	0.059	0.059	7.317
Ethyl Acetate	0.187	0.155	0.160	0.174	0.173	0.174	0.162	0.157	0.168	6.523
Methyl methacrylate	0.198	0.166	0.173	0.184	0.184	0.184	0.171	0.166	0.178	6.206
Chlorobenzene-d5	ISTD									
1,4-Dichlorobenzene-d4	ISTD									

Fri Sep 13 11:06:27 2013

Calibration Table Report
Method: 8260WTR.M
Title: 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Calibration: Wed Sep 18 09:40:31 2013
Curve: WG444955
Calibration Files

	Compound	0.3	0.4	1	2	5	20	50	100	200	300	Avg	%RSD	Linear	Quadratic
		11M95117.D	11M95118.D	11M95119.D	11M95120.D	11M95121.D	11M95122.D	11M95123.D	11M95124.D	11M95125.D	11M95126.D				
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.194	0.206	0.206	0.270	0.260	0.271	0.262	0.255	0.240	13.492		
P	Chloromethane		0.310	0.266	0.290	0.280	0.320	0.276	0.291	0.283	0.285	0.289	5.756		
C	Vinyl Chloride		0.339	0.282	0.281	0.299	0.344	0.323	0.336	0.316	0.302	0.314	7.636		
T	1,3-Butadiene		0.206	0.187	0.189	0.202	0.223	0.169	0.122			0.185	17.537		0.999
T	Bromomethane		0.278	0.191	0.185	0.190	0.194	0.183	0.196	0.196	0.201	0.202	14.519		
T	Chloroethane			0.140	0.150	0.159	0.184	0.175	0.187	0.183	0.183	0.170	10.571		
T	Trichlorofluoromethane		0.461	0.391	0.392	0.407	0.470	0.447	0.473	0.457	0.459	0.440	7.603		
T	Diethyl ether			0.180	0.166	0.173	0.177	0.168	0.173		0.180	0.174	3.167		
T	Isoprene		0.374	0.303	0.309	0.326	0.368	0.391	0.400	0.386	0.399	0.362	10.683		
T	Acrolein			0.021	0.022	0.021	0.023	0.022	0.023		0.024	0.022	5.573		
T	1,1,2-Trichloro-1,2,2-Trifluoroe		0.197	0.228	0.220	0.229	0.267	0.256	0.274	0.269	0.274	0.246	11.384		
T	Acetone					0.086	0.079	0.072	0.070	0.072	0.072	0.075	8.303		
C	1,1-Dichloroethene		0.373	0.356	0.348	0.376	0.410	0.399	0.417	0.401	0.398	0.387	6.249		
T	Tert-Butyl Alcohol			0.021	0.016	0.016	0.016	0.014	0.015		0.016	0.016	12.745		
T	Dimethyl Sulfide		0.290	0.227	0.226	0.246	0.259	0.268	0.273	0.264	0.268	0.258	8.289		
T	Iodomethane			0.159	0.152	0.169	0.243	0.291	0.319	0.318		0.236	31.942		1.000
T	Methyl acetate					0.107	0.131	0.126	0.134	0.131	0.147	0.129	10.060		
T	Methylene Chloride		0.278	0.245	0.244	0.251	0.264	0.257	0.272	0.263	0.266	0.260	4.489		
T	Carbon Disulfide		0.834	0.702	0.734	0.770	0.848	0.873	0.855	0.764	0.714	0.788	8.275		
T	Acrylonitrile			0.071	0.060	0.062	0.067	0.067	0.069		0.077	0.068	8.573		
T	Methyl Tert Butyl Ether		0.617	0.633	0.600	0.627	0.687	0.652	0.683	0.639	0.645	0.642	4.420		
T	trans-1,2-Dichloroethene		0.230	0.237	0.229	0.249	0.275	0.264	0.280	0.273	0.277	0.257	8.134		
T	n-Hexane		0.357	0.296	0.290	0.315	0.340	0.350	0.347	0.330	0.333	0.329	7.219		
T	Diisopropyl ether			0.876	0.806	0.833	0.822	0.791	0.760		0.736	0.803	5.840		
T	Vinyl Acetate					0.120	0.286	0.330	0.354	0.325		0.283	33.414	0.998	
P	1,1-Dichloroethane		0.387	0.396	0.404	0.448	0.482	0.463	0.479	0.457	0.449	0.441	8.155		
T	Ethyl-Tert-Butyl ether			0.786	0.741	0.764	0.766	0.727	0.713		0.696	0.742	4.304		
T	2-Butanone				0.075	0.080	0.081	0.077	0.081	0.074	0.080	0.078	3.510		
T	Propionitrile			0.022	0.021	0.022	0.024	0.022	0.023		0.024	0.023	4.526		
T	2,2-Dichloropropane		0.339	0.328	0.350	0.358	0.439	0.429	0.460	0.430	0.429	0.396	12.828		
T	cis-1,2-Dichloroethene		0.293	0.268	0.260	0.268	0.296	0.289	0.304	0.294	0.295	0.285	5.482		
C	Chloroform	0.514	0.434	0.444	0.430	0.452	0.497	0.474	0.496	0.465	0.453	0.466	6.147		
T	1-Bromopropane			0.035	0.043	0.052	0.056	0.058	0.060	0.058	0.061	0.053	17.318	0.999	
T	Bromochloromethane		0.128	0.135	0.149	0.162	0.173	0.169	0.180	0.176	0.182	0.161	12.250		
T	Tetrahydrofuran			0.053	0.049	0.050	0.052	0.048	0.049		0.050	0.050	3.375		
S	Dibromofluoromethane			0.209	0.239	0.258	0.279	0.268	0.282	0.270	0.277	0.260	9.575		
T	1,1,1-Trichloroethane		0.443	0.385	0.394	0.417	0.465	0.453	0.477	0.463	0.456	0.439	7.493		
T	Cyclohexane		0.437	0.380	0.385	0.399	0.427	0.443	0.442	0.422	0.425	0.418	5.717		
T	1,1-Dichloropropene		0.365	0.325	0.328	0.363	0.391	0.373	0.393	0.374	0.375	0.365	6.640		
T	Carbon Tetrachloride		0.327	0.344	0.342	0.378	0.431	0.420	0.445	0.423	0.425	0.393	11.531		
T	Tert-Amyl-Methyl ether			0.722	0.666	0.682	0.704	0.654	0.647		0.637	0.673	4.642		
S	1,2-Dichloroethane-d4			0.271	0.27	0.276	0.306	0.289	0.297	0.278	0.286	0.284	4.509		
T	Heptane											0.000	0.000		
T	1,2-Dichloroethane		0.353	0.33	0.332	0.364	0.391	0.367	0.38	0.353	0.346	0.357	5.715		
T	Benzene		1.128	1.001	0.934	0.979	1.054	0.994	0.994	0.867	0.79	0.971	10.205		
T	Trichloroethene		0.278	0.249	0.252	0.259	0.28	0.267	0.283	0.277	0.281	0.270	4.841		
T	Methylcyclohexane		0.392	0.347	0.353	0.376	0.419	0.431	0.434	0.414	0.418	0.398	8.275		
C	1,2-Dichloropropane		0.259	0.233	0.227	0.248	0.263	0.254	0.265	0.257	0.26	0.252	5.285		
T	1,4-Dioxane				0.001	0.002	0.002	0.002	0.002		0.002	0.002	7.778		
T	Bromodichloromethane		0.334	0.321	0.315	0.341	0.383	0.37	0.391	0.373	0.367	0.355	7.849		
T	Dibromomethane		0.146	0.139	0.139	0.147	0.169	0.16	0.166	0.16	0.164	0.154	7.649		
T	2-Chloroethyl Vinyl Ether					0.092	0.122	0.126	0.128	0.122	0.13	0.120	11.749		
T	4-Methyl-2-Pentanone				0.046	0.055	0.069	0.068	0.069	0.064	0.068	0.063	14.301		
T	cis-1,3-Dichloropropene		0.383	0.358	0.347	0.372	0.444	0.426	0.442	0.418	0.41	0.400	9.085		

T	Dimethyl Disulfide			0.192	0.183	0.21	0.235	0.252	0.262	0.257	0.263	0.232	13.937	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.056	1.1	1.15	1.235	1.169	1.167	1.098	1.091	1.133	5.076	
C	Toluene		1.434	1.346	1.281	1.441	1.548	1.413	1.367	1.159	1.024	1.335	11.985	
T	Ethyl Methacrylate		0.276	0.27	0.292	0.319	0.376	0.378	0.384	0.369	0.376	0.338	14.263	
T	Paraldehyde											0.000	0.000	
T	trans-1,3-Dichloropropene		0.408	0.392	0.419	0.475	0.55	0.516	0.521	0.501	0.493	0.475	11.749	
T	1,1,2-Trichloroethane		0.187	0.243	0.257	0.258	0.287	0.27	0.274	0.267	0.273	0.257	11.368	
T	2-Hexanone			0.146	0.146	0.167	0.182	0.181	0.169	0.156	0.162	0.164	8.499	
T	1,3-Dichloropropane		0.465	0.447	0.442	0.472	0.508	0.474	0.477	0.458	0.456	0.467	4.180	
T	Tetrachloroethene		0.328	0.282	0.267	0.295	0.332	0.318	0.327	0.328	0.336	0.313	7.959	
T	Dibromochloromethane		0.286	0.265	0.295	0.312	0.359	0.347	0.362	0.359	0.364	0.328	11.739	
T	1,2-Dibromoethane		0.274	0.24	0.243	0.267	0.295	0.277	0.284	0.278	0.283	0.271	6.850	
T	1-Chlorohexane		0.472	0.425	0.421	0.452	0.504	0.517	0.503	0.491	0.491	0.475	7.419	
P	Chlorobenzene		0.965	0.884	0.911	0.949	1.049	0.996	1.017	0.942	0.852	0.952	6.667	
T	1,1,1,2-Tetrachloroethane		0.324	0.308	0.321	0.345	0.397	0.391	0.419	0.431	0.426	0.373	13.163	
C	Ethylbenzene		0.437	0.435	0.46	0.486	0.552	0.535	0.567	0.573	0.56	0.512	11.175	
T	m-,p-Xylene		0.572	0.533	0.548	0.597	0.659	0.629	0.625	0.545	0.483	0.577	9.661	
T	o-Xylene		0.569	0.489	0.513	0.583	0.645	0.622	0.642	0.627	0.609	0.589	9.530	
T	Styrene		0.866	0.868	0.816	0.965	1.092	1.053	1.067	0.958	0.869	0.950	10.741	
P	Bromoform			0.159	0.184	0.192	0.243	0.241	0.259	0.255	0.261	0.224	17.687	0.999
T	Isopropylbenzene		1.442	1.294	1.361	1.441	1.63	1.529	1.477	1.222	1.066	1.385	12.311	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.427	0.433	0.453	0.517	0.599	0.565	0.6	0.577	0.581	0.528	13.655	
S	p-Bromofluorobenzene			0.907	0.892	0.948	0.999	0.959	0.981	0.966	0.955	0.951	3.762	
T	1,2,3-Trichloropropane		0.112	0.155	0.164	0.176	0.193	0.18	0.187	0.184	0.186	0.171	14.705	
T	trans-1,4-Dichloro-2-Butene			0.086	0.118	0.14	0.187	0.2	0.207	0.204	0.21	0.169	28.199	0.999
T	n-Propylbenzene		3.731	3.262	3.308	3.548	3.862	3.522	3.319	2.648		3.400	10.881	
T	Bromobenzene	1.034	0.801	0.743	0.723	0.783	0.848	0.817	0.861	0.864	0.836	0.831	10.327	
T	1,3,5-Trimethylbenzene		2.321	2.156	2.245	2.388	2.638	2.489	2.467	2.136	1.852	2.299	10.165	
T	2-Chlorotoluene		2.138	2.156	2.046	2.175	2.33	2.15	2.118	1.825	1.88	2.091	7.416	
T	4-Chlorotoluene		2.36	1.785	1.697	2.28	2.439	2.285	1.781	1.825	1.88	2.037	14.534	
T	a-Methylstyrene		1.059	1.127	1.134	1.207	1.44	1.502	1.522	1.425	1.343	1.306	13.565	
T	tert-Butylbenzene		0.474	0.485	0.454	0.519	0.582	0.567	0.606	0.613	0.614	0.546	11.669	
T	1,2,4-Trimethylbenzene		2.401	2.262	2.298	2.456	2.683	2.527	2.488	2.106	1.824	2.338	10.902	
T	sec-Butylbenzene		3.035	2.758	2.779	2.913	3.231	2.988	2.91	2.4	2.056	2.785	12.791	
T	p-Isopropyltoluene		2.579	2.349	2.277	2.451	2.746	2.567	2.547	2.15	1.885	2.394	10.935	
T	1,3-Dichlorobenzene		1.454	1.371	1.39	1.449	1.61	1.518	1.561	1.425	1.322	1.455	6.386	
T	1,4-Dichlorobenzene	2.012	1.519	1.466	1.469	1.505	1.628	1.526	1.562	1.417	1.318	1.542	11.991	
T	n-Butylbenzene		2.545	2.108	2.19	2.292	2.588	2.392	2.336	1.961	1.743	2.239	12.169	
T	1,2-Dichlorobenzene	1.691	1.332	1.322	1.326	1.416	1.507	1.424	1.45	1.33	1.273	1.407	8.735	
T	1,2-Dibromo-3-Chloropropane				0.083	0.091	0.11	0.104	0.113	0.114	0.124	0.105	13.199	
T	1,2,4-Trichlorobenzene		1.083	0.955	0.911	0.962	1.062	1.002	1.022	1.062	1.048	1.012	5.800	
T	Hexachlorobutadiene		0.473	0.435	0.386	0.424	0.501	0.454	0.473	0.51	0.528	0.465	9.750	
T	Naphthalene		1.864	1.803	1.634	1.784	2.007	1.854	1.851	1.695	1.55	1.782	7.701	
T	1,2,3-Trichlorobenzene	1.192	0.957	0.813	0.791	0.828	0.946	0.875	0.913	0.938	0.946	0.920	12.340	

Thu Sep 19 10:28:54 2013

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water - IC: 09/10/13- HPMS8
Last Calibration: Wed Sep 18 14:03:14 2013
Curve: WG444230
Calibration Files

	Compound	5 8M390497.D	20 8M390498.D	50 8M390499.D	100 8M390500.D	200 8M390501.D	300 8M390502.D	400 8M390503.D	500 8M390504.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.020	0.024	0.023	0.022	0.024	0.023	0.023	0.023	0.023	4.949		
T	3-Chloro-1-propene	0.420	0.459	0.476	0.469	0.489	0.467	0.464	0.468	0.464	4.255		
T	2-Chloro-1,3-butadiene	0.382	0.445	0.455	0.452	0.473	0.455	0.454	0.457	0.447	6.077		
T	Ethyl Acetate	0.149	0.167	0.171	0.169	0.176	0.167	0.169	0.174	0.168	4.840		
T	Methacrylonitrile	0.060	0.068	0.073	0.070	0.073	0.069	0.069	0.070	0.069	6.061		
T	Isobutyl Alcohol		0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006	3.782		
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.002	17.616	0.996	
T	Methyl methacrylate	0.139	0.166	0.178	0.179	0.189	0.179	0.181	0.185	0.174	9.121		
T	2-Nitropropane	0.038	0.048	0.051	0.053	0.059	0.057	0.058	0.061	0.053	14.554		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											
T	Cyclohexanone				0.018	0.015	0.014	0.019	0.016	0.016	12.394		

Wed Sep 18 14:08:38 2013

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Calibration: Tue Oct 01 19:55:07 2013
Curve: WG446788
Calibration Files

	Compound	0.3 8M391092.D	0.4 8M391093.D	1 8M391094.D	2 8M391095.D	5 8M391096.D	20 8M391097.D	50 8M391098.D	100 8M391099.D	200 8M391100.D	300 8M391101.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.262	0.272	0.268	0.262	0.298	0.296	0.287	0.287	0.281	0.279	4.861		
P	Chloromethane			0.346	0.282	0.273	0.269	0.257	0.243	0.244	0.246	0.270	12.546		
C	Vinyl Chloride		0.258	0.281	0.271	0.259	0.272	0.269	0.257	0.257	0.252	0.264	3.578		
T	1,3-Butadiene				0.156	0.158	0.158	0.173	0.164	0.161	0.159	0.161	3.691		
T	Bromomethane			0.103	0.114	0.126	0.144	0.169	0.181	0.191	0.207	0.154	24.692	0.995	
T	Chloroethane		0.171	0.200	0.181	0.186	0.199	0.195	0.184	0.182	0.180	0.186	5.207		
T	Trichlorofluoromethane		0.511	0.525	0.510	0.507	0.515	0.520	0.489	0.490	0.484	0.506	2.883		
T	Diethyl ether			0.183	0.186	0.185	0.183	0.177	0.175		0.167	0.179	3.869		
T	Isoprene		0.297	0.347	0.335	0.347	0.340	0.363	0.346	0.344	0.346	0.340	5.277		
T	Acrolein			0.020	0.019	0.019	0.020	0.020	0.020		0.021	0.020	3.058		
T	1,1,2-Trichloro-1,2,2-Trifluoroe		0.274	0.275	0.292	0.292	0.286	0.289	0.278	0.280	0.279	0.283	2.431		
T	Acetone					0.062	0.061	0.058	0.055	0.051	0.054	0.057	7.783		
C	1,1-Dichloroethene		0.384	0.416	0.416	0.413	0.430	0.433	0.414	0.413	0.407	0.414	3.388		
T	Tert-Butyl Alcohol				0.011	0.011	0.011	0.011	0.010		0.010	0.011	5.135		
T	Dimethyl Sulfide					0.222	0.226	0.238	0.236	0.226	0.227	0.229	2.780		
T	Iodomethane			0.131	0.172	0.214	0.271	0.322	0.326	0.328	0.317	0.260	30.046	0.999	
T	Methyl acetate			0.122	0.137	0.138	0.126	0.125	0.126	0.120	0.122	0.127	5.436		
T	Methylene Chloride		0.332	0.305	0.285	0.284	0.283	0.279	0.270	0.264	0.260	0.285	7.780		
T	Carbon Disulfide		0.874	0.875	0.836	0.811	0.784	0.828	0.789	0.771	0.755	0.814	5.304		
T	Acrylonitrile			0.057	0.057	0.059	0.060	0.062	0.063		0.067	0.061	5.963		
T	Methyl Tert Butyl Ether			0.702	0.650	0.696	0.708	0.716	0.704	0.684	0.662	0.690	3.383		
T	trans-1,2-Dichloroethene		0.378	0.402	0.391	0.397	0.402	0.408	0.390	0.384	0.380	0.393	2.698		
T	n-Hexane		0.322	0.328	0.330	0.324	0.303	0.320	0.329	0.323	0.323	0.322	2.527		
T	Diisopropyl ether			0.875	0.891	0.875	0.866	0.829	0.799		0.772	0.844	5.295		
T	Vinyl Acetate			0.383	0.388	0.390	0.399	0.398	0.415	0.382	0.345	0.388	5.218		
P	1,1-Dichloroethane		0.489	0.568	0.504	0.521	0.506	0.502	0.484	0.478	0.468	0.502	5.889		
T	Ethyl-Tert-Butyl ether			0.803	0.823	0.814	0.809	0.777	0.761		0.737	0.789	3.978		
T	2-Butanone				0.064	0.068	0.070	0.071	0.070	0.068	0.067	0.068	3.721		
T	Propionitrile			0.019	0.020	0.020	0.020	0.020	0.020		0.020	0.020	2.714		
T	2,2-Dichloropropane		0.492	0.514	0.487	0.485	0.488	0.485	0.485	0.477	0.463	0.486	2.782		
T	cis-1,2-Dichloroethene		0.300	0.316	0.310	0.311	0.323	0.325	0.313	0.311	0.306	0.313	2.484		
C	Chloroform	0.545	0.520	0.544	0.537	0.537	0.536	0.534	0.512	0.500	0.491	0.526	3.605		
T	1-Bromopropane			0.057	0.061	0.064	0.065	0.069	0.069	0.069	0.069	0.065	6.689		
T	Bromochloromethane		0.212	0.233	0.231	0.235	0.235	0.232	0.228	0.222	0.217	0.227	3.680		
T	Tetrahydrofuran			0.046	0.047	0.046	0.048	0.045	0.044			0.046	3.159		
S	Dibromofluoromethane			0.358	0.330	0.316	0.311	0.310	0.300	0.297	0.291	0.314	6.850		
T	1,1,1-Trichloroethane		0.491	0.531	0.508	0.532	0.523	0.531	0.503	0.494	0.482	0.510	3.779		
T	Cyclohexane			0.431	0.398	0.407	0.380	0.412	0.399	0.399	0.404	0.404	3.643		
T	1,1-Dichloropropene			0.401	0.395	0.406	0.413	0.424	0.404	0.396	0.393	0.404	2.574		
T	Tert-Amyl-Methyl ether			0.690	0.729	0.722	0.720	0.699	0.687		0.668	0.702	3.181		
T	Carbon Tetrachloride		0.504	0.514	0.493	0.502	0.506	0.51	0.485	0.484	0.469	0.49633	2.98359		
S	1,2-Dichloroethane-d4			0.327	0.319	0.321	0.308	0.302	0.293	0.286	0.276	0.30394	5.91974		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.37	0.41	0.392	0.416	0.405	0.399	0.386	0.376	0.366	0.39112	4.59213		
T	Benzene		1.262	1.199	1.132	1.14	1.139	1.113	1.06	1.004	0.95	1.11086	8.57312		
T	Trichloroethene		0.371	0.356	0.356	0.362	0.37	0.372	0.356	0.353	0.347	0.36034	2.44088		
T	Methylcyclohexane					0.426	0.399	0.433	0.429	0.428	0.432	0.42455	3.04339		
C	1,2-Dichloropropane		0.256	0.267	0.266	0.278	0.272	0.275	0.265	0.263	0.258	0.26653	2.74941		
T	Bromodichloromethane		0.437	0.404	0.383	0.405	0.415	0.419	0.408	0.4	0.392	0.40701	3.8667		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.00126	11.786		
T	Dibromomethane		0.141	0.168	0.157	0.162	0.165	0.17	0.164	0.163	0.158	0.16097	5.4375		
T	2-Chloroethyl Vinyl Ether					0.115	0.132	0.136	0.137	0.138	0.133	0.13182	6.49529		
T	4-Methyl-2-Pentanone					0.054	0.061	0.062	0.064	0.064	0.061	0.06098	5.79032		
T	cis-1,3-Dichloropropene		0.399	0.437	0.44	0.455	0.472	0.482	0.475	0.463	0.452	0.45274	5.59512		
T	Dimethyl Disulfide					0.418	0.464	0.52	0.528	0.519	0.511	0.49334	8.81929		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.278	1.242	1.239	1.156	1.148	1.063	1.012	0.99	1.14103	9.63577		
C	Toluene		1.402	1.384	1.32	1.338	1.336	1.317	1.222	1.119	1.043	1.27565	9.60934		
T	Ethyl Methacrylate			0.225	0.213	0.242	0.263	0.279	0.277	0.266	0.264	0.25369	9.61766		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.447	0.425	0.444	0.457	0.467	0.445	0.424	0.416	0.44078	3.9838		
T	1,1,2-Trichloroethane		0.203	0.25	0.242	0.236	0.242	0.246	0.231	0.221	0.22	0.23237	6.48809		
T	2-Hexanone					0.05	0.056	0.06	0.059	0.058	0.056	0.05656	6.19739		
T	1,3-Dichloropropane		0.351	0.397	0.376	0.394	0.389	0.398	0.379	0.36	0.356	0.37774	4.85557		
T	Tetrachloroethene		0.337	0.381	0.331	0.348	0.345	0.349	0.329	0.319	0.32	0.33981	5.56406		
T	Dibromochloromethane		0.339	0.349	0.344	0.356	0.368	0.387	0.366	0.356	0.352	0.35732	4.04417		
T	1,2-Dibromoethane		0.213	0.235	0.244	0.245	0.252	0.258	0.248	0.237	0.238	0.24095	5.36784		
T	1-Chlorohexane			0.348	0.352	0.376	0.373	0.41	0.385	0.375	0.38	0.37506	5.14547		
P	Chlorobenzene		1.137	1.114	1.025	1.045	1.019	1.01	0.936	0.858	0.799	0.9937	11.2083		
T	1,1,1,2-Tetrachloroethane		0.41	0.398	0.378	0.39	0.393	0.4	0.375	0.352	0.34	0.38196	6.08788		
C	Ethylbenzene		0.566	0.529	0.521	0.528	0.545	0.542	0.5			0.53319	3.9334		
T	m-,p-Xylene		0.728	0.701	0.654	0.676	0.661	0.652	0.601	0.54	0.492	0.63372	12.0285		
T	o-Xylene			0.628	0.598	0.641	0.652	0.664	0.616	0.586	0.564	0.61841	5.54062		
T	Styrene		0.849	0.944	0.94	1.018	1.073	1.092	1.017	0.939	0.87	0.9713	8.69974		
P	Bromoform			0.234	0.214	0.225	0.239	0.261	0.245	0.241	0.237	0.23693	5.84219		
T	Isopropylbenzene		1.391	1.555	1.51	1.63	1.624	1.646	1.509	1.352	1.201	1.49093	10.0498		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.384	0.404	0.366	0.382	0.39	0.408	0.382	0.373	0.361	0.38357	4.14364		
S	p-Bromofluorobenzene			0.731	0.74	0.732	0.696	0.697	0.674	0.672	0.659	0.70005	4.4675		

T	1,2,3-Trichloropropane			0.12	0.129	0.137	0.14	0.144	0.137	0.134	0.131	0.1339	5.61382	
T	trans-1,4-Dichloro-2-Butene			0.081	0.093	0.104	0.114	0.126	0.121	0.129	0.12	0.11101	15.1867	0.999
T	n-Propylbenzene		2.636	2.662	2.65	2.77	2.829	2.75	2.515	2.252	1.956	2.5578	11.0394	
T	Bromobenzene	0.736	0.755	0.758	0.72	0.763	0.76	0.762	0.715	0.699	0.673	0.73408	4.26105	
T	1,3,5-Trimethylbenzene		1.96	2.123	2.099	2.244	2.277	2.225	2.056	1.894	1.687	2.06266	9.23029	
T	2-Chlorotoluene		1.671	1.955	1.623	1.962	1.875	1.824	1.718	1.58	1.378	1.73195	11.1006	
T	4-Chlorotoluene		1.63	1.728	1.827	1.624	1.696	1.67	1.509	1.418	1.363	1.6073	9.34621	
T	a-Methylstyrene					1.083	1.135	1.22	1.161	1.131	1.052	1.13034	5.22612	
T	tert-Butylbenzene			0.481	0.493	0.512	0.507	0.503	0.474	0.462	0.448	0.48503	4.69981	
T	1,2,4-Trimethylbenzene			2.263	2.25	2.34	2.324	2.268	2.078	1.895	1.686	2.13794	11.0021	
T	sec-Butylbenzene			2.49	2.492	2.626	2.625	2.613	2.382	2.163	1.9	2.41134	10.737	
T	p-Isopropyltoluene			2.264	2.221	2.39	2.44	2.422	2.205	2	1.755	2.21228	10.6016	
T	1,3-Dichlorobenzene		1.372	1.532	1.466	1.504	1.503	1.495	1.378	1.298	1.202	1.41663	7.91188	
T	1,4-Dichlorobenzene	1.646	1.544	1.605	1.467	1.541	1.526	1.524	1.401	1.314	1.201	1.47684	9.21518	
T	n-Butylbenzene		1.806	1.801	1.763	1.822	1.843	1.847	1.698	1.584	1.432	1.73283	8.11051	
T	1,2-Dichlorobenzene	1.348	1.331	1.398	1.316	1.395	1.426	1.415	1.307	1.227	1.14	1.33014	6.77418	
T	1,2-Dibromo-3-Chloropropane				0.065	0.069	0.076	0.086	0.08	0.081	0.079	0.07654	9.58458	
T	1,2,4-Trichlorobenzene		1.132	1.075	0.98	1.034	1.071	1.093	1	0.947	0.879	1.02363	7.79448	
T	Hexachlorobutadiene		0.429	0.441	0.433	0.449	0.434	0.462	0.425	0.416	0.397	0.43199	4.29341	
T	Naphthalene		1.695	1.874	1.741	1.846	1.951	2.012	1.81	1.652	1.458	1.78196	9.41784	
T	1,2,3-Trichlorobenzene	0.879	0.964	0.976	0.939	0.959	0.97	0.99	0.892	0.855	0.794	0.92179	6.94198	

Fri Oct 04 14:16:48 2013

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13100060 Run Date: 09/17/2013 Sample ID: WG444955-12
Instrument ID: HPMS11 Run Time: 20:40 Method: 8260B
File ID: 11M95128 Analyst: FJB QC Key: DOD4
ICal Workgroup: WG444955 Cal ID: HPMS11 - 17-SEP-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	20.0	20.5	ug/L	0.477	2.40	20	
1,1-Dichloroethene	CCC	20.0	19.2	ug/L	0.370	4.20	20	
1,2-Dichloropropane	CCC	20.0	20.5	ug/L	0.258	2.50	20	
Ethylbenzene	CCC	20.0	20.3	ug/L	0.520	1.70	20	
Toluene	CCC	20.0	22.0	ug/L	1.47	9.90	20	
Vinyl Chloride	CCC	20.0	20.0	ug/L	0.313	0.200	20	
Bromoform	SPCC	20.0	18.8	ug/L	0.235	5.90	20	
Chlorobenzene	SPCC	20.0	19.6	ug/L	0.932	2.00	20	
Chloromethane	SPCC	20.0	20.8	ug/L	0.301	4.10	20	
1,1-Dichloroethane	SPCC	20.0	20.5	ug/L	0.451	2.30	20	
1,1,2,2-Tetrachloroethane	SPCC	20.0	21.6	ug/L	0.569	7.80	20	
Acetone		20.0	15.3	ug/L	0.0577	23.4	20	*
Benzene		20.0	20.7	ug/L	1.00	3.30	20	
Bromobenzene		20.0	19.8	ug/L	0.821	1.20	20	
Bromochloromethane		20.0	21.0	ug/L	0.170	5.10	20	
Bromodichloromethane		20.0	20.1	ug/L	0.357	0.600	20	
Bromomethane		20.0	19.5	ug/L	0.197	2.40	20	
2-Butanone		20.0	20.7	ug/L	0.0811	3.70	20	
n-Butylbenzene		20.0	23.0	ug/L	2.58	15.1	20	
sec-Butylbenzene		20.0	20.6	ug/L	2.87	3.10	20	
tert-Butylbenzene		20.0	19.1	ug/L	0.522	4.40	20	
Carbon Disulfide		20.0	21.6	ug/L	0.853	8.20	20	
Carbon Tetrachloride		20.0	20.6	ug/L	0.404	2.80	20	
Dibromochloromethane		20.0	20.5	ug/L	0.336	2.50	20	
Chloroethane		20.0	19.8	ug/L	0.168	1.00	20	
2-Chlorotoluene		20.0	20.2	ug/L	2.12	1.20	20	
4-Chlorotoluene		20.0	20.9	ug/L	2.13	4.60	20	
1,2-Dibromo-3-Chloropropane		20.0	19.9	ug/L	0.105	0.600	20	
1,2-Dibromoethane		20.0	20.8	ug/L	0.282	3.80	20	
Dibromomethane		20.0	20.2	ug/L	0.156	1.10	20	
1,2-Dichlorobenzene		20.0	19.2	ug/L	1.35	3.80	20	
1,3-Dichlorobenzene		20.0	19.7	ug/L	1.43	1.70	20	
1,4-Dichlorobenzene		20.0	20.3	ug/L	1.56	1.30	20	
Dichlorodifluoromethane		20.0	22.8	ug/L	0.274	14.0	20	
1,2-Dichloroethane		20.0	20.7	ug/L	0.370	3.50	20	
cis-1,2-Dichloroethene		20.0	20.5	ug/L	0.292	2.40	20	
trans-1,2-Dichloroethene		20.0	20.9	ug/L	0.269	4.50	20	
1,3-Dichloropropane		20.0	20.7	ug/L	0.482	3.30	20	
2,2-Dichloropropane		20.0	19.3	ug/L	0.382	3.40	20	
cis-1,3-Dichloropropene		20.0	21.7	ug/L	0.434	8.50	20	
trans-1,3-Dichloropropene		20.0	20.7	ug/L	0.491	3.40	20	
1,1-Dichloropropene		20.0	19.9	ug/L	0.364	0.400	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3130470
Report generated 10/15/2013 14:04

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13100060 Run Date: 09/17/2013 Sample ID: WG444955-12
Instrument ID: HPMS11 Run Time: 20:40 Method: 8260B
File ID: 11M95128 Analyst: FJB QC Key: DOD4
ICal Workgroup: WG444955 Cal ID: HPMS11 - 17-SEP-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		20.0	21.0	ug/L	0.172	4.90	20	
Hexachlorobutadiene		20.0	21.9	ug/L	0.510	9.70	20	
Isopropylbenzene		20.0	21.0	ug/L	1.45	4.90	20	
p-Isopropyltoluene		20.0	21.0	ug/L	2.52	5.00	20	
4-Methyl-2-Pentanone		20.0	22.0	ug/L	0.0691	10.2	20	
Methylene Chloride		20.0	19.4	ug/L	0.253	2.80	20	
Naphthalene		20.0	22.0	ug/L	1.96	9.90	20	
n-Propylbenzene		20.0	19.7	ug/L	3.34	1.70	20	
Styrene		20.0	21.9	ug/L	1.04	9.60	20	
1,1,1,2-Tetrachloroethane		20.0	20.7	ug/L	0.387	3.50	20	
Tetrachloroethene		20.0	20.6	ug/L	0.323	3.10	20	
1,2,3-Trichlorobenzene		20.0	20.1	ug/L	0.927	0.700	20	
1,2,4-Trichlorobenzene		20.0	20.7	ug/L	1.05	3.50	20	
1,1,1-Trichloroethane		20.0	20.4	ug/L	0.447	1.80	20	
1,1,2-Trichloroethane		20.0	21.8	ug/L	0.281	9.20	20	
Trichloroethene		20.0	21.8	ug/L	0.294	9.20	20	
Trichlorofluoromethane		20.0	20.2	ug/L	0.444	1.10	20	
1,2,3-Trichloropropane		20.0	21.1	ug/L	0.180	5.60	20	
1,2,4-Trimethylbenzene		20.0	22.6	ug/L	2.64	12.8	20	
1,3,5-Trimethylbenzene		20.0	22.6	ug/L	2.60	13.2	20	
o-Xylene		20.0	19.3	ug/L	0.569	3.40	20	
m-,p-Xylene		40.0	42.2	ug/L	0.608	5.50	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3130470
Report generated 10/15/2013 14:04

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13100060 Run Date: 10/01/2013 Sample ID: WG446788-12
Instrument ID: HPMS8 Run Time: 20:58 Method: 8260B
File ID: 8M391104 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG446788 Cal ID: HPMS8 - 01-OCT-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.0	ug/L	0.494	6.00	20	
1,1-Dichloroethene	CCC	50.0	47.0	ug/L	0.390	5.90	20	
1,2-Dichloropropane	CCC	50.0	47.9	ug/L	0.256	4.10	20	
Ethylbenzene	CCC	50.0	46.7	ug/L	0.498	6.70	20	
Toluene	CCC	50.0	48.1	ug/L	1.23	3.70	20	
Vinyl Chloride	CCC	50.0	50.0	ug/L	0.264	0.100	20	
Bromoform	SPCC	50.0	48.4	ug/L	0.230	3.10	20	
Chlorobenzene	SPCC	50.0	44.8	ug/L	0.890	10.5	20	
Chloromethane	SPCC	50.0	47.0	ug/L	0.254	5.90	20	
1,1-Dichloroethane	SPCC	50.0	45.8	ug/L	0.460	8.40	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.6	ug/L	0.365	4.80	20	
Acetone		50.0	41.7	ug/L	0.0474	16.6	20	
Benzene		50.0	46.9	ug/L	1.04	6.10	20	
Bromobenzene		50.0	46.4	ug/L	0.681	7.20	20	
Bromochloromethane		50.0	47.1	ug/L	0.214	5.70	20	
Bromodichloromethane		50.0	46.7	ug/L	0.380	6.50	20	
Bromomethane		50.0	43.5	ug/L	0.166	12.9	20	
2-Butanone		50.0	51.2	ug/L	0.0700	2.40	20	
n-Butylbenzene		50.0	51.0	ug/L	1.77	2.00	20	
sec-Butylbenzene		50.0	47.0	ug/L	2.27	5.90	20	
tert-Butylbenzene		50.0	45.0	ug/L	0.437	9.90	20	
Carbon Disulfide		50.0	48.2	ug/L	0.784	3.70	20	
Carbon Tetrachloride		50.0	46.9	ug/L	0.465	6.30	20	
Dibromochloromethane		50.0	49.0	ug/L	0.350	2.10	20	
Chloroethane		50.0	49.1	ug/L	0.183	1.80	20	
2-Chlorotoluene		50.0	48.2	ug/L	1.67	3.60	20	
4-Chlorotoluene		50.0	41.8	ug/L	1.34	16.4	20	
1,2-Dibromo-3-Chloropropane		50.0	49.1	ug/L	0.0751	1.90	20	
1,2-Dibromoethane		50.0	48.6	ug/L	0.234	2.70	20	
Dibromomethane		50.0	48.6	ug/L	0.157	2.80	20	
1,2-Dichlorobenzene		50.0	45.3	ug/L	1.21	9.30	20	
1,3-Dichlorobenzene		50.0	45.0	ug/L	1.27	10.1	20	
1,4-Dichlorobenzene		50.0	47.4	ug/L	1.40	5.10	20	
Dichlorodifluoromethane		50.0	68.7	ug/L	0.384	37.5	20	*
1,2-Dichloroethane		50.0	47.1	ug/L	0.368	5.80	20	
cis-1,2-Dichloroethene		50.0	49.3	ug/L	0.309	1.40	20	
trans-1,2-Dichloroethene		50.0	48.6	ug/L	0.382	2.80	20	
1,3-Dichloropropane		50.0	48.4	ug/L	0.366	3.20	20	
2,2-Dichloropropane		50.0	46.7	ug/L	0.454	6.60	20	
cis-1,3-Dichloropropene		50.0	51.6	ug/L	0.467	3.20	20	
trans-1,3-Dichloropropene		50.0	46.0	ug/L	0.406	8.00	20	
1,1-Dichloropropene		50.0	46.9	ug/L	0.379	6.20	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3130470
Report generated 10/15/2013 14:04

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13100060 Run Date: 10/01/2013 Sample ID: WG446788-12
Instrument ID: HPMS8 Run Time: 20:58 Method: 8260B
File ID: 8M391104 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG446788 Cal ID: HPMS8 - 01-OCT-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	50.4	ug/L	0.0571	0.900	20	
Hexachlorobutadiene		50.0	48.6	ug/L	0.420	2.80	20	
Isopropylbenzene		50.0	48.2	ug/L	1.44	3.50	20	
p-Isopropyltoluene		50.0	47.6	ug/L	2.10	4.90	20	
4-Methyl-2-Pentanone		50.0	50.6	ug/L	0.0617	1.30	20	
Methylene Chloride		50.0	46.4	ug/L	0.264	7.20	20	
Naphthalene		50.0	50.5	ug/L	1.80	0.900	20	
n-Propylbenzene		50.0	46.1	ug/L	2.36	7.80	20	
Styrene		50.0	52.2	ug/L	1.01	4.50	20	
1,1,1,2-Tetrachloroethane		50.0	48.1	ug/L	0.368	3.70	20	
Tetrachloroethene		50.0	46.8	ug/L	0.318	6.50	20	
1,2,3-Trichlorobenzene		50.0	48.3	ug/L	0.890	3.50	20	
1,2,4-Trichlorobenzene		50.0	48.8	ug/L	0.999	2.40	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.486	4.90	20	
1,1,2-Trichloroethane		50.0	48.7	ug/L	0.226	2.60	20	
Trichloroethene		50.0	50.2	ug/L	0.362	0.400	20	
Trichlorofluoromethane		50.0	51.6	ug/L	0.522	3.10	20	
1,2,3-Trichloropropane		50.0	47.3	ug/L	0.127	5.40	20	
1,2,4-Trimethylbenzene		50.0	49.6	ug/L	2.12	0.700	20	
1,3,5-Trimethylbenzene		50.0	50.8	ug/L	2.09	1.60	20	
o-Xylene		50.0	46.3	ug/L	0.572	7.40	20	
m-,p-Xylene		100	93.8	ug/L	0.595	6.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3130470
Report generated 10/15/2013 14:04

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13100060 Run Date: 10/06/2013 Sample ID: WG447416-02
Instrument ID: HPMS8 Run Time: 16:56 Method: 8260B
File ID: 8M391273 Analyst: MES QC Key: DOD4
Workgroup (AAB#): WG447417 Cal ID: HPMS8 - 01-OCT-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.8	ug/L	0.545	3.63	20	
1,1-Dichloroethene	CCC	50.0	52.8	ug/L	0.437	5.63	20	
1,2-Dichloropropane	CCC	50.0	50.5	ug/L	0.269	1.06	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.514	3.63	20	
Toluene	CCC	50.0	48.9	ug/L	1.25	2.23	20	
Vinyl Chloride	CCC	50.0	52.0	ug/L	0.274	3.91	20	
Bromoform	SPCC	50.0	49.2	ug/L	0.233	1.67	20	
Chlorobenzene	SPCC	50.0	48.8	ug/L	0.970	2.42	20	
Chloromethane	SPCC	50.0	52.5	ug/L	0.284	5.05	20	
1,1-Dichloroethane	SPCC	50.0	50.8	ug/L	0.510	1.59	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.5	ug/L	0.349	9.07	20	
Xylenes		150	149	ug/L	0.625	0.705	20	
Acetone		50.0	62.7	ug/L	0.0714	25.5	20	*
Benzene		50.0	50.0	ug/L	1.11	0.0460	20	
Bromobenzene		50.0	48.7	ug/L	0.715	2.67	20	
Bromochloromethane		50.0	51.8	ug/L	0.235	3.64	20	
Bromodichloromethane		50.0	52.1	ug/L	0.424	4.11	20	
Bromomethane		50.0	54.9	ug/L	0.210	9.82	20	
2-Butanone		50.0	49.1	ug/L	0.0671	1.87	20	
n-Butylbenzene		50.0	50.5	ug/L	1.75	0.952	20	
sec-Butylbenzene		50.0	51.2	ug/L	2.47	2.40	20	
tert-Butylbenzene		50.0	49.3	ug/L	0.478	1.40	20	
Carbon Disulfide		50.0	51.4	ug/L	0.836	2.76	20	
Carbon Tetrachloride		50.0	53.1	ug/L	0.527	6.27	20	
Dibromochloromethane		50.0	50.4	ug/L	0.361	0.896	20	
Chloroethane		50.0	51.4	ug/L	0.192	2.83	20	
2-Chlorotoluene		50.0	49.8	ug/L	1.73	0.328	20	
4-Chlorotoluene		50.0	50.3	ug/L	1.62	0.544	20	
1,2-Dibromo-3-Chloropropane		50.0	49.1	ug/L	0.0752	1.75	20	
1,2-Dibromoethane		50.0	48.4	ug/L	0.233	3.22	20	
Dibromomethane		50.0	51.2	ug/L	0.165	2.48	20	
1,2-Dichlorobenzene		50.0	49.6	ug/L	1.32	0.763	20	
1,3-Dichlorobenzene		50.0	50.4	ug/L	1.43	0.787	20	
1,4-Dichlorobenzene		50.0	48.9	ug/L	1.44	2.24	20	
Dichlorodifluoromethane		50.0	53.9	ug/L	0.301	7.87	20	
1,2-Dichloroethane		50.0	51.4	ug/L	0.402	2.85	20	
cis-1,2-Dichloroethene		50.0	52.2	ug/L	0.327	4.46	20	
trans-1,2-Dichloroethene		50.0	52.0	ug/L	0.408	3.97	20	
1,3-Dichloropropane		50.0	48.0	ug/L	0.363	3.94	20	
2,2-Dichloropropane		50.0	53.0	ug/L	0.516	6.03	20	
cis-1,3-Dichloropropene		50.0	52.7	ug/L	0.477	5.45	20	
trans-1,3-Dichloropropene		50.0	49.2	ug/L	0.433	1.67	20	

CCV - Modified 03/05/2008
PDF File ID: 3130471
Report generated 10/15/2013 14:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13100060 Run Date: 10/06/2013 Sample ID: WG447416-02
Instrument ID: HPMS8 Run Time: 16:56 Method: 8260B
File ID: 8M391273 Analyst: MES QC Key: DOD4
Workgroup (AAB#): WG447417 Cal ID: HPMS8 - 01-OCT-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.9	ug/L	0.419	3.79	20	
2-Hexanone		50.0	44.6	ug/L	0.0505	10.8	20	
Hexachlorobutadiene		50.0	49.9	ug/L	0.431	0.160	20	
Isopropylbenzene		50.0	52.7	ug/L	1.57	5.30	20	
p-Isopropyltoluene		50.0	52.6	ug/L	2.33	5.28	20	
4-Methyl-2-Pentanone		50.0	46.6	ug/L	0.0568	6.78	20	
Methylene Chloride		50.0	48.5	ug/L	0.276	2.94	20	
Naphthalene		50.0	48.3	ug/L	1.72	3.31	20	
n-Propylbenzene		50.0	51.4	ug/L	2.63	2.79	20	
Styrene		50.0	53.3	ug/L	1.04	6.58	20	
1,1,1,2-Tetrachloroethane		50.0	50.4	ug/L	0.385	0.721	20	
Tetrachloroethene		50.0	49.4	ug/L	0.336	1.27	20	
1,2,3-Trichlorobenzene		50.0	47.3	ug/L	0.872	5.44	20	
1,2,4-Trichlorobenzene		50.0	49.3	ug/L	1.01	1.37	20	
1,1,1-Trichloroethane		50.0	52.7	ug/L	0.538	5.32	20	
1,1,2-Trichloroethane		50.0	47.2	ug/L	0.220	5.52	20	
Trichloroethene		50.0	52.9	ug/L	0.381	5.80	20	
Trichlorofluoromethane		50.0	53.8	ug/L	0.544	7.52	20	
1,2,3-Trichloropropane		50.0	47.8	ug/L	0.128	4.44	20	
1,2,4-Trimethylbenzene		50.0	51.3	ug/L	2.19	2.64	20	
1,3,5-Trimethylbenzene		50.0	51.7	ug/L	2.13	3.39	20	
o-Xylene		50.0	50.8	ug/L	0.628	1.58	20	
m-,p-Xylene		100	98.2	ug/L	0.622	1.85	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3130471
Report generated 10/15/2013 14:04

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13100060 Run Date: 10/10/2013 Sample ID: WG448050-02
Instrument ID: HPMS11 Run Time: 10:58 Method: 8260B
File ID: 11M95883 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG448051 Cal ID: HPMS11 - 17-SEP-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.3	ug/L	0.488	4.70	20	
1,1-Dichloroethene	CCC	50.0	51.6	ug/L	0.399	3.22	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.257	2.02	20	
Ethylbenzene	CCC	50.0	52.8	ug/L	0.541	5.65	20	
Toluene	CCC	50.0	54.5	ug/L	1.45	8.91	20	
Vinyl Chloride	CCC	50.0	51.7	ug/L	0.325	3.43	20	
Bromoform	SPCC	50.0	49.6	ug/L	0.253	0.817	20	
Chlorobenzene	SPCC	50.0	53.9	ug/L	1.03	7.79	20	
Chloromethane	SPCC	50.0	47.6	ug/L	0.275	4.76	20	
1,1-Dichloroethane	SPCC	50.0	53.7	ug/L	0.474	7.49	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	50.8	ug/L	0.536	1.54	20	
Xylenes		150	163	ug/L	0.630	8.49	20	
Acetone		50.0	59.6	ug/L	0.0897	19.2	20	
Benzene		50.0	53.8	ug/L	1.04	7.57	20	
Bromobenzene		50.0	49.6	ug/L	0.825	0.734	20	
Bromochloromethane		50.0	56.4	ug/L	0.182	12.7	20	
Bromodichloromethane		50.0	53.0	ug/L	0.376	5.94	20	
Bromomethane		50.0	34.9	ug/L	0.141	30.2	20	*
2-Butanone		50.0	43.6	ug/L	0.0683	12.8	20	
n-Butylbenzene		50.0	49.5	ug/L	2.22	0.949	20	
sec-Butylbenzene		50.0	51.0	ug/L	2.84	1.90	20	
tert-Butylbenzene		50.0	50.2	ug/L	0.548	0.399	20	
Carbon Disulfide		50.0	49.5	ug/L	0.781	0.942	20	
Carbon Tetrachloride		50.0	55.7	ug/L	0.438	11.4	20	
Dibromochloromethane		50.0	54.1	ug/L	0.355	8.22	20	
Chloroethane		50.0	52.7	ug/L	0.179	5.40	20	
2-Chlorotoluene		50.0	55.5	ug/L	2.32	11.0	20	
4-Chlorotoluene		50.0	49.9	ug/L	2.03	0.265	20	
1,2-Dibromo-3-Chloropropane		50.0	44.5	ug/L	0.0938	11.1	20	
1,2-Dibromoethane		50.0	46.0	ug/L	0.250	7.92	20	
Dibromomethane		50.0	50.6	ug/L	0.156	1.12	20	
1,2-Dichlorobenzene		50.0	50.6	ug/L	1.42	1.23	20	
1,3-Dichlorobenzene		50.0	52.5	ug/L	1.53	4.95	20	
1,4-Dichlorobenzene		50.0	50.0	ug/L	1.54	0.0726	20	
Dichlorodifluoromethane		50.0	49.6	ug/L	0.238	0.833	20	
1,2-Dichloroethane		50.0	47.8	ug/L	0.342	4.38	20	
cis-1,2-Dichloroethene		50.0	53.4	ug/L	0.305	6.88	20	
trans-1,2-Dichloroethene		50.0	54.5	ug/L	0.280	8.93	20	
1,3-Dichloropropane		50.0	49.6	ug/L	0.463	0.802	20	
2,2-Dichloropropane		50.0	55.2	ug/L	0.437	10.4	20	
cis-1,3-Dichloropropene		50.0	54.3	ug/L	0.434	8.65	20	
trans-1,3-Dichloropropene		50.0	53.2	ug/L	0.506	6.48	20	

CCV - Modified 03/05/2008
PDF File ID: 3130471
Report generated 10/15/2013 14:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13100060 Run Date: 10/10/2013 Sample ID: WG448050-02
Instrument ID: HPMS11 Run Time: 10:58 Method: 8260B
File ID: 11M95883 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG448051 Cal ID: HPMS11 - 17-SEP-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.2	ug/L	0.389	6.45	20	
2-Hexanone		50.0	42.2	ug/L	0.138	15.7	20	
Hexachlorobutadiene		50.0	43.5	ug/L	0.404	13.0	20	
Isopropylbenzene		50.0	55.4	ug/L	1.54	10.9	20	
p-Isopropyltoluene		50.0	52.6	ug/L	2.52	5.18	20	
4-Methyl-2-Pentanone		50.0	45.4	ug/L	0.0570	9.17	20	
Methylene Chloride		50.0	51.1	ug/L	0.266	2.28	20	
Naphthalene		50.0	47.0	ug/L	1.68	5.98	20	
n-Propylbenzene		50.0	49.9	ug/L	3.39	0.254	20	
Styrene		50.0	56.6	ug/L	1.08	13.2	20	
1,1,1,2-Tetrachloroethane		50.0	54.0	ug/L	0.403	7.96	20	
Tetrachloroethene		50.0	53.5	ug/L	0.335	7.04	20	
1,2,3-Trichlorobenzene		50.0	45.0	ug/L	0.829	9.91	20	
1,2,4-Trichlorobenzene		50.0	47.9	ug/L	0.969	4.20	20	
1,1,1-Trichloroethane		50.0	53.1	ug/L	0.466	6.13	20	
1,1,2-Trichloroethane		50.0	51.8	ug/L	0.267	3.62	20	
Trichloroethene		50.0	53.2	ug/L	0.287	6.47	20	
Trichlorofluoromethane		50.0	50.9	ug/L	0.448	1.86	20	
1,2,3-Trichloropropane		50.0	47.6	ug/L	0.163	4.83	20	
1,2,4-Trimethylbenzene		50.0	53.0	ug/L	2.48	6.03	20	
1,3,5-Trimethylbenzene		50.0	52.4	ug/L	2.41	4.87	20	
o-Xylene		50.0	53.5	ug/L	0.630	7.07	20	
m-,p-Xylene		100	109	ug/L	0.630	9.20	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3130471
Report generated 10/15/2013 14:04

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13100060
Instrument ID: HPMS8
Workgroup (AAB#): WG447417

ICAL CCV Number: WG446788-08
CAL ID: HPMS8 - 01-OCT-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG446788-08	NA	NA	525036	794349	827699
Upper Limit	NA	NA	1050072	1588698	1655398
Lower Limit	NA	NA	262518	397175	413850
L13100060-01	1.00	01	461158	675395	655512
L13100060-02	1.00	01	435379	648163	632063
L13100060-03	1.00	01	428648	622865	605184
L13100060-04	1.00	01	412579	610983	599260
L13100060-05	1.00	01	418585	615224	594444
L13100060-06	1.00	01	408371	601573	585886
L13100060-09	1.00	01	409128	605998	584776
L13100060-10	1.00	01	452563	648835	611287
L13100060-11	1.00	01	451907	651425	620926
WG447417-01	1.00	01	454429	677890	675148
WG447417-02	1.00	01	472365	707219	679596
WG447417-03	1.00	01	452735	678792	667086

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3141912
Report generated 10/15/2013 14:04

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13100060
Instrument ID: HPMS11
Workgroup (AAB#): WG448051

ICAL CCV Number: WG444955-08
CAL ID: HPMS11-17-SEP-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG444955-08	NA	NA	357123	670579	897116
Upper Limit	NA	NA	714246	1341158	1794232
Lower Limit	NA	NA	178562	335290	448558
L13100060-07	1.00	01	351432	648710	832573
L13100060-08	1.00	01	346918	642496	825564
L13100060-12	1.00	01	362187	669771	854521
WG448051-01	1.00	01	367061	687085	880258
WG448051-02	1.00	01	397653	710452	902320
WG448051-03	1.00	01	392689	708693	913799

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3141912
Report generated 10/15/2013 14:04

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13100060
Instrument ID: HPMS11
Workgroup (AAB#): WG448051

ICAL CCV Number: WG444955-08
CAL ID: HPMS11-17-SEP-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG444955-08	NA	NA	17.12	14.31	10.68
Upper Limit	NA	NA	17.62	14.81	11.18
Lower Limit	NA	NA	16.62	13.81	10.18
L13100060-07	1.00	01	17.1	14.29	10.66
L13100060-08	1.00	01	17.1	14.29	10.66
L13100060-12	1.00	01	17.1	14.29	10.65
WG448051-01	1.00	01	17.1	14.29	10.66
WG448051-02	1.00	01	17.1	14.29	10.66
WG448051-03	1.00	01	17.1	14.29	10.66

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3141913
Report generated: 10/15/2013 14:04

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13100060
Instrument ID: HPMS8
Workgroup (AAB#): WG447417

ICAL CCV Number: WG446788-08
CAL ID: HPMS8 - 01-OCT-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG446788-08	NA	NA	17.95	14.92	11.05
Upper Limit	NA	NA	18.45	15.42	11.55
Lower Limit	NA	NA	17.45	14.42	10.55
L13100060-01	1.00	01	17.95	14.92	11.05
L13100060-02	1.00	01	17.95	14.93	11.05
L13100060-03	1.00	01	17.96	14.93	11.05
L13100060-04	1.00	01	17.95	14.92	11.04
L13100060-05	1.00	01	17.95	14.92	11.05
L13100060-06	1.00	01	17.96	14.93	11.05
L13100060-09	1.00	01	17.95	14.92	11.05
L13100060-10	1.00	01	17.95	14.92	11.05
L13100060-11	1.00	01	17.95	14.93	11.05
WG447417-01	1.00	01	17.95	14.92	11.04
WG447417-02	1.00	01	17.95	14.92	11.04
WG447417-03	1.00	01	17.95	14.92	11.04

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3141913
Report generated: 10/15/2013 14:04

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391293.D Vial: 22
Acq On : 7 Oct 2013 3:17 Operator: MES
Sample : L13100060-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 07 09:31:41 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	655512	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.92	117	675395	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.95	152	461158	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	207733	25.2266 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.92%		
43) 1,2-Dichloroethane-d4	10.65	65	207982	26.0973 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.40%		
58) Toluene-d8	13.03	98	739738	23.9972 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.00%		
80) p-Bromofluorobenzene	16.43	95	295618	22.8923 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.56%		

Target Compounds

					Qvalue
3) Chloromethane	3.87	50	2056	0.2903 ug/L	99
13) Acetone	6.58	43	1535	1.0294 ug/L #	48
36) Tetrahydrofuran	9.97	42	483	0.3995 ug/L #	34
48) Methylcyclohexane	11.63	83	2395	0.2151 ug/L	93
56) Dimethyl Disulfide	13.03	94	20491	1.5841 ug/L #	28
73) m-,p-Xylene	15.08	106	3586	0.2095 ug/L	75
84) Bromobenzene	16.71	156	4573	0.3377 ug/L #	1
90) 1,2,4-Trimethylbenzene	17.30	105	8267	0.2096 ug/L	82
100) Naphthalene	21.02	128	4203	0.1279 ug/L #	82

(#) = qualifier out of range (m) = manual integration
8M391293.D 8260WT.M Mon Oct 07 09:31:43 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391293.D Vial: 22
Acq On : 7 Oct 2013 3:17 Operator: MES
Sample : L13100060-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 7 9:31 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration

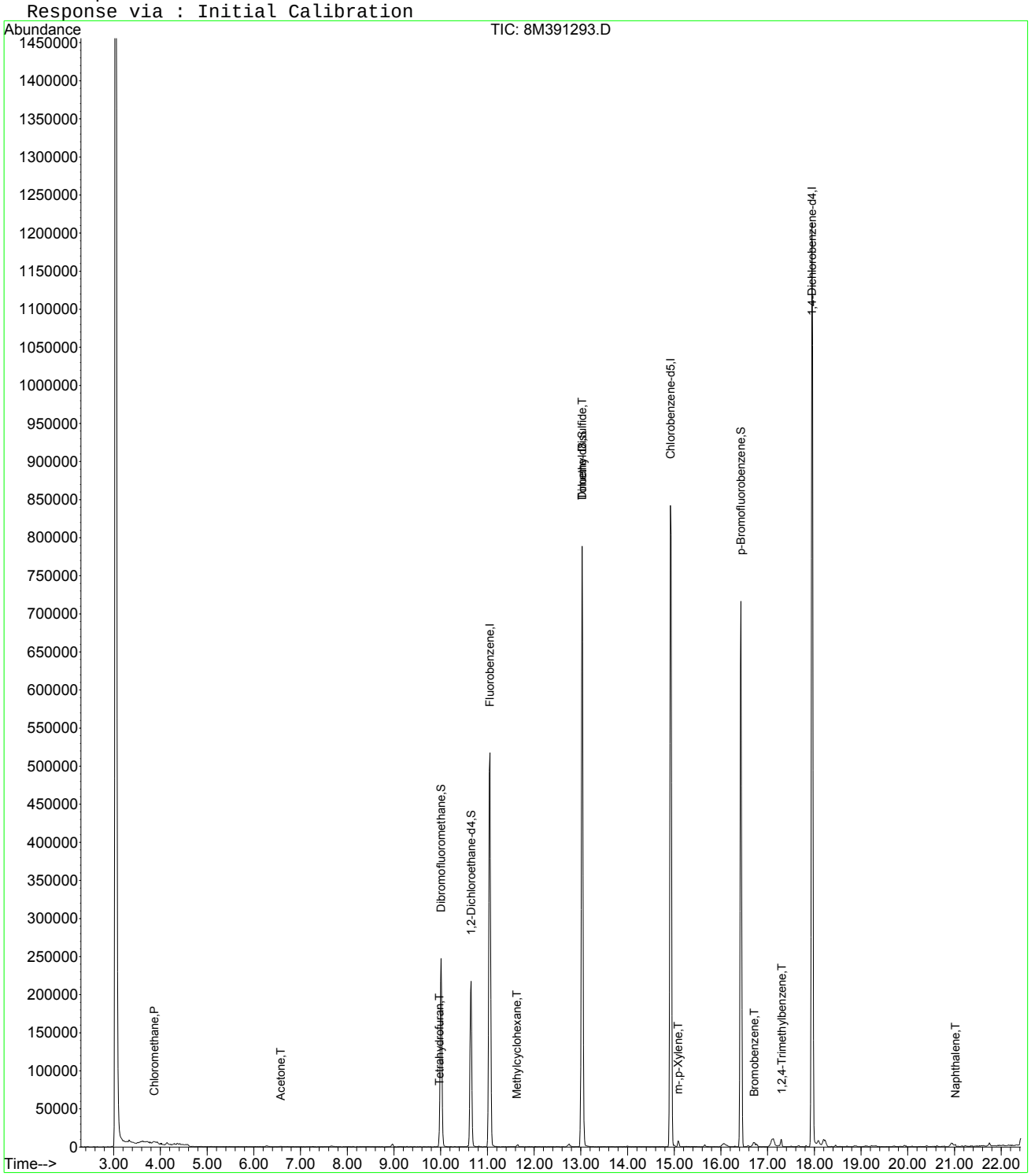

8M391293.D 8260WT.M Mon Oct 07 09:31:43 2013 Page 2

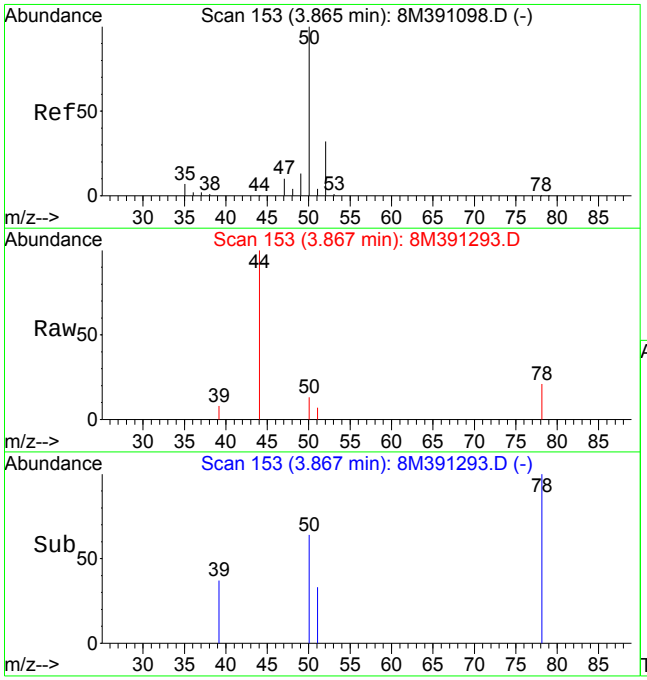

#3
Chloromethane
Concen: 0.29 ug/L
RT: 3.87 min Scan# 153
Delta R.T. 0.00 min
Lab File: 8M391293.D
Acq: 7 Oct 2013 3:17

Tgt Ion: 50 Resp: 2056

Ion	Ratio	Lower	Upper
50	100		
52	32.5	19.8	46.2

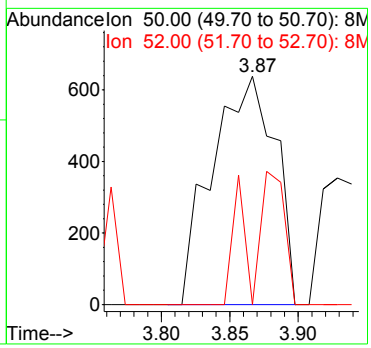

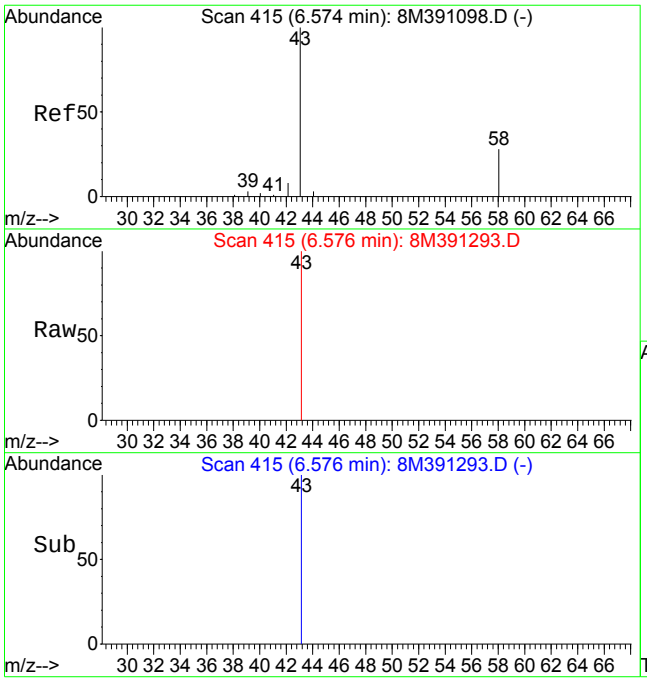

#13
Acetone
Concen: 1.03 ug/L
RT: 6.58 min Scan# 415
Delta R.T. 0.00 min
Lab File: 8M391293.D
Acq: 7 Oct 2013 3:17

Tgt Ion: 43 Resp: 1535

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

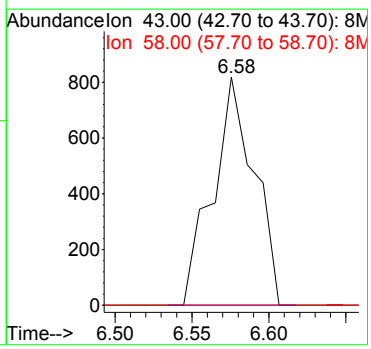

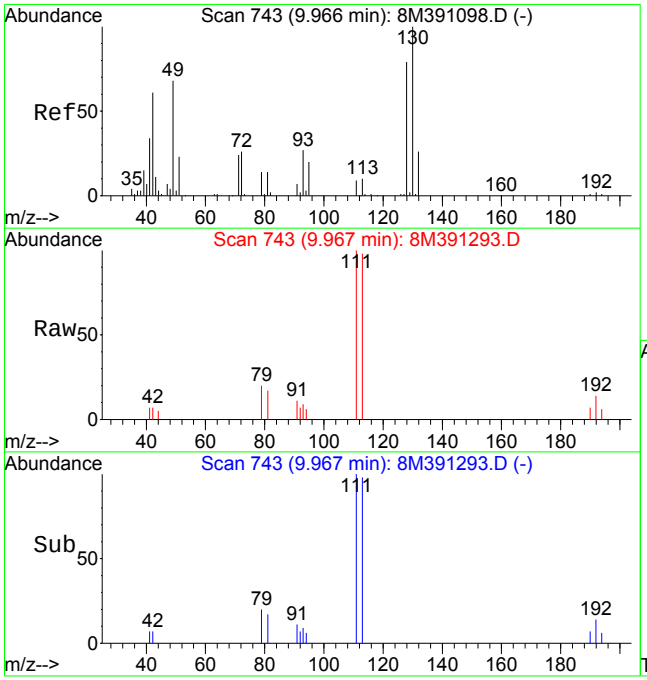

#36
Tetrahydrofuran
Concen: 0.40 ug/L
RT: 9.97 min Scan# 743
Delta R.T. 0.00 min
Lab File: 8M391293.D
Acq: 7 Oct 2013 3:17

Tgt Ion: 42 Resp: 483

Ion	Ratio	Lower	Upper
42	100		
72	0.0	25.7	59.9#
71	0.0	24.4	57.0#

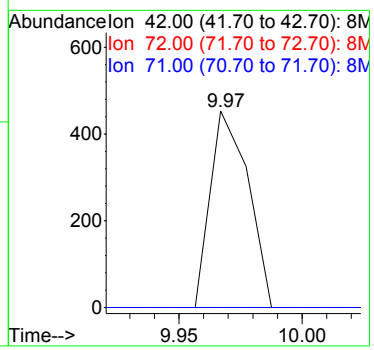

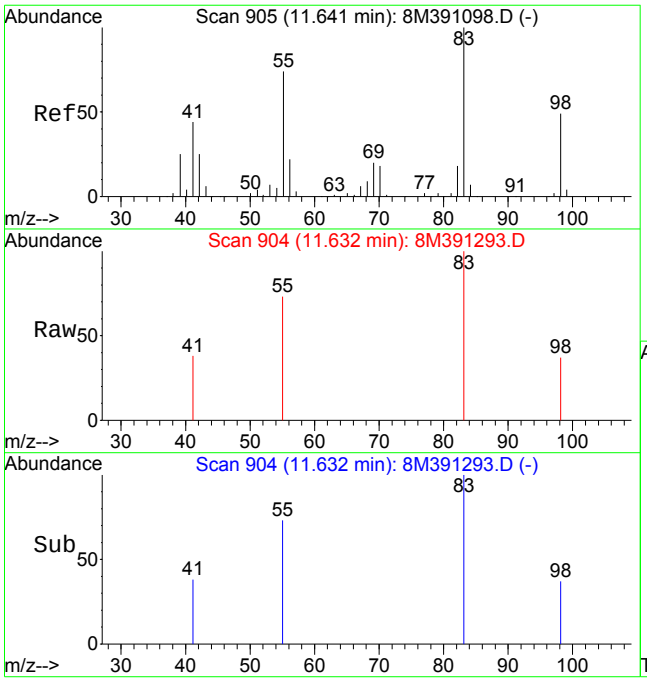

#48
Methylcyclohexane
Concen: 0.22 ug/L
RT: 11.63 min Scan# 904
Delta R.T. -0.01 min
Lab File: 8M391293.D
Acq: 7 Oct 2013 3:17

Tgt Ion: 83 Resp: 2395

Ion	Ratio	Lower	Upper
83	100		
55	74.4	43.3	101.1
98	40.5	29.3	68.5

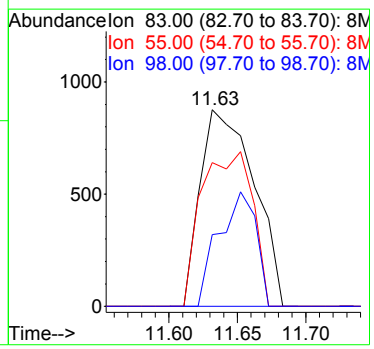

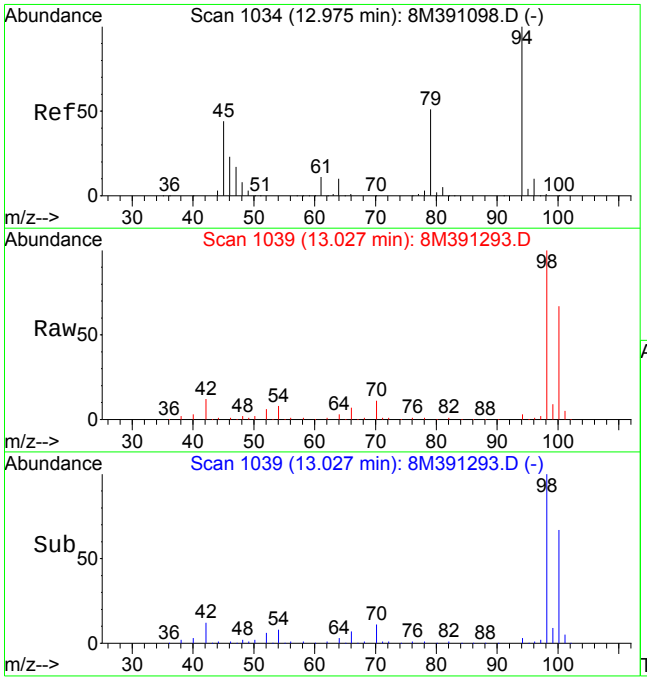

#56
Dimethyl Disulfide
Concen: 1.58 ug/L
RT: 13.03 min Scan# 1039
Delta R.T. 0.05 min
Lab File: 8M391293.D
Acq: 7 Oct 2013 3:17

Tgt Ion: 94 Resp: 20491

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

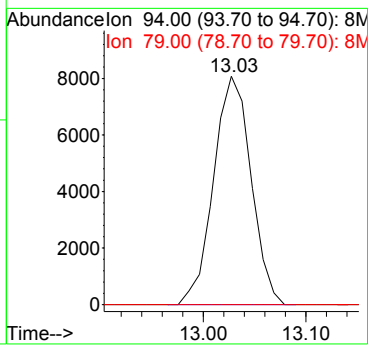

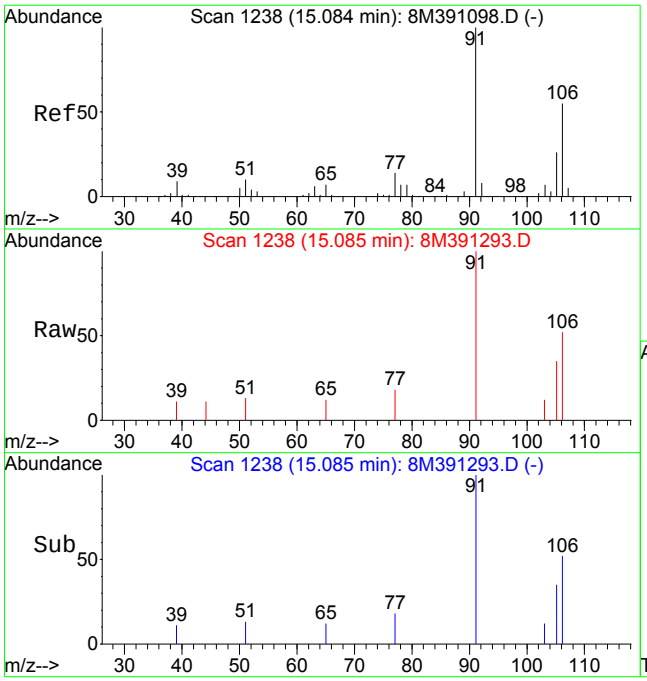

#73
m-,p-Xylene
Concen: 0.21 ug/L
RT: 15.08 min Scan# 1238
Delta R.T. 0.00 min
Lab File: 8M391293.D
Acq: 7 Oct 2013 3:17

Tgt Ion:106 Resp: 3586

Ion	Ratio	Lower	Upper
106	100		
91	219.7	110.2	257.2

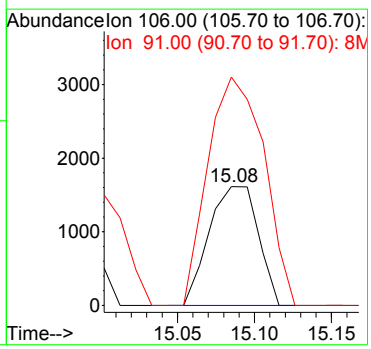

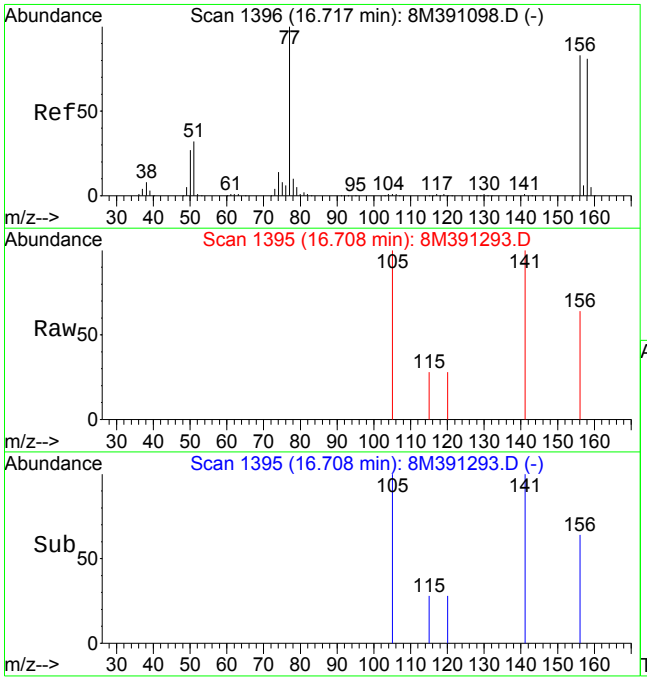

#84
Bromobenzene
Concen: 0.34 ug/L
RT: 16.71 min Scan# 1395
Delta R.T. -0.01 min
Lab File: 8M391293.D
Acq: 7 Oct 2013 3:17

Tgt Ion:156 Resp: 4573

Ion	Ratio	Lower	Upper
156	100		
77	0.0	92.0	214.8#

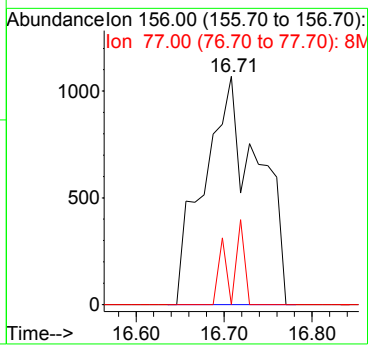

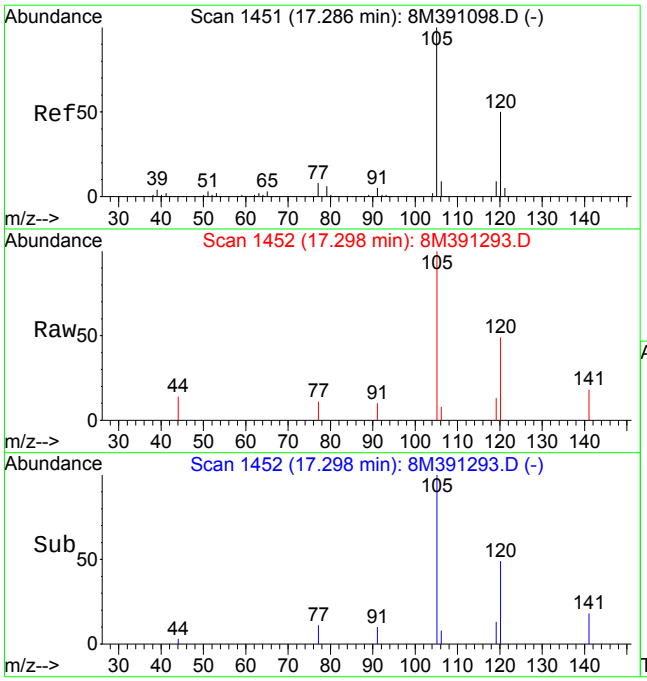

#90
1,2,4-Trimethylbenzene
Concen: 0.21 ug/L
RT: 17.30 min Scan# 1452
Delta R.T. 0.01 min
Lab File: 8M391293.D
Acq: 7 Oct 2013 3:17

Tgt Ion:105 Resp: 8267

Ion	Ratio	Lower	Upper
105	100		
120	45.2	35.3	82.5

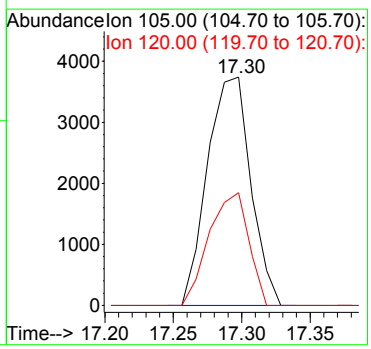

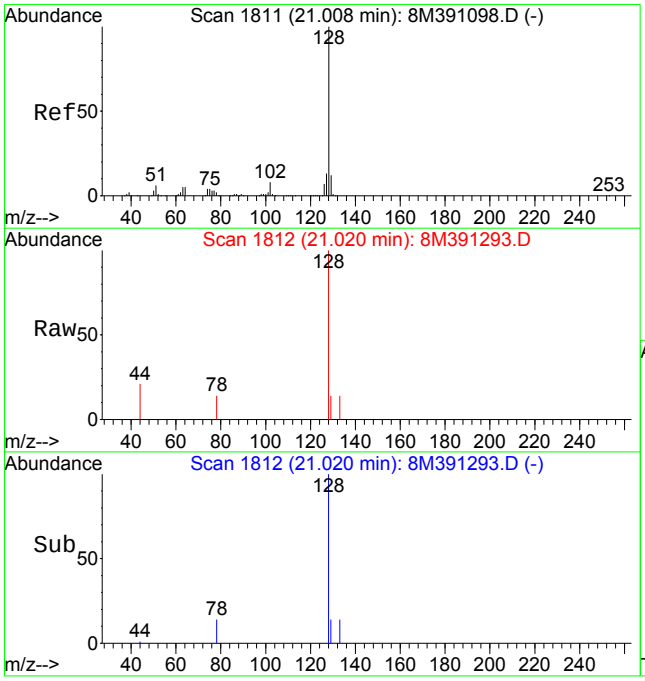

#100
Naphthalene
Concen: 0.13 ug/L
RT: 21.02 min Scan# 1812
Delta R.T. 0.01 min
Lab File: 8M391293.D
Acq: 7 Oct 2013 3:17

Tgt Ion:128 Resp: 4203

Ion	Ratio	Lower	Upper
128	100		
127	5.5	7.6	17.8#

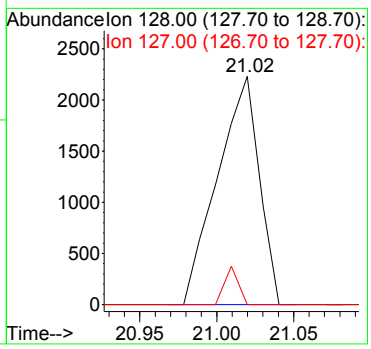

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391294.D Vial: 23
Acq On : 7 Oct 2013 3:48 Operator: MES
Sample : L13100060-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 07 09:31:46 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	632063	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.93	117	648163	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.95	152	435379	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	205399	25.8685 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.65	65	209040	27.2032 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.80%		
58) Toluene-d8	13.03	98	723044	24.4412 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.76%		
80) p-Bromofluorobenzene	16.43	95	284520	23.3375 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.36%		

Target Compounds					Qvalue
3) Chloromethane	3.87	50	1651	0.2418 ug/L	84
13) Acetone	6.58	43	1457	1.0134 ug/L #	48
36) Tetrahydrofuran	9.98	42	449	0.3851 ug/L #	34
56) Dimethyl Disulfide	13.03	94	20616	1.6529 ug/L #	28
72) Ethylbenzene	15.08	106	1891	0.1368 ug/L	48

(#) = qualifier out of range (m) = manual integration
8M391294.D 8260WT.M Mon Oct 07 09:31:47 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391294.D Vial: 23
Acq On : 7 Oct 2013 3:48 Operator: MES
Sample : L13100060-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 7 9:31 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration

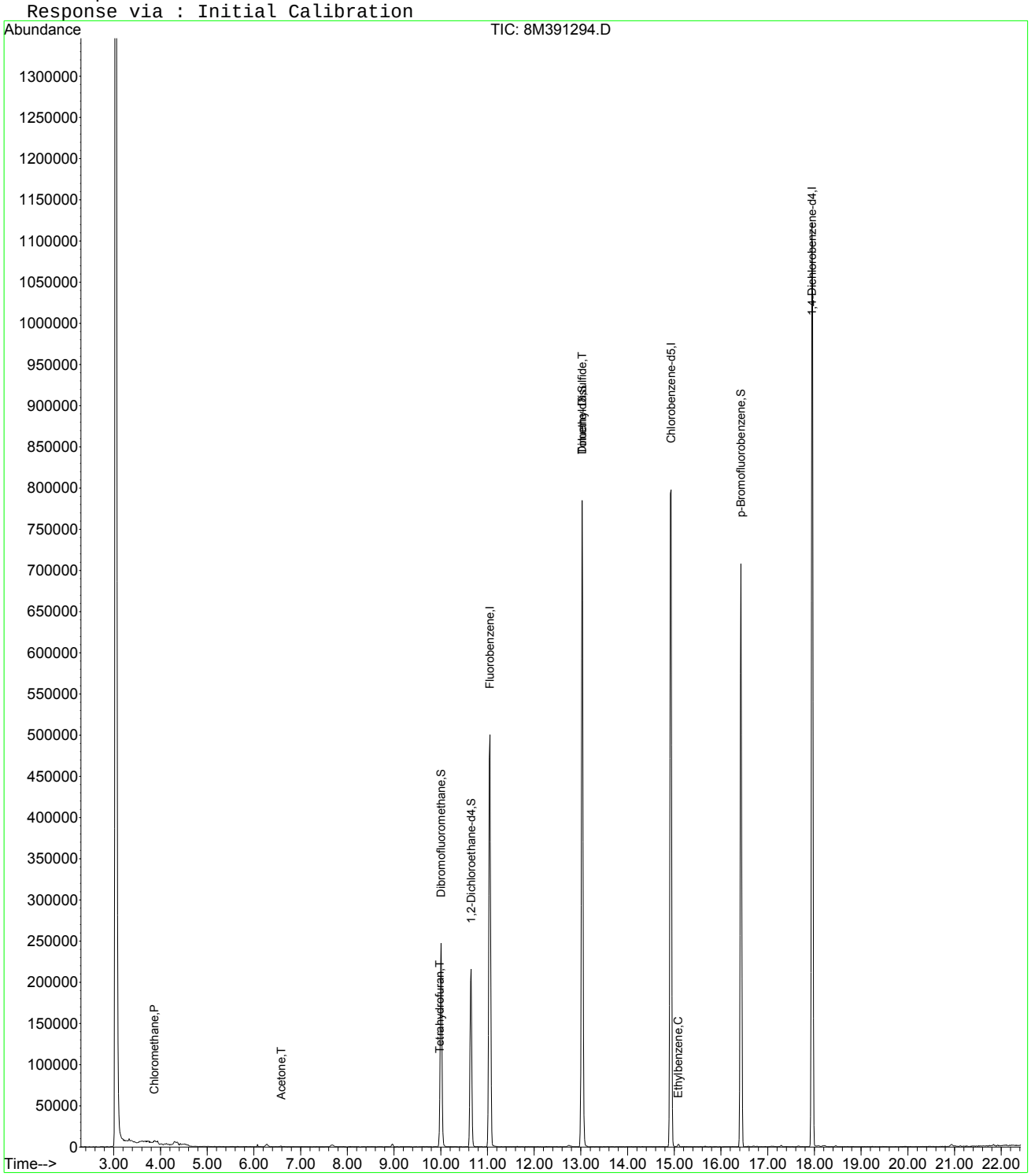

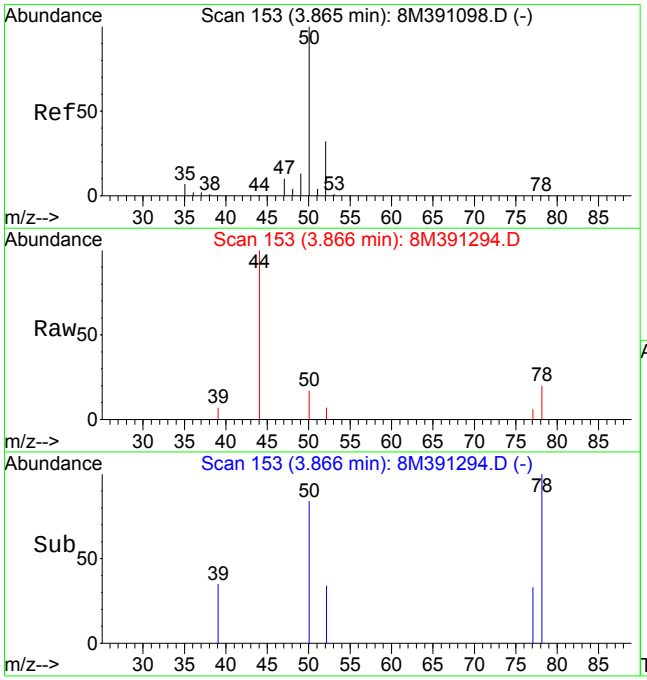

#3
Chloromethane
Concen: 0.24 ug/L
RT: 3.87 min Scan# 153
Delta R.T. 0.00 min
Lab File: 8M391294.D
Acq: 7 Oct 2013 3:48

Tgt Ion: 50 Resp: 1651

Ion	Ratio	Lower	Upper
50	100		
52	42.3	19.8	46.2

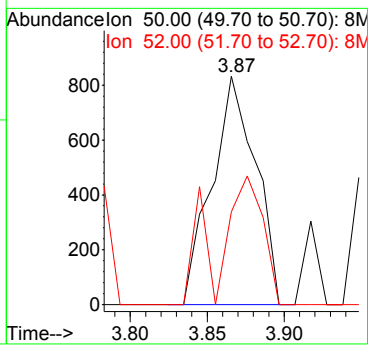

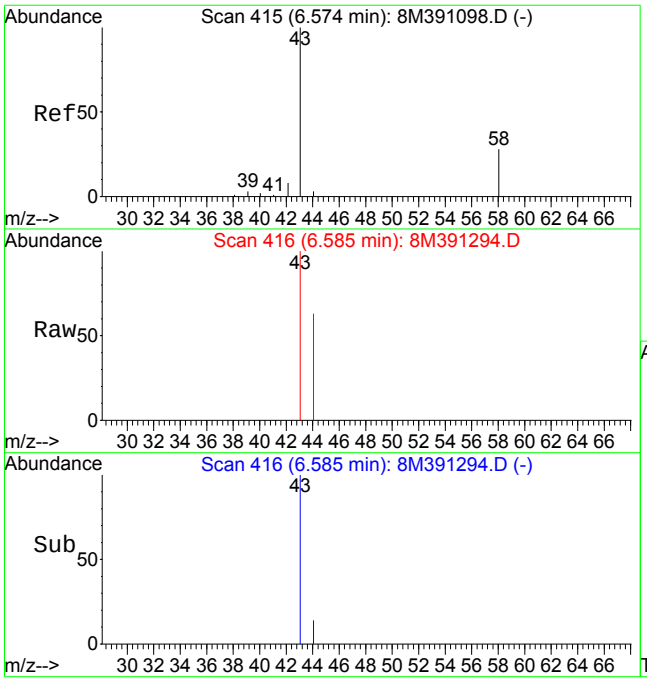

#13
Acetone
Concen: 1.01 ug/L
RT: 6.58 min Scan# 416
Delta R.T. 0.01 min
Lab File: 8M391294.D
Acq: 7 Oct 2013 3:48

Tgt Ion: 43 Resp: 1457

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

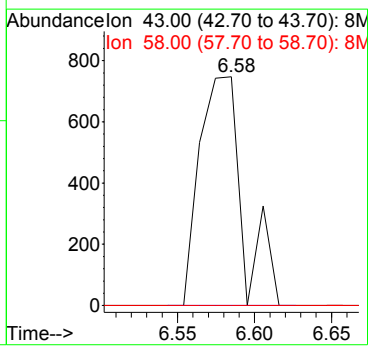

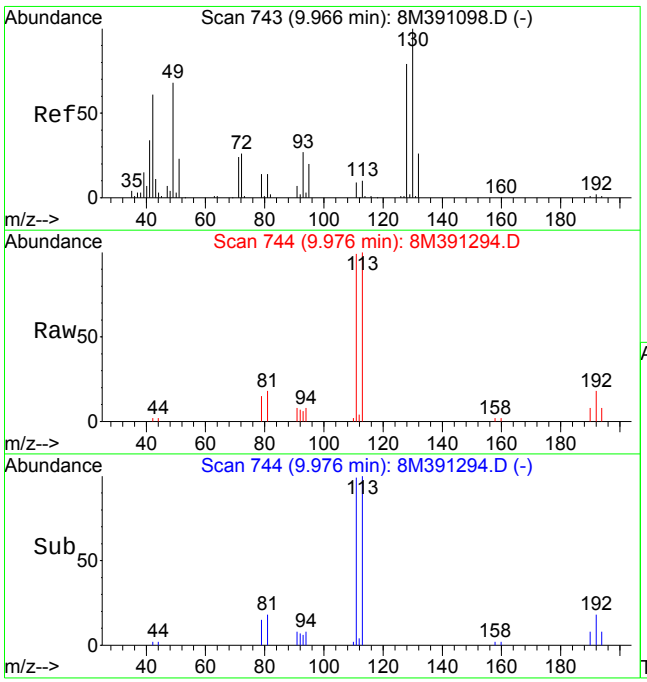

#36
Tetrahydrofuran
Concen: 0.39 ug/L
RT: 9.98 min Scan# 744
Delta R.T. 0.01 min
Lab File: 8M391294.D
Acq: 7 Oct 2013 3:48

Tgt Ion: 42 Resp: 449

Ion	Ratio	Lower	Upper
42	100		
72	0.0	25.7	59.9#
71	0.0	24.4	57.0#

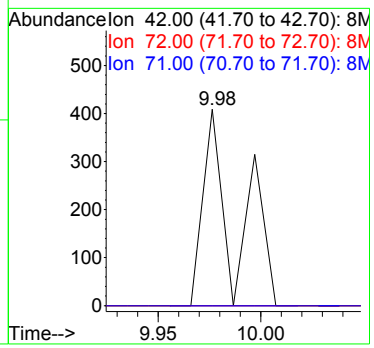

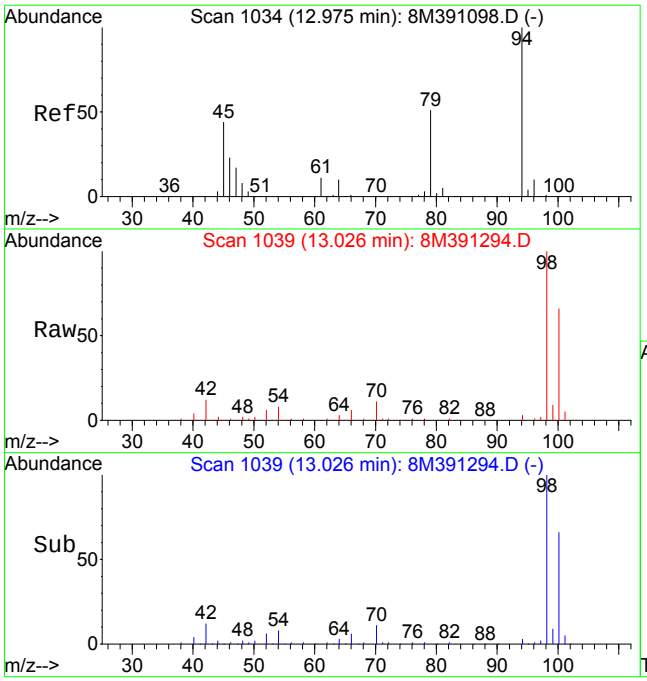

#56
Dimethyl Disulfide
Concen: 1.65 ug/L
RT: 13.03 min Scan# 1039
Delta R.T. 0.05 min
Lab File: 8M391294.D
Acq: 7 Oct 2013 3:48

Tgt Ion: 94 Resp: 20616

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

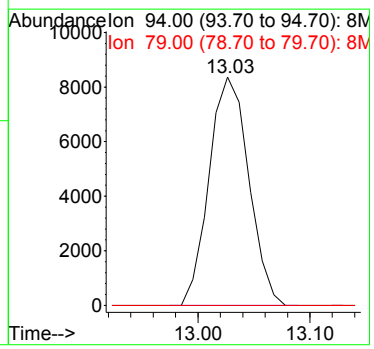

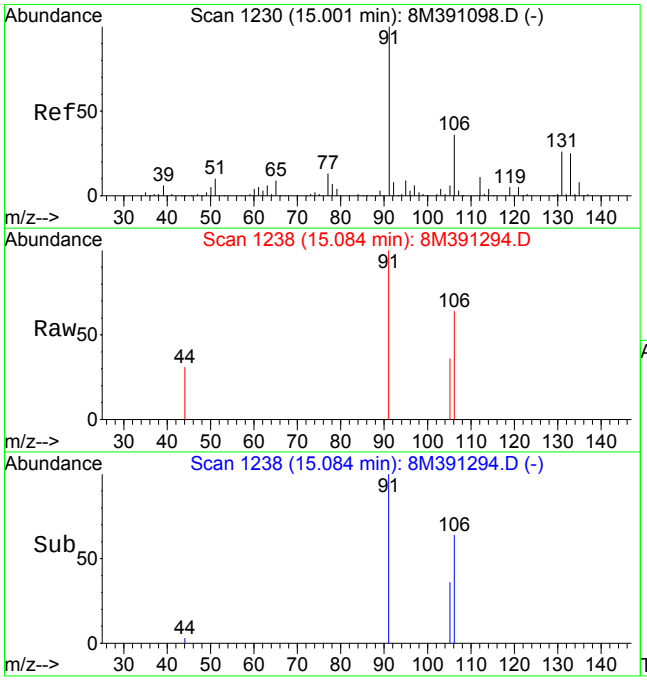

#72
Ethylbenzene
Concen: 0.14 ug/L
RT: 15.08 min Scan# 1238
Delta R.T. 0.08 min
Lab File: 8M391294.D
Acq: 7 Oct 2013 3:48

Tgt Ion:106 Resp: 1891

Ion	Ratio	Lower	Upper
106	100		
91	188.1	172.2	401.8

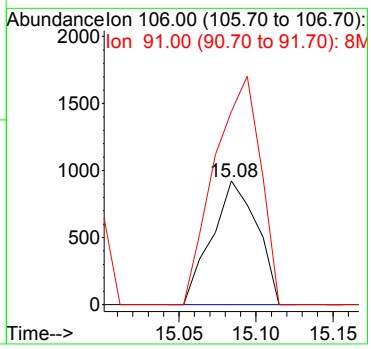

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391285.D Vial: 14
Acq On : 6 Oct 2013 23:10 Operator: MES
Sample : L13100060-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 07 09:31:14 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	605184	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.93	117	622865	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.96	152	428648	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.01	111	197975	26.0409 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.16%		
43) 1,2-Dichloroethane-d4	10.65	65	199110	27.0618 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.24%		
58) Toluene-d8	13.03	98	683885	24.0564 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.24%		
80) p-Bromofluorobenzene	16.43	95	274211	22.8451 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.40%		
Target Compounds					Qvalue
3) Chloromethane	3.87	50	2301	0.3519 ug/L #	73
13) Acetone	6.58	43	1768	1.2843 ug/L #	48
20) Carbon Disulfide	7.64	76	3644	0.1850 ug/L #	74
27) 1,1-Dichloroethane	8.67	63	4405	0.3624 ug/L #	77
28) Ethyl-Tert-Butyl ether	8.96	59	3223	0.1687 ug/L #	36
36) Tetrahydrofuran	9.98	42	2567	2.2996 ug/L #	73
56) Dimethyl Disulfide	13.03	94	19828	1.6603 ug/L #	28

(#) = qualifier out of range (m) = manual integration
8M391285.D 8260WT.M Mon Oct 07 09:31:15 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391285.D Vial: 14
Acq On : 6 Oct 2013 23:10 Operator: MES
Sample : L13100060-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 7 9:31 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration

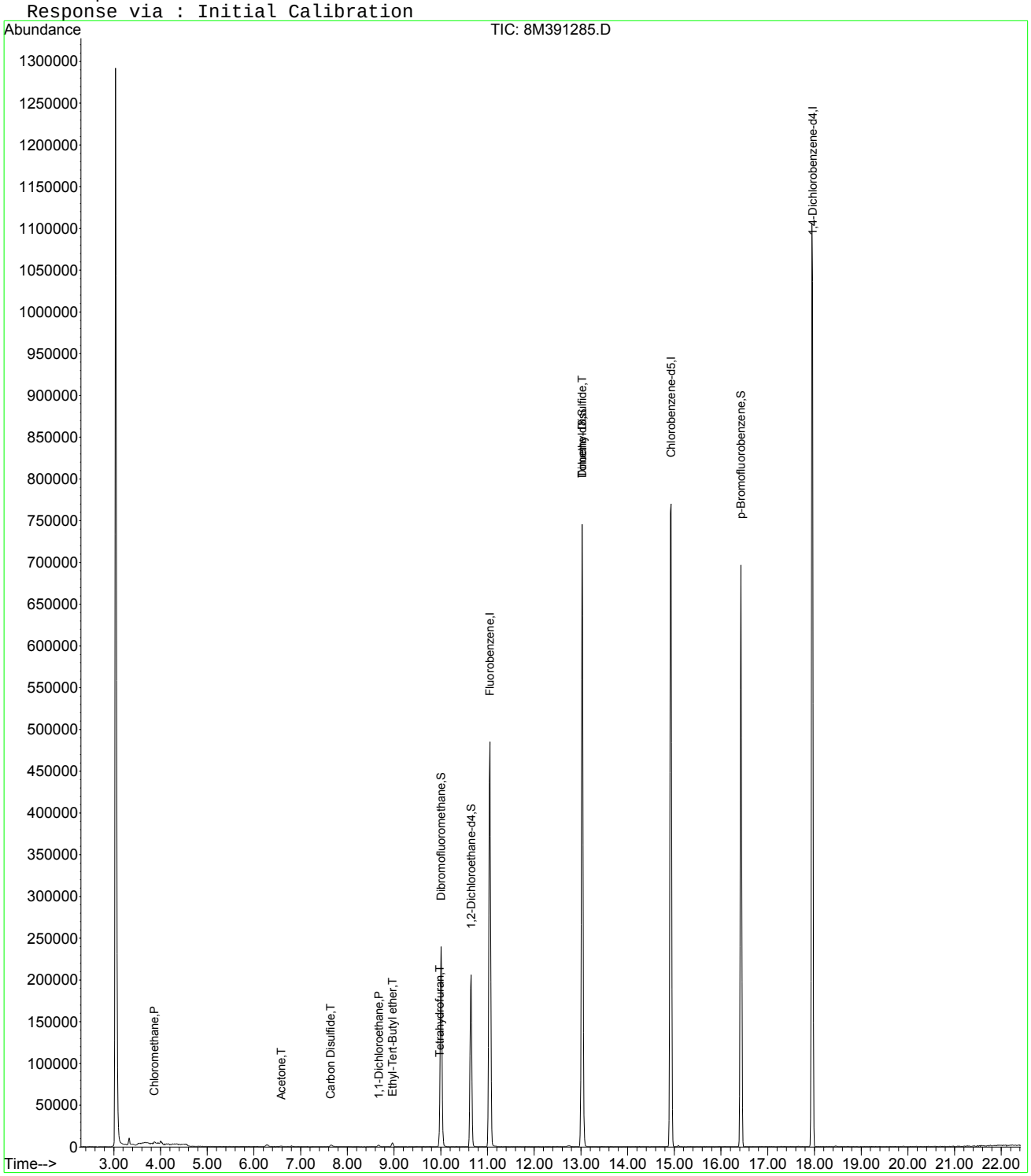

8M391285.D 8260WT.M Mon Oct 07 09:31:15 2013 Page 2

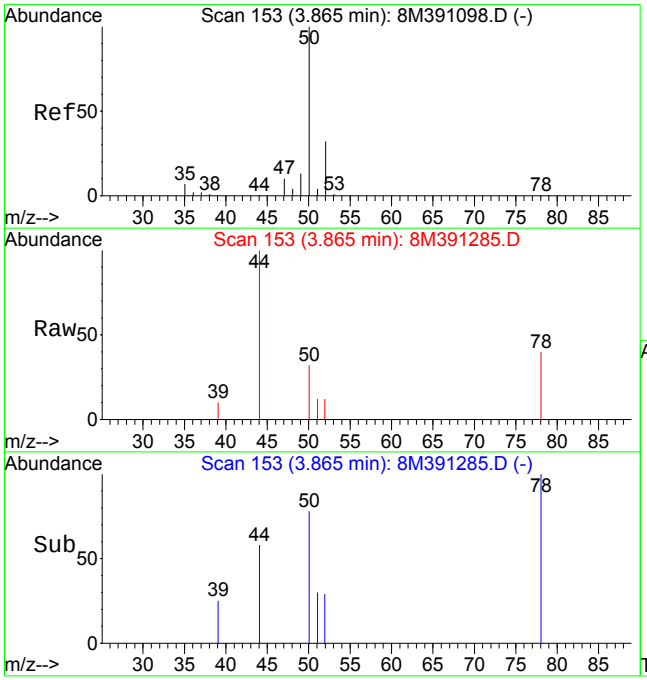

#3
Chloromethane
Concen: 0.35 ug/L
RT: 3.87 min Scan# 153
Delta R.T. -0.00 min
Lab File: 8M391285.D
Acq: 6 Oct 2013 23:10

Tgt Ion: 50 Resp: 2301

Ion	Ratio	Lower	Upper
50	100		
52	48.4	19.8	46.2#

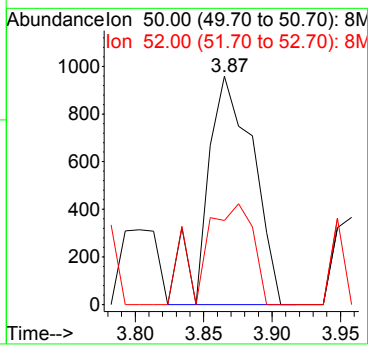

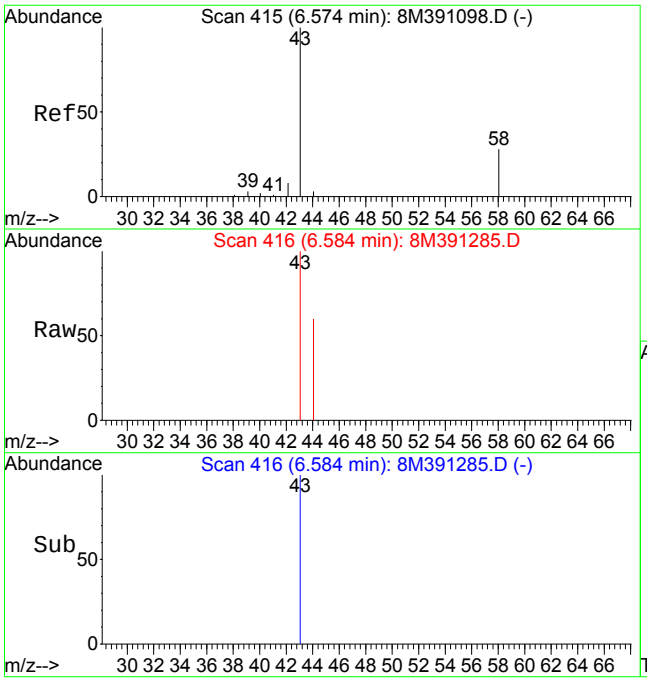

#13
Acetone
Concen: 1.28 ug/L
RT: 6.58 min Scan# 416
Delta R.T. 0.01 min
Lab File: 8M391285.D
Acq: 6 Oct 2013 23:10

Tgt Ion: 43 Resp: 1768

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

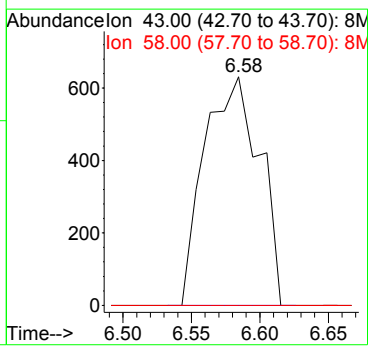

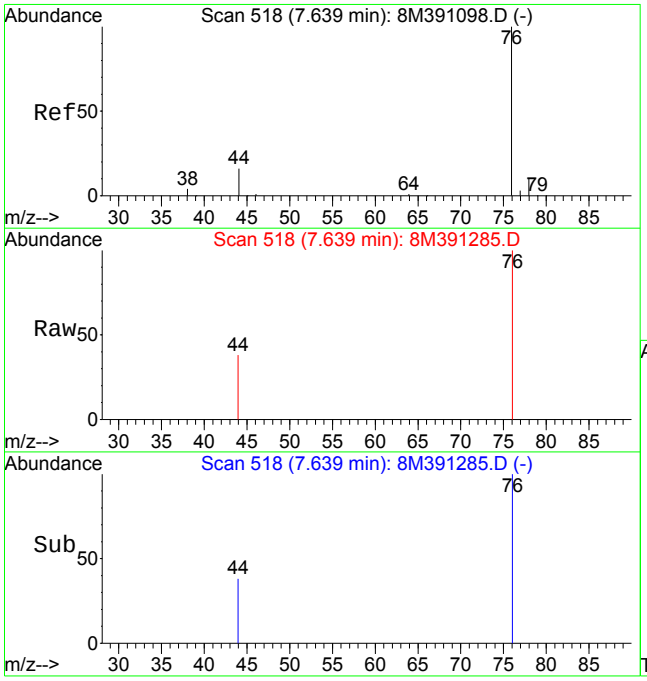

#20
Carbon Disulfide
Concen: 0.18 ug/L
RT: 7.64 min Scan# 518
Delta R.T. -0.00 min
Lab File: 8M391285.D
Acq: 6 Oct 2013 23:10

Tgt Ion: 76 Resp: 3644

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.8	13.4#

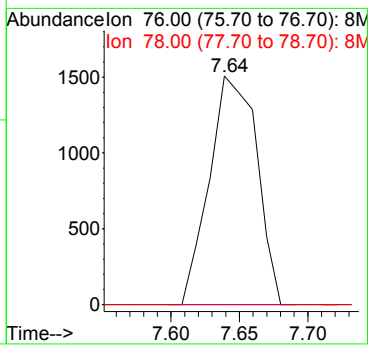

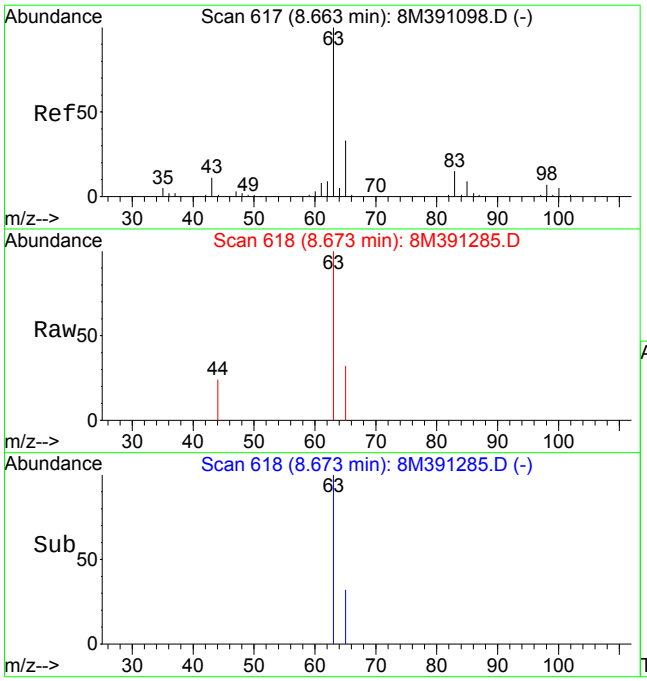

#27
1,1-Dichloroethane
Concen: 0.36 ug/L
RT: 8.67 min Scan# 618
Delta R.T. 0.01 min
Lab File: 8M391285.D
Acq: 6 Oct 2013 23:10

Tgt Ion: 63 Resp: 4405

Ion	Ratio	Lower	Upper
63	100		
65	22.9	19.6	45.6
83	0.0	8.6	20.0#

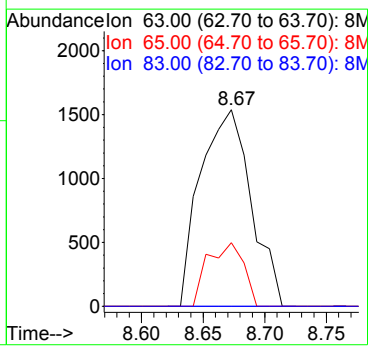

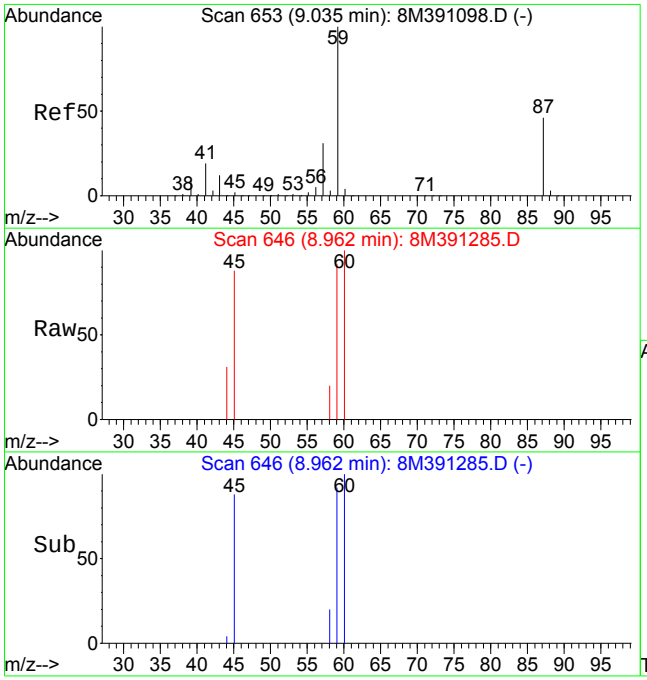

#28
Ethyl-Tert-Butyl ether
Concen: 0.17 ug/L
RT: 8.96 min Scan# 646
Delta R.T. -0.07 min
Lab File: 8M391285.D
Acq: 6 Oct 2013 23:10

Tgt Ion: 59 Resp: 3223

Ion	Ratio	Lower	Upper
59	100		
87	0.0	27.3	63.7#
57	0.0	18.8	44.0#

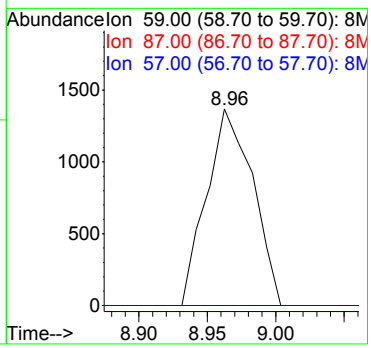

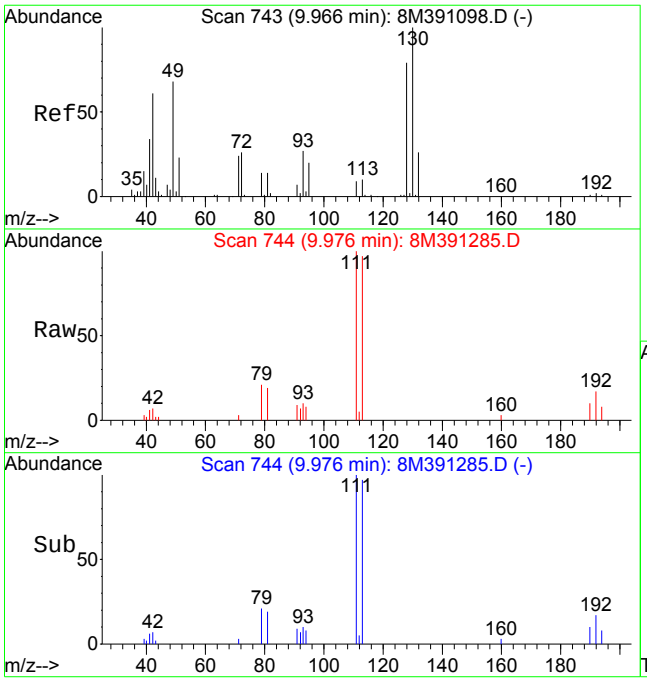

#36
Tetrahydrofuran
Concen: 2.30 ug/L
RT: 9.98 min Scan# 744
Delta R.T. 0.01 min
Lab File: 8M391285.D
Acq: 6 Oct 2013 23:10

Tgt Ion: 42 Resp: 2567

Ion	Ratio	Lower	Upper
42	100		
72	18.2	25.7	59.9#
71	31.0	24.4	57.0

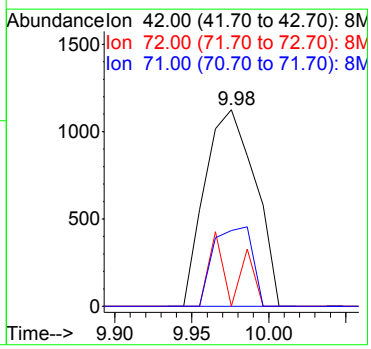

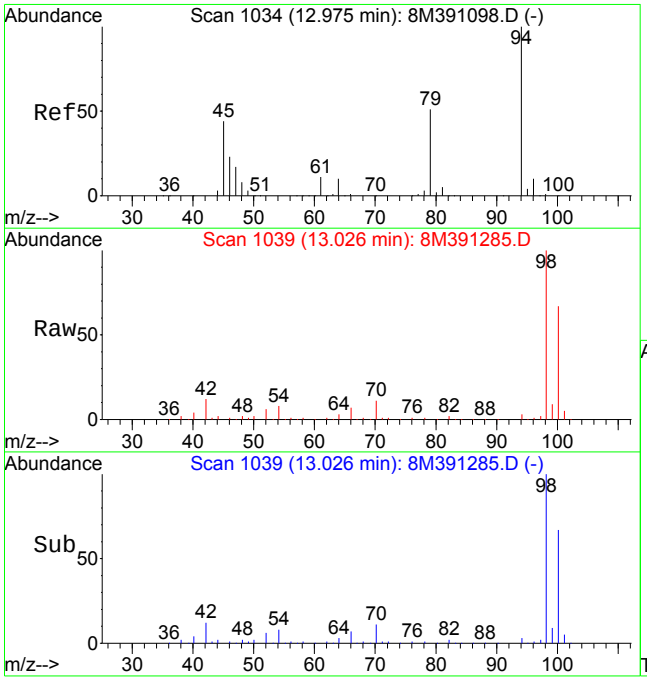

#56
Dimethyl Disulfide
Concen: 1.66 ug/L
RT: 13.03 min Scan# 1039
Delta R.T. 0.05 min
Lab File: 8M391285.D
Acq: 6 Oct 2013 23:10

Tgt Ion: 94 Resp: 19828

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

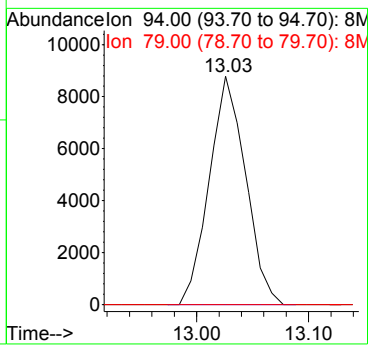

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391286.D Vial: 15
Acq On : 6 Oct 2013 23:41 Operator: MES
Sample : L13100060-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 07 09:31:17 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	599260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.92	117	610983	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.95	152	412579	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	194773	25.8730 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.64	65	194883	26.7491 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	13.03	98	682787	24.4848 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.92%		
80) p-Bromofluorobenzene	16.42	95	268787	23.2654 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.08%		

Target Compounds					Qvalue
3) Chloromethane	3.87	50	2841	0.4388 ug/L	93
13) Acetone	6.58	43	1759	1.2904 ug/L #	48
33) Chloroform	9.71	83	1835	0.1456 ug/L	73
56) Dimethyl Disulfide	13.03	94	19415	1.6418 ug/L #	28

(#) = qualifier out of range (m) = manual integration
8M391286.D 8260WT.M Mon Oct 07 09:31:18 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391286.D Vial: 15
Acq On : 6 Oct 2013 23:41 Operator: MES
Sample : L13100060-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 7 9:31 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration

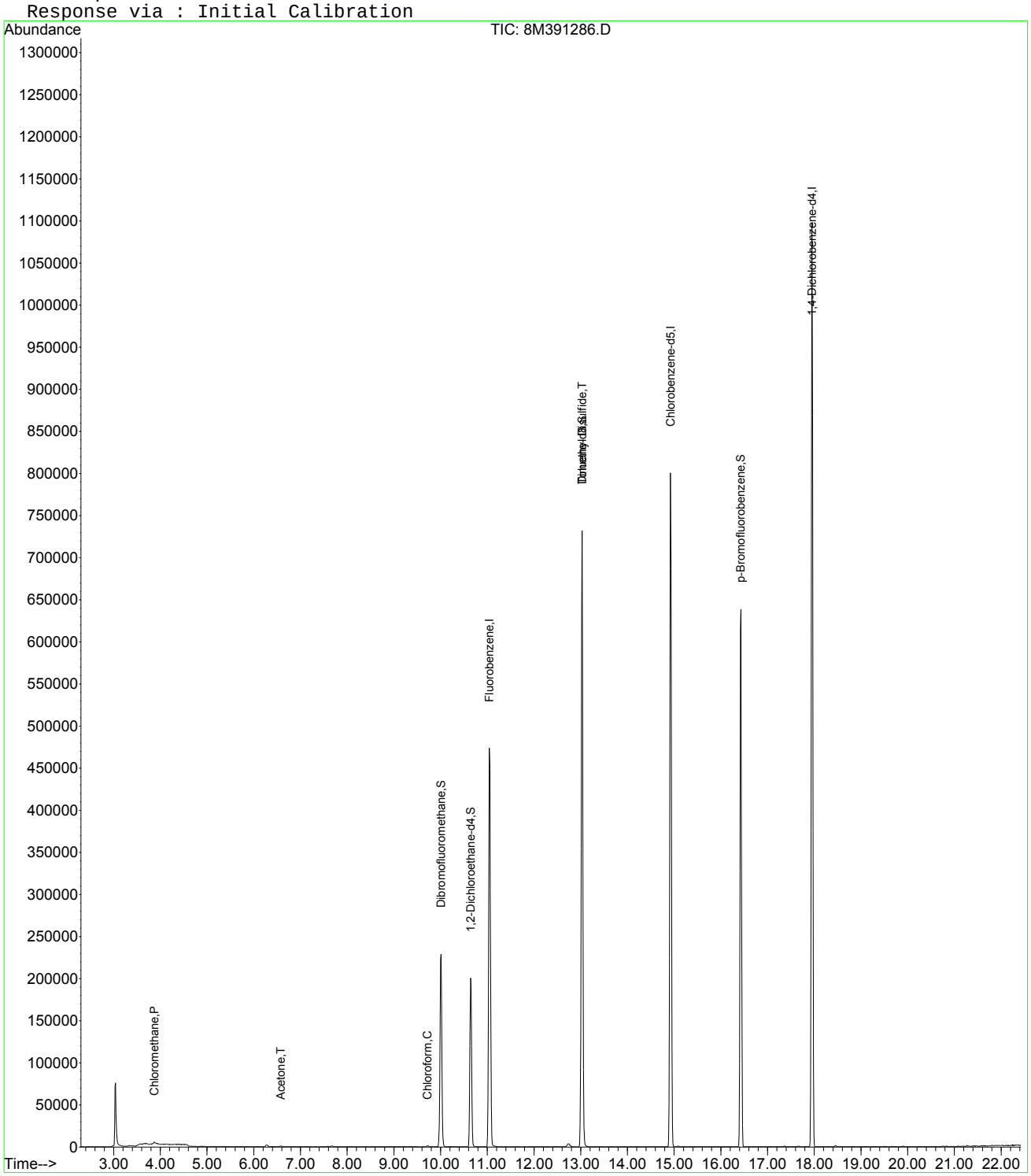

8M391286.D 8260WT.M Mon Oct 07 09:31:18 2013 Page 2

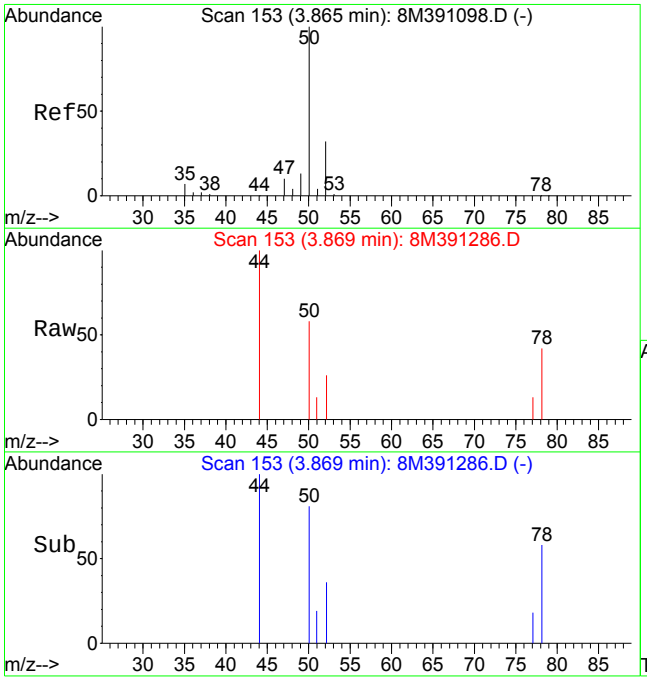

#3
Chloromethane
Concen: 0.44 ug/L
RT: 3.87 min Scan# 153
Delta R.T. 0.00 min
Lab File: 8M391286.D
Acq: 6 Oct 2013 23:41

Tgt Ion: 50 Resp: 2841

Ion	Ratio	Lower	Upper
50	100		
52	37.2	19.8	46.2

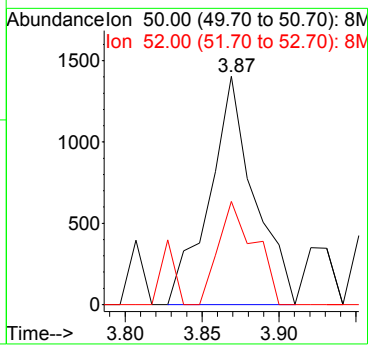

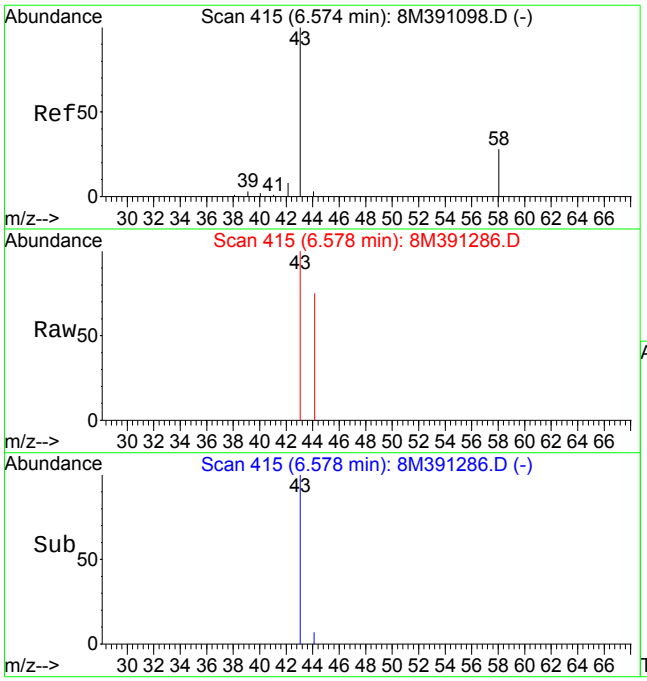

#13
Acetone
Concen: 1.29 ug/L
RT: 6.58 min Scan# 415
Delta R.T. 0.00 min
Lab File: 8M391286.D
Acq: 6 Oct 2013 23:41

Tgt Ion: 43 Resp: 1759

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

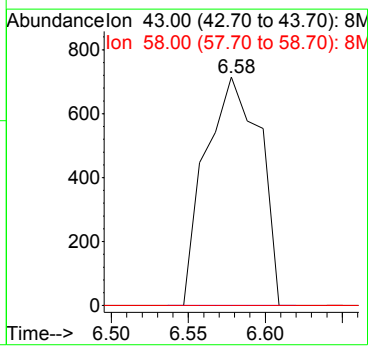

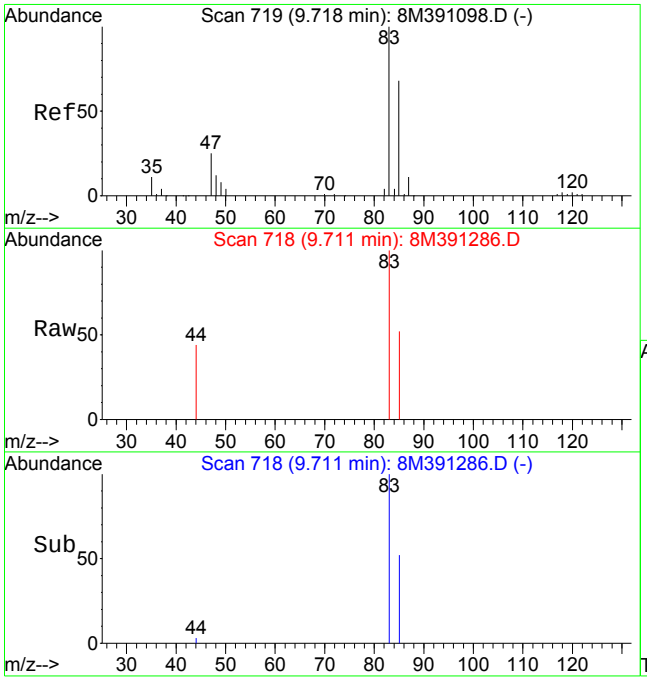

#33
Chloroform
Concen: 0.15 ug/L
RT: 9.71 min Scan# 718
Delta R.T. -0.01 min
Lab File: 8M391286.D
Acq: 6 Oct 2013 23:41

Tgt Ion: 83 Resp: 1835

Ion	Ratio	Lower	Upper
83	100		
85	45.6	40.1	93.7

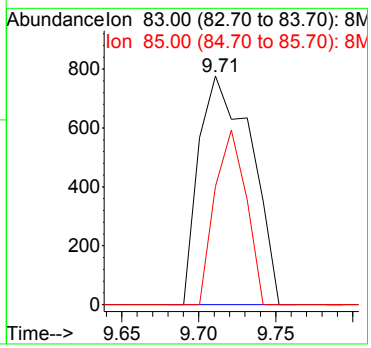

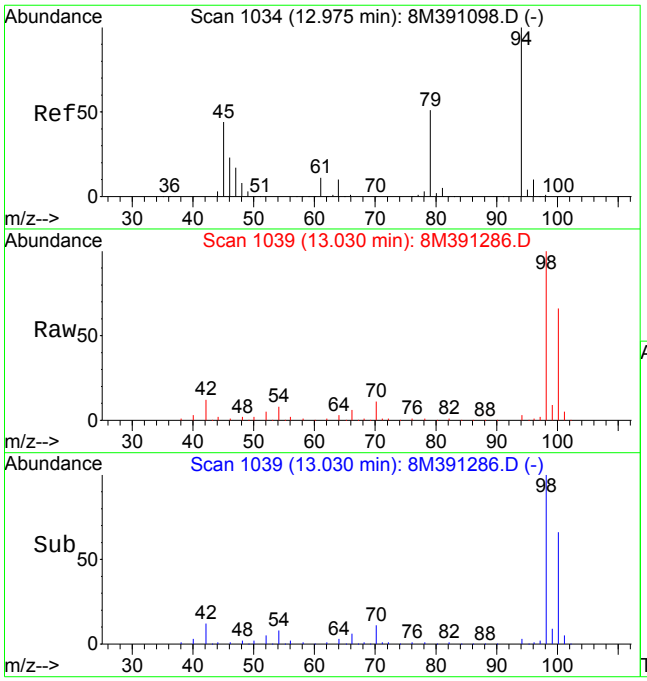

#56
Dimethyl Disulfide
Concen: 1.64 ug/L
RT: 13.03 min Scan# 1039
Delta R.T. 0.06 min
Lab File: 8M391286.D
Acq: 6 Oct 2013 23:41

Tgt Ion: 94 Resp: 19415

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

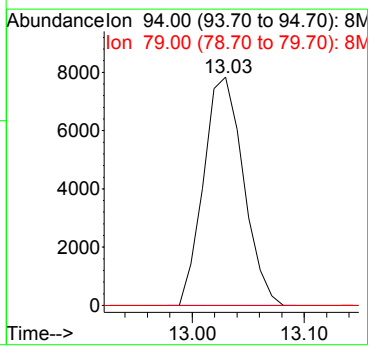

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391287.D Vial: 16
Acq On : 7 Oct 2013 00:12 Operator: MES
Sample : L13100060-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 07 09:31:20 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	594444	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.92	117	615224	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.95	152	418585	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.01	111	198410	26.5697 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.28%		
43) 1,2-Dichloroethane-d4	10.65	65	196492	27.1885 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.76%		
58) Toluene-d8	13.03	98	674672	24.0271 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.12%		
80) p-Bromofluorobenzene	16.43	95	266386	22.7267 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.92%		

Target Compounds					Qvalue
3) Chloromethane	3.88	50	1402	0.2183 ug/L	99
13) Acetone	6.59	43	869	0.6426 ug/L #	48
36) Tetrahydrofuran	9.98	42	230	0.2098 ug/L #	34
45) 1,2-Dichloroethane	10.76	62	16507	1.7750 ug/L	91
56) Dimethyl Disulfide	13.03	94	19375	1.6517 ug/L #	28

(#) = qualifier out of range (m) = manual integration
8M391287.D 8260WT.M Mon Oct 07 09:31:21 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391287.D Vial: 16
Acq On : 7 Oct 2013 00:12 Operator: MES
Sample : L13100060-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 7 9:31 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration

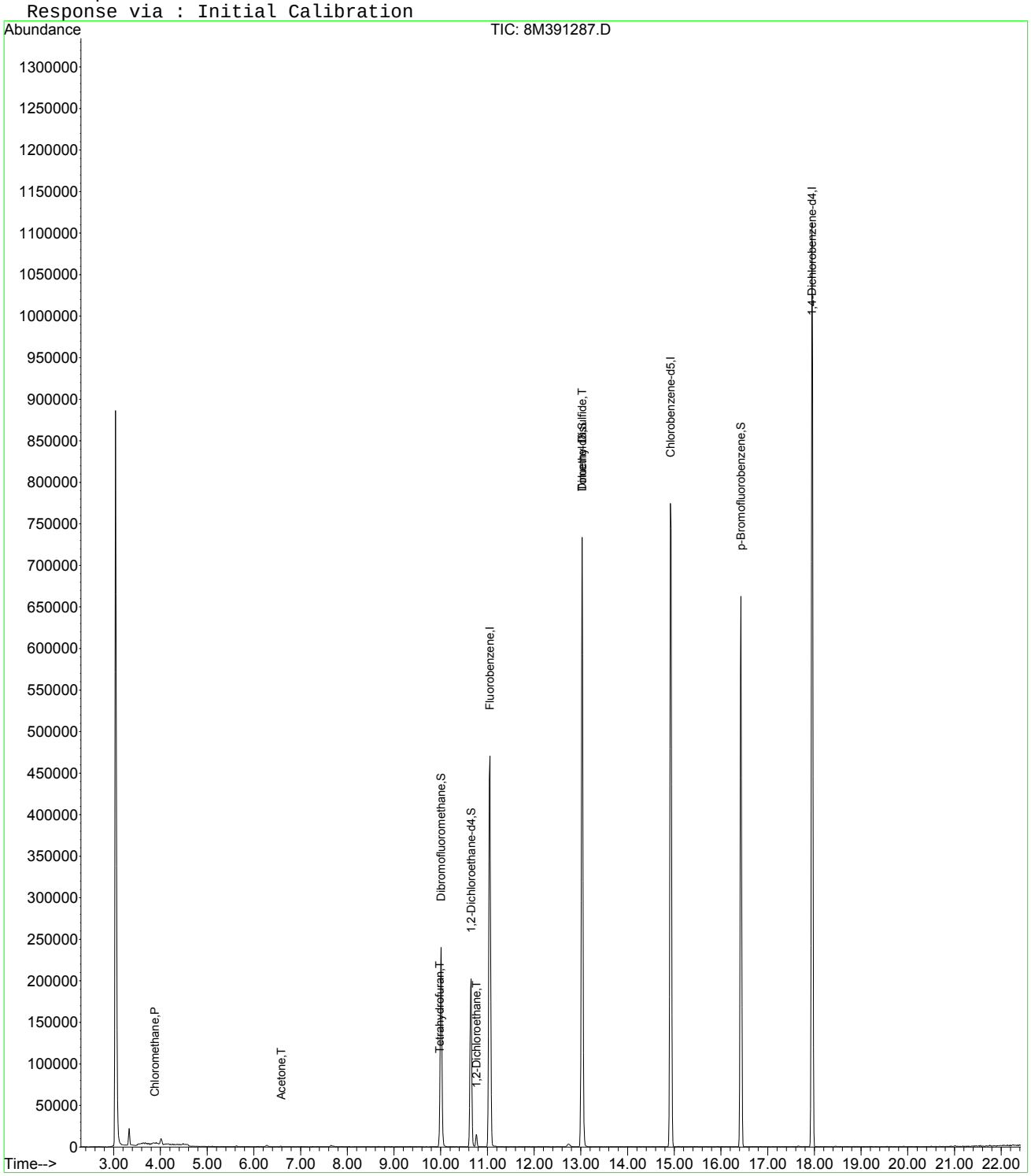

8M391287.D 8260WT.M Mon Oct 07 09:31:21 2013 Page 2

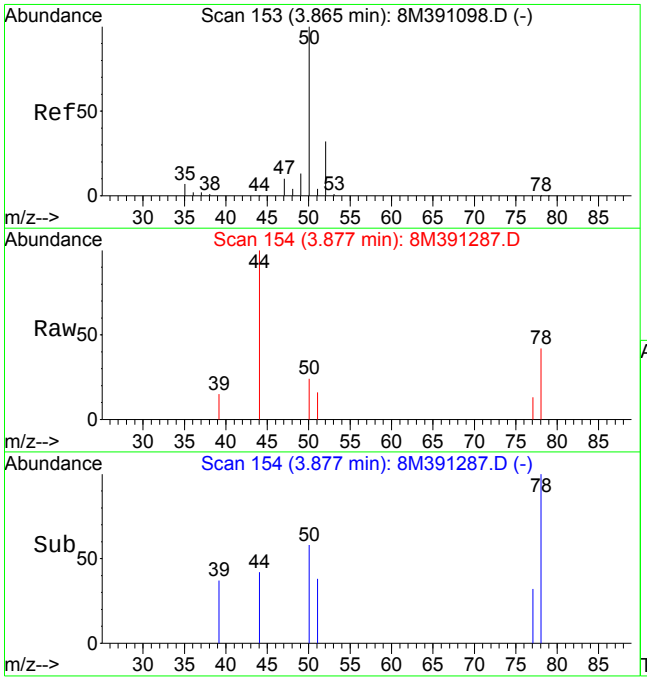

#3
Chloromethane
Concen: 0.22 ug/L
RT: 3.88 min Scan# 154
Delta R.T. 0.01 min
Lab File: 8M391287.D
Acq: 7 Oct 2013 00:12

Tgt Ion: 50 Resp: 1402

Ion	Ratio	Lower	Upper
50	100		
52	32.3	19.8	46.2

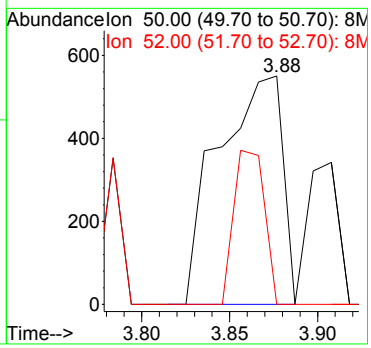

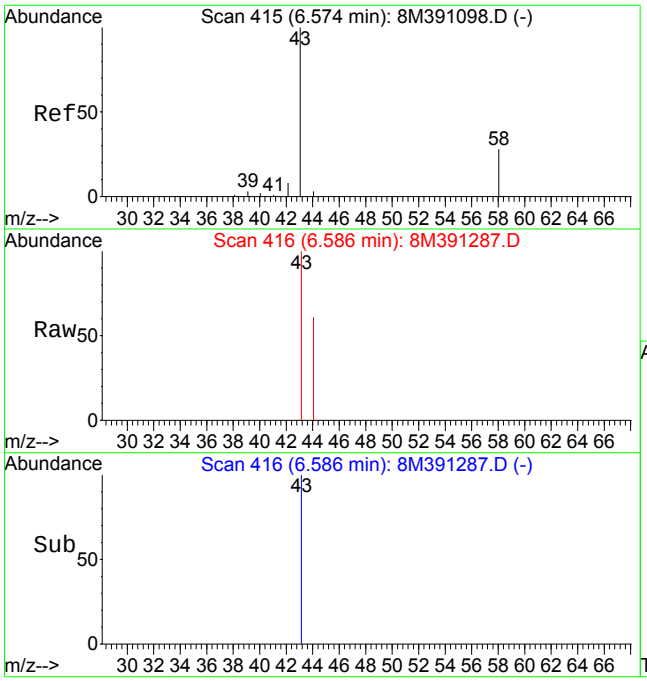

#13
Acetone
Concen: 0.64 ug/L
RT: 6.59 min Scan# 416
Delta R.T. 0.01 min
Lab File: 8M391287.D
Acq: 7 Oct 2013 00:12

Tgt Ion: 43 Resp: 869

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

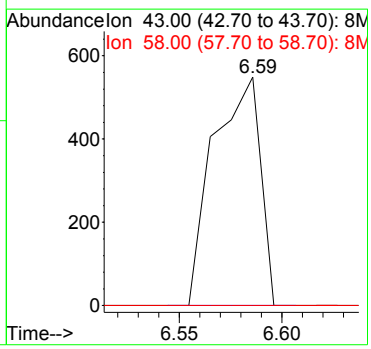

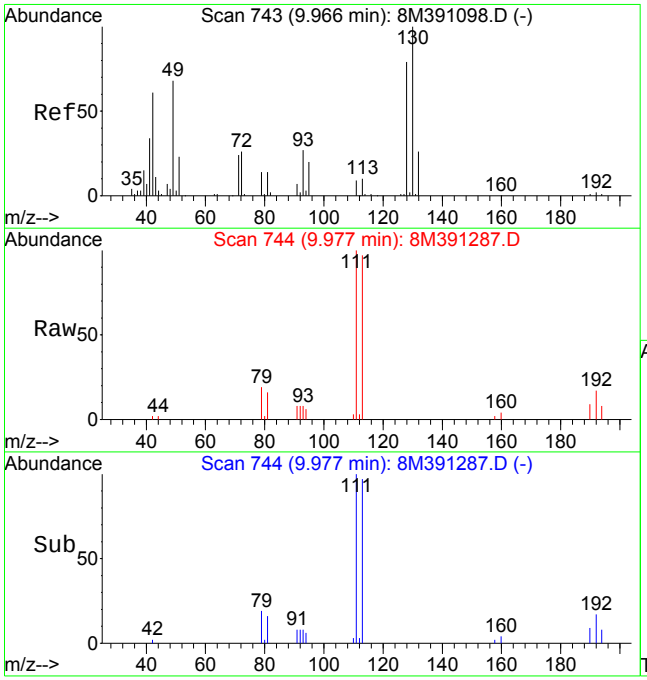

#36
Tetrahydrofuran
Concen: 0.21 ug/L
RT: 9.98 min Scan# 744
Delta R.T. 0.01 min
Lab File: 8M391287.D
Acq: 7 Oct 2013 00:12

Tgt Ion: 42 Resp: 230

Ion	Ratio	Lower	Upper
42	100		
72	0.0	25.7	59.9#
71	0.0	24.4	57.0#

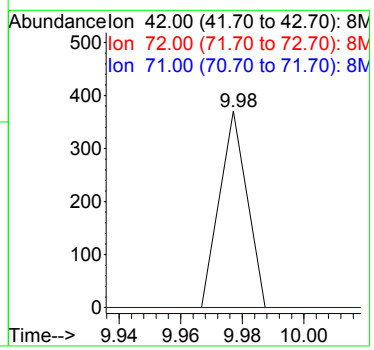

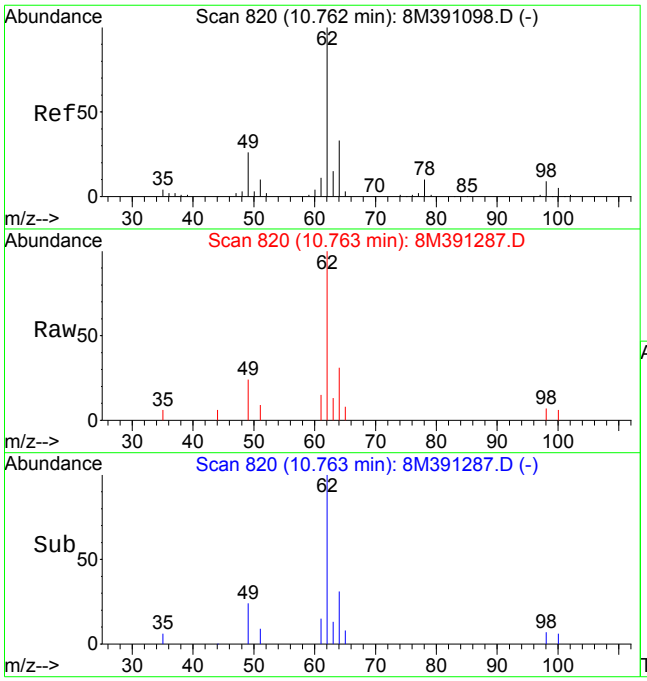

#45
1,2-Dichloroethane
Concen: 1.77 ug/L
RT: 10.76 min Scan# 820
Delta R.T. 0.00 min
Lab File: 8M391287.D
Acq: 7 Oct 2013 00:12

Tgt Ion: 62 Resp: 16507

Ion	Ratio	Lower	Upper
62	100		
64	33.2	19.9	46.5
49	22.0	19.4	45.2

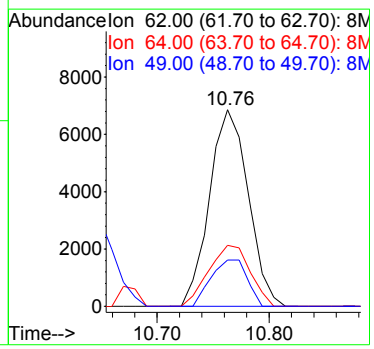

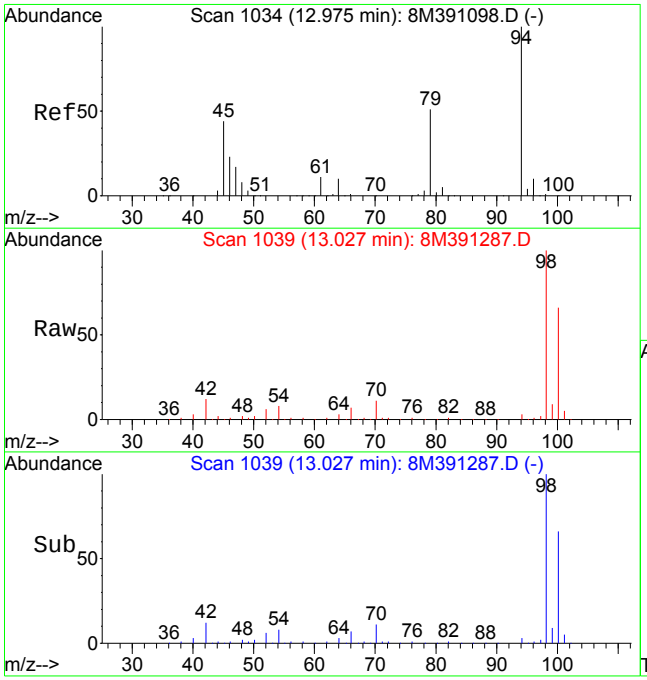

#56
Dimethyl Disulfide
Concen: 1.65 ug/L
RT: 13.03 min Scan# 1039
Delta R.T. 0.05 min
Lab File: 8M391287.D
Acq: 7 Oct 2013 00:12

Tgt Ion: 94 Resp: 19375

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

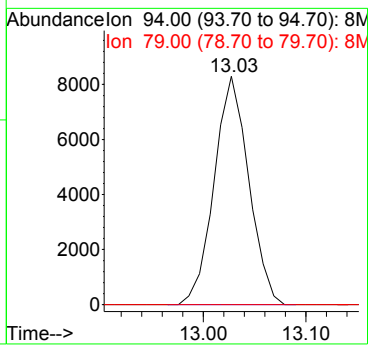

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391288.D Vial: 17
Acq On : 7 Oct 2013 00:43 Operator: MES
Sample : L13100060-06 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 07 09:31:23 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	585886	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.93	117	601573	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.96	152	408371	25.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	196941	26.7582 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.04%		
43) 1,2-Dichloroethane-d4	10.65	65	199302	27.9801 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.92%		
58) Toluene-d8	13.03	98	674541	24.5675 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.28%		
80) p-Bromofluorobenzene	16.43	95	262549	22.9596 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.84%		

Target Compounds					Qvalue
3) Chloromethane	3.87	50	1012	0.1599 ug/L	92
13) Acetone	6.57	43	1581	1.1863 ug/L #	48
27) 1,1-Dichloroethane	8.66	63	5979	0.5080 ug/L #	85
36) Tetrahydrofuran	9.98	42	244	0.2258 ug/L #	34
56) Dimethyl Disulfide	13.03	94	18871	1.6322 ug/L #	28

(#) = qualifier out of range (m) = manual integration
8M391288.D 8260WT.M Mon Oct 07 09:31:24 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391288.D Vial: 17
Acq On : 7 Oct 2013 00:43 Operator: MES
Sample : L13100060-06 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 7 9:31 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration

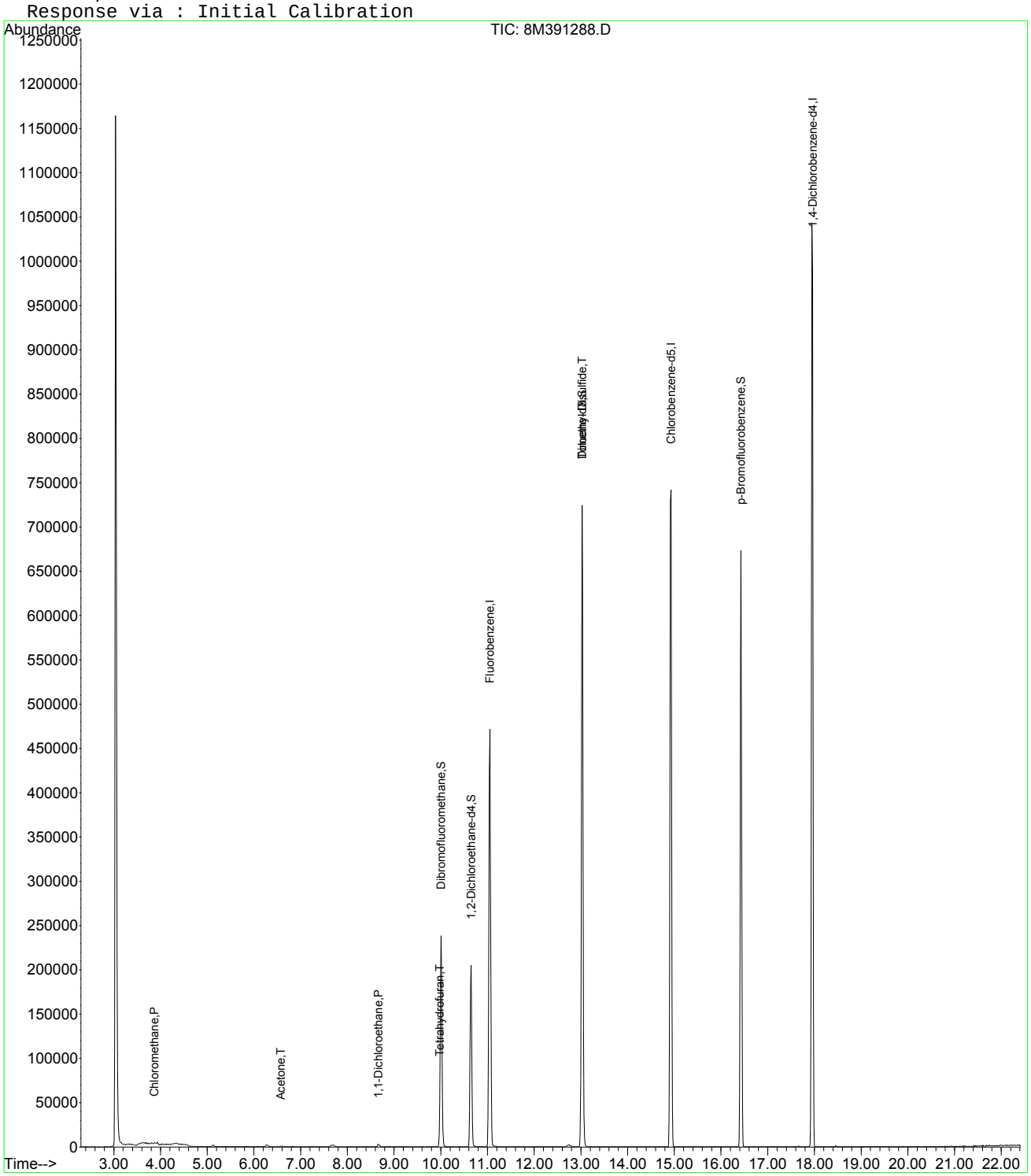

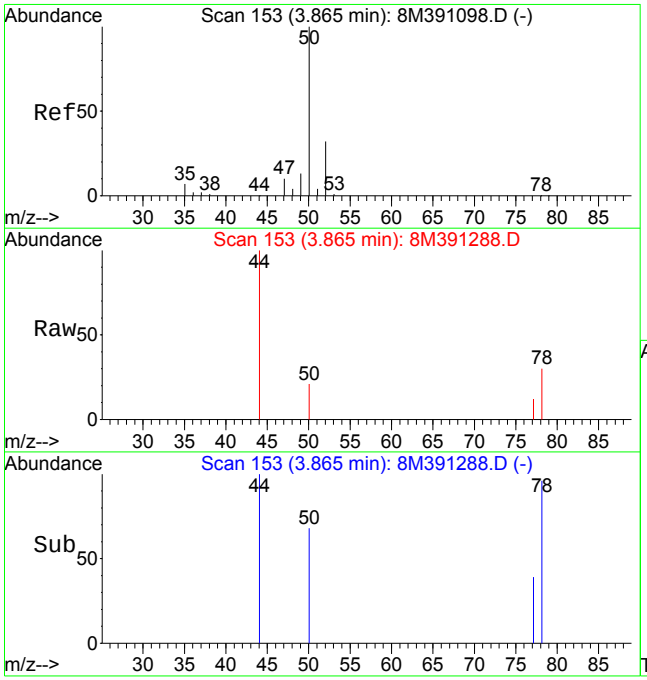

#3
Chloromethane
Concen: 0.16 ug/L
RT: 3.87 min Scan# 153
Delta R.T. -0.00 min
Lab File: 8M391288.D
Acq: 7 Oct 2013 00:43

Tgt Ion: 50 Resp: 1012

Ion	Ratio	Lower	Upper
50	100		
52	28.8	19.8	46.2

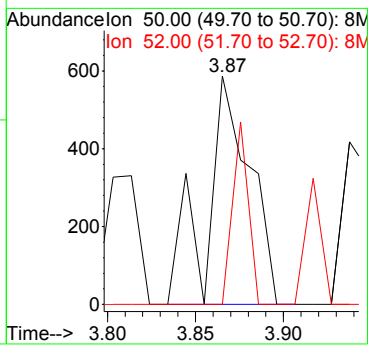

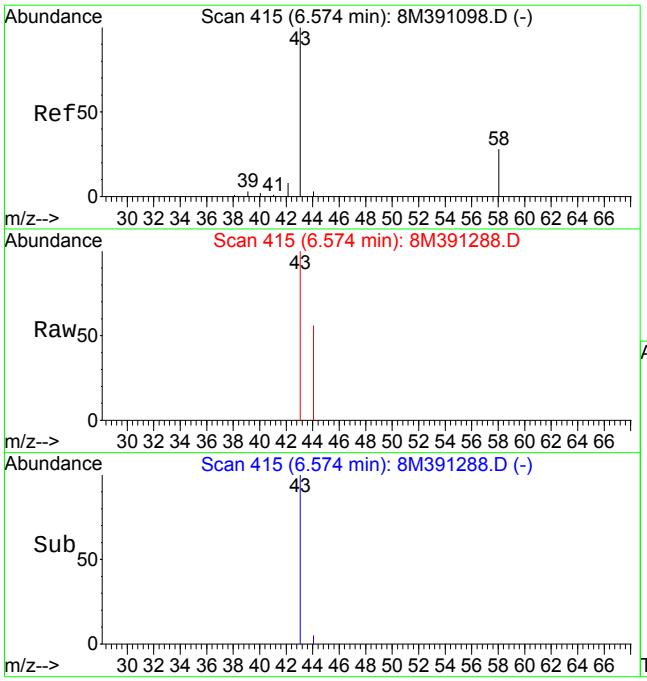

#13
Acetone
Concen: 1.19 ug/L
RT: 6.57 min Scan# 415
Delta R.T. -0.00 min
Lab File: 8M391288.D
Acq: 7 Oct 2013 00:43

Tgt Ion: 43 Resp: 1581

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

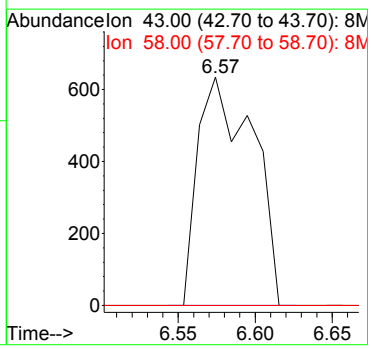

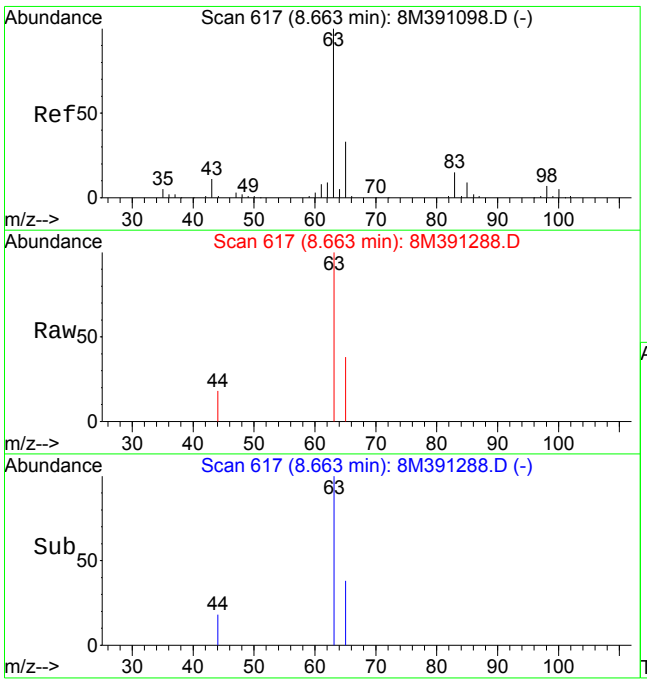

#27
1,1-Dichloroethane
Concen: 0.51 ug/L
RT: 8.66 min Scan# 617
Delta R.T. -0.00 min
Lab File: 8M391288.D
Acq: 7 Oct 2013 00:43

Tgt Ion: 63 Resp: 5979

Ion	Ratio	Lower	Upper
63	100		
65	28.8	19.6	45.6
83	0.0	8.6	20.0#

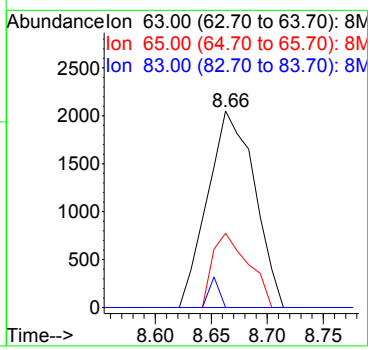

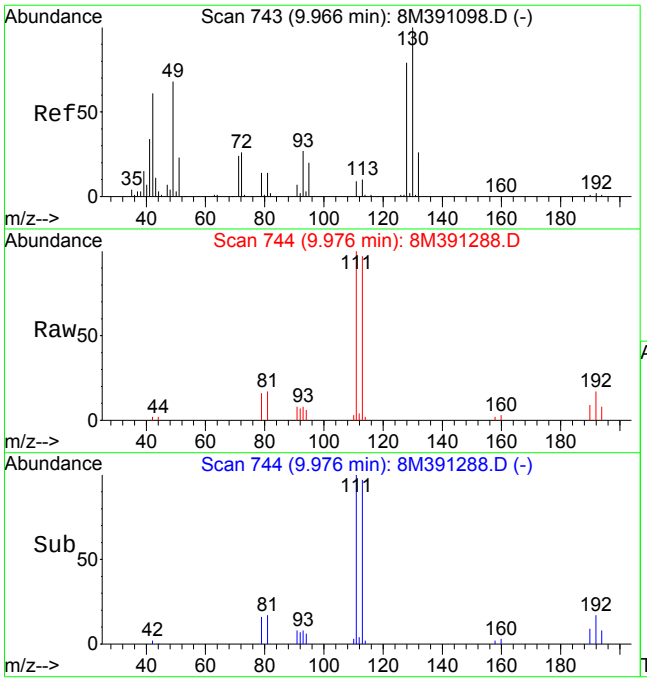

#36
Tetrahydrofuran
Concen: 0.23 ug/L
RT: 9.98 min Scan# 744
Delta R.T. 0.01 min
Lab File: 8M391288.D
Acq: 7 Oct 2013 00:43

Tgt Ion: 42 Resp: 244

Ion	Ratio	Lower	Upper
42	100		
72	0.0	25.7	59.9#
71	0.0	24.4	57.0#

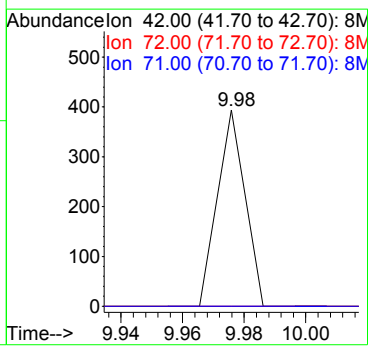

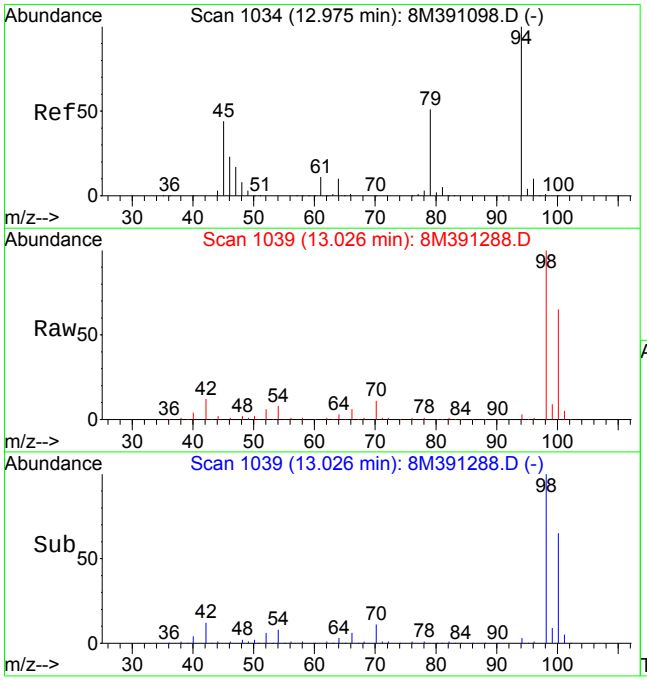

#56
Dimethyl Disulfide
Concen: 1.63 ug/L
RT: 13.03 min Scan# 1039
Delta R.T. 0.05 min
Lab File: 8M391288.D
Acq: 7 Oct 2013 00:43

Tgt Ion: 94 Resp: 18871

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

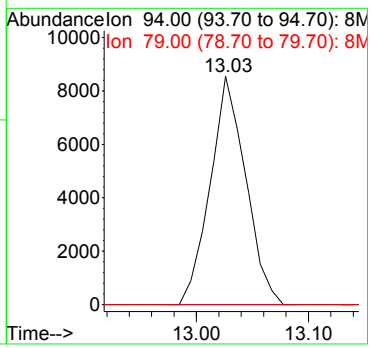

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101013\11M95900.D Vial: 19
Acq On : 10 Oct 2013 19:53 Operator: FJB
Sample : L13100060-07 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 20:15:09 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.66	96	832573	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.29	117	648710	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.10	152	351432	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	214431	24.7439 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.96%		
43) 1,2-Dichloroethane-d4	10.28	65	212872	22.5066 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.04%		
58) Toluene-d8	12.51	98	714758	24.3069 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.24%		
80) p-Bromofluorobenzene	15.69	95	298770	22.3459 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 89.40%		

Target Compounds					Qvalue
3) Chloromethane	3.72	50	1391	0.1444 ug/L #	44
13) Acetone	6.38	43	2579	1.0290 ug/L	91

(#) = qualifier out of range (m) = manual integration
11M95900.D 8260WTR.M Tue Oct 15 09:03:42 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101013\11M95900.D Vial: 19
Acq On : 10 Oct 2013 19:53 Operator: FJB
Sample : L13100060-07 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 20:15 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Initial Calibration

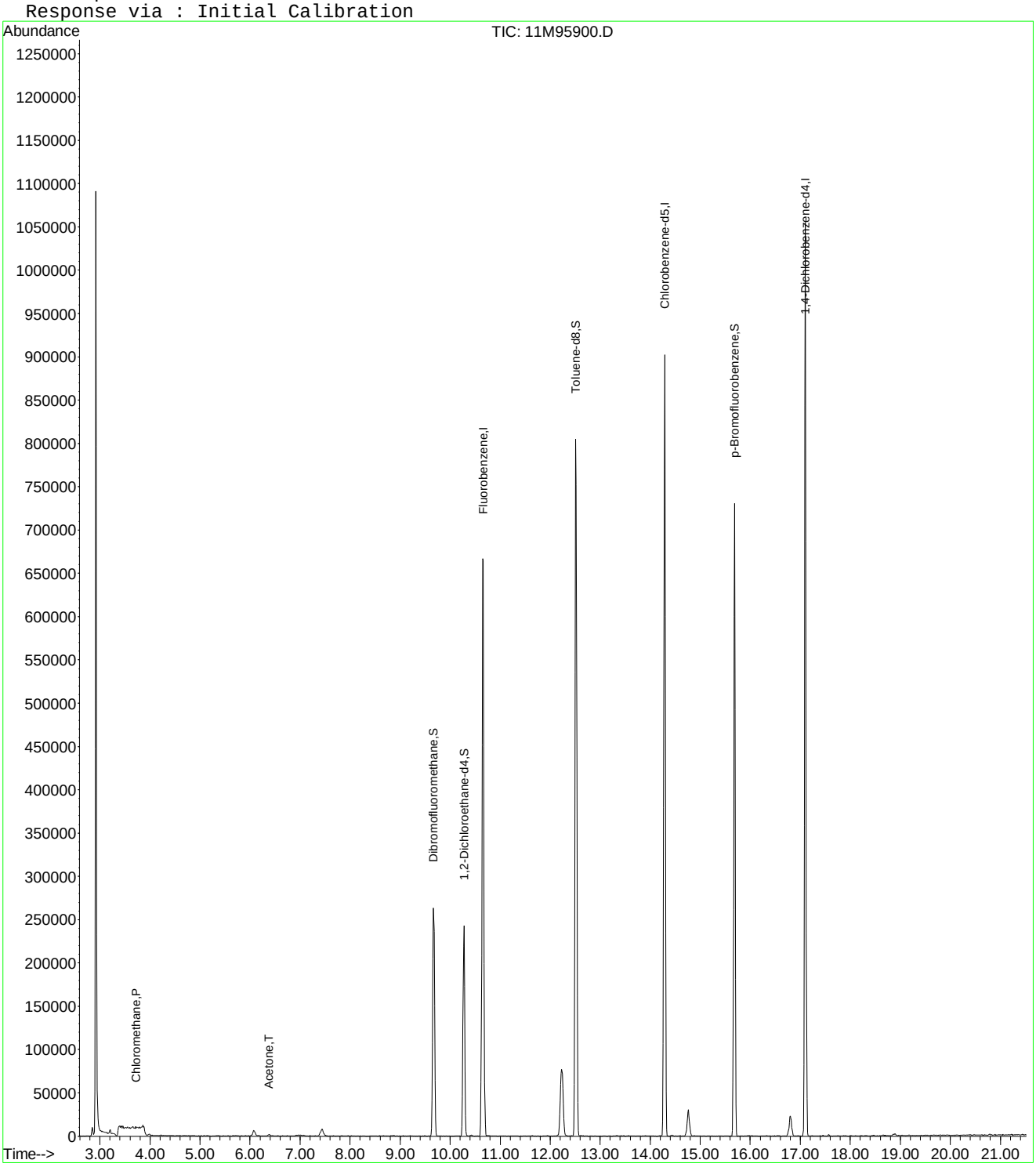

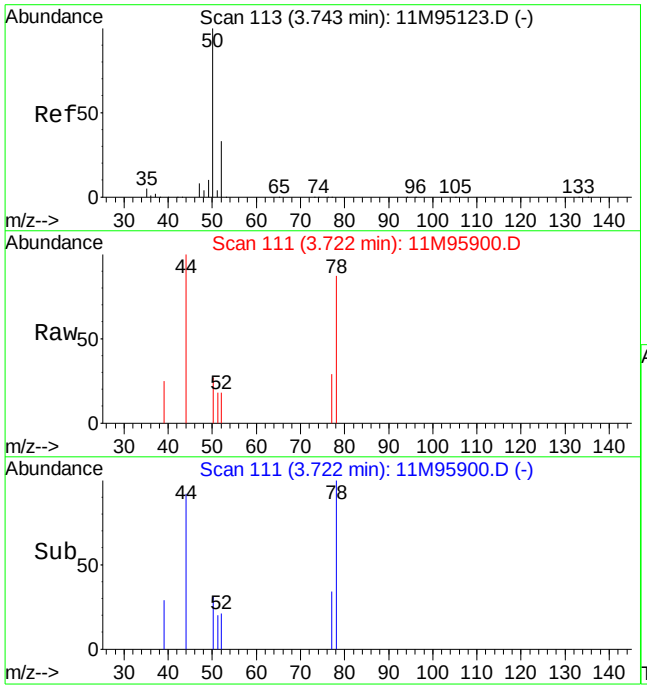

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.72 min Scan# 111
Delta R.T. -0.00 min
Lab File: 11M95900.D
Acq: 10 Oct 2013 19:53

Tgt Ion: 50 Resp: 1391

Ion	Ratio	Lower	Upper
50	100		
52	65.6	20.3	47.3#

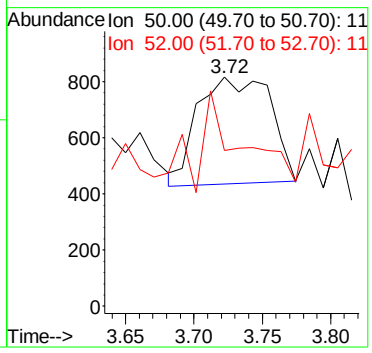

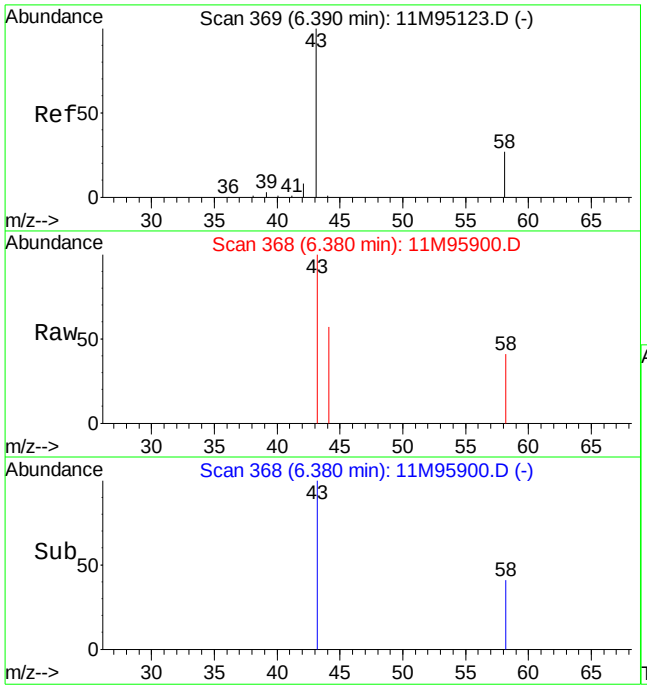

#13
Acetone
Concen: 1.03 ug/L
RT: 6.38 min Scan# 368
Delta R.T. 0.01 min
Lab File: 11M95900.D
Acq: 10 Oct 2013 19:53

Tgt Ion: 43 Resp: 2579

Ion	Ratio	Lower	Upper
43	100		
58	18.7	13.9	32.3

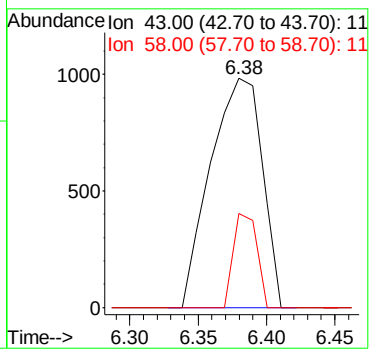

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101013\11M95901.D Vial: 20
Acq On : 10 Oct 2013 20:24 Operator: FJB
Sample : L13100060-08 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 20:46:30 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.66	96	825564	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.29	117	642496	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.10	152	346918	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	207129	24.1042 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.40%		
43) 1,2-Dichloroethane-d4	10.28	65	210207	22.4135 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.64%		
58) Toluene-d8	12.51	98	715924	24.5820 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.32%		
80) p-Bromofluorobenzene	15.69	95	299265	22.6742 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.68%		

Target Compounds					Qvalue
3) Chloromethane	3.73	50	2397	0.2510 ug/L	96
13) Acetone	6.38	43	2336	0.9400 ug/L	90
14) 1,1-Dichloroethene	6.61	61	2909	0.2279 ug/L	79
19) Methylene Chloride	7.36	84	8289	0.9663 ug/L	73
27) 1,1-Dichloroethane	8.41	63	2349	0.1615 ug/L #	51
45) 1,2-Dichloroethane	10.39	62	20841	1.7663 ug/L	92

(#) = qualifier out of range (m) = manual integration
11M95901.D 8260WTR.M Tue Oct 15 09:03:43 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101013\11M95901.D Vial: 20
Acq On : 10 Oct 2013 20:24 Operator: FJB
Sample : L13100060-08 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 20:46 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Initial Calibration

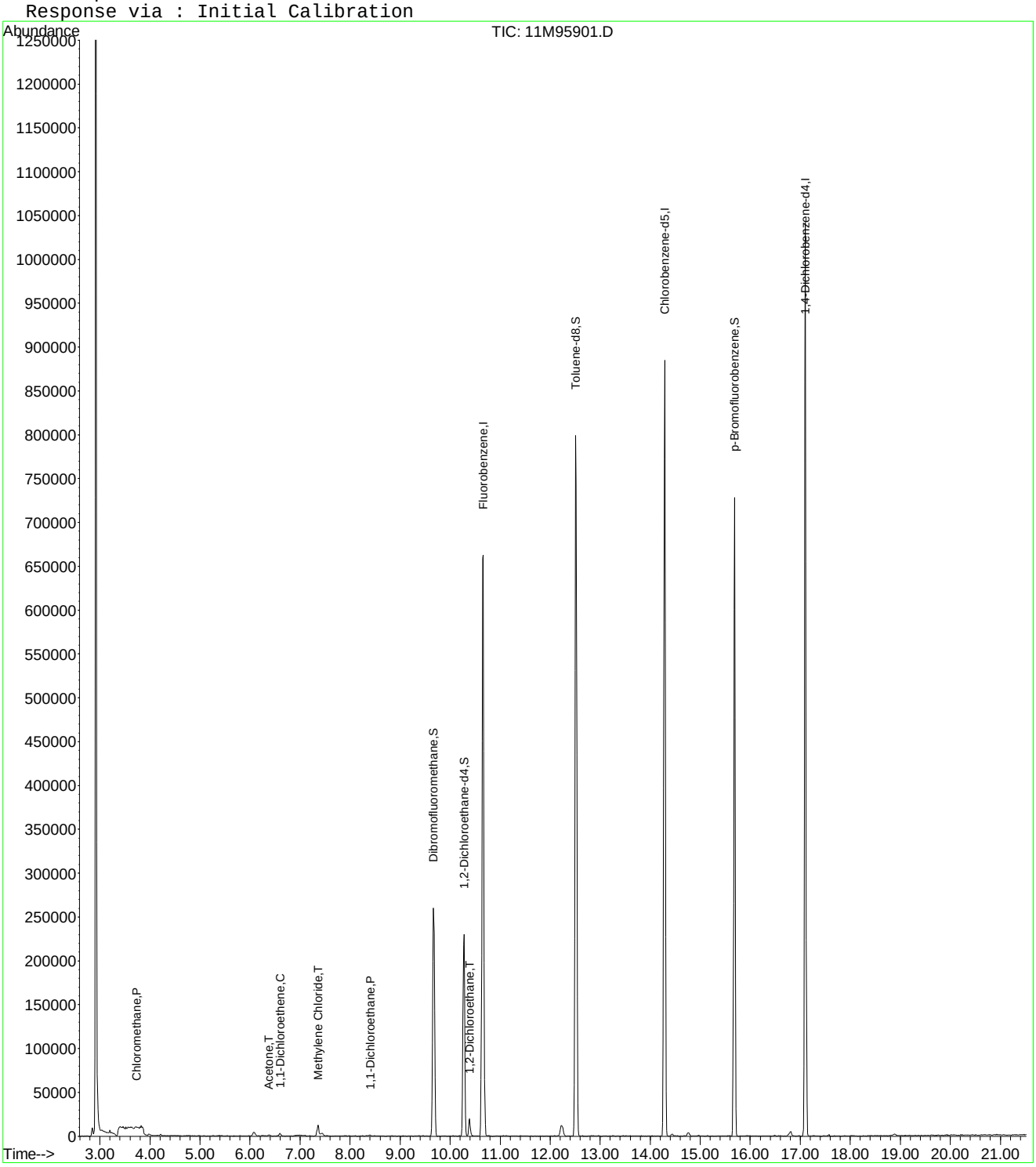

11M95901.D 8260WTR.M Tue Oct 15 09:03:43 2013 Page 2

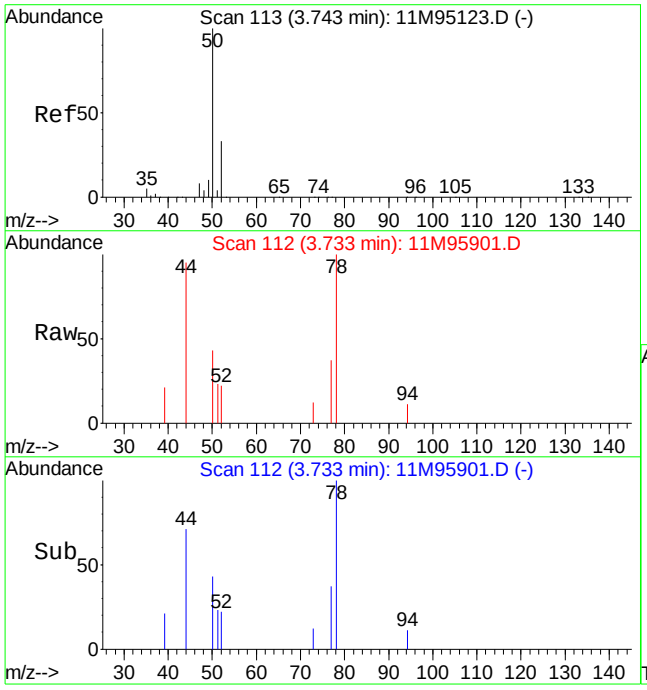

#3
Chloromethane
Concen: 0.25 ug/L
RT: 3.73 min Scan# 112
Delta R.T. 0.01 min
Lab File: 11M95901.D
Acq: 10 Oct 2013 20:24

Tgt Ion: 50 Resp: 2397

Ion	Ratio	Lower	Upper
50	100		
52	31.5	20.3	47.3

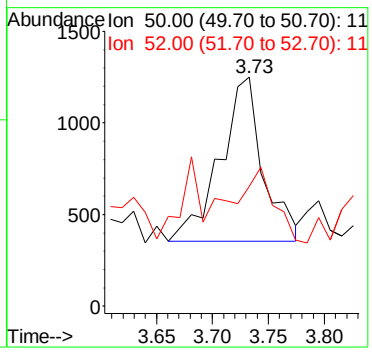

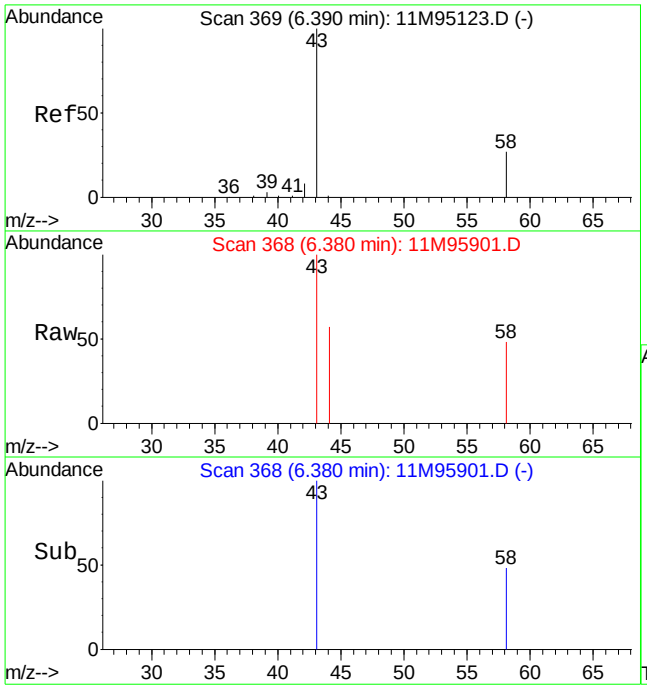

#13
Acetone
Concen: 0.94 ug/L
RT: 6.38 min Scan# 368
Delta R.T. 0.01 min
Lab File: 11M95901.D
Acq: 10 Oct 2013 20:24

Tgt Ion: 43 Resp: 2336

Ion	Ratio	Lower	Upper
43	100		
58	28.0	13.9	32.3

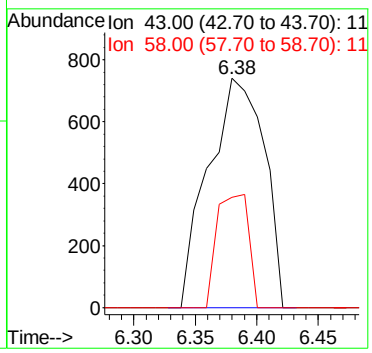

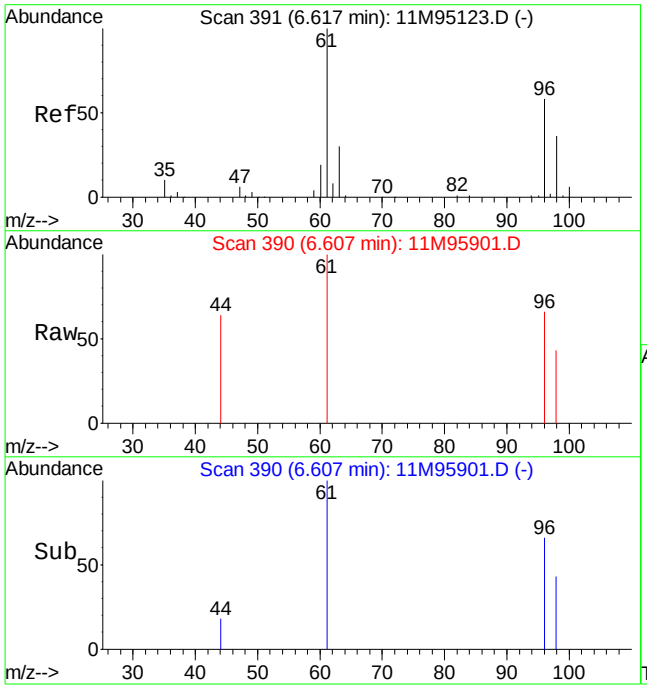

#14
1,1-Dichloroethene
Concen: 0.23 ug/L
RT: 6.61 min Scan# 390
Delta R.T. 0.01 min
Lab File: 11M95901.D
Acq: 10 Oct 2013 20:24

Tgt Ion: 61 Resp: 2909

Ion	Ratio	Lower	Upper
61	100		
96	67.2	31.4	73.4

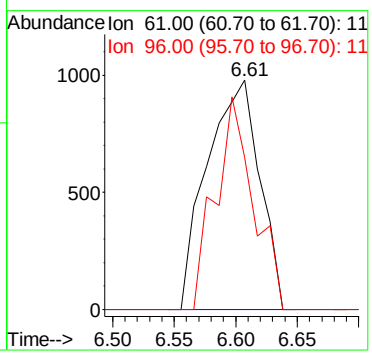

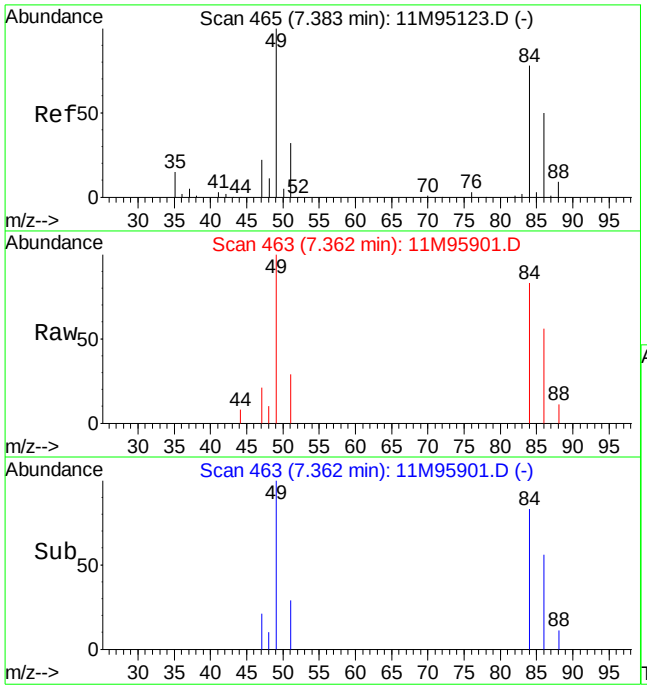

#19
Methylene Chloride
Concen: 0.97 ug/L
RT: 7.36 min Scan# 463
Delta R.T. -0.00 min
Lab File: 11M95901.D
Acq: 10 Oct 2013 20:24

Tgt Ion: 84 Resp: 8289

Ion	Ratio	Lower	Upper
84	100		
49	122.2	94.9	221.5

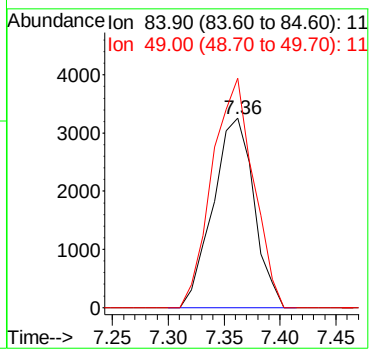

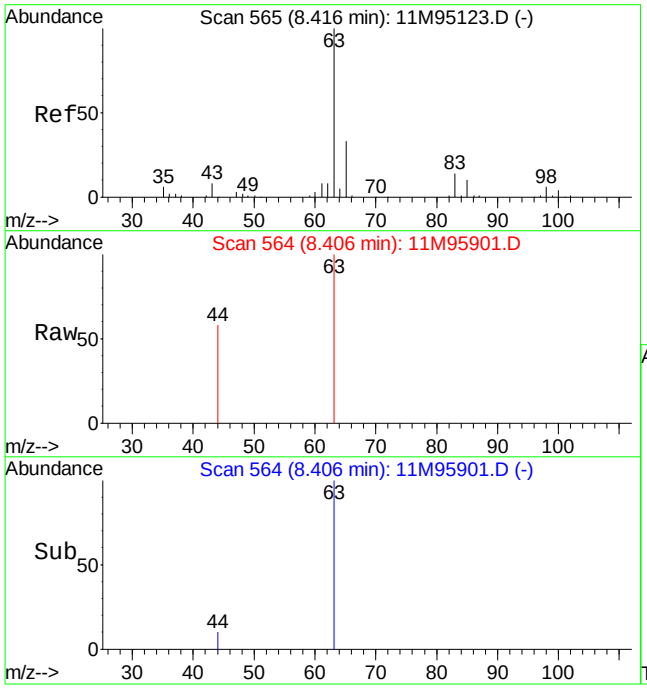

#27
1,1-Dichloroethane
Concen: 0.16 ug/L
RT: 8.41 min Scan# 564
Delta R.T. 0.01 min
Lab File: 11M95901.D
Acq: 10 Oct 2013 20:24

Tgt Ion: 63 Resp: 2349

Ion	Ratio	Lower	Upper
63	100		
65	0.0	18.2	42.4#
83	0.0	8.0	18.6#

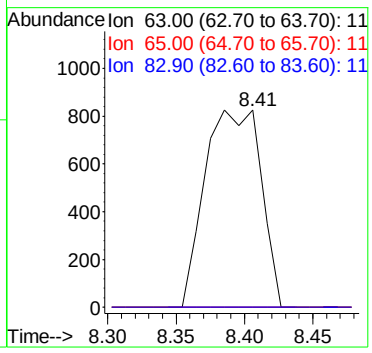

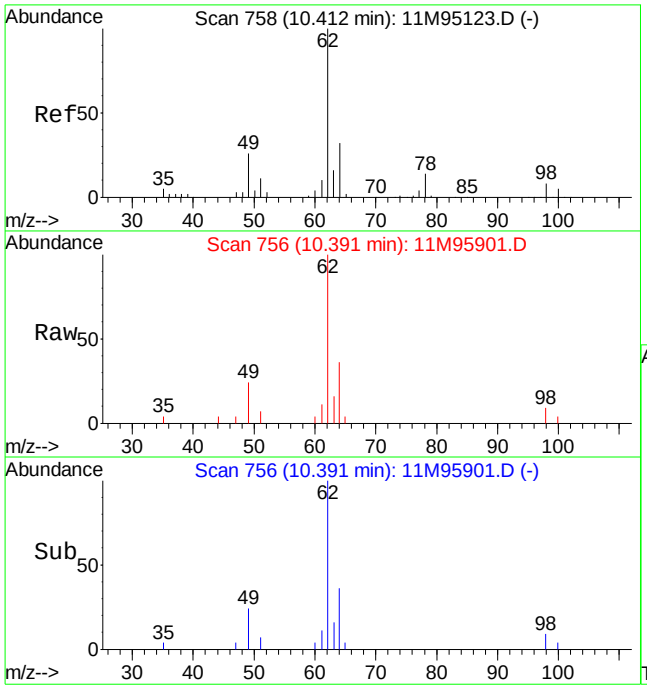

#45
1,2-Dichloroethane
Concen: 1.77 ug/L
RT: 10.39 min Scan# 756
Delta R.T. -0.00 min
Lab File: 11M95901.D
Acq: 10 Oct 2013 20:24

Tgt Ion: 62 Resp: 20841

Ion	Ratio	Lower	Upper
62	100		
64	32.3	18.8	43.8
49	24.2	19.4	45.4

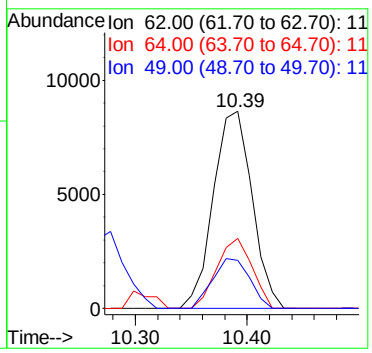

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391289.D Vial: 18
Acq On : 7 Oct 2013 1:14 Operator: MES
Sample : L13100060-09 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 07 09:31:26 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	584776	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.92	117	605998	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.95	152	409128	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.00	111	194655	26.4978 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.00%		
43) 1,2-Dichloroethane-d4	10.64	65	197656	27.8017 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.20%		
58) Toluene-d8	13.03	98	674088	24.3717 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.48%		
80) p-Bromofluorobenzene	16.42	95	264707	23.1055 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.44%		

Target Compounds					Qvalue
3) Chloromethane	3.87	50	3118	0.4935 ug/L	96
4) Vinyl Chloride	4.13	62	1291	0.2091 ug/L	95
13) Acetone	6.57	43	1347	1.0126 ug/L #	48
14) 1,1-Dichloroethene	6.81	61	169537	17.5021 ug/L	100
27) 1,1-Dichloroethane	8.67	63	46594	3.9666 ug/L	99
45) 1,2-Dichloroethane	10.77	62	3790	0.4143 ug/L #	77
56) Dimethyl Disulfide	13.03	94	18621	1.6136 ug/L #	28

(#) = qualifier out of range (m) = manual integration
8M391289.D 8260WT.M Mon Oct 07 09:31:27 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391289.D Vial: 18
Acq On : 7 Oct 2013 1:14 Operator: MES
Sample : L13100060-09 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 7 9:31 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration

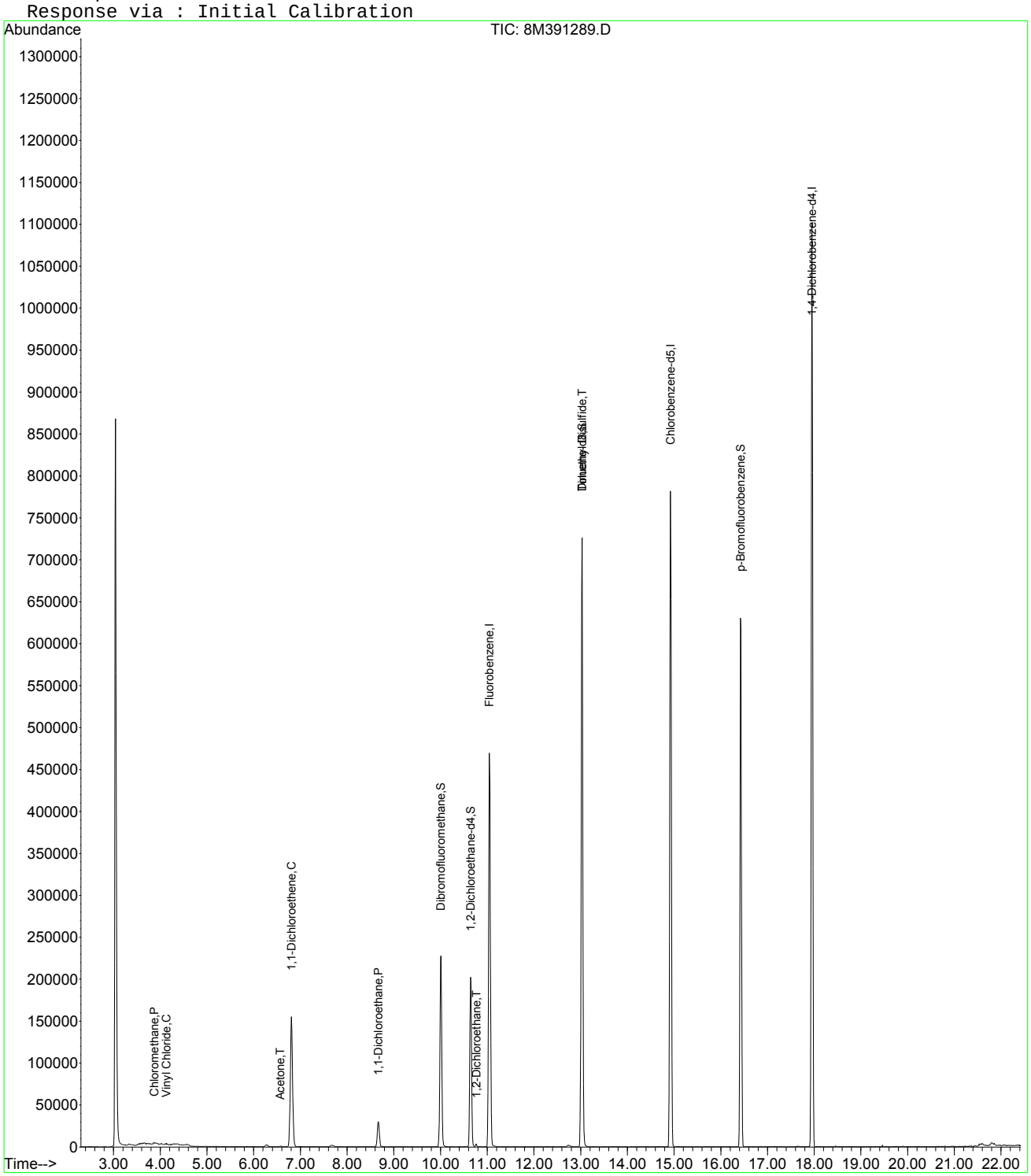

8M391289.D 8260WT.M Mon Oct 07 09:31:27 2013 Page 2

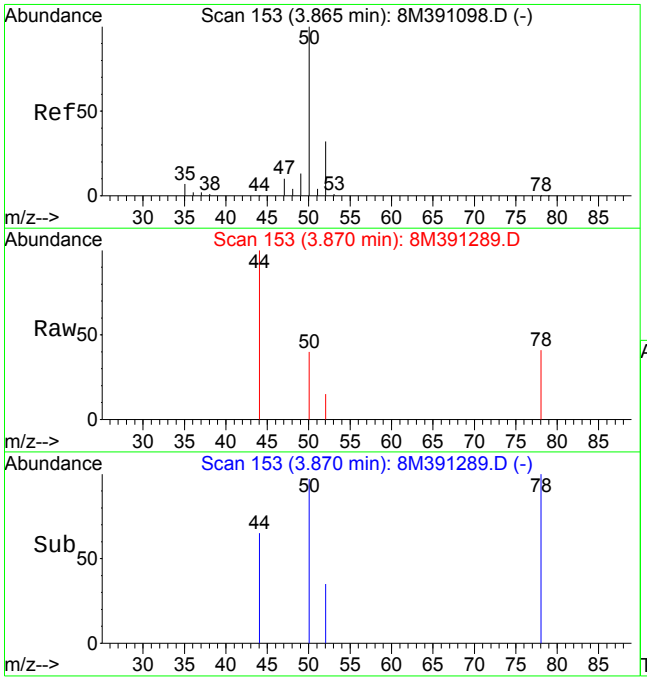

#3
Chloromethane
Concen: 0.49 ug/L
RT: 3.87 min Scan# 153
Delta R.T. 0.00 min
Lab File: 8M391289.D
Acq: 7 Oct 2013 1:14

Tgt Ion: 50 Resp: 3118

Ion	Ratio	Lower	Upper
50	100		
52	35.3	19.8	46.2

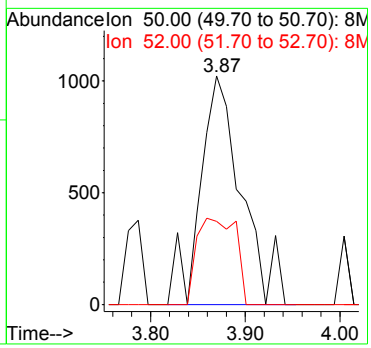

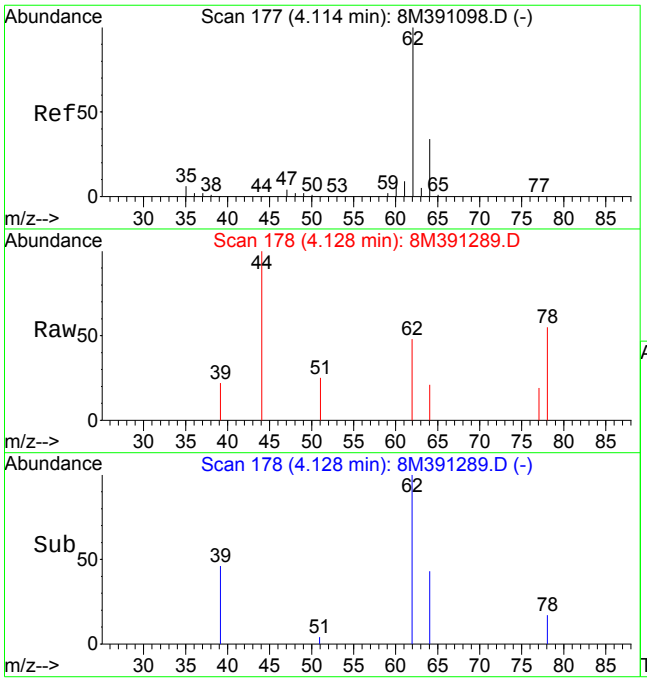

#4
Vinyl Chloride
Concen: 0.21 ug/L
RT: 4.13 min Scan# 178
Delta R.T. 0.01 min
Lab File: 8M391289.D
Acq: 7 Oct 2013 1:14

Tgt Ion: 62 Resp: 1291

Ion	Ratio	Lower	Upper
62	100		
64	30.8	20.1	46.9

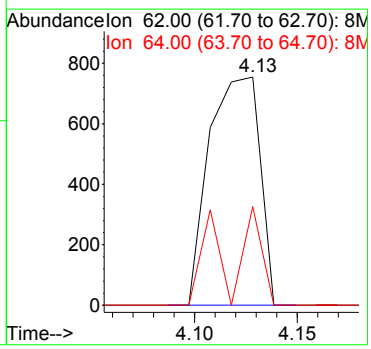

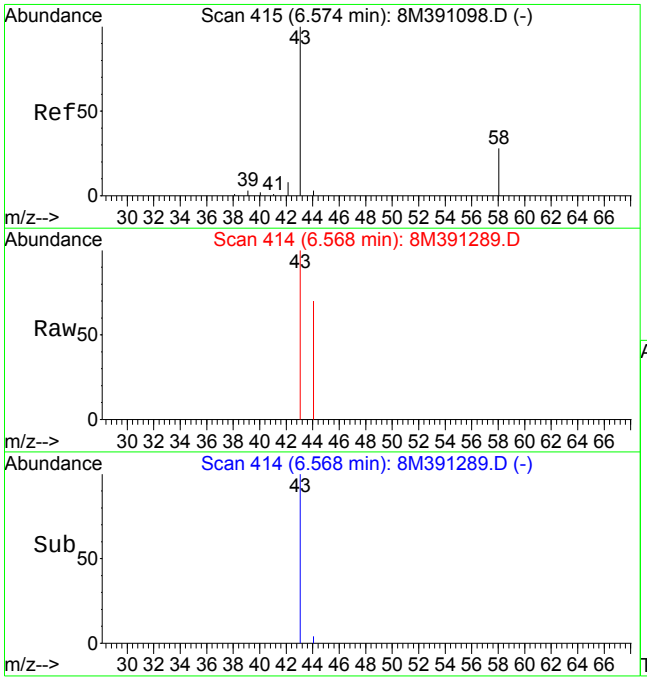

#13
Acetone
Concen: 1.01 ug/L
RT: 6.57 min Scan# 414
Delta R.T. -0.01 min
Lab File: 8M391289.D
Acq: 7 Oct 2013 1:14

Tgt Ion: 43 Resp: 1347

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

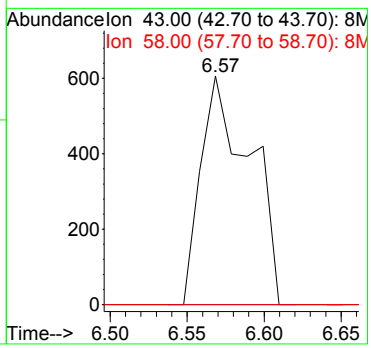

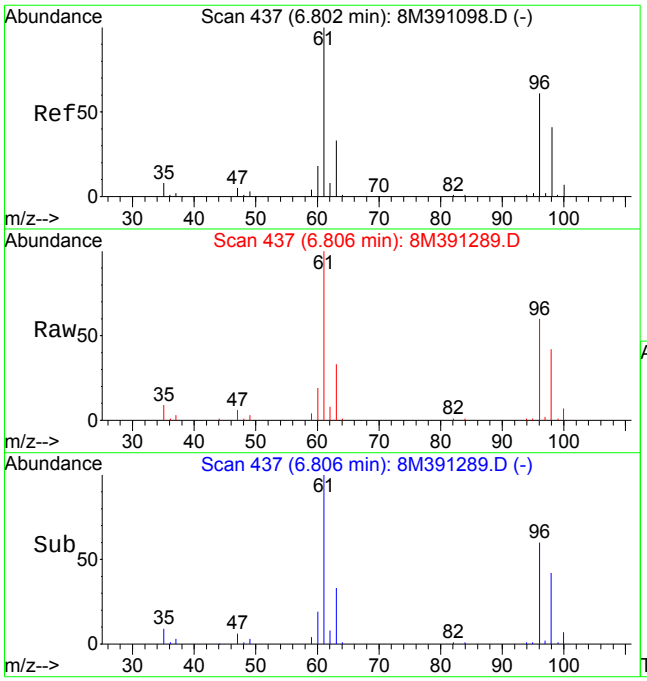

#14
1,1-Dichloroethene
Concen: 17.50 ug/L
RT: 6.81 min Scan# 437
Delta R.T. 0.00 min
Lab File: 8M391289.D
Acq: 7 Oct 2013 1:14

Tgt Ion: 61 Resp: 169537

Ion	Ratio	Lower	Upper
61	100		
96	62.5	37.4	87.2

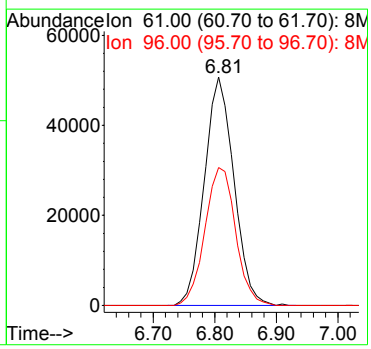

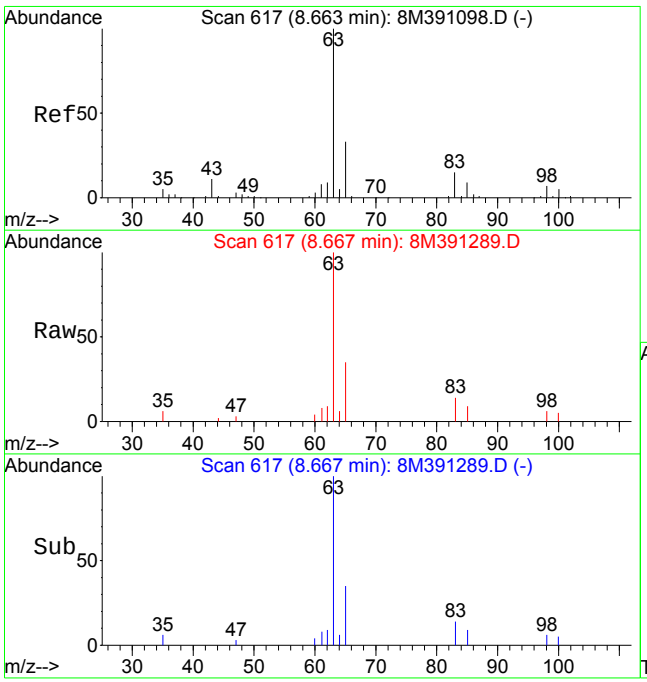

#27
1,1-Dichloroethane
Concen: 3.97 ug/L
RT: 8.67 min Scan# 617
Delta R.T. 0.00 min
Lab File: 8M391289.D
Acq: 7 Oct 2013 1:14

Tgt Ion: 63 Resp: 46594

Ion	Ratio	Lower	Upper
63	100		
65	32.9	19.6	45.6
83	13.5	8.6	20.0

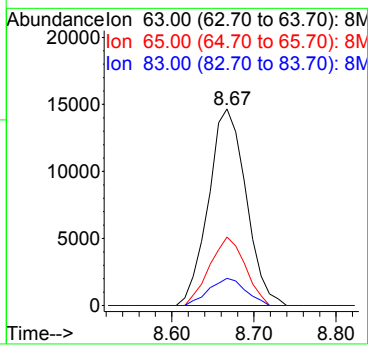

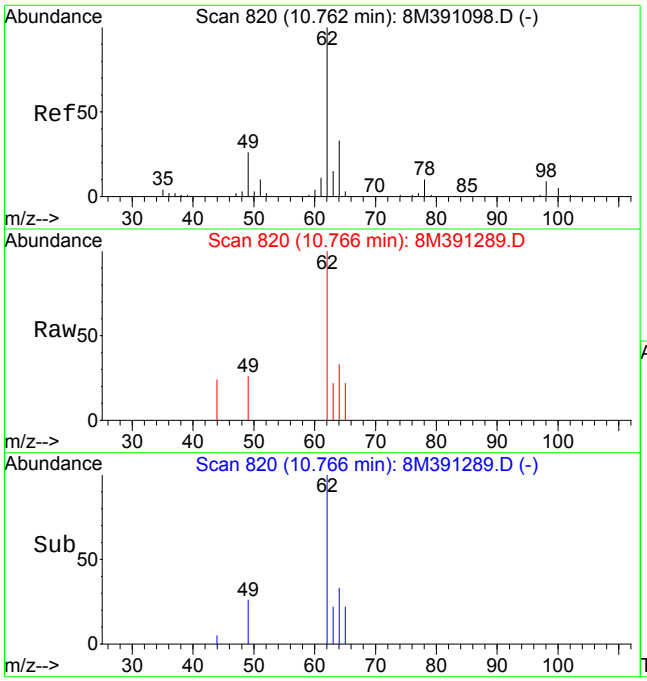

#45
1,2-Dichloroethane
Concen: 0.41 ug/L
RT: 10.77 min Scan# 820
Delta R.T. 0.00 min
Lab File: 8M391289.D
Acq: 7 Oct 2013 1:14

Tgt Ion: 62 Resp: 3790

Ion	Ratio	Lower	Upper
62	100		
64	27.2	19.9	46.5
49	12.6	19.4	45.2#

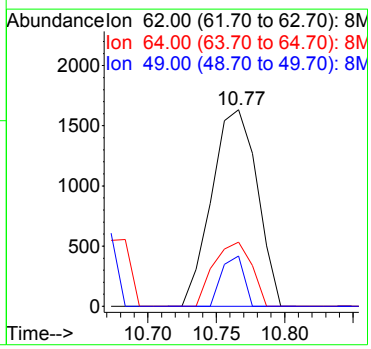

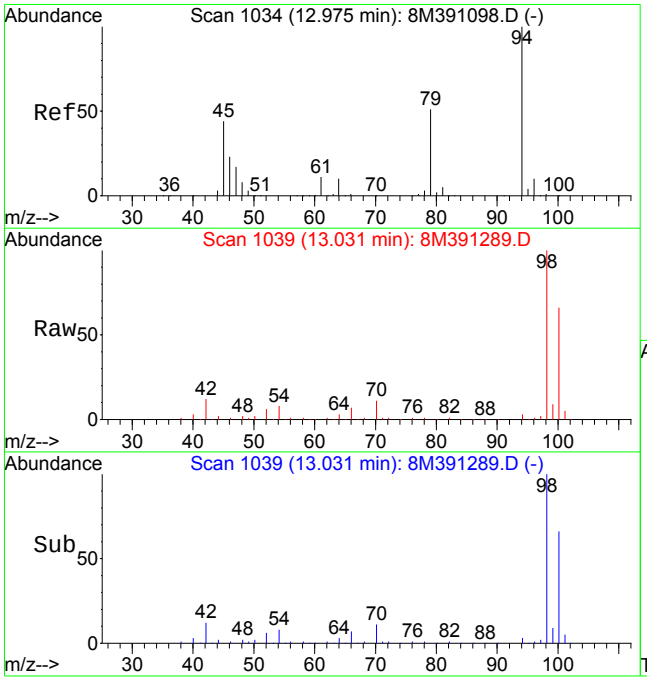

#56
Dimethyl Disulfide
Concen: 1.61 ug/L
RT: 13.03 min Scan# 1039
Delta R.T. 0.06 min
Lab File: 8M391289.D
Acq: 7 Oct 2013 1:14

Tgt Ion: 94 Resp: 18621

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

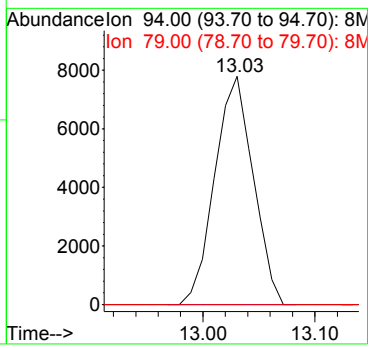

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\100613\8M391290.D Vial: 19
Acq On : 7 Oct 2013 1:45 Operator: MES
Sample : L13100060-10 MS A 826-LOW Inst : HPMS8
Misc : 1,1 STD60522 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 07 02:07:31 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	611287	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.92	117	648835	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.95	152	452563	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	202739	26.4013 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.60%		
43) 1,2-Dichloroethane-d4	10.64	65	197283	26.5458 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.20%		
58) Toluene-d8	13.03	98	707595	23.8942 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.56%		
80) p-Bromofluorobenzene	16.43	95	287612	22.6954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.80%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	160658	23.5319 ug/L	99
3) Chloromethane	3.87	50	147658	22.3566 ug/L	99
4) Vinyl Chloride	4.12	62	137308	21.2699 ug/L	98
5) 1,3-Butadiene	4.16	54	102253	25.9406 ug/L	99
6) Bromomethane	5.04	94	105389	23.0450 ug/L	98
7) Chloroethane	5.20	64	92327	20.2554 ug/L	98
8) Trichlorofluoromethane	5.71	101	261613	21.1607 ug/L	100
10) Isoprene	6.28	67	153595	18.4495 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.48	101	136224	19.6992 ug/L	98
13) Acetone	6.58	43	28059	20.1786 ug/L	94
14) 1,1-Dichloroethene	6.80	61	338081	33.3881 ug/L	99
16) Dimethyl Sulfide	7.07	62	142891	25.4990 ug/L	99
17) Iodomethane	7.33	142	203805	26.7223 ug/L	97
18) Methyl acetate	7.33	43	65325	21.0310 ug/L #	97
19) Methylene Chloride	7.59	84	139995	20.1019 ug/L	99
20) Carbon Disulfide	7.64	76	404919	20.3499 ug/L	100
21) Acrylonitrile	7.78	53	32409	21.8491 ug/L	99
22) Methyl Tert Butyl Ether	7.80	73	376833	22.3261 ug/L	97
23) trans-1,2-Dichloroethene	8.04	61	200108	20.8493 ug/L	98
24) n-Hexane	8.12	57	121247	15.3763 ug/L	99
26) Vinyl Acetate	8.63	43	184320	19.4514 ug/L	100
27) 1,1-Dichloroethane	8.66	63	290275	23.6398 ug/L	99
29) 2-Butanone	9.21	43	32186	19.2498 ug/L	100
31) 2,2-Dichloropropane	9.44	77	218759	18.4027 ug/L	100
32) cis-1,2-Dichloroethene	9.51	96	161539	21.1223 ug/L	99
33) Chloroform	9.72	83	279915	21.7778 ug/L	99
34) 1-Bromopropane	9.85	122	37878	23.6900 ug/L	99
35) Bromochloromethane	9.95	130	121793	21.9270 ug/L	96
36) Tetrahydrofuran	9.98	42	549	0.4869 ug/L #	34
38) 1,1,1-Trichloroethane	10.26	97	273993	21.9518 ug/L	100
39) Cyclohexane	10.29	56	163852	16.5926 ug/L	97
40) 1,1-Dichloropropene	10.44	75	191935	19.4292 ug/L	100
42) Carbon Tetrachloride	10.60	117	261078	21.5125 ug/L	99
45) 1,2-Dichloroethane	10.76	62	220587	23.0657 ug/L	97
46) Benzene	10.81	78	555045	20.4345 ug/L	100
47) Trichloroethene	11.56	130	194534	22.0789 ug/L	99
48) Methylcyclohexane	11.64	83	180261	17.3648 ug/L	99
49) 1,2-Dichloropropane	11.77	63	132110	20.2713 ug/L	93
50) Bromodichloromethane	12.07	83	213214	21.4240 ug/L	99
51) 1,4-Dioxane	12.06	88	1590	51.7719 ug/L	93
52) Dibromomethane	12.16	93	85990	21.8474 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\100613\8M391290.D Vial: 19
Acq On : 7 Oct 2013 1:45 Operator: MES
Sample : L13100060-10 MS A 826-LOW Inst : HPMS8
Misc : 1,1 STD60522 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 07 02:07:31 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
54)	4-Methyl-2-Pentanone	12.39	58	28061	18.8193	ug/L	98
55)	cis-1,3-Dichloropropene	12.70	75	236213	21.3379	ug/L	100
56)	Dimethyl Disulfide	12.97	94	266816	22.1186	ug/L	97
59)	Toluene	13.13	91	643572	19.4388	ug/L	100
60)	Ethyl Methacrylate	13.20	69	139307	21.1579	ug/L	100
62)	trans-1,3-Dichloropropene	13.30	75	206262	18.0303	ug/L	99
63)	1,1,2-Trichloroethane	13.51	97	120708	20.0157	ug/L	98
64)	2-Hexanone	13.44	58	26714	18.2001	ug/L	97
65)	1,3-Dichloropropane	13.82	76	187942	19.1708	ug/L	97
66)	Tetrachloroethene	13.95	164	169470	19.2160	ug/L	99
67)	Dibromochloromethane	14.22	129	190705	20.5641	ug/L	99
68)	1,2-Dibromoethane	14.48	107	124047	19.8366	ug/L	99
69)	1-Chlorohexane	14.55	91	192907	19.8177	ug/L	98
70)	Chlorobenzene	14.97	112	480415	18.6280	ug/L	100
71)	1,1,1,2-Tetrachloroethane	15.00	131	204791	20.6585	ug/L	99
72)	Ethylbenzene	15.00	106	261864	18.9234	ug/L	98
73)	m-,p-Xylene	15.09	106	623143	37.8874	ug/L	97
74)	o-Xylene	15.65	106	298235	18.5818	ug/L	98
75)	Styrene	15.69	104	532048	21.1058	ug/L	99
76)	Bromoform	16.19	173	126294	20.5389	ug/L	99
77)	Isopropylbenzene	16.08	105	755849	19.5337	ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.28	83	124571	17.9404	ug/L	98
81)	1,2,3-Trichloropropane	16.48	110	45165	18.6325	ug/L	73
82)	trans-1,4-Dichloro-2-Buten	16.52	53	27486	12.7393	ug/L	75
83)	n-Propylbenzene	16.58	91	817684	17.6596	ug/L	100
84)	Bromobenzene	16.72	156	251420	18.9199	ug/L	97
85)	1,3,5-Trimethylbenzene	16.77	105	748441	20.0443	ug/L	100
86)	2-Chlorotoluene	16.86	91	572974	18.2751	ug/L	99
87)	4-Chlorotoluene	16.91	91	507703	17.4491	ug/L	99
88)	a-Methylstyrene	17.17	118	396657	19.3851	ug/L	100
89)	tert-Butylbenzene	17.24	134	156750	17.8527	ug/L	98
90)	1,2,4-Trimethylbenzene	17.29	105	771791	19.9419	ug/L	98
91)	sec-Butylbenzene	17.50	105	770542	17.6522	ug/L	100
92)	p-Isopropyltoluene	17.66	119	730119	18.2312	ug/L	99
93)	1,3-Dichlorobenzene	17.87	146	472097	18.4093	ug/L	99
94)	1,4-Dichlorobenzene	17.99	146	519105	19.4170	ug/L	100
95)	n-Butylbenzene	18.19	91	586726	18.7042	ug/L	100
96)	1,2-Dichlorobenzene	18.50	146	444366	18.4546	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	19.49	75	25411	18.3405	ug/L	99
98)	1,2,4-Trichlorobenzene	20.64	180	345868	18.6650	ug/L	99
99)	Hexachlorobutadiene	20.78	225	136910	17.5074	ug/L	99
100)	Naphthalene	21.01	128	635311	19.6947	ug/L	98
101)	1,2,3-Trichlorobenzene	21.32	180	318567	19.0911	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M391290.D 8260WT.M Mon Oct 07 02:07:32 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\100613\8M391290.D Vial: 19
Acq On : 7 Oct 2013 1:45 Operator: MES
Sample : L13100060-10 MS A 826-LOW Inst : HPMS8
Misc : 1,1 STD60522 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 7 2:07 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration

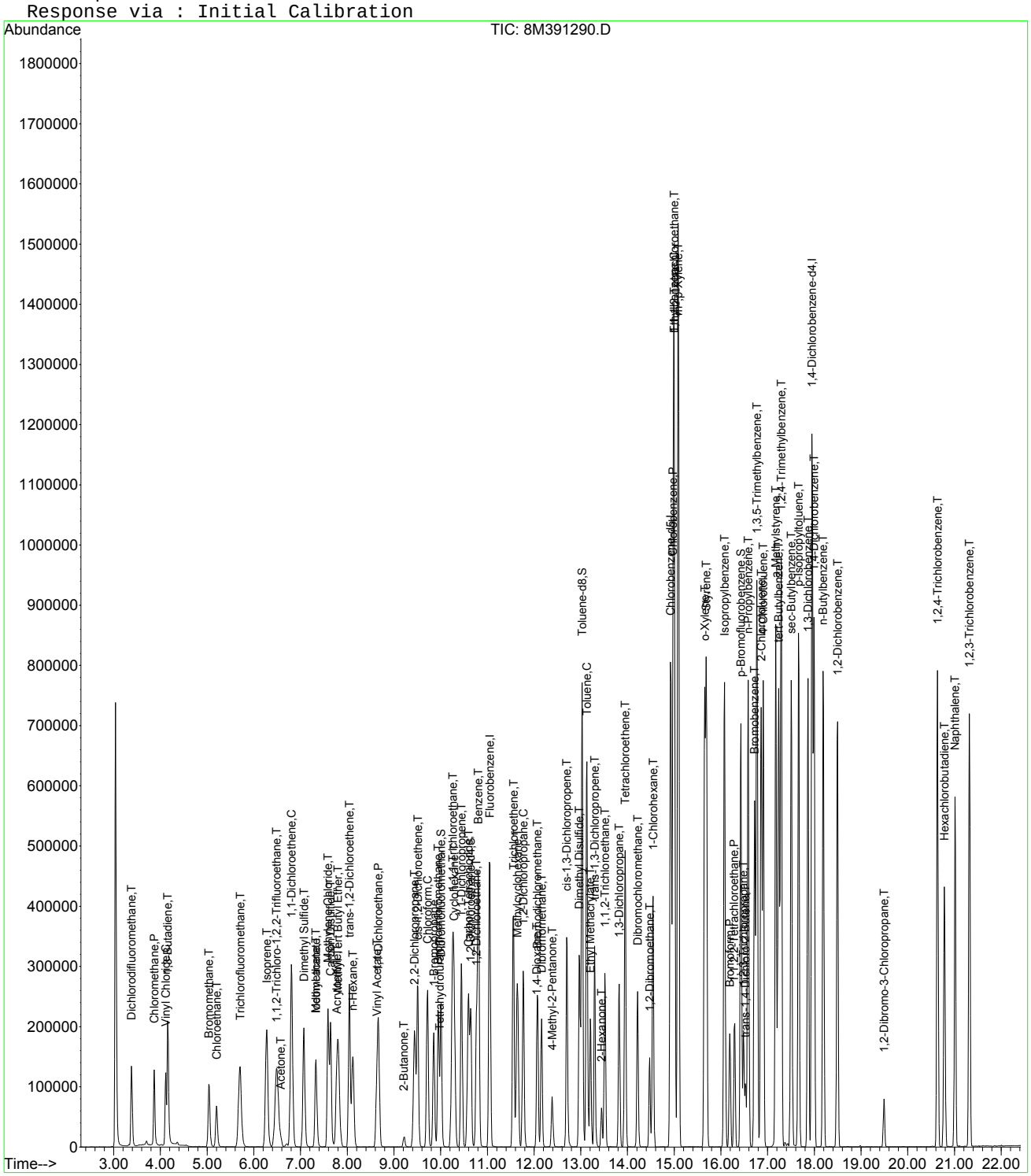

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\100613\8M391291.D Vial: 20
Acq On : 7 Oct 2013 2:16 Operator: MES
Sample : L13100060-11 MSD A 826-LOW Inst : HPMS8
Misc : 1,1 STD60522 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 07 02:38:32 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	620926	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.93	117	651425	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.95	152	451907	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.01	111	202321	25.9379 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.76%		
43) 1,2-Dichloroethane-d4	10.65	65	201408	26.6801 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.72%		
58) Toluene-d8	13.03	98	726716	24.4423 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.76%		
80) p-Bromofluorobenzene	16.43	95	294597	23.2803 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	178661	25.7626 ug/L	99
3) Chloromethane	3.87	50	155566	23.1883 ug/L	99
4) Vinyl Chloride	4.11	62	145560	22.1982 ug/L	98
5) 1,3-Butadiene	4.16	54	105861	26.4390 ug/L	98
6) Bromomethane	5.03	94	111890	24.0449 ug/L	100
7) Chloroethane	5.20	64	96281	20.7949 ug/L	99
8) Trichlorofluoromethane	5.70	101	277506	22.0978 ug/L	100
10) Isoprene	6.28	67	164283	19.4270 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.48	101	149919	21.3431 ug/L	95
13) Acetone	6.58	43	29821	21.1128 ug/L	95
14) 1,1-Dichloroethene	6.80	61	353072	34.3273 ug/L	99
16) Dimethyl Sulfide	7.06	62	145272	25.5215 ug/L	97
17) Iodomethane	7.33	142	205251	26.5016 ug/L	98
18) Methyl acetate	7.33	43	65542	20.7733 ug/L #	96
19) Methylene Chloride	7.59	84	143584	20.2972 ug/L	97
20) Carbon Disulfide	7.64	76	425400	21.0474 ug/L	100
21) Acrylonitrile	7.77	53	32035	21.2617 ug/L	99
22) Methyl Tert Butyl Ether	7.80	73	386467	22.5414 ug/L	98
23) trans-1,2-Dichloroethene	8.04	61	206532	21.1846 ug/L	97
24) n-Hexane	8.12	57	134400	16.7797 ug/L	100
26) Vinyl Acetate	8.63	43	184498	19.1679 ug/L	100
27) 1,1-Dichloroethane	8.66	63	298609	23.9410 ug/L	99
29) 2-Butanone	9.21	43	34821	20.5025 ug/L	98
31) 2,2-Dichloropropane	9.44	77	221372	18.3334 ug/L	98
32) cis-1,2-Dichloroethene	9.51	96	170752	21.9803 ug/L	96
33) Chloroform	9.72	83	282510	21.6385 ug/L	99
34) 1-Bromopropane	9.85	122	39130	24.0931 ug/L	99
35) Bromochloromethane	9.95	130	124106	21.9966 ug/L	96
36) Tetrahydrofuran	9.98	42	675	0.5894 ug/L #	34
38) 1,1,1-Trichloroethane	10.25	97	283685	22.3755 ug/L	99
39) Cyclohexane	10.29	56	179962	17.9411 ug/L	98
40) 1,1-Dichloropropene	10.44	75	204714	20.4011 ug/L	100
42) Carbon Tetrachloride	10.60	117	270754	21.9635 ug/L	100
45) 1,2-Dichloroethane	10.76	62	222595	22.9143 ug/L	97
46) Benzene	10.80	78	565434	20.4938 ug/L	100
47) Trichloroethene	11.56	130	201824	22.5507 ug/L	98
48) Methylcyclohexane	11.64	83	199233	18.8944 ug/L	99
49) 1,2-Dichloropropane	11.77	63	135430	20.4582 ug/L	94
50) Bromodichloromethane	12.08	83	218235	21.5881 ug/L	99
51) 1,4-Dioxane	12.06	88	1686	54.0455 ug/L	96
52) Dibromomethane	12.16	93	88671	22.1788 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M391291.D 8260WT.M Mon Oct 07 02:38:33 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\100613\8M391291.D Vial: 20
Acq On : 7 Oct 2013 2:16 Operator: MES
Sample : L13100060-11 MSD A 826-LOW Inst : HPMS8
Misc : 1,1 STD60522 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 07 02:38:32 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
54)	4-Methyl-2-Pentanone	12.39	58	30477	20.1223	ug/L	95
55)	cis-1,3-Dichloropropene	12.71	75	241558	21.4820	ug/L	99
56)	Dimethyl Disulfide	12.98	94	276211	22.5420	ug/L	97
59)	Toluene	13.13	91	665157	20.0109	ug/L	100
60)	Ethyl Methacrylate	13.20	69	144608	21.8757	ug/L	99
62)	trans-1,3-Dichloropropene	13.30	75	212395	18.4926	ug/L	99
63)	1,1,2-Trichloroethane	13.51	97	123000	20.3146	ug/L	99
64)	2-Hexanone	13.44	58	27297	18.5233	ug/L	97
65)	1,3-Dichloropropane	13.82	76	194224	19.7328	ug/L	100
66)	Tetrachloroethene	13.95	164	170088	19.2094	ug/L	98
67)	Dibromochloromethane	14.22	129	196463	21.1008	ug/L	100
68)	1,2-Dibromoethane	14.47	107	126511	20.1502	ug/L	98
69)	1-Chlorohexane	14.55	91	200908	20.5576	ug/L	98
70)	Chlorobenzene	14.97	112	491198	18.9704	ug/L	100
71)	1,1,1,2-Tetrachloroethane	15.00	131	208845	20.9837	ug/L	100
72)	Ethylbenzene	15.00	106	274145	19.7321	ug/L	100
73)	m-,p-Xylene	15.08	106	651043	39.4263	ug/L	98
74)	o-Xylene	15.65	106	308042	19.1165	ug/L	98
75)	Styrene	15.68	104	543480	21.4736	ug/L	100
76)	Bromoform	16.19	173	130551	21.1468	ug/L	99
77)	Isopropylbenzene	16.08	105	782034	20.1300	ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.29	83	130659	18.8445	ug/L	98
81)	1,2,3-Trichloropropane	16.48	110	47547	19.6436	ug/L	76
82)	trans-1,4-Dichloro-2-Buten	16.52	53	28581	13.2472	ug/L	70
83)	n-Propylbenzene	16.58	91	845242	18.2813	ug/L	99
84)	Bromobenzene	16.72	156	258208	19.4589	ug/L	97
85)	1,3,5-Trimethylbenzene	16.77	105	767389	20.5816	ug/L	99
86)	2-Chlorotoluene	16.86	91	579770	18.5187	ug/L	100
87)	4-Chlorotoluene	16.90	91	529038	18.2087	ug/L	99
88)	a-Methylstyrene	17.17	118	385112	18.8482	ug/L	97
89)	tert-Butylbenzene	17.24	134	162030	18.4808	ug/L	99
90)	1,2,4-Trimethylbenzene	17.29	105	796110	20.6001	ug/L	98
91)	sec-Butylbenzene	17.50	105	805601	18.4822	ug/L	100
92)	p-Isopropyltoluene	17.67	119	761015	19.0302	ug/L	99
93)	1,3-Dichlorobenzene	17.87	146	482619	18.8469	ug/L	99
94)	1,4-Dichlorobenzene	18.00	146	534564	20.0243	ug/L	100
95)	n-Butylbenzene	18.19	91	611503	19.5224	ug/L	100
96)	1,2-Dichlorobenzene	18.50	146	459366	19.1053	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.49	75	28152	20.3483	ug/L	94
98)	1,2,4-Trichlorobenzene	20.64	180	360241	19.4689	ug/L	99
99)	Hexachlorobutadiene	20.79	225	143488	18.3752	ug/L	99
100)	Naphthalene	21.01	128	654538	20.3201	ug/L	99
101)	1,2,3-Trichlorobenzene	21.32	180	325286	19.5221	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\100613\8M391291.D Vial: 20
Acq On : 7 Oct 2013 2:16 Operator: MES
Sample : L13100060-11 MSD A 826-LOW Inst : HPMS8
Misc : 1,1 STD60522 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 7 2:38 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration

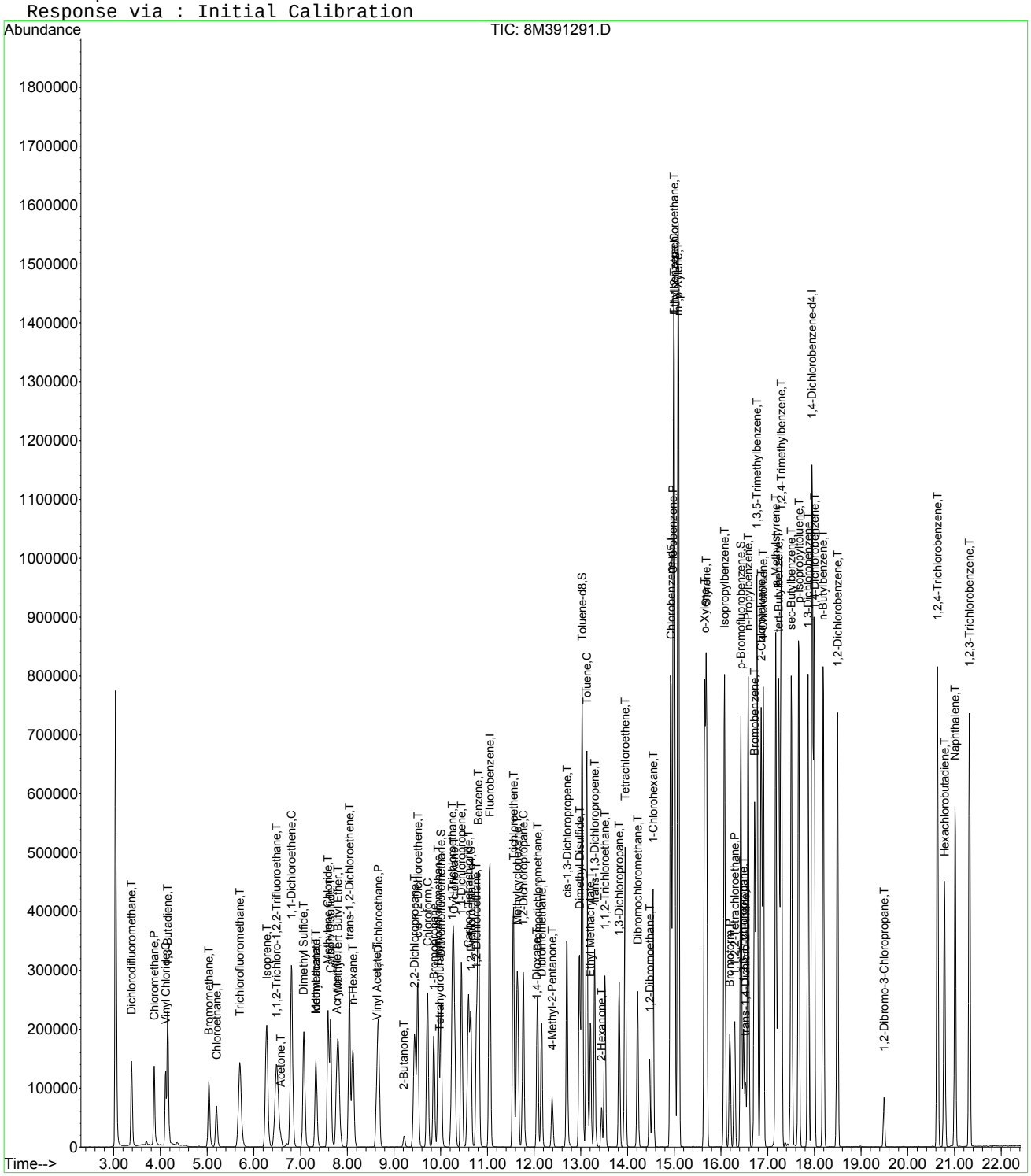

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101013\11M95897.D Vial: 16
Acq On : 10 Oct 2013 18:18 Operator: FJB
Sample : L13100060-12 TB A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 18:40:41 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	854521	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.29	117	669771	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.10	152	362187	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	220495	24.7901 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.16%		
43) 1,2-Dichloroethane-d4	10.28	65	221069	22.7729 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.08%		
58) Toluene-d8	12.51	98	740021	24.3747 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.48%		
80) p-Bromofluorobenzene	15.69	95	306383	22.2349 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 88.92%		

Target Compounds

					Qvalue
3) Chloromethane	3.73	50	1482	0.1499 ug/L #	76
13) Acetone	6.38	43	3193	1.2413 ug/L	81
55) cis-1,3-Dichloropropene	12.23	75	2676	0.1958 ug/L #	43

(#) = qualifier out of range (m) = manual integration
11M95897.D 8260WTR.M Tue Oct 15 09:03:38 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101013\11M95897.D Vial: 16
Acq On : 10 Oct 2013 18:18 Operator: FJB
Sample : L13100060-12 TB A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 18:40 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Initial Calibration

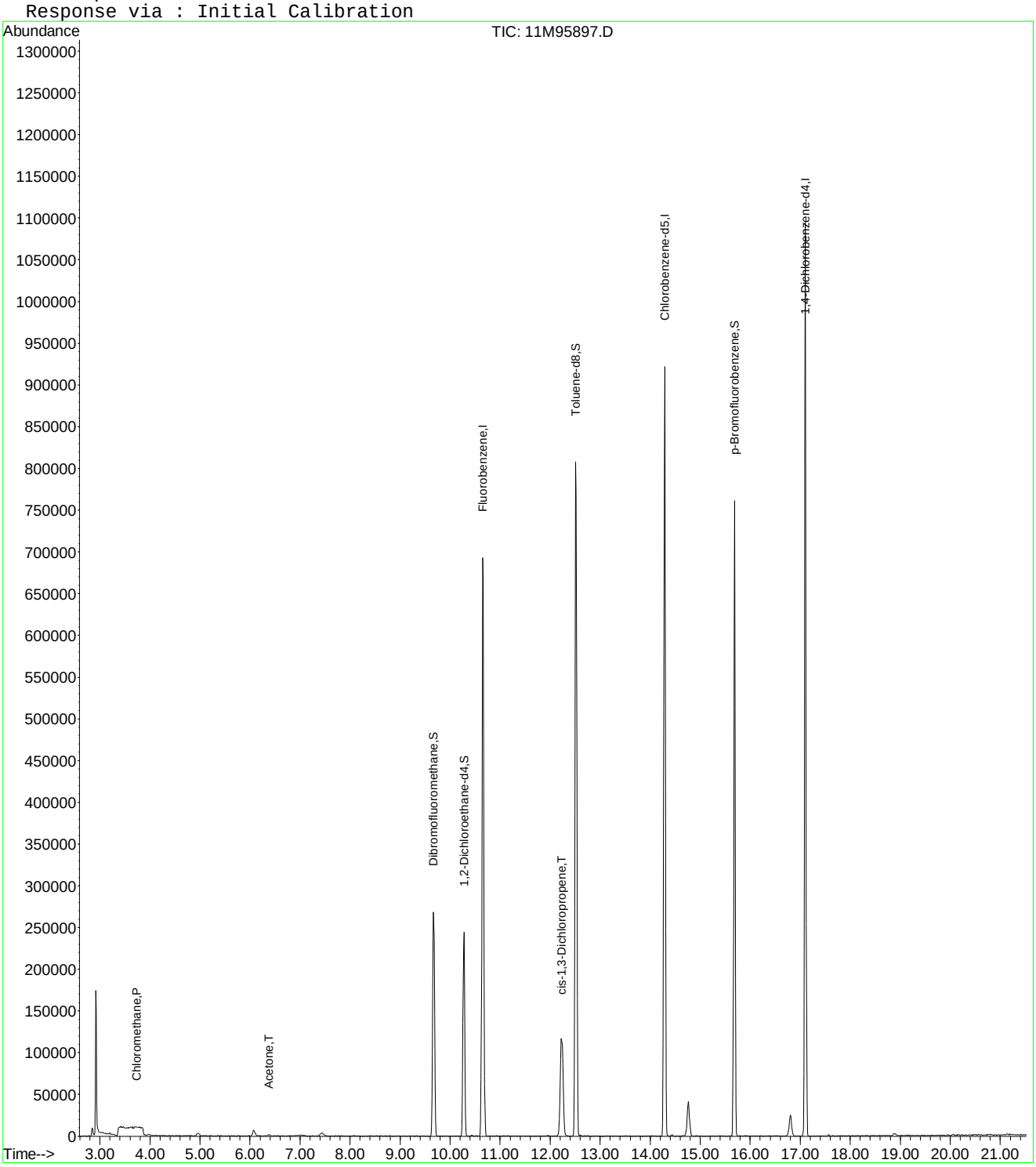

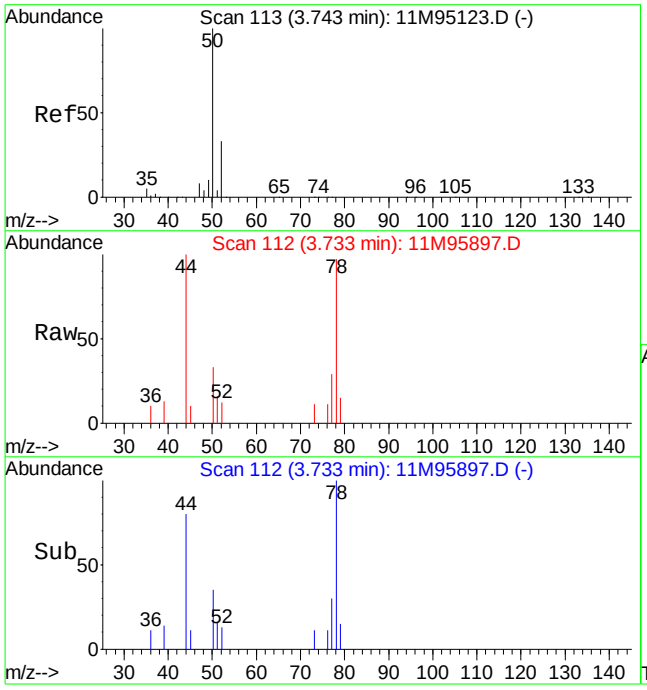

#3
Chloromethane
Concen: 0.15 ug/L
RT: 3.73 min Scan# 112
Delta R.T. 0.01 min
Lab File: 11M95897.D
Acq: 10 Oct 2013 18:18

Tgt Ion: 50 Resp: 1482

Ion	Ratio	Lower	Upper
50	100		
52	47.8	20.3	47.3#

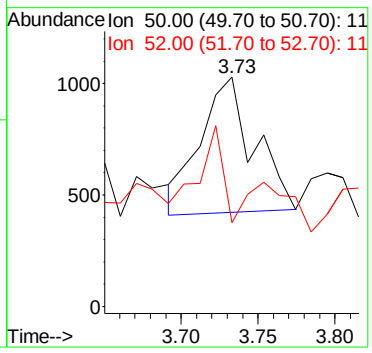

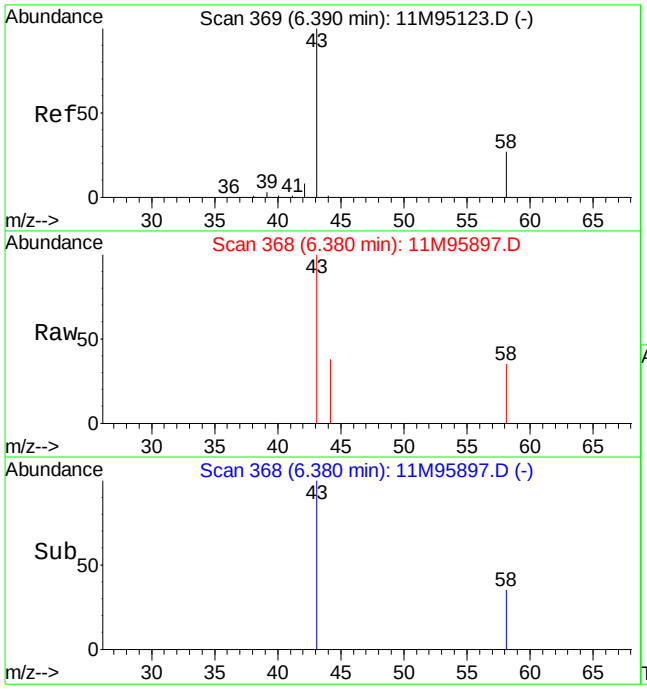

#13
Acetone
Concen: 1.24 ug/L
RT: 6.38 min Scan# 368
Delta R.T. 0.01 min
Lab File: 11M95897.D
Acq: 10 Oct 2013 18:18

Tgt Ion: 43 Resp: 3193

Ion	Ratio	Lower	Upper
43	100		
58	13.9	13.9	32.3

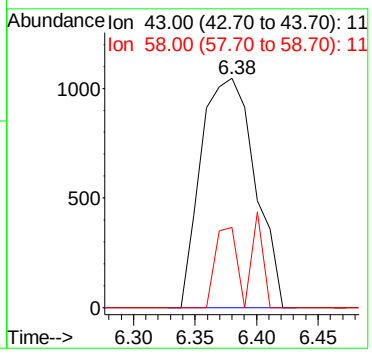

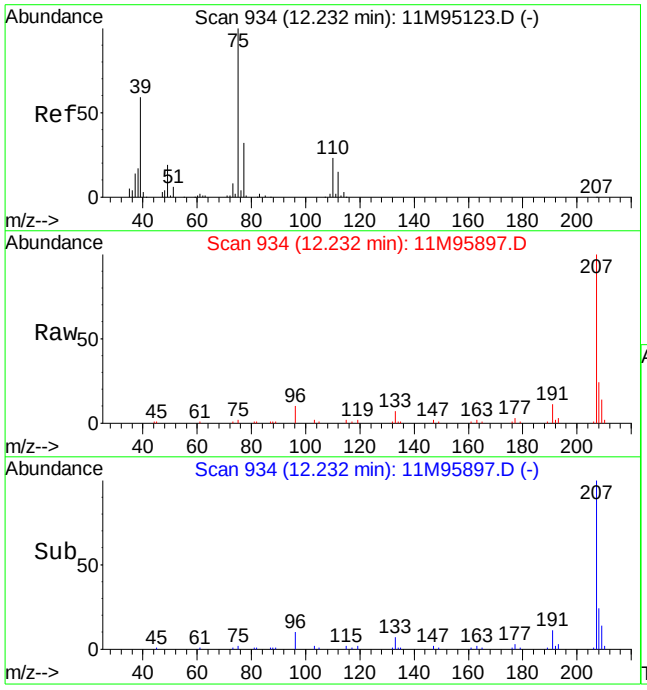

#55
cis-1,3-Dichloropropene
Concen: 0.20 ug/L
RT: 12.23 min Scan# 934
Delta R.T. 0.02 min
Lab File: 11M95897.D
Acq: 10 Oct 2013 18:18

Tgt Ion: 75 Resp: 2676

Ion	Ratio	Lower	Upper
75	100		
77	0.0	25.6	38.4#

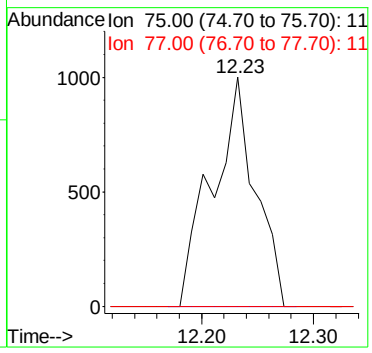

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\11M95058.D Vial: 3
Acq On : 11 Sep 2013 12:58 Operator: FJB
Sample : WG444293-03 20ug/L STD A9FOO Inst : hpms11
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 13 11:04:49 2013 Quant Results File: A9WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.06	96	695794	25.00 ug/L	0.01
12) Chlorobenzene-d5	13.67	117	543814	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.47	152	272701	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.21	41	11792	19.7992 ug/L	88
3) 3-Chloro-1-propene	6.59	41	225276	19.4788 ug/L	96
4) 2-Chloro-1,3-butadiene	7.92	53	238518	19.4818 ug/L	99
5) Methacrylonitrile	8.69	41	75401	20.4587 ug/L	90
6) Isobutyl Alcohol	8.70	43	5738	40.0352 ug/L	94
8) Cyclohexanone	14.84	55	16131	17.9879 ug/L	93
9) 2-Nitropropane	11.04	43	25394	15.4715 ug/L	89
10) Ethyl Acetate	8.54	43	86470	18.5114 ug/L	98
11) Methyl methacrylate	10.73	41	92466	18.6368 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M95058.D A9WT.M Fri Sep 13 11:04:49 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\11M95058.D Vial: 3
Acq On : 11 Sep 2013 12:58 Operator: FJB
Sample : WG444293-03 20ug/L STD A9FOO Inst : hpms11
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 13 11:04 2013 Quant Results File: A9WT.RES

Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Initial Calibration

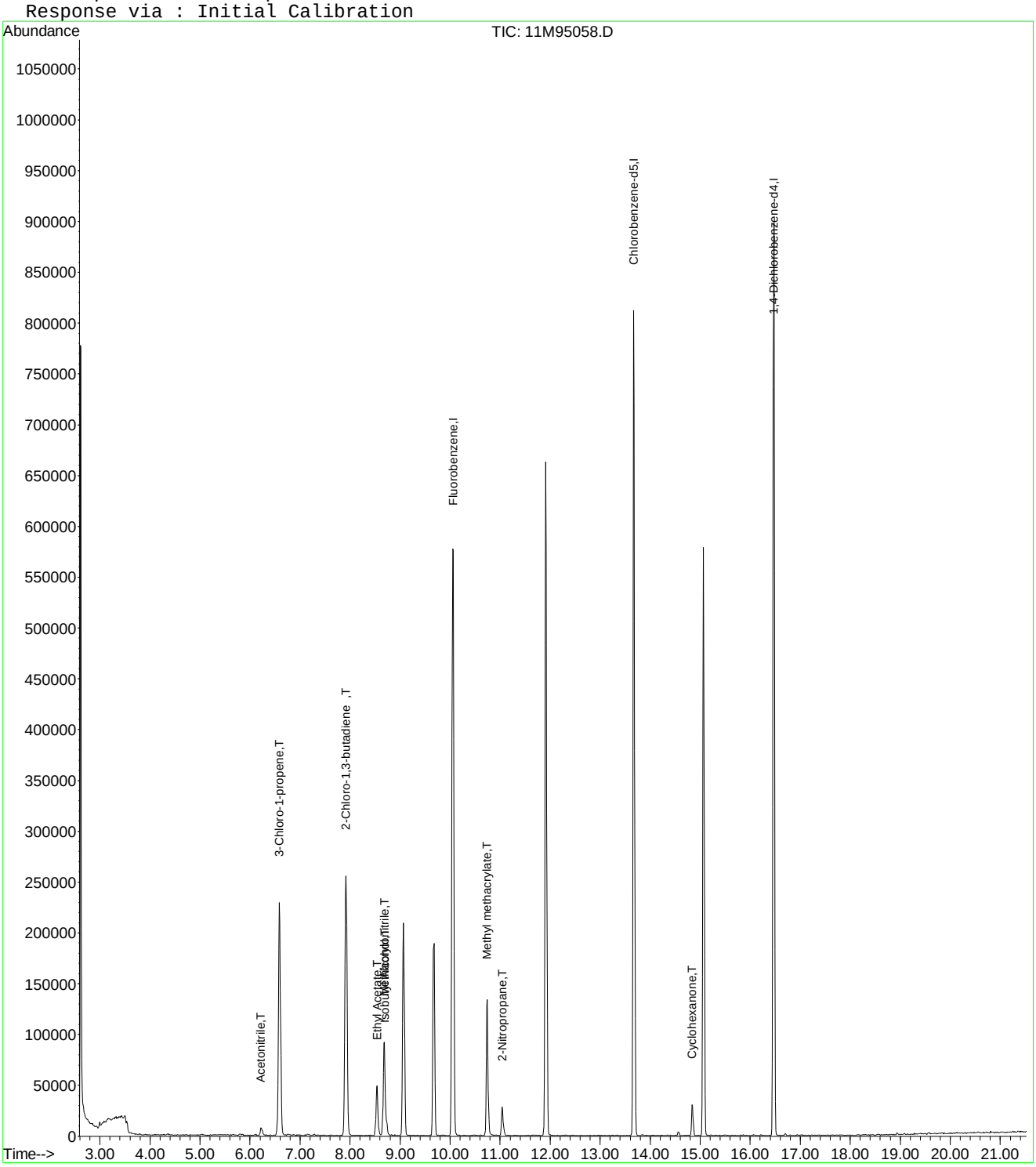

11M95058.D A9WT.M Fri Sep 13 11:04:49 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\11M95059.D Vial: 4
Acq On : 11 Sep 2013 13:30 Operator: FJB
Sample : WG444293-04 50ug/L STD A9FOO Inst : hpms11
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 13 11:04:50 2013 Quant Results File: A9WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.06	96	676812	25.00 ug/L	0.01
12) Chlorobenzene-d5	13.67	117	522362	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.47	152	261364	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.21	41	25802	44.5375 ug/L	93
3) 3-Chloro-1-propene	6.59	41	577071	51.2966 ug/L	98
4) 2-Chloro-1,3-butadiene	7.92	53	616386	51.7574 ug/L	99
5) Methacrylonitrile	8.68	41	178782	49.8697 ug/L	93
6) Isobutyl Alcohol	8.69	43	16029	114.9743 ug/L	83
7) 1-Butanol	9.59	56	1790	41.1541 ug/L #	73
8) Cyclohexanone	14.85	55	40769	46.7371 ug/L	95
9) 2-Nitropropane	11.04	43	69063	43.2574 ug/L	89
10) Ethyl Acetate	8.53	43	216894	47.7348 ug/L	99
11) Methyl methacrylate	10.73	41	234221	48.5319 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M95059.D A9WT.M Fri Sep 13 11:04:50 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\11M95059.D Vial: 4
Acq On : 11 Sep 2013 13:30 Operator: FJB
Sample : WG444293-04 50ug/L STD A9FOO Inst : hpms11
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 13 11:04 2013 Quant Results File: A9WT.RES

Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Initial Calibration

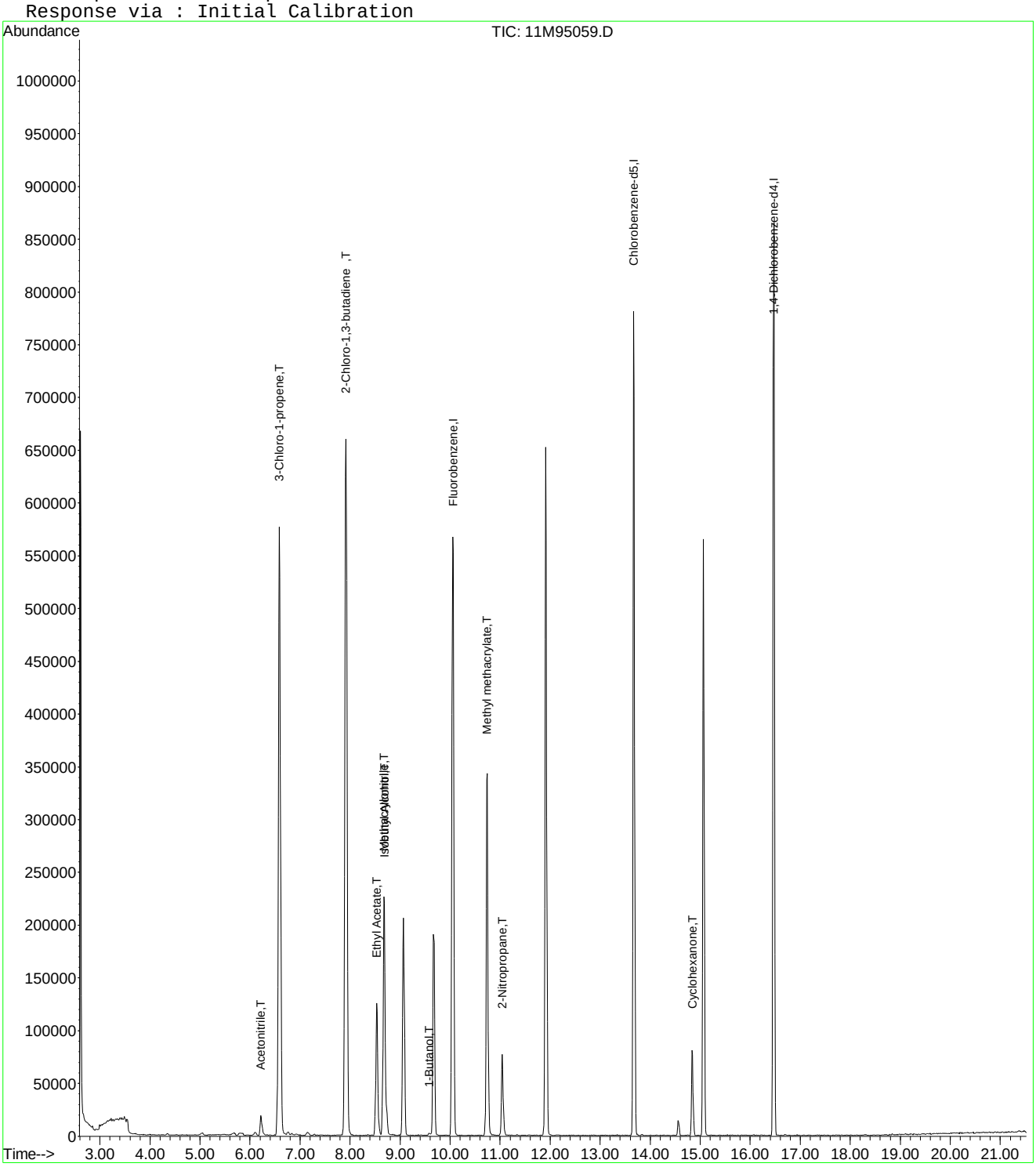

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\11M95060.D Vial: 5
Acq On : 11 Sep 2013 14:02 Operator: FJB
Sample : WG444293-05 100ug/L STD A9FOO Inst : hpms11
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 13 11:04:51 2013 Quant Results File: A9WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.05	96	673001	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.67	117	512434	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.47	152	257400	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.21	41	57597	99.9827 ug/L	94
3) 3-Chloro-1-propene	6.59	41	1181640	105.6323 ug/L	99
4) 2-Chloro-1,3-butadiene	7.92	53	1276611	107.8030 ug/L	99
5) Methacrylonitrile	8.68	41	371511	104.2167 ug/L	93
6) Isobutyl Alcohol	8.70	43	31000	223.6189 ug/L	93
7) 1-Butanol	9.57	56	4535	104.8550 ug/L #	72
8) Cyclohexanone	14.84	55	88835	102.4160 ug/L	96
9) 2-Nitropropane	11.04	43	156511	98.5853 ug/L	94
10) Ethyl Acetate	8.53	43	468667	103.7299 ug/L	99
11) Methyl methacrylate	10.73	41	494318	103.0055 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M95060.D A9WT.M Fri Sep 13 11:04:51 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\11M95060.D Vial: 5
Acq On : 11 Sep 2013 14:02 Operator: FJB
Sample : WG444293-05 100ug/L STD A9FOO Inst : hpms11
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 13 11:04 2013 Quant Results File: A9WT.RES

Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Initial Calibration

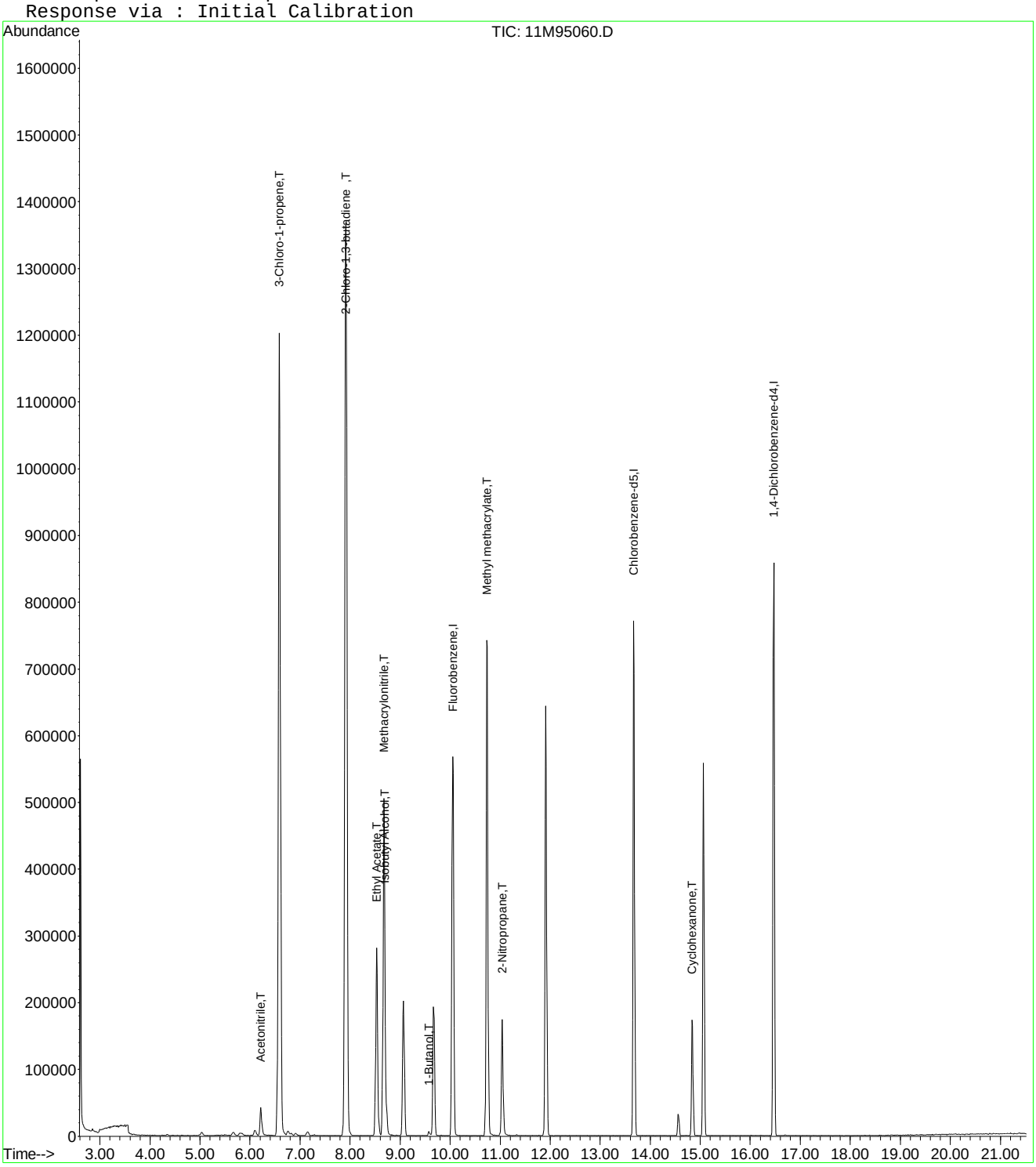

11M95060.D A9WT.M Fri Sep 13 11:04:51 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\11M95061.D Vial: 6
Acq On : 11 Sep 2013 14:33 Operator: FJB
Sample : WG444293-06 200ug/L STD A9FOO Inst : hpms11
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 13 11:04:52 2013 Quant Results File: A9WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.05	96	686744	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.67	117	523462	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.47	152	266294	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.21	41	119857	203.8962 ug/L	93
3) 3-Chloro-1-propene	6.59	41	2345972	205.5205 ug/L	98
4) 2-Chloro-1,3-butadiene	7.91	53	2520097	208.5501 ug/L	95
5) Methacrylonitrile	8.68	41	737403	202.7175 ug/L	97
6) Isobutyl Alcohol	8.70	43	55118	389.6378 ug/L	93
7) 1-Butanol	9.57	56	9625	218.0889 ug/L #	80
8) Cyclohexanone	14.84	55	184936	208.9421 ug/L	96
9) 2-Nitropropane	11.04	43	337332	208.2311 ug/L	94
10) Ethyl Acetate	8.53	43	951482	206.3768 ug/L	100
11) Methyl methacrylate	10.73	41	1010551	206.3637 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M95061.D A9WT.M Fri Sep 13 11:04:52 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\11M95061.D Vial: 6
Acq On : 11 Sep 2013 14:33 Operator: FJB
Sample : WG444293-06 200ug/L STD A9FOO Inst : hpms11
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 13 11:04 2013 Quant Results File: A9WT.RES

Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Initial Calibration

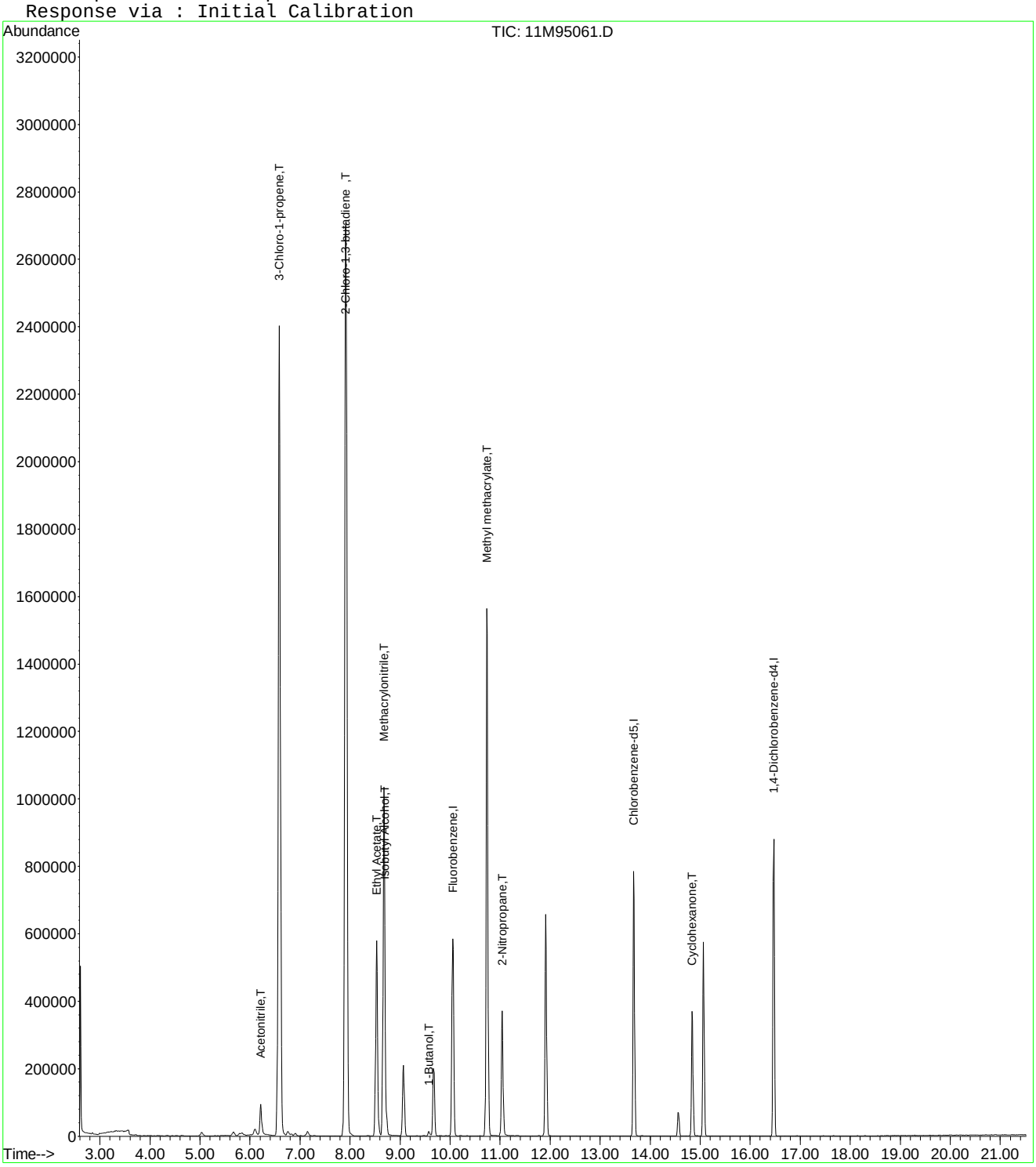

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\11M95062.D Vial: 7
Acq On : 11 Sep 2013 15:05 Operator: FJB
Sample : WG444293-07 300ug/L STD A9FOO Inst : hpms11
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 13 11:04:53 2013 Quant Results File: A9WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.05	96	686543	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.67	117	525178	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.47	152	268053	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.21	41	183577	312.3857 ug/L	93
3) 3-Chloro-1-propene	6.59	41	3454226	302.6984 ug/L	96
4) 2-Chloro-1,3-butadiene	7.91	53	3683269	304.8974 ug/L	93
5) Methacrylonitrile	8.68	41	1095220	301.1722 ug/L	99
6) Isobutyl Alcohol	8.70	43	82802	585.5116 ug/L	94
7) 1-Butanol	9.57	56	14240	322.7527 ug/L #	79
8) Cyclohexanone	14.84	55	286016	323.2377 ug/L	97
9) 2-Nitropropane	11.04	43	523769	323.4111 ug/L	95
10) Ethyl Acetate	8.53	43	1429631	310.1783 ug/L	99
11) Methyl methacrylate	10.73	41	1518261	310.1334 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M95062.D A9WT.M Fri Sep 13 11:04:53 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\11M95062.D Vial: 7
Acq On : 11 Sep 2013 15:05 Operator: FJB
Sample : WG444293-07 300ug/L STD A9FOO Inst : hpms11
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 13 11:04 2013 Quant Results File: A9WT.RES

Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Initial Calibration

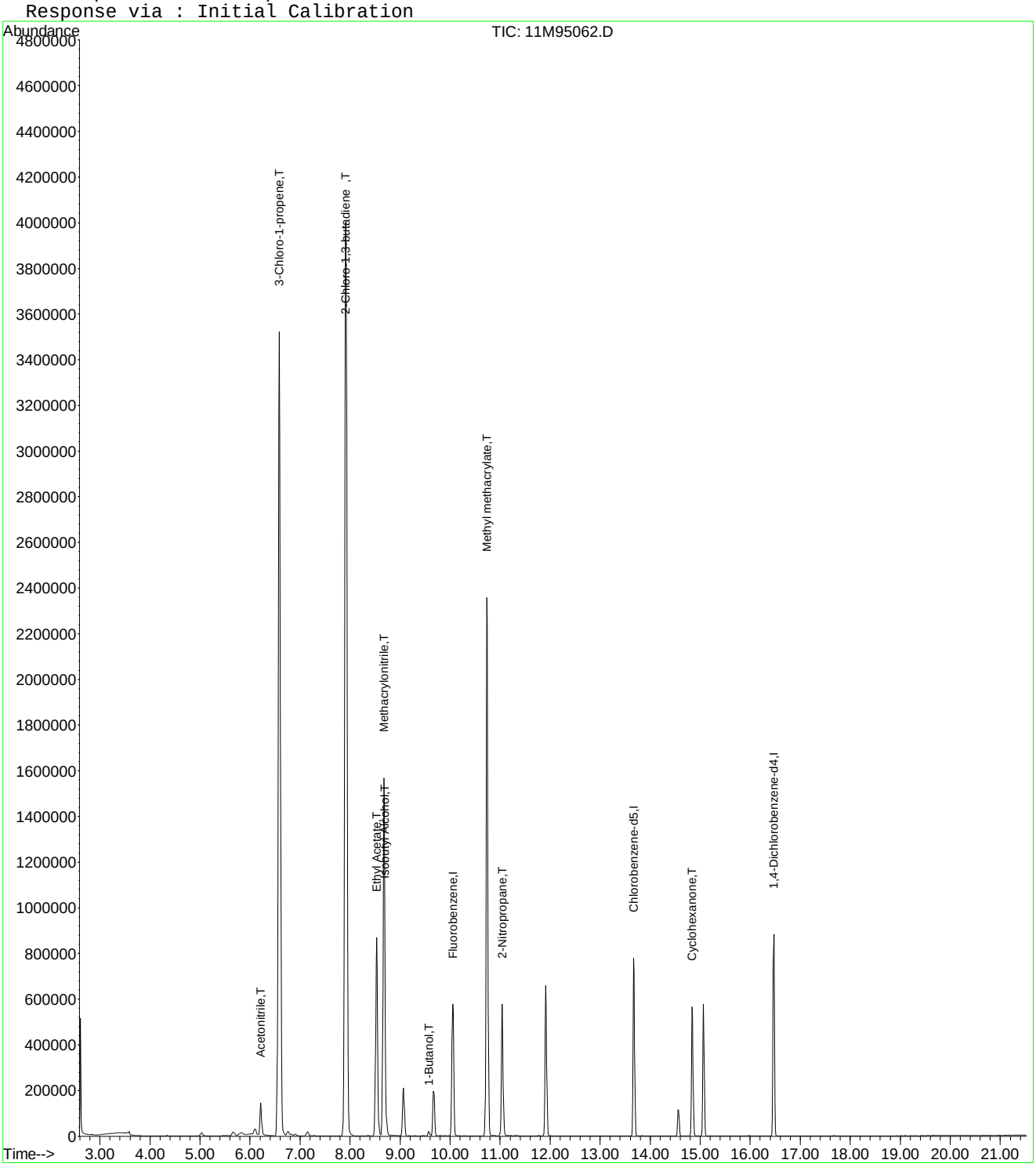

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\11M95063.D Vial: 8
Acq On : 11 Sep 2013 15:36 Operator: FJB
Sample : WG444293-08 400ug/L STD A9FOO Inst : hpms11
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 13 11:04:54 2013 Quant Results File: A9WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.05	96	694792	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.67	117	534395	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.47	152	271612	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.21	41	235664	396.2589 ug/L	93
3) 3-Chloro-1-propene	6.59	41	4419838	382.7178 ug/L	94
4) 2-Chloro-1,3-butadiene	7.91	53	4663075	381.4219 ug/L	90
5) Methacrylonitrile	8.68	41	1361590	369.9754 ug/L	98
6) Isobutyl Alcohol	8.70	43	103084	720.2759 ug/L	92
7) 1-Butanol	9.57	56	17183	384.8326 ug/L	89
8) Cyclohexanone	14.84	55	351244	392.2415 ug/L	97
9) 2-Nitropropane	11.04	43	671132	409.4831 ug/L	96
10) Ethyl Acetate	8.53	43	1802923	386.5250 ug/L	99
11) Methyl methacrylate	10.73	41	1906050	384.7241 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M95063.D A9WT.M Fri Sep 13 11:04:54 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\11M95063.D Vial: 8
Acq On : 11 Sep 2013 15:36 Operator: FJB
Sample : WG444293-08 400ug/L STD A9FOO Inst : hpms11
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 13 11:04 2013 Quant Results File: A9WT.RES

Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Initial Calibration

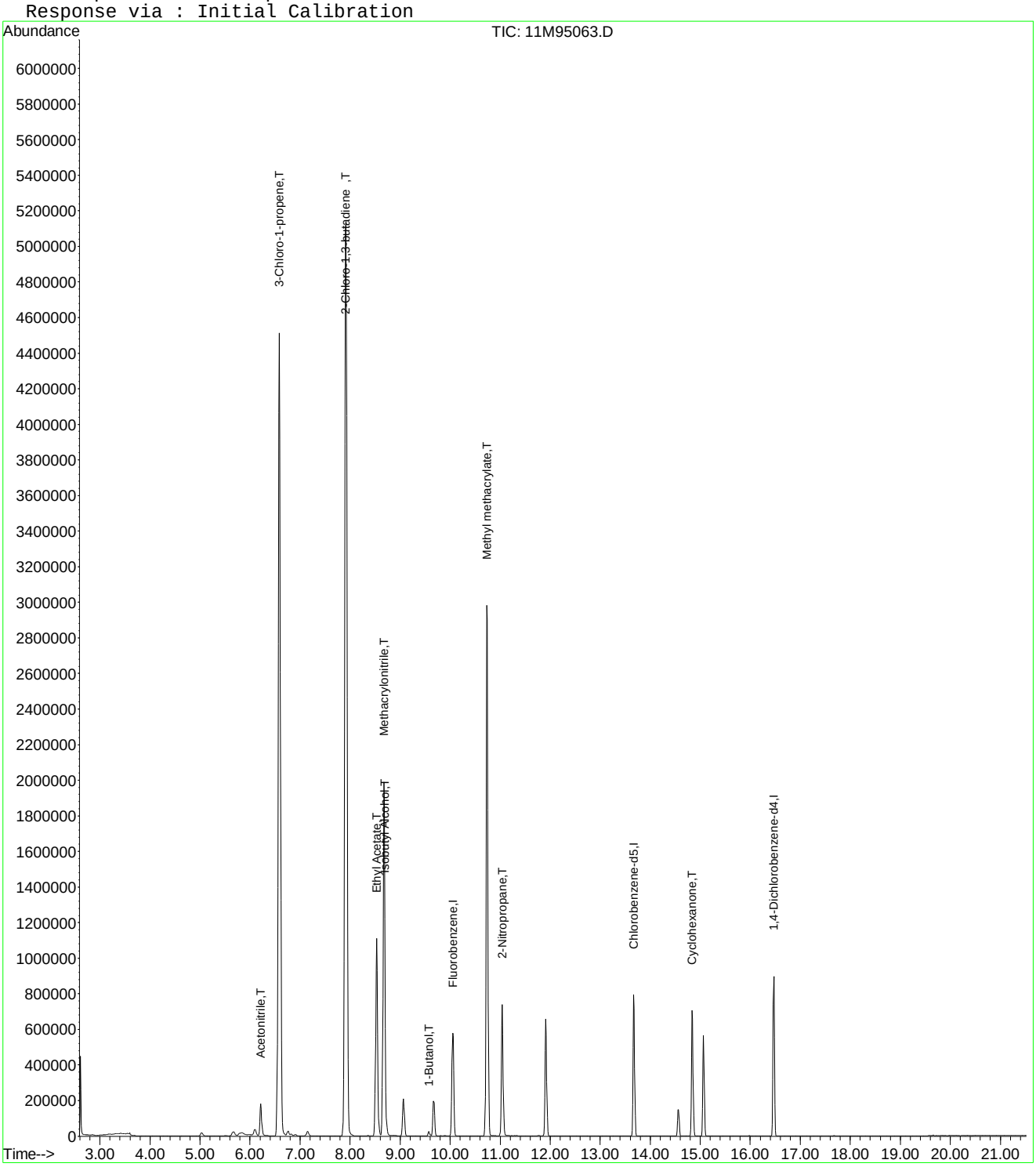

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\11M95064.D Vial: 9
Acq On : 11 Sep 2013 16:08 Operator: FJB
Sample : WG444293-09 500ug/L STD A9FOO Inst : hpms11
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 13 11:04:54 2013 Quant Results File: A9WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.05	96	691368	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.67	117	535303	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.47	152	274377	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.21	41	287346	485.5528 ug/L	93
3) 3-Chloro-1-propene	6.59	41	5253299	457.1408 ug/L	91
4) 2-Chloro-1,3-butadiene	7.91	53	5535063	454.9895 ug/L	87
5) Methacrylonitrile	8.67	41	1642857	448.6129 ug/L	97
6) Isobutyl Alcohol	8.70	43	125589	881.8704 ug/L	94
7) 1-Butanol	9.57	56	22240	500.5566 ug/L #	83
8) Cyclohexanone	14.84	55	418055	469.1628 ug/L	96
9) 2-Nitropropane	11.04	43	820422	503.0497 ug/L	96
10) Ethyl Acetate	8.53	43	2170046	467.5358 ug/L	98
11) Methyl methacrylate	10.73	41	2292919	465.1032 ug/L	94

(#) = qualifier out of range (m) = manual integration
11M95064.D A9WT.M Fri Sep 13 11:04:55 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\11M95064.D Vial: 9
Acq On : 11 Sep 2013 16:08 Operator: FJB
Sample : WG444293-09 500ug/L STD A9FOO Inst : hpms11
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 13 11:04 2013 Quant Results File: A9WT.RES

Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Initial Calibration

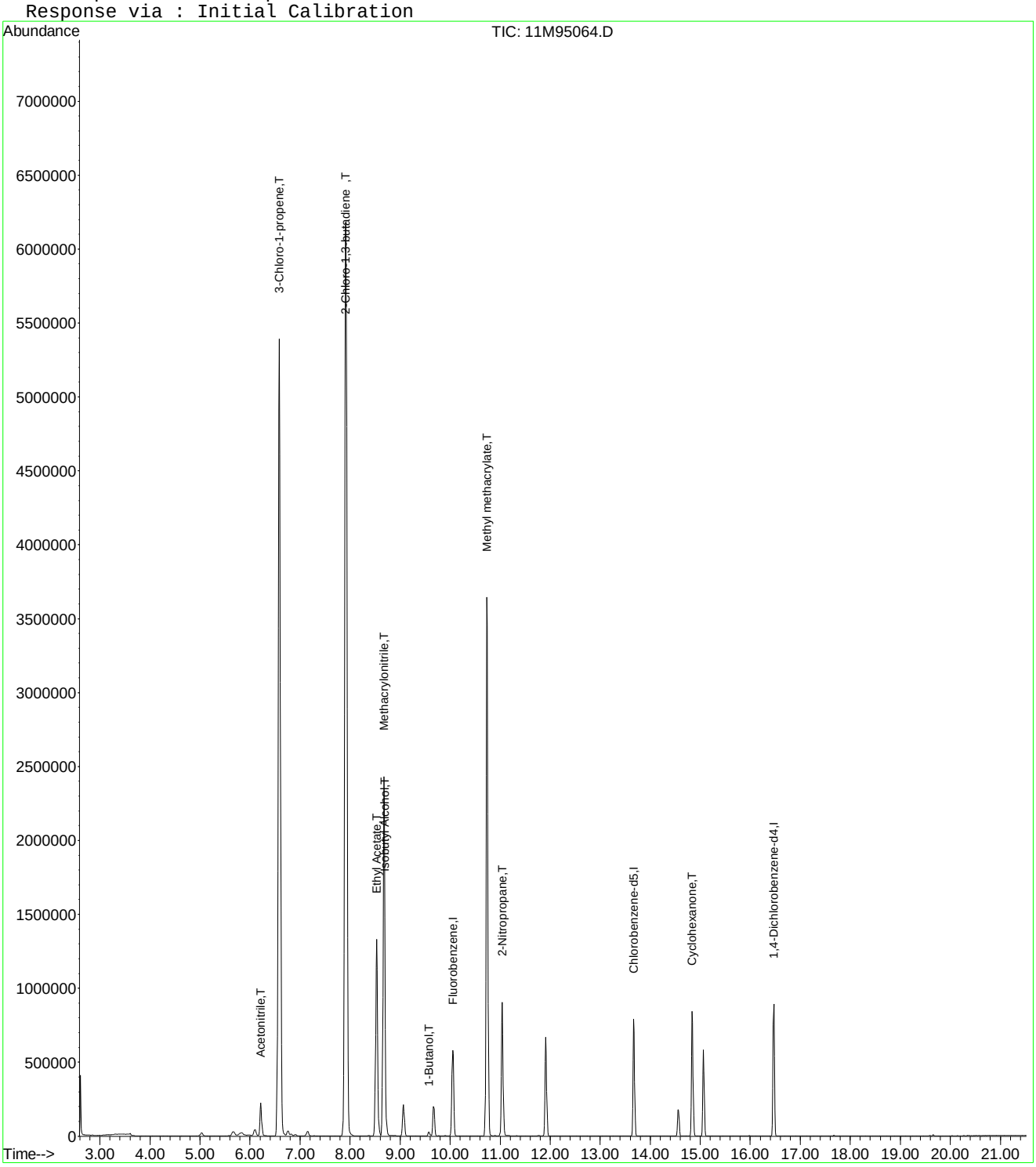

11M95064.D A9WT.M Fri Sep 13 11:04:55 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\11M95066.D Vial: 11
Acq On : 11 Sep 2013 17:14 Operator: FJB
Sample : WG444293-02 5ug/L STD A9FOO Inst : hpms11
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 13 11:04:57 2013 Quant Results File: A9WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.05	96	627294	25.00 ug/L	0.00
12) Chlorobenzene-d5	13.67	117	480579	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.47	152	240223	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.22	41	2945	5.4847 ug/L	74
3) 3-Chloro-1-propene	6.59	41	54017	5.1807 ug/L	96
4) 2-Chloro-1,3-butadiene	7.92	53	54644	4.9506 ug/L	95
5) Methacrylonitrile	8.69	41	18239	5.4892 ug/L	91
6) Isobutyl Alcohol	8.71	43	2403	18.5971 ug/L #	1
8) Cyclohexanone	14.85	55	5566	6.8845 ug/L	98
9) 2-Nitropropane	11.04	43	8760	5.9199 ug/L	96
10) Ethyl Acetate	8.54	43	23483	5.5762 ug/L	99
11) Methyl methacrylate	10.74	41	24822	5.5493 ug/L	94

(#) = qualifier out of range (m) = manual integration
11M95066.D A9WT.M Fri Sep 13 11:04:57 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\11M95066.D Vial: 11
Acq On : 11 Sep 2013 17:14 Operator: FJB
Sample : WG444293-02 5ug/L STD A9FOO Inst : hpms11
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 13 11:04 2013 Quant Results File: A9WT.RES

Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Initial Calibration

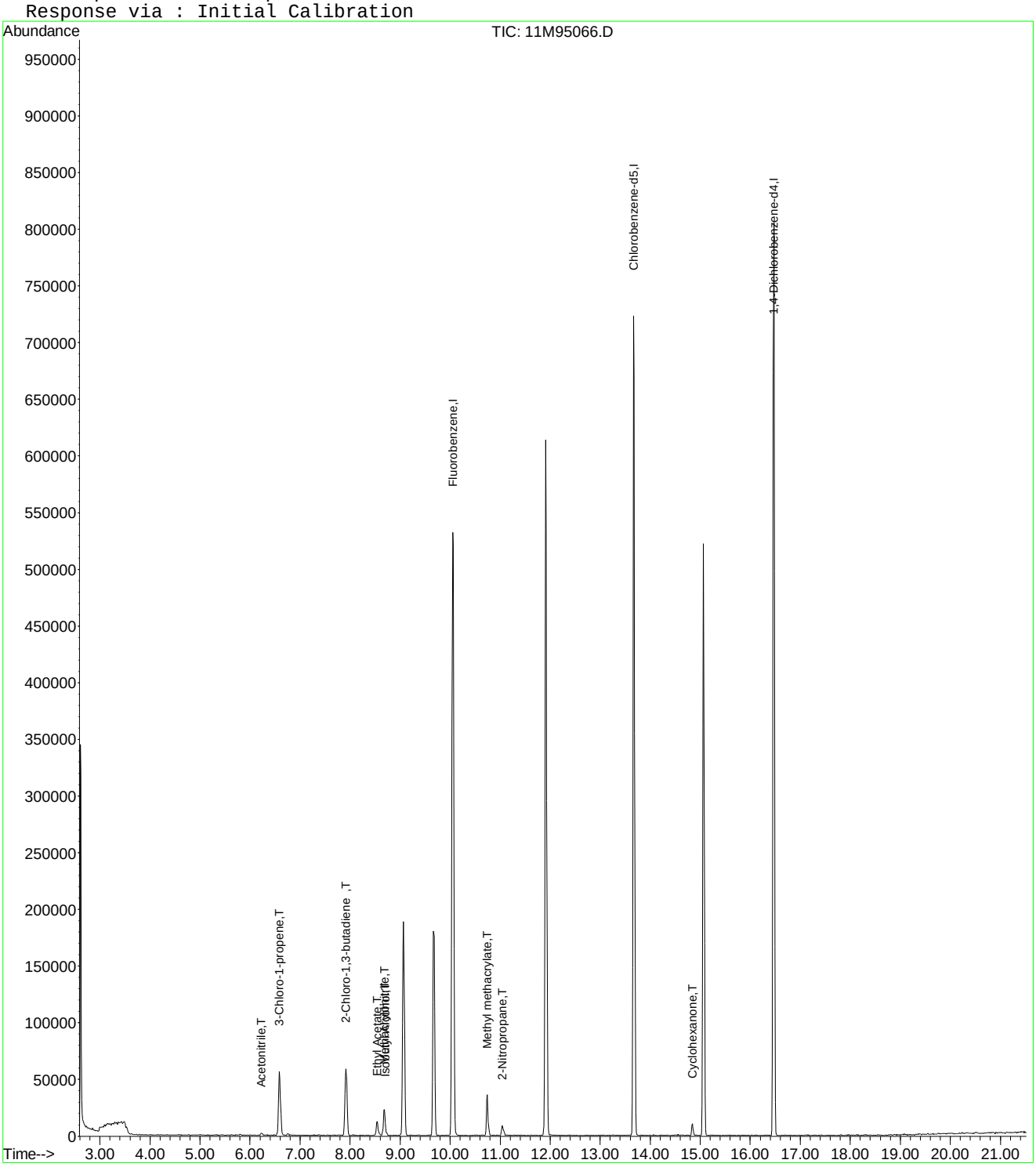

11M95066.D A9WT.M Fri Sep 13 11:04:57 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\11M95067.D Vial: 12
Acq On : 11 Sep 2013 17:46 Operator: FJB
Sample : WG444293-10 100ug/L ALT SRC A9FOO Inst : hpms11
Misc : 1,1 STD60074 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 13 11:04:58 2013 Quant Results File: A9WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.06	96	629402	25.00 ug/L	0.01
12) Chlorobenzene-d5	13.67	117	483330	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.47	152	241535	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.21	41	52616	97.6630 ug/L	95
3) 3-Chloro-1-propene	6.59	41	1249840	119.4685 ug/L	99
4) 2-Chloro-1,3-butadiene	7.92	53	1024137	92.4736 ug/L	99
5) Methacrylonitrile	8.67	41	326299	97.8743 ug/L	97
6) Isobutyl Alcohol	8.70	43	26143	201.6461 ug/L	92
7) 1-Butanol	9.58	56	3322	82.1295 ug/L #	68
8) Cyclohexanone	14.85	55	38503	47.4642 ug/L	95
9) 2-Nitropropane	11.04	43	141034	94.9902 ug/L	96
10) Ethyl Acetate	8.53	43	440839	104.3295 ug/L	100
11) Methyl methacrylate	10.73	41	458942	102.2585 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M95067.D A9WT.M Fri Sep 13 11:04:58 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091113\11M95067.D Vial: 12
Acq On : 11 Sep 2013 17:46 Operator: FJB
Sample : WG444293-10 100ug/L ALT SRC A9FOO Inst : hpms11
Misc : 1,1 STD60074 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 13 11:04 2013 Quant Results File: A9WT.RES

Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Initial Calibration

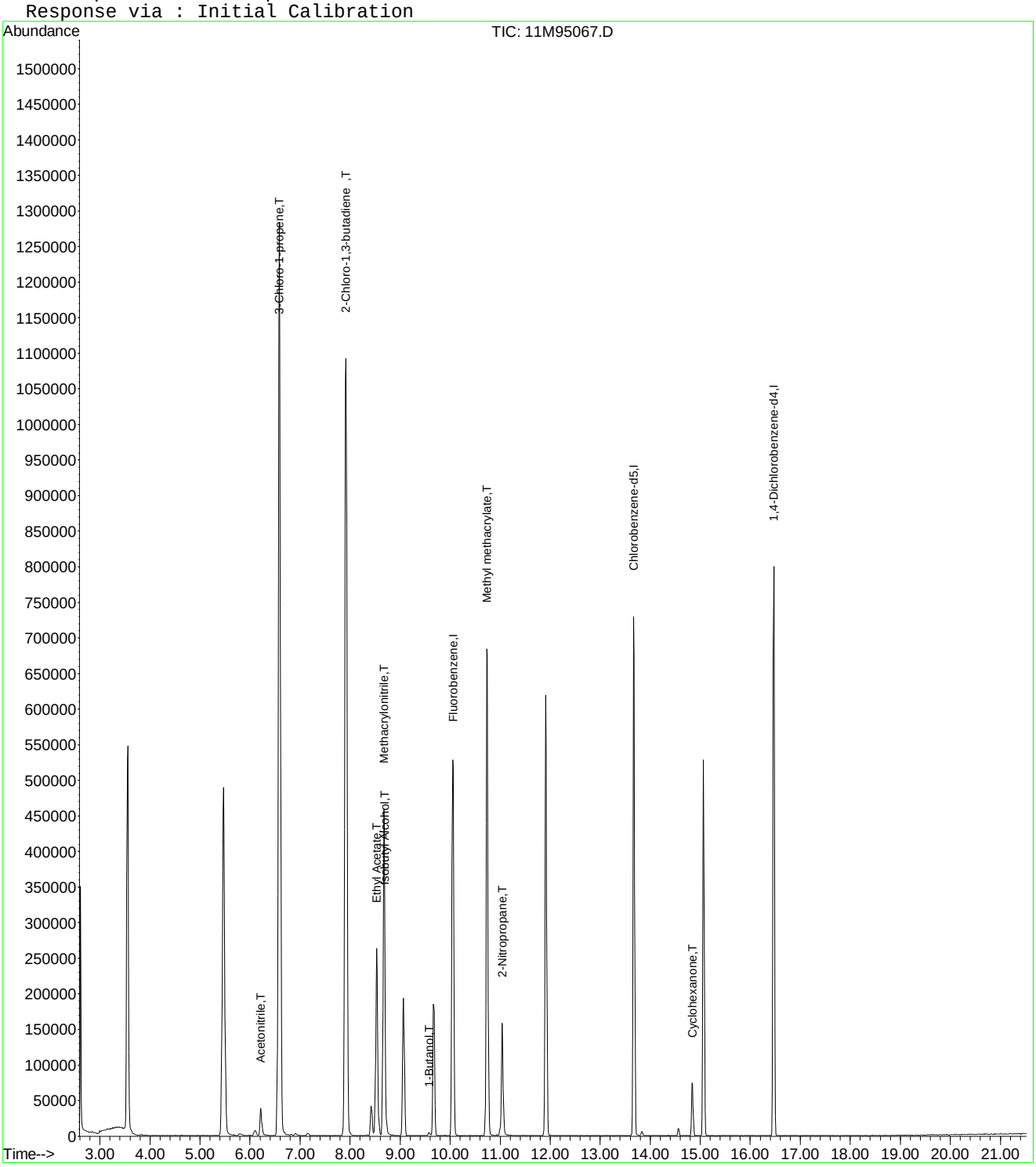

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\091113\11M95067.D Vial: 12
Acq On : 11 Sep 2013 17:46 Operator: FJB
Sample : WG444293-10 100ug/L ALT SRC A9FOO Inst : hpms11
Misc : 1,1 STD60074 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9WT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 09/11/13 HPMS11
Last Update : Fri Sep 13 10:49:32 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	94	0.01
2	T	Acetonitrile	100.0000	97.6630	2.3	91	0.00
3	T	3-Chloro-1-propene	100.0000	119.4685	-19.5	106	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	92.4736	7.5	80	0.00
5	T	Methacrylonitrile	100.0000	97.8744	2.1	88	0.00
6	T	Isobutyl Alcohol	200.0000	201.6461	-0.8	84	0.00
7	T	1-Butanol	100.0000	82.1295	17.9	73	0.01
8	T	Cyclohexanone	100.0000	47.4642	52.5	43	0.01
9	T	2-Nitropropane	100.0000	94.9902	5.0	90	0.00
10	T	Ethyl Acetate	100.0000	104.3295	-4.3	94	0.00
11	T	Methyl methacrylate	100.0000	102.2585	-2.3	93	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	94	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	94	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M95067.D A9WT.M Fri Sep 13 11:06:11 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95117.D Vial: 2
Acq On : 17 Sep 2013 14:40 Operator: FJB
Sample : WG444955-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 15:02:37 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.68	96	917941	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.31	117	660471	25.00 ug/L	0.02
78) 1,4-Dichlorobenzene-d4	17.13	152	330406	25.00 ug/L	0.04

System Monitoring Compounds					
37) Dibromofluoromethane	9.70	111	3345	0.3441 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.36%#	
43) 1,2-Dichloroethane-d4	10.30	65	3986	0.3587 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.44%#	
58) Toluene-d8	12.54	98	11657	0.4005 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery	= 1.60%#	
80) p-Bromofluorobenzene	15.71	95	4714	0.4035 ug/L	0.02
Spiked Amount 25.000	Range 86 - 115		Recovery	= 1.60%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2823	0.3181 ug/L #	85
3) Chloromethane	3.74	50	5684	0.4936 ug/L #	1
4) Vinyl Chloride	3.99	62	4687	0.4135 ug/L	92
5) 1,3-Butadiene	4.05	54	2596	0.2385 ug/L #	21
6) Bromomethane	4.90	94	3797	0.7945 ug/L	92
7) Chloroethane	5.07	64	2148	0.3473 ug/L #	64
8) Trichlorofluoromethane	5.55	101	6470	0.3863 ug/L	99
10) Isoprene	6.11	67	4239	0.3181 ug/L	69
12) 1,1,2-Trichloro-1,2,2-Trif	6.32	101	2518	0.2666 ug/L	95
13) Acetone	6.41	43	4193	1.2956 ug/L #	1
14) 1,1-Dichloroethene	6.63	61	6084	0.3752 ug/L	98
16) Dimethyl Sulfide	6.88	62	3445	0.3758 ug/L	78
17) Iodomethane	7.13	142	3492	0.6187 ug/L	71
18) Methyl acetate	7.13	43	1049	0.1989 ug/L #	66
19) Methylene Chloride	7.38	84	3363	0.3433 ug/L	89
20) Carbon Disulfide	7.43	76	13868	0.4783 ug/L #	84
22) Methyl Tert Butyl Ether	7.58	73	6450	0.2747 ug/L #	75
23) trans-1,2-Dichloroethene	7.82	96	4022	0.3892 ug/L	71
24) n-Hexane	7.90	57	4729	0.4130 ug/L #	69
27) 1,1-Dichloroethane	8.43	63	4838	0.2820 ug/L #	87
29) 2-Butanone	8.95	43	910	0.3261 ug/L #	59
31) 2,2-Dichloropropane	9.14	77	4950	0.3528 ug/L	88
32) cis-1,2-Dichloroethene	9.22	96	4047	0.3701 ug/L	76
33) Chloroform	9.43	83	5663	0.3157 ug/L	97
35) Bromochloromethane	9.64	130	1624	0.2672 ug/L	98
38) 1,1,1-Trichloroethane	9.93	97	5007	0.3007 ug/L #	90
39) Cyclohexane	9.96	56	5427	0.3355 ug/L	91
40) 1,1-Dichloropropene	10.11	75	5386	0.3719 ug/L	89
41) Carbon Tetrachloride	10.25	117	4636	0.3149 ug/L	93
45) 1,2-Dichloroethane	10.42	62	4035	0.2907 ug/L	90
46) Benzene	10.45	78	16634	0.4294 ug/L	94
47) Trichloroethene	11.16	130	4444	0.4162 ug/L	92
48) Methylcyclohexane	11.24	83	5585	0.3679 ug/L	87
49) 1,2-Dichloropropane	11.36	63	2970	0.2977 ug/L	84
51) Bromodichloromethane	11.64	83	3836	0.2836 ug/L #	91
52) Dibromomethane	11.73	93	1828	0.3167 ug/L	81
53) 2-Chloroethyl Vinyl Ether	11.91	63	630	0.1551 ug/L #	47
55) cis-1,3-Dichloropropene	12.23	75	4736	0.3379 ug/L #	83
56) Dimethyl Disulfide	12.49	79	1954	0.2231 ug/L	81
59) Toluene	12.64	91	15093	0.4172 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95117.D Vial: 2
Acq On : 17 Sep 2013 14:40 Operator: FJB
Sample : WG444955-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 15:02:37 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
60)	Ethyl Methacrylate	12.70	69	2526	0.3012 ug/L	78
62)	trans-1,3-Dichloropropene	12.79	75	3915	0.3494 ug/L #	68
63)	1,1,2-Trichloroethane	13.00	97	1665	0.2589 ug/L	82
64)	2-Hexanone	12.92	43	1090	0.3011 ug/L #	41
65)	1,3-Dichloropropane	13.29	76	3774	0.3385 ug/L	97
66)	Tetrachloroethene	13.41	164	3235	0.3965 ug/L	97
67)	Dibromochloromethane	13.65	129	2170	0.2735 ug/L	94
68)	1,2-Dibromoethane	13.90	107	2359	0.3835 ug/L	86
69)	1-Chlorohexane	13.95	91	4868	0.4135 ug/L	72
70)	Chlorobenzene	14.36	112	10266	0.4056 ug/L	95
71)	1,1,1,2-Tetrachloroethane	14.38	131	2785	0.2910 ug/L	99
72)	Ethylbenzene	14.38	106	4694	0.3403 ug/L	90
73)	m-,p-Xylene	14.46	106	11739	0.7511 ug/L	100
74)	o-Xylene	14.99	106	5711	0.3588 ug/L	86
75)	Styrene	15.02	104	8899	0.3458 ug/L	79
76)	Bromoform	15.50	173	1223	0.2301 ug/L #	52
77)	Isopropylbenzene	15.38	105	14128	0.3745 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.58	83	1546	0.2439 ug/L	91
82)	trans-1,4-Dichloro-2-Buten	15.80	53	409	0.2225 ug/L #	1
83)	n-Propylbenzene	15.85	91	18337	0.4083 ug/L	93
84)	Bromobenzene	15.99	156	4099	0.3987 ug/L #	50
85)	1,3,5-Trimethylbenzene	16.02	105	12129	0.3977 ug/L	98
86)	2-Chlorotoluene	16.12	91	11250	0.3786 ug/L	84
87)	4-Chlorotoluene	16.12	91	11250	0.4169 ug/L	99
88)	a-Methylstyrene	16.41	118	5343	0.3253 ug/L	94
89)	tert-Butylbenzene	16.46	134	2340	0.3380 ug/L	90
90)	1,2,4-Trimethylbenzene	16.51	105	12300	0.3978 ug/L	97
91)	sec-Butylbenzene	16.71	105	14203	0.4074 ug/L	98
92)	p-Isopropyltoluene	16.85	119	12278	0.3998 ug/L	99
93)	1,3-Dichlorobenzene	17.05	146	7952	0.4210 ug/L	89
94)	1,4-Dichlorobenzene	17.05	146	7952	0.4049 ug/L	91
95)	n-Butylbenzene	17.34	91	12324	0.4503 ug/L #	97
96)	1,2-Dichlorobenzene	17.64	146	6703	0.3791 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	18.56	75	226	0.1819 ug/L #	1
98)	1,2,4-Trichlorobenzene	19.61	180	5232	0.4226 ug/L	96
99)	Hexachlorobutadiene	19.75	225	2871	0.5607 ug/L	93
100)	Naphthalene	19.97	128	8570	0.3938 ug/L #	88
101)	1,2,3-Trichlorobenzene	20.26	180	4728	0.4325 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M95117.D 8260WTR.M Tue Sep 17 15:02:38 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95117.D Vial: 2
Acq On : 17 Sep 2013 14:40 Operator: FJB
Sample : WG444955-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 15:02 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration

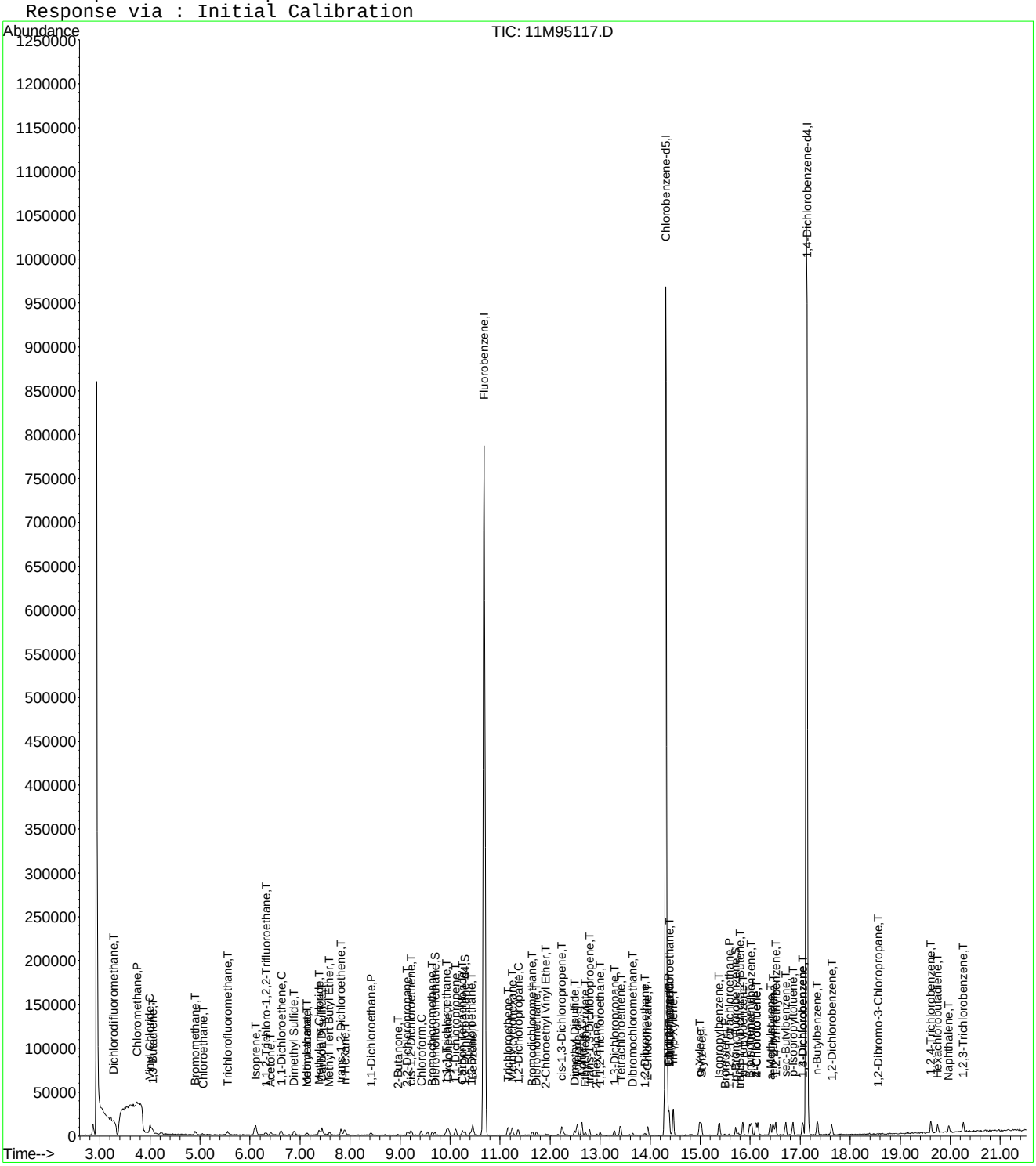

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95118.D Vial: 3
Acq On : 17 Sep 2013 15:25 Operator: FJB
Sample : WG444955-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 15:46:49 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.68	96	903046	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.31	117	661289	25.00 ug/L	0.02
78) 1,4-Dichlorobenzene-d4	17.13	152	334691	25.00 ug/L	0.04

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	10.30	65	550	0.0503 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.20%#	
58) Toluene-d8	12.54	98	2785	0.0956 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.40%#	
80) p-Bromofluorobenzene	15.71	95	1393	0.1177 ug/L	0.02
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.48%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2654	0.3040 ug/L #	87
3) Chloromethane	3.74	50	4478	0.3953 ug/L	85
4) Vinyl Chloride	3.98	62	4904	0.4398 ug/L	89
5) 1,3-Butadiene	4.03	54	2970	0.2774 ug/L #	9
6) Bromomethane	4.90	94	4020	0.8551 ug/L	96
7) Chloroethane	5.06	64	2003	0.3292 ug/L #	43
8) Trichlorofluoromethane	5.54	101	6655	0.4039 ug/L	98
10) Isoprene	6.10	67	5402	0.4120 ug/L #	59
12) 1,1,2-Trichloro-1,2,2-Trif	6.32	101	2853	0.3071 ug/L	96
13) Acetone	6.41	43	2688	0.8442 ug/L #	68
14) 1,1-Dichloroethene	6.63	61	5387	0.3377 ug/L	89
16) Dimethyl Sulfide	6.89	62	4188	0.4644 ug/L	59
17) Iodomethane	7.14	142	2983	0.5372 ug/L #	63
18) Methyl acetate	7.14	43	1142	0.2201 ug/L #	66
19) Methylene Chloride	7.38	84	4010	0.4160 ug/L	84
20) Carbon Disulfide	7.43	76	12049	0.4224 ug/L #	66
22) Methyl Tert Butyl Ether	7.59	73	8911	0.3857 ug/L	89
23) trans-1,2-Dichloroethene	7.82	96	3321	0.3267 ug/L	89
24) n-Hexane	7.88	57	5164	0.4585 ug/L #	77
27) 1,1-Dichloroethane	8.42	63	5594	0.3314 ug/L #	84
29) 2-Butanone	8.95	43	779	0.2838 ug/L #	59
31) 2,2-Dichloropropane	9.16	77	4901	0.3551 ug/L	79
32) cis-1,2-Dichloroethene	9.22	96	4231	0.3933 ug/L	74
33) Chloroform	9.41	83	6273	0.3555 ug/L	96
34) 1-Bromopropane	9.55	122	638	0.3159 ug/L	33
35) Bromochloromethane	9.65	130	1855	0.3103 ug/L	88
38) 1,1,1-Trichloroethane	9.93	97	6395	0.3904 ug/L #	92
39) Cyclohexane	9.96	56	6307	0.3963 ug/L	95
40) 1,1-Dichloropropene	10.11	75	5281	0.3707 ug/L	98
41) Carbon Tetrachloride	10.25	117	4731	0.3267 ug/L #	80
45) 1,2-Dichloroethane	10.41	62	5100	0.3734 ug/L	90
46) Benzene	10.45	78	16302	0.4277 ug/L	97
47) Trichloroethene	11.16	130	4020	0.3827 ug/L	99
48) Methylcyclohexane	11.25	83	5664	0.3793 ug/L	87
49) 1,2-Dichloropropane	11.35	63	3748	0.3819 ug/L #	68
51) Bromodichloromethane	11.64	83	4824	0.3625 ug/L #	90
52) Dibromomethane	11.73	93	2111	0.3718 ug/L	90
53) 2-Chloroethyl Vinyl Ether	11.91	63	1104	0.2763 ug/L #	47
54) 4-Methyl-2-Pentanone	11.94	58	289	0.1351 ug/L #	36
55) cis-1,3-Dichloropropene	12.23	75	5535	0.4014 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M95118.D 8260WTR.M Tue Sep 17 15:46:49 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95118.D Vial: 3
Acq On : 17 Sep 2013 15:25 Operator: FJB
Sample : WG444955-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 15:46:49 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
56)	Dimethyl Disulfide	12.49	79	2516	0.2920 ug/L		86
59)	Toluene	12.64	91	15176	0.4189 ug/L		97
60)	Ethyl Methacrylate	12.70	69	2917	0.3474 ug/L		85
62)	trans-1,3-Dichloropropene	12.79	75	4313	0.3845 ug/L		90
63)	1,1,2-Trichloroethane	13.00	97	1976	0.3069 ug/L		64
64)	2-Hexanone	12.94	43	1538	0.4244 ug/L	#	3
65)	1,3-Dichloropropane	13.28	76	4920	0.4408 ug/L		88
66)	Tetrachloroethene	13.40	164	3469	0.4246 ug/L		79
67)	Dibromochloromethane	13.66	129	3028	0.3812 ug/L		91
68)	1,2-Dibromoethane	13.90	107	2902	0.4711 ug/L		82
69)	1-Chlorohexane	13.96	91	4991	0.4235 ug/L		72
70)	Chlorobenzene	14.36	112	10208	0.4028 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.38	131	3424	0.3573 ug/L		93
72)	Ethylbenzene	14.37	106	4625	0.3349 ug/L		73
73)	m-,p-Xylene	14.47	106	12097	0.7731 ug/L		95
74)	o-Xylene	14.98	106	6016	0.3775 ug/L		96
75)	Styrene	15.02	104	9161	0.3555 ug/L		85
76)	Bromoform	15.49	173	1581	0.2971 ug/L		80
77)	Isopropylbenzene	15.39	105	15252	0.4038 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.59	83	2287	0.3562 ug/L		93
81)	1,2,3-Trichloropropane	15.77	110	599	0.2976 ug/L		69
82)	trans-1,4-Dichloro-2-Buten	15.81	53	538	0.2889 ug/L	#	1
83)	n-Propylbenzene	15.85	91	19978	0.4392 ug/L		94
84)	Bromobenzene	15.99	156	4290	0.4119 ug/L	#	44
85)	1,3,5-Trimethylbenzene	16.03	105	12430	0.4024 ug/L		89
86)	2-Chlorotoluene	16.12	91	11447	0.3803 ug/L		93
87)	4-Chlorotoluene	16.12	91	11447	0.4188 ug/L		88
88)	a-Methylstyrene	16.40	118	5669	0.3408 ug/L		91
89)	tert-Butylbenzene	16.46	134	2536	0.3616 ug/L		97
90)	1,2,4-Trimethylbenzene	16.51	105	12860	0.4106 ug/L		95
91)	sec-Butylbenzene	16.71	105	16252	0.4602 ug/L		99
92)	p-Isopropyltoluene	16.85	119	13809	0.4439 ug/L		98
93)	1,3-Dichlorobenzene	17.05	146	7786	0.4069 ug/L		98
94)	1,4-Dichlorobenzene	17.05	146	7786	0.3913 ug/L		96
95)	n-Butylbenzene	17.34	91	13630	0.4917 ug/L		94
96)	1,2-Dichlorobenzene	17.63	146	7133	0.3982 ug/L		94
98)	1,2,4-Trichlorobenzene	19.61	180	5800	0.4624 ug/L		87
99)	Hexachlorobutadiene	19.75	225	2534	0.4885 ug/L		81
100)	Naphthalene	19.97	128	9981	0.4528 ug/L		97
101)	1,2,3-Trichlorobenzene	20.26	180	5123	0.4626 ug/L		89

(#) = qualifier out of range (m) = manual integration
11M95118.D 8260WTR.M Tue Sep 17 15:46:50 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95118.D Vial: 3
Acq On : 17 Sep 2013 15:25 Operator: FJB
Sample : WG444955-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 15:46 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration

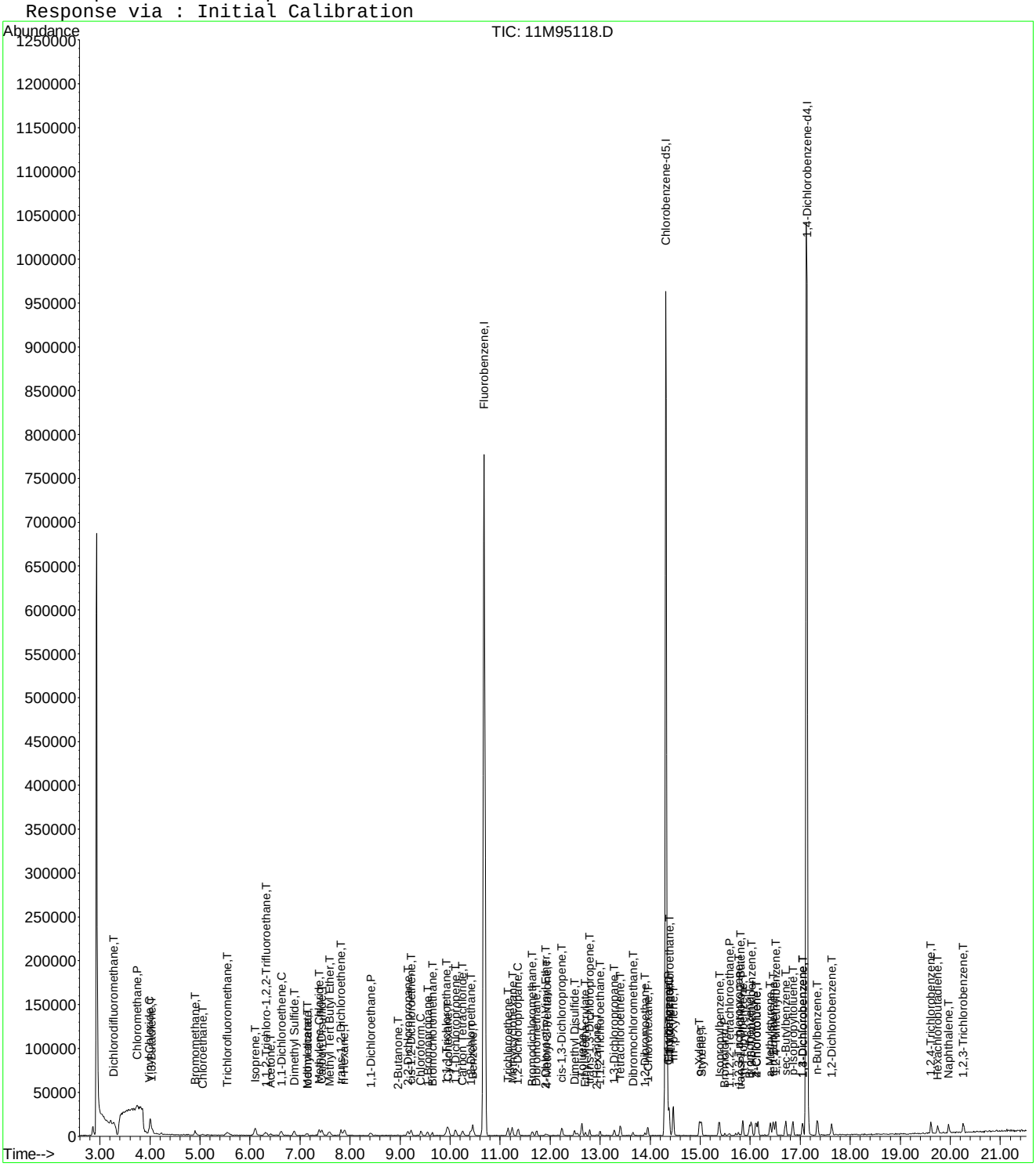

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95119.D Vial: 4
Acq On : 17 Sep 2013 15:56 Operator: FJB
Sample : WG444955-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 16:18:13 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.68	96	874654	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.31	117	644062	25.00 ug/L	0.02
78) 1,4-Dichlorobenzene-d4	17.12	152	327093	25.00 ug/L	0.03

System Monitoring Compounds					
37) Dibromofluoromethane	9.69	111	3649	0.3940 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.56%#	
43) 1,2-Dichloroethane-d4	10.30	65	4735	0.4472 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.80%#	
58) Toluene-d8	12.54	98	13599	0.4791 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.92%#	
80) p-Bromofluorobenzene	15.71	95	5936	0.5133 ug/L	0.02
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.04%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	6779	0.8018 ug/L	100
3) Chloromethane	3.74	50	9310	0.8486 ug/L #	1
4) Vinyl Chloride	3.99	62	9877	0.9145 ug/L	95
5) 1,3-Butadiene	4.04	54	6528	0.6295 ug/L #	69
6) Bromomethane	4.90	94	6682	1.4674 ug/L	90
7) Chloroethane	5.07	64	4899	0.8314 ug/L	97
8) Trichlorofluoromethane	5.55	101	13673	0.8567 ug/L	98
9) Diethyl ether	6.07	59	31533	4.9465 ug/L	84
10) Isoprene	6.10	67	10602	0.8348 ug/L	80
11) Acrolein	6.30	56	1826	1.9381 ug/L	71
12) 1,1,2-Trichloro-1,2,2-Trif	6.32	101	7983	0.8872 ug/L	78
13) Acetone	6.41	43	3505	1.1366 ug/L	95
14) 1,1-Dichloroethene	6.63	61	12472	0.8072 ug/L	92
15) Tert-Butyl Alcohol	6.73	59	7260	14.5439 ug/L #	85
16) Dimethyl Sulfide	6.88	62	7929	0.9078 ug/L	77
17) Iodomethane	7.13	142	5560	1.0338 ug/L	80
18) Methyl acetate	7.14	43	2721	0.5414 ug/L #	66
19) Methylene Chloride	7.38	84	8569	0.9179 ug/L	87
20) Carbon Disulfide	7.43	76	24573	0.8895 ug/L	90
21) Acrylonitrile	7.57	53	6196	2.7566 ug/L	95
22) Methyl Tert Butyl Ether	7.59	73	22150	0.9900 ug/L	92
23) trans-1,2-Dichloroethene	7.83	96	8292	0.8421 ug/L	81
24) n-Hexane	7.90	57	10373	0.9508 ug/L #	91
25) Diisopropyl ether	8.22	45	153320	4.9375 ug/L	97
26) Vinyl Acetate	8.39	43	1990	0.2570 ug/L #	76
27) 1,1-Dichloroethane	8.42	63	13850	0.8472 ug/L	94
28) Ethyl-Tert-Butyl ether	8.76	59	137571	5.1376 ug/L	97
29) 2-Butanone	8.95	43	2319	0.8721 ug/L #	59
30) Propionitrile	9.05	54	3908	5.2847 ug/L #	59
31) 2,2-Dichloropropane	9.15	77	11490	0.8596 ug/L	97
32) cis-1,2-Dichloroethene	9.22	96	9371	0.8993 ug/L	83
33) Chloroform	9.42	83	15538	0.9092 ug/L	93
34) 1-Bromopropane	9.56	122	1230	0.6289 ug/L	98
35) Bromochloromethane	9.65	130	4714	0.8140 ug/L	91
36) Tetrahydrofuran	9.67	42	9251	5.3270 ug/L	94
38) 1,1,1-Trichloroethane	9.93	97	13479	0.8496 ug/L #	95
39) Cyclohexane	9.97	56	13296	0.8627 ug/L	96
40) 1,1-Dichloropropene	10.11	75	11356	0.8229 ug/L	93
41) Carbon Tetrachloride	10.25	117	12039	0.8582 ug/L	95
42) Tert-Amyl-Methyl ether	10.21	73	126370	5.3237 ug/L	90

(#) = qualifier out of range (m) = manual integration
11M95119.D 8260WTR.M Tue Sep 17 16:18:13 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95119.D Vial: 4
Acq On : 17 Sep 2013 15:56 Operator: FJB
Sample : WG444955-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 16:18:13 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.41	62	11544	0.8727 ug/L		98
46)	Benzene	10.45	78	35024	0.9488 ug/L		97
47)	Trichloroethene	11.16	130	8724	0.8575 ug/L		96
48)	Methylcyclohexane	11.24	83	12124	0.8382 ug/L		93
49)	1,2-Dichloropropane	11.35	63	8155	0.8579 ug/L		77
50)	1,4-Dioxane	11.63	88	207	3.5322 ug/L	#	48
51)	Bromodichloromethane	11.64	83	11218	0.8703 ug/L		93
52)	Dibromomethane	11.73	93	4850	0.8819 ug/L		95
53)	2-Chloroethyl Vinyl Ether	11.91	63	3025	0.7817 ug/L	#	60
54)	4-Methyl-2-Pentanone	11.94	58	1526	0.7367 ug/L	#	49
55)	cis-1,3-Dichloropropene	12.23	75	12509	0.9366 ug/L		98
56)	Dimethyl Disulfide	12.49	79	6716	0.8046 ug/L		92
59)	Toluene	12.64	91	34683	0.9830 ug/L		99
60)	Ethyl Methacrylate	12.71	69	6967	0.8520 ug/L		96
62)	trans-1,3-Dichloropropene	12.79	75	10103	0.9247 ug/L		100
63)	1,1,2-Trichloroethane	13.00	97	6257	0.9978 ug/L		96
64)	2-Hexanone	12.92	43	3772	1.0686 ug/L	#	43
65)	1,3-Dichloropropane	13.28	76	11516	1.0593 ug/L		93
66)	Tetrachloroethene	13.40	164	7277	0.9145 ug/L		86
67)	Dibromochloromethane	13.66	129	6815	0.8808 ug/L		97
68)	1,2-Dibromoethane	13.90	107	6173	1.0290 ug/L		97
69)	1-Chlorohexane	13.95	91	10940	0.9531 ug/L		79
70)	Chlorobenzene	14.36	112	22779	0.9228 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.38	131	7924	0.8490 ug/L		96
72)	Ethylbenzene	14.38	106	11212	0.8335 ug/L		89
73)	m-,p-Xylene	14.45	106	27476	1.8028 ug/L		92
74)	o-Xylene	14.98	106	12590	0.8112 ug/L		92
75)	Styrene	15.02	104	22372	0.8914 ug/L		97
76)	Bromoform	15.50	173	4100	0.7911 ug/L		94
77)	Isopropylbenzene	15.39	105	33328	0.9059 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.58	83	5670	0.9037 ug/L		95
81)	1,2,3-Trichloropropane	15.76	110	2028	1.0310 ug/L	#	35
82)	trans-1,4-Dichloro-2-Buten	15.80	53	1131	0.6214 ug/L	#	1
83)	n-Propylbenzene	15.85	91	42681	0.9600 ug/L		100
84)	Bromobenzene	15.99	156	9718	0.9548 ug/L		53
85)	1,3,5-Trimethylbenzene	16.03	105	28214	0.9346 ug/L		100
86)	2-Chlorotoluene	16.12	91	28208	0.9590 ug/L		95
87)	4-Chlorotoluene	16.12	91	28208	1.0559 ug/L		86
88)	a-Methylstyrene	16.40	118	14750	0.9072 ug/L		84
89)	tert-Butylbenzene	16.46	134	6349	0.9264 ug/L		83
90)	1,2,4-Trimethylbenzene	16.50	105	29590	0.9668 ug/L		92
91)	sec-Butylbenzene	16.71	105	36081	1.0455 ug/L		97
92)	p-Isopropyltoluene	16.85	119	30728	1.0106 ug/L		98
93)	1,3-Dichlorobenzene	17.05	146	17944	0.9595 ug/L		99
94)	1,4-Dichlorobenzene	17.05	146	17944	0.9228 ug/L		99
95)	n-Butylbenzene	17.34	91	27576	1.0178 ug/L		98
96)	1,2-Dichlorobenzene	17.63	146	17291	0.9878 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	18.56	75	1014	0.8243 ug/L		83
98)	1,2,4-Trichlorobenzene	19.61	180	12495	1.0194 ug/L		94
99)	Hexachlorobutadiene	19.75	225	5692	1.1228 ug/L		97
100)	Naphthalene	19.97	128	23584	1.0947 ug/L	#	95
101)	1,2,3-Trichlorobenzene	20.26	180	10633	0.9825 ug/L		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95119.D Vial: 4
Acq On : 17 Sep 2013 15:56 Operator: FJB
Sample : WG444955-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 16:18 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration

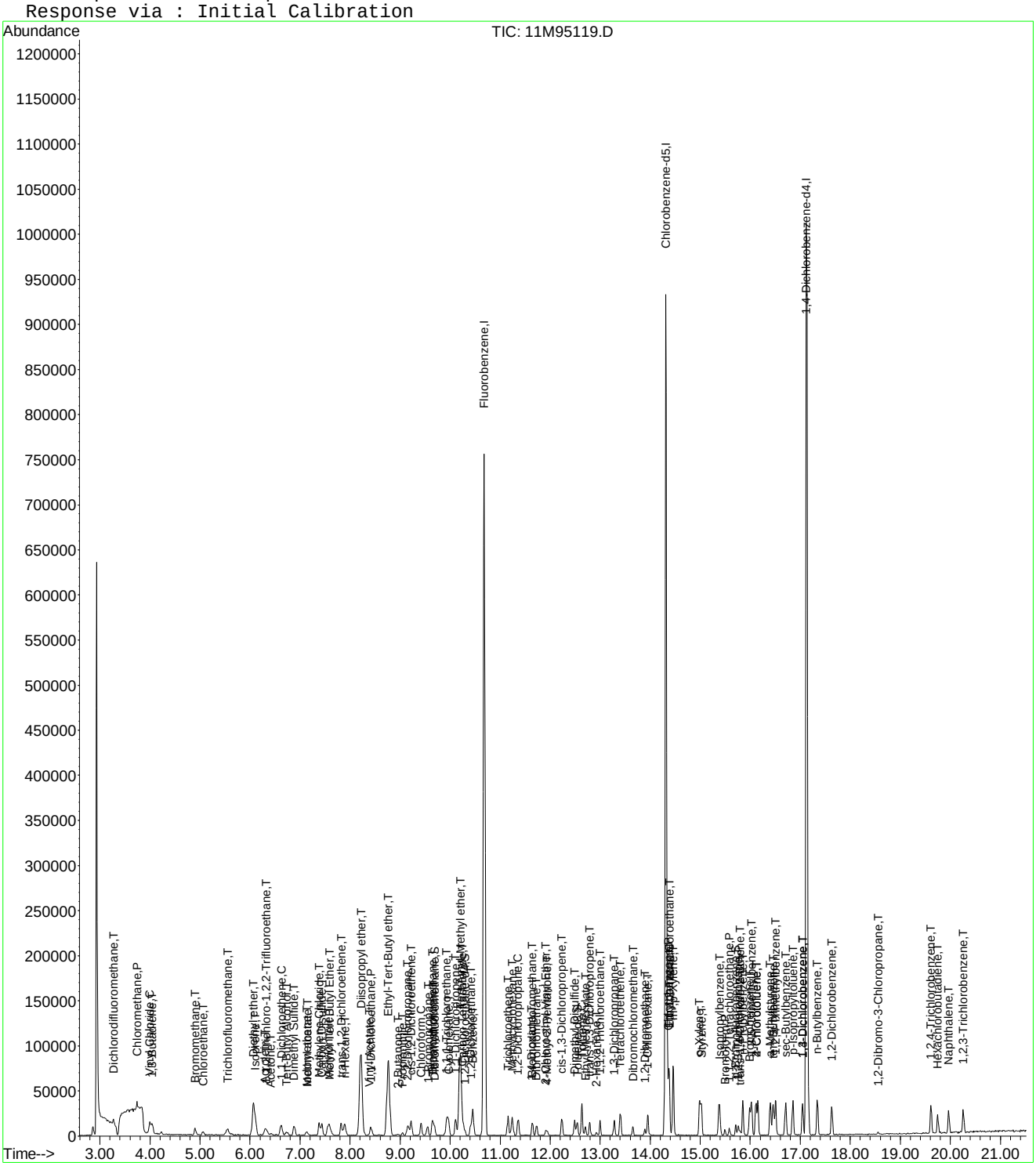

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95120.D Vial: 5
Acq On : 17 Sep 2013 16:28 Operator: FJB
Sample : WG444955-05 2ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 16:49:35 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.68	96	847784	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.31	117	624227	25.00 ug/L	0.02
78) 1,4-Dichlorobenzene-d4	17.12	152	316617	25.00 ug/L	0.03

System Monitoring Compounds					
37) Dibromofluoromethane	9.69	111	8119	0.9044 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.60%#	
43) 1,2-Dichloroethane-d4	10.30	65	9159	0.8924 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.56%#	
58) Toluene-d8	12.54	98	27454	0.9979 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#	
80) p-Bromofluorobenzene	15.71	95	11296	1.0091 ug/L	0.02
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.04%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	13985	1.7065 ug/L	95
3) Chloromethane	3.74	50	19659	1.8486 ug/L #	17
4) Vinyl Chloride	3.99	62	19075	1.8221 ug/L	96
5) 1,3-Butadiene	4.04	54	12826	1.2760 ug/L	77
6) Bromomethane	4.90	94	12566	2.8471 ug/L	100
7) Chloroethane	5.07	64	10149	1.7770 ug/L	97
8) Trichlorofluoromethane	5.55	101	26558	1.7167 ug/L	96
9) Diethyl ether	6.06	59	140831	22.7920 ug/L	90
10) Isoprene	6.10	67	20950	1.7020 ug/L	78
11) Acrolein	6.30	56	9433	10.3294 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	14924	1.7111 ug/L	95
13) Acetone	6.41	43	6536	2.1866 ug/L	88
14) 1,1-Dichloroethene	6.63	61	23614	1.5768 ug/L	86
15) Tert-Butyl Alcohol	6.72	59	26885	55.5655 ug/L	95
16) Dimethyl Sulfide	6.88	62	15299	1.8071 ug/L	80
17) Iodomethane	7.12	142	10339	1.9833 ug/L	86
18) Methyl acetate	7.13	43	6180	1.2686 ug/L #	72
19) Methylene Chloride	7.38	84	16522	1.8259 ug/L	75
20) Carbon Disulfide	7.43	76	49787	1.8593 ug/L	93
21) Acrylonitrile	7.56	53	25377	11.6481 ug/L	96
22) Methyl Tert Butyl Ether	7.59	73	40705	1.8769 ug/L	93
23) trans-1,2-Dichloroethene	7.83	96	15563	1.6306 ug/L	85
24) n-Hexane	7.89	57	19655	1.8588 ug/L	96
25) Diisopropyl ether	8.21	45	683243	22.7003 ug/L	98
26) Vinyl Acetate	8.39	43	5573	0.7424 ug/L #	76
27) 1,1-Dichloroethane	8.42	63	27368	1.7271 ug/L	96
28) Ethyl-Tert-Butyl ether	8.76	59	627964	24.1945 ug/L	98
29) 2-Butanone	8.94	43	5067	1.9660 ug/L #	77
30) Propionitrile	9.05	54	17694	24.6858 ug/L	96
31) 2,2-Dichloropropane	9.16	77	23727	1.8313 ug/L	99
32) cis-1,2-Dichloroethene	9.22	96	17638	1.7463 ug/L	82
33) Chloroform	9.42	83	29158	1.7602 ug/L	98
34) 1-Bromopropane	9.55	122	2935	1.5481 ug/L	98
35) Bromochloromethane	9.65	130	10091	1.7978 ug/L	92
36) Tetrahydrofuran	9.67	42	41505	24.6574 ug/L	92
38) 1,1,1-Trichloroethane	9.93	97	26701	1.7364 ug/L	94
39) Cyclohexane	9.96	56	26111	1.7478 ug/L	92
40) 1,1-Dichloropropene	10.11	75	22231	1.6620 ug/L	98
41) Carbon Tetrachloride	10.25	117	23217	1.7076 ug/L	94
42) Tert-Amyl-Methyl ether	10.21	73	564347	24.5283 ug/L	90

(#) = qualifier out of range (m) = manual integration
11M95120.D 8260WTR.M Tue Sep 17 16:49:36 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95120.D Vial: 5
Acq On : 17 Sep 2013 16:28 Operator: FJB
Sample : WG444955-05 2ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 16:49:35 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.41	62	22518	1.7563 ug/L		99
46)	Benzene	10.45	78	63365	1.7709 ug/L		99
47)	Trichloroethene	11.16	130	17108	1.7348 ug/L		98
48)	Methylcyclohexane	11.24	83	23974	1.7099 ug/L		88
49)	1,2-Dichloropropane	11.36	63	15428	1.6744 ug/L		91
50)	1,4-Dioxane	11.63	88	2505	44.0990 ug/L		91
51)	Bromodichloromethane	11.64	83	21344	1.7083 ug/L		97
52)	Dibromomethane	11.73	93	9430	1.7690 ug/L		97
53)	2-Chloroethyl Vinyl Ether	11.90	63	5727	1.5269 ug/L		83
54)	4-Methyl-2-Pentanone	11.93	58	3087	1.5375 ug/L	#	85
55)	cis-1,3-Dichloropropene	12.23	75	23502	1.8154 ug/L		99
56)	Dimethyl Disulfide	12.49	79	12437	1.5373 ug/L		94
59)	Toluene	12.64	91	63989	1.8713 ug/L		99
60)	Ethyl Methacrylate	12.70	69	14602	1.8425 ug/L		81
62)	trans-1,3-Dichloropropene	12.79	75	20935	1.9770 ug/L		100
63)	1,1,2-Trichloroethane	13.00	97	12834	2.1117 ug/L		94
64)	2-Hexanone	12.92	43	7284	2.1291 ug/L	#	42
65)	1,3-Dichloropropane	13.29	76	22094	2.0970 ug/L		90
66)	Tetrachloroethene	13.40	164	13340	1.7298 ug/L		98
67)	Dibromochloromethane	13.65	129	14733	1.9647 ug/L		94
68)	1,2-Dibromoethane	13.90	107	12144	2.0886 ug/L		94
69)	1-Chlorohexane	13.96	91	21001	1.8877 ug/L		79
70)	Chlorobenzene	14.36	112	45499	1.9018 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.38	131	16041	1.7733 ug/L		94
72)	Ethylbenzene	14.37	106	22961	1.7611 ug/L		91
73)	m-,p-Xylene	14.47	106	54755	3.7069 ug/L		94
74)	o-Xylene	14.99	106	25619	1.7032 ug/L		95
75)	Styrene	15.02	104	40732	1.6745 ug/L		96
76)	Bromoform	15.50	173	9177	1.8270 ug/L		92
77)	Isopropylbenzene	15.39	105	67966	1.9061 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.58	83	11474	1.8893 ug/L		93
81)	1,2,3-Trichloropropane	15.76	110	4151	2.1801 ug/L	#	51
82)	trans-1,4-Dichloro-2-Buten	15.80	53	2988	1.6960 ug/L	#	1
83)	n-Propylbenzene	15.85	91	83792	1.9471 ug/L		97
84)	Bromobenzene	15.99	156	18316	1.8591 ug/L		59
85)	1,3,5-Trimethylbenzene	16.03	105	56871	1.9461 ug/L		97
86)	2-Chlorotoluene	16.11	91	51825	1.8202 ug/L		89
87)	4-Chlorotoluene	16.11	91	51825	2.0042 ug/L		92
88)	a-Methylstyrene	16.40	118	28711	1.8243 ug/L		89
89)	tert-Butylbenzene	16.46	134	11510	1.7350 ug/L		96
90)	1,2,4-Trimethylbenzene	16.51	105	58206	1.9646 ug/L		97
91)	sec-Butylbenzene	16.71	105	70379	2.1068 ug/L		100
92)	p-Isopropyltoluene	16.85	119	57677	1.9597 ug/L		98
93)	1,3-Dichlorobenzene	17.05	146	35211	1.9452 ug/L		100
94)	1,4-Dichlorobenzene	17.16	146	37197	1.9763 ug/L		83
95)	n-Butylbenzene	17.34	91	55470	2.1151 ug/L		97
96)	1,2-Dichlorobenzene	17.63	146	33599	1.9829 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	18.55	75	2104	1.7670 ug/L		99
98)	1,2,4-Trichlorobenzene	19.61	180	23063	1.9438 ug/L		98
99)	Hexachlorobutadiene	19.75	225	9771	1.9912 ug/L		94
100)	Naphthalene	19.97	128	41391	1.9848 ug/L		100
101)	1,2,3-Trichlorobenzene	20.27	180	20033	1.9123 ug/L		95

(#) = qualifier out of range (m) = manual integration
11M95120.D 8260WTR.M Tue Sep 17 16:49:36 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95120.D Vial: 5
Acq On : 17 Sep 2013 16:28 Operator: FJB
Sample : WG444955-05 2ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 16:49 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration

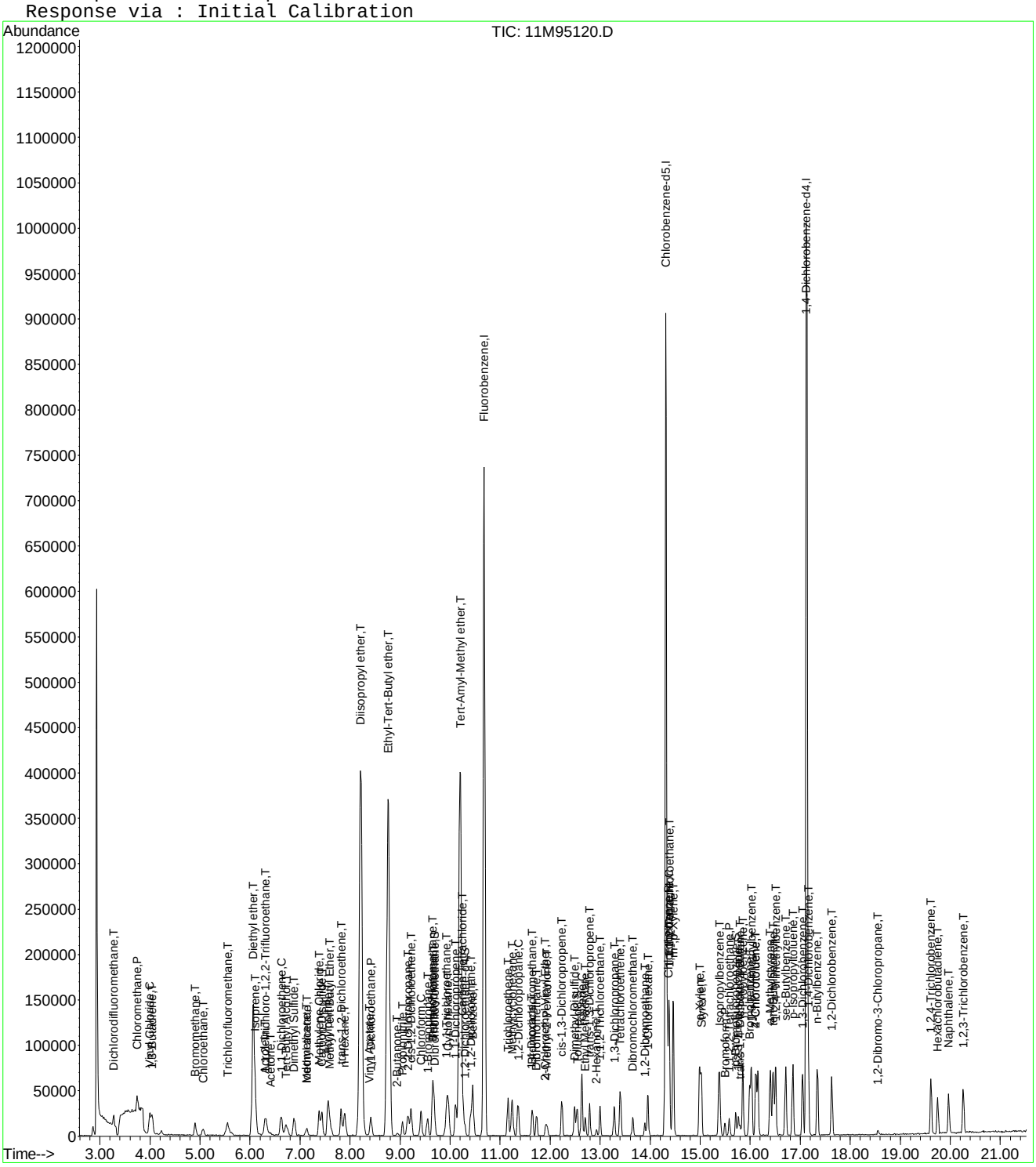

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95121.D Vial: 6
Acq On : 17 Sep 2013 16:59 Operator: FJB
Sample : WG444955-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 17:21:20 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.68	96	872528	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.31	117	638442	25.00 ug/L	0.02
78) 1,4-Dichlorobenzene-d4	17.12	152	330062	25.00 ug/L	0.03

System Monitoring Compounds					
37) Dibromofluoromethane	9.70	111	22543	2.4400 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 9.76%#		
43) 1,2-Dichloroethane-d4	10.30	65	24042	2.2761 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 9.12%#		
58) Toluene-d8	12.54	98	73421	2.6094 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.44%#		
80) p-Bromofluorobenzene	15.71	95	31306	2.6826 ug/L	0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.72%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	35956	4.2630 ug/L	98
3) Chloromethane	3.74	50	48888	4.4667 ug/L	96
4) Vinyl Chloride	3.98	62	52180	4.8430 ug/L	99
5) 1,3-Butadiene	4.03	54	35219	3.4043 ug/L	92
6) Bromomethane	4.90	94	33216	7.3124 ug/L	96
7) Chloroethane	5.06	64	27809	4.7310 ug/L	95
8) Trichlorofluoromethane	5.55	101	71044	4.4620 ug/L	99
9) Diethyl ether	6.06	59	301303	47.3799 ug/L	90
10) Isoprene	6.10	67	56884	4.4902 ug/L	78
11) Acrolein	6.30	56	17936	19.0834 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	39888	4.4436 ug/L	96
13) Acetone	6.40	43	15045	4.8906 ug/L	91
14) 1,1-Dichloroethene	6.62	61	65655	4.2596 ug/L	94
15) Tert-Butyl Alcohol	6.72	59	54604	109.6542 ug/L	97
16) Dimethyl Sulfide	6.88	62	42921	4.9260 ug/L	83
17) Iodomethane	7.12	142	29562	5.5099 ug/L	90
18) Methyl acetate	7.13	43	18729	3.7356 ug/L #	92
19) Methylene Chloride	7.38	84	43800	4.7032 ug/L	81
20) Carbon Disulfide	7.43	76	134361	4.8755 ug/L	98
21) Acrylonitrile	7.55	53	54204	24.1742 ug/L	99
22) Methyl Tert Butyl Ether	7.58	73	109435	4.9030 ug/L	96
23) trans-1,2-Dichloroethene	7.82	96	43514	4.4300 ug/L	82
24) n-Hexane	7.89	57	54939	5.0482 ug/L	97
25) Diisopropyl ether	8.21	45	1453597	46.9252 ug/L	98
26) Vinyl Acetate	8.39	43	20856	2.6996 ug/L	97
27) 1,1-Dichloroethane	8.42	63	78199	4.7948 ug/L	100
28) Ethyl-Tert-Butyl ether	8.76	59	1332476	49.8824 ug/L	97
29) 2-Butanone	8.94	43	13951	5.2595 ug/L	86
30) Propionitrile	9.05	54	38420	52.0816 ug/L	96
31) 2,2-Dichloropropane	9.16	77	62510	4.6877 ug/L	100
32) cis-1,2-Dichloroethene	9.22	96	46703	4.4928 ug/L	88
33) Chloroform	9.42	83	78905	4.6281 ug/L	100
34) 1-Bromopropane	9.55	122	9101	4.6644 ug/L	98
35) Bromochloromethane	9.64	130	28192	4.8803 ug/L	95
36) Tetrahydrofuran	9.66	42	86437	49.8945 ug/L	91
38) 1,1,1-Trichloroethane	9.93	97	72686	4.5929 ug/L	96
39) Cyclohexane	9.96	56	69679	4.5319 ug/L	90
40) 1,1-Dichloropropene	10.11	75	63261	4.5953 ug/L	96
41) Carbon Tetrachloride	10.25	117	65881	4.7080 ug/L	97
42) Tert-Amyl-Methyl ether	10.20	73	1190908	50.2928 ug/L	90

(#) = qualifier out of range (m) = manual integration
11M95121.D 8260WTR.M Tue Sep 17 17:21:21 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95121.D Vial: 6
Acq On : 17 Sep 2013 16:59 Operator: FJB
Sample : WG444955-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 17:21:20 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.41	62	63515	4.8135 ug/L		98
46)	Benzene	10.45	78	170897	4.6408 ug/L		99
47)	Trichloroethene	11.16	130	45266	4.4600 ug/L		98
48)	Methylcyclohexane	11.24	83	65597	4.5459 ug/L		87
49)	1,2-Dichloropropane	11.36	63	43231	4.5588 ug/L		86
50)	1,4-Dioxane	11.62	88	5803	99.2611 ug/L		92
51)	Bromodichloromethane	11.64	83	59484	4.6260 ug/L		99
52)	Dibromomethane	11.73	93	25575	4.6616 ug/L		98
53)	2-Chloroethyl Vinyl Ether	11.91	63	16057	4.1596 ug/L		99
54)	4-Methyl-2-Pentanone	11.93	58	9680	4.6845 ug/L		96
55)	cis-1,3-Dichloropropene	12.23	75	64854	4.8677 ug/L		98
56)	Dimethyl Disulfide	12.49	79	36730	4.4112 ug/L		99
59)	Toluene	12.64	91	184009	5.2613 ug/L		97
60)	Ethyl Methacrylate	12.71	69	40727	5.0245 ug/L		84
62)	trans-1,3-Dichloropropene	12.79	75	60625	5.5977 ug/L		97
63)	1,1,2-Trichloroethane	13.00	97	32904	5.2935 ug/L		95
64)	2-Hexanone	12.92	43	21309	6.0900 ug/L	#	76
65)	1,3-Dichloropropane	13.29	76	60306	5.5963 ug/L		92
66)	Tetrachloroethene	13.40	164	37629	4.7706 ug/L		92
67)	Dibromochloromethane	13.66	129	39882	5.2001 ug/L		97
68)	1,2-Dibromoethane	13.90	107	34104	5.7349 ug/L		99
69)	1-Chlorohexane	13.95	91	57711	5.0719 ug/L		80
70)	Chlorobenzene	14.36	112	121170	4.9520 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.38	131	44101	4.7668 ug/L		98
72)	Ethylbenzene	14.38	106	62055	4.6536 ug/L		94
73)	m-,p-Xylene	14.47	106	152417	10.0887 ug/L		99
74)	o-Xylene	14.99	106	74397	4.8360 ug/L		95
75)	Styrene	15.02	104	123171	4.9509 ug/L		93
76)	Bromoform	15.50	173	24519	4.7727 ug/L		98
77)	Isopropylbenzene	15.38	105	184038	5.0463 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.58	83	34125	5.3901 ug/L		98
81)	1,2,3-Trichloropropane	15.76	110	11605	5.8466 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	15.80	53	9261	5.0423 ug/L	#	1
83)	n-Propylbenzene	15.85	91	234238	5.2212 ug/L		97
84)	Bromobenzene	15.99	156	51673	5.0312 ug/L		58
85)	1,3,5-Trimethylbenzene	16.03	105	157624	5.1742 ug/L		95
86)	2-Chlorotoluene	16.11	91	143609	4.8384 ug/L		98
87)	4-Chlorotoluene	16.15	91	150489	5.5827 ug/L		99
88)	a-Methylstyrene	16.40	118	79647	4.8547 ug/L		93
89)	tert-Butylbenzene	16.46	134	34268	4.9550 ug/L		82
90)	1,2,4-Trimethylbenzene	16.50	105	162122	5.2492 ug/L		95
91)	sec-Butylbenzene	16.71	105	192306	5.5221 ug/L		100
92)	p-Isopropyltoluene	16.85	119	161787	5.2732 ug/L		95
93)	1,3-Dichlorobenzene	17.05	146	95650	5.0687 ug/L		99
94)	1,4-Dichlorobenzene	17.16	146	99336	5.0627 ug/L		94
95)	n-Butylbenzene	17.34	91	151300	5.5342 ug/L		99
96)	1,2-Dichlorobenzene	17.63	146	93448	5.2904 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	18.55	75	6038	4.8644 ug/L		97
98)	1,2,4-Trichlorobenzene	19.61	180	63501	5.1339 ug/L		98
99)	Hexachlorobutadiene	19.75	225	27977	5.4691 ug/L		98
100)	Naphthalene	19.97	128	117756	5.4166 ug/L		98
101)	1,2,3-Trichlorobenzene	20.27	180	54681	5.0072 ug/L		95

(#) = qualifier out of range (m) = manual integration
11M95121.D 8260WTR.M Tue Sep 17 17:21:21 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95121.D Vial: 6
Acq On : 17 Sep 2013 16:59 Operator: FJB
Sample : WG444955-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 17:21 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration

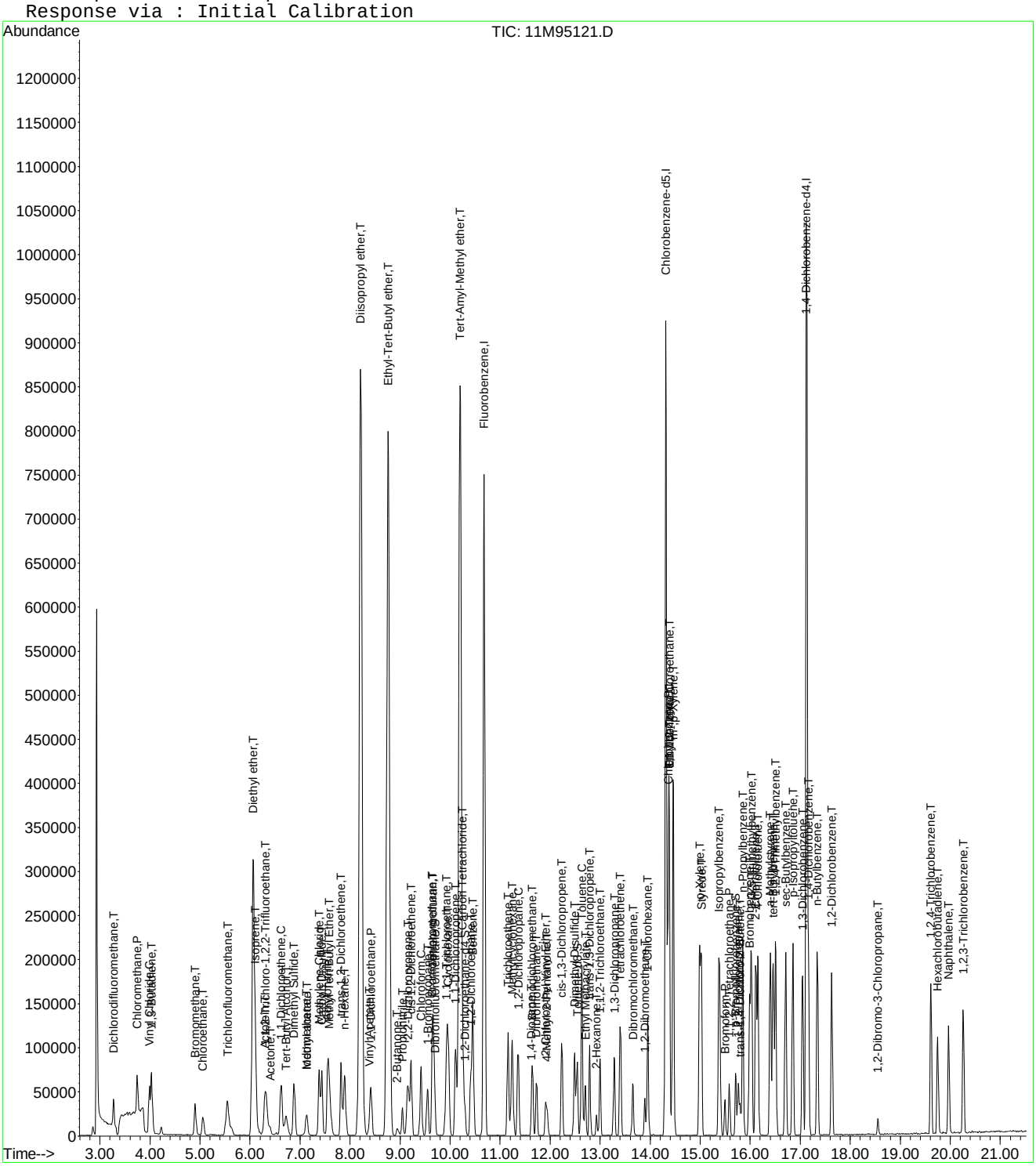

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95122.D Vial: 7
Acq On : 17 Sep 2013 17:31 Operator: FJB
Sample : WG444955-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 17:53:33 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.68	96	881824	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.31	117	648405	25.00 ug/L	0.02
78) 1,4-Dichlorobenzene-d4	17.12	152	343999	25.00 ug/L	0.03

System Monitoring Compounds

37) Dibromofluoromethane	9.69	111	98374	10.5354 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 42.16%#		
43) 1,2-Dichloroethane-d4	10.30	65	107842	10.1021 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.40%#		
58) Toluene-d8	12.54	98	320261	11.2072 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 44.84%#		
80) p-Bromofluorobenzene	15.71	95	137481	11.3035 ug/L	0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 45.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	190332	22.3282 ug/L	98
3) Chloromethane	3.74	50	225803	20.4133 ug/L	95
4) Vinyl Chloride	3.98	62	242873	22.3043 ug/L	99
5) 1,3-Butadiene	4.03	54	157479	15.0616 ug/L	96
6) Bromomethane	4.90	94	136886	29.8173 ug/L	98
7) Chloroethane	5.06	64	129473	21.7944 ug/L	99
8) Trichlorofluoromethane	5.54	101	331300	20.5885 ug/L	99
9) Diethyl ether	6.06	59	498772	77.6051 ug/L	91
10) Isoprene	6.11	67	259760	20.2883 ug/L	77
11) Acrolein	6.30	56	32580	34.2987 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.32	101	188038	20.7268 ug/L	94
13) Acetone	6.39	43	55800	17.9474 ug/L	96
14) 1,1-Dichloroethene	6.62	61	289393	18.5776 ug/L	88
15) Tert-Butyl Alcohol	6.72	59	89028	176.8989 ug/L	98
16) Dimethyl Sulfide	6.88	62	182652	20.7416 ug/L	82
17) Iodomethane	7.13	142	171572	31.6414 ug/L	93
18) Methyl acetate	7.13	43	92664	18.2874 ug/L	95
19) Methylene Chloride	7.38	84	186065	19.7691 ug/L	81
20) Carbon Disulfide	7.43	76	598355	21.4834 ug/L	100
21) Acrylonitrile	7.55	53	94154	41.5487 ug/L	98
22) Methyl Tert Butyl Ether	7.58	73	484339	21.4709 ug/L	96
23) trans-1,2-Dichloroethene	7.82	96	193914	19.5334 ug/L	83
24) n-Hexane	7.89	57	239971	21.8178 ug/L	94
25) Diisopropyl ether	8.21	45	2319612	74.0925 ug/L	97
26) Vinyl Acetate	8.38	43	201993	25.8705 ug/L	98
27) 1,1-Dichloroethane	8.42	63	339716	20.6103 ug/L	98
28) Ethyl-Tert-Butyl ether	8.76	59	2160573	80.0303 ug/L	96
29) 2-Butanone	8.94	43	56889	21.2208 ug/L	88
30) Propionitrile	9.04	54	66535	89.2430 ug/L	99
31) 2,2-Dichloropropane	9.16	77	309818	22.9888 ug/L	99
32) cis-1,2-Dichloroethene	9.22	96	208968	19.8907 ug/L	89
33) Chloroform	9.42	83	350517	20.3426 ug/L	100
34) 1-Bromopropane	9.55	122	39566	20.0646 ug/L	98
35) Bromochloromethane	9.64	130	122275	20.9437 ug/L	93
36) Tetrahydrofuran	9.66	42	146911	83.9083 ug/L	89
38) 1,1,1-Trichloroethane	9.93	97	327969	20.5055 ug/L	94
39) Cyclohexane	9.96	56	301425	19.3979 ug/L	89
40) 1,1-Dichloropropene	10.11	75	275553	19.8054 ug/L	98
41) Carbon Tetrachloride	10.25	117	304244	21.5128 ug/L	98
42) Tert-Amyl-Methyl ether	10.19	73	1985942	82.9835 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M95122.D 8260WTR.M Tue Sep 17 17:53:35 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95122.D Vial: 7
Acq On : 17 Sep 2013 17:31 Operator: FJB
Sample : WG444955-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 17:53:33 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.41	62	275900	20.6888 ug/L		99
46)	Benzene	10.45	78	743486	19.9769 ug/L		100
47)	Trichloroethene	11.16	130	197675	19.2715 ug/L		96
48)	Methylcyclohexane	11.24	83	295518	20.2636 ug/L		88
49)	1,2-Dichloropropane	11.36	63	185496	19.3545 ug/L		91
50)	1,4-Dioxane	11.62	88	9698	164.1369 ug/L		97
51)	Bromodichloromethane	11.64	83	270131	20.7863 ug/L		98
52)	Dibromomethane	11.73	93	119063	21.4729 ug/L		97
53)	2-Chloroethyl Vinyl Ether	11.91	63	85779	21.9868 ug/L		98
54)	4-Methyl-2-Pentanone	11.93	58	48325	23.1399 ug/L		97
55)	cis-1,3-Dichloropropene	12.23	75	313322	23.2687 ug/L		98
56)	Dimethyl Disulfide	12.49	79	165715	19.6924 ug/L		92
59)	Toluene	12.64	91	803017	22.6075 ug/L		99
60)	Ethyl Methacrylate	12.70	69	195293	23.7231 ug/L		83
62)	trans-1,3-Dichloropropene	12.79	75	285046	25.9149 ug/L		96
63)	1,1,2-Trichloroethane	13.00	97	148852	23.5788 ug/L		98
64)	2-Hexanone	12.92	43	94624	26.6277 ug/L	#	80
65)	1,3-Dichloropropane	13.29	76	263317	24.0599 ug/L		92
66)	Tetrachloroethene	13.40	164	172257	21.5031 ug/L		92
67)	Dibromochloromethane	13.66	129	186367	23.9266 ug/L		100
68)	1,2-Dibromoethane	13.90	107	153006	25.3342 ug/L		100
69)	1-Chlorohexane	13.95	91	261182	22.6010 ug/L		78
70)	Chlorobenzene	14.36	112	544258	21.9009 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.38	131	205787	21.9014 ug/L		99
72)	Ethylbenzene	14.38	106	286248	21.1365 ug/L		99
73)	m-,p-Xylene	14.47	106	683284	44.5328 ug/L		98
74)	o-Xylene	14.99	106	334434	21.4049 ug/L		96
75)	Styrene	15.02	104	566639	22.4262 ug/L		93
76)	Bromoform	15.50	173	126024	24.1540 ug/L		98
77)	Isopropylbenzene	15.38	105	845497	22.8274 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.58	83	164842	24.9821 ug/L		99
81)	1,2,3-Trichloropropane	15.76	110	53044	25.6411 ug/L	#	51
82)	trans-1,4-Dichloro-2-Buten	15.80	53	51515	26.9119 ug/L	#	1
83)	n-Propylbenzene	15.85	91	1062698	22.7281 ug/L		100
84)	Bromobenzene	15.99	156	233480	21.8122 ug/L		63
85)	1,3,5-Trimethylbenzene	16.03	105	725852	22.8616 ug/L		95
86)	2-Chlorotoluene	16.11	91	641114	20.7249 ug/L		97
87)	4-Chlorotoluene	16.15	91	671129	23.8881 ug/L		99
88)	a-Methylstyrene	16.40	118	396350	23.1797 ug/L		88
89)	tert-Butylbenzene	16.46	134	160031	22.2022 ug/L		79
90)	1,2,4-Trimethylbenzene	16.50	105	738241	22.9346 ug/L		94
91)	sec-Butylbenzene	16.71	105	889217	24.4994 ug/L		98
92)	p-Isopropyltoluene	16.85	119	755632	23.6309 ug/L		95
93)	1,3-Dichlorobenzene	17.05	146	443067	22.5280 ug/L		98
94)	1,4-Dichlorobenzene	17.16	146	448144	21.9146 ug/L		100
95)	n-Butylbenzene	17.34	91	712274	24.9979 ug/L		99
96)	1,2-Dichlorobenzene	17.63	146	414730	22.5280 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	18.55	75	30166	23.3179 ug/L		94
98)	1,2,4-Trichlorobenzene	19.61	180	292183	22.6653 ug/L		98
99)	Hexachlorobutadiene	19.75	225	137904	25.8658 ug/L		97
100)	Naphthalene	19.97	128	552311	24.3762 ug/L		98
101)	1,2,3-Trichlorobenzene	20.26	180	260468	22.8848 ug/L		96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95122.D Vial: 7
Acq On : 17 Sep 2013 17:31 Operator: FJB
Sample : WG444955-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 17:53 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration

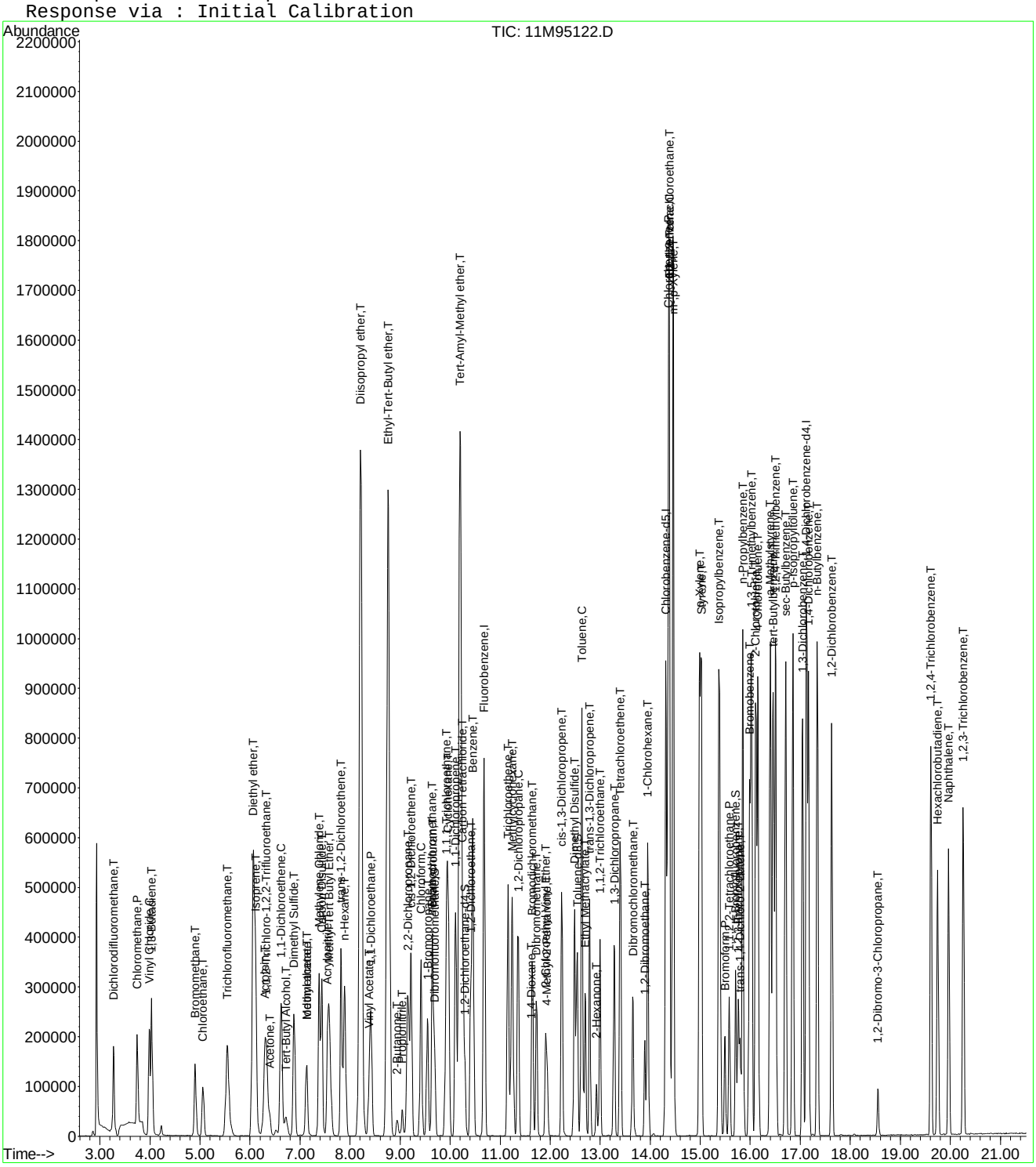

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091713\11M95123.D Vial: 8
Acq On : 17 Sep 2013 18:03 Operator: FJB
Sample : WG444955-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 08:43:36 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Wed Sep 18 08:42:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.68	96	897116	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.31	117	670579	25.00 ug/L	0.02
78) 1,4-Dichlorobenzene-d4	17.12	152	357123	25.00 ug/L	0.03
System Monitoring Compounds					
37) Dibromofluoromethane	9.69	111	240313	25.2978 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.20%		
43) 1,2-Dichloroethane-d4	10.30	65	259678	23.9107 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.64%		
58) Toluene-d8	12.54	98	784181	26.5342 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.12%		
80) p-Bromofluorobenzene	15.71	95	342521	27.1266 ug/L	0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.52%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	466667	53.8123 ug/L	98
3) Chloromethane	3.74	50	495769	44.0550 ug/L	99
4) Vinyl Chloride	3.98	62	580403	52.3928 ug/L	99
5) 1,3-Butadiene	4.02	54	303889	28.5690 ug/L	95
6) Bromomethane	4.90	94	328163	70.2639 ug/L	100
7) Chloroethane	5.06	64	314509	52.0394 ug/L	99
8) Trichlorofluoromethane	5.55	101	802054	48.9938 ug/L	99
9) Diethyl ether	6.06	59	603373	92.2800 ug/L	91
10) Isoprene	6.10	67	702106	53.9027 ug/L	76
11) Acrolein	6.30	56	39470	40.8439 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.32	101	459680	49.8053 ug/L	95
13) Acetone	6.39	43	129946	41.0832 ug/L	94
14) 1,1-Dichloroethene	6.62	61	715204	45.1299 ug/L	90
15) Tert-Butyl Alcohol	6.72	59	103428	202.0086 ug/L	98
16) Dimethyl Sulfide	6.88	62	481553	53.7521 ug/L	81
17) Iodomethane	7.13	142	521493	94.5348 ug/L	92
18) Methyl acetate	7.13	43	225195	43.6851 ug/L	91
19) Methylene Chloride	7.38	84	460327	48.0752 ug/L	79
20) Carbon Disulfide	7.43	76	1566007	55.2677 ug/L	99
21) Acrylonitrile	7.56	53	119816	51.9717 ug/L	96
22) Methyl Tert Butyl Ether	7.58	73	1169724	50.9704 ug/L	96
23) trans-1,2-Dichloroethene	7.82	96	473465	46.8803 ug/L	83
24) n-Hexane	7.89	57	628396	56.1589 ug/L	94
25) Diisopropyl ether	8.21	45	2836990	89.0739 ug/L	97
26) Vinyl Acetate	8.38	43	591831	74.5075 ug/L	98
27) 1,1-Dichloroethane	8.42	63	831461	49.5842 ug/L	97
28) Ethyl-Tert-Butyl ether	8.76	59	2610576	95.0507 ug/L	95
29) 2-Butanone	8.93	43	139051	50.9848 ug/L	87
30) Propionitrile	9.05	54	80672	106.3605 ug/L	97
31) 2,2-Dichloropropane	9.16	77	770511	56.1982 ug/L	100
32) cis-1,2-Dichloroethene	9.22	96	518533	48.5155 ug/L	86
33) Chloroform	9.42	83	849970	48.4881 ug/L	99
34) 1-Bromopropane	9.55	122	103796	51.7395 ug/L	100
35) Bromochloromethane	9.65	130	302876	50.9933 ug/L	92
36) Tetrahydrofuran	9.66	42	173816	97.5829 ug/L	91
38) 1,1,1-Trichloroethane	9.93	97	811936	49.8990 ug/L	95
39) Cyclohexane	9.96	56	794256	50.2422 ug/L	87
40) 1,1-Dichloropropene	10.11	75	669747	47.3177 ug/L	97
41) Carbon Tetrachloride	10.25	117	753649	52.3814 ug/L	99
42) Tert-Amyl-Methyl ether	10.19	73	2348320	96.4530 ug/L	90

(#) = qualifier out of range (m) = manual integration
11M95123.D 8260WTR.M Thu Oct 10 15:22:42 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091713\11M95123.D Vial: 8
Acq On : 17 Sep 2013 18:03 Operator: FJB
Sample : WG444955-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 08:43:36 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Wed Sep 18 08:42:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.41	62	658670	48.5494 ug/L		99
46)	Benzene	10.45	78	1782992	47.0911 ug/L		100
47)	Trichloroethene	11.16	130	478702	45.8736 ug/L		98
48)	Methylcyclohexane	11.24	83	773854	52.1585 ug/L		87
49)	1,2-Dichloropropane	11.36	63	456207	46.7890 ug/L		89
50)	1,4-Dioxane	11.62	88	11641	193.6635 ug/L		96
51)	Bromodichloromethane	11.64	83	663918	50.2170 ug/L		99
52)	Dibromomethane	11.73	93	287361	50.9419 ug/L		97
53)	2-Chloroethyl Vinyl Ether	11.91	63	226548	57.0787 ug/L		99
54)	4-Methyl-2-Pentanone	11.93	58	122836	57.8160 ug/L		94
55)	cis-1,3-Dichloropropene	12.23	75	764647	55.8181 ug/L		100
56)	Dimethyl Disulfide	12.49	79	451466	52.7346 ug/L		94
59)	Toluene	12.64	91	1895525	51.6005 ug/L		99
60)	Ethyl Methacrylate	12.70	69	507379	59.5956 ug/L		85
62)	trans-1,3-Dichloropropene	12.79	75	692591	60.8846 ug/L		94
63)	1,1,2-Trichloroethane	13.00	97	361569	55.3803 ug/L		98
64)	2-Hexanone	12.92	43	242211	65.9056 ug/L		83
65)	1,3-Dichloropropane	13.29	76	636198	56.2086 ug/L		91
66)	Tetrachloroethene	13.40	164	426725	51.5073 ug/L		91
67)	Dibromochloromethane	13.65	129	466019	57.8511 ug/L		99
68)	1,2-Dibromoethane	13.90	107	371875	59.5377 ug/L		99
69)	1-Chlorohexane	13.95	91	694009	58.0691 ug/L		77
70)	Chlorobenzene	14.36	112	1335630	51.9683 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.38	131	524074	53.9315 ug/L		100
72)	Ethylbenzene	14.38	106	718059	51.2680 ug/L		94
73)	m-,p-Xylene	14.47	106	1687825	106.3659 ug/L		90
74)	o-Xylene	14.99	106	833732	51.5971 ug/L		92
75)	Styrene	15.02	104	1412438	54.0524 ug/L		92
76)	Bromoform	15.50	173	323071	59.8730 ug/L		99
77)	Isopropylbenzene	15.38	105	2050918	53.5414 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.58	83	403208	58.8614 ug/L		96
81)	1,2,3-Trichloropropane	15.76	110	128320	59.7494 ug/L	#	46
82)	trans-1,4-Dichloro-2-Buten	15.80	53	142694	71.8051 ug/L	#	1
83)	n-Propylbenzene	15.85	91	2515253	51.8173 ug/L		98
84)	Bromobenzene	15.99	156	583684	52.5251 ug/L		63
85)	1,3,5-Trimethylbenzene	16.03	105	1778028	53.9433 ug/L		93
86)	2-Chlorotoluene	16.11	91	1535901	47.8255 ug/L		96
87)	4-Chlorotoluene	16.15	91	1632205	55.9615 ug/L		97
88)	a-Methylstyrene	16.40	118	1072504	60.4180 ug/L		88
89)	tert-Butylbenzene	16.46	134	405328	54.1673 ug/L		75
90)	1,2,4-Trimethylbenzene	16.51	105	1804589	54.0022 ug/L		92
91)	sec-Butylbenzene	16.71	105	2134302	56.6426 ug/L		96
92)	p-Isopropyltoluene	16.85	119	1833261	55.2248 ug/L		93
93)	1,3-Dichlorobenzene	17.05	146	1084101	53.0961 ug/L		99
94)	1,4-Dichlorobenzene	17.16	146	1090130	51.3493 ug/L		99
95)	n-Butylbenzene	17.34	91	1708361	57.7530 ug/L		97
96)	1,2-Dichlorobenzene	17.63	146	1017389	53.2333 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	18.55	75	74598	55.5441 ug/L		94
98)	1,2,4-Trichlorobenzene	19.61	180	715863	53.4903 ug/L		98
99)	Hexachlorobutadiene	19.75	225	324307	58.5929 ug/L		100
100)	Naphthalene	19.97	128	1324301	56.3000 ug/L		99
101)	1,2,3-Trichlorobenzene	20.26	180	624745	52.8732 ug/L		97

(#) = qualifier out of range (m) = manual integration
11M95123.D 8260WTR.M Thu Oct 10 15:22:42 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091713\11M95123.D Vial: 8
Acq On : 17 Sep 2013 18:03 Operator: FJB
Sample : WG444955-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 8:43 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Initial Calibration

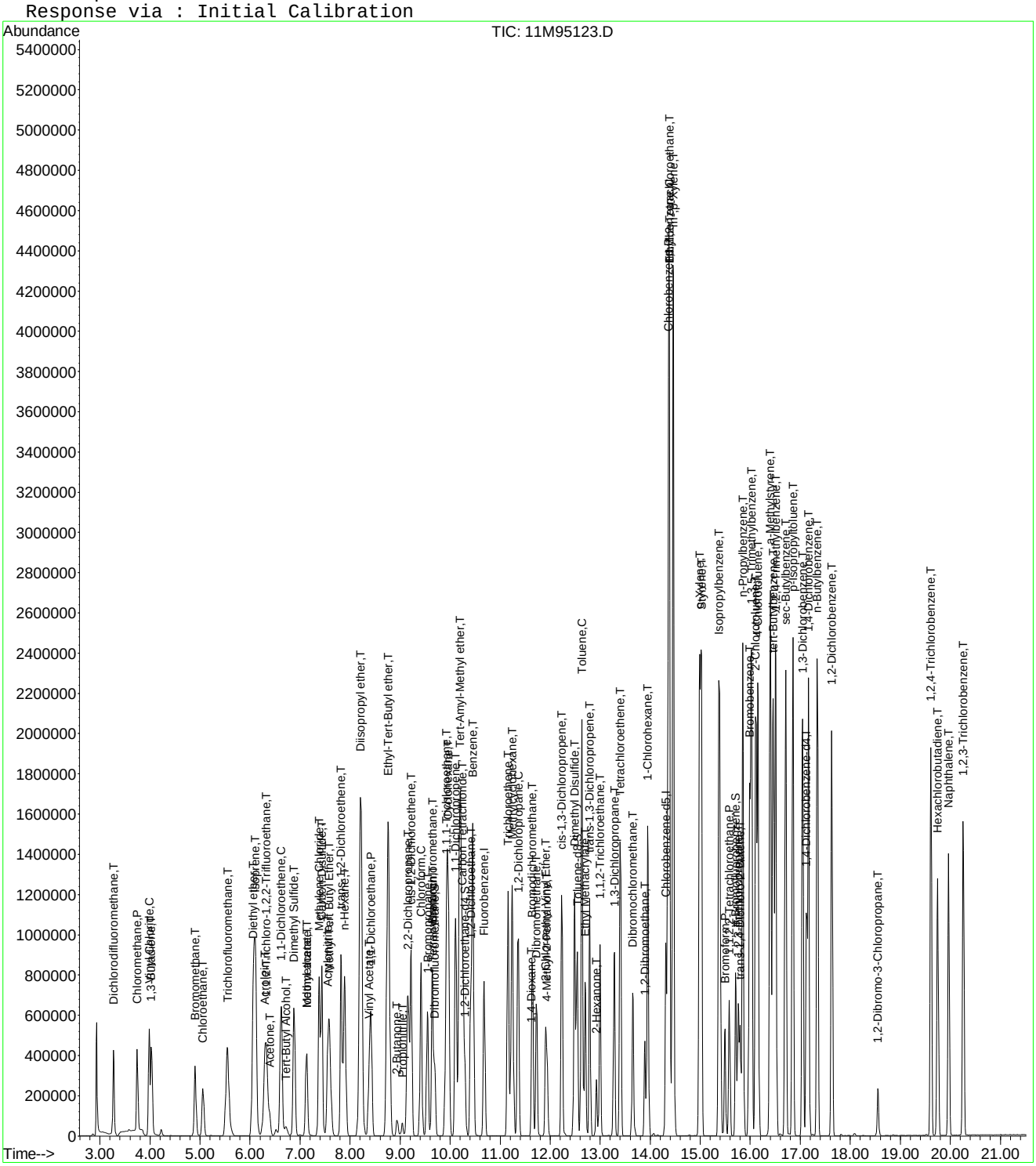

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95124.D Vial: 9
Acq On : 17 Sep 2013 18:34 Operator: FJB
Sample : WG444955-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 18:56:18 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.68	96	893756	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.31	117	688946	25.00 ug/L	0.02
78) 1,4-Dichlorobenzene-d4	17.12	152	360035	25.00 ug/L	0.03

System Monitoring Compounds

37) Dibromofluoromethane	9.70	111	503868	53.2416 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 212.96%#		
43) 1,2-Dichloroethane-d4	10.30	65	530671	49.0469 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 196.20%#		
58) Toluene-d8	12.54	98	1607778	52.9518 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.80%#		
80) p-Bromofluorobenzene	15.71	95	706676	55.5138 ug/L	0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 222.04%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	967359	111.9675 ug/L	98
3) Chloromethane	3.74	50	1041589	92.9057 ug/L	99
4) Vinyl Chloride	3.98	62	1202658	108.9717 ug/L	98
5) 1,3-Butadiene	4.02	54	437650	41.2988 ug/L	92
6) Bromomethane	4.90	94	700137	150.4718 ug/L	100
7) Chloroethane	5.06	64	667893	110.9265 ug/L	98
8) Trichlorofluoromethane	5.54	101	1691475	103.7128 ug/L	100
9) Diethyl ether	6.06	59	1233989	189.4361 ug/L	89
10) Isoprene	6.10	67	1428458	110.0790 ug/L	76
11) Acrolein	6.30	56	81256	84.4006 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.32	101	980518	106.6362 ug/L	95
13) Acetone	6.39	43	248519	78.8662 ug/L	88
14) 1,1-Dichloroethene	6.62	61	1492393	94.5251 ug/L	88
15) Tert-Butyl Alcohol	6.71	59	217332	426.0740 ug/L	98
16) Dimethyl Sulfide	6.88	62	975197	109.2631 ug/L	81
17) Iodomethane	7.12	142	1141490	207.7041 ug/L	92
18) Methyl acetate	7.12	43	480261	93.5151 ug/L	90
19) Methylene Chloride	7.38	84	971165	101.8069 ug/L	77
20) Carbon Disulfide	7.43	76	3057466	108.3101 ug/L	98
21) Acrylonitrile	7.55	53	246121	107.1595 ug/L	95
22) Methyl Tert Butyl Ether	7.58	73	2440811	106.7575 ug/L	96
23) trans-1,2-Dichloroethene	7.82	96	999423	99.3302 ug/L	81
24) n-Hexane	7.89	57	1239480	111.1870 ug/L	93
25) Diisopropyl ether	8.21	45	5432979	171.2222 ug/L	94
26) Vinyl Acetate	8.38	43	1265880	159.9649 ug/L	97
27) 1,1-Dichloroethane	8.42	63	1713419	102.5639 ug/L	96
28) Ethyl-Tert-Butyl ether	8.76	59	5100804	186.4177 ug/L	93
29) 2-Butanone	8.93	43	288471	106.1691 ug/L	86
30) Propionitrile	9.05	54	164515	217.7171 ug/L	95
31) 2,2-Dichloropropane	9.16	77	1643335	120.3092 ug/L	99
32) cis-1,2-Dichloroethene	9.22	96	1085698	101.9631 ug/L	86
33) Chloroform	9.42	83	1773452	101.5502 ug/L	99
34) 1-Bromopropane	9.55	122	214717	107.4329 ug/L	100
35) Bromochloromethane	9.64	130	643963	108.8276 ug/L	90
36) Tetrahydrofuran	9.66	42	350545	197.5410 ug/L	87
38) 1,1,1-Trichloroethane	9.93	97	1706551	105.2735 ug/L	96
39) Cyclohexane	9.96	56	1580206	100.3347 ug/L	86
40) 1,1-Dichloropropene	10.11	75	1404322	99.5884 ug/L	96
41) Carbon Tetrachloride	10.26	117	1592617	111.1088 ug/L	98
42) Tert-Amyl-Methyl ether	10.19	73	4623879	190.6314 ug/L	91

(#) = qualifier out of range (m) = manual integration
11M95124.D 8260WTR.M Tue Sep 17 18:56:18 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95124.D Vial: 9
Acq On : 17 Sep 2013 18:34 Operator: FJB
Sample : WG444955-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 18:56:18 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.41	62	1357102	100.4057 ug/L		98
46)	Benzene	10.45	78	3552222	94.1715 ug/L		97
47)	Trichloroethene	11.16	130	1012074	97.3507 ug/L		97
48)	Methylcyclohexane	11.24	83	1553255	105.0845 ug/L		87
49)	1,2-Dichloropropane	11.36	63	947018	97.4921 ug/L		90
50)	1,4-Dioxane	11.62	88	23101	385.7606 ug/L		100
51)	Bromodichloromethane	11.64	83	1397004	106.0629 ug/L		99
52)	Dibromomethane	11.73	93	593068	105.5313 ug/L		97
53)	2-Chloroethyl Vinyl Ether	11.91	63	456722	115.5037 ug/L		96
54)	4-Methyl-2-Pentanone	11.93	58	246625	116.5169 ug/L		95
55)	cis-1,3-Dichloropropene	12.23	75	1579620	115.7435 ug/L		99
56)	Dimethyl Disulfide	12.49	79	936607	109.8141 ug/L		95
59)	Toluene	12.64	91	3767881	99.8358 ug/L		95
60)	Ethyl Methacrylate	12.70	69	1059135	121.0872 ug/L		83
62)	trans-1,3-Dichloropropene	12.79	75	1436549	122.9181 ug/L		94
63)	1,1,2-Trichloroethane	13.00	97	754974	112.5539 ug/L		98
64)	2-Hexanone	12.92	43	465112	123.1830 ug/L		83
65)	1,3-Dichloropropane	13.29	76	1314408	113.0331 ug/L		91
66)	Tetrachloroethene	13.40	164	901081	105.8643 ug/L		91
67)	Dibromochloromethane	13.66	129	997743	120.5567 ug/L		99
68)	1,2-Dibromoethane	13.90	107	782510	121.9409 ug/L		100
69)	1-Chlorohexane	13.95	91	1385152	112.8086 ug/L		77
70)	Chlorobenzene	14.36	112	2802326	106.1295 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.38	131	1154353	115.6254 ug/L		99
72)	Ethylbenzene	14.38	106	1563451	108.6515 ug/L		80
73)	m-,p-Xylene	14.47	106	3445253	211.3300 ug/L		75
74)	o-Xylene	14.99	106	1769717	106.6024 ug/L		85
75)	Styrene	15.02	104	2941609	109.5709 ug/L		94
76)	Bromoform	15.50	173	712790	128.5758 ug/L		99
77)	Isopropylbenzene	15.38	105	4069409	103.4040 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.58	83	863401	125.0221 ug/L		98
81)	1,2,3-Trichloropropane	15.76	110	269687	124.5583 ug/L	#	45
82)	trans-1,4-Dichloro-2-Buten	15.80	53	298339	148.9131 ug/L	#	1
83)	n-Propylbenzene	15.85	91	4780143	97.6802 ug/L		91
84)	Bromobenzene	15.99	156	1239953	110.6795 ug/L		67
85)	1,3,5-Trimethylbenzene	16.03	105	3552714	106.9133 ug/L		88
86)	2-Chlorotoluene	16.11	91	3049703	94.1948 ug/L		90
87)	4-Chlorotoluene	16.11	91	3049703	103.7159 ug/L	#	68
88)	a-Methylstyrene	16.40	118	2192326	122.5028 ug/L		90
89)	tert-Butylbenzene	16.46	134	872372	115.6393 ug/L		70
90)	1,2,4-Trimethylbenzene	16.51	105	3582447	106.3373 ug/L		87
91)	sec-Butylbenzene	16.71	105	4190489	110.3125 ug/L		91
92)	p-Isopropyltoluene	16.85	119	3667596	109.5884 ug/L		89
93)	1,3-Dichlorobenzene	17.05	146	2247835	109.2020 ug/L		100
94)	1,4-Dichlorobenzene	17.16	146	2249845	105.1191 ug/L		99
95)	n-Butylbenzene	17.34	91	3363802	112.7973 ug/L		94
96)	1,2-Dichlorobenzene	17.63	146	2087927	108.3639 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	18.55	75	162053	119.6854 ug/L		95
98)	1,2,4-Trichlorobenzene	19.61	180	1471411	109.0567 ug/L		99
99)	Hexachlorobutadiene	19.75	225	681084	122.0570 ug/L		99
100)	Naphthalene	19.97	128	2665535	112.4034 ug/L		99
101)	1,2,3-Trichlorobenzene	20.26	180	1314496	110.3481 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95124.D Vial: 9
Acq On : 17 Sep 2013 18:34 Operator: FJB
Sample : WG444955-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 18:56 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration

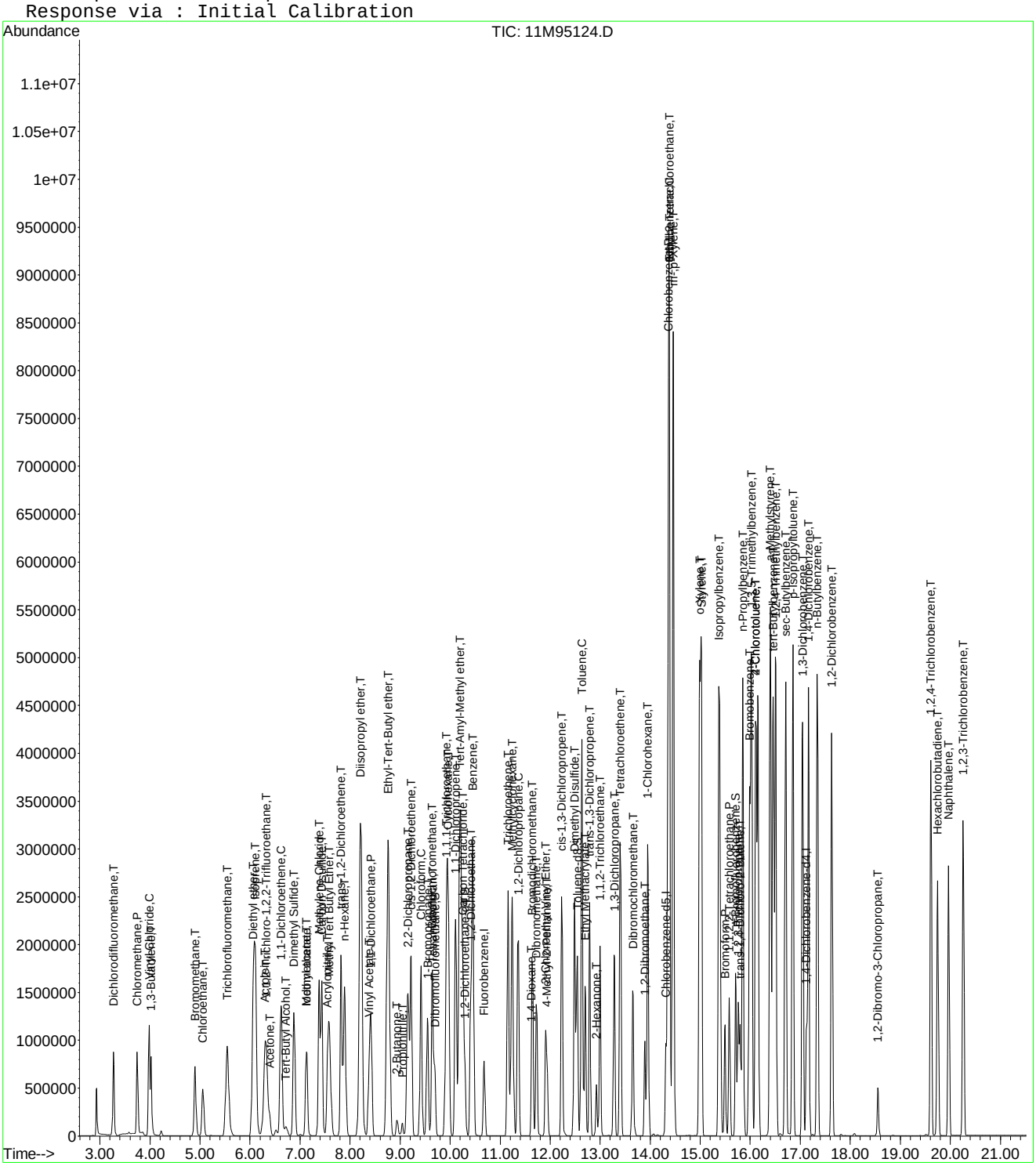

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95125.D Vial: 10
Acq On : 17 Sep 2013 19:06 Operator: FJB
Sample : WG444955-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 19:27:41 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.68	96	882678	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.31	117	672390	25.00 ug/L	0.02
78) 1,4-Dichlorobenzene-d4	17.13	152	341029	25.00 ug/L	0.04

System Monitoring Compounds					
37) Dibromofluoromethane	9.69	111	953193	101.9840 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 407.92%#		
43) 1,2-Dichloroethane-d4	10.30	65	981905	91.8908 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 367.56%#		
58) Toluene-d8	12.54	98	2953437	99.6658 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 398.68%#		
80) p-Bromofluorobenzene	15.71	95	1318361	109.3374 ug/L	0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 437.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	1851134	216.9495 ug/L	98
3) Chloromethane	3.74	50	2001766	180.7906 ug/L	100
4) Vinyl Chloride	3.98	62	2234343	204.9925 ug/L	95
5) 1,3-Butadiene	4.02	54	800795	76.5153 ug/L	92
6) Bromomethane	4.90	94	1382700	300.8961 ug/L	100
7) Chloroethane	5.06	64	1292717	217.3945 ug/L	97
8) Trichlorofluoromethane	5.54	101	3224867	200.2144 ug/L	99
9) Diethyl ether	6.07	59	9013	1.4010 ug/L	75
10) Isoprene	6.10	67	2723080	212.4781 ug/L	76
11) Acrolein	6.30	56	5078	5.3407 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.32	101	1896736	208.8684 ug/L	96
13) Acetone	6.39	43	508127	163.2753 ug/L	91
14) 1,1-Dichloroethene	6.62	61	2831608	181.5991 ug/L	86
15) Tert-Butyl Alcohol	6.73	59	7266	14.4236 ug/L #	86
16) Dimethyl Sulfide	6.88	62	1863136	211.3695 ug/L	79
17) Iodomethane	7.13	142	2247472	414.0796 ug/L	92
18) Methyl acetate	7.12	43	923551	182.0882 ug/L	90
19) Methylene Chloride	7.38	84	1857496	197.1645 ug/L	75
20) Carbon Disulfide	7.43	76	5397853	193.6176 ug/L	95
21) Acrylonitrile	7.58	53	46996	20.7186 ug/L #	35
22) Methyl Tert Butyl Ether	7.58	73	4509784	199.7269 ug/L	97
23) trans-1,2-Dichloroethene	7.82	96	1928494	194.0739 ug/L	79
24) n-Hexane	7.89	57	2329042	211.5478 ug/L	92
25) Diisopropyl ether	8.22	45	6006	0.1917 ug/L #	82
26) Vinyl Acetate	8.38	43	2296100	293.7917 ug/L	96
27) 1,1-Dichloroethane	8.42	63	3227643	195.6290 ug/L	94
28) Ethyl-Tert-Butyl ether	8.77	59	7259	0.2686 ug/L	94
29) 2-Butanone	8.93	43	525208	195.7239 ug/L	86
30) Propionitrile	9.05	54	3543	4.7476 ug/L #	59
31) 2,2-Dichloropropane	9.16	77	3033478	224.8694 ug/L	98
32) cis-1,2-Dichloroethene	9.22	96	2073861	197.2106 ug/L	85
33) Chloroform	9.42	83	3282198	190.3017 ug/L	97
34) 1-Bromopropane	9.55	122	411787	208.6221 ug/L	98
35) Bromochloromethane	9.64	130	1244186	212.9022 ug/L	89
36) Tetrahydrofuran	9.66	42	5678	3.2399 ug/L #	84
38) 1,1,1-Trichloroethane	9.93	97	3272256	204.3918 ug/L	95
39) Cyclohexane	9.96	56	2978299	191.4796 ug/L	84
40) 1,1-Dichloropropene	10.11	75	2642897	189.7750 ug/L	94
41) Carbon Tetrachloride	10.26	117	2990393	211.2430 ug/L	97
42) Tert-Amyl-Methyl ether	10.19	73	9116	0.3805 ug/L #	96

(#) = qualifier out of range (m) = manual integration
11M95125.D 8260WTR.M Tue Sep 17 19:27:41 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95125.D Vial: 10
Acq On : 17 Sep 2013 19:06 Operator: FJB
Sample : WG444955-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 19:27:41 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.41	62	2495755	186.9668 ug/L		96
46)	Benzene	10.45	78	6118726	164.2468 ug/L		92
47)	Trichloroethene	11.16	130	1953847	190.2979 ug/L		97
48)	Methylcyclohexane	11.24	83	2926676	200.4874 ug/L		85
49)	1,2-Dichloropropane	11.36	63	1818071	189.5129 ug/L		90
50)	1,4-Dioxane	11.64	88	5004	84.6099 ug/L	#	52
51)	Bromodichloromethane	11.64	83	2632960	202.4075 ug/L		98
52)	Dibromomethane	11.73	93	1132693	204.0825 ug/L		98
53)	2-Chloroethyl Vinyl Ether	11.91	63	858244	219.7714 ug/L		97
54)	4-Methyl-2-Pentanone	11.93	58	453700	217.0387 ug/L		94
55)	cis-1,3-Dichloropropene	12.23	75	2952319	219.0403 ug/L		96
56)	Dimethyl Disulfide	12.49	79	1818267	215.8613 ug/L		98
59)	Toluene	12.64	91	6233011	169.2197 ug/L		87
60)	Ethyl Methacrylate	12.70	69	1986898	232.7482 ug/L		82
62)	trans-1,3-Dichloropropene	12.79	75	2695895	236.3536 ug/L		91
63)	1,1,2-Trichloroethane	13.00	97	1436224	219.3889 ug/L		97
64)	2-Hexanone	12.92	43	838554	227.5559 ug/L		83
65)	1,3-Dichloropropane	13.29	76	2461437	216.8844 ug/L		91
66)	Tetrachloroethene	13.40	164	1766682	212.6708 ug/L		91
67)	Dibromochloromethane	13.65	129	1929787	238.9165 ug/L		98
68)	1,2-Dibromoethane	13.90	107	1496417	238.9330 ug/L		100
69)	1-Chlorohexane	13.96	91	2640508	220.3415 ug/L		77
70)	Chlorobenzene	14.36	112	5067599	196.6453 ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.38	131	2317210	237.8176 ug/L		100
72)	Ethylbenzene	14.38	106	3083890	219.5908 ug/L		54
73)	m-,p-Xylene	14.47	106	5857875	368.1663 ug/L		57
74)	o-Xylene	14.99	106	3374929	208.3012 ug/L		70
75)	Styrene	15.02	104	5154259	196.7164 ug/L		100
76)	Bromoform	15.50	173	1369365	253.0933 ug/L		100
77)	Isopropylbenzene	15.38	105	6575196	171.1901 ug/L	#	77
79)	1,1,2,2-Tetrachloroethane	15.58	83	1574795	240.7419 ug/L		96
81)	1,2,3-Trichloropropane	15.76	110	502280	244.9130 ug/L	#	44
82)	trans-1,4-Dichloro-2-Buten	15.80	53	557857	293.9674 ug/L	#	1
83)	n-Propylbenzene	15.85	91	7225533	155.8796 ug/L	#	77
84)	Bromobenzene	15.99	156	2356681	222.0835 ug/L		73
85)	1,3,5-Trimethylbenzene	16.03	105	5827403	185.1399 ug/L		77
86)	2-Chlorotoluene	16.12	91	4978101	162.3254 ug/L		80
87)	4-Chlorotoluene	16.12	91	4978101	178.7331 ug/L	#	56
88)	a-Methylstyrene	16.40	118	3886614	229.2797 ug/L		94
89)	tert-Butylbenzene	16.46	134	1672641	234.0777 ug/L		58
90)	1,2,4-Trimethylbenzene	16.51	105	5744902	180.0288 ug/L		74
91)	sec-Butylbenzene	16.71	105	6546584	181.9401 ug/L	#	80
92)	p-Isopropyltoluene	16.85	119	5866320	185.0556 ug/L	#	78
93)	1,3-Dichlorobenzene	17.05	146	3886897	199.3530 ug/L		95
94)	1,4-Dichlorobenzene	17.16	146	3866246	190.7093 ug/L		94
95)	n-Butylbenzene	17.34	91	5349578	189.3831 ug/L		85
96)	1,2-Dichlorobenzene	17.63	146	3627488	198.7600 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	18.55	75	310177	241.8505 ug/L		95
98)	1,2,4-Trichlorobenzene	19.61	180	2897274	226.7052 ug/L		98
99)	Hexachlorobutadiene	19.75	225	1391016	263.1768 ug/L		98
100)	Naphthalene	19.97	128	4625477	205.9230 ug/L	#	95
101)	1,2,3-Trichlorobenzene	20.26	180	2559880	226.8708 ug/L		100

(#) = qualifier out of range (m) = manual integration
11M95125.D 8260WTR.M Tue Sep 17 19:27:41 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\091713\11M95125.D Vial: 10
Acq On : 17 Sep 2013 19:06 Operator: FJB
Sample : WG444955-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 17 19:27 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Tue Sep 17 13:02:19 2013
Response via : Initial Calibration

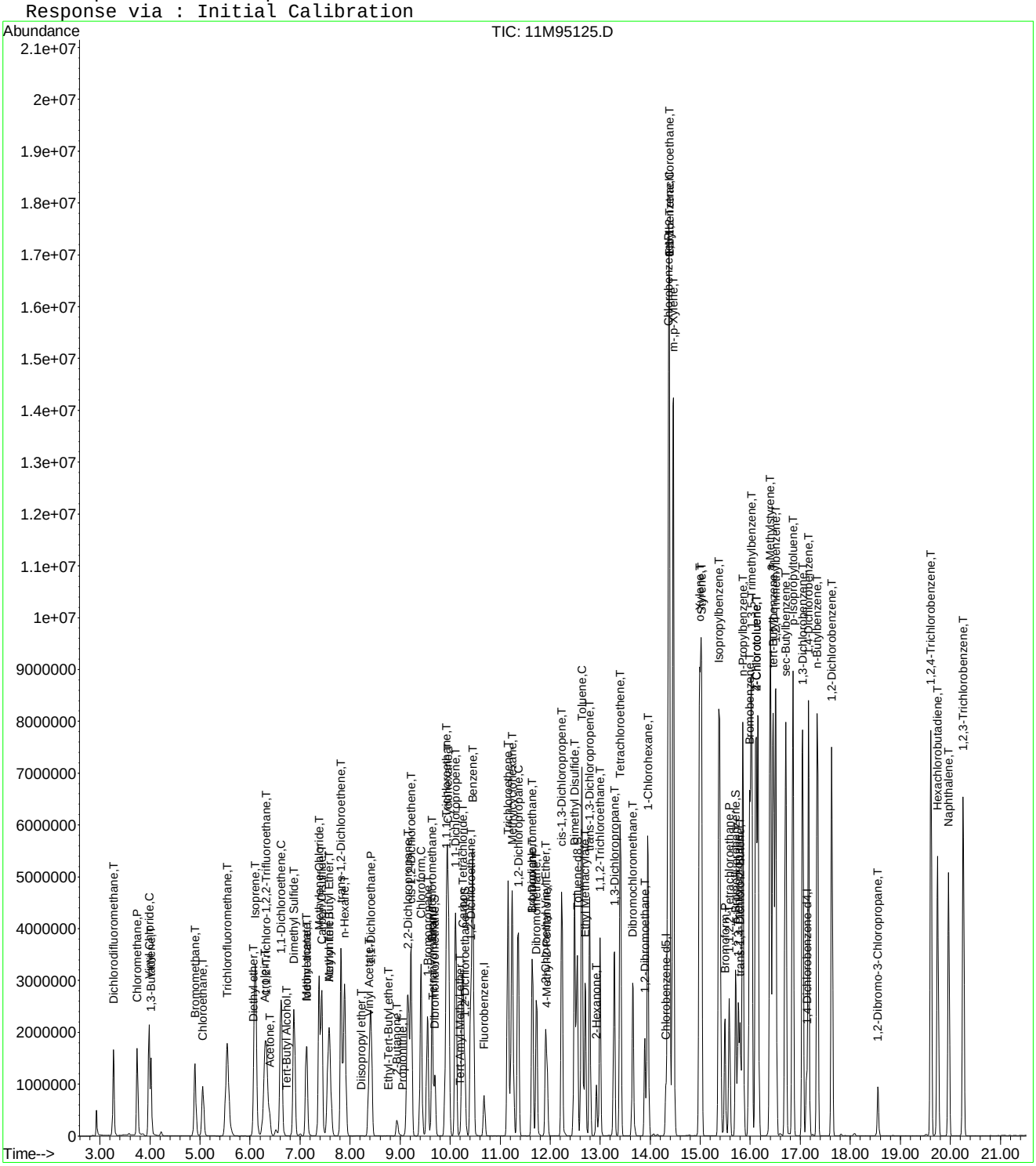

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091713\11M95126.D Vial: 11
Acq On : 17 Sep 2013 19:37 Operator: FJB
Sample : WG444955-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 09:09:19 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Wed Sep 18 09:06:09 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.68	96	813859	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.31	117	619942	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.13	152	324115	25.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.69	111	1351391	159.5270 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery	= 638.12%#	
43) 1,2-Dichloroethane-d4	10.30	65	1394425	150.8202 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery	= 603.28%#	
58) Toluene-d8	12.54	98	4059834	144.4702 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 577.88%#	
80) p-Bromofluorobenzene	15.71	95	1857328	4.0880 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 16.36%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2487328	326.3634 ug/L	97
3) Chloromethane	3.74	50	2787601	296.1222 ug/L	98
4) Vinyl Chloride	3.98	62	2953446	289.0333 ug/L	93
5) 1,3-Butadiene	4.02	54	1068057	194.1508 ug/L	91
6) Bromomethane	4.89	94	1959263	298.5894 ug/L	100
7) Chloroethane	5.06	64	1788688	322.9941 ug/L	97
8) Trichlorofluoromethane	5.54	101	4483092	313.3273 ug/L	98
9) Diethyl ether	6.06	59	1757176	310.6083 ug/L	88
10) Isoprene	6.10	67	3893124	330.6468 ug/L	75
11) Acrolein	6.30	56	117732	162.6794 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	2676203	334.1910 ug/L	96
13) Acetone	6.39	43	706479	233.9462 ug/L	89
14) 1,1-Dichloroethene	6.62	61	3885095	308.7480 ug/L	83
15) Tert-Butyl Alcohol	6.73	59	310072	587.3724 ug/L	98
16) Dimethyl Sulfide	6.88	62	2615265	311.6820 ug/L	78
17) Iodomethane	7.12	142	3038514	387.1518 ug/L	92
18) Methyl acetate	7.12	43	1437058	356.1671 ug/L #	89
19) Methylene Chloride	7.38	84	2595218	306.9019 ug/L	73
20) Carbon Disulfide	7.43	76	6972712	271.7001 ug/L	92
21) Acrylonitrile	7.56	53	378398	172.1374 ug/L	91
22) Methyl Tert Butyl Ether	7.58	73	6295355	301.0268 ug/L	98
23) trans-1,2-Dichloroethene	7.82	96	2708205	323.5023 ug/L	76
24) n-Hexane	7.89	57	3249251	303.6670 ug/L	91
25) Diisopropyl ether	8.21	45	7185389	274.7442 ug/L	92
26) Vinyl Acetate	8.38	43	3287892	345.9585 ug/L	96
27) 1,1-Dichloroethane	8.42	63	4387648	305.9104 ug/L	93
28) Ethyl-Tert-Butyl ether	8.76	59	6800394	281.5507 ug/L	90
29) 2-Butanone	8.94	43	779956	306.1938 ug/L	85
30) Propionitrile	9.05	54	233614	317.4943 ug/L	98
31) 2,2-Dichloropropane	9.16	77	4193513	325.3911 ug/L	97
32) cis-1,2-Dichloroethene	9.22	96	2885508	310.8339 ug/L	83
33) Chloroform	9.42	83	4426278	291.8261 ug/L	95
34) 1-Bromopropane	9.55	122	596197	352.1169 ug/L	100
35) Bromochloromethane	9.64	130	1772647	337.1811 ug/L	87
36) Tetrahydrofuran	9.66	42	492949	301.6622 ug/L	84
38) 1,1,1-Trichloroethane	9.93	97	4451389	311.3913 ug/L #	94
39) Cyclohexane	9.96	56	4154433	305.4668 ug/L	82
40) 1,1-Dichloropropene	10.11	75	3659353	307.8683 ug/L	92
41) Carbon Tetrachloride	10.25	117	4154816	324.7424 ug/L	97
42) Tert-Amyl-Methyl ether	10.20	73	6221599	283.8865 ug/L	92

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091713\11M95126.D Vial: 11
Acq On : 17 Sep 2013 19:37 Operator: FJB
Sample : WG444955-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 09:09:19 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Wed Sep 18 09:06:09 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.41	62	3376022	290.2318 ug/L		94
46)	Benzene	10.45	78	7716699	244.0686 ug/L		85
47)	Trichloroethene	11.16	130	2740219	312.1913 ug/L		97
48)	Methylcyclohexane	11.24	83	4080017	314.6496 ug/L		85
49)	1,2-Dichloropropane	11.36	63	2540019	309.7073 ug/L		90
50)	1,4-Dioxane	11.63	88	36485	674.8868 ug/L		94
51)	Bromodichloromethane	11.64	83	3588224	310.5763 ug/L		96
52)	Dibromomethane	11.73	93	1602003	318.7209 ug/L		98
53)	2-Chloroethyl Vinyl Ether	11.91	63	1271980	351.0909 ug/L		95
54)	4-Methyl-2-Pentanone	11.93	58	662521	337.3314 ug/L		94
55)	cis-1,3-Dichloropropene	12.23	75	4000455	307.3286 ug/L		93
56)	Dimethyl Disulfide	12.49	79	2564115	349.4586 ug/L		99
59)	Toluene	12.64	91	7614339	230.0261 ug/L		81
60)	Ethyl Methacrylate	12.70	69	2799755	333.9985 ug/L		82
62)	trans-1,3-Dichloropropene	12.79	75	3663995	311.0857 ug/L		87
63)	1,1,2-Trichloroethane	13.00	97	2032474	318.6388 ug/L		97
64)	2-Hexanone	12.92	43	1204244	296.8575 ug/L		85
65)	1,3-Dichloropropane	13.29	76	3393547	293.2882 ug/L		90
66)	Tetrachloroethene	13.40	164	2501204	322.5903 ug/L		92
67)	Dibromochloromethane	13.66	129	2704801	332.8578 ug/L		98
68)	1,2-Dibromoethane	13.90	107	2105711	313.0089 ug/L		100
69)	1-Chlorohexane	13.96	91	3652705	310.1521 ug/L		77
70)	Chlorobenzene	14.36	112	6335664	268.4778 ug/L		82
71)	1,1,1,2-Tetrachloroethane	14.38	131	3172000	342.4961 ug/L		99
72)	Ethylbenzene	14.38	106	4166151	328.2788 ug/L		43
73)	m-,p-Xylene	14.47	106	7180799	502.1484 ug/L		50
74)	o-Xylene	14.99	106	4532633	310.4947 ug/L		60
75)	Styrene	15.02	104	6462568	274.1888 ug/L		94
76)	Bromoform	15.50	173	1942135	362.8716 ug/L		100
77)	Isopropylbenzene	15.38	105	7932939	231.0344 ug/L	#	66
79)	1,1,2,2-Tetrachloroethane	15.58	83	2258136	9.1913 ug/L		96
81)	1,2,3-Trichloropropane	15.77	110	724168	9.1891 ug/L	#	41
82)	trans-1,4-Dichloro-2-Buten	15.80	53	817443	9.2310 ug/L	#	1
83)	n-Propylbenzene	15.85	91	8549907	9.0317 ug/L	#	65
84)	Bromobenzene	15.99	156	3250665	10.1517 ug/L		77
85)	1,3,5-Trimethylbenzene	16.03	105	7203481	9.0987 ug/L	#	68
86)	2-Chlorotoluene	16.12	91	7310548	9.1344 ug/L		86
87)	4-Chlorotoluene	16.12	91	7310548	9.1424 ug/L	#	63
88)	a-Methylstyrene	16.40	118	5222950	9.1734 ug/L		98
89)	tert-Butylbenzene	16.46	134	2388562	9.1969 ug/L		49
90)	1,2,4-Trimethylbenzene	16.51	105	7095703	9.0869 ug/L	#	62
91)	sec-Butylbenzene	16.71	105	7996737	9.0675 ug/L	#	69
92)	p-Isopropyltoluene	16.85	119	7331529	9.0907 ug/L	#	67
93)	1,3-Dichlorobenzene	17.05	146	5139952	9.1375 ug/L		88
94)	1,4-Dichlorobenzene	17.16	146	5124794	10.0916 ug/L		87
95)	n-Butylbenzene	17.34	91	6780029	9.0868 ug/L	#	75
96)	1,2-Dichlorobenzene	17.63	146	4951892	9.1433 ug/L		90
97)	1,2-Dibromo-3-Chloropropan	18.55	75	480816	7.2030 ug/L		92
98)	1,2,4-Trichlorobenzene	19.61	180	4075975	9.1755 ug/L		94
99)	Hexachlorobutadiene	19.75	225	2054485	9.1995 ug/L		97
100)	Naphthalene	19.97	128	6029515	9.1240 ug/L	#	89
101)	1,2,3-Trichlorobenzene	20.27	180	3677473	10.1591 ug/L		98

(#) = qualifier out of range (m) = manual integration
11M95126.D 8260WTR.M Thu Sep 19 12:37:27 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091713\11M95126.D Vial: 11
Acq On : 17 Sep 2013 19:37 Operator: FJB
Sample : WG444955-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD60178 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 9:09 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Wed Sep 18 09:40:31 2013
Response via : Initial Calibration

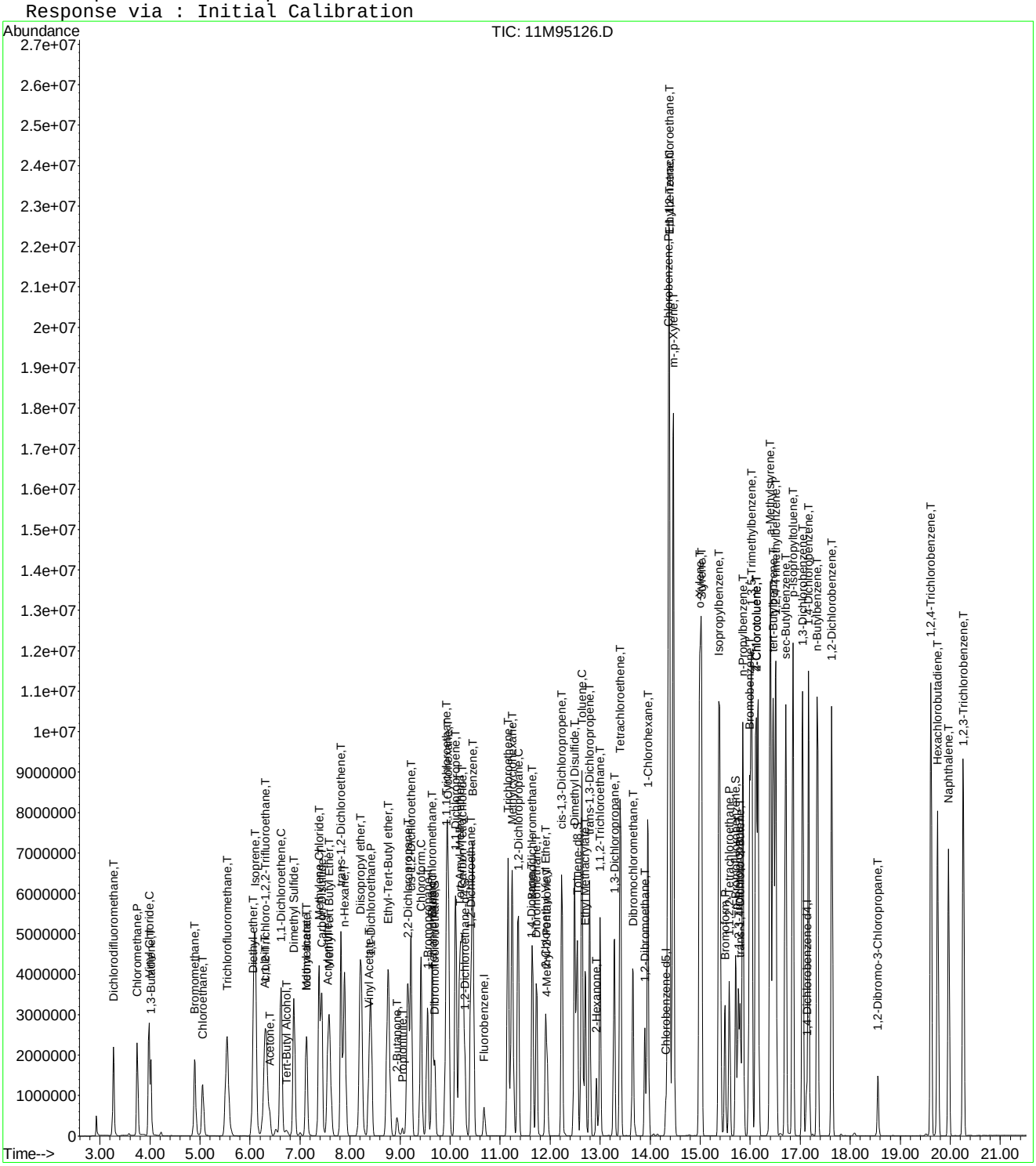

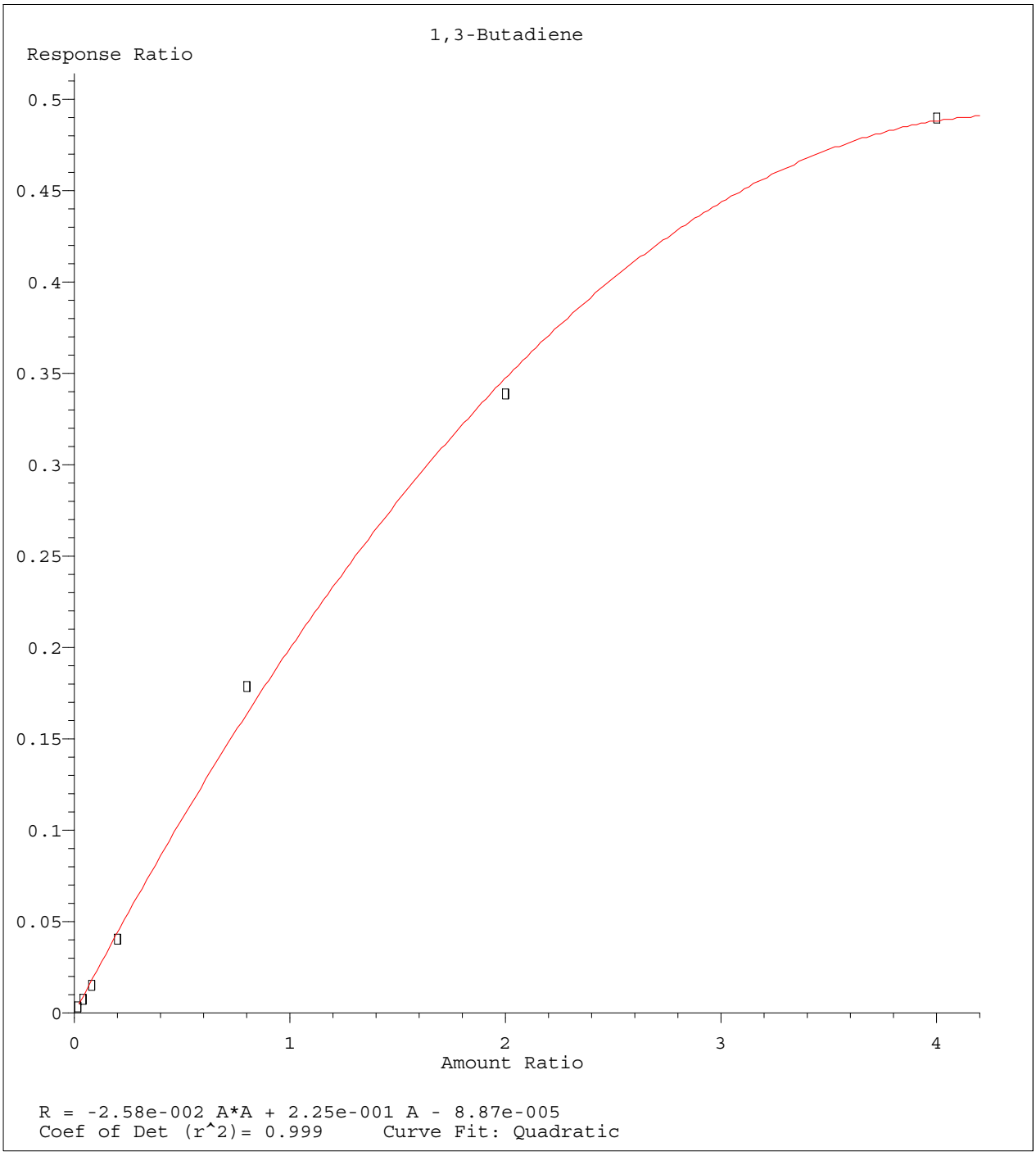

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Wed Sep 18 09:40:31 2013

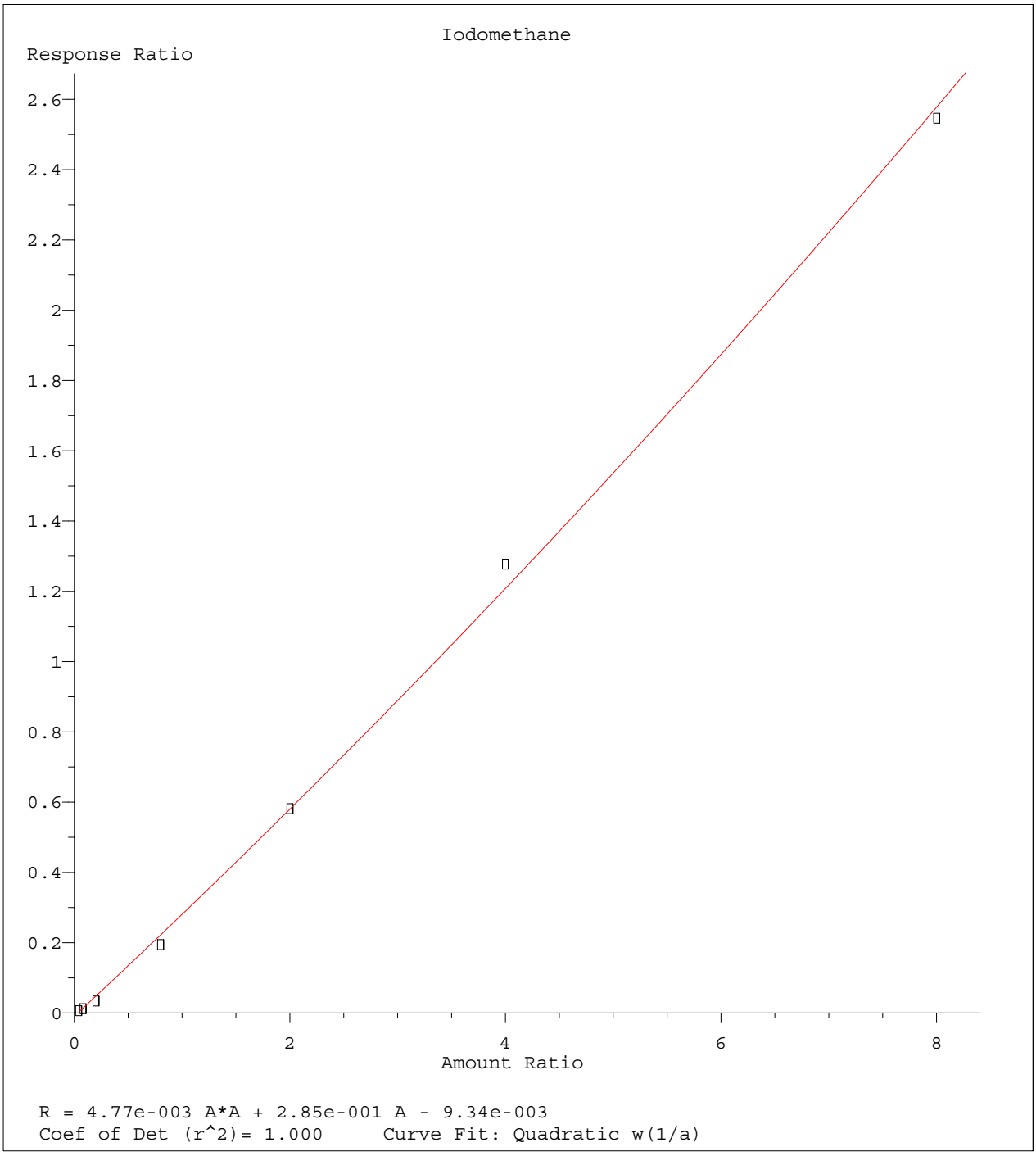

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Wed Sep 18 09:40:31 2013

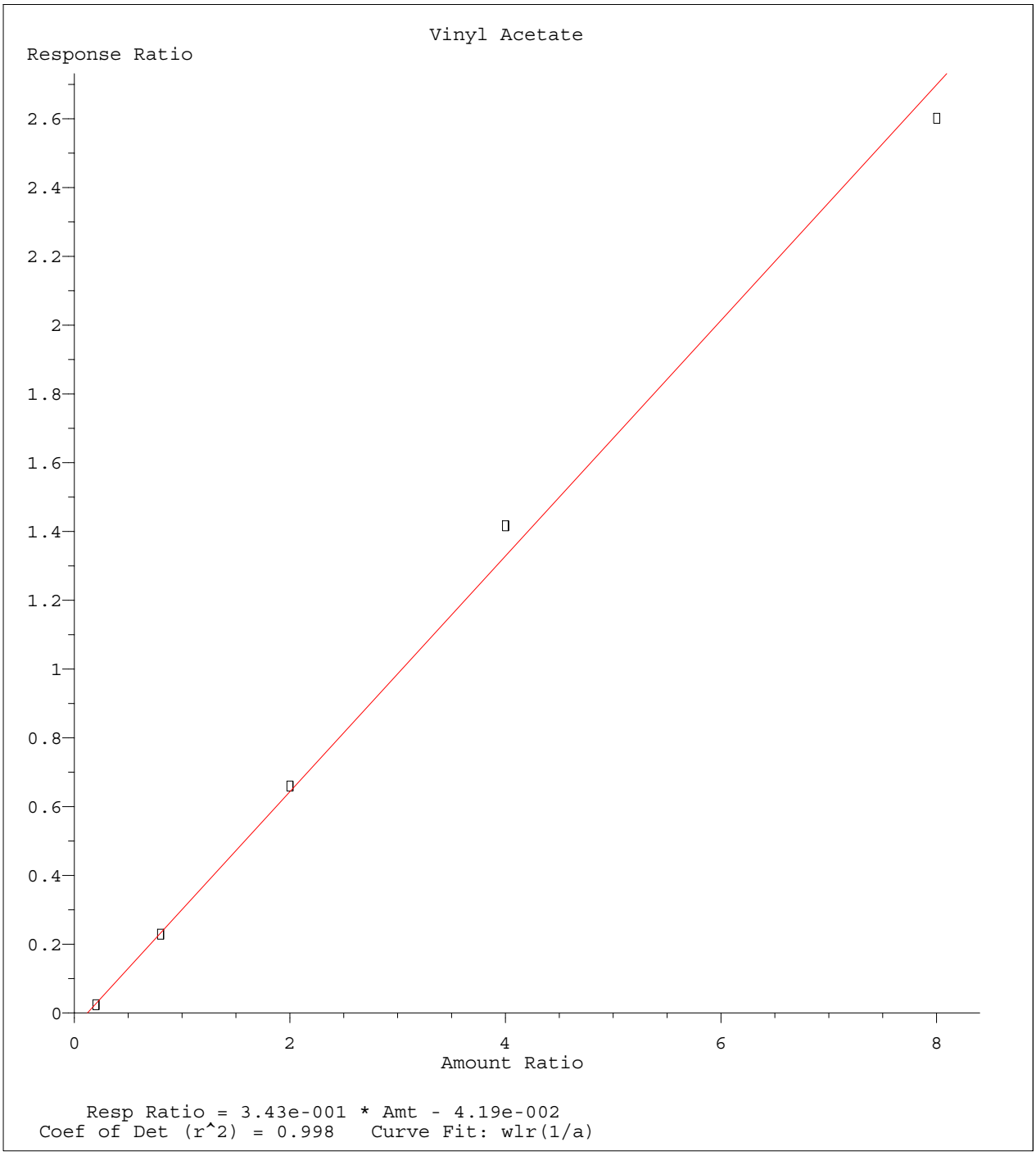

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Wed Sep 18 09:40:31 2013

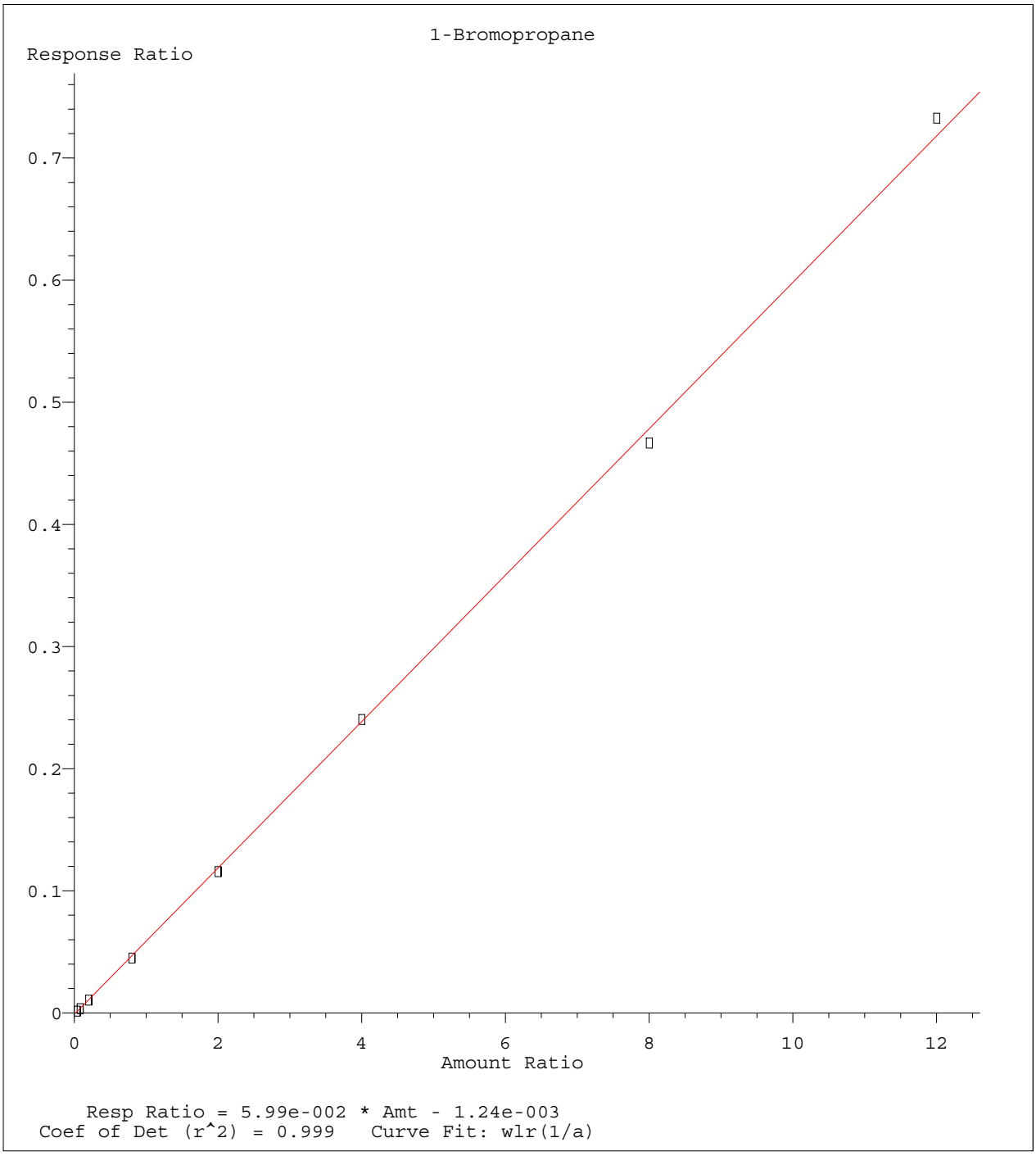

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Wed Sep 18 09:40:31 2013

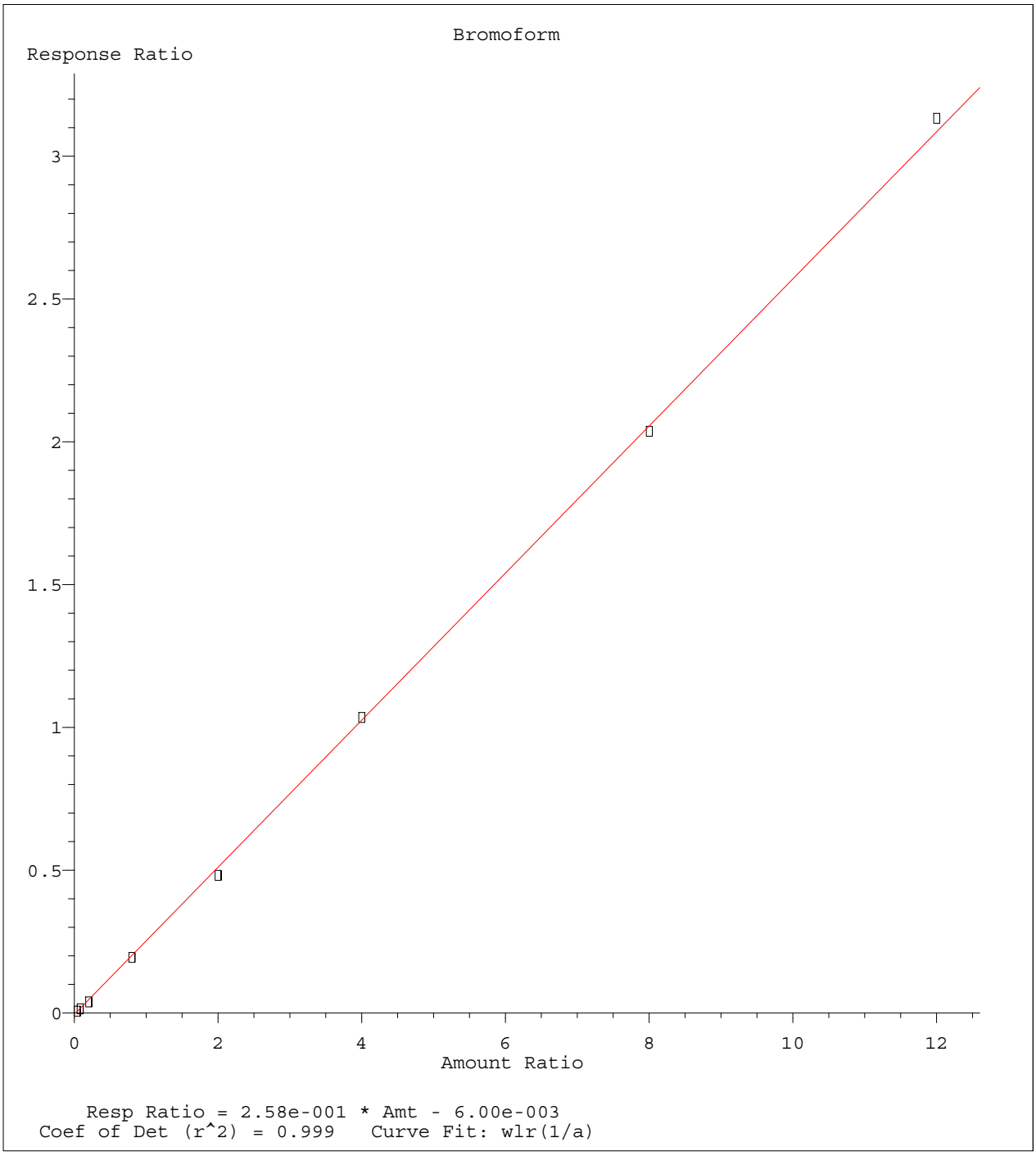

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Wed Sep 18 09:40:31 2013

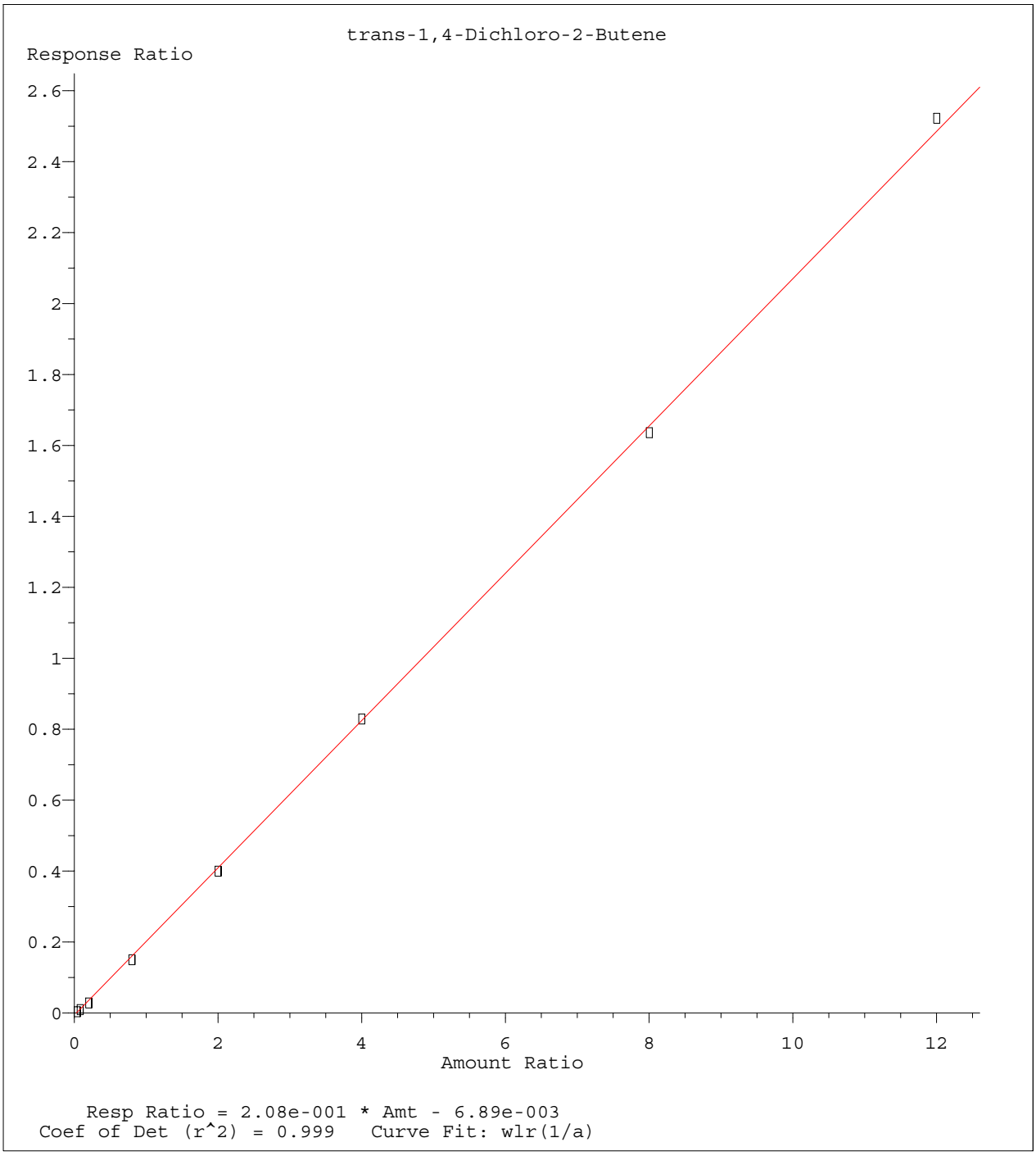

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Wed Sep 18 09:40:31 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091713\11M95128.D Vial: 13
Acq On : 17 Sep 2013 20:40 Operator: FJB
Sample : WG444955-12 20ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 09:40:35 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Wed Sep 18 09:40:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.68	96	792434	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.31	117	588284	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.12	152	316405	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.70	111	216593	26.2593 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.04%		
43) 1,2-Dichloroethane-d4	10.30	65	234003	25.9939 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.96%		
58) Toluene-d8	12.54	98	701048	26.2895 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.16%		
80) p-Bromofluorobenzene	15.71	95	308166	25.6003 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.40%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	173802	22.8071 ug/L	100
3) Chloromethane	3.74	50	190873	20.8229 ug/L	98
4) Vinyl Chloride	3.98	62	198642	19.9653 ug/L	99
5) 1,3-Butadiene	4.02	54	85169	12.6679 ug/L	94
6) Bromomethane	4.90	94	124773	19.5296 ug/L	99
7) Chloroethane	5.06	64	106719	19.7919 ug/L	97
8) Trichlorofluoromethane	5.54	101	281654	20.2173 ug/L	98
9) Diethyl ether	6.06	59	467927	84.9497 ug/L	89
10) Isoprene	6.10	67	231700	20.2106 ug/L	76
11) Acrolein	6.30	56	65585	93.0741 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.32	101	163894	21.0196 ug/L	90
13) Acetone	6.39	43	36569	15.3298 ug/L	90
14) 1,1-Dichloroethene	6.62	61	234841	19.1674 ug/L	89
15) Tert-Butyl Alcohol	6.72	59	81939	159.4145 ug/L	97
16) Dimethyl Sulfide	6.88	62	201692	24.6871 ug/L	80
17) Iodomethane	7.13	142	161910	18.4956 ug/L	92
18) Methyl acetate	7.13	43	93698	22.8423 ug/L	92
19) Methylene Chloride	7.38	84	160068	19.4409 ug/L	78
20) Carbon Disulfide	7.43	76	540686	21.6381 ug/L	100
21) Acrylonitrile	7.56	53	44929	20.9913 ug/L	96
22) Methyl Tert Butyl Ether	7.58	73	455369	22.3632 ug/L	96
23) trans-1,2-Dichloroethene	7.82	96	170300	20.8928 ug/L	79
24) n-Hexane	7.89	57	187761	18.0221 ug/L	94
25) Diisopropyl ether	8.21	45	2100110	82.4720 ug/L	98
26) Vinyl Acetate	8.38	43	140674	16.0067 ug/L	98
27) 1,1-Dichloroethane	8.42	63	285798	20.4648 ug/L	97
28) Ethyl-Tert-Butyl ether	8.77	59	1936354	82.3367 ug/L	96
29) 2-Butanone	8.94	43	51442	20.7410 ug/L	88
30) Propionitrile	9.05	54	59570	83.1478 ug/L	97
31) 2,2-Dichloropropane	9.16	77	242358	19.3140 ug/L	100
32) cis-1,2-Dichloroethene	9.22	96	185131	20.4819 ug/L	85
33) Chloroform	9.42	83	302554	20.4868 ug/L	100
34) 1-Bromopropane	9.55	122	40100	21.6294 ug/L	97
35) Bromochloromethane	9.65	130	107561	21.0127 ug/L	89
36) Tetrahydrofuran	9.66	42	128315	80.6459 ug/L	87
38) 1,1,1-Trichloroethane	9.93	97	283441	20.3638 ug/L	97
39) Cyclohexane	9.96	56	256641	19.3805 ug/L	86
40) 1,1-Dichloropropene	10.11	75	230430	19.9107 ug/L	97
41) Carbon Tetrachloride	10.26	117	255999	20.5500 ug/L	97
42) Tert-Amyl-Methyl ether	10.21	73	1806036	84.6360 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M95128.D 8260WTR.M Wed Sep 18 09:40:36 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091713\11M95128.D Vial: 13
Acq On : 17 Sep 2013 20:40 Operator: FJB
Sample : WG444955-12 20ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 09:40:35 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Wed Sep 18 09:40:31 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.41	62	234402	20.6960 ug/L		99
46)	Benzene	10.45	78	635765	20.6520 ug/L		98
47)	Trichloroethene	11.16	130	186624	21.8368 ug/L		98
48)	Methylcyclohexane	11.24	83	259473	20.5515 ug/L		86
49)	1,2-Dichloropropane	11.36	63	163713	20.5014 ug/L		88
50)	1,4-Dioxane	11.62	88	7375	140.1086 ug/L		99
51)	Bromodichloromethane	11.64	83	226421	20.1276 ug/L		98
52)	Dibromomethane	11.73	93	98920	20.2124 ug/L		97
53)	2-Chloroethyl Vinyl Ether	11.91	63	80346	21.1406 ug/L		98
54)	4-Methyl-2-Pentanone	11.93	58	43803	22.0339 ug/L		96
55)	cis-1,3-Dichloropropene	12.23	75	275087	21.7045 ug/L		100
56)	Dimethyl Disulfide	12.49	79	157807	21.4782 ug/L		87
59)	Toluene	12.64	91	690538	21.9835 ug/L		99
60)	Ethyl Methacrylate	12.70	69	187458	23.5664 ug/L		87
62)	trans-1,3-Dichloropropene	12.79	75	231100	20.6771 ug/L		95
63)	1,1,2-Trichloroethane	13.00	97	132198	21.8405 ug/L		98
64)	2-Hexanone	12.92	43	80794	20.9883 ug/L		82
65)	1,3-Dichloropropane	13.29	76	226827	20.6585 ug/L		92
66)	Tetrachloroethene	13.40	164	151775	20.6284 ug/L		91
67)	Dibromochloromethane	13.65	129	158006	20.4909 ug/L		100
68)	1,2-Dibromoethane	13.90	107	132556	20.7645 ug/L		98
69)	1-Chlorohexane	13.95	91	248177	22.2068 ug/L		77
70)	Chlorobenzene	14.36	112	438790	19.5946 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.38	131	181884	20.6957 ug/L		99
72)	Ethylbenzene	14.38	106	244852	20.3318 ug/L		98
73)	m-,p-Xylene	14.47	106	572663	42.2010 ug/L		99
74)	o-Xylene	14.98	106	267613	19.3186 ug/L		96
75)	Styrene	15.02	104	490044	21.9101 ug/L		92
76)	Bromoform	15.50	173	110570	18.8191 ug/L		99
77)	Isopropylbenzene	15.38	105	683775	20.9855 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.58	83	144047	21.5594 ug/L		96
81)	1,2,3-Trichloropropane	15.76	110	45623	21.1149 ug/L	#	59
82)	trans-1,4-Dichloro-2-Buten	15.80	53	35711	14.4163 ug/L	#	1
83)	n-Propylbenzene	15.85	91	845918	19.6582 ug/L		100
84)	Bromobenzene	15.99	156	207919	19.7698 ug/L		65
85)	1,3,5-Trimethylbenzene	16.03	105	658973	22.6461 ug/L		94
86)	2-Chlorotoluene	16.11	91	535725	20.2456 ug/L		91
87)	4-Chlorotoluene	16.15	91	539506	20.9298 ug/L		100
88)	a-Methylstyrene	16.40	118	392661	23.7486 ug/L		87
89)	tert-Butylbenzene	16.46	134	132127	19.1191 ug/L		81
90)	1,2,4-Trimethylbenzene	16.50	105	667710	22.5634 ug/L		95
91)	sec-Butylbenzene	16.71	105	726751	20.6151 ug/L		98
92)	p-Isopropyltoluene	16.85	119	636644	21.0086 ug/L		95
93)	1,3-Dichlorobenzene	17.05	146	361992	19.6511 ug/L		98
94)	1,4-Dichlorobenzene	17.16	146	395255	20.2507 ug/L		99
95)	n-Butylbenzene	17.34	91	652627	23.0265 ug/L		99
96)	1,2-Dichlorobenzene	17.63	146	342698	19.2444 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	18.55	75	26553	19.8883 ug/L		96
98)	1,2,4-Trichlorobenzene	19.61	180	265111	20.7028 ug/L		99
99)	Hexachlorobutadiene	19.75	225	129098	21.9416 ug/L		99
100)	Naphthalene	19.97	128	495666	21.9720 ug/L		98
101)	1,2,3-Trichlorobenzene	20.26	180	234541	20.1458 ug/L		97

(#) = qualifier out of range (m) = manual integration
11M95128.D 8260WTR.M Wed Sep 18 09:40:36 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091713\11M95128.D Vial: 13
Acq On : 17 Sep 2013 20:40 Operator: FJB
Sample : WG444955-12 20ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 9:40 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Wed Sep 18 09:40:31 2013
Response via : Initial Calibration

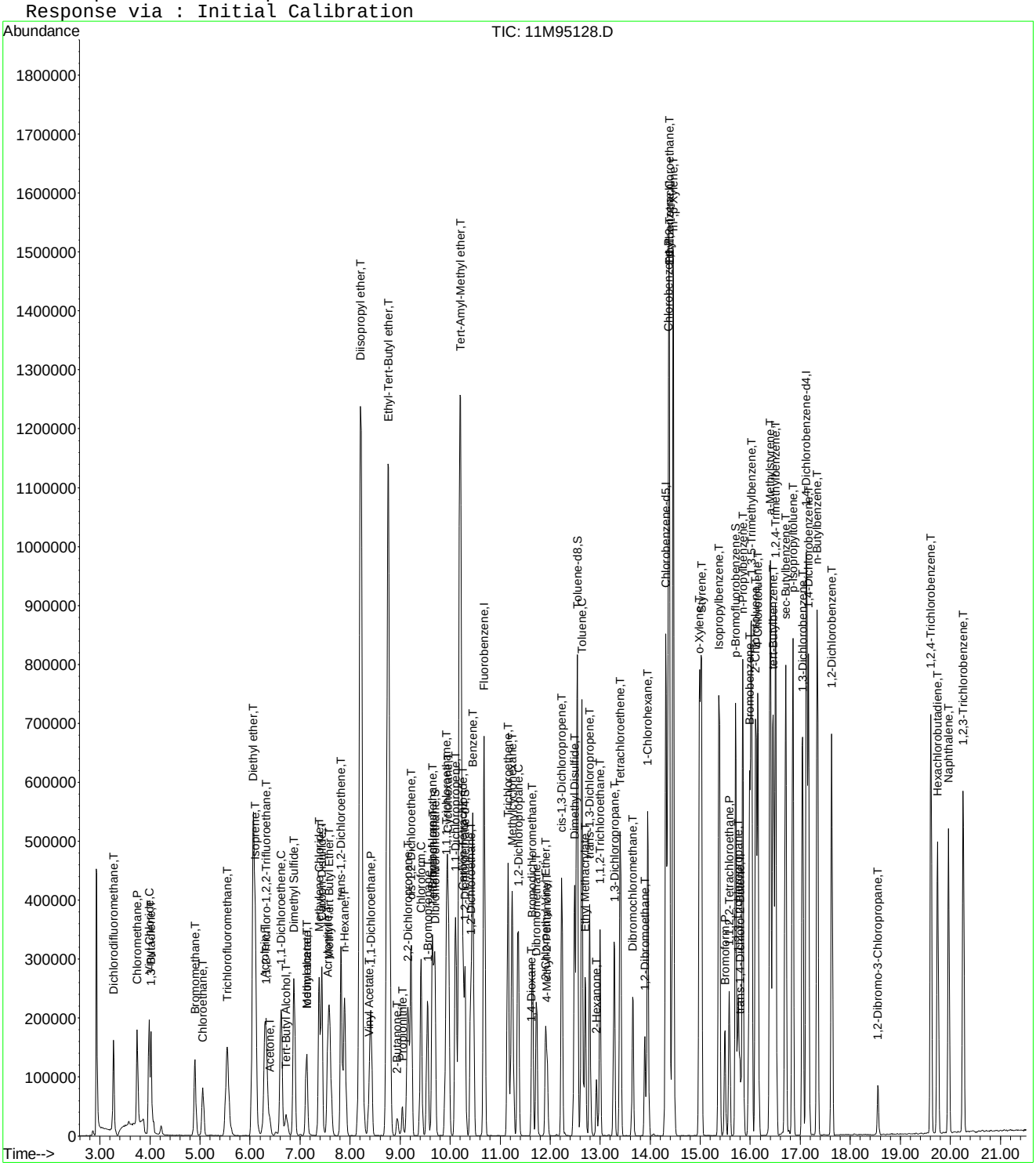

11M95128.D 8260WTR.M Wed Sep 18 09:40:36 2013 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\091713\11M95128.D Vial: 13
Acq On : 17 Sep 2013 20:40 Operator: FJB
Sample : WG444955-12 20ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Wed Sep 18 09:40:31 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	90	0.00
2	T	Dichlorodifluoromethane	20.0000	22.8071	-14.0	91	0.00
3	P	Chloromethane	20.0000	20.8229	-4.1	85	0.00
4	C	Vinyl Chloride	20.0000	19.9653	0.2	82	0.00
5	T	1,3-Butadiene	20.0000	12.6679	36.7#	54	0.00
6	T	Bromomethane	20.0000	19.5296	2.4	91	0.00
7	T	Chloroethane	20.0000	19.7919	1.0	82	0.00
8	T	Trichlorofluoromethane	20.0000	20.2173	-1.1	85	-0.01
9	T	Diethyl ether	80.0000	84.9497	-6.2	94	0.00
10	T	Isoprene	20.0000	20.2106	-1.1	89	0.00
11	T	Acrolein	40.0000	93.0741	-132.7#	201	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	20.0000	21.0196	-5.1	87	0.00
13	T	Acetone	20.0000	15.3298	23.4	66	0.00
14	C	1,1-Dichloroethene	20.0000	19.1674	4.2	81	0.00
15	T	Tert-Butyl Alcohol	160.0000	159.4145	0.4	92	0.00
16	T	Dimethyl Sulfide	20.0000	24.6871	-23.4	110	0.00
17	T	Iodomethane	20.0000	18.4956	7.5	94	0.00
18	T	Methyl acetate	20.0000	22.8423	-14.2	101	0.00
19	T	Methylene Chloride	20.0000	19.4409	2.8	86	0.00
20	T	Carbon Disulfide	20.0000	21.6381	-8.2	90	0.00
21	T	Acrylonitrile	40.0000	20.9913	47.5#	48	0.00
22	T	Methyl Tert Butyl Ether	20.0000	22.3632	-11.8	94	0.00
23	T	trans-1,2-Dichloroethene	20.0000	20.8928	-4.5	88	0.00
24	T	n-Hexane	20.0000	18.0221	9.9	78	0.00
25	T	Diisopropyl ether	80.0000	82.4720	-3.1	91	0.00
26	T	Vinyl Acetate	20.0000	16.0067	20.0	70	0.00
27	P	1,1-Dichloroethane	20.0000	20.4648	-2.3	84	0.00
28	T	Ethyl-Tert-Butyl ether	80.0000	82.3367	-2.9	90	0.01
29	T	2-Butanone	20.0000	20.7410	-3.7	90	0.01
30	T	Propionitrile	80.0000	83.1478	-3.9	90	0.00
31	T	2,2-Dichloropropane	20.0000	19.3139	3.4	78	0.00
32	T	cis-1,2-Dichloroethene	20.0000	20.4820	-2.4	89	0.00
33	C	Chloroform	20.0000	20.4868	-2.4	86	0.00
34	T	1-Bromopropane	20.0000	21.6294	-8.1	101	0.00
35	T	Bromochloromethane	20.0000	21.0127	-5.1	88	0.00
36	T	Tetrahydrofuran	80.0000	80.6459	-0.8	87	0.00
37	S	Dibromofluoromethane	10.0000	26.2593	-162.6#	220	0.01
38	T	1,1,1-Trichloroethane	20.0000	20.3638	-1.8	86	0.00
39	T	Cyclohexane	20.0000	19.3805	3.1	85	0.00
40	T	1,1-Dichloropropene	20.0000	19.9107	0.4	84	0.00
41	T	Carbon Tetrachloride	20.0000	20.5500	-2.7	84	0.01
42	T	Tert-Amyl-Methyl ether	80.0000	84.6360	-5.8	91	0.01
43	S	1,2-Dichloroethane-d4	10.0000	25.9939	-159.9#	217	0.00
44	T	Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	20.0000	20.6960	-3.5	85	0.00
46	T	Benzene	20.0000	20.6520	-3.3	86	0.00
47	T	Trichloroethene	20.0000	21.8368	-9.2	94	0.00
48	T	Methylcyclohexane	20.0000	20.5515	-2.8	88	0.00
49	C	1,2-Dichloropropane	20.0000	20.5014	-2.5	88	0.00
50	T	1,4-Dioxane	160.0000	140.1086	12.4	76	0.00
51	T	Bromodichloromethane	20.0000	20.1276	-0.6	84	0.00
52	T	Dibromomethane	20.0000	20.2124	-1.1	83	0.00
53	T	2-Chloroethyl Vinyl Ether	20.0000	21.1406	-5.7	94	0.00
54	T	4-Methyl-2-Pentanone	20.0000	22.0339	-10.2	91	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\091713\11M95128.D Vial: 13
Acq On : 17 Sep 2013 20:40 Operator: FJB
Sample : WG444955-12 20ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD60011 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Wed Sep 18 09:40:31 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	20.0000	21.7045	-8.5	88	0.00
56	T	Dimethyl Disulfide	20.0000	21.4782	-7.4	95	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	91	0.00
58	S	Toluene-d8	10.0000	26.2895	-162.9#	219	0.00
59	C	Toluene	20.0000	21.9835	-9.9	86	0.00
60	T	Ethyl Methacrylate	20.0000	23.5664	-17.8	96	0.00
61	T	Paraldehyde	-1.0000	0.0000	0.0	0	-12.87#
62	T	trans-1,3-Dichloropropene	20.0000	20.6771	-3.4	81	0.00
63	T	1,1,2-Trichloroethane	20.0000	21.8405	-9.2	89	0.00
64	T	2-Hexanone	20.0000	20.9883	-4.9	85	0.00
65	T	1,3-Dichloropropane	20.0000	20.6585	-3.3	86	0.00
66	T	Tetrachloroethene	20.0000	20.6284	-3.1	88	0.00
67	T	Dibromochloromethane	20.0000	20.4909	-2.5	85	0.00
68	T	1,2-Dibromoethane	20.0000	20.7645	-3.8	87	0.00
69	T	1-Chlorohexane	20.0000	22.2068	-11.0	95	0.00
70	P	Chlorobenzene	20.0000	19.5946	2.0	81	0.00
71	T	1,1,1,2-Tetrachloroethane	20.0000	20.6957	-3.5	88	0.00
72	C	Ethylbenzene	20.0000	20.3318	-1.7	86	0.00
73	T	m-,p-Xylene	40.0000	42.2010	-5.5	84	0.00
74	T	o-Xylene	20.0000	19.3186	3.4	80	-0.01
75	T	Styrene	20.0000	21.9101	-9.6	86	0.00
76	P	Bromoform	20.0000	18.8191	5.9	88	0.00
77	T	Isopropylbenzene	20.0000	20.9855	-4.9	81	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	92	0.00
79	P	1,1,2,2-Tetrachloroethane	20.0000	21.5594	-7.8	87	0.00
80	S	p-Bromofluorobenzene	10.0000	25.6003	-156.0#	224	0.00
81	T	1,2,3-Trichloropropane	20.0000	21.1149	-5.6	86	0.00
82	T	trans-1,4-Dichloro-2-Butene	20.0000	14.4163	27.9#	69	0.00
83	T	n-Propylbenzene	20.0000	19.6582	1.7	80	0.00
84	T	Bromobenzene	20.0000	19.7698	1.2	89	0.00
85	T	1,3,5-Trimethylbenzene	20.0000	22.6461	-13.2	91	0.00
86	T	2-Chlorotoluene	20.0000	20.2456	-1.2	84	0.00
87	T	4-Chlorotoluene	20.0000	20.9298	-4.6	80	0.00
88	T	a-Methylstyrene	20.0000	23.7486	-18.7	99	0.00
89	T	tert-Butylbenzene	20.0000	19.1191	4.4	83	0.00
90	T	1,2,4-Trimethylbenzene	20.0000	22.5634	-12.8	90	-0.01
91	T	sec-Butylbenzene	20.0000	20.6151	-3.1	82	0.00
92	T	p-Isopropyltoluene	20.0000	21.0086	-5.0	84	0.00
93	T	1,3-Dichlorobenzene	20.0000	19.6511	1.7	82	0.00
94	T	1,4-Dichlorobenzene	20.0000	20.2507	-1.3	88	0.00
95	T	n-Butylbenzene	20.0000	23.0265	-15.1	92	0.00
96	T	1,2-Dichlorobenzene	20.0000	19.2444	3.8	83	0.00
97	T	1,2-Dibromo-3-Chloropropane	20.0000	19.8883	0.6	88	0.00
98	T	1,2,4-Trichlorobenzene	20.0000	20.7028	-3.5	91	0.00
99	T	Hexachlorobutadiene	20.0000	21.9416	-9.7	94	0.00
100	T	Naphthalene	20.0000	21.9720	-9.9	90	0.00
101	T	1,2,3-Trichlorobenzene	20.0000	20.1458	-0.7	90	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M95128.D 8260WTR.M Wed Sep 18 09:41:08 2013 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390497.D Vial: 11
Acq On : 10 Sep 2013 20:06 Operator: TMB
Sample : WG444230-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 14:03:22 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 14:03:14 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	606224	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.93	117	517475	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.95	152	295810	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.03	41	2451	4.4376 ug/L	65
3) 3-Chloro-1-propene	7.41	41	50960	4.5309 ug/L	95
4) 2-Chloro-1,3-butadiene	8.80	53	46362	4.2803 ug/L	75
5) Ethyl Acetate	9.43	43	18108	4.4511 ug/L	88
6) Methacrylonitrile	9.59	67	7248	4.3320 ug/L	79
9) Methyl methacrylate	11.75	41	16793	3.9744 ug/L	88
10) 2-Nitropropane	12.09	43	4559	3.5432 ug/L	77

(#) = qualifier out of range (m) = manual integration
8M390497.D A9FOOWTR.M Thu Sep 19 09:29:31 2013 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390497.D Vial: 11
Acq On : 10 Sep 2013 20:06 Operator: TMB
Sample : WG444230-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 19 9:28 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Initial Calibration

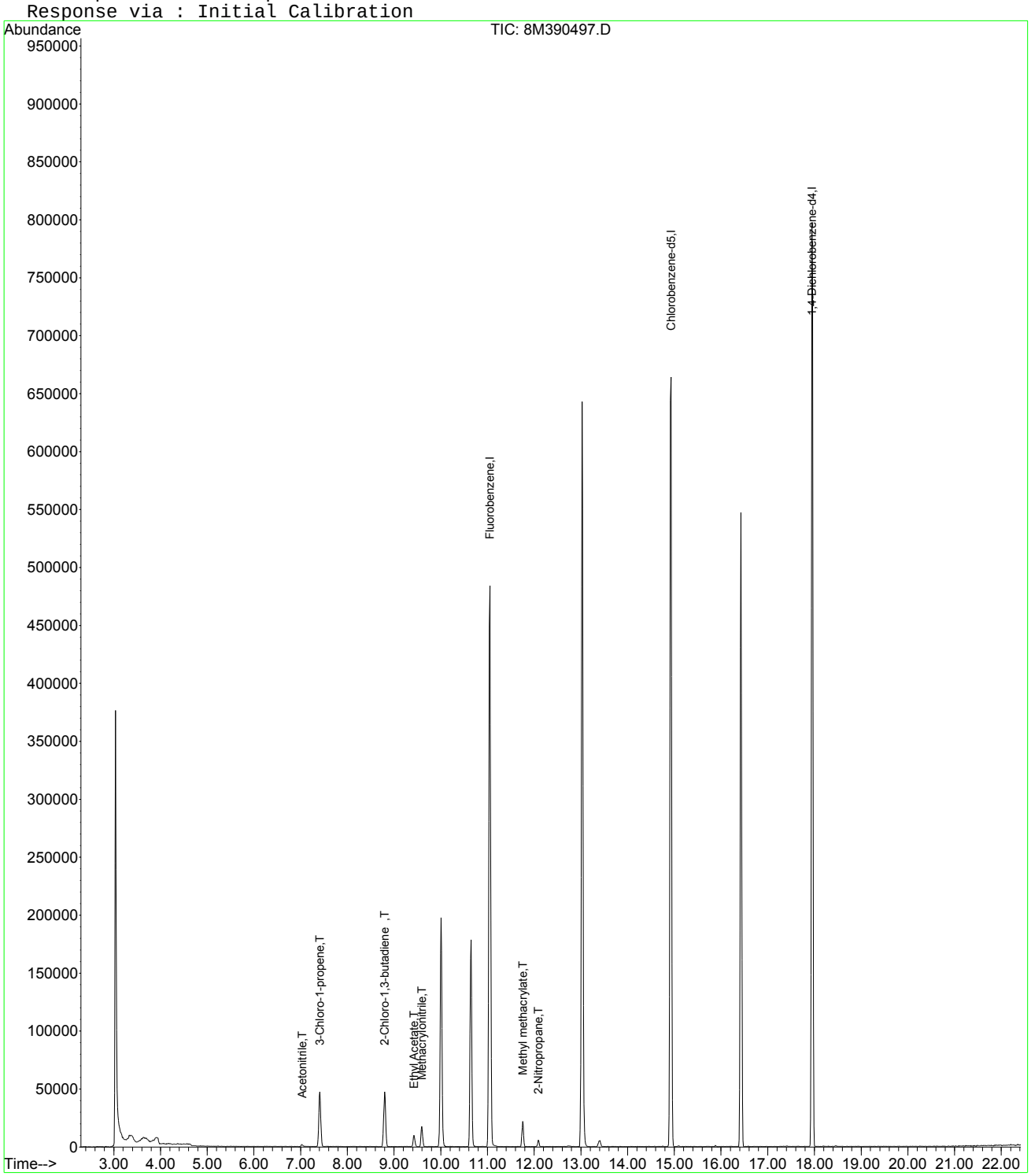

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390498.D Vial: 12
Acq On : 10 Sep 2013 20:36 Operator: TMB
Sample : WG444230-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 08:36:55 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:35:33 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	591724	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.92	117	503888	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.95	152	287605	25.00 ug/L	0.00

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration
8M390498.D A9FOOWTR.M Wed Sep 11 08:36:55 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390498.D Vial: 12
Acq On : 10 Sep 2013 20:36 Operator: TMB
Sample : WG444230-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 8:36 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:35:33 2013
Response via : Initial Calibration

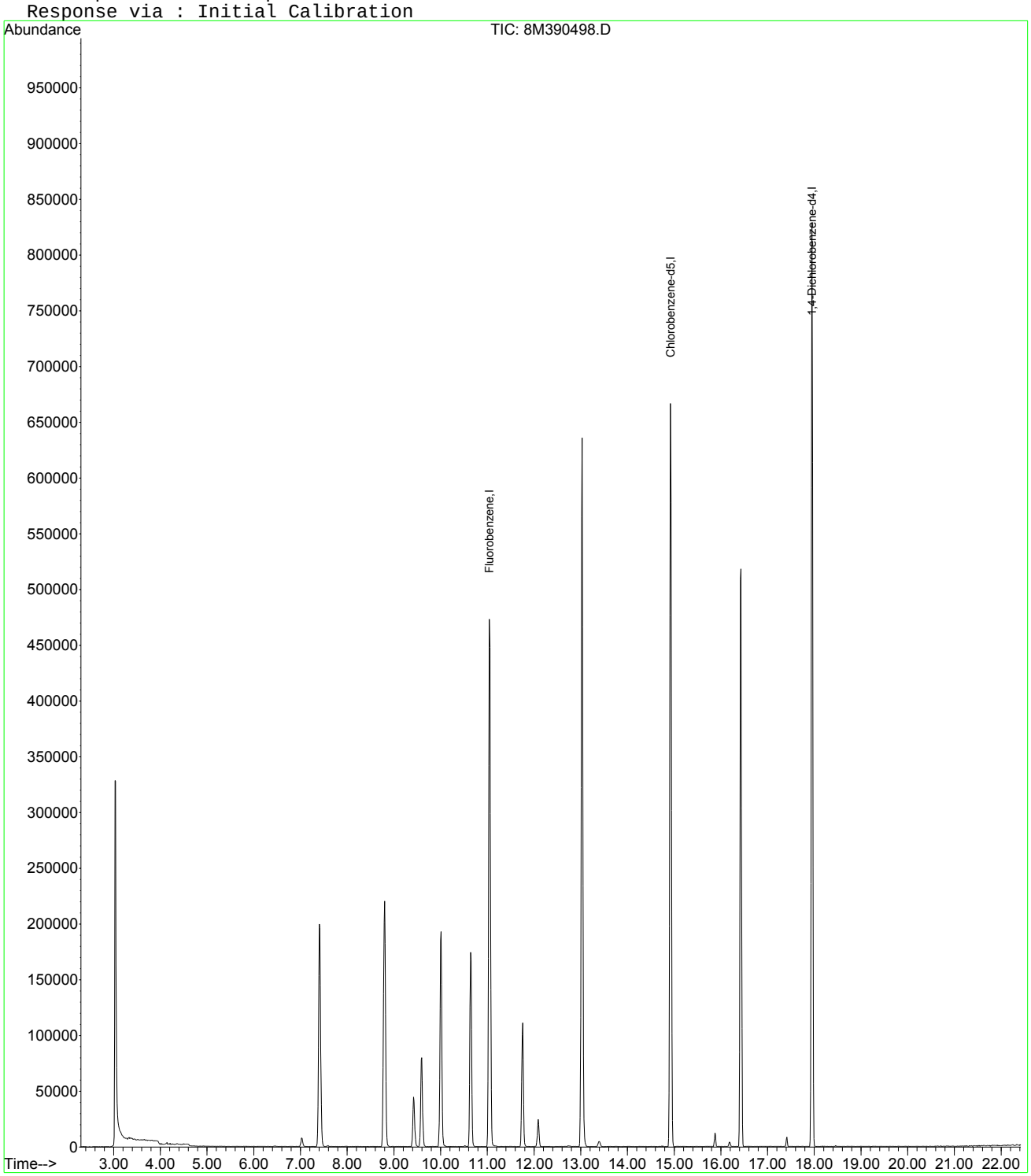

8M390498.D A9FOOWTR.M Wed Sep 11 08:36:55 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390499.D Vial: 13
Acq On : 10 Sep 2013 21:06 Operator: TMB
Sample : WG444230-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 08:36:56 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:35:33 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	584977	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.93	117	499352	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.95	152	290876	25.00 ug/L	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M390499.D A9FOOWTR.M Wed Sep 11 08:36:56 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390499.D Vial: 13
Acq On : 10 Sep 2013 21:06 Operator: TMB
Sample : WG444230-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 8:36 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:35:33 2013
Response via : Initial Calibration

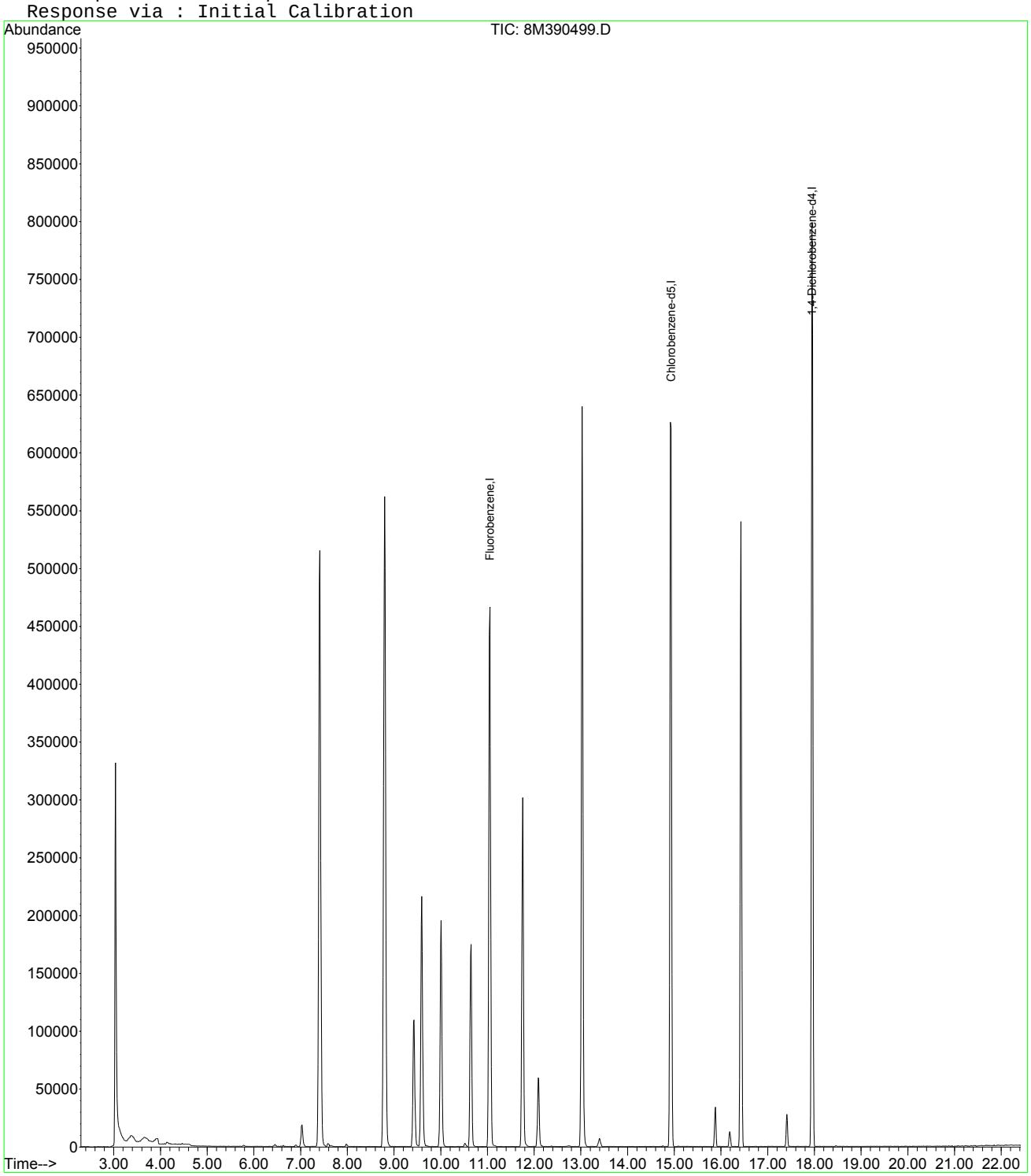

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390500.D Vial: 14
Acq On : 10 Sep 2013 21:35 Operator: TMB
Sample : WG444230-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 08:36:57 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:35:33 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	601905	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.93	117	508476	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.95	152	299215	25.00 ug/L	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M390500.D A9FOOWTR.M Wed Sep 11 08:36:57 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390500.D Vial: 14
Acq On : 10 Sep 2013 21:35 Operator: TMB
Sample : WG444230-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 8:36 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:35:33 2013
Response via : Initial Calibration

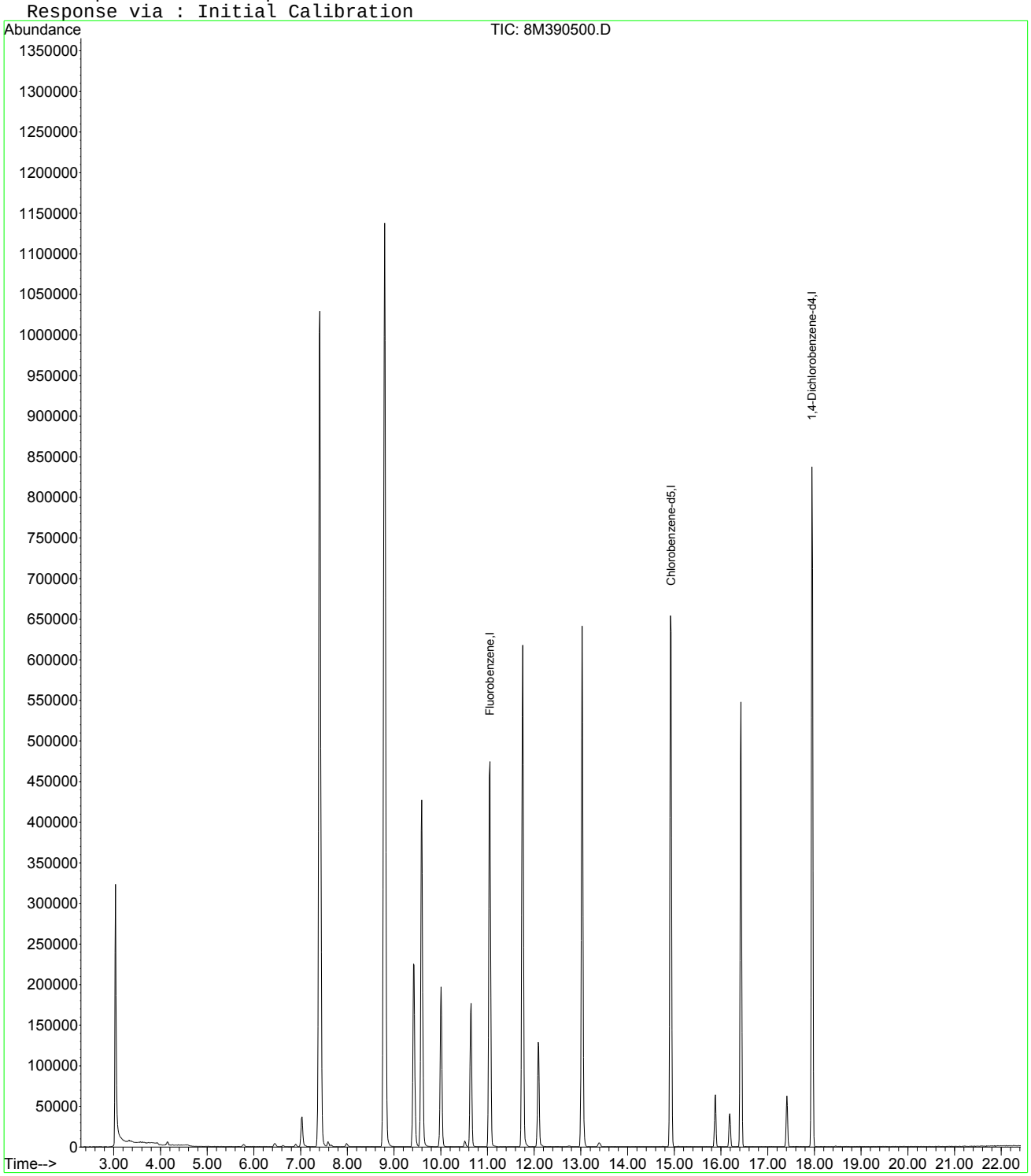

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390501.D Vial: 15
Acq On : 10 Sep 2013 22:05 Operator: TMB
Sample : WG444230-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:49:29 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	581357	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.93	117	495180	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.95	152	290338	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.03	41	109664	207.0434 ug/L	94
3) 3-Chloro-1-propene	7.41	41	2272454	210.6882 ug/L	94
4) 2-Chloro-1,3-butadiene	8.80	53	2200075	211.8084 ug/L	74
5) Ethyl Acetate	9.42	43	817958	209.6611 ug/L	95
6) Methacrylonitrile	9.59	67	338912	211.2271 ug/L	84
7) Isobutyl Alcohol	9.59	43	55372m	87.0545 ug/L	
8) 1-Butanol	10.51	56	12004	202.4354 ug/L	73
9) Methyl methacrylate	11.76	41	878380	216.7779 ug/L	86
10) 2-Nitropropane	12.09	43	274189	222.2095 ug/L	99
13) Cyclohexanone	16.19	55	34479	193.3288 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M390501.D A9FOOWTR.M Wed Sep 18 13:51:26 2013 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390501.D Vial: 15
Acq On : 10 Sep 2013 22:05 Operator: TMB
Sample : WG444230-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:51 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Initial Calibration

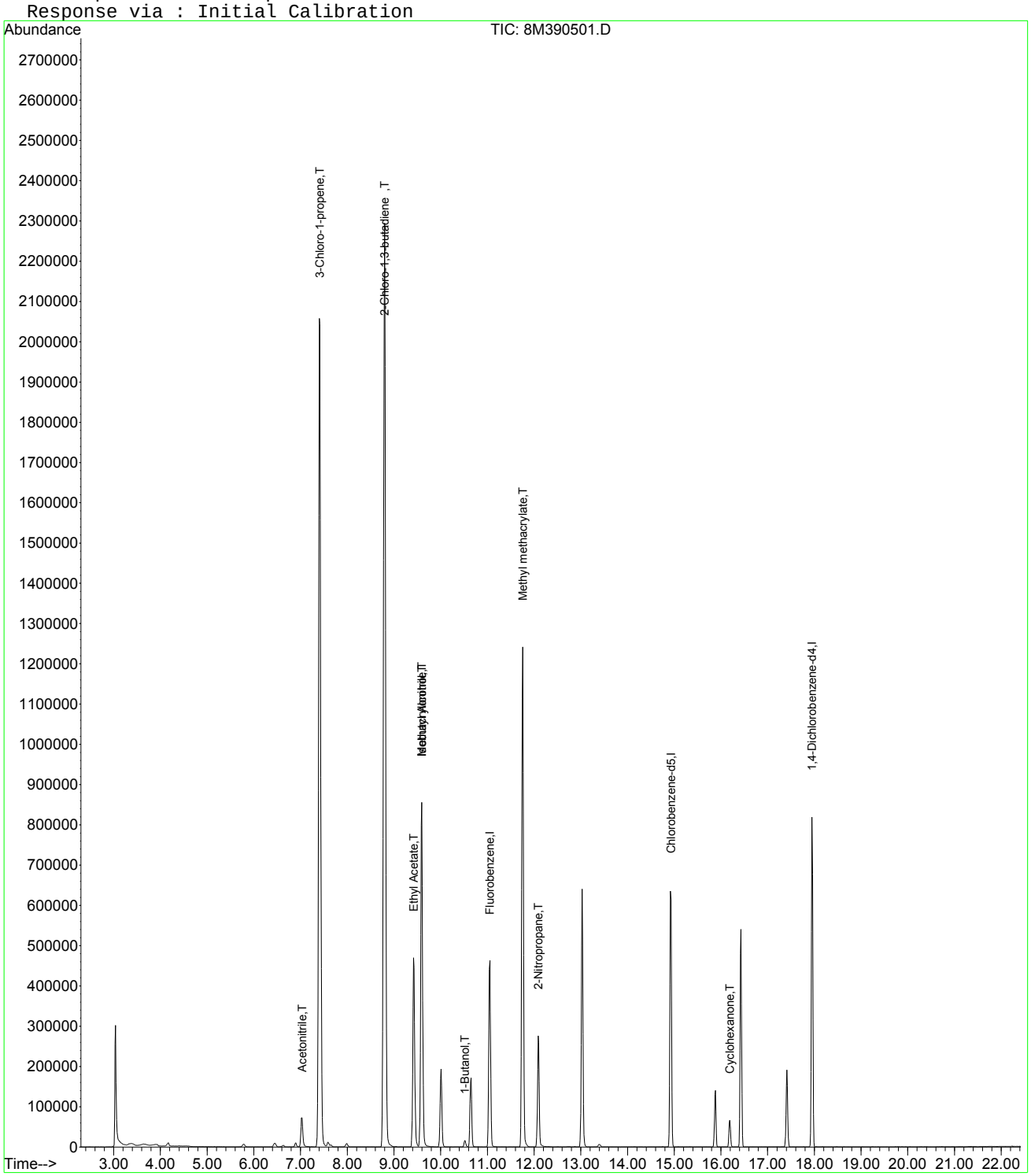

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\091013\8M390501.D Vial: 15
Acq On : 10 Sep 2013 22:05 Operator: TMB
Sample : WG444230-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:49 2013 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Multiple Level Calibration

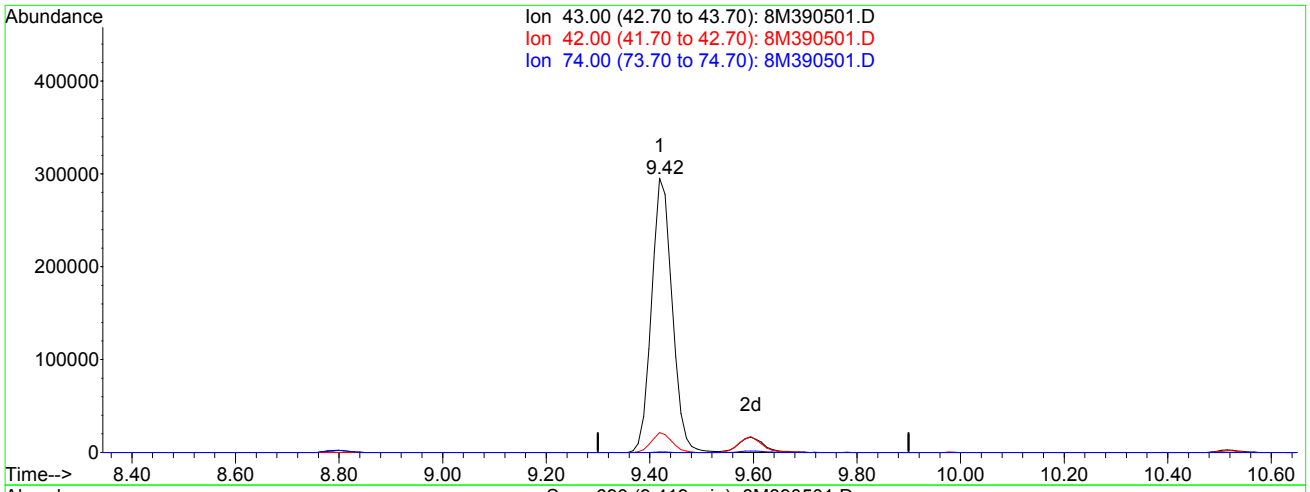

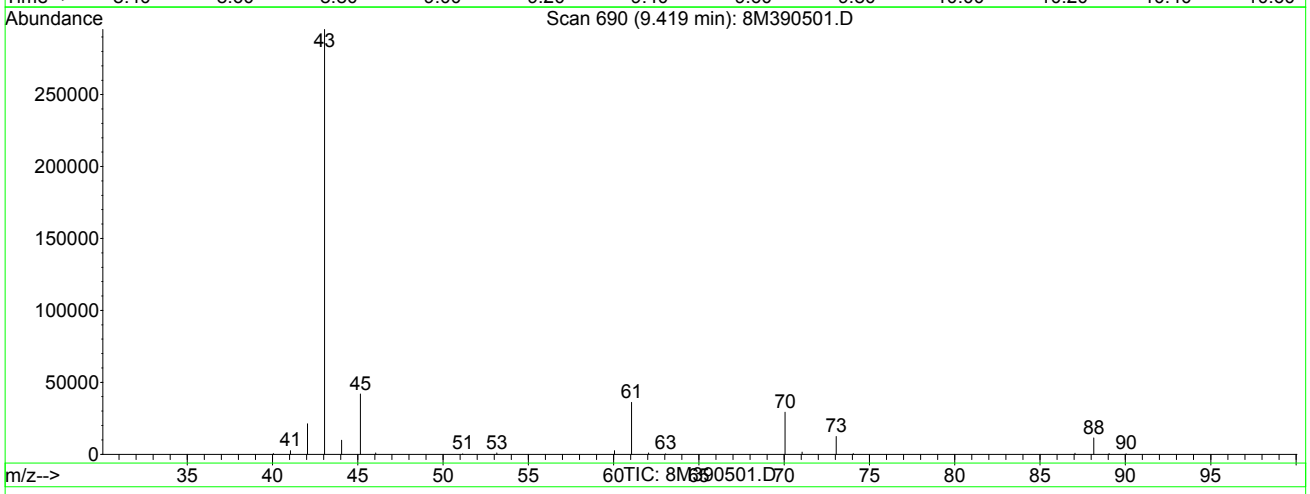

(7) Isobutyl Alcohol (T)

9.42min 1285.97ug/L

response 817958

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	7.10
74.00	4.20	0.11
0.00	0.00	0.00

8M390501.D A9FOOWTR.M Wed Sep 18 13:51:08 2013

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\091013\8M390501.D Vial: 15
Acq On : 10 Sep 2013 22:05 Operator: TMB
Sample : WG444230-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:51 2013 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Multiple Level Calibration

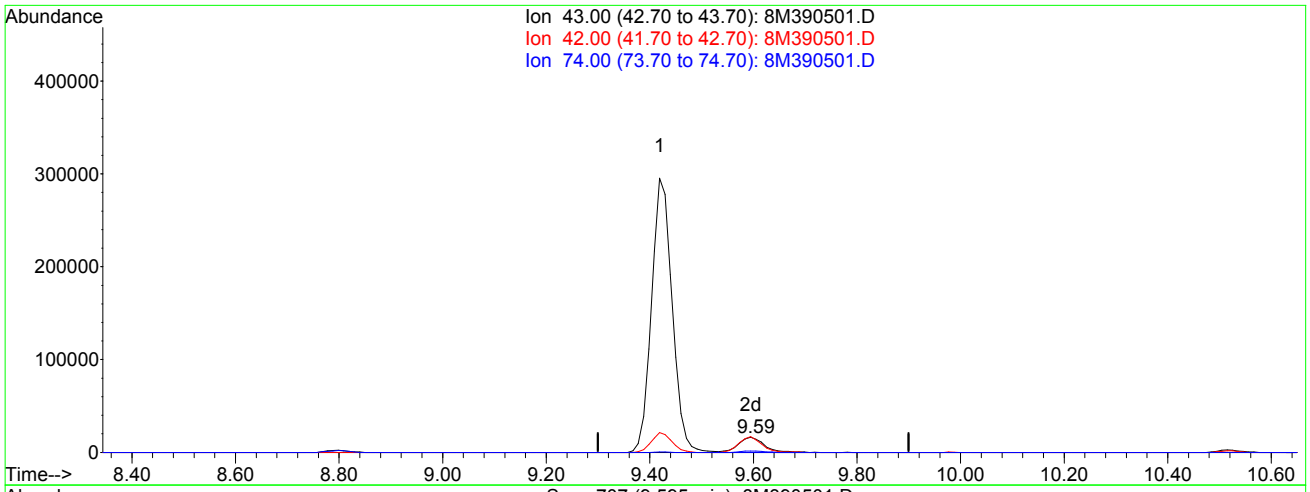

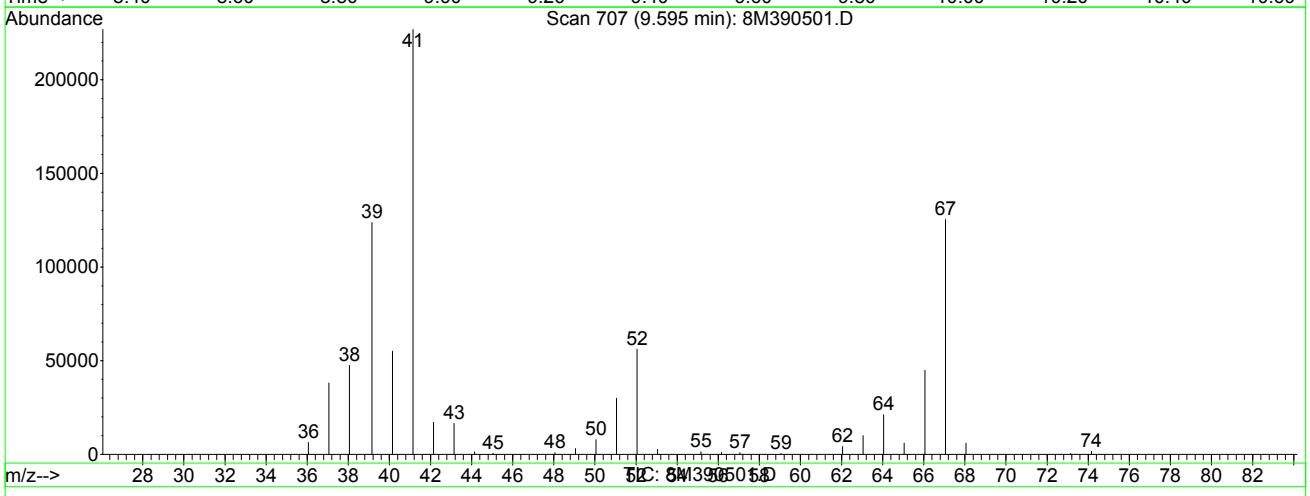

(7) Isobutyl Alcohol (T)

9.59min 87.05ug/L mint

response 55372

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	104.82#
74.00	4.20	1.68
0.00	0.00	0.00

8M390501.D A9FOOWTR.M Wed Sep 1 4 2013

Analyst: 09/18/2013 14:23 Supervisor: 09/19/2013 09:27

#1 - Data system fails to select correct peak

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390502.D Vial: 16
Acq On : 10 Sep 2013 22:35 Operator: TMB
Sample : WG444230-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:51:40 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	589640	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.93	117	497842	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.95	152	292464	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.03	41	159890	297.6286 ug/L	96
3) 3-Chloro-1-propene	7.40	41	3302203	301.8595 ug/L	94
4) 2-Chloro-1,3-butadiene	8.80	53	3218929	305.5435 ug/L	75
5) Ethyl Acetate	9.42	43	1181409	298.5678 ug/L	95
6) Methacrylonitrile	9.59	67	485380	298.2638 ug/L	85
7) Isobutyl Alcohol	9.59	43	79921m	123.8848 ug/L	
8) 1-Butanol	10.51	56	18085	289.4769 ug/L	75
9) Methyl methacrylate	11.75	41	1265599	307.9531 ug/L	86
10) 2-Nitropropane	12.09	43	402184	321.3612 ug/L	98
13) Cyclohexanone	16.19	55	49965	278.1245 ug/L	91

(#) = qualifier out of range (m) = manual integration
8M390502.D A9FOOWTR.M Wed Sep 18 13:52:05 2013 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390502.D Vial: 16
Acq On : 10 Sep 2013 22:35 Operator: TMB
Sample : WG444230-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:51 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Initial Calibration

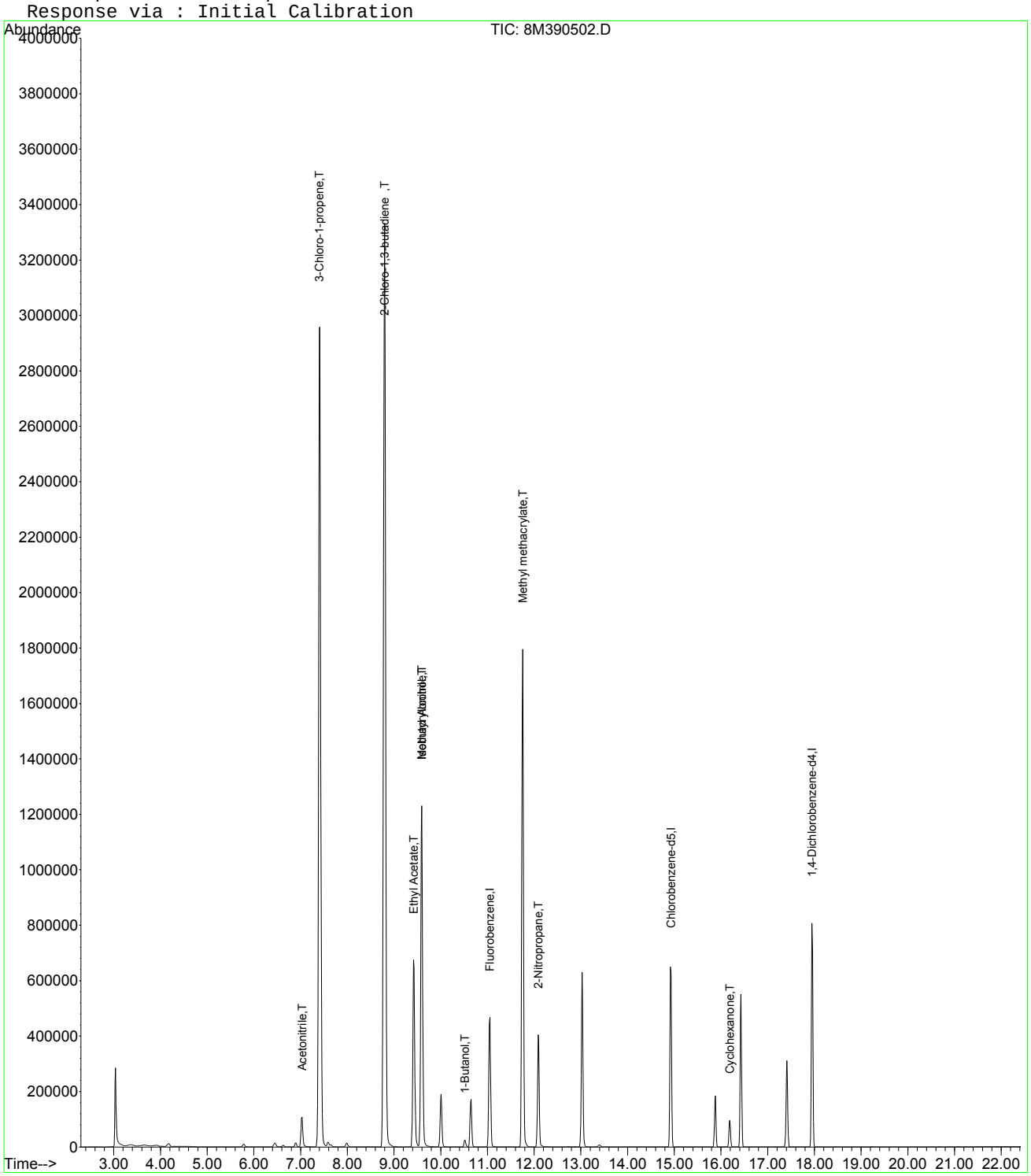

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\091013\8M390502.D Vial: 16
Acq On : 10 Sep 2013 22:35 Operator: TMB
Sample : WG444230-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:51 2013 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Multiple Level Calibration

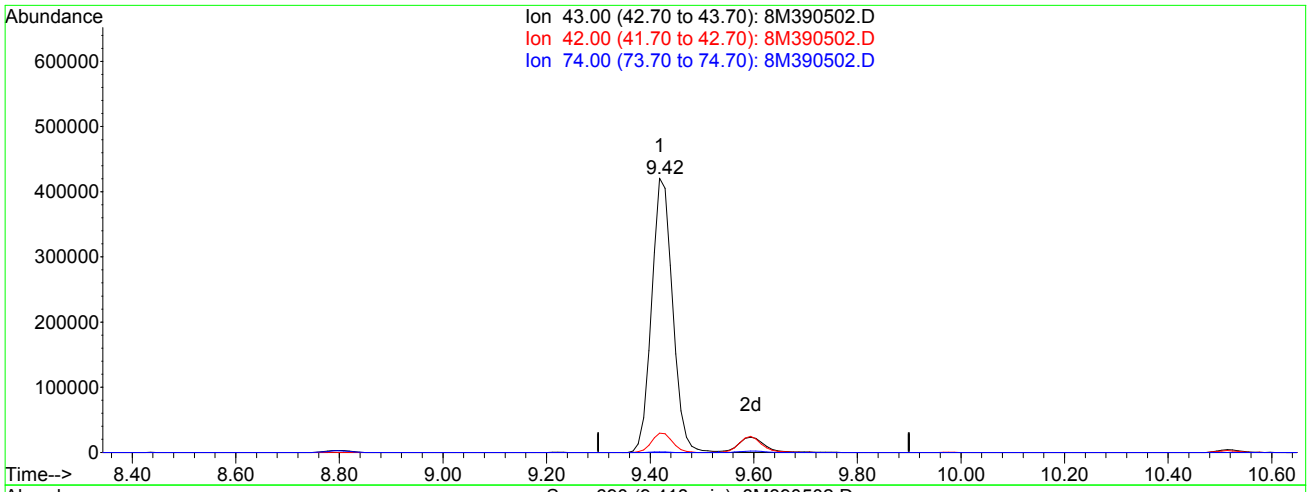

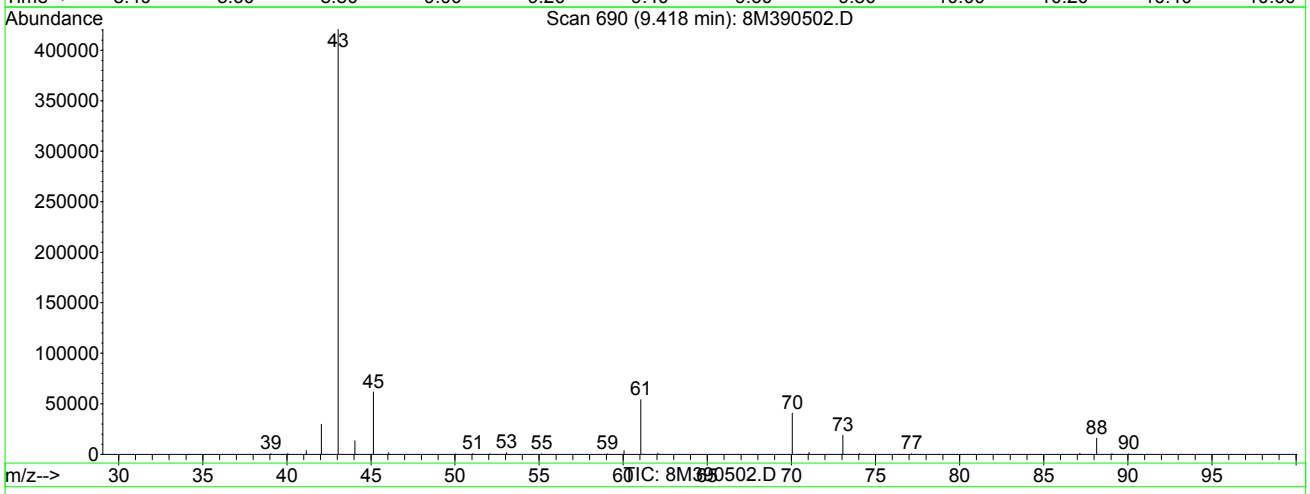

(7) Isobutyl Alcohol (T)

9.42min 1831.29ug/L

response 1181409

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	7.03
74.00	4.20	0.14
0.00	0.00	0.00

8M390502.D A9FOOWTR.M Wed Sep 18 13:51:53 2013

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\091013\8M390502.D Vial: 16
Acq On : 10 Sep 2013 22:35 Operator: TMB
Sample : WG444230-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:51 2013 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Multiple Level Calibration

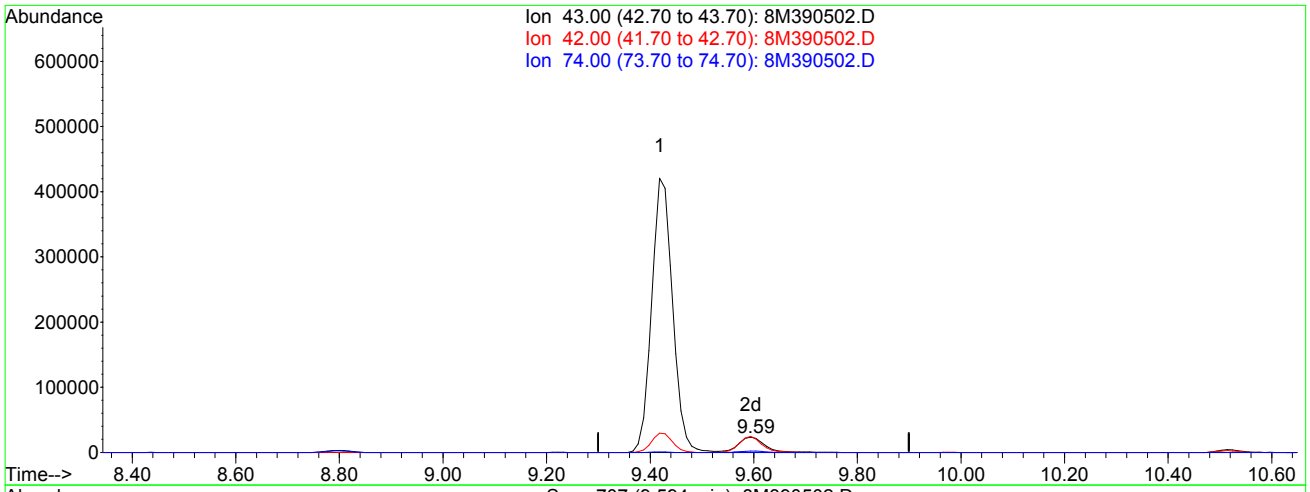

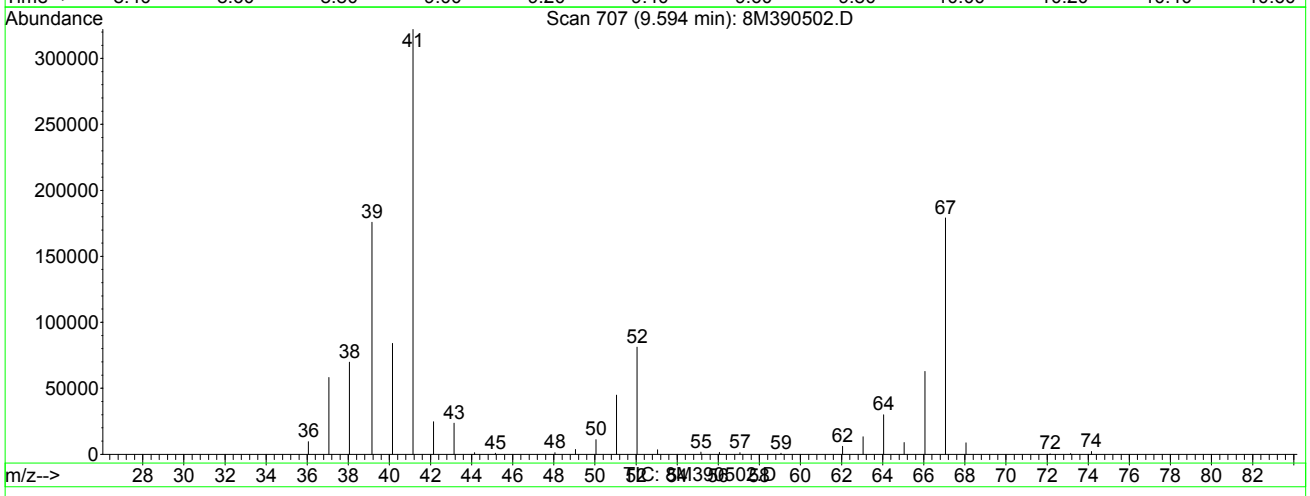

(7) Isobutyl Alcohol (T)

9.59min 123.88ug/L mint

response 79921

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	103.98#
74.00	4.20	2.06
0.00	0.00	0.00

8M390502.D A9FOOWTR.M Wed Sep 18 2013

Analyst: 09/18/2013 14:23 Supervisor: 09/19/2013 09:27

#1 - Data system fails to select correct peak

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390503.D Vial: 17
Acq On : 10 Sep 2013 23:04 Operator: TMB
Sample : WG444230-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:49:31 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	579813	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.92	117	495720	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.95	152	297832	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.02	41	212449	402.1676 ug/L	96
3) 3-Chloro-1-propene	7.41	41	4306259	400.3135 ug/L	94
4) 2-Chloro-1,3-butadiene	8.80	53	4212728	406.6531 ug/L	76
5) Ethyl Acetate	9.42	43	1567912	402.9614 ug/L	95
6) Methacrylonitrile	9.60	67	640749	400.4107 ug/L	86
7) Isobutyl Alcohol	9.60	43	107462m	169.3991 ug/L	
8) 1-Butanol	10.52	56	24495	389.9972 ug/L	68
9) Methyl methacrylate	11.75	41	1675239	414.5379 ug/L	87
10) 2-Nitropropane	12.09	43	538660	437.7059 ug/L	97
13) Cyclohexanone	16.18	55	88727	484.9872 ug/L	93

(#) = qualifier out of range (m) = manual integration
8M390503.D A9FOOWTR.M Wed Sep 18 13:52:39 2013 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390503.D Vial: 17
Acq On : 10 Sep 2013 23:04 Operator: TMB
Sample : WG444230-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:52 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Initial Calibration

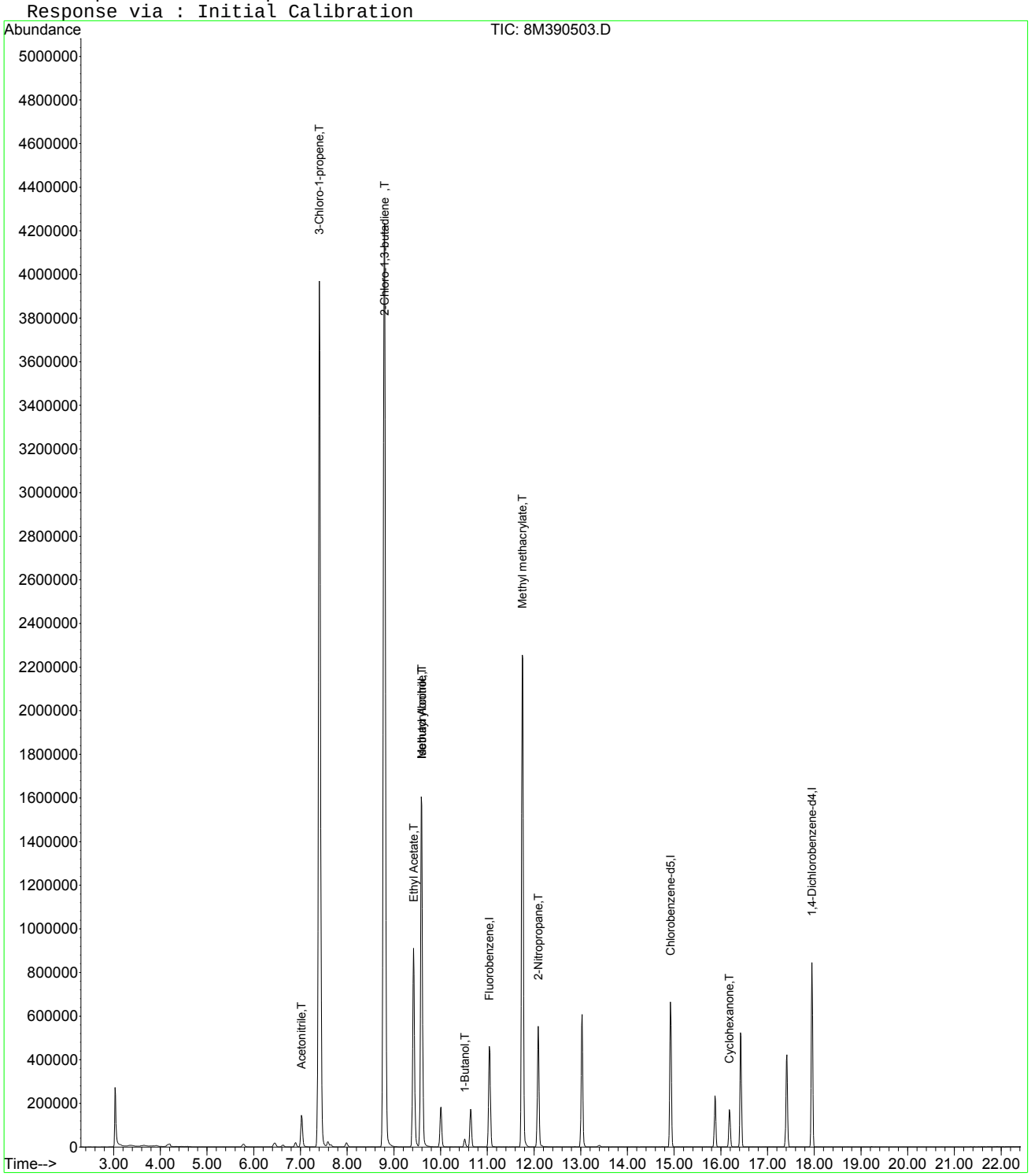

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\091013\8M390503.D Vial: 17
Acq On : 10 Sep 2013 23:04 Operator: TMB
Sample : WG444230-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 8:40 2013 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:39:57 2013
Response via : Multiple Level Calibration

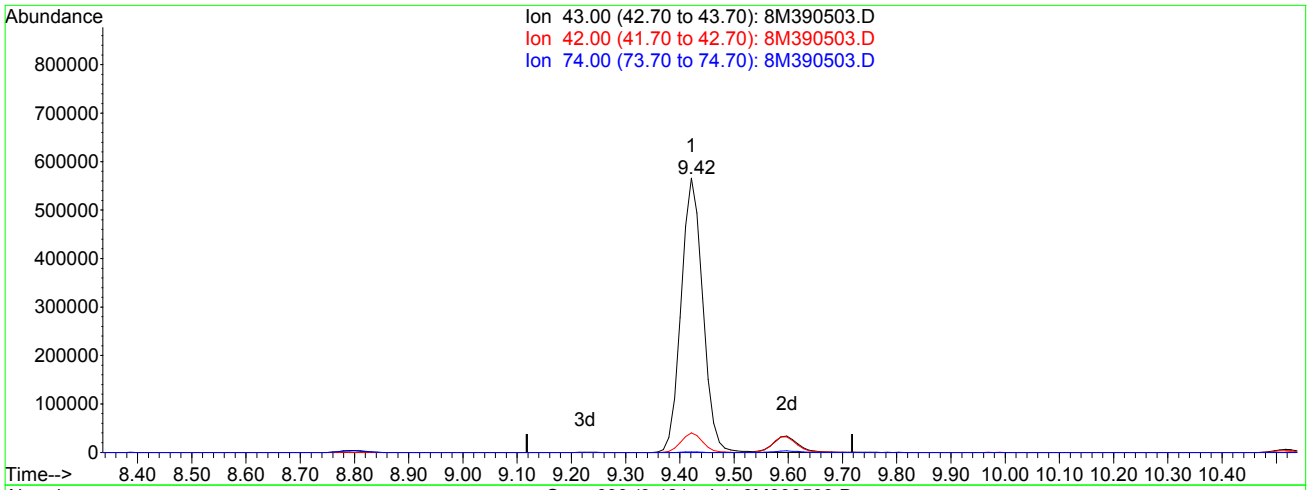

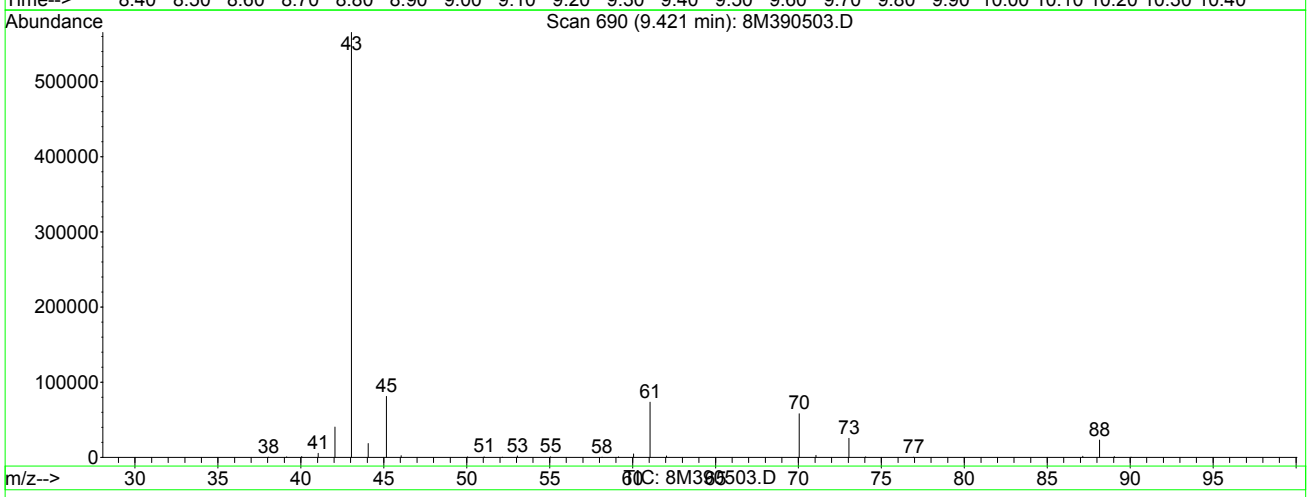

(7) Isobutyl Alcohol (T)

9.42min 1878.86ug/L

response 1567912

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	7.07
74.00	4.20	0.12
0.00	0.00	0.00

8M390503.D A9FOOWTR.M Wed Sep 11 08:41:12 2013

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\091013\8M390503.D Vial: 17
Acq On : 10 Sep 2013 23:04 Operator: TMB
Sample : WG444230-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 8:41 2013 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:39:57 2013
Response via : Multiple Level Calibration

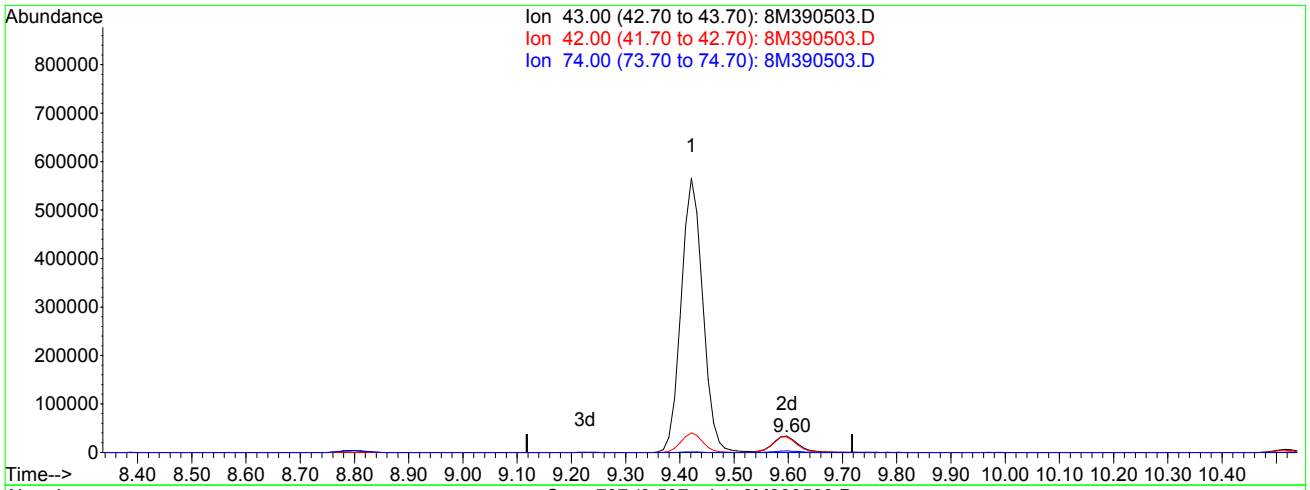

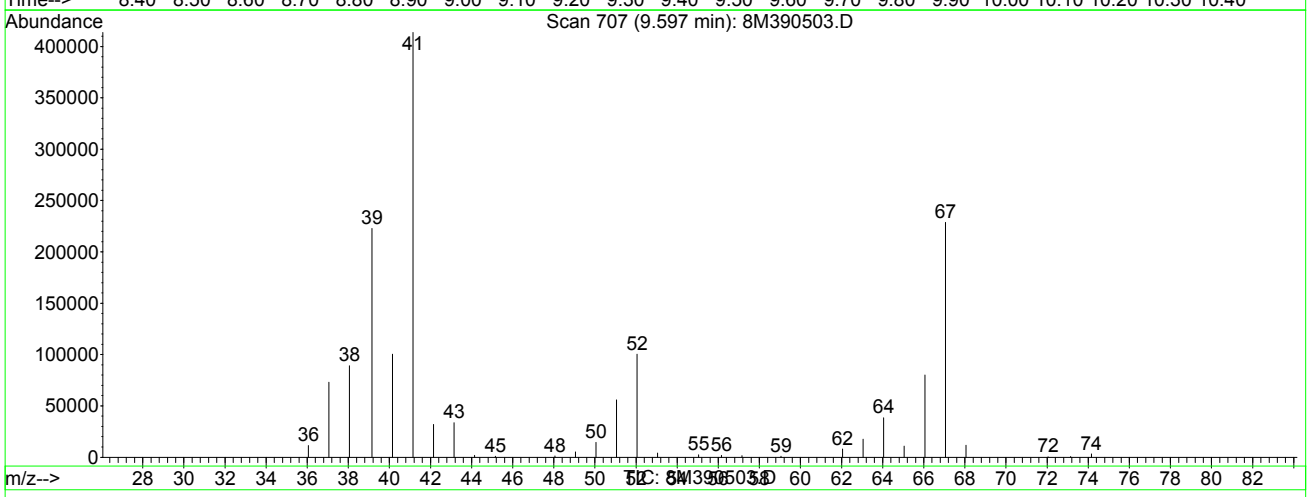

(7) Isobutyl Alcohol (T)

9.60min 130.43ug/L mint

response 108840

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	101.90#
74.00	4.20	1.76
0.00	0.00	0.00

8M390503.D A9FOOWTR.M Wed Sep 18 2013

Analyst: 09/18/2013 14:23 Supervisor: 09/19/2013 09:27

#1 - Data system fails to select correct peak

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390504.D Vial: 18
Acq On : 10 Sep 2013 23:34 Operator: TMB
Sample : WG444230-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:49:33 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	569805	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.93	117	482922	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.95	152	289442	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.03	41	266675	513.6844 ug/L	97
3) 3-Chloro-1-propene	7.40	41	5331435	504.3196 ug/L	94
4) 2-Chloro-1,3-butadiene	8.80	53	5205275	511.2885 ug/L	76
5) Ethyl Acetate	9.42	43	1982961	518.5822 ug/L	95
6) Methacrylonitrile	9.59	67	800851	509.2501 ug/L	85
7) Isobutyl Alcohol	9.59	43	133213m	213.6803 ug/L	
8) 1-Butanol	10.51	56	32659	520.8651 ug/L	75
9) Methyl methacrylate	11.75	41	2105643	530.1929 ug/L	87
10) 2-Nitropropane	12.09	43	700795	579.4558 ug/L	98
13) Cyclohexanone	16.18	55	92371	519.5411 ug/L	91

(#) = qualifier out of range (m) = manual integration
8M390504.D A9FOOWTR.M Wed Sep 18 13:53:00 2013 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390504.D Vial: 18
Acq On : 10 Sep 2013 23:34 Operator: TMB
Sample : WG444230-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:52 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Initial Calibration

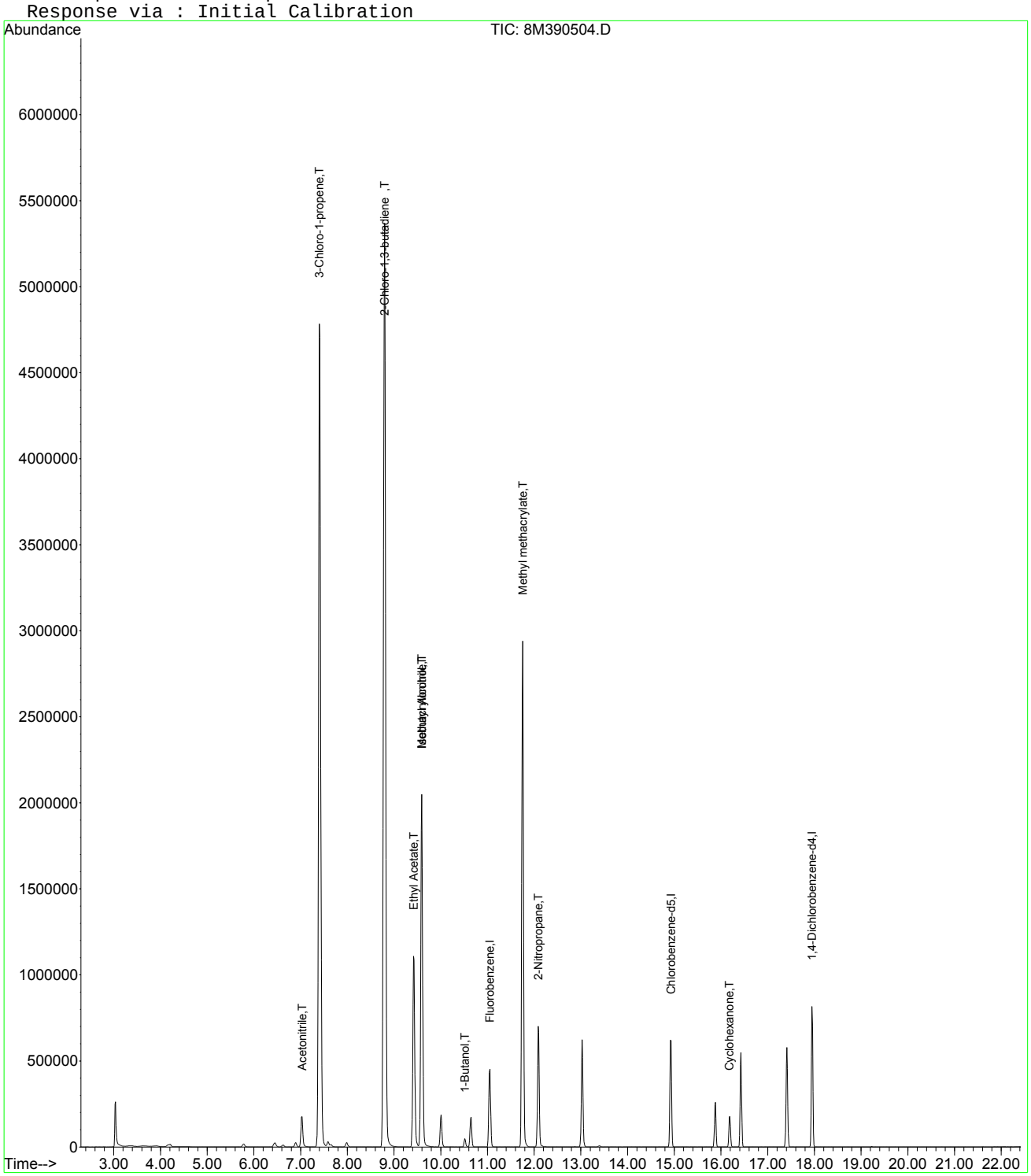

8M390504.D A9FOOWTR.M Wed Sep 18 13:53:01 2013 Page 2

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\091013\8M390504.D Vial: 18
Acq On : 10 Sep 2013 23:34 Operator: TMB
Sample : WG444230-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 8:46 2013 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:46:45 2013
Response via : Multiple Level Calibration

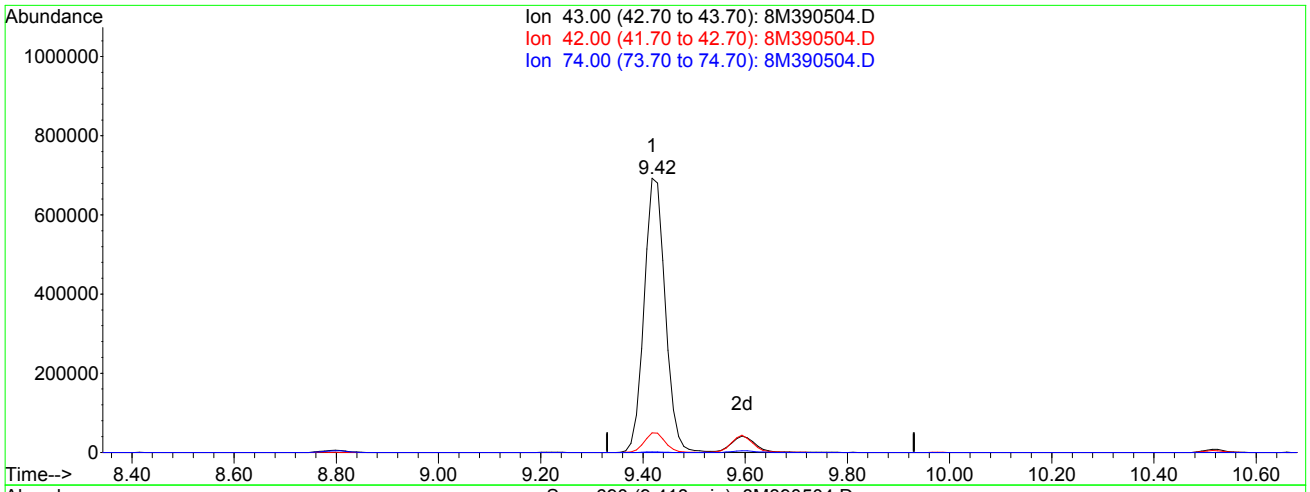

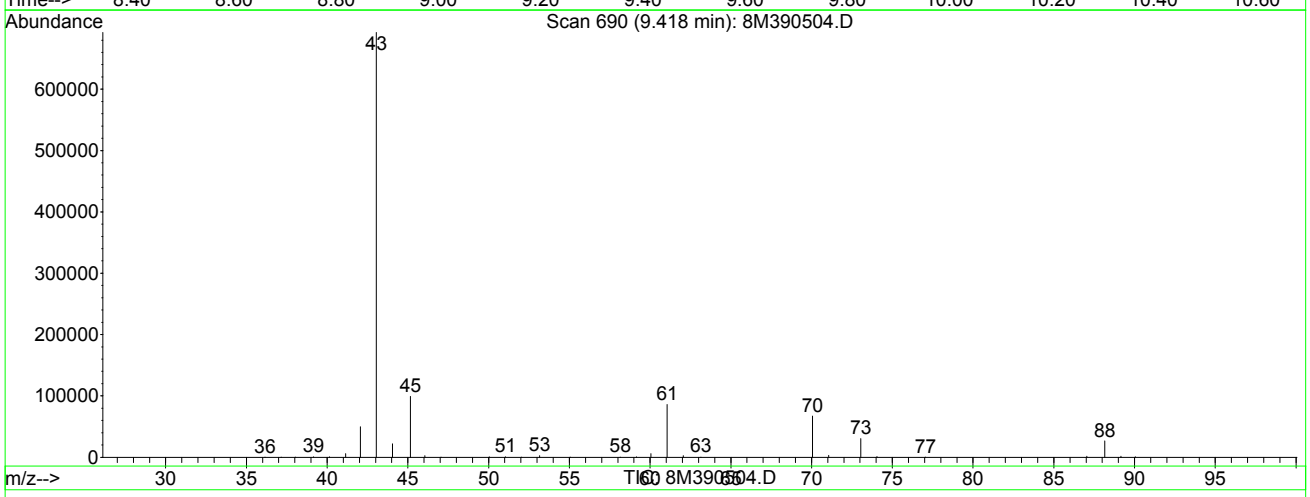

(7) Isobutyl Alcohol (T)

9.42min 2811.15ug/L

response 1982846

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	7.08
74.00	4.20	0.14
0.00	0.00	0.00

8M390504.D A9FOOWTR.M Wed Sep 11 08:47:10 2013

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\091013\8M390504.D Vial: 18
Acq On : 10 Sep 2013 23:34 Operator: TMB
Sample : WG444230-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 8:47 2013 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:46:45 2013
Response via : Multiple Level Calibration

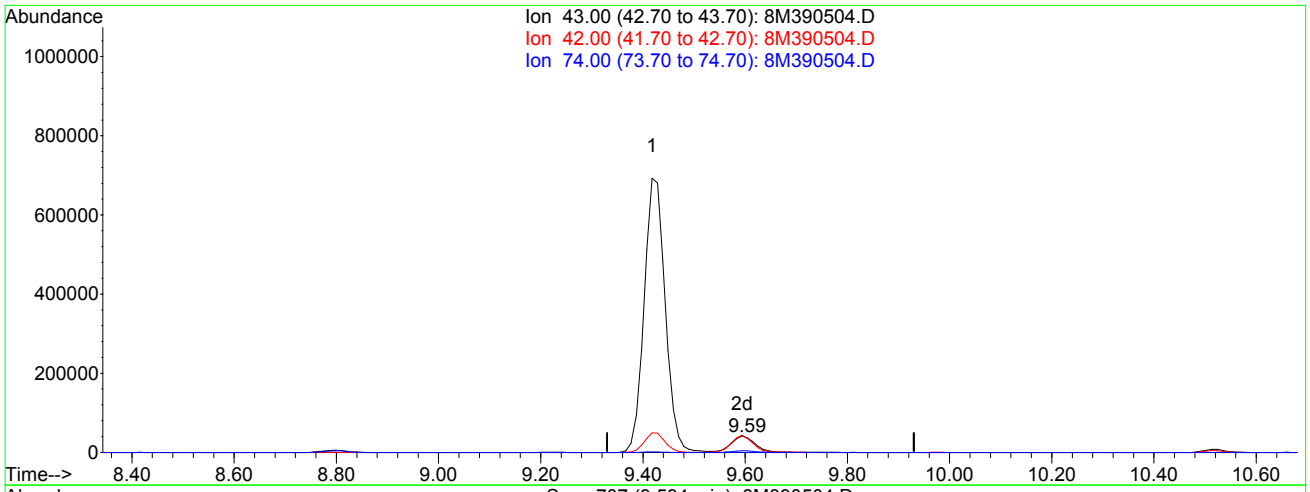

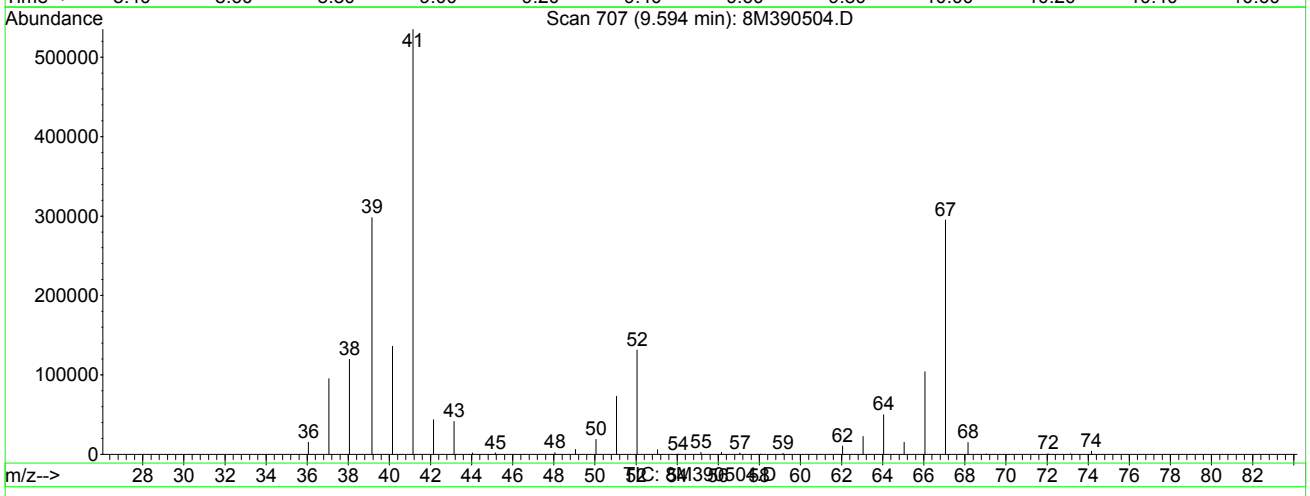

(7) Isobutyl Alcohol (T)

9.59min 186.94ug/L mint

response 131858

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	106.40#
74.00	4.20	2.16
0.00	0.00	0.00

8M390504.D A9FOOWTR.M Wed Sep 1 0 2013

Analyst: 09/18/2013 14:23 Supervisor: 09/19/2013 09:27

#1 - Data system fails to select correct peak

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390507.D Vial: 21
Acq On : 11 Sep 2013 1:03 Operator: TMB
Sample : WG444230-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD60074 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 14:07:51 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 14:03:14 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	539550	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.93	117	462888	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.96	152	265738	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.03	41	48736	99.1422 ug/L	96
3) 3-Chloro-1-propene	7.41	41	1135146	113.3987 ug/L	95
4) 2-Chloro-1,3-butadiene	8.80	53	854605	88.6507 ug/L	78
5) Ethyl Acetate	9.43	43	389815	107.6605 ug/L	94
6) Methacrylonitrile	9.59	67	157306	105.6378 ug/L	85
7) Isobutyl Alcohol	9.59	43	22892	186.3968 ug/L #	97
8) 1-Butanol	10.51	56	3015	75.6314 ug/L #	58
9) Methyl methacrylate	11.75	41	406894	108.1994 ug/L	88
10) 2-Nitropropane	12.10	43	118267	103.2732 ug/L	96
13) Cyclohexanone	16.19	55	8794	50.3558 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M390507.D A9FOOWTR.M Thu Sep 19 09:30:57 2013 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390507.D Vial: 21
Acq On : 11 Sep 2013 1:03 Operator: TMB
Sample : WG444230-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD60074 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 14:07 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Initial Calibration

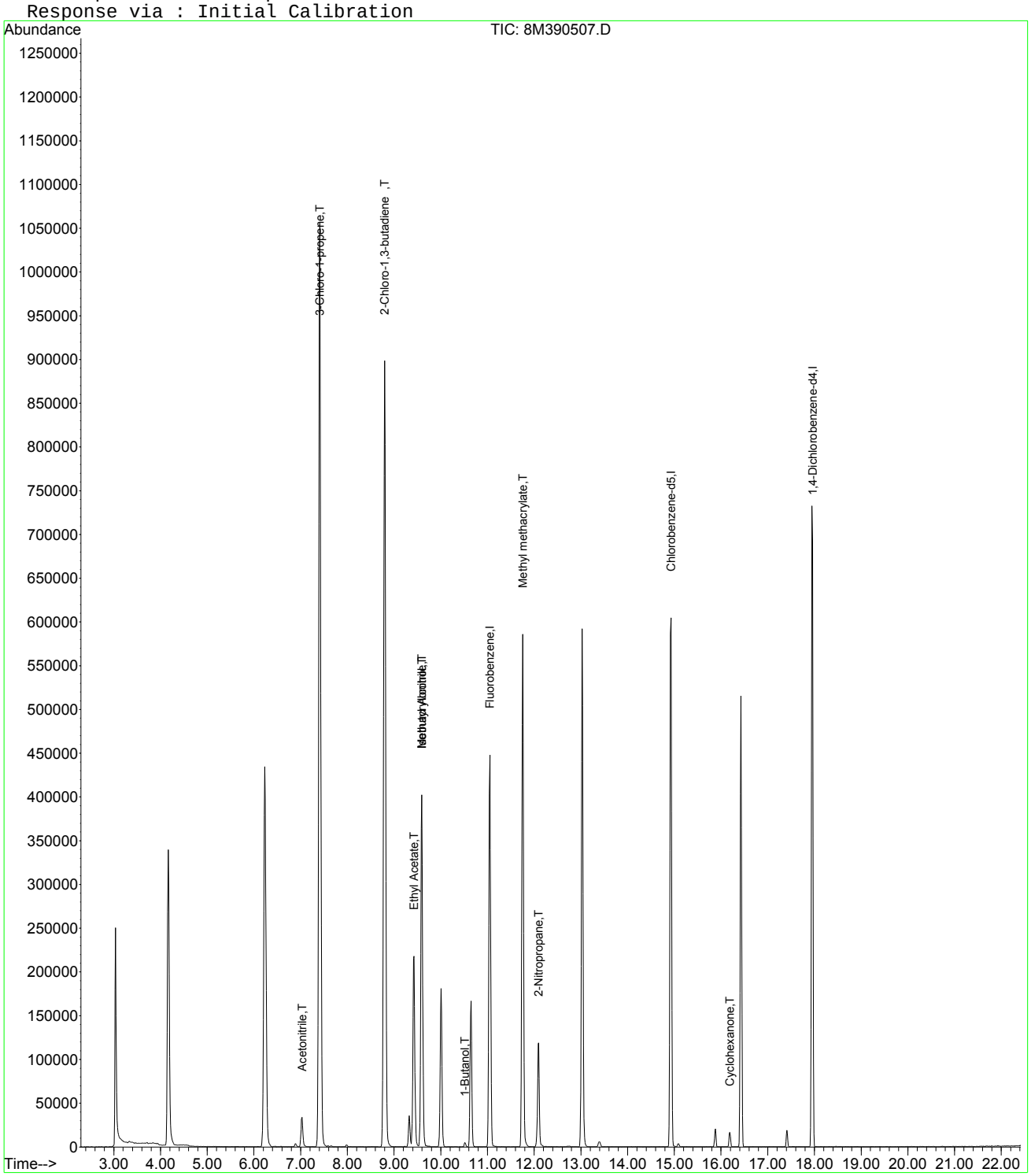

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\091013\8M390507.D Vial: 21
Acq On : 11 Sep 2013 1:03 Operator: TMB
Sample : WG444230-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD60074 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	90	0.00
2	T	Acetonitrile	100.0000	99.1422	0.9	90	0.00
3	T	3-Chloro-1-propene	100.0000	113.3987	-13.4	101	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	88.6507	11.3	78	0.00
5	T	Ethyl Acetate	100.0000	107.6605	-7.7	96	0.00
6	T	Methacrylonitrile	100.0000	105.6378	-5.6	93	0.00
7	T	Isobutyl Alcohol	200.0000	186.3968	6.8	86	0.00
8	T	1-Butanol	100.0000	75.6314	24.4	62	0.00
9	T	Methyl methacrylate	100.0000	108.1994	-8.2	95	0.00
10	T	2-Nitropropane	100.0000	103.2732	-3.3	93	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	91	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	89	0.00
13	T	Cyclohexanone	100.0000	50.3558	49.6	40	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M390507.D A9FOOWTR.M Thu Sep 19 09:34:00 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391092.D Vial: 2
Acq On : 1 Oct 2013 14:46 Operator: TMB
Sample : WG446788-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:07:46 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	834369	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.92	117	776779	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.95	152	493979	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.01	111	1799	0.1716 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.68%#	
43) 1,2-Dichloroethane-d4	10.65	65	1912	0.1885 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.76%#	
58) Toluene-d8	13.03	98	8011	0.2260 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.92%#	
80) p-Bromofluorobenzene	16.42	95	3245	0.2346 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.92%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	2570	0.2758 ug/L	80
3) Chloromethane	3.88	50	5792	0.6425 ug/L	77
4) Vinyl Chloride	4.12	62	2531	0.2872 ug/L	92
5) 1,3-Butadiene	4.18	54	1639	0.3046 ug/L #	45
6) Bromomethane	5.03	94	719	1.0375 ug/L #	2
7) Chloroethane	5.21	64	1657	0.2663 ug/L #	44
8) Trichlorofluoromethane	5.69	101	5320	0.3153 ug/L #	93
10) Isoprene	6.27	67	3205	0.2820 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.48	101	2210	0.2341 ug/L	83
13) Acetone	6.57	43	385	0.2028 ug/L #	48
14) 1,1-Dichloroethene	6.80	61	3871	0.2801 ug/L	91
16) Dimethyl Sulfide	7.07	62	2309	0.3019 ug/L	67
17) Iodomethane	7.33	142	460	0.9075 ug/L #	34
19) Methylene Chloride	7.59	84	3427	0.3605 ug/L	98
20) Carbon Disulfide	7.64	76	10646	0.3920 ug/L	93
22) Methyl Tert Butyl Ether	7.80	73	6108	0.2651 ug/L #	64
23) trans-1,2-Dichloroethene	8.05	61	4108	0.3136 ug/L	86
24) n-Hexane	8.12	57	4299	0.3994 ug/L	93
26) Vinyl Acetate	8.62	43	3164	0.2446 ug/L #	73
27) 1,1-Dichloroethane	8.66	63	5305	0.3165 ug/L #	81
31) 2,2-Dichloropropane	9.44	77	5225	0.3220 ug/L	78
32) cis-1,2-Dichloroethene	9.51	96	2955	0.2831 ug/L	99
33) Chloroform	9.72	83	5460	0.3112 ug/L	92
35) Bromochloromethane	9.95	130	2135	0.2816 ug/L	92
36) Tetrahydrofuran	9.97	42	4674	3.0370 ug/L	86
38) 1,1,1-Trichloroethane	10.25	97	5447	0.3197 ug/L	95
39) Cyclohexane	10.29	56	4605	0.3416 ug/L #	88
40) 1,1-Dichloropropene	10.45	75	3865	0.2866 ug/L	84
42) Carbon Tetrachloride	10.60	117	4922	0.2971 ug/L	96
45) 1,2-Dichloroethane	10.76	62	3852	0.2951 ug/L #	80
46) Benzene	10.81	78	13954	0.3764 ug/L	87
47) Trichloroethene	11.55	130	3679	0.3059 ug/L	92
48) Methylcyclohexane	11.64	83	5199	0.3669 ug/L	93
49) 1,2-Dichloropropane	11.78	63	2659	0.2989 ug/L	74
50) Bromodichloromethane	12.07	83	3679	0.2708 ug/L #	89
52) Dibromomethane	12.16	93	1212	0.2256 ug/L	81
53) 2-Chloroethyl Vinyl Ether	12.36	63	594	0.1350 ug/L #	42
55) cis-1,3-Dichloropropene	12.70	75	3707	0.2453 ug/L	97
56) Dimethyl Disulfide	12.98	94	3008	0.1827 ug/L	96
59) Toluene	13.13	91	12544	0.3165 ug/L	98
60) Ethyl Methacrylate	13.22	69	1813	0.2300 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391092.D Vial: 2
Acq On : 1 Oct 2013 14:46 Operator: TMB
Sample : WG446788-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:07:46 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
62)	trans-1,3-Dichloropropene	13.29	75	3518	0.2569	ug/L		94
63)	1,1,2-Trichloroethane	13.52	97	1862	0.2579	ug/L		82
65)	1,3-Dichloropropane	13.83	76	3382	0.2882	ug/L		96
66)	Tetrachloroethene	13.94	164	3237	0.3066	ug/L		93
67)	Dibromochloromethane	14.21	129	2962	0.2668	ug/L		98
68)	1,2-Dibromoethane	14.47	107	2086	0.2786	ug/L		93
69)	1-Chlorohexane	14.55	91	3238	0.2779	ug/L		95
70)	Chlorobenzene	14.97	112	10020	0.3245	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.99	131	3553	0.2994	ug/L		92
72)	Ethylbenzene	15.00	106	5510	0.3326	ug/L		85
73)	m-,p-Xylene	15.09	106	16748	0.8506	ug/L		94
74)	o-Xylene	15.66	106	6072	0.3160	ug/L		98
75)	Styrene	15.69	104	8310	0.2754	ug/L		94
76)	Bromoform	16.19	173	1867	0.2536	ug/L	#	67
77)	Isopropylbenzene	16.08	105	13688	0.2955	ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.29	83	1952	0.2576	ug/L	#	80
81)	1,2,3-Trichloropropane	16.49	110	424	0.1603	ug/L	#	63
83)	n-Propylbenzene	16.59	91	15933	0.3153	ug/L		89
84)	Bromobenzene	16.72	156	4363	0.3008	ug/L		99
85)	1,3,5-Trimethylbenzene	16.77	105	12753	0.3129	ug/L		91
86)	2-Chlorotoluene	16.85	91	9313	0.2721	ug/L		99
87)	4-Chlorotoluene	16.91	91	9443	0.2973	ug/L		92
88)	a-Methylstyrene	17.18	118	4895	0.2192	ug/L		90
89)	tert-Butylbenzene	17.25	134	2753	0.2873	ug/L		90
90)	1,2,4-Trimethylbenzene	17.29	105	13957	0.3304	ug/L		90
91)	sec-Butylbenzene	17.51	105	14112	0.2962	ug/L		93
92)	p-Isopropyltoluene	17.66	119	12264	0.2806	ug/L		98
93)	1,3-Dichlorobenzene	17.87	146	8538	0.3050	ug/L		96
94)	1,4-Dichlorobenzene	17.99	146	9757	0.3344	ug/L	#	50
95)	n-Butylbenzene	18.19	91	11490	0.3356	ug/L		96
96)	1,2-Dichlorobenzene	18.49	146	7991	0.3040	ug/L		96
98)	1,2,4-Trichlorobenzene	20.64	180	6289	0.3109	ug/L		97
99)	Hexachlorobutadiene	20.78	225	2748	0.3219	ug/L		94
100)	Naphthalene	21.01	128	9949	0.2826	ug/L		99
101)	1,2,3-Trichlorobenzene	21.32	180	5213	0.2862	ug/L		96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391092.D Vial: 2
Acq On : 1 Oct 2013 14:46 Operator: TMB
Sample : WG446788-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 4 14:07 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration

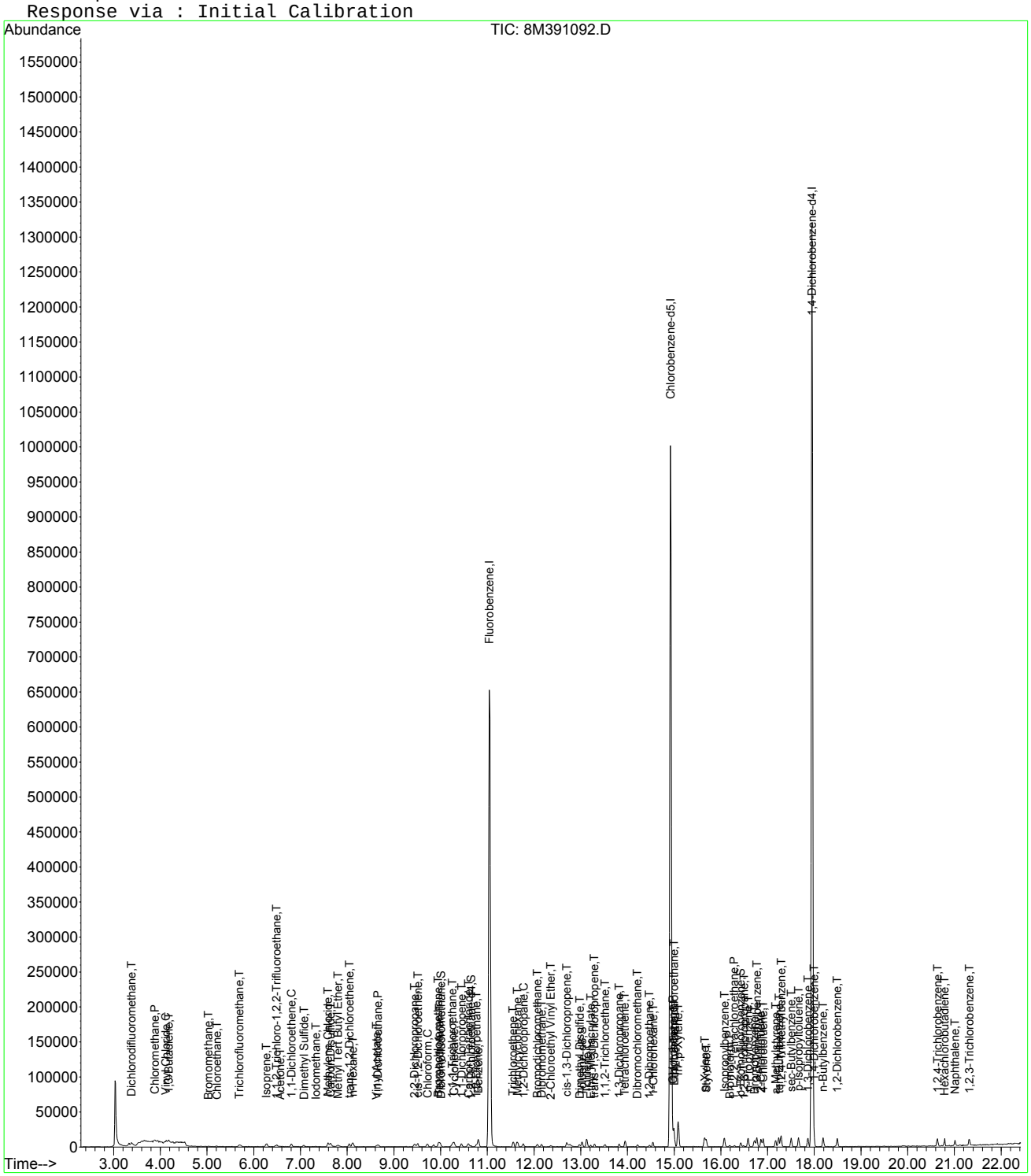

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391093.D Vial: 3
Acq On : 1 Oct 2013 15:17 Operator: TMB
Sample : WG446788-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:07:48 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	814698	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.92	117	755883	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.95	152	491583	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	259	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.12%#	
43) 1,2-Dichloroethane-d4	10.64	65	227	0.0229 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.08%#	
58) Toluene-d8	13.03	98	3141	0.0910 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.36%#	
80) p-Bromofluorobenzene	16.43	95	1070	0.0777 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.32%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.39	85	3418	0.3756 ug/L #	69
3) Chloromethane	3.87	50	5681	0.6454 ug/L #	75
4) Vinyl Chloride	4.11	62	3358	0.3903 ug/L	80
5) 1,3-Butadiene	4.17	54	1970	0.3750 ug/L #	1
6) Bromomethane	5.04	94	801	1.0531 ug/L	98
7) Chloroethane	5.20	64	2229	0.3669 ug/L #	44
8) Trichlorofluoromethane	5.72	101	6660	0.4042 ug/L #	91
10) Isoprene	6.26	67	3871	0.3489 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	3574	0.3878 ug/L	87
13) Acetone	6.57	43	819	0.4419 ug/L #	48
14) 1,1-Dichloroethene	6.80	61	5010	0.3712 ug/L	85
16) Dimethyl Sulfide	7.08	62	2417	0.3236 ug/L	87
17) Iodomethane	7.32	142	891	0.9496 ug/L #	34
18) Methyl acetate	7.34	43	1017	0.2457 ug/L #	60
19) Methylene Chloride	7.59	84	4328	0.4663 ug/L	99
20) Carbon Disulfide	7.64	76	11390	0.4295 ug/L	92
22) Methyl Tert Butyl Ether	7.79	73	8040	0.3574 ug/L #	80
23) trans-1,2-Dichloroethene	8.04	61	4932	0.3856 ug/L	91
24) n-Hexane	8.13	57	4202	0.3998 ug/L	85
26) Vinyl Acetate	8.63	43	4426	0.3505 ug/L #	73
27) 1,1-Dichloroethane	8.67	63	6374	0.3895 ug/L	92
31) 2,2-Dichloropropane	9.44	77	6414	0.4048 ug/L	88
32) cis-1,2-Dichloroethene	9.51	96	3909	0.3835 ug/L	88
33) Chloroform	9.72	83	6784	0.3960 ug/L	98
35) Bromochloromethane	9.96	130	2758	0.3726 ug/L	92
36) Tetrahydrofuran	9.99	42	508	0.3380 ug/L #	34
38) 1,1,1-Trichloroethane	10.24	97	6402	0.3849 ug/L	96
39) Cyclohexane	10.28	56	5061	0.3845 ug/L	94
40) 1,1-Dichloropropene	10.45	75	4485	0.3407 ug/L	98
42) Carbon Tetrachloride	10.60	117	6572	0.4063 ug/L	96
45) 1,2-Dichloroethane	10.76	62	4828	0.3788 ug/L	85
46) Benzene	10.81	78	16448	0.4544 ug/L	94
47) Trichloroethene	11.55	130	4833	0.4116 ug/L	96
48) Methylcyclohexane	11.65	83	5508	0.3981 ug/L	91
49) 1,2-Dichloropropane	11.76	63	3332	0.3836 ug/L	83
50) Bromodichloromethane	12.07	83	5698	0.4296 ug/L	89
52) Dibromomethane	12.16	93	1832	0.3492 ug/L	92
53) 2-Chloroethyl Vinyl Ether	12.35	63	873	0.2032 ug/L #	42
55) cis-1,3-Dichloropropene	12.71	75	5204	0.3527 ug/L	93
56) Dimethyl Disulfide	12.97	94	3822	0.2377 ug/L	86
59) Toluene	13.13	91	16956	0.4396 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391093.D Vial: 3
Acq On : 1 Oct 2013 15:17 Operator: TMB
Sample : WG446788-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:07:48 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
60)	Ethyl Methacrylate	13.20	69	2426	0.3163 ug/L		98
62)	trans-1,3-Dichloropropene	13.29	75	5091	0.3820 ug/L		91
63)	1,1,2-Trichloroethane	13.51	97	2457	0.3497 ug/L		99
65)	1,3-Dichloropropane	13.82	76	4244	0.3716 ug/L		91
66)	Tetrachloroethene	13.95	164	4076	0.3967 ug/L		97
67)	Dibromochloromethane	14.22	129	4102	0.3797 ug/L		91
68)	1,2-Dibromoethane	14.47	107	2571	0.3529 ug/L		97
69)	1-Chlorohexane	14.55	91	3767	0.3322 ug/L		86
70)	Chlorobenzene	14.97	112	13755	0.4578 ug/L		91
71)	1,1,1,2-Tetrachloroethane	15.00	131	4964	0.4298 ug/L		91
72)	Ethylbenzene	15.00	106	6850	0.4249 ug/L		97
73)	m-,p-Xylene	15.08	106	17598	0.9184 ug/L		98
74)	o-Xylene	15.65	106	7467	0.3994 ug/L		98
75)	Styrene	15.68	104	10271	0.3497 ug/L		86
76)	Bromoform	16.19	173	2423	0.3382 ug/L		97
77)	Isopropylbenzene	16.08	105	16820	0.3731 ug/L		97
79)	1,1,2,2-Tetrachloroethane	16.29	83	3022	0.4007 ug/L	#	84
81)	1,2,3-Trichloropropane	16.48	110	498	0.1891 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.52	53	249	0.5586 ug/L	#	1
83)	n-Propylbenzene	16.58	91	20732	0.4122 ug/L		90
84)	Bromobenzene	16.73	156	5938	0.4114 ug/L		97
85)	1,3,5-Trimethylbenzene	16.77	105	15413	0.3800 ug/L		96
86)	2-Chlorotoluene	16.86	91	13144	0.3860 ug/L		95
87)	4-Chlorotoluene	16.90	91	12821	0.4057 ug/L		93
88)	a-Methylstyrene	17.17	118	6973	0.3137 ug/L		99
89)	tert-Butylbenzene	17.23	134	3443	0.3610 ug/L		92
90)	1,2,4-Trimethylbenzene	17.29	105	16256	0.3867 ug/L		96
91)	sec-Butylbenzene	17.50	105	18444	0.3890 ug/L		95
92)	p-Isopropyltoluene	17.66	119	15817	0.3636 ug/L		98
93)	1,3-Dichlorobenzene	17.86	146	10788	0.3873 ug/L		100
94)	1,4-Dichlorobenzene	17.99	146	12141	0.4181 ug/L	#	25
95)	n-Butylbenzene	18.19	91	14202	0.4168 ug/L		90
96)	1,2-Dichlorobenzene	18.50	146	10471	0.4003 ug/L		100
98)	1,2,4-Trichlorobenzene	20.64	180	8906	0.4425 ug/L		92
99)	Hexachlorobutadiene	20.78	225	3377	0.3976 ug/L		95
100)	Naphthalene	21.01	128	13331	0.3805 ug/L		96
101)	1,2,3-Trichlorobenzene	21.32	180	7581	0.4183 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M391093.D 8260WT.M Fri Oct 04 14:07:49 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391093.D Vial: 3
Acq On : 1 Oct 2013 15:17 Operator: TMB
Sample : WG446788-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 4 14:07 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration

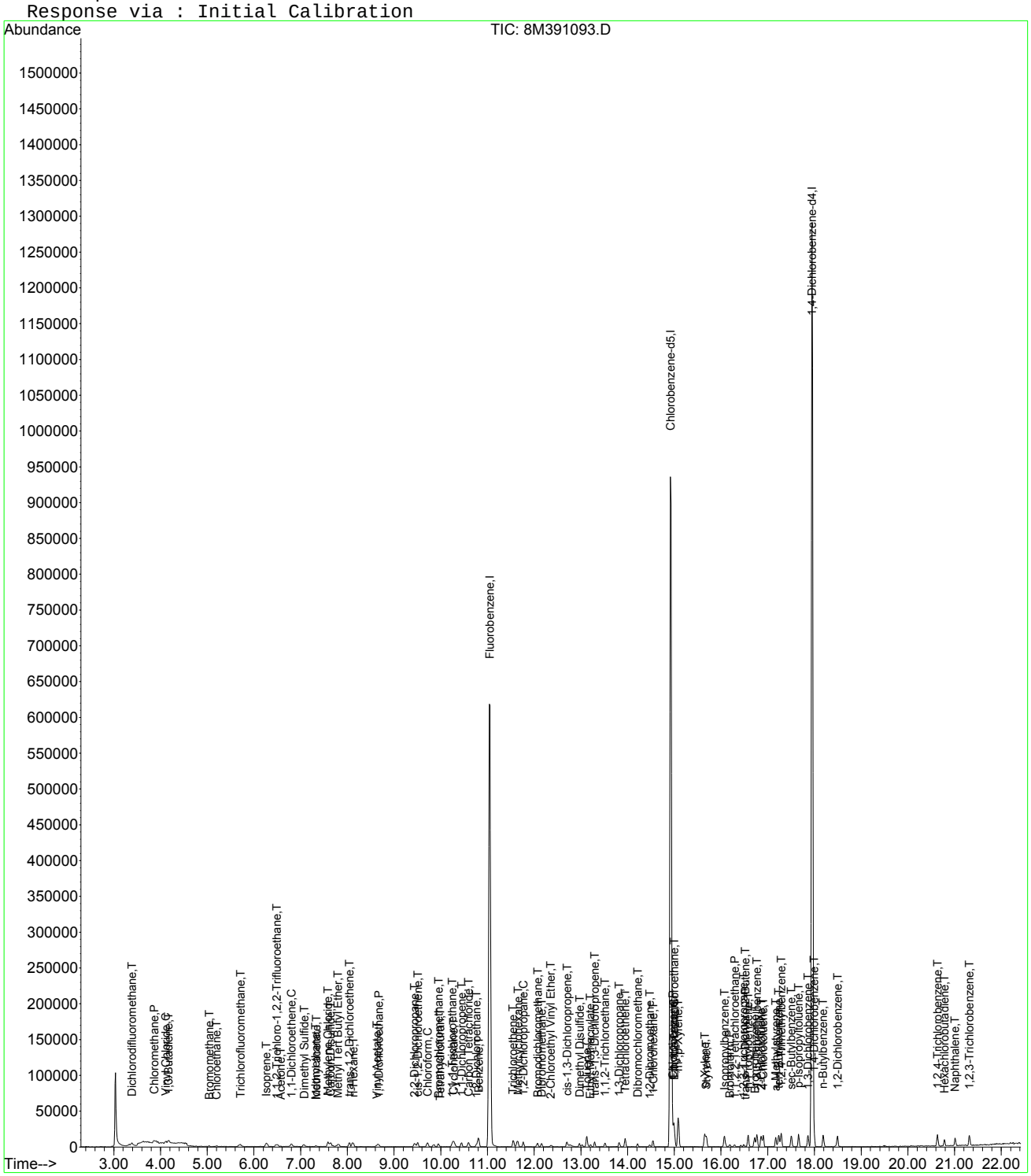

8M391093.D 8260WT.M Fri Oct 04 14:07:49 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391094.D Vial: 4
Acq On : 1 Oct 2013 15:48 Operator: TMB
Sample : WG446788-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:07:50 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	817260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.92	117	764908	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.95	152	498511	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.01	111	5849	0.5697 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.28%#	
43) 1,2-Dichloroethane-d4	10.65	65	5347	0.5381 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.16%#	
58) Toluene-d8	13.03	98	19553	0.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.24%#	
80) p-Bromofluorobenzene	16.42	95	7288	0.5221 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	8908	0.9759 ug/L	87
3) Chloromethane	3.87	50	11307	1.2805 ug/L	86
4) Vinyl Chloride	4.11	62	9181	1.0638 ug/L	93
5) 1,3-Butadiene	4.18	54	5248	0.9958 ug/L #	45
6) Bromomethane	5.04	94	3378	1.4572 ug/L	96
7) Chloroethane	5.21	64	6547	1.0743 ug/L	93
8) Trichlorofluoromethane	5.71	101	17151	1.0376 ug/L	96
9) Diethyl ether	6.23	59	29910	5.1027 ug/L	96
10) Isoprene	6.27	67	11341	1.0189 ug/L	96
11) Acrolein	6.48	56	1645	2.5326 ug/L #	52
12) 1,1,2-Trichloro-1,2,2-Trif	6.48	101	8999	0.9734 ug/L	92
13) Acetone	6.59	43	2241	1.2054 ug/L #	48
14) 1,1-Dichloroethene	6.79	61	13599	1.0045 ug/L	94
15) Tert-Butyl Alcohol	6.92	59	3788	10.7226 ug/L #	55
16) Dimethyl Sulfide	7.07	62	7250	0.9677 ug/L	97
17) Iodomethane	7.33	142	4281	1.2710 ug/L	97
18) Methyl acetate	7.33	43	4002	0.9637 ug/L #	60
19) Methylene Chloride	7.59	84	9978	1.0716 ug/L	98
20) Carbon Disulfide	7.64	76	28616	1.0757 ug/L	100
21) Acrylonitrile	7.77	53	4660	2.3498 ug/L	94
22) Methyl Tert Butyl Ether	7.79	73	22944	1.0168 ug/L	98
23) trans-1,2-Dichloroethene	8.04	61	13149	1.0247 ug/L	97
24) n-Hexane	8.12	57	10734	1.0182 ug/L	92
25) Diisopropyl ether	8.46	45	142972	5.1829 ug/L	97
26) Vinyl Acetate	8.63	43	12514	0.9878 ug/L	90
27) 1,1-Dichloroethane	8.66	63	18563	1.1308 ug/L	93
28) Ethyl-Tert-Butyl ether	9.04	59	131175	5.0849 ug/L	100
29) 2-Butanone	9.22	43	1899	0.8495 ug/L #	52
30) Propionitrile	9.33	54	3082	4.7252 ug/L #	54
31) 2,2-Dichloropropane	9.44	77	16812	1.0578 ug/L	95
32) cis-1,2-Dichloroethene	9.50	96	10343	1.0116 ug/L	97
33) Chloroform	9.71	83	17774	1.0343 ug/L	99
34) 1-Bromopropane	9.86	122	1878	0.8785 ug/L	96
35) Bromochloromethane	9.96	130	7609	1.0246 ug/L	97
36) Tetrahydrofuran	9.98	42	7566	5.0190 ug/L	94
38) 1,1,1-Trichloroethane	10.26	97	17372	1.0410 ug/L	97
39) Cyclohexane	10.29	56	14105	1.0684 ug/L	92
40) 1,1-Dichloropropene	10.44	75	13122	0.9935 ug/L	95
41) Tert-Amyl-Methyl ether	10.55	73	112751	4.9120 ug/L	93
42) Carbon Tetrachloride	10.60	117	16802	1.0355 ug/L	98
45) 1,2-Dichloroethane	10.76	62	13400	1.0480 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391094.D Vial: 4
Acq On : 1 Oct 2013 15:48 Operator: TMB
Sample : WG446788-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:07:50 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
46)	Benzene	10.80	78	39198	1.0794	ug/L		98
47)	Trichloroethene	11.55	130	11626	0.9870	ug/L		97
48)	Methylcyclohexane	11.64	83	13574	0.9780	ug/L		92
49)	1,2-Dichloropropane	11.78	63	8725	1.0014	ug/L		95
50)	Bromodichloromethane	12.07	83	13198	0.9919	ug/L		98
52)	Dibromomethane	12.16	93	5484	1.0422	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.35	63	3091	0.7173	ug/L		82
54)	4-Methyl-2-Pentanone	12.39	58	1136	0.5699	ug/L	#	54
55)	cis-1,3-Dichloropropene	12.71	75	14289	0.9655	ug/L		98
56)	Dimethyl Disulfide	12.96	94	11758	0.7291	ug/L		100
59)	Toluene	13.13	91	42339	1.0848	ug/L		98
60)	Ethyl Methacrylate	13.20	69	6899	0.8888	ug/L		93
62)	trans-1,3-Dichloropropene	13.30	75	13679	1.0143	ug/L		92
63)	1,1,2-Trichloroethane	13.52	97	7651	1.0762	ug/L		98
64)	2-Hexanone	13.44	58	849	0.4906	ug/L	#	1
65)	1,3-Dichloropropane	13.82	76	12143	1.0507	ug/L		99
66)	Tetrachloroethene	13.95	164	11648	1.1203	ug/L		95
67)	Dibromochloromethane	14.22	129	10672	0.9762	ug/L		97
68)	1,2-Dibromoethane	14.47	107	7181	0.9741	ug/L		94
69)	1-Chlorohexane	14.55	91	10648	0.9279	ug/L		94
70)	Chlorobenzene	14.97	112	34090	1.1212	ug/L		76
71)	1,1,1,2-Tetrachloroethane	15.00	131	12183	1.0425	ug/L		99
72)	Ethylbenzene	15.00	106	16200	0.9930	ug/L		87
73)	m-,p-Xylene	15.08	106	42925	2.2138	ug/L		99
74)	o-Xylene	15.65	106	19221	1.0159	ug/L		94
75)	Styrene	15.68	104	28884	0.9719	ug/L		94
76)	Bromoform	16.19	173	7153	0.9868	ug/L		92
77)	Isopropylbenzene	16.08	105	47592	1.0433	ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.28	83	8062	1.0541	ug/L		96
81)	1,2,3-Trichloropropane	16.48	110	2387	0.8940	ug/L		98
82)	trans-1,4-Dichloro-2-Buten	16.52	53	1623	1.1146	ug/L		56
83)	n-Propylbenzene	16.58	91	53083	1.0408	ug/L		96
84)	Bromobenzene	16.72	156	15107	1.0320	ug/L		100
85)	1,3,5-Trimethylbenzene	16.77	105	42324	1.0290	ug/L		99
86)	2-Chlorotoluene	16.86	91	38986	1.1289	ug/L		96
87)	4-Chlorotoluene	16.90	91	34463	1.0753	ug/L		99
88)	a-Methylstyrene	17.17	118	20045	0.8893	ug/L		100
89)	tert-Butylbenzene	17.23	134	9598	0.9924	ug/L		92
90)	1,2,4-Trimethylbenzene	17.29	105	45130	1.0586	ug/L		97
91)	sec-Butylbenzene	17.51	105	49650	1.0326	ug/L		95
92)	p-Isopropyltoluene	17.66	119	45154	1.0236	ug/L		98
93)	1,3-Dichlorobenzene	17.87	146	30539	1.0811	ug/L		99
94)	1,4-Dichlorobenzene	17.99	146	32000	1.0866	ug/L	#	72
95)	n-Butylbenzene	18.19	91	35911	1.0393	ug/L		95
96)	1,2-Dichlorobenzene	18.50	146	27881	1.0512	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.50	75	1295	0.8485	ug/L		92
98)	1,2,4-Trichlorobenzene	20.64	180	21441	1.0504	ug/L		96
99)	Hexachlorobutadiene	20.78	225	8800	1.0216	ug/L		93
100)	Naphthalene	21.01	128	37361	1.0514	ug/L		99
101)	1,2,3-Trichlorobenzene	21.32	180	19469	1.0592	ug/L		97

(#) = qualifier out of range (m) = manual integration
8M391094.D 8260WT.M Fri Oct 04 14:07:51 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391094.D Vial: 4
Acq On : 1 Oct 2013 15:48 Operator: TMB
Sample : WG446788-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 4 14:07 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration

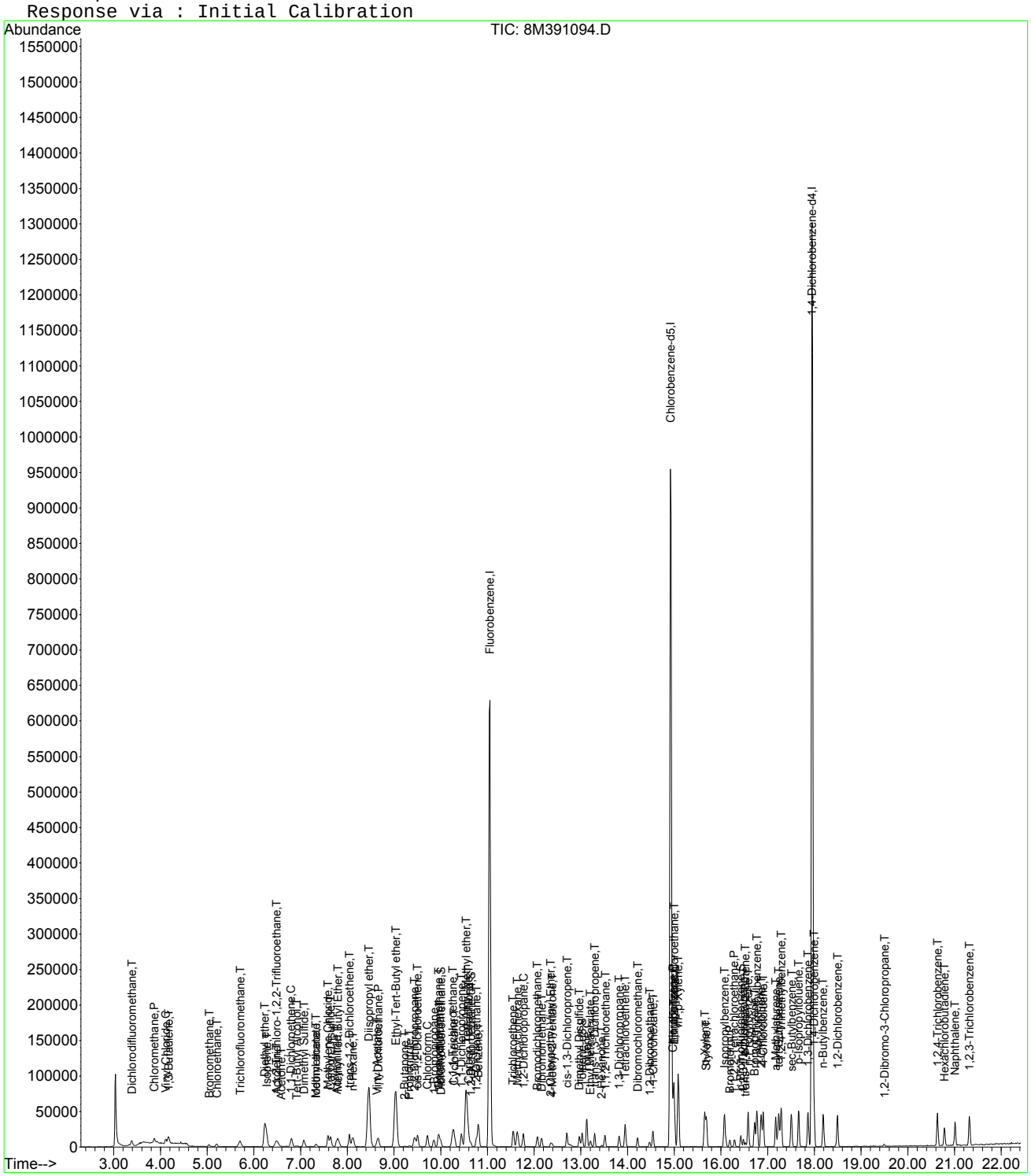

8M391094.D 8260WT.M Fri Oct 04 14:07:51 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391095.D Vial: 5
Acq On : 1 Oct 2013 16:19 Operator: TMB
Sample : WG446788-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:07:51 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	817394	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.92	117	776894	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.95	152	503200	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.00	111	10786	1.0504 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.20%#	
43) 1,2-Dichloroethane-d4	10.64	65	10417	1.0482 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.20%#	
58) Toluene-d8	13.03	98	38591	1.0883 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.36%#	
80) p-Bromofluorobenzene	16.42	95	14900	1.0574 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	17533	1.9205 ug/L	99
3) Chloromethane	3.87	50	18440	2.0880 ug/L	97
4) Vinyl Chloride	4.12	62	17707	2.0513 ug/L	98
5) 1,3-Butadiene	4.18	54	10205	1.9361 ug/L	72
6) Bromomethane	5.04	94	7463	2.0983 ug/L	98
7) Chloroethane	5.20	64	11815	1.9385 ug/L	95
8) Trichlorofluoromethane	5.71	101	33346	2.0171 ug/L	99
9) Diethyl ether	6.24	59	152220	25.9649 ug/L	99
10) Isoprene	6.27	67	21900	1.9673 ug/L	97
11) Acrolein	6.47	56	7854	12.0896 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	19075	2.0629 ug/L	95
13) Acetone	6.57	43	4574	2.4600 ug/L	87
14) 1,1-Dichloroethene	6.81	61	27216	2.0101 ug/L	97
15) Tert-Butyl Alcohol	6.91	59	18326	51.8665 ug/L	93
16) Dimethyl Sulfide	7.07	62	13897	1.8546 ug/L	98
17) Iodomethane	7.33	142	11244	1.9316 ug/L	85
18) Methyl acetate	7.33	43	8943	2.1532 ug/L #	87
19) Methylene Chloride	7.59	84	18654	2.0031 ug/L	98
20) Carbon Disulfide	7.64	76	54696	2.0557 ug/L	99
21) Acrylonitrile	7.77	53	23288	11.7413 ug/L	93
22) Methyl Tert Butyl Ether	7.81	73	42489	1.8826 ug/L	97
23) trans-1,2-Dichloroethene	8.05	61	25574	1.9927 ug/L	99
24) n-Hexane	8.13	57	21591	2.0477 ug/L	99
25) Diisopropyl ether	8.46	45	727999	26.3867 ug/L	99
26) Vinyl Acetate	8.63	43	25360	2.0014 ug/L	96
27) 1,1-Dichloroethane	8.67	63	32989	2.0092 ug/L	97
28) Ethyl-Tert-Butyl ether	9.03	59	672191	26.0529 ug/L	99
29) 2-Butanone	9.21	43	4157	1.8593 ug/L #	65
30) Propionitrile	9.33	54	16260	24.9249 ug/L	96
31) 2,2-Dichloropropane	9.44	77	31815	2.0015 ug/L	100
32) cis-1,2-Dichloroethene	9.51	96	20240	1.9792 ug/L	96
33) Chloroform	9.71	83	35114	2.0431 ug/L	98
34) 1-Bromopropane	9.86	122	4001	1.8714 ug/L	97
35) Bromochloromethane	9.95	130	15108	2.0341 ug/L	98
36) Tetrahydrofuran	9.98	42	38162	25.3110 ug/L	95
38) 1,1,1-Trichloroethane	10.25	97	33222	1.9905 ug/L	100
39) Cyclohexane	10.29	56	26052	1.9730 ug/L	98
40) 1,1-Dichloropropene	10.45	75	25818	1.9545 ug/L	100
41) Tert-Amyl-Methyl ether	10.55	73	595422	25.9356 ug/L	98
42) Carbon Tetrachloride	10.60	117	32208	1.9847 ug/L	97
45) 1,2-Dichloroethane	10.77	62	25656	2.0063 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M391095.D 8260WT.M Fri Oct 04 14:07:52 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391095.D Vial: 5
Acq On : 1 Oct 2013 16:19 Operator: TMB
Sample : WG446788-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:07:51 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
46)	Benzene	10.81	78	74030	2.0382	ug/L		99
47)	Trichloroethene	11.55	130	23288	1.9766	ug/L		99
48)	Methylcyclohexane	11.63	83	27652	1.9921	ug/L		98
49)	1,2-Dichloropropane	11.77	63	17420	1.9990	ug/L		96
50)	Bromodichloromethane	12.07	83	25063	1.8834	ug/L		100
51)	1,4-Dioxane	12.06	88	1251	30.4626	ug/L	#	21
52)	Dibromomethane	12.16	93	10272	1.9517	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.36	63	7140	1.6566	ug/L		81
54)	4-Methyl-2-Pentanone	12.39	58	2865	1.4369	ug/L		96
55)	cis-1,3-Dichloropropene	12.70	75	28741	1.9416	ug/L		94
56)	Dimethyl Disulfide	12.97	94	24382	1.5116	ug/L		93
59)	Toluene	13.12	91	82023	2.0691	ug/L		95
60)	Ethyl Methacrylate	13.21	69	13208	1.6754	ug/L		99
62)	trans-1,3-Dichloropropene	13.30	75	26445	1.9306	ug/L		92
63)	1,1,2-Trichloroethane	13.52	97	15049	2.0841	ug/L		98
64)	2-Hexanone	13.44	58	2651	1.5084	ug/L	#	45
65)	1,3-Dichloropropane	13.83	76	23399	1.9934	ug/L		97
66)	Tetrachloroethene	13.95	164	20552	1.9462	ug/L		96
67)	Dibromochloromethane	14.21	129	21378	1.9253	ug/L		100
68)	1,2-Dibromoethane	14.47	107	15151	2.0235	ug/L		97
69)	1-Chlorohexane	14.54	91	21906	1.8795	ug/L		98
70)	Chlorobenzene	14.97	112	63689	2.0625	ug/L		87
71)	1,1,1,2-Tetrachloroethane	14.99	131	23496	1.9795	ug/L		100
72)	Ethylbenzene	14.99	106	32411	1.9561	ug/L		96
73)	m-,p-Xylene	15.09	106	81246	4.1255	ug/L		96
74)	o-Xylene	15.66	106	37136	1.9324	ug/L		96
75)	Styrene	15.69	104	58415	1.9353	ug/L		98
76)	Bromoform	16.19	173	13273	1.8028	ug/L		97
77)	Isopropylbenzene	16.08	105	93832	2.0252	ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.29	83	14721	1.9067	ug/L		99
81)	1,2,3-Trichloropropane	16.48	110	5173	1.9193	ug/L		92
82)	trans-1,4-Dichloro-2-Buten	16.52	53	3739	1.9589	ug/L		78
83)	n-Propylbenzene	16.59	91	106662	2.0718	ug/L		98
84)	Bromobenzene	16.72	156	28972	1.9608	ug/L		96
85)	1,3,5-Trimethylbenzene	16.77	105	84490	2.0351	ug/L		98
86)	2-Chlorotoluene	16.86	91	65350	1.8746	ug/L		90
87)	4-Chlorotoluene	16.91	91	73547	2.2733	ug/L		88
88)	a-Methylstyrene	17.18	118	39442	1.7336	ug/L		100
89)	tert-Butylbenzene	17.24	134	19852	2.0335	ug/L		97
90)	1,2,4-Trimethylbenzene	17.29	105	90563	2.1045	ug/L		95
91)	sec-Butylbenzene	17.51	105	100310	2.0667	ug/L		99
92)	p-Isopropyltoluene	17.66	119	89425	2.0083	ug/L		100
93)	1,3-Dichlorobenzene	17.87	146	59013	2.0696	ug/L		99
94)	1,4-Dichlorobenzene	17.99	146	59063	1.9869	ug/L		85
95)	n-Butylbenzene	18.19	91	70968	2.0347	ug/L		97
96)	1,2-Dichlorobenzene	18.49	146	52971	1.9785	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.49	75	2609	1.6936	ug/L		87
98)	1,2,4-Trichlorobenzene	20.64	180	39465	1.9154	ug/L		98
99)	Hexachlorobutadiene	20.78	225	17444	2.0062	ug/L		98
100)	Naphthalene	21.01	128	70078	1.9538	ug/L		97
101)	1,2,3-Trichlorobenzene	21.32	180	37794	2.0370	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M391095.D 8260WT.M Fri Oct 04 14:07:52 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391095.D Vial: 5
Acq On : 1 Oct 2013 16:19 Operator: TMB
Sample : WG446788-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 4 14:07 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration

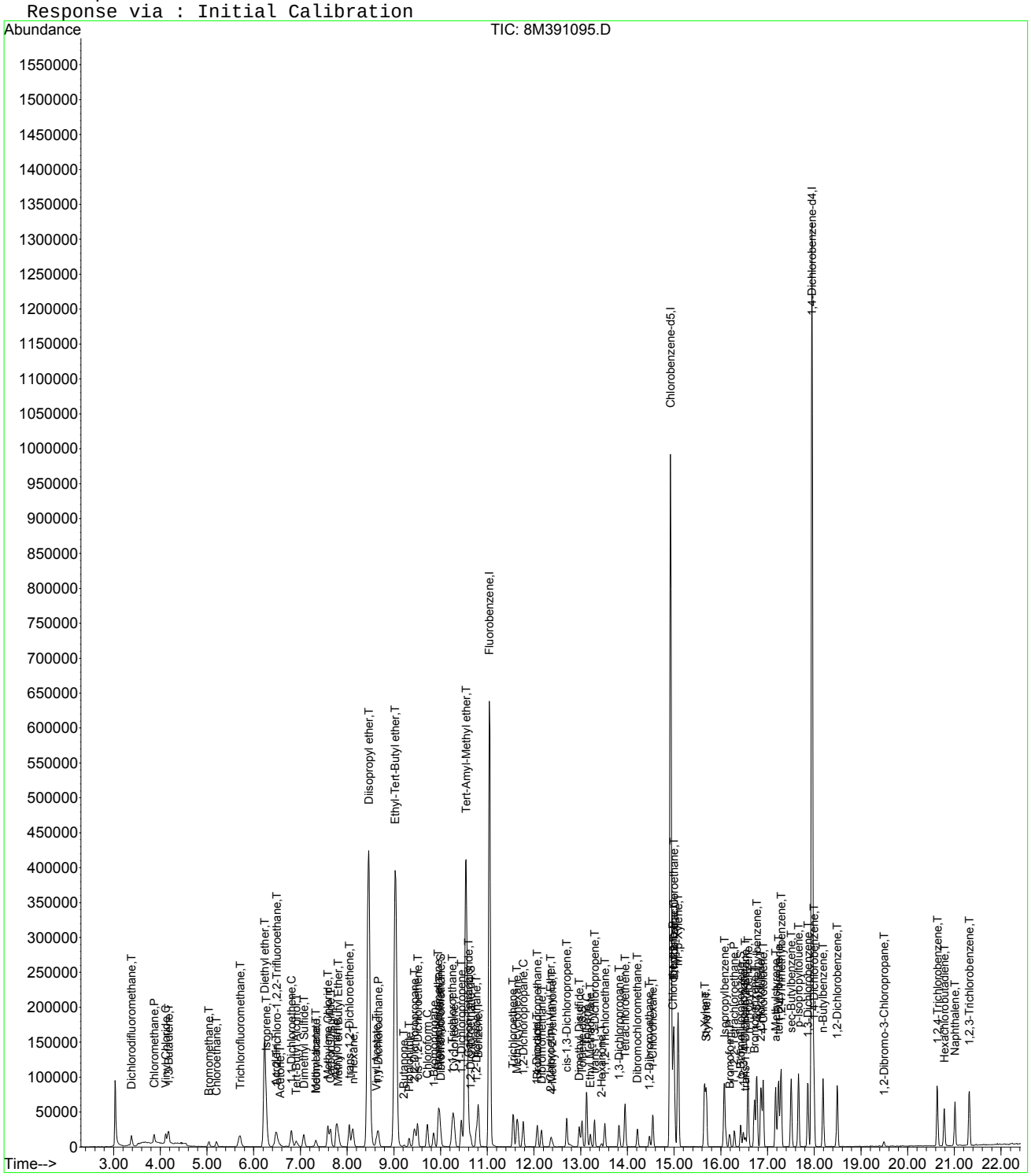

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391096.D Vial: 6
Acq On : 1 Oct 2013 16:50 Operator: TMB
Sample : WG446788-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:07:53 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	808937	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.92	117	771773	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.95	152	501738	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	25549	2.5142 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.04%#		
43) 1,2-Dichloroethane-d4	10.65	65	25934	2.6370 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.56%#		
58) Toluene-d8	13.03	98	95656	2.7156 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.88%#		
80) p-Bromofluorobenzene	16.43	95	36742	2.6151 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.48%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.38	85	42444	4.6979 ug/L	100
3) Chloromethane	3.87	50	44214	5.0587 ug/L	99
4) Vinyl Chloride	4.12	62	41964	4.9122 ug/L	96
5) 1,3-Butadiene	4.17	54	25539	4.8960 ug/L	86
6) Bromomethane	5.04	94	20380	4.1591 ug/L	100
7) Chloroethane	5.20	64	30097	4.9896 ug/L	97
8) Trichlorofluoromethane	5.71	101	82048	5.0150 ug/L	100
9) Diethyl ether	6.24	59	298578	51.4623 ug/L	99
10) Isoprene	6.28	67	56182	5.0996 ug/L	100
11) Acrolein	6.47	56	15245	23.7118 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.48	101	47207	5.1586 ug/L	96
13) Acetone	6.58	43	10075	5.4751 ug/L	90
14) 1,1-Dichloroethene	6.80	61	66817	4.9864 ug/L	99
15) Tert-Butyl Alcohol	6.92	59	35971	102.8699 ug/L	97
16) Dimethyl Sulfide	7.07	62	35911	4.8426 ug/L	97
17) Iodomethane	7.33	142	34574	4.1795 ug/L	99
18) Methyl acetate	7.33	43	22402	5.4500 ug/L #	90
19) Methylene Chloride	7.59	84	45978	4.9889 ug/L	98
20) Carbon Disulfide	7.64	76	131219	4.9834 ug/L	100
21) Acrylonitrile	7.77	53	47340	24.1172 ug/L	92
22) Methyl Tert Butyl Ether	7.81	73	112666	5.0441 ug/L	98
23) trans-1,2-Dichloroethene	8.04	61	64187	5.0536 ug/L	95
24) n-Hexane	8.12	57	52411	5.0227 ug/L	98
25) Diisopropyl ether	8.46	45	1414207	51.7945 ug/L	99
26) Vinyl Acetate	8.62	43	63142	5.0353 ug/L	96
27) 1,1-Dichloroethane	8.67	63	84340	5.1904 ug/L	98
28) Ethyl-Tert-Butyl ether	9.03	59	1315284	51.5110 ug/L	99
29) 2-Butanone	9.21	43	11022	4.9814 ug/L	94
30) Propionitrile	9.33	54	32524	50.3771 ug/L	100
31) 2,2-Dichloropropane	9.44	77	78443	4.9865 ug/L	99
32) cis-1,2-Dichloroethene	9.50	96	50389	4.9789 ug/L	94
33) Chloroform	9.72	83	86846	5.1059 ug/L	99
34) 1-Bromopropane	9.85	122	10342	4.8878 ug/L	98
35) Bromochloromethane	9.95	130	38012	5.1714 ug/L	98
36) Tetrahydrofuran	9.97	42	74900	50.1970 ug/L	97
38) 1,1,1-Trichloroethane	10.25	97	85992	5.2062 ug/L	98
39) Cyclohexane	10.28	56	65905	5.0433 ug/L	100
40) 1,1-Dichloropropene	10.44	75	65743	5.0290 ug/L	99
41) Tert-Amyl-Methyl ether	10.55	73	1167673	51.3936 ug/L	99
42) Carbon Tetrachloride	10.59	117	81284	5.0612 ug/L	99
45) 1,2-Dichloroethane	10.76	62	67300	5.3178 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391096.D Vial: 6
Acq On : 1 Oct 2013 16:50 Operator: TMB
Sample : WG446788-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:07:53 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.81	78	184362	5.1290	ug/L	99
47)	Trichloroethene	11.56	130	58530	5.0199	ug/L	99
48)	Methylcyclohexane	11.64	83	68914	5.0165	ug/L	99
49)	1,2-Dichloropropane	11.77	63	44981	5.2156	ug/L	100
50)	Bromodichloromethane	12.07	83	65554	4.9775	ug/L	100
51)	1,4-Dioxane	12.06	88	3461	85.1586	ug/L	77
52)	Dibromomethane	12.16	93	26288	5.0471	ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.36	63	18620	4.3653	ug/L	98
54)	4-Methyl-2-Pentanone	12.39	58	8772	4.4456	ug/L	95
55)	cis-1,3-Dichloropropene	12.70	75	73598	5.0239	ug/L	100
56)	Dimethyl Disulfide	12.97	94	67566	4.2326	ug/L	99
59)	Toluene	13.12	91	206462	5.2427	ug/L	99
60)	Ethyl Methacrylate	13.20	69	37394	4.7747	ug/L	98
62)	trans-1,3-Dichloropropene	13.30	75	68497	5.0338	ug/L	98
63)	1,1,2-Trichloroethane	13.51	97	36409	5.0756	ug/L	98
64)	2-Hexanone	13.44	58	7750	4.4390	ug/L	93
65)	1,3-Dichloropropane	13.82	76	60799	5.2138	ug/L	99
66)	Tetrachloroethene	13.95	164	53661	5.1153	ug/L	99
67)	Dibromochloromethane	14.22	129	54877	4.9749	ug/L	99
68)	1,2-Dibromoethane	14.48	107	37785	5.0798	ug/L	99
69)	1-Chlorohexane	14.54	91	58078	5.0161	ug/L	100
70)	Chlorobenzene	14.97	112	161321	5.2588	ug/L	95
71)	1,1,1,2-Tetrachloroethane	15.00	131	60259	5.1104	ug/L	98
72)	Ethylbenzene	14.99	106	81485	4.9505	ug/L	95
73)	m-,p-Xylene	15.09	106	208537	10.6594	ug/L	98
74)	o-Xylene	15.65	106	98882	5.1795	ug/L	99
75)	Styrene	15.69	104	157181	5.2420	ug/L	100
76)	Bromoform	16.19	173	34791	4.7567	ug/L	99
77)	Isopropylbenzene	16.08	105	251655	5.4676	ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.29	83	38368	4.9841	ug/L	98
81)	1,2,3-Trichloropropane	16.48	110	13793	5.1325	ug/L	81
82)	trans-1,4-Dichloro-2-Buten	16.52	53	10435	4.6624	ug/L	99
83)	n-Propylbenzene	16.59	91	277942	5.4144	ug/L	98
84)	Bromobenzene	16.72	156	76548	5.1958	ug/L	100
85)	1,3,5-Trimethylbenzene	16.77	105	225179	5.4396	ug/L	99
86)	2-Chlorotoluene	16.86	91	196926	5.6654	ug/L	99
87)	4-Chlorotoluene	16.91	91	162919	5.0505	ug/L	98
88)	a-Methylstyrene	17.17	118	108689	4.7911	ug/L	95
89)	tert-Butylbenzene	17.24	134	51383	5.2786	ug/L	98
90)	1,2,4-Trimethylbenzene	17.29	105	234803	5.4723	ug/L	98
91)	sec-Butylbenzene	17.51	105	263476	5.4443	ug/L	97
92)	p-Isopropyltoluene	17.66	119	239860	5.4023	ug/L	99
93)	1,3-Dichlorobenzene	17.87	146	150972	5.3101	ug/L	99
94)	1,4-Dichlorobenzene	17.99	146	154594	5.2158	ug/L	94
95)	n-Butylbenzene	18.19	91	182801	5.2564	ug/L	98
96)	1,2-Dichlorobenzene	18.49	146	139939	5.2421	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.49	75	6914	4.5011	ug/L	97
98)	1,2,4-Trichlorobenzene	20.64	180	103724	5.0489	ug/L	99
99)	Hexachlorobutadiene	20.78	225	45053	5.1965	ug/L	99
100)	Naphthalene	21.01	128	185193	5.1783	ug/L	99
101)	1,2,3-Trichlorobenzene	21.32	180	96220	5.2011	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M391096.D 8260WT.M Fri Oct 04 14:07:54 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391096.D Vial: 6
Acq On : 1 Oct 2013 16:50 Operator: TMB
Sample : WG446788-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 4 14:07 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration

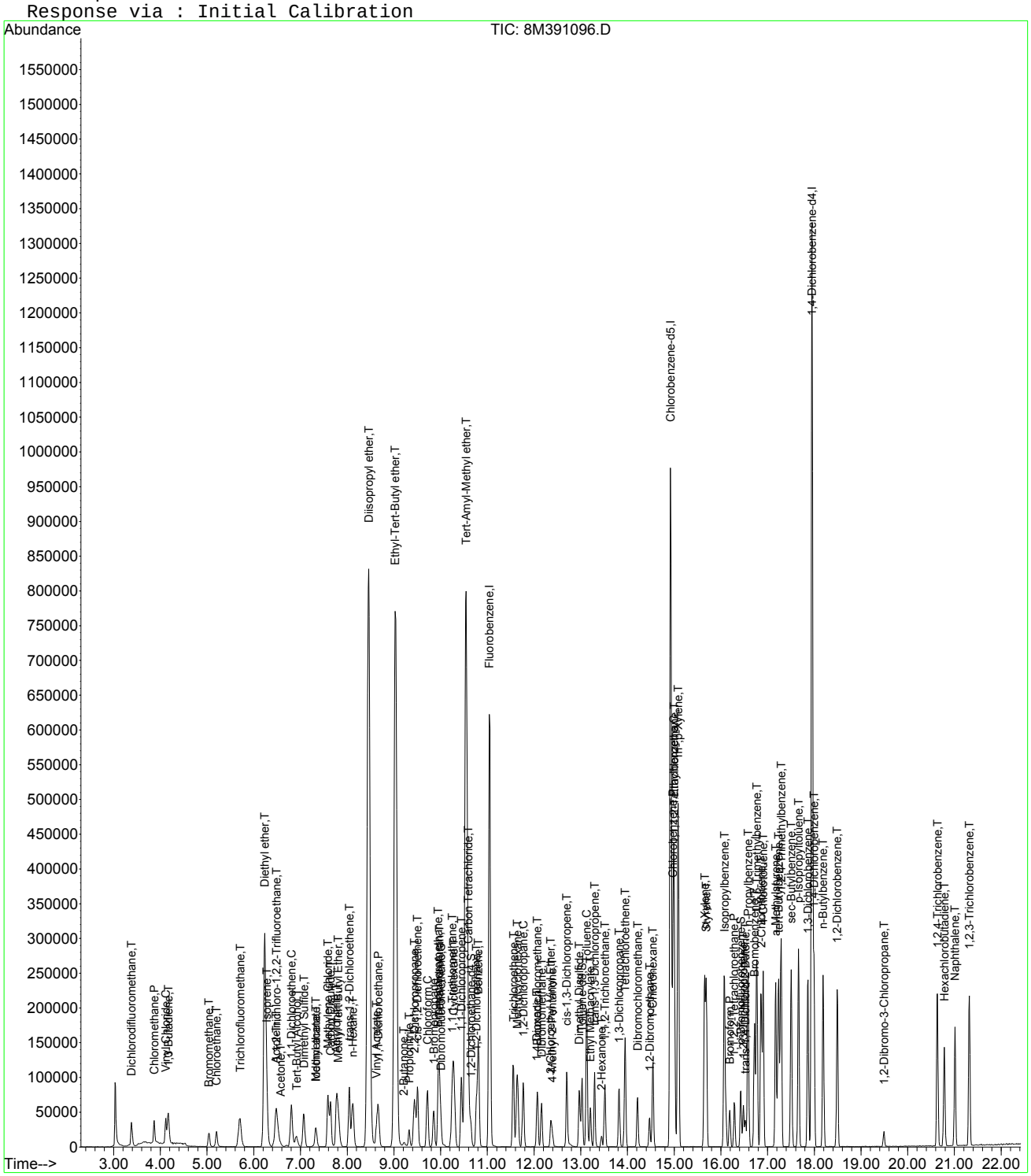

8M391096.D 8260WT.M Fri Oct 04 14:07:54 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391097.D Vial: 7
Acq On : 1 Oct 2013 17:21 Operator: TMB
Sample : WG446788-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:07:55 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	819665	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.92	117	787142	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.95	152	505628	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.01	111	102055	9.9113 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 39.64%#		
43) 1,2-Dichloroethane-d4	10.65	65	101013	10.1366 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.56%#		
58) Toluene-d8	13.03	98	364096	10.1345 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 40.52%#		
80) p-Bromofluorobenzene	16.43	95	140758	9.9415 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 39.76%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	195098	21.3116 ug/L	100
3) Chloromethane	3.87	50	176668	19.9487 ug/L	99
4) Vinyl Chloride	4.11	62	178057	20.5702 ug/L	98
5) 1,3-Butadiene	4.17	54	103374	19.5580 ug/L	95
6) Bromomethane	5.04	94	94308	15.6877 ug/L	100
7) Chloroethane	5.20	64	130396	21.3346 ug/L	98
8) Trichlorofluoromethane	5.71	101	337472	20.3572 ug/L	99
9) Diethyl ether	6.23	59	480707	81.7693 ug/L	99
10) Isoprene	6.27	67	222750	19.9542 ug/L	99
11) Acrolein	6.47	56	26190	40.2024 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	187437	20.2143 ug/L	99
13) Acetone	6.58	43	40149	21.5329 ug/L	96
14) 1,1-Dichloroethene	6.80	61	282008	20.7702 ug/L	100
15) Tert-Butyl Alcohol	6.91	59	61972	174.9080 ug/L	100
16) Dimethyl Sulfide	7.07	62	148222	19.7260 ug/L	100
17) Iodomethane	7.33	142	177497	17.6595 ug/L	99
18) Methyl acetate	7.33	43	82887	19.9011 ug/L	98
19) Methylene Chloride	7.59	84	185882	19.9054 ug/L	99
20) Carbon Disulfide	7.64	76	513954	19.2632 ug/L	100
21) Acrylonitrile	7.76	53	78989	39.7141 ug/L	96
22) Methyl Tert Butyl Ether	7.80	73	464520	20.5247 ug/L	99
23) trans-1,2-Dichloroethene	8.04	61	263699	20.4901 ug/L	98
24) n-Hexane	8.12	57	198532	18.7767 ug/L	98
25) Diisopropyl ether	8.46	45	2271136	82.0903 ug/L	99
26) Vinyl Acetate	8.63	43	261873	20.6100 ug/L	99
27) 1,1-Dichloroethane	8.66	63	331562	20.1376 ug/L	100
28) Ethyl-Tert-Butyl ether	9.04	59	2119274	81.9117 ug/L	100
29) 2-Butanone	9.22	43	46144	20.5818 ug/L	95
30) Propionitrile	9.32	54	53565	81.8821 ug/L	99
31) 2,2-Dichloropropane	9.44	77	320235	20.0906 ug/L	100
32) cis-1,2-Dichloroethene	9.51	96	211810	20.6547 ug/L	98
33) Chloroform	9.72	83	351687	20.4058 ug/L	100
34) 1-Bromopropane	9.85	122	42496	19.8214 ug/L	100
35) Bromochloromethane	9.96	130	153905	20.6642 ug/L	100
36) Tetrahydrofuran	9.98	42	126778	83.8529 ug/L	97
38) 1,1,1-Trichloroethane	10.24	97	342638	20.4727 ug/L	100
39) Cyclohexane	10.29	56	248851	18.7936 ug/L	99
40) 1,1-Dichloropropene	10.44	75	270610	20.4293 ug/L	99
41) Tert-Amyl-Methyl ether	10.54	73	1882709	81.7804 ug/L	99
42) Carbon Tetrachloride	10.60	117	331628	20.3789 ug/L	99
45) 1,2-Dichloroethane	10.76	62	265573	20.7099 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M391097.D 8260WT.M Fri Oct 04 14:07:55 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391097.D Vial: 7
Acq On : 1 Oct 2013 17:21 Operator: TMB
Sample : WG446788-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:07:55 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.80	78	746828	20.5052	ug/L	99
47)	Trichloroethene	11.56	130	242898	20.5596	ug/L	99
48)	Methylcyclohexane	11.64	83	261487	18.7856	ug/L	99
49)	1,2-Dichloropropane	11.76	63	178085	20.3790	ug/L	100
50)	Bromodichloromethane	12.07	83	272192	20.3971	ug/L	99
51)	1,4-Dioxane	12.05	88	7200	174.8388	ug/L	94
52)	Dibromomethane	12.16	93	108225	20.5063	ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.35	63	86421	19.9956	ug/L	98
54)	4-Methyl-2-Pentanone	12.39	58	39874	19.9434	ug/L	96
55)	cis-1,3-Dichloropropene	12.70	75	309769	20.8687	ug/L	100
56)	Dimethyl Disulfide	12.97	94	304469	18.8234	ug/L	100
59)	Toluene	13.13	91	841430	20.9494	ug/L	100
60)	Ethyl Methacrylate	13.20	69	165515	20.7214	ug/L	99
62)	trans-1,3-Dichloropropene	13.30	75	288078	20.7575	ug/L	99
63)	1,1,2-Trichloroethane	13.51	97	152412	20.8321	ug/L	99
64)	2-Hexanone	13.44	58	35093	19.7077	ug/L	97
65)	1,3-Dichloropropane	13.82	76	245193	20.6161	ug/L	98
66)	Tetrachloroethene	13.95	164	217399	20.3193	ug/L	100
67)	Dibromochloromethane	14.22	129	231451	20.5726	ug/L	100
68)	1,2-Dibromoethane	14.47	107	158549	20.8990	ug/L	99
69)	1-Chlorohexane	14.55	91	234964	19.8970	ug/L	99
70)	Chlorobenzene	14.97	112	641852	20.5147	ug/L	100
71)	1,1,1,2-Tetrachloroethane	15.00	131	247601	20.5883	ug/L	100
72)	Ethylbenzene	15.00	106	343486	20.4604	ug/L	99
73)	m-,p-Xylene	15.08	106	832100	41.7026	ug/L	99
74)	o-Xylene	15.65	106	410441	21.0795	ug/L	99
75)	Styrene	15.68	104	675796	22.0977	ug/L	100
76)	Bromoform	16.19	173	150677	20.1987	ug/L	100
77)	Isopropylbenzene	16.08	105	1022869	21.7897	ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.29	83	157957	20.3611	ug/L	99
81)	1,2,3-Trichloropropane	16.48	110	56570	20.8883	ug/L	99
82)	trans-1,4-Dichloro-2-Buten	16.52	53	46094	18.8931	ug/L	90
83)	n-Propylbenzene	16.58	91	1144340	22.1207	ug/L	99
84)	Bromobenzene	16.72	156	307323	20.6996	ug/L	99
85)	1,3,5-Trimethylbenzene	16.77	105	920876	22.0741	ug/L	99
86)	2-Chlorotoluene	16.86	91	758509	21.6537	ug/L	100
87)	4-Chlorotoluene	16.90	91	686104	21.1057	ug/L	100
88)	a-Methylstyrene	17.17	118	458991	20.0772	ug/L	97
89)	tert-Butylbenzene	17.23	134	205119	20.9098	ug/L	100
90)	1,2,4-Trimethylbenzene	17.29	105	939930	21.7375	ug/L	99
91)	sec-Butylbenzene	17.50	105	1061915	21.7741	ug/L	99
92)	p-Isopropyltoluene	17.66	119	987161	22.0626	ug/L	99
93)	1,3-Dichlorobenzene	17.87	146	607862	21.2157	ug/L	100
94)	1,4-Dichlorobenzene	17.99	146	617329	20.6677	ug/L	99
95)	n-Butylbenzene	18.19	91	745481	21.2711	ug/L	99
96)	1,2-Dichlorobenzene	18.50	146	576702	21.4370	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.49	75	30879	19.9481	ug/L	97
98)	1,2,4-Trichlorobenzene	20.64	180	433351	20.9318	ug/L	99
99)	Hexachlorobutadiene	20.78	225	175728	20.1129	ug/L	99
100)	Naphthalene	21.01	128	789046	21.8934	ug/L	100
101)	1,2,3-Trichlorobenzene	21.32	180	392329	21.0441	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M391097.D 8260WT.M Fri Oct 04 14:07:56 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391097.D Vial: 7
Acq On : 1 Oct 2013 17:21 Operator: TMB
Sample : WG446788-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 4 14:07 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration

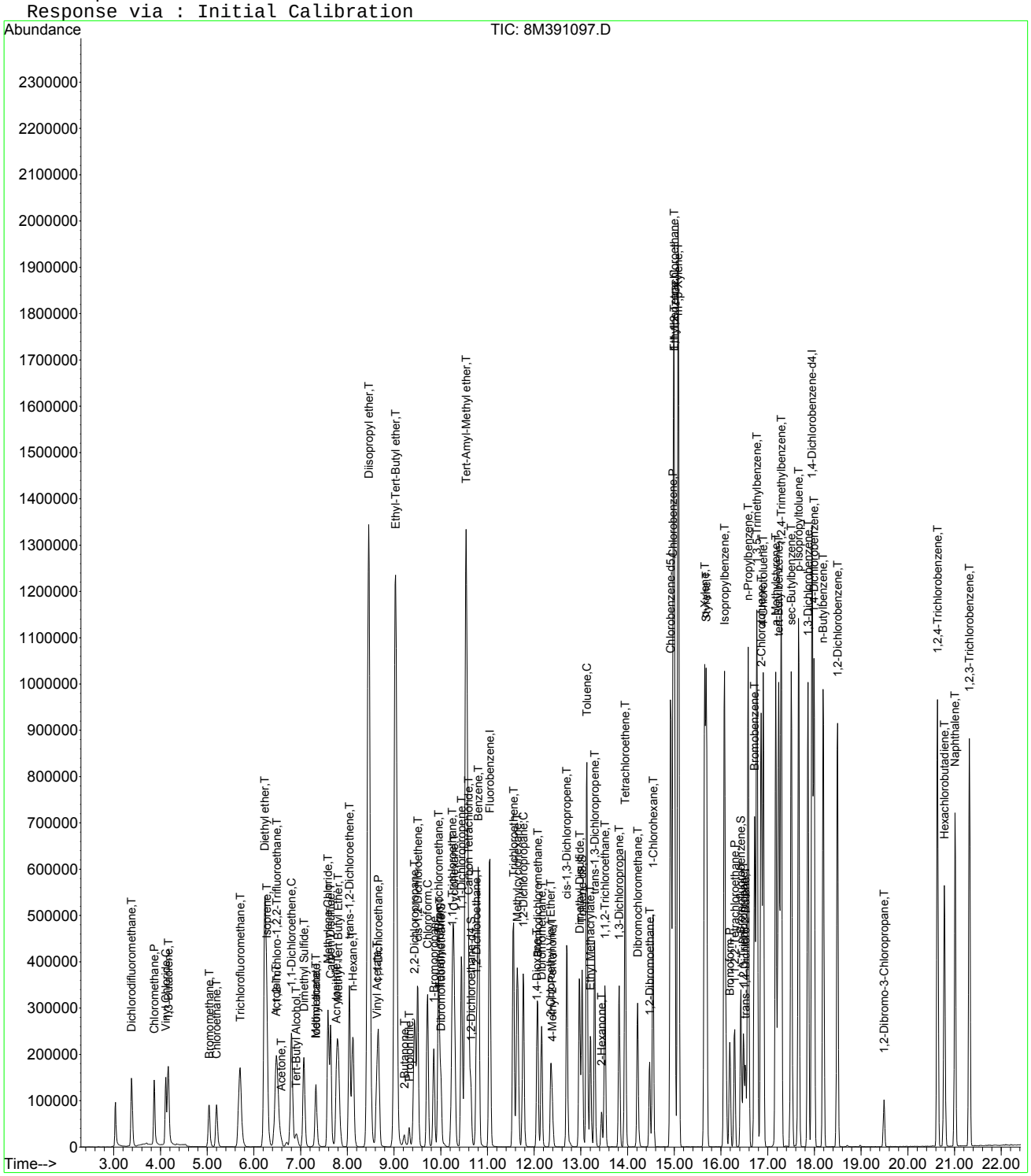

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391098.D Vial: 8
Acq On : 1 Oct 2013 17:52 Operator: TMB
Sample : WG446788-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:07:57 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	827699	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.92	117	794349	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.95	152	525036	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	256956	24.7127 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.84%		
43) 1,2-Dichloroethane-d4	10.65	65	250115	24.8553 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.44%		
58) Toluene-d8	13.03	98	911983	25.1546 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.60%		
80) p-Bromofluorobenzene	16.43	95	365812	24.8816 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.52%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	489606	52.9631 ug/L	100
3) Chloromethane	3.87	50	424948	47.5178 ug/L	100
4) Vinyl Chloride	4.11	62	445883	51.0110 ug/L	100
5) 1,3-Butadiene	4.15	54	286813	53.7373 ug/L	100
6) Bromomethane	5.03	94	280495	44.4029 ug/L	100
7) Chloroethane	5.20	64	322326	52.2251 ug/L	100
8) Trichlorofluoromethane	5.71	101	861296	51.4513 ug/L	100
9) Diethyl ether	6.23	59	584015	98.3780 ug/L	100
10) Isoprene	6.27	67	600693	53.2883 ug/L	100
11) Acrolein	6.46	56	33356	50.7054 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.48	101	478109	51.0617 ug/L	100
13) Acetone	6.57	43	90926	48.2925 ug/L	97
14) 1,1-Dichloroethene	6.80	61	717556	52.3359 ug/L	100
15) Tert-Butyl Alcohol	6.92	59	70184	196.1626 ug/L	100
16) Dimethyl Sulfide	7.07	62	394752	52.0254 ug/L	100
17) Iodomethane	7.33	142	533670	50.8704 ug/L	100
18) Methyl acetate	7.33	43	206590	49.1205 ug/L	100
19) Methylene Chloride	7.59	84	461187	48.9074 ug/L	100
20) Carbon Disulfide	7.64	76	1371214	50.8947 ug/L	100
21) Acrylonitrile	7.77	53	102713	51.1407 ug/L	100
22) Methyl Tert Butyl Ether	7.80	73	1185142	51.8569 ug/L	100
23) trans-1,2-Dichloroethene	8.04	61	676094	52.0244 ug/L	100
24) n-Hexane	8.11	57	529880	49.6285 ug/L	100
25) Diisopropyl ether	8.46	45	2744985	98.2546 ug/L	100
26) Vinyl Acetate	8.62	43	658182	51.2975 ug/L	100
27) 1,1-Dichloroethane	8.66	63	831493	50.0110 ug/L	100
28) Ethyl-Tert-Butyl ether	9.04	59	2572009	98.4454 ug/L	100
29) 2-Butanone	9.22	43	117778	52.0231 ug/L	100
30) Propionitrile	9.32	54	66343	100.4308 ug/L	100
31) 2,2-Dichloropropane	9.44	77	802510	49.8583 ug/L	100
32) cis-1,2-Dichloroethene	9.51	96	537339	51.8900 ug/L	100
33) Chloroform	9.72	83	884562	50.8264 ug/L	100
34) 1-Bromopropane	9.85	122	114166	52.7336 ug/L	100
35) Bromochloromethane	9.96	130	384716	51.1528 ug/L	100
36) Tetrahydrofuran	9.97	42	148759	97.4364 ug/L	100
38) 1,1,1-Trichloroethane	10.24	97	878534	51.9831 ug/L	100
39) Cyclohexane	10.29	56	682534	51.0457 ug/L	100
40) 1,1-Dichloropropene	10.44	75	701919	52.4760 ug/L	100
41) Tert-Amyl-Methyl ether	10.54	73	2303937	99.1062 ug/L	100
42) Carbon Tetrachloride	10.60	117	844961	51.4198 ug/L	100
45) 1,2-Dichloroethane	10.76	62	660770	51.0281 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391098.D Vial: 8
Acq On : 1 Oct 2013 17:52 Operator: TMB
Sample : WG446788-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:07:57 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.80	78	1841799	50.0783	ug/L	100
47)	Trichloroethene	11.56	130	614995	51.5497	ug/L	100
48)	Methylcyclohexane	11.64	83	717537	51.0486	ug/L	100
49)	1,2-Dichloropropane	11.76	63	454543	51.5103	ug/L	100
50)	Bromodichloromethane	12.07	83	693836	51.4890	ug/L	100
51)	1,4-Dioxane	12.05	88	9329	224.3388	ug/L	100
52)	Dibromomethane	12.16	93	282210	52.9538	ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.35	63	225927	51.7663	ug/L	100
54)	4-Methyl-2-Pentanone	12.39	58	103443	51.2359	ug/L	100
55)	cis-1,3-Dichloropropene	12.71	75	797908	53.2321	ug/L	100
56)	Dimethyl Disulfide	12.97	94	860436	52.6789	ug/L	100
59)	Toluene	13.13	91	2092187	51.6174	ug/L	100
60)	Ethyl Methacrylate	13.20	69	443623	55.0348	ug/L	100
62)	trans-1,3-Dichloropropene	13.30	75	742115	52.9880	ug/L	100
63)	1,1,2-Trichloroethane	13.51	97	390295	52.8627	ug/L	100
64)	2-Hexanone	13.44	58	95004	52.8687	ug/L	100
65)	1,3-Dichloropropane	13.82	76	631946	52.6526	ug/L	100
66)	Tetrachloroethene	13.95	164	553665	51.2790	ug/L	100
67)	Dibromochloromethane	14.22	129	614591	54.1324	ug/L	100
68)	1,2-Dibromoethane	14.47	107	409229	53.4527	ug/L	100
69)	1-Chlorohexane	14.55	91	651533	54.6720	ug/L	100
70)	Chlorobenzene	14.97	112	1603948	50.7999	ug/L	100
71)	1,1,1,2-Tetrachloroethane	15.00	131	635662	52.3765	ug/L	100
72)	Ethylbenzene	15.00	106	861108	50.8282	ug/L	100
73)	m-,p-Xylene	15.08	106	2070929	102.8478	ug/L	100
74)	o-Xylene	15.65	106	1054115	53.6463	ug/L	100
75)	Styrene	15.68	104	1734496	56.2014	ug/L	100
76)	Bromoform	16.19	173	414102	55.0079	ug/L	100
77)	Isopropylbenzene	16.08	105	2615284	55.2066	ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.29	83	428759	53.2252	ug/L	100
81)	1,2,3-Trichloropropane	16.48	110	151183	53.7603	ug/L	100
82)	trans-1,4-Dichloro-2-Buten	16.52	53	131948	51.2826	ug/L	100
83)	n-Propylbenzene	16.58	91	2887799	53.7591	ug/L	100
84)	Bromobenzene	16.72	156	800611	51.9313	ug/L	100
85)	1,3,5-Trimethylbenzene	16.77	105	2336597	53.9395	ug/L	100
86)	2-Chlorotoluene	16.86	91	1915114	52.6513	ug/L	100
87)	4-Chlorotoluene	16.90	91	1753694	51.9525	ug/L	100
88)	a-Methylstyrene	17.17	118	1281314	53.9756	ug/L	100
89)	tert-Butylbenzene	17.23	134	528085	51.8430	ug/L	100
90)	1,2,4-Trimethylbenzene	17.29	105	2381249	53.0348	ug/L	100
91)	sec-Butylbenzene	17.50	105	2744248	54.1896	ug/L	100
92)	p-Isopropyltoluene	17.66	119	2543632	54.7477	ug/L	100
93)	1,3-Dichlorobenzene	17.87	146	1569692	52.7606	ug/L	100
94)	1,4-Dichlorobenzene	17.99	146	1600609	51.6063	ug/L	100
95)	n-Butylbenzene	18.19	91	1939746	53.3015	ug/L	100
96)	1,2-Dichlorobenzene	18.50	146	1485358	53.1723	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	19.49	75	90433	56.2608	ug/L	100
98)	1,2,4-Trichlorobenzene	20.64	180	1148145	53.4079	ug/L	100
99)	Hexachlorobutadiene	20.78	225	484618	53.4165	ug/L	100
100)	Naphthalene	21.01	128	2112237	56.4410	ug/L	100
101)	1,2,3-Trichlorobenzene	21.32	180	1039151	53.6784	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M391098.D 8260WT.M Fri Oct 04 14:07:57 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391098.D Vial: 8
Acq On : 1 Oct 2013 17:52 Operator: TMB
Sample : WG446788-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 4 14:07 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration

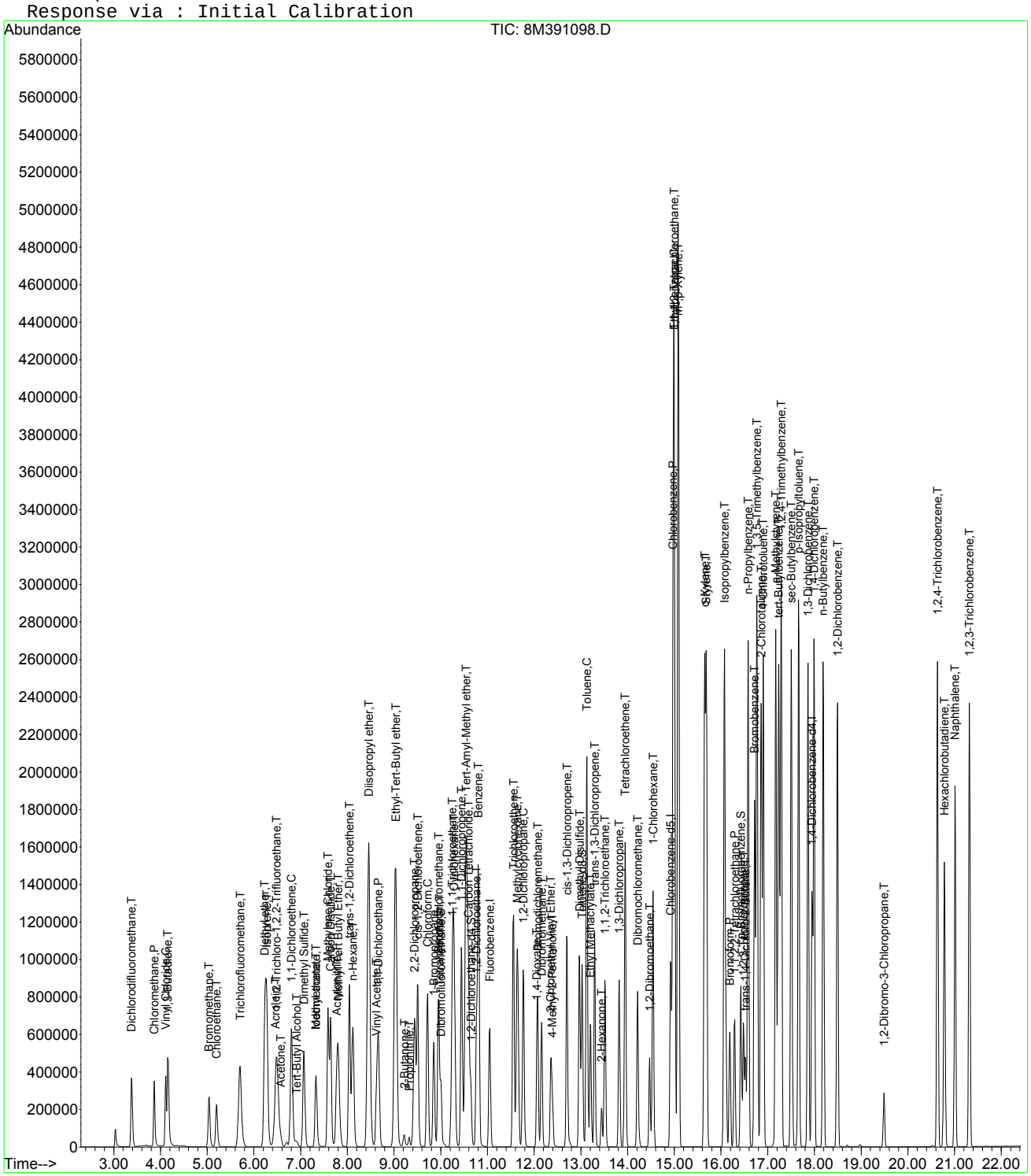

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391099.D Vial: 9
Acq On : 1 Oct 2013 18:23 Operator: TMB
Sample : WG446788-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:07:58 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	840346	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.92	117	822570	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.95	152	539642	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	503530	47.6981 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 190.80%#		
43) 1,2-Dichloroethane-d4	10.64	65	492229	48.1793 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 192.72%#		
58) Toluene-d8	13.03	98	1748480	46.5724 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 186.28%#		
80) p-Bromofluorobenzene	16.42	95	727200	48.1235 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 192.48%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	963049	102.6100 ug/L	99
3) Chloromethane	3.87	50	817249	90.0097 ug/L	100
4) Vinyl Chloride	4.11	62	865347	97.5096 ug/L	99
5) 1,3-Butadiene	4.16	54	552027	101.8713 ug/L	96
6) Bromomethane	5.04	94	609542	93.9825 ug/L	99
7) Chloroethane	5.20	64	619107	98.8016 ug/L	99
8) Trichlorofluoromethane	5.70	101	1644188	96.7408 ug/L	100
9) Diethyl ether	6.23	59	1173971	194.7805 ug/L	100
10) Isoprene	6.27	67	1162758	101.5976 ug/L	99
11) Acrolein	6.47	56	68006	101.8220 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	933652	98.2127 ug/L	99
13) Acetone	6.58	43	175827	91.9795 ug/L	95
14) 1,1-Dichloroethene	6.80	61	1392015	100.0004 ug/L	100
15) Tert-Butyl Alcohol	6.91	59	138667	381.7381 ug/L	99
16) Dimethyl Sulfide	7.07	62	791794	102.7821 ug/L	99
17) Iodomethane	7.33	142	1095382	101.9589 ug/L	100
18) Methyl acetate	7.33	43	422764	99.0070 ug/L	99
19) Methylene Chloride	7.59	84	908056	94.8471 ug/L	98
20) Carbon Disulfide	7.64	76	2651708	96.9410 ug/L	99
21) Acrylonitrile	7.77	53	211213	103.5801 ug/L	100
22) Methyl Tert Butyl Ether	7.81	73	2365141	101.9312 ug/L	100
23) trans-1,2-Dichloroethene	8.04	61	1310008	99.2860 ug/L	99
24) n-Hexane	8.12	57	1105351	101.9690 ug/L	100
25) Diisopropyl ether	8.46	45	5372000	189.3927 ug/L	99
26) Vinyl Acetate	8.62	43	1396558	107.2071 ug/L	99
27) 1,1-Dichloroethane	8.67	63	1626134	96.3335 ug/L	100
28) Ethyl-Tert-Butyl ether	9.03	59	5115601	192.8563 ug/L	99
29) 2-Butanone	9.21	43	235407	102.4156 ug/L	99
30) Propionitrile	9.33	54	133525	199.0896 ug/L	100
31) 2,2-Dichloropropane	9.44	77	1630209	99.7573 ug/L	100
32) cis-1,2-Dichloroethene	9.50	96	1052508	100.1095 ug/L	100
33) Chloroform	9.72	83	1719851	97.3343 ug/L	100
34) 1-Bromopropane	9.85	122	232023	105.5591 ug/L	98
35) Bromochloromethane	9.95	130	764810	100.1607 ug/L	99
36) Tetrahydrofuran	9.97	42	296765	191.4542 ug/L	98
38) 1,1,1-Trichloroethane	10.25	97	1692112	98.6159 ug/L	100
39) Cyclohexane	10.29	56	1342833	98.9171 ug/L	100
40) 1,1-Dichloropropene	10.44	75	1357606	99.9681 ug/L	99
41) Tert-Amyl-Methyl ether	10.55	73	4609098	195.2811 ug/L	100
42) Carbon Tetrachloride	10.60	117	1630270	97.7164 ug/L	100
45) 1,2-Dichloroethane	10.76	62	1298077	98.7355 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M391099.D 8260WT.M Fri Oct 04 14:07:59 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391099.D Vial: 9
Acq On : 1 Oct 2013 18:23 Operator: TMB
Sample : WG446788-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:07:58 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.81	78	3561957	95.3917	ug/L	100
47)	Trichloroethene	11.55	130	1198139	98.9182	ug/L	99
48)	Methylcyclohexane	11.64	83	1442133	101.0553	ug/L	99
49)	1,2-Dichloropropane	11.77	63	890089	99.3497	ug/L	99
50)	Bromodichloromethane	12.07	83	1371499	100.2462	ug/L	100
51)	1,4-Dioxane	12.06	88	17395	412.0103	ug/L	94
52)	Dibromomethane	12.16	93	551915	102.0025	ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.36	63	461868	104.2344	ug/L	98
54)	4-Methyl-2-Pentanone	12.39	58	214266	104.5299	ug/L	99
55)	cis-1,3-Dichloropropene	12.70	75	1597058	104.9436	ug/L	100
56)	Dimethyl Disulfide	12.97	94	1775544	107.0691	ug/L	100
59)	Toluene	13.13	91	4021708	95.8175	ug/L	99
60)	Ethyl Methacrylate	13.20	69	911887	109.2453	ug/L	99
62)	trans-1,3-Dichloropropene	13.30	75	1464806	101.0008	ug/L	100
63)	1,1,2-Trichloroethane	13.51	97	759761	99.3738	ug/L	99
64)	2-Hexanone	13.44	58	195125	104.8596	ug/L	98
65)	1,3-Dichloropropane	13.82	76	1246249	100.2728	ug/L	100
66)	Tetrachloroethene	13.95	164	1083966	96.9498	ug/L	99
67)	Dibromochloromethane	14.22	129	1205005	102.4940	ug/L	99
68)	1,2-Dibromoethane	14.48	107	816958	103.0485	ug/L	100
69)	1-Chlorohexane	14.55	91	1267896	102.7427	ug/L	100
70)	Chlorobenzene	14.97	112	3078412	94.1538	ug/L	99
71)	1,1,1,2-Tetrachloroethane	15.00	131	1235324	98.2946	ug/L	99
72)	Ethylbenzene	14.99	106	1643769	93.6972	ug/L	99
73)	m-,p-Xylene	15.09	106	3953563	189.6081	ug/L	96
74)	o-Xylene	15.65	106	2025915	99.5661	ug/L	100
75)	Styrene	15.69	104	3345358	104.6779	ug/L	99
76)	Bromoform	16.19	173	806164	103.4142	ug/L	98
77)	Isopropylbenzene	16.08	105	4964223	101.1957	ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.29	83	825563	99.7098	ug/L	99
81)	1,2,3-Trichloropropane	16.48	110	295379	102.1932	ug/L	98
82)	trans-1,4-Dichloro-2-Buten	16.52	53	260387	98.0425	ug/L	98
83)	n-Propylbenzene	16.59	91	5429080	98.3319	ug/L	98
84)	Bromobenzene	16.72	156	1544057	97.4439	ug/L	99
85)	1,3,5-Trimethylbenzene	16.77	105	4437538	99.6664	ug/L	100
86)	2-Chlorotoluene	16.86	91	3709775	99.2305	ug/L	99
87)	4-Chlorotoluene	16.91	91	3258034	93.9057	ug/L	98
88)	a-Methylstyrene	17.17	118	2506500	102.7290	ug/L	97
89)	tert-Butylbenzene	17.24	134	1022265	97.6412	ug/L	98
90)	1,2,4-Trimethylbenzene	17.29	105	4486314	97.2141	ug/L	99
91)	sec-Butylbenzene	17.51	105	5141109	98.7718	ug/L	98
92)	p-Isopropyltoluene	17.66	119	4758806	99.6535	ug/L	99
93)	1,3-Dichlorobenzene	17.87	146	2975130	97.2936	ug/L	99
94)	1,4-Dichlorobenzene	17.99	146	3024506	94.8757	ug/L	98
95)	n-Butylbenzene	18.19	91	3666189	98.0151	ug/L	99
96)	1,2-Dichlorobenzene	18.50	146	2820260	98.2261	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.49	75	173281	104.8851	ug/L	97
98)	1,2,4-Trichlorobenzene	20.64	180	2158987	97.7107	ug/L	100
99)	Hexachlorobutadiene	20.78	225	918466	98.4969	ug/L	99
100)	Naphthalene	21.01	128	3907964	101.5982	ug/L	99
101)	1,2,3-Trichlorobenzene	21.32	180	1925864	96.7899	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M391099.D 8260WT.M Fri Oct 04 14:07:59 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391099.D Vial: 9
Acq On : 1 Oct 2013 18:23 Operator: TMB
Sample : WG446788-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 4 14:07 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration

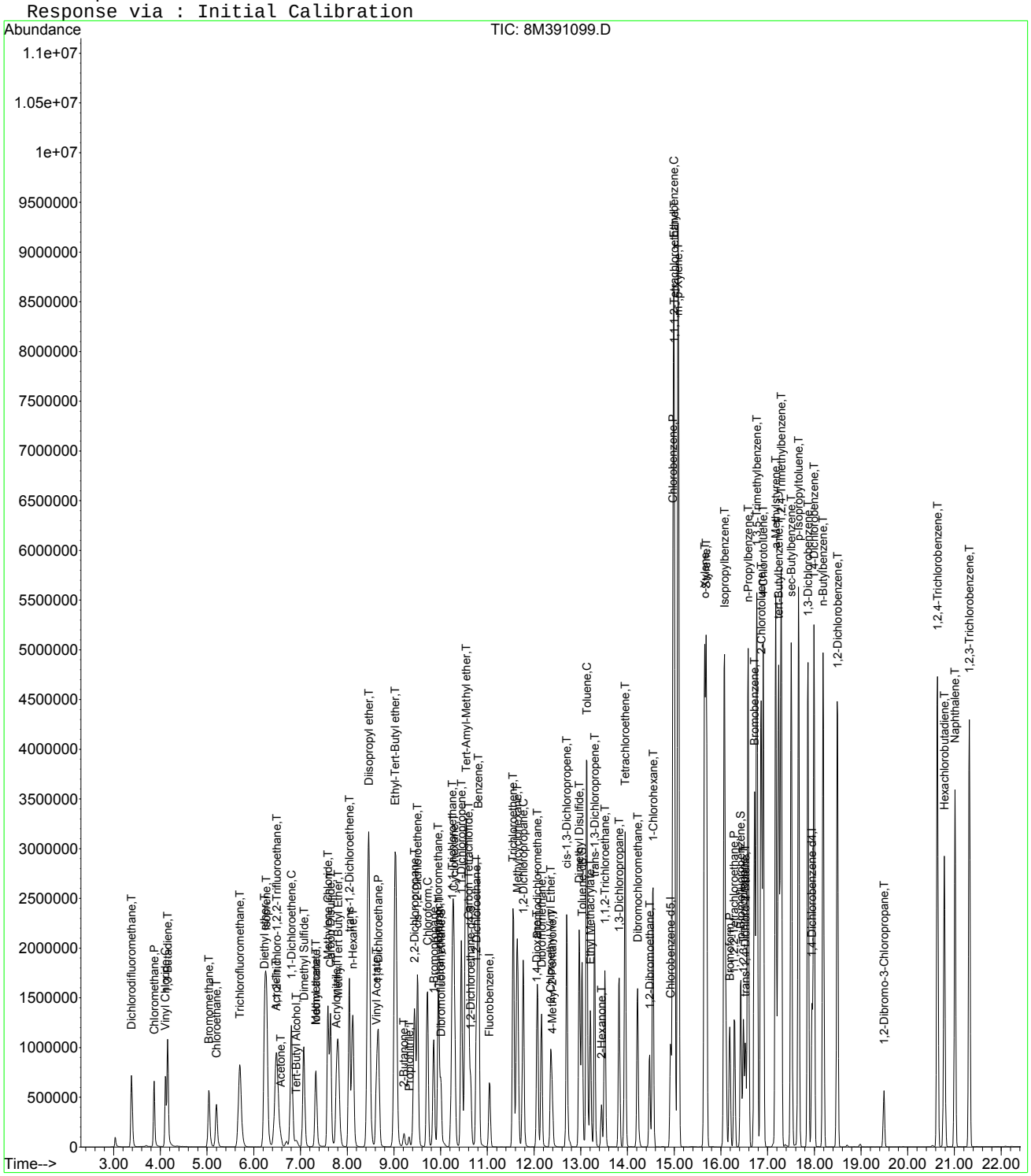

8M391099.D 8260WT.M Fri Oct 04 14:07:59 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391100.D Vial: 10
Acq On : 1 Oct 2013 18:54 Operator: TMB
Sample : WG446788-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:08:00 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	864847	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.92	117	867961	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.95	152	557349	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	1026269	94.4617 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 377.84%#		
43) 1,2-Dichloroethane-d4	10.64	65	988235	93.9879 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 375.96%#		
58) Toluene-d8	13.03	98	3512980	88.6782 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 354.72%#		
80) p-Bromofluorobenzene	16.42	95	1497796	95.9698 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 383.88%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.38	85	1988866	205.9044 ug/L	98
3) Chloromethane	3.87	50	1689071	180.7598 ug/L	99
4) Vinyl Chloride	4.11	62	1780915	194.9930 ug/L	100
5) 1,3-Butadiene	4.16	54	1112016	199.3982 ug/L	95
6) Bromomethane	5.04	94	1323752	197.2919 ug/L	99
7) Chloroethane	5.19	64	1262065	195.7036 ug/L	100
8) Trichlorofluoromethane	5.70	101	3391262	193.8824 ug/L	99
9) Diethyl ether	6.24	59	5429	0.8752 ug/L	85
10) Isoprene	6.27	67	2381737	202.2118 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.48	101	1940363	198.3281 ug/L	99
13) Acetone	6.58	43	350635	178.2295 ug/L	94
14) 1,1-Dichloroethene	6.80	61	2855515	199.3248 ug/L	99
15) Tert-Butyl Alcohol	6.92	59	15744	42.1140 ug/L	98
16) Dimethyl Sulfide	7.07	62	1565790	197.4957 ug/L	100
17) Iodomethane	7.33	142	2266834	204.1469 ug/L	100
18) Methyl acetate	7.33	43	827208	188.2355 ug/L	99
19) Methylene Chloride	7.59	84	1826300	185.3542 ug/L	97
20) Carbon Disulfide	7.64	76	5334573	189.4961 ug/L	98
21) Acrylonitrile	7.79	53	44091	21.0099 ug/L #	31
22) Methyl Tert Butyl Ether	7.80	73	4735754	198.3162 ug/L	100
23) trans-1,2-Dichloroethene	8.04	61	2657527	195.7090 ug/L	99
24) n-Hexane	8.12	57	2232138	200.0818 ug/L	99
26) Vinyl Acetate	8.62	43	2640309	196.9419 ug/L	99
27) 1,1-Dichloroethane	8.67	63	3303949	190.1836 ug/L	99
29) 2-Butanone	9.21	43	471552	199.3403 ug/L	99
30) Propionitrile	9.34	54	410	0.5940 ug/L #	54
31) 2,2-Dichloropropane	9.44	77	3297660	196.0768 ug/L	99
32) cis-1,2-Dichloroethene	9.50	96	2149992	198.7035 ug/L	100
33) Chloroform	9.72	83	3458815	190.2047 ug/L	100
34) 1-Bromopropane	9.85	122	474211	209.6308 ug/L	99
35) Bromochloromethane	9.95	130	1539265	195.8737 ug/L	99
36) Tetrahydrofuran	9.98	42	1206	0.7560 ug/L #	34
38) 1,1,1-Trichloroethane	10.25	97	3416981	193.4992 ug/L	99
39) Cyclohexane	10.29	56	2758539	197.4456 ug/L	100
40) 1,1-Dichloropropene	10.44	75	2737042	195.8339 ug/L	98
42) Carbon Tetrachloride	10.59	117	3348958	195.0458 ug/L	100
45) 1,2-Dichloroethane	10.76	62	2598826	192.0742 ug/L	99
46) Benzene	10.81	78	6947932	180.7991 ug/L	98
47) Trichloroethene	11.55	130	2445156	196.1527 ug/L	99
48) Methylcyclohexane	11.64	83	2961110	201.6170 ug/L	99
49) 1,2-Dichloropropane	11.77	63	1817977	197.1698 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391100.D Vial: 10
Acq On : 1 Oct 2013 18:54 Operator: TMB
Sample : WG446788-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:08:00 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
50)	Bromodichloromethane	12.07	83	2765847	196.4352 ug/L	100
51)	1,4-Dioxane	12.05	88	10659	245.3121 ug/L	82
52)	Dibromomethane	12.16	93	1129547	202.8439 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.36	63	951876	208.7336 ug/L	99
54)	4-Methyl-2-Pentanone	12.39	58	439796	208.4767 ug/L	99
55)	cis-1,3-Dichloropropene	12.70	75	3201835	204.4339 ug/L	99
56)	Dimethyl Disulfide	12.97	94	3590788	210.3978 ug/L	99
59)	Toluene	13.13	91	7772401	175.4939 ug/L	96
60)	Ethyl Methacrylate	13.20	69	1847226	209.7270 ug/L	99
62)	trans-1,3-Dichloropropene	13.30	75	2941531	192.2166 ug/L	99
63)	1,1,2-Trichloroethane	13.51	97	1535972	190.3930 ug/L	100
64)	2-Hexanone	13.44	58	403178	205.3359 ug/L	97
65)	1,3-Dichloropropane	13.82	76	2497914	190.4708 ug/L	100
66)	Tetrachloroethene	13.95	164	2215640	187.8032 ug/L	99
67)	Dibromochloromethane	14.22	129	2470661	199.1570 ug/L	100
68)	1,2-Dibromoethane	14.48	107	1647722	196.9693 ug/L	99
69)	1-Chlorohexane	14.55	91	2603985	199.9762 ug/L	99
70)	Chlorobenzene	14.97	112	5960956	172.7824 ug/L	96
71)	1,1,1,2-Tetrachloroethane	15.00	131	2442003	184.1483 ug/L	99
72)	Ethylbenzene	15.00	106	3344873	180.6916 ug/L	89
73)	m-,p-Xylene	15.09	106	7494925	340.6498 ug/L	86
74)	o-Xylene	15.65	106	4071645	189.6413 ug/L	95
75)	Styrene	15.69	104	6516776	193.2493 ug/L	95
76)	Bromoform	16.19	173	1674716	203.5966 ug/L	99
77)	Isopropylbenzene	16.08	105	9384878	181.3059 ug/L	95
79)	1,1,2,2-Tetrachloroethane	16.29	83	1663302	194.5079 ug/L	100
81)	1,2,3-Trichloropropane	16.48	110	595655	199.5334 ug/L	95
82)	trans-1,4-Dichloro-2-Buten	16.52	53	576136	209.5172 ug/L	90
83)	n-Propylbenzene	16.59	91	10042716	176.1157 ug/L	93
84)	Bromobenzene	16.72	156	3118657	190.5625 ug/L	99
85)	1,3,5-Trimethylbenzene	16.77	105	8446754	183.6856 ug/L	96
86)	2-Chlorotoluene	16.86	91	7044073	182.4316 ug/L	96
87)	4-Chlorotoluene	16.91	91	6323704	176.4762 ug/L	96
88)	a-Methylstyrene	17.17	118	5042971	200.1199 ug/L	96
89)	tert-Butylbenzene	17.24	134	2059406	190.4539 ug/L	95
90)	1,2,4-Trimethylbenzene	17.29	105	8450571	177.2981 ug/L	95
91)	sec-Butylbenzene	17.51	105	9644928	179.4129 ug/L	94
92)	p-Isopropyltoluene	17.66	119	8916452	180.7862 ug/L	95
93)	1,3-Dichlorobenzene	17.87	146	5789519	183.3156 ug/L	96
94)	1,4-Dichlorobenzene	17.99	146	5856864	177.8871 ug/L	96
95)	n-Butylbenzene	18.19	91	7063155	182.8334 ug/L	97
96)	1,2-Dichlorobenzene	18.50	146	5471418	184.5085 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	19.49	75	359299	210.5703 ug/L	95
98)	1,2,4-Trichlorobenzene	20.64	180	4224090	185.0988 ug/L	99
99)	Hexachlorobutadiene	20.78	225	1855400	192.6530 ug/L	100
100)	Naphthalene	21.01	128	7365029	185.3909 ug/L	97
101)	1,2,3-Trichlorobenzene	21.32	180	3812887	185.5398 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M391100.D 8260WT.M Fri Oct 04 14:08:01 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391100.D Vial: 10
Acq On : 1 Oct 2013 18:54 Operator: TMB
Sample : WG446788-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 4 14:08 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration

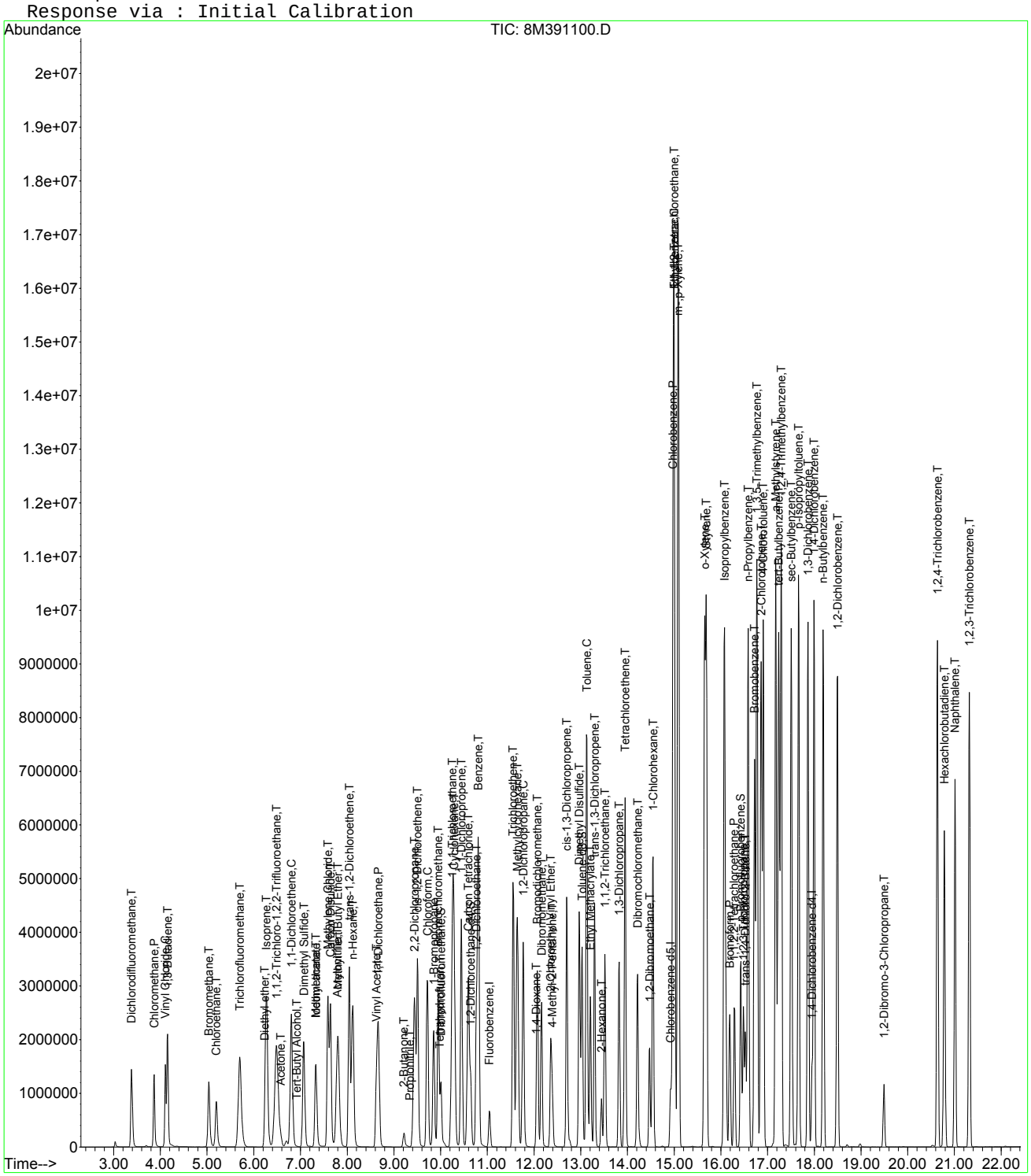

8M391100.D 8260WT.M Fri Oct 04 14:08:01 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391101.D Vial: 11
Acq On : 1 Oct 2013 19:25 Operator: TMB
Sample : WG446788-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:08:02 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	888355	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.93	117	880799	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.96	152	568516	25.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	1550541	138.9410 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 555.76%#		
43) 1,2-Dichloroethane-d4	10.65	65	1473168	136.4008 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 545.60%#		
58) Toluene-d8	13.03	98	5230590	130.1113 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 520.44%#		
80) p-Bromofluorobenzene	16.43	95	2246473	141.1132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 564.44%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	2990367	301.3959 ug/L	98
3) Chloromethane	3.87	50	2626346	273.6268 ug/L	99
4) Vinyl Chloride	4.10	62	2683871	286.0818 ug/L	99
5) 1,3-Butadiene	4.16	54	1690825	295.1628 ug/L	94
6) Bromomethane	5.03	94	2201952	318.9203 ug/L	100
7) Chloroethane	5.19	64	1914617	289.0359 ug/L	99
8) Trichlorofluoromethane	5.70	101	5156182	286.9842 ug/L	99
9) Diethyl ether	6.23	59	1778687	279.1639 ug/L	99
10) Isoprene	6.26	67	3683310	304.4415 ug/L	100
11) Acrolein	6.47	56	109503	155.0929 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.48	101	2979523	296.4837 ug/L	99
13) Acetone	6.57	43	580288	287.1579 ug/L	98
14) 1,1-Dichloroethene	6.80	61	4340419	294.9587 ug/L	98
15) Tert-Butyl Alcohol	6.92	59	222837	580.2983 ug/L	98
16) Dimethyl Sulfide	7.07	62	2417163	296.8129 ug/L	99
17) Iodomethane	7.33	142	3380358	295.9822 ug/L	100
18) Methyl acetate	7.33	43	1297664	287.4761 ug/L	99
19) Methylene Chloride	7.59	84	2776985	274.3826 ug/L	97
20) Carbon Disulfide	7.64	76	8050996	278.4216 ug/L	98
21) Acrylonitrile	7.76	53	357166	165.6905 ug/L	95
22) Methyl Tert Butyl Ether	7.79	73	7055954	287.6587 ug/L	99
23) trans-1,2-Dichloroethene	8.04	61	4050077	290.3682 ug/L	98
24) n-Hexane	8.12	57	3445808	300.6979 ug/L	100
25) Diisopropyl ether	8.46	45	8231756	274.5309 ug/L	98
26) Vinyl Acetate	8.62	43	3681928	267.3693 ug/L	98
27) 1,1-Dichloroethane	8.66	63	4986775	279.4553 ug/L	99
28) Ethyl-Tert-Butyl ether	9.04	59	7858985	280.2691 ug/L	98
29) 2-Butanone	9.21	43	717043	295.0961 ug/L	99
30) Propionitrile	9.32	54	218479	308.1536 ug/L	99
31) 2,2-Dichloropropane	9.44	77	4935512	285.6968 ug/L	99
32) cis-1,2-Dichloroethene	9.51	96	3264736	293.7443 ug/L	100
33) Chloroform	9.72	83	5235658	280.2967 ug/L	99
34) 1-Bromopropane	9.85	122	738029	317.6213 ug/L	99
35) Bromochloromethane	9.96	130	2313551	286.6121 ug/L	100
36) Tetrahydrofuran	9.98	42	477964	291.6883 ug/L	99
38) 1,1,1-Trichloroethane	10.25	97	5133550	283.0134 ug/L	99
39) Cyclohexane	10.29	56	4303142	299.8519 ug/L	99
40) 1,1-Dichloropropene	10.44	75	4193065	292.0726 ug/L	98
41) Tert-Amyl-Methyl ether	10.54	73	7121053	285.4041 ug/L	100
42) Carbon Tetrachloride	10.60	117	4996452	283.2966 ug/L	100
45) 1,2-Dichloroethane	10.76	62	3896365	280.3523 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391101.D Vial: 11
Acq On : 1 Oct 2013 19:25 Operator: TMB
Sample : WG446788-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:08:02 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.80	78	10125392	256.5106 ug/L		95
47)	Trichloroethene	11.56	130	3698818	288.8707 ug/L		99
48)	Methylcyclohexane	11.64	83	4606363	305.3399 ug/L		99
49)	1,2-Dichloropropane	11.77	63	2751695	290.5395 ug/L		99
50)	Bromodichloromethane	12.08	83	4176755	288.7905 ug/L		99
51)	1,4-Dioxane	12.05	88	24207	542.3707 ug/L		87
52)	Dibromomethane	12.16	93	1683061	294.2457 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.35	63	1413436	301.7456 ug/L		98
54)	4-Methyl-2-Pentanone	12.39	58	650926	300.3936 ug/L		99
55)	cis-1,3-Dichloropropene	12.71	75	4814007	299.2357 ug/L		99
56)	Dimethyl Disulfide	12.97	94	5448806	310.8176 ug/L		98
59)	Toluene	13.13	91	11024109	245.2866 ug/L		93
60)	Ethyl Methacrylate	13.21	69	2790566	312.2123 ug/L		99
62)	trans-1,3-Dichloropropene	13.30	75	4402163	283.4699 ug/L		97
63)	1,1,2-Trichloroethane	13.51	97	2327855	284.3460 ug/L		99
64)	2-Hexanone	13.44	58	594282	298.2525 ug/L		97
65)	1,3-Dichloropropane	13.82	76	3760741	282.5841 ug/L		100
66)	Tetrachloroethene	13.95	164	3382003	282.4887 ug/L		99
67)	Dibromochloromethane	14.22	129	3720168	295.5074 ug/L		99
68)	1,2-Dibromoethane	14.47	107	2512699	295.9910 ug/L		100
69)	1-Chlorohexane	14.55	91	4017925	304.0640 ug/L		99
70)	Chlorobenzene	14.97	112	8444890	241.2131 ug/L		90
71)	1,1,1,2-Tetrachloroethane	15.00	131	3595035	267.1455 ug/L		99
72)	Ethylbenzene	15.00	106	4899834	260.8333 ug/L		79
73)	m-,p-Xylene	15.08	106	10409010	466.2016 ug/L		78
74)	o-Xylene	15.65	106	5956382	273.3814 ug/L		89
75)	Styrene	15.69	104	9195887	268.7214 ug/L		90
76)	Bromoform	16.19	173	2499962	299.4926 ug/L		98
77)	Isopropylbenzene	16.08	105	12695775	241.6941 ug/L		89
79)	1,1,2,2-Tetrachloroethane	16.29	83	2464723	282.5653 ug/L		100
81)	1,2,3-Trichloropropane	16.49	110	895827	294.1911 ug/L	#	31
82)	trans-1,4-Dichloro-2-Buten	16.53	53	821028	292.5286 ug/L	#	24
83)	n-Propylbenzene	16.58	91	13345990	229.4469 ug/L		87
84)	Bromobenzene	16.73	156	4589497	274.9283 ug/L		83
85)	1,3,5-Trimethylbenzene	16.77	105	11509491	245.3725 ug/L		92
86)	2-Chlorotoluene	16.86	91	9403626	238.7570 ug/L		93
87)	4-Chlorotoluene	16.90	91	9298674	254.4018 ug/L		91
88)	a-Methylstyrene	17.17	118	7175509	279.1522 ug/L		93
89)	tert-Butylbenzene	17.24	134	3057881	277.2382 ug/L		90
90)	1,2,4-Trimethylbenzene	17.30	105	11499981	236.5373 ug/L		89
91)	sec-Butylbenzene	17.50	105	12961354	236.3685 ug/L		89
92)	p-Isopropyltoluene	17.67	119	11972591	237.9829 ug/L		89
93)	1,3-Dichlorobenzene	17.87	146	8198899	254.5054 ug/L		92
94)	1,4-Dichlorobenzene	18.00	146	8194196	243.9889 ug/L		92
95)	n-Butylbenzene	18.20	91	9766495	247.8449 ug/L		93
96)	1,2-Dichlorobenzene	18.50	146	7774026	257.0082 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.49	75	537121	308.6014 ug/L		95
98)	1,2,4-Trichlorobenzene	20.64	180	5995488	257.5607 ug/L		99
99)	Hexachlorobutadiene	20.78	225	2711117	275.9757 ug/L		99
100)	Naphthalene	21.01	128	9949471	245.5265 ug/L		94
101)	1,2,3-Trichlorobenzene	21.32	180	5414586	258.3050 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M391101.D 8260WT.M Fri Oct 04 14:08:02 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391101.D Vial: 11
Acq On : 1 Oct 2013 19:25 Operator: TMB
Sample : WG446788-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 4 14:08 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration

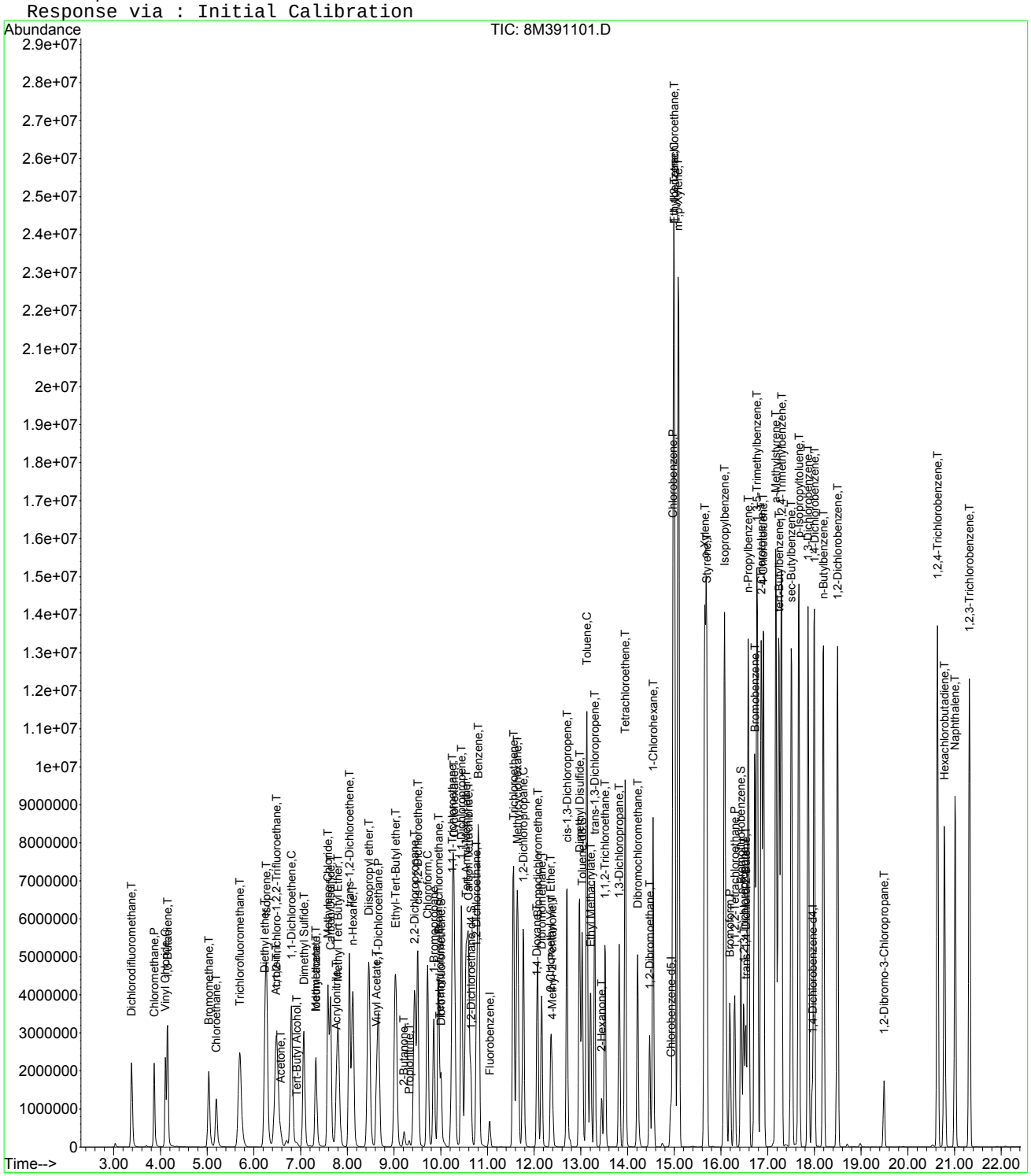

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391104.D Vial: 14
Acq On : 1 Oct 2013 20:58 Operator: TMB
Sample : WG446788-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD60459 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:08:03 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	831434	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.92	117	800741	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.95	152	533928	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.00	111	228296	21.8577 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 87.44%		
43) 1,2-Dichloroethane-d4	10.64	65	218935	21.6590 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.64%		
58) Toluene-d8	13.03	98	828014	22.6562 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 90.64%		
80) p-Bromofluorobenzene	16.42	95	338387	22.6329 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.52%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	638324	68.7405 ug/L	98
3) Chloromethane	3.87	50	422574	47.0401 ug/L	99
4) Vinyl Chloride	4.11	62	438759	49.9705 ug/L	100
5) 1,3-Butadiene	4.15	54	279260	52.0871 ug/L	95
6) Bromomethane	5.04	94	276163	43.5392 ug/L	100
7) Chloroethane	5.19	64	304486	49.1129 ug/L	99
8) Trichlorofluoromethane	5.70	101	867105	51.5656 ug/L	100
9) Diethyl ether	6.23	59	593072	99.4548 ug/L	99
10) Isoprene	6.27	67	594213	52.4767 ug/L	100
11) Acrolein	6.47	56	76289	115.4480 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.48	101	510340	54.2591 ug/L	94
13) Acetone	6.58	43	78879	41.7059 ug/L	95
14) 1,1-Dichloroethene	6.81	61	647710	47.0293 ug/L	100
15) Tert-Butyl Alcohol	6.92	59	64786	180.2619 ug/L	99
16) Dimethyl Sulfide	7.06	62	456116	59.8427 ug/L	100
17) Iodomethane	7.32	142	538243	51.0723 ug/L	100
18) Methyl acetate	7.33	43	211478	50.0568 ug/L	100
19) Methylene Chloride	7.59	84	439422	46.3899 ug/L	98
20) Carbon Disulfide	7.64	76	1303691	48.1711 ug/L	100
21) Acrylonitrile	7.77	53	102116	50.6151 ug/L	98
22) Methyl Tert Butyl Ether	7.80	73	1157524	50.4209 ug/L	99
23) trans-1,2-Dichloroethene	8.04	61	634520	48.6060 ug/L	99
24) n-Hexane	8.12	57	534861	49.8700 ug/L	100
25) Diisopropyl ether	8.46	45	2720605	96.9445 ug/L	100
26) Vinyl Acetate	8.63	43	673233	52.2349 ug/L	100
27) 1,1-Dichloroethane	8.67	63	765006	45.8053 ug/L	99
28) Ethyl-Tert-Butyl ether	9.03	59	2542293	96.8708 ug/L	100
29) 2-Butanone	9.21	43	116476	51.2169 ug/L	99
30) Propionitrile	9.33	54	65353	98.4877 ug/L	99
31) 2,2-Dichloropropane	9.44	77	755212	46.7090 ug/L	100
32) cis-1,2-Dichloroethene	9.50	96	512973	49.3145 ug/L	100
33) Chloroform	9.71	83	821797	47.0078 ug/L	99
34) 1-Bromopropane	9.86	122	120481	55.4005 ug/L	99
35) Bromochloromethane	9.95	130	356115	47.1373 ug/L	99
36) Tetrahydrofuran	9.97	42	152308	99.3128 ug/L	97
38) 1,1,1-Trichloroethane	10.25	97	807442	47.5619 ug/L	99
39) Cyclohexane	10.28	56	666901	49.6525 ug/L	100
40) 1,1-Dichloropropene	10.44	75	629864	46.8775 ug/L	100
41) Tert-Amyl-Methyl ether	10.55	73	2273438	97.3549 ug/L	100
42) Carbon Tetrachloride	10.59	117	773691	46.8712 ug/L	98
45) 1,2-Dichloroethane	10.77	62	612466	47.0853 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391104.D Vial: 14
Acq On : 1 Oct 2013 20:58 Operator: TMB
Sample : WG446788-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD60459 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 04 14:08:03 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.81	78	1733775	46.9294	ug/L	99
47)	Trichloroethene	11.55	130	601323	50.1773	ug/L	98
48)	Methylcyclohexane	11.64	83	739470	52.3727	ug/L	100
49)	1,2-Dichloropropane	11.77	63	424867	47.9310	ug/L	100
50)	Bromodichloromethane	12.07	83	632570	46.7317	ug/L	99
51)	1,4-Dioxane	12.06	88	6985	167.2170	ug/L	88
52)	Dibromomethane	12.16	93	260175	48.5998	ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.36	63	225883	51.5237	ug/L	100
54)	4-Methyl-2-Pentanone	12.39	58	102671	50.6251	ug/L	98
55)	cis-1,3-Dichloropropene	12.70	75	776985	51.6034	ug/L	99
56)	Dimethyl Disulfide	12.97	94	869460	52.9923	ug/L	98
59)	Toluene	13.12	91	1967052	48.1428	ug/L	100
60)	Ethyl Methacrylate	13.21	69	459001	56.4880	ug/L	97
62)	trans-1,3-Dichloropropene	13.30	75	649494	46.0045	ug/L	100
63)	1,1,2-Trichloroethane	13.52	97	362531	48.7103	ug/L	99
64)	2-Hexanone	13.44	58	91369	50.4400	ug/L	98
65)	1,3-Dichloropropane	13.83	76	585758	48.4147	ug/L	99
66)	Tetrachloroethene	13.95	164	508919	46.7585	ug/L	99
67)	Dibromochloromethane	14.22	129	560281	48.9549	ug/L	100
68)	1,2-Dibromoethane	14.48	107	375272	48.6260	ug/L	99
69)	1-Chlorohexane	14.55	91	657296	54.7153	ug/L	100
70)	Chlorobenzene	14.97	112	1424969	44.7710	ug/L	100
71)	1,1,1,2-Tetrachloroethane	15.00	131	588898	48.1360	ug/L	98
72)	Ethylbenzene	14.99	106	796838	46.6591	ug/L	99
73)	m-,p-Xylene	15.09	106	1904144	93.8099	ug/L	100
74)	o-Xylene	15.66	106	916698	46.2804	ug/L	98
75)	Styrene	15.69	104	1625129	52.2374	ug/L	99
76)	Bromoform	16.19	173	367585	48.4390	ug/L	99
77)	Isopropylbenzene	16.07	105	2303759	48.2424	ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.29	83	389765	47.5788	ug/L	99
81)	1,2,3-Trichloropropane	16.48	110	135276	47.3027	ug/L	79
82)	trans-1,4-Dichloro-2-Buten	16.52	53	87799	33.7131	ug/L	77
83)	n-Propylbenzene	16.59	91	2517444	46.0841	ug/L	100
84)	Bromobenzene	16.72	156	727670	46.4140	ug/L	97
85)	1,3,5-Trimethylbenzene	16.77	105	2236775	50.7753	ug/L	100
86)	2-Chlorotoluene	16.86	91	1782635	48.1929	ug/L	99
87)	4-Chlorotoluene	16.91	91	1434166	41.7791	ug/L	99
88)	a-Methylstyrene	17.18	118	1287554	53.3352	ug/L	97
89)	tert-Butylbenzene	17.24	134	466442	45.0288	ug/L	98
90)	1,2,4-Trimethylbenzene	17.29	105	2265905	49.6254	ug/L	99
91)	sec-Butylbenzene	17.51	105	2422850	47.0463	ug/L	100
92)	p-Isopropyltoluene	17.66	119	2247592	47.5702	ug/L	100
93)	1,3-Dichlorobenzene	17.87	146	1360286	44.9606	ug/L	100
94)	1,4-Dichlorobenzene	17.99	146	1496553	47.4478	ug/L	100
95)	n-Butylbenzene	18.19	91	1886934	50.9868	ug/L	100
96)	1,2-Dichlorobenzene	18.49	146	1288003	45.3396	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	19.49	75	80214	49.0722	ug/L	99
98)	1,2,4-Trichlorobenzene	20.64	180	1067100	48.8113	ug/L	99
99)	Hexachlorobutadiene	20.78	225	448380	48.5992	ug/L	100
100)	Naphthalene	21.01	128	1920912	50.4738	ug/L	99
101)	1,2,3-Trichlorobenzene	21.32	180	950352	48.2739	ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100113\8M391104.D Vial: 14
Acq On : 1 Oct 2013 20:58 Operator: TMB
Sample : WG446788-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD60459 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 4 14:08 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Initial Calibration

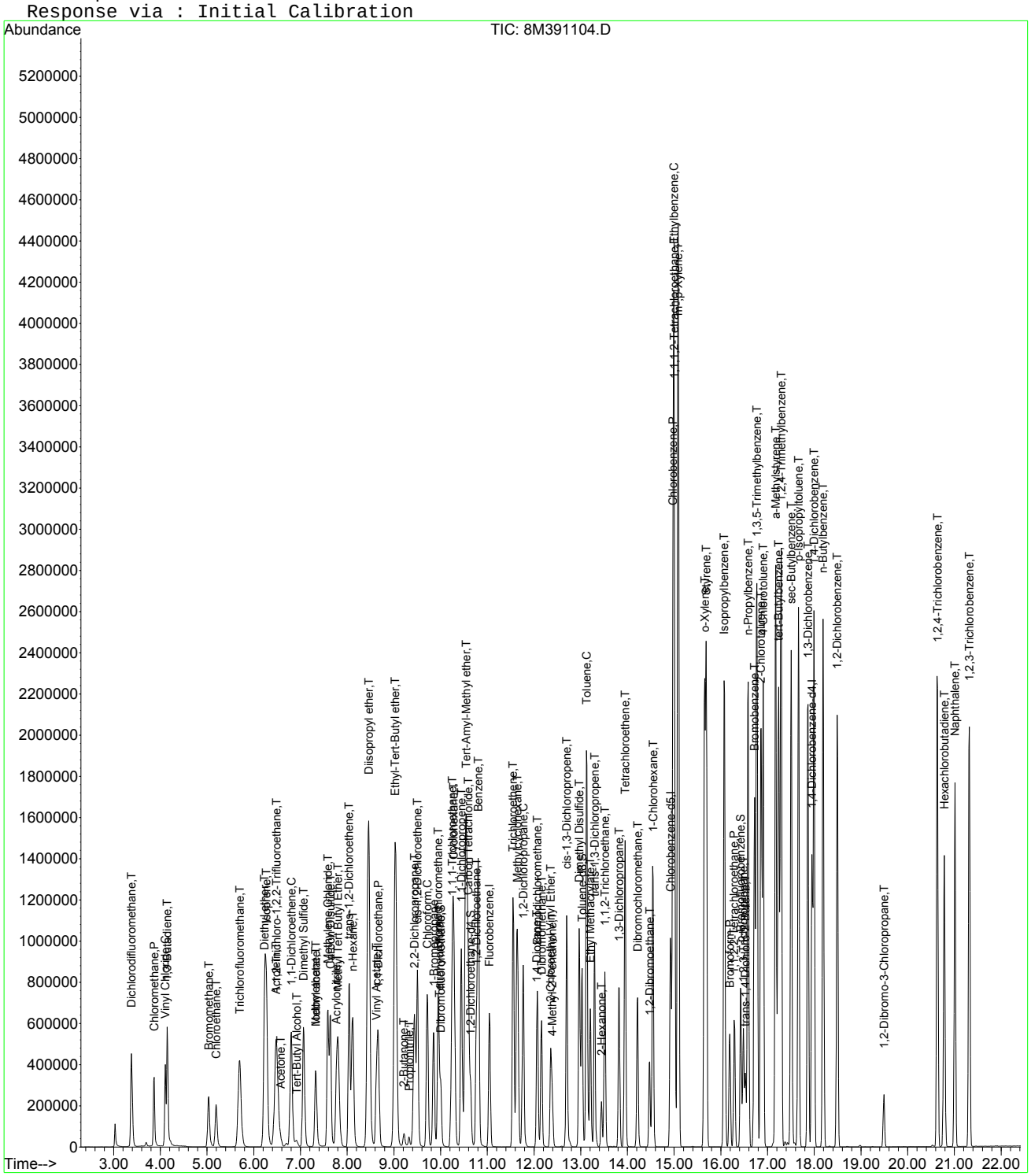

8M391104.D 8260WT.M Fri Oct 04 14:08:05 2013 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100113\8M391104.D Vial: 14
Acq On : 1 Oct 2013 20:58 Operator: TMB
Sample : WG446788-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD60459 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	50.0000	68.7405	-37.5#	130	0.00
3	P	Chloromethane	50.0000	47.0401	5.9	99	0.00
4	C	Vinyl Chloride	50.0000	49.9705	0.1	98	0.00
5	T	1,3-Butadiene	50.0000	52.0871	-4.2	97	0.00
6	T	Bromomethane	50.0000	43.5392	12.9	98	0.00
7	T	Chloroethane	50.0000	49.1129	1.8	94	0.00
8	T	Trichlorofluoromethane	50.0000	51.5656	-3.1	101	0.00
9	T	Diethyl ether	100.0000	99.4548	0.5	101	0.00
10	T	Isoprene	50.0000	52.4767	-5.0	99	0.00
11	T	Acrolein	50.0000	115.4480	-130.9#	229	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.2591	-8.5	107	0.00
13	T	Acetone	50.0000	41.7059	16.6	82	0.00
14	C	1,1-Dichloroethene	50.0000	47.0293	5.9	90	0.00
15	T	Tert-Butyl Alcohol	200.0000	180.2619	9.9	92	0.00
16	T	Dimethyl Sulfide	50.0000	59.8427	-19.7	116	0.00
17	T	Iodomethane	50.0000	51.0723	-2.1	101	0.00
18	T	Methyl acetate	50.0000	50.0568	-0.1	102	0.00
19	T	Methylene Chloride	50.0000	46.3899	7.2	95	0.00
20	T	Carbon Disulfide	50.0000	48.1711	3.7	95	0.00
21	T	Acrylonitrile	50.0000	50.6151	-1.2	99	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.4209	-0.8	98	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.6060	2.8	94	0.00
24	T	n-Hexane	50.0000	49.8700	0.3	101	0.00
25	T	Diisopropyl ether	100.0000	96.9445	3.1	99	0.00
26	T	Vinyl Acetate	50.0000	52.2349	-4.5	102	0.00
27	P	1,1-Dichloroethane	50.0000	45.8053	8.4	92	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	96.8709	3.1	99	0.00
29	T	2-Butanone	50.0000	51.2169	-2.4	99	0.00
30	T	Propionitrile	100.0000	98.4877	1.5	99	0.00
31	T	2,2-Dichloropropane	50.0000	46.7090	6.6	94	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.3145	1.4	95	0.00
33	C	Chloroform	50.0000	47.0078	6.0	93	0.00
34		1-Bromopropane	50.0000	55.4005	-10.8	106	0.00
35	T	Bromochloromethane	50.0000	47.1373	5.7	93	0.00
36	T	Tetrahydrofuran	100.0000	99.3128	0.7	102	0.00
37	S	Dibromofluoromethane	25.0000	21.8577	12.6	89	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5619	4.9	92	0.00
39	T	Cyclohexane	50.0000	49.6525	0.7	98	0.00
40	T	1,1-Dichloropropene	50.0000	46.8775	6.2	90	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	97.3549	2.6	98	0.00
42	T	Carbon Tetrachloride	50.0000	46.8712	6.3	92	0.00
43	S	1,2-Dichloroethane-d4	25.0000	21.6590	13.4	88	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.74#
45	T	1,2-Dichloroethane	50.0000	47.0853	5.8	93	0.00
46	T	Benzene	50.0000	46.9294	6.1	94	0.00
47	T	Trichloroethene	50.0000	50.1773	-0.4	98	0.00
48	T	Methylcyclohexane	50.0000	52.3727	-4.7	103	0.00
49	C	1,2-Dichloropropane	50.0000	47.9310	4.1	93	0.00
50	T	Bromodichloromethane	50.0000	46.7317	6.5	91	0.00
51	T	1,4-Dioxane	200.0000	167.2170	16.4	75	0.00
52	T	Dibromomethane	50.0000	48.5998	2.8	92	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.5237	-3.0	100	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.6251	-1.3	99	0.00
55	T	cis-1,3-Dichloropropene	50.0000	51.6034	-3.2	97	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100113\8M391104.D Vial: 14
Acq On : 1 Oct 2013 20:58 Operator: TMB
Sample : WG446788-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD60459 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Tue Oct 01 19:55:07 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	50.0000	52.9923	-6.0	101	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
58	S	Toluene-d8	25.0000	22.6562	9.4	91	0.00
59	C	Toluene	50.0000	48.1427	3.7	94	0.00
60	T	Ethyl Methacrylate	50.0000	56.4880	-13.0	103	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.34#
62	T	trans-1,3-Dichloropropene	50.0000	46.0045	8.0	88	0.00
63	T	1,1,2-Trichloroethane	50.0000	48.7103	2.6	93	0.00
64	T	2-Hexanone	50.0000	50.4400	-0.9	96	0.00
65	T	1,3-Dichloropropane	50.0000	48.4147	3.2	93	0.00
66	T	Tetrachloroethene	50.0000	46.7585	6.5	92	0.00
67	T	Dibromochloromethane	50.0000	48.9549	2.1	91	0.00
68	T	1,2-Dibromoethane	50.0000	48.6260	2.7	92	0.00
69	T	1-Chlorohexane	50.0000	54.7153	-9.4	101	0.00
70	P	Chlorobenzene	50.0000	44.7710	10.5	89	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	48.1360	3.7	93	0.00
72	C	Ethylbenzene	50.0000	46.6591	6.7	93	0.00
73	T	m-,p-Xylene	100.0000	93.8099	6.2	92	0.00
74	T	o-Xylene	50.0000	46.2804	7.4	87	0.00
75	T	Styrene	50.0000	52.2374	-4.5	94	0.00
76	P	Bromoform	50.0000	48.4390	3.1	89	0.00
77	T	Isopropylbenzene	50.0000	48.2424	3.5	88	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	102	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.5788	4.8	91	0.00
80	S	p-Bromofluorobenzene	25.0000	22.6329	9.5	93	0.00
81	T	1,2,3-Trichloropropane	50.0000	47.3027	5.4	89	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	33.7131	32.6#	67	0.00
83	T	n-Propylbenzene	50.0000	46.0841	7.8	87	0.00
84	T	Bromobenzene	50.0000	46.4140	7.2	91	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.7753	-1.6	96	0.00
86	T	2-Chlorotoluene	50.0000	48.1929	3.6	93	0.00
87	T	4-Chlorotoluene	50.0000	41.7791	16.4	82	0.00
88	T	a-Methylstyrene	50.0000	53.3352	-6.7	100	0.00
89	T	tert-Butylbenzene	50.0000	45.0288	9.9	88	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6254	0.7	95	0.00
91	T	sec-Butylbenzene	50.0000	47.0463	5.9	88	0.00
92	T	p-Isopropyltoluene	50.0000	47.5702	4.9	88	0.00
93	T	1,3-Dichlorobenzene	50.0000	44.9606	10.1	87	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.4478	5.1	93	0.00
95	T	n-Butylbenzene	50.0000	50.9868	-2.0	97	0.00
96	T	1,2-Dichlorobenzene	50.0000	45.3396	9.3	87	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	49.0722	1.9	89	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.8113	2.4	93	0.00
99	T	Hexachlorobutadiene	50.0000	48.5992	2.8	93	0.00
100	T	Naphthalene	50.0000	50.4738	-0.9	91	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	48.2739	3.5	91	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101013\11M95883.D Vial: 2
Acq On : 10 Oct 2013 10:58 Operator: FJB
Sample : WG448050-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 11:20:10 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.66	96	964357	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.29	117	744640	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.10	152	409631	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	263692	26.2701 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.08%		
43) 1,2-Dichloroethane-d4	10.28	65	253742	23.1616 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.64%		
58) Toluene-d8	12.51	98	868306	25.7245 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.88%		
80) p-Bromofluorobenzene	15.69	95	367056	23.5528 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	459827	49.5833 ug/L	98
3) Chloromethane	3.73	50	531237	47.6223 ug/L	99
4) Vinyl Chloride	3.96	62	626189	51.7173 ug/L	99
5) 1,3-Butadiene	4.01	54	298485	42.7049 ug/L	98
6) Bromomethane	4.88	94	271194	34.8801 ug/L	99
7) Chloroethane	5.04	64	345818	52.7010 ug/L	98
8) Trichlorofluoromethane	5.52	101	863473	50.9308 ug/L	100
9) Diethyl ether	6.04	59	653677	97.5152 ug/L	89
10) Isoprene	6.08	67	639884	45.8647 ug/L	75
11) Acrolein	6.28	56	41909	48.8716 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	498283	52.5126 ug/L	100
13) Acetone	6.37	43	173019	59.5995 ug/L #	51
14) 1,1-Dichloroethene	6.60	61	769498	51.6085 ug/L	85
15) Tert-Butyl Alcohol	6.69	59	107670	172.1302 ug/L	98
16) Dimethyl Sulfide	6.86	62	432938	43.5445 ug/L	78
17) Iodomethane	7.10	142	420039	38.0230 ug/L	87
18) Methyl acetate	7.10	43	242918	48.6625 ug/L	91
19) Methylene Chloride	7.36	84	512438	51.1421 ug/L	74
20) Carbon Disulfide	7.41	76	1506126	49.5291 ug/L	99
21) Acrylonitrile	7.53	53	122158	46.8986 ug/L	95
22) Methyl Tert Butyl Ether	7.56	73	1268051	51.1721 ug/L	95
23) trans-1,2-Dichloroethene	7.80	96	540274	54.4655 ug/L	78
24) n-Hexane	7.87	57	528005	41.6451 ug/L	93
25) Diisopropyl ether	8.19	45	3112013	100.4225 ug/L	96
26) Vinyl Acetate	8.35	43	622453	50.1486 ug/L	97
27) 1,1-Dichloroethane	8.40	63	913395	53.7443 ug/L	97
28) Ethyl-Tert-Butyl ether	8.74	59	2833105	98.9912 ug/L	94
29) 2-Butanone	8.91	43	131641	43.6143 ug/L	85
30) Propionitrile	9.02	54	85802	98.4115 ug/L	97
31) 2,2-Dichloropropane	9.13	77	842652	55.1807 ug/L	100
32) cis-1,2-Dichloroethene	9.19	96	587842	53.4414 ug/L	82
33) Chloroform	9.40	83	940815	52.3481 ug/L	100
34) 1-Bromopropane	9.52	122	98165	42.9859 ug/L	99
35) Bromochloromethane	9.62	130	351050	56.3536 ug/L	85
36) Tetrahydrofuran	9.64	42	176143	90.9694 ug/L	85
38) 1,1,1-Trichloroethane	9.91	97	898819	53.0633 ug/L	99
39) Cyclohexane	9.94	56	723909	44.9208 ug/L	85
40) 1,1-Dichloropropene	10.08	75	749622	53.2248 ug/L	97
41) Carbon Tetrachloride	10.23	117	844413	55.6998 ug/L	98
42) Tert-Amyl-Methyl ether	10.17	73	2564751	98.7641 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M95883.D 8260WTR.M Thu Oct 10 11:20:11 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101013\11M95883.D Vial: 2
Acq On : 10 Oct 2013 10:58 Operator: FJB
Sample : WG448050-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 11:20:10 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.39	62	658946	47.8080	ug/L		97
46)	Benzene	10.43	78	2014948	53.7843	ug/L		100
47)	Trichloroethene	11.14	130	553660	53.2341	ug/L		96
48)	Methylcyclohexane	11.22	83	685551	44.6186	ug/L		85
49)	1,2-Dichloropropane	11.33	63	495727	51.0115	ug/L		88
50)	1,4-Dioxane	11.60	88	28525	445.3009	ug/L		99
51)	Bromodichloromethane	11.62	83	725152	52.9699	ug/L		99
52)	Dibromomethane	11.70	93	301113	50.5578	ug/L		97
53)	2-Chloroethyl Vinyl Ether	11.88	63	199773	43.1932	ug/L		98
54)	4-Methyl-2-Pentanone	11.91	58	109873	45.4155	ug/L		93
55)	cis-1,3-Dichloropropene	12.21	75	837871	54.3228	ug/L		99
56)	Dimethyl Disulfide	12.46	79	413955	46.2966	ug/L		88
59)	Toluene	12.61	91	2165084	54.4533	ug/L		99
60)	Ethyl Methacrylate	12.68	69	488802	48.5470	ug/L		78
62)	trans-1,3-Dichloropropene	12.77	75	753179	53.2388	ug/L		93
63)	1,1,2-Trichloroethane	12.98	97	396952	51.8103	ug/L		99
64)	2-Hexanone	12.90	43	205479	42.1702	ug/L		82
65)	1,3-Dichloropropane	13.26	76	689333	49.5992	ug/L		83
66)	Tetrachloroethene	13.38	164	498456	53.5222	ug/L		89
67)	Dibromochloromethane	13.63	129	528144	54.1104	ug/L		100
68)	1,2-Dibromoethane	13.87	107	372011	46.0382	ug/L		99
69)	1-Chlorohexane	13.93	91	660645	46.7017	ug/L		73
70)	Chlorobenzene	14.33	112	1527644	53.8943	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.36	131	600482	53.9793	ug/L		100
72)	Ethylbenzene	14.35	106	805277	52.8272	ug/L		96
73)	m-,p-Xylene	14.43	106	1875690	109.2006	ug/L		91
74)	o-Xylene	14.96	106	938675	53.5332	ug/L		92
75)	Styrene	14.99	104	1602418	56.6011	ug/L		89
76)	Bromoform	15.47	173	376116	49.5916	ug/L		97
77)	Isopropylbenzene	15.35	105	2286660	55.4433	ug/L		93
79)	1,1,2,2-Tetrachloroethane	15.56	83	439176	50.7718	ug/L		96
81)	1,2,3-Trichloropropane	15.74	110	133113	47.5856	ug/L	#	42
82)	trans-1,4-Dichloro-2-Buten	15.77	53	122706	36.8909	ug/L	#	1
83)	n-Propylbenzene	15.83	91	2778433	49.8732	ug/L		97
84)	Bromobenzene	15.96	156	675793	49.6331	ug/L		75
85)	1,3,5-Trimethylbenzene	16.00	105	1975305	52.4336	ug/L		91
86)	2-Chlorotoluene	16.09	91	1902105	55.5230	ug/L		93
87)	4-Chlorotoluene	16.13	91	1664180	49.8677	ug/L		84
88)	a-Methylstyrene	16.38	118	1007490	47.0664	ug/L		88
89)	tert-Butylbenzene	16.43	134	449132	50.1996	ug/L		75
90)	1,2,4-Trimethylbenzene	16.48	105	2031026	53.0129	ug/L		91
91)	sec-Butylbenzene	16.69	105	2325410	50.9508	ug/L		95
92)	p-Isopropyltoluene	16.82	119	2063284	52.5908	ug/L		93
93)	1,3-Dichlorobenzene	17.02	146	1251455	52.4751	ug/L		97
94)	1,4-Dichlorobenzene	17.14	146	1264365	50.0363	ug/L		98
95)	n-Butylbenzene	17.32	91	1817247	49.5253	ug/L		96
96)	1,2-Dichlorobenzene	17.61	146	1166937	50.6163	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	18.53	75	76861	44.4673	ug/L		82
98)	1,2,4-Trichlorobenzene	19.59	180	794092	47.8987	ug/L		96
99)	Hexachlorobutadiene	19.73	225	331185	43.4780	ug/L		95
100)	Naphthalene	19.95	128	1372912	47.0083	ug/L		99
101)	1,2,3-Trichlorobenzene	20.23	180	678917	45.0436	ug/L		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101013\11M95883.D Vial: 2
Acq On : 10 Oct 2013 10:58 Operator: FJB
Sample : WG448050-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 11:20 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Initial Calibration

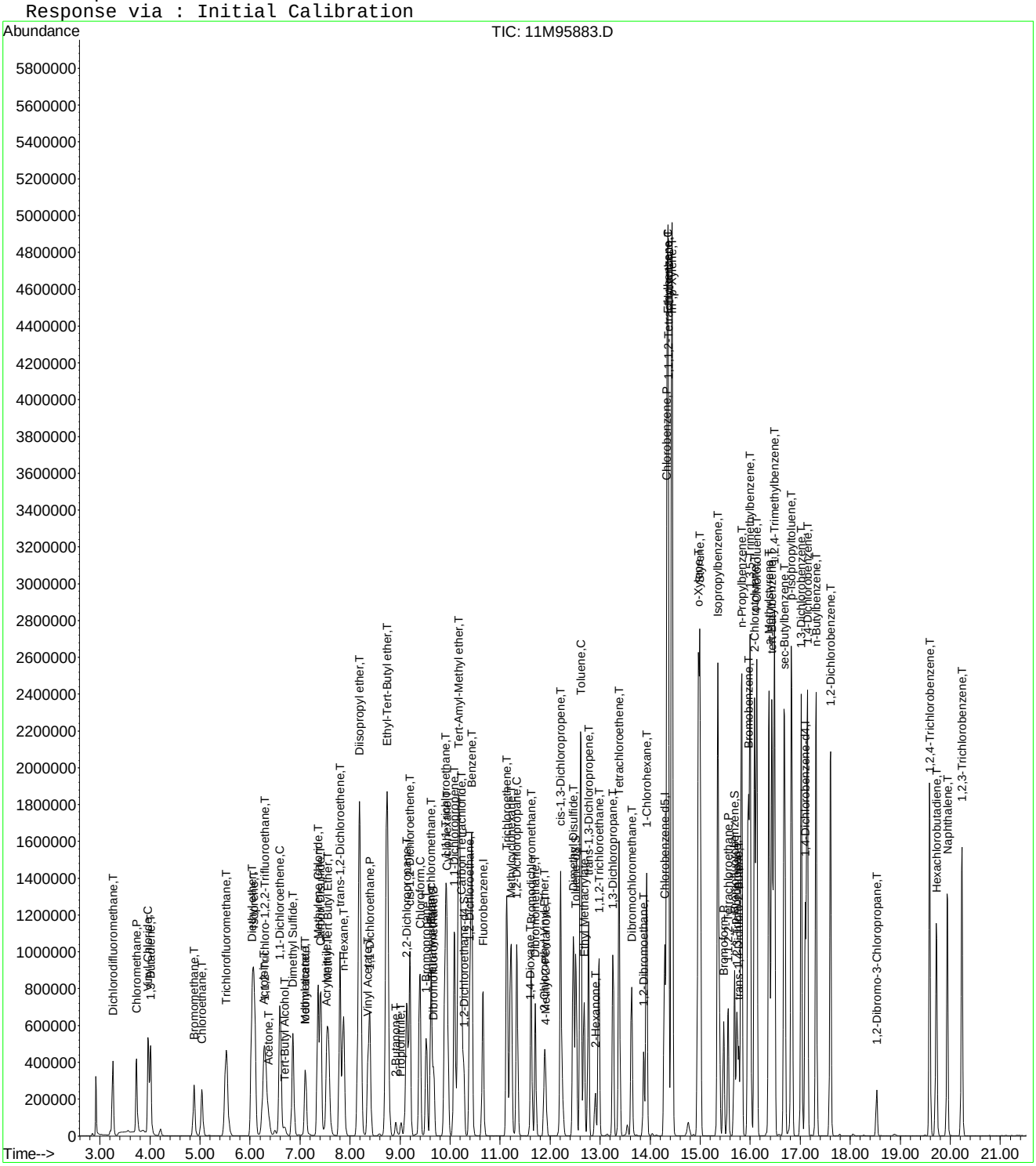

Continuing Calibration Area and RT check

Instrument: hpms11
Initial cal date: 17 Sep 2013 18:03
CCV date: 10 Oct 2013 10:58
CCV Filename: 11M95883.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	897116	10.68	670579	14.31	357123	17.12
CCV	964357	10.66	744640	14.29	409631	17.10

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101013\11M95883.D Vial: 2
Acq On : 10 Oct 2013 10:58 Operator: FJB
Sample : WG448050-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	0.2404	0.2384	0.8	99	0.01
3	P	Chloromethane	0.2892	0.2754	4.8	107	0.00
4	C	Vinyl Chloride	0.3139	0.3247	-3.4	108	0.00
5	T	1,3-Butadiene	0.1854	0.1548	16.5	98	0.01
6	T	Bromomethane	0.2016	0.1406	30.2#	83	0.00
7	T	Chloroethane	0.1701	0.1793	-5.4	110	0.00
8	T	Trichlorofluoromethane	0.4395	0.4477	-1.9	108	-0.01
9	T	Diethyl ether	0.1738	0.1695	2.5	108	0.00
10	T	Isoprene	0.3617	0.3318	8.3	91	0.00
11	T	Acrolein	0.0222	0.0217	2.2	106	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2460	0.2584	-5.0	108	0.00
13	T	Acetone	0.0753	0.0897	-19.2	133	0.00
14	C	1,1-Dichloroethene	0.3865	0.3990	-3.2	108	0.00
15	T	Tert-Butyl Alcohol	0.0162	0.0140	13.9	104	-0.01
16	T	Dimethyl Sulfide	0.2577	0.2245	12.9	90	0.00
17	T	Iodomethane	0.2360	0.2178	7.7	81	-0.01
18	T	Methyl acetate	0.1294	0.1260	2.7	108	-0.01
19	T	Methylene Chloride	0.2598	0.2657	-2.3	111	0.00
20	T	Carbon Disulfide	0.7883	0.7809	0.9	96	0.00
21	T	Acrylonitrile	0.0675	0.0633	6.2	102	-0.01
22	T	Methyl Tert Butyl Ether	0.6424	0.6575	-2.3	108	0.00
23	T	trans-1,2-Dichloroethene	0.2572	0.2801	-8.9	114	0.00
24	T	n-Hexane	0.3287	0.2738	16.7	84	0.00
25	T	Diisopropyl ether	0.8034	0.8068	-0.4	110	0.00
26	T	Vinyl Acetate	0.2830	0.3227	-14.0	105	0.00
27	P	1,1-Dichloroethane	0.4406	0.4736	-7.5	110	0.00
28	T	Ethyl-Tert-Butyl ether	0.7419	0.7345	1.0	109	0.00
29	T	2-Butanone	0.0783	0.0683	12.8	95	0.00
30	T	Propionitrile	0.0226	0.0222	1.6	106	-0.01
31	T	2,2-Dichloropropane	0.3959	0.4369	-10.4	109	-0.01
32	T	cis-1,2-Dichloroethene	0.2852	0.3048	-6.9	113	-0.01
33	C	Chloroform	0.4659	0.4878	-4.7	111	0.00
34	T	1-Bromopropane	0.0530	0.0509	3.9	95	0.00
35	T	Bromochloromethane	0.1615	0.1820	-12.7	116	-0.01
36	T	Tetrahydrofuran	0.0502	0.0457	9.0	101	0.00
37	S	Dibromofluoromethane	0.2602	0.2734	-5.1	110	0.00
38	T	1,1,1-Trichloroethane	0.4391	0.4660	-6.1	111	0.00
39	T	Cyclohexane	0.4178	0.3753	10.2	91	0.00
40	T	1,1-Dichloropropene	0.3651	0.3887	-6.4	112	-0.01
41	T	Carbon Tetrachloride	0.3930	0.4378	-11.4	112	0.00
42	T	Tert-Amyl-Methyl ether	0.6732	0.6649	1.2	109	0.00
43	S	1,2-Dichloroethane-d4	0.2840	0.2631	7.4	98	0.00
44	T	Heptane	0.0000	0.0000	0.0	0#	-0.01
45	T	1,2-Dichloroethane	0.3573	0.3417	4.4	100	0.00
46	T	Benzene	0.9712	1.0447	-7.6	113	0.00
47	T	Trichloroethene	0.2696	0.2871	-6.5	116	0.00
48	T	Methylcyclohexane	0.3983	0.3554	10.8	89	0.00
49	C	1,2-Dichloropropane	0.2519	0.2570	-2.0	109	-0.01
50	T	1,4-Dioxane	0.0017	0.0037	-122.9#	245#	0.00
51	T	Bromodichloromethane	0.3549	0.3760	-5.9	109	0.00
52	T	Dibromomethane	0.1544	0.1561	-1.1	105	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1199	0.1036	13.6	88	-0.01
54	T	4-Methyl-2-Pentanone	0.0627	0.0570	9.2	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101013\11M95883.D Vial: 2
Acq On : 10 Oct 2013 10:58 Operator: FJB
Sample : WG448050-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3998	0.4344	-8.6	110	0.00
56	T	Dimethyl Disulfide	0.2318	0.2146	7.4	92	-0.01
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	111	0.00
58	S	Toluene-d8	1.1332	1.1661	-2.9	111	-0.01
59	C	Toluene	1.3349	1.4538	-8.9	114	0.00
60	T	Ethyl Methacrylate	0.3380	0.3282	2.9	96	0.00
61	T	Paraldehyde	0.0000	0.0000	0.0	0#	-12.85#
62	T	trans-1,3-Dichloropropene	0.4750	0.5057	-6.5	109	0.00
63	T	1,1,2-Trichloroethane	0.2572	0.2665	-3.6	110	0.00
64	T	2-Hexanone	0.1636	0.1380	15.7	85	0.00
65	T	1,3-Dichloropropane	0.4666	0.4629	0.8	108	-0.01
66	T	Tetrachloroethene	0.3127	0.3347	-7.0	117	0.00
67	T	Dibromochloromethane	0.3277	0.3546	-8.2	113	0.00
68	T	1,2-Dibromoethane	0.2713	0.2498	7.9	100	-0.01
69	T	1-Chlorohexane	0.4749	0.4436	6.6	95	0.00
70	P	Chlorobenzene	0.9516	1.0258	-7.8	114	-0.01
71	T	1,1,1,2-Tetrachloroethane	0.3735	0.4032	-8.0	115	0.00
72	C	Ethylbenzene	0.5118	0.5407	-5.7	112	-0.01
73	T	m-,p-Xylene	0.5767	0.6297	-9.2	111	-0.01
74	T	o-Xylene	0.5887	0.6303	-7.1	113	-0.01
75	T	Styrene	0.9505	1.0760	-13.2	113	-0.01
76	P	Bromoform	0.2241	0.2526	-12.7	116	-0.01
77	T	Isopropylbenzene	1.3847	1.5354	-10.9	111	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	115	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5279	0.5361	-1.5	109	0.00
80	S	p-Bromofluorobenzene	0.9511	0.8961	5.8	107	0.00
81	T	1,2,3-Trichloropropane	0.1707	0.1625	4.8	104	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1692	0.1498	11.5	86	0.00
83	T	n-Propylbenzene	3.4000	3.3914	0.3	110	0.00
84	T	Bromobenzene	0.8310	0.8249	0.7	116	0.00
85	T	1,3,5-Trimethylbenzene	2.2992	2.4111	-4.9	111	-0.01
86	T	2-Chlorotoluene	2.0908	2.3217	-11.0	124	0.00
87	T	4-Chlorotoluene	2.0367	2.0313	0.3	102	0.00
88	T	a-Methylstyrene	1.3064	1.2297	5.9	94	0.00
89	T	tert-Butylbenzene	0.5460	0.5482	-0.4	111	-0.01
90	T	1,2,4-Trimethylbenzene	2.3382	2.4791	-6.0	113	-0.01
91	T	sec-Butylbenzene	2.7855	2.8384	-1.9	109	0.00
92	T	p-Isopropyltoluene	2.3944	2.5185	-5.2	113	-0.01
93	T	1,3-Dichlorobenzene	1.4555	1.5275	-5.0	115	-0.01
94	T	1,4-Dichlorobenzene	1.5422	1.5433	-0.1	116	0.00
95	T	n-Butylbenzene	2.2394	2.2182	0.9	106	0.00
96	T	1,2-Dichlorobenzene	1.4070	1.4244	-1.2	115	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1055	0.0938	11.1	103	0.00
98	T	1,2,4-Trichlorobenzene	1.0118	0.9693	4.2	111	0.00
99	T	Hexachlorobutadiene	0.4649	0.4043	13.0	102	0.00
100	T	Naphthalene	1.7824	1.6758	6.0	104	0.00
101	T	1,2,3-Trichlorobenzene	0.9199	0.8287	9.9	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M95883.D 8260WTR.M Thu Oct 10 11:26:45 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101013\11M95883.D Vial: 2
Acq On : 10 Oct 2013 10:58 Operator: FJB
Sample : WG448050-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	49.5833	0.8	99	0.01
3	P	Chloromethane	50.0000	47.6223	4.8	107	0.00
4	C	Vinyl Chloride	50.0000	51.7173	-3.4	108	0.00
5	T	1,3-Butadiene	50.0000	42.7049	14.6	98	0.01
6	T	Bromomethane	50.0000	34.8801	30.2#	83	0.00
7	T	Chloroethane	50.0000	52.7010	-5.4	110	0.00
8	T	Trichlorofluoromethane	50.0000	50.9308	-1.9	108	-0.01
9	T	Diethyl ether	100.0000	97.5152	2.5	108	0.00
10	T	Isoprene	50.0000	45.8647	8.3	91	0.00
11	T	Acrolein	50.0000	48.8716	2.3	106	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.5125	-5.0	108	0.00
13	T	Acetone	50.0000	59.5995	-19.2	133	0.00
14	C	1,1-Dichloroethene	50.0000	51.6085	-3.2	108	0.00
15	T	Tert-Butyl Alcohol	200.0000	172.1302	13.9	104	-0.01
16	T	Dimethyl Sulfide	50.0000	43.5445	12.9	90	0.00
17	T	Iodomethane	50.0000	38.0230	24.0	81	-0.01
18	T	Methyl acetate	50.0000	48.6625	2.7	108	-0.01
19	T	Methylene Chloride	50.0000	51.1421	-2.3	111	0.00
20	T	Carbon Disulfide	50.0000	49.5291	0.9	96	0.00
21	T	Acrylonitrile	50.0000	46.8986	6.2	102	-0.01
22	T	Methyl Tert Butyl Ether	50.0000	51.1721	-2.3	108	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.4655	-8.9	114	0.00
24	T	n-Hexane	50.0000	41.6451	16.7	84	0.00
25	T	Diisopropyl ether	100.0000	100.4225	-0.4	110	0.00
26	T	Vinyl Acetate	50.0000	50.1486	-0.3	105	0.00
27	P	1,1-Dichloroethane	50.0000	53.7443	-7.5	110	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.9912	1.0	109	0.00
29	T	2-Butanone	50.0000	43.6143	12.8	95	0.00
30	T	Propionitrile	100.0000	98.4115	1.6	106	-0.01
31	T	2,2-Dichloropropane	50.0000	55.1807	-10.4	109	-0.01
32	T	cis-1,2-Dichloroethene	50.0000	53.4414	-6.9	113	-0.01
33	C	Chloroform	50.0000	52.3481	-4.7	111	0.00
34	T	1-Bromopropane	50.0000	42.9859	14.0	95	0.00
35	T	Bromochloromethane	50.0000	56.3535	-12.7	116	-0.01
36	T	Tetrahydrofuran	100.0000	90.9694	9.0	101	0.00
37	S	Dibromofluoromethane	25.0000	26.2701	-5.1	110	0.00
38	T	1,1,1-Trichloroethane	50.0000	53.0633	-6.1	111	0.00
39	T	Cyclohexane	50.0000	44.9208	10.2	91	0.00
40	T	1,1-Dichloropropene	50.0000	53.2248	-6.4	112	-0.01
41	T	Carbon Tetrachloride	50.0000	55.6998	-11.4	112	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	98.7641	1.2	109	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.1616	7.4	98	0.00
44	T	Heptane	-1.0000	0.0000	0.0	0	-0.01
45	T	1,2-Dichloroethane	50.0000	47.8080	4.4	100	0.00
46	T	Benzene	50.0000	53.7843	-7.6	113	0.00
47	T	Trichloroethene	50.0000	53.2341	-6.5	116	0.00
48	T	Methylcyclohexane	50.0000	44.6186	10.8	89	0.00
49	C	1,2-Dichloropropane	50.0000	51.0115	-2.0	109	-0.01
50	T	1,4-Dioxane	200.0000	445.3009	-122.7#	245	0.00
51	T	Bromodichloromethane	50.0000	52.9699	-5.9	109	0.00
52	T	Dibromomethane	50.0000	50.5578	-1.1	105	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.1932	13.6	88	-0.01
54	T	4-Methyl-2-Pentanone	50.0000	45.4155	9.2	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101013\11M95883.D Vial: 2
Acq On : 10 Oct 2013 10:58 Operator: FJB
Sample : WG448050-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.3228	-8.6	110	0.00
56	T	Dimethyl Disulfide	50.0000	46.2966	7.4	92	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	111	0.00
58	S	Toluene-d8	25.0000	25.7245	-2.9	111	-0.01
59	C	Toluene	50.0000	54.4533	-8.9	114	0.00
60	T	Ethyl Methacrylate	50.0000	48.5470	2.9	96	0.00
61	T	Paraldehyde	-1.0000	0.0000	0.0	0	-12.85#
62	T	trans-1,3-Dichloropropene	50.0000	53.2388	-6.5	109	0.00
63	T	1,1,2-Trichloroethane	50.0000	51.8103	-3.6	110	0.00
64	T	2-Hexanone	50.0000	42.1702	15.7	85	0.00
65	T	1,3-Dichloropropane	50.0000	49.5992	0.8	108	-0.01
66	T	Tetrachloroethene	50.0000	53.5222	-7.0	117	0.00
67	T	Dibromochloromethane	50.0000	54.1104	-8.2	113	0.00
68	T	1,2-Dibromoethane	50.0000	46.0382	7.9	100	-0.01
69	T	1-Chlorohexane	50.0000	46.7017	6.6	95	0.00
70	P	Chlorobenzene	50.0000	53.8943	-7.8	114	-0.01
71	T	1,1,1,2-Tetrachloroethane	50.0000	53.9793	-8.0	115	0.00
72	C	Ethylbenzene	50.0000	52.8272	-5.7	112	-0.01
73	T	m-,p-Xylene	100.0000	109.2006	-9.2	111	-0.01
74	T	o-Xylene	50.0000	53.5332	-7.1	113	-0.01
75	T	Styrene	50.0000	56.6011	-13.2	113	-0.01
76	P	Bromoform	50.0000	49.5916	0.8	116	-0.01
77	T	Isopropylbenzene	50.0000	55.4433	-10.9	111	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	115	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	50.7718	-1.5	109	0.00
80	S	p-Bromofluorobenzene	25.0000	23.5528	5.8	107	0.00
81	T	1,2,3-Trichloropropane	50.0000	47.5857	4.8	104	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	36.8909	26.2#	86	0.00
83	T	n-Propylbenzene	50.0000	49.8732	0.3	110	0.00
84	T	Bromobenzene	50.0000	49.6331	0.7	116	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.4336	-4.9	111	-0.01
86	T	2-Chlorotoluene	50.0000	55.5230	-11.0	124	0.00
87	T	4-Chlorotoluene	50.0000	49.8677	0.3	102	0.00
88	T	a-Methylstyrene	50.0000	47.0664	5.9	94	0.00
89	T	tert-Butylbenzene	50.0000	50.1996	-0.4	111	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	53.0129	-6.0	113	-0.01
91	T	sec-Butylbenzene	50.0000	50.9508	-1.9	109	0.00
92	T	p-Isopropyltoluene	50.0000	52.5908	-5.2	113	-0.01
93	T	1,3-Dichlorobenzene	50.0000	52.4751	-5.0	115	-0.01
94	T	1,4-Dichlorobenzene	50.0000	50.0363	-0.1	116	0.00
95	T	n-Butylbenzene	50.0000	49.5253	0.9	106	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.6163	-1.2	115	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	44.4673	11.1	103	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.8987	4.2	111	0.00
99	T	Hexachlorobutadiene	50.0000	43.4780	13.0	102	0.00
100	T	Naphthalene	50.0000	47.0083	6.0	104	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	45.0436	9.9	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M95883.D 8260WTR.M Thu Oct 10 11:26:47 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\100613\8M391273.D Vial: 2
Acq On : 6 Oct 2013 16:56 Operator: MES
Sample : WG447416-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 06 17:19:05 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	726711	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.93	117	737015	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.95	152	484687	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.01	111	223924	24.5286 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.12%		
43) 1,2-Dichloroethane-d4	10.65	65	215106	24.3468 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.40%		
58) Toluene-d8	13.03	98	809420	24.0624 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.24%		
80) p-Bromofluorobenzene	16.43	95	322592	23.7685 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	437748	53.9339 ug/L	98
3) Chloromethane	3.87	50	412424	52.5261 ug/L	100
4) Vinyl Chloride	4.11	62	398741	51.9570 ug/L	100
5) 1,3-Butadiene	4.16	54	266288	56.8250 ug/L	99
6) Bromomethane	5.05	94	305791	54.9103 ug/L	100
7) Chloroethane	5.20	64	278603	51.4139 ug/L	99
8) Trichlorofluoromethane	5.71	101	790131	53.7593 ug/L	100
9) Diethyl ether	6.23	59	498225	95.5895 ug/L	99
10) Isoprene	6.28	67	532309	53.7841 ug/L	98
11) Acrolein	6.47	56	24446	42.3251 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	439693	53.4846 ug/L	98
13) Acetone	6.58	43	103715	62.7399 ug/L	94
14) 1,1-Dichloroethene	6.80	61	635747	52.8127 ug/L	99
15) Tert-Butyl Alcohol	6.91	59	65963	209.9855 ug/L	98
16) Dimethyl Sulfide	7.07	62	343247	51.5239 ug/L	100
17) Iodomethane	7.33	142	535714	58.0376 ug/L	99
18) Methyl acetate	7.33	43	178051	48.2180 ug/L	99
19) Methylene Chloride	7.59	84	401798	48.5306 ug/L	99
20) Carbon Disulfide	7.64	76	1215357	51.3786 ug/L	99
21) Acrylonitrile	7.77	53	85953	48.7431 ug/L	99
22) Methyl Tert Butyl Ether	7.81	73	990927	49.3842 ug/L	100
23) trans-1,2-Dichloroethene	8.04	61	593146	51.9843 ug/L	99
24) n-Hexane	8.12	57	480378	51.2445 ug/L	99
25) Diisopropyl ether	8.46	45	2402742	97.9559 ug/L	99
26) Vinyl Acetate	8.63	43	522271	46.3614 ug/L	100
27) 1,1-Dichloroethane	8.66	63	741508	50.7964 ug/L	99
28) Ethyl-Tert-Butyl ether	9.03	59	2253521	98.2415 ug/L	99
29) 2-Butanone	9.21	43	97528	49.0651 ug/L	99
30) Propionitrile	9.33	54	55715	96.0626 ug/L	100
31) 2,2-Dichloropropane	9.44	77	749185	53.0136 ug/L	100
32) cis-1,2-Dichloroethene	9.51	96	474887	52.2320 ug/L	99
33) Chloroform	9.72	83	791752	51.8156 ug/L	99
34) 1-Bromopropane	9.85	122	103587	54.4962 ug/L	99
35) Bromochloromethane	9.95	130	342195	51.8220 ug/L	98
36) Tetrahydrofuran	9.97	42	120449	89.8570 ug/L	99
38) 1,1,1-Trichloroethane	10.25	97	781381	52.6595 ug/L	99
39) Cyclohexane	10.29	56	602731	51.3416 ug/L	99
40) 1,1-Dichloropropene	10.44	75	609466	51.8960 ug/L	100
41) Tert-Amyl-Methyl ether	10.55	73	1986140	97.3085 ug/L	100
42) Carbon Tetrachloride	10.60	117	766582	53.1328 ug/L	100
45) 1,2-Dichloroethane	10.76	62	584650	51.4239 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\100613\8M391273.D Vial: 2
Acq On : 6 Oct 2013 16:56 Operator: MES
Sample : WG447416-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 06 17:19:05 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.80	78	1613808	49.9770	ug/L	100
47)	Trichloroethene	11.56	130	554082	52.8980	ug/L	99
48)	Methylcyclohexane	11.64	83	655500	53.1157	ug/L	99
49)	1,2-Dichloropropane	11.77	63	391474	50.5281	ug/L	97
50)	Bromodichloromethane	12.07	83	615899	52.0569	ug/L	99
51)	1,4-Dioxane	12.06	88	7223	197.8325	ug/L	94
52)	Dibromomethane	12.16	93	239769	51.2422	ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.36	63	184344	48.1081	ug/L	97
54)	4-Methyl-2-Pentanone	12.39	58	82625	46.6117	ug/L	99
55)	cis-1,3-Dichloropropene	12.70	75	693909	52.7271	ug/L	100
56)	Dimethyl Disulfide	12.98	94	737858	51.4519	ug/L	100
59)	Toluene	13.13	91	1838509	48.8874	ug/L	99
60)	Ethyl Methacrylate	13.20	69	369002	49.3386	ug/L	100
62)	trans-1,3-Dichloropropene	13.30	75	638905	49.1674	ug/L	100
63)	1,1,2-Trichloroethane	13.51	97	323602	47.2392	ug/L	100
64)	2-Hexanone	13.44	58	74366	44.6032	ug/L	97
65)	1,3-Dichloropropane	13.82	76	534854	48.0297	ug/L	100
66)	Tetrachloroethene	13.95	164	494506	49.3627	ug/L	99
67)	Dibromochloromethane	14.22	129	531420	50.4480	ug/L	99
68)	1,2-Dibromoethane	14.47	107	343742	48.3917	ug/L	100
69)	1-Chlorohexane	14.55	91	582964	52.7236	ug/L	99
70)	Chlorobenzene	14.97	112	1429299	48.7900	ug/L	100
71)	1,1,1,2-Tetrachloroethane	15.00	131	567080	50.3605	ug/L	99
72)	Ethylbenzene	15.00	106	757390	48.1839	ug/L	100
73)	m-,p-Xylene	15.08	106	1833738	98.1527	ug/L	99
74)	o-Xylene	15.65	106	925959	50.7901	ug/L	98
75)	Styrene	15.68	104	1525949	53.2904	ug/L	99
76)	Bromoform	16.19	173	343415	49.1669	ug/L	99
77)	Isopropylbenzene	16.08	105	2314149	52.6500	ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.29	83	338113	45.4667	ug/L	99
81)	1,2,3-Trichloropropane	16.48	110	124037	47.7791	ug/L	100
82)	trans-1,4-Dichloro-2-Buten	16.52	53	107133	45.1592	ug/L	97
83)	n-Propylbenzene	16.58	91	2548526	51.3927	ug/L	99
84)	Bromobenzene	16.72	156	692619	48.6665	ug/L	99
85)	1,3,5-Trimethylbenzene	16.77	105	2067248	51.6944	ug/L	100
86)	2-Chlorotoluene	16.86	91	1673400	49.8358	ug/L	100
87)	4-Chlorotoluene	16.90	91	1566561	50.2722	ug/L	99
88)	a-Methylstyrene	17.17	118	1147441	52.3600	ug/L	99
89)	tert-Butylbenzene	17.24	134	463602	49.3014	ug/L	98
90)	1,2,4-Trimethylbenzene	17.29	105	2127230	51.3214	ug/L	100
91)	sec-Butylbenzene	17.50	105	2393682	51.2020	ug/L	99
92)	p-Isopropyltoluene	17.67	119	2257662	52.6378	ug/L	100
93)	1,3-Dichlorobenzene	17.87	146	1384051	50.3935	ug/L	100
94)	1,4-Dichlorobenzene	18.00	146	1399496	48.8784	ug/L	99
95)	n-Butylbenzene	18.19	91	1695747	50.4759	ug/L	99
96)	1,2-Dichlorobenzene	18.50	146	1279558	49.6183	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.49	75	72894	49.1246	ug/L	99
98)	1,2,4-Trichlorobenzene	20.64	180	978636	49.3126	ug/L	100
99)	Hexachlorobutadiene	20.79	225	418091	49.9200	ug/L	99
100)	Naphthalene	21.01	128	1670238	48.3457	ug/L	99
101)	1,2,3-Trichlorobenzene	21.32	180	844927	47.2790	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M391273.D 8260WT.M Sun Oct 06 17:19:06 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\100613\8M391273.D Vial: 2
Acq On : 6 Oct 2013 16:56 Operator: MES
Sample : WG447416-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 6 17:19 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration

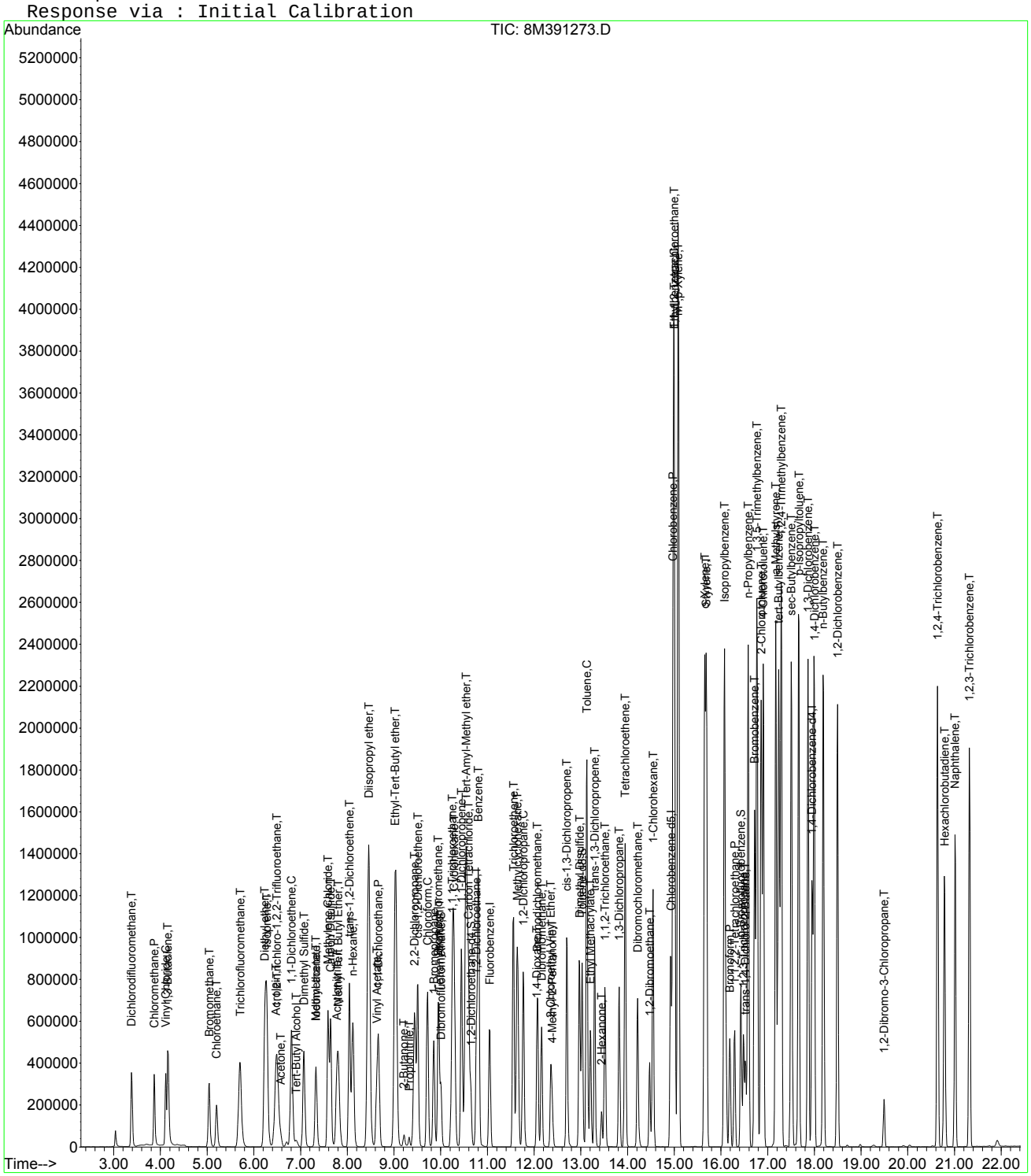

8M391273.D 8260WT.M Sun Oct 06 17:19:06 2013 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 1 Oct 2013 17:52
CCV date: 6 Oct 2013 16:56
CCV Filename: 8M391273.D

	Fluorobenzene		**Chlorobenzene-d5**		**1,4-Dichlorobenzene-d4**	
	Amount	RT	Amount	RT	Amount	RT
InitCal	827699	11.05	794349	14.92	525036	17.95
CCV	726711	11.05	737015	14.93	484687	17.95

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100613\8M391273.D Vial: 2
Acq On : 6 Oct 2013 16:56 Operator: MES
Sample : WG447416-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	88	0.00
2	T	Dichlorodifluoromethane	0.2792	0.3012	-7.9	89	0.00
3	P	Chloromethane	0.2701	0.2838	-5.1	97	0.00
4	C	Vinyl Chloride	0.2640	0.2743	-3.9	89	0.00
5	T	1,3-Butadiene	0.1612	0.1832	-13.6	93	0.00
6	T	Bromomethane	0.1545	0.2104	-36.2#	109	0.01
7	T	Chloroethane	0.1864	0.1917	-2.8	86	0.00
8	T	Trichlorofluoromethane	0.5056	0.5436	-7.5	92	0.00
9	T	Diethyl ether	0.1793	0.1714	4.4	85	0.00
10	T	Isoprene	0.3405	0.3663	-7.6	89	0.00
11	T	Acrolein	0.0199	0.0168	15.3	73	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2828	0.3025	-7.0	92	0.01
13	T	Acetone	0.0569	0.0714	-25.5#	108	0.00
14	C	1,1-Dichloroethene	0.4141	0.4374	-5.6	89	0.00
15	T	Tert-Butyl Alcohol	0.0108	0.0114	-5.0	94	0.00
16	T	Dimethyl Sulfide	0.2292	0.2362	-3.0	87	0.00
17	T	Iodomethane	0.2600	0.3686	-41.7#	100	0.00
18	T	Methyl acetate	0.1270	0.1225	3.6	86	0.00
19	T	Methylene Chloride	0.2848	0.2764	2.9	87	0.00
20	T	Carbon Disulfide	0.8138	0.8362	-2.8	89	0.00
21	T	Acrylonitrile	0.0607	0.0591	2.5	84	0.00
22	T	Methyl Tert Butyl Ether	0.6903	0.6818	1.2	84	0.00
23	T	trans-1,2-Dichloroethene	0.3925	0.4081	-4.0	88	0.00
24	T	n-Hexane	0.3225	0.3305	-2.5	91	0.00
25	T	Diisopropyl ether	0.8438	0.8266	2.0	88	0.00
26	T	Vinyl Acetate	0.3875	0.3593	7.3	79	0.01
27	P	1,1-Dichloroethane	0.5022	0.5102	-1.6	89	0.00
28	T	Ethyl-Tert-Butyl ether	0.7891	0.7752	1.8	88	0.00
29	T	2-Butanone	0.0684	0.0671	1.9	83	0.00
30	T	Propionitrile	0.0199	0.0192	3.9	84	0.00
31	T	2,2-Dichloropropane	0.4862	0.5155	-6.0	93	0.00
32	T	cis-1,2-Dichloroethene	0.3128	0.3267	-4.5	88	0.00
33	C	Chloroform	0.5257	0.5447	-3.6	90	0.00
34		1-Bromopropane	0.0654	0.0713	-9.0	91	0.00
35	T	Bromochloromethane	0.2272	0.2354	-3.6	89	0.00
36	T	Tetrahydrofuran	0.0461	0.0414	10.1	81	0.00
37	S	Dibromofluoromethane	0.3141	0.3081	1.9	87	0.00
38	T	1,1,1-Trichloroethane	0.5105	0.5376	-5.3	89	0.00
39	T	Cyclohexane	0.4039	0.4147	-2.7	88	0.00
40	T	1,1-Dichloropropene	0.4040	0.4193	-3.8	87	0.00
41	T	Tert-Amyl-Methyl ether	0.7022	0.6833	2.7	86	0.00
42	T	Carbon Tetrachloride	0.4963	0.5274	-6.3	91	0.00
43	S	1,2-Dichloroethane-d4	0.3039	0.2960	2.6	86	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.74#
45	T	1,2-Dichloroethane	0.3911	0.4023	-2.8	88	0.00
46	T	Benzene	1.1109	1.1103	0.0	88	0.00
47	T	Trichloroethene	0.3603	0.3812	-5.8	90	0.00
48	T	Methylcyclohexane	0.4245	0.4510	-6.2	91	0.00
49	C	1,2-Dichloropropane	0.2665	0.2693	-1.1	86	0.00
50	T	Bromodichloromethane	0.4070	0.4238	-4.1	89	0.00
51	T	1,4-Dioxane	0.0013	0.0012	1.6	77	0.00
52	T	Dibromomethane	0.1610	0.1650	-2.5	85	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1318	0.1268	3.8	82	0.00
54	T	4-Methyl-2-Pentanone	0.0610	0.0568	6.8	80	0.00
55	T	cis-1,3-Dichloropropene	0.4527	0.4774	-5.5	87	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100613\8M391273.D Vial: 2
Acq On : 6 Oct 2013 16:56 Operator: MES
Sample : WG447416-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	0.4933	0.5077	-2.9	86	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	93	0.01
58	S	Toluene-d8	1.1410	1.0982	3.8	89	0.00
59	C	Toluene	1.2757	1.2473	2.2	88	0.00
60	T	Ethyl Methacrylate	0.2537	0.2503	1.3	83	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.34#
62	T	trans-1,3-Dichloropropene	0.4408	0.4334	1.7	86	0.00
63	T	1,1,2-Trichloroethane	0.2324	0.2195	5.5	83	0.00
64	T	2-Hexanone	0.0566	0.0505	10.8	78	0.00
65	T	1,3-Dichloropropane	0.3777	0.3629	3.9	85	0.00
66	T	Tetrachloroethene	0.3398	0.3355	1.3	89	0.00
67	T	Dibromochloromethane	0.3573	0.3605	-0.9	86	0.00
68	T	1,2-Dibromoethane	0.2410	0.2332	3.2	84	0.00
69	T	1-Chlorohexane	0.3751	0.3955	-5.4	89	0.00
70	P	Chlorobenzene	0.9937	0.9697	2.4	89	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3820	0.3847	-0.7	89	0.00
72	C	Ethylbenzene	0.5332	0.5138	3.6	88	0.00
73	T	m-,p-Xylene	0.6337	0.6220	1.8	89	0.00
74	T	o-Xylene	0.6184	0.6282	-1.6	88	0.00
75	T	Styrene	0.9713	1.0352	-6.6	88	0.00
76	P	Bromoform	0.2369	0.2330	1.7	83	0.00
77	T	Isopropylbenzene	1.4909	1.5700	-5.3	88	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	92	0.00
79	P	1,1,2,2-Tetrachloroethane	0.3836	0.3488	9.1	79	0.00
80	S	p-Bromofluorobenzene	0.7000	0.6656	4.9	88	0.00
81	T	1,2,3-Trichloropropane	0.1339	0.1280	4.4	82	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1110	0.1105	0.4	81	0.00
83	T	n-Propylbenzene	2.5578	2.6290	-2.8	88	0.00
84	T	Bromobenzene	0.7341	0.7145	2.7	87	0.00
85	T	1,3,5-Trimethylbenzene	2.0627	2.1326	-3.4	88	0.00
86	T	2-Chlorotoluene	1.7320	1.7263	0.3	87	0.00
87	T	4-Chlorotoluene	1.6073	1.6161	-0.5	89	0.00
88	T	a-Methylstyrene	1.1303	1.1837	-4.7	90	0.00
89	T	tert-Butylbenzene	0.4850	0.4783	1.4	88	0.00
90	T	1,2,4-Trimethylbenzene	2.1379	2.1944	-2.6	89	0.00
91	T	sec-Butylbenzene	2.4113	2.4693	-2.4	87	0.00
92	T	p-Isopropyltoluene	2.2123	2.3290	-5.3	89	0.01
93	T	1,3-Dichlorobenzene	1.4166	1.4278	-0.8	88	0.00
94	T	1,4-Dichlorobenzene	1.4768	1.4437	2.2	87	0.01
95	T	n-Butylbenzene	1.7328	1.7493	-1.0	87	0.00
96	T	1,2-Dichlorobenzene	1.3301	1.3200	0.8	86	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0765	0.0752	1.8	81	0.00
98	T	1,2,4-Trichlorobenzene	1.0236	1.0095	1.4	85	0.00
99	T	Hexachlorobutadiene	0.4320	0.4313	0.2	86	0.01
100	T	Naphthalene	1.7820	1.7230	3.3	79	0.00
101	T	1,2,3-Trichlorobenzene	0.9218	0.8716	5.4	81	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M391273.D 8260WT.M Sun Oct 06 17:21:44 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100613\8M391273.D Vial: 2
Acq On : 6 Oct 2013 16:56 Operator: MES
Sample : WG447416-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	88	0.00
2	T	Dichlorodifluoromethane	50.0000	53.9339	-7.9	89	0.00
3	P	Chloromethane	50.0000	52.5261	-5.1	97	0.00
4	C	Vinyl Chloride	50.0000	51.9570	-3.9	89	0.00
5	T	1,3-Butadiene	50.0000	56.8250	-13.7	93	0.00
6	T	Bromomethane	50.0000	54.9103	-9.8	109	0.01
7	T	Chloroethane	50.0000	51.4139	-2.8	86	0.00
8	T	Trichlorofluoromethane	50.0000	53.7593	-7.5	92	0.00
9	T	Diethyl ether	100.0000	95.5895	4.4	85	0.00
10	T	Isoprene	50.0000	53.7841	-7.6	89	0.00
11	T	Acrolein	50.0000	42.3252	15.3	73	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.4846	-7.0	92	0.01
13	T	Acetone	50.0000	62.7399	-25.5#	108	0.00
14	C	1,1-Dichloroethene	50.0000	52.8127	-5.6	89	0.00
15	T	Tert-Butyl Alcohol	200.0000	209.9855	-5.0	94	0.00
16	T	Dimethyl Sulfide	50.0000	51.5239	-3.0	87	0.00
17	T	Iodomethane	50.0000	58.0376	-16.1	100	0.00
18	T	Methyl acetate	50.0000	48.2180	3.6	86	0.00
19	T	Methylene Chloride	50.0000	48.5306	2.9	87	0.00
20	T	Carbon Disulfide	50.0000	51.3786	-2.8	89	0.00
21	T	Acrylonitrile	50.0000	48.7431	2.5	84	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.3842	1.2	84	0.00
23	T	trans-1,2-Dichloroethene	50.0000	51.9843	-4.0	88	0.00
24	T	n-Hexane	50.0000	51.2445	-2.5	91	0.00
25	T	Diisopropyl ether	100.0000	97.9559	2.0	88	0.00
26	T	Vinyl Acetate	50.0000	46.3614	7.3	79	0.01
27	P	1,1-Dichloroethane	50.0000	50.7964	-1.6	89	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.2415	1.8	88	0.00
29	T	2-Butanone	50.0000	49.0651	1.9	83	0.00
30	T	Propionitrile	100.0000	96.0626	3.9	84	0.00
31	T	2,2-Dichloropropane	50.0000	53.0136	-6.0	93	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.2320	-4.5	88	0.00
33	C	Chloroform	50.0000	51.8156	-3.6	90	0.00
34		1-Bromopropane	50.0000	54.4962	-9.0	91	0.00
35	T	Bromochloromethane	50.0000	51.8220	-3.6	89	0.00
36	T	Tetrahydrofuran	100.0000	89.8570	10.1	81	0.00
37	S	Dibromofluoromethane	25.0000	24.5286	1.9	87	0.00
38	T	1,1,1-Trichloroethane	50.0000	52.6595	-5.3	89	0.00
39	T	Cyclohexane	50.0000	51.3416	-2.7	88	0.00
40	T	1,1-Dichloropropene	50.0000	51.8960	-3.8	87	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	97.3085	2.7	86	0.00
42	T	Carbon Tetrachloride	50.0000	53.1328	-6.3	91	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.3468	2.6	86	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.74#
45	T	1,2-Dichloroethane	50.0000	51.4239	-2.8	88	0.00
46	T	Benzene	50.0000	49.9770	0.0	88	0.00
47	T	Trichloroethene	50.0000	52.8980	-5.8	90	0.00
48	T	Methylcyclohexane	50.0000	53.1157	-6.2	91	0.00
49	C	1,2-Dichloropropane	50.0000	50.5281	-1.1	86	0.00
50	T	Bromodichloromethane	50.0000	52.0569	-4.1	89	0.00
51	T	1,4-Dioxane	200.0000	197.8325	1.1	77	0.00
52	T	Dibromomethane	50.0000	51.2422	-2.5	85	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	48.1081	3.8	82	0.00
54	T	4-Methyl-2-Pentanone	50.0000	46.6117	6.8	80	0.00
55	T	cis-1,3-Dichloropropene	50.0000	52.7271	-5.5	87	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100613\8M391273.D Vial: 2
Acq On : 6 Oct 2013 16:56 Operator: MES
Sample : WG447416-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD60466 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	50.0000	51.4519	-2.9	86	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	93	0.01
58	S	Toluene-d8	25.0000	24.0624	3.8	89	0.00
59	C	Toluene	50.0000	48.8874	2.2	88	0.00
60	T	Ethyl Methacrylate	50.0000	49.3386	1.3	83	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.34#
62	T	trans-1,3-Dichloropropene	50.0000	49.1674	1.7	86	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.2392	5.5	83	0.00
64	T	2-Hexanone	50.0000	44.6032	10.8	78	0.00
65	T	1,3-Dichloropropane	50.0000	48.0297	3.9	85	0.00
66	T	Tetrachloroethene	50.0000	49.3627	1.3	89	0.00
67	T	Dibromochloromethane	50.0000	50.4480	-0.9	86	0.00
68	T	1,2-Dibromoethane	50.0000	48.3917	3.2	84	0.00
69	T	1-Chlorohexane	50.0000	52.7236	-5.4	89	0.00
70	P	Chlorobenzene	50.0000	48.7900	2.4	89	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.3605	-0.7	89	0.00
72	C	Ethylbenzene	50.0000	48.1839	3.6	88	0.00
73	T	m-,p-Xylene	100.0000	98.1527	1.8	89	0.00
74	T	o-Xylene	50.0000	50.7901	-1.6	88	0.00
75	T	Styrene	50.0000	53.2904	-6.6	88	0.00
76	P	Bromoform	50.0000	49.1668	1.7	83	0.00
77	T	Isopropylbenzene	50.0000	52.6500	-5.3	88	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	92	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	45.4667	9.1	79	0.00
80	S	p-Bromofluorobenzene	25.0000	23.7685	4.9	88	0.00
81	T	1,2,3-Trichloropropane	50.0000	47.7791	4.4	82	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	45.1592	9.7	81	0.00
83	T	n-Propylbenzene	50.0000	51.3927	-2.8	88	0.00
84	T	Bromobenzene	50.0000	48.6665	2.7	87	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6944	-3.4	88	0.00
86	T	2-Chlorotoluene	50.0000	49.8358	0.3	87	0.00
87	T	4-Chlorotoluene	50.0000	50.2722	-0.5	89	0.00
88	T	a-Methylstyrene	50.0000	52.3600	-4.7	90	0.00
89	T	tert-Butylbenzene	50.0000	49.3014	1.4	88	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.3214	-2.6	89	0.00
91	T	sec-Butylbenzene	50.0000	51.2020	-2.4	87	0.00
92	T	p-Isopropyltoluene	50.0000	52.6378	-5.3	89	0.01
93	T	1,3-Dichlorobenzene	50.0000	50.3935	-0.8	88	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.8784	2.2	87	0.01
95	T	n-Butylbenzene	50.0000	50.4759	-1.0	87	0.00
96	T	1,2-Dichlorobenzene	50.0000	49.6183	0.8	86	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	49.1246	1.8	81	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.3126	1.4	85	0.00
99	T	Hexachlorobutadiene	50.0000	49.9200	0.2	86	0.01
100	T	Naphthalene	50.0000	48.3457	3.3	79	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.2790	5.4	81	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\100613\8M391274.D Vial: 3
Acq On : 6 Oct 2013 17:28 Operator: MES
Sample : WG447425-01 100ug/L CCV A9 Inst : HPMS8
Misc : 1,1 STD60223 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 06 17:50:35 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	691629	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.93	117	694871	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.95	152	466867	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.01	111	220962	25.4319 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.72%		
43) 1,2-Dichloroethane-d4	10.65	65	218883	26.0309 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.12%		
58) Toluene-d8	13.03	98	781484	24.6409 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.56%		
80) p-Bromofluorobenzene	16.43	95	315722	24.1502 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.60%		

Target Compounds					Qvalue
3) Chloromethane	3.89	50	1400	0.1873 ug/L #	1
13) Acetone	6.59	43	1617	1.0278 ug/L #	48
15) Tert-Butyl Alcohol	6.91	59	3203	10.7136 ug/L #	1
19) Methylene Chloride	7.59	84	5362	0.6805 ug/L	97
36) Tetrahydrofuran	9.98	42	1097	0.8599 ug/L #	34
51) 1,4-Dioxane	12.05	88	2517	72.4356 ug/L #	67
56) Dimethyl Disulfide	13.03	94	22231	1.6288 ug/L #	28
73) m-,p-Xylene	15.08	106	2259	0.1282 ug/L	94
95) n-Butylbenzene	18.19	91	4509	0.1393 ug/L #	87
98) 1,2,4-Trichlorobenzene	20.64	180	2835	0.1483 ug/L	95
99) Hexachlorobutadiene	20.79	225	3945	0.4890 ug/L	93
100) Naphthalene	21.01	128	5612	0.1686 ug/L #	82
101) 1,2,3-Trichlorobenzene	21.32	180	2982	0.1732 ug/L	93

(#) = qualifier out of range (m) = manual integration
8M391274.D 8260WT.M Sun Oct 06 17:50:36 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\100613\8M391274.D Vial: 3
Acq On : 6 Oct 2013 17:28 Operator: MES
Sample : WG447425-01 100ug/L CCV A9 Inst : HPMS8
Misc : 1,1 STD60223 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 6 17:50 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration

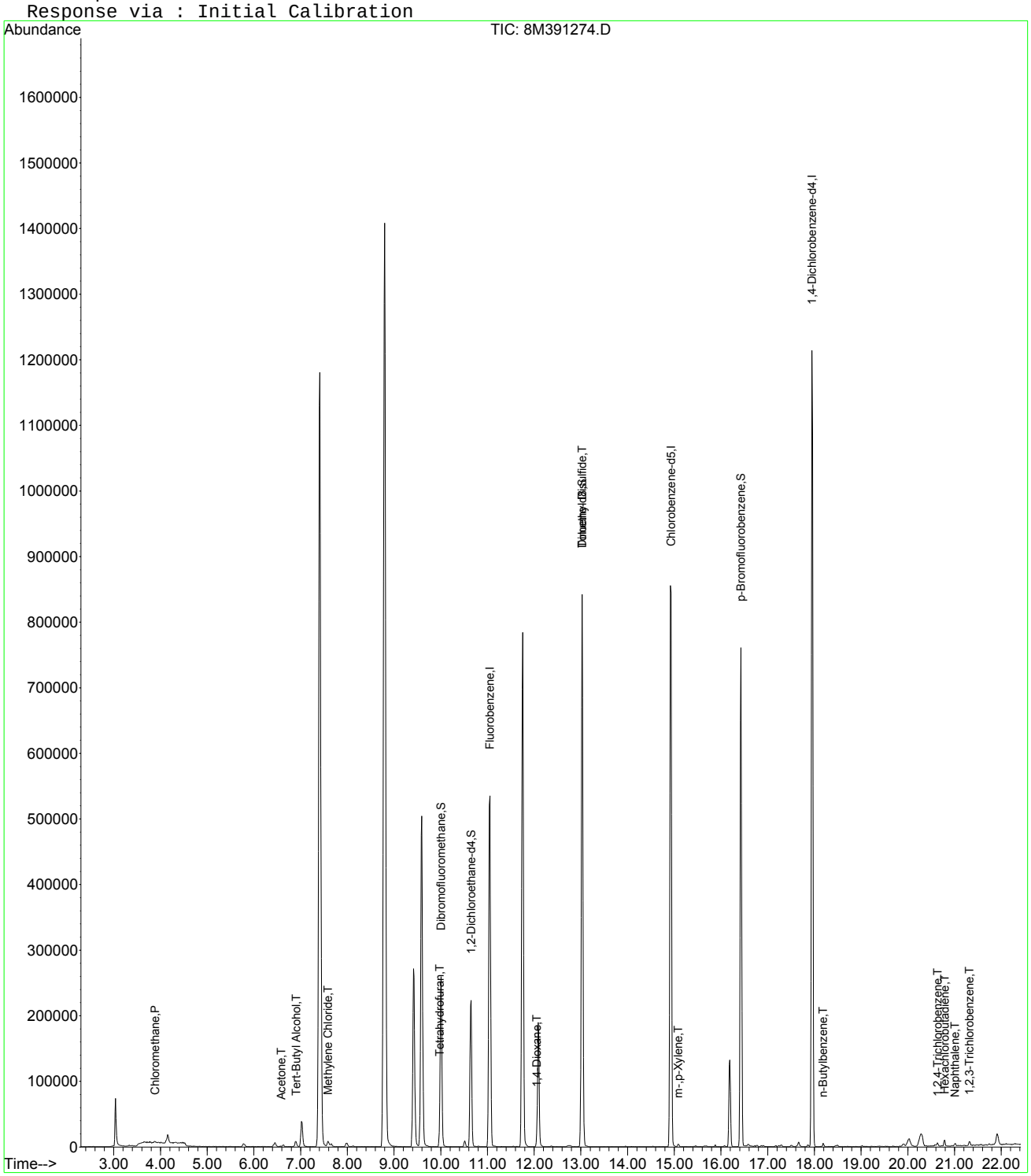

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391274.D Vial: 3
Acq On : 6 Oct 2013 17:28 Operator: MES
Sample : WG447425-01 100ug/L CCV A9 Inst : HPMS8
Misc : 1,1 STD60223 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 18:18:35 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	691629	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.93	117	694871	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.95	152	466867	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.02	41	55437	87.9765 ug/L	94
3) 3-Chloro-1-propene	7.41	41	1198212	93.3788 ug/L	89
4) 2-Chloro-1,3-butadiene	8.80	53	1326379	107.3354 ug/L	69
5) Ethyl Acetate	9.42	43	465585	100.3126 ug/L	96
6) Methacrylonitrile	9.59	67	207966	108.9494 ug/L	75
7) Isobutyl Alcohol	9.59	43	30657	194.7345 ug/L #	88
8) 1-Butanol	10.51	56	6096	103.0489 ug/L	86
9) Methyl methacrylate	11.75	41	512466	106.3083 ug/L	78
10) 2-Nitropropane	12.09	43	190018	129.4426 ug/L	99
13) Cyclohexanone	16.19	55	68955	224.7447 ug/L	82

(#) = qualifier out of range (m) = manual integration
8M391274.D A9FOOWTR.M Sun Oct 06 18:18:36 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391274.D Vial: 3
Acq On : 6 Oct 2013 17:28 Operator: MES
Sample : WG447425-01 100ug/L CCV A9 Inst : HPMS8
Misc : 1,1 STD60223 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 18:18 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Initial Calibration

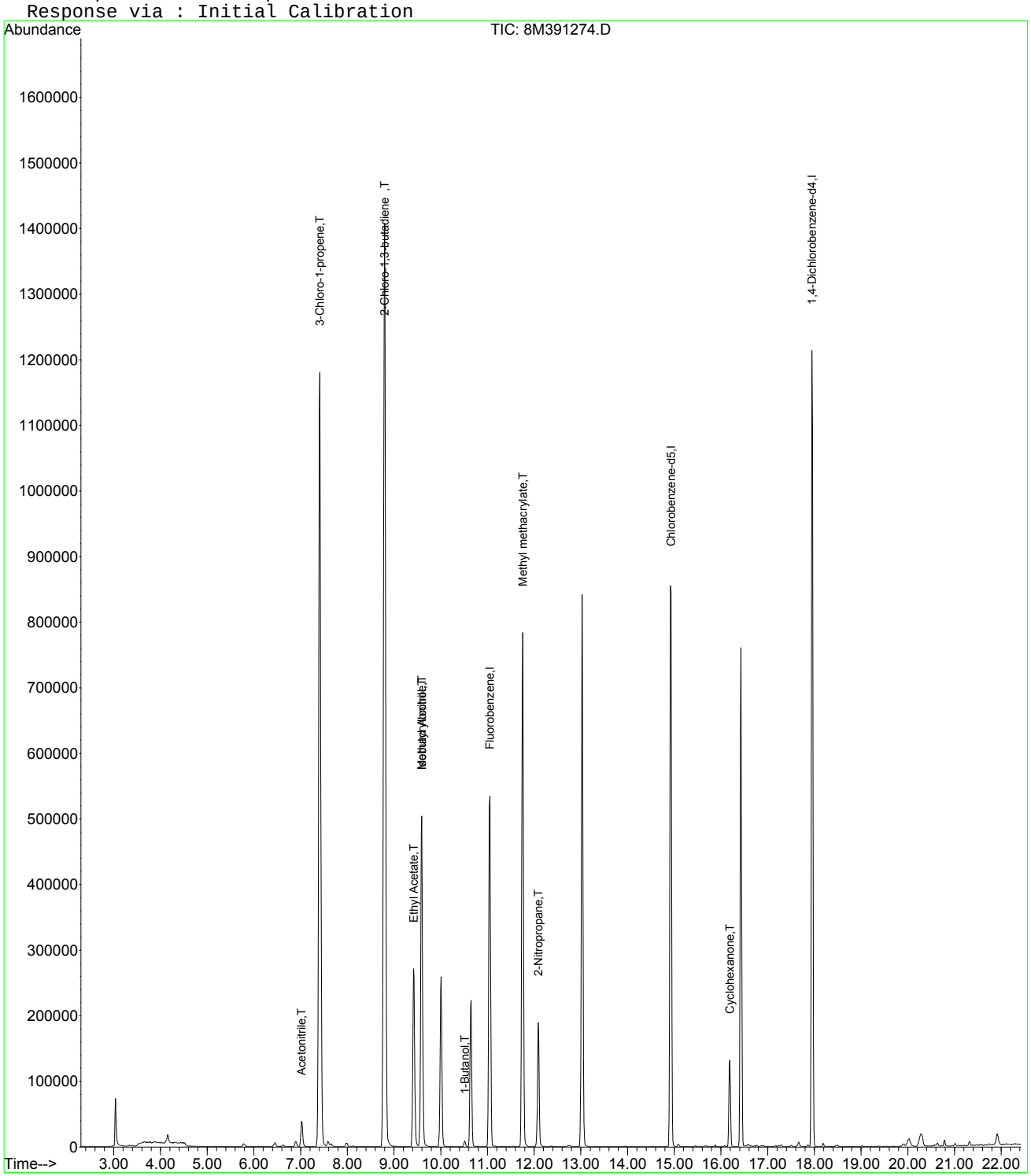

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100613\8M391274.D Vial: 3
Acq On : 6 Oct 2013 17:28 Operator: MES
Sample : WG447425-01 100ug/L CCV A9 Inst : HPMS8
Misc : 1,1 STD60223 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	115	0.00
2	T	Acetonitrile	100.0000	87.9765	12.0	102	-0.01
3	T	3-Chloro-1-propene	100.0000	93.3788	6.6	106	0.01
4	T	2-Chloro-1,3-butadiene	100.0000	107.3354	-7.3	122	0.00
5	T	Ethyl Acetate	100.0000	100.3126	-0.3	115	0.00
6	T	Methacrylonitrile	100.0000	108.9494	-8.9	123	0.00
7	T	Isobutyl Alcohol	200.0000	194.7345	2.6	115	0.00
8	T	1-Butanol	100.0000	103.0489	-3.0	124	0.00
9	T	Methyl methacrylate	100.0000	106.3083	-6.3	119	0.00
10	T	2-Nitropropane	100.0000	129.4426	-29.4	149	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	137	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	156	0.00
13	T	Cyclohexanone	100.0000	224.7447	-124.7#	312	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M391274.D A9FOOWTR.M Sun Oct 06 18:18:39 2013 Page 1

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\1\DATA\091013\8M390487.D
Acq On : 10 Sep 2013 15:11
Sample : ~~WG444230~~ WG444230-01 50ng BFB
Misc : 1,1 STD59881 9/19/13
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

Vial: 3
Operator: TMB
Inst : HPMS8
Multiplr: 1.00

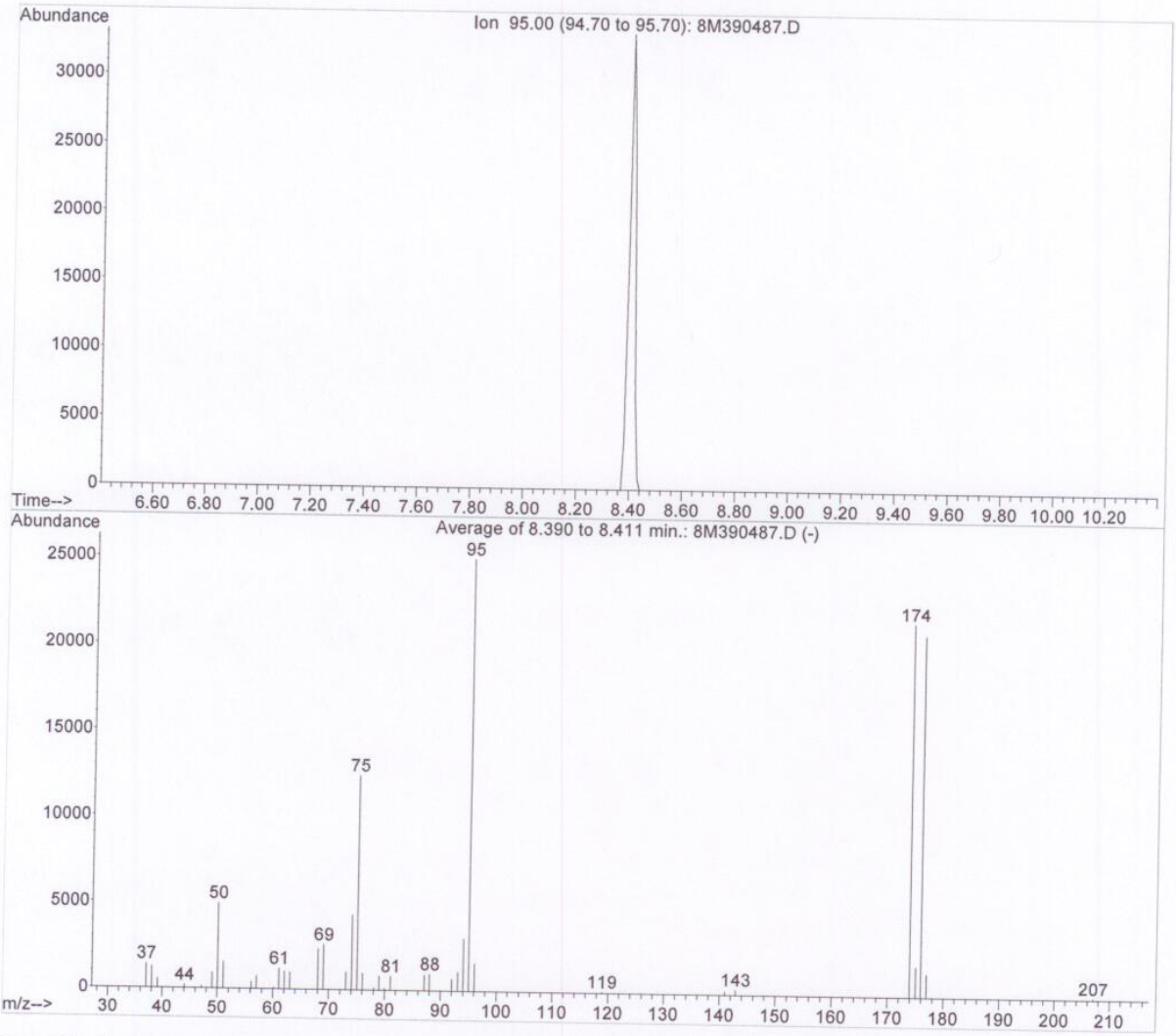

AutoFind: Scans 128, 129, 130; Background Corrected with Scan 124

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.8	4960	PASS
75	95	30	60	49.7	12441	PASS
95	95	100	100	100.0	25013	PASS
96	95	5	9	6.5	1635	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.3	21596	PASS
175	174	5	9	8.3	1799	PASS
176	174	95	101	96.8	20906	PASS
177	176	5	9	6.6	1379	PASS

8M390487.D BFB.M Wed Sep 18 14:17:51 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\091113\11M95056.D          Vial: 1
Acq On    : 11 Sep 2013  12:00                       Operator: FJB
Sample    : WG444293-01 BFB 50ng 8260                Inst    : hpms11
Misc      : 1,1 STD59881                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

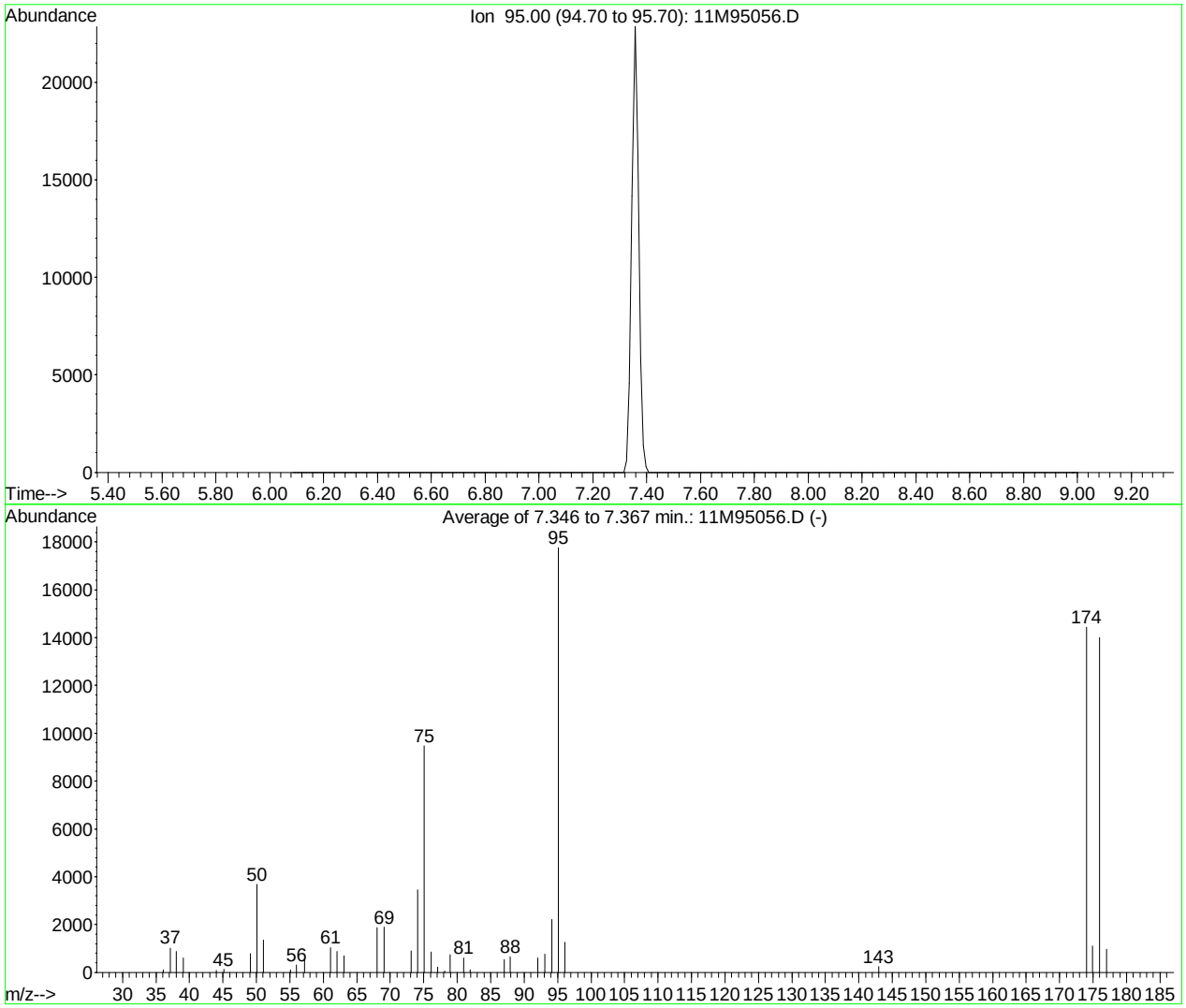

AutoFind: Scans 123, 124, 125; Background Corrected with Scan 118

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.7	3684	PASS
75	95	30	60	53.4	9479	PASS
95	95	100	100	100.0	17767	PASS
96	95	5	9	7.1	1259	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	81.2	14433	PASS
175	174	5	9	7.6	1094	PASS
176	174	95	101	97.0	14006	PASS
177	176	5	9	6.9	965	PASS

11M95056.D BFB.M Wed Sep 11 12:11:49 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\091713\11M95116.D          Vial: 1
Acq On    : 17 Sep 2013  13:49                        Operator: FJB
Sample    : WG444955-01 BFB 50ng 8260                 Inst    : hpms11
Misc      : 1,1 STD59881                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

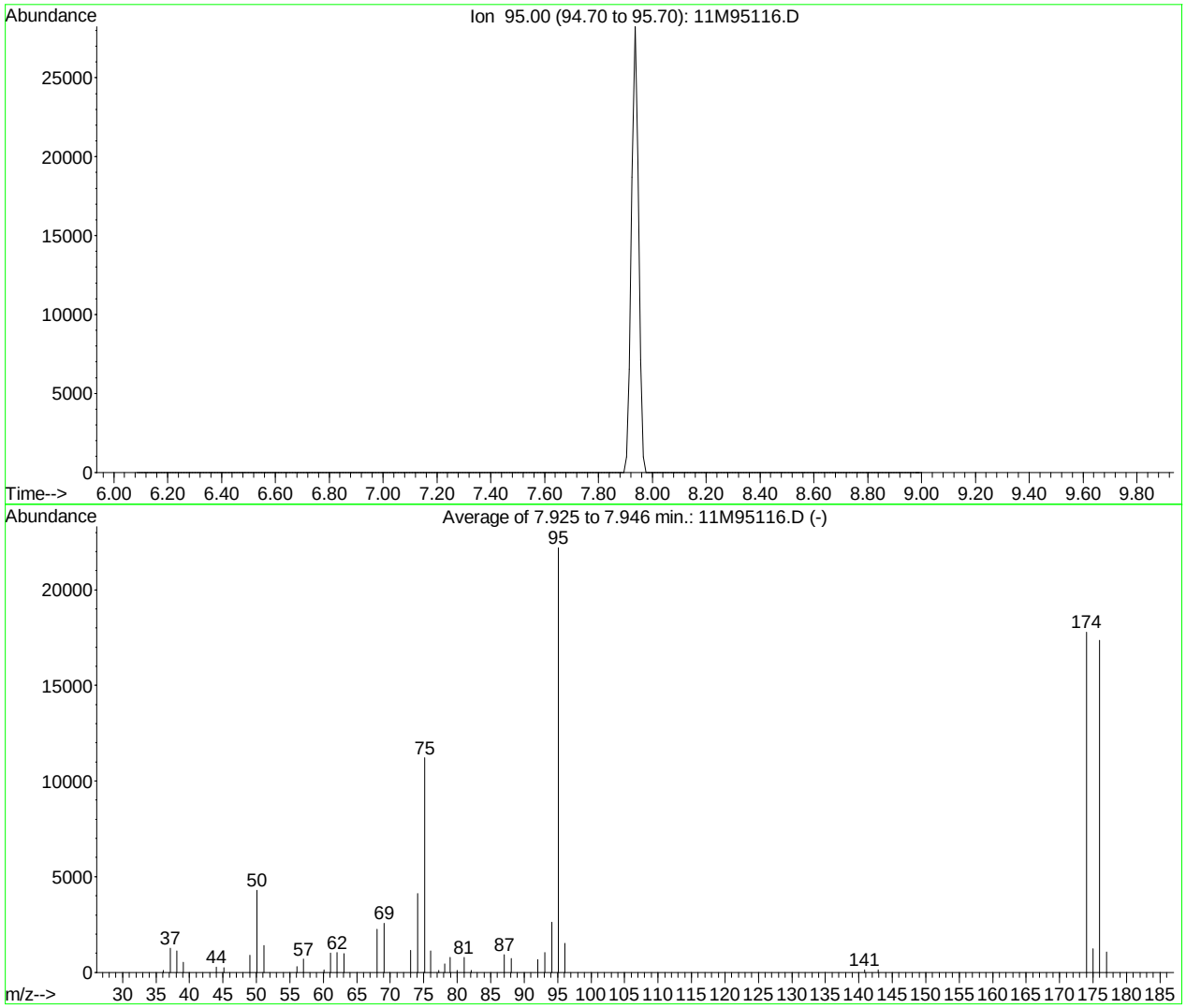

AutoFind: Scans 179, 180, 181; Background Corrected with Scan 174

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.3	4291	PASS
75	95	30	60	50.5	11218	PASS
95	95	100	100	100.0	22205	PASS
96	95	5	9	6.8	1502	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	80.1	17778	PASS
175	174	5	9	6.9	1235	PASS
176	174	95	101	97.6	17358	PASS
177	176	5	9	6.1	1052	PASS

11M95116.D BFB.M Thu Sep 19 11:07:35 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\100113\8M391091.D          Vial: 1
Acq On    :  1 Oct 2013  14:20                       Operator: TMB
Sample    : WG446788-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD59881                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

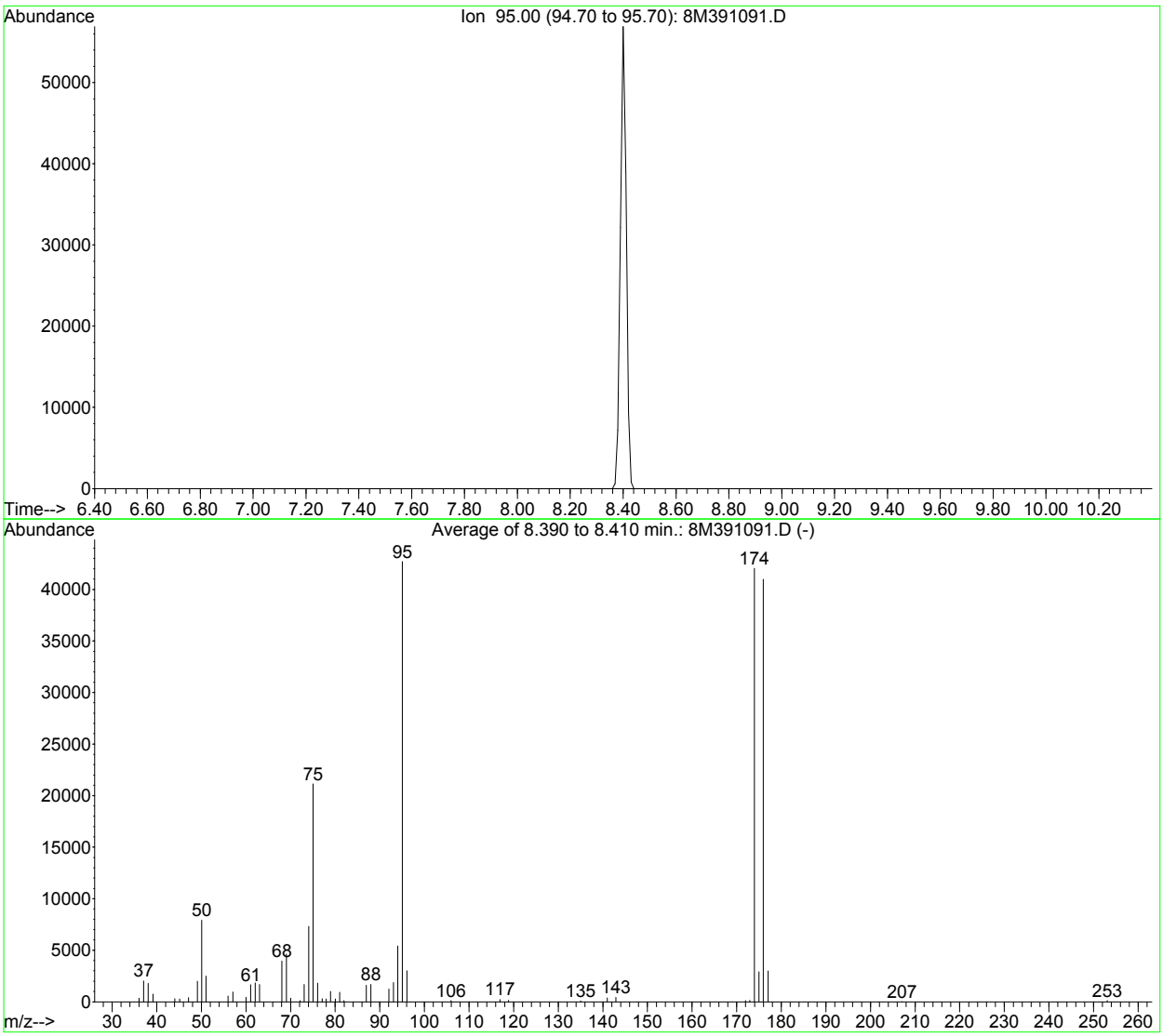

AutoFind: Scans 128, 129, 130; Background Corrected with Scan 123

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.5	7918	PASS
75	95	30	60	49.5	21146	PASS
95	95	100	100	100.0	42690	PASS
96	95	5	9	7.1	3011	PASS
173	174	0.00	2	0.4	149	PASS
174	95	50	100	98.5	42045	PASS
175	174	5	9	6.9	2912	PASS
176	174	95	101	97.4	40970	PASS
177	176	5	9	7.3	2999	PASS

8M391091.D BFB.M Tue Oct 01 16:32:57 2013

BFB

Data File : C:\MSDCHEM\1\DATA\100613\8M391272.D Vial: 1
Acq On : 6 Oct 2013 16:28 Operator: MES
Sample : WG447416-01 BFB 50ng 8260 Inst : HPMS8
Misc : 1,1 STD60561 purged Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

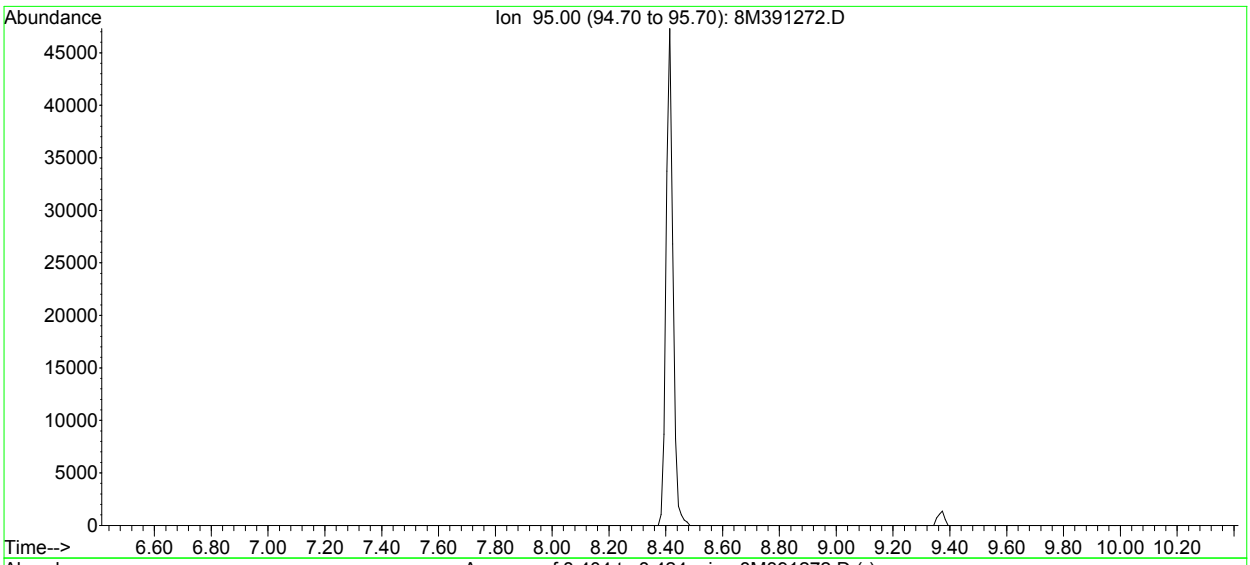

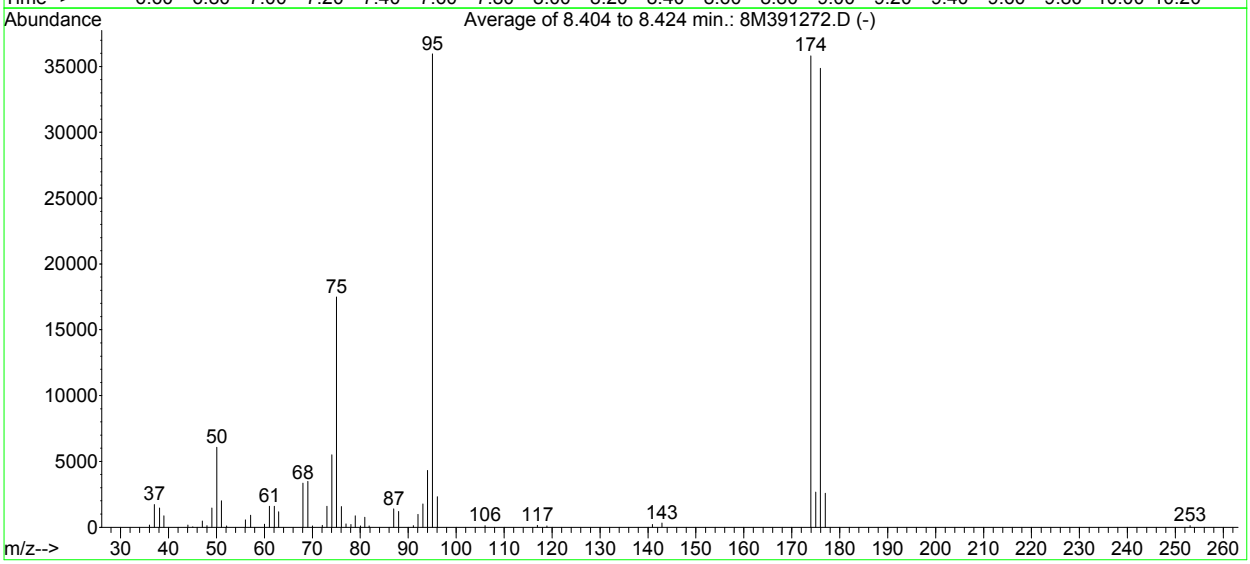

AutoFind: Scans 129, 130, 131; Background Corrected with Scan 124

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.9	6082	PASS
75	95	30	60	48.6	17482	PASS
95	95	100	100	100.0	35952	PASS
96	95	5	9	6.4	2311	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	99.6	35818	PASS
175	174	5	9	7.4	2660	PASS
176	174	95	101	97.3	34861	PASS
177	176	5	9	7.4	2581	PASS

8M391272.D BFB.M Sun Oct 06 16:49:19 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\101013\11M95882.D          Vial: 1
Acq On    : 10 Oct 2013  10:32                        Operator: FJB
Sample    : WG448050-01 BFB 50ng 8260                 Inst    : hpms11
Misc      : 1,1 STD60561                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

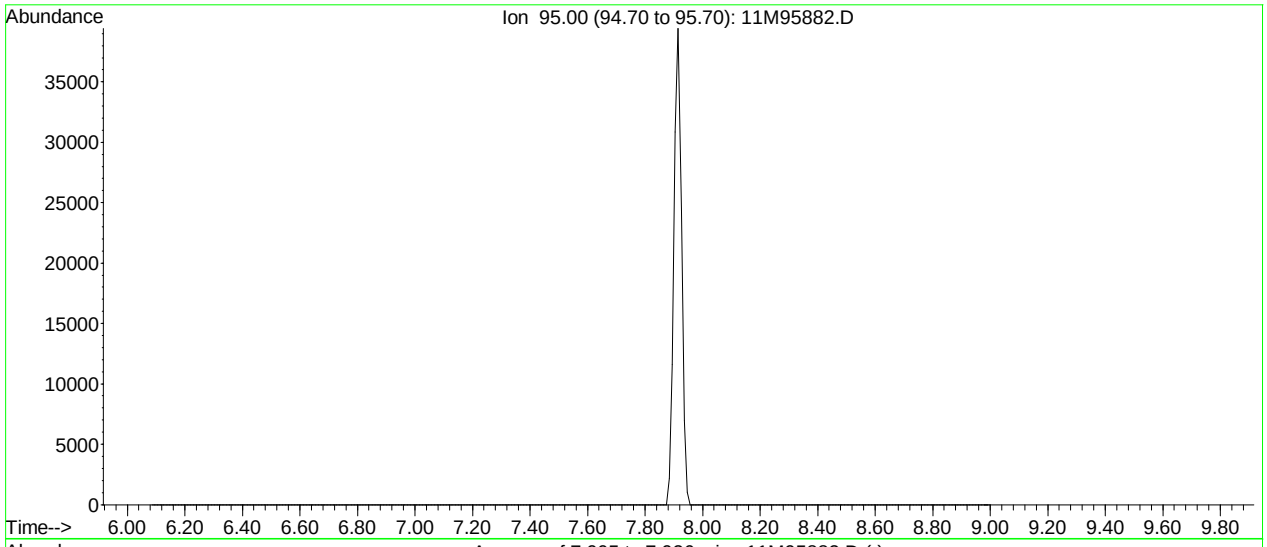

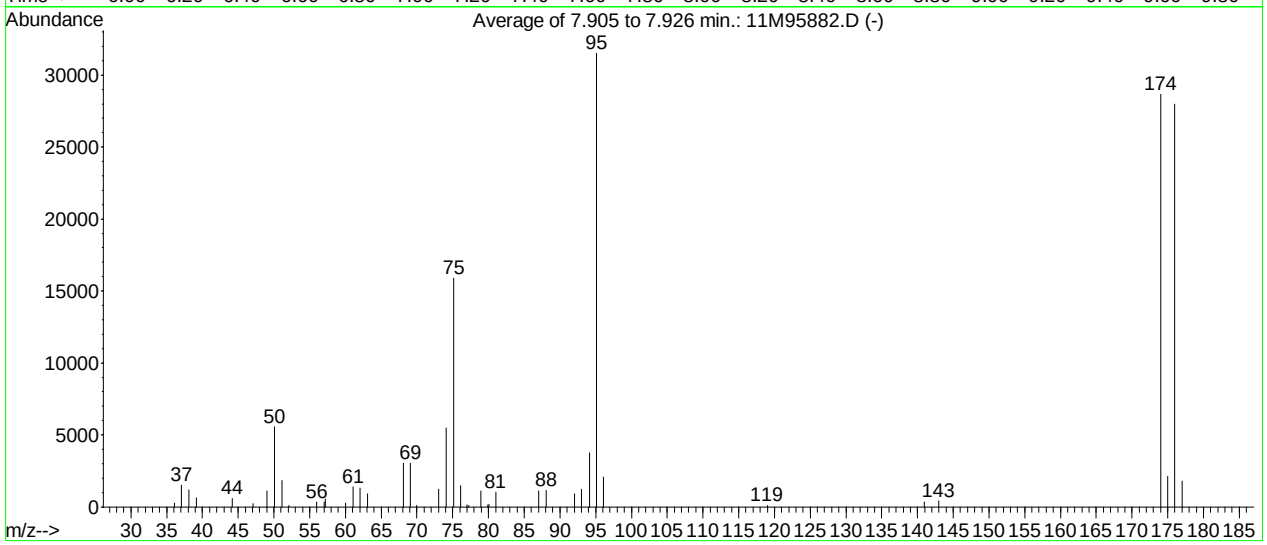

AutoFind: Scans 177, 178, 179; Background Corrected with Scan 172

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.6	5554	PASS
75	95	30	60	50.4	15882	PASS
95	95	100	100	100.0	31528	PASS
96	95	5	9	6.5	2054	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	91.0	28685	PASS
175	174	5	9	7.3	2097	PASS
176	174	95	101	97.5	27973	PASS
177	176	5	9	6.4	1780	PASS

11M95882.D BFB.M Thu Oct 10 11:27:20 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101013\11M95885.D Vial: 4
Acq On : 10 Oct 2013 12:01 Operator: FJB
Sample : WG448051-01 VBLK1010 BLANK 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 12:23:14 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.66	96	880258	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.29	117	687085	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.10	152	367061	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	222135	24.2443 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.96%		
43) 1,2-Dichloroethane-d4	10.28	65	219858	21.9860 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.96%		
58) Toluene-d8	12.51	98	745318	23.9305 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.72%		
80) p-Bromofluorobenzene	15.69	95	314646	22.5313 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.12%		

Target Compounds					Qvalue
3) Chloromethane	3.70	50	1640	0.1611 ug/L #	75
13) Acetone	6.38	43	2952	1.1140 ug/L #	40
99) Hexachlorobutadiene	19.72	225	1282	0.1878 ug/L #	43

(#) = qualifier out of range (m) = manual integration
11M95885.D 8260WTR.M Tue Oct 15 09:03:03 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101013\11M95885.D Vial: 4
Acq On : 10 Oct 2013 12:01 Operator: FJB
Sample : WG448051-01 VBLK1010 BLANK 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 12:23 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Initial Calibration

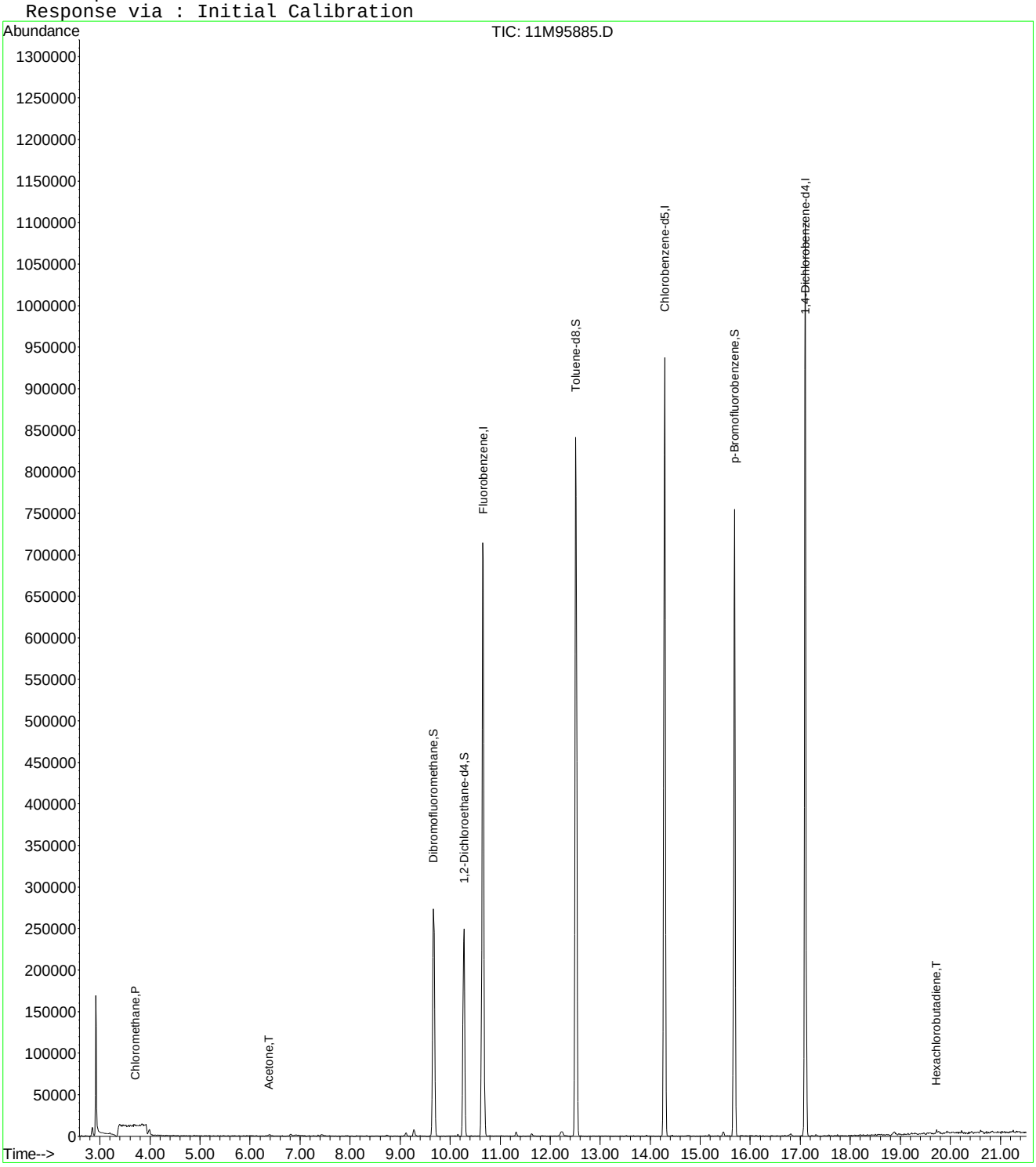

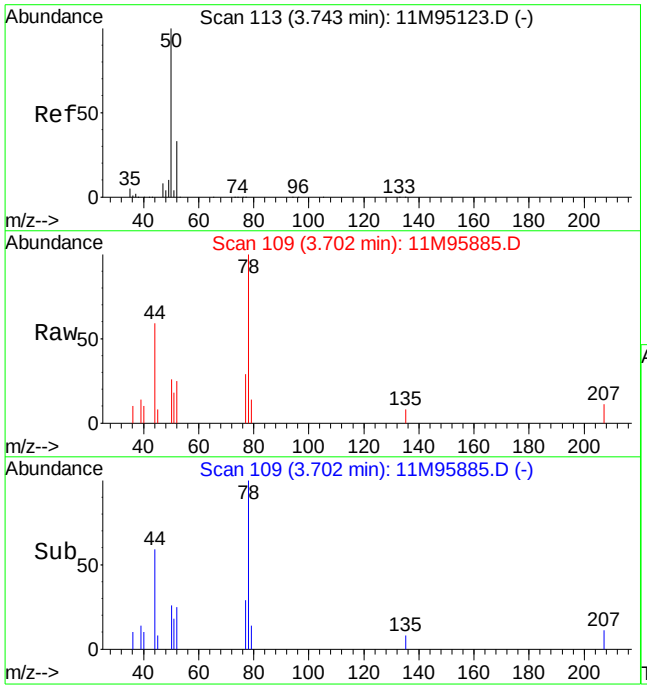

#3
Chloromethane
Concen: 0.16 ug/L
RT: 3.70 min Scan# 109
Delta R.T. -0.02 min
Lab File: 11M95885.D
Acq: 10 Oct 2013 12:01

Tgt Ion: 50 Resp: 1640

Ion	Ratio	Lower	Upper
50	100		
52	48.3	20.3	47.3#

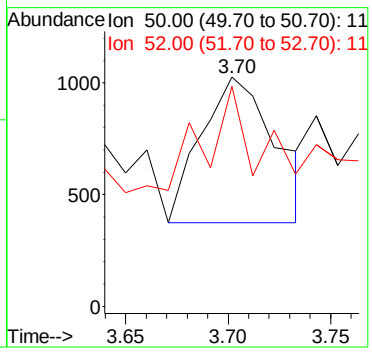

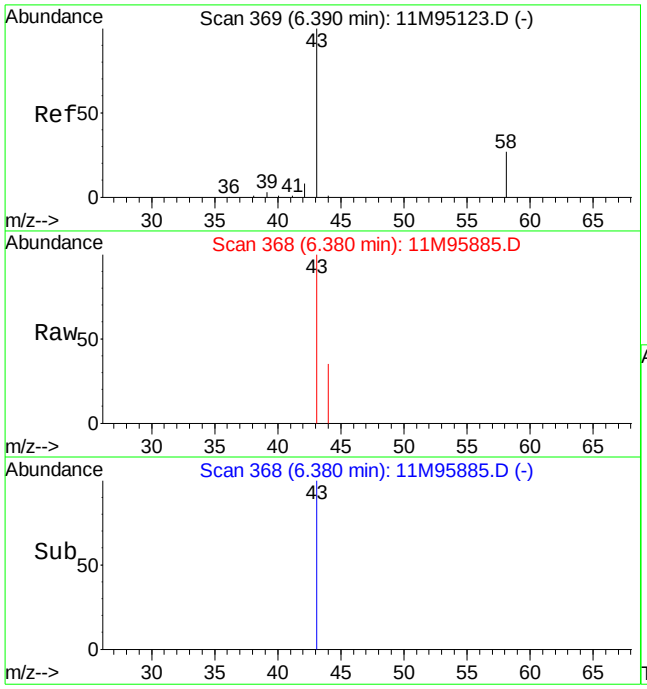

#13
Acetone
Concen: 1.11 ug/L
RT: 6.38 min Scan# 368
Delta R.T. 0.01 min
Lab File: 11M95885.D
Acq: 10 Oct 2013 12:01

Tgt Ion: 43 Resp: 2952

Ion	Ratio	Lower	Upper
43	100		
58	52.5	13.9	32.3#

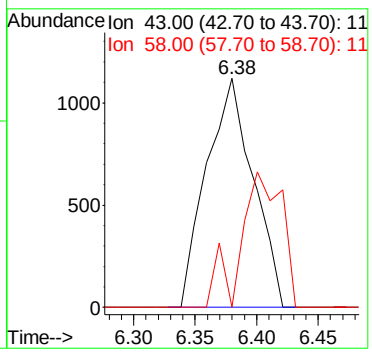

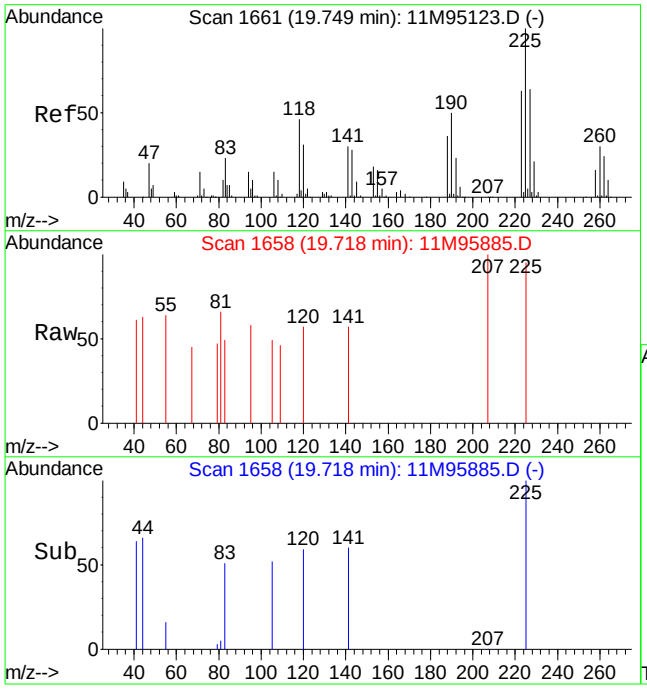

#99
Hexachlorobutadiene
Concen: 0.19 ug/L
RT: 19.72 min Scan# 1658
Delta R.T. -0.01 min
Lab File: 11M95885.D
Acq: 10 Oct 2013 12:01

Tgt Ion:225 Resp: 1282

Ion	Ratio	Lower	Upper
225	100		
227	27.2	38.2	89.0#
118	0.0	27.9	65.1#

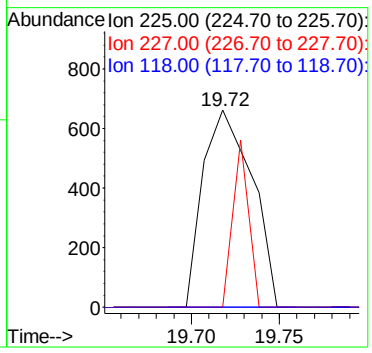

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391275.D Vial: 4
Acq On : 6 Oct 2013 17:59 Operator: MES
Sample : WG447417-01 BLANK 1006 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 07 09:30:52 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	675148	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.92	117	677890	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.95	152	454429	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.01	111	214930	25.3415 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.36%		
43) 1,2-Dichloroethane-d4	10.64	65	215709	26.2797 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.12%		
58) Toluene-d8	13.03	98	762008	24.6287 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.52%		
80) p-Bromofluorobenzene	16.42	95	301642	23.7047 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.80%		
Target Compounds					Qvalue
3) Chloromethane	3.85	50	1673	0.2293 ug/L #	64
36) Tetrahydrofuran	9.98	42	293	0.2353 ug/L #	34
56) Dimethyl Disulfide	13.03	94	21264	1.5960 ug/L #	28

(#) = qualifier out of range (m) = manual integration
8M391275.D 8260WT.M Mon Oct 07 09:30:53 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391275.D Vial: 4
Acq On : 6 Oct 2013 17:59 Operator: MES
Sample : WG447417-01 BLANK 1006 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 7 9:30 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration

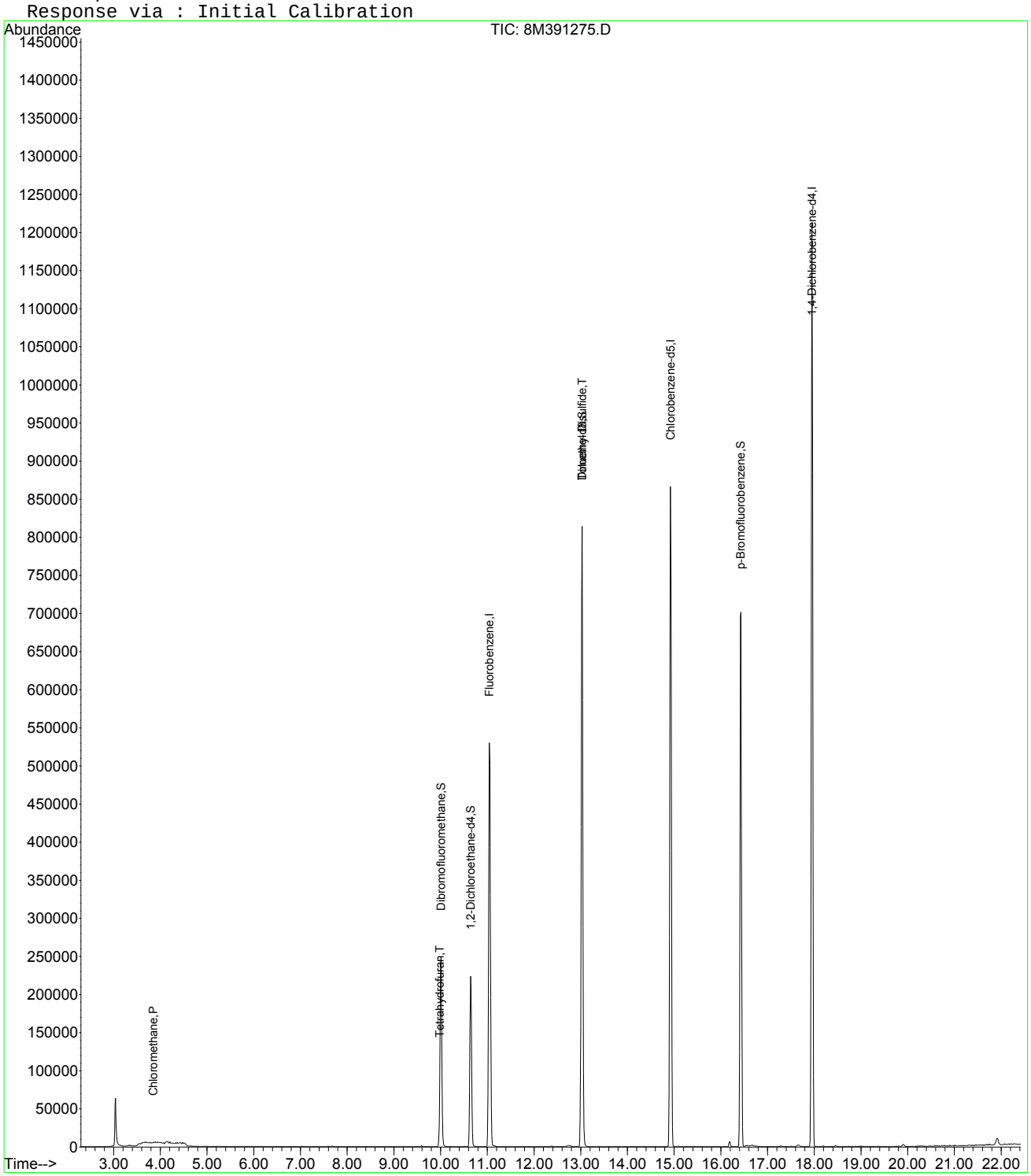

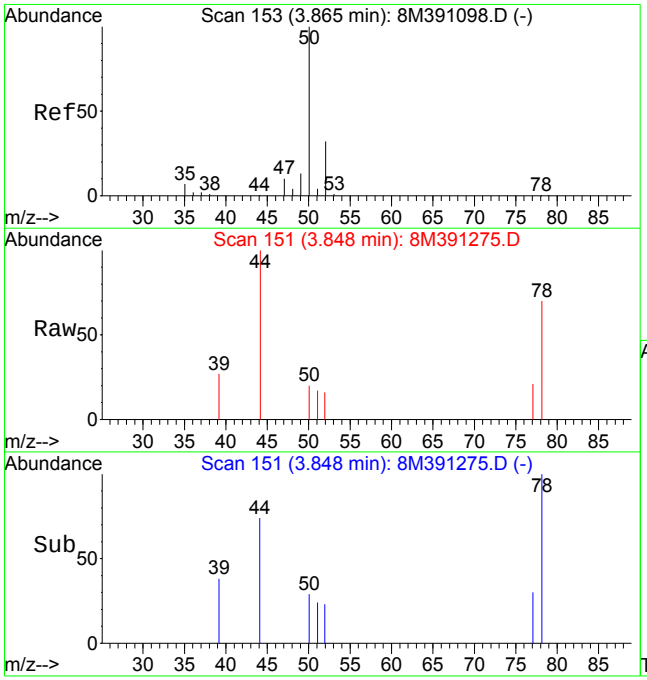

#3
Chloromethane
Concen: 0.23 ug/L
RT: 3.85 min Scan# 151
Delta R.T. -0.02 min
Lab File: 8M391275.D
Acq: 6 Oct 2013 17:59

Tgt Ion: 50 Resp: 1673

Ion	Ratio	Lower	Upper
50	100		
52	12.4	19.8	46.2#

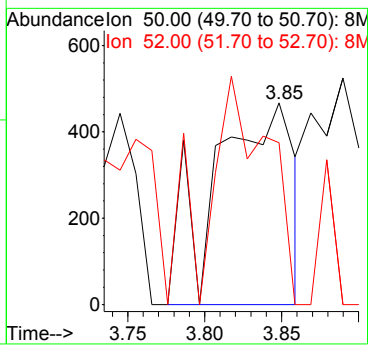

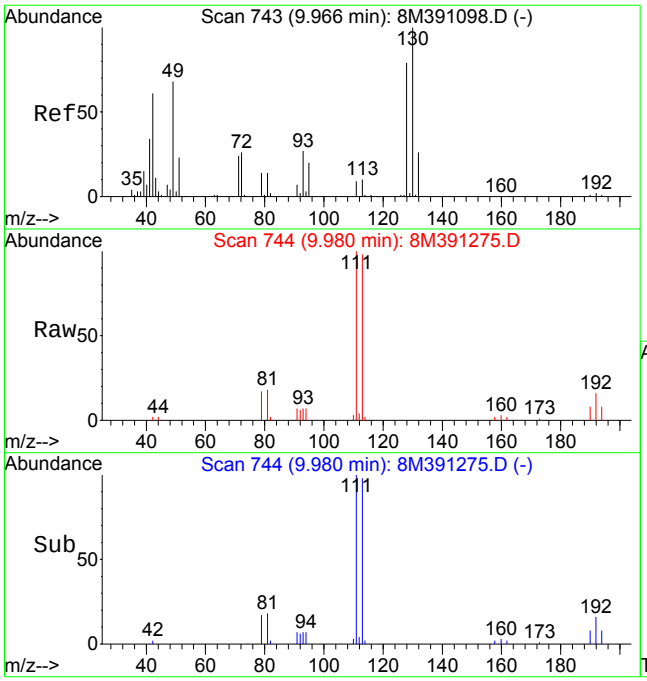

#36
Tetrahydrofuran
Concen: 0.24 ug/L
RT: 9.98 min Scan# 744
Delta R.T. 0.01 min
Lab File: 8M391275.D
Acq: 6 Oct 2013 17:59

Tgt Ion: 42 Resp: 293

Ion	Ratio	Lower	Upper
42	100		
72	0.0	25.7	59.9#
71	0.0	24.4	57.0#

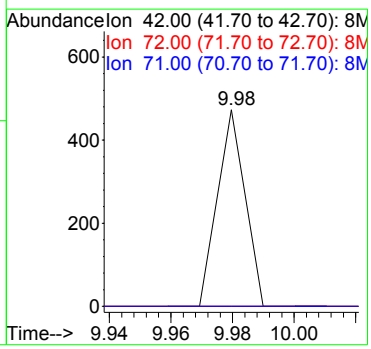

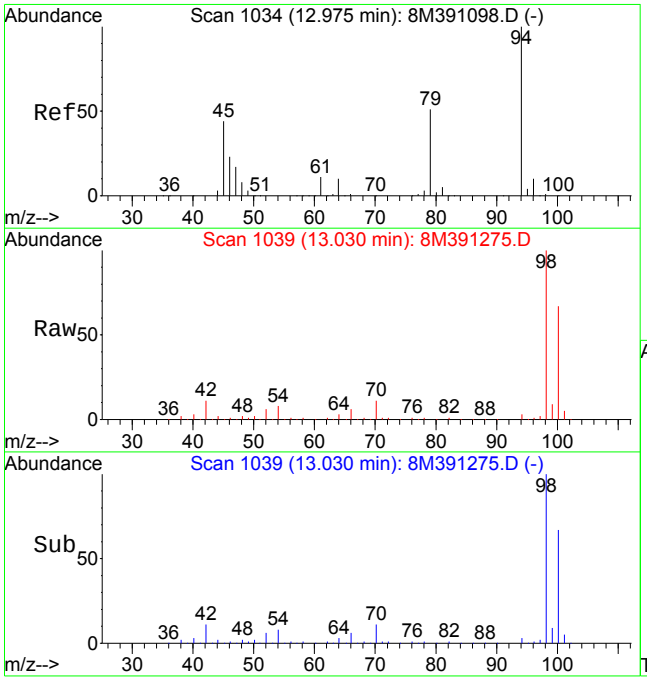

#56
Dimethyl Disulfide
Concen: 1.60 ug/L
RT: 13.03 min Scan# 1039
Delta R.T. 0.06 min
Lab File: 8M391275.D
Acq: 6 Oct 2013 17:59

Tgt Ion: 94 Resp: 21264

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

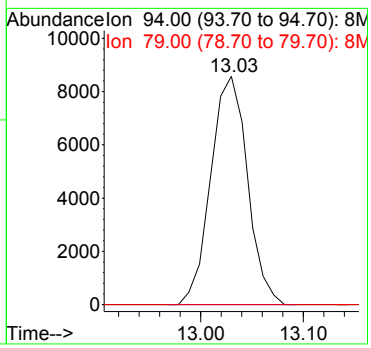

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391275.D Vial: 4
Acq On : 6 Oct 2013 17:59 Operator: MES
Sample : WG447417-01 BLANK 1006 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 08:55:51 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	675148	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.92	117	677890	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.95	152	454429	25.00 ug/L	0.00

Target Compounds					Qvalue
5) Ethyl Acetate	9.59	43	1221	0.2695 ug/L #	64
7) Isobutyl Alcohol	9.59	43	1221	7.9452 ug/L #	87
13) Cyclohexanone	16.19	55	4115	13.7791 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M391275.D A9FOOWTR.M Thu Oct 10 08:55:51 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100613\8M391275.D Vial: 4
Acq On : 6 Oct 2013 17:59 Operator: MES
Sample : WG447417-01 BLANK 1006 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 8:55 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Initial Calibration

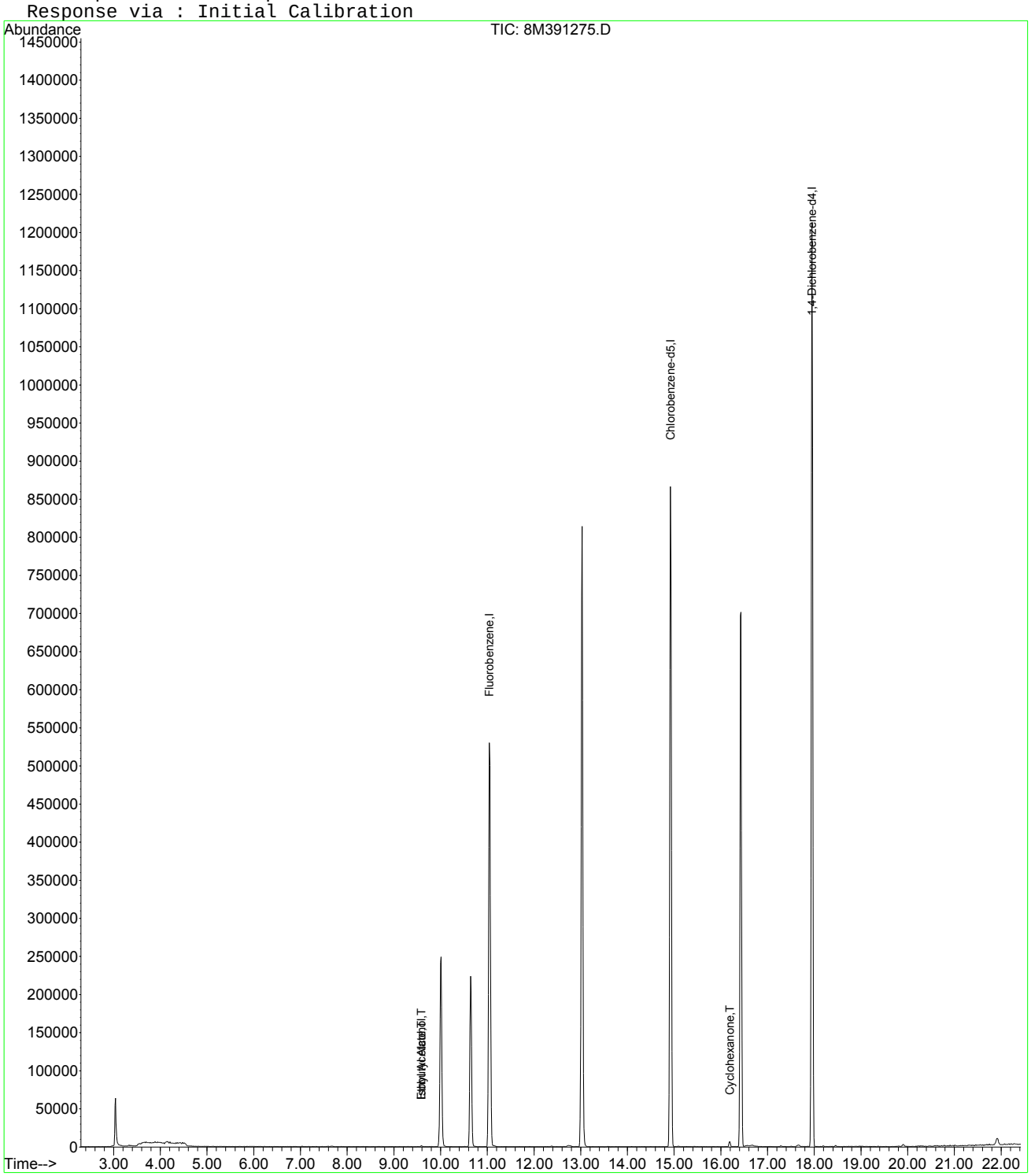

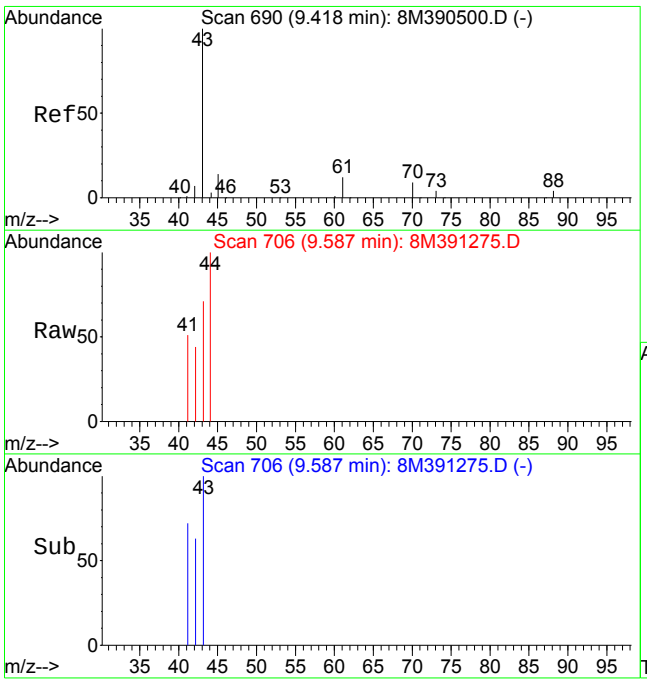

#5
Ethyl Acetate
Concen: 0.27 ug/L
RT: 9.59 min Scan# 706
Delta R.T. 0.17 min
Lab File: 8M391275.D
Acq: 6 Oct 2013 17:59

Tgt Ion: 43 Resp: 1221

Ion	Ratio	Lower	Upper
43	100		
61	0.0	8.9	20.9#

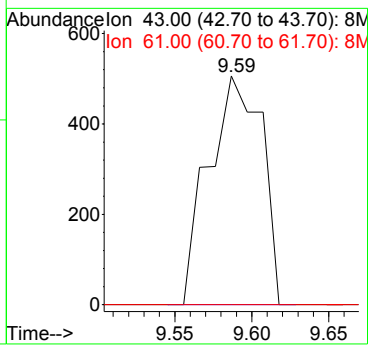

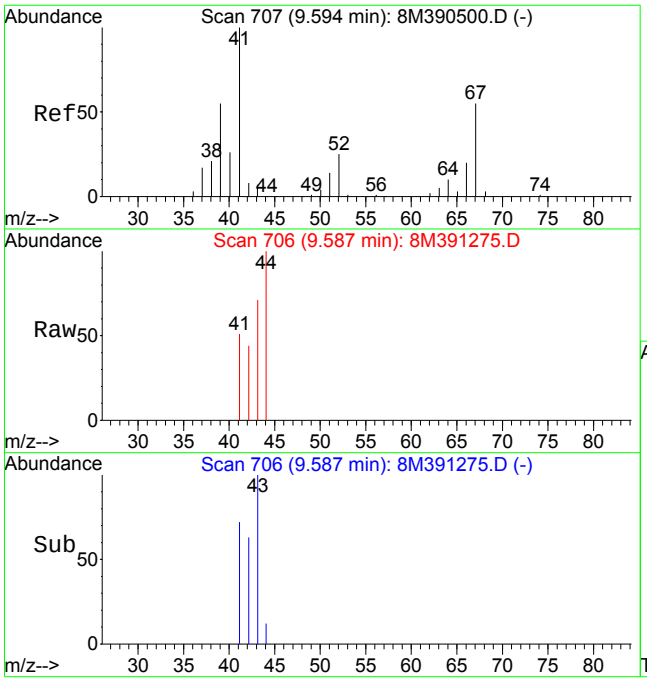

#7
Isobutyl Alcohol
Concen: 7.95 ug/L
RT: 9.59 min Scan# 706
Delta R.T. -0.01 min
Lab File: 8M391275.D
Acq: 6 Oct 2013 17:59

Tgt Ion: 43 Resp: 1221

Ion	Ratio	Lower	Upper
43	100		
42	0.0	0.0	40.0
74	0.0	0.0	44.2

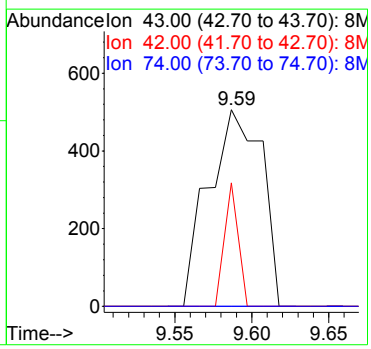

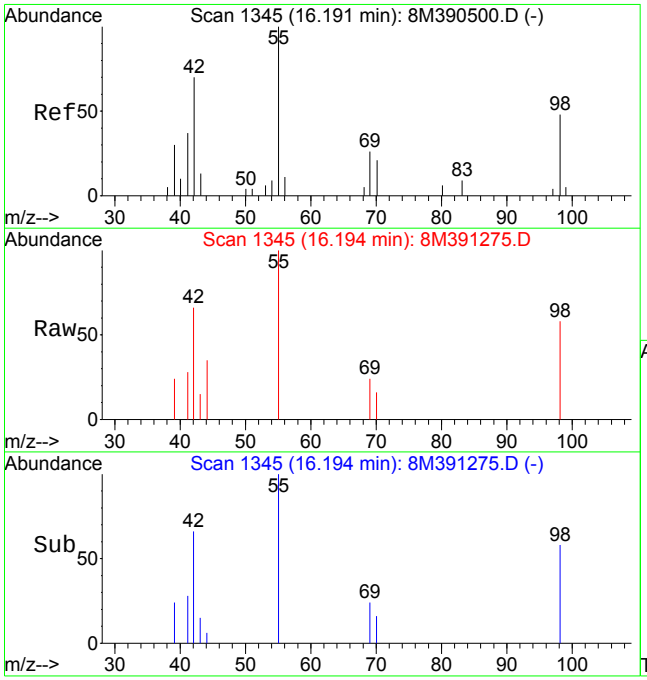

#13
Cyclohexanone
Concen: 13.78 ug/L
RT: 16.19 min Scan# 1345
Delta R.T. 0.01 min
Lab File: 8M391275.D
Acq: 6 Oct 2013 17:59

Tgt Ion: 55 Resp: 4115

Ion	Ratio	Lower	Upper
55	100		
98	46.9	26.0	60.8

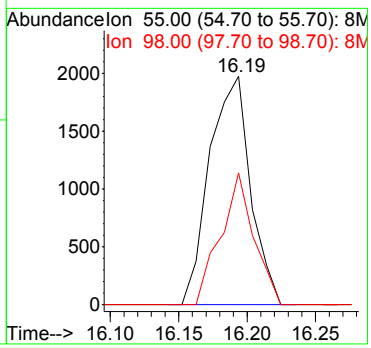

Data File : C:\MSDCHEM\1\DATA\100613\8M391295.D Vial: 24
Acq On : 7 Oct 2013 4:19 Operator: MES
Sample : ~~WG447~~ WG447417-06 624 BLK Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P 10/10/13
Quant Time: Oct 09 16:38:11 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	627896	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.92	117	633527	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.95	152	433300	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.01	111	202663	25.6933 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.76%		
43) 1,2-Dichloroethane-d4	10.64	65	202335	26.5054 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.04%		
58) Toluene-d8	13.03	98	710292	24.5648 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.24%		
80) p-Bromofluorobenzene	16.43	95	280661	23.1314 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.52%		
Target Compounds					Qvalue
19) Methylene Chloride	7.59	84	1299	0.1816 ug/L	87
56) Dimethyl Disulfide	13.03	94	19998	1.6139 ug/L #	28

(#) = qualifier out of range (m) = manual integration
8M391295.D 8260WT.M Wed Oct 09 16:38:12 2013 Page 1

Data File : C:\MSDCHEM\1\DATA\100613\8M391295.D
Acq On : 7 Oct 2013 4:19
Sample : ~~WG447~~ WG447417-06 624 BLK
Misc : 2,1
MS Integration Params: RTEINT.P
Quant Time: Oct 9 16:38 2013

Vial: 24
Operator: MES
Inst : HPMS8
Multiplr: 1.00
10/10/13
Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration

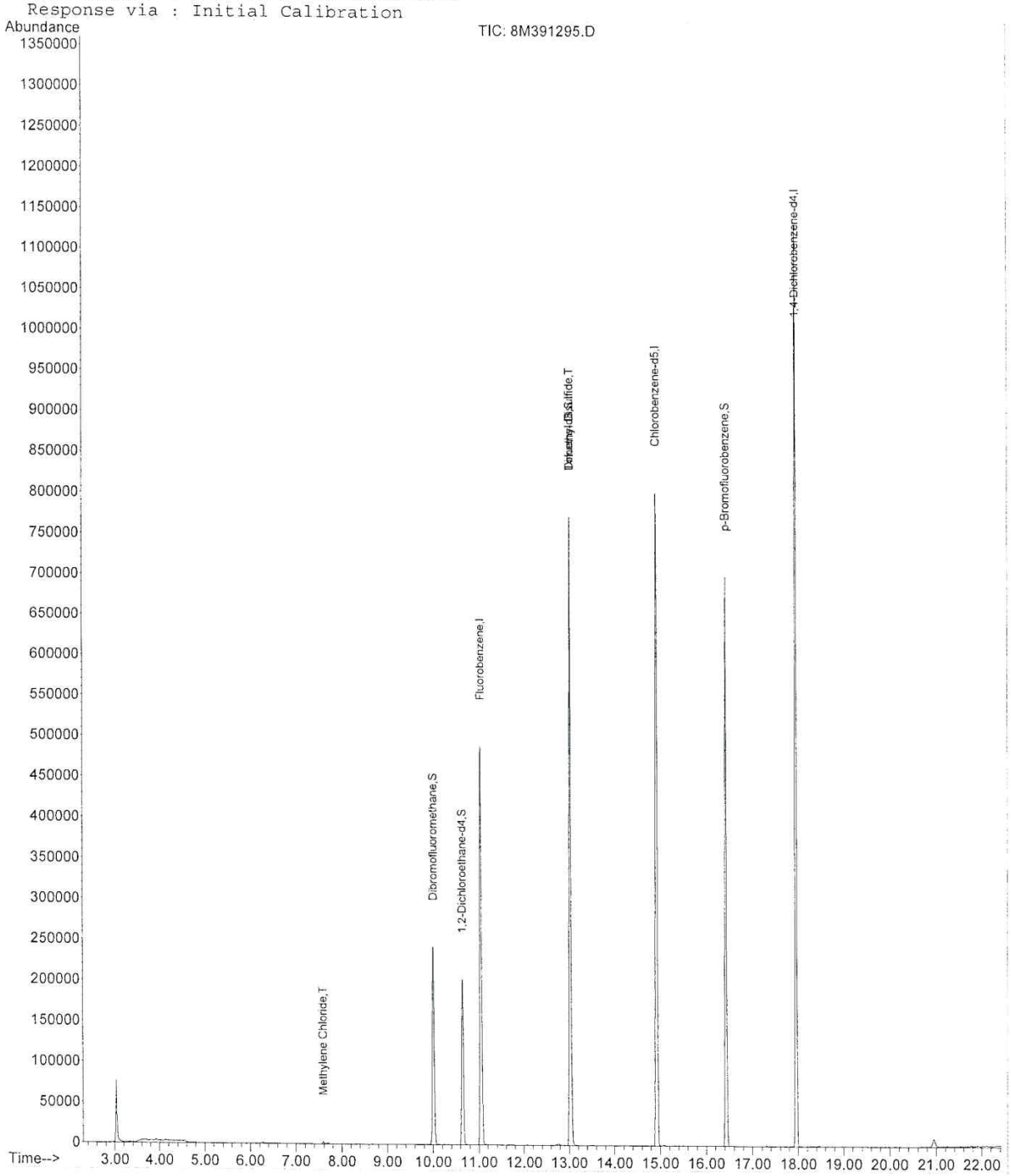

8M391295.D 8260WT.M Wed Oct 09 16:38:12 2013 Page 2

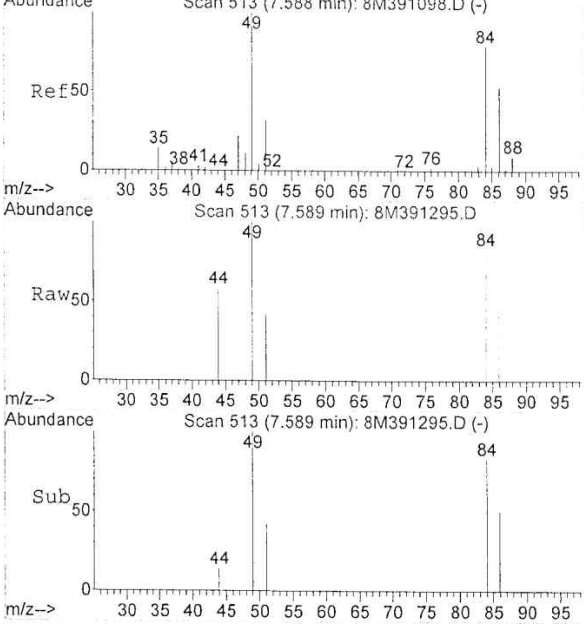

#19
Methylene Chloride
Concen: 0.18 ug/L
RT: 7.59 min Scan# 513
Delta R.T. 0.00 min
Lab File: 8M391295.D
Acq: 7 Oct 2013 4:19

Tgt Ion: 84 Resp: 1299

Ion	Ratio	Lower	Upper
84	100		
49	142.7	76.3	178.1

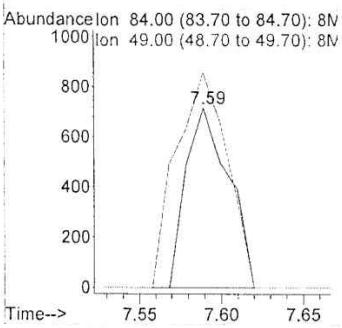

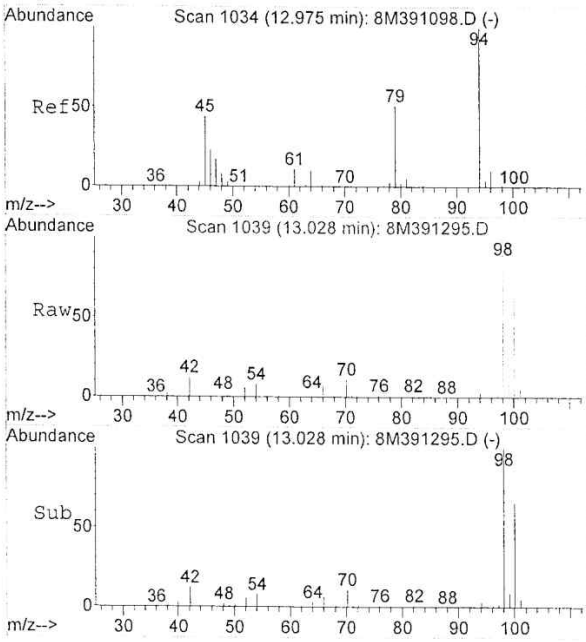

#56
Dimethyl Disulfide
Concen: 1.61 ug/L
RT: 13.03 min Scan# 1039
Delta R.T. 0.05 min
Lab File: 8M391295.D
Acq: 7 Oct 2013 4:19

Tgt Ion: 94 Resp: 19998

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

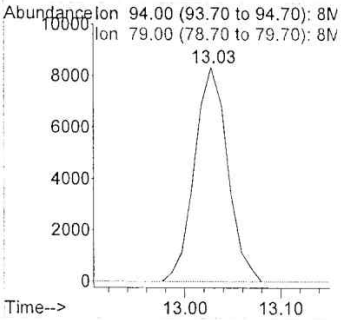

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101013\11M95886.D Vial: 5
Acq On : 10 Oct 2013 12:32 Operator: FJB
Sample : WG448051-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD60522 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 12:54:37 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.66	96	902320	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.29	117	710452	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.10	152	397653	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	230110	24.5006 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.00%		
43) 1,2-Dichloroethane-d4	10.28	65	231291	22.5638 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.24%		
58) Toluene-d8	12.51	98	782738	24.3054 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.24%		
80) p-Bromofluorobenzene	15.69	95	324900	21.4758 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 85.92%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	203982	23.5077 ug/L	99
3) Chloromethane	3.72	50	208624	19.9877 ug/L	98
4) Vinyl Chloride	3.96	62	228895	20.2043 ug/L	99
5) 1,3-Butadiene	4.00	54	99963	13.0838 ug/L	97
6) Bromomethane	4.88	94	98832	13.5854 ug/L	100
7) Chloroethane	5.04	64	117794	19.1854 ug/L	99
8) Trichlorofluoromethane	5.52	101	327334	20.6348 ug/L	100
9) Diethyl ether	6.04	59	613926	97.8819 ug/L	88
10) Isoprene	6.08	67	250029	19.1534 ug/L	74
11) Acrolein	6.28	56	85501	106.5609 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	192743	21.7092 ug/L	94
13) Acetone	6.37	43	39508	14.5449 ug/L	84
14) 1,1-Dichloroethene	6.60	61	254759	18.2608 ug/L	85
15) Tert-Butyl Alcohol	6.70	59	96042	164.0971 ug/L	98
16) Dimethyl Sulfide	6.86	62	208744	22.4387 ug/L	77
17) Iodomethane	7.10	142	174717	17.5809 ug/L	85
18) Methyl acetate	7.10	43	109168	23.3726 ug/L	90
19) Methylene Chloride	7.35	84	179688	19.1661 ug/L	74
20) Carbon Disulfide	7.41	76	571718	20.0936 ug/L	100
21) Acrylonitrile	7.53	53	47840	19.6294 ug/L	96
22) Methyl Tert Butyl Ether	7.56	73	528203	22.7811 ug/L	93
23) trans-1,2-Dichloroethene	7.80	96	189843	20.4540 ug/L	80
24) n-Hexane	7.87	57	188612	15.8991 ug/L	94
25) Diisopropyl ether	8.19	45	2802105	96.6388 ug/L	97
26) Vinyl Acetate	8.35	43	199835	19.2132 ug/L	97
27) 1,1-Dichloroethane	8.40	63	316549	19.9064 ug/L	98
28) Ethyl-Tert-Butyl ether	8.74	59	2649875	98.9547 ug/L	94
29) 2-Butanone	8.91	43	56764	20.0996 ug/L	86
30) Propionitrile	9.02	54	79328	97.2416 ug/L	99
31) 2,2-Dichloropropane	9.13	77	275517	19.2826 ug/L	98
32) cis-1,2-Dichloroethene	9.19	96	208484	20.2566 ug/L	81
33) Chloroform	9.39	83	328042	19.5076 ug/L	99
34) 1-Bromopropane	9.52	122	43556	20.6563 ug/L	99
35) Bromochloromethane	9.62	130	124214	21.3108 ug/L	84
36) Tetrahydrofuran	9.64	42	171112	94.4469 ug/L	85
38) 1,1,1-Trichloroethane	9.90	97	312970	19.7471 ug/L	98
39) Cyclohexane	9.94	56	269037	17.8424 ug/L	83
40) 1,1-Dichloropropene	10.08	75	257730	19.5575 ug/L	98
41) Carbon Tetrachloride	10.23	117	297563	20.9775 ug/L	100
42) Tert-Amyl-Methyl ether	10.17	73	2476287	101.9136 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M95886.D 8260WTR.M Thu Oct 10 12:54:37 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101013\11M95886.D Vial: 5
Acq On : 10 Oct 2013 12:32 Operator: FJB
Sample : WG448051-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD60522 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 12:54:37 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.39	62	240356	18.6373	ug/L		99
46)	Benzene	10.43	78	722899	20.6227	ug/L		99
47)	Trichloroethene	11.14	130	207663	21.3395	ug/L		96
48)	Methylcyclohexane	11.22	83	267989	18.6411	ug/L		84
49)	1,2-Dichloropropane	11.33	63	174562	19.1979	ug/L		87
50)	1,4-Dioxane	11.60	88	8444	140.8813	ug/L		99
51)	Bromodichloromethane	11.62	83	247369	19.3118	ug/L		99
52)	Dibromomethane	11.70	93	110316	19.7959	ug/L		97
53)	2-Chloroethyl Vinyl Ether	11.88	63	92312	21.3311	ug/L		95
54)	4-Methyl-2-Pentanone	11.91	58	44711	19.7517	ug/L		91
55)	cis-1,3-Dichloropropene	12.21	75	305520	21.1700	ug/L		98
56)	Dimethyl Disulfide	12.46	79	164294	19.6379	ug/L		84
59)	Toluene	12.60	91	797558	21.0244	ug/L		98
60)	Ethyl Methacrylate	12.68	69	205545	21.3967	ug/L		83
62)	trans-1,3-Dichloropropene	12.77	75	253070	18.7492	ug/L		95
63)	1,1,2-Trichloroethane	12.98	97	143681	19.6557	ug/L		97
64)	2-Hexanone	12.90	43	82200	17.6816	ug/L		82
65)	1,3-Dichloropropane	13.26	76	253974	19.1534	ug/L		82
66)	Tetrachloroethene	13.38	164	175646	19.7677	ug/L		89
67)	Dibromochloromethane	13.63	129	186347	20.0107	ug/L		99
68)	1,2-Dibromoethane	13.87	107	145339	18.8520	ug/L		100
69)	1-Chlorohexane	13.93	91	262696	19.4639	ug/L		72
70)	Chlorobenzene	14.33	112	518382	19.1683	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.36	131	209383	19.7279	ug/L		100
72)	Ethylbenzene	14.35	106	280995	19.3207	ug/L		99
73)	m-,p-Xylene	14.43	106	651041	39.7268	ug/L		98
74)	o-Xylene	14.96	106	308068	18.4148	ug/L		94
75)	Styrene	14.99	104	553445	20.4897	ug/L		88
76)	Bromoform	15.47	173	132779	18.7163	ug/L		96
77)	Isopropylbenzene	15.35	105	783939	19.9224	ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.55	83	166411	19.8178	ug/L		99
81)	1,2,3-Trichloropropane	15.74	110	50246	18.5031	ug/L	#	62
82)	trans-1,4-Dichloro-2-Buten	15.77	53	32137	10.5581	ug/L	#	1
83)	n-Propylbenzene	15.83	91	936874	17.3235	ug/L		100
84)	Bromobenzene	15.96	156	243092	18.3915	ug/L		76
85)	1,3,5-Trimethylbenzene	16.00	105	729861	19.9574	ug/L		92
86)	2-Chlorotoluene	16.09	91	652203	19.6115	ug/L		93
87)	4-Chlorotoluene	16.13	91	555862	17.1583	ug/L		86
88)	a-Methylstyrene	16.38	118	410363	19.7482	ug/L		86
89)	tert-Butylbenzene	16.43	134	150458	17.3233	ug/L		75
90)	1,2,4-Trimethylbenzene	16.48	105	746143	20.0621	ug/L		94
91)	sec-Butylbenzene	16.68	105	790099	17.8329	ug/L		96
92)	p-Isopropyltoluene	16.82	119	695454	18.2603	ug/L		95
93)	1,3-Dichlorobenzene	17.02	146	419799	18.1329	ug/L		96
94)	1,4-Dichlorobenzene	17.14	146	461735	18.8232	ug/L		97
95)	n-Butylbenzene	17.32	91	671529	18.8524	ug/L		96
96)	1,2-Dichlorobenzene	17.61	146	401291	17.9305	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	18.53	75	29535	17.6019	ug/L		88
98)	1,2,4-Trichlorobenzene	19.58	180	304879	18.9439	ug/L		96
99)	Hexachlorobutadiene	19.73	225	121941	16.4906	ug/L		96
100)	Naphthalene	19.93	128	545335	19.2346	ug/L		99
101)	1,2,3-Trichlorobenzene	20.23	180	264617	18.0852	ug/L		95

(#) = qualifier out of range (m) = manual integration
11M95886.D 8260WTR.M Thu Oct 10 12:54:37 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101013\11M95886.D Vial: 5
Acq On : 10 Oct 2013 12:32 Operator: FJB
Sample : WG448051-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD60522 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 12:54 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Initial Calibration

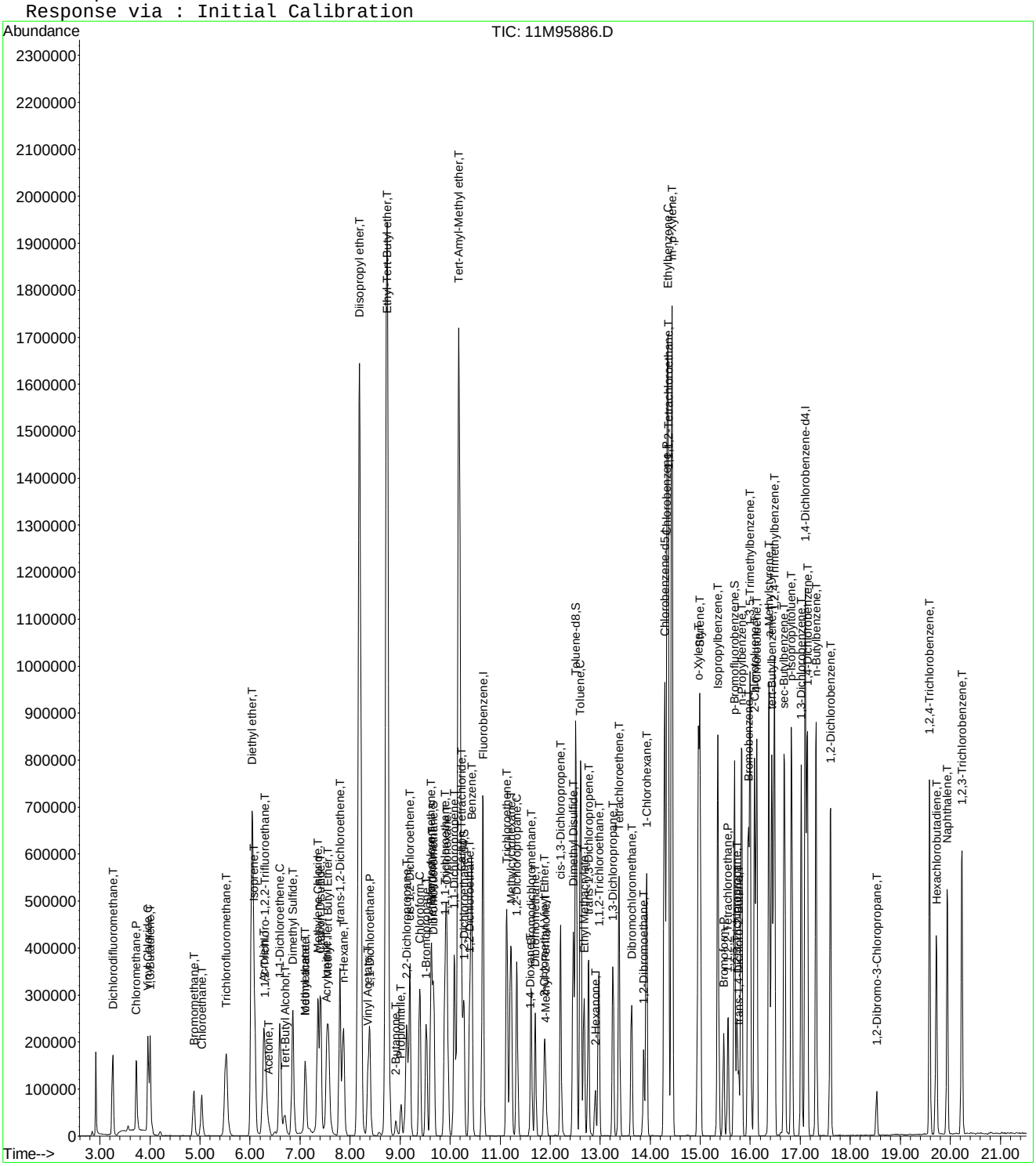

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\100613\8M391276.D Vial: 5
Acq On : 6 Oct 2013 18:30 Operator: MES
Sample : WG447417-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD60522 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 06 18:53:20 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	679596	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.92	117	707219	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.95	152	472365	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.00	111	219344	25.6926 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.76%		
43) 1,2-Dichloroethane-d4	10.64	65	209134	25.3119 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.24%		
58) Toluene-d8	13.03	98	791658	24.5259 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.12%		
80) p-Bromofluorobenzene	16.42	95	314569	23.7819 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.12%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.38	85	227791	30.0113 ug/L	100
3) Chloromethane	3.87	50	169398	23.0702 ug/L	99
4) Vinyl Chloride	4.11	62	158826	22.1302 ug/L	98
5) 1,3-Butadiene	4.16	54	63293	14.4429 ug/L	98
6) Bromomethane	5.04	94	122156	23.9870 ug/L	99
7) Chloroethane	5.20	64	107420	21.1978 ug/L	99
8) Trichlorofluoromethane	5.70	101	322064	23.4319 ug/L	99
9) Diethyl ether	6.24	59	503476	103.2938 ug/L	100
10) Isoprene	6.27	67	213156	23.0303 ug/L	99
11) Acrolein	6.47	56	63458	117.4865 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	184155	23.9537 ug/L	96
13) Acetone	6.58	43	30873	19.9706 ug/L	97
14) 1,1-Dichloroethene	6.80	61	233083	20.7050 ug/L	99
15) Tert-Butyl Alcohol	6.91	59	67848	230.9600 ug/L	97
16) Dimethyl Sulfide	7.07	62	159592	25.6167 ug/L	99
17) Iodomethane	7.33	142	218984	25.8555 ug/L	99
18) Methyl acetate	7.33	43	77844	22.5424 ug/L	98
19) Methylene Chloride	7.59	84	154074	19.8998 ug/L	98
20) Carbon Disulfide	7.64	76	468770	21.1909 ug/L	99
21) Acrylonitrile	7.77	53	35752	21.6802 ug/L	100
22) Methyl Tert Butyl Ether	7.80	73	403588	21.5078 ug/L	99
23) trans-1,2-Dichloroethene	8.05	61	229381	21.4971 ug/L	100
24) n-Hexane	8.12	57	181631	20.7188 ug/L	100
25) Diisopropyl ether	8.46	45	2349253	102.4152 ug/L	99
26) Vinyl Acetate	8.62	43	186191	17.6738 ug/L	99
27) 1,1-Dichloroethane	8.67	63	277765	20.3473 ug/L	100
28) Ethyl-Tert-Butyl ether	9.03	59	2206291	102.8507 ug/L	99
29) 2-Butanone	9.21	43	39824	21.4239 ug/L	98
30) Propionitrile	9.33	54	56715	104.5662 ug/L	98
31) 2,2-Dichloropropane	9.44	77	276318	20.9083 ug/L	99
32) cis-1,2-Dichloroethene	9.51	96	182200	21.4292 ug/L	100
33) Chloroform	9.72	83	295956	20.7114 ug/L	100
34) 1-Bromopropane	9.86	122	40010	22.5082 ug/L	99
35) Bromochloromethane	9.95	130	128355	20.7857 ug/L	98
36) Tetrahydrofuran	9.97	42	123744	98.7151 ug/L	99
38) 1,1,1-Trichloroethane	10.25	97	298596	21.5183 ug/L	99
39) Cyclohexane	10.29	56	234064	21.3202 ug/L	99
40) 1,1-Dichloropropene	10.44	75	223721	20.3705 ug/L	100
41) Tert-Amyl-Methyl ether	10.55	73	1959206	102.6436 ug/L	100
42) Carbon Tetrachloride	10.59	117	291757	21.6240 ug/L	98
45) 1,2-Dichloroethane	10.76	62	225510	21.2103 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\100613\8M391276.D Vial: 5
Acq On : 6 Oct 2013 18:30 Operator: MES
Sample : WG447417-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD60522 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 06 18:53:20 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.81	78	613918	20.3301	ug/L	99
47)	Trichloroethene	11.55	130	216969	22.1500	ug/L	100
48)	Methylcyclohexane	11.64	83	255809	22.1655	ug/L	99
49)	1,2-Dichloropropane	11.77	63	147407	20.3450	ug/L	98
50)	Bromodichloromethane	12.07	83	225252	20.3586	ug/L	100
51)	1,4-Dioxane	12.06	88	5703	167.0299	ug/L	98
52)	Dibromomethane	12.16	93	89348	20.4188	ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.36	63	72228	20.1561	ug/L	99
54)	4-Methyl-2-Pentanone	12.39	58	33020	19.9192	ug/L	98
55)	cis-1,3-Dichloropropene	12.70	75	265648	21.5848	ug/L	98
56)	Dimethyl Disulfide	12.97	94	301447	22.4777	ug/L	95
59)	Toluene	13.12	91	718545	19.9116	ug/L	99
60)	Ethyl Methacrylate	13.21	69	154472	21.5244	ug/L	97
62)	trans-1,3-Dichloropropene	13.30	75	227757	18.2657	ug/L	99
63)	1,1,2-Trichloroethane	13.52	97	127447	19.3885	ug/L	99
64)	2-Hexanone	13.44	58	29588	18.4940	ug/L	96
65)	1,3-Dichloropropane	13.83	76	200699	18.7820	ug/L	99
66)	Tetrachloroethene	13.95	164	186067	19.3562	ug/L	99
67)	Dibromochloromethane	14.22	129	200155	19.8014	ug/L	98
68)	1,2-Dibromoethane	14.48	107	128405	18.8384	ug/L	100
69)	1-Chlorohexane	14.55	91	233181	21.9776	ug/L	99
70)	Chlorobenzene	14.97	112	521774	18.5615	ug/L	100
71)	1,1,1,2-Tetrachloroethane	15.00	131	214667	19.8670	ug/L	100
72)	Ethylbenzene	14.99	106	289989	19.2259	ug/L	100
73)	m-,p-Xylene	15.09	106	695698	38.8068	ug/L	97
74)	o-Xylene	15.66	106	332810	19.0242	ug/L	100
75)	Styrene	15.69	104	578316	21.0473	ug/L	99
76)	Bromoform	16.19	173	125508	18.7261	ug/L	98
77)	Isopropylbenzene	16.08	105	838931	19.8910	ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.29	83	129628	17.8861	ug/L	100
81)	1,2,3-Trichloropropane	16.48	110	46354	18.3214	ug/L	77
82)	trans-1,4-Dichloro-2-Buten	16.52	53	31055	13.7524	ug/L	86
83)	n-Propylbenzene	16.59	91	904403	18.7136	ug/L	100
84)	Bromobenzene	16.72	156	265563	19.1464	ug/L	98
85)	1,3,5-Trimethylbenzene	16.77	105	824950	21.1672	ug/L	98
86)	2-Chlorotoluene	16.87	91	638141	19.5003	ug/L	100
87)	4-Chlorotoluene	16.91	91	529738	17.4432	ug/L	100
88)	a-Methylstyrene	17.18	118	470284	22.0198	ug/L	99
89)	tert-Butylbenzene	17.24	134	166549	18.1735	ug/L	92
90)	1,2,4-Trimethylbenzene	17.29	105	831979	20.5959	ug/L	99
91)	sec-Butylbenzene	17.51	105	864236	18.9687	ug/L	100
92)	p-Isopropyltoluene	17.66	119	812753	19.4438	ug/L	99
93)	1,3-Dichlorobenzene	17.87	146	497722	18.5949	ug/L	99
94)	1,4-Dichlorobenzene	17.99	146	542365	19.4366	ug/L	99
95)	n-Butylbenzene	18.19	91	662090	20.2220	ug/L	99
96)	1,2-Dichlorobenzene	18.50	146	462057	18.3849	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	19.49	75	27449	18.9809	ug/L	98
98)	1,2,4-Trichlorobenzene	20.64	180	367150	18.9829	ug/L	100
99)	Hexachlorobutadiene	20.78	225	152068	18.6305	ug/L	98
100)	Naphthalene	21.01	128	632390	18.7823	ug/L	100
101)	1,2,3-Trichlorobenzene	21.32	180	325650	18.6975	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\100613\8M391276.D Vial: 5
Acq On : 6 Oct 2013 18:30 Operator: MES
Sample : WG447417-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD60522 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 6 18:53 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Fri Oct 04 14:09:59 2013
Response via : Initial Calibration

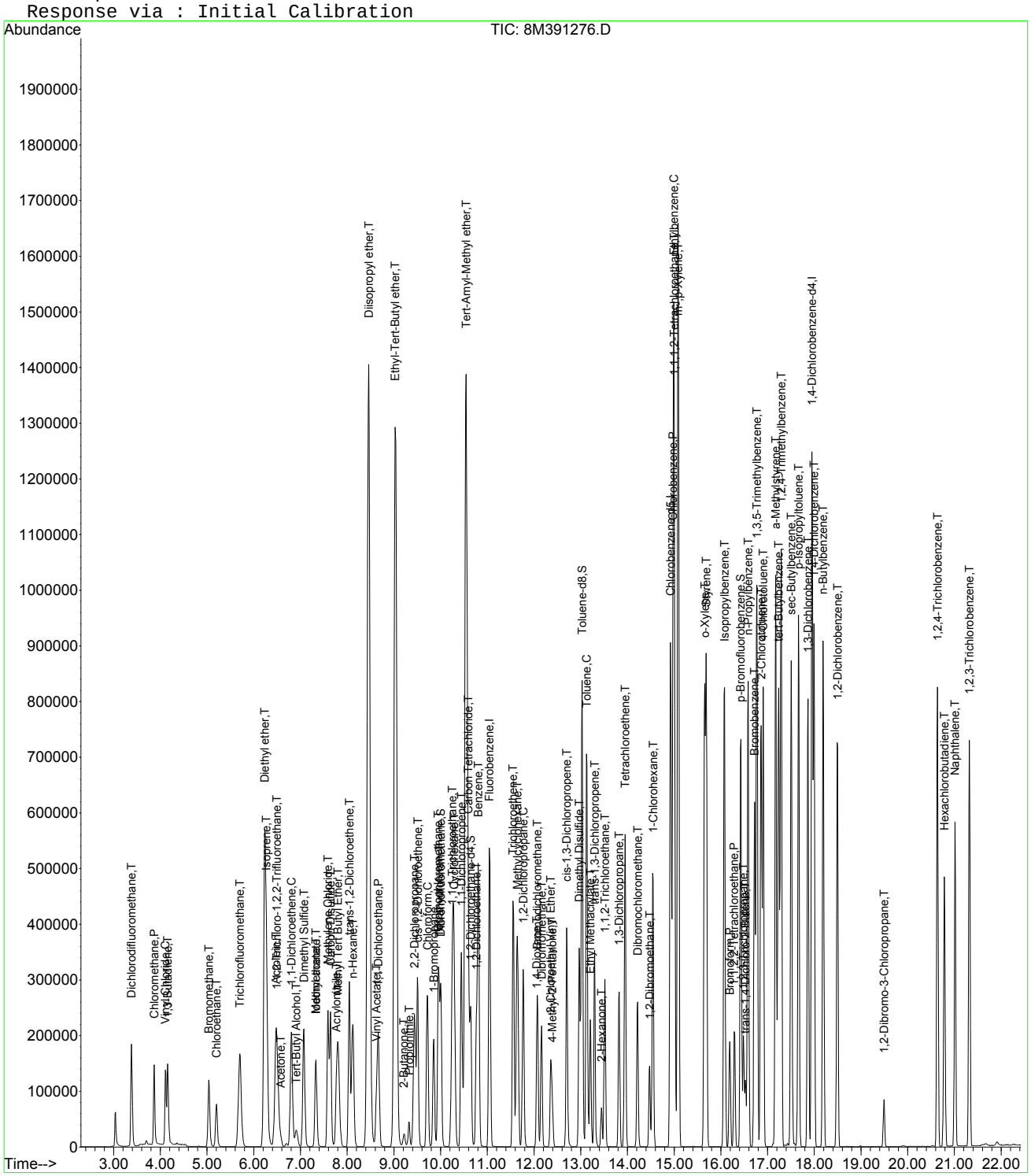

8M391276.D 8260WT.M Sun Oct 06 18:53:21 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101013\11M95887.D Vial: 6
Acq On : 10 Oct 2013 13:04 Operator: FJB
Sample : WG448051-03 20ug/L LCS DUP 8260 Inst : hpms11
Misc : 1,1 STD60522 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 13:26:00 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.66	96	913799	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.29	117	708693	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.10	152	392689	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	233188	24.5165 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.08%		
43) 1,2-Dichloroethane-d4	10.28	65	223460	21.5260 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.12%		
58) Toluene-d8	12.51	98	795432	24.7609 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.04%		
80) p-Bromofluorobenzene	15.69	95	329692	22.0680 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 88.28%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	206652	23.5162 ug/L	97
3) Chloromethane	3.72	50	189792	17.9551 ug/L	98
4) Vinyl Chloride	3.96	62	223167	19.4512 ug/L	99
5) 1,3-Butadiene	4.00	54	96367	12.4147 ug/L	98
6) Bromomethane	4.88	94	98744	13.4028 ug/L	98
7) Chloroethane	5.04	64	120624	19.3996 ug/L	98
8) Trichlorofluoromethane	5.52	101	323346	20.1273 ug/L	99
9) Diethyl ether	6.04	59	605557	95.3348 ug/L	88
10) Isoprene	6.08	67	246529	18.6480 ug/L	75
11) Acrolein	6.28	56	80443	98.9977 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	192472	21.4063 ug/L	93
13) Acetone	6.37	43	38244	13.9027 ug/L #	81
14) 1,1-Dichloroethene	6.60	61	254076	17.9831 ug/L	85
15) Tert-Butyl Alcohol	6.69	59	100708	169.9079 ug/L	97
16) Dimethyl Sulfide	6.86	62	206975	21.9691 ug/L	77
17) Iodomethane	7.10	142	199131	19.6574 ug/L	89
18) Methyl acetate	7.10	43	102414	21.6511 ug/L	89
19) Methylene Chloride	7.36	84	181151	19.0794 ug/L	72
20) Carbon Disulfide	7.40	76	565984	19.6422 ug/L	100
21) Acrylonitrile	7.53	53	45433	18.4076 ug/L	99
22) Methyl Tert Butyl Ether	7.56	73	512375	21.8208 ug/L	92
23) trans-1,2-Dichloroethene	7.80	96	187377	19.9347 ug/L	80
24) n-Hexane	7.87	57	181987	15.1479 ug/L	95
25) Diisopropyl ether	8.19	45	2783723	94.7988 ug/L	96
26) Vinyl Acetate	8.35	43	180261	17.4473 ug/L	97
27) 1,1-Dichloroethane	8.40	63	309067	19.1917 ug/L	97
28) Ethyl-Tert-Butyl ether	8.74	59	2590218	95.5119 ug/L	94
29) 2-Butanone	8.91	43	52153	18.2349 ug/L	86
30) Propionitrile	9.02	54	77751	94.1113 ug/L	98
31) 2,2-Dichloropropane	9.13	77	266332	18.4056 ug/L	98
32) cis-1,2-Dichloroethene	9.19	96	208503	20.0040 ug/L	80
33) Chloroform	9.39	83	331348	19.4567 ug/L	100
34) 1-Bromopropane	9.52	122	42988	20.1440 ug/L	99
35) Bromochloromethane	9.62	130	118689	20.1071 ug/L	87
36) Tetrahydrofuran	9.64	42	165455	90.1773 ug/L	86
38) 1,1,1-Trichloroethane	9.91	97	310587	19.3505 ug/L	98
39) Cyclohexane	9.94	56	273210	17.8915 ug/L	85
40) 1,1-Dichloropropene	10.08	75	253092	18.9643 ug/L	98
41) Carbon Tetrachloride	10.23	117	292375	20.3529 ug/L	98
42) Tert-Amyl-Methyl ether	10.17	73	2423981	98.5078 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M95887.D 8260WTR.M Thu Oct 10 13:26:01 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101013\11M95887.D Vial: 6
Acq On : 10 Oct 2013 13:04 Operator: FJB
Sample : WG448051-03 20ug/L LCS DUP 8260 Inst : hpms11
Misc : 1,1 STD60522 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 13:26:00 2013 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.39	62	233580	17.8844 ug/L		98
46)	Benzene	10.43	78	716171	20.1742 ug/L		99
47)	Trichloroethene	11.14	130	208070	21.1127 ug/L		95
48)	Methylcyclohexane	11.22	83	266233	18.2863 ug/L		84
49)	1,2-Dichloropropane	11.33	63	173367	18.8269 ug/L		89
50)	1,4-Dioxane	11.60	88	10547	173.7577 ug/L		99
51)	Bromodichloromethane	11.62	83	245700	18.9405 ug/L		99
52)	Dibromomethane	11.70	93	104872	18.5825 ug/L		95
53)	2-Chloroethyl Vinyl Ether	11.88	63	88794	20.2605 ug/L		97
54)	4-Methyl-2-Pentanone	11.91	58	43568	19.0050 ug/L		93
55)	cis-1,3-Dichloropropene	12.21	75	296470	20.2849 ug/L		100
56)	Dimethyl Disulfide	12.46	79	160228	18.9113 ug/L		83
59)	Toluene	12.60	91	787313	20.8058 ug/L		99
60)	Ethyl Methacrylate	12.68	69	202371	21.1186 ug/L		81
62)	trans-1,3-Dichloropropene	12.77	75	250086	18.5741 ug/L		94
63)	1,1,2-Trichloroethane	12.98	97	137926	18.9153 ug/L		96
64)	2-Hexanone	12.90	43	76577	16.5130 ug/L		84
65)	1,3-Dichloropropane	13.26	76	244526	18.4867 ug/L		85
66)	Tetrachloroethene	13.38	164	171935	19.3981 ug/L		91
67)	Dibromochloromethane	13.63	129	181733	19.5637 ug/L		99
68)	1,2-Dibromoethane	13.87	107	141761	18.4335 ug/L		99
69)	1-Chlorohexane	13.93	91	257355	19.1155 ug/L		75
70)	Chlorobenzene	14.33	112	510412	18.9204 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.36	131	209974	19.8327 ug/L		98
72)	Ethylbenzene	14.35	106	279848	19.2896 ug/L		100
73)	m-,p-Xylene	14.43	106	647795	39.6269 ug/L		98
74)	o-Xylene	14.96	106	301037	18.0392 ug/L		97
75)	Styrene	14.99	104	554801	20.5909 ug/L		87
76)	Bromoform	15.47	173	124711	17.6566 ug/L		99
77)	Isopropylbenzene	15.35	105	776811	19.7902 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.56	83	157352	18.9758 ug/L		99
81)	1,2,3-Trichloropropane	15.74	110	46848	17.4699 ug/L	#	56
82)	trans-1,4-Dichloro-2-Buten	15.77	53	30379	10.1422 ug/L	#	1
83)	n-Propylbenzene	15.83	91	930743	17.4277 ug/L		100
84)	Bromobenzene	15.96	156	236309	18.1043 ug/L		72
85)	1,3,5-Trimethylbenzene	16.00	105	727319	20.1393 ug/L		94
86)	2-Chlorotoluene	16.09	91	651015	19.8232 ug/L		92
87)	4-Chlorotoluene	16.13	91	547604	17.1171 ug/L		85
88)	a-Methylstyrene	16.38	118	408840	19.9236 ug/L		86
89)	tert-Butylbenzene	16.43	134	148369	17.2987 ug/L		76
90)	1,2,4-Trimethylbenzene	16.48	105	743904	20.2548 ug/L		94
91)	sec-Butylbenzene	16.68	105	786367	17.9730 ug/L		96
92)	p-Isopropyltoluene	16.82	119	685454	18.2252 ug/L		95
93)	1,3-Dichlorobenzene	17.02	146	423484	18.5233 ug/L		95
94)	1,4-Dichlorobenzene	17.14	146	457126	18.8709 ug/L		98
95)	n-Butylbenzene	17.32	91	672473	19.1176 ug/L		97
96)	1,2-Dichlorobenzene	17.61	146	397548	17.9878 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	18.53	75	26985	16.2855 ug/L		77
98)	1,2,4-Trichlorobenzene	19.58	180	298852	18.8041 ug/L		96
99)	Hexachlorobutadiene	19.73	225	127371	17.4427 ug/L		94
100)	Naphthalene	19.93	128	533867	19.0682 ug/L		97
101)	1,2,3-Trichlorobenzene	20.23	180	259251	17.9424 ug/L		96

(#) = qualifier out of range (m) = manual integration
11M95887.D 8260WTR.M Thu Oct 10 13:26:01 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101013\11M95887.D Vial: 6
Acq On : 10 Oct 2013 13:04 Operator: FJB
Sample : WG448051-03 20ug/L LCS DUP 8260 Inst : hpms11
Misc : 1,1 STD60522 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 10 13:26 2013 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 09/17/13 HPMS11
Last Update : Mon Oct 07 17:55:50 2013
Response via : Initial Calibration

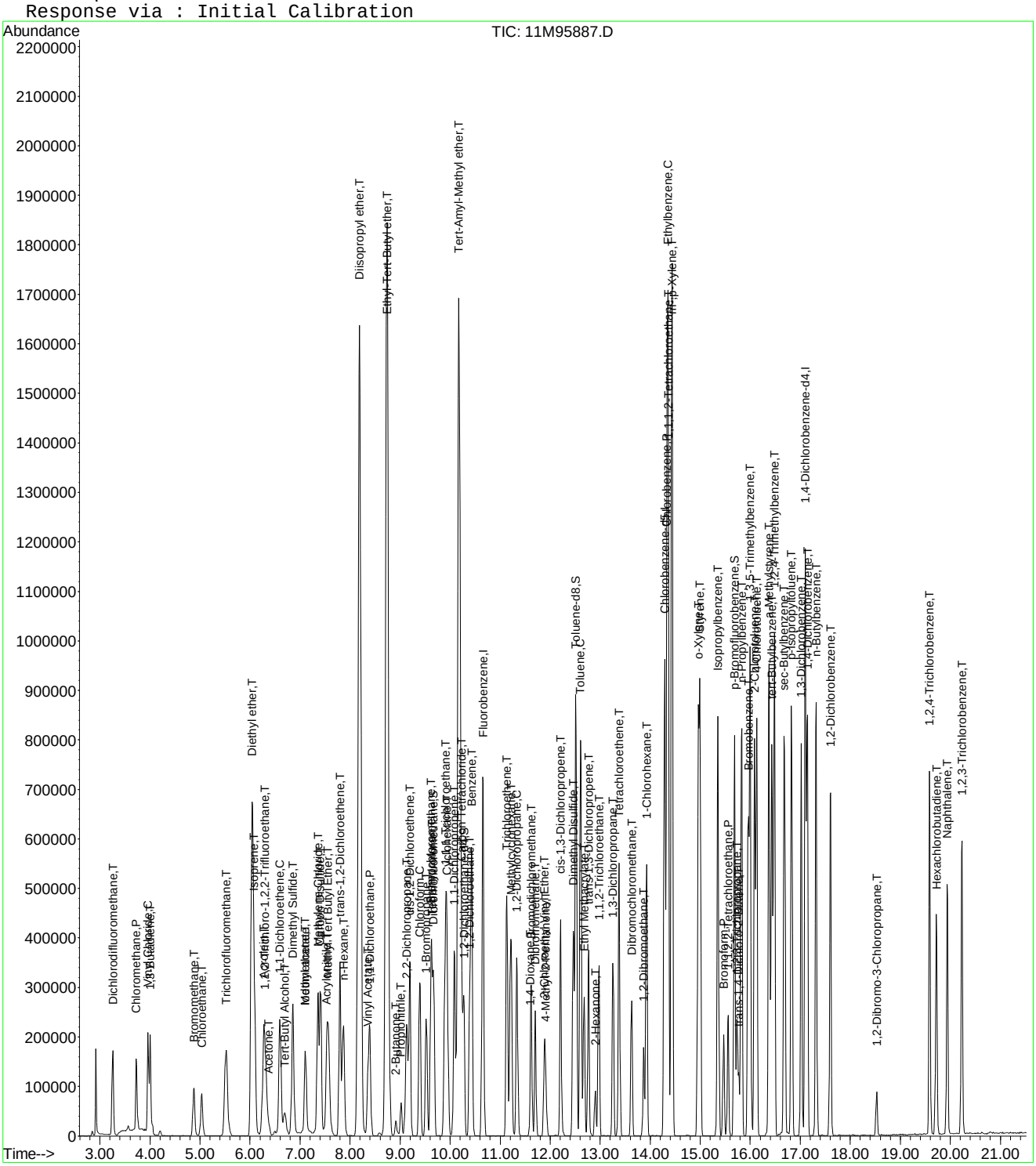

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
October 15, 2013

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AJF - AMANDA J. FICKIESEN	AML - TONY M. LONG
AZH - AFTER HOURS	BAF - BRICE A. FENTON
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER	CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS	CRW - CHRISTINA R. WILSON
CSH - CHRIS S. HILL	CTB - CHRIS T. BUCINA
DAK - DEAN A. K	DCM - DAVID C. MERCKLE
DDE - DEBRA D. ELLIOTT	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLR - DIANNA L. RAUCH
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
EDL - ERIN D. LONG	ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	HJR - HOLLY J. REED
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JKS - JANE K. SCHAAD	JLL - JOHN L. LENT
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
KSC - KELLY S. CUNNINGHAM	LKN - LINDA K. NEDEFF
LSB - LESLIE S. BUCINA	MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON	MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING	MLW - MATTHEW L. WARREN
MMB - MAREN M. BEERY	MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PSW - PEGGY S. WEBB
QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN
RNP - RICK N. PETTY	RS - ROSEMARY SCOTT
RWC - RODNEY W. CAMPBELL	SAV - SARAH A. VANDENBERG
SEP - SUZANNE J. PAUGH	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	TPA - TYLER P. AMRINE
VC - VICKI COLLIER	WJB - WILL J. BEASLEY
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
October 15, 2013

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, H1	Not detected; Sample analysis performed past holding time.
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Analyte was not detected. The concentration is below the reported LOD.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Kathy Albertson	Project Manager: Dave Wacker	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60256135.0002JA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 67	67WW09A-092713			9/27/13	1405		✓	W	3	✓					
	67WW09A-092713-FD			9/27/13	1405		✓	W	3	✓					
	67WW10-092713			9/27/13	1510		✓	W	3	✓					
	Equipment Rinse-092713			9/27/13	1525		✓	W	3	✓					
	67WW07-092713			9/27/13	1535		✓	W	3	✓					
	67WW02-092713			9/27/13	1600		✓	W	3	✓					
	67WW05-092813			9/28/13	0735		✓	W	3	✓					
	67WW06-092813			9/28/13	0855		✓	W	3	✓					
	67WW09-092813			9/28/13	1015		✓	W	3	✓					
	67WW09-092813-MS			9/28/13	1015		✓	W	3	✓					
	67WW09-092813-MSD			9/28/13	1015		✓	W	3	✓					
	Trip Blank			9/28/13			✓	W	2	✓					

ERPIMS REQUIRED FIELDS

Comments: **STANDARD TAT**

Relinquished by (Signature): Scott Beesinger	Date: 9/30/13	Time: 0800	Re	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Re (Si	Time	Remarks:	

Microbac OVD
Received: 10/01/2013 10:17
By: ROSEMARY SCOTT 221000042775

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13100060
Account: 2551
Project: 2551.096
Samples: 12
Due Date: 11-OCT-2013

Samplenum	Container ID	Products
L13100060-01	254343	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:49	JLL	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:49	JLL	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:49	JLL	CLS	

Samplenum	Container ID	Products
L13100060-02	254344	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:49	JLL	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:49	JLL	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:49	JLL	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13100060
Account: 2551
Project: 2551.096
Samples: 12
Due Date: 11-OCT-2013

Samplenum	Container ID	Products
L13100060-03	254345	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:49	JLL	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:49	JLL	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:49	JLL	CLS	

Samplenum	Container ID	Products
L13100060-04	254346	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:49	JLL	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:49	JLL	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:49	JLL	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13100060
Account: 2551
Project: 2551.096
Samples: 12
Due Date: 11-OCT-2013

Samplenum	Container ID	Products
L13100060-05	254347	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:49	JLL	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:49	JLL	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:49	JLL	CLS	

Samplenum	Container ID	Products
L13100060-06	254348	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:49	JLL	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:49	JLL	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:50	JLL	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13100060
Account: 2551
Project: 2551.096
Samples: 12
Due Date: 11-OCT-2013

Samplenum	Container ID	Products
L13100060-07	254349	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:50	JLL	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:50	JLL	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:50	JLL	CLS	

Samplenum	Container ID	Products
L13100060-08	254350	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:50	JLL	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:50	JLL	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:50	JLL	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13100060
Account: 2551
Project: 2551.096
Samples: 12
Due Date: 11-OCT-2013

Samplenum	Container ID	Products
L13100060-09	254351	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:50	JLL	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:50	JLL	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:50	JLL	CLS	

Samplenum	Container ID	Products
L13100060-10	254352	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:50	JLL	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:50	JLL	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:50	JLL	CLS	

Samplenum	Container ID	Products
L13100060-11	254353	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:50	JLL	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:50	JLL	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13100060
Account: 2551
Project: 2551.096
Samples: 12
Due Date: 11-OCT-2013

Samplenum	Container ID	Products
L13100060-12	254354	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:50	JLL	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	01-OCT-2013 15:20	CLS		<2
2	ANALYZ	V1	ORG4	02-OCT-2013 08:50	JLL	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - April 25, 2013

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)

DOD

The following is a list of those tests that are not included in the Scope of Accreditation to ISO/IEC 17025:2005:

2-Butanone by EPA Method 8260B in Solid and Chemical Material.

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Nitroguanidine
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL KNITRO-C-WUV-VIS

Nitrocellulose

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam

Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL HPLCOS-HPLC-UV

Nitroguanidine

OVL KNITRO-C-S/UV-VIS

Nitrocellulose

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L13100266

Linda Raabe
AECOM Technical Services, Inc.
112 East Pecan
San Antonio, TX 78205

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Kathy Albertson – Team Chemist/Data Specialist
(740) 373-4071
Kathy.Albertson@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on October 21 2013

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110669	I	4.0		J2317155850	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
67WW14-100113	L13100266-01	10/01/2013 09:15	10/03/2013 10:17
67WW14-100113-FD	L13100266-02	10/01/2013 09:15	10/03/2013 10:17
67WW13-100113	L13100266-03	10/01/2013 10:40	10/03/2013 10:17
67WW12-100113	L13100266-04	10/01/2013 13:30	10/03/2013 10:17
67WW08-100213	L13100266-05	10/02/2013 08:50	10/03/2013 10:17
EQUIPMENT RINSE-100213	L13100266-06	10/02/2013 09:10	10/03/2013 10:17
67WW11-100213	L13100266-07	10/02/2013 10:20	10/03/2013 10:17
TRIP BLANK	L13100266-08	10/02/2013 00:01	10/03/2013 10:17

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L13100266
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 43
2.0 Full Sample Data Package 79
2.1 Volatiles Data 80
2.1.1 Volatiles GCMS Data (8260) 81
2.1.1.1 Summary Data 82
2.1.1.2 QC Summary Data 111
2.1.1.3 Sample Data 157
2.1.1.4 Standards Data 223
2.1.1.5 Raw QC Data 321
2.1.2 RSK 175 364
2.1.2.1 Summary Data 365
2.1.2.2 QC Summary Data 369
2.1.2.3 Sample Data 402
2.1.2.4 Standards Data 407
2.1.2.5 Raw QC Data 452
2.2 General Chemistry Data 463
2.2.1 Method 9056 464
2.2.1.1 Summary Data 465
2.2.1.2 QC Summary Data 471
2.2.1.3 Sample Data 490
2.2.1.4 Standards Data 495
2.2.1.5 Raw QC Data 517
2.2.2 Ferrous Iron Data 520
2.2.2.1 Summary Data 521
2.2.2.2 QC Summary Data 524
2.2.2.3 Raw Data 531
2.2.3 Sulfide Data 540
2.2.3.1 Summary Data 541
2.2.3.2 QC Summary Data 545
2.2.3.3 Raw Data 552
2.2.4 Total Organic Carbon Data 555
2.2.4.1 Summary Data 556
2.2.4.2 QC Summary Data 559
2.2.4.3 Raw Data 566
3.0 Attachments 642

1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	8260
Prep Batch Number(s):	448583,448662	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-10-21 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2013-10-21 17:18:07

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	8260
Prep Batch Number(s):	448583,448662	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-10-21 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			3
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	8260
Prep Batch Number(s):	448583,448662	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-10-21 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	8260
Prep Batch Number(s):	448583,448662	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-10-21 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	8260
Prep Batch Number(s):	448583,448662	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-10-21 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	8260
Prep Batch Number(s):	448583,448662	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-10-21 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Dichlorodifluoromethane was outside the control limits in the Alternate Source analyzed 10-13-13 on HPMS8.

2) 1,2-Dibromo-3-chloropropane was outside the control limits in the CCV analyzed 10-14-13 on HPMS8.

3) Toluene was greater than one-half the RL in the Method Blank analyzed 10-15-13 on HPMS8.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	447706,448119	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-10-21 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2013-10-21 17:41:32

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	447706,448119	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-10-21 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			1
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	447706,448119	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-10-21 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	447706,448119	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-10-21 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	447706,448119	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-10-21 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	447706,448119	**Reviewer Name:**	Michael Albertson
LRC Date:	2013-10-21 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Methane was greater than one-half the RL in the Method blank analyzed 10-10-13 on HP16.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG447339	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2013-10-04 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Jeremy Kinney		Chemist I	2013-10-05 12:42:23

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG447339	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2013-10-04 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG447339	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2013-10-04 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				1
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG447339	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2013-10-04 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG447339	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2013-10-04 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG447339	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2013-10-04 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -05 and -07 were analyzed at dilutions only due to their high Cl concentration which were greater than 200 ppm. Any single anion load greater than 200 ppm will be diluted to prevent oversaturation of the suppressor membranes and damage to the analytical columns.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG447221	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-10-14 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2013-10-14 21:54:23

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG447221	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-10-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG447221	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-10-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG447221	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-10-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG447221	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-10-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG447221	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-10-14 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	S
Prep Batch Number(s):	WG447665	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-10-14 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2013-10-14 21:55:29

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	S
Prep Batch Number(s):	WG447665	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-10-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	S
Prep Batch Number(s):	WG447665	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-10-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	S
Prep Batch Number(s):	WG447665	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-10-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	S
Prep Batch Number(s):	WG447665	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-10-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	S
Prep Batch Number(s):	WG447665	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-10-14 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG447603	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-10-14 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2013-10-14 21:56:05

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG447603	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-10-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG447603	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-10-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG447603	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-10-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG447603	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-10-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L13100266
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG447603	**Reviewer Name:**	Deanna Hesson
LRC Date:	2013-10-14 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW14-100113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/13/2013 21:32
Workgroup #:	WG448583	**Analyst:**	TMB	**Run Date:**	10/14/2013 22:14
Collect Date:	10/01/2013 09:15	**Dilution:**	1	**File ID:**	8M391578
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.27	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	9.06	J	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	0.640	J	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.197	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.692	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.82	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.431	J	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.0	85	115	
1,2-Dichloroethane-d4	94.9	70	120	
Toluene-d8	98.7	85	120	
4-Bromofluorobenzene	94.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW14-100113-FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/13/2013 21:32
Workgroup #:	WG448583	**Analyst:**	TMB	**Run Date:**	10/14/2013 22:45
Collect Date:	10/01/2013 09:15	**Dilution:**	1	**File ID:**	8M391579
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.59	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	7.47	J	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.304	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.849	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	2.22		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.353	J	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.6	85	115	
1,2-Dichloroethane-d4	95.1	70	120	
Toluene-d8	94.9	85	120	
4-Bromofluorobenzene	92.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW13-100113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/13/2013 21:32
Workgroup #:	WG448583	**Analyst:**	TMB	**Run Date:**	10/14/2013 23:16
Collect Date:	10/01/2013 10:40	**Dilution:**	1	**File ID:**	8M391580
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.336	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	33.8		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.8		1.00	0.500	0.250
cis-1,2-Dichloroethene	156-59-2	1.66		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	3.37		1.00	0.500	0.250
Trichloroethene	79-01-6	2.81		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	2.10		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.4	85	115	
1,2-Dichloroethane-d4	96.6	70	120	
Toluene-d8	97.1	85	120	
4-Bromofluorobenzene	96.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW13-100113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/13/2013 21:32
Workgroup #:	WG448662	**Analyst:**	TMB	**Run Date:**	10/15/2013 10:59
Collect Date:	10/01/2013 10:40	**Dilution:**	10	**File ID:**	8M391597
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1-Dichloroethene	75-35-4	515		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.4	85	115	
1,2-Dichloroethane-d4	86.5	70	120	
Toluene-d8	95.0	85	120	
4-Bromofluorobenzene	90.5	75	120	

B	The reported result is associated with a contaminated method blank.
J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW12-100113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/13/2013 21:32
Workgroup #:	WG448583	**Analyst:**	TMB	**Run Date:**	10/14/2013 23:47
Collect Date:	10/01/2013 13:30	**Dilution:**	1	**File ID:**	8M391581
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.4	85	115	
1,2-Dichloroethane-d4	96.5	70	120	
Toluene-d8	98.6	85	120	
4-Bromofluorobenzene	94.7	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW08-100213	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/13/2013 21:32
Workgroup #:	WG448662	**Analyst:**	TMB	**Run Date:**	10/15/2013 18:21
Collect Date:	10/02/2013 08:50	**Dilution:**	10	**File ID:**	8M391611
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	2.66	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	46.5		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	76.5		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	1120		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.08	J	10.0	5.00	2.50
Trichloroethene	79-01-6	5.00	U	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.2	85	115	
1,2-Dichloroethane-d4	94.9	70	120	
Toluene-d8	96.4	85	120	
4-Bromofluorobenzene	94.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW08-100213	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/02/2013 13:25
Workgroup #:	WG448119	**Analyst:**	QX	**Run Date:**	10/10/2013 15:05
Collect Date:	10/02/2013 08:50	**Dilution:**	1	**File ID:**	16G39820
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	9.49		5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-05	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	67WW08-100213	**Prep Method:**	9056	**Prep Date:**	10/04/2013 07:35
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	07/23/2013 18:03
Workgroup #:	WG447339	**Analyst:**	JBK	**Run Date:**	10/04/2013 08:44
Collect Date:	10/02/2013 08:50	**Dilution:**	10	**File ID:**	I2_100413-07
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfate	14808-79-8	297		20.0	10.0	5.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-05	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	67WW08-100213	**Prep Method:**	9056	**Prep Date:**	10/04/2013 07:35
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	07/23/2013 18:03
Workgroup #:	WG447339	**Analyst:**	JBK	**Run Date:**	10/04/2013 13:51
Collect Date:	10/02/2013 08:50	**Dilution:**	100	**File ID:**	I2_100413-13
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1360		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-05	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW08-100213	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	07/16/2013 10:00
Workgroup #:	WG447221	**Analyst:**	DIH	**Run Date:**	10/04/2013 07:50
Collect Date:	10/02/2013 08:50	**Dilution:**	1	**File ID:**	1V.1310040750-13
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.161		0.0400	0.0400	0.0200

Certificate of Analysis

Sample #:	L13100266-05	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW08-100213	**Prep Method:**	EPA 376.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	EPA 376.1	**Cal Date:**	
Workgroup #:	WG447665	**Analyst:**	DLP	**Run Date:**	10/08/2013 09:00
Collect Date:	10/02/2013 08:50	**Dilution:**	1	**File ID:**	ET.1310080900-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-100213	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG447603	**Analyst:**	BAF	**Run Date:**	10/08/2013 02:26
Collect Date:	10/02/2013 08:50	**Dilution:**	1	**File ID:**	TC10072013.043
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		28.9		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L13100266-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-100213	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG447603	**Analyst:**	BAF	**Run Date:**	10/08/2013 02:26
Collect Date:	10/02/2013 08:50	**Dilution:**	1	**File ID:**	TC10072013.043
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	6.32		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L13100266-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	EQUIPMENT RINSE-100213	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/13/2013 21:32
Workgroup #:	WG448583	**Analyst:**	TMB	**Run Date:**	10/14/2013 19:08
Collect Date:	10/02/2013 09:10	**Dilution:**	1	**File ID:**	8M391572
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.168	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.1	85	115	
1,2-Dichloroethane-d4	91.4	70	120	
Toluene-d8	96.1	85	120	
4-Bromofluorobenzene	93.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW11-100213	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/13/2013 21:32
Workgroup #:	WG448662	**Analyst:**	TMB	**Run Date:**	10/15/2013 14:06
Collect Date:	10/02/2013 10:20	**Dilution:**	1	**File ID:**	8M391603
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	33.6		10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	0.536	J	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	10.6		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.799	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	42.8		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.5	85	115	
1,2-Dichloroethane-d4	92.6	70	120	
Toluene-d8	95.8	85	120	
4-Bromofluorobenzene	90.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW11-100213	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/02/2013 13:25
Workgroup #:	WG447706	**Analyst:**	QX	**Run Date:**	10/08/2013 13:12
Collect Date:	10/02/2013 10:20	**Dilution:**	1	**File ID:**	16G39801
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	4.38	J	5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-07	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	67WW11-100213	**Prep Method:**	9056	**Prep Date:**	10/04/2013 07:35
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	07/23/2013 18:03
Workgroup #:	WG447339	**Analyst:**	JBK	**Run Date:**	10/04/2013 09:01
Collect Date:	10/02/2013 10:20	**Dilution:**	10	**File ID:**	I2_100413-08
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfate	14808-79-8	375		20.0	10.0	5.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-07	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	67WW11-100213	**Prep Method:**	9056	**Prep Date:**	10/04/2013 07:35
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	07/23/2013 18:03
Workgroup #:	WG447339	**Analyst:**	JBK	**Run Date:**	10/04/2013 14:08
Collect Date:	10/02/2013 10:20	**Dilution:**	100	**File ID:**	I2_100413-14
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1200		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-07	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW11-100213	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	07/16/2013 10:00
Workgroup #:	WG447221	**Analyst:**	DIH	**Run Date:**	10/04/2013 07:50
Collect Date:	10/02/2013 10:20	**Dilution:**	1	**File ID:**	1V.1310040750-14
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.0400	U	0.0400	0.0400	0.0200

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-07	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW11-100213	**Prep Method:**	EPA 376.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	EPA 376.1	**Cal Date:**	
Workgroup #:	WG447665	**Analyst:**	DLP	**Run Date:**	10/08/2013 09:00
Collect Date:	10/02/2013 10:20	**Dilution:**	1	**File ID:**	ET.1310080900-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW11-100213	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG447603	**Analyst:**	BAF	**Run Date:**	10/08/2013 02:42
Collect Date:	10/02/2013 10:20	**Dilution:**	1	**File ID:**	TC10072013.044
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	5.70		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L13100266-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW11-100213	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG447603	**Analyst:**	BAF	**Run Date:**	10/08/2013 02:42
Collect Date:	10/02/2013 10:20	**Dilution:**	1	**File ID:**	TC10072013.044
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		17.6		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L13100266-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/13/2013 21:32
Workgroup #:	WG448583	**Analyst:**	TMB	**Run Date:**	10/14/2013 15:31
Collect Date:	10/02/2013 00:01	**Dilution:**	1	**File ID:**	8M391565
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.6	85	115	
1,2-Dichloroethane-d4	90.7	70	120	
Toluene-d8	97.1	85	120	
4-Bromofluorobenzene	94.6	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW14-100113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/13/2013 21:32
Workgroup #:	WG448583	**Analyst:**	TMB	**Run Date:**	10/14/2013 22:14
Collect Date:	10/01/2013 09:15	**Dilution:**	1	**File ID:**	8M391578
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.27	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	9.06	J	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	0.640	J	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.197	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.692	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.82	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.431	J	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.0	85	115	
1,2-Dichloroethane-d4	94.9	70	120	
Toluene-d8	98.7	85	120	
4-Bromofluorobenzene	94.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW14-100113-FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/13/2013 21:32
Workgroup #:	WG448583	**Analyst:**	TMB	**Run Date:**	10/14/2013 22:45
Collect Date:	10/01/2013 09:15	**Dilution:**	1	**File ID:**	8M391579
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.59	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	7.47	J	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.304	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.849	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	2.22		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.353	J	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.6	85	115	
1,2-Dichloroethane-d4	95.1	70	120	
Toluene-d8	94.9	85	120	
4-Bromofluorobenzene	92.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW13-100113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/13/2013 21:32
Workgroup #:	WG448583	**Analyst:**	TMB	**Run Date:**	10/14/2013 23:16
Collect Date:	10/01/2013 10:40	**Dilution:**	1	**File ID:**	8M391580
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.336	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	33.8		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.8		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	559	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.66		1.00	0.500	0.250

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	3.37		1.00	0.500	0.250
Trichloroethene	79-01-6	2.81		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	2.10		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.4	85	115	
1,2-Dichloroethane-d4	96.6	70	120	
Toluene-d8	97.1	85	120	
4-Bromofluorobenzene	96.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

J	Estimated value ; the analyte concentration was greater than the highest standard
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW13-100113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/13/2013 21:32
Workgroup #:	WG448662	**Analyst:**	TMB	**Run Date:**	10/15/2013 10:59
Collect Date:	10/01/2013 10:40	**Dilution:**	10	**File ID:**	8M391597
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	2.50	U	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	30.9		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	22.1		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	515		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	3.32	B	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	3.10	J	10.0	5.00	2.50
Trichloroethene	79-01-6	5.00	U	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.4	85	115	
1,2-Dichloroethane-d4	86.5	70	120	
Toluene-d8	95.0	85	120	
4-Bromofluorobenzene	90.5	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW12-100113	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/13/2013 21:32
Workgroup #:	WG448583	**Analyst:**	TMB	**Run Date:**	10/14/2013 23:47
Collect Date:	10/01/2013 13:30	**Dilution:**	1	**File ID:**	8M391581
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.4	85	115	
1,2-Dichloroethane-d4	96.5	70	120	
Toluene-d8	98.6	85	120	
4-Bromofluorobenzene	94.7	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW08-100213	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/13/2013 21:32
Workgroup #:	WG448662	**Analyst:**	TMB	**Run Date:**	10/15/2013 18:21
Collect Date:	10/02/2013 08:50	**Dilution:**	10	**File ID:**	8M391611
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	2.66	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	46.5		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	76.5		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	1120		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.08	J	10.0	5.00	2.50
Trichloroethene	79-01-6	5.00	U	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.2	85	115	
1,2-Dichloroethane-d4	94.9	70	120	
Toluene-d8	96.4	85	120	
4-Bromofluorobenzene	94.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	EQUIPMENT RINSE-100213	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/13/2013 21:32
Workgroup #:	WG448583	**Analyst:**	TMB	**Run Date:**	10/14/2013 19:08
Collect Date:	10/02/2013 09:10	**Dilution:**	1	**File ID:**	8M391572
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.168	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.1	85	115	
1,2-Dichloroethane-d4	91.4	70	120	
Toluene-d8	96.1	85	120	
4-Bromofluorobenzene	93.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW11-100213	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/13/2013 21:32
Workgroup #:	WG448662	**Analyst:**	TMB	**Run Date:**	10/15/2013 14:06
Collect Date:	10/02/2013 10:20	**Dilution:**	1	**File ID:**	8M391603
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	33.6		10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	0.536	J	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	10.6		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.799	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	42.8		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.5	85	115	
1,2-Dichloroethane-d4	92.6	70	120	
Toluene-d8	95.8	85	120	
4-Bromofluorobenzene	90.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/13/2013 21:32
Workgroup #:	WG448583	**Analyst:**	TMB	**Run Date:**	10/14/2013 15:31
Collect Date:	10/02/2013 00:01	**Dilution:**	1	**File ID:**	8M391565
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.6	85	115	
1,2-Dichloroethane-d4	90.7	70	120	
Toluene-d8	97.1	85	120	
4-Bromofluorobenzene	94.6	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 091013
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 624 SOP: MSV10 Rev: 10
Method: OVAP/5030B/5030C/5035A SOP: MSV01/PAT01 Rev: 0/13
Maintenance Log ID: 47421

Internal Standard: STD59445 Surrogate Standard: STD59446
CCV: STD59907 LCS: STD60074 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG444230

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M390485	BFB CHECK AFTER TUNE	NA	1	1	STD59881	09/10/13 14:38
8M390486	BFB CHECK	NA	1	1	STD59881	09/10/13 14:55
8M390487	WG444230-01 50ng BFB	NA	1	1	STD59881	09/10/13 15:11
8M390488	RINSE	NA	1	1		09/10/13 15:38
8M390489	GRO STD	NA	1	1		09/10/13 16:08
8M390490	GRO STD	NA	1	1		09/10/13 16:38
8M390491	GRO STD	NA	1	1		09/10/13 17:08
8M390492	CCV	NA	1	1		09/10/13 17:37
8M390493	CCV	NA	1	1		09/10/13 18:07
8M390494	CCV	NA	1	1		09/10/13 18:37
8M390495	RINSE	NA	1	1		09/10/13 19:06
8M390496	RINSE	NA	1	1		09/10/13 19:36
8M390497	WG444230-02 5ug/L STD A9/FOO	NA	1	1	STD59907	09/10/13 20:06
8M390498	WG444230-03 20ug/L STD A9/FOO	NA	1	1	STD59907	09/10/13 20:36
8M390499	WG444230-04 50ug/L STD A9/FOO	NA	1	1	STD59907	09/10/13 21:06
8M390500	WG444230-05 100ug/L STD A9/FOO	NA	1	1	STD59907	09/10/13 21:35
8M390501	WG444230-06 200ug/L STD A9/FOO	NA	1	1	STD59907	09/10/13 22:05
8M390502	WG444230-07 300ug/L STD A9/FOO	NA	1	1	STD59907	09/10/13 22:35
8M390503	WG444230-08 400ug/L STD A9/FOO	NA	1	1	STD59907	09/10/13 23:04
8M390504	WG444230-09 500ug/L STD A9/FOO	NA	1	1	STD59907	09/10/13 23:34
8M390505	RINSE	NA	1	1		09/11/13 00:04
8M390506	RINSE	NA	1	1		09/11/13 00:34
8M390507	WG444230-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD60074	09/11/13 01:03
8M390508	RINSE	NA	1	1		09/11/13 01:33

Approved: September 19, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 101313
Analyst1: MES Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 17
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Method: 624 SOP: MSV10 Rev: 10
Maintenance Log ID: 47745

Internal Standard: STD60086 Surrogate Standard: STD60128
CCV: STD60687 LCS: STD60753 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG448425

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M391533	WG448425-01 50ng BFB STD 8260	NA	1	1	STD60561	10/13/13 10:18
8M391534	WG448425-01 50ug/L CCV STD 8260	NA	1	1	STD60687	10/13/13 10:54
8M391535	WG4484XX-01 100ug/L A9 CCV STD 8260	NA	1	1	STD60223	10/13/13 11:28
8M391536	WG448425-01 50ng BFB STD 8260	NA	1	1	STD60561	10/13/13 12:16
8M391537	WG448425-01 50ng BFB STD 8260	NA	1	1	STD60561	10/13/13 12:43
8M391538	WG448425-01 50ng BFB STD 8260	NA	1	1	STD60561	10/13/13 13:10
8M391539	BFB RETUNED	NA	1	1	STD60561	10/13/13 13:38
8M391540	BFB RETUNED	NA	1	1	STD60561	10/13/13 14:04
8M391541	WG448425-01 50ng BFB STD 8260	NA	1	1	STD60561	10/13/13 14:18
8M391542	WG448425-02 50ug/L WATER STD 8260	NA	1	1	STD60687	10/13/13 14:58
8M391543	WG448425-01 50ng BFB STD 8260	NA	1	1	STD60561	10/13/13 15:25
8M391544	RINSE	NA	1	1		10/13/13 15:51
8M391545	RINSE	NA	1	1		10/13/13 16:23
8M391546	WG448425-02 0.3ug/L WATER STD 8260	NA	1	1	STD60687	10/13/13 16:54
8M391547	WG448425-03 0.4 ug/L WATER STD 8260	NA	1	1	STD60687	10/13/13 17:24
8M391548	WG448425-04 1 ug/L WATER STD 8260	NA	1	1	STD60687	10/13/13 17:55
8M391549	WG448425-05 2 ug/L WATER STD 8260	NA	1	1	STD60687	10/13/13 18:26
8M391550	WG448425-06 5 ug/L WATER STD 8260	NA	1	1	STD60687	10/13/13 18:57
8M391551	WG448425-07 20 ug/L WATER STD 8260	NA	1	1	STD60687	10/13/13 19:28
8M391552	WG448425-08 50 ug/L WATER STD 8260	NA	1	1	STD60687	10/13/13 19:59
8M391553	WG448425-09 100 ug/L WATER STD 8260	NA	1	1	STD60687	10/13/13 20:30
8M391554	WG448425-10 200 ug/L WATER STD 8260	NA	1	1	STD60687	10/13/13 21:01
8M391555	WG448425-11 300 ug/L WATER STD 8260	NA	1	1	STD60687	10/13/13 21:32
8M391556	RINSE	NA	1	1		10/13/13 22:03
8M391557	WG448425-12 50ug/L ALT SOURCE	NA	1	1	STD60753	10/13/13 22:34

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X		Surrogate standard failure	
File ID: 8M391534				
	DNR.			
3				
File ID: 8M391535				

Approved: October 15, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	101313		
Analyst1:	MES	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	17
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	13
Method:	624	SOP:	MSV10	Rev:	10
Maintenance Log ID:	47745				

Internal Standard: STD60086 Surrogate Standard: STD60128

CCV: STD60687 LCS: STD60753 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG448425

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Not needed, DNR.	
4	X			
File ID: 8M391536				
			Tune failed, DNR.	
5	X			
File ID: 8M391537				
			Tune failed, DNR. Restored old tune.	
6	X			
File ID: 8M391538				
			Tune failed, DNR.	
10				
File ID: 8M391542				
			DNR. Running a curve.	

Approved: October 15, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 101413
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 17
Method: 624 SOP: MSV10 Rev: 10
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 47751

Internal Standard: STD60741 Surrogate Standard: STD60769
CCV: STD60687; STD60752 LCS: STD60753 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG448583

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M391558	WG448561-01 50ng BFB STD 8260	NA	1	1	STD60561	10/14/13 11:52
8M391559	WG448561-02 50ug/L CCV STD 8260	NA	1	1	STD60687	10/14/13 12:23
8M391560	WG448582-01 100ug/L A9 CCV STD 8260	NA	1	1	STD60752	10/14/13 12:54
8M391561	WG448583-01 VBLK1014 BLANK STD 826	NA	1	1		10/14/13 13:25
8M391562	WG448583-02 20ug/L LCS STD 8260	NA	1	1	STD60753	10/14/13 13:58
8M391563	WG448583-03 20ug/L LCSDUP STD 8260	NA	1	1	STD60753	10/14/13 14:29
8M391564	L13100143-01 A TB 826-LOW	<2	1	1		10/14/13 15:00
8M391565	L13100266-08 A TB 826-LOW	<2	1	1		10/14/13 15:31
8M391566	L13100345-04 A TB 826-A9	<2	1	1		10/14/13 16:02
8M391567	L13100183-03 A TB 826-SPE	<2	1	1		10/14/13 16:33
8M391568	L13100183-34 A TB 826-SPE	<2	1	1		10/14/13 17:04
8M391569	L13100001-01 A LOD 826-SPE	<2	1	1	STD60772	10/14/13 17:35
8M391570	L13100003-01 A LOQ 826-SPE	<2	1	1	STD60772	10/14/13 18:06
8M391571	L13100183-01 A EB 826-SPE	<2	1	1		10/14/13 18:37
8M391572	L13100266-06 A ER 826-SPE	<2	1	1		10/14/13 19:08
8M391573	L13100183-02 A 826-SPE	<2	1	1		10/14/13 19:39
8M391574	L13100345-01 A 826-A9	<2	1	1		10/14/13 20:10
8M391575	L13100345-02 A 826-A9	<2	1	1		10/14/13 20:41
8M391576	L13100345-03 A 826-A9	<2	1	1		10/14/13 21:12
8M391577	L13100143-02 A 826-LOW	<2	1	1		10/14/13 21:43
8M391578	L13100266-01 A 826-LOW	<2	1	1		10/14/13 22:14
8M391579	L13100266-02 A 826-LOW	<2	1	1		10/14/13 22:45
8M391580	L13100266-03 A 826-LOW	<2	1	1		10/14/13 23:16
8M391581	L13100266-04 A 826-LOW	<2	1	1		10/14/13 23:47
8M391582	RINSE	NA	1	1		10/15/13 00:18
8M391583	WG448583-04 VBLK1014 BLANK STD 624	NA	1	1		10/15/13 00:48
8M391584	L13100854-02 A 624-SPE	10	2	1		10/15/13 01:19
8M391585	L13100854-04 A 624-SPE	<2	2	1		10/15/13 01:50
8M391586	RINSE	NA	1	1		10/15/13 02:21
8M391587	ANTIFOAM BLANK	NA	2	1		10/15/13 02:52

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: October 15, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 101413
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 17
Method: 624 SOP: MSV10 Rev: 10
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 47751

Internal Standard: STD60741 Surrogate Standard: STD60769
CCV: STD60687; STD60752 LCS: STD60753 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG448583

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7	X	1	Carry-over contamination	
File ID: 8M391564				
	Hexabut. carry over.			
12	X			
File ID: 8M391569				
	Rerun for 1-bromopropane.			
23	X	10	Over Calibration Range	11-DCE
File ID: 8M391580				
27	X	1000	Over Calibration Range	ACE, 2-BUT, TOL, EB, M/P, O-XY, STY, ISOPROP, N-PROP, 135-TMB, 124-TMB
File ID: 8M391584				
28	X	1	Carry-over contamination	
File ID: 8M391585				
	DNR.			

Approved: October 15, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 101513
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 17
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13

Maintenance Log ID: 47766

Internal Standard: STD60741 Surrogate Standard: STD60769
CCV: STD60687; STD60749 LCS: STD60753 MS/MSD: STD60753

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG448662; WG448861

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M391588	WG448661-01 50ng BFB STD 8260	NA	1	1	STD60561	10/15/13 06:25
8M391589	WG448661-02 50ug/L CCV STD 8260	NA	1	1	STD60687	10/15/13 06:51
8M391590	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD60752	10/15/13 07:22
8M391591	WG448662-01 VBLK1015 BLANK STD 826	NA	1	1		10/15/13 07:53
8M391592	WG448662-02 20ug/L LCS STD 8260	NA	1	1	STD60753	10/15/13 08:24
8M391593	L13100212-03 A MS 826-SPE	<2	1	1	STD60753	10/15/13 08:55
8M391594	L13100212-04 A MSD 826-SPE	<2	1	1	STD60753	10/15/13 09:26
8M391595	L13100733-01 A 10X 826-TC	NA	17	10		10/15/13 09:57
8M391596	L13100001-01 LOD 826-SPE	NA	1	1	STD60788	10/15/13 10:28
8M391597	L13100266-03 B 10X 826-LOW D1	<2	1	10		10/15/13 10:59
8M391598	L13100228-01 A TB 826-LOW	<2	1	1		10/15/13 11:30
8M391599	L13100143-01 B TB 826-LOW	<2	1	1		10/15/13 12:01
8M391600	L13100212-02 A REF 826-SPE	<2	1	1		10/15/13 12:32
8M391601	L13100212-01 A 826-SPE	<2	1	1		10/15/13 13:03
8M391602	L13100212-05 A 826-SPE	<2	1	1		10/15/13 13:35
8M391603	L13100266-07 A 826-LOW	<2	1	1		10/15/13 14:06
8M391604	L13100228-03 A 826-LOW	<2	1	1		10/15/13 14:37
8M391605	L13100228-05 A 826-LOW	<2	1	1		10/15/13 15:08
8M391606	L13100228-02 A 826-LOW	<2	1	1		10/15/13 15:39
8M391607	L13100228-04 A 826-LOW	<2	1	1		10/15/13 16:10
8M391608	L13100777-01 A 826-SPE	<2	1	1		10/15/13 16:41
8M391609	L13100901-01 A 826-SPE	<2	1	1		10/15/13 17:12
8M391610	L13100334-01 A 826-LOW	<2	1	1		10/15/13 17:50
8M391611	L13100266-05 A 10X 826-LOW	<2	1	10		10/15/13 18:21
8M391612	WG448860-01 BFB 50ng 8260	NA	1	1	STD60561	10/15/13 20:01
8M391613	WG448860-02 50ug/L CCV 8260	NA	1	1	STD60687	10/15/13 20:26
8M391614	WG449271-01 100ug/L CCV A9	NA	1	1	STD60752	10/15/13 21:11
8M391615	WG448861-01 VBLK1015 BLANK 8260	NA	1	1		10/15/13 21:42
8M391616	WG448861-02 20ug/L LCS 8260	NA	1	1	STD60753	10/15/13 22:13
8M391617	L13100340-05 MS 5X A 826-SPE1	<2	1	5	STD60753	10/15/13 22:44
8M391618	L13100340-06 MSD 5X A 826-SPE1	<2	1	5		10/15/13 23:15
8M391619	L13100275-04 10X B 826-SPE D1	<2	1	10		10/15/13 23:46
8M391620	L13100530-03 TB A 826-SPE	<2	1	1		10/16/13 00:17
8M391621	L13100228-01 TB B 826-LOW	<2	1	1		10/16/13 00:48

Approved: October 16, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 101513
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 17
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13

Maintenance Log ID: 47766

Internal Standard: STD60741 Surrogate Standard: STD60769
CCV: STD60687; STD60749 LCS: STD60753 MS/MSD: STD60753

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG448662; WG448861

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M391622	L13100340-08 RB A 826-SPE1	<2	1	1		10/16/13 01:19
8M391623	L13100340-09 FB A 826-SPE1	<2	1	1		10/16/13 01:50
8M391624	L13100340-10 TB A 826-SPE1	<2	1	1		10/16/13 02:21
8M391625	L13100308-10 TB A 826-SPE	<2	1	1		10/16/13 02:52
8M391626	L13100695-14 TB A 826-SPE	<2	1	1		10/16/13 03:23
8M391627	L13100695-15 TB A 826-SPE	<2	1	1		10/16/13 03:54
8M391628	L13100334-05 TB A 826-LOW	<2	1	1		10/16/13 04:25
8M391629	L13100340-01 REF 5X A 826-SPE1	<2	1	5		10/16/13 04:56
8M391630	L13100340-02 A 826-SPE1	<2	1	1		10/16/13 05:27
8M391631	L13100340-03 50X A 826-SPE1	6	1	50		10/16/13 05:58
8M391632	L13100340-04 100X A 826-SPE1	<2	1	100		10/16/13 06:29
8M391633	L13100334-04 A 826-LOW	<2	1	1		10/16/13 07:00
8M391634	L13100530-01 A 826-SPE	<2	1	1		10/16/13 07:31
8M391635	L13100340-07 A 826-SPE	<2	1	1		10/16/13 08:02
8M391636	RINSE	NA	1	1		10/16/13 08:37
8M391637	RINSE	NA	1	1		10/16/13 09:18

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 8M391590				
	Not needed, DNR.			
11	X	1	Carry-over contamination	
File ID: 8M391598				
	Toluene carry over, DNR.			
75	X	1	Analyzed too dilute	
File ID: 8M391617				
	Report, only one vial for msd.			
77	X	1	Analyzed too dilute	
File ID: 8M391629				
	Report. Only one vial for msd.			
47	X	500	Over Calibration Range	MTBE, BEN
File ID: 8M391631				
48	X	50	Analyzed too dilute	

Approved: October 16, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 101513
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 17
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13

Maintenance Log ID: 47766

Internal Standard: STD60741 Surrogate Standard: STD60769
CCV: STD60687; STD60749 LCS: STD60753 MS/MSD: STD60753

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG448662; WG448861

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 8M391632				
	DNR.			
49	X	1	Carry-over contamination	
File ID: 8M391633				
	Possible benzene carry over.			
51	X	2.5	Missed Tune	
File ID: 8M391635				
	DNR.			

Approved: October 16, 2013

Page: 3

Microbac Laboratories Inc.

Data Checklist

Date: 10-SEP-2013
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 55721
Analytical Workgroups: WG444230

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
18-SEP-2013
Tiffany Bailey

Secondary Reviewer:
19-SEP-2013

CHECKLIST1 - Modified 03/05/2008
Generated: SEP-19-2013 09:08:31

Microbac Laboratories Inc.

Data Checklist

Date: 13-OCT-2013
Analyst: MES
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 56345
Analytical Workgroups: WG448425

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
15-OCT-2013
Tiffany Bailey

Secondary Reviewer:
15-OCT-2013

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-15-2013 13:23:14

Microbac Laboratories Inc.

Data Checklist

Date: 14-OCT-2013
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 56356
Analytical Workgroups: WG448583

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
15-OCT-2013
Tiffany Bailey

Secondary Reviewer:
15-OCT-2013

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-15-2013 13:58:15

Microbac Laboratories Inc.

Data Checklist

Date: 15-OCT-2013
Analyst: TMB
Analyst: FJB
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 56374
Analytical Workgroups: WG448662; WG448861

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
16-OCT-2013
Tiffany Bailey

Secondary Reviewer:
16-OCT-2013

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-16-2013 10:22:09

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG448583

Login Number: L13100266

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW14-100113	01	10/01/13					10/14/2013	13.5	14		10/14/13	13.5	14	
67WW14-100113-FD	02	10/01/13					10/14/2013	13.6	14		10/14/13	13.6	14	
67WW13-100113	03	10/01/13					10/14/2013	13.5	14		10/14/13	13.5	14	
67WW12-100113	04	10/01/13					10/14/2013	13.4	14		10/14/13	13.4	14	
EQUIPMENT RINSE-100213	06	10/02/13					10/14/2013	12.4	14		10/14/13	12.4	14	
TRIP BLANK	08	10/02/13					10/14/2013	12.6	14		10/14/13	12.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3153568
Report generated 10/21/2013 12:56

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG448662

Login Number: L13100266

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW13-100113	03	10/01/13					10/15/2013	14	14		10/15/13	14	14	
67WW08-100213	05	10/02/13					10/15/2013	13.4	14		10/15/13	13.4	14	
67WW11-100213	07	10/02/13					10/15/2013	13.2	14		10/15/13	13.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3153568
Report generated 10/21/2013 12:56

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L13100266
Instrument Id: HPMS8
Workgroup (AAB#): WG448662

Method: 8260
CAL ID: HPMS8-13-OCT-13
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L13100266-03	10.0	DL01	86.5	92.4	90.5	95.0
L13100266-05	10.0	DL01	94.9	97.2	94.0	96.4
L13100266-07	1.00	01	92.6	93.5	90.8	95.8
WG448662-01	1.00	01	87.2	90.7	92.3	95.6
WG448662-02	1.00	01	85.1	90.8	90.3	93.8

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3141823
Report generated: 10/21/2013 12:57

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L13100266
Instrument Id: HPMS8
Workgroup (AAB#): WG448583

Method: 8260
CAL ID: HPMS8-13-OCT-13
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L13100266-01	1.00	01	94.9	97.0	94.5	98.7
L13100266-02	1.00	01	95.1	95.6	92.1	94.9
L13100266-03	1.00	01	96.6	97.4	96.1	97.1
L13100266-04	1.00	01	96.5	96.4	94.7	98.6
L13100266-06	1.00	01	91.4	94.1	93.1	96.1
L13100266-08	1.00	01	90.7	93.6	94.6	97.1
WG448583-01	1.00	01	89.6	93.9	93.3	98.6
WG448583-02	1.00	01	91.1	94.4	95.0	98.4
WG448583-03	1.00	01	90.1	96.0	94.8	98.3
WG448583-04	1.00	01	94.9	94.2	93.4	95.3

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3141823
Report generated: 10/21/2013 12:57

METHOD BLANK SUMMARY

Login Number: L13100266
Blank File ID: 8M391561
Prep Date: 10/14/13 13:25
Analyzed Date: 10/14/13 13:25
Analyst: TMB

Work Group: WG448583
Blank Sample ID: WG448583-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG448583-02	8M391562	10/14/13 13:58	01
LCS2	WG448583-03	8M391563	10/14/13 14:29	01
TRIP BLANK	L13100266-08	8M391565	10/14/13 15:31	01
EQUIPMENT RINSE-100213	L13100266-06	8M391572	10/14/13 19:08	01
67WW14-100113	L13100266-01	8M391578	10/14/13 22:14	01
67WW14-100113-FD	L13100266-02	8M391579	10/14/13 22:45	01
67WW13-100113	L13100266-03	8M391580	10/14/13 23:16	01
67WW12-100113	L13100266-04	8M391581	10/14/13 23:47	01

Report Name: BLANK_SUMMARY
PDF File ID: 3153569
Report generated 10/21/2013 12:56

METHOD BLANK SUMMARY

Login Number: L13100266
Blank File ID: 8M391591
Prep Date: 10/15/13 07:53
Analyzed Date: 10/15/13 07:53
Analyst: TMB

Work Group: WG448662
Blank Sample ID: WG448662-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG448662-02	8M391592	10/15/13 08:24	01
67WW13-100113	L13100266-03	8M391597	10/15/13 10:59	DL01
67WW11-100213	L13100266-07	8M391603	10/15/13 14:06	01
67WW08-100213	L13100266-05	8M391611	10/15/13 18:21	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 3153569
Report generated 10/21/2013 12:56

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13100266 Prep Date: 10/14/13 13:25 Sample ID: WG448583-01
Instrument ID: HPMS8 Run Date: 10/14/13 13:25 Prep Method: 5030B/5030C/503
File ID: 8M391561 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG448583 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-OCT-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 3153570
21-OCT-2013 12:56

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13100266 Prep Date: 10/14/13 13:25 Sample ID: WG448583-01
Instrument ID: HPMS8 Run Date: 10/14/13 13:25 Prep Method: 5030B/5030C/503
File ID: 8M391561 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG448583 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-OCT-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	93.9	85 - 115	PASS
1,2-Dichloroethane-d4	89.6	70 - 120	PASS
Toluene-d8	98.6	85 - 120	PASS
4-Bromofluorobenzene	93.3	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3153570
21-OCT-2013 12:56

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13100266 Prep Date: 10/15/13 07:53 Sample ID: WG448662-01
Instrument ID: HPMS8 Run Date: 10/15/13 07:53 Prep Method: 5030B/5030C/503
File ID: 8M391591 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG448662 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-OCT-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 3153570
21-OCT-2013 12:56

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13100266 Prep Date: 10/15/13 07:53 Sample ID: WG448662-01
Instrument ID: HPMS8 Run Date: 10/15/13 07:53 Prep Method: 5030B/5030C/503
File ID: 8M391591 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG448662 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-OCT-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.152	1	J
Styrene	0.125	1.00	0.296	1	J
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.758	1	*
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.315	1	J
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	90.7	85 - 115	PASS
1,2-Dichloroethane-d4	87.2	70 - 120	PASS
Toluene-d8	95.6	85 - 120	PASS
4-Bromofluorobenzene	92.3	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3153570
21-OCT-2013 12:56

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13100266 Run Date: 10/15/2013 Sample ID: WG448662-02
Instrument ID: HPMS8 Run Time: 08:24 Prep Method: 5030B/5030C/503
File ID: 8M391592 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG448662 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD60753 Cal ID: HPMS8-13-OCT-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	19.6	98.1	40 - 140	
Benzene	20.0	20.4	102	80 - 120	
Bromobenzene	20.0	20.3	102	75 - 125	
Bromochloromethane	20.0	19.9	99.7	65 - 130	
Bromodichloromethane	20.0	19.2	96.1	75 - 120	
Bromoform	20.0	18.9	94.4	70 - 130	
Bromomethane	20.0	18.0	90.1	30 - 145	
2-Butanone	20.0	19.4	97.2	30 - 150	
n-Butylbenzene	20.0	20.6	103	70 - 135	
sec-Butylbenzene	20.0	19.4	97.2	70 - 125	
tert-Butylbenzene	20.0	19.6	98.1	70 - 130	
Carbon disulfide	20.0	19.7	98.6	35 - 160	
Carbon tetrachloride	20.0	19.0	95.1	65 - 140	
Chlorobenzene	20.0	19.3	96.3	80 - 120	
Chlorodibromomethane	20.0	19.7	98.5	60 - 135	
Chloroethane	20.0	21.2	106	60 - 135	
Chloroform	20.0	19.2	96.0	65 - 135	
Chloromethane	20.0	20.6	103	40 - 125	
2-Chlorotoluene	20.0	20.3	102	75 - 125	
4-Chlorotoluene	20.0	17.2	85.9	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	18.1	90.6	50 - 130	
1,2-Dibromoethane	20.0	19.7	98.5	80 - 120	
Dibromomethane	20.0	19.6	98.2	75 - 125	
1,2-Dichlorobenzene	20.0	18.5	92.7	70 - 120	
1,3-Dichlorobenzene	20.0	19.0	94.9	75 - 125	
1,4-Dichlorobenzene	20.0	19.9	99.6	75 - 125	
Dichlorodifluoromethane	20.0	22.8	114	30 - 155	
1,1-Dichloroethane	20.0	20.1	100	70 - 135	
1,2-Dichloroethane	20.0	18.3	91.7	70 - 130	
1,1-Dichloroethene	20.0	19.1	95.3	70 - 130	
cis-1,2-Dichloroethene	20.0	20.6	103	70 - 125	
trans-1,2-Dichloroethene	20.0	20.2	101	60 - 140	
1,2-Dichloropropane	20.0	20.1	101	75 - 125	
1,3-Dichloropropane	20.0	19.2	95.9	75 - 125	
2,2-Dichloropropane	20.0	21.2	106	70 - 135	
cis-1,3-Dichloropropene	20.0	21.4	107	70 - 130	
trans-1,3-Dichloropropene	20.0	18.6	93.2	55 - 140	
1,1-Dichloropropene	20.0	19.7	98.7	75 - 130	
Ethylbenzene	20.0	19.9	99.4	75 - 125	
2-Hexanone	20.0	18.8	93.8	55 - 130	
Hexachlorobutadiene	20.0	20.5	102	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 3143195
Report generated: 10/21/2013 12:56

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13100266 Run Date: 10/15/2013 Sample ID: WG448662-02
Instrument ID: HPMS8 Run Time: 08:24 Prep Method: 5030B/5030C/503
File ID: 8M391592 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG448662 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD60753 Cal ID: HPMS8-13-OCT-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	19.8	98.9	75 - 125	
p-Isopropyltoluene	20.0	19.8	99.2	75 - 130	
4-Methyl-2-pentanone	20.0	18.6	92.9	60 - 135	
Methylene chloride	20.0	19.9	99.4	55 - 140	
Naphthalene	20.0	19.6	98.2	55 - 140	
n-Propylbenzene	20.0	19.0	94.9	70 - 130	
Styrene	20.0	21.2	106	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.7	98.3	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.9	94.7	65 - 130	
Tetrachloroethene	20.0	20.9	105	45 - 150	
Toluene	20.0	21.3	107	75 - 120	
1,2,3-Trichlorobenzene	20.0	19.6	98.2	55 - 140	
1,2,4-Trichlorobenzene	20.0	20.4	102	65 - 135	
1,1,1-Trichloroethane	20.0	19.5	97.4	65 - 130	
1,1,2-Trichloroethane	20.0	19.7	98.4	75 - 125	
Trichloroethene	20.0	20.2	101	70 - 125	
Trichlorofluoromethane	20.0	20.3	101	60 - 145	
1,2,3-Trichloropropane	20.0	18.5	92.6	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.9	104	75 - 130	
1,3,5-Trimethylbenzene	20.0	22.0	110	75 - 130	
Vinyl chloride	20.0	19.9	99.6	50 - 145	
o-Xylene	20.0	19.3	96.3	80 - 120	
m-,p-Xylene	40.0	40.7	102	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	90.8	85 - 115	PASS
1,2-Dichloroethane-d4	85.1	70 - 120	PASS
Toluene-d8	93.8	85 - 120	PASS
4-Bromofluorobenzene	90.3	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 3143195
Report generated: 10/21/2013 12:56

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13100266 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG448583 Units: ug/L
QC Key: DOD4 Lot #: STD60753

Sample ID: WG448583-02 LCS File ID: 8M391562 Run Date: 10/14/2013 13:58
Sample ID: WG448583-03 LCS2 File ID: 8M391563 Run Date: 10/14/2013 14:29

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	19.9	99.6	20.0	20.2	101	1.44	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.0	99.8	20.0	19.8	99.1	0.685	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	20.1	100	20.0	20.6	103	2.74	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.1	101	20.0	20.4	102	1.43	75 - 125	30	
1,1-Dichloroethane	20.0	19.9	99.3	20.0	19.8	99.0	0.305	70 - 135	30	
1,1-Dichloroethene	20.0	19.1	95.3	20.0	18.7	93.3	2.13	70 - 130	30	
1,1-Dichloropropene	20.0	19.9	99.7	20.0	19.1	95.5	4.34	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	20.0	100	20.0	20.5	102	2.34	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.7	98.4	20.0	20.3	102	3.30	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	20.8	104	20.0	21.3	106	2.26	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	21.1	105	20.0	21.1	105	0.0377	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	18.8	94.1	20.0	19.5	97.6	3.67	50 - 130	30	
1,2-Dibromoethane	20.0	19.3	96.6	20.0	20.6	103	6.56	80 - 120	30	
1,2-Dichlorobenzene	20.0	18.6	92.9	20.0	19.0	95.2	2.42	70 - 120	30	
1,2-Dichloroethane	20.0	19.2	96.0	20.0	19.8	98.9	2.92	70 - 130	30	
1,2-Dichloropropane	20.0	20.1	101	20.0	20.1	100	0.389	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	21.6	108	20.0	21.7	108	0.234	75 - 130	30	
1,3-Dichlorobenzene	20.0	19.0	95.1	20.0	19.5	97.3	2.35	75 - 125	30	
1,3-Dichloropropane	20.0	19.6	97.9	20.0	19.7	98.7	0.879	75 - 125	30	
1,4-Dichlorobenzene	20.0	20.0	100	20.0	20.1	101	0.514	75 - 125	30	
2,2-Dichloropropane	20.0	21.2	106	20.0	21.6	108	1.77	70 - 135	30	
2-Butanone	20.0	20.0	100	20.0	21.0	105	5.06	30 - 150	30	
2-Chlorotoluene	20.0	18.3	91.5	20.0	18.2	90.8	0.752	75 - 125	30	
2-Hexanone	20.0	19.1	95.5	20.0	21.0	105	9.64	55 - 130	30	
4-Chlorotoluene	20.0	20.4	102	20.0	20.6	103	0.999	75 - 130	30	
4-Methyl-2-pentanone	20.0	18.3	91.3	20.0	21.0	105	13.9	60 - 135	30	
Acetone	20.0	21.0	105	20.0	20.5	102	2.28	40 - 140	30	
Benzene	20.0	19.9	99.6	20.0	20.0	100	0.567	80 - 120	30	
Bromobenzene	20.0	20.2	101	20.0	20.3	101	0.235	75 - 125	30	
Bromochloromethane	20.0	19.5	97.6	20.0	19.8	99.0	1.47	65 - 130	30	
Bromodichloromethane	20.0	19.6	98.2	20.0	20.1	100	2.26	75 - 120	30	
Bromoform	20.0	19.6	98.0	20.0	20.2	101	2.96	70 - 130	30	
Bromomethane	20.0	17.6	87.8	20.0	17.9	89.5	1.86	30 - 145	30	
Carbon disulfide	20.0	19.9	99.4	20.0	20.1	100	0.987	35 - 160	30	
Carbon tetrachloride	20.0	19.6	98.1	20.0	19.0	94.8	3.34	65 - 140	30	
Chlorobenzene	20.0	19.0	95.1	20.0	19.2	96.2	1.22	80 - 120	30	
Chloroethane	20.0	20.6	103	20.0	20.1	101	2.51	60 - 135	30	
Chloroform	20.0	19.2	96.1	20.0	19.1	95.3	0.769	65 - 135	30	
Chloromethane	20.0	18.8	93.9	20.0	19.2	96.1	2.34	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.1	100	20.0	20.4	102	1.47	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3141820
Report generated: 10/21/2013 12:56

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13100266 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG448583 Units: ug/L
QC Key: DOD4 Lot #: STD60753

Sample ID: WG448583-02 LCS File ID: 8M391562 Run Date: 10/14/2013 13:58
Sample ID: WG448583-03 LCS2 File ID: 8M391563 Run Date: 10/14/2013 14:29

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.3	106	20.0	21.7	108	2.02	70 - 130	30	
Chlorodibromomethane	20.0	20.1	101	20.0	20.7	104	2.98	60 - 135	30	
Dibromomethane	20.0	20.0	100	20.0	20.4	102	2.12	75 - 125	30	
Dichlorodifluoromethane	20.0	25.4	127	20.0	23.7	118	7.26	30 - 155	30	
Ethylbenzene	20.0	19.6	98.2	20.0	19.7	98.4	0.160	75 - 125	30	
Hexachlorobutadiene	20.0	20.5	102	20.0	20.6	103	0.667	50 - 140	30	
Isopropylbenzene	20.0	19.7	98.7	20.0	19.6	98.2	0.445	75 - 125	30	
m-,p-Xylene	40.0	39.8	99.6	40.0	40.0	100	0.398	75 - 130	30	
Methylene chloride	20.0	19.6	98.1	20.0	19.7	98.4	0.328	55 - 140	30	
n-Butylbenzene	20.0	21.0	105	20.0	21.2	106	0.986	70 - 135	30	
n-Propylbenzene	20.0	19.3	96.7	20.0	19.1	95.3	1.50	70 - 130	30	
Naphthalene	20.0	19.9	99.6	20.0	20.7	104	4.01	55 - 140	30	
o-Xylene	20.0	18.9	94.7	20.0	19.1	95.3	0.610	80 - 120	30	
p-Isopropyltoluene	20.0	20.0	100	20.0	19.7	98.5	1.49	75 - 130	30	
sec-Butylbenzene	20.0	19.7	98.3	20.0	19.3	96.6	1.75	70 - 125	30	
Styrene	20.0	20.8	104	20.0	21.1	105	1.18	65 - 135	30	
tert-Butylbenzene	20.0	19.4	97.2	20.0	19.2	96.2	1.01	70 - 130	30	
Tetrachloroethene	20.0	20.5	102	20.0	19.8	98.9	3.47	45 - 150	30	
Toluene	20.0	20.7	103	20.0	20.4	102	1.20	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.2	101	20.0	19.9	99.3	1.55	60 - 140	30	
trans-1,3-Dichloropropene	20.0	19.1	95.7	20.0	19.7	98.5	2.91	55 - 140	30	
Trichloroethene	20.0	19.7	98.3	20.0	19.4	97.2	1.11	70 - 125	30	
Trichlorofluoromethane	20.0	21.0	105	20.0	20.2	101	3.81	60 - 145	30	
Vinyl chloride	20.0	20.0	100	20.0	19.3	96.4	3.66	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	91.1	90.1	70 - 120	PASS
Dibromofluoromethane	94.4	96.0	85 - 115	PASS
4-Bromofluorobenzene	95.0	94.8	75 - 120	PASS
Toluene-d8	98.4	98.3	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3141820
Report generated: 10/21/2013 12:56

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13100266
Instrument: HPMS8
Analyst: TMB
Workgroup: WG444230

Tune ID: WG444230-01
Run Date: 09/10/2013
Run Time: 15:11
File ID: 8M390487
Cal ID: HPMS8 - 10-SEP-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.8	4960	PASS
75.0	95.0	30.0	60.0	49.7	12441	PASS
95.0	95.0	100	100	100	25013	PASS
96.0	95.0	5.00	9.00	6.54	1635	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.3	21596	PASS
175	174	5.00	9.00	8.33	1799	PASS
176	174	95.0	101	96.8	20906	PASS
177	176	5.00	9.00	6.60	1379	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG444230-02	STD	01	09/10/2013 20:06	
WG444230-03	STD	01	09/10/2013 20:36	
WG444230-04	STD	01	09/10/2013 21:06	
WG444230-05	STD-CCV	01	09/10/2013 21:35	
WG444230-06	STD	01	09/10/2013 22:05	
WG444230-07	STD	01	09/10/2013 22:35	
WG444230-08	STD	01	09/10/2013 23:04	
WG444230-09	STD	01	09/10/2013 23:34	
WG444230-10	SSCV	01	09/11/2013 01:03	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3153571
Report generated 10/21/2013 12:57

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13100266
Instrument: HPMS8
Analyst: MES
Workgroup: WG448425

Tune ID: WG448425-01
Run Date: 10/13/2013
Run Time: 15:25
File ID: 8M391543
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.7	5225	PASS
75.0	95.0	30.0	60.0	49.8	11468	PASS
95.0	95.0	100	100	100	23048	PASS
96.0	95.0	5.00	9.00	7.71	1778	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	92.6	21343	PASS
175	174	5.00	9.00	7.07	1509	PASS
176	174	95.0	101	98.0	20924	PASS
177	176	5.00	9.00	6.75	1413	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG448425-02	STD	01	10/13/2013 16:54	
WG448425-03	STD	01	10/13/2013 17:24	
WG448425-04	STD	01	10/13/2013 17:55	
WG448425-05	STD	01	10/13/2013 18:26	
WG448425-06	STD	01	10/13/2013 18:57	
WG448425-07	STD	01	10/13/2013 19:28	
WG448425-08	STD-CCV	01	10/13/2013 19:59	
WG448425-09	STD	01	10/13/2013 20:30	
WG448425-10	STD	01	10/13/2013 21:01	
WG448425-11	STD	01	10/13/2013 21:32	
WG448425-12	SSCV	01	10/13/2013 22:34	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3153571
Report generated 10/21/2013 12:57

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13100266
Instrument: HPMS8
Analyst: TMB
Workgroup: WG448561

Tune ID: WG448561-01
Run Date: 10/14/2013
Run Time: 11:52
File ID: 8M391558
Cal ID: HPMS8 - 13-OCT-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.3	10017	PASS
75.0	95.0	30.0	60.0	48.2	20743	PASS
95.0	95.0	100	100	100	43034	PASS
96.0	95.0	5.00	9.00	6.66	2866	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	89.6	38573	PASS
175	174	5.00	9.00	7.35	2834	PASS
176	174	95.0	101	98.3	37909	PASS
177	176	5.00	9.00	6.76	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG448561-02	CCV	01	10/14/2013 12:23	
WG448582-01	CCV	01	10/14/2013 12:54	
WG448583-01	BLANK	01	10/14/2013 13:25	
WG448583-02	LCS	01	10/14/2013 13:58	
WG448583-03	LCS2	01	10/14/2013 14:29	
L13100266-08	TRIP BLANK	01	10/14/2013 15:31	
L13100266-06	EQUIPMENT RINSE-100213	01	10/14/2013 19:08	
L13100266-01	67WW14-100113	01	10/14/2013 22:14	
L13100266-02	67WW14-100113-FD	01	10/14/2013 22:45	
L13100266-03	67WW13-100113	01	10/14/2013 23:16	
L13100266-04	67WW12-100113	01	10/14/2013 23:47	
WG448583-04	BLANK2	01	10/15/2013 00:48	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3153571
Report generated 10/21/2013 12:57

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L13100266
Instrument: HPMS8
Analyst: TMB
Workgroup: WG448661

Tune ID: WG448661-01
Run Date: 10/15/2013
Run Time: 06:25
File ID: 8M391588
Cal ID: HPMS8 - 13-OCT-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.7	9996	PASS
75.0	95.0	30.0	60.0	48.1	21165	PASS
95.0	95.0	100	100	100	43960	PASS
96.0	95.0	5.00	9.00	6.83	3002	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.7	38117	PASS
175	174	5.00	9.00	7.56	2881	PASS
176	174	95.0	101	98.8	37672	PASS
177	176	5.00	9.00	7.09	2672	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG448661-02	CCV	01	10/15/2013 06:51	
WG448662-01	BLANK	01	10/15/2013 07:53	
WG448662-02	LCS	01	10/15/2013 08:24	
L13100266-03	67WW13-100113	DL01	10/15/2013 10:59	
L13100266-07	67WW11-100213	01	10/15/2013 14:06	
L13100266-05	67WW08-100213	DL01	10/15/2013 18:21	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3153571
Report generated 10/21/2013 12:57

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water - IC: 09/10/13- HPMS8
Last Calibration: Wed Sep 18 14:03:14 2013
Curve: WG444230
Calibration Files

	Compound	5 8M390497.D	20 8M390498.D	50 8M390499.D	100 8M390500.D	200 8M390501.D	300 8M390502.D	400 8M390503.D	500 8M390504.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.020	0.024	0.023	0.022	0.024	0.023	0.023	0.023	0.023	4.949		
T	3-Chloro-1-propene	0.420	0.459	0.476	0.469	0.489	0.467	0.464	0.468	0.464	4.255		
T	2-Chloro-1,3-butadiene	0.382	0.445	0.455	0.452	0.473	0.455	0.454	0.457	0.447	6.077		
T	Ethyl Acetate	0.149	0.167	0.171	0.169	0.176	0.167	0.169	0.174	0.168	4.840		
T	Methacrylonitrile	0.060	0.068	0.073	0.070	0.073	0.069	0.069	0.070	0.069	6.061		
T	Isobutyl Alcohol		0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006	3.782		
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.002	17.616	0.996	
T	Methyl methacrylate	0.139	0.166	0.178	0.179	0.189	0.179	0.181	0.185	0.174	9.121		
T	2-Nitropropane	0.038	0.048	0.051	0.053	0.059	0.057	0.058	0.061	0.053	14.554		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											
T	Cyclohexanone				0.018	0.015	0.014	0.019	0.016	0.016	12.394		

Wed Sep 18 14:08:38 2013

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Calibration: Mon Oct 14 11:42:22 2013
Curve: WG448425
Calibration Files

	Compound	0.3 8M391546.D	0.4 8M391547.D	1 8M391548.D	2 8M391549.D	5 8M391550.D	20 8M391551.D	50 8M391552.D	100 8M391553.D	200 8M391554.D	300 8M391555.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.258	0.262	0.261	0.291	0.294	0.293	0.286	0.281	0.277	0.278	5.220		
P	Chloromethane			0.435	0.374	0.350	0.346	0.338	0.331	0.334	0.340	0.356	9.712		
C	Vinyl Chloride		0.343	0.293	0.301	0.307	0.303	0.307	0.298	0.294	0.292	0.304	5.063		
T	1,3-Butadiene				0.315	0.313	0.312	0.316	0.307	0.298	0.288	0.307	3.378		
T	Bromomethane			0.118	0.131	0.135	0.152	0.172	0.181	0.186	0.185	0.157	17.223	0.999	
T	Chloroethane		0.154	0.178	0.198	0.202	0.195	0.196	0.192	0.188	0.184	0.188	7.821		
T	Trichlorofluoromethane		0.461	0.484	0.496	0.516	0.501	0.502	0.489	0.482	0.475	0.490	3.338		
T	Diethyl ether			0.203	0.212	0.201	0.200	0.202	0.192		0.184	0.199	4.456		
T	Isoprene		0.278	0.333	0.354	0.354	0.349	0.354	0.349	0.347	0.345	0.340	7.158		
T	Acrolein			0.023	0.019	0.019	0.021	0.020	0.019		0.019	0.020	7.495		
T	1,1,2-Trichloro-1,2,2-Trifluoroe		0.210	0.244	0.250	0.270	0.263	0.260	0.258	0.256	0.254	0.252	6.928		
T	Acetone					0.068	0.064	0.058	0.054	0.061	0.053	0.059	9.704		
C	1,1-Dichloroethene		0.443	0.445	0.452	0.479	0.469	0.473	0.458	0.453	0.448	0.458	2.861		
T	Tert-Butyl Alcohol				0.016	0.014	0.013	0.012	0.012		0.011	0.013	13.044		
T	Dimethyl Sulfide					0.239	0.254	0.255	0.245	0.242	0.236	0.245	3.227		
T	Iodomethane			0.148	0.175	0.209	0.246	0.263	0.258	0.253	0.240	0.224	18.968	0.999	
T	Methyl acetate			0.174	0.197	0.195	0.180	0.176	0.171	0.172	0.166	0.179	6.307		
T	Methylene Chloride		0.266	0.267	0.261	0.249	0.251	0.249	0.242	0.241	0.232	0.251	4.804		
T	Carbon Disulfide		0.748	0.736	0.754	0.759	0.740	0.755	0.731	0.719	0.706	0.739	2.419		
T	Acrylonitrile			0.088	0.073	0.074	0.077	0.083	0.077		0.082	0.079	6.786		
T	Methyl Tert Butyl Ether			0.631	0.634	0.665	0.670	0.665	0.640	0.638	0.607	0.644	3.354		
T	trans-1,2-Dichloroethene		0.438	0.408	0.421	0.450	0.441	0.434	0.420	0.418	0.410	0.427	3.429		
T	n-Hexane		0.320	0.352	0.340	0.378	0.362	0.360	0.353	0.350	0.346	0.351	4.564		
T	Diisopropyl ether			1.215	1.158	1.122	1.114	1.108	1.047		0.990	1.108	6.570		
T	Vinyl Acetate			0.410	0.504	0.405	0.460	0.447	0.457	0.427	0.432	0.443	7.196		
P	1,1-Dichloroethane		0.460	0.507	0.507	0.520	0.527	0.517	0.501	0.495	0.483	0.502	4.104		
T	Ethyl-Tert-Butyl ether			0.963	0.906	0.885	0.879	0.884	0.836		0.803	0.879	5.757		
T	2-Butanone				0.098	0.098	0.098	0.097	0.092	0.094	0.089	0.095	3.635		
T	Propionitrile			0.033	0.028	0.027	0.027	0.026	0.025		0.025	0.027	10.568		
T	2,2-Dichloropropane		0.369	0.407	0.414	0.437	0.437	0.440	0.430	0.422	0.411	0.419	5.304		
T	cis-1,2-Dichloroethene		0.246	0.300	0.282	0.290	0.284	0.286	0.279	0.276	0.270	0.279	5.345		
C	Chloroform	0.498	0.547	0.529	0.524	0.502	0.506	0.502	0.489	0.479	0.467	0.504	4.761		
T	1-Bromopropane			0.053	0.045	0.058	0.057	0.059	0.057	0.057	0.057	0.055	8.627		
T	Bromochloromethane		0.163	0.170	0.171	0.184	0.187	0.181	0.180	0.179	0.174	0.177	4.273		
T	Tetrahydrofuran			0.085	0.068	0.066	0.064	0.066	0.060			0.068	12.511		
S	Dibromofluoromethane			0.269	0.294	0.297	0.286	0.289	0.282	0.282	0.275	0.284	3.362		
T	1,1,1-Trichloroethane		0.402	0.457	0.461	0.485	0.488	0.487	0.471	0.465	0.454	0.463	5.685		
T	Cyclohexane			0.473	0.484	0.513	0.494	0.499	0.496	0.493	0.485	0.492	2.452		
T	1,1-Dichloropropene			0.356	0.363	0.373	0.372	0.377	0.363	0.362	0.359	0.366	2.074		
T	Tert-Amyl-Methyl ether			0.769	0.660	0.658	0.651	0.660	0.629		0.614	0.663	7.532		
T	Carbon Tetrachloride		0.353	0.432	0.454	0.466	0.451	0.461	0.451	0.448	0.435	0.43895	7.77965		
S	1,2-Dichloroethane-d4			0.344	0.346	0.35	0.348	0.337	0.322	0.317	0.301	0.33326	5.30697		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.448	0.399	0.422	0.429	0.427	0.423	0.406	0.398	0.376	0.41424	5.16653		
T	Benzene		1.046	1.034	1.038	1.032	1.025	1.006	0.974	0.942	0.896	0.99916	5.16444		
T	Trichloroethene		0.319	0.278	0.298	0.318	0.313	0.318	0.304	0.304	0.296	0.30537	4.43356		
T	Methylcyclohexane					0.38	0.383	0.386	0.383	0.38	0.377	0.38157	0.82036		
C	1,2-Dichloropropane		0.248	0.253	0.276	0.273	0.278	0.278	0.268	0.265	0.258	0.26635	4.17947		
T	Bromodichloromethane		0.318	0.354	0.374	0.398	0.393	0.395	0.39	0.383	0.37	0.3751	6.82		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.00123	12.0498		
T	Dibromomethane		0.112	0.14	0.133	0.15	0.151	0.156	0.149	0.148	0.139	0.1419	9.26679		
T	2-Chloroethyl Vinyl Ether					0.13	0.146	0.146	0.145	0.146	0.141	0.14228	4.56476		
T	4-Methyl-2-Pentanone					0.063	0.071	0.071	0.069	0.071	0.069	0.06902	4.48419		
T	cis-1,3-Dichloropropene		0.354	0.378	0.408	0.414	0.428	0.433	0.427	0.422	0.406	0.40783	6.41144		
T	Dimethyl Disulfide					0.361	0.404	0.441	0.45	0.455	0.444	0.42575	8.57212		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.281	1.334	1.228	1.208	1.168	1.154	1.111	1.042	1.19071	7.8169		
C	Toluene		1.278	1.395	1.397	1.408	1.372	1.312	1.3	1.223	1.12	1.31172	7.28222		
T	Ethyl Methacrylate			0.274	0.292	0.31	0.33	0.33	0.328	0.324	0.3	0.3109	6.71179		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.507	0.465	0.485	0.506	0.504	0.496	0.482	0.446	0.48617	4.47336		
T	1,1,2-Trichloroethane		0.213	0.243	0.229	0.252	0.253	0.246	0.243	0.236	0.219	0.23704	5.97388		
T	2-Hexanone					0.074	0.079	0.079	0.079	0.081	0.075	0.07785	3.56284		
T	1,3-Dichloropropane		0.432	0.455	0.427	0.433	0.447	0.433	0.424	0.413	0.378	0.42695	5.17099		
T	Tetrachloroethene		0.262	0.308	0.298	0.305	0.314	0.31	0.313	0.306	0.292	0.30091	5.33174		
T	Dibromochloromethane		0.3	0.332	0.348	0.367	0.38	0.379	0.377	0.37	0.344	0.35539	7.53179		
T	1,2-Dibromoethane		0.203	0.252	0.246	0.262	0.265	0.262	0.262	0.257	0.237	0.24969	7.83468		
T	1-Chlorohexane			0.4	0.397	0.424	0.429	0.429	0.433	0.422	0.4	0.41661	3.59515		
P	Chlorobenzene		0.993	1.006	0.983	1.01	0.992	0.96	0.948	0.906	0.832	0.9588	6.01606		
T	1,1,1,2-Tetrachloroethane		0.352	0.388	0.382	0.397	0.402	0.397	0.396	0.384	0.356	0.38368	4.73649		
C	Ethylbenzene		0.52	0.532	0.526	0.509	0.513	0.507	0.513			0.51712	1.79025		
T	m-,p-Xylene		0.609	0.638	0.614	0.637	0.632	0.613	0.612	0.584	0.532	0.60791	5.43141		
T	o-Xylene			0.6	0.62	0.628	0.621	0.62	0.62	0.604	0.569	0.61033	3.11927		
T	Styrene		0.926	0.967	0.984	1.045	1.066	1.06	1.049	1.01	0.928	1.00397	5.4936		
P	Bromoform			0.199	0.207	0.23	0.237	0.242	0.246	0.245	0.227	0.22882	7.68344		
T	Isopropylbenzene		1.432	1.601	1.553	1.607	1.613	1.579	1.574	1.477	1.331	1.52978	6.31744		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.396	0.465	0.495	0.481	0.473	0.462	0.46	0.451	0.439	0.45805	6.16962		
S	p-Bromofluorobenzene			0.923	0.918	0.899	0.873	0.863	0.839	0.825	0.808	0.8685	4.92405		

T	1,2,3-Trichloropropane			0.134	0.16	0.175	0.165	0.16	0.159	0.156	0.152	0.15757	7.48925
T	trans-1,4-Dichloro-2-Butene			0.161	0.169	0.177	0.195	0.187	0.198	0.188	0.195	0.18386	7.33761
T	n-Propylbenzene		3.002	3.061	3.259	3.257	3.18	3.087	3.007	2.769	2.546	3.01841	7.71171
T	Bromobenzene	0.712	0.703	0.785	0.812	0.819	0.797	0.782	0.768	0.743	0.724	0.76453	5.4803
T	1,3,5-Trimethylbenzene		2.043	2.366	2.382	2.491	2.415	2.363	2.331	2.19	2.066	2.29421	6.85827
T	2-Chlorotoluene		2.253	1.831	2.29	2.316	1.99	1.949	1.894	1.759	1.819	2.01128	10.84
T	4-Chlorotoluene		1.724	2.232	1.859	1.898	2.056	2.009	1.971	1.899	1.646	1.92151	9.09586
T	a-Methylstyrene					1.345	1.326	1.361	1.36	1.325	1.284	1.33354	2.15744
T	tert-Butylbenzene			0.489	0.475	0.521	0.525	0.511	0.513	0.504	0.497	0.50444	3.34706
T	1,2,4-Trimethylbenzene			2.488	2.533	2.538	2.511	2.424	2.382	2.238	2.081	2.39951	6.79663
T	sec-Butylbenzene			2.781	2.785	2.854	2.792	2.736	2.716	2.521	2.355	2.69238	6.24829
T	p-Isopropyltoluene			2.435	2.536	2.634	2.57	2.524	2.502	2.31	2.155	2.45814	6.34715
T	1,3-Dichlorobenzene		1.5	1.528	1.541	1.53	1.49	1.475	1.449	1.39	1.325	1.46972	4.87238
T	1,4-Dichlorobenzene	1.705	1.581	1.613	1.618	1.576	1.514	1.489	1.472	1.406	1.335	1.5309	7.16701
T	n-Butylbenzene		2.201	2.185	2.094	2.169	2.084	2.035	2.008	1.875	1.776	2.04739	7.03311
T	1,2-Dichlorobenzene	1.629	1.49	1.379	1.43	1.451	1.422	1.401	1.366	1.306	1.248	1.41217	7.32918
T	1,2-Dibromo-3-Chloropropane				0.096	0.102	0.098	0.1	0.102	0.102	0.097	0.09971	2.517
T	1,2,4-Trichlorobenzene		1.165	1.059	1.026	1.097	1.094	1.074	1.039	0.981	0.928	1.05145	6.59344
T	Hexachlorobutadiene		0.412	0.43	0.387	0.385	0.39	0.391	0.389	0.367	0.36	0.39015	5.42606
T	Naphthalene		2.141	2.001	2.051	2.053	2.062	2.028	1.914	1.803	1.645	1.96657	7.87609
T	1,2,3-Trichlorobenzene	1.047	1.008	1.008	0.994	0.985	0.99	0.964	0.936	0.877	0.831	0.96412	6.80805

Tue Oct 15 10:40:34 2013

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13100266 Run Date: 10/13/2013 Sample ID: WG448425-12
Instrument ID: HPMS8 Run Time: 22:34 Method: 8260B
File ID: 8M391557 Analyst: MES QC Key: DOD4
ICal Workgroup: WG448425 Cal ID: HPMS8 - 13-OCT-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.1	ug/L	0.495	1.80	20	
1,1-Dichloroethene	CCC	50.0	50.3	ug/L	0.460	0.600	20	
1,2-Dichloropropane	CCC	50.0	51.9	ug/L	0.277	3.80	20	
Ethylbenzene	CCC	50.0	50.5	ug/L	0.522	1.00	20	
Toluene	CCC	50.0	51.9	ug/L	1.36	3.80	20	
Vinyl Chloride	CCC	50.0	53.4	ug/L	0.325	6.70	20	
Bromoform	SPCC	50.0	50.7	ug/L	0.232	1.40	20	
Chlorobenzene	SPCC	50.0	47.9	ug/L	0.919	4.10	20	
Chloromethane	SPCC	50.0	49.9	ug/L	0.355	0.300	20	
1,1-Dichloroethane	SPCC	50.0	51.1	ug/L	0.513	2.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.7	ug/L	0.456	0.500	20	
Acetone		50.0	48.8	ug/L	0.0580	2.50	20	
Benzene		50.0	51.4	ug/L	1.03	2.90	20	
Bromobenzene		50.0	51.5	ug/L	0.788	3.00	20	
Bromochloromethane		50.0	50.6	ug/L	0.179	1.20	20	
Bromodichloromethane		50.0	51.0	ug/L	0.383	2.10	20	
Bromomethane		50.0	47.9	ug/L	0.173	4.30	20	
2-Butanone		50.0	50.8	ug/L	0.0966	1.50	20	
n-Butylbenzene		50.0	53.2	ug/L	2.18	6.50	20	
sec-Butylbenzene		50.0	50.1	ug/L	2.70	0.200	20	
tert-Butylbenzene		50.0	49.7	ug/L	0.501	0.600	20	
Carbon Disulfide		50.0	54.1	ug/L	0.800	8.30	20	
Carbon Tetrachloride		50.0	52.0	ug/L	0.457	4.10	20	
Dibromochloromethane		50.0	52.4	ug/L	0.372	4.70	20	
Chloroethane		50.0	53.5	ug/L	0.201	7.00	20	
2-Chlorotoluene		50.0	53.8	ug/L	2.16	7.50	20	
4-Chlorotoluene		50.0	42.6	ug/L	1.64	14.8	20	
1,2-Dibromo-3-Chloropropane		50.0	47.3	ug/L	0.0944	5.40	20	
1,2-Dibromoethane		50.0	51.3	ug/L	0.256	2.50	20	
Dibromomethane		50.0	51.5	ug/L	0.146	3.00	20	
1,2-Dichlorobenzene		50.0	47.3	ug/L	1.34	5.30	20	
1,3-Dichlorobenzene		50.0	48.4	ug/L	1.42	3.20	20	
1,4-Dichlorobenzene		50.0	50.2	ug/L	1.54	0.300	20	
Dichlorodifluoromethane		50.0	66.3	ug/L	0.369	32.6	20	*
1,2-Dichloroethane		50.0	48.9	ug/L	0.405	2.20	20	
cis-1,2-Dichloroethene		50.0	52.0	ug/L	0.290	3.90	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.445	4.20	20	
1,3-Dichloropropane		50.0	49.6	ug/L	0.424	0.700	20	
2,2-Dichloropropane		50.0	50.1	ug/L	0.419	0.100	20	
cis-1,3-Dichloropropene		50.0	54.0	ug/L	0.441	8.10	20	
trans-1,3-Dichloropropene		50.0	48.2	ug/L	0.469	3.60	20	
1,1-Dichloropropene		50.0	51.8	ug/L	0.379	3.70	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3141821
Report generated 10/21/2013 12:56

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13100266 Run Date: 10/13/2013 Sample ID: WG448425-12
Instrument ID: HPMS8 Run Time: 22:34 Method: 8260B
File ID: 8M391557 Analyst: MES QC Key: DOD4
ICal Workgroup: WG448425 Cal ID: HPMS8 - 13-OCT-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.9	ug/L	0.0824	5.80	20	
Hexachlorobutadiene		50.0	52.7	ug/L	0.411	5.40	20	
Isopropylbenzene		50.0	49.9	ug/L	1.53	0.300	20	
p-Isopropyltoluene		50.0	50.5	ug/L	2.48	1.00	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0717	3.80	20	
Methylene Chloride		50.0	49.9	ug/L	0.250	0.200	20	
Naphthalene		50.0	50.5	ug/L	1.98	0.900	20	
n-Propylbenzene		50.0	48.8	ug/L	2.95	2.40	20	
Styrene		50.0	53.4	ug/L	1.07	6.70	20	
1,1,1,2-Tetrachloroethane		50.0	51.1	ug/L	0.392	2.30	20	
Tetrachloroethene		50.0	52.8	ug/L	0.318	5.60	20	
1,2,3-Trichlorobenzene		50.0	50.5	ug/L	0.974	1.00	20	
1,2,4-Trichlorobenzene		50.0	52.2	ug/L	1.10	4.40	20	
1,1,1-Trichloroethane		50.0	51.7	ug/L	0.479	3.40	20	
1,1,2-Trichloroethane		50.0	51.3	ug/L	0.243	2.60	20	
Trichloroethene		50.0	52.6	ug/L	0.322	5.30	20	
Trichlorofluoromethane		50.0	55.4	ug/L	0.543	10.8	20	
1,2,3-Trichloropropane		50.0	48.9	ug/L	0.154	2.30	20	
1,2,4-Trimethylbenzene		50.0	53.2	ug/L	2.55	6.30	20	
1,3,5-Trimethylbenzene		50.0	54.6	ug/L	2.51	9.30	20	
o-Xylene		50.0	48.4	ug/L	0.591	3.20	20	
m-,p-Xylene		100	101	ug/L	0.617	1.40	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3141821
Report generated 10/21/2013 12:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13100266 Run Date: 10/14/2013 Sample ID: WG448561-02
Instrument ID: HPMS8 Run Time: 12:23 Method: 8260B
File ID: 8M391559 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG448583 Cal ID: HPMS8 - 13-OCT-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	45.2	ug/L	0.456	9.61	20	
1,1-Dichloroethene	CCC	50.0	48.0	ug/L	0.439	4.07	20	
1,2-Dichloropropane	CCC	50.0	46.9	ug/L	0.250	6.14	20	
Ethylbenzene	CCC	50.0	46.9	ug/L	0.485	6.16	20	
Toluene	CCC	50.0	47.9	ug/L	1.26	4.28	20	
Vinyl Chloride	CCC	50.0	47.7	ug/L	0.290	4.60	20	
Bromoform	SPCC	50.0	43.6	ug/L	0.200	12.7	20	
Chlorobenzene	SPCC	50.0	46.7	ug/L	0.896	6.59	20	
Chloromethane	SPCC	50.0	44.6	ug/L	0.318	10.7	20	
1,1-Dichloroethane	SPCC	50.0	47.8	ug/L	0.480	4.34	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	42.2	ug/L	0.387	15.6	20	
Xylenes		150	145	ug/L	0.588	3.43	20	
Acetone		50.0	43.6	ug/L	0.0519	12.8	20	
Benzene		50.0	47.1	ug/L	0.942	5.77	20	
Bromobenzene		50.0	46.3	ug/L	0.707	7.47	20	
Bromochloromethane		50.0	46.5	ug/L	0.164	7.02	20	
Bromodichloromethane		50.0	46.9	ug/L	0.352	6.23	20	
Bromomethane		50.0	48.1	ug/L	0.174	3.80	20	
2-Butanone		50.0	40.9	ug/L	0.0777	18.3	20	
n-Butylbenzene		50.0	49.4	ug/L	2.02	1.18	20	
sec-Butylbenzene		50.0	49.2	ug/L	2.65	1.64	20	
tert-Butylbenzene		50.0	48.6	ug/L	0.491	2.70	20	
Carbon Disulfide		50.0	52.5	ug/L	0.776	5.00	20	
Carbon Tetrachloride		50.0	48.0	ug/L	0.421	3.99	20	
Dibromochloromethane		50.0	45.2	ug/L	0.321	9.60	20	
Chloroethane		50.0	49.1	ug/L	0.184	1.85	20	
2-Chlorotoluene		50.0	44.5	ug/L	1.79	11.1	20	
4-Chlorotoluene		50.0	49.5	ug/L	1.90	0.956	20	
1,2-Dibromo-3-Chloropropane		50.0	38.8	ug/L	0.0774	22.4	20	*
1,2-Dibromoethane		50.0	44.2	ug/L	0.221	11.5	20	
Dibromomethane		50.0	45.3	ug/L	0.129	9.38	20	
1,2-Dichlorobenzene		50.0	44.3	ug/L	1.25	11.4	20	
1,3-Dichlorobenzene		50.0	46.6	ug/L	1.37	6.87	20	
1,4-Dichlorobenzene		50.0	45.1	ug/L	1.38	9.78	20	
Dichlorodifluoromethane		50.0	50.1	ug/L	0.279	0.274	20	
1,2-Dichloroethane		50.0	42.6	ug/L	0.353	14.7	20	
cis-1,2-Dichloroethene		50.0	48.3	ug/L	0.270	3.44	20	
trans-1,2-Dichloroethene		50.0	47.0	ug/L	0.401	5.91	20	
1,3-Dichloropropane		50.0	43.0	ug/L	0.367	14.1	20	
2,2-Dichloropropane		50.0	54.3	ug/L	0.455	8.61	20	
cis-1,3-Dichloropropene		50.0	48.6	ug/L	0.396	2.84	20	
trans-1,3-Dichloropropene		50.0	45.5	ug/L	0.442	9.00	20	

CCV - Modified 03/05/2008
PDF File ID: 3141822
Report generated 10/21/2013 12:57

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13100266 Run Date: 10/14/2013 Sample ID: WG448561-02
Instrument ID: HPMS8 Run Time: 12:23 Method: 8260B
File ID: 8M391559 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG448583 Cal ID: HPMS8 - 13-OCT-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	48.5	ug/L	0.355	3.05	20	
2-Hexanone		50.0	41.7	ug/L	0.0650	16.5	20	
Hexachlorobutadiene		50.0	51.6	ug/L	0.403	3.23	20	
Isopropylbenzene		50.0	49.4	ug/L	1.51	1.17	20	
p-Isopropyltoluene		50.0	49.9	ug/L	2.45	0.132	20	
4-Methyl-2-Pentanone		50.0	41.0	ug/L	0.0566	18.0	20	
Methylene Chloride		50.0	45.4	ug/L	0.228	9.30	20	
Naphthalene		50.0	41.5	ug/L	1.63	17.0	20	
n-Propylbenzene		50.0	48.9	ug/L	2.95	2.24	20	
Styrene		50.0	48.9	ug/L	0.982	2.23	20	
1,1,1,2-Tetrachloroethane		50.0	46.8	ug/L	0.359	6.41	20	
Tetrachloroethene		50.0	50.2	ug/L	0.302	0.486	20	
1,2,3-Trichlorobenzene		50.0	43.9	ug/L	0.846	12.2	20	
1,2,4-Trichlorobenzene		50.0	46.4	ug/L	0.977	7.11	20	
1,1,1-Trichloroethane		50.0	47.4	ug/L	0.439	5.23	20	
1,1,2-Trichloroethane		50.0	44.2	ug/L	0.209	11.7	20	
Trichloroethene		50.0	46.9	ug/L	0.286	6.20	20	
Trichlorofluoromethane		50.0	46.5	ug/L	0.455	6.98	20	
1,2,3-Trichloropropane		50.0	40.6	ug/L	0.128	18.8	20	
1,2,4-Trimethylbenzene		50.0	47.6	ug/L	2.28	4.85	20	
1,3,5-Trimethylbenzene		50.0	49.0	ug/L	2.25	2.02	20	
o-Xylene		50.0	48.2	ug/L	0.588	3.59	20	
m-,p-Xylene		100	96.6	ug/L	0.588	3.35	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3141822
Report generated 10/21/2013 12:57

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13100266 Run Date: 10/15/2013 Sample ID: WG448661-02
Instrument ID: HPMS8 Run Time: 06:51 Method: 8260B
File ID: 8M391589 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG448662 Cal ID: HPMS8 - 13-OCT-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.0	ug/L	0.485	3.90	20	
1,1-Dichloroethene	CCC	50.0	50.4	ug/L	0.462	0.838	20	
1,2-Dichloropropane	CCC	50.0	50.2	ug/L	0.267	0.318	20	
Ethylbenzene	CCC	50.0	50.1	ug/L	0.518	0.222	20	
Toluene	CCC	50.0	54.8	ug/L	1.44	9.66	20	
Vinyl Chloride	CCC	50.0	51.2	ug/L	0.312	2.41	20	
Bromoform	SPCC	50.0	47.9	ug/L	0.219	4.24	20	
Chlorobenzene	SPCC	50.0	50.7	ug/L	0.971	1.31	20	
Chloromethane	SPCC	50.0	50.2	ug/L	0.357	0.417	20	
1,1-Dichloroethane	SPCC	50.0	51.6	ug/L	0.518	3.19	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.1	ug/L	0.423	7.74	20	
Xylenes		150	157	ug/L	0.637	4.63	20	
Acetone		50.0	44.1	ug/L	0.0524	11.9	20	
Benzene		50.0	50.5	ug/L	1.01	1.03	20	
Bromobenzene		50.0	50.8	ug/L	0.776	1.52	20	
Bromochloromethane		50.0	50.4	ug/L	0.178	0.800	20	
Bromodichloromethane		50.0	49.1	ug/L	0.368	1.83	20	
Bromomethane		50.0	51.3	ug/L	0.186	2.57	20	
2-Butanone		50.0	44.0	ug/L	0.0838	11.9	20	
n-Butylbenzene		50.0	51.8	ug/L	2.12	3.58	20	
sec-Butylbenzene		50.0	52.0	ug/L	2.80	4.10	20	
tert-Butylbenzene		50.0	52.1	ug/L	0.525	4.11	20	
Carbon Disulfide		50.0	51.5	ug/L	0.761	2.96	20	
Carbon Tetrachloride		50.0	49.8	ug/L	0.437	0.353	20	
Dibromochloromethane		50.0	48.8	ug/L	0.347	2.36	20	
Chloroethane		50.0	52.8	ug/L	0.198	5.67	20	
2-Chlorotoluene		50.0	54.1	ug/L	2.18	8.25	20	
4-Chlorotoluene		50.0	45.4	ug/L	1.74	9.22	20	
1,2-Dibromo-3-Chloropropane		50.0	42.9	ug/L	0.0856	14.2	20	
1,2-Dibromoethane		50.0	48.9	ug/L	0.244	2.21	20	
Dibromomethane		50.0	48.4	ug/L	0.137	3.15	20	
1,2-Dichlorobenzene		50.0	48.1	ug/L	1.36	3.72	20	
1,3-Dichlorobenzene		50.0	50.1	ug/L	1.47	0.181	20	
1,4-Dichlorobenzene		50.0	48.8	ug/L	1.49	2.49	20	
Dichlorodifluoromethane		50.0	50.2	ug/L	0.279	0.410	20	
1,2-Dichloroethane		50.0	45.6	ug/L	0.378	8.70	20	
cis-1,2-Dichloroethene		50.0	51.2	ug/L	0.286	2.50	20	
trans-1,2-Dichloroethene		50.0	50.3	ug/L	0.429	0.565	20	
1,3-Dichloropropane		50.0	46.8	ug/L	0.400	6.44	20	
2,2-Dichloropropane		50.0	57.6	ug/L	0.482	15.3	20	
cis-1,3-Dichloropropene		50.0	51.9	ug/L	0.423	3.75	20	
trans-1,3-Dichloropropene		50.0	49.6	ug/L	0.482	0.765	20	

CCV - Modified 03/05/2008
PDF File ID: 3141822
Report generated 10/21/2013 12:57

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13100266 Run Date: 10/15/2013 Sample ID: WG448661-02
Instrument ID: HPMS8 Run Time: 06:51 Method: 8260B
File ID: 8M391589 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG448662 Cal ID: HPMS8 - 13-OCT-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.4	ug/L	0.376	2.87	20	
2-Hexanone		50.0	45.7	ug/L	0.0711	8.61	20	
Hexachlorobutadiene		50.0	55.0	ug/L	0.429	9.95	20	
Isopropylbenzene		50.0	52.6	ug/L	1.61	5.23	20	
p-Isopropyltoluene		50.0	52.8	ug/L	2.59	5.52	20	
4-Methyl-2-Pentanone		50.0	44.9	ug/L	0.0620	10.1	20	
Methylene Chloride		50.0	49.2	ug/L	0.247	1.50	20	
Naphthalene		50.0	45.7	ug/L	1.80	8.56	20	
n-Propylbenzene		50.0	52.0	ug/L	3.14	4.02	20	
Styrene		50.0	55.1	ug/L	1.11	10.2	20	
1,1,1,2-Tetrachloroethane		50.0	50.6	ug/L	0.388	1.12	20	
Tetrachloroethene		50.0	54.2	ug/L	0.326	8.41	20	
1,2,3-Trichlorobenzene		50.0	47.5	ug/L	0.916	5.01	20	
1,2,4-Trichlorobenzene		50.0	50.0	ug/L	1.05	0.0758	20	
1,1,1-Trichloroethane		50.0	50.0	ug/L	0.463	0.0304	20	
1,1,2-Trichloroethane		50.0	48.4	ug/L	0.230	3.13	20	
Trichloroethene		50.0	50.6	ug/L	0.309	1.18	20	
Trichlorofluoromethane		50.0	48.6	ug/L	0.476	2.77	20	
1,2,3-Trichloropropane		50.0	44.4	ug/L	0.140	11.1	20	
1,2,4-Trimethylbenzene		50.0	52.0	ug/L	2.49	3.91	20	
1,3,5-Trimethylbenzene		50.0	54.9	ug/L	2.52	9.71	20	
o-Xylene		50.0	52.1	ug/L	0.637	4.29	20	
m-,p-Xylene		100	105	ug/L	0.637	4.80	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3141822
Report generated 10/21/2013 12:57

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13100266
Instrument ID: HPMS8
Workgroup (AAB#): WG448583

ICAL CCV Number: WG448425-08
CAL ID: HPMS8 - 13-OCT-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG448425-08	NA	NA	315004	534518	660376
Upper Limit	NA	NA	630008	1069036	1320752
Lower Limit	NA	NA	157502	267259	330188
L13100266-01	1.00	01	293217	500820	643288
L13100266-02	1.00	01	297938	510721	651751
L13100266-03	1.00	01	290708	500892	641615
L13100266-04	1.00	01	290463	496035	633778
L13100266-06	1.00	01	305466	524651	675140
L13100266-08	1.00	01	311945	548811	701955
WG448583-01	1.00	01	325501	557076	727482
WG448583-02	1.00	01	328198	563493	712239
WG448583-03	1.00	01	326660	555474	701435

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3153572
Report generated 10/21/2013 12:57

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13100266
Instrument ID: HPMS8
Workgroup (AAB#): WG448662

ICAL CCV Number: WG448425-08
CAL ID: HPMS8-13-OCT-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG448425-08	NA	NA	315004	534518	660376
Upper Limit	NA	NA	630008	1069036	1320752
Lower Limit	NA	NA	157502	267259	330188
L13100266-03	10.0	DL01	327239	560690	708550
L13100266-05	10.0	DL01	289323	497455	625386
L13100266-07	1.00	01	310778	523259	665909
WG448662-01	1.00	01	349669	599749	768006
WG448662-02	1.00	01	368206	618713	767661

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3153572
Report generated 10/21/2013 12:57

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13100266
Instrument ID: HPMS8
Workgroup (AAB#): WG448583

ICAL CCV Number: WG448425-08
CAL ID: HPMS8-13-OCT-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG448425-08	NA	NA	17.94	14.91	11.03
Upper Limit	NA	NA	18.44	15.41	11.53
Lower Limit	NA	NA	17.44	14.41	10.53
L13100266-01	1.00	01	17.94	14.91	11.03
L13100266-02	1.00	01	17.94	14.91	11.03
L13100266-03	1.00	01	17.94	14.91	11.03
L13100266-04	1.00	01	17.94	14.91	11.03
L13100266-06	1.00	01	17.94	14.91	11.03
L13100266-08	1.00	01	17.94	14.91	11.03
WG448583-01	1.00	01	17.94	14.91	11.03
WG448583-02	1.00	01	17.94	14.91	11.03
WG448583-03	1.00	01	17.94	14.91	11.03

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3153573
Report generated: 10/21/2013 12:57

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L13100266
Instrument ID: HPMS8
Workgroup (AAB#): WG448662

ICAL CCV Number: WG448425-08
CAL ID: HPMS8 - 13-OCT-13
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG448425-08	NA	NA	17.94	14.91	11.03
Upper Limit	NA	NA	18.44	15.41	11.53
Lower Limit	NA	NA	17.44	14.41	10.53
L13100266-03	10.0	DL01	17.94	14.91	11.03
L13100266-05	10.0	DL01	17.94	14.91	11.03
L13100266-07	1.00	01	17.94	14.91	11.03
WG448662-01	1.00	01	17.94	14.91	11.03
WG448662-02	1.00	01	17.94	14.91	11.03

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3153573
Report generated: 10/21/2013 12:57

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391578.D Vial: 21
Acq On : 14 Oct 2013 22:14 Operator: TMB
Sample : L13100266-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 11:01:29 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	643288	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	500820	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	293217	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.99	111	177432	24.2566 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.04%		
43) 1,2-Dichloroethane-d4	10.63	65	203475	23.7279 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.92%		
58) Toluene-d8	13.02	98	588849	24.6862 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.76%		
80) p-Bromofluorobenzene	16.41	95	240629	23.6226 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.48%		

Target Compounds

					Qvalue
3) Chloromethane	3.86	50	5862	0.6402 ug/L	86
13) Acetone	6.57	43	5008	3.2732 ug/L #	64
14) 1,1-Dichloroethene	6.78	61	21453	1.8215 ug/L	88
27) 1,1-Dichloroethane	8.64	63	2540	0.1967 ug/L #	72
29) 2-Butanone	9.20	43	22185	9.0630 ug/L	85
36) Tetrahydrofuran	9.96	42	1492	0.8531 ug/L #	34
45) 1,2-Dichloroethane	10.75	62	7377	0.6921 ug/L	98
56) Dimethyl Disulfide	13.02	94	17120	1.5627 ug/L #	28
92) p-Isopropyltoluene	17.65	119	12439	0.4314 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M391578.D 8260WT.M Tue Oct 15 11:01:30 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391578.D Vial: 21
Acq On : 14 Oct 2013 22:14 Operator: TMB
Sample : L13100266-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 11:01 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

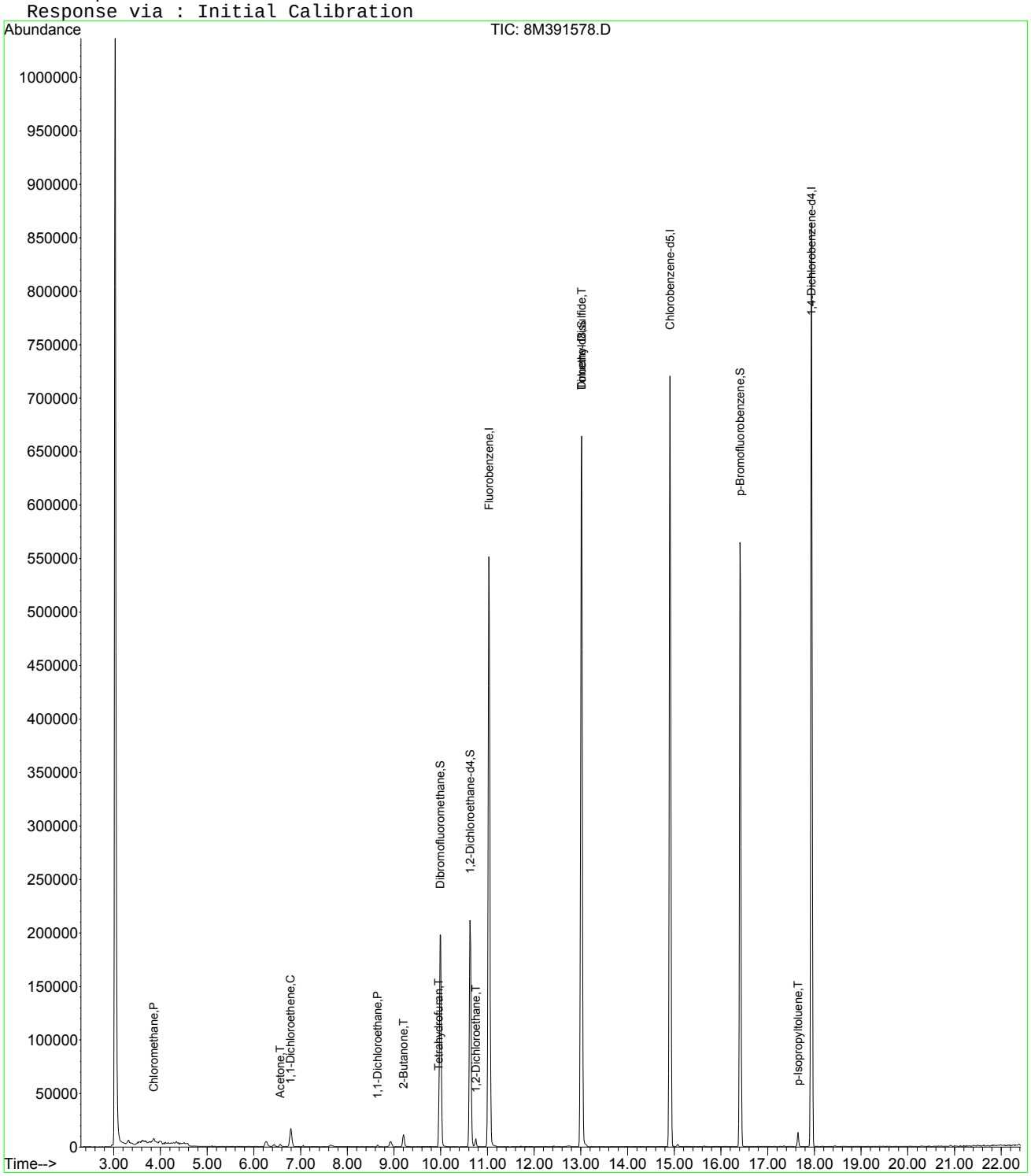

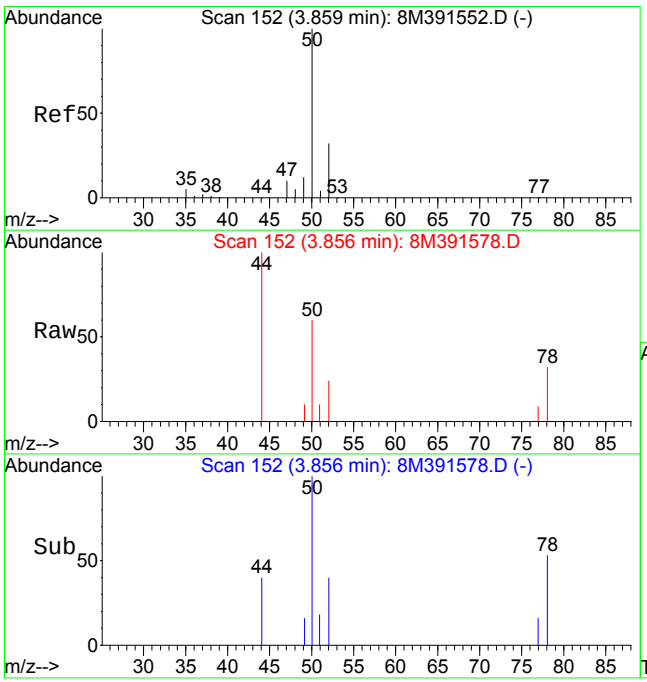

#3
Chloromethane
Concen: 0.64 ug/L
RT: 3.86 min Scan# 152
Delta R.T. 0.01 min
Lab File: 8M391578.D
Acq: 14 Oct 2013 22:14

Tgt Ion: 50 Resp: 5862

Ion	Ratio	Lower	Upper
50	100		
52	41.1	19.8	46.2

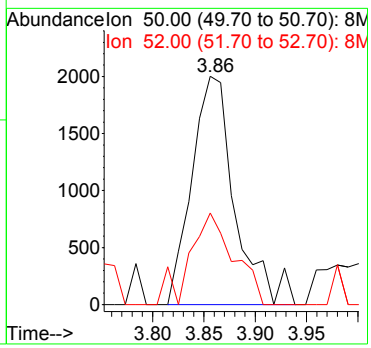

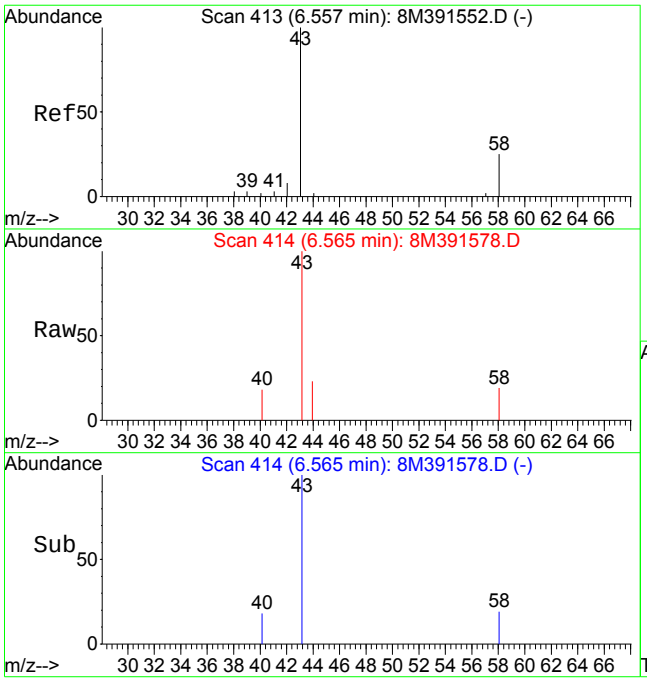

#13
Acetone
Concen: 3.27 ug/L
RT: 6.57 min Scan# 414
Delta R.T. -0.01 min
Lab File: 8M391578.D
Acq: 14 Oct 2013 22:14

Tgt Ion: 43 Resp: 5008

Ion	Ratio	Lower	Upper
43	100		
58	8.0	16.1	37.7#

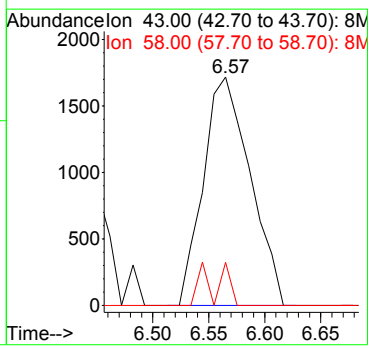

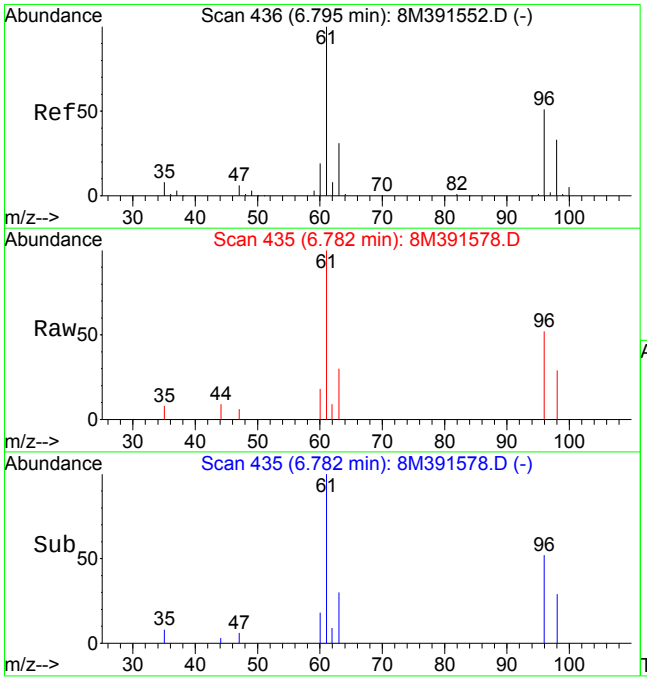

#14
1,1-Dichloroethene
Concen: 1.82 ug/L
RT: 6.78 min Scan# 435
Delta R.T. -0.02 min
Lab File: 8M391578.D
Acq: 14 Oct 2013 22:14

Tgt Ion: 61 Resp: 21453

Ion	Ratio	Lower	Upper
61	100		
96	52.8	37.4	87.2

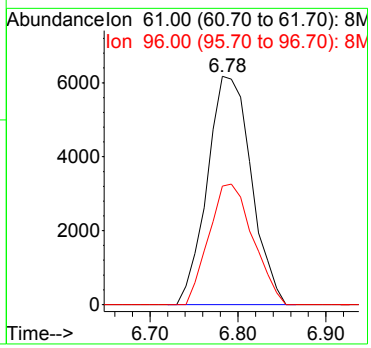

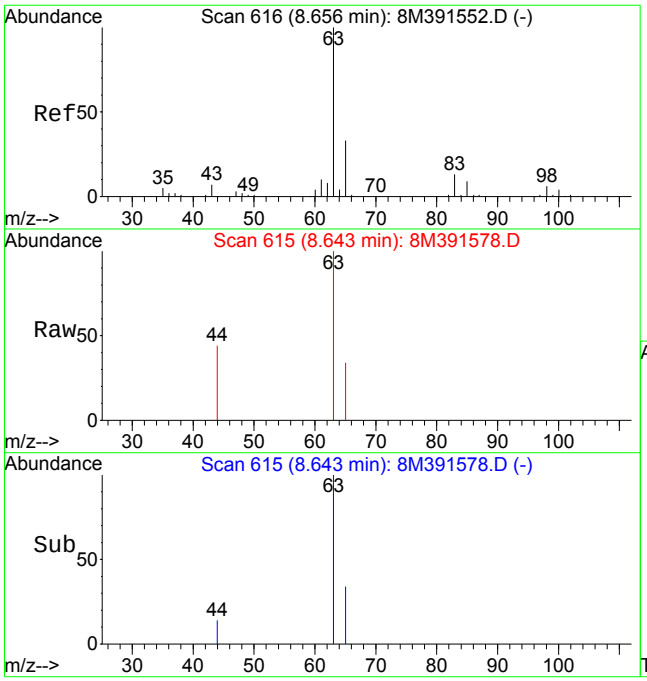

#27
1,1-Dichloroethane
Concen: 0.20 ug/L
RT: 8.64 min Scan# 615
Delta R.T. -0.02 min
Lab File: 8M391578.D
Acq: 14 Oct 2013 22:14

Tgt Ion: 63 Resp: 2540

Ion	Ratio	Lower	Upper
63	100		
65	18.7	19.6	45.6#
83	0.0	8.6	20.0#

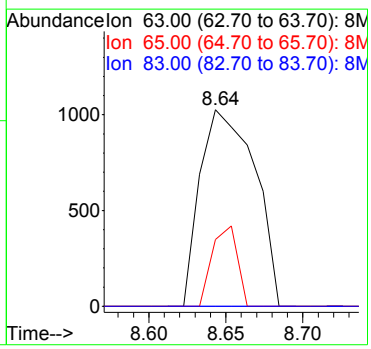

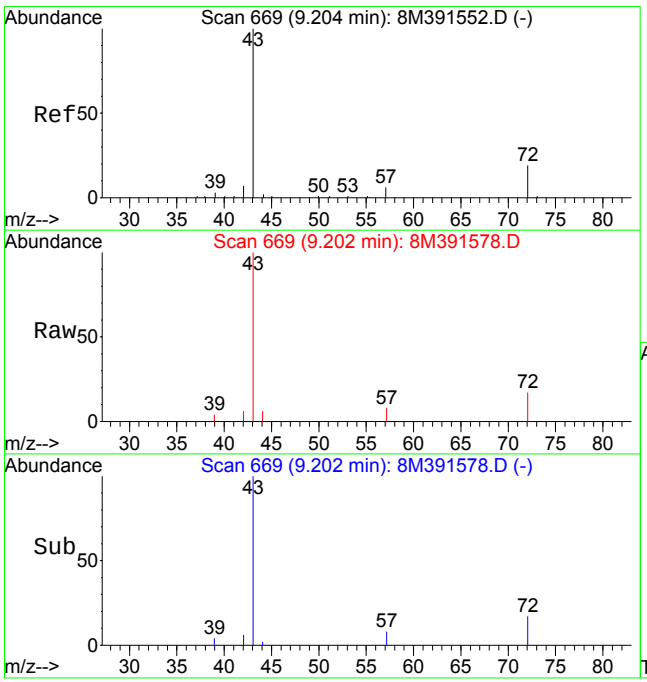

#29
2-Butanone
Concen: 9.06 ug/L
RT: 9.20 min Scan# 669
Delta R.T. -0.02 min
Lab File: 8M391578.D
Acq: 14 Oct 2013 22:14

Tgt Ion: 43 Resp: 22185

Ion	Ratio	Lower	Upper
43	100		
72	16.1	14.1	32.9

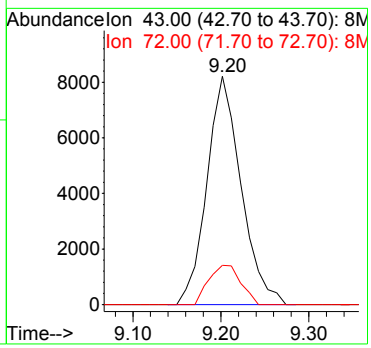

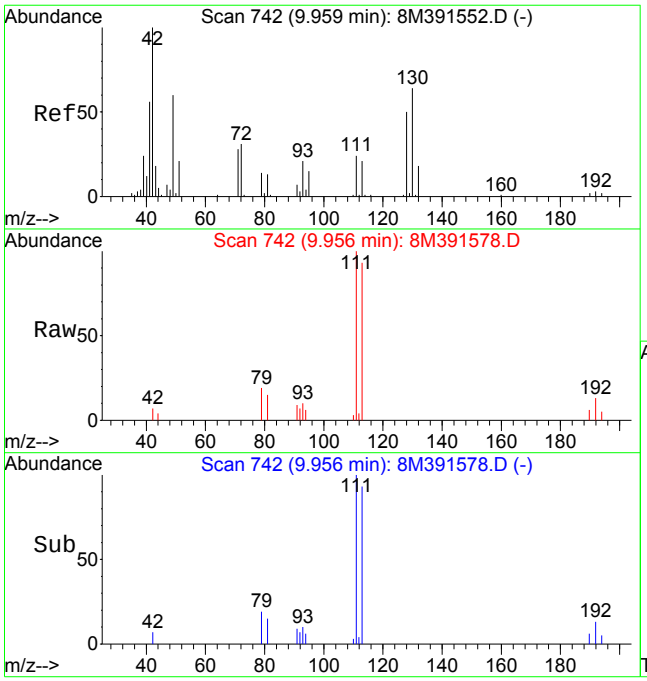

#36
Tetrahydrofuran
Concen: 0.85 ug/L
RT: 9.96 min Scan# 742
Delta R.T. -0.01 min
Lab File: 8M391578.D
Acq: 14 Oct 2013 22:14

Tgt Ion: 42 Resp: 1492

Ion	Ratio	Lower	Upper
42	100		
72	0.0	25.7	59.9#
71	0.0	24.4	57.0#

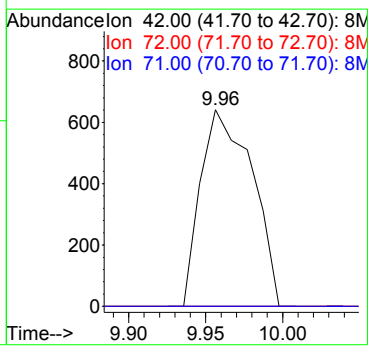

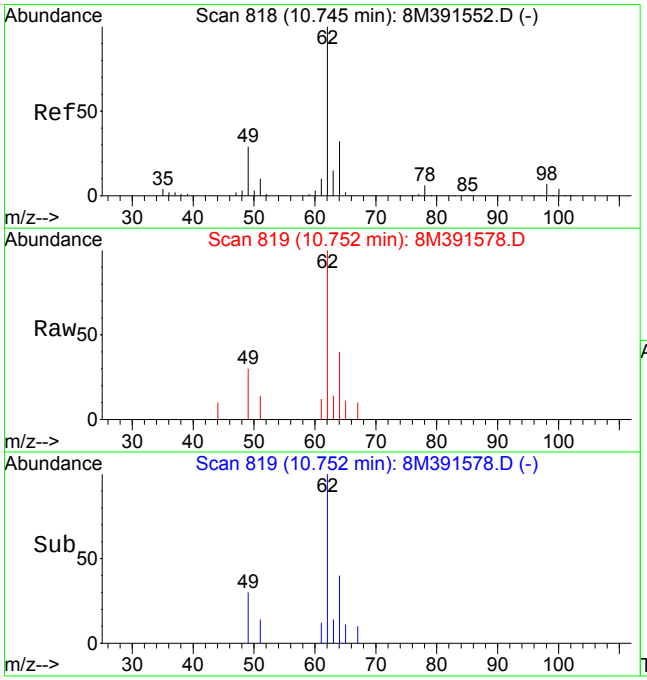

#45
1,2-Dichloroethane
Concen: 0.69 ug/L
RT: 10.75 min Scan# 819
Delta R.T. -0.01 min
Lab File: 8M391578.D
Acq: 14 Oct 2013 22:14

Tgt Ion: 62 Resp: 7377

Ion	Ratio	Lower	Upper
62	100		
64	32.6	19.9	46.5
49	30.8	19.4	45.2

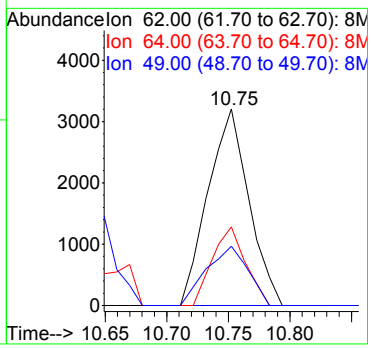

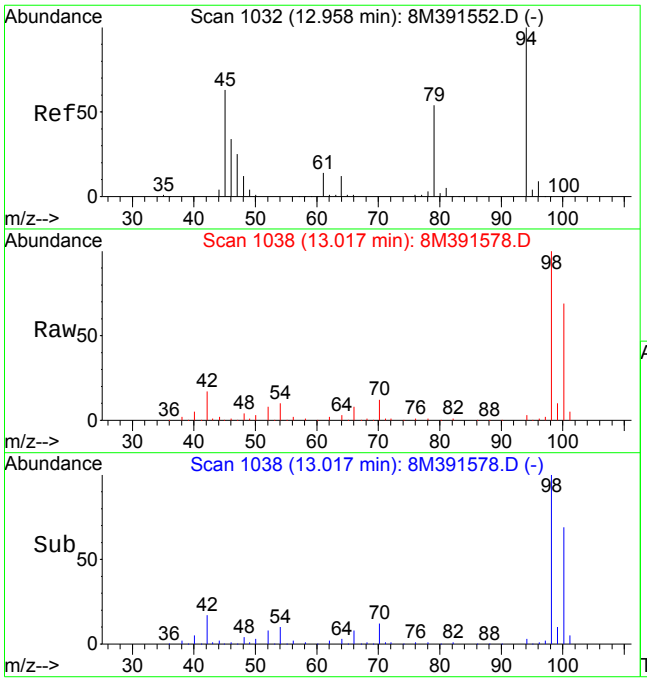

#56
Dimethyl Disulfide
Concen: 1.56 ug/L
RT: 13.02 min Scan# 1038
Delta R.T. 0.04 min
Lab File: 8M391578.D
Acq: 14 Oct 2013 22:14

Tgt Ion: 94 Resp: 17120

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

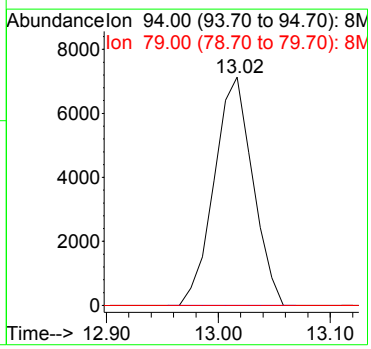

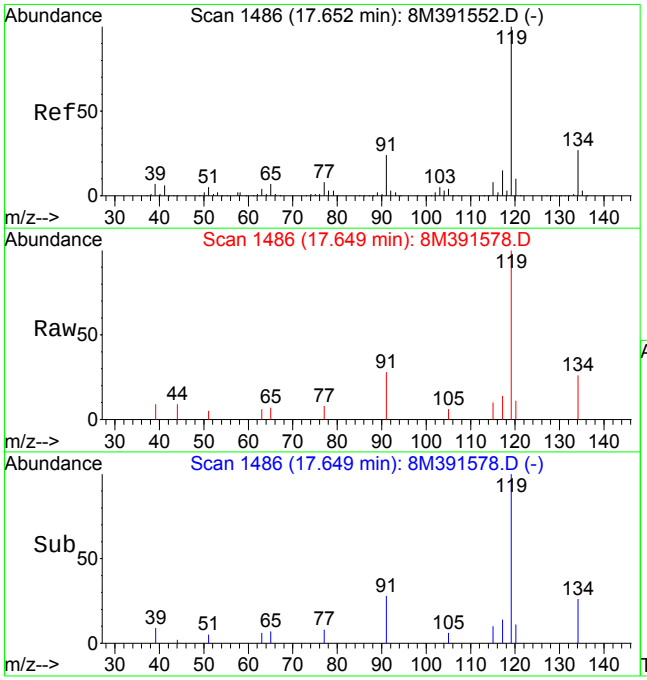

#92
p-Isopropyltoluene
Concen: 0.43 ug/L
RT: 17.65 min Scan# 1486
Delta R.T. -0.01 min
Lab File: 8M391578.D
Acq: 14 Oct 2013 22:14

Tgt Ion:119 Resp: 12439

Ion	Ratio	Lower	Upper
119	100		
134	25.7	17.1	39.9

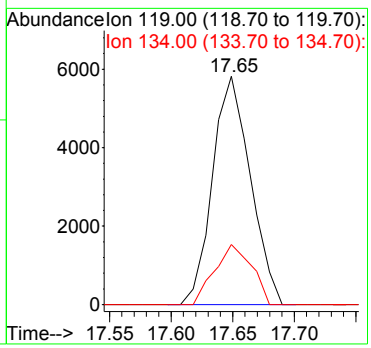

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391579.D Vial: 22
Acq On : 14 Oct 2013 22:45 Operator: TMB
Sample : L13100266-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 11:01:34 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	651751	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	510721	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.94	152	297938	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.00	111	177138	23.9020 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.60%		
43) 1,2-Dichloroethane-d4	10.63	65	206563	23.7752 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.12%		
58) Toluene-d8	13.01	98	577210	23.7292 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.92%		
80) p-Bromofluorobenzene	16.41	95	238316	23.0248 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.08%		

Target Compounds

					Qvalue
3) Chloromethane	3.86	50	1982	0.2137 ug/L #	74
13) Acetone	6.55	43	4019	2.5927 ug/L #	48
14) 1,1-Dichloroethene	6.79	61	26523	2.2227 ug/L	81
27) 1,1-Dichloroethane	8.66	63	3980	0.3042 ug/L #	78
29) 2-Butanone	9.21	43	18516	7.4659 ug/L #	78
36) Tetrahydrofuran	9.96	42	1395	0.7873 ug/L #	34
45) 1,2-Dichloroethane	10.75	62	9172	0.8493 ug/L	98
56) Dimethyl Disulfide	13.01	94	17167	1.5467 ug/L #	28
92) p-Isopropyltoluene	17.65	119	10339	0.3529 ug/L	94

(#) = qualifier out of range (m) = manual integration
8M391579.D 8260WT.M Tue Oct 15 11:01:35 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391579.D Vial: 22
Acq On : 14 Oct 2013 22:45 Operator: TMB
Sample : L13100266-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 11:01 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

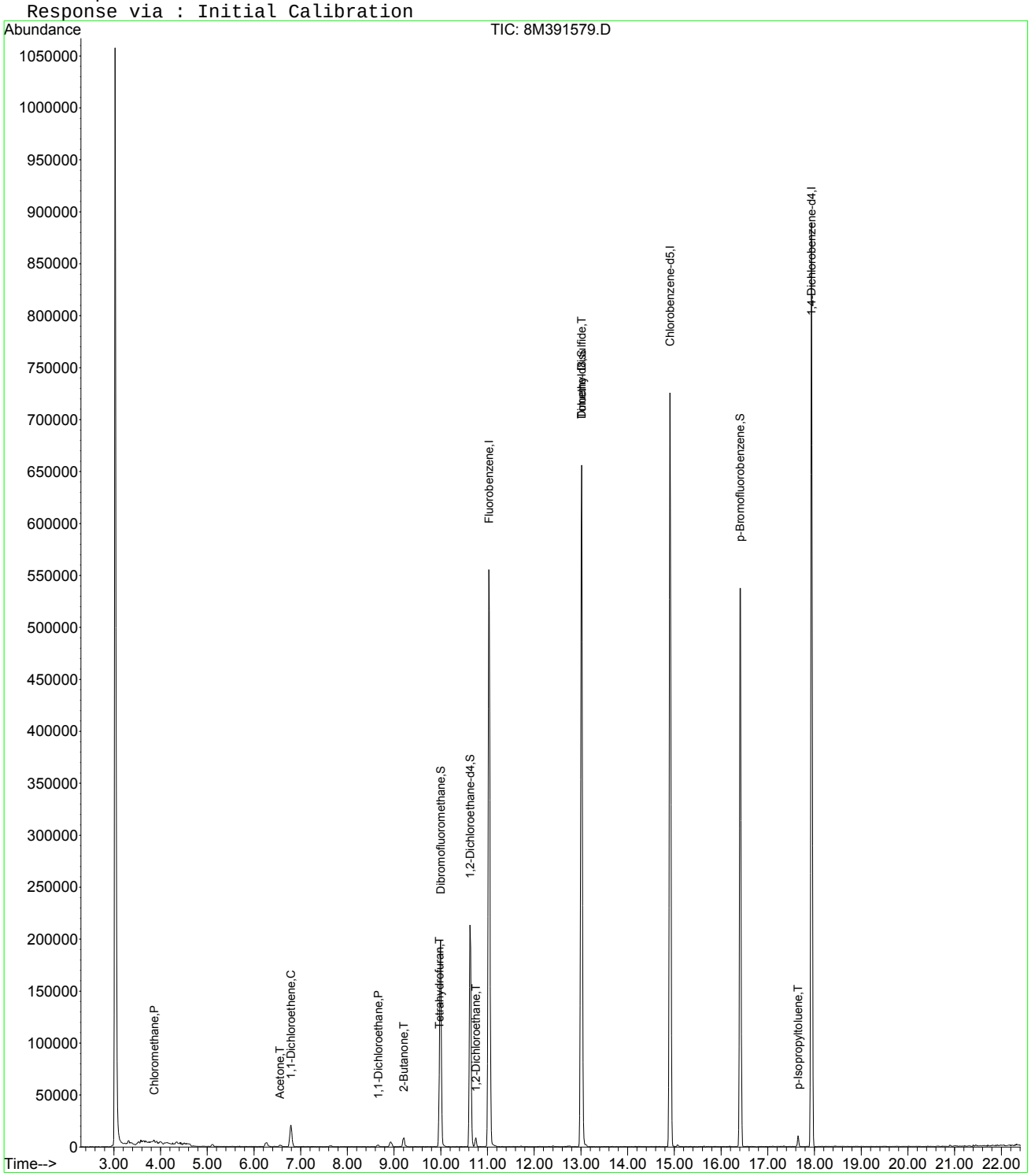

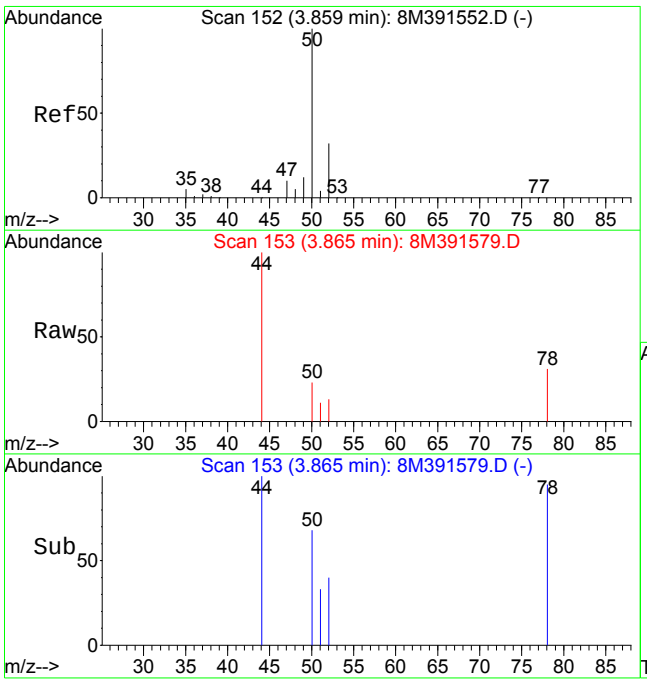

#3
Chloromethane
Concen: 0.21 ug/L
RT: 3.86 min Scan# 153
Delta R.T. 0.01 min
Lab File: 8M391579.D
Acq: 14 Oct 2013 22:45

Tgt Ion: 50 Resp: 1982

Ion	Ratio	Lower	Upper
50	100		
52	47.7	19.8	46.2#

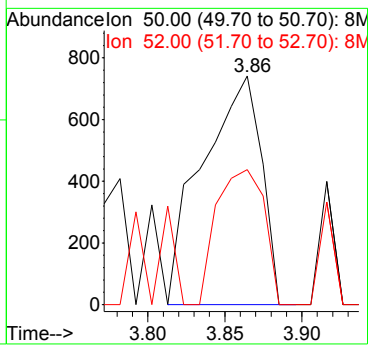

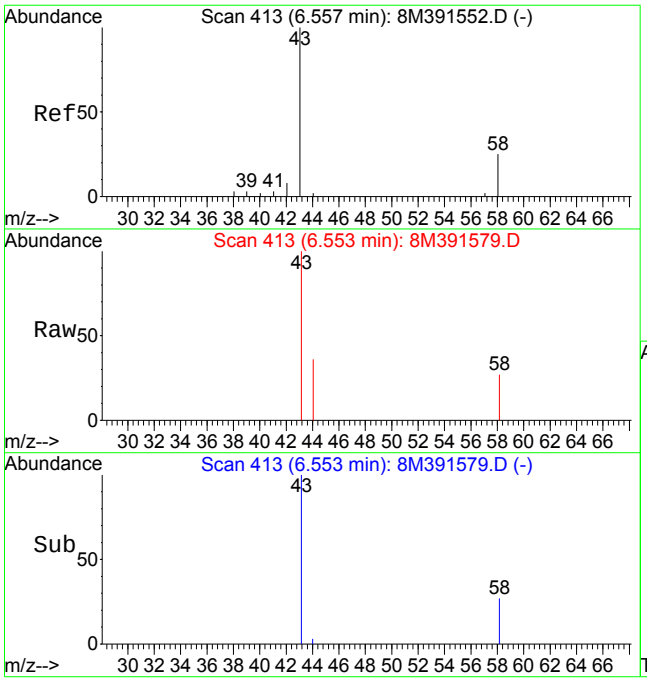

#13
Acetone
Concen: 2.59 ug/L
RT: 6.55 min Scan# 413
Delta R.T. -0.02 min
Lab File: 8M391579.D
Acq: 14 Oct 2013 22:45

Tgt Ion: 43 Resp: 4019

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

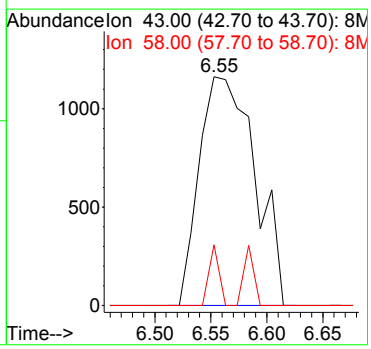

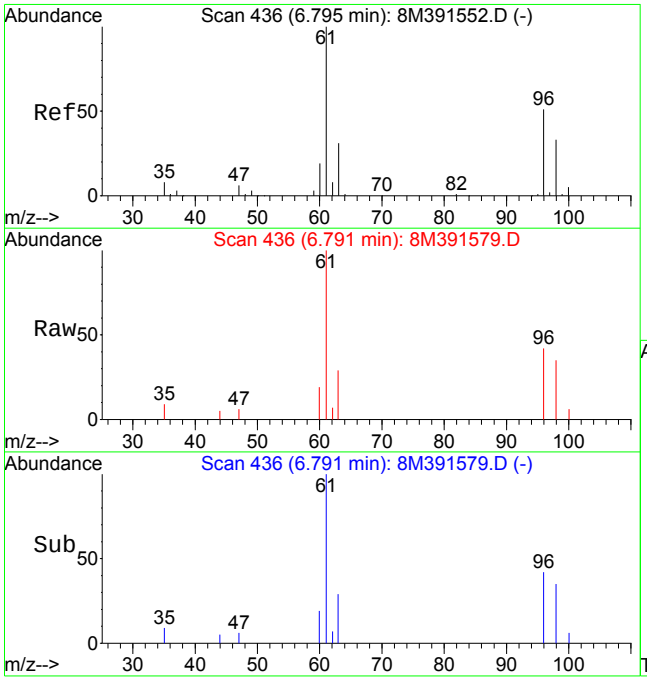

#14
1,1-Dichloroethene
Concen: 2.22 ug/L
RT: 6.79 min Scan# 436
Delta R.T. -0.01 min
Lab File: 8M391579.D
Acq: 14 Oct 2013 22:45

Tgt Ion: 61 Resp: 26523

Ion	Ratio	Lower	Upper
61	100		
96	47.7	37.4	87.2

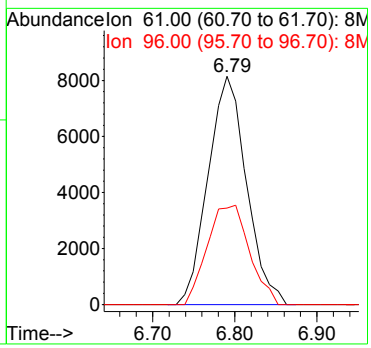

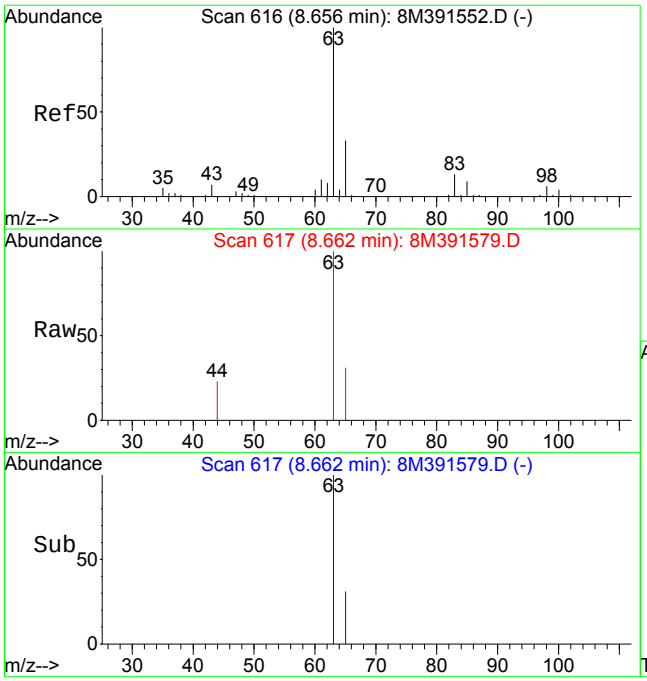

#27
1,1-Dichloroethane
Concen: 0.30 ug/L
RT: 8.66 min Scan# 617
Delta R.T. -0.00 min
Lab File: 8M391579.D
Acq: 14 Oct 2013 22:45

Tgt Ion: 63 Resp: 3980

Ion	Ratio	Lower	Upper
63	100		
65	23.2	19.6	45.6
83	0.0	8.6	20.0#

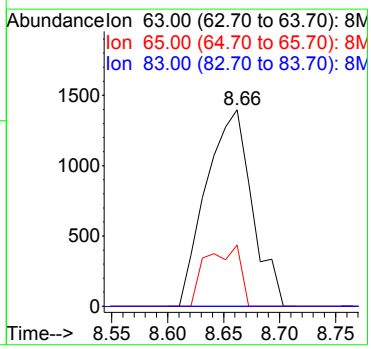

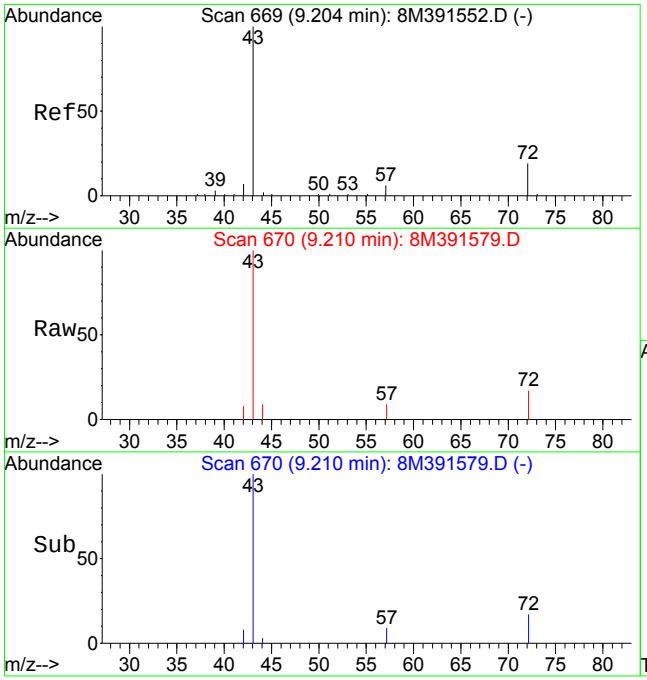

#29
2-Butanone
Concen: 7.47 ug/L
RT: 9.21 min Scan# 670
Delta R.T. -0.01 min
Lab File: 8M391579.D
Acq: 14 Oct 2013 22:45

Tgt Ion: 43 Resp: 18516

Ion	Ratio	Lower	Upper
43	100		
72	12.8	14.1	32.9#

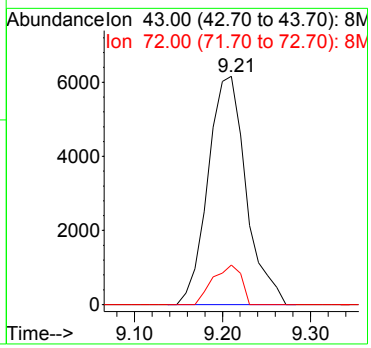

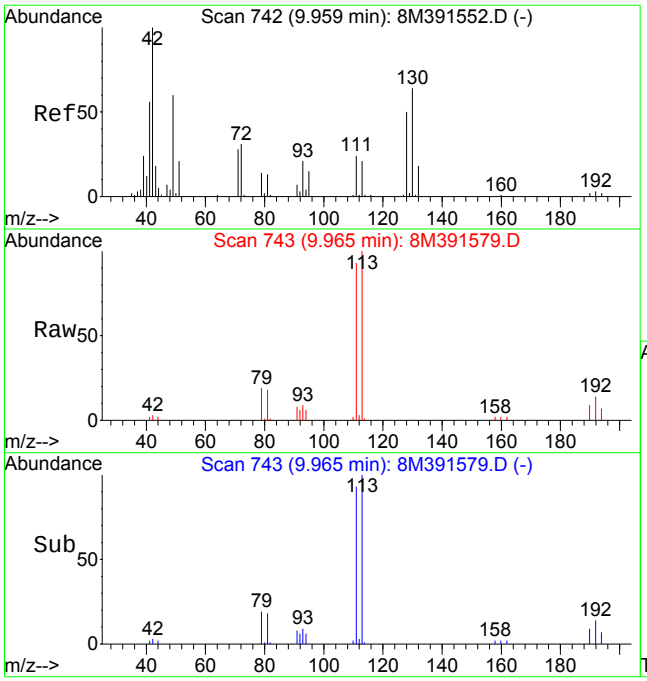

#36
Tetrahydrofuran
Concen: 0.79 ug/L
RT: 9.96 min Scan# 743
Delta R.T. -0.00 min
Lab File: 8M391579.D
Acq: 14 Oct 2013 22:45

Tgt Ion: 42 Resp: 1395

Ion	Ratio	Lower	Upper
42	100		
72	0.0	25.7	59.9#
71	0.0	24.4	57.0#

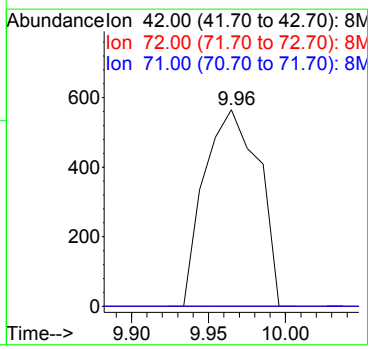

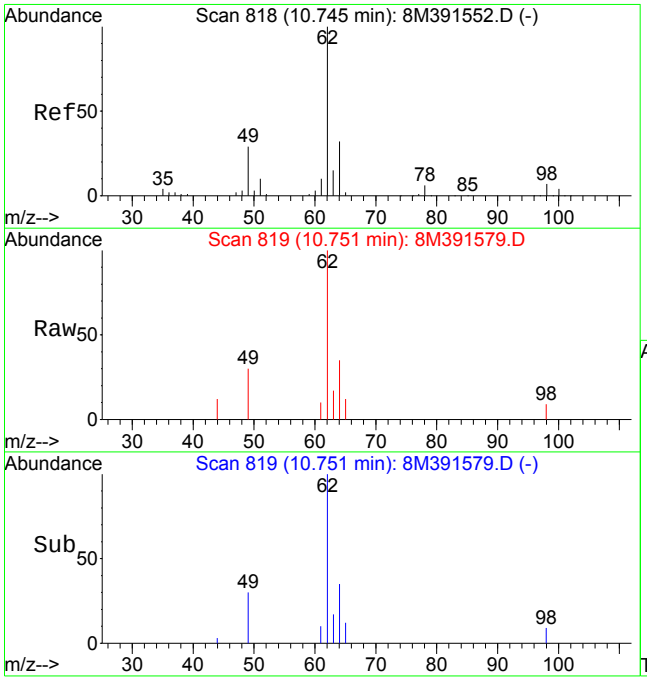

#45
1,2-Dichloroethane
Concen: 0.85 ug/L
RT: 10.75 min Scan# 819
Delta R.T. -0.01 min
Lab File: 8M391579.D
Acq: 14 Oct 2013 22:45

Tgt Ion: 62 Resp: 9172

Ion	Ratio	Lower	Upper
62	100		
64	32.4	19.9	46.5
49	31.4	19.4	45.2

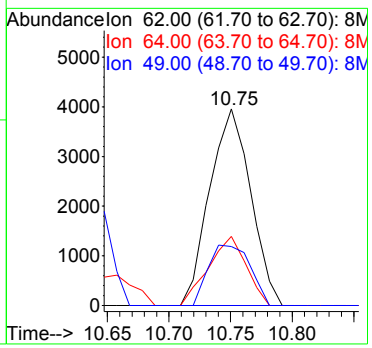

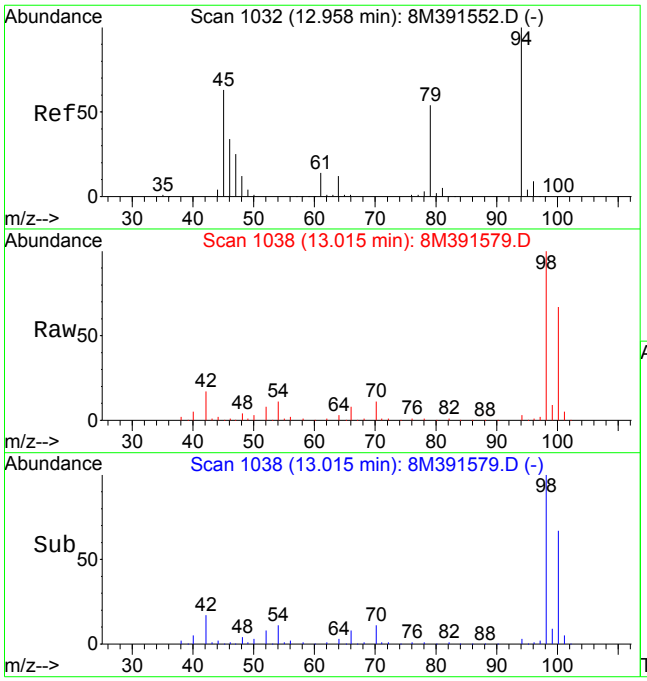

#56
Dimethyl Disulfide
Concen: 1.55 ug/L
RT: 13.01 min Scan# 1038
Delta R.T. 0.04 min
Lab File: 8M391579.D
Acq: 14 Oct 2013 22:45

Tgt Ion: 94 Resp: 17167

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

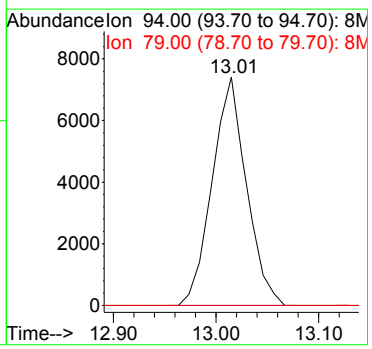

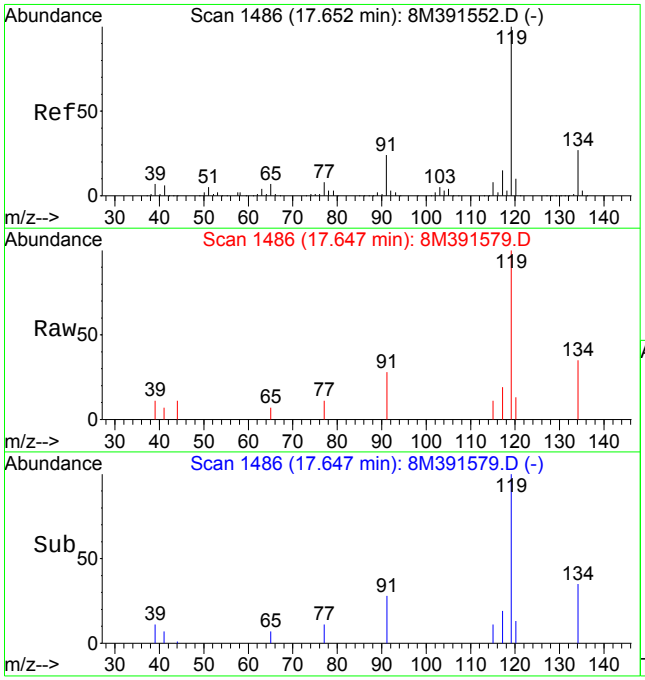

#92
p-Isopropyltoluene
Concen: 0.35 ug/L
RT: 17.65 min Scan# 1486
Delta R.T. -0.01 min
Lab File: 8M391579.D
Acq: 14 Oct 2013 22:45

Tgt Ion:119 Resp: 10339

Ion	Ratio	Lower	Upper
119	100		
134	25.4	17.1	39.9

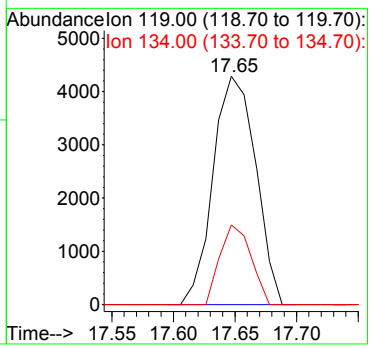

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391580.D Vial: 23
Acq On : 14 Oct 2013 23:16 Operator: TMB
Sample : L13100266-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 11:01:38 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	641615	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	500892	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	290708	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.99	111	177720	24.3593 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.44%		
43) 1,2-Dichloroethane-d4	10.63	65	206488	24.1421 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.56%		
58) Toluene-d8	13.02	98	579007	24.2701 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.08%		
80) p-Bromofluorobenzene	16.41	95	242645	24.0261 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.12%		

Target Compounds

					Qvalue
3) Chloromethane	3.86	50	3474	0.3804 ug/L	88
4) Vinyl Chloride	4.10	62	16363	2.0954 ug/L	98
13) Acetone	6.57	43	1979	1.2968 ug/L #	48
14) 1,1-Dichloroethene	6.79	61	6566068	558.9454 ug/L	84
27) 1,1-Dichloroethane	8.65	63	434853	33.7637 ug/L	99
32) cis-1,2-Dichloroethene	9.49	96	11866	1.6561 ug/L	97
33) Chloroform	9.70	83	4345	0.3357 ug/L	98
36) Tetrahydrofuran	9.98	42	1528	0.8760 ug/L #	46
45) 1,2-Dichloroethane	10.75	62	253004	23.7979 ug/L	97
46) Benzene	10.78	78	4030	0.1572 ug/L #	1
47) Trichloroethene	11.55	130	22040	2.8122 ug/L	92
51) 1,4-Dioxane	12.05	88	1248	39.6475 ug/L #	44
56) Dimethyl Disulfide	13.01	94	16969	1.5530 ug/L #	28
63) 1,1,2-Trichloroethane	13.50	97	16008	3.3706 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M391580.D 8260WT.M Tue Oct 15 11:01:39 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391580.D Vial: 23
Acq On : 14 Oct 2013 23:16 Operator: TMB
Sample : L13100266-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 11:01 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

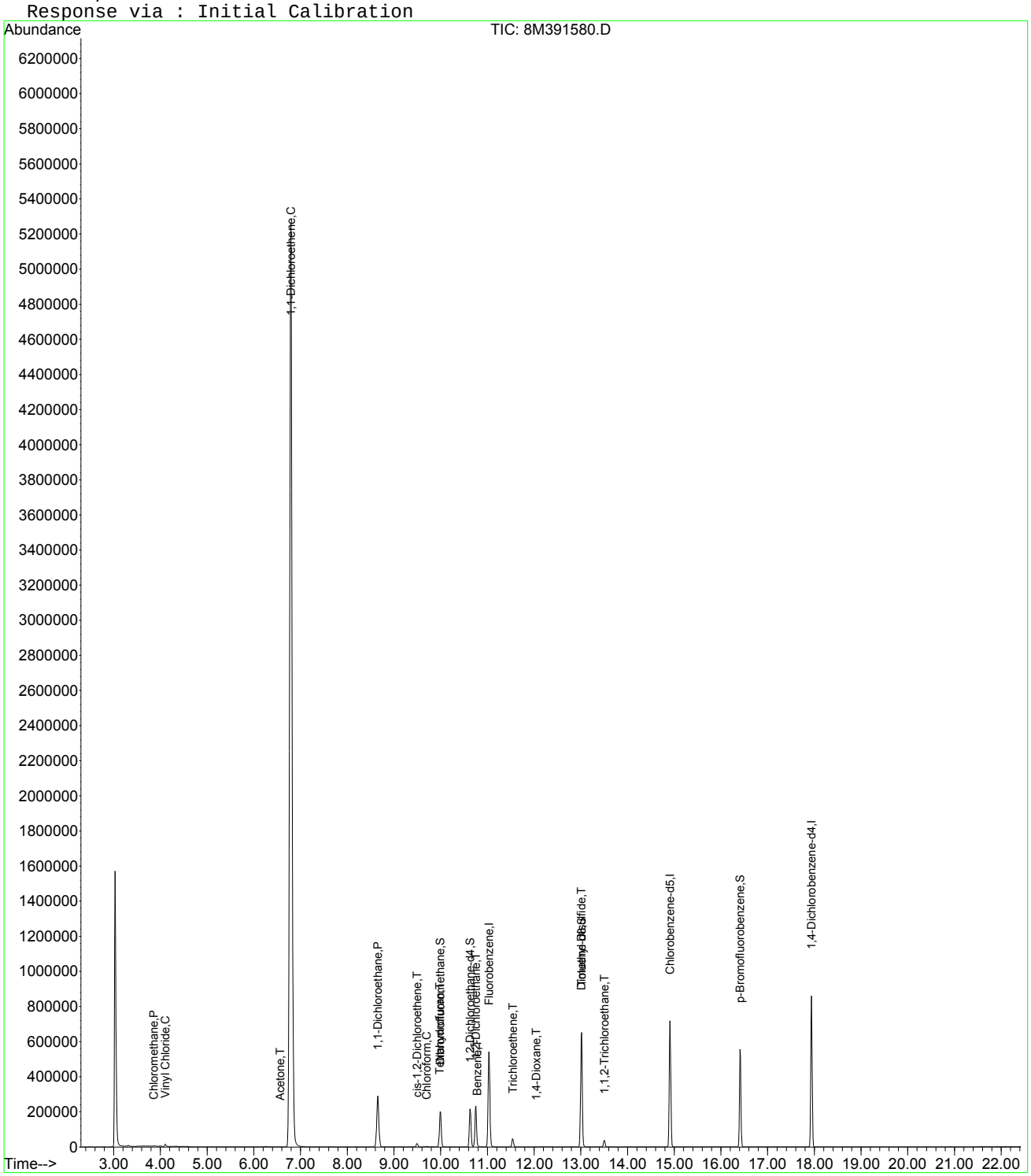

8M391580.D 8260WT.M Tue Oct 15 11:01:40 2013 Page 2

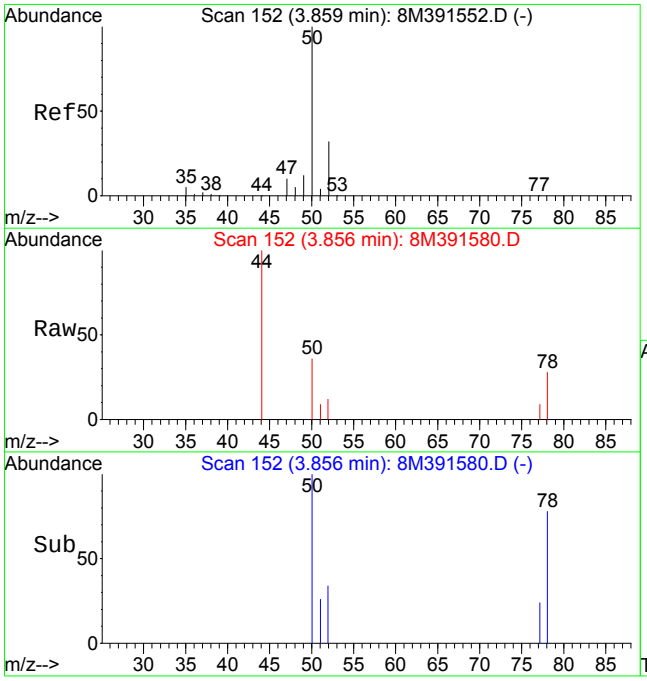

#3
Chloromethane
Concen: 0.38 ug/L
RT: 3.86 min Scan# 152
Delta R.T. 0.01 min
Lab File: 8M391580.D
Acq: 14 Oct 2013 23:16

Tgt Ion: 50 Resp: 3474

Ion	Ratio	Lower	Upper
50	100		
52	40.0	19.8	46.2

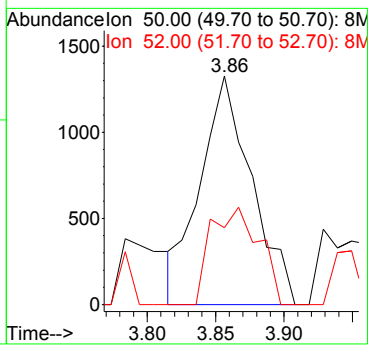

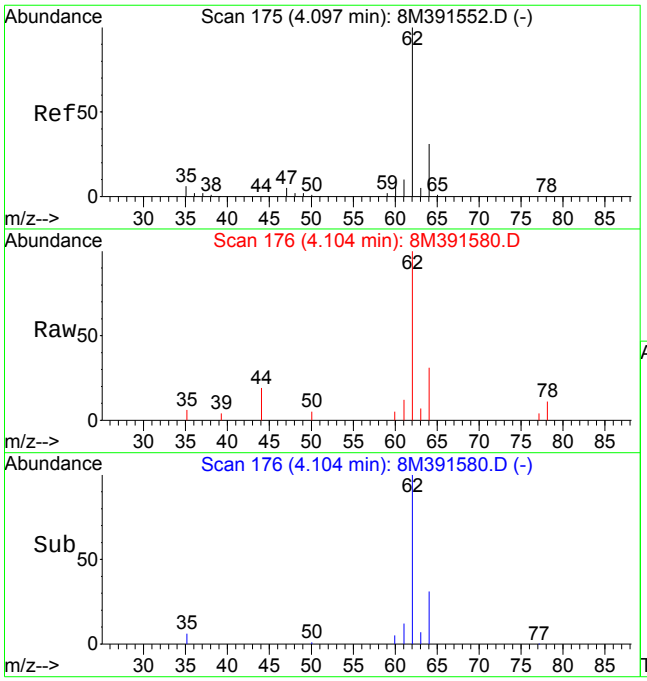

#4
Vinyl Chloride
Concen: 2.10 ug/L
RT: 4.10 min Scan# 176
Delta R.T. -0.01 min
Lab File: 8M391580.D
Acq: 14 Oct 2013 23:16

Tgt Ion: 62 Resp: 16363

Ion	Ratio	Lower	Upper
62	100		
64	32.4	20.1	46.9

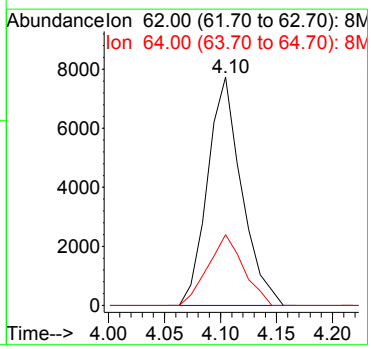

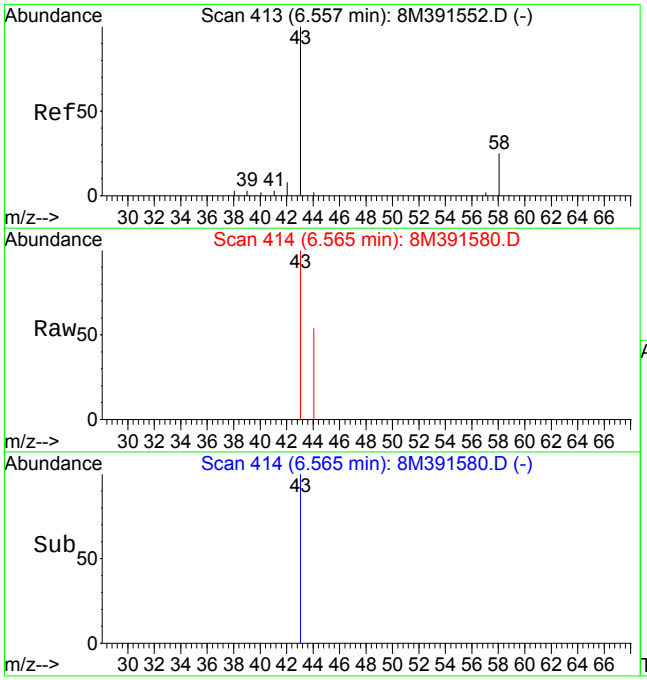

#13
Acetone
Concen: 1.30 ug/L
RT: 6.57 min Scan# 414
Delta R.T. -0.01 min
Lab File: 8M391580.D
Acq: 14 Oct 2013 23:16

Tgt Ion: 43 Resp: 1979

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

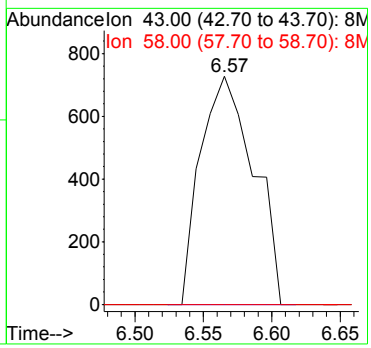

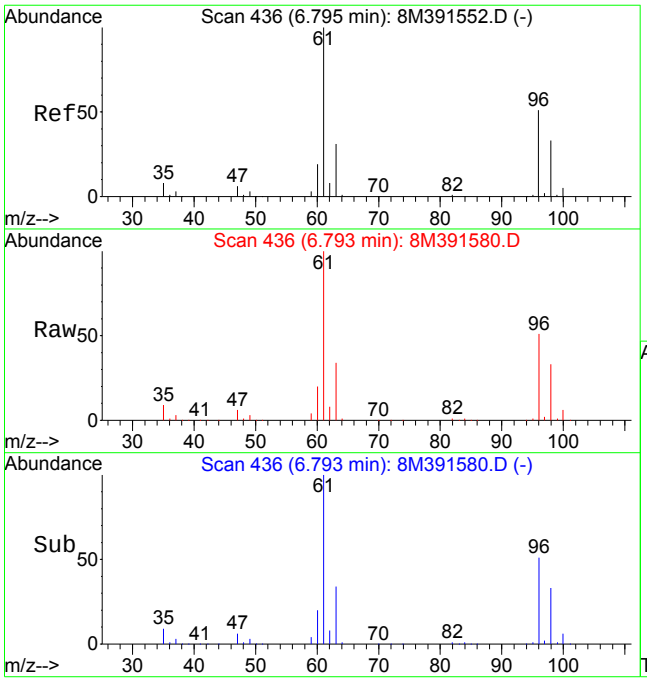

#14
1,1-Dichloroethene
Concen: 558.95 ug/L
RT: 6.79 min Scan# 436
Delta R.T. -0.01 min
Lab File: 8M391580.D
Acq: 14 Oct 2013 23:16

Tgt Ion: 61 Resp: 6566068

Ion	Ratio	Lower	Upper
61	100		
96	50.3	37.4	87.2

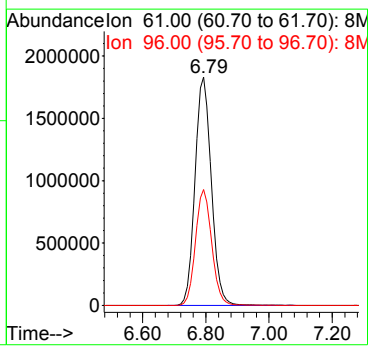

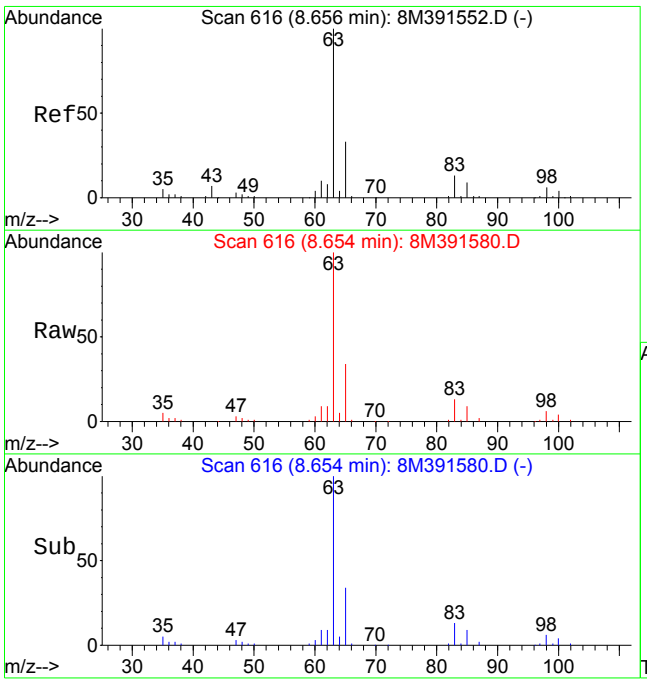

#27
1,1-Dichloroethane
Concen: 33.76 ug/L
RT: 8.65 min Scan# 616
Delta R.T. -0.01 min
Lab File: 8M391580.D
Acq: 14 Oct 2013 23:16

Tgt Ion: 63 Resp: 434853

Ion	Ratio	Lower	Upper
63	100		
65	32.3	19.6	45.6
83	12.9	8.6	20.0

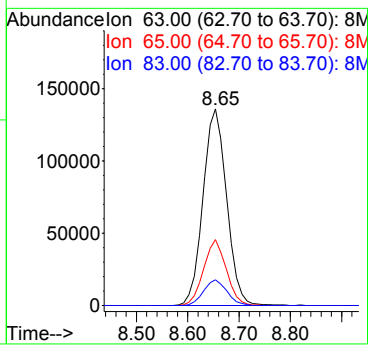

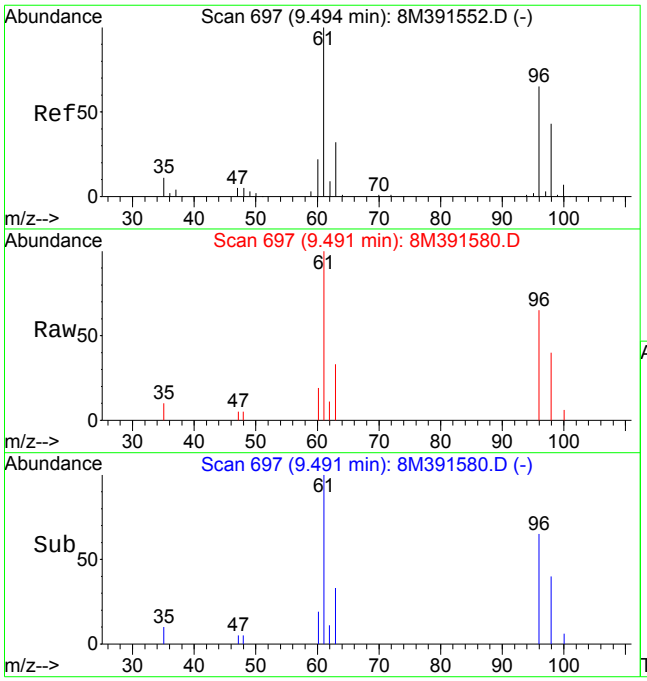

#32
cis-1,2-Dichloroethene
Concen: 1.66 ug/L
RT: 9.49 min Scan# 697
Delta R.T. -0.02 min
Lab File: 8M391580.D
Acq: 14 Oct 2013 23:16

Tgt Ion: 96 Resp: 11866

Ion	Ratio	Lower	Upper
96	100		
61	146.4	85.7	200.1

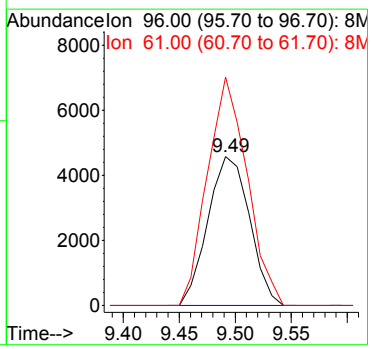

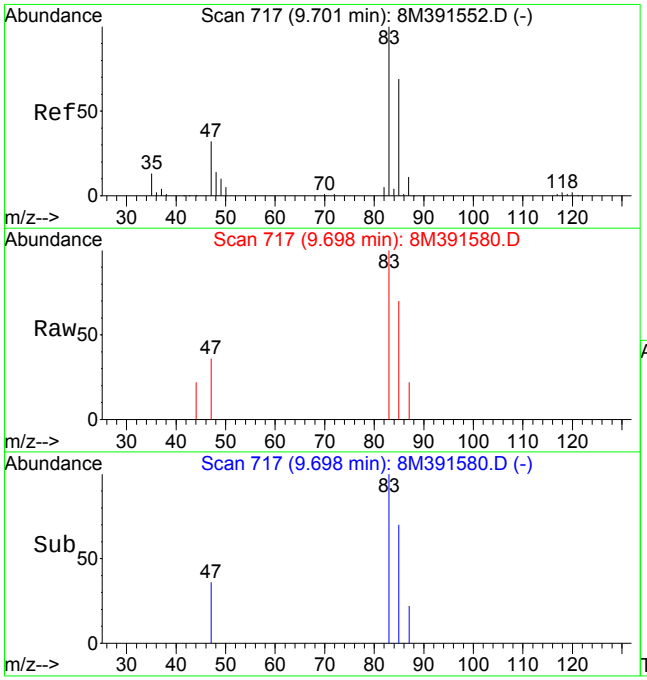

#33
Chloroform
Concen: 0.34 ug/L
RT: 9.70 min Scan# 717
Delta R.T. -0.02 min
Lab File: 8M391580.D
Acq: 14 Oct 2013 23:16

Tgt Ion: 83 Resp: 4345

Ion	Ratio	Lower	Upper
83	100		
85	65.6	40.1	93.7

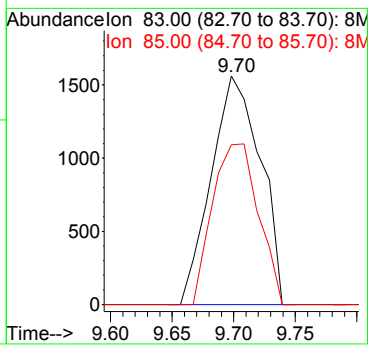

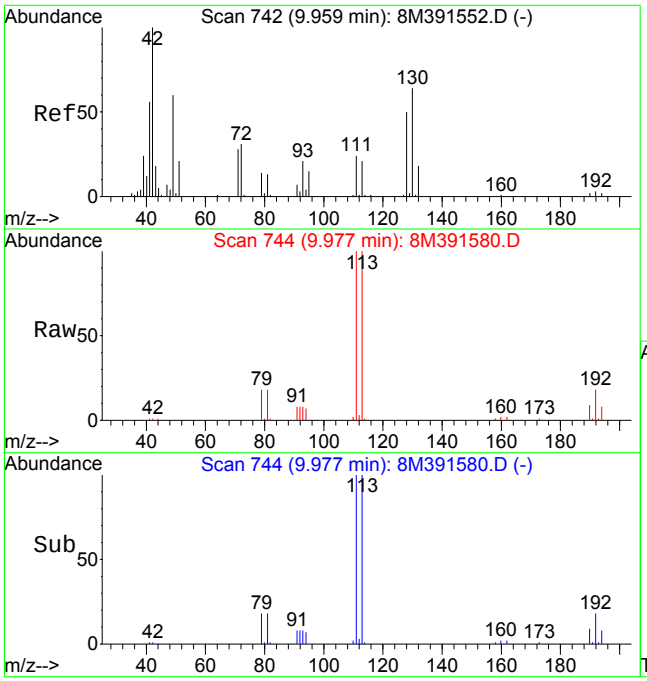

#36
Tetrahydrofuran
Concen: 0.88 ug/L
RT: 9.98 min Scan# 744
Delta R.T. 0.01 min
Lab File: 8M391580.D
Acq: 14 Oct 2013 23:16

Tgt Ion: 42 Resp: 1528

Ion	Ratio	Lower	Upper
42	100		
72	14.8	25.7	59.9#
71	0.0	24.4	57.0#

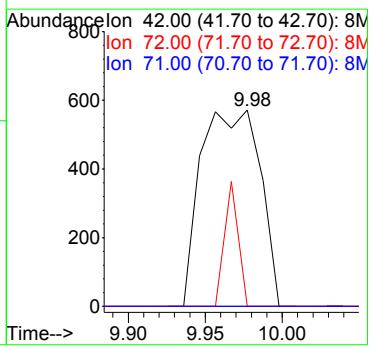

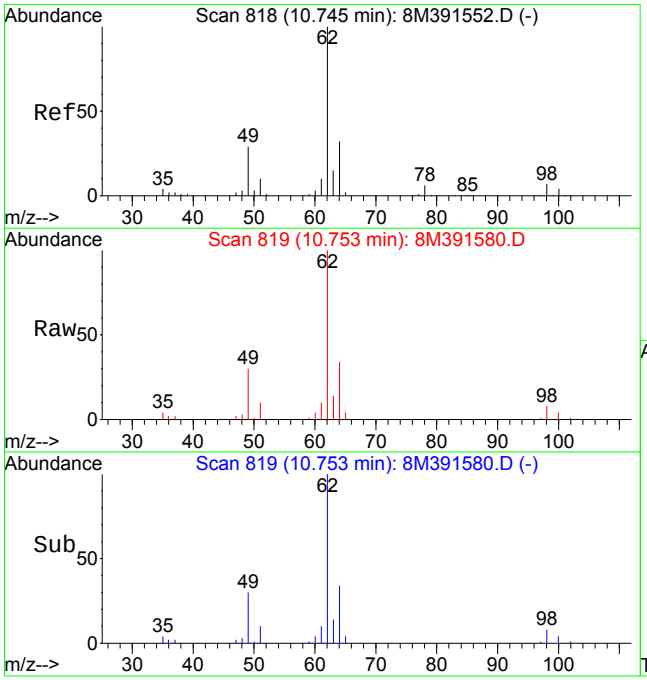

#45
1,2-Dichloroethane
Concen: 23.80 ug/L
RT: 10.75 min Scan# 819
Delta R.T. -0.01 min
Lab File: 8M391580.D
Acq: 14 Oct 2013 23:16

Tgt Ion: 62 Resp: 253004

Ion	Ratio	Lower	Upper
62	100		
64	32.6	19.9	46.5
49	29.3	19.4	45.2

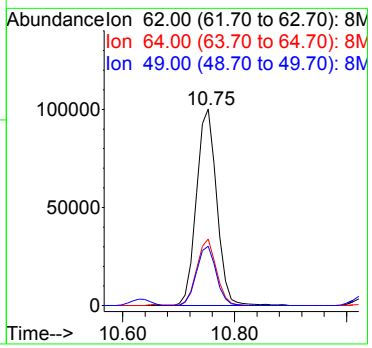

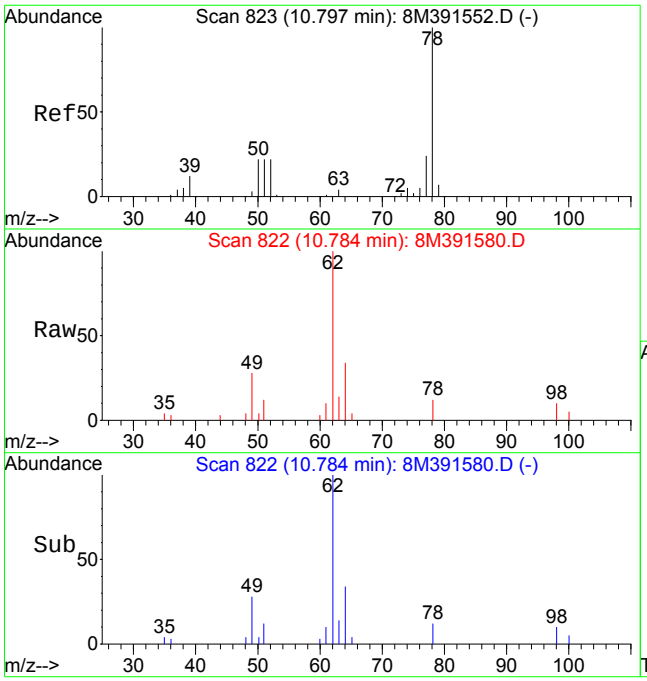

#46
Benzene
Concen: 0.16 ug/L
RT: 10.78 min Scan# 822
Delta R.T. -0.02 min
Lab File: 8M391580.D
Acq: 14 Oct 2013 23:16

Tgt Ion: 78 Resp: 4030

Ion	Ratio	Lower	Upper
78	100		
52	10.2	9.7	22.5
51	611.1	12.4	28.8#

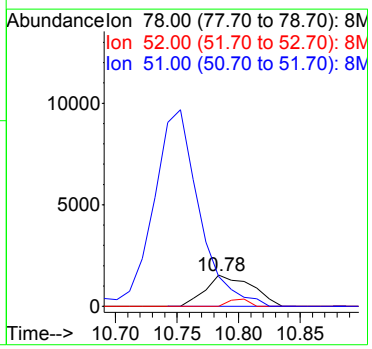

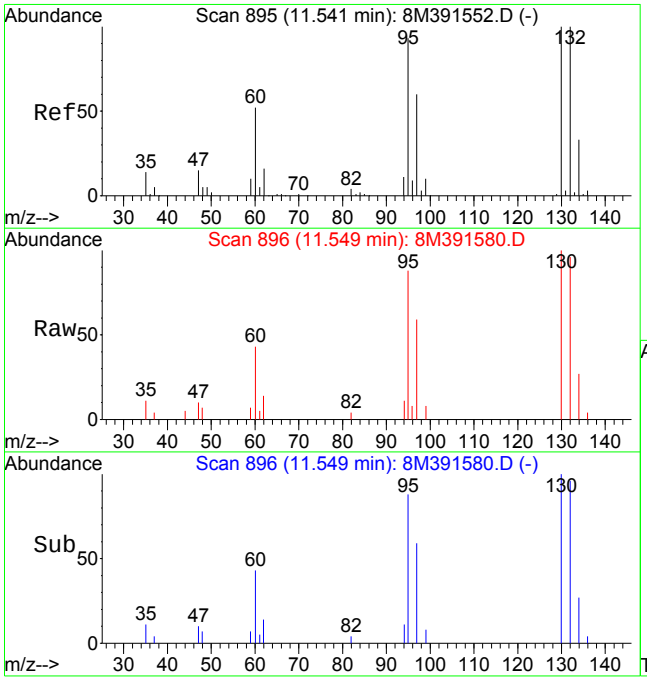

#47
Trichloroethene
Concen: 2.81 ug/L
RT: 11.55 min Scan# 896
Delta R.T. -0.01 min
Lab File: 8M391580.D
Acq: 14 Oct 2013 23:16

Tgt Ion:130 Resp: 22040

Ion	Ratio	Lower	Upper
130	100		
132	95.5	60.1	140.3
95	94.0	49.6	115.6

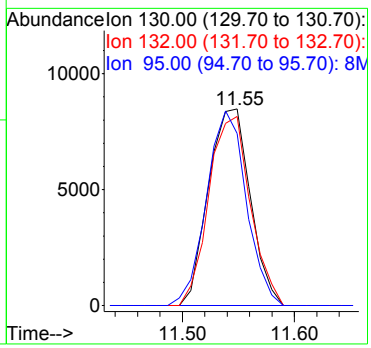

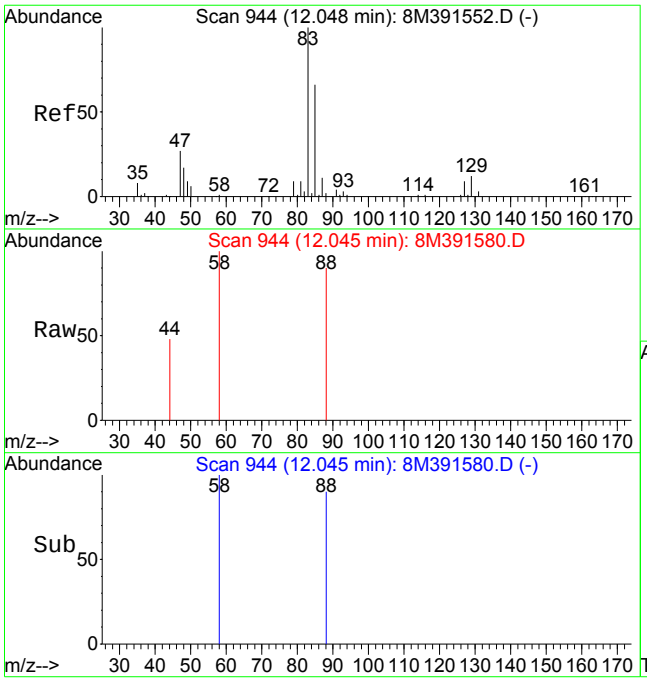

#51
1,4-Dioxane
Concen: 39.65 ug/L
RT: 12.05 min Scan# 944
Delta R.T. -0.01 min
Lab File: 8M391580.D
Acq: 14 Oct 2013 23:16

Tgt Ion: 88 Resp: 1248

Ion	Ratio	Lower	Upper
88	100		
58	100.6	35.3	82.3#

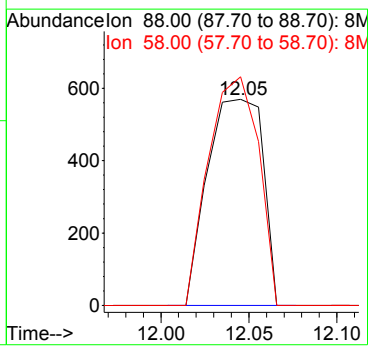

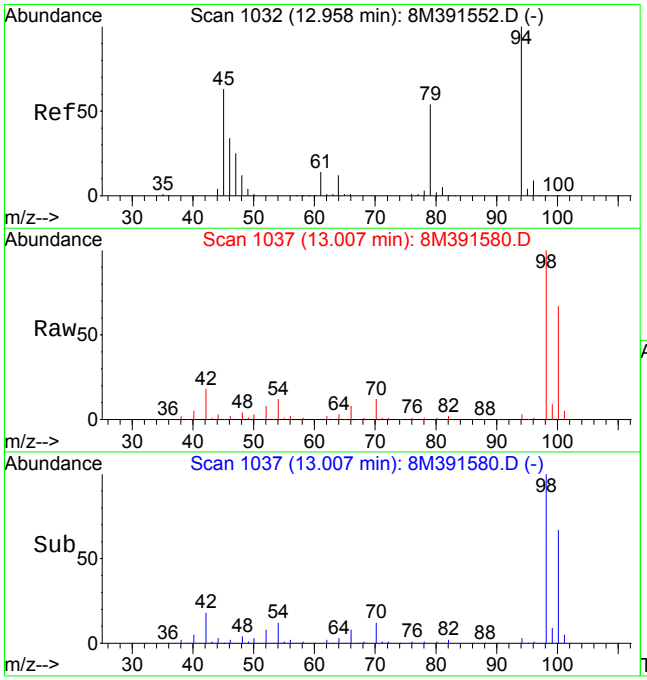

#56
Dimethyl Disulfide
Concen: 1.55 ug/L
RT: 13.01 min Scan# 1037
Delta R.T. 0.03 min
Lab File: 8M391580.D
Acq: 14 Oct 2013 23:16

Tgt Ion: 94 Resp: 16969

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

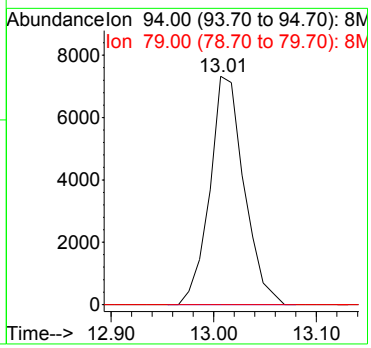

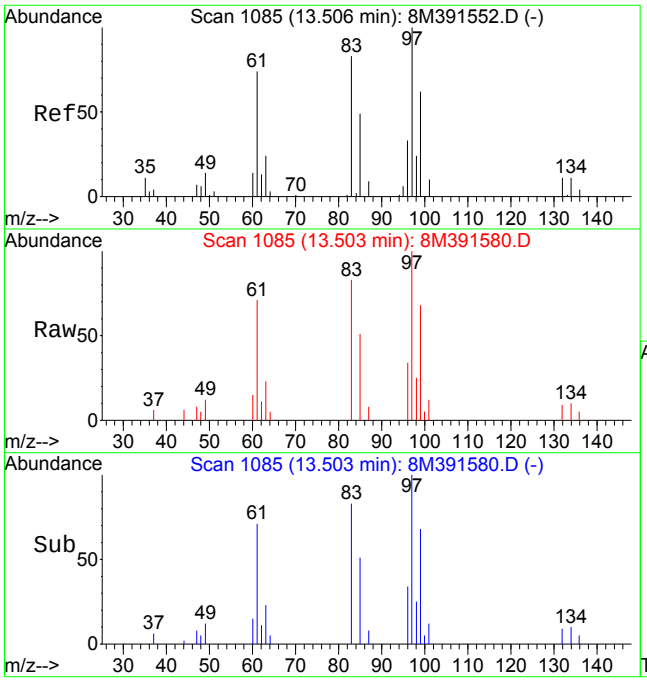

#63
1,1,2-Trichloroethane
Concen: 3.37 ug/L
RT: 13.50 min Scan# 1085
Delta R.T. -0.01 min
Lab File: 8M391580.D
Acq: 14 Oct 2013 23:16

Tgt Ion: 97 Resp: 16008

Ion	Ratio	Lower	Upper
97	100		
83	80.0	45.8	107.0

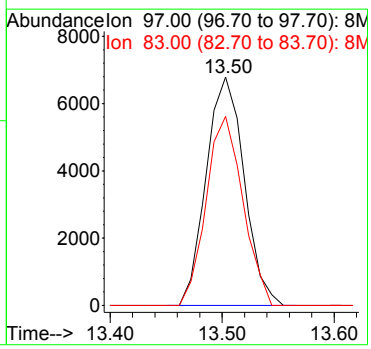

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101513\8M391597.D Vial: 10
Acq On : 15 Oct 2013 10:59 Operator: TMB
Sample : L13100266-03 B 10X 826-LOW D1 Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 17:52:30 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	708550	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	560690	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	327239	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.99	111	186125	23.1014 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.40%		
43) 1,2-Dichloroethane-d4	10.63	65	204304	21.6302 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.52%		
58) Toluene-d8	13.02	98	634415	23.7565 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.04%		
80) p-Bromofluorobenzene	16.41	95	257082	22.6139 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.44%		

Target Compounds

					Qvalue
3) Chloromethane	3.87	50	1890	0.1874 ug/L #	63
4) Vinyl Chloride	4.09	62	1800	0.2087 ug/L #	41
13) Acetone	6.58	43	772	0.4581 ug/L #	48
14) 1,1-Dichloroethene	6.79	61	668193	51.5074 ug/L	86
27) 1,1-Dichloroethane	8.65	63	43986	3.0926 ug/L	98
36) Tetrahydrofuran	9.97	42	1107	0.5747 ug/L #	34
45) 1,2-Dichloroethane	10.75	62	25950	2.2103 ug/L	92
47) Trichloroethene	11.54	130	2024	0.2339 ug/L	97
56) Dimethyl Disulfide	13.02	94	17528	1.4526 ug/L #	28
59) Toluene	13.11	91	9778	0.3324 ug/L	89
63) 1,1,2-Trichloroethane	13.50	97	1647	0.3098 ug/L	85
72) Ethylbenzene	15.08	106	1669	0.1439 ug/L	66
73) m-,p-Xylene	15.08	106	1669	0.1224 ug/L	74
85) 1,3,5-Trimethylbenzene	16.68	105	7708	0.2567 ug/L #	61
90) 1,2,4-Trimethylbenzene	17.27	105	4070	0.1296 ug/L #	68

(#) = qualifier out of range (m) = manual integration
8M391597.D 8260WT.M Tue Oct 15 17:52:31 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101513\8M391597.D Vial: 10
Acq On : 15 Oct 2013 10:59 Operator: TMB
Sample : L13100266-03 B 10X 826-LOW D1 Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 17:52 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

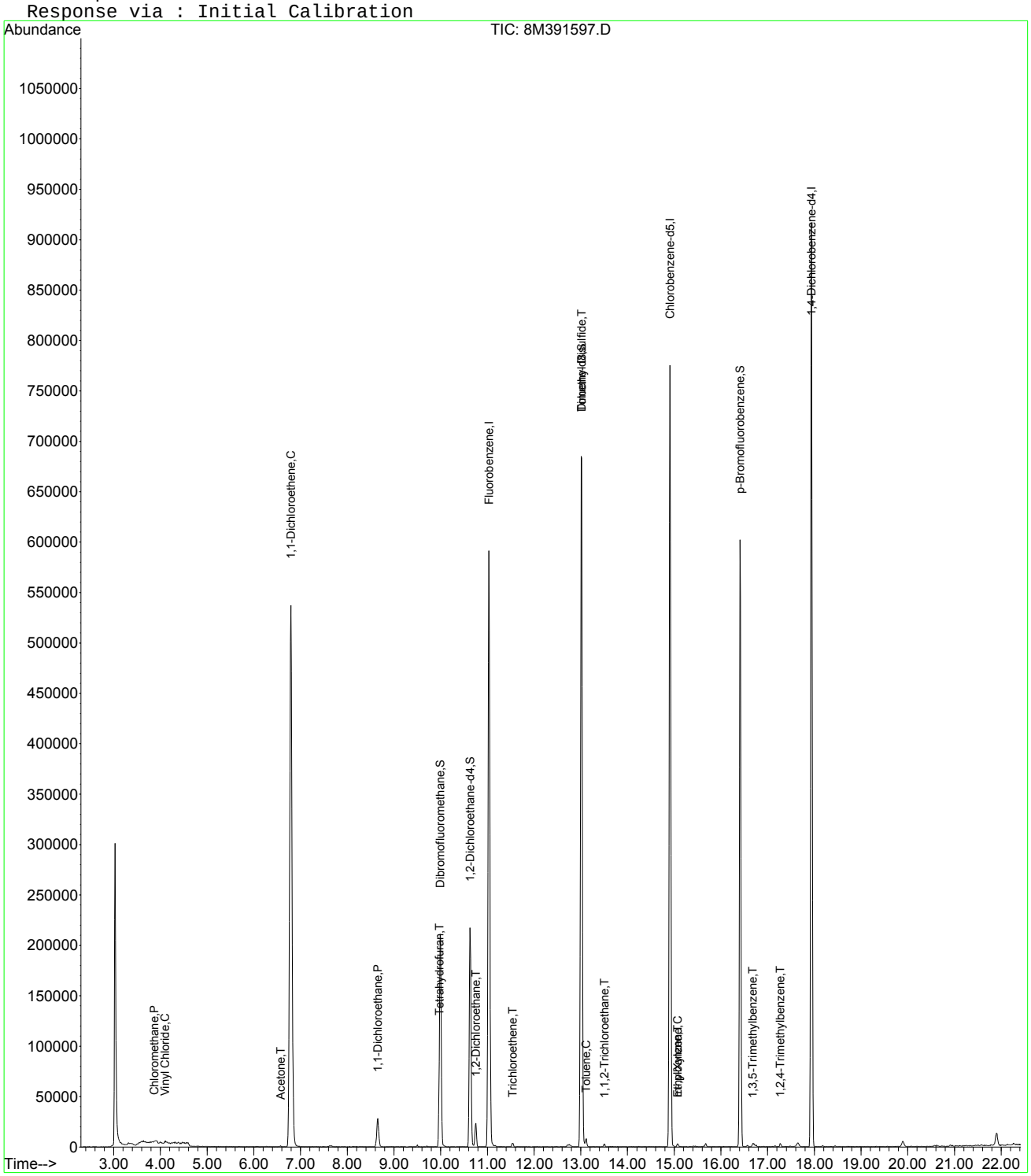

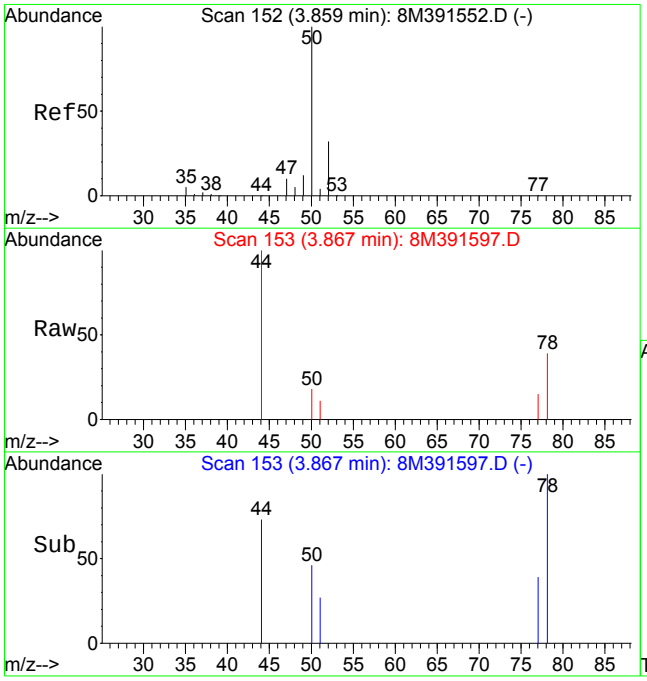

#3
Chloromethane
Concen: 0.19 ug/L
RT: 3.87 min Scan# 153
Delta R.T. 0.02 min
Lab File: 8M391597.D
Acq: 15 Oct 2013 10:59

Tgt Ion: 50 Resp: 1890

Ion	Ratio	Lower	Upper
50	100		
52	11.9	19.8	46.2#

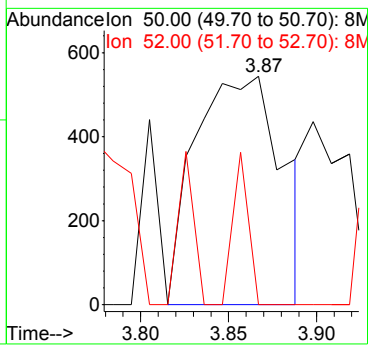

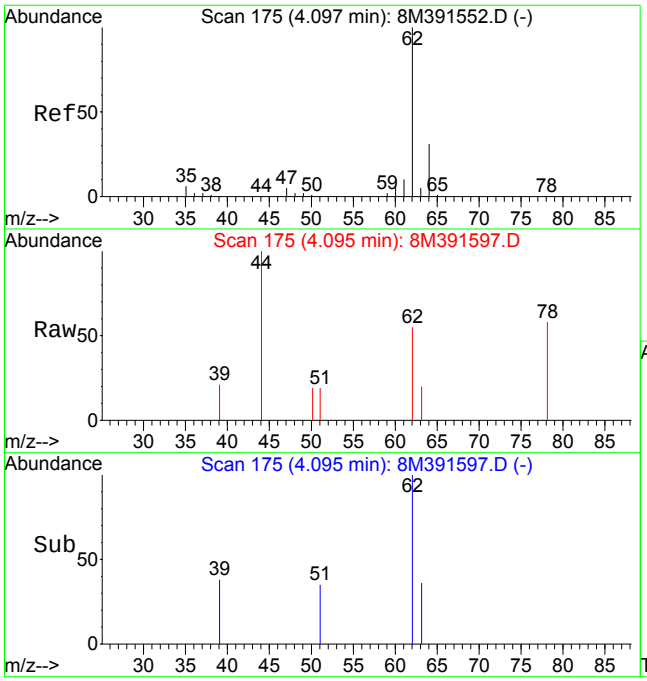

#4
Vinyl Chloride
Concen: 0.21 ug/L
RT: 4.09 min Scan# 175
Delta R.T. -0.02 min
Lab File: 8M391597.D
Acq: 15 Oct 2013 10:59

Tgt Ion: 62 Resp: 1800

Ion	Ratio	Lower	Upper
62	100		
64	0.0	20.1	46.9#

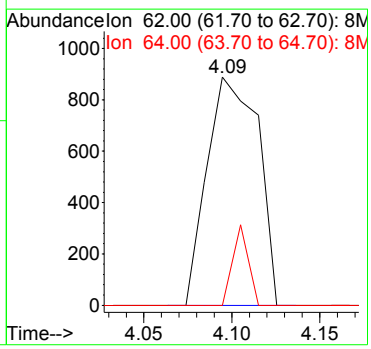

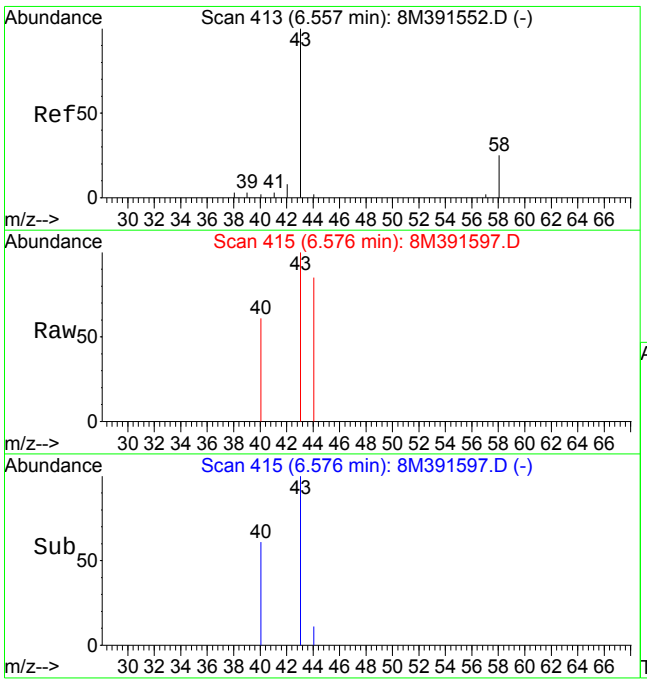

#13
Acetone
Concen: 0.46 ug/L
RT: 6.58 min Scan# 415
Delta R.T. 0.00 min
Lab File: 8M391597.D
Acq: 15 Oct 2013 10:59

Tgt Ion: 43 Resp: 772

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

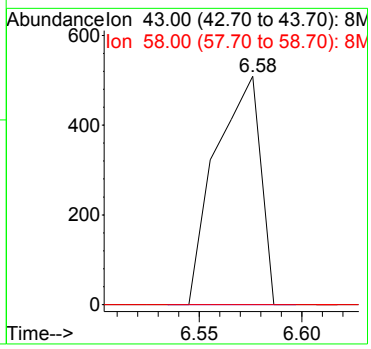

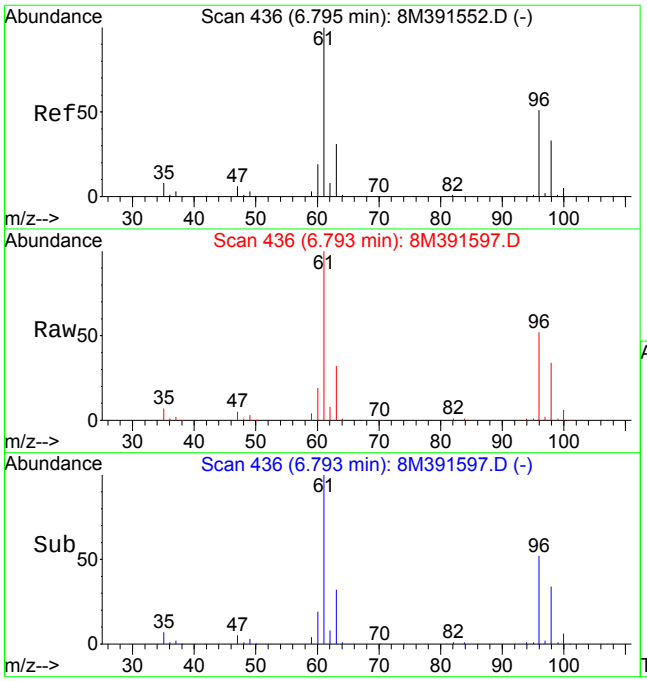

#14
1,1-Dichloroethene
Concen: 51.51 ug/L
RT: 6.79 min Scan# 436
Delta R.T. -0.01 min
Lab File: 8M391597.D
Acq: 15 Oct 2013 10:59

Tgt Ion: 61 Resp: 668193

Ion	Ratio	Lower	Upper
61	100		
96	51.7	37.4	87.2

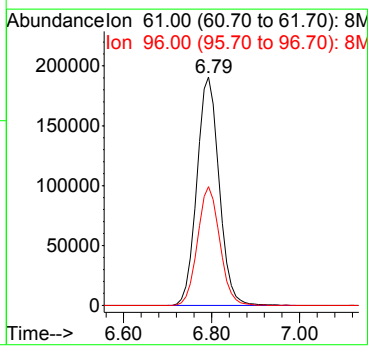

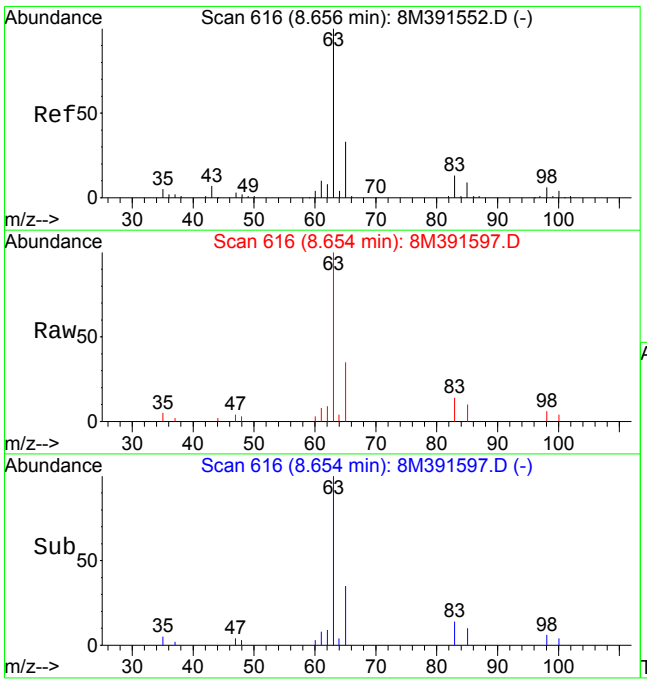

#27
1,1-Dichloroethane
Concen: 3.09 ug/L
RT: 8.65 min Scan# 616
Delta R.T. -0.01 min
Lab File: 8M391597.D
Acq: 15 Oct 2013 10:59

Tgt Ion: 63 Resp: 43986

Ion	Ratio	Lower	Upper
63	100		
65	32.3	19.6	45.6
83	11.7	8.6	20.0

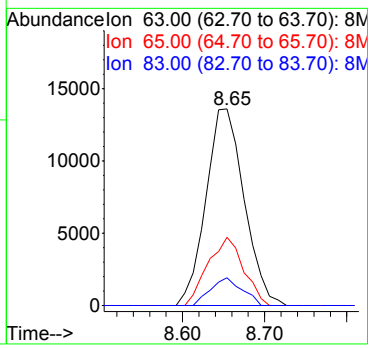

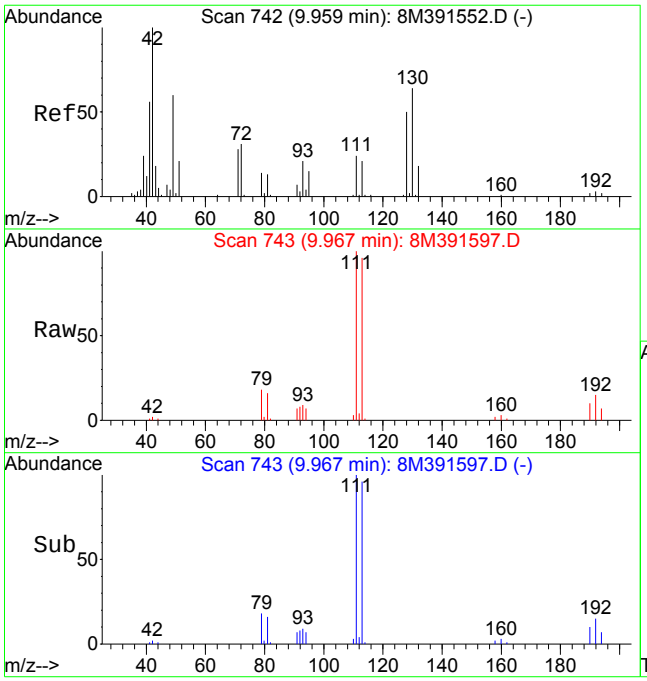

#36
Tetrahydrofuran
Concen: 0.57 ug/L
RT: 9.97 min Scan# 743
Delta R.T. 0.00 min
Lab File: 8M391597.D
Acq: 15 Oct 2013 10:59

Tgt Ion: 42 Resp: 1107

Ion	Ratio	Lower	Upper
42	100		
72	0.0	25.7	59.9#
71	0.0	24.4	57.0#

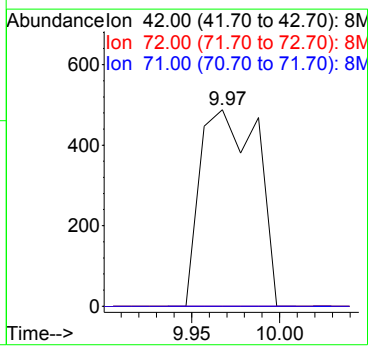

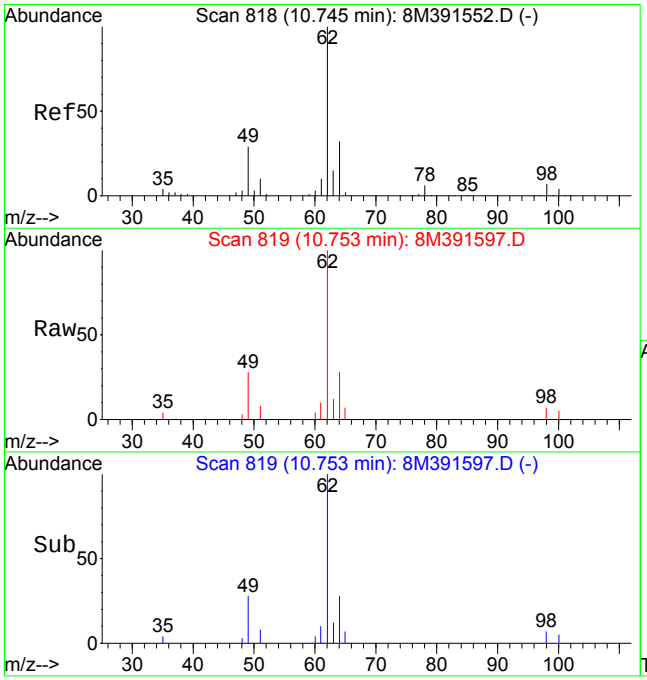

#45
1,2-Dichloroethane
Concen: 2.21 ug/L
RT: 10.75 min Scan# 819
Delta R.T. -0.01 min
Lab File: 8M391597.D
Acq: 15 Oct 2013 10:59

Tgt Ion: 62 Resp: 25950

Ion	Ratio	Lower	Upper
62	100		
64	28.6	19.9	46.5
49	27.5	19.4	45.2

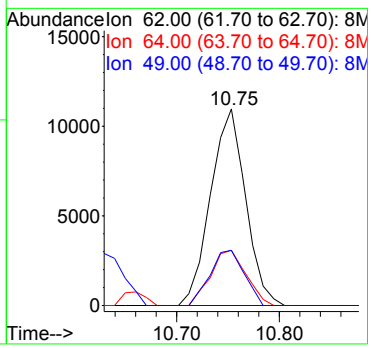

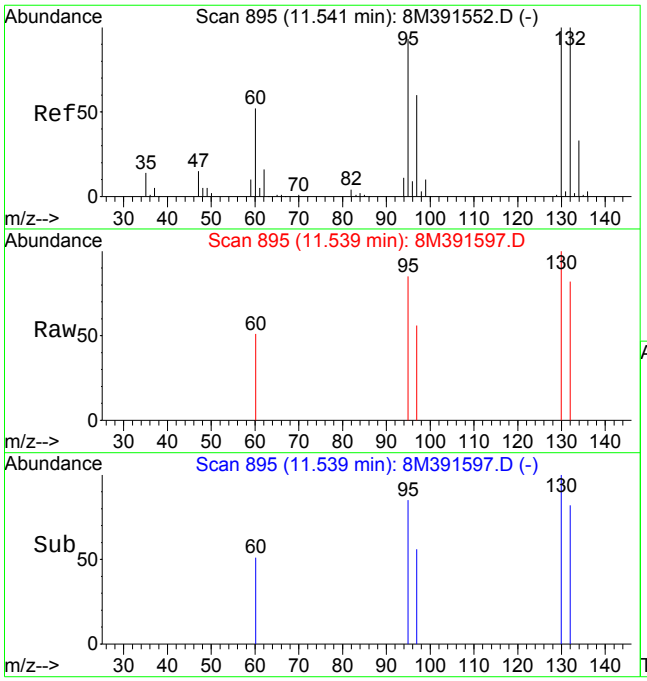

#47
Trichloroethene
Concen: 0.23 ug/L
RT: 11.54 min Scan# 895
Delta R.T. -0.02 min
Lab File: 8M391597.D
Acq: 15 Oct 2013 10:59

Tgt Ion:130 Resp: 2024

Ion	Ratio	Lower	Upper
130	100		
132	101.2	60.1	140.3
95	88.2	49.6	115.6

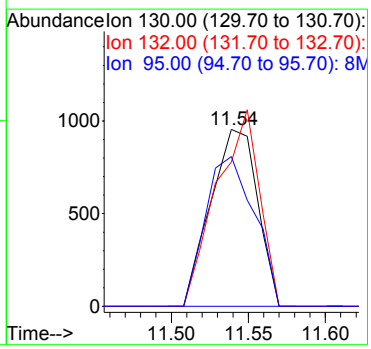

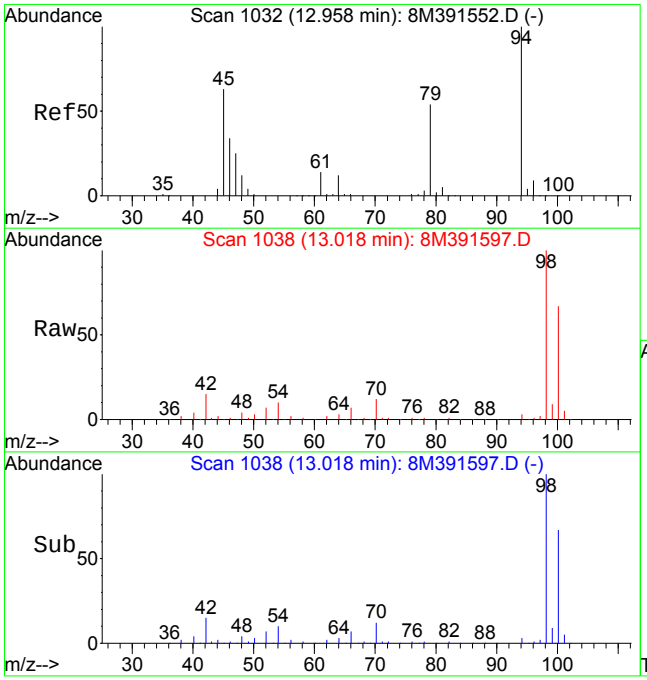

#56
Dimethyl Disulfide
Concen: 1.45 ug/L
RT: 13.02 min Scan# 1038
Delta R.T. 0.04 min
Lab File: 8M391597.D
Acq: 15 Oct 2013 10:59

Tgt Ion: 94 Resp: 17528

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

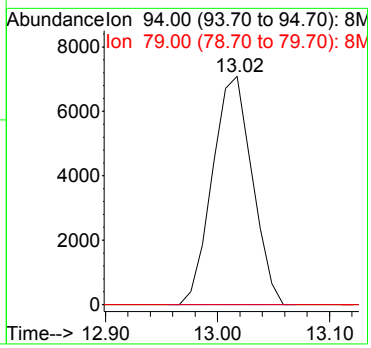

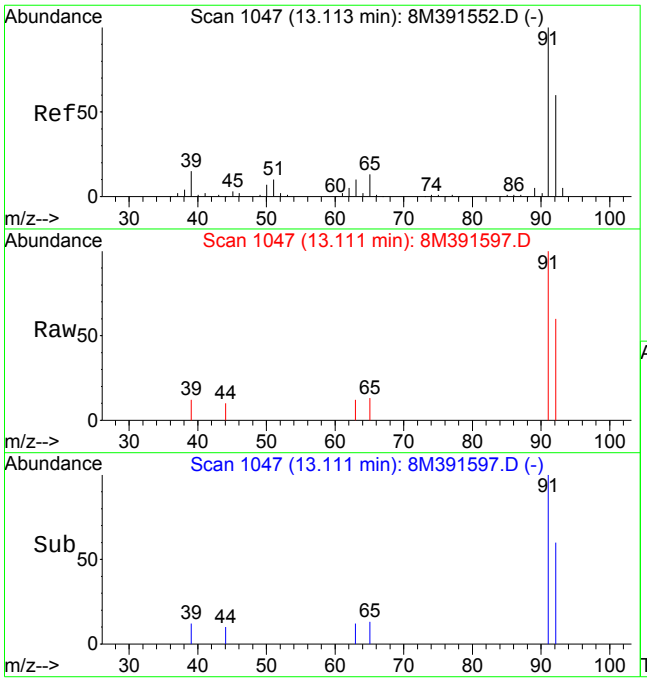

#59
Toluene
Concen: 0.33 ug/L
RT: 13.11 min Scan# 1047
Delta R.T. -0.02 min
Lab File: 8M391597.D
Acq: 15 Oct 2013 10:59

Tgt Ion: 91 Resp: 9778

Ion	Ratio	Lower	Upper
91	100		
92	52.3	36.4	84.8

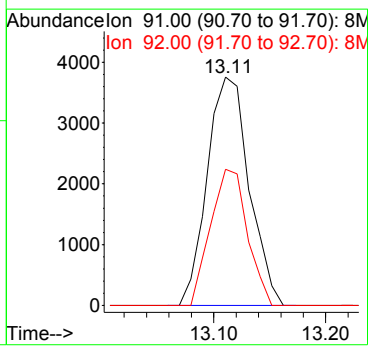

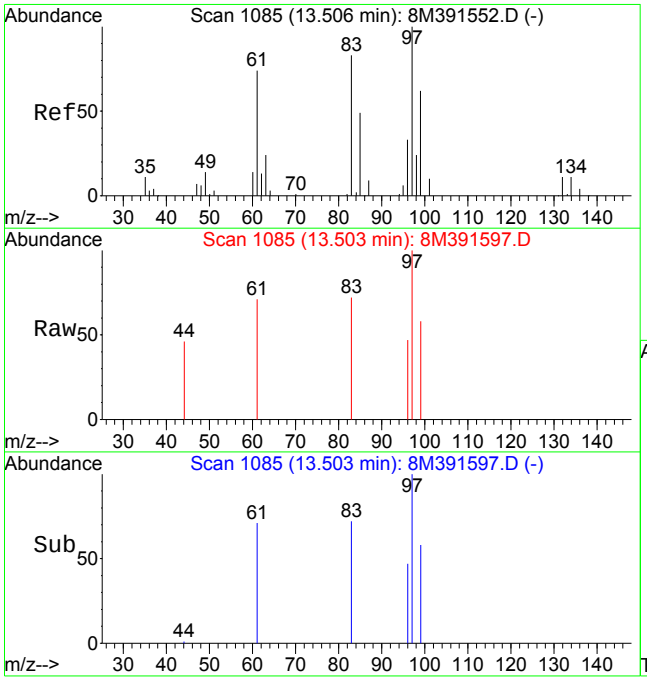

#63
1,1,2-Trichloroethane
Concen: 0.31 ug/L
RT: 13.50 min Scan# 1085
Delta R.T. -0.01 min
Lab File: 8M391597.D
Acq: 15 Oct 2013 10:59

Tgt Ion: 97 Resp: 1647

Ion	Ratio	Lower	Upper
97	100		
83	63.5	45.8	107.0

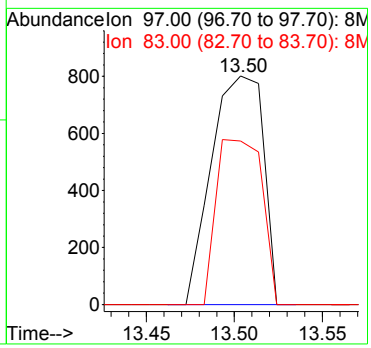

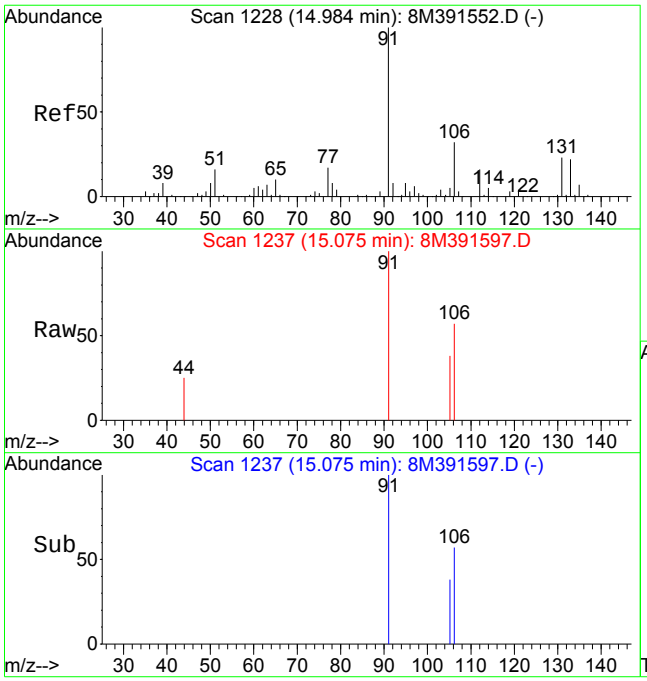

#72
Ethylbenzene
Concen: 0.14 ug/L
RT: 15.08 min Scan# 1237
Delta R.T. 0.07 min
Lab File: 8M391597.D
Acq: 15 Oct 2013 10:59

Tgt Ion:106 Resp: 1669

Ion	Ratio	Lower	Upper
106	100		
91	221.6	172.2	401.8

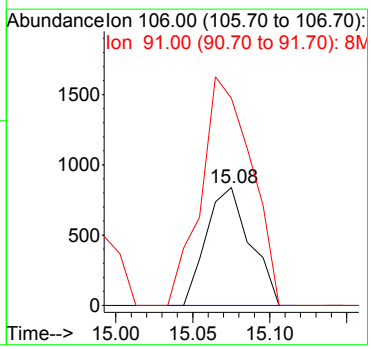

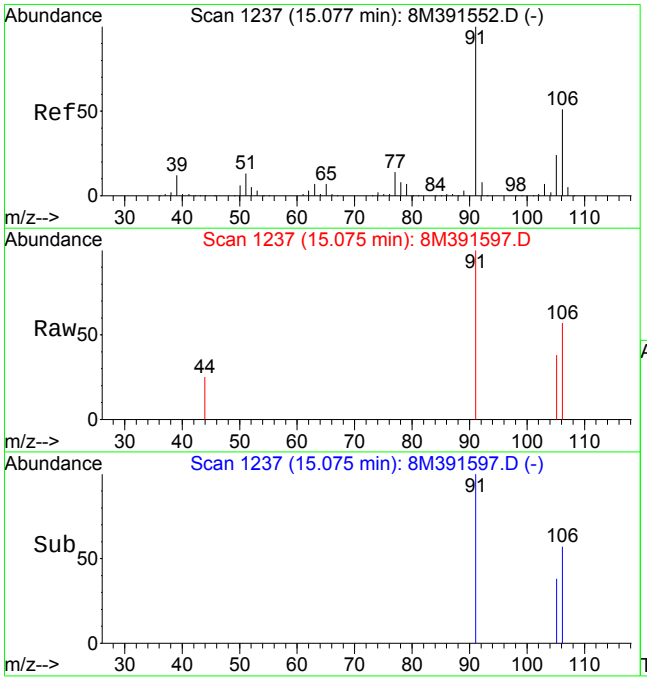

#73
m-,p-Xylene
Concen: 0.12 ug/L
RT: 15.08 min Scan# 1237
Delta R.T. -0.01 min
Lab File: 8M391597.D
Acq: 15 Oct 2013 10:59

Tgt Ion:106 Resp: 1669

Ion	Ratio	Lower	Upper
106	100		
91	221.6	110.2	257.2

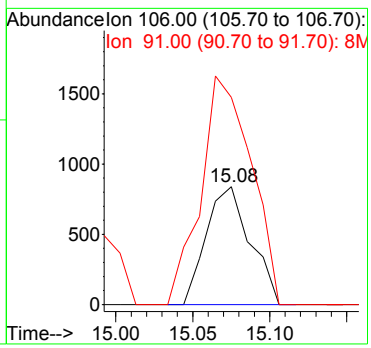

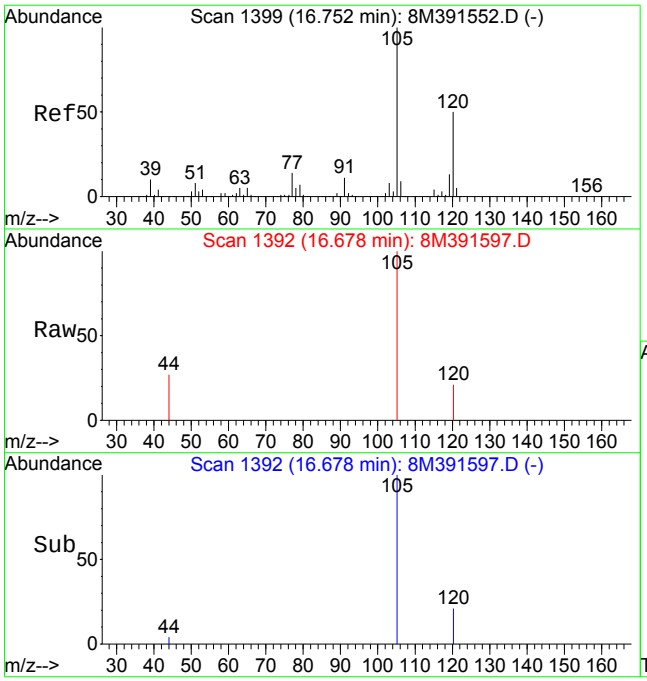

#85
1,3,5-Trimethylbenzene
Concen: 0.26 ug/L
RT: 16.68 min Scan# 1392
Delta R.T. -0.09 min
Lab File: 8M391597.D
Acq: 15 Oct 2013 10:59

Tgt Ion:105 Resp: 7708

Ion	Ratio	Lower	Upper
105	100		
120	25.5	32.0	74.8#

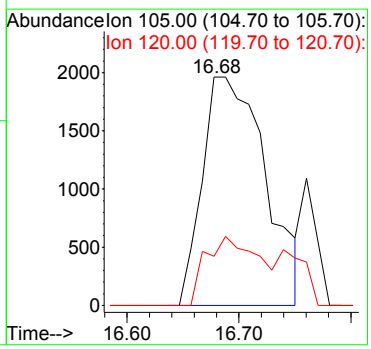

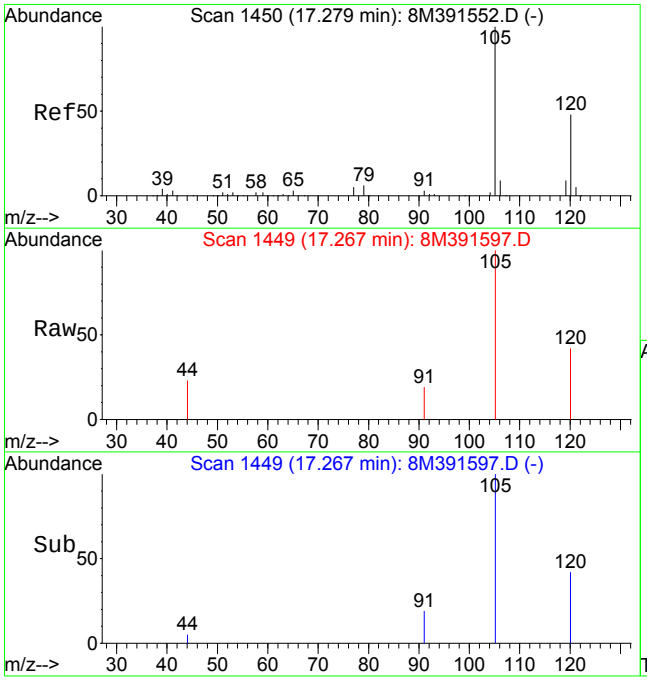

#90
1,2,4-Trimethylbenzene
Concen: 0.13 ug/L
RT: 17.27 min Scan# 1449
Delta R.T. -0.02 min
Lab File: 8M391597.D
Acq: 15 Oct 2013 10:59

Tgt Ion:105 Resp: 4070

Ion	Ratio	Lower	Upper
105	100		
120	34.8	35.3	82.5#

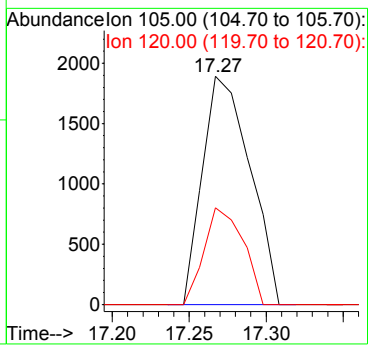

8M391597.D 8260WT.M Tue Oct 15 17:52:35 2013 Page 10

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391581.D Vial: 24
Acq On : 14 Oct 2013 23:47 Operator: TMB
Sample : L13100266-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 11:01:44 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	633778	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	496035	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.94	152	290463	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.99	111	173635	24.0937 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.36%		
43) 1,2-Dichloroethane-d4	10.63	65	203817	24.1244 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.48%		
58) Toluene-d8	13.02	98	582516	24.6563 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.64%		
80) p-Bromofluorobenzene	16.41	95	238823	23.6676 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.68%		

Target Compounds

					Qvalue
3) Chloromethane	3.87	50	3397	0.3766 ug/L	98
13) Acetone	6.56	43	3421	2.2695 ug/L #	48
14) 1,1-Dichloroethene	6.79	61	3098	0.2670 ug/L	79
16) Dimethyl Sulfide	7.06	62	7831	1.2600 ug/L	77
20) Carbon Disulfide	7.64	76	2746	0.1466 ug/L #	74
36) Tetrahydrofuran	9.97	42	1299	0.7539 ug/L #	34
56) Dimethyl Disulfide	13.02	94	16648	1.5424 ug/L #	28

(#) = qualifier out of range (m) = manual integration
8M391581.D 8260WT.M Tue Oct 15 11:01:45 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391581.D Vial: 24
Acq On : 14 Oct 2013 23:47 Operator: TMB
Sample : L13100266-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 11:01 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

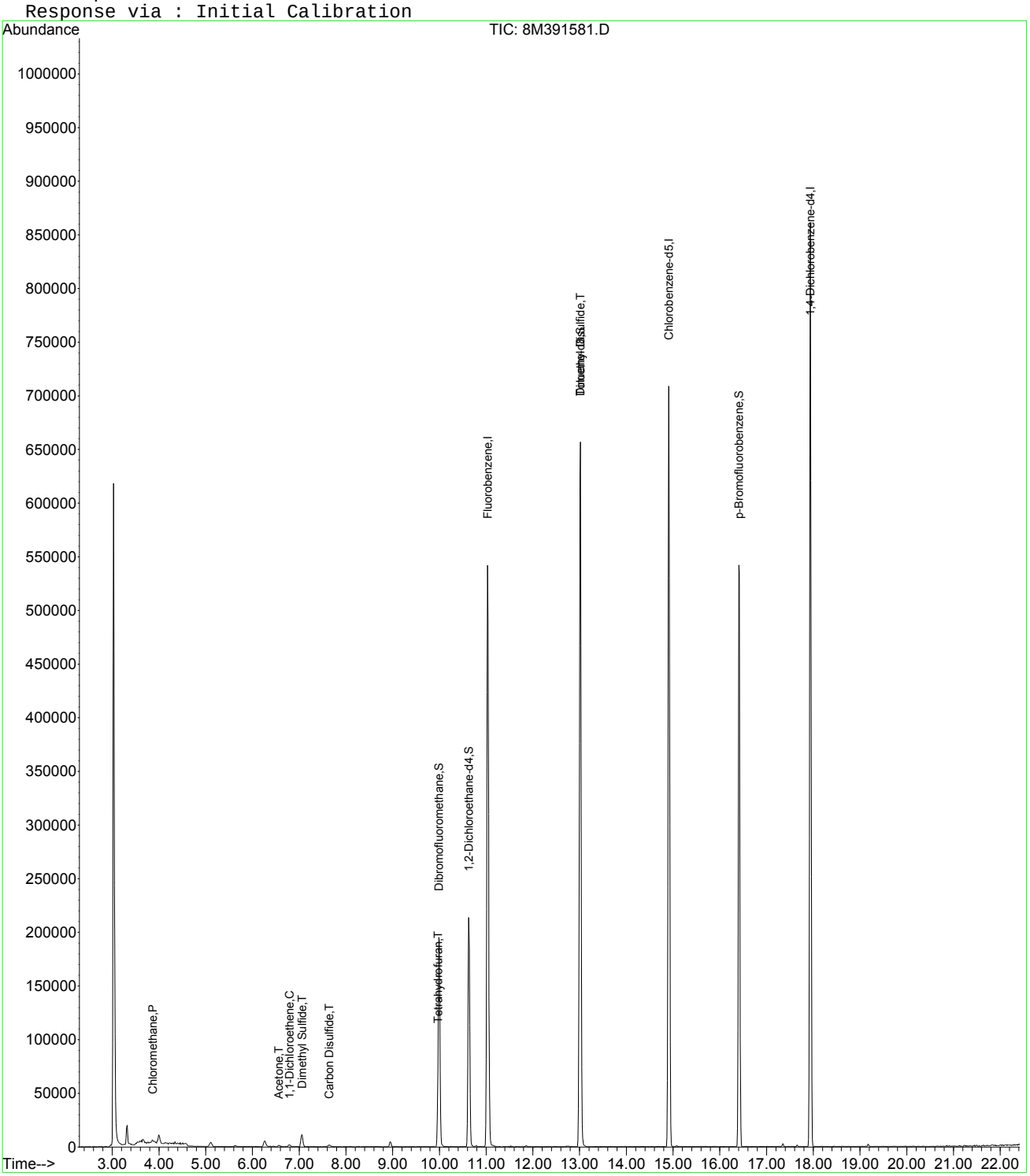

8M391581.D 8260WT.M Tue Oct 15 11:01:45 2013 Page 2

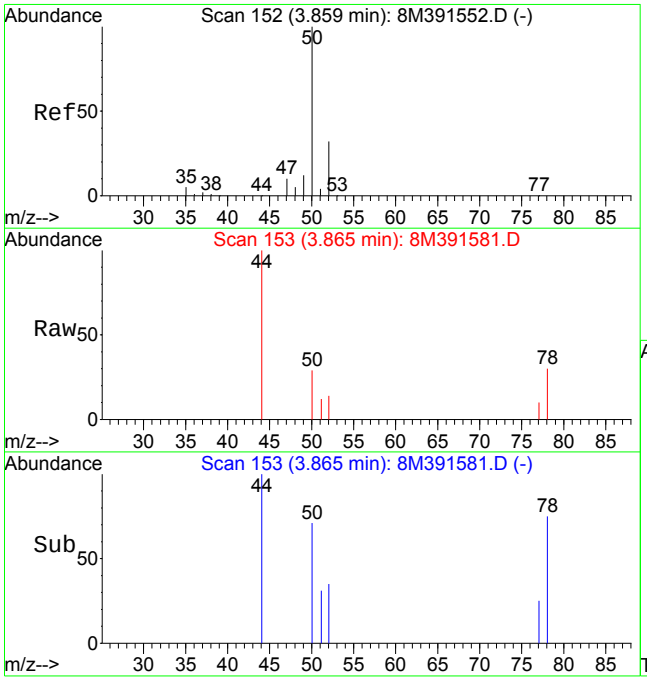

#3
Chloromethane
Concen: 0.38 ug/L
RT: 3.87 min Scan# 153
Delta R.T. 0.02 min
Lab File: 8M391581.D
Acq: 14 Oct 2013 23:47

Tgt Ion: 50 Resp: 3397

Ion	Ratio	Lower	Upper
50	100		
52	34.4	19.8	46.2

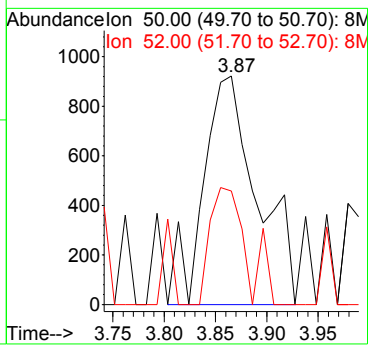

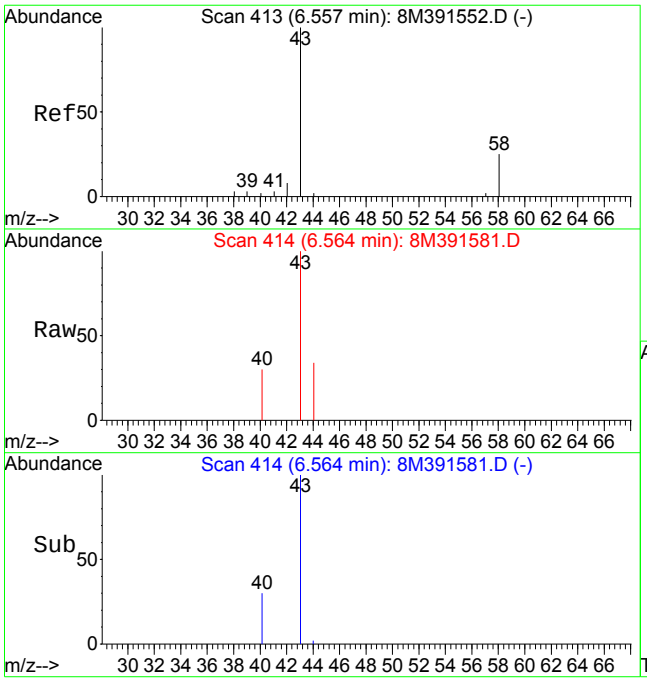

#13
Acetone
Concen: 2.27 ug/L
RT: 6.56 min Scan# 414
Delta R.T. -0.01 min
Lab File: 8M391581.D
Acq: 14 Oct 2013 23:47

Tgt Ion: 43 Resp: 3421

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

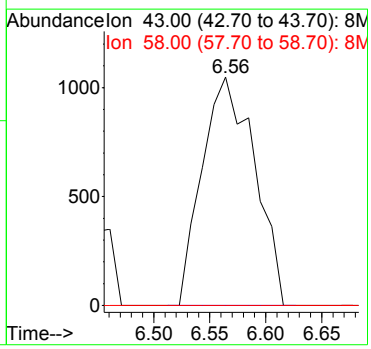

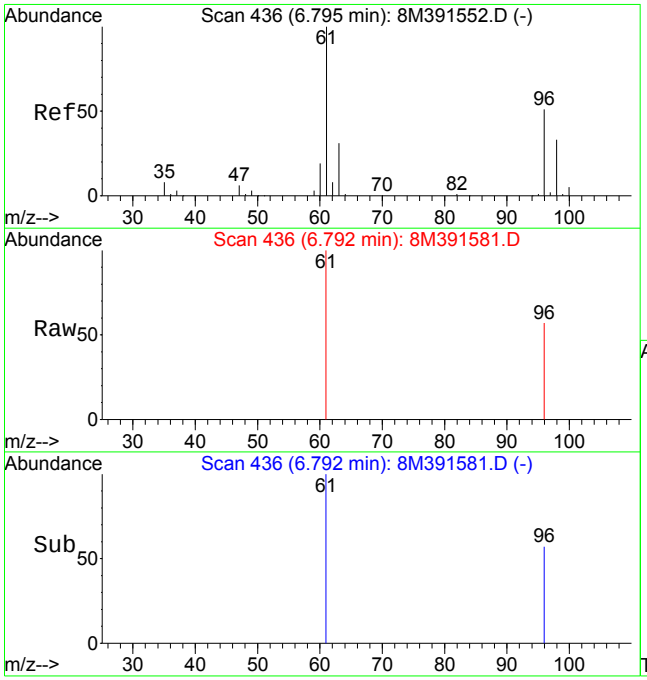

#14
1,1-Dichloroethene
Concen: 0.27 ug/L
RT: 6.79 min Scan# 436
Delta R.T. -0.01 min
Lab File: 8M391581.D
Acq: 14 Oct 2013 23:47

Tgt Ion: 61 Resp: 3098

Ion	Ratio	Lower	Upper
61	100		
96	46.4	37.4	87.2

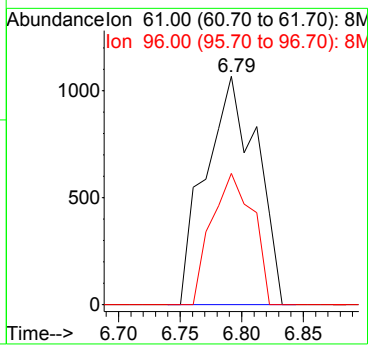

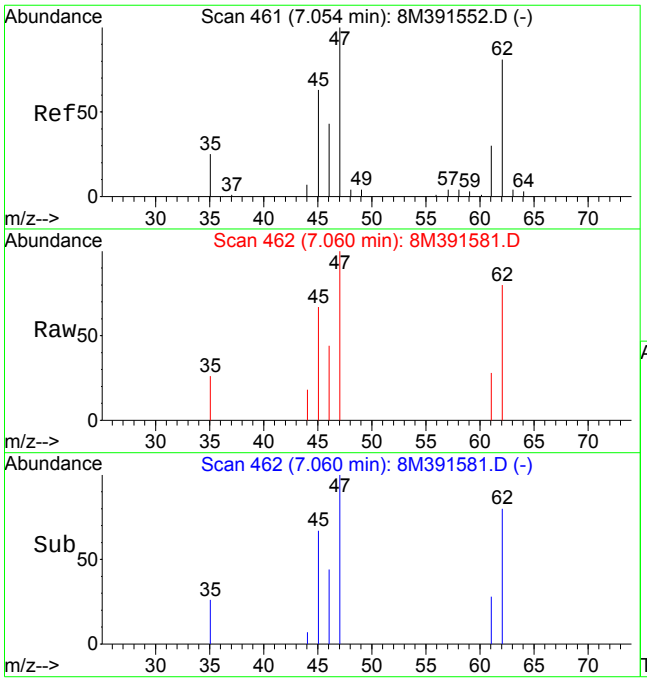

#16
Dimethyl Sulfide
Concen: 1.26 ug/L
RT: 7.06 min Scan# 462
Delta R.T. -0.01 min
Lab File: 8M391581.D
Acq: 14 Oct 2013 23:47

Tgt Ion: 62 Resp: 7831

Ion	Ratio	Lower	Upper
62	100		
47	125.3	61.3	142.9

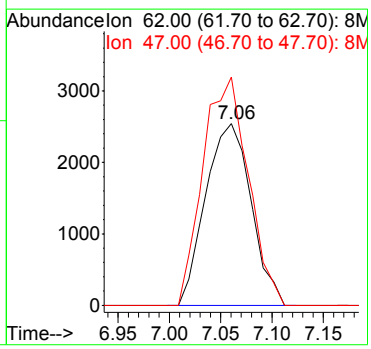

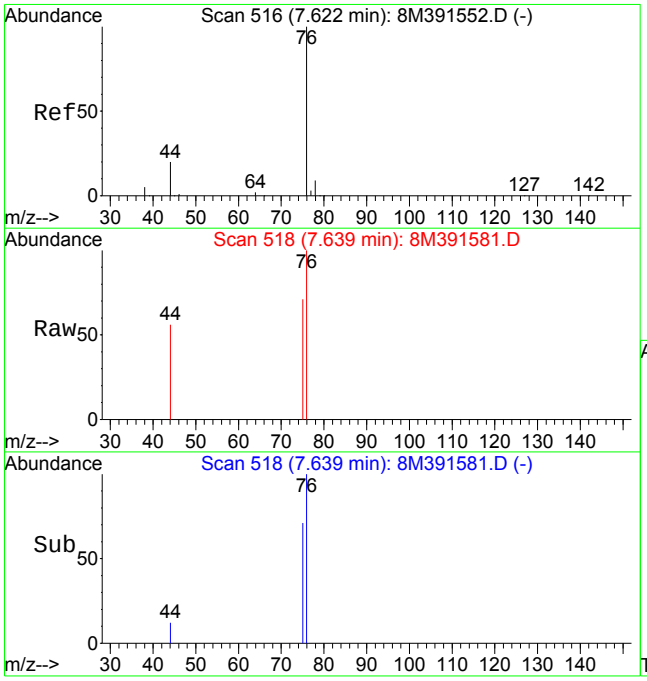

#20
Carbon Disulfide
Concen: 0.15 ug/L
RT: 7.64 min Scan# 518
Delta R.T. 0.00 min
Lab File: 8M391581.D
Acq: 14 Oct 2013 23:47

Tgt Ion: 76 Resp: 2746

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.8	13.4#

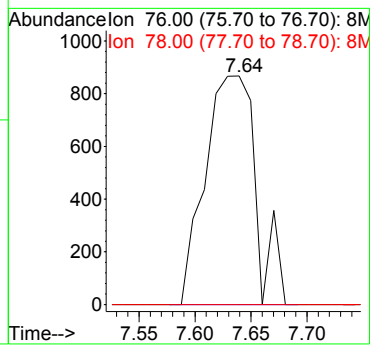

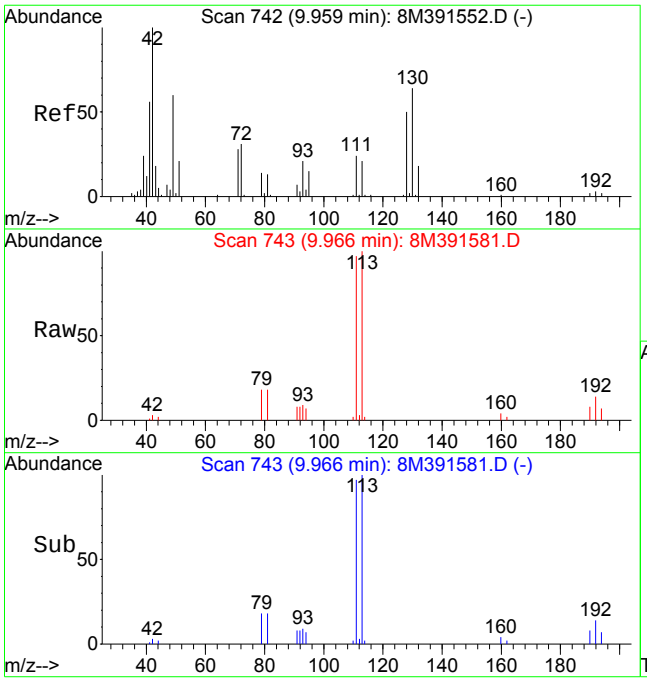

#36
Tetrahydrofuran
Concen: 0.75 ug/L
RT: 9.97 min Scan# 743
Delta R.T. 0.00 min
Lab File: 8M391581.D
Acq: 14 Oct 2013 23:47

Tgt Ion: 42 Resp: 1299

Ion	Ratio	Lower	Upper
42	100		
72	0.0	25.7	59.9#
71	0.0	24.4	57.0#

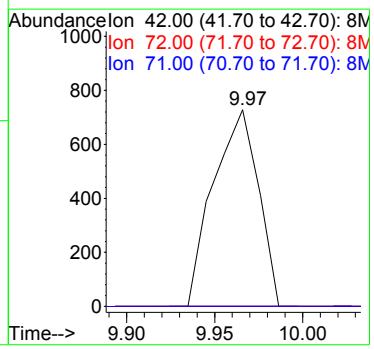

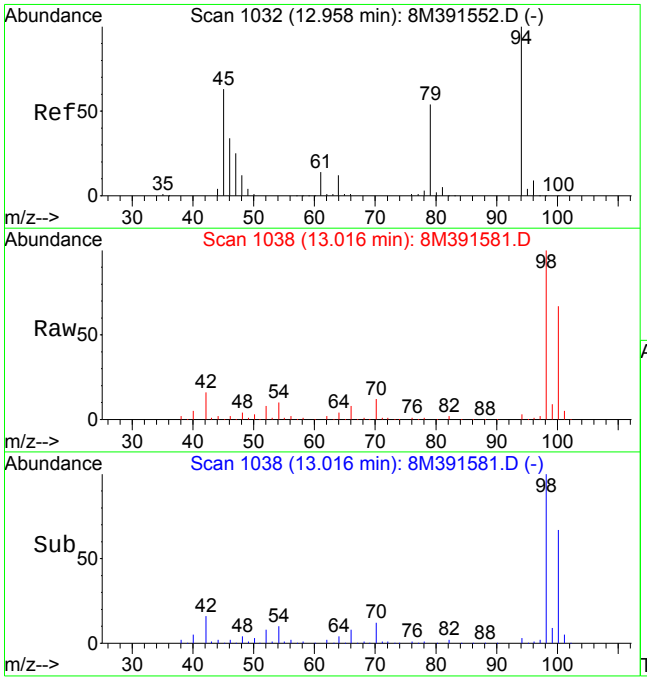

#56
Dimethyl Disulfide
Concen: 1.54 ug/L
RT: 13.02 min Scan# 1038
Delta R.T. 0.04 min
Lab File: 8M391581.D
Acq: 14 Oct 2013 23:47

Tgt Ion: 94 Resp: 16648

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

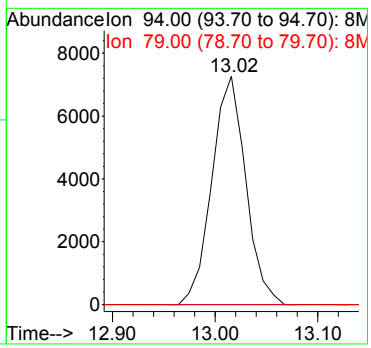

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101513\8M391611.D Vial: 24
Acq On : 15 Oct 2013 18:21 Operator: TMB
Sample : L13100266-05 A 10X 826-LOW Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 16 08:17:50 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	625386	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	497455	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.94	152	289323	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.00	111	172822	24.3027 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.20%		
43) 1,2-Dichloroethane-d4	10.63	65	197858	23.7334 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.92%		
58) Toluene-d8	13.02	98	570757	24.0896 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.36%		
80) p-Bromofluorobenzene	16.42	95	236299	23.5097 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.04%		

Target Compounds					Qvalue
3) Chloromethane	3.88	50	1361	0.1529 ug/L	97
13) Acetone	6.56	43	657	0.4417 ug/L #	48
14) 1,1-Dichloroethene	6.79	61	1285862	112.3013 ug/L	85
27) 1,1-Dichloroethane	8.65	63	58410	4.6529 ug/L	99
32) cis-1,2-Dichloroethene	9.48	96	1317	0.1886 ug/L	89
33) Chloroform	9.70	83	3362	0.2665 ug/L	91
36) Tetrahydrofuran	9.97	42	4528	2.6632 ug/L #	68
45) 1,2-Dichloroethane	10.75	62	79299	7.6525 ug/L	95
47) Trichloroethene	11.55	130	1714	0.2244 ug/L	87
56) Dimethyl Disulfide	13.02	94	17390	1.6328 ug/L #	28
59) Toluene	13.12	91	3239	0.1241 ug/L	97
63) 1,1,2-Trichloroethane	13.50	97	2397	0.5082 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M391611.D 8260WT.M Wed Oct 16 08:17:51 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101513\8M391611.D Vial: 24
Acq On : 15 Oct 2013 18:21 Operator: TMB
Sample : L13100266-05 A 10X 826-LOW Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 16 8:17 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

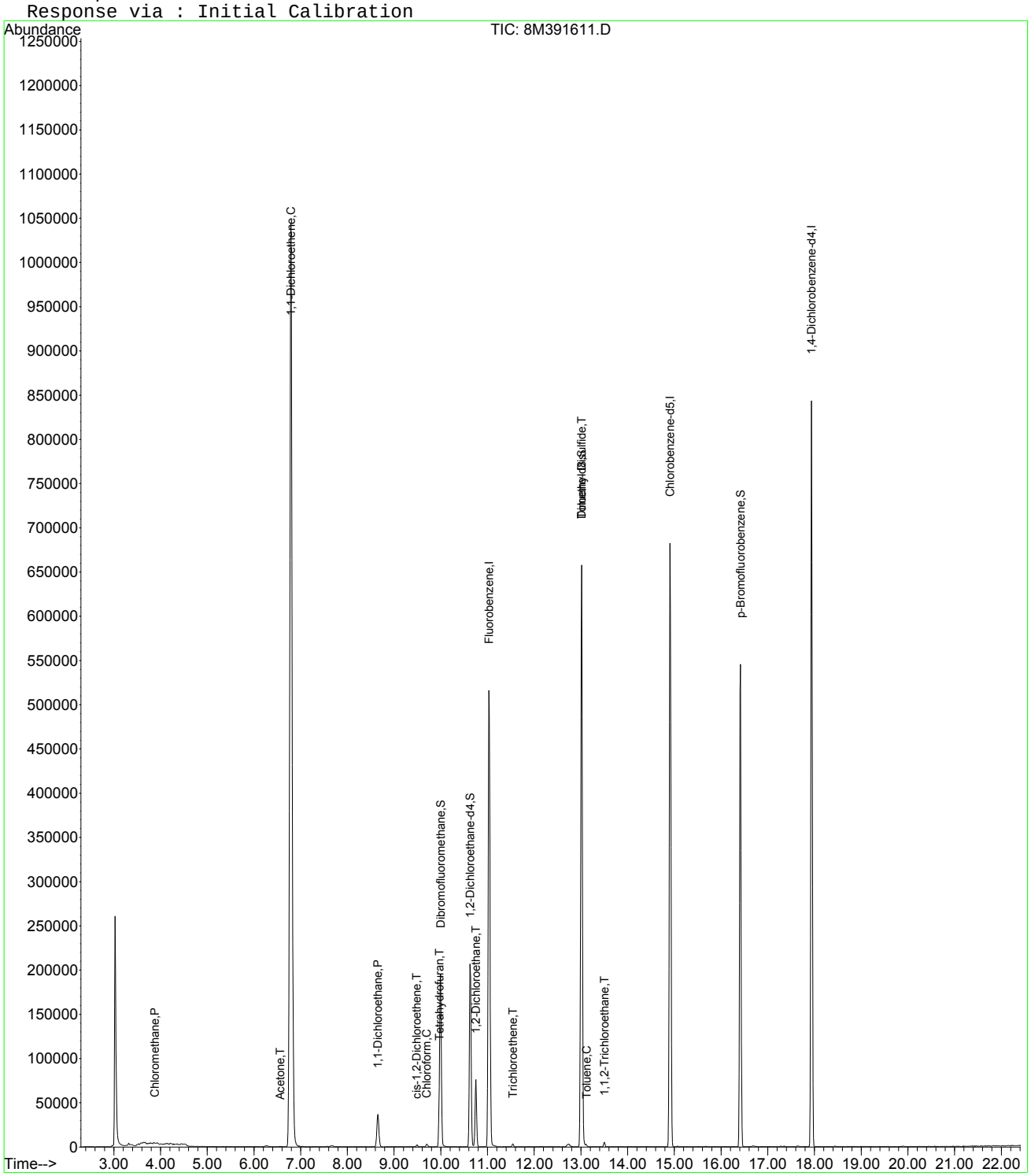

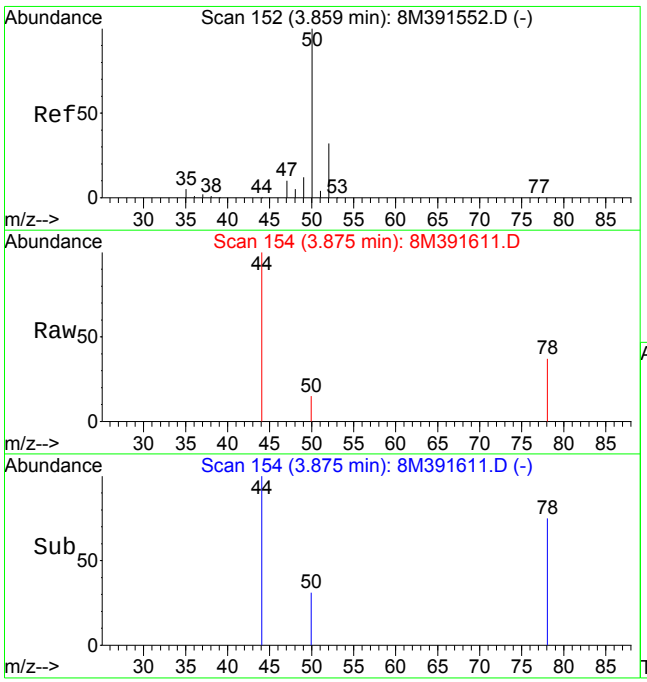

#3
Chloromethane
Concen: 0.15 ug/L
RT: 3.88 min Scan# 154
Delta R.T. 0.03 min
Lab File: 8M391611.D
Acq: 15 Oct 2013 18:21

Tgt Ion: 50 Resp: 1361

Ion	Ratio	Lower	Upper
50	100		
52	34.5	19.8	46.2

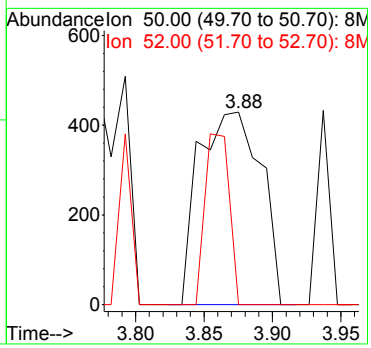

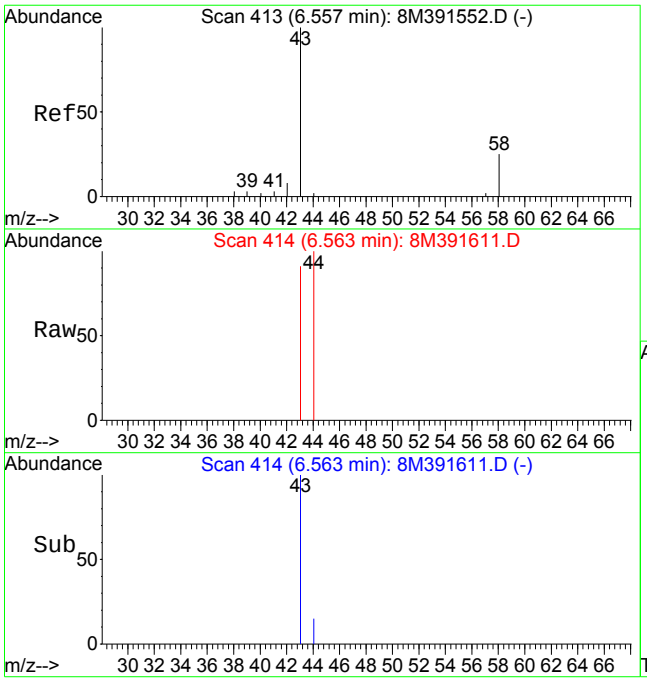

#13
Acetone
Concen: 0.44 ug/L
RT: 6.56 min Scan# 414
Delta R.T. -0.01 min
Lab File: 8M391611.D
Acq: 15 Oct 2013 18:21

Tgt Ion: 43 Resp: 657

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

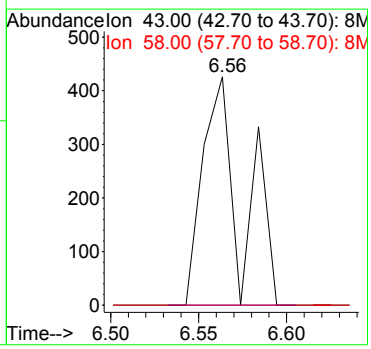

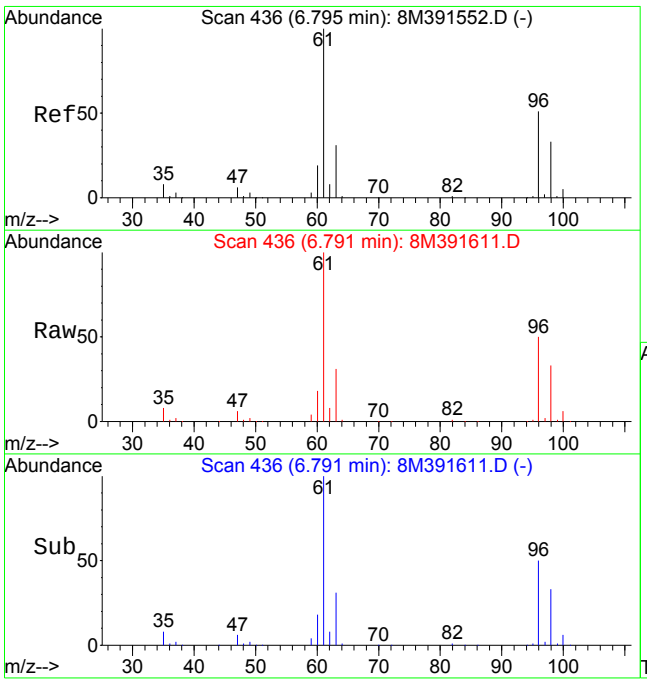

#14
1,1-Dichloroethene
Concen: 112.30 ug/L
RT: 6.79 min Scan# 436
Delta R.T. -0.01 min
Lab File: 8M391611.D
Acq: 15 Oct 2013 18:21

Tgt Ion: 61 Resp: 1285862

Ion	Ratio	Lower	Upper
61	100		
96	50.8	37.4	87.2

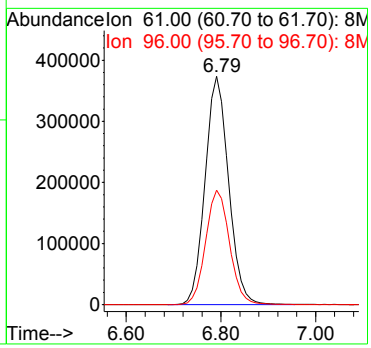

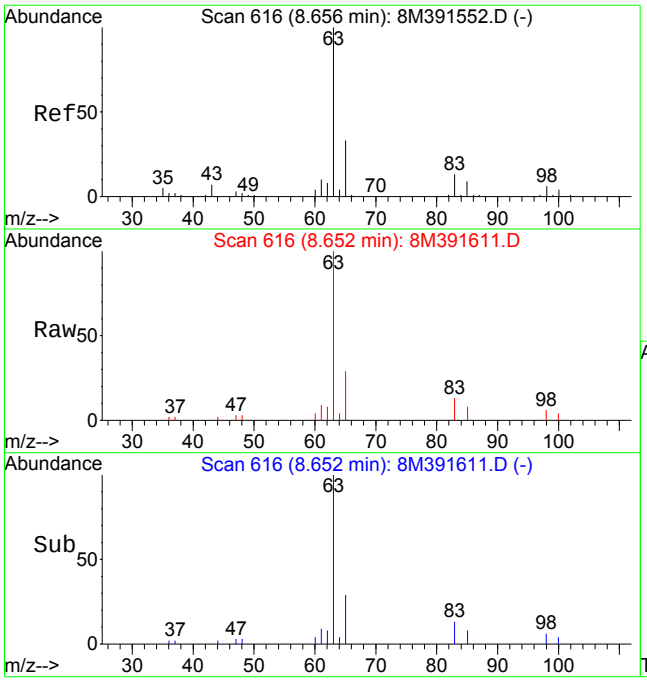

#27
1,1-Dichloroethane
Concen: 4.65 ug/L
RT: 8.65 min Scan# 616
Delta R.T. -0.01 min
Lab File: 8M391611.D
Acq: 15 Oct 2013 18:21

Tgt Ion: 63 Resp: 58410

Ion	Ratio	Lower	Upper
63	100		
65	32.4	19.6	45.6
83	12.7	8.6	20.0

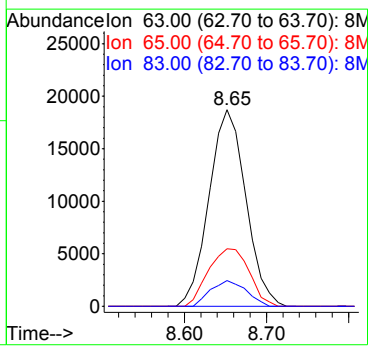

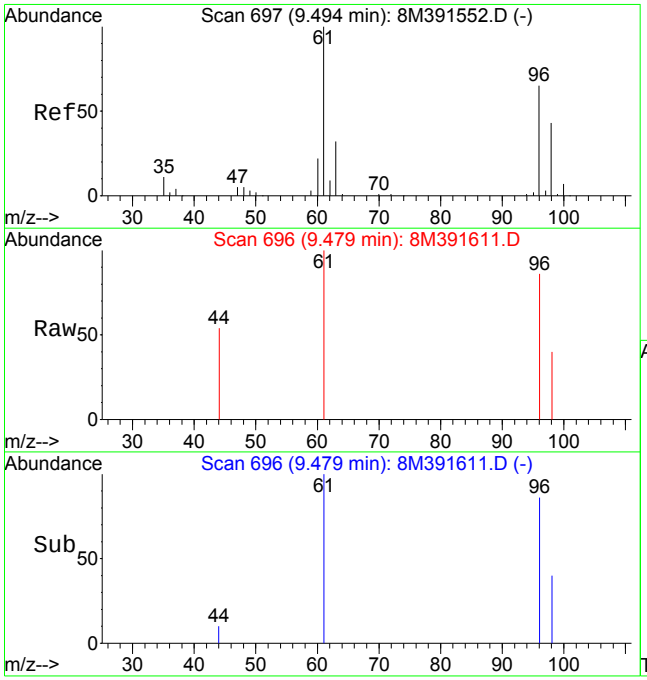

#32
cis-1,2-Dichloroethene
Concen: 0.19 ug/L
RT: 9.48 min Scan# 696
Delta R.T. -0.03 min
Lab File: 8M391611.D
Acq: 15 Oct 2013 18:21

Tgt Ion: 96 Resp: 1317

Ion	Ratio	Lower	Upper
96	100		
61	156.6	85.7	200.1

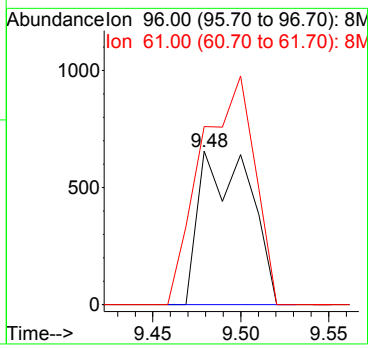

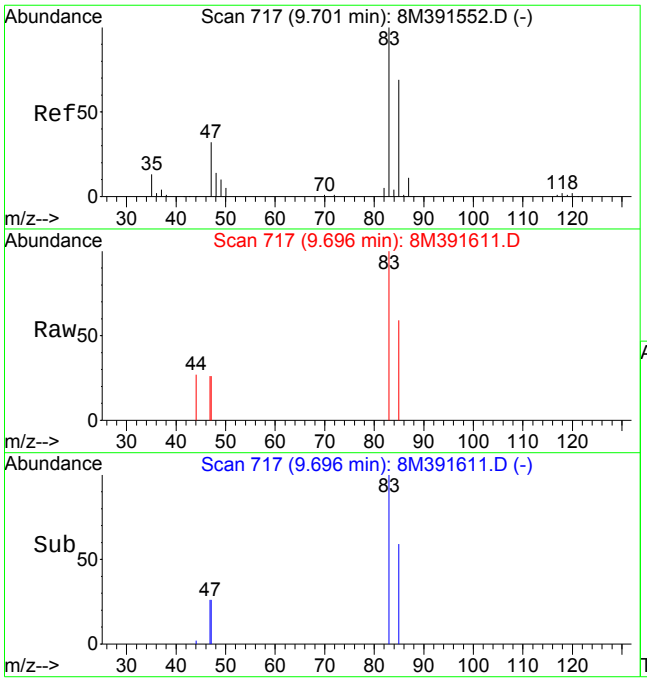

#33
Chloroform
Concen: 0.27 ug/L
RT: 9.70 min Scan# 717
Delta R.T. -0.02 min
Lab File: 8M391611.D
Acq: 15 Oct 2013 18:21

Tgt Ion: 83 Resp: 3362

Ion	Ratio	Lower	Upper
83	100		
85	60.1	40.1	93.7

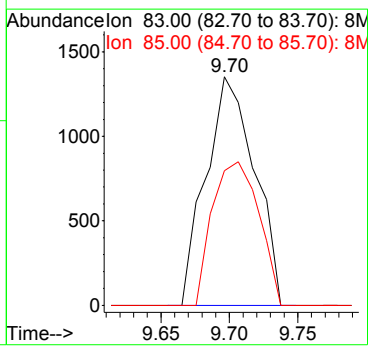

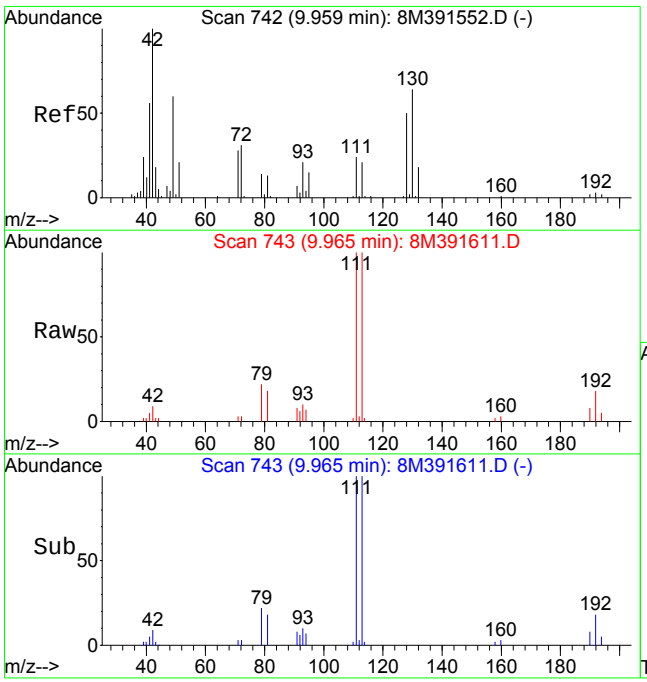

#36
Tetrahydrofuran
Concen: 2.66 ug/L
RT: 9.97 min Scan# 743
Delta R.T. -0.00 min
Lab File: 8M391611.D
Acq: 15 Oct 2013 18:21

Tgt Ion: 42 Resp: 4528

Ion	Ratio	Lower	Upper
42	100		
72	25.0	25.7	59.9#
71	18.4	24.4	57.0#

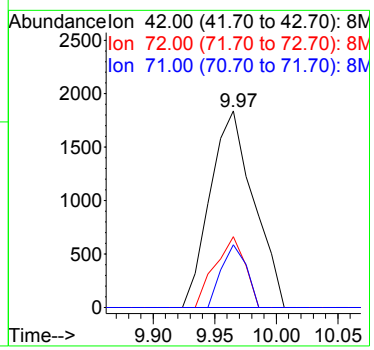

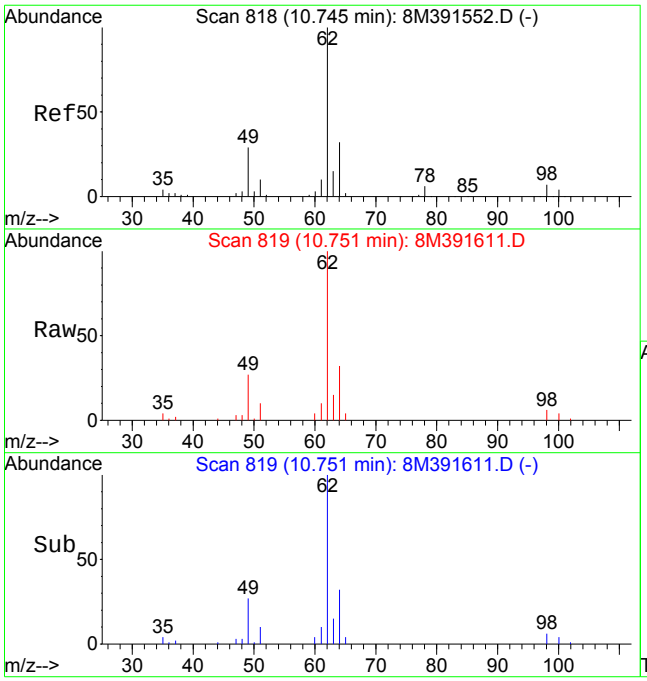

#45
1,2-Dichloroethane
Concen: 7.65 ug/L
RT: 10.75 min Scan# 819
Delta R.T. -0.01 min
Lab File: 8M391611.D
Acq: 15 Oct 2013 18:21

Tgt Ion: 62 Resp: 79299

Ion	Ratio	Lower	Upper
62	100		
64	32.3	19.9	46.5
49	27.3	19.4	45.2

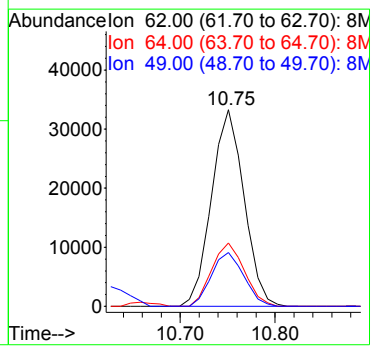

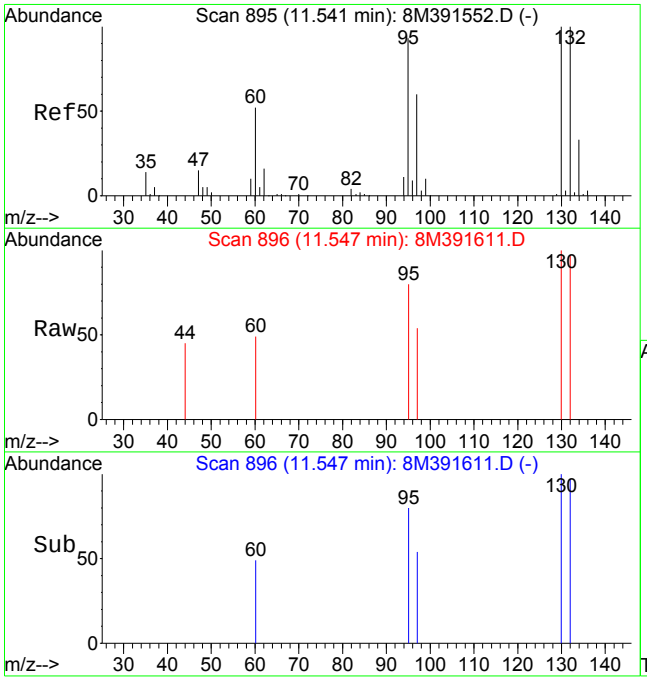

#47
Trichloroethene
Concen: 0.22 ug/L
RT: 11.55 min Scan# 896
Delta R.T. -0.01 min
Lab File: 8M391611.D
Acq: 15 Oct 2013 18:21

Tgt Ion:130 Resp: 1714

Ion	Ratio	Lower	Upper
130	100		
132	85.1	60.1	140.3
95	91.7	49.6	115.6

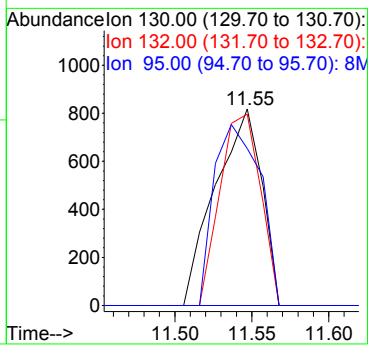

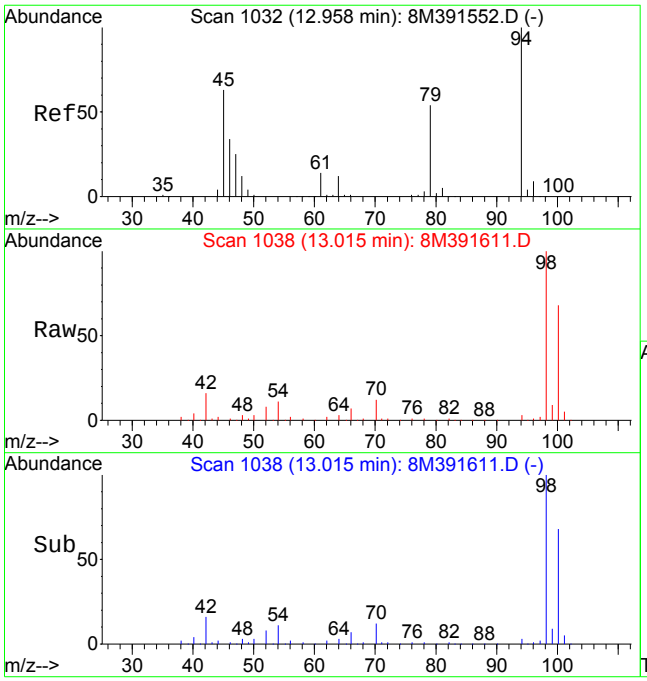

#56
Dimethyl Disulfide
Concen: 1.63 ug/L
RT: 13.02 min Scan# 1038
Delta R.T. 0.04 min
Lab File: 8M391611.D
Acq: 15 Oct 2013 18:21

Tgt Ion: 94 Resp: 17390

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

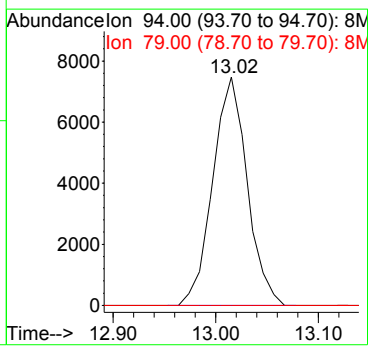

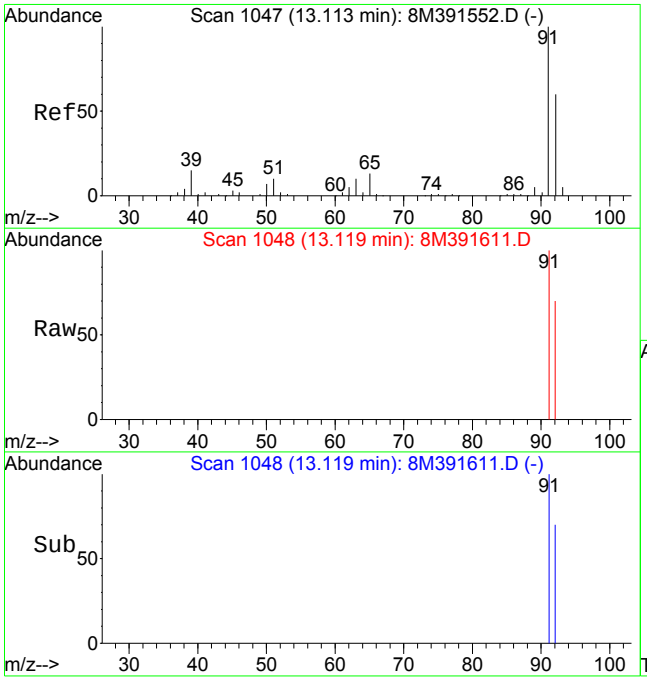

#59
Toluene
Concen: 0.12 ug/L
RT: 13.12 min Scan# 1048
Delta R.T. -0.01 min
Lab File: 8M391611.D
Acq: 15 Oct 2013 18:21

Tgt Ion: 91 Resp: 3239

Ion	Ratio	Lower	Upper
91	100		
92	63.0	36.4	84.8

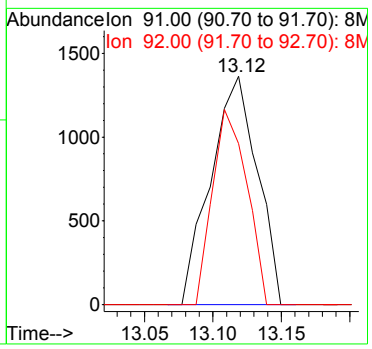

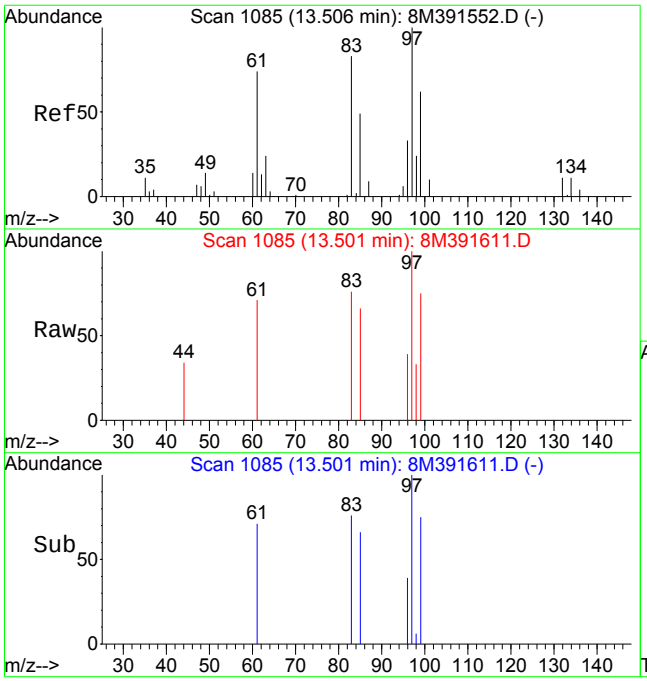

#63
1,1,2-Trichloroethane
Concen: 0.51 ug/L
RT: 13.50 min Scan# 1085
Delta R.T. -0.01 min
Lab File: 8M391611.D
Acq: 15 Oct 2013 18:21

Tgt Ion: 97 Resp: 2397

Ion	Ratio	Lower	Upper
97	100		
83	79.3	45.8	107.0

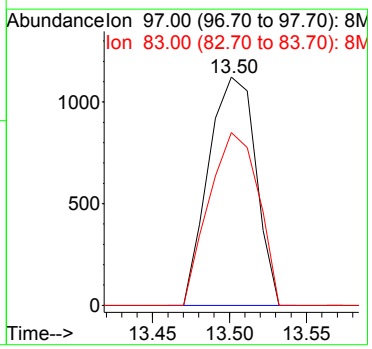

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391572.D Vial: 15
Acq On : 14 Oct 2013 19:08 Operator: TMB
Sample : L13100266-06 A ER 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 11:00:58 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	675140	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	524651	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	305466	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.99	111	180683	23.5357 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.16%		
43) 1,2-Dichloroethane-d4	10.63	65	205678	22.8532 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.40%		
58) Toluene-d8	13.02	98	600547	24.0331 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.12%		
80) p-Bromofluorobenzene	16.41	95	247123	23.2873 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.16%		

Target Compounds					Qvalue
3) Chloromethane	3.86	50	2550	0.2654 ug/L #	75
13) Acetone	6.58	43	3162	1.9691 ug/L #	48
15) Tert-Butyl Alcohol	6.93	59	229	0.6520 ug/L #	55
33) Chloroform	9.71	83	2282	0.1675 ug/L	96
36) Tetrahydrofuran	9.96	42	1081	0.5889 ug/L #	34
56) Dimethyl Disulfide	13.02	94	17787	1.5470 ug/L #	28
100) Naphthalene	21.00	128	4318	0.1797 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M391572.D 8260WT.M Tue Oct 15 11:00:59 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391572.D Vial: 15
Acq On : 14 Oct 2013 19:08 Operator: TMB
Sample : L13100266-06 A ER 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 11:00 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

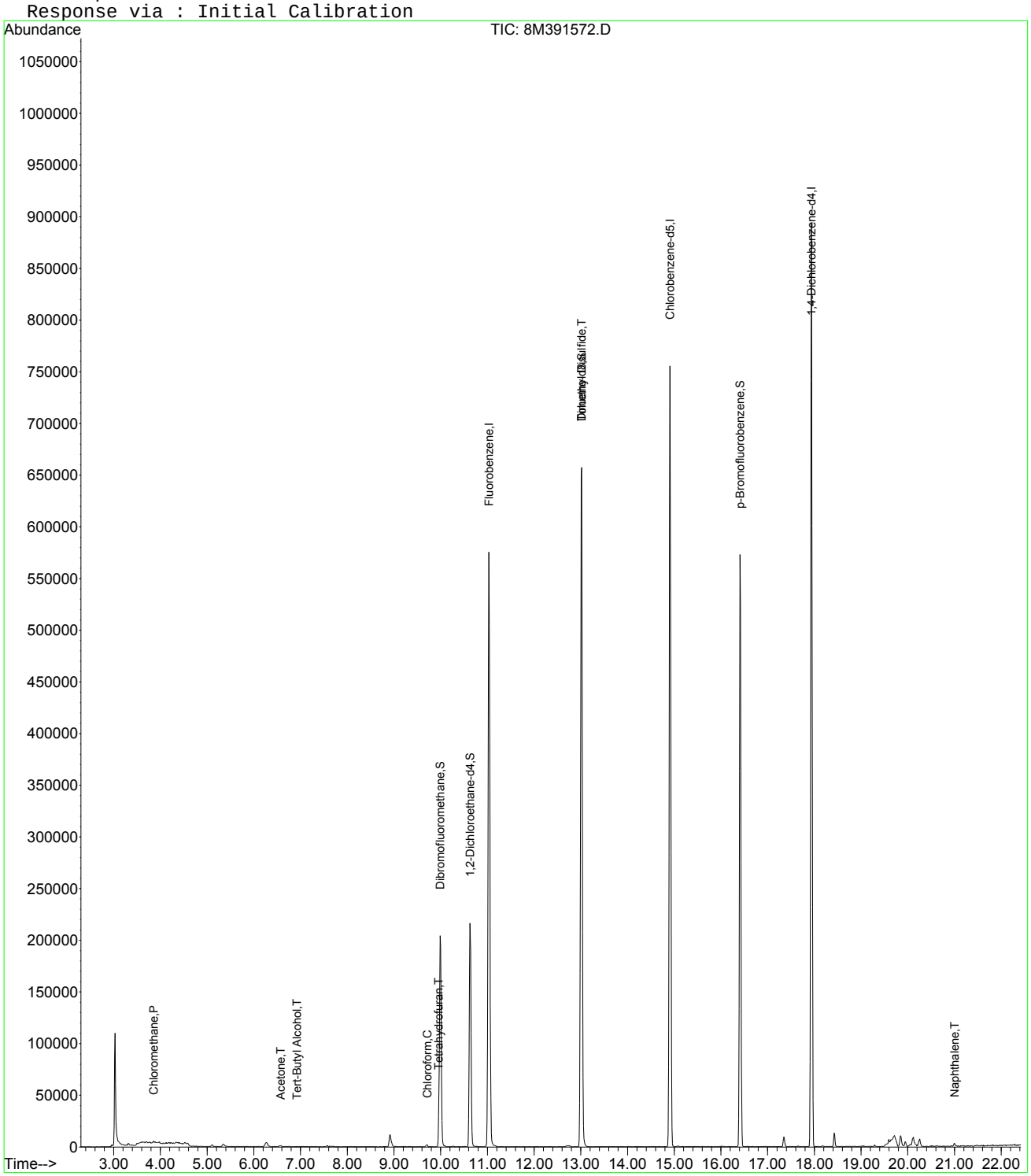

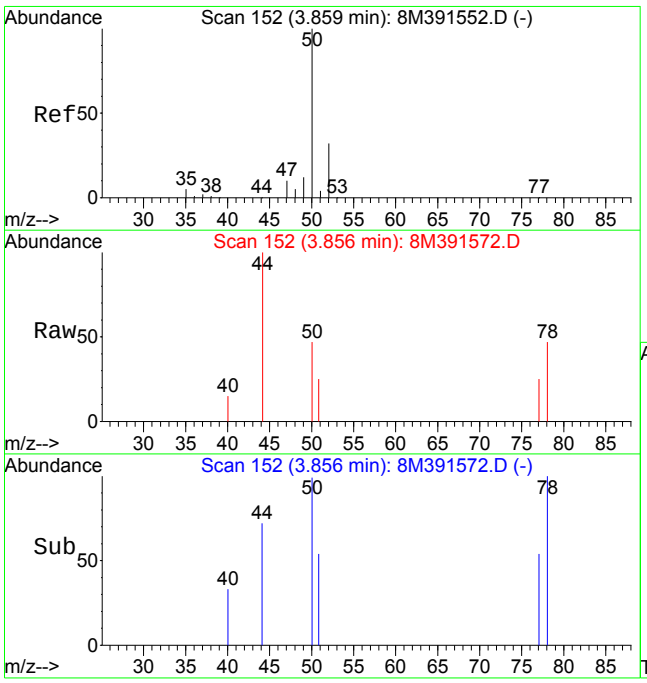

#3
Chloromethane
Concen: 0.27 ug/L
RT: 3.86 min Scan# 152
Delta R.T. 0.01 min
Lab File: 8M391572.D
Acq: 14 Oct 2013 19:08

Tgt Ion: 50 Resp: 2550

Ion	Ratio	Lower	Upper
50	100		
52	19.1	19.8	46.2#

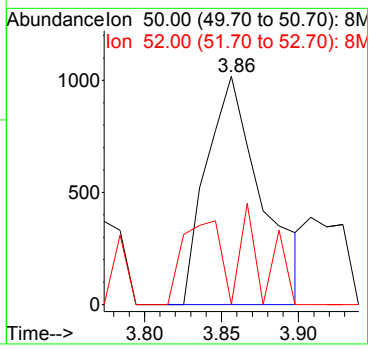

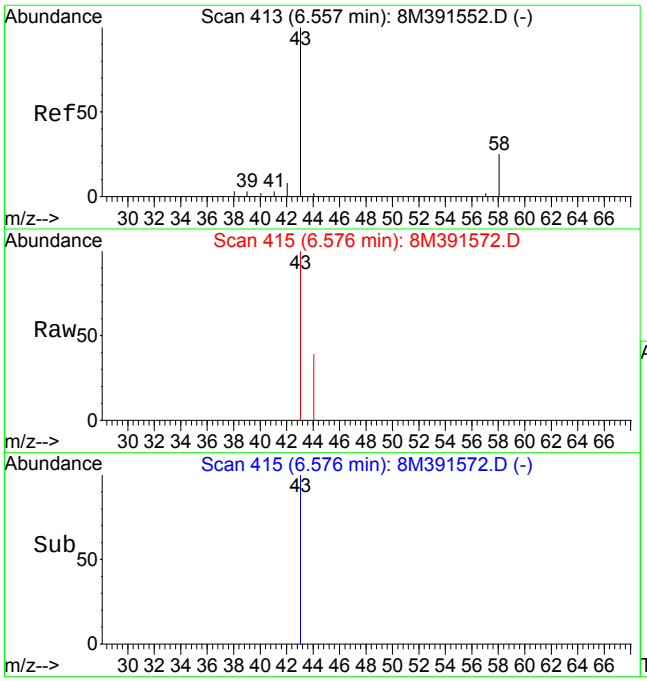

#13
Acetone
Concen: 1.97 ug/L
RT: 6.58 min Scan# 415
Delta R.T. 0.00 min
Lab File: 8M391572.D
Acq: 14 Oct 2013 19:08

Tgt Ion: 43 Resp: 3162

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

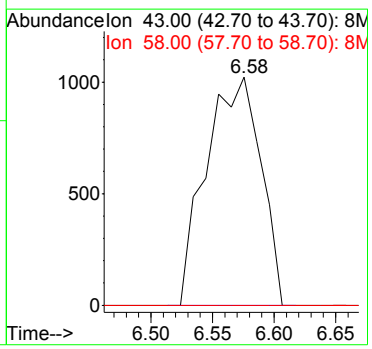

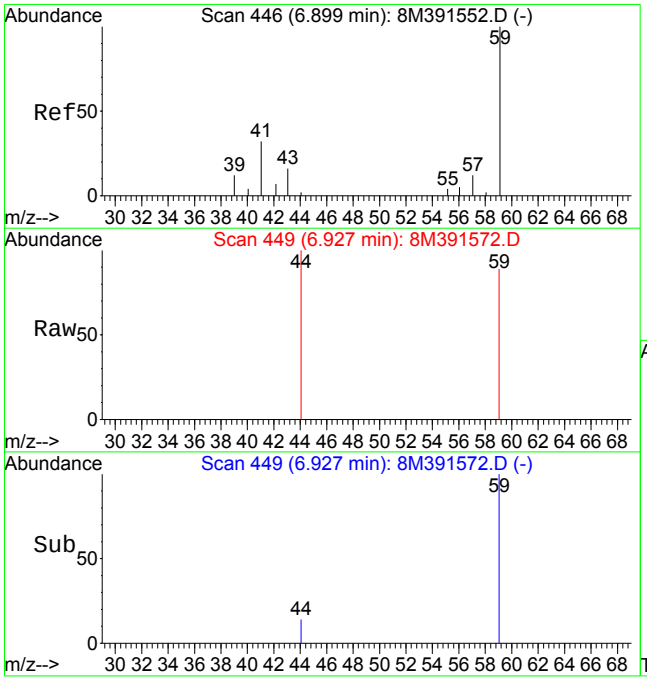

#15
Tert-Butyl Alcohol
Concen: 0.65 ug/L
RT: 6.93 min Scan# 449
Delta R.T. 0.01 min
Lab File: 8M391572.D
Acq: 14 Oct 2013 19:08

Tgt Ion: 59 Resp: 229

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.8	37.0#
57	0.0	6.5	15.3#

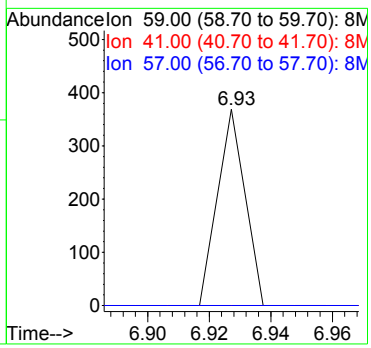

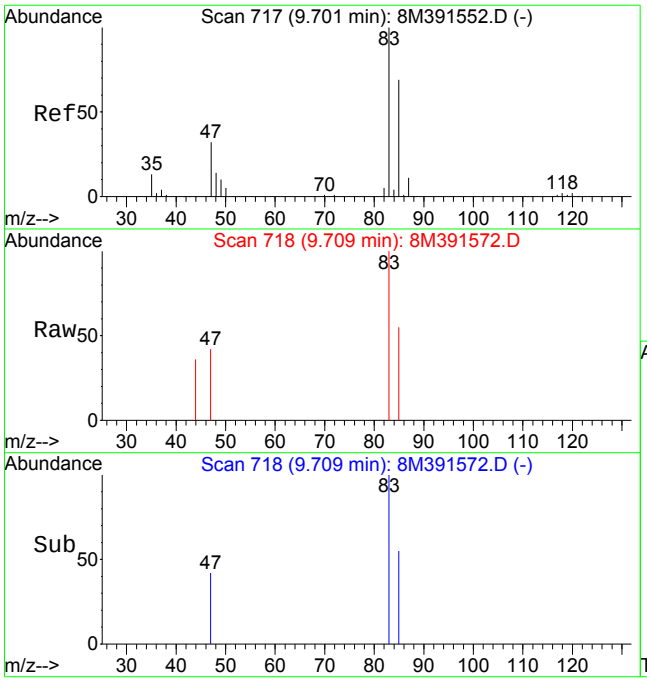

#33
Chloroform
Concen: 0.17 ug/L
RT: 9.71 min Scan# 718
Delta R.T. -0.01 min
Lab File: 8M391572.D
Acq: 14 Oct 2013 19:08

Tgt Ion: 83 Resp: 2282

Ion	Ratio	Lower	Upper
83	100		
85	63.4	40.1	93.7

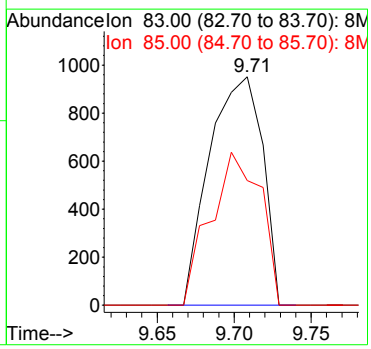

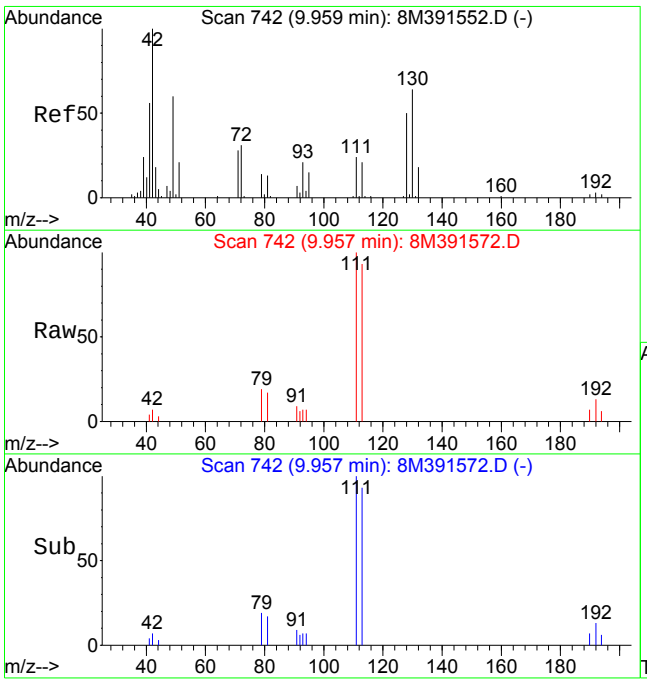

#36
Tetrahydrofuran
Concen: 0.59 ug/L
RT: 9.96 min Scan# 742
Delta R.T. -0.01 min
Lab File: 8M391572.D
Acq: 14 Oct 2013 19:08

Tgt Ion: 42 Resp: 1081

Ion	Ratio	Lower	Upper
42	100		
72	0.0	25.7	59.9#
71	0.0	24.4	57.0#

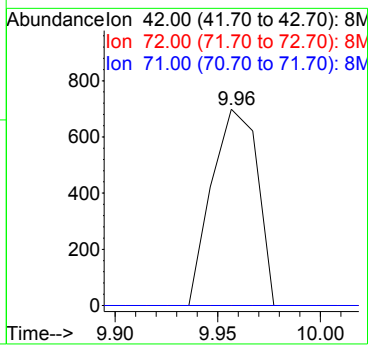

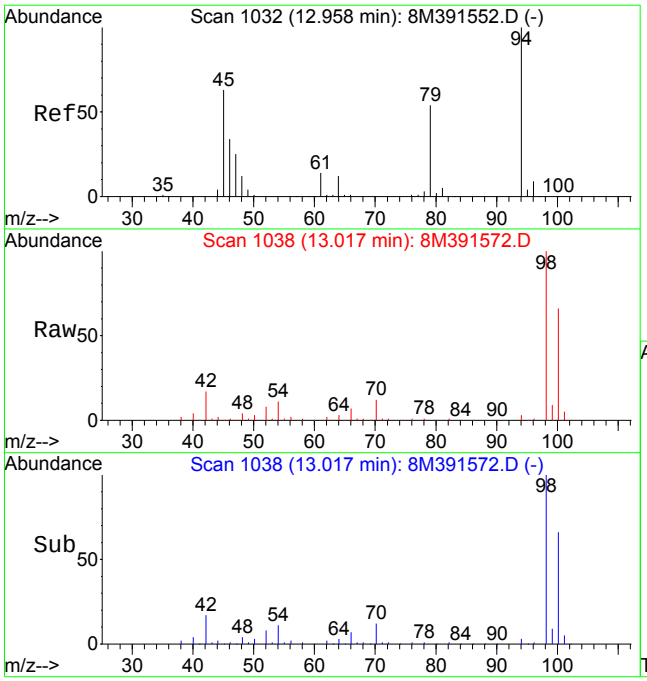

#56
Dimethyl Disulfide
Concen: 1.55 ug/L
RT: 13.02 min Scan# 1038
Delta R.T. 0.04 min
Lab File: 8M391572.D
Acq: 14 Oct 2013 19:08

Tgt Ion: 94 Resp: 17787

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

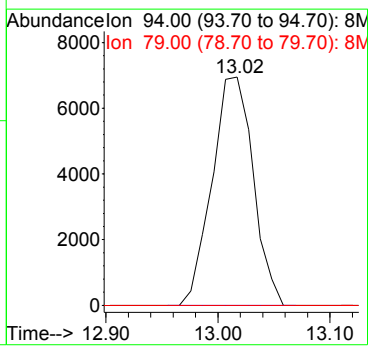

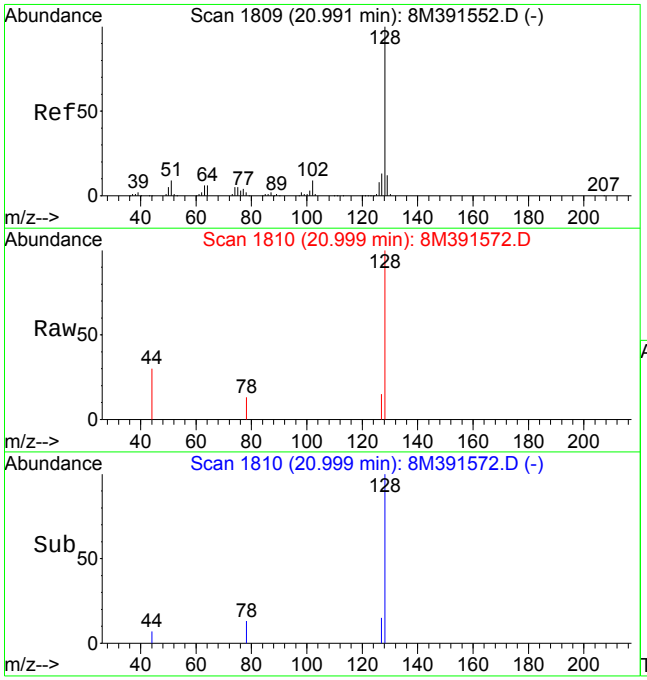

#100
Naphthalene
Concen: 0.18 ug/L
RT: 21.00 min Scan# 1810
Delta R.T. -0.01 min
Lab File: 8M391572.D
Acq: 14 Oct 2013 19:08

Tgt Ion:128 Resp: 4318

Ion	Ratio	Lower	Upper
128	100		
127	9.7	7.6	17.8

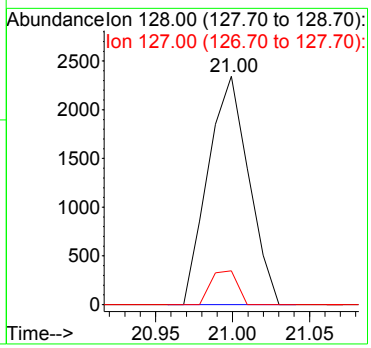

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101513\8M391603.D Vial: 16
Acq On : 15 Oct 2013 14:06 Operator: TMB
Sample : L13100266-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 17:52:53 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	665909	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	523259	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	310778	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.99	111	177002	23.3758 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.52%		
43) 1,2-Dichloroethane-d4	10.63	65	205438	23.1430 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.56%		
58) Toluene-d8	13.02	98	597169	23.9614 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.84%		
80) p-Bromofluorobenzene	16.41	95	244968	22.6896 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.76%		

Target Compounds

					Qvalue
3) Chloromethane	3.86	50	5085	0.5365 ug/L	84
4) Vinyl Chloride	4.11	62	1488	0.1836 ug/L	86
13) Acetone	6.57	43	53200	33.5897 ug/L	92
14) 1,1-Dichloroethene	6.79	61	521477	42.7719 ug/L	84
27) 1,1-Dichloroethane	8.66	63	141647	10.5968 ug/L	98
29) 2-Butanone	9.20	43	2205	0.8702 ug/L #	52
36) Tetrahydrofuran	9.97	42	1252	0.6916 ug/L #	34
45) 1,2-Dichloroethane	10.75	62	8818	0.7992 ug/L	99
51) 1,4-Dioxane	12.05	88	2411	73.8003 ug/L	85
56) Dimethyl Disulfide	13.01	94	17960	1.5837 ug/L #	28
59) Toluene	13.12	91	4642	0.1691 ug/L	89
85) 1,3,5-Trimethylbenzene	16.70	105	3984	0.1397 ug/L #	49

(#) = qualifier out of range (m) = manual integration
8M391603.D 8260WT.M Tue Oct 15 17:52:54 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101513\8M391603.D Vial: 16
Acq On : 15 Oct 2013 14:06 Operator: TMB
Sample : L13100266-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 17:52 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

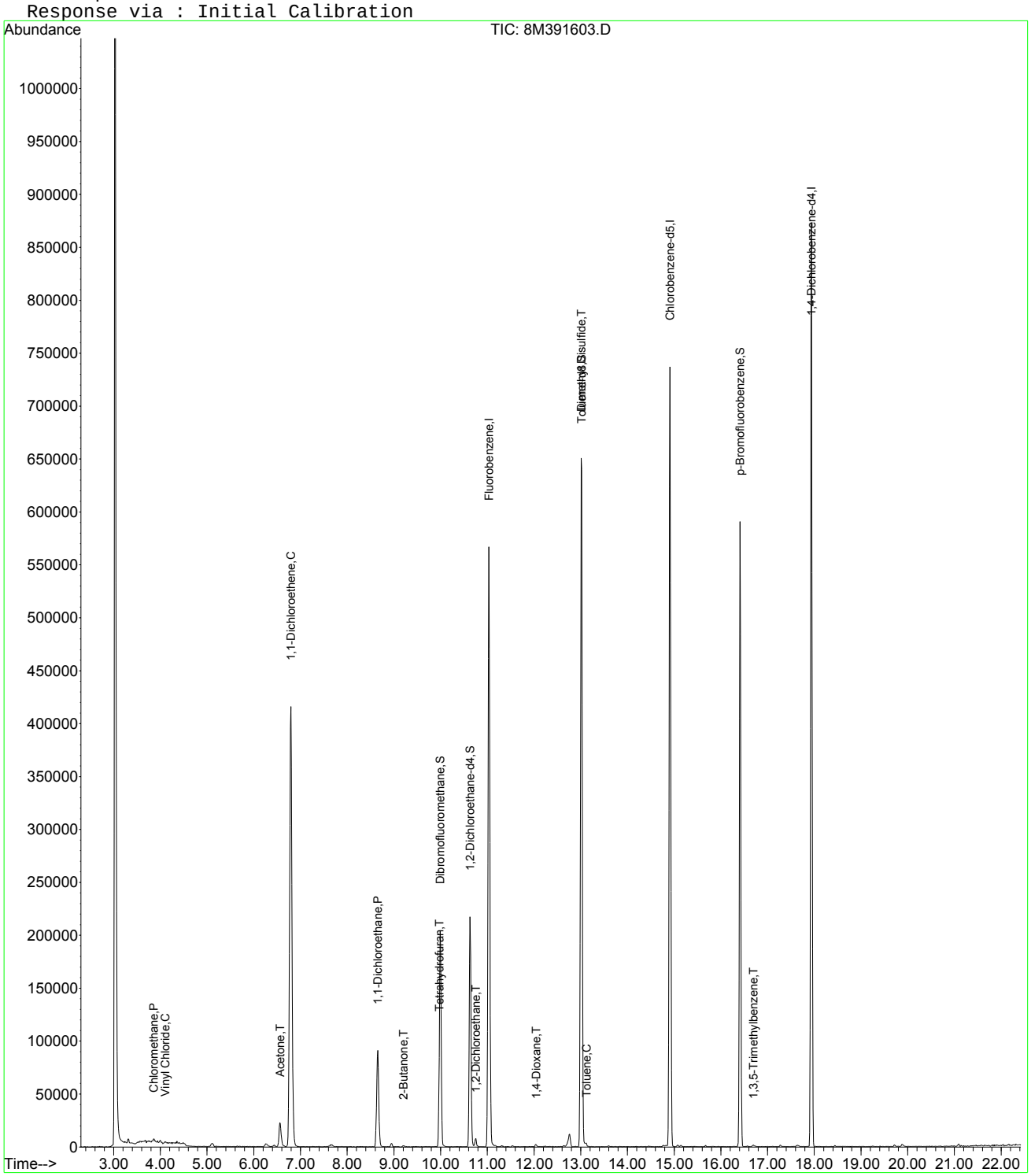

8M391603.D 8260WT.M Tue Oct 15 17:52:54 2013 Page 2

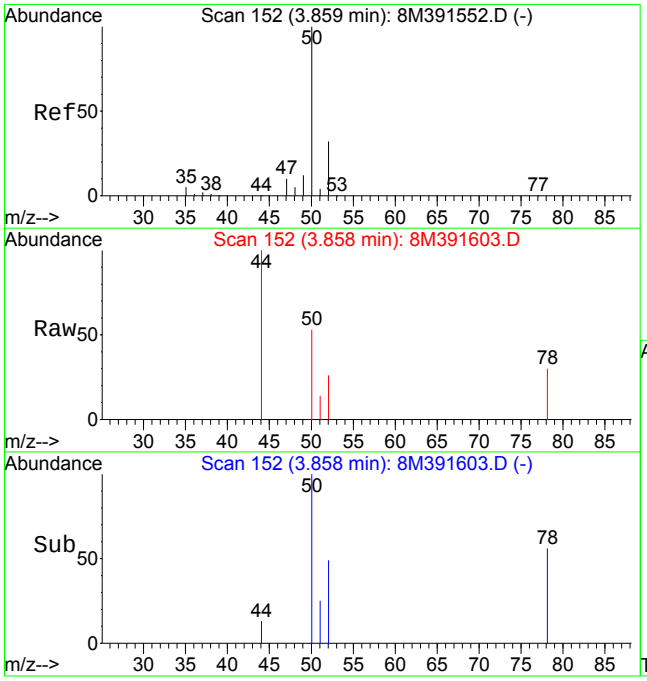

#3
Chloromethane
Concen: 0.54 ug/L
RT: 3.86 min Scan# 152
Delta R.T. 0.01 min
Lab File: 8M391603.D
Acq: 15 Oct 2013 14:06

Tgt Ion: 50 Resp: 5085

Ion	Ratio	Lower	Upper
50	100		
52	41.8	19.8	46.2

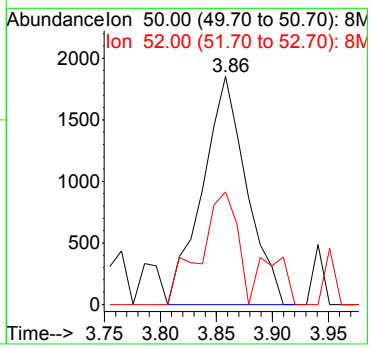

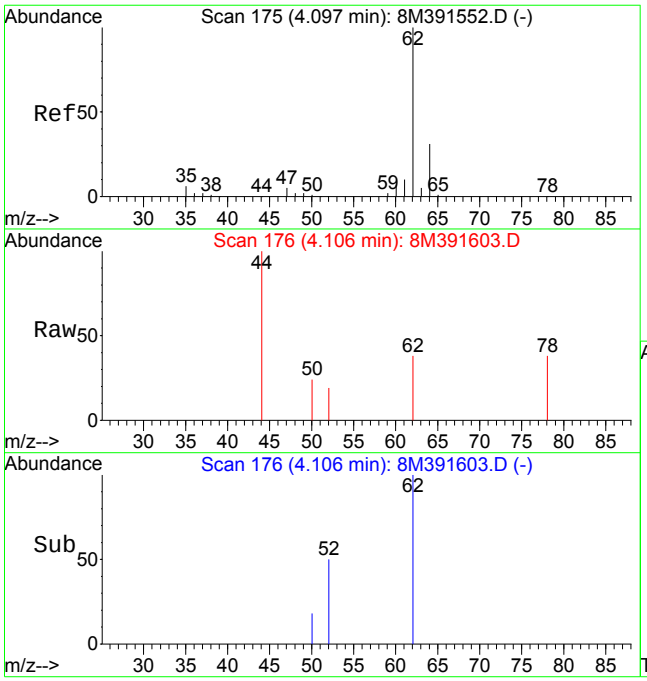

#4
Vinyl Chloride
Concen: 0.18 ug/L
RT: 4.11 min Scan# 176
Delta R.T. -0.01 min
Lab File: 8M391603.D
Acq: 15 Oct 2013 14:06

Tgt Ion: 62 Resp: 1488

Ion	Ratio	Lower	Upper
62	100		
64	25.8	20.1	46.9

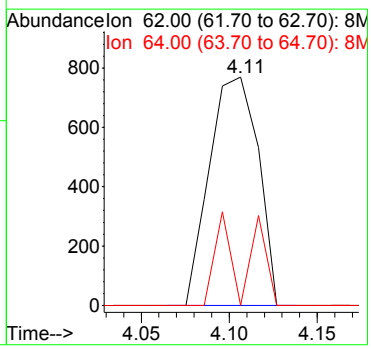

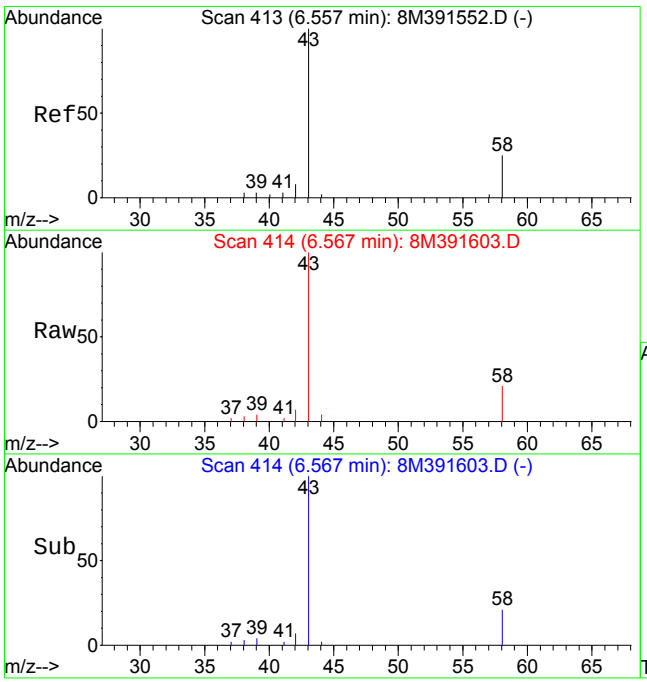

#13
Acetone
Concen: 33.59 ug/L
RT: 6.57 min Scan# 414
Delta R.T. -0.01 min
Lab File: 8M391603.D
Acq: 15 Oct 2013 14:06

Tgt Ion: 43 Resp: 53200

Ion	Ratio	Lower	Upper
43	100		
58	22.5	16.1	37.7

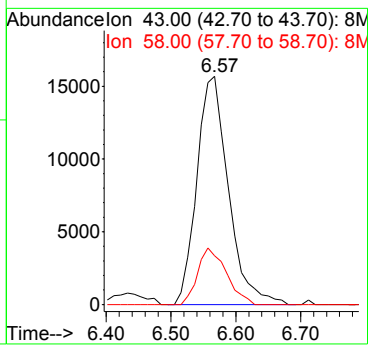

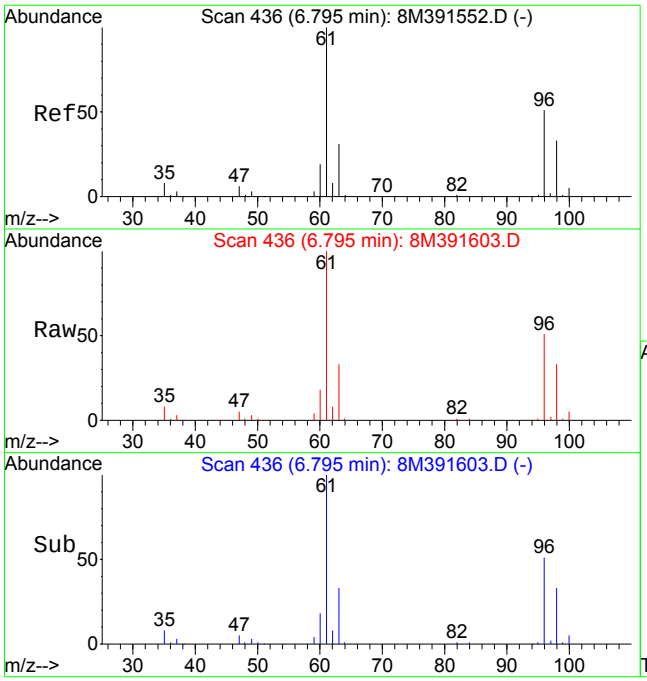

#14
1,1-Dichloroethene
Concen: 42.77 ug/L
RT: 6.79 min Scan# 436
Delta R.T. -0.01 min
Lab File: 8M391603.D
Acq: 15 Oct 2013 14:06

Tgt Ion: 61 Resp: 521477

Ion	Ratio	Lower	Upper
61	100		
96	50.3	37.4	87.2

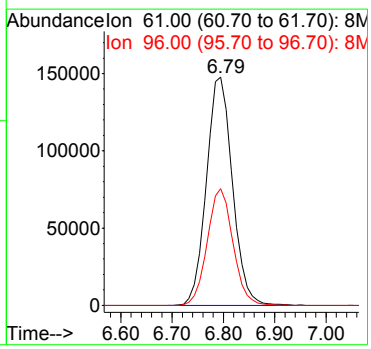

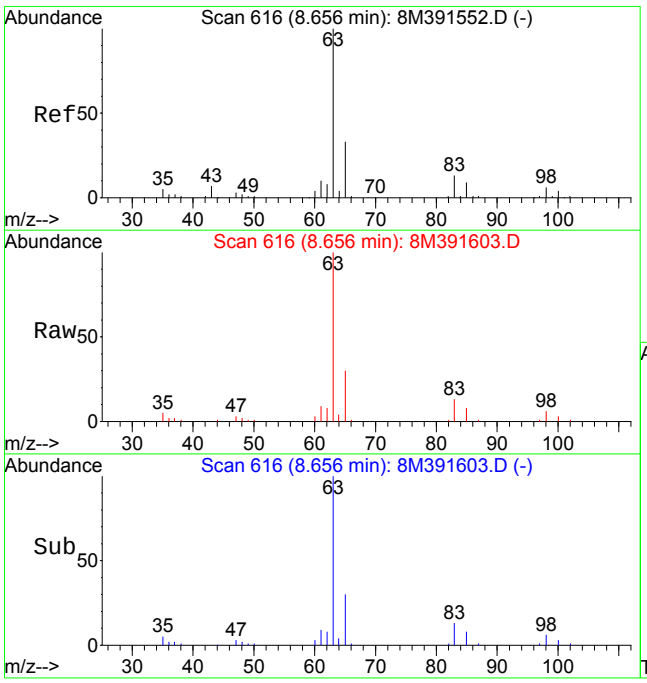

#27
1,1-Dichloroethane
Concen: 10.60 ug/L
RT: 8.66 min Scan# 616
Delta R.T. -0.01 min
Lab File: 8M391603.D
Acq: 15 Oct 2013 14:06

Tgt Ion: 63 Resp: 141647

Ion	Ratio	Lower	Upper
63	100		
65	31.7	19.6	45.6
83	12.7	8.6	20.0

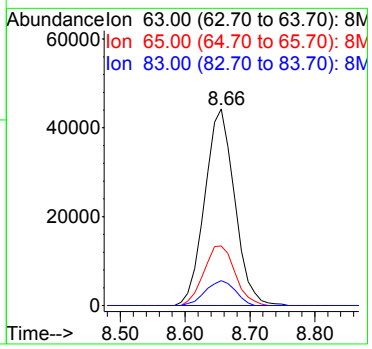

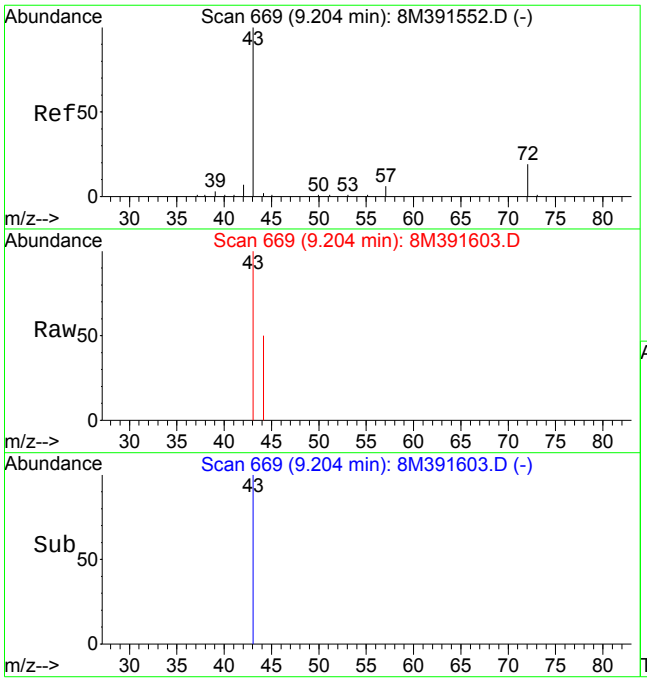

#29
2-Butanone
Concen: 0.87 ug/L
RT: 9.20 min Scan# 669
Delta R.T. -0.02 min
Lab File: 8M391603.D
Acq: 15 Oct 2013 14:06

Tgt Ion: 43 Resp: 2205

Ion	Ratio	Lower	Upper
43	100		
72	0.0	14.1	32.9#

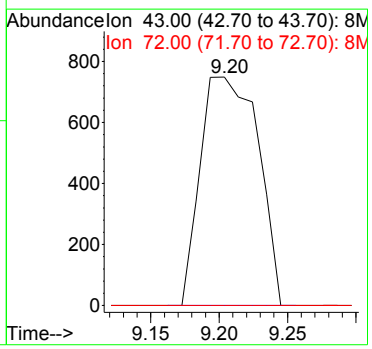

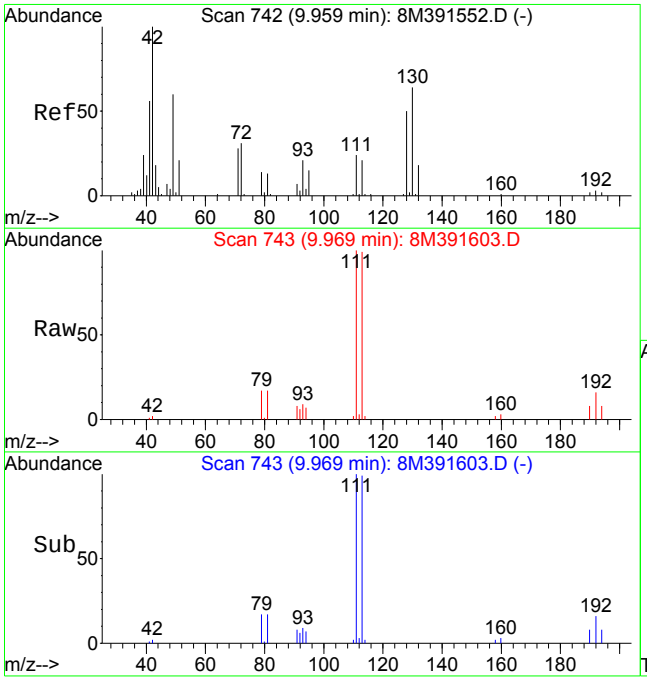

#36
Tetrahydrofuran
Concen: 0.69 ug/L
RT: 9.97 min Scan# 743
Delta R.T. 0.00 min
Lab File: 8M391603.D
Acq: 15 Oct 2013 14:06

Tgt Ion: 42 Resp: 1252

Ion	Ratio	Lower	Upper
42	100		
72	0.0	25.7	59.9#
71	0.0	24.4	57.0#

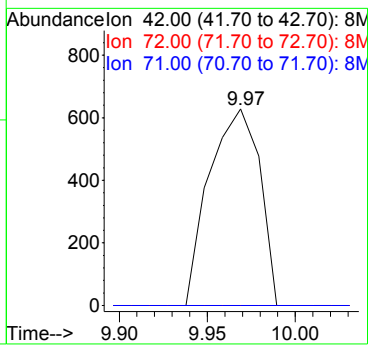

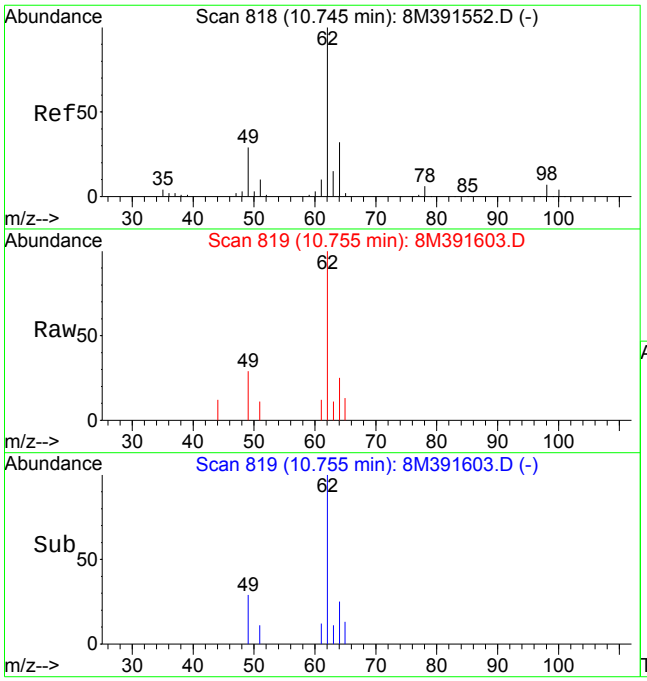

#45
1,2-Dichloroethane
Concen: 0.80 ug/L
RT: 10.75 min Scan# 819
Delta R.T. -0.01 min
Lab File: 8M391603.D
Acq: 15 Oct 2013 14:06

Tgt Ion: 62 Resp: 8818

Ion	Ratio	Lower	Upper
62	100		
64	32.6	19.9	46.5
49	31.4	19.4	45.2

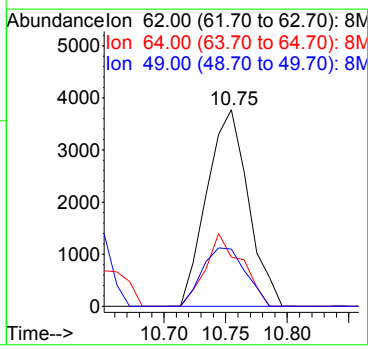

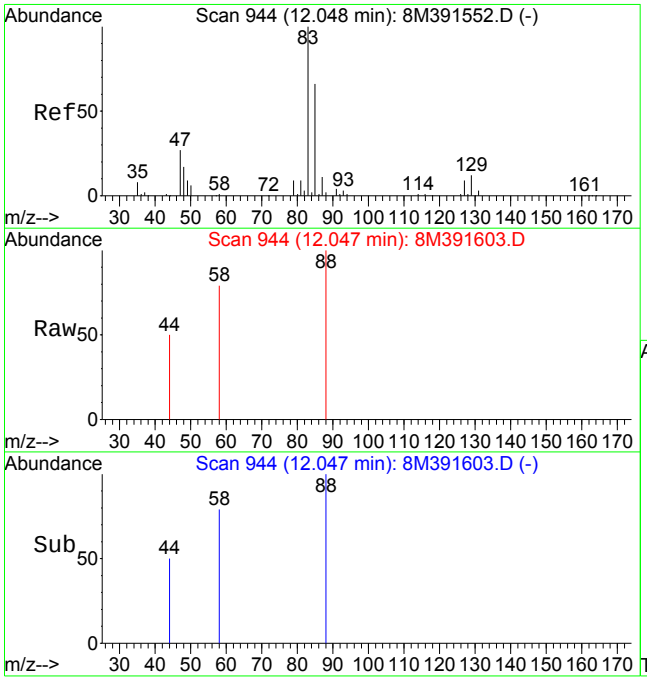

#51
1,4-Dioxane
Concen: 73.80 ug/L
RT: 12.05 min Scan# 944
Delta R.T. -0.01 min
Lab File: 8M391603.D
Acq: 15 Oct 2013 14:06

Tgt Ion: 88 Resp: 2411

Ion	Ratio	Lower	Upper
88	100		
58	70.3	35.3	82.3

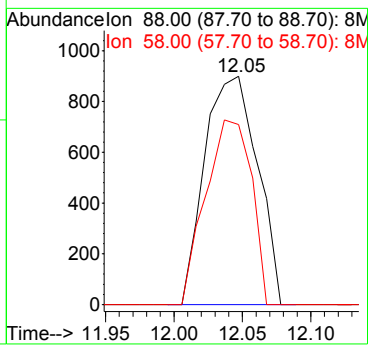

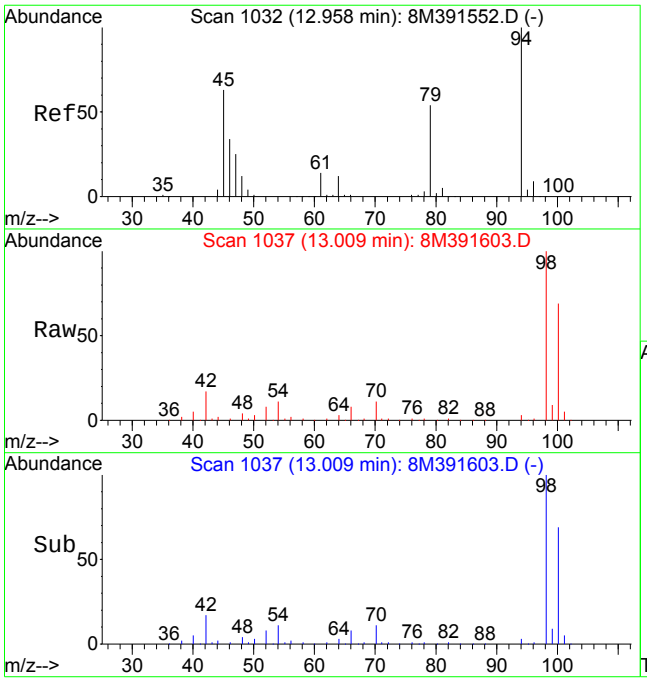

#56
Dimethyl Disulfide
Concen: 1.58 ug/L
RT: 13.01 min Scan# 1037
Delta R.T. 0.03 min
Lab File: 8M391603.D
Acq: 15 Oct 2013 14:06

Tgt Ion: 94 Resp: 17960

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

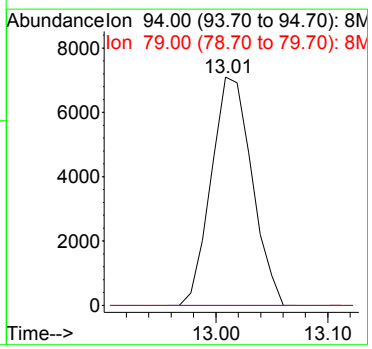

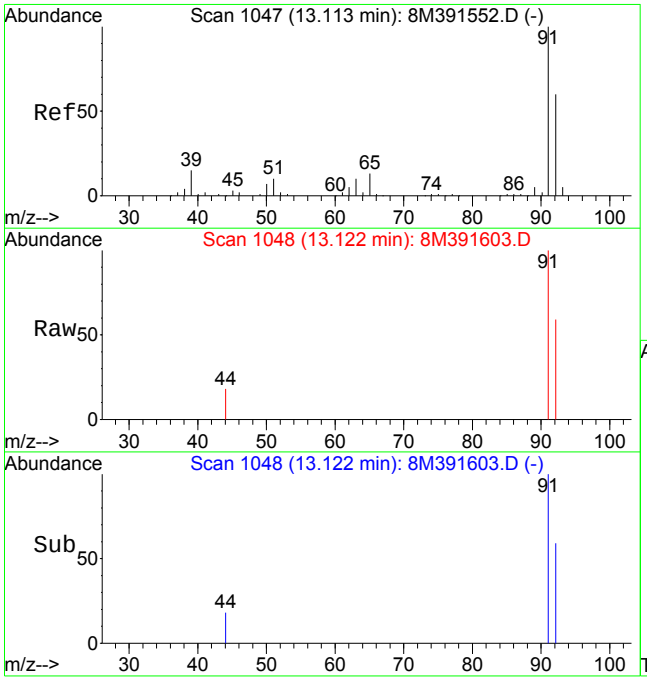

#59
Toluene
Concen: 0.17 ug/L
RT: 13.12 min Scan# 1048
Delta R.T. -0.01 min
Lab File: 8M391603.D
Acq: 15 Oct 2013 14:06

Tgt Ion: 91 Resp: 4642

Ion	Ratio	Lower	Upper
91	100		
92	52.3	36.4	84.8

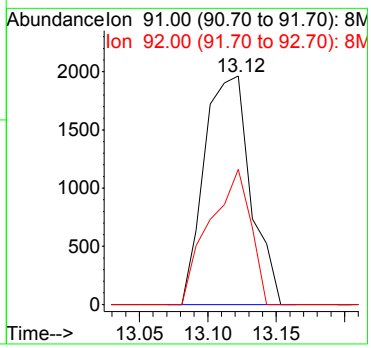

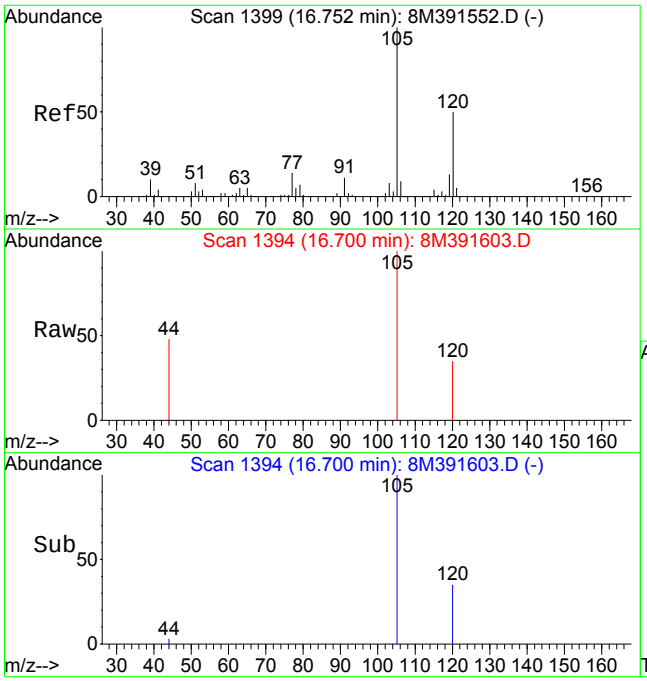

#85
1,3,5-Trimethylbenzene
Concen: 0.14 ug/L
RT: 16.70 min Scan# 1394
Delta R.T. -0.07 min
Lab File: 8M391603.D
Acq: 15 Oct 2013 14:06

Tgt Ion:105 Resp: 3984

Ion	Ratio	Lower	Upper
105	100		
120	16.8	32.0	74.8#

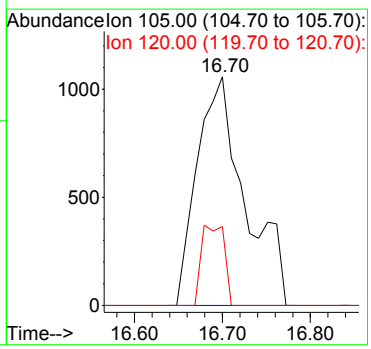

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391565.D Vial: 8
Acq On : 14 Oct 2013 15:31 Operator: TMB
Sample : L13100266-08 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 10:59:52 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	701955	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	548811	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	311945	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.99	111	186795	23.4023 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.60%		
43) 1,2-Dichloroethane-d4	10.63	65	212250	22.6826 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.72%		
58) Toluene-d8	13.01	98	634751	24.2836 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.12%		
80) p-Bromofluorobenzene	16.41	95	256370	23.6569 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.64%		

Target Compounds

					Qvalue
3) Chloromethane	3.86	50	2759	0.2761 ug/L #	45
13) Acetone	6.56	43	3498	2.0952 ug/L #	48
36) Tetrahydrofuran	9.96	42	1405	0.7362 ug/L #	34
56) Dimethyl Disulfide	13.02	94	18459	1.5441 ug/L #	28

(#) = qualifier out of range (m) = manual integration
8M391565.D 8260WT.M Tue Oct 15 10:59:53 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391565.D Vial: 8
Acq On : 14 Oct 2013 15:31 Operator: TMB
Sample : L13100266-08 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 10:59 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

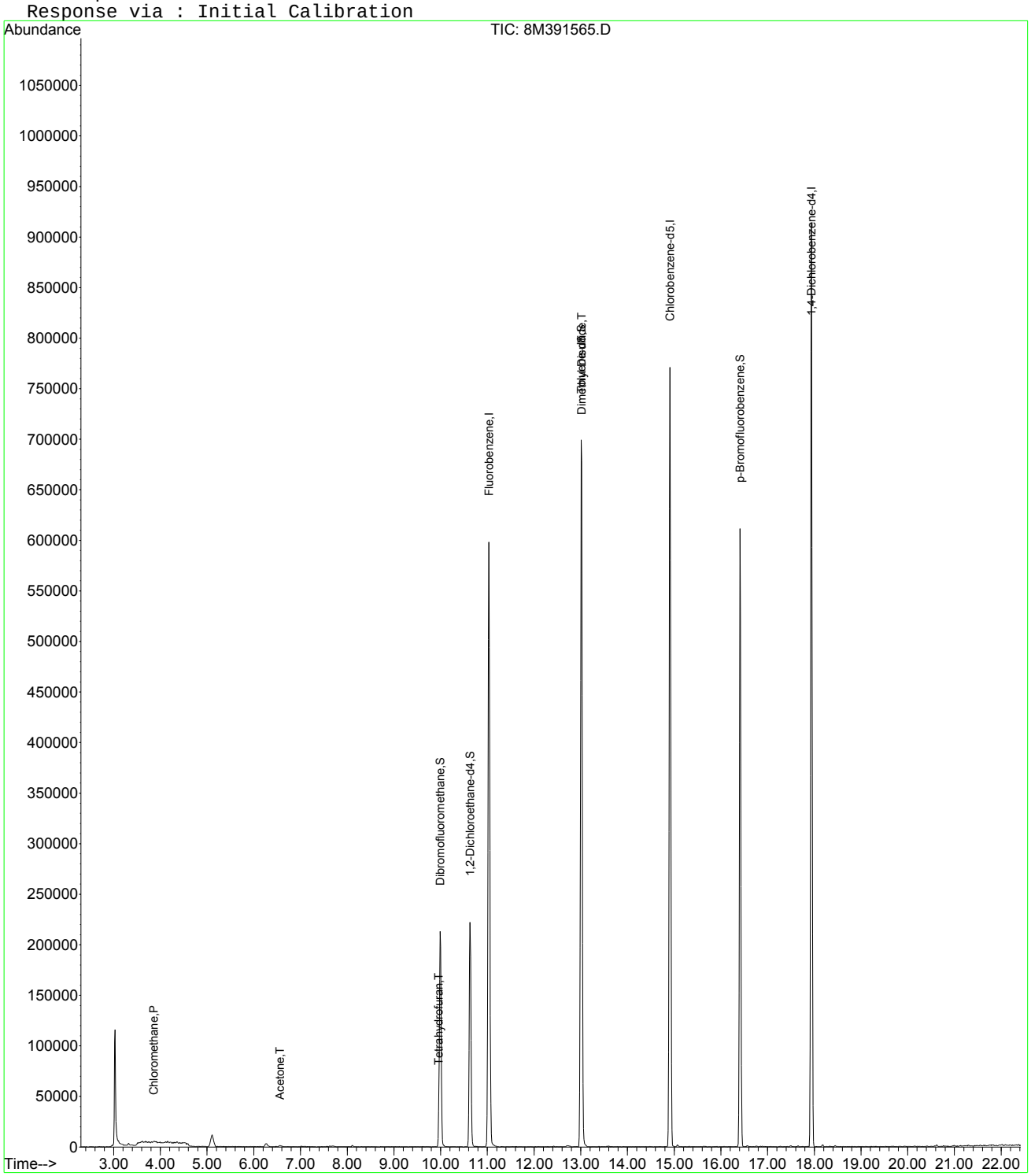

8M391565.D 8260WT.M Tue Oct 15 10:59:53 2013 Page 2

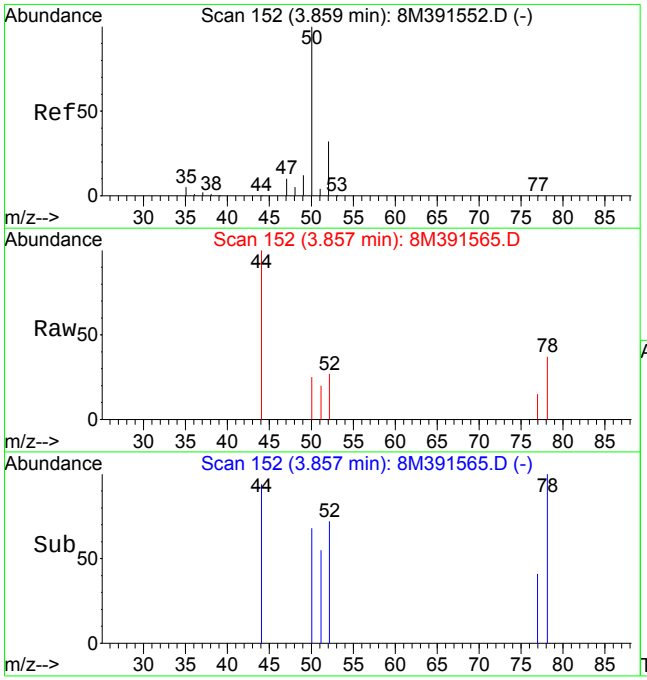

#3
Chloromethane
Concen: 0.28 ug/L
RT: 3.86 min Scan# 152
Delta R.T. 0.01 min
Lab File: 8M391565.D
Acq: 14 Oct 2013 15:31

Tgt Ion: 50 Resp: 2759

Ion	Ratio	Lower	Upper
50	100		
52	63.9	19.8	46.2#

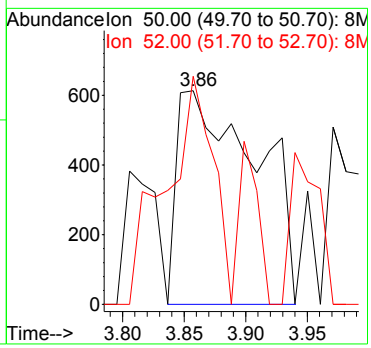

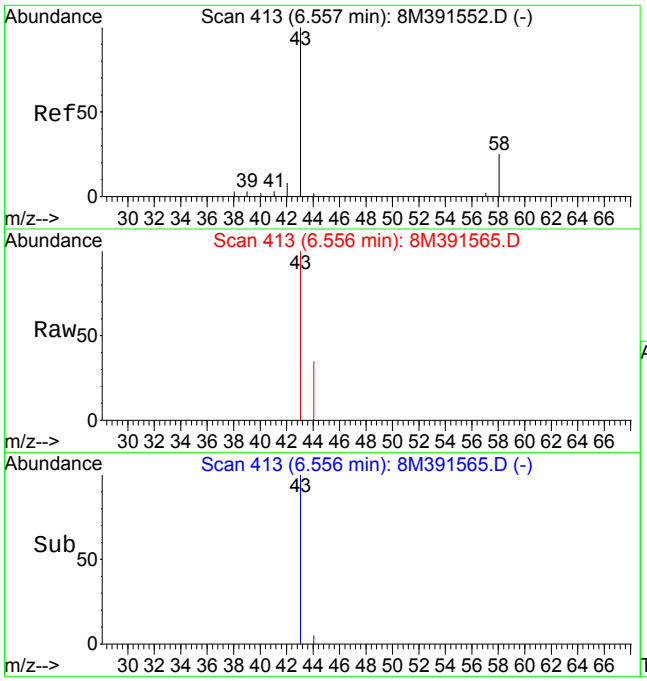

#13
Acetone
Concen: 2.10 ug/L
RT: 6.56 min Scan# 413
Delta R.T. -0.02 min
Lab File: 8M391565.D
Acq: 14 Oct 2013 15:31

Tgt Ion: 43 Resp: 3498

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

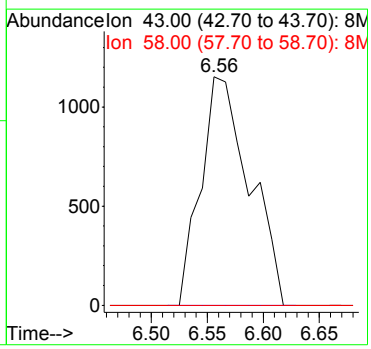

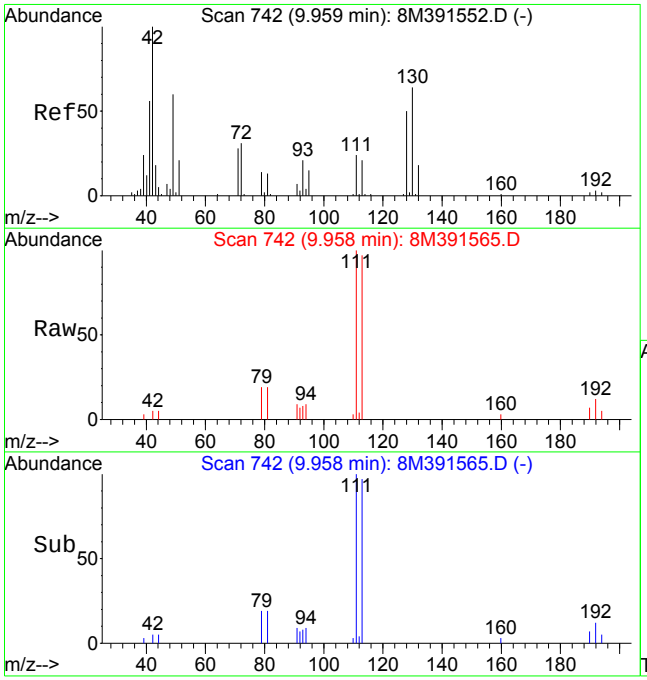

#36
Tetrahydrofuran
Concen: 0.74 ug/L
RT: 9.96 min Scan# 742
Delta R.T. -0.01 min
Lab File: 8M391565.D
Acq: 14 Oct 2013 15:31

Tgt Ion: 42 Resp: 1405

Ion	Ratio	Lower	Upper
42	100		
72	0.0	25.7	59.9#
71	0.0	24.4	57.0#

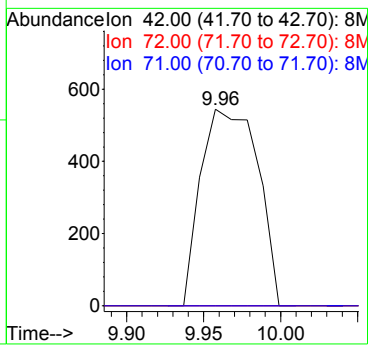

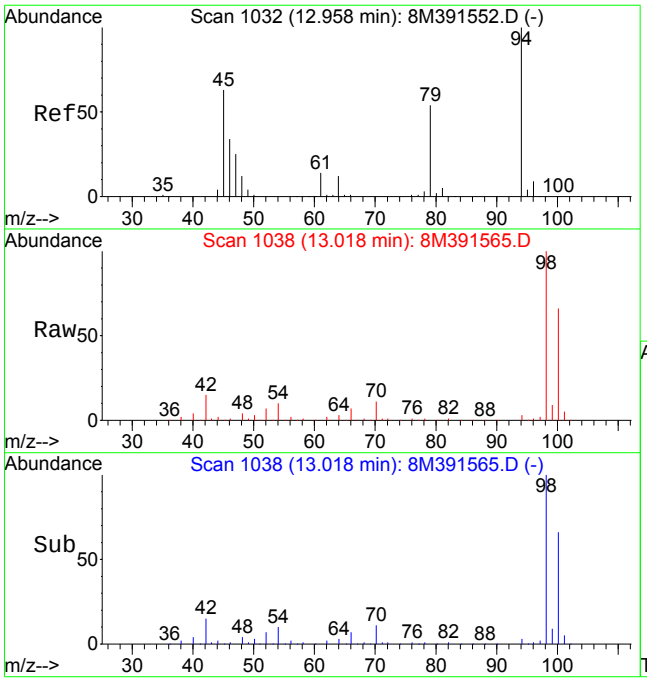

#56
Dimethyl Disulfide
Concen: 1.54 ug/L
RT: 13.02 min Scan# 1038
Delta R.T. 0.04 min
Lab File: 8M391565.D
Acq: 14 Oct 2013 15:31

Tgt Ion: 94 Resp: 18459

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

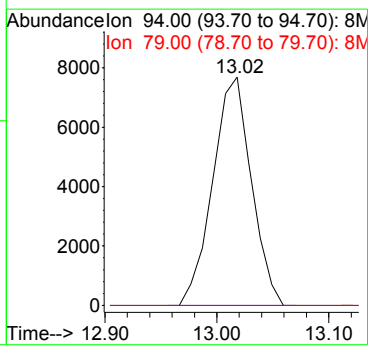

2.1.1.4 Standards Data

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390497.D Vial: 11
Acq On : 10 Sep 2013 20:06 Operator: TMB
Sample : WG444230-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 14:03:22 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 14:03:14 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	606224	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.93	117	517475	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.95	152	295810	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.03	41	2451	4.4376 ug/L	65
3) 3-Chloro-1-propene	7.41	41	50960	4.5309 ug/L	95
4) 2-Chloro-1,3-butadiene	8.80	53	46362	4.2803 ug/L	75
5) Ethyl Acetate	9.43	43	18108	4.4511 ug/L	88
6) Methacrylonitrile	9.59	67	7248	4.3320 ug/L	79
9) Methyl methacrylate	11.75	41	16793	3.9744 ug/L	88
10) 2-Nitropropane	12.09	43	4559	3.5432 ug/L	77

(#) = qualifier out of range (m) = manual integration
8M390497.D A9FOOWTR.M Thu Sep 19 09:29:31 2013 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390497.D Vial: 11
Acq On : 10 Sep 2013 20:06 Operator: TMB
Sample : WG444230-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 19 9:28 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Initial Calibration

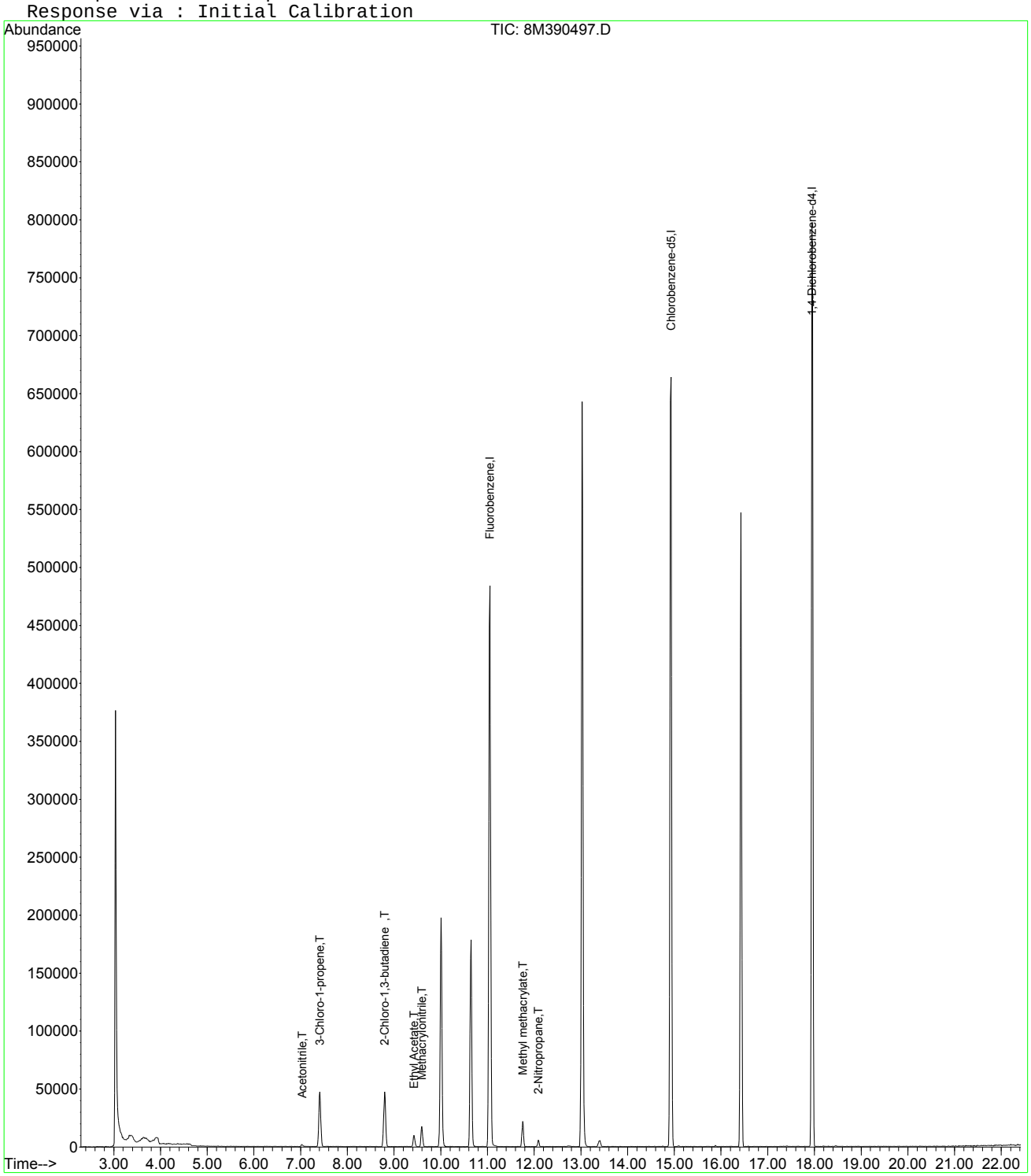

8M390497.D A9FOOWTR.M Thu Sep 19 09:29:52 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390498.D Vial: 12
Acq On : 10 Sep 2013 20:36 Operator: TMB
Sample : WG444230-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 08:36:55 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:35:33 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	591724	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.92	117	503888	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.95	152	287605	25.00 ug/L	0.00

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration
8M390498.D A9FOOWTR.M Wed Sep 11 08:36:55 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390498.D Vial: 12
Acq On : 10 Sep 2013 20:36 Operator: TMB
Sample : WG444230-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 8:36 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:35:33 2013
Response via : Initial Calibration

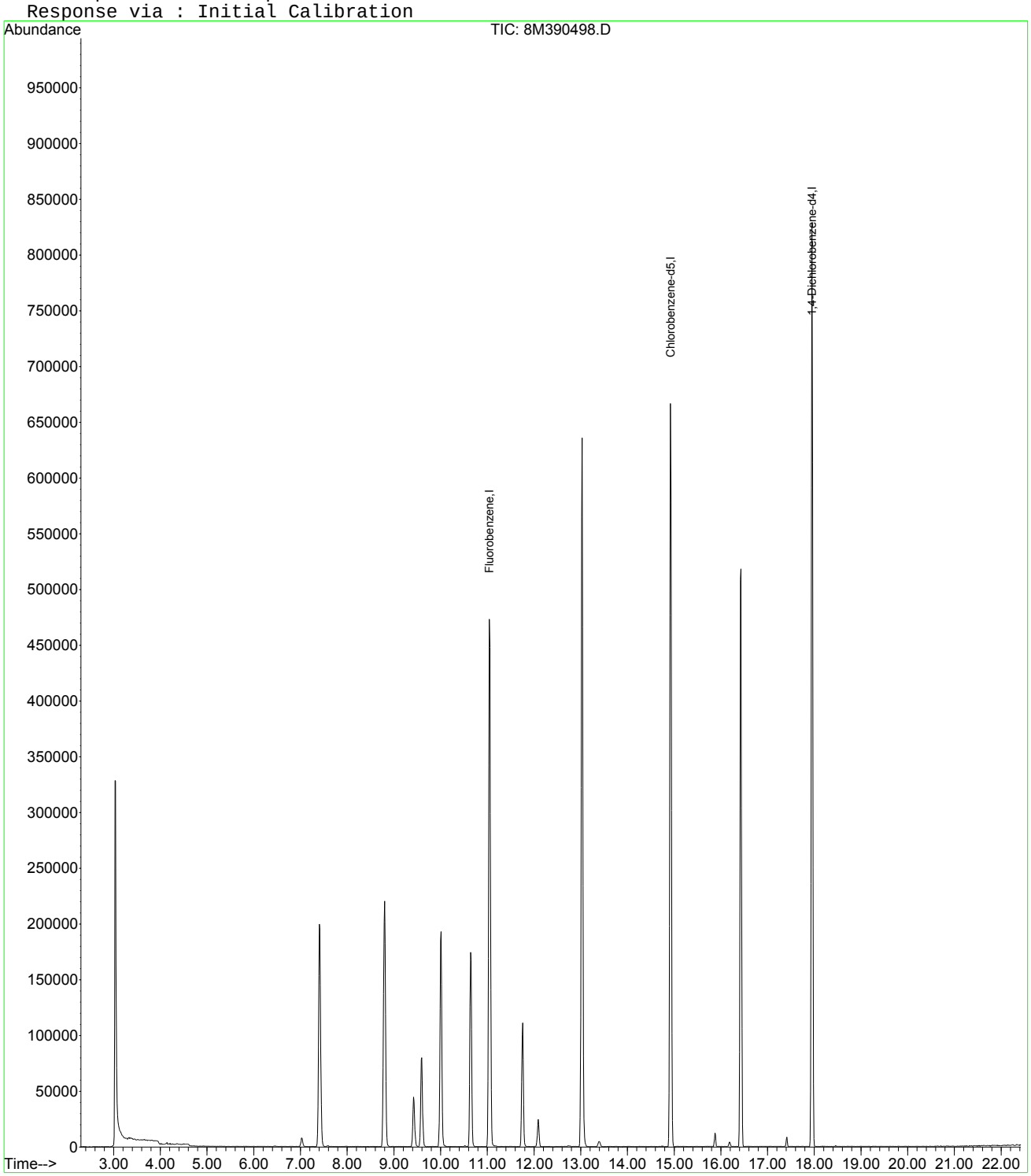

8M390498.D A9FOOWTR.M Wed Sep 11 08:36:55 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390499.D Vial: 13
Acq On : 10 Sep 2013 21:06 Operator: TMB
Sample : WG444230-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 08:36:56 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:35:33 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	584977	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.93	117	499352	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.95	152	290876	25.00 ug/L	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M390499.D A9FOOWTR.M Wed Sep 11 08:36:56 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390499.D Vial: 13
Acq On : 10 Sep 2013 21:06 Operator: TMB
Sample : WG444230-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 8:36 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:35:33 2013
Response via : Initial Calibration

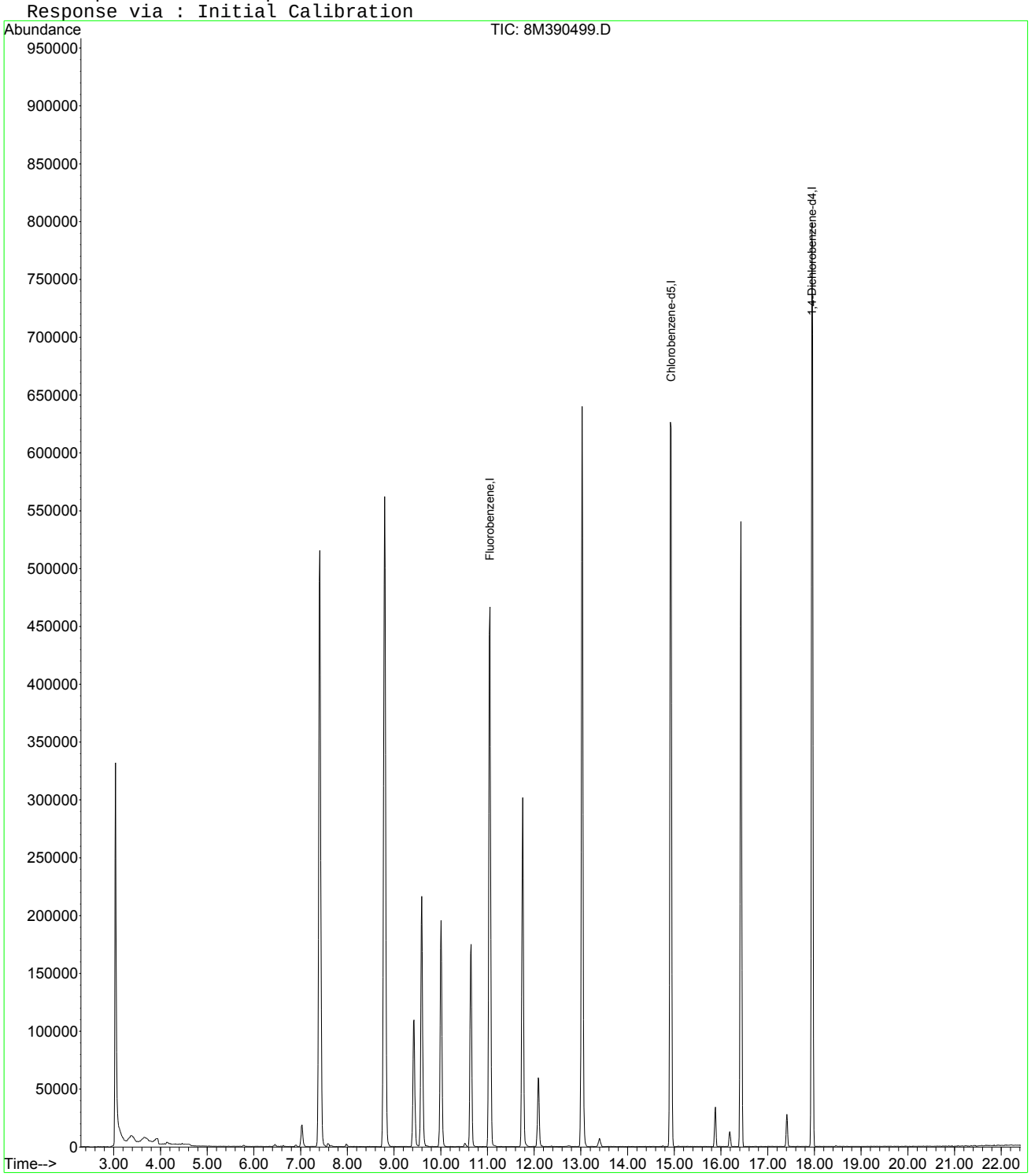

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390500.D Vial: 14
Acq On : 10 Sep 2013 21:35 Operator: TMB
Sample : WG444230-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 08:36:57 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:35:33 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	601905	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.93	117	508476	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.95	152	299215	25.00 ug/L	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M390500.D A9FOOWTR.M Wed Sep 11 08:36:57 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390500.D Vial: 14
Acq On : 10 Sep 2013 21:35 Operator: TMB
Sample : WG444230-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 8:36 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:35:33 2013
Response via : Initial Calibration

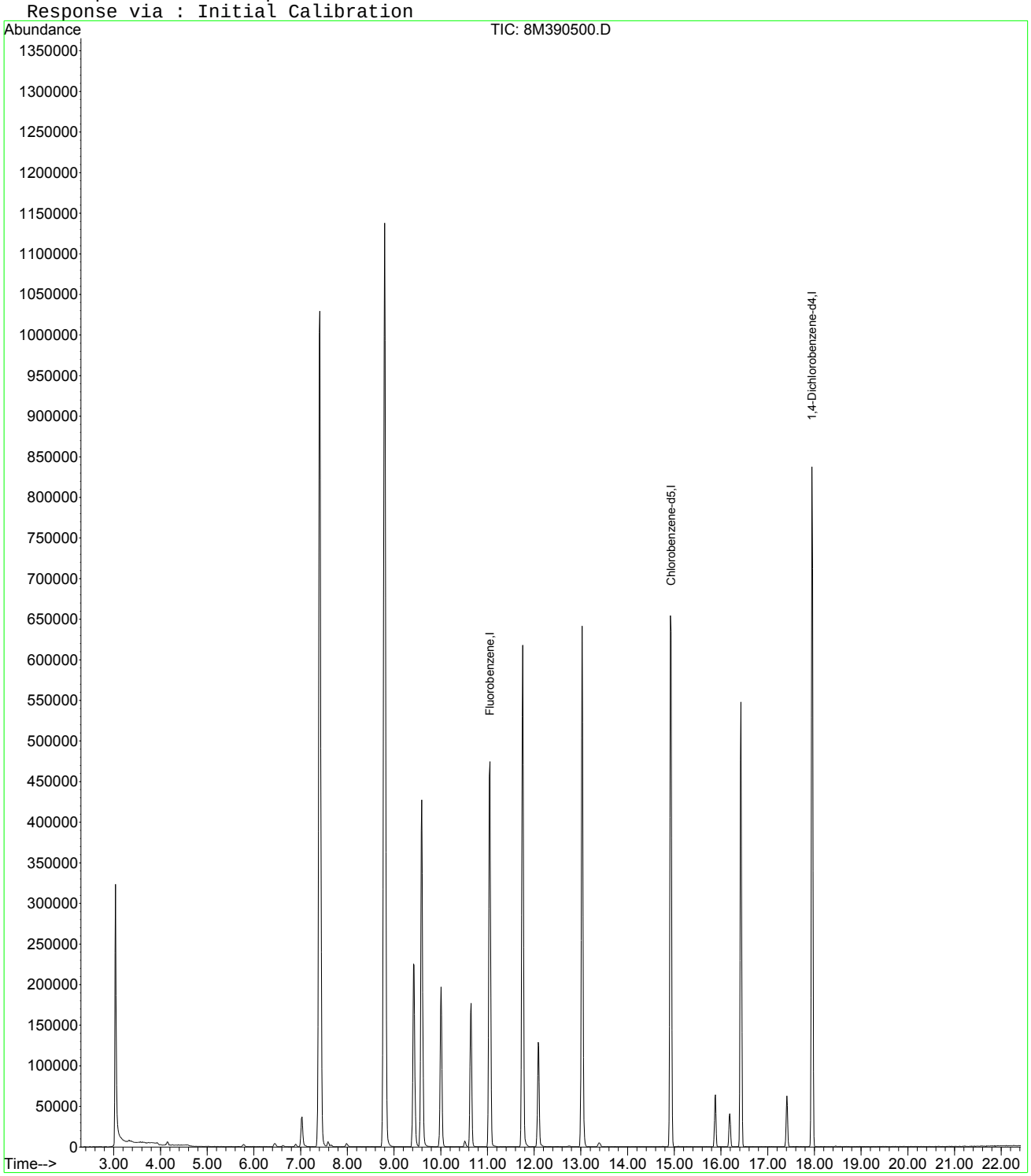

8M390500.D A9FOOWTR.M Wed Sep 11 08:36:58 2013 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390501.D Vial: 15
Acq On : 10 Sep 2013 22:05 Operator: TMB
Sample : WG444230-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:49:29 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	581357	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.93	117	495180	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.95	152	290338	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.03	41	109664	207.0434 ug/L	94
3) 3-Chloro-1-propene	7.41	41	2272454	210.6882 ug/L	94
4) 2-Chloro-1,3-butadiene	8.80	53	2200075	211.8084 ug/L	74
5) Ethyl Acetate	9.42	43	817958	209.6611 ug/L	95
6) Methacrylonitrile	9.59	67	338912	211.2271 ug/L	84
7) Isobutyl Alcohol	9.59	43	55372m	87.0545 ug/L	
8) 1-Butanol	10.51	56	12004	202.4354 ug/L	73
9) Methyl methacrylate	11.76	41	878380	216.7779 ug/L	86
10) 2-Nitropropane	12.09	43	274189	222.2095 ug/L	99
13) Cyclohexanone	16.19	55	34479	193.3288 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M390501.D A9FOOWTR.M Wed Sep 18 13:51:26 2013 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390501.D Vial: 15
Acq On : 10 Sep 2013 22:05 Operator: TMB
Sample : WG444230-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:51 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Initial Calibration

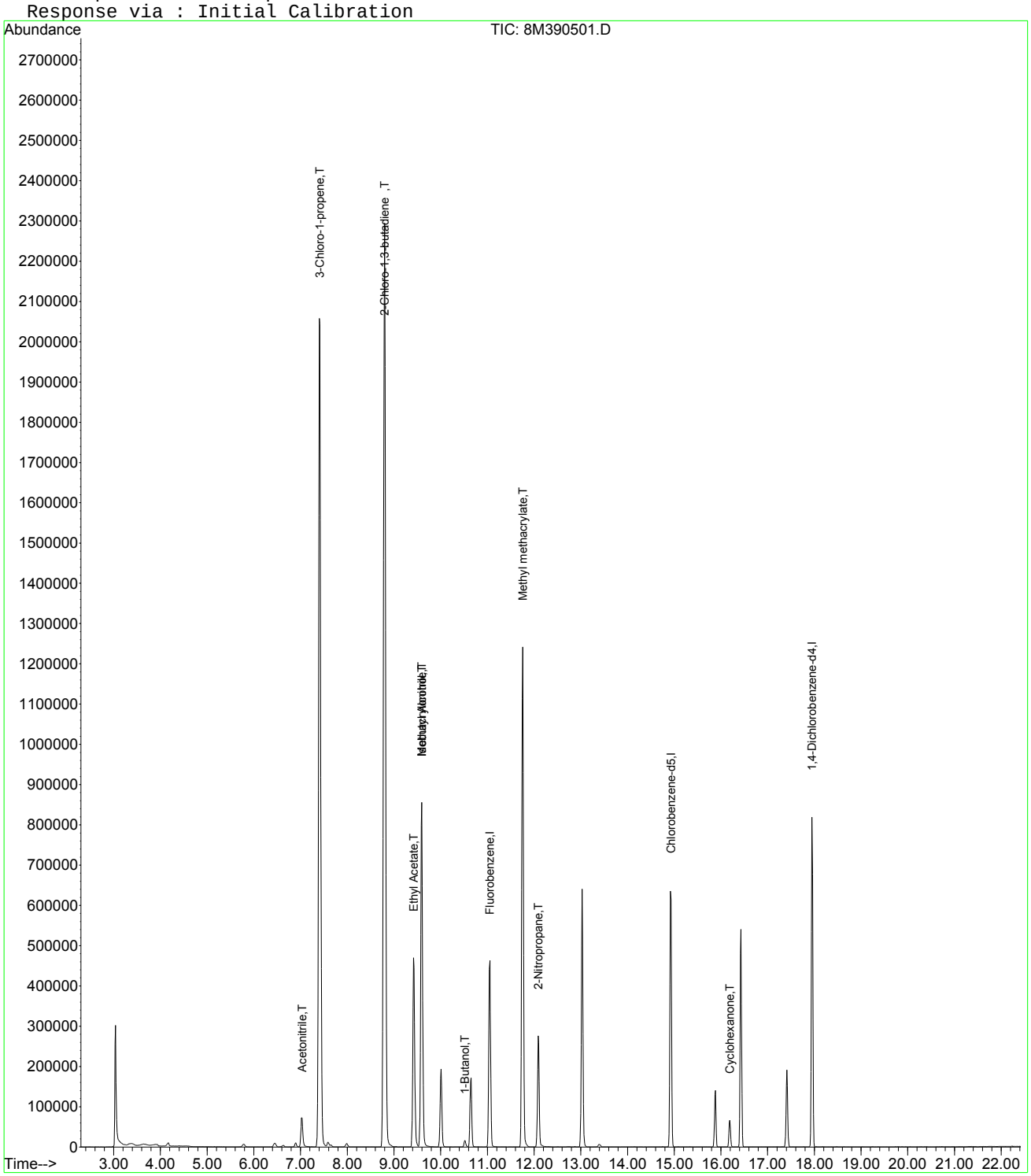

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\091013\8M390501.D Vial: 15
Acq On : 10 Sep 2013 22:05 Operator: TMB
Sample : WG444230-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:49 2013 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Multiple Level Calibration

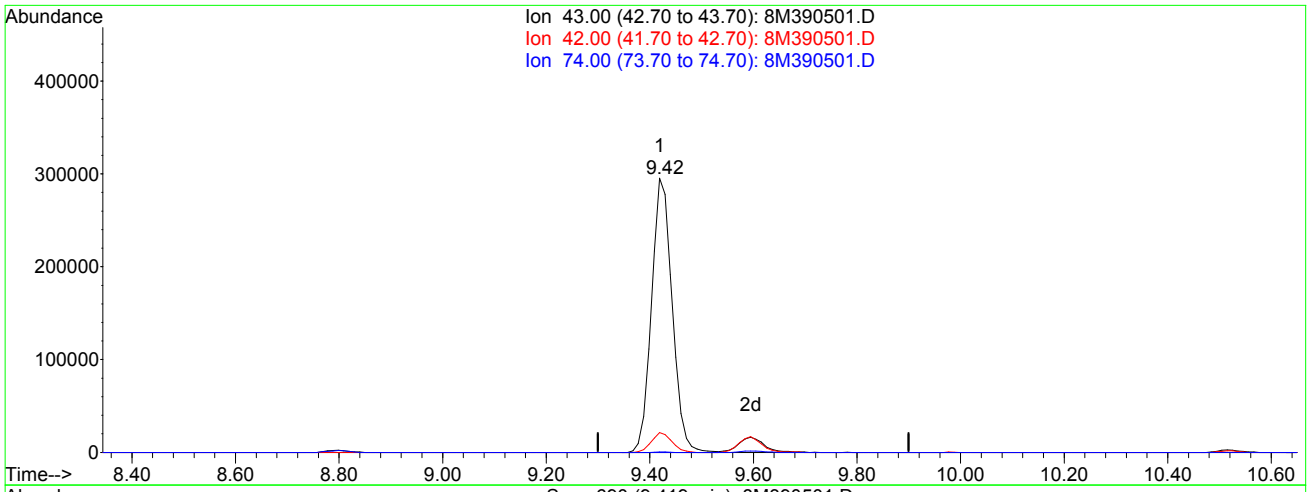

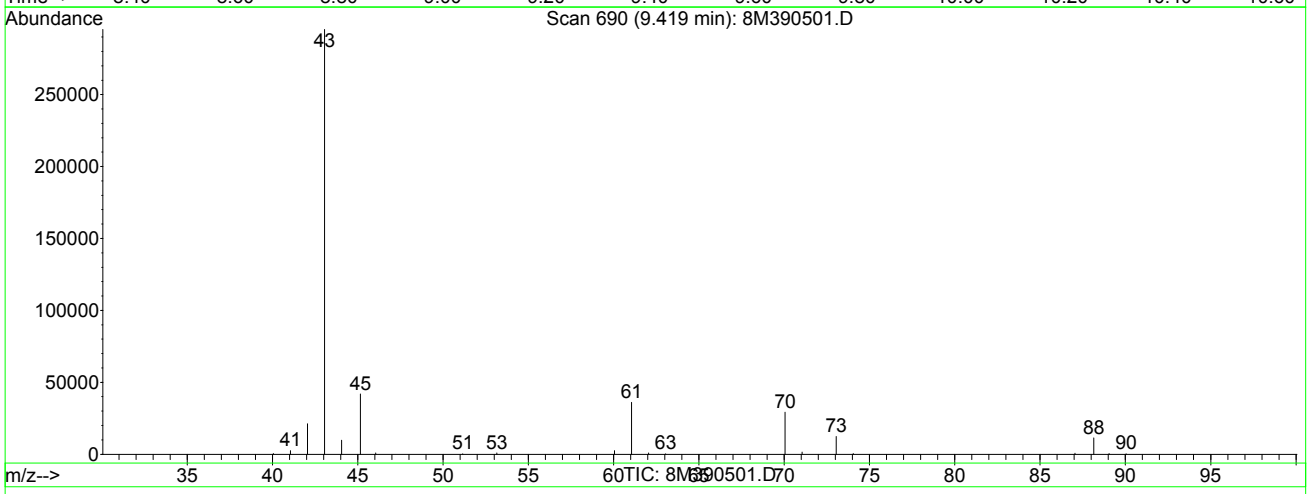

(7) Isobutyl Alcohol (T)

9.42min 1285.97ug/L

response 817958

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	7.10
74.00	4.20	0.11
0.00	0.00	0.00

8M390501.D A9FOOWTR.M Wed Sep 18 13:51:08 2013

Quantitation Report (Qedit)

```
Data File : C:\MSDCHEM\1\DATA\091013\8M390501.D          Vial: 15
Acq On    : 10 Sep 2013  22:05                        Operator: TMB
Sample    : WG444230-06 200ug/L STD A9/FOO            Inst    : HPMS8
Misc      : 1,1 STD59907                              Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:51 2013              Quant Results File: temp.res

Method       : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title        : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update  : Wed Sep 18 13:48:06 2013
Response via : Multiple Level Calibration
```

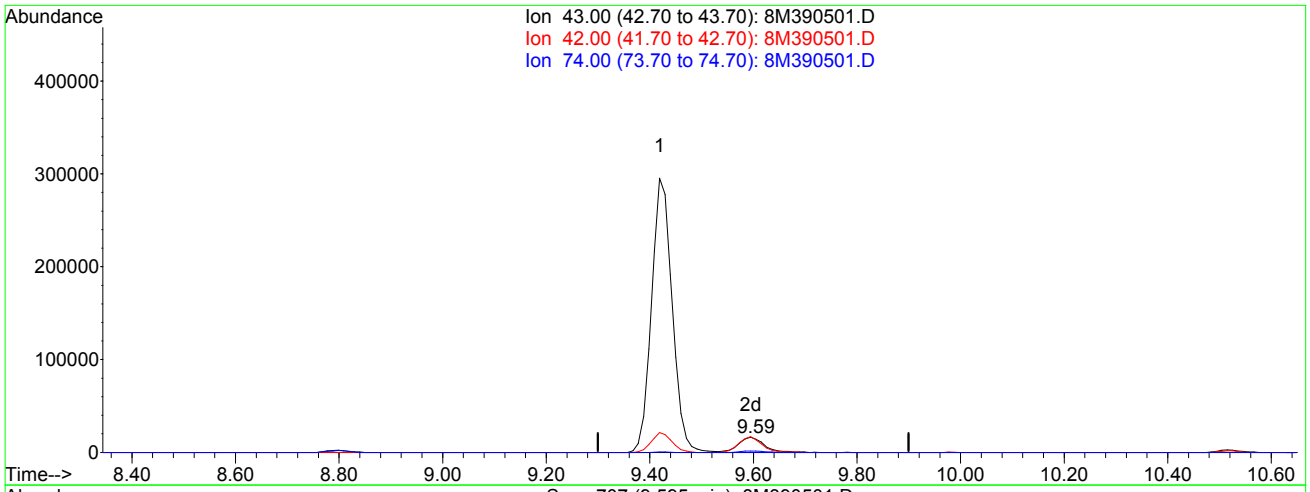

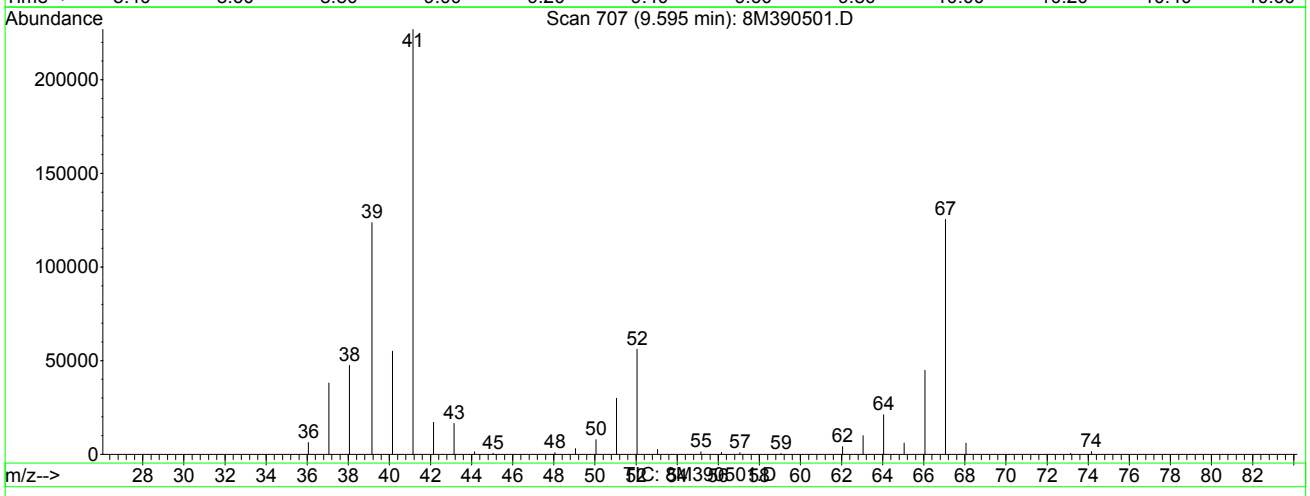

(7) Isobutyl Alcohol (T)

9.59min 87.05ug/L mint

response 55372

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	104.82#
74.00	4.20	1.68
0.00	0.00	0.00

8M390501.D A9FOOWTR.M Wed Sep 1 4 2013

Analyst: 09/18/2013 14:23 Tiffany Bailey
Supervisor: 09/19/2013 09:27
#1 - Data system fails to select correct peak

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390502.D Vial: 16
Acq On : 10 Sep 2013 22:35 Operator: TMB
Sample : WG444230-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:51:40 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	589640	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.93	117	497842	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.95	152	292464	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.03	41	159890	297.6286 ug/L	96
3) 3-Chloro-1-propene	7.40	41	3302203	301.8595 ug/L	94
4) 2-Chloro-1,3-butadiene	8.80	53	3218929	305.5435 ug/L	75
5) Ethyl Acetate	9.42	43	1181409	298.5678 ug/L	95
6) Methacrylonitrile	9.59	67	485380	298.2638 ug/L	85
7) Isobutyl Alcohol	9.59	43	79921m	123.8848 ug/L	
8) 1-Butanol	10.51	56	18085	289.4769 ug/L	75
9) Methyl methacrylate	11.75	41	1265599	307.9531 ug/L	86
10) 2-Nitropropane	12.09	43	402184	321.3612 ug/L	98
13) Cyclohexanone	16.19	55	49965	278.1245 ug/L	91

(#) = qualifier out of range (m) = manual integration
8M390502.D A9FOOWTR.M Wed Sep 18 13:52:05 2013 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390502.D Vial: 16
Acq On : 10 Sep 2013 22:35 Operator: TMB
Sample : WG444230-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:51 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Initial Calibration

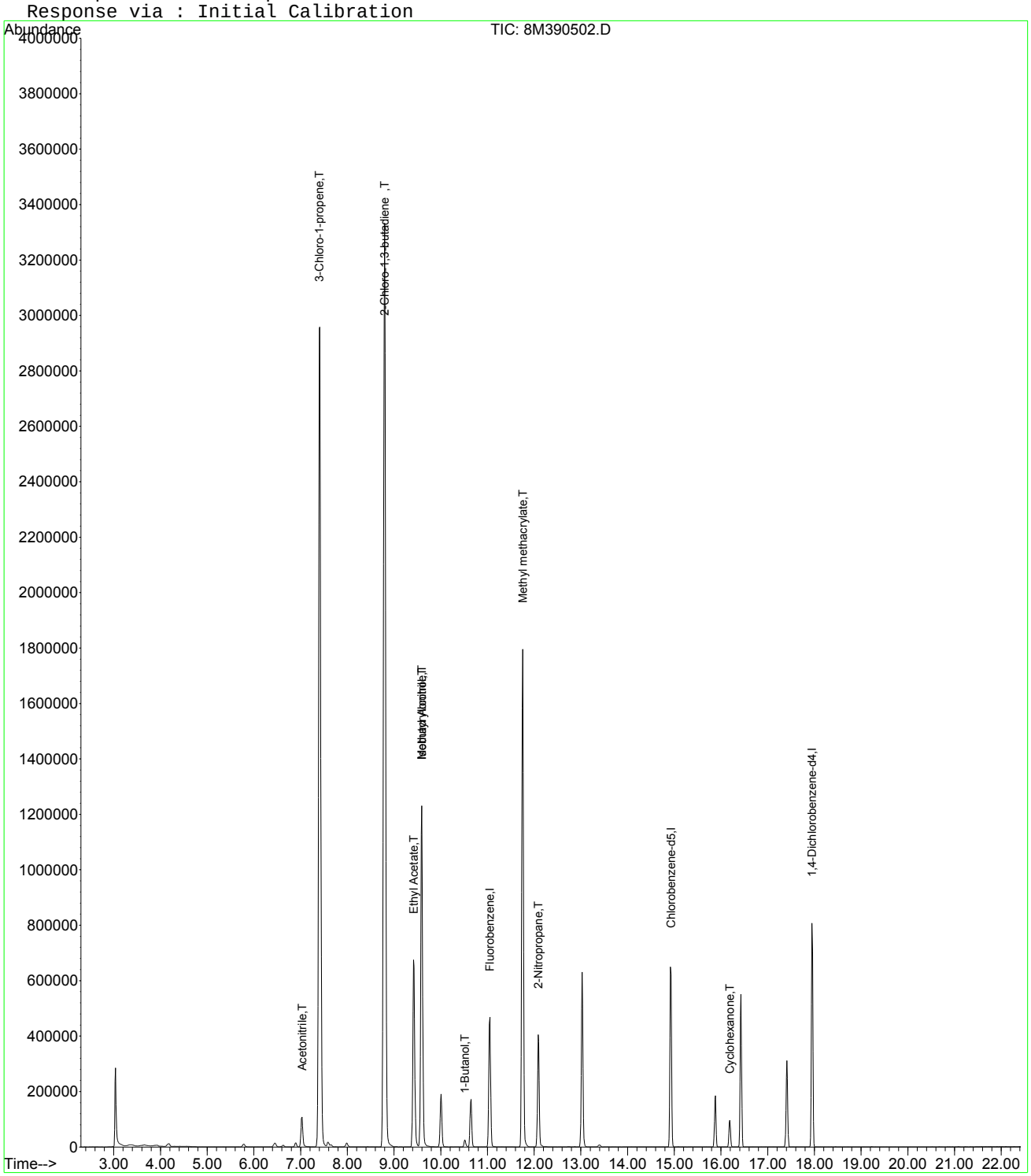

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\091013\8M390502.D Vial: 16
Acq On : 10 Sep 2013 22:35 Operator: TMB
Sample : WG444230-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:51 2013 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Multiple Level Calibration

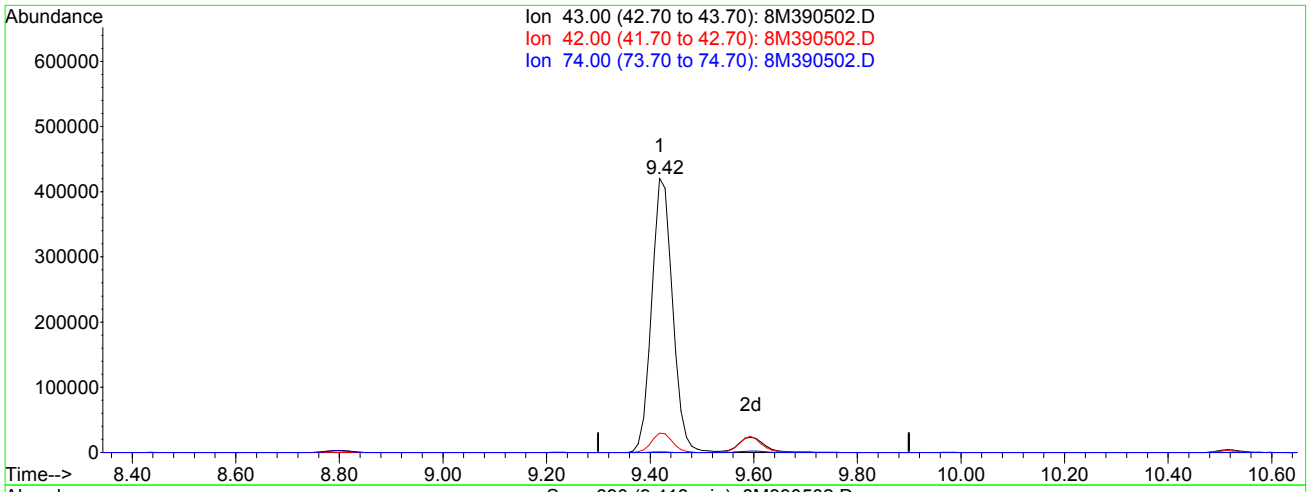

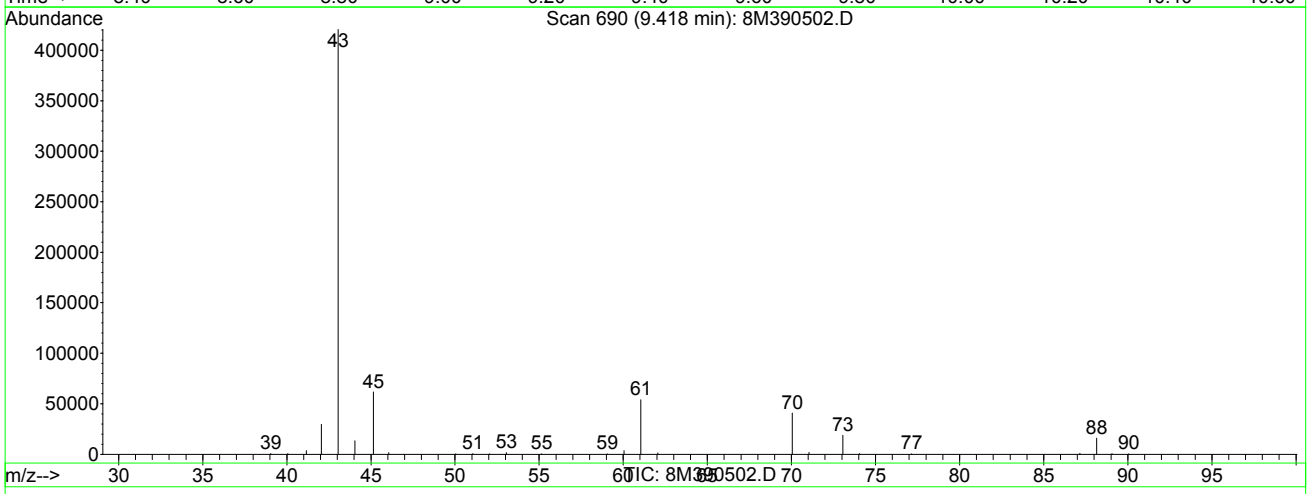

(7) Isobutyl Alcohol (T)

9.42min 1831.29ug/L

response 1181409

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	7.03
74.00	4.20	0.14
0.00	0.00	0.00

8M390502.D A9FOOWTR.M Wed Sep 18 13:51:53 2013

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\091013\8M390502.D Vial: 16
Acq On : 10 Sep 2013 22:35 Operator: TMB
Sample : WG444230-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:51 2013 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Multiple Level Calibration

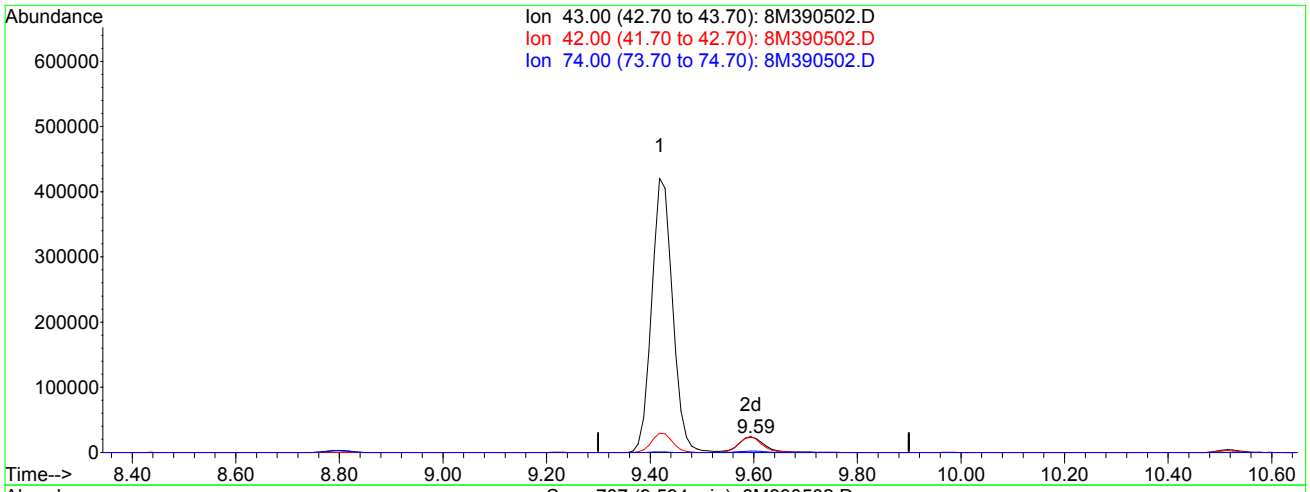

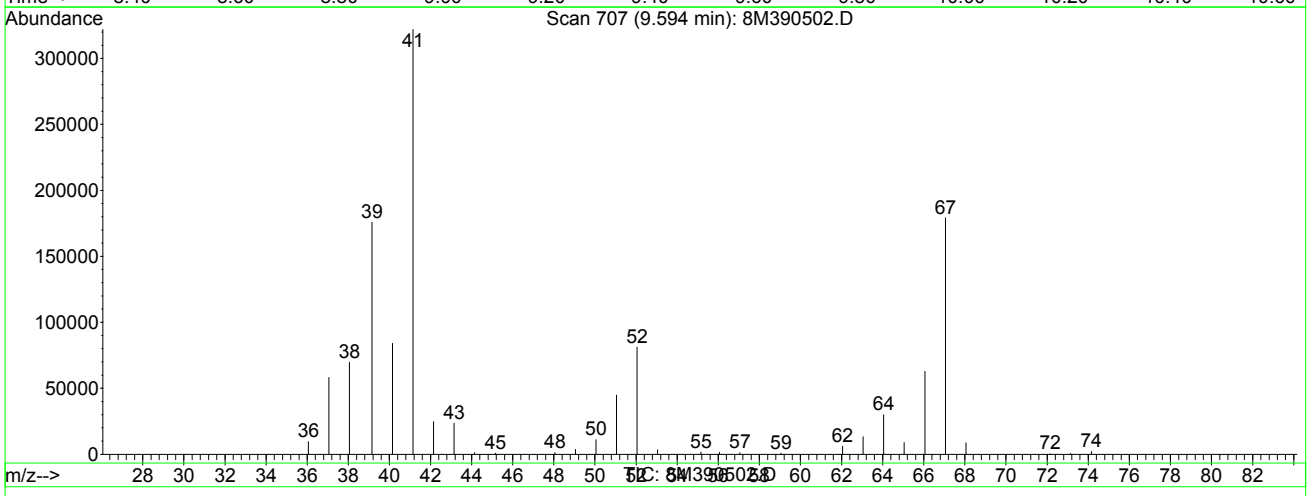

(7) Isobutyl Alcohol (T)

9.59min 123.88ug/L mint

response 79921

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	103.98#
74.00	4.20	2.06
0.00	0.00	0.00

8M390502.D A9FOOWTR.M Wed Sep 18 2013

Analyst: 09/18/2013 14:23 Tiffany Bailey
Supervisor: 09/19/2013 09:27
#1 - Data system fails to select correct peak

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390503.D Vial: 17
Acq On : 10 Sep 2013 23:04 Operator: TMB
Sample : WG444230-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:49:31 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.04	96	579813	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.92	117	495720	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.95	152	297832	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.02	41	212449	402.1676 ug/L	96
3) 3-Chloro-1-propene	7.41	41	4306259	400.3135 ug/L	94
4) 2-Chloro-1,3-butadiene	8.80	53	4212728	406.6531 ug/L	76
5) Ethyl Acetate	9.42	43	1567912	402.9614 ug/L	95
6) Methacrylonitrile	9.60	67	640749	400.4107 ug/L	86
7) Isobutyl Alcohol	9.60	43	107462m	169.3991 ug/L	
8) 1-Butanol	10.52	56	24495	389.9972 ug/L	68
9) Methyl methacrylate	11.75	41	1675239	414.5379 ug/L	87
10) 2-Nitropropane	12.09	43	538660	437.7059 ug/L	97
13) Cyclohexanone	16.18	55	88727	484.9872 ug/L	93

(#) = qualifier out of range (m) = manual integration
8M390503.D A9FOOWTR.M Wed Sep 18 13:52:39 2013 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390503.D Vial: 17
Acq On : 10 Sep 2013 23:04 Operator: TMB
Sample : WG444230-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:52 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Initial Calibration

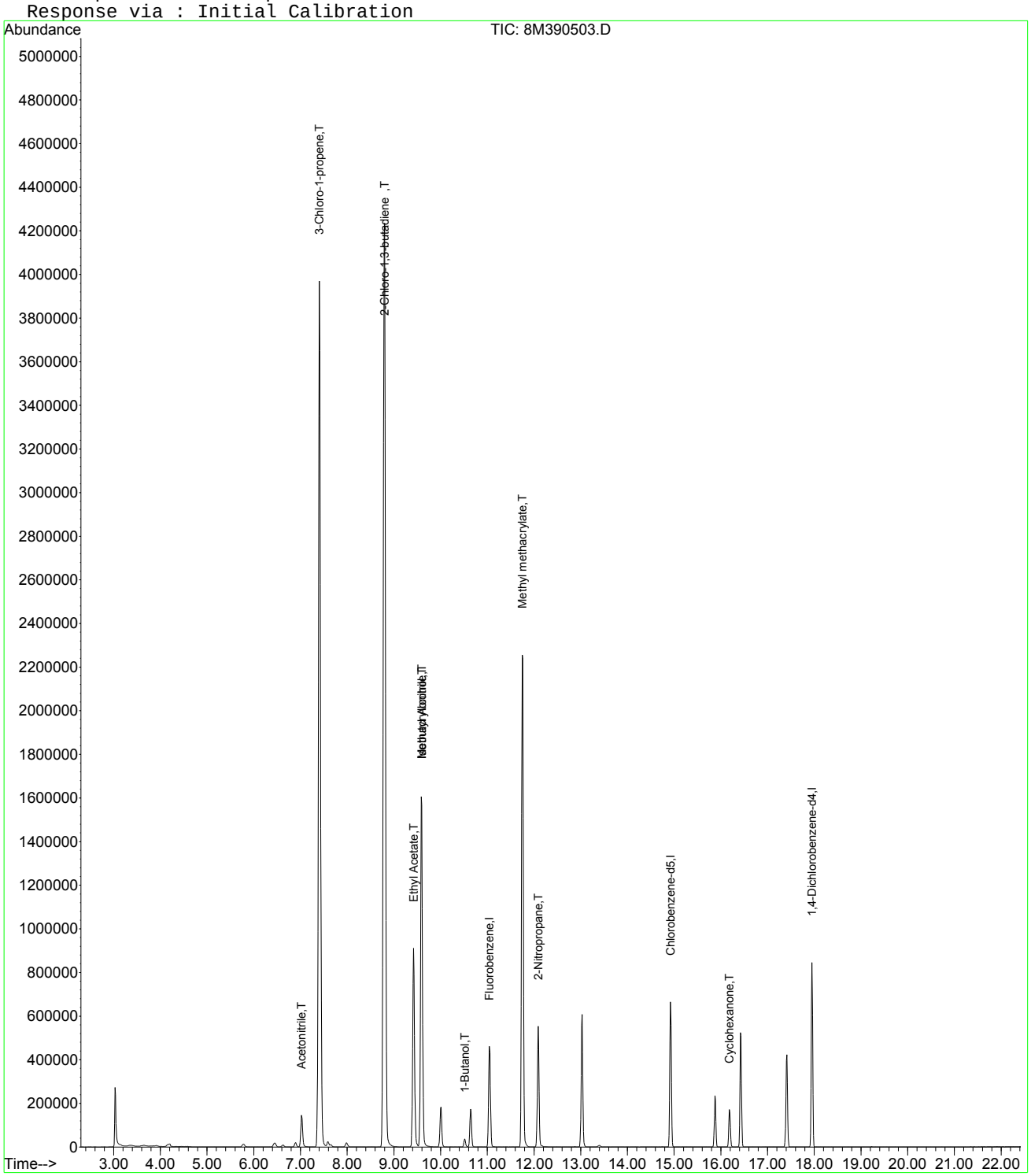

8M390503.D A9FOOWTR.M Wed Sep 18 13:52:40 2013 Page 2

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\091013\8M390503.D Vial: 17
Acq On : 10 Sep 2013 23:04 Operator: TMB
Sample : WG444230-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 8:40 2013 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:39:57 2013
Response via : Multiple Level Calibration

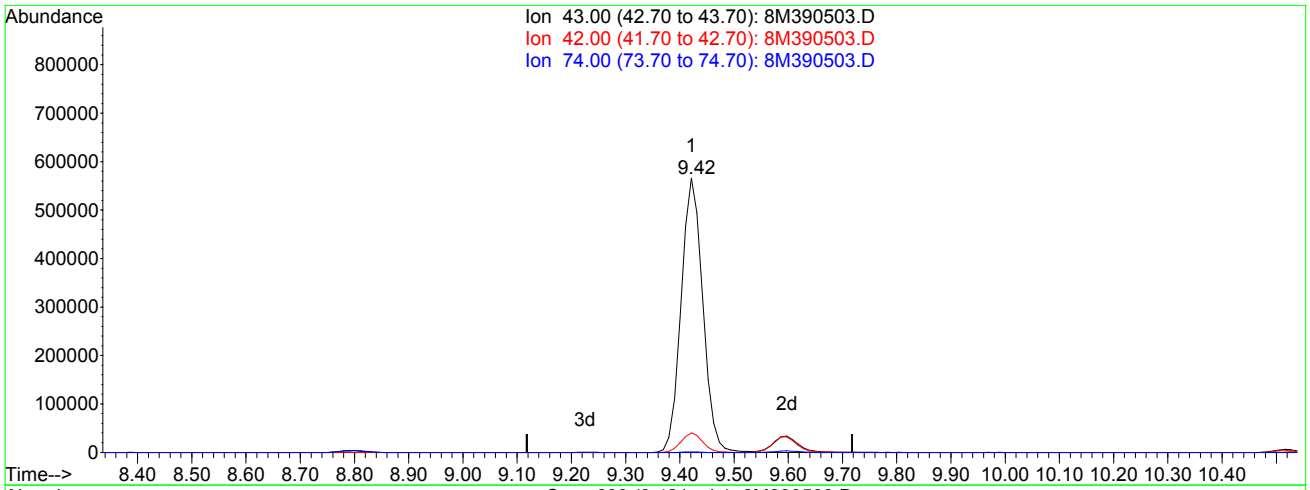

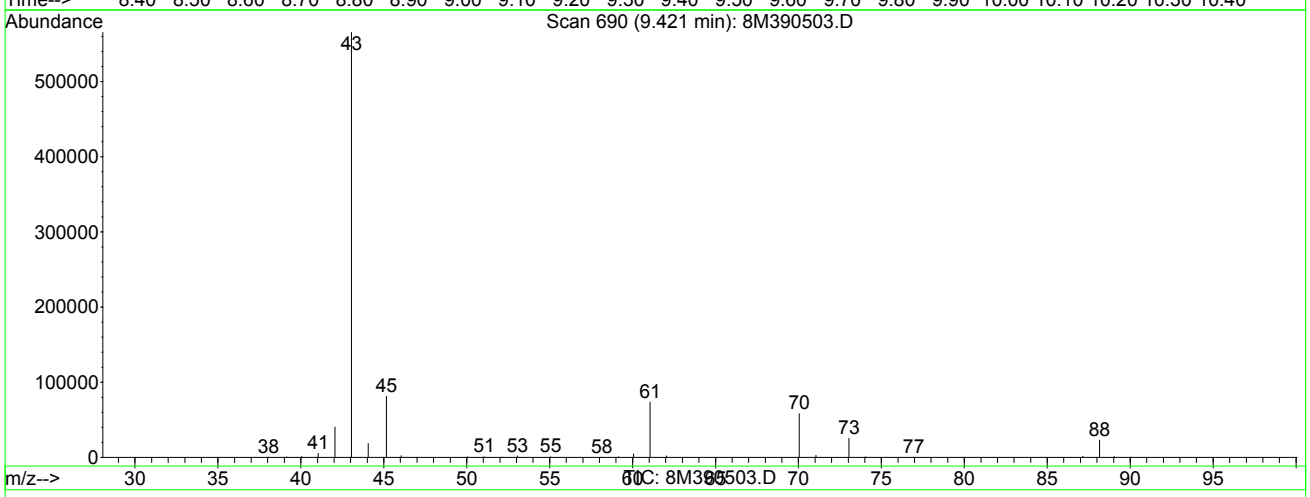

(7) Isobutyl Alcohol (T)

9.42min 1878.86ug/L

response 1567912

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	7.07
74.00	4.20	0.12
0.00	0.00	0.00

8M390503.D A9FOOWTR.M Wed Sep 11 08:41:12 2013

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\091013\8M390503.D Vial: 17
Acq On : 10 Sep 2013 23:04 Operator: TMB
Sample : WG444230-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 8:41 2013 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:39:57 2013
Response via : Multiple Level Calibration

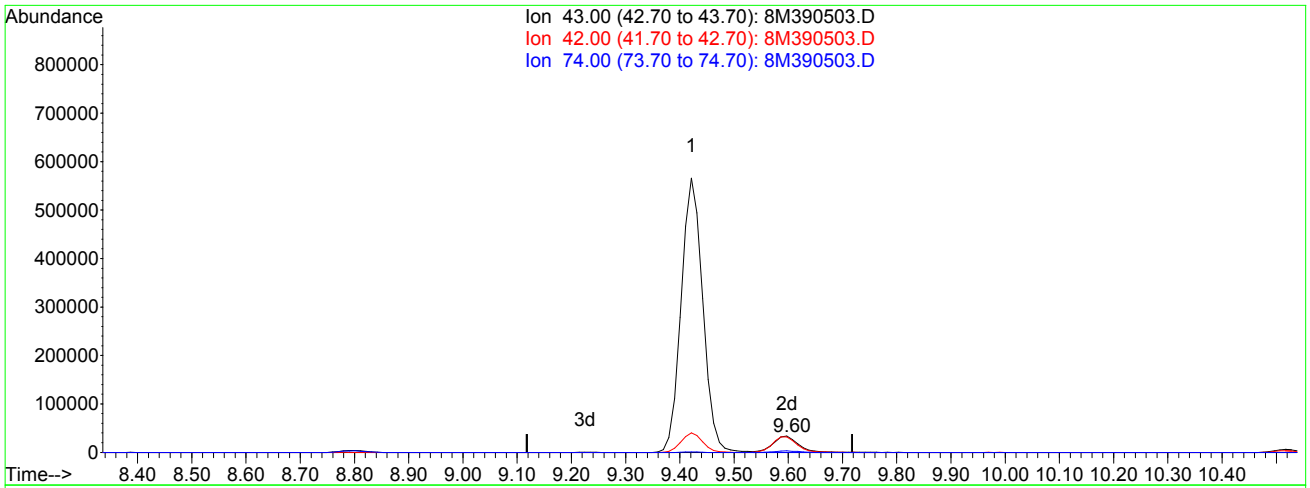

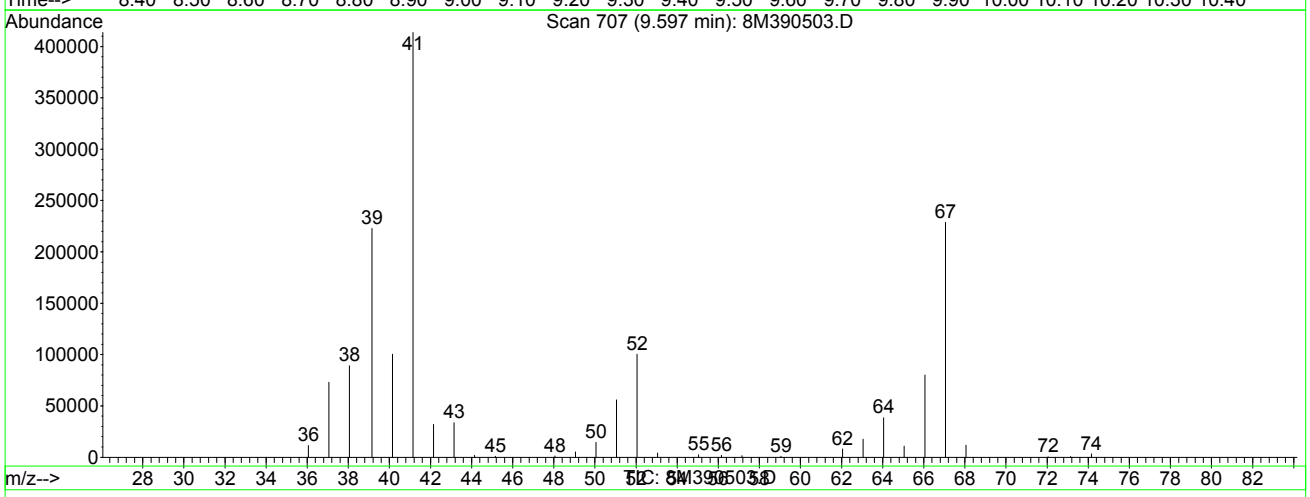

(7) Isobutyl Alcohol (T)

9.60min 130.43ug/L mint

response 108840

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	101.90#
74.00	4.20	1.76
0.00	0.00	0.00

8M390503.D A9FOOWTR.M Wed Sep 18 2013

Analyst: 09/18/2013 14:23 Tiffany Bailey
Supervisor: 09/19/2013 09:27
#1 - Data system fails to select correct peak

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390504.D Vial: 18
Acq On : 10 Sep 2013 23:34 Operator: TMB
Sample : WG444230-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:49:33 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	569805	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.93	117	482922	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.95	152	289442	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.03	41	266675	513.6844 ug/L	97
3) 3-Chloro-1-propene	7.40	41	5331435	504.3196 ug/L	94
4) 2-Chloro-1,3-butadiene	8.80	53	5205275	511.2885 ug/L	76
5) Ethyl Acetate	9.42	43	1982961	518.5822 ug/L	95
6) Methacrylonitrile	9.59	67	800851	509.2501 ug/L	85
7) Isobutyl Alcohol	9.59	43	133213m	213.6803 ug/L	
8) 1-Butanol	10.51	56	32659	520.8651 ug/L	75
9) Methyl methacrylate	11.75	41	2105643	530.1929 ug/L	87
10) 2-Nitropropane	12.09	43	700795	579.4558 ug/L	98
13) Cyclohexanone	16.18	55	92371	519.5411 ug/L	91

(#) = qualifier out of range (m) = manual integration
8M390504.D A9FOOWTR.M Wed Sep 18 13:53:00 2013 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390504.D Vial: 18
Acq On : 10 Sep 2013 23:34 Operator: TMB
Sample : WG444230-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 13:52 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 13:48:06 2013
Response via : Initial Calibration

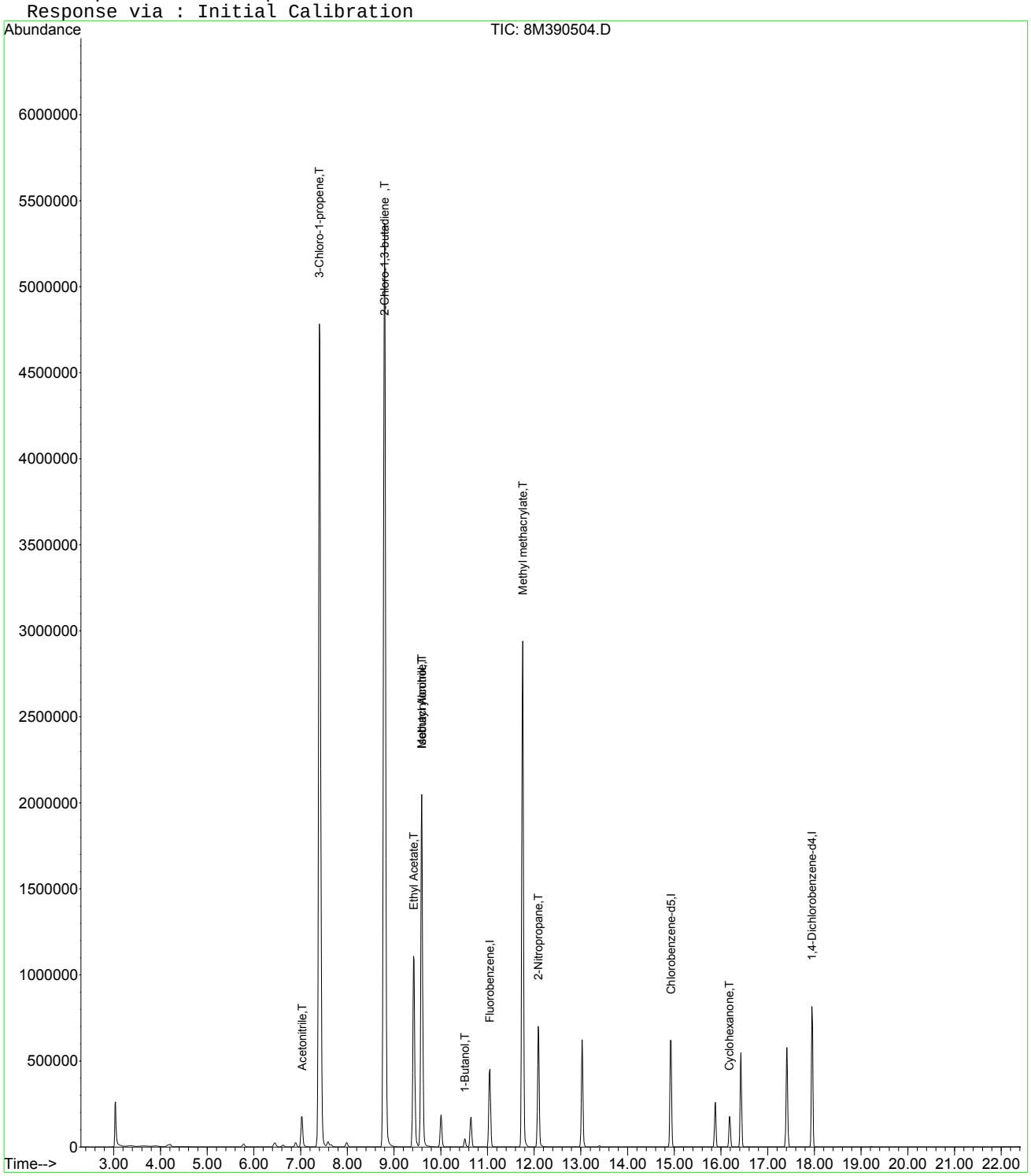

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\091013\8M390504.D Vial: 18
Acq On : 10 Sep 2013 23:34 Operator: TMB
Sample : WG444230-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 8:46 2013 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:46:45 2013
Response via : Multiple Level Calibration

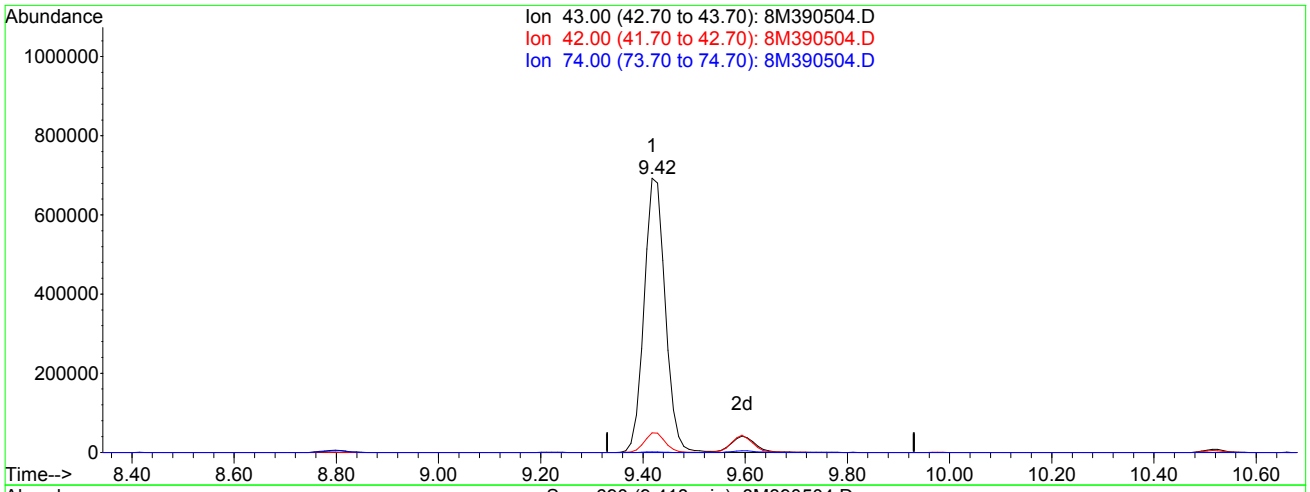

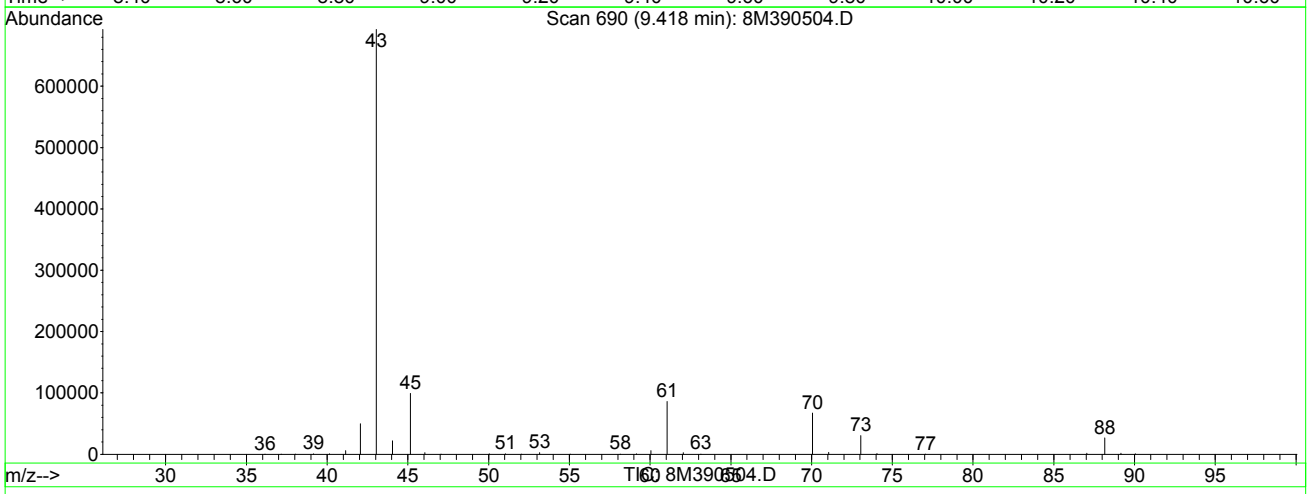

(7) Isobutyl Alcohol (T)

9.42min 2811.15ug/L

response 1982846

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	7.08
74.00	4.20	0.14
0.00	0.00	0.00

8M390504.D A9FOOWTR.M Wed Sep 11 08:47:10 2013

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\091013\8M390504.D Vial: 18
Acq On : 10 Sep 2013 23:34 Operator: TMB
Sample : WG444230-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD59907 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 11 8:47 2013 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 11 08:46:45 2013
Response via : Multiple Level Calibration

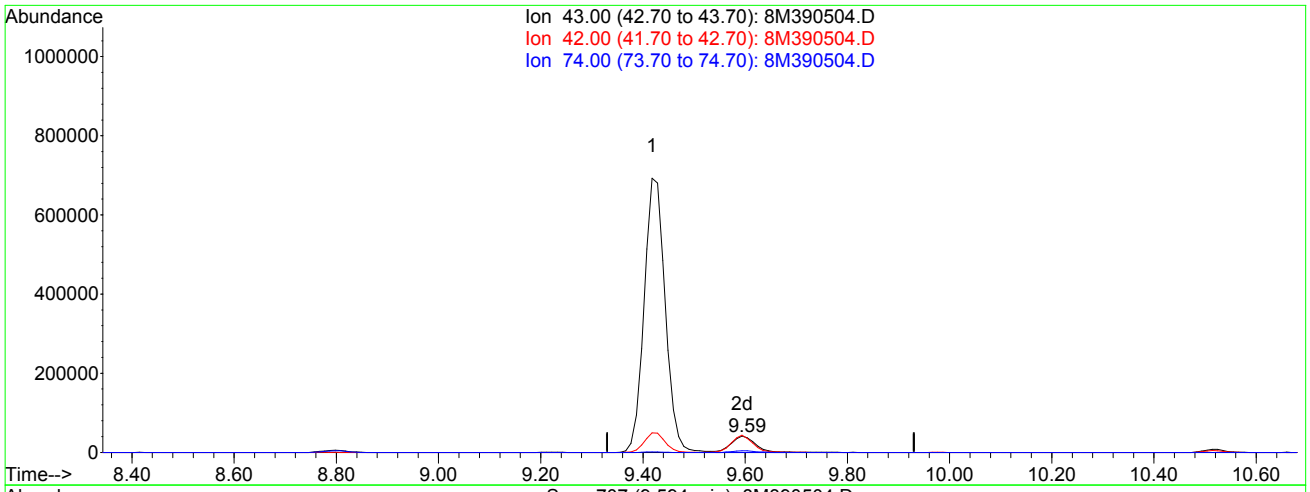

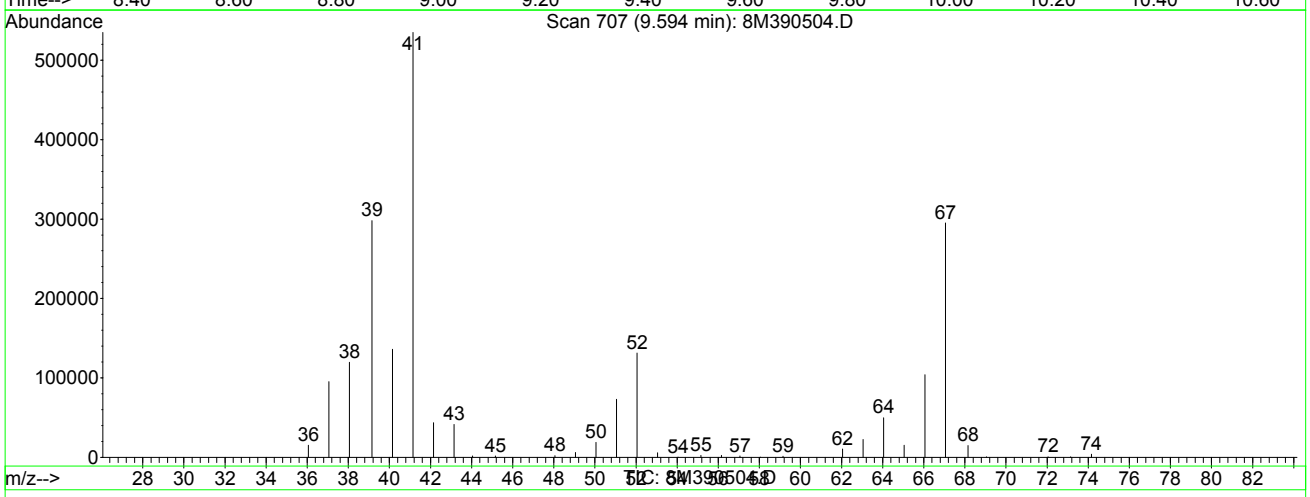

(7) Isobutyl Alcohol (T)

9.59min 186.94ug/L mint

response 131858

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	106.40#
74.00	4.20	2.16
0.00	0.00	0.00

8M390504.D A9FOOWTR.M Wed Sep 1 0 2013

Analyst: 09/18/2013 14:23 Supervisor: 09/19/2013 09:27

#1 - Data system fails to select correct peak

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390507.D Vial: 21
Acq On : 11 Sep 2013 1:03 Operator: TMB
Sample : WG444230-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD60074 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 14:07:51 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Wed Sep 18 14:03:14 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.05	96	539550	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.93	117	462888	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.96	152	265738	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.03	41	48736	99.1422 ug/L	96
3) 3-Chloro-1-propene	7.41	41	1135146	113.3987 ug/L	95
4) 2-Chloro-1,3-butadiene	8.80	53	854605	88.6507 ug/L	78
5) Ethyl Acetate	9.43	43	389815	107.6605 ug/L	94
6) Methacrylonitrile	9.59	67	157306	105.6378 ug/L	85
7) Isobutyl Alcohol	9.59	43	22892	186.3968 ug/L #	97
8) 1-Butanol	10.51	56	3015	75.6314 ug/L #	58
9) Methyl methacrylate	11.75	41	406894	108.1994 ug/L	88
10) 2-Nitropropane	12.10	43	118267	103.2732 ug/L	96
13) Cyclohexanone	16.19	55	8794	50.3558 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M390507.D A9FOOWTR.M Thu Sep 19 09:30:57 2013 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\091013\8M390507.D Vial: 21
Acq On : 11 Sep 2013 1:03 Operator: TMB
Sample : WG444230-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD60074 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 18 14:07 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Initial Calibration

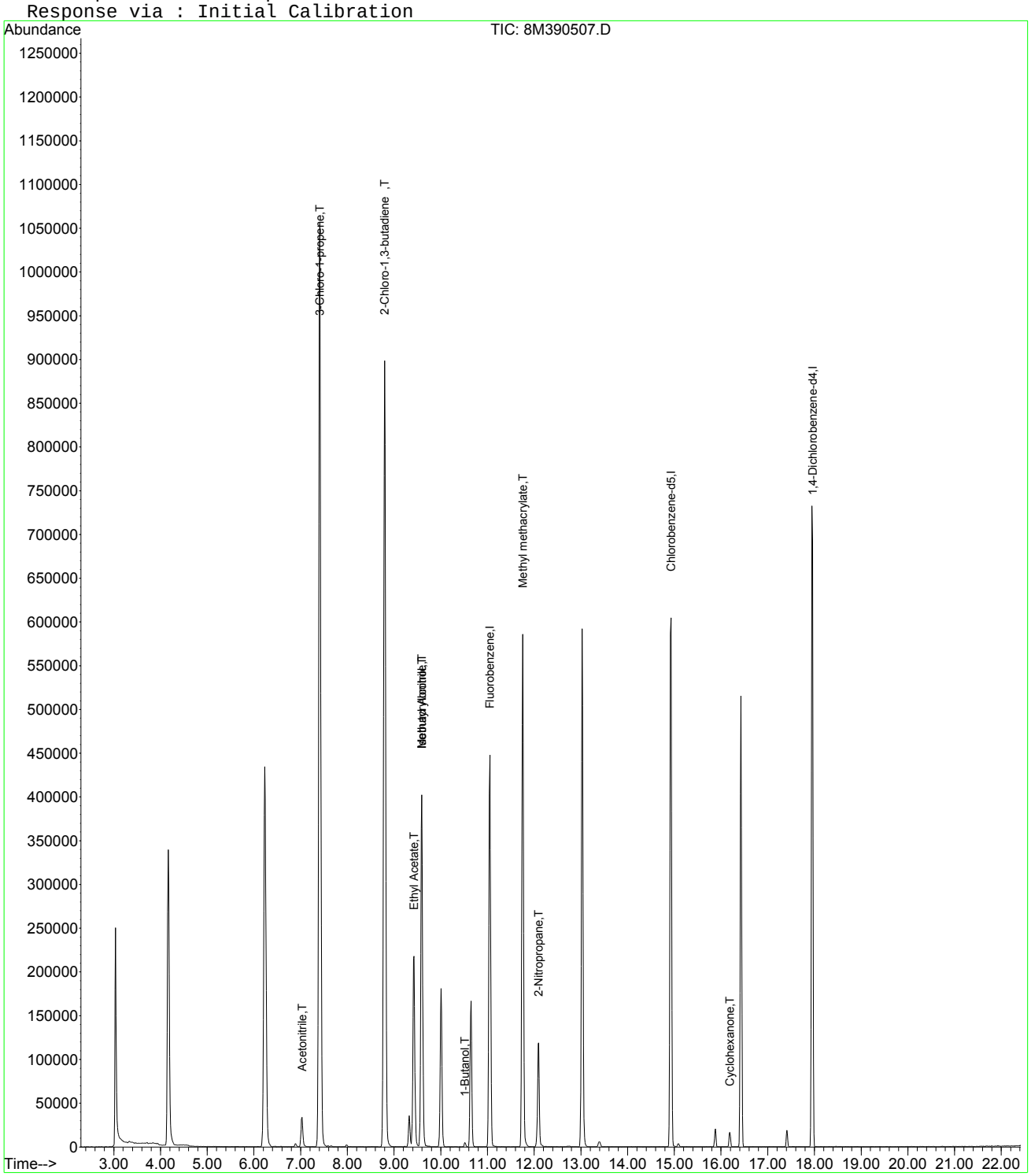

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\091013\8M390507.D Vial: 21
Acq On : 11 Sep 2013 1:03 Operator: TMB
Sample : WG444230-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD60074 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	90	0.00
2	T	Acetonitrile	100.0000	99.1422	0.9	90	0.00
3	T	3-Chloro-1-propene	100.0000	113.3987	-13.4	101	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	88.6507	11.3	78	0.00
5	T	Ethyl Acetate	100.0000	107.6605	-7.7	96	0.00
6	T	Methacrylonitrile	100.0000	105.6378	-5.6	93	0.00
7	T	Isobutyl Alcohol	200.0000	186.3968	6.8	86	0.00
8	T	1-Butanol	100.0000	75.6314	24.4	62	0.00
9	T	Methyl methacrylate	100.0000	108.1994	-8.2	95	0.00
10	T	2-Nitropropane	100.0000	103.2732	-3.3	93	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	91	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	89	0.00
13	T	Cyclohexanone	100.0000	50.3558	49.6	40	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M390507.D A9FOOWTR.M Thu Sep 19 09:34:00 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391546.D Vial: 5
Acq On : 13 Oct 2013 16:54 Operator: MES
Sample : WG448425-02 0.3ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:32 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	672576	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	525318	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	301925	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	13.02	98	1404	0.0561 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.24%#	
80) p-Bromofluorobenzene	16.41	95	247	0.0235 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.08%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.38	85	1553	0.2074 ug/L #	43
3) Chloromethane	3.86	50	4137	0.4321 ug/L #	48
4) Vinyl Chloride	4.10	62	2437	0.2977 ug/L #	71
5) 1,3-Butadiene	4.16	54	1707	0.2066 ug/L #	1
6) Bromomethane	5.01	94	702	0.7770 ug/L #	51
7) Chloroethane	5.19	64	1445	0.2863 ug/L #	44
8) Trichlorofluoromethane	5.69	101	2957	0.2245 ug/L #	86
10) Isoprene	6.25	67	2617	0.2860 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.46	101	907	0.1340 ug/L #	44
13) Acetone	6.56	43	498	0.3113 ug/L #	48
14) 1,1-Dichloroethene	6.79	61	3338	0.2711 ug/L	84
16) Dimethyl Sulfide	7.05	62	1538	0.2332 ug/L	62
17) Iodomethane	7.31	142	873	0.5790 ug/L #	34
18) Methyl acetate	7.33	43	730	0.1516 ug/L #	60
19) Methylene Chloride	7.58	84	1874	0.2777 ug/L #	36
20) Carbon Disulfide	7.63	76	6715	0.3379 ug/L #	74
22) Methyl Tert Butyl Ether	7.78	73	4673	0.2697 ug/L #	65
23) trans-1,2-Dichloroethene	8.02	61	3317	0.2890 ug/L	92
24) n-Hexane	8.09	57	2360	0.2498 ug/L	74
26) Vinyl Acetate	8.62	43	3091	0.2595 ug/L #	73
27) 1,1-Dichloroethane	8.65	63	4254	0.3151 ug/L #	72
31) 2,2-Dichloropropane	9.42	77	3147	0.2795 ug/L #	76
32) cis-1,2-Dichloroethene	9.50	96	1907	0.2539 ug/L	73
33) Chloroform	9.70	83	4020	0.2963 ug/L	92
35) Bromochloromethane	9.94	130	1413	0.2975 ug/L #	54
36) Tetrahydrofuran	9.97	42	1185	0.6481 ug/L #	34
38) 1,1,1-Trichloroethane	10.22	97	3244	0.2602 ug/L	92
39) Cyclohexane	10.27	56	3003	0.2269 ug/L #	69
40) 1,1-Dichloropropene	10.43	75	2404	0.2443 ug/L	89
42) Carbon Tetrachloride	10.59	117	2920	0.2473 ug/L #	71
45) 1,2-Dichloroethane	10.74	62	3393	0.3045 ug/L #	76
46) Benzene	10.79	78	8555	0.3183 ug/L	92
47) Trichloroethene	11.55	130	2348	0.2858 ug/L	94
48) Methylcyclohexane	11.62	83	2960	0.2883 ug/L	80
49) 1,2-Dichloropropane	11.75	63	2097	0.2927 ug/L	85
50) Bromodichloromethane	12.05	83	3071	0.3043 ug/L #	91
52) Dibromomethane	12.14	93	910	0.2384 ug/L	83
53) 2-Chloroethyl Vinyl Ether	12.34	63	548	0.1432 ug/L #	42
55) cis-1,3-Dichloropropene	12.69	75	3184	0.2902 ug/L #	74
56) Dimethyl Disulfide	12.95	94	2442	0.2132 ug/L	86
59) Toluene	13.12	91	9294	0.3372 ug/L	88

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391546.D Vial: 5
Acq On : 13 Oct 2013 16:54 Operator: MES
Sample : WG448425-02 0.3ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:32 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
60)	Ethyl Methacrylate	13.19	69	1064	0.1629 ug/L #	17
62)	trans-1,3-Dichloropropene	13.27	75	2851	0.2791 ug/L	89
63)	1,1,2-Trichloroethane	13.51	97	1437	0.2885 ug/L	98
65)	1,3-Dichloropropane	13.80	76	2692	0.3001 ug/L	92
66)	Tetrachloroethene	13.94	164	1808	0.2859 ug/L	84
67)	Dibromochloromethane	14.21	129	2027	0.2714 ug/L	93
68)	1,2-Dibromoethane	14.45	107	1521	0.2899 ug/L	91
69)	1-Chlorohexane	14.53	91	2473	0.2825 ug/L	77
70)	Chlorobenzene	14.96	112	7020	0.3484 ug/L	92
71)	1,1,1,2-Tetrachloroethane	14.98	131	2318	0.2875 ug/L	99
72)	Ethylbenzene	14.98	106	3276	0.3015 ug/L	83
73)	m-,p-Xylene	15.07	106	8009	0.6270 ug/L	86
74)	o-Xylene	15.64	106	3964	0.3091 ug/L	95
75)	Styrene	15.67	104	6470	0.3067 ug/L	92
76)	Bromoform	16.18	173	1237	0.2573 ug/L #	42
77)	Isopropylbenzene	16.07	105	9418	0.2930 ug/L	95
79)	1,1,2,2-Tetrachloroethane	16.27	83	1478	0.2672 ug/L #	81
81)	1,2,3-Trichloropropane	16.47	110	236	0.1240 ug/L #	14
83)	n-Propylbenzene	16.57	91	11116	0.3049 ug/L	90
84)	Bromobenzene	16.71	156	2578	0.2792 ug/L	57
85)	1,3,5-Trimethylbenzene	16.76	105	8407	0.3034 ug/L	93
86)	2-Chlorotoluene	16.84	91	8606	0.3543 ug/L #	73
87)	4-Chlorotoluene	16.89	91	7105	0.3062 ug/L	93
88)	a-Methylstyrene	17.16	118	4081	0.2534 ug/L	98
89)	tert-Butylbenzene	17.22	134	1549	0.2543 ug/L	59
90)	1,2,4-Trimethylbenzene	17.27	105	8235	0.2842 ug/L	86
91)	sec-Butylbenzene	17.49	105	9969	0.3066 ug/L	97
92)	p-Isopropyltoluene	17.65	119	9385	0.3161 ug/L	87
93)	1,3-Dichlorobenzene	17.84	146	5635	0.3175 ug/L	89
94)	1,4-Dichlorobenzene	17.98	146	6176	0.3340 ug/L #	36
95)	n-Butylbenzene	18.18	91	8021	0.3244 ug/L	89
96)	1,2-Dichlorobenzene	18.48	146	5901	0.3460 ug/L	93
98)	1,2,4-Trichlorobenzene	20.62	180	4481	0.3529 ug/L	96
99)	Hexachlorobutadiene	20.77	225	1337	0.2838 ug/L	89
100)	Naphthalene	21.00	128	8203	0.3454 ug/L	98
101)	1,2,3-Trichlorobenzene	21.30	180	3792	0.3257 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391546.D Vial: 5
Acq On : 13 Oct 2013 16:54 Operator: MES
Sample : WG448425-02 0.3ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

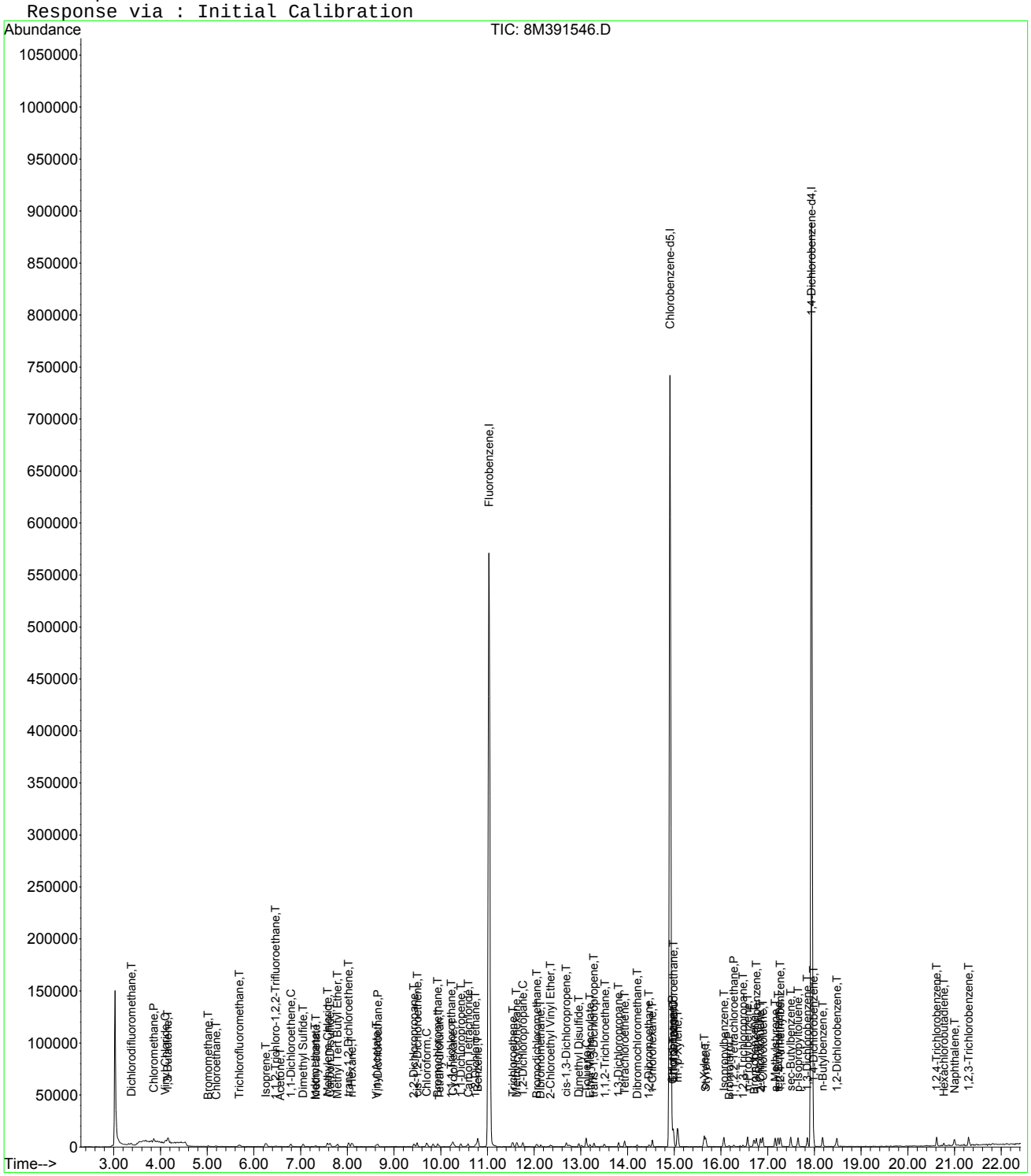

8M391546.D 8260WT.M Mon Oct 14 11:43:33 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391547.D Vial: 6
Acq On : 13 Oct 2013 17:24 Operator: MES
Sample : WG448425-03 0.4 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:34 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	674105	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	521374	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.94	152	305239	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	2779	0.3703 ug/L	92
3) Chloromethane	3.86	50	6105	0.6363 ug/L	84
4) Vinyl Chloride	4.10	62	3695	0.4504 ug/L	77
5) 1,3-Butadiene	4.17	54	3353	0.4050 ug/L #	50
6) Bromomethane	5.02	94	925	0.8218 ug/L	83
7) Chloroethane	5.19	64	1656	0.3274 ug/L #	55
8) Trichlorofluoromethane	5.69	101	4975	0.3768 ug/L #	79
10) Isoprene	6.25	67	2995	0.3265 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.47	101	2261	0.3334 ug/L #	26
13) Acetone	6.56	43	810	0.5052 ug/L #	48
14) 1,1-Dichloroethene	6.78	61	4775	0.3869 ug/L	85
16) Dimethyl Sulfide	7.05	62	1981	0.2997 ug/L #	56
17) Iodomethane	7.32	142	1595	0.6862 ug/L #	34
18) Methyl acetate	7.32	43	1319	0.2733 ug/L #	60
19) Methylene Chloride	7.58	84	2867	0.4239 ug/L #	54
20) Carbon Disulfide	7.63	76	8066	0.4050 ug/L	90
22) Methyl Tert Butyl Ether	7.79	73	6151	0.3543 ug/L	86
23) trans-1,2-Dichloroethene	8.03	61	4728	0.4110 ug/L	75
24) n-Hexane	8.10	57	3450	0.3643 ug/L	83
26) Vinyl Acetate	8.62	43	4915	0.4118 ug/L #	73
27) 1,1-Dichloroethane	8.66	63	4959	0.3665 ug/L #	81
29) 2-Butanone	9.19	43	424	0.1653 ug/L #	52
31) 2,2-Dichloropropane	9.44	77	3980	0.3526 ug/L #	62
32) cis-1,2-Dichloroethene	9.50	96	2653	0.3524 ug/L	83
33) Chloroform	9.71	83	5905	0.4342 ug/L	82
35) Bromochloromethane	9.95	130	1760	0.3698 ug/L #	65
36) Tetrahydrofuran	9.97	42	946	0.5162 ug/L #	34
38) 1,1,1-Trichloroethane	10.25	97	4341	0.3474 ug/L	98
39) Cyclohexane	10.29	56	4565	0.3441 ug/L #	65
40) 1,1-Dichloropropene	10.43	75	2930	0.2971 ug/L	90
42) Carbon Tetrachloride	10.58	117	3804	0.3214 ug/L	88
45) 1,2-Dichloroethane	10.75	62	4829	0.4323 ug/L	88
46) Benzene	10.79	78	11283	0.4188 ug/L	96
47) Trichloroethene	11.54	130	3446	0.4185 ug/L	95
48) Methylcyclohexane	11.62	83	3554	0.3454 ug/L	80
49) 1,2-Dichloropropane	11.75	63	2673	0.3722 ug/L	81
50) Bromodichloromethane	12.05	83	3433	0.3394 ug/L #	85
52) Dibromomethane	12.15	93	1212	0.3168 ug/L	80
53) 2-Chloroethyl Vinyl Ether	12.34	63	1176	0.3065 ug/L #	42
55) cis-1,3-Dichloropropene	12.69	75	3815	0.3469 ug/L	94
56) Dimethyl Disulfide	12.95	94	3007	0.2619 ug/L	91

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391547.D Vial: 6
Acq On : 13 Oct 2013 17:24 Operator: MES
Sample : WG448425-03 0.4 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:34 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
59)	Toluene	13.12	91	10663	0.3898 ug/L	99
60)	Ethyl Methacrylate	13.19	69	1798	0.2773 ug/L #	55
62)	trans-1,3-Dichloropropene	13.28	75	3416	0.3369 ug/L	94
63)	1,1,2-Trichloroethane	13.50	97	1773	0.3587 ug/L	92
65)	1,3-Dichloropropane	13.81	76	3600	0.4043 ug/L	69
66)	Tetrachloroethene	13.94	164	2188	0.3487 ug/L	84
67)	Dibromochloromethane	14.19	129	2506	0.3381 ug/L	92
68)	1,2-Dibromoethane	14.45	107	1697	0.3259 ug/L #	50
69)	1-Chlorohexane	14.54	91	3095	0.3562 ug/L #	59
70)	Chlorobenzene	14.96	112	8286	0.4144 ug/L	97
71)	1,1,1,2-Tetrachloroethane	14.99	131	2939	0.3673 ug/L	99
72)	Ethylbenzene	14.98	106	4335	0.4020 ug/L	91
73)	m-,p-Xylene	15.07	106	10159	0.8013 ug/L	88
74)	o-Xylene	15.63	106	4816	0.3784 ug/L	87
75)	Styrene	15.67	104	7726	0.3690 ug/L	91
76)	Bromoform	16.18	173	1564	0.3277 ug/L	75
77)	Isopropylbenzene	16.07	105	11945	0.3744 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.28	83	1936	0.3462 ug/L #	83
83)	n-Propylbenzene	16.57	91	14659	0.3978 ug/L	92
84)	Bromobenzene	16.71	156	3432	0.3677 ug/L	67
85)	1,3,5-Trimethylbenzene	16.76	105	9980	0.3563 ug/L	96
86)	2-Chlorotoluene	16.84	91	11004	0.4481 ug/L	90
87)	4-Chlorotoluene	16.89	91	8420	0.3589 ug/L	94
88)	a-Methylstyrene	17.16	118	5012	0.3078 ug/L	99
89)	tert-Butylbenzene	17.22	134	1912	0.3104 ug/L	58
90)	1,2,4-Trimethylbenzene	17.28	105	11570	0.3949 ug/L	86
91)	sec-Butylbenzene	17.49	105	12920	0.3930 ug/L	93
92)	p-Isopropyltoluene	17.65	119	11474	0.3823 ug/L	96
93)	1,3-Dichlorobenzene	17.84	146	7326	0.4083 ug/L	95
94)	1,4-Dichlorobenzene	17.98	146	7721	0.4131 ug/L #	54
95)	n-Butylbenzene	18.18	91	10749	0.4300 ug/L #	85
96)	1,2-Dichlorobenzene	18.49	146	7277	0.4221 ug/L	99
98)	1,2,4-Trichlorobenzene	20.63	180	5691	0.4433 ug/L	91
99)	Hexachlorobutadiene	20.77	225	2014	0.4228 ug/L	97
100)	Naphthalene	21.00	128	10456	0.4355 ug/L	88
101)	1,2,3-Trichlorobenzene	21.31	180	4925	0.4184 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391547.D Vial: 6
Acq On : 13 Oct 2013 17:24 Operator: MES
Sample : WG448425-03 0.4 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

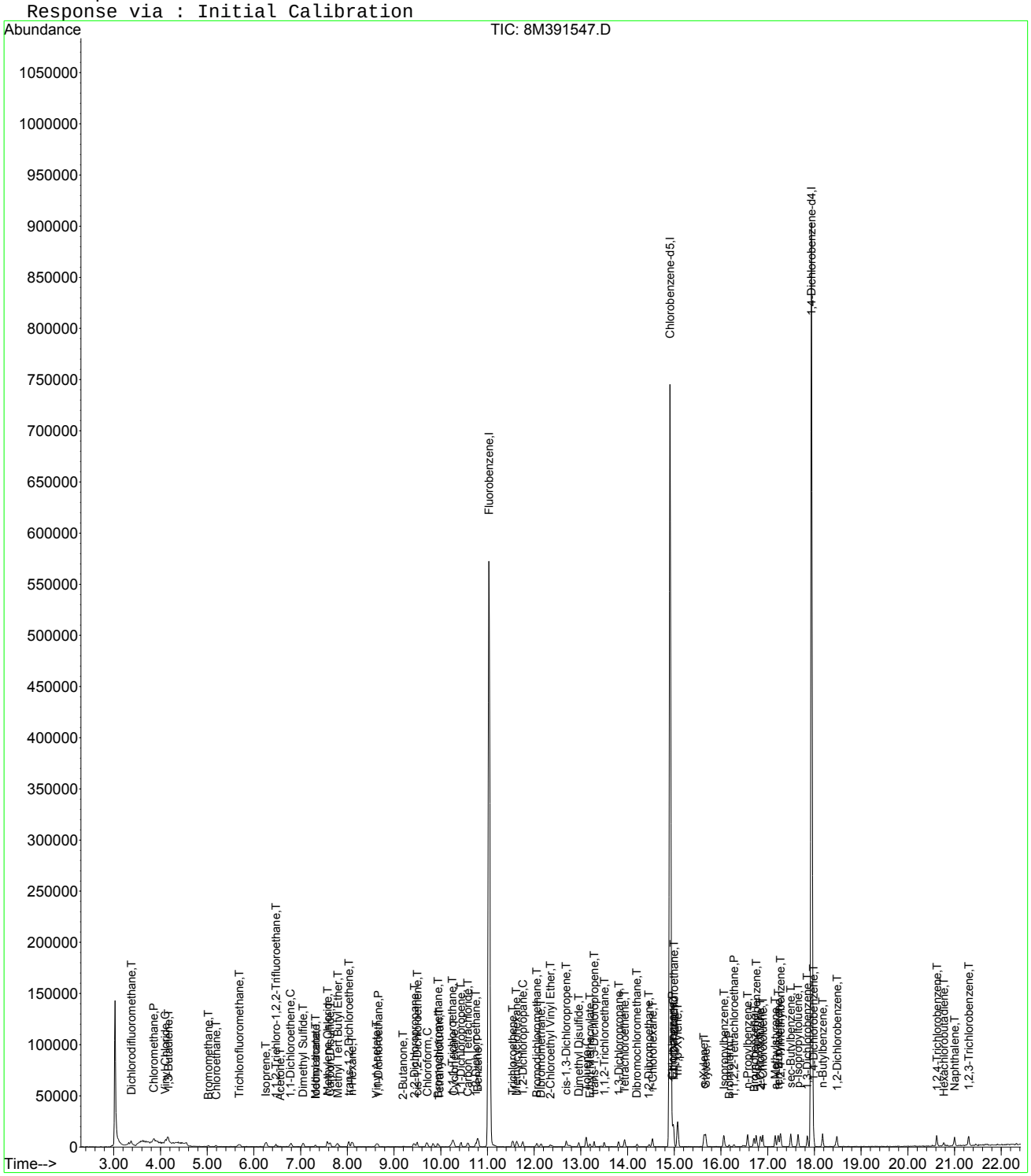

8M391547.D 8260WT.M Mon Oct 14 11:43:35 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391548.D Vial: 7
Acq On : 13 Oct 2013 17:55 Operator: MES
Sample : WG448425-04 1 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:36 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	672308	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	516505	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.94	152	301343	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	10.00	111	3612	0.4725 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.88%#	
43) 1,2-Dichloroethane-d4	10.63	65	4632	0.5168 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.08%#	
58) Toluene-d8	13.02	98	13235	0.5380 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.16%#	
80) p-Bromofluorobenzene	16.41	95	5560	0.5311 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	7049	0.9419 ug/L	98
3) Chloromethane	3.85	50	11687	1.2213 ug/L	95
4) Vinyl Chloride	4.10	62	7886	0.9638 ug/L	97
5) 1,3-Butadiene	4.17	54	7790	0.9433 ug/L #	62
6) Bromomethane	5.02	94	3169	1.2772 ug/L	91
7) Chloroethane	5.20	64	4797	0.9508 ug/L	92
8) Trichlorofluoromethane	5.68	101	13020	0.9888 ug/L	97
9) Diethyl ether	6.21	59	27272	5.0958 ug/L	80
10) Isoprene	6.26	67	8947	0.9781 ug/L	76
11) Acrolein	6.45	56	1524	2.8694 ug/L	75
12) 1,1,2-Trichloro-1,2,2-Trif	6.48	101	6553	0.9688 ug/L	84
13) Acetone	6.55	43	2179	1.3627 ug/L #	48
14) 1,1-Dichloroethene	6.80	61	11954	0.9711 ug/L	83
15) Tert-Butyl Alcohol	6.89	59	6159	17.6098 ug/L #	92
16) Dimethyl Sulfide	7.06	62	5884	0.8925 ug/L	74
17) Iodomethane	7.32	142	3983	1.0435 ug/L	95
18) Methyl acetate	7.32	43	4673	0.9710 ug/L #	60
19) Methylene Chloride	7.58	84	7189	1.0659 ug/L #	53
20) Carbon Disulfide	7.63	76	19796	0.9966 ug/L	92
21) Acrylonitrile	7.76	53	5946	2.7896 ug/L	97
22) Methyl Tert Butyl Ether	7.78	73	16980	0.9805 ug/L	94
23) trans-1,2-Dichloroethene	8.03	61	10969	0.9561 ug/L	85
24) n-Hexane	8.10	57	9466	1.0023 ug/L	89
25) Diisopropyl ether	8.45	45	163331	5.4827 ug/L	91
26) Vinyl Acetate	8.61	43	11030	0.9265 ug/L #	79
27) 1,1-Dichloroethane	8.65	63	13626	1.0097 ug/L	96
28) Ethyl-Tert-Butyl ether	9.02	59	129478	5.4752 ug/L	92
29) 2-Butanone	9.21	43	2476	0.9678 ug/L #	52
30) Propionitrile	9.31	54	4504	6.1408 ug/L #	81
31) 2,2-Dichloropropane	9.44	77	10933	0.9712 ug/L	88
32) cis-1,2-Dichloroethene	9.49	96	8055	1.0729 ug/L	91
33) Chloroform	9.70	83	14220	1.0484 ug/L	98
34) 1-Bromopropane	9.84	122	1417	0.9506 ug/L	86
35) Bromochloromethane	9.93	130	4584	0.9656 ug/L #	60
36) Tetrahydrofuran	9.96	42	11366	6.2184 ug/L	79
38) 1,1,1-Trichloroethane	10.23	97	12286	0.9859 ug/L	96
39) Cyclohexane	10.27	56	12711	0.9607 ug/L	72
40) 1,1-Dichloropropene	10.43	75	9567	0.9727 ug/L	89
41) Tert-Amyl-Methyl ether	10.53	73	103421	5.7984 ug/L #	82
42) Carbon Tetrachloride	10.58	117	11615	0.9839 ug/L	98
45) 1,2-Dichloroethane	10.75	62	10734	0.9636 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391548.D Vial: 7
Acq On : 13 Oct 2013 17:55 Operator: MES
Sample : WG448425-04 1 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:36 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.79	78	27817	1.0353 ug/L		91
47)	Trichloroethene	11.54	130	7471	0.9098 ug/L		90
48)	Methylcyclohexane	11.63	83	10370	1.0106 ug/L		83
49)	1,2-Dichloropropane	11.75	63	6801	0.9495 ug/L		95
50)	Bromodichloromethane	12.05	83	9519	0.9437 ug/L	#	95
52)	Dibromomethane	12.15	93	3755	0.9840 ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.34	63	3098	0.8097 ug/L	#	71
54)	4-Methyl-2-Pentanone	12.37	58	1182	0.6368 ug/L	#	28
55)	cis-1,3-Dichloropropene	12.68	75	10178	0.9280 ug/L		99
56)	Dimethyl Disulfide	12.95	94	8236	0.7193 ug/L		92
59)	Toluene	13.11	91	28830	1.0638 ug/L		97
60)	Ethyl Methacrylate	13.19	69	5656	0.8806 ug/L		76
62)	trans-1,3-Dichloropropene	13.28	75	10466	1.0420 ug/L		85
63)	1,1,2-Trichloroethane	13.50	97	5025	1.0261 ug/L		94
64)	2-Hexanone	13.44	58	1268	0.7884 ug/L	#	42
65)	1,3-Dichloropropane	13.81	76	9397	1.0653 ug/L		68
66)	Tetrachloroethene	13.94	164	6370	1.0246 ug/L		93
67)	Dibromochloromethane	14.19	129	6861	0.9344 ug/L		97
68)	1,2-Dibromoethane	14.45	107	5206	1.0092 ug/L		97
69)	1-Chlorohexane	14.53	91	8263	0.9600 ug/L		73
70)	Chlorobenzene	14.96	112	20777	1.0489 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.99	131	8010	1.0105 ug/L		96
72)	Ethylbenzene	14.98	106	11001	1.0297 ug/L		87
73)	m-,p-Xylene	15.07	106	26355	2.0984 ug/L		90
74)	o-Xylene	15.63	106	12399	0.9833 ug/L		78
75)	Styrene	15.67	104	19979	0.9632 ug/L		90
76)	Bromoform	16.18	173	4104	0.8681 ug/L		98
77)	Isopropylbenzene	16.06	105	33079	1.0466 ug/L		93
79)	1,1,2,2-Tetrachloroethane	16.27	83	5599	1.0141 ug/L	#	91
81)	1,2,3-Trichloropropane	16.47	110	1615	0.8503 ug/L		75
82)	trans-1,4-Dichloro-2-Buten	16.51	53	1938	0.8745 ug/L	#	69
83)	n-Propylbenzene	16.57	91	36896	1.0141 ug/L		95
84)	Bromobenzene	16.71	156	9465	1.0271 ug/L		92
85)	1,3,5-Trimethylbenzene	16.76	105	28524	1.0315 ug/L		89
86)	2-Chlorotoluene	16.85	91	22066	0.9102 ug/L		95
87)	4-Chlorotoluene	16.89	91	26904	1.1616 ug/L		84
88)	a-Methylstyrene	17.16	118	14872	0.9252 ug/L		94
89)	tert-Butylbenzene	17.22	134	5889	0.9685 ug/L		76
90)	1,2,4-Trimethylbenzene	17.28	105	29991	1.0369 ug/L		93
91)	sec-Butylbenzene	17.49	105	33517	1.0328 ug/L		95
92)	p-Isopropyltoluene	17.65	119	29345	0.9904 ug/L		95
93)	1,3-Dichlorobenzene	17.85	146	18414	1.0394 ug/L		95
94)	1,4-Dichlorobenzene	17.98	146	19448	1.0539 ug/L	#	66
95)	n-Butylbenzene	18.18	91	26343	1.0674 ug/L		90
96)	1,2-Dichlorobenzene	18.47	146	16622	0.9765 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	19.47	75	1116	0.9286 ug/L		92
98)	1,2,4-Trichlorobenzene	20.63	180	12768	1.0074 ug/L		97
99)	Hexachlorobutadiene	20.77	225	5181	1.1017 ug/L		93
100)	Naphthalene	21.00	128	24123	1.0177 ug/L		99
101)	1,2,3-Trichlorobenzene	21.31	180	12154	1.0458 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M391548.D 8260WT.M Mon Oct 14 11:43:36 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391548.D Vial: 7
Acq On : 13 Oct 2013 17:55 Operator: MES
Sample : WG448425-04 1 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

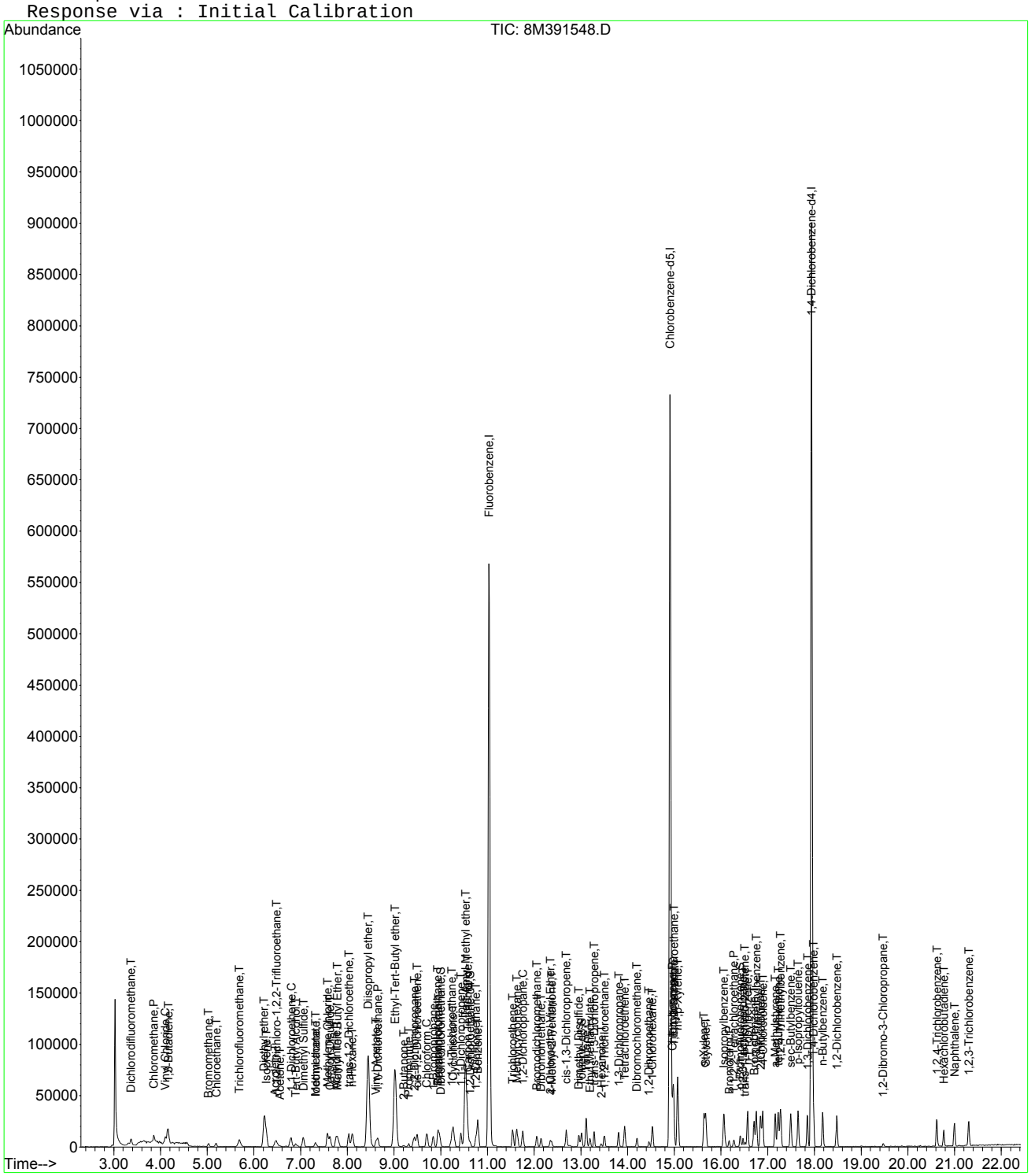

8M391548.D 8260WT.M Mon Oct 14 11:43:37 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391549.D Vial: 8
Acq On : 13 Oct 2013 18:26 Operator: MES
Sample : WG448425-05 2 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:37 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	659735	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	516383	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	292721	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.00	111	7756	1.0339 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.12%#	
43) 1,2-Dichloroethane-d4	10.63	65	9127	1.0378 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.16%#	
58) Toluene-d8	13.02	98	27547	1.1200 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.48%#	
80) p-Bromofluorobenzene	16.41	95	10753	1.0574 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	13796	1.8785 ug/L	99
3) Chloromethane	3.86	50	19743	2.1024 ug/L	97
4) Vinyl Chloride	4.10	62	15895	1.9796 ug/L	97
5) 1,3-Butadiene	4.16	54	16611	2.0499 ug/L	85
6) Bromomethane	5.02	94	6908	2.0620 ug/L	91
7) Chloroethane	5.19	64	10469	2.1147 ug/L	91
8) Trichlorofluoromethane	5.70	101	26158	2.0244 ug/L	97
9) Diethyl ether	6.21	59	139836	26.6262 ug/L	82
10) Isoprene	6.25	67	18694	2.0826 ug/L	81
11) Acrolein	6.46	56	6266	12.0224 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.47	101	13175	1.9850 ug/L	90
13) Acetone	6.56	43	3520	2.2433 ug/L #	48
14) 1,1-Dichloroethene	6.79	61	23843	1.9739 ug/L	81
15) Tert-Butyl Alcohol	6.91	59	20610	60.0510 ug/L	97
16) Dimethyl Sulfide	7.06	62	12234	1.8911 ug/L	75
17) Iodomethane	7.32	142	9232	1.8536 ug/L	92
18) Methyl acetate	7.32	43	10381	2.1982 ug/L #	78
19) Methylene Chloride	7.58	84	13787	2.0831 ug/L #	52
20) Carbon Disulfide	7.63	76	39790	2.0413 ug/L	100
21) Acrylonitrile	7.75	53	24244	11.5911 ug/L	88
22) Methyl Tert Butyl Ether	7.77	73	33454	1.9687 ug/L	96
23) trans-1,2-Dichloroethene	8.03	61	22199	1.9718 ug/L	88
24) n-Hexane	8.11	57	17936	1.9353 ug/L	84
25) Diisopropyl ether	8.45	45	764164	26.1405 ug/L	91
26) Vinyl Acetate	8.61	43	26581	2.2754 ug/L #	85
27) 1,1-Dichloroethane	8.65	63	26739	2.0191 ug/L	96
28) Ethyl-Tert-Butyl ether	9.02	59	597519	25.7488 ug/L	92
29) 2-Butanone	9.21	43	5174	2.0610 ug/L #	68
30) Propionitrile	9.31	54	18221	25.3160 ug/L	93
31) 2,2-Dichloropropane	9.43	77	21869	1.9798 ug/L	97
32) cis-1,2-Dichloroethene	9.49	96	14896	2.0219 ug/L	71
33) Chloroform	9.70	83	27660	2.0781 ug/L	95
34) 1-Bromopropane	9.84	122	2351	1.6073 ug/L	80
35) Bromochloromethane	9.94	130	9024	1.9371 ug/L #	58
36) Tetrahydrofuran	9.96	42	44584	24.8570 ug/L	78
38) 1,1,1-Trichloroethane	10.24	97	24341	1.9905 ug/L	98
39) Cyclohexane	10.27	56	25534	1.9666 ug/L	74
40) 1,1-Dichloropropene	10.43	75	19180	1.9872 ug/L	90
41) Tert-Amyl-Methyl ether	10.52	73	435661	24.8913 ug/L	85
42) Carbon Tetrachloride	10.58	117	23952	2.0677 ug/L	96
45) 1,2-Dichloroethane	10.75	62	22287	2.0388 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391549.D Vial: 8
Acq On : 13 Oct 2013 18:26 Operator: MES
Sample : WG448425-05 2 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:37 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
46)	Benzene	10.79	78	54773	2.0773	ug/L		89
47)	Trichloroethene	11.54	130	15704	1.9487	ug/L		93
48)	Methylcyclohexane	11.62	83	19745	1.9609	ug/L		84
49)	1,2-Dichloropropane	11.76	63	14551	2.0702	ug/L		91
50)	Bromodichloromethane	12.05	83	19752	1.9954	ug/L		96
51)	1,4-Dioxane	12.03	88	1526	47.1478	ug/L		88
52)	Dibromomethane	12.15	93	7026	1.8763	ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.34	63	6298	1.6774	ug/L		91
54)	4-Methyl-2-Pentanone	12.38	58	3044	1.6713	ug/L	#	58
55)	cis-1,3-Dichloropropene	12.69	75	21508	1.9985	ug/L		95
56)	Dimethyl Disulfide	12.95	94	16969	1.5103	ug/L		100
59)	Toluene	13.11	91	57715	2.1302	ug/L		95
60)	Ethyl Methacrylate	13.20	69	12054	1.8771	ug/L		76
62)	trans-1,3-Dichloropropene	13.29	75	19190	1.9110	ug/L		97
63)	1,1,2-Trichloroethane	13.50	97	9464	1.9329	ug/L		83
64)	2-Hexanone	13.43	58	2975	1.8502	ug/L	#	49
65)	1,3-Dichloropropane	13.80	76	17659	2.0024	ug/L	#	62
66)	Tetrachloroethene	13.94	164	12327	1.9833	ug/L		86
67)	Dibromochloromethane	14.21	129	14384	1.9595	ug/L		97
68)	1,2-Dibromoethane	14.45	107	10183	1.9744	ug/L		94
69)	1-Chlorohexane	14.54	91	16409	1.9069	ug/L	#	62
70)	Chlorobenzene	14.96	112	40617	2.0509	ug/L		72
71)	1,1,1,2-Tetrachloroethane	14.99	131	15771	1.9900	ug/L		99
72)	Ethylbenzene	14.98	106	21709	2.0325	ug/L		89
73)	m-,p-Xylene	15.07	106	50761	4.0426	ug/L		83
74)	o-Xylene	15.64	106	25611	2.0316	ug/L		90
75)	Styrene	15.67	104	40666	1.9610	ug/L		90
76)	Bromoform	16.17	173	8540	1.8069	ug/L		96
77)	Isopropylbenzene	16.06	105	64173	2.0309	ug/L		96
79)	1,1,2,2-Tetrachloroethane	16.27	83	11588	2.1606	ug/L		91
81)	1,2,3-Trichloropropane	16.47	110	3743	2.0288	ug/L		96
82)	trans-1,4-Dichloro-2-Buten	16.51	53	3964	1.8413	ug/L		75
83)	n-Propylbenzene	16.56	91	76307	2.1591	ug/L		91
84)	Bromobenzene	16.71	156	19022	2.1249	ug/L		81
85)	1,3,5-Trimethylbenzene	16.76	105	55786	2.0767	ug/L		96
86)	2-Chlorotoluene	16.85	91	53624	2.2771	ug/L		85
87)	4-Chlorotoluene	16.89	91	43529	1.9347	ug/L		90
88)	a-Methylstyrene	17.16	118	28822	1.8459	ug/L		92
89)	tert-Butylbenzene	17.22	134	11124	1.8834	ug/L		75
90)	1,2,4-Trimethylbenzene	17.28	105	59325	2.1115	ug/L		91
91)	sec-Butylbenzene	17.49	105	65214	2.0687	ug/L		97
92)	p-Isopropyltoluene	17.65	119	59391	2.0635	ug/L		96
93)	1,3-Dichlorobenzene	17.86	146	36088	2.0971	ug/L		98
94)	1,4-Dichlorobenzene	17.98	146	37880	2.1132	ug/L		81
95)	n-Butylbenzene	18.18	91	49027	2.0451	ug/L		90
96)	1,2-Dichlorobenzene	18.48	146	33498	2.0259	ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.48	75	2254	1.9307	ug/L		87
98)	1,2,4-Trichlorobenzene	20.62	180	24020	1.9511	ug/L		98
99)	Hexachlorobutadiene	20.77	225	9064	1.9842	ug/L		95
100)	Naphthalene	21.00	128	48040	2.0863	ug/L		97
101)	1,2,3-Trichlorobenzene	21.31	180	23278	2.0621	ug/L		97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391549.D Vial: 8
Acq On : 13 Oct 2013 18:26 Operator: MES
Sample : WG448425-05 2 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

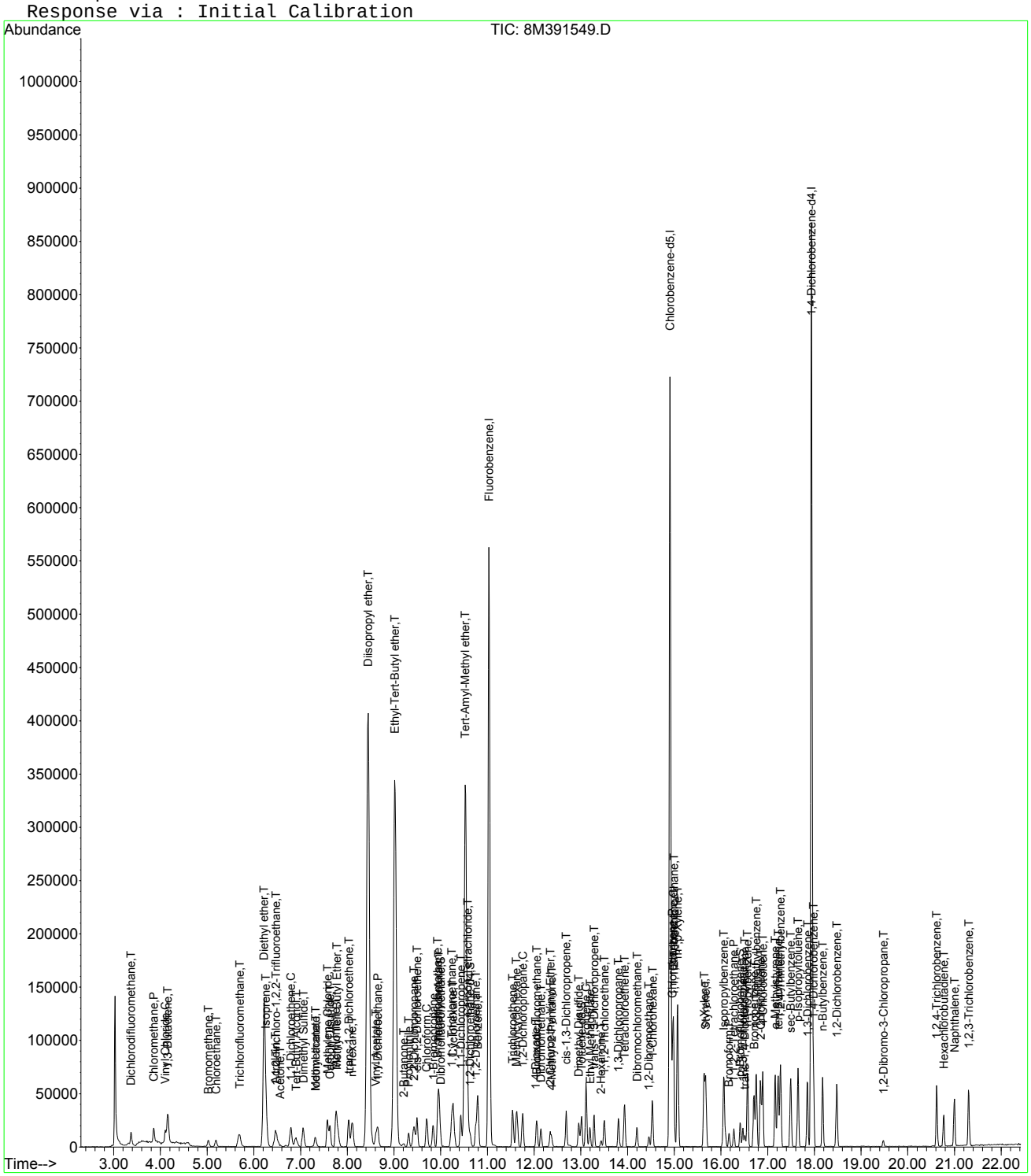

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391550.D Vial: 9
Acq On : 13 Oct 2013 18:57 Operator: MES
Sample : WG448425-06 5 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:39 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	662902	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	522473	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.94	152	299421	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.99	111	19721	2.6163 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.48%#		
43) 1,2-Dichloroethane-d4	10.63	65	23212	2.6267 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.52%#		
58) Toluene-d8	13.02	98	64172	2.5788 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.32%#		
80) p-Bromofluorobenzene	16.41	95	26920	2.5880 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	38607	5.2318 ug/L	98
3) Chloromethane	3.85	50	46397	4.9172 ug/L	96
4) Vinyl Chloride	4.10	62	40717	5.0468 ug/L	96
5) 1,3-Butadiene	4.15	54	41551	5.1031 ug/L	90
6) Bromomethane	5.02	94	17878	4.3108 ug/L	96
7) Chloroethane	5.19	64	26745	5.3765 ug/L	95
8) Trichlorofluoromethane	5.68	101	68381	5.2668 ug/L	97
9) Diethyl ether	6.22	59	266359	50.4752 ug/L	83
10) Isoprene	6.25	67	46872	5.1968 ug/L	74
11) Acrolein	6.46	56	12457	23.7866 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.47	101	35744	5.3595 ug/L	87
13) Acetone	6.56	43	9009	5.7139 ug/L #	79
14) 1,1-Dichloroethene	6.79	61	63486	5.2308 ug/L	83
15) Tert-Butyl Alcohol	6.89	59	38424	111.4206 ug/L	97
16) Dimethyl Sulfide	7.05	62	31639	4.8672 ug/L	77
17) Iodomethane	7.31	142	27742	4.6505 ug/L	93
18) Methyl acetate	7.32	43	25881	5.4541 ug/L #	82
19) Methylene Chloride	7.58	84	32957	4.9556 ug/L #	56
20) Carbon Disulfide	7.63	76	100685	5.1408 ug/L	99
21) Acrylonitrile	7.75	53	48837	23.2376 ug/L	94
22) Methyl Tert Butyl Ether	7.78	73	88225	5.1670 ug/L	94
23) trans-1,2-Dichloroethene	8.03	61	59599	5.2686 ug/L	82
24) n-Hexane	8.10	57	50092	5.3791 ug/L	90
25) Diisopropyl ether	8.45	45	1487971	50.6574 ug/L	91
26) Vinyl Acetate	8.61	43	53633	4.5692 ug/L #	89
27) 1,1-Dichloroethane	8.65	63	68876	5.1761 ug/L	98
28) Ethyl-Tert-Butyl ether	9.02	59	1173470	50.3265 ug/L	92
29) 2-Butanone	9.21	43	12985	5.1476 ug/L	83
30) Propionitrile	9.31	54	35227	48.7100 ug/L	94
31) 2,2-Dichloropropane	9.43	77	57949	5.2210 ug/L	98
32) cis-1,2-Dichloroethene	9.49	96	38393	5.1863 ug/L	79
33) Chloroform	9.70	83	66595	4.9793 ug/L	99
34) 1-Bromopropane	9.84	122	7699	5.2382 ug/L	94
35) Bromochloromethane	9.93	130	24339	5.1998 ug/L #	68
36) Tetrahydrofuran	9.96	42	86875	48.2042 ug/L	79
38) 1,1,1-Trichloroethane	10.23	97	64322	5.2349 ug/L	99
39) Cyclohexane	10.28	56	68068	5.2174 ug/L	75
40) 1,1-Dichloropropene	10.43	75	49470	5.1010 ug/L	91
41) Tert-Amyl-Methyl ether	10.53	73	872908	49.6349 ug/L	86
42) Carbon Tetrachloride	10.58	117	61793	5.3090 ug/L	98
45) 1,2-Dichloroethane	10.75	62	56855	5.1761 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391550.D Vial: 9
Acq On : 13 Oct 2013 18:57 Operator: MES
Sample : WG448425-06 5 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:39 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
46)	Benzene	10.79	78	136824	5.1644	ug/L		87
47)	Trichloroethene	11.54	130	42108	5.2003	ug/L		93
48)	Methylcyclohexane	11.63	83	50349	4.9763	ug/L		80
49)	1,2-Dichloropropane	11.75	63	36149	5.1185	ug/L		92
50)	Bromodichloromethane	12.05	83	52727	5.3012	ug/L		95
51)	1,4-Dioxane	12.04	88	2963	91.1084	ug/L	#	67
52)	Dibromomethane	12.15	93	19919	5.2939	ug/L		90
53)	2-Chloroethyl Vinyl Ether	12.34	63	17173	4.5520	ug/L		91
54)	4-Methyl-2-Pentanone	12.37	58	8362	4.5692	ug/L		75
55)	cis-1,3-Dichloropropene	12.68	75	54849	5.0721	ug/L		97
56)	Dimethyl Disulfide	12.95	94	47861	4.2395	ug/L		96
59)	Toluene	13.11	91	147125	5.3669	ug/L		97
60)	Ethyl Methacrylate	13.19	69	32400	4.9866	ug/L		69
62)	trans-1,3-Dichloropropene	13.28	75	50634	4.9835	ug/L		99
63)	1,1,2-Trichloroethane	13.50	97	26287	5.3063	ug/L		93
64)	2-Hexanone	13.43	58	7699	4.7323	ug/L	#	76
65)	1,3-Dichloropropane	13.80	76	45271	5.0736	ug/L		68
66)	Tetrachloroethene	13.94	164	31875	5.0686	ug/L		88
67)	Dibromochloromethane	14.20	129	38337	5.1616	ug/L		96
68)	1,2-Dibromoethane	14.45	107	27399	5.2505	ug/L		98
69)	1-Chlorohexane	14.54	91	44314	5.0896	ug/L		71
70)	Chlorobenzene	14.96	112	105490	5.2645	ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.99	131	41453	5.1697	ug/L		97
72)	Ethylbenzene	14.98	106	53189	4.9216	ug/L		83
73)	m-,p-Xylene	15.07	106	133143	10.4798	ug/L		86
74)	o-Xylene	15.63	106	65606	5.1435	ug/L		89
75)	Styrene	15.67	104	109152	5.2022	ug/L		92
76)	Bromoform	16.17	173	24038	5.0268	ug/L		99
77)	Isopropylbenzene	16.07	105	167937	5.2528	ug/L		96
79)	1,1,2,2-Tetrachloroethane	16.27	83	28826	5.2544	ug/L		97
81)	1,2,3-Trichloropropane	16.47	110	10498	5.5628	ug/L		92
82)	trans-1,4-Dichloro-2-Buten	16.51	53	10621	4.8231	ug/L		72
83)	n-Propylbenzene	16.57	91	195051	5.3954	ug/L		93
84)	Bromobenzene	16.71	156	49054	5.3572	ug/L		94
85)	1,3,5-Trimethylbenzene	16.76	105	149157	5.4284	ug/L		95
86)	2-Chlorotoluene	16.84	91	138700	5.7579	ug/L		94
87)	4-Chlorotoluene	16.89	91	113653	4.9385	ug/L		94
88)	a-Methylstyrene	17.16	118	80574	5.0448	ug/L		90
89)	tert-Butylbenzene	17.22	134	31199	5.1641	ug/L		83
90)	1,2,4-Trimethylbenzene	17.28	105	152015	5.2896	ug/L		95
91)	sec-Butylbenzene	17.49	105	170889	5.2995	ug/L		95
92)	p-Isopropyltoluene	17.65	119	157745	5.3581	ug/L		95
93)	1,3-Dichlorobenzene	17.85	146	91622	5.2050	ug/L		95
94)	1,4-Dichlorobenzene	17.98	146	94366	5.1467	ug/L		89
95)	n-Butylbenzene	18.18	91	129866	5.2961	ug/L		91
96)	1,2-Dichlorobenzene	18.47	146	86888	5.1372	ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.48	75	6123	5.1274	ug/L		84
98)	1,2,4-Trichlorobenzene	20.62	180	65719	5.2187	ug/L		99
99)	Hexachlorobutadiene	20.77	225	23058	4.9346	ug/L		95
100)	Naphthalene	21.00	128	122949	5.2200	ug/L		100
101)	1,2,3-Trichlorobenzene	21.31	180	58970	5.1069	ug/L		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391550.D Vial: 9
Acq On : 13 Oct 2013 18:57 Operator: MES
Sample : WG448425-06 5 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

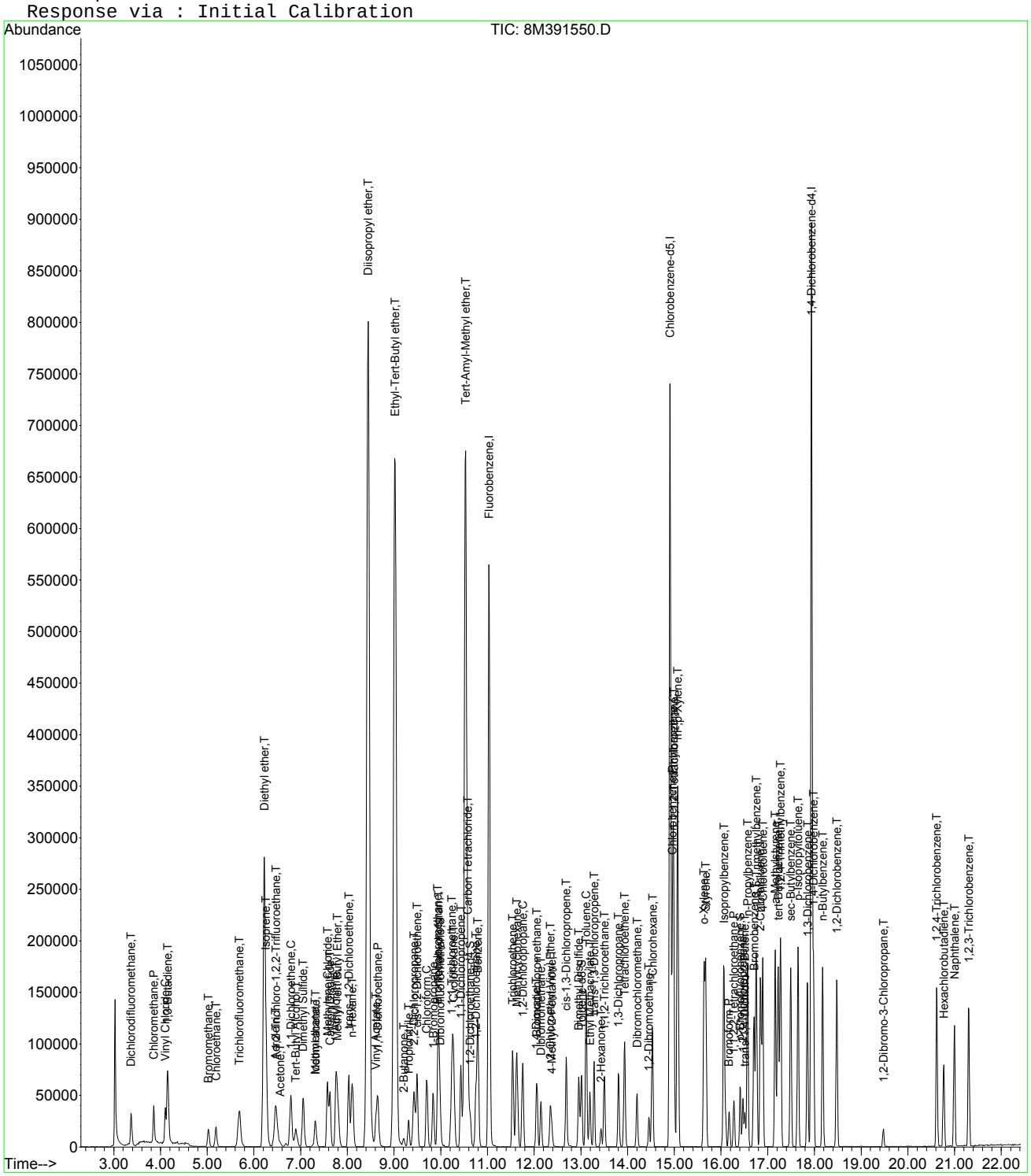

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391551.D Vial: 10
Acq On : 13 Oct 2013 19:28 Operator: MES
Sample : WG448425-07 20 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 10:54:46 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	665657	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	526416	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	307650	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.99	111	76026	10.0442 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 40.16%#		
43) 1,2-Dichloroethane-d4	10.63	65	92615	10.4372 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.76%#		
58) Toluene-d8	13.01	98	254328	10.1437 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery = 40.56%#		
80) p-Bromofluorobenzene	16.41	95	107397	10.0485 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 40.20%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.37	85	156535	21.1251 ug/L	98
3) Chloromethane	3.86	50	184253	19.4467 ug/L	98
4) Vinyl Chloride	4.10	62	161449	19.9284 ug/L	97
5) 1,3-Butadiene	4.15	54	166109	20.3161 ug/L	96
6) Bromomethane	5.03	94	80756	17.1709 ug/L	96
7) Chloroethane	5.18	64	103834	20.7871 ug/L	91
8) Trichlorofluoromethane	5.69	101	267040	20.4827 ug/L	99
9) Diethyl ether	6.22	59	425551	80.3085 ug/L	82
10) Isoprene	6.26	67	186033	20.5404 ug/L	76
11) Acrolein	6.45	56	22009	41.8522 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.48	101	140315	20.9518 ug/L	89
13) Acetone	6.56	43	33908	21.4171 ug/L	92
14) 1,1-Dichloroethene	6.79	61	249896	20.5044 ug/L	84
15) Tert-Butyl Alcohol	6.89	59	53982	155.8872 ug/L	92
16) Dimethyl Sulfide	7.05	62	135368	20.7383 ug/L	79
17) Iodomethane	7.31	142	131191	20.2367 ug/L	94
18) Methyl acetate	7.32	43	96071	20.1621 ug/L	86
19) Methylene Chloride	7.57	84	133830	20.0403 ug/L #	53
20) Carbon Disulfide	7.63	76	393991	20.0331 ug/L	100
21) Acrylonitrile	7.76	53	82392	39.0415 ug/L	100
22) Methyl Tert Butyl Ether	7.79	73	356943	20.8183 ug/L	92
23) trans-1,2-Dichloroethene	8.03	61	235034	20.6912 ug/L	84
24) n-Hexane	8.11	57	192712	20.6088 ug/L	87
25) Diisopropyl ether	8.45	45	2371908	80.4165 ug/L	91
26) Vinyl Acetate	8.61	43	244975	20.7841 ug/L	90
27) 1,1-Dichloroethane	8.66	63	280873	21.0204 ug/L	97
28) Ethyl-Tert-Butyl ether	9.02	59	1871726	79.9403 ug/L	92
29) 2-Butanone	9.20	43	52007	20.5318 ug/L	86
30) Propionitrile	9.31	54	56838	78.2673 ug/L	96
31) 2,2-Dichloropropane	9.43	77	232711	20.8795 ug/L	100
32) cis-1,2-Dichloroethene	9.49	96	151041	20.3190 ug/L	73
33) Chloroform	9.70	83	269676	20.0802 ug/L	99
34) 1-Bromopropane	9.85	122	30219	20.4753 ug/L	97
35) Bromochloromethane	9.94	130	99757	21.2239 ug/L #	67
36) Tetrahydrofuran	9.96	42	136681	75.5261 ug/L	80
38) 1,1,1-Trichloroethane	10.24	97	259857	21.0613 ug/L	99
39) Cyclohexane	10.27	56	263120	20.0847 ug/L	77
40) 1,1-Dichloropropene	10.43	75	198267	20.3592 ug/L	92
41) Tert-Amyl-Methyl ether	10.53	73	1387223	78.5532 ug/L	87
42) Carbon Tetrachloride	10.58	117	240274	20.5578 ug/L	100
45) 1,2-Dichloroethane	10.74	62	227372	20.6145 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391551.D Vial: 10
Acq On : 13 Oct 2013 19:28 Operator: MES
Sample : WG448425-07 20 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 10:54:46 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.80	78	545770	20.5146 ug/L	87
47)	Trichloroethene	11.54	130	166769	20.5105 ug/L	94
48)	Methylcyclohexane	11.62	83	204142	20.0930 ug/L	81
49)	1,2-Dichloropropane	11.76	63	147896	20.8546 ug/L	96
50)	Bromodichloromethane	12.06	83	209421	20.9681 ug/L	99
51)	1,4-Dioxane	12.05	88	4902	150.1063 ug/L	72
52)	Dibromomethane	12.14	93	80290	21.2504 ug/L	92
53)	2-Chloroethyl Vinyl Ether	12.35	63	77811	20.5397 ug/L	87
54)	4-Methyl-2-Pentanone	12.37	58	37879	20.6123 ug/L	80
55)	cis-1,3-Dichloropropene	12.69	75	228060	21.0022 ug/L	99
56)	Dimethyl Disulfide	12.96	94	215026	18.9681 ug/L	95
59)	Toluene	13.11	91	577660	20.9143 ug/L	98
60)	Ethyl Methacrylate	13.20	69	139182	21.2605 ug/L	72
62)	trans-1,3-Dichloropropene	13.28	75	213064	20.8130 ug/L	100
63)	1,1,2-Trichloroethane	13.51	97	106475	21.3321 ug/L	94
64)	2-Hexanone	13.43	58	33202	20.2551 ug/L	75
65)	1,3-Dichloropropane	13.81	76	188382	20.9542 ug/L	70
66)	Tetrachloroethene	13.94	164	132118	20.8513 ug/L	91
67)	Dibromochloromethane	14.20	129	160221	21.4102 ug/L	99
68)	1,2-Dibromoethane	14.46	107	111652	21.2359 ug/L	99
69)	1-Chlorohexane	14.53	91	180506	20.5766 ug/L	71
70)	Chlorobenzene	14.96	112	417750	20.6919 ug/L	89
71)	1,1,1,2-Tetrachloroethane	14.98	131	169327	20.9591 ug/L	99
72)	Ethylbenzene	14.98	106	216066	19.8431 ug/L	84
73)	m-,p-Xylene	15.08	106	532254	41.5803 ug/L	88
74)	o-Xylene	15.64	106	261698	20.3632 ug/L	85
75)	Styrene	15.68	104	448944	21.2365 ug/L	91
76)	Bromoform	16.17	173	99625	20.6772 ug/L	98
77)	Isopropylbenzene	16.06	105	679363	21.0903 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.28	83	116380	20.6464 ug/L	98
81)	1,2,3-Trichloropropane	16.47	110	40547	20.9109 ug/L	95
82)	trans-1,4-Dichloro-2-Buten	16.51	53	47936	21.1860 ug/L	63
83)	n-Propylbenzene	16.57	91	782613	21.0694 ug/L	94
84)	Bromobenzene	16.71	156	196197	20.8536 ug/L	79
85)	1,3,5-Trimethylbenzene	16.75	105	594440	21.0552 ug/L	95
86)	2-Chlorotoluene	16.84	91	489774	19.7882 ug/L	95
87)	4-Chlorotoluene	16.90	91	505938	21.3962 ug/L	95
88)	a-Methylstyrene	17.17	118	326239	19.8798 ug/L	92
89)	tert-Butylbenzene	17.23	134	129304	20.8300 ug/L	91
90)	1,2,4-Trimethylbenzene	17.28	105	618098	20.9323 ug/L	95
91)	sec-Butylbenzene	17.50	105	687194	20.7408 ug/L	98
92)	p-Isopropyltoluene	17.65	119	632494	20.9090 ug/L	97
93)	1,3-Dichlorobenzene	17.85	146	366600	20.2694 ug/L	94
94)	1,4-Dichlorobenzene	17.98	146	372746	19.7856 ug/L	94
95)	n-Butylbenzene	18.18	91	512840	20.3547 ug/L	94
96)	1,2-Dichlorobenzene	18.48	146	349889	20.1338 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	19.47	75	24234	19.7508 ug/L	87
98)	1,2,4-Trichlorobenzene	20.62	180	269182	20.8038 ug/L	98
99)	Hexachlorobutadiene	20.77	225	96099	20.0158 ug/L	96
100)	Naphthalene	21.00	128	507491	20.9701 ug/L	98
101)	1,2,3-Trichlorobenzene	21.30	180	243755	20.5450 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M391551.D 8260WT.M Tue Oct 15 10:54:47 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391551.D Vial: 10
Acq On : 13 Oct 2013 19:28 Operator: MES
Sample : WG448425-07 20 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 10:54 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

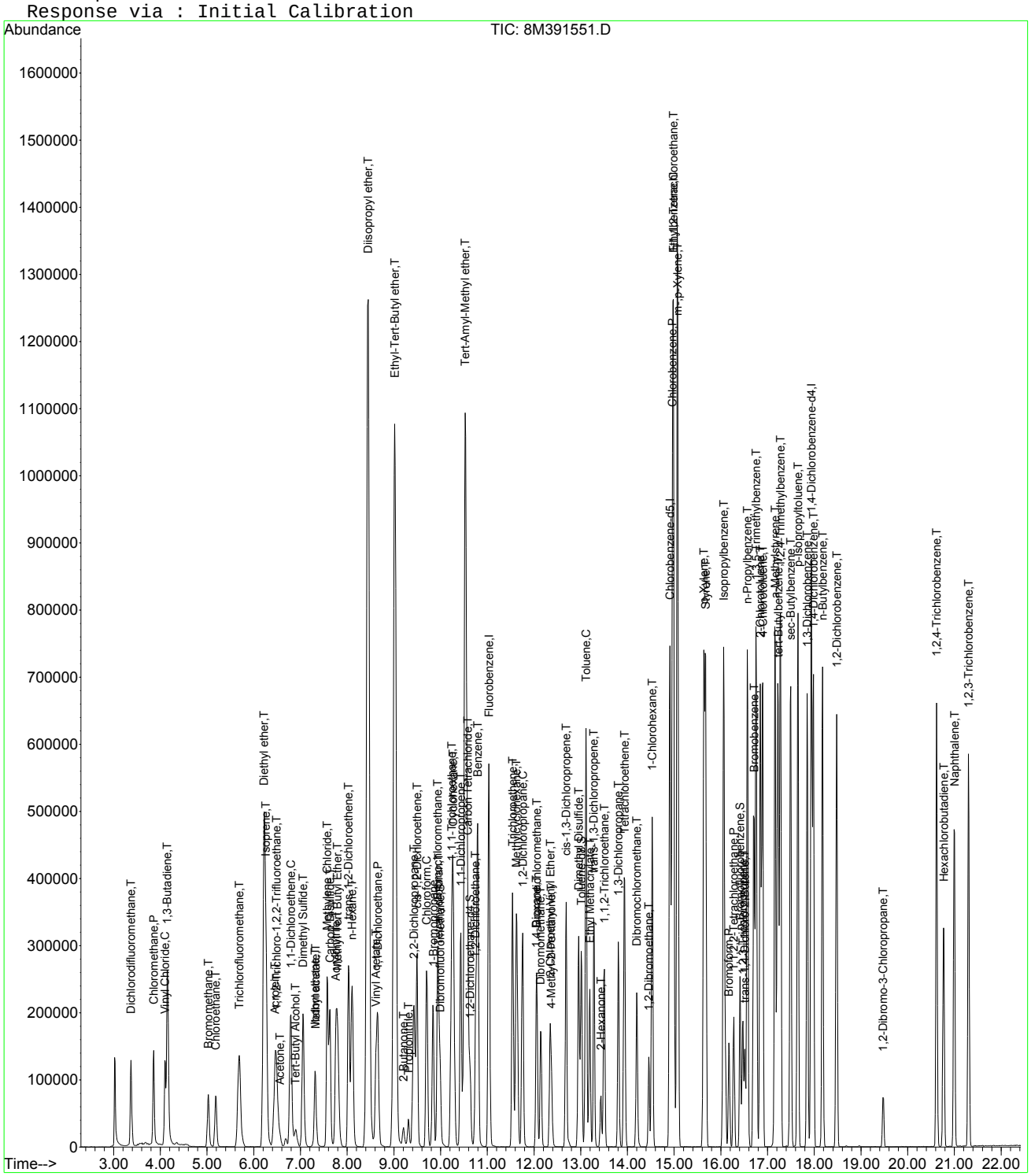

8M391551.D 8260WT.M Tue Oct 15 10:54:47 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391552.D Vial: 11
Acq On : 13 Oct 2013 19:59 Operator: MES
Sample : WG448425-08 50 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:42 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	660376	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	534518	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	315004	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.99	111	191075	25.4458 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.80%		
43) 1,2-Dichloroethane-d4	10.63	65	222505	25.2757 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.12%		
58) Toluene-d8	13.01	98	624138	24.5161 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.08%		
80) p-Bromofluorobenzene	16.41	95	271994	24.8549 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.40%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	387507	52.7141 ug/L	98
3) Chloromethane	3.86	50	445998	47.4485 ug/L	98
4) Vinyl Chloride	4.10	62	404831	50.3699 ug/L	97
5) 1,3-Butadiene	4.15	54	417101	51.4219 ug/L	97
6) Bromomethane	5.03	94	227803	47.6543 ug/L	99
7) Chloroethane	5.18	64	259033	52.2718 ug/L	93
8) Trichlorofluoromethane	5.69	101	663504	51.2994 ug/L	99
9) Diethyl ether	6.22	59	533309	101.4491 ug/L	83
10) Isoprene	6.26	67	467467	52.0270 ug/L	75
11) Acrolein	6.45	56	26082	49.9941 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.47	101	343644	51.7233 ug/L	90
13) Acetone	6.56	43	75977	48.3726 ug/L	97
14) 1,1-Dichloroethene	6.80	61	624899	51.6841 ug/L	84
15) Tert-Butyl Alcohol	6.90	59	64919	188.9699 ug/L	92
16) Dimethyl Sulfide	7.05	62	336592	51.9781 ug/L	81
17) Iodomethane	7.31	142	347581	53.2950 ug/L	93
18) Methyl acetate	7.31	43	233025	49.2952 ug/L	87
19) Methylene Chloride	7.58	84	328402	49.5696 ug/L	57
20) Carbon Disulfide	7.62	76	996918	51.0953 ug/L	100
21) Acrylonitrile	7.76	53	109062	52.0923 ug/L	99
22) Methyl Tert Butyl Ether	7.79	73	878654	51.6562 ug/L	91
23) trans-1,2-Dichloroethene	8.03	61	573085	50.8549 ug/L	84
24) n-Hexane	8.11	57	475985	51.3093 ug/L	88
25) Diisopropyl ether	8.44	45	2927693	100.0534 ug/L	92
26) Vinyl Acetate	8.61	43	589835	50.4428 ug/L	91
27) 1,1-Dichloroethane	8.66	63	682573	51.4921 ug/L	98
28) Ethyl-Tert-Butyl ether	9.02	59	2334158	100.4878 ug/L	92
29) 2-Butanone	9.20	43	128219	51.0243 ug/L	86
30) Propionitrile	9.31	54	69445	96.3921 ug/L	98
31) 2,2-Dichloropropane	9.43	77	580918	52.5385 ug/L	100
32) cis-1,2-Dichloroethene	9.49	96	377369	51.1722 ug/L	74
33) Chloroform	9.70	83	663068	49.7673 ug/L	100
34) 1-Bromopropane	9.84	122	78032	53.2945 ug/L	99
35) Bromochloromethane	9.94	130	239018	51.2591 ug/L #	65
36) Tetrahydrofuran	9.96	42	174205	97.0306 ug/L	80
38) 1,1,1-Trichloroethane	10.24	97	643343	52.5595 ug/L	100
39) Cyclohexane	10.27	56	658931	50.7003 ug/L	77
40) 1,1-Dichloropropene	10.43	75	498330	51.5805 ug/L	94
41) Tert-Amyl-Methyl ether	10.53	73	1744122	99.5529 ug/L	88
42) Carbon Tetrachloride	10.58	117	608619	52.4898 ug/L	100
45) 1,2-Dichloroethane	10.74	62	559045	51.0907 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391552.D Vial: 11
Acq On : 13 Oct 2013 19:59 Operator: MES
Sample : WG448425-08 50 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:42 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.80	78	1328250	50.3260	ug/L	86
47)	Trichloroethene	11.54	130	419668	52.0268	ug/L	95
48)	Methylcyclohexane	11.62	83	509552	50.5547	ug/L	81
49)	1,2-Dichloropropane	11.76	63	367434	52.2257	ug/L	97
50)	Bromodichloromethane	12.06	83	522353	52.7184	ug/L	99
51)	1,4-Dioxane	12.05	88	7646	236.0038	ug/L	82
52)	Dibromomethane	12.14	93	205561	54.8410	ug/L	90
53)	2-Chloroethyl Vinyl Ether	12.35	63	193039	51.3637	ug/L	90
54)	4-Methyl-2-Pentanone	12.37	58	93840	51.4726	ug/L	84
55)	cis-1,3-Dichloropropene	12.69	75	572529	53.1462	ug/L	100
56)	Dimethyl Disulfide	12.96	94	582814	51.8231	ug/L	95
59)	Toluene	13.11	91	1402281	50.0003	ug/L	99
60)	Ethyl Methacrylate	13.20	69	352274	52.9955	ug/L	72
62)	trans-1,3-Dichloropropene	13.28	75	538892	51.8435	ug/L	99
63)	1,1,2-Trichloroethane	13.51	97	263216	51.9355	ug/L	94
64)	2-Hexanone	13.43	58	84675	50.8737	ug/L	79
65)	1,3-Dichloropropane	13.81	76	462979	50.7178	ug/L	71
66)	Tetrachloroethene	13.94	164	331025	51.4516	ug/L	91
67)	Dibromochloromethane	14.20	129	404830	53.2770	ug/L	99
68)	1,2-Dibromoethane	14.46	107	279780	52.4068	ug/L	99
69)	1-Chlorohexane	14.53	91	458382	51.4607	ug/L	71
70)	Chlorobenzene	14.96	112	1025993	50.0490	ug/L	88
71)	1,1,1,2-Tetrachloroethane	14.98	131	424780	51.7819	ug/L	99
72)	Ethylbenzene	14.98	106	541923	49.0148	ug/L	86
73)	m-,p-Xylene	15.08	106	1310453	100.8224	ug/L	89
74)	o-Xylene	15.64	106	662363	50.7586	ug/L	88
75)	Styrene	15.68	104	1133259	52.7944	ug/L	91
76)	Bromoform	16.17	173	258223	52.7820	ug/L	99
77)	Isopropylbenzene	16.06	105	1687760	51.6010	ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.28	83	291281	50.4684	ug/L	99
81)	1,2,3-Trichloropropane	16.47	110	101039	50.8913	ug/L	90
82)	trans-1,4-Dichloro-2-Buten	16.51	53	117672	50.7928	ug/L	69
83)	n-Propylbenzene	16.57	91	1944713	51.1330	ug/L	94
84)	Bromobenzene	16.71	156	492712	51.1474	ug/L	79
85)	1,3,5-Trimethylbenzene	16.75	105	1488804	51.5025	ug/L	95
86)	2-Chlorotoluene	16.85	91	1228118	48.4609	ug/L	95
87)	4-Chlorotoluene	16.90	91	1265816	52.2818	ug/L	95
88)	a-Methylstyrene	17.16	118	857450	51.0300	ug/L	92
89)	tert-Butylbenzene	17.23	134	321986	50.6589	ug/L	90
90)	1,2,4-Trimethylbenzene	17.28	105	1527392	50.5186	ug/L	96
91)	sec-Butylbenzene	17.50	105	1723700	50.8100	ug/L	98
92)	p-Isopropyltoluene	17.65	119	1590010	51.3355	ug/L	98
93)	1,3-Dichlorobenzene	17.85	146	929242	50.1785	ug/L	95
94)	1,4-Dichlorobenzene	17.98	146	937989	48.6267	ug/L	94
95)	n-Butylbenzene	18.18	91	1282174	49.7016	ug/L	95
96)	1,2-Dichlorobenzene	18.48	146	882418	49.5919	ug/L	94
97)	1,2-Dibromo-3-Chloropropan	19.47	75	63287	50.3749	ug/L	91
98)	1,2,4-Trichlorobenzene	20.62	180	676485	51.0616	ug/L	99
99)	Hexachlorobutadiene	20.77	225	246304	50.1033	ug/L	97
100)	Naphthalene	20.99	128	1277664	51.5620	ug/L	99
101)	1,2,3-Trichlorobenzene	21.30	180	607605	50.0166	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M391552.D 8260WT.M Mon Oct 14 11:43:43 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391552.D Vial: 11
Acq On : 13 Oct 2013 19:59 Operator: MES
Sample : WG448425-08 50 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

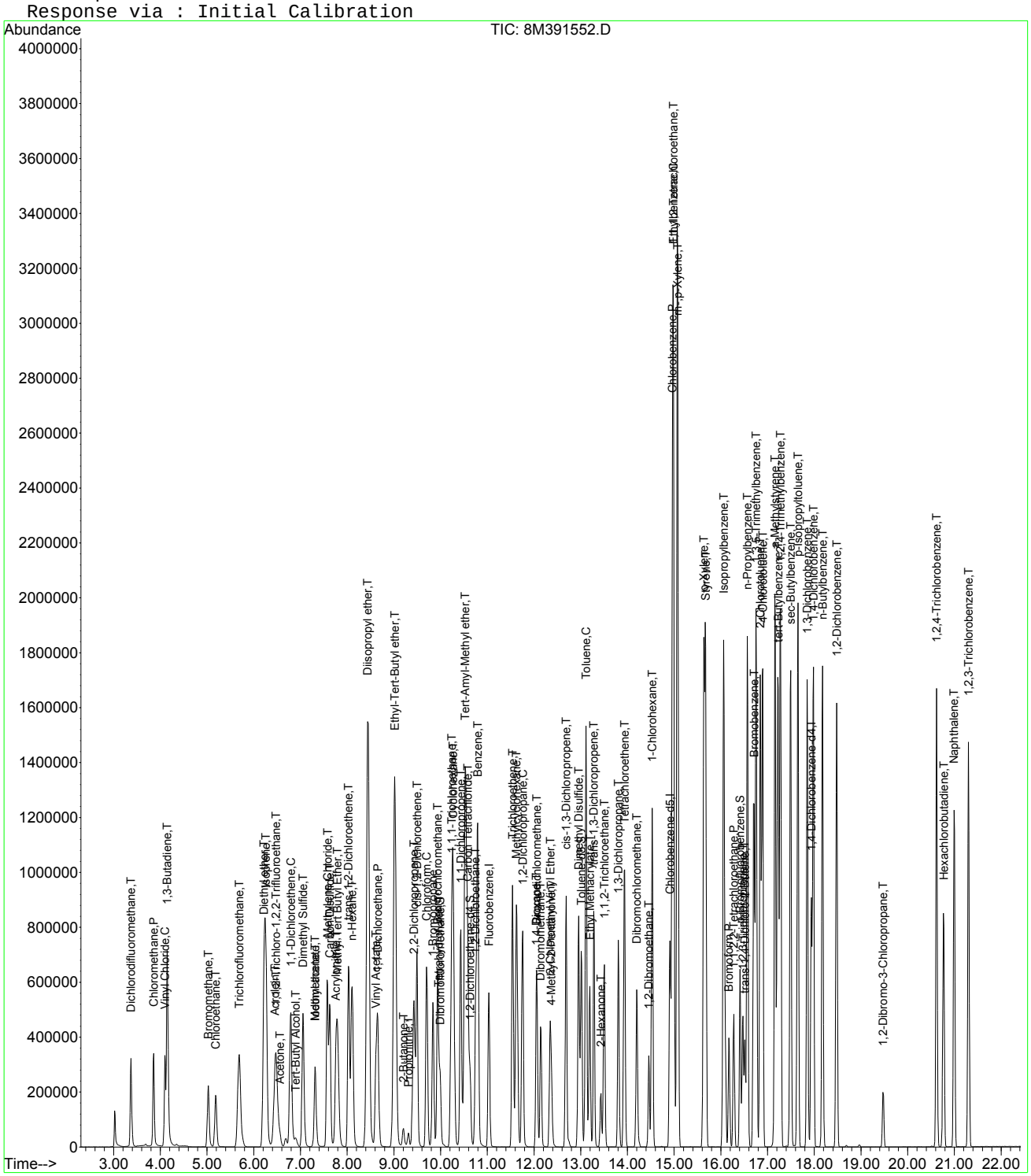

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391553.D Vial: 12
Acq On : 13 Oct 2013 20:30 Operator: MES
Sample : WG448425-09 100 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:44 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	687597	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	547543	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	327463	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.99	111	388305	49.6641 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 198.64%#		
43) 1,2-Dichloroethane-d4	10.63	65	443287	48.3621 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 193.44%#		
58) Toluene-d8	13.01	98	1264021	48.4695 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery = 193.88%#		
80) p-Bromofluorobenzene	16.41	95	549292	48.2847 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 193.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	787834	102.9293 ug/L	98
3) Chloromethane	3.86	50	909537	92.9325 ug/L	99
4) Vinyl Chloride	4.10	62	820607	98.0595 ug/L	98
5) 1,3-Butadiene	4.15	54	845728	100.1370 ug/L	96
6) Bromomethane	5.03	94	496926	99.1420 ug/L	99
7) Chloroethane	5.18	64	529395	102.6005 ug/L	93
8) Trichlorofluoromethane	5.69	101	1345948	99.9435 ug/L	100
9) Diethyl ether	6.22	59	1054221	192.6008 ug/L	83
10) Isoprene	6.26	67	958612	102.4656 ug/L	76
11) Acrolein	6.46	56	50902	93.7065 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.48	101	708357	102.3969 ug/L	90
13) Acetone	6.56	43	148322	90.6944 ug/L	100
14) 1,1-Dichloroethene	6.80	61	1260989	100.1650 ug/L	85
15) Tert-Butyl Alcohol	6.90	59	128464	359.1365 ug/L	94
16) Dimethyl Sulfide	7.05	62	673972	99.9575 ug/L	80
17) Iodomethane	7.31	142	708443	103.8965 ug/L	93
18) Methyl acetate	7.31	43	471352	95.7645 ug/L	88
19) Methylene Chloride	7.57	84	665334	96.4509 ug/L	59
20) Carbon Disulfide	7.62	76	2011430	99.0111 ug/L	99
21) Acrylonitrile	7.76	53	212897	97.6624 ug/L	100
22) Methyl Tert Butyl Ether	7.79	73	1760812	99.4203 ug/L	91
23) trans-1,2-Dichloroethene	8.03	61	1154140	98.3624 ug/L	85
24) n-Hexane	8.11	57	972007	100.6304 ug/L	88
25) Diisopropyl ether	8.44	45	5759834	189.0487 ug/L	92
26) Vinyl Acetate	8.62	43	1257126	103.2534 ug/L	92
27) 1,1-Dichloroethane	8.66	63	1379042	99.9139 ug/L	99
28) Ethyl-Tert-Butyl ether	9.02	59	4598865	190.1476 ug/L	92
29) 2-Butanone	9.20	43	253620	96.9316 ug/L	87
30) Propionitrile	9.31	54	138296	184.3603 ug/L	99
31) 2,2-Dichloropropane	9.43	77	1181725	102.6447 ug/L	100
32) cis-1,2-Dichloroethene	9.49	96	767761	99.9887 ug/L	75
33) Chloroform	9.70	83	1344074	96.8872 ug/L	99
34) 1-Bromopropane	9.84	122	158043	103.6674 ug/L	100
35) Bromochloromethane	9.94	130	494899	101.9329 ug/L #	68
36) Tetrahydrofuran	9.96	42	330344	176.7144 ug/L	81
38) 1,1,1-Trichloroethane	10.24	97	1295969	101.6859 ug/L	100
39) Cyclohexane	10.27	56	1363881	100.7869 ug/L	77
40) 1,1-Dichloropropene	10.44	75	998778	99.2876 ug/L	94
41) Tert-Amyl-Methyl ether	10.53	73	3459938	189.6717 ug/L	89
42) Carbon Tetrachloride	10.58	117	1241734	102.8526 ug/L	99
45) 1,2-Dichloroethane	10.75	62	1116185	97.9690 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391553.D Vial: 12
Acq On : 13 Oct 2013 20:30 Operator: MES
Sample : WG448425-09 100 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:44 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.80	78	2678761	97.4773	ug/L	87
47)	Trichloroethene	11.54	130	836268	99.5689	ug/L	95
48)	Methylcyclohexane	11.62	83	1054616	100.4903	ug/L	81
49)	1,2-Dichloropropane	11.76	63	738066	100.7529	ug/L	97
50)	Bromodichloromethane	12.06	83	1072147	103.9225	ug/L	99
51)	1,4-Dioxane	12.04	88	14405	427.0270	ug/L	89
52)	Dibromomethane	12.14	93	409521	104.9295	ug/L	91
53)	2-Chloroethyl Vinyl Ether	12.35	63	397505	101.5807	ug/L	91
54)	4-Methyl-2-Pentanone	12.37	58	190059	100.1230	ug/L	84
55)	cis-1,3-Dichloropropene	12.69	75	1173789	104.6459	ug/L	99
56)	Dimethyl Disulfide	12.96	94	1237042	105.6416	ug/L	95
59)	Toluene	13.11	91	2848058	99.1358	ug/L	99
60)	Ethyl Methacrylate	13.20	69	717700	105.4011	ug/L	72
62)	trans-1,3-Dichloropropene	13.28	75	1085486	101.9437	ug/L	100
63)	1,1,2-Trichloroethane	13.51	97	531408	102.3586	ug/L	94
64)	2-Hexanone	13.43	58	173729	101.8953	ug/L	80
65)	1,3-Dichloropropane	13.81	76	928718	99.3178	ug/L	71
66)	Tetrachloroethene	13.94	164	684521	103.8650	ug/L	92
67)	Dibromochloromethane	14.20	129	825785	106.0909	ug/L	98
68)	1,2-Dibromoethane	14.46	107	574461	105.0451	ug/L	99
69)	1-Chlorohexane	14.53	91	947760	103.8701	ug/L	73
70)	Chlorobenzene	14.96	112	2076010	98.8609	ug/L	87
71)	1,1,1,2-Tetrachloroethane	14.98	131	867433	103.2271	ug/L	99
72)	Ethylbenzene	14.98	106	1123933	99.2372	ug/L	91
73)	m-,p-Xylene	15.08	106	2680466	201.3215	ug/L	92
74)	o-Xylene	15.64	106	1358673	101.6418	ug/L	90
75)	Styrene	15.68	104	2298511	104.5319	ug/L	90
76)	Bromoform	16.17	173	537867	107.3272	ug/L	100
77)	Isopropylbenzene	16.06	105	3448389	102.9219	ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.28	83	602782	100.4665	ug/L	98
81)	1,2,3-Trichloropropane	16.47	110	207778	100.6718	ug/L	96
82)	trans-1,4-Dichloro-2-Buten	16.51	53	260004	107.9600	ug/L	52
83)	n-Propylbenzene	16.57	91	3938128	99.6068	ug/L	96
84)	Bromobenzene	16.71	156	1005729	100.4304	ug/L	99
85)	1,3,5-Trimethylbenzene	16.75	105	3052745	101.5864	ug/L	97
86)	2-Chlorotoluene	16.85	91	2481339	94.1871	ug/L	96
87)	4-Chlorotoluene	16.90	91	2581528	102.5678	ug/L	96
88)	a-Methylstyrene	17.17	118	1780974	101.9595	ug/L	92
89)	tert-Butylbenzene	17.23	134	671810	101.6762	ug/L	91
90)	1,2,4-Trimethylbenzene	17.28	105	3119578	99.2546	ug/L	97
91)	sec-Butylbenzene	17.50	105	3557784	100.8836	ug/L	99
92)	p-Isopropyltoluene	17.65	119	3277068	101.7787	ug/L	99
93)	1,3-Dichlorobenzene	17.85	146	1897420	98.5612	ug/L	94
94)	1,4-Dichlorobenzene	17.98	146	1927880	96.1414	ug/L	94
95)	n-Butylbenzene	18.18	91	2630213	98.0773	ug/L	95
96)	1,2-Dichlorobenzene	18.48	146	1789560	96.7468	ug/L	94
97)	1,2-Dibromo-3-Chloropropan	19.47	75	133383	102.1301	ug/L	88
98)	1,2,4-Trichlorobenzene	20.62	180	1360914	98.8146	ug/L	99
99)	Hexachlorobutadiene	20.77	225	509800	99.7582	ug/L	96
100)	Naphthalene	20.99	128	2507275	97.3350	ug/L	99
101)	1,2,3-Trichlorobenzene	21.30	180	1226249	97.1013	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M391553.D 8260WT.M Mon Oct 14 11:43:45 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391553.D Vial: 12
Acq On : 13 Oct 2013 20:30 Operator: MES
Sample : WG448425-09 100 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

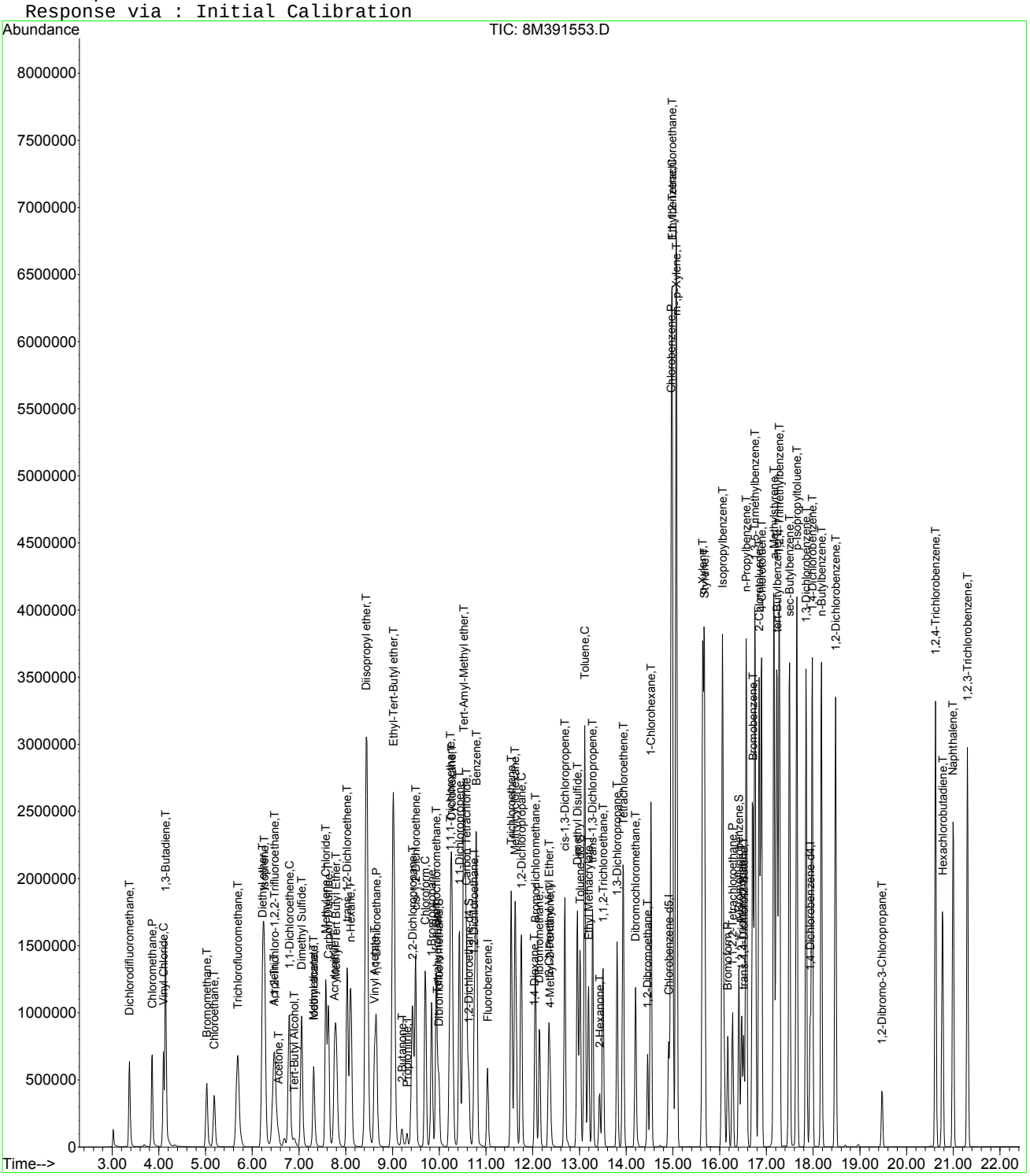

8M391553.D 8260WT.M Mon Oct 14 11:43:45 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391554.D Vial: 13
Acq On : 13 Oct 2013 21:01 Operator: MES
Sample : WG448425-10 200 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:46 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	701086	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	572875	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	345341	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.99	111	791472	99.2813 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 397.12%#		
43) 1,2-Dichloroethane-d4	10.63	65	888985	95.1211 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 380.48%#		
58) Toluene-d8	13.01	98	2545026	93.2749 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery = 373.08%#		
80) p-Bromofluorobenzene	16.41	95	1139567	94.9861 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 379.96%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	1576550	202.0109 ug/L	98
3) Chloromethane	3.86	50	1874336	187.8267 ug/L	99
4) Vinyl Chloride	4.10	62	1648433	193.1916 ug/L	98
5) 1,3-Butadiene	4.14	54	1673210	194.3019 ug/L	95
6) Bromomethane	5.03	94	1041893	203.1987 ug/L	100
7) Chloroethane	5.18	64	1056685	200.8529 ug/L	93
8) Trichlorofluoromethane	5.69	101	2704417	196.9531 ug/L	100
9) Diethyl ether	6.21	59	6107	1.0943 ug/L	79
10) Isoprene	6.26	67	1943981	203.7933 ug/L	76
12) 1,1,2-Trichloro-1,2,2-Trif	6.47	101	1437722	203.8320 ug/L	91
13) Acetone	6.56	43	340016	203.9093 ug/L	94
14) 1,1-Dichloroethene	6.78	61	2539343	197.8284 ug/L	85
16) Dimethyl Sulfide	7.05	62	1359121	197.6944 ug/L	80
17) Iodomethane	7.31	142	1419284	203.7070 ug/L	92
18) Methyl acetate	7.31	43	963692	192.0260 ug/L	89
19) Methylene Chloride	7.57	84	1350127	191.9570 ug/L	61
20) Carbon Disulfide	7.62	76	4030535	194.5827 ug/L	99
21) Acrylonitrile	7.79	53	40666	18.2958 ug/L #	34
22) Methyl Tert Butyl Ether	7.79	73	3576975	198.0799 ug/L	91
23) trans-1,2-Dichloroethene	8.03	61	2344771	195.9900 ug/L	85
24) n-Hexane	8.11	57	1961902	199.2048 ug/L	87
26) Vinyl Acetate	8.61	43	2395492	192.9670 ug/L	93
27) 1,1-Dichloroethane	8.66	63	2774943	197.1811 ug/L	99
29) 2-Butanone	9.20	43	525915	197.1334 ug/L	88
30) Propionitrile	9.25	54	448	0.5857 ug/L #	54
31) 2,2-Dichloropropane	9.43	77	2369522	201.8570 ug/L	100
32) cis-1,2-Dichloroethene	9.49	96	1549914	197.9681 ug/L	74
33) Chloroform	9.70	83	2688489	190.0702 ug/L	99
34) 1-Bromopropane	9.84	122	322217	207.2898 ug/L	100
35) Bromochloromethane	9.94	130	1001256	202.2579 ug/L #	69
36) Tetrahydrofuran	9.98	42	3210	1.6841 ug/L #	34
38) 1,1,1-Trichloroethane	10.24	97	2606193	200.5560 ug/L	99
39) Cyclohexane	10.27	56	2762635	200.2230 ug/L	77
40) 1,1-Dichloropropene	10.43	75	2029117	197.8318 ug/L	94
42) Carbon Tetrachloride	10.58	117	2511887	204.0561 ug/L	99
45) 1,2-Dichloroethane	10.75	62	2233107	192.2316 ug/L	95
46) Benzene	10.80	78	5281652	188.4959 ug/L	85
47) Trichloroethene	11.54	130	1707727	199.4158 ug/L	95
48) Methylcyclohexane	11.62	83	2129649	199.0218 ug/L	82
49) 1,2-Dichloropropane	11.76	63	1489066	199.3603 ug/L	97
50) Bromodichloromethane	12.06	83	2148386	204.2349 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391554.D Vial: 13
Acq On : 13 Oct 2013 21:01 Operator: MES
Sample : WG448425-10 200 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:46 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
51)	1,4-Dioxane	12.05	88	7046	204.8554 ug/L	75
52)	Dibromomethane	12.14	93	828243	208.1335 ug/L	91
53)	2-Chloroethyl Vinyl Ether	12.35	63	818107	205.0414 ug/L	91
54)	4-Methyl-2-Pentanone	12.37	58	398123	205.6957 ug/L	84
55)	cis-1,3-Dichloropropene	12.69	75	2368111	207.0604 ug/L	100
56)	Dimethyl Disulfide	12.96	94	2549153	213.5054 ug/L	94
59)	Toluene	13.11	91	5603560	186.4249 ug/L	98
60)	Ethyl Methacrylate	13.19	69	1484589	208.3851 ug/L	74
62)	trans-1,3-Dichloropropene	13.28	75	2208609	198.2502 ug/L	99
63)	1,1,2-Trichloroethane	13.51	97	1082975	199.3761 ug/L	94
64)	2-Hexanone	13.43	58	370519	207.7068 ug/L	83
65)	1,3-Dichloropropane	13.80	76	1893532	193.5416 ug/L	72
66)	Tetrachloroethene	13.94	164	1404428	203.6761 ug/L	92
67)	Dibromochloromethane	14.20	129	1697232	208.4063 ug/L	98
68)	1,2-Dibromoethane	14.46	107	1177071	205.7199 ug/L	99
69)	1-Chlorohexane	14.53	91	1932651	202.4436 ug/L	72
70)	Chlorobenzene	14.96	112	4150846	188.9253 ug/L	85
71)	1,1,1,2-Tetrachloroethane	14.99	131	1757813	199.9350 ug/L	100
72)	Ethylbenzene	14.98	106	2300186	194.1134 ug/L	96
73)	m-,p-Xylene	15.08	106	5354701	384.3912 ug/L	100
74)	o-Xylene	15.64	106	2768446	197.9483 ug/L	93
75)	Styrene	15.68	104	4628878	201.2040 ug/L	88
76)	Bromoform	16.17	173	1121949	213.9767 ug/L	99
77)	Isopropylbenzene	16.06	105	6767232	193.0461 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.28	83	1245441	196.8331 ug/L	99
81)	1,2,3-Trichloropropane	16.47	110	431327	198.1660 ug/L	93
82)	trans-1,4-Dichloro-2-Buten	16.51	53	520747	205.0330 ug/L	54
83)	n-Propylbenzene	16.57	91	7649345	183.4584 ug/L	98
84)	Bromobenzene	16.71	156	2053648	194.4573 ug/L	98
85)	1,3,5-Trimethylbenzene	16.76	105	6049694	190.8941 ug/L	98
86)	2-Chlorotoluene	16.84	91	4859777	174.9186 ug/L	92
87)	4-Chlorotoluene	16.90	91	5246691	197.6667 ug/L	88
88)	a-Methylstyrene	17.17	118	3661320	198.7568 ug/L	90
89)	tert-Butylbenzene	17.23	134	1393071	199.9217 ug/L	95
90)	1,2,4-Trimethylbenzene	17.28	105	6182742	186.5305 ug/L	99
91)	sec-Butylbenzene	17.50	105	6964175	187.2513 ug/L	99
92)	p-Isopropyltoluene	17.65	119	6382505	187.9649 ug/L	99
93)	1,3-Dichlorobenzene	17.86	146	3841361	189.2090 ug/L	92
94)	1,4-Dichlorobenzene	17.98	146	3884351	183.6805 ug/L	92
95)	n-Butylbenzene	18.18	91	5180231	183.1643 ug/L	97
96)	1,2-Dichlorobenzene	18.48	146	3608065	184.9604 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.47	75	281390	204.3037 ug/L	89
98)	1,2,4-Trichlorobenzene	20.62	180	2709804	186.5702 ug/L	98
99)	Hexachlorobutadiene	20.77	225	1013620	188.0781 ug/L	96
100)	Naphthalene	21.00	128	4981111	183.3613 ug/L	97
101)	1,2,3-Trichlorobenzene	21.30	180	2421890	181.8507 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391554.D Vial: 13
Acq On : 13 Oct 2013 21:01 Operator: MES
Sample : WG448425-10 200 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

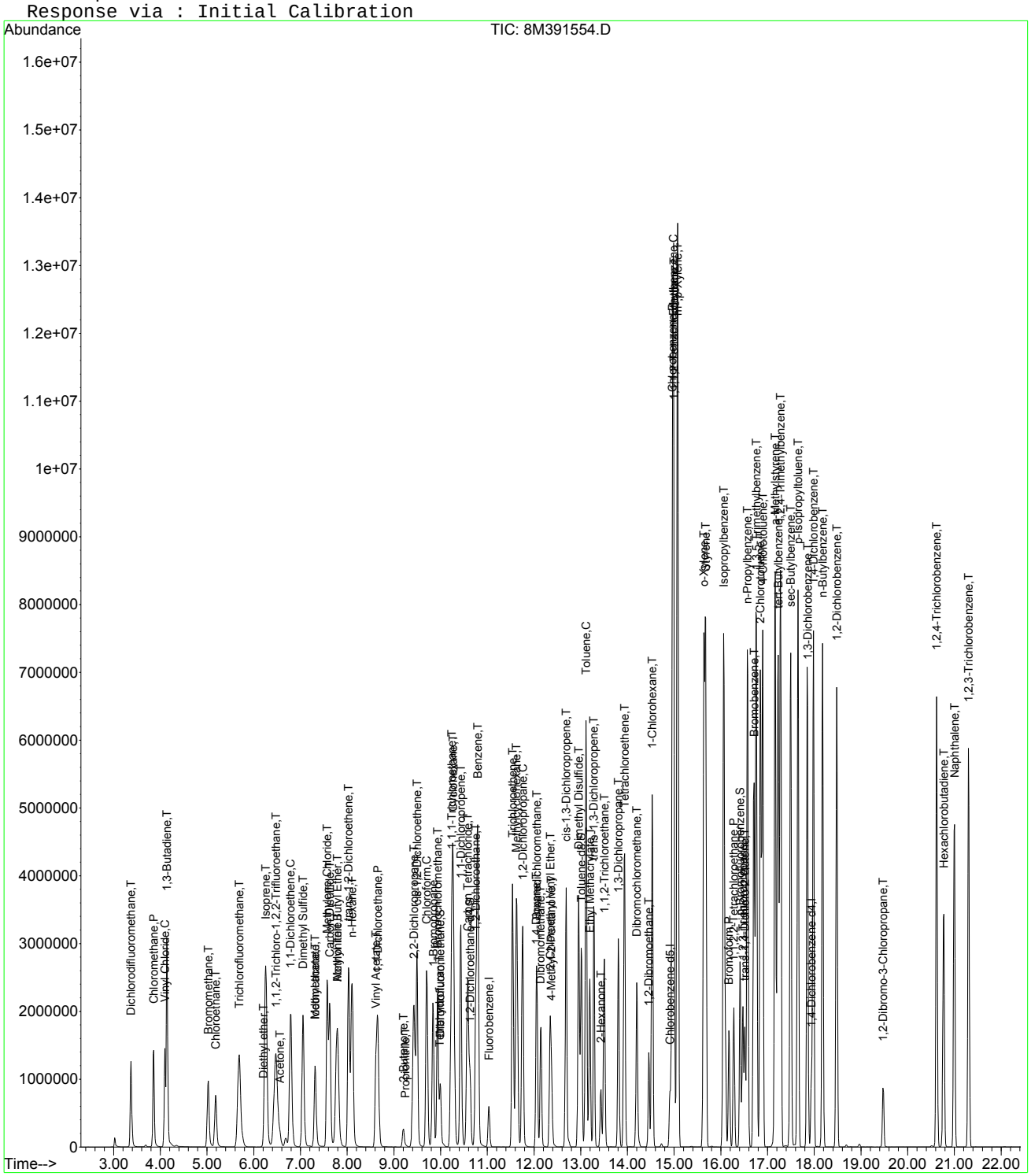

8M391554.D 8260WT.M Mon Oct 14 11:43:47 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391555.D Vial: 14
Acq On : 13 Oct 2013 21:32 Operator: MES
Sample : WG448425-11 300 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:48 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	729349	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	619616	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.94	152	357796	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.00	111	1202089	144.9455 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 579.80%#		
43) 1,2-Dichloroethane-d4	10.63	65	1319301	135.6946 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 542.76%#		
58) Toluene-d8	13.02	98	3874659	131.2936 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 525.16%#		
80) p-Bromofluorobenzene	16.41	95	1735051	139.5870 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 558.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	2427725	299.0216 ug/L	97
3) Chloromethane	3.85	50	2972032	286.2854 ug/L	100
4) Vinyl Chloride	4.09	62	2558460	288.2249 ug/L	99
5) 1,3-Butadiene	4.13	54	2519155	281.2013 ug/L	94
6) Bromomethane	5.02	94	1618905	303.1842 ug/L	100
7) Chloroethane	5.18	64	1614116	294.9193 ug/L	94
8) Trichlorofluoromethane	5.68	101	4153887	290.7901 ug/L	99
9) Diethyl ether	6.22	59	1611057	277.4827 ug/L	84
10) Isoprene	6.25	67	3017937	304.1193 ug/L	77
11) Acrolein	6.46	56	82604	143.3622 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.47	101	2219337	302.4520 ug/L	91
13) Acetone	6.56	43	464423	267.7239 ug/L	100
14) 1,1-Dichloroethene	6.79	61	3921237	293.6475 ug/L	86
15) Tert-Butyl Alcohol	6.91	59	197555	520.6726 ug/L	93
16) Dimethyl Sulfide	7.05	62	2064140	288.6099 ug/L	81
17) Iodomethane	7.31	142	2098385	289.3172 ug/L	94
18) Methyl acetate	7.32	43	1452399	278.1913 ug/L	89
19) Methylene Chloride	7.58	84	2028154	277.1828 ug/L	61
20) Carbon Disulfide	7.63	76	6177012	286.6526 ug/L	98
21) Acrylonitrile	7.75	53	358235	154.9260 ug/L	95
22) Methyl Tert Butyl Ether	7.78	73	5315092	282.9250 ug/L	90
23) trans-1,2-Dichloroethene	8.03	61	3590086	288.4524 ug/L	85
24) n-Hexane	8.10	57	3025992	295.3426 ug/L	88
25) Diisopropyl ether	8.45	45	8664636	268.1097 ug/L	93
26) Vinyl Acetate	8.61	43	3783172	292.9411 ug/L	93
27) 1,1-Dichloroethane	8.65	63	4231590	289.0351 ug/L	99
28) Ethyl-Tert-Butyl ether	9.01	59	7031383	274.0814 ug/L	92
29) 2-Butanone	9.20	43	780924	281.3774 ug/L	88
30) Propionitrile	9.31	54	219836	276.2837 ug/L	100
31) 2,2-Dichloropropane	9.43	77	3599996	294.7955 ug/L	99
32) cis-1,2-Dichloroethene	9.49	96	2366938	290.6099 ug/L	76
33) Chloroform	9.71	83	4084333	277.5638 ug/L	99
34) 1-Bromopropane	9.84	122	502270	310.6009 ug/L	100
35) Bromochloromethane	9.93	130	1520984	295.3390 ug/L #	70
36) Tetrahydrofuran	9.96	42	530894	267.7392 ug/L	80
38) 1,1,1-Trichloroethane	10.23	97	3971939	293.8106 ug/L	98
39) Cyclohexane	10.27	56	4243063	295.6009 ug/L	78
40) 1,1-Dichloropropene	10.43	75	3143240	294.5794 ug/L	95
41) Tert-Amyl-Methyl ether	10.53	73	5376232	277.8502 ug/L	89
42) Carbon Tetrachloride	10.58	117	3805025	297.1275 ug/L	99
45) 1,2-Dichloroethane	10.75	62	3290558	272.2831 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391555.D Vial: 14
Acq On : 13 Oct 2013 21:32 Operator: MES
Sample : WG448425-11 300 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:48 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.79	78	7841861	269.0216 ug/L #	83
47)	Trichloroethene	11.54	130	2594434	291.2189 ug/L	94
48)	Methylcyclohexane	11.63	83	3302800	296.6954 ug/L	82
49)	1,2-Dichloropropane	11.75	63	2260266	290.8843 ug/L	96
50)	Bromodichloromethane	12.05	83	3239289	296.0079 ug/L	99
51)	1,4-Dioxane	12.04	88	19390	541.8991 ug/L	96
52)	Dibromomethane	12.15	93	1214478	293.3660 ug/L	91
53)	2-Chloroethyl Vinyl Ether	12.34	63	1238186	298.3000 ug/L	91
54)	4-Methyl-2-Pentanone	12.37	58	601872	298.9152 ug/L	85
55)	cis-1,3-Dichloropropene	12.68	75	3555872	298.8663 ug/L	99
56)	Dimethyl Disulfide	12.95	94	3887544	312.9855 ug/L	94
59)	Toluene	13.12	91	8329479	256.2094 ug/L	96
60)	Ethyl Methacrylate	13.19	69	2230121	289.4184 ug/L	74
62)	trans-1,3-Dichloropropene	13.28	75	3317040	275.2851 ug/L	99
63)	1,1,2-Trichloroethane	13.50	97	1628187	277.1380 ug/L	93
64)	2-Hexanone	13.43	58	559040	289.7479 ug/L	84
65)	1,3-Dichloropropane	13.81	76	2809552	265.5071 ug/L	71
66)	Tetrachloroethene	13.94	164	2169699	290.9225 ug/L	92
67)	Dibromochloromethane	14.20	129	2561265	290.7779 ug/L	98
68)	1,2-Dibromoethane	14.46	107	1763408	284.9467 ug/L	99
69)	1-Chlorohexane	14.54	91	2972727	287.9008 ug/L	72
70)	Chlorobenzene	14.96	112	6187824	260.3926 ug/L	82
71)	1,1,1,2-Tetrachloroethane	14.99	131	2643771	278.0207 ug/L	100
72)	Ethylbenzene	14.99	106	3588386	279.9812 ug/L	95
73)	m-,p-Xylene	15.07	106	7912228	525.1390 ug/L	91
74)	o-Xylene	15.64	106	4232772	279.8194 ug/L	98
75)	Styrene	15.67	104	6899723	277.2871 ug/L	86
76)	Bromoform	16.18	173	1685004	297.1197 ug/L	98
77)	Isopropylbenzene	16.07	105	9899947	261.1079 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.27	83	1885625	287.6358 ug/L	99
81)	1,2,3-Trichloropropane	16.47	110	650689	288.5417 ug/L #	35
82)	trans-1,4-Dichloro-2-Buten	16.51	53	837065	318.1038 ug/L #	7
83)	n-Propylbenzene	16.57	91	10929749	253.0092 ug/L	98
84)	Bromobenzene	16.71	156	3108291	284.0747 ug/L	77
85)	1,3,5-Trimethylbenzene	16.76	105	8871577	270.1921 ug/L	99
86)	2-Chlorotoluene	16.85	91	7809638	271.3083 ug/L	99
87)	4-Chlorotoluene	16.89	91	7067458	256.9946 ug/L	100
88)	a-Methylstyrene	17.16	118	5514192	288.9209 ug/L	90
89)	tert-Butylbenzene	17.22	134	2135279	295.7699 ug/L	92
90)	1,2,4-Trimethylbenzene	17.28	105	8934274	260.1601 ug/L	97
91)	sec-Butylbenzene	17.49	105	10110892	262.3961 ug/L	96
92)	p-Isopropyltoluene	17.65	119	9250547	262.9455 ug/L	96
93)	1,3-Dichlorobenzene	17.85	146	5690032	270.5105 ug/L	90
94)	1,4-Dichlorobenzene	17.98	146	5733936	261.7038 ug/L	90
95)	n-Butylbenzene	18.18	91	7625114	260.2260 ug/L	98
96)	1,2-Dichlorobenzene	18.49	146	5358875	265.1494 ug/L	91
97)	1,2-Dibromo-3-Chloropropan	19.48	75	415814	291.3932 ug/L	90
98)	1,2,4-Trichlorobenzene	20.63	180	3984564	264.7878 ug/L	98
99)	Hexachlorobutadiene	20.77	225	1543593	276.4448 ug/L	96
100)	Naphthalene	21.00	128	7064056	250.9852 ug/L	96
101)	1,2,3-Trichlorobenzene	21.31	180	3569793	258.7119 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M391555.D 8260WT.M Mon Oct 14 11:43:48 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391555.D Vial: 14
Acq On : 13 Oct 2013 21:32 Operator: MES
Sample : WG448425-11 300 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

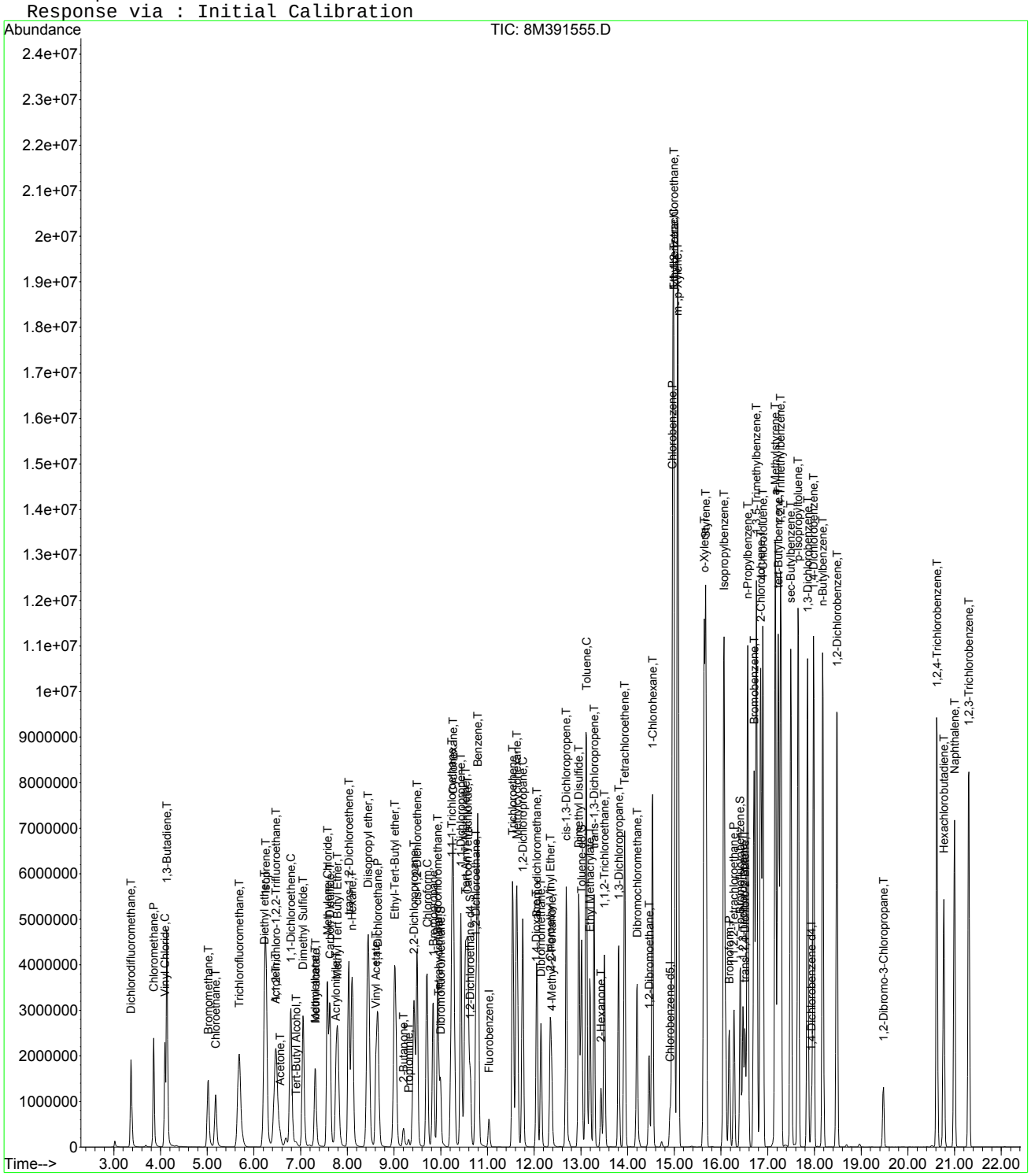

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391557.D Vial: 16
Acq On : 13 Oct 2013 22:34 Operator: MES
Sample : WG448425-12 50ug/L ALT SOURCE Inst : HPMS8
Misc : 1,1 STD60753 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:51 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	707837	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	566368	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	332512	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.99	111	199158	24.7439 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.96%		
43) 1,2-Dichloroethane-d4	10.63	65	223020	23.6355 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.56%		
58) Toluene-d8	13.02	98	667706	24.7525 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.00%		
80) p-Bromofluorobenzene	16.41	95	284820	24.6565 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.64%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	522398	66.2990 ug/L	98
3) Chloromethane	3.86	50	502270	49.8523 ug/L	99
4) Vinyl Chloride	4.09	62	459756	53.3682 ug/L	97
5) 1,3-Butadiene	4.14	54	427766	49.2007 ug/L	96
6) Bromomethane	5.02	94	245303	47.8715 ug/L	97
7) Chloroethane	5.18	64	284247	53.5139 ug/L	94
8) Trichlorofluoromethane	5.69	101	768344	55.4221 ug/L	99
9) Diethyl ether	6.22	59	613057	108.7998 ug/L	83
10) Isoprene	6.25	67	543871	56.4718 ug/L	77
11) Acrolein	6.46	56	78081	139.6307 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.47	101	426470	59.8858 ug/L	85
13) Acetone	6.56	43	82099	48.7656 ug/L	99
14) 1,1-Dichloroethene	6.78	61	651771	50.2922 ug/L	85
15) Tert-Butyl Alcohol	6.91	59	66579	180.8074 ug/L	92
16) Dimethyl Sulfide	7.05	62	441666	63.6309 ug/L	82
17) Iodomethane	7.31	142	422700	60.4070 ug/L	95
18) Methyl acetate	7.32	43	283979	56.0462 ug/L	88
19) Methylene Chloride	7.57	84	354398	49.9067 ug/L	59
20) Carbon Disulfide	7.63	76	1132426	54.1489 ug/L	100
21) Acrylonitrile	7.75	53	327376	145.8832 ug/L	95
22) Methyl Tert Butyl Ether	7.78	73	970841	53.2489 ug/L	91
23) trans-1,2-Dichloroethene	8.02	61	629588	52.1228 ug/L	85
24) n-Hexane	8.11	57	514574	51.7498 ug/L	87
25) Diisopropyl ether	8.45	45	3246232	103.5008 ug/L	92
26) Vinyl Acetate	8.61	43	569181	45.4126 ug/L	92
27) 1,1-Dichloroethane	8.65	63	726391	51.1234 ug/L	97
28) Ethyl-Tert-Butyl ether	9.02	59	2558872	102.7755 ug/L	92
29) 2-Butanone	9.20	43	136754	50.7718 ug/L	85
30) Propionitrile	9.32	54	75503	97.7739 ug/L	100
31) 2,2-Dichloropropane	9.43	77	593211	50.0530 ug/L	100
32) cis-1,2-Dichloroethene	9.49	96	410710	51.9590 ug/L	76
33) Chloroform	9.70	83	701001	49.0865 ug/L	100
34) 1-Bromopropane	9.84	122	94098	59.9581 ug/L	99
35) Bromochloromethane	9.94	130	252957	50.6110 ug/L #	69
36) Tetrahydrofuran	9.96	42	184527	95.8884 ug/L	81
38) 1,1,1-Trichloroethane	10.24	97	678463	51.7122 ug/L	99
39) Cyclohexane	10.27	56	734786	52.7460 ug/L	78
40) 1,1-Dichloropropene	10.43	75	536859	51.8427 ug/L	94
41) Tert-Amyl-Methyl ether	10.54	73	1908402	101.6260 ug/L	89
42) Carbon Tetrachloride	10.58	117	646672	52.0321 ug/L	98
45) 1,2-Dichloroethane	10.75	62	573658	48.9110 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391557.D Vial: 16
Acq On : 13 Oct 2013 22:34 Operator: MES
Sample : WG448425-12 50ug/L ALT SOURCE Inst : HPMS8
Misc : 1,1 STD60753 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43:51 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.79	78	1454934	51.4296	ug/L	87
47)	Trichloroethene	11.54	130	455136	52.6405	ug/L	95
48)	Methylcyclohexane	11.62	83	586753	54.3108	ug/L	82
49)	1,2-Dichloropropane	11.76	63	391414	51.9038	ug/L	94
50)	Bromodichloromethane	12.06	83	542148	51.0474	ug/L	98
51)	1,4-Dioxane	12.03	88	5765	166.0130	ug/L	84
52)	Dibromomethane	12.15	93	206964	51.5130	ug/L	91
53)	2-Chloroethyl Vinyl Ether	12.34	63	207053	51.3986	ug/L	91
54)	4-Methyl-2-Pentanone	12.38	58	101441	51.9110	ug/L	82
55)	cis-1,3-Dichloropropene	12.69	75	624018	54.0418	ug/L	100
56)	Dimethyl Disulfide	12.95	94	661227	54.8532	ug/L	96
59)	Toluene	13.11	91	1542770	51.9161	ug/L	99
60)	Ethyl Methacrylate	13.19	69	394701	56.0389	ug/L	77
62)	trans-1,3-Dichloropropene	13.29	75	531008	48.2122	ug/L	99
63)	1,1,2-Trichloroethane	13.50	97	275586	51.3184	ug/L	93
64)	2-Hexanone	13.43	58	93314	52.9113	ug/L	84
65)	1,3-Dichloropropane	13.80	76	480172	49.6432	ug/L	73
66)	Tetrachloroethene	13.94	164	360065	52.8181	ug/L	92
67)	Dibromochloromethane	14.20	129	421687	52.3746	ug/L	98
68)	1,2-Dibromoethane	14.45	107	289918	51.2519	ug/L	99
69)	1-Chlorohexane	14.53	91	531778	56.3433	ug/L	75
70)	Chlorobenzene	14.96	112	1041351	47.9415	ug/L	87
71)	1,1,1,2-Tetrachloroethane	14.99	131	444510	51.1398	ug/L	100
72)	Ethylbenzene	14.98	106	591728	50.5098	ug/L	89
73)	m-,p-Xylene	15.07	106	1396665	101.4125	ug/L	90
74)	o-Xylene	15.63	106	668940	48.3798	ug/L	89
75)	Styrene	15.67	104	1213614	53.3584	ug/L	92
76)	Bromoform	16.18	173	262784	50.6936	ug/L	98
77)	Isopropylbenzene	16.06	105	1728367	49.8709	ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.27	83	302996	49.7339	ug/L	98
81)	1,2,3-Trichloropropane	16.47	110	102429	48.8749	ug/L	83
82)	trans-1,4-Dichloro-2-Buten	16.51	53	88583	36.2233	ug/L	82
83)	n-Propylbenzene	16.56	91	1959051	48.7978	ug/L	95
84)	Bromobenzene	16.71	156	523701	51.5018	ug/L	98
85)	1,3,5-Trimethylbenzene	16.76	105	1667553	54.6487	ug/L	96
86)	2-Chlorotoluene	16.84	91	1438184	53.7619	ug/L	95
87)	4-Chlorotoluene	16.89	91	1088800	42.6027	ug/L	96
88)	a-Methylstyrene	17.16	118	974478	54.9411	ug/L	91
89)	tert-Butylbenzene	17.22	134	333358	49.6865	ug/L	88
90)	1,2,4-Trimethylbenzene	17.28	105	1696282	53.1505	ug/L	96
91)	sec-Butylbenzene	17.49	105	1793790	50.0919	ug/L	98
92)	p-Isopropyltoluene	17.65	119	1650663	50.4876	ug/L	98
93)	1,3-Dichlorobenzene	17.85	146	946488	48.4187	ug/L	95
94)	1,4-Dichlorobenzene	17.98	146	1021237	50.1547	ug/L	94
95)	n-Butylbenzene	18.18	91	1449594	53.2327	ug/L	95
96)	1,2-Dichlorobenzene	18.48	146	889176	47.3405	ug/L	95
97)	1,2-Dibromo-3-Chloropropan	19.47	75	62749	47.3168	ug/L	92
98)	1,2,4-Trichlorobenzene	20.62	180	730347	52.2245	ug/L	98
99)	Hexachlorobutadiene	20.77	225	273479	52.7021	ug/L	96
100)	Naphthalene	21.00	128	1319892	50.4616	ug/L	99
101)	1,2,3-Trichlorobenzene	21.31	180	647619	50.5034	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101313\8M391557.D Vial: 16
Acq On : 13 Oct 2013 22:34 Operator: MES
Sample : WG448425-12 50ug/L ALT SOURCE Inst : HPMS8
Misc : 1,1 STD60753 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 11:43 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

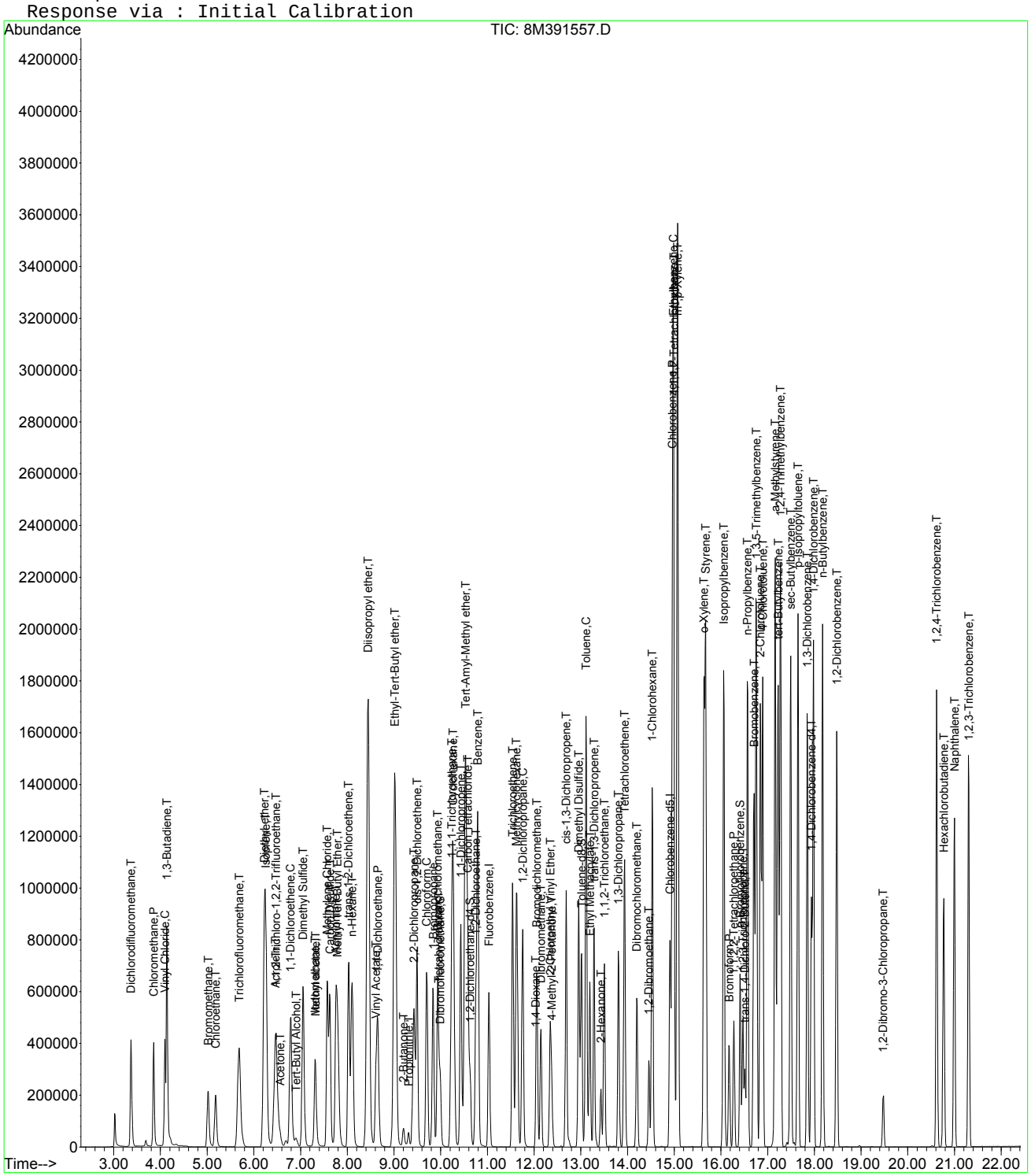

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101313\8M391557.D Vial: 16
Acq On : 13 Oct 2013 22:34 Operator: MES
Sample : WG448425-12 50ug/L ALT SOURCE Inst : HPMS8
Misc : 1,1 STD60753 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	-0.02
2	T	Dichlorodifluoromethane	50.0000	66.2990	-32.6#	135	0.00
3	P	Chloromethane	50.0000	49.8523	0.3	113	0.00
4	C	Vinyl Chloride	50.0000	53.3682	-6.7	114	-0.02
5	T	1,3-Butadiene	50.0000	49.2007	1.6	103	-0.02
6	T	Bromomethane	50.0000	47.8715	4.3	108	0.00
7	T	Chloroethane	50.0000	53.5139	-7.0	110	-0.02
8	T	Trichlorofluoromethane	50.0000	55.4221	-10.8	116	-0.02
9	T	Diethyl ether	100.0000	108.7998	-8.8	115	0.00
10	T	Isoprene	50.0000	56.4718	-12.9	116	-0.02
11	T	Acrolein	50.0000	139.6307	-179.3#	299	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	59.8858	-19.8	124	0.00
13	T	Acetone	50.0000	48.7656	2.5	108	0.00
14	C	1,1-Dichloroethene	50.0000	50.2922	-0.6	104	-0.02
15	T	Tert-Butyl Alcohol	200.0000	180.8074	9.6	103	0.00
16	T	Dimethyl Sulfide	50.0000	63.6309	-27.3#	131	-0.02
17	T	Iodomethane	50.0000	60.4070	-20.8	122	-0.02
18	T	Methyl acetate	50.0000	56.0462	-12.1	122	0.00
19	T	Methylene Chloride	50.0000	49.9067	0.2	108	-0.02
20	T	Carbon Disulfide	50.0000	54.1489	-8.3	114	0.00
21	T	Acrylonitrile	50.0000	145.8832	-191.8#	300	-0.02
22	T	Methyl Tert Butyl Ether	50.0000	53.2489	-6.5	110	-0.02
23	T	trans-1,2-Dichloroethene	50.0000	52.1228	-4.2	110	-0.02
24	T	n-Hexane	50.0000	51.7498	-3.5	108	0.00
25	T	Diisopropyl ether	100.0000	103.5008	-3.5	111	0.00
26	T	Vinyl Acetate	50.0000	45.4126	9.2	96	0.00
27	P	1,1-Dichloroethane	50.0000	51.1234	-2.2	106	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.7755	-2.8	110	-0.02
29	T	2-Butanone	50.0000	50.7718	-1.5	107	-0.02
30	T	Propionitrile	100.0000	97.7739	2.2	109	0.00
31	T	2,2-Dichloropropane	50.0000	50.0530	-0.1	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.9590	-3.9	109	-0.02
33	C	Chloroform	50.0000	49.0865	1.8	106	-0.02
34		1-Bromopropane	50.0000	59.9581	-19.9	121	0.00
35	T	Bromochloromethane	50.0000	50.6110	-1.2	106	-0.02
36	T	Tetrahydrofuran	100.0000	95.8884	4.1	106	0.00
37	S	Dibromofluoromethane	25.0000	24.7439	1.0	104	-0.02
38	T	1,1,1-Trichloroethane	50.0000	51.7122	-3.4	105	0.00
39	T	Cyclohexane	50.0000	52.7460	-5.5	112	-0.02
40	T	1,1-Dichloropropene	50.0000	51.8426	-3.7	108	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	101.6260	-1.6	109	0.00
42	T	Carbon Tetrachloride	50.0000	52.0321	-4.1	106	-0.02
43	S	1,2-Dichloroethane-d4	25.0000	23.6355	5.5	100	-0.02
44		Heptane	-1.0000	0.0000	0.0	0	-2.74#
45	T	1,2-Dichloroethane	50.0000	48.9110	2.2	103	0.00
46	T	Benzene	50.0000	51.4296	-2.9	110	0.00
47	T	Trichloroethene	50.0000	52.6405	-5.3	108	-0.02
48	T	Methylcyclohexane	50.0000	54.3108	-8.6	115	-0.02
49	C	1,2-Dichloropropane	50.0000	51.9038	-3.8	107	0.00
50	T	Bromodichloromethane	50.0000	51.0474	-2.1	104	-0.02
51	T	1,4-Dioxane	200.0000	166.0130	17.0	75	-0.02
52	T	Dibromomethane	50.0000	51.5130	-3.0	101	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.3986	-2.8	107	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.9110	-3.8	108	0.00
55	T	cis-1,3-Dichloropropene	50.0000	54.0418	-8.1	109	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101313\8M391557.D Vial: 16
Acq On : 13 Oct 2013 22:34 Operator: MES
Sample : WG448425-12 50ug/L ALT SOURCE Inst : HPMS8
Misc : 1,1 STD60753 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	50.0000	54.8532	-9.7	113	-0.02
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	106	0.00
58	S	Toluene-d8	25.0000	24.7525	1.0	107	0.00
59	C	Toluene	50.0000	51.9161	-3.8	110	-0.02
60	T	Ethyl Methacrylate	50.0000	56.0389	-12.1	112	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.34#
62	T	trans-1,3-Dichloropropene	50.0000	48.2122	3.6	99	0.00
63	T	1,1,2-Trichloroethane	50.0000	51.3184	-2.6	105	0.00
64	T	2-Hexanone	50.0000	52.9113	-5.8	110	0.00
65	T	1,3-Dichloropropane	50.0000	49.6432	0.7	104	-0.02
66	T	Tetrachloroethene	50.0000	52.8181	-5.6	109	0.00
67	T	Dibromochloromethane	50.0000	52.3746	-4.7	104	-0.02
68	T	1,2-Dibromoethane	50.0000	51.2519	-2.5	104	-0.02
69	T	1-Chlorohexane	50.0000	56.3433	-12.7	116	-0.02
70	P	Chlorobenzene	50.0000	47.9415	4.1	101	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.1398	-2.3	105	0.00
72	C	Ethylbenzene	50.0000	50.5098	-1.0	109	-0.02
73	T	m-,p-Xylene	100.0000	101.4125	-1.4	107	0.00
74	T	o-Xylene	50.0000	48.3798	3.2	101	-0.02
75	T	Styrene	50.0000	53.3584	-6.7	107	0.00
76	P	Bromoform	50.0000	50.6936	-1.4	102	0.00
77	T	Isopropylbenzene	50.0000	49.8709	0.3	102	-0.02
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.7339	0.5	104	-0.02
80	S	p-Bromofluorobenzene	25.0000	24.6565	1.4	105	-0.02
81	T	1,2,3-Trichloropropane	50.0000	48.8749	2.3	101	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	36.2233	27.6#	75	0.00
83	T	n-Propylbenzene	50.0000	48.7978	2.4	101	-0.02
84	T	Bromobenzene	50.0000	51.5018	-3.0	106	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	54.6487	-9.3	112	0.00
86	T	2-Chlorotoluene	50.0000	53.7619	-7.5	117	-0.02
87	T	4-Chlorotoluene	50.0000	42.6027	14.8	86	0.00
88	T	a-Methylstyrene	50.0000	54.9411	-9.9	114	0.00
89	T	tert-Butylbenzene	50.0000	49.6865	0.6	104	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	53.1505	-6.3	111	0.00
91	T	sec-Butylbenzene	50.0000	50.0919	-0.2	104	0.00
92	T	p-Isopropyltoluene	50.0000	50.4876	-1.0	104	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.4187	3.2	102	-0.02
94	T	1,4-Dichlorobenzene	50.0000	50.1547	-0.3	109	0.00
95	T	n-Butylbenzene	50.0000	53.2328	-6.5	113	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.3405	5.3	101	-0.02
97	T	1,2-Dibromo-3-Chloropropane	50.0000	47.3168	5.4	99	-0.02
98	T	1,2,4-Trichlorobenzene	50.0000	52.2245	-4.4	108	-0.02
99	T	Hexachlorobutadiene	50.0000	52.7021	-5.4	111	0.00
100	T	Naphthalene	50.0000	50.4616	-0.9	103	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.5035	-1.0	107	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M391557.D 8260WT.M Mon Oct 14 11:44:01 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101413\8M391559.D Vial: 2
Acq On : 14 Oct 2013 12:23 Operator: TMB
Sample : WG448561-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 12:45:31 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	806884	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	644429	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	382581	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.99	111	219589	23.9333 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.72%		
43) 1,2-Dichloroethane-d4	10.63	65	237239	22.0561 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.24%		
58) Toluene-d8	13.01	98	735006	23.9468 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.80%		
80) p-Bromofluorobenzene	16.41	95	304864	22.9378 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	450332	50.1372 ug/L	99
3) Chloromethane	3.86	50	512766	44.6467 ug/L	98
4) Vinyl Chloride	4.10	62	468413	47.6987 ug/L	98
5) 1,3-Butadiene	4.15	54	494174	49.8616 ug/L	97
6) Bromomethane	5.03	94	280968	48.0978 ug/L	99
7) Chloroethane	5.18	64	297141	49.0744 ug/L	94
8) Trichlorofluoromethane	5.69	101	734986	46.5081 ug/L	99
9) Diethyl ether	6.22	59	551218	85.8169 ug/L	83
10) Isoprene	6.26	67	564054	51.3782 ug/L	78
11) Acrolein	6.45	56	28554	44.7945 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.47	101	405529	49.9551 ug/L	91
13) Acetone	6.57	43	83720	43.6242 ug/L	93
14) 1,1-Dichloroethene	6.79	61	708607	47.9659 ug/L	85
15) Tert-Butyl Alcohol	6.89	59	76788	182.9340 ug/L	98
16) Dimethyl Sulfide	7.05	62	383161	48.4259 ug/L	82
17) Iodomethane	7.31	142	442091	55.4598 ug/L	96
18) Methyl acetate	7.31	43	234865	40.6631 ug/L	88
19) Methylene Chloride	7.57	84	367112	45.3511 ug/L	60
20) Carbon Disulfide	7.63	76	1251541	52.4985 ug/L	99
21) Acrylonitrile	7.76	53	111556	43.6087 ug/L	98
22) Methyl Tert Butyl Ether	7.79	73	871135	41.9151 ug/L	92
23) trans-1,2-Dichloroethene	8.02	61	647802	47.0474 ug/L	86
24) n-Hexane	8.11	57	633915	55.9260 ug/L	87
25) Diisopropyl ether	8.44	45	3187565	89.1550 ug/L	91
26) Vinyl Acetate	8.61	43	774559	54.2130 ug/L	93
27) 1,1-Dichloroethane	8.66	63	774723	47.8319 ug/L	98
28) Ethyl-Tert-Butyl ether	9.02	59	2476863	87.2700 ug/L	92
29) 2-Butanone	9.20	43	125463	40.8621 ug/L	87
30) Propionitrile	9.31	54	72141	81.9526 ug/L	97
31) 2,2-Dichloropropane	9.43	77	733659	54.3047 ug/L	100
32) cis-1,2-Dichloroethene	9.49	96	435012	48.2780 ug/L	76
33) Chloroform	9.70	83	735703	45.1927 ug/L	100
34) 1-Bromopropane	9.83	122	92005	51.4282 ug/L	99
35) Bromochloromethane	9.94	130	264877	46.4906 ug/L #	70
36) Tetrahydrofuran	9.96	42	330078	150.4683 ug/L	81
38) 1,1,1-Trichloroethane	10.24	97	708695	47.3858 ug/L	99
39) Cyclohexane	10.27	56	789718	49.7305 ug/L	78
40) 1,1-Dichloropropene	10.43	75	572252	48.4771 ug/L	93
41) Tert-Amyl-Methyl ether	10.53	73	1793774	83.7963 ug/L	91
42) Carbon Tetrachloride	10.58	117	680084	48.0034 ug/L	99
45) 1,2-Dichloroethane	10.74	62	570020	42.6349 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101413\8M391559.D Vial: 2
Acq On : 14 Oct 2013 12:23 Operator: TMB
Sample : WG448561-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 12:45:31 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.80	78	1519310	47.1128	ug/L	88
47)	Trichloroethene	11.54	130	462227	46.8982	ug/L	95
48)	Methylcyclohexane	11.62	83	637536	51.7675	ug/L	83
49)	1,2-Dichloropropane	11.76	63	403444	46.9319	ug/L	95
50)	Bromodichloromethane	12.06	83	567621	46.8853	ug/L	98
51)	1,4-Dioxane	12.04	88	9298	234.8846	ug/L	82
52)	Dibromomethane	12.14	93	207516	45.3102	ug/L	92
53)	2-Chloroethyl Vinyl Ether	12.34	63	196972	42.8940	ug/L	91
54)	4-Methyl-2-Pentanone	12.38	58	91344	41.0061	ug/L	82
55)	cis-1,3-Dichloropropene	12.69	75	639449	48.5804	ug/L	99
56)	Dimethyl Disulfide	12.96	94	692149	50.3701	ug/L	97
59)	Toluene	13.11	91	1618223	47.8589	ug/L	99
60)	Ethyl Methacrylate	13.19	69	358260	44.7037	ug/L	75
62)	trans-1,3-Dichloropropene	13.28	75	570207	45.5001	ug/L	100
63)	1,1,2-Trichloroethane	13.50	97	269874	44.1673	ug/L	94
64)	2-Hexanone	13.43	58	83766	41.7439	ug/L	82
65)	1,3-Dichloropropane	13.80	76	472786	42.9587	ug/L	76
66)	Tetrachloroethene	13.94	164	389718	50.2430	ug/L	94
67)	Dibromochloromethane	14.20	129	414095	45.2017	ug/L	98
68)	1,2-Dibromoethane	14.46	107	284702	44.2333	ug/L	99
69)	1-Chlorohexane	14.53	91	554896	51.6710	ug/L	75
70)	Chlorobenzene	14.96	112	1154352	46.7064	ug/L	88
71)	1,1,1,2-Tetrachloroethane	14.99	131	462788	46.7932	ug/L	100
72)	Ethylbenzene	14.98	106	625466	46.9225	ug/L	90
73)	m-,p-Xylene	15.08	106	1514495	96.6476	ug/L	91
74)	o-Xylene	15.63	106	758423	48.2072	ug/L	89
75)	Styrene	15.68	104	1265076	48.8835	ug/L	91
76)	Bromoform	16.17	173	257365	43.6343	ug/L	100
77)	Isopropylbenzene	16.06	105	1948610	49.4151	ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.28	83	295840	42.2043	ug/L	99
81)	1,2,3-Trichloropropane	16.47	110	97954	40.6228	ug/L	96
82)	trans-1,4-Dichloro-2-Buten	16.51	53	125312	44.5363	ug/L	51
83)	n-Propylbenzene	16.57	91	2257738	48.8778	ug/L	95
84)	Bromobenzene	16.71	156	541269	46.2633	ug/L	98
85)	1,3,5-Trimethylbenzene	16.75	105	1719987	48.9902	ug/L	96
86)	2-Chlorotoluene	16.84	91	1368461	44.4607	ug/L	94
87)	4-Chlorotoluene	16.90	91	1456221	49.5222	ug/L	86
88)	a-Methylstyrene	17.16	118	1008832	49.4343	ug/L	90
89)	tert-Butylbenzene	17.23	134	375540	48.6483	ug/L	92
90)	1,2,4-Trimethylbenzene	17.28	105	1746929	47.5739	ug/L	96
91)	sec-Butylbenzene	17.50	105	2026395	49.1818	ug/L	98
92)	p-Isopropyltoluene	17.65	119	1878389	49.9340	ug/L	98
93)	1,3-Dichlorobenzene	17.85	146	1047373	46.5675	ug/L	95
94)	1,4-Dichlorobenzene	17.98	146	1056881	45.1123	ug/L	94
95)	n-Butylbenzene	18.18	91	1548024	49.4076	ug/L	95
96)	1,2-Dichlorobenzene	18.48	146	957627	44.3124	ug/L	94
97)	1,2-Dibromo-3-Chloropropan	19.47	75	59234	38.8207	ug/L	89
98)	1,2,4-Trichlorobenzene	20.62	180	747310	46.4440	ug/L	99
99)	Hexachlorobutadiene	20.77	225	308157	51.6131	ug/L	96
100)	Naphthalene	21.00	128	1249378	41.5145	ug/L	99
101)	1,2,3-Trichlorobenzene	21.30	180	647513	43.8868	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M391559.D 8260WT.M Mon Oct 14 12:45:32 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101413\8M391559.D Vial: 2
Acq On : 14 Oct 2013 12:23 Operator: TMB
Sample : WG448561-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 12:45 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

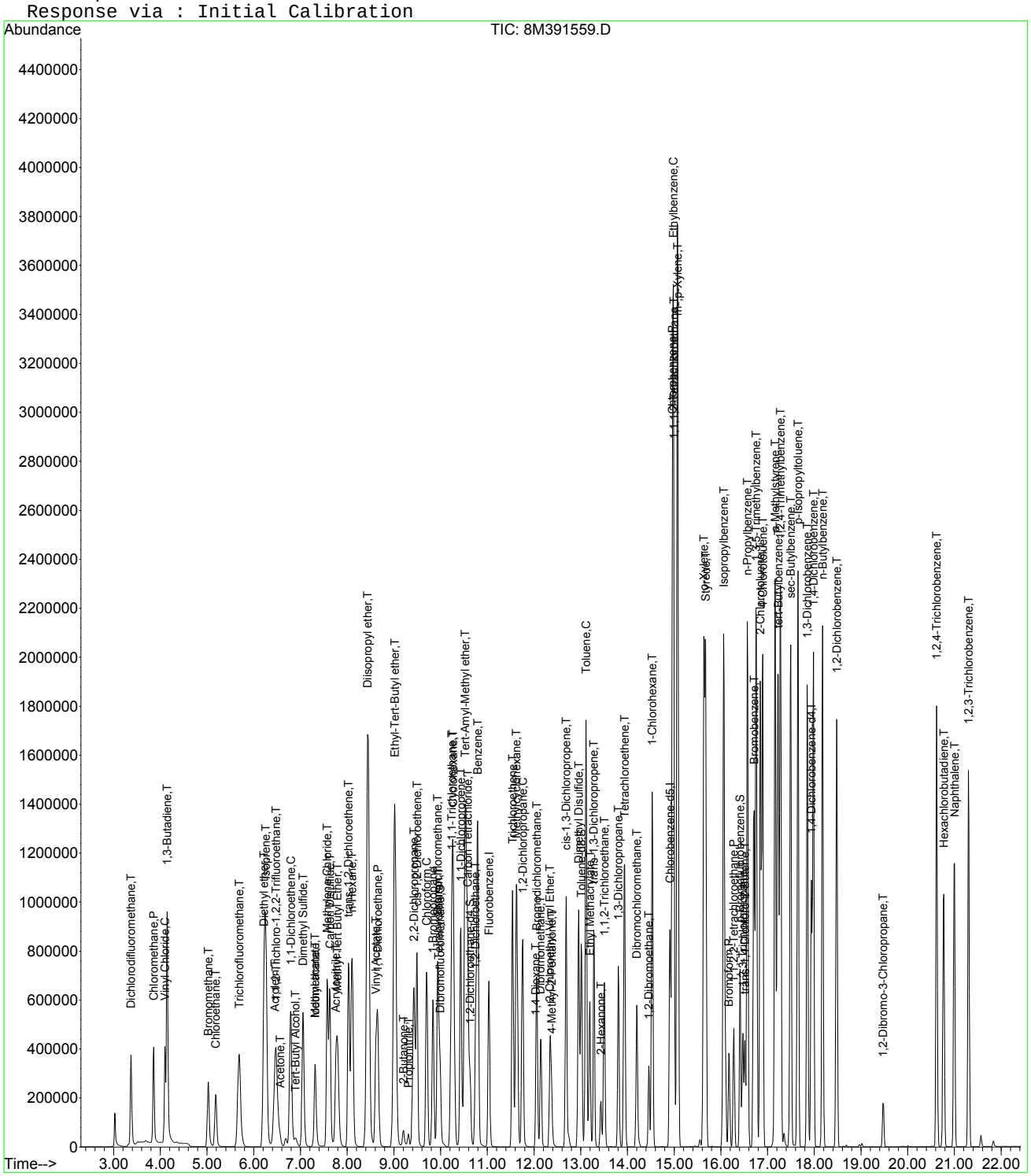

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 13 Oct 2013 19:59
CCV date: 14 Oct 2013 12:23
CCV Filename: 8M391559.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	660376	11.03	534518	14.91	315004	17.94
CCV	806884	11.03	644429	14.91	382581	17.94

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101413\8M391559.D Vial: 2
Acq On : 14 Oct 2013 12:23 Operator: TMB
Sample : WG448561-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	122	-0.02
2	T	Dichlorodifluoromethane	0.2783	0.2791	-0.3	116	0.00
3	P	Chloromethane	0.3558	0.3177	10.7	115	0.00
4	C	Vinyl Chloride	0.3043	0.2903	4.6	116	-0.02
5	T	1,3-Butadiene	0.3071	0.3062	0.3	118	0.00
6	T	Bromomethane	0.1574	0.1741	-10.6	123	0.00
7	T	Chloroethane	0.1876	0.1841	1.8	115	-0.02
8	T	Trichlorofluoromethane	0.4896	0.4555	7.0	111	-0.02
9	T	Diethyl ether	0.1990	0.1708	14.2	103	-0.02
10	T	Isoprene	0.3402	0.3495	-2.8	121	-0.02
11	T	Acrolein	0.0198	0.0177	10.4	109	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2515	0.2513	0.1	118	0.00
13	T	Acetone	0.0595	0.0519	12.7	110	0.00
14	C	1,1-Dichloroethene	0.4577	0.4391	4.1	113	0.00
15	T	Tert-Butyl Alcohol	0.0130	0.0119	8.5	118	-0.03
16	T	Dimethyl Sulfide	0.2452	0.2374	3.1	114	-0.02
17	T	Iodomethane	0.2240	0.2740	-22.3	127	-0.02
18	T	Methyl acetate	0.1790	0.1455	18.7	101	-0.02
19	T	Methylene Chloride	0.2508	0.2275	9.3	112	-0.02
20	T	Carbon Disulfide	0.7386	0.7755	-5.0	126	0.00
21	T	Acrylonitrile	0.0793	0.0691	12.8	102	-0.02
22	T	Methyl Tert Butyl Ether	0.6439	0.5398	16.2	99	-0.02
23	T	trans-1,2-Dichloroethene	0.4266	0.4014	5.9	113	-0.02
24	T	n-Hexane	0.3512	0.3928	-11.9	133	0.00
25	T	Diisopropyl ether	1.1078	0.9876	10.8	109	-0.02
26	T	Vinyl Acetate	0.4427	0.4800	-8.4	131	0.00
27	P	1,1-Dichloroethane	0.5018	0.4801	4.3	114	0.00
28	T	Ethyl-Tert-Butyl ether	0.8794	0.7674	12.7	106	-0.02
29	T	2-Butanone	0.0951	0.0778	18.3	98	-0.02
30	T	Propionitrile	0.0273	0.0223	18.0	104	-0.02
31	T	2,2-Dichloropropane	0.4186	0.4546	-8.6	126	0.00
32	T	cis-1,2-Dichloroethene	0.2792	0.2696	3.4	115	-0.02
33	C	Chloroform	0.5044	0.4559	9.6	111	-0.02
34		1-Bromopropane	0.0554	0.0570	-2.9	118	-0.02
35	T	Bromochloromethane	0.1765	0.1641	7.0	111	-0.02
36	T	Tetrahydrofuran	0.0680	0.1023	-50.5#	189#	0.00
37	S	Dibromofluoromethane	0.2843	0.2721	4.3	115	-0.02
38	T	1,1,1-Trichloroethane	0.4634	0.4392	5.2	110	0.00
39	T	Cyclohexane	0.4920	0.4894	0.5	120	-0.02
40	T	1,1-Dichloropropene	0.3658	0.3546	3.0	115	0.00
41	T	Tert-Amyl-Methyl ether	0.6632	0.5558	16.2	103	-0.02
42	T	Carbon Tetrachloride	0.4390	0.4214	4.0	112	-0.02
43	S	1,2-Dichloroethane-d4	0.3333	0.2940	11.8	107	-0.02
44		Heptane	0.0000	0.0000	0.0	0#	-2.74#
45	T	1,2-Dichloroethane	0.4142	0.3532	14.7	102	-0.02
46	T	Benzene	0.9992	0.9415	5.8	114	0.00
47	T	Trichloroethene	0.3054	0.2864	6.2	110	-0.02
48	T	Methylcyclohexane	0.3816	0.3951	-3.5	125	-0.02
49	C	1,2-Dichloropropane	0.2663	0.2500	6.1	110	0.00
50	T	Bromodichloromethane	0.3751	0.3517	6.2	109	-0.02
51	T	1,4-Dioxane	0.0012	0.0014	-17.1	122	-0.02
52	T	Dibromomethane	0.1419	0.1286	9.4	101	-0.02
53	T	2-Chloroethyl Vinyl Ether	0.1423	0.1221	14.2	102	-0.02
54	T	4-Methyl-2-Pentanone	0.0690	0.0566	18.0	97	0.00
55	T	cis-1,3-Dichloropropene	0.4078	0.3962	2.8	112	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101413\8M391559.D Vial: 2
Acq On : 14 Oct 2013 12:23 Operator: TMB
Sample : WG448561-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	0.4258	0.4289	-0.7	119	-0.02
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	121	0.00
58	S	Toluene-d8	1.1907	1.1406	4.2	118	-0.02
59	C	Toluene	1.3117	1.2555	4.3	115	-0.02
60	T	Ethyl Methacrylate	0.3109	0.2780	10.6	102	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.34#
62	T	trans-1,3-Dichloropropene	0.4862	0.4424	9.0	106	-0.02
63	T	1,1,2-Trichloroethane	0.2370	0.2094	11.7	103	0.00
64	T	2-Hexanone	0.0779	0.0650	16.5	99	0.00
65	T	1,3-Dichloropropane	0.4270	0.3668	14.1	102	-0.02
66	T	Tetrachloroethene	0.3009	0.3024	-0.5	118	0.00
67	T	Dibromochloromethane	0.3554	0.3213	9.6	102	-0.02
68	T	1,2-Dibromoethane	0.2497	0.2209	11.5	102	-0.02
69	T	1-Chlorohexane	0.4166	0.4305	-3.3	121	-0.02
70	P	Chlorobenzene	0.9588	0.8956	6.6	113	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3837	0.3591	6.4	109	0.00
72	C	Ethylbenzene	0.5171	0.4853	6.2	115	-0.02
73	T	m-,p-Xylene	0.6079	0.5875	3.4	116	0.00
74	T	o-Xylene	0.6103	0.5885	3.6	115	-0.02
75	T	Styrene	1.0040	0.9816	2.2	112	0.00
76	P	Bromoform	0.2288	0.1997	12.7	100	-0.02
77	T	Isopropylbenzene	1.5298	1.5119	1.2	115	-0.02
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	121	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4581	0.3866	15.6	102	-0.02
80	S	p-Bromofluorobenzene	0.8685	0.7969	8.2	112	-0.02
81	T	1,2,3-Trichloropropane	0.1576	0.1280	18.8	97	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1839	0.1638	10.9	106	0.00
83	T	n-Propylbenzene	3.0184	2.9507	2.2	116	-0.02
84	T	Bromobenzene	0.7645	0.7074	7.5	110	0.00
85	T	1,3,5-Trimethylbenzene	2.2942	2.2479	2.0	116	-0.02
86	T	2-Chlorotoluene	2.0113	1.7885	11.1	111	-0.02
87	T	4-Chlorotoluene	1.9215	1.9031	1.0	115	0.00
88	T	a-Methylstyrene	1.3335	1.3185	1.1	118	0.00
89	T	tert-Butylbenzene	0.5044	0.4908	2.7	117	0.00
90	T	1,2,4-Trimethylbenzene	2.3995	2.2831	4.9	114	0.00
91	T	sec-Butylbenzene	2.6924	2.6483	1.6	118	0.00
92	T	p-Isopropyltoluene	2.4581	2.4549	0.1	118	0.00
93	T	1,3-Dichlorobenzene	1.4697	1.3688	6.9	113	-0.02
94	T	1,4-Dichlorobenzene	1.5309	1.3813	9.8	113	0.00
95	T	n-Butylbenzene	2.0474	2.0231	1.2	121	0.00
96	T	1,2-Dichlorobenzene	1.4122	1.2515	11.4	109	-0.02
97	T	1,2-Dibromo-3-Chloropropane	0.0997	0.0774	22.4	94	-0.02
98	T	1,2,4-Trichlorobenzene	1.0515	0.9767	7.1	110	-0.02
99	T	Hexachlorobutadiene	0.3902	0.4027	-3.2	125	0.00
100	T	Naphthalene	1.9666	1.6328	17.0	98	0.00
101	T	1,2,3-Trichlorobenzene	0.9641	0.8462	12.2	107	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M391559.D 8260WT.M Mon Oct 14 13:26:01 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101413\8M391559.D Vial: 2
Acq On : 14 Oct 2013 12:23 Operator: TMB
Sample : WG448561-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	122	-0.02
2	T	Dichlorodifluoromethane	50.0000	50.1372	-0.3	116	0.00
3	P	Chloromethane	50.0000	44.6467	10.7	115	0.00
4	C	Vinyl Chloride	50.0000	47.6987	4.6	116	-0.02
5	T	1,3-Butadiene	50.0000	49.8616	0.3	118	0.00
6	T	Bromomethane	50.0000	48.0978	3.8	123	0.00
7	T	Chloroethane	50.0000	49.0744	1.9	115	-0.02
8	T	Trichlorofluoromethane	50.0000	46.5081	7.0	111	-0.02
9	T	Diethyl ether	100.0000	85.8169	14.2	103	-0.02
10	T	Isoprene	50.0000	51.3782	-2.8	121	-0.02
11	T	Acrolein	50.0000	44.7945	10.4	109	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.9551	0.1	118	0.00
13	T	Acetone	50.0000	43.6242	12.8	110	0.00
14	C	1,1-Dichloroethene	50.0000	47.9659	4.1	113	0.00
15	T	Tert-Butyl Alcohol	200.0000	182.9340	8.5	118	-0.03
16	T	Dimethyl Sulfide	50.0000	48.4259	3.1	114	-0.02
17	T	Iodomethane	50.0000	55.4598	-10.9	127	-0.02
18	T	Methyl acetate	50.0000	40.6631	18.7	101	-0.02
19	T	Methylene Chloride	50.0000	45.3511	9.3	112	-0.02
20	T	Carbon Disulfide	50.0000	52.4985	-5.0	126	0.00
21	T	Acrylonitrile	50.0000	43.6087	12.8	102	-0.02
22	T	Methyl Tert Butyl Ether	50.0000	41.9151	16.2	99	-0.02
23	T	trans-1,2-Dichloroethene	50.0000	47.0474	5.9	113	-0.02
24	T	n-Hexane	50.0000	55.9260	-11.9	133	0.00
25	T	Diisopropyl ether	100.0000	89.1550	10.8	109	-0.02
26	T	Vinyl Acetate	50.0000	54.2129	-8.4	131	0.00
27	P	1,1-Dichloroethane	50.0000	47.8319	4.3	114	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	87.2700	12.7	106	-0.02
29	T	2-Butanone	50.0000	40.8621	18.3	98	-0.02
30	T	Propionitrile	100.0000	81.9526	18.0	104	-0.02
31	T	2,2-Dichloropropane	50.0000	54.3047	-8.6	126	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.2780	3.4	115	-0.02
33	C	Chloroform	50.0000	45.1927	9.6	111	-0.02
34		1-Bromopropane	50.0000	51.4282	-2.9	118	-0.02
35	T	Bromochloromethane	50.0000	46.4906	7.0	111	-0.02
36	T	Tetrahydrofuran	100.0000	150.4683	-50.5#	189	0.00
37	S	Dibromofluoromethane	25.0000	23.9333	4.3	115	-0.02
38	T	1,1,1-Trichloroethane	50.0000	47.3858	5.2	110	0.00
39	T	Cyclohexane	50.0000	49.7305	0.5	120	-0.02
40	T	1,1-Dichloropropene	50.0000	48.4771	3.0	115	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	83.7963	16.2	103	-0.02
42	T	Carbon Tetrachloride	50.0000	48.0034	4.0	112	-0.02
43	S	1,2-Dichloroethane-d4	25.0000	22.0561	11.8	107	-0.02
44		Heptane	-1.0000	0.0000	0.0	0	-2.74#
45	T	1,2-Dichloroethane	50.0000	42.6349	14.7	102	-0.02
46	T	Benzene	50.0000	47.1128	5.8	114	0.00
47	T	Trichloroethene	50.0000	46.8982	6.2	110	-0.02
48	T	Methylcyclohexane	50.0000	51.7675	-3.5	125	-0.02
49	C	1,2-Dichloropropane	50.0000	46.9319	6.1	110	0.00
50	T	Bromodichloromethane	50.0000	46.8853	6.2	109	-0.02
51	T	1,4-Dioxane	200.0000	234.8846	-17.4	122	-0.02
52	T	Dibromomethane	50.0000	45.3102	9.4	101	-0.02
53	T	2-Chloroethyl Vinyl Ether	50.0000	42.8940	14.2	102	-0.02
54	T	4-Methyl-2-Pentanone	50.0000	41.0061	18.0	97	0.00
55	T	cis-1,3-Dichloropropene	50.0000	48.5804	2.8	112	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101413\8M391559.D Vial: 2
Acq On : 14 Oct 2013 12:23 Operator: TMB
Sample : WG448561-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	50.0000	50.3701	-0.7	119	-0.02
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	121	0.00
58	S	Toluene-d8	25.0000	23.9469	4.2	118	-0.02
59	C	Toluene	50.0000	47.8590	4.3	115	-0.02
60	T	Ethyl Methacrylate	50.0000	44.7037	10.6	102	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.34#
62	T	trans-1,3-Dichloropropene	50.0000	45.5001	9.0	106	-0.02
63	T	1,1,2-Trichloroethane	50.0000	44.1673	11.7	103	0.00
64	T	2-Hexanone	50.0000	41.7439	16.5	99	0.00
65	T	1,3-Dichloropropane	50.0000	42.9587	14.1	102	-0.02
66	T	Tetrachloroethene	50.0000	50.2430	-0.5	118	0.00
67	T	Dibromochloromethane	50.0000	45.2017	9.6	102	-0.02
68	T	1,2-Dibromoethane	50.0000	44.2332	11.5	102	-0.02
69	T	1-Chlorohexane	50.0000	51.6710	-3.3	121	-0.02
70	P	Chlorobenzene	50.0000	46.7064	6.6	113	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	46.7932	6.4	109	0.00
72	C	Ethylbenzene	50.0000	46.9225	6.2	115	-0.02
73	T	m-,p-Xylene	100.0000	96.6475	3.4	116	0.00
74	T	o-Xylene	50.0000	48.2072	3.6	115	-0.02
75	T	Styrene	50.0000	48.8835	2.2	112	0.00
76	P	Bromoform	50.0000	43.6343	12.7	100	-0.02
77	T	Isopropylbenzene	50.0000	49.4151	1.2	115	-0.02
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	121	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	42.2043	15.6	102	-0.02
80	S	p-Bromofluorobenzene	25.0000	22.9378	8.2	112	-0.02
81	T	1,2,3-Trichloropropane	50.0000	40.6228	18.8	97	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	44.5363	10.9	106	0.00
83	T	n-Propylbenzene	50.0000	48.8778	2.2	116	-0.02
84	T	Bromobenzene	50.0000	46.2632	7.5	110	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.9902	2.0	116	-0.02
86	T	2-Chlorotoluene	50.0000	44.4607	11.1	111	-0.02
87	T	4-Chlorotoluene	50.0000	49.5222	1.0	115	0.00
88	T	a-Methylstyrene	50.0000	49.4342	1.1	118	0.00
89	T	tert-Butylbenzene	50.0000	48.6483	2.7	117	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	47.5739	4.9	114	0.00
91	T	sec-Butylbenzene	50.0000	49.1818	1.6	118	0.00
92	T	p-Isopropyltoluene	50.0000	49.9340	0.1	118	0.00
93	T	1,3-Dichlorobenzene	50.0000	46.5675	6.9	113	-0.02
94	T	1,4-Dichlorobenzene	50.0000	45.1123	9.8	113	0.00
95	T	n-Butylbenzene	50.0000	49.4076	1.2	121	0.00
96	T	1,2-Dichlorobenzene	50.0000	44.3124	11.4	109	-0.02
97	T	1,2-Dibromo-3-Chloropropane	50.0000	38.8207	22.4	94	-0.02
98	T	1,2,4-Trichlorobenzene	50.0000	46.4440	7.1	110	-0.02
99	T	Hexachlorobutadiene	50.0000	51.6131	-3.2	125	0.00
100	T	Naphthalene	50.0000	41.5145	17.0	98	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	43.8868	12.2	107	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101413\8M391560.D Vial: 3
Acq On : 14 Oct 2013 12:54 Operator: TMB
Sample : WG448582-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60752 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 13:16:53 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	742473	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	577103	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.94	152	336328	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	10.00	111	198235	23.4803 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.92%		
43) 1,2-Dichloroethane-d4	10.63	65	221018	22.3306 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.32%		
58) Toluene-d8	13.02	98	670995	24.4117 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.64%		
80) p-Bromofluorobenzene	16.41	95	272897	23.3563 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.44%		

Target Compounds					Qvalue
5) 1,3-Butadiene	4.14	54	450417	49.3892 ug/L	99
9) Diethyl ether	6.21	59	617822	104.5305 ug/L	85
13) Acetone	6.57	43	614	0.3477 ug/L #	48
15) Tert-Butyl Alcohol	6.89	59	2985	7.7282 ug/L #	1
19) Methylene Chloride	7.58	84	996	0.1337 ug/L #	17
20) Carbon Disulfide	7.63	76	3554	0.1620 ug/L	94
24) n-Hexane	8.10	57	3198	0.3066 ug/L	97
29) 2-Butanone	9.21	43	1371	0.4853 ug/L #	52
30) Propionitrile	9.31	54	75625	93.3634 ug/L	97
36) Tetrahydrofuran	9.97	42	1691	0.8377 ug/L #	34
48) Methylcyclohexane	11.63	83	1993	0.1759 ug/L #	66
51) 1,4-Dioxane	12.04	88	8010	219.9013 ug/L #	67
56) Dimethyl Disulfide	13.02	94	20007	1.5823 ug/L #	30
69) 1-Chlorohexane	14.53	91	1591	0.1654 ug/L	81
73) m-,p-Xylene	15.07	106	5548	0.3953 ug/L	72
83) n-Propylbenzene	16.57	91	6832	0.1682 ug/L	85
85) 1,3,5-Trimethylbenzene	16.76	105	3889	0.1260 ug/L	77
87) 4-Chlorotoluene	16.89	91	3819	0.1477 ug/L	76
91) sec-Butylbenzene	17.49	105	6617	0.1827 ug/L	85
92) p-Isopropyltoluene	17.65	119	5706	0.1725 ug/L	92
93) 1,3-Dichlorobenzene	17.84	146	3022	0.1528 ug/L	93
94) 1,4-Dichlorobenzene	17.99	146	3009	0.1461 ug/L #	1
95) n-Butylbenzene	18.17	91	7998	0.2904 ug/L #	85
98) 1,2,4-Trichlorobenzene	20.63	180	3544	0.2505 ug/L	81
99) Hexachlorobutadiene	20.76	225	3006	0.5727 ug/L	93
100) Naphthalene	20.99	128	5100	0.1928 ug/L #	78
101) 1,2,3-Trichlorobenzene	21.31	180	3054	0.2355 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M391560.D 8260WT.M Mon Oct 14 13:16:53 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101413\8M391560.D Vial: 3
Acq On : 14 Oct 2013 12:54 Operator: TMB
Sample : WG448582-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60752 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 13:16 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

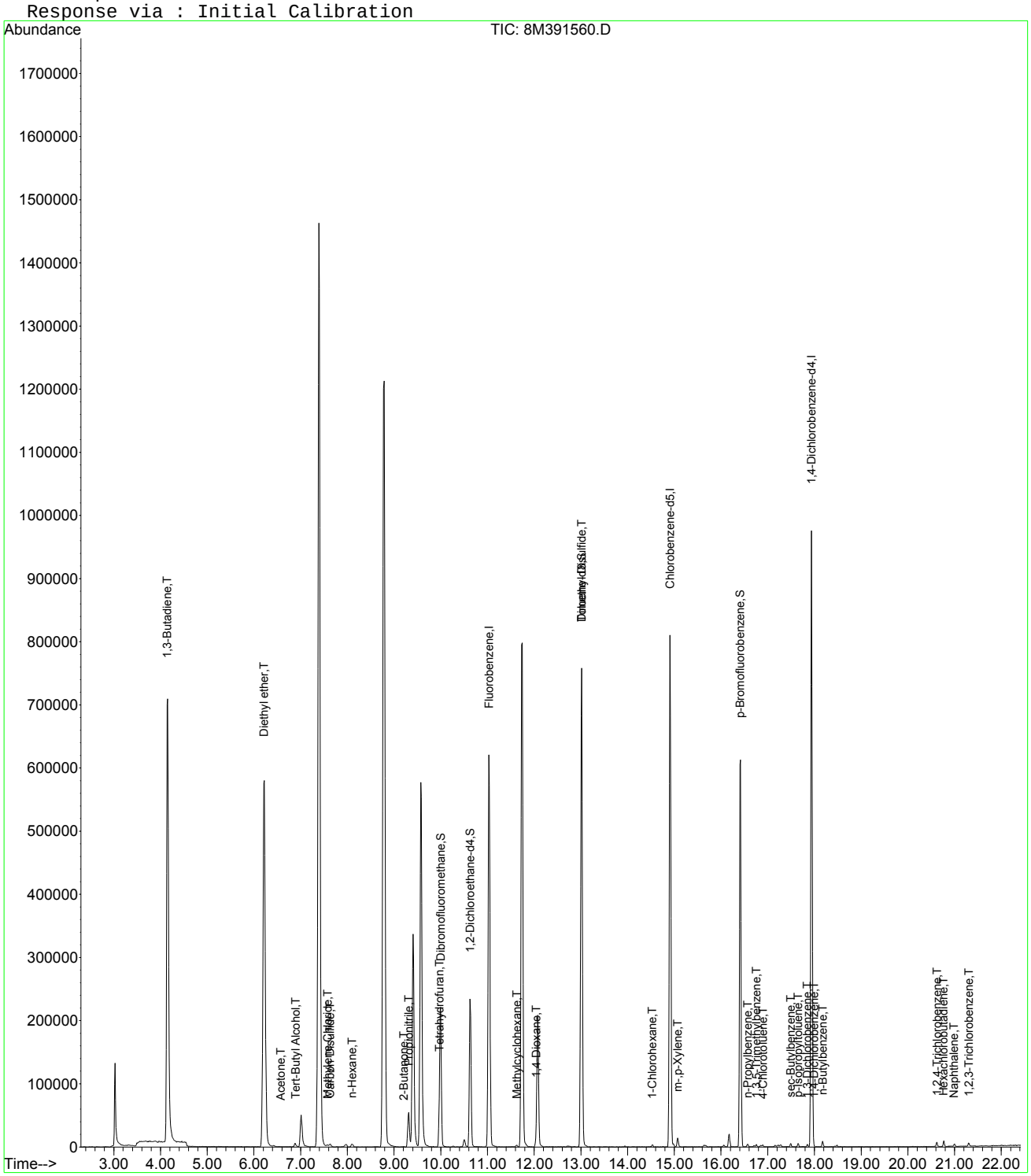

8M391560.D 8260WT.M Mon Oct 14 13:16:54 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391560.D Vial: 3
Acq On : 14 Oct 2013 12:54 Operator: TMB
Sample : WG448582-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60752 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 14 13:44:35 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	742473	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.91	117	577103	25.00 ug/L	-0.02
12) 1,4-Dichlorobenzene-d4	17.94	152	336328	25.00 ug/L	-0.01

Target Compounds					Qvalue
2) Acetonitrile	7.01	41	79777	117.9335 ug/L	94
3) 3-Chloro-1-propene	7.39	41	1702477	123.5915 ug/L	99
4) 2-Chloro-1,3-butadiene	8.79	53	1315621	99.1742 ug/L	92
5) Ethyl Acetate	9.41	43	620425	124.5198 ug/L	92
6) Methacrylonitrile	9.57	67	206848	100.9430 ug/L	91
7) Isobutyl Alcohol	9.58	43	44948	265.9599 ug/L #	96
8) 1-Butanol	10.50	56	9075	132.0192 ug/L	78
9) Methyl methacrylate	11.73	41	646789	124.9849 ug/L	98
10) 2-Nitropropane	12.07	43	210913	133.8376 ug/L	99
13) Cyclohexanone	16.17	55	12374	55.9840 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M391560.D A9FOOWTR.M Mon Oct 14 13:44:36 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391560.D Vial: 3
Acq On : 14 Oct 2013 12:54 Operator: TMB
Sample : WG448582-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60752 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 14 13:44 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Initial Calibration

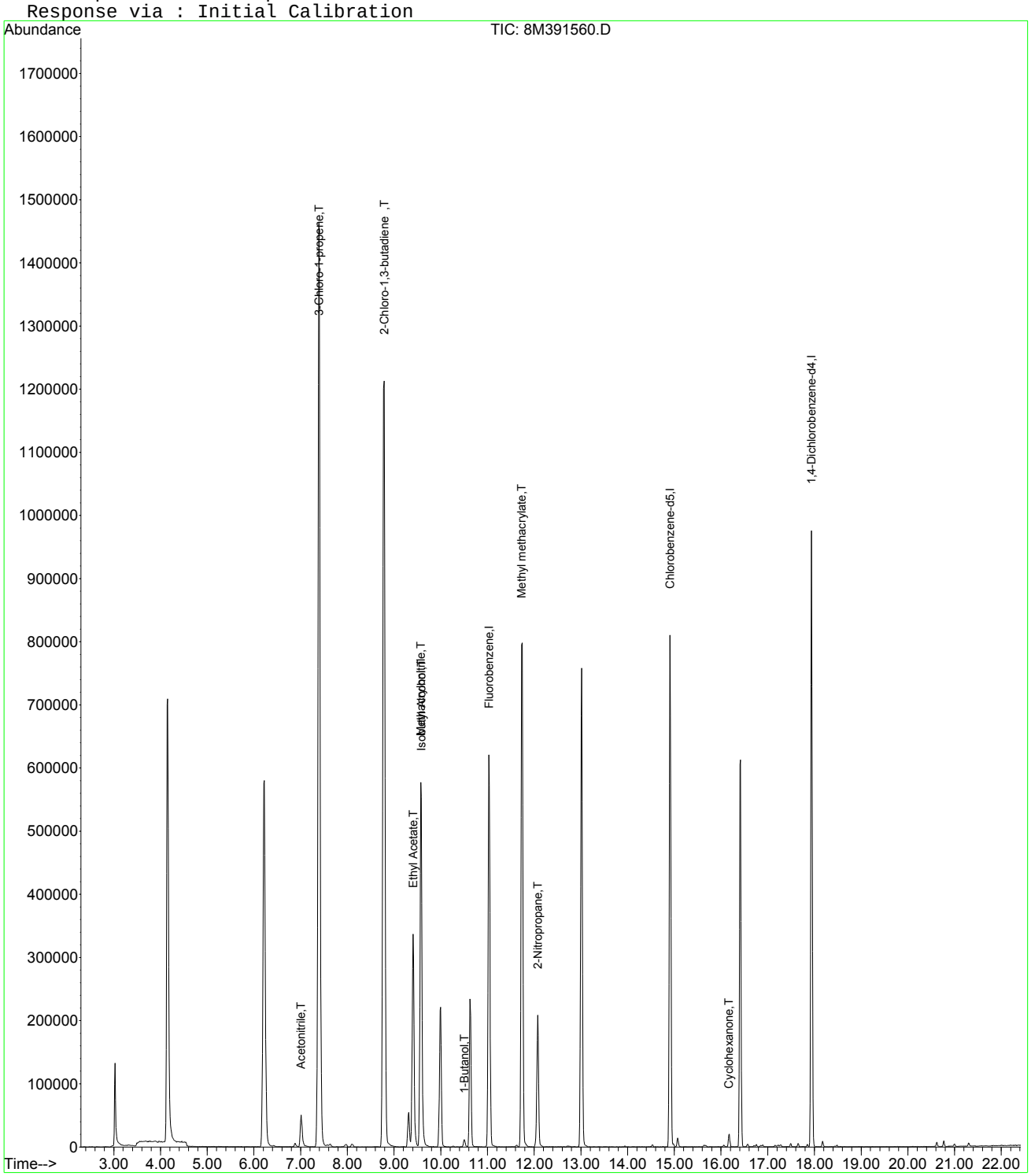

8M391560.D A9FOOWTR.M Mon Oct 14 13:44:36 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101413\8M391560.D Vial: 3
Acq On : 14 Oct 2013 12:54 Operator: TMB
Sample : WG448582-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60752 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	123	-0.02
2	T	Acetonitrile	100.0000	117.9335	-17.9	147	-0.02
3	T	3-Chloro-1-propene	100.0000	123.5915	-23.6	151	-0.01
4	T	2-Chloro-1,3-butadiene	100.0000	99.1742	0.8	121	-0.01
5	T	Ethyl Acetate	100.0000	124.5198	-24.5	153	-0.01
6	T	Methacrylonitrile	100.0000	100.9430	-0.9	122	-0.02
7	T	Isobutyl Alcohol	200.0000	265.9599	-33.0	169	-0.02
8	T	1-Butanol	100.0000	132.0192	-32.0	185	-0.01
9	T	Methyl methacrylate	100.0000	124.9848	-25.0	150	-0.02
10	T	2-Nitropropane	100.0000	133.8376	-33.8	165	-0.01
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	113	-0.02
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	112	-0.01
13	T	Cyclohexanone	100.0000	55.9840	44.0	56	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M391560.D A9FOOWTR.M Mon Oct 14 13:44:48 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101513\8M391589.D Vial: 2
Acq On : 15 Oct 2013 6:51 Operator: TMB
Sample : WG448661-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 07:13:30 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	777451	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	617730	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	365452	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.99	111	205807	23.2804 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.12%		
43) 1,2-Dichloroethane-d4	10.63	65	218318	21.0654 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 84.28%		
58) Toluene-d8	13.02	98	711635	24.1875 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.76%		
80) p-Bromofluorobenzene	16.41	95	295327	23.2617 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	434493	50.2051 ug/L	99
3) Chloromethane	3.86	50	555609	50.2085 ug/L	99
4) Vinyl Chloride	4.10	62	484493	51.2039 ug/L	97
5) 1,3-Butadiene	4.15	54	464962	48.6903 ug/L	96
6) Bromomethane	5.02	94	288892	51.2840 ug/L	99
7) Chloroethane	5.19	64	308251	52.8367 ug/L	95
8) Trichlorofluoromethane	5.69	101	740282	48.6166 ug/L	100
9) Diethyl ether	6.22	59	564166	91.1579 ug/L	84
10) Isoprene	6.26	67	551137	52.1022 ug/L	79
11) Acrolein	6.46	56	27031	44.0107 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.47	101	410099	52.4305 ug/L	90
13) Acetone	6.57	43	81495	44.0724 ug/L	99
14) 1,1-Dichloroethene	6.79	61	717677	50.4190 ug/L	87
15) Tert-Butyl Alcohol	6.90	59	82162	203.1468 ug/L	99
16) Dimethyl Sulfide	7.05	62	374213	49.0855 ug/L	82
17) Iodomethane	7.31	142	413505	53.8507 ug/L	98
18) Methyl acetate	7.32	43	248736	44.6950 ug/L	88
19) Methylene Chloride	7.58	84	384118	49.2484 ug/L	61
20) Carbon Disulfide	7.63	76	1182476	51.4792 ug/L	99
21) Acrylonitrile	7.75	53	109687	44.5014 ug/L	100
22) Methyl Tert Butyl Ether	7.79	73	918880	45.8862 ug/L	91
23) trans-1,2-Dichloroethene	8.02	61	667091	50.2825 ug/L	87
24) n-Hexane	8.11	57	592503	54.2514 ug/L	89
25) Diisopropyl ether	8.45	45	3196190	92.7806 ug/L	92
26) Vinyl Acetate	8.61	43	790862	57.4496 ug/L	93
27) 1,1-Dichloroethane	8.65	63	805225	51.5973 ug/L	97
28) Ethyl-Tert-Butyl ether	9.02	59	2490521	91.0734 ug/L	92
29) 2-Butanone	9.20	43	130303	44.0451 ug/L	87
30) Propionitrile	9.32	54	75579	89.1087 ug/L	97
31) 2,2-Dichloropropane	9.43	77	750147	57.6272 ug/L	100
32) cis-1,2-Dichloroethene	9.49	96	444937	51.2489 ug/L	76
33) Chloroform	9.70	83	753651	48.0479 ug/L	100
34) 1-Bromopropane	9.84	122	91454	53.0555 ug/L	99
35) Bromochloromethane	9.94	130	276677	50.4001 ug/L #	71
36) Tetrahydrofuran	9.96	42	216286	102.3281 ug/L	81
38) 1,1,1-Trichloroethane	10.24	97	720295	49.9848 ug/L	99
39) Cyclohexane	10.27	56	752980	49.2121 ug/L	78
40) 1,1-Dichloropropene	10.43	75	585014	51.4344 ug/L	93
41) Tert-Amyl-Methyl ether	10.53	73	1831547	88.8000 ug/L	91
42) Carbon Tetrachloride	10.58	117	680119	49.8233 ug/L	99
45) 1,2-Dichloroethane	10.75	62	588051	45.6487 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101513\8M391589.D Vial: 2
Acq On : 15 Oct 2013 6:51 Operator: TMB
Sample : WG448661-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 07:13:30 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.79	78	1569527	50.5125	ug/L	89
47)	Trichloroethene	11.54	130	480415	50.5890	ug/L	96
48)	Methylcyclohexane	11.63	83	606231	51.0892	ug/L	83
49)	1,2-Dichloropropane	11.76	63	415457	50.1590	ug/L	94
50)	Bromodichloromethane	12.06	83	572561	49.0838	ug/L	99
51)	1,4-Dioxane	12.04	88	10369	271.8566	ug/L	85
52)	Dibromomethane	12.15	93	213699	48.4267	ug/L	94
53)	2-Chloroethyl Vinyl Ether	12.35	63	211274	47.7503	ug/L	89
54)	4-Methyl-2-Pentanone	12.38	58	96469	44.9463	ug/L	85
55)	cis-1,3-Dichloropropene	12.69	75	657900	51.8744	ug/L	99
56)	Dimethyl Disulfide	12.96	94	697244	52.6618	ug/L	97
59)	Toluene	13.11	91	1777041	54.8275	ug/L	99
60)	Ethyl Methacrylate	13.19	69	373229	48.5844	ug/L	79
62)	trans-1,3-Dichloropropene	13.29	75	596042	49.6173	ug/L	100
63)	1,1,2-Trichloroethane	13.50	97	283692	48.4354	ug/L	94
64)	2-Hexanone	13.43	58	87896	45.6952	ug/L	85
65)	1,3-Dichloropropane	13.80	76	493510	46.7799	ug/L	75
66)	Tetrachloroethene	13.94	164	403046	54.2071	ug/L	96
67)	Dibromochloromethane	14.21	129	428732	48.8221	ug/L	98
68)	1,2-Dibromoethane	14.45	107	301657	48.8932	ug/L	100
69)	1-Chlorohexane	14.53	91	545469	52.9885	ug/L	76
70)	Chlorobenzene	14.96	112	1200101	50.6562	ug/L	90
71)	1,1,1,2-Tetrachloroethane	14.99	131	479312	50.5587	ug/L	99
72)	Ethylbenzene	14.98	106	640297	50.1112	ug/L	90
73)	m-,p-Xylene	15.07	106	1574215	104.8005	ug/L	92
74)	o-Xylene	15.63	106	786417	52.1470	ug/L	91
75)	Styrene	15.67	104	1367360	55.1194	ug/L	93
76)	Bromoform	16.18	173	270721	47.8825	ug/L	99
77)	Isopropylbenzene	16.06	105	1988761	52.6131	ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.27	83	308867	46.1280	ug/L	99
81)	1,2,3-Trichloropropane	16.47	110	102341	44.4314	ug/L	98
82)	trans-1,4-Dichloro-2-Buten	16.51	53	126691	47.1368	ug/L	55
83)	n-Propylbenzene	16.57	91	2294893	52.0108	ug/L	95
84)	Bromobenzene	16.71	156	567285	50.7595	ug/L	81
85)	1,3,5-Trimethylbenzene	16.76	105	1839658	54.8547	ug/L	96
86)	2-Chlorotoluene	16.84	91	1591323	54.1247	ug/L	96
87)	4-Chlorotoluene	16.89	91	1274931	45.3892	ug/L	98
88)	a-Methylstyrene	17.16	118	1019588	52.3030	ug/L	93
89)	tert-Butylbenzene	17.23	134	383854	52.0560	ug/L	93
90)	1,2,4-Trimethylbenzene	17.28	105	1822400	51.9554	ug/L	97
91)	sec-Butylbenzene	17.49	105	2048470	52.0478	ug/L	99
92)	p-Isopropyltoluene	17.65	119	1895837	52.7600	ug/L	99
93)	1,3-Dichlorobenzene	17.86	146	1076171	50.0906	ug/L	96
94)	1,4-Dichlorobenzene	17.98	146	1091105	48.7561	ug/L	96
95)	n-Butylbenzene	18.18	91	1550029	51.7904	ug/L	96
96)	1,2-Dichlorobenzene	18.48	146	993812	48.1422	ug/L	95
97)	1,2-Dibromo-3-Chloropropan	19.48	75	62564	42.9250	ug/L	92
98)	1,2,4-Trichlorobenzene	20.62	180	767924	49.9621	ug/L	99
99)	Hexachlorobutadiene	20.77	225	313524	54.9733	ug/L	97
100)	Naphthalene	21.00	128	1314388	45.7217	ug/L	99
101)	1,2,3-Trichlorobenzene	21.31	180	669381	47.4954	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M391589.D 8260WT.M Tue Oct 15 07:13:30 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101513\8M391589.D Vial: 2
Acq On : 15 Oct 2013 6:51 Operator: TMB
Sample : WG448661-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 7:13 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

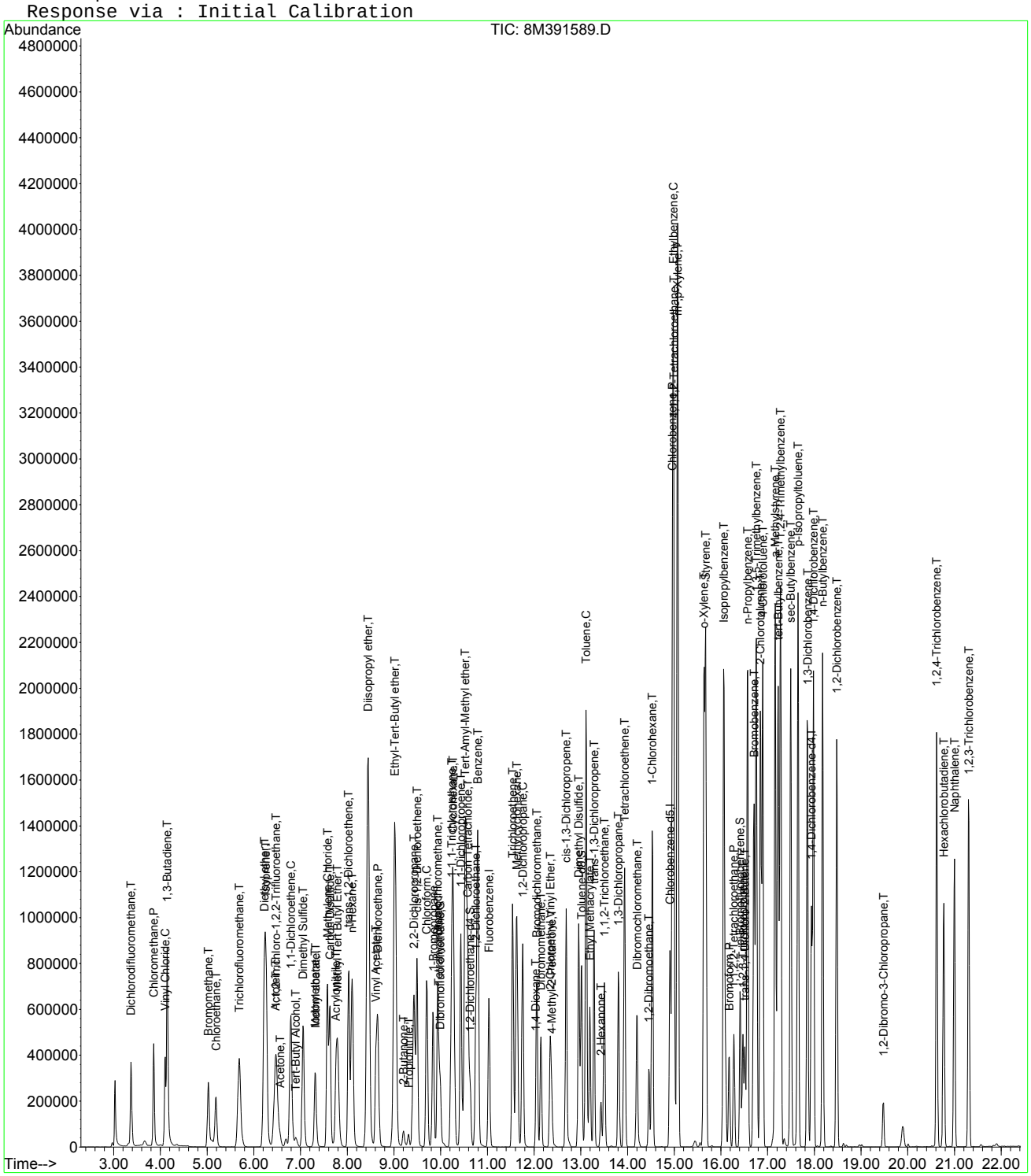

8M391589.D 8260WT.M Tue Oct 15 07:13:31 2013 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 13 Oct 2013 19:59
CCV date: 15 Oct 2013 6:51
CCV Filename: 8M391589.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	660376	11.03	534518	14.91	315004	17.94
CCV	777451	11.03	617730	14.91	365452	17.94

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101513\8M391589.D Vial: 2
Acq On : 15 Oct 2013 6:51 Operator: TMB
Sample : WG448661-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	118	-0.02
2	T	Dichlorodifluoromethane	0.2783	0.2794	-0.4	112	0.00
3	P	Chloromethane	0.3558	0.3573	-0.4	125	0.00
4	C	Vinyl Chloride	0.3043	0.3116	-2.4	120	0.00
5	T	1,3-Butadiene	0.3071	0.2990	2.6	111	0.00
6	T	Bromomethane	0.1574	0.1858	-18.0	127	0.00
7	T	Chloroethane	0.1876	0.1982	-5.7	119	0.00
8	T	Trichlorofluoromethane	0.4896	0.4761	2.8	112	-0.02
9	T	Diethyl ether	0.1990	0.1814	8.8	106	0.00
10	T	Isoprene	0.3402	0.3544	-4.2	118	-0.02
11	T	Acrolein	0.0198	0.0174	12.0	104	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2515	0.2637	-4.9	119	0.00
13	T	Acetone	0.0595	0.0524	11.9	107	0.00
14	C	1,1-Dichloroethene	0.4577	0.4616	-0.8	115	0.00
15	T	Tert-Butyl Alcohol	0.0130	0.0132	-1.5	127	-0.02
16	T	Dimethyl Sulfide	0.2452	0.2407	1.8	111	-0.02
17	T	Iodomethane	0.2240	0.2659	-18.7	119	-0.02
18	T	Methyl acetate	0.1790	0.1600	10.6	107	0.00
19	T	Methylene Chloride	0.2508	0.2470	1.5	117	0.00
20	T	Carbon Disulfide	0.7386	0.7605	-3.0	119	0.00
21	T	Acrylonitrile	0.0793	0.0705	11.0	101	-0.02
22	T	Methyl Tert Butyl Ether	0.6439	0.5910	8.2	105	-0.02
23	T	trans-1,2-Dichloroethene	0.4266	0.4290	-0.6	116	-0.02
24	T	n-Hexane	0.3512	0.3811	-8.5	124	0.00
25	T	Diisopropyl ether	1.1078	1.0278	7.2	109	0.00
26	T	Vinyl Acetate	0.4427	0.5086	-14.9	134	0.00
27	P	1,1-Dichloroethane	0.5018	0.5179	-3.2	118	0.00
28	T	Ethyl-Tert-Butyl ether	0.8794	0.8009	8.9	107	-0.02
29	T	2-Butanone	0.0951	0.0838	11.9	102	-0.02
30	T	Propionitrile	0.0273	0.0243	10.9	109	0.00
31	T	2,2-Dichloropropane	0.4186	0.4824	-15.3	129	0.00
32	T	cis-1,2-Dichloroethene	0.2792	0.2862	-2.5	118	-0.02
33	C	Chloroform	0.5044	0.4847	3.9	114	-0.02
34		1-Bromopropane	0.0554	0.0588	-6.1	117	0.00
35	T	Bromochloromethane	0.1765	0.1779	-0.8	116	-0.02
36	T	Tetrahydrofuran	0.0680	0.0696	-2.3	124	0.00
37	S	Dibromofluoromethane	0.2843	0.2647	6.9	108	-0.02
38	T	1,1,1-Trichloroethane	0.4634	0.4632	0.0	112	0.00
39	T	Cyclohexane	0.4920	0.4843	1.6	114	-0.02
40	T	1,1-Dichloropropene	0.3658	0.3762	-2.9	117	0.00
41	T	Tert-Amyl-Methyl ether	0.6632	0.5890	11.2	105	-0.02
42	T	Carbon Tetrachloride	0.4390	0.4374	0.4	112	-0.02
43	S	1,2-Dichloroethane-d4	0.3333	0.2808	15.7	98	-0.02
44		Heptane	0.0000	0.0000	0.0	0#	-2.74#
45	T	1,2-Dichloroethane	0.4142	0.3782	8.7	105	0.00
46	T	Benzene	0.9992	1.0094	-1.0	118	0.00
47	T	Trichloroethene	0.3054	0.3090	-1.2	114	-0.02
48	T	Methylcyclohexane	0.3816	0.3899	-2.2	119	0.00
49	C	1,2-Dichloropropane	0.2663	0.2672	-0.3	113	0.00
50	T	Bromodichloromethane	0.3751	0.3682	1.8	110	-0.02
51	T	1,4-Dioxane	0.0012	0.0017	-35.8#	136	-0.02
52	T	Dibromomethane	0.1419	0.1374	3.1	104	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1423	0.1359	4.5	109	0.00
54	T	4-Methyl-2-Pentanone	0.0690	0.0620	10.1	103	0.00
55	T	cis-1,3-Dichloropropene	0.4078	0.4231	-3.7	115	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101513\8M391589.D Vial: 2
Acq On : 15 Oct 2013 6:51 Operator: TMB
Sample : WG448661-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	0.4258	0.4484	-5.3	120	-0.02
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	116	0.00
58	S	Toluene-d8	1.1907	1.1520	3.2	114	0.00
59	C	Toluene	1.3117	1.4384	-9.7	127	-0.02
60	T	Ethyl Methacrylate	0.3109	0.3021	2.8	106	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.34#
62	T	trans-1,3-Dichloropropene	0.4862	0.4824	0.8	111	0.00
63	T	1,1,2-Trichloroethane	0.2370	0.2296	3.1	108	0.00
64	T	2-Hexanone	0.0779	0.0711	8.6	104	0.00
65	T	1,3-Dichloropropane	0.4270	0.3995	6.4	107	-0.02
66	T	Tetrachloroethene	0.3009	0.3262	-8.4	122	0.00
67	T	Dibromochloromethane	0.3554	0.3470	2.4	106	0.00
68	T	1,2-Dibromoethane	0.2497	0.2442	2.2	108	-0.02
69	T	1-Chlorohexane	0.4166	0.4415	-6.0	119	-0.02
70	P	Chlorobenzene	0.9588	0.9714	-1.3	117	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3837	0.3880	-1.1	113	0.00
72	C	Ethylbenzene	0.5171	0.5183	-0.2	118	-0.02
73	T	m-,p-Xylene	0.6079	0.6371	-4.8	120	0.00
74	T	o-Xylene	0.6103	0.6365	-4.3	119	-0.02
75	T	Styrene	1.0040	1.1068	-10.2	121	0.00
76	P	Bromoform	0.2288	0.2191	4.2	105	0.00
77	T	Isopropylbenzene	1.5298	1.6097	-5.2	118	-0.02
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	116	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4581	0.4226	7.7	106	-0.02
80	S	p-Bromofluorobenzene	0.8685	0.8081	7.0	109	-0.02
81	T	1,2,3-Trichloropropane	0.1576	0.1400	11.1	101	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1839	0.1733	5.7	108	0.00
83	T	n-Propylbenzene	3.0184	3.1398	-4.0	118	0.00
84	T	Bromobenzene	0.7645	0.7761	-1.5	115	0.00
85	T	1,3,5-Trimethylbenzene	2.2942	2.5170	-9.7	124	0.00
86	T	2-Chlorotoluene	2.0113	2.1772	-8.2	130	-0.02
87	T	4-Chlorotoluene	1.9215	1.7443	9.2	101	0.00
88	T	a-Methylstyrene	1.3335	1.3950	-4.6	119	0.00
89	T	tert-Butylbenzene	0.5044	0.5252	-4.1	119	0.00
90	T	1,2,4-Trimethylbenzene	2.3995	2.4934	-3.9	119	0.00
91	T	sec-Butylbenzene	2.6924	2.8026	-4.1	119	0.00
92	T	p-Isopropyltoluene	2.4581	2.5938	-5.5	119	0.00
93	T	1,3-Dichlorobenzene	1.4697	1.4724	-0.2	116	0.00
94	T	1,4-Dichlorobenzene	1.5309	1.4928	2.5	116	0.00
95	T	n-Butylbenzene	2.0474	2.1207	-3.6	121	0.00
96	T	1,2-Dichlorobenzene	1.4122	1.3597	3.7	113	-0.02
97	T	1,2-Dibromo-3-Chloropropane	0.0997	0.0856	14.2	99	0.00
98	T	1,2,4-Trichlorobenzene	1.0515	1.0507	0.1	114	-0.02
99	T	Hexachlorobutadiene	0.3902	0.4290	-9.9	127	0.00
100	T	Naphthalene	1.9666	1.7983	8.6	103	0.00
101	T	1,2,3-Trichlorobenzene	0.9641	0.9158	5.0	110	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M391589.D 8260WT.M Tue Oct 15 07:22:21 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101513\8M391589.D Vial: 2
Acq On : 15 Oct 2013 6:51 Operator: TMB
Sample : WG448661-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	118	-0.02
2	T	Dichlorodifluoromethane	50.0000	50.2051	-0.4	112	0.00
3	P	Chloromethane	50.0000	50.2085	-0.4	125	0.00
4	C	Vinyl Chloride	50.0000	51.2039	-2.4	120	0.00
5	T	1,3-Butadiene	50.0000	48.6903	2.6	111	0.00
6	T	Bromomethane	50.0000	51.2840	-2.6	127	0.00
7	T	Chloroethane	50.0000	52.8366	-5.7	119	0.00
8	T	Trichlorofluoromethane	50.0000	48.6166	2.8	112	-0.02
9	T	Diethyl ether	100.0000	91.1579	8.8	106	0.00
10	T	Isoprene	50.0000	52.1022	-4.2	118	-0.02
11	T	Acrolein	50.0000	44.0107	12.0	104	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.4305	-4.9	119	0.00
13	T	Acetone	50.0000	44.0724	11.9	107	0.00
14	C	1,1-Dichloroethene	50.0000	50.4190	-0.8	115	0.00
15	T	Tert-Butyl Alcohol	200.0000	203.1468	-1.6	127	-0.02
16	T	Dimethyl Sulfide	50.0000	49.0855	1.8	111	-0.02
17	T	Iodomethane	50.0000	53.8507	-7.7	119	-0.02
18	T	Methyl acetate	50.0000	44.6950	10.6	107	0.00
19	T	Methylene Chloride	50.0000	49.2484	1.5	117	0.00
20	T	Carbon Disulfide	50.0000	51.4792	-3.0	119	0.00
21	T	Acrylonitrile	50.0000	44.5014	11.0	101	-0.02
22	T	Methyl Tert Butyl Ether	50.0000	45.8862	8.2	105	-0.02
23	T	trans-1,2-Dichloroethene	50.0000	50.2825	-0.6	116	-0.02
24	T	n-Hexane	50.0000	54.2514	-8.5	124	0.00
25	T	Diisopropyl ether	100.0000	92.7806	7.2	109	0.00
26	T	Vinyl Acetate	50.0000	57.4496	-14.9	134	0.00
27	P	1,1-Dichloroethane	50.0000	51.5973	-3.2	118	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	91.0734	8.9	107	-0.02
29	T	2-Butanone	50.0000	44.0451	11.9	102	-0.02
30	T	Propionitrile	100.0000	89.1087	10.9	109	0.00
31	T	2,2-Dichloropropane	50.0000	57.6272	-15.3	129	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.2489	-2.5	118	-0.02
33	C	Chloroform	50.0000	48.0479	3.9	114	-0.02
34		1-Bromopropane	50.0000	53.0555	-6.1	117	0.00
35	T	Bromochloromethane	50.0000	50.4001	-0.8	116	-0.02
36	T	Tetrahydrofuran	100.0000	102.3281	-2.3	124	0.00
37	S	Dibromofluoromethane	25.0000	23.2804	6.9	108	-0.02
38	T	1,1,1-Trichloroethane	50.0000	49.9848	0.0	112	0.00
39	T	Cyclohexane	50.0000	49.2121	1.6	114	-0.02
40	T	1,1-Dichloropropene	50.0000	51.4344	-2.9	117	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	88.8000	11.2	105	-0.02
42	T	Carbon Tetrachloride	50.0000	49.8233	0.4	112	-0.02
43	S	1,2-Dichloroethane-d4	25.0000	21.0654	15.7	98	-0.02
44		Heptane	-1.0000	0.0000	0.0	0	-2.74#
45	T	1,2-Dichloroethane	50.0000	45.6487	8.7	105	0.00
46	T	Benzene	50.0000	50.5125	-1.0	118	0.00
47	T	Trichloroethene	50.0000	50.5890	-1.2	114	-0.02
48	T	Methylcyclohexane	50.0000	51.0892	-2.2	119	0.00
49	C	1,2-Dichloropropane	50.0000	50.1590	-0.3	113	0.00
50	T	Bromodichloromethane	50.0000	49.0838	1.8	110	-0.02
51	T	1,4-Dioxane	200.0000	271.8566	-35.9#	136	-0.02
52	T	Dibromomethane	50.0000	48.4267	3.1	104	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	47.7503	4.5	109	0.00
54	T	4-Methyl-2-Pentanone	50.0000	44.9463	10.1	103	0.00
55	T	cis-1,3-Dichloropropene	50.0000	51.8744	-3.7	115	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101513\8M391589.D Vial: 2
Acq On : 15 Oct 2013 6:51 Operator: TMB
Sample : WG448661-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	50.0000	52.6618	-5.3	120	-0.02
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	116	0.00
58	S	Toluene-d8	25.0000	24.1875	3.2	114	0.00
59	C	Toluene	50.0000	54.8275	-9.7	127	-0.02
60	T	Ethyl Methacrylate	50.0000	48.5844	2.8	106	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.34#
62	T	trans-1,3-Dichloropropene	50.0000	49.6173	0.8	111	0.00
63	T	1,1,2-Trichloroethane	50.0000	48.4354	3.1	108	0.00
64	T	2-Hexanone	50.0000	45.6952	8.6	104	0.00
65	T	1,3-Dichloropropane	50.0000	46.7799	6.4	107	-0.02
66	T	Tetrachloroethene	50.0000	54.2071	-8.4	122	0.00
67	T	Dibromochloromethane	50.0000	48.8221	2.4	106	0.00
68	T	1,2-Dibromoethane	50.0000	48.8932	2.2	108	-0.02
69	T	1-Chlorohexane	50.0000	52.9885	-6.0	119	-0.02
70	P	Chlorobenzene	50.0000	50.6562	-1.3	117	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.5587	-1.1	113	0.00
72	C	Ethylbenzene	50.0000	50.1112	-0.2	118	-0.02
73	T	m-,p-Xylene	100.0000	104.8005	-4.8	120	0.00
74	T	o-Xylene	50.0000	52.1471	-4.3	119	-0.02
75	T	Styrene	50.0000	55.1195	-10.2	121	0.00
76	P	Bromoform	50.0000	47.8825	4.2	105	0.00
77	T	Isopropylbenzene	50.0000	52.6131	-5.2	118	-0.02
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	116	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	46.1280	7.7	106	-0.02
80	S	p-Bromofluorobenzene	25.0000	23.2617	7.0	109	-0.02
81	T	1,2,3-Trichloropropane	50.0000	44.4314	11.1	101	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	47.1369	5.7	108	0.00
83	T	n-Propylbenzene	50.0000	52.0108	-4.0	118	0.00
84	T	Bromobenzene	50.0000	50.7595	-1.5	115	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	54.8547	-9.7	124	0.00
86	T	2-Chlorotoluene	50.0000	54.1247	-8.2	130	-0.02
87	T	4-Chlorotoluene	50.0000	45.3892	9.2	101	0.00
88	T	a-Methylstyrene	50.0000	52.3030	-4.6	119	0.00
89	T	tert-Butylbenzene	50.0000	52.0560	-4.1	119	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.9554	-3.9	119	0.00
91	T	sec-Butylbenzene	50.0000	52.0478	-4.1	119	0.00
92	T	p-Isopropyltoluene	50.0000	52.7600	-5.5	119	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.0906	-0.2	116	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.7561	2.5	116	0.00
95	T	n-Butylbenzene	50.0000	51.7904	-3.6	121	0.00
96	T	1,2-Dichlorobenzene	50.0000	48.1422	3.7	113	-0.02
97	T	1,2-Dibromo-3-Chloropropane	50.0000	42.9250	14.2	99	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.9621	0.1	114	-0.02
99	T	Hexachlorobutadiene	50.0000	54.9733	-9.9	127	0.00
100	T	Naphthalene	50.0000	45.7217	8.6	103	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.4954	5.0	110	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M391589.D 8260WT.M Tue Oct 15 07:22:23 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101513\8M391613.D Vial: 2
Acq On : 15 Oct 2013 20:26 Operator: FJB
Sample : WG448860-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 20:49:21 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	662365	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	532411	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.94	152	319294	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.99	111	177482	23.5646 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.24%		
43) 1,2-Dichloroethane-d4	10.63	65	191788	21.7209 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.88%		
58) Toluene-d8	13.02	98	602213	23.7485 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.00%		
80) p-Bromofluorobenzene	16.41	95	254878	22.9779 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.92%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	381591	51.7534 ug/L	99
3) Chloromethane	3.86	50	476595	50.5514 ug/L	99
4) Vinyl Chloride	4.10	62	410183	50.8825 ug/L	98
5) 1,3-Butadiene	4.16	54	422785	51.9661 ug/L	97
6) Bromomethane	5.02	94	249712	52.0216 ug/L	99
7) Chloroethane	5.19	64	261400	52.5911 ug/L	94
8) Trichlorofluoromethane	5.69	101	695811	53.6357 ug/L	100
9) Diethyl ether	6.22	59	485490	92.0753 ug/L	83
10) Isoprene	6.26	67	485210	53.8396 ug/L	76
11) Acrolein	6.46	56	23101	44.1471 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.47	101	374253	56.1612 ug/L	91
13) Acetone	6.56	43	68822	43.6856 ug/L	95
14) 1,1-Dichloroethene	6.79	61	649946	53.5943 ug/L	85
15) Tert-Butyl Alcohol	6.90	59	51832	150.4225 ug/L	94
16) Dimethyl Sulfide	7.06	62	322916	49.7164 ug/L	80
17) Iodomethane	7.31	142	386949	59.1039 ug/L	93
18) Methyl acetate	7.32	43	207745	43.8153 ug/L	88
19) Methylene Chloride	7.58	84	329469	49.5813 ug/L	59
20) Carbon Disulfide	7.63	76	1033548	52.8136 ug/L	99
21) Acrylonitrile	7.75	53	92640	44.1157 ug/L	100
22) Methyl Tert Butyl Ether	7.78	73	800764	46.9357 ug/L	92
23) trans-1,2-Dichloroethene	8.03	61	592409	52.4118 ug/L	84
24) n-Hexane	8.10	57	546919	58.7786 ug/L	88
25) Diisopropyl ether	8.45	45	2786449	94.9405 ug/L	92
26) Vinyl Acetate	8.61	43	668777	57.0222 ug/L	92
27) 1,1-Dichloroethane	8.65	63	694868	52.2622 ug/L	98
28) Ethyl-Tert-Butyl ether	9.01	59	2177076	93.4438 ug/L	92
29) 2-Butanone	9.20	43	111043	44.0565 ug/L	87
30) Propionitrile	9.31	54	60297	83.4431 ug/L	97
31) 2,2-Dichloropropane	9.43	77	682622	61.5513 ug/L	100
32) cis-1,2-Dichloroethene	9.49	96	388785	52.5619 ug/L	72
33) Chloroform	9.70	83	679271	50.8303 ug/L	100
34) 1-Bromopropane	9.84	122	81354	55.3965 ug/L	99
35) Bromochloromethane	9.93	130	243181	51.9953 ug/L #	71
36) Tetrahydrofuran	9.96	42	168536	93.5912 ug/L	79
38) 1,1,1-Trichloroethane	10.23	97	673211	54.8345 ug/L	100
39) Cyclohexane	10.28	56	688612	52.8249 ug/L	77
40) 1,1-Dichloropropene	10.43	75	510754	52.7078 ug/L	96
41) Tert-Amyl-Methyl ether	10.53	73	1592518	90.6265 ug/L	89
42) Carbon Tetrachloride	10.58	117	647928	55.7122 ug/L	99
45) 1,2-Dichloroethane	10.75	62	541153	49.3071 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101513\8M391613.D Vial: 2
Acq On : 15 Oct 2013 20:26 Operator: FJB
Sample : WG448860-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 20:49:21 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.79	78	1369625	51.7378	ug/L	88
47)	Trichloroethene	11.54	130	425096	52.5414	ug/L	95
48)	Methylcyclohexane	11.63	83	556208	55.0179	ug/L	83
49)	1,2-Dichloropropane	11.75	63	358447	50.7953	ug/L	98
50)	Bromodichloromethane	12.05	83	520483	52.3719	ug/L	99
51)	1,4-Dioxane	12.04	88	4579	140.9124	ug/L	94
52)	Dibromomethane	12.15	93	188823	50.2242	ug/L	92
53)	2-Chloroethyl Vinyl Ether	12.34	63	172159	45.6704	ug/L	90
54)	4-Methyl-2-Pentanone	12.38	58	80439	43.9894	ug/L	84
55)	cis-1,3-Dichloropropene	12.69	75	576984	53.3989	ug/L	99
56)	Dimethyl Disulfide	12.95	94	581411	51.5431	ug/L	97
59)	Toluene	13.11	91	1467274	52.5248	ug/L	99
60)	Ethyl Methacrylate	13.19	69	321409	48.5435	ug/L	73
62)	trans-1,3-Dichloropropene	13.28	75	522358	50.4517	ug/L	100
63)	1,1,2-Trichloroethane	13.50	97	246968	48.9224	ug/L	93
64)	2-Hexanone	13.43	58	73106	44.0967	ug/L	80
65)	1,3-Dichloropropane	13.81	76	436165	47.9695	ug/L	72
66)	Tetrachloroethene	13.94	164	361368	56.3901	ug/L	93
67)	Dibromochloromethane	14.21	129	389697	51.4884	ug/L	98
68)	1,2-Dibromoethane	14.45	107	264066	49.6591	ug/L	99
69)	1-Chlorohexane	14.54	91	497295	56.0503	ug/L	74
70)	Chlorobenzene	14.96	112	1068869	52.3469	ug/L	90
71)	1,1,1,2-Tetrachloroethane	14.99	131	434487	53.1748	ug/L	100
72)	Ethylbenzene	14.98	106	570427	51.7971	ug/L	89
73)	m-,p-Xylene	15.07	106	1397493	107.9445	ug/L	91
74)	o-Xylene	15.64	106	698016	53.7024	ug/L	90
75)	Styrene	15.67	104	1176777	55.0387	ug/L	92
76)	Bromoform	16.18	173	248887	51.0750	ug/L	99
77)	Isopropylbenzene	16.07	105	1806648	55.4544	ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.27	83	278578	47.6189	ug/L	99
81)	1,2,3-Trichloropropane	16.47	110	93708	46.5647	ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.51	53	112549	47.9287	ug/L	55
83)	n-Propylbenzene	16.57	91	2090568	54.2294	ug/L	95
84)	Bromobenzene	16.71	156	509194	52.1482	ug/L	81
85)	1,3,5-Trimethylbenzene	16.76	105	1600376	54.6183	ug/L	96
86)	2-Chlorotoluene	16.85	91	1405325	54.7084	ug/L	97
87)	4-Chlorotoluene	16.89	91	1210770	49.3364	ug/L	96
88)	a-Methylstyrene	17.16	118	920693	54.0576	ug/L	93
89)	tert-Butylbenzene	17.22	134	352089	54.6508	ug/L	92
90)	1,2,4-Trimethylbenzene	17.28	105	1629287	53.1647	ug/L	97
91)	sec-Butylbenzene	17.49	105	1893898	55.0769	ug/L	99
92)	p-Isopropyltoluene	17.65	119	1754917	55.8984	ug/L	99
93)	1,3-Dichlorobenzene	17.85	146	984556	52.4511	ug/L	95
94)	1,4-Dichlorobenzene	17.98	146	990949	50.6819	ug/L	96
95)	n-Butylbenzene	18.18	91	1422477	54.3994	ug/L	96
96)	1,2-Dichlorobenzene	18.49	146	905378	50.1986	ug/L	95
97)	1,2-Dibromo-3-Chloropropan	19.48	75	58099	45.6240	ug/L	88
98)	1,2,4-Trichlorobenzene	20.63	180	701326	52.2254	ug/L	99
99)	Hexachlorobutadiene	20.77	225	291609	58.5223	ug/L	96
100)	Naphthalene	21.00	128	1171894	46.6581	ug/L	99
101)	1,2,3-Trichlorobenzene	21.31	180	610000	49.5391	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M391613.D 8260WT.M Tue Oct 15 20:49:22 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101513\8M391613.D Vial: 2
Acq On : 15 Oct 2013 20:26 Operator: FJB
Sample : WG448860-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 20:49 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

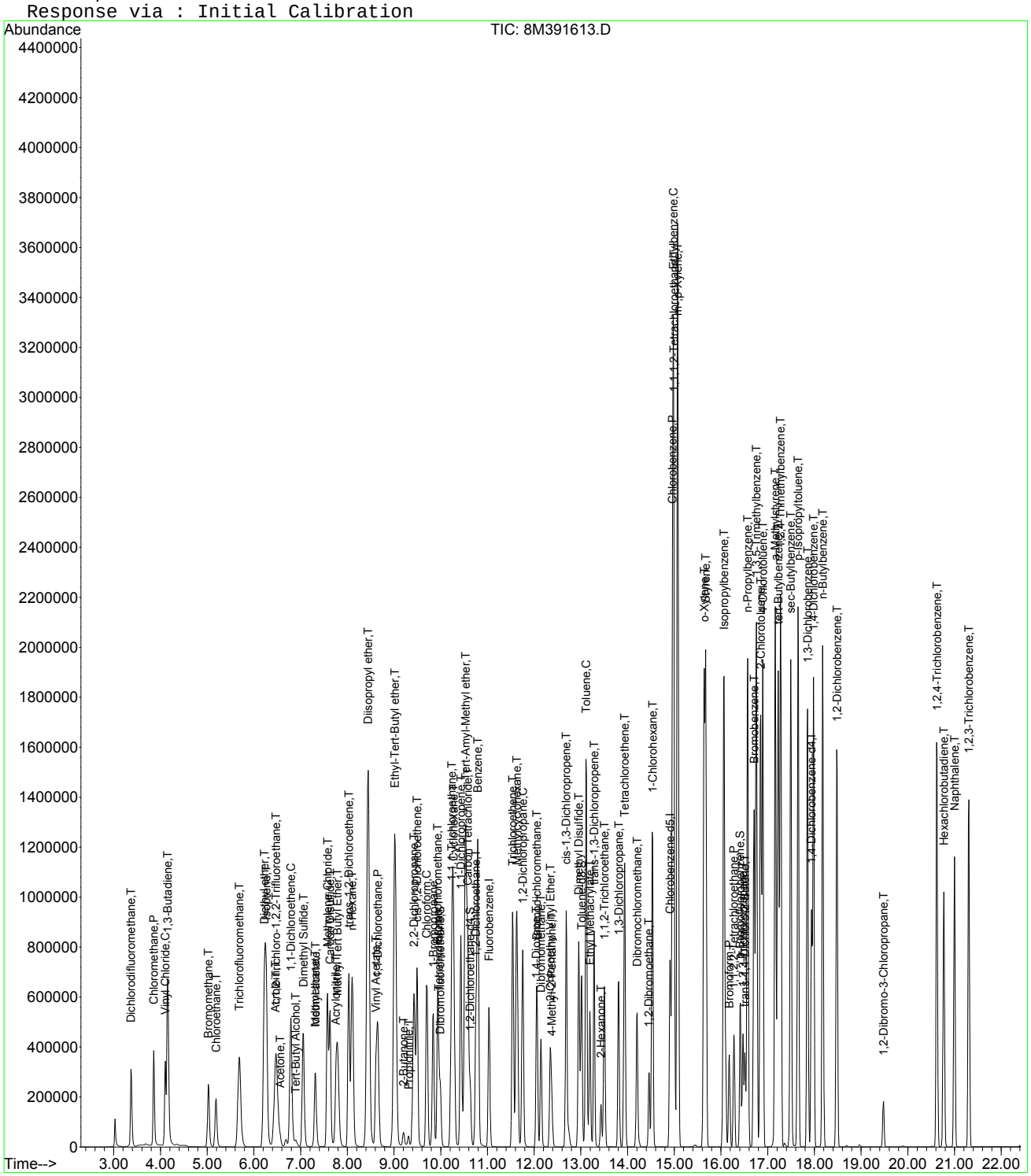

8M391613.D 8260WT.M Tue Oct 15 20:49:22 2013 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 13 Oct 2013 19:59
CCV date: 15 Oct 2013 20:26
CCV Filename: 8M391613.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	660376	11.03	534518	14.91	315004	17.94
CCV	662365	11.03	532411	14.91	319294	17.94

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101513\8M391613.D Vial: 2
Acq On : 15 Oct 2013 20:26 Operator: FJB
Sample : WG448860-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	100	-0.02
2	T	Dichlorodifluoromethane	0.2783	0.2880	-3.5	98	-0.01
3	P	Chloromethane	0.3558	0.3598	-1.1	107	0.00
4	C	Vinyl Chloride	0.3043	0.3096	-1.8	101	-0.01
5	T	1,3-Butadiene	0.3071	0.3191	-3.9	101	0.00
6	T	Bromomethane	0.1574	0.1885	-19.8	110	0.00
7	T	Chloroethane	0.1876	0.1973	-5.2	101	-0.01
8	T	Trichlorofluoromethane	0.4896	0.5252	-7.3	105	-0.02
9	T	Diethyl ether	0.1990	0.1832	7.9	91	-0.01
10	T	Isoprene	0.3402	0.3663	-7.7	104	-0.01
11	T	Acrolein	0.0198	0.0174	11.7	89	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2515	0.2825	-12.3	109	-0.01
13	T	Acetone	0.0595	0.0520	12.6	91	-0.01
14	C	1,1-Dichloroethene	0.4577	0.4906	-7.2	104	-0.01
15	T	Tert-Butyl Alcohol	0.0130	0.0098	24.8	80	-0.02
16	T	Dimethyl Sulfide	0.2452	0.2438	0.6	96	-0.01
17	T	Iodomethane	0.2240	0.2921	-30.4#	111	-0.02
18	T	Methyl acetate	0.1790	0.1568	12.4	89	-0.01
19	T	Methylene Chloride	0.2508	0.2487	0.8	100	-0.01
20	T	Carbon Disulfide	0.7386	0.7802	-5.6	104	-0.01
21	T	Acrylonitrile	0.0793	0.0699	11.8	85	-0.02
22	T	Methyl Tert Butyl Ether	0.6439	0.6045	6.1	91	-0.02
23	T	trans-1,2-Dichloroethene	0.4266	0.4472	-4.8	103	-0.01
24	T	n-Hexane	0.3512	0.4128	-17.6	115	-0.01
25	T	Diisopropyl ether	1.1078	1.0517	5.1	95	-0.01
26	T	Vinyl Acetate	0.4427	0.5048	-14.0	113	-0.01
27	P	1,1-Dichloroethane	0.5018	0.5245	-4.5	102	-0.01
28	T	Ethyl-Tert-Butyl ether	0.8794	0.8217	6.6	93	-0.02
29	T	2-Butanone	0.0951	0.0838	11.9	87	-0.02
30	T	Propionitrile	0.0273	0.0228	16.5	87	-0.01
31	T	2,2-Dichloropropane	0.4186	0.5153	-23.1	118	-0.01
32	T	cis-1,2-Dichloroethene	0.2792	0.2935	-5.1	103	-0.02
33	C	Chloroform	0.5044	0.5128	-1.7	102	-0.02
34		1-Bromopropane	0.0554	0.0614	-10.8	104	-0.01
35	T	Bromochloromethane	0.1765	0.1836	-4.0	102	-0.02
36	T	Tetrahydrofuran	0.0680	0.0636	6.4	97	-0.01
37	S	Dibromofluoromethane	0.2843	0.2680	5.7	93	-0.02
38	T	1,1,1-Trichloroethane	0.4634	0.5082	-9.7	105	-0.01
39	T	Cyclohexane	0.4920	0.5198	-5.7	105	-0.01
40	T	1,1-Dichloropropene	0.3658	0.3856	-5.4	102	-0.01
41	T	Tert-Amyl-Methyl ether	0.6632	0.6011	9.4	91	-0.01
42	T	Carbon Tetrachloride	0.4390	0.4891	-11.4	106	-0.02
43	S	1,2-Dichloroethane-d4	0.3333	0.2895	13.1	86	-0.02
44		Heptane	0.0000	0.0000	0.0	0#	-2.74#
45	T	1,2-Dichloroethane	0.4142	0.4085	1.4	97	-0.01
46	T	Benzene	0.9992	1.0339	-3.5	103	-0.01
47	T	Trichloroethene	0.3054	0.3209	-5.1	101	-0.02
48	T	Methylcyclohexane	0.3816	0.4199	-10.0	109	-0.01
49	C	1,2-Dichloropropane	0.2663	0.2706	-1.6	98	-0.01
50	T	Bromodichloromethane	0.3751	0.3929	-4.7	100	-0.02
51	T	1,4-Dioxane	0.0012	0.0009	30.1#	60	-0.01
52	T	Dibromomethane	0.1419	0.1425	-0.5	92	-0.01
53	T	2-Chloroethyl Vinyl Ether	0.1423	0.1300	8.7	89	-0.01
54	T	4-Methyl-2-Pentanone	0.0690	0.0607	12.0	86	-0.01
55	T	cis-1,3-Dichloropropene	0.4078	0.4355	-6.8	101	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101513\8M391613.D Vial: 2
Acq On : 15 Oct 2013 20:26 Operator: FJB
Sample : WG448860-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	0.4258	0.4389	-3.1	100	-0.02
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	100	-0.01
58	S	Toluene-d8	1.1907	1.1311	5.0	96	-0.01
59	C	Toluene	1.3117	1.3780	-5.0	105	-0.02
60	T	Ethyl Methacrylate	0.3109	0.3018	2.9	91	-0.01
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.34#
62	T	trans-1,3-Dichloropropene	0.4862	0.4906	-0.9	97	-0.01
63	T	1,1,2-Trichloroethane	0.2370	0.2319	2.2	94	-0.01
64	T	2-Hexanone	0.0779	0.0687	11.8	86	-0.01
65	T	1,3-Dichloropropane	0.4270	0.4096	4.1	94	-0.01
66	T	Tetrachloroethene	0.3009	0.3394	-12.8	109	-0.01
67	T	Dibromochloromethane	0.3554	0.3660	-3.0	96	-0.01
68	T	1,2-Dibromoethane	0.2497	0.2480	0.7	94	-0.02
69	T	1-Chlorohexane	0.4166	0.4670	-12.1	108	-0.01
70	P	Chlorobenzene	0.9588	1.0038	-4.7	104	-0.01
71	T	1,1,1,2-Tetrachloroethane	0.3837	0.4080	-6.3	102	-0.01
72	C	Ethylbenzene	0.5171	0.5357	-3.6	105	-0.02
73	T	m-,p-Xylene	0.6079	0.6562	-7.9	107	-0.01
74	T	o-Xylene	0.6103	0.6555	-7.4	105	-0.01
75	T	Styrene	1.0040	1.1051	-10.1	104	-0.01
76	P	Bromoform	0.2288	0.2337	-2.2	96	-0.01
77	T	Isopropylbenzene	1.5298	1.6967	-10.9	107	-0.01
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	101	-0.01
79	P	1,1,2,2-Tetrachloroethane	0.4581	0.4362	4.8	96	-0.02
80	S	p-Bromofluorobenzene	0.8685	0.7983	8.1	94	-0.02
81	T	1,2,3-Trichloropropane	0.1576	0.1467	6.9	93	-0.01
82	T	trans-1,4-Dichloro-2-Butene	0.1839	0.1762	4.1	96	0.00
83	T	n-Propylbenzene	3.0184	3.2737	-8.5	108	-0.01
84	T	Bromobenzene	0.7645	0.7974	-4.3	103	-0.01
85	T	1,3,5-Trimethylbenzene	2.2942	2.5061	-9.2	107	-0.01
86	T	2-Chlorotoluene	2.0113	2.2007	-9.4	114	-0.01
87	T	4-Chlorotoluene	1.9215	1.8960	1.3	96	-0.01
88	T	a-Methylstyrene	1.3335	1.4418	-8.1	107	-0.01
89	T	tert-Butylbenzene	0.5044	0.5514	-9.3	109	-0.01
90	T	1,2,4-Trimethylbenzene	2.3995	2.5514	-6.3	107	-0.01
91	T	sec-Butylbenzene	2.6924	2.9658	-10.2	110	-0.01
92	T	p-Isopropyltoluene	2.4581	2.7481	-11.8	110	-0.01
93	T	1,3-Dichlorobenzene	1.4697	1.5418	-4.9	106	-0.01
94	T	1,4-Dichlorobenzene	1.5309	1.5518	-1.4	106	-0.01
95	T	n-Butylbenzene	2.0474	2.2275	-8.8	111	-0.01
96	T	1,2-Dichlorobenzene	1.4122	1.4178	-0.4	103	-0.01
97	T	1,2-Dibromo-3-Chloropropane	0.0997	0.0910	8.8	92	-0.01
98	T	1,2,4-Trichlorobenzene	1.0515	1.0982	-4.5	104	-0.01
99	T	Hexachlorobutadiene	0.3902	0.4567	-17.0	118	-0.01
100	T	Naphthalene	1.9666	1.8351	6.7	92	-0.01
101	T	1,2,3-Trichlorobenzene	0.9641	0.9552	0.9	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M391613.D 8260WT.M Tue Oct 15 21:07:03 2013 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101513\8M391613.D Vial: 2
Acq On : 15 Oct 2013 20:26 Operator: FJB
Sample : WG448860-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	-0.02
2	T	Dichlorodifluoromethane	50.0000	51.7534	-3.5	98	-0.01
3	P	Chloromethane	50.0000	50.5514	-1.1	107	0.00
4	C	Vinyl Chloride	50.0000	50.8825	-1.8	101	-0.01
5	T	1,3-Butadiene	50.0000	51.9661	-3.9	101	0.00
6	T	Bromomethane	50.0000	52.0216	-4.0	110	0.00
7	T	Chloroethane	50.0000	52.5911	-5.2	101	-0.01
8	T	Trichlorofluoromethane	50.0000	53.6357	-7.3	105	-0.02
9	T	Diethyl ether	100.0000	92.0753	7.9	91	-0.01
10	T	Isoprene	50.0000	53.8396	-7.7	104	-0.01
11	T	Acrolein	50.0000	44.1471	11.7	89	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	56.1612	-12.3	109	-0.01
13	T	Acetone	50.0000	43.6857	12.6	91	-0.01
14	C	1,1-Dichloroethene	50.0000	53.5943	-7.2	104	-0.01
15	T	Tert-Butyl Alcohol	200.0000	150.4225	24.8	80	-0.02
16	T	Dimethyl Sulfide	50.0000	49.7164	0.6	96	-0.01
17	T	Iodomethane	50.0000	59.1039	-18.2	111	-0.02
18	T	Methyl acetate	50.0000	43.8153	12.4	89	-0.01
19	T	Methylene Chloride	50.0000	49.5813	0.8	100	-0.01
20	T	Carbon Disulfide	50.0000	52.8136	-5.6	104	-0.01
21	T	Acrylonitrile	50.0000	44.1157	11.8	85	-0.02
22	T	Methyl Tert Butyl Ether	50.0000	46.9357	6.1	91	-0.02
23	T	trans-1,2-Dichloroethene	50.0000	52.4118	-4.8	103	-0.01
24	T	n-Hexane	50.0000	58.7786	-17.6	115	-0.01
25	T	Diisopropyl ether	100.0000	94.9405	5.1	95	-0.01
26	T	Vinyl Acetate	50.0000	57.0222	-14.0	113	-0.01
27	P	1,1-Dichloroethane	50.0000	52.2622	-4.5	102	-0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	93.4438	6.6	93	-0.02
29	T	2-Butanone	50.0000	44.0565	11.9	87	-0.02
30	T	Propionitrile	100.0000	83.4431	16.6	87	-0.01
31	T	2,2-Dichloropropane	50.0000	61.5513	-23.1	118	-0.01
32	T	cis-1,2-Dichloroethene	50.0000	52.5619	-5.1	103	-0.02
33	C	Chloroform	50.0000	50.8303	-1.7	102	-0.02
34		1-Bromopropane	50.0000	55.3965	-10.8	104	-0.01
35	T	Bromochloromethane	50.0000	51.9953	-4.0	102	-0.02
36	T	Tetrahydrofuran	100.0000	93.5911	6.4	97	-0.01
37	S	Dibromofluoromethane	25.0000	23.5646	5.7	93	-0.02
38	T	1,1,1-Trichloroethane	50.0000	54.8345	-9.7	105	-0.01
39	T	Cyclohexane	50.0000	52.8249	-5.6	105	-0.01
40	T	1,1-Dichloropropene	50.0000	52.7078	-5.4	102	-0.01
41	T	Tert-Amyl-Methyl ether	100.0000	90.6265	9.4	91	-0.01
42	T	Carbon Tetrachloride	50.0000	55.7122	-11.4	106	-0.02
43	S	1,2-Dichloroethane-d4	25.0000	21.7209	13.1	86	-0.02
44		Heptane	-1.0000	0.0000	0.0	0	-2.74#
45	T	1,2-Dichloroethane	50.0000	49.3071	1.4	97	-0.01
46	T	Benzene	50.0000	51.7378	-3.5	103	-0.01
47	T	Trichloroethene	50.0000	52.5414	-5.1	101	-0.02
48	T	Methylcyclohexane	50.0000	55.0179	-10.0	109	-0.01
49	C	1,2-Dichloropropane	50.0000	50.7953	-1.6	98	-0.01
50	T	Bromodichloromethane	50.0000	52.3719	-4.7	100	-0.02
51	T	1,4-Dioxane	200.0000	140.9124	29.5#	60	-0.01
52	T	Dibromomethane	50.0000	50.2242	-0.4	92	-0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.6704	8.7	89	-0.01
54	T	4-Methyl-2-Pentanone	50.0000	43.9894	12.0	86	-0.01
55	T	cis-1,3-Dichloropropene	50.0000	53.3989	-6.8	101	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101513\8M391613.D Vial: 2
Acq On : 15 Oct 2013 20:26 Operator: FJB
Sample : WG448860-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD60687 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	Dimethyl Disulfide	50.0000	51.5431	-3.1	100	-0.02
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	-0.01
58	S	Toluene-d8	25.0000	23.7485	5.0	96	-0.01
59	C	Toluene	50.0000	52.5248	-5.0	105	-0.02
60	T	Ethyl Methacrylate	50.0000	48.5435	2.9	91	-0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.34#
62	T	trans-1,3-Dichloropropene	50.0000	50.4517	-0.9	97	-0.01
63	T	1,1,2-Trichloroethane	50.0000	48.9224	2.2	94	-0.01
64	T	2-Hexanone	50.0000	44.0967	11.8	86	-0.01
65	T	1,3-Dichloropropane	50.0000	47.9695	4.1	94	-0.01
66	T	Tetrachloroethene	50.0000	56.3901	-12.8	109	-0.01
67	T	Dibromochloromethane	50.0000	51.4884	-3.0	96	-0.01
68	T	1,2-Dibromoethane	50.0000	49.6591	0.7	94	-0.02
69	T	1-Chlorohexane	50.0000	56.0502	-12.1	108	-0.01
70	P	Chlorobenzene	50.0000	52.3469	-4.7	104	-0.01
71	T	1,1,1,2-Tetrachloroethane	50.0000	53.1748	-6.3	102	-0.01
72	C	Ethylbenzene	50.0000	51.7971	-3.6	105	-0.02
73	T	m-,p-Xylene	100.0000	107.9446	-7.9	107	-0.01
74	T	o-Xylene	50.0000	53.7024	-7.4	105	-0.01
75	T	Styrene	50.0000	55.0387	-10.1	104	-0.01
76	P	Bromoform	50.0000	51.0750	-2.2	96	-0.01
77	T	Isopropylbenzene	50.0000	55.4544	-10.9	107	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	-0.01
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.6189	4.8	96	-0.02
80	S	p-Bromofluorobenzene	25.0000	22.9779	8.1	94	-0.02
81	T	1,2,3-Trichloropropane	50.0000	46.5647	6.9	93	-0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	47.9287	4.1	96	0.00
83	T	n-Propylbenzene	50.0000	54.2294	-8.5	108	-0.01
84	T	Bromobenzene	50.0000	52.1482	-4.3	103	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	54.6184	-9.2	107	-0.01
86	T	2-Chlorotoluene	50.0000	54.7084	-9.4	114	-0.01
87	T	4-Chlorotoluene	50.0000	49.3364	1.3	96	-0.01
88	T	a-Methylstyrene	50.0000	54.0576	-8.1	107	-0.01
89	T	tert-Butylbenzene	50.0000	54.6508	-9.3	109	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	53.1647	-6.3	107	-0.01
91	T	sec-Butylbenzene	50.0000	55.0769	-10.2	110	-0.01
92	T	p-Isopropyltoluene	50.0000	55.8984	-11.8	110	-0.01
93	T	1,3-Dichlorobenzene	50.0000	52.4511	-4.9	106	-0.01
94	T	1,4-Dichlorobenzene	50.0000	50.6820	-1.4	106	-0.01
95	T	n-Butylbenzene	50.0000	54.3994	-8.8	111	-0.01
96	T	1,2-Dichlorobenzene	50.0000	50.1986	-0.4	103	-0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	45.6240	8.8	92	-0.01
98	T	1,2,4-Trichlorobenzene	50.0000	52.2254	-4.5	104	-0.01
99	T	Hexachlorobutadiene	50.0000	58.5223	-17.0	118	-0.01
100	T	Naphthalene	50.0000	46.6581	6.7	92	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	49.5391	0.9	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M391613.D 8260WT.M Tue Oct 15 21:07:05 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101513\8M391614.D Vial: 3
Acq On : 15 Oct 2013 21:11 Operator: FJB
Sample : WG449271-01 100ug/L CCV A9 Inst : HPMS8
Misc : 1,1 STD60752 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 18 08:47:05 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Wed Oct 16 13:27:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	653080	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	511998	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	302044	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.99	111	178802	24.0774 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.32%		
43) 1,2-Dichloroethane-d4	10.63	65	202430	23.2521 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.00%		
58) Toluene-d8	13.02	98	598650	24.5492 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.20%		
80) p-Bromofluorobenzene	16.41	95	247771	23.6128 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.44%		

Target Compounds					Qvalue
3) Chloromethane	3.86	50	3852	0.4144 ug/L	95
4) Vinyl Chloride	4.10	62	1749	0.2200 ug/L	79
5) 1,3-Butadiene	4.15	54	417006	51.9845 ug/L	99
6) Bromomethane	5.03	94	1317	0.9096 ug/L	80
7) Chloroethane	5.18	64	649	0.1324 ug/L #	44
9) Diethyl ether	6.22	59	568781	109.4055 ug/L	84
13) Acetone	6.57	43	1381	0.8891 ug/L #	48
14) 1,1-Dichloroethene	6.79	61	1911	0.1598 ug/L #	64
15) Tert-Butyl Alcohol	6.91	59	7595	22.3549 ug/L #	22
16) Dimethyl Sulfide	7.05	62	968	0.1512 ug/L #	57
17) Iodomethane	7.31	142	709	0.5576 ug/L #	34
19) Methylene Chloride	7.58	84	1733	0.2645 ug/L #	49
20) Carbon Disulfide	7.63	76	5881	0.3048 ug/L	97
23) trans-1,2-Dichloroethene	8.03	61	1905	0.1709 ug/L	72
24) n-Hexane	8.09	57	1411	0.1538 ug/L #	61
25) Diisopropyl ether	8.44	45	3614	0.1249 ug/L #	75
27) 1,1-Dichloroethane	8.67	63	1709	0.1304 ug/L #	49
29) 2-Butanone	9.20	43	1652	0.6648 ug/L #	52
30) Propionitrile	9.31	54	66381	93.1685 ug/L	100
33) Chloroform	9.70	83	2054	0.1559 ug/L	86
36) Tetrahydrofuran	9.97	42	1497	0.8431 ug/L #	46
40) 1,1-Dichloropropene	10.43	75	1182	0.1237 ug/L #	35
46) Benzene	10.79	78	3297	0.1263 ug/L	97
51) 1,4-Dioxane	12.04	88	6810	212.5479 ug/L	70
56) Dimethyl Disulfide	13.02	94	18804	1.6907 ug/L #	28
59) Toluene	13.11	91	6976	0.2597 ug/L	96
66) Tetrachloroethene	13.93	164	823	0.1335 ug/L #	65
70) Chlorobenzene	14.96	112	2508	0.1277 ug/L #	1
72) Ethylbenzene	14.98	106	1723	0.1627 ug/L #	34
73) m-,p-Xylene	15.08	106	6771	0.5439 ug/L	80
74) o-Xylene	15.63	106	1558	0.1246 ug/L #	24
75) Styrene	15.68	104	3199	0.1556 ug/L	95
77) Isopropylbenzene	16.06	105	4441	0.1417 ug/L #	73
83) n-Propylbenzene	16.58	91	7405	0.2031 ug/L	90
84) Bromobenzene	16.70	156	1280	0.1386 ug/L	97
85) 1,3,5-Trimethylbenzene	16.75	105	5314	0.1917 ug/L	90
86) 2-Chlorotoluene	16.84	91	4491	0.1848 ug/L #	68
87) 4-Chlorotoluene	16.90	91	3460	0.1490 ug/L	85
88) a-Methylstyrene	17.17	118	1988	0.1234 ug/L	89
90) 1,2,4-Trimethylbenzene	17.27	105	5938	0.2048 ug/L	77
91) sec-Butylbenzene	17.49	105	6082	0.1870 ug/L	89

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101513\8M391614.D Vial: 3
Acq On : 15 Oct 2013 21:11 Operator: FJB
Sample : WG449271-01 100ug/L CCV A9 Inst : HPMS8
Misc : 1,1 STD60752 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 18 08:47:05 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Wed Oct 16 13:27:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
92)	p-Isopropyltoluene	17.65	119	5966	0.2009 ug/L	80
93)	1,3-Dichlorobenzene	17.86	146	3176	0.1789 ug/L	91
94)	1,4-Dichlorobenzene	17.98	146	3399	0.1838 ug/L #	1
95)	n-Butylbenzene	18.18	91	6360	0.2571 ug/L #	83
96)	1,2-Dichlorobenzene	18.48	146	2477	0.1452 ug/L	86
98)	1,2,4-Trichlorobenzene	20.62	180	3074	0.2420 ug/L	95
99)	Hexachlorobutadiene	20.77	225	2620	0.5558 ug/L	96
100)	Naphthalene	21.00	128	5945	0.2502 ug/L	100
101)	1,2,3-Trichlorobenzene	21.30	180	2984	0.2562 ug/L	86

(#) = qualifier out of range (m) = manual integration
8M391614.D 8260WT.M Fri Oct 18 08:47:05 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101513\8M391614.D Vial: 3
Acq On : 15 Oct 2013 21:11 Operator: FJB
Sample : WG449271-01 100ug/L CCV A9 Inst : HPMS8
Misc : 1,1 STD60752 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 18 8:47 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Wed Oct 16 13:27:11 2013
Response via : Initial Calibration

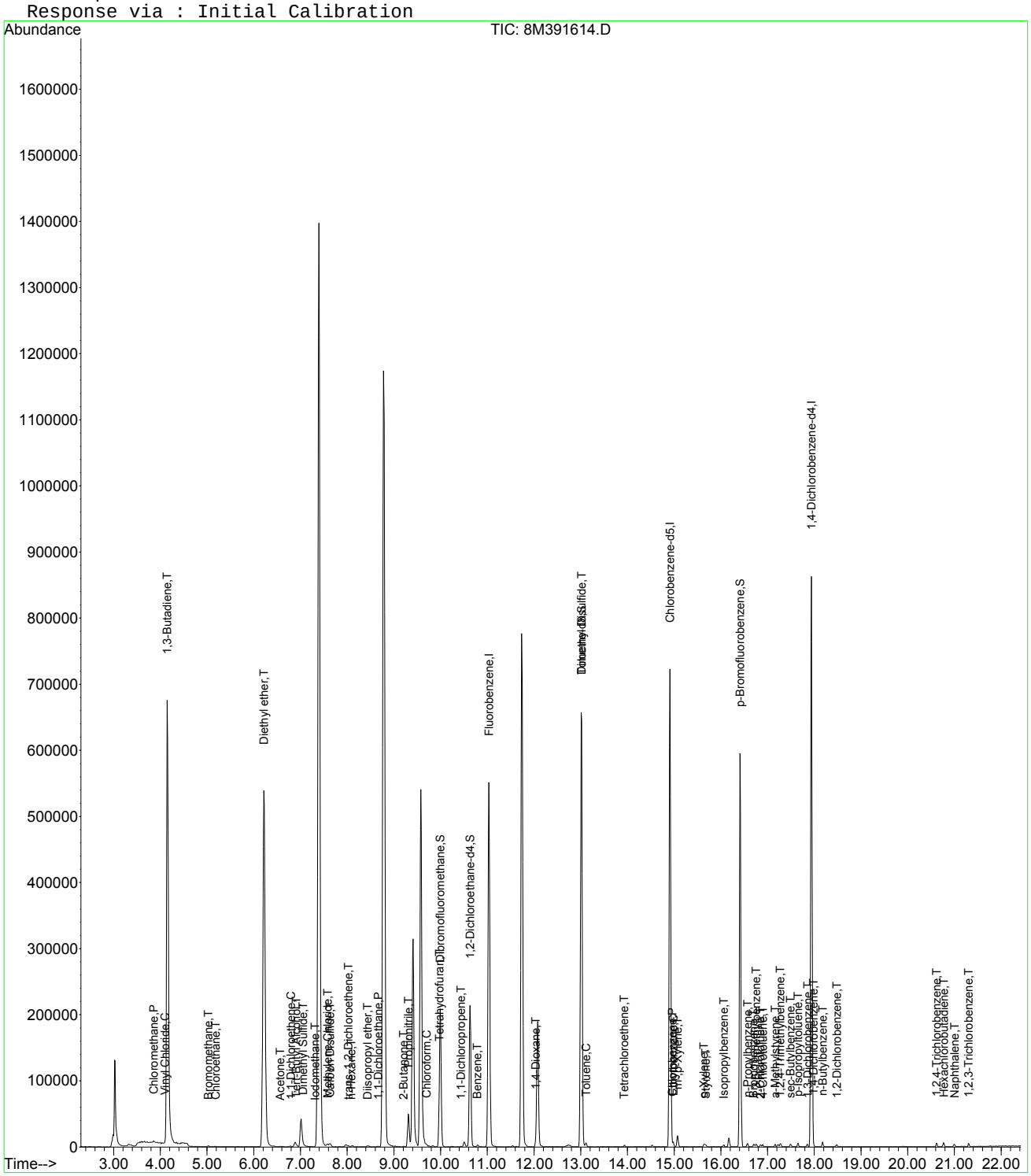

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101513\8M391614.D Vial: 3
Acq On : 15 Oct 2013 21:11 Operator: FJB
Sample : WG449271-01 100ug/L CCV A9 Inst : HPMS8
Misc : 1,1 STD60752 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 18 08:47:47 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	653080	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.91	117	511998	25.00 ug/L	-0.02
12) 1,4-Dichlorobenzene-d4	17.94	152	302044	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.01	41	67126	112.8144 ug/L	95
3) 3-Chloro-1-propene	7.39	41	1590855	131.2962 ug/L	99
4) 2-Chloro-1,3-butadiene	8.78	53	1240332	106.2968 ug/L	92
5) Ethyl Acetate	9.41	43	573111	130.7682 ug/L	92
6) Methacrylonitrile	9.58	67	189187	104.9616 ug/L	91
7) Isobutyl Alcohol	9.59	43	34263	230.4864 ug/L #	87
8) 1-Butanol	10.51	56	5187	95.6411 ug/L #	65
9) Methyl methacrylate	11.74	41	599000	131.5939 ug/L	99
10) 2-Nitropropane	12.08	43	192480	138.8593 ug/L	98
13) Cyclohexanone	16.17	55	7736	38.9729 ug/L	91

(#) = qualifier out of range (m) = manual integration
8M391614.D A9FOOWTR.M Fri Oct 18 08:47:47 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101513\8M391614.D Vial: 3
Acq On : 15 Oct 2013 21:11 Operator: FJB
Sample : WG449271-01 100ug/L CCV A9 Inst : HPMS8
Misc : 1,1 STD60752 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 18 8:47 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Initial Calibration

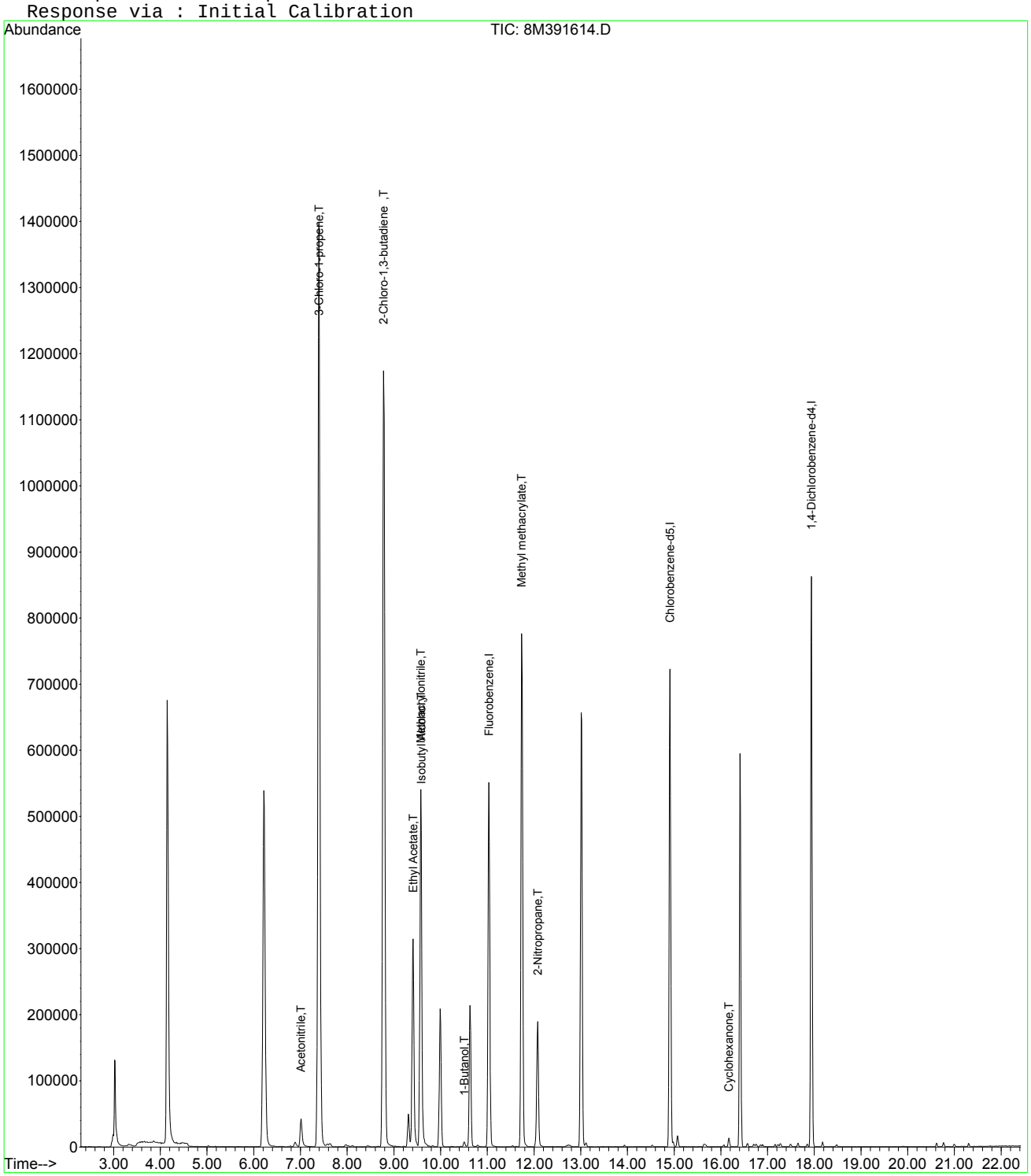

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\101513\8M391614.D Vial: 3
Acq On : 15 Oct 2013 21:11 Operator: FJB
Sample : WG449271-01 100ug/L CCV A9 Inst : HPMS8
Misc : 1,1 STD60752 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	109	-0.02
2	T	Acetonitrile	100.0000	112.8144	-12.8	124	-0.02
3	T	3-Chloro-1-propene	100.0000	131.2962	-31.3	141	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	106.2968	-6.3	114	-0.02
5	T	Ethyl Acetate	100.0000	130.7682	-30.8	141	0.00
6	T	Methacrylonitrile	100.0000	104.9616	-5.0	112	-0.02
7	T	Isobutyl Alcohol	200.0000	230.4864	-15.2	129	-0.01
8	T	1-Butanol	100.0000	95.6411	4.4	106	0.00
9	T	Methyl methacrylate	100.0000	131.5939	-31.6	139	-0.02
10	T	2-Nitropropane	100.0000	138.8593	-38.9	151	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	-0.02
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
13	T	Cyclohexanone	100.0000	38.9729	61.0	35	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M391614.D A9FOOWTR.M Fri Oct 18 08:47:59 2013 Page 1

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\1\DATA\091013\8M390487.D Vial: 3
Acq On : 10 Sep 2013 15:11 Operator: TMB
Sample : ~~WG444230~~ WG444230-01 50ng BFB Inst : HPMS8
Misc : 1,1 STD59881 ~~ 9/19/13 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

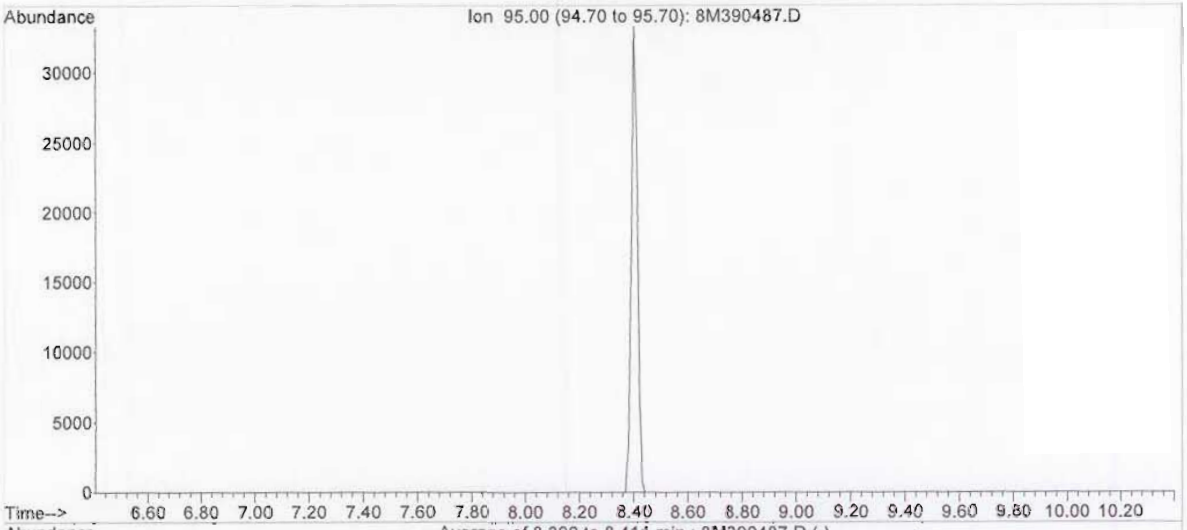

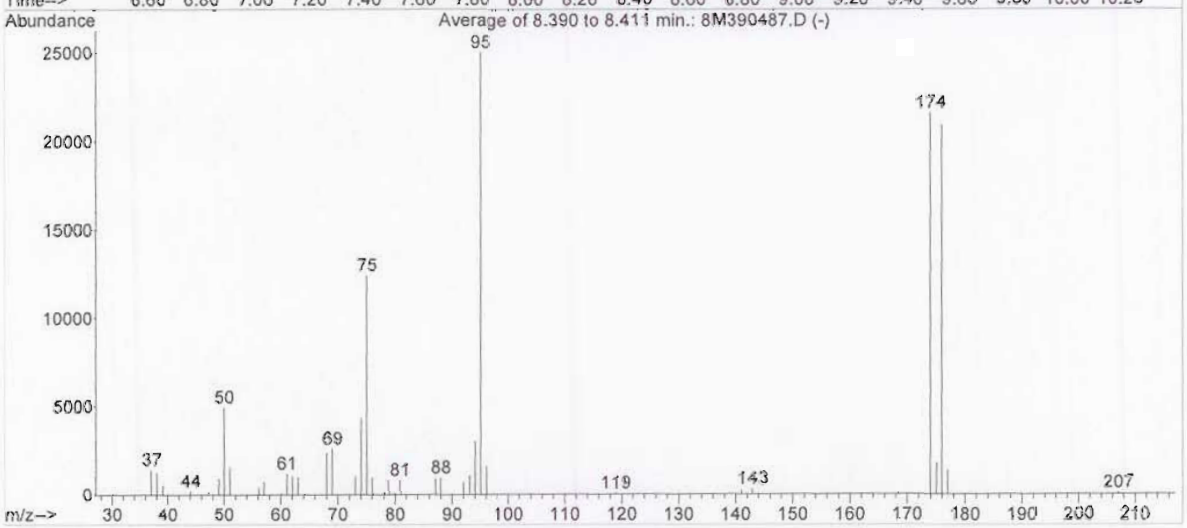

AutoFind: Scans 128, 129, 130; Background Corrected with Scan 124

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.8	4960	PASS
75	95	30	60	49.7	12441	PASS
95	95	100	100	100.0	25013	PASS
96	95	5	9	6.5	1635	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.3	21596	PASS
175	174	5	9	8.3	1799	PASS
176	174	95	101	96.8	20906	PASS
177	176	5	9	6.6	1379	PASS

8M390487.D BFB.M Wed Sep 18 14:17:51 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\101313\8M391543.D          Vial: 2
Acq On    : 13 Oct 2013  15:25                       Operator: MES
Sample    : WG448425-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD60561                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

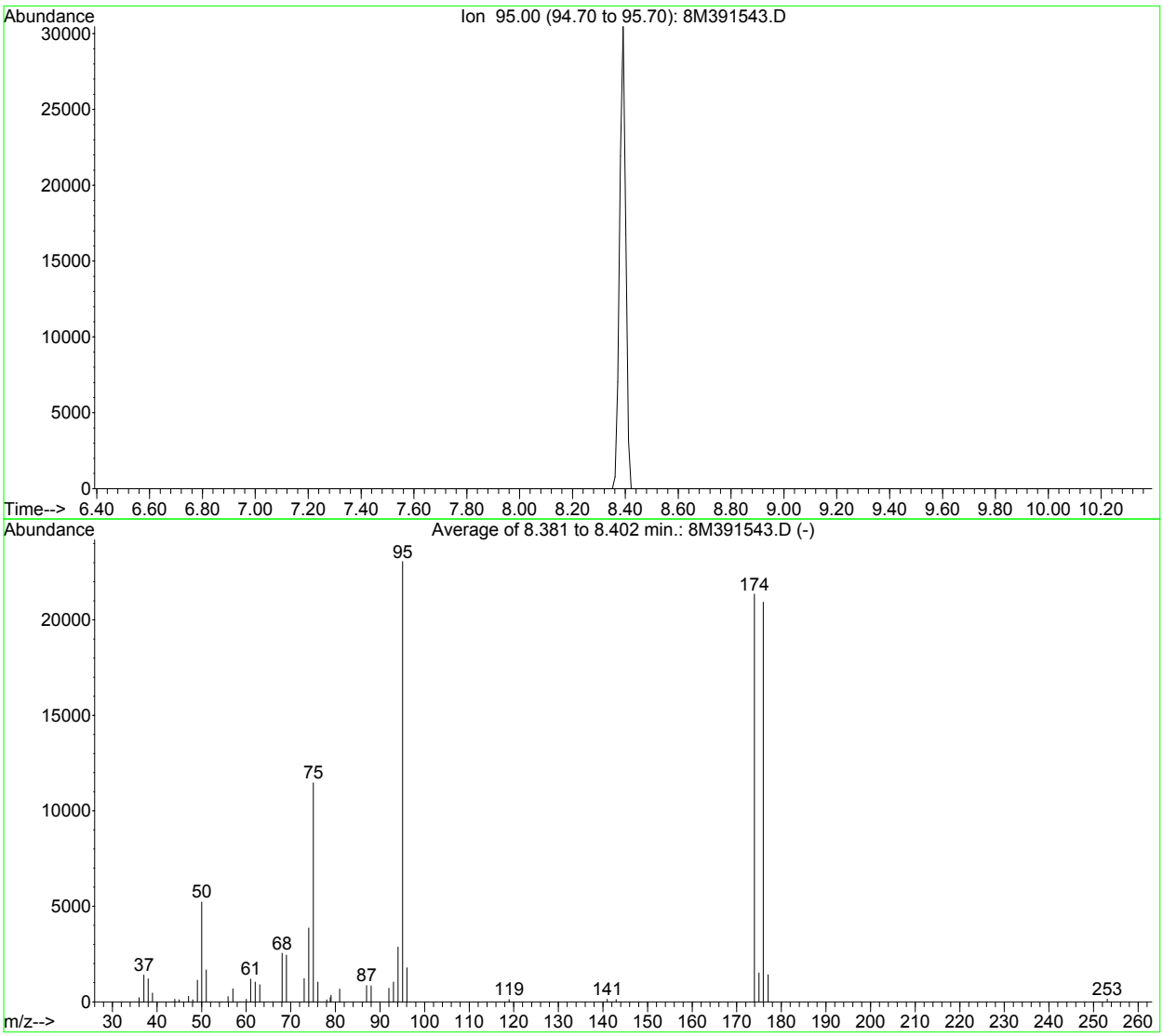

AutoFind: Scans 127, 128, 129; Background Corrected with Scan 122

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.7	5225	PASS
75	95	30	60	49.8	11468	PASS
95	95	100	100	100.0	23048	PASS
96	95	5	9	7.7	1778	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	92.6	21343	PASS
175	174	5	9	7.1	1509	PASS
176	174	95	101	98.0	20924	PASS
177	176	5	9	6.8	1413	PASS

8M391543.D BFB.M Sun Oct 13 15:35:47 2013

BFB

```
Data File : C:\MSDCHEM\1\DATA\101413\8M391558.D          Vial: 1
Acq On    : 14 Oct 2013  11:52                        Operator: TMB
Sample    : WG448561-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD60561                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

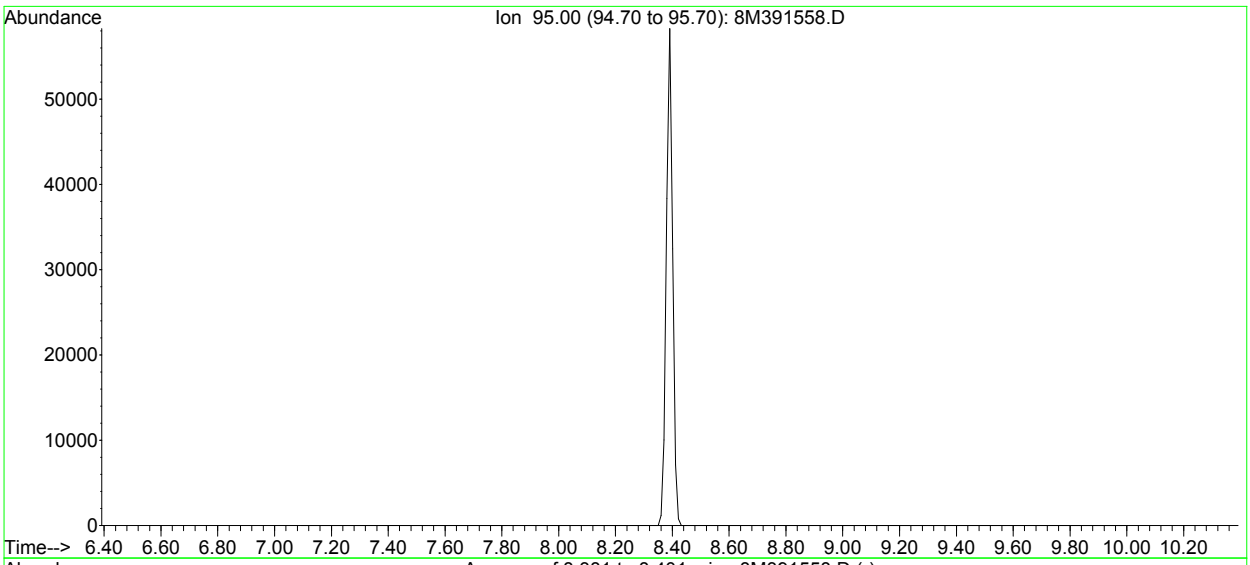

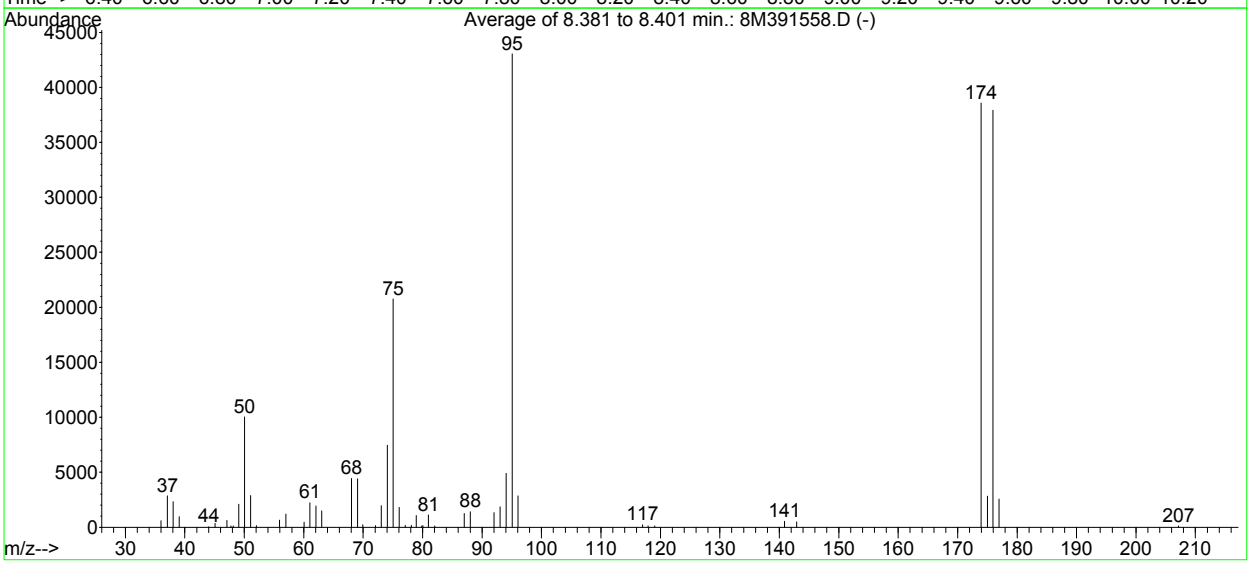

AutoFind: Scans 127, 128, 129; Background Corrected with Scan 122

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.3	10017	PASS
75	95	30	60	48.2	20743	PASS
95	95	100	100	100.0	43034	PASS
96	95	5	9	6.7	2866	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	89.6	38573	PASS
175	174	5	9	7.3	2834	PASS
176	174	95	101	98.3	37909	PASS
177	176	5	9	6.8	2564	PASS

8M391558.D BFB.M Mon Oct 14 12:07:08 2013

BFB

Data File : C:\MSDCHEM\1\DATA\101513\8M391588.D Vial: 1
Acq On : 15 Oct 2013 6:25 Operator: TMB
Sample : WG448661-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD60561 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

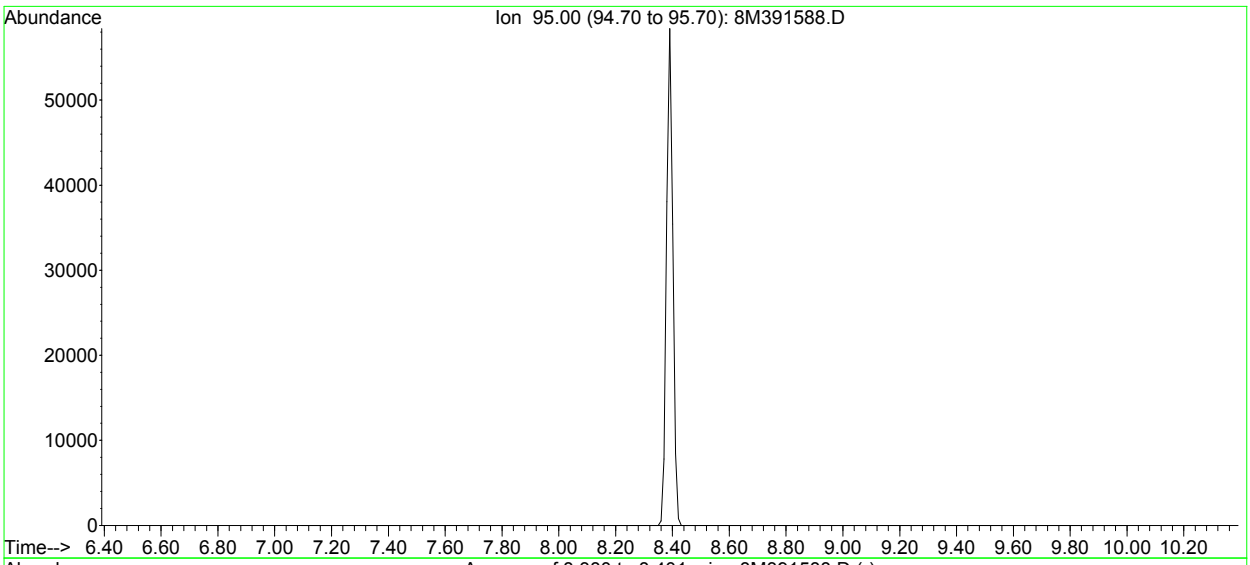

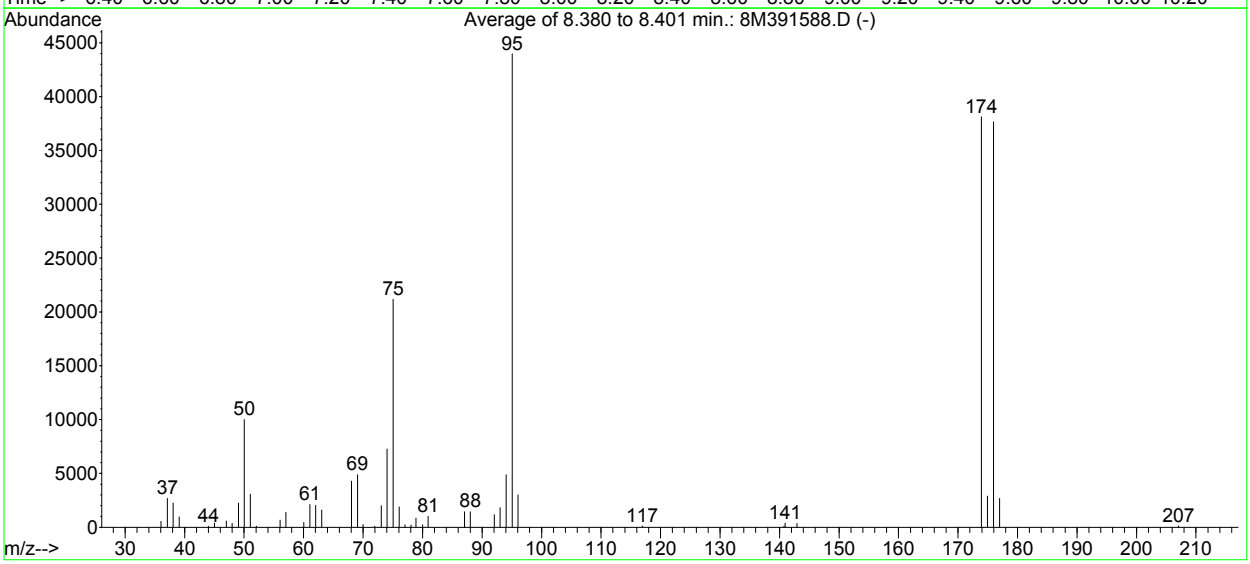

AutoFind: Scans 127, 128, 129; Background Corrected with Scan 122

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.7	9996	PASS
75	95	30	60	48.1	21165	PASS
95	95	100	100	100.0	43960	PASS
96	95	5	9	6.8	3002	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.7	38117	PASS
175	174	5	9	7.6	2881	PASS
176	174	95	101	98.8	37672	PASS
177	176	5	9	7.1	2672	PASS

8M391588.D BFB.M Tue Oct 15 06:40:08 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391561.D Vial: 4
Acq On : 14 Oct 2013 13:25 Operator: TMB
Sample : WG448583-01 VBLK1014 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 10:59:43 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	727482	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	557076	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.94	152	325501	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	10.00	111	194136	23.4686 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.88%		
43) 1,2-Dichloroethane-d4	10.63	65	217344	22.4119 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.64%		
58) Toluene-d8	13.02	98	654183	24.6557 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.64%		
80) p-Bromofluorobenzene	16.41	95	263719	23.3215 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.28%		

Target Compounds					Qvalue
24) n-Hexane	8.10	57	1433	0.1402 ug/L	93
36) Tetrahydrofuran	9.97	42	1345	0.6800 ug/L #	47
51) 1,4-Dioxane	12.04	88	1708	47.8566 ug/L	85
56) Dimethyl Disulfide	13.02	94	19880	1.6046 ug/L #	28
95) n-Butylbenzene	18.17	91	3542	0.1329 ug/L #	58
99) Hexachlorobutadiene	20.77	225	823	0.1620 ug/L #	84

(#) = qualifier out of range (m) = manual integration
8M391561.D 8260WT.M Tue Oct 15 10:59:44 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391561.D Vial: 4
Acq On : 14 Oct 2013 13:25 Operator: TMB
Sample : WG448583-01 VBLK1014 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 10:59 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

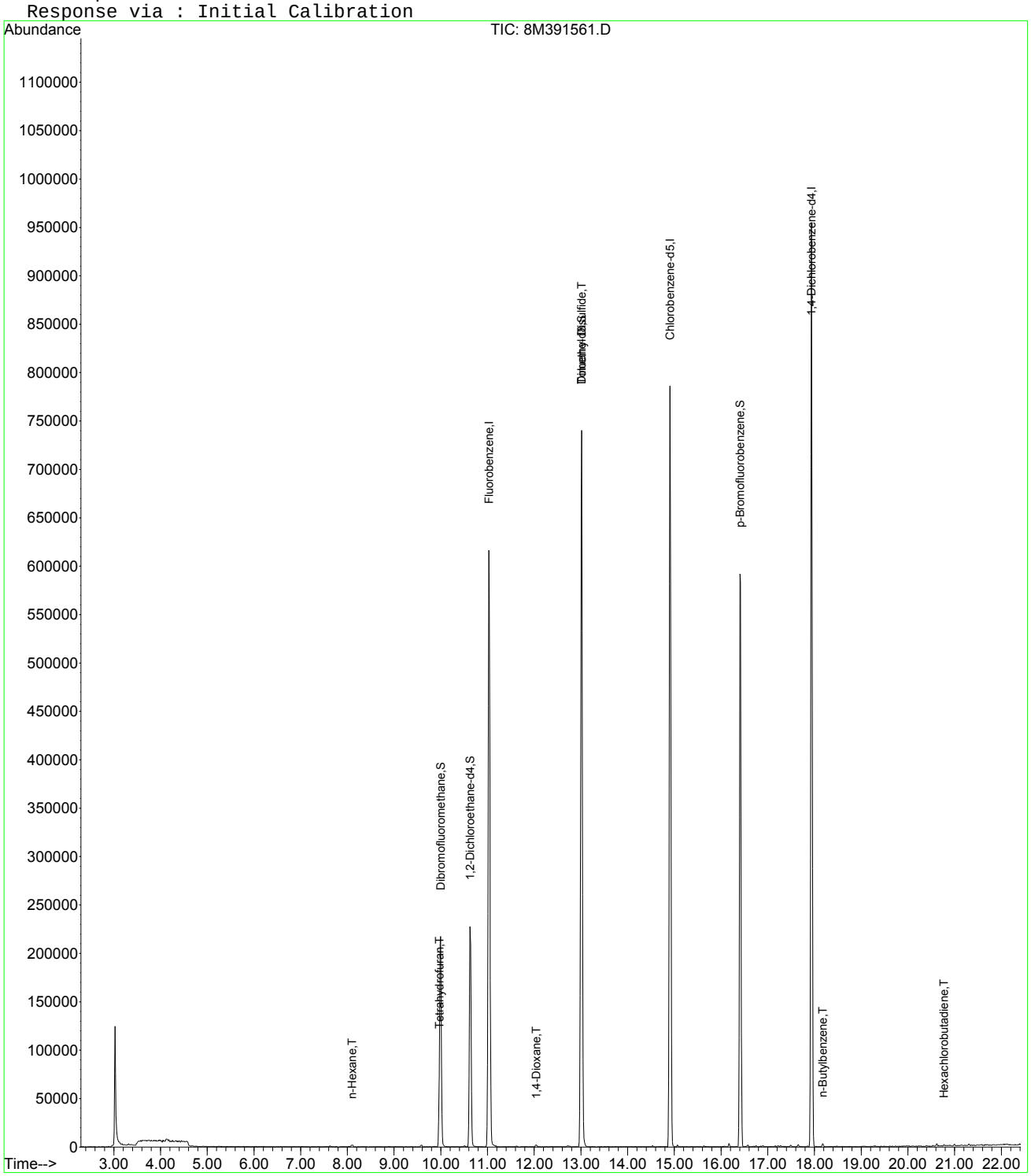

8M391561.D 8260WT.M Tue Oct 15 10:59:44 2013 Page 2

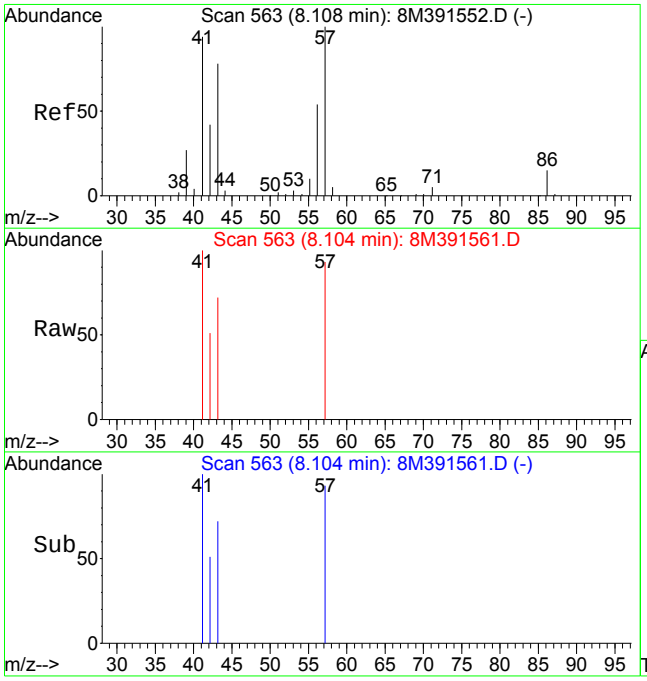

#24
n-Hexane
Concen: 0.14 ug/L
RT: 8.10 min Scan# 563
Delta R.T. -0.01 min
Lab File: 8M391561.D
Acq: 14 Oct 2013 13:25

Tgt Ion: 57 Resp: 1433

Ion	Ratio	Lower	Upper
57	100		
43	72.9	40.2	93.8

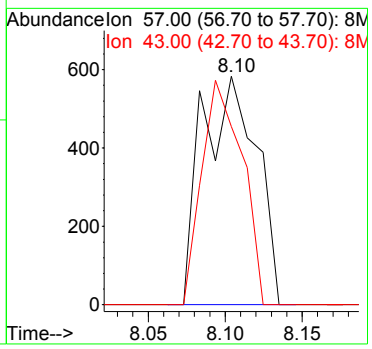

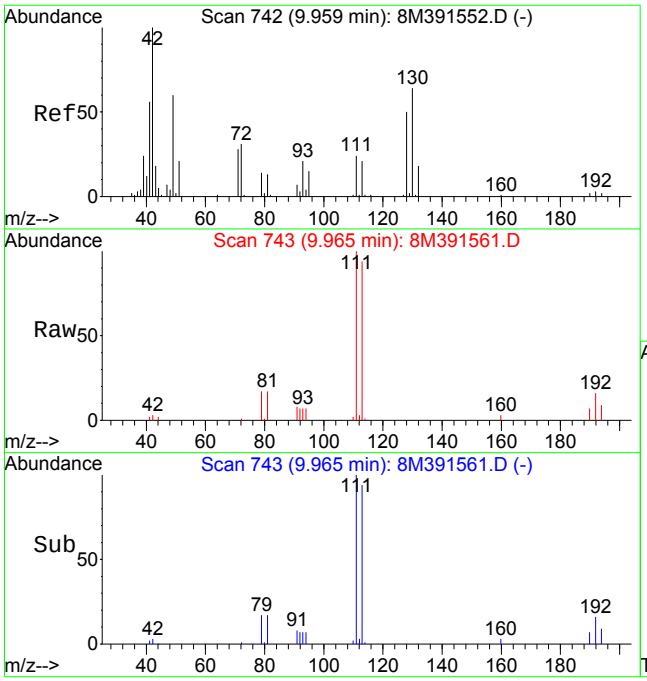

#36
Tetrahydrofuran
Concen: 0.68 ug/L
RT: 9.97 min Scan# 743
Delta R.T. -0.00 min
Lab File: 8M391561.D
Acq: 14 Oct 2013 13:25

Tgt Ion: 42 Resp: 1345

Ion	Ratio	Lower	Upper
42	100		
72	16.1	25.7	59.9#
71	0.0	24.4	57.0#

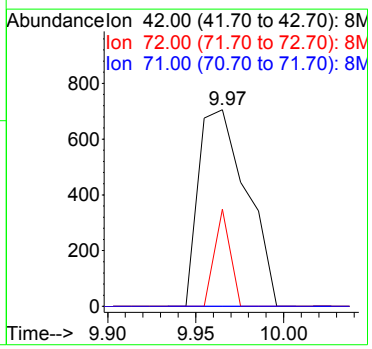

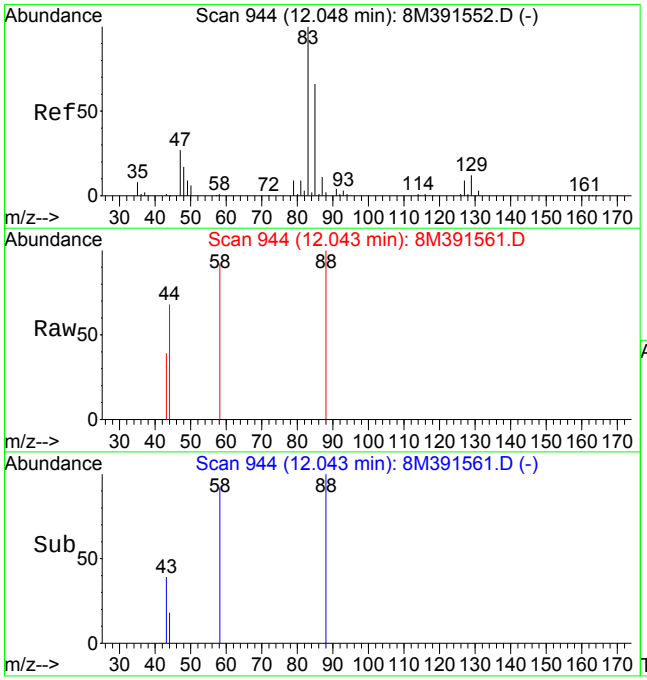

#51
1,4-Dioxane
Concen: 47.86 ug/L
RT: 12.04 min Scan# 944
Delta R.T. -0.01 min
Lab File: 8M391561.D
Acq: 14 Oct 2013 13:25

Tgt Ion: 88 Resp: 1708

Ion	Ratio	Lower	Upper
88	100		
58	70.0	35.3	82.3

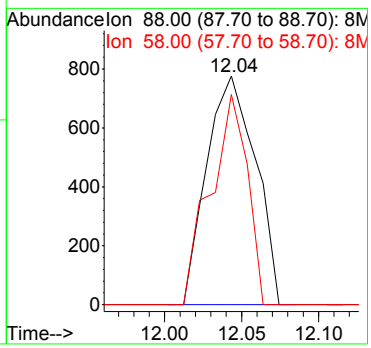

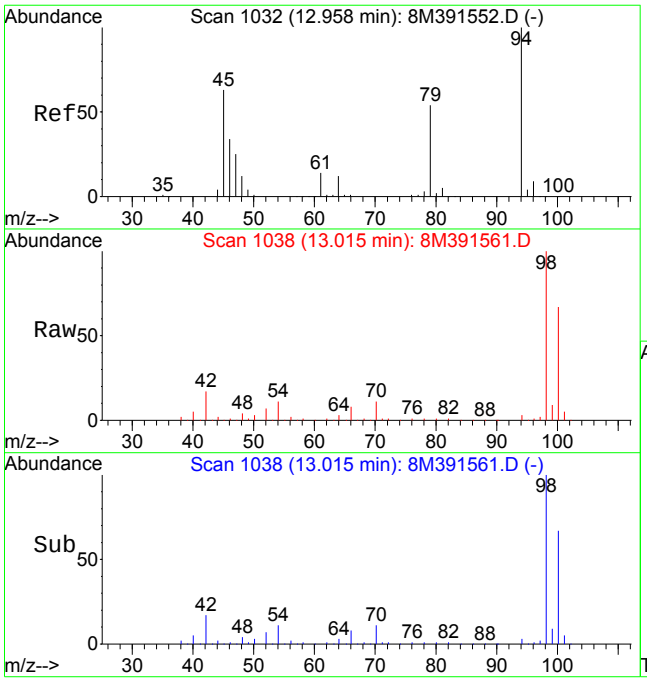

#56
Dimethyl Disulfide
Concen: 1.60 ug/L
RT: 13.02 min Scan# 1038
Delta R.T. 0.04 min
Lab File: 8M391561.D
Acq: 14 Oct 2013 13:25

Tgt Ion: 94 Resp: 19880

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

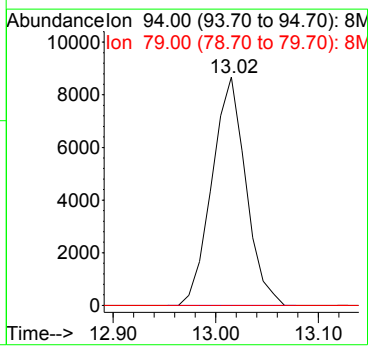

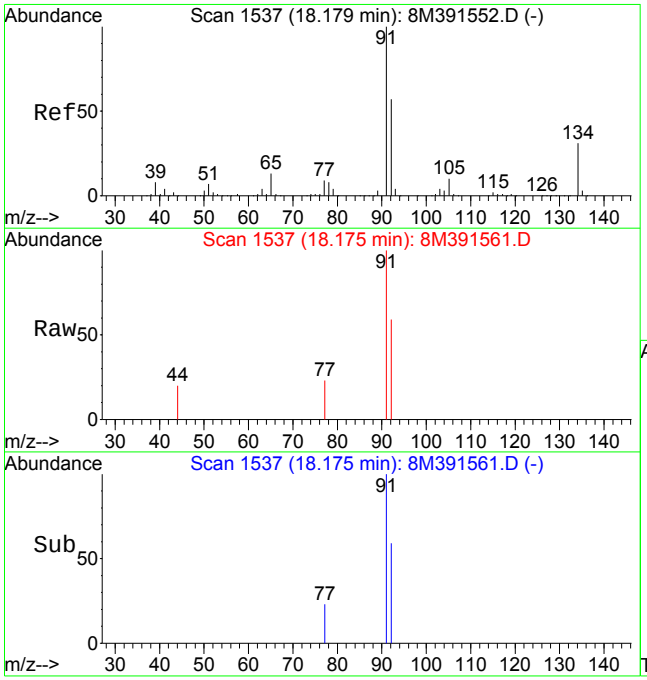

#95
n-Butylbenzene
Concen: 0.13 ug/L
RT: 18.17 min Scan# 1537
Delta R.T. -0.01 min
Lab File: 8M391561.D
Acq: 14 Oct 2013 13:25

Tgt Ion: 91 Resp: 3542

Ion	Ratio	Lower	Upper
91	100		
134	7.2	20.4	47.6#
105	0.0	6.0	14.0#

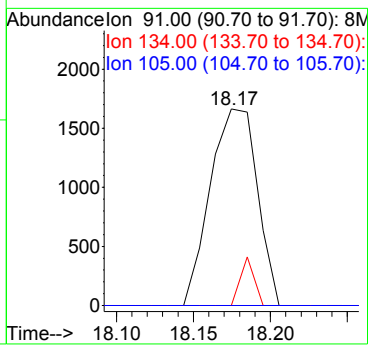

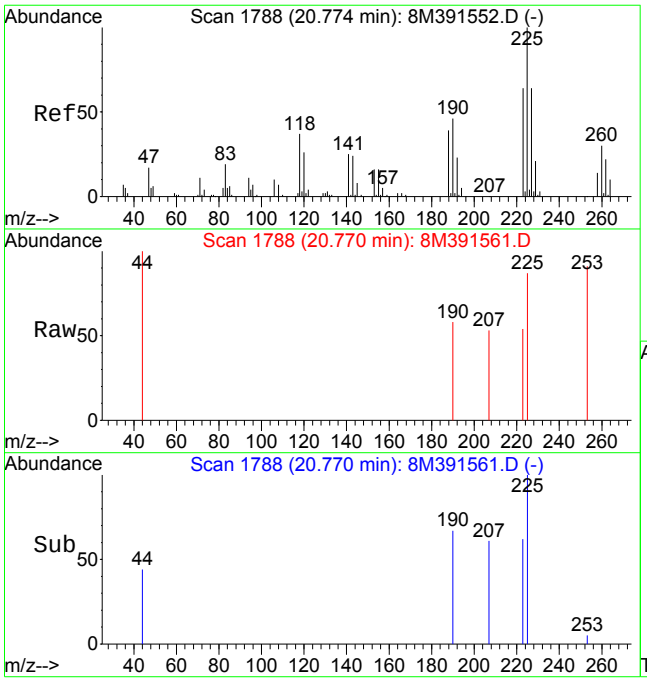

#99
Hexachlorobutadiene
Concen: 0.16 ug/L
RT: 20.77 min Scan# 1788
Delta R.T. -0.01 min
Lab File: 8M391561.D
Acq: 14 Oct 2013 13:25

Tgt Ion:225 Resp: 823

Ion	Ratio	Lower	Upper
225	100		
223	57.1	37.9	88.5
190	25.6	26.2	61.0#

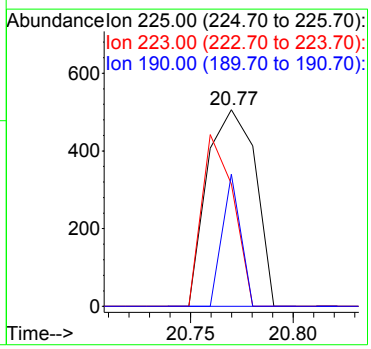

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391561.D Vial: 4
Acq On : 14 Oct 2013 13:25 Operator: TMB
Sample : WG448583-01 VBLK1014 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 15 11:28:04 2013 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	727482	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.91	117	557076	25.00 ug/L	-0.02
12) 1,4-Dichlorobenzene-d4	17.94	152	325501	25.00 ug/L	-0.01

Target Compounds					Qvalue
5) Ethyl Acetate	9.58	43	1728	0.3540 ug/L #	64
7) Isobutyl Alcohol	9.58	43	1728	10.4354 ug/L #	87
8) 1-Butanol	10.52	56	1214	42.3222 ug/L #	63
10) 2-Nitropropane	12.03	43	849	0.5498 ug/L #	8
13) Cyclohexanone	16.17	55	1908	8.9196 ug/L #	71

(#) = qualifier out of range (m) = manual integration
8M391561.D A9FOOWTR.M Tue Oct 15 11:28:04 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391561.D Vial: 4
Acq On : 14 Oct 2013 13:25 Operator: TMB
Sample : WG448583-01 VBLK1014 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 15 11:28 2013 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/10/13- HPMS8
Last Update : Thu Sep 19 09:25:44 2013
Response via : Initial Calibration

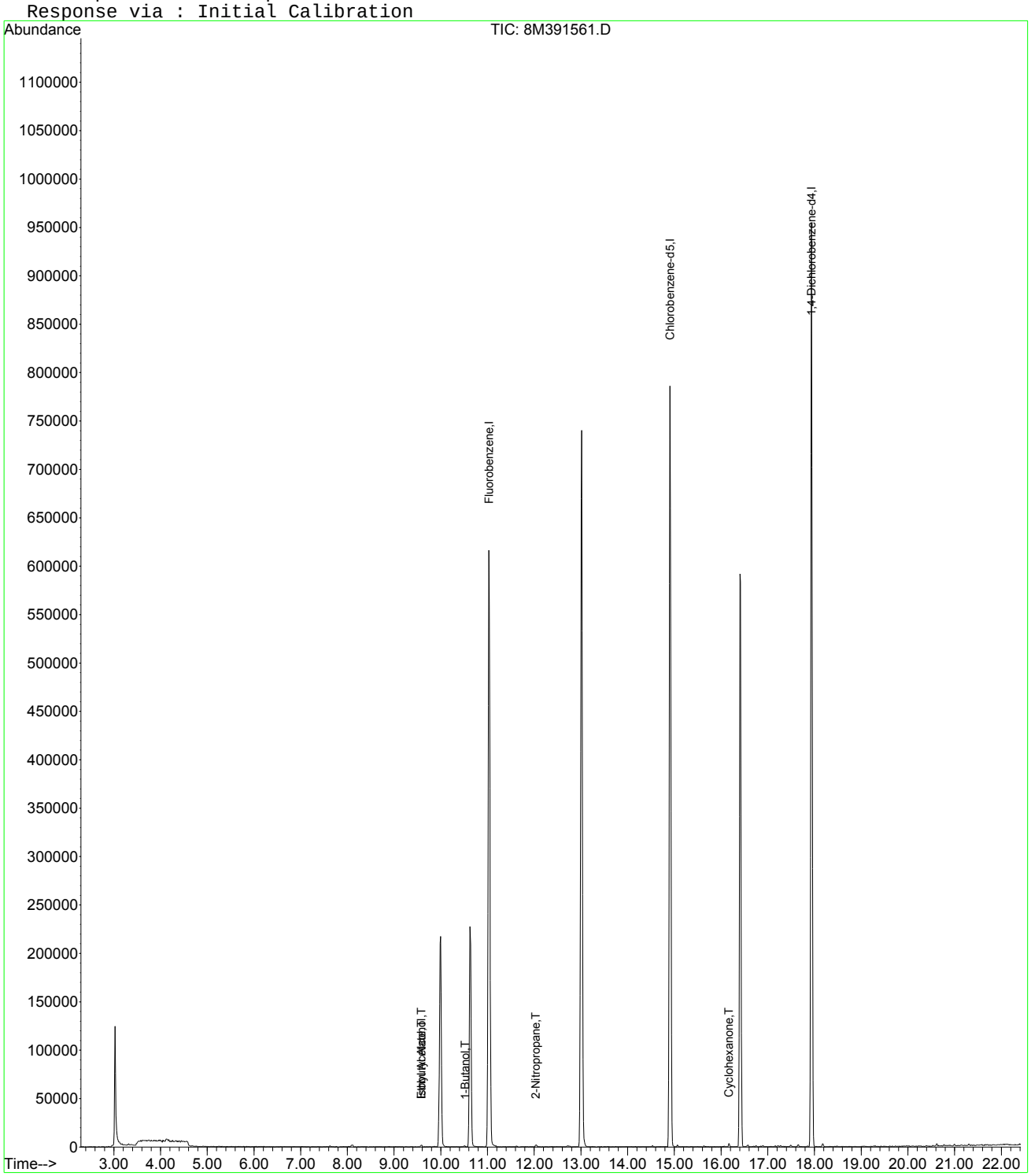

8M391561.D A9FOOWTR.M Tue Oct 15 11:28:05 2013 Page 2

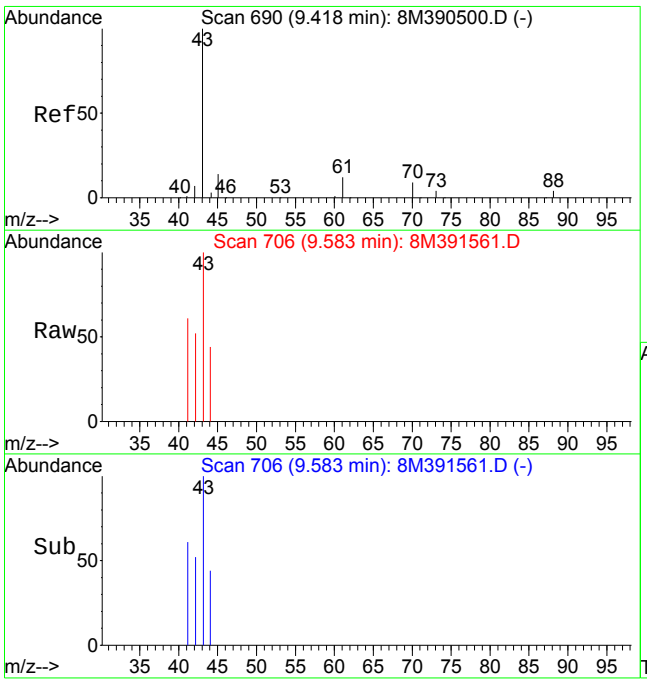

#5
Ethyl Acetate
Concen: 0.35 ug/L
RT: 9.58 min Scan# 706
Delta R.T. 0.16 min
Lab File: 8M391561.D
Acq: 14 Oct 2013 13:25

Tgt Ion: 43 Resp: 1728

Ion	Ratio	Lower	Upper
43	100		
61	0.0	8.9	20.9#

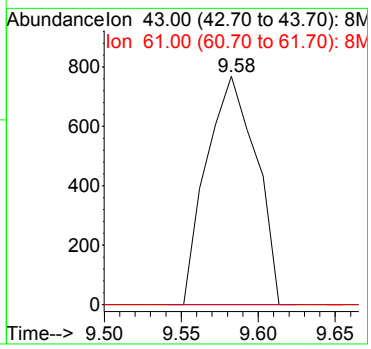

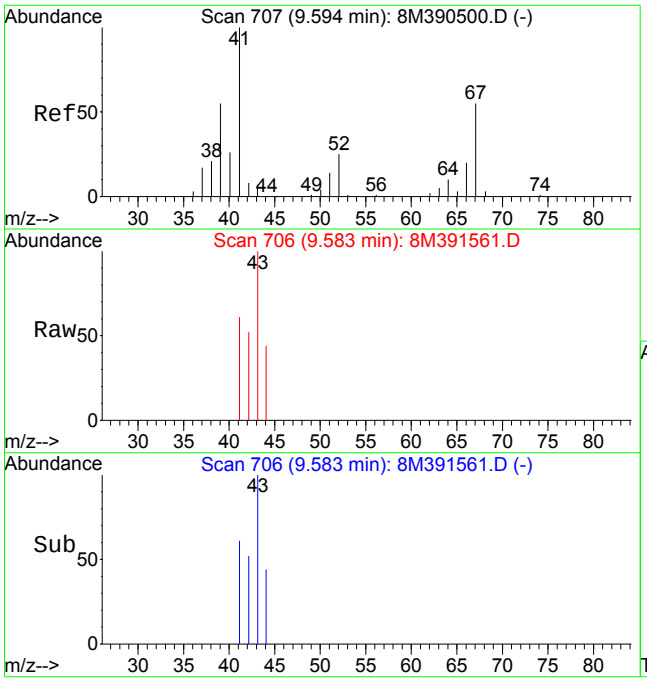

#7
Isobutyl Alcohol
Concen: 10.44 ug/L
RT: 9.58 min Scan# 706
Delta R.T. -0.02 min
Lab File: 8M391561.D
Acq: 14 Oct 2013 13:25

Tgt Ion: 43 Resp: 1728

Ion	Ratio	Lower	Upper
43	100		
42	51.7	0.0	40.0#
74	0.0	0.0	44.2

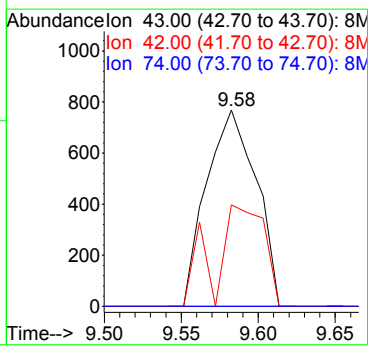

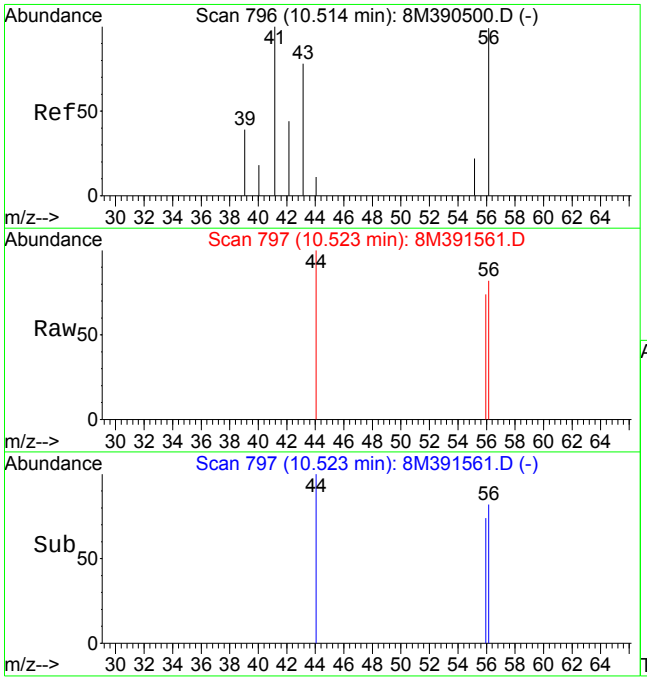

#8
1-Butanol
Concen: 42.32 ug/L
RT: 10.52 min Scan# 797
Delta R.T. 0.01 min
Lab File: 8M391561.D
Acq: 14 Oct 2013 13:25

Tgt Ion: 56 Resp: 1214

Ion	Ratio	Lower	Upper
56	100		
41	41.1	43.1	100.5#

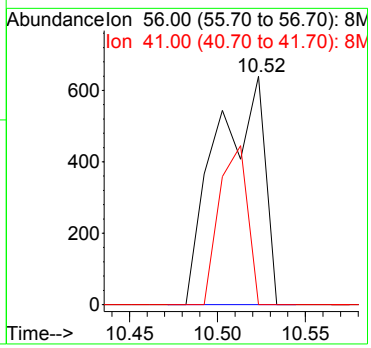

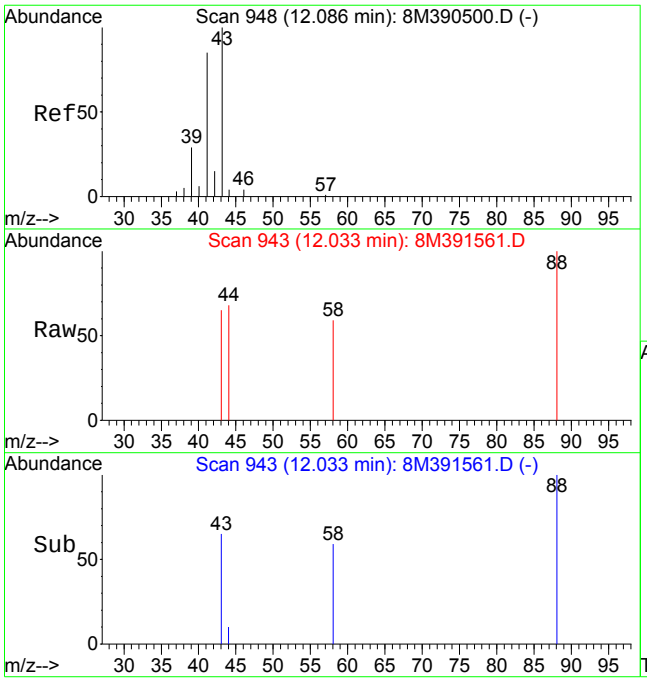

#10
2-Nitropropane
Concen: 0.55 ug/L
RT: 12.03 min Scan# 943
Delta R.T. -0.05 min
Lab File: 8M391561.D
Acq: 14 Oct 2013 13:25

Tgt Ion: 43 Resp: 849

Ion	Ratio	Lower	Upper
43	100		
41	0.0	49.7	115.9#

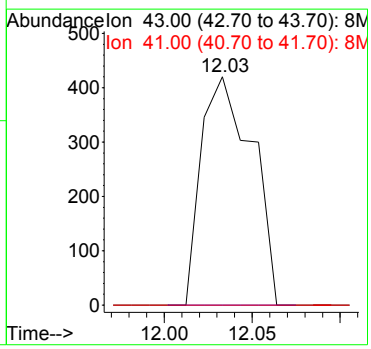

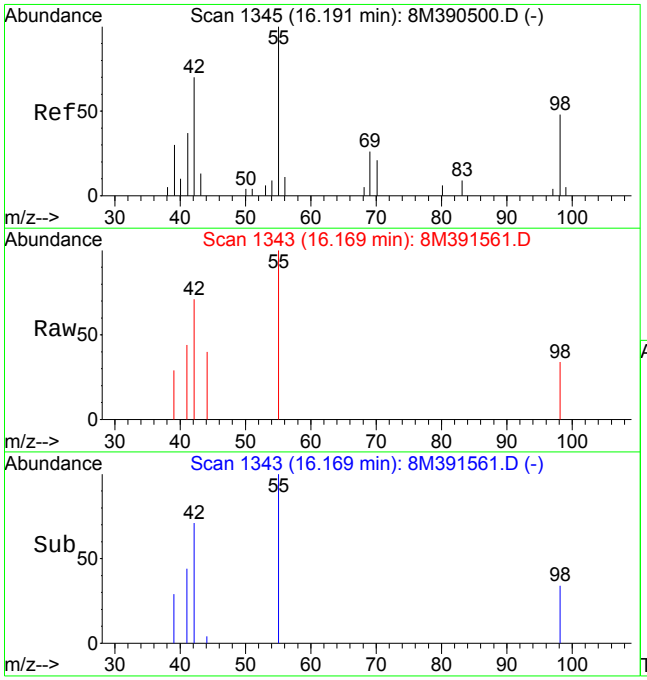

#13
Cyclohexanone
Concen: 8.92 ug/L
RT: 16.17 min Scan# 1343
Delta R.T. -0.01 min
Lab File: 8M391561.D
Acq: 14 Oct 2013 13:25

Tgt Ion: 55 Resp: 1908

Ion	Ratio	Lower	Upper
55	100		
98	24.6	26.0	60.8#

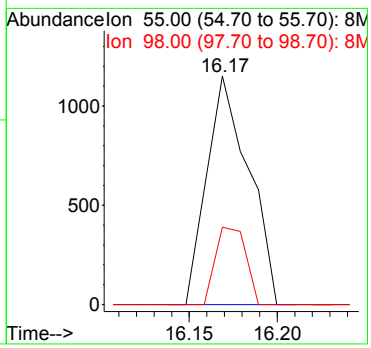

LSC Area Percent Report

Data File : C:\MSDCHEM\1\DATA\101413\8M391561.D Vial: 4
Acq On : 14 Oct 2013 13:25 Operator: TMB
Sample : WG448583-01 VBLK1014 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 200 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.369	103	105	110	rVB2	902	1960	0.10%	0.020%
2	3.534	114	121	123	rBV2	4493	16779	0.87%	0.169%
3	4.051	170	171	174	rBV3	2276	3653	0.19%	0.037%
4	4.123	176	178	186	rVB4	3168	12003	0.62%	0.121%
5	5.281	283	290	292	rBB	855	2821	0.15%	0.028%
6	5.312	292	293	297	rBV	770	1665	0.09%	0.017%
7	5.374	297	299	304	rVB	665	1794	0.09%	0.018%
8	5.964	352	356	361	rBV	544	2474	0.13%	0.025%
9	6.046	361	364	367	rVB	769	1638	0.08%	0.017%
10	6.119	367	371	372	rBV	553	1436	0.07%	0.014%
11	6.150	372	374	377	rVV	570	1188	0.06%	0.012%
12	6.212	377	380	384	rVB	794	1788	0.09%	0.018%
13	6.274	384	386	394	rBB	433	2029	0.11%	0.020%
14	6.491	403	407	411	rBB	500	1737	0.09%	0.018%
15	6.574	411	415	417	rBV	688	1563	0.08%	0.016%
16	7.153	467	471	476	rBB	506	1493	0.08%	0.015%
17	7.370	487	492	495	rBV	528	1589	0.08%	0.016%
18	7.566	507	511	513	rBV	652	1496	0.08%	0.015%
19	7.628	513	517	527	rVB	1338	4107	0.21%	0.041%
20	8.032	552	556	559	rBV	814	1500	0.08%	0.015%
21	8.114	559	564	567	rVB2	2120	5799	0.30%	0.059%
22	8.321	579	584	587	rBB	409	1491	0.08%	0.015%
23	9.035	649	653	656	rBB	446	1142	0.06%	0.012%
24	9.231	671	672	679	rBB	439	1431	0.07%	0.014%
25	9.376	682	686	688	rBB	387	1137	0.06%	0.011%
26	9.583	702	706	710	rBB2	1977	4934	0.26%	0.050%
27	9.862	728	733	735	rBV	787	1807	0.09%	0.018%
28	9.996	739	746	757	rBB	217582	608517	31.53%	6.140%
29	10.224	766	768	773	rBB	483	1450	0.08%	0.015%
30	10.337	776	779	782	rBB	389	1145	0.06%	0.012%
31	10.503	790	795	800	rBB	1311	3320	0.17%	0.033%
32	10.627	800	807	822	rBB	227690	570016	29.54%	5.752%
33	11.030	837	846	864	rBB	616550	1631228	84.52%	16.459%
34	11.619	898	903	907	rBB2	1102	2854	0.15%	0.029%
35	11.775	910	918	919	rBB2	443	1344	0.07%	0.014%
36	12.043	939	944	947	rBB3	2320	5437	0.28%	0.055%
37	12.240	960	963	969	rBB	482	1444	0.07%	0.015%
38	12.374	970	976	977	rBB	674	1543	0.08%	0.016%
39	12.726	1004	1010	1017	rBB	1415	5687	0.29%	0.057%
40	13.015	1030	1038	1054	rVB	740356	1831067	94.88%	18.476%
41	13.584	1089	1093	1094	rBB	558	1239	0.06%	0.013%
42	13.739	1106	1108	1112	rBB	763	1412	0.07%	0.014%
43	13.811	1112	1115	1119	rBB	403	1140	0.06%	0.012%

44	13.894	1119	1123	1126	rBV	467	1587	0.08%	0.016%
45	14.215	1152	1154	1158	rBB	423	1225	0.06%	0.012%
46	14.308	1161	1163	1169	rBB	408	1551	0.08%	0.016%
47	14.442	1175	1176	1181	rBV	425	1396	0.07%	0.014%
48	14.535	1181	1185	1187	rVB	1494	2559	0.13%	0.026%
49	14.907	1214	1221	1234	rVB	786270	1776431	92.05%	17.925%
50	15.062	1234	1236	1243	rBB2	1929	4442	0.23%	0.045%
51	15.176	1243	1247	1248	rBV	412	1158	0.06%	0.012%
52	15.373	1261	1266	1271	rBB	697	2312	0.12%	0.023%
53	15.631	1289	1291	1294	rBB	1238	1747	0.09%	0.018%
54	15.807	1303	1308	1311	rBB	486	1824	0.09%	0.018%
55	15.993	1321	1326	1330	rBB	574	2143	0.11%	0.022%
56	16.065	1330	1333	1336	rBV2	854	2332	0.12%	0.024%
57	16.169	1340	1343	1350	rVB2	3285	5455	0.28%	0.055%
58	16.407	1359	1366	1374	rBV	591716	1324097	68.61%	13.360%
59	16.572	1377	1382	1385	rVB	1751	3472	0.18%	0.035%
60	16.706	1391	1395	1397	rVB	820	1852	0.10%	0.019%
61	16.748	1397	1399	1403	rBB	1532	2634	0.14%	0.027%
62	16.851	1403	1409	1410	rBV	980	2423	0.13%	0.024%
63	16.903	1410	1414	1418	rVV	1418	3408	0.18%	0.034%
64	16.975	1418	1421	1424	rVV	437	1248	0.06%	0.013%
65	17.068	1428	1430	1435	rVV	642	1482	0.08%	0.015%
66	17.161	1435	1439	1441	rVB	1428	2572	0.13%	0.026%
67	17.223	1441	1445	1448	rBV2	1416	3450	0.18%	0.035%
68	17.275	1448	1450	1453	rVV2	1466	2150	0.11%	0.022%
69	17.327	1453	1455	1458	rVB	785	1301	0.07%	0.013%
70	17.368	1458	1459	1462	rBV	810	1227	0.06%	0.012%
71	17.492	1468	1471	1478	rVV	1895	3631	0.19%	0.037%
72	17.658	1481	1487	1490	rBV3	2392	6010	0.31%	0.061%
73	17.854	1502	1506	1508	rBV	845	1302	0.07%	0.013%
74	17.937	1508	1514	1521	rBV	954237	1929929	100.00%	19.473%
75	18.175	1533	1537	1541	rBB	3356	7866	0.41%	0.079%
76	18.268	1541	1546	1547	rBV	447	1516	0.08%	0.015%
77	18.474	1564	1566	1571	rBV	803	1311	0.07%	0.013%
78	19.074	1618	1624	1626	rBV2	528	1458	0.08%	0.015%
79	19.612	1671	1676	1680	rVB	752	1539	0.08%	0.016%
80	19.736	1684	1688	1691	rBV	656	1254	0.06%	0.013%
81	19.901	1703	1704	1708	rBV2	759	1564	0.08%	0.016%
82	19.974	1708	1711	1714	rBV	644	1500	0.08%	0.015%
83	20.108	1720	1724	1728	rVB	883	2794	0.14%	0.028%
84	20.180	1728	1731	1733	rBV	701	1448	0.08%	0.015%
85	20.232	1733	1736	1738	rBV2	572	1491	0.08%	0.015%
86	20.398	1748	1752	1758	rVB2	1113	2922	0.15%	0.029%
87	20.470	1758	1759	1763	rBV	750	1311	0.07%	0.013%
88	20.532	1763	1765	1768	rBV	1145	2025	0.10%	0.020%
89	20.615	1769	1773	1776	rVB3	2570	5245	0.27%	0.053%
90	20.770	1785	1788	1791	rBV3	1683	3207	0.17%	0.032%
91	20.853	1795	1796	1799	rVV2	626	1168	0.06%	0.012%
92	20.904	1799	1801	1807	rVB2	1121	1820	0.09%	0.018%
93	20.997	1807	1810	1813	rBV2	2049	3674	0.19%	0.037%
94	21.142	1821	1824	1829	rBV2	1124	2748	0.14%	0.028%
95	21.214	1829	1831	1834	rVV	691	1394	0.07%	0.014%
96	21.307	1837	1840	1843	rVV2	2040	3367	0.17%	0.034%
97	21.349	1843	1844	1847	rVB	898	1374	0.07%	0.014%
98	21.483	1853	1857	1860	rBV3	892	2280	0.12%	0.023%
99	21.659	1871	1874	1876	rBV2	890	1586	0.08%	0.016%
100	21.814	1886	1889	1897	rVV4	840	3096	0.16%	0.031%

Sum of corrected areas: 9910605

LSC Report - Integrated Chromatogram

```
File        : C:\MSDCHEM\1\DATA\101413\8M391561.D
Operator    : TMB
Acquired    : 14 Oct 2013  13:25     using AcqMethod 8260WT
Instrument :   HPMS8
Sample Name: WG448583-01 VBLK1014 BLANK STD 8260
Misc Info   : 1,1
Vial Number: 4
Quant File :8260WT.RES (RTE Integrator)
```

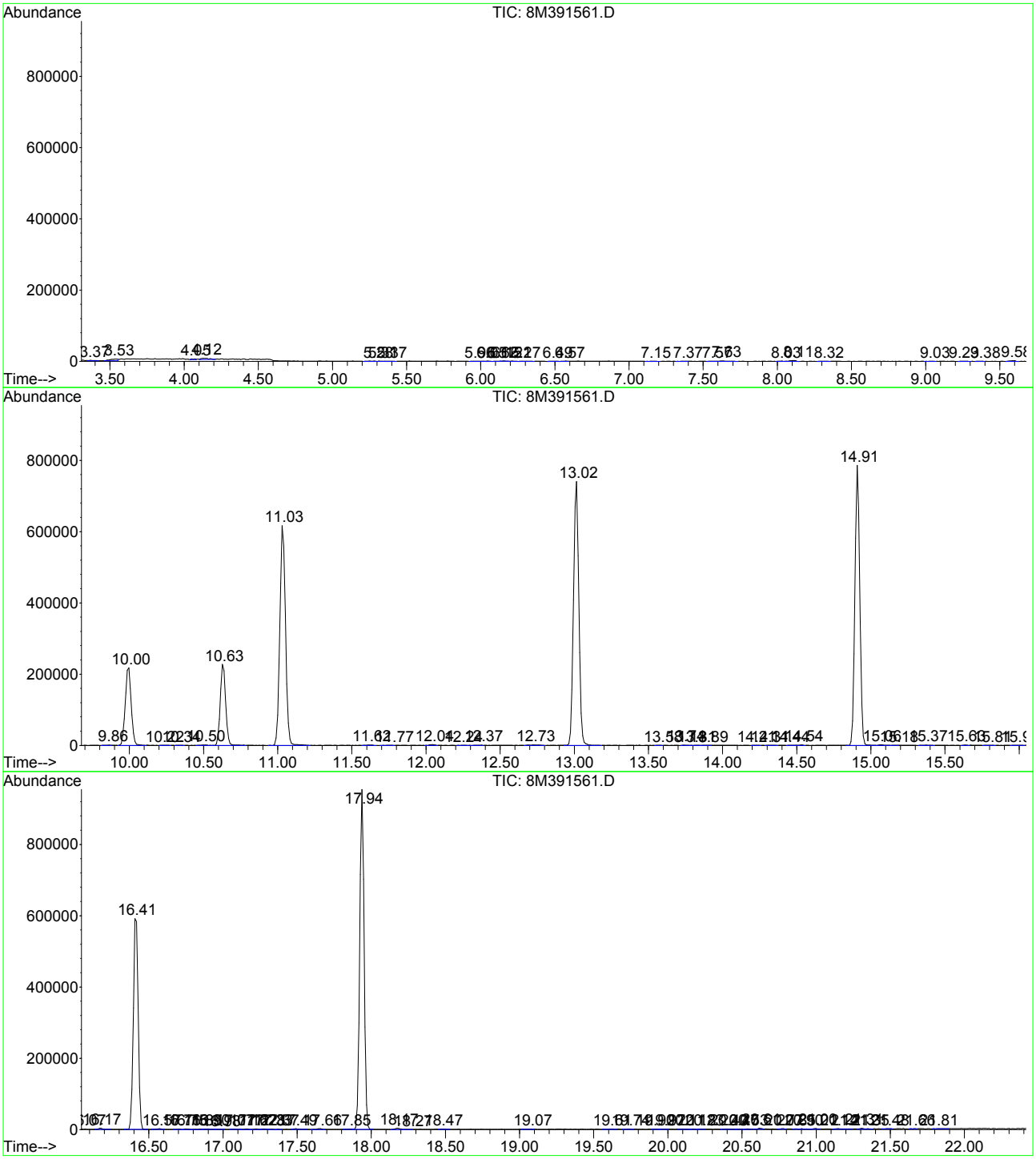

8M391561.D 8260WT.M Tue Oct 15 11:43:45 2013 Page 3

Tentatively Identified Compound (LSC) summary

Operator ID: TMB Date Acquired: 14 Oct 2013 13:25
Data File: C:\MSDCHEM\1\DATA\101413\8M391561.D
Name: WG448583-01 VBLK1014 BLANK STD 8260
Misc: 1,1
Method: C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title: Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Library Searched: C:\DATABASE\NIST02.L

						--Internal Standard---|			
TIC	Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101513\8M391591.D Vial: 4
Acq On : 15 Oct 2013 7:53 Operator: TMB
Sample : WG448662-01 VBLK1015 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 16 15:19:18 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Wed Oct 16 13:27:11 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	768006	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	599749	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	349669	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.99	111	197927	22.6644 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.64%		
43) 1,2-Dichloroethane-d4	10.63	65	223060	21.7877 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.16%		
58) Toluene-d8	13.02	98	682624	23.8971 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.60%		
80) p-Bromofluorobenzene	16.41	95	280358	23.0794 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.32%		

Target Compounds

					Qvalue
3) Chloromethane	3.86	50	1890	0.1729 ug/L #	64
13) Acetone	6.58	43	418	0.2288 ug/L #	48
36) Tetrahydrofuran	9.98	42	868	0.4157 ug/L #	34
56) Dimethyl Disulfide	13.02	94	20081	1.5353 ug/L #	28
59) Toluene	13.11	91	23862	0.7583 ug/L	98
73) m-,p-Xylene	15.08	106	4423	0.3033 ug/L	98
75) Styrene	15.68	104	7125	0.2958 ug/L	99
83) n-Propylbenzene	16.57	91	6438	0.1525 ug/L	88
85) 1,3,5-Trimethylbenzene	16.69	105	20535	0.6399 ug/L #	70
90) 1,2,4-Trimethylbenzene	17.28	105	10580	0.3152 ug/L	76

(#) = qualifier out of range (m) = manual integration
8M391591.D 8260WT.M Wed Oct 16 15:19:19 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101513\8M391591.D Vial: 4
Acq On : 15 Oct 2013 7:53 Operator: TMB
Sample : WG448662-01 VBLK1015 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 16 15:19 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Wed Oct 16 13:27:11 2013
Response via : Initial Calibration

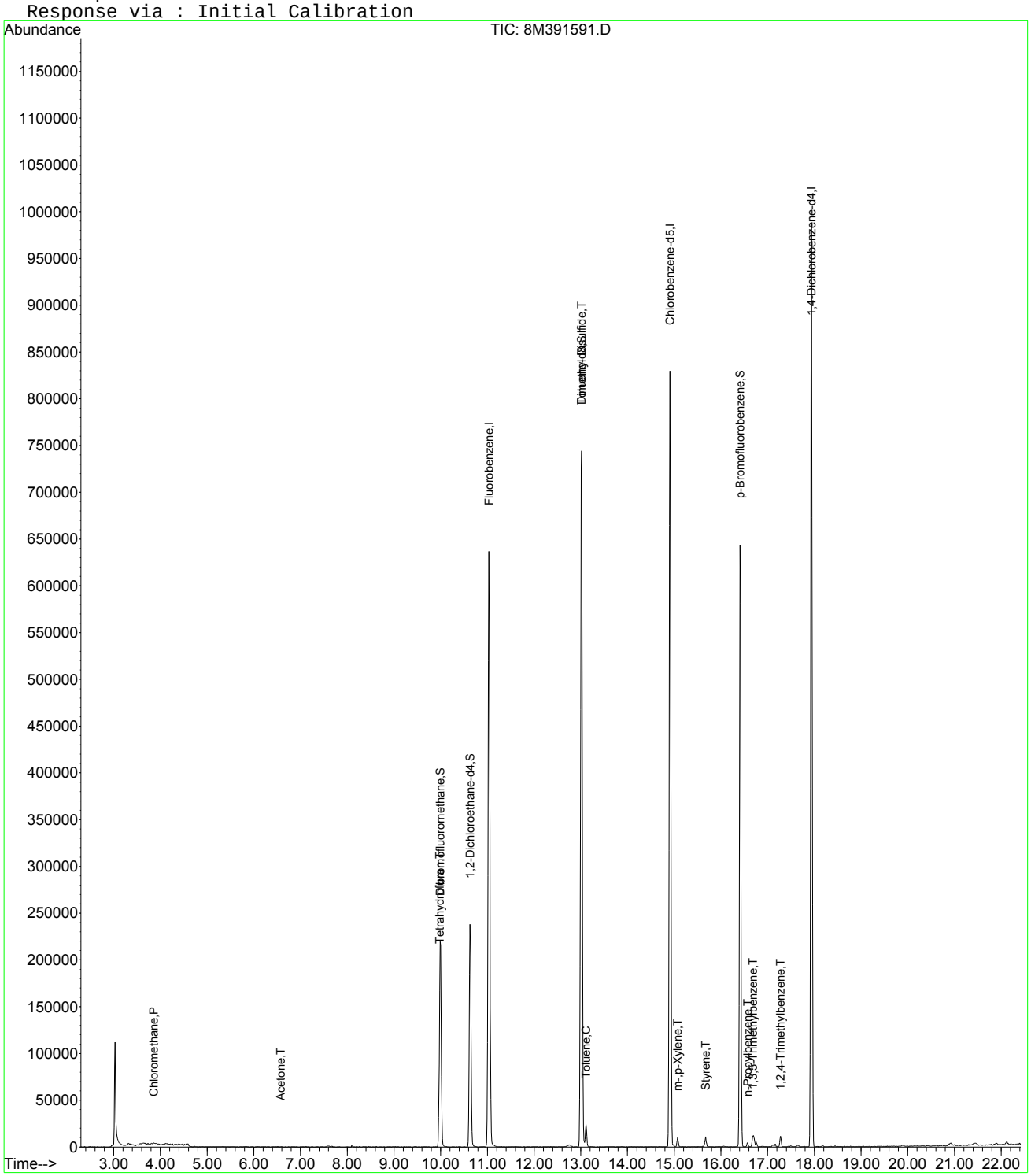

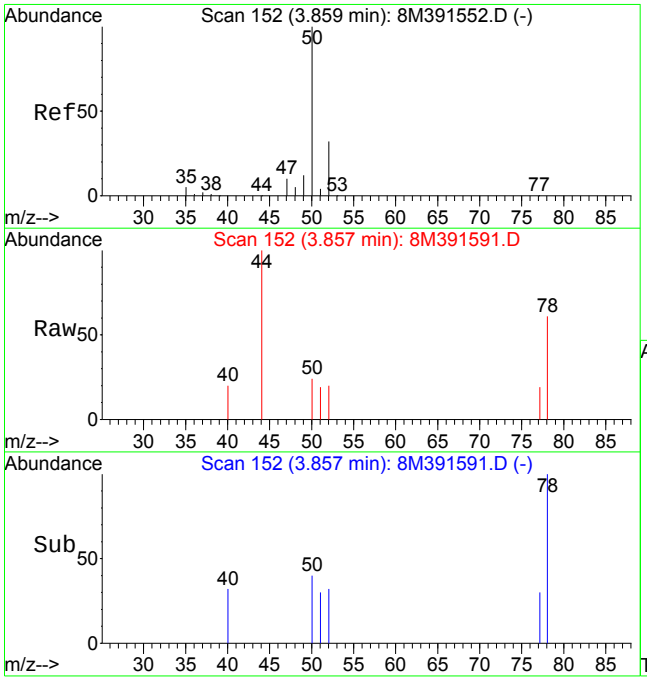

#3
Chloromethane
Concen: 0.17 ug/L
RT: 3.86 min Scan# 152
Delta R.T. 0.01 min
Lab File: 8M391591.D
Acq: 15 Oct 2013 7:53

Tgt Ion: 50 Resp: 1890

Ion	Ratio	Lower	Upper
50	100		
52	53.5	19.8	46.2#

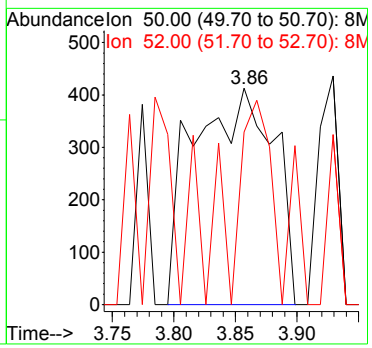

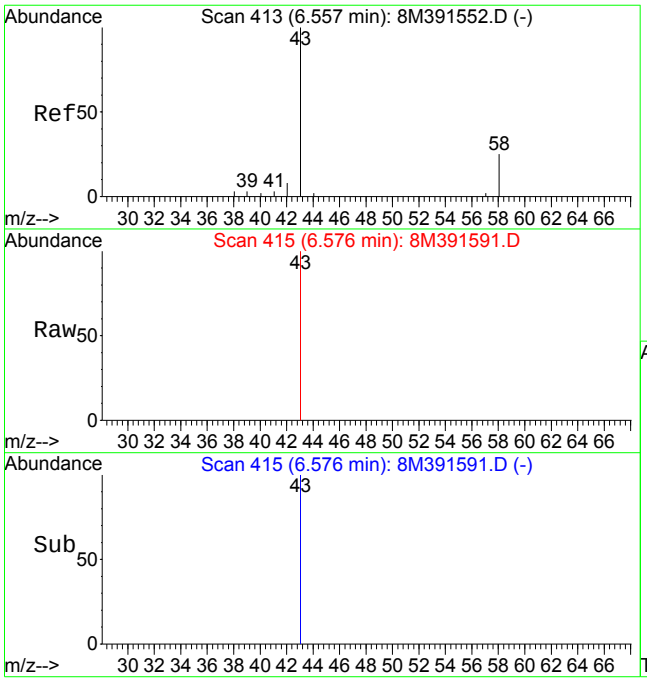

#13
Acetone
Concen: 0.23 ug/L
RT: 6.58 min Scan# 415
Delta R.T. 0.00 min
Lab File: 8M391591.D
Acq: 15 Oct 2013 7:53

Tgt Ion: 43 Resp: 418

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

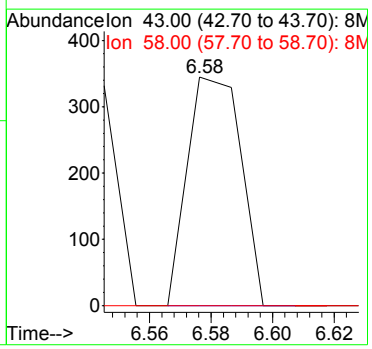

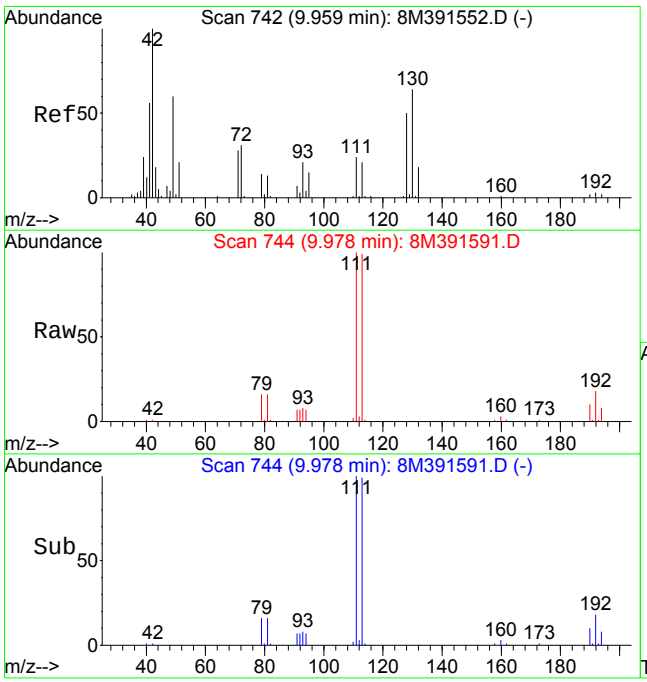

#36
Tetrahydrofuran
Concen: 0.42 ug/L
RT: 9.98 min Scan# 744
Delta R.T. 0.01 min
Lab File: 8M391591.D
Acq: 15 Oct 2013 7:53

Tgt Ion: 42 Resp: 868

Ion	Ratio	Lower	Upper
42	100		
72	0.0	25.7	59.9#
71	0.0	24.4	57.0#

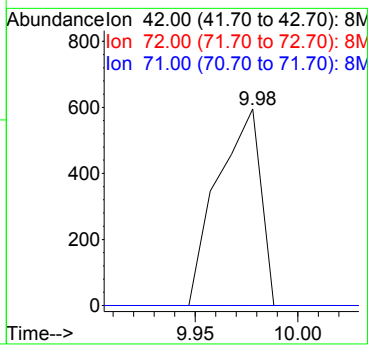

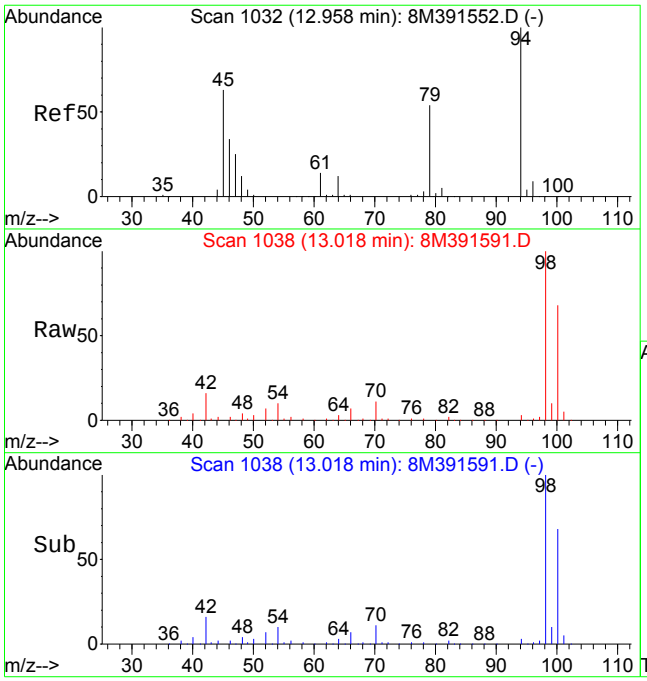

#56
Dimethyl Disulfide
Concen: 1.54 ug/L
RT: 13.02 min Scan# 1038
Delta R.T. 0.04 min
Lab File: 8M391591.D
Acq: 15 Oct 2013 7:53

Tgt Ion: 94 Resp: 20081

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

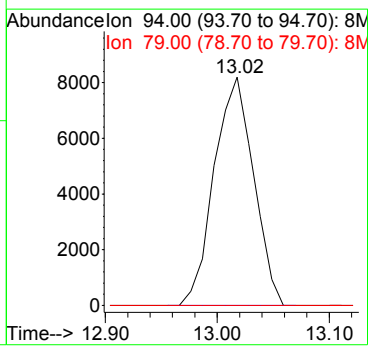

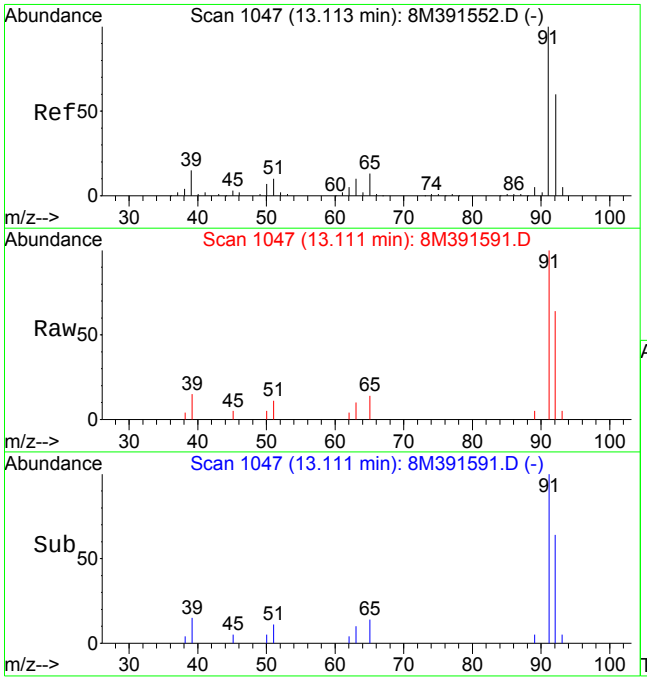

#59
Toluene
Concen: 0.76 ug/L
RT: 13.11 min Scan# 1047
Delta R.T. -0.02 min
Lab File: 8M391591.D
Acq: 15 Oct 2013 7:53

Tgt Ion: 91 Resp: 23862

Ion	Ratio	Lower	Upper
91	100		
92	58.8	36.4	84.8

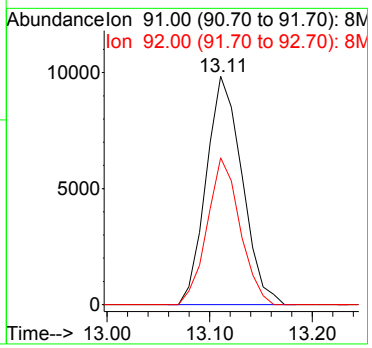

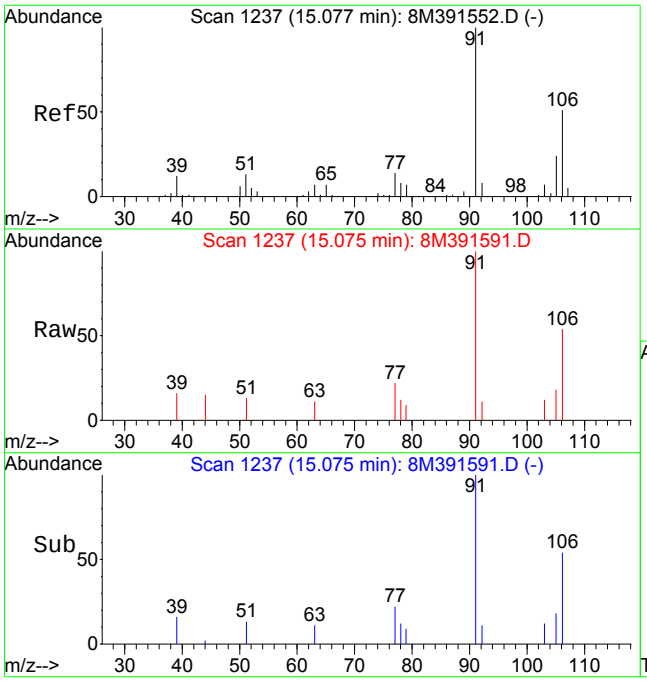

#73
m-,p-Xylene
Concen: 0.30 ug/L
RT: 15.08 min Scan# 1237
Delta R.T. -0.01 min
Lab File: 8M391591.D
Acq: 15 Oct 2013 7:53

Tgt Ion:106 Resp: 4423

Ion	Ratio	Lower	Upper
106	100		
91	180.3	110.2	257.2

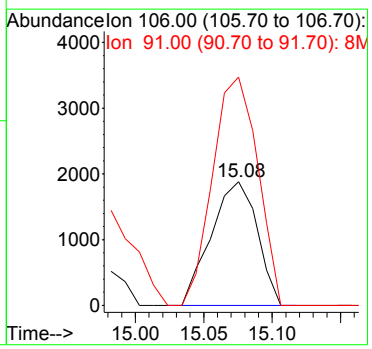

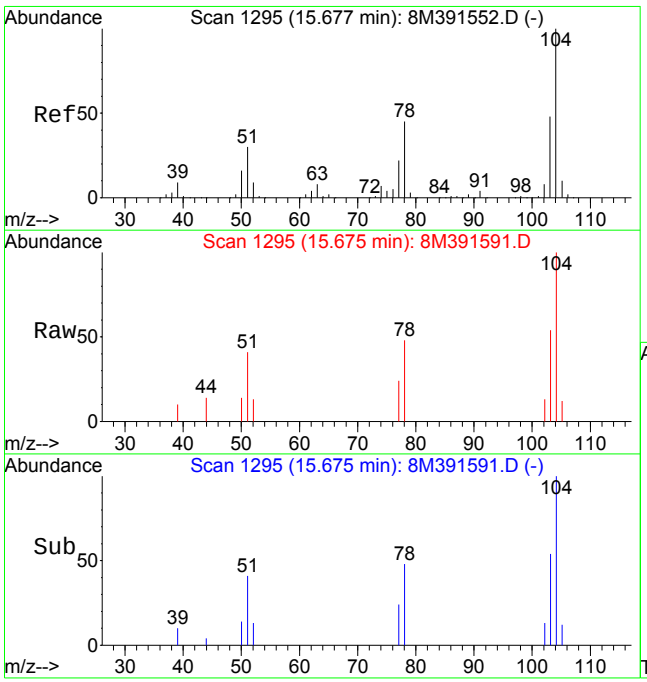

#75
Styrene
Concen: 0.30 ug/L
RT: 15.68 min Scan# 1295
Delta R.T. -0.01 min
Lab File: 8M391591.D
Acq: 15 Oct 2013 7:53

Tgt Ion:104 Resp: 7125

Ion	Ratio	Lower	Upper
104	100		
78	48.4	28.7	67.1

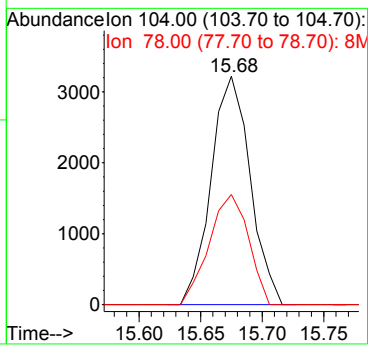

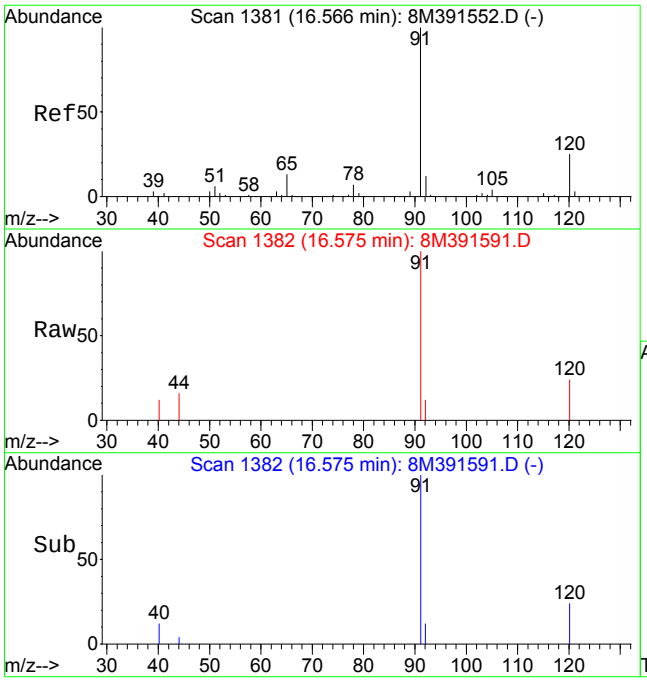

#83
n-Propylbenzene
Concen: 0.15 ug/L
RT: 16.57 min Scan# 1382
Delta R.T. -0.01 min
Lab File: 8M391591.D
Acq: 15 Oct 2013 7:53

Tgt Ion: 91 Resp: 6438

Ion	Ratio	Lower	Upper
91	100		
120	21.9	16.8	39.2

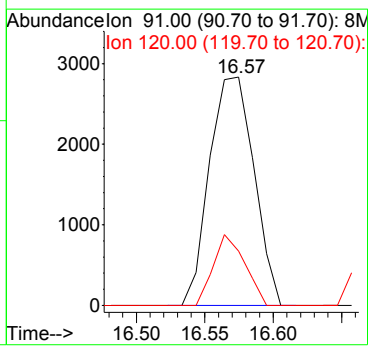

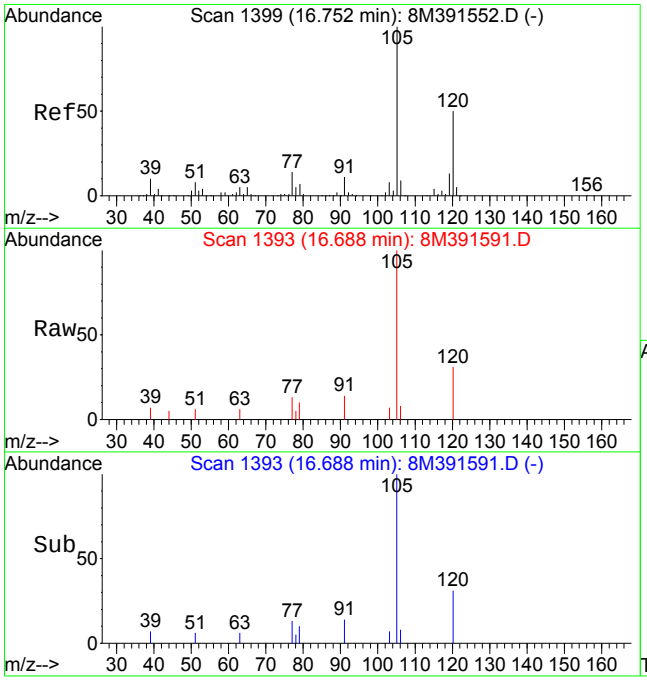

#85
1,3,5-Trimethylbenzene
Concen: 0.64 ug/L
RT: 16.69 min Scan# 1393
Delta R.T. -0.08 min
Lab File: 8M391591.D
Acq: 15 Oct 2013 7:53

Tgt Ion:105 Resp: 20535

Ion	Ratio	Lower	Upper
105	100		
120	31.8	32.0	74.8#

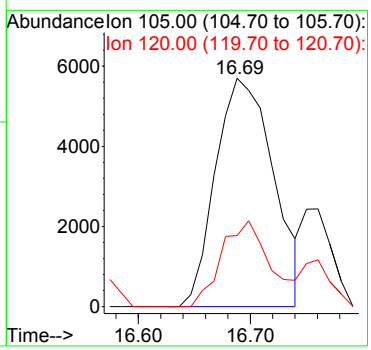

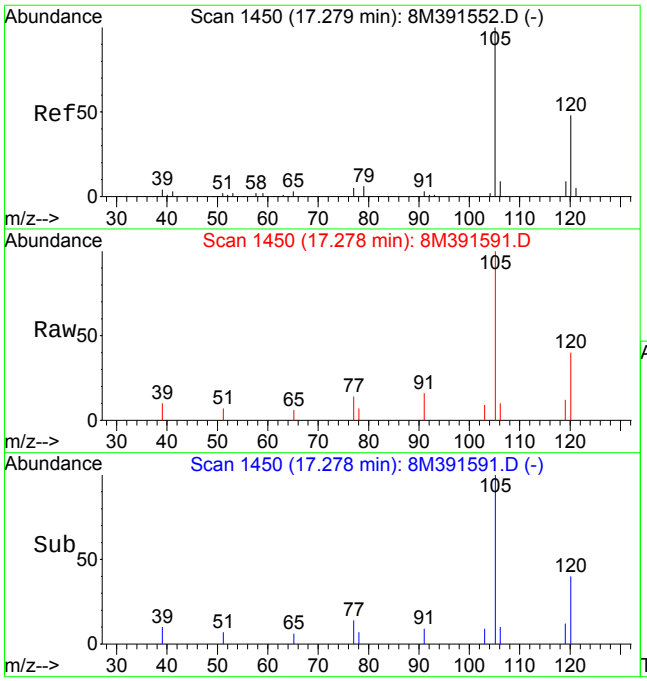

#90
1,2,4-Trimethylbenzene
Concen: 0.32 ug/L
RT: 17.28 min Scan# 1450
Delta R.T. -0.01 min
Lab File: 8M391591.D
Acq: 15 Oct 2013 7:53

Tgt Ion:105 Resp: 10580

Ion	Ratio	Lower	Upper
105	100		
120	41.1	35.3	82.5

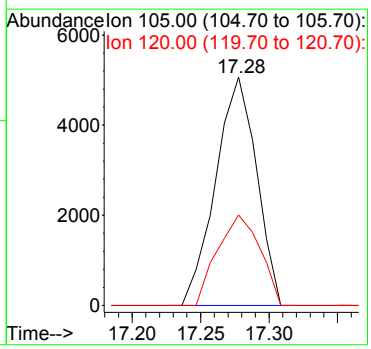

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391583.D Vial: 26
Acq On : 15 Oct 2013 00:48 Operator: TMB
Sample : WG448583-04 VBLK1014 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 11:01:48 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	643118	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	504401	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.94	152	293218	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.99	111	172293	23.5603 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.24%		
43) 1,2-Dichloroethane-d4	10.63	65	203395	23.7249 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.88%		
58) Toluene-d8	13.02	98	572346	23.8240 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.28%		
80) p-Bromofluorobenzene	16.41	95	237882	23.3528 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.40%		
Target Compounds					Qvalue
13) Acetone	6.56	43	210	0.1373 ug/L #	48
36) Tetrahydrofuran	9.97	42	1413	0.8081 ug/L #	34
56) Dimethyl Disulfide	13.02	94	17523	1.5999 ug/L #	28

(#) = qualifier out of range (m) = manual integration
8M391583.D 8260WT.M Tue Oct 15 11:01:49 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\101413\8M391583.D Vial: 26
Acq On : 15 Oct 2013 00:48 Operator: TMB
Sample : WG448583-04 VBLK1014 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 11:01 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

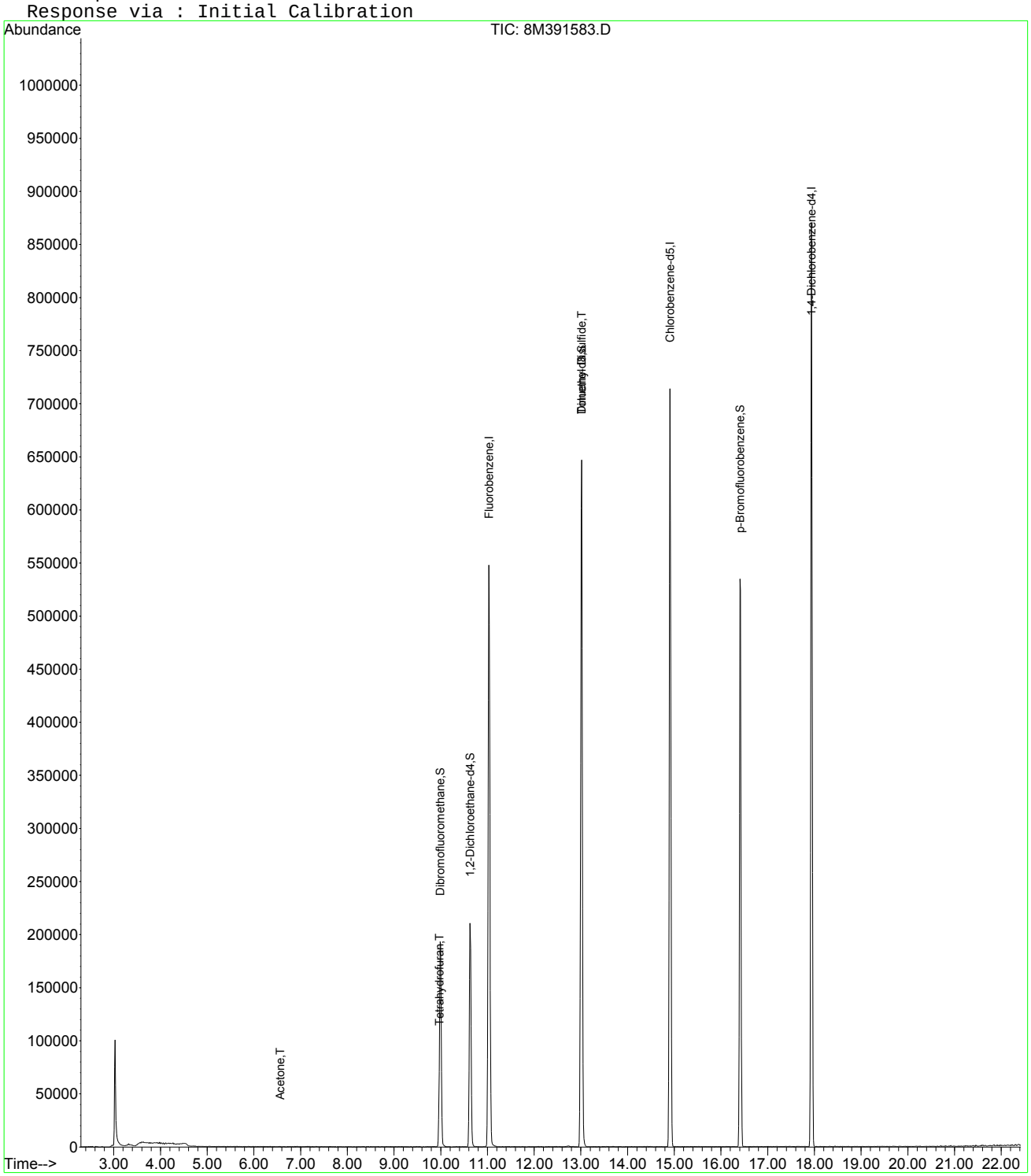

8M391583.D 8260WT.M Tue Oct 15 11:01:49 2013 Page 2

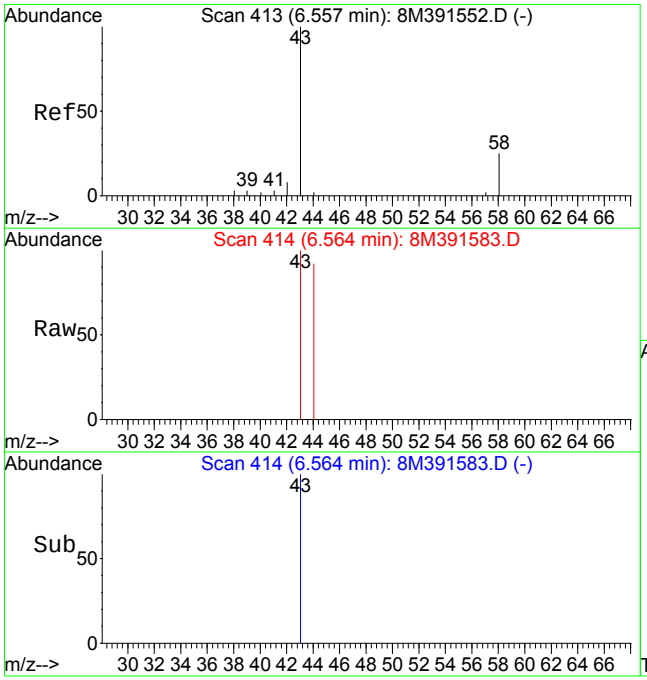

#13
Acetone
Concen: 0.14 ug/L
RT: 6.56 min Scan# 414
Delta R.T. -0.01 min
Lab File: 8M391583.D
Acq: 15 Oct 2013 00:48

Tgt Ion: 43 Resp: 210

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

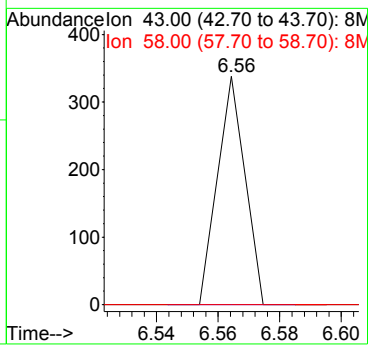

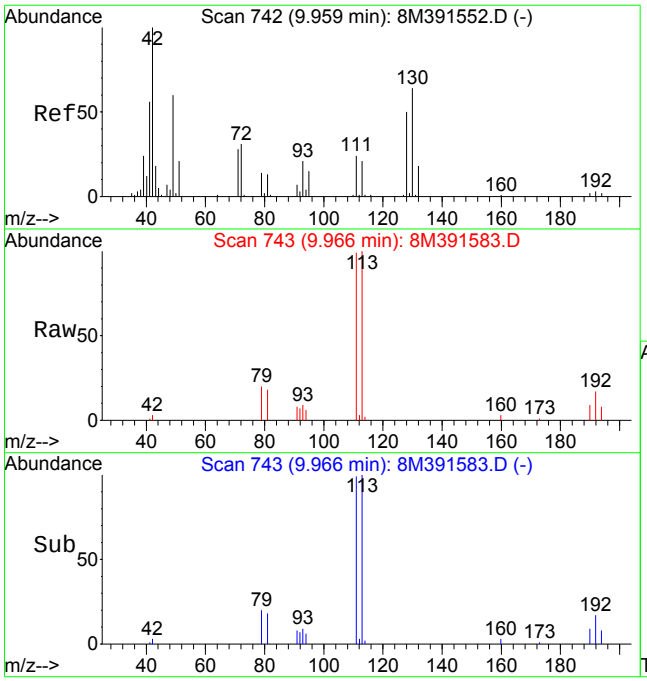

#36
Tetrahydrofuran
Concen: 0.81 ug/L
RT: 9.97 min Scan# 743
Delta R.T. 0.00 min
Lab File: 8M391583.D
Acq: 15 Oct 2013 00:48

Tgt Ion: 42 Resp: 1413

Ion	Ratio	Lower	Upper
42	100		
72	0.0	25.7	59.9#
71	0.0	24.4	57.0#

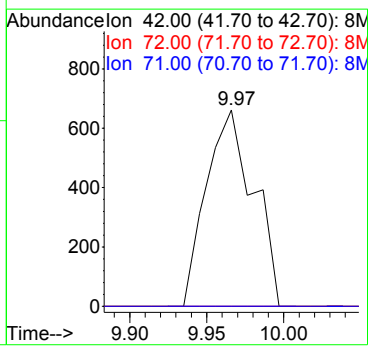

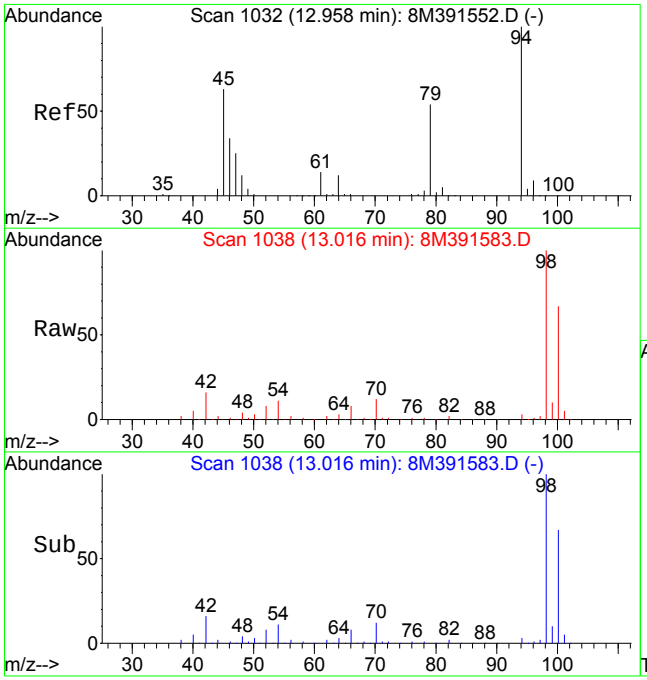

#56
Dimethyl Disulfide
Concen: 1.60 ug/L
RT: 13.02 min Scan# 1038
Delta R.T. 0.04 min
Lab File: 8M391583.D
Acq: 15 Oct 2013 00:48

Tgt Ion: 94 Resp: 17523

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.7#

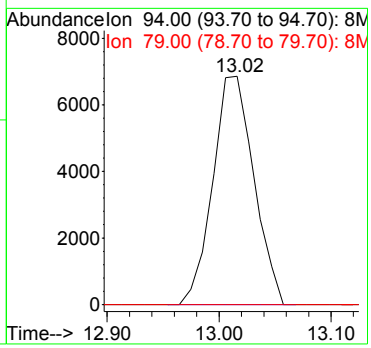

LSC Area Percent Report

Data File : C:\MSDCHEM\1\DATA\101413\8M391583.D Vial: 26
Acq On : 15 Oct 2013 00:48 Operator: TMB
Sample : WG448583-04 VBLK1014 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 200 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.566	114	124	125	rBV	3363	13130	0.75%	0.149%
2	4.114	174	177	179	rBV2	1395	2698	0.15%	0.031%
3	5.365	295	298	302	rVB	629	1781	0.10%	0.020%
4	5.437	302	305	307	rBV	721	1443	0.08%	0.016%
5	5.685	328	329	335	rVB	580	1677	0.10%	0.019%
6	5.779	335	338	339	rBV	500	1023	0.06%	0.012%
7	5.882	344	348	353	rBB	586	2195	0.12%	0.025%
8	6.027	360	362	367	rBV	514	1790	0.10%	0.020%
9	6.254	382	384	388	rBB	508	1305	0.07%	0.015%
10	6.347	388	393	395	rBB	733	1693	0.10%	0.019%
11	6.399	395	398	400	rBB	600	1110	0.06%	0.013%
12	6.430	400	401	405	rBV	505	1196	0.07%	0.014%
13	6.564	409	414	417	rVB	648	1786	0.10%	0.020%
14	6.781	430	435	437	rBV	500	1787	0.10%	0.020%
15	6.926	445	449	454	rBB	729	2266	0.13%	0.026%
16	7.071	458	463	466	rBV	433	1797	0.10%	0.020%
17	7.154	468	471	473	rVV	620	1089	0.06%	0.012%
18	7.257	477	481	484	rBB	471	1012	0.06%	0.011%
19	7.329	484	488	494	rBB	462	2235	0.13%	0.025%
20	7.443	497	499	504	rBB	460	1364	0.08%	0.015%
21	7.619	512	516	517	rBB	538	1021	0.06%	0.012%
22	7.640	517	518	522	rBB	556	1067	0.06%	0.012%
23	7.846	535	538	542	rBB	402	1267	0.07%	0.014%
24	8.043	551	557	559	rBV	394	1552	0.09%	0.018%
25	8.260	574	578	580	rBB	439	1105	0.06%	0.013%
26	8.332	580	585	590	rBB	502	1907	0.11%	0.022%
27	8.415	591	593	599	rBB	526	1475	0.08%	0.017%
28	8.663	604	617	620	rBB	460	3155	0.18%	0.036%
29	8.746	621	625	628	rBB	553	1456	0.08%	0.016%
30	8.839	632	634	637	rBV	491	1155	0.07%	0.013%
31	9.025	649	652	657	rBB	403	1466	0.08%	0.017%
32	9.480	693	696	701	rBB	484	1341	0.08%	0.015%
33	9.832	724	730	731	rBB	518	1317	0.07%	0.015%
34	9.987	735	745	756	rBB	193460	545516	31.06%	6.174%
35	10.183	760	764	768	rBB	429	1350	0.08%	0.015%
36	10.349	774	780	781	rBB	476	1196	0.07%	0.014%
37	10.400	782	785	788	rBB	463	1230	0.07%	0.014%
38	10.628	801	807	819	rBV	210715	524789	29.88%	5.939%
39	11.031	838	846	863	rVB	548118	1447621	82.42%	16.384%
40	11.538	891	895	898	rBB	428	1410	0.08%	0.016%
41	11.579	898	899	905	rBB	448	1462	0.08%	0.017%
42	11.868	925	927	931	rBB	408	1103	0.06%	0.012%
43	12.086	944	948	950	rBB	589	1386	0.08%	0.016%

44	12.158	950	955	956	rBB	456	1189	0.07%	0.013%
45	12.551	987	993	994	rBB	448	1463	0.08%	0.017%
46	12.727	1005	1010	1017	rBB	1021	4306	0.25%	0.049%
47	12.830	1017	1020	1023	rBB	504	1328	0.08%	0.015%
48	13.016	1030	1038	1050	rBB	647158	1611224	91.73%	18.235%
49	13.161	1050	1052	1055	rBV	414	1101	0.06%	0.012%
50	13.275	1062	1063	1067	rBB	583	975	0.06%	0.011%
51	13.492	1082	1084	1087	rBB	515	974	0.06%	0.011%
52	13.543	1087	1089	1091	rBV	520	1023	0.06%	0.012%
53	13.688	1099	1103	1109	rVB	759	2426	0.14%	0.027%
54	13.957	1128	1129	1135	rBB	481	1495	0.09%	0.017%
55	14.226	1154	1155	1159	rBV	431	1183	0.07%	0.013%
56	14.433	1169	1175	1177	rBB	605	1835	0.10%	0.021%
57	14.484	1177	1180	1184	rBV	484	1831	0.10%	0.021%
58	14.629	1193	1194	1198	rBV	472	1210	0.07%	0.014%
59	14.795	1207	1210	1212	rBV	398	1106	0.06%	0.013%
60	14.908	1213	1221	1230	rVV	713936	1596815	90.91%	18.072%
61	15.177	1243	1247	1248	rBB	491	1032	0.06%	0.012%
62	15.218	1250	1251	1255	rBV	521	1281	0.07%	0.014%
63	15.291	1255	1258	1262	rVV	407	1022	0.06%	0.012%
64	15.384	1262	1267	1268	rVB	457	1237	0.07%	0.014%
65	15.425	1268	1271	1275	rBV	519	1733	0.10%	0.020%
66	15.818	1307	1309	1313	rVB	564	1284	0.07%	0.015%
67	15.953	1320	1322	1328	rVB	461	1764	0.10%	0.020%
68	16.035	1328	1330	1334	rBV	528	1563	0.09%	0.018%
69	16.407	1358	1366	1374	rBV	534808	1189696	67.73%	13.464%
70	16.697	1389	1394	1396	rBV	660	1854	0.11%	0.021%
71	16.780	1399	1402	1406	rVV	567	1597	0.09%	0.018%
72	16.862	1409	1410	1415	rVB	554	1319	0.08%	0.015%
73	16.935	1415	1417	1419	rBV	456	985	0.06%	0.011%
74	17.007	1423	1424	1427	rBV	747	1157	0.07%	0.013%
75	17.069	1427	1430	1432	rVB	508	1159	0.07%	0.013%
76	17.121	1432	1435	1438	rBV	491	1494	0.09%	0.017%
77	17.617	1478	1483	1491	rBV	639	3905	0.22%	0.044%
78	17.938	1508	1514	1522	rVB	869908	1756488	100.00%	19.879%
79	18.496	1566	1568	1572	rVB	493	1358	0.08%	0.015%
80	18.568	1572	1575	1576	rBV	545	1231	0.07%	0.014%
81	19.820	1692	1696	1703	rVB	349	1232	0.07%	0.014%
82	19.954	1703	1709	1711	rVB	684	2310	0.13%	0.026%
83	19.995	1711	1713	1715	rBV	744	1407	0.08%	0.016%
84	20.709	1777	1782	1784	rBV	979	1313	0.07%	0.015%
85	20.915	1797	1802	1805	rVB2	971	2011	0.11%	0.023%
86	21.205	1827	1830	1832	rVV	485	1093	0.06%	0.012%
87	21.236	1832	1833	1838	rVB	776	1589	0.09%	0.018%
88	21.391	1845	1848	1853	rVB2	839	2111	0.12%	0.024%
89	21.453	1853	1854	1858	rVB2	1277	2150	0.12%	0.024%
90	21.577	1859	1866	1871	rBV3	1145	4291	0.24%	0.049%
91	21.660	1871	1874	1877	rVB	895	1643	0.09%	0.019%
92	21.753	1877	1883	1888	rBV2	920	3042	0.17%	0.034%
93	21.846	1888	1892	1894	rBV3	1527	2860	0.16%	0.032%
94	21.918	1894	1899	1900	rVB2	1204	2126	0.12%	0.024%
95	21.991	1904	1906	1911	rBV3	1247	3008	0.17%	0.034%
96	22.073	1911	1914	1916	rBV	759	1255	0.07%	0.014%
97	22.146	1918	1921	1925	rVB3	728	1119	0.06%	0.013%
98	22.239	1927	1930	1932	rBV	1024	1519	0.09%	0.017%
99	22.311	1934	1937	1939	rBV2	1182	2152	0.12%	0.024%
100	22.363	1939	1942	1943	rBV2	1276	2238	0.13%	0.025%

Sum of corrected areas: 8835836

8M391583.D 8260WT.M Tue Oct 15 13:12:52 2013 Page 2

LSC Report - Integrated Chromatogram

```
File        : C:\MSDCHEM\1\DATA\101413\8M391583.D
Operator    : TMB
Acquired    : 15 Oct 2013  00:48     using AcqMethod 8260WT
Instrument :   HPMS8
Sample Name: WG448583-04 VBLK1014 BLANK STD 624
Misc Info   : 2,1
Vial Number: 26
Quant File :8260WT.RES (RTE Integrator)
```

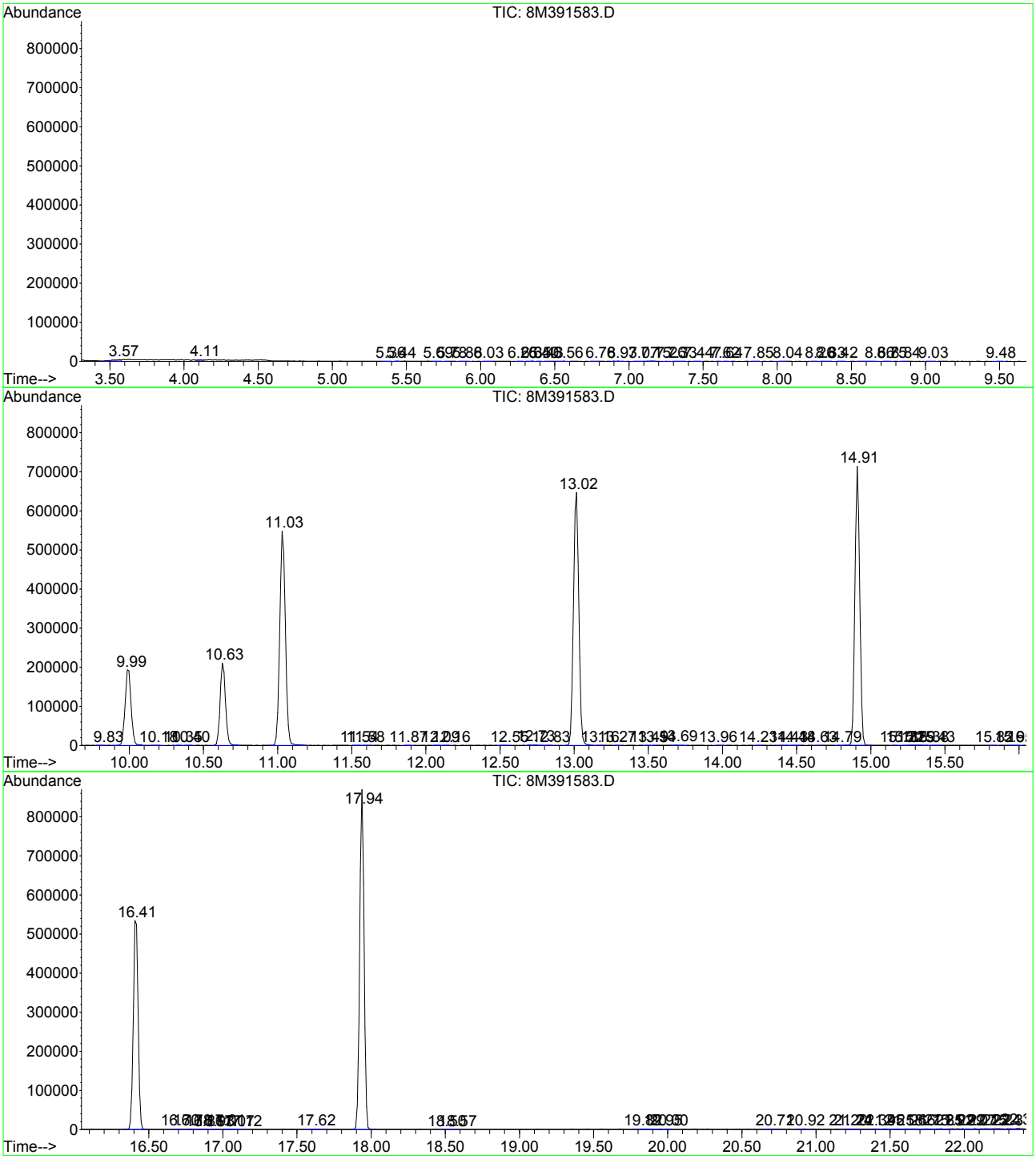

8M391583.D 8260WT.M Tue Oct 15 13:12:53 2013 Page 3

Tentatively Identified Compound (LSC) summary

Operator ID: TMB Date Acquired: 15 Oct 2013 00:48
Data File: C:\MSDCHEM\1\DATA\101413\8M391583.D
Name: WG448583-04 VBLK1014 BLANK STD 624
Misc: 2,1
Method: C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title: Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Library Searched: C:\DATABASE\NIST02.L

						--Internal Standard---|			
TIC	Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101413\8M391562.D Vial: 5
Acq On : 14 Oct 2013 13:58 Operator: TMB
Sample : WG448583-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD60753 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 14:20:31 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	712239	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	563493	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	328198	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.99	111	191133	23.6001 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.40%		
43) 1,2-Dichloroethane-d4	10.63	65	216299	22.7815 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.12%		
58) Toluene-d8	13.02	98	660367	24.6053 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.44%		
80) p-Bromofluorobenzene	16.41	95	270705	23.7426 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	201751	25.4465 ug/L	98
3) Chloromethane	3.86	50	190339	18.7751 ug/L	98
4) Vinyl Chloride	4.09	62	173425	20.0066 ug/L	97
5) 1,3-Butadiene	4.15	54	170163	19.4508 ug/L	96
6) Bromomethane	5.02	94	88463	17.5643 ug/L	99
7) Chloroethane	5.18	64	110166	20.6123 ug/L	93
8) Trichlorofluoromethane	5.69	101	292515	20.9692 ug/L	99
9) Diethyl ether	6.21	59	620426	109.4270 ug/L	83
10) Isoprene	6.25	67	198216	20.4542 ug/L	76
11) Acrolein	6.46	56	81584	144.9934 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.47	101	163107	22.7623 ug/L	85
13) Acetone	6.57	43	35524	20.9703 ug/L	90
14) 1,1-Dichloroethene	6.79	61	248506	19.0568 ug/L	84
15) Tert-Butyl Alcohol	6.90	59	70136	189.2898 ug/L	94
16) Dimethyl Sulfide	7.05	62	168401	24.1116 ug/L	81
17) Iodomethane	7.31	142	159385	22.9170 ug/L	94
18) Methyl acetate	7.32	43	106831	20.9539 ug/L #	84
19) Methylene Chloride	7.58	84	140127	19.6109 ug/L	59
20) Carbon Disulfide	7.63	76	418522	19.8887 ug/L	99
21) Acrylonitrile	7.75	53	244746	108.3881 ug/L	95
22) Methyl Tert Butyl Ether	7.79	73	372116	20.2838 ug/L	91
23) trans-1,2-Dichloroethene	8.02	61	245265	20.1797 ug/L	85
24) n-Hexane	8.11	57	206617	20.6507 ug/L	90
25) Diisopropyl ether	8.45	45	3283393	104.0386 ug/L	92
26) Vinyl Acetate	8.61	43	325272	25.7917 ug/L	91
27) 1,1-Dichloroethane	8.65	63	283975	19.8626 ug/L	97
28) Ethyl-Tert-Butyl ether	9.02	59	2584518	103.1640 ug/L	92
29) 2-Butanone	9.20	43	54188	19.9937 ug/L	84
30) Propionitrile	9.32	54	75927	97.7153 ug/L	99
31) 2,2-Dichloropropane	9.43	77	252880	21.2052 ug/L	99
32) cis-1,2-Dichloroethene	9.49	96	159616	20.0683 ug/L	75
33) Chloroform	9.70	83	276088	19.2132 ug/L	99
34) 1-Bromopropane	9.84	122	37762	23.9128 ug/L	98
35) Bromochloromethane	9.94	130	98149	19.5160 ug/L #	69
36) Tetrahydrofuran	9.96	42	185898	96.0038 ug/L	80
38) 1,1,1-Trichloroethane	10.24	97	263478	19.9581 ug/L	99
39) Cyclohexane	10.27	56	278496	19.8680 ug/L	77
40) 1,1-Dichloropropene	10.43	75	207788	19.9414 ug/L	94
41) Tert-Amyl-Methyl ether	10.53	73	1927640	102.0160 ug/L	89
42) Carbon Tetrachloride	10.58	117	245281	19.6137 ug/L	99
45) 1,2-Dichloroethane	10.75	62	226643	19.2045 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101413\8M391562.D Vial: 5
Acq On : 14 Oct 2013 13:58 Operator: TMB
Sample : WG448583-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD60753 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 14:20:31 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.79	78	567318	19.9299	ug/L	87
47)	Trichloroethene	11.54	130	170961	19.6510	ug/L	94
48)	Methylcyclohexane	11.63	83	220687	20.3009	ug/L	82
49)	1,2-Dichloropropane	11.76	63	152896	20.1496	ug/L	95
50)	Bromodichloromethane	12.06	83	209973	19.6484	ug/L	99
51)	1,4-Dioxane	12.04	88	5960	170.5676	ug/L	89
52)	Dibromomethane	12.15	93	80873	20.0048	ug/L	92
53)	2-Chloroethyl Vinyl Ether	12.34	63	75747	18.6871	ug/L	89
54)	4-Methyl-2-Pentanone	12.38	58	35891	18.2532	ug/L	85
55)	cis-1,3-Dichloropropene	12.69	75	246929	21.2526	ug/L	98
56)	Dimethyl Disulfide	12.95	94	262626	21.6519	ug/L	100
59)	Toluene	13.11	91	610839	20.6604	ug/L	98
60)	Ethyl Methacrylate	13.19	69	145374	20.7452	ug/L	75
62)	trans-1,3-Dichloropropene	13.29	75	209675	19.1343	ug/L	100
63)	1,1,2-Trichloroethane	13.50	97	107506	20.1214	ug/L	94
64)	2-Hexanone	13.43	58	33512	19.0991	ug/L	81
65)	1,3-Dichloropropane	13.80	76	188355	19.5727	ug/L	74
66)	Tetrachloroethene	13.94	164	138918	20.4819	ug/L	92
67)	Dibromochloromethane	14.21	129	161328	20.1396	ug/L	98
68)	1,2-Dibromoethane	14.45	107	108685	19.3114	ug/L	94
69)	1-Chlorohexane	14.53	91	202829	21.5999	ug/L	75
70)	Chlorobenzene	14.96	112	410930	19.0148	ug/L	87
71)	1,1,1,2-Tetrachloroethane	14.99	131	172218	19.9143	ug/L	100
72)	Ethylbenzene	14.98	106	229025	19.6493	ug/L	86
73)	m-,p-Xylene	15.07	106	545922	39.8419	ug/L	89
74)	o-Xylene	15.63	106	260655	18.9476	ug/L	87
75)	Styrene	15.67	104	470980	20.8130	ug/L	92
76)	Bromoform	16.18	173	101095	19.6017	ug/L	99
77)	Isopropylbenzene	16.06	105	680537	19.7366	ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.27	83	120574	20.0512	ug/L	98
81)	1,2,3-Trichloropropane	16.47	110	40709	19.6800	ug/L	79
82)	trans-1,4-Dichloro-2-Buten	16.51	53	34855	14.4402	ug/L	80
83)	n-Propylbenzene	16.57	91	766596	19.3460	ug/L	95
84)	Bromobenzene	16.71	156	203133	20.2391	ug/L	77
85)	1,3,5-Trimethylbenzene	16.76	105	650816	21.6087	ug/L	95
86)	2-Chlorotoluene	16.84	91	483236	18.3017	ug/L	96
87)	4-Chlorotoluene	16.89	91	513596	20.3602	ug/L	85
88)	a-Methylstyrene	17.16	118	368404	21.0436	ug/L	92
89)	tert-Butylbenzene	17.22	134	128769	19.4451	ug/L	88
90)	1,2,4-Trimethylbenzene	17.28	105	664483	21.0943	ug/L	94
91)	sec-Butylbenzene	17.49	105	695159	19.6676	ug/L	97
92)	p-Isopropyltoluene	17.65	119	645570	20.0051	ug/L	97
93)	1,3-Dichlorobenzene	17.86	146	366929	19.0174	ug/L	96
94)	1,4-Dichlorobenzene	17.98	146	402244	20.0146	ug/L	94
95)	n-Butylbenzene	18.18	91	565177	21.0275	ug/L	95
96)	1,2-Dichlorobenzene	18.48	146	344402	18.5773	ug/L	96
97)	1,2-Dibromo-3-Chloropropan	19.47	75	24636	18.8213	ug/L	88
98)	1,2,4-Trichlorobenzene	20.62	180	287018	20.7934	ug/L	99
99)	Hexachlorobutadiene	20.77	225	104802	20.4618	ug/L	97
100)	Naphthalene	21.00	128	514343	19.9226	ug/L	99
101)	1,2,3-Trichlorobenzene	21.31	180	253378	20.0190	ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101413\8M391562.D Vial: 5
Acq On : 14 Oct 2013 13:58 Operator: TMB
Sample : WG448583-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD60753 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 14:20 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

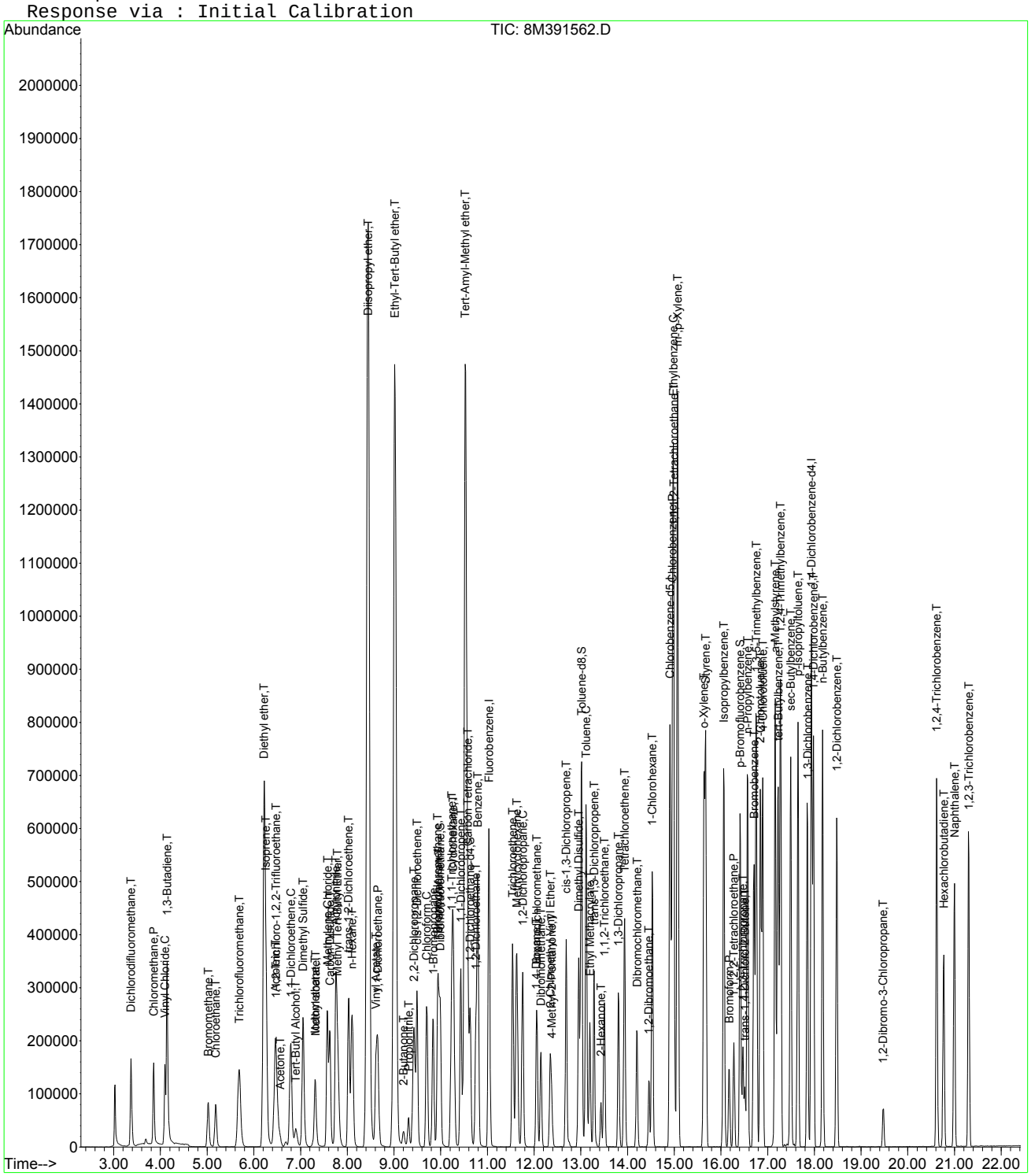
Abundance
TIC: 8M391562.D
Time-->
Dichlorodifluoromethane,T
Chloromethane,P
Vinyl Chloride,C
1,3-Butadiene,T
Bromomethane,T
Chloroethane,T
Trichlorofluoromethane,T
Acetone,T
Tert-Butyl Alcohol,T
Dimethyl Sulfide,T
Diethyl ether,T
Diisopropyl ether,T
Ethyl-Tert-Butyl ether,T
Tert-Amyl-Methyl ether,T
2-Butanone,T
Fluorobenzene,I
Toluene-d8,S
Toluene,C
Chlorobenzene-d5,S
Ethylbenzene,T
m,p-Xylene,T
o-Xylene,T
Styrene,T
Isopropylbenzene,T
n-Propylbenzene,T
1,3,5-Trimethylbenzene,T
1,2,4-Trichlorobenzene,T
Hexachlorobutadiene,T
Naphthalene,T
1,2,3-Trichlorobenzene,T
1,2-Dibromo-3-Chloropropane,T
1,2-Dichlorobenzene,T
n-Butylbenzene,T
1,3-Dichlorobenzene,T
1,4-Dichlorobenzene-d4,I
sec-Butylbenzene,T
p-Isopropyltoluene,T
1,2-Dichloroethane,T
1,1,1-Trichloroethane,T
1,1,2-Trichloroethane,T
1,3-Dichloropropane,T
Tetrachloroethene,T
1-Chlorohexane,T
Dibromochloromethane,T
1,2-Dibromoethane,T
2-Hexanone,T
Ethyl Methacrylate,T
Chlorobenzene,T
Bromoform,P
Tetrachloroethane,P
Bromobenzene,T
Benzene,T
Trichloroethene,T
Dibromomethane,T
4-Methyl-2-Pentanone,T
Methyl Ether,T
cis-1,3-Dichloropropene,T
Methylene Chloride,T
Carbon Tetrachloride,T
Methyl Tert-Butyl Ether,T
n-Hexane,T
1,2-Dichloroethene,T
Vinyl Acetate,T
Acrylonitrile,T
Methyl Acrylate,T
Methyl Methacrylate,T
Acrylonitrile,T
Isoprene,T
1,2,2-Trifluoroethane,T
1,1-Dichloroethene,C
Chloroprene,T
2,2-Dichloropropane,T
1-Bromochloromethane,S
Chloroform,C
1,1-Dichloroethane,T
1,1,1-Trichloroethane,T
Cyclohexane,T
1,2-Dichloropropane,T
Dibromofluoromethane,S
1,4-Dioxane,T
Dibromomethane,T
Chloroethane,T
Methyl Ethyl Ketone,T
Methyl Isobutyl Ketone,T
Methyl Methacrylate,T
Methyl Acrylate,T
Methyl Methacrylate,T
Methyl Methacrylate,T
Methyl Methac

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101513\8M391592.D Vial: 5
Acq On : 15 Oct 2013 8:24 Operator: TMB
Sample : WG448662-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD60753 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 08:46:34 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	767661	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	618713	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	368206	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.99	111	198223	22.7085 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.84%		
43) 1,2-Dichloroethane-d4	10.63	65	217829	21.2863 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.16%		
58) Toluene-d8	13.02	98	690987	23.4484 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.80%		
80) p-Bromofluorobenzene	16.41	95	288847	22.5811 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.32%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	194966	22.8154 ug/L	99
3) Chloromethane	3.86	50	225047	20.5961 ug/L	100
4) Vinyl Chloride	4.09	62	186143	19.9235 ug/L	97
5) 1,3-Butadiene	4.13	54	169543	17.9808 ug/L	96
6) Bromomethane	5.01	94	97868	18.0120 ug/L	99
7) Chloroethane	5.18	64	122016	21.1812 ug/L	95
8) Trichlorofluoromethane	5.69	101	305047	20.2889 ug/L	99
9) Diethyl ether	6.22	59	650325	106.4195 ug/L	85
10) Isoprene	6.25	67	214108	20.4990 ug/L	80
11) Acrolein	6.46	56	82050	135.2938 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.47	101	176834	22.8963 ug/L	85
13) Acetone	6.56	43	35820	19.6185 ug/L	95
14) 1,1-Dichloroethene	6.79	61	267869	19.0586 ug/L	87
15) Tert-Butyl Alcohol	6.91	59	102527	256.7325 ug/L	99
16) Dimethyl Sulfide	7.05	62	180771	24.0141 ug/L	82
17) Iodomethane	7.31	142	170142	22.7018 ug/L	98
18) Methyl acetate	7.32	43	115229	20.9694 ug/L	85
19) Methylene Chloride	7.58	84	153050	19.8731 ug/L	61
20) Carbon Disulfide	7.62	76	447346	19.7236 ug/L	99
21) Acrylonitrile	7.75	53	267699	109.9940 ug/L	93
22) Methyl Tert Butyl Ether	7.78	73	395664	20.0103 ug/L	91
23) trans-1,2-Dichloroethene	8.02	61	265092	20.2363 ug/L	85
24) n-Hexane	8.11	57	213092	19.7602 ug/L	90
25) Diisopropyl ether	8.45	45	3463905	101.8343 ug/L	92
26) Vinyl Acetate	8.61	43	324810	23.8957 ug/L	91
27) 1,1-Dichloroethane	8.65	63	309653	20.0950 ug/L	97
28) Ethyl-Tert-Butyl ether	9.01	59	2711422	100.4157 ug/L	92
29) 2-Butanone	9.20	43	56793	19.4420 ug/L	84
30) Propionitrile	9.31	54	89161	106.4627 ug/L	97
31) 2,2-Dichloropropane	9.43	77	272073	21.1675 ug/L	99
32) cis-1,2-Dichloroethene	9.49	96	176722	20.6148 ug/L	77
33) Chloroform	9.70	83	297259	19.1930 ug/L	98
34) 1-Bromopropane	9.84	122	39404	23.1511 ug/L	100
35) Bromochloromethane	9.94	130	108137	19.9497 ug/L #	69
36) Tetrahydrofuran	9.96	42	200315	95.9806 ug/L	80
38) 1,1,1-Trichloroethane	10.23	97	277316	19.4897 ug/L	100
39) Cyclohexane	10.27	56	288222	19.0774 ug/L	78
40) 1,1-Dichloropropene	10.43	75	221592	19.7308 ug/L	95
41) Tert-Amyl-Methyl ether	10.53	73	2050342	100.6758 ug/L	91
42) Carbon Tetrachloride	10.58	117	256402	19.0227 ug/L	99
45) 1,2-Dichloroethane	10.75	62	233360	18.3461 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101513\8M391592.D Vial: 5
Acq On : 15 Oct 2013 8:24 Operator: TMB
Sample : WG448662-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD60753 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 08:46:34 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.79	78	627156	20.4414	ug/L	90
47)	Trichloroethene	11.54	130	189361	20.1945	ug/L	96
48)	Methylcyclohexane	11.63	83	227404	19.4085	ug/L	83
49)	1,2-Dichloropropane	11.75	63	164513	20.1153	ug/L	95
50)	Bromodichloromethane	12.05	83	221283	19.2118	ug/L	98
51)	1,4-Dioxane	12.04	88	11951	317.3298	ug/L	86
52)	Dibromomethane	12.15	93	85543	19.6323	ug/L	94
53)	2-Chloroethyl Vinyl Ether	12.34	63	79724	18.2483	ug/L	89
54)	4-Methyl-2-Pentanone	12.38	58	39366	18.5751	ug/L	85
55)	cis-1,3-Dichloropropene	12.69	75	267759	21.3816	ug/L	98
56)	Dimethyl Disulfide	12.95	94	274730	21.0146	ug/L	99
59)	Toluene	13.11	91	692586	21.3346	ug/L	99
60)	Ethyl Methacrylate	13.19	69	153203	19.9112	ug/L	78
62)	trans-1,3-Dichloropropene	13.29	75	224371	18.6480	ug/L	100
63)	1,1,2-Trichloroethane	13.50	97	115498	19.6879	ug/L	93
64)	2-Hexanone	13.43	58	36158	18.7679	ug/L	86
65)	1,3-Dichloropropane	13.81	76	202567	19.1708	ug/L	75
66)	Tetrachloroethene	13.94	164	155803	20.9212	ug/L	97
67)	Dibromochloromethane	14.21	129	173269	19.6998	ug/L	99
68)	1,2-Dibromoethane	14.45	107	121747	19.7016	ug/L	100
69)	1-Chlorohexane	14.54	91	213143	20.6725	ug/L	76
70)	Chlorobenzene	14.96	112	456870	19.2538	ug/L	90
71)	1,1,1,2-Tetrachloroethane	14.99	131	186625	19.6543	ug/L	100
72)	Ethylbenzene	14.98	106	254438	19.8813	ug/L	89
73)	m-,p-Xylene	15.07	106	611803	40.6650	ug/L	91
74)	o-Xylene	15.64	106	290852	19.2557	ug/L	90
75)	Styrene	15.67	104	527951	21.2483	ug/L	95
76)	Bromoform	16.18	173	106947	18.8857	ug/L	98
77)	Isopropylbenzene	16.07	105	748549	19.7716	ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.27	83	127755	18.9370	ug/L	99
81)	1,2,3-Trichloropropane	16.47	110	42987	18.5232	ug/L	85
82)	trans-1,4-Dichloro-2-Buten	16.51	53	35600	13.1463	ug/L	90
83)	n-Propylbenzene	16.57	91	843676	18.9778	ug/L	95
84)	Bromobenzene	16.71	156	228692	20.3098	ug/L	81
85)	1,3,5-Trimethylbenzene	16.76	105	743791	22.0124	ug/L	96
86)	2-Chlorotoluene	16.84	91	601936	20.3202	ug/L	95
87)	4-Chlorotoluene	16.89	91	486160	17.1785	ug/L	96
88)	a-Methylstyrene	17.16	118	390419	19.8780	ug/L	93
89)	tert-Butylbenzene	17.22	134	145742	19.6168	ug/L	92
90)	1,2,4-Trimethylbenzene	17.28	105	737179	20.8593	ug/L	96
91)	sec-Butylbenzene	17.49	105	770833	19.4390	ug/L	98
92)	p-Isopropyltoluene	17.65	119	718040	19.8331	ug/L	98
93)	1,3-Dichlorobenzene	17.86	146	410726	18.9743	ug/L	96
94)	1,4-Dichlorobenzene	17.98	146	449201	19.9224	ug/L	95
95)	n-Butylbenzene	18.18	91	622582	20.6465	ug/L	95
96)	1,2-Dichlorobenzene	18.48	146	385654	18.5421	ug/L	96
97)	1,2-Dibromo-3-Chloropropan	19.48	75	26616	18.1246	ug/L	87
98)	1,2,4-Trichlorobenzene	20.63	180	315504	20.3735	ug/L	100
99)	Hexachlorobutadiene	20.77	225	117581	20.4624	ug/L	97
100)	Naphthalene	21.00	128	568843	19.6395	ug/L	100
101)	1,2,3-Trichlorobenzene	21.31	180	278781	19.6327	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101513\8M391592.D Vial: 5
Acq On : 15 Oct 2013 8:24 Operator: TMB
Sample : WG448662-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD60753 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 15 8:46 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

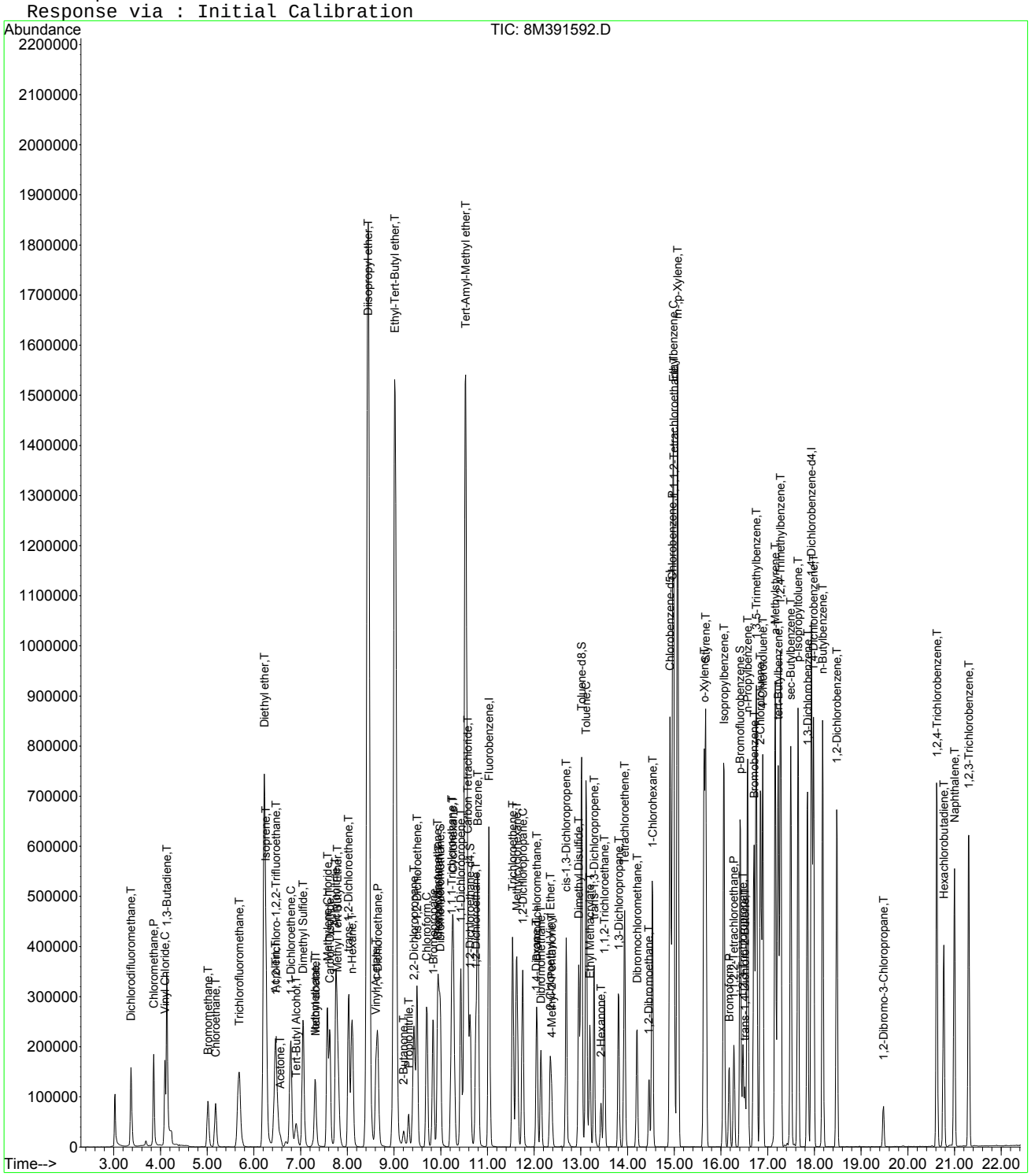

8M391592.D 8260WT.M Tue Oct 15 08:46:35 2013 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101413\8M391563.D Vial: 6
Acq On : 14 Oct 2013 14:29 Operator: TMB
Sample : WG448583-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD60753 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 14:51:33 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.03	96	701435	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.91	117	555474	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.94	152	326660	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.99	111	191344	23.9900 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.96%		
43) 1,2-Dichloroethane-d4	10.63	65	210620	22.5251 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.12%		
58) Toluene-d8	13.02	98	649990	24.5683 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.28%		
80) p-Bromofluorobenzene	16.41	95	268870	23.6927 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	184774	23.6642 ug/L	100
3) Chloromethane	3.86	50	191888	19.2195 ug/L	100
4) Vinyl Chloride	4.09	62	164651	19.2870 ug/L	97
5) 1,3-Butadiene	4.14	54	155305	18.0259 ug/L	96
6) Bromomethane	5.02	94	88817	17.8939 ug/L	98
7) Chloroethane	5.18	64	105809	20.1020 ug/L	93
8) Trichlorofluoromethane	5.69	101	277320	20.1862 ug/L	100
9) Diethyl ether	6.21	59	610677	109.3666 ug/L	84
10) Isoprene	6.25	67	195428	20.4771 ug/L	78
11) Acrolein	6.46	56	82375	148.6541 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.47	101	155007	21.9651 ug/L	86
13) Acetone	6.57	43	34195	20.4967 ug/L	93
14) 1,1-Dichloroethene	6.78	61	239572	18.6547 ug/L	84
15) Tert-Butyl Alcohol	6.90	59	80180	219.7307 ug/L	94
16) Dimethyl Sulfide	7.05	62	170295	24.7584 ug/L	79
17) Iodomethane	7.31	142	159099	23.2222 ug/L	96
18) Methyl acetate	7.32	43	108676	21.6441 ug/L	86
19) Methylene Chloride	7.57	84	138455	19.6753 ug/L	59
20) Carbon Disulfide	7.63	76	416262	20.0859 ug/L	99
21) Acrylonitrile	7.75	53	252131	113.3785 ug/L	96
22) Methyl Tert Butyl Ether	7.79	73	388894	21.5248 ug/L	91
23) trans-1,2-Dichloroethene	8.02	61	237830	19.8694 ug/L	85
24) n-Hexane	8.11	57	200147	20.3121 ug/L	89
25) Diisopropyl ether	8.45	45	3252821	104.6575 ug/L	92
26) Vinyl Acetate	8.61	43	343309	27.6412 ug/L	91
27) 1,1-Dichloroethane	8.65	63	278817	19.8022 ug/L	98
28) Ethyl-Tert-Butyl ether	9.02	59	2558365	103.6930 ug/L	92
29) 2-Butanone	9.20	43	56137	21.0319 ug/L	85
30) Propionitrile	9.32	54	78509	102.5945 ug/L	99
31) 2,2-Dichloropropane	9.43	77	253491	21.5839 ug/L	98
32) cis-1,2-Dichloroethene	9.49	96	159515	20.3645 ug/L	75
33) Chloroform	9.70	83	269817	19.0660 ug/L	100
34) 1-Bromopropane	9.83	122	35591	22.8851 ug/L	98
35) Bromochloromethane	9.94	130	98091	19.8049 ug/L #	67
36) Tetrahydrofuran	9.96	42	185800	97.4311 ug/L	81
38) 1,1,1-Trichloroethane	10.24	97	257711	19.8219 ug/L	99
39) Cyclohexane	10.27	56	269618	19.5309 ug/L	76
40) 1,1-Dichloropropene	10.43	75	195948	19.0947 ug/L	94
41) Tert-Amyl-Methyl ether	10.53	73	1927423	103.5757 ug/L	89
42) Carbon Tetrachloride	10.58	117	233628	18.9696 ug/L	99
45) 1,2-Dichloroethane	10.75	62	229808	19.7726 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101413\8M391563.D Vial: 6
Acq On : 14 Oct 2013 14:29 Operator: TMB
Sample : WG448583-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD60753 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 14:51:33 2013 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Benzene	10.79	78	561889	20.0432	ug/L	88
47)	Trichloroethene	11.54	130	166516	19.4348	ug/L	95
48)	Methylcyclohexane	11.62	83	211994	19.8016	ug/L	82
49)	1,2-Dichloropropane	11.76	63	149992	20.0714	ug/L	96
50)	Bromodichloromethane	12.06	83	211518	20.0978	ug/L	97
51)	1,4-Dioxane	12.04	88	8408	244.3325	ug/L	90
52)	Dibromomethane	12.15	93	81352	20.4332	ug/L	92
53)	2-Chloroethyl Vinyl Ether	12.34	63	78440	19.6496	ug/L	89
54)	4-Methyl-2-Pentanone	12.38	58	40631	20.9821	ug/L	83
55)	cis-1,3-Dichloropropene	12.69	75	248144	21.6862	ug/L	99
56)	Dimethyl Disulfide	12.95	94	267900	22.4269	ug/L	99
59)	Toluene	13.11	91	594956	20.4137	ug/L	99
60)	Ethyl Methacrylate	13.19	69	152931	22.1387	ug/L	76
62)	trans-1,3-Dichloropropene	13.29	75	212788	19.6987	ug/L	100
63)	1,1,2-Trichloroethane	13.50	97	107505	20.4117	ug/L	94
64)	2-Hexanone	13.43	58	36381	21.0335	ug/L	82
65)	1,3-Dichloropropane	13.80	76	187314	19.7455	ug/L	72
66)	Tetrachloroethene	13.94	164	132265	19.7825	ug/L	92
67)	Dibromochloromethane	14.20	129	163851	20.7498	ug/L	100
68)	1,2-Dibromoethane	14.45	107	114400	20.6203	ug/L	100
69)	1-Chlorohexane	14.53	91	199336	21.5344	ug/L	72
70)	Chlorobenzene	14.96	112	410061	19.2486	ug/L	87
71)	1,1,1,2-Tetrachloroethane	14.99	131	172224	20.2025	ug/L	100
72)	Ethylbenzene	14.98	106	226128	19.6808	ug/L	87
73)	m-,p-Xylene	15.07	106	540301	40.0009	ug/L	90
74)	o-Xylene	15.63	106	258518	19.0635	ug/L	88
75)	Styrene	15.67	104	469795	21.0603	ug/L	93
76)	Bromoform	16.18	173	102649	20.1904	ug/L	99
77)	Isopropylbenzene	16.06	105	667871	19.6489	ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.27	83	123337	20.6073	ug/L	98
81)	1,2,3-Trichloropropane	16.47	110	41878	20.3404	ug/L	80
82)	trans-1,4-Dichloro-2-Buten	16.51	53	36333	15.1234	ug/L	79
83)	n-Propylbenzene	16.56	91	751644	19.0580	ug/L	94
84)	Bromobenzene	16.71	156	202657	20.2867	ug/L	76
85)	1,3,5-Trimethylbenzene	16.75	105	649286	21.6594	ug/L	95
86)	2-Chlorotoluene	16.84	91	477367	18.1645	ug/L	95
87)	4-Chlorotoluene	16.89	91	516321	20.5646	ug/L	86
88)	a-Methylstyrene	17.16	118	373942	21.4605	ug/L	92
89)	tert-Butylbenzene	17.23	134	126874	19.2491	ug/L	87
90)	1,2,4-Trimethylbenzene	17.28	105	661120	21.0863	ug/L	94
91)	sec-Butylbenzene	17.49	105	679893	19.3263	ug/L	97
92)	p-Isopropyltoluene	17.65	119	633035	19.7090	ug/L	96
93)	1,3-Dichlorobenzene	17.86	146	373887	19.4693	ug/L	96
94)	1,4-Dichlorobenzene	17.98	146	402424	20.1178	ug/L	93
95)	n-Butylbenzene	18.18	91	568100	21.2358	ug/L	94
96)	1,2-Dichlorobenzene	18.48	146	351183	19.0322	ug/L	95
97)	1,2-Dibromo-3-Chloropropan	19.47	75	25438	19.5255	ug/L	88
98)	1,2,4-Trichlorobenzene	20.62	180	292201	21.2686	ug/L	100
99)	Hexachlorobutadiene	20.77	225	105009	20.5988	ug/L	97
100)	Naphthalene	21.00	128	532898	20.7385	ug/L	99
101)	1,2,3-Trichlorobenzene	21.30	180	258168	20.4935	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M391563.D 8260WT.M Mon Oct 14 14:51:33 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\101413\8M391563.D Vial: 6
Acq On : 14 Oct 2013 14:29 Operator: TMB
Sample : WG448583-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD60753 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 14 14:51 2013 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/01/13 HPMS 8
Last Update : Mon Oct 14 11:42:22 2013
Response via : Initial Calibration

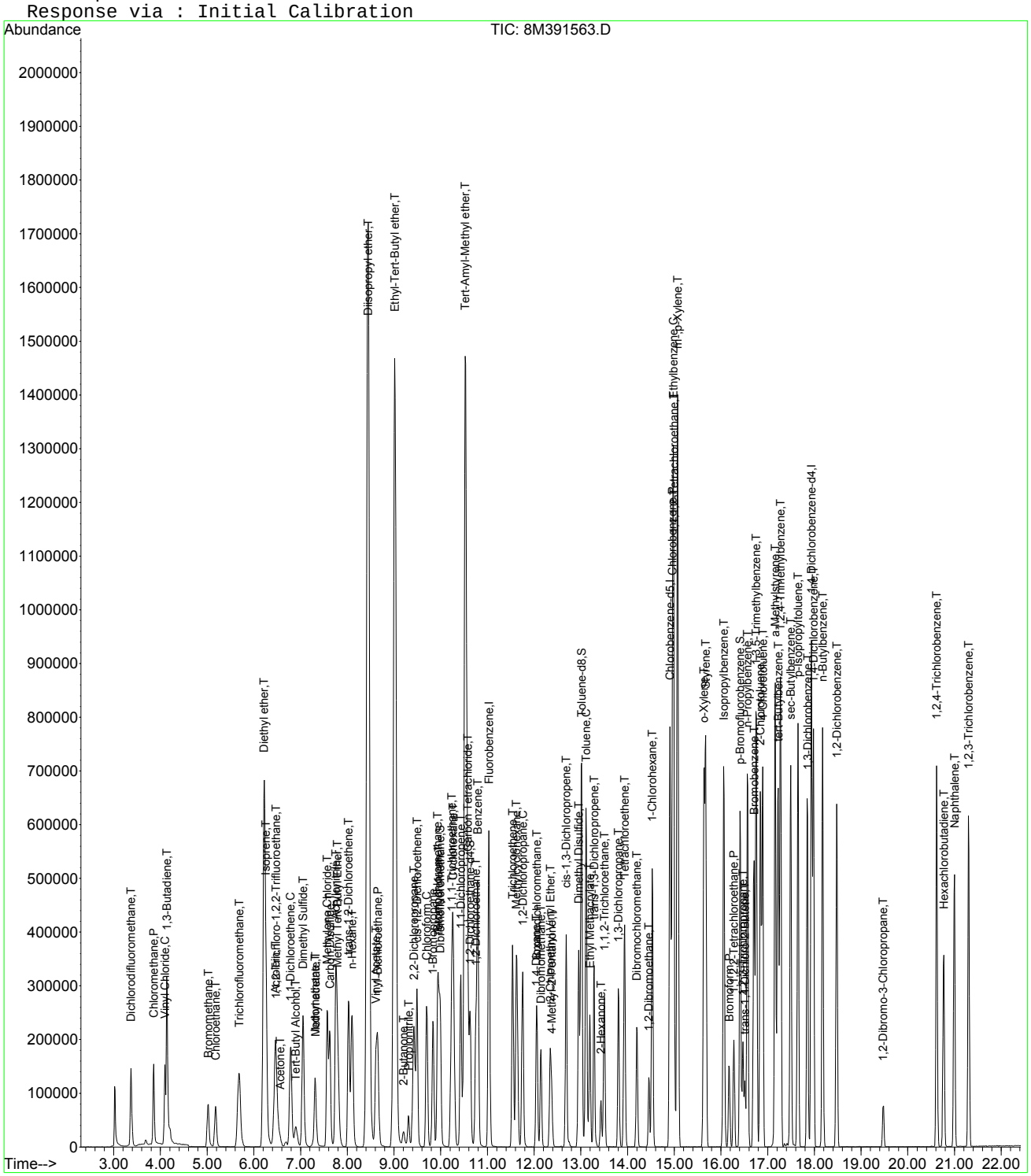

8M391563.D 8260WT.M Mon Oct 14 14:51:34 2013 Page 3

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW08-100213	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/02/2013 13:25
Workgroup #:	WG448119	**Analyst:**	QX	**Run Date:**	10/10/2013 15:05
Collect Date:	10/02/2013 08:50	**Dilution:**	1	**File ID:**	16G39820
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	9.49		5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW11-100213	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/02/2013 13:25
Workgroup #:	WG447706	**Analyst:**	QX	**Run Date:**	10/08/2013 13:12
Collect Date:	10/02/2013 10:20	**Dilution:**	1	**File ID:**	16G39801
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	4.38	J	5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:

y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 040213
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 45406

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD56793 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG425333, WG425112, WG425390

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G37318	WG425333-01 0.667umol/mol ICAL RSK17	NA	1	1	STD55748	04/02/13 09:57
16G37319	WG425333-02 1.67umol/mol ICAL RSK175	NA	1	1	STD55748	04/02/13 10:06
16G37320	WG425333-03 6.67umol/mol ICAL RSK175	NA	1	1	STD55748	04/02/13 10:16
16G37321	WG425333-04 16.67umol/mol ICAL RSK17	NA	1	1	STD55748	04/02/13 10:25
16G37322	WG425333-05 66.67umol/mol ICAL RSK17	NA	1	1	STD55748	04/02/13 10:34
16G37323	WG425333-06 133umol/mol ICAL RSK175	NA	1	1	STD55748	04/02/13 10:44
16G37324	WG425333-07 266umol/mol ICAL RSK175	NA	1	1	STD55748	04/02/13 10:53
16G37325	WG425333-08 400umol/mol ICAL RSK175	NA	1	1	STD55748	04/02/13 11:03
16G37326	WG425333-09 533umol/mol ICAL RSK175	NA	1	1	STD55748	04/02/13 11:12
16G37328	WG425333-02 1.67umol/mol ICAL RSK175	NA	1	1		04/02/13 13:06
16G37329	WG425333-03 6.67umol/mol ICAL RSK175	NA	1	1		04/02/13 13:16
16G37330	WG425333-04 16.67umol/mol ICAL RSK17	NA	1	1		04/02/13 13:25
16G37331	WG425333-10 133umol/mol ICV RSK175	NA	1	1	STD56793	04/02/13 13:58
16G37332	WG425333-10 133umol/mol ICV RSK175	NA	1	1	STD56793	04/02/13 14:21
16G37333	WG425212-01 BLANK RSK175	NA	1	1		04/02/13 14:40
16G37334	WG425212-02 67umol/mol LCS RSK175	NA	1	1	STD56793	04/02/13 14:59
16G37335	L13031013-07 C RSK175	<2	1	1		04/02/13 15:12
16G37336	L13031022-07 C 10X RSK175	<2	1	10		04/02/13 15:22
16G37337	L13031022-09 C 10X RSK175	<2	1	10		04/02/13 15:31
16G37338	L13031022-11 C 5X RSK175	<2	1	5		04/02/13 15:41
16G37339	WG425212-03 L13031079-01 REF B RSK17	<2	1	1		04/02/13 15:51
16G37340	WG425212-04 L13031079-06 MS B RSK17	<2	1	1	STD56793	04/02/13 16:00
16G37341	WG425212-05 L13031079-07 MS B RSK17	<2	1	1	STD56793	04/02/13 16:10
16G37342	L13031079-02 A RSK175	3	1	1		04/02/13 16:19
16G37343	WG425333-11 133umol/mol CCV RSK175	NA	1	1	STD55748	04/02/13 16:29
16G37344	L13031079-03 A RSK175	<2	1	1		04/02/13 16:38
16G37345	L13031052-01 A RSK175	<2	1	1		04/02/13 16:48
16G37346	L13031062-01 A RSK175	<2	1	1		04/02/13 16:58
16G37347	L13031063-01 A RSK175	<2	1	1		04/02/13 17:08
16G37348	L13031116-01 A RSK175	4	1	1		04/02/13 17:17
16G37349	L13031116-02 A RSK175	3	1	1		04/02/13 17:27
16G37350	L13031098-01 A RSK175	<2	1	1		04/02/13 17:37
16G37351	L13031102-01 A RSK175	<2	1	1		04/02/13 17:46
16G37352	L13031102-02 A RSK175	<2	1	1		04/02/13 17:56

Approved: April 04, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 040213
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 45406

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD56793 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG425333, WG425112, WG425390

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G37353	L13031143-01 A RSK175	<2	1	1		04/02/13 18:05
16G37354	WG425333-12 133umol/mol CCV RSK175	NA	1	1	STD55748	04/02/13 18:15
16G37355	L13031071-01 A RSK175	<2	1	1		04/02/13 18:25
16G37356	L13031022-13 A RSK175	<2	1	1		04/02/13 18:34
16G37357	WG425333-13 133umol/mol CCV RSK175	NA	1	1	STD55748	04/02/13 18:44
16G37358	WG425390-01 BLANK RSK175	NA	1	1		04/02/13 18:54
16G37359	WG425390-02 67umol/mol LCS RSK175	NA	1	1	STD56793	04/02/13 19:03
16G37360	WG425390-03 L13031080-01 REF A RSK17	<2	1	1		04/02/13 19:13
16G37361	WG425390-04 L13031080-03 MS A RSK17	<2	1	1	STD56793	04/02/13 19:23
16G37362	WG425390-05 L13031080-05 MSD A RSK1	<2	1	1	STD56793	04/02/13 19:32
16G37363	L13031080-07 A RSK175	<2	1	1		04/02/13 19:42
16G37364	L13031080-09 A RSK175	<2	1	1		04/02/13 19:51
16G37365	L13031080-11 A RSK175	<2	1	1		04/02/13 20:01
16G37366	L13031148-01 A RSK175	<2	1	1		04/02/13 20:11
16G37367	L13031148-02 A RSK175	<2	1	1		04/02/13 20:20
16G37368	WG425333-14 133umol/mol CCV RSK175	NA	1	1	STD55748	04/02/13 20:30
16G37369	L13031148-03 A RSK175	<2	1	1		04/02/13 20:39
16G37370	L13031148-04 A RSK175	<2	1	1		04/02/13 20:49
16G37371	L13031148-05 A RSK175	<2	1	1		04/02/13 20:58
16G37372	L13031148-06 A RSK175	<2	1	1		04/02/13 21:08
16G37373	L13031148-07 A RSK175	<2	1	1		04/02/13 21:17
16G37374	L13031148-08 A RSK175	<2	1	1		04/02/13 21:27
16G37375	L13031148-09 A RSK175	<2	1	1		04/02/13 21:36
16G37376	L13031148-10 A RSK175	<2	1	1		04/02/13 21:45
16G37377	L13031072-01 A RSK175	<2	1	1		04/02/13 21:54
16G37378	L13031073-01 A RSK175	<2	1	1		04/02/13 22:04
16G37379	WG425333-15 133umol/mol CCV RSK175	NA	1	1	STD55748	04/02/13 22:13
16G37380	L13031078-01 A RSK175	<2	1	1		04/02/13 22:22
16G37381	L13031077-01 A RSK175	<2	1	1		04/02/13 22:31
16G37382	WG425333-16 133umol/mol CCV RSK175	NA	1	1	STD55748	04/02/13 22:40

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: April 04, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 040213
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 45406

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD56793 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG425333, WG425112, WG425390

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2 File ID: 16G37319				
	DNR RR			
3 File ID: 16G37320				
	DNR RR			
4 File ID: 16G37321				
	DNR RR			
13 File ID: 16G37331				
	DNR RR			
24 File ID: 16G37342				
	rr 5x methane			
26 File ID: 16G37344				
	rr 5x methane			
27 File ID: 16G37345				
	dnr rr st			
28 File ID: 16G37346				
	dnr rr st			
29 File ID: 16G37347				
	dnr rr st			
30 File ID: 16G37348				
	rr 10x methane			
31 File ID: 16G37349				
	rr 10x methane			
32 File ID: 16G37350				
	dnr rr st			

Approved: April 04, 2013

Page: 3

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 040213
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 45406

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD56793 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG425333, WG425112, WG425390

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
33 File ID: 16G37351				
	dnr rr st			
46 File ID: 16G37364				
	rr 20x methane			
47 File ID: 16G37365				
	rr 25x methane			
48 File ID: 16G37366				
	dnr rr st			
49 File ID: 16G37367				
	dnr rr st			

Approved: April 04, 2013

Page: 4

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 100813
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 47650

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD56793 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: NA
Workgroups: wg447706

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G39788	WG447704-01 133umol/mol CCV RSK	NA	1	1	STD55748	10/08/13 11:08
16G39789	WG447706-01 BLANK RSK175	NA	1	1		10/08/13 11:19
16G39790	WG447706-02 67umol/mol LCS RSK175	NA	1	1	STD56793	10/08/13 11:31
16G39791	WG447706-03 67umol/mol LCS2 RSK	NA	1	1	STD56793	10/08/13 11:40
16G39792	L13100222-01 C 50X RSK175	<2	1	50		10/08/13 11:49
16G39793	L13100308-01 C 20X RSK175	<2	1	20		10/08/13 11:58
16G39794	L13100308-02 C 5X RSK175	<2	1	5		10/08/13 12:08
16G39795	L13100416-01 B 50X RSK175	<2	1	50		10/08/13 12:17
16G39796	L13100416-02 B 25X RSK175	<2	1	25		10/08/13 12:26
16G39797	L13100308-08 A RSK175	<2	1	1		10/08/13 12:35
16G39798	L13100308-09 A RSK175	<2	1	1		10/08/13 12:45
16G39799	WG447704-02 133umol/mol RSK175	NA	1	1	STD55748	10/08/13 12:53
16G39800	L13100266-05 A RSK175	7	1	1		10/08/13 13:02
16G39801	L13100266-07 A RSK175	7	1	1		10/08/13 13:12
16G39802	L13100331-01 A RSK175	<2	1	1		10/08/13 13:21
16G39803	L13100331-03 A RSK175	<2	1	1		10/08/13 13:30
16G39804	L13100333-01 A RSK175	<2	1	1		10/08/13 13:39
16G39805	L13100333-03 A RSK175	<2	1	1		10/08/13 13:48
16G39806	L13100333-05 A RSK175	<2	1	1		10/08/13 13:57
16G39807	L13100334-02 A RSK175	<2	1	1		10/08/13 14:07
16G39808	L13100334-03 A RSK175	<2	1	1		10/08/13 14:15
16G39809	L13100334-04 A RSK175	<2	1	1		10/08/13 14:25
16G39810	WG447704-03 133umol/mol RSK175	NA	1	1	STD55748	10/08/13 14:34
16G39811	L13100340-01 A RSK175	5	1	1		10/08/13 14:43
16G39812	L13100340-02 A RSK175	5	1	1		10/08/13 14:52
16G39813	L13100340-03 A RSK175	5	1	1		10/08/13 15:01
16G39814	WG447704-04 133umol/mol RSK175	NA	1	1	STD55748	10/08/13 15:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10				
File ID: 16G39797				
needs dilution				

Approved: October 08, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 100813
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 47650

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD56793 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: NA
Workgroups: wg447706

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
11 File ID: 16G39798				
	needs dilution			
25 File ID: 16G39812				
	needs dilution			
26 File ID: 16G39813				
	needs dilution			

Approved: October 08, 2013

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 101013
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 47722

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD56793 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: NA
Workgroups: wg448119

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G39815	WG448118-01 133umol/mol RSK175	NA	1	1	STD55748	10/10/13 13:47
16G39816	WG448119-01 BLANK RSK175	NA	1	1		10/10/13 14:10
16G39817	WG448119-01 BLANK RSK175	NA	1	1		10/10/13 14:32
16G39818	WG448119-02 67umol/mol LCS RSK175	NA	1	1	STD56793	10/10/13 14:44
16G39819	L13100331-01 B RSK175	<2	1	1		10/10/13 14:56
16G39820	L13100266-05 B RSK175	6	1	1		10/10/13 15:05
16G39821	L13100308-08 B 20X RSK175	<2	1	20		10/10/13 15:14
16G39822	L13100308-09 B 20X RSK175	<2	1	20		10/10/13 15:23
16G39823	L13100340-03 B 10X RSK175	<2	1	10		10/10/13 15:32
16G39824	L13100604-09 A REF RSK175	<2	1	1		10/10/13 15:41
16G39825	L13100604-11 A MS RSK175	<2	1	1	STD56793	10/10/13 15:50
16G39826	L13100604-13 A MSD RSK175	<2	1	1	STD56793	10/10/13 16:00
16G39827	WG448118-02 133umol/mol RSK175	NA	1	1	STD55748	10/10/13 16:09
16G39828	L13100340-04 A RSK175	<2	1	1		10/10/13 16:18
16G39829	L13100433-01 A RSK175	<2	1	1		10/10/13 16:27
16G39830	L13100433-02 A RSK175	<2	1	1		10/10/13 16:36
16G39831	L13100433-08 A RSK175	<2	1	1		10/10/13 16:45
16G39832	L13100433-10 A RSK175	<2	1	1		10/10/13 16:54
16G39833	L13100433-15 A RSK175	<2	1	1		10/10/13 17:04
16G39834	L13100433-17 A RSK175	<2	1	1		10/10/13 17:13
16G39835	L13100540-01 A RSK175	<2	1	1		10/10/13 17:22
16G39836	L13100604-01 A RSK175	<2	1	1		10/10/13 17:31
16G39837	L13100604-03 A RSK175	<2	1	1		10/10/13 17:40
16G39838	WG448118-03 133umol/mol RSK175	NA	1	1	STD55748	10/10/13 17:49
16G39839	L13100604-05 A RSK175	<2	1	1		10/10/13 17:58
16G39840	L13100604-07 A RSK175	<2	1	1		10/10/13 18:08
16G39841	WG448118-04 133umol/mol RSK175	NA	1	1	STD55748	10/10/13 18:17

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 16G39816				
BLANK BY HIGH, RERUN.				

Approved: October 15, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 101013
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 47722

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD56793 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: NA
Workgroups: wg448119

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X	5	Over Calibration Range	M
File ID: 16G39824				
14	X	1	Carry-over contamination	
File ID: 16G39828				
15	X	20	Over Calibration Range	M
File ID: 16G39829				
16	X	25	Over Calibration Range	M
File ID: 16G39830				
17	X	50	Over Calibration Range	M
File ID: 16G39831				
18	X	50	Over Calibration Range	M
File ID: 16G39832				
19	X	25	Over Calibration Range	M
File ID: 16G39833				
20	X	20	Over Calibration Range	M
File ID: 16G39834				
21	X	1	Carry-over contamination	
File ID: 16G39835				
23	X	50	Over Calibration Range	M
File ID: 16G39837				
25	X	20	Over Calibration Range	M
File ID: 16G39839				
26	X	5	Over Calibration Range	M
File ID: 16G39840				

Approved: October 15, 2013

Page: 2

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B167647

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG425333-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG425333-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG425333-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG425333-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG425333-08	15	mL	15	mL					5.47	mL	5.47	mL	40
WG425333-09	15	mL	15	mL					5.47	mL	5.47	mL	40
WG425333-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG425333-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG425333-04	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B167648

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG425333-10	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B177487

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG447704-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG447704-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG447704-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG447704-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100416-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100308-09	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100334-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100308-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100331-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100340-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG447706-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L13100340-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100333-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100334-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100340-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG447706-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L13100416-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100266-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100222-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100308-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100266-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100333-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100334-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100331-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG447706-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100308-08	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100333-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B177757

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG448118-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG448118-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG448118-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG448118-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100340-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100604-11	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
WG448119-04	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L13100433-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100433-10	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100433-15	15	mL	15	mL					5.47	mL	5.47	mL	40
WG448119-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100331-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100308-09	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100604-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG448119-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
WG448119-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100540-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100604-13	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L13100433-17	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100604-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100266-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100340-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100604-09	15	mL	15	mL					5.47	mL	5.47	mL	40
WG448119-05	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L13100433-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100433-08	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100604-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100604-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L13100308-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 02-APR-2013
Analyst: QX
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: WG425333
Runlog ID: 52261
Analytical Workgroups: WG425333, WG425112, WG425390

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	NA
Surrogates	NA
MS/MSD/Duplicates	X
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	QX
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer: 04-APR-2013

Secondary Reviewer: 04-APR-2013

CHECKLIST1 - Modified 03/05/2008
Generated: APR-23-2013 15:53:13

Microbac Laboratories Inc.

Data Checklist

Date: 08-OCT-2013
Analyst: QX
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 56173
Analytical Workgroups: WG447706

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	QX
Secondary Reviewer	
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer: Secondary Reviewer:

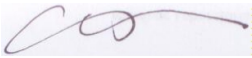

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-11-2013 08:53:42

Microbac Laboratories Inc.

Data Checklist

Date: 10-OCT-2013
Analyst: QX
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 56298
Analytical Workgroups: WG448119

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	X
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	QX
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
15-OCT-2013

Secondary Reviewer:
15-OCT-2013

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-15-2013 12:45:17

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG447706

Login Number: L13100266

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW11-100213	07	10/02/13					10/08/2013	6.1	14		10/08/13	6.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3128067
Report generated 10/21/2013 13:11

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG448119

Login Number: L13100266

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-100213	05	10/02/13					10/10/2013	8.3	14		10/10/13	8.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3128067
Report generated 10/21/2013 13:11

METHOD BLANK SUMMARY

Login Number: L13100266
Blank File ID: 16G39789
Prep Date: 10/08/13 11:19
Analyzed Date: 10/08/13 11:19
Analyst: QX

Work Group: WG447706
Blank Sample ID: WG447706-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG447706-02	16G39790	10/08/13 11:31	01
LCS2	WG447706-03	16G39791	10/08/13 11:40	01
67WW11-100213	L13100266-07	16G39801	10/08/13 13:12	01

Report Name: BLANK_SUMMARY
PDF File ID: 3128068
Report generated 10/21/2013 13:11

METHOD BLANK SUMMARY

Login Number: L13100266
Blank File ID: 16G39817
Prep Date: 10/10/13 14:32
Analyzed Date: 10/10/13 14:32
Analyst: QX

Work Group: WG448119
Blank Sample ID: WG448119-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG448119-02	16G39818	10/10/13 14:44	01
67WW08-100213	L13100266-05	16G39820	10/10/13 15:05	02

Report Name: BLANK_SUMMARY
PDF File ID: 3128068
Report generated 10/21/2013 13:11

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13100266 Prep Date: 10/08/13 11:19 Sample ID: WG447706-01
Instrument ID: HP16 Run Date: 10/08/13 11:19 Prep Method: 5021
File ID: 16G39789 Analyst: QX Method: RSK175
Workgroup (AAB#): WG447706 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16-02-APR-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Methane	1.00	5.00	3.67	1	*
Ethene	1.00	5.00	1.00	1	U
Ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3128069
21-OCT-2013 13:11

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13100266 Prep Date: 10/10/13 14:32 Sample ID: WG448119-01
Instrument ID: HP16 Run Date: 10/10/13 14:32 Prep Method: 5021
File ID: 16G39817 Analyst: QX Method: RSK175
Workgroup (AAB#): WG448119 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 02-APR-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Methane	1.00	5.00	4.20	1	*
Ethene	1.00	5.00	1.00	1	U
Ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3128069
21-OCT-2013 13:11

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13100266 Run Date: 10/10/2013 Sample ID: WG448119-02
Instrument ID: HP16 Run Time: 14:44 Prep Method: 5021
File ID: 16G39818 Analyst: QX Method: RSK175
Workgroup (AAB#): WG448119 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD56793 Cal ID: HP16 - 02-APR-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Methane	114	103	90.0	85 - 115	
Ethene	200	190	95.3	85 - 115	
Ethane	214	207	96.8	85 - 115	

LCS - Modified 03/06/2008
PDF File ID: 3136772
Report generated: 10/21/2013 13:11

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13100266 Analyst: QX Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG447706 Units: ug/L
QC Key: DOD4 Lot #: STD56793

Sample ID: WG447706-02 LCS File ID: 16G39790 Run Date: 10/08/2013 11:31
Sample ID: WG447706-03 LCS2 File ID: 16G39791 Run Date: 10/08/2013 11:40

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	107	94.1	114	111	96.8	2.86	85 - 115	20	
Ethene	200	204	102	200	208	104	2.11	85 - 115	20	
Ethane	214	221	103	214	226	106	2.31	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3128070
Report generated: 10/21/2013 13:11

Calibration Table Report
Method: RSK2EXT.M
Title: RSK175 HP16 (SOP: OVL RSK01) 040213
Last Calibration: Tue Apr 02 13:41:57 2013
Curve: WG425333
Calibration Files

	0.67	1.67	6.67	16.7	66.7	133	266	400	533		
	16G37318.D	16G37328.D	16G37329.D	16G37330.D	16G37322.D	16G37323.D	16G37324.D	16G37325.D	16G37326.D		
Compound										Avg	%RSD
methane			225468.037	179463.975	186372.433	167962.818	180532.553	179368.723	166712.437	183697.000	10.738
ethene		303583.784	298295.906	276525.918	317673.425	287845.657	308471.555	305743.710	283796.271	297742.000	4.670
acetylene		211867.163	224540.452	240333.485	273646.691	245434.113	260599.834	251928.796	232259.633	242576.000	8.194
ethane	265361.084	325947.024	313924.900	289698.844	330731.933	300502.936	322811.339	320484.291	297978.706	307493.000	6.857
propane	401579.085	488084.731	469435.960	426550.003	491900.003	447504.565	476658.561	473159.114	437234.132	456901.000	6.686
Signal #2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
carbon dioxide		6606.415	6633.056	6573.566	6547.482	6174.033	6389.216	6257.252	5676.281	6357.160	5.078

Thu Apr 04 13:28:10 2013

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13100266 Run Date: 04/02/2013 Sample ID: WG425333-10
Instrument ID: HP16 Run Time: 14:21 Method: RSK175
File ID: 16G37332 Analyst: QX QC Key: DOD4
ICal Workgroup: WG425333 Cal ID: HP16 - 02-APR-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
methane		228	211	ug/L	170000	7.30	15	
ethene		398	399	ug/L	298000	0.100	15	
ethane		427	430	ug/L	310000	0.700	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3128071
Report generated 10/21/2013 13:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13100266
Run Date: 10/08/2013
Sample ID: WG447704-01
Instrument ID: HP16
Run Time: 11:08
Method: RSK175
File ID: 16G39788
Analyst: QX
QC Key: DOD4
Workgroup (AAB#): WG447706
Cal ID: HP16 - 02-APR-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	212	ug/L	171000	7.06	15	
ethene		398	390	ug/L	292000	2.09	15	
ethane		427	416	ug/L	300000	2.51	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3128072
Report generated 10/21/2013 13:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13100266
Run Date: 10/08/2013
Sample ID: WG447704-02
Instrument ID: HP16
Run Time: 12:53
Method: RSK175
File ID: 16G39799
Analyst: QX
QC Key: DOD4
Workgroup (AAB#): WG447706
Cal ID: HP16 - 02-APR-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	219	ug/L	177000	3.89	15	
ethene		398	405	ug/L	302000	1.59	15	
ethane		427	432	ug/L	311000	1.14	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3128072
Report generated 10/21/2013 13:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13100266
Run Date: 10/08/2013
Sample ID: WG447704-03
Instrument ID: HP16
Run Time: 14:34
Method: RSK175
File ID: 16G39810
Analyst: QX
QC Key: DOD4
Workgroup (AAB#): WG447706
Cal ID: HP16 - 02-APR-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	231	ug/L	186000	1.24	15	
ethene		398	432	ug/L	323000	8.42	15	
ethane		427	463	ug/L	333000	8.41	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3128072
Report generated 10/21/2013 13:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13100266
Run Date: 10/10/2013
Sample ID: WG448118-01
Instrument ID: HP16
Run Time: 13:47
Method: RSK175
File ID: 16G39815
Analyst: QX
QC Key: DOD4
Workgroup (AAB#): WG448119
Cal ID: HP16 - 02-APR-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	217	ug/L	175000	4.63	15	
ethene		398	406	ug/L	303000	1.84	15	
ethane		427	434	ug/L	312000	1.61	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3128072
Report generated 10/21/2013 13:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13100266
Run Date: 10/10/2013
Sample ID: WG448118-02
Instrument ID: HP16
Run Time: 16:09
Method: RSK175
File ID: 16G39827
Analyst: QX
QC Key: DOD4
Workgroup (AAB#): WG448119
Cal ID: HP16 - 02-APR-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	211	ug/L	170000	7.23	15	
ethene		398	391	ug/L	292000	1.87	15	
ethane		427	418	ug/L	301000	2.02	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3128072
Report generated 10/21/2013 13:11

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\101013\16G39820.D Vial: 5
Acq On : 10 Oct 2013 15:05 Operator: QX
Sample : L13100266-05 B RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Oct 10 15:10:32 2013 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	1017084	5.537	umol/
2) T	ethene	1.05	97081	0.326	umol/
3) T	acetylene	1.12	2429	0.010	umol/
4) T	ethane	1.38	47514	0.155	umol/
5) T	propane	3.82	16392	0.036	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G39820.D RSK2.M Thu Oct 10 15:10:32 2013 Page 1

Quantitation Report (Not Reviewed)

```
Data File : C:\MSDchem\1\DATA\101013\16G39820.D          Vial: 5
Acq On    : 10 Oct 2013  15:05                       Operator: QX
Sample    : L13100266-05 B RSK175                    Inst    : HP16
Misc      : 1,1                                      Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Oct 10 15:10 2013  Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```

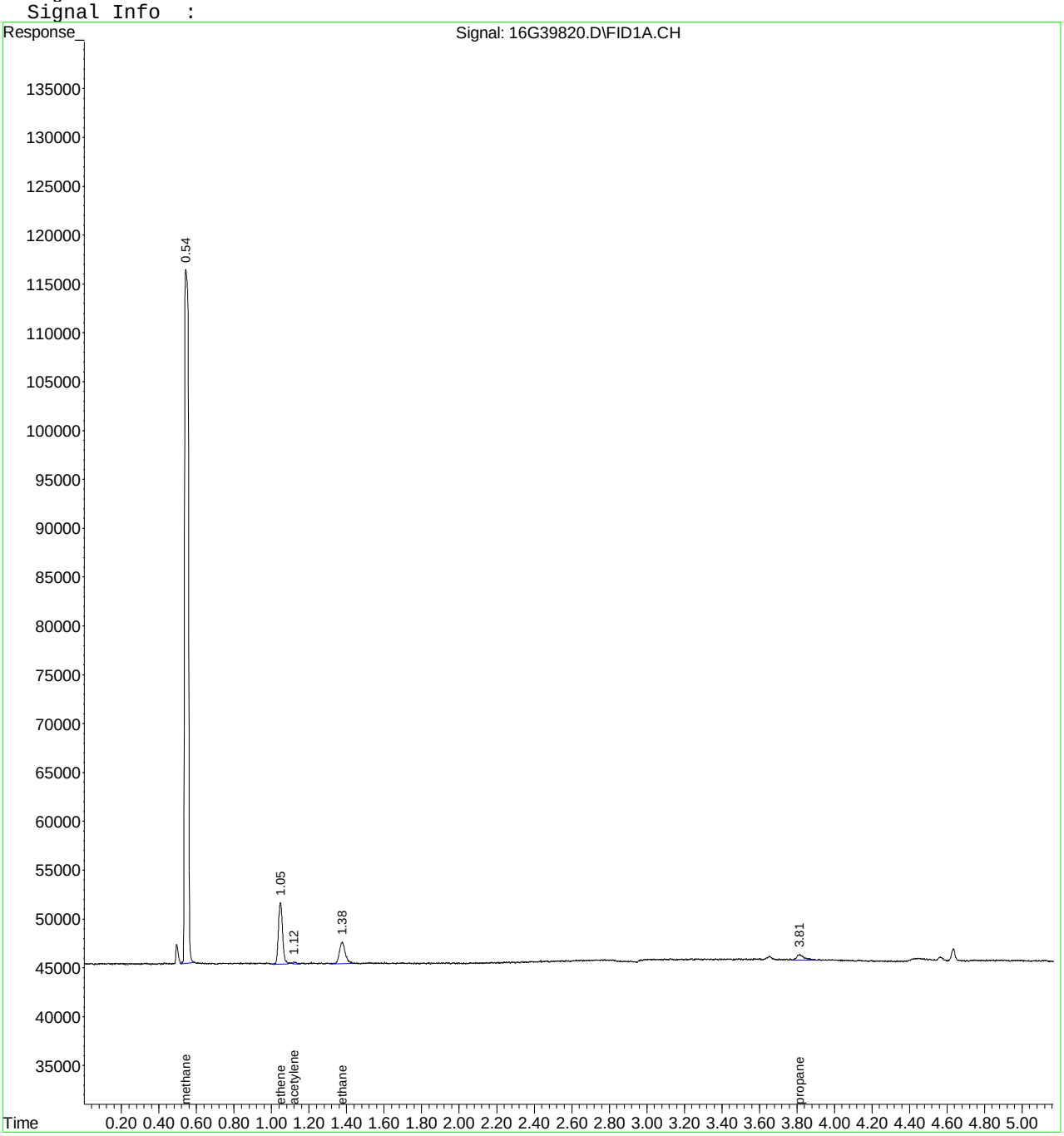

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\100813\16G39801.D Vial: 14
Acq On : 08 Oct 2013 13:12 Operator: QX
Sample : L13100266-07 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Oct 08 13:17:28 2013 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	471043	2.564	umol/
2) T	ethene	1.05	38806	0.130	umol/
3) T	acetylene	1.14	737	0.003	umol/
4) T	ethane	1.38	16921	0.055	umol/
5) T	propane	3.81	111504	0.244	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G39801.D RSK2.M Tue Oct 08 13:17:28 2013 Page 1

Quantitation Report (Not Reviewed)

```
Data File : C:\MSDchem\1\DATA\100813\16G39801.D          Vial: 14
Acq On    : 08 Oct 2013  13:12                       Operator: QX
Sample    : L13100266-07 A RSK175                    Inst    : HP16
Misc      : 1,1                                      Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Oct  8 13:17 2013  Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```

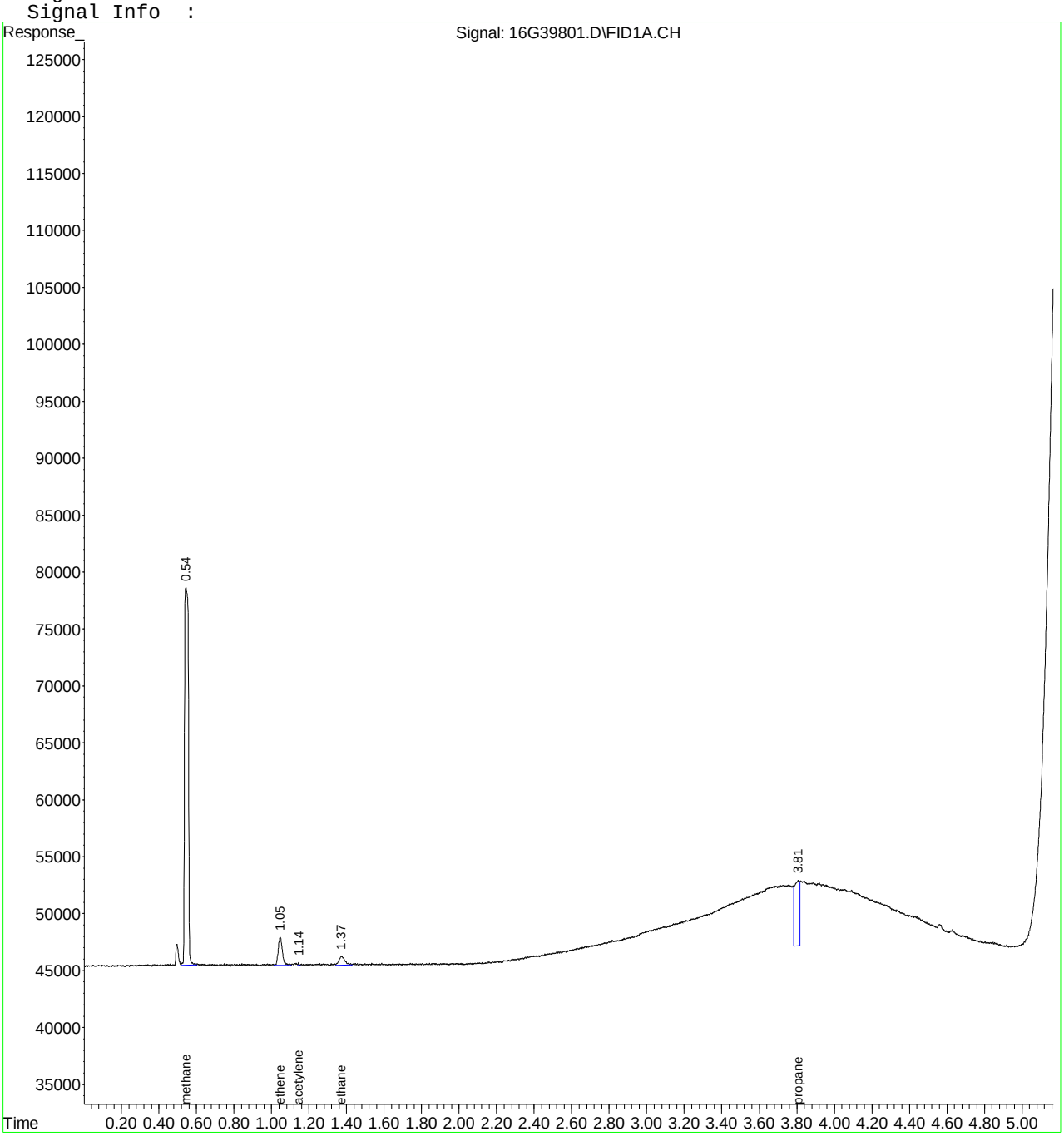

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37318.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37318.D\TCD2B.CH
Acq On : 02 Apr 2013 9:57 Operator: QX
Sample : WG425333-01 0.667umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 12:21:02 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:03:45 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	449273	N.D.	umol/
2) T	ethene	1.05	150309	0.525	umol/
3) T	acetylene	1.12	62943	N.D.	umol/
4) T	ethane	1.37	176996	0.577	umol/
5) T	propane	3.82	267853	0.585	umol/
7) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37318.D RSK2EXT.M Tue Apr 02 12:23:03 2013 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37318.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37318.D\TCD2B.CH
Acq On : 02 Apr 2013 9:57 Operator: QX
Sample : WG425333-01 0.667umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 2 12:21 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:03:45 2013
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

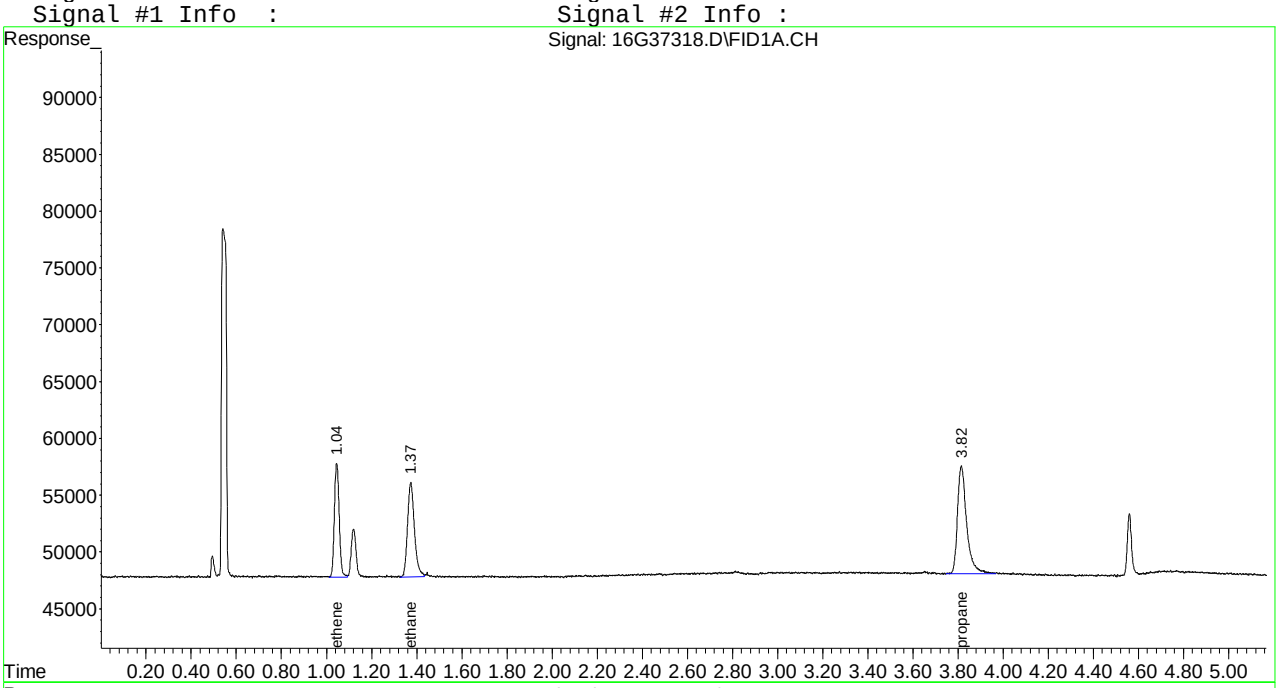

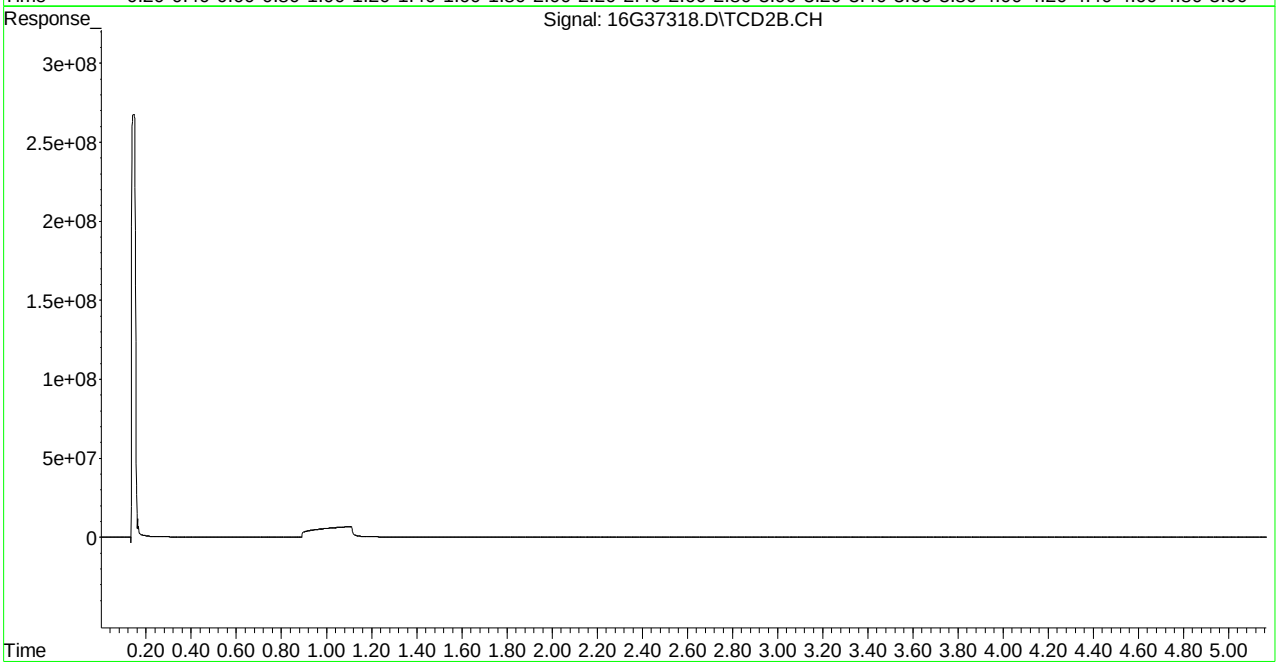

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37322.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37322.D\TCD2B.CH
Acq On : 02 Apr 2013 10:34 Operator: QX
Sample : WG425333-05 66.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 12:22:53 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:22:40 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	12425450	47.775	umol/
2) T	ethene	1.04	21179287	73.988	umol/
3) T	acetylene	1.12	18244025	83.207	umol/
4) T	ethane	1.37	22049898	71.902	umol/
5) T	propane	3.82	32794973	71.637	umol/
7) T	carbon dioxide	0.20	43671705	6.338	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37322.D RSK2EXT.M Tue Apr 02 12:22:53 2013 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37322.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37322.D\TCD2B.CH
Acq On    : 02 Apr 2013  10:34                        Operator: QX
Sample    : WG425333-05 66.67umol/mol ICAL RSK175     Inst    : HP16
Misc      : 1,1 STD55748                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e
Quant Time: Apr  2 12:22 2013  Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 12:22:40 2013
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

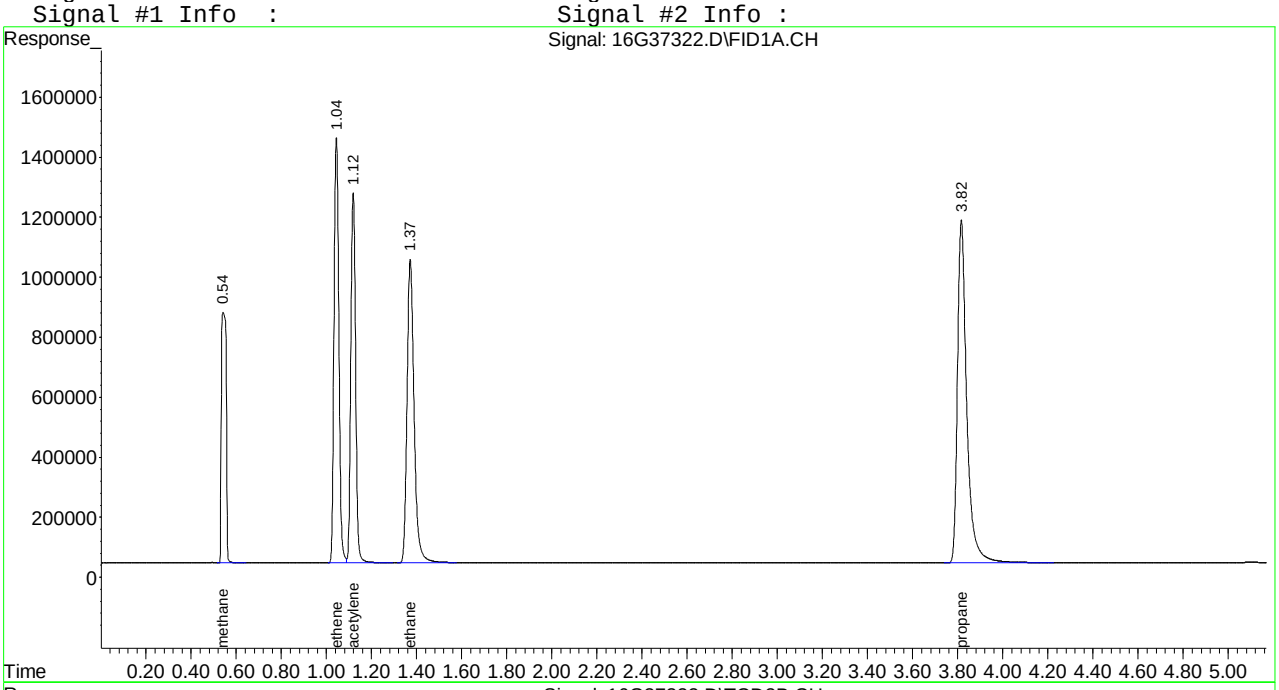

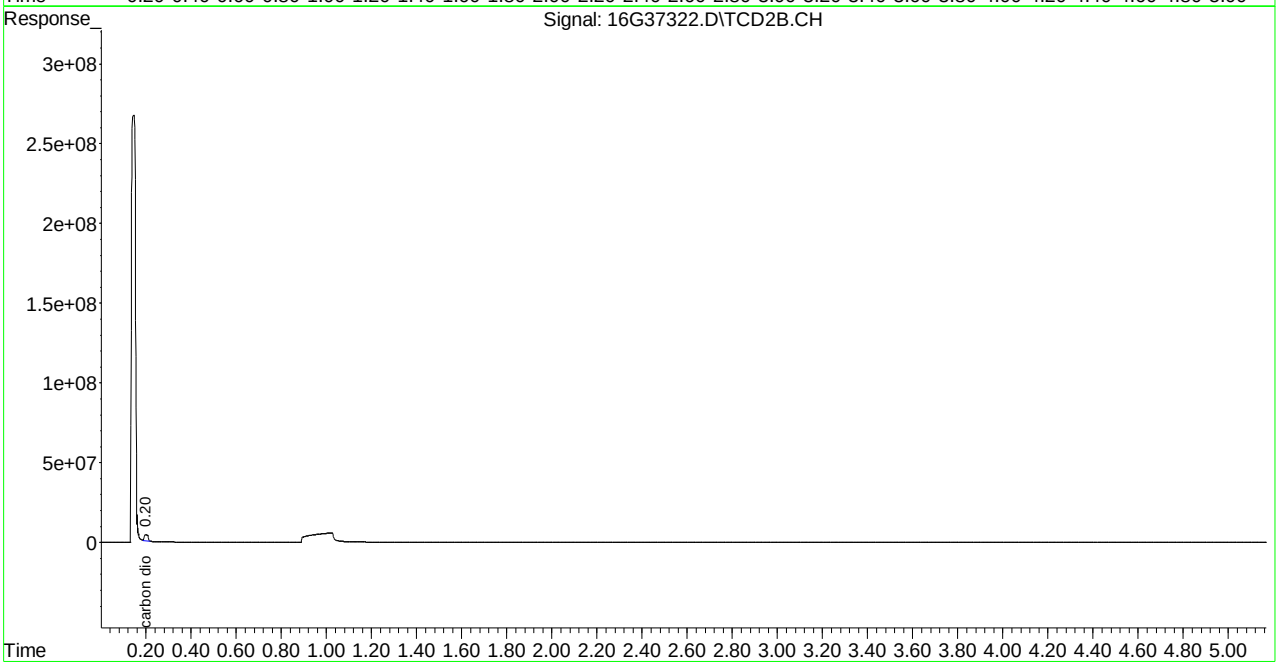

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37323.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37323.D\TCD2B.CH
Acq On : 02 Apr 2013 10:44 Operator: QX
Sample : WG425333-06 133umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 12:22:54 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:22:40 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	22339055	85.892	umol/
2) T	ethene	1.04	38283472	133.740	umol/
3) T	acetylene	1.12	32642737	148.876	umol/
4) T	ethane	1.37	39966891	130.326	umol/
5) T	propane	3.81	59518107	130.010	umol/
7) T	carbon dioxide	0.20	82318385	11.946	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37323.D RSK2EXT.M Tue Apr 02 12:22:54 2013 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37323.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37323.D\TCD2B.CH
Acq On : 02 Apr 2013 10:44 Operator: QX
Sample : WG425333-06 133umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 2 12:22 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:22:40 2013
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

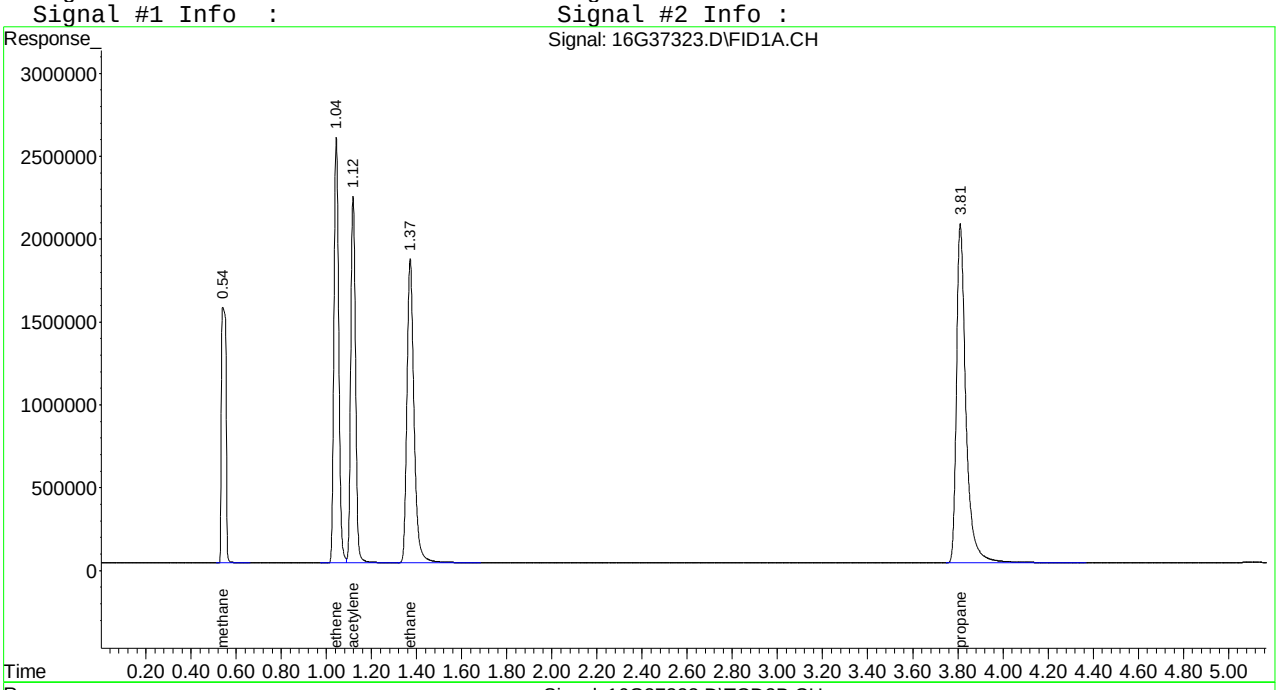

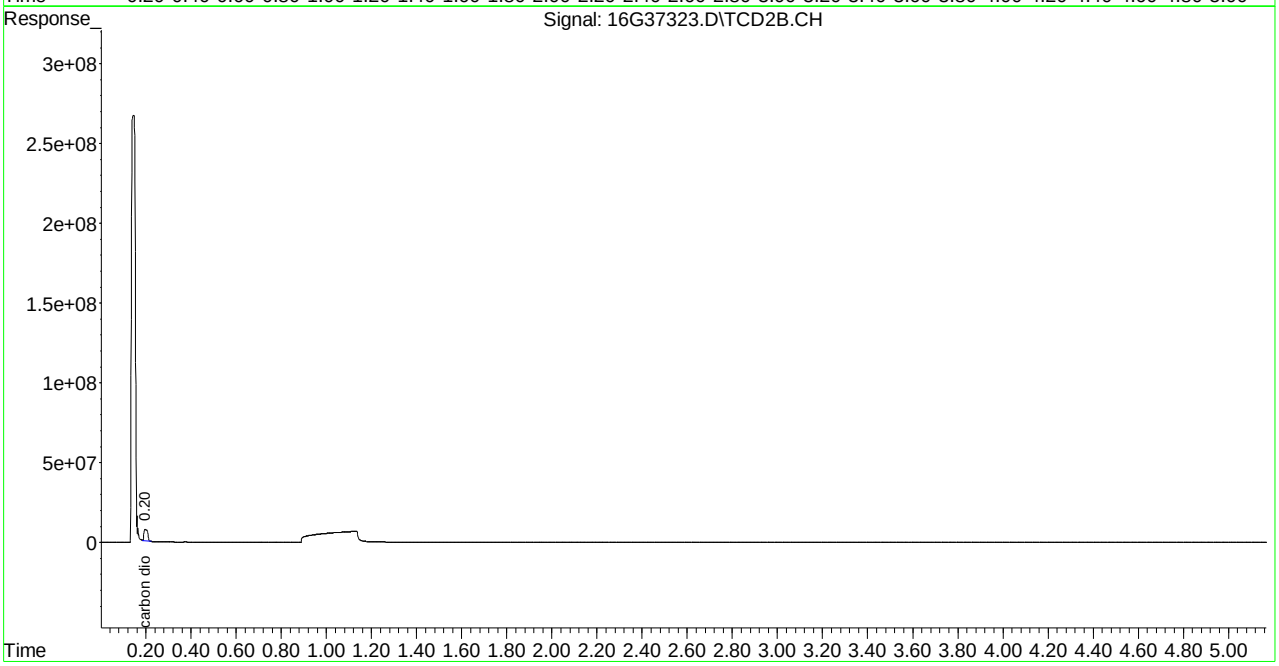

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37324.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37324.D\TCD2B.CH
Acq On : 02 Apr 2013 10:53 Operator: QX
Sample : WG425333-07 266umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 12:22:54 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:22:40 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	48021659	184.639	umol/
2) T	ethene	1.04	82053434	286.647	umol/
3) T	acetylene	1.12	69319556	316.151	umol/
4) T	ethane	1.37	85867816	280.002	umol/
5) T	propane	3.81	126791177	276.960	umol/
7) T	carbon dioxide	0.20	170374835	24.724	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37324.D RSK2EXT.M Tue Apr 02 12:22:55 2013 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37324.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37324.D\TCD2B.CH
Acq On : 02 Apr 2013 10:53 Operator: QX
Sample : WG425333-07 266umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 2 12:22 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:22:40 2013
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

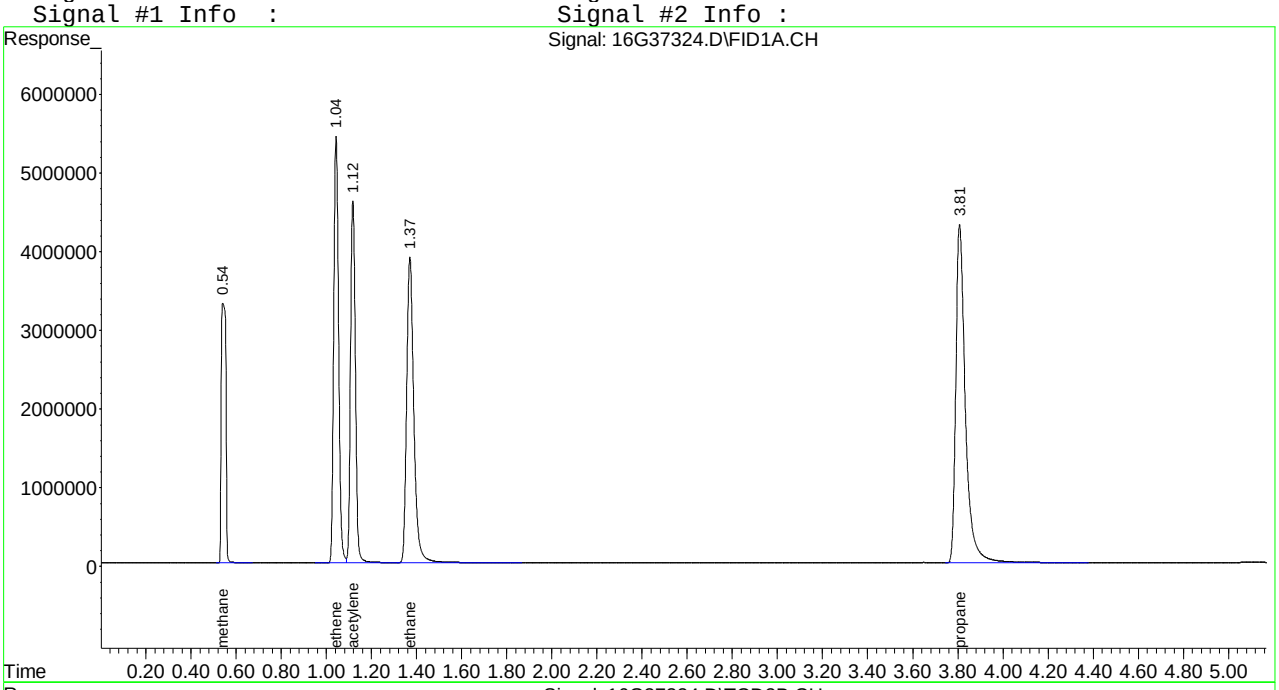

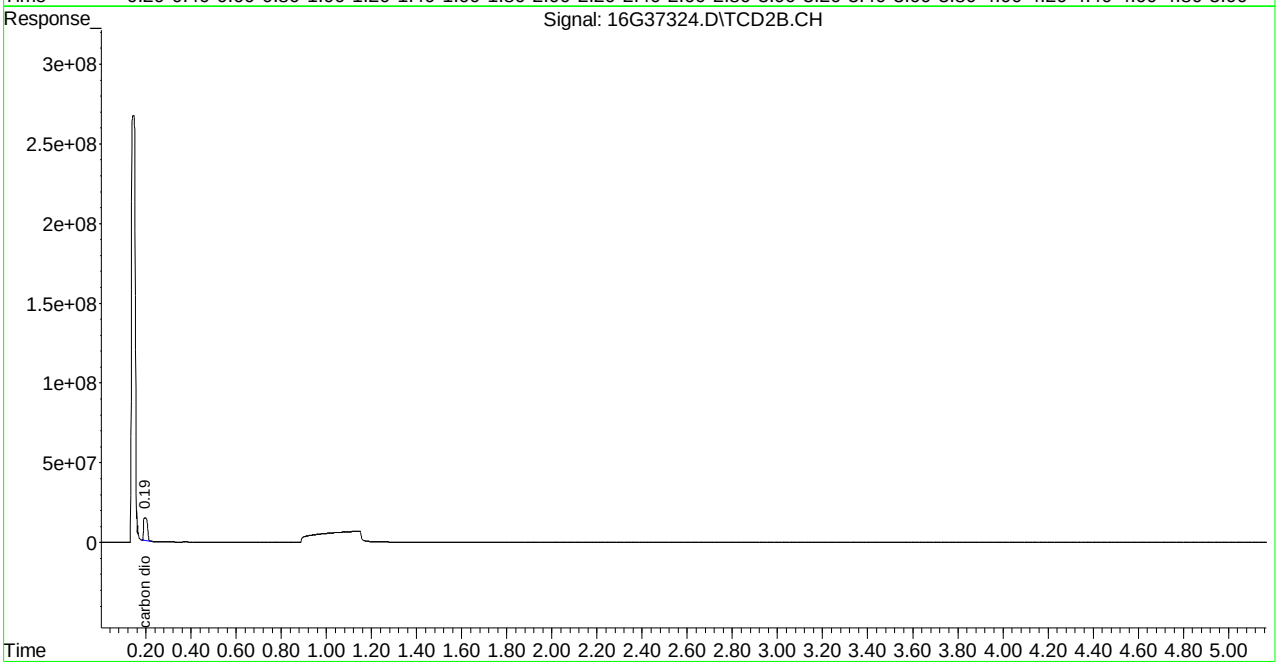

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37325.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37325.D\TCD2B.CH
Acq On : 02 Apr 2013 11:03 Operator: QX
Sample : WG425333-08 400umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 12:22:55 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:22:40 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	71747489	275.863	umol/
2) T	ethene	1.04	122297484	427.236	umol/
3) T	acetylene	1.12	100771518	459.596	umol/
4) T	ethane	1.37	128193716	418.021	umol/
5) T	propane	3.81	189263646	413.424	umol/
7) T	carbon dioxide	0.19	250290098	36.321	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37325.D RSK2EXT.M Tue Apr 02 12:22:55 2013 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37325.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37325.D\TCD2B.CH
Acq On : 02 Apr 2013 11:03 Operator: QX
Sample : WG425333-08 400umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 2 12:22 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:22:40 2013
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

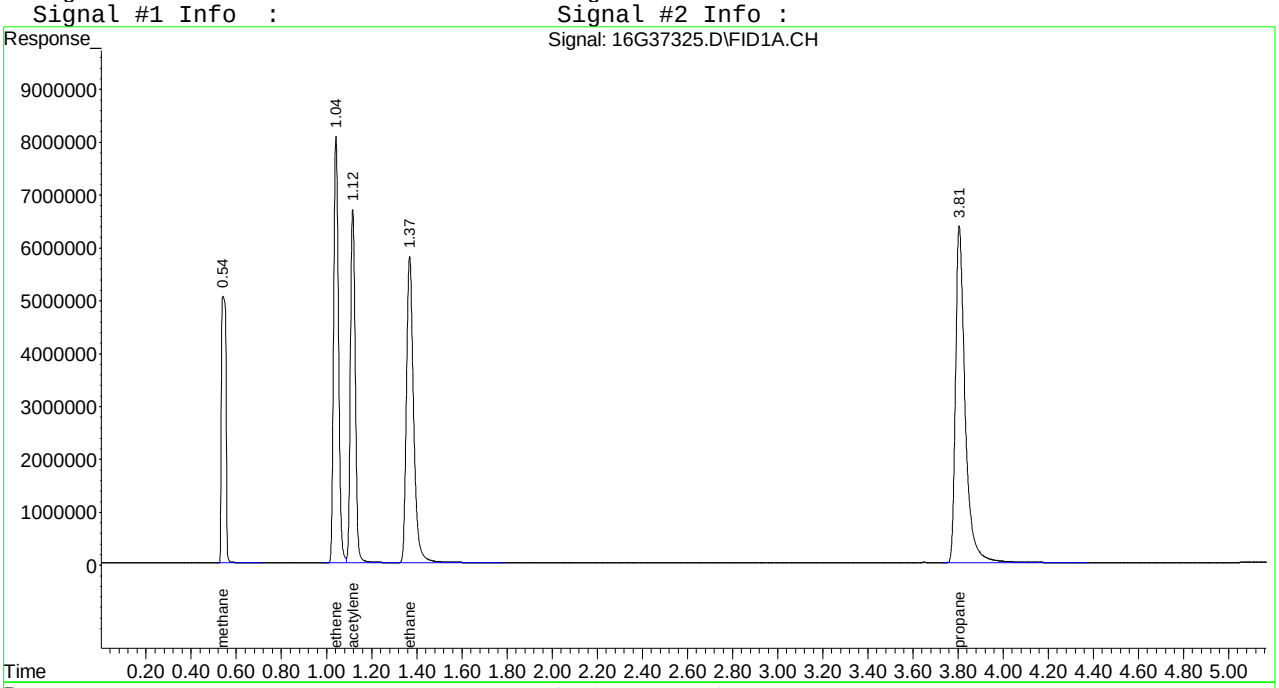

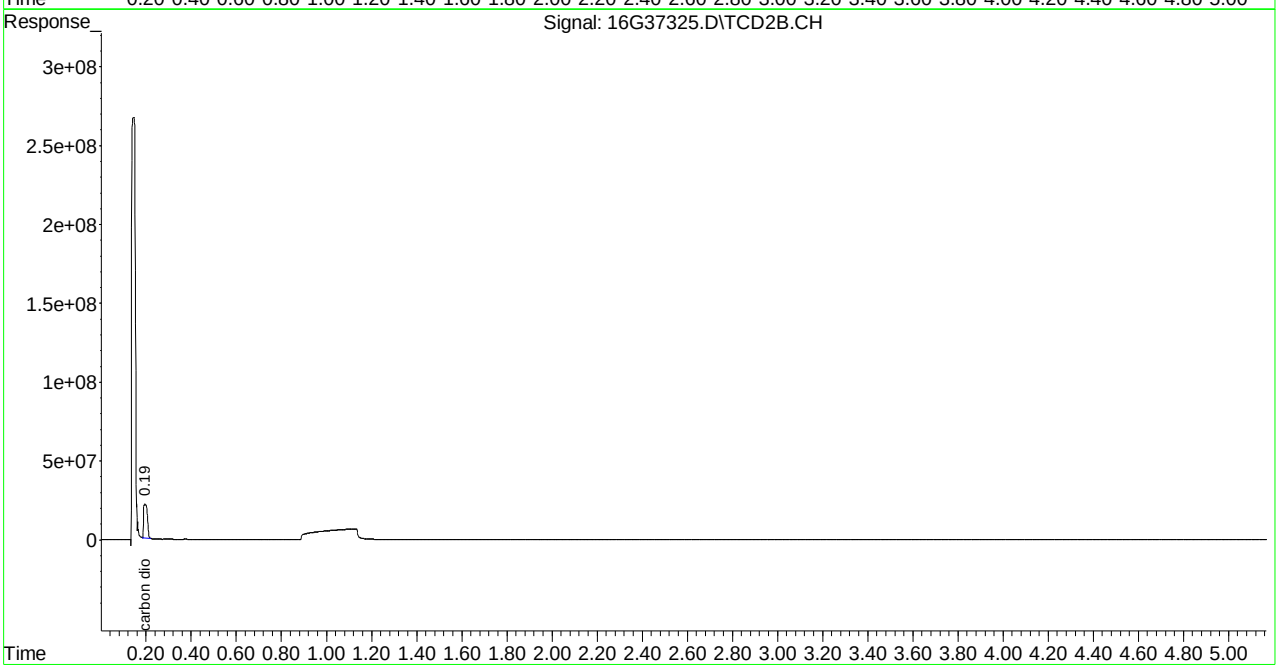

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37326.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37326.D\TCD2B.CH
Acq On : 02 Apr 2013 11:12 Operator: QX
Sample : WG425333-09 533umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 12:22:56 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:22:40 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	88857729	341.650	umol/
2) T	ethene	1.04	151263412	528.426	umol/
3) T	acetylene	1.12	123794384	564.598	umol/
4) T	ethane	1.37	158822651	517.898	umol/
5) T	propane	3.80	233045792	509.061	umol/
7) T	carbon dioxide	0.19	302733085	43.932	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37326.D RSK2EXT.M Tue Apr 02 12:22:56 2013 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37326.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37326.D\TCD2B.CH
Acq On : 02 Apr 2013 11:12 Operator: QX
Sample : WG425333-09 533umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 2 12:22 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:22:40 2013
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

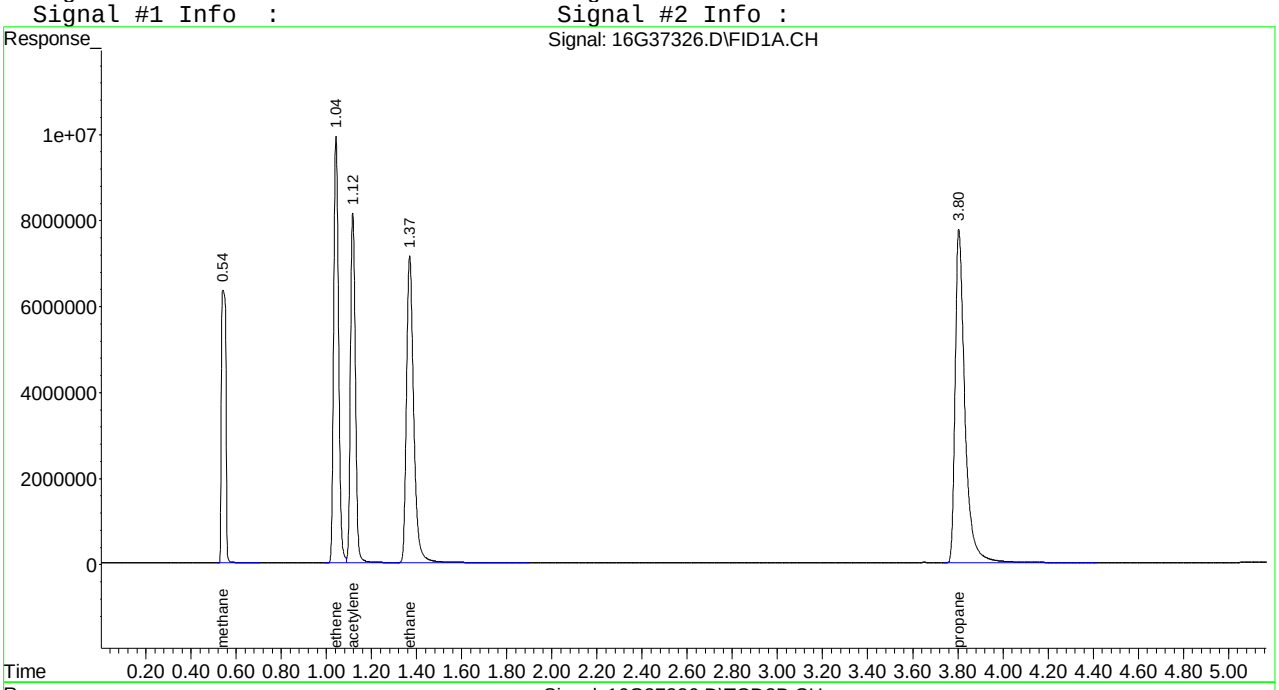

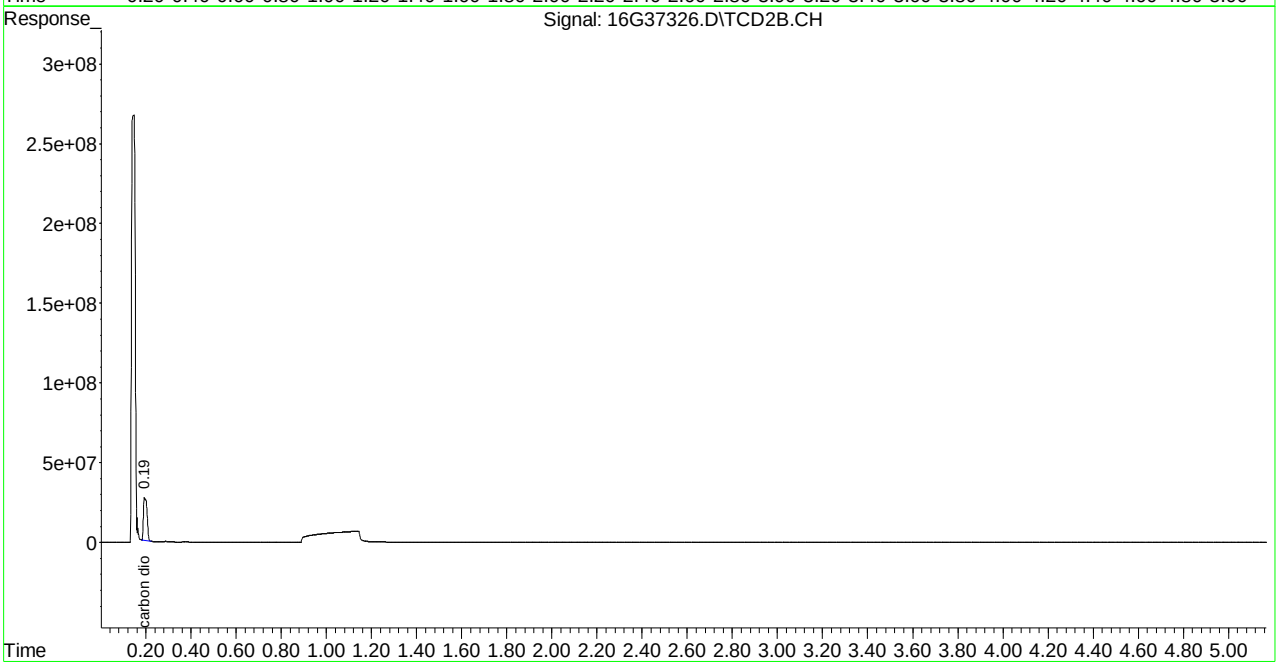

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\040213\16G37328.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDchem\1\DATA\040213\16G37328.D\TCD2B.CH
Acq On : 02 Apr 2013 13:06 Operator: QX
Sample : WG425333-02 1.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 13:11:44 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:28:53 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	647515	3.107	umol/
2) T	ethene	1.04	506985	1.725	umol/
3) T	acetylene	1.11	353818	1.506	umol/
4) T	ethane	1.37	544332	1.775	umol/
5) T	propane	3.81	815101	1.780	umol/
7) T	carbon dioxide	0.19	13212829	7.367	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37328.D RSK2EXT.M Tue Apr 02 13:11:44 2013 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\040213\16G37328.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDchem\1\DATA\040213\16G37328.D\TCD2B.CH
Acq On : 02 Apr 2013 13:06 Operator: QX
Sample : WG425333-02 1.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 2 13:11 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:28:53 2013
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

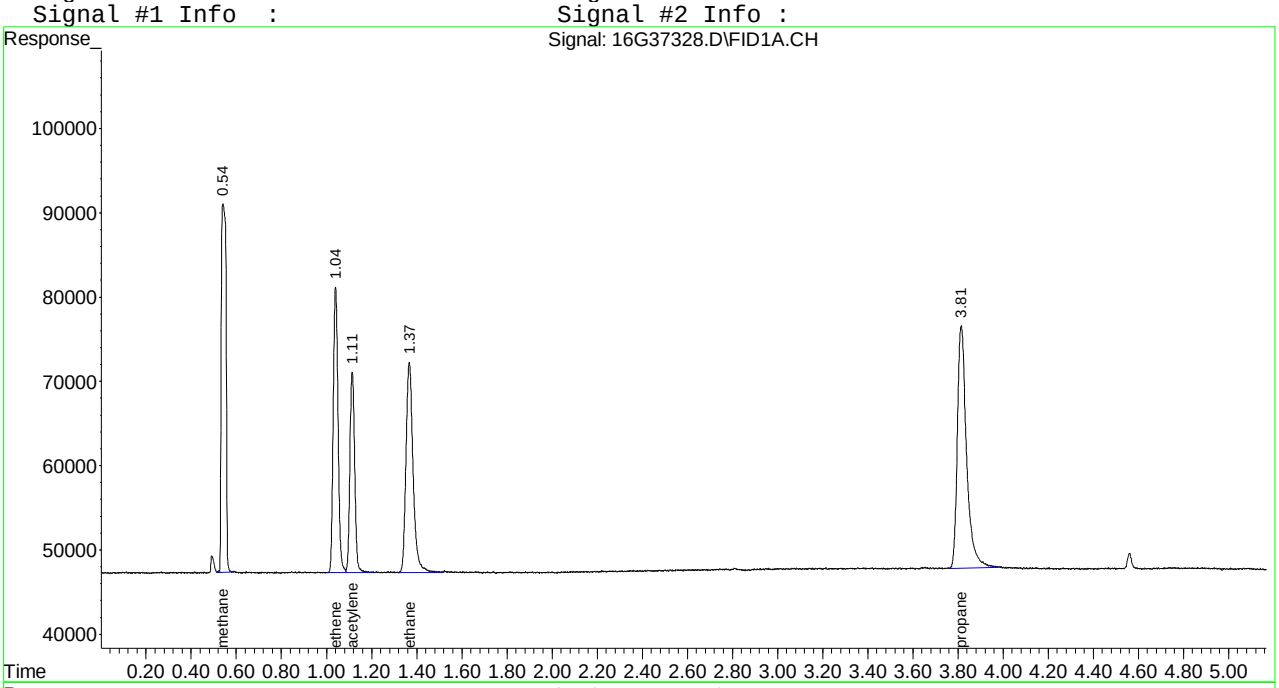

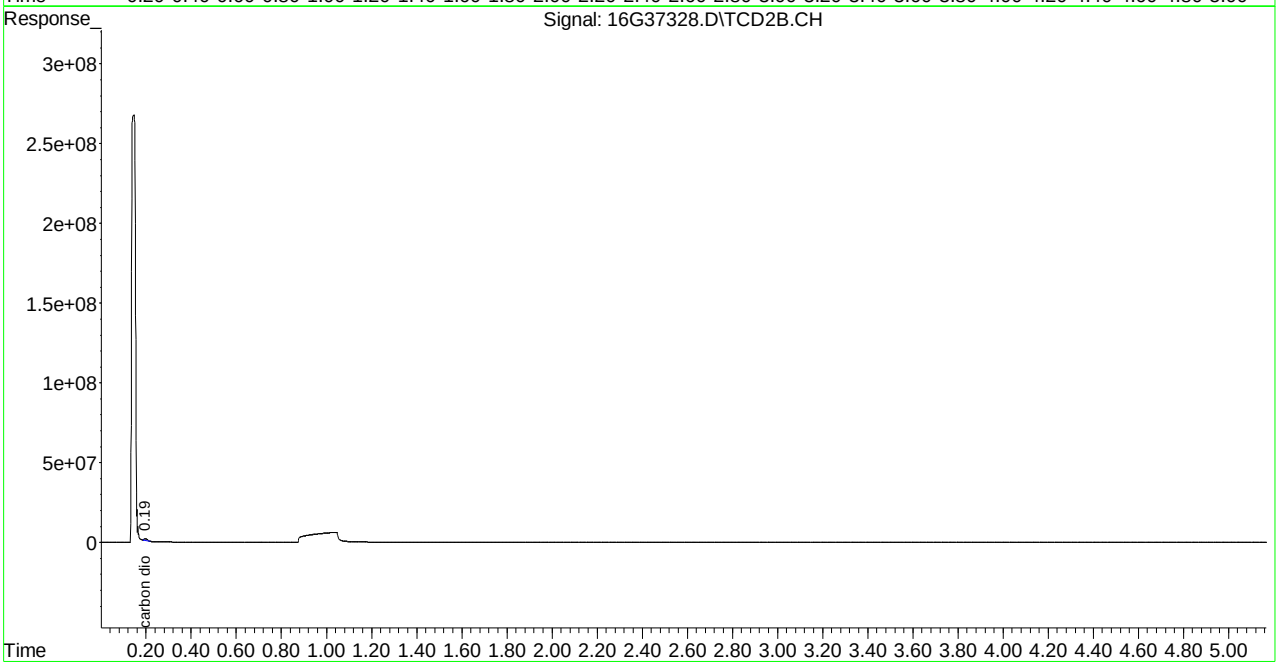

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\040213\16G37329.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\040213\16G37329.D\TCD2B.CH
Acq On : 02 Apr 2013 13:16 Operator: QX
Sample : WG425333-03 6.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 13:21:21 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:28:53 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	1503872	7.216	umol/
2) T	ethene	1.05	1989634	6.771	umol/
3) T	acetylene	1.12	1497685	6.377	umol/
4) T	ethane	1.37	2093879	6.828	umol/
5) T	propane	3.81	3131138	6.840	umol/
7) T	carbon dioxide	0.20	22088076	12.316	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37329.D RSK2EXT.M Tue Apr 02 13:21:22 2013 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\040213\16G37329.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\040213\16G37329.D\TCD2B.CH
Acq On : 02 Apr 2013 13:16 Operator: QX
Sample : WG425333-03 6.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 2 13:21 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:28:53 2013
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

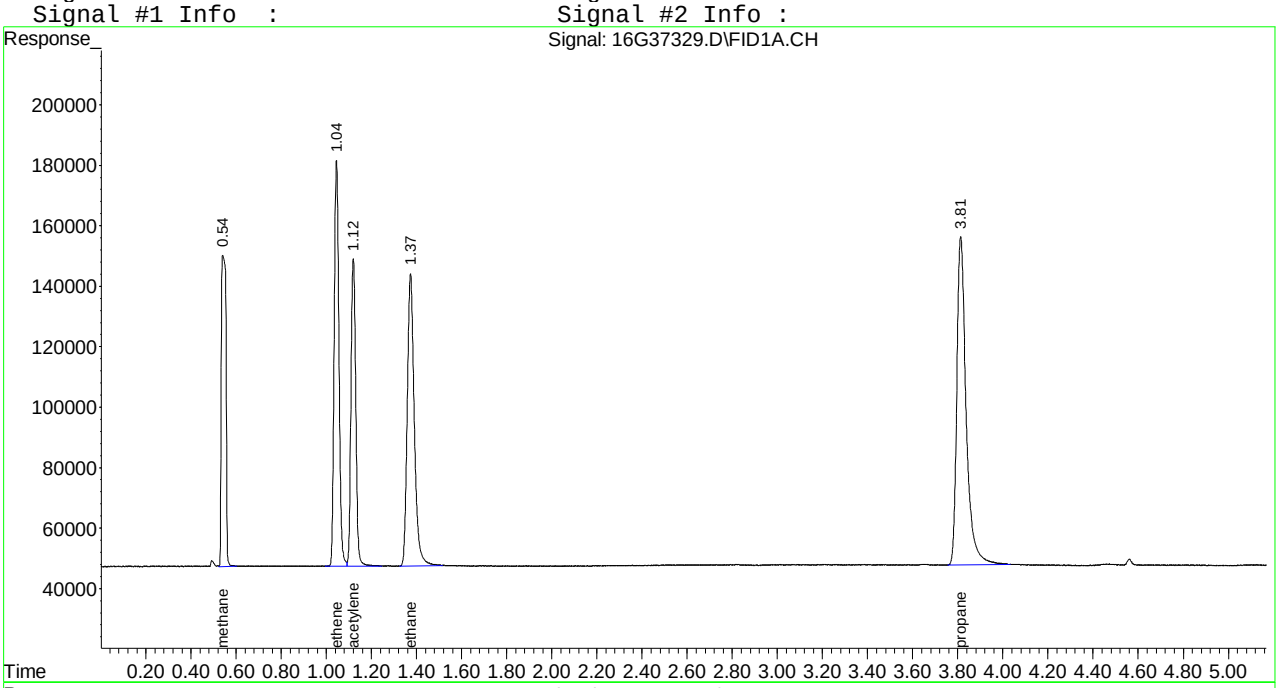

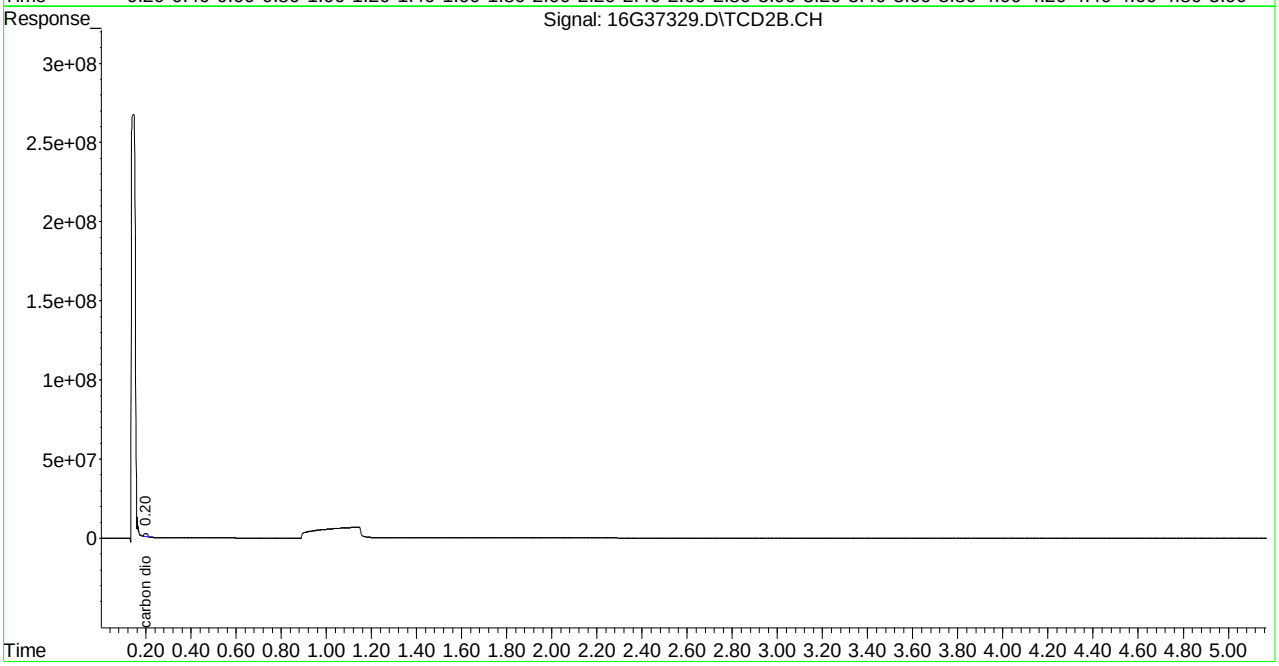

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\040213\16G37330.D\FID1A.CH Vial: 13
Signal #2 : C:\MSDchem\1\DATA\040213\16G37330.D\TCD2B.CH
Acq On : 02 Apr 2013 13:25 Operator: QX
Sample : WG425333-04 16.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 13:31:08 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:28:53 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

Compound	R.T.	Response	Conc	Units
Target Compounds				
1) T methane	0.54	2991664	14.356	umol/
2) T ethene	1.05	4609687	15.686	umol/
3) T acetylene	1.12	4006359	17.058	umol/
4) T ethane	1.37	4829280	15.748	umol/
5) T propane	3.81	7110589	15.532	umol/
7) T carbon dioxide	0.20	32834962	18.308	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37330.D RSK2EXT.M Tue Apr 02 13:31:09 2013 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\040213\16G37330.D\FID1A.CH Vial: 13
Signal #2 : C:\MSDchem\1\DATA\040213\16G37330.D\TCD2B.CH
Acq On : 02 Apr 2013 13:25 Operator: QX
Sample : WG425333-04 16.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 2 13:31 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 12:28:53 2013
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

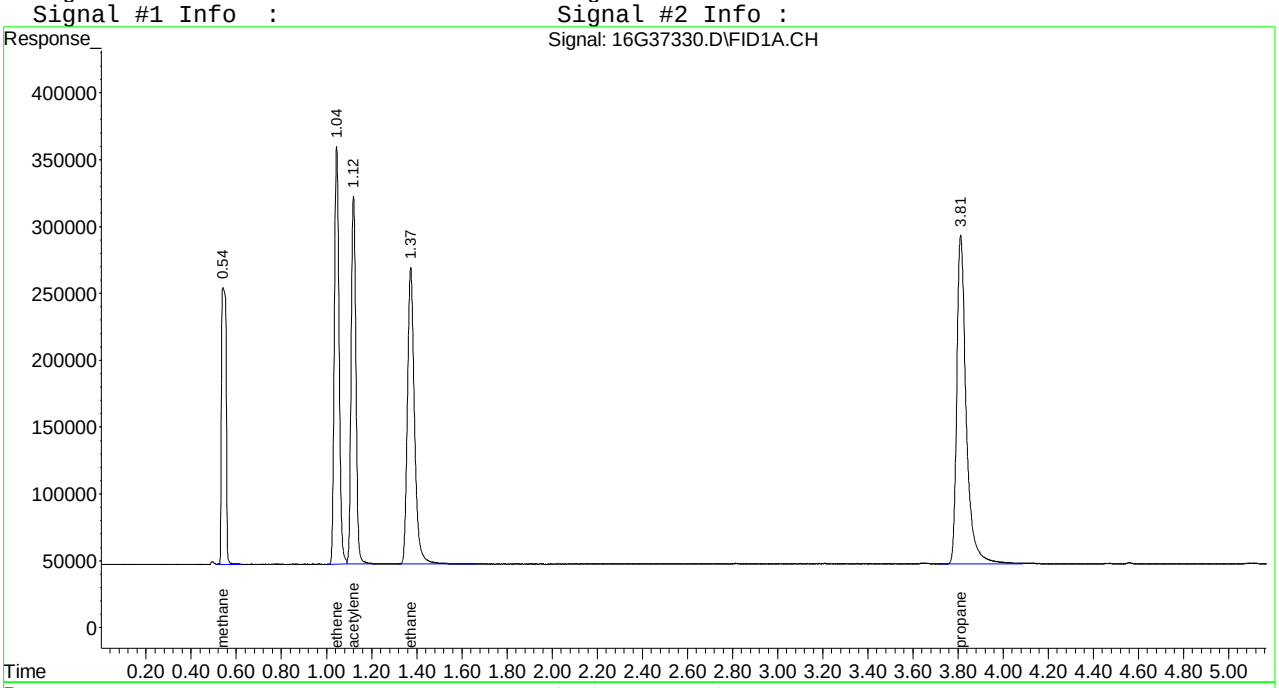

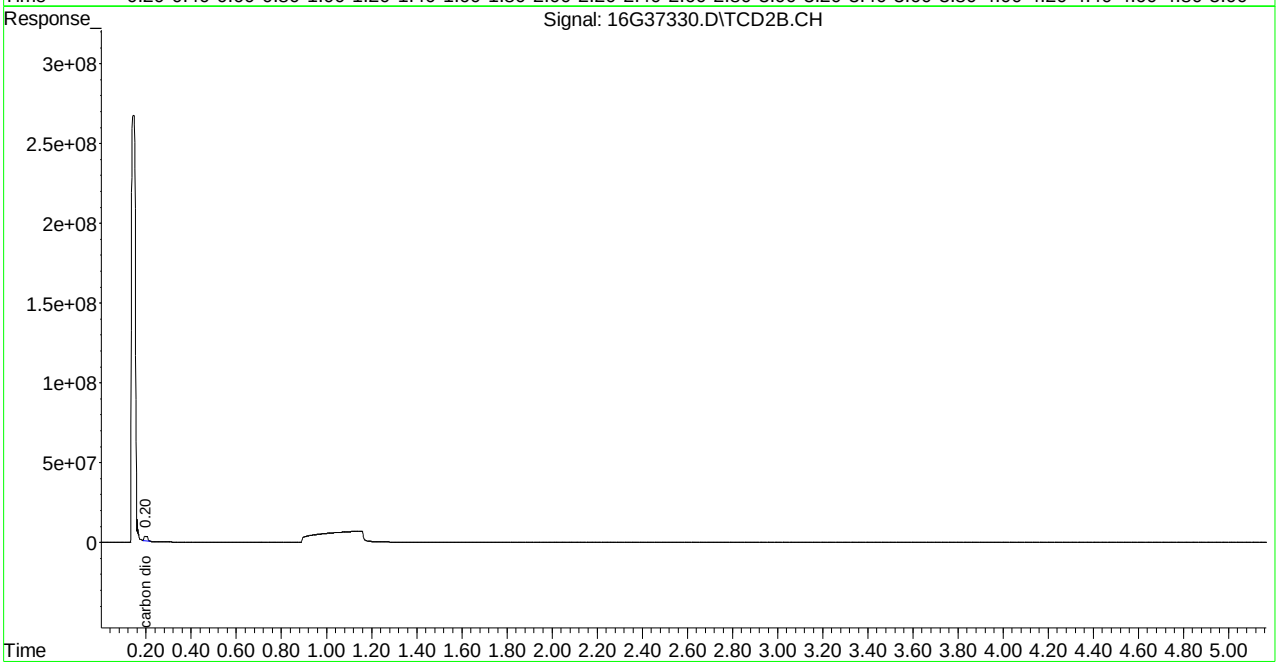

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\040213\16G37332.D\FID1A.CH Vial: 15
Signal #2 : C:\MSDchem\1\DATA\040213\16G37332.D\TCD2B.CH
Acq On : 02 Apr 2013 14:21 Operator: QX
Sample : WG425333-10 133umol/mol ICV RSK175 Inst : HP16
Misc : 1,1 STD56793 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 02 14:27:08 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	22654019	123.323	umol/
2) T	ethene	1.04	39629849	133.101	umol/
3) T	acetylene	1.12	38327610	158.002	umol/
4) T	ethane	1.37	41187146	133.945	umol/
5) T	propane	3.81	60773891	133.013	umol/
7) T	carbon dioxide	0.20	91935377	14461.700	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G37332.D RSK2EXT.M Tue Apr 02 14:27:08 2013 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\040213\16G37332.D\FID1A.CH Vial: 15
Signal #2 : C:\MSDchem\1\DATA\040213\16G37332.D\TCD2B.CH
Acq On : 02 Apr 2013 14:21 Operator: QX
Sample : WG425333-10 133umol/mol ICV RSK175 Inst : HP16
Misc : 1,1 STD56793 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Apr 2 14:27 2013 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

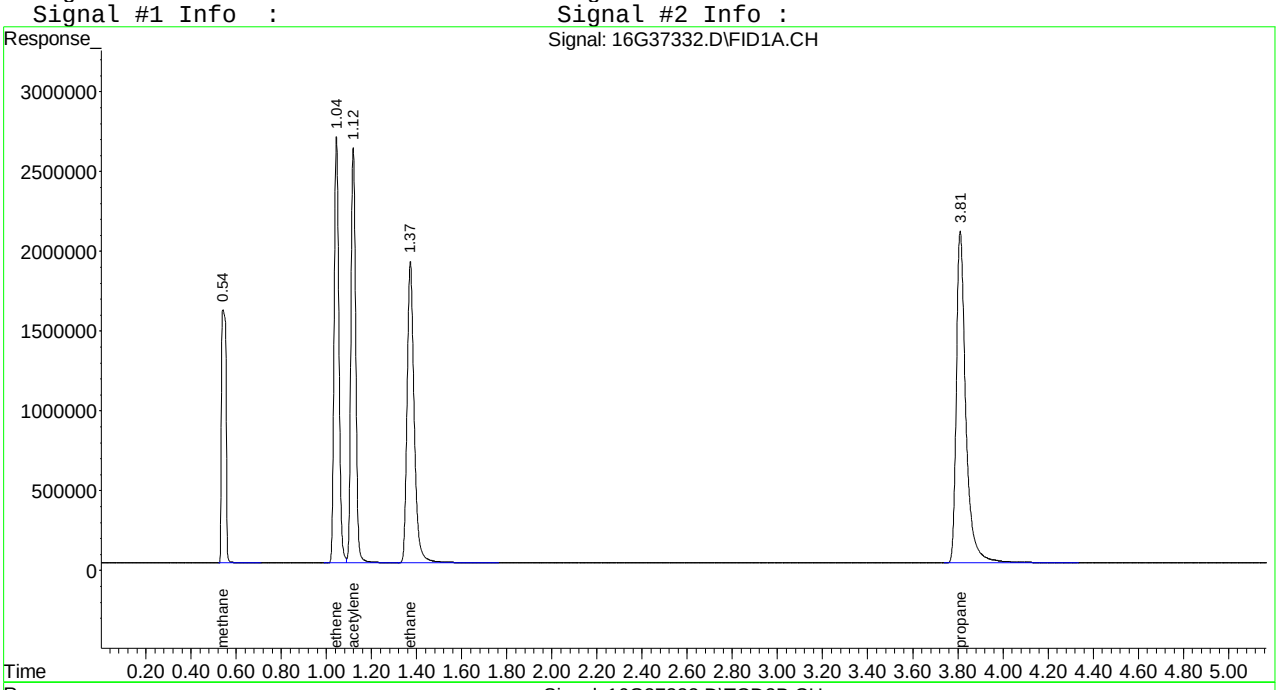

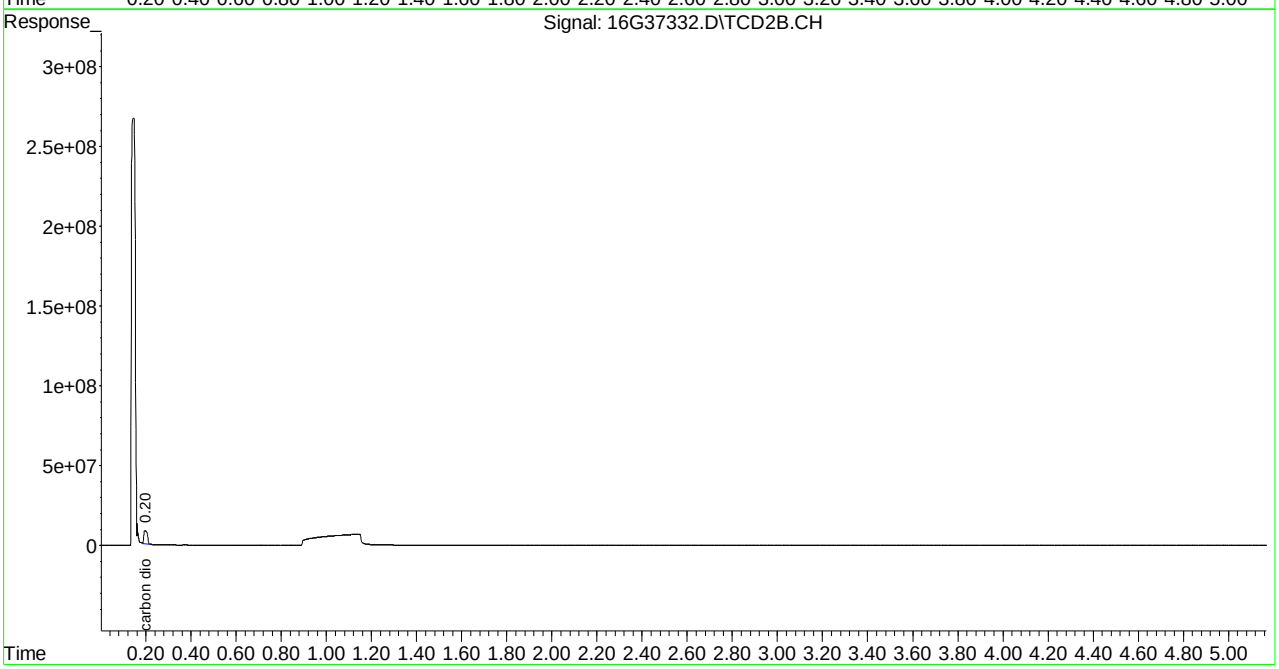

Evaluate Continuing Calibration Report

```
Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37332.D\FID1A.CH Vial: 15
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37332.D\TCD2B.CH
Acq On    : 02 Apr 2013  14:21                      Operator: QX
Sample    : WG425333-10 133umol/mol ICV RSK175      Inst    : HP16
Misc      : 1,1 STD56793                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e

Method       : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	123.323	7.3	101	0.00
2	T	ethene	133.000	133.101	-0.1	104	0.00
3	T	acetylene	133.000	158.002	-18.8#	117	0.00
4	T	ethane	133.000	133.945	-0.7	103	0.00
5	T	propane	133.000	133.013	-0.0	102	0.00
		Signal #2					
7	T	carbon dioxide	13333.000	14461.700	-8.5	112	0.00

```
(#) = Out of Range            SPCC's out = 0  CCC's out = 0
16G37332.D  RSK2EXT.M      Tue Apr 02 14:30:57 2013                    Page 1
```

```
Signal #1 : C:\MSDCHEM\1\DATA\040213\16G37332.D\FID1A.CH Vial: 15
Signal #2 : C:\MSDCHEM\1\DATA\040213\16G37332.D\TCD2B.CH
Acq On    : 02 Apr 2013  14:21                      Operator: QX
Sample    : WG425333-10 133umol/mol ICV RSK175      Inst    : HP16
Misc      : 1,1 STD56793                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e

Method       : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\100813\16G39788.D Vial: 1
Acq On : 08 Oct 2013 11:08 Operator: QX
Sample : WG447704-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Oct 08 11:13:32 2013 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	22706230	123.607	umol/
2) T	ethene	1.05	38772337	130.221	umol/
3) T	acetylene	1.12	38169344	157.350	umol/
4) T	ethane	1.38	39872139	129.668	umol/
5) T	propane	3.82	58126708	127.220	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G39788.D RSK2.M Tue Oct 08 11:13:32 2013 Page 1

Quantitation Report (Not Reviewed)

```
Data File : C:\MSDchem\1\DATA\100813\16G39788.D          Vial: 1
Acq On    : 08 Oct 2013  11:08                       Operator: QX
Sample    : WG447704-01 133umol/mol  CCV   RSK175    Inst    : HP16
Misc      : 1,1 STD55748                              Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Oct  8 11:13 2013  Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```

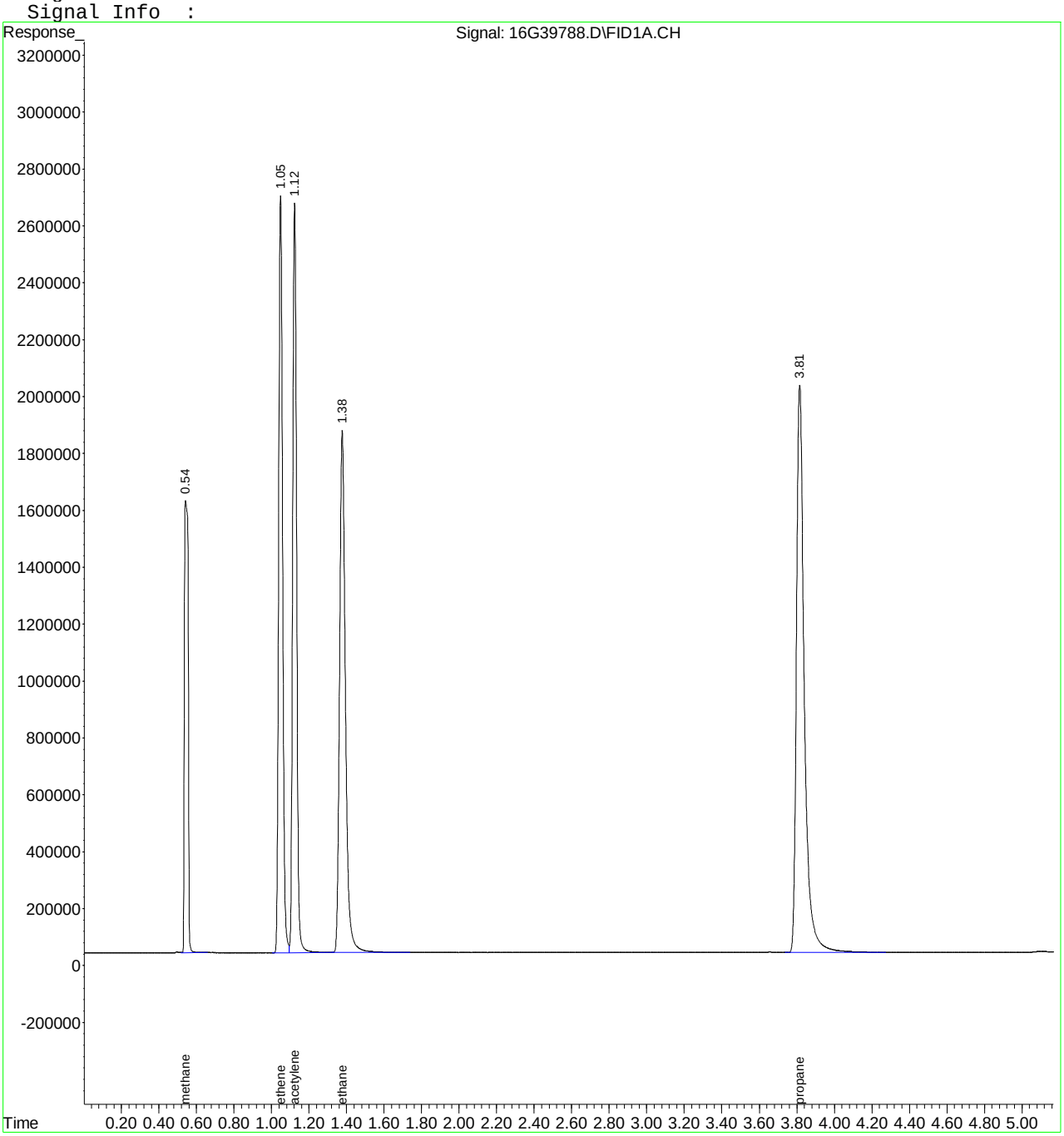

Evaluate Continuing Calibration Report

```
Data File : C:\MSDCHEM\1\DATA\100813\16G39788.D          Vial: 1
Acq On    : 08 Oct 2013  11:08                       Operator: QX
Sample    : WG447704-01 133umol/mol  CCV   RSK175    Inst    : HP16
Misc      : 1,1 STD55748                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	123.607	7.1	102	0.00
2	T	ethene	133.000	130.221	2.1	101	0.00
3	T	acetylene	133.000	157.350	-18.3#	117	0.00
4	T	ethane	133.000	129.668	2.5	100	0.00
5	T	propane	133.000	127.220	4.3	98	0.00

```
---------------------------------------------------------------------------
 (#) = Out of Range             SPCC's out = 0  CCC's out = 0
 16G39788.D  RSK2.M      Tue Oct 08 11:14:30 2013                          Page 1
```

```
Data File : C:\MSDCHEM\1\DATA\100813\16G39788.D          Vial: 1
Acq On    : 08 Oct 2013  11:08                       Operator: QX
Sample    : WG447704-01 133umol/mol  CCV   RSK175    Inst    : HP16
Misc      : 1,1 STD55748                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------
```

```
---------------------------------------------------------------------------
 (#) = Out of Range             SPCC's out = 0  CCC's out = 0
 16G39788.D  RSK2.M      Tue Oct 08 11:14:30 2013                          Page 2
```

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\100813\16G39799.D Vial: 12
Acq On : 08 Oct 2013 12:53 Operator: QX
Sample : WG447704-02 133umol/mol RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Oct 08 12:59:12 2013 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	23481129	127.825	umol/
2) T	ethene	1.04	40229203	135.114	umol/
3) T	acetylene	1.12	39240119	161.764	umol/
4) T	ethane	1.37	41361863	134.513	umol/
5) T	propane	3.81	60743971	132.948	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G39799.D RSK2.M Tue Oct 08 12:59:12 2013 Page 1

Quantitation Report (Not Reviewed)

```
Data File : C:\MSDchem\1\DATA\100813\16G39799.D          Vial: 12
Acq On    : 08 Oct 2013  12:53                       Operator: QX
Sample    : WG447704-02 133umol/mol   RSK175         Inst    : HP16
Misc      : 1,1 STD55748                             Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Oct  8 12:59 2013  Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```

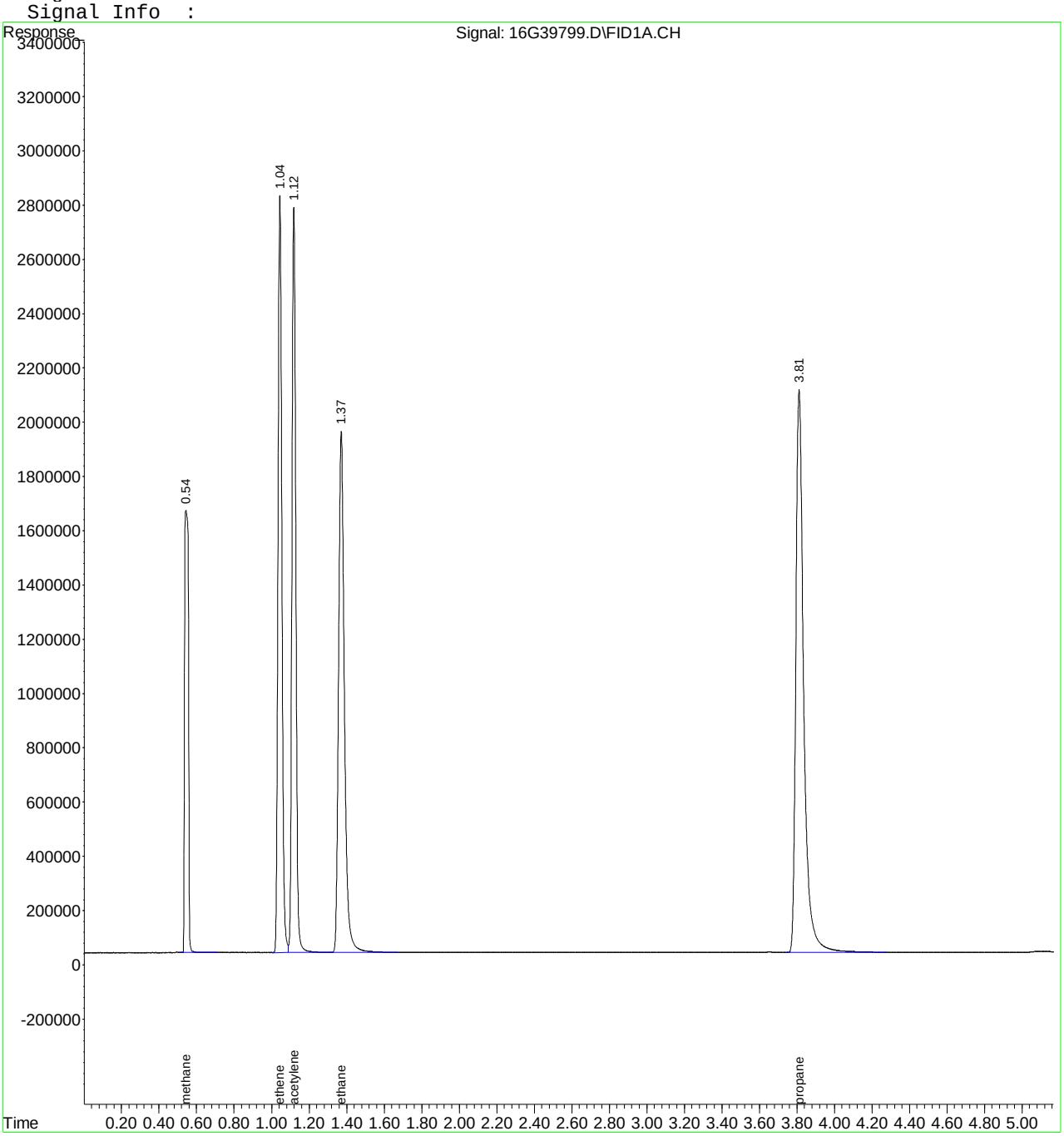

Evaluate Continuing Calibration Report

```
Data File : C:\MSDCHEM\1\DATA\100813\16G39799.D          Vial: 12
Acq On    : 08 Oct 2013  12:53                       Operator: QX
Sample    : WG447704-02 133umol/mol   RSK175         Inst    : HP16
Misc      : 1,1 STD55748                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	127.825	3.9	105	0.00
2	T	ethene	133.000	135.114	-1.6	105	0.00
3	T	acetylene	133.000	161.764	-21.6#	120	0.00
4	T	ethane	133.000	134.513	-1.1	103	0.00
5	T	propane	133.000	132.948	0.0	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G39799.D RSK2.M Tue Oct 08 13:14:13 2013 Page 1

```
Data File : C:\MSDCHEM\1\DATA\100813\16G39799.D          Vial: 12
Acq On    : 08 Oct 2013  12:53                       Operator: QX
Sample    : WG447704-02 133umol/mol   RSK175         Inst    : HP16
Misc      : 1,1 STD55748                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------
```

```
---------------------------------------------------------------------------
 (#) = Out of Range             SPCC's out = 0  CCC's out = 0
 16G39799.D  RSK2.M      Tue Oct 08 13:14:13 2013                          Page 2
```

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\100813\16G39810.D Vial: 23
Acq On : 08 Oct 2013 14:34 Operator: QX
Sample : WG447704-03 133umol/mol RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Oct 08 14:39:25 2013 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24735770	134.655	umol/
2) T	ethene	1.04	42932534	144.194	umol/
3) T	acetylene	1.12	42101578	173.560	umol/
4) T	ethane	1.37	44334096	144.179	umol/
5) T	propane	3.81	64339497	140.817	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G39810.D RSK2.M Tue Oct 08 14:39:33 2013 Page 1

Quantitation Report (Not Reviewed)

```
Data File : C:\MSDchem\1\DATA\100813\16G39810.D          Vial: 23
Acq On    : 08 Oct 2013  14:34                       Operator: QX
Sample    : WG447704-03 133umol/mol  RSK175          Inst    : HP16
Misc      : 1,1 STD55748                             Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Oct  8 14:39 2013  Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```

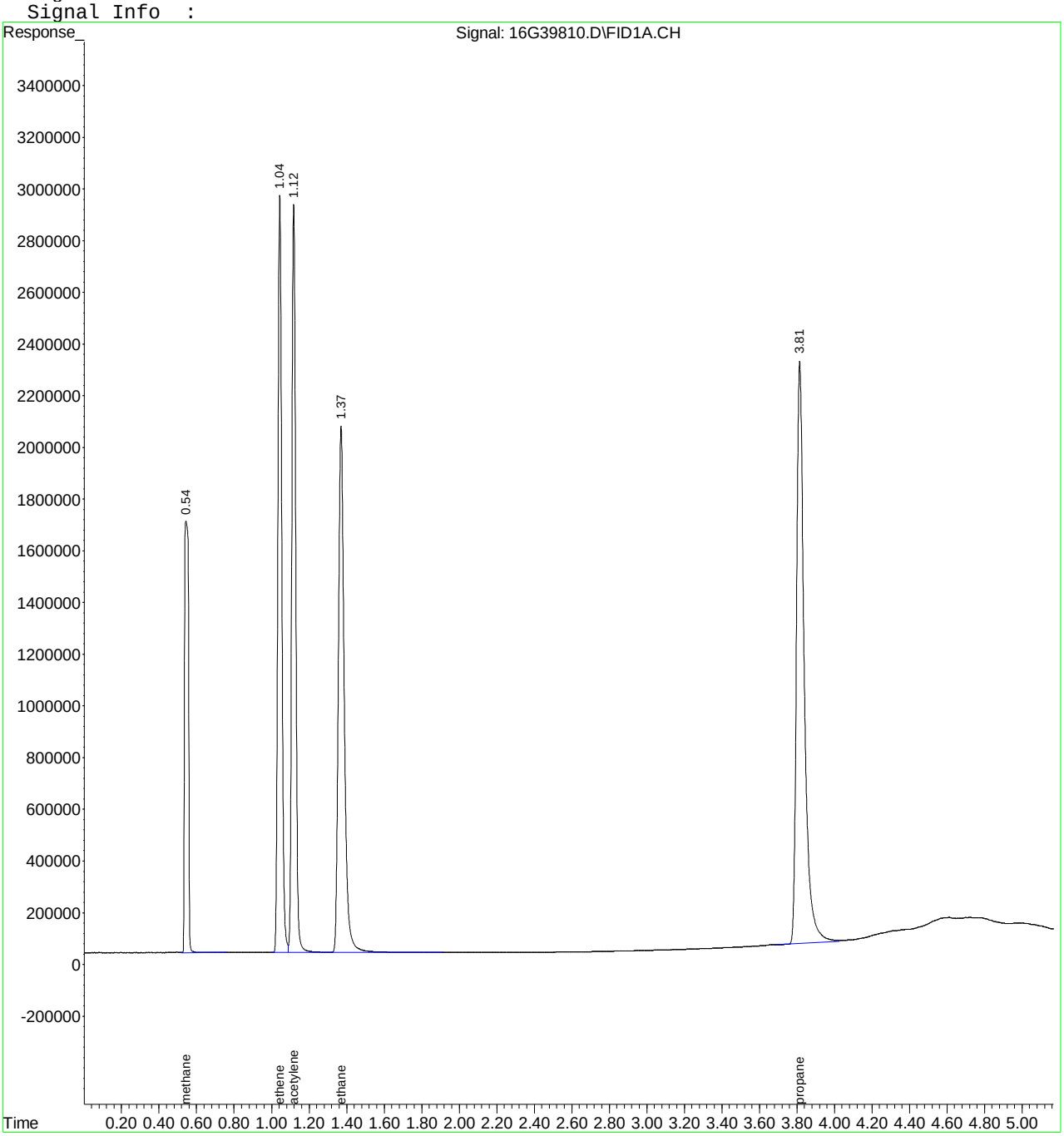

Evaluate Continuing Calibration Report

```
Data File : C:\MSDCHEM\1\DATA\100813\16G39810.D          Vial: 23
Acq On    : 08 Oct 2013  14:34                       Operator: QX
Sample    : WG447704-03 133umol/mol  RSK175          Inst    : HP16
Misc      : 1,1 STD55748                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	134.655	-1.2	111	0.00
2	T	ethene	133.000	144.194	-8.4	112	0.00
3	T	acetylene	133.000	173.560	-30.5#	129	0.00
4	T	ethane	133.000	144.179	-8.4	111	0.00
5	T	propane	133.000	140.817	-5.9	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G39810.D RSK2.M Tue Oct 08 14:44:26 2013 Page 1

```
Data File : C:\MSDCHEM\1\DATA\100813\16G39810.D          Vial: 23
Acq On    : 08 Oct 2013  14:34                       Operator: QX
Sample    : WG447704-03 133umol/mol  RSK175          Inst    : HP16
Misc      : 1,1 STD55748                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------
```

```
---------------------------------------------------------------------------
 (#) = Out of Range             SPCC's out = 0  CCC's out = 0
 16G39810.D  RSK2.M      Tue Oct 08 14:44:27 2013                          Page 2
```

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\101013\16G39815.D Vial: 1
Acq On : 10 Oct 2013 13:47 Operator: QX
Sample : WG448118-01 133umol/mol RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Oct 10 13:52:16 2013 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	23299848	126.838	umol/
2) T	ethene	1.05	40327670	135.445	umol/
3) T	acetylene	1.12	39863828	164.335	umol/
4) T	ethane	1.38	41555865	135.144	umol/
5) T	propane	3.82	61239260	134.032	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G39815.D RSK2.M Thu Oct 10 13:52:16 2013 Page 1

Quantitation Report (Not Reviewed)

```
Data File : C:\MSDchem\1\DATA\101013\16G39815.D          Vial: 1
Acq On    : 10 Oct 2013  13:47                       Operator: QX
Sample    : WG448118-01 133umol/mol  RSK175          Inst    : HP16
Misc      : 1,1 STD55748                             Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Oct 10 13:52 2013  Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```

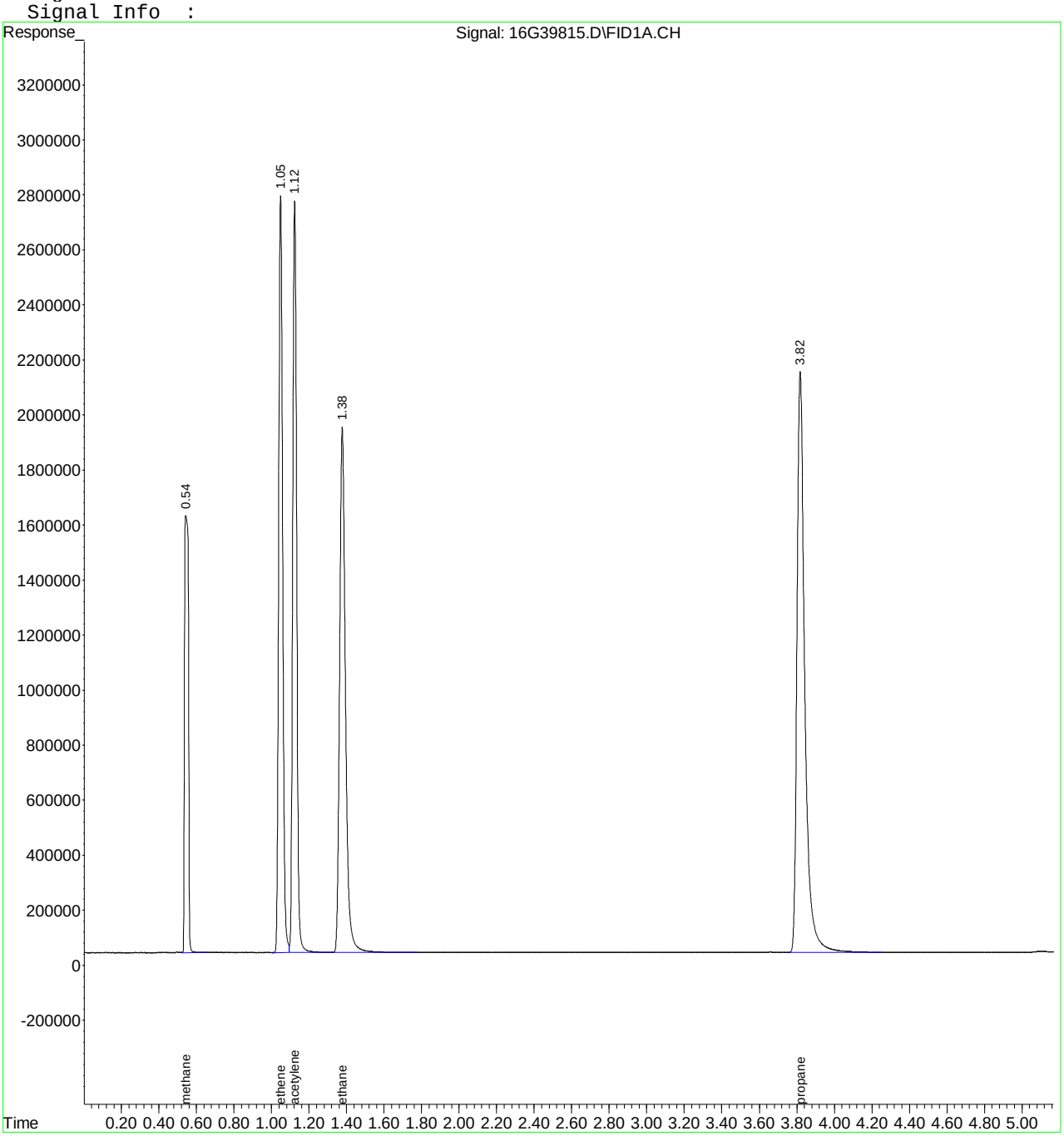

Evaluate Continuing Calibration Report

```
Data File : C:\MSDCHEM\1\DATA\101013\16G39815.D          Vial: 1
Acq On    : 10 Oct 2013  13:47                       Operator: QX
Sample    : WG448118-01 133umol/mol  RSK175          Inst    : HP16
Misc      : 1,1 STD55748                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	126.838	4.6	104	0.00
2	T	ethene	133.000	135.445	-1.8	105	0.00
3	T	acetylene	133.000	164.335	-23.6#	122	0.00
4	T	ethane	133.000	135.144	-1.6	104	0.00
5	T	propane	133.000	134.032	-0.8	103	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G39815.D RSK2.M Thu Oct 10 14:05:47 2013 Page 1

```
Data File : C:\MSDCHEM\1\DATA\101013\16G39815.D          Vial: 1
Acq On    : 10 Oct 2013  13:47                       Operator: QX
Sample    : WG448118-01 133umol/mol  RSK175          Inst    : HP16
Misc      : 1,1 STD55748                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------
```

```
---------------------------------------------------------------------------
 (#) = Out of Range             SPCC's out = 0  CCC's out = 0
 16G39815.D  RSK2.M      Thu Oct 10 14:05:47 2013                                Page 2
```

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\101013\16G39827.D Vial: 12
Acq On : 10 Oct 2013 16:09 Operator: QX
Sample : WG448118-02 133umol/mol RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Oct 10 16:14:38 2013 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	22666383	123.390	umol/
2) T	ethene	1.05	38860488	130.517	umol/
3) T	acetylene	1.12	37358952	154.009	umol/
4) T	ethane	1.38	40071943	130.318	umol/
5) T	propane	3.82	59895177	131.090	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G39827.D RSK2.M Thu Oct 10 16:14:39 2013 Page 1

Quantitation Report (Not Reviewed)

```
Data File : C:\MSDchem\1\DATA\101013\16G39827.D          Vial: 12
Acq On    : 10 Oct 2013  16:09                       Operator: QX
Sample    : WG448118-02 133umol/mol    RSK175        Inst    : HP16
Misc      : 1,1 STD55748                              Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Oct 10 16:14 2013  Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```

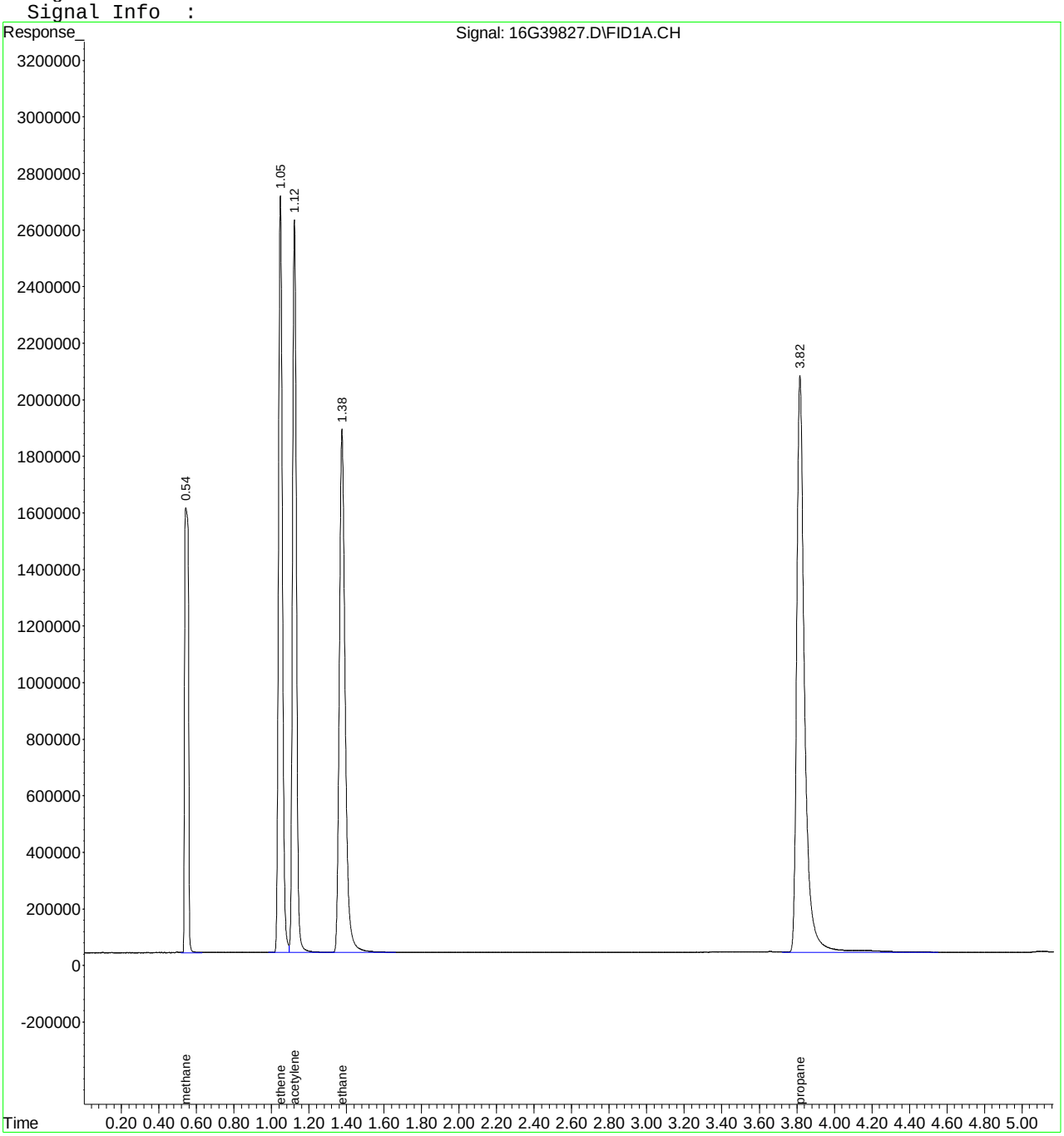

Evaluate Continuing Calibration Report

```
Data File : C:\MSDCHEM\1\DATA\101013\16G39827.D          Vial: 12
Acq On    : 10 Oct 2013  16:09                       Operator: QX
Sample    : WG448118-02 133umol/mol    RSK175        Inst    : HP16
Misc      : 1,1 STD55748                              Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	123.390	7.2	101	0.00
2	T	ethene	133.000	130.517	1.9	102	0.00
3	T	acetylene	133.000	154.009	-15.8#	114	0.00
4	T	ethane	133.000	130.318	2.0	100	0.00
5	T	propane	133.000	131.090	1.4	101	0.00

```
---------------------------------------------------------------------------
 (#) = Out of Range             SPCC's out = 0  CCC's out = 0
 16G39827.D  RSK2.M      Thu Oct 10 16:16:30 2013                          Page 1
```

Evaluate Continuing Calibration Report - Not Founds

```
Data File : C:\MSDCHEM\1\DATA\101013\16G39827.D          Vial: 12
Acq On    : 10 Oct 2013  16:09                       Operator: QX
Sample    : WG448118-02 133umol/mol    RSK175        Inst    : HP16
Misc      : 1,1 STD55748                              Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------
```

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G39827.D RSK2.M Thu Oct 10 16:16:30 2013 Page 2

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L13100266 **Run Date:** 10/08/2013 **Sample ID:** WG447704-01
Instrument: HP16 **Run Time:** 11:08 **Method:** RSK175
Workgroup (AAB#): WG447706 **File ID:** 16G39788

RT Standard	Analysis Date	File ID	Analyst
WG418215-01	01/10/2013	16G35943	MDA
WG417838-01	01/03/2013	16G35924	FJB
WG417763-01	01/02/2013	16G35907	FJB

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.59	.59	.59	.54	0.510	0.570
ETHENE	1.13	1.14	1.14	1.05	1.020	1.080
ETHANE	1.49	1.5	1.5	1.38	1.350	1.410
PROPANE	3.9	3.9	3.91	3.82	3.790	3.850
CARBON DIOXIDE	.2	.19	.19			
ACETYLENE	1.21	1.22	1.23	1.12	1.090	1.150

RT_WIN - Modified 01/06/2010
PDF File ID: 3128073
Report generated 10/21/2013 13:11

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L13100266 **Run Date:** 10/10/2013 **Sample ID:** WG448118-01
Instrument: HP16 **Run Time:** 13:47 **Method:** RSK175
Workgroup (AAB#): WG448119 **File ID:** 16G39815

RT Standard	Analysis Date	File ID	Analyst
WG418215-01	01/10/2013	16G35943	MDA
WG417838-01	01/03/2013	16G35924	FJB
WG417763-01	01/02/2013	16G35907	FJB

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.59	.59	.59	.54	0.510	0.570
ETHENE	1.13	1.14	1.14	1.05	1.020	1.080
ETHANE	1.49	1.5	1.5	1.38	1.350	1.410
PROPANE	3.9	3.9	3.91	3.82	3.790	3.850
CARBON DIOXIDE	.2	.19	.19			
ACETYLENE	1.21	1.22	1.23	1.12	1.090	1.150

RT_WIN - Modified 01/06/2010
PDF File ID: 3128073
Report generated 10/21/2013 13:11

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\100813\16G39789.D Vial: 2
Acq On : 08 Oct 2013 11:19 Operator: QX
Sample : WG447706-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Oct 08 11:24:58 2013 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	393425	2.142	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	1.12	4037	0.017	umol/
4) T	ethane	1.37	15755	0.051	umol/
5) T	propane	3.81	10150	0.022	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G39789.D RSK2.M Tue Oct 08 11:24:58 2013 Page 1

Quantitation Report (Not Reviewed)

```
Data File : C:\MSDchem\1\DATA\100813\16G39789.D          Vial: 2
Acq On    : 08 Oct 2013  11:19                       Operator: QX
Sample    : WG447706-01 BLANK   RSK175               Inst    : HP16
Misc      : 1,1                                      Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Oct  8 11:24 2013  Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```

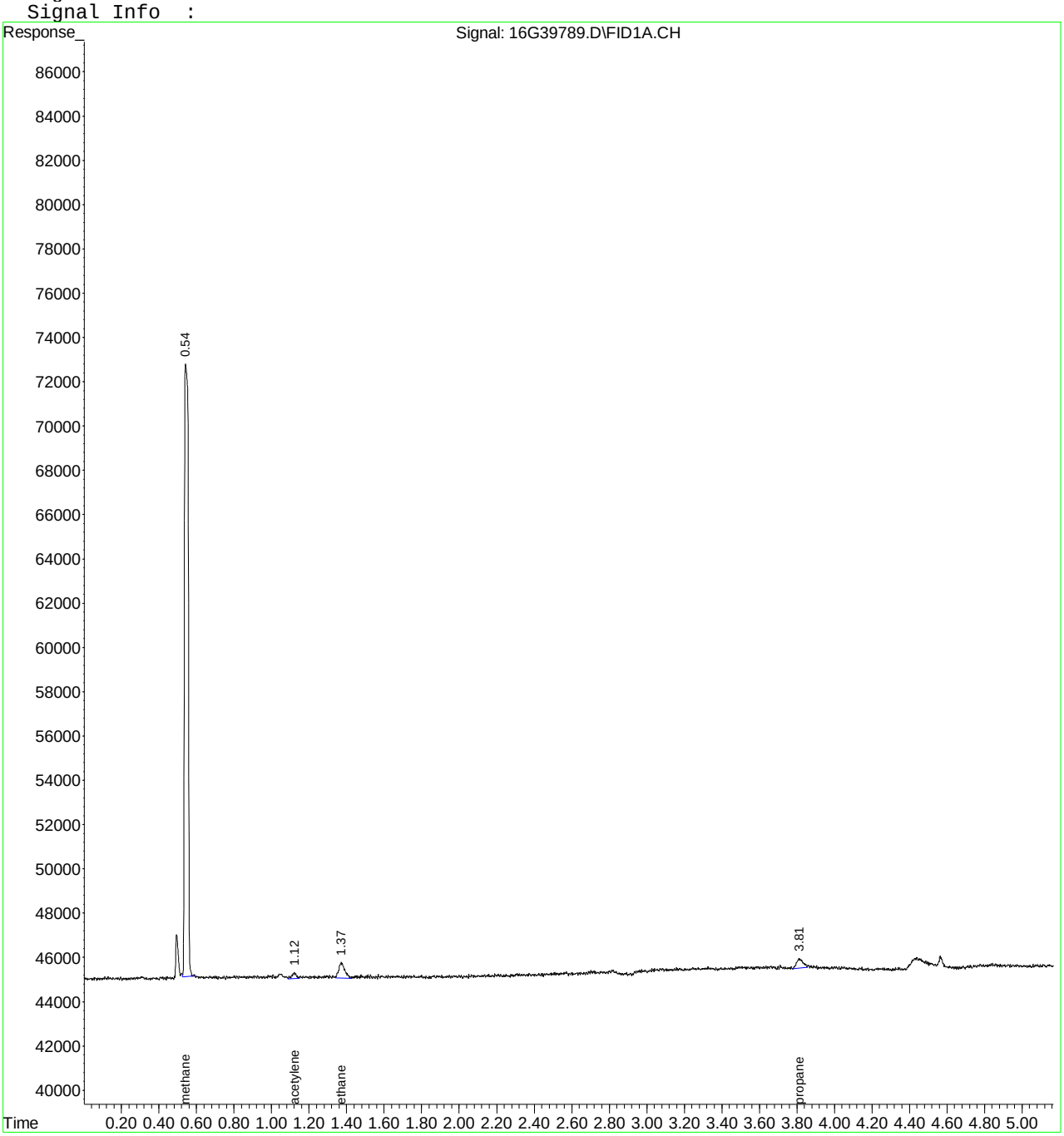

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\101013\16G39817.D Vial: 2
Acq On : 10 Oct 2013 14:32 Operator: QX
Sample : WG448119-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Oct 10 14:37:25 2013 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	450432	2.452	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.38	19031	0.062	umol/
5) T	propane	3.82	9423	0.021	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G39817.D RSK2.M Thu Oct 10 14:37:25 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\101013\16G39817.D Vial: 2
Acq On : 10 Oct 2013 14:32 Operator: QX
Sample : WG448119-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Oct 10 14:37 2013 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

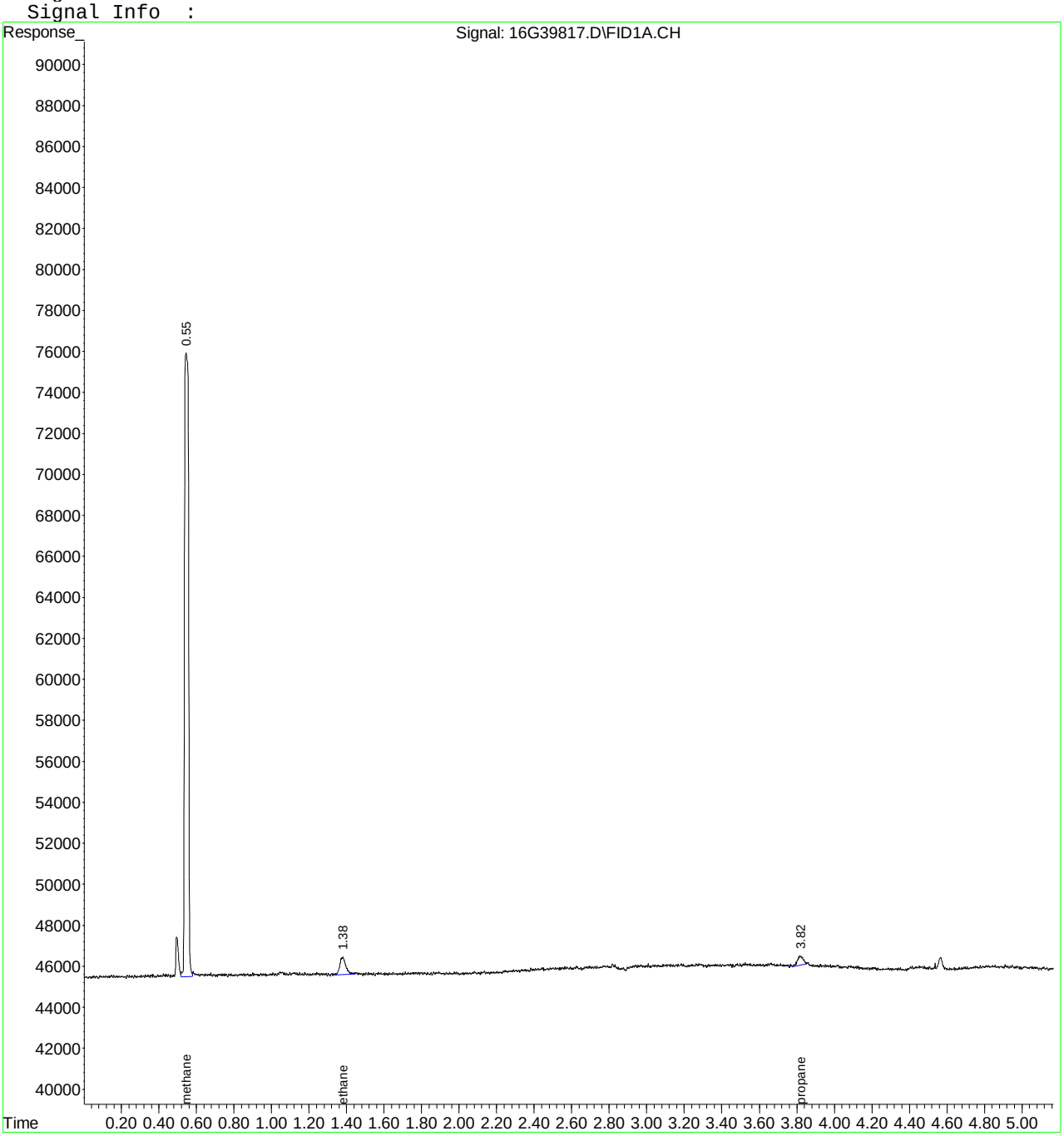

16G39817.D RSK2.M Thu Oct 10 14:37:25 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\100813\16G39790.D Vial: 3
Acq On : 08 Oct 2013 11:31 Operator: QX
Sample : WG447706-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD56793 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Oct 08 11:36:52 2013 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	11519494	62.709	umol/
2) T	ethene	1.04	20252556	68.020	umol/
3) T	acetylene	1.12	18827925	77.617	umol/
4) T	ethane	1.37	21155880	68.801	umol/
5) T	propane	3.82	32203113	70.482	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G39790.D RSK2.M Tue Oct 08 11:36:52 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\100813\16G39790.D Vial: 3
Acq On : 08 Oct 2013 11:31 Operator: QX
Sample : WG447706-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD56793 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Oct 8 11:36 2013 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

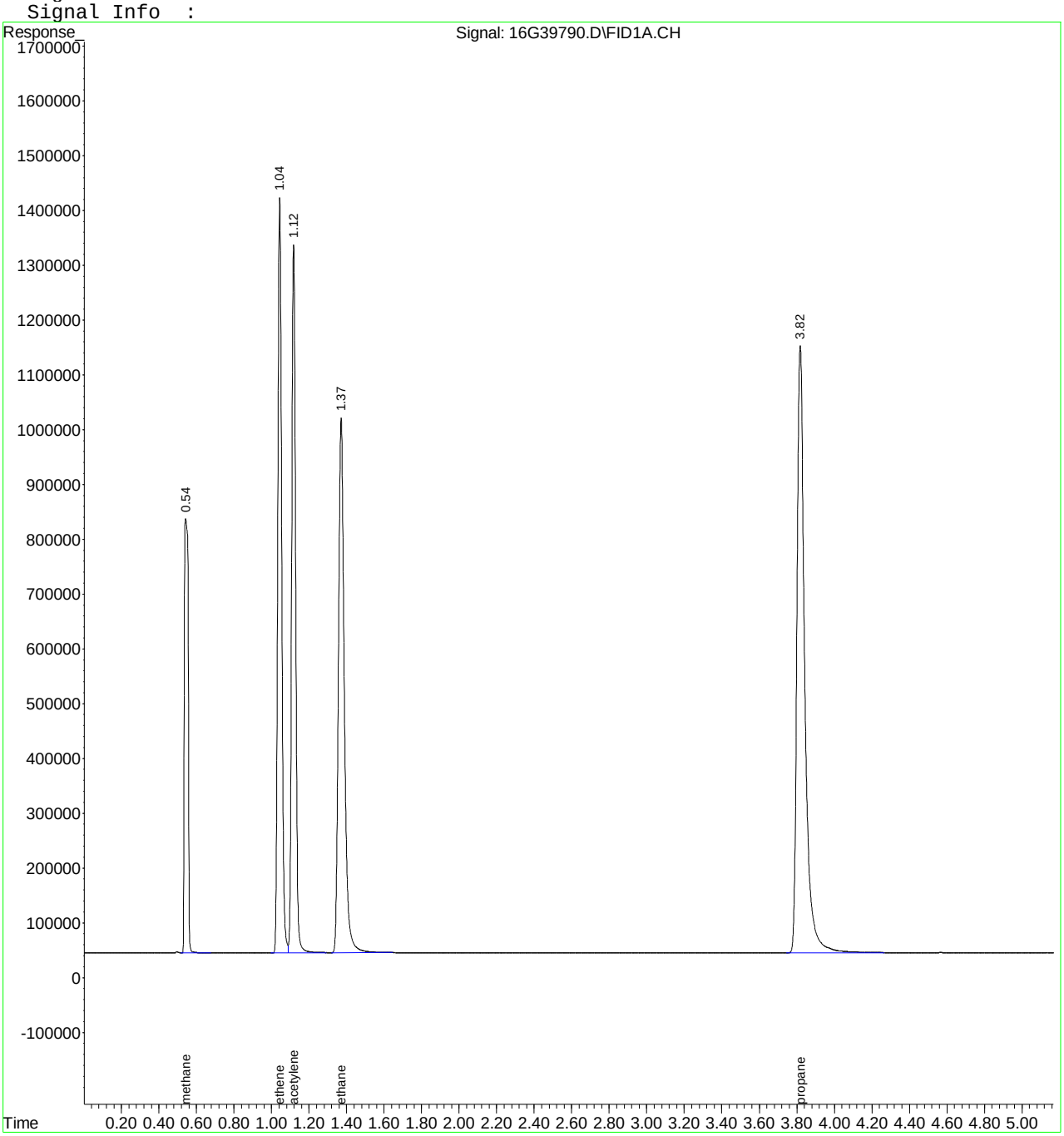

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\101013\16G39818.D Vial: 3
Acq On : 10 Oct 2013 14:44 Operator: QX
Sample : WG448119-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD56793 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Oct 10 14:49:52 2013 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	11025565	60.020	umol/
2) T	ethene	1.04	18915004	63.528	umol/
3) T	acetylene	1.12	16689137	68.800	umol/
4) T	ethane	1.37	19848950	64.551	umol/
5) T	propane	3.82	29743867	65.099	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G39818.D RSK2.M Thu Oct 10 14:49:52 2013 Page 1

Quantitation Report (Not Reviewed)

```
Data File : C:\MSDchem\1\DATA\101013\16G39818.D          Vial: 3
Acq On    : 10 Oct 2013  14:44                       Operator: QX
Sample    : WG448119-02 67umol/mol LCS RSK175        Inst    : HP16
Misc      : 1,1 STD56793                             Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Oct 10 14:49 2013  Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update  : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```

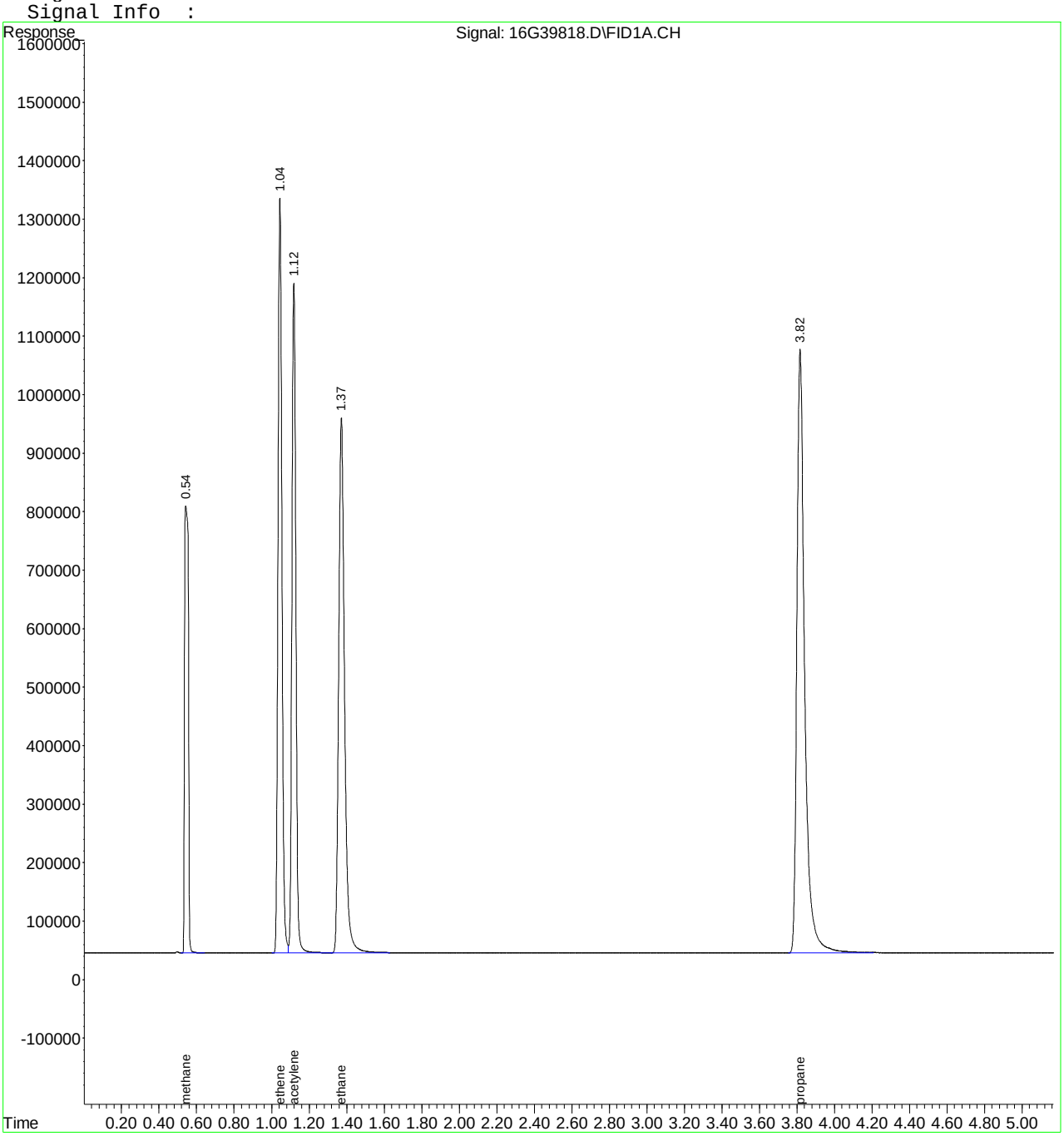

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\100813\16G39791.D Vial: 4
Acq On : 08 Oct 2013 11:40 Operator: QX
Sample : WG447706-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD56793 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Oct 08 11:45:47 2013 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	11853639	64.528	umol/
2) T	ethene	1.04	20682808	69.466	umol/
3) T	acetylene	1.12	18910864	77.958	umol/
4) T	ethane	1.37	21649671	70.407	umol/
5) T	propane	3.82	33066565	72.371	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G39791.D RSK2.M Tue Oct 08 11:45:47 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\100813\16G39791.D Vial: 4
Acq On : 08 Oct 2013 11:40 Operator: QX
Sample : WG447706-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD56793 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Oct 8 11:45 2013 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 040213
Last Update : Tue Apr 02 13:41:57 2013
Response via : Single Level Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

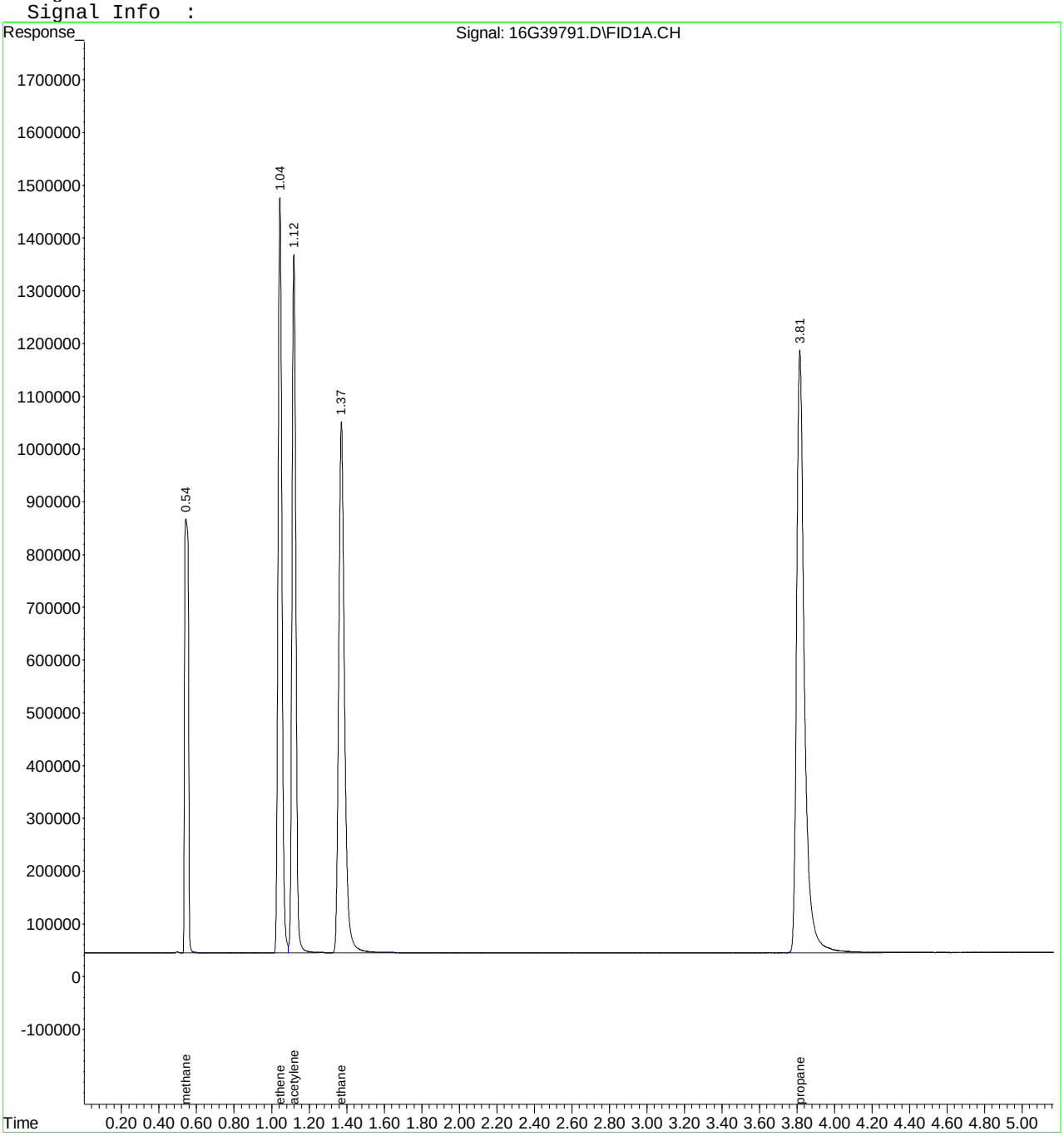

2.2 General Chemistry Data

2.2.1 Method 9056

2.2.1.1 Summary Data

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-05	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	67WW08-100213	**Prep Method:**	9056	**Prep Date:**	10/04/2013 07:35
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	07/23/2013 18:03
Workgroup #:	WG447339	**Analyst:**	JBK	**Run Date:**	10/04/2013 08:44
Collect Date:	10/02/2013 08:50	**Dilution:**	10	**File ID:**	I2_100413-07
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1850	J	4.00	2.00	1.00
Sulfate	14808-79-8	297		20.0	10.0	5.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-05	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	67WW08-100213	**Prep Method:**	9056	**Prep Date:**	10/04/2013 07:35
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	07/23/2013 18:03
Workgroup #:	WG447339	**Analyst:**	JBK	**Run Date:**	10/04/2013 13:51
Collect Date:	10/02/2013 08:50	**Dilution:**	100	**File ID:**	I2_100413-13
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1360		40.0	20.0	10.0
Sulfate	14808-79-8	241		200	100	50.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-07	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	67WW11-100213	**Prep Method:**	9056	**Prep Date:**	10/04/2013 07:35
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	07/23/2013 18:03
Workgroup #:	WG447339	**Analyst:**	JBK	**Run Date:**	10/04/2013 09:01
Collect Date:	10/02/2013 10:20	**Dilution:**	10	**File ID:**	I2_100413-08
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1660	J	4.00	2.00	1.00
Sulfate	14808-79-8	375		20.0	10.0	5.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-07	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	67WW11-100213	**Prep Method:**	9056	**Prep Date:**	10/04/2013 07:35
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	07/23/2013 18:03
Workgroup #:	WG447339	**Analyst:**	JBK	**Run Date:**	10/04/2013 14:08
Collect Date:	10/02/2013 10:20	**Dilution:**	100	**File ID:**	I2_100413-14
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1200		40.0	20.0	10.0
Sulfate	14808-79-8	254		200	100	50.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.2.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(- c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 072313 ICAL IC2.SEQ

Analyst1: KRB Analyst2: NA

Method: 300/9056 SOP: ICOL Rev: 14

Maintenance Log ID: 46786 Syringe Filter Lot#: 00164587

Eluent ID#: RGT27527

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG438790 (WATERS), WG438794 (SOILS)

Internal STD: NA Surrogate STD: NA Calibration STD STD57462

CCV STD: STD57462 LCS STD: STD57462 MS/MSD STD: NA

Comments: WG438788 (ICAL)
Alt. source STD57463

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I2_072313-01	WG438788-01 STD \#6	1	1		07/23/13 16:30
2	I2_072313-02	WG438788-02 STD \#5	1	1		07/23/13 16:49
3	I2_072313-03	WG438788-03 STD \#4	1	1		07/23/13 17:07
4	I2_072313-04	WG438788-04 STD \#3	1	1		07/23/13 17:26
5	I2_072313-05	WG438788-05 STD \#2	1	1		07/23/13 17:45
6	I2_072313-06	WG438788-06 STD \#1	1	1		07/23/13 18:03
7	I2_072313-07	WG438788-07 ALT STD	1	1		07/23/13 18:22
8	I2_072313-08	ELUENT	1	1		07/23/13 18:41
9	I2_072313-09	DI WATER	1	1		07/23/13 19:00
10	I2_072313-10	WG438795-01 ANION CCV	1	1		07/23/13 19:18
11	I2_072313-11	WG438795-02 ANION CCB	1	1		07/23/13 19:37
12	I2_072313-12	WG438790-01 ANION BLANK	1	1		07/23/13 19:56
13	I2_072313-13	WG438790-02 ANION LCS	1	1		07/23/13 20:14
14	I2_072313-14	L13070001-01 LOD (F,Cl,Br,SO4)	1	1		07/23/13 20:33
15	I2_072313-15	L13070001-01 LOD (NO2, NO3)	1	1		07/23/13 20:52
16	I2_072313-16	L13070003-01 LOQ (F,Cl,Br,SO4)	1	1		07/23/13 21:11
17	I2_072313-17	L13070003-01 LOQ (NO2, NO3)	1	1		07/23/13 21:29
18	I2_072313-18	WG438795-03 ANION CCV	1	1		07/23/13 21:48
19	I2_072313-19	WG438795-04 ANION CCB	1	1		07/23/13 22:07
20	I2_072313-20	WG438794-01 ANION BLANK	7	1		07/23/13 22:26
21	I2_072313-21	WG438794-02 ANION LCS	7	1		07/23/13 22:44
22	I2_072313-22	L13070006-29 (ALL)	7	1		07/23/13 23:03
23	I2_072313-23	L13070006-30 (ALL)	7	1		07/23/13 23:22
24	I2_072313-24	L13070006-31 (ALL)	7	1		07/23/13 23:41
25	I2_072313-25	L13070006-32 (ALL)	7	1		07/23/13 23:59
26	I2_072313-26	L13070006-33 (ALL)	7	1		07/24/13 00:18
27	I2_072313-27	L13070006-34 (ALL)	7	1		07/24/13 00:37
28	I2_072313-28	L13070006-35 (ALL)	7	1		07/24/13 00:55
29	I2_072313-29	WG438795-05 ANION CCV	1	1		07/24/13 01:14
30	I2_072313-30	WG438795-06 ANION CCB	1	1		07/24/13 01:33
31	I2_072313-31	END	1	1		07/24/13 01:52

Comments

Page: 1 Approved: 01-AUG-13

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 100413 IC2.SEQ
Analyst1: JBK Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 14

Maintenance Log ID: 47631 Syringe Filter Lot#: 00166429
Eluent ID#: RGT27749
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG447339
Internal STD: NA Surrogate STD: NA Calibration STD STD57462
CCV STD: STD57462 LCS STD: STD57462 MS/MSD STD: STD57462

Comments: L13100222, L13100266 and L13100324 dilutions due to high analyte concentrations (Cl and/or SO4) which were greater than 200 ppm. L13100222-01 had a thick organic matrix atop the water soluble matrix. The bottom layer was targeted for analysis.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I2_100413-01	ELUENT	1	1		10/04/13 07:01
2	I2_100413-02	DI WATER	1	1		10/04/13 07:18
3	I2_100413-03	WG447368-01 ANION CCV	1	1		10/04/13 07:35
4	I2_100413-04	WG447368-02 ANION CCB	1	1		10/04/13 07:52
5	I2_100413-05	WG447339-01 ANION BLANK	1	1		10/04/13 08:09
6	I2_100413-06	WG447339-02 ANION LCS	1	1		10/04/13 08:27
7	I2_100413-07	L13100266-05 1/10 (CL,NO2,NO3,SO4)	1	10		10/04/13 08:44
8	I2_100413-08	L13100266-07 1/10 (CL,NO2,NO3,SO4)	1	10		10/04/13 09:01
9	I2_100413-09	L13100222-01 1/100 (F)	1	100		10/04/13 09:18
10	I2_100413-10	L13100222-02 1/100 (F)	1	100		10/04/13 09:36
11	I2_100413-11	L13100184-01 1/2 (SO4)	2	2		10/04/13 09:53
12	I2_100413-12	L13100184-07 (SO4)	2	1		10/04/13 10:10
13	I2_100413-13	L13100266-05 1/100 RR CL	1	100		10/04/13 13:51
14	I2_100413-14	L13100266-07 1/100 RR CL	1	100		10/04/13 14:08
15	I2_100413-15	WG447368-03 ANION CCV	1	1		10/04/13 14:25
16	I2_100413-16	WG447368-04 ANION CCB	1	1		10/04/13 15:10
17	I2_100413-17	L13100324-01 1/100 (ALL)	1	100		10/04/13 15:28
18	I2_100413-18	L13100324-01 1/1000 RR CL	1	1000		10/04/13 15:45
19	I2_100413-19	L13100308-01 (NO3,SO4)	1	1		10/04/13 16:02
20	I2_100413-20	L13100308-02 (NO3,SO4)	1	1		10/04/13 16:19
21	I2_100413-21	L13100308-03 (NO3,SO4)	1	1		10/04/13 16:36
22	I2_100413-22	L13100308-04 (NO3,SO4)	1	1		10/04/13 16:54
23	I2_100413-23	L13100308-05 (NO3,SO4)	1	1		10/04/13 17:11
24	I2_100413-24	L13100308-06 (NO3,SO4)	1	1		10/04/13 17:28
39	I2_100413-25	L13100308-07 (NO3,SO4)	1	1		10/04/13 17:45
26	I2_100413-26	WG447339-04 DUP 308-07	1	1		10/04/13 18:03
27	I2_100413-27	WG447368-05 ANION CCV	1	1		10/04/13 18:20
28	I2_100413-28	WG447368-06 ANION CCB	1	1		10/04/13 18:37
29	I2_100413-29	WG447339-05 MS 308-07	1	1		10/04/13 18:54
30	I2_100413-30	WG447339-06 SD 308-07	1	1		10/04/13 19:11
31	I2_100413-31	L13100308-08 (NO3,SO4)	1	1		10/04/13 19:29
32	I2_100413-32	L13100308-09 (NO3,SO4)	1	1		10/04/13 19:46
33	I2_100413-33	L13100334-02 (CL,NO2,NO3,SO4)	1	1		10/04/13 20:03

Page: 1 Approved: 05-OCT-13

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 100413 IC2.SEQ
Analyst1: JBK Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 14

Maintenance Log ID: 47631 Syringe Filter Lot#: 00166429
Eluent ID#: RGT27749
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG447339
Internal STD: NA Surrogate STD: NA STD57462
CCV STD: STD57462 LCS STD: STD57462 STD57462

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I2_100413-34	L13100334-03 (CL,NO2,NO3,SO4)	1	1		10/04/13 20:20
35	I2_100413-35	L13100334-04 (CL,NO2,NO3,SO4)	1	1		10/04/13 20:38
36	I2_100413-36	WG447368-07 ANION CCV	1	1		10/04/13 20:55
37	I2_100413-37	WG447368-08 ANION CCB	1	1		10/04/13 21:12
38	I2_100413-38	END	1	1		10/04/13 21:29

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7	X	100	Over Calibration Range	Cl
	L13100266-05 1/10 (CL,NO2,NO3,SO4): DL this sequence.			
8	X	100	Over Calibration Range	Cl
	L13100266-07 1/10 (CL,NO2,NO3,SO4): DL this sequence.			
17				
	L13100324-01 1/100 (ALL): Received and analyzed out of hold for NO2 and NO3.			

Page: 2 Approved: 05-OCT-13

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUL-2013
Analyst: KRB
Analyst: NA
Method: 300/9056
Instrument: IC2
Curve Workgroup: NA
Runlog ID: 54622
Analytical Workgroups: 07-0001, 0003, 0006

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	KRB
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MDC

Primary Reviewer:
24-JUL-2013

Secondary Reviewer:
01-AUG-2013

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-01-2013 11:47:14

Microbac Laboratories Inc.

Data Checklist

Date: 04-OCT-2013
Analyst: JBK
Analyst: NA
Method: 300/9056
Instrument: IC2
Curve Workgroup: NA
Runlog ID: 56126
Analytical Workgroups: WG447339 (10-184, 222, 266, 308, 324, 334)

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	JBK
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MDC

Primary Reviewer:
05-OCT-2013

Secondary Reviewer:
05-OCT-2013

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-05-2013 17:13:32

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG447339

Login Number: L13100266

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-100213	05	10/02/13					10/04/2013	1.9	2		10/04/13	2	2	
67WW08-100213	05	10/02/13					10/04/2013	1.9	2		10/04/13	2.2	2	*
67WW11-100213	07	10/02/13					10/04/2013	1.9	2		10/04/13	1.9	2	
67WW11-100213	07	10/02/13					10/04/2013	1.9	2		10/04/13	2.2	2	*

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3123148
Report generated 10/07/2013 14:10

METHOD BLANK SUMMARY

Login Number: L13100266
Blank File ID: I2_100413-05
Prep Date: 10/04/13 07:35
Analyzed Date: 10/04/13 08:09
Analyst: JBK

Work Group: WG447339
Blank Sample ID: WG447339-01
Instrument ID: IC2
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG447339-02	I2_100413-06	10/04/13 08:27	01
67WW08-100213	L13100266-05	I2_100413-07	10/04/13 08:44	DL01
67WW11-100213	L13100266-07	I2_100413-08	10/04/13 09:01	DL01
67WW08-100213	L13100266-05	I2_100413-13	10/04/13 13:51	DL02
67WW11-100213	L13100266-07	I2_100413-14	10/04/13 14:08	DL02
DUP	WG447339-04	I2_100413-26	10/04/13 18:03	01

Report Name: BLANK_SUMMARY
PDF File ID: 3123149
Report generated 10/07/2013 14:10

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13100266 Prep Date: 10/04/13 07:35 Sample ID: WG447339-01
Instrument ID: IC2 Run Date: 10/04/13 08:09 Prep Method: 9056
File ID: I2 100413-05 Analyst: JBK Method: 9056
Workgroup (AAB#): WG447339 Matrix: Water Units: mg/L
Contract #: Cal ID: IC2-23-JUL-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3123150
07-OCT-2013 14:10

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13100266 Run Date: 10/04/2013 Sample ID: WG447339-02
Instrument ID: IC2 Run Time: 08:27 Prep Method: 9056
File ID: I2 100413-06 Analyst: JBK Method: 9056
Workgroup (AAB#): WG447339 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD57462 Cal ID: IC2-23-JUL-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	7.92	99.0	90 - 110	
Sulfate	40.0	40.1	100	90 - 110	
Nitrate	5.42	5.44	100	90 - 110	
Nitrite	4.87	4.84	99.4	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 3123151
Report generated: 10/07/2013 14:10

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L13100266
Analytical Method: 9056
ICAL Workgroup: WG438788

Instrument ID: IC2
Initial Calibration Date: 23-JUL-13 18:03
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.859	9.42	0.99800	
Nitrate		2.360	8.76	0.99700	
Nitrite		2.712	6.27	0.99900	
Sulfate		7.607	9.30	0.99800	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 3123152
Report generated 10/07/2013 14:10

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L13100266
Analytical Method: 9056
Instrument ID: IC2
Initial Calibration Date: 23-JUL-13 18:03
Column ID: F

Analyte	WG438788-01			WG438788-02			WG438788-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.73600000	5.068	12.0	2.16600000	5.540	8.00	1.39200000	5.747
Nitrate	16.3	7.95900000	2.044	8.13	3.62900000	2.241	5.42	2.32600000	2.331
Nitrite	14.6	5.87300000	2.488	7.31	2.81100000	2.599	4.87	1.84300000	2.643
Sulfate	120	18.3170000	6.551	60.0	8.34200000	7.193	40.0	5.34300000	7.486

INT_CAL - Modified 03/06/2008
PDF File ID: 3123152
Report generated 10/07/2013 14:10

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L13100266
Analytical Method: 9056
Instrument ID: IC2
Initial Calibration Date: 23-JUL-13 18:03
Column ID: F

Analyte	WG438788-04			WG438788-05			WG438788-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.667000000	5.997	1.00	0.163000000	6.135	0.200	0.0300000000	6.667
Nitrate	2.71	1.10300000	2.458	0.678	0.264000000	2.566	0.134	0.0530000000	2.520
Nitrite	2.44	0.886000000	2.749	0.609	0.216000000	2.819	0.122	0.0410000000	2.971
Sulfate	20.0	2.52000000	7.937	5.00	0.625000000	8.000	1.00	0.118000000	8.475

INT_CAL - Modified 03/06/2008
PDF File ID: 3123152
Report generated 10/07/2013 14:10

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13100266 Run Date: 07/23/2013 Sample ID: WG438788-07
Instrument ID: IC2 Run Time: 18:22 Method: 9056
File ID: I2_072313-07 Analyst: KRB QC Key: DOD4
ICal Workgroup: WG438788 Cal ID: IC2 - 23-JUL-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.78	mg/L	5.83	2.80	10	
Sulfate		40.0	38.9	mg/L	7.61	2.70	10	
Nitrate		5.42	5.30	mg/L	2.37	2.20	10	
Nitrite		4.87	4.84	mg/L	2.66	0.600	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3123153
Report generated 10/07/2013 14:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13100266
Run Date: 10/04/2013
Sample ID: WG447368-02
Instrument ID: IC2
Run Time: 07:52
Method: 9056
File ID: I2 100413-04
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG447339
Cal ID: IC2 - 23-JUL-13
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3123155
Report generated 10/07/2013 14:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13100266
Run Date: 10/04/2013
Sample ID: WG447368-04
Instrument ID: IC2
Run Time: 15:10
Method: 9056
File ID: I2 100413-16
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG447339
Cal ID: IC2 - 23-JUL-13
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3123155
Report generated 10/07/2013 14:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13100266 Run Date: 10/04/2013 Sample ID: WG447368-01
Instrument ID: IC2 Run Time: 07:35 Method: 9056
File ID: I2 100413-03 Analyst: JBK QC Key: DOD4
Workgroup (AAB#): WG447339 Cal ID: IC2 - 23-JUL-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.89	mg/L	5.74	1.35	10	
Sulfate		40.0	40.0	mg/L	7.40	0.115	10	
Nitrate		5.42	5.41	mg/L	2.33	0.288	10	
Nitrite		4.87	4.84	mg/L	2.66	0.686	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3123154
Report generated 10/07/2013 14:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13100266 Run Date: 10/04/2013 Sample ID: WG447368-03
Instrument ID: IC2 Run Time: 14:25 Method: 9056
File ID: I2 100413-15 Analyst: JBK QC Key: DOD4
Workgroup (AAB#): WG447339 Cal ID: IC2 - 23-JUL-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.95	mg/L	5.70	0.588	10	
Sulfate		40.0	40.4	mg/L	7.34	0.960	10	
Nitrate		5.42	5.46	mg/L	2.30	0.764	10	
Nitrite		4.87	4.88	mg/L	2.64	0.259	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3123154
Report generated 10/07/2013 14:11

2.2.1.3 Sample Data

7 L13100266-05 1/10 (CL,NO2,NO3,SO4)

1,10 JBK (HIGH CL, RR 1/100)

Sample Name:	**L13100266-05 1/10 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/4/2013 8:44**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

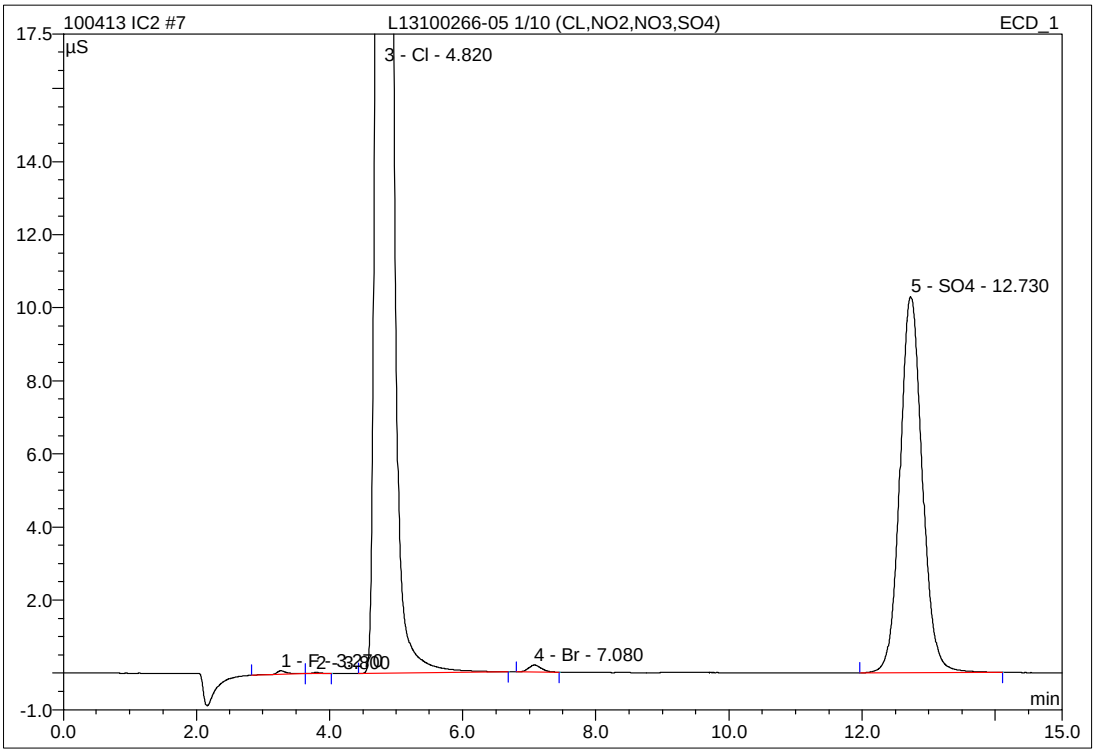

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.27	F	0.101	0.019	0.05	0.102	BMB
2	3.80	n.a.	0.035	0.005	0.01	n.a.	bMB
3	4.82	Cl	207.552	32.847	88.98	185.405	BMB
4	7.08	Br	0.193	0.043	0.12	0.622	BMB
5	12.73	SO4	10.290	4.000	10.84	29.661	BMB
Total:			218.172	36.916	100.00	215.791	

13 L13100266-05 1/100 RR CL

1,100 JBK

Sample Name:	**L13100266-05 1/100 RR CL**	*Injection Volume:*	**25.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/4/2013 13:51**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

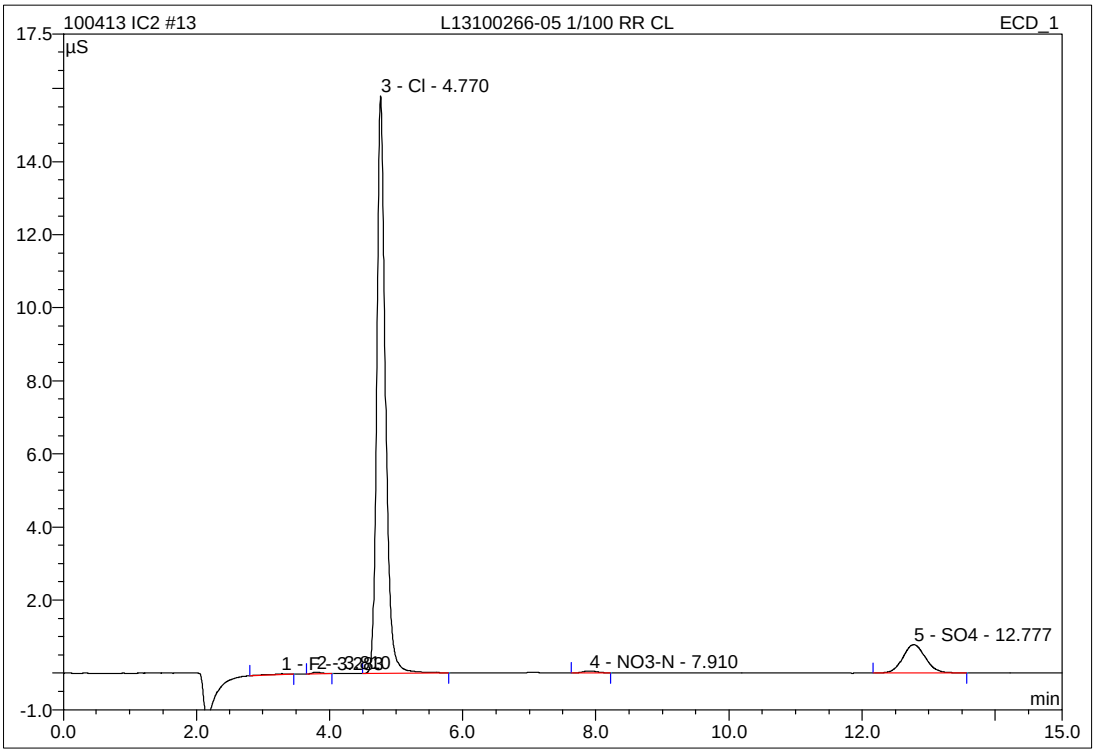

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.28	F	0.020	0.007	0.24	0.055	BMB
2	3.81	n.a.	0.043	0.006	0.24	n.a.	BMB
3	4.77	Cl	15.801	2.399	87.79	13.570	BMB
4	7.91	NO3-N	0.055	0.014	0.51	0.048	BMB
5	12.78	SO4	0.777	0.307	11.23	2.407	BMB
Total:			16.696	2.733	100.00	16.080	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

8 L13100266-07 1/10 (CL,NO2,NO3,SO4)

1,10 JBK (HIGH CL, RR 1/100)

Sample Name:	**L13100266-07 1/10 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/4/2013 9:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

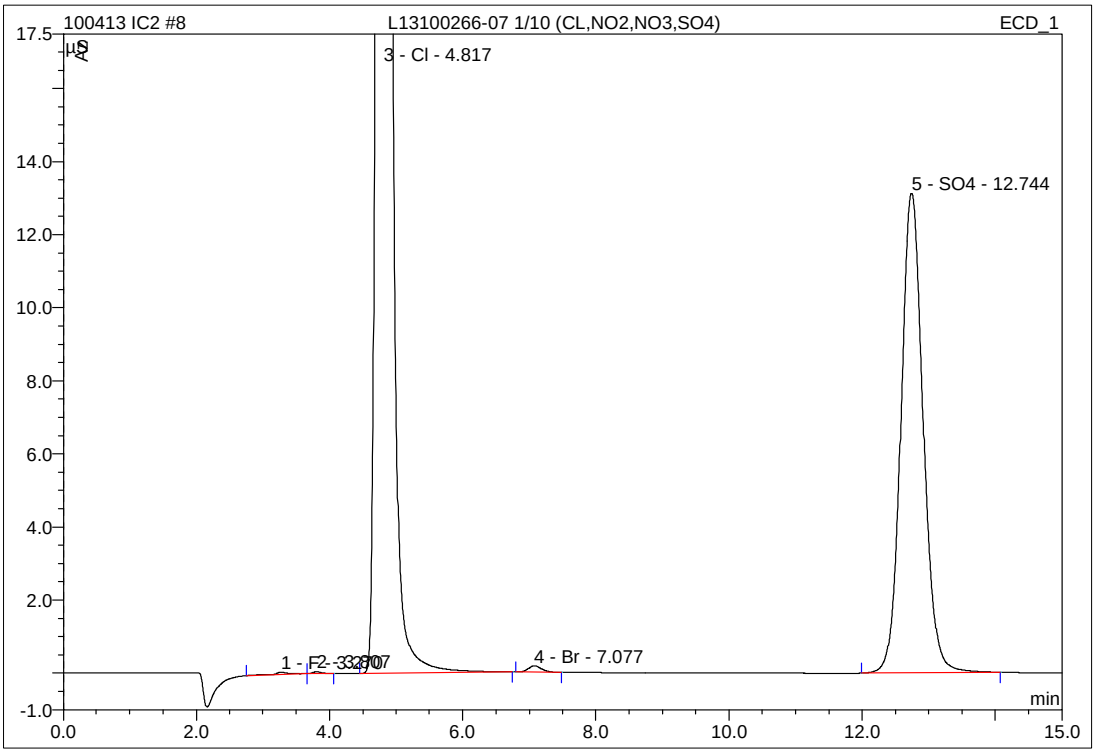

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.27	F	0.067	0.017	0.05	0.095	BMB
2	3.81	n.a.	0.055	0.008	0.02	n.a.	bMB
3	4.82	Cl	190.222	29.468	85.18	166.334	BMB
4	7.08	Br	0.177	0.040	0.12	0.580	BMB
5	12.74	SO4	13.124	5.061	14.63	37.490	BMB
Total:			203.646	34.595	100.00	204.499	

14 L13100266-07 1/100 RR CL

1,100 JBK

Sample Name:	**L13100266-07 1/100 RR CL**	*Injection Volume:*	**25.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/4/2013 14:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

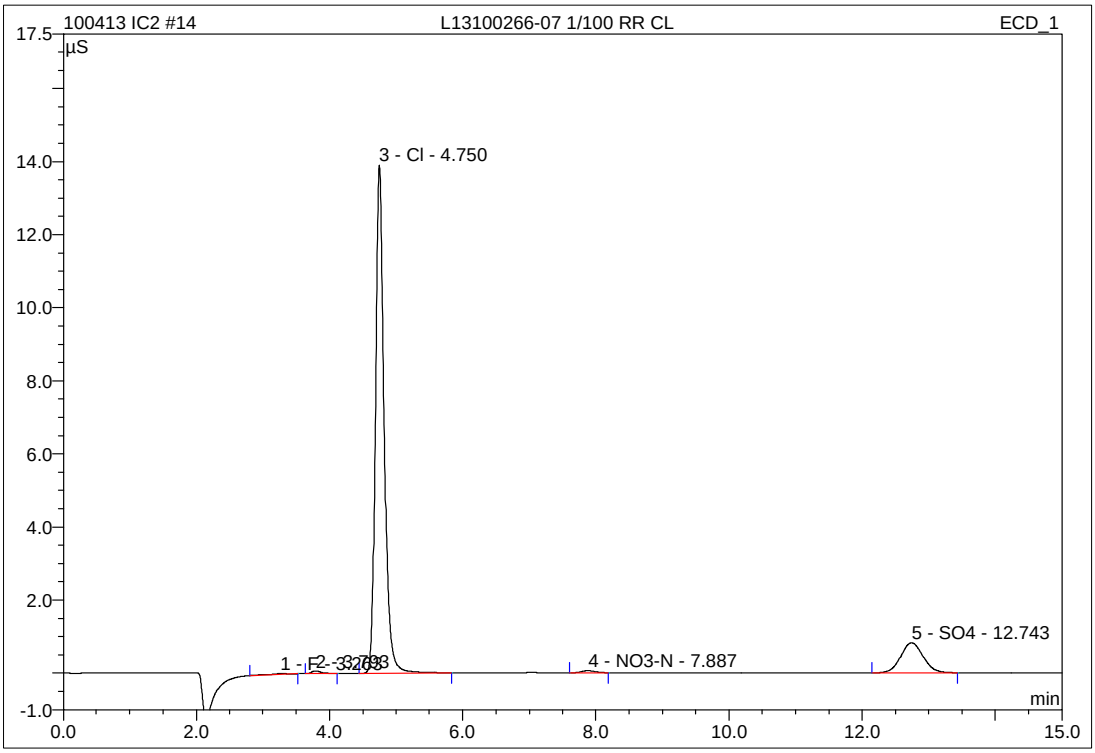

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.26	F	0.023	0.007	0.29	0.057	BMB
2	3.79	n.a.	0.075	0.012	0.49	n.a.	BMB
3	4.75	Cl	13.905	2.121	85.54	12.000	BMB
4	7.89	NO3-N	0.059	0.015	0.60	0.050	BMB
5	12.74	SO4	0.822	0.324	13.08	2.536	BMB
Total:			14.884	2.479	100.00	14.643	

2.2.1.4 Standards Data

1 WG438788-01 STD #6

1,1 KRB STD57462

Sample Name:	**WG438788-01 STD #6**	*Injection Volume:*	**25.0**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/23/2013 16:30**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.50**	*Sample Amount:*	**1.0000**

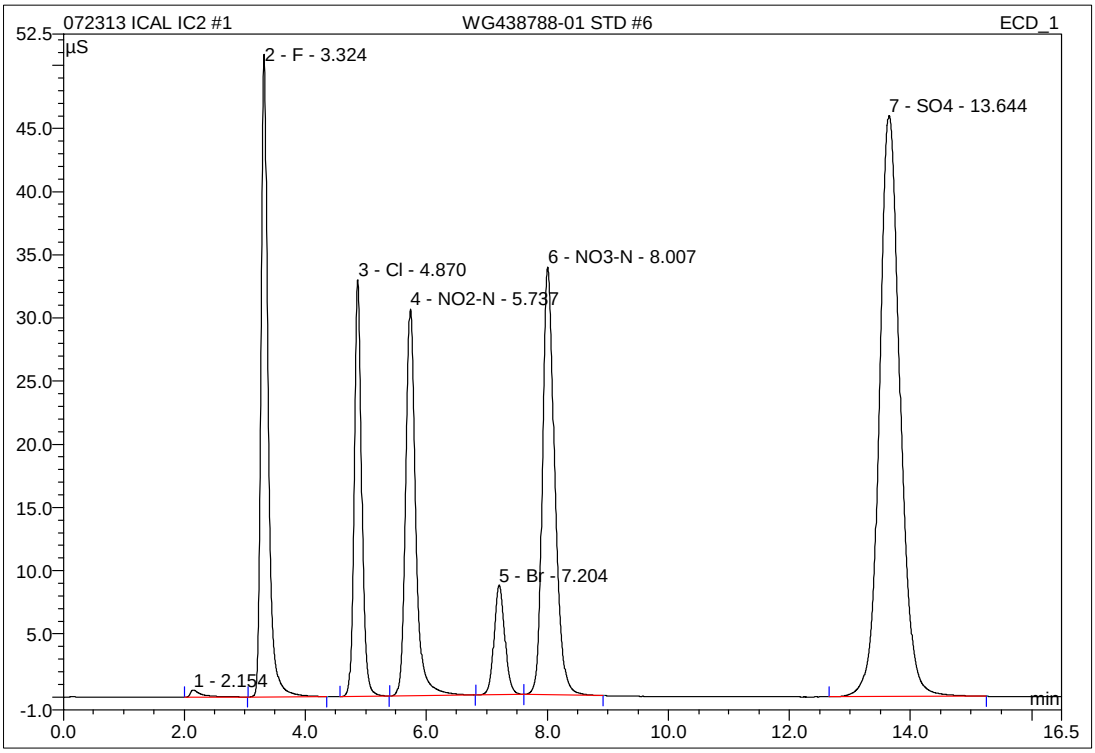

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.15	n.a.	0.547	0.119	0.26	n.a.	BMB
2	3.32	F	50.861	6.875	15.05	25.620	BMB
3	4.87	Cl	33.005	4.736	10.37	26.760	BMB
4	5.74	NO2-N	30.581	5.873	12.86	15.516	BMB
5	7.20	Br	8.687	1.797	3.93	24.989	BMB
6	8.01	NO3-N	33.847	7.959	17.42	18.430	BMB
7	13.64	SO4	45.982	18.317	40.10	135.301	BMB
Total:			203.511	45.676	100.00	246.617	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2 WG438788-02 STD #5

1,1 KRB STD57462

Sample Name:	**WG438788-02 STD #5**	*Injection Volume:*	**25.0**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/23/2013 16:49**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.50**	*Sample Amount:*	**1.0000**

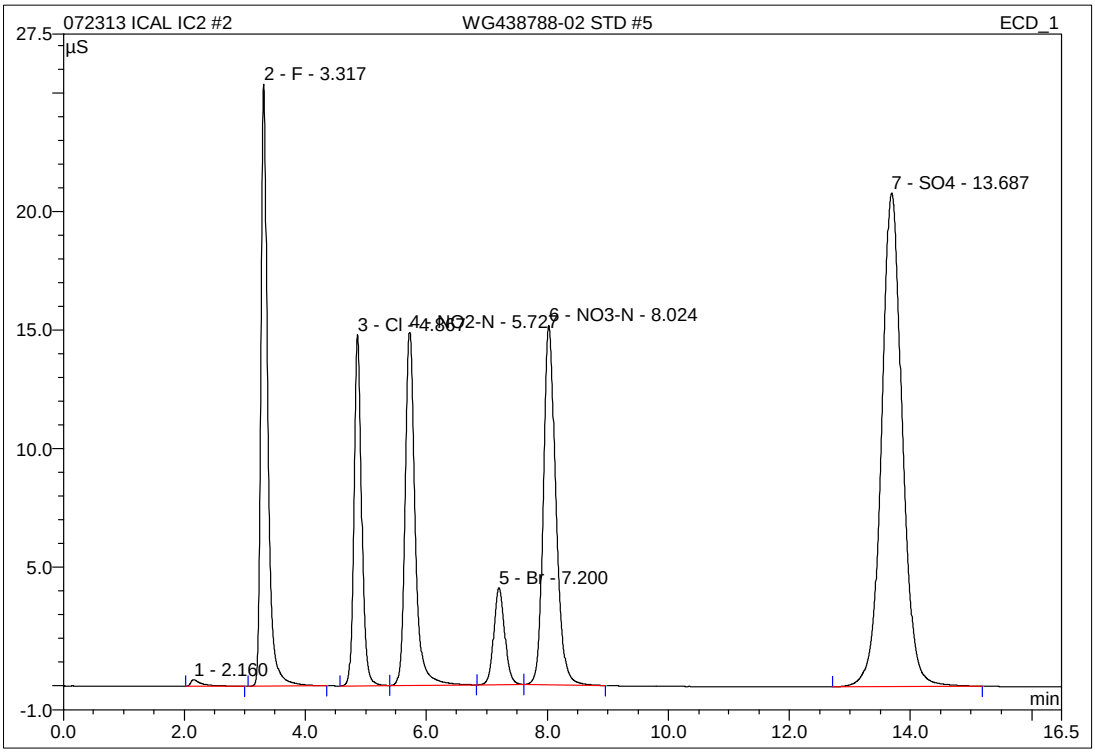

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.16	n.a.	0.272	0.059	0.28	n.a.	BMB
2	3.32	F	25.378	3.304	15.61	12.329	BMB
3	4.87	Cl	14.798	2.166	10.23	12.256	BMB
4	5.73	NO2-N	14.891	2.811	13.28	7.434	BMB
5	7.20	Br	4.083	0.861	4.06	11.978	BMb
6	8.02	NO3-N	15.151	3.629	17.14	8.412	bMB
7	13.69	SO4	20.814	8.342	39.40	61.700	BMB
Total:			95.388	21.172	100.00	114.109	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG438788-03 STD #4

1,1 KRB STD57462

Sample Name:	**WG438788-03 STD #4**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/23/2013 17:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.50**	*Sample Amount:*	**1.0000**

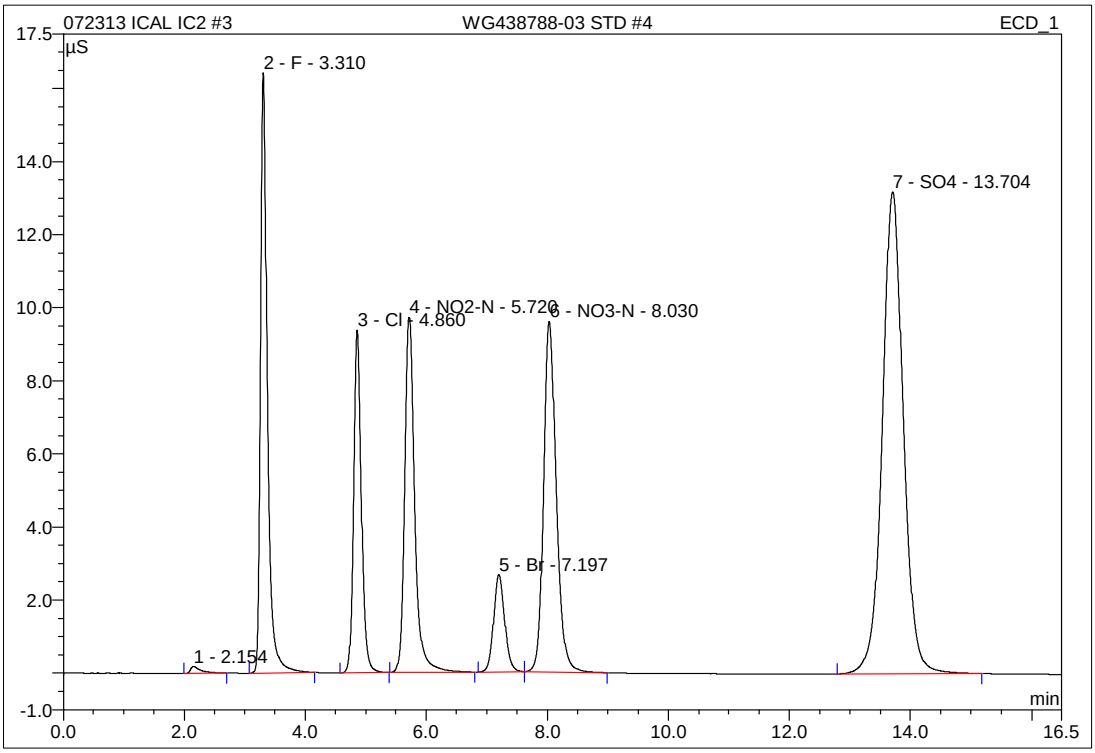

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.15	n.a.	0.184	0.036	0.26	n.a.	BMB
2	3.31	F	16.428	2.152	15.76	8.042	BMB
3	4.86	Cl	9.386	1.392	10.19	7.885	BMB
4	5.72	NO2-N	9.714	1.843	13.49	4.878	BMB
5	7.20	Br	2.663	0.567	4.15	7.892	BMB
6	8.03	NO3-N	9.597	2.326	17.03	5.398	BMB
7	13.70	SO4	13.193	5.343	39.12	39.566	BMB
Total:			61.166	13.658	100.00	73.660	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG438788-03 STD #4

1,1 KRB STD57462

Sample Name:	**WG438788-03 STD #4**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/23/2013 17:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.50**	*Sample Amount:*	**1.0000**

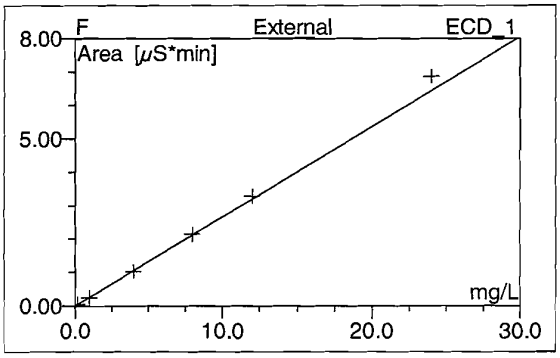

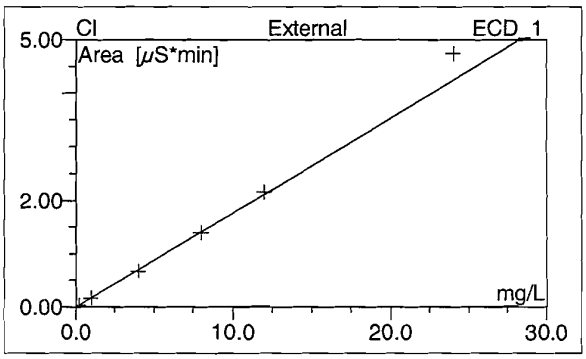

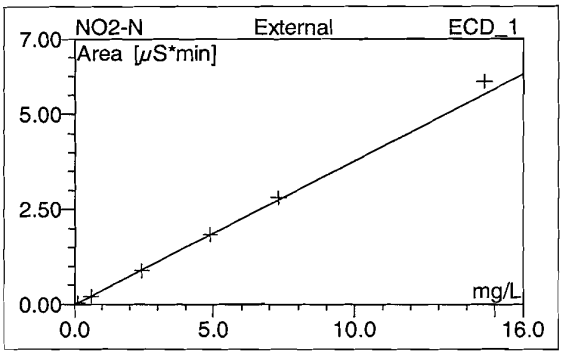

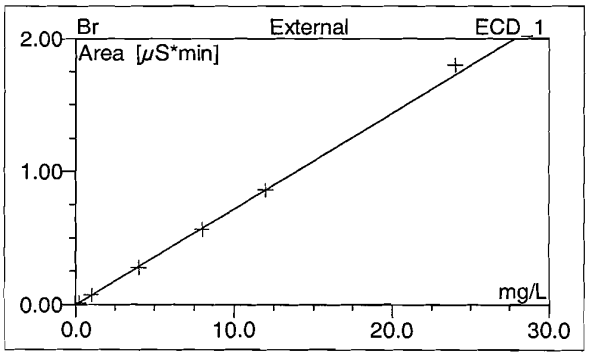

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.15	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.31	F	YYLOff	6	99.8847	-0.0081	0.2687	0.0000
3	4.86	Cl	YYLOff	6	99.8104	-0.0057	0.1772	0.0000
4	5.72	NO2-N	YYLOff	6	99.9218	-0.0051	0.3789	0.0000
5	7.20	Br	YYLOff	6	99.9652	-0.0014	0.0720	0.0000
6	8.03	NO3-N	YYLOff	6	99.7118	-0.0069	0.4322	0.0000
7	13.70	SO4	YYLOff	6	99.7597	-0.0194	0.1355	0.0000
Average:					99.8423	-0.0078	0.2441	0.0000

3 WG438788-03 STD #4

1,1 KRB STD57462

Sample Name:	**WG438788-03 STD #4**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/23/2013 17:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.50**	*Sample Amount:*	**1.0000**

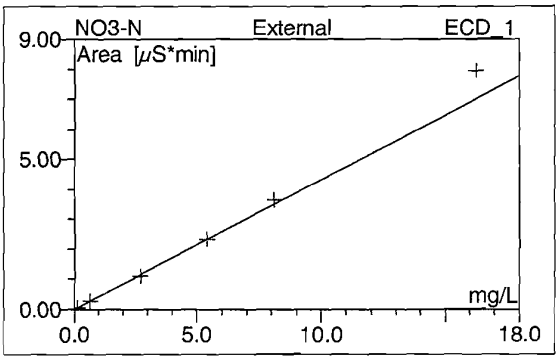

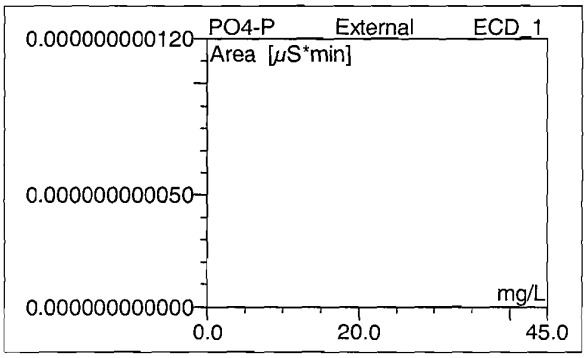

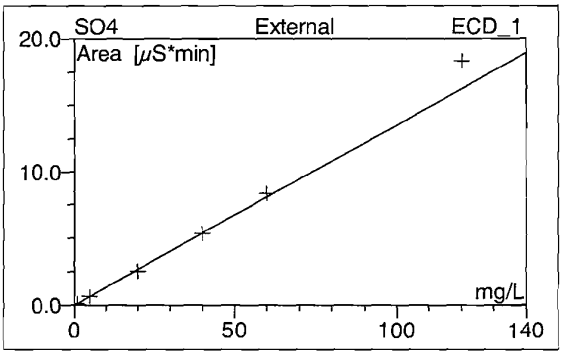

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.15	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.31	F	YYLOff	6	99.8847	-0.0081	0.2687	0.0000
3	4.86	Cl	YYLOff	6	99.8104	-0.0057	0.1772	0.0000
4	5.72	NO2-N	YYLOff	6	99.9218	-0.0051	0.3789	0.0000
5	7.20	Br	YYLOff	6	99.9652	-0.0014	0.0720	0.0000
6	8.03	NO3-N	YYLOff	6	99.7118	-0.0069	0.4322	0.0000
7	13.70	SO4	YYLOff	6	99.7597	-0.0194	0.1355	0.0000
Average:					99.8423	-0.0078	0.2441	0.0000

4 WG438788-04 STD #3

1,1 KRB STD57462

Sample Name:	**WG438788-04 STD #3**	*Injection Volume:*	**25.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/23/2013 17:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.50**	*Sample Amount:*	**1.0000**

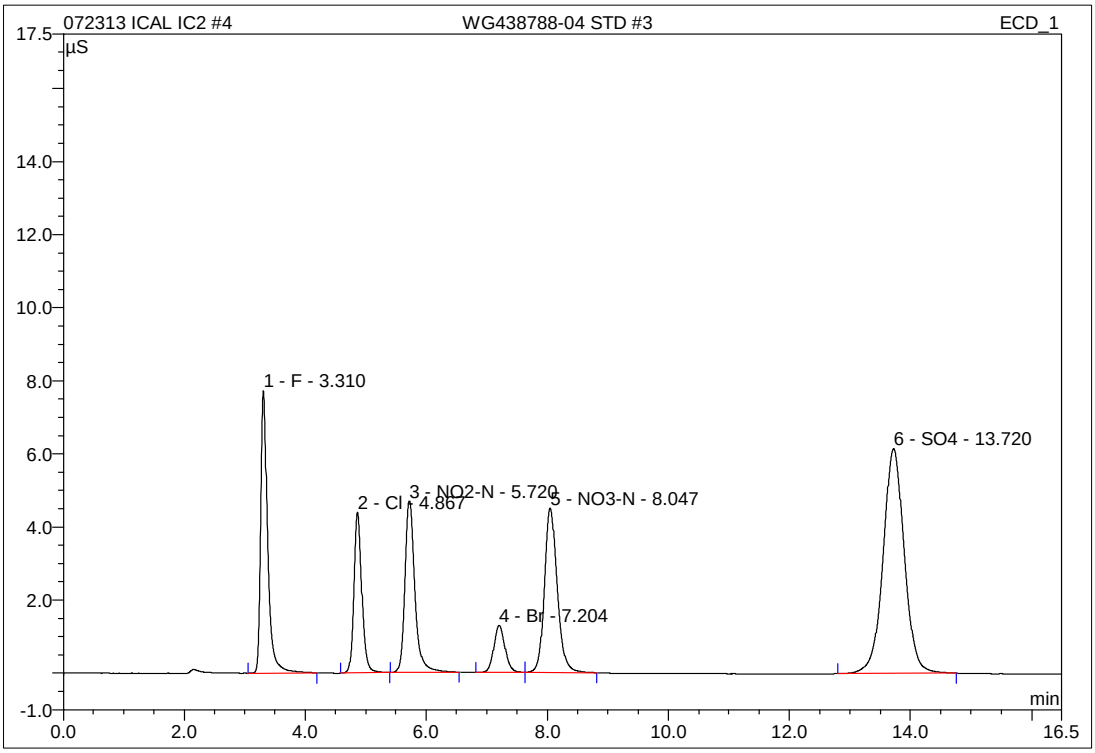

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.31	F	7.722	1.032	15.92	3.873	BMB
2	4.87	Cl	4.403	0.667	10.29	3.799	BMB
3	5.72	NO2-N	4.692	0.886	13.66	2.352	BMB
4	7.20	Br	1.293	0.277	4.27	3.870	BMB
5	8.05	NO3-N	4.501	1.103	17.00	2.567	bMB
6	13.72	SO4	6.153	2.520	38.86	18.739	BMB
Total:			28.763	6.486	100.00	35.201	

00734931

5 WG438788-05 STD #2

1,1 KRB STD57462

Sample Name:	**WG438788-05 STD #2**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/23/2013 17:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.50**	*Sample Amount:*	**1.0000**

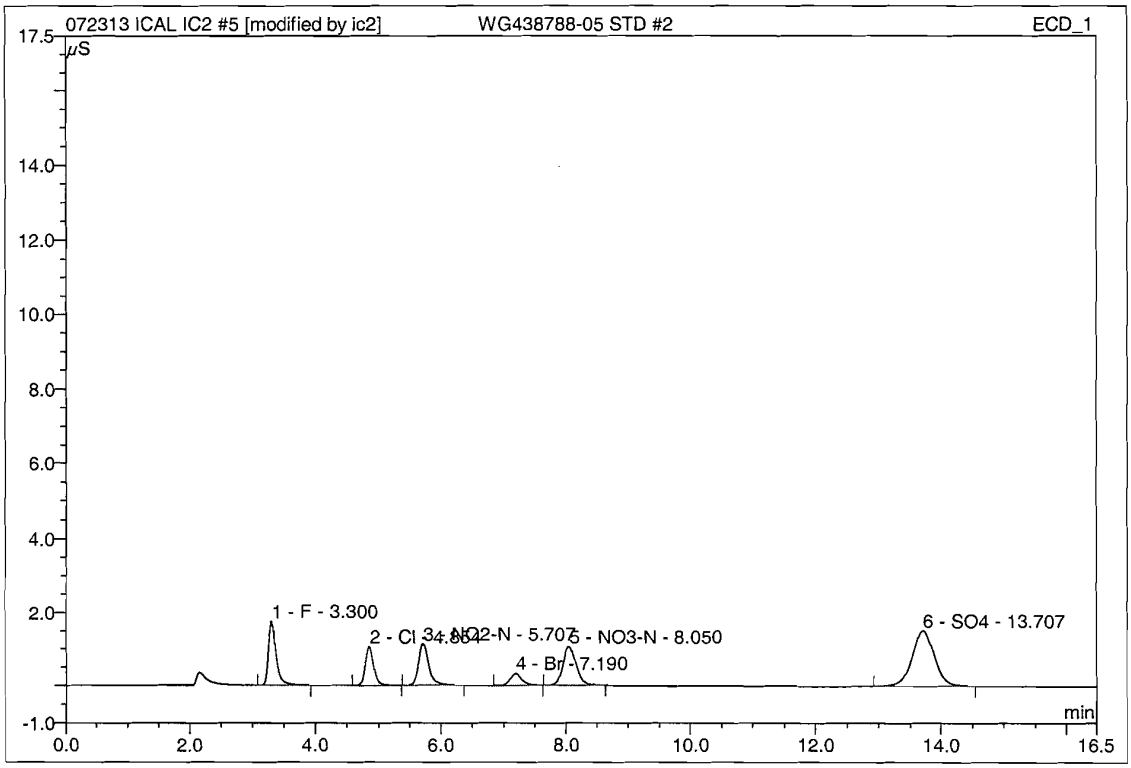

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.30	F	1.762	0.245	15.44	0.941	BMB*
2	4.85	Cl	1.051	0.163	10.30	0.954	BMB*
3	5.71	NO2-N	1.127	0.216	13.64	0.584	BMB*
4	7.19	Br	0.316	0.072	4.51	1.013	BMB
5	8.05	NO3-N	1.053	0.264	16.66	0.627	BMB
6	13.71	SO4	1.510	0.625	39.44	4.755	BMB
Total:			6.819	1.585	100.00	8.875	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

5 WG438788-05 STD #2

1,1 KRB STD57462

Sample Name:	**WG438788-05 STD #2**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/23/2013 17:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.50**	*Sample Amount:*	**1.0000**

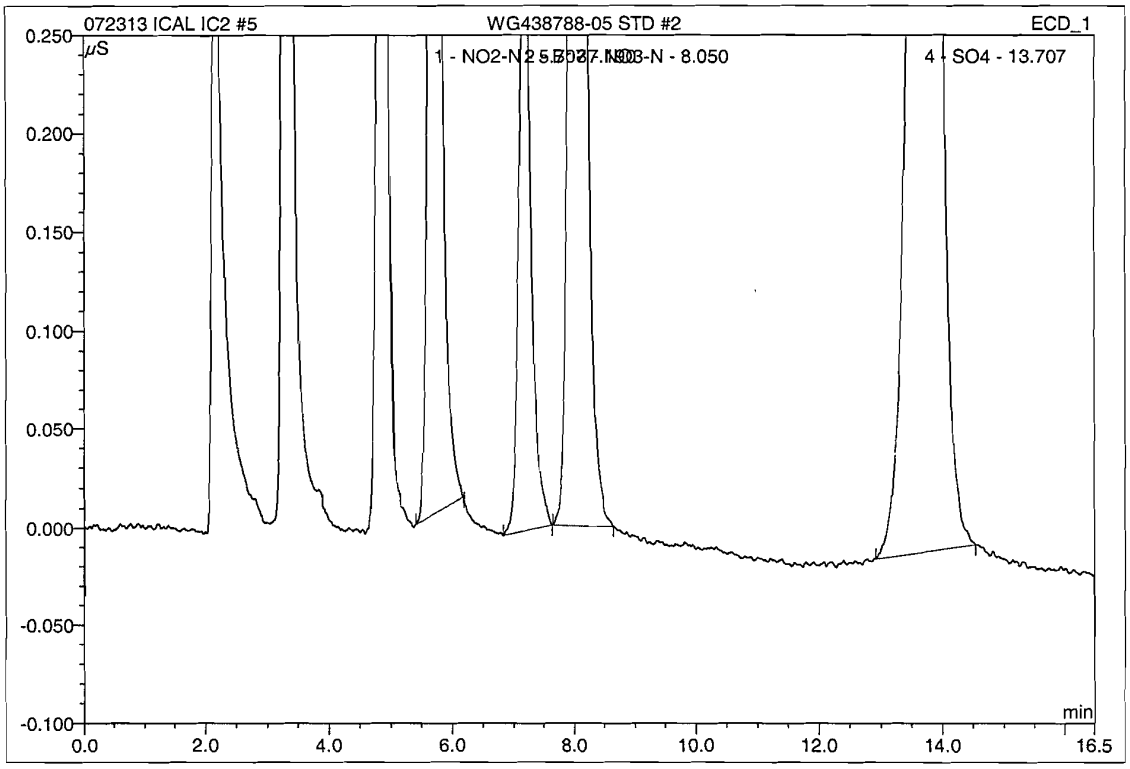

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	5.71	NO2-N	1.121	0.209	17.90	0.566	BMB
2	7.19	Br	0.316	0.072	6.11	1.013	BMB
3	8.05	NO3-N	1.053	0.264	22.56	0.627	BMB
4	13.71	SO4	1.510	0.625	53.42	4.755	BMB
Total:			4.000	1.170	100.00	6.962	

00734933

5 WG438788-05 STD #2

#607239

1,1 KRB STD57462

Sample Name:	**WG438788-05 STD #2**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/23/2013 17:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.50**	*Sample Amount:*	**1.0000**

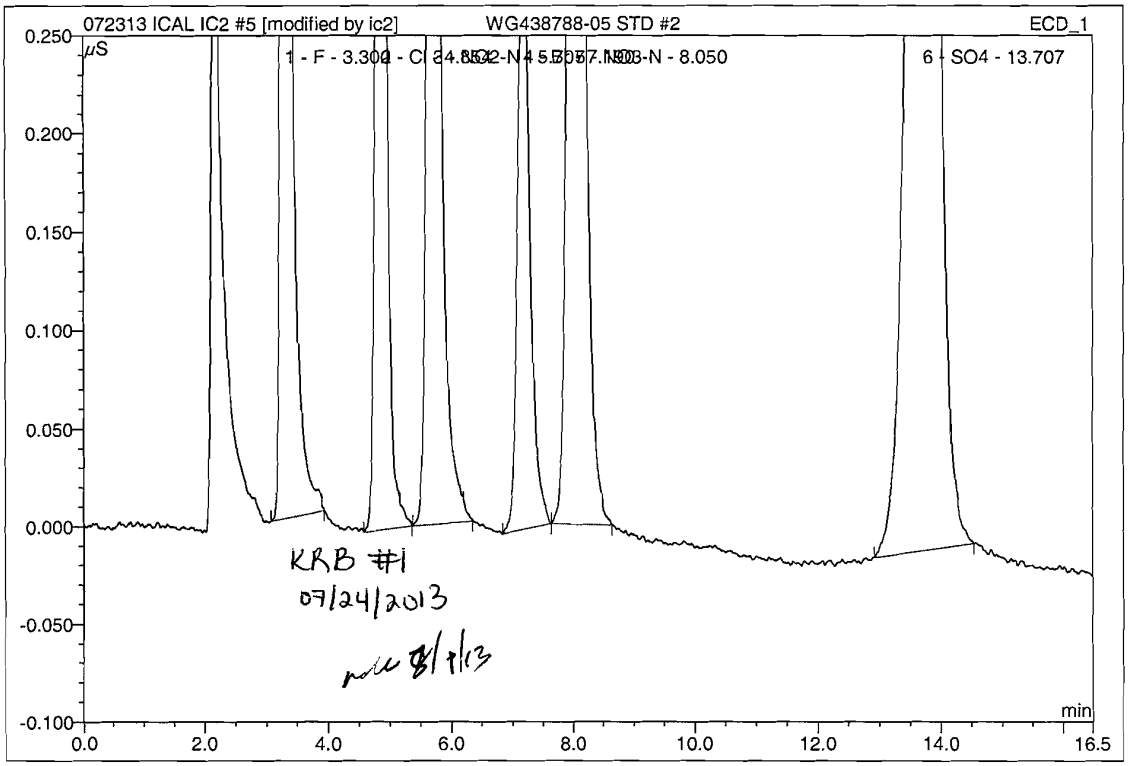

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.30	F	1.762	0.245	15.44	0.941	BMB*
2	4.85	Cl	1.051	0.163	10.30	0.954	BMB*
3	5.71	NO2-N	1.127	0.216	13.64	0.584	BMB*
4	7.19	Br	0.316	0.072	4.51	1.013	BMB
5	8.05	NO3-N	1.053	0.264	16.66	0.627	BMB
6	13.71	SO4	1.510	0.625	39.44	4.755	BMB
Total:			6.819	1.585	100.00	8.875	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

00734934

6 WG438788-06 STD #1

1,1 KRB STD57462

Sample Name:	**WG438788-06 STD #1**	*Injection Volume:*	**25.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/23/2013 18:03**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.50**	*Sample Amount:*	**1.0000**

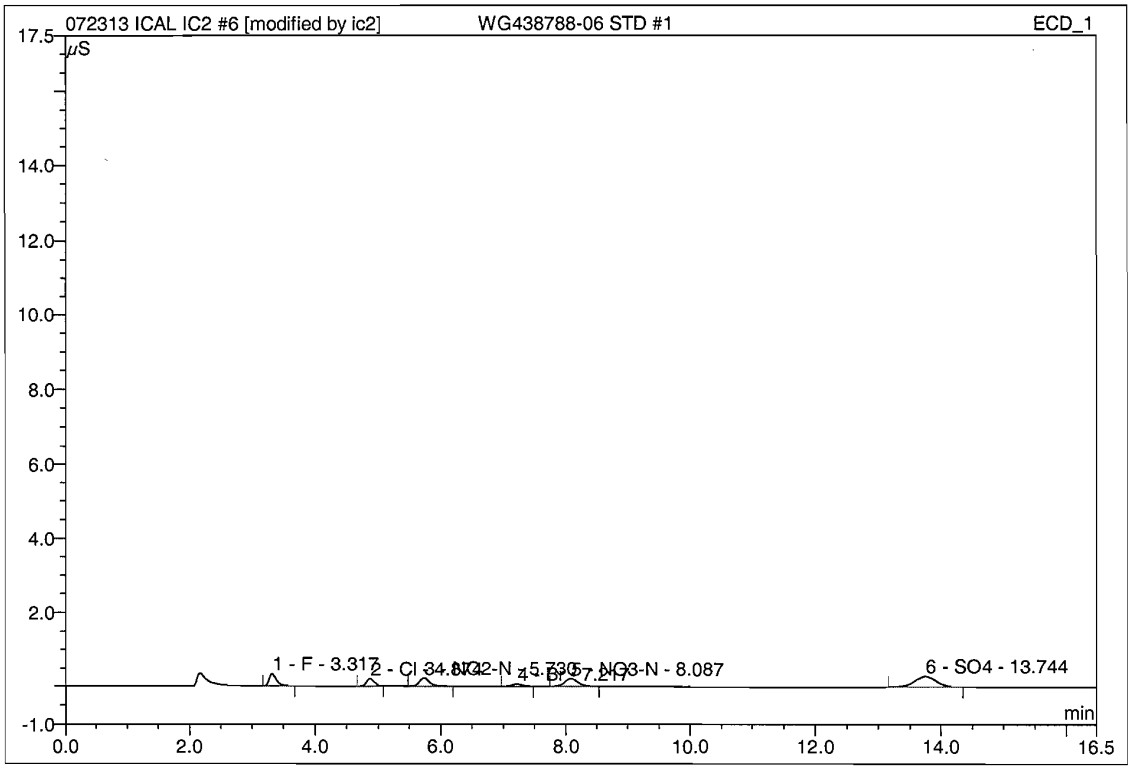

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.32	F	0.341	0.046	15.37	0.202	BMB*
2	4.87	Cl	0.206	0.030	10.00	0.202	BMB
3	5.73	NO2-N	0.223	0.041	13.76	0.123	BMB
4	7.22	Br	0.062	0.013	4.32	0.200	BMB
5	8.09	NO3-N	0.209	0.053	17.49	0.138	BMB
6	13.74	SO4	0.288	0.118	39.07	1.011	BMB
Total:			1.329	0.301	100.00	1.875	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

6 WG438788-06 STD #1

1,1 KRB STD57462

Sample Name:	**WG438788-06 STD #1**	*Injection Volume:*	**25.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/23/2013 18:03**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.50**	*Sample Amount:*	**1.0000**

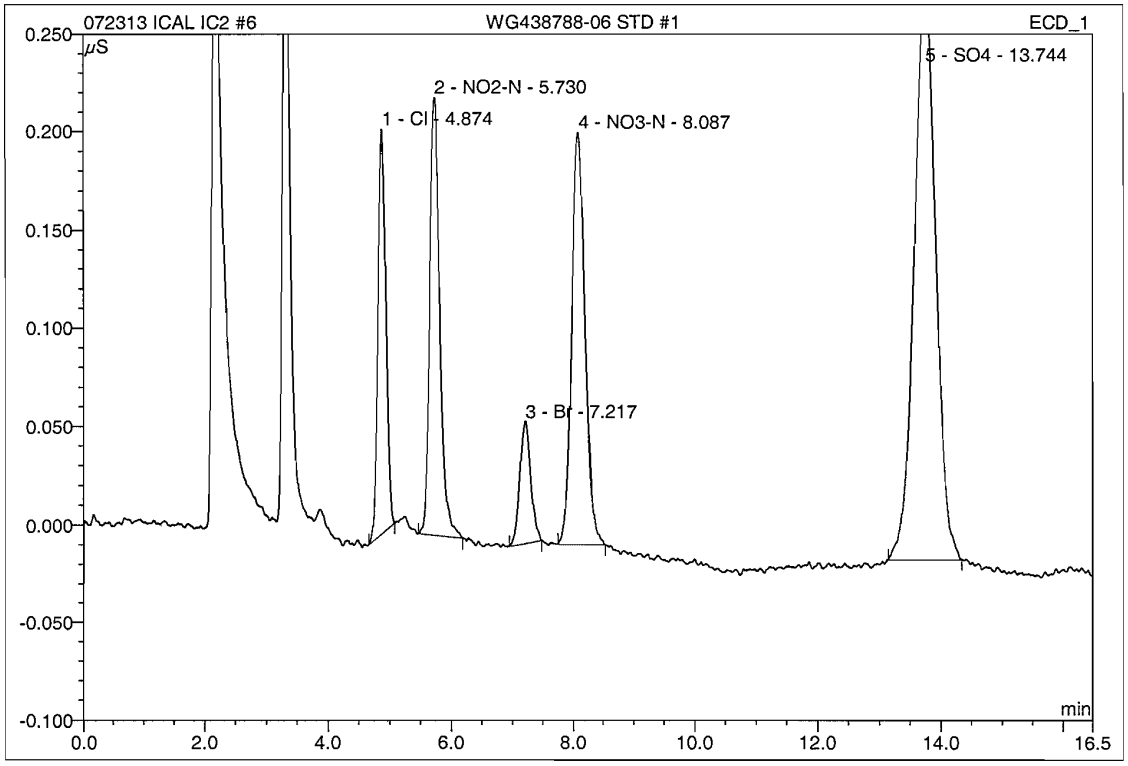

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.87	Cl	0.206	0.030	11.81	0.202	BMB
2	5.73	NO2-N	0.223	0.041	16.26	0.123	BMB
3	7.22	Br	0.062	0.013	5.10	0.200	BMB
4	8.09	NO3-N	0.209	0.053	20.66	0.138	BMB
5	13.74	SO4	0.288	0.118	46.16	1.011	BMB
Total:			0.988	0.255	100.00	1.673	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

00734936

6 WG438788-06 STD #1

1,1 KRB STD57462 #607242

Sample Name:	**WG438788-06 STD #1**	*Injection Volume:*	**25.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/23/2013 18:03**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.50**	*Sample Amount:*	**1.0000**

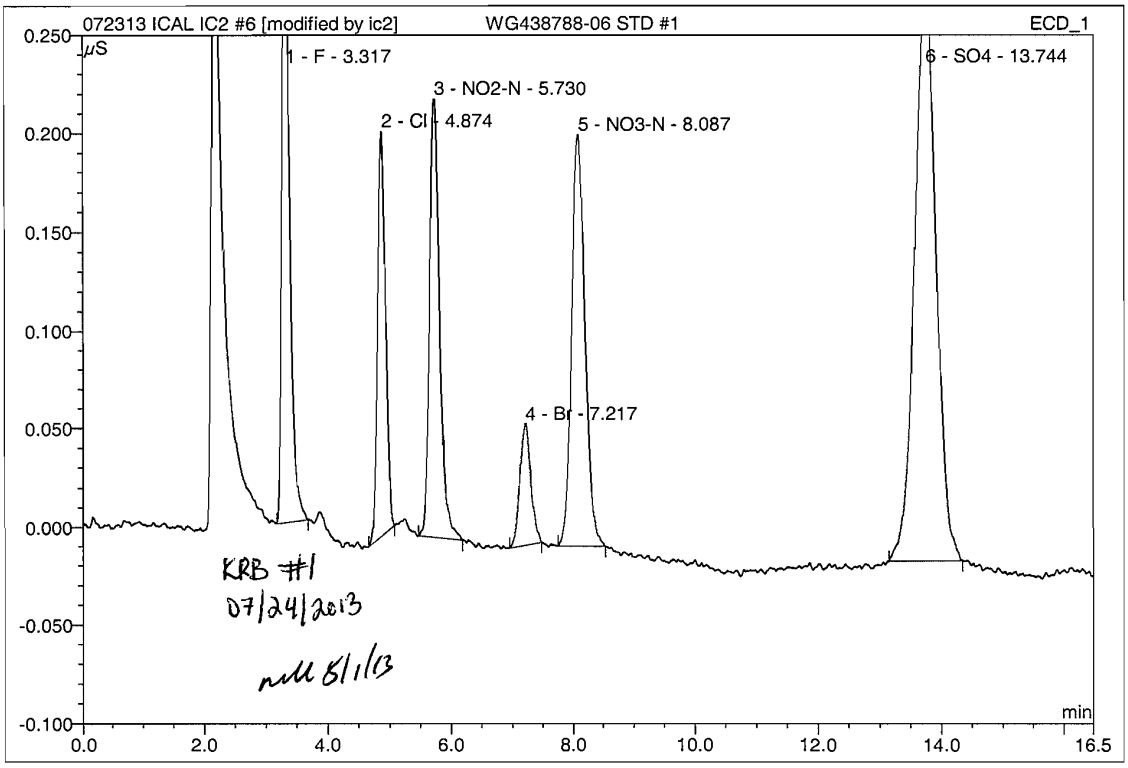

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.32	F	0.341	0.046	15.37	0.202	BMB*
2	4.87	Cl	0.206	0.030	10.00	0.202	BMB
3	5.73	NO2-N	0.223	0.041	13.76	0.123	BMB
4	7.22	Br	0.062	0.013	4.32	0.200	BMB
5	8.09	NO3-N	0.209	0.053	17.49	0.138	BMB
6	13.74	SO4	0.288	0.118	39.07	1.011	BMB
Total:			1.329	0.301	100.00	1.875	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

7 WG438788-07 ALT STD

1,1 KRB STD57463

Sample Name:	**WG438788-07 ALT STD**	*Injection Volume:*	**25.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/23/2013 18:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.50**	*Sample Amount:*	**1.0000**

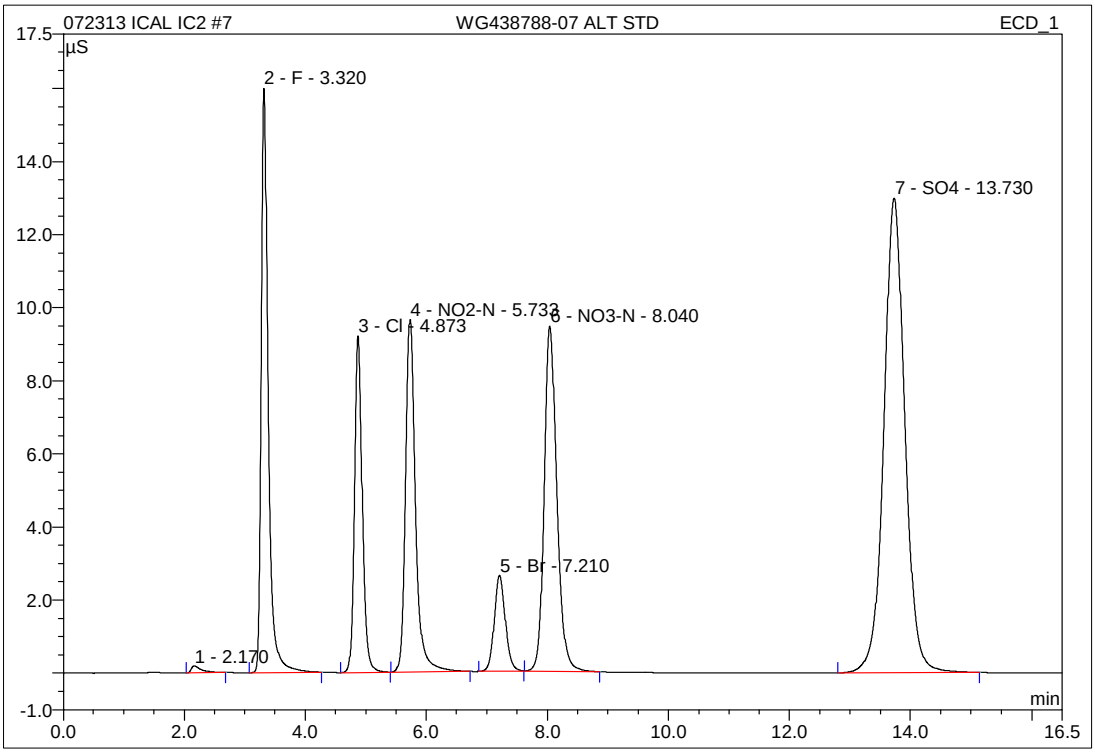

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.17	n.a.	0.186	0.036	0.27	n.a.	BMB
2	3.32	F	15.995	2.120	15.76	7.921	BMB
3	4.87	Cl	9.215	1.372	10.20	7.777	BMB
4	5.73	NO2-N	9.641	1.829	13.60	4.842	BMB
5	7.21	Br	2.622	0.558	4.15	7.775	BMB
6	8.04	NO3-N	9.442	2.284	16.98	5.301	BMB
7	13.73	SO4	12.995	5.254	39.05	38.909	BMB
Total:			60.096	13.454	100.00	72.525	

7 WG438788-07 ALT STD

1,1 KRB STD57463

Sample Name:	**WG438788-07 ALT STD**	*Injection Volume:*	**25.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/23/2013 18:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.50**	*Sample Amount:*	**1.0000**

WG438788-07 ALT	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.9211	-0.99	PASS
Cl	8	7.7770	-2.79	PASS
NO2-N	4.8714	4.8422	-0.60	PASS
NO3-N	5.4216	5.3006	-2.23	PASS
Br	8	7.7754	-2.81	PASS
SO4	40	38.9091	-2.73	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

3 WG447368-01 ANION CCV

1,1 JBK STD57462 _____ psi @_____

Sample Name:	**WG447368-01 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/4/2013 7:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

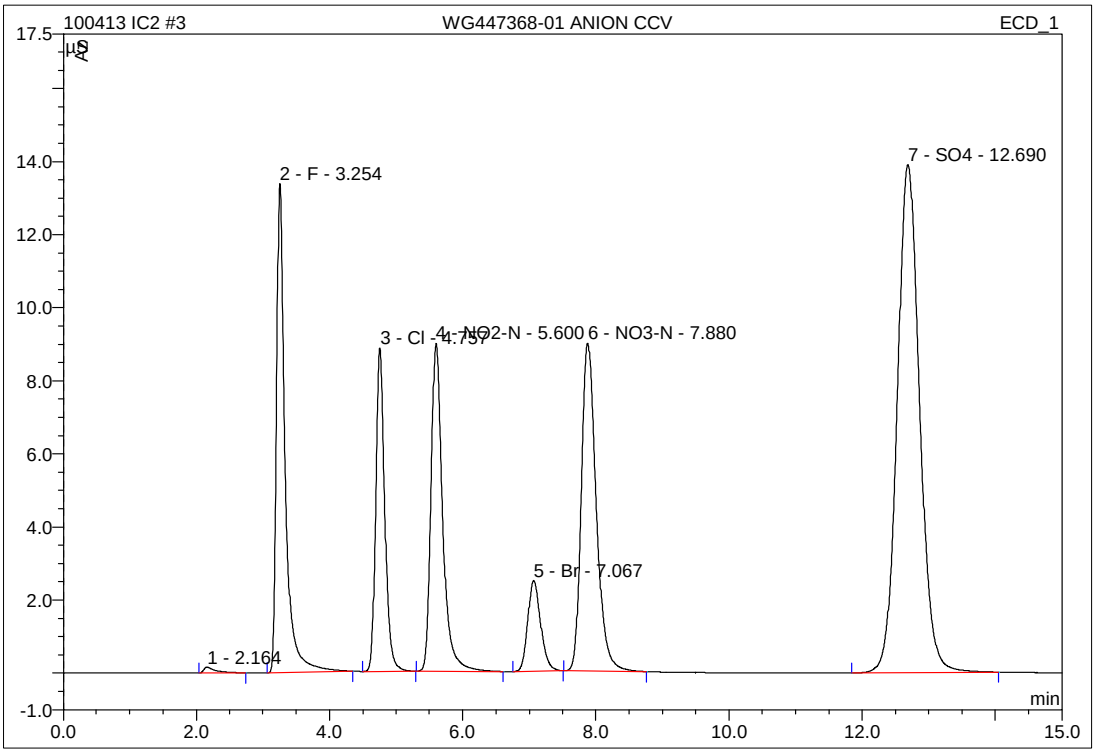

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.16	n.a.	0.159	0.033	0.24	n.a.	BMB
2	3.25	F	13.389	2.014	14.85	7.526	BMB
3	4.76	Cl	8.847	1.393	10.27	7.892	BMB
4	5.60	NO2-N	8.974	1.828	13.47	4.838	BMB
5	7.07	Br	2.484	0.561	4.14	7.818	BMB
6	7.88	NO3-N	8.971	2.329	17.17	5.406	BMB
7	12.69	SO4	13.913	5.408	39.86	40.046	BMB
Total:			56.737	13.565	100.00	73.526	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG447368-01 ANION CCV

1,1 JBK STD57462 _____ psi @_____

Sample Name:	**WG447368-01 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/4/2013 7:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

WG447368-01 ANI(	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.5262	-5.92	PASS
Cl	8	7.8922	-1.35	PASS
NO2-N	4.8714	4.8380	-0.69	PASS
NO3-N	5.4216	5.4056	-0.30	PASS
Br	8	7.8182	-2.27	PASS
SO4	40	40.0456	0.11	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

15 WG447368-03 ANION CCV

1,1 JBK STD57462

Sample Name:	**WG447368-03 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/4/2013 14:25**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

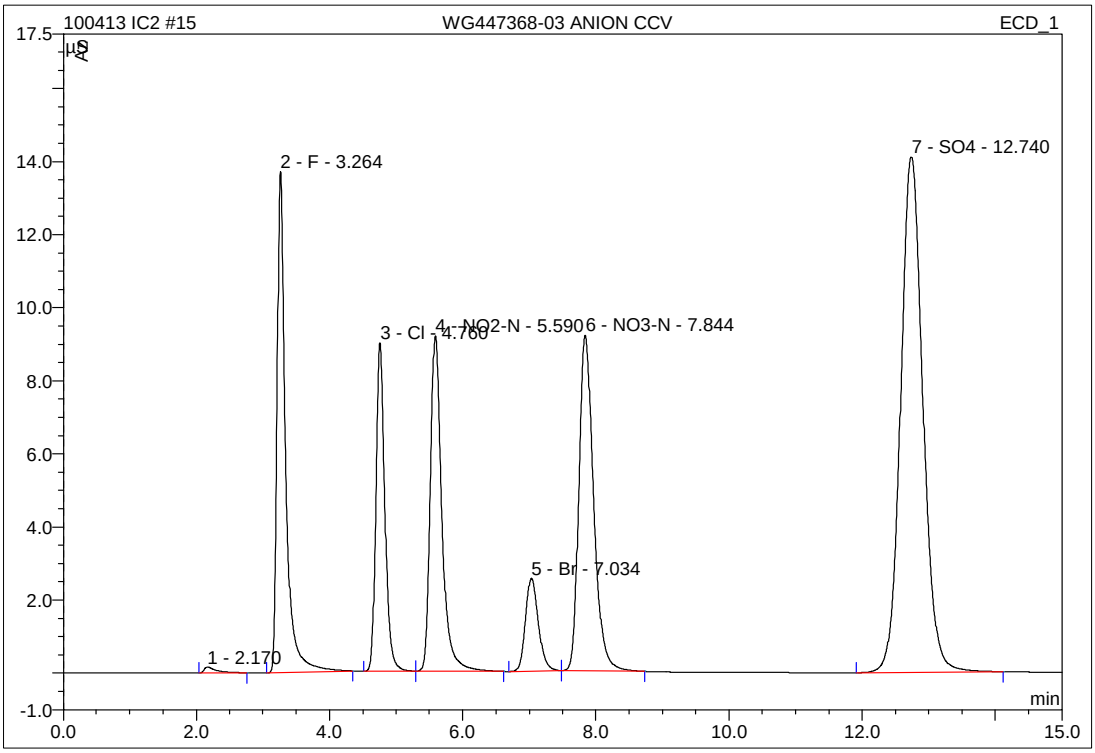

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.17	n.a.	0.162	0.034	0.25	n.a.	BMB
2	3.26	F	13.717	2.041	14.89	7.626	BMB
3	4.76	Cl	8.988	1.403	10.24	7.953	BMB
4	5.59	NO2-N	9.179	1.845	13.47	4.884	BMB
5	7.03	Br	2.543	0.571	4.17	7.960	BMB
6	7.84	NO3-N	9.186	2.354	17.18	5.463	bMB
7	12.74	SO4	14.102	5.453	39.80	40.384	BMB
Total:			57.877	13.703	100.00	74.270	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

15 WG447368-03 ANION CCV

1,1 JBK STD57462

Sample Name:	**WG447368-03 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/4/2013 14:25**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

WG447368-03 ANI(	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.6264	-4.67	PASS
Cl	8	7.9527	-0.59	PASS
NO2-N	4.8714	4.8841	0.26	PASS
NO3-N	5.4216	5.4631	0.77	PASS
Br	8	7.9605	-0.49	PASS
SO4	40	40.3836	0.96	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

4 WG447368-02 ANION CCB

1,1 JBK

Sample Name:	**WG447368-02 ANION CCB**	*Injection Volume:*	**25.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/4/2013 7:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

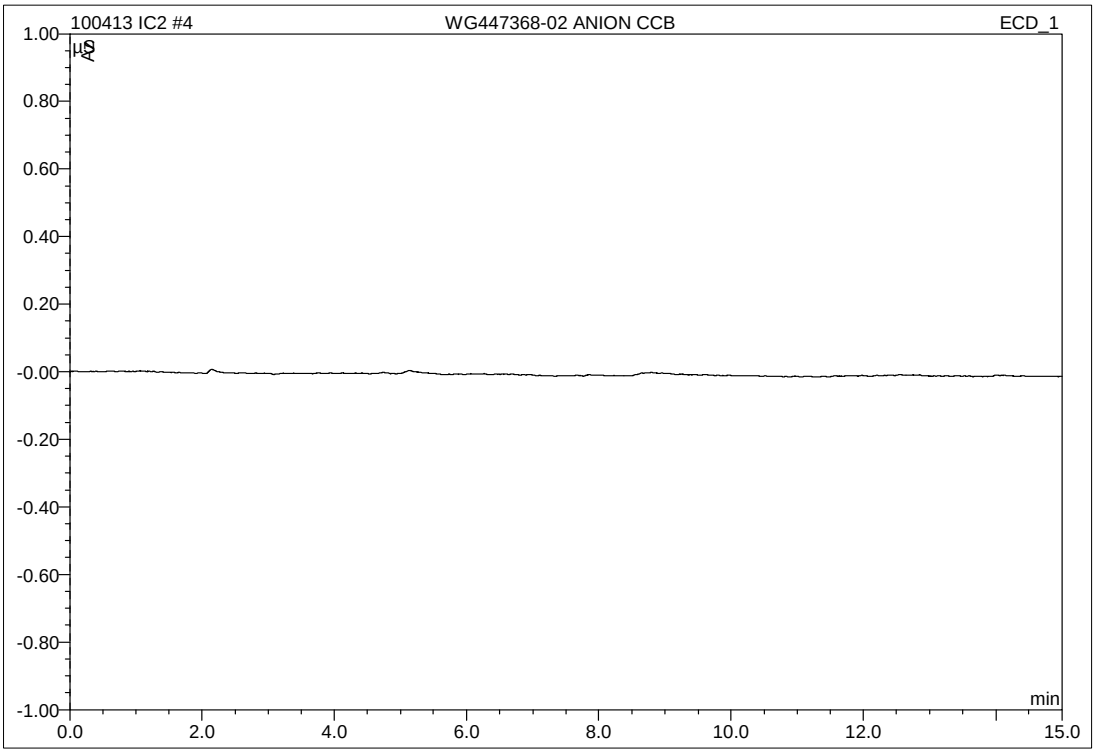

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

16 WG447368-04 ANION CCB

1,1 JBK

Sample Name:	**WG447368-04 ANION CCB**	*Injection Volume:*	**25.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/4/2013 15:10**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

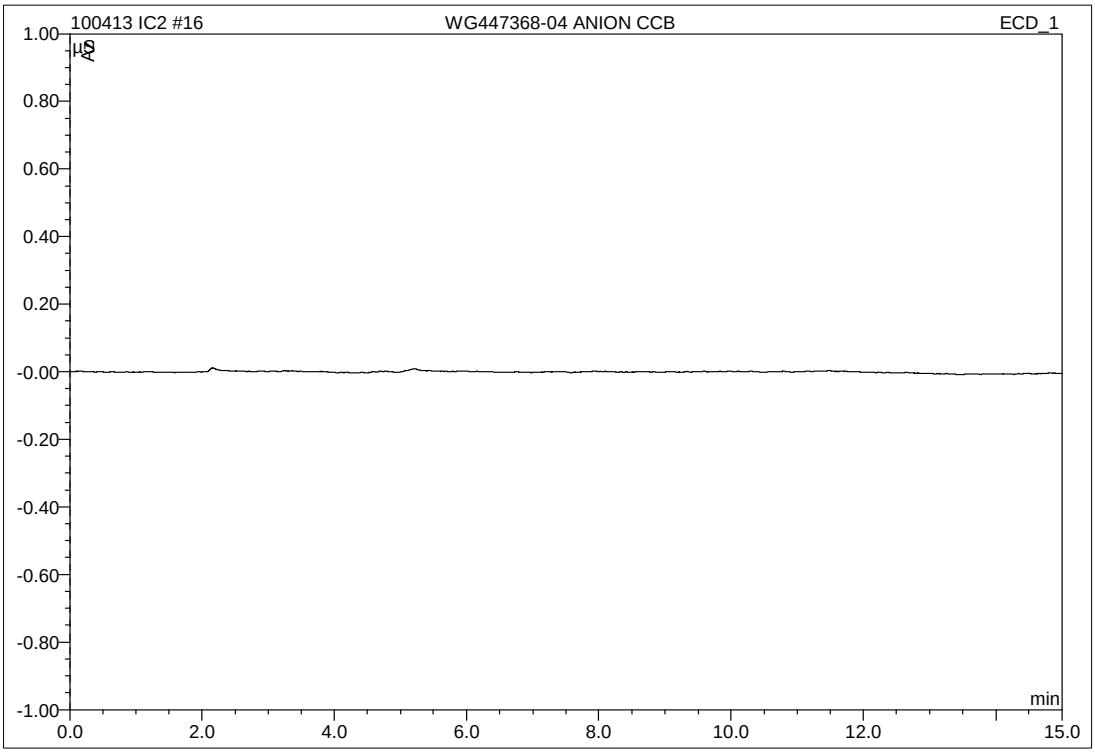

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/6/2013	6/6/2013	6/7/2013
File #	WG433163-01	WG433163-05	WG433448-01
Time	12:58	18:54	12:23

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.31	3.30	3.31	0.017
Cl	4.90	4.89	4.92	0.046
NO2-N	5.79	5.78	5.83	0.079
Br	7.34	7.31	7.43	0.187
NO3-N	8.21	8.18	8.32	0.221
SO4	13.74	13.74	13.67	0.121

2.2.1.5 Raw QC Data

5 WG447339-01 ANION BLANK

1,1 JBK

Sample Name:	**WG447339-01 ANION BLANK**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/4/2013 8:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

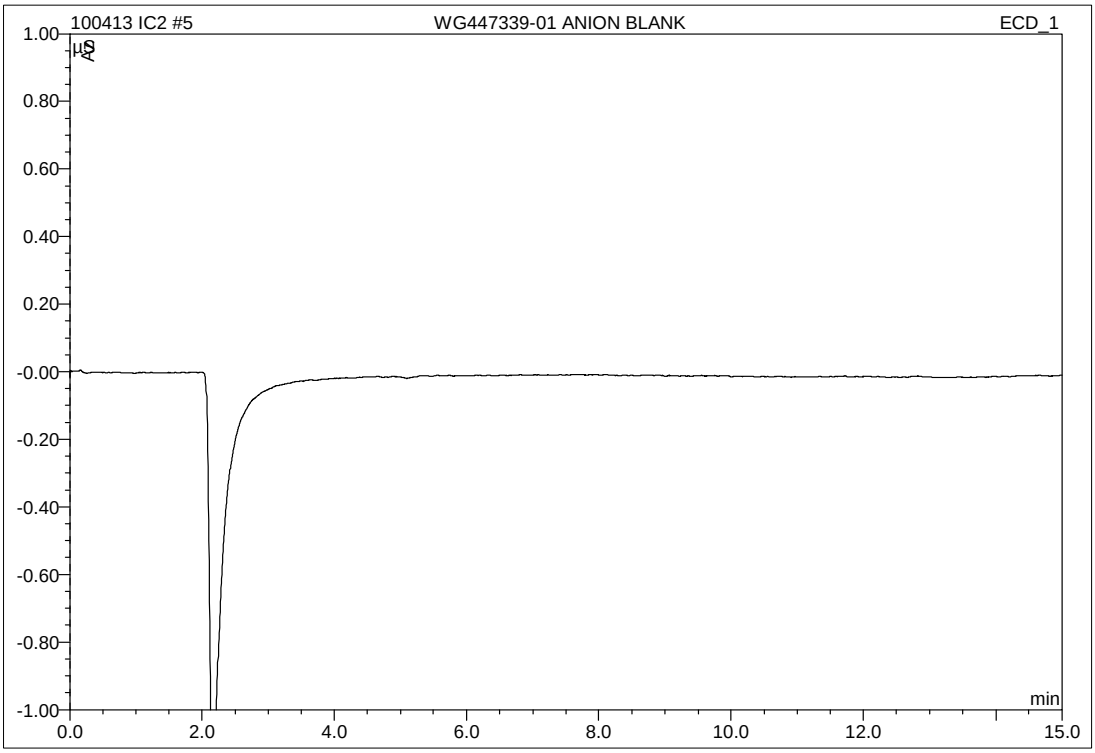

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

6 WG447339-02 ANION LCS

1,1 JBK STD57462

Sample Name:	**WG447339-02 ANION LCS**	*Injection Volume:*	**25.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/4/2013 8:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

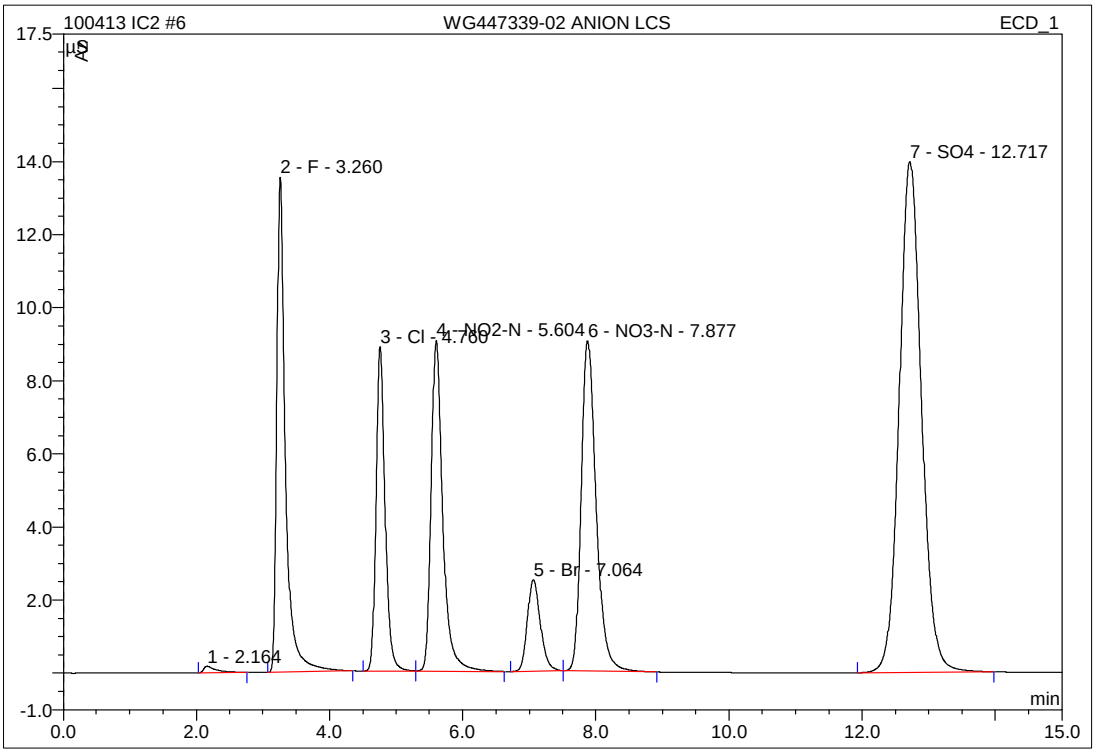

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.16	n.a.	0.179	0.039	0.29	n.a.	BMB
2	3.26	F	13.549	2.035	14.93	7.605	BMB
3	4.76	Cl	8.880	1.398	10.25	7.920	BMB
4	5.60	NO2-N	9.048	1.830	13.42	4.843	BMB
5	7.06	Br	2.508	0.569	4.18	7.932	BMB
6	7.88	NO3-N	9.037	2.344	17.20	5.440	bMB
7	12.72	SO4	13.981	5.415	39.73	40.099	BMB
Total:			57.183	13.630	100.00	73.840	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.2.2 Ferrous Iron Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-05	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW08-100213	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	07/16/2013 10:00
Workgroup #:	WG447221	**Analyst:**	DIH	**Run Date:**	10/04/2013 07:50
Collect Date:	10/02/2013 08:50	**Dilution:**	1	**File ID:**	1V.1310040750-13
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.161		0.0400	0.0400	0.0200

Certificate of Analysis

Sample #:	L13100266-07	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW11-100213	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	07/16/2013 10:00
Workgroup #:	WG447221	**Analyst:**	DIH	**Run Date:**	10/04/2013 07:50
Collect Date:	10/02/2013 10:20	**Dilution:**	1	**File ID:**	1V.1310040750-14
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.0400	U	0.0400	0.0400	0.0200

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.2.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 04-OCT-2013
Analyst: DIH
Analyst: NA
Method: FERROUS
Instrument: UV-120-1V
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG447221

Calibration/Linearity	7/16/13
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
14-OCT-2013

Secondary Reviewer:
14-OCT-2013

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-14-2013 15:41:54

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM3500Fe-B-1997 AAB#: WG447221

Login Number: L13100266

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-100213	05	10/02/13					10/04/2013	2	7		10/04/13	2	7	
67WW11-100213	07	10/02/13					10/04/2013	1.9	7		10/04/13	1.9	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3139109
Report generated 10/14/2013 17:57

METHOD BLANK SUMMARY

Login Number: L13100266
Blank File ID: 1V.1310040750-02
Prep Date: 10/04/13 07:50
Analyzed Date: 10/04/13 07:50
Analyst: DIH

Work Group: WG447221
Blank Sample ID: WG447221-01
Instrument ID: UV-120-1V
Method: SM3500Fe-B-1997

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG447221-02	1V.1310040750-03	10/04/13 07:50	
LCS2	WG447221-03	1V.1310040750-04	10/04/13 07:50	
67WW08-100213	L13100266-05	1V.1310040750-13	10/04/13 07:50	
67WW11-100213	L13100266-07	1V.1310040750-14	10/04/13 07:50	
DUP	WG447221-05	1V.1310040750-25	10/04/13 07:50	

Report Name: BLANK_SUMMARY
PDF File ID: 3139110
Report generated 10/14/2013 17:57

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13100266 Prep Date: 10/04/13 07:50 Sample ID: WG447221-01
Instrument ID: UV-120-1V Run Date: 10/04/13 07:50 Prep Method: SM3500Fe-B-1997
File ID: 1V.1310040750-02 Analyst: DIH Method: SM3500Fe-B-1997
Workgroup (AAB#): WG447221 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-120-16-JUL-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Ferrous - Laboratory	0.0200	0.0400	0.0200	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3139111
14-OCT-2013 17:57

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13100266 Analyst: DIH Prep Method: SM3500Fe-B-1997
Instrument ID: UV-120-1V Matrix: Water Method: SM3500Fe-B-1997
Workgroup (AAB#): WG447221 Units: mg/L
QC Key: DOD4 Lot #: STD57525

Sample ID: WG447221-02 LCS File ID: 1V.1310040750-03 Run Date: 10/04/2013 07:50
Sample ID: WG447221-03 LCS2 File ID: 1V.1310040750-04 Run Date: 10/04/2013 07:50

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Iron, Ferrous - Laboratory	0.200	0.199	99.6	0.200	0.195	97.5	2.10	75 - 125	25	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3139112
Report generated: 10/14/2013 17:57

2.2.2.3 Raw Data

Wg 437788

Curves

Parameter: Ferrous Iron

Spectrophotometer: UV-120-1V

Calibration (Curve) standard stock: Std

Concentration: 100 mg/L

Recipe for preparation of curve standards found in:
SOP: 3500 Revision: ____ Page: 8

Second Source Stock: Std 57525 (concentration: 100mg/L)

Daily Preparation: 2(100)/1000

concentration = = 0.2

Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance
0	50	10cm	510	0.002
0.04	↓	↓	↓	0.035
0.08				0.078
0.2				0.179
0.4				0.380
0.6	↓	↓	↓	0.581
2nd Source				7/16/13
std (2.0)	50	10cm	510	~~0.289~~ 0.189

Analyst: Tammy Morris Date/Time: 7/16/13 @ 1000

DCN#96589

Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG437788
Analytical Method: FERROUS
Instrument ID: UV-120-1V

Analyst: TMM
Initial Calibration Date: 07/16/2013

Analyte: FERROUS IRON
Number of Points: 6
Slope: 0.965202
Y-Intercept: -0.00317771
Coef. Of Correlation (R^2): 0.999248
Coef. Of Correlation (R): 0.999624

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00200	0.00	0.00	-0.00317771
0.0400	0.0350	0.00160	0.00140	0.0354304
0.0800	0.0780	0.00640	0.00624	0.0740384
0.200	0.179	0.0400	0.0358	0.189863
0.400	0.380	0.160	0.152	0.382903
0.600	0.581	0.360	0.349	0.575943

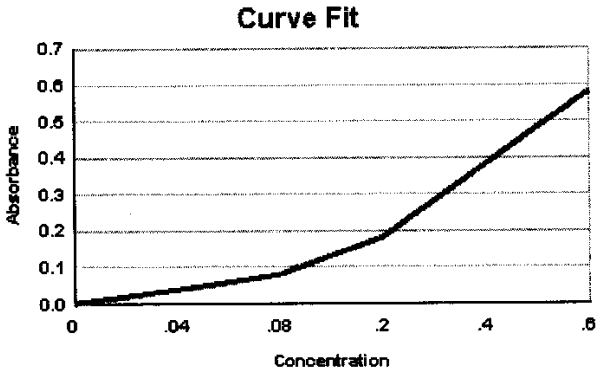

WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 07/22/2013 16:28

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG437788
File ID: 1V.1307161000-07
CCV ID: WG437788-07
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 07/16/2013
Run Time: 10:00
Analyst: TMM
Cal ID: UV-120 - 16-JUL-13 10:00:06

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.2	0.199	0.945	0.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 07/22/2013 16:28

[redacted]

WORKGROUP: WG447221

Ferrous Iron

SM 3500Fe-B

SOP K3500 Revision # 15

Instrument: UV-120-IV

Curve Reference: 7/16/13

CCV: std 57527
Daily Dilution: 3/1000(100)
Daily Dilution: =0.3

RGTS: 26880
RGTS: 28105
RGTS: 27071

LCS: std 57525
Daily Dilution: 2/1000(100)
Daily Dilution: =0.2

Spike: std 57525
Daily Dilution: 0.1/50(100)
Daily Dilution: = 0.2

λ = 510

Sample	Blank	Volume (mL)	Dilution	Cell Size (nm)	Absorbance
CCV: 0.3 mg/L	✓	50		10 cm	0.283
BLANK	✓	50			0.003
LCS: 0.2 mg/L	✓	50			0.189
LCS DUP: (0.2 mg/L)	✓	50			0.185
10-212-01	✓	50			0.009
-02	✓	50			0.007
05	✓	50			0.012
06	✓	50			0.007
07	✓	50			0.191
08	✓	50			0.010
09	✓	50			0.006
10	✓	50			0.005
10-266-05	✓	50			0.152
07	✓	50			0.007
@ 1620 10-308-01	✓	50	1/10		0.396
02	✓	50			0.022
03	✓	50	1/10		0.466
04	✓	50	–, 1/2		0.771, 0.402
05	✓	50			0.009
06	✓	50			0.008
07	✓	50			0.006
08	✓	50	1/2		0.432
09	✓	50			0.195
~~10-3~~ CCV	✓	50			0.272, 0.303
DUP: 212-02	✓	50			0.008
MS: (0.1) 03	✓	50			0.191
MSD: (0.1) 04	✓	50			0.199
CCV: ( ) 0.3	✓	50			0.282

Analyst: Deanna Nesson Date/Time: 10/4/0750

*Samples were analyzed in the laboratory and not immediately in the field.

DCN#98008

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG447221 **Analyst:** DIH
Analyte: FERROUS IRON **Date:** 10/04/2013

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG447221-01	50	50	0.00300	0.9652	-0.003178	0.0064004	0.0064004	1	mg/L
WG447221-02	50	50	0.189	0.9652	-0.003178	0.19911	0.19911	1	mg/L
WG447221-03	50	50	0.185	0.9652	-0.003178	0.19496	0.19496	1	mg/L
L13100212-01	50	50	0.00900	0.9652	-0.003178	0.012617	ND	1	ug/L
L13100212-02	50	50	0.00700	0.9652	-0.003178	0.010545	ND	1	ug/L
WG447221-04	50	50	0.00700	0.9652	-0.003178	0.010545	0.010545	1	mg/L
L13100212-05	50	50	0.0120	0.9652	-0.003178	0.015725	ND	1	ug/L
L13100212-06	50	50	0.00700	0.9652	-0.003178	0.010545	ND	1	ug/L
L13100212-07	50	50	0.191	0.9652	-0.003178	0.20118	201.18	1	ug/L
L13100212-08	50	50	0.0100	0.9652	-0.003178	0.013653	ND	1	ug/L
L13100212-09	50	50	0.00600	0.9652	-0.003178	0.0095086	ND	1	ug/L
L13100212-10	50	50	0.00500	0.9652	-0.003178	0.0084725	ND	1	ug/L
L13100266-05	50	50	0.152	0.9652	-0.003178	0.16077	0.16077	1	mg/L
L13100266-07	50	50	0.00700	0.9652	-0.003178	0.010545	ND	1	mg/L
L13100308-01	50	50	0.396	0.9652	-0.003178	0.41357	4135.7	10	ug/L
L13100308-02	50	50	0.0220	0.9652	-0.003178	0.026085	26.085 F	1	ug/L
L13100308-03	50	50	0.466	0.9652	-0.003178	0.48609	4860.9	10	ug/L
L13100308-04	50	50	0.402	0.9652	-0.003178	0.41979	839.57	2	ug/L
L13100308-05	50	50	0.00900	0.9652	-0.003178	0.012617	ND	1	ug/L
L13100308-06	50	50	0.00800	0.9652	-0.003178	0.011581	ND	1	ug/L
L13100308-07	50	50	0.00600	0.9652	-0.003178	0.0095086	ND	1	ug/L
L13100308-08	50	50	0.432	0.9652	-0.003178	0.45087	901.73	2	ug/L
L13100308-09	50	50	0.195	0.9652	-0.003178	0.20532	205.32	1	ug/L
WG447221-05	50	50	0.00800	0.9652	-0.003178	0.011581	0.011581	1	mg/L
WG447221-06	50	50	0.191	0.9652	-0.003178	0.20118	0.20118	1	mg/L
L13100212-03	50	50	0.191	0.9652	-0.003178	0.20118	201.18	1	ug/L
WG447221-07	50	50	0.199	0.9652	-0.003178	0.20947	0.20947	1	mg/L
L13100212-04	50	50	0.199	0.9652	-0.003178	0.20947	209.47	1	ug/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 10/14/2013 12:42

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG448580
File ID: 1V.1310040750-01
CCV ID: WG448580-01
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 10/04/2013
Run Time: 07:50
Analyst: DIH
Cal ID: UV-120 - 03-OCT-13

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.296	0.943	1.3	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 10/14/2013 12:29

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG448580
File ID: 1V.1310040750-15
CCV ID: WG448580-02
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 10/04/2013
Run Time: 07:50
Analyst: DIH
Cal ID: UV-120 - 03-OCT-13

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.285	0.907	5.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 10/14/2013 12:29

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG448580
File ID: 1V.1310040750-28
CCV ID: WG448580-03
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 10/04/2013
Run Time: 07:50
Analyst: DIH
Cal ID: UV-120 - 03-OCT-13

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.295	0.940	1.7	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 10/14/2013 12:29

[redacted]

2.2.3 Sulfide Data

2.2.3.1 Summary Data

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-05	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW08-100213	**Prep Method:**	EPA 376.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	EPA 376.1	**Cal Date:**	
Workgroup #:	WG447665	**Analyst:**	DLP	**Run Date:**	10/08/2013 09:00
Collect Date:	10/02/2013 08:50	**Dilution:**	1	**File ID:**	ET.1310080900-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-07	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW11-100213	**Prep Method:**	EPA 376.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	EPA 376.1	**Cal Date:**	
Workgroup #:	WG447665	**Analyst:**	DLP	**Run Date:**	10/08/2013 09:00
Collect Date:	10/02/2013 10:20	**Dilution:**	1	**File ID:**	ET.1310080900-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.2.3.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 08-OCT-2013
Analyst: EPT
Analyst: DLP
Method: SULFIDE
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG447665

Calibration/Linearity	10/8/13
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
09-OCT-2013
Ethan Tido

Secondary Reviewer:
10-OCT-2013
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-10-2013 14:10:31

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: EPA 376.1 AAB#: WG447665

Login Number: L13100266

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-100213	05	10/02/13					10/08/2013	6	7		10/08/13	6	7	
67WW11-100213	07	10/02/13					10/08/2013	5.9	7		10/08/13	5.9	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3131691
Report generated 10/10/2013 14:09

METHOD BLANK SUMMARY

Login Number: L13100266
Blank File ID: ET.1310080900-01
Prep Date: 10/08/13 09:00
Analyzed Date: 10/08/13 09:00
Analyst: DLP

Work Group: WG447665
Blank Sample ID: WG447665-01
Instrument ID: BURET
Method: EPA 376.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG447665-02	ET.1310080900-02	10/08/13 09:00	
LCS2	WG447665-03	ET.1310080900-03	10/08/13 09:00	
67WW08-100213	L13100266-05	ET.1310080900-04	10/08/13 09:00	
67WW11-100213	L13100266-07	ET.1310080900-05	10/08/13 09:00	

Report Name: BLANK_SUMMARY
PDF File ID: 3131693
Report generated 10/10/2013 14:09

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13100266 Prep Date: 10/08/13 09:00 Sample ID: WG447665-01
Instrument ID: BURET Run Date: 10/08/13 09:00 Prep Method: EPA 376.1
File ID: ET.1310080900-01 Analyst: DLP Method: EPA 376.1
Workgroup (AAB#): WG447665 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3131695
10-OCT-2013 14:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13100266 Analyst: DLP Prep Method: EPA 376.1
Instrument ID: BURET Matrix: Water Method: EPA 376.1
Workgroup (AAB#): WG447665 Units: mg/L
QC Key: DOD4 Lot #: STD60625

Sample ID: WG447665-02 LCS File ID: ET.1310080900-02 Run Date: 10/08/2013 09:00
Sample ID: WG447665-03 LCS2 File ID: ET.1310080900-03 Run Date: 10/08/2013 09:00

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	22.2	22.4	101	22.2	22.6	102	0.889	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3131697
Report generated: 10/10/2013 14:09

2.2.3.3 Raw Data

SULFIDE 1480
(sulfide1)

WORKGROUP: WG447665

$\frac{5}{100}(1480) = 74$
LOQ $3/200(74) = 1.11$
LOD $2/250(74) = 0.592$

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: 13

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: Std 60625

Iodine standardization (0.025N) COA: 16853
mL 0.025N titrant: 10.0
Volume I: 10.0 mL
Normality I: 0.0250

(0.1 N I) COA: 16856
mL 0.025 N titrant: 8.0
Volume I: 2.0 mL
Normality I: 0.100

Stock standardization (in duplicate) 5.0 mL stock

mL I	1) 10.0	2) 10.0
N I	1) 0.100	2) 0.100
mL 0.025 titrant 1)	21.5	2) 21.5

1480 = stock conc (mg/L)

LCS daily dilution: $\frac{(3)(1480)}{200}$ = 22.2 mg/L

Titrant: T- 1286-02-04

SAMPLE	Volume Filtered mL	mL Iodine 15.0 EPT	10/8/13 N Iodine	~~0.0250~~ 0.0250 EPT 10/8/13 N Sodium Thiosulfate (mL)
BLANK	200	~~0.0250~~	0.0250	15.0
LCS (mL)	200	15.0	0.0250	3.8
LCSDUP (mL)	200	15.0	0.0250	3.7
10-0266-05	490	15.0	0.0250	15.0
-07	500	15.0	0.0250	15.0
10-0344-02	540	15.0	0.0250	15.0
-03	510	15.0	0.0250	15.0
-04	500	15.0	0.0250	15.0
LOQ 10-0003-01	200	15.0	0.0250	~~15.0~~ 14.5 EPT 10/8/13
LOD 10-0001-01	250	15.0	0.0250	~~15.0~~ 14.7

Analyst: Ethan Tidd
Chrissy Halpin

Date/Time: 10/8/13 0900

DCN#98065

Microbac Laboratories Inc.
TITRAMETRIC REPORT

Workgroup (AAB#): WG447665
Product: EPA 376.1\9034
Analyte: Sulfide

Analyst: DLP
Run Date: 10/08/2013 09:00

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG447665-01	200.0	15	.025	15	.025	1	0	0	mg/L
WG447665-02	200.0	15	.025	3.8	.025	1	22.4	22.40	mg/L
WG447665-03	200.0	15	.025	3.7	.025	1	22.6	22.60	mg/L
L13100266-05	490.0	15	.025	15	.025	1	0	ND	mg/L
L13100266-07	500.0	15	.025	15	.025	1	0	ND	mg/L
L13100334-02	540.0	15	.025	15	.025	1	0	ND	mg/L
L13100334-03	510.0	15	.025	15	.025	1	0	ND	mg/L
L13100334-04	500.0	15	.025	15	.025	1	0	ND	mg/L
L13100003-01	200.0	15	.025	14.5	.025	1	1.00	1.000	mg/L
L13100001-01	250.0	15	.025	14.7	.025	1	0.480	0.4800	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 10/08/2013 12:46

[redacted]

2.2.4 Total Organic Carbon Data

2.2.4.1 Summary Data

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L13100266-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-100213	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG447603	**Analyst:**	BAF	**Run Date:**	10/08/2013 02:26
Collect Date:	10/02/2013 08:50	**Dilution:**	1	**File ID:**	TC10072013.043
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	6.32		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L13100266-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-100213	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG447603	**Analyst:**	BAF	**Run Date:**	10/08/2013 02:26
Collect Date:	10/02/2013 08:50	**Dilution:**	1	**File ID:**	TC10072013.043
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		28.9		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L13100266-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW11-100213	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG447603	**Analyst:**	BAF	**Run Date:**	10/08/2013 02:42
Collect Date:	10/02/2013 10:20	**Dilution:**	1	**File ID:**	TC10072013.044
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		17.6		2.00	1.00	0.500

Certificate of Analysis

Microbac

Lab Report #: L13100266
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Sample #:	L13100266-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW11-100213	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG447603	**Analyst:**	BAF	**Run Date:**	10/08/2013 02:42
Collect Date:	10/02/2013 10:20	**Dilution:**	1	**File ID:**	TC10072013.044
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	5.70		2.00	1.00	0.500

2.2.4.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 07-OCT-2013
Analyst: BAF
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG447602 WG447603 WG447604

Calibration/Linearity	7-9-2013
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BAF
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
08-OCT-2013
Brice Fenton

Secondary Reviewer:
08-OCT-2013
Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-08-2013 17:29:53

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG447603

Login Number: L13100266

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-100213	05	10/02/13					10/08/2013	5.7	28		10/08/13	5.7	28	
67WW11-100213	07	10/02/13					10/08/2013	5.7	28		10/08/13	5.7	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3127959
Report generated 10/08/2013 17:19

METHOD BLANK SUMMARY

Login Number: L13100266
Blank File ID: TC10072013.032
Prep Date: 10/08/13 00:09
Analyzed Date: 10/08/13 00:09
Analyst: BAF

Work Group: WG447603
Blank Sample ID: WG447603-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG447603-02	TC10072013.033	10/08/13 00:21	01
LCS2	WG447603-03	TC10072013.034	10/08/13 00:32	01
67WW08-100213	L13100266-05	TC10072013.043	10/08/13 02:26	01
67WW08-100213	L13100266-05	TC10072013.043	10/08/13 02:26	01
67WW11-100213	L13100266-07	TC10072013.044	10/08/13 02:42	01
67WW11-100213	L13100266-07	TC10072013.044	10/08/13 02:42	01
DUP	WG447603-05	TC10072013.052	10/08/13 04:22	01

Report Name: BLANK_SUMMARY
PDF File ID: 3127960
Report generated 10/08/2013 17:19

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L13100266 Prep Date: 10/08/13 00:09 Sample ID: WG447603-01
Instrument ID: TOC-VWP Run Date: 10/08/13 00:09 Prep Method: 415.1
File ID: TC10072013.032 Analyst: BAF Method: 415.1
Workgroup (AAB#): WG447603 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-09-JUL-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3127961
08-OCT-2013 17:19

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13100266 Analyst: BAF Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG447603 Units: mg/L
QC Key: DOD4 Lot #: STD60155

Sample ID: WG447603-02 LCS File ID: TC10072013.033 Run Date: 10/08/2013 00:21
Sample ID: WG447603-03 LCS2 File ID: TC10072013.034 Run Date: 10/08/2013 00:32

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	24.6	98.4	25.0	24.5	97.9	0.530	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3127962
Report generated: 10/08/2013 17:19

2.2.4.3 Raw Data

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L

see below

MS (TOC): _____

Calibration Curve Date: _____

Reagent: _____

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 15

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full

☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate

☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC curve		27	Std 58866		52		
3	TC ICV		28			53	see SOP	
4	TIC ICV		29	TIC Curve		54	for curve	
5			30	Std 58877		55	points	
6			31			56		
7			32			57		
8			33	TC ICV		58	7/9/13	
9			34	Std 57523		59	~~see~~ 5/200 (1000)	
10			35			60	= 25mg/L	
11			36	TIC ICV		61		
12			37	Std 58878		62		
13			38			63		
14			39			64		
15	all points		40	analyzed	its	65	duplicate	
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: Brie Jenson Date/Time: 7/9/13/1400

DCN#96473

C:\TOC3201\Data\07-09-2013-BAF-TOC.t32

	Analy	Sample Name	Result	Status	Date / Time	Vial
1	TOC		TOC:2.208mg/L TC:26.74mg/L IC:24.53mg/L	Complete	7/9/2013 5:17:57 PM	1
2	TOC		TOC:23.65mg/L TC:23.65mg/L IC:0.00022mg/L	Complete	7/9/2013 5:29:56 PM	2
3	TOC		TOC:22.05mg/L TC:22.22mg/L IC:0.1735mg/L	Complete	7/9/2013 5:42:12 PM	3
4	TOC		!!Error!! TOC:24.67mg/L TC:24.54mg/L IC:-0.1326mg	Complete	7/9/2013 5:54:31 PM	4

7/11/2013 12:57:57 PM

1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-07-09-2013.2013_07_09_13_54_59.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	9.370	500uL	1	*******		7/9/2013 2:00:04 PM
2	10.94	500uL	1	*******		7/9/2013 2:03:54 PM

Acid Add. 0.000%
Mean Area 10.16

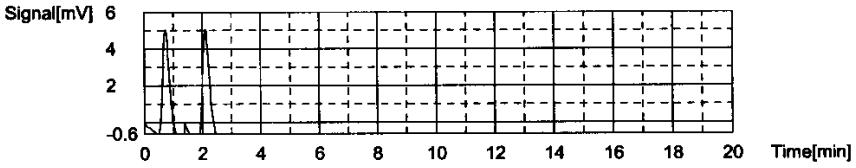

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	43.95	500uL	1	*******		7/9/2013 2:09:31 PM
2	40.43	500uL	1	*******		7/9/2013 2:13:23 PM

Acid Add. 0.000%
Mean Area 42.19

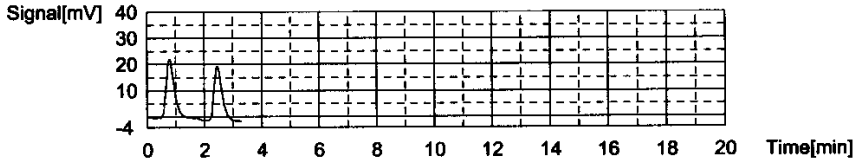

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	180.9	500uL	1	*******		7/9/2013 2:19:14 PM
2	179.0	500uL	1	*******		7/9/2013 2:23:23 PM

Acid Add. 0.000%
Mean Area 179.9

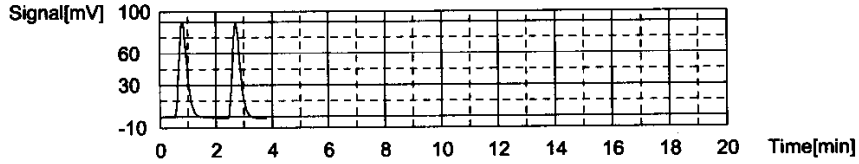

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	357.3	500uL	1	*******		7/9/2013 2:29:25 PM
2	358.1	500uL	1	*******		7/9/2013 2:33:50 PM

Acid Add. 0.000%
Mean Area 357.7

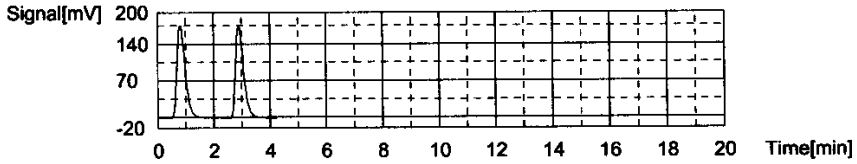

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	900.5	500uL	1	*******		7/9/2013 2:40:10 PM
2	968.7	500uL	1	*******		7/9/2013 2:44:47 PM

Acid Add. 0.000%
Mean Area 934.6

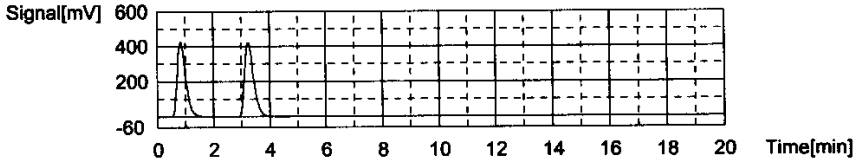

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1813	500uL	1	*******		7/9/2013 2:51:11 PM
2	1802	500uL	1	*******		7/9/2013 2:57:12 PM

Acid Add. 0.000%
Mean Area 1808

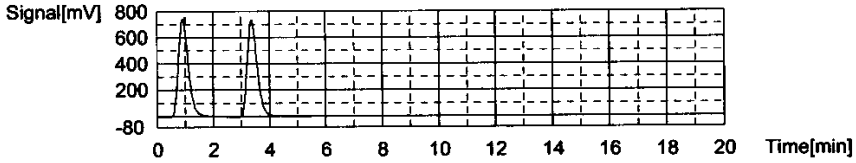

Slope: 36.20
Intercept 6.332
r^2 0.999673
Zero Shift No

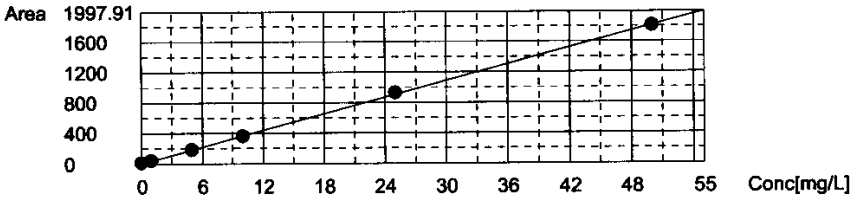

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-07-09-2013.2013_07_09_14_57_12.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	6.571	500uL	1	*******		7/9/2013 3:02:59 PM
2	6.428	500uL	1	*******		7/9/2013 3:07:04 PM

Acid Add. 10.00%
Mean Area 6.500

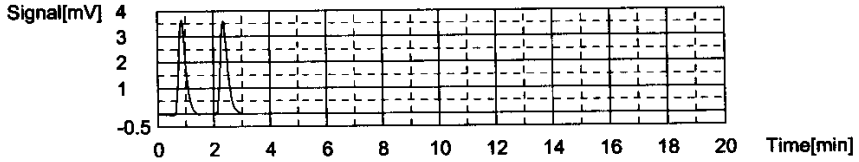

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	33.29	500uL	1	*******		7/9/2013 3:14:33 PM
2	33.59	500uL	1	*******		7/9/2013 3:18:50 PM

Acid Add. 10.00%
Mean Area 33.44

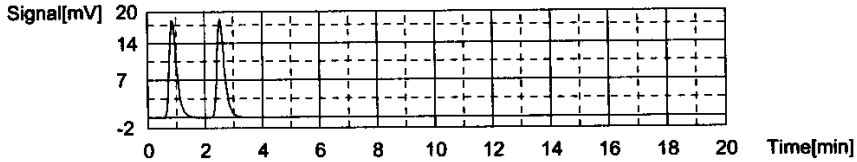

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	158.6	500uL	1	*******		7/9/2013 3:26:34 PM
2	158.4	500uL	1	*******		7/9/2013 3:31:09 PM

Acid Add. 10.00%
Mean Area 158.5

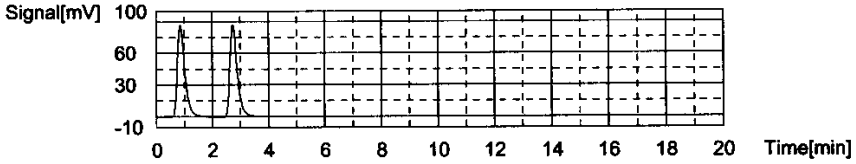

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	312.7	500uL	1	*******		7/9/2013 3:39:08 PM
2	313.0	500uL	1	*******		7/9/2013 3:44:01 PM

Acid Add. 10.00%
Mean Area 312.9

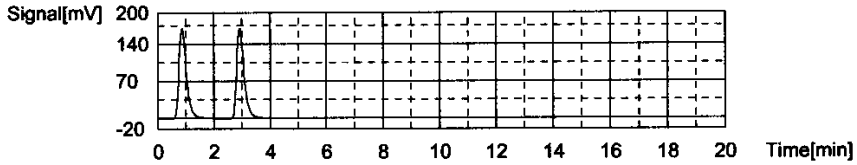

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	755.5	500uL	1	*******		7/9/2013 3:52:43 PM
2	755.7	500uL	1	*******		7/9/2013 3:58:05 PM

Acid Add. 10.00%
Mean Area 755.6

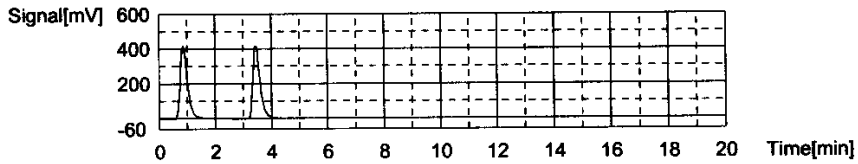

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1495	500uL	1	*******		7/9/2013 4:07:15 PM
2	1495	500uL	1	*******		7/9/2013 4:13:10 PM

Acid Add. 10.00%
Mean Area 1495

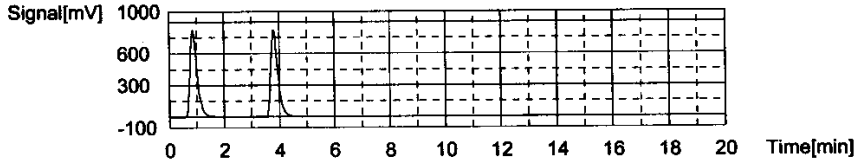

Slope: 29.78
Intercept 8.713
r^2 0.999949
Zero Shift No

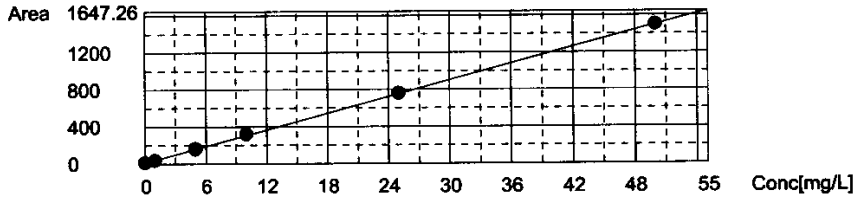

Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-07-09-2013.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:23.67mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	868.0	23.80mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	7/9/2013 4:21:01 PM
2	858.5	23.54mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	7/9/2013 4:25:50 PM

Mean Area 863.3
Mean Conc. 23.67mg/L

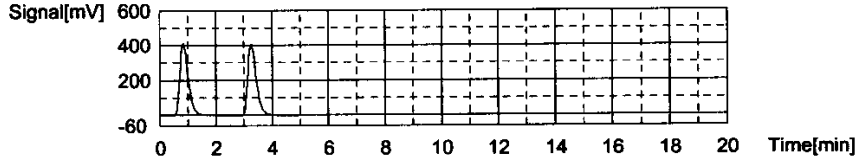

Sample

Sample Name:	TIC ICV
Sample ID:	Untitled
Origin:	TICCURVE-07-09-2013.cal
Status	Completed
Chk. Result	

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:25.62mg/L

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	769.8	25.56mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	7/9/2013 4:32:54 PM
2	773.1	25.67mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	7/9/2013 4:38:08 PM

Mean Area	771.5
Mean Conc.	25.62mg/L

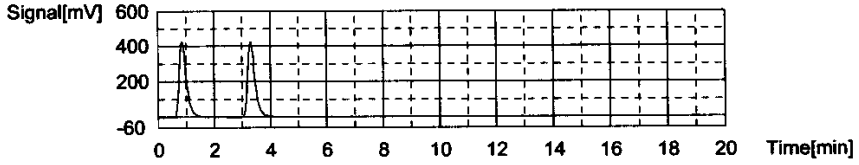

WORKGROUP: WG447602

447603

447604

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std58866
(5/200)(1000) = 25mg/L

LCS (TOC): Std60155
(5/200)(1000) = 25mg/L

CCV (TIC): Std58878
(5/200)(1000) = 25mg/L

MS (TOC): Std60155
0.4/40 (1000) = 10

Calibration Curve Date: 7-9-2013

Reagent: RGT28057
RGT28691

☑ SM5310-C : Matrix 2 WG 447604
☑ EPA 415.1/9060A(mod): Matrix 1 WG 447602 SOP: K 4151 Rev. 15
WG 447603 Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full
☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate
☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution
1	TIC 25	
2	CCV 25	
~~3~~ 0	Blk	
4	LCS 25	
~~5~~ 4	LCSDUP	
6	09-1525-08	
7	.11	
8	.13	
9	.14	
10	09-1661-01	
11	09-1662-01	
12	02	
13	03	
14	CCV	
~~15~~ 0	CCB	
16	10-074-01	
17	10-075-01	
18	.02	
19	10-076-01	
20	.02	
21	10-169-01	
22	02	
23	03	
24	04	
25	05	

Position	Sample ID	Dilution
~~26~~ 24	CCV	
~~27~~ 0	CCB	
28	10-169-06	
29	10-174-01	
30	DUP 1525-14	
31	MS ↓	
~~32~~ 0	Blk	
33	LCS	
~~34~~ 33	LCSDUP	
35	10-174-02	
36	10-218-01	
37	09-1656-01	
~~38~~ 2	CCV	
~~39~~ 0	CCB	
40	09-1667-01	
41	10-363-01	
42	10-232-01	
43	10-266-05	
44	07	
45	10-001-01	
46	10-003-01	
47	10-334-02	
48	03	
49	04	
~~50~~ 14	CCV	

Position	Sample ID	Dilution
~~51~~ 0	CCB	
52	DUP 1667-01	
53	MS ↓	
~~54~~ 0	Blk	
55	LCS	
~~56~~ 55	LCSDUP	
57	10-354-01	
58	03	
59	10-355-01	
60	10-371-01	
61	02	
~~62~~ 14	CCV	
~~63~~ 0	CCB	
64	10-371-03	
65	04	
66	05	
67	06	
68	07	
~~69~~ 3	08	
~~70~~ 5	09	
~~71~~ 16	10-404-01	
~~72~~ 27	10-408-01	
~~73~~ 32	10-409-01	
~~74~~ 26	CCV	
~~75~~ 0	CCB	

Analyst: Brie Jenton Date/Time: 10/7/13/1637

DCN#98061

page 1

WORKGROUP: WG447602

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L See pg. 1

MS (TOC): _____

Calibration Curve Date: _____

Reagent: _____

☐ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K _____ Rev. _____

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☐ drain reservoir filled
☐ ASI water bottle full
☐ dilution water bottle full
☐ 3rd bottle full
☐ sufficient gas
☐ sufficient persulfate
☐ sufficient acid
☐ waste container

Position	Sample ID	Dilution
~~1~~ 34	10-309-01	
~~2~~ 38	03	
~~3~~ 39	05	
50 ~~4~~ 44	07	
~~5~~ 51	09	
~~6~~ 54	11	
~~7~~ 56	09-1525-~~013~~	
~~8~~ 62	DUP 309-11	
~~9~~ 63	MS ↓	
~~10~~ 2	CCV	
~~11~~ 0	CCB	
12		
13	Std 60155	
14	RL: 1/(25) = 1/25	1
15		
16	MDL: 1/(1) = 1/2 = 0.5	
~~17~~		
~~18~~ 1	09-1525-~~08~~	1/4
~~19~~ 27	11	1/3
~~20~~ 3	13	1/4
~~21~~ 4	10-075-01	1/5
~~22~~ 5	02	1/10
~~23~~ 6	CCV	
~~24~~ 10	CCB	
~~25~~		

Jaf 10/7/13

Position	Sample ID	Dilution
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		

Position	Sample ID	Dilution
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		

Analyst: Brice Fenton Date/Time: 10/7/13/1637

DCN#98061

page 2

C:\TOC3201\Data\10-07-2013-BAF-TOC.t32

	Analysi	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC 25	TOC:2.032mg/L TC:26.90mg/L IC:24.87mg/L	Completed	10/7/2013 5:32:58	1
2	TOC	CCV 25	!!Error!! TOC:22.43mg/L TC:22.36mg/L IC:-0.06913	Completed	10/7/2013 5:45:12	2
3	TOC	WG447602-01 BLK	!!Error!! TOC:0.1456mg/L TC:0.06671mg/L IC:-0.078	Completed	10/7/2013 5:54:10	0
4	TOC	WG447602-02 LCS	!!Error!! TOC:24.27mg/L TC:24.12mg/L IC:-0.1465m	Completed	10/7/2013 6:06:17	4
5	TOC	WG447602-03 LCSDUP	!!Error!! TOC:24.37mg/L TC:24.23mg/L IC:-0.1429m	Completed	10/7/2013 6:16:50	4
6	TOC		TOC:1.635mg/L TC:95.55mg/L IC:93.91mg/L	Completed	10/7/2013 6:34:03	6
7	TOC		TOC:17.46mg/L TC:74.36mg/L IC:56.90mg/L	Completed	10/7/2013 6:50:04	7
8	TOC		TOC:1.988mg/L TC:81.46mg/L IC:79.47mg/L	Completed	10/7/2013 7:05:45	8
9	TOC	L13091525-14	TOC:7.684mg/L TC:50.38mg/L IC:42.70mg/L	Completed	10/7/2013 7:19:49	9
10	TOC	L13091661-01	TOC:6.769mg/L TC:10.48mg/L IC:3.711mg/L	Completed	10/7/2013 7:32:38	10
11	TOC	L13091662-01	TOC:1.439mg/L TC:5.657mg/L IC:4.218mg/L	Completed	10/7/2013 7:44:52	11
12	TOC	L13091662-02	TOC:1.282mg/L TC:6.527mg/L IC:5.245mg/L	Completed	10/7/2013 7:57:12	12
13	TOC	L13091662-03	TOC:1.517mg/L TC:11.43mg/L IC:9.910mg/L	Completed	10/7/2013 8:09:51	13
14	TOC	CCV	!!Error!! TOC:22.72mg/L TC:22.70mg/L IC:-0.02258	Completed	10/7/2013 8:22:01	14
15	TOC	CCB	!!Error!! TOC:0.1267mg/L TC:0.06069mg/L IC:-0.066	Completed	10/7/2013 8:30:56	0
16	TOC	L13100074-01	TOC:17.46mg/L TC:20.98mg/L IC:3.523mg/L	Completed	10/7/2013 8:45:27	16
17	TOC		TOC:101.5mg/L TC:121.8mg/L IC:20.33mg/L	Completed	10/7/2013 9:01:10	17
18	TOC		TOC:130.4mg/L TC:276.0mg/L IC:145.7mg/L	Completed	10/7/2013 9:19:00	18
19	TOC	L13100076-01	TOC:1.752mg/L TC:3.187mg/L IC:1.435mg/L	Completed	10/7/2013 9:31:12	19
20	TOC	L13100076-02	TOC:0.7641mg/L TC:0.9295mg/L IC:0.1655mg/L	Completed	10/7/2013 9:42:46	20
21	TOC	L13100169-01	TOC:3.181mg/L TC:19.43mg/L IC:16.24mg/L	Completed	10/7/2013 9:55:49	21
22	TOC	L13100169-02	TOC:5.227mg/L TC:46.51mg/L IC:41.28mg/L	Completed	10/7/2013 10:10:0	22
23	TOC	L13100169-03	TOC:4.749mg/L TC:34.36mg/L IC:29.61mg/L	Completed	10/7/2013 10:23:4	23
24	TOC	L13100169-04	TOC:4.688mg/L TC:31.65mg/L IC:26.96mg/L	Completed	10/7/2013 10:37:1	24
25	TOC	L13100169-05	TOC:5.533mg/L TC:9.986mg/L IC:4.453mg/L	Completed	10/7/2013 10:49:5	25
26	TOC	CCV	!!Error!! TOC:22.50mg/L TC:22.49mg/L IC:-0.01899	Completed	10/7/2013 11:01:5	26
27	TOC	CCB	!!Error!! TOC:0.1204mg/L TC:0.06431mg/L IC:-0.056	Completed	10/7/2013 11:10:5	0
28	TOC		TOC:84.48mg/L TC:103.0mg/L IC:18.55mg/L	Completed	10/7/2013 11:26:3	28
29	TOC	L13100174-01	TOC:0.6188mg/L TC:0.6417mg/L IC:0.02289mg/L	Completed	10/7/2013 11:38:0	29
30	TOC	WG447602-05 DUP	TOC:3.239mg/L TC:24.87mg/L IC:21.63mg/L	Completed	10/7/2013 11:51:2	30
31	TOC	WG447602-06 MS	TOC:13.79mg/L TC:33.53mg/L IC:19.74mg/L	Completed	10/8/2013 12:04:3	31
32	TOC	WG447603-01 BLK	TOC:0.1164mg/L TC:0.1234mg/L IC:0.00707mg/L	Completed	10/8/2013 12:13:3	0
33	TOC	WG447603-02 LCS	!!Error!! TOC:24.61mg/L TC:24.54mg/L IC:-0.07219	Completed	10/8/2013 12:25:4	33
34	TOC	WG447603-03 LCSDUP	!!Error!! TOC:24.48mg/L TC:24.38mg/L IC:-0.09775	Completed	10/8/2013 12:36:2	33
35	TOC	L13100174-02	!!Error!! TOC:0.3726mg/L TC:0.3110mg/L IC:-0.0616	Completed	10/8/2013 12:47:3	35
36	TOC	L13100218-01	TOC:2.196mg/L TC:21.24mg/L IC:19.04mg/L	Completed	10/8/2013 1:00:51	36
37	TOC		TOC:41.30mg/L TC:99.44mg/L IC:58.14mg/L	Completed	10/8/2013 1:17:09	37
38	TOC	CCV	TOC:23.49mg/L TC:23.65mg/L IC:0.1661mg/L	Completed	10/8/2013 1:29:52	2
39	TOC	CCB	!!Error!! TOC:0.1114mg/L TC:0.07829mg/L IC:-0.033	Completed	10/8/2013 1:38:49	0
40	TOC	Ref -04	TOC:1.764mg/L TC:66.93mg/L IC:65.16mg/L	Completed	10/8/2013 1:53:27	40
41	TOC	L13100363-01	TOC:9.427mg/L TC:13.17mg/L IC:3.744mg/L	Completed	10/8/2013 2:05:52	41
42	TOC	L13100232-01	!!Error!! TOC:0.6964mg/L TC:0.6745mg/L IC:-0.0218	Completed	10/8/2013 2:17:17	42
43	TOC	L13100266-05	TOC:6.321mg/L TC:35.21mg/L IC:28.89mg/L	Completed	10/8/2013 2:32:26	43
44	TOC	L13100266-07	TOC:5.695mg/L TC:23.28mg/L IC:17.58mg/L	Completed	10/8/2013 2:47:21	44
45	TOC		TOC:20.37mg/L TC:20.37mg/L IC:0.00348mg/L	Completed	10/8/2013 2:59:31	45
46	TOC		!!Error!! TOC:41.45mg/L TC:41.40mg/L IC:-0.05163	Completed	10/8/2013 3:11:48	46
47	TOC		!!Error!! TOC:-3.655mg/L TC:68.22mg/L IC:71.88mg/	Completed	10/8/2013 3:26:40	47
48	TOC	L13100334-03	TOC:3.197mg/L TC:18.07mg/L IC:14.87mg/L	Completed	10/8/2013 3:39:55	48
49	TOC	L13100334-04	TOC:2.006mg/L TC:10.41mg/L IC:8.402mg/L	Completed	10/8/2013 3:52:27	49
50	TOC	CCV	TOC:22.83mg/L TC:22.84mg/L IC:0.01090mg/L	Completed	10/8/2013 4:04:43	14
51	TOC	CCB	!!Error!! TOC:0.1006mg/L TC:0.04423mg/L IC:-0.056	Completed	10/8/2013 4:13:39	0
52	TOC	WG447603-05 DUP	TOC:6.108mg/L TC:39.94mg/L IC:33.83mg/L	Completed	10/8/2013 4:27:37	52
53	TOC	WG447603-06 MS	TOC:15.02mg/L TC:45.27mg/L IC:30.25mg/L	Completed	10/8/2013 4:41:20	53
54	TOC	WG447604-01 BLK	!!Error!! TOC:0.1109mg/L TC:0.1052mg/L IC:-0.0056	Completed	10/8/2013 4:57:49	0
55	TOC	WG447604-02 LCS	!!Error!! TOC:24.76mg/L TC:24.67mg/L IC:-0.08644	Completed	10/8/2013 5:18:57	55
56	TOC	WG447604-03 LCSDUP	!!Error!! TOC:24.88mg/L TC:24.78mg/L IC:-0.09623	Completed	10/8/2013 5:38:26	55
57	TOC	L13100354-01	TOC:2.826mg/L TC:4.506mg/L IC:1.680mg/L	Completed	10/8/2013 5:59:17	57
58	TOC	L13100354-03	TOC:3.884mg/L TC:6.023mg/L IC:2.139mg/L	Completed	10/8/2013 6:20:25	58
59	TOC	L13100355-01	TOC:10.09mg/L TC:12.84mg/L IC:2.745mg/L	Completed	10/8/2013 6:42:52	59
60	TOC	L13100371-01	TOC:9.348mg/L TC:11.32mg/L IC:1.969mg/L	Completed	10/8/2013 7:05:04	60
61	TOC	L13100371-02	TOC:9.078mg/L TC:11.17mg/L IC:2.089mg/L	Completed	10/8/2013 7:26:38	61
62	TOC	CCV	TOC:23.09mg/L TC:23.09mg/L IC:0.00663mg/L	Completed	10/8/2013 7:38:59	14
63	TOC	CCB	!!Error!! TOC:0.1211mg/L TC:0.05870mg/L IC:-0.062	Completed	10/8/2013 7:47:53	0
64	TOC	L13100371-03	TOC:8.790mg/L TC:10.11mg/L IC:1.316mg/L	Completed	10/8/2013 8:09:20	64
65	TOC	L13100371-04	TOC:8.798mg/L TC:10.31mg/L IC:1.516mg/L	Completed	10/8/2013 8:30:56	65
66	TOC	L13100371-05	TOC:9.016mg/L TC:10.37mg/L IC:1.349mg/L	Completed	10/8/2013 8:52:23	66
67	TOC	L13100371-06	TOC:8.859mg/L TC:10.37mg/L IC:1.514mg/L	Completed	10/8/2013 9:13:54	67

10/8/2013 4:52:26 PM 1/2

C:\TOC3201\Data\10-07-2013-BAF-TOC.t32

	Analysi	Sample Name	Result	Status	Date / Time	Vial
68	TOC	L13100371-07	TOC:2.398mg/L TC:3.089mg/L IC:0.6914mg/L	Completed	10/8/2013 9:34:17	68
69	TOC	L13100371-08	TOC:2.218mg/L TC:2.843mg/L IC:0.6251mg/L	Completed	10/8/2013 9:54:40	3
70	TOC	L13100371-09	TOC:2.183mg/L TC:2.951mg/L IC:0.7676mg/L	Completed	10/8/2013 10:14:5	5
71	TOC	L13100404-01	TOC:6.847mg/L TC:8.389mg/L IC:1.541mg/L	Completed	10/8/2013 10:37:1	15
72	TOC	L13100408-01	TOC:7.527mg/L TC:8.861mg/L IC:1.335mg/L	Completed	10/8/2013 11:01:0	27
73	TOC	L13100409-01	TOC:11.86mg/L TC:12.18mg/L IC:0.3206mg/L	Completed	10/8/2013 11:27:2	32
74	TOC	CCV	TOC:23.52mg/L TC:23.54mg/L IC:0.01822mg/L	Completed	10/8/2013 11:39:5	26
75	TOC	CCB	!!Error!! TOC:0.1325mg/L TC:0.07080mg/L IC:-0.061	Completed	10/8/2013 11:48:4	0
76	TOC	L13100309-01	TOC:2.055mg/L TC:3.734mg/L IC:1.679mg/L	Completed	10/8/2013 12:09:2	34
77	TOC	L13100309-03	TOC:1.936mg/L TC:3.813mg/L IC:1.877mg/L	Completed	10/8/2013 12:30:0	38
78	TOC	L13100309-05	TOC:2.153mg/L TC:2.670mg/L IC:0.5171mg/L	Completed	10/8/2013 12:50:2	39
79	TOC	L13100309-07	TOC:2.285mg/L TC:3.079mg/L IC:0.7940mg/L	Completed	10/8/2013 1:10:49	50
80	TOC	L13100309-09	TOC:0.9523mg/L TC:1.288mg/L IC:0.3356mg/L	Completed	10/8/2013 1:30:35	51
81	TOC	L13100309-11	TOC:2.282mg/L TC:3.525mg/L IC:1.243mg/L	Completed	10/8/2013 1:51:09	54
82	TOC	L13091525-07	TOC:6.699mg/L TC:12.96mg/L IC:6.256mg/L	Completed	10/8/2013 2:04:02	56
83	TOC	WG447604-05 DUP	TOC:2.315mg/L TC:3.151mg/L IC:0.8360mg/L	Completed	10/8/2013 2:24:42	62
84	TOC	WG447604-06 MS	TOC:12.42mg/L TC:13.42mg/L IC:0.9960mg/L	Completed	10/8/2013 2:45:55	63
85	TOC	CCV	TOC:22.09mg/L TC:22.28mg/L IC:0.1927mg/L	Completed	10/8/2013 3:06:42	2
86	TOC	CCB	!!Error!! TOC:0.1181mg/L TC:0.06019mg/L IC:-0.057	Completed	10/8/2013 3:15:36	0
87	TOC	L13091525-08 (4)	TOC:4.921mg/L TC:21.73mg/L IC:16.81mg/L	Completed	10/8/2013 3:29:09	1
88	TOC	L13091525-11 (3)	TOC:5.205mg/L TC:18.25mg/L IC:13.04mg/L	Completed	10/8/2013 3:42:28	7
89	TOC	L13091525-13 (4)	TOC:3.600mg/L TC:16.43mg/L IC:12.83mg/L	Completed	10/8/2013 3:55:41	3
90	TOC	L13100075-01 (5)	TOC:19.47mg/L TC:23.65mg/L IC:4.181mg/L	Completed	10/8/2013 4:09:05	4
91	TOC	L13100075-02 (10)	TOC:27.72mg/L TC:47.64mg/L IC:19.93mg/L	Completed	10/8/2013 4:23:51	5
92	TOC	CCV	TOC:22.63mg/L TC:22.78mg/L IC:0.1537mg/L	Completed	10/8/2013 4:36:17	6
93	TOC	CCB	!!Error!! TOC:0.1251mg/L TC:0.08368mg/L IC:-0.041	Completed	10/8/2013 4:45:15	0

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC 25
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.032mg/L TC:26.90mg/L IC:24.87mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	980.0	26.90mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 5:27:29 PM

Mean Area 980.0
Mean Conc. 26.90mg/L

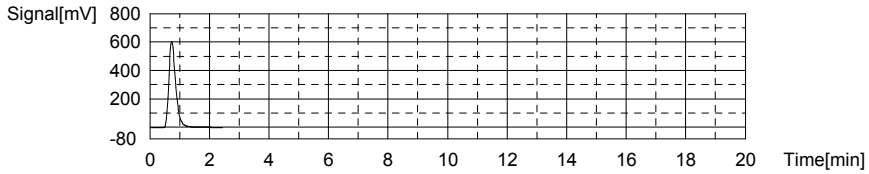

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	749.1	24.87mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 5:32:58 PM

Mean Area 749.1
Mean Conc. 24.87mg/L

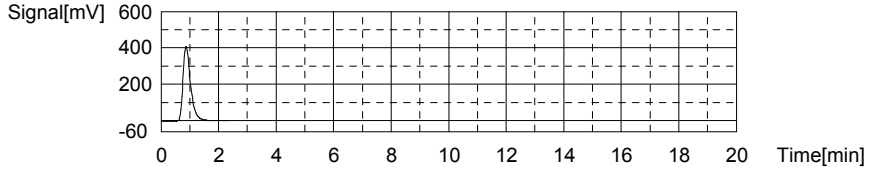

Sample

Sample Name: CCV 25
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:22.43mg/L TC:22.36mg/L IC:-0.06913mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	815.8	22.36mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 5:40:53 PM

Mean Area 815.8
Mean Conc. 22.36mg/L

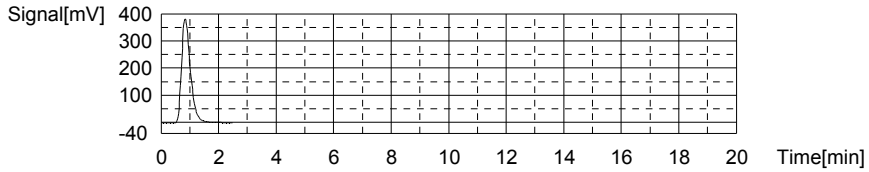

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.655	-0.06913mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 5:45:12 PM

Mean Area 6.655
Mean Conc. -0.06913mg/L

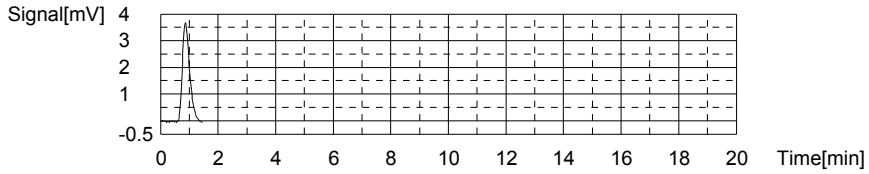

Sample

Sample Name: WG447602-01 BLK
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1456mg/L TC:0.06671mg/L IC:-0.07884mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.747	0.06671mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 5:50:16 PM

Mean Area 8.747
Mean Conc. 0.06671mg/L

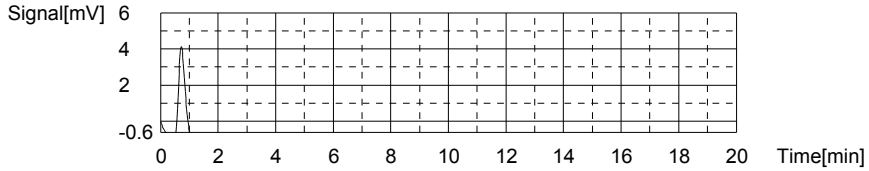

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.366	-0.07884mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 5:54:10 PM

Mean Area 6.366
Mean Conc. -0.07884mg/L

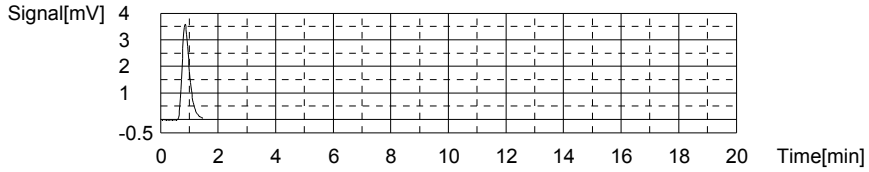

Sample

Sample Name: WG447602-02 LCS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.27mg/L TC:24.12mg/L IC:-0.1465mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	879.4	24.12mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 6:01:59 PM

Mean Area 879.4
Mean Conc. 24.12mg/L

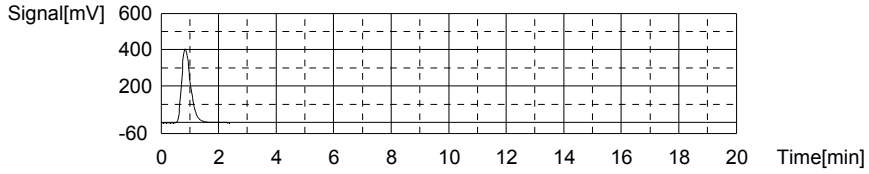

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.351	-0.1465mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 6:06:17 PM

Mean Area 4.351
Mean Conc. -0.1465mg/L

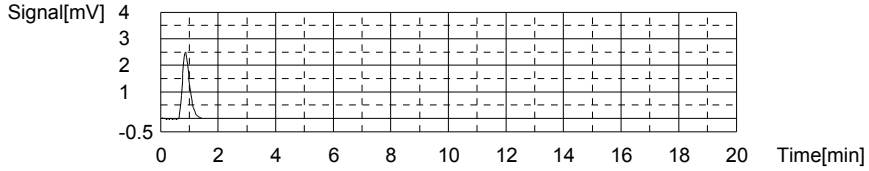

Sample

Sample Name: WG447602-03 LCSDUP
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.37mg/L TC:24.23mg/L IC:-0.1429mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	883.5	24.23mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 6:12:32 PM

Mean Area 883.5
Mean Conc. 24.23mg/L

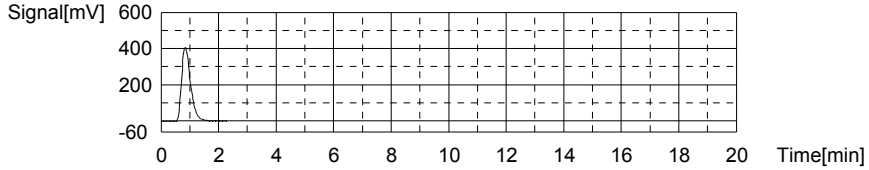

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.459	-0.1429mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 6:16:50 PM

Mean Area 4.459
Mean Conc. -0.1429mg/L

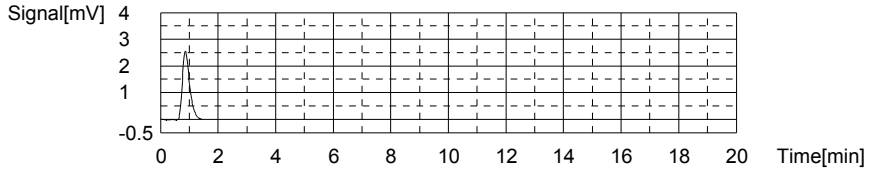

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.635mg/L TC:95.55mg/L IC:93.91mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3465	95.55mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 6:27:07 PM

Mean Area 3465
Mean Conc. 95.55mg/L

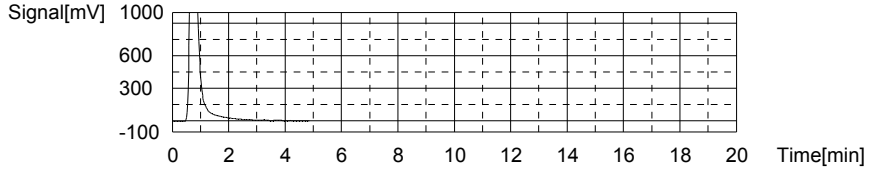

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2805	93.91mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 6:34:03 PM

Mean Area 2805
Mean Conc. 93.91mg/L

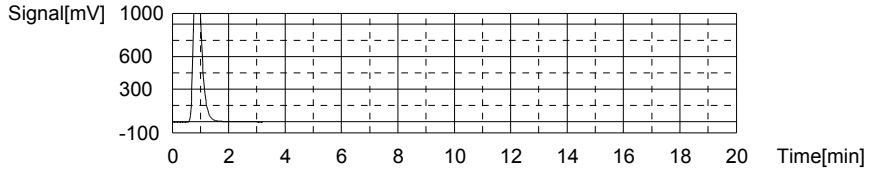

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:17.46mg/L TC:74.36mg/L IC:56.90mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2698	74.36mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 6:43:37 PM

Mean Area 2698
Mean Conc. 74.36mg/L

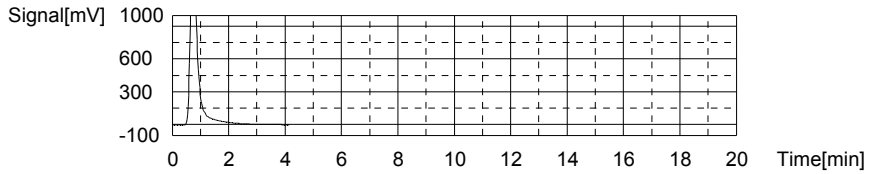

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1703	56.90mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 6:50:04 PM

Mean Area 1703
Mean Conc. 56.90mg/L

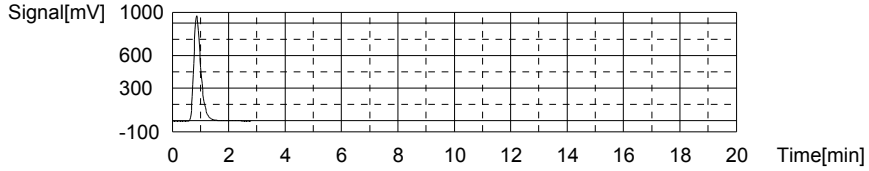

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.988mg/L TC:81.46mg/L IC:79.47mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2955	81.46mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 6:59:04 PM

Mean Area 2955
Mean Conc. 81.46mg/L

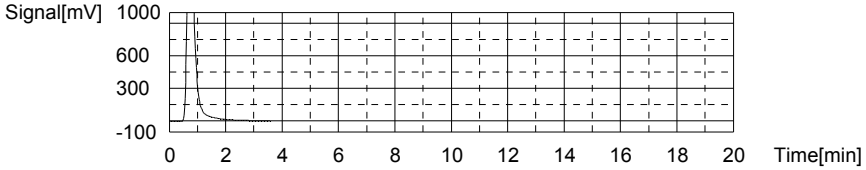

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2375	79.47mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 7:05:45 PM

Mean Area 2375
Mean Conc. 79.47mg/L

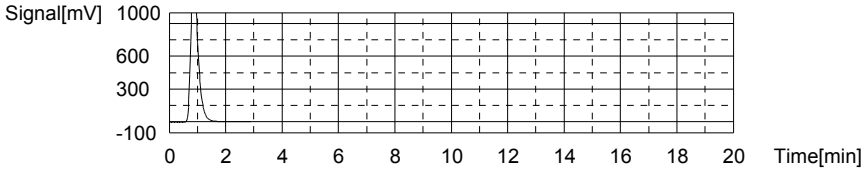

Sample

Sample Name: L13091525-14
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.684mg/L TC:50.38mg/L IC:42.70mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1830	50.38mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 7:13:51 PM

Mean Area 1830
Mean Conc. 50.38mg/L

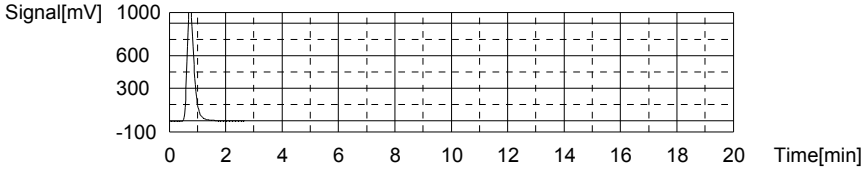

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1280	42.70mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 7:19:49 PM

Mean Area 1280
Mean Conc. 42.70mg/L

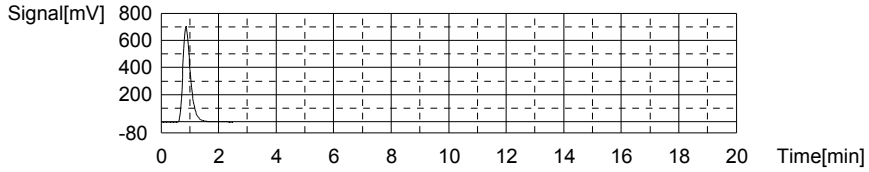

Sample

Sample Name: L13091661-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.769mg/L TC:10.48mg/L IC:3.711mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	385.7	10.48mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 7:27:46 PM

Mean Area 385.7
Mean Conc. 10.48mg/L

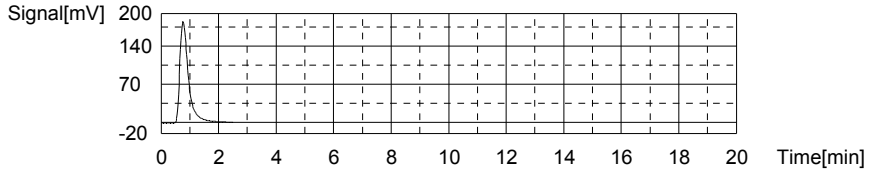

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	119.2	3.711mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 7:32:38 PM

Mean Area 119.2
Mean Conc. 3.711mg/L

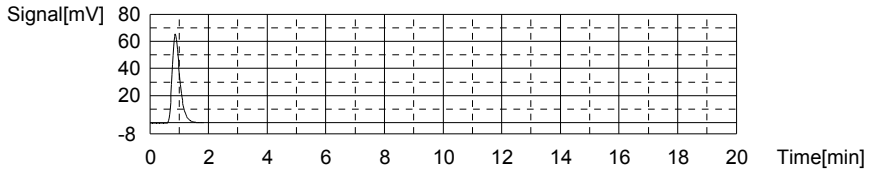

Sample

Sample Name: L13091662-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.439mg/L TC:5.657mg/L IC:4.218mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	211.1	5.657mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 7:39:59 PM

Mean Area 211.1
Mean Conc. 5.657mg/L

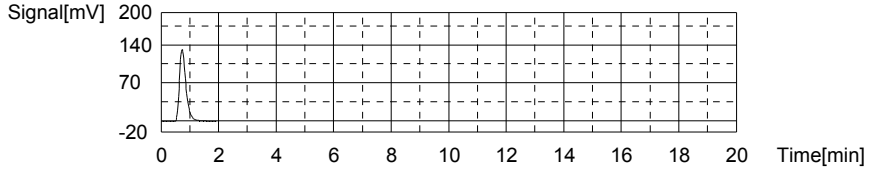

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	134.3	4.218mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 7:44:52 PM

Mean Area 134.3
Mean Conc. 4.218mg/L

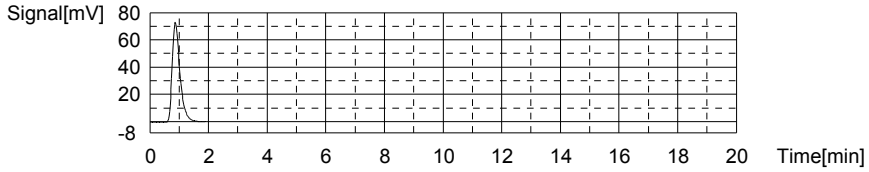

Sample

Sample Name: L13091662-02
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.282mg/L TC:6.527mg/L IC:5.245mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	242.6	6.527mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 7:52:20 PM

Mean Area 242.6
Mean Conc. 6.527mg/L

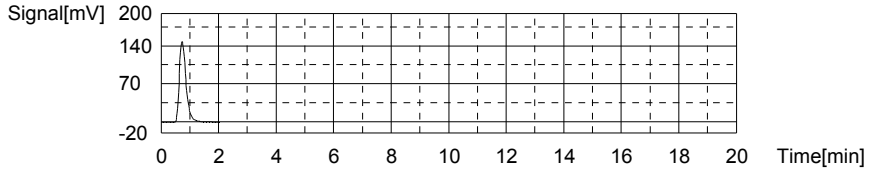

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	164.9	5.245mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 7:57:12 PM

Mean Area 164.9
Mean Conc. 5.245mg/L

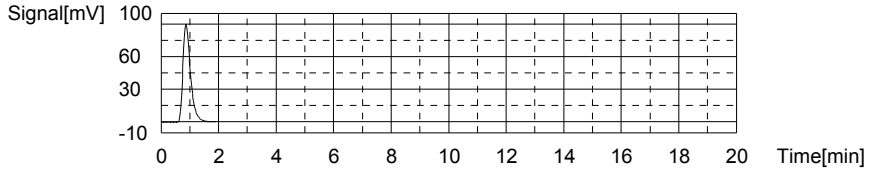

Sample

Sample Name: L13091662-03
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.517mg/L TC:11.43mg/L IC:9.910mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	420.0	11.43mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 8:04:43 PM

Mean Area 420.0
Mean Conc. 11.43mg/L

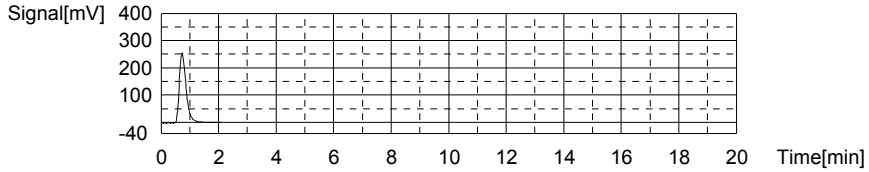

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	303.8	9.910mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 8:09:51 PM

Mean Area 303.8
Mean Conc. 9.910mg/L

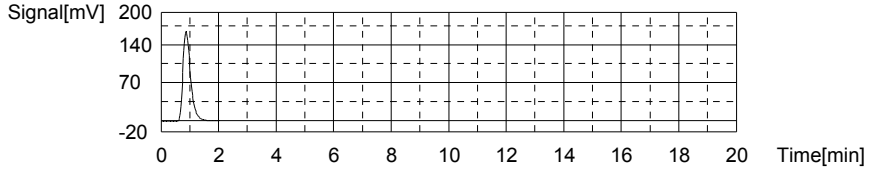

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:22.72mg/L TC:22.70mg/L IC:-0.02258mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	828.0	22.70mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 8:17:40 PM

Mean Area 828.0
Mean Conc. 22.70mg/L

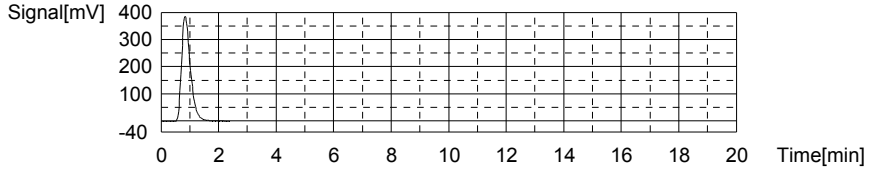

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.041	-0.02258mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 8:22:01 PM

Mean Area 8.041
Mean Conc. -0.02258mg/L

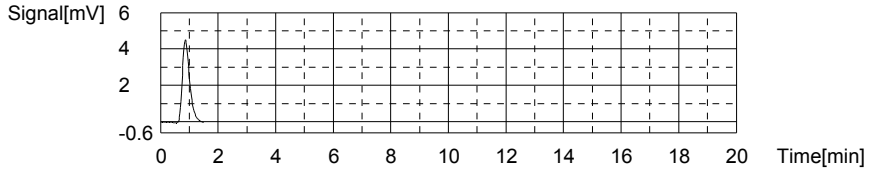

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1267mg/L TC:0.06069mg/L IC:-0.06604mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.529	0.06069mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 8:27:02 PM

Mean Area 8.529
Mean Conc. 0.06069mg/L

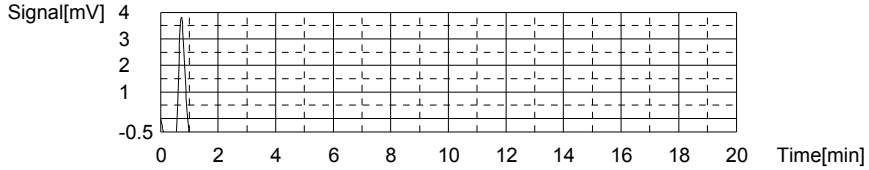

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.747	-0.06604mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 8:30:56 PM

Mean Area 6.747
Mean Conc. -0.06604mg/L

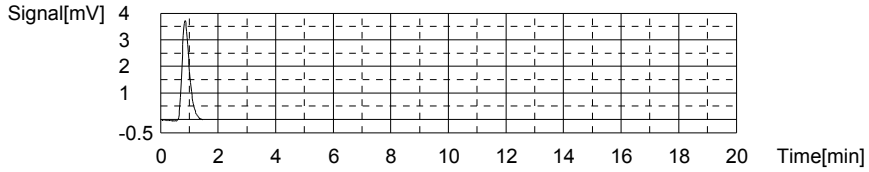

Sample

Sample Name: L13100074-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:17.46mg/L TC:20.98mg/L IC:3.523mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	765.8	20.98mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 8:40:41 PM

Mean Area 765.8
Mean Conc. 20.98mg/L

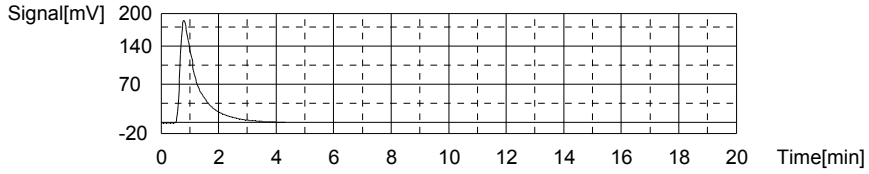

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	113.6	3.523mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 8:45:27 PM

Mean Area 113.6
Mean Conc. 3.523mg/L

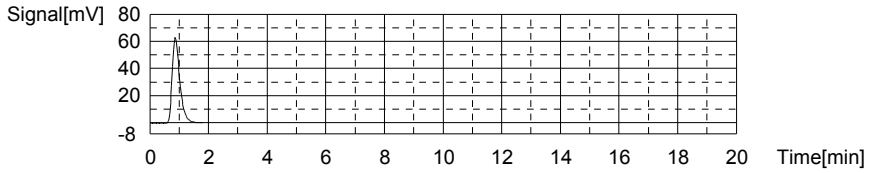

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:101.5mg/L TC:121.8mg/L IC:20.33mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4415	121.8mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 8:55:48 PM

Mean Area 4415
Mean Conc. 121.8mg/L

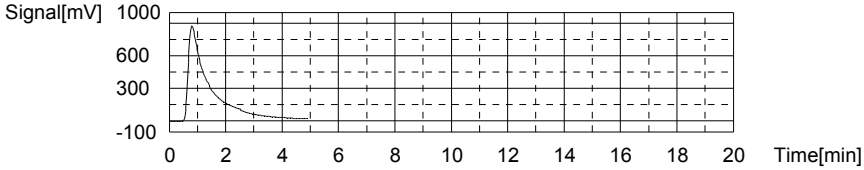

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	614.2	20.33mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 9:01:10 PM

Mean Area 614.2
Mean Conc. 20.33mg/L

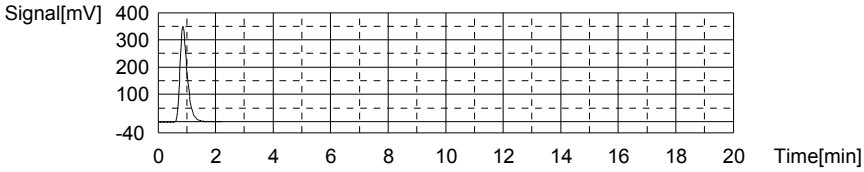

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:130.4mg/L TC:276.0mg/L IC:145.7mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9999	276.0mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 9:11:30 PM

Mean Area 9999
Mean Conc. 276.0mg/L

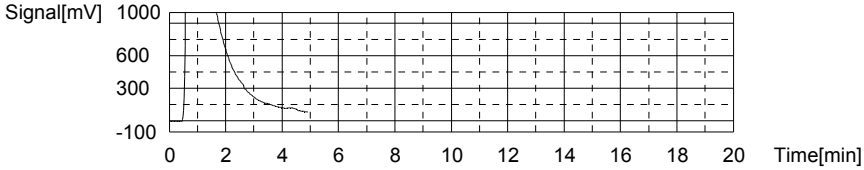

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4347	145.7mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 9:19:00 PM

Mean Area 4347
Mean Conc. 145.7mg/L

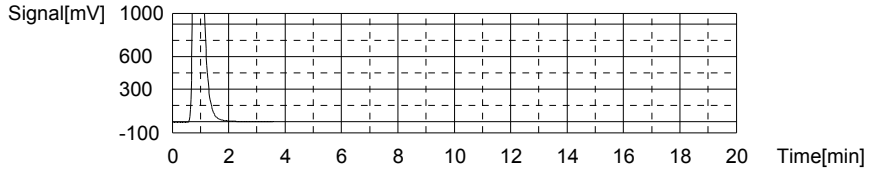

Sample

Sample Name: L13100076-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.752mg/L TC:3.187mg/L IC:1.435mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	121.7	3.187mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 9:26:12 PM

Mean Area 121.7
Mean Conc. 3.187mg/L

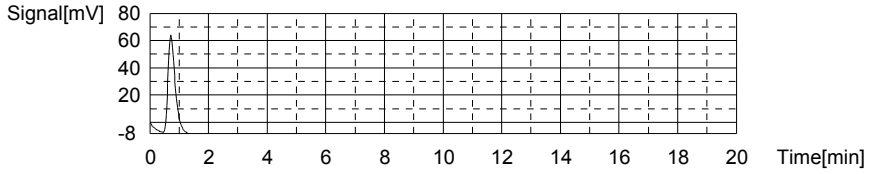

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	51.44	1.435mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 9:31:12 PM

Mean Area 51.44
Mean Conc. 1.435mg/L

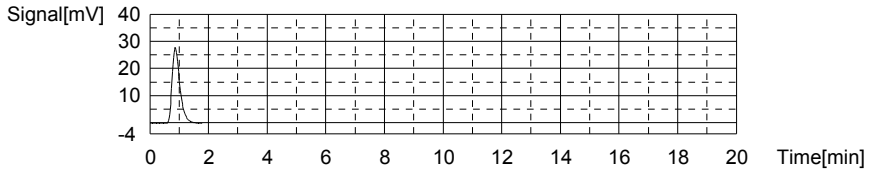

Sample

Sample Name: L13100076-02
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.7641mg/L TC:0.9295mg/L IC:0.1655mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	39.98	0.9295mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 9:38:17 PM

Mean Area 39.98
Mean Conc. 0.9295mg/L

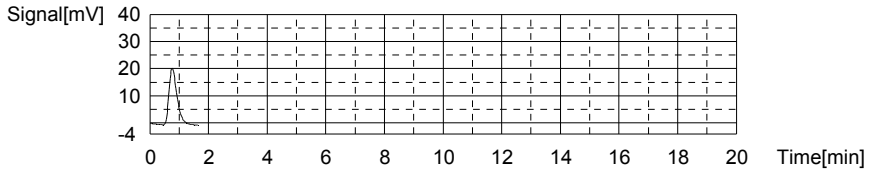

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.64	0.1655mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 9:42:46 PM

Mean Area 13.64
Mean Conc. 0.1655mg/L

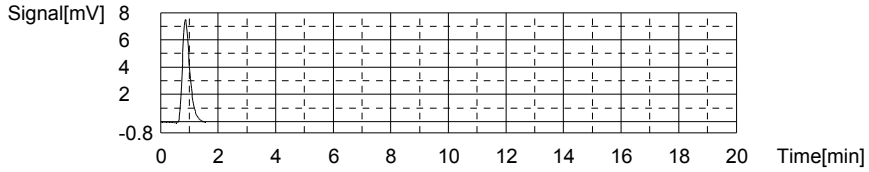

Sample

Sample Name: L13100169-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.181mg/L TC:19.43mg/L IC:16.24mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	709.5	19.43mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 9:50:39 PM

Mean Area 709.5
Mean Conc. 19.43mg/L

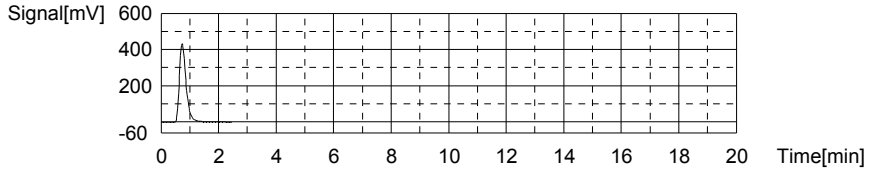

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	492.4	16.24mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 9:55:49 PM

Mean Area 492.4
Mean Conc. 16.24mg/L

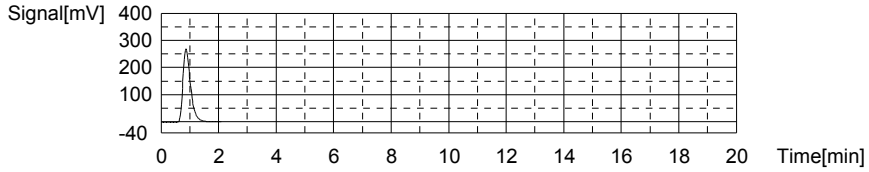

Sample

Sample Name: L13100169-02
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.227mg/L TC:46.51mg/L IC:41.28mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1690	46.51mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 10:04:15 PM

Mean Area 1690
Mean Conc. 46.51mg/L

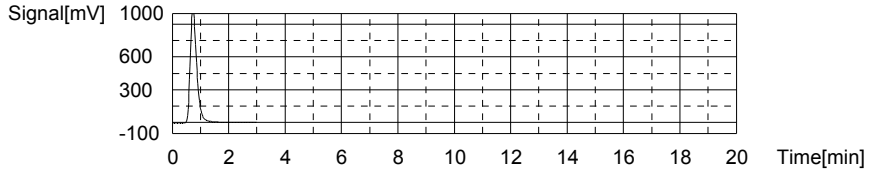

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1238	41.28mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 10:10:04 PM

Mean Area 1238
Mean Conc. 41.28mg/L

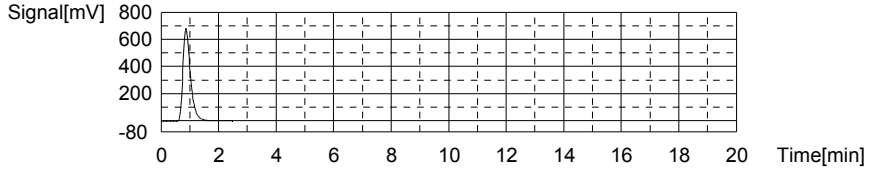

Sample

Sample Name: L13100169-03
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.749mg/L TC:34.36mg/L IC:29.61mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1250	34.36mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 10:18:06 PM

Mean Area 1250
Mean Conc. 34.36mg/L

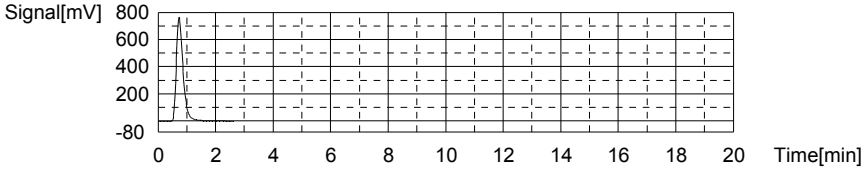

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	890.3	29.61mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 10:23:41 PM

Mean Area 890.3
Mean Conc. 29.61mg/L

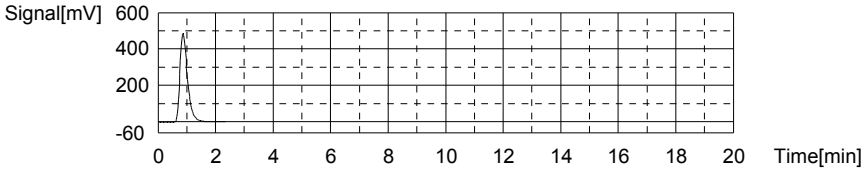

Sample

Sample Name: L13100169-04
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.688mg/L TC:31.65mg/L IC:26.96mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1152	31.65mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 10:31:45 PM

Mean Area 1152
Mean Conc. 31.65mg/L

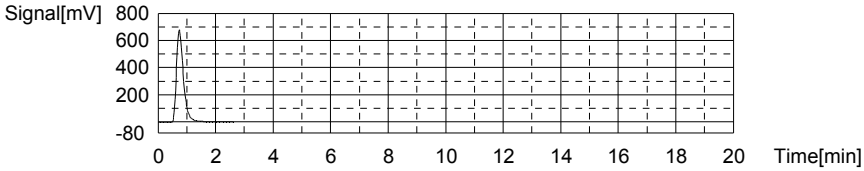

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	811.5	26.96mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 10:37:15 PM

Mean Area 811.5
Mean Conc. 26.96mg/L

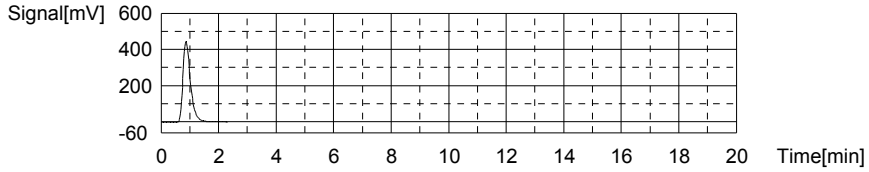

Sample

Sample Name: L13100169-05
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.533mg/L TC:9.986mg/L IC:4.453mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	367.8	9.986mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 10:44:59 PM

Mean Area 367.8
Mean Conc. 9.986mg/L

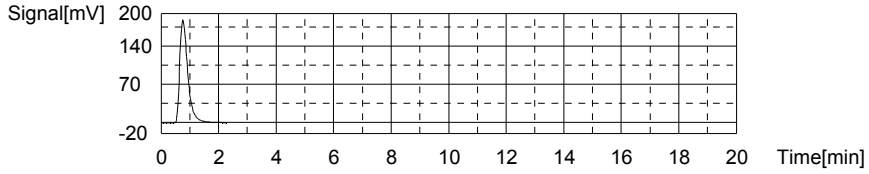

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	141.3	4.453mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 10:49:52 PM

Mean Area 141.3
Mean Conc. 4.453mg/L

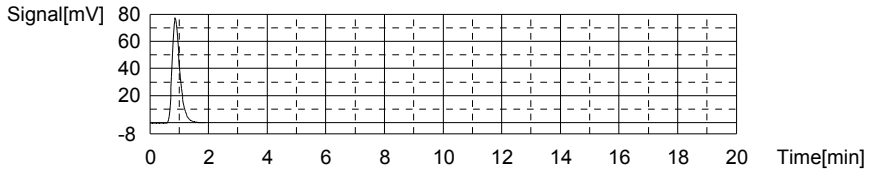

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:22.50mg/L TC:22.49mg/L IC:-0.01899mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	820.3	22.49mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 10:57:36 PM

Mean Area 820.3
Mean Conc. 22.49mg/L

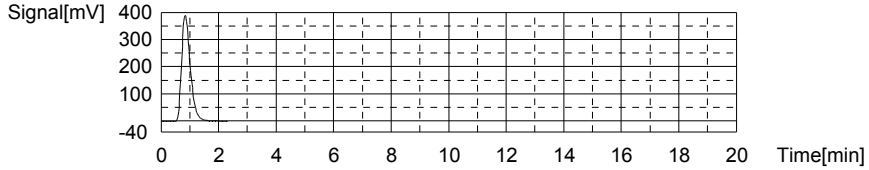

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.148	-0.01899mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 11:01:59 PM

Mean Area 8.148
Mean Conc. -0.01899mg/L

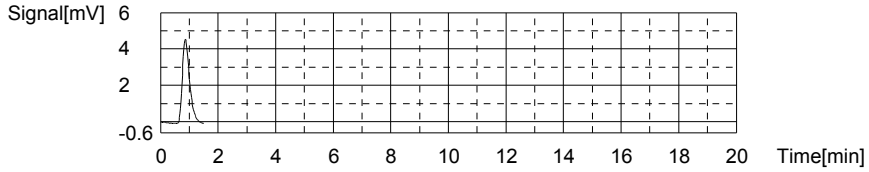

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1204mg/L TC:0.06431mg/L IC:-0.05610mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.660	0.06431mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 11:06:59 PM

Mean Area 8.660
Mean Conc. 0.06431mg/L

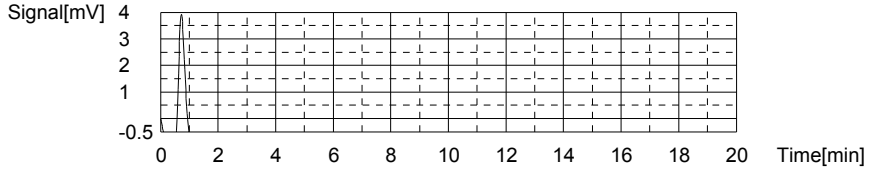

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.043	-0.05610mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 11:10:51 PM

Mean Area 7.043
Mean Conc. -0.05610mg/L

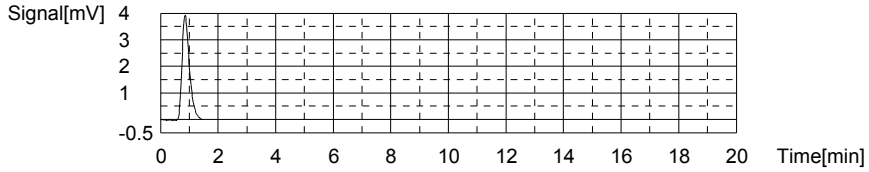

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:84.48mg/L TC:103.0mg/L IC:18.55mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3736	103.0mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 11:21:12 PM

Mean Area 3736
Mean Conc. 103.0mg/L

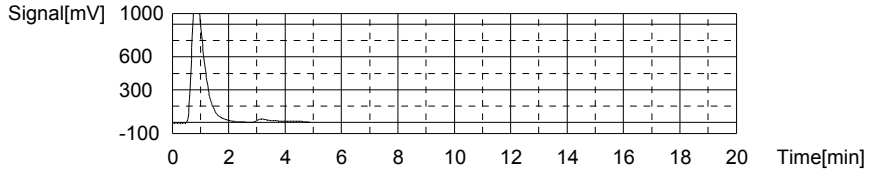

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	561.2	18.55mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 11:26:31 PM

Mean Area 561.2
Mean Conc. 18.55mg/L

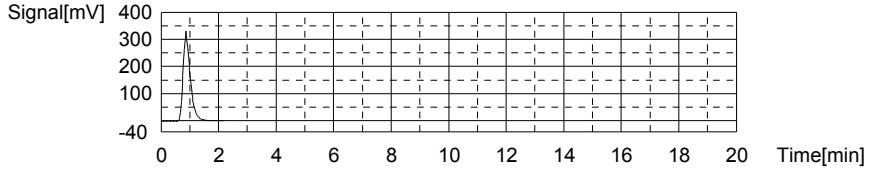

Sample

Sample Name: L13100174-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.6188mg/L TC:0.6417mg/L IC:0.02289mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	29.56	0.6417mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 11:33:37 PM

Mean Area 29.56
Mean Conc. 0.6417mg/L

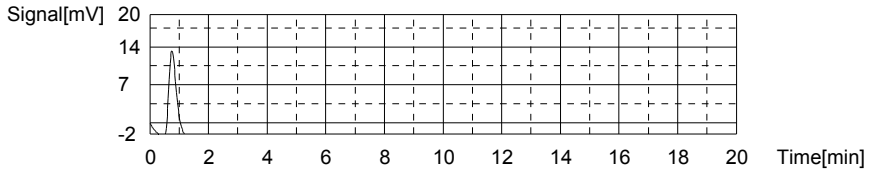

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.395	0.02289mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 11:38:02 PM

Mean Area 9.395
Mean Conc. 0.02289mg/L

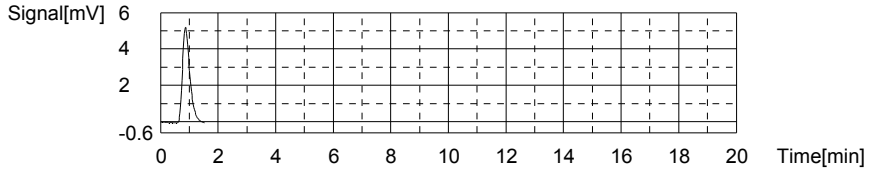

Sample

Sample Name: WG447602-05 DUP
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.239mg/L TC:24.87mg/L IC:21.63mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	906.5	24.87mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 11:46:01 PM

Mean Area 906.5
Mean Conc. 24.87mg/L

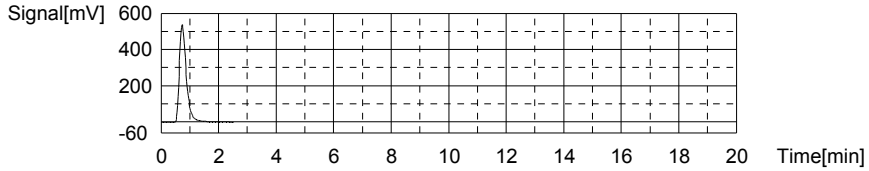

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	652.7	21.63mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/7/2013 11:51:21 PM

Mean Area 652.7
Mean Conc. 21.63mg/L

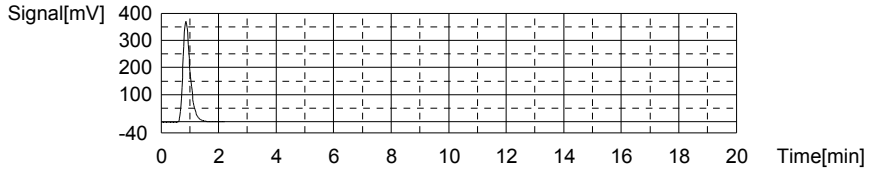

Sample

Sample Name: WG447602-06 MS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.79mg/L TC:33.53mg/L IC:19.74mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1220	33.53mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/7/2013 11:59:17 PM

Mean Area 1220
Mean Conc. 33.53mg/L

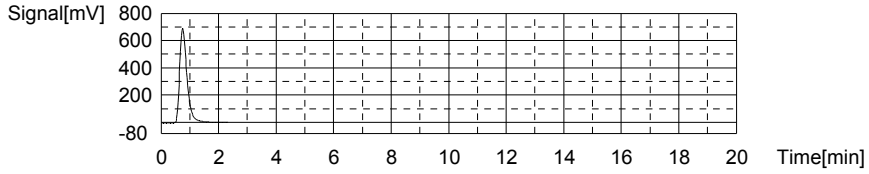

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	596.5	19.74mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 12:04:36 AM

Mean Area 596.5
Mean Conc. 19.74mg/L

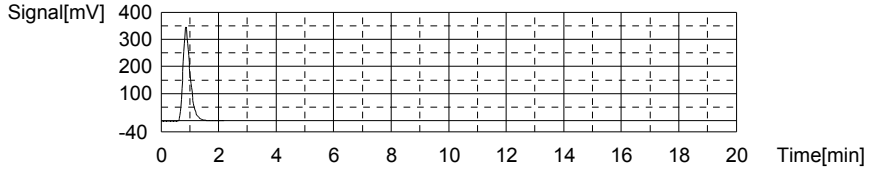

Sample

Sample Name: WG447603-01 BLK
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1164mg/L TC:0.1234mg/L IC:0.00707mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.80	0.1234mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 12:09:36 AM

Mean Area 10.80
Mean Conc. 0.1234mg/L

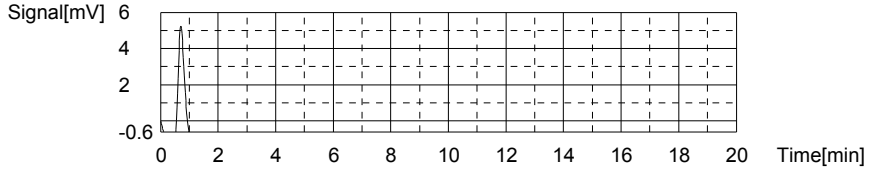

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.924	0.00707mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 12:13:33 AM

Mean Area 8.924
Mean Conc. 0.00707mg/L

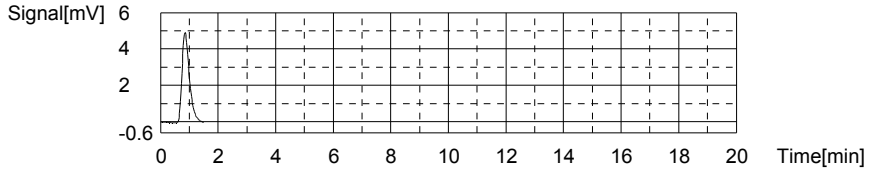

Sample

Sample Name: WG447603-02 LCS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.61mg/L TC:24.54mg/L IC:-0.07219mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	894.6	24.54mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 12:21:25 AM

Mean Area 894.6
Mean Conc. 24.54mg/L

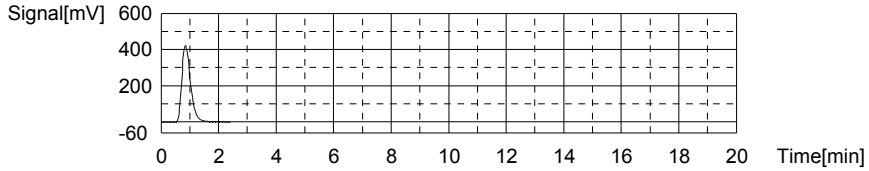

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.564	-0.07219mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 12:25:44 AM

Mean Area 6.564
Mean Conc. -0.07219mg/L

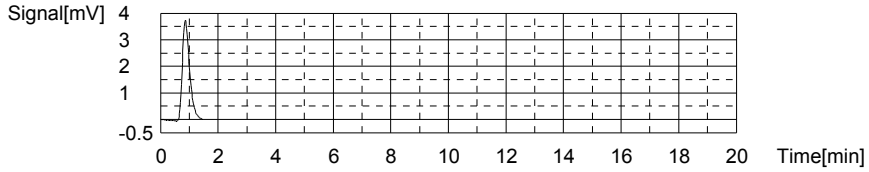

Sample

Sample Name: WG447603-03 LCSDUP
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.48mg/L TC:24.38mg/L IC:-0.09775mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	889.0	24.38mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 12:32:03 AM

Mean Area 889.0
Mean Conc. 24.38mg/L

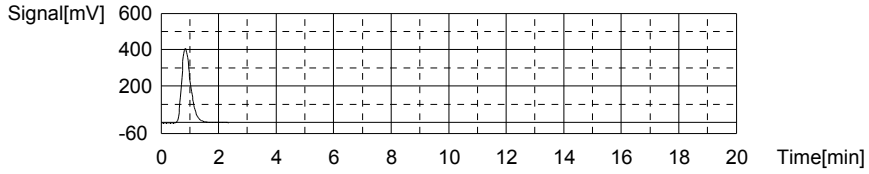

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.803	-0.09775mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 12:36:21 AM

Mean Area 5.803
Mean Conc. -0.09775mg/L

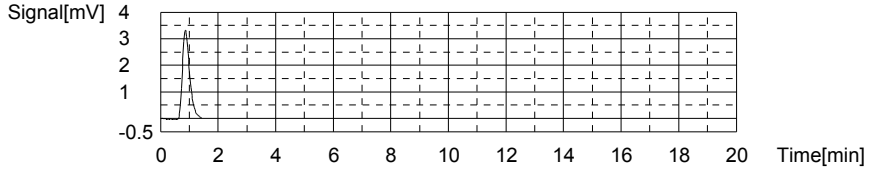

Sample

Sample Name: L13100174-02
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3726mg/L TC:0.3110mg/L IC:-0.06164mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.59	0.3110mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 12:43:20 AM

Mean Area 17.59
Mean Conc. 0.3110mg/L

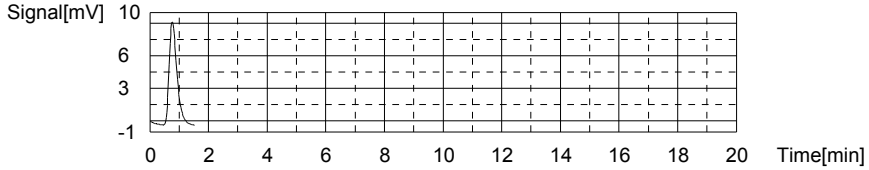

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.878	-0.06164mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 12:47:39 AM

Mean Area 6.878
Mean Conc. -0.06164mg/L

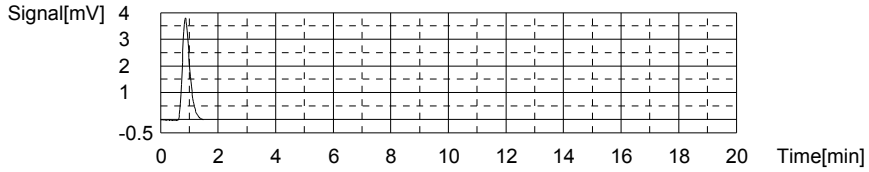

Sample

Sample Name: L13100218-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.196mg/L TC:21.24mg/L IC:19.04mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	775.1	21.24mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 12:55:33 AM

Mean Area 775.1
Mean Conc. 21.24mg/L

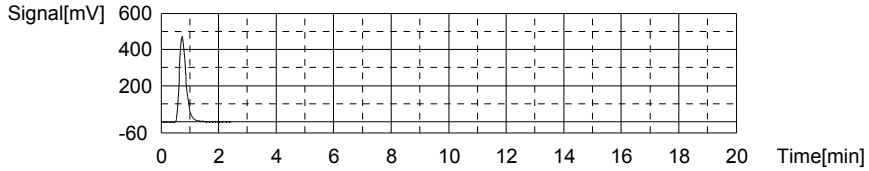

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	575.7	19.04mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 1:00:51 AM

Mean Area 575.7
Mean Conc. 19.04mg/L

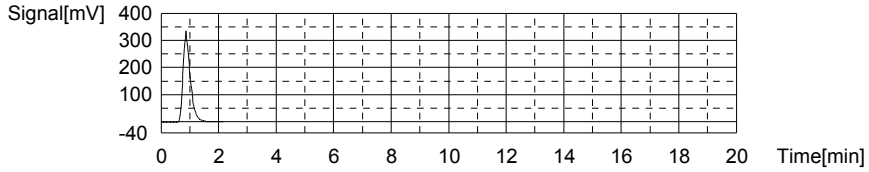

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:41.30mg/L TC:99.44mg/L IC:58.14mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3606	99.44mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 1:11:05 AM

Mean Area 3606
Mean Conc. 99.44mg/L

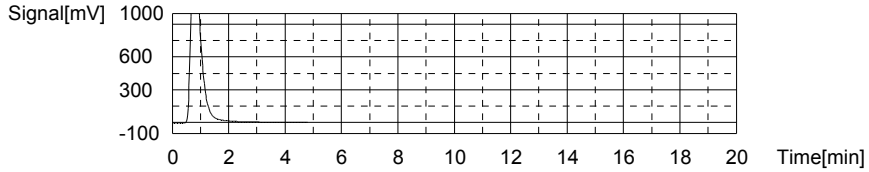

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1740	58.14mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 1:17:09 AM

Mean Area 1740
Mean Conc. 58.14mg/L

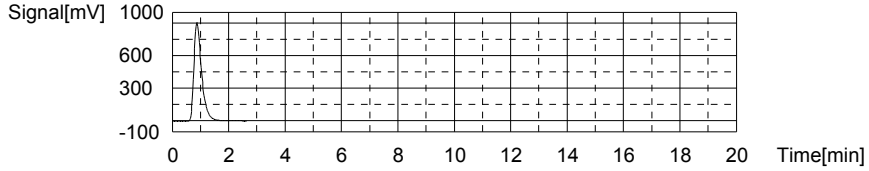

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.49mg/L TC:23.65mg/L IC:0.1661mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	862.5	23.65mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 1:25:18 AM

Mean Area 862.5
Mean Conc. 23.65mg/L

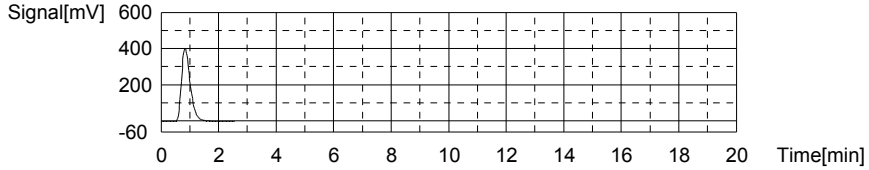

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.66	0.1661mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 1:29:52 AM

Mean Area 13.66
Mean Conc. 0.1661mg/L

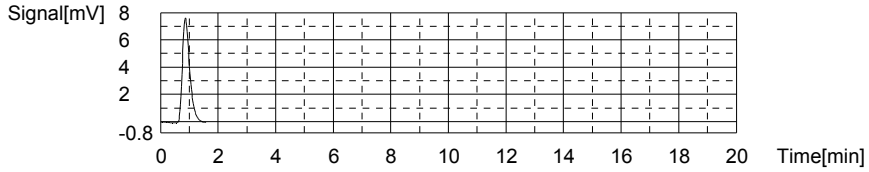

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1114mg/L TC:0.07829mg/L IC:-0.03313mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.166	0.07829mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 1:34:53 AM

Mean Area 9.166
Mean Conc. 0.07829mg/L

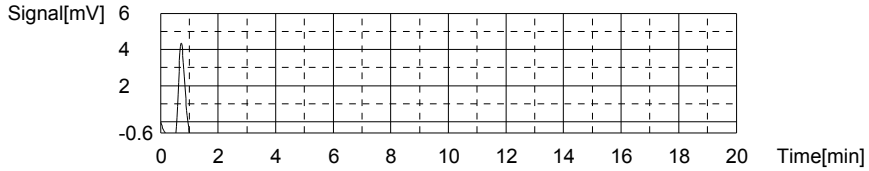

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.727	-0.03313mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 1:38:49 AM

Mean Area 7.727
Mean Conc. -0.03313mg/L

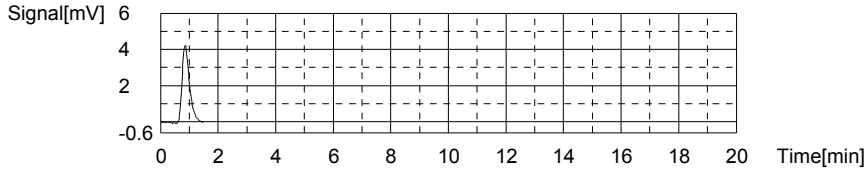

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.764mg/L TC:66.93mg/L IC:65.16mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2429	66.93mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 1:47:15 AM

Mean Area 2429
Mean Conc. 66.93mg/L

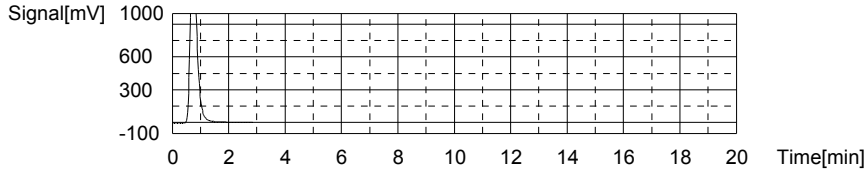

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1949	65.16mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 1:53:27 AM

Mean Area 1949
Mean Conc. 65.16mg/L

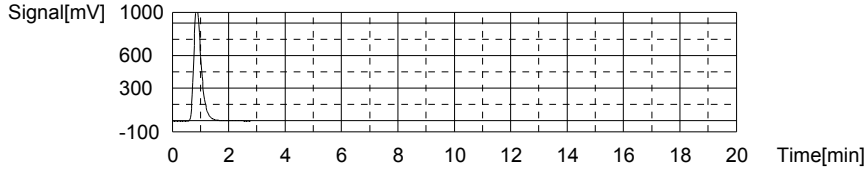

Sample

Sample Name: L13100363-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.427mg/L TC:13.17mg/L IC:3.744mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	483.1	13.17mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 2:00:56 AM

Mean Area 483.1
Mean Conc. 13.17mg/L

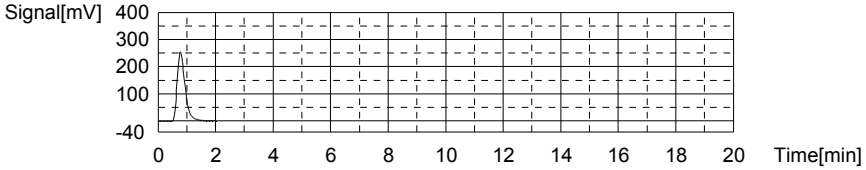

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	120.2	3.744mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 2:05:52 AM

Mean Area 120.2
Mean Conc. 3.744mg/L

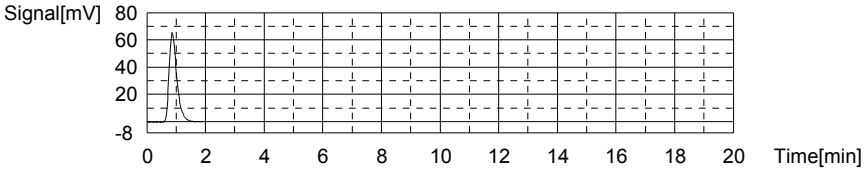

Sample

Sample Name: L13100232-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.6964mg/L TC:0.6745mg/L IC:-0.02188mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	30.75	0.6745mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 2:12:52 AM

Mean Area 30.75
Mean Conc. 0.6745mg/L

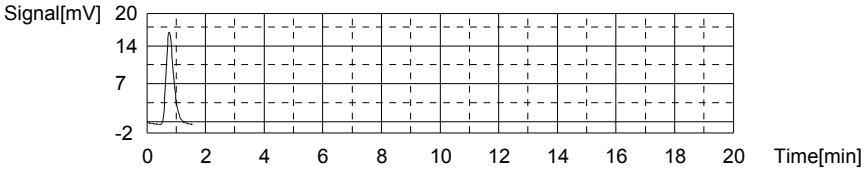

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.062	-0.02188mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 2:17:17 AM

Mean Area 8.062
Mean Conc. -0.02188mg/L

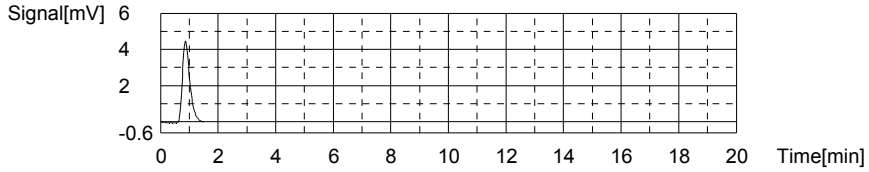

Sample

Sample Name: L13100266-05
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.321mg/L TC:35.21mg/L IC:28.89mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1281	35.21mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 2:26:55 AM

Mean Area 1281
Mean Conc. 35.21mg/L

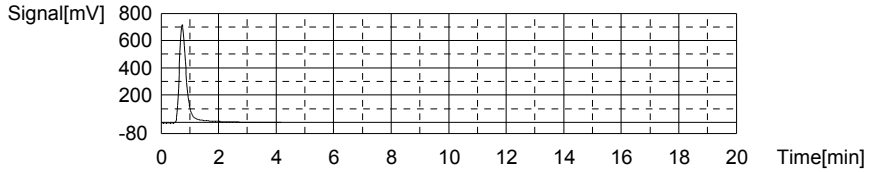

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	869.0	28.89mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 2:32:26 AM

Mean Area 869.0
Mean Conc. 28.89mg/L

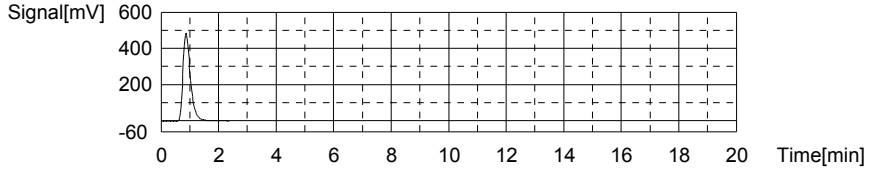

Sample

Sample Name: L13100266-07
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.695mg/L TC:23.28mg/L IC:17.58mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	849.0	23.28mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 2:42:03 AM

Mean Area 849.0
Mean Conc. 23.28mg/L

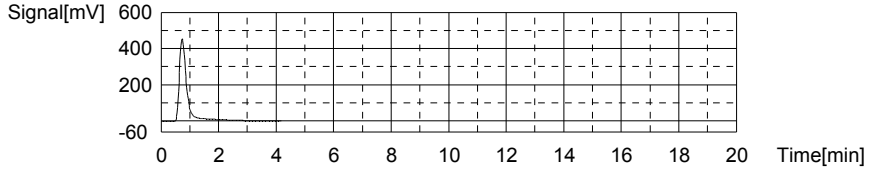

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	532.3	17.58mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 2:47:21 AM

Mean Area 532.3
Mean Conc. 17.58mg/L

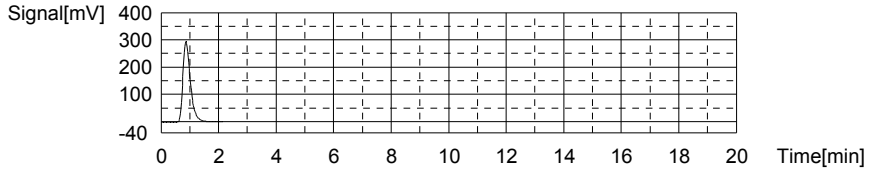

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:20.37mg/L TC:20.37mg/L IC:0.00348mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	743.8	20.37mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 2:55:06 AM

Mean Area 743.8
Mean Conc. 20.37mg/L

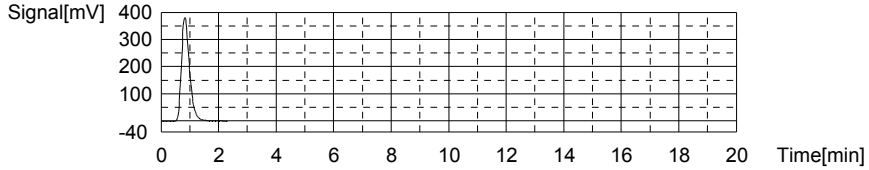

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.817	0.00348mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 2:59:31 AM

Mean Area 8.817
Mean Conc. 0.00348mg/L

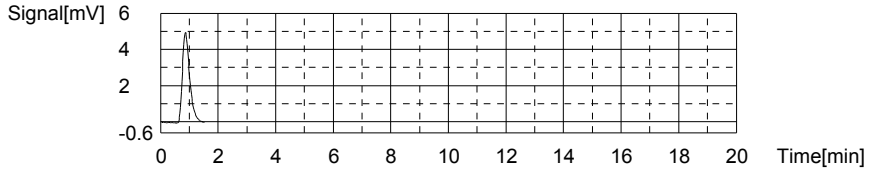

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:41.45mg/L TC:41.40mg/L IC:-0.05163mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1505	41.40mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 3:07:28 AM

Mean Area 1505
Mean Conc. 41.40mg/L

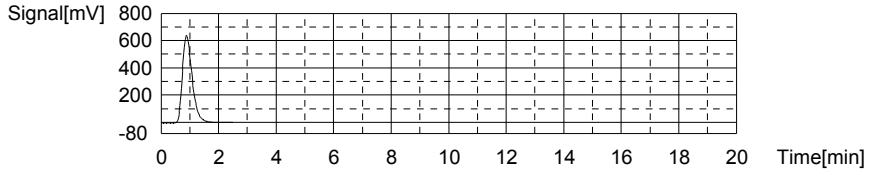

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.176	-0.05163mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 3:11:48 AM

Mean Area 7.176
Mean Conc. -0.05163mg/L

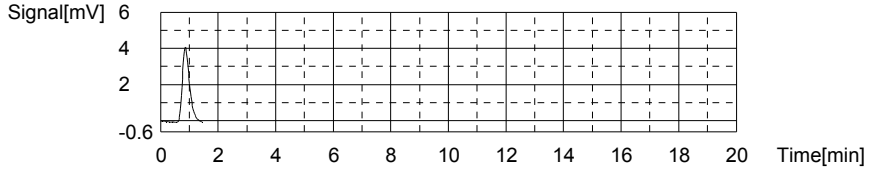

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-3.655mg/L TC:68.22mg/L IC:71.88mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2476	68.22mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 3:20:18 AM

Mean Area 2476
Mean Conc. 68.22mg/L

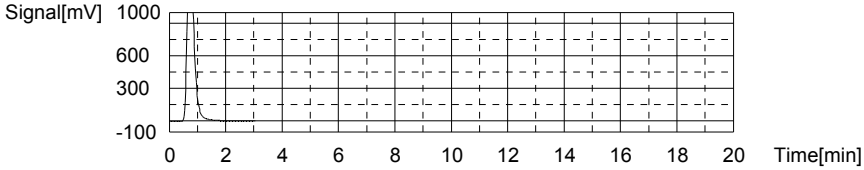

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2149	71.88mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 3:26:40 AM

Mean Area 2149
Mean Conc. 71.88mg/L

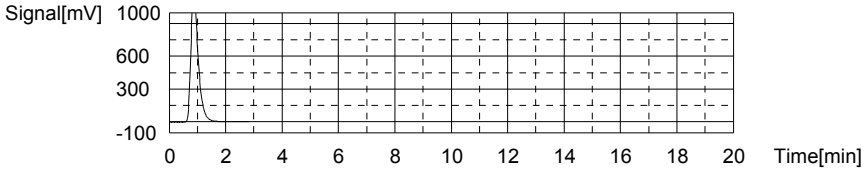

Sample

Sample Name: L13100334-03
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.197mg/L TC:18.07mg/L IC:14.87mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	660.5	18.07mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 3:34:33 AM

Mean Area 660.5
Mean Conc. 18.07mg/L

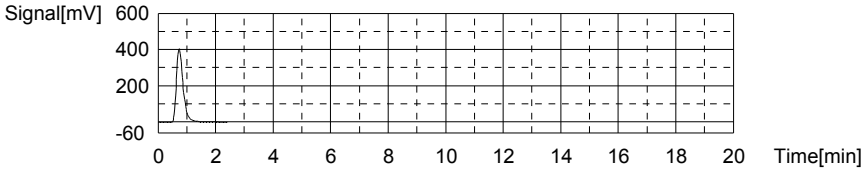

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	451.6	14.87mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 3:39:55 AM

Mean Area 451.6
Mean Conc. 14.87mg/L

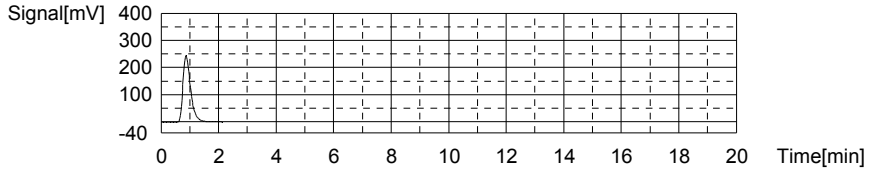

Sample

Sample Name: L13100334-04
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.006mg/L TC:10.41mg/L IC:8.402mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	383.1	10.41mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 3:47:25 AM

Mean Area 383.1
Mean Conc. 10.41mg/L

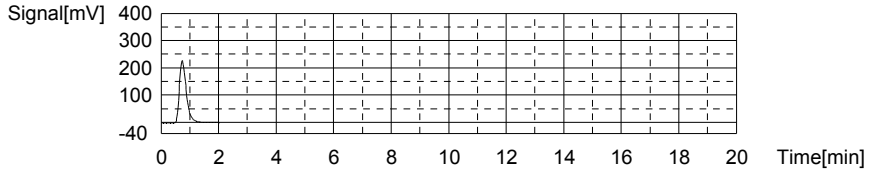

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	258.9	8.402mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 3:52:27 AM

Mean Area 258.9
Mean Conc. 8.402mg/L

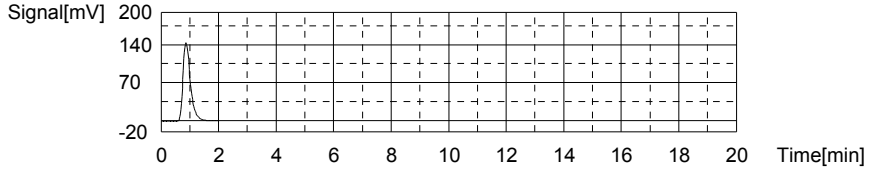

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:22.83mg/L TC:22.84mg/L IC:0.01090mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	833.0	22.84mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 4:00:20 AM

Mean Area 833.0
Mean Conc. 22.84mg/L

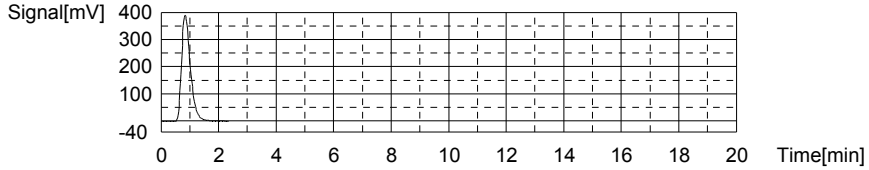

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.038	0.01090mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 4:04:43 AM

Mean Area 9.038
Mean Conc. 0.01090mg/L

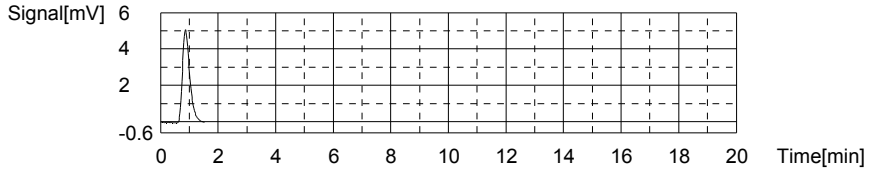

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1006mg/L TC:0.04423mg/L IC:-0.05640mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.933	0.04423mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 4:09:43 AM

Mean Area 7.933
Mean Conc. 0.04423mg/L

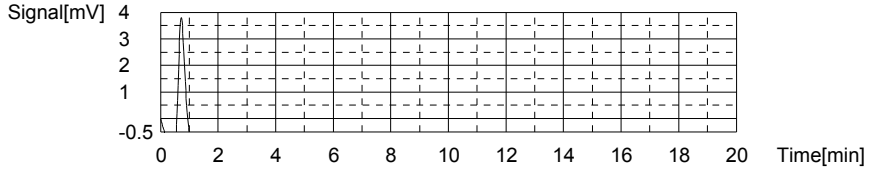

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.034	-0.05640mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 4:13:39 AM

Mean Area 7.034
Mean Conc. -0.05640mg/L

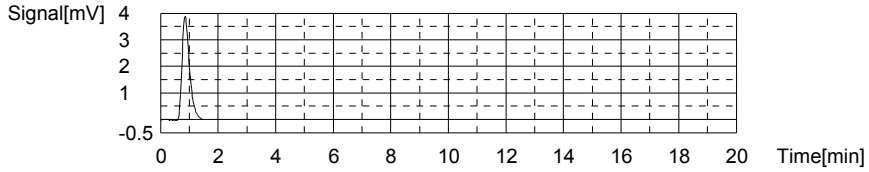

Sample

Sample Name: WG447603-05 DUP
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.108mg/L TC:39.94mg/L IC:33.83mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1452	39.94mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 4:22:00 AM

Mean Area 1452
Mean Conc. 39.94mg/L

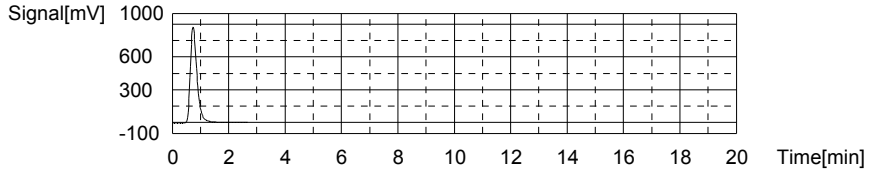

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1016	33.83mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 4:27:37 AM

Mean Area 1016
Mean Conc. 33.83mg/L

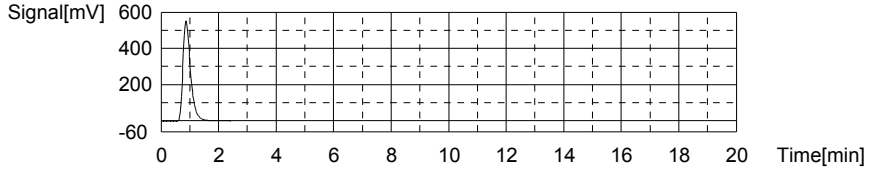

Sample

Sample Name: WG447603-06 MS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.02mg/L TC:45.27mg/L IC:30.25mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1645	45.27mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 4:35:47 AM

Mean Area 1645
Mean Conc. 45.27mg/L

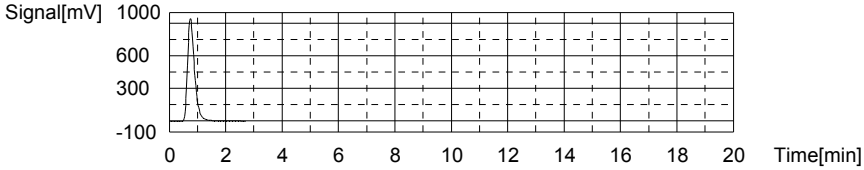

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	909.4	30.25mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 4:41:20 AM

Mean Area 909.4
Mean Conc. 30.25mg/L

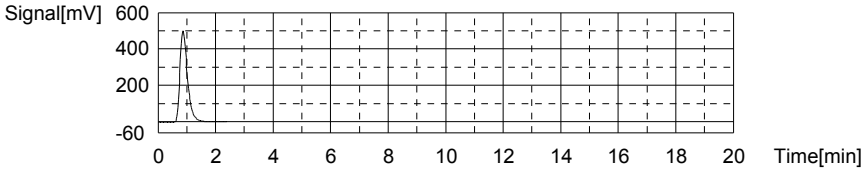

Sample

Sample Name: WG447604-01 BLK
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1109mg/L TC:0.1052mg/L IC:-0.00564mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.37	0.1392mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 4:46:19 AM
2	8.911	0.07124mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 4:49:46 AM

Mean Area 10.14
Mean Conc. 0.1052mg/L

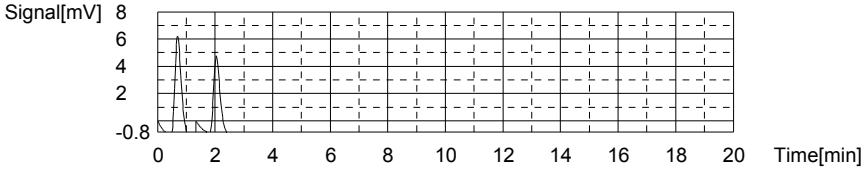

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.269	0.01866mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 4:53:46 AM
2	7.822	-0.02994mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 4:57:49 AM

Mean Area 8.546
Mean Conc. -0.00564mg/L

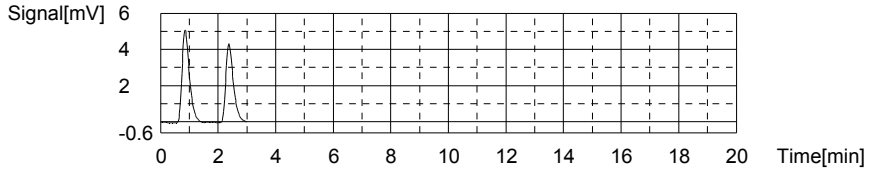

Sample

Sample Name: WG447604-02 LCS
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.76mg/L TC:24.67mg/L IC:-0.08644mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	902.7	24.76mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 5:05:48 AM
2	896.1	24.58mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 5:10:31 AM

Mean Area 899.4
Mean Conc. 24.67mg/L

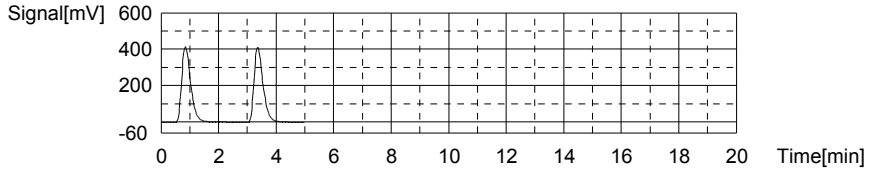

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.306	-0.08085mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 5:14:52 AM
2	5.973	-0.09204mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 5:18:57 AM

Mean Area 6.140
Mean Conc. -0.08644mg/L

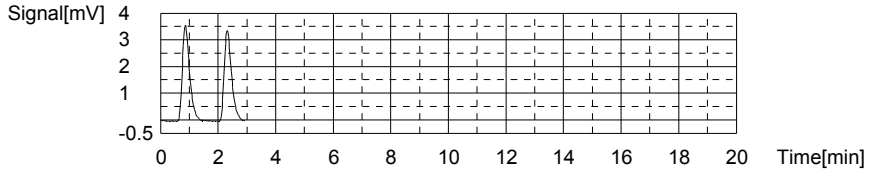

Sample

Sample Name: WG447604-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.88mg/L TC:24.78mg/L IC:-0.09623mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	902.4	24.75mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 5:25:23 AM
2	904.2	24.80mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 5:30:02 AM

Mean Area 903.3
Mean Conc. 24.78mg/L

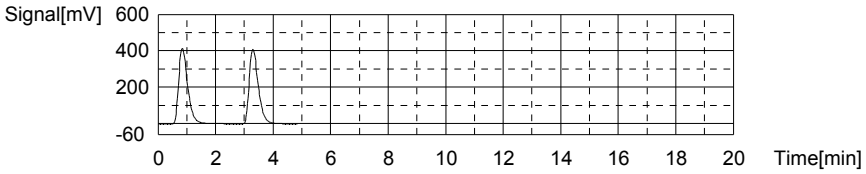

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.896	-0.09462mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 5:34:21 AM
2	5.800	-0.09785mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 5:38:26 AM

Mean Area 5.848
Mean Conc. -0.09623mg/L

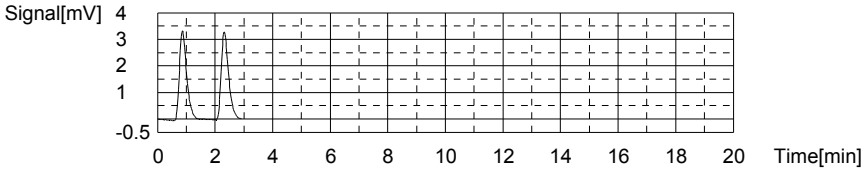

Sample

Sample Name: L13100354-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.826mg/L TC:4.506mg/L IC:1.680mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	169.8	4.516mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 5:45:55 AM
2	169.1	4.496mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 5:50:12 AM

Mean Area 169.4
Mean Conc. 4.506mg/L

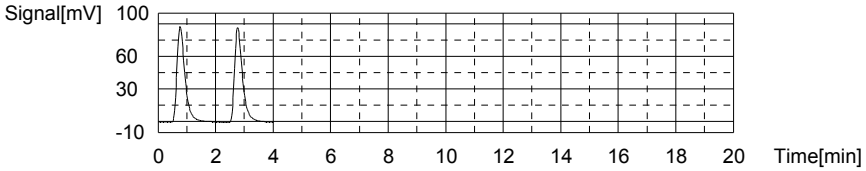

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	58.91	1.686mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 5:54:50 AM
2	58.59	1.675mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 5:59:17 AM

Mean Area 58.75
Mean Conc. 1.680mg/L

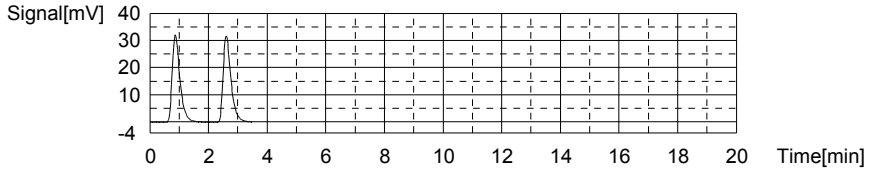

Sample

Sample Name: L13100354-03
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.884mg/L TC:6.023mg/L IC:2.139mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	224.0	6.013mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 6:06:42 AM
2	224.7	6.032mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 6:11:09 AM

Mean Area 224.4
Mean Conc. 6.023mg/L

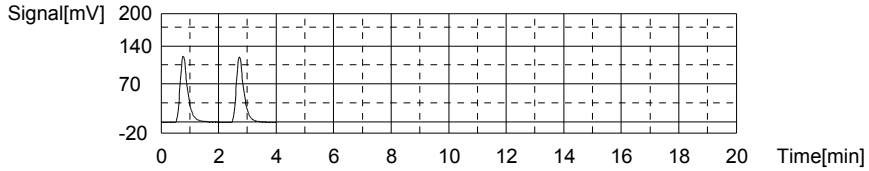

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	73.74	2.184mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 6:15:57 AM
2	71.05	2.094mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 6:20:25 AM

Mean Area 72.40
Mean Conc. 2.139mg/L

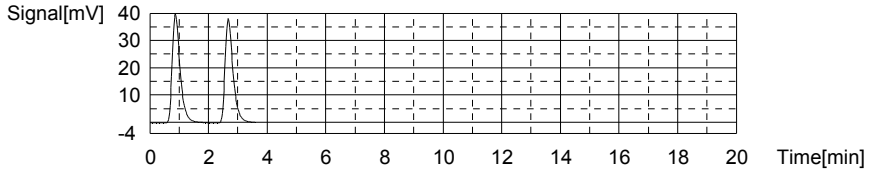

Sample

Sample Name: L13100355-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.09mg/L TC:12.84mg/L IC:2.745mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	471.6	12.85mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 6:28:28 AM
2	470.3	12.82mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 6:33:32 AM

Mean Area 471.0
Mean Conc. 12.84mg/L

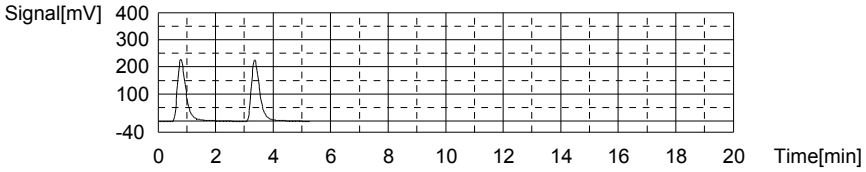

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	91.31	2.774mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 6:38:20 AM
2	89.58	2.716mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 6:42:52 AM

Mean Area 90.44
Mean Conc. 2.745mg/L

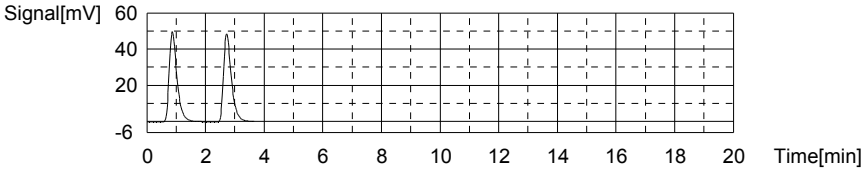

Sample

Sample Name: L13100371-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.348mg/L TC:11.32mg/L IC:1.969mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	421.2	11.46mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 6:51:19 AM
2	410.8	11.17mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 6:55:54 AM

Mean Area 416.0
Mean Conc. 11.32mg/L

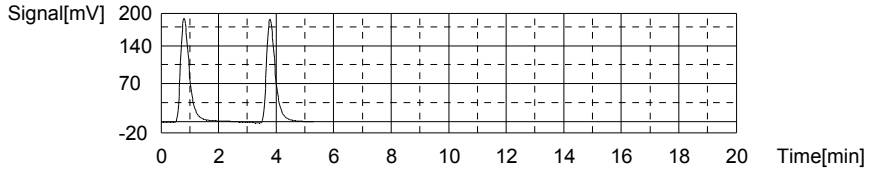

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	68.03	1.992mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 7:00:34 AM
2	66.66	1.946mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 7:05:04 AM

Mean Area 67.34
Mean Conc. 1.969mg/L

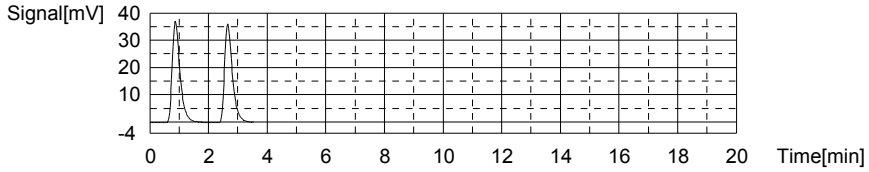

Sample

Sample Name: L13100371-02
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.078mg/L TC:11.17mg/L IC:2.089mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	410.6	11.17mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 7:12:53 AM
2	410.5	11.17mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 7:17:29 AM

Mean Area 410.6
Mean Conc. 11.17mg/L

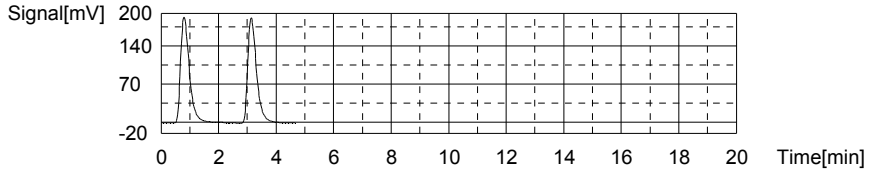

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	71.22	2.099mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 7:22:08 AM
2	70.59	2.078mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 7:26:38 AM

Mean Area 70.91
Mean Conc. 2.089mg/L

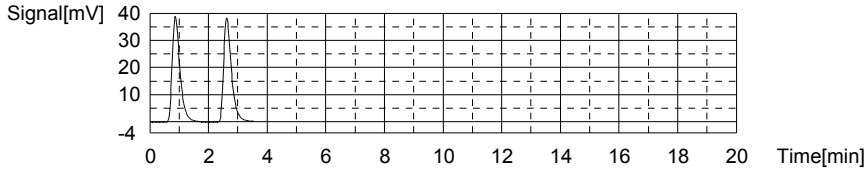

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.09mg/L TC:23.09mg/L IC:0.00663mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	842.3	23.09mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 7:34:39 AM

Mean Area 842.3
Mean Conc. 23.09mg/L

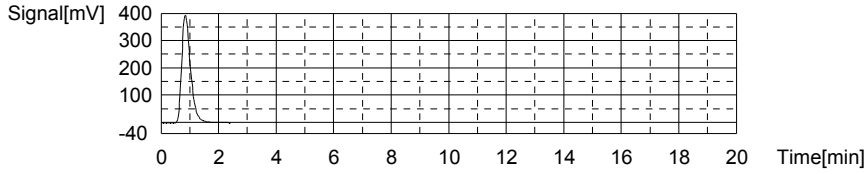

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.911	0.00663mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 7:38:59 AM

Mean Area 8.911
Mean Conc. 0.00663mg/L

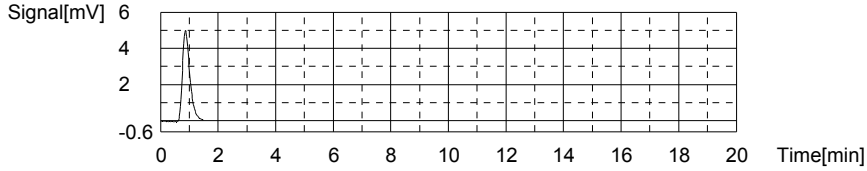

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1211mg/L TC:0.05870mg/L IC:-0.06238mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.457	0.05870mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 7:43:59 AM

Mean Area 8.457
Mean Conc. 0.05870mg/L

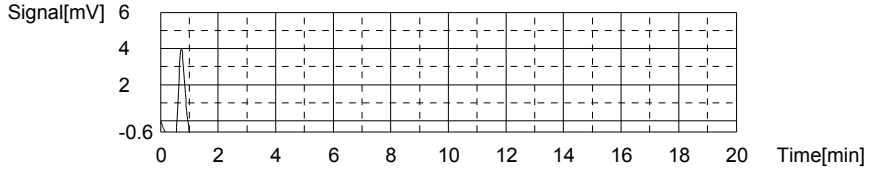

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.856	-0.06238mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 7:47:53 AM

Mean Area 6.856
Mean Conc. -0.06238mg/L

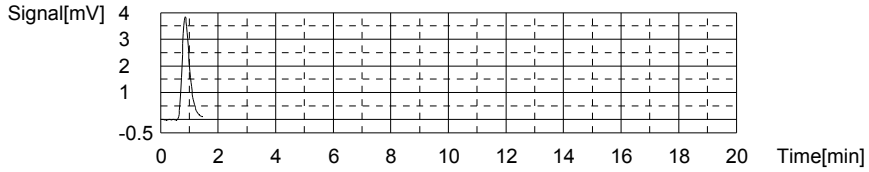

Sample

Sample Name: L13100371-03
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.790mg/L TC:10.11mg/L IC:1.316mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	368.1	9.994mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 7:55:48 AM
2	376.2	10.22mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 8:00:17 AM

Mean Area 372.2
Mean Conc. 10.11mg/L

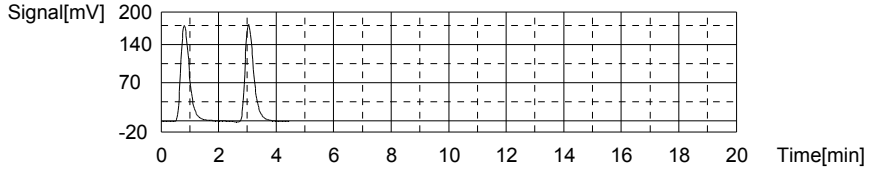

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	47.90	1.316mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 8:04:58 AM
2	47.89	1.316mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 8:09:20 AM

Mean Area 47.90
Mean Conc. 1.316mg/L

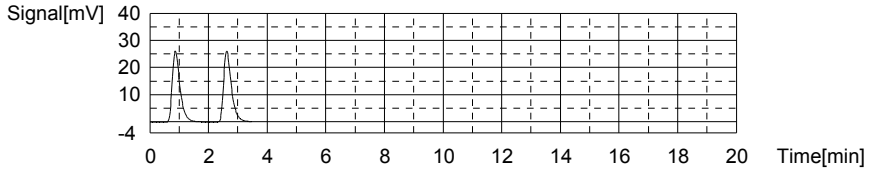

Sample

Sample Name: L13100371-04
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.798mg/L TC:10.31mg/L IC:1.516mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	364.9	9.905mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 8:17:07 AM
2	394.5	10.72mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 8:21:49 AM

Mean Area 379.7
Mean Conc. 10.31mg/L

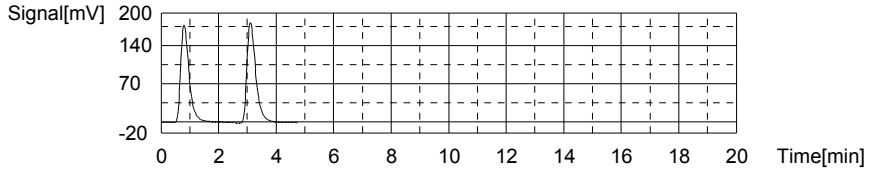

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	54.06	1.523mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 8:26:29 AM
2	53.64	1.509mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 8:30:56 AM

Mean Area 53.85
Mean Conc. 1.516mg/L

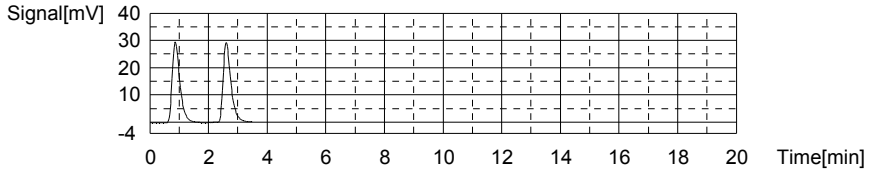

Sample

Sample Name: L13100371-05
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.016mg/L TC:10.37mg/L IC:1.349mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	390.5	10.61mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 8:38:40 AM
2	372.6	10.12mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 8:43:19 AM

Mean Area 381.6
Mean Conc. 10.37mg/L

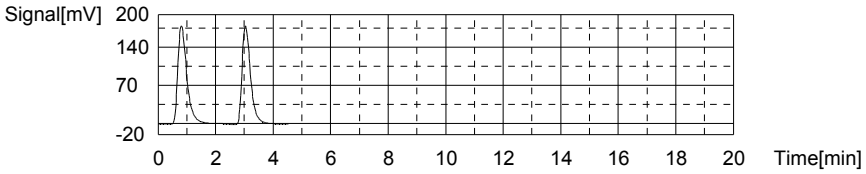

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	49.10	1.356mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 8:47:55 AM
2	48.67	1.342mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 8:52:23 AM

Mean Area 48.89
Mean Conc. 1.349mg/L

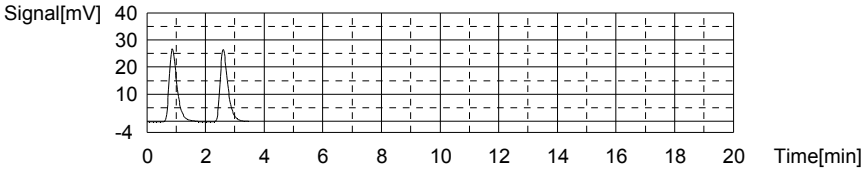

Sample

Sample Name: L13100371-06
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.859mg/L TC:10.37mg/L IC:1.514mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	393.1	10.68mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 9:00:12 AM
2	370.5	10.06mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 9:04:44 AM

Mean Area 381.8
Mean Conc. 10.37mg/L

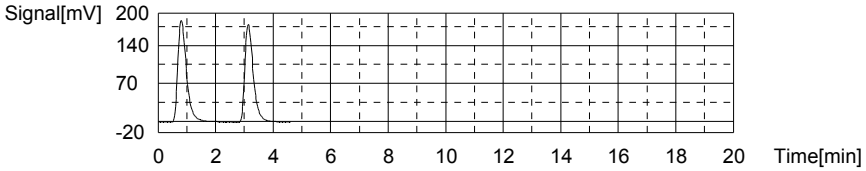

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	54.14	1.526mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 9:09:26 AM
2	53.43	1.502mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 9:13:54 AM

Mean Area 53.78
Mean Conc. 1.514mg/L

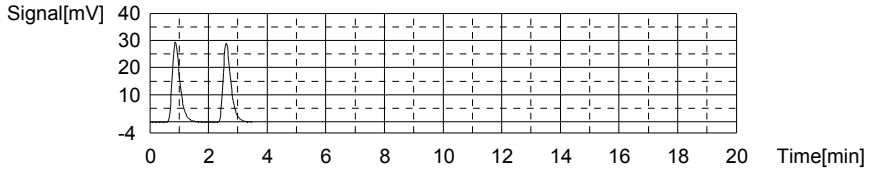

Sample

Sample Name: L13100371-07
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.398mg/L TC:3.089mg/L IC:0.6914mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	117.6	3.074mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 9:21:15 AM
2	118.7	3.104mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 9:25:21 AM

Mean Area 118.2
Mean Conc. 3.089mg/L

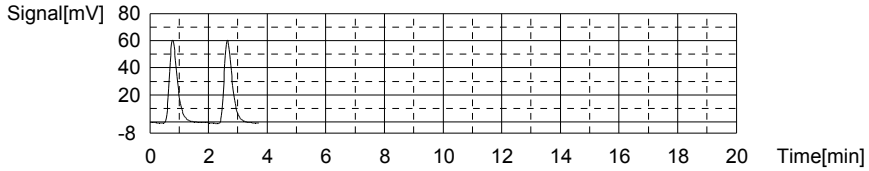

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	29.24	0.6894mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 9:29:53 AM
2	29.36	0.6934mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 9:34:17 AM

Mean Area 29.30
Mean Conc. 0.6914mg/L

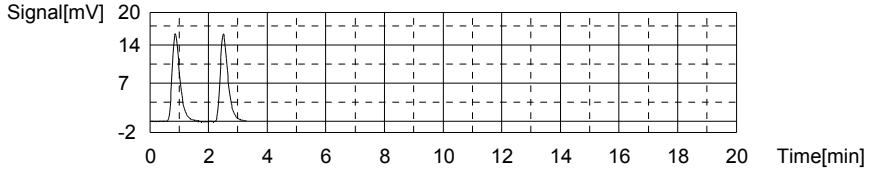

Sample

Sample Name: L13100371-08
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.218mg/L TC:2.843mg/L IC:0.6251mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	109.2	2.842mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 9:41:38 AM
2	109.3	2.845mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 9:45:46 AM

Mean Area 109.3
Mean Conc. 2.843mg/L

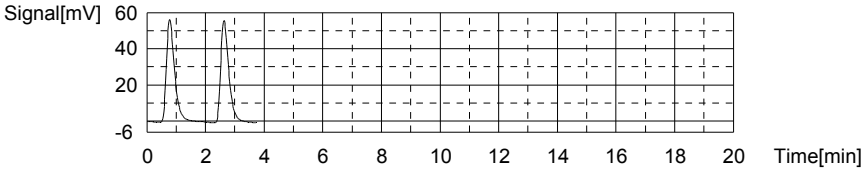

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	27.39	0.6272mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 9:50:19 AM
2	27.26	0.6229mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 9:54:40 AM

Mean Area 27.33
Mean Conc. 0.6251mg/L

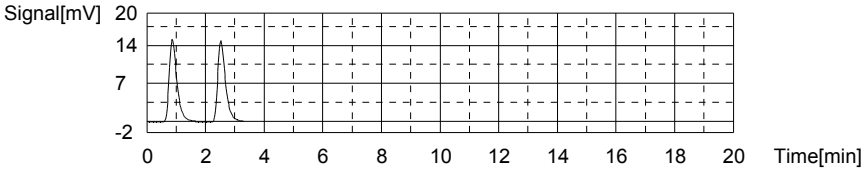

Sample

Sample Name: L13100371-09
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.183mg/L TC:2.951mg/L IC:0.7676mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	113.6	2.963mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 10:01:58 AM
2	112.7	2.938mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 10:06:06 AM

Mean Area 113.2
Mean Conc. 2.951mg/L

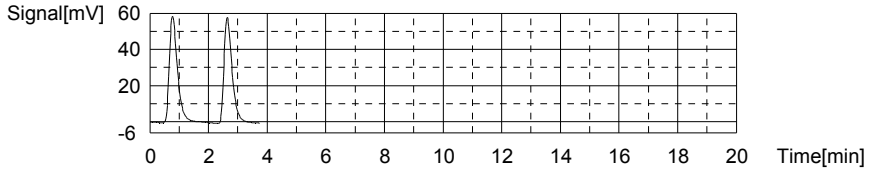

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	31.88	0.7780mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 10:10:38 AM
2	31.26	0.7572mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 10:14:58 AM

Mean Area 31.57
Mean Conc. 0.7676mg/L

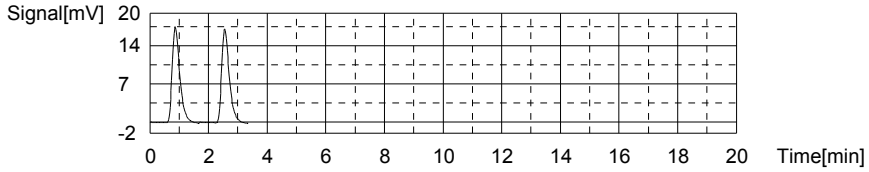

Sample

Sample Name: L13100404-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.847mg/L TC:8.389mg/L IC:1.541mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	298.1	8.060mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 10:23:07 AM
2	321.9	8.718mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 10:28:07 AM

Mean Area 310.0
Mean Conc. 8.389mg/L

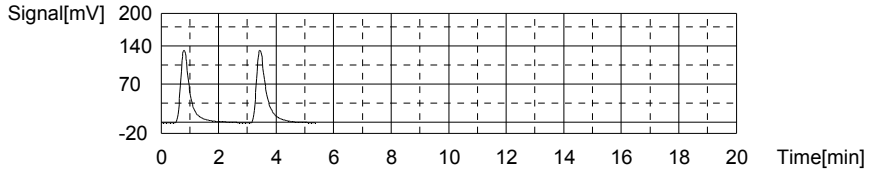

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	55.29	1.564mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 10:32:49 AM
2	53.93	1.519mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 10:37:16 AM

Mean Area 54.61
Mean Conc. 1.541mg/L

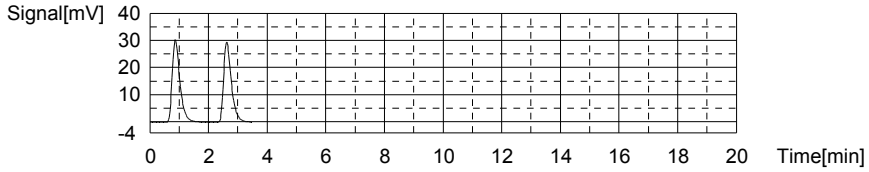

Sample

Sample Name: L13100408-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.527mg/L TC:8.861mg/L IC:1.335mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	304.2	8.229mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 10:45:20 AM
2	350.0	9.494mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 10:51:58 AM

Mean Area 327.1
Mean Conc. 8.861mg/L

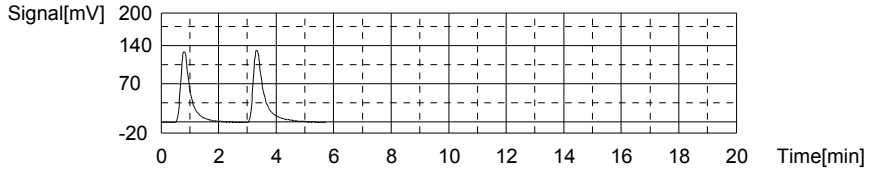

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	48.61	1.340mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 10:56:36 AM
2	48.29	1.329mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 11:01:02 AM

Mean Area 48.45
Mean Conc. 1.335mg/L

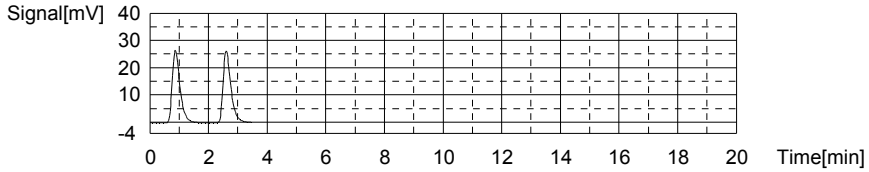

Sample

Sample Name: L13100409-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:11.86mg/L TC:12.18mg/L IC:0.3206mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	441.2	12.01mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 11:11:26 AM
2	453.4	12.35mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 11:18:43 AM

Mean Area 447.3
Mean Conc. 12.18mg/L

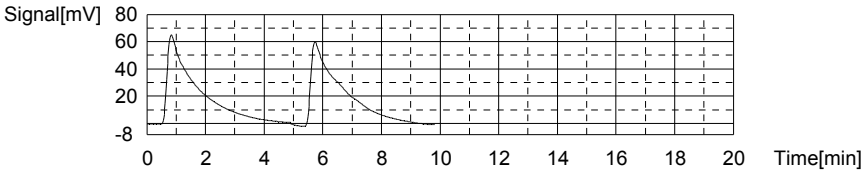

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	18.42	0.3260mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 11:23:09 AM
2	18.10	0.3152mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 11:27:21 AM

Mean Area 18.26
Mean Conc. 0.3206mg/L

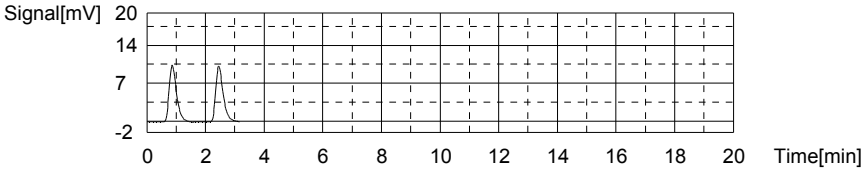

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.52mg/L TC:23.54mg/L IC:0.01822mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	858.4	23.54mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 11:35:27 AM

Mean Area 858.4
Mean Conc. 23.54mg/L

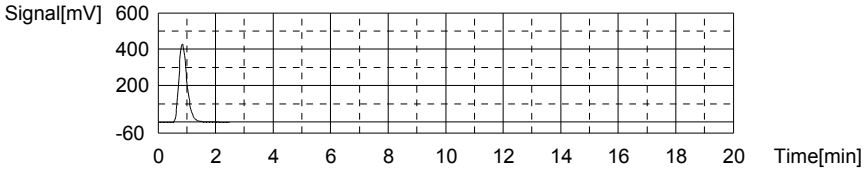

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.256	0.01822mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 11:39:50 AM

Mean Area 9.256
Mean Conc. 0.01822mg/L

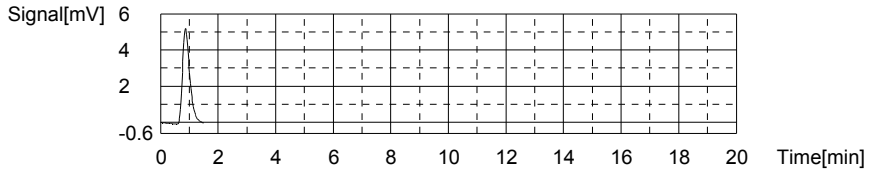

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1325mg/L TC:0.07080mg/L IC:-0.06168mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.895	0.07080mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 11:44:50 AM

Mean Area 8.895
Mean Conc. 0.07080mg/L

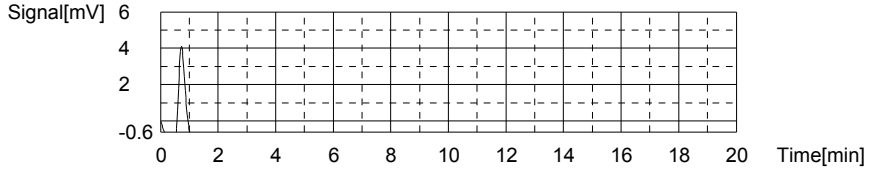

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.877	-0.06168mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 11:48:45 AM

Mean Area 6.877
Mean Conc. -0.06168mg/L

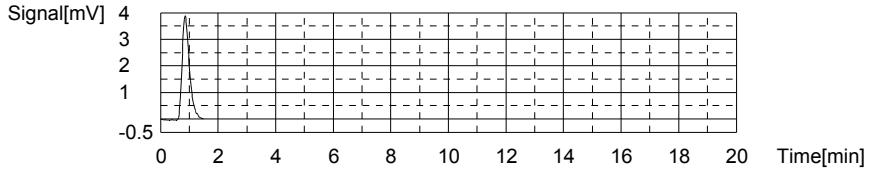

Sample

Sample Name: L13100309-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.055mg/L TC:3.734mg/L IC:1.679mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	139.9	3.690mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 11:56:13 AM
2	143.1	3.778mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 12:00:23 PM

Mean Area 141.5
Mean Conc. 3.734mg/L

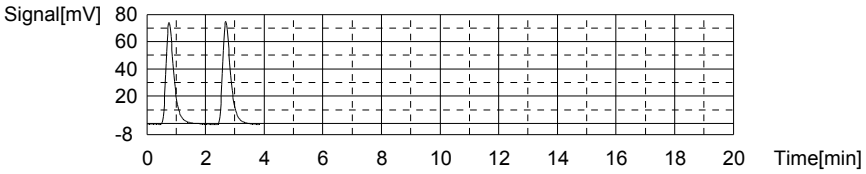

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	58.40	1.669mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 12:05:02 PM
2	59.02	1.690mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 12:09:29 PM

Mean Area 58.71
Mean Conc. 1.679mg/L

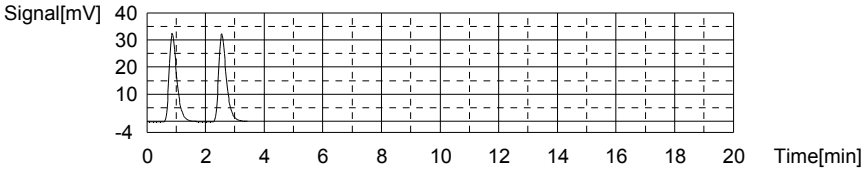

Sample

Sample Name: L13100309-03
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.936mg/L TC:3.813mg/L IC:1.877mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	142.8	3.770mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 12:16:52 PM
2	145.9	3.856mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 12:20:56 PM

Mean Area 144.4
Mean Conc. 3.813mg/L

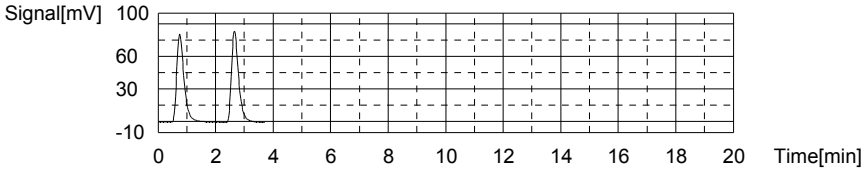

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	64.73	1.881mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 12:25:38 PM
2	64.47	1.873mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 12:30:08 PM

Mean Area 64.60
Mean Conc. 1.877mg/L

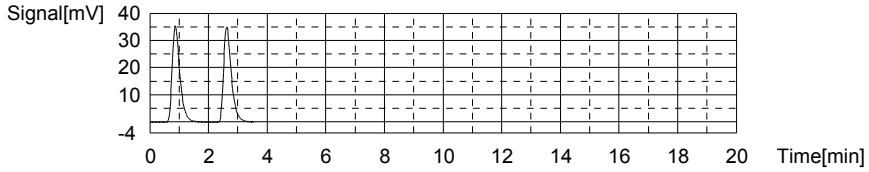

Sample

Sample Name: L13100309-05
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.153mg/L TC:2.670mg/L IC:0.5171mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	103.5	2.684mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 12:37:27 PM
2	102.5	2.657mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 12:41:35 PM

Mean Area 103.0
Mean Conc. 2.670mg/L

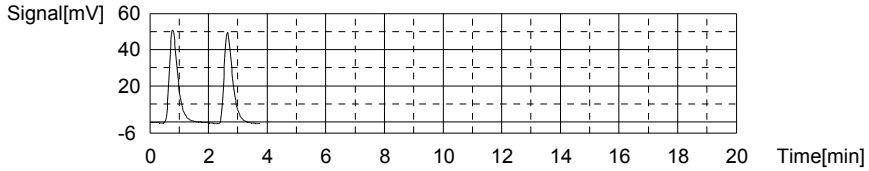

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	24.33	0.5245mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 12:46:02 PM
2	23.89	0.5097mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 12:50:20 PM

Mean Area 24.11
Mean Conc. 0.5171mg/L

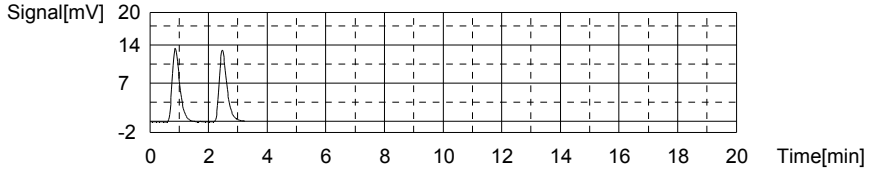

Sample

Sample Name: L13100309-07
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.285mg/L TC:3.079mg/L IC:0.7940mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	117.3	3.066mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 12:57:44 PM
2	118.3	3.093mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 1:01:51 PM

Mean Area 117.8
Mean Conc. 3.079mg/L

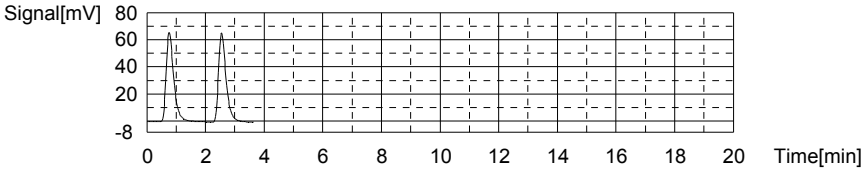

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	32.44	0.7968mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 1:06:23 PM
2	32.27	0.7911mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 1:10:49 PM

Mean Area 32.36
Mean Conc. 0.7940mg/L

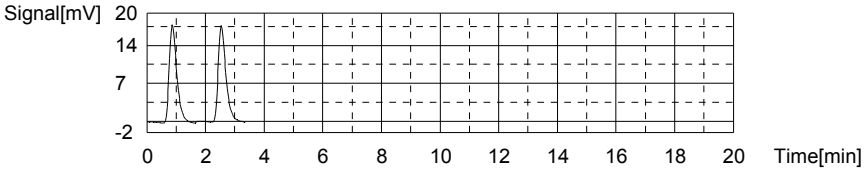

Sample

Sample Name: L13100309-09
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9523mg/L TC:1.288mg/L IC:0.3356mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	53.64	1.307mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 1:17:57 PM
2	52.26	1.269mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 1:21:52 PM

Mean Area 52.95
Mean Conc. 1.288mg/L

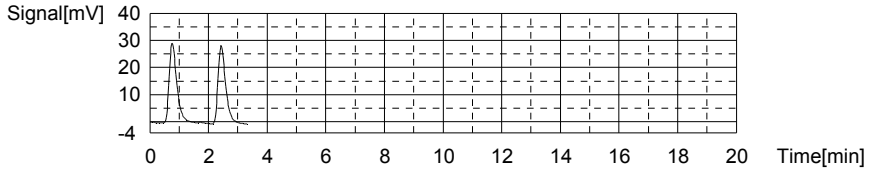

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	18.59	0.3317mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 1:26:22 PM
2	18.82	0.3394mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 1:30:35 PM

Mean Area 18.70
Mean Conc. 0.3356mg/L

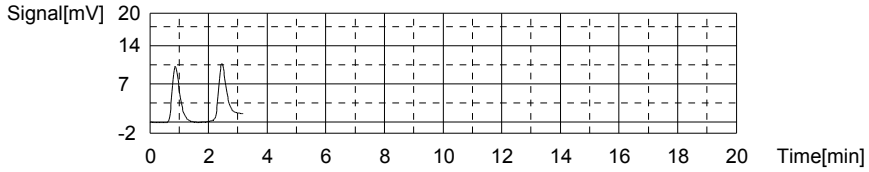

Sample

Sample Name: L13100309-11
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.282mg/L TC:3.525mg/L IC:1.243mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	134.1	3.530mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 1:37:59 PM
2	133.8	3.521mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 1:42:08 PM

Mean Area 133.9
Mean Conc. 3.525mg/L

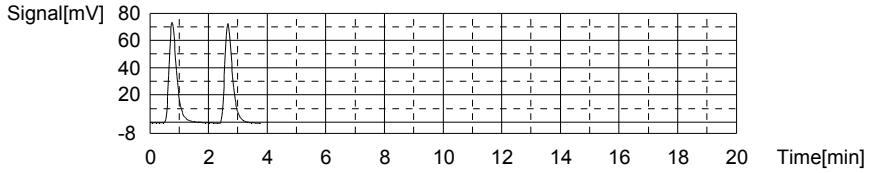

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	46.17	1.258mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 1:46:46 PM
2	45.29	1.228mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 1:51:09 PM

Mean Area 45.73
Mean Conc. 1.243mg/L

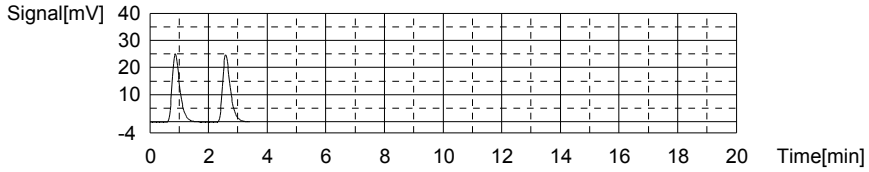

Sample

Sample Name: L13091525-07
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.699mg/L TC:12.96mg/L IC:6.256mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	475.3	12.96mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 1:59:14 PM

Mean Area 475.3
Mean Conc. 12.96mg/L

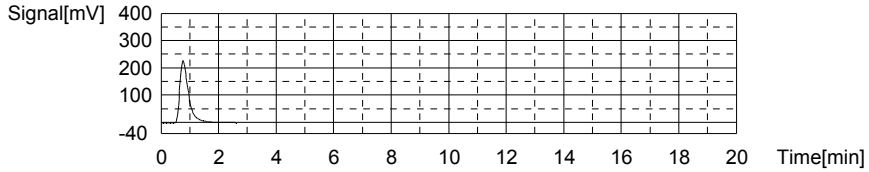

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	195.0	6.256mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 2:04:02 PM

Mean Area 195.0
Mean Conc. 6.256mg/L

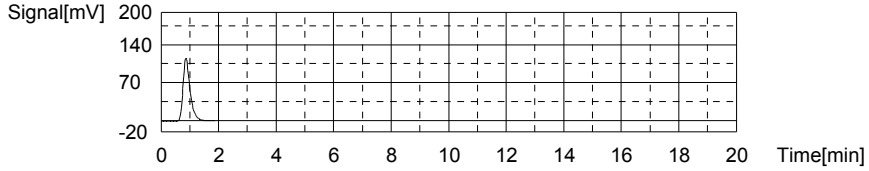

Sample

Sample Name: WG447604-05 DUP
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.315mg/L TC:3.151mg/L IC:0.8360mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	120.9	3.165mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 2:11:28 PM
2	119.9	3.137mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 2:15:38 PM

Mean Area 120.4
Mean Conc. 3.151mg/L

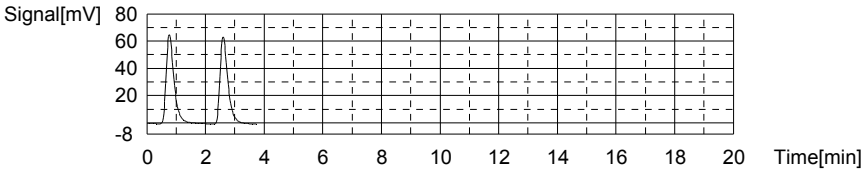

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	33.92	0.8465mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 2:20:15 PM
2	33.29	0.8254mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 2:24:42 PM

Mean Area 33.61
Mean Conc. 0.8360mg/L

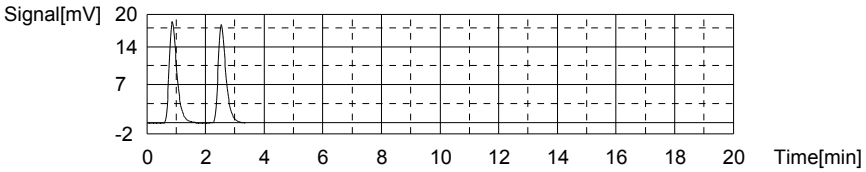

Sample

Sample Name: WG447604-06 MS
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.42mg/L TC:13.42mg/L IC:0.9960mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	491.4	13.40mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 2:32:20 PM
2	492.8	13.44mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 2:36:52 PM

Mean Area 492.1
Mean Conc. 13.42mg/L

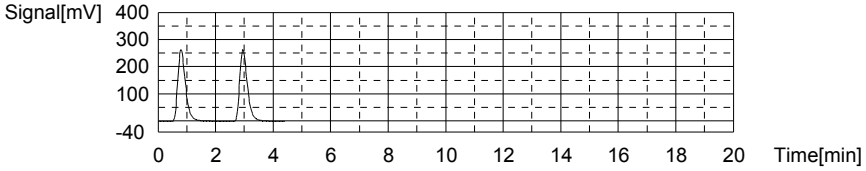

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	38.73	1.008mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 2:41:28 PM
2	38.01	0.9839mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 2:45:55 PM

Mean Area 38.37
Mean Conc. 0.9960mg/L

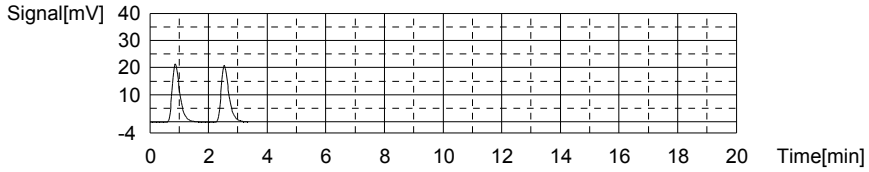

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:22.09mg/L TC:22.28mg/L IC:0.1927mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	813.0	22.28mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 3:02:17 PM

Mean Area 813.0
Mean Conc. 22.28mg/L

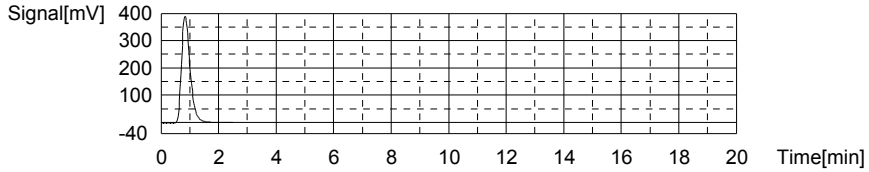

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.45	0.1927mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 3:06:42 PM

Mean Area 14.45
Mean Conc. 0.1927mg/L

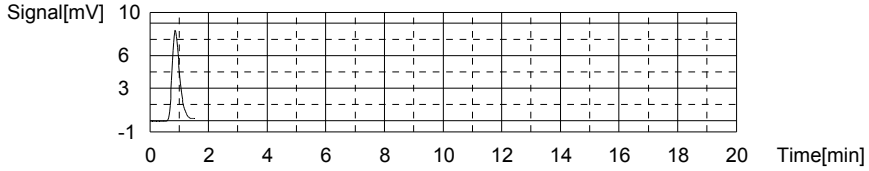

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1181mg/L TC:0.06019mg/L IC:-0.05788mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.511	0.06019mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 3:11:41 PM

Mean Area 8.511
Mean Conc. 0.06019mg/L

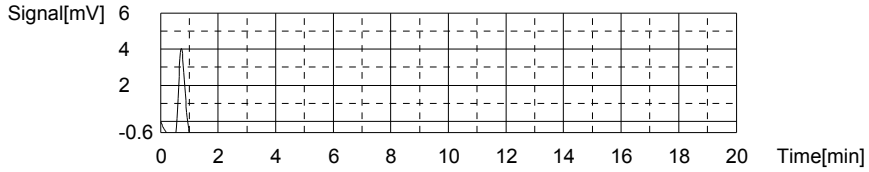

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.990	-0.05788mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 3:15:36 PM

Mean Area 6.990
Mean Conc. -0.05788mg/L

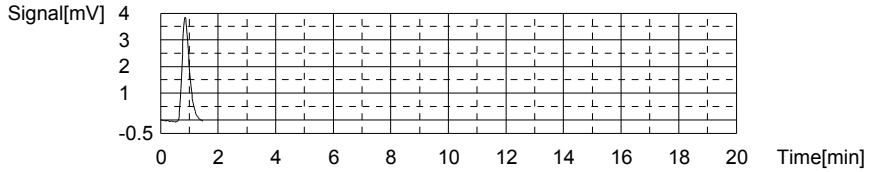

Sample

Sample Name: L13091525-08 (4)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.921mg/L TC:21.73mg/L IC:16.81mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	792.8	21.73mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 3:23:57 PM

Mean Area 792.8
Mean Conc. 21.73mg/L

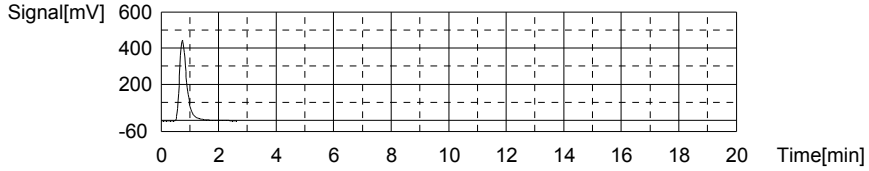

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	509.1	16.81mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 3:29:09 PM

Mean Area 509.1
Mean Conc. 16.81mg/L

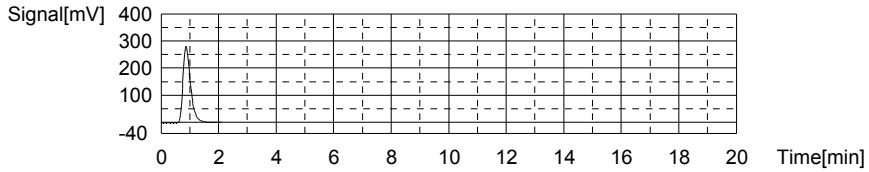

Sample

Sample Name: L13091525-11 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.205mg/L TC:18.25mg/L IC:13.04mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	666.8	18.25mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 3:37:18 PM

Mean Area 666.8
Mean Conc. 18.25mg/L

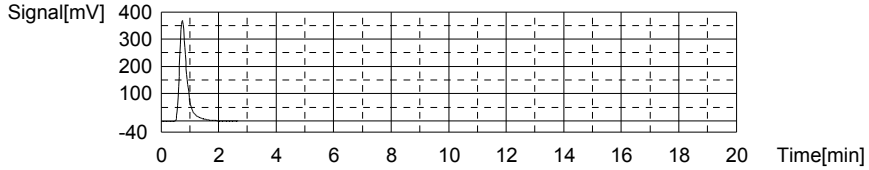

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	397.0	13.04mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 3:42:28 PM

Mean Area 397.0
Mean Conc. 13.04mg/L

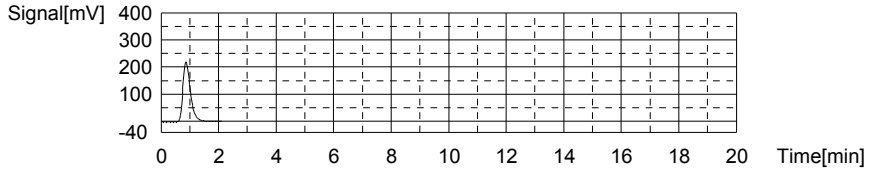

Sample

Sample Name: L13091525-13 (4)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.600mg/L TC:16.43mg/L IC:12.83mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	600.9	16.43mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 3:50:30 PM

Mean Area 600.9
Mean Conc. 16.43mg/L

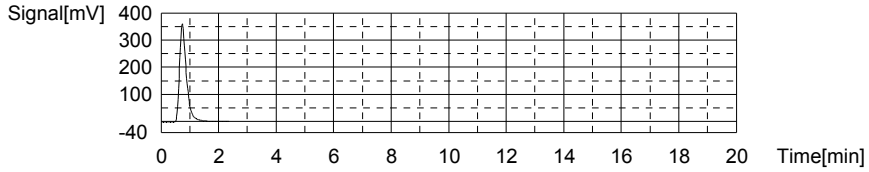

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	390.6	12.83mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 3:55:41 PM

Mean Area 390.6
Mean Conc. 12.83mg/L

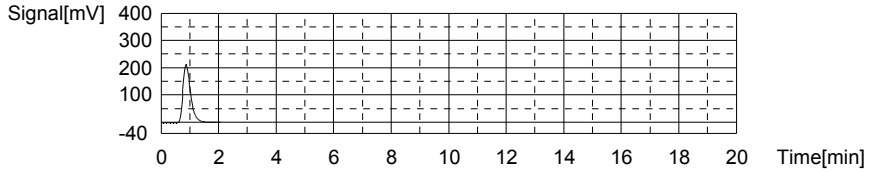

Sample

Sample Name: L13100075-01 (5)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:19.47mg/L TC:23.65mg/L IC:4.181mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	862.4	23.65mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 4:04:17 PM

Mean Area 862.4
Mean Conc. 23.65mg/L

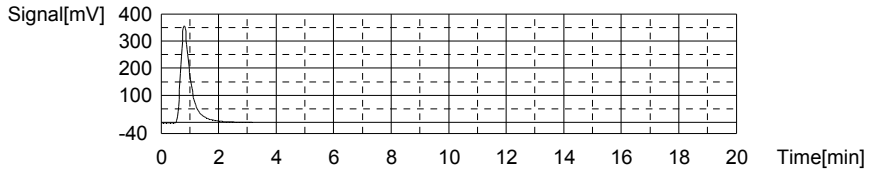

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	133.2	4.181mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 4:09:05 PM

Mean Area 133.2
Mean Conc. 4.181mg/L

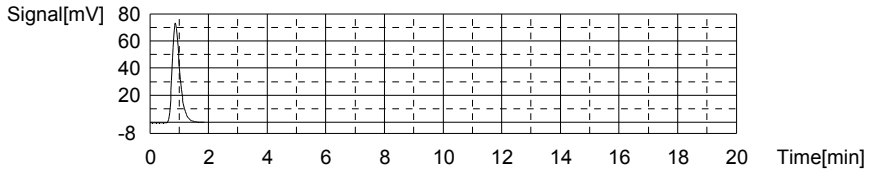

Sample

Sample Name: L13100075-02 (10)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.72mg/L TC:47.64mg/L IC:19.93mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1731	47.64mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 4:18:18 PM

Mean Area 1731
Mean Conc. 47.64mg/L

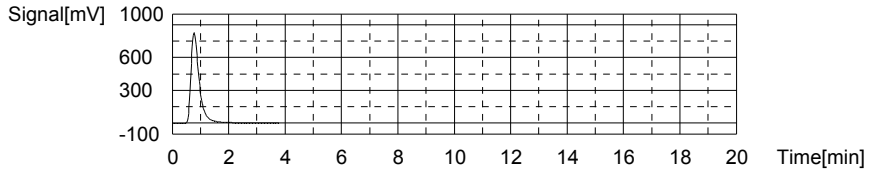

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	602.0	19.93mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 4:23:51 PM

Mean Area 602.0
Mean Conc. 19.93mg/L

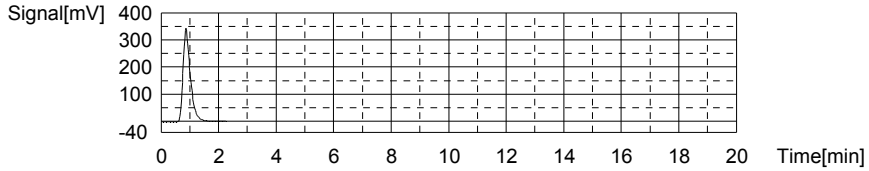

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:22.63mg/L TC:22.78mg/L IC:0.1537mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	831.0	22.78mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 4:31:47 PM

Mean Area 831.0
Mean Conc. 22.78mg/L

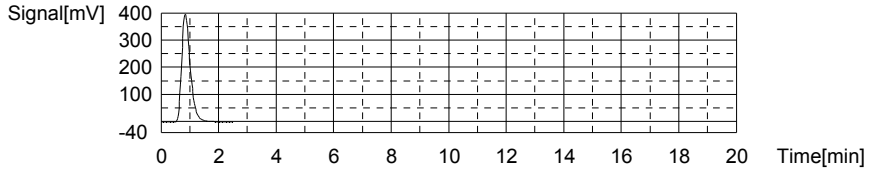

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.29	0.1537mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 4:36:17 PM

Mean Area 13.29
Mean Conc. 0.1537mg/L

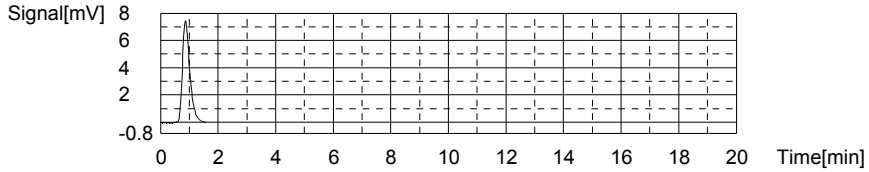

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1251mg/L TC:0.08368mg/L IC:-0.04143mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.361	0.08368mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	10/8/2013 4:41:17 PM

Mean Area 9.361
Mean Conc. 0.08368mg/L

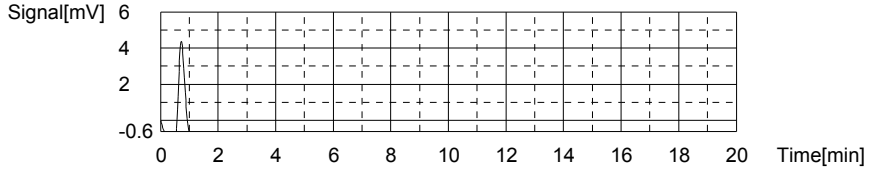

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.480	-0.04143mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	10/8/2013 4:45:15 PM

Mean Area 7.480
Mean Conc. -0.04143mg/L

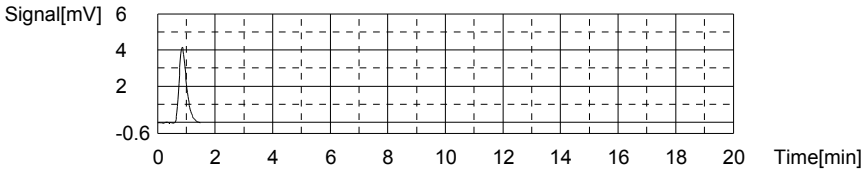

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
October 21, 2013

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AJF - AMANDA J. FICKIESEN
AML - TONY M. LONG
AZH - AFTER HOURS
BAF - BRICE A. FENTON
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CRW - CHRISTINA R. WILSON
CSH - CHRIS S. HILL
CTB - CHRIS T. BUCINA
DAK - DEAN A. K
DCM - DAVID C. MERCKLE
DDE - DEBRA D. ELLIOTT
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLR - DIANNA L. RAUCH
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EDL - ERIN D. LONG
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HJR - HOLLY J. REED
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JKS - JANE K. SCHAAD
JLL - JOHN L. LENT
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KSC - KELLY S. CUNNINGHAM
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLW - MATTHEW L. WARREN
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RNP - RICK N. PETTY
RS - ROSEMARY SCOTT
RWC - RODNEY W. CAMPBELL
SAV - SARAH A. VANDENBERG
SEP - SUZANNE J. PAUGH
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
TPA - TYLER P. AMRINE
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
October 21, 2013

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, H1	Not detected; Sample analysis performed past holding time.
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Analyte was not detected. The concentration is below the reported LOD.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Kathy Albertson	Project Manager: Dave Wacker	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60256135.0002JA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Dissolved Gases	Anions	Ferrous Iron	Sulfide	TOC	Inorganic Carbon			SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 67	67WW14-100113			10/1/13	0915		✓	W	3	✓													
	67WW14-100113-FD			10/1/13	0915		✓	W	3	✓													
	67WW13-100113			10/1/13	1040		✓	W	3	✓													
	67WW12-100113			10/1/13	1330		✓	W	3	✓													
	67WW08-100213			10/2/13	0850		✓	W	10	✓	✓	✓	✓	✓	✓	✓							
	Equipment Rinse-100213			10/2/13	0910		✓	W	3	✓													
	67WW11-100213			10/2/13	1020		✓	W	10	✓	✓	✓	✓	✓	✓	✓							
	Trip Blank			10/2/13			✓	W	2	✓													

Microbac OVD
Received: 10/03/2013 10:17
By: ROSEMARY SCOTT 221000042947

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 10/2/13	Time 1300	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13100266
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 14-OCT-2013

Samplenum	Container ID	Products
L13100266-01	256248	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:05	CLS	QX	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:05	CLS	QX	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:05	CLS	QX	

Samplenum	Container ID	Products
L13100266-02	256249	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:05	CLS	QX	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:05	CLS	QX	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:05	CLS	QX	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13100266
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 14-OCT-2013

Samplenum	Container ID	Products
L13100266-03	256250	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:05	CLS	QX	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:05	CLS	QX	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	03-OCT-2013 17:12	CLS		<2
2	STORE	ORG4	A1	17-OCT-2013 14:05	CLS	QX	

Samplenum	Container ID	Products
L13100266-04	256251	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:05	CLS	QX	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:05	CLS	QX	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:05	CLS	QX	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13100266
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 14-OCT-2013

Samplenum	Container ID	Products
L13100266-05	256252	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:06	CLS	QX	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:06	CLS	QX	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:05	CLS	QX	

Samplenum	Container ID	Products
L13100266-05	256253	RSK175

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG1	07-OCT-2013 09:14	JLL	CLS	
3	STORE	ORG1	A1	21-OCT-2013 08:49	CLS	JLL	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG1	07-OCT-2013 09:14	JLL	CLS	
3	STORE	ORG1	A1	21-OCT-2013 08:49	CLS	JLL	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG1	07-OCT-2013 09:14	JLL	CLS	
3	STORE	ORG1	A1	21-OCT-2013 08:49	CLS	JLL	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13100266
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 14-OCT-2013

Samplenum	Container ID	Products
L13100266-05	256254	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	03-OCT-2013 17:12	CLS		
2	STORE	SEM	A1	18-OCT-2013 09:06	CLS	JBK	

Samplenum	Container ID	Products
L13100266-05	256255	FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-OCT-2013 17:12	CLS		
2	ANALYZ	W1	WET	04-OCT-2013 07:34	DIH	AZH	
3	STORE	WET	A1	04-OCT-2013 10:06	CLS	BAF	

Samplenum	Container ID	Products
L13100266-05	256256	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	W1	WET	07-OCT-2013 16:40	BAF	RS	
3	ANALYZ	W1	A1	08-OCT-2013 14:05	CLS	BAF	

Samplenum	Container ID	Products
L13100266-05	256257	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-OCT-2013 17:12	CLS		
2	ANALYZ	W1	WET	08-OCT-2013 07:57	EPT	CLS	
3	STORE	WET	A1	11-OCT-2013 17:02	RS	DCM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13100266
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 14-OCT-2013

Samplenum	Container ID	Products
L13100266-06	256258	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:05	CLS	QX	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:05	CLS	QX	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:05	CLS	QX	

Samplenum	Container ID	Products
L13100266-07	256259	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:06	CLS	QX	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:06	CLS	QX	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:06	CLS	QX	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13100266
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 14-OCT-2013

Samplenum	Container ID	Products
L13100266-07	256260	RSK175

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG1	07-OCT-2013 09:14	JLL	CLS	
3	STORE	ORG1	A1	21-OCT-2013 08:49	CLS	JLL	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG1	07-OCT-2013 09:14	JLL	CLS	
3	STORE	ORG1	A1	21-OCT-2013 08:49	CLS	JLL	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG1	07-OCT-2013 09:14	JLL	CLS	
3	STORE	ORG1	A1	21-OCT-2013 08:49	CLS	JLL	

Samplenum	Container ID	Products
L13100266-07	256261	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	03-OCT-2013 17:12	CLS		
2	STORE	SEM	A1	18-OCT-2013 09:06	CLS	JBK	

Samplenum	Container ID	Products
L13100266-07	256262	FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-OCT-2013 17:12	CLS		
2	ANALYZ	W1	WET	04-OCT-2013 07:34	DIH	AZH	
3	STORE	WET	A1	04-OCT-2013 10:06	CLS	BAF	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13100266
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 14-OCT-2013

Samplenum	Container ID	Products
L13100266-07	256263	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	W1	WET	07-OCT-2013 16:40	BAF	RS	
3	ANALYZ	W1	A1	08-OCT-2013 14:05	CLS	BAF	

Samplenum	Container ID	Products
L13100266-07	256264	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-OCT-2013 17:12	CLS		
2	ANALYZ	W1	WET	08-OCT-2013 07:57	EPT	CLS	
3	STORE	WET	A1	11-OCT-2013 17:02	RS	DCM	

Samplenum	Container ID	Products
L13100266-08	256265	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:06	CLS	QX	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-OCT-2013 17:12	CLS		<2
2	ANALYZ	V1	ORG4	05-OCT-2013 16:13	FJB	AZH	
3	STORE	ORG4	A1	17-OCT-2013 14:06	CLS	QX	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - April 25, 2013

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)

DOD

The following is a list of those tests that are not included in the Scope of Accreditation to ISO/IEC 17025:2005:

2-Butanone by EPA Method 8260B in Solid and Chemical Material.

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Nitroguanidine
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL KNITRO-C-WUV-VIS

Nitrocellulose

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam

Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL HPLCOS-HPLC-UV

Nitroguanidine

OVL KNITRO-C-S/UV-VIS

Nitrocellulose

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L14011242

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Kathy Albertson – Team Chemist/Data Specialist
(740) 373-4071
Kathy.Albertson@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on February 13 2014

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
We received 1 set (3 vials) of vials for the following ID that is not listed on the chain of custody. 67WW11FD-012314 01/23/14 @ 1125. CLS	Please log and proceed MRT

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0018751	H	0.0		J2317155378	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	No
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
67WW08-012314	L14011242-01	01/23/2014 09:55	01/24/2014 09:57
67WW11-012314	L14011242-02	01/23/2014 11:25	01/24/2014 09:57
TRIP BLANK	L14011242-03	01/23/2014 00:01	01/24/2014 09:57
67WW11 FD-012314	L14011242-04	01/23/2014 11:25	01/24/2014 09:57

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L14011242
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 45
2.0 Full Sample Data Package 63
2.1 Volatiles Data 64
2.1.1 Volatiles GCMS Data (8260) 65
2.1.1.1 Summary Data 66
2.1.1.2 QC Summary Data 82
2.1.1.3 Sample Data 134
2.1.1.4 Standards Data 175
2.1.1.5 Raw QC Data 333
2.1.2 RSK 175 359
2.1.2.1 Summary Data 360
2.1.2.2 QC Summary Data 365
2.1.2.3 Sample Data 385
2.1.2.4 Standards Data 388
2.1.2.5 Raw QC Data 416
2.2 General Chemistry Data 423
2.2.1 Method 9056 424
2.2.1.1 Summary Data 425
2.2.1.2 QC Summary Data 429
2.2.1.3 Sample Data 449
2.2.1.4 Standards Data 452
2.2.1.5 Raw QC Data 475
2.2.2 Ferrous Iron Data 478
2.2.2.1 Summary Data 479
2.2.2.2 QC Summary Data 481
2.2.2.3 Raw Data 488
2.2.3 Sulfide Data 496
2.2.3.1 Summary Data 497
2.2.3.2 QC Summary Data 500
2.2.3.3 Raw Data 507
2.2.4 Total Organic Carbon Data 510
2.2.4.1 Summary Data 511
2.2.4.2 QC Summary Data 513
2.2.4.3 Raw Data 520
3.0 Attachments 579

1.0 Summary Data

1.1 Narratives

Microbac Laboratories
Case Narrative

Login Number: L14011242
Department: Volatiles - GC
Analyst: Qin Xu

Analysis RSK-175

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes/Sample Duplicates: The MS/MSD results were not associated with this sample delivery group (SDG), due to insufficient volume of sample. Microbac Laboratories recommends site specific MS/MSD samples to avoid possible data qualifications.

SAMPLES

Samples: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

Narrative ID: 78028
Approved By: Michael Albertson

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	8260
Prep Batch Number(s):	461586,461716	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-02-12 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2014-02-12 18:25:41

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	8260
Prep Batch Number(s):	461586,461716	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-02-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	8260
Prep Batch Number(s):	461586,461716	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-02-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			1
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	8260
Prep Batch Number(s):	461586,461716	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-02-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?		X			2
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	8260
Prep Batch Number(s):	461586,461716	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-02-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	8260
Prep Batch Number(s):	461586,461716	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-02-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) 1,2,3-Trichloropropane, chloromethane, and dichlorodilfuoromethane were outside the control limits in the LCS/LCSD analyzed 01-31-14 on HPMS9.

2) Vinyl chloride was outside the control limits in the Alternate Source analyzed 01-28-14 on HPMS17.
Acetone and 2-hexanone were outside the control limits in the Alternate Source analyzed 01-30-14 on HPMS9.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	461058	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-01-30 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2014-01-30 15:08:10

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	461058	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-01-30 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	461058	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-01-30 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	461058	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-01-30 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	461058	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-01-30 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	461058	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-01-30 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There were no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG460782	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2014-01-24 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Jeremy Kinney		Chemist I	2014-01-27 21:03:44

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG460782	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2014-01-24 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG460782	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2014-01-24 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				1
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG460782	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2014-01-24 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG460782	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2014-01-24 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG460782	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2014-01-24 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -01 was analyzed at a dilution only due to its high Cl concentration which was greater than 200 ppm. Any single anion load greater than 200 ppm will be diluted to prevent oversaturation of the suppressor membranes.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG461134	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-01-31 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2014-01-31 16:24:11

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG461134	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-01-31 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG461134	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-01-31 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG461134	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-01-31 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG461134	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-01-31 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG461134	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-01-31 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	S
Prep Batch Number(s):	WG460785	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-01-31 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2014-01-31 16:24:57

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	S
Prep Batch Number(s):	WG460785	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-01-31 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	S
Prep Batch Number(s):	WG460785	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-01-31 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	S
Prep Batch Number(s):	WG460785	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-01-31 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	S
Prep Batch Number(s):	WG460785	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-01-31 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	S
Prep Batch Number(s):	WG460785	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-01-31 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG460779	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-01-31 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2014-01-31 16:25:32

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG460779	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-01-31 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG460779	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-01-31 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG460779	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-01-31 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG460779	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-01-31 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011242
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG460779	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-01-31 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW08-012314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/30/2014 15:20
Workgroup #:	WG461586	**Analyst:**	MES	**Run Date:**	01/31/2014 02:54
Collect Date:	01/23/2014 09:55	**Dilution:**	5	**File ID:**	9M961151
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	25.0	U	50.0	25.0	12.5
Benzene	71-43-2	1.25	U	5.00	1.25	0.625
Bromobenzene	108-86-1	1.25	U	5.00	1.25	0.625
Bromochloromethane	74-97-5	2.00	U	5.00	2.00	1.00
Bromodichloromethane	75-27-4	2.50	U	5.00	2.50	1.25
Bromoform	75-25-2	5.00	U	10.0	5.00	2.50
Bromomethane	74-83-9	5.00	U	10.0	5.00	2.50
2-Butanone	78-93-3	25.0	U	50.0	25.0	12.5
n-Butylbenzene	104-51-8	2.50	U	5.00	2.50	1.25
sec-Butylbenzene	135-98-8	2.50	U	5.00	2.50	1.25
tert-Butylbenzene	98-06-6	2.50	U	5.00	2.50	1.25
Carbon disulfide	75-15-0	5.00	U	10.0	5.00	2.50
Carbon tetrachloride	56-23-5	2.50	U	5.00	2.50	1.25
Chlorobenzene	108-90-7	1.25	U	5.00	1.25	0.625
Chlorodibromomethane	124-48-1	2.50	U	5.00	2.50	1.25
Chloroethane	75-00-3	5.00	U	10.0	5.00	2.50
Chloroform	67-66-3	4.11	J	5.00	1.25	0.625
Chloromethane	74-87-3	5.00	U	10.0	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	5.00	1.25	0.625
4-Chlorotoluene	106-43-4	2.50	U	5.00	2.50	1.25
1,2-Dibromo-3-chloropropane	96-12-8	10.0	U	25.0	10.0	5.00
1,2-Dibromoethane	106-93-4	2.50	U	5.00	2.50	1.25
Dibromomethane	74-95-3	2.50	U	5.00	2.50	1.25
1,2-Dichlorobenzene	95-50-1	1.25	U	5.00	1.25	0.625
1,3-Dichlorobenzene	541-73-1	2.50	U	5.00	2.50	1.25
1,4-Dichlorobenzene	106-46-7	1.25	U	5.00	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	5.00	2.50	1.25
1,1-Dichloroethane	75-34-3	54.4		5.00	1.25	0.625
1,2-Dichloroethane	107-06-2	89.9		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	2.73	J	5.00	2.50	1.25
trans-1,2-Dichloroethene	156-60-5	2.50	U	5.00	2.50	1.25
1,2-Dichloropropane	78-87-5	2.00	U	5.00	2.00	1.00

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,3-Dichloropropane	142-28-9	2.00	U	5.00	2.00	1.00
2,2-Dichloropropane	594-20-7	2.50	U	5.00	2.50	1.25
cis-1,3-Dichloropropene	10061-01-5	2.50	U	5.00	2.50	1.25
trans-1,3-Dichloropropene	10061-02-6	5.00	U	10.0	5.00	2.50
1,1-Dichloropropene	563-58-6	2.50	U	5.00	2.50	1.25
Ethylbenzene	100-41-4	2.50	U	5.00	2.50	1.25
2-Hexanone	591-78-6	25.0	U	50.0	25.0	12.5
Hexachlorobutadiene	87-68-3	2.50	U	5.00	2.50	1.25
Isopropylbenzene	98-82-8	2.50	U	5.00	2.50	1.25
p-Isopropyltoluene	99-87-6	2.50	U	5.00	2.50	1.25
4-Methyl-2-pentanone	108-10-1	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	2.50	U	5.00	2.50	1.25
Naphthalene	91-20-3	2.00	U	5.00	2.00	1.00
n-Propylbenzene	103-65-1	1.25	U	5.00	1.25	0.625
Styrene	100-42-5	1.25	U	5.00	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	2.50	U	5.00	2.50	1.25
1,1,2,2-Tetrachloroethane	79-34-5	2.00	U	5.00	2.00	1.00
Tetrachloroethene	127-18-4	2.50	U	5.00	2.50	1.25
Toluene	108-88-3	2.50	U	5.00	2.50	1.25
1,2,3-Trichlorobenzene	87-61-6	1.50	U	5.00	1.50	0.750
1,2,4-Trichlorobenzene	120-82-1	2.00	U	5.00	2.00	1.00
1,1,1-Trichloroethane	71-55-6	2.50	U	5.00	2.50	1.25
1,1,2-Trichloroethane	79-00-5	6.70		5.00	2.50	1.25
Trichloroethene	79-01-6	3.12	J	5.00	2.50	1.25
Trichlorofluoromethane	75-69-4	2.50	U	5.00	2.50	1.25
1,2,3-Trichloropropane	96-18-4	5.00	U	10.0	5.00	2.50
1,2,4-Trimethylbenzene	95-63-6	2.50	U	5.00	2.50	1.25
1,3,5-Trimethylbenzene	108-67-8	2.50	U	5.00	2.50	1.25
Vinyl chloride	75-01-4	2.50	U	5.00	2.50	1.25
o-Xylene	95-47-6	2.50	U	5.00	2.50	1.25
m-,p-Xylene	179601-23-1	5.00	U	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	111	85	120	
4-Bromofluorobenzene	97.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW08-012314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/28/2014 19:25
Workgroup #:	WG461716	**Analyst:**	ADC	**Run Date:**	01/31/2014 23:29
Collect Date:	01/23/2014 09:55	**Dilution:**	50	**File ID:**	17M002775
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1-Dichloroethene	75-35-4	1340		100	50.0	25.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW08-012314	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	01/13/2014 15:47
Workgroup #:	WG461058	**Analyst:**	QX	**Run Date:**	01/27/2014 15:31
Collect Date:	01/23/2014 09:55	**Dilution:**	1	**File ID:**	16G41383
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	7.79		5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-012314	**Prep Method:**	9056	**Prep Date:**	01/24/2014 10:13
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	11/06/2013 10:26
Workgroup #:	WG460782	**Analyst:**	JBK	**Run Date:**	01/24/2014 14:48
Collect Date:	01/23/2014 09:55	**Dilution:**	10	**File ID:**	I1_012414-19
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfate	14808-79-8	303		20.0	10.0	5.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-012314	**Prep Method:**	9056	**Prep Date:**	01/24/2014 10:13
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	11/06/2013 10:26
Workgroup #:	WG460782	**Analyst:**	JBK	**Run Date:**	01/24/2014 15:05
Collect Date:	01/23/2014 09:55	**Dilution:**	100	**File ID:**	I1_012414-20
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1490		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW08-012314	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	01/28/2014 09:00
Workgroup #:	WG461134	**Analyst:**	TMM	**Run Date:**	01/28/2014 11:00
Collect Date:	01/23/2014 09:55	**Dilution:**	1	**File ID:**	1V.1401281100-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.344		0.0400	0.0400	0.0200

Certificate of Analysis

Sample #:	L14011242-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW08-012314	**Prep Method:**	EPA 376.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	EPA 376.1	**Cal Date:**	
Workgroup #:	WG460785	**Analyst:**	EPT	**Run Date:**	01/24/2014 14:30
Collect Date:	01/23/2014 09:55	**Dilution:**	1	**File ID:**	ET.1401241430-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-012314	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG460779	**Analyst:**	DCM	**Run Date:**	01/25/2014 15:56
Collect Date:	01/23/2014 09:55	**Dilution:**	1	**File ID:**	TC01242014.068
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	9.95		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L14011242-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-012314	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG460779	**Analyst:**	DCM	**Run Date:**	01/25/2014 15:56
Collect Date:	01/23/2014 09:55	**Dilution:**	1	**File ID:**	TC01242014.068
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		37.9		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L14011242-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW11-012314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/30/2014 15:20
Workgroup #:	WG461586	**Analyst:**	MES	**Run Date:**	01/31/2014 00:29
Collect Date:	01/23/2014 11:25	**Dilution:**	1	**File ID:**	9M961146
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	9.83		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.748	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	38.8		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	113	85	120	
4-Bromofluorobenzene	97.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/30/2014 15:20
Workgroup #:	WG461586	**Analyst:**	MES	**Run Date:**	01/31/2014 00:00
Collect Date:	01/23/2014 00:01	**Dilution:**	1	**File ID:**	9M961145
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.236	J	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	114	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW11 FD-012314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/30/2014 15:20
Workgroup #:	WG461586	**Analyst:**	MES	**Run Date:**	01/31/2014 00:58
Collect Date:	01/23/2014 11:25	**Dilution:**	1	**File ID:**	9M961147
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	10.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.823	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	43.0		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.296	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	120	85	120	
4-Bromofluorobenzene	111	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW08-012314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/30/2014 15:20
Workgroup #:	WG461586	**Analyst:**	MES	**Run Date:**	01/31/2014 02:54
Collect Date:	01/23/2014 09:55	**Dilution:**	5	**File ID:**	9M961151
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	25.0	U	50.0	25.0	12.5
Benzene	71-43-2	1.25	U	5.00	1.25	0.625
Bromobenzene	108-86-1	1.25	U	5.00	1.25	0.625
Bromochloromethane	74-97-5	2.00	U	5.00	2.00	1.00
Bromodichloromethane	75-27-4	2.50	U	5.00	2.50	1.25
Bromoform	75-25-2	5.00	U	10.0	5.00	2.50
Bromomethane	74-83-9	5.00	U	10.0	5.00	2.50
2-Butanone	78-93-3	25.0	U	50.0	25.0	12.5
n-Butylbenzene	104-51-8	2.50	U	5.00	2.50	1.25
sec-Butylbenzene	135-98-8	2.50	U	5.00	2.50	1.25
tert-Butylbenzene	98-06-6	2.50	U	5.00	2.50	1.25
Carbon disulfide	75-15-0	5.00	U	10.0	5.00	2.50
Carbon tetrachloride	56-23-5	2.50	U	5.00	2.50	1.25
Chlorobenzene	108-90-7	1.25	U	5.00	1.25	0.625
Chlorodibromomethane	124-48-1	2.50	U	5.00	2.50	1.25
Chloroethane	75-00-3	5.00	U	10.0	5.00	2.50
Chloroform	67-66-3	4.11	J	5.00	1.25	0.625
Chloromethane	74-87-3	5.00	U	10.0	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	5.00	1.25	0.625
4-Chlorotoluene	106-43-4	2.50	U	5.00	2.50	1.25
1,2-Dibromo-3-chloropropane	96-12-8	10.0	U	25.0	10.0	5.00
1,2-Dibromoethane	106-93-4	2.50	U	5.00	2.50	1.25
Dibromomethane	74-95-3	2.50	U	5.00	2.50	1.25
1,2-Dichlorobenzene	95-50-1	1.25	U	5.00	1.25	0.625
1,3-Dichlorobenzene	541-73-1	2.50	U	5.00	2.50	1.25
1,4-Dichlorobenzene	106-46-7	1.25	U	5.00	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	5.00	2.50	1.25
1,1-Dichloroethane	75-34-3	54.4		5.00	1.25	0.625
1,2-Dichloroethane	107-06-2	89.9		5.00	2.50	1.25
1,1-Dichloroethene	75-35-4	1600	J	10.0	5.00	2.50
cis-1,2-Dichloroethene	156-59-2	2.73	J	5.00	2.50	1.25
trans-1,2-Dichloroethene	156-60-5	2.50	U	5.00	2.50	1.25

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	2.00	U	5.00	2.00	1.00
1,3-Dichloropropane	142-28-9	2.00	U	5.00	2.00	1.00
2,2-Dichloropropane	594-20-7	2.50	U	5.00	2.50	1.25
cis-1,3-Dichloropropene	10061-01-5	2.50	U	5.00	2.50	1.25
trans-1,3-Dichloropropene	10061-02-6	5.00	U	10.0	5.00	2.50
1,1-Dichloropropene	563-58-6	2.50	U	5.00	2.50	1.25
Ethylbenzene	100-41-4	2.50	U	5.00	2.50	1.25
2-Hexanone	591-78-6	25.0	U	50.0	25.0	12.5
Hexachlorobutadiene	87-68-3	2.50	U	5.00	2.50	1.25
Isopropylbenzene	98-82-8	2.50	U	5.00	2.50	1.25
p-Isopropyltoluene	99-87-6	2.50	U	5.00	2.50	1.25
4-Methyl-2-pentanone	108-10-1	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	2.50	U	5.00	2.50	1.25
Naphthalene	91-20-3	2.00	U	5.00	2.00	1.00
n-Propylbenzene	103-65-1	1.25	U	5.00	1.25	0.625
Styrene	100-42-5	1.25	U	5.00	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	2.50	U	5.00	2.50	1.25
1,1,2,2-Tetrachloroethane	79-34-5	2.00	U	5.00	2.00	1.00
Tetrachloroethene	127-18-4	2.50	U	5.00	2.50	1.25
Toluene	108-88-3	2.50	U	5.00	2.50	1.25
1,2,3-Trichlorobenzene	87-61-6	1.50	U	5.00	1.50	0.750
1,2,4-Trichlorobenzene	120-82-1	2.00	U	5.00	2.00	1.00
1,1,1-Trichloroethane	71-55-6	2.50	U	5.00	2.50	1.25
1,1,2-Trichloroethane	79-00-5	6.70		5.00	2.50	1.25
Trichloroethene	79-01-6	3.12	J	5.00	2.50	1.25
Trichlorofluoromethane	75-69-4	2.50	U	5.00	2.50	1.25
1,2,3-Trichloropropane	96-18-4	5.00	U	10.0	5.00	2.50
1,2,4-Trimethylbenzene	95-63-6	2.50	U	5.00	2.50	1.25
1,3,5-Trimethylbenzene	108-67-8	2.50	U	5.00	2.50	1.25
Vinyl chloride	75-01-4	2.50	U	5.00	2.50	1.25
o-Xylene	95-47-6	2.50	U	5.00	2.50	1.25
m-,p-Xylene	179601-23-1	5.00	U	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	111	85	120	
4-Bromofluorobenzene	97.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW08-012314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/28/2014 19:25
Workgroup #:	WG461716	**Analyst:**	ADC	**Run Date:**	01/31/2014 23:29
Collect Date:	01/23/2014 09:55	**Dilution:**	50	**File ID:**	17M002775
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	250	U	500	250	125
Benzene	71-43-2	12.5	U	50.0	12.5	6.25
Bromobenzene	108-86-1	12.5	U	50.0	12.5	6.25
Bromochloromethane	74-97-5	20.0	U	50.0	20.0	10.0
Bromodichloromethane	75-27-4	25.0	U	50.0	25.0	12.5
Bromoform	75-25-2	50.0	U	100	50.0	25.0
Bromomethane	74-83-9	50.0	U	100	50.0	25.0
2-Butanone	78-93-3	250	U	500	250	125
n-Butylbenzene	104-51-8	19.2	J	50.0	25.0	12.5
sec-Butylbenzene	135-98-8	25.0	U	50.0	25.0	12.5
tert-Butylbenzene	98-06-6	25.0	U	50.0	25.0	12.5
Carbon disulfide	75-15-0	50.0	U	100	50.0	25.0
Carbon tetrachloride	56-23-5	25.0	U	50.0	25.0	12.5
Chlorobenzene	108-90-7	12.5	U	50.0	12.5	6.25
Chlorodibromomethane	124-48-1	25.0	U	50.0	25.0	12.5
Chloroethane	75-00-3	50.0	U	100	50.0	25.0
Chloroform	67-66-3	12.5	U	50.0	12.5	6.25
Chloromethane	74-87-3	50.0	U	100	50.0	25.0
2-Chlorotoluene	95-49-8	12.5	U	50.0	12.5	6.25
4-Chlorotoluene	106-43-4	25.0	U	50.0	25.0	12.5
1,2-Dibromo-3-chloropropane	96-12-8	100	U	250	100	50.0
1,2-Dibromoethane	106-93-4	25.0	U	50.0	25.0	12.5
Dibromomethane	74-95-3	25.0	U	50.0	25.0	12.5
1,2-Dichlorobenzene	95-50-1	12.5	U	50.0	12.5	6.25
1,3-Dichlorobenzene	541-73-1	25.0	U	50.0	25.0	12.5
1,4-Dichlorobenzene	106-46-7	12.5	U	50.0	12.5	6.25
Dichlorodifluoromethane	75-71-8	25.0	U	50.0	25.0	12.5
1,1-Dichloroethane	75-34-3	50.0		50.0	12.5	6.25
1,2-Dichloroethane	107-06-2	84.3		50.0	25.0	12.5
1,1-Dichloroethene	75-35-4	1340		100	50.0	25.0
cis-1,2-Dichloroethene	156-59-2	25.0	U	50.0	25.0	12.5

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	25.0	U	50.0	25.0	12.5
1,2-Dichloropropane	78-87-5	20.0	U	50.0	20.0	10.0
1,3-Dichloropropane	142-28-9	20.0	U	50.0	20.0	10.0
2,2-Dichloropropane	594-20-7	25.0	U	50.0	25.0	12.5
cis-1,3-Dichloropropene	10061-01-5	25.0	U	50.0	25.0	12.5
trans-1,3-Dichloropropene	10061-02-6	50.0	U	100	50.0	25.0
1,1-Dichloropropene	563-58-6	25.0	U	50.0	25.0	12.5
Ethylbenzene	100-41-4	25.0	U	50.0	25.0	12.5
2-Hexanone	591-78-6	250	U	500	250	125
Hexachlorobutadiene	87-68-3	25.0	U	50.0	25.0	12.5
Isopropylbenzene	98-82-8	25.0	U	50.0	25.0	12.5
p-Isopropyltoluene	99-87-6	25.0	U	50.0	25.0	12.5
4-Methyl-2-pentanone	108-10-1	250	U	500	250	125
Methylene chloride	75-09-2	25.0	U	50.0	25.0	12.5
Naphthalene	91-20-3	20.0	U	50.0	20.0	10.0
n-Propylbenzene	103-65-1	12.5	U	50.0	12.5	6.25
Styrene	100-42-5	15.3	J	50.0	12.5	6.25
1,1,1,2-Tetrachloroethane	630-20-6	25.0	U	50.0	25.0	12.5
1,1,2,2-Tetrachloroethane	79-34-5	20.0	U	50.0	20.0	10.0
Tetrachloroethene	127-18-4	25.0	U	50.0	25.0	12.5
Toluene	108-88-3	25.0	U	50.0	25.0	12.5
1,2,3-Trichlorobenzene	87-61-6	15.0	U	50.0	15.0	7.50
1,2,4-Trichlorobenzene	120-82-1	20.0	U	50.0	20.0	10.0
1,1,1-Trichloroethane	71-55-6	25.0	U	50.0	25.0	12.5
1,1,2-Trichloroethane	79-00-5	25.0	U	50.0	25.0	12.5
Trichloroethene	79-01-6	25.0	U	50.0	25.0	12.5
Trichlorofluoromethane	75-69-4	25.0	U	50.0	25.0	12.5
1,2,3-Trichloropropane	96-18-4	50.0	U	100	50.0	25.0
1,2,4-Trimethylbenzene	95-63-6	25.0	U	50.0	25.0	12.5
1,3,5-Trimethylbenzene	108-67-8	25.0	U	50.0	25.0	12.5
Vinyl chloride	75-01-4	25.0	U	50.0	25.0	12.5
o-Xylene	95-47-6	25.0	U	50.0	25.0	12.5
m-,p-Xylene	179601-23-1	50.0	U	100	50.0	25.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW11-012314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/30/2014 15:20
Workgroup #:	WG461586	**Analyst:**	MES	**Run Date:**	01/31/2014 00:29
Collect Date:	01/23/2014 11:25	**Dilution:**	1	**File ID:**	9M961146
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	9.83		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.748	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	38.8		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	113	85	120	
4-Bromofluorobenzene	97.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/30/2014 15:20
Workgroup #:	WG461586	**Analyst:**	MES	**Run Date:**	01/31/2014 00:00
Collect Date:	01/23/2014 00:01	**Dilution:**	1	**File ID:**	9M961145
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.236	J	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	114	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW11 FD-012314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/30/2014 15:20
Workgroup #:	WG461586	**Analyst:**	MES	**Run Date:**	01/31/2014 00:58
Collect Date:	01/23/2014 11:25	**Dilution:**	1	**File ID:**	9M961147
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	10.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.823	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	43.0		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.296	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	120	85	120	
4-Bromofluorobenzene	111	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 081913
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 47153

Internal Standard: STD59587 Surrogate Standard: STD59627
CCV: STD59677 LCS: STD59678 MS/MSD: STD59678

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG441888(ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M957893	WG441887-01 50ng BFB STD	NA	1	1		08/19/13 15:08
9M957894	WG441887-02 50.0ug/L STD 8260	NA	1	1	STD59582	08/19/13 15:33
9M957895	WG441888-01 5.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 16:23
9M957896	WG441888-02 20.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 16:53
9M957897	WG441888-03 50.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 17:22
9M957898	WG441888-04 100.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 17:51
9M957899	WG441888-05 200.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 18:20
9M957900	WG441888-06 300.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 18:48
9M957901	WG441888-07 400.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 19:17
9M957902	WG441888-08 500.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 19:46
9M957903	RINSE	NA	1	1		08/19/13 20:16
9M957904	WG441888-09 100.0ug/L A9 ALT SRC 826	NA	1	1	STD59238	08/19/13 20:45

Approved: August 27, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 101313
Analyst1: MES Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 17
Method: 624 SOP: MSV10 Rev: 10
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 47805

Internal Standard: STD60409 Surrogate Standard: STD60842
CCV: STD60752 LCS: STD60749 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG448463

Comments: Rerun MDLs for isobutanol and cyclohexanone.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M000183	WG448462-01 50NG BFB STD 8260	NA	1	1	STD60561	10/13/13 16:29
17M000184	WG448462-01 50NG BFB STD 8260	NA	1	1	STD60561	10/13/13 16:45
17M000185	WG448466-02 50ug/L WATER STD 8260	NA	1	1	STD60687	10/13/13 17:20
17M000186	WG448462-02 5ug/L APPIX STD	NA	1	1	STD60752	10/13/13 17:48
17M000187	WG448462-03 20ug/L APPIX STD	NA	1	1	STD60752	10/13/13 18:15
17M000188	WG448462-04 50ug/L APPIX STD	NA	1	1	STD60752	10/13/13 18:43
17M000189	WG448462-05 100ug/L APPIX STD	NA	1	1	STD60752	10/13/13 19:11
17M000190	WG448462-06 200ug/L APPIX STD	NA	1	1	STD60752	10/13/13 19:39
17M000191	WG448462-07 300ug/L APPIX STD	NA	1	1	STD60752	10/13/13 20:07
17M000192	WG448462-08 400ug/L APPIX STD	NA	1	1	STD60752	10/13/13 20:35
17M000193	WG448462-09 500ug/L APPIX STD	NA	1	1	STD60752	10/13/13 21:03
17M000194	RINSE	NA	1	1		10/13/13 21:31
17M000195	WG448462-10 100ug/L APPIX ALT SRC	NA	1	1	STD60749	10/13/13 22:00
17M000196	RINSE	NA	1	1		10/13/13 22:27
17M000197	L13100005-12 BLANK	NA	1	1		10/13/13 22:55
17M000198	L13100005-13 BLANK	NA	1	1		10/13/13 23:23
17M000199	L13100005-01 MDL	NA	1	1	STD60752	10/13/13 23:51
17M000200	L13100005-02 MDL	NA	1	1	STD60752	10/14/13 00:18
17M000201	L13100005-03 MDL	NA	1	1	STD60752	10/14/13 00:47
17M000202	L13100005-04 MDL	NA	1	1	STD60752	10/14/13 01:14
17M000203	L13100005-05 MDL	NA	1	1	STD60752	10/14/13 01:43
17M000204	L13100005-06 MDL	NA	1	1	STD60752	10/14/13 02:11
17M000205	L13100005-07 MDL	NA	1	1	STD60752	10/14/13 02:39

Approved: October 18, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 012814
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 5030C SOP: PAT01 Rev: 16
Method: 624 SOP: PAT10 Rev: 12
Maintenance Log ID: 49034

Internal Standard: STD62310 Surrogate Standard: STD62075
CCV: STD62280 LCS: STD62390 MS/MSD: STD62390

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG460934

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M002686	WG461242-01 BFB 50ng 8260	NA	1	1	STD62146	01/28/14 14:29
17M002687	RINSE	NA	1	1		01/28/14 14:52
17M002688	WG460934-02 0.3 ug/L STD 8260	NA	1	1	STD62504	01/28/14 15:20
17M002689	WG460934-03 0.4 ug/L STD 8260	NA	1	1	STD62504	01/28/14 15:47
17M002690	WG460934-04 1.0 ug/L STD 8260	NA	1	1	STD62504	01/28/14 16:15
17M002691	WG460934-05 2.0 ug/L STD 8260	NA	1	1	STD62504	01/28/14 16:43
17M002692	WG460934-06 5.0 ug/L STD 8260	NA	1	1	STD62504	01/28/14 17:10
17M002693	WG460934-07 20.0 ug/L STD 8260	NA	1	1	STD62504	01/28/14 17:37
17M002694	WG460934-08 50.0 ug/L STD 8260	NA	1	1	STD62504	01/28/14 18:04
17M002695	WG460934-09 100.0 ug/L STD 8260	NA	1	1	STD62504	01/28/14 18:31
17M002696	WG460934-10 200.0 ug/L STD 8260	NA	1	1	STD62504	01/28/14 18:58
17M002697	WG460934-11 300.0 ug/L STD 8260	NA	1	1	STD62504	01/28/14 19:25
17M002698	RINSE	NA	1	1		01/28/14 19:52
17M002699	WG460934-12 50.0 ug/L ALTSRC 8260	NA	1	1	STD62390	01/28/14 20:19

Approved: February 04, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 013014
Analyst1: ADC Analyst2: MES
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 49089

Internal Standard: STD62391 Surrogate Standard: STD62627
CCV: STD62504 LCS: STD62638 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG461445 (ICAL), WG461586

Comments: DCDF is failing in residual checks, but passes in the ALT SRC.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M961120	WG461445-01 50ng BFB STD	NA	1	1	STD62146	01/30/14 08:11
9M961121	WG461445-01 50ng BFB STD	NA	1	1	STD62146	01/30/14 08:30
9M961123	WG461445-02 0.3 ug/L STD	NA	1	1	STD62504	01/30/14 09:30
9M961124	WG461445-03 0.4 ug/L STD	NA	1	1	STD62504	01/30/14 09:58
9M961125	WG461445-04 1.0 ug/L STD	NA	1	1	STD62504	01/30/14 10:27
9M961126	WG461445-05 2.0 ug/L STD	NA	1	1	STD62504	01/30/14 10:56
9M961127	WG461445-06 5.0 ug/L STD	NA	1	1	STD62504	01/30/14 11:24
9M961128	WG461445-07 20.0 ug/L STD	NA	1	1	STD62504	01/30/14 11:53
9M961129	WG461445-08 50.0 ug/L STD	NA	1	1	STD62504	01/30/14 12:22
9M961130	WG461445-09 100.0 ug/L STD	NA	1	1	STD62504	01/30/14 12:51
9M961131	WG461445-10 200.0 ug/L STD	NA	1	1	STD62504	01/30/14 13:20
9M961132	WG461445-11 300.0 ug/L STD	NA	1	1	STD62504	01/30/14 13:49
9M961133	RINSE	NA	1	1	STD62504	01/30/14 14:18
9M961134	WG461445-04 1.0 ug/L STD	NA	1	1	STD62504	01/30/14 15:20
9M961135	WG461445-12 50.0 ug/L ALTSRC	NA	1	1	STD62504	01/30/14 15:49
9M961136	WG461585-01 50NG BFB STD 8260	NA	1	1	STD62146	01/30/14 19:37
9M961137	WG461585-02 50ug/L WATER CCV 8260	NA	1	1	STD62504	01/30/14 20:02
9M961138	WG461585-02 50ug/L WATER CCV 8260	NA	1	1	STD62504	01/30/14 20:35
9M961139	RINSE	NA	1	1		01/30/14 21:06
9M961140	WG461586-01 BLANK 1/30	NA	1	1		01/30/14 21:35
9M961141	L14011137-03 TB A 826-SPE	<2	1	1		01/30/14 22:04
9M961142	L14011137-04 AB A 826-SPE	<2	1	1		01/30/14 22:33
9M961143	L14011544-09 A 826-SPE	<2	1	1		01/30/14 23:02
9M961144	L14011544-13 A 826-SPE	<2	1	1		01/30/14 23:31
9M961145	L14011242-03 TB A 826-LOW	<2	1	1		01/31/14 00:00
9M961146	L14011242-02 A 826-LOW	<2	1	1		01/31/14 00:29
9M961147	L14011242-04 A 826-LOW	<2	1	1		01/31/14 00:58
9M961148	L14011372-01 A 826-LOW	<2	1	1		01/31/14 01:27
9M961149	L14011372-02 A 826-LOW	<2	1	1		01/31/14 01:56
9M961150	L14011372-03 A 826-LOW	<2	1	1		01/31/14 02:25
9M961151	L14011242-01 5X A 826-LOW	<2	1	5		01/31/14 02:54
9M961152	L14011137-01 A 826-SPE	<2	1	1		01/31/14 03:23
9M961153	L14011137-02 5X A 826-LOW	3	1	5		01/31/14 03:52
9M961154	WG461586-02 20ug/L LCS 8260	NA	1	1	STD62430	01/31/14 04:22

Approved: February 10, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 013014
Analyst1: ADC Analyst2: MES
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 49089

Internal Standard: STD62391 Surrogate Standard: STD62627
CCV: STD62504 LCS: STD62638 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG461445 (ICAL), WG461586

Comments: DCDF is failing in residual checks, but passes in the ALT SRC.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M961155	WG461586-03 20ug/L LCS DUP 8260	NA	1	1	STD62430	01/31/14 04:51
9M961156	ANTIFOAM BLANK	NA	1	1		01/31/14 05:20

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1				
File ID: 9M961120				
	WG461445-01 DNR RR			
5				
File ID: 9M961125				
	WG461445-04 DNR RR			
31	X	50	Over Calibration Range	11DCE
File ID: 9M961151				
	L14011242-01			
32				
File ID: 9M961152				
	L14011137-01 DNR RR STR C/O			
33	X	5	Analyzed too dilute	
File ID: 9M961153				
	L14011137-02			

Approved: February 10, 2014

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 013114
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 5030C SOP: PAT01 Rev: 16
Method: 624 SOP: PAT10 Rev: 12
Maintenance Log ID: 49062

Internal Standard: STD62310 Surrogate Standard: STD62651
CCV: STD62504 LCS: STD62638 MS/MSD: STD62638

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG461716, WG461717

Comments: Surrogates were being changed and adjusted at the beginning of this run resulting in failures and renalysis of the method blank.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M002760	WG461715-01 BFB 50ng 8260	NA	1	1	STD62146	01/31/14 15:53
17M002761	WG461715-02 50 ug/L CCV 8260	NA	1	1	STD62504	01/31/14 16:16
17M002762	RINSE	NA	1	1		01/31/14 16:52
17M002763	RINSE	NA	1	1		01/31/14 17:40
17M002764	WG461716-01 VBLK 0131 8260	NA	1	1		01/31/14 18:24
17M002765	WG461717-01 EXTBLK 0131 8260	NA	7	50		01/31/14 18:52
17M002766	WG461716-01 VBLK 0131 8260	NA	1	1		01/31/14 19:20
17M002767	L14010697-01 A 826-REF-BLK	<2	1	1		01/31/14 19:48
17M002768	L14010697-02 A 826-REF-BLK	<2	1	1		01/31/14 20:16
17M002769	L14010697-03 A 826-REF-BLK	<2	1	1		01/31/14 20:43
17M002770	L14010697-04 A 826-REF-BLK	<2	1	1		01/31/14 21:11
17M002771	L14010697-05 A 826-REF-BLK	<2	1	1		01/31/14 21:39
17M002772	WG461717-02 20ug/kg EXTLCS 0131 8260	NA	7	50		01/31/14 22:07
17M002773	WG461716-02 20ug/L LCS 8260	NA	1	1	STD62430	01/31/14 22:34
17M002774	WG461716-03 20ug/L LCSDUP 8260	NA	1	1	STD62430	01/31/14 23:02
17M002775	L14011242-01 B 50X 826-LOW	<2	1	50		01/31/14 23:29
17M002776	L14011137-02 B 5X 826-SPE	2	1	5		01/31/14 23:57
17M002777	L14010616-01 A 10,000X 826-SPE	NA	12	10000		02/01/14 00:24
17M002778	L14011026-04 A 100X 826-SPE 5.07g	NA	7	50		02/01/14 00:52
17M002779	L14011305-01 A 100X 826-SPE 4.84g	NA	7	50		02/01/14 01:20
17M002780	WG461350-02 A MS 100X 4.62g	NA	7	50		02/01/14 01:47
17M002781	WG461350-03 A MSD 100X 4.67g	NA	7	50		02/01/14 02:15
17M002782	RINSE W/AF	NA	1	1		02/01/14 02:42
17M002783	WG461716-04 624-BLK	NA	2	1		02/01/14 03:10
17M002784	L14011542-02 B 100X 624-SPE	<2	2	100		02/01/14 03:38
17M002785	L14011603-02 A 624	<2	2	1		02/01/14 04:05
17M002786	L14011604-02 A 624	<2	2	1		02/01/14 04:33
17M002787	L14011623-02 A 624-SPE	6	2	1		02/01/14 05:01
17M002788	RINSE	NA	2	1		02/01/14 05:28
17M002789	RINSE	NA	2	1		02/01/14 05:56
17M002790	RINSE	NA	2	1		02/01/14 06:23
17M002791	RINSE	NA	2	1		02/01/14 06:51

Approved: February 07, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS17	Dataset:	013114		
Analyst1:	ADC	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	19
Method:	5030C	SOP:	PAT01	Rev:	16
Method:	624	SOP:	PAT10	Rev:	12
Maintenance Log ID:	49062				

Internal Standard: STD62310 Surrogate Standard: STD62651

CCV: STD62504 LCS: STD62638 MS/MSD: STD62638

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG461716, WG461717

Comments: Surrogates were being changed and adjusted at the beginning of this run resulting in failures and renalysis of the method blank.

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18	X	50000	Over Calibration Range	MeCl
File ID: 17M002777				
	L14010616-01			
26	X	5	Over Calibration Range	ACE
File ID: 17M002785				
	L14011603-02			

Approved: February 07, 2014

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 19-AUG-2013
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: WG441888
Runlog ID: 55275
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	NA
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
26-AUG-2013

Secondary Reviewer:
27-AUG-2013

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-27-2013 08:13:37

Microbac Laboratories Inc.

Data Checklist

Date: 13-OCT-2013
Analyst: MES
Analyst: NA
Method: 8260/624
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 56448
Analytical Workgroups: WG448463

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	NA
Recoveries	NA
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	NA
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	MES
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 17-OCT-2013

Secondary Reviewer: 18-OCT-2013

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-18-2013 08:13:54

Microbac Laboratories Inc.

Data Checklist

Date: 28-JAN-2014
Analyst: ADC
Analyst: NA
Method: 8260/624
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 58682
Analytical Workgroups: WG460934

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	NA
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	NA
KOBRA Workgroup Data	NA
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 03-FEB-2014

Secondary Reviewer: 04-FEB-2014

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-04-2014 08:40:20

Microbac Laboratories Inc.

Data Checklist

Date: 30-JAN-2014
Analyst: ADC
Analyst: MES
Method: 8260
Instrument: HPMS9
Curve Workgroup: WG461445
Runlog ID: 58792
Analytical Workgroups: WG461586

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 07-FEB-2014

Secondary Reviewer: 10-FEB-2014

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-10-2014 09:08:54

Microbac Laboratories Inc.

Data Checklist

Date: 31-JAN-2014
Analyst: ADC
Analyst: NA
Method: 8260/624
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 58733
Analytical Workgroups: WG461716, WG461717

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
05-FEB-2014

Secondary Reviewer:
05-FEB-2014

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-05-2014 13:44:09

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG461586

Login Number: L14011242

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-012314	01	01/23/14					01/31/2014	7.7	14		01/31/14	7.7	14	
67WW11-012314	02	01/23/14					01/31/2014	7.5	14		01/31/14	7.5	14	
TRIP BLANK	03	01/23/14					01/31/2014	8	14		01/31/14	8	14	
67WW11 FD-012314	04	01/23/14					01/31/2014	7.6	14		01/31/14	7.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3358278
Report generated 02/12/2014 13:04

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG461716

Login Number: L14011242

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-012314	01	01/23/14					01/31/2014	8.6	14		01/31/14	8.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3358278
Report generated 02/12/2014 13:04

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L14011242
Instrument Id: HPMS17
Workgroup (AAB#): WG461716

Method: 8260
CAL ID: HPMS17-28-JAN-14
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
WG461716-01	1.00	01	95.9	96.4	107	103
WG461716-02	1.00	01	95.2	91.6	93.3	95.8
WG461716-03	1.00	01	93.1	91.2	93.2	94.6
WG461716-04	1.00	01	93.3	86.8	101	97.5

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - p-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3347062
Report generated: 02/12/2014 13:04

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L14011242
Instrument Id: HPMS9
Workgroup (AAB#): WG461586

Method: 8260
CAL ID: HPMS9-30-JAN-14
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L14011242-01	5.00	DL02	108	108	97.4	111
L14011242-02	1.00	01	106	104	97.8	113
L14011242-03	1.00	01	105	107	104	114
L14011242-04	1.00	01	114	114	111	120
WG461586-01	1.00	01	110	110	106	120
WG461586-02	1.00	01	109	109	101	113
WG461586-03	1.00	01	110	110	98.6	112

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3347062
Report generated: 02/12/2014 13:04

METHOD BLANK SUMMARY

Login Number: L14011242
Blank File ID: 17M002766
Prep Date: 01/31/14 19:20
Analyzed Date: 01/31/14 19:20
Analyst: ADC

Work Group: WG461716
Blank Sample ID: WG461716-01
Instrument ID: HPMS17
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG461716-02	17M002773	01/31/14 22:34	01
LCS2	WG461716-03	17M002774	01/31/14 23:02	01
67WW08-012314	L14011242-01	17M002775	01/31/14 23:29	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 3358279
Report generated 02/12/2014 13:04

METHOD BLANK SUMMARY

Login Number: L14011242
Blank File ID: 9M961140
Prep Date: 01/30/14 21:35
Analyzed Date: 01/30/14 21:35
Analyst: MES

Work Group: WG461586
Blank Sample ID: WG461586-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
TRIP BLANK	L14011242-03	9M961145	01/31/14 00:00	01
67WW11-012314	L14011242-02	9M961146	01/31/14 00:29	01
67WW11 FD-012314	L14011242-04	9M961147	01/31/14 00:58	01
67WW08-012314	L14011242-01	9M961151	01/31/14 02:54	DL02
LCS	WG461586-02	9M961154	01/31/14 04:22	01
LCS2	WG461586-03	9M961155	01/31/14 04:51	01

Report Name: BLANK_SUMMARY
PDF File ID: 3358279
Report generated 02/12/2014 13:04

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L14011242 Prep Date: 01/31/14 19:20 Sample ID: WG461716-01
Instrument ID: HPMS17 Run Date: 01/31/14 19:20 Prep Method: 5030B/5030C/503
File ID: 17M002766 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG461716 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-28-JAN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 3358280
12-FEB-2014 13:04

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14011242 Prep Date: 01/31/14 19:20 Sample ID: WG461716-01
Instrument ID: HPMS17 Run Date: 01/31/14 19:20 Prep Method: 5030B/5030C/503
File ID: 17M002766 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG461716 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-28-JAN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	96.4	85 - 115	PASS
1,2-Dichloroethane-d4	95.9	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	107	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3358280
12-FEB-2014 13:04

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14011242 Prep Date: 01/30/14 21:35 Sample ID: WG461586-01
Instrument ID: HPMS9 Run Date: 01/30/14 21:35 Prep Method: 5030B/5030C/503
File ID: 9M961140 Analyst: MES Method: 8260B
Workgroup (AAB#): WG461586 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS9-30-JAN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 3358280
12-FEB-2014 13:04

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14011242 Prep Date: 01/30/14 21:35 Sample ID: WG461586-01
Instrument ID: HPMS9 Run Date: 01/30/14 21:35 Prep Method: 5030B/5030C/503
File ID: 9M961140 Analyst: MES Method: 8260B
Workgroup (AAB#): WG461586 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS9-30-JAN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	110	70 - 120	PASS
Toluene-d8	120	85 - 120	PASS
4-Bromofluorobenzene	106	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3358280
12-FEB-2014 13:04

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14011242 Analyst: MES Prep Method: 5030B/5030C/503
Instrument ID: HPMS9 Matrix: Water Method: 8260B
Workgroup (AAB#): WG461586 Units: ug/L
QC Key: DOD4 Lot #: STD62430

Sample ID: WG461586-02 LCS File ID: 9M961154 Run Date: 01/31/2014 04:22
Sample ID: WG461586-03 LCS2 File ID: 9M961155 Run Date: 01/31/2014 04:51

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	22.7	114	20.0	21.3	106	6.63	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.6	103	20.0	20.0	100	3.10	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	22.3	112	20.0	20.8	104	7.08	65 - 130	30	
1,1,2-Trichloroethane	20.0	22.9	115	20.0	22.2	111	3.18	75 - 125	30	
1,1-Dichloroethane	20.0	20.1	101	20.0	19.8	99.0	1.53	70 - 135	30	
1,1-Dichloroethene	20.0	20.8	104	20.0	19.6	98.0	5.95	70 - 130	30	
1,1-Dichloropropene	20.0	21.0	105	20.0	20.3	101	3.72	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	23.6	118	20.0	22.8	114	3.25	55 - 140	30	
1,2,3-Trichloropropane	20.0	25.2	126	20.0	22.4	112	12.1	75 - 125	30	*
1,2,4-Trichlorobenzene	20.0	22.9	114	20.0	22.3	112	2.46	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	22.6	113	20.0	20.6	103	9.42	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	23.8	119	20.0	23.9	120	0.438	50 - 130	30	
1,2-Dibromoethane	20.0	22.3	112	20.0	21.6	108	3.53	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.9	104	20.0	19.8	98.9	5.36	70 - 120	30	
1,2-Dichloroethane	20.0	21.6	108	20.0	21.2	106	2.05	70 - 130	30	
1,2-Dichloropropane	20.0	20.9	105	20.0	20.6	103	1.68	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	23.0	115	20.0	20.6	103	11.0	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.1	100	20.0	18.5	92.7	7.86	75 - 125	30	
1,3-Dichloropropane	20.0	21.5	107	20.0	21.0	105	2.01	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.5	107	20.0	20.1	101	6.42	75 - 125	30	
2,2-Dichloropropane	20.0	18.0	90.1	20.0	17.0	85.2	5.55	70 - 135	30	
2-Butanone	20.0	23.7	118	20.0	24.6	123	3.96	30 - 150	30	
2-Chlorotoluene	20.0	19.5	97.5	20.0	18.2	91.1	6.72	75 - 125	30	
2-Hexanone	20.0	22.7	114	20.0	22.3	112	1.86	55 - 130	30	
4-Chlorotoluene	20.0	20.5	102	20.0	18.6	93.0	9.55	75 - 130	30	
4-Methyl-2-pentanone	20.0	21.0	105	20.0	20.8	104	1.25	60 - 135	30	
Acetone	20.0	26.3	132	20.0	27.2	136	3.22	40 - 140	30	
Benzene	20.0	21.0	105	20.0	20.2	101	4.04	80 - 120	30	
Bromobenzene	20.0	22.1	111	20.0	20.3	102	8.50	75 - 125	30	
Bromochloromethane	20.0	21.8	109	20.0	21.2	106	2.62	65 - 130	30	
Bromodichloromethane	20.0	20.7	104	20.0	20.2	101	2.61	75 - 120	30	
Bromoform	20.0	24.7	123	20.0	23.5	117	5.09	70 - 130	30	
Bromomethane	20.0	21.1	106	20.0	19.6	98.0	7.48	30 - 145	30	
Carbon disulfide	20.0	18.7	93.3	20.0	17.8	89.1	4.60	35 - 160	30	
Carbon tetrachloride	20.0	21.2	106	20.0	19.7	98.6	7.36	65 - 140	30	
Chlorobenzene	20.0	19.3	96.7	20.0	18.6	92.9	3.98	80 - 120	30	
Chloroethane	20.0	21.6	108	20.0	20.7	104	4.05	60 - 135	30	
Chloroform	20.0	21.7	108	20.0	21.4	107	1.47	65 - 135	30	
Chloromethane	20.0	25.3	126	20.0	25.6	128	1.38	40 - 125	30	*
cis-1,2-Dichloroethene	20.0	20.0	99.8	20.0	19.7	98.6	1.20	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3347061
Report generated: 02/12/2014 13:04

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14011242 Analyst: MES Prep Method: 5030B/5030C/503
Instrument ID: HPMS9 Matrix: Water Method: 8260B
Workgroup (AAB#): WG461586 Units: ug/L
QC Key: DOD4 Lot #: STD62430

Sample ID: WG461586-02 LCS File ID: 9M961154 Run Date: 01/31/2014 04:22
Sample ID: WG461586-03 LCS2 File ID: 9M961155 Run Date: 01/31/2014 04:51

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.6	108	20.0	21.3	107	1.26	70 - 130	30	
Chlorodibromomethane	20.0	21.7	109	20.0	20.8	104	4.22	60 - 135	30	
Dibromomethane	20.0	22.8	114	20.0	22.2	111	2.81	75 - 125	30	
Dichlorodifluoromethane	20.0	39.5	198	20.0	35.1	175	11.9	30 - 155	30	*
Ethylbenzene	20.0	21.5	107	20.0	20.1	100	6.67	75 - 125	30	
Hexachlorobutadiene	20.0	22.8	114	20.0	21.4	107	6.02	50 - 140	30	
Isopropylbenzene	20.0	19.4	97.2	20.0	18.2	90.8	6.84	75 - 125	30	
m-,p-Xylene	40.0	41.2	103	40.0	38.8	97.0	6.13	75 - 130	30	
Methylene chloride	20.0	21.5	107	20.0	20.4	102	5.07	55 - 140	30	
n-Butylbenzene	20.0	22.7	113	20.0	20.2	101	11.6	70 - 135	30	
n-Propylbenzene	20.0	20.2	101	20.0	18.5	92.6	8.81	70 - 130	30	
Naphthalene	20.0	24.6	123	20.0	24.4	122	0.919	55 - 140	30	
o-Xylene	20.0	19.3	96.6	20.0	18.8	93.8	2.91	80 - 120	30	
p-Isopropyltoluene	20.0	20.8	104	20.0	19.0	94.9	9.03	75 - 130	30	
sec-Butylbenzene	20.0	20.9	104	20.0	18.5	92.5	12.2	70 - 125	30	
Styrene	20.0	21.2	106	20.0	20.7	104	2.46	65 - 135	30	
tert-Butylbenzene	20.0	19.6	97.9	20.0	18.3	91.5	6.78	70 - 130	30	
Tetrachloroethene	20.0	21.0	105	20.0	18.9	94.7	10.2	45 - 150	30	
Toluene	20.0	21.5	108	20.0	20.2	101	6.44	75 - 120	30	
trans-1,2-Dichloroethene	20.0	21.0	105	20.0	20.0	100	4.51	60 - 140	30	
trans-1,3-Dichloropropene	20.0	20.7	104	20.0	20.0	100	3.56	55 - 140	30	
Trichloroethene	20.0	20.6	103	20.0	20.0	99.8	3.34	70 - 125	30	
Trichlorofluoromethane	20.0	23.1	115	20.0	22.0	110	4.51	60 - 145	30	
Vinyl chloride	20.0	26.2	131	20.0	24.6	123	6.26	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	109	110	70 - 120	PASS
Dibromofluoromethane	109	110	85 - 115	PASS
4-Bromofluorobenzene	101	98.6	75 - 120	PASS
Toluene-d8	113	112	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3347061
Report generated: 02/12/2014 13:04

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14011242 Analyst: ADC Prep Method: 5030B/5030C/503
Instrument ID: HPMS17 Matrix: Water Method: 8260B
Workgroup (AAB#): WG461716 Units: ug/L
QC Key: DOD4 Lot #: STD62430

Sample ID: WG461716-02 LCS File ID: 17M002773 Run Date: 01/31/2014 22:34
Sample ID: WG461716-03 LCS2 File ID: 17M002774 Run Date: 01/31/2014 23:02

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	18.2	91.2	20.0	18.8	93.8	2.77	80 - 130	30	
1,1,1-Trichloroethane	20.0	18.4	91.8	20.0	19.3	96.5	4.97	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.5	92.4	20.0	18.8	93.9	1.64	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.8	99.1	20.0	20.4	102	3.00	75 - 125	30	
1,1-Dichloroethane	20.0	18.6	93.1	20.0	19.2	96.1	3.07	70 - 135	30	
1,1-Dichloroethene	20.0	18.2	90.8	20.0	18.9	94.4	3.92	70 - 130	30	
1,1-Dichloropropene	20.0	19.2	96.0	20.0	19.9	99.7	3.81	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.7	98.5	20.0	20.3	101	2.95	55 - 140	30	
1,2,3-Trichloropropane	20.0	21.0	105	20.0	20.5	102	2.63	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.0	95.0	20.0	19.4	97.2	2.28	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.1	95.4	20.0	19.9	99.5	4.26	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	21.3	107	20.0	21.6	108	1.19	50 - 130	30	
1,2-Dibromoethane	20.0	20.0	100	20.0	20.2	101	0.775	80 - 120	30	
1,2-Dichlorobenzene	20.0	17.7	88.3	20.0	18.1	90.4	2.43	70 - 120	30	
1,2-Dichloroethane	20.0	19.8	98.8	20.0	20.3	101	2.57	70 - 130	30	
1,2-Dichloropropane	20.0	19.5	97.5	20.0	20.1	101	3.09	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	19.2	95.9	20.0	19.8	99.2	3.38	75 - 130	30	
1,3-Dichlorobenzene	20.0	17.0	85.1	20.0	17.6	87.8	3.15	75 - 125	30	
1,3-Dichloropropane	20.0	19.8	99.1	20.0	20.2	101	2.06	75 - 125	30	
1,4-Dichlorobenzene	20.0	18.3	91.4	20.0	18.9	94.3	3.10	75 - 125	30	
2,2-Dichloropropane	20.0	16.6	82.8	20.0	17.3	86.3	4.15	70 - 135	30	
2-Butanone	20.0	23.5	117	20.0	23.6	118	0.735	30 - 150	30	
2-Chlorotoluene	20.0	16.5	82.6	20.0	17.1	85.7	3.69	75 - 125	30	
2-Hexanone	20.0	23.0	115	20.0	22.8	114	0.669	55 - 130	30	
4-Chlorotoluene	20.0	18.7	93.5	20.0	19.4	97.1	3.80	75 - 130	30	
4-Methyl-2-pentanone	20.0	21.1	105	20.0	21.0	105	0.250	60 - 135	30	
Acetone	20.0	25.9	130	20.0	25.6	128	1.08	40 - 140	30	
Benzene	20.0	18.3	91.7	20.0	18.9	94.5	3.08	80 - 120	30	
Bromobenzene	20.0	18.5	92.4	20.0	19.1	95.5	3.30	75 - 125	30	
Bromochloromethane	20.0	18.7	93.5	20.0	19.3	96.6	3.24	65 - 130	30	
Bromodichloromethane	20.0	18.2	91.0	20.0	18.8	94.0	3.23	75 - 120	30	
Bromoform	20.0	17.1	85.6	20.0	17.3	86.3	0.797	70 - 130	30	
Bromomethane	20.0	17.6	88.2	20.0	18.5	92.5	4.78	30 - 145	30	
Carbon disulfide	20.0	16.8	83.8	20.0	17.7	88.4	5.28	35 - 160	30	
Carbon tetrachloride	20.0	18.0	89.8	20.0	18.8	94.2	4.76	65 - 140	30	
Chlorobenzene	20.0	16.9	84.5	20.0	17.4	86.9	2.81	80 - 120	30	
Chloroethane	20.0	18.0	89.9	20.0	19.0	94.8	5.39	60 - 135	30	
Chloroform	20.0	18.6	92.9	20.0	19.3	96.3	3.62	65 - 135	30	
Chloromethane	20.0	18.5	92.5	20.0	19.3	96.3	3.96	40 - 125	30	
cis-1,2-Dichloroethene	20.0	18.3	91.4	20.0	18.8	94.1	2.83	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3347061
Report generated: 02/12/2014 13:04

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14011242 Analyst: ADC Prep Method: 5030B/5030C/503
Instrument ID: HPMS17 Matrix: Water Method: 8260B
Workgroup (AAB#): WG461716 Units: ug/L
QC Key: DOD4 Lot #: STD62430

Sample ID: WG461716-02 LCS File ID: 17M002773 Run Date: 01/31/2014 22:34
Sample ID: WG461716-03 LCS2 File ID: 17M002774 Run Date: 01/31/2014 23:02

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	19.5	97.5	20.0	20.2	101	3.29	70 - 130	30	
Chlorodibromomethane	20.0	17.3	86.3	20.0	17.6	87.8	1.72	60 - 135	30	
Dibromomethane	20.0	19.3	96.3	20.0	19.4	96.8	0.563	75 - 125	30	
Dichlorodifluoromethane	20.0	22.5	112	20.0	23.5	117	4.37	30 - 155	30	
Ethylbenzene	20.0	17.5	87.7	20.0	18.1	90.5	3.18	75 - 125	30	
Hexachlorobutadiene	20.0	19.9	99.5	20.0	20.3	102	2.04	50 - 140	30	
Isopropylbenzene	20.0	16.9	84.7	20.0	17.5	87.4	3.09	75 - 125	30	
m-,p-Xylene	40.0	32.2	80.5	40.0	33.1	82.9	2.94	75 - 130	30	
Methylene chloride	20.0	17.2	85.8	20.0	17.8	88.8	3.36	55 - 140	30	
n-Butylbenzene	20.0	17.4	86.8	20.0	18.0	89.9	3.51	70 - 135	30	
n-Propylbenzene	20.0	17.3	86.7	20.0	17.9	89.7	3.37	70 - 130	30	
Naphthalene	20.0	20.4	102	20.0	20.9	104	2.19	55 - 140	30	
o-Xylene	20.0	16.5	82.6	20.0	17.2	85.8	3.81	80 - 120	30	
p-Isopropyltoluene	20.0	17.7	88.4	20.0	18.4	91.8	3.87	75 - 130	30	
sec-Butylbenzene	20.0	17.6	88.0	20.0	18.2	91.0	3.36	70 - 125	30	
Styrene	20.0	17.4	86.8	20.0	17.8	89.0	2.53	65 - 135	30	
tert-Butylbenzene	20.0	17.2	86.1	20.0	18.1	90.6	5.14	70 - 130	30	
Tetrachloroethene	20.0	18.2	90.9	20.0	18.9	94.3	3.72	45 - 150	30	
Toluene	20.0	18.5	92.5	20.0	19.1	95.4	3.11	75 - 120	30	
trans-1,2-Dichloroethene	20.0	18.5	92.5	20.0	19.4	97.2	4.95	60 - 140	30	
trans-1,3-Dichloropropene	20.0	18.8	94.1	20.0	19.0	95.2	1.14	55 - 140	30	
Trichloroethene	20.0	19.6	98.1	20.0	20.2	101	3.03	70 - 125	30	
Trichlorofluoromethane	20.0	19.8	98.8	20.0	20.6	103	4.13	60 - 145	30	
Vinyl chloride	20.0	17.8	88.8	20.0	18.5	92.5	4.13	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	95.2	93.1	70 - 120	PASS
Dibromofluoromethane	91.6	91.2	85 - 115	PASS
4-Bromofluorobenzene	93.3	93.2	75 - 120	PASS
Toluene-d8	95.8	94.6	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3347061
Report generated: 02/12/2014 13:04

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14011242
Instrument: HPMS17
Analyst: MES
Workgroup: WG448462

Tune ID: WG448462-01
Run Date: 10/13/2013
Run Time: 16:45
File ID: 17M000184
Cal ID: HPMS17 - 13-OCT-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.4	9603	PASS
75.0	95.0	30.0	60.0	46.9	24464	PASS
95.0	95.0	100	100	100	52213	PASS
96.0	95.0	5.00	9.00	7.19	3755	PASS
173	174	0	2.00	1.14	488	PASS
174	95.0	50.0	100	82.2	42925	PASS
175	174	5.00	9.00	7.26	3116	PASS
176	174	95.0	101	97.1	41672	PASS
177	176	5.00	9.00	6.38	2660	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG448462-02	STD	01	10/13/2013 17:48	
WG448462-03	STD	01	10/13/2013 18:15	
WG448462-04	STD	01	10/13/2013 18:43	
WG448462-05	STD-CCV	01	10/13/2013 19:11	
WG448462-06	STD	01	10/13/2013 19:39	
WG448462-07	STD	01	10/13/2013 20:07	
WG448462-08	STD	01	10/13/2013 20:35	
WG448462-09	STD	01	10/13/2013 21:03	
WG448462-10	SSCV	01	10/13/2013 22:00	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3358282
Report generated 02/12/2014 13:04

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14011242
Instrument: HPMS17
Analyst: ADC
Workgroup: WG461242

Tune ID: WG461242-01
Run Date: 01/28/2014
Run Time: 14:29
File ID: 17M002686
Cal ID: HPMS17 - 28-JAN-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.5	9156	PASS
75.0	95.0	30.0	60.0	50.0	19447	PASS
95.0	95.0	100	100	100	38920	PASS
96.0	95.0	5.00	9.00	7.31	2846	PASS
173	174	0	2.00	1.26	419	PASS
174	95.0	50.0	100	85.4	33248	PASS
175	174	5.00	9.00	7.03	2336	PASS
176	174	95.0	101	96.0	31933	PASS
177	176	5.00	9.00	7.23	2310	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG461242-02	STD	01	01/28/2014 15:20	
WG461242-03	STD	01	01/28/2014 15:47	
WG461242-04	STD	01	01/28/2014 16:15	
WG461242-05	STD	01	01/28/2014 16:43	
WG461242-06	STD	01	01/28/2014 17:10	
WG461242-07	STD	01	01/28/2014 17:37	
WG461242-08	STD-CCV	01	01/28/2014 18:04	
WG461242-09	STD	01	01/28/2014 18:31	
WG461242-10	STD	01	01/28/2014 18:58	
WG461242-11	STD	01	01/28/2014 19:25	
WG461242-12	SSCV	01	01/28/2014 20:19	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3358282
Report generated 02/12/2014 13:04

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14011242
Instrument: HPMS17
Analyst: ADC
Workgroup: WG461715

Tune ID: WG461715-01
Run Date: 01/31/2014
Run Time: 15:53
File ID: 17M002760
Cal ID: HPMS17 - 28-JAN-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.4	9911	PASS
75.0	95.0	30.0	60.0	52.1	20328	PASS
95.0	95.0	100	100	100	39011	PASS
96.0	95.0	5.00	9.00	6.43	2509	PASS
173	174	0	2.00	0.873	268	PASS
174	95.0	50.0	100	78.7	30709	PASS
175	174	5.00	9.00	8.40	2580	PASS
176	174	95.0	101	99.3	30488	PASS
177	176	5.00	9.00	6.82	2079	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG461715-02	CCV	01	01/31/2014 16:16	
WG461716-01	BLANK	01	01/31/2014 19:20	
WG461716-02	LCS	01	01/31/2014 22:34	
WG461716-03	LCS2	01	01/31/2014 23:02	
L14011242-01	67WW08-012314	DL01	01/31/2014 23:29	
WG461716-04	BLANK2	01	02/01/2014 03:10	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3358282
Report generated 02/12/2014 13:04

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14011242
Instrument: HPMS9
Analyst: ADC
Workgroup: WG441887

Tune ID: WG441887-01
Run Date: 08/19/2013
Run Time: 15:08
File ID: 9M957893
Cal ID: HPMS9 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.7	8524	PASS
75.0	95.0	30.0	60.0	54.9	26372	PASS
95.0	95.0	100	100	100	48077	PASS
96.0	95.0	5.00	9.00	6.87	3304	PASS
173	174	0	2.00	0.270	117	PASS
174	95.0	50.0	100	90.1	43306	PASS
175	174	5.00	9.00	7.40	3205	PASS
176	174	95.0	101	98.9	42808	PASS
177	176	5.00	9.00	6.58	2817	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG441888-01	STD	01	08/19/2013 16:23	
WG441888-02	STD	01	08/19/2013 16:53	
WG441888-03	STD	01	08/19/2013 17:22	
WG441888-04	STD-CCV	01	08/19/2013 17:51	
WG441888-05	STD	01	08/19/2013 18:20	
WG441888-06	STD	01	08/19/2013 18:48	
WG441888-07	STD	01	08/19/2013 19:17	
WG441888-08	STD	01	08/19/2013 19:46	
WG441888-09	SSCV	01	08/19/2013 20:45	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3358282
Report generated 02/12/2014 13:04

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14011242
Instrument: HPMS9
Analyst: ADC
Workgroup: WG461445

Tune ID: WG461445-01
Run Date: 01/30/2014
Run Time: 08:30
File ID: 9M961121
Cal ID: HPMS9 - 30-JAN-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.6	10219	PASS
75.0	95.0	30.0	60.0	46.8	19440	PASS
95.0	95.0	100	100	100	41573	PASS
96.0	95.0	5.00	9.00	5.69	2365	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	85.9	35693	PASS
175	174	5.00	9.00	6.69	2388	PASS
176	174	95.0	101	95.7	34141	PASS
177	176	5.00	9.00	6.26	2138	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG461445-02	STD	01	01/30/2014 09:30	
WG461445-03	STD	01	01/30/2014 09:58	
WG461445-05	STD	01	01/30/2014 10:56	
WG461445-08	STD-CCV	01	01/30/2014 12:22	
WG461445-09	STD	01	01/30/2014 12:51	
WG461445-10	STD	01	01/30/2014 13:20	
WG461445-11	STD	01	01/30/2014 13:49	
WG461445-04	STD	01	01/30/2014 15:20	
WG461445-12	SSCV	01	01/30/2014 15:49	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3358282
Report generated 02/12/2014 13:04

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14011242
Instrument: HPMS9
Analyst: MES
Workgroup: WG461585

Tune ID: WG461585-01
Run Date: 01/30/2014
Run Time: 19:37
File ID: 9M961136
Cal ID: HPMS9 - 30-JAN-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	28.2	7518	PASS
75.0	95.0	30.0	60.0	50.1	13339	PASS
95.0	95.0	100	100	100	26639	PASS
96.0	95.0	5.00	9.00	7.62	2030	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	83.2	22158	PASS
175	174	5.00	9.00	7.61	1687	PASS
176	174	95.0	101	95.3	21114	PASS
177	176	5.00	9.00	6.96	1470	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG461585-02	CCV	01	01/30/2014 20:35	
WG461586-01	BLANK	01	01/30/2014 21:35	
L14011242-03	TRIP BLANK	01	01/31/2014 00:00	
L14011242-02	67WW11-012314	01	01/31/2014 00:29	
L14011242-04	67WW11 FD-012314	01	01/31/2014 00:58	
L14011242-01	67WW08-012314	DL02	01/31/2014 02:54	
WG461586-02	LCS	01	01/31/2014 04:22	
WG461586-03	LCS2	01	01/31/2014 04:51	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3358282
Report generated 02/12/2014 13:04

Response Factor Report HPMS17

Method Path : D:\MassHunter\GCMS\1\methods\
Method File : A9FOOWT.M
Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
Last Update : Thu Oct 17 17:39:37 2013
Response Via : Initial Calibration
Curve:WG448462
Calibration Files
5 =17M000186.D 20 =17M000187.D 50 =17M000188.D 100 =17M000189.D 200 =17M000190.D 300 =17M000191.D 400 =17M00019
500 =17M000193.D

	Compound	5	20	50	100	200	300	400	500	Avg	%RSD	Linear	Quadratic
1) I	Fluorobenzene	----------ISTD----------											
2) T	Acetonitrile		0.015	0.016	0.016	0.018	0.018	0.019	0.018	0.017	6.99		
3) T	3-Chloro-1-pro...	0.338	0.384	0.374	0.368	0.350	0.333	0.318	0.306	0.346	8.00		
4) T	2-Chloro-1,3-b...	0.284	0.344	0.339	0.340	0.330	0.319	0.309	0.299	0.320	6.81		
5) T	Methacrylonitrile	0.055	0.065	0.068	0.067	0.070	0.066	0.066	0.064	0.065	6.65		
6) T	Ethyl Acetate	0.124	0.142	0.149	0.150	0.156	0.149	0.150	0.146	0.146	6.70		
7) T	Isobutyl Alcohol		0.004	0.005	0.004	0.005	0.005	0.005	0.005	0.005	7.94		
8) T	1-Butanol			0.002	0.002	0.002	0.003	0.003	0.003	0.002	24.53	0.996	
9) T	Methyl methacr...	0.110	0.132	0.142	0.147	0.151	0.141	0.140	0.135	0.137	9.17		
10) T	2-Nitropropane		0.039	0.048	0.051	0.056	0.055	0.056	0.055	0.051	12.15		
11)	Chlorobenzene-d5	----------ISTD----------											
12) T	Cyclohexanone			0.004	0.004	0.005	0.005	0.006	0.006	0.005	18.06	0.993	
13) I	1,4-Dichlorobenzen...	----------ISTD----------											

(#) = Out of Range

A9FOOWT.M Thu Oct 17 17:45:24 2013

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
Last Calibration: Wed Jan 29 07:59:38 2014
Curve: WG461242
Calibration Files

Compound	0.3 17M002688.D	0.4 17M002689.D	1 17M002690.D	2 17M002691.D	5 17M002692.D	20 17M002693.D	50 17M002694.D	100 17M002695.D	200 17M002696.D	300 17M002697.D	Avg	%RSD	R^2 Linear	R^2 Quadratic
Fluorobenzene	ISTD													
Dichlorodifluoromethane			0.244	0.237	0.250	0.276	0.281	0.291	0.298	0.286	0.270	8.622		
Chloromethane			0.661	0.671	0.660	0.648	0.657	0.669	0.665	0.623	0.657	2.363		
Vinyl Chloride		0.630	0.589	0.515	0.524	0.521	0.519	0.527	0.523	0.474	0.536	8.560		
1,3-Butadiene					0.426	0.412	0.398	0.384	0.353	0.296	0.378	12.596		
Bromomethane			0.182	0.183	0.190	0.190	0.197	0.202	0.212	0.211	0.196	5.919		
Chloroethane			0.215	0.203	0.215	0.214	0.216	0.225	0.232	0.231	0.219	4.488		
Trichlorofluoromethane		0.399	0.430	0.444	0.456	0.449	0.462	0.480	0.495	0.479	0.455	6.418		
Diethyl ether			0.202	0.212	0.226	0.206	0.208	0.222		0.232	0.216	5.214		
Isoprene			0.345	0.344	0.374	0.369	0.405	0.429	0.435	0.453	0.394	10.684		
Acrolein				0.024	0.025	0.023	0.022	0.024		0.023	0.023	3.787		
1,1,2-Trichloro-1,2,2-Trifluoroet			0.250	0.259	0.271	0.260	0.266	0.275	0.281	0.271	0.267	3.752		
Acetone					0.081	0.059	0.054	0.056	0.056	0.053	0.060	17.991	0.999	
1,1-Dichloroethene		0.418	0.480	0.480	0.492	0.482	0.491	0.512	0.534	0.524	0.490	6.852		
Tert-Butyl Alcohol				0.021	0.016	0.015	0.014	0.013		0.013	0.016	19.007	0.999	
Dimethyl Sulfide			0.262	0.251	0.269	0.251	0.264	0.270	0.280	0.277	0.266	4.008		
Iodomethane			0.260	0.271	0.281	0.270	0.290	0.300	0.304	0.305	0.285	6.029		
Methyl acetate				0.203	0.216	0.170	0.164	0.172	0.168	0.168	0.180	11.274		
Methylene Chloride			0.363	0.326	0.317	0.295	0.298	0.317	0.338	0.339	0.324	6.910		
Carbon Disulfide			0.796	0.807	0.852	0.820	0.895	0.948	1.017	1.022	0.895	10.234		
Acrylonitrile			0.071	0.074	0.080	0.074	0.077	0.080		0.086	0.077	6.590		
Methyl Tert Butyl Ether			0.705	0.711	0.754	0.677	0.681	0.729	0.725	0.680	0.708	3.900		
trans-1,2-Dichloroethene		0.237	0.277	0.277	0.289	0.276	0.287	0.303	0.319	0.318	0.287	8.689		
n-Hexane			0.318	0.342	0.367	0.347	0.379	0.400	0.412	0.401	0.371	9.018		
Diisopropyl ether			1.010	1.055	1.124	1.038	1.060	1.129		1.120	1.077	4.418		
Vinyl Acetate				0.452	0.450	0.383	0.404	0.446	0.508	0.460	0.443	9.107		
1,1-Dichloroethane		0.510	0.550	0.559	0.569	0.556	0.572	0.602	0.637	0.630	0.576	7.017		
Ethyl-Tert-Butyl ether			0.874	0.916	0.972	0.895	0.908	0.963		0.959	0.927	4.086		
2-Butanone				0.086	0.096	0.081	0.081	0.085	0.085	0.082	0.085	6.013		
Propionitrile			0.025	0.027	0.029	0.026	0.025	0.027		0.027	0.027	4.544		
2,2-Dichloropropane		0.465	0.466	0.453	0.474	0.459	0.474	0.503	0.522	0.513	0.481	5.236		
cis-1,2-Dichloroethene		0.291	0.312	0.313	0.320	0.317	0.325	0.342	0.362	0.363	0.327	7.357		
Chloroform	0.546	0.513	0.547	0.546	0.565	0.542	0.561	0.590	0.617	0.614	0.564	5.946		
1-Bromopropane			0.053	0.056	0.057	0.055	0.059	0.060	0.062	0.061	0.058	5.414		
Bromochloromethane		0.153	0.197	0.188	0.201	0.193	0.196	0.206	0.213	0.210	0.195	9.129		
Tetrahydrofuran			0.057	0.059	0.062	0.055	0.054	0.055		0.056	0.057	5.160		
Dibromofluoromethane				0.288	0.290	0.262	0.279	0.287	0.293	0.288	0.284	3.768		
1,1,1-Trichloroethane		0.424	0.478	0.488	0.495	0.490	0.511	0.542	0.579	0.577	0.509	9.762		
Cyclohexane		0.448	0.523	0.503	0.532	0.503	0.550	0.575	0.615	0.621	0.541	10.341		
1,1-Dichloropropene		0.324	0.369	0.366	0.381	0.376	0.393	0.415	0.440	0.435	0.389	9.475		
Tert-Amyl-Methyl ether			0.665	0.711	0.761	0.700	0.708	0.759		0.788	0.728	5.936		
Carbon Tetrachloride		0.17	0.228	0.285	0.358	0.401	0.441	0.485	0.488		0.35726	33.3554		0.999
1,2-Dichloroethane-d4				0.326	0.352	0.297	0.304	0.31	0.31	0.307	0.31522	5.89918		
1,2-Dichloroethane		0.364	0.385	0.381	0.41	0.393	0.404	0.427	0.457	0.454	0.40821	7.92598		
Benzene		1.031	1.113	1.101	1.133	1.106	1.148	1.222	1.31	1.294	1.16205	8.06509		
Trichloroethene		0.273	0.307	0.305	0.336	0.327	0.336	0.349	0.362	0.367	0.32935	9.15364		
Methylcyclohexane			0.419	0.423	0.444	0.426	0.463	0.481	0.499	0.5	0.4569	7.4249		
1,2-Dichloropropane		0.262	0.3	0.298	0.316	0.307	0.313	0.332	0.347	0.351	0.31415	8.77749		
1,4-Dioxane				0.002	0.002	0.002	0.002	0.002		0.002	0.00183	10.8991		
Bromodichloromethane		0.33	0.367	0.379	0.405	0.409	0.425	0.456	0.481	0.485	0.41524	12.5886		
Dibromomethane		0.152	0.148	0.165	0.171	0.165	0.167	0.177	0.185	0.183	0.16809	7.50055		
2-Chloroethyl Vinyl Ether			0.127	0.135	0.145	0.14	0.147	0.158	0.165	0.165	0.14782	9.4283		
4-Methyl-2-Pentanone					0.075	0.071	0.072	0.076	0.078	0.078	0.07511	3.5776		
cis-1,3-Dichloropropene		0.361	0.436	0.448	0.46	0.451	0.473	0.506	0.536	0.54	0.46799	11.8388		
Dimethyl Disulfide					0.226	0.25	0.28	0.298	0.32	0.327	0.28374	13.9976		
Chlorobenzene-d5	ISTD													
Toluene-d8				1.441	1.507	1.347	1.408	1.438	1.461	1.442	1.43483	3.41548		
Toluene		1.587	1.655	1.653	1.734	1.679	1.74	1.863	1.94	1.85	1.74446	6.69119		
Ethyl Methacrylate			0.313	0.343	0.378	0.379	0.397	0.411	0.426	0.418	0.38305	10.1702		
trans-1,3-Dichloropropene		0.47	0.525	0.546	0.582	0.575	0.585	0.618	0.649	0.636	0.57633	9.78717		
1,1,2-Trichloroethane	0.301	0.263	0.309	0.306	0.337	0.31	0.309	0.324	0.334	0.329	0.31229	6.88977		
2-Hexanone				0.185	0.199	0.183	0.182	0.189	0.195	0.19	0.18898	3.36778		
1,3-Dichloropropane		0.525	0.538	0.536	0.562	0.529	0.527	0.552	0.572	0.56	0.54456	3.16867		
Tetrachloroethene		0.389	0.454	0.459	0.486	0.461	0.481	0.506	0.531	0.531	0.47752	9.23003		
Dibromochloromethane		0.296	0.329	0.358	0.4	0.413	0.429	0.458	0.478	0.473	0.4039	15.976	0.999	
1,2-Dibromoethane		0.263	0.294	0.304	0.325	0.316	0.32	0.334	0.347	0.338	0.31558	8.1285		
1-Chlorohexane		0.402	0.444	0.448	0.497	0.5	0.549	0.584	0.625	0.628	0.51944	15.7543		0.999
Chlorobenzene		1.021	1.091	1.091	1.141	1.105	1.15	1.253	1.351	1.344	1.17193	10.0101		
1,1,1,2-Tetrachloroethane		0.334	0.377	0.383	0.415	0.424	0.452	0.501	0.56	0.574	0.44669	18.588		0.999
Ethylbenzene		0.523	0.549	0.57	0.611	0.601	0.643	0.715	0.816	0.832	0.65124	17.2977		0.999
m-,p-Xylene		0.631	0.68	0.694	0.728	0.728	0.779	0.881	0.985	0.93	0.78173	15.6563		0.997
o-Xylene		0.626	0.707	0.688	0.744	0.721	0.754	0.829	0.916	0.94	0.76942	13.6538		
Styrene		0.814	0.909	0.971	1.084	1.158	1.255	1.399	1.544	1.544	1.1864	22.6742		0.999
Bromoform			0.197	0.203	0.243	0.261	0.275	0.299	0.313	0.314	0.26299	17.5853	0.998	
Isopropylbenzene		1.626	1.74	1.747	1.88	1.85	1.947	2.139	2.268	2.129	1.92496	11.153		
1,4-Dichlorobenzene-d4	ISTD													
1,1,2,2-Tetrachloroethane		0.705	0.794	0.75	0.705	0.643	0.651	0.706	0.73	0.704	0.70974	6.53329		
p-Bromofluorobenzene					1.128	1.027	1.065	1.125	1.12	1.137	1.10045	4.00335		
1,2,3-Trichloropropane		0.112	0.216	0.233	0.237	0.22	0.214	0.22	0.215	0.209	0.20844	17.8042		1

trans-1,4-Dichloro-2-Butene			0.157	0.19	0.21	0.22	0.238	0.249	0.255	0.253	0.22148	15.6453	0.999	
n-Propylbenzene		3.794	4.287	4.33	4.555	4.596	4.819	5.226	5.218	4.642	4.60742	9.84476		
Bromobenzene	0.967	0.949	1.035	1.04	1.08	1.032	1.038	1.101	1.132	1.149	1.05225	6.17075		
1,3,5-Trimethylbenzene		2.907	3.209	3.072	3.243	3.244	3.373	3.695	3.8	3.641	3.35376	8.96642		
2-Chlorotoluene		2.785	3.045	3.021	3.106	3.025	3.124	3.032	3.039	2.899	3.00841	3.48605		
4-Chlorotoluene		2.257	2.445	2.378	2.521	2.474	2.584	2.863	3.024	2.964	2.6121	10.4302		
a-Methylstyrene				1.339	1.514	1.645	1.837	1.998	2.104	2.187	1.80331	17.5517	0.997	
tert-Butylbenzene		0.558	0.714	0.683	0.712	0.698	0.705	0.764	0.796	0.821	0.71673	10.6255		
1,2,4-Trimethylbenzene		2.892	3.105	3.138	3.336	3.333	3.466	3.795	3.882	3.708	3.40614	9.89666		
sec-Butylbenzene		3.558	3.894	3.917	4.167	4.187	4.326	4.743	4.794	4.396	4.22013	9.49982		
p-Isopropyltoluene		2.814	3.157	3.082	3.401	3.442	3.573	3.962	4.037	3.797	3.47393	11.8933		
1,3-Dichlorobenzene		1.747	1.743	1.83	1.878	1.883	1.928	2.103	2.2	2.224	1.94836	9.42387		
1,4-Dichlorobenzene	1.935	1.712	1.834	1.789	1.862	1.865	1.919	2.087	2.184	2.217	1.94024	8.69086		
n-Butylbenzene		2.276	2.426	2.525	2.807	2.985	3.232	3.593	3.751	3.545	3.01561	18.0959		0.998
1,2-Dichlorobenzene	1.777	1.732	1.752	1.78	1.858	1.802	1.823	1.952	2.026	2.033	1.85348	6.01185		
1,2-Dibromo-3-Chloropropane				0.119	0.122	0.121	0.119	0.128	0.13	0.126	0.12343	3.5773		
1,2,4-Trichlorobenzene		1.062	1.066	1.11	1.183	1.225	1.277	1.42	1.499	1.536	1.26426	14.4117		
Hexachlorobutadiene		0.517	0.633	0.66	0.683	0.697	0.716	0.785	0.805	0.813	0.70109	13.4497		
Naphthalene		1.985	2.116	2.196	2.393	2.375	2.352	2.488	2.501	2.387	2.31039	7.54993		
1,2,3-Trichlorobenzene	1.044	0.978	1.12	1.086	1.141	1.173	1.184	1.261	1.305	1.308	1.16	9.45093		

Mon Feb 03 14:25:23 2014

Calibration Table Report
Method: A9FOOWT.M
Title: FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Calibration: Tue Aug 20 15:10:19 2013
Curve: WG441888
Calibration Files

Compound	5 9M957895.D	20 9M957896.D	50 9M957897.D	100 9M957898.D	200 9M957899.D	300 9M957900.D	400 9M957901.D	500 9M957902.D	Avg	%RSD
Fluorobenzene	ISTD									
Acetonitrile	0.020	0.022	0.023	0.021	0.022	0.021	0.022	0.023	0.022	3.924
3-Chloro-1-propene	0.338	0.346	0.375	0.349	0.358	0.348	0.343	0.363	0.352	3.490
2-Chloro-1,3-butadiene	0.338	0.363	0.398	0.373	0.390	0.382	0.380	0.403	0.378	5.543
Ethyl Acetate	0.150	0.169	0.184	0.171	0.174	0.169	0.166	0.176	0.170	5.676
Methacrylonitrile	0.072	0.083	0.091	0.084	0.088	0.086	0.086	0.093	0.086	7.408
Isobutyl Alcohol	0.014	0.015	0.015	0.013	0.014	0.014	0.015	0.016	0.015	6.105
1-Butanol		0.003	0.003	0.003	0.004	0.004	0.004		0.004	12.474
Methyl methacrylate	0.164	0.173	0.191	0.178	0.183	0.180	0.177	0.189	0.179	4.819
2-Nitropropane	0.048	0.051	0.057	0.056	0.061	0.060	0.060	0.065	0.057	10.037
Chlorobenzene-d5	ISTD									
Cyclohexanone	0.044	0.032	0.036	0.034	0.035	0.034	0.035	0.037	0.036	10.211
1,4-Dichlorobenzene-d4	ISTD									

Tue Aug 20 15:10:40 2013

Calibration Table Report
Method: 8260WTR.M
Title: 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Calibration: Thu Jan 30 20:21:06 2014
Curve: WG461445
Calibration Files

Compound		0.3 9M961123.D	0.4 9M961124.D	1 9M961134.D	2 9M961126.D	5 9M961127.D	20 9M961128.D	50 9M961129.D	100 9M961130.D	200 9M961131.D	300 9M961132.D	Avg	%RSD	R^2 Linear	R^2 Quadratic
Fluorobenzene	ISTD														
Dichlorodifluoromethane				0.049	0.052	0.059	0.182	0.189	0.181	0.185	0.176	0.134	49.964	0.997	
Chloromethane				0.274	0.225	0.203	0.305	0.314	0.276	0.296	0.291	0.273	14.368		
Vinyl Chloride			0.219	0.226	0.242	0.227	0.301	0.319	0.295	0.304	0.274	0.268	14.574		
1,3-Butadiene						0.200	0.263	0.219	0.184	0.184	0.165	0.203	17.155		0.999
Bromomethane			0.248	0.212	0.206	0.168	0.184	0.199	0.184	0.201	0.194	0.199	11.192		
Chloroethane			0.186	0.153	0.194	0.194	0.216	0.233	0.213	0.224	0.215	0.203	11.992		
Trichlorofluoromethane			0.118	0.371	0.391	0.382	0.433	0.453	0.423	0.435	0.404	0.379	26.820	0.998	
Diethyl ether				0.239	0.222	0.261	0.248	0.269	0.250		0.248	0.248	6.124		
Isoprene			0.390	0.332	0.342	0.354	0.391	0.425	0.388	0.398	0.369	0.377	7.903		
Acrolein				0.028	0.025	0.030	0.031	0.037	0.033		0.034	0.031	12.566	0.995	
1,1,2-Trichloro-1,2,2-Trifluoroe			0.221	0.225	0.231	0.225	0.260	0.272	0.253	0.261	0.243	0.243	7.668		
Acetone						0.091	0.074	0.085	0.080	0.087	0.084	0.083	7.087		
1,1-Dichloroethene			0.408	0.426	0.459	0.446	0.507	0.525	0.485	0.495	0.460	0.468	8.244		
Tert-Butyl Alcohol				0.020	0.017	0.022	0.021	0.022	0.024		0.029	0.022	15.946		0.998
Dimethyl Sulfide			0.282	0.257	0.272	0.284	0.304	0.331	0.302	0.312	0.292	0.293	7.626		
Iodomethane				0.018	0.119	0.175	0.273	0.302	0.284	0.293	0.273	0.217	47.593		0.998
Methyl acetate				0.204	0.260	0.253	0.242	0.256	0.250	0.254	0.243	0.245	7.245		
Methylene Chloride			0.248	0.255	0.252	0.275	0.292	0.302	0.277	0.290	0.270	0.273	6.932		
Carbon Disulfide			0.779	0.952	0.757	0.719	0.831	0.891	0.821	0.830	0.770	0.817	8.755		
Acrylonitrile				0.087	0.083	0.106	0.107	0.119	0.116			0.103	14.639		
Methyl Tert Butyl Ether			0.694	0.651	0.694	0.717	0.728	0.779	0.726	0.759	0.711	0.718	5.230		
trans-1,2-Dichloroethene			0.429	0.493	0.446	0.464	0.475	0.495	0.455	0.472	0.436	0.463	5.071		
n-Hexane			0.356	0.423	0.364	0.390	0.458	0.486	0.459	0.465	0.425	0.425	10.913		
Diisopropyl ether				1.199	1.147	1.357	1.282	1.361	1.223		1.176	1.249	6.867		
Vinyl Acetate					0.396	0.445	0.540	0.623	0.593	0.614	0.560	0.539	16.146	0.998	
1,1-Dichloroethane			0.639	0.580	0.614	0.591	0.619	0.635	0.586	0.603	0.555	0.602	4.563		
Ethyl-Tert-Butyl ether				0.959	0.914	1.087	1.030	1.107	1.015		0.994	1.015	6.682		
2-Butanone						0.121	0.118	0.126	0.129	0.132	0.130	0.126	4.483		
Propionitrile				0.031	0.029	0.037	0.036	0.041	0.040		0.044	0.037	14.673	0.995	
2,2-Dichloropropane			0.436	0.398	0.459	0.461	0.468	0.494	0.453	0.466	0.428	0.451	6.098		
cis-1,2-Dichloroethene			0.345	0.289	0.306	0.291	0.303	0.317	0.289	0.300	0.281	0.303	6.319		
Chloroform		0.446	0.478	0.451	0.486	0.513	0.510	0.536	0.493	0.513	0.476	0.490	5.840		
1-Bromopropane				0.034	0.054	0.046	0.050	0.057	0.052	0.053	0.052	0.050	14.431	0.999	
Bromochloromethane			0.151	0.148	0.164	0.171	0.174	0.186	0.175	0.183	0.173	0.169	7.608		
Tetrahydrofuran				0.065	0.065	0.080	0.078	0.085	0.082		0.083	0.077	11.012		
Dibromofluoromethane				0.242	0.251	0.247	0.240	0.266	0.250	0.259	0.242	0.249	3.595		
1,1,1-Trichloroethane			0.501	0.364	0.438	0.433	0.437	0.460	0.425	0.441	0.411	0.434	8.454		
Cyclohexane			0.561	0.550	0.575	0.616	0.638	0.667	0.616	0.621	0.574	0.602	6.471		
1,1-Dichloropropene			0.317	0.324	0.373	0.367	0.385	0.409	0.375	0.387	0.359	0.366	8.048		
Tert-Amyl-Methyl ether				0.652	0.623	0.755	0.711	0.759	0.708		0.700	0.701	7.107		
Carbon Tetrachloride			0.36663	0.36776	0.40305	0.38917	0.39652	0.41855	0.39413	0.40469	0.37859	0.39101	4.45109		
1,2-Dichloroethane-d4					0.36424	0.31437	0.26879	0.29811	0.28088	0.29196	0.27261	0.29871	11.0015		
Heptane												0	0		
1,2-Dichloroethane			0.46759	0.41362	0.42381	0.44116	0.43939	0.46366	0.42179	0.43595	0.40659	0.43484	4.81403		
Benzene			1.16884	1.05586	1.15245	1.14858	1.13825	1.19483	1.08112	1.09825	0.99786	1.11512	5.58142		
Trichloroethene			0.29566	0.31389	0.31087	0.2943	0.30016	0.30747	0.28183	0.29031	0.26852	0.29589	4.89906		
Methylcyclohexane			0.46796	0.40367	0.40888	0.42394	0.44924	0.47863	0.4448	0.45214	0.42005	0.43881	5.95423		
1,2-Dichloropropane			0.29237	0.34193	0.3375	0.34778	0.34638	0.37138	0.33862	0.35185	0.33128	0.3399	6.22605		
1,4-Dioxane					0.00152	0.00178	0.00186	0.00214	0.00228			0.00192	15.6882	0.995	
Bromodichloromethane			0.33462	0.36151	0.41059	0.38797	0.40831	0.42802	0.39612	0.41322	0.38867	0.39212	7.33906		
Dibromomethane			0.14477	0.15335	0.17393	0.17316	0.18177	0.19274	0.18109	0.19099	0.18234	0.1749	9.25123		
2-Chloroethyl Vinyl Ether				0.14255	0.15147	0.15912	0.16142	0.18338	0.17923	0.18772	0.17985	0.16809	9.89115		
4-Methyl-2-Pentanone						0.0998	0.09629	0.11061	0.11091	0.11431	0.11711	0.10817	7.64677		
cis-1,3-Dichloropropene			0.42132	0.42169	0.44255	0.45664	0.4798	0.50353	0.46869	0.48928	0.45923	0.4603	6.19223		
Dimethyl Disulfide				0.4242	0.50286	0.50766	0.50309	0.5615	0.51663	0.53156	0.50174	0.50615	7.67979		
Chlorobenzene-d5	ISTD														
Toluene-d8					1.33106	1.27136	1.03367	1.08662	1.01147	1.03056	0.9346	1.09991	13.2453		
Toluene			1.6473	1.50286	1.49292	1.58699	1.59856	1.60558	1.45928	1.47055	1.28891	1.51699	7.171		
Ethyl Methacrylate				0.34729	0.41026	0.40513	0.44627	0.4739	0.44097	0.46432	0.44285	0.42887	9.44881		
trans-1,3-Dichloropropene			0.48268	0.51987	0.49063	0.536	0.57653	0.60158	0.56384	0.59493	0.54926	0.54615	7.82268		
1,1,2-Trichloroethane			0.25067	0.23954	0.26492	0.28849	0.30342	0.30493	0.28434	0.29987	0.28291	0.2799	8.36814		
2-Hexanone						0.23447	0.24146	0.26419	0.26785	0.28151	0.28008	0.26159	7.5016		
1,3-Dichloropropane			0.58282	0.49588	0.49623	0.55541	0.57245	0.58112	0.53809	0.55379	0.51993	0.54397	6.21106		
Tetrachloroethene			0.33291	0.35803	0.33247	0.33088	0.34988	0.35522	0.33426	0.34629	0.31513	0.33945	4.07805		
Dibromochloromethane			0.32657	0.32955	0.35149	0.34893	0.37789	0.39656	0.37035	0.38998	0.37286	0.36269	6.89505		
1,2-Dibromoethane			0.28329	0.30575	0.29613	0.30746	0.32892	0.33755	0.32371	0.34078	0.32173	0.31615	6.10531		
1-Chlorohexane			0.47455	0.41079	0.45336	0.44504	0.48967	0.51034	0.48472	0.49757	0.4597	0.46953	6.5305		
Chlorobenzene			1.1372	1.04896	1.10155	1.00791	1.08983	1.108	1.02447	1.03487	0.93768	1.0545	5.83623		
1,1,1,2-Tetrachloroethane			0.31793	0.37611	0.3865	0.40825	0.4139	0.42059	0.39668	0.4079	0.38434	0.39025	7.91646		
Ethylbenzene			0.58459	0.56002	0.55594	0.58695	0.59642	0.61016	0.57306	0.58034	0.52231	0.57442	4.49069		
m-,p-Xylene			0.7296	0.66999	0.71088	0.7212	0.73514	0.74335	0.68251	0.67662	0.59458	0.69599	6.67739		
o-Xylene			0.74324	0.66004	0.69315	0.73619	0.74603	0.75143	0.7071	0.72218	0.66629	0.71396	4.8297		
Styrene			1.17756	1.01792	1.16991	1.20116	1.26193	1.26988	1.20252	1.22283	1.12482	1.18317	6.47222		
Bromoform			0.21411	0.19934	0.22886	0.2371	0.27158	0.28489	0.28253			0.24549	13.9798		
Isopropylbenzene			2.02564	1.71599	1.76119	1.86369	1.89717	1.8774	1.77435	1.76721	1.57502	1.80641	7.08254		
1,4-Dichlorobenzene-d4	ISTD														
1,1,2,2-Tetrachloroethane			0.5285	0.55109	0.56868	0.63331	0.74372	0.7673	0.74558	0.77048	0.76212	0.67453	15.262	1	
p-Bromofluorobenzene					1.10548	1.10456	1.00761	1.03892	0.9635	0.96788	0.91106	1.01414	7.25795		
1,2,3-Trichloropropane			0.13018	0.18203	0.23578	0.24437	0.2376	0.23135	0.22376	0.22723	0.22015	0.21472	16.9575	0.999	

trans-1,4-Dichloro-2-Butene		0.25668	0.22043	0.24713	0.30207	0.32999	0.27895	0.31431	0.30678	0.28204	13.4151	0.998
n-Propylbenzene	3.78987	3.95543	4.02183	4.2378	4.43535	4.391	3.96261	3.74531	3.19456	3.97042	9.56045	
Bromobenzene	0.87287	0.90691	0.89941	0.86372	0.96569	0.97877	0.98538	0.90493	0.91102	0.83857	0.91273	5.44274
1,3,5-Trimethylbenzene	2.89219	2.89537	3.19372	3.31269	3.36303	3.3503	3.03065	2.96727	2.59148	3.0663	8.48643	
2-Chlorotoluene	2.58179	2.79945	2.60958	2.63646	2.74745	2.67678	2.43656	2.35719	2.41104	2.58403	5.93638	
4-Chlorotoluene	1.98188	2.4675	2.514	2.69769	2.65446	2.65336	2.46967	2.43105	1.83349	2.41146	12.5738	
a-Methylstyrene		1.30871	1.45225	1.64808	1.70841	1.72703	1.60917	1.56328	1.43496	1.55649	9.41749	
tert-Butylbenzene	0.70216	0.57882	0.72719	0.73967	0.73492	0.72908	0.66591	0.67633	0.61121	0.68503	8.4266	
1,2,4-Trimethylbenzene	2.96795	2.88539	2.9134	3.20297	3.32328	3.42949	3.40393	3.07707	2.96973	2.60011	3.07733	8.54249
sec-Butylbenzene	3.63588	3.45031	3.85769	4.17428	4.25047	4.17766	3.79132	3.61184	3.12661	3.78623	9.90608	
p-Isopropyltoluene	2.68259	2.74503	3.03296	3.16033	3.31984	3.33338	3.03489	2.9569	2.60124	2.98524	8.91105	
1,3-Dichlorobenzene	1.72322	1.63951	1.68234	1.78014	1.83791	1.84218	1.70568	1.71114	1.56602	1.7209	5.21124	
1,4-Dichlorobenzene	1.7338	1.62777	1.80611	1.58771	1.7964	1.80321	1.85644	1.72898	1.72681	1.57785	1.72451	5.63942
n-Butylbenzene	2.08073	2.47616	2.25872	2.54876	2.88525	2.97846	2.76297	2.72901	2.42263	2.57141	11.4704	
1,2-Dichlorobenzene	1.57303	1.65206	1.59322	1.65253	1.7908	1.78682	1.81416	1.68215	1.66147	1.54711	1.67533	5.62703
1,2-Dibromo-3-Chloropropane			0.13854	0.14149	0.15269	0.17134	0.16559	0.17793	0.17575	0.16048	10.1269	
1,2,4-Trichlorobenzene	0.99928	1.15634	1.18788	1.05363	1.17881	1.32035	1.36665	1.30046	1.37307	1.26768	1.22042	10.4696
Hexachlorobutadiene	0.58946	0.59957	0.56015	0.64005	0.723	0.76449	0.73225	0.75315	0.70242	0.67384	11.4779	
Naphthalene	2.1621	2.28506	2.29108	2.35426	2.60196	2.68535	2.53147	2.55623	2.30725	2.41942	7.34856	
1,2,3-Trichlorobenzene	1.14687	1.10333	1.11526	1.14142	1.26144	1.33159	1.23888	1.2931	1.18983	1.20241	6.83931	

Fri Feb 07 15:08:40 2014

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14011242 Run Date: 01/28/2014 Sample ID: WG461242-12
Instrument ID: HPMS17 Run Time: 20:19 Method: 8260B
File ID: 17M002699 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG461242 Cal ID: HPMS17 - 28-JAN-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.2	ug/L	0.543	3.70	20	
1,1-Dichloroethene	CCC	50.0	44.4	ug/L	0.435	11.2	20	
1,2-Dichloropropane	CCC	50.0	49.2	ug/L	0.309	1.60	20	
Ethylbenzene	CCC	50.0	45.9	ug/L	0.619	8.30	20	
Toluene	CCC	50.0	48.8	ug/L	1.70	2.40	20	
Vinyl Chloride	CCC	50.0	39.4	ug/L	0.423	21.1	20	*
Bromoform	SPCC	50.0	43.9	ug/L	0.267	12.2	20	
Chlorobenzene	SPCC	50.0	44.6	ug/L	1.05	10.8	20	
Chloromethane	SPCC	50.0	41.2	ug/L	0.541	17.7	20	
1,1-Dichloroethane	SPCC	50.0	47.0	ug/L	0.542	5.90	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.1	ug/L	0.654	7.90	20	
Acetone		50.0	45.0	ug/L	0.0506	10.0	20	
Benzene		50.0	47.6	ug/L	1.11	4.70	20	
Bromobenzene		50.0	46.5	ug/L	0.978	7.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.185	5.10	20	
Bromodichloromethane		50.0	48.1	ug/L	0.400	3.70	20	
Bromomethane		50.0	42.8	ug/L	0.168	14.5	20	
2-Butanone		50.0	44.9	ug/L	0.0764	10.3	20	
n-Butylbenzene		50.0	47.9	ug/L	3.30	4.20	20	
sec-Butylbenzene		50.0	45.4	ug/L	3.83	9.30	20	
tert-Butylbenzene		50.0	43.0	ug/L	0.617	14.0	20	
Carbon Disulfide		50.0	44.3	ug/L	0.792	11.5	20	
Carbon Tetrachloride		50.0	47.0	ug/L	0.419	6.10	20	
Dibromochloromethane		50.0	43.5	ug/L	0.404	13.1	20	
Chloroethane		50.0	44.2	ug/L	0.193	11.7	20	
2-Chlorotoluene		50.0	41.9	ug/L	2.52	16.3	20	
4-Chlorotoluene		50.0	43.5	ug/L	2.27	13.0	20	
1,2-Dibromo-3-Chloropropane		50.0	47.3	ug/L	0.117	5.30	20	
1,2-Dibromoethane		50.0	48.9	ug/L	0.309	2.10	20	
Dibromomethane		50.0	46.9	ug/L	0.158	6.20	20	
1,2-Dichlorobenzene		50.0	44.7	ug/L	1.66	10.5	20	
1,3-Dichlorobenzene		50.0	45.0	ug/L	1.75	9.90	20	
1,4-Dichlorobenzene		50.0	48.7	ug/L	1.89	2.50	20	
Dichlorodifluoromethane		50.0	41.6	ug/L	0.225	16.7	20	
1,2-Dichloroethane		50.0	48.3	ug/L	0.394	3.40	20	
cis-1,2-Dichloroethene		50.0	47.7	ug/L	0.312	4.60	20	
trans-1,2-Dichloroethene		50.0	48.4	ug/L	0.278	3.20	20	
1,3-Dichloropropane		50.0	47.6	ug/L	0.519	4.80	20	
2,2-Dichloropropane		50.0	46.0	ug/L	0.442	8.10	20	
cis-1,3-Dichloropropene		50.0	51.1	ug/L	0.479	2.20	20	
trans-1,3-Dichloropropene		50.0	47.8	ug/L	0.552	4.30	20	
1,1-Dichloropropene		50.0	49.8	ug/L	0.388	0.300	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3352790
Report generated 02/12/2014 13:04

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14011242 Run Date: 01/28/2014 Sample ID: WG461242-12
Instrument ID: HPMS17 Run Time: 20:19 Method: 8260B
File ID: 17M002699 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG461242 Cal ID: HPMS17 - 28-JAN-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	46.3	ug/L	0.175	7.30	20	
Hexachlorobutadiene		50.0	53.5	ug/L	0.750	7.00	20	
Isopropylbenzene		50.0	45.8	ug/L	1.76	8.30	20	
p-Isopropyltoluene		50.0	46.8	ug/L	3.25	6.40	20	
4-Methyl-2-Pentanone		50.0	46.3	ug/L	0.0695	7.50	20	
Methylene Chloride		50.0	43.8	ug/L	0.284	12.4	20	
Naphthalene		50.0	48.5	ug/L	2.24	3.10	20	
n-Propylbenzene		50.0	44.7	ug/L	4.12	10.5	20	
Styrene		50.0	46.5	ug/L	1.23	7.00	20	
1,1,1,2-Tetrachloroethane		50.0	47.2	ug/L	0.446	5.70	20	
Tetrachloroethene		50.0	48.4	ug/L	0.462	3.20	20	
1,2,3-Trichlorobenzene		50.0	49.2	ug/L	1.14	1.70	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.27	0.300	20	
1,1,1-Trichloroethane		50.0	48.3	ug/L	0.492	3.50	20	
1,1,2-Trichloroethane		50.0	48.5	ug/L	0.303	2.90	20	
Trichloroethene		50.0	49.1	ug/L	0.324	1.80	20	
Trichlorofluoromethane		50.0	49.0	ug/L	0.445	2.10	20	
1,2,3-Trichloropropane		50.0	46.4	ug/L	0.205	7.30	20	
1,2,4-Trimethylbenzene		50.0	49.8	ug/L	3.39	0.400	20	
1,3,5-Trimethylbenzene		50.0	49.2	ug/L	3.30	1.70	20	
o-Xylene		50.0	44.1	ug/L	0.678	11.9	20	
m-,p-Xylene		100	86.1	ug/L	0.728	13.9	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3352790
Report generated 02/12/2014 13:04

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14011242 Run Date: 01/30/2014 Sample ID: WG461445-12
Instrument ID: HPMS9 Run Time: 15:49 Method: 8260B
File ID: 9M961135 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG461445 Cal ID: HPMS9 - 30-JAN-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.5	ug/L	0.495	0.900	20	
1,1-Dichloroethene	CCC	50.0	46.1	ug/L	0.431	7.80	20	
1,2-Dichloropropane	CCC	50.0	50.8	ug/L	0.346	1.60	20	
Ethylbenzene	CCC	50.0	49.2	ug/L	0.565	1.70	20	
Toluene	CCC	50.0	49.5	ug/L	1.50	1.00	20	
Vinyl Chloride	CCC	50.0	43.8	ug/L	0.235	12.3	20	
Bromoform	SPCC	50.0	58.9	ug/L	0.289	17.9	20	
Chlorobenzene	SPCC	50.0	45.4	ug/L	0.958	9.10	20	
Chloromethane	SPCC	50.0	52.2	ug/L	0.285	4.50	20	
1,1-Dichloroethane	SPCC	50.0	47.5	ug/L	0.572	5.00	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	53.0	ug/L	0.804	6.00	20	
Acetone		50.0	67.4	ug/L	0.112	34.7	20	*
Benzene		50.0	49.5	ug/L	1.10	1.00	20	
Bromobenzene		50.0	47.2	ug/L	0.862	5.60	20	
Bromochloromethane		50.0	49.8	ug/L	0.169	0.400	20	
Bromodichloromethane		50.0	48.3	ug/L	0.379	3.40	20	
Bromomethane		50.0	44.0	ug/L	0.176	12.0	20	
2-Butanone		50.0	58.6	ug/L	0.148	17.1	20	
n-Butylbenzene		50.0	54.9	ug/L	2.82	9.80	20	
sec-Butylbenzene		50.0	45.0	ug/L	3.41	10.0	20	
tert-Butylbenzene		50.0	44.2	ug/L	0.606	11.6	20	
Carbon Disulfide		50.0	44.5	ug/L	0.728	10.9	20	
Carbon Tetrachloride		50.0	47.5	ug/L	0.372	5.00	20	
Dibromochloromethane		50.0	50.4	ug/L	0.366	0.900	20	
Chloroethane		50.0	48.3	ug/L	0.196	3.50	20	
2-Chlorotoluene		50.0	42.7	ug/L	2.20	14.7	20	
4-Chlorotoluene		50.0	46.6	ug/L	2.25	6.90	20	
1,2-Dibromo-3-Chloropropane		50.0	59.1	ug/L	0.190	18.2	20	
1,2-Dibromoethane		50.0	52.6	ug/L	0.333	5.20	20	
Dibromomethane		50.0	51.7	ug/L	0.181	3.40	20	
1,2-Dichlorobenzene		50.0	49.8	ug/L	1.67	0.500	20	
1,3-Dichlorobenzene		50.0	45.7	ug/L	1.57	8.60	20	
1,4-Dichlorobenzene		50.0	50.9	ug/L	1.76	1.80	20	
Dichlorodifluoromethane		50.0	42.7	ug/L	0.151	14.6	20	
1,2-Dichloroethane		50.0	49.7	ug/L	0.432	0.700	20	
cis-1,2-Dichloroethene		50.0	47.2	ug/L	0.286	5.60	20	
trans-1,2-Dichloroethene		50.0	48.7	ug/L	0.451	2.60	20	
1,3-Dichloropropane		50.0	52.0	ug/L	0.566	4.10	20	
2,2-Dichloropropane		50.0	48.2	ug/L	0.435	3.70	20	
cis-1,3-Dichloropropene		50.0	52.8	ug/L	0.487	5.70	20	
trans-1,3-Dichloropropene		50.0	51.0	ug/L	0.557	2.10	20	
1,1-Dichloropropene		50.0	49.3	ug/L	0.361	1.50	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3352790
Report generated 02/12/2014 13:04

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14011242 Run Date: 01/30/2014 Sample ID: WG461445-12
Instrument ID: HPMS9 Run Time: 15:49 Method: 8260B
File ID: 9M961135 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG461445 Cal ID: HPMS9 - 30-JAN-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	60.4	ug/L	0.316	20.9	20	*
Hexachlorobutadiene		50.0	57.0	ug/L	0.769	14.1	20	
Isopropylbenzene		50.0	45.2	ug/L	1.63	9.70	20	
p-Isopropyltoluene		50.0	47.3	ug/L	2.83	5.30	20	
4-Methyl-2-Pentanone		50.0	53.4	ug/L	0.116	6.90	20	
Methylene Chloride		50.0	50.7	ug/L	0.277	1.40	20	
Naphthalene		50.0	58.6	ug/L	2.83	17.1	20	
n-Propylbenzene		50.0	43.8	ug/L	3.48	12.3	20	
Styrene		50.0	51.4	ug/L	1.22	2.80	20	
1,1,1,2-Tetrachloroethane		50.0	51.2	ug/L	0.400	2.40	20	
Tetrachloroethene		50.0	48.4	ug/L	0.329	3.20	20	
1,2,3-Trichlorobenzene		50.0	56.8	ug/L	1.37	13.6	20	
1,2,4-Trichlorobenzene		50.0	57.7	ug/L	1.41	15.5	20	
1,1,1-Trichloroethane		50.0	47.4	ug/L	0.412	5.10	20	
1,1,2-Trichloroethane		50.0	53.9	ug/L	0.302	7.90	20	
Trichloroethene		50.0	46.6	ug/L	0.276	6.70	20	
Trichlorofluoromethane		50.0	47.2	ug/L	0.396	5.50	20	
1,2,3-Trichloropropane		50.0	52.6	ug/L	0.236	5.10	20	
1,2,4-Trimethylbenzene		50.0	50.6	ug/L	3.11	1.20	20	
1,3,5-Trimethylbenzene		50.0	48.7	ug/L	2.99	2.60	20	
o-Xylene		50.0	45.4	ug/L	0.649	9.10	20	
m-,p-Xylene		100	94.7	ug/L	0.659	5.30	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3352790
Report generated 02/12/2014 13:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14011242 Run Date: 01/30/2014 Sample ID: WG461585-02
Instrument ID: HPMS9 Run Time: 20:35 Method: 8260B
File ID: 9M961138 Analyst: MES QC Key: DOD4
Workgroup (AAB#): WG461586 Cal ID: HPMS9 - 30-JAN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.4	ug/L	0.494	0.726	20	
1,1-Dichloroethene	CCC	50.0	52.4	ug/L	0.490	4.78	20	
1,2-Dichloropropane	CCC	50.0	50.2	ug/L	0.341	0.338	20	
Ethylbenzene	CCC	50.0	52.2	ug/L	0.599	4.34	20	
Toluene	CCC	50.0	50.6	ug/L	1.54	1.21	20	
Vinyl Chloride	CCC	50.0	55.6	ug/L	0.297	11.1	20	
Bromoform	SPCC	50.0	54.4	ug/L	0.267	8.73	20	
Chlorobenzene	SPCC	50.0	49.5	ug/L	1.04	1.02	20	
Chloromethane	SPCC	50.0	50.5	ug/L	0.276	1.02	20	
1,1-Dichloroethane	SPCC	50.0	48.5	ug/L	0.584	3.02	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	50.0	ug/L	0.759	0.0568	20	
Xylenes		150	153	ug/L	0.715	1.87	20	
Acetone		50.0	46.9	ug/L	0.0782	6.19	20	
Benzene		50.0	49.7	ug/L	1.11	0.641	20	
Bromobenzene		50.0	51.3	ug/L	0.937	2.66	20	
Bromochloromethane		50.0	51.2	ug/L	0.174	2.41	20	
Bromodichloromethane		50.0	50.2	ug/L	0.394	0.399	20	
Bromomethane		50.0	47.0	ug/L	0.187	6.07	20	
2-Butanone		50.0	46.5	ug/L	0.117	6.99	20	
n-Butylbenzene		50.0	59.1	ug/L	3.04	18.3	20	
sec-Butylbenzene		50.0	54.7	ug/L	4.14	9.45	20	
tert-Butylbenzene		50.0	51.1	ug/L	0.700	2.24	20	
Carbon Disulfide		50.0	51.8	ug/L	0.847	3.68	20	
Carbon Tetrachloride		50.0	49.1	ug/L	0.384	1.76	20	
Dibromochloromethane		50.0	50.6	ug/L	0.367	1.26	20	
Chloroethane		50.0	52.0	ug/L	0.211	4.05	20	
2-Chlorotoluene		50.0	49.7	ug/L	2.57	0.519	20	
4-Chlorotoluene		50.0	54.8	ug/L	2.64	9.52	20	
1,2-Dibromo-3-Chloropropane		50.0	50.3	ug/L	0.161	0.570	20	
1,2-Dibromoethane		50.0	50.0	ug/L	0.316	0.0540	20	
Dibromomethane		50.0	50.2	ug/L	0.176	0.481	20	
1,2-Dichlorobenzene		50.0	51.7	ug/L	1.73	3.49	20	
1,3-Dichlorobenzene		50.0	52.8	ug/L	1.82	5.70	20	
1,4-Dichlorobenzene		50.0	52.7	ug/L	1.82	5.31	20	
Dichlorodifluoromethane		50.0	48.4	ug/L	0.171	3.27	20	
1,2-Dichloroethane		50.0	48.1	ug/L	0.419	3.74	20	
cis-1,2-Dichloroethene		50.0	47.8	ug/L	0.289	4.42	20	
trans-1,2-Dichloroethene		50.0	50.9	ug/L	0.471	1.73	20	
1,3-Dichloropropane		50.0	50.2	ug/L	0.546	0.370	20	
2,2-Dichloropropane		50.0	51.8	ug/L	0.467	3.52	20	
cis-1,3-Dichloropropene		50.0	50.9	ug/L	0.469	1.80	20	
trans-1,3-Dichloropropene		50.0	51.0	ug/L	0.557	2.04	20	

CCV - Modified 03/05/2008
PDF File ID: 3352793
Report generated 02/12/2014 13:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14011242 Run Date: 01/30/2014 Sample ID: WG461585-02
Instrument ID: HPMS9 Run Time: 20:35 Method: 8260B
File ID: 9M961138 Analyst: MES QC Key: DOD4
Workgroup (AAB#): WG461586 Cal ID: HPMS9 - 30-JAN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.8	ug/L	0.380	3.66	20	
2-Hexanone		50.0	45.8	ug/L	0.240	8.45	20	
Hexachlorobutadiene		50.0	57.5	ug/L	0.775	15.0	20	
Isopropylbenzene		50.0	50.7	ug/L	1.83	1.38	20	
p-Isopropyltoluene		50.0	55.4	ug/L	3.31	10.8	20	
4-Methyl-2-Pentanone		50.0	46.4	ug/L	0.100	7.21	20	
Methylene Chloride		50.0	51.2	ug/L	0.280	2.35	20	
Naphthalene		50.0	53.1	ug/L	2.57	6.19	20	
n-Propylbenzene		50.0	54.5	ug/L	4.33	8.99	20	
Styrene		50.0	51.5	ug/L	1.22	2.93	20	
1,1,1,2-Tetrachloroethane		50.0	51.4	ug/L	0.401	2.75	20	
Tetrachloroethene		50.0	51.2	ug/L	0.347	2.35	20	
1,2,3-Trichlorobenzene		50.0	53.6	ug/L	1.29	7.28	20	
1,2,4-Trichlorobenzene		50.0	56.1	ug/L	1.37	12.2	20	
1,1,1-Trichloroethane		50.0	49.0	ug/L	0.426	1.98	20	
1,1,2-Trichloroethane		50.0	50.9	ug/L	0.285	1.73	20	
Trichloroethene		50.0	46.1	ug/L	0.273	7.71	20	
Trichlorofluoromethane		50.0	50.1	ug/L	0.420	0.157	20	
1,2,3-Trichloropropane		50.0	49.4	ug/L	0.222	1.12	20	
1,2,4-Trimethylbenzene		50.0	54.1	ug/L	3.33	8.16	20	
1,3,5-Trimethylbenzene		50.0	53.5	ug/L	3.28	7.07	20	
o-Xylene		50.0	50.1	ug/L	0.715	0.181	20	
m-,p-Xylene		100	103	ug/L	0.715	2.71	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3352793
Report generated 02/12/2014 13:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14011242
Run Date: 01/31/2014
Sample ID: WG461715-02
Instrument ID: HPMS17
Run Time: 16:16
Method: 8260B
File ID: 17M002761
Analyst: ADC
QC Key: DOD4
Workgroup (AAB#): WG461716
Cal ID: HPMS17 - 28-JAN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.4	ug/L	0.557	1.20	20	
1,1-Dichloroethene	CCC	50.0	50.9	ug/L	0.499	1.77	20	
1,2-Dichloropropane	CCC	50.0	50.2	ug/L	0.316	0.429	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.652	3.66	20	
Toluene	CCC	50.0	50.6	ug/L	1.77	1.29	20	
Vinyl Chloride	CCC	50.0	42.6	ug/L	0.456	14.9	20	
Bromoform	SPCC	50.0	44.4	ug/L	0.270	11.3	20	
Chlorobenzene	SPCC	50.0	50.0	ug/L	1.17	0.0152	20	
Chloromethane	SPCC	50.0	43.7	ug/L	0.574	12.6	20	
1,1-Dichloroethane	SPCC	50.0	50.2	ug/L	0.579	0.494	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	48.8	ug/L	0.692	2.49	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3352793
Report generated 02/12/2014 13:04

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14011242
Instrument ID: HPMS9
Workgroup (AAB#): WG461586

ICAL CCV Number: WG461445-08
CAL ID: HPMS9-30-JAN-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG461445-08	NA	NA	232079	474328	633808
Upper Limit	NA	NA	464158	948656	1267616
Lower Limit	NA	NA	116040	237164	316904
L14011242-01	5.00	DL02	192778	405508	557208
L14011242-02	1.00	01	207894	432285	608406
L14011242-03	1.00	01	191281	417679	588978
L14011242-04	1.00	01	174010	387079	546586
WG461586-01	1.00	01	207091	454300	639115
WG461586-02	1.00	01	186869	384017	527371
WG461586-03	1.00	01	189904	378940	513067

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3358283
Report generated 02/12/2014 13:04

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14011242
Instrument ID: HPMS17
Workgroup (AAB#): WG461716

ICAL CCV Number: WG461242-08
CAL ID: HPMS17-28-JAN-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG461242-08	NA	NA	300437	616991	876843
Upper Limit	NA	NA	600874	1233982	1753686
Lower Limit	NA	NA	150219	308496	438422
WG461716-01	1.00	01	238045	562557	859940
WG461716-02	1.00	01	285899	601242	873034
WG461716-03	1.00	01	282471	598002	860851

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3358283
Report generated 02/12/2014 13:04

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14011242
Instrument ID: HPMS17
Workgroup (AAB#): WG461716

ICAL CCV Number: WG461242-08
CAL ID: HPMS17-28-JAN-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG461242-08	NA	NA	16.898	13.913	10.088
Upper Limit	NA	NA	17.398	14.413	10.588
Lower Limit	NA	NA	16.398	13.413	9.588
WG461716-01	1.00	01	16.9	13.91	10.09
WG461716-02	1.00	01	16.9	13.91	10.09
WG461716-03	1.00	01	16.9	13.91	10.09

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3358285
Report generated: 02/12/2014 13:04

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14011242
Instrument ID: HPMS9
Workgroup (AAB#): WG461586

ICAL CCV Number: WG461445-08
CAL ID: HPMS9-30-JAN-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG461445-08	NA	NA	17.84	14.81	10.92
Upper Limit	NA	NA	18.34	15.31	11.42
Lower Limit	NA	NA	17.34	14.31	10.42
L14011242-01	5.00	DL02	17.84	14.81	10.92
L14011242-02	1.00	01	17.84	14.81	10.92
L14011242-03	1.00	01	17.83	14.8	10.93
L14011242-04	1.00	01	17.83	14.8	10.93
WG461586-01	1.00	01	17.84	14.81	10.92
WG461586-02	1.00	01	17.84	14.81	10.92
WG461586-03	1.00	01	17.84	14.81	10.92

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3358285
Report generated: 02/12/2014 13:04

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961151.D Vial: 14
Acq On : 31 Jan 2014 2:54 Operator: MES
Sample : L14011242-01 5X A 826-LOW Inst : HPMS9
Misc : 1,5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 07 16:21:58 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	557208	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	405508	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	192778	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.88	111	149918	26.9671 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.88%		
43) 1,2-Dichloroethane-d4	10.52	65	179098	26.9010 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.60%		
58) Toluene-d8	12.91	98	493846	27.6807 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 110.72%#		
79) p-Bromofluorobenzene	16.31	95	190474	24.3567 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.44%		

Target Compounds					Qvalue
3) Chloromethane	3.81	50	1418	0.2329 ug/L #	67
4) Vinyl Chloride	4.02	62	1563	0.2621 ug/L #	69
13) Acetone	6.46	43	630	0.3391 ug/L #	45
14) 1,1-Dichloroethene	6.69	61	3326871	319.0140 ug/L	100
15) Tert-Butyl Alcohol	6.69	59	122512	245.0218 ug/L #	57
20) Carbon Disulfide	7.51	76	4227	0.2322 ug/L #	75
27) 1,1-Dichloroethane	8.54	63	146025	10.8759 ug/L	98
32) cis-1,2-Dichloroethene	9.37	96	3686	0.5467 ug/L	73
33) Chloroform	9.59	83	8983	0.8222 ug/L	87
45) 1,2-Dichloroethane	10.64	62	174299	17.9841 ug/L	94
47) Trichloroethene	11.43	130	4121	0.6249 ug/L	93
50) 1,4-Dioxane	11.92	88	816	36.7839 ug/L	88
56) Dimethyl Disulfide	12.91	94	13081	1.1595 ug/L #	25
62) 1,1,2-Trichloroethane	13.39	97	6082	1.3396 ug/L	86

(#) = qualifier out of range (m) = manual integration
9M961151.D 8260WTR.M Fri Feb 07 16:22:00 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961151.D Vial: 14
Acq On : 31 Jan 2014 2:54 Operator: MES
Sample : L14011242-01 5X A 826-LOW Inst : HPMS9
Misc : 1,5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 7 16:21 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration

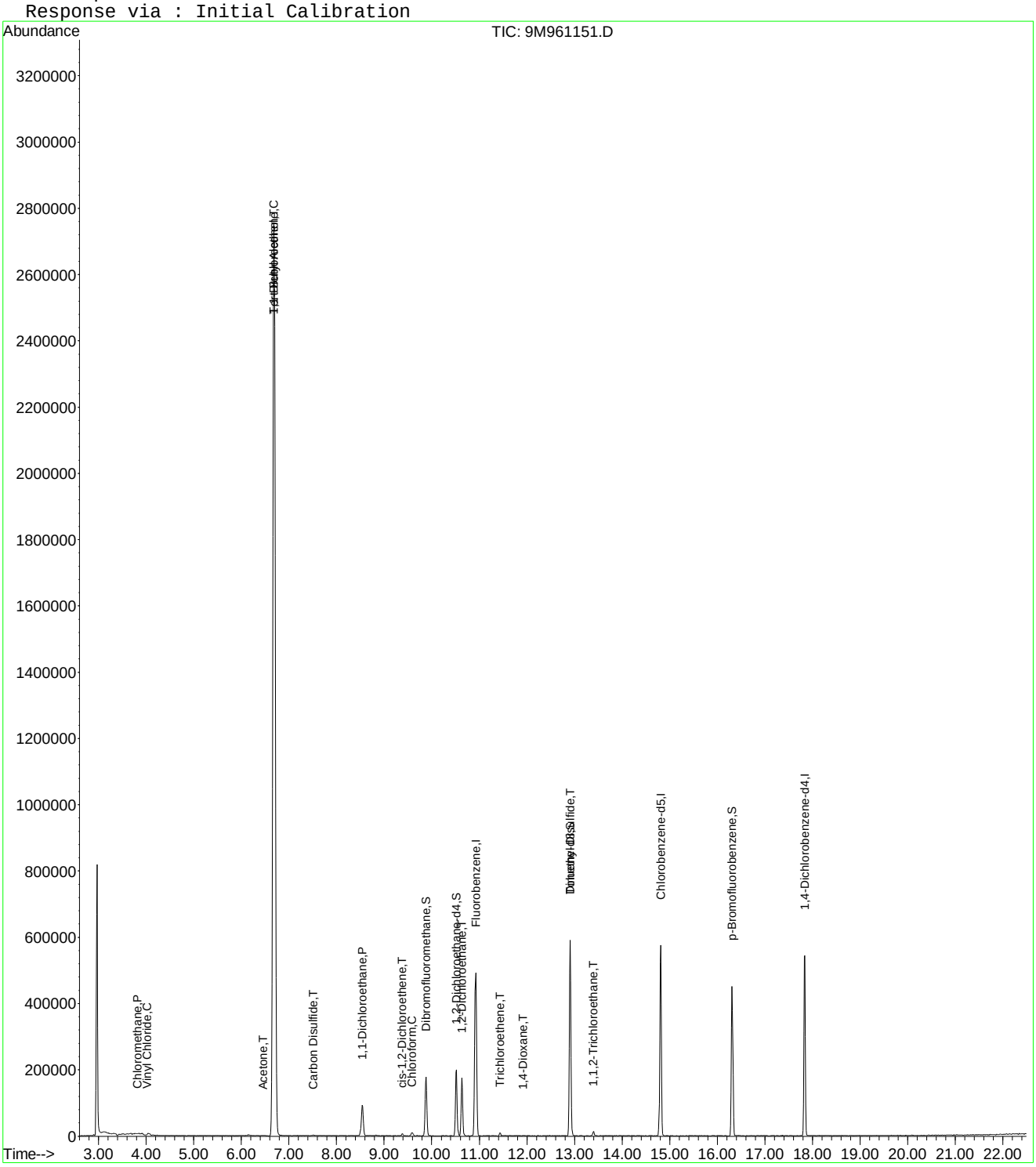

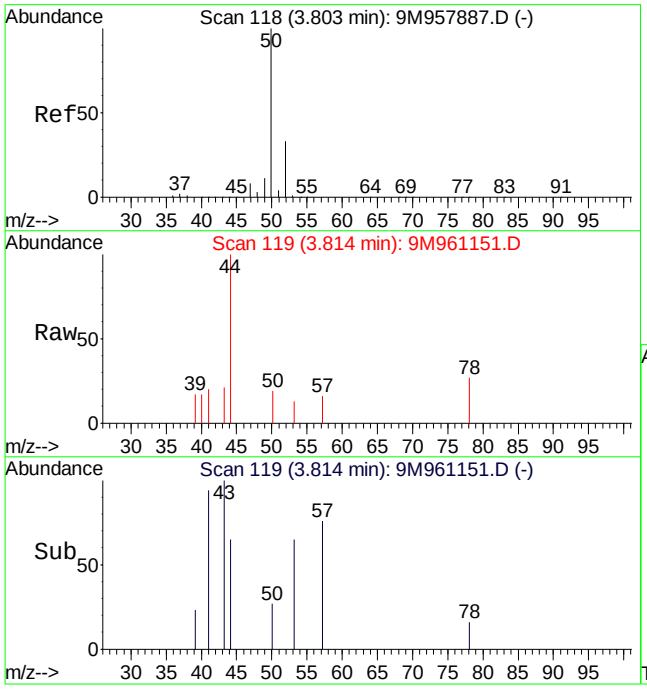

#3
Chloromethane
Concen: 0.23 ug/L
RT: 3.81 min Scan# 119
Delta R.T. 0.04 min
Lab File: 9M961151.D
Acq: 31 Jan 2014 2:54

Tgt Ion: 50 Resp: 1418

Ion	Ratio	Lower	Upper
50	100		
52	13.3	18.8	44.0#

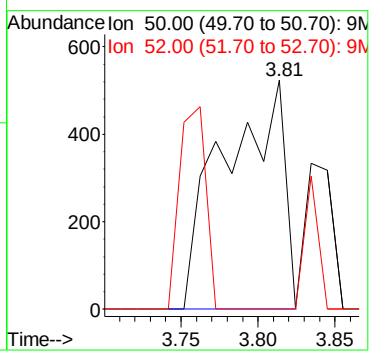

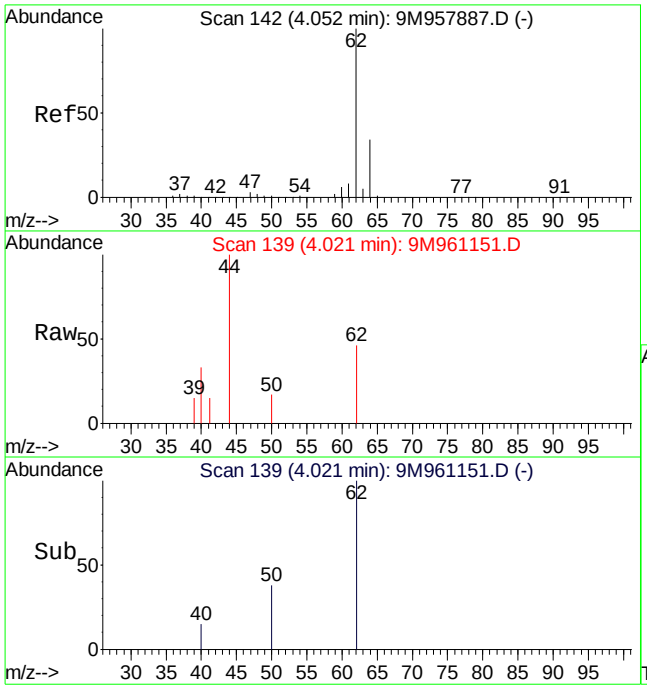

#4
Vinyl Chloride
Concen: 0.26 ug/L
RT: 4.02 min Scan# 139
Delta R.T. 0.00 min
Lab File: 9M961151.D
Acq: 31 Jan 2014 2:54

Tgt Ion: 62 Resp: 1563

Ion	Ratio	Lower	Upper
62	100		
64	12.5	17.6	41.0#

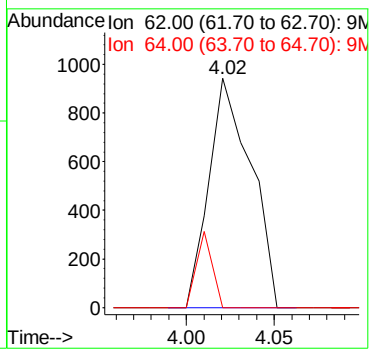

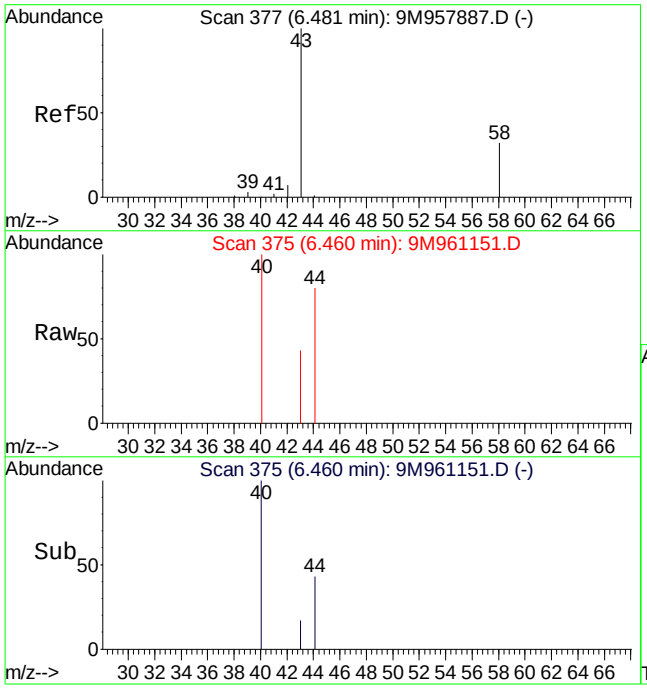

#13
Acetone
Concen: 0.34 ug/L
RT: 6.46 min Scan# 375
Delta R.T. 0.01 min
Lab File: 9M961151.D
Acq: 31 Jan 2014 2:54

Tgt Ion: 43 Resp: 630

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.1#

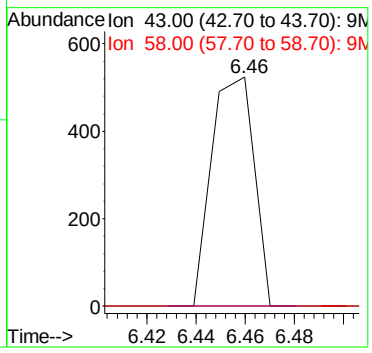

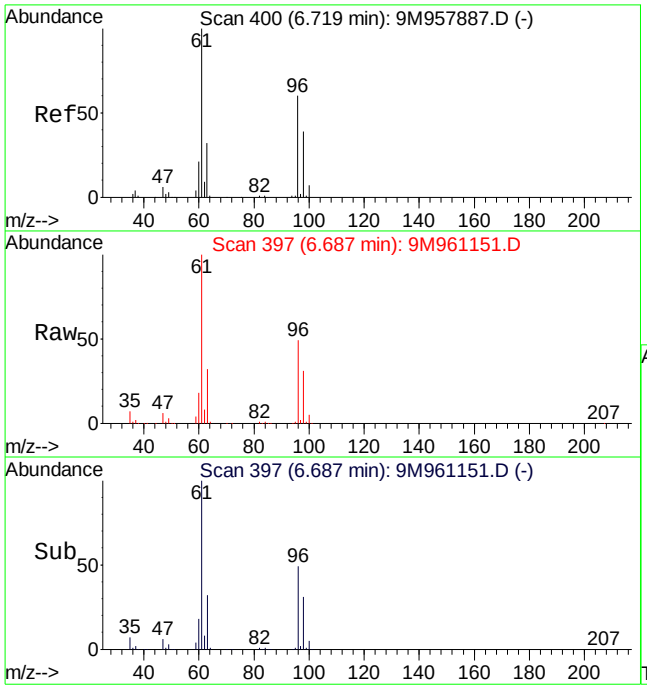

#14
1,1-Dichloroethene
Concen: 319.01 ug/L
RT: 6.69 min Scan# 397
Delta R.T. 0.00 min
Lab File: 9M961151.D
Acq: 31 Jan 2014 2:54

Tgt Ion: 61 Resp: 3326871

Ion	Ratio	Lower	Upper
61	100		
96	48.9	29.3	68.3

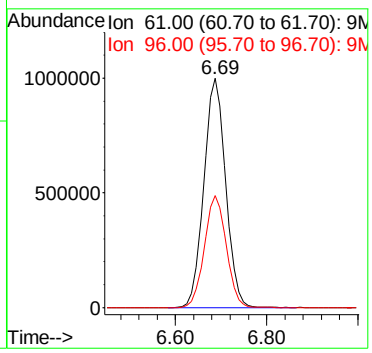

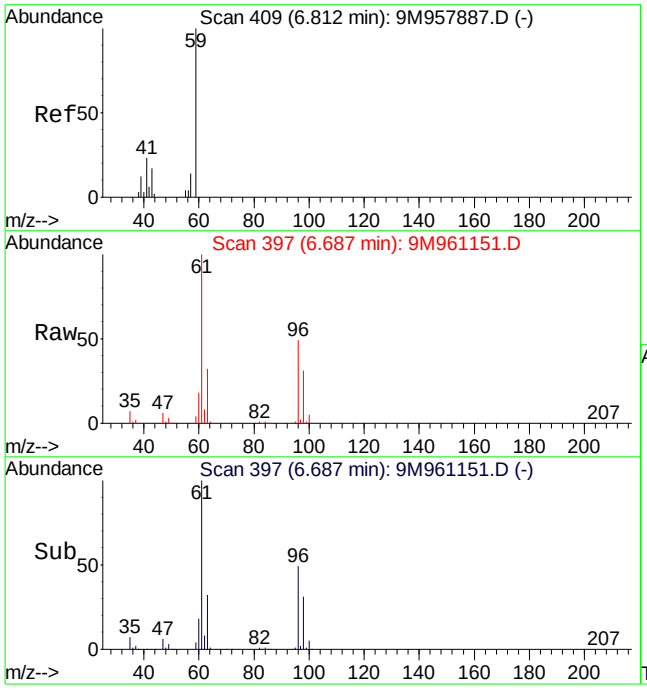

#15
Tert-Butyl Alcohol
Concen: 245.02 ug/L
RT: 6.69 min Scan# 397
Delta R.T. -0.09 min
Lab File: 9M961151.D
Acq: 31 Jan 2014 2:54

Tgt Ion: 59 Resp: 122512

Ion	Ratio	Lower	Upper
59	100		
41	0.6	15.1	35.1#
57	0.0	6.3	14.7#

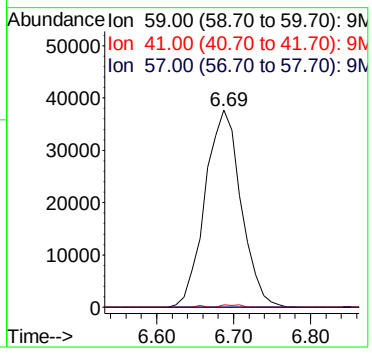

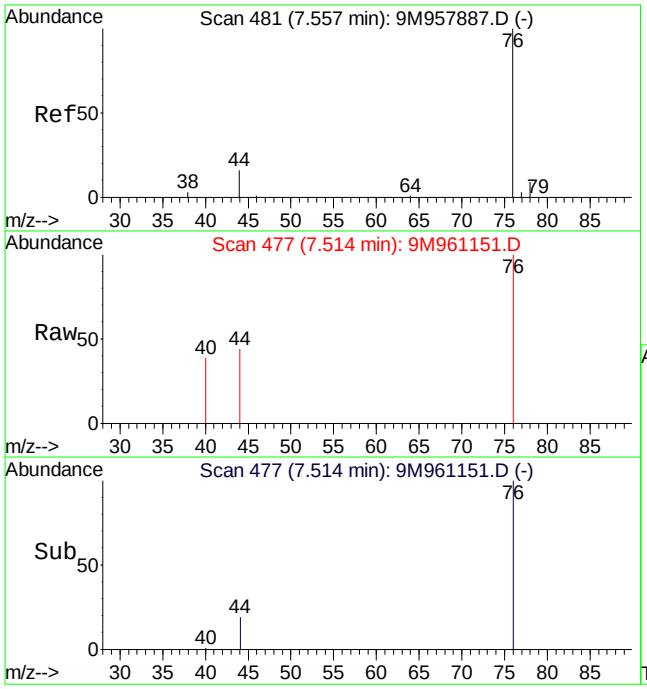

#20
Carbon Disulfide
Concen: 0.23 ug/L
RT: 7.51 min Scan# 477
Delta R.T. 0.00 min
Lab File: 9M961151.D
Acq: 31 Jan 2014 2:54

Tgt Ion: 76 Resp: 4227

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.5	12.7#

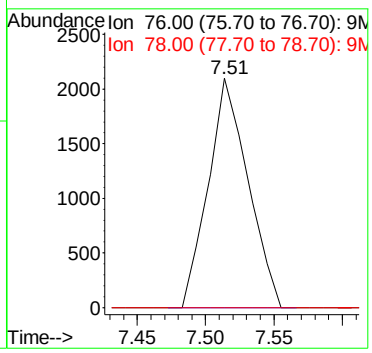

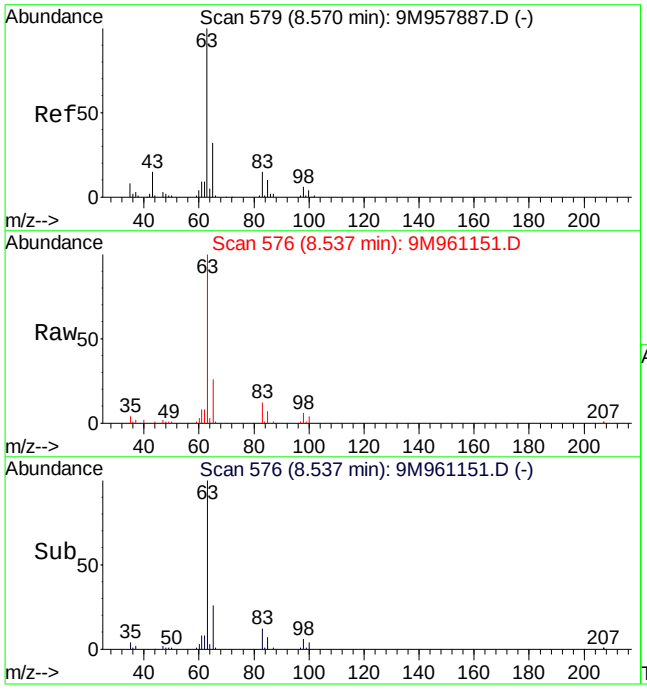

#27
1,1-Dichloroethane
Concen: 10.88 ug/L
RT: 8.54 min Scan# 576
Delta R.T. 0.00 min
Lab File: 9M961151.D
Acq: 31 Jan 2014 2:54

Tgt Ion: 63 Resp: 146025

Ion	Ratio	Lower	Upper
63	100		
65	28.6	18.0	42.0
83	11.4	7.0	16.2

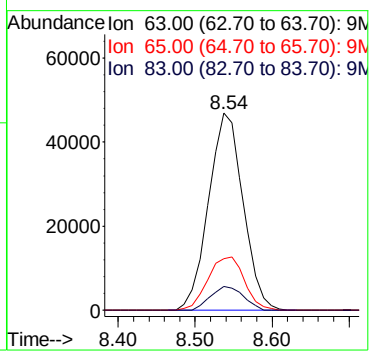

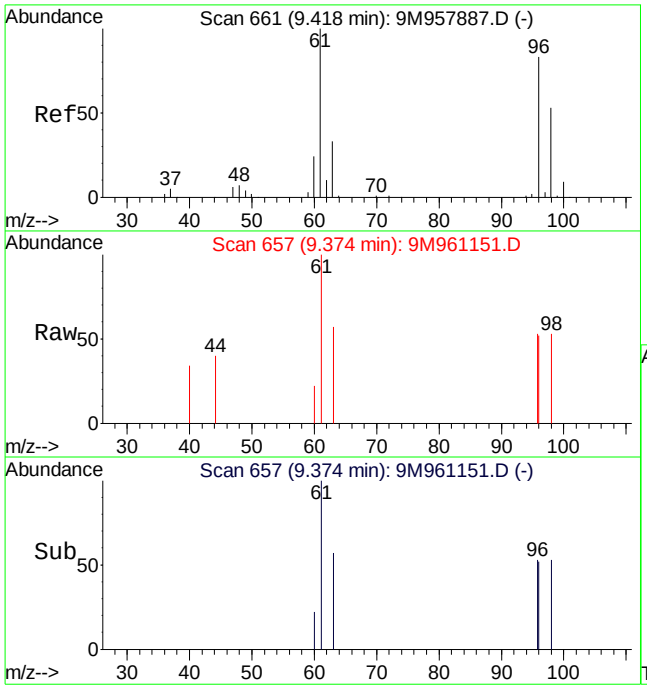

#32
cis-1,2-Dichloroethene
Concen: 0.55 ug/L
RT: 9.37 min Scan# 657
Delta R.T. 0.00 min
Lab File: 9M961151.D
Acq: 31 Jan 2014 2:54

Tgt Ion: 96 Resp: 3686

Ion	Ratio	Lower	Upper
96	100		
61	145.4	110.4	257.6

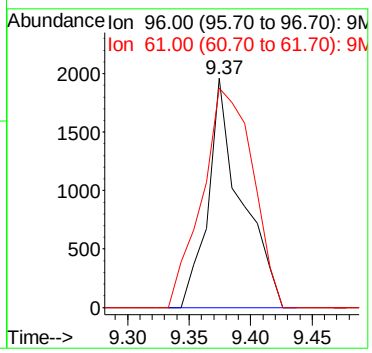

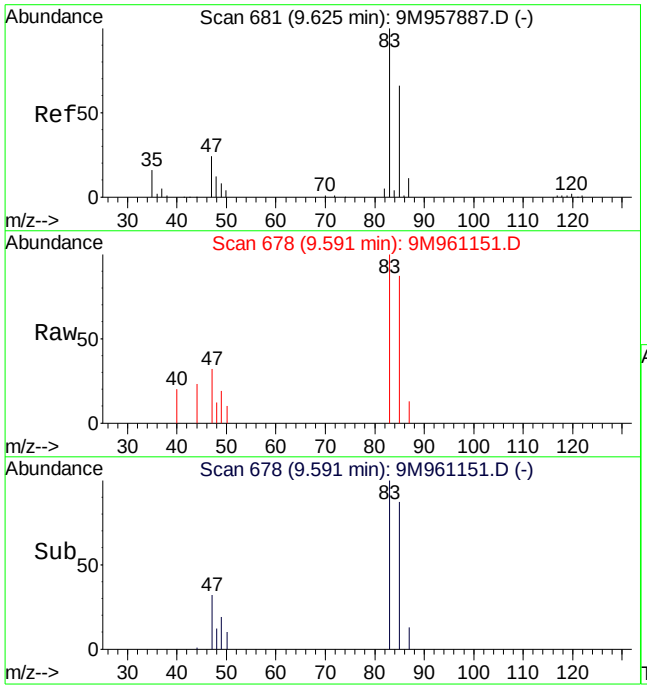

#33
Chloroform
Concen: 0.82 ug/L
RT: 9.59 min Scan# 678
Delta R.T. 0.00 min
Lab File: 9M961151.D
Acq: 31 Jan 2014 2:54

Tgt Ion: 83 Resp: 8983

Ion	Ratio	Lower	Upper
83	100		
85	74.7	38.9	90.7

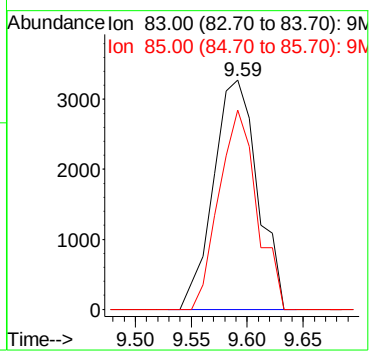

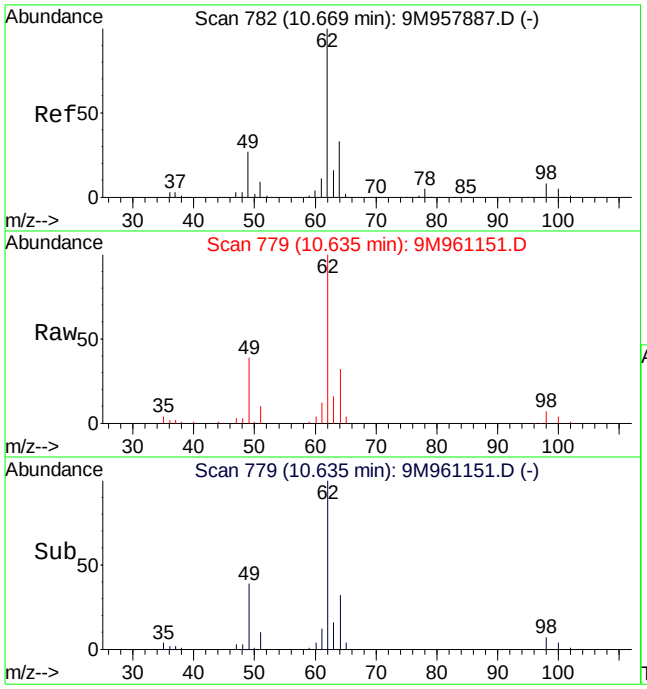

#45
1,2-Dichloroethane
Concen: 17.98 ug/L
RT: 10.64 min Scan# 779
Delta R.T. 0.00 min
Lab File: 9M961151.D
Acq: 31 Jan 2014 2:54

Tgt Ion: 62 Resp: 174299

Ion	Ratio	Lower	Upper
62	100		
64	30.6	18.2	42.6
49	35.5	24.8	57.8

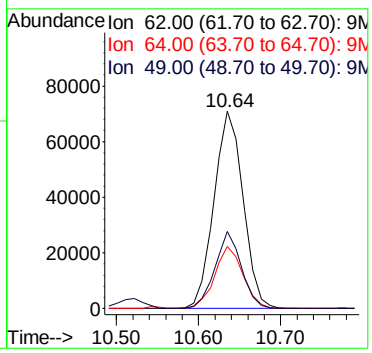

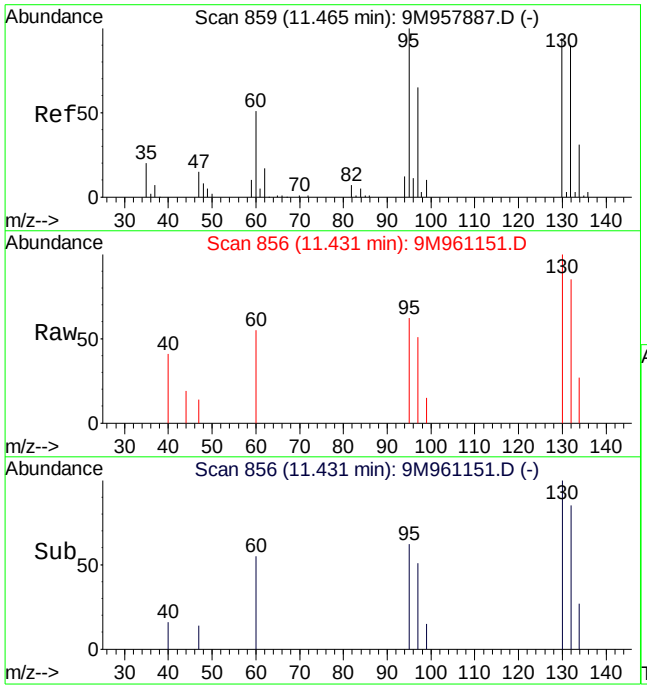

#47
Trichloroethene
Concen: 0.62 ug/L
RT: 11.43 min Scan# 856
Delta R.T. 0.00 min
Lab File: 9M961151.D
Acq: 31 Jan 2014 2:54

Tgt Ion:130 Resp: 4121

Ion	Ratio	Lower	Upper
130	100		
132	104.5	63.2	147.4
95	85.8	60.0	140.0

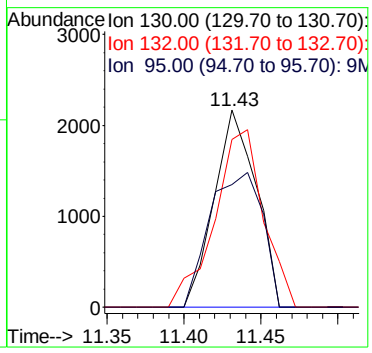

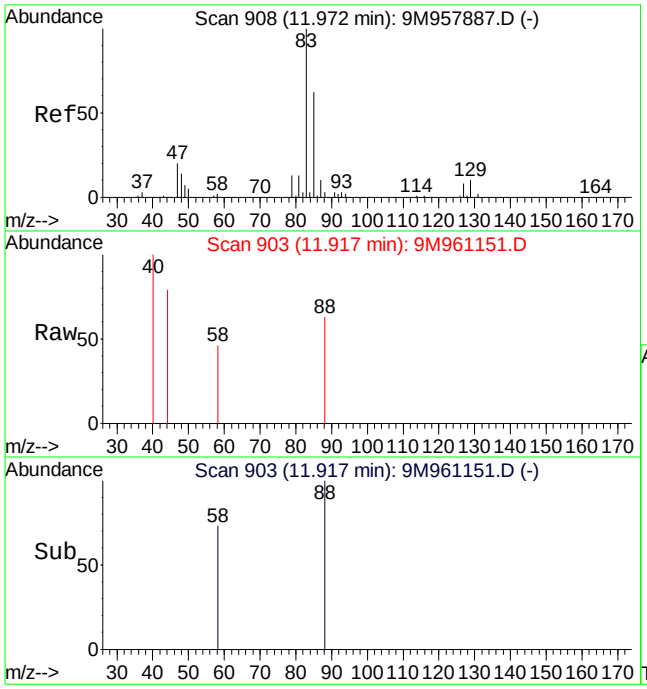

#50
1,4-Dioxane
Concen: 36.78 ug/L
RT: 11.92 min Scan# 903
Delta R.T. -0.01 min
Lab File: 9M961151.D
Acq: 31 Jan 2014 2:54

Tgt Ion: 88 Resp: 816

Ion	Ratio	Lower	Upper
88	100		
58	96.8	51.5	120.3

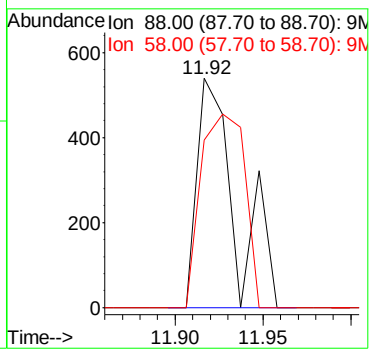

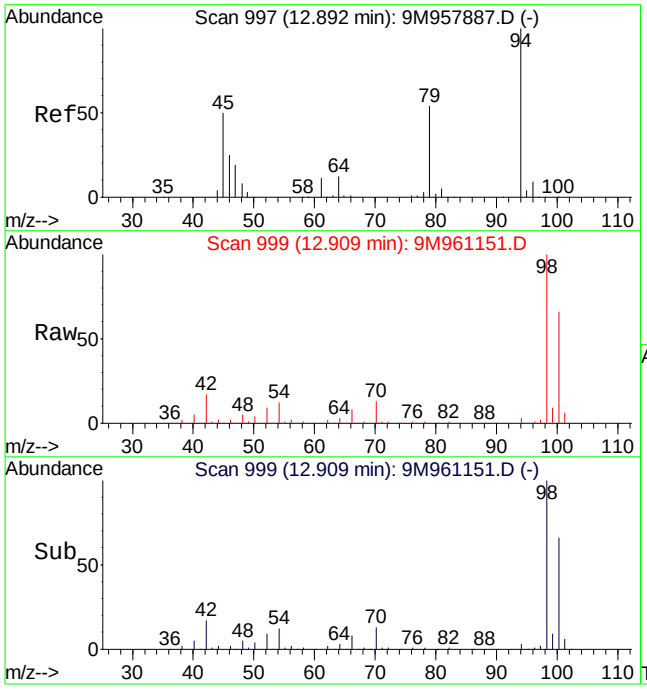

#56
Dimethyl Disulfide
Concen: 1.16 ug/L
RT: 12.91 min Scan# 999
Delta R.T. 0.06 min
Lab File: 9M961151.D
Acq: 31 Jan 2014 2:54

Tgt Ion: 94 Resp: 13081

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.8	74.2#

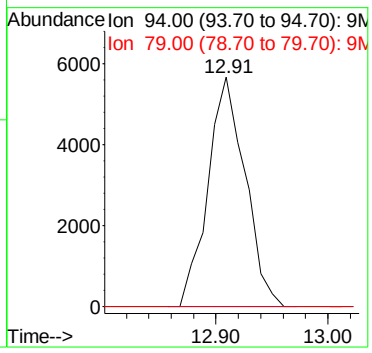

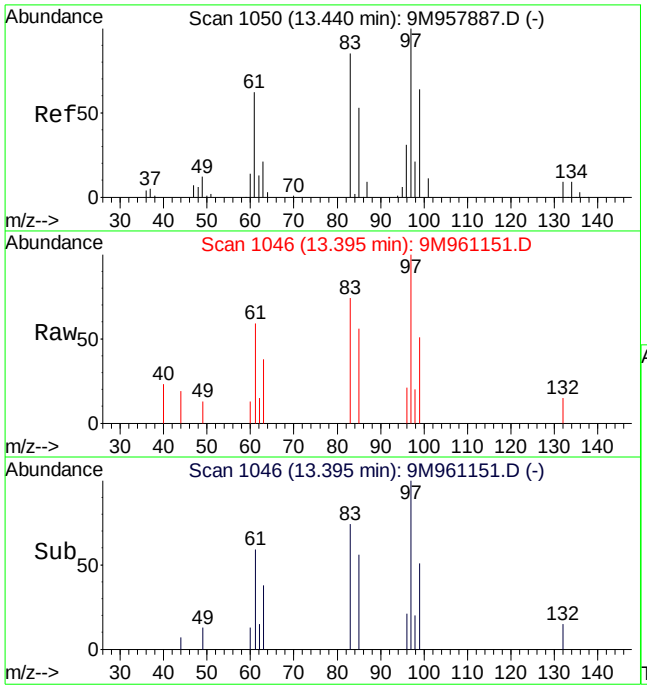

#62
1,1,2-Trichloroethane
Concen: 1.34 ug/L
RT: 13.39 min Scan# 1046
Delta R.T. 0.00 min
Lab File: 9M961151.D
Acq: 31 Jan 2014 2:54

Tgt Ion: 97 Resp: 6082

Ion	Ratio	Lower	Upper
97	100		
83	77.5	54.6	127.4

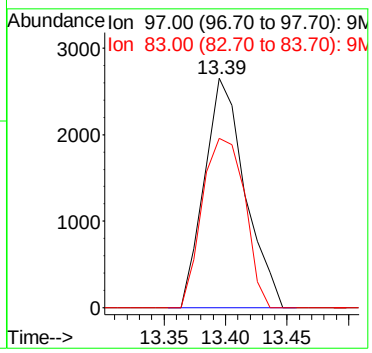

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\013114\
Data File : 17M002775.D
Acq On : 31 Jan 2014 23:29
Operator : ADC
Sample : L14011242-01 B 50X 826-LOW
Misc : 1,50
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Feb 05 09:19:44 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.088	96	845024	25.00000 ug/L	0.0000
56) Chlorobenzene-d5	13.913	117	561117	25.00000 ug/L	0.0000
76) 1,4-Dichlorobenzene-d4	16.898	152	236157	25.00000 ug/L	0.0000
System Monitoring Compounds					
37) Dibromofluoromethane	9.041	111	222480	23.1757 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.703%		
43) 1,2-Dichloroethane-d4	9.684	65	249194	23.3882 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.553%		
57) Toluene-d8	12.047	98	788295	24.4779 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.912%		
78) p-Bromofluorobenzene	15.395	95	262504	25.2526 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.010%		
Target Compounds					Qvalue
3) Chloromethane	2.915	50	3149	0.1418 ug/L	95
13) Acetone	5.548	43	396	Below Cal #	48
14) 1,1-Dichloroethene	5.766	61	444370	26.8128 ug/L	98
15) Tert-Butyl Alcohol	5.984	59	452	Below Cal #	63
20) Carbon Disulfide	6.564	76	4652	0.1538 ug/L #	75
27) 1,1-Dichloroethane	7.683	63	19482	1.0005 ug/L	98
36) Tetrahydrofuran	9.010	42	659	0.3427 ug/L #	38
44) 1,2-Dichloroethane	9.798	62	23255	1.6854 ug/L	89
46) Trichloroethene	10.586	130	1721	0.1546 ug/L #	65
67) 1-Chlorohexane	13.581	91	476	0.2363 ug/L	69
70) Ethylbenzene	14.089	106	1300	0.2377 ug/L	65
71) m-,p-Xylene	14.089	106	1300	0.4824 ug/L	70
73) Styrene	14.680	104	823	0.3064 ug/L	96
86) a-Methylstyrene	16.152	118	226	1.3151 ug/L	94
92) 1,4-Dichlorobenzene	16.940	146	2209	0.1205 ug/L #	1
93) n-Butylbenzene	17.168	91	3167	0.3846 ug/L #	78
96) 1,2,4-Trichlorobenzene	19.541	180	1535	0.1285 ug/L #	85
98) Naphthalene	19.883	128	2814	0.1289 ug/L #	67

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\013114\
Data File : 17M002775.D
Acq On : 31 Jan 2014 23:29
Operator : ADC
Sample : L14011242-01 B 50X 826-LOW
Misc : 1,50
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Feb 05 09:19:44 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

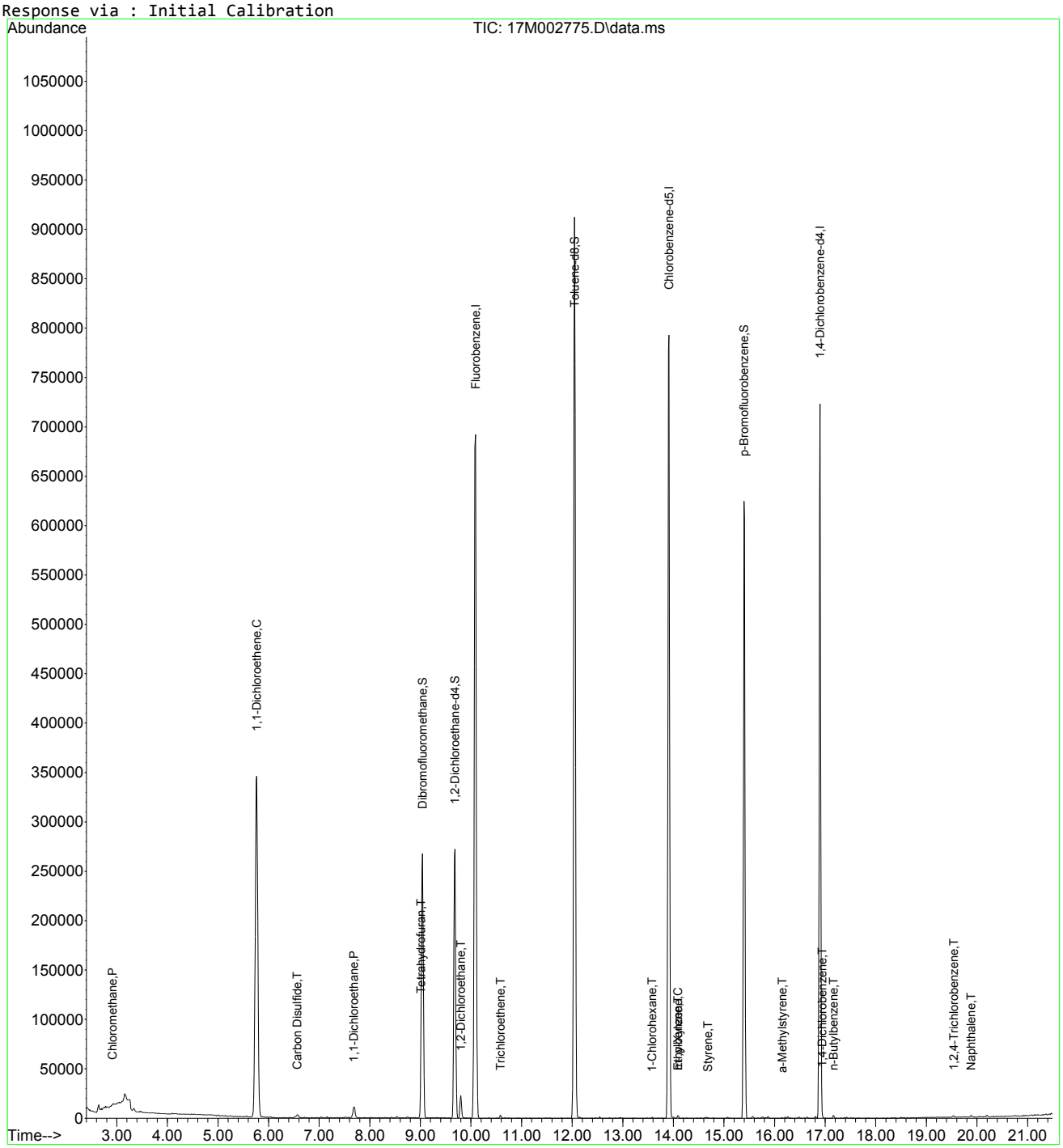

8260WT.M Wed Feb 05 09:19:45 2014 Page: 2

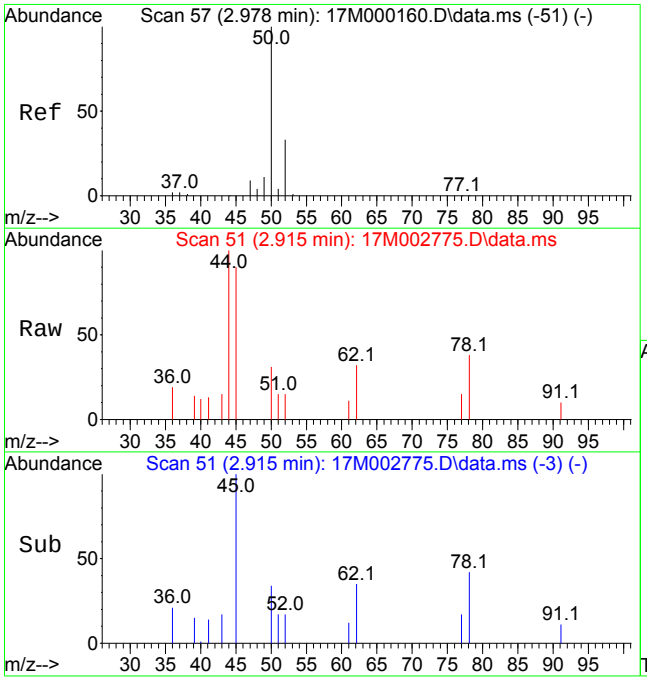

#3
Chloromethane
Concen: 0.1418 ug/L
RT: 2.915 min Scan# 51
Delta R.T. -0.001 min
Lab File: 17M002775.D
Acq: 31 Jan 2014 23:29

Tgt Ion: 50 Resp: 3149

Ion	Ratio	Lower	Upper
50	100		
52	34.8	19.1	44.5

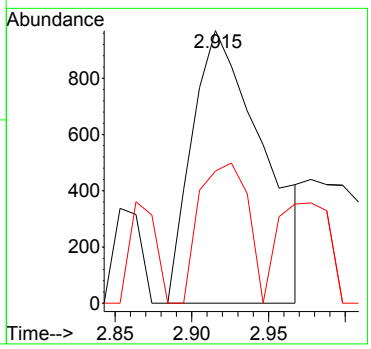

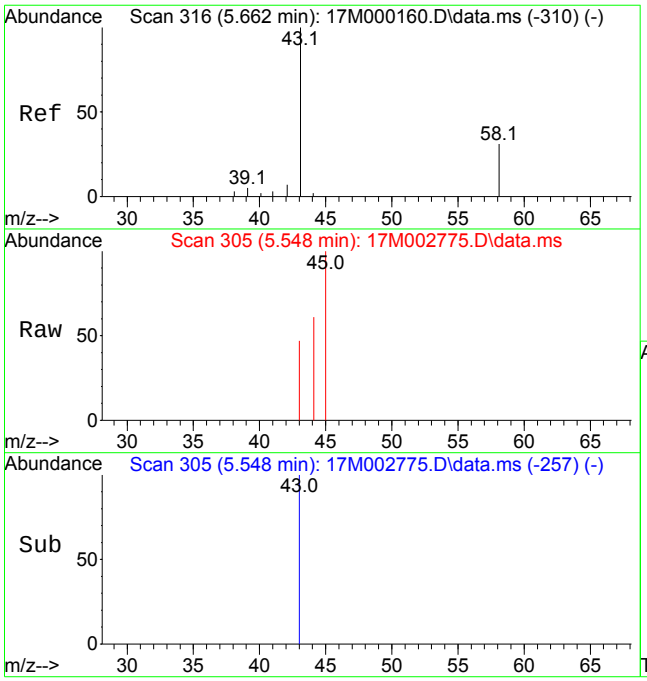

#13
Acetone
Concen: Below Cal
RT: 5.548 min Scan# 305
Delta R.T. 0.000 min
Lab File: 17M002775.D
Acq: 31 Jan 2014 23:29

Tgt Ion: 43 Resp: 396

Ion	Ratio	Lower	Upper
43	100		
58	54.8	16.6	38.8#

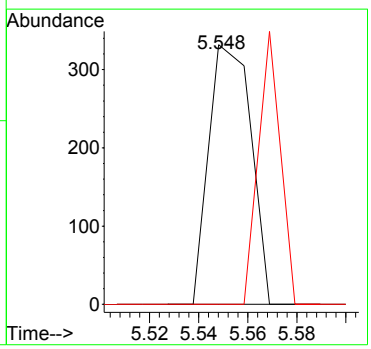

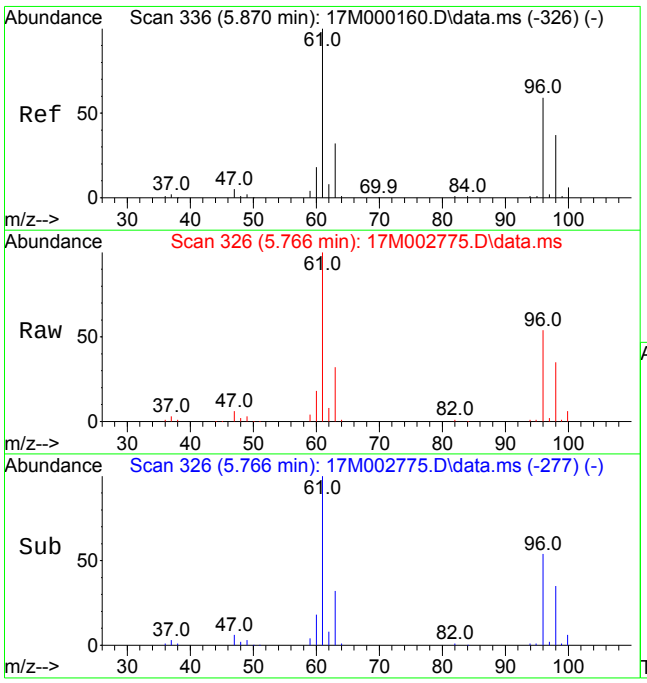

#14
1,1-Dichloroethene
Concen: 26.8128 ug/L
RT: 5.766 min Scan# 326
Delta R.T. 0.010 min
Lab File: 17M002775.D
Acq: 31 Jan 2014 23:29

Tgt Ion: 61 Resp: 444370

Ion	Ratio	Lower	Upper
61	100		
96	53.8	33.1	77.1

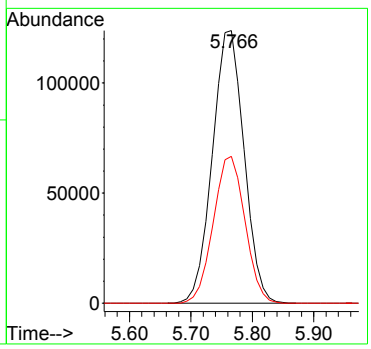

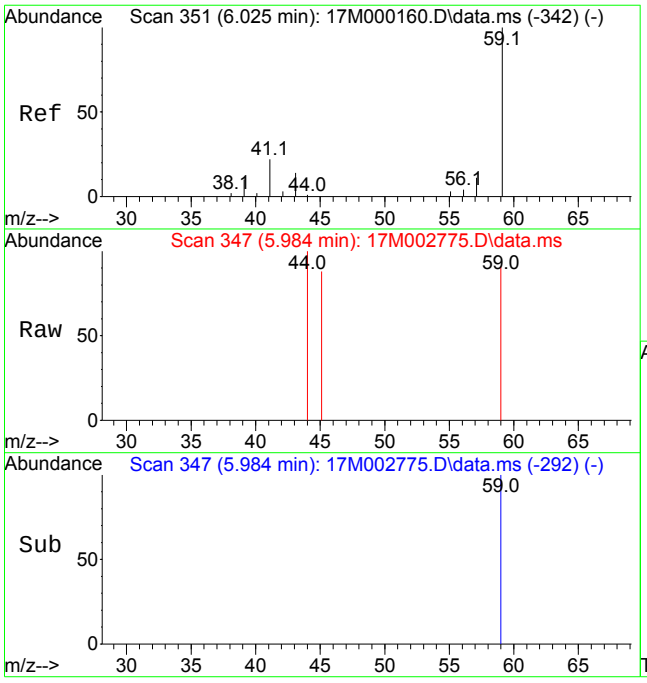

#15
Tert-Butyl Alcohol
Concen: Below Cal
RT: 5.984 min Scan# 347
Delta R.T. 0.073 min
Lab File: 17M002775.D
Acq: 31 Jan 2014 23:29

Tgt Ion: 59 Resp: 452

Ion	Ratio	Lower	Upper
59	100		
41	0.0	11.9	27.7#
57	0.0	5.2	12.0#

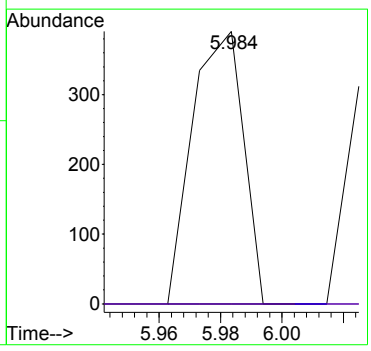

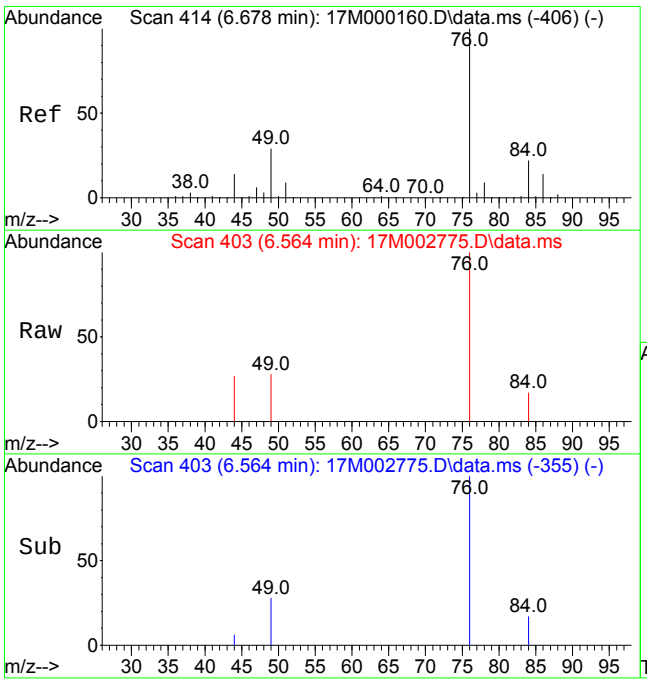

#20
Carbon Disulfide
Concen: 0.1538 ug/L
RT: 6.564 min Scan# 403
Delta R.T. -0.000 min
Lab File: 17M002775.D
Acq: 31 Jan 2014 23:29

Tgt Ion: 76 Resp: 4652

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.5	12.9#

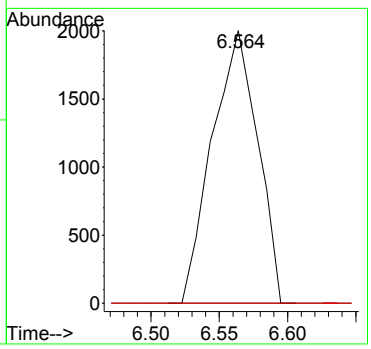

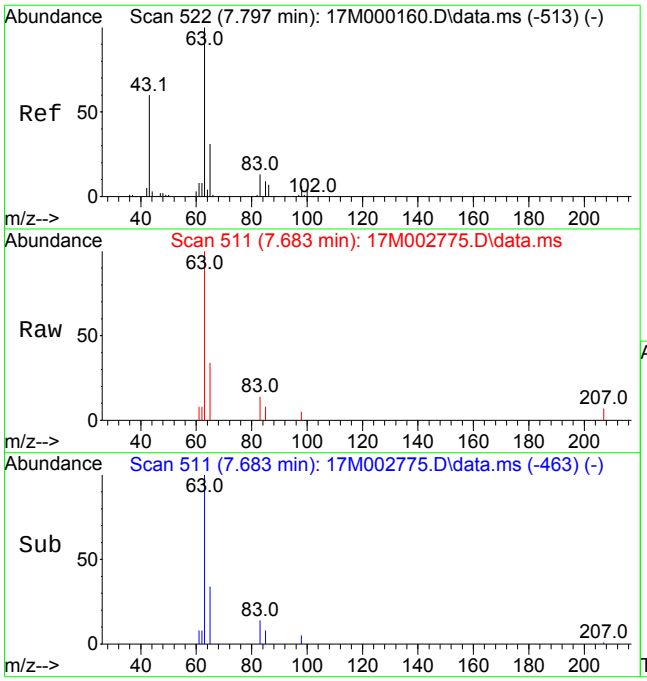

#27
1,1-Dichloroethane
Concen: 1.0005 ug/L
RT: 7.683 min Scan# 511
Delta R.T. -0.001 min
Lab File: 17M002775.D
Acq: 31 Jan 2014 23:29

Tgt Ion: 63 Resp: 19482

Ion	Ratio	Lower	Upper
63	100		
65	32.4	18.7	43.5

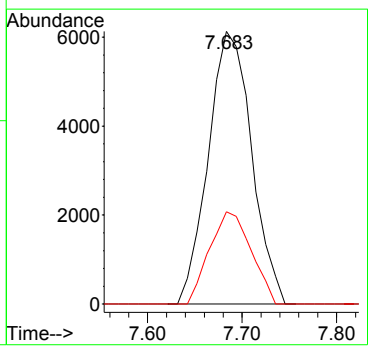

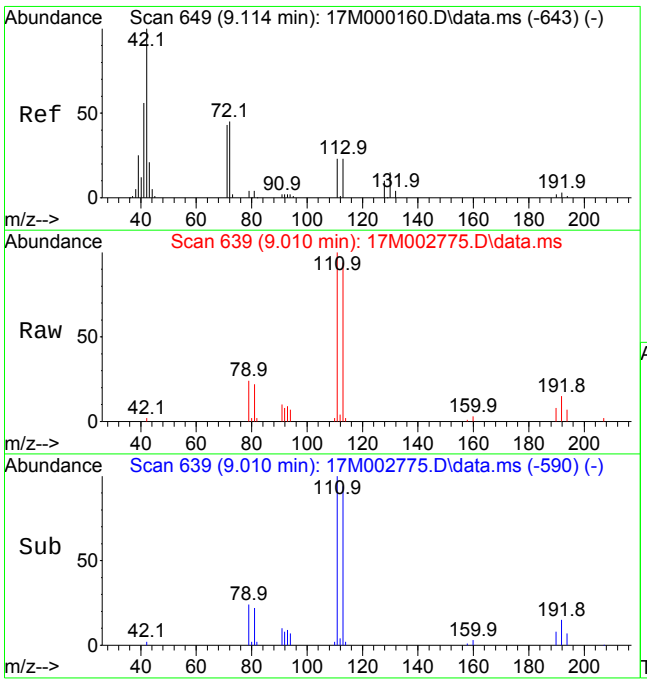

#36
Tetrahydrofuran
Concen: 0.3427 ug/L
RT: 9.010 min Scan# 639
Delta R.T. 0.010 min
Lab File: 17M002775.D
Acq: 31 Jan 2014 23:29

Tgt Ion: 42 Resp: 659

Ion	Ratio	Lower	Upper
42	100		
72	0.0	22.7	53.1#
71	0.0	21.8	50.8#

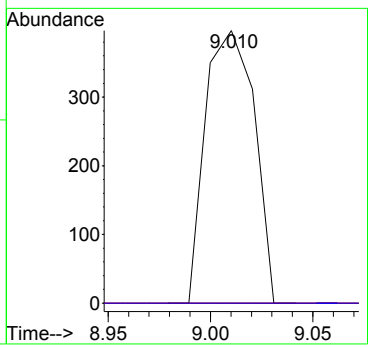

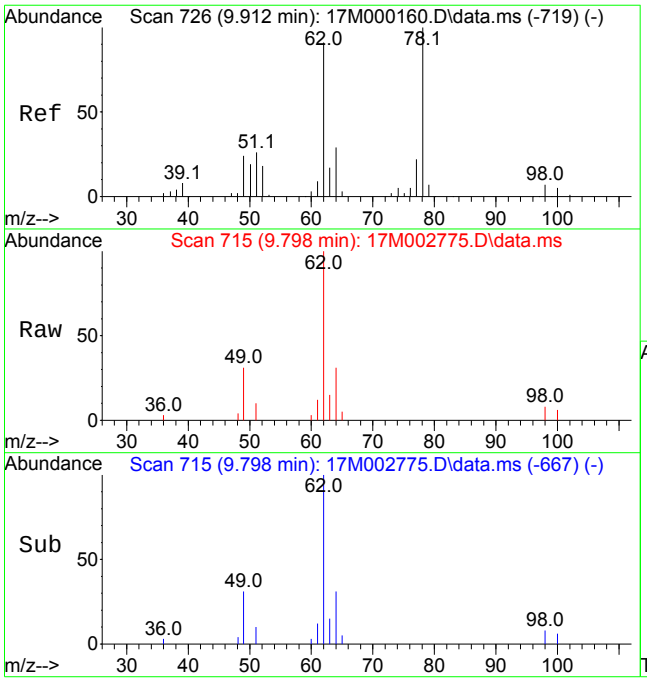

#44
1,2-Dichloroethane
Concen: 1.6854 ug/L
RT: 9.798 min Scan# 715
Delta R.T. -0.000 min
Lab File: 17M002775.D
Acq: 31 Jan 2014 23:29

Tgt Ion: 62 Resp: 23255

Ion	Ratio	Lower	Upper
62	100		
49	31.0	23.0	53.6
98	6.6	4.7	10.9

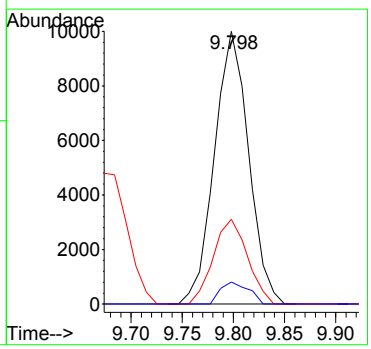

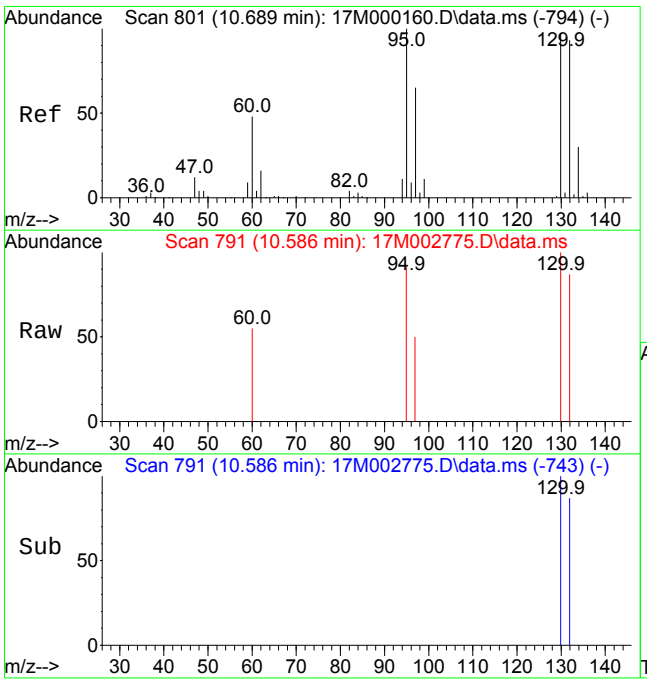

#46
Trichloroethene
Concen: 0.1546 ug/L
RT: 10.586 min Scan# 791
Delta R.T. -0.000 min
Lab File: 17M002775.D
Acq: 31 Jan 2014 23:29

Tgt Ion:130 Resp: 1721

Ion	Ratio	Lower	Upper
130	100		
60	26.7	30.4	71.0#

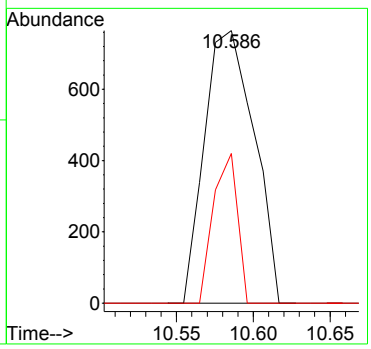

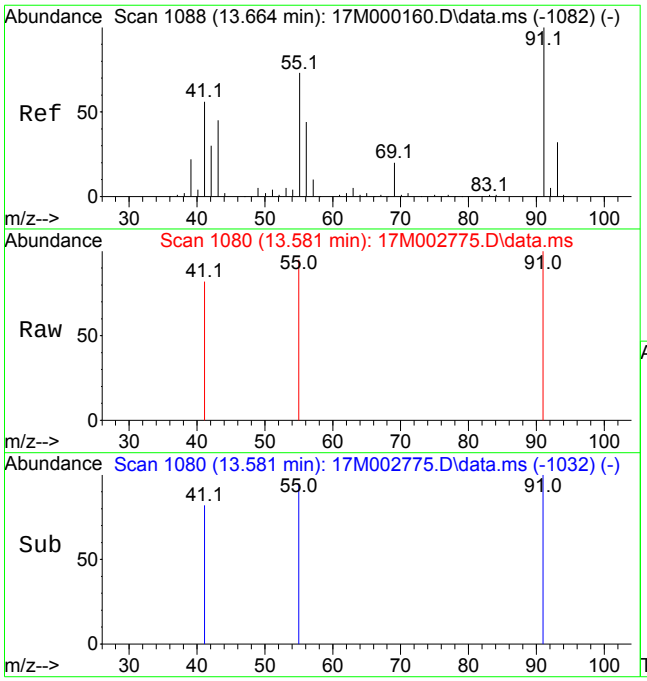

#67
1-Chlorohexane
Concen: 0.2363 ug/L
RT: 13.581 min Scan# 1080
Delta R.T. 0.000 min
Lab File: 17M002775.D
Acq: 31 Jan 2014 23:29

Tgt Ion: 91 Resp: 476

Ion	Ratio	Lower	Upper
91	100		
55	51.3	46.8	109.2

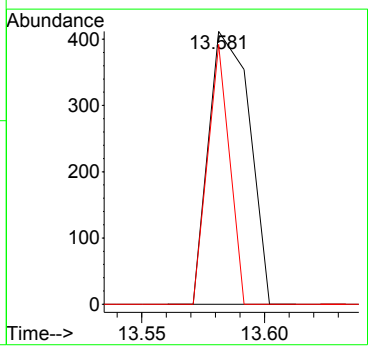

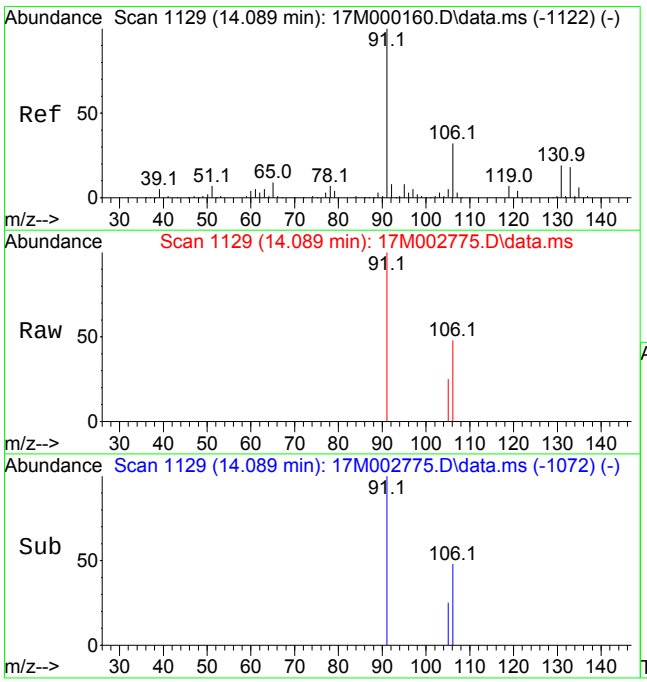

#70
Ethylbenzene
Concen: 0.2377 ug/L
RT: 14.089 min Scan# 1129
Delta R.T. 0.093 min
Lab File: 17M002775.D
Acq: 31 Jan 2014 23:29

Tgt Ion:106 Resp: 1300

Ion	Ratio	Lower	Upper
106	100		
91	249.3	192.9	450.1

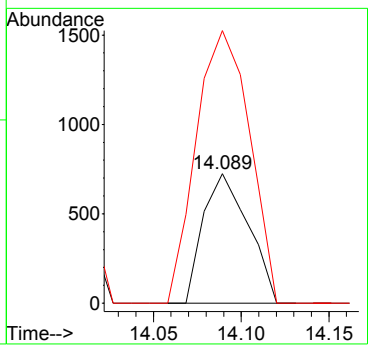

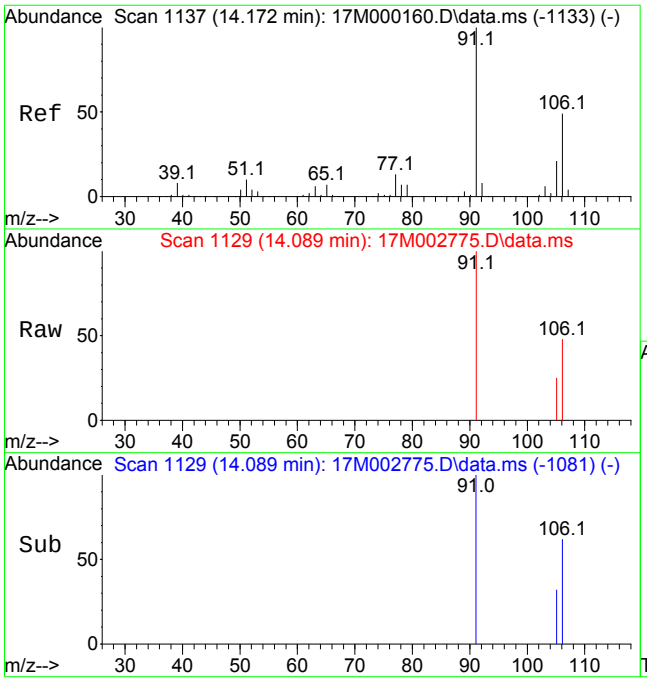

#71
m-,p-Xylene
Concen: 0.4824 ug/L
RT: 14.089 min Scan# 1129
Delta R.T. 0.000 min
Lab File: 17M002775.D
Acq: 31 Jan 2014 23:29

Tgt Ion:106 Resp: 1300

Ion	Ratio	Lower	Upper
106	100		
91	249.3	122.1	284.9

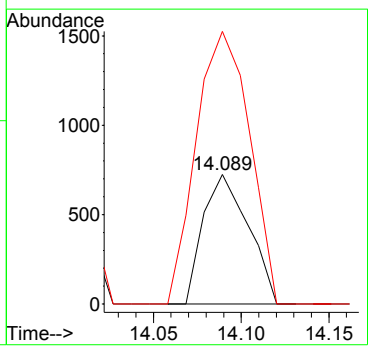

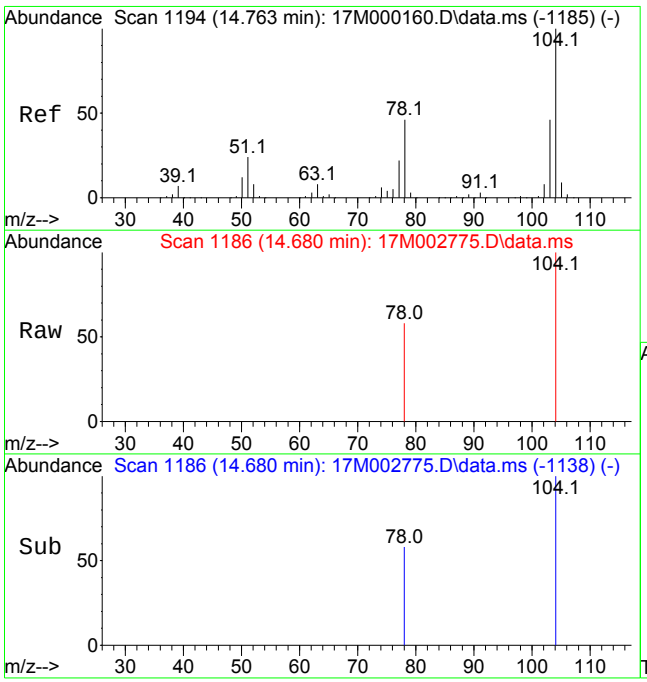

#73
Styrene
Concen: 0.3064 ug/L
RT: 14.680 min Scan# 1186
Delta R.T. 0.000 min
Lab File: 17M002775.D
Acq: 31 Jan 2014 23:29

Tgt Ion:104 Resp: 823

Ion	Ratio	Lower	Upper
104	100		
78	49.0	31.0	72.2

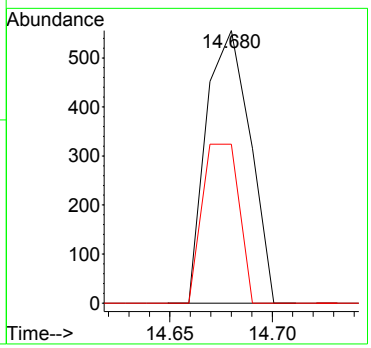

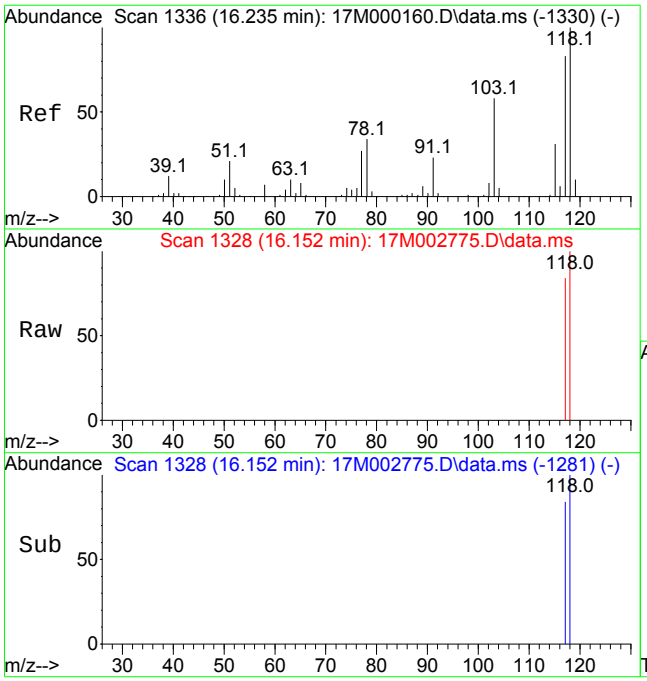

#86
a-Methylstyrene
Concen: 1.3151 ug/L
RT: 16.152 min Scan# 1328
Delta R.T. -0.010 min
Lab File: 17M002775.D
Acq: 31 Jan 2014 23:29

Tgt Ion:118 Resp: 226

Ion	Ratio	Lower	Upper
118	100		
117	84.1	53.6	125.2

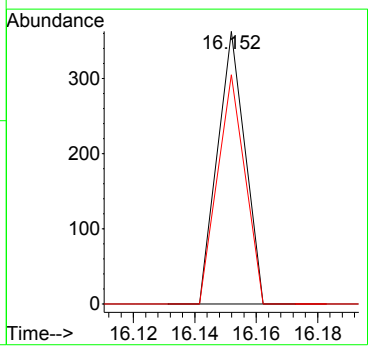

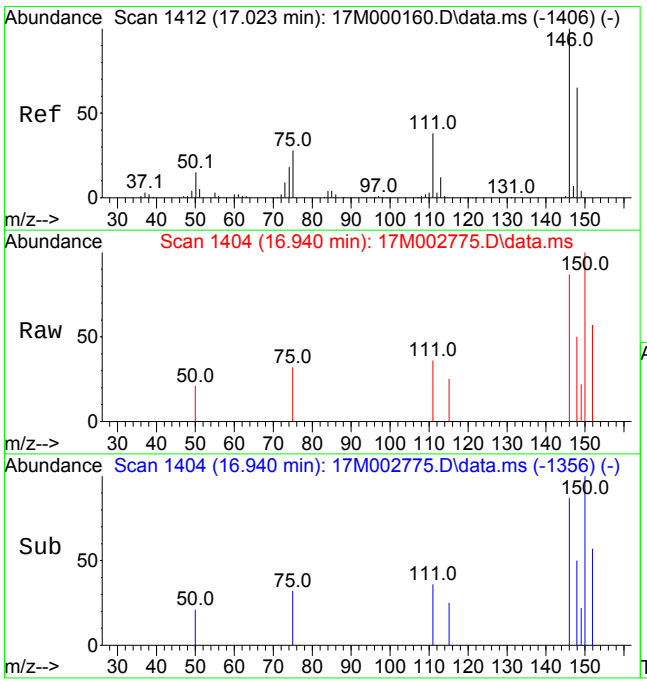

#92
1,4-Dichlorobenzene
Concen: 0.1205 ug/L
RT: 16.940 min Scan# 1404
Delta R.T. -0.000 min
Lab File: 17M002775.D
Acq: 31 Jan 2014 23:29

Tgt Ion:146 Resp: 2209

Ion	Ratio	Lower	Upper
146	100		
111	178.6	22.3	52.1#

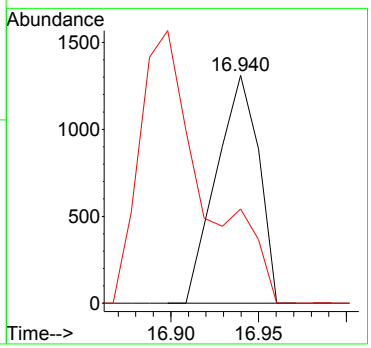

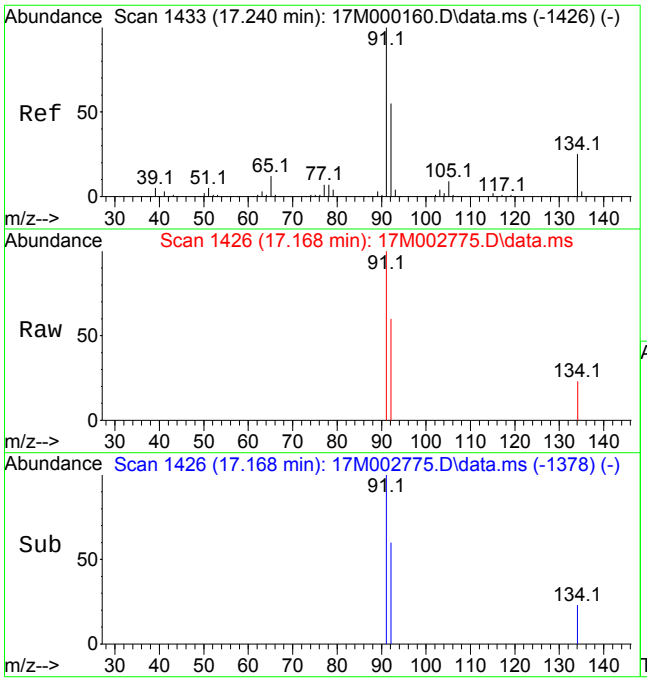

#93
n-Butylbenzene
Concen: 0.3846 ug/L
RT: 17.168 min Scan# 1426
Delta R.T. -0.000 min
Lab File: 17M002775.D
Acq: 31 Jan 2014 23:29

Tgt Ion: 91 Resp: 3167

Ion	Ratio	Lower	Upper
91	100		
134	13.8	15.1	35.1#

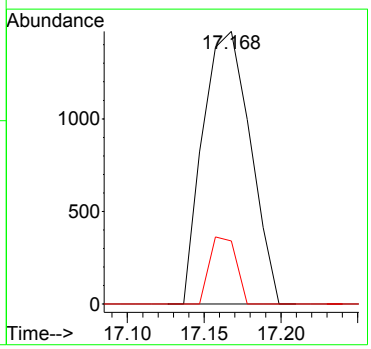

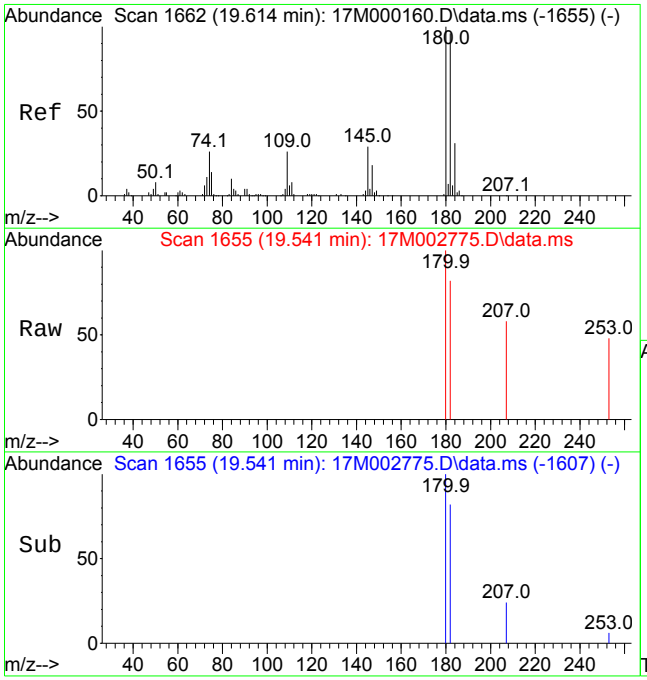

#96
1,2,4-Trichlorobenzene
Concen: 0.1285 ug/L
RT: 19.541 min Scan# 1655
Delta R.T. 0.000 min
Lab File: 17M002775.D
Acq: 31 Jan 2014 23:29

Tgt Ion:180 Resp: 1535

Ion	Ratio	Lower	Upper
180	100		
182	97.6	57.2	133.6
145	0.0	17.6	41.2#

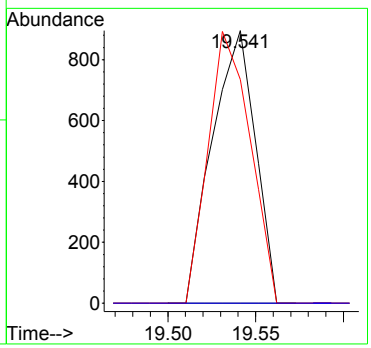

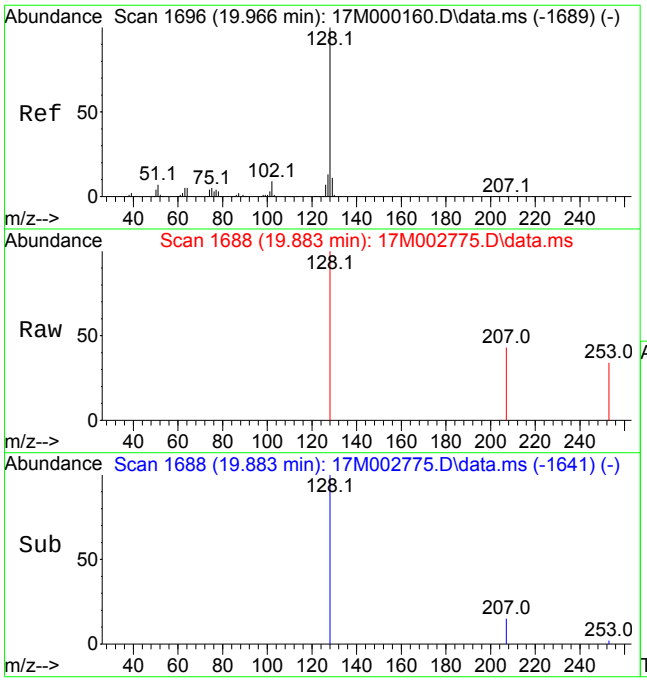

#98
Naphthalene
Concen: 0.1289 ug/L
RT: 19.883 min Scan# 1688
Delta R.T. -0.011 min
Lab File: 17M002775.D
Acq: 31 Jan 2014 23:29

Tgt Ion:128 Resp: 2814

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.7	18.1#

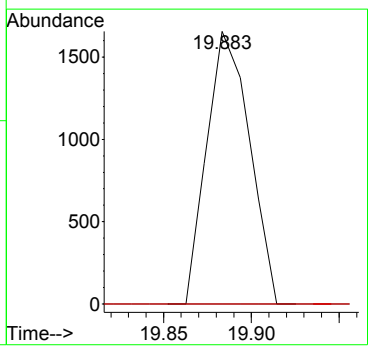

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961146.D Vial: 9
Acq On : 31 Jan 2014 00:29 Operator: MES
Sample : L14011242-02 A 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 07 16:21:29 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	608406	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	432285	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	207894	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.88	111	158516	26.1142 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.44%		
43) 1,2-Dichloroethane-d4	10.52	65	192126	26.4294 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.72%		
58) Toluene-d8	12.91	98	535146	28.1376 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 112.56%#		
79) p-Bromofluorobenzene	16.31	95	206300	24.4623 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.84%		

Target Compounds					Qvalue
3) Chloromethane	3.79	50	1509	0.2270 ug/L #	68
4) Vinyl Chloride	4.02	62	1358	0.2086 ug/L	80
13) Acetone	6.45	43	3874	1.9096 ug/L #	54
14) 1,1-Dichloroethene	6.69	61	441516	38.7743 ug/L	100
15) Tert-Butyl Alcohol	6.69	59	14466	30.9855 ug/L #	57
27) 1,1-Dichloroethane	8.54	63	144140	9.8321 ug/L	98
28) Ethyl-Tert-Butyl ether	8.84	59	5371	0.2175 ug/L #	54
45) 1,2-Dichloroethane	10.65	62	7915	0.7479 ug/L	89
50) 1,4-Dioxane	11.93	88	5942	125.0159 ug/L	89
56) Dimethyl Disulfide	12.91	94	15548	1.2622 ug/L #	25

(#) = qualifier out of range (m) = manual integration
9M961146.D 8260WTR.M Fri Feb 07 16:21:31 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961146.D Vial: 9
Acq On : 31 Jan 2014 00:29 Operator: MES
Sample : L14011242-02 A 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 7 16:21 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration

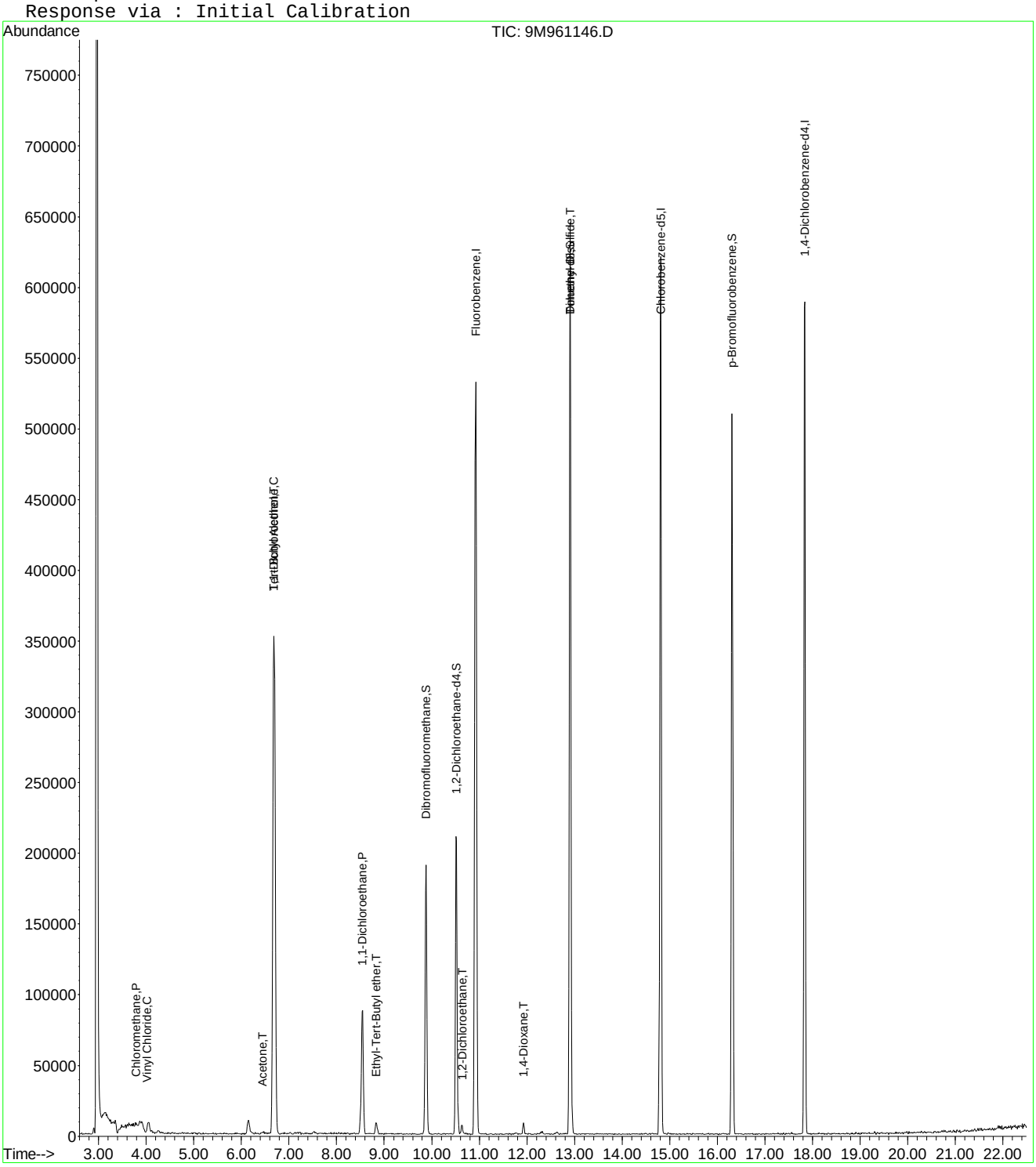

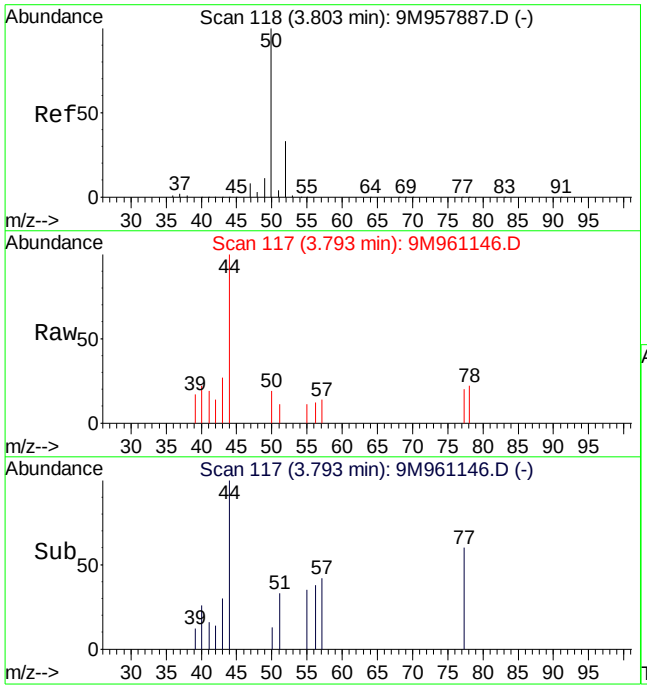

#3
Chloromethane
Concen: 0.23 ug/L
RT: 3.79 min Scan# 117
Delta R.T. 0.02 min
Lab File: 9M961146.D
Acq: 31 Jan 2014 00:29

Tgt Ion: 50 Resp: 1509

Ion	Ratio	Lower	Upper
50	100		
52	13.6	18.8	44.0#

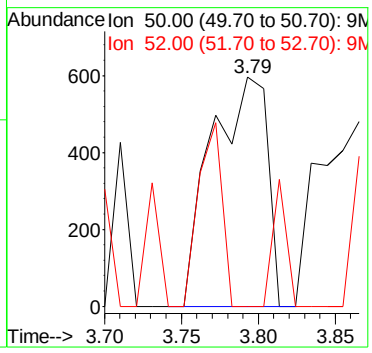

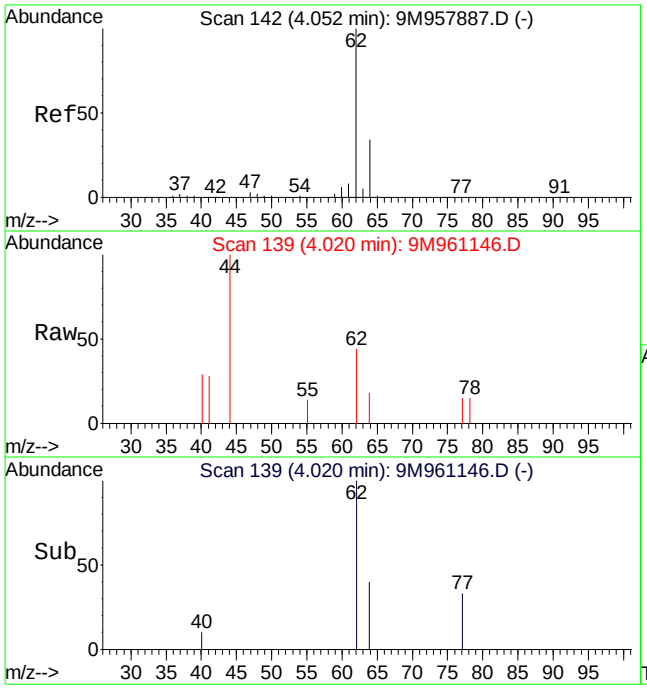

#4
Vinyl Chloride
Concen: 0.21 ug/L
RT: 4.02 min Scan# 139
Delta R.T. 0.00 min
Lab File: 9M961146.D
Acq: 31 Jan 2014 00:29

Tgt Ion: 62 Resp: 1358

Ion	Ratio	Lower	Upper
62	100		
64	18.4	17.6	41.0

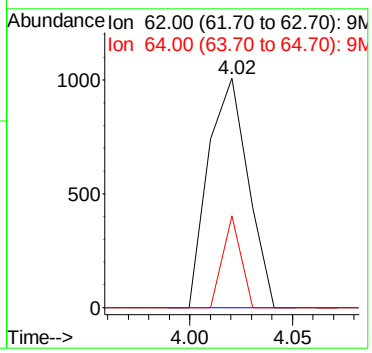

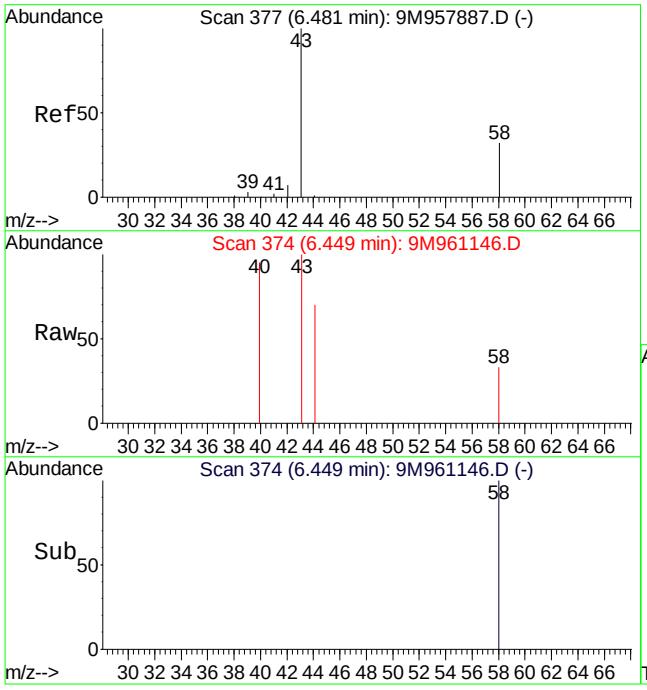

#13
Acetone
Concen: 1.91 ug/L
RT: 6.45 min Scan# 374
Delta R.T. -0.00 min
Lab File: 9M961146.D
Acq: 31 Jan 2014 00:29

Tgt Ion: 43 Resp: 3874

Ion	Ratio	Lower	Upper
43	100		
58	5.3	18.1	42.1#

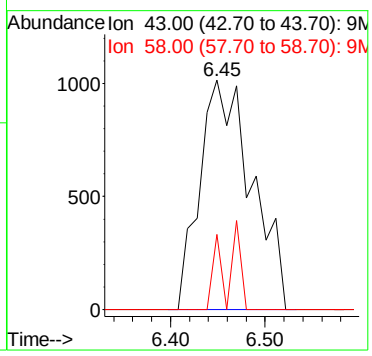

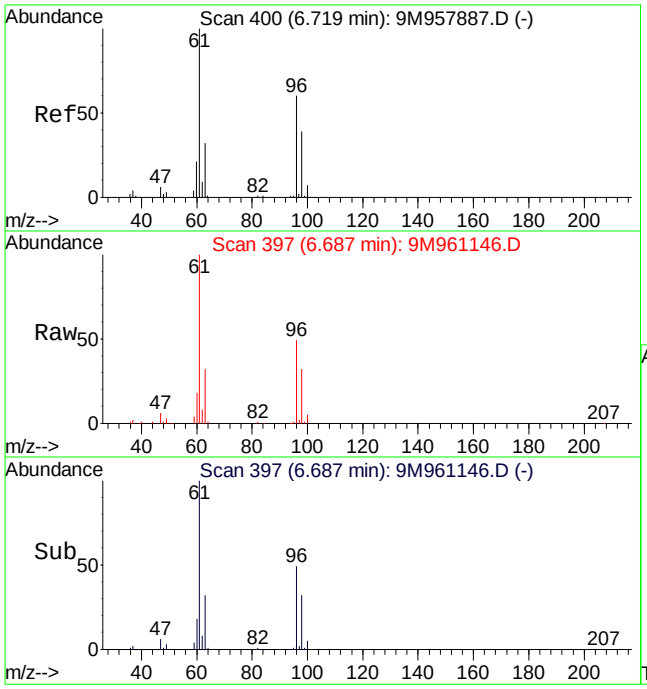

#14
1,1-Dichloroethene
Concen: 38.77 ug/L
RT: 6.69 min Scan# 397
Delta R.T. -0.00 min
Lab File: 9M961146.D
Acq: 31 Jan 2014 00:29

Tgt Ion: 61 Resp: 441516

Ion	Ratio	Lower	Upper
61	100		
96	48.7	29.3	68.3

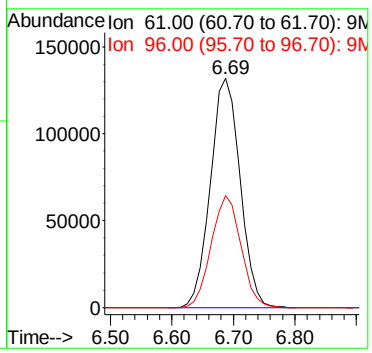

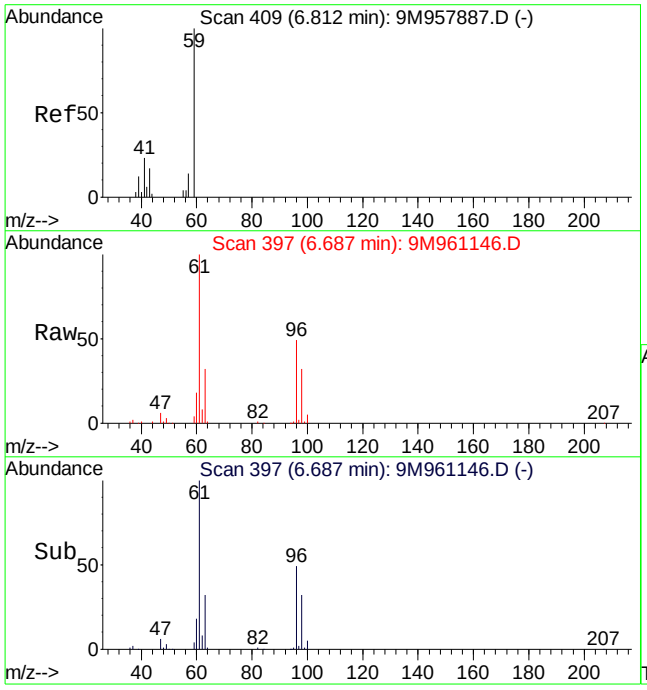

#15
Tert-Butyl Alcohol
Concen: 30.99 ug/L
RT: 6.69 min Scan# 397
Delta R.T. -0.09 min
Lab File: 9M961146.D
Acq: 31 Jan 2014 00:29

Tgt Ion: 59 Resp: 14466

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.1	35.1#
57	0.0	6.3	14.7#

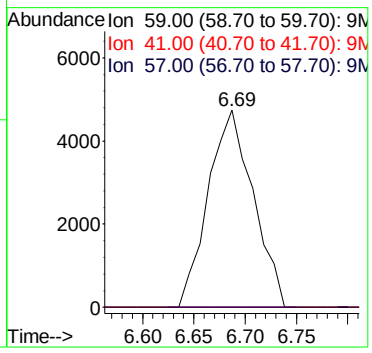

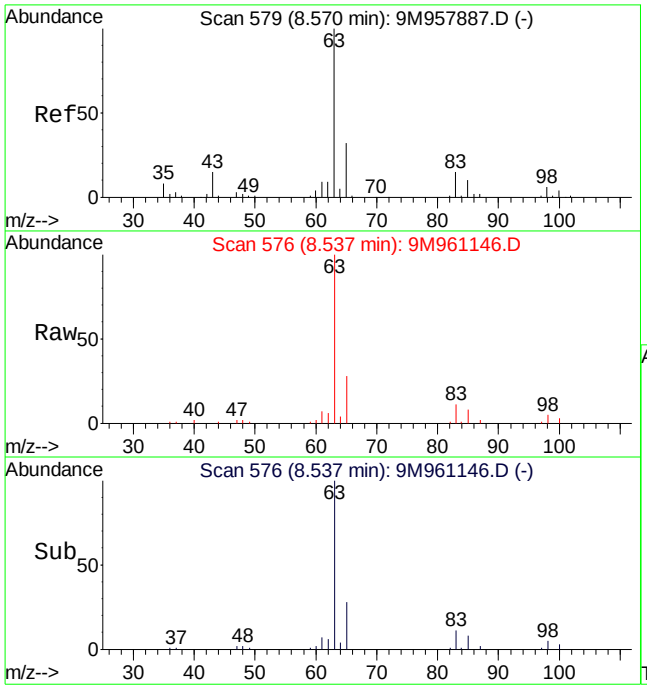

#27
1,1-Dichloroethane
Concen: 9.83 ug/L
RT: 8.54 min Scan# 576
Delta R.T. -0.00 min
Lab File: 9M961146.D
Acq: 31 Jan 2014 00:29

Tgt Ion: 63 Resp: 144140

Ion	Ratio	Lower	Upper
63	100		
65	28.8	18.0	42.0
83	11.1	7.0	16.2

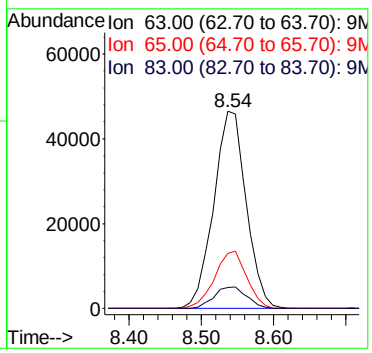

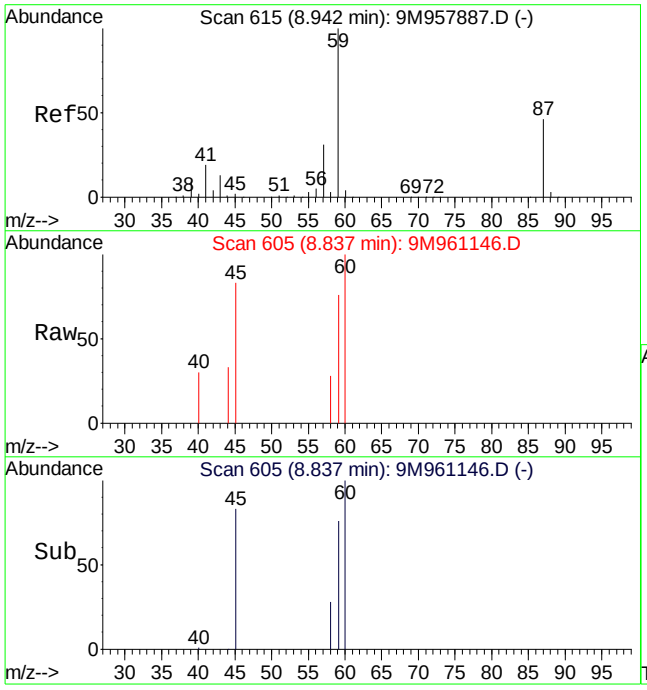

#28
Ethyl-Tert-Butyl ether
Concen: 0.22 ug/L
RT: 8.84 min Scan# 605
Delta R.T. -0.07 min
Lab File: 9M961146.D
Acq: 31 Jan 2014 00:29

Tgt Ion: 59 Resp: 5371

Ion	Ratio	Lower	Upper
59	100		
87	0.0	19.1	44.7#
57	13.1	20.2	47.0#

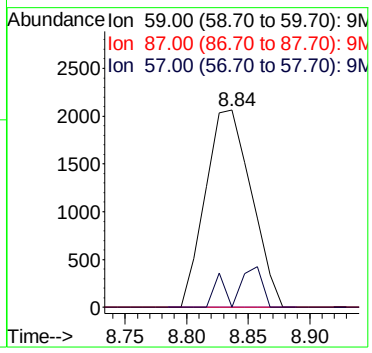

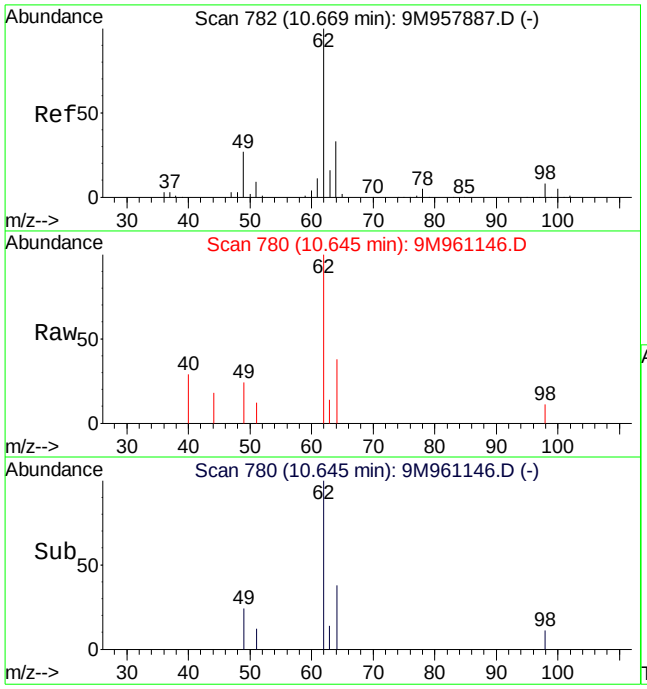

#45
1,2-Dichloroethane
Concen: 0.75 ug/L
RT: 10.65 min Scan# 780
Delta R.T. 0.01 min
Lab File: 9M961146.D
Acq: 31 Jan 2014 00:29

Tgt Ion: 62 Resp: 7915

Ion	Ratio	Lower	Upper
62	100		
64	33.7	18.2	42.6
49	32.2	24.8	57.8

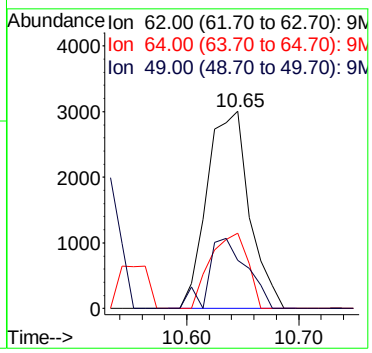

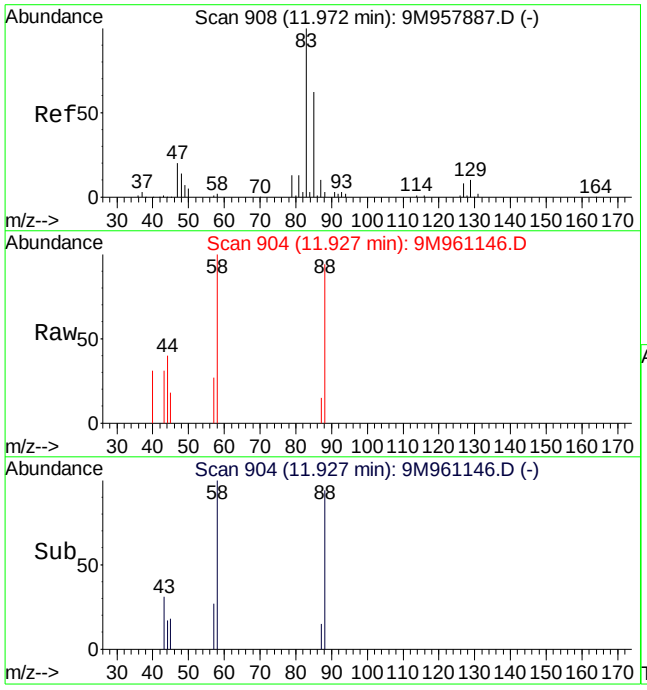

#50
1,4-Dioxane
Concen: 125.02 ug/L
RT: 11.93 min Scan# 904
Delta R.T. -0.00 min
Lab File: 9M961146.D
Acq: 31 Jan 2014 00:29

Tgt Ion: 88 Resp: 5942

Ion	Ratio	Lower	Upper
88	100		
58	95.9	51.5	120.3

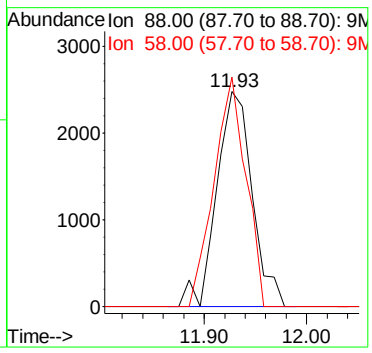

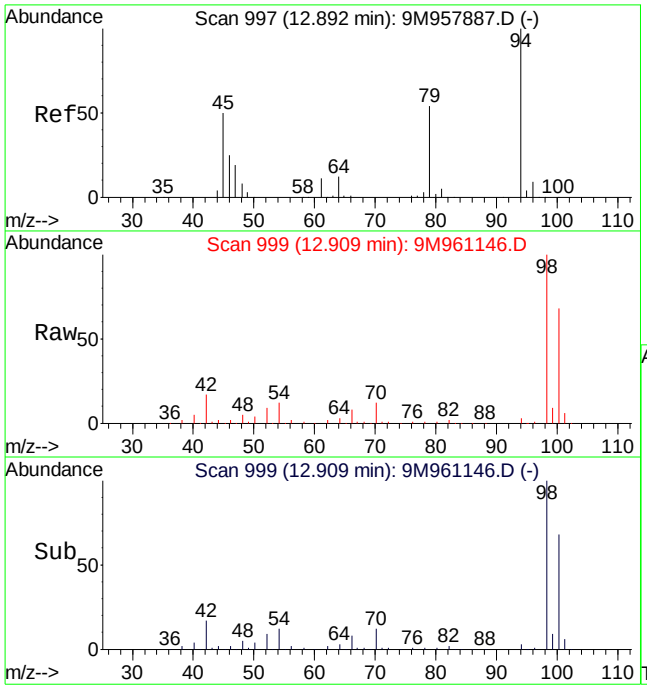

#56
Dimethyl Disulfide
Concen: 1.26 ug/L
RT: 12.91 min Scan# 999
Delta R.T. 0.06 min
Lab File: 9M961146.D
Acq: 31 Jan 2014 00:29

Tgt Ion: 94 Resp: 15548

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.8	74.2#

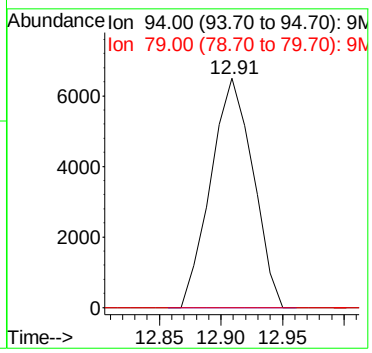

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961145.D Vial: 8
Acq On : 31 Jan 2014 00:00 Operator: MES
Sample : L14011242-03 TB A 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 07 16:21:23 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.93	96	588978	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.80	117	417679	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.83	152	191281	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.87	111	156607	26.6508 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.60%		
43) 1,2-Dichloroethane-d4	10.51	65	184938	26.2798 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.12%		
58) Toluene-d8	12.91	98	522333	28.4242 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 113.68%#		
79) p-Bromofluorobenzene	16.31	95	202657	26.1174 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.48%		

Target Compounds					Qvalue
3) Chloromethane	3.76	50	1096	0.1703 ug/L	86
13) Acetone	6.45	43	4766	2.4268 ug/L	87
36) Tetrahydrofuran	9.84	42	770	0.4242 ug/L #	45
56) Dimethyl Disulfide	12.91	94	13522	1.1340 ug/L #	25
71) Ethylbenzene	14.98	106	2411	0.2512 ug/L #	32
72) m-,p-Xylene	14.98	106	2411	0.2073 ug/L	83
74) Styrene	15.58	104	4665	0.2360 ug/L	83

(#) = qualifier out of range (m) = manual integration
9M961145.D 8260WTR.M Fri Feb 07 16:21:25 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961145.D Vial: 8
Acq On : 31 Jan 2014 00:00 Operator: MES
Sample : L14011242-03 TB A 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 7 16:21 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration

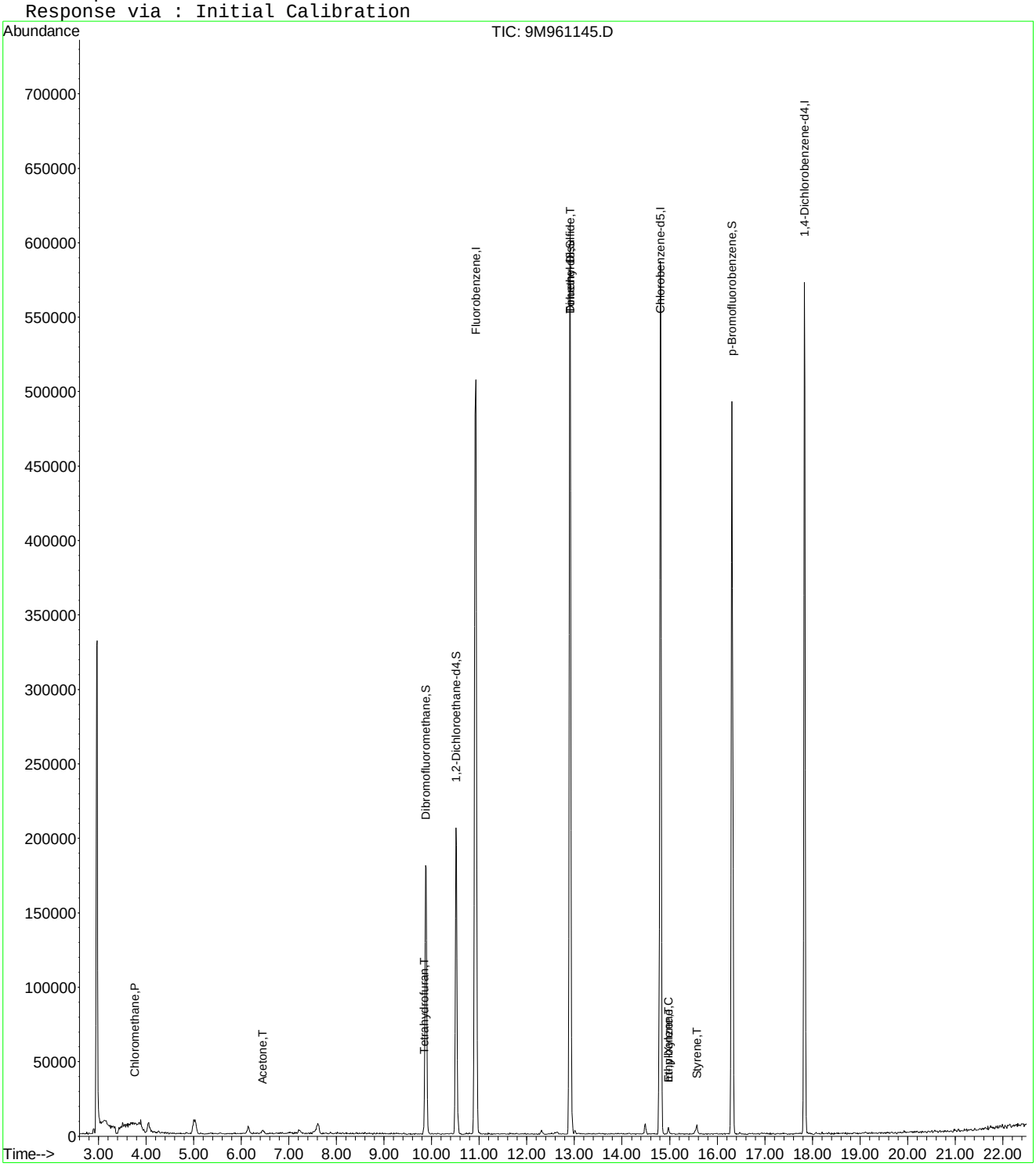

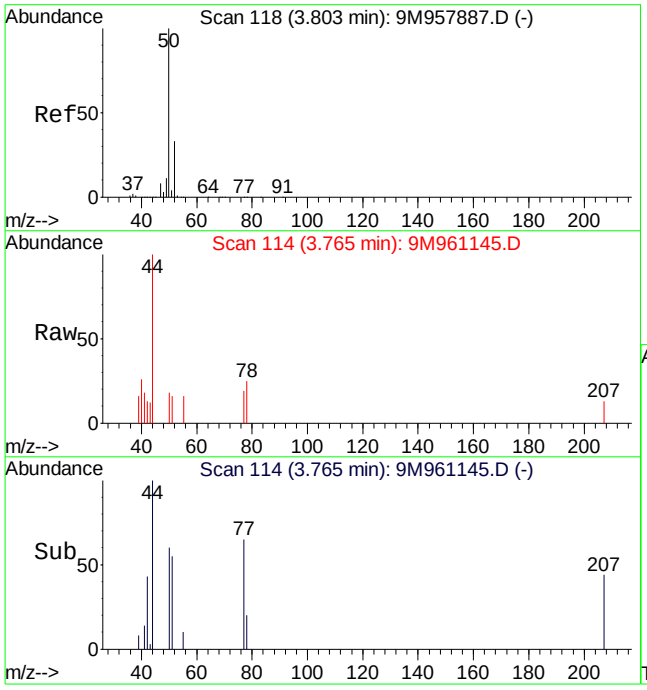

#3
Chloromethane
Concen: 0.17 ug/L
RT: 3.76 min Scan# 114
Delta R.T. -0.01 min
Lab File: 9M961145.D
Acq: 31 Jan 2014 00:00

Tgt Ion: 50 Resp: 1096

Ion	Ratio	Lower	Upper
50	100		
52	23.4	18.8	44.0

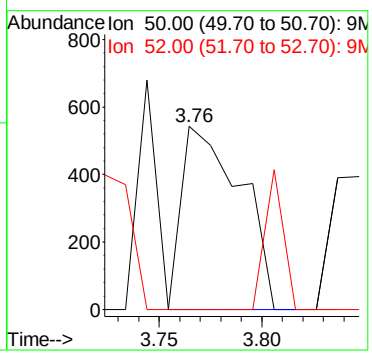

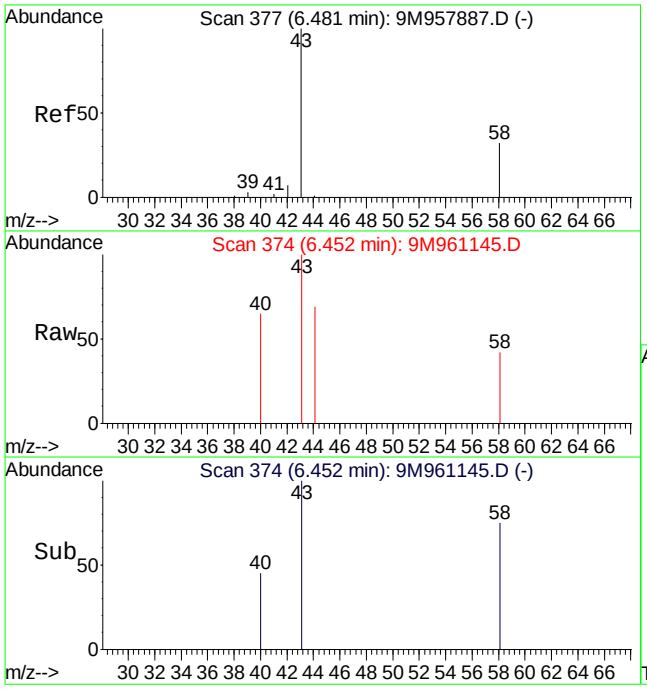

#13
Acetone
Concen: 2.43 ug/L
RT: 6.45 min Scan# 374
Delta R.T. 0.00 min
Lab File: 9M961145.D
Acq: 31 Jan 2014 00:00

Tgt Ion: 43 Resp: 4766

Ion	Ratio	Lower	Upper
43	100		
58	23.3	18.1	42.1

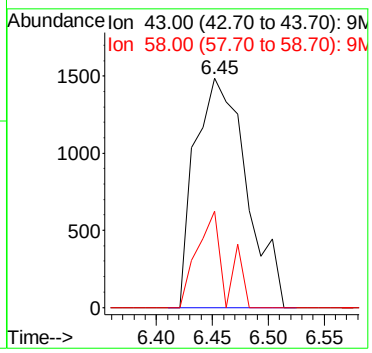

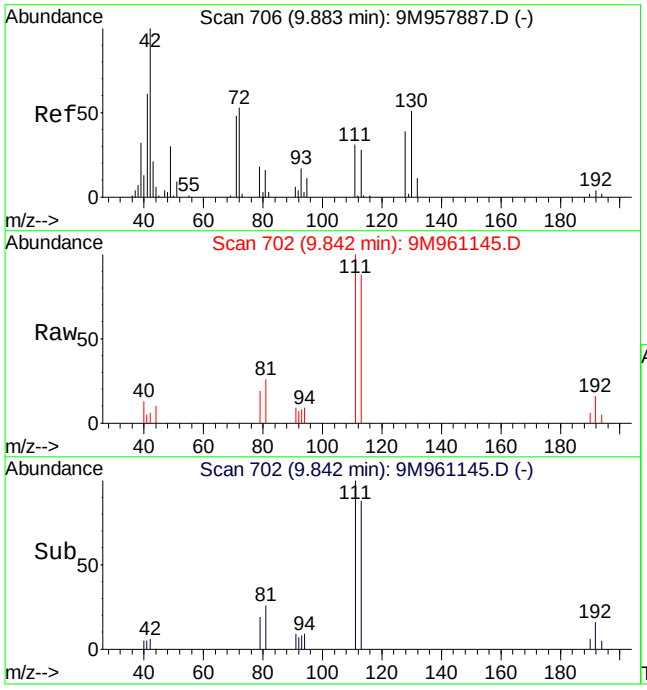

#36
Tetrahydrofuran
Concen: 0.42 ug/L
RT: 9.84 min Scan# 702
Delta R.T. 0.00 min
Lab File: 9M961145.D
Acq: 31 Jan 2014 00:00

Tgt Ion: 42 Resp: 770

Ion	Ratio	Lower	Upper
42	100		
72	0.0	18.3	42.7#
71	0.0	17.3	40.3#

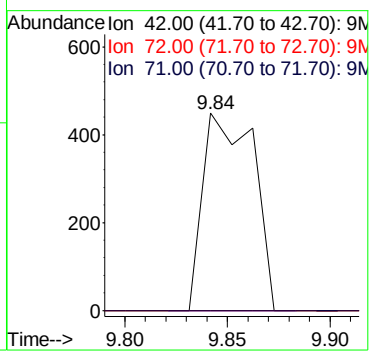

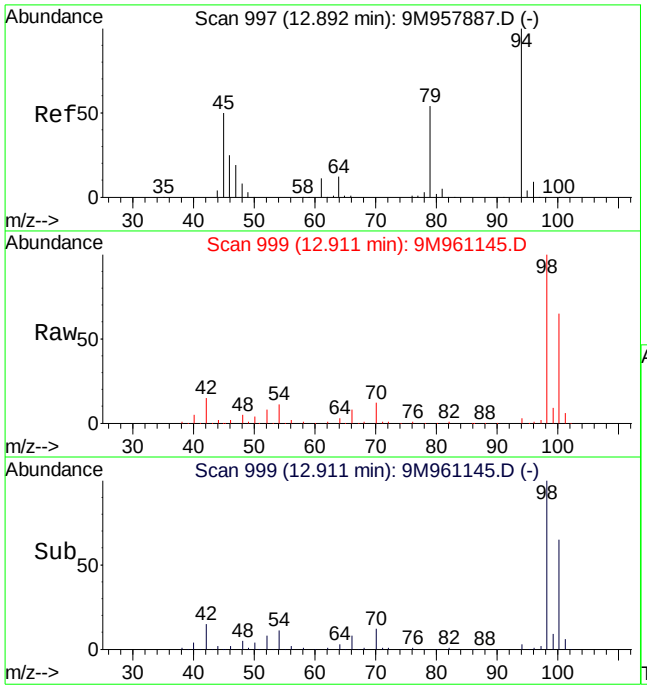

#56
Dimethyl Disulfide
Concen: 1.13 ug/L
RT: 12.91 min Scan# 999
Delta R.T. 0.06 min
Lab File: 9M961145.D
Acq: 31 Jan 2014 00:00

Tgt Ion: 94 Resp: 13522

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.8	74.2#

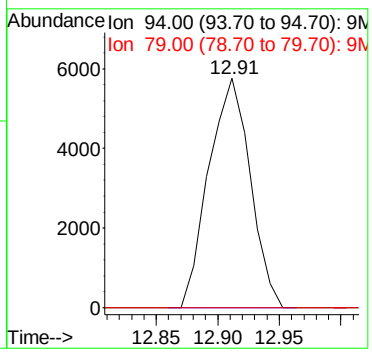

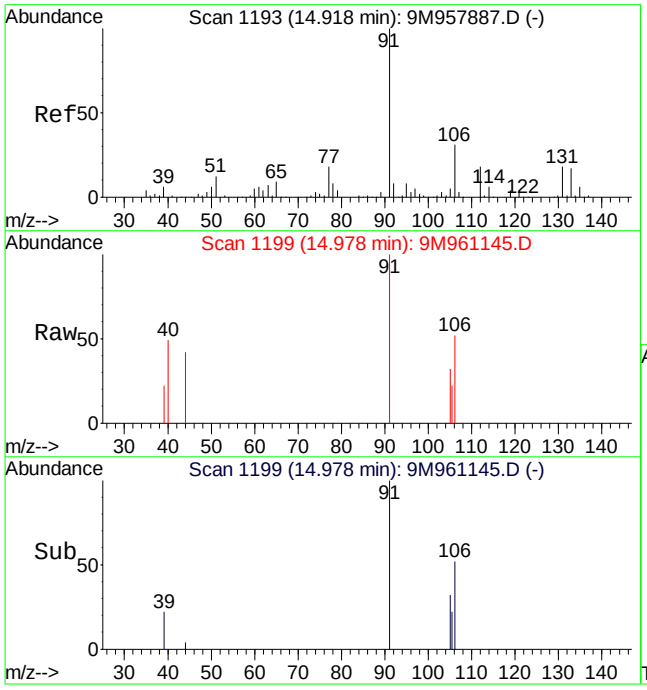

#71
Ethylbenzene
Concen: 0.25 ug/L
RT: 14.98 min Scan# 1199
Delta R.T. 0.10 min
Lab File: 9M961145.D
Acq: 31 Jan 2014 00:00

Tgt Ion:106 Resp: 2411

Ion	Ratio	Lower	Upper
106	100		
91	166.1	179.3	418.5#

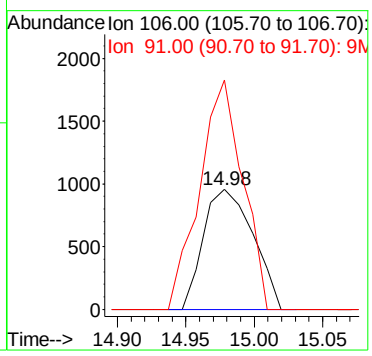

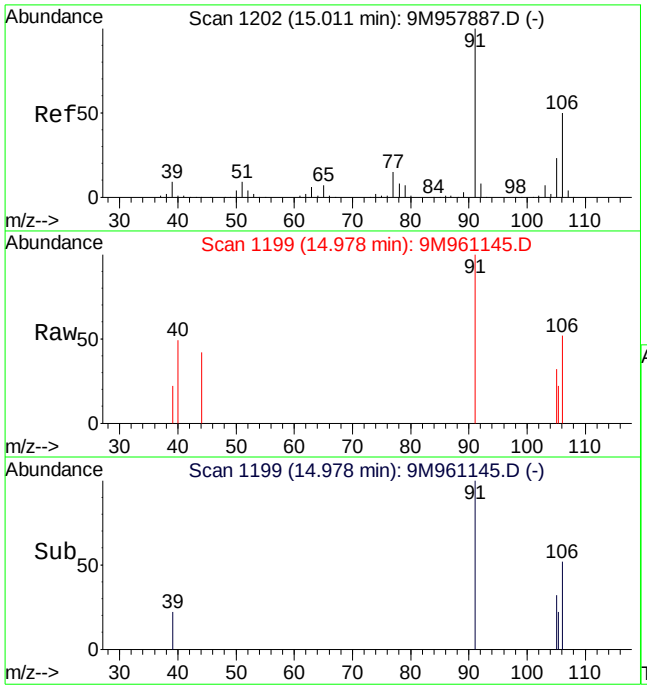

#72
m-,p-Xylene
Concen: 0.21 ug/L
RT: 14.98 min Scan# 1199
Delta R.T. 0.00 min
Lab File: 9M961145.D
Acq: 31 Jan 2014 00:00

Tgt Ion:106 Resp: 2411

Ion	Ratio	Lower	Upper
106	100		
91	166.1	114.4	267.0

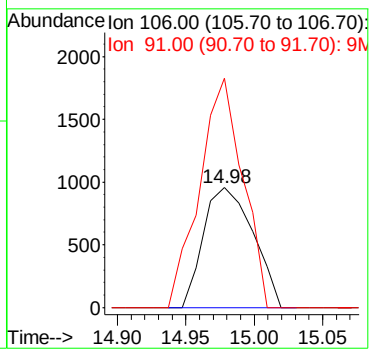

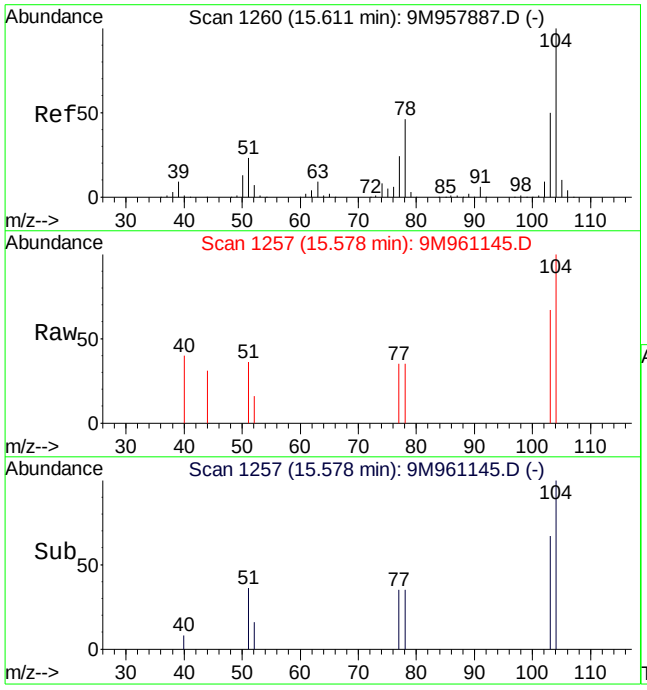

#74
Styrene
Concen: 0.24 ug/L
RT: 15.58 min Scan# 1257
Delta R.T. 0.00 min
Lab File: 9M961145.D
Acq: 31 Jan 2014 00:00

Tgt Ion:104 Resp: 4665

Ion	Ratio	Lower	Upper
104	100		
78	40.5	31.3	72.9

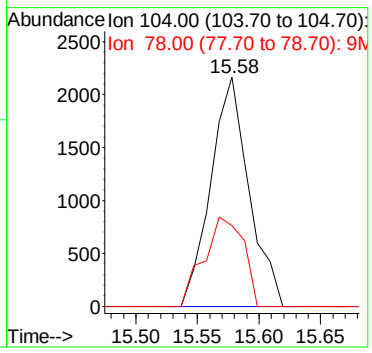

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961147.D Vial: 10
Acq On : 31 Jan 2014 00:58 Operator: MES
Sample : L14011242-04 A 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 07 16:21:36 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.93	96	546586	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.80	117	387079	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.83	152	174010	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.87	111	154968	28.4172 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.68%		
43) 1,2-Dichloroethane-d4	10.51	65	186188	28.5094 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.04%		
58) Toluene-d8	12.91	98	509290	29.9054 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 119.64%#		
79) p-Bromofluorobenzene	16.31	95	195098	27.6388 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.56%		

Target Compounds

					Qvalue
3) Chloromethane	3.78	50	1049	0.1757 ug/L #	1
4) Vinyl Chloride	4.02	62	1733	0.2963 ug/L #	72
13) Acetone	6.45	43	3037	1.6663 ug/L #	57
14) 1,1-Dichloroethene	6.69	61	440376	43.0483 ug/L	100
27) 1,1-Dichloroethane	8.54	63	140664	10.6803 ug/L	99
28) Ethyl-Tert-Butyl ether	8.83	59	4946	0.2229 ug/L #	46
45) 1,2-Dichloroethane	10.64	62	7825	0.8231 ug/L	91
50) 1,4-Dioxane	11.93	88	6613	149.8022 ug/L	97
56) Dimethyl Disulfide	12.90	94	15430	1.3943 ug/L #	25

(#) = qualifier out of range (m) = manual integration
9M961147.D 8260WTR.M Fri Feb 07 16:21:38 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961147.D Vial: 10
Acq On : 31 Jan 2014 00:58 Operator: MES
Sample : L14011242-04 A 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 7 16:21 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration

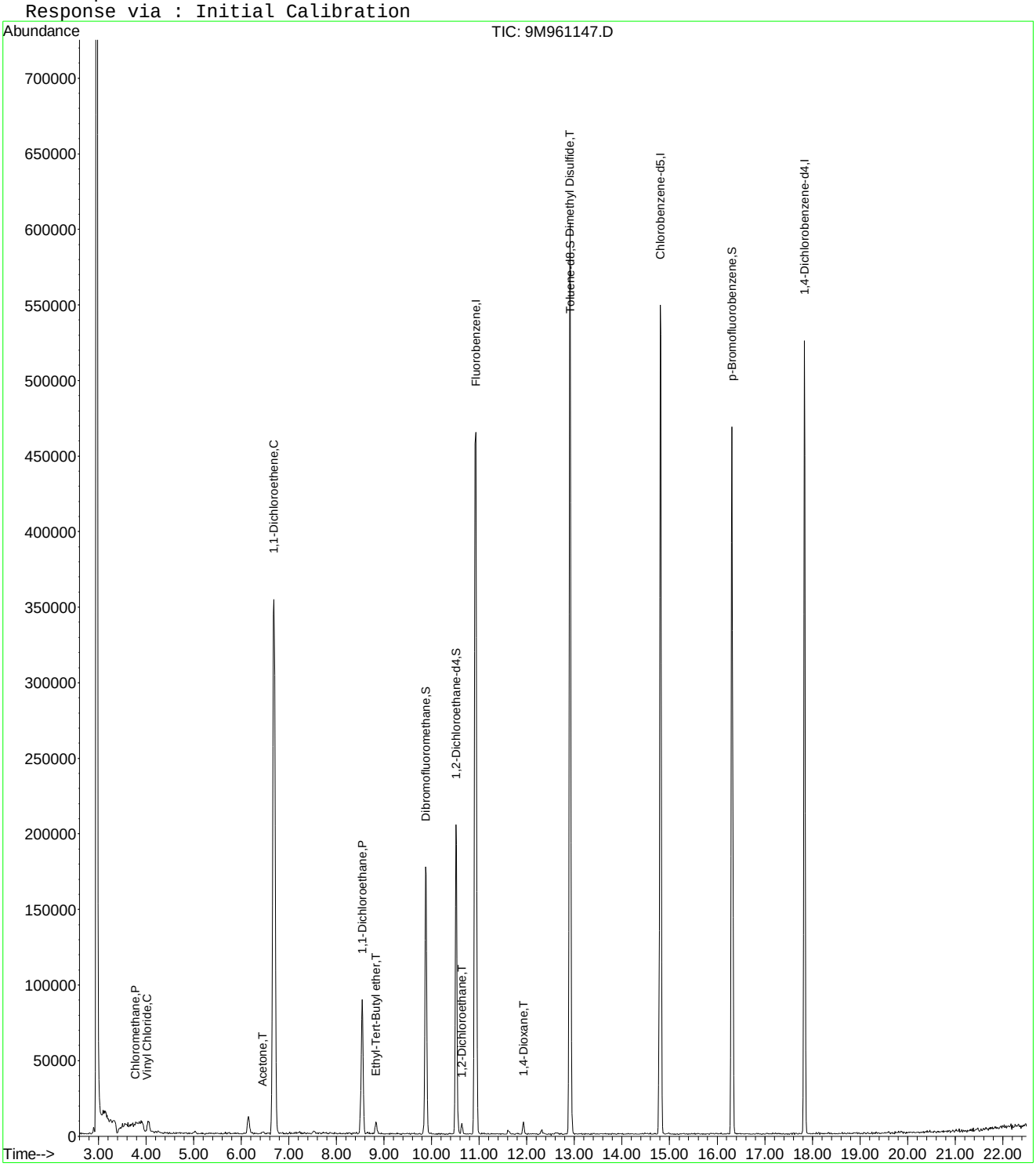

9M961147.D 8260WTR.M Fri Feb 07 16:21:39 2014 Page 2

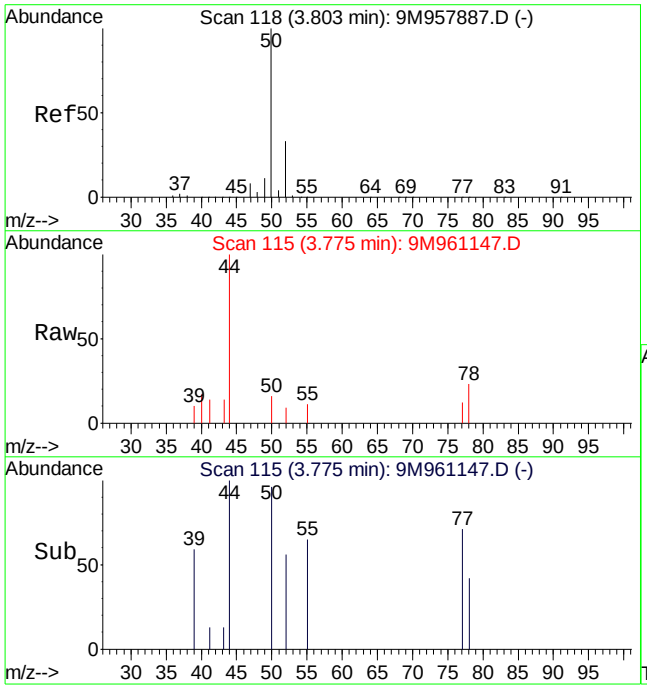

#3
Chloromethane
Concen: 0.18 ug/L
RT: 3.78 min Scan# 115
Delta R.T. 0.00 min
Lab File: 9M961147.D
Acq: 31 Jan 2014 00:58

Tgt Ion: 50 Resp: 1049

Ion	Ratio	Lower	Upper
50	100		
52	90.7	18.8	44.0#

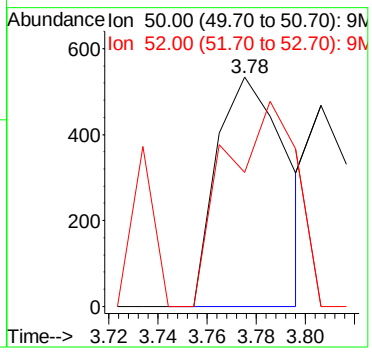

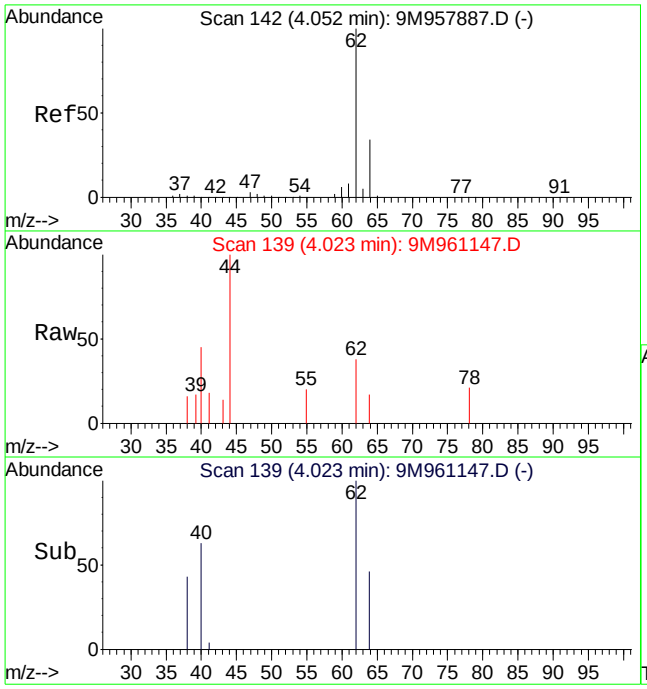

#4
Vinyl Chloride
Concen: 0.30 ug/L
RT: 4.02 min Scan# 139
Delta R.T. 0.00 min
Lab File: 9M961147.D
Acq: 31 Jan 2014 00:58

Tgt Ion: 62 Resp: 1733

Ion	Ratio	Lower	Upper
62	100		
64	14.4	17.6	41.0#

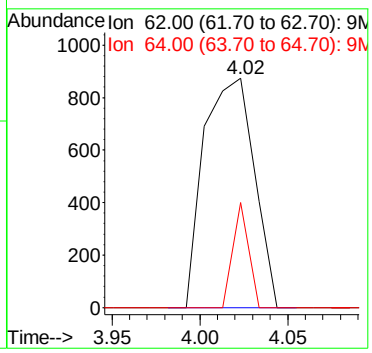

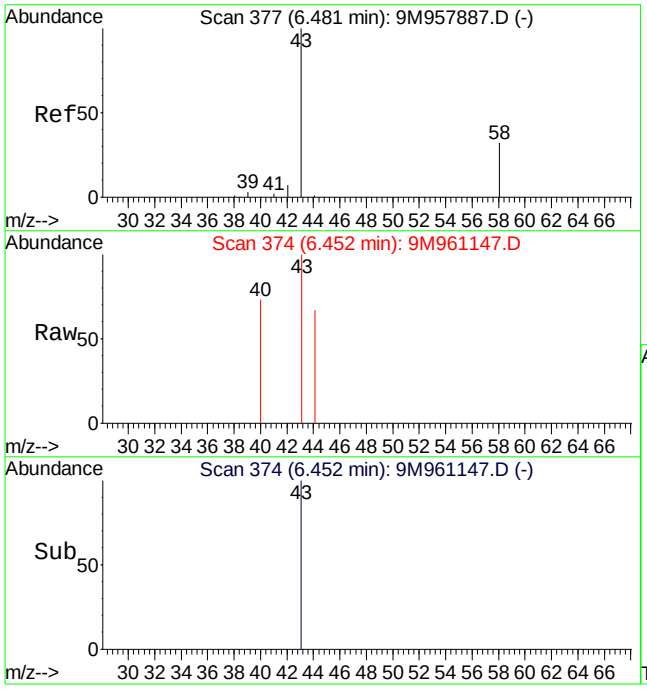

#13
Acetone
Concen: 1.67 ug/L
RT: 6.45 min Scan# 374
Delta R.T. 0.00 min
Lab File: 9M961147.D
Acq: 31 Jan 2014 00:58

Tgt Ion: 43 Resp: 3037

Ion	Ratio	Lower	Upper
43	100		
58	6.8	18.1	42.1#

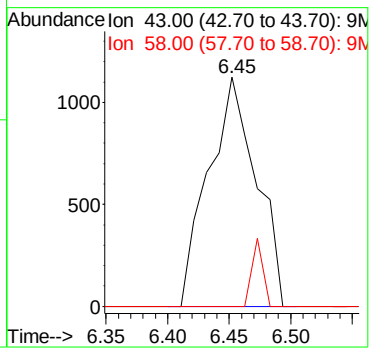

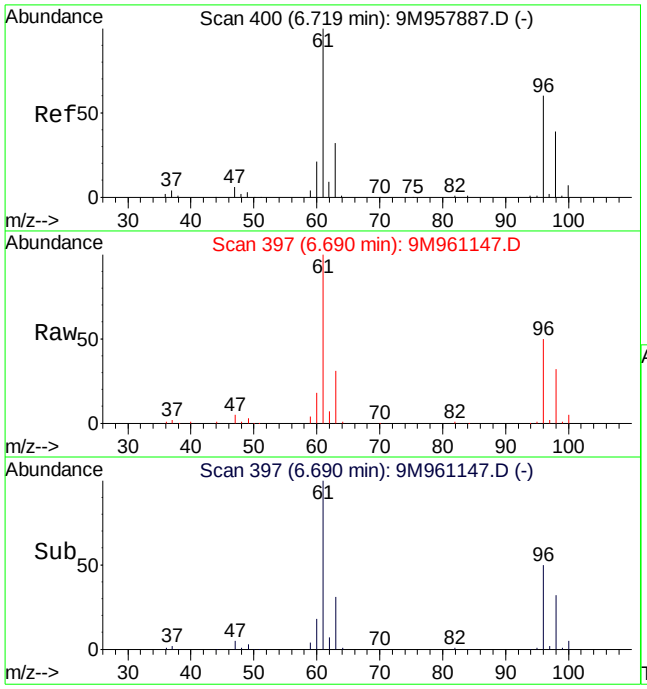

#14
1,1-Dichloroethene
Concen: 43.05 ug/L
RT: 6.69 min Scan# 397
Delta R.T. 0.00 min
Lab File: 9M961147.D
Acq: 31 Jan 2014 00:58

Tgt Ion: 61 Resp: 440376

Ion	Ratio	Lower	Upper
61	100		
96	48.9	29.3	68.3

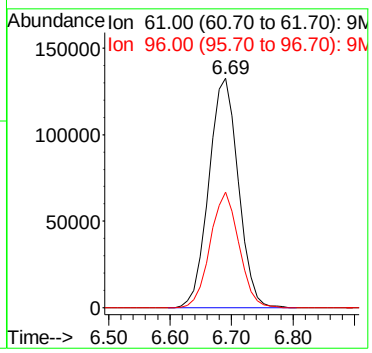

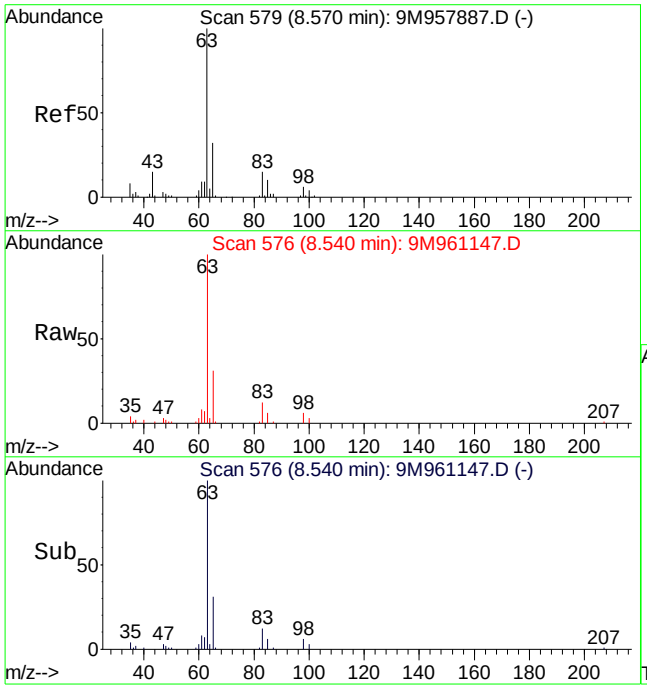

#27
1,1-Dichloroethane
Concen: 10.68 ug/L
RT: 8.54 min Scan# 576
Delta R.T. 0.00 min
Lab File: 9M961147.D
Acq: 31 Jan 2014 00:58

Tgt Ion: 63 Resp: 140664

Ion	Ratio	Lower	Upper
63	100		
65	29.5	18.0	42.0
83	11.6	7.0	16.2

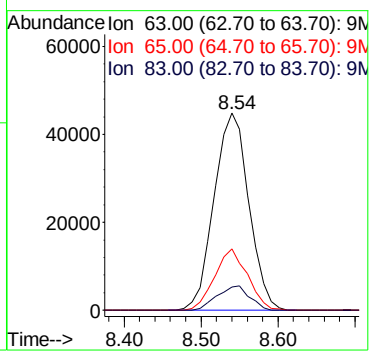

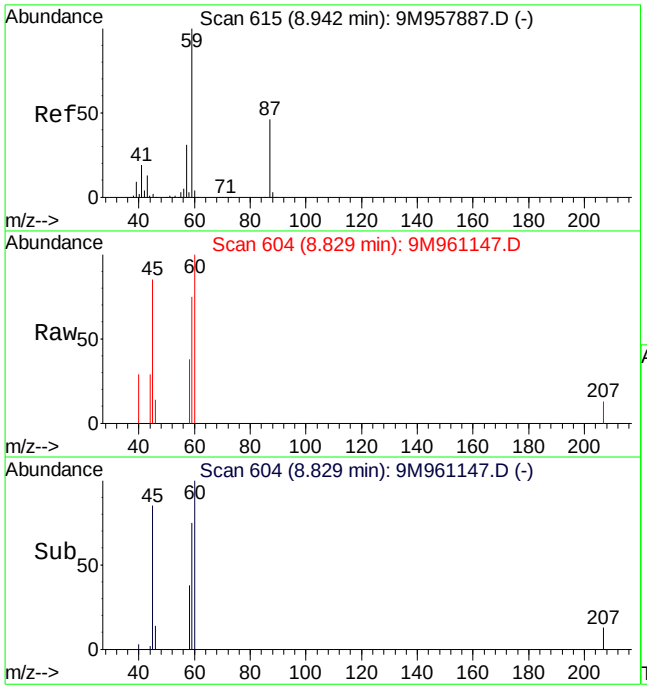

#28
Ethyl-Tert-Butyl ether
Concen: 0.22 ug/L
RT: 8.83 min Scan# 604
Delta R.T. -0.08 min
Lab File: 9M961147.D
Acq: 31 Jan 2014 00:58

Tgt Ion: 59 Resp: 4946

Ion	Ratio	Lower	Upper
59	100		
87	0.0	19.1	44.7#
57	4.5	20.2	47.0#

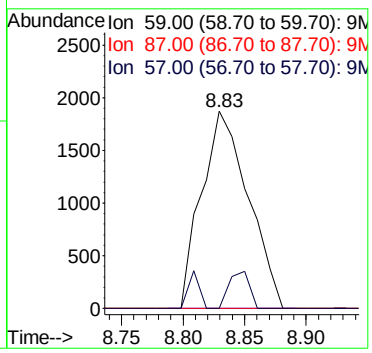

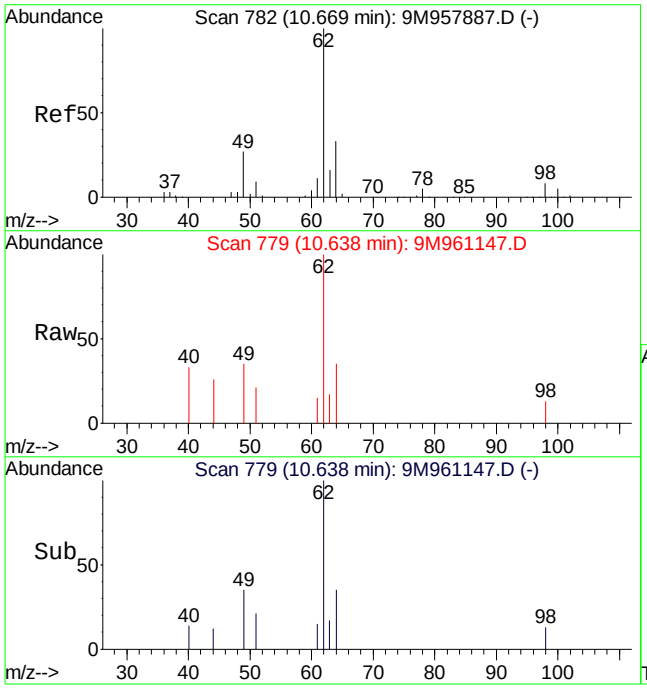

#45
1,2-Dichloroethane
Concen: 0.82 ug/L
RT: 10.64 min Scan# 779
Delta R.T. 0.00 min
Lab File: 9M961147.D
Acq: 31 Jan 2014 00:58

Tgt Ion: 62 Resp: 7825

Ion	Ratio	Lower	Upper
62	100		
64	28.7	18.2	42.6
49	32.5	24.8	57.8

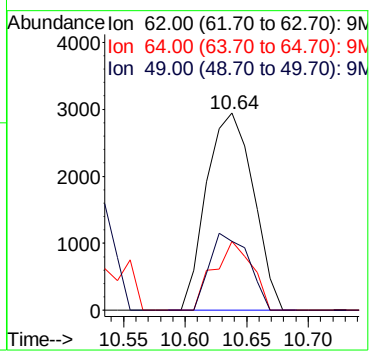

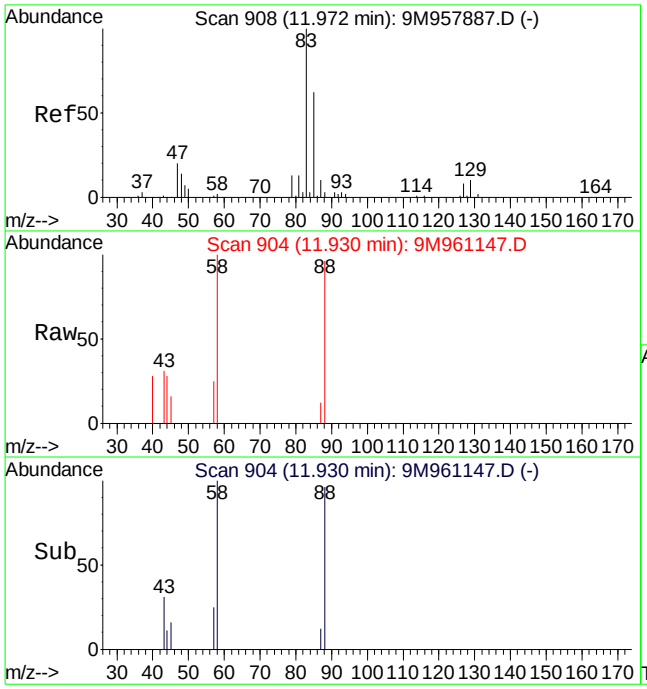

#50
1,4-Dioxane
Concen: 149.80 ug/L
RT: 11.93 min Scan# 904
Delta R.T. 0.00 min
Lab File: 9M961147.D
Acq: 31 Jan 2014 00:58

Tgt Ion: 88 Resp: 6613

Ion	Ratio	Lower	Upper
88	100		
58	88.4	51.5	120.3

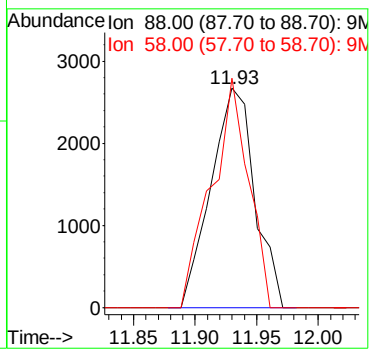

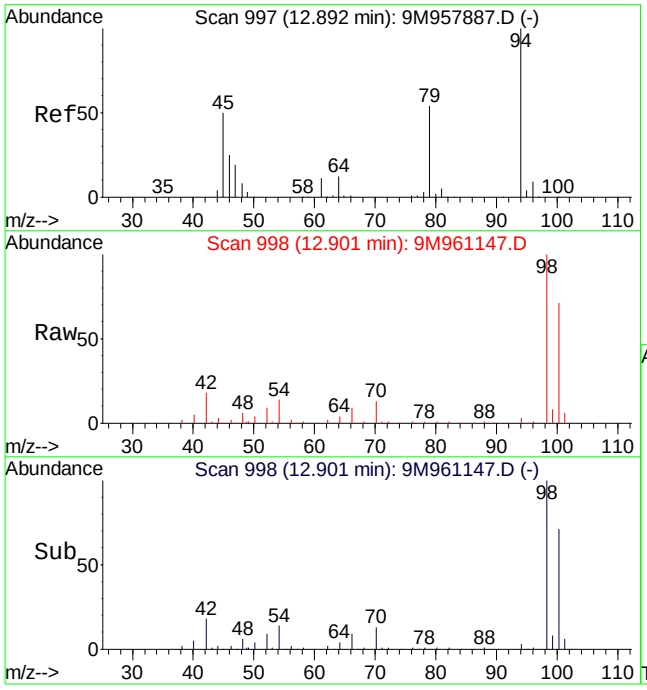

#56
Dimethyl Disulfide
Concen: 1.39 ug/L
RT: 12.90 min Scan# 998
Delta R.T. 0.05 min
Lab File: 9M961147.D
Acq: 31 Jan 2014 00:58

Tgt Ion: 94 Resp: 15430

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.8	74.2#

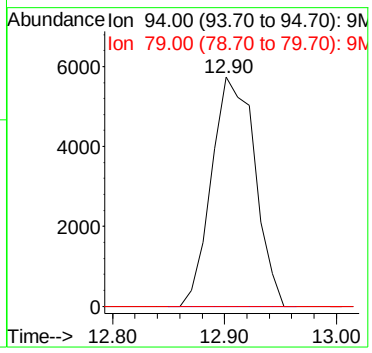

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000186.D
Acq On : 13 Oct 2013 17:48
Operator : MES
Sample : WG448462-02 5ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 17 17:42:57 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.192	96	834735	25.0000 ug/L	0.00
11) Chlorobenzene-d5	13.996	117	596678	25.0000 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.971	152	298748	25.0000 ug/L	0.00
Target Compounds					Qvalue
2) Acetonitrile	6.139	41	2125	3.70 ug/L #	72
3) 3-Chloro-1-propene	6.513	41	56439	4.88 ug/L #	87
4) 2-Chloro-1,3-butadiene	7.933	53	47335	4.42 ug/L	98
5) Methacrylonitrile	8.762	67	9230	4.25 ug/L	98
6) Ethyl Acetate	8.627	43	20657	4.25 ug/L #	87
7) Isobutyl Alcohol	8.793	43	984	6.08 ug/L #	48
8) 1-Butanol	9.415	56	1024	34.64 ug/L #	16
9) Methyl methacrylate	10.939	41	18354	4.00 ug/L	99
10) 2-Nitropropane	11.249	43	5280	3.08 ug/L	90
12) Cyclohexanone	15.479	55	199	17.31 ug/L #	23

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000186.D
Acq On : 13 Oct 2013 17:48
Operator : MES
Sample : WG448462-02 5ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 17 17:42:57 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

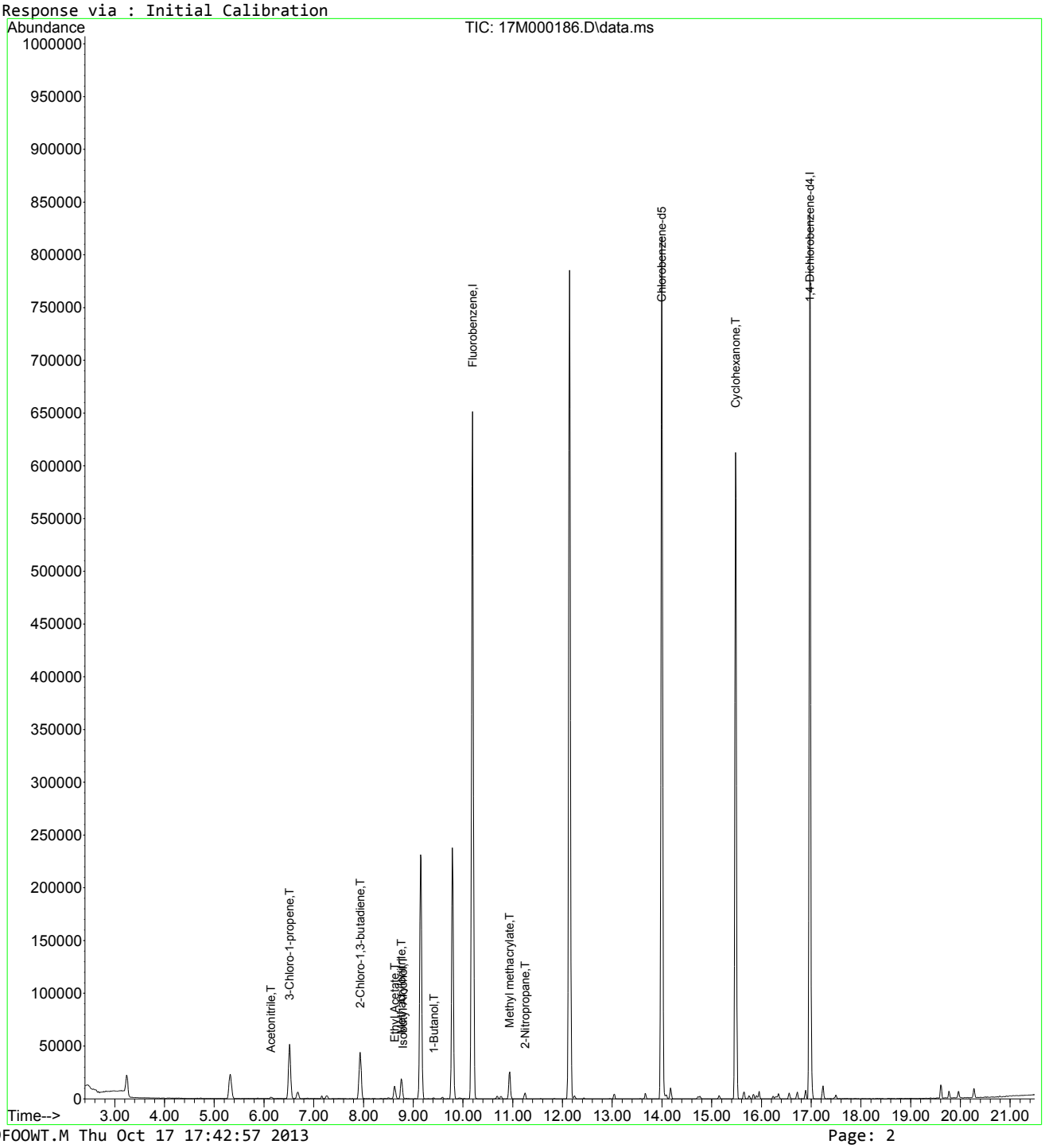

A9FOOWT.M Thu Oct 17 17:42:57 2013 Page: 2

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000186.D
Acq On : 13 Oct 2013 17:48
Operator : MES
Sample : WG448462-02 5ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 17 17:43:35 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.00
2	T	Acetonitrile	5.000	3.703	25.9#	0	0.01
3	T	3-Chloro-1-propene	5.000	4.880	2.4	100	0.00
4	T	2-Chloro-1,3-butadiene	5.000	4.424	11.5	100	0.00
5	T	Methacrylonitrile	5.000	4.254	14.9	100	0.00
6	T	Ethyl Acetate	5.000	4.247	15.1	100	0.01
7	T	Isobutyl Alcohol	5.000	6.076	-21.5	0	0.01
8	T	1-Butanol	-1.000	34.643	0.0	0	-0.30
9	T	Methyl methacrylate	5.000	4.002	20.0	100	0.01
10	T	2-Nitropropane	-1.000	3.076	0.0	0	0.00
11		Chlorobenzene-d5	25.000	25.000	0.0	100	0.00
12	T	Cyclohexanone	-1.000	17.312	0.0	0	0.23
13	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000187.D
Acq On : 13 Oct 2013 18:15
Operator : MES
Sample : WG448462-03 20ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 17 17:43:00 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.192	96	769796	25.0000 ug/L	0.00
11) Chlorobenzene-d5	13.996	117	542862	25.0000 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.981	152	283988	25.0000 ug/L	0.01
Target Compounds					Qvalue
2) Acetonitrile	6.129	41	9431	17.82 ug/L #	91
3) 3-Chloro-1-propene	6.512	41	236510	22.18 ug/L	99
4) 2-Chloro-1,3-butadiene	7.932	53	212042	21.49 ug/L	99
5) Methacrylonitrile	8.761	67	39753	19.87 ug/L	99
6) Ethyl Acetate	8.616	43	87278	19.46 ug/L	100
7) Isobutyl Alcohol	8.782	43	5450	36.49 ug/L #	97
8) 1-Butanol	9.725	56	885	33.83 ug/L #	48
9) Methyl methacrylate	10.938	41	81246	19.21 ug/L	100
10) 2-Nitropropane	11.249	43	24099	15.23 ug/L	93
12) Cyclohexanone	15.240	55	1683	31.57 ug/L #	89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000187.D
Acq On : 13 Oct 2013 18:15
Operator : MES
Sample : WG448462-03 20ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 17 17:43:00 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

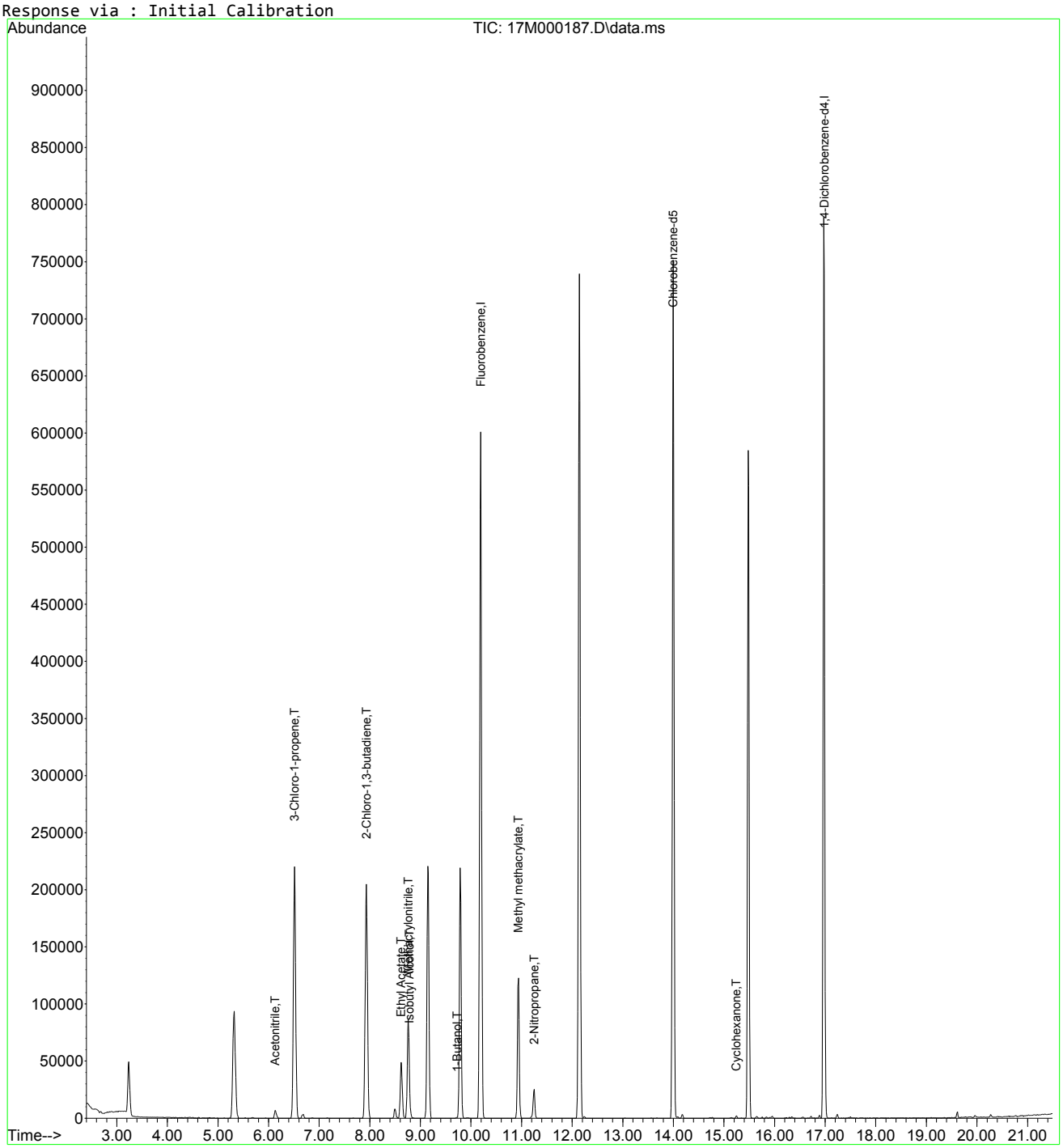

A9FOOWT.M Thu Oct 17 17:43:00 2013 Page: 2

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000188.D
Acq On : 13 Oct 2013 18:43
Operator : MES
Sample : WG448462-04 50ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 17 17:43:02 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.192	96	764083	25.0000 ug/L	0.00
11) Chlorobenzene-d5	13.996	117	535993	25.0000 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.981	152	263764	25.0000 ug/L	0.01
Target Compounds					Qvalue
2) Acetonitrile	6.129	41	25091	47.77 ug/L #	99
3) 3-Chloro-1-propene	6.512	41	571105	53.95 ug/L	100
4) 2-Chloro-1,3-butadiene	7.932	53	517543	52.84 ug/L	100
5) Methacrylonitrile	8.762	67	103271	52.00 ug/L	99
6) Ethyl Acetate	8.616	43	227233	51.04 ug/L	100
7) Isobutyl Alcohol	8.782	43	14258	96.18 ug/L #	96
8) 1-Butanol	9.715	56	2582	56.98 ug/L	98
9) Methyl methacrylate	10.928	41	217667	51.85 ug/L	99
10) 2-Nitropropane	11.249	43	72850	46.37 ug/L	97
12) Cyclohexanone	15.240	55	4463	57.76 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000188.D
Acq On : 13 Oct 2013 18:43
Operator : MES
Sample : WG448462-04 50ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 17 17:43:02 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

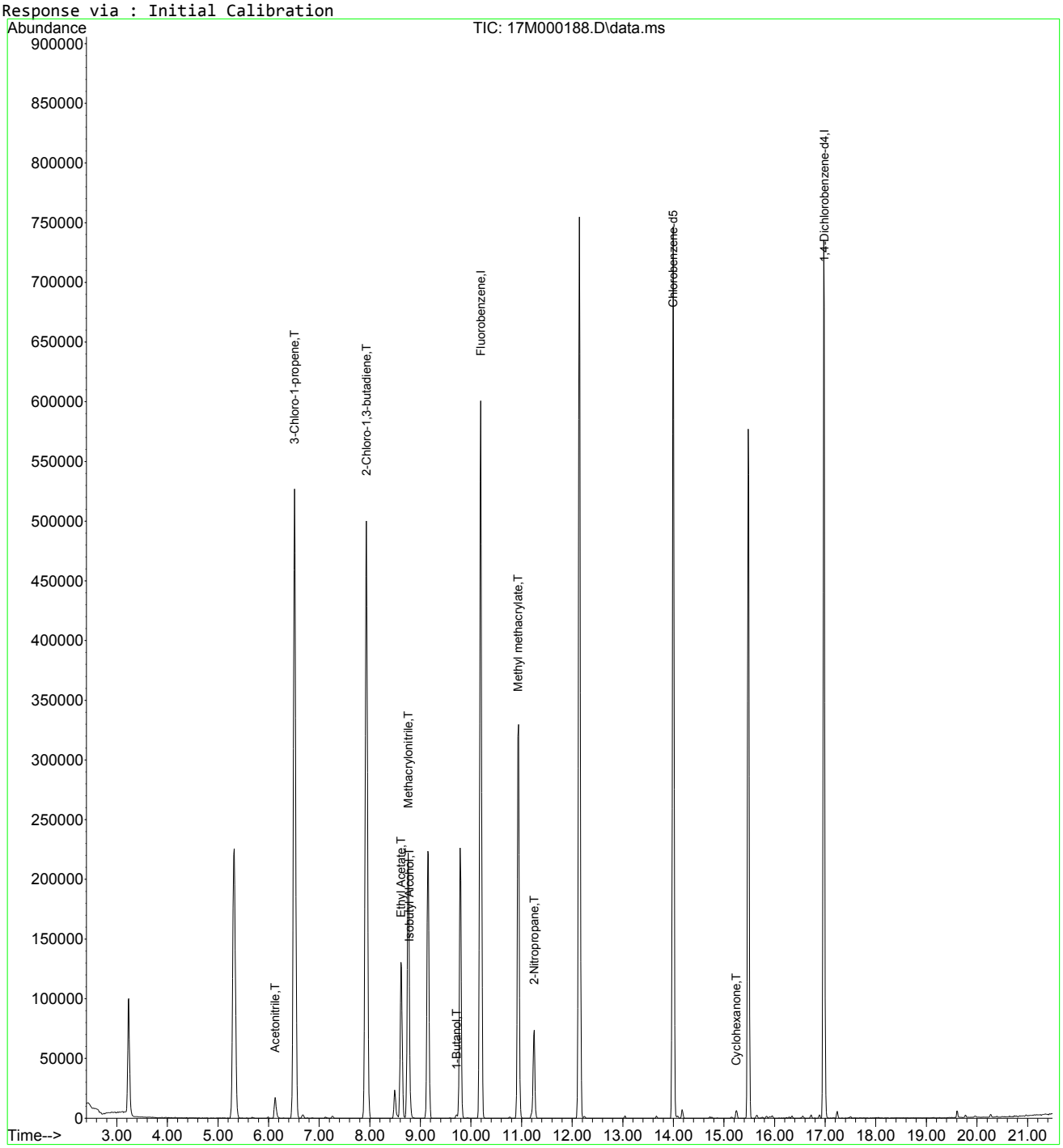

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000189.D
Acq On : 13 Oct 2013 19:11
Operator : MES
Sample : WG448462-05 100ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 17 17:43:04 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.192	96	762819	25.0000 ug/L	0.00
11) Chlorobenzene-d5	13.996	117	543994	25.0000 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.971	152	279020	25.0000 ug/L	0.00
Target Compounds					Qvalue
2) Acetonitrile	6.129	41	49660	94.69 ug/L #	100
3) 3-Chloro-1-propene	6.512	41	1123358	106.29 ug/L	100
4) 2-Chloro-1,3-butadiene	7.932	53	1036798	106.03 ug/L	100
5) Methacrylonitrile	8.762	67	205353	103.57 ug/L	100
6) Ethyl Acetate	8.616	43	457591	102.95 ug/L	100
7) Isobutyl Alcohol	8.782	43	27086	183.01 ug/L	100
8) 1-Butanol	9.715	56	5648	96.66 ug/L	100
9) Methyl methacrylate	10.928	41	448267	106.96 ug/L	100
10) 2-Nitropropane	11.249	43	155172	98.94 ug/L	100
12) Cyclohexanone	15.250	55	9042	97.58 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000189.D
Acq On : 13 Oct 2013 19:11
Operator : MES
Sample : WG448462-05 100ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 17 17:43:04 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

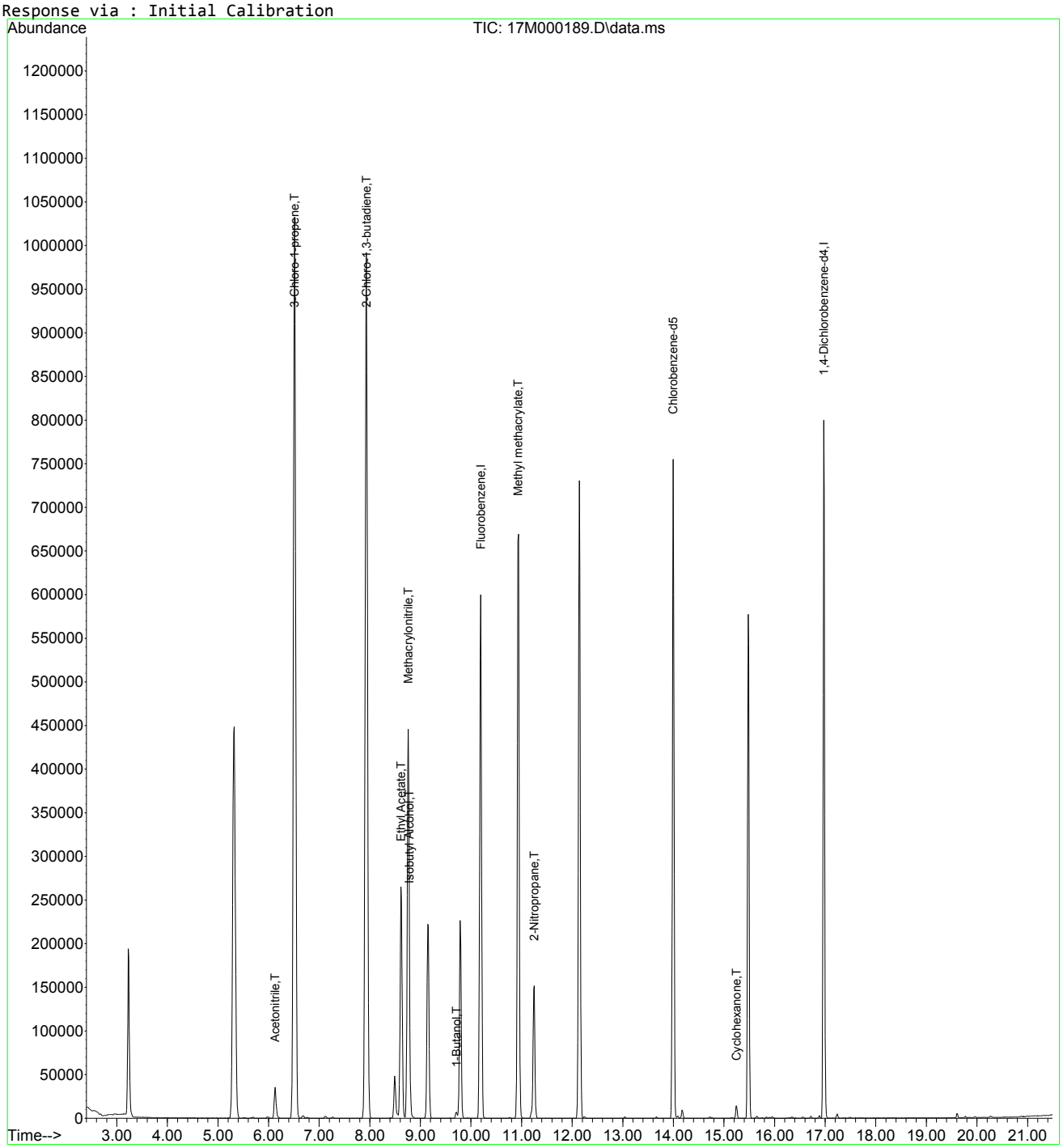

A9FOOWT.M Thu Oct 17 17:43:04 2013 Page: 2

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000190.D
Acq On : 13 Oct 2013 19:39
Operator : MES
Sample : WG448462-06 200ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 17 17:43:06 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.192	96	735626	25.0000 ug/L	0.00
11) Chlorobenzene-d5	13.996	117	520486	25.0000 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.971	152	259787	25.0000 ug/L	0.00
Target Compounds					Qvalue
2) Acetonitrile	6.129	41	104743	207.11 ug/L #	98
3) 3-Chloro-1-propene	6.512	41	2062227	202.34 ug/L	100
4) 2-Chloro-1,3-butadiene	7.932	53	1943243	206.08 ug/L	100
5) Methacrylonitrile	8.762	67	410090	214.48 ug/L	100
6) Ethyl Acetate	8.616	43	919702	214.56 ug/L	100
7) Isobutyl Alcohol	8.782	43	57001	399.37 ug/L	98
8) 1-Butanol	9.705	56	13539	194.38 ug/L	98
9) Methyl methacrylate	10.928	41	887601	219.62 ug/L	100
10) 2-Nitropropane	11.249	43	329942	218.15 ug/L	100
12) Cyclohexanone	15.240	55	19663	191.13 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000190.D
Acq On : 13 Oct 2013 19:39
Operator : MES
Sample : WG448462-06 200ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 17 17:43:06 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

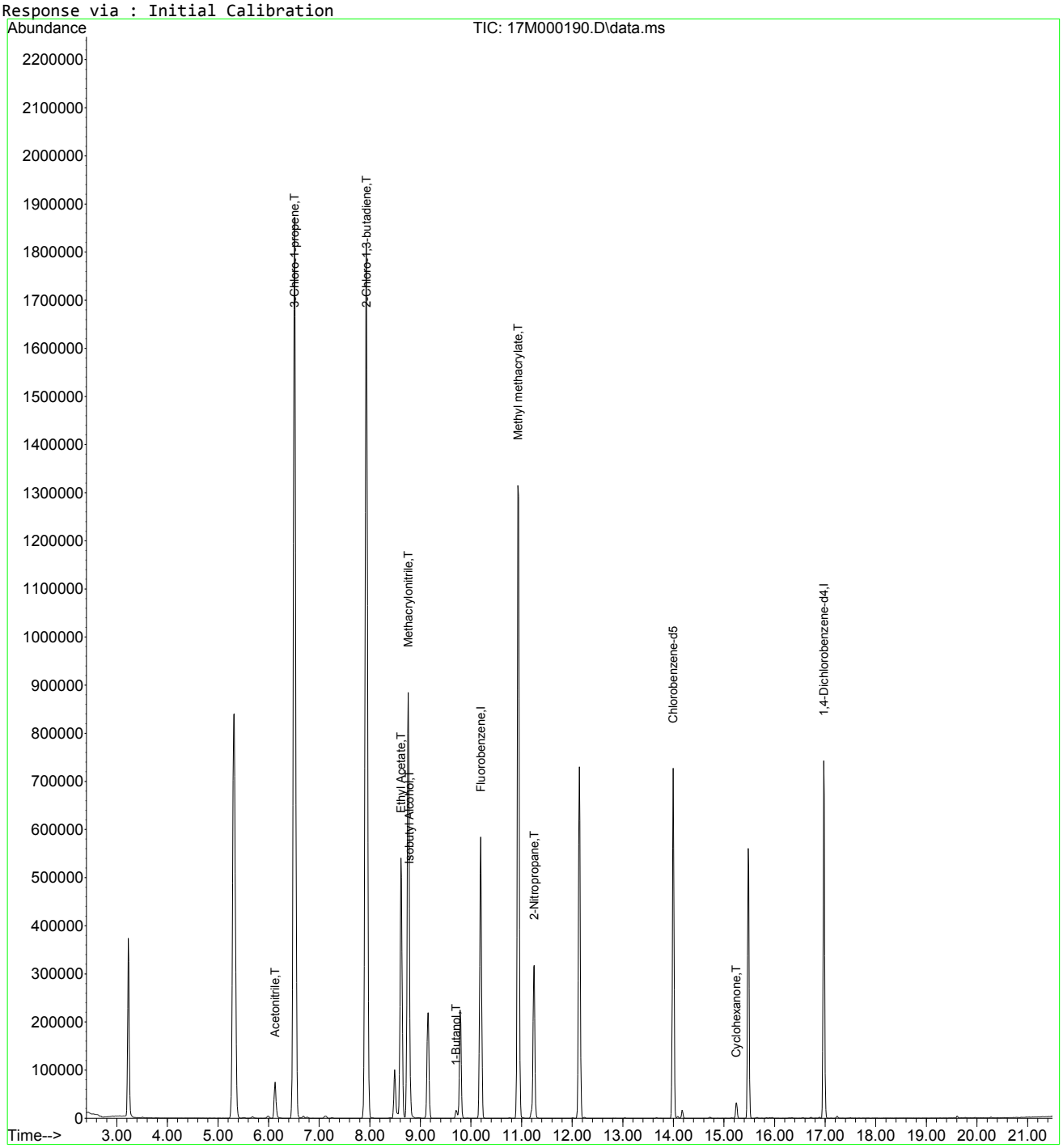

A9FOOWT.M Thu Oct 17 17:43:06 2013 Page: 2

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000191.D
Acq On : 13 Oct 2013 20:07
Operator : MES
Sample : WG448462-07 300ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 17 17:43:08 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.192	96	745118	25.0000 ug/L	0.00
11) Chlorobenzene-d5	13.996	117	526334	25.0000 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.971	152	266080	25.0000 ug/L	0.00
Target Compounds					Qvalue
2) Acetonitrile	6.129	41	157466	307.40 ug/L #	99
3) 3-Chloro-1-propene	6.512	41	2977166	288.39 ug/L	100
4) 2-Chloro-1,3-butadiene	7.932	53	2856242	299.04 ug/L	100
5) Methacrylonitrile	8.762	67	587249	303.22 ug/L	100
6) Ethyl Acetate	8.616	43	1333314	307.09 ug/L	100
7) Isobutyl Alcohol	8.782	43	87294	603.83 ug/L	98
8) 1-Butanol	9.705	56	22963	291.08 ug/L	96
9) Methyl methacrylate	10.928	41	1264197	308.82 ug/L	99
10) 2-Nitropropane	11.249	43	491384	320.75 ug/L	99
12) Cyclohexanone	15.250	55	32886	289.25 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000191.D
Acq On : 13 Oct 2013 20:07
Operator : MES
Sample : WG448462-07 300ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 17 17:43:08 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

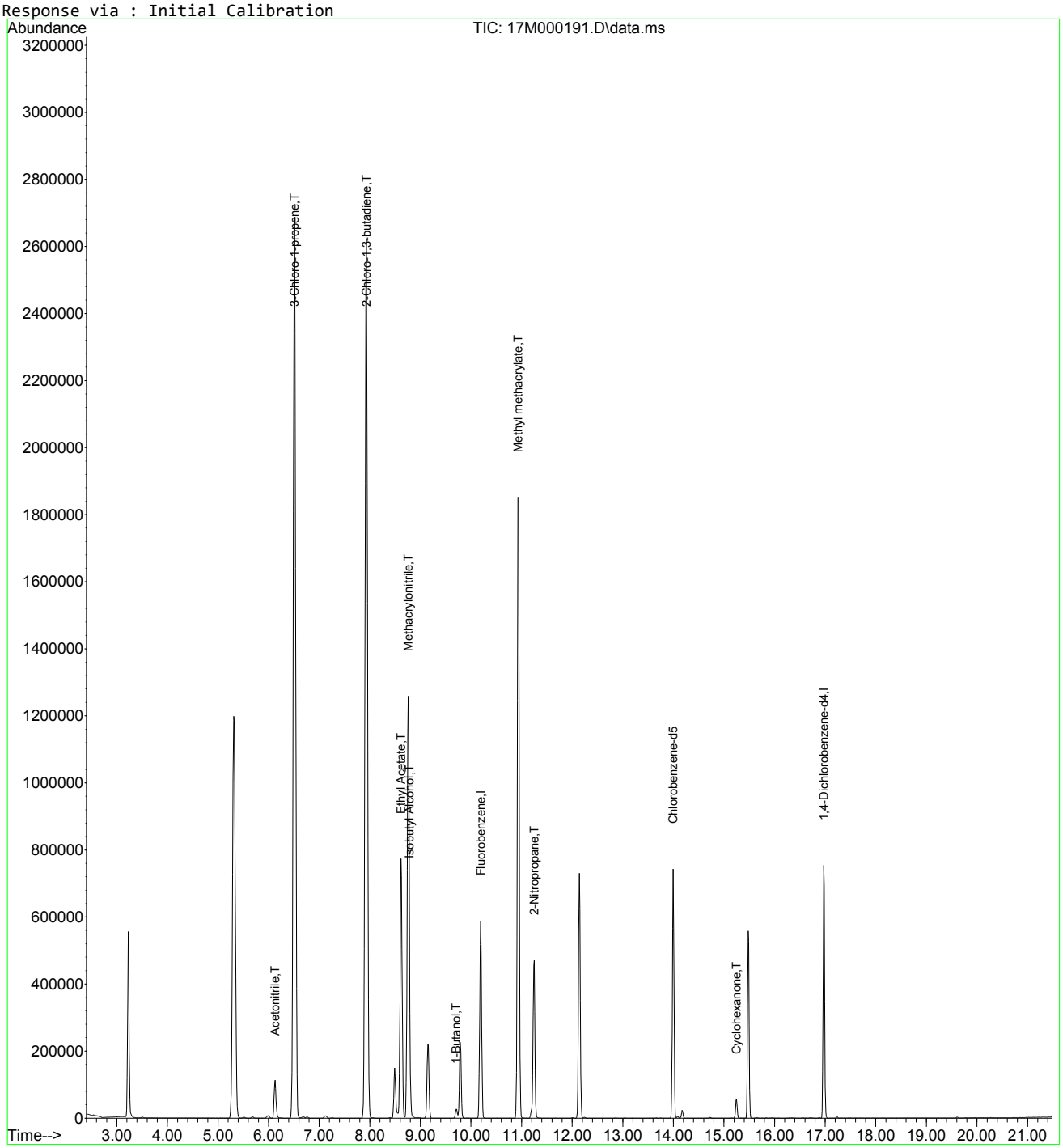

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000192.D
Acq On : 13 Oct 2013 20:35
Operator : MES
Sample : WG448462-08 400ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 17 17:43:10 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.192	96	728958	25.0000 ug/L	0.00
11) Chlorobenzene-d5	13.996	117	513477	25.0000 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.971	152	258316	25.0000 ug/L	0.00
Target Compounds					Qvalue
2) Acetonitrile	6.129	41	215922	430.86 ug/L #	98
3) 3-Chloro-1-propene	6.512	41	3707052	367.06 ug/L	100
4) 2-Chloro-1,3-butadiene	7.932	53	3605435	385.84 ug/L	99
5) Methacrylonitrile	8.762	67	767786	405.22 ug/L	99
6) Ethyl Acetate	8.616	43	1747197	411.34 ug/L	100
7) Isobutyl Alcohol	8.782	43	125947	890.51 ug/L #	95
8) 1-Butanol	9.715	56	36038	418.14 ug/L	96
9) Methyl methacrylate	10.928	41	1636030	408.51 ug/L	99
10) 2-Nitropropane	11.249	43	653312	435.90 ug/L	99
12) Cyclohexanone	15.240	55	51645	423.92 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000192.D
Acq On : 13 Oct 2013 20:35
Operator : MES
Sample : WG448462-08 400ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 17 17:43:10 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

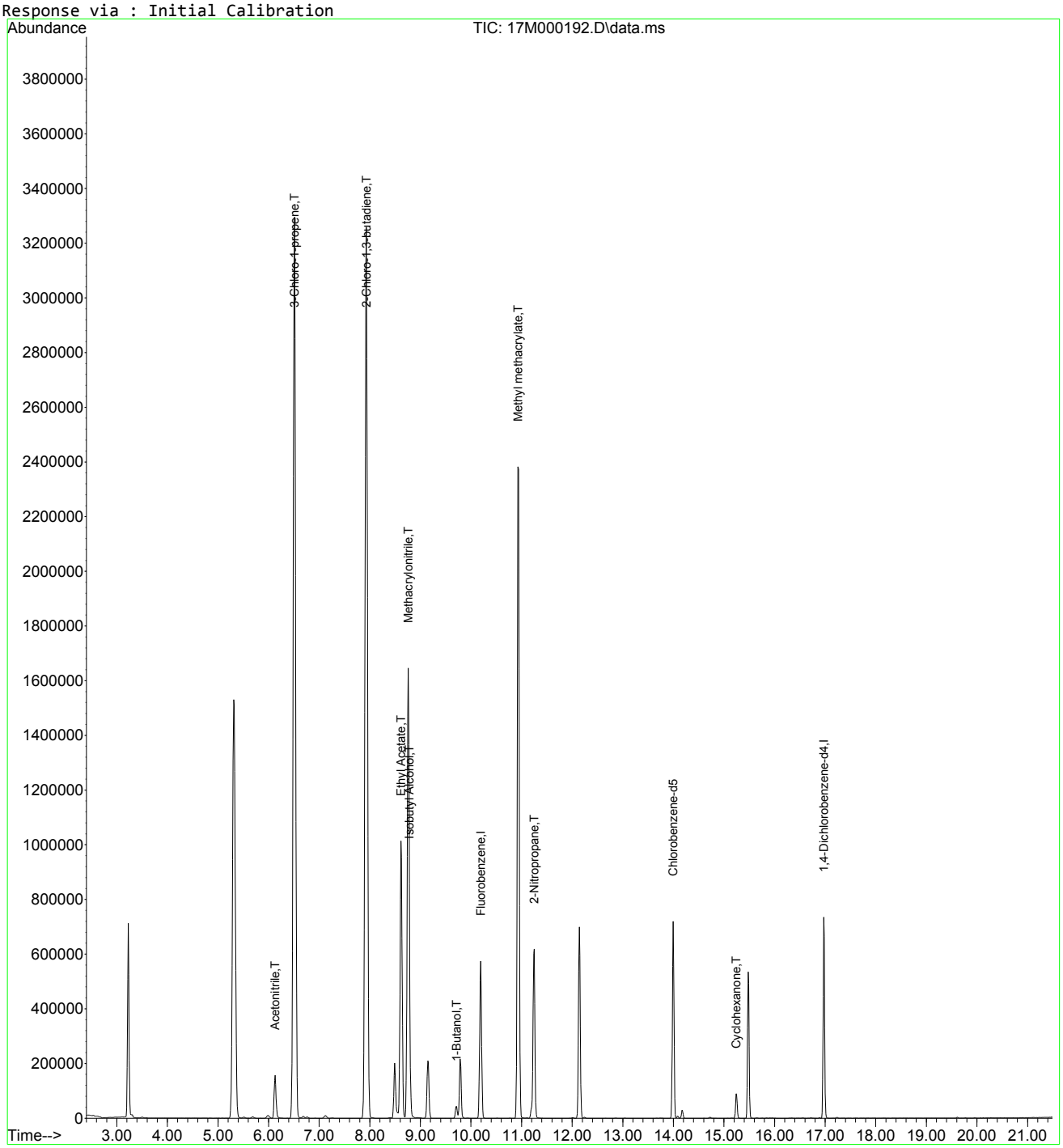

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000193.D
Acq On : 13 Oct 2013 21:03
Operator : MES
Sample : WG448462-09 500ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 17 17:43:12 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.192	96	759233	25.0000 ug/L	0.00
11) Chlorobenzene-d5	13.996	117	544729	25.0000 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.971	152	285472	25.0000 ug/L	0.00
Target Compounds					Qvalue
2) Acetonitrile	6.129	41	279066	534.65 ug/L #	99
3) 3-Chloro-1-propene	6.512	41	4641883	441.29 ug/L	99
4) 2-Chloro-1,3-butadiene	7.932	53	4534980	465.97 ug/L	100
5) Methacrylonitrile	8.761	67	970860	491.97 ug/L	100
6) Ethyl Acetate	8.616	43	2217784	501.31 ug/L	100
7) Isobutyl Alcohol	8.782	43	161004	1092.99 ug/L #	96
8) 1-Butanol	9.715	56	46748	492.64 ug/L	96
9) Methyl methacrylate	10.928	41	2051591	491.84 ug/L	98
10) 2-Nitropropane	11.249	43	836858	536.10 ug/L	99
12) Cyclohexanone	15.240	55	65947	490.06 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000193.D
Acq On : 13 Oct 2013 21:03
Operator : MES
Sample : WG448462-09 500ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 17 17:43:12 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

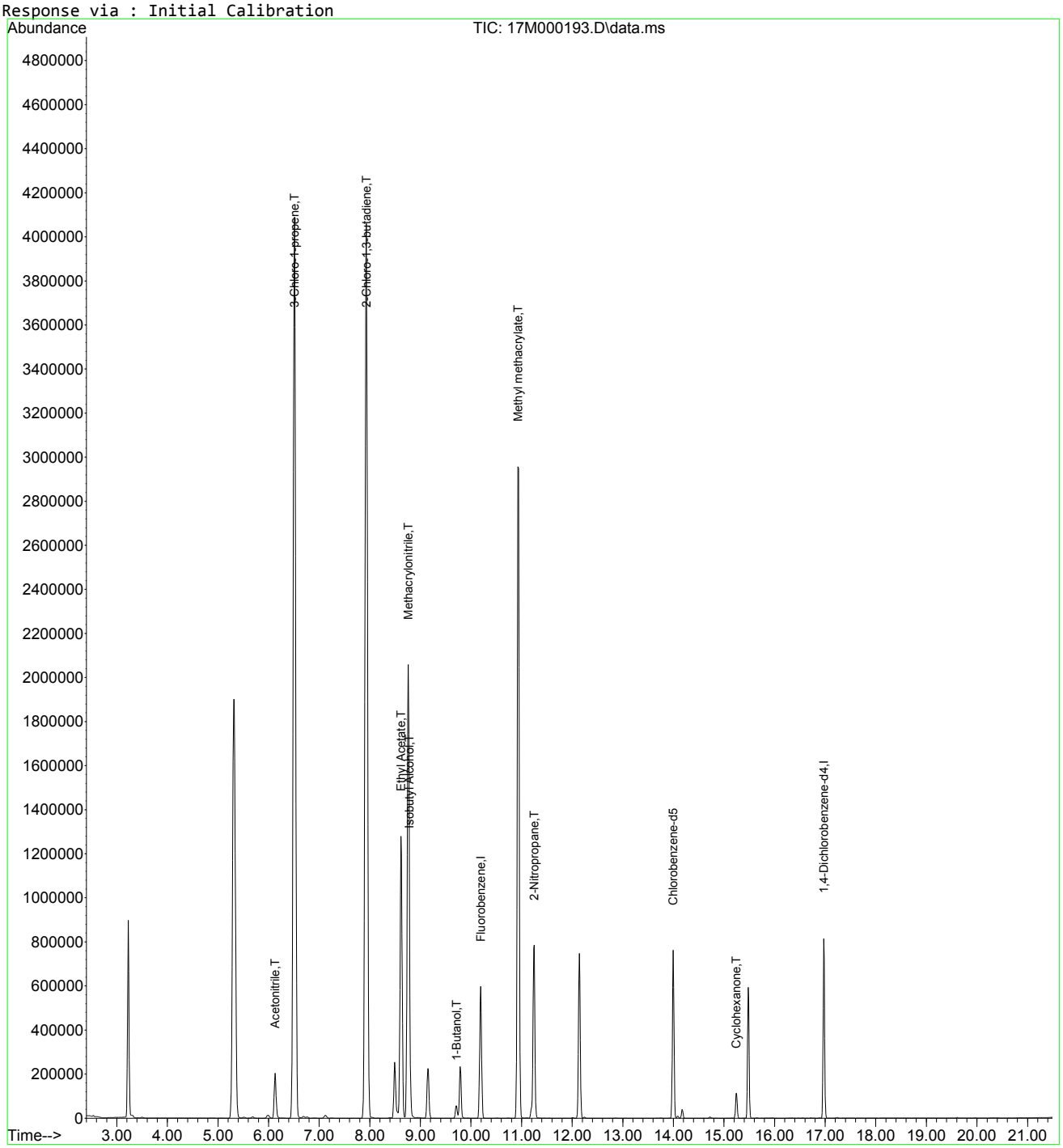

1-Butanol

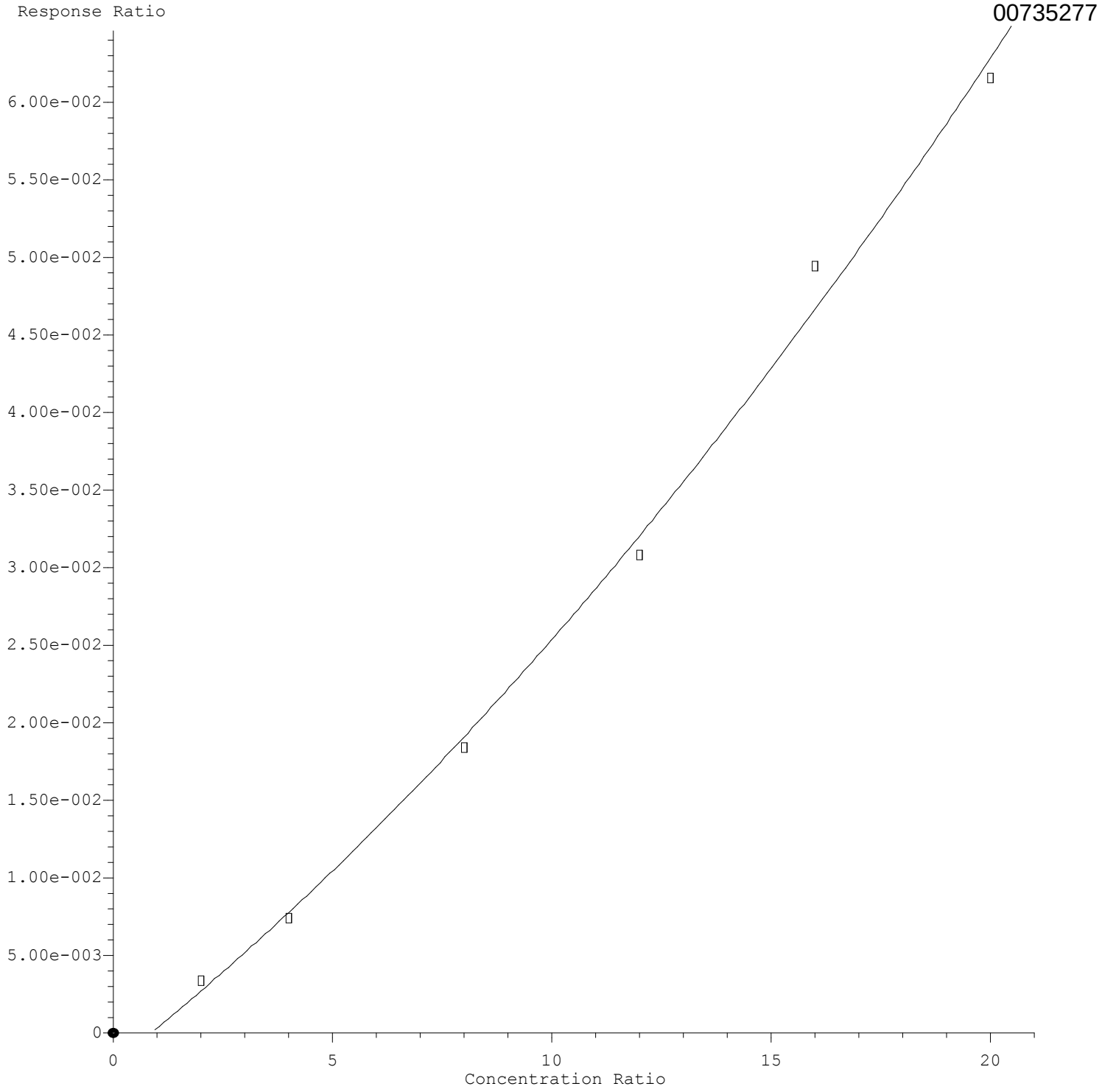

R = 5.08e-005 A*A + 2.22e-003 A - 1.95e-003
Coef of Det (r^2) = 0.995563 Curve Fit: Quadratic
Method Name: D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Calibration Table Last Updated: Thu Oct 17 17:48:22 2013

Cyclohexanone

00735278

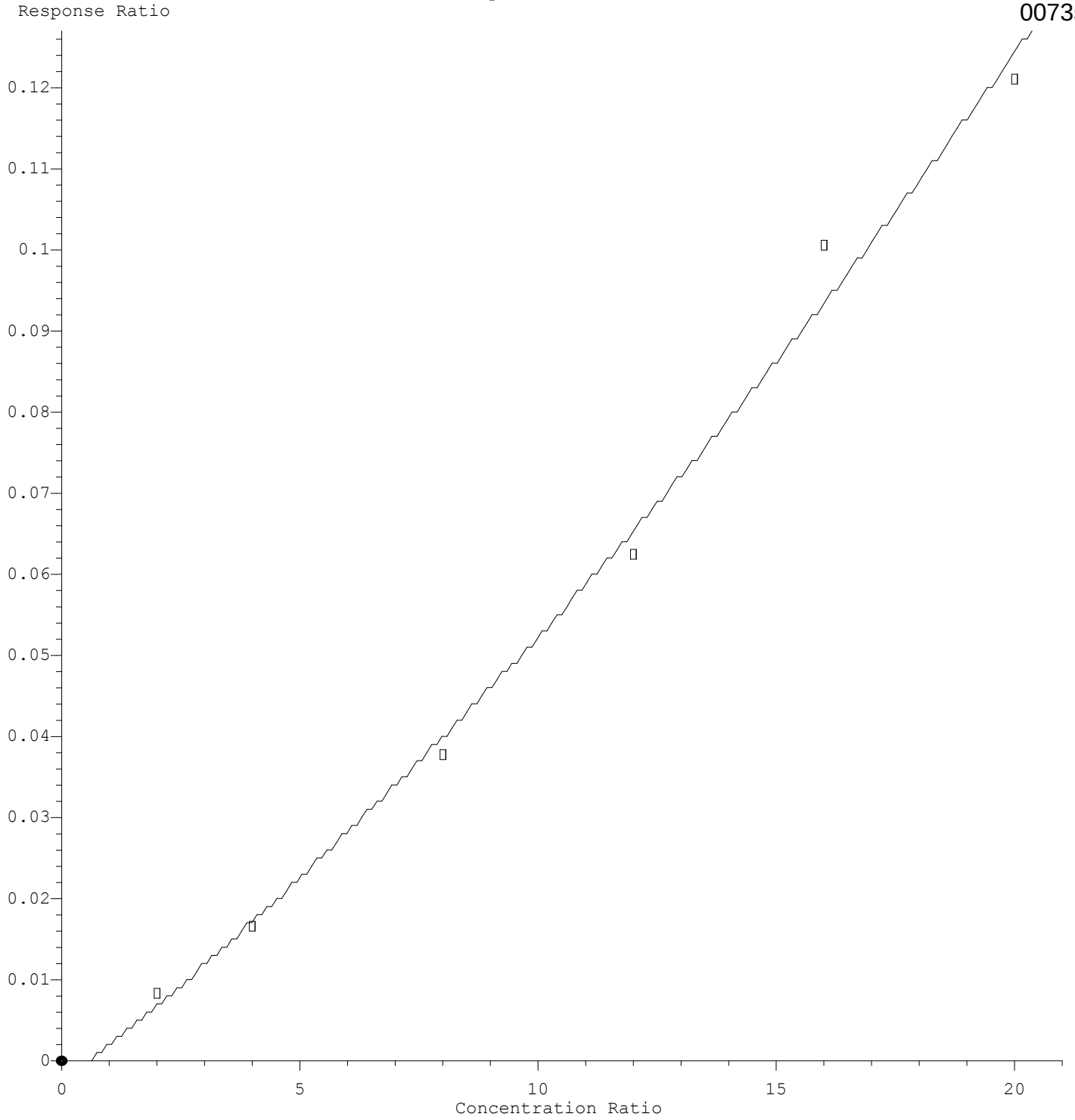

R = 8.36e-005 A*A + 4.69e-003 A - 2.95e-003
Coef of Det (r^2) = 0.992665 Curve Fit: Quadratic
Method Name: D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Calibration Table Last Updated: Thu Oct 17 17:48:22 2013

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000195.D
Acq On : 13 Oct 2013 22:00
Operator : MES
Sample : WG448462-10 100ug/L APPIX ALT SRC
Misc : 1,1 STD60749
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 17 17:44:26 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.192	96	737303	25.0000 ug/L	0.00
11) Chlorobenzene-d5	13.996	117	523223	25.0000 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.981	152	266615	25.0000 ug/L	0.01
Target Compounds					Qvalue
2) Acetonitrile	6.129	41	50664	99.95 ug/L #	100
3) 3-Chloro-1-propene	6.512	41	1059147	103.69 ug/L	100
4) 2-Chloro-1,3-butadiene	7.932	53	1242553	131.47 ug/L	99
5) Methacrylonitrile	8.761	67	206460	107.73 ug/L	100
6) Ethyl Acetate	8.616	43	431934	100.54 ug/L	100
7) Isobutyl Alcohol	8.782	43	27315	190.94 ug/L	99
8) 1-Butanol	9.715	56	5884	102.15 ug/L	97
9) Methyl methacrylate	10.928	41	453602	111.98 ug/L	99
10) 2-Nitropropane	11.249	43	153443	101.22 ug/L	99
12) Cyclohexanone	15.250	55	65010	500.01 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000195.D
Acq On : 13 Oct 2013 22:00
Operator : MES
Sample : WG448462-10 100ug/L APPIX ALT SRC
Misc : 1,1 STD60749
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 17 17:44:26 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

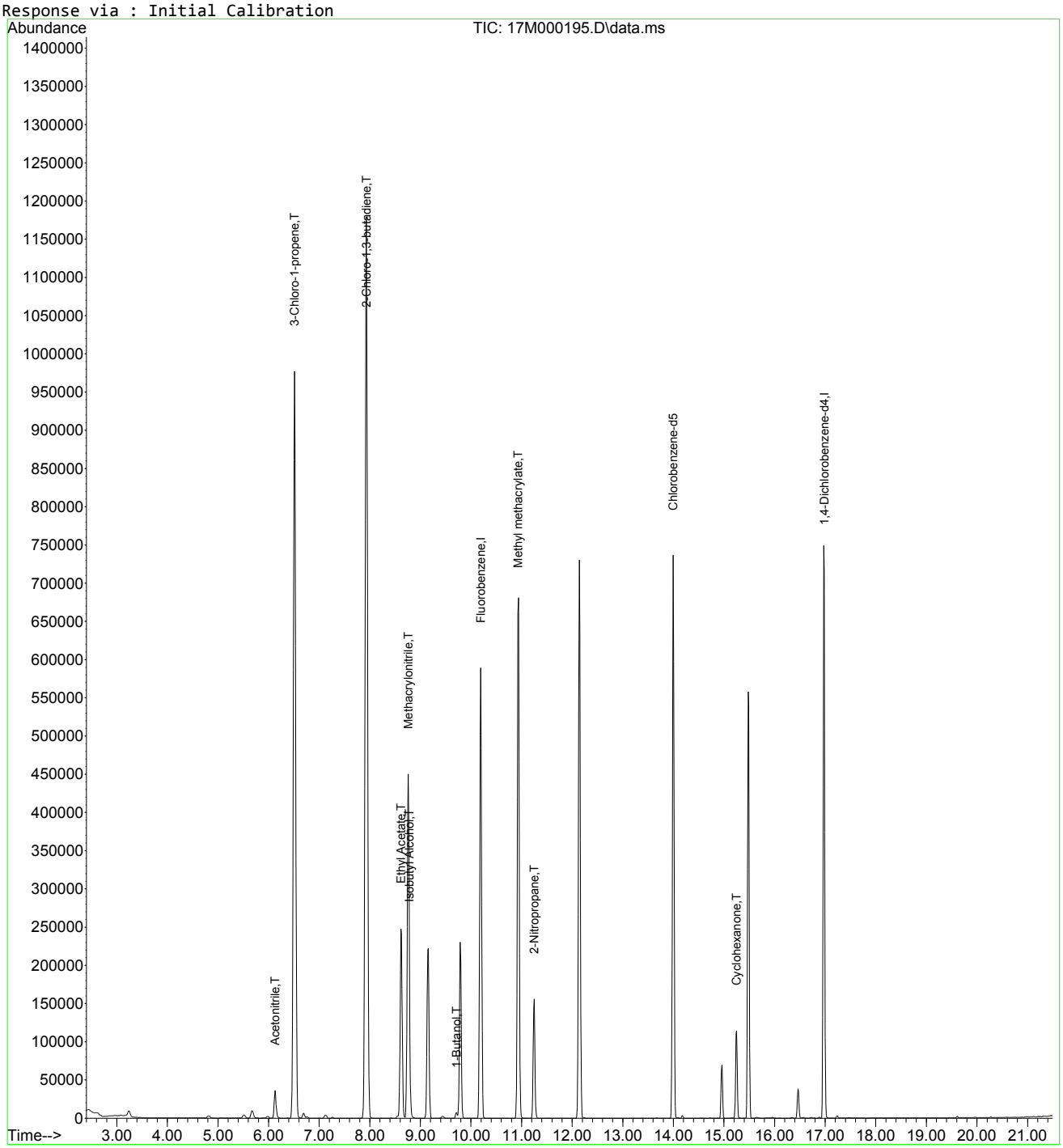

A9FOOWT.M Thu Oct 17 17:44:26 2013 Page: 2

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000195.D
Acq On : 13 Oct 2013 22:00
Operator : MES
Sample : WG448462-10 100ug/L APPIX ALT SRC
Misc : 1,1 STD60749
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 17 17:44:26 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	97	0.00
2	T	Acetonitrile	100.000	99.953	0.0	102	0.00
3	T	3-Chloro-1-propene	100.000	103.685	-3.7	94	0.00
4	T	2-Chloro-1,3-butadiene	100.000	131.470	-31.5#	120	0.00
5	T	Methacrylonitrile	100.000	107.732	-7.7	101	0.00
6	T	Ethyl Acetate	100.000	100.539	-0.5	94	0.00
7	T	Isobutyl Alcohol	200.000	190.945	4.5	101	0.00
8	T	1-Butanol	100.000	102.146	-2.1	104	0.00
9	T	Methyl methacrylate	100.000	111.979	-12.0	101	0.00
10	T	2-Nitropropane	100.000	101.221	-1.2	99	0.00
11		Chlorobenzene-d5	25.000	25.000	0.0	96	0.00
12	T	Cyclohexanone	100.000	500.013	-400.0#	719	0.00
13	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	96	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002688.D
Acq On : 28 Jan 2014 15:20
Operator : ADC
Sample : WG461242-02 0.3 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 04 11:12:30 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.088	96	881765	25.00000 ug/L	0.0000
56) Chlorobenzene-d5	13.913	117	600045	25.00000 ug/L	0.0000
76) 1,4-Dichlorobenzene-d4	16.898	152	260945	25.00000 ug/L	0.0000
System Monitoring Compounds					
37) Dibromofluoromethane	9.031	111	1182	0.1180 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.472%#	
43) 1,2-Dichloroethane-d4	9.684	65	2114	0.1901 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.760%#	
57) Toluene-d8	12.047	98	6263	0.1819 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.728%#	
78) p-Bromofluorobenzene	15.395	95	2036	0.1773 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.709%#	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.522	85	2265	0.2375 ug/L #	66
3) Chloromethane	2.916	50	8181	0.3531 ug/L	95
4) Vinyl Chloride	3.123	62	6683	0.3538 ug/L	94
5) 1,3-Butadiene	3.175	54	5583	0.4186 ug/L #	32
6) Bromomethane	3.962	94	1658	0.2398 ug/L	93
7) Chloroethane	4.128	64	1792	0.2321 ug/L #	44
8) Trichlorofluoromethane	4.636	101	4278	0.2666 ug/L #	91
10) Isoprene	5.227	67	3414	0.2455 ug/L	88
12) 1,1,2-Trichloro-1,2,2-...	5.465	101	1848	0.1965 ug/L	97
13) Acetone	5.559	43	922	Below Cal	86
14) 1,1-Dichloroethene	5.756	61	5092	0.2944 ug/L	94
15) Tert-Butyl Alcohol	5.870	59	2125	Below Cal #	63
16) Dimethyl Sulfide	6.035	62	2605	0.2781 ug/L	95
17) Iodomethane	6.274	142	2541	0.2526 ug/L	84
18) Methyl acetate	6.346	43	1654	0.2601 ug/L #	63
19) Methylene Chloride	6.585	84	6338	0.5543 ug/L	99
20) Carbon Disulfide	6.564	76	8800	0.2789 ug/L	98
22) Methyl Tert Butyl Ether	6.834	73	7290	0.2920 ug/L	82
23) trans-1,2-Dichloroethene	7.051	96	2868	0.2833 ug/L	94
24) n-Hexane	7.145	57	3523	0.2694 ug/L	100
26) Vinyl Acetate	7.704	43	4903	0.3137 ug/L #	77
27) 1,1-Dichloroethane	7.684	63	5909	0.2908 ug/L	90
29) 2-Butanone	8.274	43	640	0.2131 ug/L #	56
31) 2,2-Dichloropropane	8.482	77	4978	0.2935 ug/L	98
32) cis-1,2-Dichloroethene	8.544	96	3127	0.2709 ug/L	89
33) Chloroform	8.751	83	5774	0.2902 ug/L	98
35) Bromochloromethane	8.969	130	1821	0.2647 ug/L	93
38) 1,1,1-Trichloroethane	9.269	97	4480	0.2494 ug/L	96
39) Cyclohexane	9.301	56	5248	0.2750 ug/L	97
40) 1,1-Dichloropropene	9.477	75	3633	0.2650 ug/L	88
42) Carbon Tetrachloride	9.612	117	1056	0.4646 ug/L #	50
44) 1,2-Dichloroethane	9.798	62	4044	0.2809 ug/L #	84
45) Benzene	9.819	78	11873	0.2897 ug/L	98
46) Trichloroethene	10.586	130	2854	0.2457 ug/L	98
47) Methylcyclohexane	10.658	83	4200	0.2606 ug/L	94
48) 1,2-Dichloropropane	10.793	63	2962	0.2673 ug/L	90
50) Bromodichloromethane	11.083	83	3375	0.2304 ug/L	99
51) Dibromomethane	11.166	93	1320	0.2226 ug/L	99
52) 2-Chloroethyl Vinyl Ether	11.436	63	1172	0.2248 ug/L #	43
54) cis-1,3-Dichloropropene	11.736	75	4275	0.2590 ug/L	95
55) Dimethyl Disulfide	11.975	79	1668	0.1667 ug/L #	51
58) Toluene	12.141	91	12278	0.2932 ug/L	95
59) Ethyl Methacrylate	12.286	69	2040	0.2219 ug/L	95
60) trans-1,3-Dichloropropene	12.338	75	3564	0.2576 ug/L	83

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002688.D
Acq On : 28 Jan 2014 15:20
Operator : ADC
Sample : WG461242-02 0.3 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 04 11:12:30 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
61) 1,1,2-Trichloroethane	12.555	97	2167	0.2891 ug/L	90
62) 2-Hexanone	12.503	43	1300	0.2866 ug/L #	50
63) 1,3-Dichloropropane	12.845	76	3813	0.2917 ug/L	97
64) Tetrachloroethene	12.949	166	3084	0.2691 ug/L	97
65) Dibromochloromethane	13.198	129	2048	0.4700 ug/L	94
66) 1,2-Dibromoethane	13.457	107	1876	0.2477 ug/L	96
67) 1-Chlorohexane	13.581	91	3400	0.4554 ug/L	96
68) Chlorobenzene	13.955	112	7440	0.2645 ug/L	72
69) 1,1,1,2-Tetrachloroethane	14.006	131	2183	0.3838 ug/L	86
70) Ethylbenzene	14.006	106	3894	0.3990 ug/L	92
71) m-,p-Xylene	14.089	106	9925	0.9101 ug/L	93
72) o-Xylene	14.639	106	4837	0.2619 ug/L	99
73) Styrene	14.680	104	5630	0.4606 ug/L	80
74) Bromoform	15.136	173	1152	0.8142 ug/L #	52
75) Isopropylbenzene	15.074	105	12027	0.2603 ug/L	97
77) 1,1,2,2-Tetrachloroethane	15.281	83	2440	0.3294 ug/L	88
79) 1,2,3-Trichloropropane	15.468	110	418	0.2874 ug/L #	35
81) n-Propylbenzene	15.572	91	13314	0.2768 ug/L #	94
82) Bromobenzene	15.675	156	3028	0.2757 ug/L #	81
83) 1,3,5-Trimethylbenzene	15.769	105	9503	0.2715 ug/L	99
84) 2-Chlorotoluene	15.820	91	9104	0.2899 ug/L	97
85) 4-Chlorotoluene	15.872	91	7369	0.2703 ug/L	98
86) a-Methylstyrene	16.152	118	3371	1.4566 ug/L	88
87) tert-Butylbenzene	16.214	134	2142	0.2863 ug/L	88
88) 1,2,4-Trimethylbenzene	16.266	105	9526	0.2679 ug/L	91
89) sec-Butylbenzene	16.484	105	11631	0.2640 ug/L	99
90) p-Isopropyltoluene	16.650	119	8604	0.2373 ug/L	97
91) 1,3-Dichlorobenzene	16.805	146	5917	0.2910 ug/L	90
92) 1,4-Dichlorobenzene	16.940	146	6058	0.2991 ug/L #	20
93) n-Butylbenzene	17.168	91	7399	0.4934 ug/L	95
94) 1,2-Dichlorobenzene	17.427	146	5564	0.2876 ug/L	92
96) 1,2,4-Trichlorobenzene	19.541	180	3285	0.2489 ug/L	95
97) Hexachlorobutadiene	19.697	225	1768	0.2416 ug/L	91
98) Naphthalene	19.894	128	6812	0.2825 ug/L #	86
99) 1,2,3-Trichlorobenzene	20.205	180	3269	0.2700 ug/L	91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002688.D
Acq On : 28 Jan 2014 15:20
Operator : ADC
Sample : WG461242-02 0.3 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 04 11:12:30 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

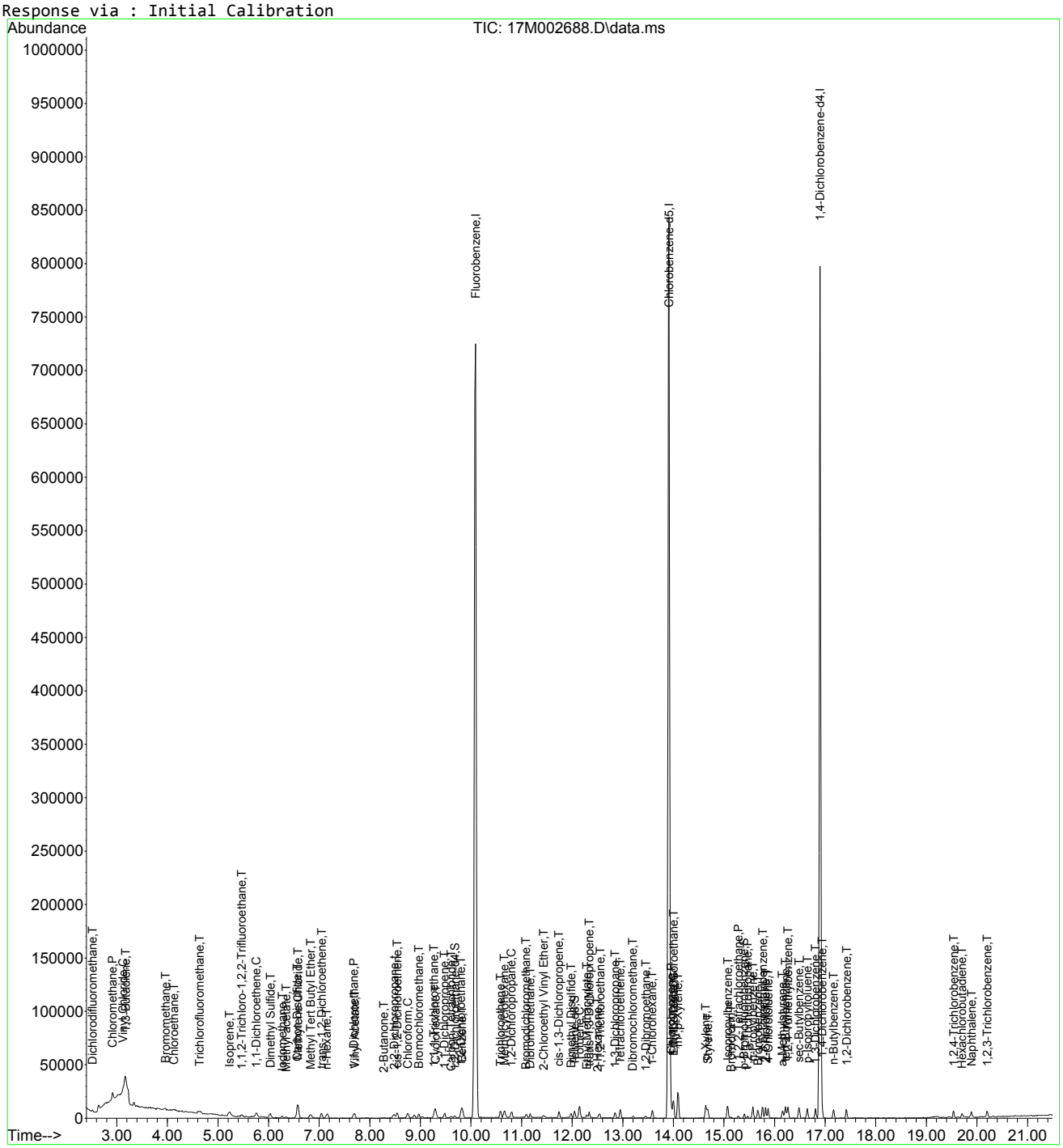

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002688.D
Acq On : 28 Jan 2014 15:20
Operator : ADC
Sample : WG461242-02 0.3 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 04 11:12:30 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	-1.000	0.237	0.0	0	0.000
3	P	Chloromethane	-1.000	0.353	0.0	0	0.000
4	C	Vinyl Chloride	-1.000	0.354	0.0	0	0.000
5	T	1,3-Butadiene	-1.000	0.419	0.0	0	0.011
6	T	Bromomethane	-1.000	0.240	0.0	0	0.010
7	T	Chloroethane	-1.000	0.232	0.0	0	0.000
8	T	Trichlorofluoromethane	-1.000	0.267	0.0	0	0.000
9	T	Diethyl ether	-1.000	0.026	0.0	0	0.000
10	T	Isoprene	-1.000	0.245	0.0	0	0.000
11	T	Acrolein	-1.000	0.000	0.0	0	-5.445#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.000	0.197	0.0	0	0.000
13	T	Acetone	-1.000	-2.043	0.0	0	0.011
14	C	1,1-Dichloroethene	-1.000	0.294	0.0	0	0.000
15	T	Tert-Butyl Alcohol	-1.000	-28.021	0.0	0	-0.041
16	T	Dimethyl Sulfide	-1.000	0.278	0.0	0	0.010
17	T	Iodomethane	-1.000	0.253	0.0	0	0.011
18	T	Methyl acetate	-1.000	0.260	0.0	0	0.000
19	T	Methylene Chloride	-1.000	0.554	0.0	0	0.000
20	T	Carbon Disulfide	-1.000	0.279	0.0	0	0.000
21	T	Acrylonitrile	-1.000	0.000	0.0	0	-6.792#
22	T	Methyl Tert Butyl Ether	-1.000	0.292	0.0	0	0.011
23	T	trans-1,2-Dichloroethene	-1.000	0.283	0.0	0	0.010
24	T	n-Hexane	-1.000	0.269	0.0	0	-0.010
25	T	Diisopropyl ether	-1.000	0.000	0.0	0	-7.528#
26	T	Vinyl Acetate	-1.000	0.314	0.0	0	0.010
27	P	1,1-Dichloroethane	-1.000	0.291	0.0	0	0.000
28	T	Ethyl-Tert-Butyl ether	-1.000	0.000	0.0	0	-8.109#
29	T	2-Butanone	-1.000	0.213	0.0	0	0.000
30	T	Propionitrile	-1.000	0.000	0.0	0	-8.378#
31	t	2,2-Dichloropropane	-1.000	0.293	0.0	0	0.011
32	T	cis-1,2-Dichloroethene	-1.000	0.271	0.0	0	0.000
33	C	Chloroform	0.300	0.290	3.3#	100	0.000
34	T	1-Bromopropane	-1.000	0.000	0.0	0	-8.876#
35	T	Bromochloromethane	-1.000	0.265	0.0	0	0.000
36	T	Tetrahydrofuran	-1.000	0.000	0.0	0	-9.000#
37	S	Dibromofluoromethane	-1.000	0.118	0.0	0	0.000
38	T	1,1,1-Trichloroethane	-1.000	0.249	0.0	0	-0.011
39	T	Cyclohexane	-1.000	0.275	0.0	0	0.000
40	T	1,1-Dichloropropene	-1.000	0.265	0.0	0	0.000
41	T	Tert-Amyl-Methyl ether	-1.000	0.000	0.0	0	-9.611#
42	T	Carbon Tetrachloride	-1.000	0.465	0.0	0	0.000
43	S	1,2-Dichloroethane-d4	-1.000	0.190	0.0	0	0.000
44	T	1,2-Dichloroethane	-1.000	0.281	0.0	0	0.000
45	T	Benzene	-1.000	0.290	0.0	0	-0.010
46	T	Trichloroethene	-1.000	0.246	0.0	0	0.000
47	T	Methylcyclohexane	-1.000	0.261	0.0	0	0.000
48	C	1,2-Dichloropropane	-1.000	0.267	0.0	0	-0.011
49	T	1,4-Dioxane	-1.000	0.000	0.0	0	-11.094#
50	T	Bromodichloromethane	-1.000	0.230	0.0	0	-0.011
51	T	Dibromomethane	-1.000	0.223	0.0	0	0.000
52	T	2-Chloroethyl Vinyl Ether	-1.000	0.225	0.0	0	0.011
53	T	4-Methyl-2-Pentanone	-1.000	0.000	0.0	0	-11.457#
54	T	cis-1,3-Dichloropropene	-1.000	0.259	0.0	0	0.000
55	T	Dimethyl Disulfide	-1.000	0.167	0.0	0	0.000

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002688.D
Acq On : 28 Jan 2014 15:20
Operator : ADC
Sample : WG461242-02 0.3 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 04 11:12:30 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
57	S	Toluene-d8	-1.000	0.182	0.0	0	0.000
58	C	Toluene	-1.000	0.293	0.0	0	0.000
59	T	Ethyl Methacrylate	-1.000	0.222	0.0	0	0.000
60	T	trans-1,3-Dichloropropene	-1.000	0.258	0.0	0	0.000
61	T	1,1,2-Trichloroethane	0.300	0.289	3.7	100	0.010
62	T	2-Hexanone	-1.000	0.287	0.0	0	-0.011
63	T	1,3-Dichloropropane	-1.000	0.292	0.0	0	0.000
64	T	Tetrachloroethene	-1.000	0.269	0.0	0	0.000
65	T	Dibromochloromethane	-1.000	0.470	0.0	0	0.000
66	T	1,2-Dibromoethane	-1.000	0.248	0.0	0	0.000
67	T	1-Chlorohexane	-1.000	0.455	0.0	0	0.000
68	P	Chlorobenzene	-1.000	0.265	0.0	0	0.000
69	T	1,1,1,2-Tetrachloroethane	-1.000	0.384	0.0	0	0.010
70	C	Ethylbenzene	-1.000	0.399	0.0	0	0.010
71	T	m-,p-Xylene	-1.000	0.910	0.0	0	0.000
72	T	o-Xylene	-1.000	0.262	0.0	0	0.000
73	T	Styrene	-1.000	0.461	0.0	0	0.000
74	P	Bromoform	-1.000	0.814	0.0	0	0.000
75	T	Isopropylbenzene	-1.000	0.260	0.0	0	0.000
76	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
77	P	1,1,2,2-Tetrachloroethane	-1.000	0.329	0.0	0	0.000
78	S	p-Bromofluorobenzene	-1.000	0.177	0.0	0	0.000
79	T	1,2,3-Trichloropropane	-1.000	0.287	0.0	0	0.000
80	T	trans-1,4-Dichloro-2-Butene	-1.000	0.000	0.0	0	-15.530#
81	T	n-Propylbenzene	-1.000	0.277	0.0	0	0.000
82	T	Bromobenzene	0.300	0.276	8.0	100	0.000
83	T	1,3,5-Trimethylbenzene	-1.000	0.271	0.0	0	0.011
84	T	2-Chlorotoluene	-1.000	0.290	0.0	0	0.000
85	T	4-Chlorotoluene	-1.000	0.270	0.0	0	0.000
86	T	a-Methylstyrene	-1.000	1.457	0.0	0	0.000
87	T	tert-Butylbenzene	-1.000	0.286	0.0	0	0.000
88	T	1,2,4-Trimethylbenzene	-1.000	0.268	0.0	0	0.000
89	T	sec-Butylbenzene	-1.000	0.264	0.0	0	0.000
90	T	p-Isopropyltoluene	-1.000	0.237	0.0	0	0.000
91	T	1,3-Dichlorobenzene	-1.000	0.291	0.0	0	0.000
92	T	1,4-Dichlorobenzene	0.300	0.299	0.3	100	0.000
93	T	n-Butylbenzene	-1.000	0.493	0.0	0	0.000
94	T	1,2-Dichlorobenzene	0.300	0.288	4.0	100	0.000
95	T	1,2-Dibromo-3-Chloropropane	-1.000	0.000	0.0	0	-18.412#
96	T	1,2,4-Trichlorobenzene	-1.000	0.249	0.0	0	0.000
97	T	Hexachlorobutadiene	-1.000	0.242	0.0	0	-0.010
98	T	Naphthalene	-1.000	0.282	0.0	0	0.000
99	T	1,2,3-Trichlorobenzene	0.300	0.270	10.0	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 1

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002689.D
Acq On : 28 Jan 2014 15:47
Operator : ADC
Sample : WG461242-03 0.4 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 04 11:12:34 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	10.088	96	896261	25.00000	ug/L	0.0000
56) Chlorobenzene-d5	13.913	117	596358	25.00000	ug/L	0.0000
76) 1,4-Dichlorobenzene-d4	16.898	152	260162	25.00000	ug/L	0.0000
System Monitoring Compounds						
37) Dibromofluoromethane	9.041	111	662	0.0650	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.260%#	
43) 1,2-Dichloroethane-d4	9.684	65	1397	0.1236	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.494%#	
57) Toluene-d8	12.047	98	3400	0.0993	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.397%#	
78) p-Bromofluorobenzene	15.406	95	1201	0.1049	ug/L	0.0107
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.420%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.522	85	3216	0.3318	ug/L #	66
3) Chloromethane	2.916	50	9453	0.4014	ug/L	93
4) Vinyl Chloride	3.123	62	9029	0.4702	ug/L	90
5) 1,3-Butadiene	3.175	54	6834	0.5041	ug/L #	47
6) Bromomethane	3.952	94	2578	0.3669	ug/L	100
7) Chloroethane	4.139	64	2837	0.3615	ug/L #	61
8) Trichlorofluoromethane	4.626	101	5717	0.3505	ug/L #	87
10) Isoprene	5.217	67	3865	0.2734	ug/L	89
12) 1,1,2-Trichloro-1,2,2-...	5.476	101	2985	0.3123	ug/L	84
13) Acetone	5.548	43	1215	Below Cal	#	78
14) 1,1-Dichloroethene	5.756	61	5991	0.3408	ug/L	93
15) Tert-Butyl Alcohol	5.994	59	1647	Below Cal	#	63
16) Dimethyl Sulfide	6.035	62	3322	0.3489	ug/L	92
17) Iodomethane	6.274	142	3202	0.3132	ug/L	97
18) Methyl acetate	6.357	43	2047	0.3167	ug/L #	63
19) Methylene Chloride	6.585	84	6278	0.5402	ug/L	91
20) Carbon Disulfide	6.564	76	11095	0.3459	ug/L	99
22) Methyl Tert Butyl Ether	6.834	73	9403	0.3706	ug/L	92
23) trans-1,2-Dichloroethene	7.051	96	3405	0.3309	ug/L	88
24) n-Hexane	7.145	57	4144	0.3117	ug/L	95
26) Vinyl Acetate	7.694	43	5930	0.3733	ug/L #	77
27) 1,1-Dichloroethane	7.694	63	7316	0.3542	ug/L	98
29) 2-Butanone	8.285	43	1127	0.3691	ug/L #	56
31) 2,2-Dichloropropane	8.482	77	6663	0.3864	ug/L	94
32) cis-1,2-Dichloroethene	8.544	96	4175	0.3559	ug/L	80
33) Chloroform	8.751	83	7350	0.3635	ug/L	96
35) Bromochloromethane	8.979	130	2189	0.3130	ug/L	99
38) 1,1,1-Trichloroethane	9.280	97	6076	0.3328	ug/L	98
39) Cyclohexane	9.301	56	6423	0.3311	ug/L	98
40) 1,1-Dichloropropene	9.477	75	4649	0.3336	ug/L	95
42) Carbon Tetrachloride	9.622	117	2443	0.5522	ug/L #	74
44) 1,2-Dichloroethane	9.798	62	5216	0.3564	ug/L #	90
45) Benzene	9.829	78	14787	0.3549	ug/L	99
46) Trichloroethene	10.575	130	3915	0.3316	ug/L	92
47) Methylcyclohexane	10.669	83	5408	0.3302	ug/L	95
48) 1,2-Dichloropropane	10.804	63	3750	0.3330	ug/L	97
50) Bromodichloromethane	11.083	83	4739	0.3183	ug/L	94
51) Dibromomethane	11.166	93	2176	0.3611	ug/L	86
52) 2-Chloroethyl Vinyl Ether	11.425	63	1552	0.2929	ug/L #	43
54) cis-1,3-Dichloropropene	11.736	75	5182	0.3089	ug/L	100
55) Dimethyl Disulfide	11.985	79	2446	0.2405	ug/L #	51
58) Toluene	12.141	91	15139	0.3638	ug/L	98
59) Ethyl Methacrylate	12.286	69	2578	0.2821	ug/L	87
60) trans-1,3-Dichloropropene	12.338	75	4486	0.3263	ug/L	81

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002689.D
Acq On : 28 Jan 2014 15:47
Operator : ADC
Sample : WG461242-03 0.4 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 04 11:12:34 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
61) 1,1,2-Trichloroethane	12.545	97	2508	0.3367 ug/L	94
62) 2-Hexanone	12.514	43	1800	0.3993 ug/L #	58
63) 1,3-Dichloropropane	12.845	76	5009	0.3856 ug/L	94
64) Tetrachloroethene	12.949	166	3715	0.3261 ug/L	93
65) Dibromochloromethane	13.208	129	2828	0.5409 ug/L	99
66) 1,2-Dibromoethane	13.457	107	2510	0.3334 ug/L	93
67) 1-Chlorohexane	13.592	91	3833	0.4901 ug/L	95
68) Chlorobenzene	13.955	112	9746	0.3486 ug/L	97
69) 1,1,1,2-Tetrachloroethane	13.996	131	3183	0.4773 ug/L	85
70) Ethylbenzene	14.006	106	4994	0.4718 ug/L	99
71) m-,p-Xylene	14.089	106	12042	1.0199 ug/L	98
72) o-Xylene	14.639	106	5970	0.3253 ug/L	98
73) Styrene	14.680	104	7769	0.5316 ug/L	95
74) Bromoform	15.136	173	1471	0.8585 ug/L #	66
75) Isopropylbenzene	15.074	105	15511	0.3378 ug/L	95
77) 1,1,2,2-Tetrachloroethane	15.281	83	2935	0.3974 ug/L	97
79) 1,2,3-Trichloropropane	15.468	110	468	0.3094 ug/L #	1
81) n-Propylbenzene	15.572	91	15793	0.3294 ug/L #	98
82) Bromobenzene	15.675	156	3950	0.3607 ug/L	92
83) 1,3,5-Trimethylbenzene	15.758	105	12100	0.3467 ug/L	99
84) 2-Chlorotoluene	15.820	91	11592	0.3703 ug/L	97
85) 4-Chlorotoluene	15.872	91	9395	0.3456 ug/L	99
86) a-Methylstyrene	16.162	118	4190	1.4943 ug/L	99
87) tert-Butylbenzene	16.214	134	2321	0.3112 ug/L	82
88) 1,2,4-Trimethylbenzene	16.266	105	12040	0.3397 ug/L	100
89) sec-Butylbenzene	16.484	105	14809	0.3372 ug/L	97
90) p-Isopropyltoluene	16.650	119	11715	0.3241 ug/L	96
91) 1,3-Dichlorobenzene	16.815	146	7270	0.3586 ug/L	95
92) 1,4-Dichlorobenzene	16.940	146	7128	0.3530 ug/L	77
93) n-Butylbenzene	17.168	91	9473	0.5520 ug/L	99
94) 1,2-Dichlorobenzene	17.417	146	7209	0.3738 ug/L	100
96) 1,2,4-Trichlorobenzene	19.541	180	4419	0.3359 ug/L	96
97) Hexachlorobutadiene	19.707	225	2152	0.2950 ug/L	95
98) Naphthalene	19.894	128	8264	0.3437 ug/L	98
99) 1,2,3-Trichlorobenzene	20.205	180	4069	0.3371 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002689.D
Acq On : 28 Jan 2014 15:47
Operator : ADC
Sample : WG461242-03 0.4 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 04 11:12:34 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

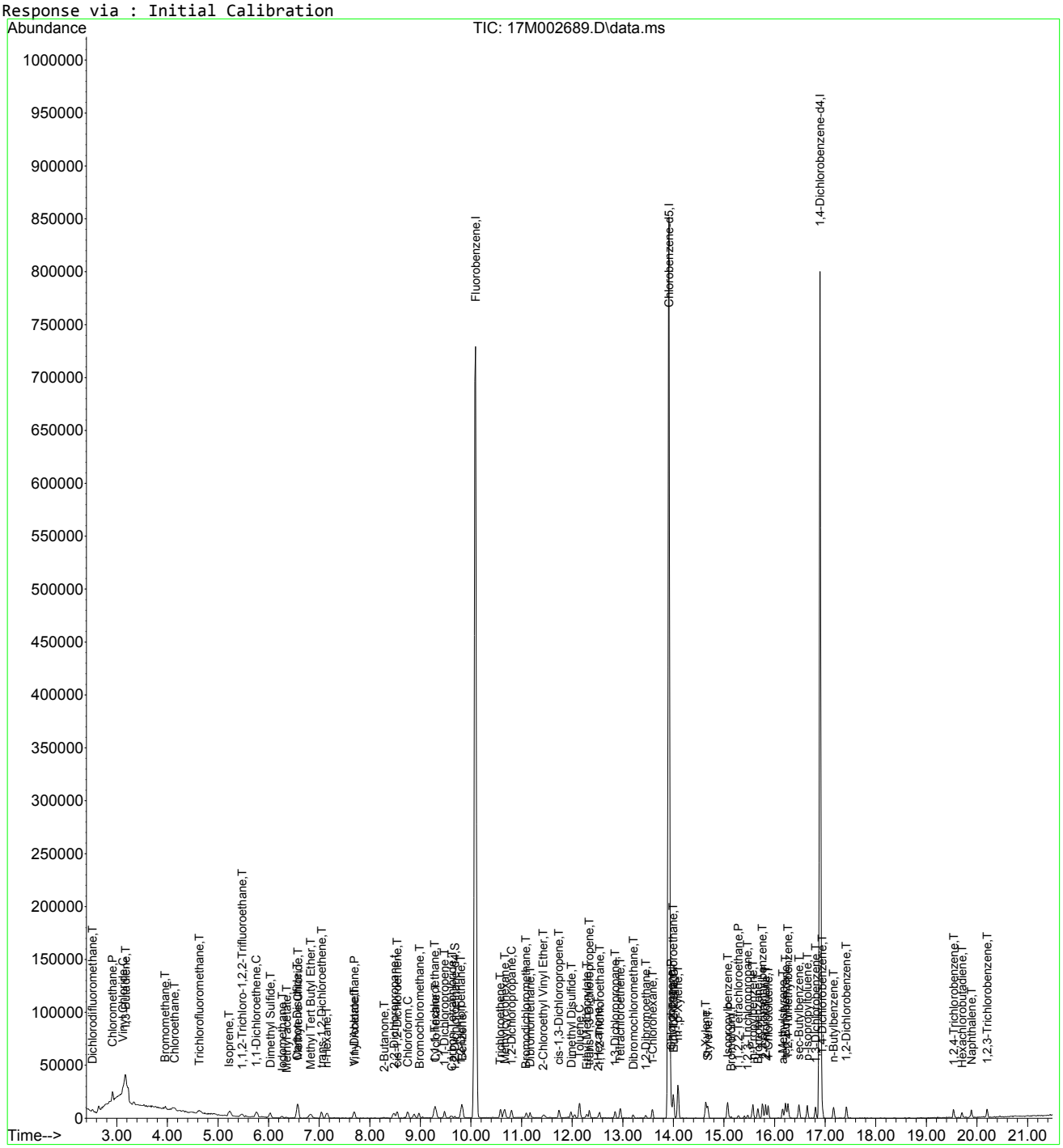

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002689.D
Acq On : 28 Jan 2014 15:47
Operator : ADC
Sample : WG461242-03 0.4 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 04 11:12:34 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	-1.000	0.332	0.0	100	0.000
3	P	Chloromethane	-1.000	0.401	0.0	100	0.000
4	C	Vinyl Chloride	0.400	0.470	-17.5#	100	0.000
5	T	1,3-Butadiene	-1.000	0.504	0.0	100	0.011
6	T	Bromomethane	-1.000	0.367	0.0	100	0.000
7	T	Chloroethane	-1.000	0.362	0.0	100	0.011
8	T	Trichlorofluoromethane	0.400	0.351	12.3	100	-0.010
9	T	Diethyl ether	-1.000	0.057	0.0	100	-0.010
10	T	Isoprene	-1.000	0.273	0.0	100	-0.010
11	T	Acrolein	-1.000	0.000	0.0	0	-5.445#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.000	0.312	0.0	100	0.011
13	T	Acetone	-1.000	-1.897	0.0	100	0.000
14	C	1,1-Dichloroethene	0.400	0.341	14.8#	100	0.000
15	T	Tert-Butyl Alcohol	-1.000	-29.172	0.0	100	0.083
16	T	Dimethyl Sulfide	-1.000	0.349	0.0	100	0.010
17	T	Iodomethane	-1.000	0.313	0.0	100	0.011
18	T	Methyl acetate	-1.000	0.317	0.0	100	0.011
19	T	Methylene Chloride	-1.000	0.540	0.0	100	0.000
20	T	Carbon Disulfide	-1.000	0.346	0.0	100	0.000
21	T	Acrylonitrile	-1.000	0.000	0.0	0	-6.792#
22	T	Methyl Tert Butyl Ether	-1.000	0.371	0.0	100	0.011
23	T	trans-1,2-Dichloroethene	0.400	0.331	17.3	100	0.010
24	T	n-Hexane	-1.000	0.312	0.0	100	-0.010
25	T	Diisopropyl ether	-1.000	0.000	0.0	0	-7.528#
26	T	Vinyl Acetate	-1.000	0.373	0.0	100	0.000
27	P	1,1-Dichloroethane	0.400	0.354	11.5	100	0.000
28	T	Ethyl-Tert-Butyl ether	-1.000	0.000	0.0	0	-8.109#
29	T	2-Butanone	-1.000	0.369	0.0	100	0.011
30	T	Propionitrile	-1.000	0.000	0.0	0	-8.378#
31	t	2,2-Dichloropropane	0.400	0.386	3.5	100	0.011
32	T	cis-1,2-Dichloroethene	0.400	0.356	11.0	100	0.000
33	C	Chloroform	0.400	0.363	9.3#	100	0.000
34	T	1-Bromopropane	-1.000	0.000	0.0	0	-8.876#
35	T	Bromochloromethane	0.400	0.313	21.8#	100	0.010
36	T	Tetrahydrofuran	-1.000	0.000	0.0	0	-9.000#
37	S	Dibromofluoromethane	-1.000	0.065	0.0	100	0.000
38	T	1,1,1-Trichloroethane	0.400	0.333	16.8	100	0.000
39	T	Cyclohexane	0.400	0.331	17.3	100	0.000
40	T	1,1-Dichloropropene	0.400	0.334	16.5	100	0.000
41	T	Tert-Amyl-Methyl ether	-1.000	0.000	0.0	0	-9.611#
42	T	Carbon Tetrachloride	0.400	0.552	-38.0#	100	0.011
43	S	1,2-Dichloroethane-d4	-1.000	0.124	0.0	100	0.000
44	T	1,2-Dichloroethane	0.400	0.356	11.0	100	0.000
45	T	Benzene	0.400	0.355	11.3	100	0.000
46	T	Trichloroethene	0.400	0.332	17.0	100	-0.011
47	T	Methylcyclohexane	-1.000	0.330	0.0	100	0.011
48	C	1,2-Dichloropropane	0.400	0.333	16.8#	100	0.000
49	T	1,4-Dioxane	-1.000	0.000	0.0	0	-11.094#
50	T	Bromodichloromethane	0.400	0.318	20.5#	100	-0.011
51	T	Dibromomethane	0.400	0.361	9.8	100	0.000
52	T	2-Chloroethyl Vinyl Ether	-1.000	0.293	0.0	100	0.000
53	T	4-Methyl-2-Pentanone	-1.000	0.072	0.0	100	0.000
54	T	cis-1,3-Dichloropropene	0.400	0.309	22.8#	100	0.000
55	T	Dimethyl Disulfide	-1.000	0.240	0.0	100	0.010

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002689.D
Acq On : 28 Jan 2014 15:47
Operator : ADC
Sample : WG461242-03 0.4 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 04 11:12:34 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
57	S	Toluene-d8	-1.000	0.099	0.0	100	0.000
58	C	Toluene	0.400	0.364	9.0#	100	0.000
59	T	Ethyl Methacrylate	-1.000	0.282	0.0	100	0.000
60	T	trans-1,3-Dichloropropene	0.400	0.326	18.5	100	0.000
61	T	1,1,2-Trichloroethane	0.400	0.337	15.8	100	0.000
62	T	2-Hexanone	-1.000	0.399	0.0	100	0.000
63	T	1,3-Dichloropropane	0.400	0.386	3.5	100	0.000
64	T	Tetrachloroethene	0.400	0.326	18.5	100	0.000
65	T	Dibromochloromethane	0.400	0.541	-35.3#	100	0.010
66	T	1,2-Dibromoethane	0.400	0.333	16.8	100	0.000
67	T	1-Chlorohexane	0.400	0.490	-22.5#	100	0.011
68	P	Chlorobenzene	0.400	0.349	12.8	100	0.000
69	T	1,1,1,2-Tetrachloroethane	0.400	0.477	-19.2	100	0.000
70	C	Ethylbenzene	0.400	0.472	-18.0#	100	0.010
71	T	m-,p-Xylene	0.800	1.020	-27.5#	100	0.000
72	T	o-Xylene	0.400	0.325	18.8	100	0.000
73	T	Styrene	0.400	0.532	-33.0#	100	0.000
74	P	Bromoform	-1.000	0.859	0.0	100	0.000
75	T	Isopropylbenzene	0.400	0.338	15.5	100	0.000
76	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
77	P	1,1,2,2-Tetrachloroethane	0.400	0.397	0.8	100	0.000
78	S	p-Bromofluorobenzene	-1.000	0.105	0.0	100	0.011
79	T	1,2,3-Trichloropropane	0.400	0.309	22.8#	100	0.000
80	T	trans-1,4-Dichloro-2-Butene	-1.000	0.000	0.0	0	-15.530#
81	T	n-Propylbenzene	0.400	0.329	17.8	100	0.000
82	T	Bromobenzene	0.400	0.361	9.8	100	0.000
83	T	1,3,5-Trimethylbenzene	0.400	0.347	13.3	100	0.000
84	T	2-Chlorotoluene	0.400	0.370	7.5	100	0.000
85	T	4-Chlorotoluene	0.400	0.346	13.5	100	0.000
86	T	a-Methylstyrene	-1.000	1.494	0.0	100	0.000
87	T	tert-Butylbenzene	0.400	0.311	22.3#	100	0.000
88	T	1,2,4-Trimethylbenzene	0.400	0.340	15.0	100	0.000
89	T	sec-Butylbenzene	0.400	0.337	15.8	100	0.000
90	T	p-Isopropyltoluene	0.400	0.324	19.0	100	0.000
91	T	1,3-Dichlorobenzene	0.400	0.359	10.3	100	0.010
92	T	1,4-Dichlorobenzene	0.400	0.353	11.8	100	0.000
93	T	n-Butylbenzene	0.400	0.552	-38.0#	100	0.000
94	T	1,2-Dichlorobenzene	0.400	0.374	6.5	100	0.000
95	T	1,2-Dibromo-3-Chloropropane	-1.000	0.000	0.0	0	-18.412#
96	T	1,2,4-Trichlorobenzene	0.400	0.336	16.0	100	0.000
97	T	Hexachlorobutadiene	0.400	0.295	26.3#	100	0.000
98	T	Naphthalene	0.400	0.344	14.0	100	0.000
99	T	1,2,3-Trichlorobenzene	0.400	0.337	15.8	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002690.D
Acq On : 28 Jan 2014 16:15
Operator : ADC
Sample : WG461242-04 1.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 04 11:12:37 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	10.088	96	840743	25.00000	ug/L	0.0000
56) Chlorobenzene-d5	13.913	117	569533	25.00000	ug/L	0.0000
76) 1,4-Dichlorobenzene-d4	16.898	152	249109	25.00000	ug/L	0.0000
System Monitoring Compounds						
37) Dibromofluoromethane	9.041	111	5155	0.5397	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 2.159%#			
43) 1,2-Dichloroethane-d4	9.684	65	6413	0.6050	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 2.420%#			
57) Toluene-d8	12.047	98	19217	0.5879	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 2.352%#			
78) p-Bromofluorobenzene	15.406	95	6197	0.5651	ug/L	0.0107
Spiked Amount 25.000	Range 86 - 115		Recovery = 2.260%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.522	85	8219	0.9038	ug/L	100
3) Chloromethane	2.915	50	22244	1.0070	ug/L	79
4) Vinyl Chloride	3.123	62	19811	1.0998	ug/L	92
5) 1,3-Butadiene	3.175	54	16671	1.3109	ug/L #	75
6) Bromomethane	3.952	94	6126	0.9294	ug/L	98
7) Chloroethane	4.128	64	7219	0.9807	ug/L	88
8) Trichlorofluoromethane	4.636	101	14466	0.9456	ug/L	95
9) Diethyl ether	5.217	59	33988	4.6873	ug/L	95
10) Isoprene	5.237	67	11613	0.8757	ug/L	99
11) Acrolein	5.445	56	1677	2.1317	ug/L	96
12) 1,1,2-Trichloro-1,2,2-...	5.465	101	8396	0.9364	ug/L	99
13) Acetone	5.548	43	2231	Below Cal #		1
14) 1,1-Dichloroethene	5.766	61	16157	0.9799	ug/L	100
15) Tert-Butyl Alcohol	5.921	59	5721	Below Cal #		68
16) Dimethyl Sulfide	6.035	62	8801	0.9853	ug/L	87
17) Iodomethane	6.263	142	8740	0.9113	ug/L	96
18) Methyl acetate	6.357	43	5923	0.9770	ug/L #	81
19) Methylene Chloride	6.585	84	12201	1.1192	ug/L	100
20) Carbon Disulfide	6.564	76	26757	0.8894	ug/L	99
21) Acrylonitrile	6.792	53	6004	2.3070	ug/L	98
22) Methyl Tert Butyl Ether	6.834	73	23714	0.9962	ug/L	94
23) trans-1,2-Dichloroethene	7.051	96	9324	0.9660	ug/L	97
24) n-Hexane	7.155	57	10685	0.8568	ug/L	96
25) Diisopropyl ether	7.528	45	169911	4.6921	ug/L	99
26) Vinyl Acetate	7.694	43	15107	1.0139	ug/L	94
27) 1,1-Dichloroethane	7.684	63	18484	0.9541	ug/L	95
28) Ethyl-Tert-Butyl ether	8.108	59	147018	4.7163	ug/L	100
29) 2-Butanone	8.285	43	2981	1.0409	ug/L #	56
30) Propionitrile	8.378	54	4268	4.7829	ug/L	90
31) 2,2-Dichloropropane	8.482	77	15668	0.9687	ug/L	100
32) cis-1,2-Dichloroethene	8.533	96	10484	0.9527	ug/L	99
33) Chloroform	8.751	83	18409	0.9704	ug/L	99
34) 1-Bromopropane	8.876	122	1786	0.9160	ug/L	97
35) Bromochloromethane	8.969	130	6630	1.0106	ug/L	96
36) Tetrahydrofuran	9.000	42	9642	5.0397	ug/L	92
38) 1,1,1-Trichloroethane	9.280	97	16069	0.9383	ug/L	97
39) Cyclohexane	9.300	56	17573	0.9658	ug/L	97
40) 1,1-Dichloropropene	9.477	75	12394	0.9480	ug/L	98
41) Tert-Amyl-Methyl ether	9.611	73	111788	4.5691	ug/L	98
42) Carbon Tetrachloride	9.611	117	7672	0.9187	ug/L	97
44) 1,2-Dichloroethane	9.798	62	12938	0.9425	ug/L	96
45) Benzene	9.829	78	37439	0.9580	ug/L	99
46) Trichloroethene	10.586	130	10337	0.9333	ug/L	98
47) Methylcyclohexane	10.669	83	14087	0.9168	ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002690.D
Acq On : 28 Jan 2014 16:15
Operator : ADC
Sample : WG461242-04 1.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 04 11:12:37 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
48) 1,2-Dichloropropane	10.803	63	10102	0.9562 ug/L	96
49) 1,4-Dioxane	11.094	88	202	3.2819 ug/L #	17
50) Bromodichloromethane	11.094	83	12352	0.8845 ug/L	100
51) Dibromomethane	11.166	93	4981	0.8811 ug/L	95
52) 2-Chloroethyl Vinyl Ether	11.425	63	4287	0.8624 ug/L	99
53) 4-Methyl-2-Pentanone	11.456	58	2102	0.8322 ug/L #	52
54) cis-1,3-Dichloropropene	11.736	75	14648	0.9307 ug/L	98
55) Dimethyl Disulfide	11.975	79	5889	0.6172 ug/L	97
58) Toluene	12.141	91	37707	0.9488 ug/L	100
59) Ethyl Methacrylate	12.286	69	7127	0.8167 ug/L	92
60) trans-1,3-Dichloropropene	12.338	75	11965	0.9113 ug/L	99
61) 1,1,2-Trichloroethane	12.545	97	7047	0.9905 ug/L	94
62) 2-Hexanone	12.514	43	4039	0.9382 ug/L	93
63) 1,3-Dichloropropane	12.845	76	12257	0.9880 ug/L	99
64) Tetrachloroethene	12.949	166	10335	0.9500 ug/L	96
65) Dibromochloromethane	13.208	129	7493	0.9904 ug/L	99
66) 1,2-Dibromoethane	13.457	107	6695	0.9312 ug/L	98
67) 1-Chlorohexane	13.581	91	10104	1.0045 ug/L	96
68) Chlorobenzene	13.955	112	24845	0.9306 ug/L	74
69) 1,1,1,2-Tetrachloroethane	14.006	131	8592	1.0134 ug/L	94
70) Ethylbenzene	13.996	106	12505	0.9965 ug/L	98
71) m-,p-Xylene	14.089	106	30994	2.0486 ug/L	97
72) o-Xylene	14.639	106	16112	0.9192 ug/L	96
73) Styrene	14.680	104	20701	0.9855 ug/L	94
74) Bromoform	15.136	173	4480	1.2962 ug/L	94
75) Isopropylbenzene	15.074	105	39635	0.9038 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.281	83	7910	1.1185 ug/L	97
79) 1,2,3-Trichloropropane	15.468	110	2148	1.0731 ug/L	87
80) trans-1,4-Dichloro-2-B...	15.530	53	1562	1.1615 ug/L	84
81) n-Propylbenzene	15.572	91	42714	0.9304 ug/L	99
82) Bromobenzene	15.675	156	10314	0.9837 ug/L	96
83) 1,3,5-Trimethylbenzene	15.758	105	31980	0.9570 ug/L	100
84) 2-Chlorotoluene	15.820	91	30337	1.0120 ug/L	99
85) 4-Chlorotoluene	15.872	91	24366	0.9361 ug/L	99
86) a-Methylstyrene	16.162	118	12379	1.8915 ug/L	96
87) tert-Butylbenzene	16.214	134	7110	0.9956 ug/L	97
88) 1,2,4-Trimethylbenzene	16.266	105	30939	0.9116 ug/L	97
89) sec-Butylbenzene	16.484	105	38805	0.9228 ug/L	99
90) p-Isopropyltoluene	16.650	119	31454	0.9087 ug/L	98
91) 1,3-Dichlorobenzene	16.805	146	17366	0.8945 ug/L	99
92) 1,4-Dichlorobenzene	16.940	146	18271	0.9451 ug/L #	72
93) n-Butylbenzene	17.168	91	24170	0.9930 ug/L	99
94) 1,2-Dichlorobenzene	17.427	146	17455	0.9451 ug/L	99
95) 1,2-Dibromo-3-Chloropr...	18.412	75	888	0.7220 ug/L	98
96) 1,2,4-Trichlorobenzene	19.541	180	10626	0.8435 ug/L	99
97) Hexachlorobutadiene	19.707	225	6308	0.9030 ug/L	96
98) Naphthalene	19.894	128	21082	0.9158 ug/L	99
99) 1,2,3-Trichlorobenzene	20.205	180	11157	0.9652 ug/L	91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002690.D
Acq On : 28 Jan 2014 16:15
Operator : ADC
Sample : WG461242-04 1.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 04 11:12:37 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

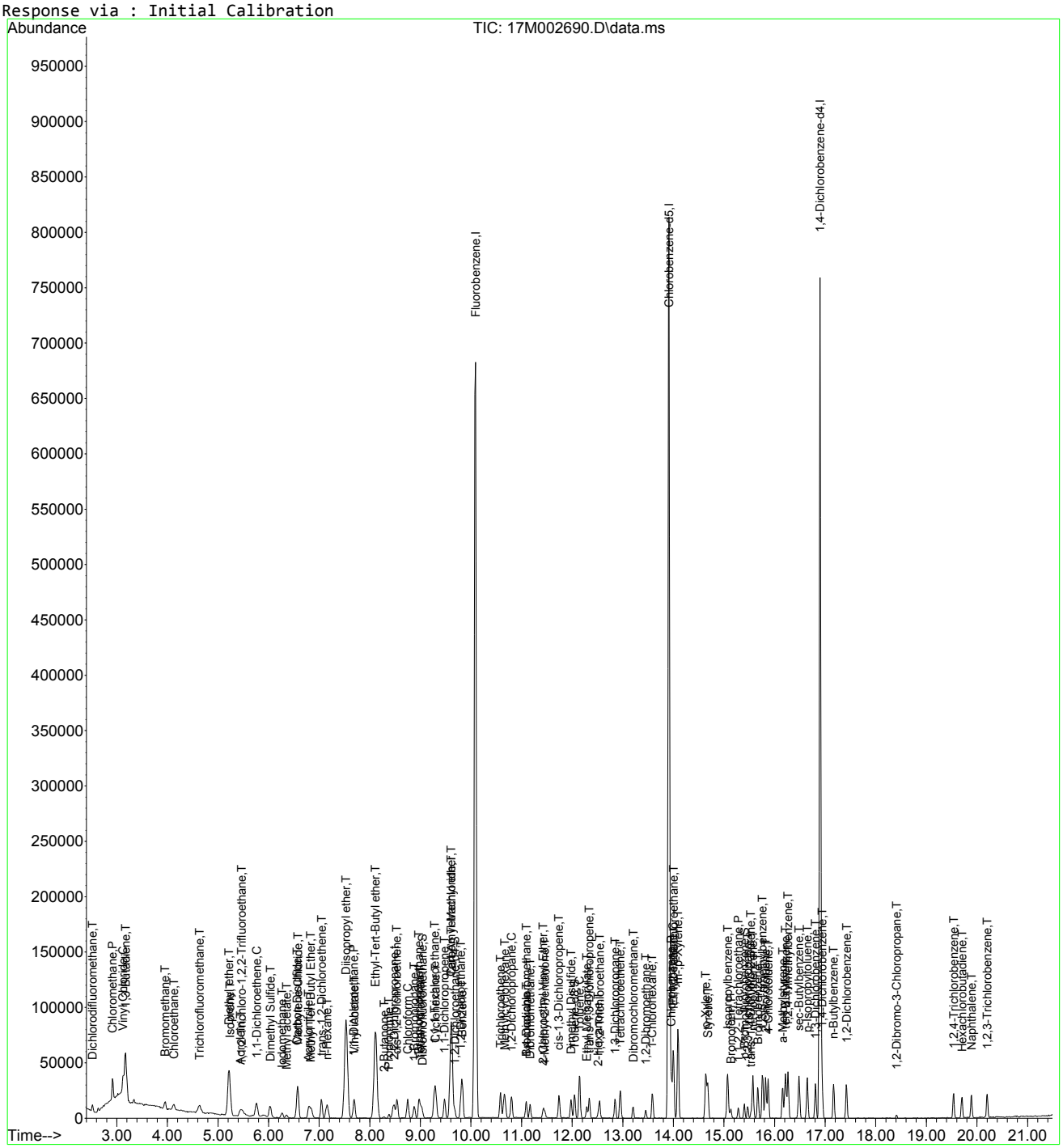

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002690.D
Acq On : 28 Jan 2014 16:15
Operator : ADC
Sample : WG461242-04 1.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 04 11:12:37 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	1.000	0.904	9.6	100	0.000
3	P	Chloromethane	1.000	1.007	-0.7	100	0.000
4	C	Vinyl Chloride	1.000	1.100	-10.0#	100	0.000
5	T	1,3-Butadiene	-1.000	1.311	0.0	0	0.011
6	T	Bromomethane	1.000	0.929	7.1	100	0.000
7	T	Chloroethane	1.000	0.981	1.9	100	0.000
8	T	Trichlorofluoromethane	1.000	0.946	5.4	100	0.000
9	T	Diethyl ether	5.000	4.687	6.3	100	0.011
10	T	Isoprene	1.000	0.876	12.4	100	0.010
11	T	Acrolein	-1.000	2.132	0.0	0	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.000	0.936	6.4	100	0.000
13	T	Acetone	-1.000	-1.288	0.0	0	0.000
14	C	1,1-Dichloroethene	1.000	0.980	2.0#	100	0.000
15	T	Tert-Butyl Alcohol	-1.000	-19.182	0.0	0	0.010
16	T	Dimethyl Sulfide	1.000	0.985	1.5	100	0.010
17	T	Iodomethane	1.000	0.911	8.9	100	0.000
18	T	Methyl acetate	-1.000	0.977	0.0	0	0.011
19	T	Methylene Chloride	1.000	1.119	-11.9	100	0.000
20	T	Carbon Disulfide	1.000	0.889	11.1	100	0.000
21	T	Acrylonitrile	2.500	2.307	7.7	100	0.000
22	T	Methyl Tert Butyl Ether	1.000	0.996	0.4	100	0.011
23	T	trans-1,2-Dichloroethene	1.000	0.966	3.4	100	0.010
24	T	n-Hexane	1.000	0.857	14.3	100	0.000
25	T	Diisopropyl ether	5.000	4.692	6.2	100	0.000
26	T	Vinyl Acetate	-1.000	1.014	0.0	0	0.000
27	P	1,1-Dichloroethane	1.000	0.954	4.6	100	0.000
28	T	Ethyl-Tert-Butyl ether	5.000	4.716	5.7	100	0.000
29	T	2-Butanone	-1.000	1.041	0.0	0	0.011
30	T	Propionitrile	5.000	4.783	4.3	100	0.000
31	t	2,2-Dichloropropane	1.000	0.969	3.1	100	0.011
32	T	cis-1,2-Dichloroethene	1.000	0.953	4.7	100	-0.011
33	C	Chloroform	1.000	0.970	3.0#	100	0.000
34	T	1-Bromopropane	1.000	0.916	8.4	100	0.000
35	T	Bromochloromethane	1.000	1.011	-1.1	100	0.000
36	T	Tetrahydrofuran	5.000	5.040	-0.8	100	0.000
37	S	Dibromofluoromethane	-1.000	0.540	0.0	0	0.000
38	T	1,1,1-Trichloroethane	1.000	0.938	6.2	100	0.000
39	T	Cyclohexane	1.000	0.966	3.4	100	0.000
40	T	1,1-Dichloropropene	1.000	0.948	5.2	100	0.000
41	T	Tert-Amyl-Methyl ether	5.000	4.569	8.6	100	0.000
42	T	Carbon Tetrachloride	1.000	0.919	8.1	100	0.000
43	S	1,2-Dichloroethane-d4	-1.000	0.605	0.0	0	0.000
44	T	1,2-Dichloroethane	1.000	0.942	5.8	100	0.000
45	T	Benzene	1.000	0.958	4.2	100	0.000
46	T	Trichloroethene	1.000	0.933	6.7	100	0.000
47	T	Methylcyclohexane	1.000	0.917	8.3	100	0.011
48	C	1,2-Dichloropropane	1.000	0.956	4.4#	100	0.000
49	T	1,4-Dioxane	-1.000	3.282	0.0	0	0.000
50	T	Bromodichloromethane	1.000	0.885	11.5	100	0.000
51	T	Dibromomethane	1.000	0.881	11.9	100	0.000
52	T	2-Chloroethyl Vinyl Ether	1.000	0.862	13.8	100	0.000
53	T	4-Methyl-2-Pentanone	-1.000	0.832	0.0	0	0.000
54	T	cis-1,3-Dichloropropene	1.000	0.931	6.9	100	0.000
55	T	Dimethyl Disulfide	-1.000	0.617	0.0	0	0.000

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002690.D
Acq On : 28 Jan 2014 16:15
Operator : ADC
Sample : WG461242-04 1.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 04 11:12:37 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
57	S	Toluene-d8	-1.000	0.588	0.0	0	0.000
58	C	Toluene	1.000	0.949	5.1#	100	0.000
59	T	Ethyl Methacrylate	1.000	0.817	18.3	100	0.000
60	T	trans-1,3-Dichloropropene	1.000	0.911	8.9	100	0.000
61	T	1,1,2-Trichloroethane	1.000	0.991	0.9	100	0.000
62	T	2-Hexanone	-1.000	0.938	0.0	0	0.000
63	T	1,3-Dichloropropane	1.000	0.988	1.2	100	0.000
64	T	Tetrachloroethene	1.000	0.950	5.0	100	0.000
65	T	Dibromochloromethane	1.000	0.990	1.0	100	0.010
66	T	1,2-Dibromoethane	1.000	0.931	6.9	100	0.000
67	T	1-Chlorohexane	1.000	1.005	-0.5	100	0.000
68	P	Chlorobenzene	1.000	0.931	6.9	100	0.000
69	T	1,1,1,2-Tetrachloroethane	1.000	1.013	-1.3	100	0.010
70	C	Ethylbenzene	1.000	0.996	0.4#	100	0.000
71	T	m-,p-Xylene	2.000	2.049	-2.4	100	0.000
72	T	o-Xylene	1.000	0.919	8.1	100	0.000
73	T	Styrene	1.000	0.986	1.4	100	0.000
74	P	Bromoform	1.000	1.296	-29.6#	100	0.000
75	T	Isopropylbenzene	1.000	0.904	9.6	100	0.000
76	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
77	P	1,1,2,2-Tetrachloroethane	1.000	1.118	-11.8	100	0.000
78	S	p-Bromofluorobenzene	-1.000	0.565	0.0	0	0.011
79	T	1,2,3-Trichloropropane	1.000	1.073	-7.3	100	0.000
80	T	trans-1,4-Dichloro-2-Butene	1.000	1.162	-16.2	100	0.000
81	T	n-Propylbenzene	1.000	0.930	7.0	100	0.000
82	T	Bromobenzene	1.000	0.984	1.6	100	0.000
83	T	1,3,5-Trimethylbenzene	1.000	0.957	4.3	100	0.000
84	T	2-Chlorotoluene	1.000	1.012	-1.2	100	0.000
85	T	4-Chlorotoluene	1.000	0.936	6.4	100	0.000
86	T	a-Methylstyrene	-1.000	1.892	0.0	0	0.000
87	T	tert-Butylbenzene	1.000	0.996	0.4	100	0.000
88	T	1,2,4-Trimethylbenzene	1.000	0.912	8.8	100	0.000
89	T	sec-Butylbenzene	1.000	0.923	7.7	100	0.000
90	T	p-Isopropyltoluene	1.000	0.909	9.1	100	0.000
91	T	1,3-Dichlorobenzene	1.000	0.895	10.5	100	0.000
92	T	1,4-Dichlorobenzene	1.000	0.945	5.5	100	0.000
93	T	n-Butylbenzene	1.000	0.993	0.7	100	0.000
94	T	1,2-Dichlorobenzene	1.000	0.945	5.5	100	0.000
95	T	1,2-Dibromo-3-Chloropropane	-1.000	0.722	0.0	0	0.000
96	T	1,2,4-Trichlorobenzene	1.000	0.844	15.6	100	0.000
97	T	Hexachlorobutadiene	1.000	0.903	9.7	100	0.000
98	T	Naphthalene	1.000	0.916	8.4	100	0.000
99	T	1,2,3-Trichlorobenzene	1.000	0.965	3.5	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002691.D
Acq On : 28 Jan 2014 16:43
Operator : ADC
Sample : WG461242-05 2.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 04 11:12:40 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	10.088	96	864438	25.00000	ug/L	0.0000
56) Chlorobenzene-d5	13.913	117	589580	25.00000	ug/L	0.0000
76) 1,4-Dichlorobenzene-d4	16.898	152	267595	25.00000	ug/L	0.0000
System Monitoring Compounds						
37) Dibromofluoromethane	9.041	111	9965	1.0147	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 4.059%#			
43) 1,2-Dichloroethane-d4	9.684	65	11260	1.0331	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 4.132%#			
57) Toluene-d8	12.047	98	33981	1.0042	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 4.017%#			
78) p-Bromofluorobenzene	15.406	95	11953	1.0148	ug/L	0.0106
Spiked Amount 25.000	Range 86 - 115		Recovery = 4.059%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.522	85	16385	1.7524	ug/L	98
3) Chloromethane	2.915	50	46409	2.0434	ug/L	95
4) Vinyl Chloride	3.123	62	35594	1.9219	ug/L	98
5) 1,3-Butadiene	3.164	54	31340	2.3968	ug/L	86
6) Bromomethane	3.952	94	12670	1.8695	ug/L	97
7) Chloroethane	4.128	64	14052	1.8566	ug/L	99
8) Trichlorofluoromethane	4.636	101	30705	1.9520	ug/L	97
9) Diethyl ether	5.217	59	183198	24.5726	ug/L	99
10) Isoprene	5.227	67	23805	1.7458	ug/L	99
11) Acrolein	5.434	56	10161	12.5618	ug/L	96
12) 1,1,2-Trichloro-1,2,2-...	5.465	101	17924	1.9443	ug/L	97
13) Acetone	5.559	43	5274	0.3311	ug/L #	72
14) 1,1-Dichloroethene	5.766	61	33174	1.9567	ug/L	99
15) Tert-Butyl Alcohol	5.921	59	36580	52.2453	ug/L	93
16) Dimethyl Sulfide	6.035	62	17369	1.8912	ug/L	98
17) Iodomethane	6.263	142	18762	1.9026	ug/L	95
18) Methyl acetate	6.346	43	14051	2.2542	ug/L #	91
19) Methylene Chloride	6.585	84	22575	2.0140	ug/L	99
20) Carbon Disulfide	6.564	76	55819	1.8045	ug/L	98
21) Acrylonitrile	6.792	53	31811	11.8884	ug/L	93
22) Methyl Tert Butyl Ether	6.834	73	49163	2.0087	ug/L	100
23) trans-1,2-Dichloroethene	7.051	96	19175	1.9321	ug/L	98
24) n-Hexane	7.155	57	23673	1.8463	ug/L	90
25) Diisopropyl ether	7.528	45	912035	24.4957	ug/L	99
26) Vinyl Acetate	7.694	43	31251	2.0399	ug/L	94
27) 1,1-Dichloroethane	7.694	63	38625	1.9390	ug/L	100
28) Ethyl-Tert-Butyl ether	8.108	59	791689	24.7009	ug/L	100
29) 2-Butanone	8.274	43	5933	2.0149	ug/L	84
30) Propionitrile	8.378	54	23263	25.3551	ug/L	98
31) 2,2-Dichloropropane	8.471	77	31297	1.8819	ug/L	95
32) cis-1,2-Dichloroethene	8.544	96	21636	1.9121	ug/L	97
33) Chloroform	8.751	83	37779	1.9369	ug/L	100
34) 1-Bromopropane	8.876	122	3897	1.9439	ug/L	96
35) Bromochloromethane	8.969	130	13015	1.9295	ug/L	95
36) Tetrahydrofuran	9.000	42	50687	25.7668	ug/L	99
38) 1,1,1-Trichloroethane	9.280	97	33761	1.9172	ug/L	98
39) Cyclohexane	9.300	56	34792	1.8597	ug/L	98
40) 1,1-Dichloropropene	9.477	75	25290	1.8814	ug/L	98
41) Tert-Amyl-Methyl ether	9.611	73	614534	24.4292	ug/L	99
42) Carbon Tetrachloride	9.611	117	19739	1.7033	ug/L	99
44) 1,2-Dichloroethane	9.798	62	26336	1.8658	ug/L	98
45) Benzene	9.829	78	76115	1.8943	ug/L	99
46) Trichloroethene	10.586	130	21098	1.8526	ug/L	99
47) Methylcyclohexane	10.669	83	29234	1.8504	ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002691.D
Acq On : 28 Jan 2014 16:43
Operator : ADC
Sample : WG461242-05 2.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 04 11:12:40 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
48) 1,2-Dichloropropane	10.803	63	20635	1.8996 ug/L	99
49) 1,4-Dioxane	11.094	88	2958	46.7413 ug/L	97
50) Bromodichloromethane	11.094	83	26216	1.8259 ug/L	100
51) Dibromomethane	11.166	93	11409	1.9629 ug/L	98
52) 2-Chloroethyl Vinyl Ether	11.425	63	9327	1.8248 ug/L	95
53) 4-Methyl-2-Pentanone	11.456	58	4943	1.9034 ug/L	88
54) cis-1,3-Dichloropropene	11.736	75	30984	1.9147 ug/L	97
55) Dimethyl Disulfide	11.975	79	13700	1.3964 ug/L	99
58) Toluene	12.151	91	77980	1.8955 ug/L	100
59) Ethyl Methacrylate	12.286	69	16185	1.7917 ug/L	99
60) trans-1,3-Dichloropropene	12.338	75	25776	1.8965 ug/L	98
61) 1,1,2-Trichloroethane	12.545	97	14431	1.9594 ug/L	98
62) 2-Hexanone	12.514	43	8717	1.9559 ug/L	95
63) 1,3-Dichloropropane	12.845	76	25286	1.9689 ug/L	99
64) Tetrachloroethene	12.949	166	21642	1.9218 ug/L	98
65) Dibromochloromethane	13.208	129	16879	1.8168 ug/L	97
66) 1,2-Dibromoethane	13.457	107	14350	1.9281 ug/L	96
67) 1-Chlorohexane	13.592	91	21118	1.8260 ug/L	100
68) Chlorobenzene	13.954	112	51461	1.8620 ug/L	86
69) 1,1,1,2-Tetrachloroethane	13.996	131	18075	1.8685 ug/L	98
70) Ethylbenzene	13.996	106	26881	1.9081 ug/L	98
71) m-,p-Xylene	14.089	106	65438	3.7476 ug/L	98
72) o-Xylene	14.639	106	32451	1.7884 ug/L	99
73) Styrene	14.680	104	45783	1.7888 ug/L	96
74) Bromoform	15.136	173	9572	1.9747 ug/L	98
75) Isopropylbenzene	15.074	105	82383	1.8147 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.281	83	16064	2.1146 ug/L	95
79) 1,2,3-Trichloropropane	15.468	110	4985	2.1934 ug/L	98
80) trans-1,4-Dichloro-2-B...	15.530	53	4073	2.0501 ug/L	98
81) n-Propylbenzene	15.571	91	92685	1.8794 ug/L	100
82) Bromobenzene	15.675	156	22263	1.9766 ug/L	99
83) 1,3,5-Trimethylbenzene	15.758	105	65758	1.8318 ug/L	97
84) 2-Chlorotoluene	15.820	91	64663	2.0081 ug/L	99
85) 4-Chlorotoluene	15.872	91	50902	1.8206 ug/L	99
86) a-Methylstyrene	16.162	118	28668	2.5709 ug/L	99
87) tert-Butylbenzene	16.214	134	14631	1.9071 ug/L	100
88) 1,2,4-Trimethylbenzene	16.266	105	67180	1.8426 ug/L	98
89) sec-Butylbenzene	16.484	105	83849	1.8562 ug/L	100
90) p-Isopropyltoluene	16.649	119	65972	1.7742 ug/L	99
91) 1,3-Dichlorobenzene	16.805	146	39173	1.8784 ug/L	96
92) 1,4-Dichlorobenzene	16.940	146	38290	1.8437 ug/L	87
93) n-Butylbenzene	17.168	91	54056	1.7566 ug/L	99
94) 1,2-Dichlorobenzene	17.417	146	38101	1.9205 ug/L	97
95) 1,2-Dibromo-3-Chloropr...	18.401	75	2544	1.9255 ug/L	93
96) 1,2,4-Trichlorobenzene	19.541	180	23770	1.7565 ug/L	98
97) Hexachlorobutadiene	19.707	225	14139	1.8841 ug/L	97
98) Naphthalene	19.894	128	47007	1.9008 ug/L	98
99) 1,2,3-Trichlorobenzene	20.205	180	23245	1.8721 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002691.D
Acq On : 28 Jan 2014 16:43
Operator : ADC
Sample : WG461242-05 2.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 04 11:12:40 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

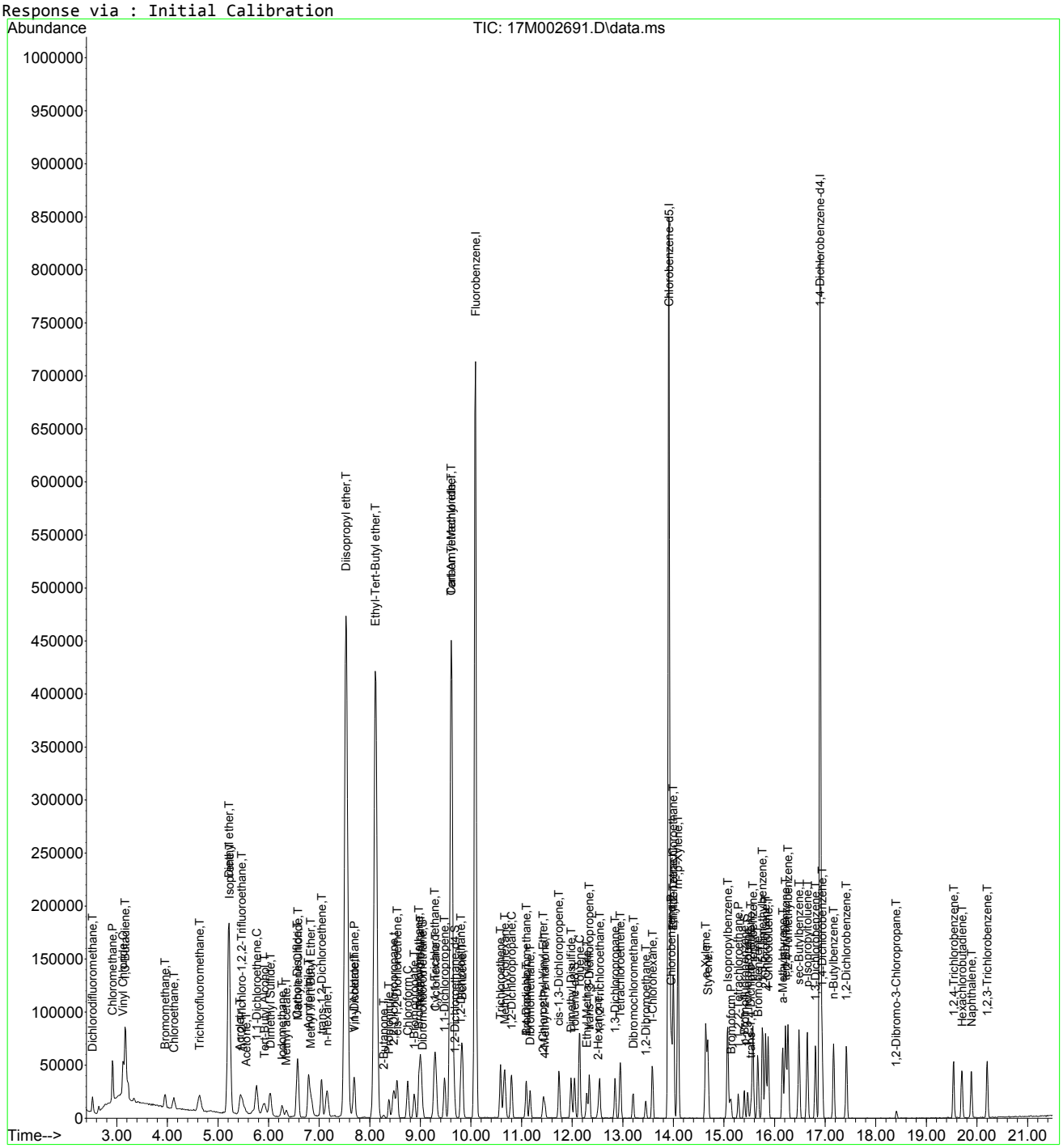

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002691.D
Acq On : 28 Jan 2014 16:43
Operator : ADC
Sample : WG461242-05 2.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 04 11:12:40 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	2.000	1.752	12.4	100	0.000
3	P	Chloromethane	2.000	2.043	-2.2	100	0.000
4	C	Vinyl Chloride	2.000	1.922	3.9#	100	0.000
5	T	1,3-Butadiene	-1.000	2.397	0.0	0	0.000
6	T	Bromomethane	2.000	1.869	6.6	100	0.000
7	T	Chloroethane	2.000	1.857	7.2	100	0.000
8	T	Trichlorofluoromethane	2.000	1.952	2.4	100	0.000
9	T	Diethyl ether	25.000	24.573	1.7	100	0.011
10	T	Isoprene	2.000	1.746	12.7	100	0.000
11	T	Acrolein	12.500	12.562	-0.5	100	-0.011
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.000	1.944	2.8	100	0.000
13	T	Acetone	-1.000	0.331	0.0	0	0.011
14	C	1,1-Dichloroethene	2.000	1.957	2.1#	100	0.000
15	T	Tert-Butyl Alcohol	50.000	52.245	-4.5	100	0.010
16	T	Dimethyl Sulfide	2.000	1.891	5.4	100	0.010
17	T	Iodomethane	2.000	1.903	4.8	100	0.000
18	T	Methyl acetate	2.000	2.254	-12.7	100	0.000
19	T	Methylene Chloride	2.000	2.014	-0.7	100	0.000
20	T	Carbon Disulfide	2.000	1.804	9.8	100	0.000
21	T	Acrylonitrile	12.500	11.888	4.9	100	0.000
22	T	Methyl Tert Butyl Ether	2.000	2.009	-0.4	100	0.011
23	T	trans-1,2-Dichloroethene	2.000	1.932	3.4	100	0.010
24	T	n-Hexane	2.000	1.846	7.7	100	0.000
25	T	Diisopropyl ether	25.000	24.496	2.0	100	0.000
26	T	Vinyl Acetate	2.000	2.040	-2.0	100	0.000
27	P	1,1-Dichloroethane	2.000	1.939	3.0	100	0.000
28	T	Ethyl-Tert-Butyl ether	25.000	24.701	1.2	100	0.000
29	T	2-Butanone	2.000	2.015	-0.8	100	0.000
30	T	Propionitrile	25.000	25.355	-1.4	100	0.000
31	t	2,2-Dichloropropane	2.000	1.882	5.9	100	0.000
32	T	cis-1,2-Dichloroethene	2.000	1.912	4.4	100	0.000
33	C	Chloroform	2.000	1.937	3.1#	100	0.000
34	T	1-Bromopropane	2.000	1.944	2.8	100	0.000
35	T	Bromochloromethane	2.000	1.930	3.5	100	0.000
36	T	Tetrahydrofuran	25.000	25.767	-3.1	100	0.000
37	S	Dibromofluoromethane	1.000	1.015	-1.5	100	0.000
38	T	1,1,1-Trichloroethane	2.000	1.917	4.1	100	0.000
39	T	Cyclohexane	2.000	1.860	7.0	100	0.000
40	T	1,1-Dichloropropene	2.000	1.881	5.9	100	0.000
41	T	Tert-Amyl-Methyl ether	25.000	24.429	2.3	100	0.000
42	T	Carbon Tetrachloride	2.000	1.703	14.8	100	0.000
43	S	1,2-Dichloroethane-d4	1.000	1.033	-3.3	100	0.000
44	T	1,2-Dichloroethane	2.000	1.866	6.7	100	0.000
45	T	Benzene	2.000	1.894	5.3	100	0.000
46	T	Trichloroethene	2.000	1.853	7.4	100	0.000
47	T	Methylcyclohexane	2.000	1.850	7.5	100	0.011
48	C	1,2-Dichloropropane	2.000	1.900	5.0#	100	0.000
49	T	1,4-Dioxane	50.000	46.741	6.5	100	0.000
50	T	Bromodichloromethane	2.000	1.826	8.7	100	0.000
51	T	Dibromomethane	2.000	1.963	1.8	100	0.000
52	T	2-Chloroethyl Vinyl Ether	2.000	1.825	8.8	100	0.000
53	T	4-Methyl-2-Pentanone	-1.000	1.903	0.0	0	0.000
54	T	cis-1,3-Dichloropropene	2.000	1.915	4.2	100	0.000
55	T	Dimethyl Disulfide	-1.000	1.396	0.0	0	0.000

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002691.D
Acq On : 28 Jan 2014 16:43
Operator : ADC
Sample : WG461242-05 2.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 04 11:12:40 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
57	S	Toluene-d8	1.000	1.004	-0.4	100	0.000
58	C	Toluene	2.000	1.895	5.2#	100	0.000
59	T	Ethyl Methacrylate	2.000	1.792	10.4	100	0.000
60	T	trans-1,3-Dichloropropene	2.000	1.896	5.2	100	0.000
61	T	1,1,2-Trichloroethane	2.000	1.959	2.0	100	0.000
62	T	2-Hexanone	2.000	1.956	2.2	100	0.000
63	T	1,3-Dichloropropane	2.000	1.969	1.5	100	0.000
64	T	Tetrachloroethene	2.000	1.922	3.9	100	0.000
65	T	Dibromochloromethane	2.000	1.817	9.2	100	0.010
66	T	1,2-Dibromoethane	2.000	1.928	3.6	100	0.000
67	T	1-Chlorohexane	2.000	1.826	8.7	100	0.011
68	P	Chlorobenzene	2.000	1.862	6.9	100	0.000
69	T	1,1,1,2-Tetrachloroethane	2.000	1.869	6.6	100	0.000
70	C	Ethylbenzene	2.000	1.908	4.6#	100	0.000
71	T	m-,p-Xylene	4.000	3.748	6.3	100	0.000
72	T	o-Xylene	2.000	1.788	10.6	100	0.000
73	T	Styrene	2.000	1.789	10.6	100	0.000
74	P	Bromoform	2.000	1.975	1.2	100	0.000
75	T	Isopropylbenzene	2.000	1.815	9.3	100	0.000
76	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
77	P	1,1,2,2-Tetrachloroethane	2.000	2.115	-5.8	100	0.000
78	S	p-Bromofluorobenzene	-1.000	1.015	0.0	0	0.011
79	T	1,2,3-Trichloropropane	2.000	2.193	-9.7	100	0.000
80	T	trans-1,4-Dichloro-2-Butene	2.000	2.050	-2.5	100	0.000
81	T	n-Propylbenzene	2.000	1.879	6.0	100	0.000
82	T	Bromobenzene	2.000	1.977	1.1	100	0.000
83	T	1,3,5-Trimethylbenzene	2.000	1.832	8.4	100	0.000
84	T	2-Chlorotoluene	2.000	2.008	-0.4	100	0.000
85	T	4-Chlorotoluene	2.000	1.821	9.0	100	0.000
86	T	a-Methylstyrene	2.000	2.571	-28.6#	100	0.000
87	T	tert-Butylbenzene	2.000	1.907	4.6	100	0.000
88	T	1,2,4-Trimethylbenzene	2.000	1.843	7.9	100	0.000
89	T	sec-Butylbenzene	2.000	1.856	7.2	100	0.000
90	T	p-Isopropyltoluene	2.000	1.774	11.3	100	0.000
91	T	1,3-Dichlorobenzene	2.000	1.878	6.1	100	0.000
92	T	1,4-Dichlorobenzene	2.000	1.844	7.8	100	0.000
93	T	n-Butylbenzene	2.000	1.757	12.2	100	0.000
94	T	1,2-Dichlorobenzene	2.000	1.920	4.0	100	0.000
95	T	1,2-Dibromo-3-Chloropropane	2.000	1.926	3.7	100	-0.011
96	T	1,2,4-Trichlorobenzene	2.000	1.757	12.2	100	0.000
97	T	Hexachlorobutadiene	2.000	1.884	5.8	100	0.000
98	T	Naphthalene	2.000	1.901	4.9	100	0.000
99	T	1,2,3-Trichlorobenzene	2.000	1.872	6.4	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002692.D
Acq On : 28 Jan 2014 17:10
Operator : ADC
Sample : WG461242-06 5.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 04 11:12:43 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.088	96	819733	25.00000 ug/L	0.0000
56) Chlorobenzene-d5	13.913	117	564601	25.00000 ug/L	0.0000
76) 1,4-Dichlorobenzene-d4	16.898	152	262582	25.00000 ug/L	0.0000
System Monitoring Compounds					
37) Dibromofluoromethane	9.041	111	23808	2.5566 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.226%#		
43) 1,2-Dichloroethane-d4	9.684	65	28890	2.7951 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 11.180%#		
57) Toluene-d8	12.047	98	85106	2.6264 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.506%#		
78) p-Bromofluorobenzene	15.395	95	29607	2.5615 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.246%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.522	85	40921	4.6154 ug/L	100
3) Chloromethane	2.915	50	108270	5.0270 ug/L	99
4) Vinyl Chloride	3.123	62	85960	4.8945 ug/L	98
5) 1,3-Butadiene	3.164	54	69918	5.6388 ug/L	94
6) Bromomethane	3.952	94	31167	4.8495 ug/L	98
7) Chloroethane	4.128	64	35244	4.9104 ug/L	100
8) Trichlorofluoromethane	4.636	101	74792	5.0140 ug/L	99
9) Diethyl ether	5.216	59	370000	52.3352 ug/L	99
10) Isoprene	5.227	67	61355	4.7451 ug/L	99
11) Acrolein	5.445	56	20407	26.6045 ug/L	94
12) 1,1,2-Trichloro-1,2,2-...	5.476	101	44456	5.0854 ug/L	99
13) Acetone	5.548	43	13315	5.0932 ug/L	98
14) 1,1-Dichloroethene	5.766	61	80670	5.0177 ug/L	99
15) Tert-Butyl Alcohol	5.911	59	52107	94.9851 ug/L #	92
16) Dimethyl Sulfide	6.025	62	44130	5.0672 ug/L	97
17) Iodomethane	6.263	142	46058	4.9254 ug/L	98
18) Methyl acetate	6.357	43	35331	5.9772 ug/L #	92
19) Methylene Chloride	6.585	84	51982	4.8904 ug/L	98
20) Carbon Disulfide	6.564	76	139700	4.7625 ug/L	99
21) Acrylonitrile	6.792	53	65534	25.8270 ug/L	96
22) Methyl Tert Butyl Ether	6.833	73	123643	5.3274 ug/L	100
23) trans-1,2-Dichloroethene	7.051	96	47313	5.0272 ug/L	97
24) n-Hexane	7.155	57	60111	4.9439 ug/L	95
25) Diisopropyl ether	7.528	45	1843266	52.2068 ug/L	100
26) Vinyl Acetate	7.694	43	73800	5.0799 ug/L	98
27) 1,1-Dichloroethane	7.683	63	93335	4.9410 ug/L	99
28) Ethyl-Tert-Butyl ether	8.108	59	1593491	52.4287 ug/L	100
29) 2-Butanone	8.274	43	15738	5.6362 ug/L	96
30) Propionitrile	8.378	54	47423	54.5067 ug/L	100
31) 2,2-Dichloropropane	8.471	77	77757	4.9306 ug/L	100
32) cis-1,2-Dichloroethene	8.544	96	52415	4.8849 ug/L	99
33) Chloroform	8.751	83	92585	5.0057 ug/L	100
34) 1-Bromopropane	8.875	122	9350	4.9184 ug/L	99
35) Bromochloromethane	8.969	130	32897	5.1430 ug/L	100
36) Tetrahydrofuran	9.000	42	102361	54.8732 ug/L	98
38) 1,1,1-Trichloroethane	9.280	97	81134	4.8587 ug/L	100
39) Cyclohexane	9.300	56	87257	4.9185 ug/L	99
40) 1,1-Dichloropropene	9.477	75	62459	4.8999 ug/L	99
41) Tert-Amyl-Methyl ether	9.611	73	1248425	52.3345 ug/L	100
42) Carbon Tetrachloride	9.611	117	58615	4.4820 ug/L	98
44) 1,2-Dichloroethane	9.798	62	67175	5.0188 ug/L	100
45) Benzene	9.829	78	185796	4.8762 ug/L	100
46) Trichloroethene	10.586	130	55128	5.1049 ug/L	99
47) Methylcyclohexane	10.669	83	72826	4.8611 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002692.D
Acq On : 28 Jan 2014 17:10
Operator : ADC
Sample : WG461242-06 5.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 04 11:12:43 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
48) 1,2-Dichloropropane	10.803	63	51824	5.0311 ug/L	100
49) 1,4-Dioxane	11.094	88	5678	94.6149 ug/L	90
50) Bromodichloromethane	11.094	83	66378	4.8753 ug/L	99
51) Dibromomethane	11.166	93	28112	5.1005 ug/L	99
52) 2-Chloroethyl Vinyl Ether	11.425	63	23734	4.8968 ug/L	98
53) 4-Methyl-2-Pentanone	11.456	58	12369	5.0226 ug/L	97
54) cis-1,3-Dichloropropene	11.736	75	75454	4.9171 ug/L	100
55) Dimethyl Disulfide	11.975	79	37094	3.9871 ug/L	99
58) Toluene	12.140	91	195830	4.9707 ug/L	100
59) Ethyl Methacrylate	12.286	69	42658	4.9311 ug/L	100
60) trans-1,3-Dichloropropene	12.337	75	65772	5.0532 ug/L	100
61) 1,1,2-Trichloroethane	12.545	97	38106	5.4029 ug/L	97
62) 2-Hexanone	12.514	43	22469	5.2646 ug/L	97
63) 1,3-Dichloropropane	12.845	76	63506	5.1638 ug/L	99
64) Tetrachloroethene	12.949	166	54875	5.0884 ug/L	98
65) Dibromochloromethane	13.208	129	45215	4.5652 ug/L	99
66) 1,2-Dibromoethane	13.457	107	36699	5.1492 ug/L	98
67) 1-Chlorohexane	13.581	91	56119	4.7095 ug/L	99
68) Chlorobenzene	13.954	112	128798	4.8664 ug/L	97
69) 1,1,1,2-Tetrachloroethane	13.996	131	46886	4.7353 ug/L	99
70) Ethylbenzene	13.996	106	68987	4.8506 ug/L	98
71) m-,p-Xylene	14.089	106	164300	9.1442 ug/L	99
72) o-Xylene	14.639	106	84049	4.8369 ug/L	98
73) Styrene	14.680	104	122441	4.4889 ug/L	99
74) Bromoform	15.136	173	27414	4.5946 ug/L	98
75) Isopropylbenzene	15.074	105	212345	4.8845 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.281	83	37002	4.9637 ug/L	100
79) 1,2,3-Trichloropropane	15.468	110	12445	5.4170 ug/L	94
80) trans-1,4-Dichloro-2-B...	15.530	53	11045	4.7149 ug/L	94
81) n-Propylbenzene	15.571	91	239230	4.9435 ug/L	98
82) Bromobenzene	15.675	156	56726	5.1326 ug/L	100
83) 1,3,5-Trimethylbenzene	15.758	105	170304	4.8347 ug/L	99
84) 2-Chlorotoluene	15.820	91	163117	5.1622 ug/L	100
85) 4-Chlorotoluene	15.872	91	132380	4.8251 ug/L	99
86) a-Methylstyrene	16.162	118	79497	4.8847 ug/L	100
87) tert-Butylbenzene	16.214	134	37380	4.9654 ug/L	99
88) 1,2,4-Trimethylbenzene	16.266	105	175211	4.8975 ug/L	99
89) sec-Butylbenzene	16.484	105	218812	4.9365 ug/L	99
90) p-Isopropyltoluene	16.649	119	178621	4.8954 ug/L	100
91) 1,3-Dichlorobenzene	16.805	146	98621	4.8192 ug/L	100
92) 1,4-Dichlorobenzene	16.940	146	97780	4.7981 ug/L	94
93) n-Butylbenzene	17.168	91	147425	4.3693 ug/L	99
94) 1,2-Dichlorobenzene	17.427	146	97569	5.0119 ug/L	100
95) 1,2-Dibromo-3-Chloropr...	18.412	75	6418	4.9504 ug/L	99
96) 1,2,4-Trichlorobenzene	19.541	180	62105	4.6770 ug/L	99
97) Hexachlorobutadiene	19.707	225	35873	4.8716 ug/L	98
98) Naphthalene	19.894	128	125656	5.1781 ug/L	99
99) 1,2,3-Trichlorobenzene	20.205	180	59927	4.9186 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002692.D
Acq On : 28 Jan 2014 17:10
Operator : ADC
Sample : WG461242-06 5.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 04 11:12:43 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

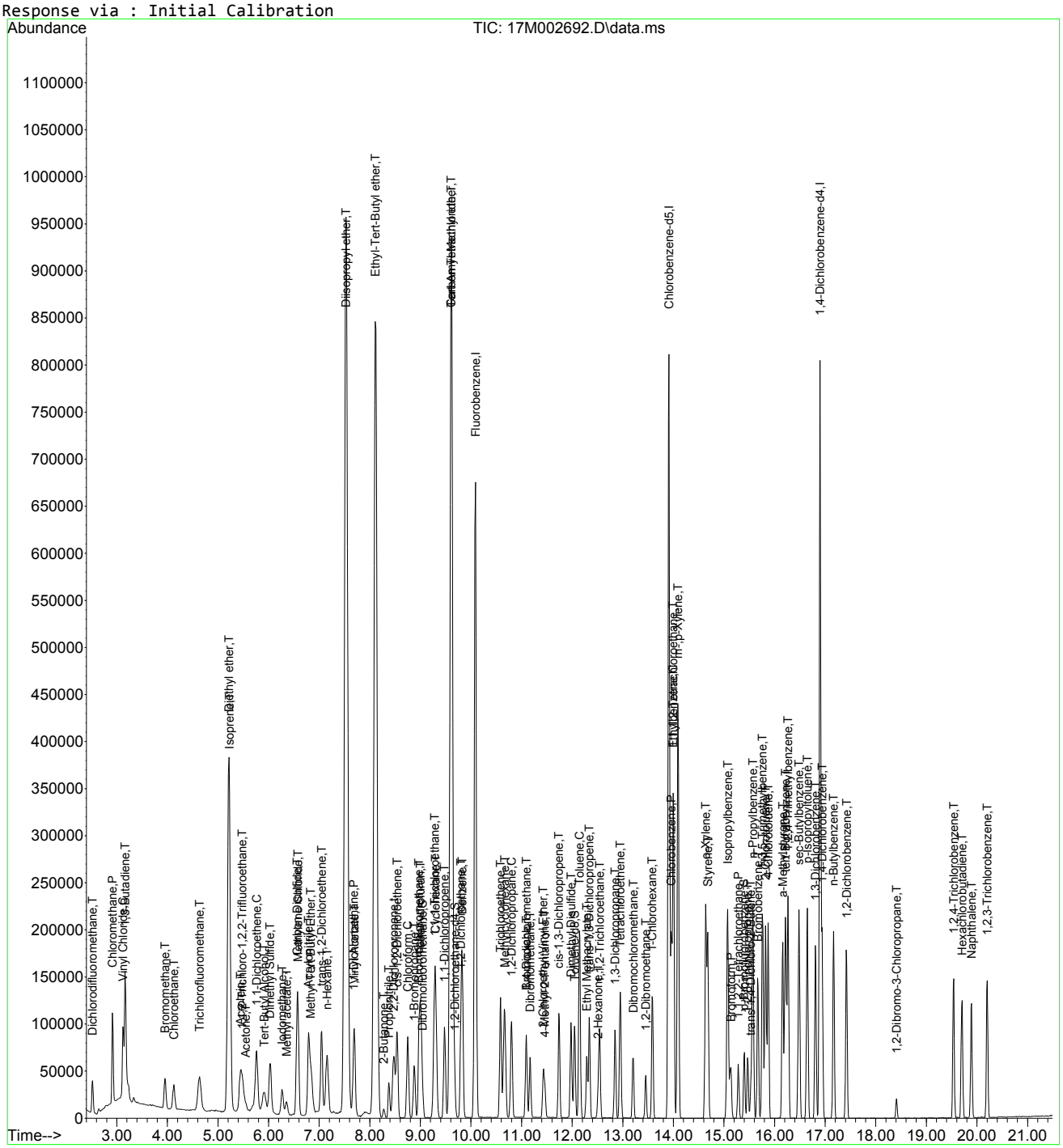

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002692.D
Acq On : 28 Jan 2014 17:10
Operator : ADC
Sample : WG461242-06 5.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 04 11:12:43 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	5.000	4.615	7.7	100	0.000
3	P	Chloromethane	5.000	5.027	-0.5	100	0.000
4	C	Vinyl Chloride	5.000	4.894	2.1#	100	0.000
5	T	1,3-Butadiene	5.000	5.639	-12.8	100	0.000
6	T	Bromomethane	5.000	4.849	3.0	100	0.000
7	T	Chloroethane	5.000	4.910	1.8	100	0.000
8	T	Trichlorofluoromethane	5.000	5.014	-0.3	100	0.000
9	T	Diethyl ether	50.000	52.335	-4.7	100	0.010
10	T	Isoprene	5.000	4.745	5.1	100	0.000
11	T	Acrolein	25.000	26.604	-6.4	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.000	5.085	-1.7	100	0.011
13	T	Acetone	5.000	5.093	-1.9	100	0.000
14	C	1,1-Dichloroethene	5.000	5.018	-0.4#	100	0.000
15	T	Tert-Butyl Alcohol	100.000	94.985	5.0	100	0.000
16	T	Dimethyl Sulfide	5.000	5.067	-1.3	100	0.000
17	T	Iodomethane	5.000	4.925	1.5	100	0.000
18	T	Methyl acetate	5.000	5.977	-19.5	100	0.011
19	T	Methylene Chloride	5.000	4.890	2.2	100	0.000
20	T	Carbon Disulfide	5.000	4.762	4.8	100	0.000
21	T	Acrylonitrile	25.000	25.827	-3.3	100	0.000
22	T	Methyl Tert Butyl Ether	5.000	5.327	-6.5	100	0.010
23	T	trans-1,2-Dichloroethene	5.000	5.027	-0.5	100	0.010
24	T	n-Hexane	5.000	4.944	1.1	100	0.000
25	T	Diisopropyl ether	50.000	52.207	-4.4	100	0.000
26	T	Vinyl Acetate	5.000	5.080	-1.6	100	0.000
27	P	1,1-Dichloroethane	5.000	4.941	1.2	100	0.000
28	T	Ethyl-Tert-Butyl ether	50.000	52.429	-4.9	100	0.000
29	T	2-Butanone	5.000	5.636	-12.7	100	0.000
30	T	Propionitrile	50.000	54.507	-9.0	100	0.000
31	t	2,2-Dichloropropane	5.000	4.931	1.4	100	0.000
32	T	cis-1,2-Dichloroethene	5.000	4.885	2.3	100	0.000
33	C	Chloroform	5.000	5.006	-0.1#	100	0.000
34	T	1-Bromopropane	5.000	4.918	1.6	100	0.000
35	T	Bromochloromethane	5.000	5.143	-2.9	100	0.000
36	T	Tetrahydrofuran	50.000	54.873	-9.7	100	0.000
37	S	Dibromofluoromethane	2.500	2.557	-2.3	100	0.000
38	T	1,1,1-Trichloroethane	5.000	4.859	2.8	100	0.000
39	T	Cyclohexane	5.000	4.918	1.6	100	0.000
40	T	1,1-Dichloropropene	5.000	4.900	2.0	100	0.000
41	T	Tert-Amyl-Methyl ether	50.000	52.334	-4.7	100	0.000
42	T	Carbon Tetrachloride	5.000	4.482	10.4	100	0.000
43	S	1,2-Dichloroethane-d4	2.500	2.795	-11.8	100	0.000
44	T	1,2-Dichloroethane	5.000	5.019	-0.4	100	0.000
45	T	Benzene	5.000	4.876	2.5	100	0.000
46	T	Trichloroethene	5.000	5.105	-2.1	100	0.000
47	T	Methylcyclohexane	5.000	4.861	2.8	100	0.011
48	C	1,2-Dichloropropane	5.000	5.031	-0.6#	100	0.000
49	T	1,4-Dioxane	100.000	94.615	5.4	100	0.000
50	T	Bromodichloromethane	5.000	4.875	2.5	100	0.000
51	T	Dibromomethane	5.000	5.101	-2.0	100	0.000
52	T	2-Chloroethyl Vinyl Ether	5.000	4.897	2.1	100	0.000
53	T	4-Methyl-2-Pentanone	5.000	5.023	-0.5	100	0.000
54	T	cis-1,3-Dichloropropene	5.000	4.917	1.7	100	0.000
55	T	Dimethyl Disulfide	5.000	3.987	20.3#	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002692.D
Acq On : 28 Jan 2014 17:10
Operator : ADC
Sample : WG461242-06 5.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 04 11:12:43 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
57	S	Toluene-d8	2.500	2.626	-5.0	100	0.000
58	C	Toluene	5.000	4.971	0.6#	100	0.000
59	T	Ethyl Methacrylate	5.000	4.931	1.4	100	0.000
60	T	trans-1,3-Dichloropropene	5.000	5.053	-1.1	100	0.000
61	T	1,1,2-Trichloroethane	5.000	5.403	-8.1	100	0.000
62	T	2-Hexanone	5.000	5.265	-5.3	100	0.000
63	T	1,3-Dichloropropane	5.000	5.164	-3.3	100	0.000
64	T	Tetrachloroethene	5.000	5.088	-1.8	100	0.000
65	T	Dibromochloromethane	5.000	4.565	8.7	100	0.010
66	T	1,2-Dibromoethane	5.000	5.149	-3.0	100	0.000
67	T	1-Chlorohexane	5.000	4.709	5.8	100	0.000
68	P	Chlorobenzene	5.000	4.866	2.7	100	0.000
69	T	1,1,1,2-Tetrachloroethane	5.000	4.735	5.3	100	0.000
70	C	Ethylbenzene	5.000	4.851	3.0#	100	0.000
71	T	m-,p-Xylene	10.000	9.144	8.6	100	0.000
72	T	o-Xylene	5.000	4.837	3.3	100	0.000
73	T	Styrene	5.000	4.489	10.2	100	0.000
74	P	Bromoform	5.000	4.595	8.1	100	0.000
75	T	Isopropylbenzene	5.000	4.884	2.3	100	0.000
76	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
77	P	1,1,2,2-Tetrachloroethane	5.000	4.964	0.7	100	0.000
78	S	p-Bromofluorobenzene	2.500	2.562	-2.5	100	0.000
79	T	1,2,3-Trichloropropane	5.000	5.417	-8.3	100	0.000
80	T	trans-1,4-Dichloro-2-Butene	5.000	4.715	5.7	100	0.000
81	T	n-Propylbenzene	5.000	4.943	1.1	100	0.000
82	T	Bromobenzene	5.000	5.133	-2.7	100	0.000
83	T	1,3,5-Trimethylbenzene	5.000	4.835	3.3	100	0.000
84	T	2-Chlorotoluene	5.000	5.162	-3.2	100	0.000
85	T	4-Chlorotoluene	5.000	4.825	3.5	100	0.000
86	T	a-Methylstyrene	5.000	4.885	2.3	100	0.000
87	T	tert-Butylbenzene	5.000	4.965	0.7	100	0.000
88	T	1,2,4-Trimethylbenzene	5.000	4.897	2.1	100	0.000
89	T	sec-Butylbenzene	5.000	4.937	1.3	100	0.000
90	T	p-Isopropyltoluene	5.000	4.895	2.1	100	0.000
91	T	1,3-Dichlorobenzene	5.000	4.819	3.6	100	0.000
92	T	1,4-Dichlorobenzene	5.000	4.798	4.0	100	0.000
93	T	n-Butylbenzene	5.000	4.369	12.6	100	0.000
94	T	1,2-Dichlorobenzene	5.000	5.012	-0.2	100	0.000
95	T	1,2-Dibromo-3-Chloropropane	5.000	4.950	1.0	100	0.000
96	T	1,2,4-Trichlorobenzene	5.000	4.677	6.5	100	0.000
97	T	Hexachlorobutadiene	5.000	4.872	2.6	100	0.000
98	T	Naphthalene	5.000	5.178	-3.6	100	0.000
99	T	1,2,3-Trichlorobenzene	5.000	4.919	1.6	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002693.D
Acq On : 28 Jan 2014 17:37
Operator : ADC
Sample : WG461242-07 20.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Feb 04 11:12:46 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.088	96	864112	25.00000 ug/L	0.0000
56) Chlorobenzene-d5	13.913	117	600331	25.00000 ug/L	0.0000
76) 1,4-Dichlorobenzene-d4	16.898	152	284108	25.00000 ug/L	0.0000
System Monitoring Compounds					
37) Dibromofluoromethane	9.041	111	90534	9.2226 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 36.890%#		
43) 1,2-Dichloroethane-d4	9.684	65	102522	9.4097 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 37.639%#		
57) Toluene-d8	12.047	98	323570	9.3911 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 37.564%#		
78) p-Bromofluorobenzene	15.395	95	116744	9.3352 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 37.341%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.521	85	190759	20.4101 ug/L	99
3) Chloromethane	2.915	50	448116	19.7377 ug/L	100
4) Vinyl Chloride	3.123	62	359822	19.4358 ug/L	99
5) 1,3-Butadiene	3.164	54	284984	21.8034 ug/L	97
6) Bromomethane	3.952	94	131460	19.4043 ug/L	99
7) Chloroethane	4.128	64	148065	19.5698 ug/L	99
8) Trichlorofluoromethane	4.636	101	310461	19.7443 ug/L	99
9) Diethyl ether	5.206	59	570789	76.5896 ug/L	99
10) Isoprene	5.227	67	254765	18.6912 ug/L	100
11) Acrolein	5.444	56	31307	38.7186 ug/L	97
12) 1,1,2-Trichloro-1,2,2-...	5.465	101	179863	19.5182 ug/L	100
13) Acetone	5.548	43	40842	19.6592 ug/L	99
14) 1,1-Dichloroethene	5.755	61	333256	19.6641 ug/L	99
15) Tert-Butyl Alcohol	5.911	59	83907	162.4382 ug/L	98
16) Dimethyl Sulfide	6.035	62	173838	18.9357 ug/L	100
17) Iodomethane	6.263	142	186703	18.9405 ug/L	99
18) Methyl acetate	6.346	43	117780	18.9023 ug/L	98
19) Methylene Chloride	6.585	84	203964	18.2033 ug/L	100
20) Carbon Disulfide	6.564	76	567189	18.3428 ug/L	100
21) Acrylonitrile	6.782	53	101848	38.0769 ug/L	96
22) Methyl Tert Butyl Ether	6.823	73	467794	19.1207 ug/L	99
23) trans-1,2-Dichloroethene	7.041	96	191049	19.2572 ug/L	100
24) n-Hexane	7.155	57	239820	18.7112 ug/L	99
25) Diisopropyl ether	7.528	45	2869187	77.0904 ug/L	100
26) Vinyl Acetate	7.694	43	264736	17.2867 ug/L	100
27) 1,1-Dichloroethane	7.683	63	384472	19.3082 ug/L	100
28) Ethyl-Tert-Butyl ether	8.108	59	2476176	77.2865 ug/L	100
29) 2-Butanone	8.274	43	56181	19.0866 ug/L	100
30) Propionitrile	8.378	54	71509	77.9694 ug/L	98
31) 2,2-Dichloropropane	8.471	77	317259	19.0844 ug/L	99
32) cis-1,2-Dichloroethene	8.544	96	219360	19.3938 ug/L	99
33) Chloroform	8.751	83	374582	19.2122 ug/L	100
34) 1-Bromopropane	8.875	122	37908	18.9167 ug/L	98
35) Bromochloromethane	8.969	130	133363	19.7789 ug/L	99
36) Tetrahydrofuran	9.000	42	152914	77.7634 ug/L	99
38) 1,1,1-Trichloroethane	9.280	97	338841	19.2495 ug/L	99
39) Cyclohexane	9.300	56	347946	18.6057 ug/L	100
40) 1,1-Dichloropropene	9.477	75	259938	19.3449 ug/L	100
41) Tert-Amyl-Methyl ether	9.611	73	1935398	76.9659 ug/L	100
42) Carbon Tetrachloride	9.611	117	277524	18.5787 ug/L	99
44) 1,2-Dichloroethane	9.798	62	271671	19.2546 ug/L	100
45) Benzene	9.829	78	764359	19.0302 ug/L	100
46) Trichloroethene	10.586	130	226361	19.8846 ug/L	100
47) Methylcyclohexane	10.658	83	294202	18.6293 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002693.D
Acq On : 28 Jan 2014 17:37
Operator : ADC
Sample : WG461242-07 20.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Feb 04 11:12:46 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
48) 1,2-Dichloropropane	10.803	63	211999	19.5238 ug/L	100
49) 1,4-Dioxane	11.094	88	9670	152.8596 ug/L	100
50) Bromodichloromethane	11.094	83	282629	19.6921 ug/L	99
51) Dibromomethane	11.166	93	114352	19.6820 ug/L	98
52) 2-Chloroethyl Vinyl Ether	11.425	63	96615	18.9099 ug/L	99
53) 4-Methyl-2-Pentanone	11.456	58	49423	19.0382 ug/L	100
54) cis-1,3-Dichloropropene	11.736	75	311926	19.2834 ug/L	100
55) Dimethyl Disulfide	11.975	79	173016	17.6417 ug/L	100
58) Toluene	12.140	91	806264	19.2471 ug/L	100
59) Ethyl Methacrylate	12.286	69	181823	19.7670 ug/L	99
60) trans-1,3-Dichloropropene	12.337	75	276177	19.9556 ug/L	100
61) 1,1,2-Trichloroethane	12.545	97	149067	19.8778 ug/L	99
62) 2-Hexanone	12.514	43	87751	19.3369 ug/L	99
63) 1,3-Dichloropropane	12.845	76	254034	19.4266 ug/L	100
64) Tetrachloroethene	12.949	166	221575	19.3231 ug/L	99
65) Dibromochloromethane	13.208	129	198196	17.9218 ug/L	99
66) 1,2-Dibromoethane	13.457	107	151614	20.0069 ug/L	99
67) 1-Chlorohexane	13.581	91	239917	18.2104 ug/L	99
68) Chlorobenzene	13.954	112	530896	18.8650 ug/L	100
69) 1,1,1,2-Tetrachloroethane	13.996	131	203597	18.5337 ug/L	100
70) Ethylbenzene	14.006	106	288871	18.4110 ug/L	100
71) m-,p-Xylene	14.089	106	699139	35.1239 ug/L	99
72) o-Xylene	14.638	106	346305	18.7431 ug/L	99
73) Styrene	14.680	104	556044	18.0803 ug/L	100
74) Bromoform	15.136	173	125229	17.5688 ug/L	100
75) Isopropylbenzene	15.074	105	888357	19.2183 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.281	83	146057	18.1085 ug/L	100
79) 1,2,3-Trichloropropane	15.468	110	49957	19.8637 ug/L	98
80) trans-1,4-Dichloro-2-B...	15.530	53	50053	18.0292 ug/L	99
81) n-Propylbenzene	15.571	91	1044569	19.9497 ug/L	99
82) Bromobenzene	15.675	156	234470	19.6076 ug/L	98
83) 1,3,5-Trimethylbenzene	15.758	105	737207	19.3426 ug/L	100
84) 2-Chlorotoluene	15.820	91	687635	20.1130 ug/L	99
85) 4-Chlorotoluene	15.872	91	562195	18.9388 ug/L	99
86) a-Methylstyrene	16.162	118	373790	16.8652 ug/L	99
87) tert-Butylbenzene	16.214	134	158595	19.4711 ug/L	99
88) 1,2,4-Trimethylbenzene	16.266	105	757443	19.5679 ug/L	100
89) sec-Butylbenzene	16.483	105	951628	19.8426 ug/L	100
90) p-Isopropyltoluene	16.649	119	782301	19.8157 ug/L	100
91) 1,3-Dichlorobenzene	16.805	146	428042	19.3319 ug/L	98
92) 1,4-Dichlorobenzene	16.940	146	423838	19.2221 ug/L	100
93) n-Butylbenzene	17.168	91	678511	17.6072 ug/L	99
94) 1,2-Dichlorobenzene	17.416	146	409607	19.4462 ug/L	100
95) 1,2-Dibromo-3-Chloropr...	18.411	75	27399	19.5325 ug/L	98
96) 1,2,4-Trichlorobenzene	19.541	180	278499	19.3841 ug/L	99
97) Hexachlorobutadiene	19.707	225	158500	19.8935 ug/L	100
98) Naphthalene	19.894	128	539780	20.5583 ug/L	100
99) 1,2,3-Trichlorobenzene	20.205	180	266720	20.2327 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002693.D
Acq On : 28 Jan 2014 17:37
Operator : ADC
Sample : WG461242-07 20.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Feb 04 11:12:46 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

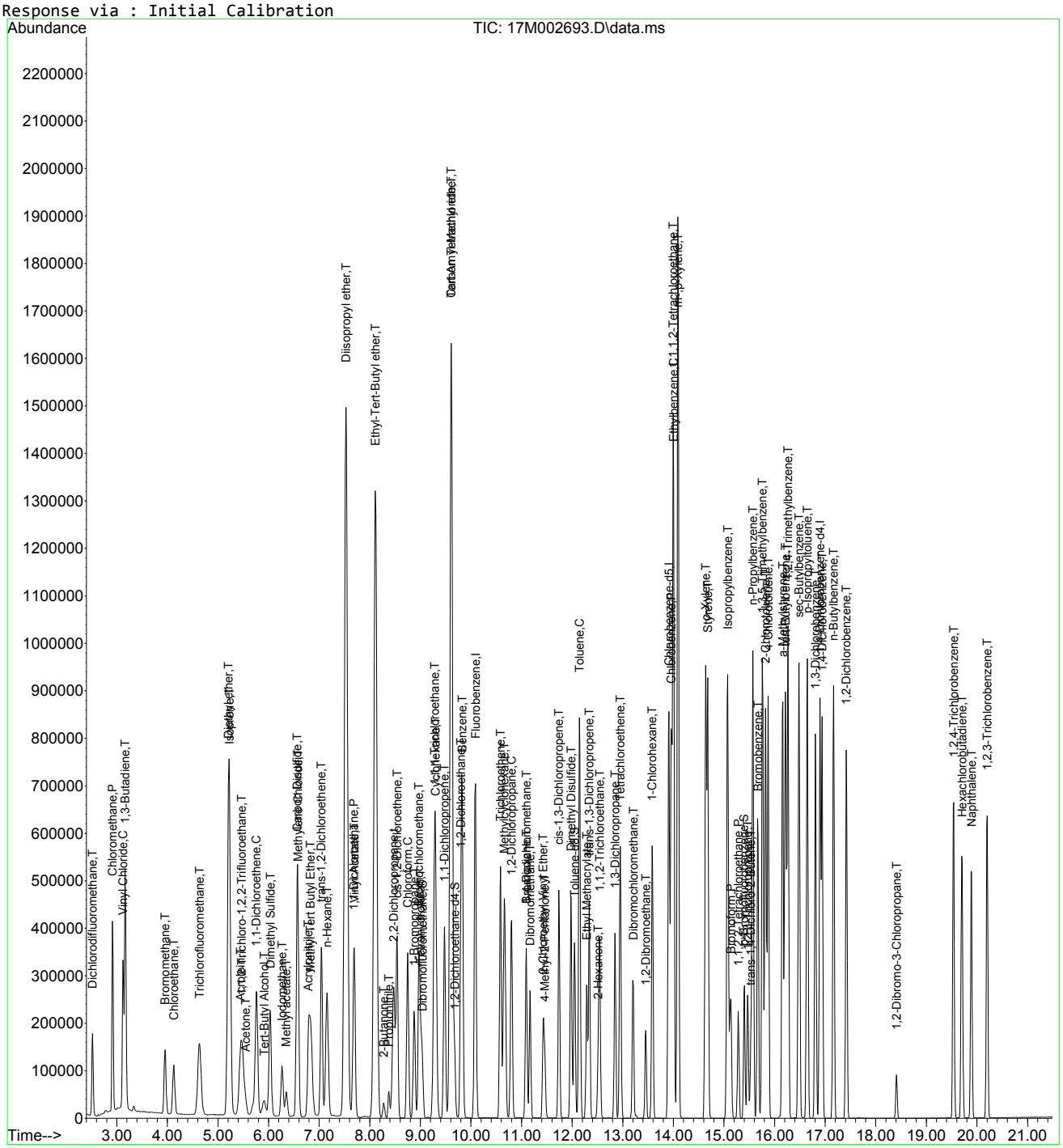

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002694.D
Acq On : 28 Jan 2014 18:04
Operator : ADC
Sample : WG461242-08 50.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 04 11:12:49 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.088	96	876843	25.00000 ug/L	0.0000
56) Chlorobenzene-d5	13.913	117	616991	25.00000 ug/L	0.0000
76) 1,4-Dichlorobenzene-d4	16.898	152	300437	25.00000 ug/L	0.0000
System Monitoring Compounds					
37) Dibromofluoromethane	9.041	111	244392	24.5344 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.138%		
43) 1,2-Dichloroethane-d4	9.684	65	266761	24.1284 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.514%		
57) Toluene-d8	12.047	98	868540	24.5273 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.109%		
78) p-Bromofluorobenzene	15.395	95	319975	24.1954 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.782%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.522	85	493308	52.0148 ug/L	100
3) Chloromethane	2.916	50	1151838	49.9973 ug/L	100
4) Vinyl Chloride	3.123	62	910059	48.4431 ug/L	100
5) 1,3-Butadiene	3.164	54	698105	52.6347 ug/L	100
6) Bromomethane	3.952	94	345997	50.3297 ug/L	100
7) Chloroethane	4.128	64	378783	49.3370 ug/L	100
8) Trichlorofluoromethane	4.636	101	810061	50.7691 ug/L	100
9) Diethyl ether	5.206	59	730940	96.6550 ug/L	100
10) Isoprene	5.227	67	710423	51.3644 ug/L	100
11) Acrolein	5.445	56	39350	47.9591 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	5.465	101	466177	49.8537 ug/L	100
13) Acetone	5.548	43	95155	48.4212 ug/L	100
14) 1,1-Dichloroethene	5.756	61	861349	50.0869 ug/L	100
15) Tert-Butyl Alcohol	5.911	59	100856	198.4812 ug/L	100
16) Dimethyl Sulfide	6.025	62	463226	49.7254 ug/L	100
17) Iodomethane	6.263	142	509164	50.9032 ug/L	100
18) Methyl acetate	6.346	43	288289	45.5951 ug/L	100
19) Methylene Chloride	6.585	84	523244	46.0203 ug/L	100
20) Carbon Disulfide	6.564	76	1569337	50.0152 ug/L	100
21) Acrylonitrile	6.792	53	134520	49.5615 ug/L	100
22) Methyl Tert Butyl Ether	6.823	73	1194580	48.1185 ug/L	100
23) trans-1,2-Dichloroethene	7.041	96	503001	49.9649 ug/L	100
24) n-Hexane	7.155	57	664027	51.0563 ug/L	100
25) Diisopropyl ether	7.528	45	3719282	98.4801 ug/L	100
26) Vinyl Acetate	7.694	43	707775	45.5452 ug/L	100
27) 1,1-Dichloroethane	7.684	63	1003817	49.6798 ug/L	100
28) Ethyl-Tert-Butyl ether	8.109	59	3186328	98.0078 ug/L	100
29) 2-Butanone	8.274	43	142577	47.7351 ug/L	100
30) Propionitrile	8.378	54	89430	96.0937 ug/L	100
31) 2,2-Dichloropropane	8.471	77	831958	49.3190 ug/L	100
32) cis-1,2-Dichloroethene	8.544	96	570373	49.6951 ug/L	100
33) Chloroform	8.751	83	983084	49.6900 ug/L	100
34) 1-Bromopropane	8.876	122	103848	51.0695 ug/L	100
35) Bromochloromethane	8.969	130	343088	50.1441 ug/L	100
36) Tetrahydrofuran	9.000	42	187803	94.1193 ug/L	100
38) 1,1,1-Trichloroethane	9.280	97	896482	50.1895 ug/L	100
39) Cyclohexane	9.301	56	963682	50.7826 ug/L	100
40) 1,1-Dichloropropene	9.477	75	688550	50.4988 ug/L	100
41) Tert-Amyl-Methyl ether	9.611	73	2483352	97.3228 ug/L	100
42) Carbon Tetrachloride	9.611	117	774075	49.3855 ug/L	100
44) 1,2-Dichloroethane	9.798	62	707926	49.4455 ug/L	100
45) Benzene	9.829	78	2014036	49.4153 ug/L	100
46) Trichloroethene	10.586	130	589283	51.0137 ug/L	100
47) Methylcyclohexane	10.658	83	812089	50.6759 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002694.D
Acq On : 28 Jan 2014 18:04
Operator : ADC
Sample : WG461242-08 50.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 04 11:12:49 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
48) 1,2-Dichloropropane	10.804	63	549556	49.8759 ug/L	100
49) 1,4-Dioxane	11.094	88	12158	189.3986 ug/L	100
50) Bromodichloromethane	11.094	83	744875	51.1454 ug/L	100
51) Dibromomethane	11.166	93	292214	49.5649 ug/L	100
52) 2-Chloroethyl Vinyl Ether	11.425	63	258551	49.8700 ug/L	100
53) 4-Methyl-2-Pentanone	11.457	58	126848	48.1536 ug/L	100
54) cis-1,3-Dichloropropene	11.736	75	828870	50.4972 ug/L	100
55) Dimethyl Disulfide	11.975	79	490915	49.3298 ug/L	100
58) Toluene	12.141	91	2146540	49.8584 ug/L	100
59) Ethyl Methacrylate	12.286	69	489726	51.8033 ug/L	100
60) trans-1,3-Dichloropropene	12.338	75	721291	50.7108 ug/L	100
61) 1,1,2-Trichloroethane	12.545	97	381042	49.4392 ug/L	100
62) 2-Hexanone	12.514	43	224713	48.1809 ug/L	100
63) 1,3-Dichloropropane	12.845	76	650813	48.4253 ug/L	100
64) Tetrachloroethene	12.949	166	593016	50.3193 ug/L	100
65) Dibromochloromethane	13.198	129	529528	46.1294 ug/L	100
66) 1,2-Dibromoethane	13.457	107	394660	50.6728 ug/L	100
67) 1-Chlorohexane	13.581	91	676869	48.8641 ug/L	100
68) Chlorobenzene	13.955	112	1418980	49.0608 ug/L	100
69) 1,1,1,2-Tetrachloroethane	13.996	131	558324	47.8461 ug/L	100
70) Ethylbenzene	13.996	106	794063	47.5838 ug/L	100
71) m-,p-Xylene	14.089	106	1922175	91.9397 ug/L	100
72) o-Xylene	14.639	106	930772	49.0161 ug/L	100
73) Styrene	14.680	104	1548882	47.4880 ug/L	100
74) Bromoform	15.136	173	338906	45.1867 ug/L	100
75) Isopropylbenzene	15.074	105	2402282	50.5666 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.281	83	391149	45.8598 ug/L	100
79) 1,2,3-Trichloropropane	15.468	110	128795	48.5618 ug/L	100
80) trans-1,4-Dichloro-2-B...	15.530	53	142771	47.7165 ug/L	100
81) n-Propylbenzene	15.572	91	2895630	52.2964 ug/L	100
82) Bromobenzene	15.675	156	623435	49.3013 ug/L	100
83) 1,3,5-Trimethylbenzene	15.758	105	2026749	50.2868 ug/L	100
84) 2-Chlorotoluene	15.820	91	1876917	51.9151 ug/L	100
85) 4-Chlorotoluene	15.872	91	1552374	49.4530 ug/L	100
86) a-Methylstyrene	16.162	118	1103669	44.7540 ug/L	100
87) tert-Butylbenzene	16.214	134	423678	49.1888 ug/L	100
88) 1,2,4-Trimethylbenzene	16.266	105	2082493	50.8754 ug/L	100
89) sec-Butylbenzene	16.484	105	2599238	51.2515 ug/L	100
90) p-Isopropyltoluene	16.650	119	2147118	51.4305 ug/L	100
91) 1,3-Dichlorobenzene	16.805	146	1158489	49.4778 ug/L	100
92) 1,4-Dichlorobenzene	16.940	146	1152953	49.4474 ug/L	100
93) n-Butylbenzene	17.168	91	1941941	46.9001 ug/L	100
94) 1,2-Dichlorobenzene	17.417	146	1095634	49.1885 ug/L	100
95) 1,2-Dibromo-3-Chloropr...	18.412	75	71380	48.1204 ug/L	100
96) 1,2,4-Trichlorobenzene	19.541	180	767286	50.5020 ug/L	100
97) Hexachlorobutadiene	19.707	225	429985	51.0347 ug/L	100
98) Naphthalene	19.894	128	1413307	50.9024 ug/L	100
99) 1,2,3-Trichlorobenzene	20.205	180	711627	51.0482 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002694.D
Acq On : 28 Jan 2014 18:04
Operator : ADC
Sample : WG461242-08 50.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 04 11:12:49 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

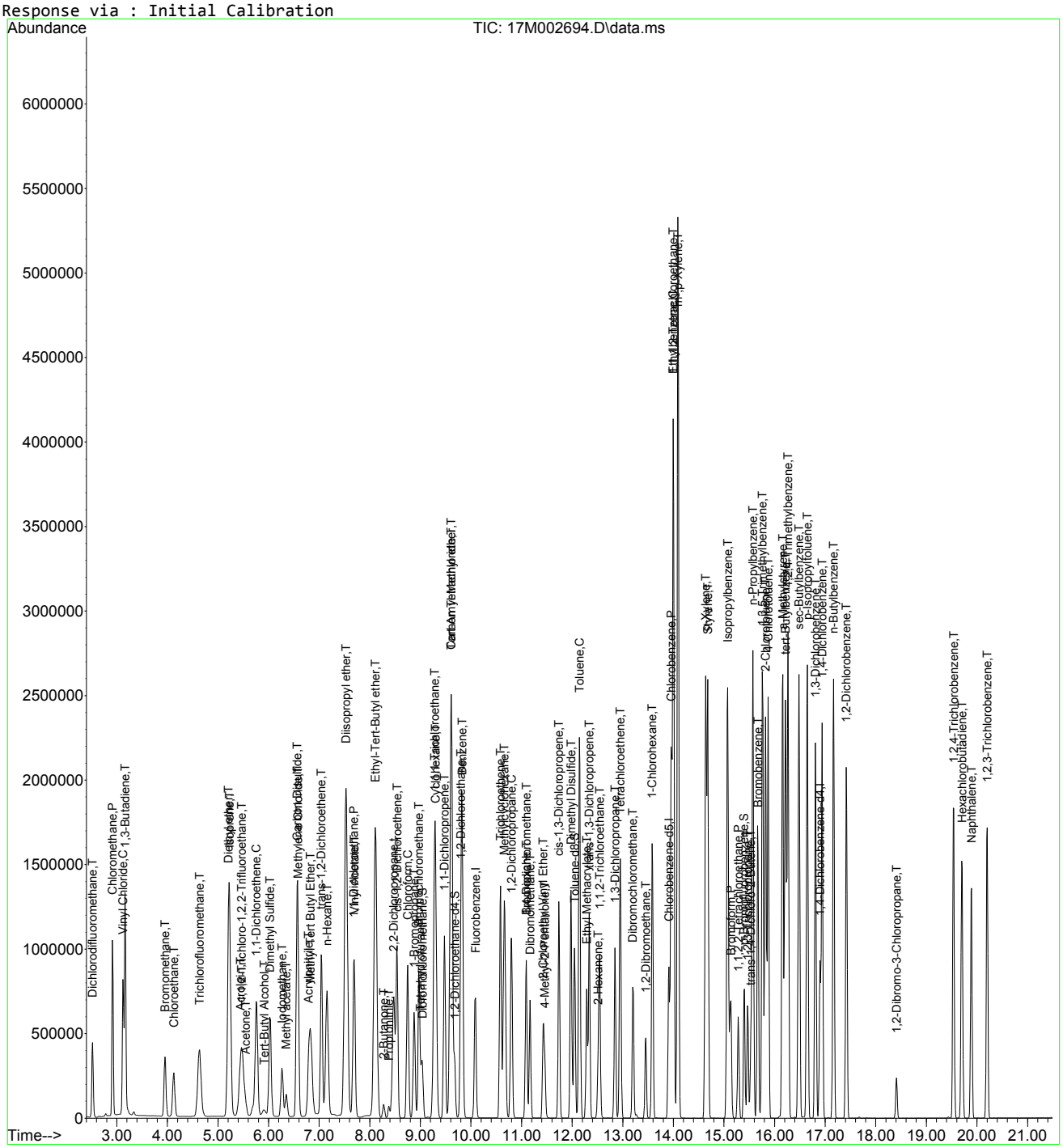

8260WT.M Tue Feb 04 11:12:50 2014 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002695.D
Acq On : 28 Jan 2014 18:31
Operator : ADC
Sample : WG461242-09 100.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 04 11:12:52 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.089	96	873346	25.00000 ug/L	0.0000
56) Chlorobenzene-d5	13.913	117	621316	25.00000 ug/L	0.0000
76) 1,4-Dichlorobenzene-d4	16.898	152	306415	25.00000 ug/L	0.0000
System Monitoring Compounds					
37) Dibromofluoromethane	9.042	111	502123	50.6097 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 202.439%#		
43) 1,2-Dichloroethane-d4	9.684	65	542274	49.2449 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 196.980%#		
57) Toluene-d8	12.048	98	1786337	50.0945 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 200.378%#		
78) p-Bromofluorobenzene	15.396	95	689618	51.1292 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.517%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.522	85	1018321	107.8026 ug/L	100
3) Chloromethane	2.916	50	2337119	101.8524 ug/L	100
4) Vinyl Chloride	3.123	62	1839965	98.3349 ug/L	100
5) 1,3-Butadiene	3.164	54	1339964	101.4331 ug/L	100
6) Bromomethane	3.952	94	706431	103.1709 ug/L	100
7) Chloroethane	4.128	64	784695	102.6168 ug/L	100
8) Trichlorofluoromethane	4.636	101	1676346	105.4827 ug/L	100
9) Diethyl ether	5.206	59	1554036	206.3190 ug/L	99
10) Isoprene	5.227	67	1500320	108.9092 ug/L	100
11) Acrolein	5.434	56	82919	101.4649 ug/L	96
12) 1,1,2-Trichloro-1,2,2-...	5.466	101	959807	103.0543 ug/L	100
13) Acetone	5.548	43	194429	101.9986 ug/L	100
14) 1,1-Dichloroethene	5.756	61	1787719	104.3710 ug/L	99
15) Tert-Butyl Alcohol	5.911	59	172828	365.1622 ug/L	93
16) Dimethyl Sulfide	6.025	62	944002	101.7404 ug/L	100
17) Iodomethane	6.264	142	1047992	105.1916 ug/L	99
18) Methyl acetate	6.347	43	602244	95.6310 ug/L	98
19) Methylene Chloride	6.585	84	1107590	97.8046 ug/L	100
20) Carbon Disulfide	6.564	76	3312517	105.9936 ug/L	100
21) Acrylonitrile	6.792	53	280143	103.6269 ug/L	99
22) Methyl Tert Butyl Ether	6.823	73	2546079	102.9686 ug/L	98
23) trans-1,2-Dichloroethene	7.041	96	1057770	105.4928 ug/L	98
24) n-Hexane	7.155	57	1398750	107.9789 ug/L	99
25) Diisopropyl ether	7.528	45	7888859	209.7197 ug/L	99
26) Vinyl Acetate	7.694	43	1556398	100.5550 ug/L	100
27) 1,1-Dichloroethane	7.684	63	2102035	104.4481 ug/L	100
28) Ethyl-Tert-Butyl ether	8.109	59	6730740	207.8589 ug/L	100
29) 2-Butanone	8.275	43	295399	99.2963 ug/L	100
30) Propionitrile	8.378	54	185797	200.4407 ug/L	98
31) 2,2-Dichloropropane	8.472	77	1755489	104.4833 ug/L	100
32) cis-1,2-Dichloroethene	8.544	96	1193534	104.4059 ug/L	99
33) Chloroform	8.751	83	2061682	104.6250 ug/L	100
34) 1-Bromopropane	8.876	122	210315	103.8411 ug/L	100
35) Bromochloromethane	8.969	130	718139	105.3801 ug/L	99
36) Tetrahydrofuran	9.000	42	386603	194.5257 ug/L	100
38) 1,1,1-Trichloroethane	9.280	97	1893669	106.4415 ug/L	100
39) Cyclohexane	9.301	56	2007603	106.2172 ug/L	100
40) 1,1-Dichloropropene	9.477	75	1451059	106.8480 ug/L	100
41) Tert-Amyl-Methyl ether	9.612	73	5304776	208.7270 ug/L	100
42) Carbon Tetrachloride	9.612	117	1695782	104.4640 ug/L	100
44) 1,2-Dichloroethane	9.798	62	1491911	104.6206 ug/L	100
45) Benzene	9.829	78	4270476	105.1977 ug/L	100
46) Trichloroethene	10.586	130	1220003	106.0375 ug/L	99
47) Methylcyclohexane	10.659	83	1681056	105.3212 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002695.D
Acq On : 28 Jan 2014 18:31
Operator : ADC
Sample : WG461242-09 100.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 04 11:12:52 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
48) 1,2-Dichloropropane	10.804	63	1160765	105.7690 ug/L	100
49) 1,4-Dioxane	11.094	88	25545	399.5361 ug/L	93
50) Bromodichloromethane	11.094	83	1592532	109.7861 ug/L	100
51) Dibromomethane	11.166	93	617051	105.0824 ug/L	99
52) 2-Chloroethyl Vinyl Ether	11.426	63	551563	106.8129 ug/L	100
53) 4-Methyl-2-Pentanone	11.457	58	264447	100.7904 ug/L	99
54) cis-1,3-Dichloropropene	11.737	75	1767589	108.1180 ug/L	100
55) Dimethyl Disulfide	11.975	79	1042368	105.1622 ug/L	100
58) Toluene	12.141	91	4628991	106.7707 ug/L	100
59) Ethyl Methacrylate	12.286	69	1021193	107.2701 ug/L	100
60) trans-1,3-Dichloropropene	12.338	75	1536906	107.3010 ug/L	100
61) 1,1,2-Trichloroethane	12.545	97	806006	103.8492 ug/L	100
62) 2-Hexanone	12.514	43	469456	99.9557 ug/L	99
63) 1,3-Dichloropropane	12.846	76	1370941	101.2980 ug/L	99
64) Tetrachloroethene	12.949	166	1258561	106.0496 ug/L	100
65) Dibromochloromethane	13.198	129	1139018	98.2071 ug/L	100
66) 1,2-Dibromoethane	13.457	107	830240	105.8576 ug/L	100
67) 1-Chlorohexane	13.592	91	1452172	101.1639 ug/L	100
68) Chlorobenzene	13.955	112	3114003	106.9162 ug/L	99
69) 1,1,1,2-Tetrachloroethane	13.996	131	1244156	100.8240 ug/L	99
70) Ethylbenzene	14.007	106	1776851	100.3241 ug/L	99
71) m-,p-Xylene	14.089	106	4381105	201.9852 ug/L	99
72) o-Xylene	14.639	106	2059500	107.7019 ug/L	99
73) Styrene	14.680	104	3477065	101.5124 ug/L	100
74) Bromoform	15.136	173	743295	97.6388 ug/L	100
75) Isopropylbenzene	15.074	105	5315917	111.1180 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.282	83	864742	99.4077 ug/L	99
79) 1,2,3-Trichloropropane	15.468	110	269297	100.5371 ug/L	99
80) trans-1,4-Dichloro-2-B...	15.530	53	304800	99.2927 ug/L	99
81) n-Propylbenzene	15.572	91	6405626	113.4315 ug/L	100
82) Bromobenzene	15.675	156	1349431	104.6312 ug/L	99
83) 1,3,5-Trimethylbenzene	15.758	105	4528949	110.1781 ug/L	99
84) 2-Chlorotoluene	15.821	91	3716676	100.7969 ug/L	95
85) 4-Chlorotoluene	15.872	91	3508483	109.5870 ug/L	99
86) a-Methylstyrene	16.163	118	2448675	95.8246 ug/L	100
87) tert-Butylbenzene	16.214	134	936856	106.6465 ug/L	99
88) 1,2,4-Trimethylbenzene	16.266	105	4651029	111.4081 ug/L	100
89) sec-Butylbenzene	16.484	105	5813875	112.4008 ug/L	100
90) p-Isopropyltoluene	16.650	119	4856474	114.0590 ug/L	100
91) 1,3-Dichlorobenzene	16.805	146	2577953	107.9535 ug/L	100
92) 1,4-Dichlorobenzene	16.940	146	2558216	107.5753 ug/L	100
93) n-Butylbenzene	17.168	91	4403989	102.8322 ug/L	99
94) 1,2-Dichlorobenzene	17.417	146	2392484	105.3151 ug/L	99
95) 1,2-Dibromo-3-Chloropr...	18.401	75	156455	103.4154 ug/L	99
96) 1,2,4-Trichlorobenzene	19.542	180	1739941	112.2869 ug/L	100
97) Hexachlorobutadiene	19.708	225	962316	111.9884 ug/L	100
98) Naphthalene	19.894	128	3050007	107.7074 ug/L	100
99) 1,2,3-Trichlorobenzene	20.205	180	1545674	108.7150 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002695.D
Acq On : 28 Jan 2014 18:31
Operator : ADC
Sample : WG461242-09 100.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 04 11:12:52 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

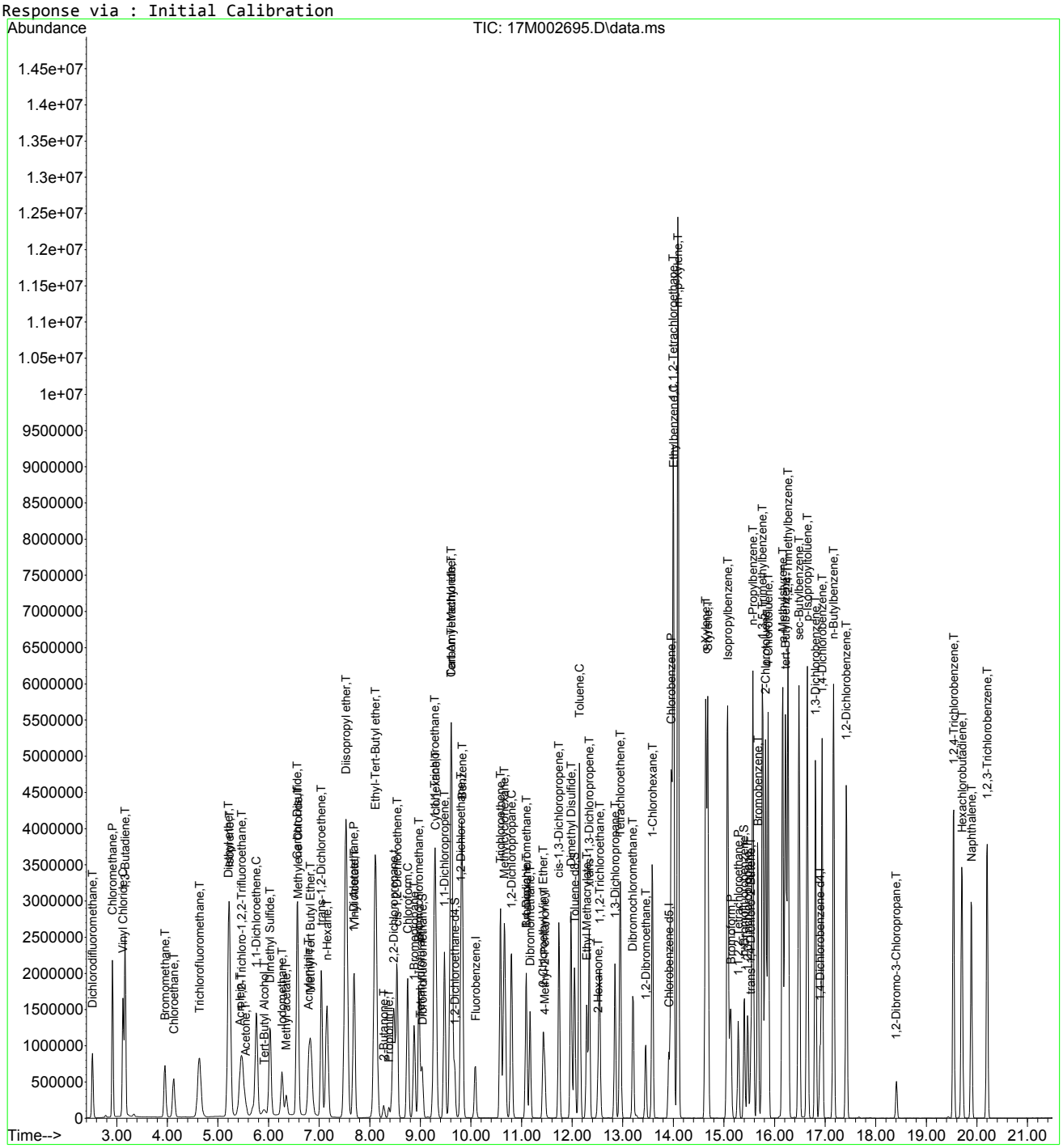

8260WT.M Tue Feb 04 11:12:53 2014 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002696.D
Acq On : 28 Jan 2014 18:58
Operator : ADC
Sample : WG461242-10 200.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Feb 04 11:12:55 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.088	96	880906	25.00000 ug/L	0.0000
56) Chlorobenzene-d5	13.913	117	636712	25.00000 ug/L	0.0000
76) 1,4-Dichlorobenzene-d4	16.898	152	325908	25.00000 ug/L	0.0000
System Monitoring Compounds					
37) Dibromofluoromethane	9.041	111	1032997	103.2238 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 412.895%#		
43) 1,2-Dichloroethane-d4	9.684	65	1091816	98.2988 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 393.195%#		
57) Toluene-d8	12.047	98	3721043	101.8264 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 407.306%#		
78) p-Bromofluorobenzene	15.406	95	1460538	101.8094 ug/L	0.0105
Spiked Amount 25.000	Range 86 - 115		Recovery = 407.238%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.521	85	2097154	220.1059 ug/L	100
3) Chloromethane	2.915	50	4686454	202.4844 ug/L	100
4) Vinyl Chloride	3.123	62	3683737	195.1836 ug/L	100
5) 1,3-Butadiene	3.164	54	2485510	186.5344 ug/L	99
6) Bromomethane	3.952	94	1495395	216.5210 ug/L	100
7) Chloroethane	4.118	64	1638254	212.4005 ug/L	100
8) Trichlorofluoromethane	4.626	101	3491151	217.7925 ug/L	100
9) Diethyl ether	5.185	59	16163	2.1274 ug/L #	51
10) Isoprene	5.227	67	3062571	220.4061 ug/L	100
11) Acrolein	5.444	56	2330	2.8267 ug/L #	24
12) 1,1,2-Trichloro-1,2,2-...	5.465	101	1980948	210.8686 ug/L	100
13) Acetone	5.548	43	391864	206.3389 ug/L	99
14) 1,1-Dichloroethene	5.755	61	3761377	217.7130 ug/L	99
15) Tert-Butyl Alcohol	5.890	59	22579	18.6859 ug/L #	64
16) Dimethyl Sulfide	6.025	62	1969962	210.4918 ug/L	100
17) Iodomethane	6.263	142	2144603	213.4159 ug/L	99
18) Methyl acetate	6.346	43	1185004	186.5532 ug/L	98
19) Methylene Chloride	6.574	84	2379672	208.3311 ug/L	99
20) Carbon Disulfide	6.564	76	7165727	227.3205 ug/L	100
21) Acrylonitrile	6.823	53	51158	18.7613 ug/L #	31
22) Methyl Tert Butyl Ether	6.823	73	5110333	204.8985 ug/L	99
23) trans-1,2-Dichloroethene	7.041	96	2247406	222.2131 ug/L	99
24) n-Hexane	7.155	57	2906784	222.4685 ug/L	99
26) Vinyl Acetate	7.694	43	3578723	229.2281 ug/L	100
27) 1,1-Dichloroethane	7.683	63	4488570	221.1187 ug/L	100
28) Ethyl-Tert-Butyl ether	8.108	59	5126	0.1569 ug/L #	44
29) 2-Butanone	8.274	43	599436	199.7669 ug/L	99
30) Propionitrile	8.285	54	1325	1.4172 ug/L #	1
31) 2,2-Dichloropropane	8.471	77	3679877	217.1394 ug/L	100
32) cis-1,2-Dichloroethene	8.533	96	2552598	221.3754 ug/L	99
33) Chloroform	8.751	83	4351051	218.9095 ug/L	100
34) 1-Bromopropane	8.875	122	434935	212.9021 ug/L	99
35) Bromochloromethane	8.969	130	1498668	218.0281 ug/L	99
38) 1,1,1-Trichloroethane	9.280	97	4077750	227.2397 ug/L	100
39) Cyclohexane	9.300	56	4335615	227.4177 ug/L	99
40) 1,1-Dichloropropene	9.477	75	3103004	226.5273 ug/L	99
41) Tert-Amyl-Methyl ether	9.601	73	3111	0.1214 ug/L #	53
42) Carbon Tetrachloride	9.611	117	3441293	198.2527 ug/L	100
44) 1,2-Dichloroethane	9.798	62	3217877	223.7178 ug/L	99
45) Benzene	9.829	78	9229407	225.4035 ug/L	99
46) Trichloroethene	10.586	130	2553218	220.0104 ug/L	99
47) Methylcyclohexane	10.658	83	3518647	218.5577 ug/L	99
48) 1,2-Dichloropropane	10.803	63	2446966	221.0542 ug/L	100
49) 1,4-Dioxane	11.094	88	3696	57.3111 ug/L #	17

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002696.D
Acq On : 28 Jan 2014 18:58
Operator : ADC
Sample : WG461242-10 200.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Feb 04 11:12:55 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) Bromodichloromethane	11.094	83	3392730	231.8810 ug/L	100
51) Dibromomethane	11.166	93	1300594	219.5873 ug/L	100
52) 2-Chloroethyl Vinyl Ether	11.425	63	1165906	223.8457 ug/L	99
53) 4-Methyl-2-Pentanone	11.456	58	549372	207.5887 ug/L	100
54) cis-1,3-Dichloropropene	11.736	75	3780213	229.2396 ug/L	100
55) Dimethyl Disulfide	11.975	79	2255796	225.6290 ug/L	100
58) Toluene	12.151	91	9882848	222.4423 ug/L	98
59) Ethyl Methacrylate	12.286	69	2170407	222.4752 ug/L	99
60) trans-1,3-Dichloropropene	12.337	75	3304879	225.1549 ug/L	99
61) 1,1,2-Trichloroethane	12.545	97	1702863	214.0988 ug/L	100
62) 2-Hexanone	12.514	43	993800	206.4816 ug/L	99
63) 1,3-Dichloropropane	12.845	76	2913438	210.0668 ug/L	100
64) Tetrachloroethene	12.949	166	2704915	222.4118 ug/L	99
65) Dibromochloromethane	13.208	129	2435351	204.5882 ug/L	99
66) 1,2-Dibromoethane	13.457	107	1765116	219.6145 ug/L	99
67) 1-Chlorohexane	13.592	91	3183413	205.4549 ug/L	99
68) Chlorobenzene	13.954	112	6883622	230.6274 ug/L	97
69) 1,1,1,2-Tetrachloroethane	13.996	131	2853517	206.5606 ug/L	98
70) Ethylbenzene	14.006	106	4154597	207.7346 ug/L	92
71) m-,p-Xylene	14.089	106	10034207	427.3370 ug/L	83
72) o-Xylene	14.638	106	4665158	238.0661 ug/L	98
73) Styrene	14.680	104	7863844	208.0814 ug/L	99
74) Bromoform	15.136	173	1596270	203.8933 ug/L	99
75) Isopropylbenzene	15.074	105	11551917	235.6296 ug/L	98
77) 1,1,2,2-Tetrachloroethane	15.281	83	1904036	205.7897 ug/L	99
79) 1,2,3-Trichloropropane	15.468	110	561352	201.2219 ug/L	98
80) trans-1,4-Dichloro-2-B...	15.530	53	664465	202.9459 ug/L	96
81) n-Propylbenzene	15.571	91	13603898	226.4908 ug/L	98
82) Bromobenzene	15.675	156	2952102	215.2072 ug/L	98
83) 1,3,5-Trimethylbenzene	15.768	105	9908609	226.6342 ug/L	99
84) 2-Chlorotoluene	15.820	91	7923793	202.0415 ug/L	94
85) 4-Chlorotoluene	15.872	91	7885136	231.5603 ug/L	99
86) a-Methylstyrene	16.162	118	5486402	200.4165 ug/L	100
87) tert-Butylbenzene	16.214	134	2074693	222.0458 ug/L	99
88) 1,2,4-Trimethylbenzene	16.266	105	10121402	227.9414 ug/L	98
89) sec-Butylbenzene	16.483	105	12497937	227.1732 ug/L	99
90) p-Isopropyltoluene	16.649	119	10525728	232.4212 ug/L	99
91) 1,3-Dichlorobenzene	16.815	146	5735529	225.8137 ug/L	100
92) 1,4-Dichlorobenzene	16.940	146	5693410	225.0933 ug/L	99
93) n-Butylbenzene	17.168	91	9780013	210.1079 ug/L	100
94) 1,2-Dichlorobenzene	17.416	146	5281421	218.5784 ug/L	99
95) 1,2-Dibromo-3-Chloropr...	18.411	75	337862	209.9666 ug/L	100
96) 1,2,4-Trichlorobenzene	19.541	180	3909331	237.1986 ug/L	100
97) Hexachlorobutadiene	19.707	225	2099977	229.7655 ug/L	100
98) Naphthalene	19.894	128	6521347	216.5195 ug/L	100
99) 1,2,3-Trichlorobenzene	20.205	180	3401417	224.9296 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002696.D
Acq On : 28 Jan 2014 18:58
Operator : ADC
Sample : WG461242-10 200.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Feb 04 11:12:55 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

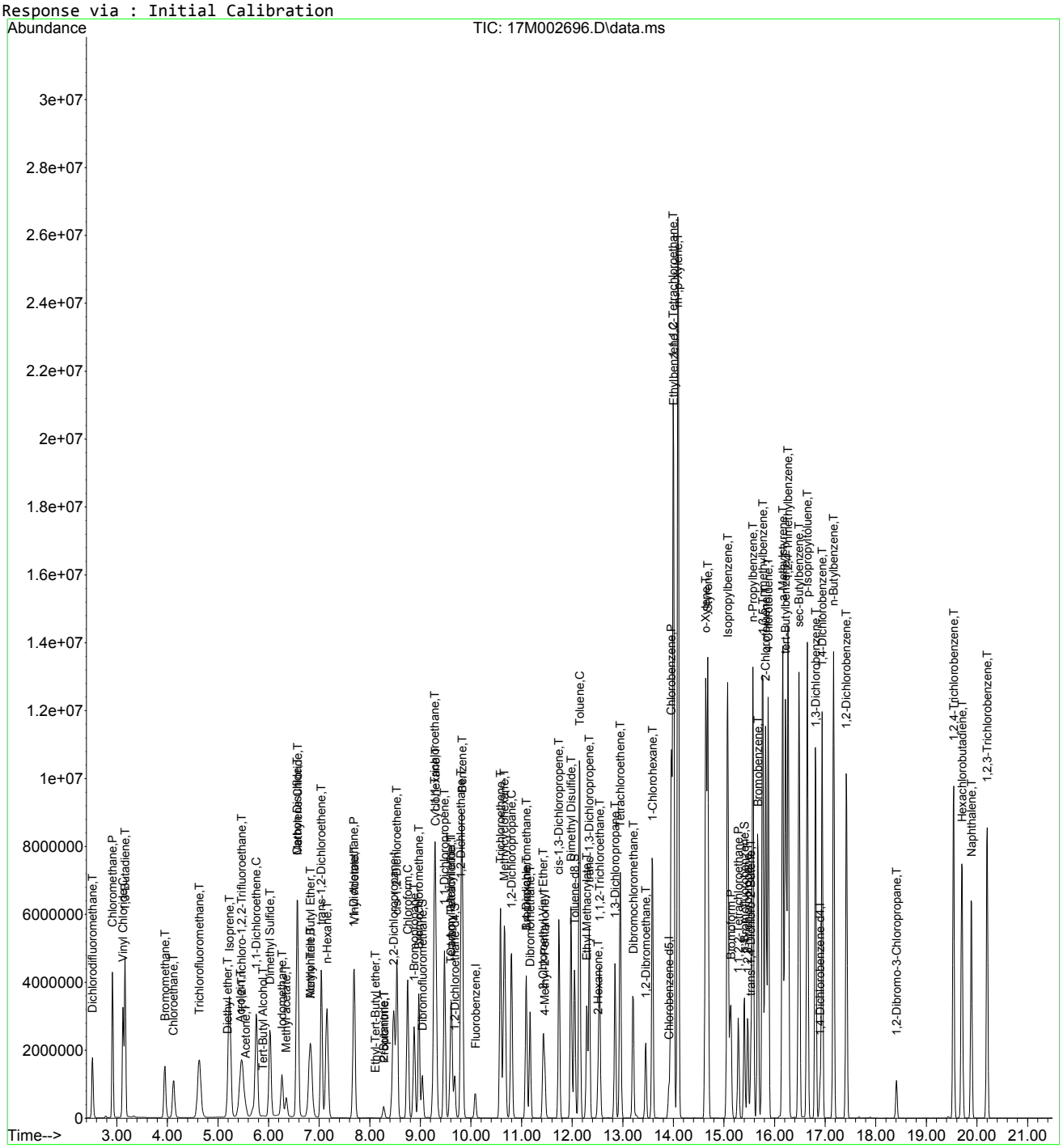

8260WT.M Tue Feb 04 11:12:56 2014 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002697.D
Acq On : 28 Jan 2014 19:25
Operator : ADC
Sample : WG461242-11 300.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Feb 04 11:12:58 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.088	96	923764	25.00000 ug/L	0.0000
56) Chlorobenzene-d5	13.913	117	682708	25.00000 ug/L	0.0000
76) 1,4-Dichlorobenzene-d4	16.898	152	352360	25.00000 ug/L	# 0.0000
System Monitoring Compounds					
37) Dibromofluoromethane	9.041	111	1597057	152.1842 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 608.737%#		
43) 1,2-Dichloroethane-d4	9.684	65	1703227	146.2312 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 584.925%#		
57) Toluene-d8	12.047	98	5906022	150.7297 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 602.919%#		
78) p-Bromofluorobenzene	15.406	95	2404181	155.0068 ug/L	0.0106
Spiked Amount 25.000	Range 86 - 115		Recovery = 620.027%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.522	85	3169854	317.2556 ug/L	100
3) Chloromethane	2.915	50	6903629	284.4417 ug/L	99
4) Vinyl Chloride	3.123	62	5253946	265.4660 ug/L	100
5) 1,3-Butadiene	3.164	54	3279592	234.7101 ug/L	99
6) Bromomethane	3.942	94	2335446	322.4649 ug/L	100
7) Chloroethane	4.118	64	2561367	316.6756 ug/L	99
8) Trichlorofluoromethane	4.626	101	5309647	315.8701 ug/L	100
9) Diethyl ether	5.216	59	2575120	323.2220 ug/L	99
10) Isoprene	5.227	67	5024480	344.8237 ug/L	100
11) Acrolein	5.434	56	128244	148.3625 ug/L	98
12) 1,1,2-Trichloro-1,2,2-...	5.465	101	3003989	304.9339 ug/L	99
13) Acetone	5.559	43	582385	293.4889 ug/L	96
14) 1,1-Dichloroethene	5.755	61	5809927	320.6835 ug/L	99
15) Tert-Butyl Alcohol	5.932	59	294533	608.4320 ug/L	97
16) Dimethyl Sulfide	6.025	62	3075173	313.3396 ug/L	99
17) Iodomethane	6.263	142	3377039	320.4679 ug/L	99
18) Methyl acetate	6.346	43	1861239	279.4174 ug/L	98
19) Methylene Chloride	6.574	84	3756852	313.6387 ug/L	98
20) Carbon Disulfide	6.554	76	11324122	342.5717 ug/L	100
21) Acrylonitrile	6.792	53	477646	167.0415 ug/L	94
22) Methyl Tert Butyl Ether	6.833	73	7542865	288.3994 ug/L	100
23) trans-1,2-Dichloroethene	7.041	96	3522736	332.1520 ug/L	98
24) n-Hexane	7.155	57	4449994	324.7758 ug/L	99
25) Diisopropyl ether	7.528	45	12420743	312.1749 ug/L	99
26) Vinyl Acetate	7.694	43	5094034	311.1502 ug/L	100
27) 1,1-Dichloroethane	7.683	63	6983554	328.0669 ug/L	99
28) Ethyl-Tert-Butyl ether	8.108	59	10631546	310.4041 ug/L	99
29) 2-Butanone	8.274	43	910472	289.3449 ug/L	99
30) Propionitrile	8.378	54	294523	300.3944 ug/L	100
31) 2,2-Dichloropropane	8.471	77	5688760	320.1043 ug/L	99
32) cis-1,2-Dichloroethene	8.533	96	4026708	333.0165 ug/L	99
33) Chloroform	8.751	83	6807559	326.6107 ug/L	100
34) 1-Bromopropane	8.875	122	680079	317.4560 ug/L	100
35) Bromochloromethane	8.969	130	2330564	323.3230 ug/L	99
36) Tetrahydrofuran	9.010	42	616810	293.4192 ug/L	100
38) 1,1,1-Trichloroethane	9.280	97	6393452	339.7563 ug/L	100
39) Cyclohexane	9.300	56	6882922	344.2825 ug/L	98
40) 1,1-Dichloropropene	9.477	75	4822259	335.7046 ug/L	99
41) Tert-Amyl-Methyl ether	9.611	73	8737107	325.0159 ug/L	100
42) Carbon Tetrachloride	9.611	117	5635241	293.0811 ug/L	100
44) 1,2-Dichloroethane	9.798	62	5038050	334.0120 ug/L	99
45) Benzene	9.829	78	14342245	334.0201 ug/L	98
46) Trichloroethene	10.586	130	4072720	334.6636 ug/L	100
47) Methylcyclohexane	10.658	83	5544835	328.4336 ug/L	98

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002697.D
Acq On : 28 Jan 2014 19:25
Operator : ADC
Sample : WG461242-11 300.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Feb 04 11:12:58 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
48) 1,2-Dichloropropane	10.803	63	3895792	335.6102 ug/L	100
49) 1,4-Dioxane	11.094	88	49415	730.6917 ug/L	100
50) Bromodichloromethane	11.094	83	5370790	350.0439 ug/L	100
51) Dibromomethane	11.166	93	2031732	327.1150 ug/L	100
52) 2-Chloroethyl Vinyl Ether	11.425	63	1827960	334.6729 ug/L	99
53) 4-Methyl-2-Pentanone	11.456	58	861408	310.3950 ug/L	100
54) cis-1,3-Dichloropropene	11.736	75	5991020	346.4517 ug/L	99
55) Dimethyl Disulfide	11.975	79	3630059	346.2401 ug/L	99
58) Toluene	12.141	91	15154110	318.1074 ug/L	94
59) Ethyl Methacrylate	12.286	69	3426057	327.5239 ug/L	99
60) trans-1,3-Dichloropropene	12.337	75	5209252	330.9858 ug/L	100
61) 1,1,2-Trichloroethane	12.545	97	2691953	315.6531 ug/L	100
62) 2-Hexanone	12.514	43	1558573	302.0073 ug/L	98
63) 1,3-Dichloropropane	12.845	76	4584501	308.2846 ug/L	100
64) Tetrachloroethene	12.949	166	4346200	333.2897 ug/L	100
65) Dibromochloromethane	13.208	129	3877319	303.6401 ug/L	99
66) 1,2-Dibromoethane	13.457	107	2768496	321.2475 ug/L	100
67) 1-Chlorohexane	13.592	91	5142343	296.5646 ug/L	99
68) Chlorobenzene	13.965	112	11010839	344.0507 ug/L	95
69) 1,1,1,2-Tetrachloroethane	13.996	131	4700943	296.2382 ug/L	98
70) Ethylbenzene	14.006	106	6820018	295.7290 ug/L	76
71) m-,p-Xylene	14.089	106	15237817	583.8454 ug/L	66
72) o-Xylene	14.639	106	7698147	366.3746 ug/L	90
73) Styrene	14.680	104	12647921	295.1465 ug/L	97
74) Bromoform	15.136	173	2570208	305.8469 ug/L	99
75) Isopropylbenzene	15.074	105	17439616	331.7575 ug/L	93
77) 1,1,2,2-Tetrachloroethane	15.281	83	2978178	297.7197 ug/L	99
79) 1,2,3-Trichloropropane	15.468	110	883500	299.2201 ug/L	98
80) trans-1,4-Dichloro-2-B...	15.530	53	1070281	302.0891 ug/L	95
81) n-Propylbenzene	15.571	91	19629484	302.2766 ug/L	91
82) Bromobenzene	15.675	156	4858296	327.5803 ug/L	98
83) 1,3,5-Trimethylbenzene	15.768	105	15395221	325.6920 ug/L	94
84) 2-Chlorotoluene	15.820	91	12258839	289.1114 ug/L	91
85) 4-Chlorotoluene	15.872	91	12533799	340.4442 ug/L	97
86) a-Methylstyrene	16.162	118	9246437	311.6841 ug/L	100
87) tert-Butylbenzene	16.224	134	3472474	343.7448 ug/L	95
88) 1,2,4-Trimethylbenzene	16.266	105	15680208	326.6200 ug/L	92
89) sec-Butylbenzene	16.484	105	18588549	312.5164 ug/L	94
90) p-Isopropyltoluene	16.649	119	16054020	327.8807 ug/L	94
91) 1,3-Dichlorobenzene	16.815	146	9402461	342.3944 ug/L	98
92) 1,4-Dichlorobenzene	16.940	146	9373079	342.7527 ug/L	98
93) n-Butylbenzene	17.168	91	14991113	293.2231 ug/L	96
94) 1,2-Dichlorobenzene	17.427	146	8598171	329.1327 ug/L	97
95) 1,2-Dibromo-3-Chloropr...	18.412	75	534520	307.2439 ug/L	98
96) 1,2,4-Trichlorobenzene	19.541	180	6495159	364.5087 ug/L	100
97) Hexachlorobutadiene	19.707	225	3436366	347.7588 ug/L	100
98) Naphthalene	19.894	128	10094265	309.9866 ug/L	99
99) 1,2,3-Trichlorobenzene	20.205	180	5532316	338.3780 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002697.D
Acq On : 28 Jan 2014 19:25
Operator : ADC
Sample : WG461242-11 300.0 ug/L STD 8260
Misc : 1,1 STD62504
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Feb 04 11:12:58 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

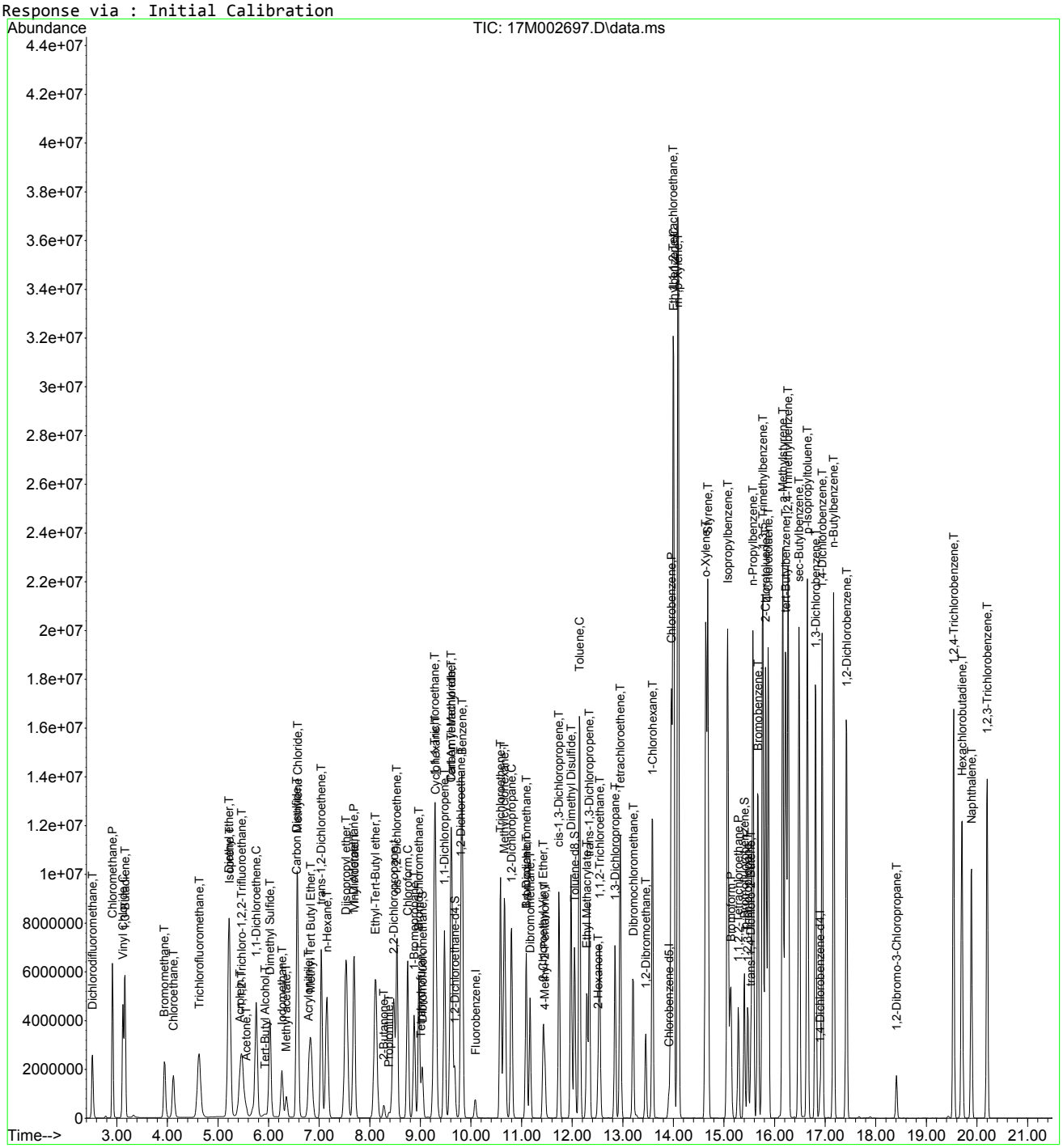

Acetone

00735322

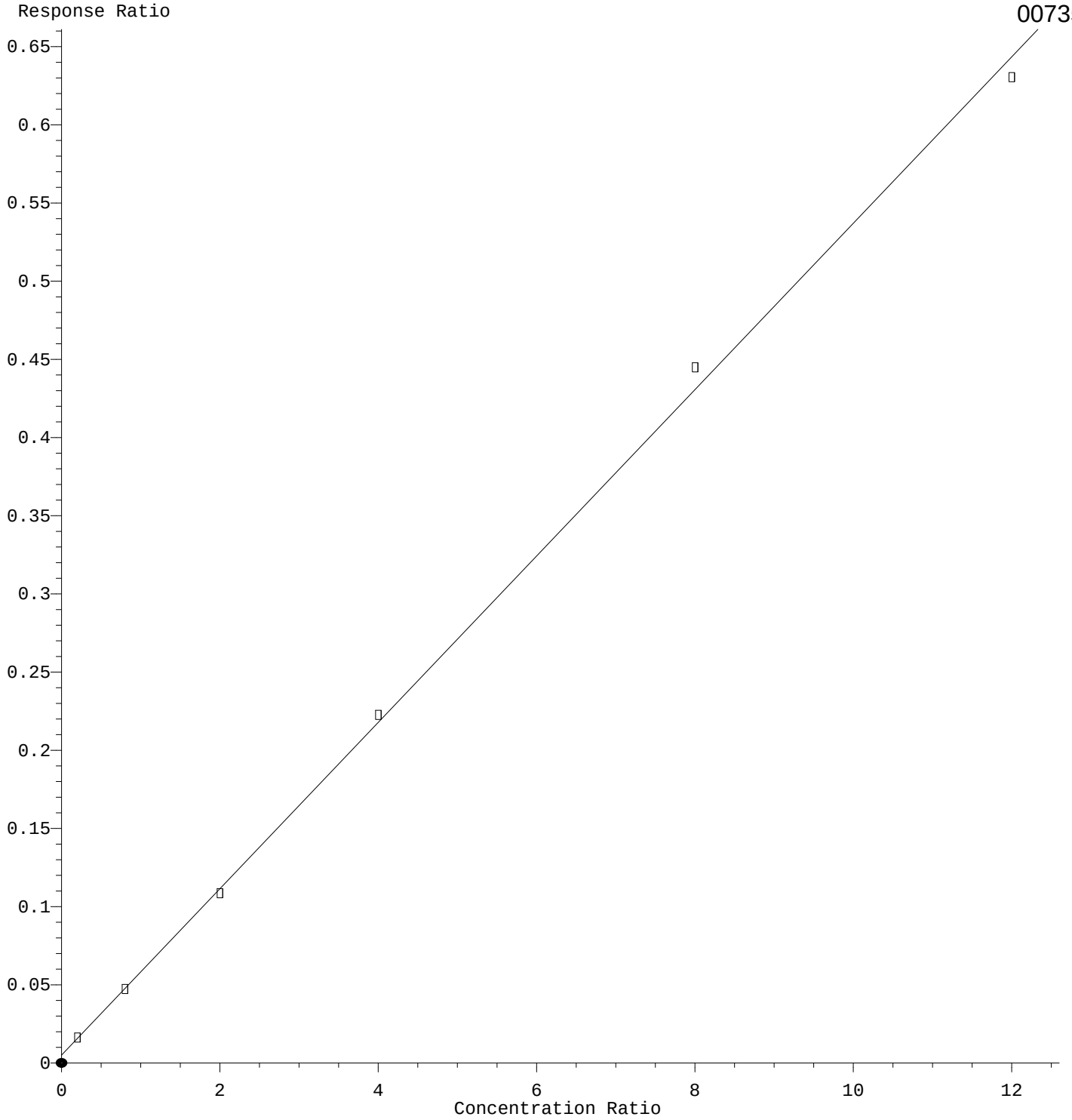

Response = 5.324e-002 * Amt + 5.396e-003
Coef of Det (r^2) = 0.999202 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260WT.M
Calibration Table Last Updated: Wed Jan 29 07:59:38 2014

Tert-Butyl Alcohol

00735323

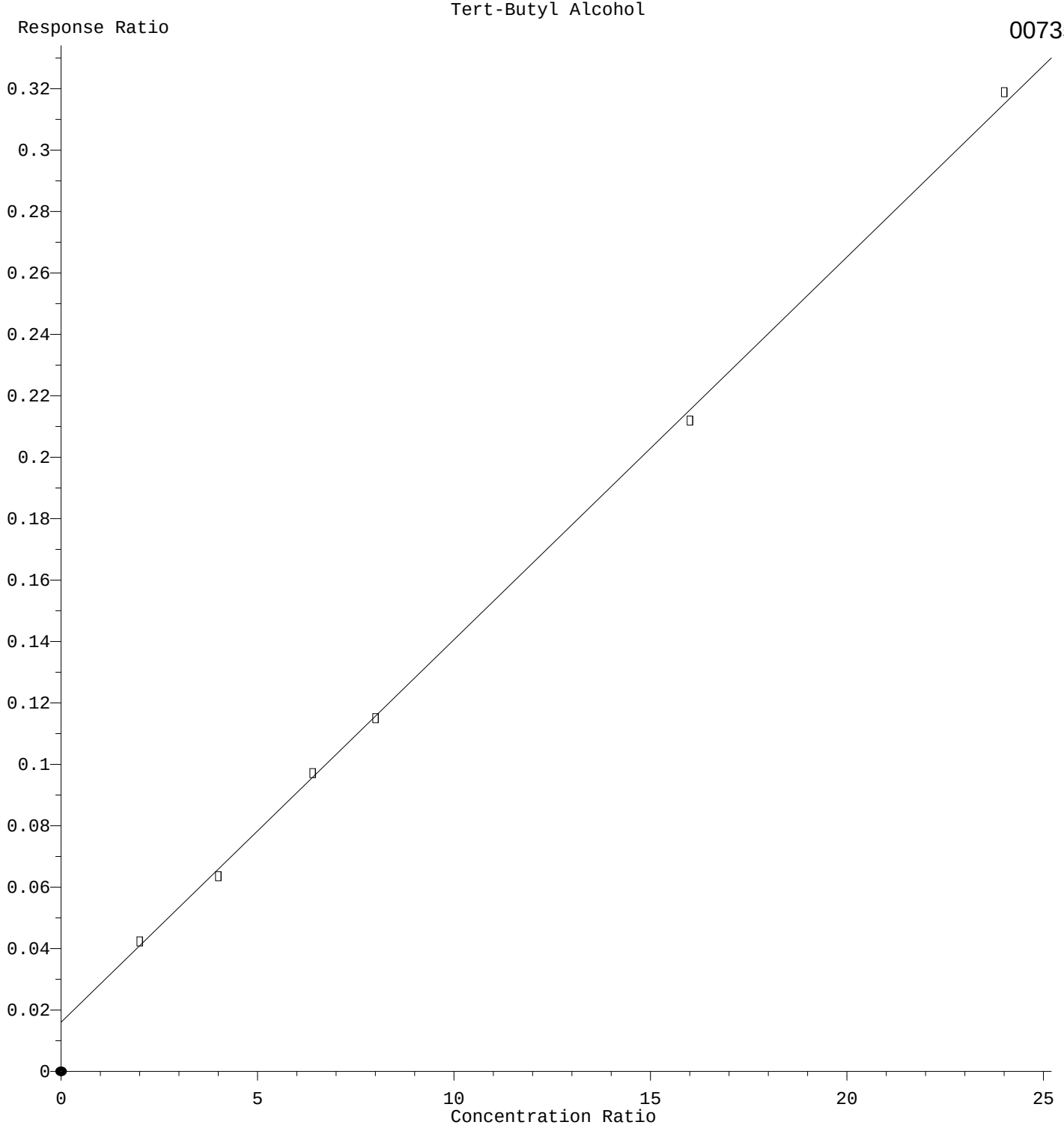

Response = 1.243e-002 * Amt + 1.634e-002
Coef of Det (r^2) = 0.999126 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260WT.M
Calibration Table Last Updated: Wed Jan 29 07:59:38 2014

Carbon Tetrachloride

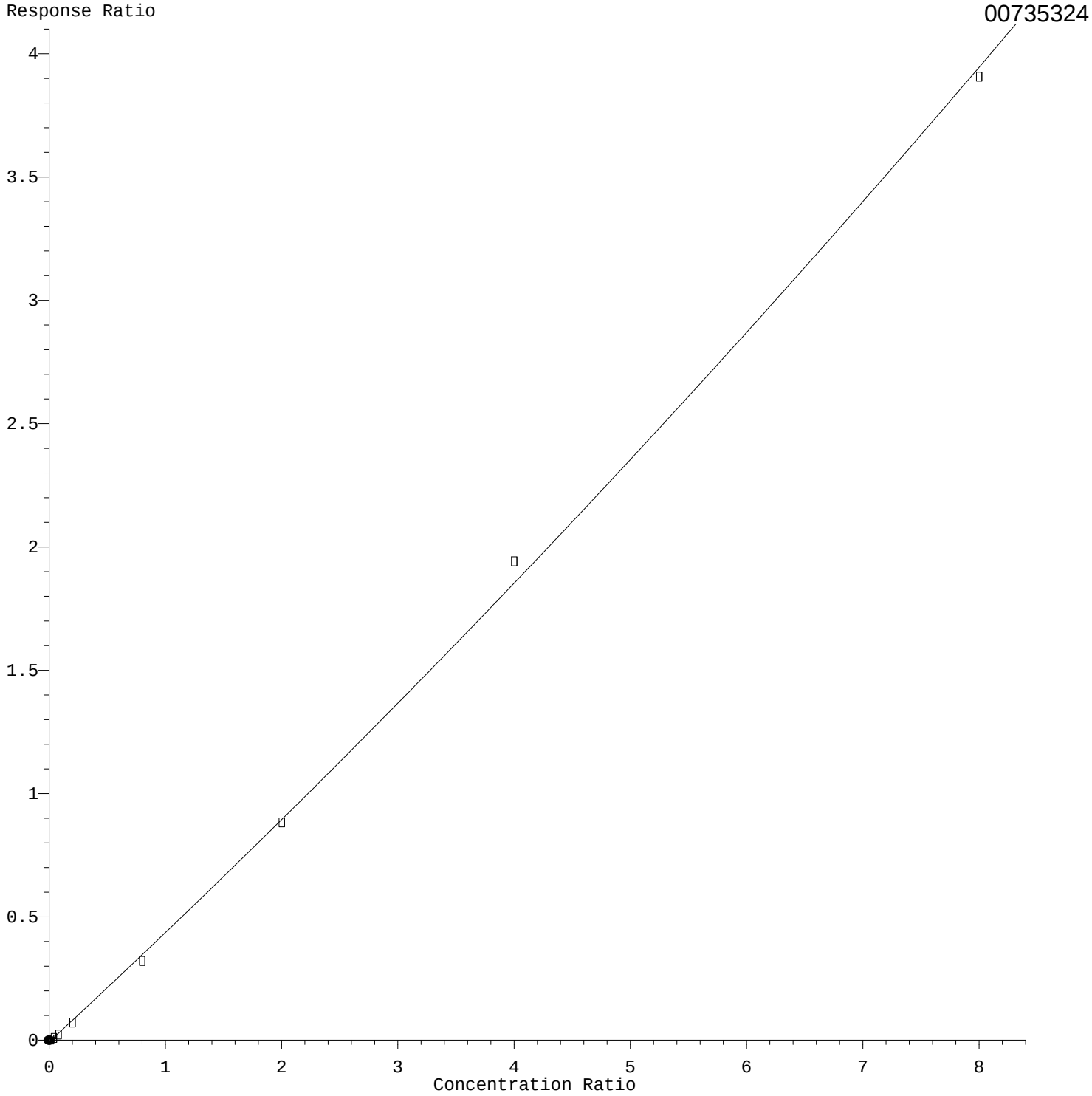

R = 7.239e-003 A*A + 4.361e-001 A - 6.910e-003
Coef of Det (r^2) = 0.998721 Curve Fit: Quadratic w(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260WT.M
Calibration Table Last Updated: Wed Jan 29 07:59:38 2014

Dibromochloromethane

00735325

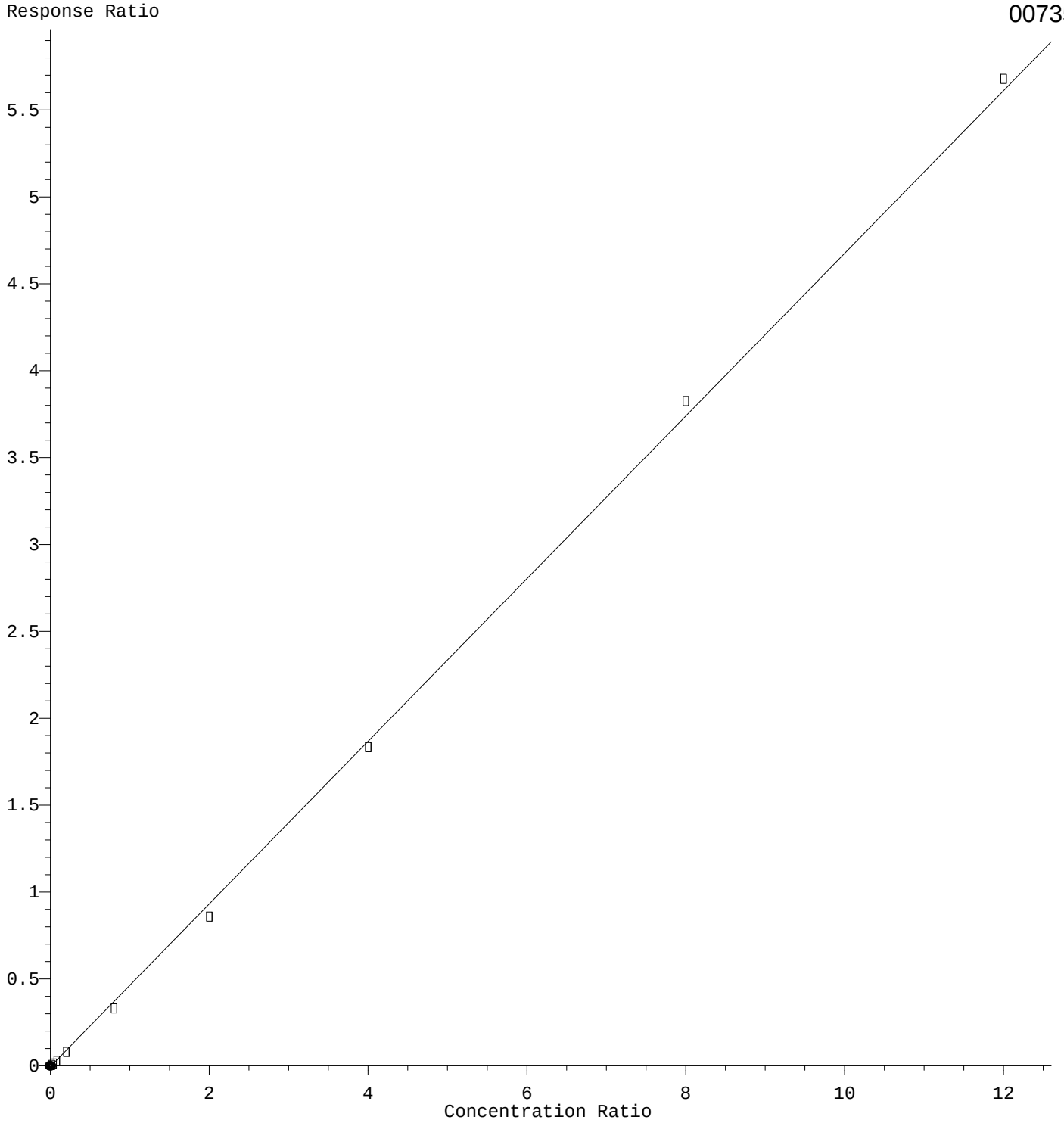

Response = 4.680e-001 * Amt - 5.385e-003
Coef of Det (r^2) = 0.998786 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260WT.M
Calibration Table Last Updated: Wed Jan 29 07:59:38 2014

1-Chlorohexane

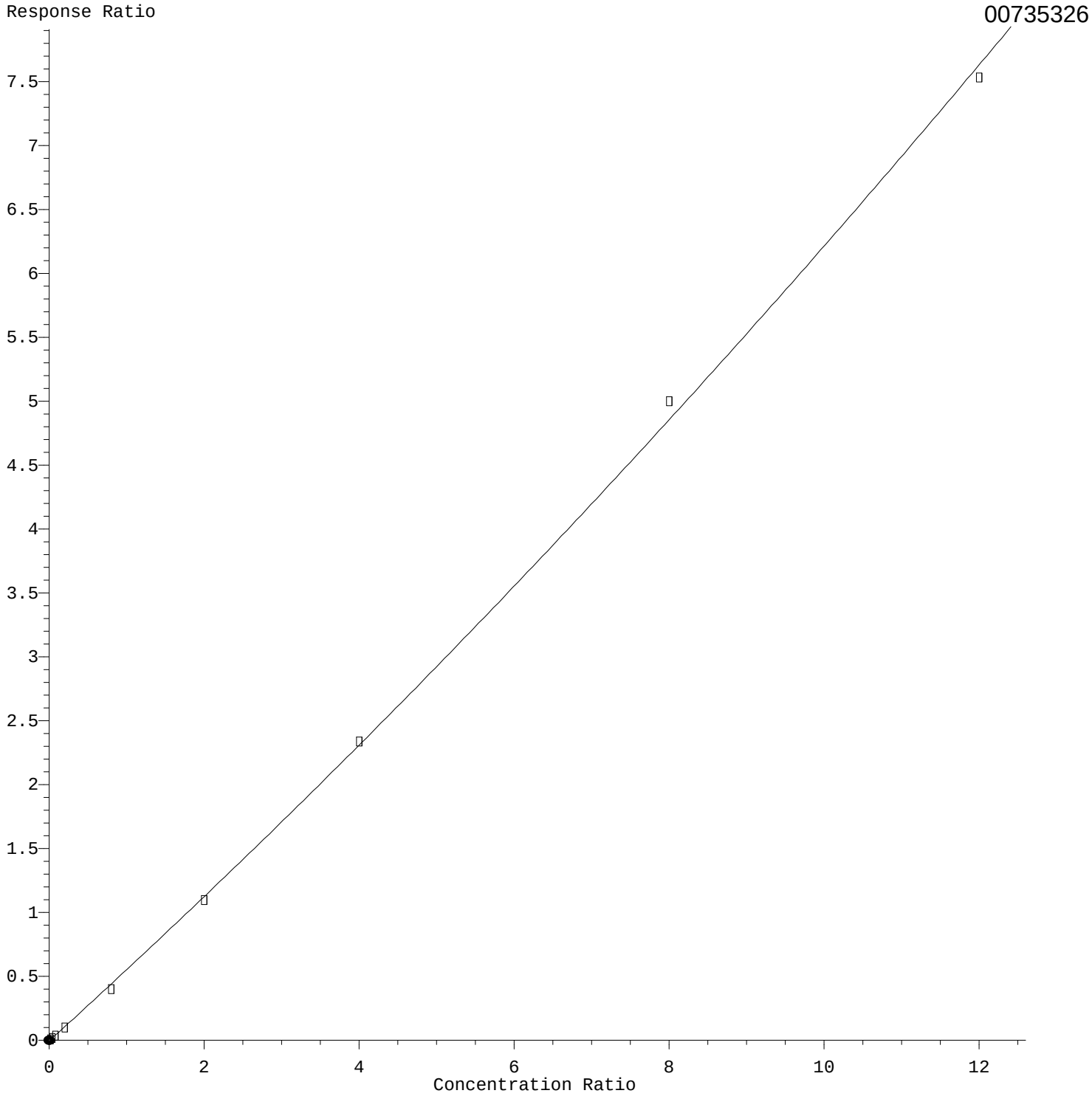

R = 7.250e-003 A*A + 5.493e-001 A - 4.344e-003
Coef of Det (r^2) = 0.999327 Curve Fit: Quadratic w(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260WT.M
Calibration Table Last Updated: Wed Jan 29 07:59:38 2014

1,1,1,2-Tetrachloroethane

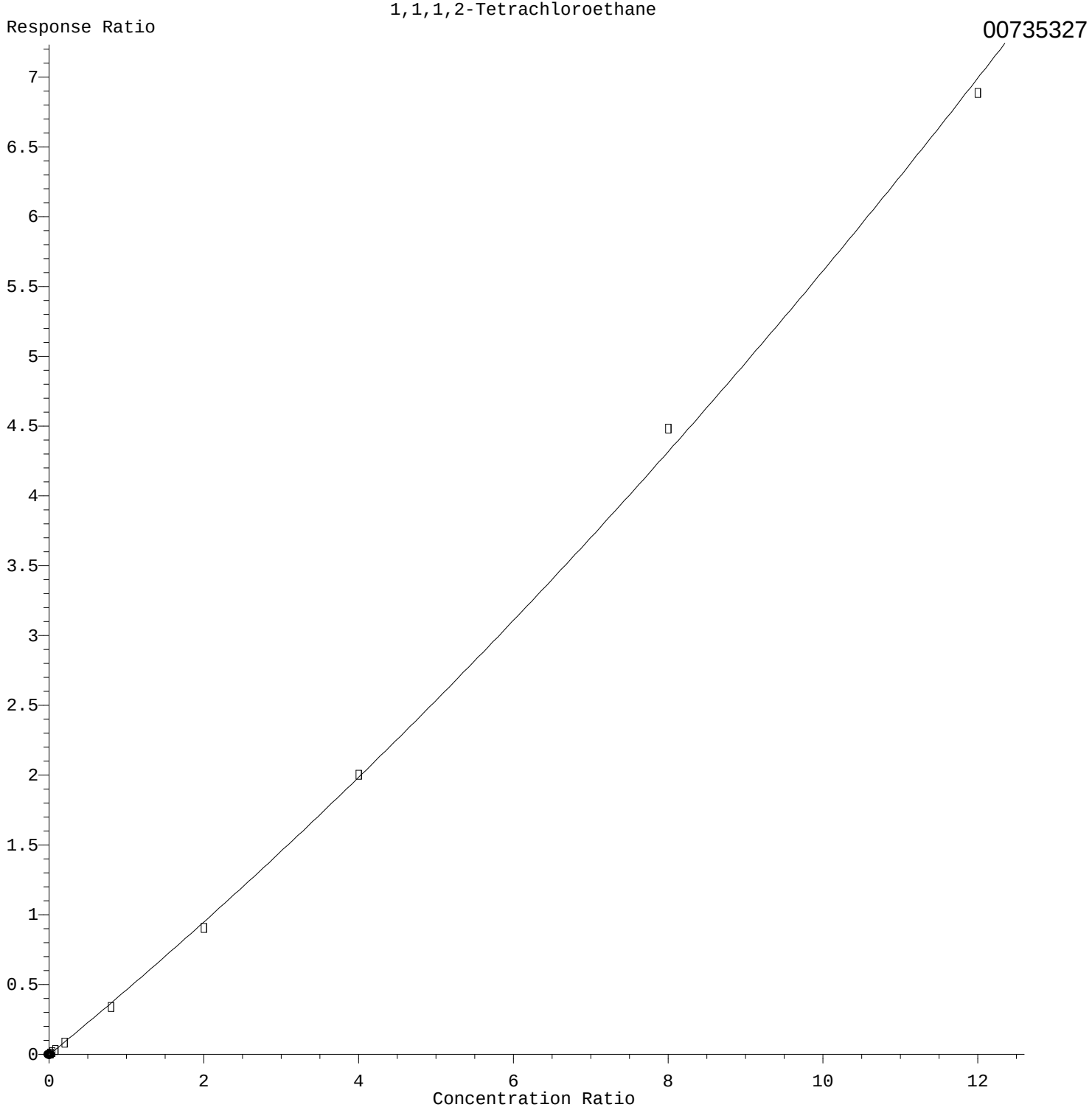

R = 1.075e-002 A*A + 4.540e-001 A - 3.334e-003
Coef of Det (r^2) = 0.999165 Curve Fit: Quadratic w(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260WT.M
Calibration Table Last Updated: Wed Jan 29 07:59:38 2014

Ethylbenzene

00735328

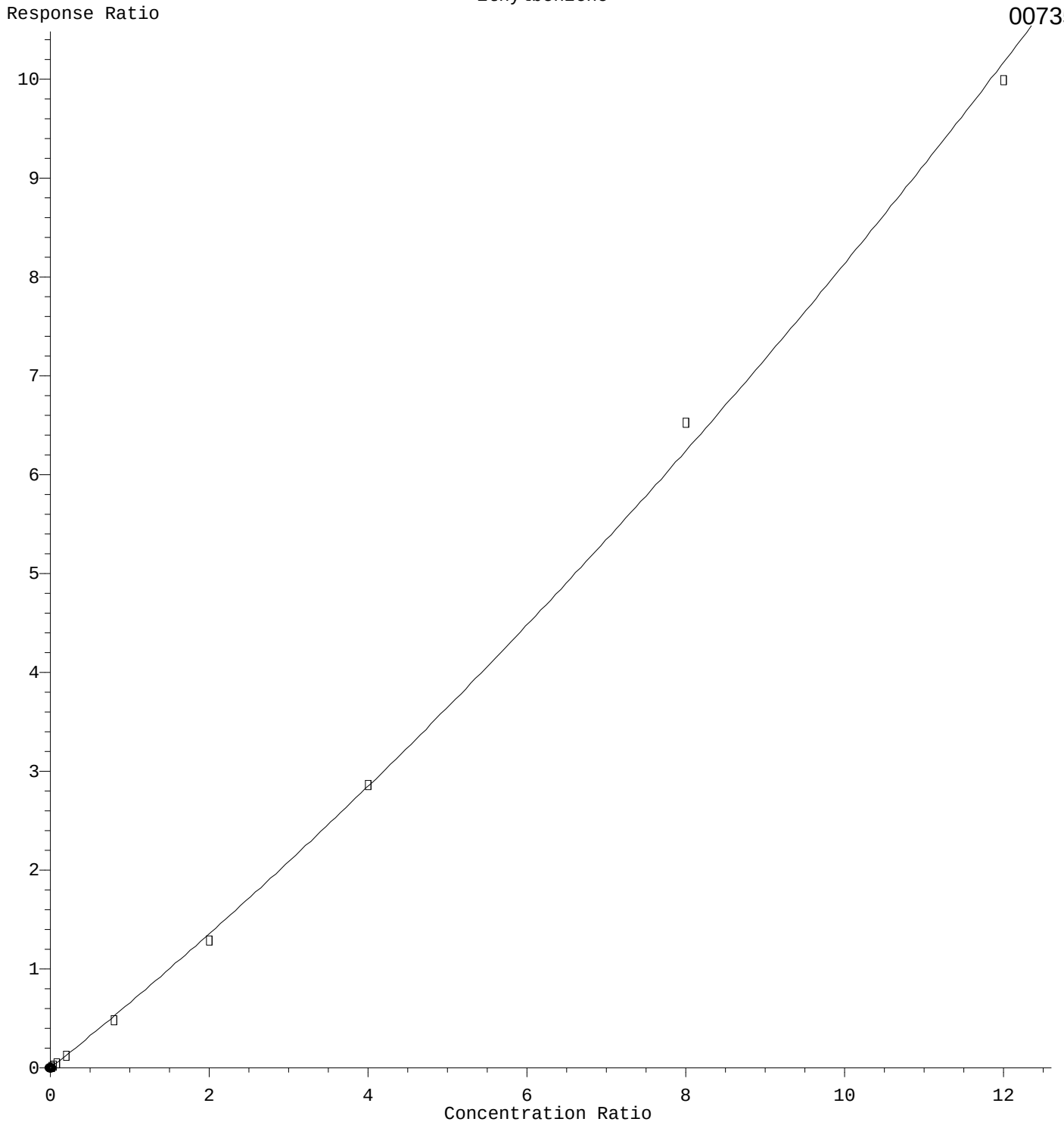

R = 1.679e-002 A*A + 6.462e-001 A - 3.828e-003
Coef of Det (r^2) = 0.998926 Curve Fit: Quadratic w(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260WT.M
Calibration Table Last Updated: Wed Jan 29 07:59:38 2014

m-,p-Xylene

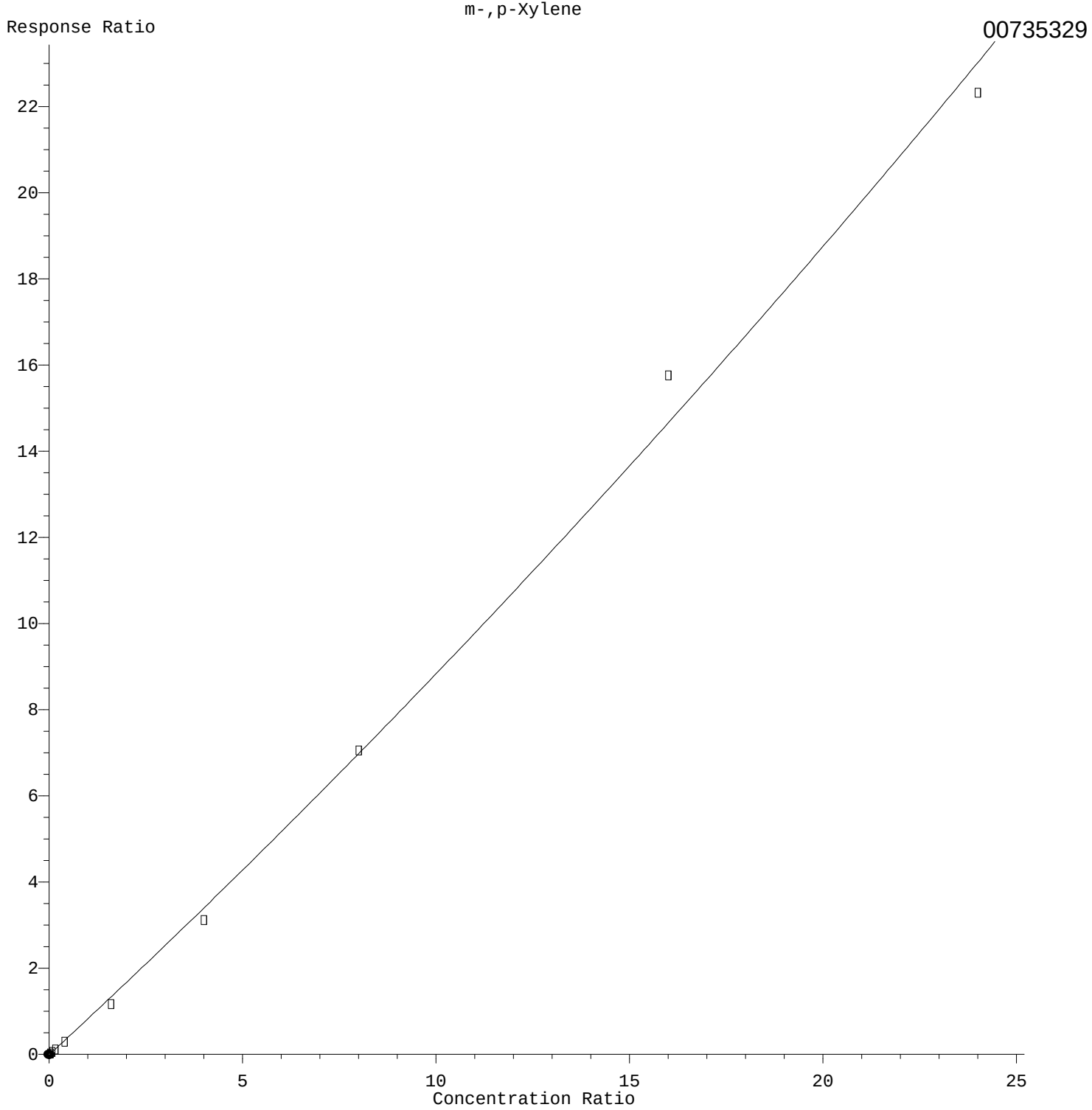

R = 5.359e-003 A*A + 8.312e-001 A - 1.372e-002
Coef of Det (r^2) = 0.996942 Curve Fit: Quadratic w(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260WT.M
Calibration Table Last Updated: Wed Jan 29 07:59:38 2014

Styrene

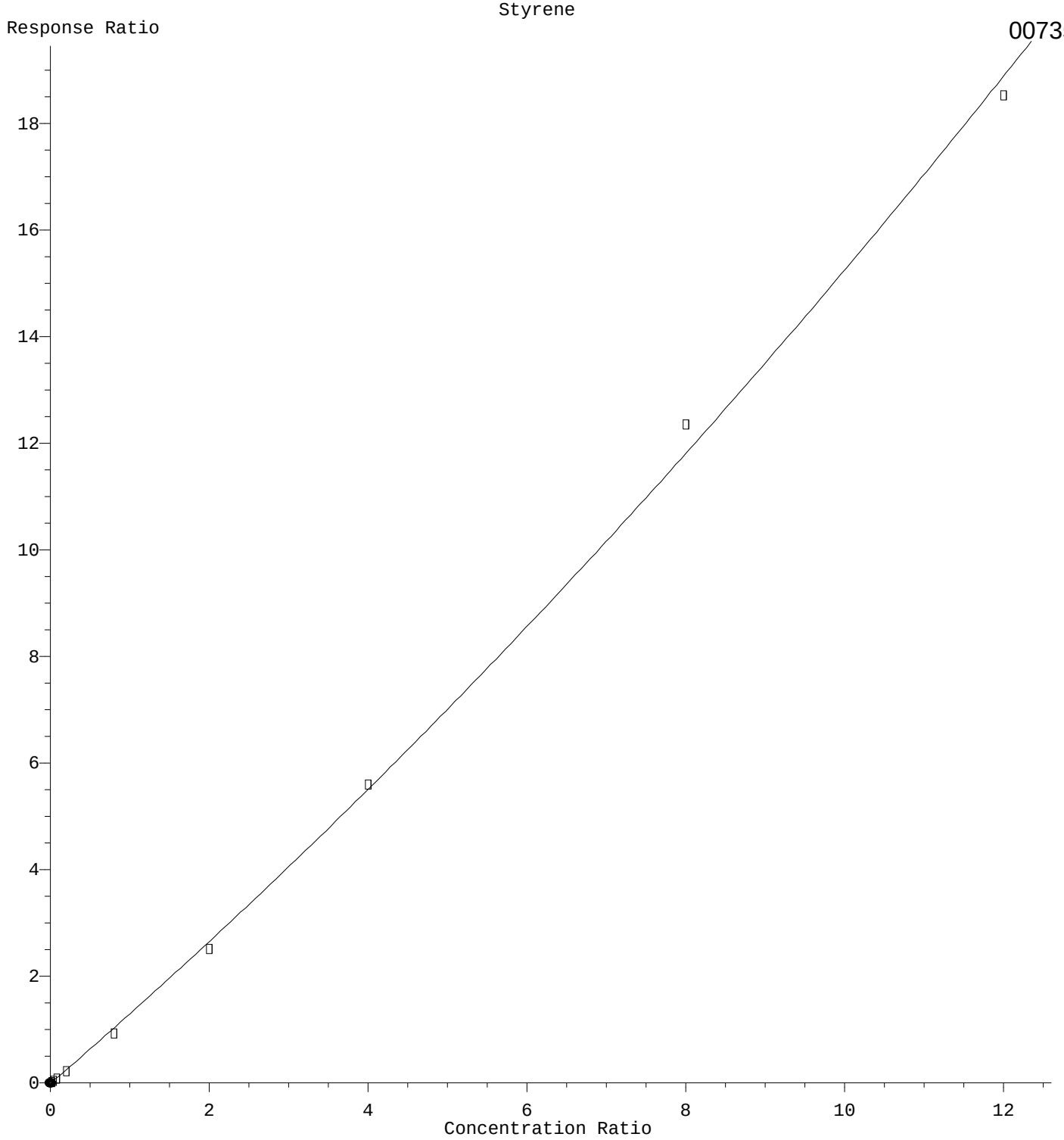

R = 2.436e-002 A*A + 1.283e+000 A - 1.426e-002
Coef of Det (r^2) = 0.998644 Curve Fit: Quadratic w(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260WT.M
Calibration Table Last Updated: Wed Jan 29 07:59:38 2014

Bromoform

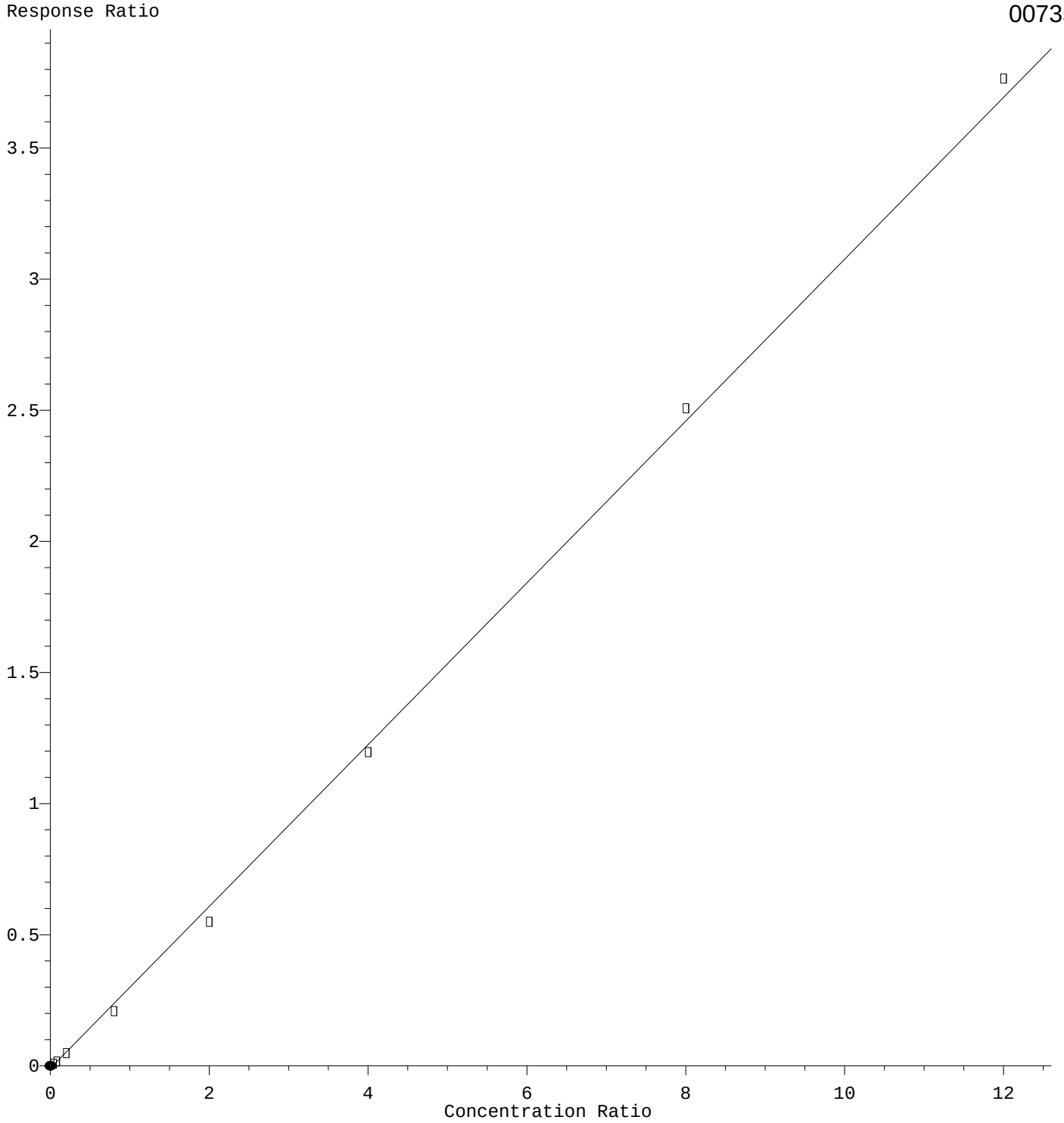

Response = 3.084e-001 * Amt - 8.124e-003
Coef of Det (r^2) = 0.998251 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260WT.M
Calibration Table Last Updated: Wed Jan 29 07:59:38 2014

1,2,3-Trichloropropane

00735332

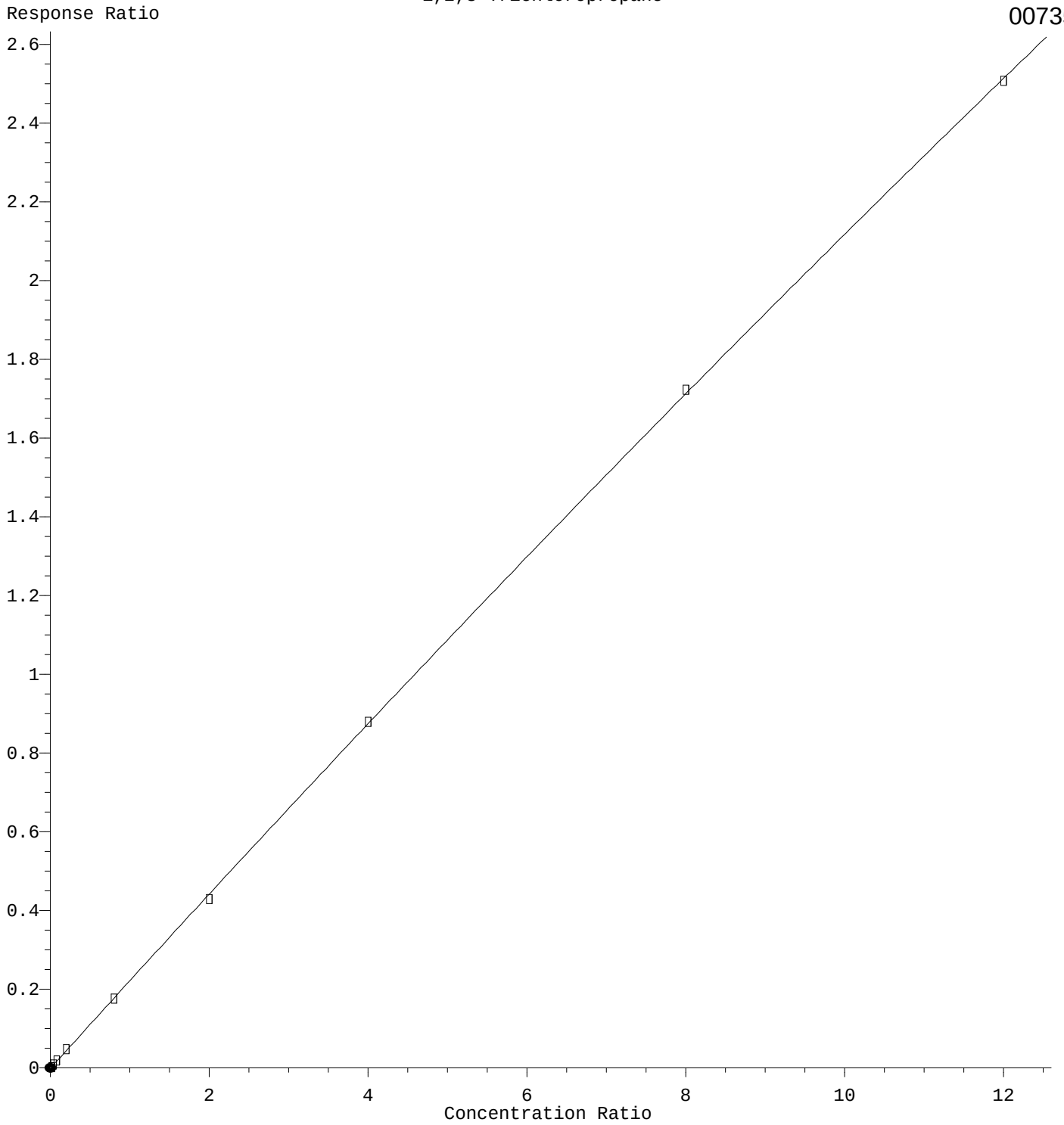

R = -1.159e-003 A*A + 2.234e-001 A - 9.663e-004
Coef of Det (r^2) = 0.999784 Curve Fit: Quadratic w(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260WT.M
Calibration Table Last Updated: Wed Jan 29 07:59:38 2014

trans-1,4-Dichloro-2-Butene

00735333

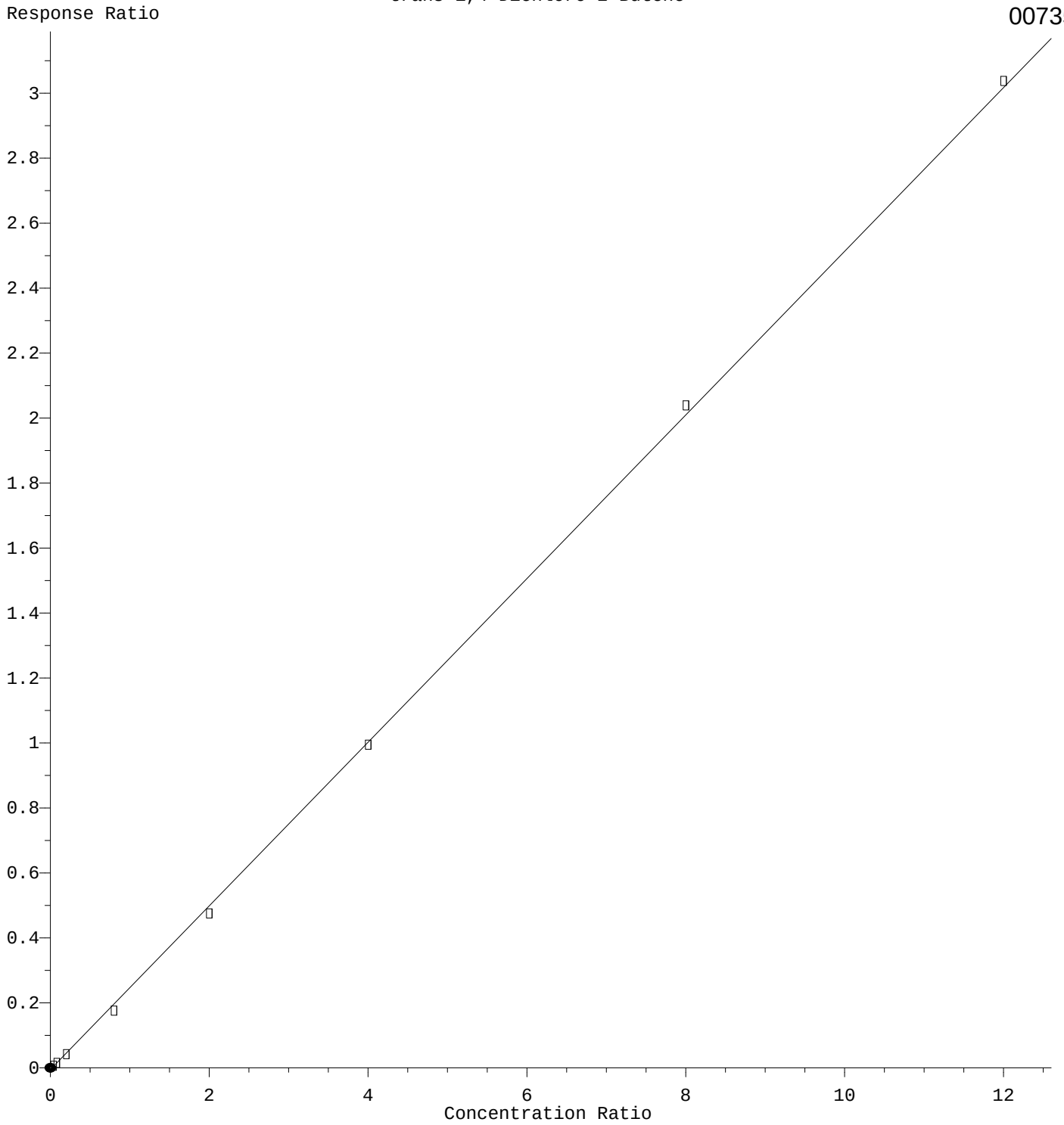

Response = 2.518e-001 * Amt - 5.430e-003
Coef of Det (r^2) = 0.999370 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260WT.M
Calibration Table Last Updated: Wed Jan 29 07:59:38 2014

a-Methylstyrene

00735334

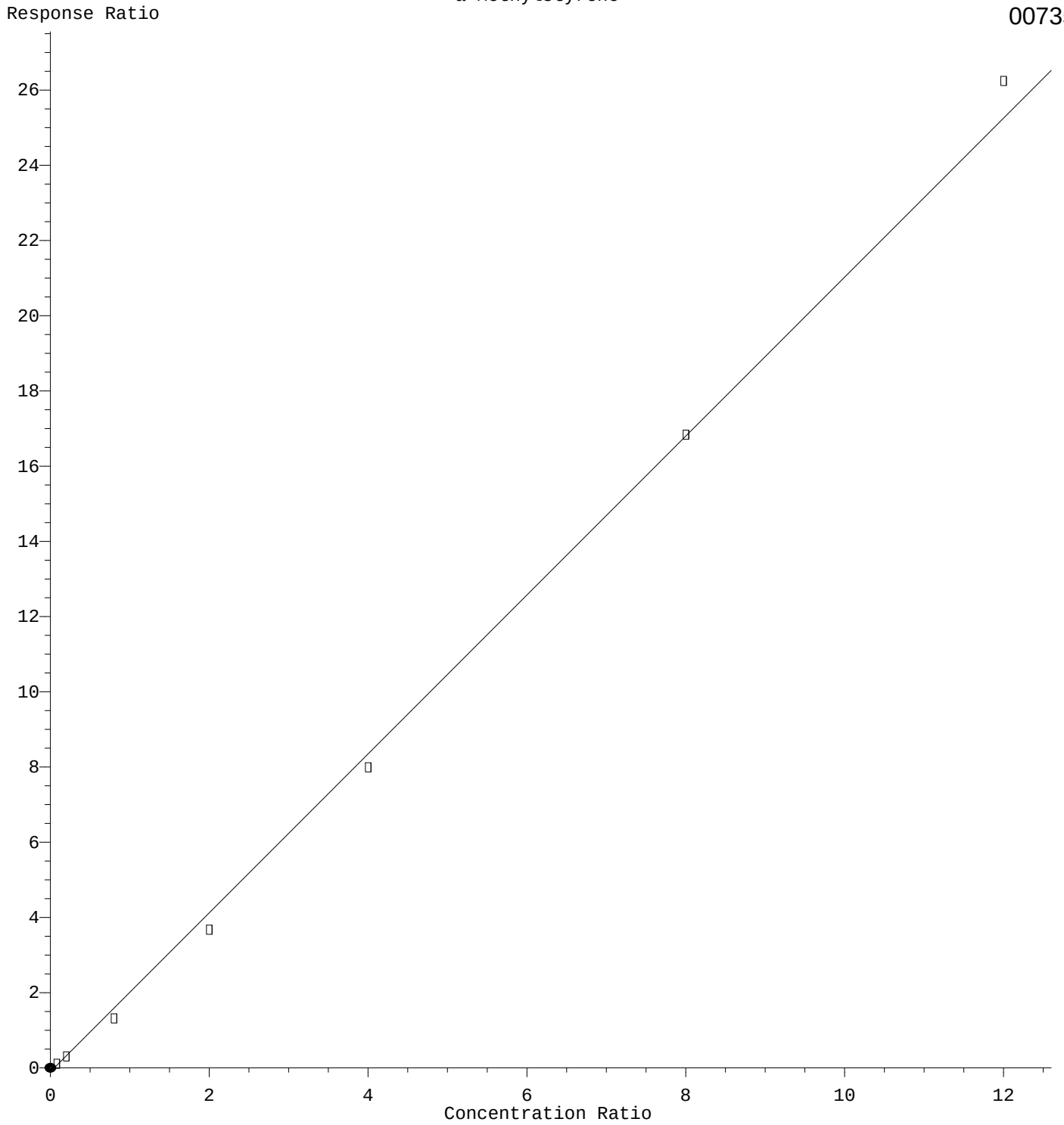

Response = 2.114e+000 * Amt - 1.102e-001
Coef of Det (r^2) = 0.997020 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260WT.M
Calibration Table Last Updated: Wed Jan 29 07:59:38 2014

n-Butylbenzene

00735335

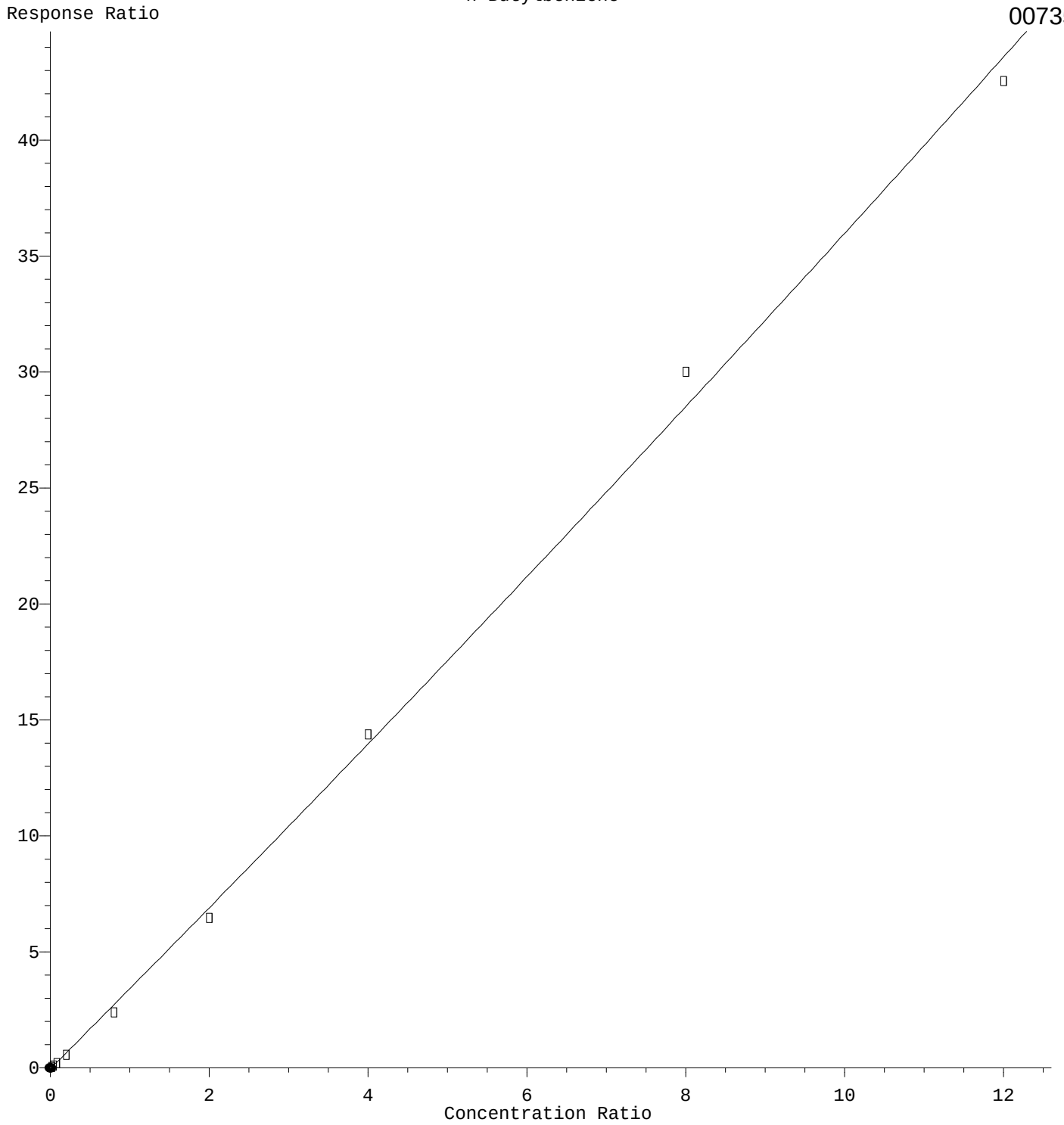

R = 1.667e-002 A*A + 3.435e+000 A - 3.945e-002
Coef of Det (r^2) = 0.997867 Curve Fit: Quadratic w(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260WT.M
Calibration Table Last Updated: Wed Jan 29 07:59:38 2014

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002699.D
Acq On : 28 Jan 2014 20:19
Operator : ADC
Sample : WG461242-12 50.0 ug/L ALTSRC 8260
Misc : 1,1 STD62390
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Feb 04 11:13:04 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.088	96	973260	25.00000 ug/L	0.0000
56) Chlorobenzene-d5	13.913	117	675393	25.00000 ug/L	0.0000
76) 1,4-Dichlorobenzene-d4	16.898	152	343265	25.00000 ug/L	0.0000
System Monitoring Compounds					
37) Dibromofluoromethane	9.031	111	283796	25.6677 ug/L	-0.0102
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.671%		
43) 1,2-Dichloroethane-d4	9.684	65	297203	24.2188 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.875%		
57) Toluene-d8	12.047	98	1027669	26.5116 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.046%		
78) p-Bromofluorobenzene	15.395	95	373548	24.7222 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.889%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.521	85	438353	41.6415 ug/L	100
3) Chloromethane	2.915	50	1052628	41.1645 ug/L	100
4) Vinyl Chloride	3.123	62	822319	39.4363 ug/L	99
5) 1,3-Butadiene	3.164	54	491635	33.3954 ug/L	99
6) Bromomethane	3.941	94	326282	42.7600 ug/L	99
7) Chloroethane	4.118	64	376360	44.1650 ug/L	99
8) Trichlorofluoromethane	4.626	101	866938	48.9512 ug/L	100
9) Diethyl ether	5.216	59	768589	91.5651 ug/L	99
10) Isoprene	5.216	67	723129	47.1036 ug/L	100
11) Acrolein	5.444	56	109878	120.6507 ug/L	97
12) 1,1,2-Trichloro-1,2,2-...	5.465	101	518206	49.9278 ug/L	95
13) Acetone	5.558	43	98561	45.0165 ug/L	89
14) 1,1-Dichloroethene	5.755	61	847234	44.3855 ug/L	100
15) Tert-Butyl Alcohol	5.932	59	94438	162.2988 ug/L #	86
16) Dimethyl Sulfide	6.025	62	521437	50.4289 ug/L	99
17) Iodomethane	6.263	142	383730	34.5626 ug/L	99
18) Methyl acetate	6.357	43	303118	43.1912 ug/L	99
19) Methylene Chloride	6.574	84	552524	43.7813 ug/L	98
20) Carbon Disulfide	6.554	76	1541970	44.2746 ug/L	100
21) Acrylonitrile	6.792	53	144615	48.0025 ug/L	99
22) Methyl Tert Butyl Ether	6.833	73	1319805	47.8961 ug/L	98
23) trans-1,2-Dichloroethene	7.041	96	540847	48.4020 ug/L	98
24) n-Hexane	7.155	57	595367	41.2421 ug/L	99
25) Diisopropyl ether	7.528	45	3879557	92.5475 ug/L	100
26) Vinyl Acetate	7.694	43	837411	48.5489 ug/L	100
27) 1,1-Dichloroethane	7.683	63	1054837	47.0331 ug/L	100
28) Ethyl-Tert-Butyl ether	8.108	59	3309470	91.7110 ug/L	100
29) 2-Butanone	8.274	43	148766	44.8730 ug/L	98
30) Propionitrile	8.378	54	95125	92.0872 ug/L	98
31) 2,2-Dichloropropane	8.471	77	860400	45.9522 ug/L	100
32) cis-1,2-Dichloroethene	8.533	96	607948	47.7215 ug/L	99
33) Chloroform	8.751	83	1057767	48.1683 ug/L	100
34) 1-Bromopropane	8.875	122	126227	55.9253 ug/L	99
35) Bromochloromethane	8.969	130	360472	47.4656 ug/L	99
36) Tetrahydrofuran	9.010	42	193582	87.4046 ug/L	99
38) 1,1,1-Trichloroethane	9.280	97	956958	48.2678 ug/L	100
39) Cyclohexane	9.300	56	928296	44.0718 ug/L	100
40) 1,1-Dichloropropene	9.477	75	754219	49.8352 ug/L	100
41) Tert-Amyl-Methyl ether	9.611	73	2643264	93.3275 ug/L	100
42) Carbon Tetrachloride	9.611	117	815616	46.9731 ug/L	100
44) 1,2-Dichloroethane	9.798	62	767561	48.2997 ug/L	99
45) Benzene	9.829	78	2155609	47.6494 ug/L	100
46) Trichloroethene	10.586	130	629808	49.1207 ug/L	99
47) Methylcyclohexane	10.658	83	791496	44.4979 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002699.D
Acq On : 28 Jan 2014 20:19
Operator : ADC
Sample : WG461242-12 50.0 ug/L ALTSRC 8260
Misc : 1,1 STD62390
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Feb 04 11:13:04 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
48) 1,2-Dichloropropane	10.793	63	601913	49.2159 ug/L	100
49) 1,4-Dioxane	11.094	88	15159	212.7542 ug/L	97
50) Bromodichloromethane	11.094	83	778007	48.1282 ug/L	100
51) Dibromomethane	11.166	93	306760	46.8776 ug/L	100
52) 2-Chloroethyl Vinyl Ether	11.425	63	206069	35.8095 ug/L	100
53) 4-Methyl-2-Pentanone	11.456	58	135264	46.2615 ug/L	100
54) cis-1,3-Dichloropropene	11.736	75	931331	51.1185 ug/L	99
55) Dimethyl Disulfide	11.975	79	507876	45.9784 ug/L	100
58) Toluene	12.140	91	2299018	48.7825 ug/L	100
59) Ethyl Methacrylate	12.286	69	499162	48.2357 ug/L	99
60) trans-1,3-Dichloropropene	12.337	75	744993	47.8481 ug/L	100
61) 1,1,2-Trichloroethane	12.545	97	409404	48.5258 ug/L	99
62) 2-Hexanone	12.514	43	236586	46.3402 ug/L	99
63) 1,3-Dichloropropane	12.845	76	700575	47.6204 ug/L	99
64) Tetrachloroethene	12.949	166	624325	48.3951 ug/L	100
65) Dibromochloromethane	13.198	129	545986	43.4670 ug/L	99
66) 1,2-Dibromoethane	13.457	107	417284	48.9447 ug/L	99
67) 1-Chlorohexane	13.581	91	708104	46.7579 ug/L	100
68) Chlorobenzene	13.954	112	1412416	44.6111 ug/L	98
69) 1,1,1,2-Tetrachloroethane	13.996	131	602108	47.1681 ug/L	99
70) Ethylbenzene	13.996	106	836371	45.8685 ug/L	98
71) m-,p-Xylene	14.089	106	1967768	86.1339 ug/L	99
72) o-Xylene	14.638	106	915802	44.0574 ug/L	99
73) Styrene	14.680	104	1659345	46.5145 ug/L	100
74) Bromoform	15.136	173	360100	43.8802 ug/L	99
75) Isopropylbenzene	15.074	105	2383121	45.8256 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.281	83	448820	46.0560 ug/L	99
79) 1,2,3-Trichloropropane	15.468	110	140512	46.3531 ug/L	97
80) trans-1,4-Dichloro-2-B...	15.530	53	93115	27.4692 ug/L	99
81) n-Propylbenzene	15.571	91	2829763	44.7304 ug/L	100
82) Bromobenzene	15.675	156	671122	46.4507 ug/L	99
83) 1,3,5-Trimethylbenzene	15.758	105	2264023	49.1653 ug/L	99
84) 2-Chlorotoluene	15.820	91	1729522	41.8696 ug/L	95
85) 4-Chlorotoluene	15.872	91	1559452	43.4803 ug/L	100
86) a-Methylstyrene	16.162	118	1208747	42.9535 ug/L	99
87) tert-Butylbenzene	16.214	134	423329	43.0162 ug/L	93
88) 1,2,4-Trimethylbenzene	16.266	105	2328193	49.7814 ug/L	99
89) sec-Butylbenzene	16.483	105	2628241	45.3575 ug/L	100
90) p-Isopropyltoluene	16.649	119	2233166	46.8177 ug/L	99
91) 1,3-Dichlorobenzene	16.805	146	1204601	45.0283 ug/L	100
92) 1,4-Dichlorobenzene	16.940	146	1298457	48.7397 ug/L	99
93) n-Butylbenzene	17.168	91	2266904	47.9022 ug/L	99
94) 1,2-Dichlorobenzene	17.416	146	1138483	44.7351 ug/L	99
95) 1,2-Dibromo-3-Chloropr...	18.411	75	80217	47.3307 ug/L	98
96) 1,2,4-Trichlorobenzene	19.541	180	870469	50.1451 ug/L	100
97) Hexachlorobutadiene	19.707	225	514961	53.4946 ug/L	100
98) Naphthalene	19.894	128	1536996	48.4505 ug/L	100
99) 1,2,3-Trichlorobenzene	20.205	180	782964	49.1580 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002699.D
Acq On : 28 Jan 2014 20:19
Operator : ADC
Sample : WG461242-12 50.0 ug/L ALTSRC 8260
Misc : 1,1 STD62390
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Feb 04 11:13:04 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

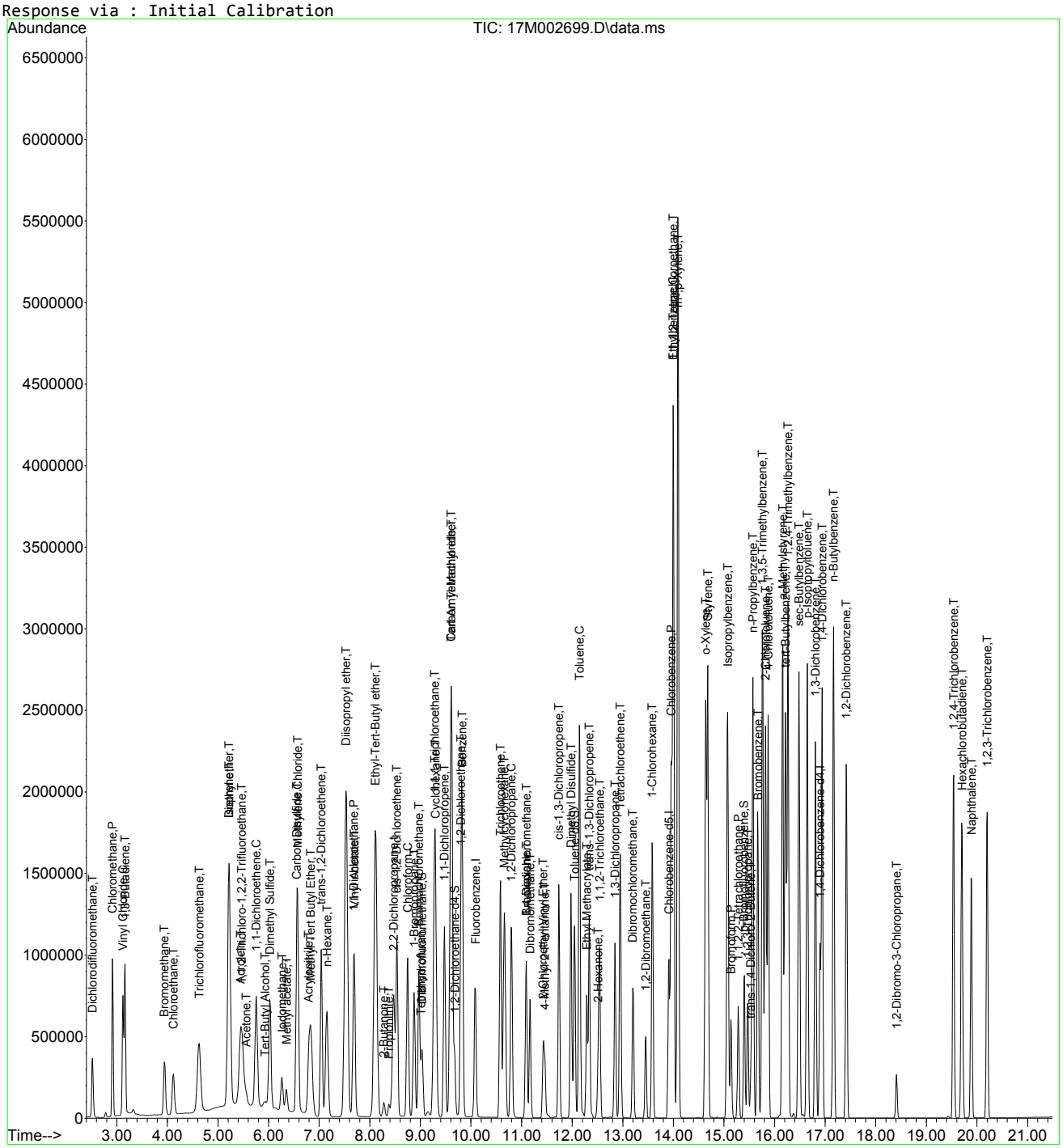

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002699.D
Acq On : 28 Jan 2014 20:19
Operator : ADC
Sample : WG461242-12 50.0 ug/L ALTSRC 8260
Misc : 1,1 STD62390
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Feb 04 11:13:04 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	111	0.000
2	T	Dichlorodifluoromethane	50.000	41.641	16.7	89	0.000
3	P	Chloromethane	50.000	41.165	17.7	91	0.000
4	C	Vinyl Chloride	50.000	39.436	21.1#	90	0.000
5	T	1,3-Butadiene	50.000	33.395	33.2#	70	0.000
6	T	Bromomethane	50.000	42.760	14.5	94	-0.011
7	T	Chloroethane	50.000	44.165	11.7	99	-0.010
8	T	Trichlorofluoromethane	50.000	48.951	2.1	107	-0.010
9	T	Diethyl ether	100.000	91.565	8.4	105	0.010
10	T	Isoprene	50.000	47.104	5.8	102	-0.011
11	T	Acrolein	50.000	120.651	-141.3#	279	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	49.928	0.1	111	0.000
13	T	Acetone	50.000	45.017	10.0	104	0.010
14	C	1,1-Dichloroethene	50.000	44.386	11.2#	98	0.000
15	T	Tert-Butyl Alcohol	200.000	162.299	18.9	94	0.021
16	T	Dimethyl Sulfide	50.000	50.429	-0.9	113	0.000
17	T	Iodomethane	50.000	34.563	30.9#	75	0.000
18	T	Methyl acetate	50.000	43.191	13.6	105	0.011
19	T	Methylene Chloride	50.000	43.781	12.4	106	-0.011
20	T	Carbon Disulfide	50.000	44.275	11.5	98	-0.010
21	T	Acrylonitrile	50.000	48.002	4.0	108	0.000
22	T	Methyl Tert Butyl Ether	50.000	47.896	4.2	110	0.010
23	T	trans-1,2-Dichloroethene	50.000	48.402	3.2	108	0.000
24	T	n-Hexane	50.000	41.242	17.5	90	0.000
25	T	Diisopropyl ether	100.000	92.547	7.5	104	0.000
26	T	Vinyl Acetate	50.000	48.549	2.9	118	0.000
27	P	1,1-Dichloroethane	50.000	47.033	5.9	105	0.000
28	T	Ethyl-Tert-Butyl ether	100.000	91.711	8.3	104	0.000
29	T	2-Butanone	50.000	44.873	10.3	104	0.000
30	T	Propionitrile	100.000	92.087	7.9	106	0.000
31	t	2,2-Dichloropropane	50.000	45.952	8.1	103	0.000
32	T	cis-1,2-Dichloroethene	50.000	47.722	4.6	107	-0.011
33	C	Chloroform	50.000	48.168	3.7#	108	0.000
34	T	1-Bromopropane	50.000	55.925	-11.8	122	0.000
35	T	Bromochloromethane	50.000	47.466	5.1	105	0.000
36	T	Tetrahydrofuran	100.000	87.405	12.6	103	0.010
37	S	Dibromofluoromethane	25.000	25.668	-2.7	116	-0.010
38	T	1,1,1-Trichloroethane	50.000	48.268	3.5	107	0.000
39	T	Cyclohexane	50.000	44.072	11.9	96	0.000
40	T	1,1-Dichloropropene	50.000	49.835	0.3	110	0.000
41	T	Tert-Amyl-Methyl ether	100.000	93.327	6.7	106	0.000
42	T	Carbon Tetrachloride	50.000	46.973	6.1	105	0.000
43	S	1,2-Dichloroethane-d4	25.000	24.219	3.1	111	0.000
44	T	1,2-Dichloroethane	50.000	48.300	3.4	108	0.000
45	T	Benzene	50.000	47.649	4.7	107	0.000
46	T	Trichloroethene	50.000	49.121	1.8	107	0.000
47	T	Methylcyclohexane	50.000	44.498	11.0	97	0.000
48	C	1,2-Dichloropropane	50.000	49.216	1.6#	110	-0.011
49	T	1,4-Dioxane	200.000	212.754	-6.4	125	0.000
50	T	Bromodichloromethane	50.000	48.128	3.7	104	0.000
51	T	Dibromomethane	50.000	46.878	6.2	105	0.000
52	T	2-Chloroethyl Vinyl Ether	50.000	35.810	28.4#	80	0.000
53	T	4-Methyl-2-Pentanone	50.000	46.262	7.5	107	0.000
54	T	cis-1,3-Dichloropropene	50.000	51.119	-2.2	112	0.000
55	T	Dimethyl Disulfide	50.000	45.978	8.0	103	0.000

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002699.D
Acq On : 28 Jan 2014 20:19
Operator : ADC
Sample : WG461242-12 50.0 ug/L ALTSRC 8260
Misc : 1,1 STD62390
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Feb 04 11:13:04 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	I	Chlorobenzene-d5	25.000	25.000	0.0	109	0.000
57	S	Toluene-d8	25.000	26.512	-6.0	118	0.000
58	C	Toluene	50.000	48.783	2.4#	107	0.000
59	T	Ethyl Methacrylate	50.000	48.236	3.5	102	0.000
60	T	trans-1,3-Dichloropropene	50.000	47.848	4.3	103	0.000
61	T	1,1,2-Trichloroethane	50.000	48.526	2.9	107	0.000
62	T	2-Hexanone	50.000	46.340	7.3	105	0.000
63	T	1,3-Dichloropropane	50.000	47.620	4.8	108	0.000
64	T	Tetrachloroethene	50.000	48.395	3.2	105	0.000
65	T	Dibromochloromethane	50.000	43.467	13.1	103	0.000
66	T	1,2-Dibromoethane	50.000	48.945	2.1	106	0.000
67	T	1-Chlorohexane	50.000	46.758	6.5	105	0.000
68	P	Chlorobenzene	50.000	44.611	10.8	100	0.000
69	T	1,1,1,2-Tetrachloroethane	50.000	47.168	5.7	108	0.000
70	C	Ethylbenzene	50.000	45.869	8.3#	105	0.000
71	T	m-,p-Xylene	100.000	86.134	13.9	102	0.000
72	T	o-Xylene	50.000	44.057	11.9	98	0.000
73	T	Styrene	50.000	46.514	7.0	107	0.000
74	P	Bromoform	50.000	43.880	12.2	106	0.000
75	T	Isopropylbenzene	50.000	45.826	8.3	99	0.000
76	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	114	0.000
77	P	1,1,2,2-Tetrachloroethane	50.000	46.056	7.9	115	0.000
78	S	p-Bromofluorobenzene	25.000	24.722	1.1	117	0.000
79	T	1,2,3-Trichloropropane	50.000	46.353	7.3	109	0.000
80	T	trans-1,4-Dichloro-2-Butene	50.000	27.469	45.1#	65	0.000
81	T	n-Propylbenzene	50.000	44.730	10.5	98	0.000
82	T	Bromobenzene	50.000	46.451	7.1	108	0.000
83	T	1,3,5-Trimethylbenzene	50.000	49.165	1.7	112	0.000
84	T	2-Chlorotoluene	50.000	41.870	16.3	92	0.000
85	T	4-Chlorotoluene	50.000	43.480	13.0	100	0.000
86	T	a-Methylstyrene	50.000	42.954	14.1	110	0.000
87	T	tert-Butylbenzene	50.000	43.016	14.0	100	0.000
88	T	1,2,4-Trimethylbenzene	50.000	49.781	0.4	112	0.000
89	T	sec-Butylbenzene	50.000	45.358	9.3	101	0.000
90	T	p-Isopropyltoluene	50.000	46.818	6.4	104	0.000
91	T	1,3-Dichlorobenzene	50.000	45.028	9.9	104	0.000
92	T	1,4-Dichlorobenzene	50.000	48.740	2.5	113	0.000
93	T	n-Butylbenzene	50.000	47.902	4.2	117	0.000
94	T	1,2-Dichlorobenzene	50.000	44.735	10.5	104	0.000
95	T	1,2-Dibromo-3-Chloropropane	50.000	47.331	5.3	112	0.000
96	T	1,2,4-Trichlorobenzene	50.000	50.145	-0.3	113	0.000
97	T	Hexachlorobutadiene	50.000	53.495	-7.0	120	0.000
98	T	Naphthalene	50.000	48.450	3.1	109	0.000
99	T	1,2,3-Trichlorobenzene	50.000	49.158	1.7	110	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957895.D Vial: 3
Acq On : 19 Aug 2013 16:23 Operator: adc
Sample : WG441888-01 5.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:37 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	643130	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	439679	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	231000	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.94	41	2569	4.6165 ug/L #	16
3) 3-Chloro-1-propene	7.32	41	43441	4.7909 ug/L	90
4) 2-Chloro-1,3-butadiene	8.71	53	43442	4.4636 ug/L	98
5) Ethyl Acetate	9.34	43	19334	4.4239 ug/L	96
6) Methacrylonitrile	9.50	67	9285	4.2205 ug/L	88
7) Isobutyl Alcohol	9.51	43	1864	4.9961 ug/L #	84
9) Methyl methacrylate	11.67	41	21094	4.5700 ug/L	95
10) 2-Nitropropane	12.01	43	6118	4.1497 ug/L	83
12) Cyclohexanone	16.11	55	3867	6.1515 ug/L	83

(#) = qualifier out of range (m) = manual integration
9M957895.D A9FOOWT.M Tue Aug 20 15:11:38 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957895.D Vial: 3
Acq On : 19 Aug 2013 16:23 Operator: adc
Sample : WG441888-01 5.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

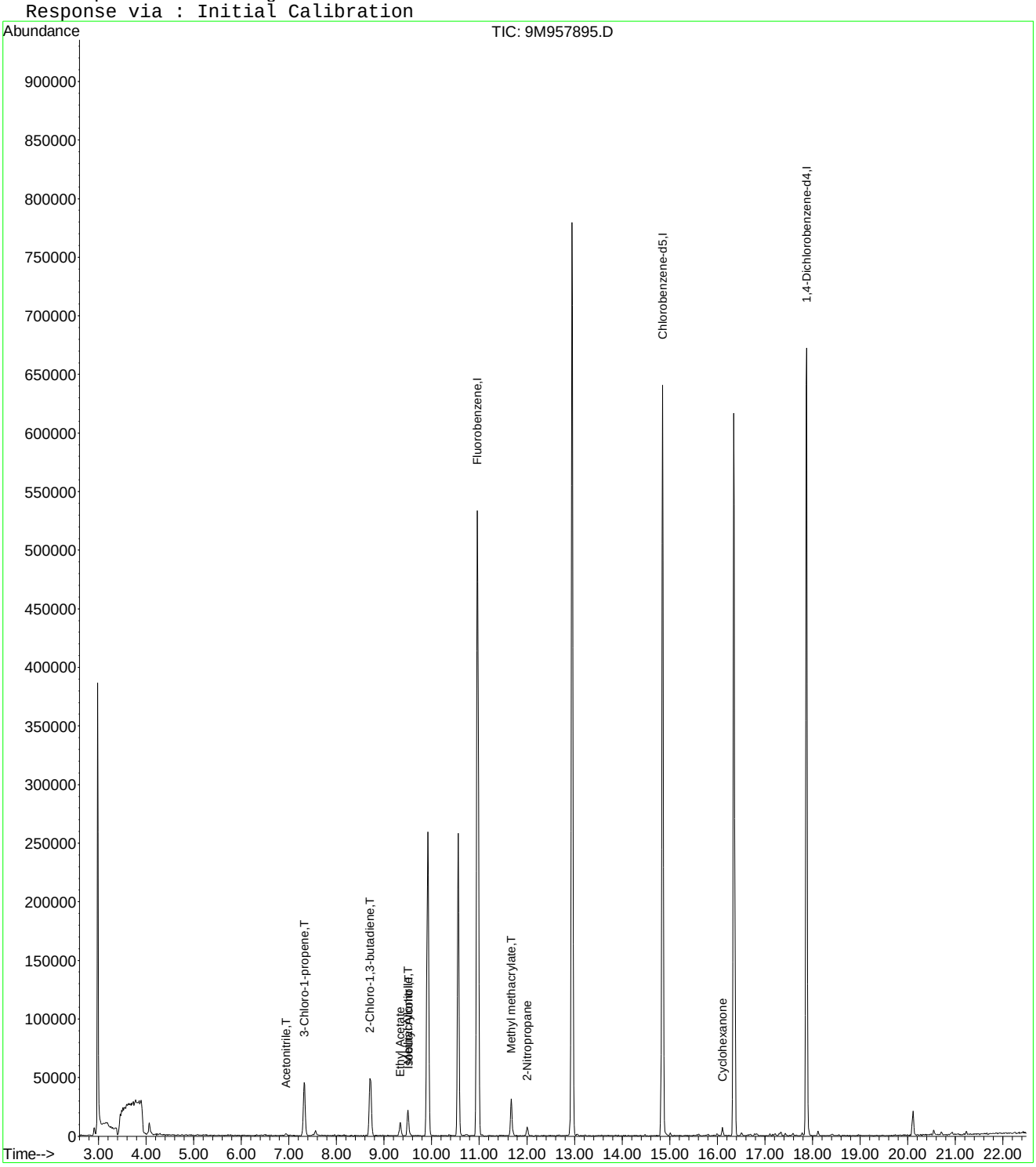

9M957895.D A9FOOWT.M Tue Aug 20 15:11:38 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957896.D Vial: 4
Acq On : 19 Aug 2013 16:53 Operator: adc
Sample : WG441888-02 20.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:39 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	597162	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	410709	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	204391	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.94	41	10346	20.0230 ug/L #	94
3) 3-Chloro-1-propene	7.32	41	165346	19.6389 ug/L	99
4) 2-Chloro-1,3-butadiene	8.71	53	173321	19.1794 ug/L	98
5) Ethyl Acetate	9.33	43	80571	19.8547 ug/L	98
6) Methacrylonitrile	9.49	67	39572	19.3720 ug/L	100
7) Isobutyl Alcohol	9.50	43	7225	20.8558 ug/L #	84
8) 1-Butanol	10.43	56	1470	17.5760 ug/L #	28
9) Methyl methacrylate	11.67	41	82730	19.3029 ug/L	99
10) 2-Nitropropane	12.01	43	24248	17.7129 ug/L	96
12) Cyclohexanone	16.11	55	10457	17.8080 ug/L	93

(#) = qualifier out of range (m) = manual integration
9M957896.D A9FOOWT.M Tue Aug 20 15:11:40 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957896.D Vial: 4
Acq On : 19 Aug 2013 16:53 Operator: adc
Sample : WG441888-02 20.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

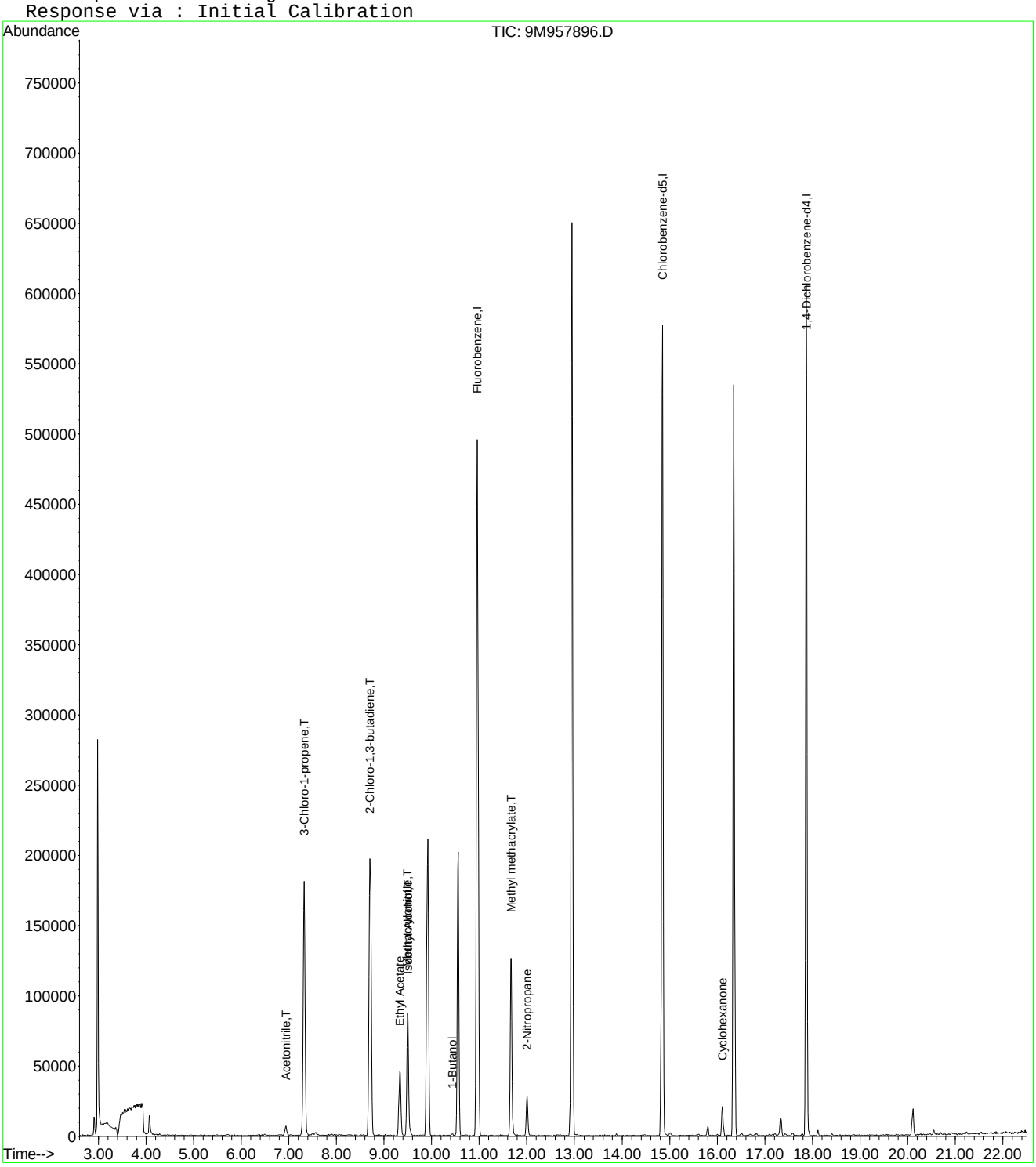

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957897.D Vial: 5
Acq On : 19 Aug 2013 17:22 Operator: adc
Sample : WG441888-03 50.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:40 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	543956	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	378286	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.87	152	186935	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	24663	52.3999 ug/L #	95
3) 3-Chloro-1-propene	7.32	41	408290	53.2380 ug/L	99
4) 2-Chloro-1,3-butadiene	8.70	53	433367	52.6464 ug/L	100
5) Ethyl Acetate	9.33	43	199641	54.0087 ug/L	99
6) Methacrylonitrile	9.50	67	98625	53.0031 ug/L	97
7) Isobutyl Alcohol	9.50	43	15873	50.3010 ug/L	98
8) 1-Butanol	10.42	56	3593	47.1615 ug/L	91
9) Methyl methacrylate	11.67	41	207430	53.1325 ug/L	99
10) 2-Nitropropane	12.00	43	62334	49.9883 ug/L	97
12) Cyclohexanone	16.11	55	27156	50.2096 ug/L	97

(#) = qualifier out of range (m) = manual integration
9M957897.D A9FOOWT.M Tue Aug 20 15:11:41 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957897.D Vial: 5
Acq On : 19 Aug 2013 17:22 Operator: adc
Sample : WG441888-03 50.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

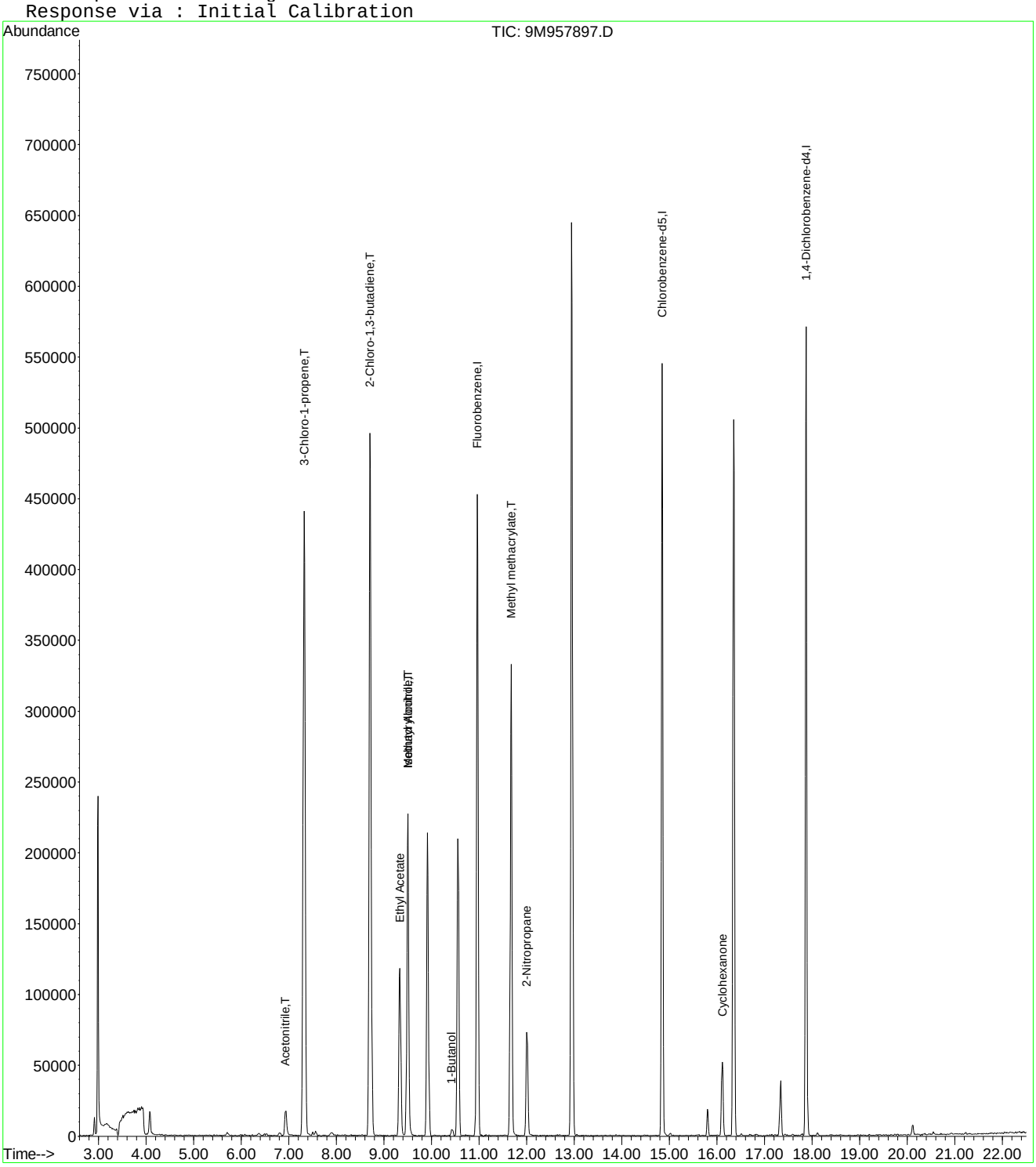

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957898.D Vial: 6
Acq On : 19 Aug 2013 17:51 Operator: adc
Sample : WG441888-04 100.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:42 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	576048	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	389894	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	192883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	49019	98.3454 ug/L #	100
3) 3-Chloro-1-propene	7.32	41	803367	98.9172 ug/L	100
4) 2-Chloro-1,3-butadiene	8.70	53	860009	98.6554 ug/L	100
5) Ethyl Acetate	9.34	43	394422	100.7581 ug/L	100
6) Methacrylonitrile	9.50	67	193914	98.4076 ug/L	100
7) Isobutyl Alcohol	9.50	43	30821	92.2294 ug/L	100
8) 1-Butanol	10.42	56	6864	85.0771 ug/L	100
9) Methyl methacrylate	11.67	41	411094	99.4339 ug/L	100
10) 2-Nitropropane	12.00	43	129933	98.3938 ug/L	100
12) Cyclohexanone	16.11	55	53010	95.0938 ug/L	100

(#) = qualifier out of range (m) = manual integration
9M957898.D A9FOOWT.M Tue Aug 20 15:11:43 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957898.D Vial: 6
Acq On : 19 Aug 2013 17:51 Operator: adc
Sample : WG441888-04 100.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

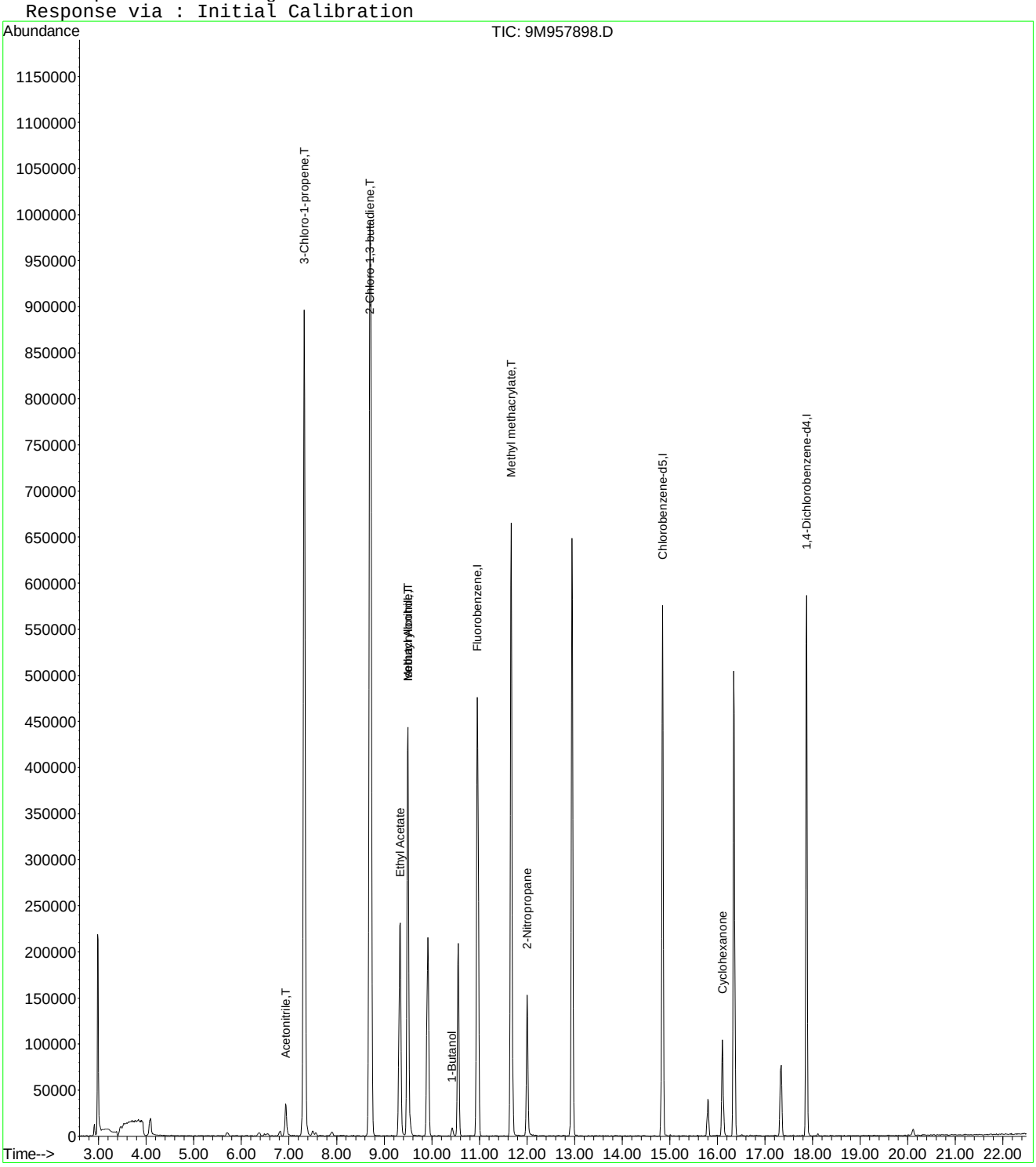

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957899.D Vial: 7
Acq On : 19 Aug 2013 18:20 Operator: adc
Sample : WG441888-05 200.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:44 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	570456	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	385619	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	194966	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	99623	201.8300 ug/L #	97
3) 3-Chloro-1-propene	7.32	41	1635978	203.4097 ug/L	100
4) 2-Chloro-1,3-butadiene	8.70	53	1777598	205.9150 ug/L	99
5) Ethyl Acetate	9.33	43	796090	205.3608 ug/L	100
6) Methacrylonitrile	9.50	67	402877	206.4564 ug/L	96
7) Isobutyl Alcohol	9.50	43	61854	186.9075 ug/L	94
8) 1-Butanol	10.43	56	17315	216.7176 ug/L	91
9) Methyl methacrylate	11.67	41	835832	204.1498 ug/L	98
10) 2-Nitropropane	12.00	43	277669	212.3304 ug/L	98
12) Cyclohexanone	16.11	55	106553	193.2629 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M957899.D A9FOOWT.M Tue Aug 20 15:11:44 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957899.D Vial: 7
Acq On : 19 Aug 2013 18:20 Operator: adc
Sample : WG441888-05 200.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

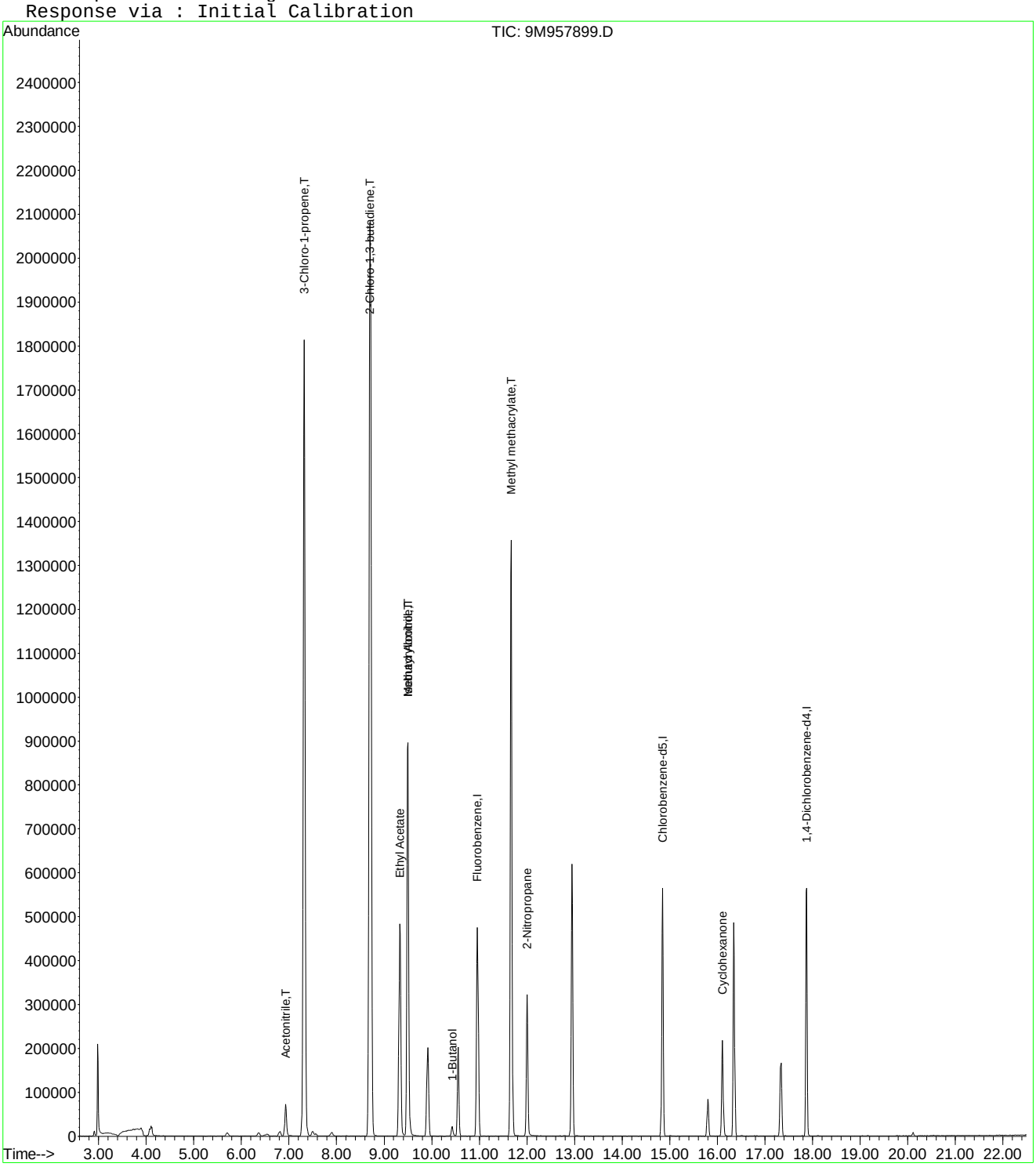

9M957899.D A9FOOWT.M Tue Aug 20 15:11:45 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957900.D Vial: 8
Acq On : 19 Aug 2013 18:48 Operator: adc
Sample : WG441888-06 300.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:45 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	592665	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	402629	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	202256	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	152817	297.9962 ug/L #	98
3) 3-Chloro-1-propene	7.32	41	2473810	296.0557 ug/L	99
4) 2-Chloro-1,3-butadiene	8.70	53	2716896	302.9287 ug/L	96
5) Ethyl Acetate	9.32	43	1204380	299.0417 ug/L	100
6) Methacrylonitrile	9.50	67	614447	303.0771 ug/L	97
7) Isobutyl Alcohol	9.50	43	100051	291.0002 ug/L	95
8) 1-Butanol	10.42	56	27392	329.9958 ug/L	92
9) Methyl methacrylate	11.67	41	1277690	300.3782 ug/L	98
10) 2-Nitropropane	12.00	43	426305	313.7748 ug/L	98
12) Cyclohexanone	16.11	55	164262	285.3469 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M957900.D A9FOOWT.M Tue Aug 20 15:11:46 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957900.D Vial: 8
Acq On : 19 Aug 2013 18:48 Operator: adc
Sample : WG441888-06 300.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

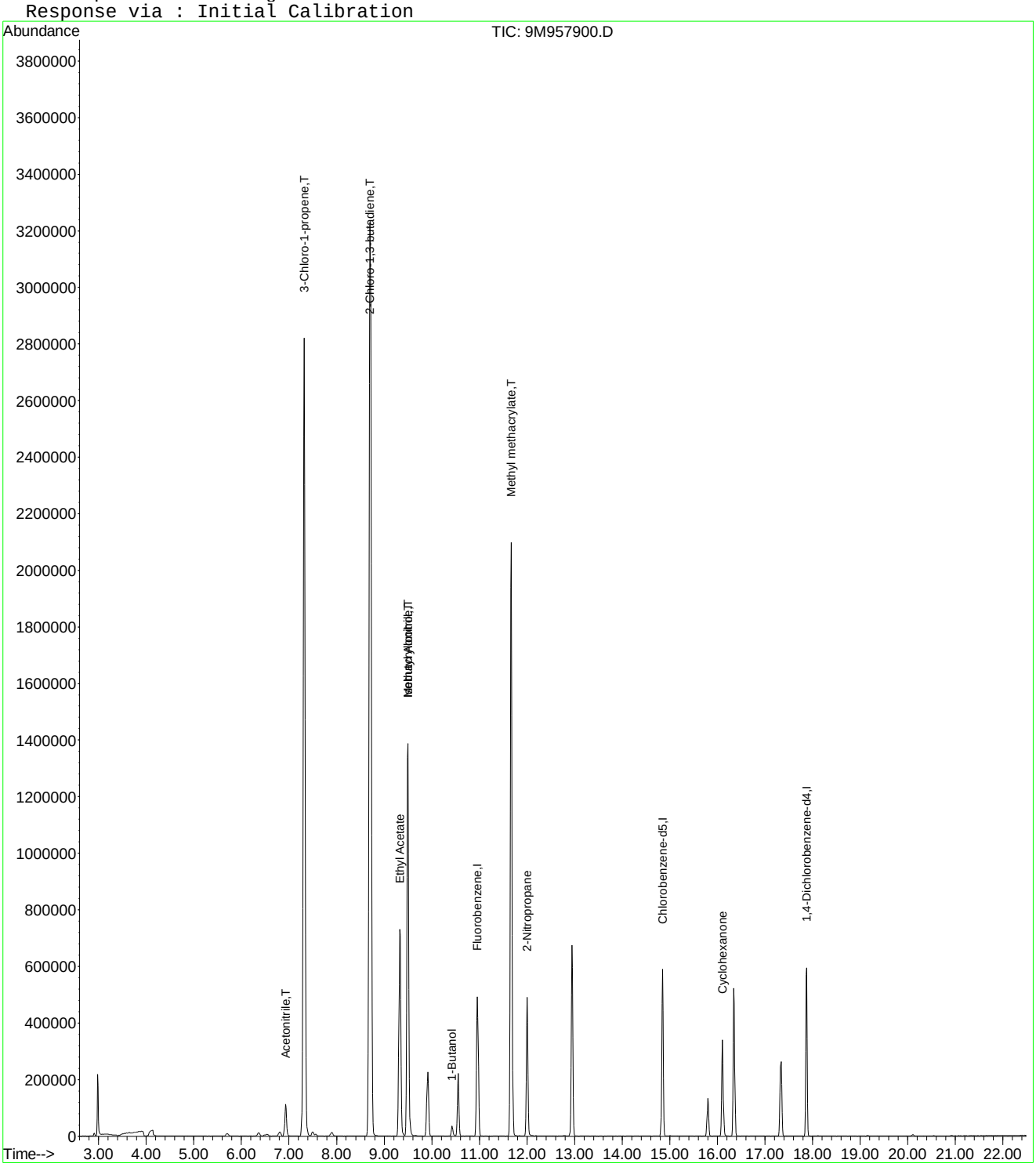

9M957900.D A9FOOWT.M Tue Aug 20 15:11:46 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957901.D Vial: 9
Acq On : 19 Aug 2013 19:17 Operator: adc
Sample : WG441888-07 400.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:47 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	594215	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	396612	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	201290	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	204659	398.0481 ug/L #	97
3) 3-Chloro-1-propene	7.32	41	3257505	388.8283 ug/L	98
4) 2-Chloro-1,3-butadiene	8.70	53	3609438	401.3956 ug/L	95
5) Ethyl Acetate	9.33	43	1573860	389.7624 ug/L	99
6) Methacrylonitrile	9.50	67	822198	404.4928 ug/L	95
7) Isobutyl Alcohol	9.50	43	139506	404.6974 ug/L	95
8) 1-Butanol	10.43	56	38071	457.4510 ug/L	87
9) Methyl methacrylate	11.67	41	1682799	394.5852 ug/L	97
10) 2-Nitropropane	12.00	43	574030	421.4033 ug/L	98
12) Cyclohexanone	16.11	55	220458	388.7775 ug/L	97

(#) = qualifier out of range (m) = manual integration
9M957901.D A9FOOWT.M Tue Aug 20 15:11:48 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957901.D Vial: 9
Acq On : 19 Aug 2013 19:17 Operator: adc
Sample : WG441888-07 400.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

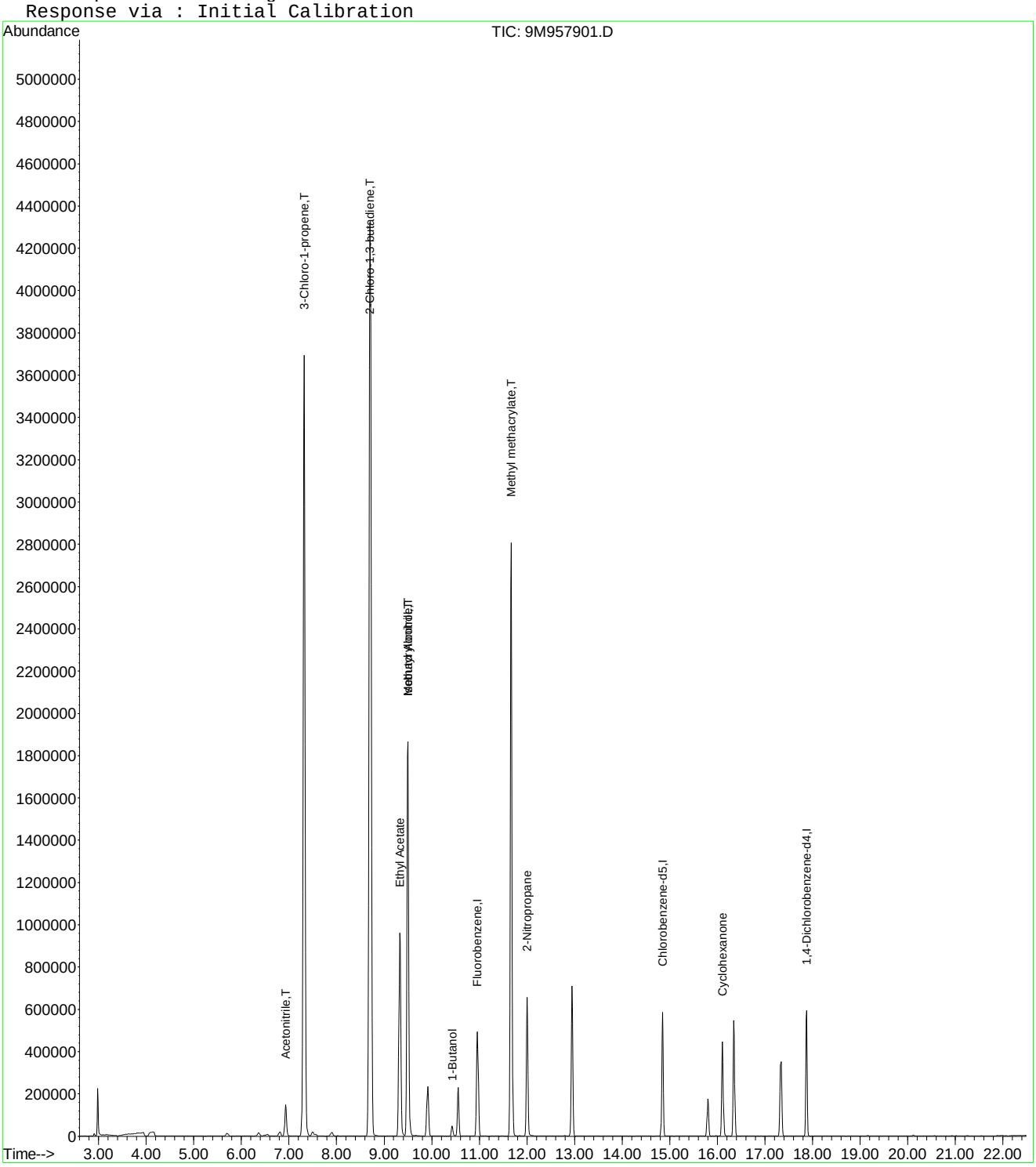

9M957901.D A9FOOWT.M Tue Aug 20 15:11:48 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957902.D Vial: 10
Acq On : 19 Aug 2013 19:46 Operator: adc
Sample : WG441888-08 500.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:48 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	558878	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	375431	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	195195	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	253035	523.2532 ug/L #	96
3) 3-Chloro-1-propene	7.32	41	4057841	514.9848 ug/L	97
4) 2-Chloro-1,3-butadiene	8.71	53	4507808	532.9974 ug/L	93
5) Ethyl Acetate	9.33	43	1968668	518.3617 ug/L	99
6) Methacrylonitrile	9.50	67	1041348	544.6993 ug/L	94
7) Isobutyl Alcohol	9.50	43	180492	556.7011 ug/L	98
8) 1-Butanol	10.42	56	50726	648.0485 ug/L	87
9) Methyl methacrylate	11.67	41	2116667	527.7007 ug/L	96
10) 2-Nitropropane	12.00	43	730036	569.8155 ug/L	96
12) Cyclohexanone	16.11	55	277715	517.3808 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M957902.D A9FOOWT.M Tue Aug 20 15:11:49 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957902.D Vial: 10
Acq On : 19 Aug 2013 19:46 Operator: adc
Sample : WG441888-08 500.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

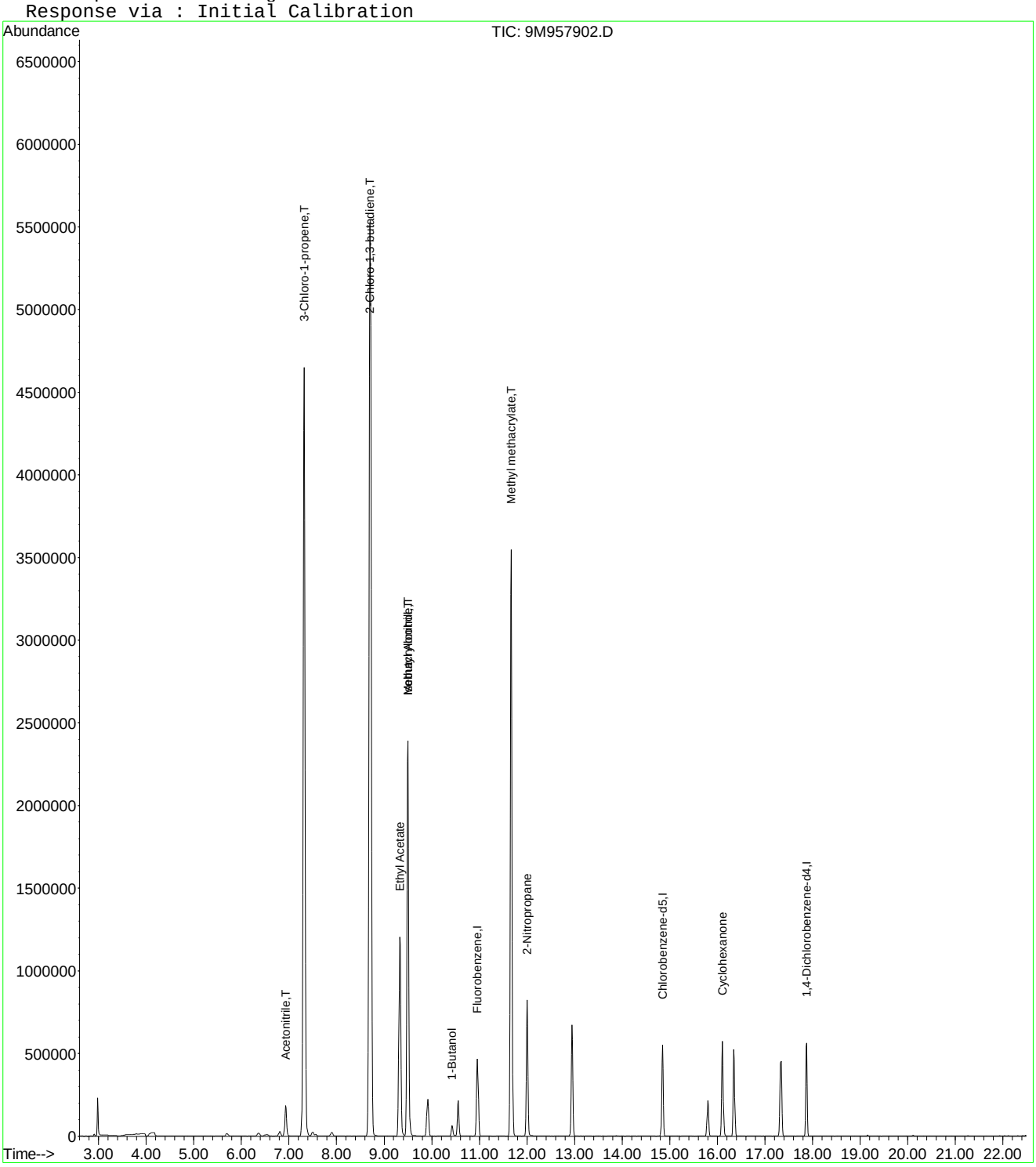

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957904.D Vial: 12
Acq On : 19 Aug 2013 20:45 Operator: adc
Sample : WG441888-09 100.0ug/L A9 ALT SRC 8260 Inst : HPMS9
Misc : 1,1 STD59238 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:51 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	586208	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	409219	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	211008	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	50132	98.8352 ug/L #	98
3) 3-Chloro-1-propene	7.32	41	816431	98.7834 ug/L	100
4) 2-Chloro-1,3-butadiene	8.70	53	671697	75.7179 ug/L	99
5) Ethyl Acetate	9.33	43	396368	99.5003 ug/L	99
6) Methacrylonitrile	9.50	67	193448	96.4696 ug/L	98
7) Isobutyl Alcohol	9.50	43	31033	91.2543 ug/L	97
8) 1-Butanol	10.42	56	7261	88.4379 ug/L	91
9) Methyl methacrylate	11.67	41	399116	94.8636 ug/L	100
10) 2-Nitropropane	12.00	43	115876	86.2281 ug/L	100
12) Cyclohexanone	16.11	55	11072	18.9239 ug/L	96

(#) = qualifier out of range (m) = manual integration
9M957904.D A9FOOWT.M Tue Aug 20 15:11:52 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957904.D Vial: 12
Acq On : 19 Aug 2013 20:45 Operator: adc
Sample : WG441888-09 100.0ug/L A9 ALT SRC 8260 Inst : HPMS9
Misc : 1,1 STD59238 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

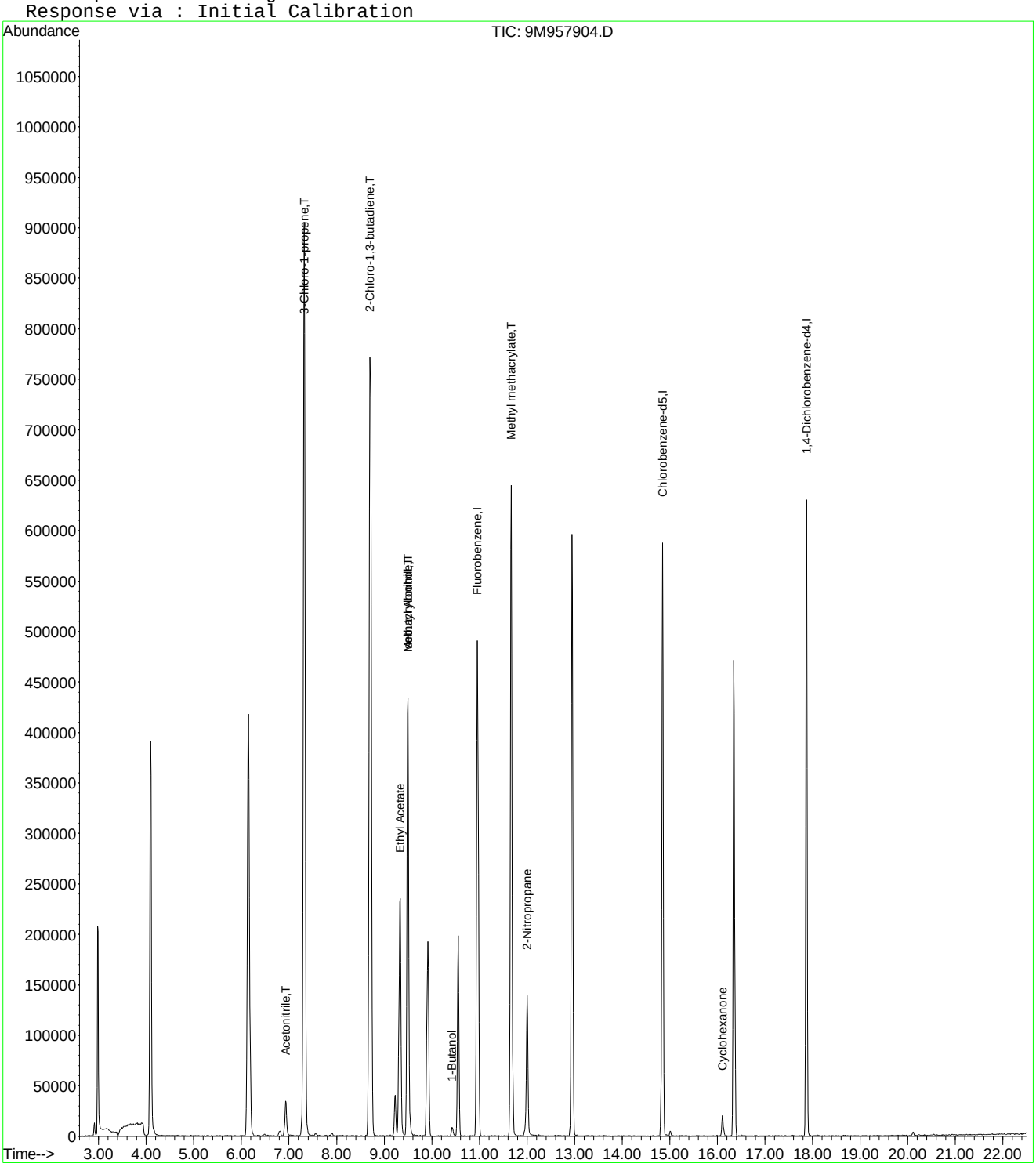

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\081913\9M957904.D Vial: 12
Acq On : 19 Aug 2013 20:45 Operator: adc
Sample : WG441888-09 100.0ug/L A9 ALT SRC 8260 Inst : HPMS9
Misc : 1,1 STD59238 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	102	0.00
2	T	Acetonitrile	100.0000	98.8352	1.2	102	0.00
3	T	3-Chloro-1-propene	100.0000	98.7834	1.2	102	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	75.7179	24.3	78	0.00
5		Ethyl Acetate	100.0000	99.5003	0.5	100	0.00
6	T	Methacrylonitrile	100.0000	96.4696	3.5	100	0.00
7	T	Isobutyl Alcohol	100.0000	91.2543	8.7	101	0.00
8		1-Butanol	100.0000	88.4379	11.6	106	0.00
9	T	Methyl methacrylate	100.0000	94.8636	5.1	97	0.00
10		2-Nitropropane	100.0000	86.2281	13.8	89	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
12		Cyclohexanone	100.0000	18.9239	81.1#	21	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M957904.D A9FOOWT.M Tue Aug 20 15:12:04 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961123.D Vial: 2
Acq On : 30 Jan 2014 9:30 Operator: ADC
Sample : WG461445-02 0.3 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 16:36:13 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 15:47:59 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.93	96	785712	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	580099	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.83	152	278868	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.87	111	243	0.0310 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.12%#	
43) 1,2-Dichloroethane-d4	10.52	65	887	0.0945 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.36%#	
58) Toluene-d8	12.92	98	3003	0.1177 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.48%#	
79) p-Bromofluorobenzene	16.31	95	1387	0.1226 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.48%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	470	1.3201 ug/L #	62
3) Chloromethane	3.78	50	5940	0.6920 ug/L #	64
4) Vinyl Chloride	4.02	62	2949	0.3507 ug/L	94
5) 1,3-Butadiene	4.09	54	2754	Below Cal #	45
6) Bromomethane	4.94	94	2184	0.3483 ug/L	96
7) Chloroethane	5.08	64	1997	0.3129 ug/L #	59
8) Trichlorofluoromethane	5.60	101	3241	0.4562 ug/L #	84
10) Isoprene	6.17	67	3595	0.3038 ug/L	82
12) 1,1,2-Trichloro-1,2,2-Trif	6.37	101	2026	0.2649 ug/L	98
13) Acetone	6.45	43	2571	0.9813 ug/L #	45
14) 1,1-Dichloroethene	6.69	61	4442	0.3021 ug/L	91
15) Tert-Butyl Alcohol	6.79	59	242	Below Cal #	3
16) Dimethyl Sulfide	6.96	62	2064	0.2244 ug/L	68
17) Iodomethane	7.23	142	531	1.1213 ug/L #	35
18) Methyl acetate	7.18	43	1857	0.2410 ug/L #	68
19) Methylene Chloride	7.45	84	2639	0.3070 ug/L	77
20) Carbon Disulfide	7.53	76	7014	0.2733 ug/L #	84
22) Methyl Tert Butyl Ether	7.67	73	6089	0.2699 ug/L #	65
23) trans-1,2-Dichloroethene	7.93	61	4411	0.3032 ug/L	99
24) n-Hexane	8.00	57	3869	0.2895 ug/L	96
26) Vinyl Acetate	8.51	43	2808	0.8983 ug/L #	81
27) 1,1-Dichloroethane	8.55	63	4717	0.2491 ug/L #	88
31) 2,2-Dichloropropane	9.32	77	4528	0.3191 ug/L	83
32) cis-1,2-Dichloroethene	9.39	96	3023	0.3180 ug/L	70
33) Chloroform	9.58	83	4207	0.2731 ug/L	84
35) Bromochloromethane	9.82	130	1075	0.2019 ug/L	85
38) 1,1,1-Trichloroethane	10.13	97	3741	0.2740 ug/L	100
39) Cyclohexane	10.16	56	5488	0.2901 ug/L	96
40) 1,1-Dichloropropene	10.32	75	3151	0.2737 ug/L	80
42) Carbon Tetrachloride	10.47	117	3479	0.2831 ug/L #	86
45) 1,2-Dichloroethane	10.64	62	3216	0.2353 ug/L	86
46) Benzene	10.69	78	10951	0.3125 ug/L	92
47) Trichloroethene	11.43	130	2693	0.2896 ug/L	87
48) Methylcyclohexane	11.53	83	4803	0.3483 ug/L	81
49) 1,2-Dichloropropane	11.65	63	3060	0.2864 ug/L	83
51) Bromodichloromethane	11.95	83	3119	0.2531 ug/L #	76
52) Dibromomethane	12.04	174	1548	0.2816 ug/L	87
53) 2-Chloroethyl Vinyl Ether	12.25	63	822	0.1556 ug/L	98
55) cis-1,3-Dichloropropene	12.58	75	3832	0.2649 ug/L	91
56) Dimethyl Disulfide	12.85	94	4638	0.2916 ug/L	95

(#) = qualifier out of range (m) = manual integration
9M961123.D 8260WTR.M Thu Jan 30 16:36:15 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961123.D Vial: 2
Acq On : 30 Jan 2014 9:30 Operator: ADC
Sample : WG461445-02 0.3 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 16:36:13 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 15:47:59 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
59)	Toluene	13.02	91	11046	0.3138 ug/L	99
60)	Ethyl Methacrylate	13.11	69	2288	0.2299 ug/L #	58
61)	trans-1,3-Dichloropropene	13.19	75	3109	0.2453 ug/L #	77
62)	1,1,2-Trichloroethane	13.40	97	1621	0.2496 ug/L	86
63)	2-Hexanone	13.36	43	746	0.1229 ug/L #	33
64)	1,3-Dichloropropane	13.71	76	3491	0.2766 ug/L	83
65)	Tetrachloroethene	13.84	164	2269	0.2881 ug/L	82
66)	Dibromochloromethane	14.10	129	1625	0.1931 ug/L #	63
67)	1,2-Dibromoethane	14.36	107	1972	0.2688 ug/L	92
68)	1-Chlorohexane	14.44	91	2815	0.2584 ug/L	99
69)	Chlorobenzene	14.85	112	7653	0.3128 ug/L	85
70)	1,1,1,2-Tetrachloroethane	14.89	131	2399	0.2649 ug/L	85
71)	Ethylbenzene	14.88	106	3649	0.2738 ug/L	77
72)	m-,p-Xylene	14.97	106	9329	0.5777 ug/L	98
73)	o-Xylene	15.54	106	5009	0.3024 ug/L	92
74)	Styrene	15.57	104	7591	0.2765 ug/L	91
75)	Bromoform	16.08	173	1225	0.4714 ug/L #	54
76)	Isopropylbenzene	15.96	105	12400	0.2958 ug/L	83
78)	1,1,2,2-Tetrachloroethane	16.17	83	1619	0.4324 ug/L #	66
80)	1,2,3-Trichloropropane	16.37	110	242	0.1881 ug/L #	1
81)	trans-1,4-Dichloro-2-Buten	16.42	53	334	0.4614 ug/L #	1
82)	n-Propylbenzene	16.47	91	13397	0.3025 ug/L	100
83)	Bromobenzene	16.61	156	2921	0.2869 ug/L	95
84)	1,3,5-Trimethylbenzene	16.65	105	9782	0.2860 ug/L	100
85)	2-Chlorotoluene	16.75	91	8965	0.3110 ug/L	99
86)	4-Chlorotoluene	16.79	91	5819	0.2163 ug/L	91
87)	a-Methylstyrene	17.07	118	4145	0.2387 ug/L	95
88)	tert-Butylbenzene	17.13	134	2177	0.2849 ug/L	90
89)	1,2,4-Trimethylbenzene	17.18	105	9932	0.2893 ug/L	95
90)	sec-Butylbenzene	17.40	105	12025	0.2847 ug/L	92
91)	p-Isopropyltoluene	17.55	119	9564	0.2872 ug/L	100
92)	1,3-Dichlorobenzene	17.75	146	4733	0.2466 ug/L	96
93)	1,4-Dichlorobenzene	17.88	146	5802	0.3016 ug/L #	12
94)	n-Butylbenzene	18.07	91	7552	0.2633 ug/L	96
95)	1,2-Dichlorobenzene	18.38	146	5264	0.2817 ug/L	91
97)	1,2,4-Trichlorobenzene	20.51	180	3344	0.2456 ug/L	87
98)	Hexachlorobutadiene	20.66	225	1872	0.2491 ug/L	88
99)	Naphthalene	20.88	128	6615	0.2451 ug/L #	76
100)	1,2,3-Trichlorobenzene	21.19	180	3649	0.2721 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M961123.D 8260WTR.M Thu Jan 30 16:36:15 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961123.D Vial: 2
Acq On : 30 Jan 2014 9:30 Operator: ADC
Sample : WG461445-02 0.3 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 16:36 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 15:47:59 2014
Response via : Initial Calibration

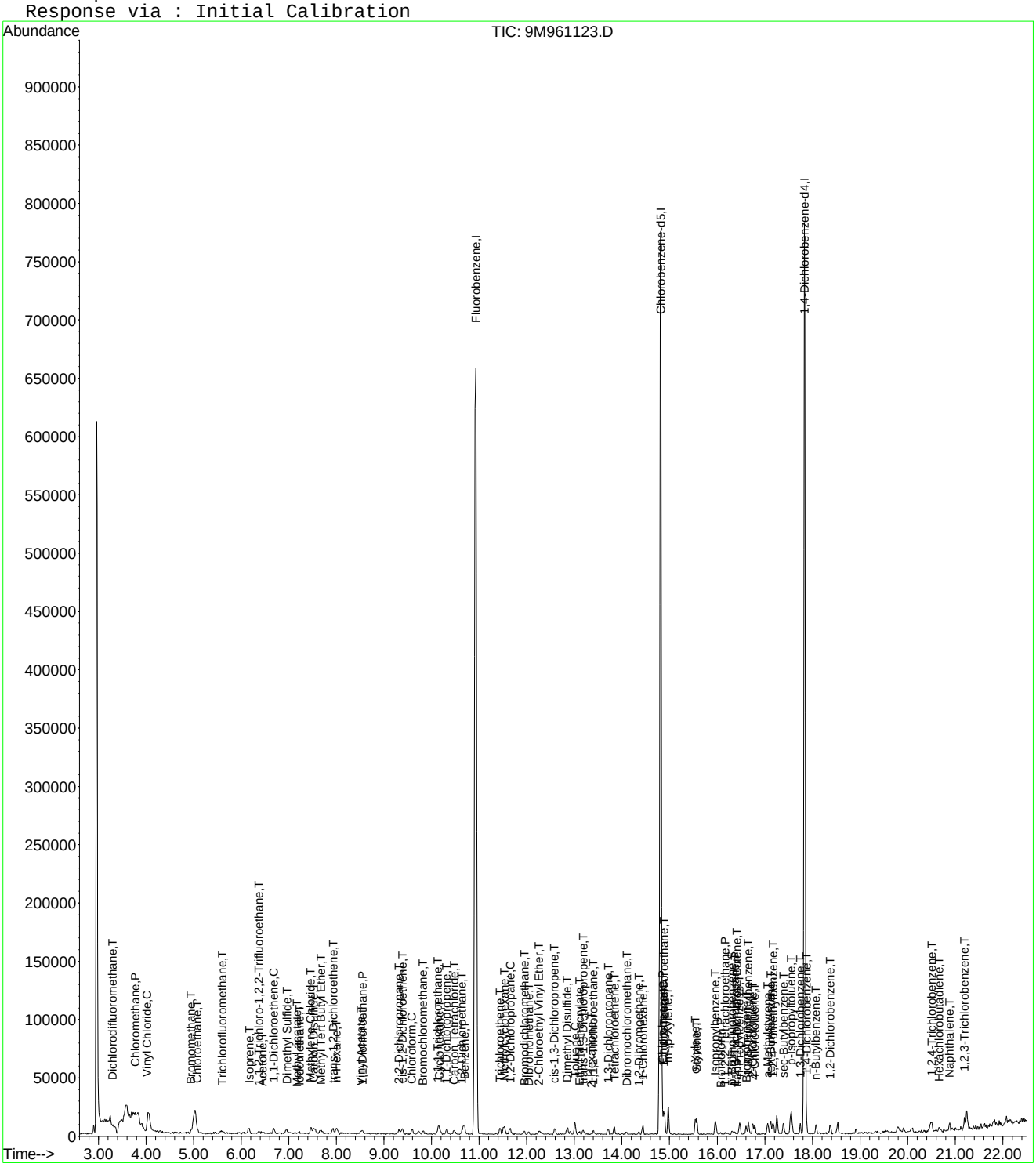

9M961123.D 8260WTR.M Thu Jan 30 16:36:16 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961124.D Vial: 3
Acq On : 30 Jan 2014 9:58 Operator: ADC
Sample : WG461445-03 0.4 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 16:53:24 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.93	96	683422	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	492436	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	257331	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	10.52	65	1025	0.1255 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.52%#	
58) Toluene-d8	12.92	98	3391	0.1565 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.64%#	
79) p-Bromofluorobenzene	16.32	95	1621	0.1553 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.64%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	221	1.2148 ug/L #	62
3) Chloromethane	3.77	50	6264	0.8390 ug/L #	63
4) Vinyl Chloride	4.03	62	2398	0.3279 ug/L	88
6) Bromomethane	4.93	94	2707	0.4964 ug/L	85
7) Chloroethane	5.10	64	2030	0.3657 ug/L #	60
8) Trichlorofluoromethane	5.57	101	1286	0.3231 ug/L #	1
10) Isoprene	6.16	67	4268	0.4146 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.37	101	2417	0.3633 ug/L	56
13) Acetone	6.46	43	1839	0.8070 ug/L #	45
14) 1,1-Dichloroethene	6.68	61	4456	0.3484 ug/L	76
16) Dimethyl Sulfide	6.96	62	3081	0.3851 ug/L	88
17) Iodomethane	7.21	142	525	1.1295 ug/L #	35
18) Methyl acetate	7.23	43	2250	0.3358 ug/L #	68
19) Methylene Chloride	7.46	84	2717	0.3634 ug/L	80
20) Carbon Disulfide	7.52	76	8515	0.3814 ug/L	94
22) Methyl Tert Butyl Ether	7.69	73	7590	0.3868 ug/L	99
23) trans-1,2-Dichloroethene	7.92	61	4691	0.3707 ug/L	89
24) n-Hexane	7.99	57	3897	0.3353 ug/L	95
26) Vinyl Acetate	8.51	43	3759	0.9801 ug/L #	81
27) 1,1-Dichloroethane	8.54	63	6987	0.4243 ug/L #	88
29) 2-Butanone	9.10	43	450	0.1306 ug/L #	60
31) 2,2-Dichloropropane	9.32	77	4767	0.3863 ug/L	79
32) cis-1,2-Dichloroethene	9.39	96	3768	0.4557 ug/L	71
33) Chloroform	9.59	83	5223	0.3898 ug/L	83
34) 1-Bromopropane	9.74	122	195	0.3888 ug/L #	2
35) Bromochloromethane	9.83	130	1648	0.3558 ug/L	91
38) 1,1,1-Trichloroethane	10.11	97	5481	0.4615 ug/L #	68
39) Cyclohexane	10.16	56	6136	0.3728 ug/L	90
40) 1,1-Dichloropropene	10.32	75	3470	0.3465 ug/L #	70
42) Carbon Tetrachloride	10.47	117	4009	0.3751 ug/L #	88
45) 1,2-Dichloroethane	10.64	62	5113	0.4301 ug/L	88
46) Benzene	10.68	78	12781	0.4193 ug/L	93
47) Trichloroethene	11.43	130	3233	0.3997 ug/L	92
48) Methylcyclohexane	11.52	83	5117	0.4266 ug/L	86
49) 1,2-Dichloropropane	11.65	63	3197	0.3441 ug/L	78
51) Bromodichloromethane	11.95	83	3659	0.3414 ug/L #	89
52) Dibromomethane	12.04	174	1583	0.3311 ug/L	83
53) 2-Chloroethyl Vinyl Ether	12.24	63	1421	0.3092 ug/L #	51
54) 4-Methyl-2-Pentanone	12.27	58	630	0.2130 ug/L #	46
55) cis-1,3-Dichloropropene	12.58	75	4607	0.3661 ug/L	89

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961124.D Vial: 3
Acq On : 30 Jan 2014 9:58 Operator: ADC
Sample : WG461445-03 0.4 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 16:53:24 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.85	94	5204	0.3761 ug/L	90
59)	Toluene	13.00	91	12979	0.4344 ug/L	93
60)	Ethyl Methacrylate	13.11	69	2647	0.3133 ug/L #	58
61)	trans-1,3-Dichloropropene	13.18	75	3803	0.3535 ug/L	88
62)	1,1,2-Trichloroethane	13.40	97	1975	0.3582 ug/L	92
63)	2-Hexanone	13.34	43	1291	0.2505 ug/L #	30
64)	1,3-Dichloropropane	13.70	76	4592	0.4286 ug/L	95
65)	Tetrachloroethene	13.83	164	2623	0.3923 ug/L	89
66)	Dibromochloromethane	14.10	129	2573	0.3602 ug/L	99
67)	1,2-Dibromoethane	14.36	107	2232	0.3584 ug/L	90
68)	1-Chlorohexane	14.43	91	3739	0.4043 ug/L	95
69)	Chlorobenzene	14.85	112	8960	0.4314 ug/L	96
70)	1,1,1,2-Tetrachloroethane	14.89	131	2505	0.3259 ug/L	70
71)	Ethylbenzene	14.88	106	4606	0.4071 ug/L	96
72)	m-,p-Xylene	14.98	106	11497	0.8386 ug/L	96
73)	o-Xylene	15.54	106	5856	0.4164 ug/L	91
74)	Styrene	15.58	104	9278	0.3981 ug/L	96
75)	Bromoform	16.08	173	1687	0.3489 ug/L	89
76)	Isopropylbenzene	15.96	105	15960	0.4485 ug/L	98
78)	1,1,2,2-Tetrachloroethane	16.18	83	2176	0.5193 ug/L #	85
80)	1,2,3-Trichloropropane	16.37	110	536	0.3234 ug/L #	89
81)	trans-1,4-Dichloro-2-Buten	16.41	53	316	0.4639 ug/L	93
82)	n-Propylbenzene	16.48	91	15604	0.3818 ug/L	95
83)	Bromobenzene	16.61	156	3734	0.3974 ug/L	72
84)	1,3,5-Trimethylbenzene	16.66	105	11908	0.3773 ug/L	95
85)	2-Chlorotoluene	16.74	91	10630	0.3997 ug/L	96
86)	4-Chlorotoluene	16.80	91	8160	0.3287 ug/L	90
87)	a-Methylstyrene	17.07	118	5624	0.3510 ug/L	95
88)	tert-Butylbenzene	17.13	134	2891	0.4100 ug/L	88
89)	1,2,4-Trimethylbenzene	17.18	105	11880	0.3751 ug/L	91
90)	sec-Butylbenzene	17.39	105	14970	0.3841 ug/L	97
91)	p-Isopropyltoluene	17.55	119	11045	0.3594 ug/L	96
92)	1,3-Dichlorobenzene	17.75	146	7095	0.4005 ug/L	99
93)	1,4-Dichlorobenzene	17.88	146	6702	0.3776 ug/L	83
94)	n-Butylbenzene	18.08	91	8567	0.3237 ug/L	91
95)	1,2-Dichlorobenzene	18.38	146	6802	0.3944 ug/L	89
97)	1,2,4-Trichlorobenzene	20.52	180	4761	0.3790 ug/L	96
98)	Hexachlorobutadiene	20.66	225	2427	0.3499 ug/L #	73
99)	Naphthalene	20.89	128	8902	0.3575 ug/L	94
100)	1,2,3-Trichlorobenzene	21.19	180	4722	0.3815 ug/L	87

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961124.D Vial: 3
Acq On : 30 Jan 2014 9:58 Operator: ADC
Sample : WG461445-03 0.4 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 16:53 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration

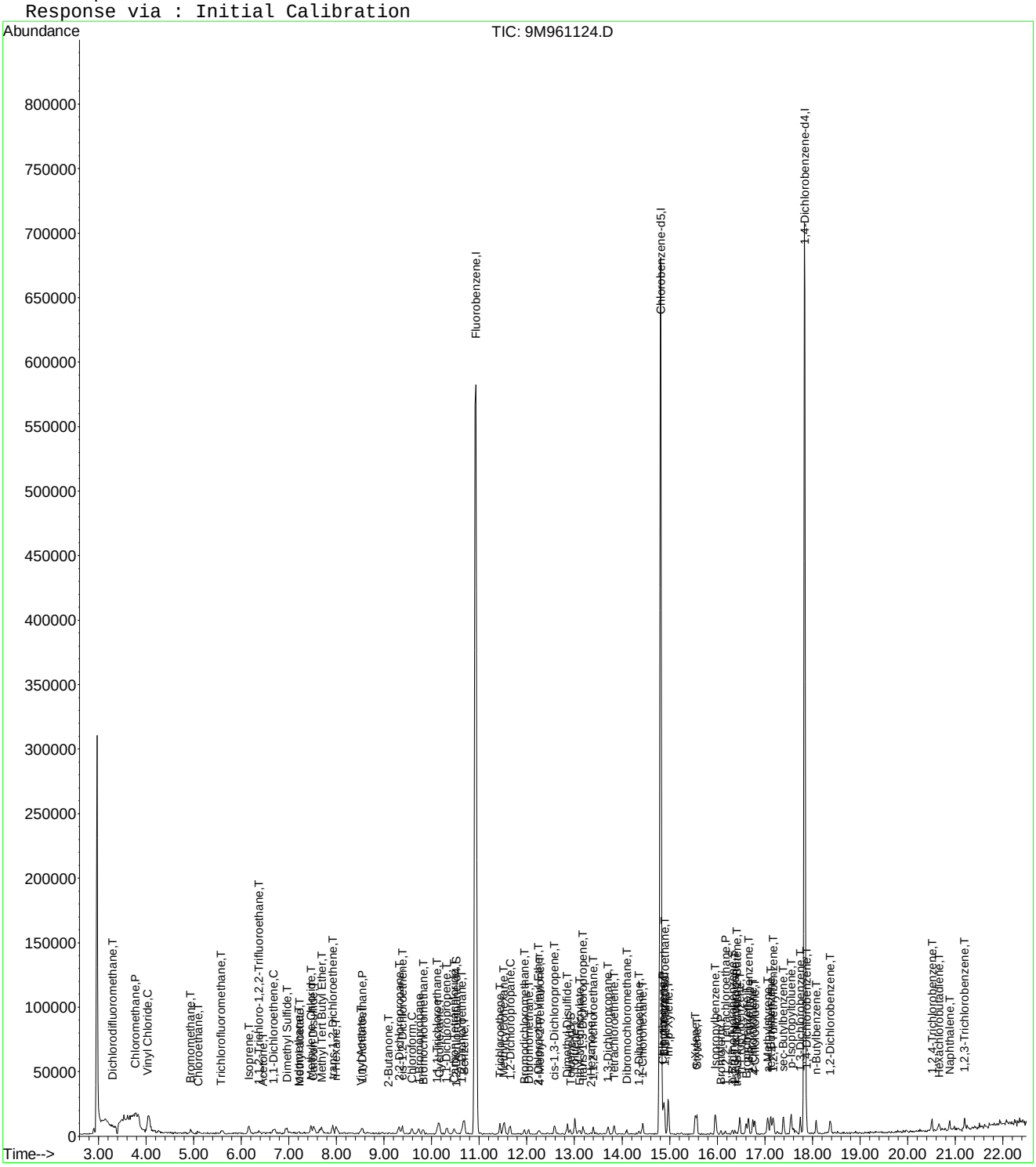

9M961124.D 8260WTR.M Thu Jan 30 16:53:26 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961126.D Vial: 5
Acq On : 30 Jan 2014 10:56 Operator: ADC
Sample : WG461445-05 2.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 16:57:06 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	638324	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	459896	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	210949	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.88	111	6407	1.0060 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.04%#	
43) 1,2-Dichloroethane-d4	10.51	65	9300	1.2194 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.88%#	
58) Toluene-d8	12.91	98	24486	1.2102 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.84%#	
79) p-Bromofluorobenzene	16.31	95	9328	1.0901 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.36%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	2660	1.7440 ug/L #	62
3) Chloromethane	3.78	50	11507	1.6501 ug/L	87
4) Vinyl Chloride	4.02	62	12363	1.8098 ug/L	85
5) 1,3-Butadiene	4.07	54	12639	1.7601 ug/L	87
6) Bromomethane	4.94	94	10511	2.0636 ug/L	91
7) Chloroethane	5.09	64	9924	1.9140 ug/L	94
8) Trichlorofluoromethane	5.59	101	19950	2.0666 ug/L	96
9) Diethyl ether	6.12	59	141858	22.3869 ug/L	97
10) Isoprene	6.15	67	17452	1.8152 ug/L	98
11) Acrolein	6.37	56	7955	10.1910 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.37	101	11811	1.9006 ug/L	98
13) Acetone	6.45	43	5238	2.4609 ug/L	87
14) 1,1-Dichloroethene	6.69	61	23462	1.9639 ug/L	96
15) Tert-Butyl Alcohol	6.77	59	22001	44.5943 ug/L #	96
16) Dimethyl Sulfide	6.94	62	13874	1.8566 ug/L	91
17) Iodomethane	7.21	142	6068	1.8973 ug/L	90
18) Methyl acetate	7.21	43	13260	2.1186 ug/L #	85
19) Methylene Chloride	7.46	84	12871	1.8432 ug/L	79
20) Carbon Disulfide	7.52	76	38660	1.8540 ug/L	99
21) Acrylonitrile	7.65	53	26438	10.0536 ug/L	100
22) Methyl Tert Butyl Ether	7.68	73	35464	1.9352 ug/L	96
23) trans-1,2-Dichloroethene	7.93	61	22774	1.9270 ug/L	100
24) n-Hexane	8.00	57	18587	1.7121 ug/L	92
25) Diisopropyl ether	8.33	45	731985	22.9473 ug/L	100
26) Vinyl Acetate	8.52	43	20239	2.0938 ug/L	94
27) 1,1-Dichloroethane	8.54	63	31352	2.0384 ug/L	96
28) Ethyl-Tert-Butyl ether	8.91	59	583423	22.5141 ug/L	99
29) 2-Butanone	9.08	43	6872	2.1359 ug/L #	76
30) Propionitrile	9.19	54	18648	20.3104 ug/L	99
31) 2,2-Dichloropropane	9.32	77	23446	2.0340 ug/L	100
32) cis-1,2-Dichloroethene	9.37	96	15647	2.0258 ug/L	92
33) Chloroform	9.59	83	24807	1.9820 ug/L	99
34) 1-Bromopropane	9.72	122	2758	2.3000 ug/L	81
35) Bromochloromethane	9.83	130	8396	1.9409 ug/L	94
36) Tetrahydrofuran	9.84	42	41315	21.0010 ug/L	97
38) 1,1,1-Trichloroethane	10.13	97	22388	2.0183 ug/L	96
39) Cyclohexane	10.16	56	29367	1.9105 ug/L	99
40) 1,1-Dichloropropene	10.32	75	19061	2.0377 ug/L	98
41) Tert-Amyl-Methyl ether	10.42	73	397439	22.2029 ug/L	99
42) Carbon Tetrachloride	10.48	117	20582	2.0616 ug/L	89

(#) = qualifier out of range (m) = manual integration
9M961126.D 8260WTR.M Thu Jan 30 16:58:35 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961126.D Vial: 5
Acq On : 30 Jan 2014 10:56 Operator: ADC
Sample : WG461445-05 2.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 16:57:06 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.63	62	21642	1.9492 ug/L	99
46)	Benzene	10.69	78	58851	2.0670 ug/L	98
47)	Trichloroethene	11.44	130	15875	2.1013 ug/L	95
48)	Methylcyclohexane	11.51	83	20880	1.8636 ug/L	94
49)	1,2-Dichloropropane	11.65	63	17235	1.9859 ug/L	94
50)	1,4-Dioxane	11.93	88	1943	53.5700 ug/L	75
51)	Bromodichloromethane	11.95	83	20967	2.0942 ug/L	97
52)	Dibromomethane	12.04	174	8882	1.9889 ug/L	92
53)	2-Chloroethyl Vinyl Ether	12.25	63	7735	1.8022 ug/L	89
54)	4-Methyl-2-Pentanone	12.27	58	4223	1.5290 ug/L	91
55)	cis-1,3-Dichloropropene	12.59	75	22599	1.9228 ug/L	99
56)	Dimethyl Disulfide	12.85	94	25679	1.9870 ug/L	98
59)	Toluene	13.01	91	54927	1.9683 ug/L	99
60)	Ethyl Methacrylate	13.09	69	15094	1.9132 ug/L	95
61)	trans-1,3-Dichloropropene	13.18	75	18051	1.7967 ug/L	100
62)	1,1,2-Trichloroethane	13.39	97	9747	1.8930 ug/L	99
63)	2-Hexanone	13.33	43	8265	1.7175 ug/L #	90
64)	1,3-Dichloropropane	13.70	76	18257	1.8245 ug/L	86
65)	Tetrachloroethene	13.84	164	12232	1.9588 ug/L	98
66)	Dibromochloromethane	14.10	129	12932	1.9383 ug/L	97
67)	1,2-Dibromoethane	14.36	107	10895	1.8734 ug/L	100
68)	1-Chlorohexane	14.44	91	16680	1.9311 ug/L	98
69)	Chlorobenzene	14.86	112	40528	2.0892 ug/L	95
70)	1,1,1,2-Tetrachloroethane	14.89	131	14220	1.9808 ug/L	98
71)	Ethylbenzene	14.88	106	20454	1.9357 ug/L	97
72)	m-,p-Xylene	14.98	106	52309	4.0856 ug/L	97
73)	o-Xylene	15.53	106	25502	1.9417 ug/L	96
74)	Styrene	15.57	104	43043	1.9776 ug/L	98
75)	Bromoform	16.07	173	8420	1.8645 ug/L	96
76)	Isopropylbenzene	15.96	105	64797	1.9499 ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.17	83	9597	1.7337 ug/L	96
80)	1,2,3-Trichloropropane	16.37	110	3979	2.1919 ug/L #	91
81)	trans-1,4-Dichloro-2-Buten	16.41	53	3720	1.7999 ug/L #	40
82)	n-Propylbenzene	16.47	91	67872	2.0259 ug/L	99
83)	Bromobenzene	16.61	156	14576	1.8926 ug/L	83
84)	1,3,5-Trimethylbenzene	16.66	105	53897	2.0831 ug/L	96
85)	2-Chlorotoluene	16.74	91	44039	2.0198 ug/L	100
86)	4-Chlorotoluene	16.79	91	42426	2.0850 ug/L	99
87)	a-Methylstyrene	17.06	118	24508	1.8661 ug/L	96
88)	tert-Butylbenzene	17.12	134	12272	2.1231 ug/L	98
89)	1,2,4-Trimethylbenzene	17.18	105	54053	2.0817 ug/L	98
90)	sec-Butylbenzene	17.39	105	65102	2.0377 ug/L	98
91)	p-Isopropyltoluene	17.55	119	51184	2.0320 ug/L	100
92)	1,3-Dichlorobenzene	17.74	146	28391	1.9552 ug/L	98
93)	1,4-Dichlorobenzene	17.88	146	26794	1.8413 ug/L	84
94)	n-Butylbenzene	18.08	91	38118	1.7568 ug/L	97
95)	1,2-Dichlorobenzene	18.38	146	27888	1.9728 ug/L	98
96)	1,2-Dibromo-3-Chloropropan	19.38	157	2338	1.7266 ug/L	98
97)	1,2,4-Trichlorobenzene	20.51	180	17781	1.7267 ug/L	98
98)	Hexachlorobutadiene	20.67	225	9453	1.6626 ug/L	95
99)	Naphthalene	20.89	128	38664	1.8939 ug/L	96
100)	1,2,3-Trichlorobenzene	21.20	180	18821	1.8550 ug/L	95

(#) = qualifier out of range (m) = manual integration
9M961126.D 8260WTR.M Thu Jan 30 16:58:35 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961126.D Vial: 5
Acq On : 30 Jan 2014 10:56 Operator: ADC
Sample : WG461445-05 2.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 16:57 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration

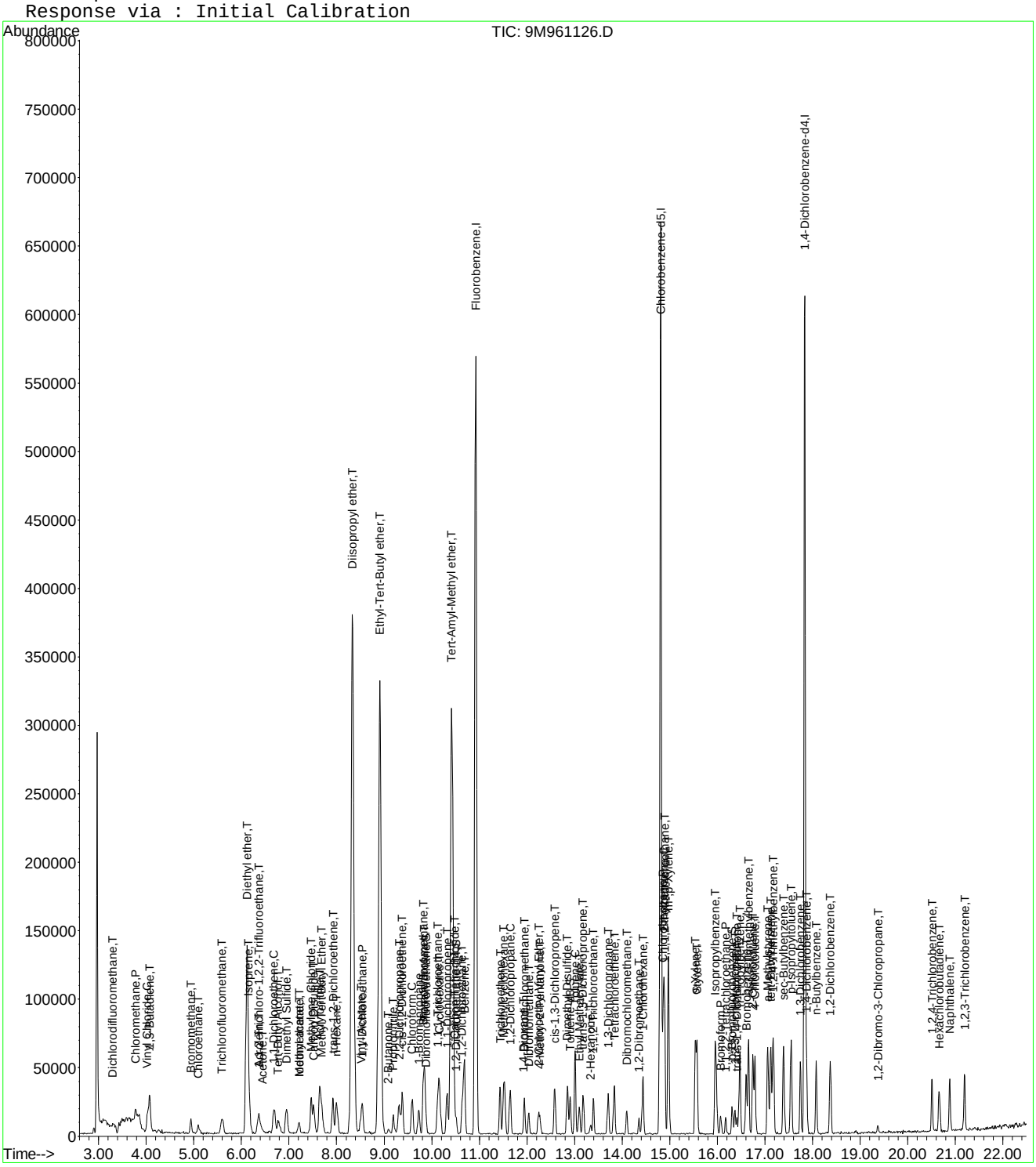

9M961126.D 8260WTR.M Thu Jan 30 16:58:36 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961129.D Vial: 8
Acq On : 30 Jan 2014 12:22 Operator: ADC
Sample : WG461445-08 50.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:36 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	633808	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	474328	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	232079	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.88	111	168299	26.6147 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.44%		
43) 1,2-Dichloroethane-d4	10.51	65	188942	24.9498 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.80%		
58) Toluene-d8	12.91	98	515415	24.6980 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.80%		
79) p-Bromofluorobenzene	16.31	95	241112	25.6108 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.31	85	239594	53.2213 ug/L	100
3) Chloromethane	3.77	50	397878	57.4610 ug/L	100
4) Vinyl Chloride	4.02	62	404540	59.6420 ug/L	100
5) 1,3-Butadiene	4.06	54	277897	52.2246 ug/L	100
6) Bromomethane	4.94	94	251639	49.7551 ug/L	100
7) Chloroethane	5.10	64	295328	57.3630 ug/L	100
8) Trichlorofluoromethane	5.59	101	574115	53.9823 ug/L	100
9) Diethyl ether	6.12	59	682840	108.5281 ug/L	100
10) Isoprene	6.16	67	538770	56.4372 ug/L	100
11) Acrolein	6.35	56	46588	55.5387 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.37	101	344206	55.7823 ug/L	100
13) Acetone	6.45	43	107716	50.9675 ug/L	100
14) 1,1-Dichloroethene	6.69	61	665560	56.1075 ug/L	100
15) Tert-Butyl Alcohol	6.78	59	113247	205.0151 ug/L	100
16) Dimethyl Sulfide	6.95	62	419496	56.5373 ug/L	100
17) Iodomethane	7.20	142	382681	54.1160 ug/L	100
18) Methyl acetate	7.20	43	324952	52.2888 ug/L	100
19) Methylene Chloride	7.46	84	383327	55.2861 ug/L	100
20) Carbon Disulfide	7.51	76	1129535	54.5537 ug/L	100
21) Acrylonitrile	7.64	53	151091	57.8648 ug/L	100
22) Methyl Tert Butyl Ether	7.68	73	987319	54.2597 ug/L	100
23) trans-1,2-Dichloroethene	7.92	61	627510	53.4749 ug/L	100
24) n-Hexane	8.00	57	616377	57.1802 ug/L	100
25) Diisopropyl ether	8.33	45	3449642	108.9150 ug/L	100
26) Vinyl Acetate	8.51	43	792168	53.8590 ug/L	100
27) 1,1-Dichloroethane	8.54	63	805417	52.7376 ug/L	100
28) Ethyl-Tert-Butyl ether	8.91	59	2805741	109.0438 ug/L	100
29) 2-Butanone	9.08	43	159953	50.0703 ug/L	100
30) Propionitrile	9.19	54	104524	101.5129 ug/L	100
31) 2,2-Dichloropropane	9.31	77	626274	54.7182 ug/L	100
32) cis-1,2-Dichloroethene	9.37	96	401706	52.3795 ug/L	100
33) Chloroform	9.59	83	679286	54.6595 ug/L	100
34) 1-Bromopropane	9.73	122	72537	54.4572 ug/L	100
35) Bromochloromethane	9.82	130	235164	54.7507 ug/L	100
36) Tetrahydrofuran	9.84	42	216594	110.8821 ug/L	100
38) 1,1,1-Trichloroethane	10.12	97	582904	52.9239 ug/L	100
39) Cyclohexane	10.16	56	845043	55.3669 ug/L	100
40) 1,1-Dichloropropene	10.31	75	518191	55.7907 ug/L	100
41) Tert-Amyl-Methyl ether	10.42	73	1924548	108.2807 ug/L	100
42) Carbon Tetrachloride	10.47	117	530557	53.5215 ug/L	100

(#) = qualifier out of range (m) = manual integration
9M961129.D 8260WTR.M Thu Jan 30 17:06:37 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961129.D Vial: 8
Acq On : 30 Jan 2014 12:22 Operator: ADC
Sample : WG461445-08 50.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:36 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.64	62	587744	53.3140 ug/L	100
46)	Benzene	10.68	78	1514587	53.5743 ug/L	100
47)	Trichloroethene	11.43	130	389748	51.9559 ug/L	100
48)	Methylcyclohexane	11.52	83	606721	54.5372 ug/L	100
49)	1,2-Dichloropropane	11.65	63	470768	54.6308 ug/L	100
50)	1,4-Dioxane	11.93	88	10867	203.4385 ug/L	100
51)	Bromodichloromethane	11.95	83	542568	54.5787 ug/L	100
52)	Dibromomethane	12.04	174	244323	55.0994 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.24	63	232461	54.5489 ug/L	100
54)	4-Methyl-2-Pentanone	12.27	58	140209	51.1260 ug/L	100
55)	cis-1,3-Dichloropropene	12.58	75	638288	54.6961 ug/L	100
56)	Dimethyl Disulfide	12.85	94	711761	55.4668 ug/L	100
59)	Toluene	13.01	91	1523145	52.9199 ug/L	100
60)	Ethyl Methacrylate	13.09	69	449570	55.2497 ug/L	100
61)	trans-1,3-Dichloropropene	13.18	75	570689	55.0747 ug/L	100
62)	1,1,2-Trichloroethane	13.39	97	289275	54.4717 ug/L	100
63)	2-Hexanone	13.33	43	250621	50.4957 ug/L	100
64)	1,3-Dichloropropane	13.70	76	551279	53.4147 ug/L	100
65)	Tetrachloroethene	13.83	164	336982	52.3226 ug/L	100
66)	Dibromochloromethane	14.10	129	376196	54.6693 ug/L	100
67)	1,2-Dibromoethane	14.36	107	320215	53.3845 ug/L	100
68)	1-Chlorohexane	14.44	91	484141	54.3465 ug/L	100
69)	Chlorobenzene	14.86	112	1051115	52.5371 ug/L	100
70)	1,1,1,2-Tetrachloroethane	14.88	131	398997	53.8882 ug/L	100
71)	Ethylbenzene	14.88	106	578833	53.1109 ug/L	100
72)	m-,p-Xylene	14.98	106	1410365	106.8052 ug/L	100
73)	o-Xylene	15.53	106	712850	52.6241 ug/L	100
74)	Styrene	15.58	104	1204676	53.6641 ug/L	100
75)	Bromoform	16.07	173	270259	58.0250 ug/L	100
76)	Isopropylbenzene	15.96	105	1781011	51.9651 ug/L	100
78)	1,1,2,2-Tetrachloroethane	16.17	83	356150	50.5593 ug/L	100
80)	1,2,3-Trichloropropane	16.37	110	107384	51.6177 ug/L	100
81)	trans-1,4-Dichloro-2-Buten	16.41	53	153167	54.1053 ug/L	100
82)	n-Propylbenzene	16.46	91	2038119	55.2965 ug/L	100
83)	Bromobenzene	16.61	156	457373	53.9802 ug/L	100
84)	1,3,5-Trimethylbenzene	16.66	105	1555070	54.6310 ug/L	100
85)	2-Chlorotoluene	16.74	91	1242448	51.7946 ug/L	100
86)	4-Chlorotoluene	16.79	91	1231577	55.0157 ug/L	100
87)	a-Methylstyrene	17.06	118	801615	55.4785 ug/L	100
88)	tert-Butylbenzene	17.13	134	338409	53.2150 ug/L	100
89)	1,2,4-Trimethylbenzene	17.18	105	1579962	55.3065 ug/L	100
90)	sec-Butylbenzene	17.39	105	1939092	55.1691 ug/L	100
91)	p-Isopropyltoluene	17.55	119	1547216	55.8311 ug/L	100
92)	1,3-Dichlorobenzene	17.75	146	855061	53.5235 ug/L	100
93)	1,4-Dichlorobenzene	17.88	146	861680	53.8252 ug/L	100
94)	n-Butylbenzene	18.08	91	1382474	57.9148 ug/L	100
95)	1,2-Dichlorobenzene	18.38	146	842056	54.1432 ug/L	100
96)	1,2-Dibromo-3-Chloropropan	19.37	157	79530	53.3856 ug/L	100
97)	1,2,4-Trichlorobenzene	20.52	180	634343	55.9913 ug/L	100
98)	Hexachlorobutadiene	20.66	225	354842	56.7262 ug/L	100
99)	Naphthalene	20.89	128	1246427	55.4958 ug/L	100
100)	1,2,3-Trichlorobenzene	21.19	180	618069	55.3717 ug/L	100

(#) = qualifier out of range (m) = manual integration
9M961129.D 8260WTR.M Thu Jan 30 17:06:38 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961129.D Vial: 8
Acq On : 30 Jan 2014 12:22 Operator: ADC
Sample : WG461445-08 50.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration

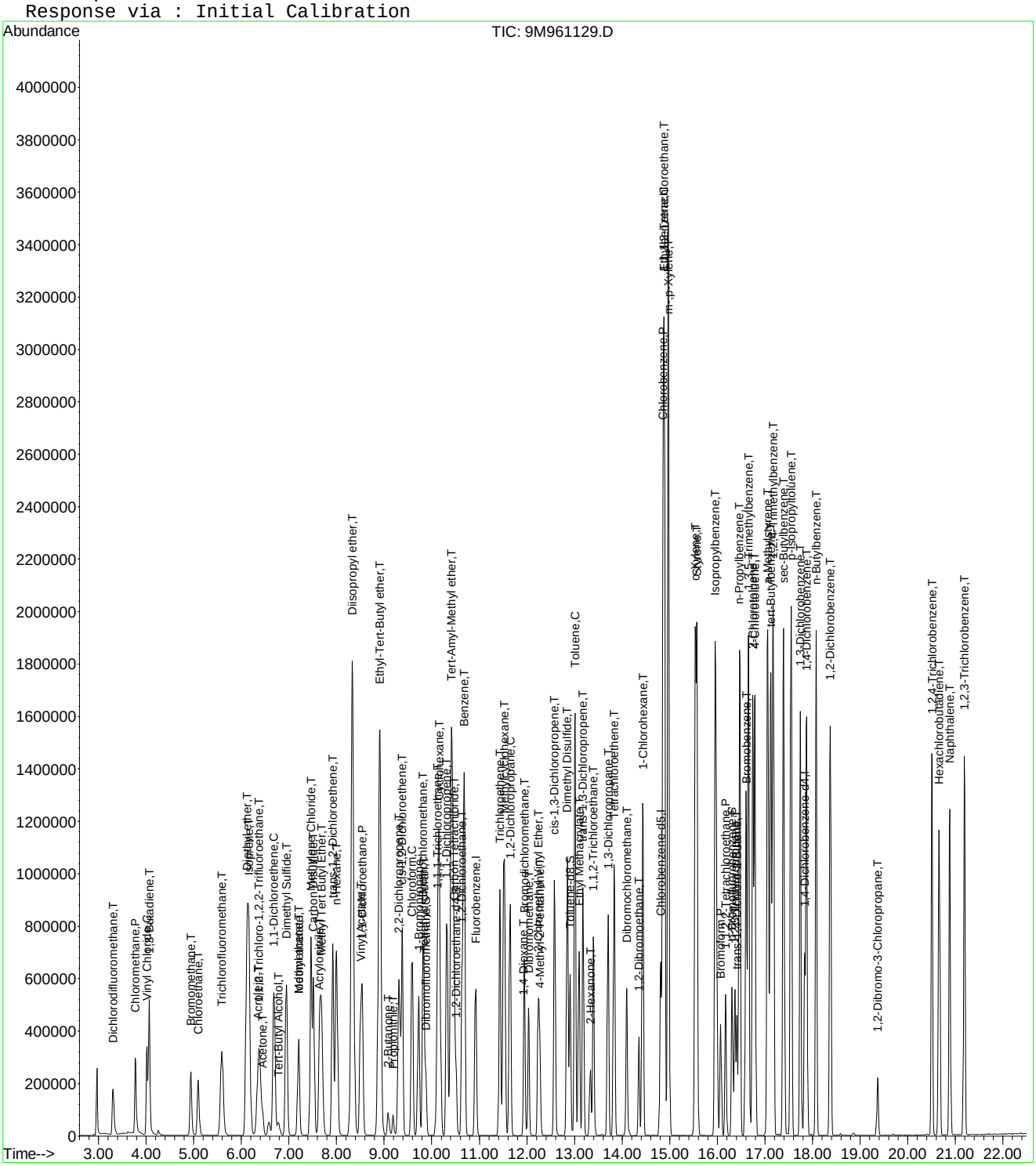

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961130.D Vial: 9
Acq On : 30 Jan 2014 12:51 Operator: ADC
Sample : WG461445-09 100.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:39 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.93	96	681141	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	501929	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	255914	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.87	111	340376	50.0864 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 200.36%#		
43) 1,2-Dichloroethane-d4	10.51	65	382631	47.0152 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 188.08%#		
58) Toluene-d8	12.91	98	1015372	45.9798 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 183.92%#		
79) p-Bromofluorobenzene	16.31	95	493144	47.5029 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 190.00%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	492704	100.7705 ug/L	100
3) Chloromethane	3.77	50	752611	101.1379 ug/L	98
4) Vinyl Chloride	4.01	62	803644	110.2491 ug/L	99
5) 1,3-Butadiene	4.06	54	500615	90.9045 ug/L	99
6) Bromomethane	4.93	94	502560	92.4631 ug/L	98
7) Chloroethane	5.10	64	581607	105.1181 ug/L	99
8) Trichlorofluoromethane	5.59	101	1151244	100.5427 ug/L	99
9) Diethyl ether	6.11	59	1361499	201.3545 ug/L	100
10) Isoprene	6.16	67	1057237	103.0516 ug/L	99
11) Acrolein	6.35	56	88640	97.6081 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.38	101	689388	103.9592 ug/L	99
13) Acetone	6.45	43	218862	96.3617 ug/L	99
14) 1,1-Dichloroethene	6.68	61	1321444	103.6580 ug/L	100
15) Tert-Butyl Alcohol	6.78	59	261552	387.8886 ug/L	97
16) Dimethyl Sulfide	6.95	62	821746	103.0542 ug/L	100
17) Iodomethane	7.20	142	772979	100.7791 ug/L	100
18) Methyl acetate	7.20	43	680346	101.8685 ug/L	100
19) Methylene Chloride	7.46	84	754330	101.2346 ug/L	100
20) Carbon Disulfide	7.51	76	2235871	100.4828 ug/L	99
21) Acrylonitrile	7.64	53	316637	112.8388 ug/L	100
22) Methyl Tert Butyl Ether	7.67	73	1977709	101.1354 ug/L	100
23) trans-1,2-Dichloroethene	7.92	61	1239938	98.3219 ug/L	100
24) n-Hexane	8.00	57	1250394	107.9361 ug/L	99
25) Diisopropyl ether	8.33	45	6666655	195.8585 ug/L	99
26) Vinyl Acetate	8.50	43	1620077	101.8197 ug/L	98
27) 1,1-Dichloroethane	8.54	63	1596201	97.2540 ug/L	99
28) Ethyl-Tert-Butyl ether	8.91	59	5531499	200.0401 ug/L	99
29) 2-Butanone	9.09	43	352797	102.7621 ug/L	100
30) Propionitrile	9.19	54	219652	195.7976 ug/L	98
31) 2,2-Dichloropropane	9.31	77	1233938	100.3187 ug/L	99
32) cis-1,2-Dichloroethene	9.37	96	788565	95.6778 ug/L	99
33) Chloroform	9.58	83	1344385	100.6601 ug/L	99
34) 1-Bromopropane	9.73	122	142351	99.2342 ug/L	100
35) Bromochloromethane	9.82	130	476307	103.1874 ug/L	96
36) Tetrahydrofuran	9.84	42	446568	212.7273 ug/L	99
38) 1,1,1-Trichloroethane	10.12	97	1156789	97.7303 ug/L	99
39) Cyclohexane	10.16	56	1677720	102.2850 ug/L	99
40) 1,1-Dichloropropene	10.32	75	1021812	102.3679 ug/L	99
41) Tert-Amyl-Methyl ether	10.42	73	3852445	201.6878 ug/L	99
42) Carbon Tetrachloride	10.47	117	1073841	100.7992 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961130.D Vial: 9
Acq On : 30 Jan 2014 12:51 Operator: ADC
Sample : WG461445-09 100.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:39 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.64	62	1149188	96.9984 ug/L	100
46)	Benzene	10.68	78	2945584	96.9515 ug/L	100
47)	Trichloroethene	11.43	130	767857	95.2472 ug/L	99
48)	Methylcyclohexane	11.52	83	1211898	101.3655 ug/L	98
49)	1,2-Dichloropropane	11.65	63	922593	99.6234 ug/L	100
50)	1,4-Dioxane	11.93	88	24832	408.6694 ug/L	100
51)	Bromodichloromethane	11.95	83	1079262	101.0222 ug/L	99
52)	Dibromomethane	12.03	174	493379	103.5341 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.24	63	488310	106.6232 ug/L	100
54)	4-Methyl-2-Pentanone	12.27	58	302183	102.5314 ug/L	99
55)	cis-1,3-Dichloropropene	12.58	75	1276966	101.8215 ug/L	100
56)	Dimethyl Disulfide	12.85	94	1407596	102.0700 ug/L	100
59)	Toluene	13.01	91	2929822	96.1956 ug/L	99
60)	Ethyl Methacrylate	13.10	69	885347	102.8212 ug/L	99
61)	trans-1,3-Dichloropropene	13.18	75	1132028	103.2396 ug/L	99
62)	1,1,2-Trichloroethane	13.40	97	570879	101.5875 ug/L	100
63)	2-Hexanone	13.33	43	537759	102.3909 ug/L	99
64)	1,3-Dichloropropane	13.71	76	1080323	98.9189 ug/L	100
65)	Tetrachloroethene	13.83	164	671104	98.4712 ug/L	100
66)	Dibromochloromethane	14.10	129	743561	102.1133 ug/L	98
67)	1,2-Dibromoethane	14.36	107	649923	102.3933 ug/L	97
68)	1-Chlorohexane	14.44	91	973183	103.2358 ug/L	100
69)	Chlorobenzene	14.85	112	2056839	97.1522 ug/L	98
70)	1,1,1,2-Tetrachloroethane	14.88	131	796416	101.6485 ug/L	99
71)	Ethylbenzene	14.88	106	1150532	99.7621 ug/L	98
72)	m-,p-Xylene	14.98	106	2740584	196.1283 ug/L	99
73)	o-Xylene	15.53	106	1419661	99.0394 ug/L	98
74)	Styrene	15.58	104	2414315	101.6352 ug/L	99
75)	Bromoform	16.07	173	567241	115.0904 ug/L	99
76)	Isopropylbenzene	15.96	105	3562390	98.2253 ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.18	83	763218	98.0276 ug/L	99
80)	1,2,3-Trichloropropane	16.37	110	229050	99.7607 ug/L	97
81)	trans-1,4-Dichloro-2-Buten	16.41	53	285545	91.2213 ug/L	83
82)	n-Propylbenzene	16.46	91	4056352	99.8035 ug/L	98
83)	Bromobenzene	16.61	156	926339	99.1460 ug/L	99
84)	1,3,5-Trimethylbenzene	16.66	105	3102348	98.8375 ug/L	98
85)	2-Chlorotoluene	16.74	91	2494203	94.2931 ug/L	91
86)	4-Chlorotoluene	16.80	91	2528097	102.4143 ug/L	88
87)	a-Methylstyrene	17.06	118	1647236	103.3848 ug/L	99
88)	tert-Butylbenzene	17.13	134	681661	97.2081 ug/L	99
89)	1,2,4-Trimethylbenzene	17.18	105	3149860	99.9914 ug/L	98
90)	sec-Butylbenzene	17.39	105	3881003	100.1343 ug/L	100
91)	p-Isopropyltoluene	17.55	119	3106680	101.6631 ug/L	100
92)	1,3-Dichlorobenzene	17.75	146	1746032	99.1155 ug/L	99
93)	1,4-Dichlorobenzene	17.88	146	1769885	100.2597 ug/L	99
94)	n-Butylbenzene	18.08	91	2828333	107.4497 ug/L	99
95)	1,2-Dichlorobenzene	18.38	146	1721942	100.4068 ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.37	157	169506	103.1859 ug/L	98
97)	1,2,4-Trichlorobenzene	20.52	180	1331227	106.5590 ug/L	99
98)	Hexachlorobutadiene	20.66	225	749575	108.6691 ug/L	99
99)	Naphthalene	20.89	128	2591353	104.6314 ug/L	100
100)	1,2,3-Trichlorobenzene	21.19	180	1268192	103.0332 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M961130.D 8260WTR.M Thu Jan 30 17:06:41 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961130.D Vial: 9
Acq On : 30 Jan 2014 12:51 Operator: ADC
Sample : WG461445-09 100.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration

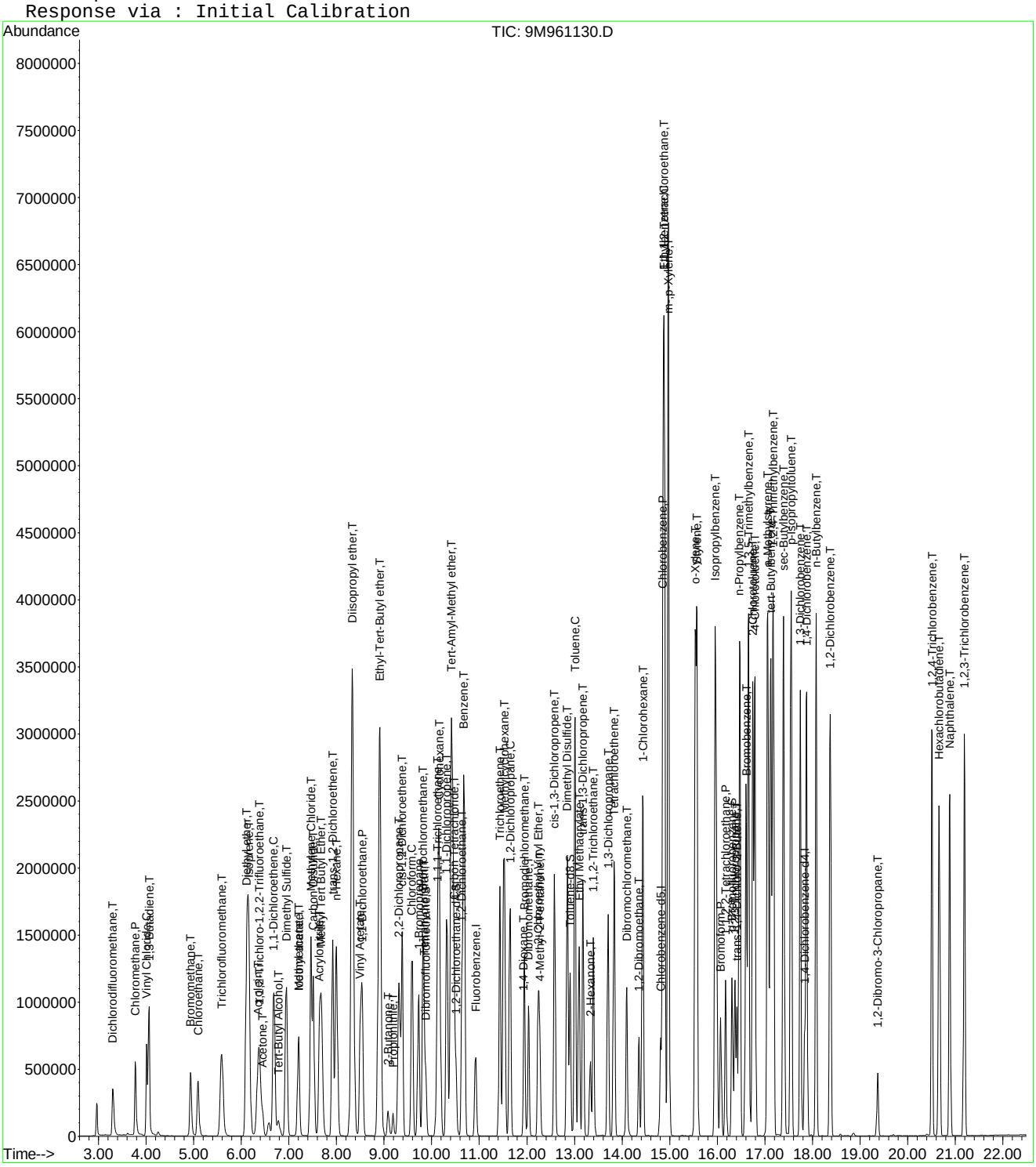

9M961130.D 8260WTR.M Thu Jan 30 17:06:42 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961131.D Vial: 10
Acq On : 30 Jan 2014 13:20 Operator: ADC
Sample : WG461445-10 200.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:43 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	635182	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	475591	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	254469	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.88	111	657491	103.7503 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 415.00%#		
43) 1,2-Dichloroethane-d4	10.51	65	741786	97.7408 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 390.96%#		
58) Toluene-d8	12.91	98	1960506	93.6955 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 374.80%#		
79) p-Bromofluorobenzene	16.31	95	985179	95.4378 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 381.76%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.30	85	939535	204.8399 ug/L	99
3) Chloromethane	3.77	50	1504651	216.8294 ug/L	98
4) Vinyl Chloride	4.01	62	1542367	226.9019 ug/L	98
5) 1,3-Butadiene	4.05	54	934296	202.3389 ug/L	99
6) Bromomethane	4.93	94	1021983	201.6336 ug/L	97
7) Chloroethane	5.09	64	1138318	220.6228 ug/L	99
8) Trichlorofluoromethane	5.58	101	2211763	206.9144 ug/L	100
9) Diethyl ether	6.13	59	3015	0.4782 ug/L	79
10) Isoprene	6.15	67	2022431	211.3952 ug/L	100
11) Acrolein	6.40	56	186	1.1505 ug/L #	1
12) 1,1,2-Trichloro-1,2,2-Trif	6.38	101	1326532	214.5140 ug/L	100
13) Acetone	6.45	43	442929	209.1255 ug/L	99
14) 1,1-Dichloroethene	6.68	61	2516319	211.6697 ug/L	99
15) Tert-Butyl Alcohol	6.68	59	88575	164.8770 ug/L #	57
16) Dimethyl Sulfide	6.95	62	1584825	213.1318 ug/L	100
17) Iodomethane	7.20	142	1486783	206.7403 ug/L	99
18) Methyl acetate	7.20	43	1288649	206.9110 ug/L	99
19) Methylene Chloride	7.46	84	1471213	211.7297 ug/L	98
20) Carbon Disulfide	7.51	76	4219900	203.3697 ug/L	99
21) Acrylonitrile	7.67	53	46733	17.8591 ug/L #	31
22) Methyl Tert Butyl Ether	7.67	73	3856961	211.5070 ug/L	99
23) trans-1,2-Dichloroethene	7.92	61	2400793	204.1474 ug/L	100
24) n-Hexane	8.00	57	2361694	218.6163 ug/L	99
26) Vinyl Acetate	8.50	43	3118945	209.4102 ug/L	98
27) 1,1-Dichloroethane	8.54	63	3064474	200.2234 ug/L	99
29) 2-Butanone	9.09	43	671392	209.7119 ug/L	98
30) Propionitrile	9.16	54	207	3.0238 ug/L #	60
31) 2,2-Dichloropropane	9.31	77	2365543	206.2329 ug/L	98
32) cis-1,2-Dichloroethene	9.37	96	1524597	198.3662 ug/L	99
33) Chloroform	9.59	83	2606883	209.3119 ug/L	99
34) 1-Bromopropane	9.73	122	271276	202.5273 ug/L	97
35) Bromochloromethane	9.82	130	929357	215.9043 ug/L	95
38) 1,1,1-Trichloroethane	10.12	97	2242948	203.2044 ug/L	100
39) Cyclohexane	10.16	56	3157345	206.4207 ug/L	99
40) 1,1-Dichloropropene	10.32	75	1968662	211.4963 ug/L	99
42) Carbon Tetrachloride	10.47	117	2056395	206.9963 ug/L	98
45) 1,2-Dichloroethane	10.64	62	2215264	200.5108 ug/L	99
46) Benzene	10.68	78	5580705	196.9750 ug/L	99
47) Trichloroethene	11.43	130	1475221	196.2310 ug/L	98
48) Methylcyclohexane	11.52	83	2297532	206.0747 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M961131.D 8260WTR.M Thu Jan 30 17:06:45 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961131.D Vial: 10
Acq On : 30 Jan 2014 13:20 Operator: ADC
Sample : WG461445-10 200.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:43 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
49)	1,2-Dichloropropane	11.65	63	1787907	207.0307 ug/L	99
50)	1,4-Dioxane	11.94	88	2812	68.2700 ug/L #	6
51)	Bromodichloromethane	11.95	83	2099748	210.7637 ug/L	100
52)	Dibromomethane	12.03	174	970515	218.3957 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.24	63	953876	223.3505 ug/L	100
54)	4-Methyl-2-Pentanone	12.27	58	580843	211.3414 ug/L	98
55)	cis-1,3-Dichloropropene	12.58	75	2486245	212.5900 ug/L	100
56)	Dimethyl Disulfide	12.85	94	2701123	210.0405 ug/L	98
59)	Toluene	13.01	91	5595031	193.8765 ug/L	98
60)	Ethyl Methacrylate	13.10	69	1766605	216.5296 ug/L	98
61)	trans-1,3-Dichloropropene	13.18	75	2263531	217.8635 ug/L	100
62)	1,1,2-Trichloroethane	13.40	97	1140922	214.2698 ug/L	98
63)	2-Hexanone	13.33	43	1071068	215.2283 ug/L	98
64)	1,3-Dichloropropane	13.71	76	2107033	203.6131 ug/L	100
65)	Tetrachloroethene	13.83	164	1317545	204.0298 ug/L	99
66)	Dibromochloromethane	14.10	129	1483783	215.0526 ug/L	98
67)	1,2-Dibromoethane	14.36	107	1296585	215.5854 ug/L	98
68)	1-Chlorohexane	14.44	91	1893128	211.9456 ug/L	99
69)	Chlorobenzene	14.86	112	3937381	196.2766 ug/L	99
70)	1,1,1,2-Tetrachloroethane	14.88	131	1551938	209.0470 ug/L	99
71)	Ethylbenzene	14.88	106	2208029	202.0599 ug/L	93
72)	m-,p-Xylene	14.98	106	5148729	388.8713 ug/L	92
73)	o-Xylene	15.53	106	2747682	202.3012 ug/L	96
74)	Styrene	15.58	104	4652554	206.7047 ug/L	98
75)	Bromoform	16.07	173	1166547	249.7943 ug/L	97
76)	Isopropylbenzene	15.96	105	6723758	195.6602 ug/L	97
78)	1,1,2,2-Tetrachloroethane	16.18	83	1568508	202.3446 ug/L	100
80)	1,2,3-Trichloropropane	16.37	110	462591	202.5272 ug/L	90
81)	trans-1,4-Dichloro-2-Buten	16.41	53	639852	205.1141 ug/L	87
82)	n-Propylbenzene	16.47	91	7624517	188.6607 ug/L	96
83)	Bromobenzene	16.61	156	1854618	199.6269 ug/L	98
84)	1,3,5-Trimethylbenzene	16.66	105	6040636	193.5410 ug/L	97
85)	2-Chlorotoluene	16.74	91	4798657	182.4428 ug/L	98
86)	4-Chlorotoluene	16.80	91	4949155	201.6308 ug/L	98
87)	a-Methylstyrene	17.06	118	3182445	200.8727 ug/L	100
88)	tert-Butylbenzene	17.13	134	1376848	197.4601 ug/L	96
89)	1,2,4-Trimethylbenzene	17.18	105	6045642	193.0070 ug/L	96
90)	sec-Butylbenzene	17.39	105	7352812	190.7883 ug/L	97
91)	p-Isopropyltoluene	17.55	119	6019517	198.1014 ug/L	97
92)	1,3-Dichlorobenzene	17.75	146	3483449	198.8648 ug/L	97
93)	1,4-Dichlorobenzene	17.88	146	3515351	200.2668 ug/L	99
94)	n-Butylbenzene	18.08	91	5555578	212.2575 ug/L	98
95)	1,2-Dichlorobenzene	18.38	146	3382336	198.3447 ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.37	157	362229	221.7571 ug/L	100
97)	1,2,4-Trichlorobenzene	20.52	180	2795240	225.0175 ug/L	98
98)	Hexachlorobutadiene	20.66	225	1533226	223.5404 ug/L	99
99)	Naphthalene	20.89	128	5203844	211.3094 ug/L	98
100)	1,2,3-Trichlorobenzene	21.19	180	2632429	215.0840 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961131.D Vial: 10
Acq On : 30 Jan 2014 13:20 Operator: ADC
Sample : WG461445-10 200.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration

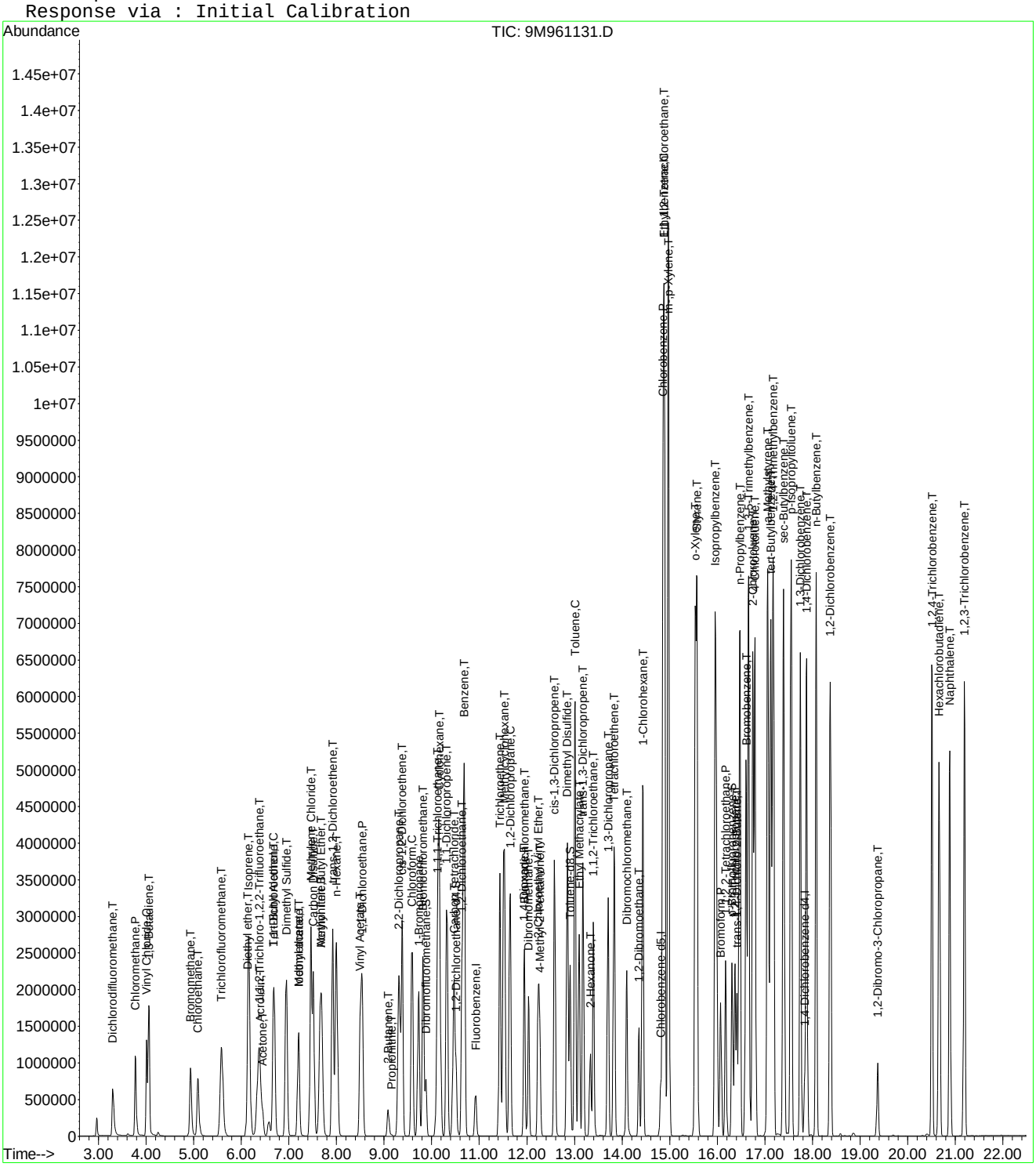

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961132.D Vial: 11
Acq On : 30 Jan 2014 13:49 Operator: ADC
Sample : WG461445-11 300.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:46 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	639184	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	491237	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	273810	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.88	111	928586	145.6110 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 582.44%#		
43) 1,2-Dichloroethane-d4	10.52	65	1045485	136.8949 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 547.56%#		
58) Toluene-d8	12.91	98	2754659	127.4562 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 509.84%#		
79) p-Bromofluorobenzene	16.31	95	1496743	134.7529 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 539.00%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	1350113	292.0113 ug/L	99
3) Chloromethane	3.78	50	2233179	319.7998 ug/L	98
4) Vinyl Chloride	4.01	62	2105304	307.7779 ug/L	98
5) 1,3-Butadiene	4.05	54	1265245	301.8013 ug/L	99
6) Bromomethane	4.93	94	1484668	291.0857 ug/L	99
7) Chloroethane	5.09	64	1645641	316.9526 ug/L	99
8) Trichlorofluoromethane	5.58	101	3098604	287.9820 ug/L	99
9) Diethyl ether	6.12	59	1904286	300.1147 ug/L	98
10) Isoprene	6.15	67	2830482	294.0046 ug/L	99
11) Acrolein	6.35	56	130511	152.6182 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.37	101	1864200	299.5730 ug/L	100
13) Acetone	6.45	43	640489	300.5085 ug/L	99
14) 1,1-Dichloroethene	6.68	61	3530364	295.1105 ug/L	98
15) Tert-Butyl Alcohol	6.79	59	437471	605.0486 ug/L	97
16) Dimethyl Sulfide	6.95	62	2238879	299.2057 ug/L	99
17) Iodomethane	7.20	142	2094340	288.9744 ug/L	99
18) Methyl acetate	7.20	43	1866515	297.8192 ug/L	98
19) Methylene Chloride	7.46	84	2072373	296.3784 ug/L	96
20) Carbon Disulfide	7.51	76	5908030	282.9430 ug/L	98
21) Acrylonitrile	7.64	53	491762	186.7509 ug/L	95
22) Methyl Tert Butyl Ether	7.68	73	5454798	297.2559 ug/L	99
23) trans-1,2-Dichloroethene	7.92	61	3343709	282.5465 ug/L	99
24) n-Hexane	8.00	57	3259279	299.8145 ug/L	100
25) Diisopropyl ether	8.33	45	9023525	282.5021 ug/L	98
26) Vinyl Acetate	8.50	43	4297097	286.4310 ug/L	98
27) 1,1-Dichloroethane	8.54	63	4253459	276.1680 ug/L	99
28) Ethyl-Tert-Butyl ether	8.91	59	7620853	293.6899 ug/L	98
29) 2-Butanone	9.08	43	995371	308.9614 ug/L	98
30) Propionitrile	9.20	54	335224	316.6615 ug/L	97
31) 2,2-Dichloropropane	9.31	77	3283972	284.5109 ug/L	98
32) cis-1,2-Dichloroethene	9.37	96	2157322	278.9330 ug/L	100
33) Chloroform	9.59	83	3649750	291.2111 ug/L	99
34) 1-Bromopropane	9.73	122	397510	294.7964 ug/L	98
35) Bromochloromethane	9.82	130	1327339	306.4311 ug/L	92
36) Tetrahydrofuran	9.84	42	638197	323.9676 ug/L	96
38) 1,1,1-Trichloroethane	10.12	97	3149695	283.5664 ug/L	100
39) Cyclohexane	10.16	56	4403241	286.0724 ug/L	98
40) 1,1-Dichloropropene	10.31	75	2756146	294.2430 ug/L	97
41) Tert-Amyl-Methyl ether	10.42	73	5366455	299.3931 ug/L	99
42) Carbon Tetrachloride	10.47	117	2903839	290.4697 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961132.D Vial: 11
Acq On : 30 Jan 2014 13:49 Operator: ADC
Sample : WG461445-11 300.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:46 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.64	62	3118668	280.5134 ug/L	99
46)	Benzene	10.68	78	7653812	268.4554 ug/L	98
47)	Trichloroethene	11.43	130	2059635	272.2533 ug/L	99
48)	Methylcyclohexane	11.52	83	3221899	287.1755 ug/L	97
49)	1,2-Dichloropropane	11.65	63	2541005	292.3935 ug/L	99
50)	1,4-Dioxane	11.94	88	42293	724.4263 ug/L	96
51)	Bromodichloromethane	11.95	83	2981182	297.3647 ug/L	100
52)	Dibromomethane	12.04	174	1398592	312.7556 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.24	63	1379523	320.9935 ug/L	100
54)	4-Methyl-2-Pentanone	12.27	58	898268	324.7910 ug/L	98
55)	cis-1,3-Dichloropropene	12.58	75	3522393	299.3015 ug/L	100
56)	Dimethyl Disulfide	12.85	94	3848422	297.3814 ug/L	98
59)	Toluene	13.01	91	7597896	254.8934 ug/L	96
60)	Ethyl Methacrylate	13.10	69	2610527	309.7766 ug/L	98
61)	trans-1,3-Dichloropropene	13.18	75	3237810	301.7115 ug/L	99
62)	1,1,2-Trichloroethane	13.39	97	1667704	303.2261 ug/L	98
63)	2-Hexanone	13.33	43	1651037	321.2045 ug/L	97
64)	1,3-Dichloropropane	13.70	76	3064892	286.7425 ug/L	97
65)	Tetrachloroethene	13.83	164	1857626	278.5024 ug/L	100
66)	Dibromochloromethane	14.10	129	2197974	308.4178 ug/L	98
67)	1,2-Dibromoethane	14.36	107	1896544	305.2980 ug/L	98
68)	1-Chlorohexane	14.44	91	2709876	293.7220 ug/L	97
69)	Chlorobenzene	14.86	112	5527497	266.7671 ug/L	98
70)	1,1,1,2-Tetrachloroethane	14.89	131	2265610	295.4590 ug/L	98
71)	Ethylbenzene	14.88	106	3078927	272.7831 ug/L	88
72)	m-,p-Xylene	14.98	106	7009949	512.5819 ug/L	87
73)	o-Xylene	15.53	106	3927673	279.9690 ug/L	93
74)	Styrene	15.58	104	6630644	285.2050 ug/L	96
75)	Bromoform	16.07	173	1827272	378.8141 ug/L	97
76)	Isopropylbenzene	15.96	105	9284516	261.5726 ug/L	94
78)	1,1,2,2-Tetrachloroethane	16.17	83	2504104	300.1052 ug/L	100
80)	1,2,3-Trichloropropane	16.37	110	723363	294.2842 ug/L #	37
81)	trans-1,4-Dichloro-2-Buten	16.41	53	1007977	300.1290 ug/L #	48
82)	n-Propylbenzene	16.47	91	10496419	241.3770 ug/L	92
83)	Bromobenzene	16.61	156	2755290	275.6243 ug/L	96
84)	1,3,5-Trimethylbenzene	16.66	105	8514879	253.5446 ug/L	94
85)	2-Chlorotoluene	16.74	91	7921998	279.9158 ug/L	93
86)	4-Chlorotoluene	16.80	91	6024338	228.0976 ug/L	83
87)	a-Methylstyrene	17.06	118	4714883	276.5773 ug/L	98
88)	tert-Butylbenzene	17.13	134	2008261	267.6696 ug/L	96
89)	1,2,4-Trimethylbenzene	17.18	105	8543235	253.4770 ug/L	93
90)	sec-Butylbenzene	17.39	105	10273250	247.7375 ug/L	94
91)	p-Isopropyltoluene	17.55	119	8546951	261.4103 ug/L	95
92)	1,3-Dichlorobenzene	17.75	146	5145500	272.9994 ug/L	95
93)	1,4-Dichlorobenzene	17.88	146	5184357	274.4864 ug/L	96
94)	n-Butylbenzene	18.08	91	7963463	282.7622 ug/L	96
95)	1,2-Dichlorobenzene	18.38	146	5083368	277.0390 ug/L	96
96)	1,2-Dibromo-3-Chloropropan	19.37	157	577466	328.5536 ug/L	99
97)	1,2,4-Trichlorobenzene	20.52	180	4165244	311.6185 ug/L	99
98)	Hexachlorobutadiene	20.66	225	2307951	312.7246 ug/L	100
99)	Naphthalene	20.89	128	7580977	286.0917 ug/L	96
100)	1,2,3-Trichlorobenzene	21.20	180	3909436	296.8597 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M961132.D 8260WTR.M Thu Jan 30 17:06:48 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961132.D Vial: 11
Acq On : 30 Jan 2014 13:49 Operator: ADC
Sample : WG461445-11 300.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration

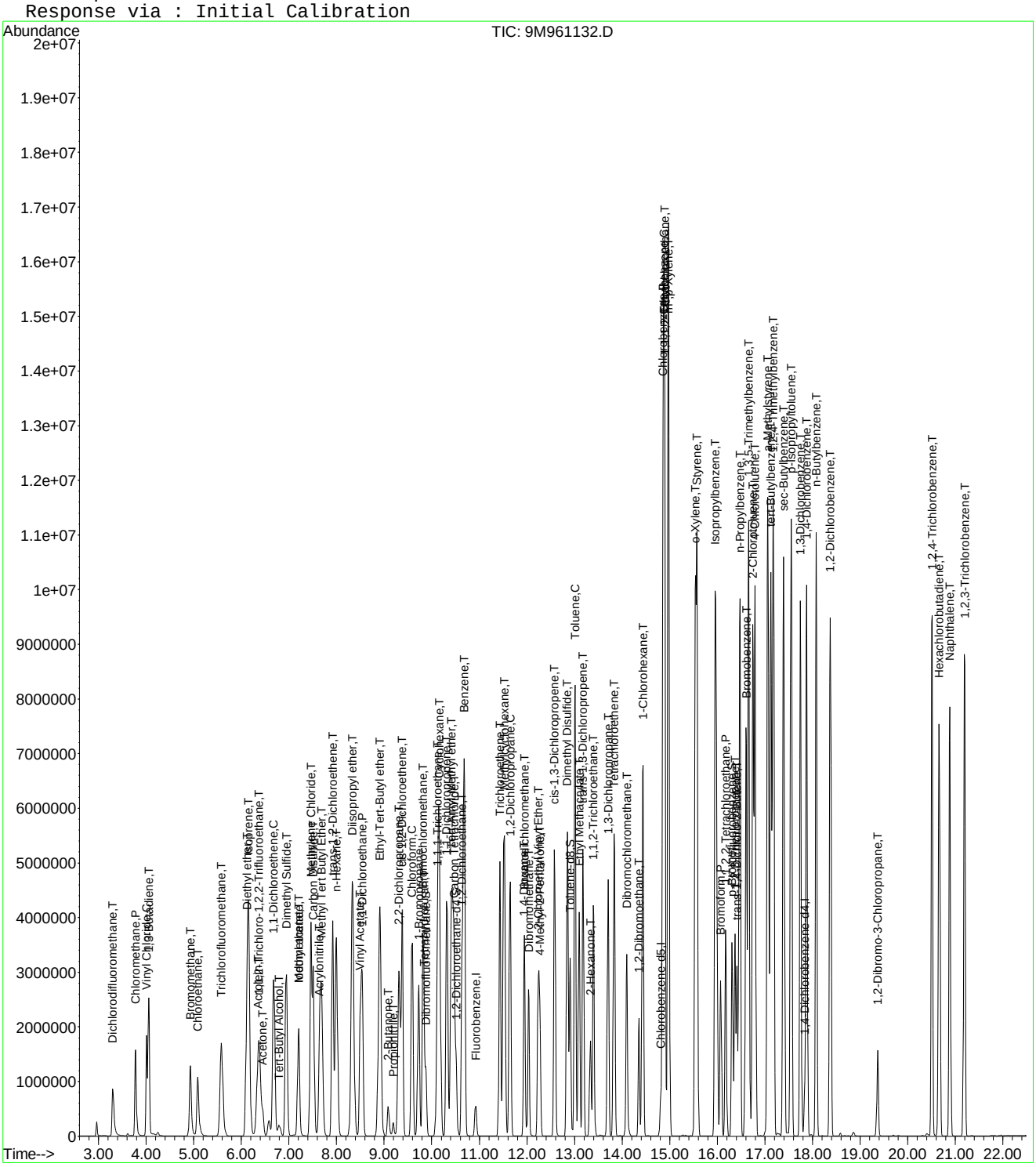

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961134.D Vial: 13
Acq On : 30 Jan 2014 15:20 Operator: ADC
Sample : WG461445-04 1.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:53 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	708690	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	507433	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	239797	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.88	111	3427	0.4847 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.92%#	
43) 1,2-Dichloroethane-d4	10.52	65	4183	0.4940 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.96%#	
58) Toluene-d8	12.91	98	12851	0.5756 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.32%#	
79) p-Bromofluorobenzene	16.32	95	5281	0.5429 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.16%#	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.31	85	1399	1.4421 ug/L #	62
3) Chloromethane	3.77	50	7766	1.0030 ug/L	82
4) Vinyl Chloride	4.01	62	6419	0.8464 ug/L	96
5) 1,3-Butadiene	4.07	54	7978	0.7736 ug/L	83
6) Bromomethane	4.94	94	6010	1.0628 ug/L	83
7) Chloroethane	5.10	64	4332	0.7525 ug/L	91
8) Trichlorofluoromethane	5.58	101	10529	1.0933 ug/L #	93
9) Diethyl ether	6.12	59	33805	4.8051 ug/L	97
10) Isoprene	6.15	67	9415	0.8820 ug/L	97
11) Acrolein	6.36	56	1986	3.0148 ug/L	73
12) 1,1,2-Trichloro-1,2,2-Trif	6.36	101	6368	0.9230 ug/L	89
13) Acetone	6.44	43	2695	1.1404 ug/L #	45
14) 1,1-Dichloroethene	6.69	61	12064	0.9095 ug/L	95
15) Tert-Butyl Alcohol	6.80	59	5643	10.2629 ug/L #	89
16) Dimethyl Sulfide	6.96	62	7273	0.8766 ug/L	94
17) Iodomethane	7.20	142	507	1.1248 ug/L #	35
18) Methyl acetate	7.20	43	5779	0.8317 ug/L #	92
19) Methylene Chloride	7.46	84	7234	0.9331 ug/L	83
20) Carbon Disulfide	7.52	76	26982	1.1655 ug/L	100
21) Acrylonitrile	7.65	53	6142	2.1037 ug/L	91
22) Methyl Tert Butyl Ether	7.67	73	18442	0.9064 ug/L	90
23) trans-1,2-Dichloroethene	7.92	61	13979	1.0654 ug/L	98
24) n-Hexane	7.99	57	11995	0.9952 ug/L	89
25) Diisopropyl ether	8.34	45	169877	4.7968 ug/L	99
26) Vinyl Acetate	8.52	43	13260	1.5415 ug/L #	86
27) 1,1-Dichloroethane	8.55	63	16442	0.9628 ug/L	96
28) Ethyl-Tert-Butyl ether	8.91	59	135874	4.7227 ug/L	100
29) 2-Butanone	9.09	43	3130	0.8763 ug/L	84
30) Propionitrile	9.19	54	4339	6.4925 ug/L #	81
31) 2,2-Dichloropropane	9.32	77	11287	0.8820 ug/L	99
32) cis-1,2-Dichloroethene	9.38	96	8204	0.9567 ug/L	83
33) Chloroform	9.59	83	12789	0.9203 ug/L	99
34) 1-Bromopropane	9.74	122	966	0.8992 ug/L	84
35) Bromochloromethane	9.82	130	4205	0.8756 ug/L	85
36) Tetrahydrofuran	9.85	42	9269	4.2437 ug/L	97
38) 1,1,1-Trichloroethane	10.13	97	10322	0.8381 ug/L	98
39) Cyclohexane	10.17	56	15588	0.9134 ug/L	96
40) 1,1-Dichloropropene	10.33	75	9188	0.8847 ug/L	92
41) Tert-Amyl-Methyl ether	10.43	73	92479	4.6534 ug/L	96
42) Carbon Tetrachloride	10.46	117	10425	0.9405 ug/L	94

(#) = qualifier out of range (m) = manual integration
9M961134.D 8260WTR.M Thu Jan 30 17:06:55 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961134.D Vial: 13
Acq On : 30 Jan 2014 15:20 Operator: ADC
Sample : WG461445-04 1.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:53 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.64	62	11725	0.9512 ug/L		95
46)	Benzene	10.69	78	29931	0.9469 ug/L		98
47)	Trichloroethene	11.44	130	8898	1.0608 ug/L		89
48)	Methylcyclohexane	11.51	83	11443	0.9199 ug/L		96
49)	1,2-Dichloropropane	11.65	63	9693	1.0060 ug/L		87
51)	Bromodichloromethane	11.95	83	10248	0.9220 ug/L		93
52)	Dibromomethane	12.03	174	4347	0.8767 ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.25	63	4041	0.8481 ug/L		94
54)	4-Methyl-2-Pentanone	12.29	58	2350	0.7664 ug/L	#	69
55)	cis-1,3-Dichloropropene	12.58	75	11954	0.9161 ug/L		98
56)	Dimethyl Disulfide	12.86	94	12025	0.8381 ug/L		97
59)	Toluene	13.01	91	30504	0.9907 ug/L		98
60)	Ethyl Methacrylate	13.10	69	7049	0.8098 ug/L	#	78
61)	trans-1,3-Dichloropropene	13.19	75	10552	0.9519 ug/L		92
62)	1,1,2-Trichloroethane	13.41	97	4862	0.8558 ug/L		93
63)	2-Hexanone	13.34	43	3481	0.6556 ug/L	#	88
64)	1,3-Dichloropropane	13.72	76	10065	0.9116 ug/L		84
65)	Tetrachloroethene	13.84	164	7267	1.0547 ug/L		84
66)	Dibromochloromethane	14.10	129	6689	0.9086 ug/L		95
67)	1,2-Dibromoethane	14.36	107	6206	0.9671 ug/L		90
68)	1-Chlorohexane	14.44	91	8338	0.8749 ug/L		96
69)	Chlorobenzene	14.86	112	21291	0.9947 ug/L		88
70)	1,1,1,2-Tetrachloroethane	14.88	131	7634	0.9638 ug/L		95
71)	Ethylbenzene	14.88	106	11367	0.9749 ug/L		91
72)	m-,p-Xylene	14.98	106	27198	1.9253 ug/L		98
73)	o-Xylene	15.53	106	13397	0.9245 ug/L		99
74)	Styrene	15.58	104	20661	0.8603 ug/L		93
75)	Bromoform	16.07	173	4046	0.8120 ug/L		97
76)	Isopropylbenzene	15.97	105	34830	0.9499 ug/L		95
78)	1,1,2,2-Tetrachloroethane	16.18	83	5286	0.9648 ug/L	#	96
80)	1,2,3-Trichloropropane	16.37	110	1746	0.9023 ug/L		96
81)	trans-1,4-Dichloro-2-Buten	16.41	53	2462	1.1999 ug/L	#	91
82)	n-Propylbenzene	16.47	91	37940	0.9962 ug/L		96
83)	Bromobenzene	16.61	156	8627	0.9854 ug/L		69
84)	1,3,5-Trimethylbenzene	16.66	105	27772	0.9443 ug/L		99
85)	2-Chlorotoluene	16.74	91	26852	1.0834 ug/L		85
86)	4-Chlorotoluene	16.80	91	23668	1.0232 ug/L		99
87)	a-Methylstyrene	17.06	118	12553	0.8408 ug/L		93
88)	tert-Butylbenzene	17.13	134	5552	0.8450 ug/L		74
89)	1,2,4-Trimethylbenzene	17.18	105	27945	0.9467 ug/L		98
90)	sec-Butylbenzene	17.39	105	33095	0.9113 ug/L		97
91)	p-Isopropyltoluene	17.55	119	26330	0.9195 ug/L		98
92)	1,3-Dichlorobenzene	17.75	146	15726	0.9527 ug/L		96
93)	1,4-Dichlorobenzene	17.88	146	17324	1.0473 ug/L	#	73
94)	n-Butylbenzene	18.08	91	23751	0.9630 ug/L		92
95)	1,2-Dichlorobenzene	18.38	146	15282	0.9510 ug/L		99
96)	1,2-Dibromo-3-Chloropropan	19.38	157	1205	0.7828 ug/L		75
97)	1,2,4-Trichlorobenzene	20.52	180	11394	0.9733 ug/L		89
98)	Hexachlorobutadiene	20.67	225	5751	0.8898 ug/L		92
99)	Naphthalene	20.89	128	21918	0.9445 ug/L		95
100)	1,2,3-Trichlorobenzene	21.20	180	10583	0.9176 ug/L		98

(#) = qualifier out of range (m) = manual integration
9M961134.D 8260WTR.M Thu Jan 30 17:06:55 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961134.D Vial: 13
Acq On : 30 Jan 2014 15:20 Operator: ADC
Sample : WG461445-04 1.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration

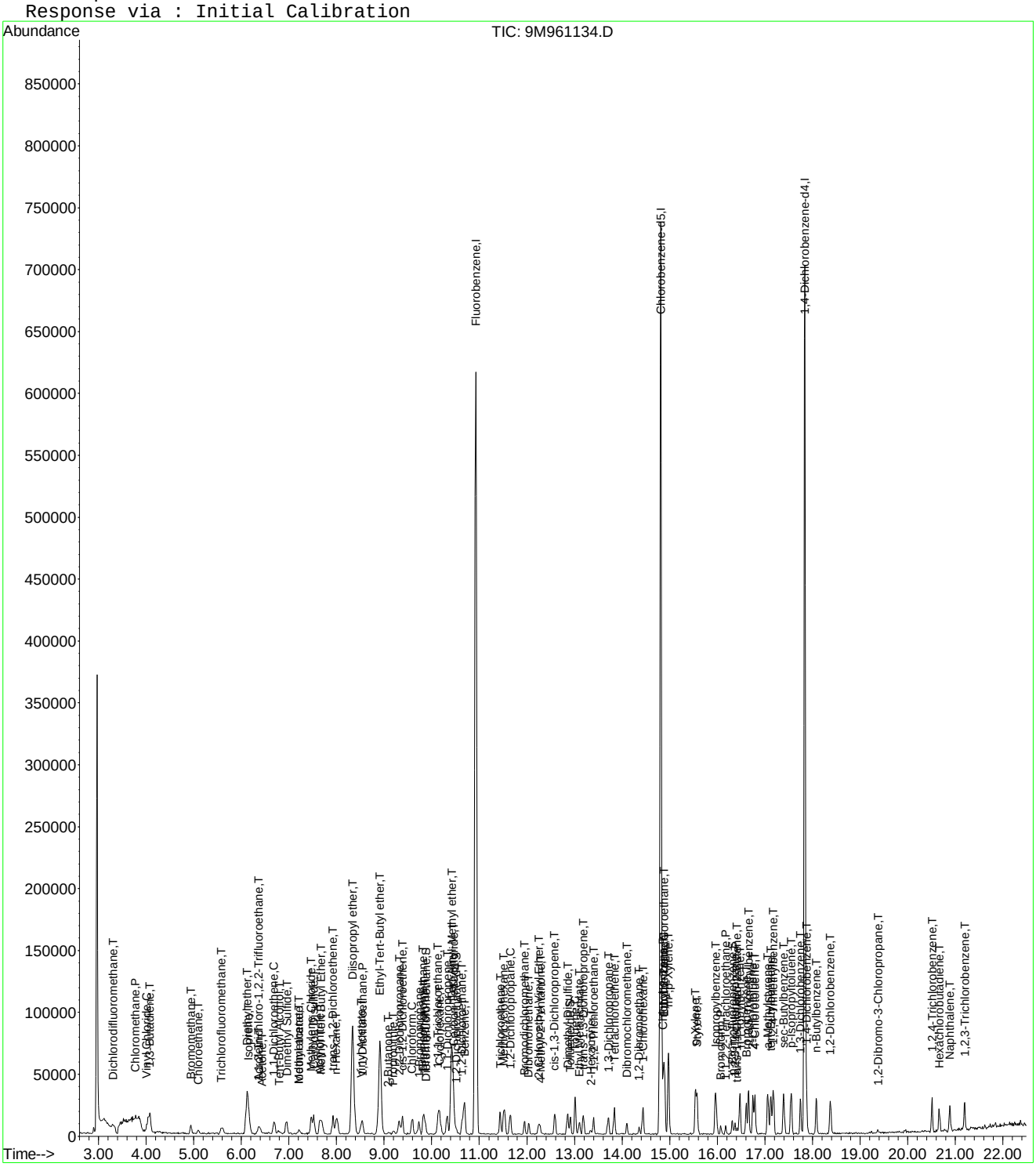

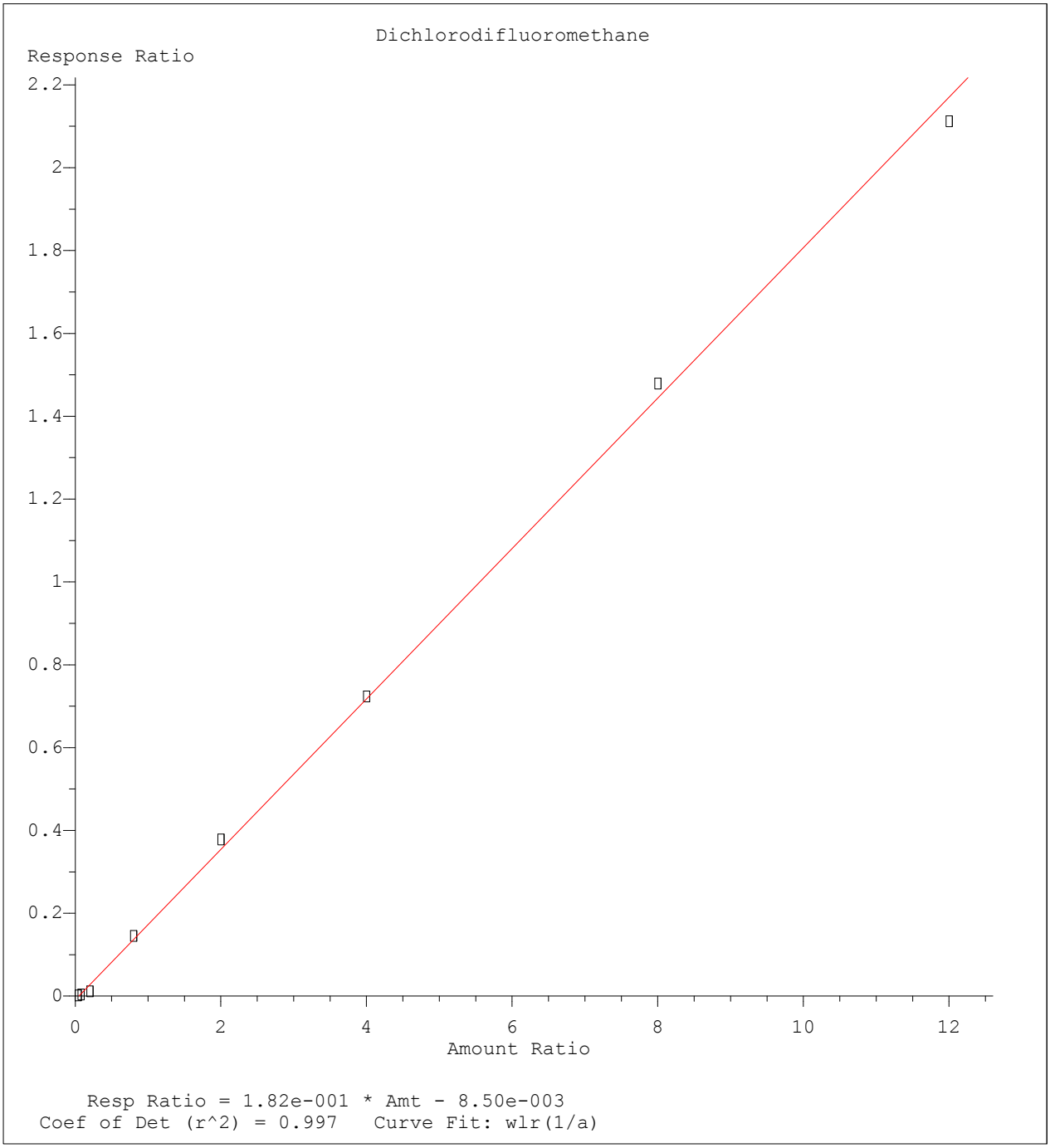

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

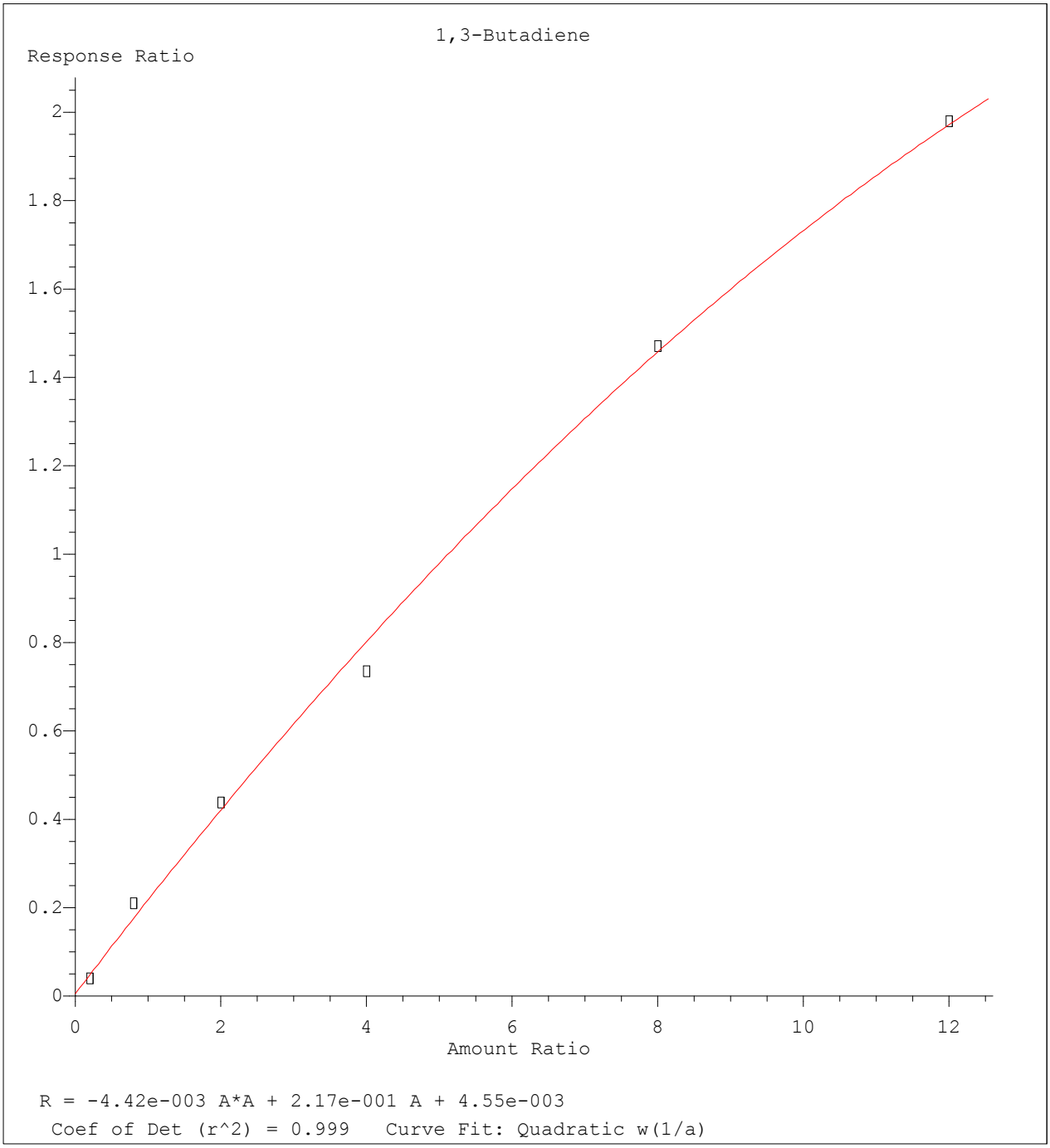

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

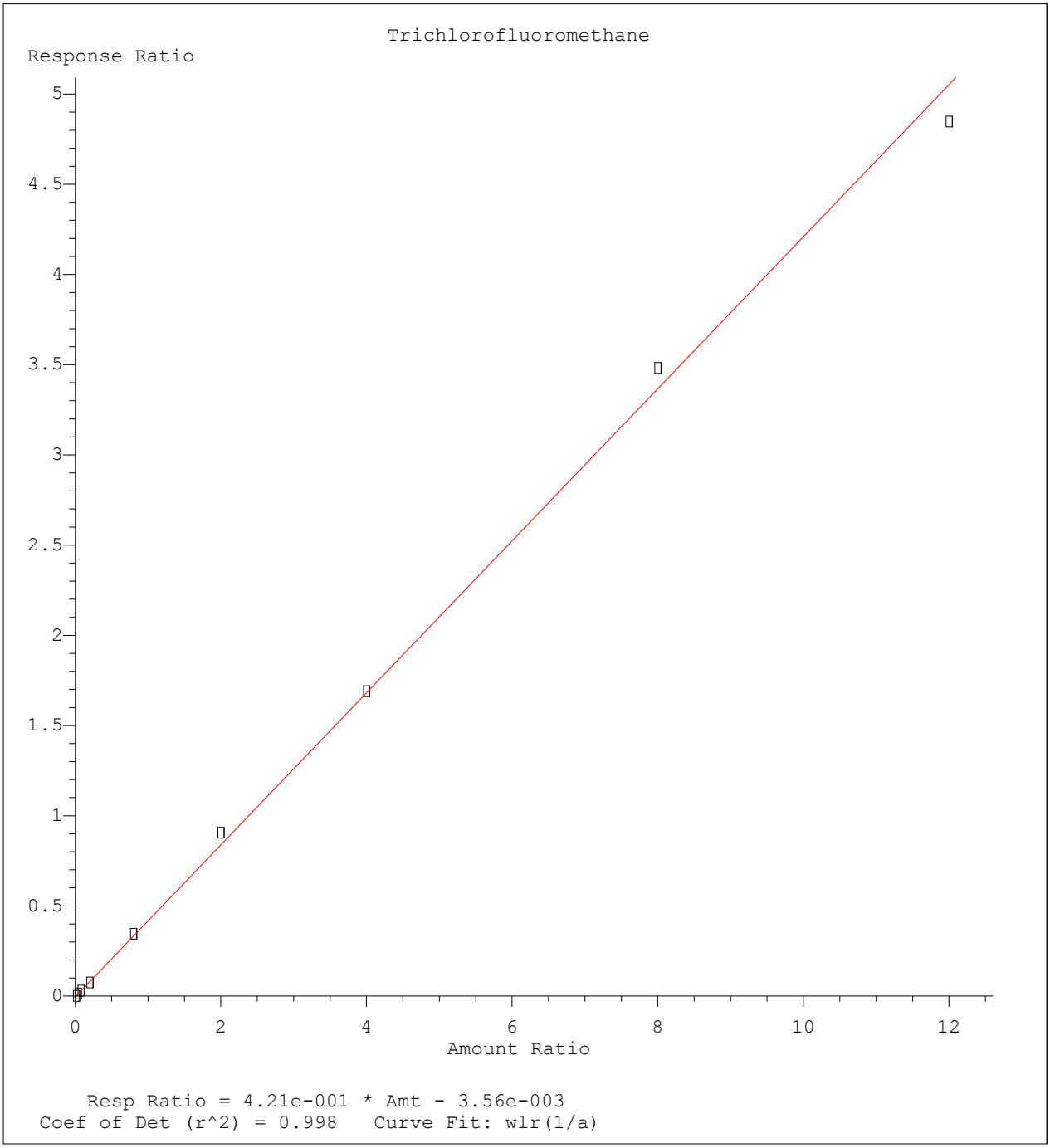

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

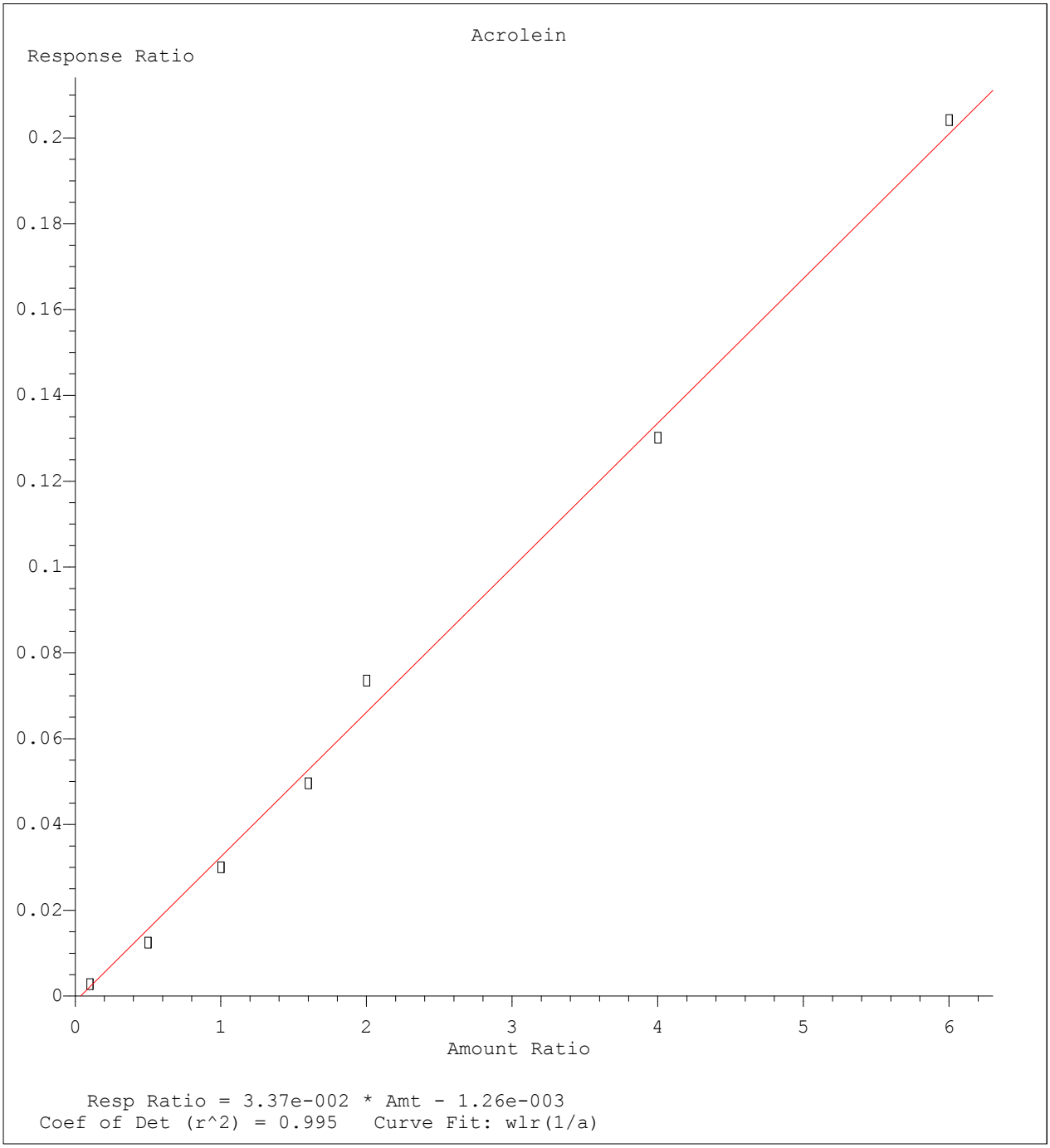

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

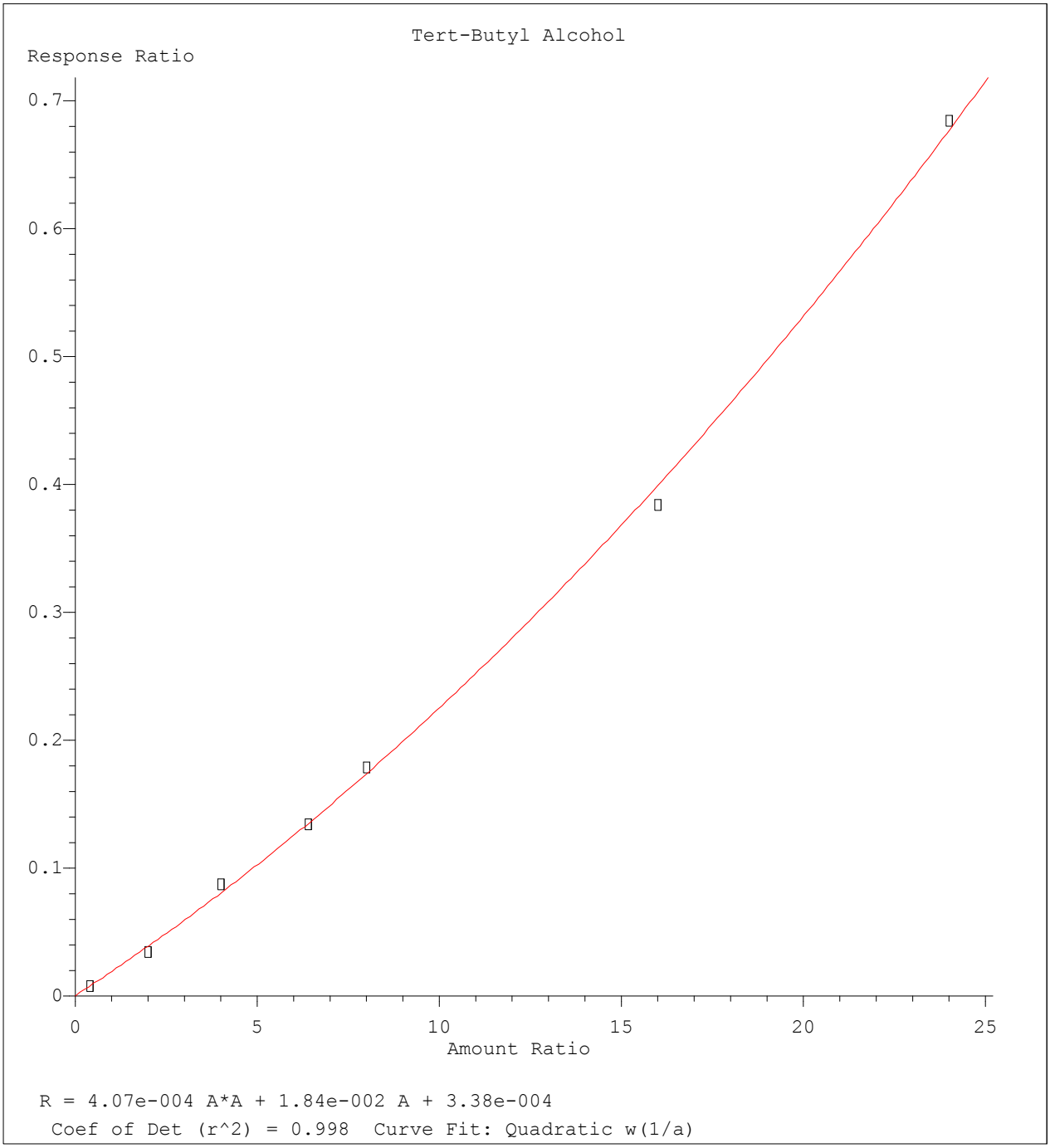

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

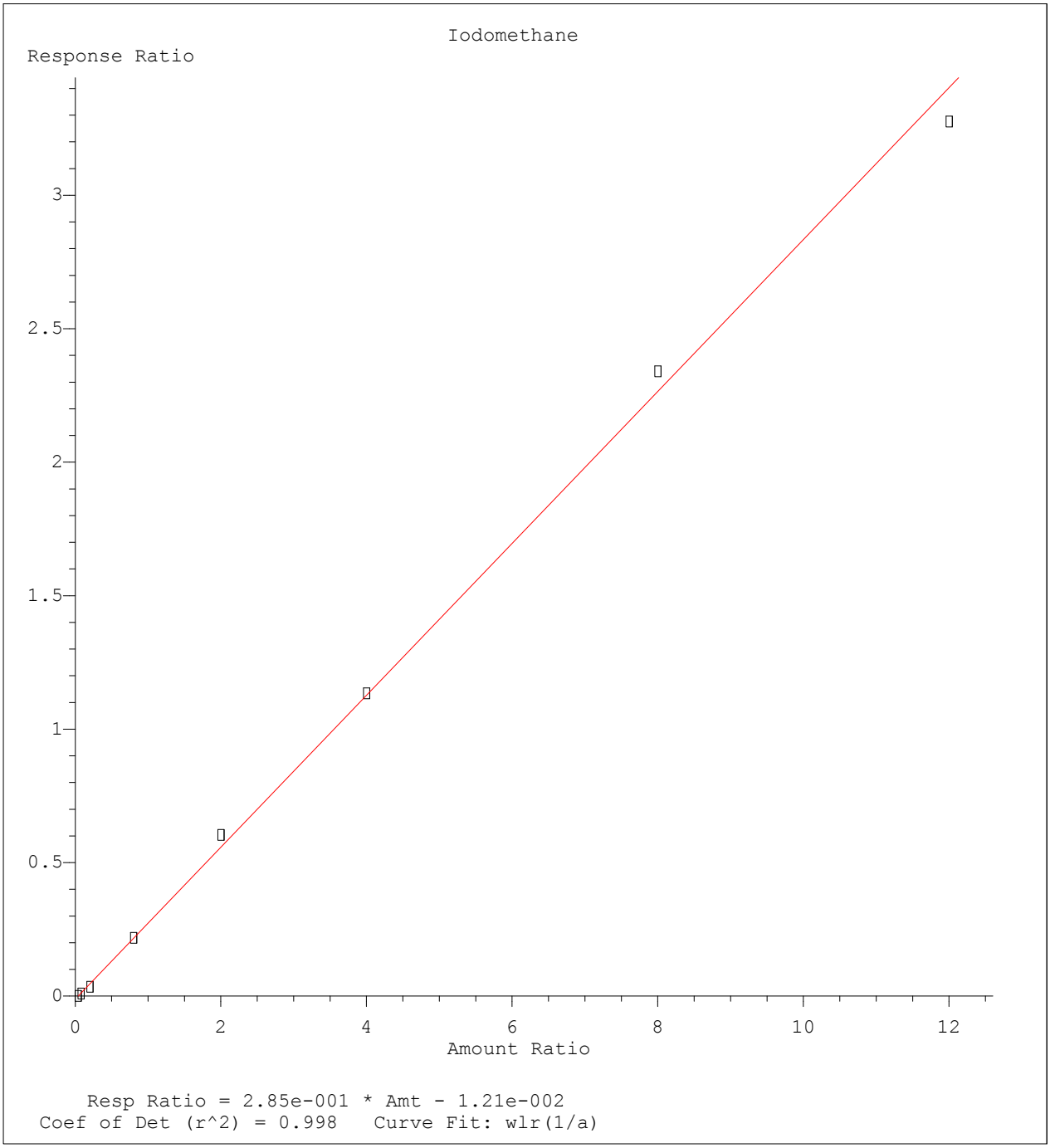

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

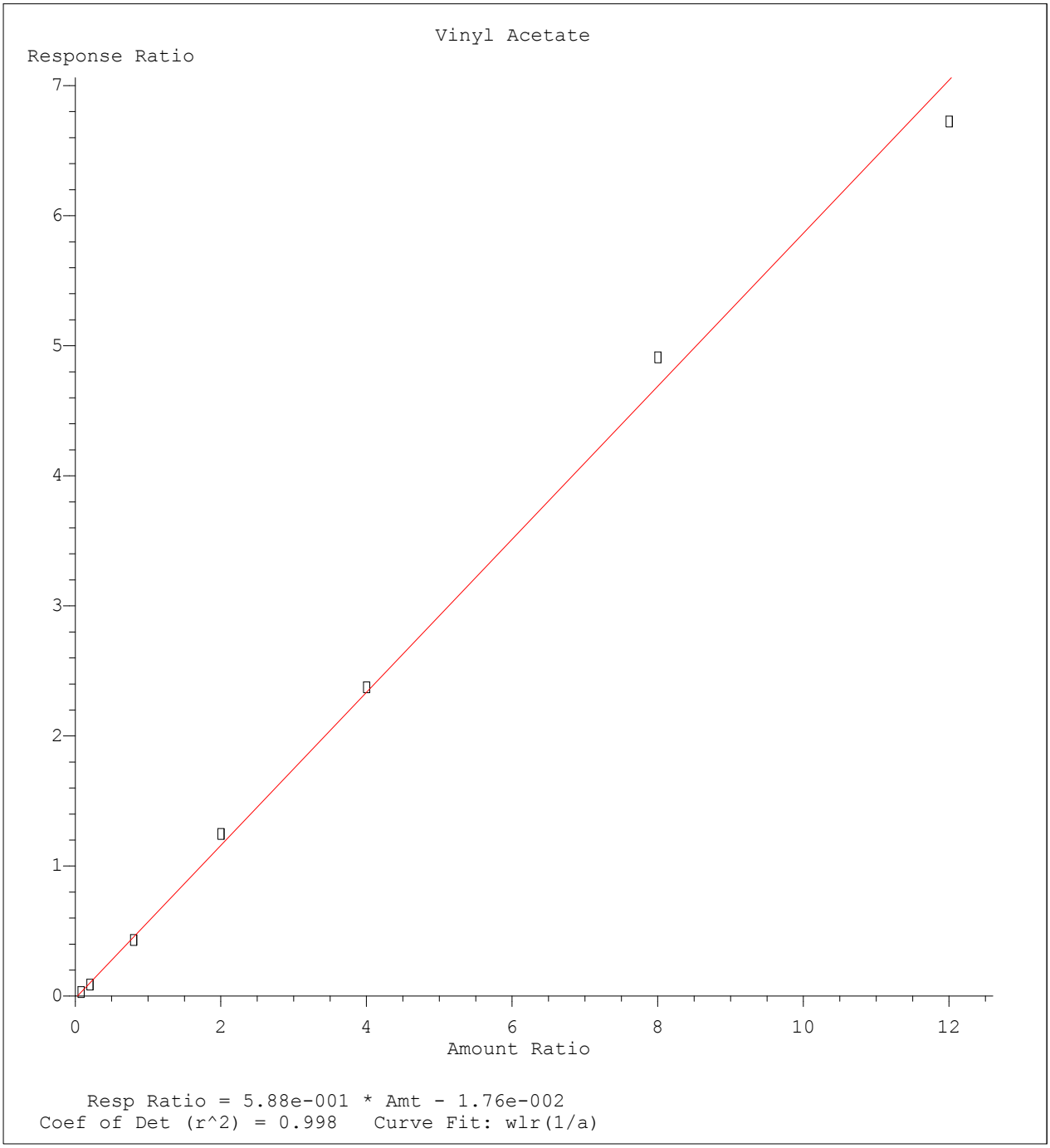

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

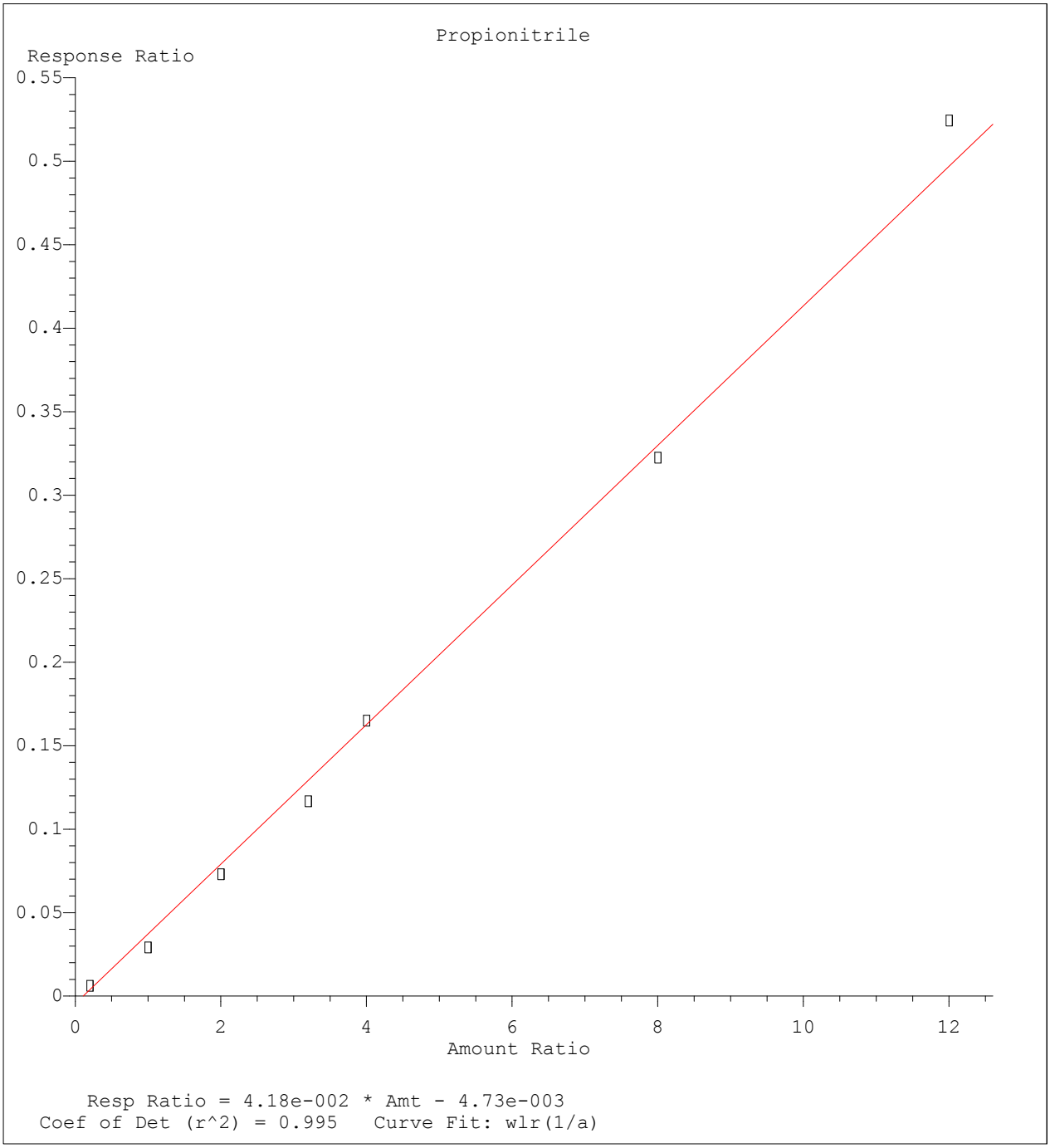

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

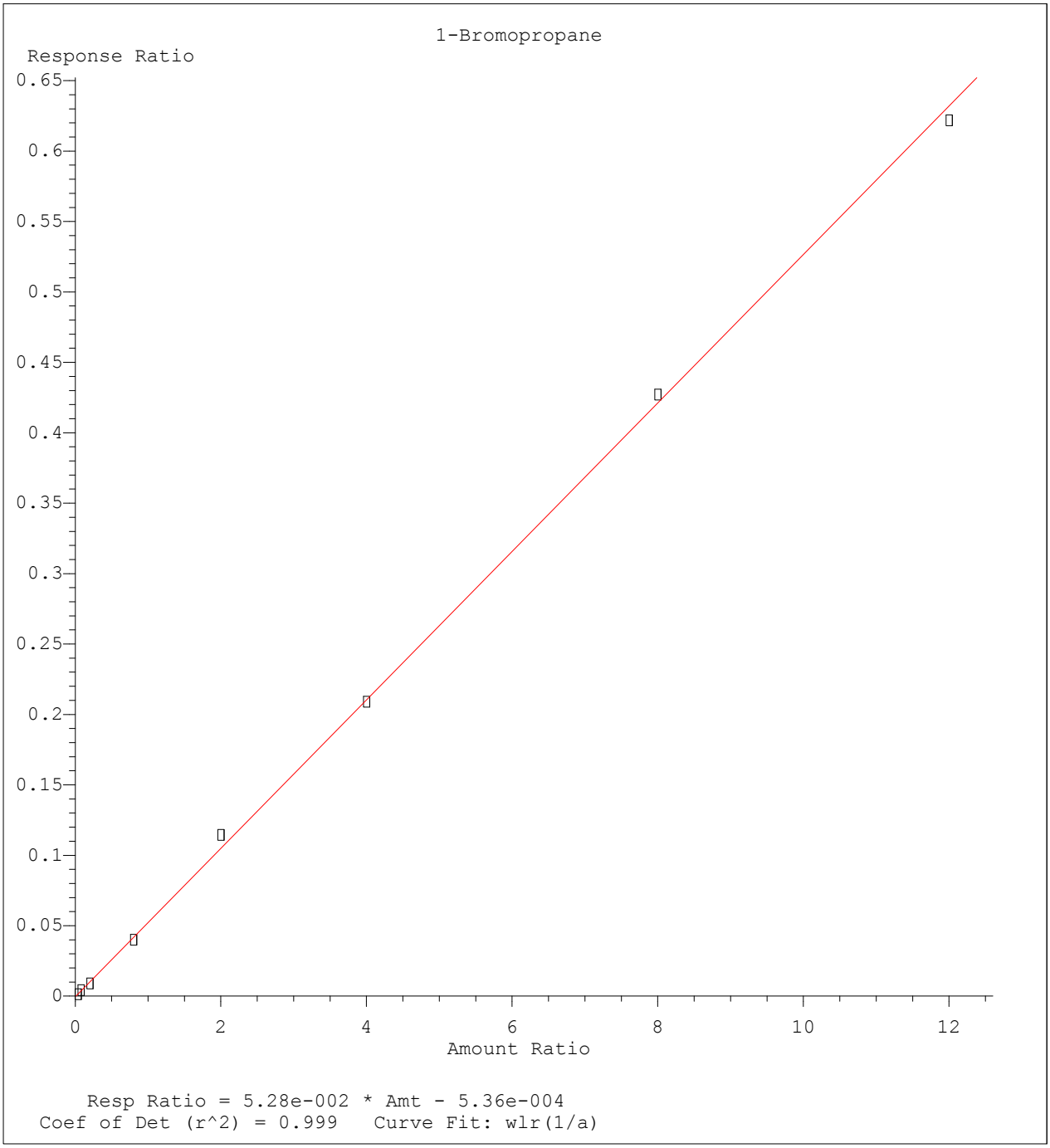

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

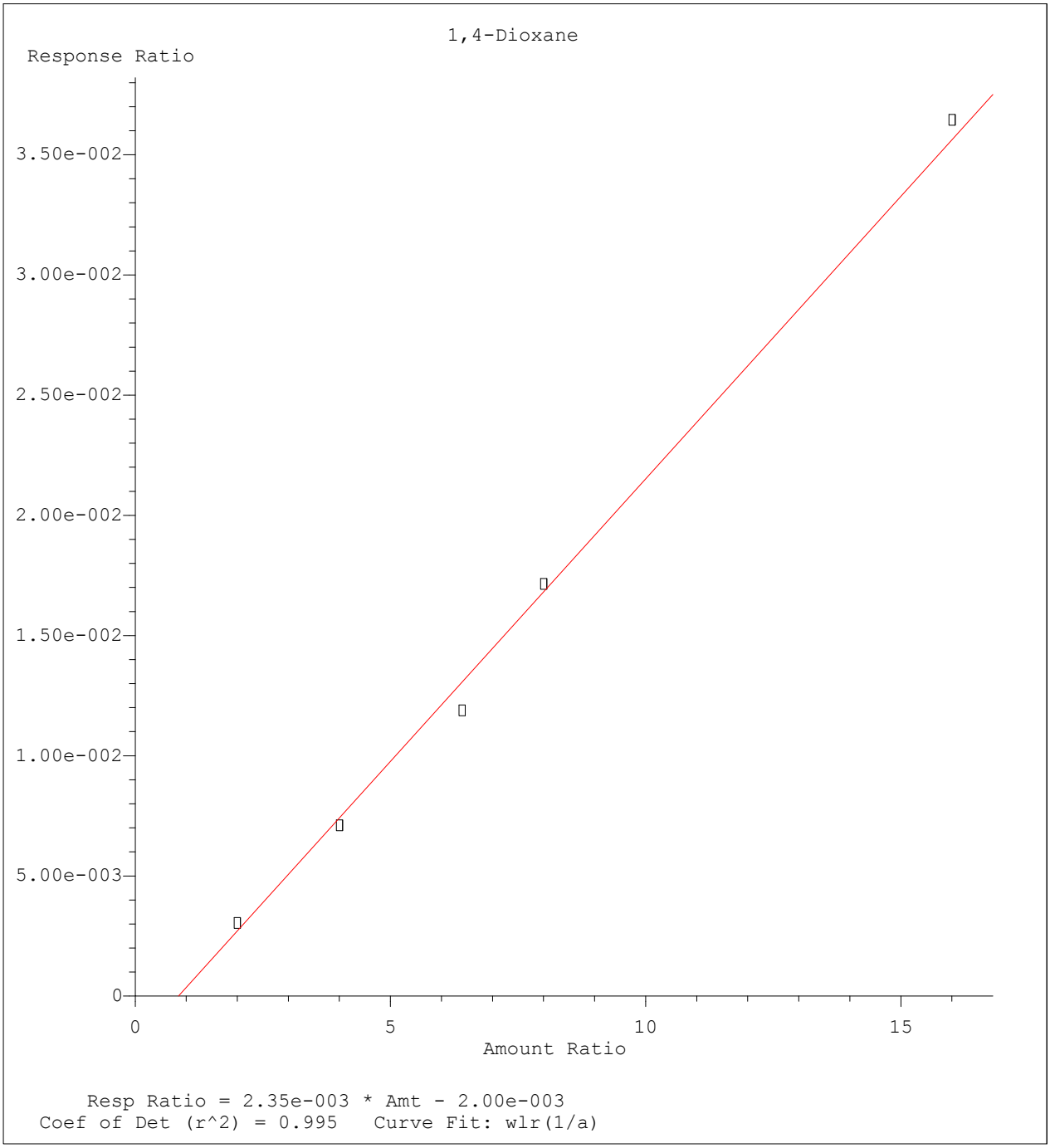

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

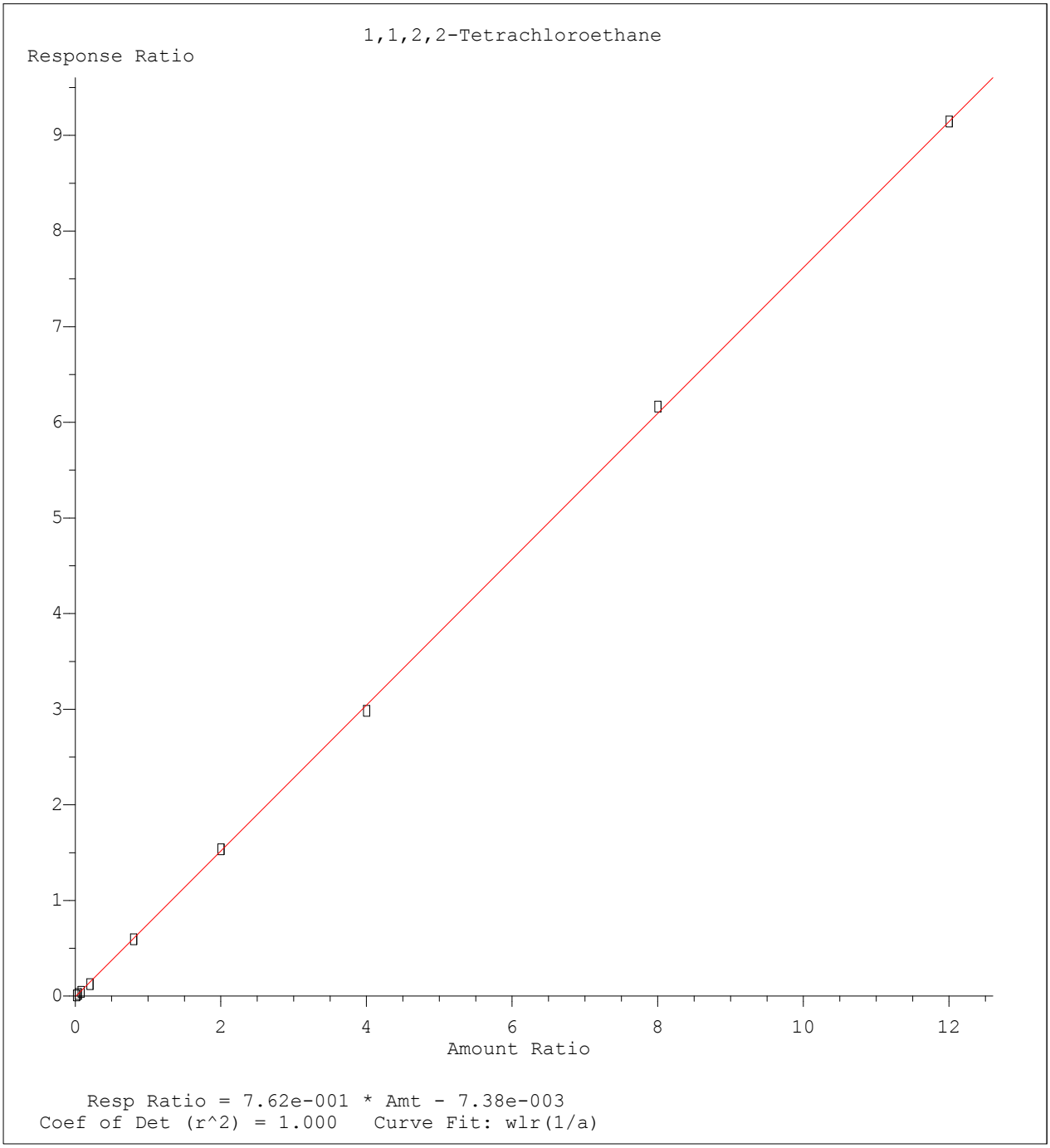

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

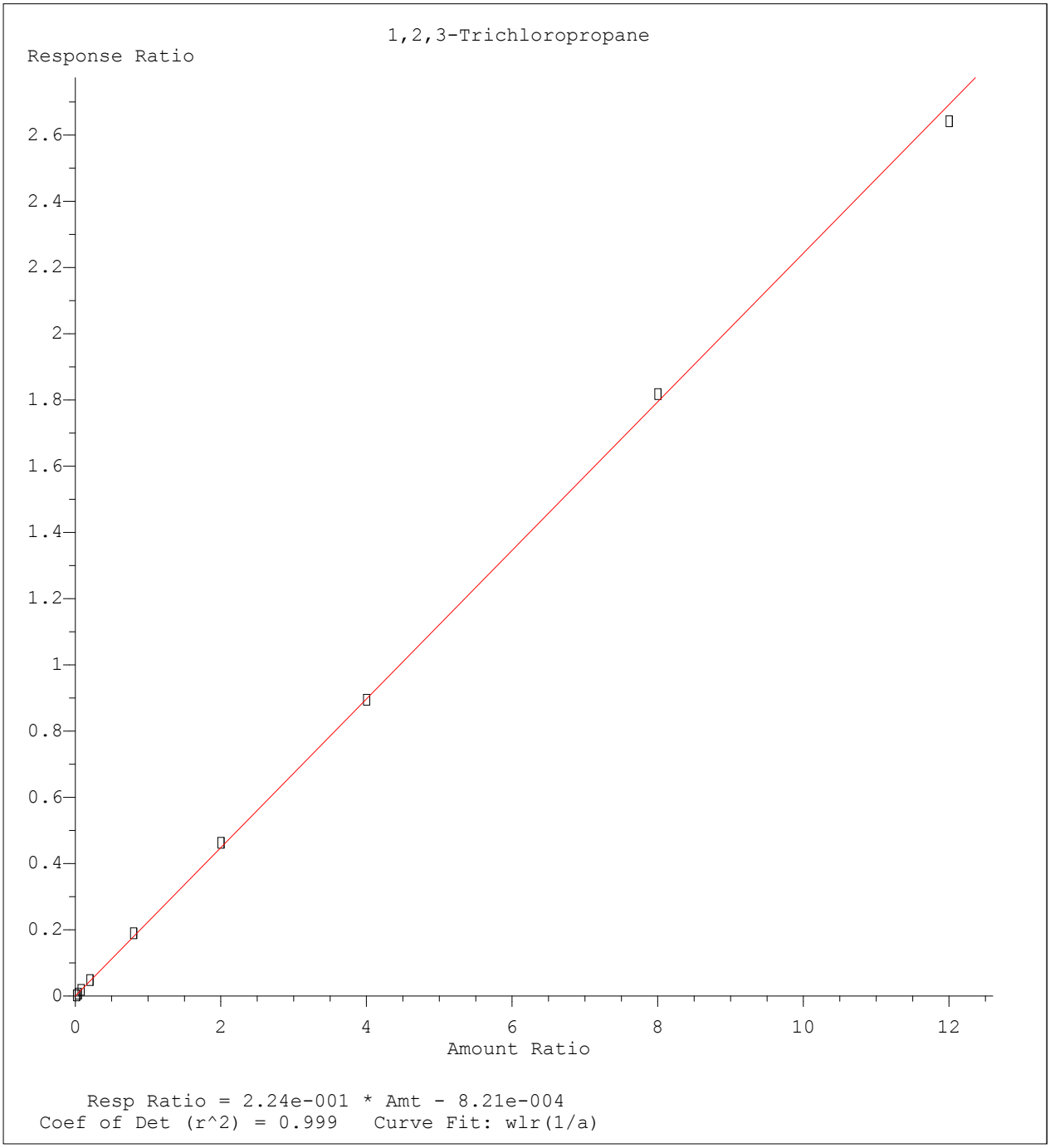

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

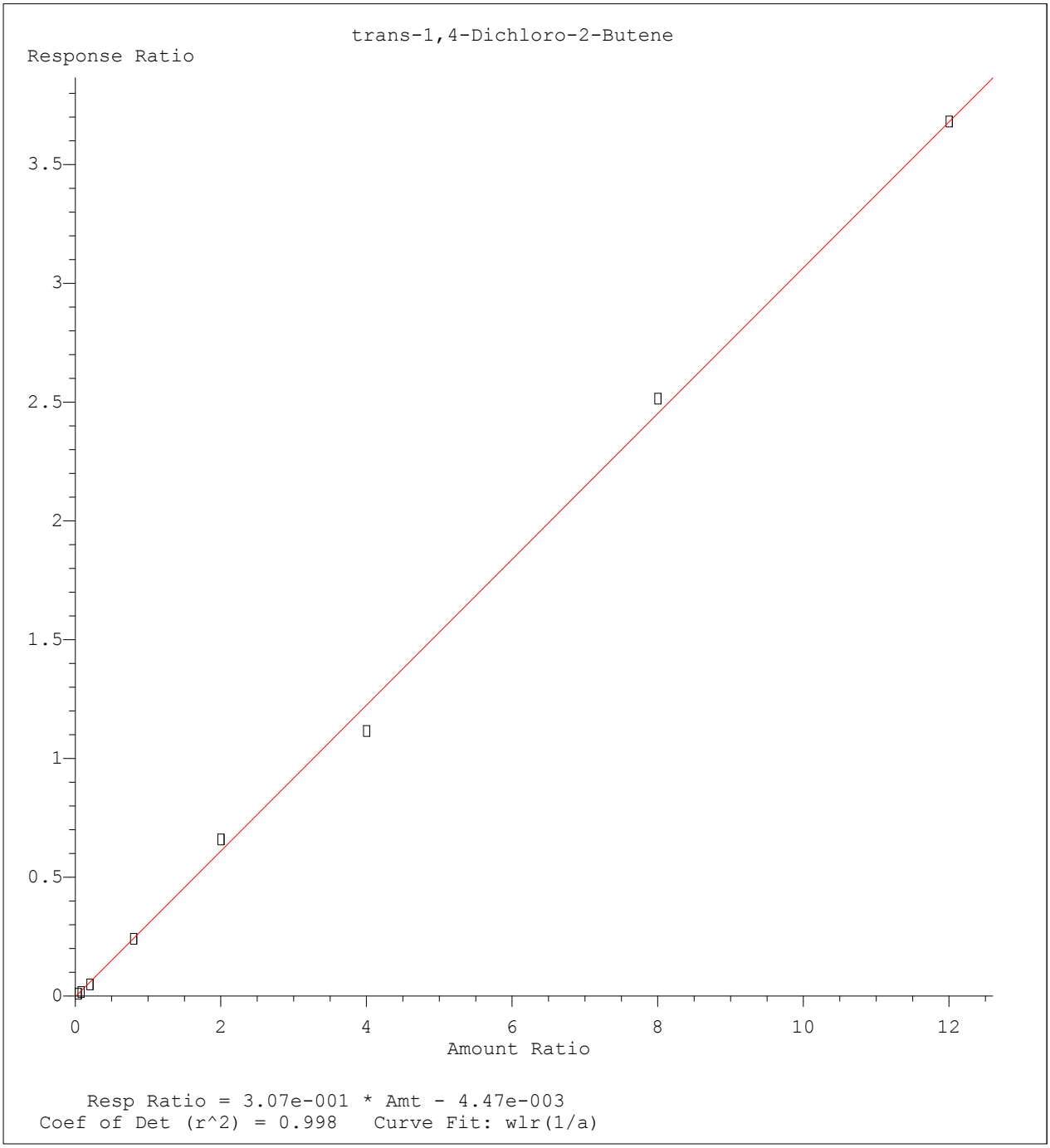

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961135.D Vial: 14
Acq On : 30 Jan 2014 15:49 Operator: ADC
Sample : WG461445-12 50.0 ug/L ALTSRC Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:57 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	594353	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	433062	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	227731	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.88	111	158695	26.7619 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.04%		
43) 1,2-Dichloroethane-d4	10.51	65	183175	25.7939 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.16%		
58) Toluene-d8	12.91	98	533955	28.0246 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 112.08%#		
79) p-Bromofluorobenzene	16.31	95	212815	23.0367 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.16%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	179343	42.7184 ug/L	99
3) Chloromethane	3.78	50	339236	52.2442 ug/L	98
4) Vinyl Chloride	4.01	62	278859	43.8418 ug/L	100
5) 1,3-Butadiene	4.05	54	171130	33.5742 ug/L	99
6) Bromomethane	4.92	94	208624	43.9883 ug/L	98
7) Chloroethane	5.08	64	233044	48.2701 ug/L	99
8) Trichlorofluoromethane	5.58	101	470724	47.2255 ug/L	100
9) Diethyl ether	6.12	59	622753	105.5486 ug/L	100
10) Isoprene	6.15	67	431455	48.1960 ug/L	99
11) Acrolein	6.34	56	108689	136.7840 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.37	101	301027	52.0232 ug/L	91
13) Acetone	6.46	43	133517	67.3695 ug/L	98
14) 1,1-Dichloroethene	6.68	61	512844	46.1033 ug/L	99
15) Tert-Butyl Alcohol	6.79	59	129534	243.1949 ug/L	99
16) Dimethyl Sulfide	6.94	62	380054	54.6218 ug/L	99
17) Iodomethane	7.20	142	189448	29.0701 ug/L	98
18) Methyl acetate	7.20	43	304146	52.1897 ug/L	97
19) Methylene Chloride	7.46	84	329758	50.7172 ug/L	99
20) Carbon Disulfide	7.51	76	864748	44.5377 ug/L	100
21) Acrylonitrile	7.64	53	147227	60.1280 ug/L	99
22) Methyl Tert Butyl Ether	7.68	73	900168	52.7542 ug/L	100
23) trans-1,2-Dichloroethene	7.92	61	535950	48.7043 ug/L	99
24) n-Hexane	8.00	57	465423	46.0427 ug/L	99
25) Diisopropyl ether	8.33	45	3008151	101.2807 ug/L	99
26) Vinyl Acetate	8.50	43	820238	59.3917 ug/L	98
27) 1,1-Dichloroethane	8.54	63	680332	47.5044 ug/L	99
28) Ethyl-Tert-Butyl ether	8.91	59	2466370	102.2175 ug/L	100
29) 2-Butanone	9.08	43	175415	58.5555 ug/L	99
30) Propionitrile	9.20	54	106789	110.3443 ug/L	100
31) 2,2-Dichloropropane	9.31	77	516895	48.1596 ug/L	99
32) cis-1,2-Dichloroethene	9.38	96	339471	47.2029 ug/L	98
33) Chloroform	9.59	83	588152	50.4680 ug/L	99
34) 1-Bromopropane	9.72	122	68737	55.0274 ug/L	99
35) Bromochloromethane	9.82	130	200580	49.7989 ug/L	98
36) Tetrahydrofuran	9.84	42	211415	115.4155 ug/L	99
38) 1,1,1-Trichloroethane	10.13	97	490014	47.4434 ug/L	100
39) Cyclohexane	10.16	56	669906	46.8057 ug/L	99
40) 1,1-Dichloropropene	10.31	75	428996	49.2537 ug/L	98
41) Tert-Amyl-Methyl ether	10.42	73	1793517	107.6072 ug/L	99
42) Carbon Tetrachloride	10.47	117	441613	47.5063 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M961135.D 8260WTR.M Thu Jan 30 17:06:59 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961135.D Vial: 14
Acq On : 30 Jan 2014 15:49 Operator: ADC
Sample : WG461445-12 50.0 ug/L ALTSRC Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:57 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.63	62	513470	49.6685 ug/L	99
46)	Benzene	10.68	78	1312773	49.5183 ug/L	100
47)	Trichloroethene	11.43	130	328137	46.6465 ug/L	100
48)	Methylcyclohexane	11.52	83	477226	45.7447 ug/L	99
49)	1,2-Dichloropropane	11.65	63	410702	50.8242 ug/L	99
50)	1,4-Dioxane	11.94	88	12202	239.4061 ug/L	92
51)	Bromodichloromethane	11.95	83	450367	48.3113 ug/L	99
52)	Dibromomethane	12.04	174	215015	51.7088 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.24	63	159402	39.8880 ug/L	99
54)	4-Methyl-2-Pentanone	12.27	58	137442	53.4440 ug/L	100
55)	cis-1,3-Dichloropropene	12.58	75	578314	52.8465 ug/L	99
56)	Dimethyl Disulfide	12.85	94	610255	50.7135 ug/L	100
59)	Toluene	13.01	91	1300513	49.4904 ug/L	100
60)	Ethyl Methacrylate	13.09	69	408445	54.9788 ug/L	100
61)	trans-1,3-Dichloropropene	13.18	75	482729	51.0252 ug/L	100
62)	1,1,2-Trichloroethane	13.40	97	261485	53.9306 ug/L	99
63)	2-Hexanone	13.33	43	273845	60.4325 ug/L	100
64)	1,3-Dichloropropane	13.70	76	490321	52.0353 ug/L	100
65)	Tetrachloroethene	13.84	164	284590	48.3984 ug/L	97
66)	Dibromochloromethane	14.10	129	316872	50.4361 ug/L	99
67)	1,2-Dibromoethane	14.35	107	287962	52.5820 ug/L	96
68)	1-Chlorohexane	14.44	91	407905	50.1519 ug/L	98
69)	Chlorobenzene	14.86	112	829942	45.4352 ug/L	98
70)	1,1,1,2-Tetrachloroethane	14.88	131	346272	51.2236 ug/L	98
71)	Ethylbenzene	14.88	106	489229	49.1667 ug/L	100
72)	m-,p-Xylene	14.97	106	1141516	94.6829 ug/L	98
73)	o-Xylene	15.53	106	561995	45.4410 ug/L	98
74)	Styrene	15.57	104	1053675	51.4102 ug/L	99
75)	Bromoform	16.07	173	250641	58.9408 ug/L	97
76)	Isopropylbenzene	15.96	105	1412810	45.1500 ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.17	83	366296	52.9808 ug/L	98
80)	1,2,3-Trichloropropane	16.37	110	107292	52.5565 ug/L	91
81)	trans-1,4-Dichloro-2-Buten	16.41	53	82586	29.8939 ug/L #	8
82)	n-Propylbenzene	16.47	91	1585123	43.8273 ug/L	100
83)	Bromobenzene	16.61	156	392513	47.2097 ug/L	99
84)	1,3,5-Trimethylbenzene	16.66	105	1360703	48.7154 ug/L	98
85)	2-Chlorotoluene	16.74	91	1004168	42.6605 ug/L	98
86)	4-Chlorotoluene	16.79	91	1022858	46.5644 ug/L	100
87)	a-Methylstyrene	17.06	118	731267	51.5761 ug/L	99
88)	tert-Butylbenzene	17.12	134	275817	44.2005 ug/L	98
89)	1,2,4-Trimethylbenzene	17.18	105	1417816	50.5782 ug/L	99
90)	sec-Butylbenzene	17.39	105	1552705	45.0194 ug/L	99
91)	p-Isopropyltoluene	17.55	119	1287274	47.3380 ug/L	99
92)	1,3-Dichlorobenzene	17.74	146	716439	45.7026 ug/L	100
93)	1,4-Dichlorobenzene	17.88	146	799621	50.9023 ug/L	99
94)	n-Butylbenzene	18.08	91	1285971	54.9007 ug/L	100
95)	1,2-Dichlorobenzene	18.37	146	759518	49.7685 ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.37	157	86371	59.0847 ug/L	99
97)	1,2,4-Trichlorobenzene	20.51	180	641850	57.7356 ug/L	100
98)	Hexachlorobutadiene	20.66	225	350117	57.0395 ug/L	99
99)	Naphthalene	20.89	128	1290446	58.5527 ug/L	100
100)	1,2,3-Trichlorobenzene	21.20	180	622008	56.7885 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M961135.D 8260WTR.M Thu Jan 30 17:06:59 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961135.D Vial: 14
Acq On : 30 Jan 2014 15:49 Operator: ADC
Sample : WG461445-12 50.0 ug/L ALTSRC Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration

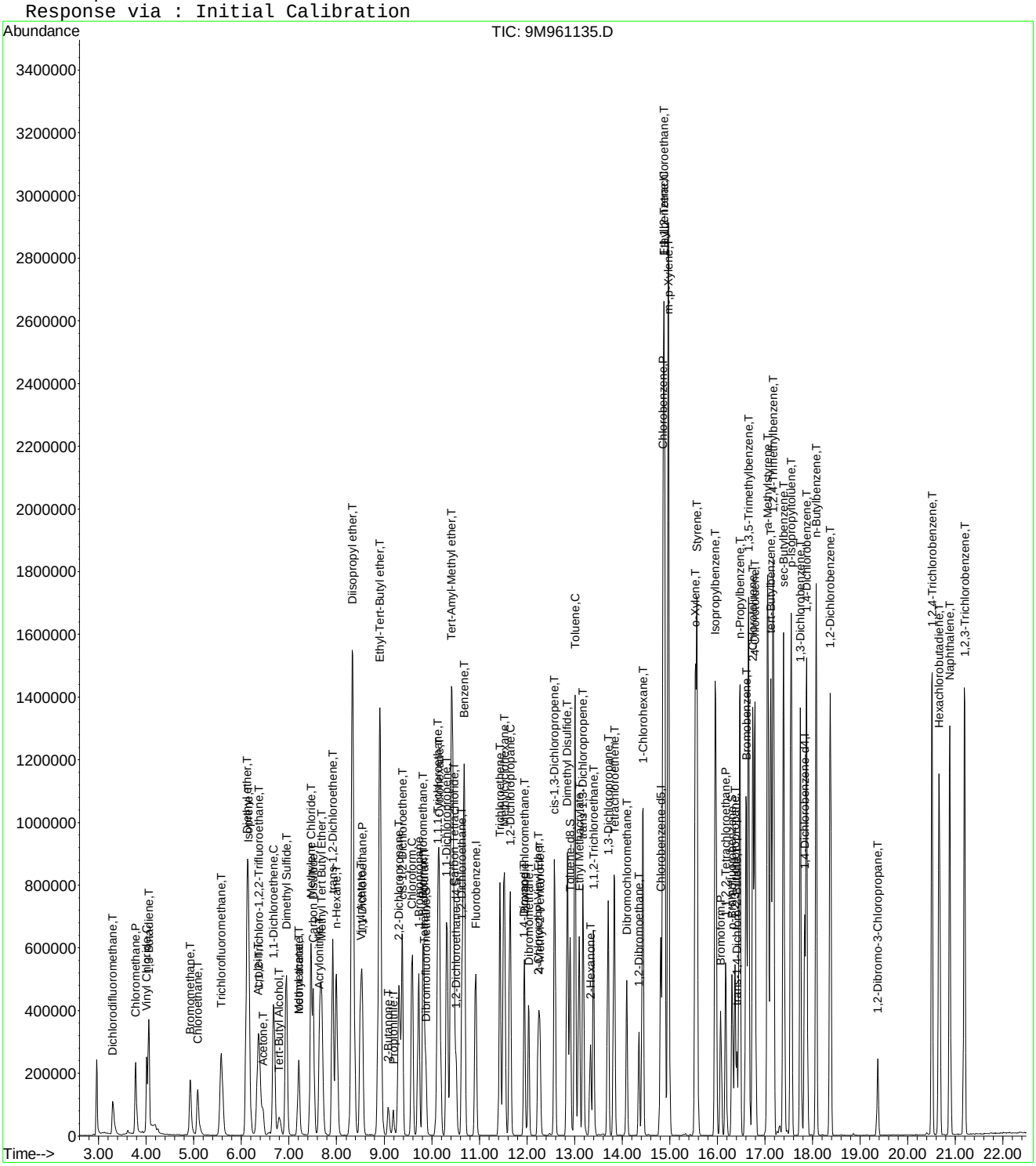

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\013014\9M961135.D Vial: 14
Acq On : 30 Jan 2014 15:49 Operator: ADC
Sample : WG461445-12 50.0 ug/L ALTSRC Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	50.0000	42.7184	14.6	75	-0.01
3	P	Chloromethane	50.0000	52.2442	-4.5	85	0.00
4	C	Vinyl Chloride	50.0000	43.8418	12.3	69	-0.01
5	T	1,3-Butadiene	50.0000	33.5742	32.9#	62	-0.01
6	T	Bromomethane	50.0000	43.9883	12.0	83	-0.02
7	T	Chloroethane	50.0000	48.2701	3.5	79	-0.01
8	T	Trichlorofluoromethane	50.0000	47.2255	5.5	82	-0.01
9	T	Diethyl ether	100.0000	105.5486	-5.5	91	0.00
10	T	Isoprene	50.0000	48.1960	3.6	80	-0.01
11	T	Acrolein	50.0000	136.7840	-173.6#	233	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.0232	-4.0	87	0.00
13	T	Acetone	50.0000	67.3695	-34.7#	124	0.00
14	C	1,1-Dichloroethene	50.0000	46.1033	7.8	77	-0.01
15	T	Tert-Butyl Alcohol	200.0000	243.1949	-21.6	114	0.00
16	T	Dimethyl Sulfide	50.0000	54.6218	-9.2	91	0.00
17	T	Iodomethane	50.0000	29.0701	41.9#	50	0.00
18	T	Methyl acetate	50.0000	52.1897	-4.4	94	0.00
19	T	Methylene Chloride	50.0000	50.7172	-1.4	86	0.00
20	T	Carbon Disulfide	50.0000	44.5376	10.9	77	0.00
21	T	Acrylonitrile	50.0000	60.1280	-20.3	97	0.00
22	T	Methyl Tert Butyl Ether	50.0000	52.7542	-5.5	91	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.7043	2.6	85	0.00
24	T	n-Hexane	50.0000	46.0427	7.9	76	0.00
25	T	Diisopropyl ether	100.0000	101.2807	-1.3	87	0.00
26	T	Vinyl Acetate	50.0000	59.3917	-18.8	104	0.00
27	P	1,1-Dichloroethane	50.0000	47.5044	5.0	84	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.2175	-2.2	88	0.00
29	T	2-Butanone	50.0000	58.5555	-17.1	110	0.00
30	T	Propionitrile	100.0000	110.3443	-10.3	102	0.00
31	T	2,2-Dichloropropane	50.0000	48.1596	3.7	83	0.00
32	T	cis-1,2-Dichloroethene	50.0000	47.2029	5.6	85	0.00
33	C	Chloroform	50.0000	50.4680	-0.9	87	0.00
34		1-Bromopropane	50.0000	55.0274	-10.1	95	0.00
35	T	Bromochloromethane	50.0000	49.7989	0.4	85	0.00
36	T	Tetrahydrofuran	100.0000	115.4155	-15.4	98	0.00
37	S	Dibromofluoromethane	25.0000	26.7619	-7.0	94	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.4434	5.1	84	0.00
39	T	Cyclohexane	50.0000	46.8057	6.4	79	0.00
40	T	1,1-Dichloropropene	50.0000	49.2537	1.5	83	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	107.6072	-7.6	93	0.00
42	T	Carbon Tetrachloride	50.0000	47.5063	5.0	83	0.00
43	S	1,2-Dichloroethane-d4	25.0000	25.7939	-3.2	97	0.00
44		Heptane	-1.0000	0.0000	0.0	93	-0.01
45	T	1,2-Dichloroethane	50.0000	49.6685	0.7	87	0.00
46	T	Benzene	50.0000	49.5183	1.0	87	0.00
47	T	Trichloroethene	50.0000	46.6465	6.7	84	0.00
48	T	Methylcyclohexane	50.0000	45.7447	8.5	79	0.00
49	C	1,2-Dichloropropane	50.0000	50.8242	-1.6	87	0.00
50	T	1,4-Dioxane	200.0000	239.4061	-19.7	112	0.00
51	T	Bromodichloromethane	50.0000	48.3113	3.4	83	0.00
52	T	Dibromomethane	50.0000	51.7088	-3.4	88	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	39.8880	20.2	69	0.00
54	T	4-Methyl-2-Pentanone	50.0000	53.4440	-6.9	98	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\013014\9M961135.D Vial: 14
Acq On : 30 Jan 2014 15:49 Operator: ADC
Sample : WG461445-12 50.0 ug/L ALTSRC Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.8465	-5.7	91	0.00
56	T	Dimethyl Disulfide	50.0000	50.7135	-1.4	86	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	91	0.00
58	S	Toluene-d8	25.0000	28.0246	-12.1	104	0.00
59	C	Toluene	50.0000	49.4904	1.0	85	0.00
60	T	Ethyl Methacrylate	50.0000	54.9788	-10.0	91	0.00
61	T	trans-1,3-Dichloropropene	50.0000	51.0252	-2.1	85	0.00
62	T	1,1,2-Trichloroethane	50.0000	53.9306	-7.9	90	0.00
63	T	2-Hexanone	50.0000	60.4325	-20.9	109	0.00
64	T	1,3-Dichloropropane	50.0000	52.0353	-4.1	89	0.00
65	T	Tetrachloroethene	50.0000	48.3984	3.2	84	0.00
66	T	Dibromochloromethane	50.0000	50.4361	-0.9	84	0.00
67	T	1,2-Dibromoethane	50.0000	52.5820	-5.2	90	0.00
68	T	1-Chlorohexane	50.0000	50.1519	-0.3	84	0.00
69	P	Chlorobenzene	50.0000	45.4352	9.1	79	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	51.2236	-2.4	87	0.00
71	C	Ethylbenzene	50.0000	49.1667	1.7	85	0.00
72	T	m-,p-Xylene	100.0000	94.6829	5.3	81	0.00
73	T	o-Xylene	50.0000	45.4410	9.1	79	0.00
74	T	Styrene	50.0000	51.4102	-2.8	87	0.00
75	P	Bromoform	50.0000	58.9408	-17.9	93	0.00
76	T	Isopropylbenzene	50.0000	45.1500	9.7	79	0.00
77	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	98	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.9808	-6.0	103	0.00
79	S	p-Bromofluorobenzene	25.0000	23.0367	7.9	88	0.00
80	T	1,2,3-Trichloropropane	50.0000	52.5565	-5.1	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	29.8939	40.2#	54	0.00
82	T	n-Propylbenzene	50.0000	43.8273	12.3	78	0.00
83	T	Bromobenzene	50.0000	47.2097	5.6	86	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	48.7154	2.6	88	0.00
85	T	2-Chlorotoluene	50.0000	42.6605	14.7	81	0.00
86	T	4-Chlorotoluene	50.0000	46.5644	6.9	83	0.00
87	T	a-Methylstyrene	50.0000	51.5761	-3.2	91	0.00
88	T	tert-Butylbenzene	50.0000	44.2005	11.6	82	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	50.5782	-1.2	90	0.00
90	T	sec-Butylbenzene	50.0000	45.0194	10.0	80	0.00
91	T	p-Isopropyltoluene	50.0000	47.3380	5.3	83	0.00
92	T	1,3-Dichlorobenzene	50.0000	45.7026	8.6	84	0.00
93	T	1,4-Dichlorobenzene	50.0000	50.9023	-1.8	93	0.00
94	T	n-Butylbenzene	50.0000	54.9007	-9.8	93	0.00
95	T	1,2-Dichlorobenzene	50.0000	49.7685	0.5	90	0.00
96	T	1,2-Dibromo-3-Chloropropane	50.0000	59.0847	-18.2	109	0.00
97	T	1,2,4-Trichlorobenzene	50.0000	57.7356	-15.5	101	0.00
98	T	Hexachlorobutadiene	50.0000	57.0395	-14.1	99	0.00
99	T	Naphthalene	50.0000	58.5527	-17.1	104	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	56.7885	-13.6	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M961135.D 8260WTR.M Thu Jan 30 17:07:47 2014 Page 2

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\013114\
Data File : 17M002761.D
Acq On : 31 Jan 2014 16:16
Operator : ADC
Sample : WG461715-02 50 ug/L CCV 8260
Misc : 1,1 STD62504
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 31 16:38:22 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.088	96	880704	25.00000 ug/L	0.0000
56) Chlorobenzene-d5	13.913	117	608202	25.00000 ug/L	0.0000
76) 1,4-Dichlorobenzene-d4	16.898	152	297386	25.00000 ug/L	0.0000
System Monitoring Compounds					
37) Dibromofluoromethane	9.041	111	320666	32.0504 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 128.202%#		
43) 1,2-Dichloroethane-d4	9.684	65	345400	31.1043 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 124.417%#		
57) Toluene-d8	12.047	98	1174670	33.6517 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 134.607%#		
78) p-Bromofluorobenzene	15.406	95	424479	32.4269 ug/L	0.0107
Spiked Amount 25.000	Range 86 - 115		Recovery = 129.708%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.522	85	466486	48.9711 ug/L	98
3) Chloromethane	2.915	50	1010808	43.6833 ug/L	100
4) Vinyl Chloride	3.123	62	803241	42.5697 ug/L	100
5) 1,3-Butadiene	3.164	54	630748	47.3477 ug/L	99
6) Bromomethane	3.952	94	335583	48.6008 ug/L	100
7) Chloroethane	4.128	64	381251	49.4407 ug/L	100
8) Trichlorofluoromethane	4.636	101	816486	50.9475 ug/L	99
9) Diethyl ether	5.217	59	770510	101.4408 ug/L	99
10) Isoprene	5.227	67	735125	52.9174 ug/L	99
11) Acrolein	5.445	56	64336	78.0678 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	5.476	101	488921	52.0568 ug/L	100
13) Acetone	5.548	43	103542	52.6693 ug/L	99
14) 1,1-Dichloroethene	5.766	61	878947	50.8862 ug/L	98
15) Tert-Butyl Alcohol	5.921	59	102727	201.7399 ug/L #	89
16) Dimethyl Sulfide	6.035	62	468080	50.0261 ug/L	99
17) Iodomethane	6.263	142	496827	49.4521 ug/L	100
18) Methyl acetate	6.357	43	308018	48.5019 ug/L	98
19) Methylene Chloride	6.585	84	516878	45.2611 ug/L	96
20) Carbon Disulfide	6.564	76	1602351	50.8435 ug/L	100
21) Acrylonitrile	6.792	53	143156	52.5120 ug/L	99
22) Methyl Tert Butyl Ether	6.834	73	1205617	48.3502 ug/L	100
23) trans-1,2-Dichloroethene	7.051	96	497873	49.2387 ug/L	95
24) n-Hexane	7.155	57	794222	60.7991 ug/L	98
25) Diisopropyl ether	7.528	45	3855411	101.6371 ug/L	100
26) Vinyl Acetate	7.694	43	805758	51.6231 ug/L	100
27) 1,1-Dichloroethane	7.694	63	1019747	50.2469 ug/L	100
28) Ethyl-Tert-Butyl ether	8.119	59	3259791	99.8279 ug/L	100
29) 2-Butanone	8.274	43	151579	50.5265 ug/L	99
30) Propionitrile	8.378	54	93439	99.9613 ug/L	100
31) 2,2-Dichloropropane	8.471	77	893139	52.7138 ug/L	97
32) cis-1,2-Dichloroethene	8.544	96	565121	49.0217 ug/L	95
33) Chloroform	8.751	83	981698	49.4024 ug/L	99
34) 1-Bromopropane	8.886	122	100945	49.4242 ug/L	100
35) Bromochloromethane	8.969	130	336410	48.9526 ug/L	100
36) Tetrahydrofuran	9.000	42	197205	98.3980 ug/L	97
38) 1,1,1-Trichloroethane	9.280	97	891448	49.6889 ug/L	98
39) Cyclohexane	9.300	56	1005365	52.7469 ug/L	99
40) 1,1-Dichloropropene	9.477	75	712225	52.0062 ug/L	97
41) Tert-Amyl-Methyl ether	9.611	73	2508657	97.8834 ug/L	99
42) Carbon Tetrachloride	9.611	117	764179	48.5723 ug/L	100
44) 1,2-Dichloroethane	9.798	62	726967	50.5528 ug/L	99
45) Benzene	9.829	78	2003389	48.9386 ug/L	99
46) Trichloroethene	10.586	130	568826	49.0269 ug/L	97
47) Methylcyclohexane	10.669	83	869538	54.0230 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\013114\
Data File : 17M002761.D
Acq On : 31 Jan 2014 16:16
Operator : ADC
Sample : WG461715-02 50 ug/L CCV 8260
Misc : 1,1 STD62504
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 31 16:38:22 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
48) 1,2-Dichloropropane	10.803	63	555721	50.2143 ug/L	99
49) 1,4-Dioxane	11.094	88	15999	248.1414 ug/L	100
50) Bromodichloromethane	11.094	83	740698	50.6357 ug/L	100
51) Dibromomethane	11.166	93	290362	49.0349 ug/L	100
52) 2-Chloroethyl Vinyl Ether	11.425	63	267758	51.4194 ug/L	100
53) 4-Methyl-2-Pentanone	11.456	58	128394	48.5268 ug/L	99
54) cis-1,3-Dichloropropene	11.736	75	844069	51.1978 ug/L	100
55) Dimethyl Disulfide	11.975	79	484298	48.4515 ug/L	99
58) Toluene	12.151	91	2149392	50.6461 ug/L	100
59) Ethyl Methacrylate	12.286	69	486852	52.2435 ug/L	98
60) trans-1,3-Dichloropropene	12.338	75	735664	52.4687 ug/L	99
61) 1,1,2-Trichloroethane	12.545	97	374088	49.2383 ug/L	99
62) 2-Hexanone	12.514	43	234293	50.9609 ug/L	99
63) 1,3-Dichloropropane	12.845	76	659579	49.7867 ug/L	97
64) Tetrachloroethene	12.949	166	593929	51.1251 ug/L	99
65) Dibromochloromethane	13.208	129	516316	45.6315 ug/L	99
66) 1,2-Dibromoethane	13.457	107	384715	50.1097 ug/L	99
67) 1-Chlorohexane	13.592	91	709040	51.8349 ug/L	98
68) Chlorobenzene	13.955	112	1425329	49.9924 ug/L	99
69) 1,1,1,2-Tetrachloroethane	13.996	131	548005	47.6497 ug/L	100
70) Ethylbenzene	14.006	106	792910	48.1715 ug/L	100
71) m-,p-Xylene	14.089	106	1939987	94.0725 ug/L	100
72) o-Xylene	14.639	106	931860	49.7825 ug/L	99
73) Styrene	14.680	104	1541600	47.9296 ug/L	98
74) Bromoform	15.136	173	327944	44.3691 ug/L	99
75) Isopropylbenzene	15.074	105	2435349	52.0035 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.281	83	411632	48.7565 ug/L	100
79) 1,2,3-Trichloropropane	15.468	110	128570	48.9777 ug/L	99
80) trans-1,4-Dichloro-2-B...	15.530	53	149420	50.4202 ug/L	99
81) n-Propylbenzene	15.572	91	2965506	54.1079 ug/L	100
82) Bromobenzene	15.675	156	612475	48.9315 ug/L	97
83) 1,3,5-Trimethylbenzene	15.758	105	2070082	51.8889 ug/L	100
84) 2-Chlorotoluene	15.820	91	1895829	52.9762 ug/L	100
85) 4-Chlorotoluene	15.872	91	1617473	52.0555 ug/L	100
86) a-Methylstyrene	16.162	118	1108620	45.3967 ug/L	99
87) tert-Butylbenzene	16.214	134	429050	50.3235 ug/L	100
88) 1,2,4-Trimethylbenzene	16.266	105	2113520	52.1631 ug/L	100
89) sec-Butylbenzene	16.484	105	2681237	53.4107 ug/L	100
90) p-Isopropyltoluene	16.650	119	2233823	54.0564 ug/L	100
91) 1,3-Dichlorobenzene	16.805	146	1181307	50.9699 ug/L	99
92) 1,4-Dichlorobenzene	16.940	146	1178510	51.0620 ug/L	99
93) n-Butylbenzene	17.168	91	2084135	50.7887 ug/L	100
94) 1,2-Dichlorobenzene	17.417	146	1105613	50.1458 ug/L	99
95) 1,2-Dibromo-3-Chloropr...	18.412	75	74902	51.0128 ug/L	96
96) 1,2,4-Trichlorobenzene	19.541	180	801699	53.3084 ug/L	100
97) Hexachlorobutadiene	19.707	225	449351	53.8804 ug/L	99
98) Naphthalene	19.894	128	1396315	50.8063 ug/L	100
99) 1,2,3-Trichlorobenzene	20.205	180	719601	52.1498 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\013114\
Data File : 17M002761.D
Acq On : 31 Jan 2014 16:16
Operator : ADC
Sample : WG461715-02 50 ug/L CCV 8260
Misc : 1,1 STD62504
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 31 16:38:22 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

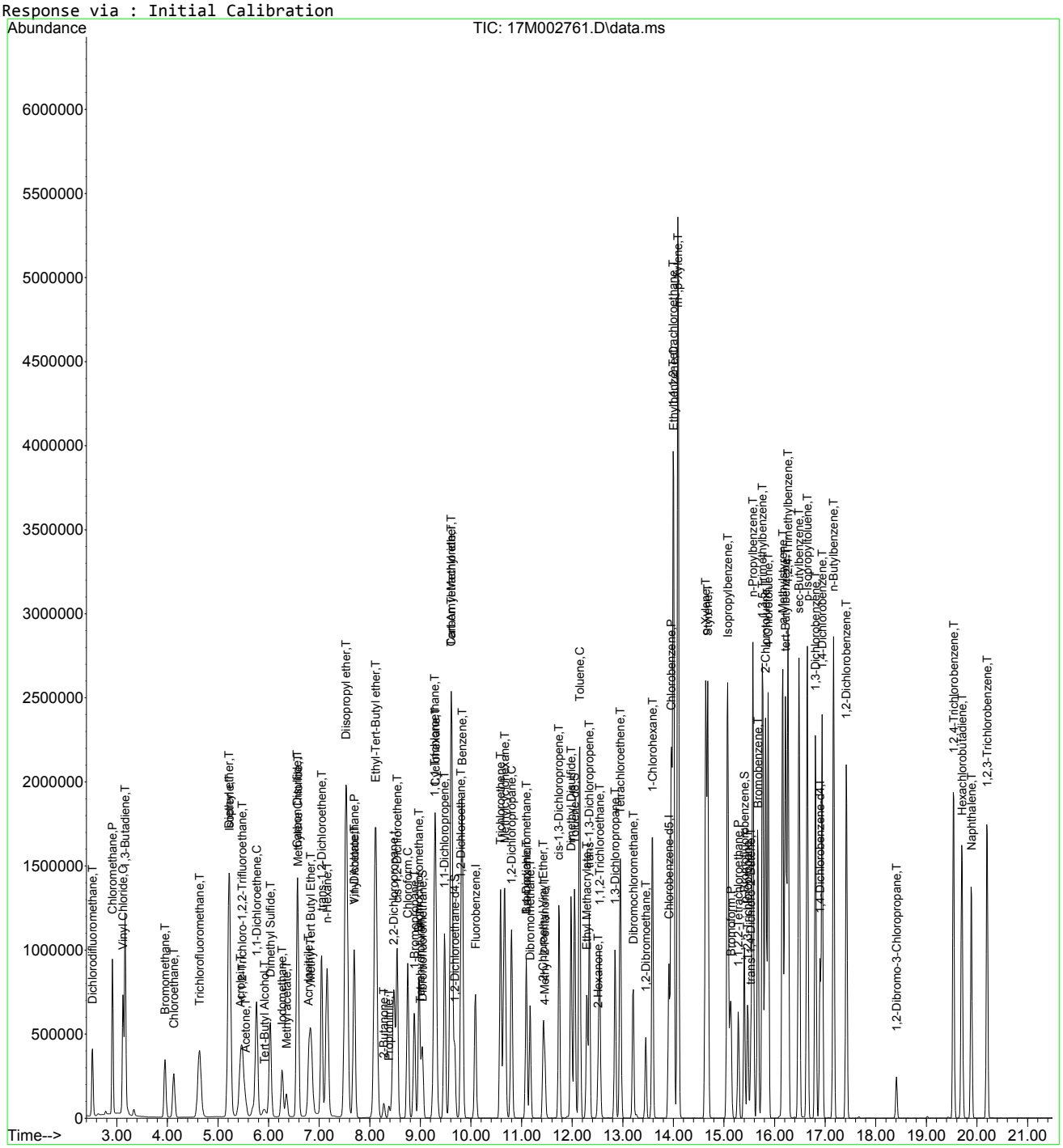

8260WT.M Fri Jan 31 16:38:24 2014 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\013114\
Data File : 17M002761.D
Acq On : 31 Jan 2014 16:16
Operator : ADC
Sample : WG461715-02 50 ug/L CCV 8260
Misc : 1,1 STD62504
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 31 16:38:22 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	0.270	0.265	1.9	95	0.000
3	P	Chloromethane	0.657	0.574	12.6	88	0.000
4	C	Vinyl Chloride	0.536	0.456	14.9#	88	0.000
5	T	1,3-Butadiene	0.378	0.358	5.3	90	0.000
6	T	Bromomethane	0.196	0.191	2.6	97	0.000
7	T	Chloroethane	0.219	0.216	1.4	101	0.000
8	T	Trichlorofluoromethane	0.455	0.464	-2.0	101	0.000
9	T	Diethyl ether	0.216	0.219	-1.4	105	0.011
10	T	Isoprene	0.394	0.417	-5.8	103	0.000
11	T	Acrolein	0.023	0.037	-60.9#	163#	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.267	0.278	-4.1	105	0.011
13	T	Acetone	0.060	0.059	1.7	109	0.000
14	C	1,1-Dichloroethene	0.490	0.499	-1.8#	102	0.000
15	T	Tert-Butyl Alcohol	0.016	0.015	6.3	102	0.010
16	T	Dimethyl Sulfide	0.266	0.266	0.0	101	0.010
17	T	Iodomethane	0.285	0.282	1.1	98	0.000
18	T	Methyl acetate	0.180	0.175	2.8	107	0.011
19	T	Methylene Chloride	0.324	0.293	9.6	99	0.000
20	T	Carbon Disulfide	0.895	0.910	-1.7	102	0.000
21	T	Acrylonitrile	0.077	0.081	-5.2	106	0.000
22	T	Methyl Tert Butyl Ether	0.708	0.684	3.4	101	0.011
23	T	trans-1,2-Dichloroethene	0.287	0.283	1.4	99	0.010
24	T	n-Hexane	0.371	0.451	-21.6#	120	0.000
25	T	Diisopropyl ether	1.077	1.094	-1.6	104	0.000
26	T	Vinyl Acetate	0.443	0.457	-3.2	114	0.000
27	P	1,1-Dichloroethane	0.576	0.579	-0.5	102	0.000
28	T	Ethyl-Tert-Butyl ether	0.927	0.925	0.2	102	0.000
29	T	2-Butanone	0.085	0.086	-1.2	106	0.000
30	T	Propionitrile	0.027	0.027	0.0	104	0.000
31	t	2,2-Dichloropropane	0.481	0.507	-5.4	107	0.000
32	T	cis-1,2-Dichloroethene	0.327	0.321	1.8	99	0.000
33	C	Chloroform	0.564	0.557	1.2#	100	0.000
34	T	1-Bromopropane	0.058	0.057	1.7	97	0.000
35	T	Bromochloromethane	0.195	0.191	2.1	98	0.000
36	T	Tetrahydrofuran	0.057	0.056	1.8	105	0.000
37	S	Dibromofluoromethane	0.284	0.364	-28.2#	131	0.000
38	T	1,1,1-Trichloroethane	0.509	0.506	0.6	99	0.000
39	T	Cyclohexane	0.541	0.571	-5.5	104	0.000
40	T	1,1-Dichloropropene	0.389	0.404	-3.9	103	0.000
41	T	Tert-Amyl-Methyl ether	0.728	0.712	2.2	101	0.000
42	T	Carbon Tetrachloride	0.357	0.434	-21.6#	99	0.000
43	S	1,2-Dichloroethane-d4	0.315	0.392	-24.4#	129	0.000
44	T	1,2-Dichloroethane	0.408	0.413	-1.2	103	0.000
45	T	Benzene	1.162	1.137	2.2	99	0.000
46	T	Trichloroethene	0.329	0.323	1.8	97	0.000
47	T	Methylcyclohexane	0.457	0.494	-8.1	107	0.011
48	C	1,2-Dichloropropane	0.314	0.315	-0.3#	101	0.000
49	T	1,4-Dioxane	0.002	0.002	0.0	132	0.000
50	T	Bromodichloromethane	0.415	0.421	-1.4	99	0.000
51	T	Dibromomethane	0.168	0.165	1.8	99	0.000
52	T	2-Chloroethyl Vinyl Ether	0.148	0.152	-2.7	104	0.000
53	T	4-Methyl-2-Pentanone	0.075	0.073	2.7	101	0.000
54	T	cis-1,3-Dichloropropene	0.468	0.479	-2.4	102	0.000
55	T	Dimethyl Disulfide	0.284	0.275	3.2	99	0.000

Data Path : D:\MassHunter\GCMS\1\data\013114\
Data File : 17M002761.D
Acq On : 31 Jan 2014 16:16
Operator : ADC
Sample : WG461715-02 50 ug/L CCV 8260
Misc : 1,1 STD62504
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 31 16:38:22 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	I	Chlorobenzene-d5	1.000	1.000	0.0	99	0.000
57	S	Toluene-d8	1.435	1.931	-34.6#	135	0.000
58	C	Toluene	1.744	1.767	-1.3#	100	0.000
59	T	Ethyl Methacrylate	0.383	0.400	-4.4	99	0.000
60	T	trans-1,3-Dichloropropene	0.576	0.605	-5.0	102	0.000
61	T	1,1,2-Trichloroethane	0.312	0.308	1.3	98	0.000
62	T	2-Hexanone	0.189	0.193	-2.1	104	0.000
63	T	1,3-Dichloropropane	0.545	0.542	0.6	101	0.000
64	T	Tetrachloroethene	0.478	0.488	-2.1	100	0.000
65	T	Dibromochloromethane	0.404	0.424	-5.0	98	0.010
66	T	1,2-Dibromoethane	0.316	0.316	0.0	97	0.000
67	T	1-Chlorohexane	0.519	0.583	-12.3	105	0.011
68	P	Chlorobenzene	1.172	1.172	0.0	100	0.000
69	T	1,1,1,2-Tetrachloroethane	0.447	0.451	-0.9	98	0.000
70	C	Ethylbenzene	0.651	0.652	-0.2#	100	0.010
71	T	m-,p-Xylene	0.782	0.797	-1.9	101	0.000
72	T	o-Xylene	0.769	0.766	0.4	100	0.000
73	T	Styrene	1.186	1.267	-6.8	100	0.000
74	P	Bromoform	0.263	0.270	-2.7	97	0.000
75	T	Isopropylbenzene	1.925	2.002	-4.0	101	0.000
76	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	99	0.000
77	P	1,1,2,2-Tetrachloroethane	0.710	0.692	2.5	105	0.000
78	S	p-Bromofluorobenzene	1.100	1.427	-29.7#	133	0.011
79	T	1,2,3-Trichloropropane	0.208	0.216	-3.8	100	0.000
80	T	trans-1,4-Dichloro-2-Butene	0.221	0.251	-13.6	105	0.000
81	T	n-Propylbenzene	4.607	4.986	-8.2	102	0.000
82	T	Bromobenzene	1.052	1.030	2.1	98	0.000
83	T	1,3,5-Trimethylbenzene	3.354	3.480	-3.8	102	0.000
84	T	2-Chlorotoluene	3.008	3.187	-6.0	101	0.000
85	T	4-Chlorotoluene	2.612	2.719	-4.1	104	0.000
86	T	a-Methylstyrene	1.803	1.864	-3.4	100	0.000
87	T	tert-Butylbenzene	0.717	0.721	-0.6	101	0.000
88	T	1,2,4-Trimethylbenzene	3.406	3.553	-4.3	101	0.000
89	T	sec-Butylbenzene	4.220	4.508	-6.8	103	0.000
90	T	p-Isopropyltoluene	3.474	3.756	-8.1	104	0.000
91	T	1,3-Dichlorobenzene	1.948	1.986	-2.0	102	0.000
92	T	1,4-Dichlorobenzene	1.940	1.981	-2.1	102	0.000
93	T	n-Butylbenzene	3.016	3.504	-16.2	107	0.000
94	T	1,2-Dichlorobenzene	1.853	1.859	-0.3	101	0.000
95	T	1,2-Dibromo-3-Chloropropane	0.123	0.126	-2.4	105	0.000
96	T	1,2,4-Trichlorobenzene	1.264	1.348	-6.6	104	0.000
97	T	Hexachlorobutadiene	0.701	0.756	-7.8	105	0.000
98	T	Naphthalene	2.310	2.348	-1.6	99	0.000
99	T	1,2,3-Trichlorobenzene	1.160	1.210	-4.3	101	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\013114\
Data File : 17M002761.D
Acq On : 31 Jan 2014 16:16
Operator : ADC
Sample : WG461715-02 50 ug/L CCV 8260
Misc : 1,1 STD62504
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 31 16:38:22 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	50.000	48.971	2.1	95	0.000
3	P	Chloromethane	50.000	43.683	12.6	88	0.000
4	C	Vinyl Chloride	50.000	42.570	14.9#	88	0.000
5	T	1,3-Butadiene	50.000	47.348	5.3	90	0.000
6	T	Bromomethane	50.000	48.601	2.8	97	0.000
7	T	Chloroethane	50.000	49.441	1.1	101	0.000
8	T	Trichlorofluoromethane	50.000	50.947	-1.9	101	0.000
9	T	Diethyl ether	100.000	101.441	-1.4	105	0.011
10	T	Isoprene	50.000	52.917	-5.8	103	0.000
11	T	Acrolein	50.000	78.068	-56.1#	163	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	52.057	-4.1	105	0.011
13	T	Acetone	50.000	52.669	-5.3	109	0.000
14	C	1,1-Dichloroethene	50.000	50.886	-1.8#	102	0.000
15	T	Tert-Butyl Alcohol	200.000	201.740	-0.9	102	0.010
16	T	Dimethyl Sulfide	50.000	50.026	-0.1	101	0.010
17	T	Iodomethane	50.000	49.452	1.1	98	0.000
18	T	Methyl acetate	50.000	48.502	3.0	107	0.011
19	T	Methylene Chloride	50.000	45.261	9.5	99	0.000
20	T	Carbon Disulfide	50.000	50.844	-1.7	102	0.000
21	T	Acrylonitrile	50.000	52.512	-5.0	106	0.000
22	T	Methyl Tert Butyl Ether	50.000	48.350	3.3	101	0.011
23	T	trans-1,2-Dichloroethene	50.000	49.239	1.5	99	0.010
24	T	n-Hexane	50.000	60.799	-21.6#	120	0.000
25	T	Diisopropyl ether	100.000	101.637	-1.6	104	0.000
26	T	Vinyl Acetate	50.000	51.623	-3.2	114	0.000
27	P	1,1-Dichloroethane	50.000	50.247	-0.5	102	0.000
28	T	Ethyl-Tert-Butyl ether	100.000	99.828	0.2	102	0.000
29	T	2-Butanone	50.000	50.527	-1.1	106	0.000
30	T	Propionitrile	100.000	99.961	0.0	104	0.000
31	t	2,2-Dichloropropane	50.000	52.714	-5.4	107	0.000
32	T	cis-1,2-Dichloroethene	50.000	49.022	2.0	99	0.000
33	C	Chloroform	50.000	49.402	1.2#	100	0.000
34	T	1-Bromopropane	50.000	49.424	1.2	97	0.000
35	T	Bromochloromethane	50.000	48.953	2.1	98	0.000
36	T	Tetrahydrofuran	100.000	98.398	1.6	105	0.000
37	S	Dibromofluoromethane	25.000	32.050	-28.2#	131	0.000
38	T	1,1,1-Trichloroethane	50.000	49.689	0.6	99	0.000
39	T	Cyclohexane	50.000	52.747	-5.5	104	0.000
40	T	1,1-Dichloropropene	50.000	52.006	-4.0	103	0.000
41	T	Tert-Amyl-Methyl ether	100.000	97.883	2.1	101	0.000
42	T	Carbon Tetrachloride	50.000	48.572	2.9	99	0.000
43	S	1,2-Dichloroethane-d4	25.000	31.104	-24.4#	129	0.000
44	T	1,2-Dichloroethane	50.000	50.553	-1.1	103	0.000
45	T	Benzene	50.000	48.939	2.1	99	0.000
46	T	Trichloroethene	50.000	49.027	1.9	97	0.000
47	T	Methylcyclohexane	50.000	54.023	-8.0	107	0.011
48	C	1,2-Dichloropropane	50.000	50.214	-0.4#	101	0.000
49	T	1,4-Dioxane	200.000	248.141	-24.1#	132	0.000
50	T	Bromodichloromethane	50.000	50.636	-1.3	99	0.000
51	T	Dibromomethane	50.000	49.035	1.9	99	0.000
52	T	2-Chloroethyl Vinyl Ether	50.000	51.419	-2.8	104	0.000
53	T	4-Methyl-2-Pentanone	50.000	48.527	2.9	101	0.000
54	T	cis-1,3-Dichloropropene	50.000	51.198	-2.4	102	0.000
55	T	Dimethyl Disulfide	50.000	48.452	3.1	99	0.000

Data Path : D:\MassHunter\GCMS\1\data\013114\
Data File : 17M002761.D
Acq On : 31 Jan 2014 16:16
Operator : ADC
Sample : WG461715-02 50 ug/L CCV 8260
Misc : 1,1 STD62504
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 31 16:38:22 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	I	Chlorobenzene-d5	25.000	25.000	0.0	99	0.000
57	S	Toluene-d8	25.000	33.652	-34.6#	135	0.000
58	C	Toluene	50.000	50.646	-1.3#	100	0.000
59	T	Ethyl Methacrylate	50.000	52.244	-4.5	99	0.000
60	T	trans-1,3-Dichloropropene	50.000	52.469	-4.9	102	0.000
61	T	1,1,2-Trichloroethane	50.000	49.238	1.5	98	0.000
62	T	2-Hexanone	50.000	50.961	-1.9	104	0.000
63	T	1,3-Dichloropropane	50.000	49.787	0.4	101	0.000
64	T	Tetrachloroethene	50.000	51.125	-2.3	100	0.000
65	T	Dibromochloromethane	50.000	45.632	8.7	98	0.010
66	T	1,2-Dibromoethane	50.000	50.110	-0.2	97	0.000
67	T	1-Chlorohexane	50.000	51.835	-3.7	105	0.011
68	P	Chlorobenzene	50.000	49.992	0.0	100	0.000
69	T	1,1,1,2-Tetrachloroethane	50.000	47.650	4.7	98	0.000
70	C	Ethylbenzene	50.000	48.172	3.7#	100	0.010
71	T	m-,p-Xylene	100.000	94.072	5.9	101	0.000
72	T	o-Xylene	50.000	49.783	0.4	100	0.000
73	T	Styrene	50.000	47.930	4.1	100	0.000
74	P	Bromoform	50.000	44.369	11.3	97	0.000
75	T	Isopropylbenzene	50.000	52.003	-4.0	101	0.000
76	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	99	0.000
77	P	1,1,2,2-Tetrachloroethane	50.000	48.756	2.5	105	0.000
78	S	p-Bromofluorobenzene	25.000	32.427	-29.7#	133	0.011
79	T	1,2,3-Trichloropropane	50.000	48.978	2.0	100	0.000
80	T	trans-1,4-Dichloro-2-Butene	50.000	50.420	-0.8	105	0.000
81	T	n-Propylbenzene	50.000	54.108	-8.2	102	0.000
82	T	Bromobenzene	50.000	48.931	2.1	98	0.000
83	T	1,3,5-Trimethylbenzene	50.000	51.889	-3.8	102	0.000
84	T	2-Chlorotoluene	50.000	52.976	-6.0	101	0.000
85	T	4-Chlorotoluene	50.000	52.055	-4.1	104	0.000
86	T	a-Methylstyrene	50.000	45.397	9.2	100	0.000
87	T	tert-Butylbenzene	50.000	50.324	-0.6	101	0.000
88	T	1,2,4-Trimethylbenzene	50.000	52.163	-4.3	101	0.000
89	T	sec-Butylbenzene	50.000	53.411	-6.8	103	0.000
90	T	p-Isopropyltoluene	50.000	54.056	-8.1	104	0.000
91	T	1,3-Dichlorobenzene	50.000	50.970	-1.9	102	0.000
92	T	1,4-Dichlorobenzene	50.000	51.062	-2.1	102	0.000
93	T	n-Butylbenzene	50.000	50.789	-1.6	107	0.000
94	T	1,2-Dichlorobenzene	50.000	50.146	-0.3	101	0.000
95	T	1,2-Dibromo-3-Chloropropane	50.000	51.013	-2.0	105	0.000
96	T	1,2,4-Trichlorobenzene	50.000	53.308	-6.6	104	0.000
97	T	Hexachlorobutadiene	50.000	53.880	-7.8	105	0.000
98	T	Naphthalene	50.000	50.806	-1.6	99	0.000
99	T	1,2,3-Trichlorobenzene	50.000	52.150	-4.3	101	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961138.D Vial: 3
Acq On : 30 Jan 2014 20:35 Operator: MES
Sample : WG461585-02 50ug/L WATER CCV 8260 Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 20:58:20 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.93	96	669904	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	485544	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	234623	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.88	111	179909	26.9177 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.68%		
43) 1,2-Dichloroethane-d4	10.52	65	208149	26.0050 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.04%		
58) Toluene-d8	12.91	98	595809	27.8909 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 111.56%#		
79) p-Bromofluorobenzene	16.31	95	236327	24.8304 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.32%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	229601	48.3627 ug/L	97
3) Chloromethane	3.77	50	369670	50.5106 ug/L	99
4) Vinyl Chloride	4.01	62	398301	55.5581 ug/L	99
5) 1,3-Butadiene	4.06	54	275010	48.7170 ug/L	98
6) Bromomethane	4.94	94	251061	46.9661 ug/L	99
7) Chloroethane	5.10	64	283098	52.0247 ug/L	99
8) Trichlorofluoromethane	5.59	101	562757	50.0785 ug/L	100
9) Diethyl ether	6.11	59	704339	105.9132 ug/L	99
10) Isoprene	6.16	67	538604	53.3798 ug/L	100
11) Acrolein	6.35	56	70762	79.4040 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.38	101	353843	54.2543 ug/L	98
13) Acetone	6.45	43	104776	46.9051 ug/L	97
14) 1,1-Dichloroethene	6.69	61	656844	52.3891 ug/L	99
15) Tert-Butyl Alcohol	6.78	59	115772	199.1549 ug/L	98
16) Dimethyl Sulfide	6.95	62	404373	51.5626 ug/L	99
17) Iodomethane	7.20	142	349044	46.8452 ug/L	97
18) Methyl acetate	7.20	43	320010	48.7190 ug/L	100
19) Methylene Chloride	7.46	84	375032	51.1753 ug/L	100
20) Carbon Disulfide	7.51	76	1134425	51.8377 ug/L	100
21) Acrylonitrile	7.64	53	155750	56.4351 ug/L	99
22) Methyl Tert Butyl Ether	7.68	73	952993	49.5513 ug/L	98
23) trans-1,2-Dichloroethene	7.92	61	630857	50.8634 ug/L	99
24) n-Hexane	8.00	57	693502	60.8684 ug/L	100
25) Diisopropyl ether	8.33	45	3429585	102.4473 ug/L	100
26) Vinyl Acetate	8.51	43	805885	51.8673 ug/L	98
27) 1,1-Dichloroethane	8.54	63	782745	48.4914 ug/L	100
28) Ethyl-Tert-Butyl ether	8.91	59	2776830	102.1052 ug/L	100
29) 2-Butanone	9.09	43	157021	46.5040 ug/L	99
30) Propionitrile	9.19	54	103618	95.3863 ug/L	99
31) 2,2-Dichloropropane	9.31	77	626132	51.7581 ug/L	98
32) cis-1,2-Dichloroethene	9.39	96	387385	47.7904 ug/L	96
33) Chloroform	9.59	83	661533	50.3628 ug/L	99
34) 1-Bromopropane	9.73	122	68642	48.7829 ug/L	99
35) Bromochloromethane	9.82	130	232458	51.2046 ug/L	96
36) Tetrahydrofuran	9.84	42	209799	101.6163 ug/L	100
38) 1,1,1-Trichloroethane	10.13	97	570515	49.0080 ug/L	100
39) Cyclohexane	10.16	56	859042	53.2514 ug/L	100
40) 1,1-Dichloropropene	10.32	75	508806	51.8286 ug/L	99
41) Tert-Amyl-Methyl ether	10.42	73	1916993	102.0441 ug/L	99
42) Carbon Tetrachloride	10.47	117	514630	49.1176 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M961138.D 8260WTR.M Thu Jan 30 20:58:22 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961138.D Vial: 3
Acq On : 30 Jan 2014 20:35 Operator: MES
Sample : WG461585-02 50ug/L WATER CCV 8260 Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 20:58:20 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.64	62	560825	48.1310 ug/L	99
46)	Benzene	10.68	78	1484461	49.6794 ug/L	100
47)	Trichloroethene	11.43	130	365880	46.1461 ug/L	98
48)	Methylcyclohexane	11.52	83	628054	53.4128 ug/L	98
49)	1,2-Dichloropropane	11.65	63	456939	50.1688 ug/L	99
50)	1,4-Dioxane	11.93	88	10401	186.2273 ug/L	96
51)	Bromodichloromethane	11.95	83	527456	50.1996 ug/L	99
52)	Dibromomethane	12.04	174	235466	50.2407 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.24	63	224390	49.8178 ug/L	97
54)	4-Methyl-2-Pentanone	12.27	58	134487	46.3972 ug/L	97
55)	cis-1,3-Dichloropropene	12.58	75	627836	50.9015 ug/L	99
56)	Dimethyl Disulfide	12.85	94	672955	49.6170 ug/L	98
59)	Toluene	13.01	91	1491009	50.6067 ug/L	100
60)	Ethyl Methacrylate	13.10	69	416773	50.0360 ug/L	100
61)	trans-1,3-Dichloropropene	13.18	75	541154	51.0181 ug/L	100
62)	1,1,2-Trichloroethane	13.40	97	276497	50.8628 ug/L	100
63)	2-Hexanone	13.33	43	232557	45.7738 ug/L	100
64)	1,3-Dichloropropane	13.71	76	530193	50.1849 ug/L	99
65)	Tetrachloroethene	13.84	164	337399	51.1773 ug/L	100
66)	Dibromochloromethane	14.10	129	356647	50.6312 ug/L	99
67)	1,2-Dibromoethane	14.36	107	306840	49.9730 ug/L	98
68)	1-Chlorohexane	14.44	91	486003	53.2952 ug/L	100
69)	Chlorobenzene	14.86	112	1013517	49.4877 ug/L	99
70)	1,1,1,2-Tetrachloroethane	14.88	131	389365	51.3726 ug/L	98
71)	Ethylbenzene	14.88	106	581996	52.1676 ug/L	98
72)	m-,p-Xylene	14.98	106	1388426	102.7149 ug/L	100
73)	o-Xylene	15.53	106	694573	50.0905 ug/L	99
74)	Styrene	15.58	104	1182654	51.4661 ug/L	100
75)	Bromoform	16.07	173	259207	54.3666 ug/L	98
76)	Isopropylbenzene	15.96	105	1778409	50.6906 ug/L	100
78)	1,1,2,2-Tetrachloroethane	16.18	83	356255	50.0284 ug/L	100
80)	1,2,3-Trichloropropane	16.37	110	103977	49.4420 ug/L	91
81)	trans-1,4-Dichloro-2-Buten	16.41	53	142341	49.7653 ug/L	87
82)	n-Propylbenzene	16.48	91	2030512	54.4928 ug/L	100
83)	Bromobenzene	16.60	156	439690	51.3305 ug/L	98
84)	1,3,5-Trimethylbenzene	16.66	105	1540616	53.5364 ug/L	99
85)	2-Chlorotoluene	16.74	91	1206252	49.7404 ug/L	99
86)	4-Chlorotoluene	16.80	91	1239332	54.7618 ug/L	99
87)	a-Methylstyrene	17.06	118	788601	53.9861 ug/L	97
88)	tert-Butylbenzene	17.13	134	328661	51.1218 ug/L	98
89)	1,2,4-Trimethylbenzene	17.18	105	1561799	54.0779 ug/L	100
90)	sec-Butylbenzene	17.40	105	1944527	54.7238 ug/L	99
91)	p-Isopropyltoluene	17.55	119	1552697	55.4213 ug/L	100
92)	1,3-Dichlorobenzene	17.75	146	853554	52.8499 ug/L	100
93)	1,4-Dichlorobenzene	17.88	146	852193	52.6554 ug/L	100
94)	n-Butylbenzene	18.08	91	1427036	59.1334 ug/L	99
95)	1,2-Dichlorobenzene	18.38	146	813580	51.7450 ug/L	100
96)	1,2-Dibromo-3-Chloropropan	19.37	157	75732	50.2849 ug/L	98
97)	1,2,4-Trichlorobenzene	20.52	180	642630	56.1077 ug/L	99
98)	Hexachlorobutadiene	20.66	225	363476	57.4765 ug/L	98
99)	Naphthalene	20.89	128	1205552	53.0939 ug/L	99
100)	1,2,3-Trichlorobenzene	21.20	180	605299	53.6396 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M961138.D 8260WTR.M Thu Jan 30 20:58:22 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961138.D Vial: 3
Acq On : 30 Jan 2014 20:35 Operator: MES
Sample : WG461585-02 50ug/L WATER CCV 8260 Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 20:58 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration

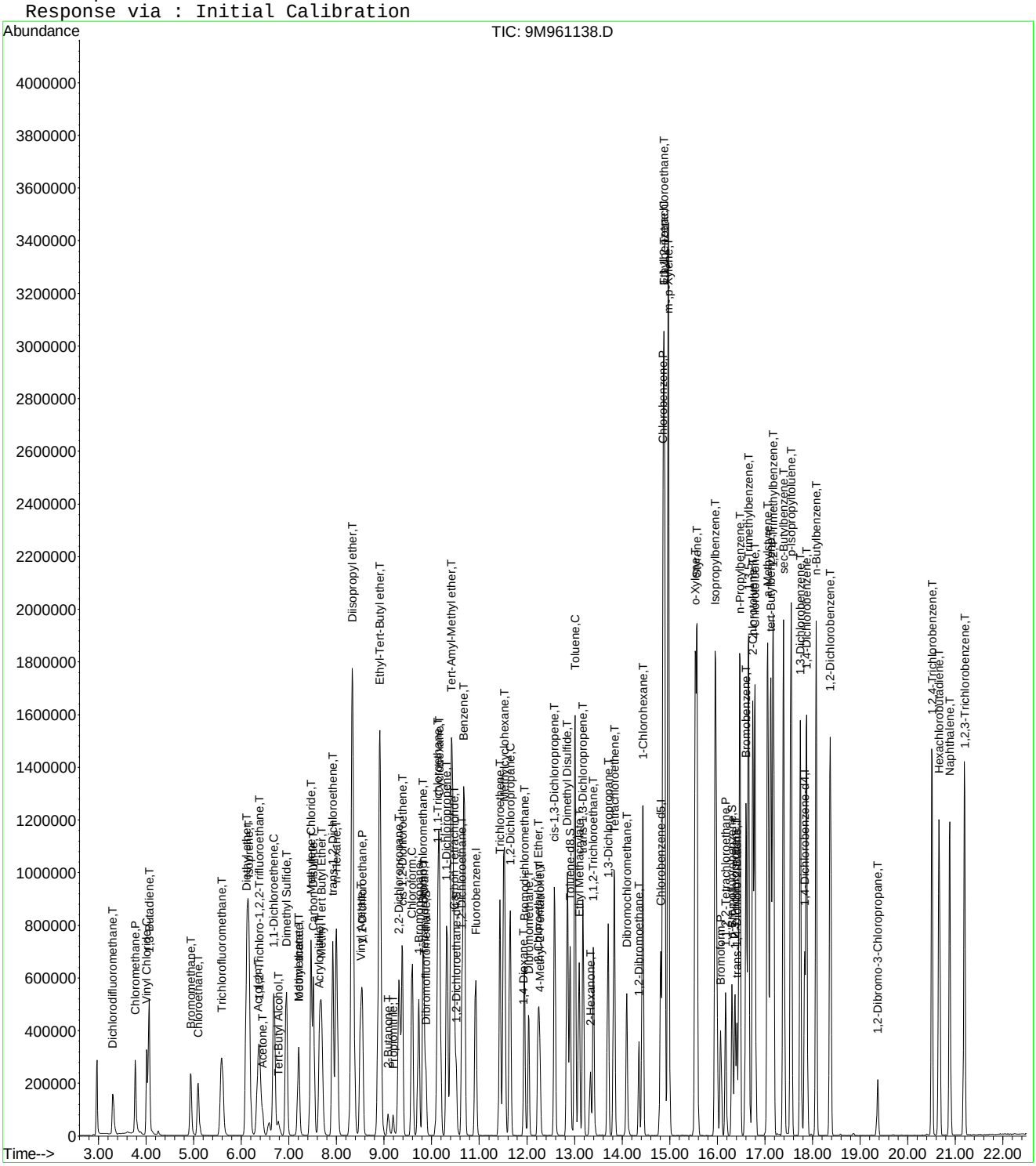

Continuing Calibration Area and RT check

Instrument: HPMS9
Initial cal date: 30 Jan 2014 12:22
CCV date: 30 Jan 2014 20:35
CCV Filename: 9M961138.D

	Fluorobenzene		**Chlorobenzene-d5**		**1,4-Dichlorobenzene-d4**	
	Amount	RT	Amount	RT	Amount	RT
InitCal	633808	10.92	711761	12.85	1781011	15.96
CCV	669904	10.93	672955	12.85	1778409	15.96

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\013014\9M961138.D Vial: 3
Acq On : 30 Jan 2014 20:35 Operator: MES
Sample : WG461585-02 50ug/L WATER CCV 8260 Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	106	0.00
2	T	Dichlorodifluoromethane	0.1341	0.1714	-27.8#	96	0.00
3	P	Chloromethane	0.2731	0.2759	-1.0	93	0.00
4	C	Vinyl Chloride	0.2675	0.2973	-11.1	98	0.00
5	T	1,3-Butadiene	0.2025	0.2053	-1.4	99	0.00
6	T	Bromomethane	0.1995	0.1874	6.1	100	0.00
7	T	Chloroethane	0.2031	0.2113	-4.1	96	0.00
8	T	Trichlorofluoromethane	0.3787	0.4200	-10.9	98	0.00
9	T	Diethyl ether	0.2482	0.2628	-5.9	103	0.00
10	T	Isoprene	0.3766	0.4020	-6.8	100	0.00
11	T	Acrolein	0.0310	0.0528	-70.2#	152	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2434	0.2641	-8.5	103	0.01
13	T	Acetone	0.0834	0.0782	6.2	97	0.00
14	C	1,1-Dichloroethene	0.4679	0.4903	-4.8	99	0.00
15	T	Tert-Butyl Alcohol	0.0221	0.0216	2.4	102	0.00
16	T	Dimethyl Sulfide	0.2927	0.3018	-3.1	96	0.00
17	T	Iodomethane	0.2170	0.2605	-20.1	91	0.00
18	T	Methyl acetate	0.2451	0.2389	2.6	98	0.00
19	T	Methylene Chloride	0.2735	0.2799	-2.3	98	0.00
20	T	Carbon Disulfide	0.8167	0.8467	-3.7	100	0.00
21	T	Acrylonitrile	0.1030	0.1163	-12.9	103	0.00
22	T	Methyl Tert Butyl Ether	0.7177	0.7113	0.9	97	0.00
23	T	trans-1,2-Dichloroethene	0.4629	0.4709	-1.7	101	0.00
24	T	n-Hexane	0.4252	0.5176	-21.7	113	0.00
25	T	Diisopropyl ether	1.2493	1.2799	-2.4	99	0.00
26	T	Vinyl Acetate	0.5389	0.6015	-11.6	102	0.00
27	P	1,1-Dichloroethane	0.6024	0.5842	3.0	97	0.00
28	T	Ethyl-Tert-Butyl ether	1.0149	1.0363	-2.1	99	0.00
29	T	2-Butanone	0.1260	0.1172	7.0	98	0.00
30	T	Propionitrile	0.0369	0.0387	-4.9	99	0.00
31	T	2,2-Dichloropropane	0.4515	0.4673	-3.5	100	0.00
32	T	cis-1,2-Dichloroethene	0.3025	0.2891	4.4	96	0.01
33	C	Chloroform	0.4902	0.4938	-0.7	97	0.00
34		1-Bromopropane	0.0498	0.0512	-2.9	95	0.00
35	T	Bromochloromethane	0.1694	0.1735	-2.4	99	0.00
36	T	Tetrahydrofuran	0.0770	0.0783	-1.6	97	0.00
37	S	Dibromofluoromethane	0.2494	0.2686	-7.7	107	0.00
38	T	1,1,1-Trichloroethane	0.4344	0.4258	2.0	98	0.01
39	T	Cyclohexane	0.6020	0.6412	-6.5	102	0.00
40	T	1,1-Dichloropropene	0.3664	0.3798	-3.7	98	0.00
41	T	Tert-Amyl-Methyl ether	0.7011	0.7154	-2.0	100	0.00
42	T	Carbon Tetrachloride	0.3910	0.3841	1.8	97	0.00
43	S	1,2-Dichloroethane-d4	0.2987	0.3107	-4.0	110	0.01
44		Heptane	0.0000	0.0000	0.0	97	0.00
45	T	1,2-Dichloroethane	0.4348	0.4186	3.7	95	0.00
46	T	Benzene	1.1151	1.1080	0.6	98	0.00
47	T	Trichloroethene	0.2959	0.2731	7.7	94	0.00
48	T	Methylcyclohexane	0.4388	0.4688	-6.8	104	0.00
49	C	1,2-Dichloropropane	0.3399	0.3411	-0.3	97	0.00
50	T	1,4-Dioxane	0.0019	0.0019	-1.0	96	0.00
51	T	Bromodichloromethane	0.3921	0.3937	-0.4	97	0.00
52	T	Dibromomethane	0.1749	0.1757	-0.5	96	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1681	0.1675	0.4	97	0.00
54	T	4-Methyl-2-Pentanone	0.1082	0.1004	7.2	96	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\013014\9M961138.D Vial: 3
Acq On : 30 Jan 2014 20:35 Operator: MES
Sample : WG461585-02 50ug/L WATER CCV 8260 Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4603	0.4686	-1.8	98	0.00
56	T	Dimethyl Disulfide	0.5061	0.5023	0.8	95	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	102	0.00
58	S	Toluene-d8	1.0999	1.2271	-11.6	116	0.00
59	C	Toluene	1.5170	1.5354	-1.2	98	0.00
60	T	Ethyl Methacrylate	0.4289	0.4292	-0.1	93	0.00
61	T	trans-1,3-Dichloropropene	0.5462	0.5573	-2.0	95	0.00
62	T	1,1,2-Trichloroethane	0.2799	0.2847	-1.7	96	0.00
63	T	2-Hexanone	0.2616	0.2395	8.5	93	0.00
64	T	1,3-Dichloropropane	0.5440	0.5460	-0.4	96	0.00
65	T	Tetrachloroethene	0.3394	0.3474	-2.4	100	0.01
66	T	Dibromochloromethane	0.3627	0.3673	-1.3	95	0.00
67	T	1,2-Dibromoethane	0.3161	0.3160	0.1	96	0.00
68	T	1-Chlorohexane	0.4695	0.5005	-6.6	100	0.00
69	P	Chlorobenzene	1.0545	1.0437	1.0	96	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3902	0.4010	-2.7	98	0.00
71	C	Ethylbenzene	0.5744	0.5993	-4.3	101	0.00
72	T	m-,p-Xylene	0.6960	0.7149	-2.7	98	0.00
73	T	o-Xylene	0.7140	0.7153	-0.2	97	0.00
74	T	Styrene	1.1832	1.2179	-2.9	98	0.00
75	P	Bromoform	0.2455	0.2669	-8.7	96	0.00
76	T	Isopropylbenzene	1.8064	1.8314	-1.4	100	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	101	0.00
78	P	1,1,2,2-Tetrachloroethane	0.6745	0.7592	-12.6	100	0.00
79	S	p-Bromofluorobenzene	1.0141	1.0073	0.7	98	0.00
80	T	1,2,3-Trichloropropane	0.2147	0.2216	-3.2	97	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2820	0.3033	-7.6	93	0.00
82	T	n-Propylbenzene	3.9704	4.3272	-9.0	100	0.01
83	T	Bromobenzene	0.9127	0.9370	-2.7	96	0.00
84	T	1,3,5-Trimethylbenzene	3.0663	3.2832	-7.1	99	0.00
85	T	2-Chlorotoluene	2.5840	2.5706	0.5	97	0.00
86	T	4-Chlorotoluene	2.4115	2.6411	-9.5	101	0.00
87	T	a-Methylstyrene	1.5565	1.6806	-8.0	98	0.00
88	T	tert-Butylbenzene	0.6850	0.7004	-2.2	97	0.00
89	T	1,2,4-Trimethylbenzene	3.0773	3.3283	-8.2	99	0.00
90	T	sec-Butylbenzene	3.7862	4.1439	-9.4	100	0.00
91	T	p-Isopropyltoluene	2.9852	3.3089	-10.8	100	0.00
92	T	1,3-Dichlorobenzene	1.7209	1.8190	-5.7	100	0.00
93	T	1,4-Dichlorobenzene	1.7245	1.8161	-5.3	99	0.00
94	T	n-Butylbenzene	2.5714	3.0411	-18.3	103	0.00
95	T	1,2-Dichlorobenzene	1.6753	1.7338	-3.5	97	0.00
96	T	1,2-Dibromo-3-Chloropropane	0.1605	0.1614	-0.6	95	0.00
97	T	1,2,4-Trichlorobenzene	1.2204	1.3695	-12.2	101	0.00
98	T	Hexachlorobutadiene	0.6738	0.7746	-15.0	102	0.00
99	T	Naphthalene	2.4194	2.5691	-6.2	97	0.00
100	T	1,2,3-Trichlorobenzene	1.2024	1.2899	-7.3	98	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M961138.D 8260WTR.M Thu Jan 30 20:58:32 2014 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\013014\9M961138.D Vial: 3
Acq On : 30 Jan 2014 20:35 Operator: MES
Sample : WG461585-02 50ug/L WATER CCV 8260 Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	106	0.00
2	T	Dichlorodifluoromethane	50.0000	48.3627	3.3	96	0.00
3	P	Chloromethane	50.0000	50.5106	-1.0	93	0.00
4	C	Vinyl Chloride	50.0000	55.5581	-11.1	98	0.00
5	T	1,3-Butadiene	50.0000	48.7170	2.6	99	0.00
6	T	Bromomethane	50.0000	46.9661	6.1	100	0.00
7	T	Chloroethane	50.0000	52.0247	-4.0	96	0.00
8	T	Trichlorofluoromethane	50.0000	50.0785	-0.2	98	0.00
9	T	Diethyl ether	100.0000	105.9132	-5.9	103	0.00
10	T	Isoprene	50.0000	53.3798	-6.8	100	0.00
11	T	Acrolein	50.0000	79.4040	-58.8#	152	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.2543	-8.5	103	0.01
13	T	Acetone	50.0000	46.9051	6.2	97	0.00
14	C	1,1-Dichloroethene	50.0000	52.3891	-4.8	99	0.00
15	T	Tert-Butyl Alcohol	200.0000	199.1549	0.4	102	0.00
16	T	Dimethyl Sulfide	50.0000	51.5626	-3.1	96	0.00
17	T	Iodomethane	50.0000	46.8452	6.3	91	0.00
18	T	Methyl acetate	50.0000	48.7190	2.6	98	0.00
19	T	Methylene Chloride	50.0000	51.1753	-2.4	98	0.00
20	T	Carbon Disulfide	50.0000	51.8377	-3.7	100	0.00
21	T	Acrylonitrile	50.0000	56.4351	-12.9	103	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.5513	0.9	97	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.8634	-1.7	101	0.00
24	T	n-Hexane	50.0000	60.8684	-21.7	113	0.00
25	T	Diisopropyl ether	100.0000	102.4473	-2.4	99	0.00
26	T	Vinyl Acetate	50.0000	51.8673	-3.7	102	0.00
27	P	1,1-Dichloroethane	50.0000	48.4914	3.0	97	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.1052	-2.1	99	0.00
29	T	2-Butanone	50.0000	46.5040	7.0	98	0.00
30	T	Propionitrile	100.0000	95.3863	4.6	99	0.00
31	T	2,2-Dichloropropane	50.0000	51.7581	-3.5	100	0.00
32	T	cis-1,2-Dichloroethene	50.0000	47.7904	4.4	96	0.01
33	C	Chloroform	50.0000	50.3628	-0.7	97	0.00
34		1-Bromopropane	50.0000	48.7829	2.4	95	0.00
35	T	Bromochloromethane	50.0000	51.2046	-2.4	99	0.00
36	T	Tetrahydrofuran	100.0000	101.6163	-1.6	97	0.00
37	S	Dibromofluoromethane	25.0000	26.9177	-7.7	107	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.0080	2.0	98	0.01
39	T	Cyclohexane	50.0000	53.2514	-6.5	102	0.00
40	T	1,1-Dichloropropene	50.0000	51.8286	-3.7	98	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.0442	-2.0	100	0.00
42	T	Carbon Tetrachloride	50.0000	49.1176	1.8	97	0.00
43	S	1,2-Dichloroethane-d4	25.0000	26.0050	-4.0	110	0.01
44		Heptane	-1.0000	0.0000	0.0	97	0.00
45	T	1,2-Dichloroethane	50.0000	48.1310	3.7	95	0.00
46	T	Benzene	50.0000	49.6794	0.6	98	0.00
47	T	Trichloroethene	50.0000	46.1461	7.7	94	0.00
48	T	Methylcyclohexane	50.0000	53.4128	-6.8	104	0.00
49	C	1,2-Dichloropropane	50.0000	50.1688	-0.3	97	0.00
50	T	1,4-Dioxane	200.0000	186.2273	6.9	96	0.00
51	T	Bromodichloromethane	50.0000	50.1996	-0.4	97	0.00
52	T	Dibromomethane	50.0000	50.2407	-0.5	96	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	49.8178	0.4	97	0.00
54	T	4-Methyl-2-Pentanone	50.0000	46.3972	7.2	96	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\013014\9M961138.D Vial: 3
Acq On : 30 Jan 2014 20:35 Operator: MES
Sample : WG461585-02 50ug/L WATER CCV 8260 Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	50.9015	-1.8	98	0.00
56	T	Dimethyl Disulfide	50.0000	49.6170	0.8	95	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	102	0.00
58	S	Toluene-d8	25.0000	27.8909	-11.6	116	0.00
59	C	Toluene	50.0000	50.6067	-1.2	98	0.00
60	T	Ethyl Methacrylate	50.0000	50.0360	-0.1	93	0.00
61	T	trans-1,3-Dichloropropene	50.0000	51.0181	-2.0	95	0.00
62	T	1,1,2-Trichloroethane	50.0000	50.8628	-1.7	96	0.00
63	T	2-Hexanone	50.0000	45.7738	8.5	93	0.00
64	T	1,3-Dichloropropane	50.0000	50.1849	-0.4	96	0.00
65	T	Tetrachloroethene	50.0000	51.1773	-2.4	100	0.01
66	T	Dibromochloromethane	50.0000	50.6312	-1.3	95	0.00
67	T	1,2-Dibromoethane	50.0000	49.9730	0.1	96	0.00
68	T	1-Chlorohexane	50.0000	53.2953	-6.6	100	0.00
69	P	Chlorobenzene	50.0000	49.4877	1.0	96	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	51.3726	-2.7	98	0.00
71	C	Ethylbenzene	50.0000	52.1676	-4.3	101	0.00
72	T	m-,p-Xylene	100.0000	102.7149	-2.7	98	0.00
73	T	o-Xylene	50.0000	50.0905	-0.2	97	0.00
74	T	Styrene	50.0000	51.4661	-2.9	98	0.00
75	P	Bromoform	50.0000	54.3666	-8.7	96	0.00
76	T	Isopropylbenzene	50.0000	50.6906	-1.4	100	0.00
77	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	50.0284	-0.1	100	0.00
79	S	p-Bromofluorobenzene	25.0000	24.8303	0.7	98	0.00
80	T	1,2,3-Trichloropropane	50.0000	49.4420	1.1	97	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	49.7653	0.5	93	0.00
82	T	n-Propylbenzene	50.0000	54.4928	-9.0	100	0.01
83	T	Bromobenzene	50.0000	51.3305	-2.7	96	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	53.5364	-7.1	99	0.00
85	T	2-Chlorotoluene	50.0000	49.7404	0.5	97	0.00
86	T	4-Chlorotoluene	50.0000	54.7618	-9.5	101	0.00
87	T	a-Methylstyrene	50.0000	53.9861	-8.0	98	0.00
88	T	tert-Butylbenzene	50.0000	51.1217	-2.2	97	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	54.0779	-8.2	99	0.00
90	T	sec-Butylbenzene	50.0000	54.7238	-9.4	100	0.00
91	T	p-Isopropyltoluene	50.0000	55.4213	-10.8	100	0.00
92	T	1,3-Dichlorobenzene	50.0000	52.8499	-5.7	100	0.00
93	T	1,4-Dichlorobenzene	50.0000	52.6554	-5.3	99	0.00
94	T	n-Butylbenzene	50.0000	59.1334	-18.3	103	0.00
95	T	1,2-Dichlorobenzene	50.0000	51.7450	-3.5	97	0.00
96	T	1,2-Dibromo-3-Chloropropane	50.0000	50.2850	-0.6	95	0.00
97	T	1,2,4-Trichlorobenzene	50.0000	56.1077	-12.2	101	0.00
98	T	Hexachlorobutadiene	50.0000	57.4765	-15.0	102	0.00
99	T	Naphthalene	50.0000	53.0939	-6.2	97	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	53.6396	-7.3	98	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M961138.D 8260WTR.M Thu Jan 30 20:58:29 2014 Page 2

2.1.1.5 Raw QC Data

Data Path : D:\MassHunter\GCMS\1\data\012814\
Data File : 17M002686.D
Acq On : 28 Jan 2014 14:29
Operator : ADC
Sample : WG461242-01 BFB 50ng 8260
Misc : 1,1 STD62146
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
Last Update : Wed Jan 29 07:59:38 2014

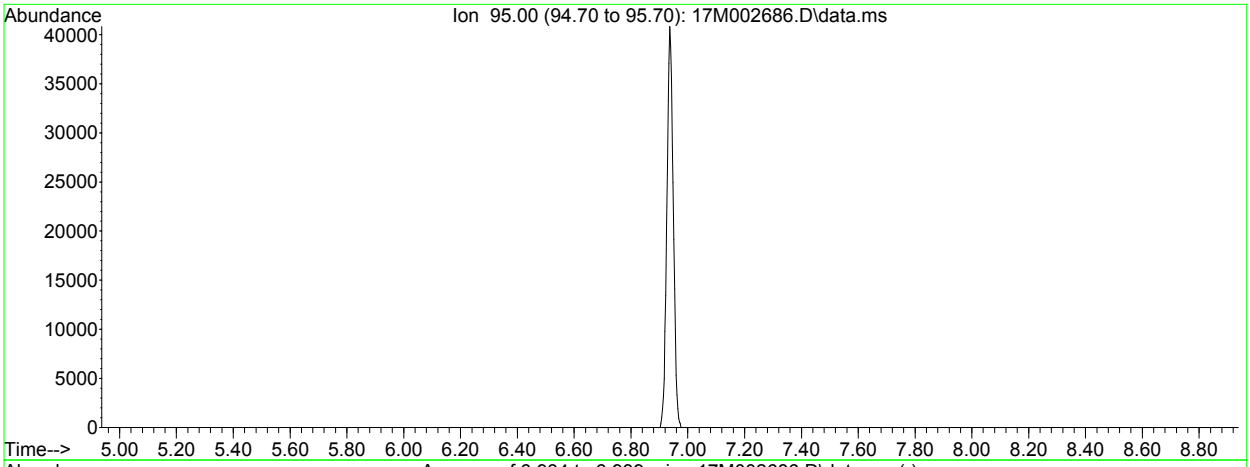

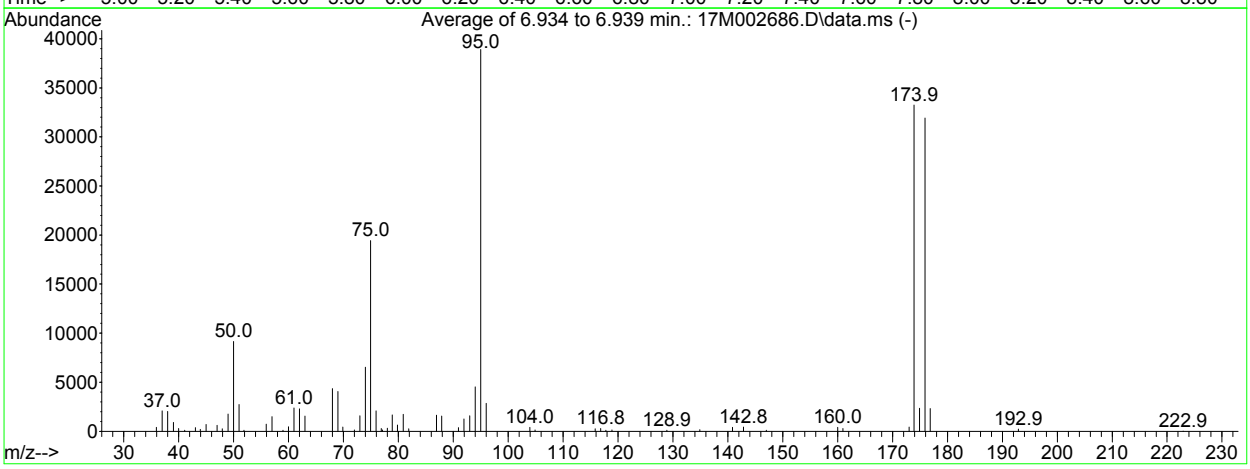

AutoFind: Scans 298, 299, 300; Background Corrected with Scan 285

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.5	9156	PASS
75	95	30	60	50.0	19447	PASS
95	95	100	100	100.0	38920	PASS
96	95	5	9	7.3	2846	PASS
173	174	0.00	2	1.3	419	PASS
174	95	50	100	85.4	33248	PASS
175	174	5	9	7.0	2336	PASS
176	174	95	101	96.0	31933	PASS
177	176	5	9	7.2	2310	PASS

BFB

```
Data File : C:\MSDCHEM\1\DATA\013014\9M961121.D          Vial: 2
Acq On    : 30 Jan 2014   8:30                        Operator: ADC
Sample    : WG461445-01 50ng BFB STD                  Inst    : HPMS9
Misc      : 1,1 STD62146                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B SL SOP: OVL MSV01 Analysis 01/30/13  HPMS 9
```

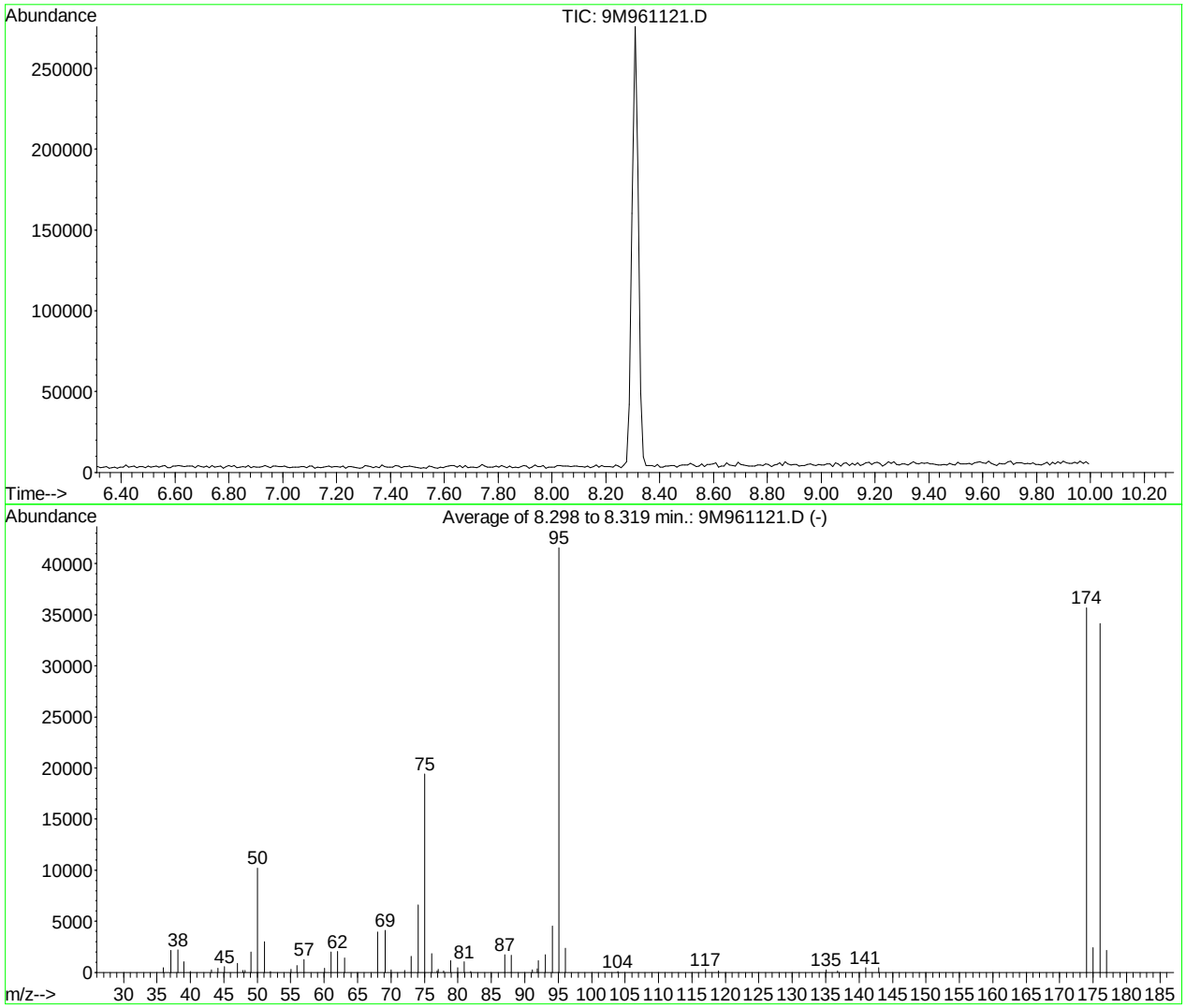

AutoFind: Scans 311, 312, 313; Background Corrected with Scan 306

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.6	10219	PASS
75	95	30	60	46.8	19440	PASS
95	95	100	100	100.0	41573	PASS
96	95	5	9	5.7	2365	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.9	35693	PASS
175	174	5	9	6.7	2388	PASS
176	174	95	101	95.7	34141	PASS
177	176	5	9	6.3	2138	PASS

9M961121.D 8260WTR.M Fri Feb 07 16:05:06 2014

BFB

Data File : C:\MSDCHEM\1\DATA\013014\9M961136.D Vial: 1
Acq On : 30 Jan 2014 19:37 Operator: MES
Sample : WG461585-01 50NG BFB STD 8260 Inst : HPMS9
Misc : 1,1 STD62146 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : BFB (SOP:OVL MSV01)

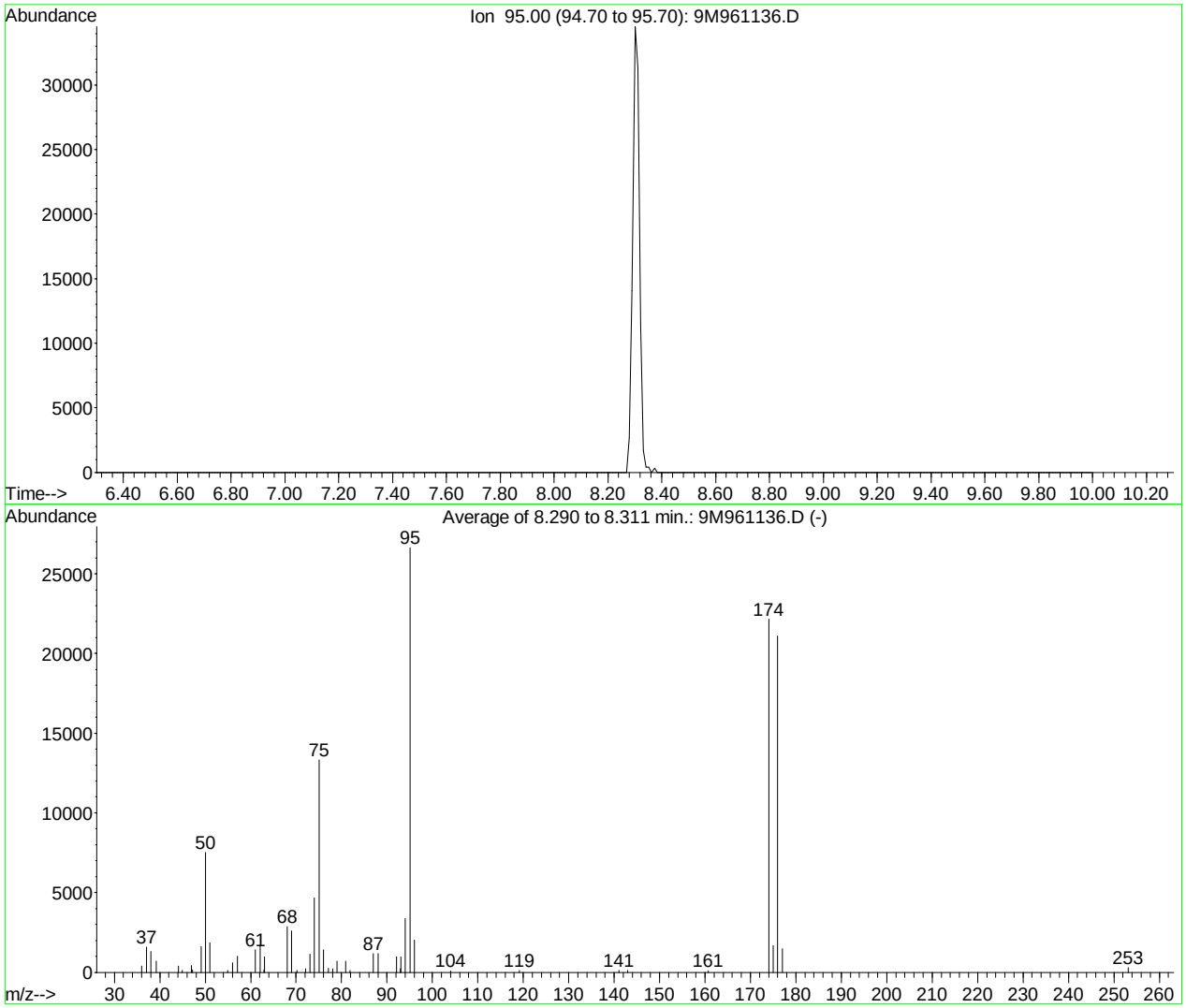

AutoFind: Scans 310, 311, 312; Background Corrected with Scan 306

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	28.2	7518	PASS
75	95	30	60	50.1	13339	PASS
95	95	100	100	100.0	26639	PASS
96	95	5	9	7.6	2030	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	83.2	22158	PASS
175	174	5	9	7.6	1687	PASS
176	174	95	101	95.3	21114	PASS
177	176	5	9	7.0	1470	PASS

9M961136.D BFB.M Thu Jan 30 19:52:27 2014

Data Path : D:\MassHunter\GCMS\1\data\013114\
Data File : 17M002760.D
Acq On : 31 Jan 2014 15:53
Operator : ADC
Sample : WG461715-01 BFB 50ng 8260
Misc : 1,1 STD62146
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
Last Update : Wed Jan 29 07:59:38 2014

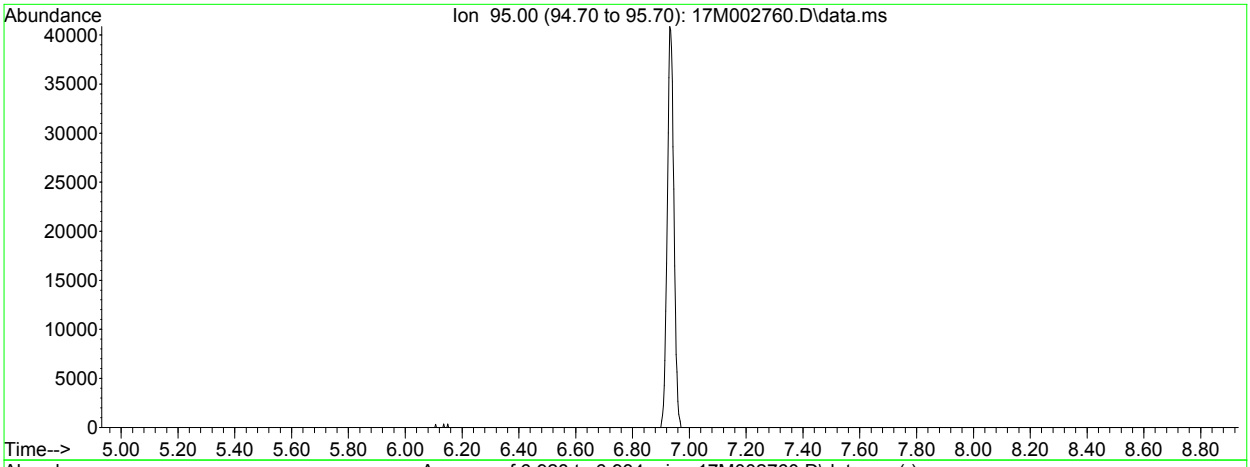

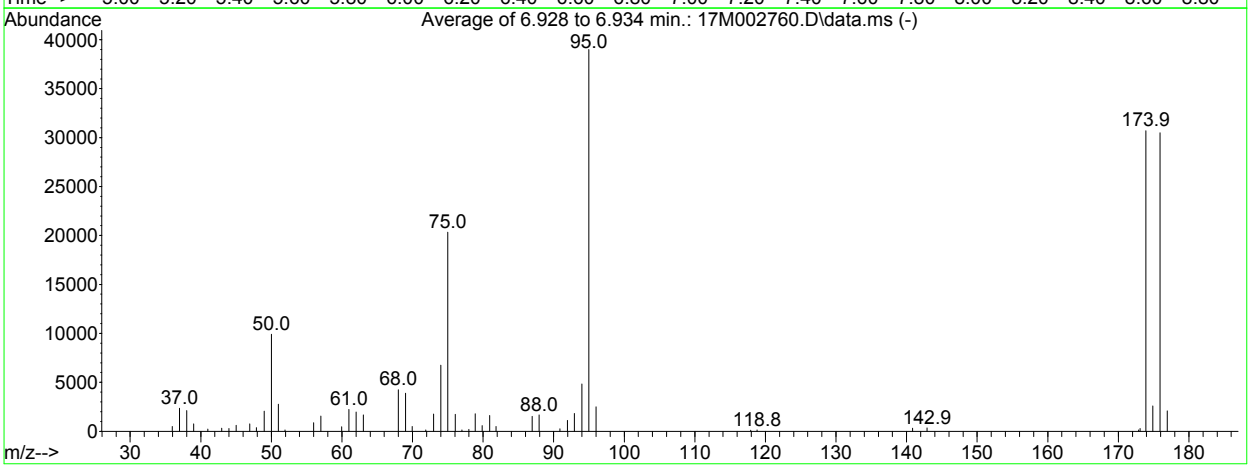

AutoFind: Scans 296, 297, 298; Background Corrected with Scan 284

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.4	9911	PASS
75	95	30	60	52.1	20328	PASS
95	95	100	100	100.0	39011	PASS
96	95	5	9	6.4	2509	PASS
173	174	0.00	2	0.9	268	PASS
174	95	50	100	78.7	30709	PASS
175	174	5	9	8.4	2580	PASS
176	174	95	101	99.3	30488	PASS
177	176	5	9	6.8	2079	PASS

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\013114\
Data File : 17M002766.D
Acq On : 31 Jan 2014 19:20
Operator : ADC
Sample : WG461716-01 VBLK 0131 8260
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 05 09:19:26 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.088	96	859940	25.00000 ug/L	0.0000
56) Chlorobenzene-d5	13.913	117	562557	25.00000 ug/L	0.0000
76) 1,4-Dichlorobenzene-d4	16.898	152	238045	25.00000 ug/L	0.0000
System Monitoring Compounds					
37) Dibromofluoromethane	9.041	111	235343	24.0904 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.362%		
43) 1,2-Dichloroethane-d4	9.674	65	259990	23.9782 ug/L	-0.0103
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.913%		
57) Toluene-d8	12.047	98	831839	25.7639 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.056%		
78) p-Bromofluorobenzene	15.395	95	279870	26.7096 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.838%		
Target Compounds					Qvalue
3) Chloromethane	2.905	50	4017	0.1778 ug/L #	73
13) Acetone	5.559	43	923	Below Cal #	47
15) Tert-Butyl Alcohol	5.870	59	1576	Below Cal #	63

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\013114\
Data File : 17M002766.D
Acq On : 31 Jan 2014 19:20
Operator : ADC
Sample : WG461716-01 VBLK 0131 8260
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 05 09:19:26 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

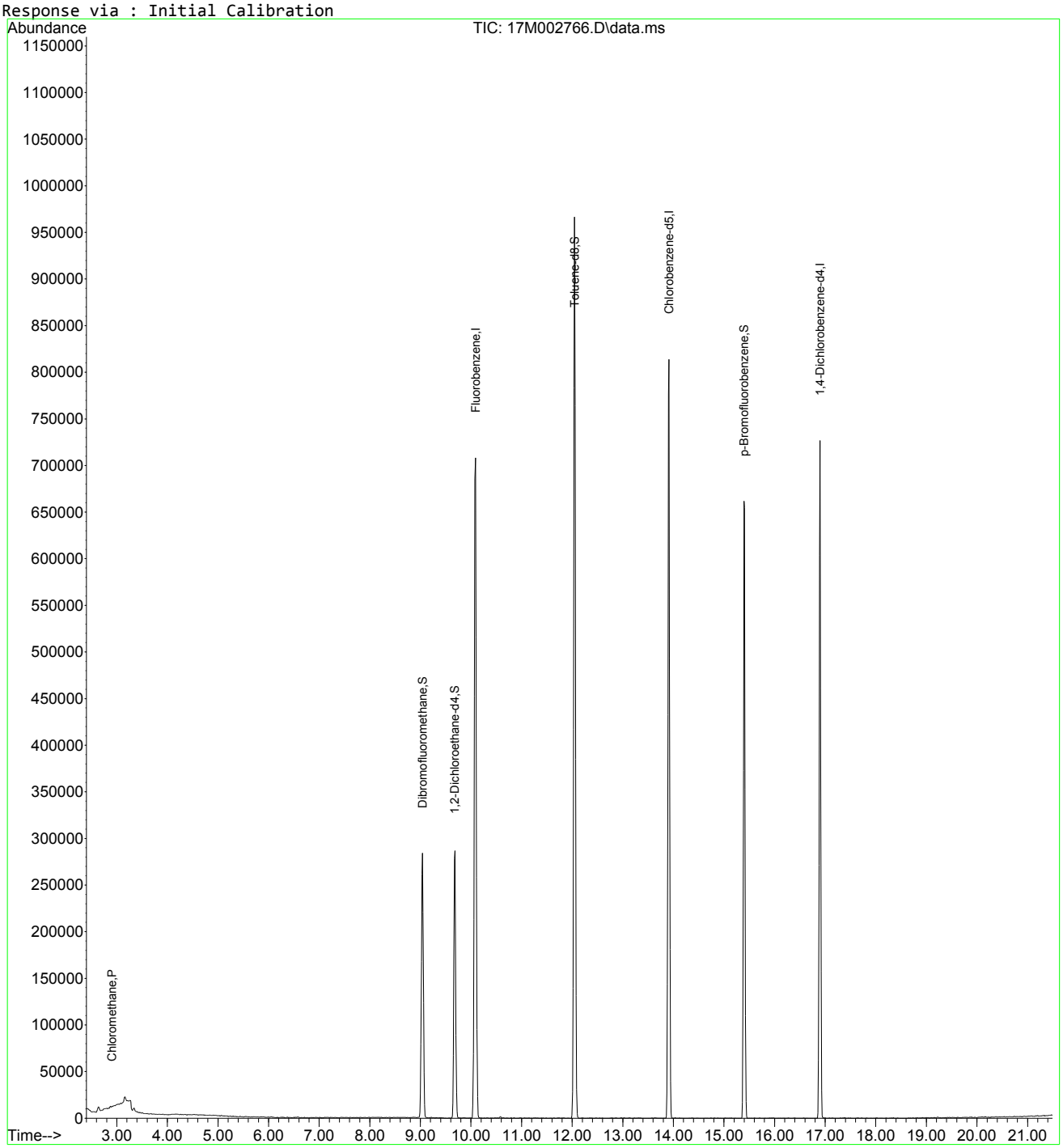

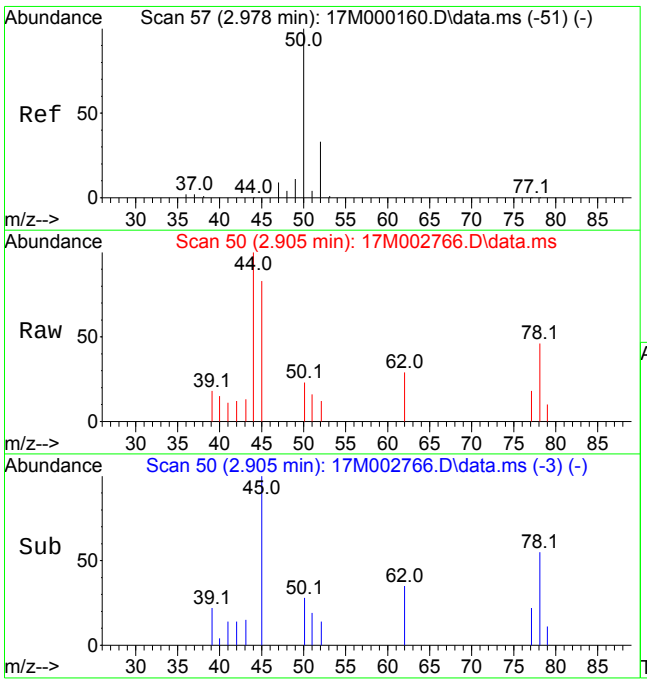

#3
Chloromethane
Concen: 0.1778 ug/L
RT: 2.905 min Scan# 50
Delta R.T. -0.011 min
Lab File: 17M002766.D
Acq: 31 Jan 2014 19:20

Tgt Ion: 50 Resp: 4017

Ion	Ratio	Lower	Upper
50	100		
52	46.7	19.1	44.5#

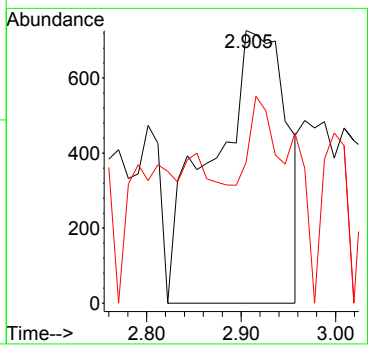

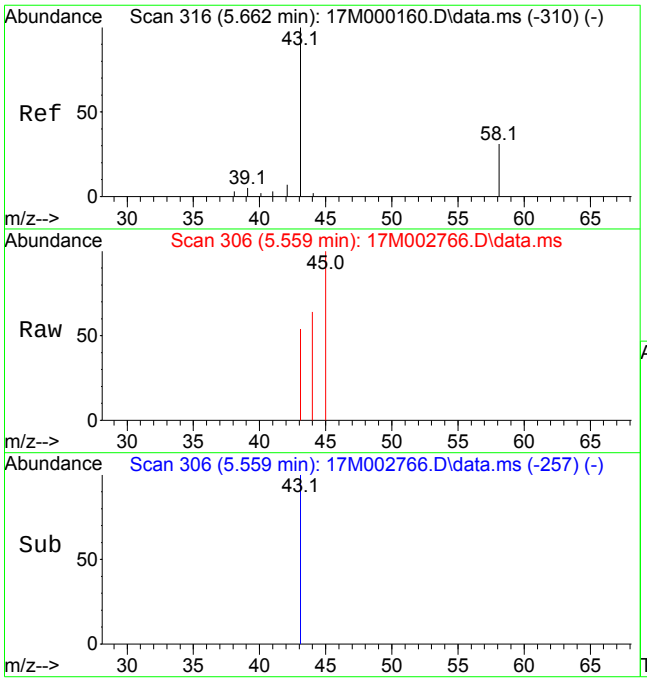

#13
Acetone
Concen: Below Cal
RT: 5.559 min Scan# 306
Delta R.T. 0.011 min
Lab File: 17M002766.D
Acq: 31 Jan 2014 19:20

Tgt Ion: 43 Resp: 923

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.6	38.8#

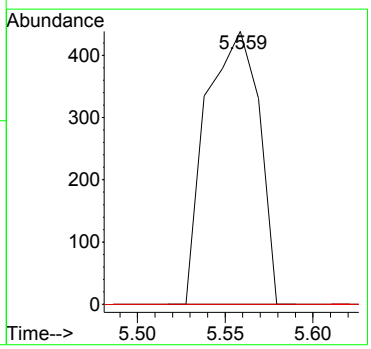

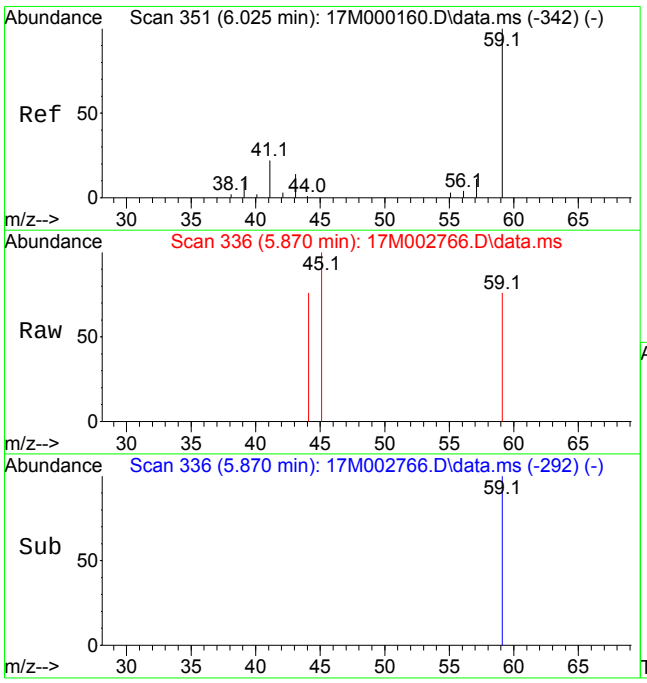

#15
Tert-Butyl Alcohol
Concen: Below Cal
RT: 5.870 min Scan# 336
Delta R.T. -0.041 min
Lab File: 17M002766.D
Acq: 31 Jan 2014 19:20

Tgt Ion: 59 Resp: 1576

Ion	Ratio	Lower	Upper
59	100		
41	0.0	11.9	27.7#
57	0.0	5.2	12.0#

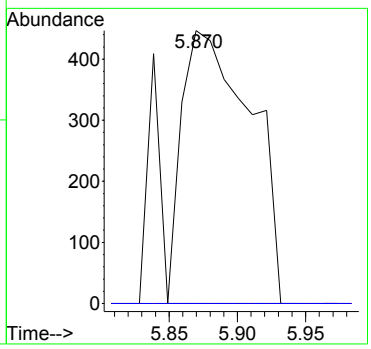

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961140.D Vial: 4
Acq On : 30 Jan 2014 21:35 Operator: MES
Sample : WG461586-01 BLANK 1/30 Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 07 16:20:54 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	639115	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	454300	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	207091	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.88	111	174798	27.4129 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.64%		
43) 1,2-Dichloroethane-d4	10.52	65	209729	27.4647 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.84%		
58) Toluene-d8	12.91	98	597129	29.8751 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 119.52%#		
79) p-Bromofluorobenzene	16.31	95	222423	26.4764 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.92%		

Target Compounds					Qvalue
3) Chloromethane	3.77	50	2355	0.3373 ug/L #	64
5) 1,3-Butadiene	4.06	54	190	Below Cal #	1
20) Carbon Disulfide	7.51	76	3897	0.1867 ug/L #	75
24) n-Hexane	8.01	57	1416	0.1303 ug/L #	61
26) Vinyl Acetate	8.44	43	208	0.7602 ug/L #	81
56) Dimethyl Disulfide	12.90	94	15738	1.2163 ug/L #	25

(#) = qualifier out of range (m) = manual integration
9M961140.D 8260WTR.M Fri Feb 07 16:20:56 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961140.D Vial: 4
Acq On : 30 Jan 2014 21:35 Operator: MES
Sample : WG461586-01 BLANK 1/30 Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 7 16:20 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration

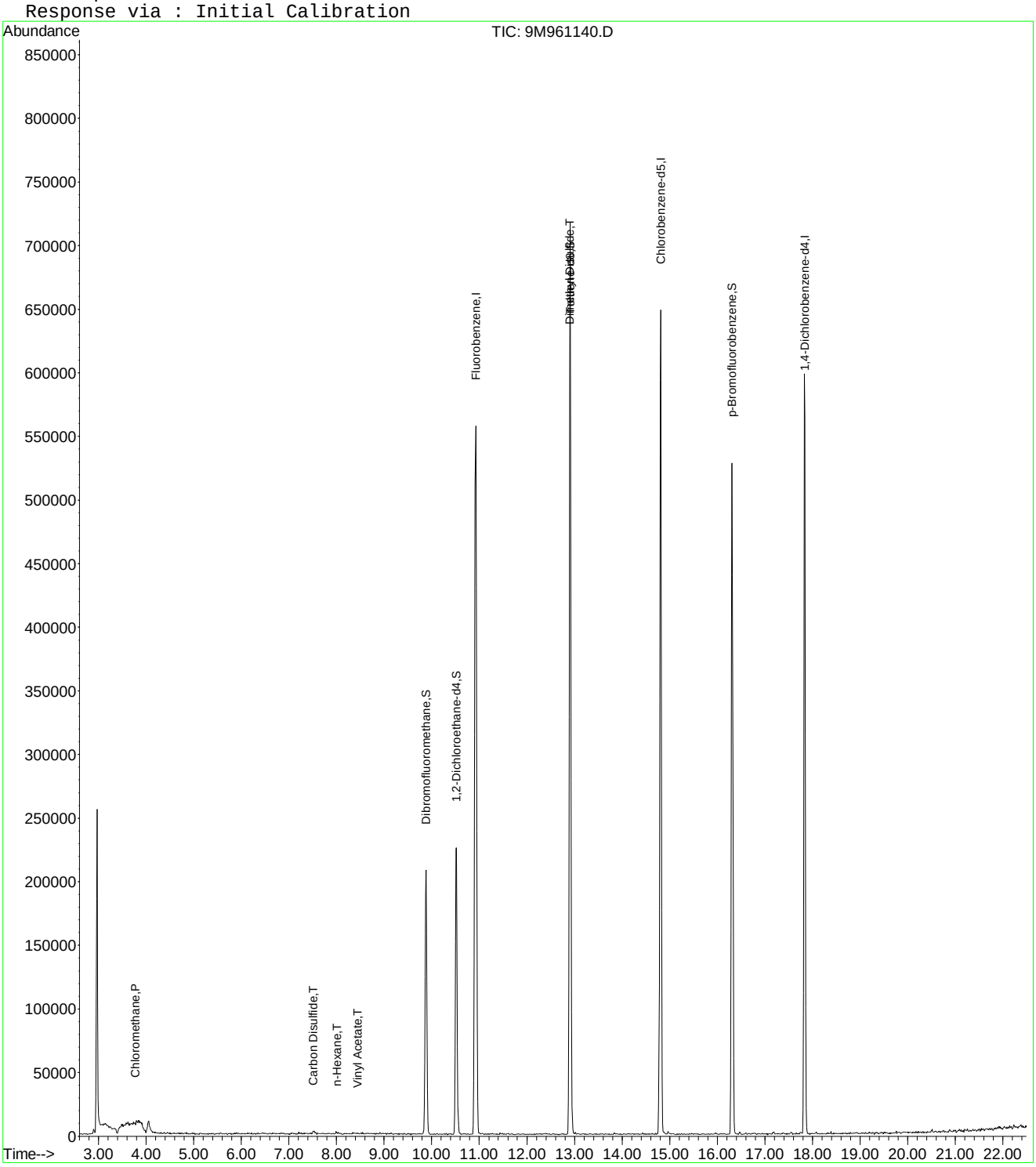

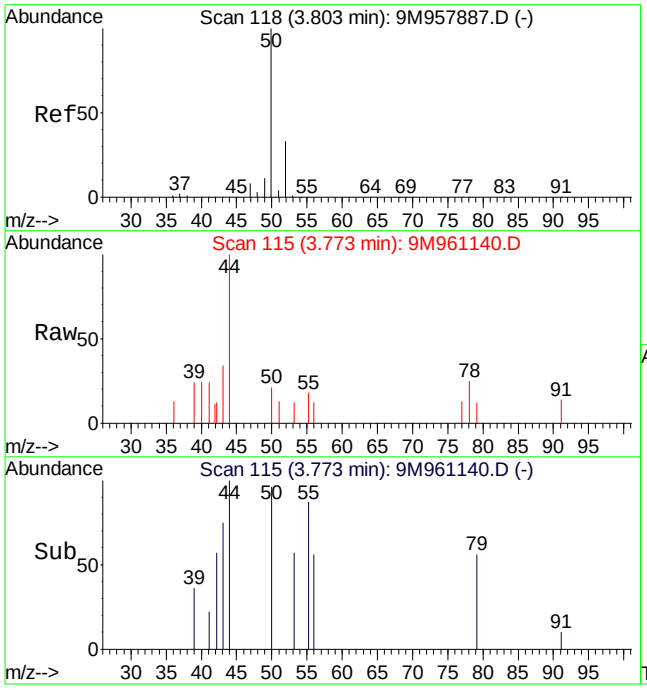

#3
Chloromethane
Concen: 0.34 ug/L
RT: 3.77 min Scan# 115
Delta R.T. 0.00 min
Lab File: 9M961140.D
Acq: 30 Jan 2014 21:35

Tgt Ion: 50 Resp: 2355

Ion	Ratio	Lower	Upper
50	100		
52	11.3	18.8	44.0#

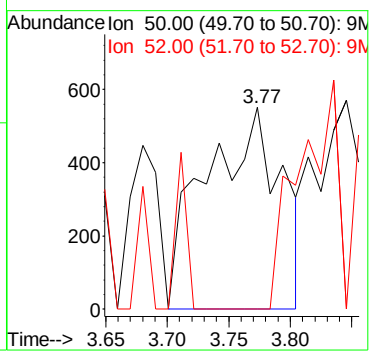

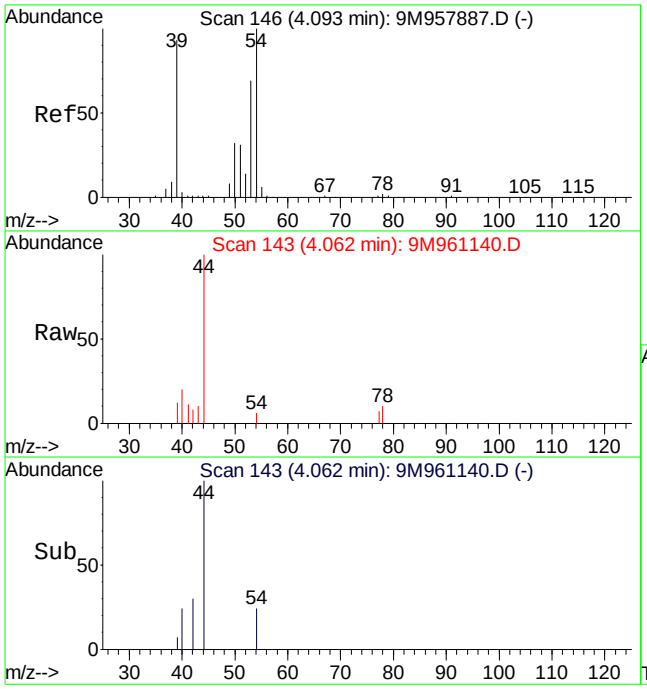

#5
1,3-Butadiene
Concen: Below Cal
RT: 4.06 min Scan# 143
Delta R.T. 0.00 min
Lab File: 9M961140.D
Acq: 30 Jan 2014 21:35

Tgt Ion: 54 Resp: 190

Ion	Ratio	Lower	Upper
54	100		
39	1582.6	56.7	132.3#
53	0.0	41.7	97.3#

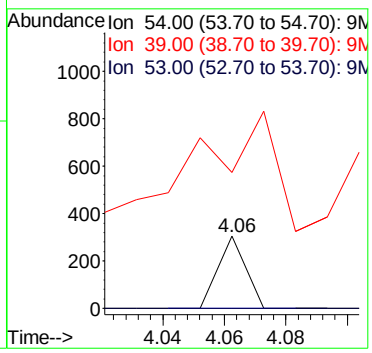

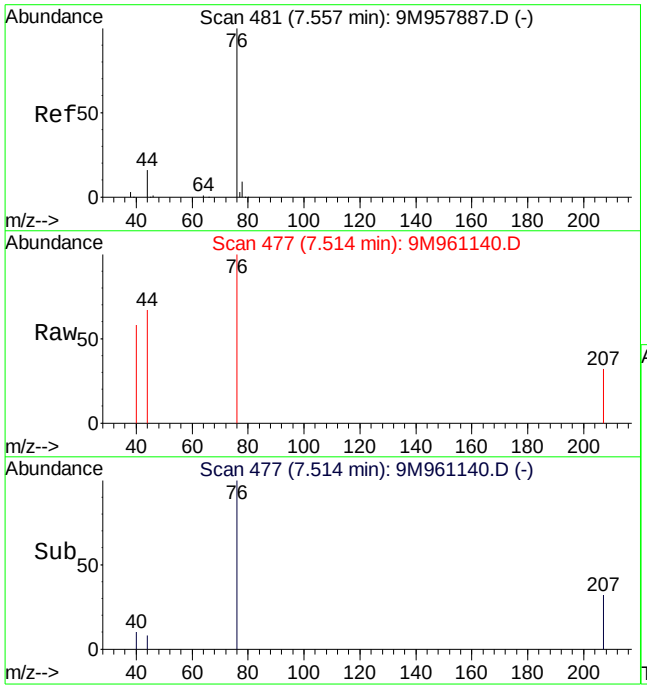

#20
Carbon Disulfide
Concen: 0.19 ug/L
RT: 7.51 min Scan# 477
Delta R.T. 0.00 min
Lab File: 9M961140.D
Acq: 30 Jan 2014 21:35

Tgt Ion: 76 Resp: 3897

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.5	12.7#

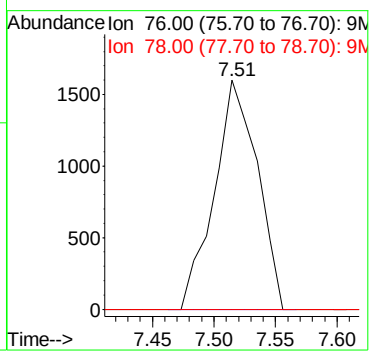

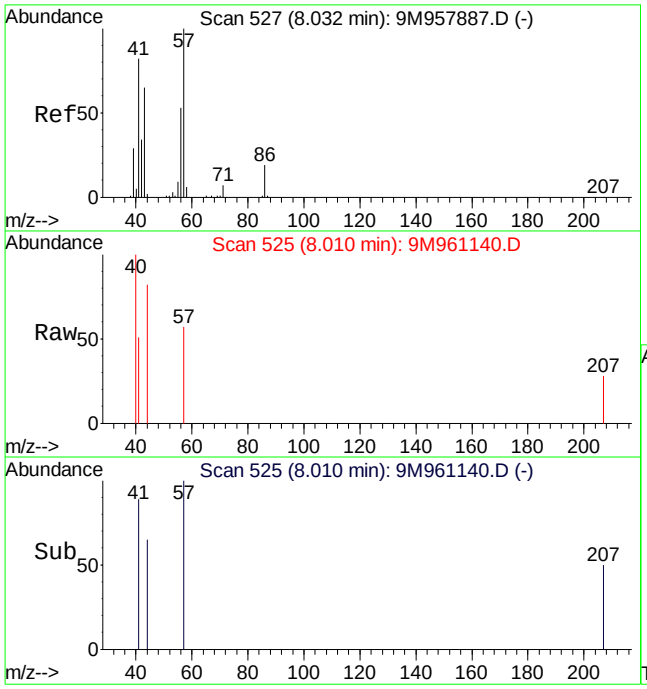

#24
n-Hexane
Concen: 0.13 ug/L
RT: 8.01 min Scan# 525
Delta R.T. 0.01 min
Lab File: 9M961140.D
Acq: 30 Jan 2014 21:35

Tgt Ion: 57 Resp: 1416

Ion	Ratio	Lower	Upper
57	100		
43	36.7	40.7	95.1#

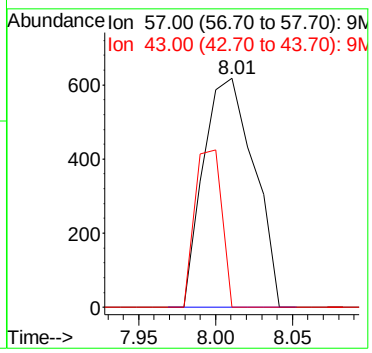

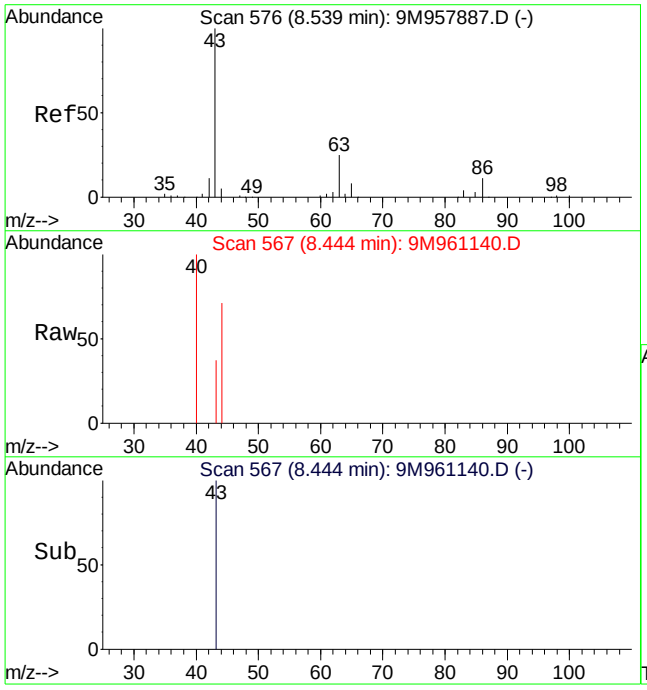

#26
Vinyl Acetate
Concen: 0.76 ug/L
RT: 8.44 min Scan# 567
Delta R.T. -0.06 min
Lab File: 9M961140.D
Acq: 30 Jan 2014 21:35

Tgt Ion: 43 Resp: 208

Ion	Ratio	Lower	Upper
43	100		
86	0.0	3.9	9.1#

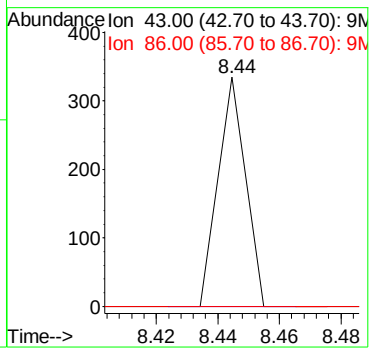

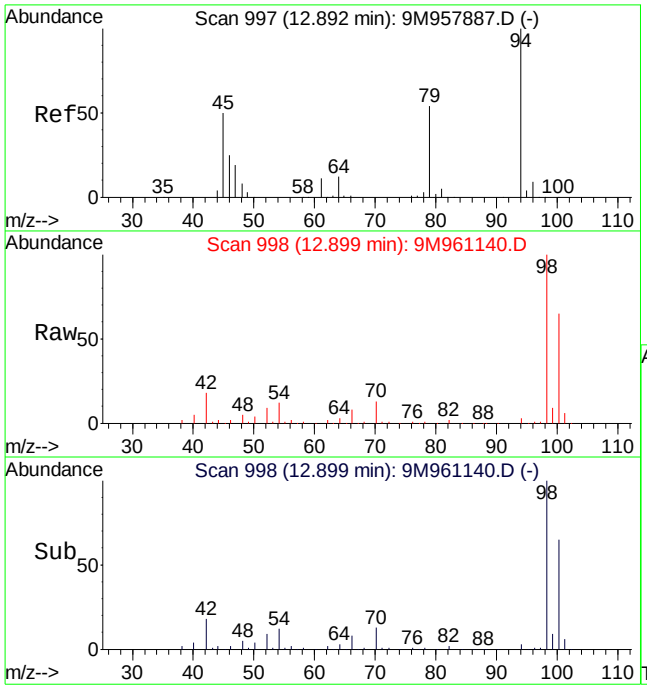

#56
Dimethyl Disulfide
Concen: 1.22 ug/L
RT: 12.90 min Scan# 998
Delta R.T. 0.05 min
Lab File: 9M961140.D
Acq: 30 Jan 2014 21:35

Tgt Ion: 94 Resp: 15738

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.8	74.2#

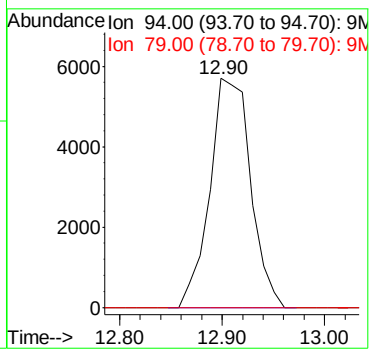

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\013114\
Data File : 17M002773.D
Acq On : 31 Jan 2014 22:34
Operator : ADC
Sample : WG461716-02 20ug/L LCS 8260
Misc : 1,1 STD62430
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 31 22:56:13 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.088	96	873034	25.00000 ug/L	0.0000
56) Chlorobenzene-d5	13.913	117	601242	25.00000 ug/L	0.0000
76) 1,4-Dichlorobenzene-d4	16.898	152	285899	25.00000 ug/L	0.0000
System Monitoring Compounds					
37) Dibromofluoromethane	9.041	111	227222	22.9102 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.641%		
43) 1,2-Dichloroethane-d4	9.684	65	262090	23.8094 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.238%		
57) Toluene-d8	12.047	98	826363	23.9475 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.790%		
78) p-Bromofluorobenzene	15.395	95	293413	23.3151 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.260%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.522	85	212275	22.4801 ug/L	98
3) Chloromethane	2.915	50	424514	18.5071 ug/L	99
4) Vinyl Chloride	3.123	62	332018	17.7507 ug/L	99
5) 1,3-Butadiene	3.164	54	186188	14.0992 ug/L	99
6) Bromomethane	3.952	94	120721	17.6370 ug/L	100
7) Chloroethane	4.118	64	137366	17.9702 ug/L	99
8) Trichlorofluoromethane	4.626	101	313853	19.7560 ug/L	99
9) Diethyl ether	5.217	59	768246	102.0314 ug/L	99
10) Isoprene	5.227	67	257229	18.6791 ug/L	99
11) Acrolein	5.434	56	123280	150.9071 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	5.465	101	185626	19.9377 ug/L	97
13) Acetone	5.559	43	52903	25.9191 ug/L	88
14) 1,1-Dichloroethene	5.756	61	311005	18.1637 ug/L	98
15) Tert-Butyl Alcohol	5.921	59	137530	283.9825 ug/L	98
16) Dimethyl Sulfide	6.025	62	192938	20.8014 ug/L	98
17) Iodomethane	6.263	142	130965	13.1502 ug/L	100
18) Methyl acetate	6.357	43	132879	21.1075 ug/L	98
19) Methylene Chloride	6.574	84	194329	17.1662 ug/L	98
20) Carbon Disulfide	6.554	76	523650	16.7617 ug/L	100
21) Acrylonitrile	6.792	53	59839	22.1428 ug/L	98
22) Methyl Tert Butyl Ether	6.834	73	567940	22.9768 ug/L	97
23) trans-1,2-Dichloroethene	7.041	96	185359	18.4927 ug/L	97
24) n-Hexane	7.155	57	203744	15.7340 ug/L	97
25) Diisopropyl ether	7.528	45	3715266	98.8030 ug/L	100
26) Vinyl Acetate	7.694	43	262503	16.9657 ug/L	100
27) 1,1-Dichloroethane	7.684	63	374795	18.6299 ug/L	99
28) Ethyl-Tert-Butyl ether	8.108	59	3210276	99.1752 ug/L	100
29) 2-Butanone	8.274	43	69750	23.4543 ug/L	99
30) Propionitrile	8.378	54	99241	107.1010 ug/L	99
31) 2,2-Dichloropropane	8.471	77	278199	16.5638 ug/L	97
32) cis-1,2-Dichloroethene	8.544	96	208996	18.2887 ug/L	99
33) Chloroform	8.751	83	365991	18.5797 ug/L	99
34) 1-Bromopropane	8.876	122	43321	21.3970 ug/L	98
35) Bromochloromethane	8.969	130	127377	18.6981 ug/L	100
36) Tetrahydrofuran	9.000	42	214254	107.8440 ug/L	98
38) 1,1,1-Trichloroethane	9.280	97	326468	18.3570 ug/L	98
39) Cyclohexane	9.301	56	340188	18.0049 ug/L	99
40) 1,1-Dichloropropene	9.477	75	260685	19.2023 ug/L	99
41) Tert-Amyl-Methyl ether	9.611	73	2580828	101.5841 ug/L	99
42) Carbon Tetrachloride	9.611	117	270863	17.9679 ug/L	99
44) 1,2-Dichloroethane	9.798	62	281694	19.7609 ug/L	98
45) Benzene	9.829	78	743914	18.3319 ug/L	99
46) Trichloroethene	10.586	130	225726	19.6262 ug/L	98
47) Methylcyclohexane	10.658	83	285346	17.8838 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\013114\
Data File : 17M002773.D
Acq On : 31 Jan 2014 22:34
Operator : ADC
Sample : WG461716-02 20ug/L LCS 8260
Misc : 1,1 STD62430
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 31 22:56:13 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
48) 1,2-Dichloropropane	10.803	63	213882	19.4959 ug/L	100
49) 1,4-Dioxane	11.094	88	13015	203.6336 ug/L	94
50) Bromodichloromethane	11.094	83	263919	18.2006 ug/L	100
51) Dibromomethane	11.166	93	113037	19.2568 ug/L	98
52) 2-Chloroethyl Vinyl Ether	11.425	63	79155	15.3342 ug/L	99
53) 4-Methyl-2-Pentanone	11.457	58	55235	21.0596 ug/L	100
54) cis-1,3-Dichloropropene	11.736	75	318676	19.4994 ug/L	99
55) Dimethyl Disulfide	11.975	79	173134	17.4733 ug/L	98
58) Toluene	12.141	91	776070	18.4982 ug/L	100
59) Ethyl Methacrylate	12.286	69	191877	20.8285 ug/L	99
60) trans-1,3-Dichloropropene	12.338	75	260936	18.8258 ug/L	100
61) 1,1,2-Trichloroethane	12.545	97	148844	19.8180 ug/L	100
62) 2-Hexanone	12.514	43	104432	22.9779 ug/L	100
63) 1,3-Dichloropropane	12.845	76	259537	19.8173 ug/L	98
64) Tetrachloroethene	12.949	166	208694	18.1722 ug/L	100
65) Dibromochloromethane	13.198	129	190978	17.2539 ug/L	100
66) 1,2-Dibromoethane	13.457	107	151845	20.0070 ug/L	100
67) 1-Chlorohexane	13.581	91	237693	18.0181 ug/L	98
68) Chlorobenzene	13.955	112	476470	16.9053 ug/L	98
69) 1,1,1,2-Tetrachloroethane	13.996	131	200584	18.2397 ug/L	99
70) Ethylbenzene	13.996	106	275183	17.5348 ug/L	100
71) m-,p-Xylene	14.089	106	640429	32.1847 ug/L	100
72) o-Xylene	14.639	106	305584	16.5141 ug/L	100
73) Styrene	14.680	104	534153	17.3627 ug/L	99
74) Bromoform	15.136	173	122138	17.1264 ug/L	99
75) Isopropylbenzene	15.074	105	784426	16.9442 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.281	83	149948	18.4745 ug/L	99
79) 1,2,3-Trichloropropane	15.468	110	53212	21.0242 ug/L	95
80) trans-1,4-Dichloro-2-B...	15.530	53	32851	11.9464 ug/L	99
81) n-Propylbenzene	15.572	91	914051	17.3476 ug/L	99
82) Bromobenzene	15.665	156	222398	18.4816 ug/L	98
83) 1,3,5-Trimethylbenzene	15.758	105	735875	19.1867 ug/L	100
84) 2-Chlorotoluene	15.820	91	568097	16.5125 ug/L	94
85) 4-Chlorotoluene	15.872	91	558327	18.6907 ug/L	95
86) a-Methylstyrene	16.162	118	384712	17.2196 ug/L	100
87) tert-Butylbenzene	16.214	134	141136	17.2190 ug/L	97
88) 1,2,4-Trimethylbenzene	16.266	105	743066	19.0762 ug/L	99
89) sec-Butylbenzene	16.484	105	849430	17.6007 ug/L	100
90) p-Isopropyltoluene	16.650	119	702121	17.6733 ug/L	99
91) 1,3-Dichlorobenzene	16.805	146	379298	17.0231 ug/L	100
92) 1,4-Dichlorobenzene	16.940	146	405743	18.2862 ug/L	98
93) n-Butylbenzene	17.168	91	672673	17.3515 ug/L	100
94) 1,2-Dichlorobenzene	17.417	146	374242	17.6560 ug/L	98
95) 1,2-Dibromo-3-Chloropr...	18.412	75	30068	21.3009 ug/L	94
96) 1,2,4-Trichlorobenzene	19.531	180	274600	18.9930 ug/L	99
97) Hexachlorobutadiene	19.697	225	159596	19.9056 ug/L	99
98) Naphthalene	19.884	128	539495	20.4188 ug/L	100
99) 1,2,3-Trichlorobenzene	20.205	180	261261	19.6944 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\013114\
Data File : 17M002773.D
Acq On : 31 Jan 2014 22:34
Operator : ADC
Sample : WG461716-02 20ug/L LCS 8260
Misc : 1,1 STD62430
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 31 22:56:13 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

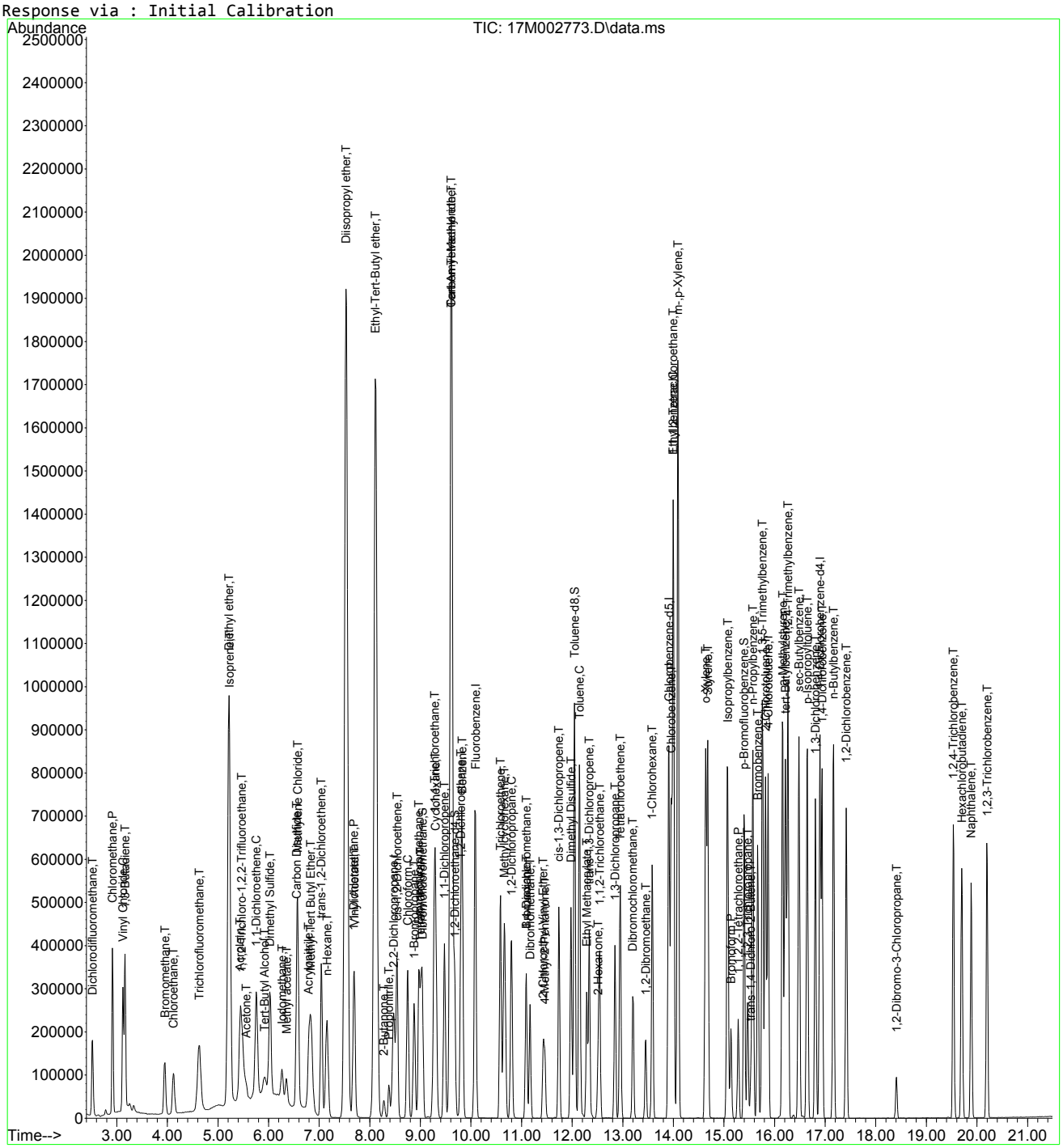
Abundance
TIC: 17M002773.D\data.ms
Time-->
Dichlorodifluoromethane,T
Chloromethane,P
Vinyl Chloride,T
Bromomethane,T
Chloroethane,T
Trichlorofluoromethane,T
Acrolein
Acrylonitrile
Trichloro-1,2,2-Trifluoroethane,T
Acetone,T
1,1-Dichloroethene,C
Tert-Butyl Alcohol,T
Methyl Sulfide,T
Carbon Disulfide,T
Methyl Tert Butyl Ether,T
Acrylonitrile,T
trans-1,2-Dichloroethene,T
n-Hexane,T
Diisopropyl ether,T
Ethyl-Tert-Butyl ether,T
2-Butanone,T
Fluorobenzene,I
Toluene-d8,S
Toluene,C
1,2-Dibromo-3-Chloropropane,T
Hexachlorobutadiene,T
Naphthalene,T
1,2,3-Trichlorobenzene,T
1,2-Dichlorobenzene,T
n-Butylbenzene,T
sec-Butylbenzene,T
p-Isopropyltoluene,T
1,3-Dichlorobenzene-d4,I
1,4-Dichlorobenzene,T
1,2,4-Trichlorobenzene,T
1,2,3-Trichlorobenzene,T
Isopropylbenzene,T
p-Bromofluorobenzene,S
n-Propylbenzene,T
Bromobenzene,T
1,3,5-Trimethylbenzene,T
4-Chlorotoluene,T
tert-Butylbenzene,T
1,2,4-Trimethylbenzene,T
o-Xylene,T
m,p-Xylene,T
Chlorobenzene-d5,I
1-Chlorohexane,T
1,2-Dibromoethane,T
Dibromochloromethane,T
Bromoform,P
1,1,2,2-Tetrachloroethane,P
trans-1,4-Dichloro-2-butene,T
Ethyl Methacrylate,T
2-Hexanone,T
1,1,2-Trichloroethane,T
1,3-Dichloropropane,T
Dimethyl Disulfide,T
cis-1,3-Dichloropropene,T
Chlorobenzene,T
Ethylbenzene,T
Styrene,T
Bromoform,T
Isopropyl Ether,T
Methyl Methacrylate,T
Methyl Iodide,T
Methyl Methacrylate,T
Methyl Methacrylate,T
Methyl Methacrylate

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013014\9M961154.D Vial: 17
Acq On : 31 Jan 2014 4:22 Operator: MES
Sample : WG461586-02 20ug/L LCS 8260 Inst : HPMS9
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 04:44:41 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	527371	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	384017	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	186869	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.88	111	143628	27.2974 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.20%		
43) 1,2-Dichloroethane-d4	10.52	65	171532	27.2223 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.88%		
58) Toluene-d8	12.91	98	476874	28.2252 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 112.92%#		
79) p-Bromofluorobenzene	16.31	95	191363	25.2442 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	146908	39.5269 ug/L	95
3) Chloromethane	3.78	50	145649	25.2797 ug/L	100
4) Vinyl Chloride	4.01	62	147951	26.2150 ug/L	96
5) 1,3-Butadiene	4.05	54	63473	13.4939 ug/L	98
6) Bromomethane	4.93	94	88917	21.1293 ug/L	100
7) Chloroethane	5.09	64	92554	21.6055 ug/L	97
8) Trichlorofluoromethane	5.59	101	203053	23.0673 ug/L	97
9) Diethyl ether	6.12	59	548708	104.8108 ug/L	99
10) Isoprene	6.15	67	159012	20.0186 ug/L	97
11) Acrolein	6.35	56	85751	121.7268 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.37	101	115376	22.4717 ug/L	95
13) Acetone	6.45	43	46289	26.3228 ug/L	100
14) 1,1-Dichloroethene	6.69	61	205288	20.7988 ug/L	99
15) Tert-Butyl Alcohol	6.79	59	113735	241.0301 ug/L	98
16) Dimethyl Sulfide	6.94	62	139063	22.5248 ug/L	96
17) Iodomethane	7.20	142	69573	12.6541 ug/L	99
18) Methyl acetate	7.20	43	115744	22.3836 ug/L	98
19) Methylene Chloride	7.46	84	123957	21.4862 ug/L	99
20) Carbon Disulfide	7.51	76	321494	18.6612 ug/L	99
21) Acrylonitrile	7.64	53	53493	24.6215 ug/L	100
22) Methyl Tert Butyl Ether	7.68	73	329083	21.7354 ug/L	100
23) trans-1,2-Dichloroethene	7.92	61	204674	20.9621 ug/L	100
24) n-Hexane	8.00	57	150230	16.7493 ug/L	100
25) Diisopropyl ether	8.33	45	2684958	101.8809 ug/L	99
26) Vinyl Acetate	8.51	43	231787	19.4236 ug/L	98
27) 1,1-Dichloroethane	8.54	63	255552	20.1104 ug/L	99
28) Ethyl-Tert-Butyl ether	8.91	59	2198780	102.7015 ug/L	99
29) 2-Butanone	9.08	43	62899	23.6632 ug/L	99
30) Propionitrile	9.19	54	92471	107.7536 ug/L	96
31) 2,2-Dichloropropane	9.32	77	171534	18.0119 ug/L	99
32) cis-1,2-Dichloroethene	9.38	96	127325	19.9530 ug/L	100
33) Chloroform	9.59	83	224140	21.6757 ug/L	100
34) 1-Bromopropane	9.72	122	25937	23.5469 ug/L	96
35) Bromochloromethane	9.82	130	77797	21.7682 ug/L	93
36) Tetrahydrofuran	9.84	42	185167	113.9253 ug/L	98
38) 1,1,1-Trichloroethane	10.13	97	189148	20.6394 ug/L	100
39) Cyclohexane	10.16	56	251892	19.8348 ug/L	98
40) 1,1-Dichloropropene	10.31	75	162596	21.0389 ug/L	98
41) Tert-Amyl-Methyl ether	10.42	73	1611011	108.9337 ug/L	100
42) Carbon Tetrachloride	10.47	117	175050	21.2227 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M961154.D 8260WTR.M Fri Jan 31 04:44:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013014\9M961154.D Vial: 17
Acq On : 31 Jan 2014 4:22 Operator: MES
Sample : WG461586-02 20ug/L LCS 8260 Inst : HPMS9
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 04:44:41 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.63	62	198155	21.6023 ug/L		100
46)	Benzene	10.68	78	494908	21.0392 ug/L		99
47)	Trichloroethene	11.43	130	128760	20.6288 ug/L		98
48)	Methylcyclohexane	11.52	83	180396	19.4882 ug/L		97
49)	1,2-Dichloropropane	11.65	63	150114	20.9360 ug/L		97
50)	1,4-Dioxane	11.93	88	9789	218.4907 ug/L		99
51)	Bromodichloromethane	11.95	83	171332	20.7133 ug/L		99
52)	Dibromomethane	12.04	174	84085	22.7899 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.24	63	56077	15.8147 ug/L		98
54)	4-Methyl-2-Pentanone	12.27	58	47996	21.0336 ug/L		98
55)	cis-1,3-Dichloropropene	12.58	75	209822	21.6089 ug/L		99
56)	Dimethyl Disulfide	12.85	94	228947	21.4425 ug/L		96
59)	Toluene	13.01	91	501063	21.5030 ug/L		100
60)	Ethyl Methacrylate	13.09	69	150857	22.8995 ug/L		99
61)	trans-1,3-Dichloropropene	13.18	75	174051	20.7471 ug/L		99
62)	1,1,2-Trichloroethane	13.39	97	98588	22.9304 ug/L		99
63)	2-Hexanone	13.33	43	91299	22.7212 ug/L		99
64)	1,3-Dichloropropane	13.70	76	179406	21.4711 ug/L		97
65)	Tetrachloroethene	13.84	164	109328	20.9673 ug/L		99
66)	Dibromochloromethane	14.10	129	121090	21.7353 ug/L		98
67)	1,2-Dibromoethane	14.36	107	108536	22.3499 ug/L		100
68)	1-Chlorohexane	14.44	91	149426	20.7183 ug/L		98
69)	Chlorobenzene	14.86	112	313222	19.3373 ug/L		98
70)	1,1,1,2-Tetrachloroethane	14.89	131	136228	22.7258 ug/L		98
71)	Ethylbenzene	14.88	106	189467	21.4730 ug/L		97
72)	m-,p-Xylene	14.98	106	440910	41.2419 ug/L		100
73)	o-Xylene	15.53	106	211821	19.3145 ug/L		99
74)	Styrene	15.57	104	386178	21.2486 ug/L		100
75)	Bromoform	16.07	173	93137	24.6994 ug/L		97
76)	Isopropylbenzene	15.96	105	539418	19.4401 ug/L		99
78)	1,1,2,2-Tetrachloroethane	16.17	83	125958	22.3429 ug/L		98
80)	1,2,3-Trichloropropane	16.37	110	42192	25.2345 ug/L		70
81)	trans-1,4-Dichloro-2-Buten	16.41	53	25798	11.6055 ug/L	#	1
82)	n-Propylbenzene	16.47	91	600378	20.2298 ug/L		99
83)	Bromobenzene	16.61	156	150892	22.1171 ug/L		98
84)	1,3,5-Trimethylbenzene	16.66	105	526467	22.9699 ug/L		99
85)	2-Chlorotoluene	16.74	91	376567	19.4961 ug/L		90
86)	4-Chlorotoluene	16.79	91	368841	20.4627 ug/L		98
87)	a-Methylstyrene	17.06	118	261442	22.4715 ug/L		98
88)	tert-Butylbenzene	17.12	134	100252	19.5787 ug/L		92
89)	1,2,4-Trimethylbenzene	17.18	105	520319	22.6203 ug/L		100
90)	sec-Butylbenzene	17.39	105	591104	20.8862 ug/L		100
91)	p-Isopropyltoluene	17.55	119	463606	20.7765 ug/L		98
92)	1,3-Dichlorobenzene	17.74	146	257924	20.0511 ug/L		100
93)	1,4-Dichlorobenzene	17.88	146	276633	21.4606 ug/L		99
94)	n-Butylbenzene	18.08	91	435737	22.6702 ug/L		100
95)	1,2-Dichlorobenzene	18.38	146	261372	20.8718 ug/L		99
96)	1,2-Dibromo-3-Chloropropan	19.37	157	28553	23.8037 ug/L		98
97)	1,2,4-Trichlorobenzene	20.51	180	208877	22.8974 ug/L		99
98)	Hexachlorobutadiene	20.66	225	114682	22.7689 ug/L		99
99)	Naphthalene	20.89	128	444487	24.5783 ug/L		98
100)	1,2,3-Trichlorobenzene	21.20	180	211871	23.5733 ug/L		99

(#) = qualifier out of range (m) = manual integration
9M961154.D 8260WTR.M Fri Jan 31 04:44:43 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013014\9M961154.D Vial: 17
Acq On : 31 Jan 2014 4:22 Operator: MES
Sample : WG461586-02 20ug/L LCS 8260 Inst : HPMS9
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 4:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration

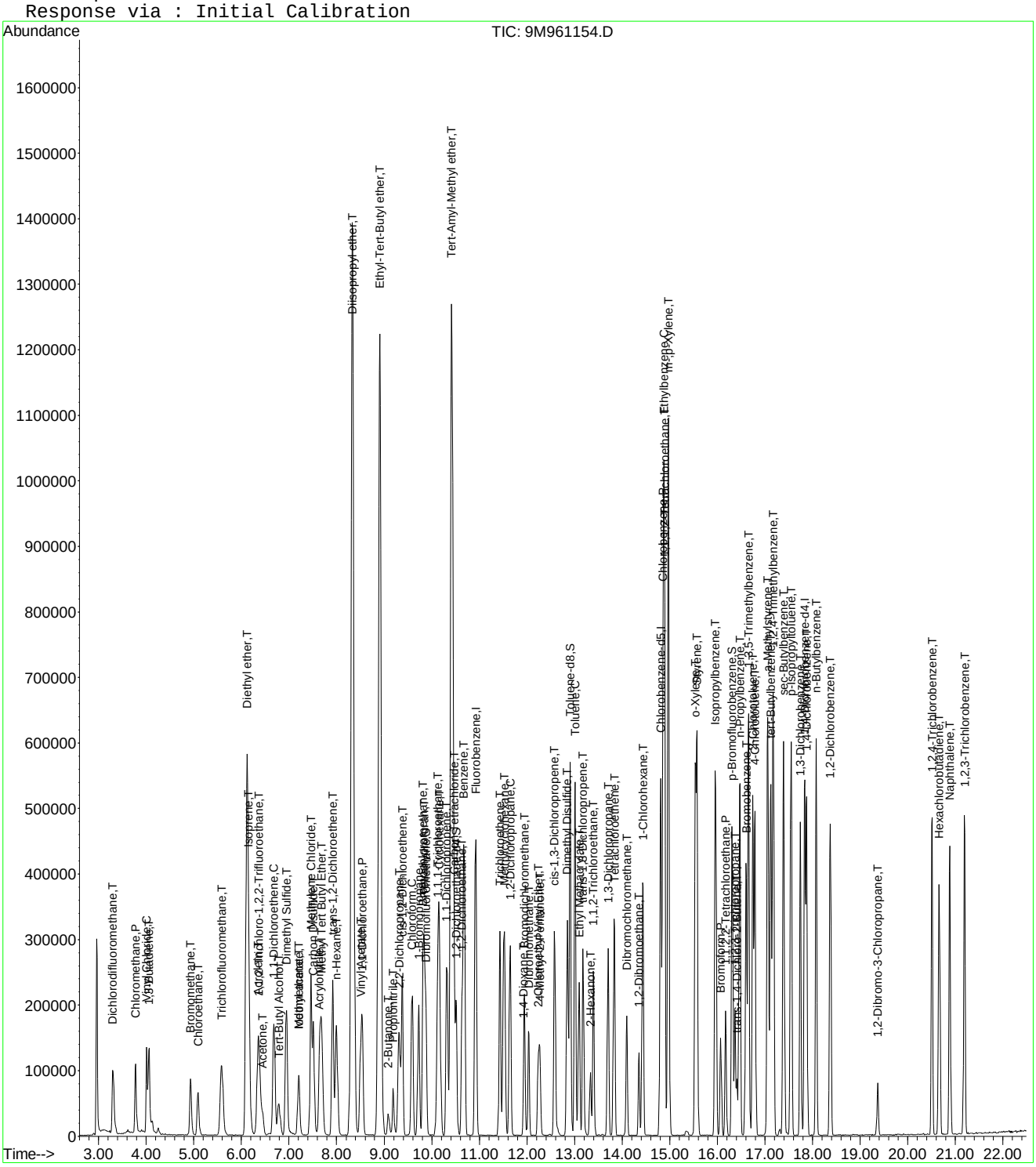

9M961154.D 8260WTR.M Fri Jan 31 04:44:44 2014 Page 3

Data Path : D:\MassHunter\GCMS\1\data\013114\
Data File : 17M002774.D
Acq On : 31 Jan 2014 23:02
Operator : ADC
Sample : WG461716-03 20ug/L LCSDUP 8260
Misc : 1,1 STD62430
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 31 23:23:38 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.088	96	860851	25.00000 ug/L	0.0000
56) Chlorobenzene-d5	13.913	117	598002	25.00000 ug/L	0.0000
76) 1,4-Dichlorobenzene-d4	16.898	152	282471	25.00000 ug/L	0.0000
System Monitoring Compounds					
37) Dibromofluoromethane	9.041	111	222933	22.7959 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.184%		
43) 1,2-Dichloroethane-d4	9.674	65	252565	23.2688 ug/L	-0.0105
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.075%		
57) Toluene-d8	12.047	98	811570	23.6462 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.585%		
78) p-Bromofluorobenzene	15.395	95	289663	23.2964 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.186%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.521	85	218666	23.4847 ug/L	99
3) Chloromethane	2.915	50	435481	19.2539 ug/L	99
4) Vinyl Chloride	3.123	62	341178	18.4985 ug/L	99
5) 1,3-Butadiene	3.164	54	193162	14.8343 ug/L	100
6) Bromomethane	3.952	94	124866	18.5008 ug/L	99
7) Chloroethane	4.118	64	142956	18.9661 ug/L	100
8) Trichlorofluoromethane	4.626	101	322513	20.5884 ug/L	99
9) Diethyl ether	5.216	59	784845	105.7111 ug/L	98
10) Isoprene	5.227	67	265494	19.5521 ug/L	99
11) Acrolein	5.444	56	122990	152.6827 ug/L	97
12) 1,1,2-Trichloro-1,2,2-...	5.465	101	191680	20.8794 ug/L	94
13) Acetone	5.558	43	51655	25.6411 ug/L	87
14) 1,1-Dichloroethene	5.755	61	318925	18.8898 ug/L	98
15) Tert-Butyl Alcohol	5.921	59	96596	192.8256 ug/L #	85
16) Dimethyl Sulfide	6.025	62	195602	21.3871 ug/L	99
17) Iodomethane	6.263	142	132258	13.4680 ug/L	100
18) Methyl acetate	6.357	43	127130	20.4801 ug/L	99
19) Methylene Chloride	6.585	84	198160	17.7523 ug/L	98
20) Carbon Disulfide	6.554	76	544330	17.6702 ug/L	100
21) Acrylonitrile	6.792	53	58722	22.0370 ug/L	100
22) Methyl Tert Butyl Ether	6.833	73	563211	23.1080 ug/L	97
23) trans-1,2-Dichloroethene	7.041	96	192042	19.4306 ug/L	98
24) n-Hexane	7.155	57	210058	16.4512 ug/L	99
25) Diisopropyl ether	7.528	45	3760622	101.4246 ug/L	99
26) Vinyl Acetate	7.694	43	264537	17.3391 ug/L	99
27) 1,1-Dichloroethane	7.683	63	381084	19.2105 ug/L	100
28) Ethyl-Tert-Butyl ether	8.108	59	3245441	101.6805 ug/L	100
29) 2-Butanone	8.274	43	69284	23.6274 ug/L	99
30) Propionitrile	8.378	54	100243	109.7134 ug/L	98
31) 2,2-Dichloropropane	8.471	77	285954	17.2665 ug/L	98
32) cis-1,2-Dichloroethene	8.533	96	211985	18.8128 ug/L	98
33) Chloroform	8.751	83	374188	19.2647 ug/L	99
34) 1-Bromopropane	8.886	122	44404	22.2423 ug/L	98
35) Bromochloromethane	8.969	130	129742	19.3148 ug/L	100
36) Tetrahydrofuran	9.010	42	210038	107.2181 ug/L	99
38) 1,1,1-Trichloroethane	9.280	97	338307	19.2920 ug/L	99
39) Cyclohexane	9.300	56	351459	18.8647 ug/L	99
40) 1,1-Dichloropropene	9.477	75	267042	19.9489 ug/L	98
41) Tert-Amyl-Methyl ether	9.611	73	2603749	103.9367 ug/L	99
42) Carbon Tetrachloride	9.611	117	280568	18.8445 ug/L	99
44) 1,2-Dichloroethane	9.798	62	284988	20.2749 ug/L	99
45) Benzene	9.829	78	756490	18.9057 ug/L	99
46) Trichloroethene	10.586	130	229421	20.2297 ug/L	97
47) Methylcyclohexane	10.658	83	292348	18.5820 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\013114\
Data File : 17M002774.D
Acq On : 31 Jan 2014 23:02
Operator : ADC
Sample : WG461716-03 20ug/L LCSDUP 8260
Misc : 1,1 STD62430
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 31 23:23:38 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
48) 1,2-Dichloropropane	10.803	63	217511	20.1073 ug/L	99
49) 1,4-Dioxane	11.094	88	13516	214.4651 ug/L	89
50) Bromodichloromethane	11.094	83	268768	18.7973 ug/L	100
51) Dibromomethane	11.166	93	112089	19.3656 ug/L	100
52) 2-Chloroethyl Vinyl Ether	11.425	63	80411	15.7980 ug/L	100
53) 4-Methyl-2-Pentanone	11.456	58	54328	21.0069 ug/L	96
54) cis-1,3-Dichloropropene	11.736	75	324735	20.1513 ug/L	100
55) Dimethyl Disulfide	11.975	79	177192	18.1360 ug/L	98
58) Toluene	12.140	91	796238	19.0818 ug/L	99
59) Ethyl Methacrylate	12.286	69	191116	20.8582 ug/L	98
60) trans-1,3-Dichloropropene	12.337	75	262506	19.0417 ug/L	99
61) 1,1,2-Trichloroethane	12.545	97	152544	20.4207 ug/L	100
62) 2-Hexanone	12.514	43	103177	22.8247 ug/L	99
63) 1,3-Dichloropropane	12.845	76	263515	20.2301 ug/L	99
64) Tetrachloroethene	12.949	166	215435	18.8608 ug/L	99
65) Dibromochloromethane	13.198	129	193297	17.5529 ug/L	99
66) 1,2-Dibromoethane	13.457	107	152202	20.1627 ug/L	100
67) 1-Chlorohexane	13.581	91	245077	18.6650 ug/L	98
68) Chlorobenzene	13.954	112	487400	17.3868 ug/L	98
69) 1,1,1,2-Tetrachloroethane	13.996	131	205258	18.7517 ug/L	99
70) Ethylbenzene	13.996	106	282772	18.1007 ug/L	99
71) m-,p-Xylene	14.089	106	656360	33.1434 ug/L	99
72) o-Xylene	14.638	106	315751	17.1560 ug/L	100
73) Styrene	14.680	104	545285	17.8074 ug/L	99
74) Bromoform	15.136	173	122491	17.2634 ug/L	99
75) Isopropylbenzene	15.074	105	804722	17.4768 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.281	83	150598	18.7797 ug/L	99
79) 1,2,3-Trichloropropane	15.468	110	51209	20.4788 ug/L	95
80) trans-1,4-Dichloro-2-B...	15.530	53	32668	12.0205 ug/L	100
81) n-Propylbenzene	15.571	91	934048	17.9423 ug/L	99
82) Bromobenzene	15.665	156	227109	19.1021 ug/L	98
83) 1,3,5-Trimethylbenzene	15.758	105	752023	19.8456 ug/L	100
84) 2-Chlorotoluene	15.820	91	582406	17.1338 ug/L	95
85) 4-Chlorotoluene	15.872	91	572974	19.4138 ug/L	95
86) a-Methylstyrene	16.162	118	395012	17.8440 ug/L	99
87) tert-Butylbenzene	16.214	134	146803	18.1278 ug/L	100
88) 1,2,4-Trimethylbenzene	16.266	105	766074	19.9056 ug/L	99
89) sec-Butylbenzene	16.484	105	867914	18.2019 ug/L	100
90) p-Isopropyltoluene	16.649	119	721048	18.3700 ug/L	99
91) 1,3-Dichlorobenzene	16.805	146	386746	17.5681 ug/L	99
92) 1,4-Dichlorobenzene	16.940	146	413516	18.8627 ug/L	98
93) n-Butylbenzene	17.168	91	688833	17.9714 ug/L	100
94) 1,2-Dichlorobenzene	17.416	146	378841	18.0898 ug/L	98
95) 1,2-Dibromo-3-Chloropr...	18.411	75	30062	21.5551 ug/L	95
96) 1,2,4-Trichlorobenzene	19.541	180	277551	19.4300 ug/L	98
97) Hexachlorobutadiene	19.707	225	160929	20.3154 ug/L	99
98) Naphthalene	19.883	128	544850	20.8717 ug/L	100
99) 1,2,3-Trichlorobenzene	20.205	180	265852	20.2837 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\013114\
Data File : 17M002774.D
Acq On : 31 Jan 2014 23:02
Operator : ADC
Sample : WG461716-03 20ug/L LCSDUP 8260
Misc : 1,1 STD62430
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 31 23:23:38 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260WT.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/28/14 HPMS17
QLast Update : Wed Jan 29 07:59:38 2014
Response via : Initial Calibration

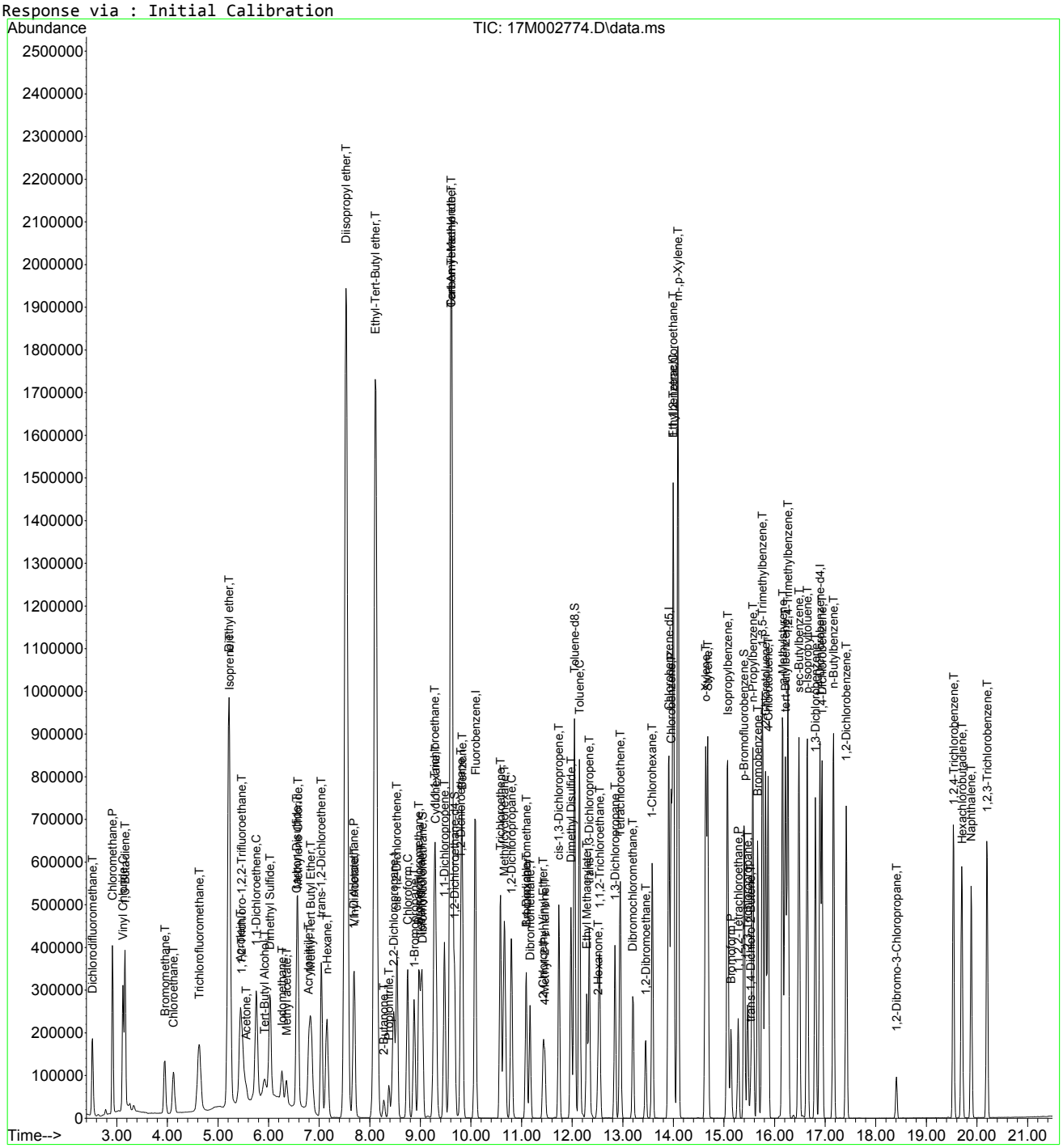

8260WT.M Wed Feb 05 11:06:34 2014 Page: 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013014\9M961155.D Vial: 18
Acq On : 31 Jan 2014 4:51 Operator: MES
Sample : WG461586-03 20ug/L LCS DUP 8260 Inst : HPMS9
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 05:13:49 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	513067	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	378940	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	189904	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.87	111	140853	27.5163 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.08%		
43) 1,2-Dichloroethane-d4	10.51	65	168398	27.4700 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.88%		
58) Toluene-d8	12.91	98	465217	27.9042 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 111.60%#		
79) p-Bromofluorobenzene	16.31	95	189959	24.6585 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.64%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	126402	35.0930 ug/L	98
3) Chloromethane	3.78	50	143672	25.6318 ug/L	100
4) Vinyl Chloride	4.01	62	135198	24.6232 ug/L	99
5) 1,3-Butadiene	4.06	54	60194	13.1363 ug/L	97
6) Bromomethane	4.93	94	80270	19.6063 ug/L	97
7) Chloroethane	5.09	64	86471	20.7482 ug/L	99
8) Trichlorofluoromethane	5.59	101	188745	22.0491 ug/L	99
9) Diethyl ether	6.11	59	538646	105.7573 ug/L	99
10) Isoprene	6.15	67	148393	19.2025 ug/L	98
11) Acrolein	6.35	56	87225	127.2287 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.37	101	111709	22.3640 ug/L	93
13) Acetone	6.45	43	46508	27.1847 ug/L	99
14) 1,1-Dichloroethene	6.68	61	188173	19.5963 ug/L	97
15) Tert-Butyl Alcohol	6.79	59	106918	234.0753 ug/L	98
16) Dimethyl Sulfide	6.95	62	135772	22.6048 ug/L	99
17) Iodomethane	7.20	142	70837	13.1938 ug/L	98
18) Methyl acetate	7.20	43	115437	22.9466 ug/L	98
19) Methylene Chloride	7.46	84	114629	20.4233 ug/L	97
20) Carbon Disulfide	7.51	76	298720	17.8227 ug/L	99
21) Acrylonitrile	7.64	53	52278	24.7331 ug/L	100
22) Methyl Tert Butyl Ether	7.68	73	327924	22.2626 ug/L	100
23) trans-1,2-Dichloroethene	7.92	61	190344	20.0379 ug/L	100
24) n-Hexane	7.99	57	135986	15.5839 ug/L	98
25) Diisopropyl ether	8.33	45	2622411	102.2817 ug/L	100
26) Vinyl Acetate	8.51	43	237472	20.4151 ug/L	100
27) 1,1-Dichloroethane	8.54	63	244848	19.8052 ug/L	99
28) Ethyl-Tert-Butyl ether	8.91	59	2145837	103.0229 ug/L	100
29) 2-Butanone	9.09	43	63664	24.6187 ug/L	96
30) Propionitrile	9.19	54	89299	106.9793 ug/L	95
31) 2,2-Dichloropropane	9.31	77	157867	17.0389 ug/L	98
32) cis-1,2-Dichloroethene	9.37	96	122397	19.7155 ug/L	96
33) Chloroform	9.59	83	214876	21.3592 ug/L	98
34) 1-Bromopropane	9.73	122	25106	23.4292 ug/L	96
35) Bromochloromethane	9.82	130	73731	21.2057 ug/L	99
36) Tetrahydrofuran	9.84	42	190003	120.1598 ug/L	99
38) 1,1,1-Trichloroethane	10.12	97	178408	20.0102 ug/L	99
39) Cyclohexane	10.16	56	233769	18.9209 ug/L	99
40) 1,1-Dichloropropene	10.32	75	152405	20.2701 ug/L	97
41) Tert-Amyl-Methyl ether	10.42	73	1553646	107.9837 ug/L	100
42) Carbon Tetrachloride	10.47	117	158207	19.7154 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M961155.D 8260WTR.M Fri Jan 31 05:13:50 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013014\9M961155.D Vial: 18
Acq On : 31 Jan 2014 4:51 Operator: MES
Sample : WG461586-03 20ug/L LCS DUP 8260 Inst : HPMS9
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 05:13:49 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.64	62	188862	21.1632 ug/L		99
46)	Benzene	10.68	78	462423	20.2062 ug/L		99
47)	Trichloroethene	11.43	130	121151	19.9509 ug/L		98
48)	Methylcyclohexane	11.52	83	160754	17.8504 ug/L		98
49)	1,2-Dichloropropane	11.65	63	143607	20.5868 ug/L		98
50)	1,4-Dioxane	11.93	88	7213	170.6310 ug/L		95
51)	Bromodichloromethane	11.95	83	162384	20.1788 ug/L		98
52)	Dibromomethane	12.03	174	79541	22.1593 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.24	63	53898	15.6240 ug/L		99
54)	4-Methyl-2-Pentanone	12.27	58	46113	20.7718 ug/L		96
55)	cis-1,3-Dichloropropene	12.58	75	201575	21.3383 ug/L		100
56)	Dimethyl Disulfide	12.85	94	222048	21.3762 ug/L		97
59)	Toluene	13.01	91	463596	20.1616 ug/L		99
60)	Ethyl Methacrylate	13.10	69	140519	21.6160 ug/L		99
61)	trans-1,3-Dichloropropene	13.18	75	165747	20.0220 ug/L		98
62)	1,1,2-Trichloroethane	13.39	97	94243	22.2135 ug/L		99
63)	2-Hexanone	13.33	43	88430	22.3021 ug/L		99
64)	1,3-Dichloropropane	13.71	76	173515	21.0443 ug/L		95
65)	Tetrachloroethene	13.83	164	97416	18.9331 ug/L		98
66)	Dibromochloromethane	14.10	129	114554	20.8376 ug/L		99
67)	1,2-Dibromoethane	14.36	107	103384	21.5742 ug/L		98
68)	1-Chlorohexane	14.44	91	136796	19.2212 ug/L		99
69)	Chlorobenzene	14.86	112	297026	18.5831 ug/L		96
70)	1,1,1,2-Tetrachloroethane	14.88	131	125802	21.2677 ug/L		99
71)	Ethylbenzene	14.88	106	174888	20.0862 ug/L		100
72)	m-,p-Xylene	14.98	106	409198	38.7885 ug/L		100
73)	o-Xylene	15.53	106	203022	18.7602 ug/L		99
74)	Styrene	15.58	104	371800	20.7315 ug/L		97
75)	Bromoform	16.07	173	87341	23.4726 ug/L		98
76)	Isopropylbenzene	15.96	105	497089	18.1546 ug/L		99
78)	1,1,2,2-Tetrachloroethane	16.18	83	119153	20.8147 ug/L		100
80)	1,2,3-Trichloropropane	16.37	110	37975	22.3598 ug/L		71
81)	trans-1,4-Dichloro-2-Buten	16.41	53	26074	11.5442 ug/L	#	15
82)	n-Propylbenzene	16.46	91	558669	18.5236 ug/L		98
83)	Bromobenzene	16.61	156	140835	20.3131 ug/L		99
84)	1,3,5-Trimethylbenzene	16.65	105	479458	20.5846 ug/L		100
85)	2-Chlorotoluene	16.74	91	357819	18.2294 ug/L		100
86)	4-Chlorotoluene	16.80	91	340671	18.5978 ug/L		99
87)	a-Methylstyrene	17.06	118	243619	20.6050 ug/L		100
88)	tert-Butylbenzene	17.13	134	95201	18.2951 ug/L		97
89)	1,2,4-Trimethylbenzene	17.18	105	481219	20.5861 ug/L		100
90)	sec-Butylbenzene	17.39	105	531853	18.4923 ug/L		99
91)	p-Isopropyltoluene	17.55	119	430423	18.9811 ug/L		100
92)	1,3-Dichlorobenzene	17.75	146	242297	18.5352 ug/L		98
93)	1,4-Dichlorobenzene	17.88	146	263631	20.1251 ug/L		98
94)	n-Butylbenzene	18.08	91	394288	20.1859 ug/L		98
95)	1,2-Dichlorobenzene	18.38	146	251743	19.7816 ug/L		99
96)	1,2-Dibromo-3-Chloropropan	19.37	157	29144	23.9081 ug/L		99
97)	1,2,4-Trichlorobenzene	20.52	180	207118	22.3417 ug/L		98
98)	Hexachlorobutadiene	20.66	225	109739	21.4394 ug/L		98
99)	Naphthalene	20.89	128	447574	24.3534 ug/L		99
100)	1,2,3-Trichlorobenzene	21.19	180	208424	22.8192 ug/L		99

(#) = qualifier out of range (m) = manual integration
9M961155.D 8260WTR.M Fri Jan 31 05:13:51 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013014\9M961155.D Vial: 18
Acq On : 31 Jan 2014 4:51 Operator: MES
Sample : WG461586-03 20ug/L LCS DUP 8260 Inst : HPMS9
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 5:13 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration

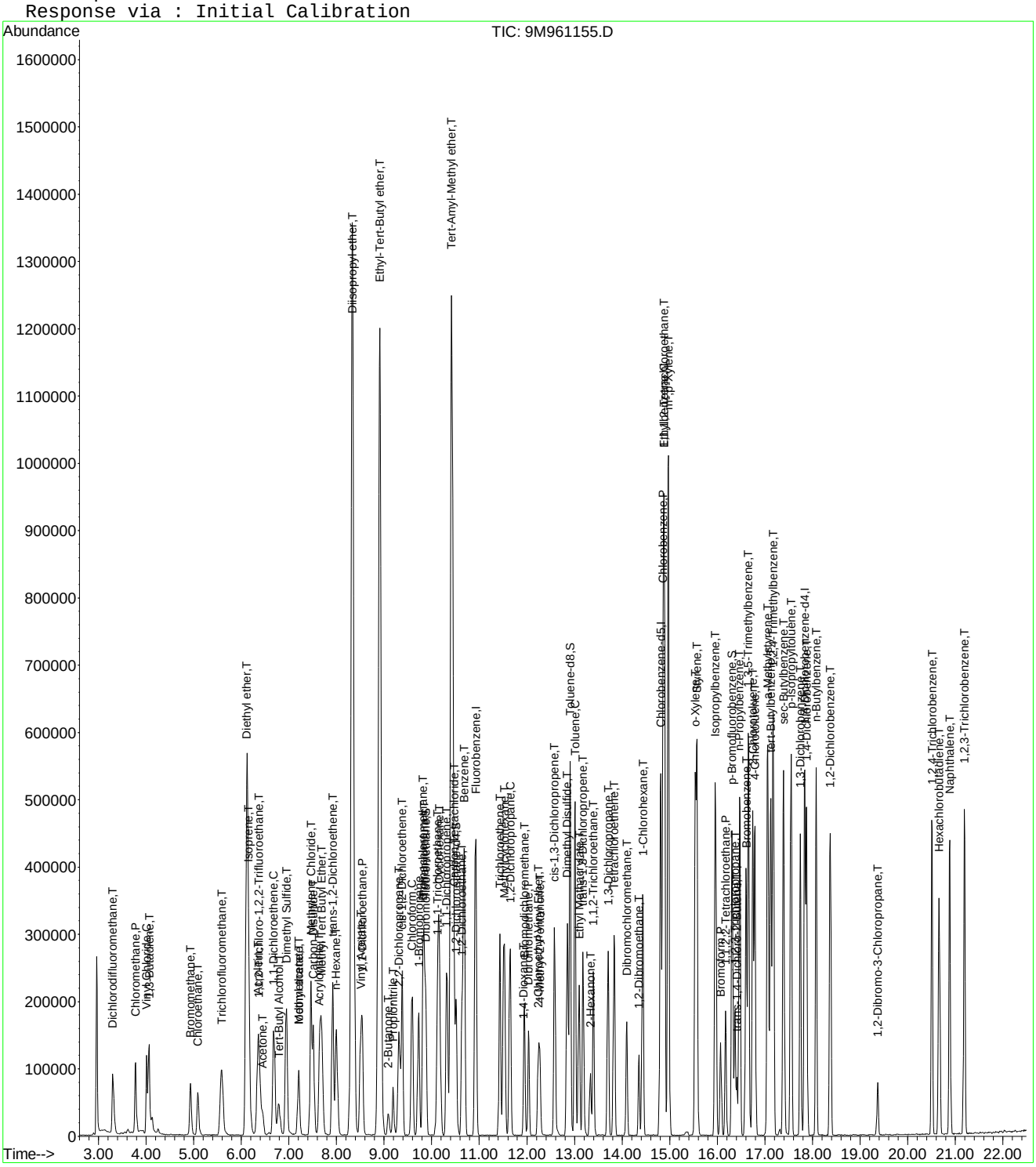

9M961155.D 8260WTR.M Fri Jan 31 05:13:51 2014 Page 3

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac Laboratories
Case Narrative

Login Number: L14011242
Department: Volatiles - GC
Analyst: Qin Xu

Analysis RSK-175

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes/Sample Duplicates: The MS/MSD results were not associated with this sample delivery group (SDG), due to insufficient volume of sample. Microbac Laboratories recommends site specific MS/MSD samples to avoid possible data qualifications.

SAMPLES

Samples: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

Narrative ID: 78028
Approved By: Michael Albertson

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW08-012314	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	01/13/2014 15:47
Workgroup #:	WG461058	**Analyst:**	QX	**Run Date:**	01/27/2014 15:31
Collect Date:	01/23/2014 09:55	**Dilution:**	1	**File ID:**	16G41383
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	7.79		5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:

y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 011314
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 48804

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD61380 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG459109, WG459110

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G41253	WG459109-01 133umol/mol CCV RSK175	NA	1	1	STD55748	01/13/14 11:10
16G41254	WG459109-01 133umol/mol CCV RSK175	NA	1	1	STD55748	01/13/14 11:31
16G41255	WG459110-01 BLANK RSK175	NA	1	1		01/13/14 11:50
16G41256	WG459110-02 67umol/mol LCS RSK175	NA	1	1	STD61380	01/13/14 12:06
16G41257	WG459110-03 67umol/mol LCS2 RSK175	NA	1	1	STD61380	01/13/14 12:16
16G41258	WG459110-02 67umol/mol LCS RSK175	NA	1	1	STD61380	01/13/14 12:27
16G41259	RINSE RSK175	NA	1	1	STD61380	01/13/14 14:34
16G41260	WG459109-01 0.67umol/mol ICAL RSK1	NA	1	1	STD55748	01/13/14 14:45
16G41261	WG459109-02 1.67umol/mol ICAL RSK1	NA	1	1	STD55748	01/13/14 14:56
16G41262	WG459109-03 33.3umol/mol ICAL RSK1	NA	1	1	STD55748	01/13/14 15:06
16G41263	WG459109-04 66.67umol/mol ICAL RSK1	NA	1	1	STD55748	01/13/14 15:16
16G41264	WG459109-05 133umol/mol ICAL RSK175	NA	1	1	STD55748	01/13/14 15:26
16G41265	WG459109-06 266umol/mol ICAL RSK175	NA	1	1	STD55748	01/13/14 15:37
16G41266	WG459109-07 533umol/mol ICAL RSK175	NA	1	1	STD55748	01/13/14 15:47
16G41268	WG459109-08 133umol/mol ICV RSK175	NA	1	1	STD61380	01/13/14 16:07
16G41269	WG459110-01 BLANK RSK175	NA	1	1		01/13/14 17:12
16G41270	WG459110-02 67umol/mol LCS RSK175	NA	1	1	STD61380	01/13/14 17:23
16G41271	WG459110-03 67umol/mol LCS DUP RSK17	NA	1	1	STD61380	01/13/14 17:34
16G41272	L14010284-01 B RSK175	<2	1	1		01/13/14 17:44
16G41273	L14010284-02 B RSK175	7	1	1		01/13/14 17:55
16G41274	L14010284-05 B RSK175	7	1	1		01/13/14 18:05
16G41275	L14010284-06 B RSK175	6	1	1		01/13/14 18:15
16G41276	WG459109-09 133umol/mol CCV RSK175	NA	1	1	STD55748	01/13/14 18:26
16G41277	L14010284-07 B RSK175	6	1	1		01/13/14 18:36
16G41278	L14010284-09 B RSK175	6	1	1		01/13/14 18:46
16G41279	L14010284-14 B RSK175	<2	1	1		01/13/14 18:57
16G41280	L14010284-15 B RSK175	<2	1	1		01/13/14 19:07
16G41281	L14010284-11 B RSK175	<2	1	1		01/13/14 19:17
16G41282	L14010365-01 A RSK175	6	1	1		01/13/14 19:28
16G41283	L14010365-02 A RSK175	6	1	1		01/13/14 19:38
16G41284	L14010365-03 A RSK175	6	1	1		01/13/14 19:49
16G41285	L14010364-02 A RSK175	6	1	1		01/13/14 19:59
16G41286	L14010364-05 A RSK175	<2	1	1		01/13/14 20:09
16G41287	WG459109-10 133umol/mol CCV RSK175	NA	1	1	STD55748	01/13/14 20:20

Approved: January 15, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 011314
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 48804

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD61380 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG459109, WG459110

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1 File ID: 16G41253				
	RR			
4 File ID: 16G41256				
	RR			
6 File ID: 16G41258				
	run ICAL			

Approved: January 15, 2014

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 012714
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 48951

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD61380 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG460958, WG461058

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G41353	WG460957-01 133umol/mol CCV RSK175	NA	1	1	STD55748	01/27/14 10:53
16G41354	WG460958-01 BLANK RSK175	NA	1	1		01/27/14 11:04
16G41355	WG460958-02 67umol/mol LCS RSK175	NA	1	1	STD61380	01/27/14 11:17
16G41356	L14011219-08 A REF RSK175	NA	1	1		01/27/14 11:25
16G41357	L14011219-09 A MS RSK175	NA	1	1	STD61380	01/27/14 11:34
16G41358	L14011219-10 A MSD RSK175	NA	1	1	STD61380	01/27/14 11:43
16G41359	L14011150-01 A RSK175	<2	1	1		01/27/14 11:52
16G41360	L14011250-04 A RSK175	6	1	1		01/27/14 12:01
16G41361	L14011250-05 A RSK175	6	1	1		01/27/14 12:10
16G41362	L14011250-06 A RSK175	6	1	1		01/27/14 12:19
16G41363	L14011250-01 A RSK175	6	1	1		01/27/14 12:28
16G41364	WG460957-02 133umol/mol CCV RSK175	NA	1	1	STD55748	01/27/14 12:37
16G41365	L14011250-02 A RSK175	6	1	1		01/27/14 12:46
16G41366	L14011250-03 A RSK175	6	1	1		01/27/14 12:55
16G41367	L14011219-02 A RSK175	<2	1	1		01/27/14 13:04
16G41368	L14011219-07 A RSK175	<2	1	1		01/27/14 13:13
16G41369	L14011219-13 A RSK175	<2	1	1		01/27/14 13:23
16G41370	L14011219-14 A RSK175	<2	1	1		01/27/14 13:32
16G41371	L14011242-01 A RSK175	6	1	1		01/27/14 13:41
16G41372	L14011150-01 B RSK175	<2	1	1		01/27/14 13:50
16G41373	L14011219-08 B 25X RSK175	NA	1	25		01/27/14 13:59
16G41374	L14011219-02 B 25X RSK175	<2	1	25		01/27/14 14:08
16G41375	WG460957-03 133umol/mol CCV RSK175	NA	1	1	STD55748	01/27/14 14:17
16G41376	L14011219-07 B 10X RSK175	<2	1	10		01/27/14 14:26
16G41377	L14011219-13 B 10X RSK175	<2	1	10		01/27/14 14:35
16G41378	WG460957-04 133umol/mol CCV RSK175	NA	1	1	STD55748	01/27/14 14:44
16G41379	WG461058-01 BLANK RSK175	NA	1	1		01/27/14 14:55
16G41380	WG461058-02 67umol/mol LCS RSK175	NA	1	1	STD61380	01/27/14 15:04
16G41381	WG461058-03 67umol/mol LCS2 RSK175	NA	1	1	STD61380	01/27/14 15:13
16G41382	L14011219-14 B 10X RSK175	<2	1	10		01/27/14 15:22
16G41383	L14011242-01 B RSK175	6	1	1		01/27/14 15:31
16G41384	WG460957-05 133umol/mol CCV RSK175	NA	1	1	STD55748	01/27/14 15:40

Approved: January 30, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 012714
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 48951

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD61380 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG460958, WG461058

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
33	X	25	Over Calibration Range	M
File ID: 16G41356				
7	X	1	Carry-over contamination	
File ID: 16G41359				
15	X	25	Over Calibration Range	M
File ID: 16G41367				
16	X	10	Over Calibration Range	M
File ID: 16G41368				
17	X	10	Over Calibration Range	M
File ID: 16G41369				
18	X	10	Over Calibration Range	M
File ID: 16G41370				
19	X	1	Carry-over contamination	
File ID: 16G41371				
25				
File ID: 16G41377				
	DNR.			

Approved: January 30, 2014

Page: 2

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B182096

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG459109-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG459109-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG459109-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG459109-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG459109-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG459109-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG459109-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG459109-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B182765

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG460957-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG460957-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG460957-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG460957-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L14011219-14	15	mL	15	mL					5.47	mL	5.47	mL	40
WG460958-04	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L14011219-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG460958-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L14011219-09	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L14011250-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L14011242-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L14011219-10	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
WG460958-05	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L14011250-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L14011250-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L14011219-13	15	mL	15	mL					5.47	mL	5.47	mL	40
L14011219-08	15	mL	15	mL					5.47	mL	5.47	mL	40
L14011250-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L14011250-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L14011219-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L14011250-06	15	mL	15	mL					5.47	mL	5.47	mL	40
L14011150-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG460958-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
WG460958-03	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B182766

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG460957-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG461058-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
WG461058-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L14011219-14	15	mL	15	mL					5.47	mL	5.47	mL	40
WG461058-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L14011242-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 13-JAN-2014
Analyst: QX
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 58255
Analytical Workgroups: WG459109, WG459110

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	QX
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
15-JAN-2014

Secondary Reviewer:
15-JAN-2014

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-15-2014 12:28:30

Microbac Laboratories Inc.

Data Checklist

Date: 27-JAN-2014
Analyst: QX
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 58541
Analytical Workgroups: WG460958, WG461058

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	X
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	QX
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
28-JAN-2014

Secondary Reviewer:
30-JAN-2014

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-30-2014 09:44:26

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG461058

Login Number: L14011242

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-012314	01	01/23/14					01/27/2014	4.2	14		01/27/14	4.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3333675
Report generated 01/30/2014 10:07

METHOD BLANK SUMMARY

Login Number: L14011242
Blank File ID: 16G41379
Prep Date: 01/27/14 14:55
Analyzed Date: 01/27/14 14:55
Analyst: QX

Work Group: WG461058
Blank Sample ID: WG461058-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG461058-02	16G41380	01/27/14 15:04	01
LCS2	WG461058-03	16G41381	01/27/14 15:13	01
67WW08-012314	L14011242-01	16G41383	01/27/14 15:31	02

Report Name: BLANK_SUMMARY
PDF File ID: 3333676
Report generated 01/30/2014 10:07

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14011242 Prep Date: 01/27/14 14:55 Sample ID: WG461058-01
Instrument ID: HP16 Run Date: 01/27/14 14:55 Prep Method: 5021
File ID: 16G41379 Analyst: QX Method: RSK175
Workgroup (AAB#): WG461058 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 13-JAN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Methane	1.00	5.00	1.00	1	U
Ethene	1.00	5.00	1.00	1	U
Ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3333677
30-JAN-2014 10:07

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14011242 Analyst: QX Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG461058 Units: ug/L
QC Key: DOD4 Lot #: STD61380

Sample ID: WG461058-02 LCS File ID: 16G41380 Run Date: 01/27/2014 15:04
Sample ID: WG461058-03 LCS2 File ID: 16G41381 Run Date: 01/27/2014 15:13

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	108	94.6	114	104	91.5	3.40	85 - 115	20	
Ethene	200	200	100	200	193	96.6	3.64	85 - 115	20	
Ethane	214	219	102	214	210	98.2	4.03	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3333678
Report generated: 01/30/2014 10:07

Calibration Table Report
Method: RSK2EXT.M
Title: RSK175 HP16 (SOP: OVL RSK01) 011314
Last Calibration: Mon Jan 13 16:10:05 2014
Curve: WG459109
Calibration Files

	Compound	0.66 16G41260.D	1.67 16G41261.D	33.3 16G41262.D	66.6 16G41263.D	133 16G41264.D	333 16G41265.D	533 16G41266.D	Avg	%RSD
T	methane		167793	160648	157795	152360	162619	162583	160633	3.241
T	ethene		248379	275461	273067	254319	281502	281014	268957	5.257
T	acetylene		177823	252095	249012	229128	253204	250454	235286	12.553
T	ethane	254328	260361	284150	282421	262519	292203	292621	275515	5.816
T	propane	396729	385562	414085	413895	374923	429442	431067	406529	5.288
	Signal #2								0.000	0.000
T	carbon dioxide		5866	5733	5837	5405	6277	6103	5870	5.147

Mon Jan 13 16:14:10 2014

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14011242 Run Date: 01/13/2014 Sample ID: WG459109-08
Instrument ID: HP16 Run Time: 16:07 Method: RSK175
File ID: 16G41268 Analyst: QX QC Key: DOD4
ICal Workgroup: WG459109 Cal ID: HP16 - 13-JAN-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
methane		228	217	ug/L	153000	4.60	15	
ethene		398	402	ug/L	272000	1.00	15	
ethane		427	441	ug/L	284000	3.20	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3333679
Report generated 01/30/2014 10:07

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14011242
Run Date: 01/27/2014
Sample ID: WG460957-04
Instrument ID: HP16
Run Time: 14:44
Method: RSK175
File ID: 16G41378
Analyst: QX
QC Key: DOD4
Workgroup (AAB#): WG461058
Cal ID: HP16 - 13-JAN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	219	ug/L	155000	3.72	15	
ethene		398	384	ug/L	259000	3.55	15	
ethane		427	417	ug/L	269000	2.35	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3333682
Report generated 01/30/2014 10:07

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14011242
Run Date: 01/27/2014
Sample ID: WG460957-05
Instrument ID: HP16
Run Time: 15:40
Method: RSK175
File ID: 16G41384
Analyst: QX
QC Key: DOD4
Workgroup (AAB#): WG461058
Cal ID: HP16 - 13-JAN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	229	ug/L	161000	0.497	15	
ethene		398	410	ug/L	277000	2.92	15	
ethane		427	445	ug/L	287000	4.17	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3333682
Report generated 01/30/2014 10:07

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\012714\16G41383.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDchem\1\DATA\012714\16G41383.D\TCD2B.CH
Acq On : 27 Jan 2014 15:31 Operator: QX
Sample : L14011242-01 B RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 27 15:36:19 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	730213	4.546	umol/
2) T	ethene	1.04	54647	0.203	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.37	3846	0.014	umol/
5) T	propane	0.00	0	N.D.	umol/
7) T	carbon dioxide	0.20	68137841	11607.250	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41383.D RSK2EXT.M Mon Jan 27 15:36:19 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\012714\16G41383.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDchem\1\DATA\012714\16G41383.D\TCD2B.CH
Acq On : 27 Jan 2014 15:31 Operator: QX
Sample : L14011242-01 B RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 27 15:36 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

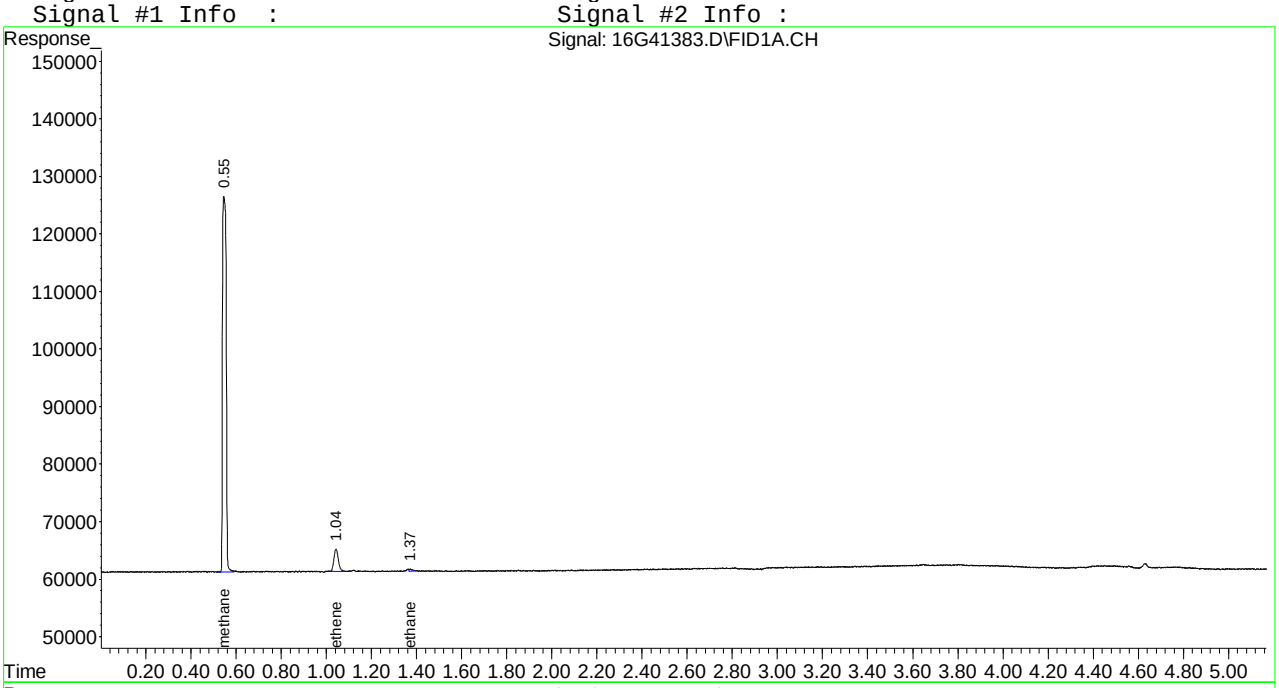

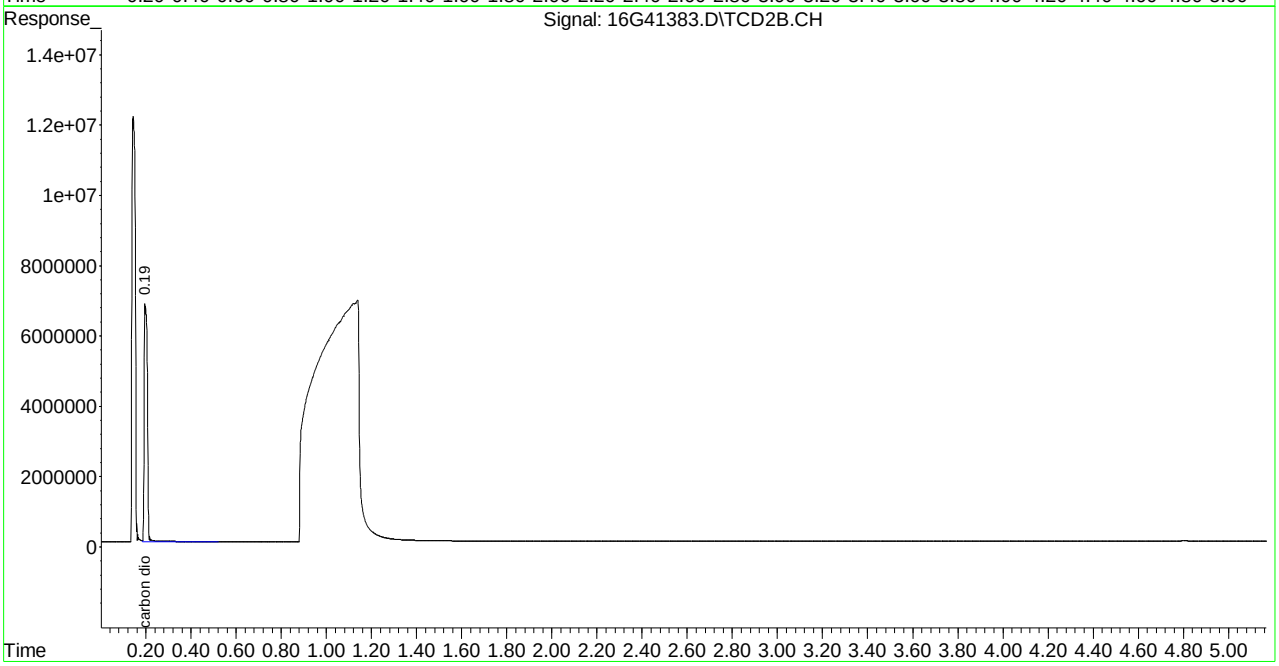

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\011314\16G41260.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\011314\16G41260.D\TCD2B.CH
Acq On : 13 Jan 2014 14:45 Operator: QX
Sample : WG459109-01 0.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 13 16:16:10 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	136265	0.848	umol/
2) T	ethene	1.05	145422	0.541	umol/
3) T	acetylene	1.12	82207	0.349	umol/
4) T	ethane	1.37	169637	0.616	umol/
5) T	propane	3.82	264618	0.651	umol/
7) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41260.D RSK2EXT.M Mon Jan 13 16:16:22 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\011314\16G41260.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\011314\16G41260.D\TCD2B.CH
Acq On : 13 Jan 2014 14:45 Operator: QX
Sample : WG459109-01 0.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 13 16:16 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

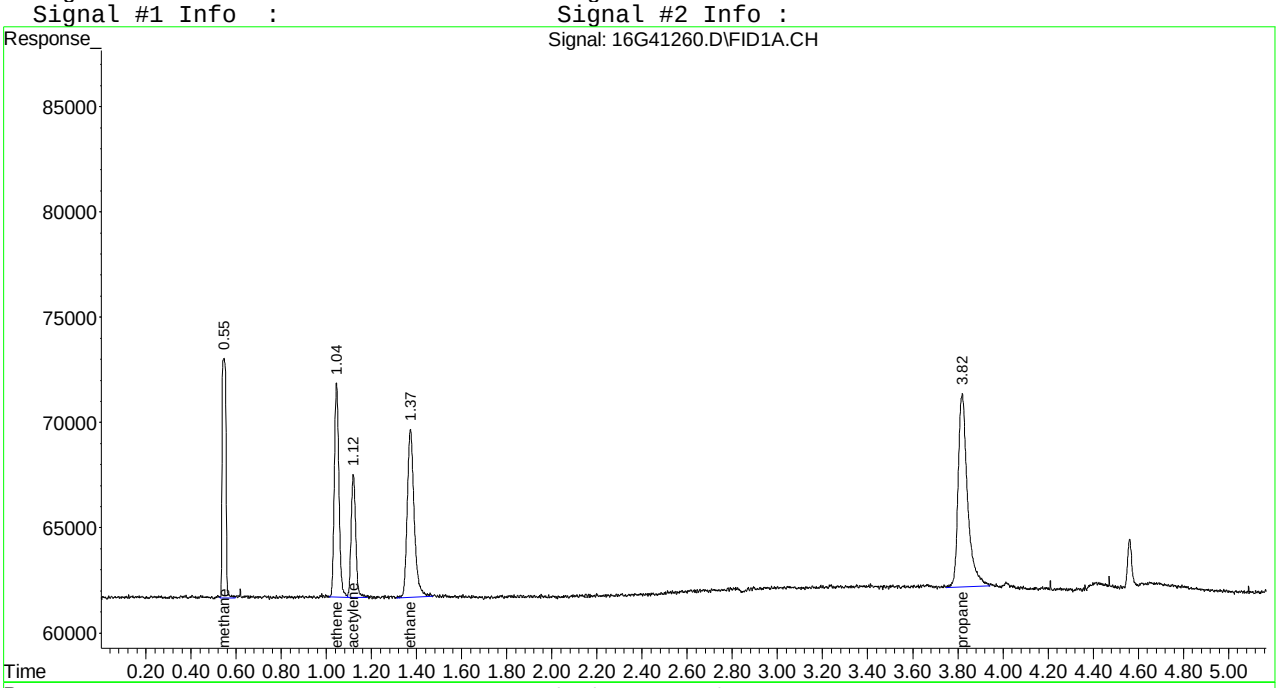

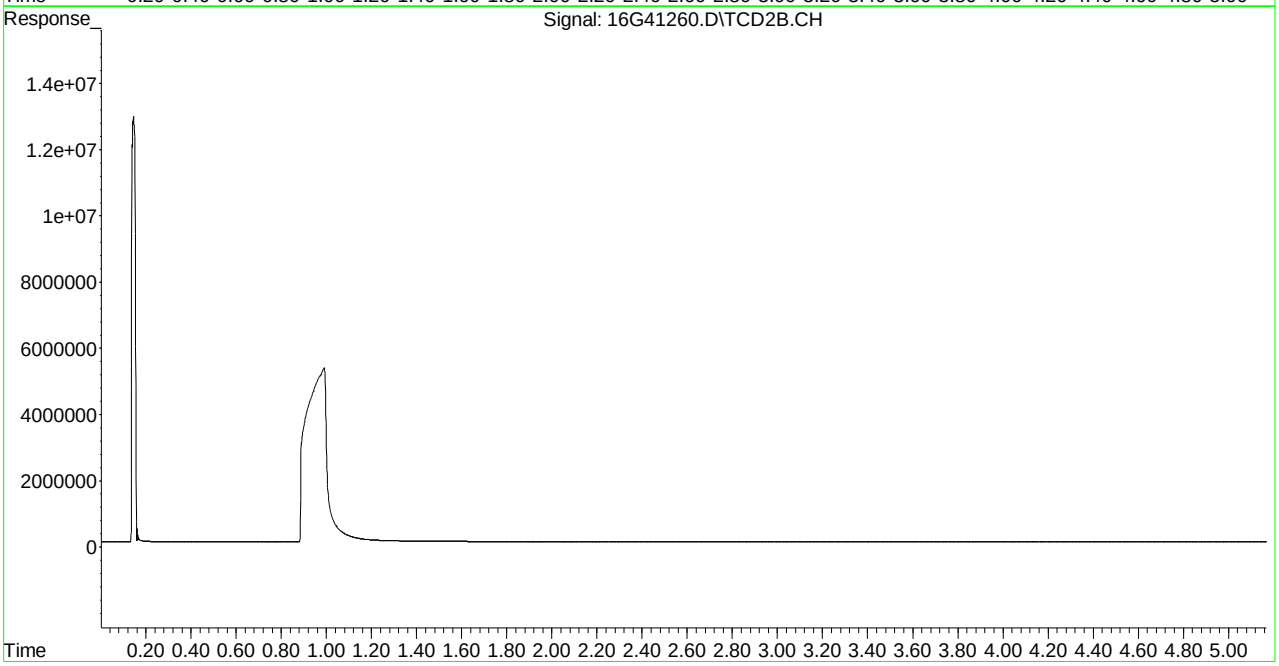

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\011314\16G41261.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\011314\16G41261.D\TCD2B.CH
Acq On : 13 Jan 2014 14:56 Operator: QX
Sample : WG459109-02 1.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 13 16:16:29 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	280215	1.744	umol/
2) T	ethene	1.05	414793	1.542	umol/
3) T	acetylene	1.12	296964	1.262	umol/
4) T	ethane	1.37	434802	1.578	umol/
5) T	propane	3.82	643888	1.584	umol/
7) T	carbon dioxide	0.20	12508999	2130.902	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41261.D RSK2EXT.M Mon Jan 13 16:16:29 2014 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\011314\16G41261.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\011314\16G41261.D\TCD2B.CH
Acq On : 13 Jan 2014 14:56 Operator: QX
Sample : WG459109-02 1.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 13 16:16 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

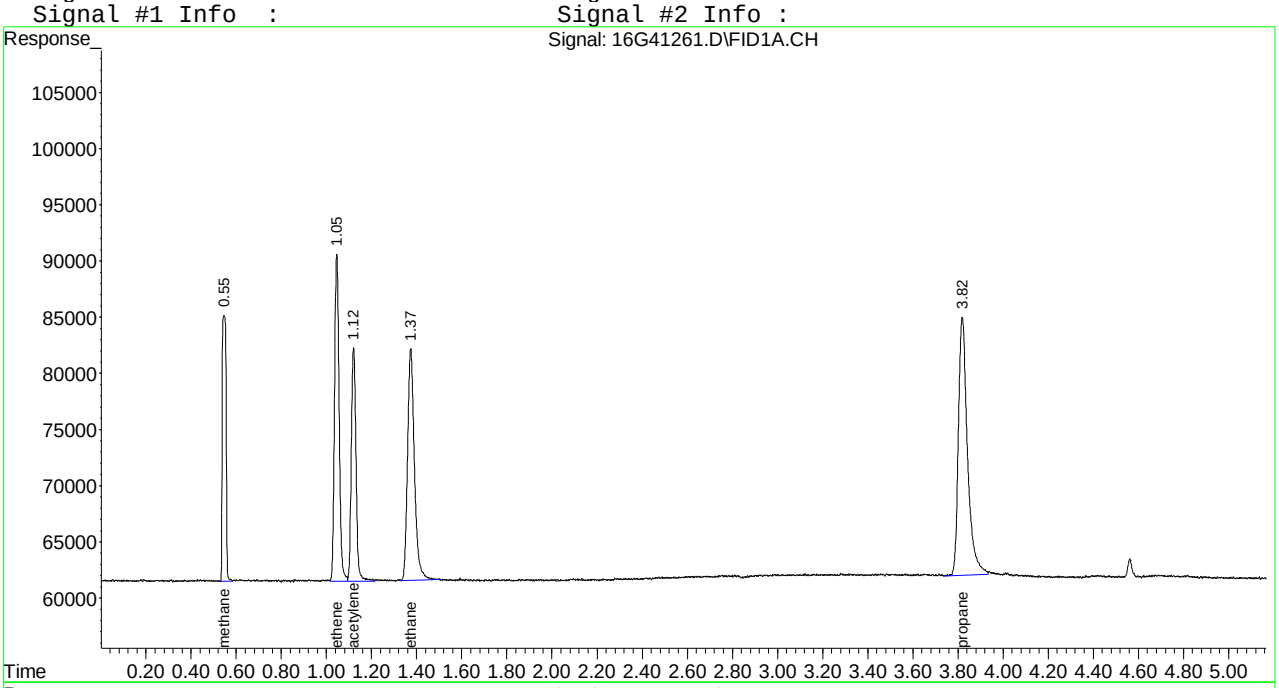

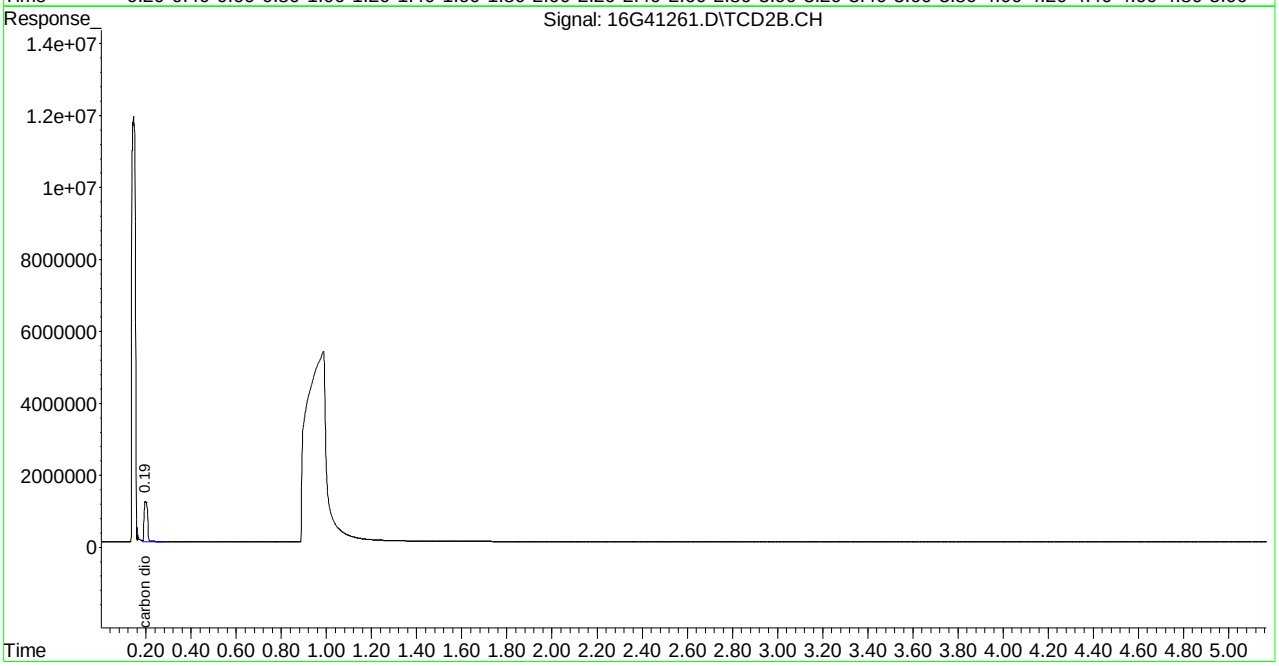

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\011314\16G41262.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\011314\16G41262.D\TCD2B.CH
Acq On : 13 Jan 2014 15:06 Operator: QX
Sample : WG459109-03 33.3umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 13 16:16:43 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	5355996	33.343	umol/
2) T	ethene	1.05	9183856	34.146	umol/
3) T	acetylene	1.12	8404842	35.722	umol/
4) T	ethane	1.37	9473551	34.385	umol/
5) T	propane	3.82	13805603	33.960	umol/
7) T	carbon dioxide	0.20	20097945	3423.676	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41262.D RSK2EXT.M Mon Jan 13 16:16:44 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\011314\16G41262.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\011314\16G41262.D\TCD2B.CH
Acq On : 13 Jan 2014 15:06 Operator: QX
Sample : WG459109-03 33.3umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 13 16:16 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

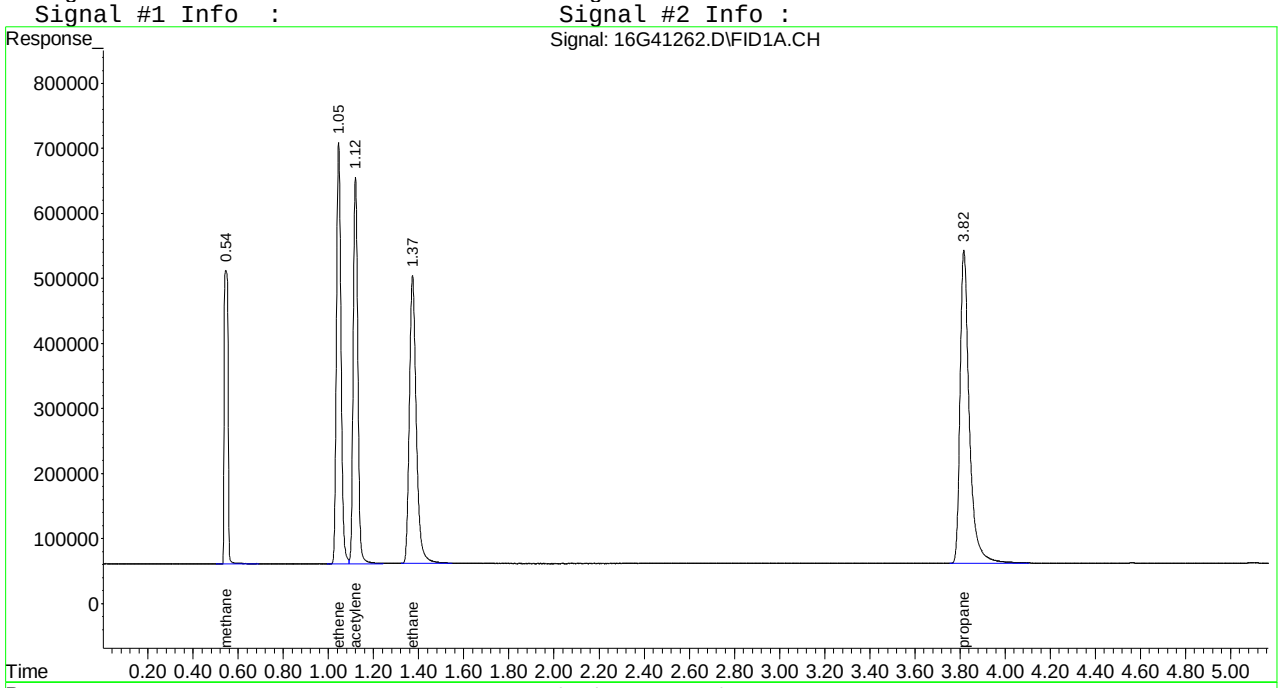

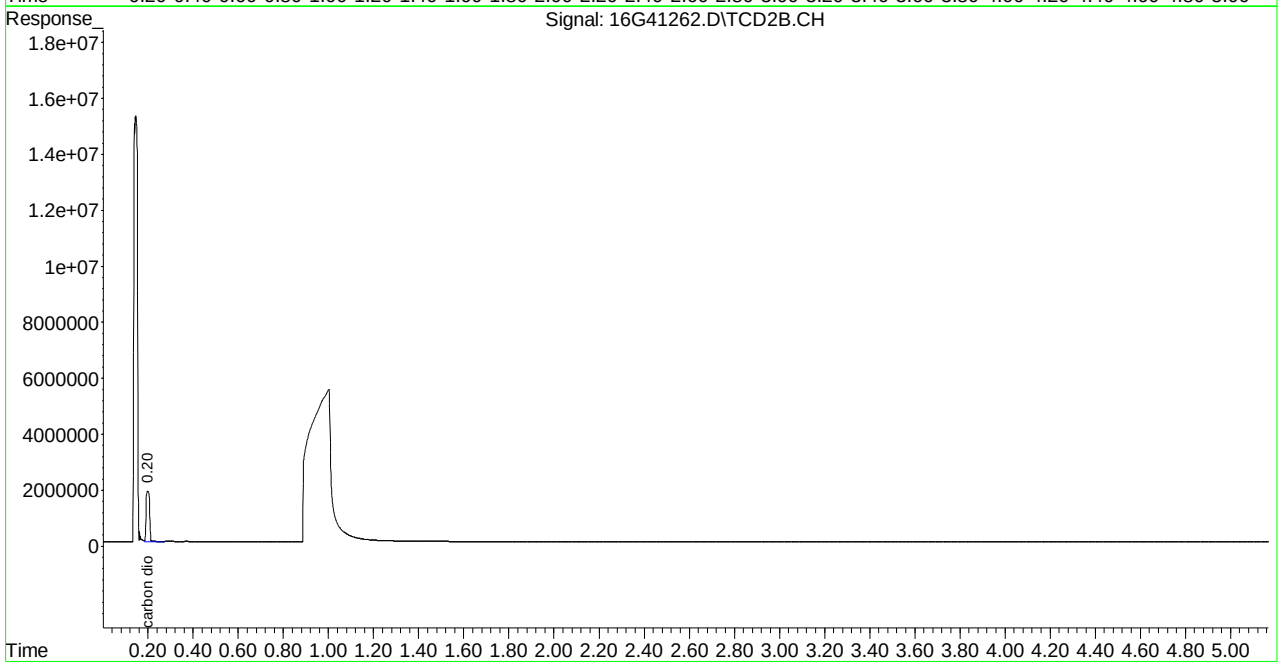

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\011314\16G41263.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\011314\16G41263.D\TCD2B.CH
Acq On : 13 Jan 2014 15:16 Operator: QX
Sample : WG459109-04 66.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 13 16:16:46 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	10520203	65.492	umol/
2) T	ethene	1.05	18205361	67.689	umol/
3) T	acetylene	1.12	16601606	70.559	umol/
4) T	ethane	1.37	18829025	68.341	umol/
5) T	propane	3.82	27594381	67.878	umol/
7) T	carbon dioxide	0.20	40351147	6873.800	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41263.D RSK2EXT.M Mon Jan 13 16:16:46 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\011314\16G41263.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\011314\16G41263.D\TCD2B.CH
Acq On : 13 Jan 2014 15:16 Operator: QX
Sample : WG459109-04 66.67umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 13 16:16 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

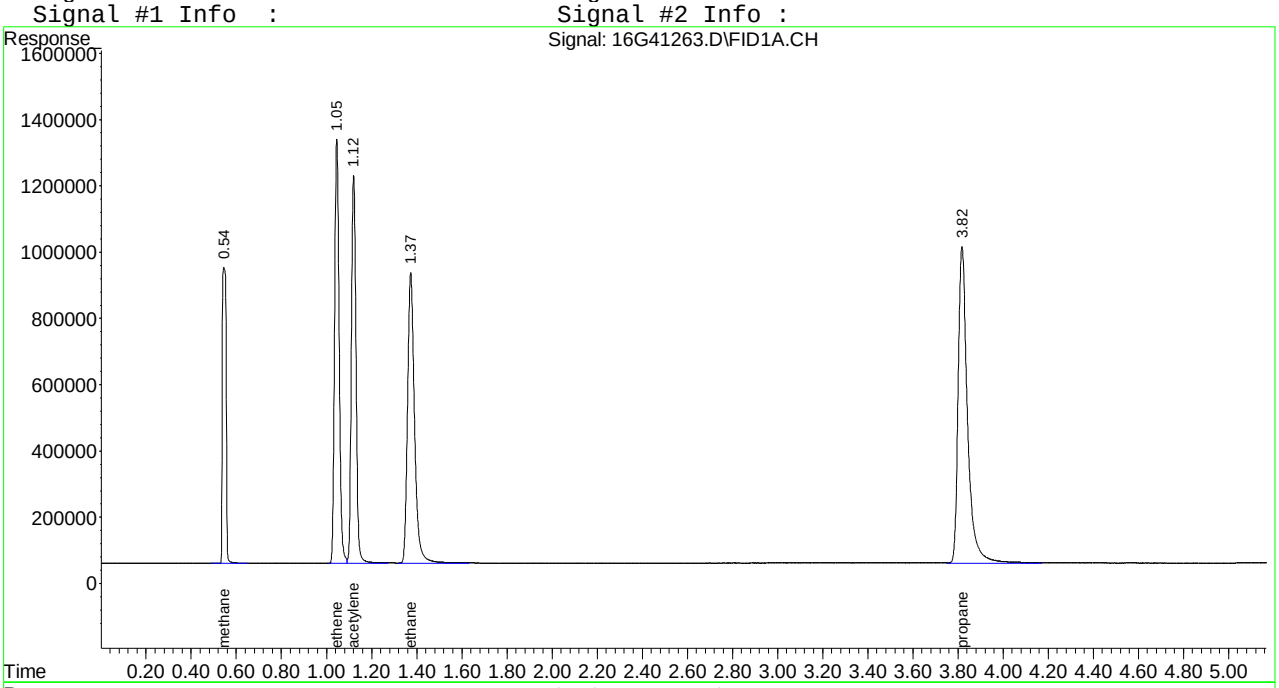

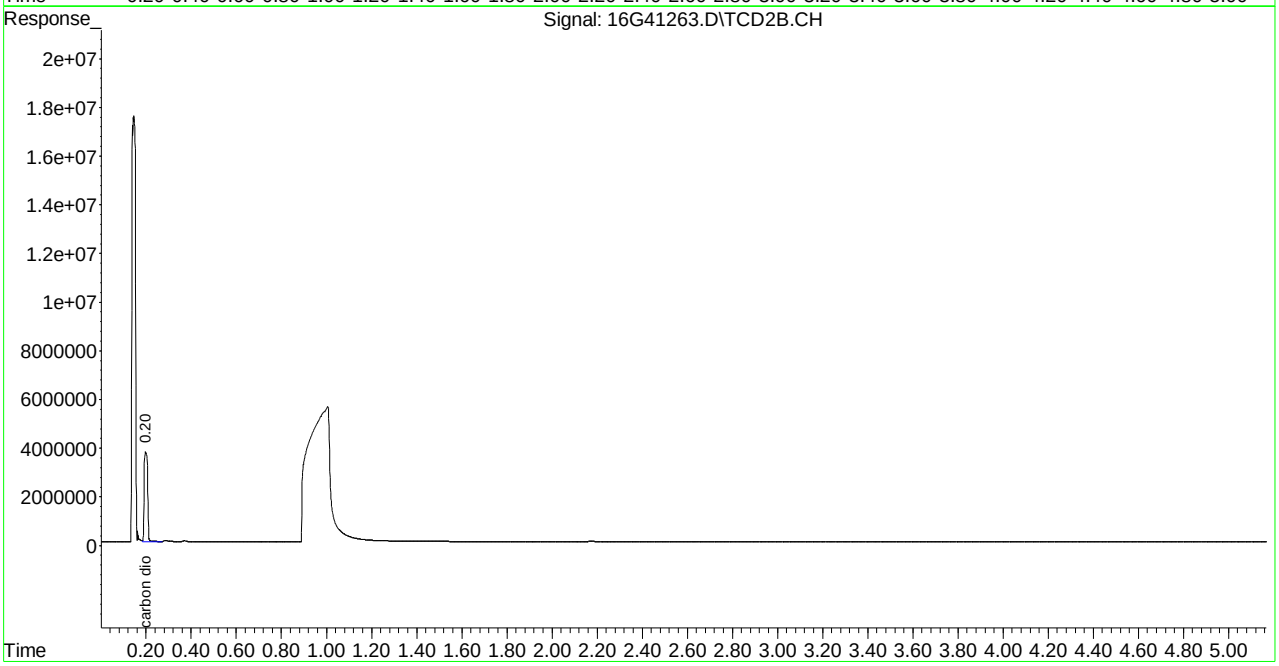

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\011314\16G41264.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\011314\16G41264.D\TCD2B.CH
Acq On    : 13 Jan 2014  15:26                        Operator: QX
Sample    : WG459109-05 133umol/mol ICAL  RSK175      Inst    : HP16
Misc      : 1,1 STD55748                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e
Quant Time: Jan 13 16:16:46 2014  Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update  : Mon Jan 13 16:10:05 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	20263912	126.150	umol/
2) T	ethene	1.05	33824387	125.761	umol/
3) T	acetylene	1.12	30474072	129.519	umol/
4) T	ethane	1.37	34915074	126.727	umol/
5) T	propane	3.81	49864754	122.660	umol/
7) T	carbon dioxide	0.20	74654621	12717.381	umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\011314\16G41264.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\011314\16G41264.D\TCD2B.CH
Acq On : 13 Jan 2014 15:26 Operator: QX
Sample : WG459109-05 133umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 13 16:16 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

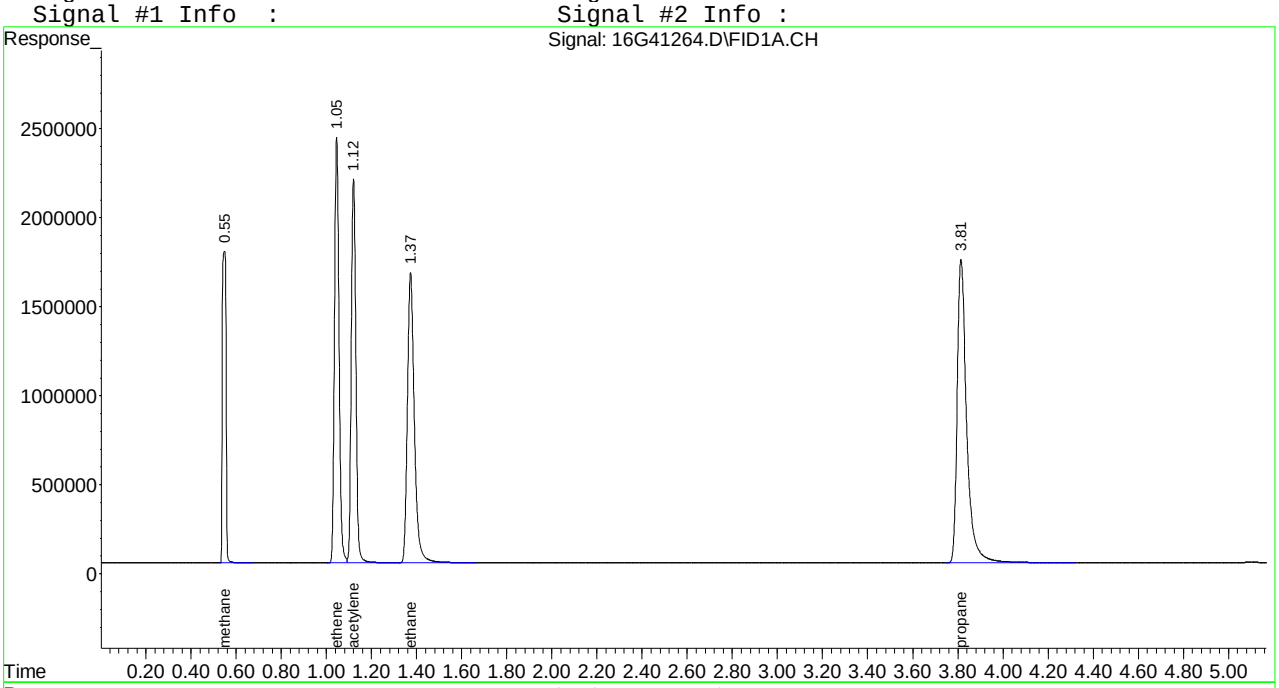

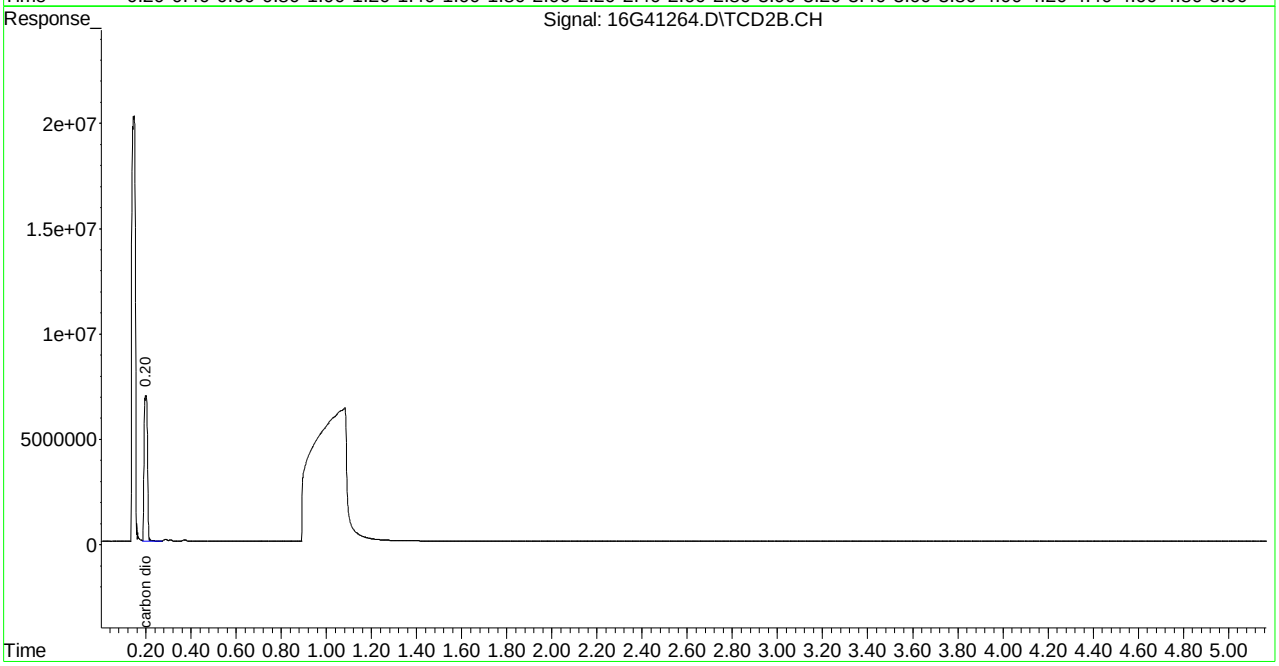

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\011314\16G41265.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\011314\16G41265.D\TCD2B.CH
Acq On : 13 Jan 2014 15:37 Operator: QX
Sample : WG459109-06 266umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 13 16:16:47 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	54152126	337.117	umol/
2) T	ethene	1.04	93740112	348.532	umol/
3) T	acetylene	1.12	84317060	358.360	umol/
4) T	ethane	1.37	97303444	353.170	umol/
5) T	propane	3.81	143004280	351.769	umol/
7) T	carbon dioxide	0.20	214370169	36517.861	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41265.D RSK2EXT.M Mon Jan 13 16:16:47 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\011314\16G41265.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\011314\16G41265.D\TCD2B.CH
Acq On : 13 Jan 2014 15:37 Operator: QX
Sample : WG459109-06 266umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 13 16:16 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

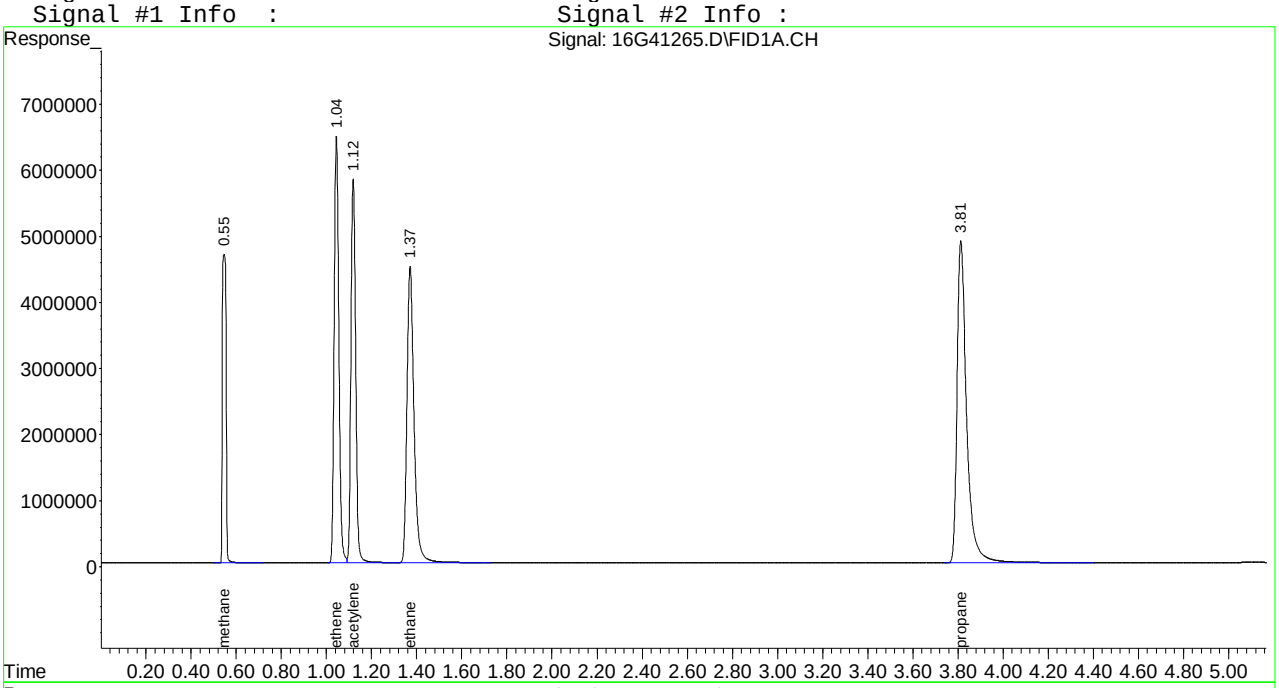

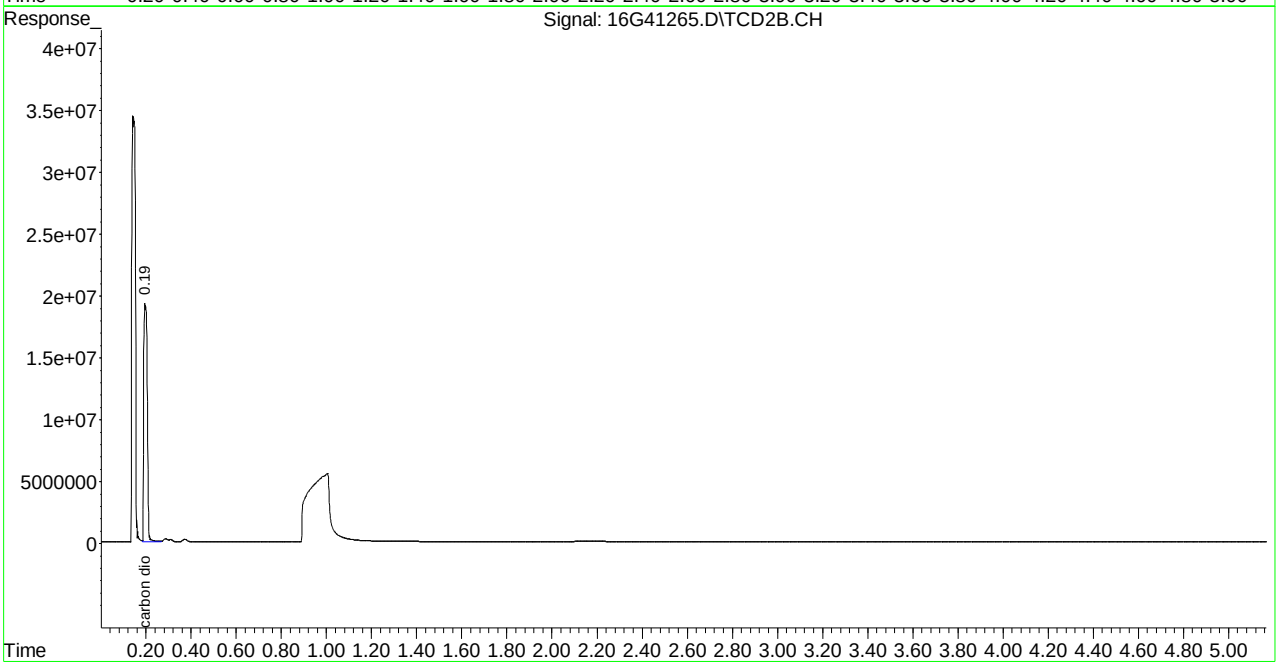

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\011314\16G41266.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\011314\16G41266.D\TCD2B.CH
Acq On    : 13 Jan 2014  15:47                        Operator: QX
Sample    : WG459109-07 533umol/mol ICAL  RSK175      Inst    : HP16
Misc      : 1,1 STD55748                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e
Quant Time: Jan 13 16:16:47 2014  Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update  : Mon Jan 13 16:10:05 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	86656661	539.470	umol/
2) T	ethene	1.04	149780196	556.893	umol/
3) T	acetylene	1.12	133491751	567.360	umol/
4) T	ethane	1.37	155966940	566.093	umol/
5) T	propane	3.81	229758522	565.171	umol/
7) T	carbon dioxide	0.19	334907928	57051.413	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G41266.D RSK2EXT.M Mon Jan 13 16:16:47 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\011314\16G41266.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\011314\16G41266.D\TCD2B.CH
Acq On : 13 Jan 2014 15:47 Operator: QX
Sample : WG459109-07 533umol/mol ICAL RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 13 16:16 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

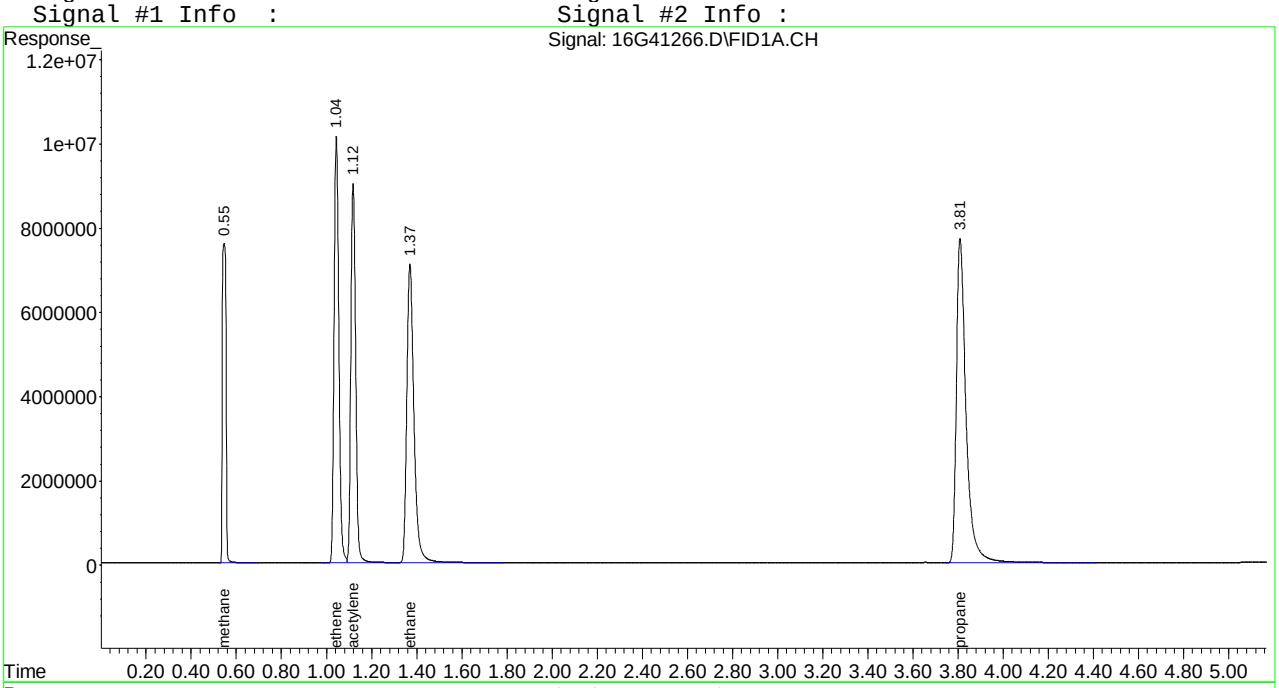

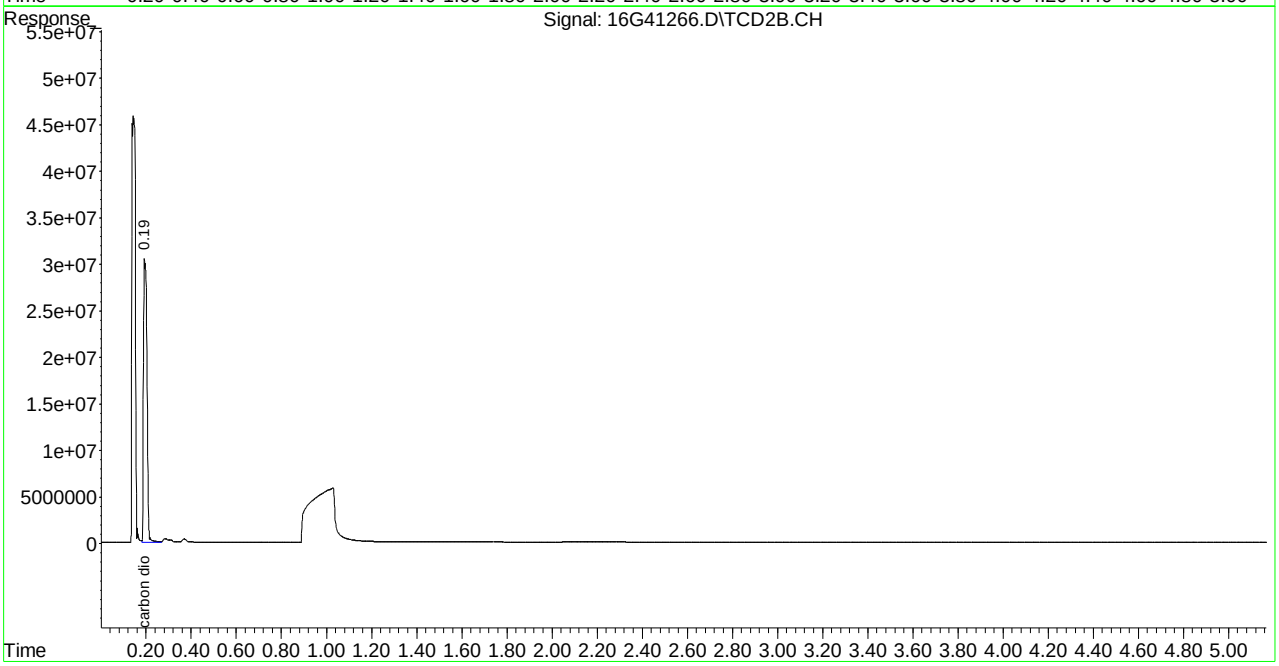

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\011314\16G41268.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\011314\16G41268.D\TCD2B.CH
Acq On : 13 Jan 2014 16:07 Operator: QX
Sample : WG459109-08 133umol/mol ICV RSK175 Inst : HP16
Misc : 1,1 STD61380 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 13 16:13:41 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
Target Compounds				
1) T	methane	0.55	20373953	126.835 umol/
2) T	ethene	1.05	36123795	134.311 umol/
3) T	acetylene	1.12	32185351	136.793 umol/
4) T	ethane	1.37	37818420	137.265 umol/
5) T	propane	3.82	55345131	136.141 umol/
7) T	carbon dioxide	0.20	77225547	13155.337 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41268.D RSK2EXT.M Mon Jan 13 16:13:42 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\011314\16G41268.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\011314\16G41268.D\TCD2B.CH
Acq On : 13 Jan 2014 16:07 Operator: QX
Sample : WG459109-08 133umol/mol ICV RSK175 Inst : HP16
Misc : 1,1 STD61380 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 13 16:13 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

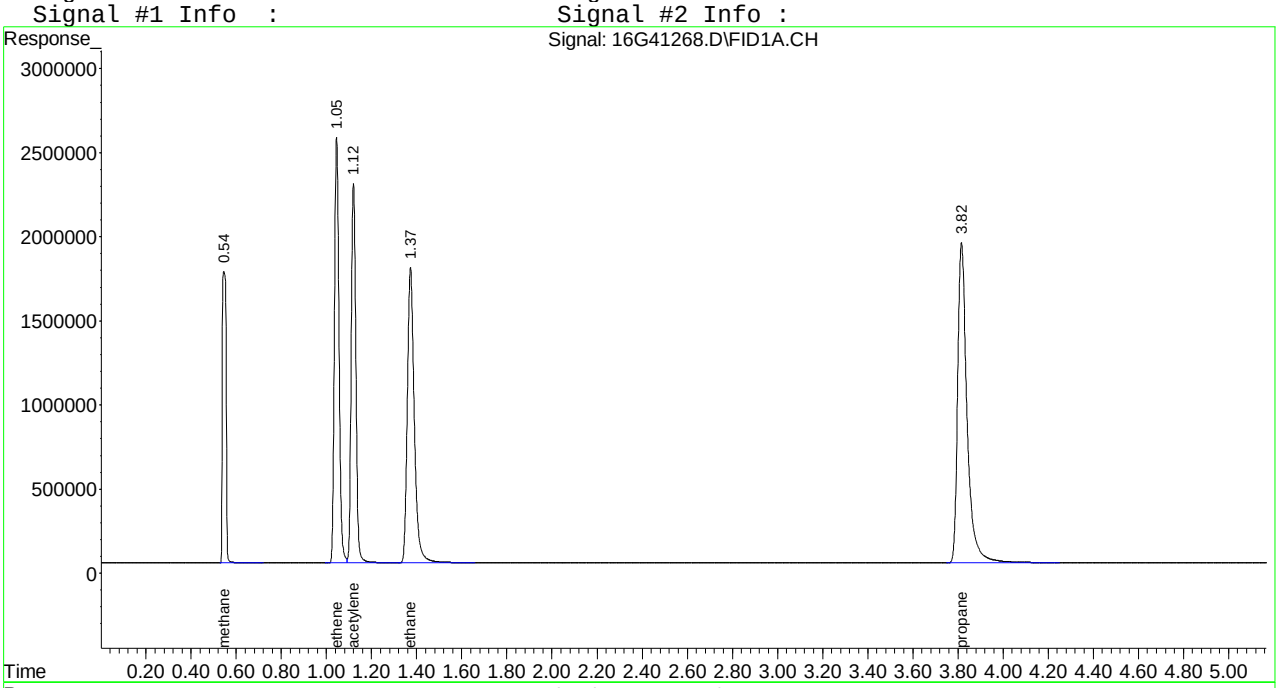

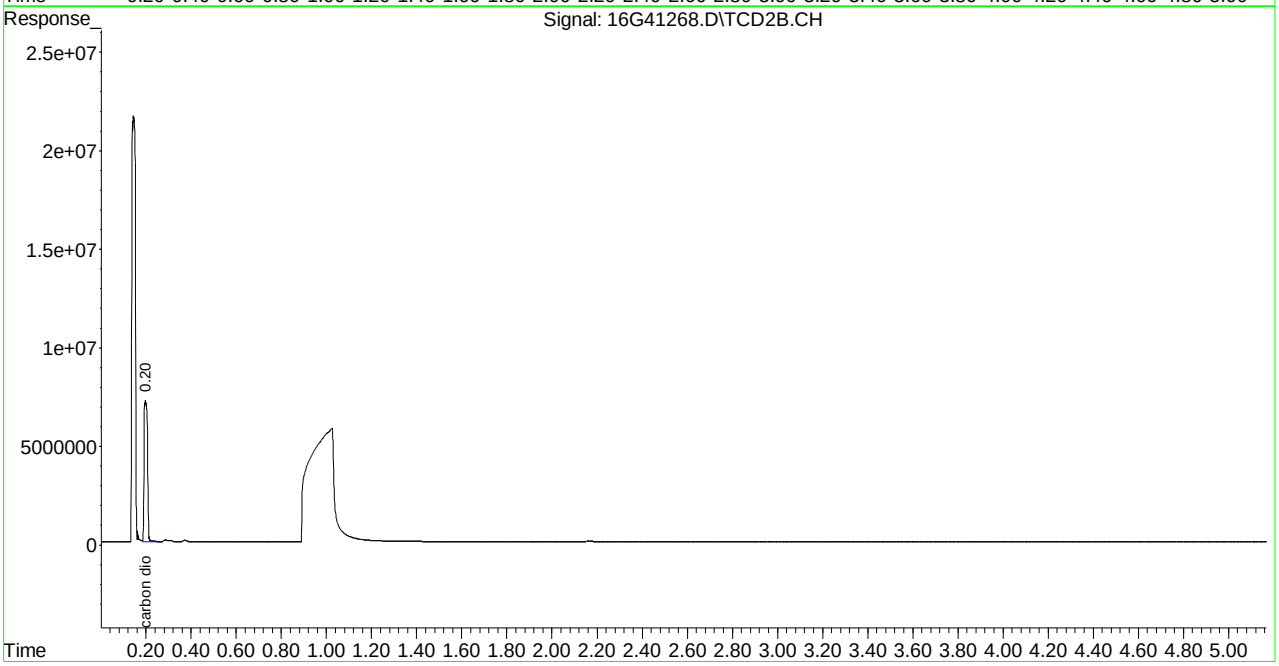

Evaluate Continuing Calibration Report

```
Signal #1 : C:\MSDCHEM\1\DATA\011314\16G41268.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\011314\16G41268.D\TCD2B.CH
Acq On    : 13 Jan 2014  16:07                      Operator: QX
Sample    : WG459109-08 133umol/mol ICV  RSK175     Inst    : HP16
Misc      : 1,1 STD61380                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e

Method       : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update  : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	126.835	4.6	101	0.00
2	T	ethene	133.000	134.311	-1.0	107	0.00
3	T	acetylene	133.000	136.793	-2.9	106	0.00
4	T	ethane	133.000	137.265	-3.2	108	0.00
5	T	propane	133.000	136.141	-2.4	111	0.00
		Signal #2					
7	T	carbon dioxide	13333.000	13155.337	1.3	107	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G41268.D RSK2EXT.M Mon Jan 13 16:13:46 2014 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\011314\16G41268.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\011314\16G41268.D\TCD2B.CH
Acq On    : 13 Jan 2014  16:07                        Operator: QX
Sample    : WG459109-08 133umol/mol ICV  RSK175       Inst    : HP16
Misc      : 1,1 STD61380                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e

Method       : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update  : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G41268.D RSK2EXT.M Mon Jan 13 16:13:46 2014 Page 2

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\012714\16G41378.D\FID1A.CH Vial: 26
Signal #2 : C:\MSDchem\1\DATA\012714\16G41378.D\TCD2B.CH
Acq On : 27 Jan 2014 14:44 Operator: QX
Sample : WG460957-04 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 27 14:50:10 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	20569747	128.054	umol/
2) T	ethene	1.04	34502497	128.283	umol/
3) T	acetylene	1.12	29380712	124.872	umol/
4) T	ethane	1.37	35780868	129.869	umol/
5) T	propane	3.81	51257711	126.086	umol/
7) T	carbon dioxide	0.20	69712027	11875.412	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41378.D RSK2EXT.M Mon Jan 27 14:50:10 2014 Page 1

Signal #1 : C:\MSDchem\1\DATA\012714\16G41378.D\FID1A.CH Vial: 26
Signal #2 : C:\MSDchem\1\DATA\012714\16G41378.D\TCD2B.CH
Acq On : 27 Jan 2014 14:44 Operator: QX
Sample : WG460957-04 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 27 14:50 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

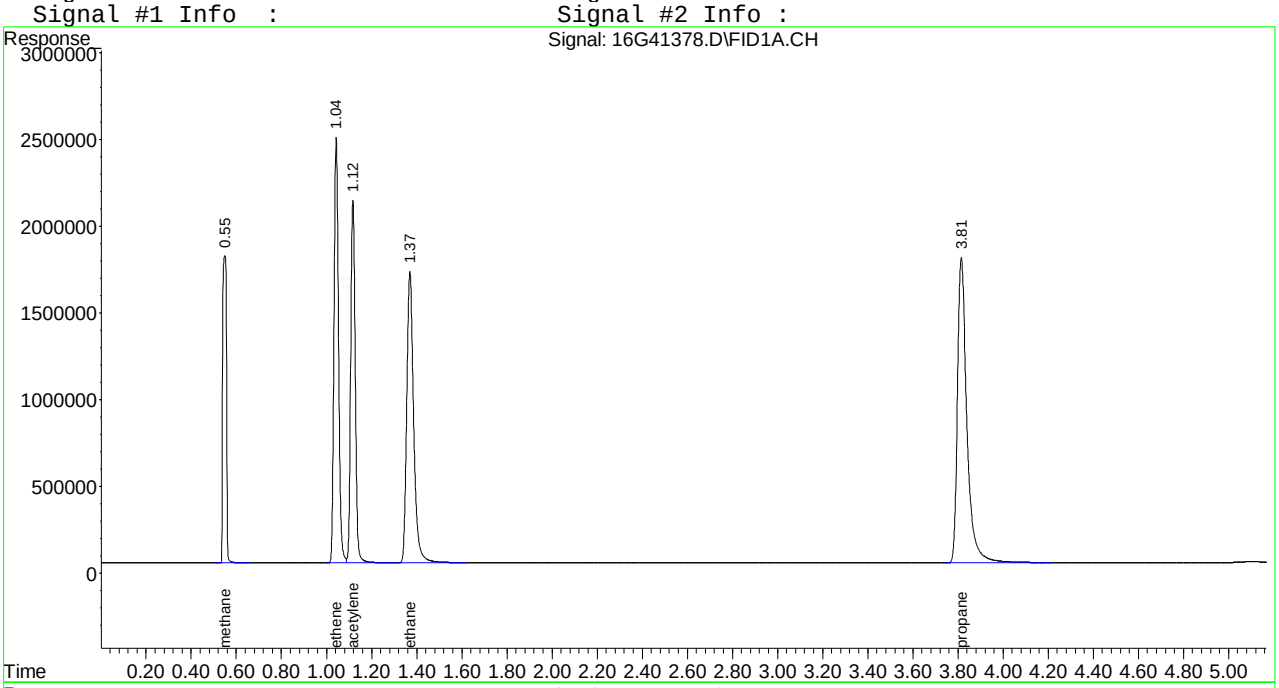

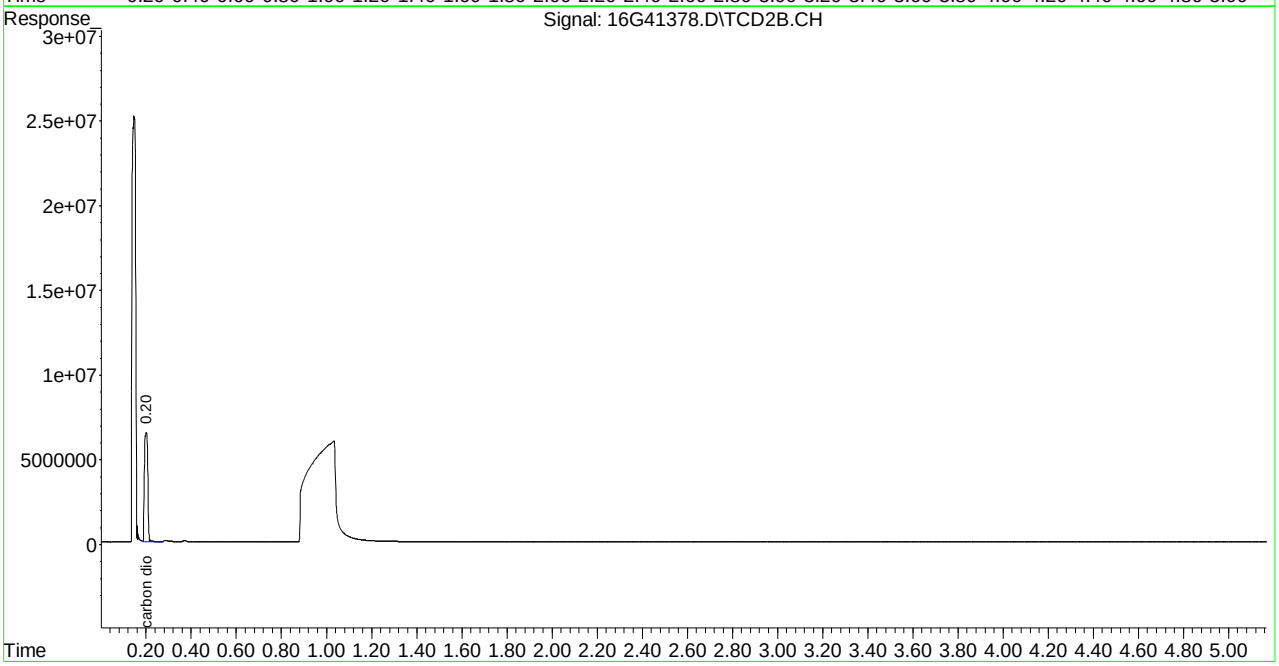

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\012714\16G41378.D\FID1A.CH Vial: 26
Signal #2 : C:\MSDCHEM\1\DATA\012714\16G41378.D\TCD2B.CH
Acq On : 27 Jan 2014 14:44 Operator: QX
Sample : WG460957-04 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e

Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	128.054	3.7	102	0.00
2	T	ethene	133.000	128.283	3.5	102	0.00
3	T	acetylene	133.000	124.872	6.1	96	0.00
4	T	ethane	133.000	129.869	2.4	102	0.00
5	T	propane	133.000	126.086	5.2	103	0.00

Signal #2

7	T	carbon dioxide	13333.000	11875.412	10.9	97	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G41378.D RSK2EXT.M Mon Jan 27 14:50:22 2014 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\012714\16G41378.D\FID1A.CH Vial: 26
Signal #2 : C:\MSDCHEM\1\DATA\012714\16G41378.D\TCD2B.CH
Acq On    : 27 Jan 2014  14:44                      Operator: QX
Sample    : WG460957-04 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD55748                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e

Method       : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update  : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
 ---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\012714\16G41384.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDchem\1\DATA\012714\16G41384.D\TCD2B.CH
Acq On : 27 Jan 2014 15:40 Operator: QX
Sample : WG460957-05 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 27 15:45:28 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	21470290	133.660	umol/
2) T	ethene	1.05	36814759	136.880	umol/
3) T	acetylene	1.12	32466793	137.989	umol/
4) T	ethane	1.37	38172396	138.549	umol/
5) T	propane	3.82	55564516	136.680	umol/
7) T	carbon dioxide	0.20	75279690	12823.861	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41384.D RSK2EXT.M Mon Jan 27 15:45:28 2014 Page 1

Signal #1 : C:\MSDchem\1\DATA\012714\16G41384.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDchem\1\DATA\012714\16G41384.D\TCD2B.CH
Acq On : 27 Jan 2014 15:40 Operator: QX
Sample : WG460957-05 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 27 15:45 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

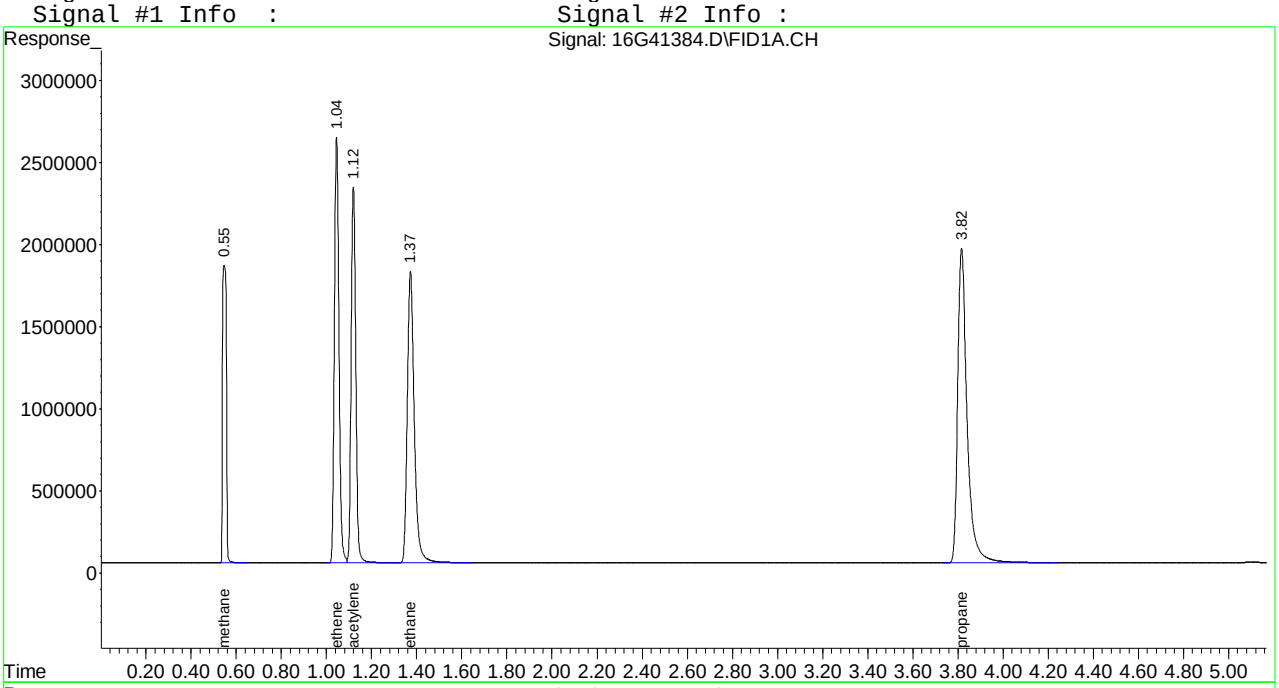

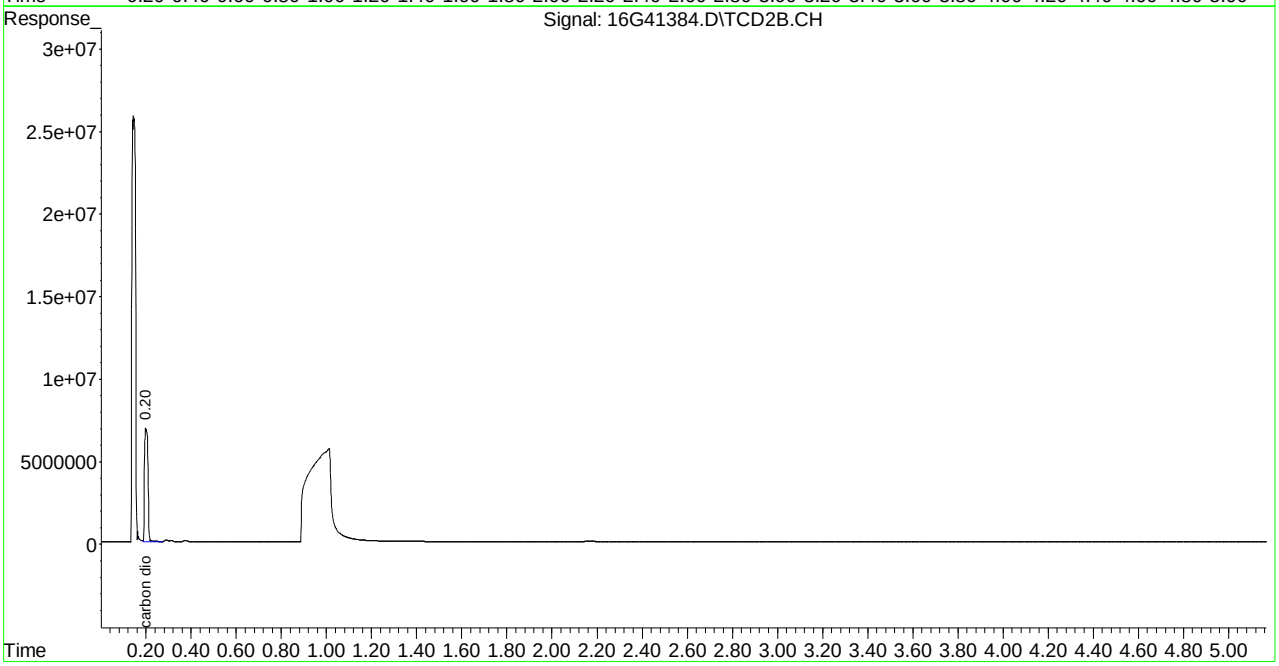

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\012714\16G41384.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\012714\16G41384.D\TCD2B.CH
Acq On : 27 Jan 2014 15:40 Operator: QX
Sample : WG460957-05 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e

Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	133.660	-0.5	106	0.00
2	T	ethene	133.000	136.880	-2.9	109	0.00
3	T	acetylene	133.000	137.989	-3.8	107	0.00
4	T	ethane	133.000	138.549	-4.2	109	0.00
5	T	propane	133.000	136.680	-2.8	111	0.00

Signal #2

7	T	carbon dioxide	13333.000	12823.861	3.8	104	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G41384.D RSK2EXT.M Tue Jan 28 08:06:20 2014 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\012714\16G41384.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\012714\16G41384.D\TCD2B.CH
Acq On    : 27 Jan 2014  15:40                      Operator: QX
Sample    : WG460957-05 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD55748                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e

Method       : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update  : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L14011242 **Run Date:** 01/27/2014 **Sample ID:** WG460957-04
Instrument: HP16 **Run Time:** 14:44 **Method:** RSK175
Workgroup (AAB#): WG461058 **File ID:** 16G41378

RT Standard	Analysis Date	File ID	Analyst
WG459109-09	01/13/2014	16G41276	FJB
WG458963-01	01/10/2014	16G41231	MDA
WG457402-01	12/24/2013	16G41197	FJB

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.55	.55	.55	.55	0.520	0.580
ETHENE	1.05	1.04	1.05	1.04	1.010	1.070
ETHANE	1.38	1.37	1.37	1.37	1.340	1.400
PROPANE	3.82	3.82	3.82	3.81	3.780	3.840
CARBON DIOXIDE	0	.2	.2	.2	-0.083	0.483
ACETYLENE	1.12	1.12	1.12	1.12	1.090	1.150

RT_WIN - Modified 01/06/2010
PDF File ID: 3333683
Report generated 01/30/2014 10:07

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\012714\16G41379.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\012714\16G41379.D\TCD2B.CH
Acq On : 27 Jan 2014 14:55 Operator: QX
Sample : WG461058-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 27 15:00:13 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	44887	0.279	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	1.12	4819	0.020	umol/
4) T	ethane	1.39	1603	0.006	umol/
5) T	propane	0.00	0	N.D.	umol/
7) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41379.D RSK2EXT.M Tue Jan 28 08:04:45 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\012714\16G41379.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\012714\16G41379.D\TCD2B.CH
Acq On : 27 Jan 2014 14:55 Operator: QX
Sample : WG461058-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 27 15:00 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

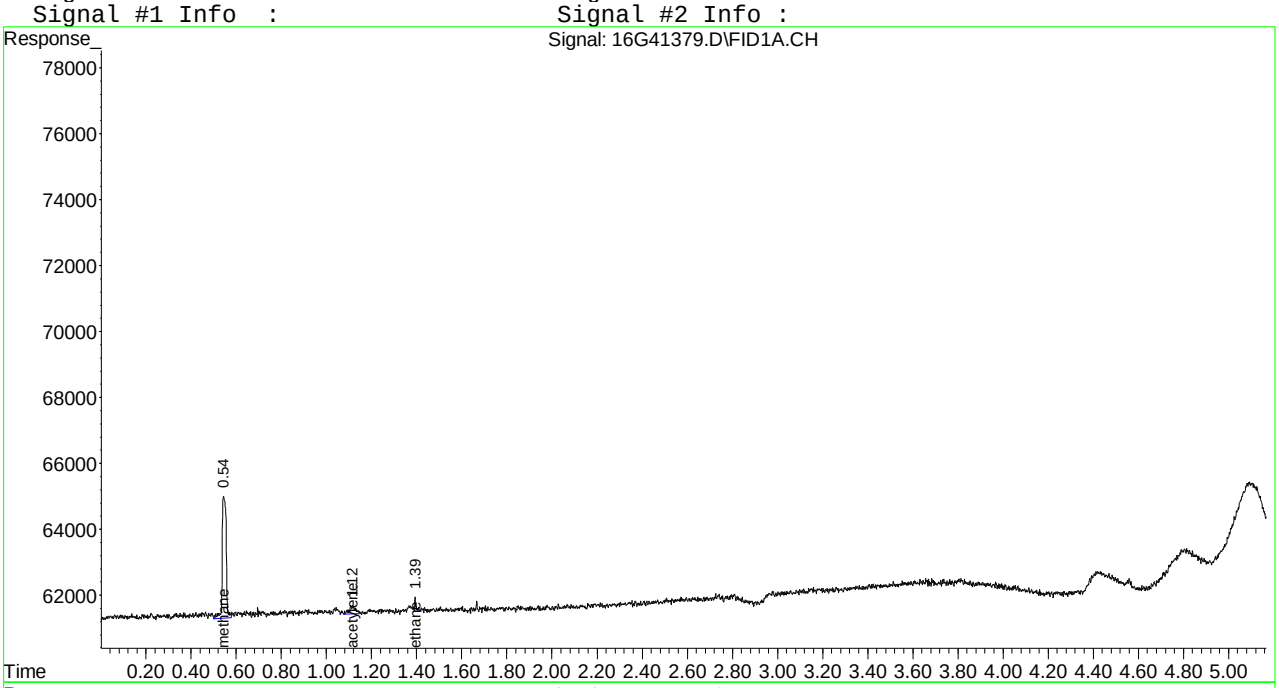

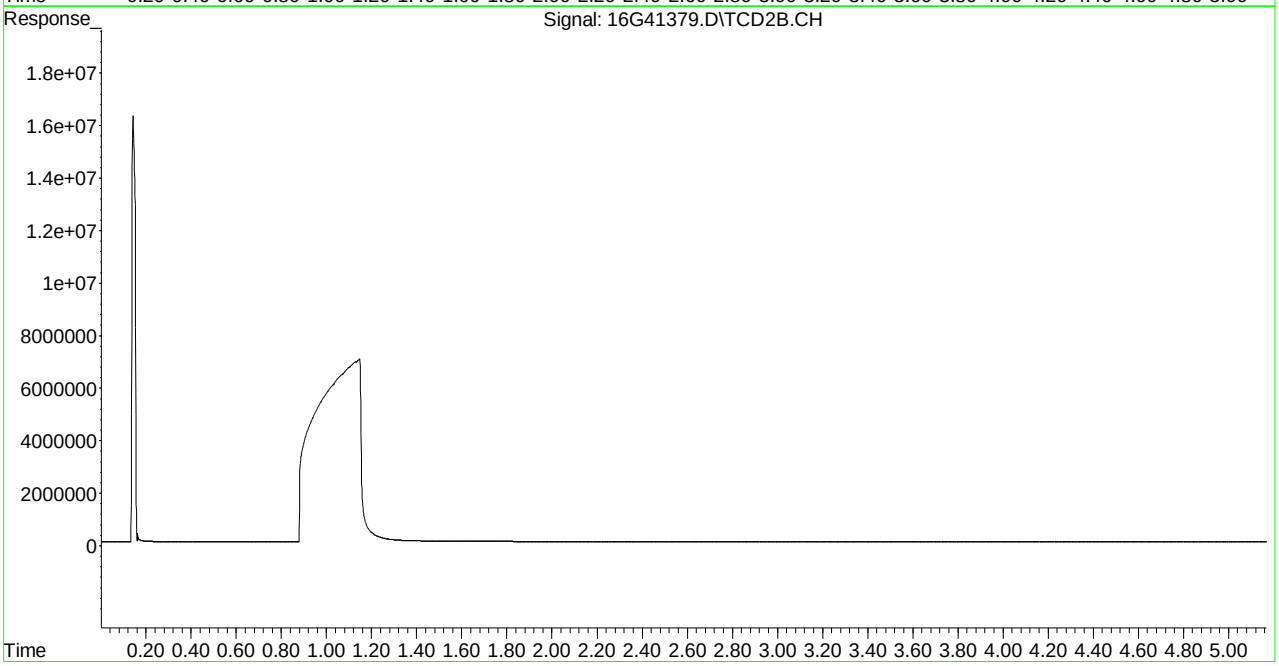

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\012714\16G41380.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDchem\1\DATA\012714\16G41380.D\TCD2B.CH
Acq On : 27 Jan 2014 15:04 Operator: QX
Sample : WG461058-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD61380 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 27 15:09:22 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	10132619	63.079	umol/
2) T	ethene	1.05	17971114	66.818	umol/
3) T	acetylene	1.12	16673308	70.864	umol/
4) T	ethane	1.37	18772557	68.136	umol/
5) T	propane	3.82	28281955	69.569	umol/
7) T	carbon dioxide	0.20	37824529	6443.391	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41380.D RSK2EXT.M Mon Jan 27 15:09:22 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\012714\16G41380.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDchem\1\DATA\012714\16G41380.D\TCD2B.CH
Acq On : 27 Jan 2014 15:04 Operator: QX
Sample : WG461058-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD61380 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 27 15:09 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

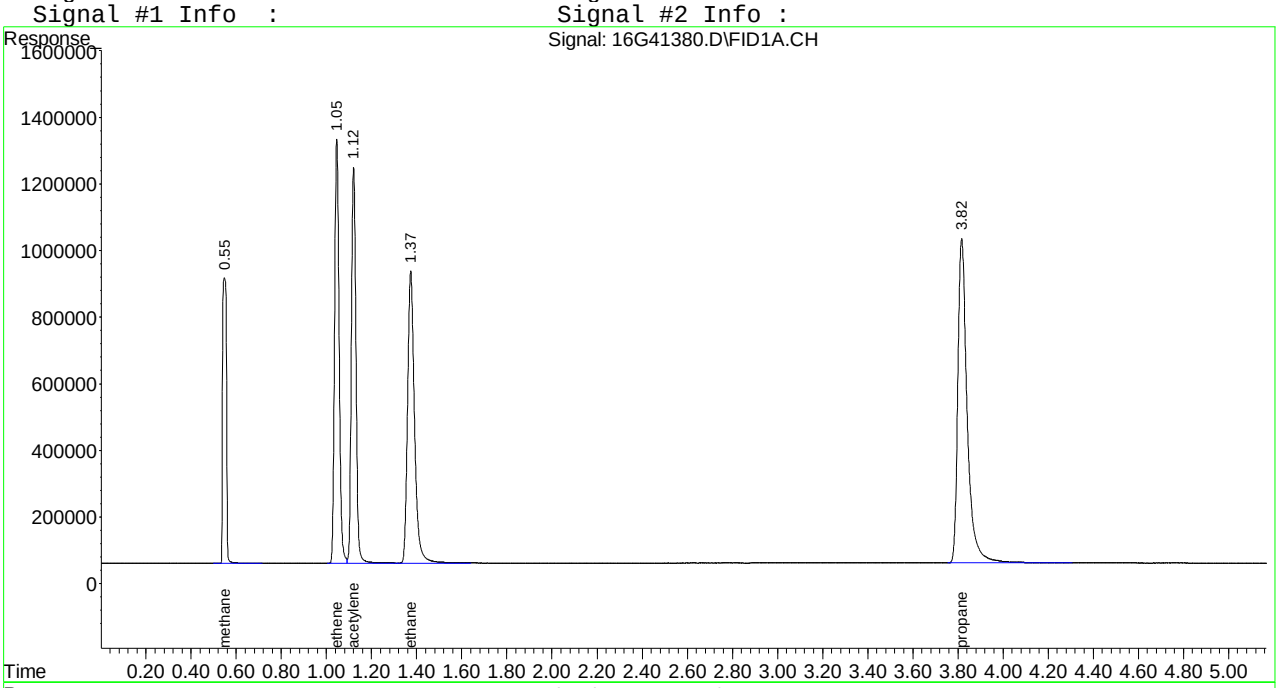

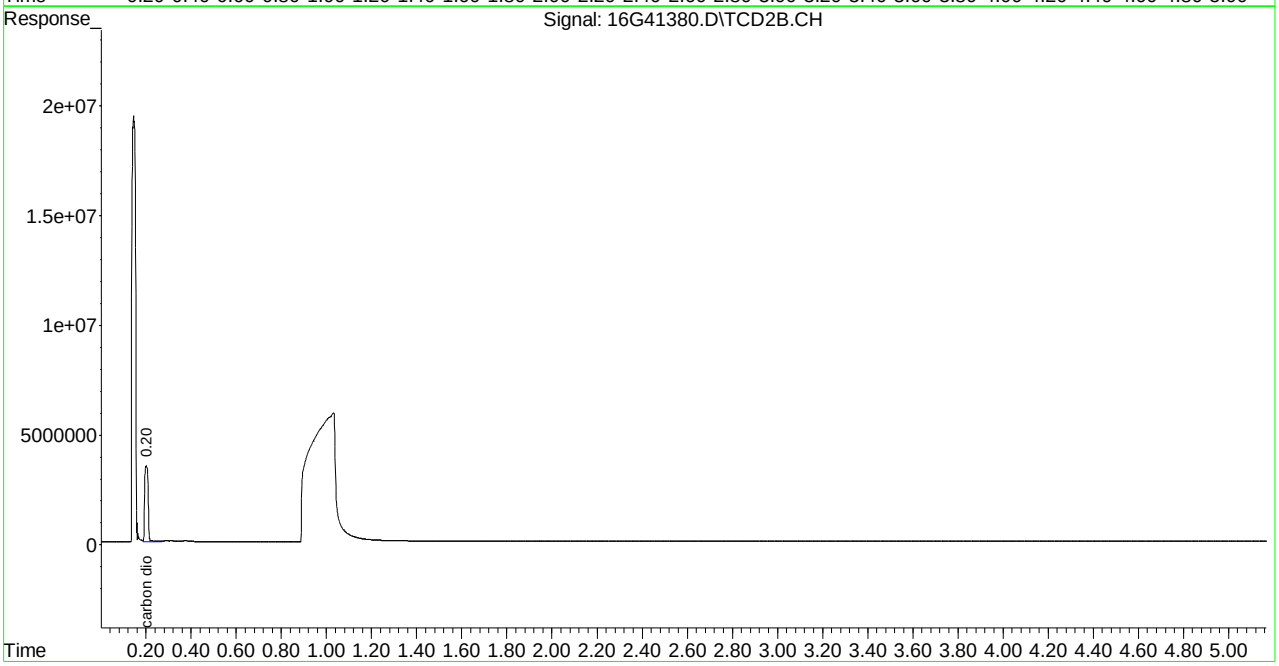

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\012714\16G41381.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\012714\16G41381.D\TCD2B.CH
Acq On : 27 Jan 2014 15:13 Operator: QX
Sample : WG461058-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD61380 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 27 15:18:20 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	9793162	60.966	umol/
2) T	ethene	1.04	17328693	64.429	umol/
3) T	acetylene	1.12	16001696	68.010	umol/
4) T	ethane	1.37	18033796	65.455	umol/
5) T	propane	3.82	26785448	65.888	umol/
7) T	carbon dioxide	0.20	35793033	6097.327	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41381.D RSK2EXT.M Tue Jan 28 08:05:06 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\012714\16G41381.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\012714\16G41381.D\TCD2B.CH
Acq On : 27 Jan 2014 15:13 Operator: QX
Sample : WG461058-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD61380 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Jan 27 15:18 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 011314
Last Update : Mon Jan 13 16:10:05 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

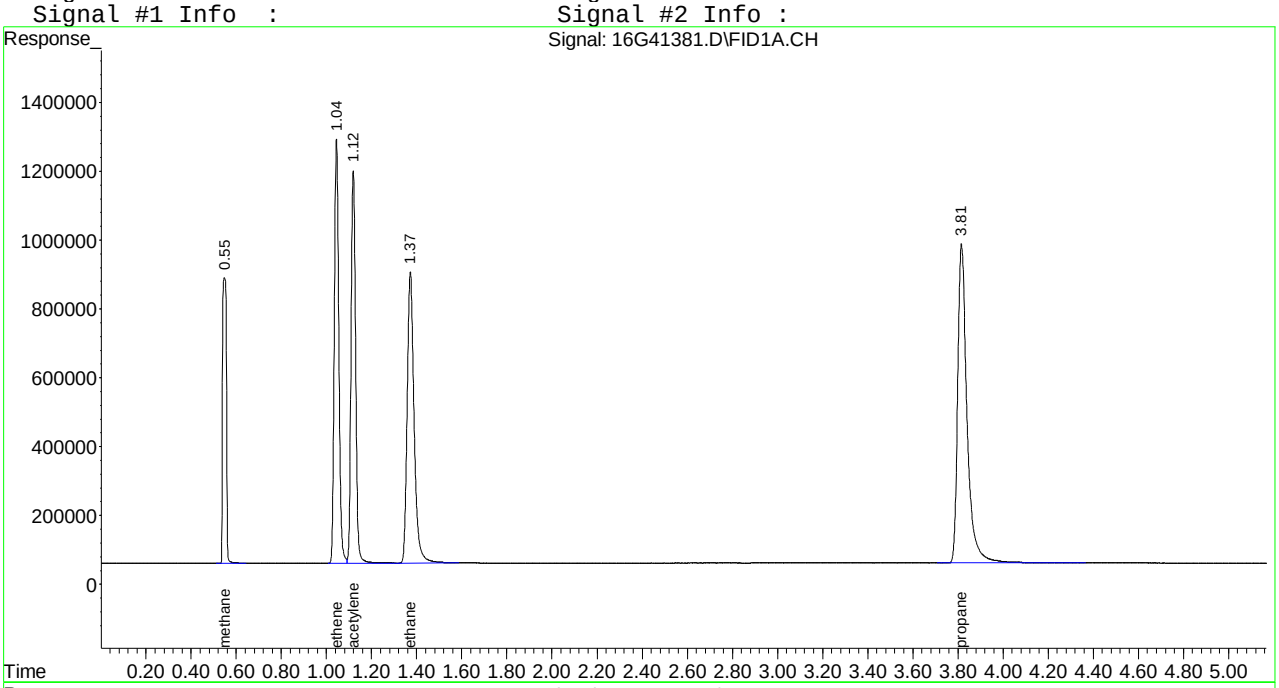

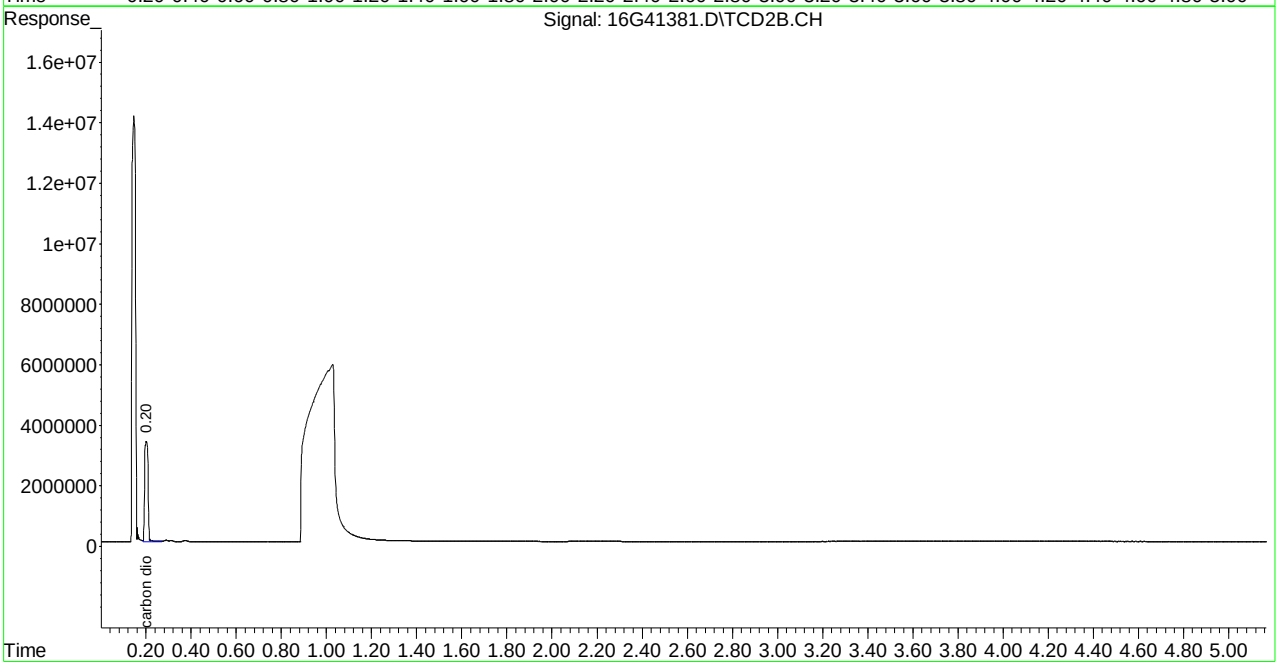

2.2 General Chemistry Data

2.2.1 Method 9056

2.2.1.1 Summary Data

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-012314	**Prep Method:**	9056	**Prep Date:**	01/24/2014 10:13
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	11/06/2013 10:26
Workgroup #:	WG460782	**Analyst:**	JBK	**Run Date:**	01/24/2014 14:48
Collect Date:	01/23/2014 09:55	**Dilution:**	10	**File ID:**	I1_012414-19
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1840	J	4.00	2.00	1.00
Sulfate	14808-79-8	303		20.0	10.0	5.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-012314	**Prep Method:**	9056	**Prep Date:**	01/24/2014 10:13
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	11/06/2013 10:26
Workgroup #:	WG460782	**Analyst:**	JBK	**Run Date:**	01/24/2014 15:05
Collect Date:	01/23/2014 09:55	**Dilution:**	100	**File ID:**	I1_012414-20
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1490		40.0	20.0	10.0
Sulfate	14808-79-8	298		200	100	50.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.2.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(- c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 110613 ICAL IC1.SEQ
Analyst1: JBK Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 14

Maintenance Log ID: 48076 Syringe Filter Lot#: 00166429
Eluent ID#: RGT28571

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG450536 (ICAL) WG451714 (LOD/LOQ)

Internal STD: NA Surrogate STD: NA Calibration STD STD60856

CCV STD: STD60856 LCS STD: STD60857 MS/MSD STD: NA

Comments: WG450536 300/9056 ICAL
Q4 2013 WATER LOD/LOQ Verification

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_110613-01	WG450536-01 STD \#6	1	1		11/06/13 08:59
2	I1_110613-02	WG450536-02 STD \#5	1	1		11/06/13 09:17
3	I1_110613-03	WG450536-03 STD \#4	1	1		11/06/13 09:34
4	I1_110613-04	WG450536-04 STD \#3	1	1		11/06/13 09:51
5	I1_110613-05	WG450536-05 STD \#2	1	1		11/06/13 10:09
6	I1_110613-06	WG450536-06 STD \#1	1	1		11/06/13 10:26
7	I1_110613-07	WG450536-07 ALT STD	1	1		11/06/13 11:07
8	I1_110613-08	L13100001-01 LOD (F,CL,BR,SO4)	1	1		11/06/13 11:24
9	I1_110613-09	L13100003-01 LOQ (F,CL,BR,SO4)	1	1		11/06/13 11:42
10	I1_110613-10	L13100001-01 LOD (NO2,NO3)	1	1		11/06/13 11:59
11	I1_110613-11	L13100003-01 LOQ (NO2,NO3)	1	1		11/06/13 12:16
12	I1_110613-12	LEVEL 4 (CCV/LCS)	1	1		11/06/13 12:34
13	I1_110613-13	LEVEL 6 (LCR)	1	1		11/06/13 12:51
14	I1_110613-14	WG451714-01 BLANK	1	1		11/06/13 13:09
15	I1_110613-15	END	1	1		11/06/13 13:26

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 08-NOV-13

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 012414 IC1.SEQ
Analyst1: JBK Analyst2: CDE
Method: 300/9056 SOP: IC01 Rev: 14

Maintenance Log ID: 48957 Syringe Filter Lot#: 00172210
Eluent ID#: RGT29292
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG460782
Internal STD: NA Surrogate STD: NA Calibration STD STD60856 (11/6/13)
CCV STD: STD60856 LCS STD: STD60856 MS/MSD STD: STD60856

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_012414-01	ELUENT	1	1		01/24/14 09:35
2	I1_012414-02	DI WATER	1	1		01/24/14 09:52
3	I1_012414-03	WG460784-01 ANION CCV	1	1		01/24/14 10:10
4	I1_012414-04	WG460784-02 ANION CCB	1	1		01/24/14 10:27
5	I1_012414-05	WG460782-01 ANION BLANK	1	1		01/24/14 10:44
6	I1_012414-06	WG460782-02 ANION LCS	1	1		01/24/14 11:02
7	I1_012414-07	L14011124-01 RS (NO3)	1	1		01/24/14 11:19
8	I1_012414-08	WG460782-04 DUP 1124-01	1	1		01/24/14 11:37
9	I1_012414-09	L14011124-02 MS	1	1		01/24/14 11:54
10	I1_012414-10	L14011124-03 SD	1	1		01/24/14 12:11
11	I1_012414-11	L14011125-01 RS (NO3)	1	1		01/24/14 12:29
12	I1_012414-12	WG460782-08 DUP 1125-01	1	1		01/24/14 12:46
13	I1_012414-13	L14011125-02 MS	1	1		01/24/14 13:04
14	I1_012414-14	L14011125-03 SD	1	1		01/24/14 13:21
15	I1_012414-15	WG460784-03 ANION CCV	1	1		01/24/14 13:38
16	I1_012414-16	WG460784-04 ANION CCB	1	1		01/24/14 13:56
17	I1_012414-17	L14011203-01 1/500 (ALL-F)	1	500		01/24/14 14:13
18	I1_012414-18	L14011203-01 1/5000 RR CL	1	5000		01/24/14 14:31
19	I1_012414-19	L14011242-01 1/10 (CL,NO2,NO3,SO4)	1	10		01/24/14 14:48
20	I1_012414-20	L14011242-01 1/100 RCL	1	100		01/24/14 15:05
21	I1_012414-21	L14011007-01 (CL,SO4)	2	1		01/24/14 15:23
22	I1_012414-22	L14011007-03 (CL,SO4)	2	1		01/24/14 15:40
23	I1_012414-23	WG460784-05 ANION CCV	1	1		01/24/14 15:58
24	I1_012414-24	WG460784-06 ANION CCB	1	1		01/24/14 16:15
25	I1_012414-25	END	1	1		01/24/14 16:33

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 28-JAN-14

Microbac Laboratories Inc.

Data Checklist

Date: 06-NOV-2013
Analyst: JBK
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 56920
Analytical Workgroups: WG450536 (ICAL) WG451714 (LOD/LOQ)

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	WG450536
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	JBK
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MDC

Primary Reviewer:
06-NOV-2013

Secondary Reviewer:
08-NOV-2013

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-08-2013 15:40:54

Microbac Laboratories Inc.

Data Checklist

Date: 24-JAN-2014
Analyst: JBK
Analyst: CDE
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 58548
Analytical Workgroups: 01-1007, 01-1124, 01-1125, 01-1203, 01-1242

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	JBK
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MDC

Primary Reviewer:
27-JAN-2014

Secondary Reviewer:
28-JAN-2014

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-28-2014 09:11:33

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG460782

Login Number: L14011242

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-012314	01	01/23/14					01/24/2014	1	2		01/24/14	1.2	2	
67WW08-012314	01	01/23/14					01/24/2014	1	2		01/24/14	1.2	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3332996
Report generated 01/28/2014 09:40

METHOD BLANK SUMMARY

Login Number: L14011242
Blank File ID: I1_012414-05
Prep Date: 01/24/14 10:13
Analyzed Date: 01/24/14 10:44
Analyst: JBK

Work Group: WG460782
Blank Sample ID: WG460782-01
Instrument ID: IC1
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG460782-02	I1_012414-06	01/24/14 11:02	01
DUP	WG460782-04	I1_012414-08	01/24/14 11:37	01
DUP	WG460782-08	I1_012414-12	01/24/14 12:46	01
67WW08-012314	L14011242-01	I1_012414-19	01/24/14 14:48	DL01
67WW08-012314	L14011242-01	I1_012414-20	01/24/14 15:05	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 3332997
Report generated 01/28/2014 09:40

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14011242 Prep Date: 01/24/14 10:13 Sample ID: WG460782-01
Instrument ID: IC1 Run Date: 01/24/14 10:44 Prep Method: 9056
File ID: I1 012414-05 Analyst: JBK Method: 9056
Workgroup (AAB#): WG460782 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1-06-NOV-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3332998
28-JAN-2014 09:40

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14011242 Run Date: 01/24/2014 Sample ID: WG460782-02
Instrument ID: IC1 Run Time: 11:02 Prep Method: 9056
File ID: I1 012414-06 Analyst: JBK Method: 9056
Workgroup (AAB#): WG460782 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD60856 Cal ID: IC1-06-NOV-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	7.81	97.7	90 - 110	
Sulfate	40.0	40.1	100	90 - 110	
Nitrate	5.42	5.37	99.2	90 - 110	
Nitrite	4.87	4.95	102	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 3332999
Report generated: 01/28/2014 09:40

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L14011242
Analytical Method: 9056
ICAL Workgroup: WG450536

Instrument ID: IC1
Initial Calibration Date: 06-NOV-13 10:26
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.674	7.25	0.99900	
Nitrate		2.334	9.44	0.99900	
Nitrite		3.178	8.02	1.00000	
Sulfate		7.597	10.2	0.99900	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 3333000
Report generated 01/28/2014 09:40

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L14011242

Analytical Method: 9056

Instrument ID: IC1

Initial Calibration Date: 06-NOV-13 10:26

Column ID: F

Analyte	WG450536-01			WG450536-02			WG450536-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.80400000	4.996	12.0	2.19100000	5.477	8.00	1.39700000	5.727
Nitrate	16.3	8.11700000	2.004	8.13	3.67800000	2.211	5.42	2.33900000	2.318
Nitrite	14.6	5.06600000	2.885	7.31	2.45400000	2.978	4.87	1.59100000	3.062
Sulfate	120	18.5710000	6.462	60.0	8.42900000	7.118	40.0	5.34100000	7.489

INT_CAL - Modified 03/06/2008
PDF File ID: 3333000
Report generated 01/28/2014 09:40

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L14011242
Analytical Method: 9056
Instrument ID: IC1
Initial Calibration Date: 06-NOV-13 10:26
Column ID: F

Analyte	WG450536-04			WG450536-05			WG450536-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.682000000	5.865	1.00	0.169000000	5.917	0.200	0.0330000000	6.061
Nitrate	2.71	1.13400000	2.390	0.678	0.275000000	2.464	0.134	0.0510000000	2.619
Nitrite	2.44	0.766000000	3.180	0.609	0.180000000	3.383	0.122	0.0340000000	3.582
Sulfate	20.0	2.56800000	7.788	5.00	0.606000000	8.251	1.00	0.118000000	8.475

INT_CAL - Modified 03/06/2008
PDF File ID: 3333000
Report generated 01/28/2014 09:40

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14011242 Run Date: 11/06/2013 Sample ID: WG450536-07
Instrument ID: IC1 Run Time: 11:07 Method: 9056
File ID: I1 110613-07 Analyst: JBK QC Key: DOD4
ICal Workgroup: WG450536 Cal ID: IC1 - 06-NOV-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.82	mg/L	5.71	2.30	10	
Sulfate		40.0	39.6	mg/L	7.46	1.00	10	
Nitrate		5.42	5.31	mg/L	2.32	2.10	10	
Nitrite		4.87	4.85	mg/L	3.09	0.400	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3333001
Report generated 01/28/2014 09:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14011242
Run Date: 01/24/2014
Sample ID: WG460784-02
Instrument ID: IC1
Run Time: 10:27
Method: 9056
File ID: I1 012414-04
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG460782
Cal ID: IC1 - 06-NOV-13
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3333003
Report generated 01/28/2014 09:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14011242
Run Date: 01/24/2014
Sample ID: WG460784-04
Instrument ID: IC1
Run Time: 13:56
Method: 9056
File ID: I1 012414-16
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG460782
Cal ID: IC1 - 06-NOV-13
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3333003
Report generated 01/28/2014 09:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14011242
Run Date: 01/24/2014
Sample ID: WG460784-06
Instrument ID: IC1
Run Time: 16:15
Method: 9056
File ID: I1 012414-24
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG460782
Cal ID: IC1 - 06-NOV-13
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3333003
Report generated 01/28/2014 09:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14011242 Run Date: 01/24/2014 Sample ID: WG460784-01
Instrument ID: IC1 Run Time: 10:10 Method: 9056
File ID: I1 012414-03 Analyst: JBK QC Key: DOD4
Workgroup (AAB#): WG460782 Cal ID: IC1 - 06-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.81	mg/L	5.72	2.40	10	
Sulfate		40.0	40.2	mg/L	7.36	0.405	10	
Nitrate		5.42	5.36	mg/L	2.29	1.06	10	
Nitrite		4.87	4.96	mg/L	3.03	1.74	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3333002
Report generated 01/28/2014 09:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14011242
Run Date: 01/24/2014
Sample ID: WG460784-03
Instrument ID: IC1
Run Time: 13:38
Method: 9056
File ID: I1 012414-15
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG460782
Cal ID: IC1 - 06-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.88	mg/L	5.67	1.56	10	
Sulfate		40.0	40.6	mg/L	7.28	1.47	10	
Nitrate		5.42	5.40	mg/L	2.28	0.343	10	
Nitrite		4.87	5.07	mg/L	2.96	3.99	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3333002
Report generated 01/28/2014 09:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14011242
Run Date: 01/24/2014
Sample ID: WG460784-05
Instrument ID: IC1
Run Time: 15:58
Method: 9056
File ID: I1 012414-23
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG460782
Cal ID: IC1 - 06-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.88	mg/L	5.66	1.45	10	
Sulfate		40.0	40.5	mg/L	7.30	1.27	10	
Nitrate		5.42	5.41	mg/L	2.27	0.177	10	
Nitrite		4.87	4.99	mg/L	3.00	2.52	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3333002
Report generated 01/28/2014 09:40

2.2.1.3 Sample Data

19 L14011242-01 1/10 (CL,NO2,NO3,SO4)

1,10 JBK (HIGH CL, RR 1/100)

Sample Name:	**L14011242-01 1/10 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/24/2014 14:48**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

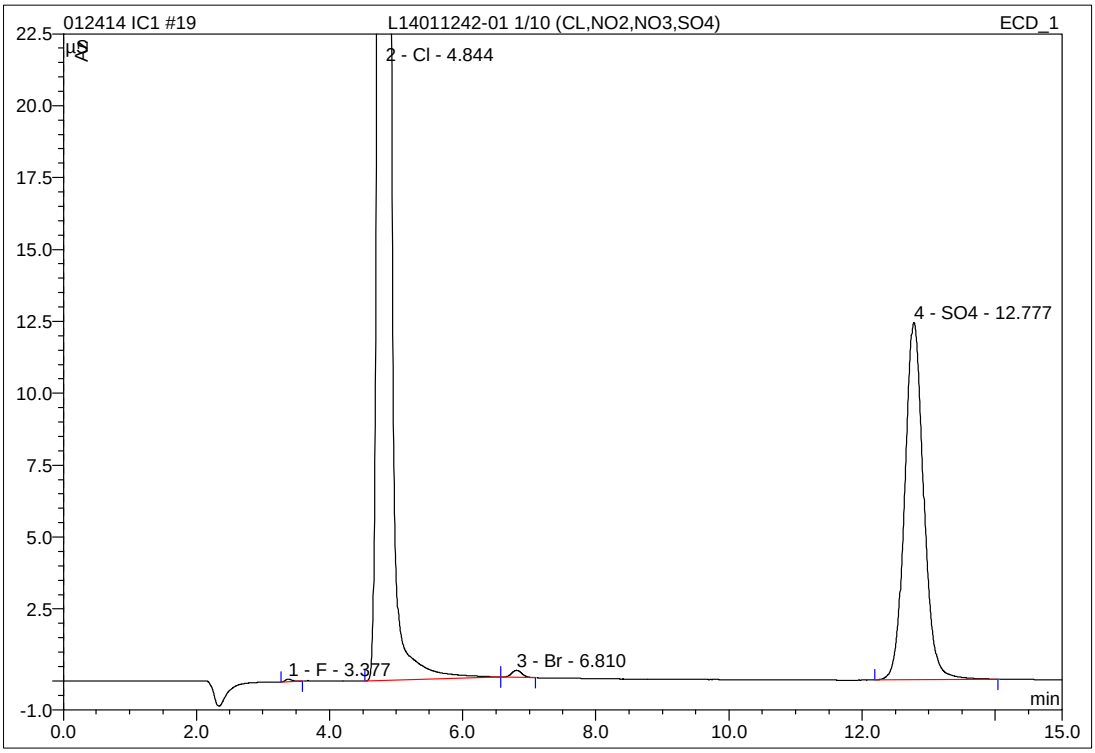

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.38	F	0.088	0.010	0.03	0.069	BMB
2	4.84	Cl	249.588	33.006	88.82	183.673	BMB
3	6.81	Br	0.244	0.043	0.12	0.608	bMB
4	12.78	SO4	12.424	4.102	11.04	30.348	BMB
Total:			262.344	37.162	100.00	214.699	

20 L14011242-01 1/100 RCL

1,100 JBK

Sample Name:	**L14011242-01 1/100 RCL**	*Injection Volume:*	**20.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/24/2014 15:05**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

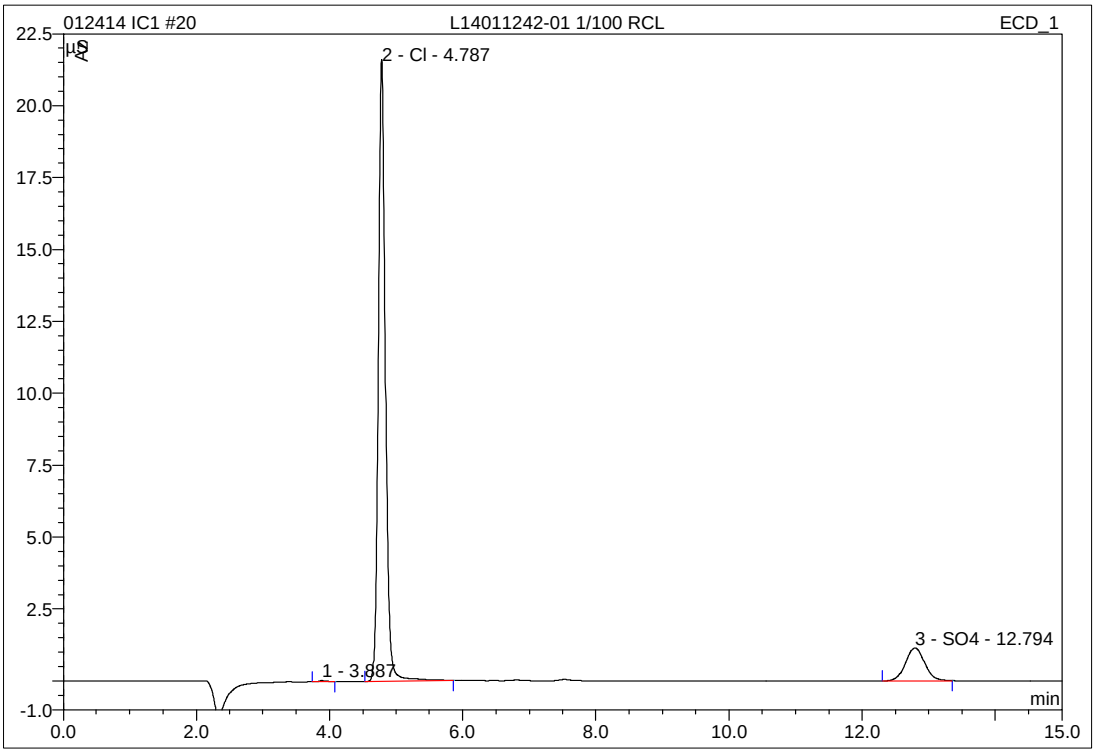

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.89	n.a.	0.035	0.004	0.13	n.a.	BMB
2	4.79	Cl	21.623	2.679	87.35	14.928	BMB
3	12.79	SO4	1.146	0.384	12.51	2.975	BMB
Total:			22.805	3.067	100.00	17.903	

2.2.1.4 Standards Data

1 WG450536-01 STD #6

1,1 JBK STD60856

Sample Name:	**WG450536-01 STD #6**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 8:59**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

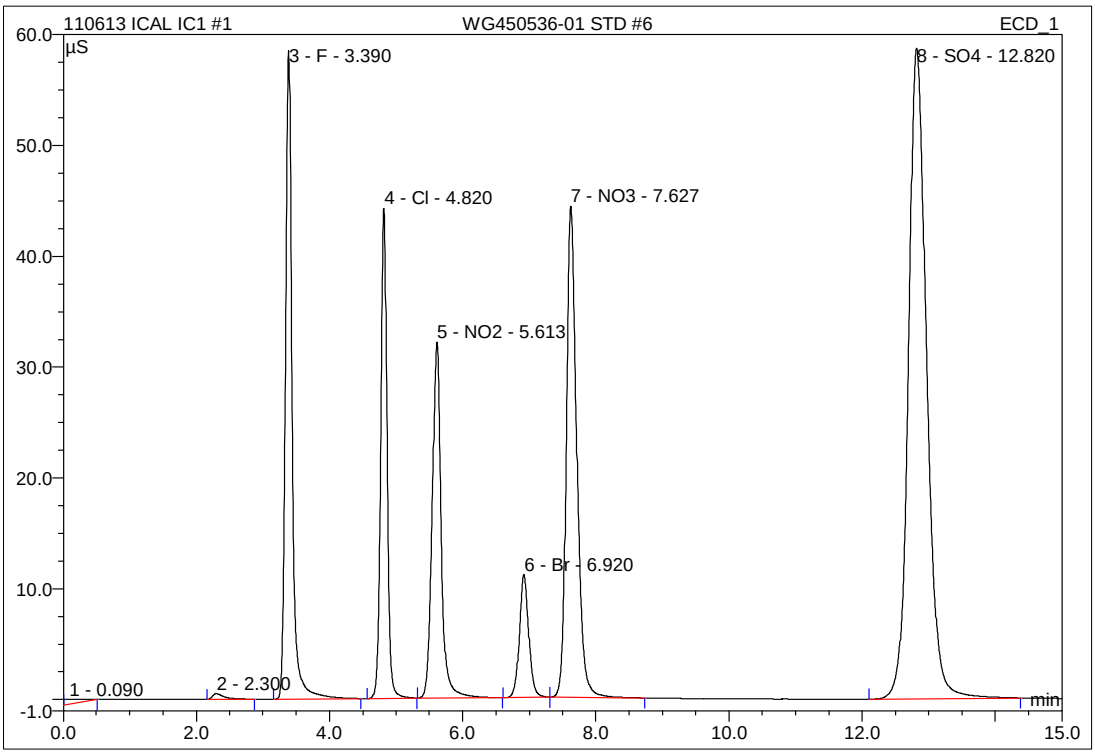

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	0.09	n.a.	0.431	0.132	0.29	n.a.	BMB
2	2.30	n.a.	0.527	0.110	0.24	n.a.	BMB
3	3.39	F	58.509	6.644	14.68	25.442	BMB
4	4.82	Cl	44.229	4.804	10.62	26.751	BMB
5	5.61	NO2	32.141	5.066	11.19	15.551	BMB
6	6.92	Br	11.090	1.809	4.00	25.227	BMb
7	7.63	NO3	44.330	8.117	17.94	18.347	bMB
8	12.82	SO4	58.721	18.571	41.04	136.882	BMB
Total:			249.979	45.254	100.00	248.200	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2 WG450536-02 STD #5

1,1 JBK STD60856

Sample Name:	**WG450536-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

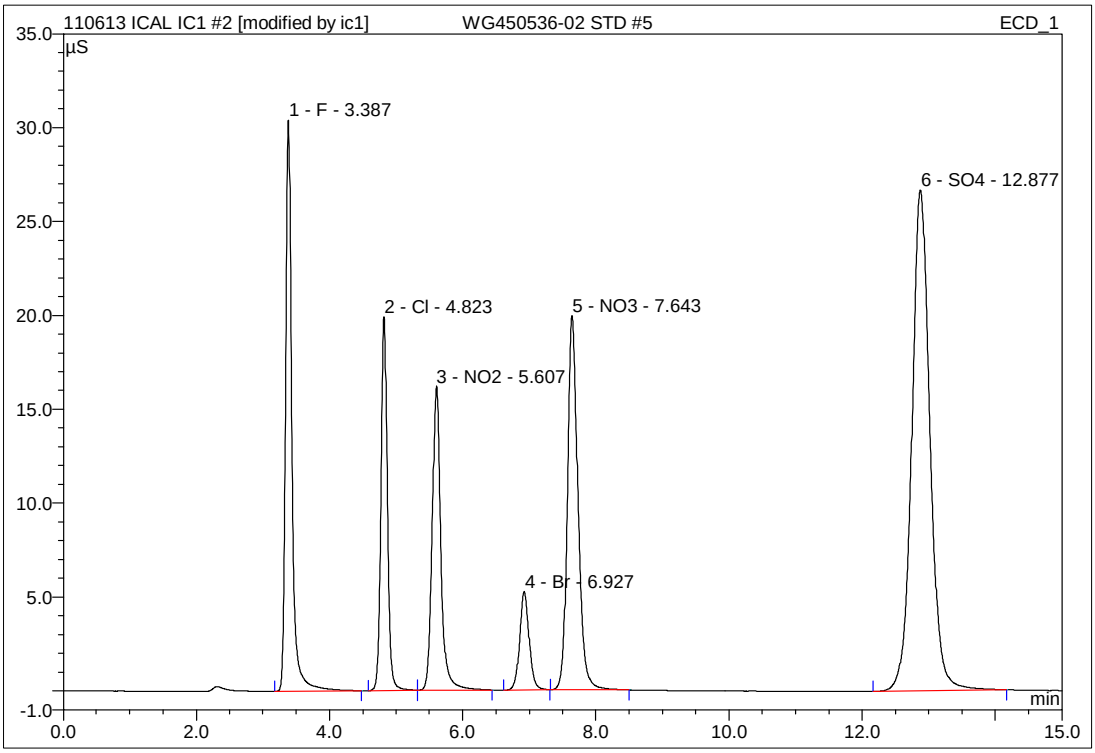

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.39	F	30.428	3.264	15.63	12.514	BMB*
2	4.82	Cl	19.929	2.191	10.49	12.214	BMB
3	5.61	NO2	16.200	2.454	11.75	7.542	BMB
4	6.93	Br	5.239	0.867	4.15	12.094	BMB
5	7.64	NO3	19.921	3.678	17.61	8.325	BMB
6	12.88	SO4	26.681	8.429	40.36	62.207	BMB
Total:			118.398	20.883	100.00	114.896	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2 WG450536-02 STD #5

1,1 JBK STD60856

Sample Name:	**WG450536-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

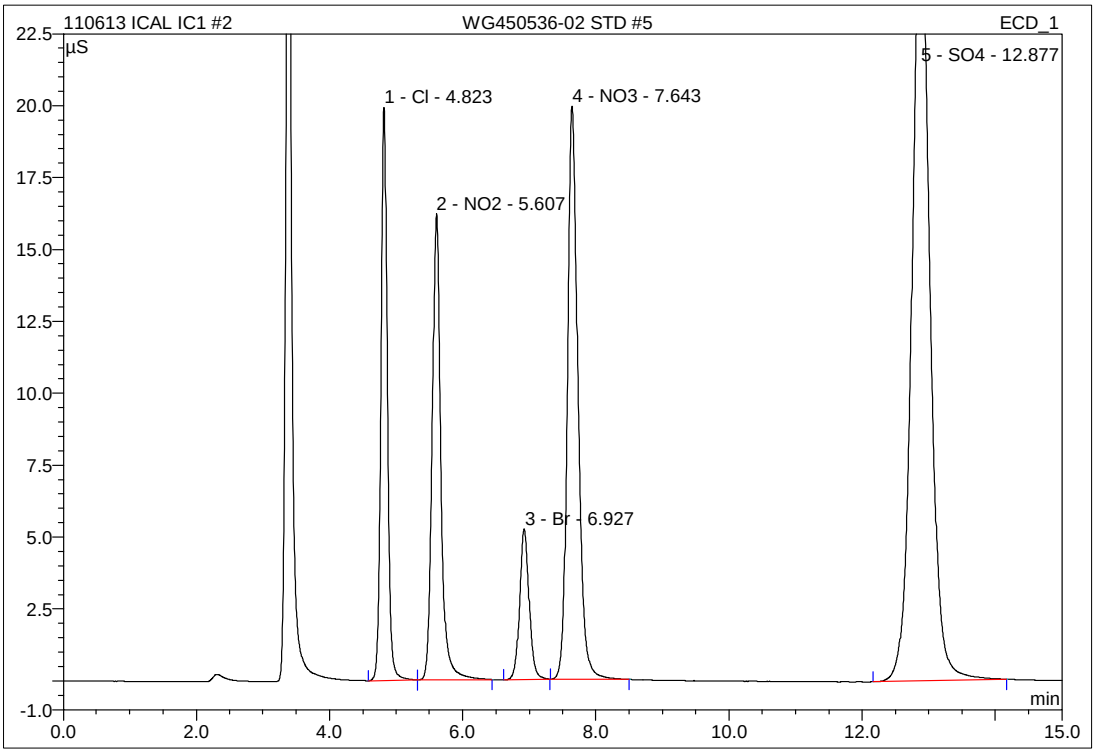

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.82	Cl	19.929	2.191	12.44	12.214	BMB
2	5.61	NO2	16.200	2.454	13.93	7.542	BMB
3	6.93	Br	5.239	0.867	4.92	12.094	BMB
4	7.64	NO3	19.921	3.678	20.87	8.325	BMB
5	12.88	SO4	26.681	8.429	47.84	62.207	BMB
Total:			87.970	17.619	100.00	102.381	

00735540

2 WG450536-02 STD #5

1,1 JBK STD60856

#753019

Sample Name:	**WG450536-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

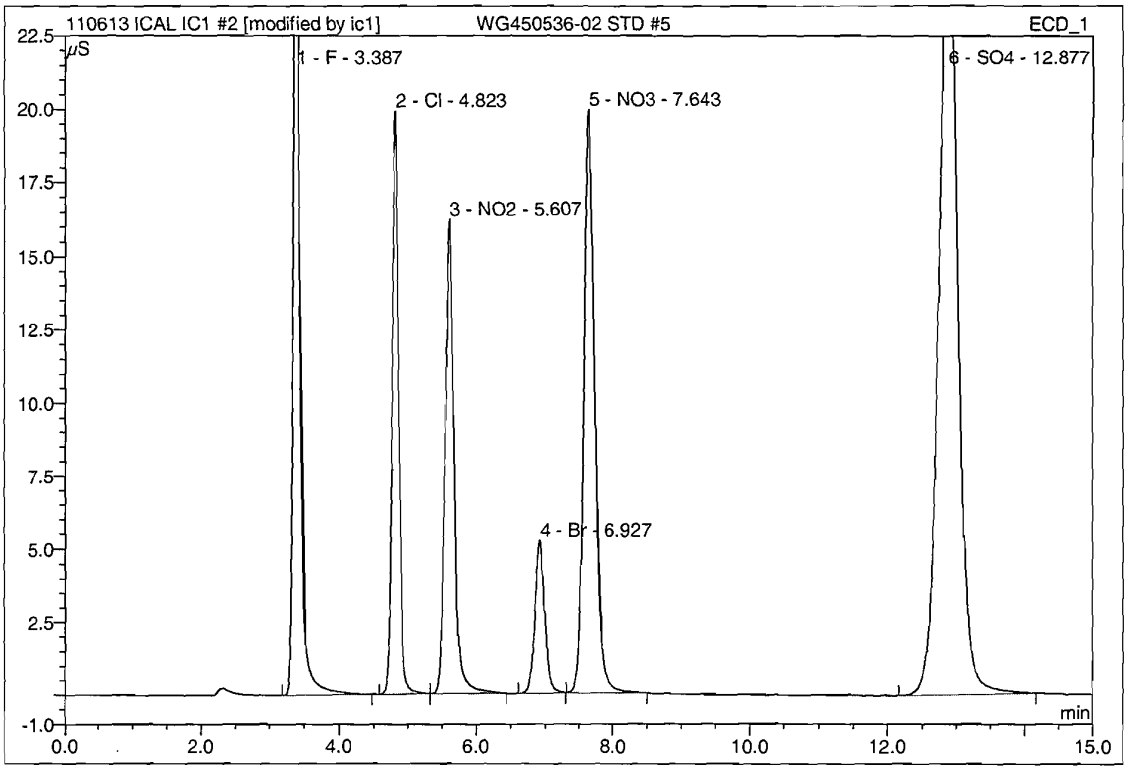

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.39	F	30.428	3.264	15.63	12.514	BMB*
2	4.82	Cl	19.929	2.191	10.49	12.214	BMB
3	5.61	NO2	16.200	2.454	11.75	7.542	BMB
4	6.93	Br	5.239	0.867	4.15	12.094	BMB
5	7.64	NO3	19.921	3.678	17.61	8.325	BMB
6	12.88	SO4	26.681	8.429	40.36	62.207	BMB
Total:			118.398	20.883	100.00	114.896	

JBK #1
11/11/13
11/11/13

3 WG450536-03 STD #4

1,1 JBK STD60856

Sample Name:	**WG450536-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

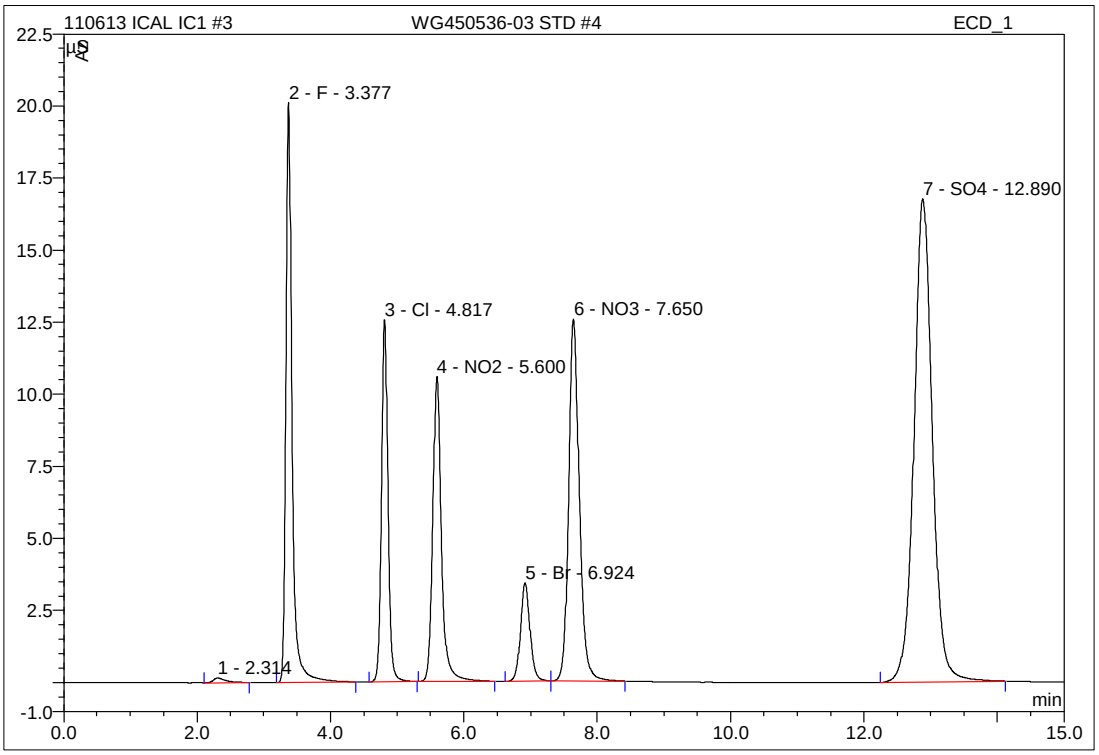

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.31	n.a.	0.162	0.036	0.27	n.a.	BMB
2	3.38	F	20.121	2.119	15.83	8.136	BMB
3	4.82	Cl	12.573	1.397	10.43	7.794	BMB
4	5.60	NO2	10.582	1.591	11.88	4.896	BMB
5	6.92	Br	3.413	0.568	4.25	7.930	BMB
6	7.65	NO3	12.548	2.339	17.46	5.302	BMB
7	12.89	SO4	16.761	5.341	39.89	39.473	BMB
Total:			76.160	13.391	100.00	73.532	

3 WG450536-03 STD #4

1,1 JBK STD60856

Sample Name:	**WG450536-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

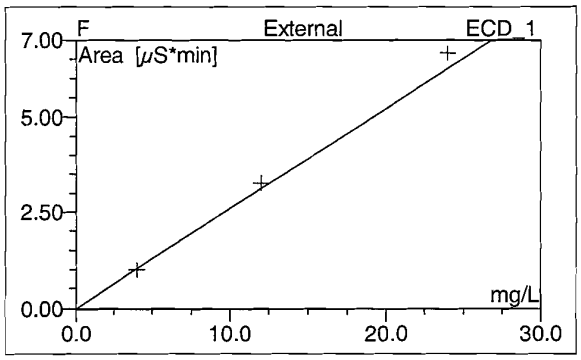

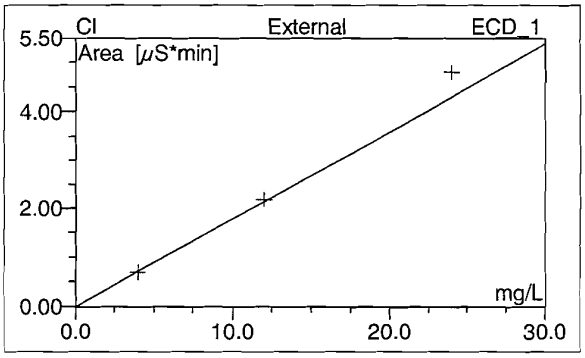

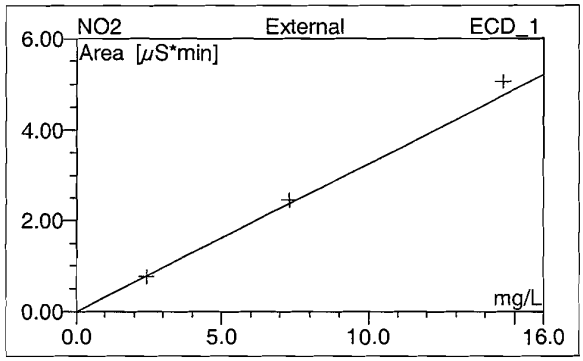

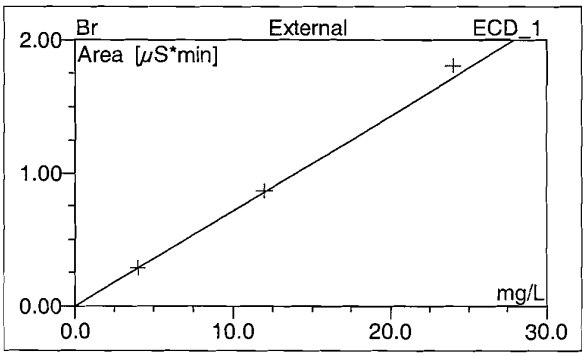

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.31	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.38	F	YYLOff	3	99.9997	-0.0079	0.2615	0.0000
3	4.82	Cl	YYLOff	3	99.8983	-0.0037	0.1797	0.0000
4	5.60	NO2	YYLOff	3	99.9953	-0.0063	0.3262	0.0000
5	6.92	Br	YYLOff	3	99.9728	-0.0002	0.0717	0.0000
6	7.65	NO3	YYLOff	3	99.8870	-0.0100	0.4430	0.0000
7	12.89	SO4	YYLOff	3	99.8991	-0.0203	0.1358	0.0000
Average:					99.9420	-0.0081	0.2363	0.0000

3 WG450536-03 STD #4

1,1 JBK STD60856

Sample Name:	**WG450536-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

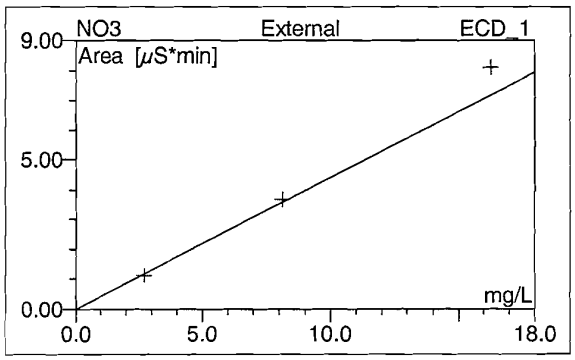

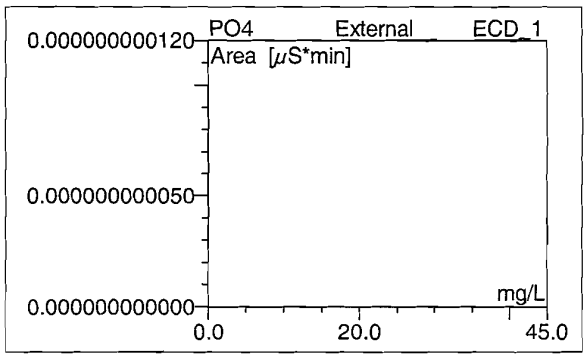

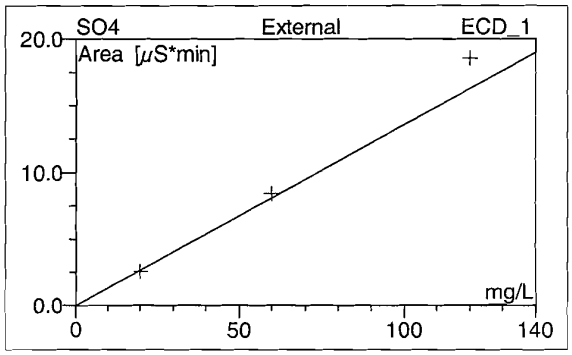

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.31	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.38	F	YYLOff	3	99.9997	-0.0079	0.2615	0.0000
3	4.82	Cl	YYLOff	3	99.8983	-0.0037	0.1797	0.0000
4	5.60	NO2	YYLOff	3	99.9953	-0.0063	0.3262	0.0000
5	6.92	Br	YYLOff	3	99.9728	-0.0002	0.0717	0.0000
6	7.65	NO3	YYLOff	3	99.8870	-0.0100	0.4430	0.0000
7	12.89	SO4	YYLOff	3	99.8991	-0.0203	0.1358	0.0000
Average:					99.9420	-0.0081	0.2363	0.0000

4 WG450536-04 STD #3

1,1 JBK STD60856

Sample Name:	**WG450536-04 STD #3**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:51**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

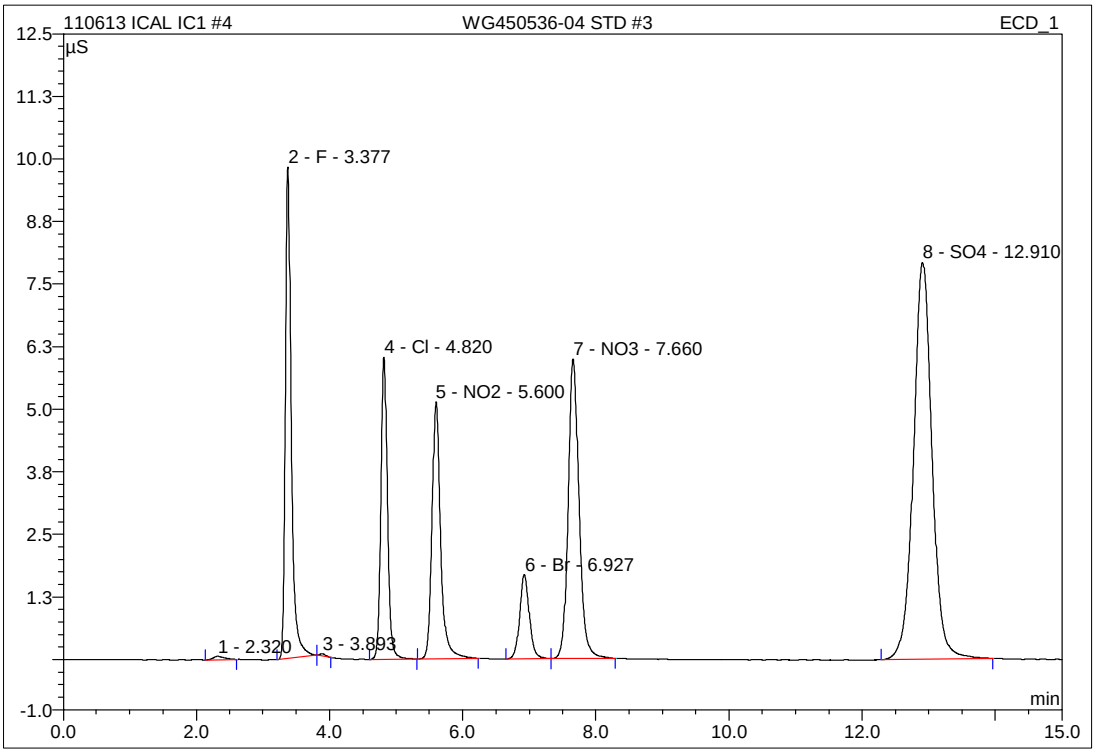

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.32	n.a.	0.067	0.013	0.20	n.a.	BMB
2	3.38	F	9.819	0.992	15.39	3.825	BMb
3	3.89	n.a.	0.050	0.005	0.07	n.a.	bMB
4	4.82	Cl	6.037	0.682	10.59	3.818	BMB
5	5.60	NO2	5.131	0.766	11.89	2.368	BMB
6	6.93	Br	1.688	0.285	4.42	3.973	BMB
7	7.66	NO3	5.989	1.134	17.59	2.582	BMB
8	12.91	SO4	7.924	2.568	39.85	19.058	BMB
Total:			36.705	6.445	100.00	35.624	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

5 WG450536-05 STD #2

1,1 JBK STD60856

Sample Name:	**WG450536-05 STD #2**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 10:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

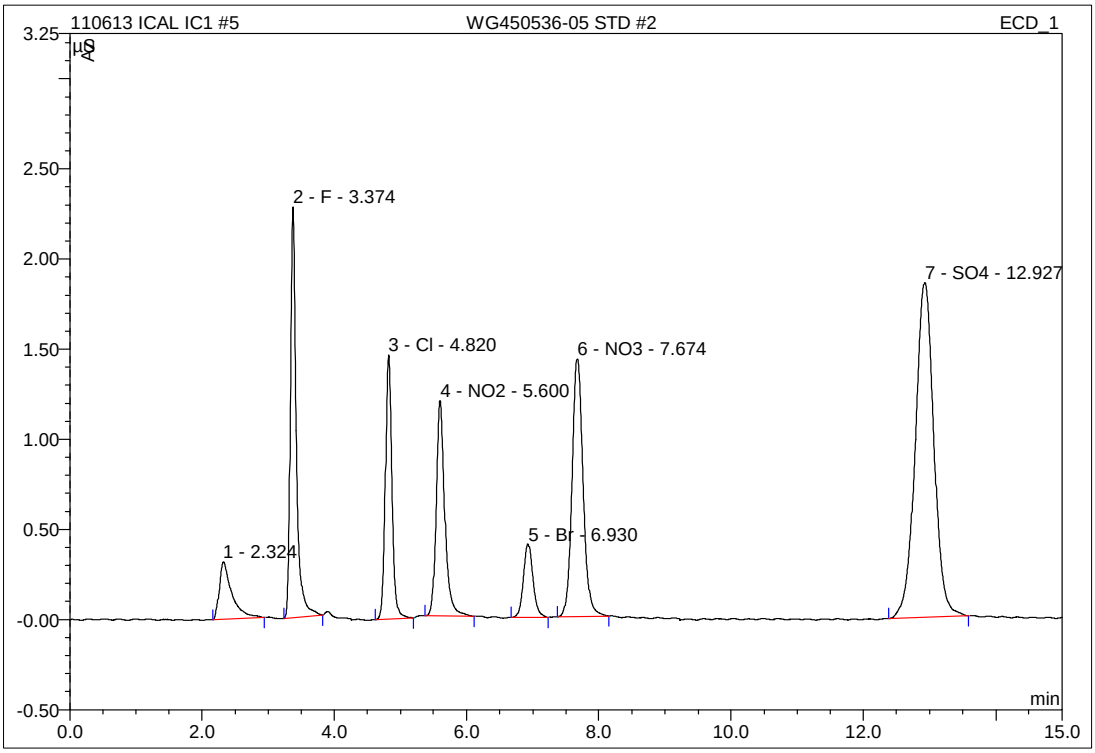

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.32	n.a.	0.319	0.071	4.41	n.a.	BMB
2	3.37	F	2.278	0.237	14.76	0.936	BMB
3	4.82	Cl	1.466	0.169	10.54	0.962	BMB
4	5.60	NO2	1.196	0.180	11.18	0.570	BMB
5	6.93	Br	0.407	0.068	4.26	0.956	BMB
6	7.67	NO3	1.430	0.275	17.11	0.643	BMB
7	12.93	SO4	1.857	0.606	37.74	4.612	BMB
Total:			8.952	1.606	100.00	8.680	

6 WG450536-06 STD #1

1,1 JBK STD60856

Sample Name:	**WG450536-06 STD #1**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 10:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

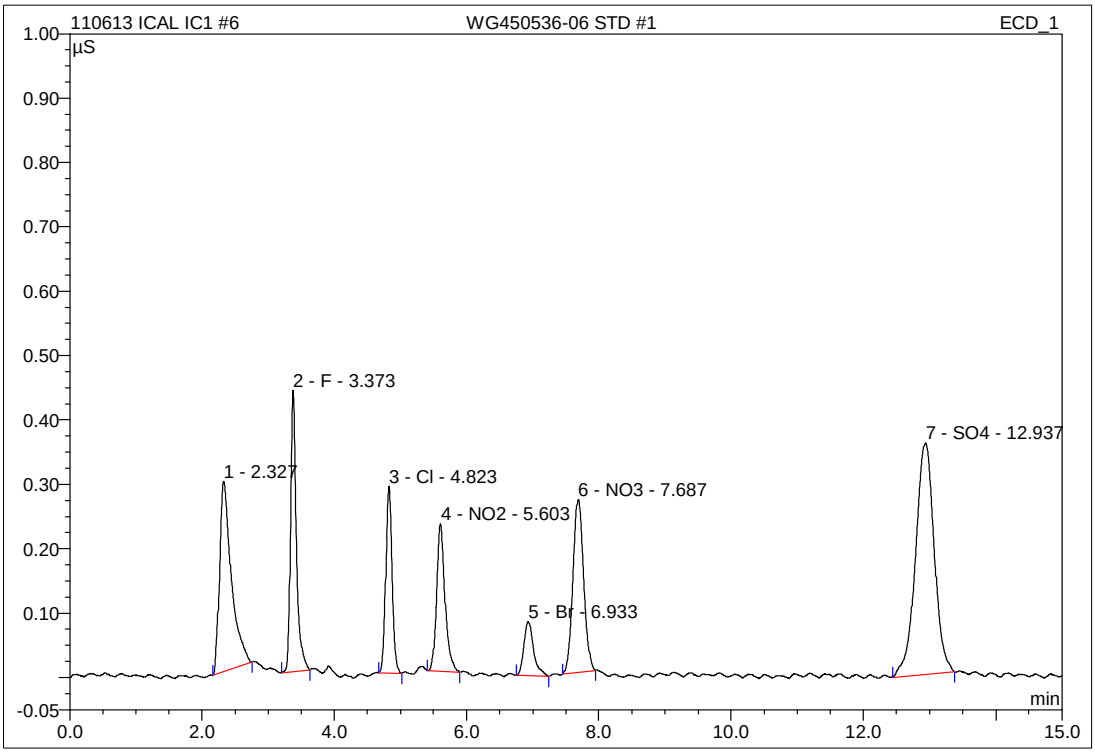

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.33	n.a.	0.296	0.062	17.32	n.a.	BMB
2	3.37	F	0.438	0.045	12.67	0.202	BMB
3	4.82	Cl	0.291	0.033	9.15	0.202	BMB
4	5.60	NO2	0.229	0.034	9.53	0.123	BMB
5	6.93	Br	0.084	0.014	4.01	0.202	BMB
6	7.69	NO3	0.269	0.051	14.23	0.137	BMB
7	12.94	SO4	0.360	0.118	33.08	1.016	BMB
Total:			1.966	0.356	100.00	1.882	

7 WG450536-07 ALT STD

1,1 JBK STD60857

Sample Name:	**WG450536-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 11:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

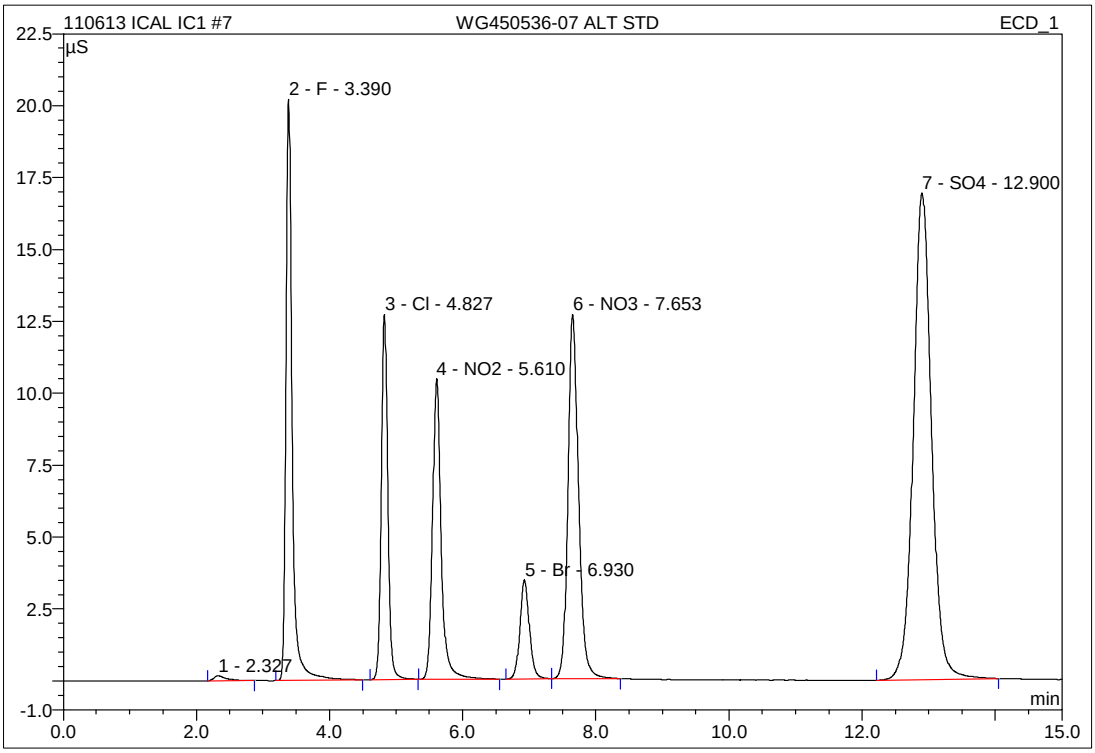

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.33	n.a.	0.171	0.038	0.28	n.a.	BMB
2	3.39	F	20.200	2.127	15.86	8.165	BMB
3	4.83	Cl	12.689	1.401	10.45	7.817	BMB
4	5.61	NO2	10.450	1.577	11.76	4.853	BMB
5	6.93	Br	3.435	0.567	4.23	7.912	BMB
6	7.65	NO3	12.659	2.341	17.46	5.308	BMB
7	12.90	SO4	16.913	5.360	39.97	39.614	BMB
Total:			76.517	13.411	100.00	73.669	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

7 WG450536-07 ALT STD

1,1 JBK STD60857

Sample Name:	**WG450536-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 11:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

WG450536-07 ALT S	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	8.1653	2.07	PASS
Cl	8.00	7.8171	-2.29	PASS
NO2-N	4.8714	4.8526	-0.38	PASS
Br	8.00	7.9119	-1.10	PASS
NO3-N	5.4216	5.3082	-2.09	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	39.6139	-0.97	PASS

3 WG460784-01 ANION CCV

1,1 JBK STD60856 _____ psi @ _____

Sample Name:	**WG460784-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/24/2014 10:10**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

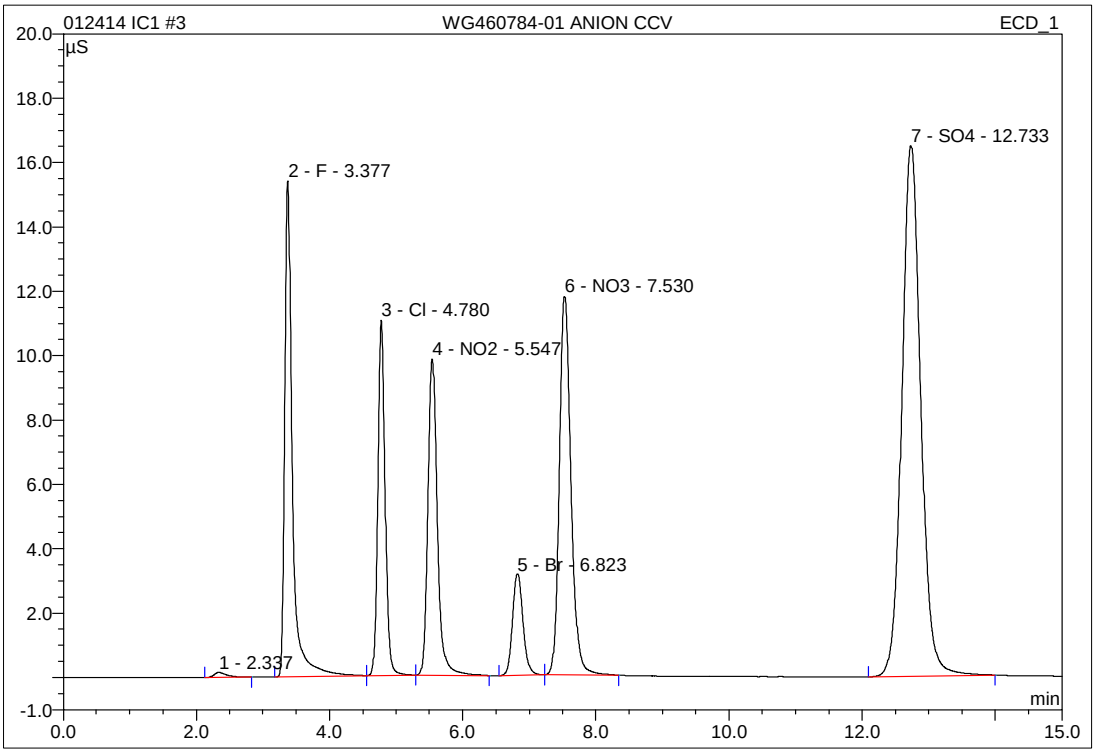

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.34	n.a.	0.156	0.035	0.26	n.a.	BMB
2	3.38	F	15.404	2.023	15.05	7.768	BMB
3	4.78	Cl	11.032	1.399	10.41	7.808	BMB
4	5.55	NO2	9.827	1.610	11.98	4.956	BMB
5	6.82	Br	3.152	0.572	4.25	7.977	BMB
6	7.53	NO3	11.752	2.366	17.60	5.364	BMB
7	12.73	SO4	16.492	5.435	40.43	40.162	BMB
Total:			67.814	13.441	100.00	74.036	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG460784-01 ANION CCV

1,1 JBK STD60856 _____ psi @ _____

Sample Name:	**WG460784-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/24/2014 10:10**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

WG460784-01 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.7685	-2.89	PASS
Cl	8.00	7.8076	-2.40	PASS
NO2-N	4.8714	4.9558	1.73	PASS
Br	8.00	7.9775	-0.28	PASS
NO3-N	5.4216	5.3644	-1.05	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	40.1618	0.40	PASS

15 WG460784-03 ANION CCV

1,1 JBK STD60856

Sample Name:	**WG460784-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/24/2014 13:38**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

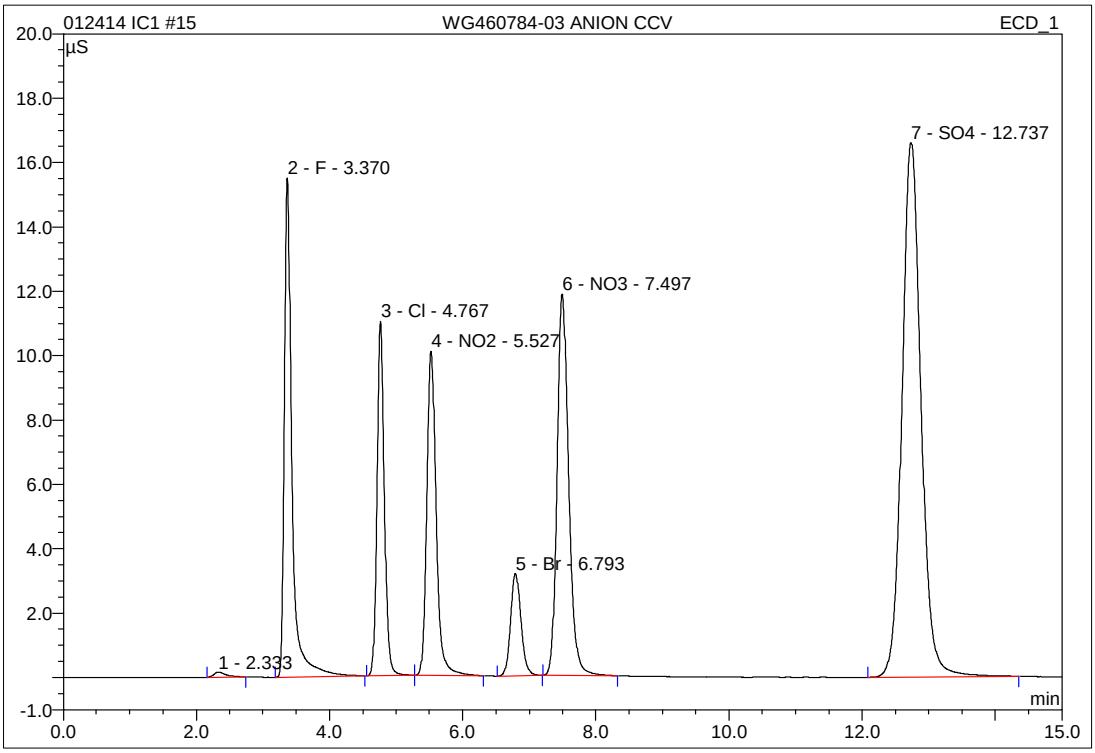

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.33	n.a.	0.159	0.034	0.25	n.a.	BMB
2	3.37	F	15.513	2.047	15.06	7.861	BMB
3	4.77	Cl	11.017	1.412	10.39	7.875	BMB
4	5.53	NO2	10.073	1.646	12.11	5.066	BMB
5	6.79	Br	3.175	0.577	4.24	8.047	BMB
6	7.50	NO3	11.850	2.383	17.54	5.403	BMB
7	12.74	SO4	16.605	5.492	40.41	40.588	BMB
Total:			68.391	13.591	100.00	74.839	

15 WG460784-03 ANION CCV

1,1 JBK STD60856

Sample Name:	**WG460784-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/24/2014 13:38**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

WG460784-03 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.8605	-1.74	PASS
Cl	8.00	7.8750	-1.56	PASS
NO2-N	4.8714	5.0658	3.99	PASS
Br	8.00	8.0467	0.58	PASS
NO3-N	5.4216	5.4030	-0.34	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	40.5876	1.47	PASS

23 WG460784-05 ANION CCV

1,1 JBK STD60856

Sample Name:	**WG460784-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/24/2014 15:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

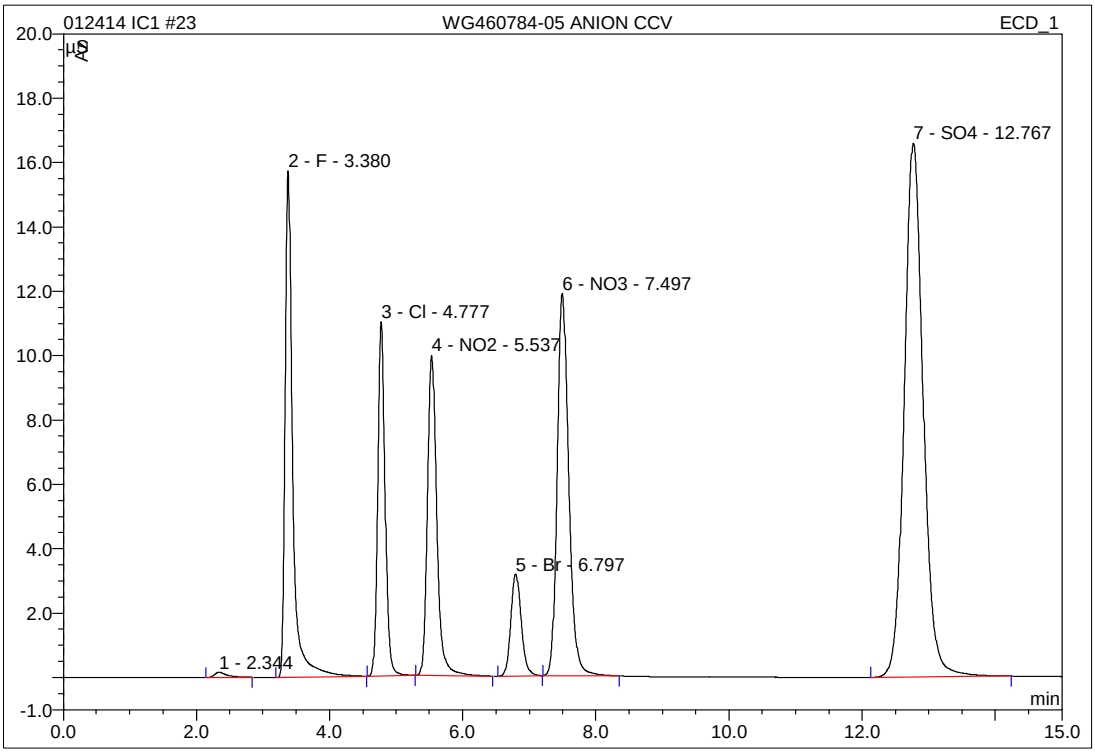

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.34	n.a.	0.161	0.037	0.27	n.a.	BMB
2	3.38	F	15.739	2.053	15.13	7.883	BMB
3	4.78	Cl	10.997	1.413	10.41	7.884	BMB
4	5.54	NO2	9.939	1.623	11.96	4.994	BMB
5	6.80	Br	3.175	0.577	4.25	8.045	BMB
6	7.50	NO3	11.869	2.387	17.59	5.412	BMB
7	12.77	SO4	16.592	5.482	40.39	40.508	BMB
Total:			68.472	13.571	100.00	74.726	

23 WG460784-05 ANION CCV

1,1 JBK STD60856

Sample Name:	**WG460784-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/24/2014 15:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

WG460784-05 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.8831	-1.46	PASS
Cl	8.00	7.8839	-1.45	PASS
NO2-N	4.8714	4.9937	2.51	PASS
Br	8.00	8.0446	0.56	PASS
NO3-N	5.4216	5.4123	-0.17	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	40.5081	1.27	PASS

4 WG460784-02 ANION CCB

1,1 JBK

Sample Name:	**WG460784-02 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/24/2014 10:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

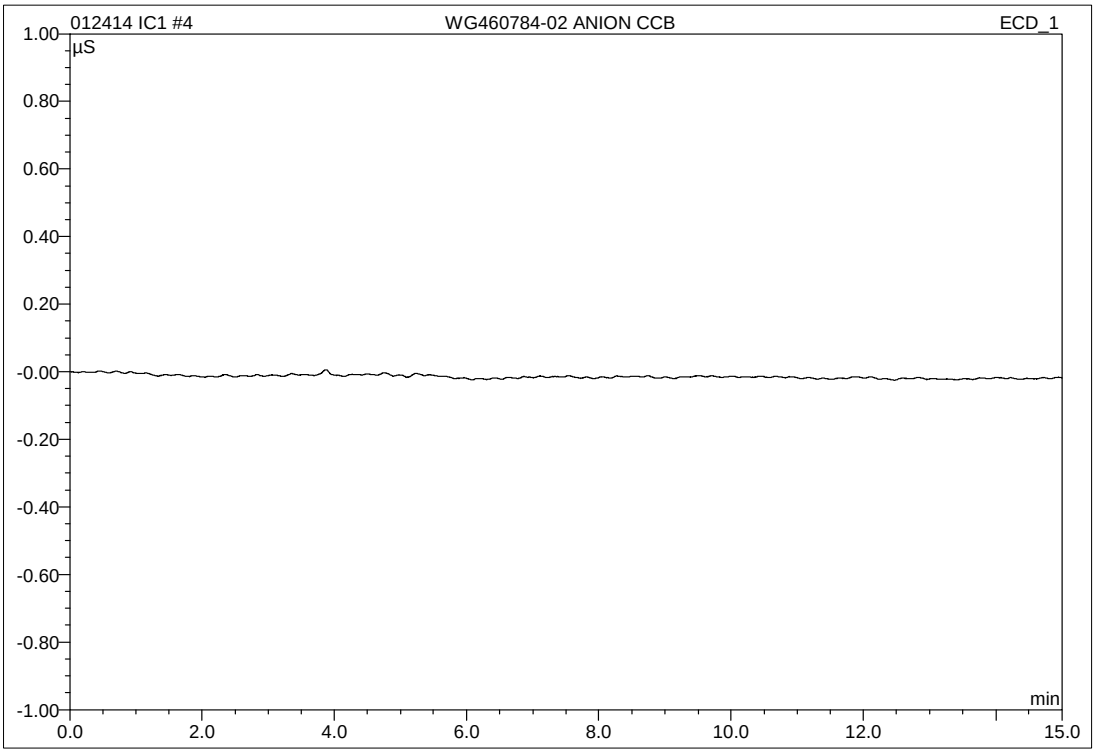

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

16 WG460784-04 ANION CCB

1,1 JBK

Sample Name:	**WG460784-04 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/24/2014 13:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

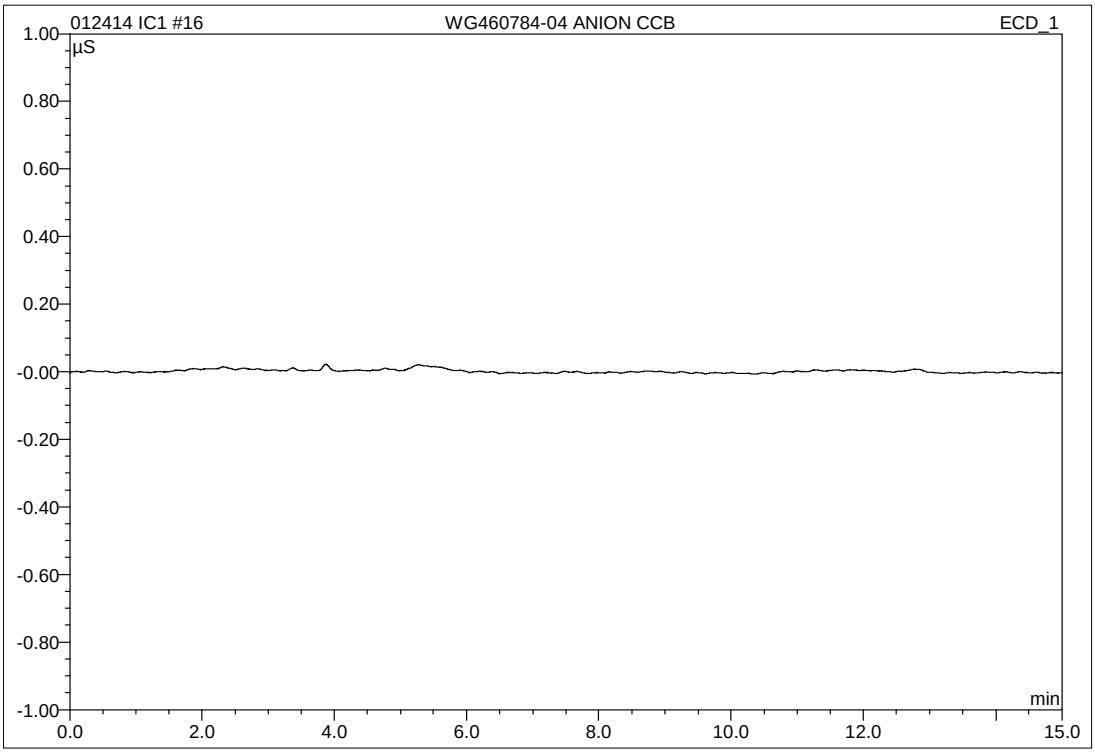

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

24 WG460784-06 ANION CCB

1,1 JBK

Sample Name:	**WG460784-06 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/24/2014 16:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

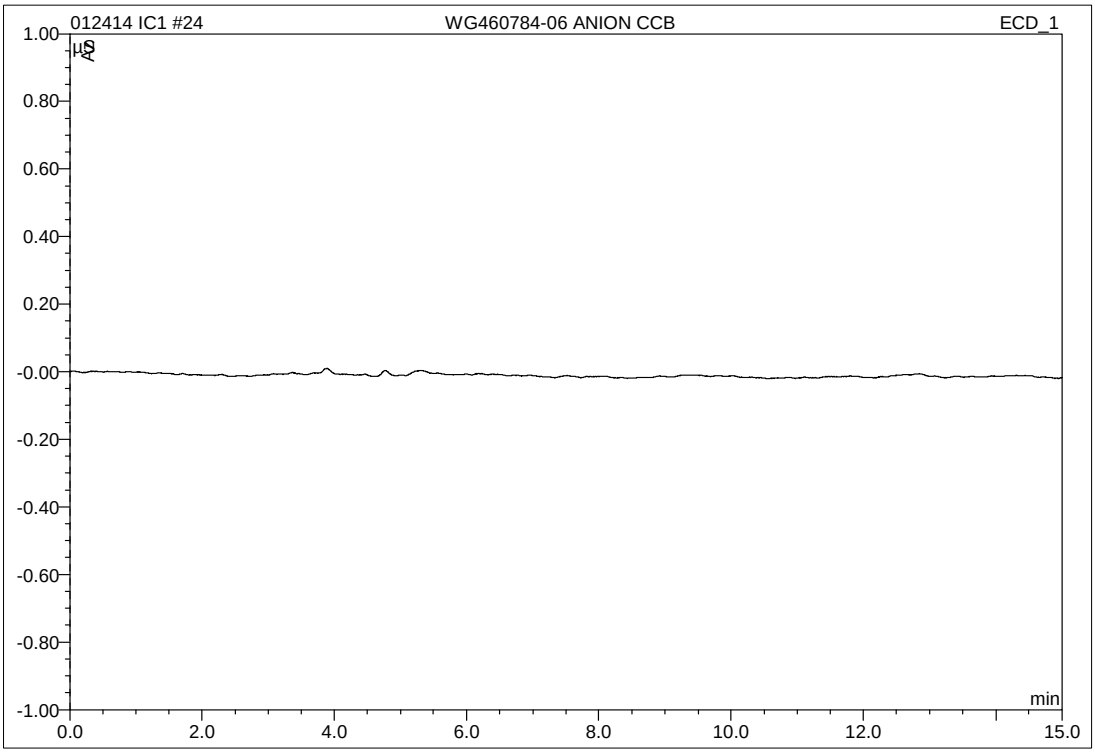

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/6/2013	6/6/2013	6/7/2013
File #	WG433163-01	WG433163-05	WG433448-01
Time	12:58	18:54	12:23

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.31	3.30	3.31	0.017
Cl	4.90	4.89	4.92	0.046
NO2-N	5.79	5.78	5.83	0.079
Br	7.34	7.31	7.43	0.187
NO3-N	8.21	8.18	8.32	0.221
SO4	13.74	13.74	13.67	0.121

2.2.1.5 Raw QC Data

5 WG460782-01 ANION BLANK

1,1 JBK

Sample Name:	**WG460782-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/24/2014 10:44**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

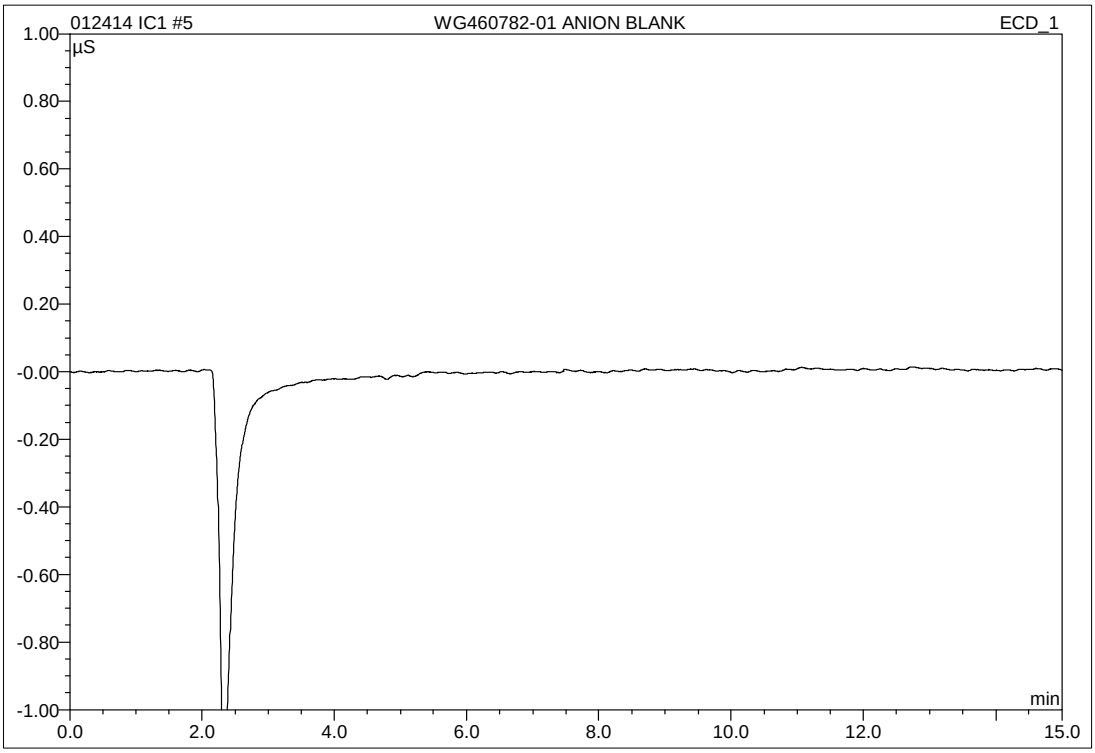

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

6 WG460782-02 ANION LCS

1,1 JBK

Sample Name:	**WG460782-02 ANION LCS**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/24/2014 11:02**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

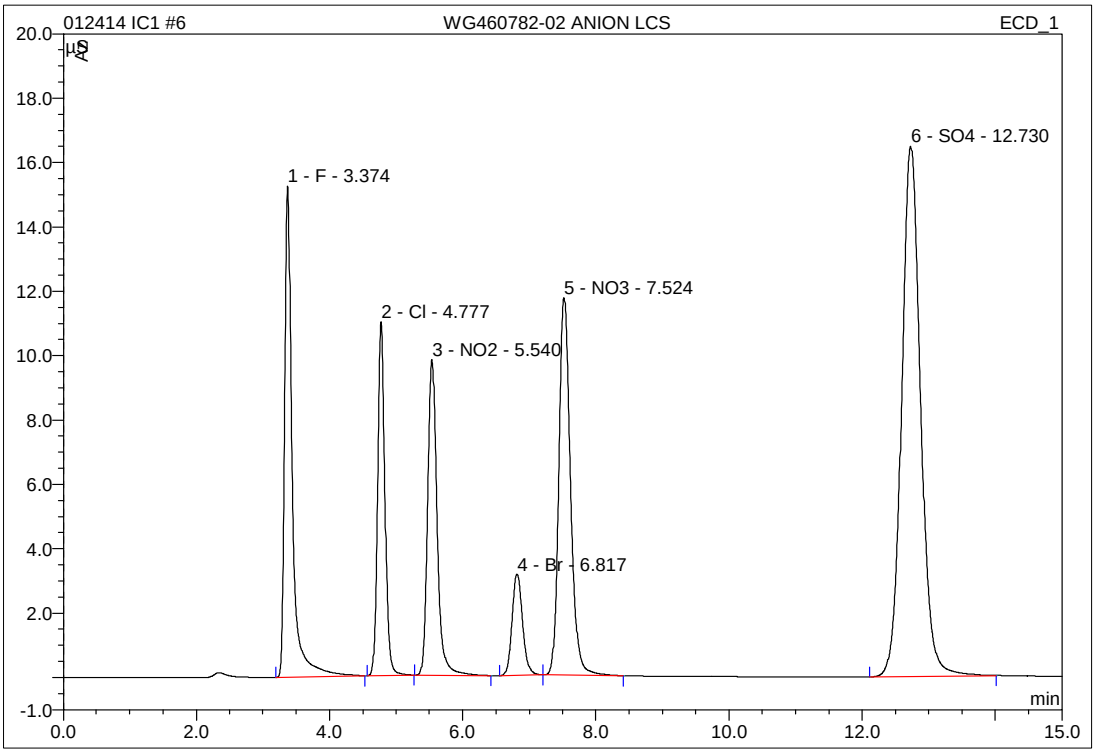

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.37	F	15.252	2.027	15.12	7.782	BMB
2	4.78	Cl	10.977	1.400	10.44	7.812	BMB
3	5.54	NO2	9.801	1.607	11.99	4.946	BMB
4	6.82	Br	3.145	0.572	4.27	7.981	BMb
5	7.52	NO3	11.730	2.370	17.68	5.373	bMB
6	12.73	SO4	16.471	5.432	40.51	40.142	BMB
Total:			67.377	13.408	100.00	74.035	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.2.2 Ferrous Iron Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW08-012314	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	01/28/2014 09:00
Workgroup #:	WG461134	**Analyst:**	TMM	**Run Date:**	01/28/2014 11:00
Collect Date:	01/23/2014 09:55	**Dilution:**	1	**File ID:**	1V.1401281100-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.344		0.0400	0.0400	0.0200

2.2.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 28-JAN-2014
Analyst: TMM
Analyst: DCM
Method: FERROUS
Instrument: UV-120-1V
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG461134

Calibration/Linearity	1/28/14
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TMM
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
29-JAN-2014
Tammy Morris

Secondary Reviewer:
30-JAN-2014
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-30-2014 13:37:24

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM3500Fe-B-1997 AAB#: WG461134

Login Number: L14011242

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-012314	01	01/23/14					01/28/2014	5	7		01/28/14	5	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3338783
Report generated 01/30/2014 12:57

METHOD BLANK SUMMARY

Login Number: L14011242
Blank File ID: 1V.1401281100-02
Prep Date: 01/28/14 11:00
Analyzed Date: 01/28/14 11:00
Analyst: TMM

Work Group: WG461134
Blank Sample ID: WG461134-01
Instrument ID: UV-120-1V
Method: SM3500Fe-B-1997

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG461134-02	1V.1401281100-03	01/28/14 11:00	
LCS2	WG461134-03	1V.1401281100-04	01/28/14 11:00	
67WW08-012314	L14011242-01	1V.1401281100-05	01/28/14 11:00	
DUP	WG461134-05	1V.1401281100-08	01/28/14 11:00	

Report Name: BLANK_SUMMARY
PDF File ID: 3338784
Report generated 01/30/2014 12:57

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14011242 Prep Date: 01/28/14 11:00 Sample ID: WG461134-01
Instrument ID: UV-120-1V Run Date: 01/28/14 11:00 Prep Method: SM3500Fe-B-1997
File ID: 1V.1401281100-02 Analyst: TMM Method: SM3500Fe-B-1997
Workgroup (AAB#): WG461134 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-120 - 28-JAN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Ferrous - Laboratory	0.0200	0.0400	0.0200	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3338785
30-JAN-2014 12:57

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14011242 Analyst: TMM Prep Method: SM3500Fe-B-1997
Instrument ID: UV-120-1V Matrix: Water Method: SM3500Fe-B-1997
Workgroup (AAB#): WG461134 Units: mg/L
QC Key: DOD4 Lot #: STD61518

Sample ID: WG461134-02 LCS File ID: 1V.1401281100-03 Run Date: 01/28/2014 11:00
Sample ID: WG461134-03 LCS2 File ID: 1V.1401281100-04 Run Date: 01/28/2014 11:00

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Iron, Ferrous - Laboratory	0.200	0.224	112	0.200	0.224	112	0.00	75 - 125	25	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3338786
Report generated: 01/30/2014 12:57

2.2.2.3 Raw Data

Wq461138

Curves

Parameter: Ferrous Iron

Spectrophotometer: UV-120-1V

Calibration (Curve) standard stock: Std

Concentration: 100 mg/L

Recipe for preparation of curve standards found in:
SOP: 3500 Revision: _____ Page: 8

Second Source Stock: Std (concentration: 100mg/L)

Daily Preparation: 2(100)/1000

concentration = =0.2

Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance	
0	50	10cm	510	0.003	0.002
0.04				0.034	0.032
0.08				0.068	0.067
0.2				0.173	0.173
0.4				0.346	0.348
0.6				0.545	0.543
2nd Source (2.0)				0.203	0.186

Analyst: Tammy Morris Date/Time: 1/28/14 @ 9:00

DCN#100231

Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG461138
Analytical Method: FERROUS
Instrument ID: UV-120-1V

Analyst: TMM
Initial Calibration Date: 01/28/2014

Analyte: FERROUS IRON
Number of Points: 6
Slope: 0.900360
Y-Intercept: -0.00391258
Coef. Of Correlation (R^2): 0.999295
Coef. Of Correlation (R): 0.999647

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00200	0.00	0.00	-0.00391258
0.0400	0.0320	0.00160	0.00128	0.0321018
0.0800	0.0670	0.00640	0.00536	0.0681162
0.200	0.173	0.0400	0.0346	0.176159
0.400	0.348	0.160	0.139	0.356232
0.600	0.543	0.360	0.326	0.536304

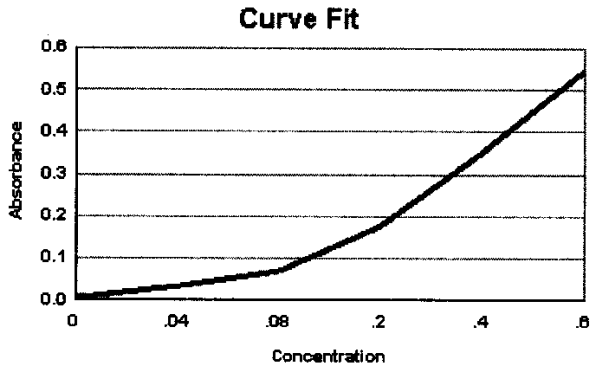

WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 01/28/2014 10:56

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG461138
File ID: 1V.1401280900-07
CCV ID: WG461138-07
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 01/28/2014
Run Time: 09:00
Analyst: TMM
Cal ID: UV-120 - 28-JAN-14 09:00:06

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.2	0.211	0.930	5.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 01/28/2014 10:55

[redacted]

MDL - LOD 0.02(100)/100 = 0.02
RL - LOQ 0.04 (100)/100 = 0.04

WORKGROUP: WG461134

Ferrous Iron

SM 3500Fe-B

CCV: Std ~~61518~~ 62554
Daily Dilution: 3(100)/1000
Daily Dilution: = 0.3

LCS: Std 61518
Daily Dilution: 2(100)/1000
Daily Dilution: = 0.2

SOP K3500 Revision # 6

Instrument: UV-120-IV

RGTS: 28280
RGTS: 28259
RGTS: 28109

Spike: Std 61518
Daily Dilution: 0.1(100)/50
Daily Dilution: = 0.2

Curve Reference: 1/28/14

Sample	Blank	Volume (mL)	Dilution	Cell Size (nm)	Absorbance
CCV: 0.3 mg/L	✓	50		10cm	~~0.198~~ 1/28/14 0.271
BLANK	✓	50			0.001
LCS: 0.2 mg/L	✓	50			0.198
LCS DUP: (0.2 mg/L)	✓	50			0.198
01-1242-01	✓	50			0.306
LOD 01-001-01	✓	50			0.020
LOQ 01-003-01	✓	50		✓	0.038
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
DUP: 01-1242-01	✓	50			0.308
MS: ( ) ✓	✓	50			0.509
MSD: ( )		50			
CCV: (0.3)	✓	50			0.262

Analyst: Tammy Morris Date/Time: 1/28/2014 @ 11:00

*Samples were analyzed in the laboratory and not immediately in the field.

DCN#100236

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG461134
Analyte: FERROUS IRON

Analyst: TMM
Date: 01/28/2014

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG461134-01	50	50	0.00100	0.9004	-0.003913	0.0054562	0.0054562	1	mg/L
WG461134-02	50	50	0.198	0.9004	-0.003913	0.22426	0.22426	1	mg/L
WG461134-03	50	50	0.198	0.9004	-0.003913	0.22426	0.22426	1	mg/L
L14011242-01	50	50	0.306	0.9004	-0.003913	0.34421	0.34421	1	mg/L
WG461134-04	50	50	0.306	0.9004	-0.003913	0.34421	0.34421	1	mg/L
L14010001-01	50	50	0.0200	0.9004	-0.003913	0.026559	0.026559	1	mg/L
L14010003-01	50	50	0.0380	0.9004	-0.003913	0.046551	0.046551	1	mg/L
WG461134-05	50	50	0.308	0.9004	-0.003913	0.34643	0.34643	1	mg/L
WG461134-06	50	50	0.509	0.9004	-0.003913	0.56967	0.56967	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 01/29/2014 13:33

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG461364
File ID: 1V.1401281100-01
CCV ID: WG461364-01
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 01/28/2014
Run Time: 11:00
Analyst: TMM
Cal ID: UV-120 - 28-JAN-14

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.305	0.903	1.7	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 01/29/2014 13:35

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG461364
File ID: 1V.1401281100-10
CCV ID: WG461364-02
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 01/28/2014
Run Time: 11:00
Analyst: TMM
Cal ID: UV-120 - 28-JAN-14

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.295	0.873	1.7	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 01/29/2014 13:35

[redacted]

2.2.3 Sulfide Data

2.2.3.1 Summary Data

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW08-012314	**Prep Method:**	EPA 376.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	EPA 376.1	**Cal Date:**	
Workgroup #:	WG460785	**Analyst:**	EPT	**Run Date:**	01/24/2014 14:30
Collect Date:	01/23/2014 09:55	**Dilution:**	1	**File ID:**	ET.1401241430-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.2.3.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 24-JAN-2014
Analyst: EPT
Analyst: NA
Method: SULFIDE
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG460785

Calibration/Linearity	01/24/14
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
27-JAN-2014
Ethan Tido

Secondary Reviewer:
27-JAN-2014
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-27-2014 15:42:50

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: EPA 376.1 AAB#: WG460785

Login Number: L14011242

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-012314	01	01/23/14					01/24/2014	1.2	7		01/24/14	1.2	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3332685
Report generated 01/27/2014 15:17

METHOD BLANK SUMMARY

Login Number: L14011242
Blank File ID: ET.1401241430-01
Prep Date: 01/24/14 14:30
Analyzed Date: 01/24/14 14:30
Analyst: EPT

Work Group: WG460785
Blank Sample ID: WG460785-01
Instrument ID: BURET
Method: EPA 376.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG460785-02	ET.1401241430-02	01/24/14 14:30	
LCS2	WG460785-03	ET.1401241430-03	01/24/14 14:30	
67WW08-012314	L14011242-01	ET.1401241430-04	01/24/14 14:30	

Report Name: BLANK_SUMMARY
PDF File ID: 3332686
Report generated 01/27/2014 15:17

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14011242 Prep Date: 01/24/14 14:30 Sample ID: WG460785-01
Instrument ID: BURET Run Date: 01/24/14 14:30 Prep Method: EPA 376.1
File ID: ET.1401241430-01 Analyst: EPT Method: EPA 376.1
Workgroup (AAB#): WG460785 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3332687
27-JAN-2014 15:17

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14011242 Analyst: EPT Prep Method: EPA 376.1
Instrument ID: BURET Matrix: Water Method: EPA 376.1
Workgroup (AAB#): WG460785 Units: mg/L
QC Key: DOD4 Lot #: STD62537

Sample ID: WG460785-02 LCS File ID: ET.1401241430-02 Run Date: 01/24/2014 14:30
Sample ID: WG460785-03 LCS2 File ID: ET.1401241430-03 Run Date: 01/24/2014 14:30

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	25.2	27.0	107	25.2	27.0	107	0.00	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3332688
Report generated: 01/27/2014 15:17

2.2.3.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG460785

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: 13

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: Std 62537

Iodine standardization (0.025N) COA: 16854
mL 0.025N titrant: 10.0
Volume I: 10.0 mL
Normality I: 0.0250

(0.1 N I) COA: 16855
mL 0.025 N titrant: 8.0
Volume I: 2.0 mL
Normality I: 0.100

Stock standardization (in duplicate) 5.0 mL stock
mL I 1) 10.0 2) 10.0
N I 1) 0.100 2) 0.100
mL 0.025 titrant 1) 19.0 2) 19.0
LCS daily dilution: (3)(25)(1680)/200 = 25.2 mg/L

1680 = stock conc (mg/L)

Titrant: T- 1400-02-01

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	0.246N Sodium Thiosulfate (mL)
BLANK	200	15.0 EPT 01/24/14	0.0250	15.0
LCS (mL)	200	~~20.0~~ 20.0	0.0250	6.6
LCSDUP (mL)	200	~~20.0~~ 20.0	0.0250	6.6
01-1242-01	480	15.0	0.0250	15.0
PE → 01-0571-08	200	15.0	0.0250	13.2
PE → 01-0571-08	200	15.0	0.0250	13.1

Analyst: Ethan Todd Date/Time: 01/24/14 1430

DCN#100186

Microbac Laboratories Inc.
TITRAMETRIC REPORT

Workgroup (AAB#): WG460785
Product: EPA 376.1\9034
Analyte: Sulfide

Analyst: EPT
Run Date: 01/24/2014 14:30

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG460785-01	200.0	15	.025	15	.0246	1	0.480	0.4800	mg/L
WG460785-02	200.0	20	.025	6.6	.0246	1	27.0	27.01	mg/L
WG460785-03	200.0	20	.025	6.6	.0246	1	27.0	27.01	mg/L
L14011242-01	480.0	15	.025	15	.0246	1	0.200	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 01/27/2014 10:02

2.2.4 Total Organic Carbon Data

2.2.4.1 Summary Data

Microbac

Lab Report #: L14011242
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011242-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-012314	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG460779	**Analyst:**	DCM	**Run Date:**	01/25/2014 15:56
Collect Date:	01/23/2014 09:55	**Dilution:**	1	**File ID:**	TC01242014.068
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	9.95		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L14011242-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-012314	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG460779	**Analyst:**	DCM	**Run Date:**	01/25/2014 15:56
Collect Date:	01/23/2014 09:55	**Dilution:**	1	**File ID:**	TC01242014.068
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		37.9		2.00	1.00	0.500

2.2.4.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 28-JAN-2014
Analyst: DCM
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG460777 WG460779

Calibration/Linearity	07-09-2013
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
28-JAN-2014

Secondary Reviewer:
30-JAN-2014

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-30-2014 13:16:16

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG460779

Login Number: L14011242

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-012314	01	01/23/14					01/25/2014	2.3	28		01/25/14	2.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3336534
Report generated 01/29/2014 10:15

METHOD BLANK SUMMARY

Login Number: L14011242
Blank File ID: TC01242014.024
Prep Date: 01/25/14 00:09
Analyzed Date: 01/25/14 00:09
Analyst: DCM

Work Group: WG460779
Blank Sample ID: WG460779-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG460779-02	TC01242014.025	01/25/14 00:21	01
LCS2	WG460779-03	TC01242014.028	01/25/14 00:55	01
DUP	WG460779-08	TC01242014.052	01/25/14 05:46	01
67WW08-012314	L14011242-01	TC01242014.068	01/25/14 15:56	01
67WW08-012314	L14011242-01	TC01242014.068	01/25/14 15:56	01

Report Name: BLANK_SUMMARY
PDF File ID: 3336535
Report generated 01/29/2014 10:15

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14011242 Prep Date: 01/25/14 00:09 Sample ID: WG460779-01
Instrument ID: TOC-VWP Run Date: 01/25/14 00:09 Prep Method: 415.1
File ID: TC01242014.024 Analyst: DCM Method: 415.1
Workgroup (AAB#): WG460779 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-09-JUL-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3336536
29-JAN-2014 10:15

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14011242 Analyst: DCM Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG460779 Units: mg/L
QC Key: DOD4 Lot #: STD60155

Sample ID: WG460779-02 LCS File ID: TC01242014.025 Run Date: 01/25/2014 00:21
Sample ID: WG460779-03 LCS2 File ID: TC01242014.028 Run Date: 01/25/2014 00:55

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	26.3	105	25.0	25.5	102	2.86	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3336537
Report generated: 01/29/2014 10:15

2.2.4.3 Raw Data

WG437280 00735605

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L

see below

MS (TOC): _____

Calibration Curve Date: _____

Reagent: _____

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 15

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full

☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate

☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC curve		27	Std 58866		52		
3	TC ICV		28			53	see SOP	
4	TIC ICV		29	TIC Curve		54	for curve	
5			30	Std 58877		55	points	
6			31			56		
7			32			57		
8			33	TC ICV		58	7/9/13	
9			34	Std 57523		59	~~see~~ 5/200 (1000)	
10			35			60	= 25mg/L	
11			36	TIC ICV		61		
12			37	Std 58878		62		
13			38			63		
14			39			64		
15	all points		40	analyzed	its	65	duplicate	
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: Brie Jenson Date/Time: 7/9/13/1400

DCN#96473

C:\TOC3201\Data\07-09-2013-BAF-TOC.t32

	Analy	Sample Name	Result	Status	Date / Time	Vial
1	TOC		TOC:2.208mg/L TC:26.74mg/L IC:24.53mg/L	Complete	7/9/2013 5:17:57 PM	1
2	TOC		TOC:23.65mg/L TC:23.65mg/L IC:0.00022mg/L	Complete	7/9/2013 5:29:56 PM	2
3	TOC		TOC:22.05mg/L TC:22.22mg/L IC:0.1735mg/L	Complete	7/9/2013 5:42:12 PM	3
4	TOC		!!Error!! TOC:24.67mg/L TC:24.54mg/L IC:-0.1326mg	Complete	7/9/2013 5:54:31 PM	4

7/11/2013 12:57:57 PM

1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-07-09-2013.2013_07_09_13_54_59.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	9.370	500uL	1	*******		7/9/2013 2:00:04 PM
2	10.94	500uL	1	*******		7/9/2013 2:03:54 PM

Acid Add. 0.000%
Mean Area 10.16

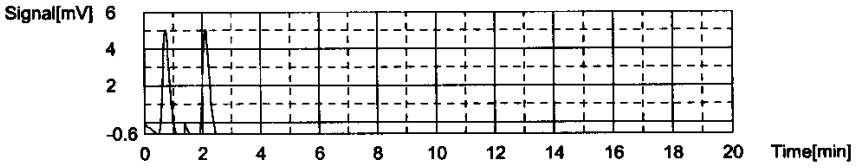

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	43.95	500uL	1	*******		7/9/2013 2:09:31 PM
2	40.43	500uL	1	*******		7/9/2013 2:13:23 PM

Acid Add. 0.000%
Mean Area 42.19

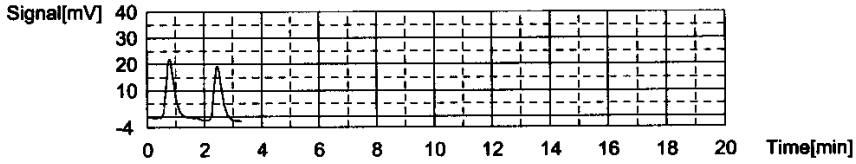

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	180.9	500uL	1	*******		7/9/2013 2:19:14 PM
2	179.0	500uL	1	*******		7/9/2013 2:23:23 PM

Acid Add. 0.000%
Mean Area 179.9

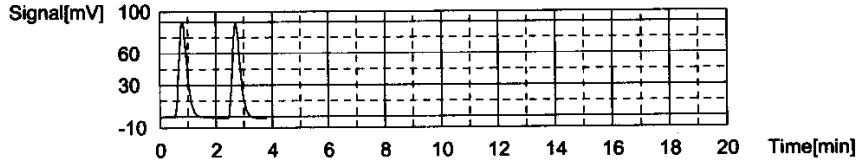

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	357.3	500uL	1	*******		7/9/2013 2:29:25 PM
2	358.1	500uL	1	*******		7/9/2013 2:33:50 PM

Acid Add. 0.000%
Mean Area 357.7

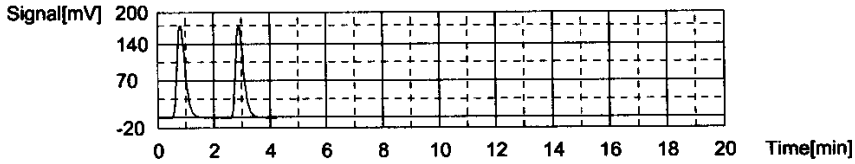

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	900.5	500uL	1	*******		7/9/2013 2:40:10 PM
2	968.7	500uL	1	*******		7/9/2013 2:44:47 PM

Acid Add. 0.000%
Mean Area 934.6

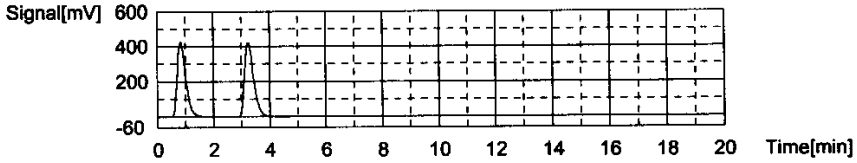

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1813	500uL	1	*******		7/9/2013 2:51:11 PM
2	1802	500uL	1	*******		7/9/2013 2:57:12 PM

Acid Add. 0.000%
Mean Area 1808

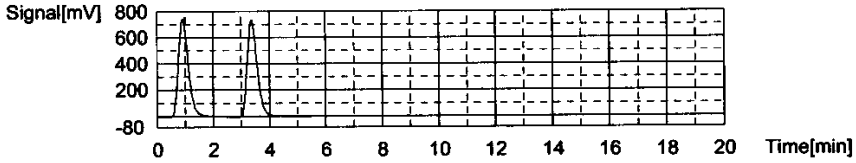

Slope: 36.20
Intercept 6.332
r^2 0.999673
Zero Shift No

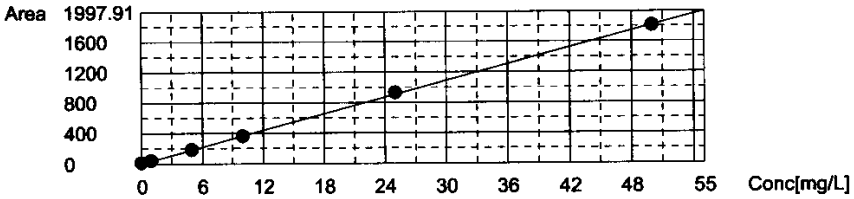

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-07-09-2013.2013_07_09_14_57_12.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	6.571	500uL	1	*******		7/9/2013 3:02:59 PM
2	6.428	500uL	1	*******		7/9/2013 3:07:04 PM

Acid Add. 10.00%
Mean Area 6.500

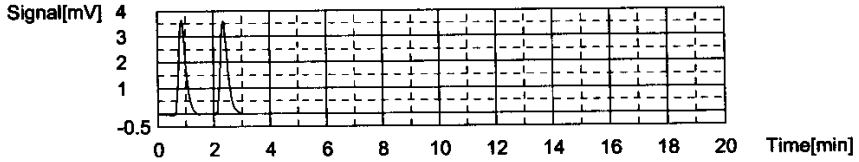

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	33.29	500uL	1	*******		7/9/2013 3:14:33 PM
2	33.59	500uL	1	*******		7/9/2013 3:18:50 PM

Acid Add. 10.00%
Mean Area 33.44

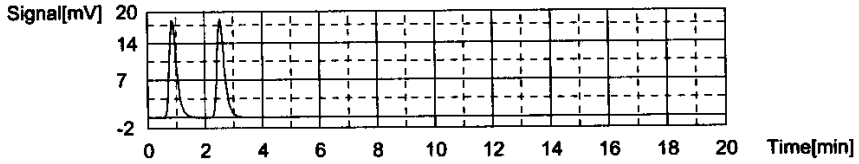

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	158.6	500uL	1	*******		7/9/2013 3:26:34 PM
2	158.4	500uL	1	*******		7/9/2013 3:31:09 PM

Acid Add. 10.00%
Mean Area 158.5

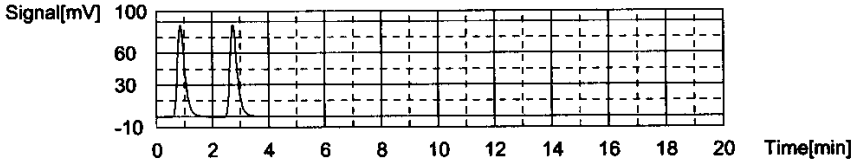

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	312.7	500uL	1	*******		7/9/2013 3:39:08 PM
2	313.0	500uL	1	*******		7/9/2013 3:44:01 PM

Acid Add. 10.00%
Mean Area 312.9

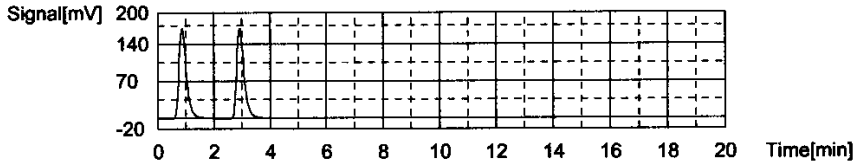

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	755.5	500uL	1	*******		7/9/2013 3:52:43 PM
2	755.7	500uL	1	*******		7/9/2013 3:58:05 PM

Acid Add. 10.00%
Mean Area 755.6

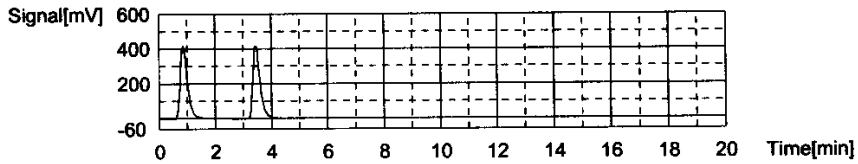

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1495	500uL	1	*******		7/9/2013 4:07:15 PM
2	1495	500uL	1	*******		7/9/2013 4:13:10 PM

Acid Add. 10.00%
Mean Area 1495

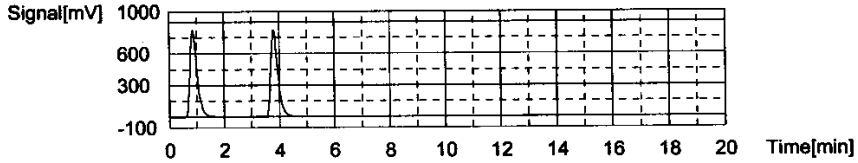

Slope: 29.78
Intercept 8.713
r^2 0.999949
Zero Shift No

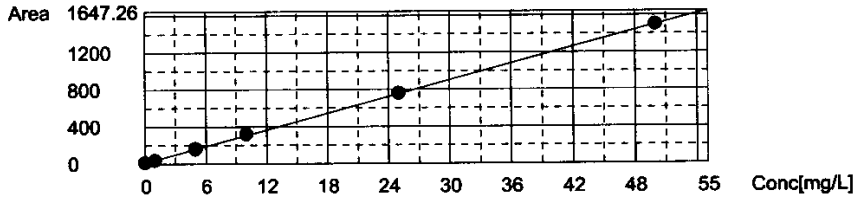

Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-07-09-2013.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:23.67mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	868.0	23.80mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	7/9/2013 4:21:01 PM
2	858.5	23.54mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	7/9/2013 4:25:50 PM

Mean Area 863.3
Mean Conc. 23.67mg/L

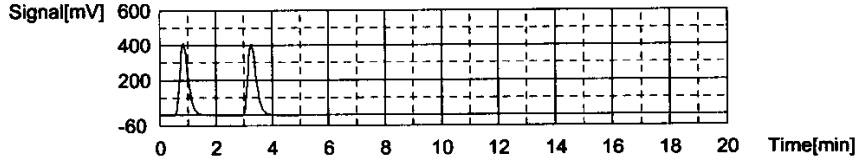

Sample

Sample Name:	TIC ICV
Sample ID:	Untitled
Origin:	TICCURVE-07-09-2013.cal
Status	Completed
Chk. Result	

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:25.62mg/L

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	769.8	25.56mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	7/9/2013 4:32:54 PM
2	773.1	25.67mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	7/9/2013 4:38:08 PM

Mean Area	771.5
Mean Conc.	25.62mg/L

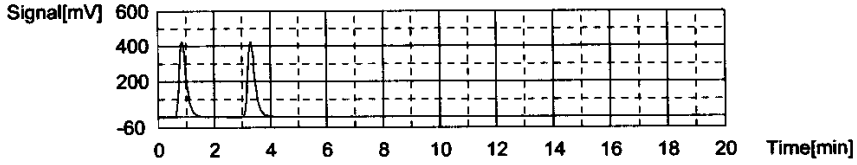

WORKGROUP: WG460777
460779

Total Organic Carbon

MAKE DAILY

CCV (TOC): std 58866 (5/200)(1000) = 25mg/L

LCS (TOC): std 60155 (5/200)(1000) = 25mg/L

CCV (TIC): std 62286 (5/200)(1000) = 25mg/L

MS (TOC): std 60155 0.4(1000)/40 = 10

Calibration Curve Date: 7/9/13

Reagent: RGT 29097, RGT 27691

☑ SM5310-C : Matrix 2 WG 460777

☑ EPA 415.1/9060A(mod): Matrix 1 WG 460779 SOP: K 4151 Rev. 15

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full
☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate
☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution
1	TIC	
2	CCV	
3	Blk	
4	LCS	
5	LCSDUP	
6	01-1102-01	
7	01-1148-01	
8	01-1222-01	
9	02	
10	03	
11	04	
12	01-1223-01	
13	02	
14	CCV	
15	CCB	
16	01-1224-01	
17	02	
18	01-1229-01	1/3 dun
19	01-1230-01	~~1/50~~ 1/10 1/14
20	01-1231-01	
21	01-1232-01	
22	DUP 01-1148-01	
23	MS 01-1148-01	
24	Blk	
25	LCS	

Position	Sample ID	Dilution
26	CCV	
27	CCB	
28	LCSDUP	
29	01-1023-02	1/3
30	01-1024-02	
31	01-1026-02	1/3
32	01-1028-02	1/10
*33	01-1203-01	1/50
34	01-1219-02	1/5
35	07	1/5
36	08	1/5
37	MS 09	1/5
38	~~MSD 10~~	CCV
39	CCB 1	
40	MSD 10	1/5
41	13	1/5
42	14	1/5
43	01-1242-01	1/3
44	01-1250-01	
45	02	
46	03	
47	04	
48	05	
49	06	
50	CCV	

Position	Sample ID	Dilution
51	CCB	
52	DUP 01-1250-06	
53	~~MS 01-1250-06~~	~~CCV~~
54	~~CCV~~	~~CCB~~
55	~~CCB~~	
56 53	01-1287-01	
57 54	CCV	
58 55	CCB	
59 ~~54~~	~~CCV~~	~~LMP~~ 1/25/14
60 ~~55~~	~~CCB~~	
61 56	CCV	
62 ~~57~~	CCB	
63 58	01-1229-01	
64 59	01-1023-02	
65 60	01-1028-02	1/25
66 61	01-1219-02	
67 62	07	
68 63	08	
69 64	09	MS
70 65	10	MSD
71 66	13	
72 67	14	
73 68	01-1242-01	
74 1	CCV	
75 0	CCB	

Analyst: David Merchle Date/Time: 1/24/14 1430

* Diluted for CL

DCN#100183

C:\TOC3201\Data\01-24-2014-DCM-TOC.t32

	Analys	Sample Name	Result	Status	Ac	Date / Time	Vial
1	TOC	TIC	TOC:3.513mg/L TC:32.26mg/L IC:28.74mg/L	Complete		1/24/2014 3:03:0	1
2	TOC	CCV	!!Error!! TOC:27.44mg/L TC:27.41mg/L IC:-0.03128mg/L	Complete		1/24/2014 3:15:4	2
3	TOC	WG460777-01 BLK	TOC:0.1071mg/L TC:0.1339mg/L IC:0.02678mg/L	Complete		1/24/2014 3:32:3	0
4	TOC	WG460777-02 LCS	!!Error!! TOC:25.18mg/L TC:25.12mg/L IC:-0.06495mg/L	Complete		1/24/2014 5:08:2	4
5	TOC	WG460777-03 LCSDU	!!Error!! TOC:24.93mg/L TC:24.85mg/L IC:-0.08324mg/L	Complete		1/24/2014 5:29:1	5
6	TOC	L14011102-01	TOC:7.089mg/L TC:20.37mg/L IC:13.28mg/L	Complete		1/24/2014 6:03:2	6
7	TOC	L14011148-01	TOC:8.285mg/L TC:22.84mg/L IC:14.55mg/L	Complete		1/24/2014 6:28:4	7
8	TOC	L14011222-01	TOC:2.674mg/L TC:27.54mg/L IC:24.86mg/L	Complete		1/24/2014 6:52:0	8
9	TOC	L14011222-02	TOC:2.137mg/L TC:26.38mg/L IC:24.25mg/L	Complete		1/24/2014 7:15:3	9
10	TOC	L14011222-03	TOC:0.6173mg/L TC:4.523mg/L IC:3.905mg/L	Complete		1/24/2014 7:36:2	10
11	TOC	L14011222-04	TOC:0.2450mg/L TC:1.365mg/L IC:1.120mg/L	Complete		1/24/2014 7:56:1	11
12	TOC	L14011223-01	TOC:4.867mg/L TC:6.776mg/L IC:1.908mg/L	Complete		1/24/2014 8:17:4	12
13	TOC	L14011223-02	TOC:1.217mg/L TC:1.752mg/L IC:0.5350mg/L	Complete		1/24/2014 8:37:4	13
14	TOC	CCV	!!Error!! TOC:22.94mg/L TC:22.91mg/L IC:-0.03464mg/L	Complete		1/24/2014 8:50:0	14
15	TOC	CCB	!!Error!! TOC:0.09542mg/L TC:0.07804mg/L IC:-0.01738mg/	Complete		1/24/2014 8:59:0	0
16	TOC	L14011224-01	TOC:8.027mg/L TC:11.38mg/L IC:3.356mg/L	Complete		1/24/2014 9:21:0	16
17	TOC	L14011224-02	TOC:5.430mg/L TC:15.35mg/L IC:9.922mg/L	Complete		1/24/2014 9:43:1	17
18	TOC		TOC:2.823mg/L TC:4.922mg/L IC:2.099mg/L	Complete		1/24/2014 10:05:	18
19	TOC	L14011230-01	TOC:9.373mg/L TC:15.53mg/L IC:6.157mg/L	Complete		1/24/2014 10:27:	19
20	TOC	L14011231-01	TOC:3.811mg/L TC:4.095mg/L IC:0.2837mg/L	Complete		1/24/2014 10:48:	20
21	TOC	L14011232-01	TOC:22.78mg/L TC:28.64mg/L IC:5.857mg/L	Complete		1/24/2014 11:13:	21
22	TOC	WG460777-05 DUP	TOC:7.246mg/L TC:13.98mg/L IC:6.738mg/L	Complete		1/24/2014 11:39:	22
23	TOC	WG460777-06 MS	TOC:17.49mg/L TC:23.48mg/L IC:5.993mg/L	Complete		1/25/2014 12:04:	23
24	TOC	WG460779-01 BLK	TOC:0.1090mg/L TC:0.1243mg/L IC:0.01526mg/L	Complete		1/25/2014 12:13:	0
25	TOC	WG460779-02 LCS	!!Error!! TOC:26.28mg/L TC:26.25mg/L IC:-0.02420mg/L	Complete		1/25/2014 12:26:	25
26	TOC	CCV	!!Error!! TOC:23.58mg/L TC:23.55mg/L IC:-0.03169mg/L	Complete		1/25/2014 12:38:	26
27	TOC	CCB	!!Error!! TOC:0.1016mg/L TC:0.09047mg/L IC:-0.01110mg/L	Complete		1/25/2014 12:47:	0
28	TOC	WG460779-03 LCSDU	!!Error!! TOC:25.54mg/L TC:25.50mg/L IC:-0.04085mg/L	Complete		1/25/2014 12:59:	28
29	TOC		TOC:1.284mg/L TC:1.426mg/L IC:0.1423mg/L	Complete		1/25/2014 1:11:4	29
30	TOC	L14011024-02	TOC:0.5352mg/L TC:0.5989mg/L IC:0.06369mg/L	Complete		1/25/2014 1:23:0	30
31	TOC	L14011026-02 (3)	!!Error!! TOC:36.25mg/L TC:36.23mg/L IC:-0.01973mg/L	Complete		1/25/2014 1:38:1	31
32	TOC		!!Error!! TOC:68.90mg/L TC:68.89mg/L IC:-0.00868mg/L	Complete		1/25/2014 1:53:0	32
33	TOC	L14011203-01 (50)	TOC:1.084mg/L TC:1.358mg/L IC:0.2743mg/L	Complete		1/25/2014 2:05:3	33
34	TOC	L14011219-02 (5)	TOC:1.760mg/L TC:5.974mg/L IC:4.214mg/L	Complete		1/25/2014 2:18:0	34
35	TOC	L14011219-07 (5)	TOC:1.271mg/L TC:5.626mg/L IC:4.355mg/L	Complete		1/25/2014 2:30:1	35
36	TOC	L14011219-08 (5)	TOC:1.108mg/L TC:4.168mg/L IC:3.059mg/L	Complete		1/25/2014 2:42:1	36
37	TOC	L14011219-09 (5) MS	TOC:3.740mg/L TC:6.430mg/L IC:2.690mg/L	Complete		1/25/2014 2:54:1	37
38	TOC	CCV	!!Error!! TOC:22.88mg/L TC:22.85mg/L IC:-0.03377mg/L	Complete		1/25/2014 3:06:3	38
39	TOC	CCB	!!Error!! TOC:0.09957mg/L TC:0.08978mg/L IC:-0.00979mg/	Complete		1/25/2014 3:15:3	0
40	TOC	L14011219-10 (5) MSD	TOC:2.993mg/L TC:5.267mg/L IC:2.274mg/L	Complete		1/25/2014 3:27:3	40
41	TOC		TOC:0.7783mg/L TC:2.246mg/L IC:1.468mg/L	Complete		1/25/2014 3:39:2	41
42	TOC	L14011219-14 (5)	TOC:4.840mg/L TC:6.356mg/L IC:1.516mg/L	Complete		1/25/2014 3:51:5	42
43	TOC		TOC:1.705mg/L TC:5.640mg/L IC:3.936mg/L	Complete		1/25/2014 4:04:3	43
44	TOC	L14011250-01	TOC:1.138mg/L TC:4.590mg/L IC:3.452mg/L	Complete		1/25/2014 4:16:5	44
45	TOC	L14011250-02	TOC:0.5925mg/L TC:2.969mg/L IC:2.376mg/L	Complete		1/25/2014 4:28:4	45
46	TOC	L14011250-03	TOC:1.217mg/L TC:5.267mg/L IC:4.050mg/L	Complete		1/25/2014 4:41:0	46
47	TOC	L14011250-04	TOC:1.229mg/L TC:6.706mg/L IC:5.477mg/L	Complete		1/25/2014 4:53:2	47
48	TOC	L14011250-05	TOC:1.166mg/L TC:3.950mg/L IC:2.784mg/L	Complete		1/25/2014 5:05:2	48
49	TOC	L14011250-06	TOC:1.851mg/L TC:4.008mg/L IC:2.157mg/L	Complete		1/25/2014 5:17:2	49
50	TOC	CCV	!!Error!! TOC:22.90mg/L TC:22.86mg/L IC:-0.04032mg/L	Complete		1/25/2014 5:29:4	50
51	TOC	CCB	!!Error!! TOC:0.09299mg/L TC:0.07854mg/L IC:-0.01446mg/	Complete		1/25/2014 5:38:4	0
52	TOC	WG460779-0[illegible] DUP	TOC:1.869mg/L TC:4.226mg/L IC:2.357mg/L	Complete		1/25/2014 5:50:5	52
53	TOC	L14011287-01	TOC:5.725mg/L TC:9.066mg/L IC:3.341mg/L	Complete		1/25/2014 6:14:0	53
54	TOC	CCV	!!Error!! TOC:23.35mg/L TC:23.32mg/L IC:-0.03239mg/L	Complete		1/25/2014 6:26:2	54
55	TOC	CCB	!!Error!! TOC:0.09491mg/L TC:0.08147mg/L IC:-0.01345mg/	Complete		1/25/2014 6:35:3	0
56	TOC	CCV	!!Error!! TOC:22.91mg/L TC:22.77mg/L IC:-0.1380mg/L	Complete		1/25/2014 1:02:1	56
57	TOC	CCB	!!Error!! TOC:0.1455mg/L TC:0.1027mg/L IC:-0.04284mg/L	Complete		1/25/2014 1:11:1	0
58	TOC	L14011229-01	TOC:7.361mg/L TC:17.12mg/L IC:9.757mg/L	Complete		1/25/2014 1:36:2	58
59	TOC	~~L1401023-02~~	TOC:3.023mg/L TC:3.624mg/L IC:0.6007mg/L	Complete		1/25/2014 1:48:3	59
60	TOC	L14011028-02 (25)	!!Error!! TOC:25.40mg/L TC:25.33mg/L IC:-0.06608mg/L	Complete		1/25/2014 2:01:4	60
61	TOC		!!Error!! TOC:-13.44mg/L TC:85.55mg/L IC:98.98mg/L	Complete		1/25/2014 2:17:0	61
62	TOC		!!Error!! TOC:-13.58mg/L TC:79.97mg/L IC:93.54mg/L	Complete		1/25/2014 2:32:4	62
63	TOC		TOC:5.692mg/L TC:67.87mg/L IC:62.17mg/L	Complete		1/25/2014 2:48:0	63
64	TOC		TOC:15.88mg/L TC:55.35mg/L IC:39.47mg/L	Complete		1/25/2014 3:02:1	64
65	TOC		TOC:16.70mg/L TC:56.54mg/L IC:39.84mg/L	Complete		1/25/2014 3:16:3	65
66	TOC	L14011219-13	TOC:4.307mg/L TC:42.84mg/L IC:38.53mg/L	Complete		1/25/2014 3:31:0	66
67	TOC		TOC:28.05mg/L TC:74.77mg/L IC:46.73mg/L	Complete		1/25/2014 3:45:5	67

dcm 1/28/14

14011023-02

1/28/2014 9:09:53 AM

1/2

C:\TOC3201\Data\01-24-2014-DCM-TOC.t32

	Analys	Sample Name	Result	Status	Ac	Date / Time	Vial
68	TOC	L14011242-01	TOC:9.945mg/L TC:47.84mg/L IC:37.89mg/L	Complete		1/25/2014 4:02:0	68
69	TOC	CCV	TOC:22.29mg/L TC:22.37mg/L IC:0.08452mg/L	Complete		1/25/2014 4:14:1	1
70	TOC	CCB	!!Error!! TOC:0.1094mg/L TC:0.09879mg/L IC:-0.01063mg/L	Complete		1/25/2014 4:23:1	0

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.513mg/L TC:32.26mg/L IC:28.74mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1174	32.26mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 2:57:30 PM

Mean Area 1174
Mean Conc. 32.26mg/L

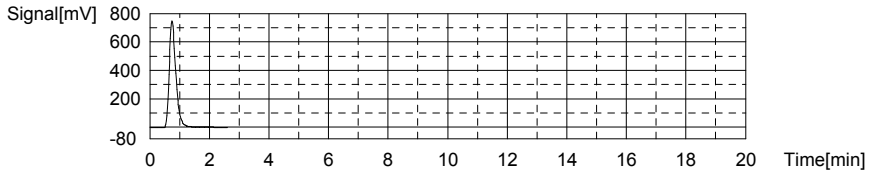

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	864.6	28.74mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 3:03:05 PM

Mean Area 864.6
Mean Conc. 28.74mg/L

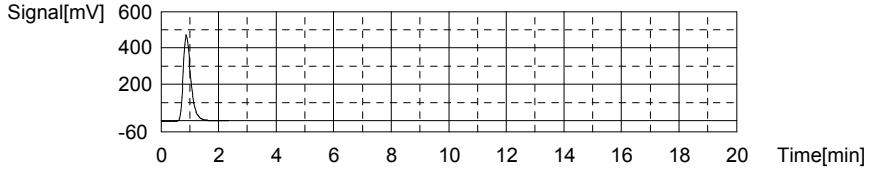

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:27.44mg/L TC:27.41mg/L IC:-0.03128mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	998.5	27.41mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 3:11:04 PM

Mean Area 998.5
Mean Conc. 27.41mg/L

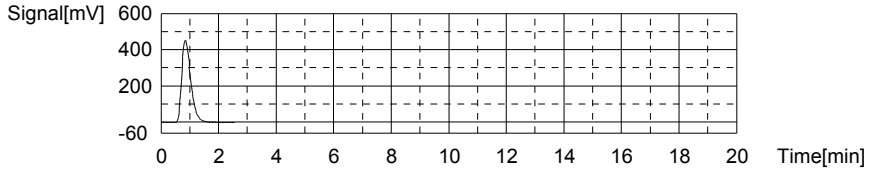

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.782	-0.03128mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 3:15:41 PM

Mean Area 7.782
Mean Conc. -0.03128mg/L

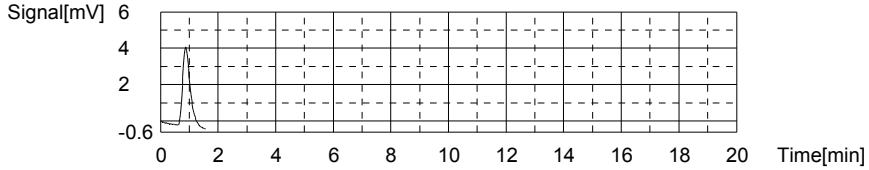

Sample

Sample Name: WG460777-01 BLK
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1071mg/L TC:0.1339mg/L IC:0.02678mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.47	0.1419mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 3:20:55 PM
2	10.89	0.1259mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 3:24:30 PM

Mean Area 11.18
Mean Conc. 0.1339mg/L

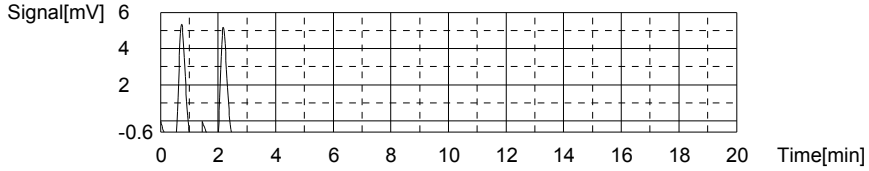

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.539	0.02772mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 3:28:33 PM
2	9.483	0.02584mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 3:32:34 PM

Mean Area 9.511
Mean Conc. 0.02678mg/L

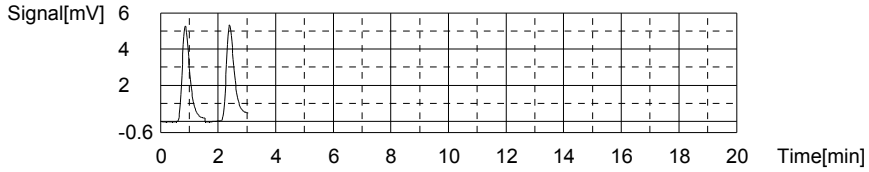

Sample

Sample Name: WG460777-02 LCS
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.18mg/L TC:25.12mg/L IC:-0.06495mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	923.2	25.33mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 4:54:19 PM
2	908.1	24.91mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 4:59:47 PM

Mean Area 915.7
Mean Conc. 25.12mg/L

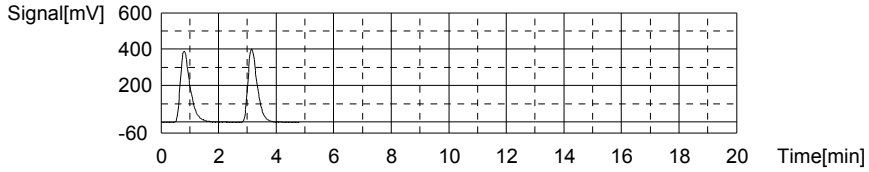

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.781	-0.06490mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 5:04:09 PM
2	6.778	-0.06500mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 5:08:20 PM

Mean Area 6.780
Mean Conc. -0.06495mg/L

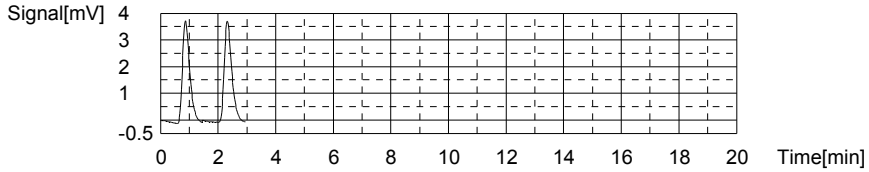

Sample

Sample Name: WG460777-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.93mg/L TC:24.85mg/L IC:-0.08324mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	912.8	25.04mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 5:15:58 PM
2	899.0	24.66mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 5:20:49 PM

Mean Area 905.9
Mean Conc. 24.85mg/L

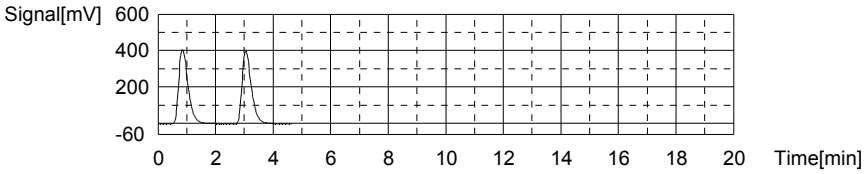

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.348	-0.07944mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 5:25:10 PM
2	6.122	-0.08703mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 5:29:19 PM

Mean Area 6.235
Mean Conc. -0.08324mg/L

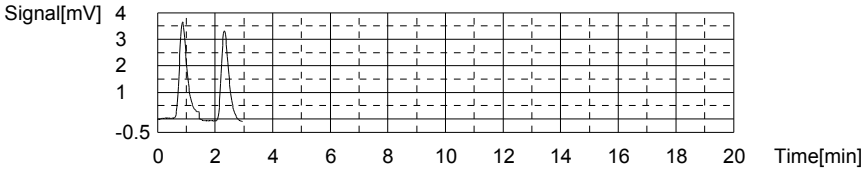

Sample

Sample Name: L14011102-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.089mg/L TC:20.37mg/L IC:13.28mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	716.2	19.61mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 5:46:52 PM
2	771.3	21.13mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 5:53:14 PM

Mean Area 743.8
Mean Conc. 20.37mg/L

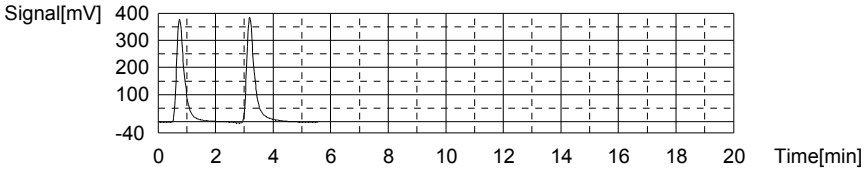

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	406.6	13.36mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 5:58:21 PM
2	401.8	13.20mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 6:03:25 PM

Mean Area 404.2
Mean Conc. 13.28mg/L

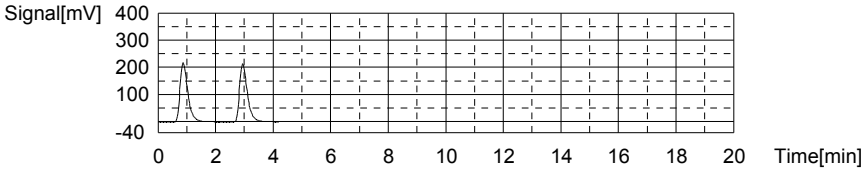

Sample

Sample Name: L14011148-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.285mg/L TC:22.84mg/L IC:14.55mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	818.7	22.44mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 6:12:29 PM
2	847.5	23.24mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 6:18:27 PM

Mean Area 833.1
Mean Conc. 22.84mg/L

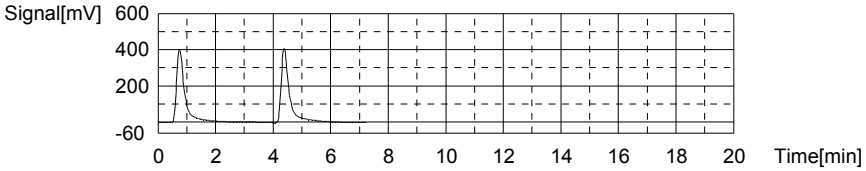

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	445.0	14.65mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 6:23:43 PM
2	439.2	14.46mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 6:28:47 PM

Mean Area 442.1
Mean Conc. 14.55mg/L

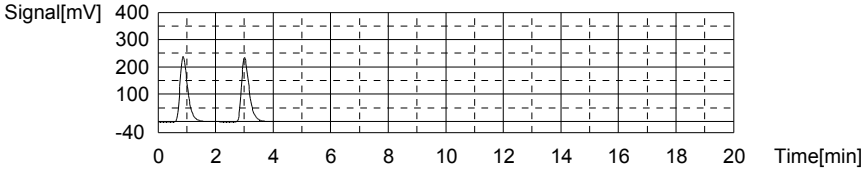

Sample

Sample Name: L14011222-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.674mg/L TC:27.54mg/L IC:24.86mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1007	27.64mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 6:36:44 PM
2	999.3	27.43mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 6:40:59 PM

Mean Area 1003
Mean Conc. 27.54mg/L

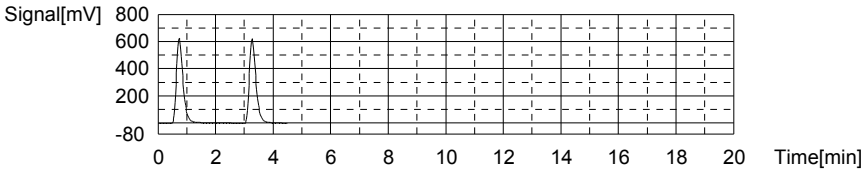

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	742.2	24.63mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 6:46:35 PM
2	755.9	25.09mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 6:52:03 PM

Mean Area 749.1
Mean Conc. 24.86mg/L

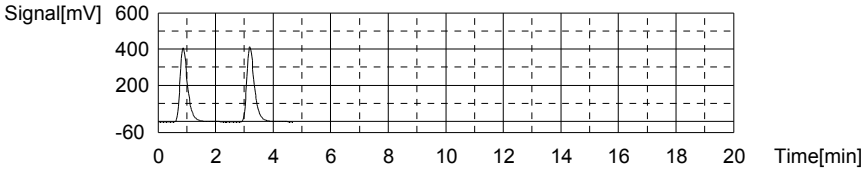

Sample

Sample Name: L14011222-02
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.137mg/L TC:26.38mg/L IC:24.25mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	946.3	25.97mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 7:00:12 PM
2	976.4	26.80mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 7:04:55 PM

Mean Area 961.4
Mean Conc. 26.38mg/L

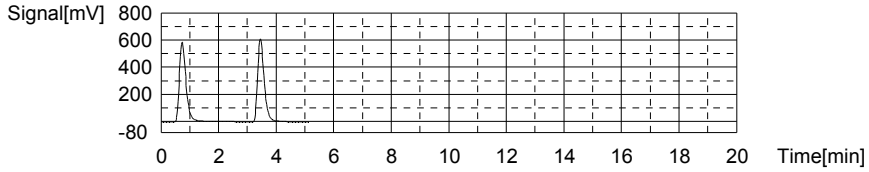

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	716.7	23.78mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 7:10:21 PM
2	744.6	24.71mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 7:15:36 PM

Mean Area 730.7
Mean Conc. 24.25mg/L

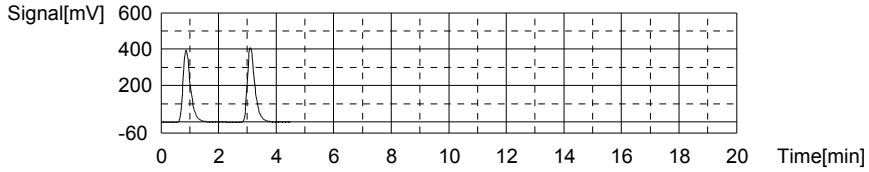

Sample

Sample Name: L14011222-03
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.6173mg/L TC:4.523mg/L IC:3.905mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	169.7	4.513mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 7:22:53 PM
2	170.4	4.532mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 7:26:46 PM

Mean Area 170.1
Mean Conc. 4.523mg/L

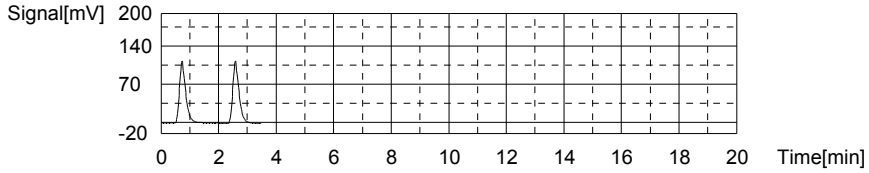

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	125.8	3.932mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 7:31:40 PM
2	124.2	3.879mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 7:36:22 PM

Mean Area 125.0
Mean Conc. 3.905mg/L

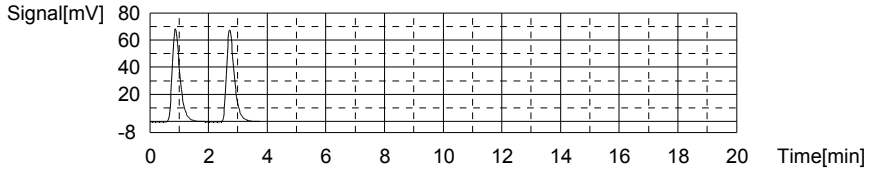

Sample

Sample Name: L14011222-04
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.2450mg/L TC:1.365mg/L IC:1.120mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	55.23	1.351mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 7:43:19 PM
2	56.24	1.379mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 7:47:09 PM

Mean Area 55.73
Mean Conc. 1.365mg/L

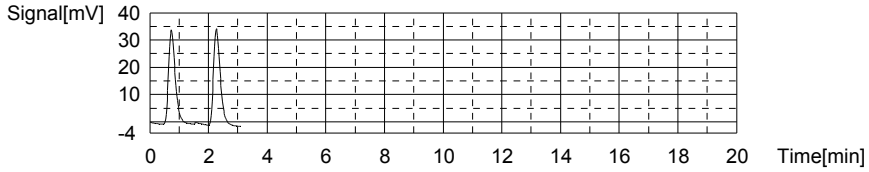

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	42.19	1.124mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 7:51:48 PM
2	41.92	1.115mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 7:56:18 PM

Mean Area 42.06
Mean Conc. 1.120mg/L

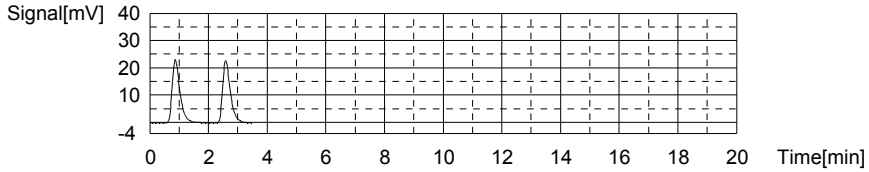

Sample

Sample Name: L14011223-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.867mg/L TC:6.776mg/L IC:1.908mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	251.0	6.759mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 8:03:55 PM
2	252.2	6.792mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 8:08:28 PM

Mean Area 251.6
Mean Conc. 6.776mg/L

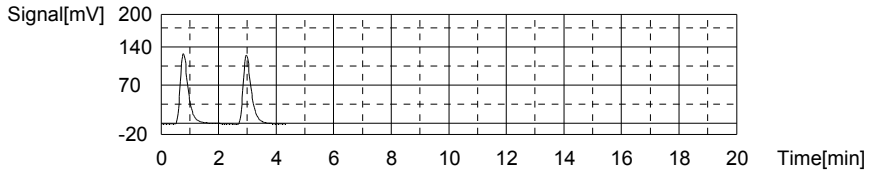

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	66.84	1.952mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 8:13:14 PM
2	64.22	1.864mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 8:17:43 PM

Mean Area 65.53
Mean Conc. 1.908mg/L

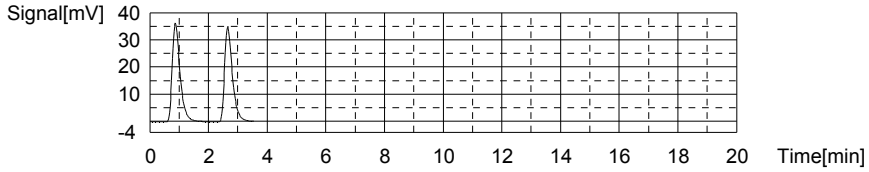

Sample

Sample Name: L14011223-02
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.217mg/L TC:1.752mg/L IC:0.5350mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	70.27	1.766mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 8:24:55 PM
2	69.21	1.737mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 8:28:56 PM

Mean Area 69.74
Mean Conc. 1.752mg/L

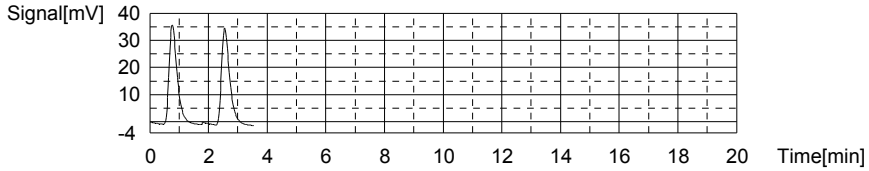

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	25.01	0.5473mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 8:33:29 PM
2	24.28	0.5228mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 8:37:49 PM

Mean Area 24.65
Mean Conc. 0.5350mg/L

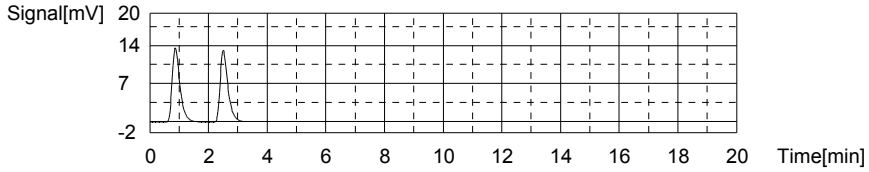

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:22.94mg/L TC:22.91mg/L IC:-0.03464mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	835.5	22.91mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 8:45:39 PM

Mean Area 835.5
Mean Conc. 22.91mg/L

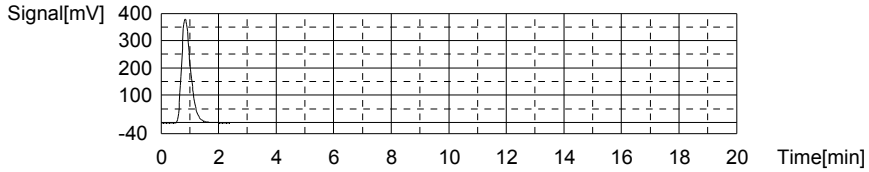

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.682	-0.03464mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 8:50:02 PM

Mean Area 7.682
Mean Conc. -0.03464mg/L

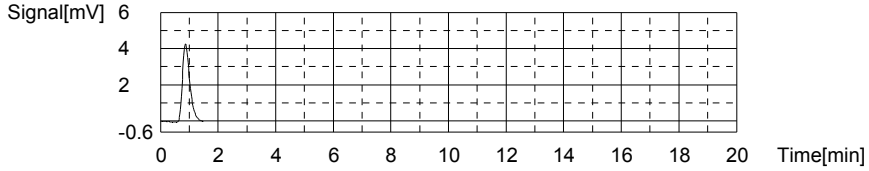

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.09542mg/L TC:0.07804mg/L IC:-0.01738mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.157	0.07804mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 8:55:05 PM

Mean Area 9.157
Mean Conc. 0.07804mg/L

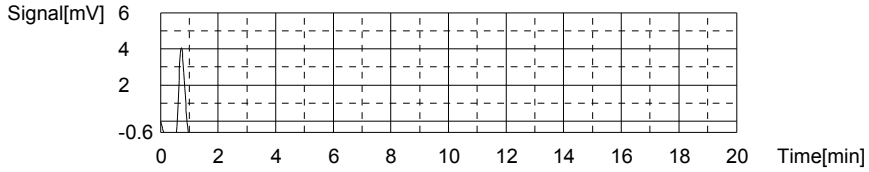

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.196	-0.01738mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 8:59:06 PM

Mean Area 8.196
Mean Conc. -0.01738mg/L

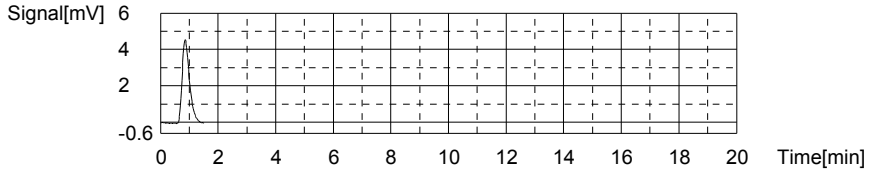

Sample

Sample Name: L14011224-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.027mg/L TC:11.38mg/L IC:3.356mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	410.1	11.15mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 9:06:51 PM
2	426.7	11.61mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 9:11:30 PM

Mean Area 418.4
Mean Conc. 11.38mg/L

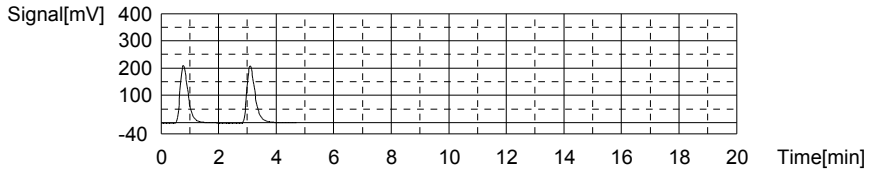

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	110.0	3.402mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 9:16:23 PM
2	107.3	3.311mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 9:21:00 PM

Mean Area 108.7
Mean Conc. 3.356mg/L

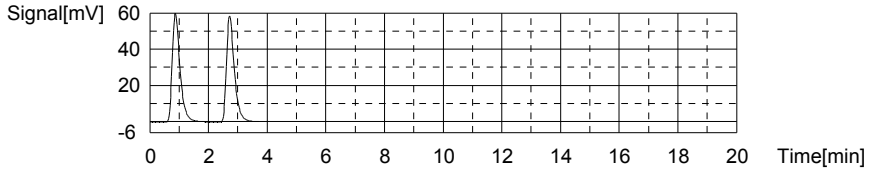

Sample

Sample Name: L14011224-02
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.430mg/L TC:15.35mg/L IC:9.922mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	552.5	15.09mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 9:28:43 PM
2	571.6	15.62mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 9:33:15 PM

Mean Area 562.0
Mean Conc. 15.35mg/L

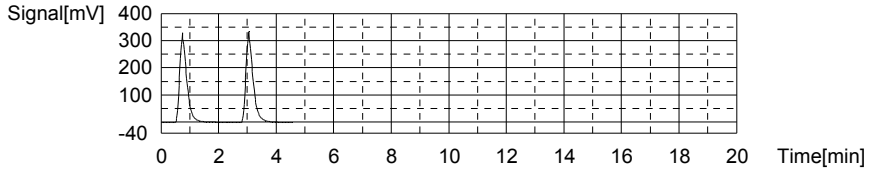

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	305.1	9.954mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 9:38:19 PM
2	303.2	9.890mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 9:43:12 PM

Mean Area 304.1
Mean Conc. 9.922mg/L

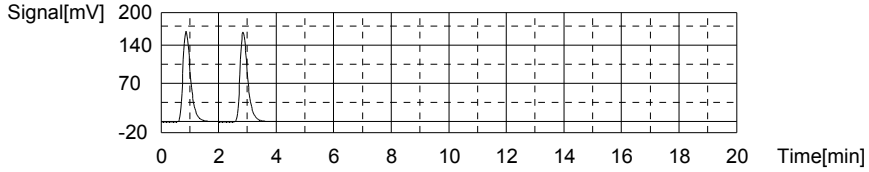

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.823mg/L TC:4.922mg/L IC:2.099mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	190.3	5.082mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 9:51:09 PM
2	178.7	4.762mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 9:55:59 PM

Mean Area 184.5
Mean Conc. 4.922mg/L

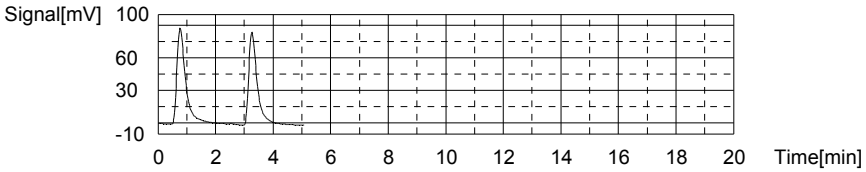

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	71.40	2.105mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 10:00:46 PM
2	71.03	2.093mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 10:05:18 PM

Mean Area 71.22
Mean Conc. 2.099mg/L

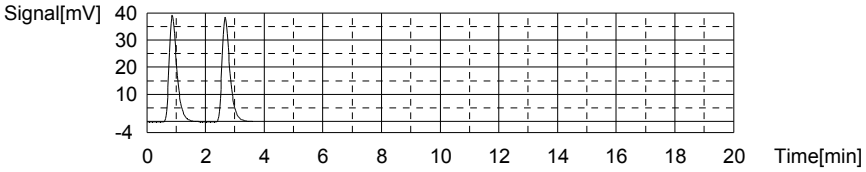

Sample

Sample Name: L14011230-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.373mg/L TC:15.53mg/L IC:6.157mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	568.2	15.52mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 10:13:19 PM
2	568.8	15.54mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 10:18:06 PM

Mean Area 568.5
Mean Conc. 15.53mg/L

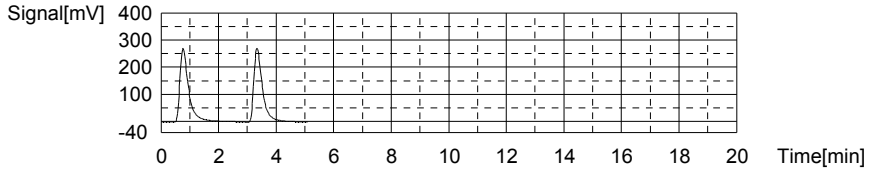

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	195.2	6.263mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 10:23:03 PM
2	188.9	6.051mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 10:27:49 PM

Mean Area 192.1
Mean Conc. 6.157mg/L

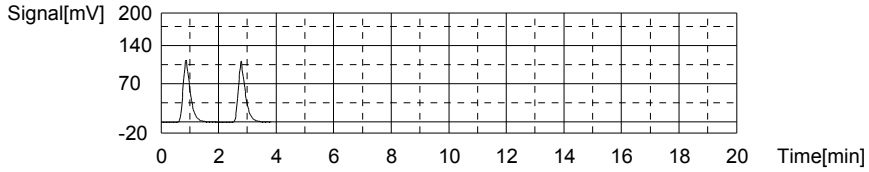

Sample

Sample Name: L14011231-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.811mg/L TC:4.095mg/L IC:0.2837mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	149.3	3.950mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 10:35:24 PM
2	159.8	4.240mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 10:39:49 PM

Mean Area 154.6
Mean Conc. 4.095mg/L

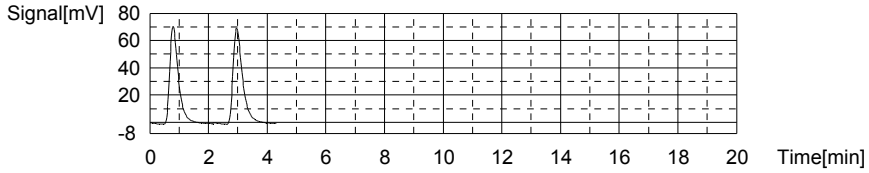

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.51	0.2954mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 10:44:20 PM
2	16.81	0.2719mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 10:48:39 PM

Mean Area 17.16
Mean Conc. 0.2837mg/L

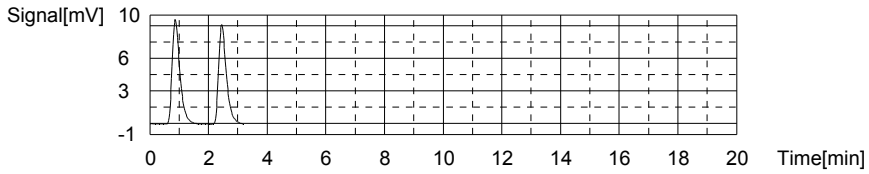

Sample

Sample Name: L14011232-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:22.78mg/L TC:28.64mg/L IC:5.857mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1042	28.61mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 10:57:52 PM
2	1044	28.67mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 11:03:37 PM

Mean Area 1043
Mean Conc. 28.64mg/L

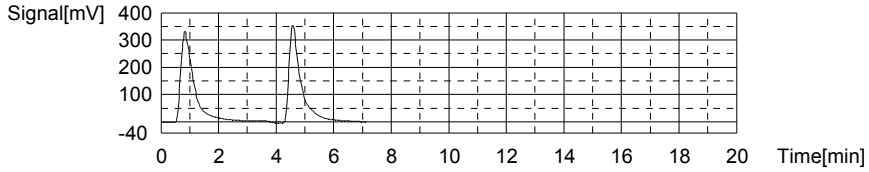

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	184.9	5.917mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 11:08:37 PM
2	181.3	5.796mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 11:13:16 PM

Mean Area 183.1
Mean Conc. 5.857mg/L

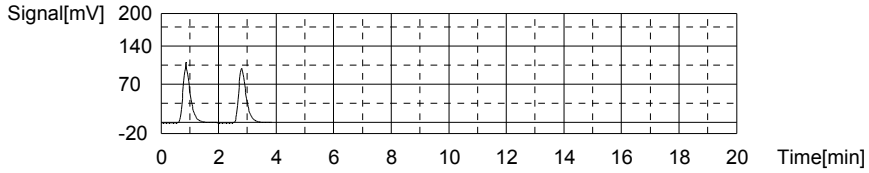

Sample

Sample Name: WG460777-05 DUP
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.246mg/L TC:13.98mg/L IC:6.738mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	513.3	14.01mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 11:22:27 PM
2	511.8	13.96mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 11:29:53 PM

Mean Area 512.6
Mean Conc. 13.98mg/L

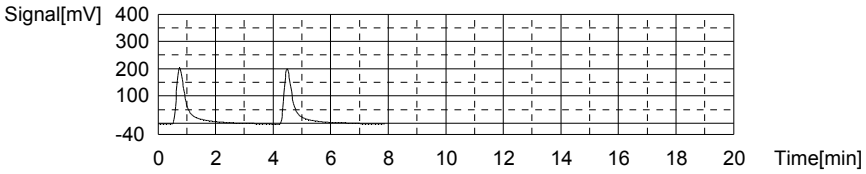

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	209.8	6.753mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 11:34:52 PM
2	208.9	6.723mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/24/2014 11:39:37 PM

Mean Area 209.4
Mean Conc. 6.738mg/L

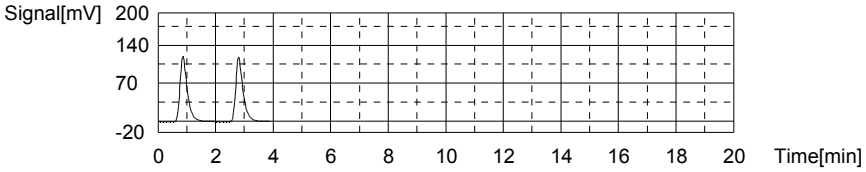

Sample

Sample Name: WG460777-06 MS
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:17.49mg/L TC:23.48mg/L IC:5.993mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	876.2	24.03mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 11:48:30 PM
2	836.6	22.94mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/24/2014 11:55:06 PM

Mean Area 856.4
Mean Conc. 23.48mg/L

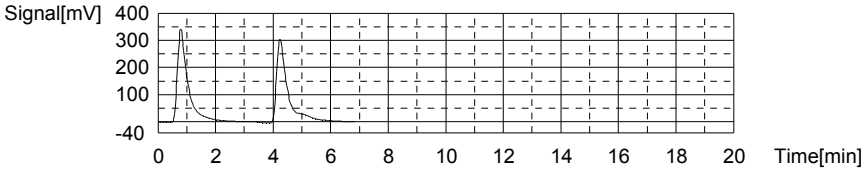

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	188.1	6.025mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 12:00:04 AM
2	186.2	5.961mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 12:04:49 AM

Mean Area 187.2
Mean Conc. 5.993mg/L

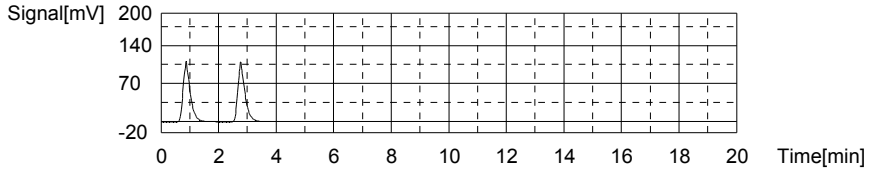

Sample

Sample Name: WG460779-01 BLK
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1090mg/L TC:0.1243mg/L IC:0.01526mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.83	0.1243mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 12:09:51 AM

Mean Area 10.83
Mean Conc. 0.1243mg/L

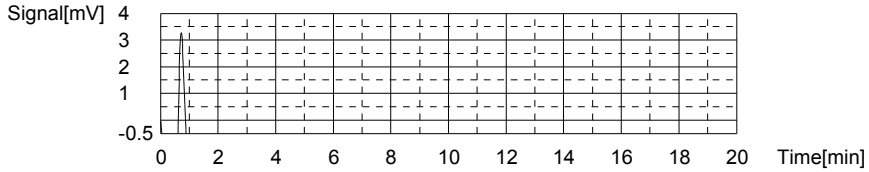

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.168	0.01526mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 12:13:51 AM

Mean Area 9.168
Mean Conc. 0.01526mg/L

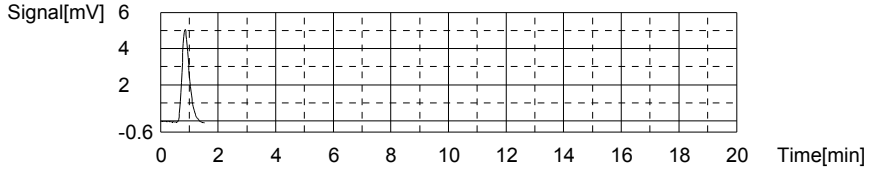

Sample

Sample Name: WG460779-02 LCS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:26.28mg/L TC:26.25mg/L IC:-0.02420mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	956.6	26.25mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 12:21:42 AM

Mean Area 956.6
Mean Conc. 26.25mg/L

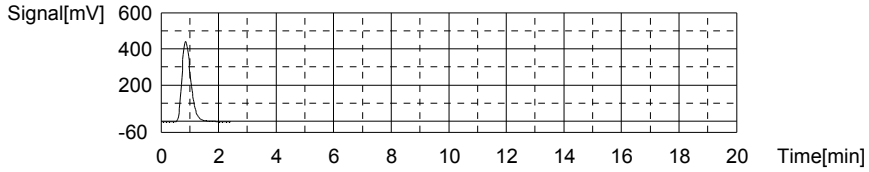

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.993	-0.02420mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 12:26:07 AM

Mean Area 7.993
Mean Conc. -0.02420mg/L

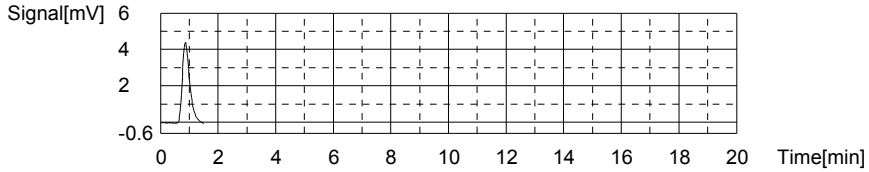

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.58mg/L TC:23.55mg/L IC:-0.03169mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	858.7	23.55mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 12:34:02 AM

Mean Area 858.7
Mean Conc. 23.55mg/L

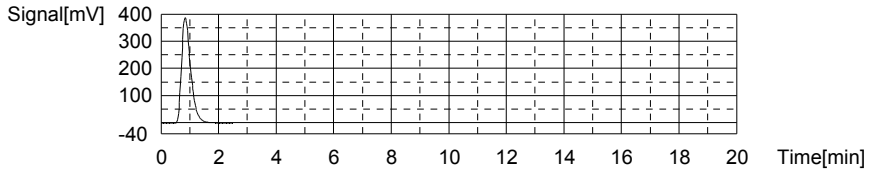

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.770	-0.03169mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 12:38:28 AM

Mean Area 7.770
Mean Conc. -0.03169mg/L

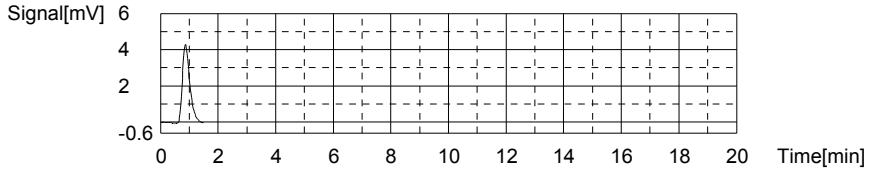

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1016mg/L TC:0.09047mg/L IC:-0.01110mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.607	0.09047mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 12:43:33 AM

Mean Area 9.607
Mean Conc. 0.09047mg/L

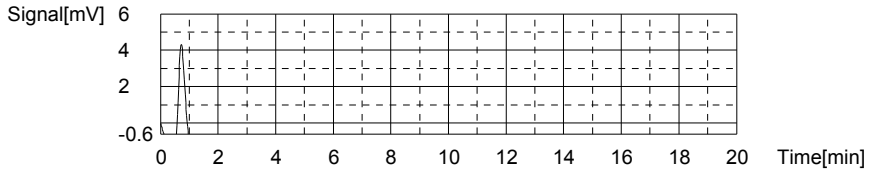

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.383	-0.01110mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 12:47:32 AM

Mean Area 8.383
Mean Conc. -0.01110mg/L

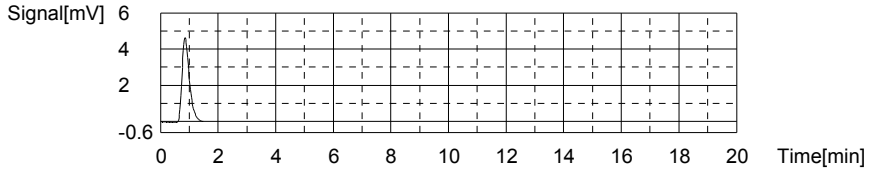

Sample

Sample Name: WG460779-03 LCSDUP
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.54mg/L TC:25.50mg/L IC:-0.04085mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	929.5	25.50mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 12:55:31 AM

Mean Area 929.5
Mean Conc. 25.50mg/L

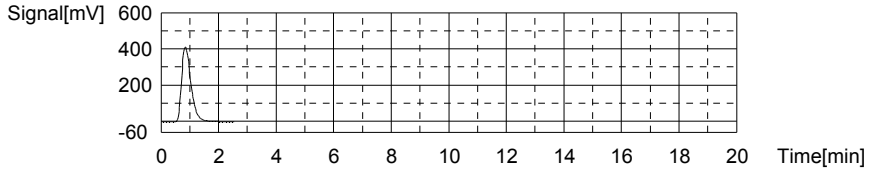

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.497	-0.04085mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 12:59:55 AM

Mean Area 7.497
Mean Conc. -0.04085mg/L

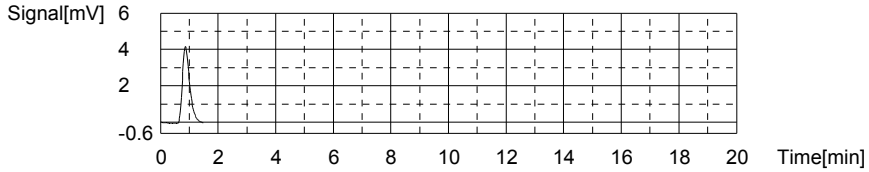

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.284mg/L TC:1.426mg/L IC:0.1423mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	57.95	1.426mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 1:07:13 AM

Mean Area 57.95
Mean Conc. 1.426mg/L

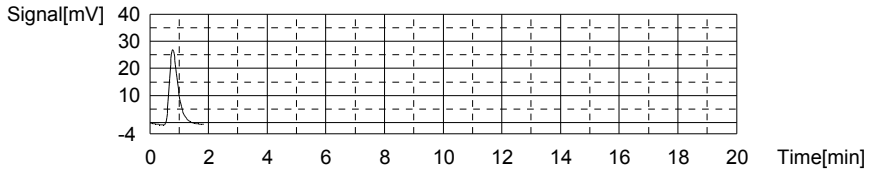

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.95	0.1423mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 1:11:40 AM

Mean Area 12.95
Mean Conc. 0.1423mg/L

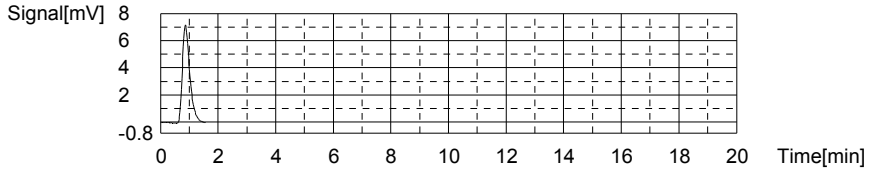

Sample

Sample Name: L14011024-02
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.5352mg/L TC:0.5989mg/L IC:0.06369mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	28.01	0.5989mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 1:18:40 AM

Mean Area 28.01
Mean Conc. 0.5989mg/L

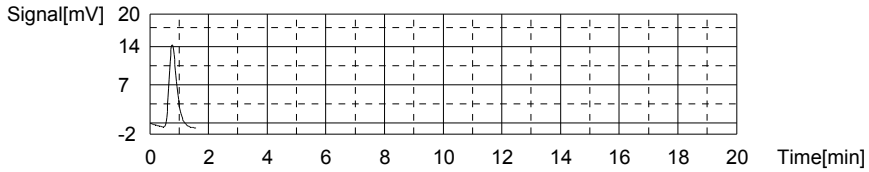

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.61	0.06369mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 1:23:09 AM

Mean Area 10.61
Mean Conc. 0.06369mg/L

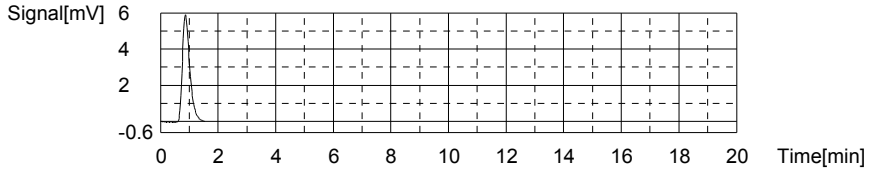

Sample

Sample Name: L14011026-02 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:36.25mg/L TC:36.23mg/L IC:-0.01973mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1318	36.23mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 1:33:18 AM

Mean Area 1318
Mean Conc. 36.23mg/L

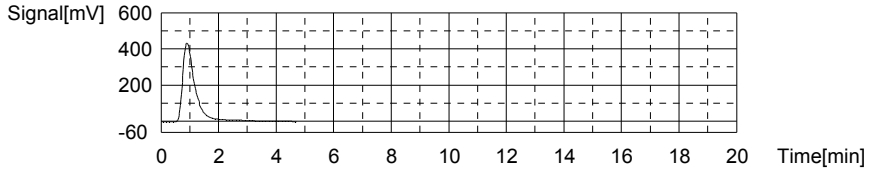

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.126	-0.01973mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 1:38:12 AM

Mean Area 8.126
Mean Conc. -0.01973mg/L

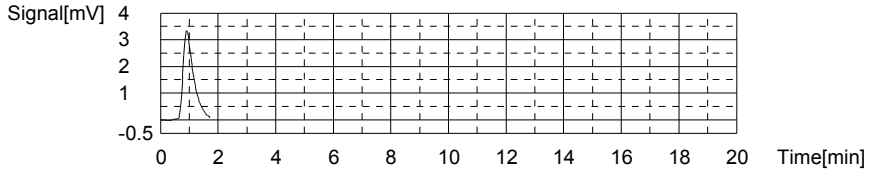

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:68.90mg/L TC:68.89mg/L IC:-0.00868mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2500	68.89mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 1:48:34 AM

Mean Area 2500
Mean Conc. 68.89mg/L

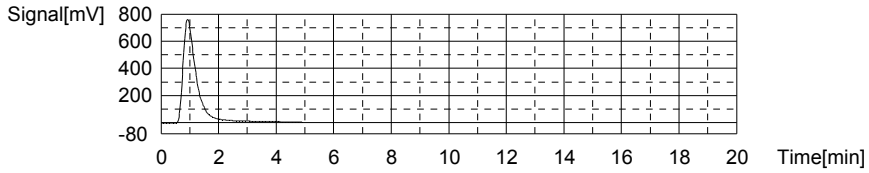

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.455	-0.00868mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 1:53:01 AM

Mean Area 8.455
Mean Conc. -0.00868mg/L

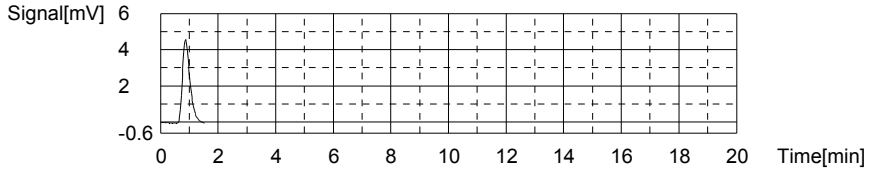

Sample

Sample Name: L14011203-01 (50)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.084mg/L TC:1.358mg/L IC:0.2743mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	55.50	1.358mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 2:01:05 AM

Mean Area 55.50
Mean Conc. 1.358mg/L

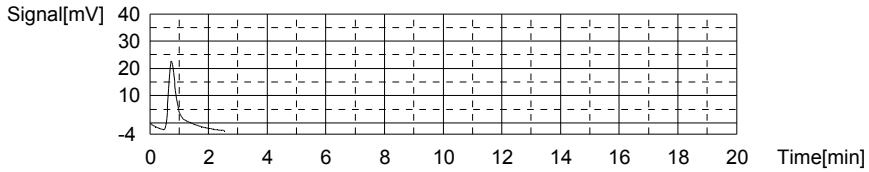

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	16.88	0.2743mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 2:05:34 AM

Mean Area 16.88
Mean Conc. 0.2743mg/L

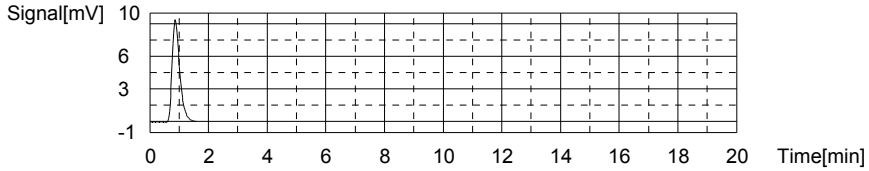

Sample

Sample Name: L14011219-02 (5)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.760mg/L TC:5.974mg/L IC:4.214mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	222.6	5.974mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 2:13:08 AM

Mean Area 222.6
Mean Conc. 5.974mg/L

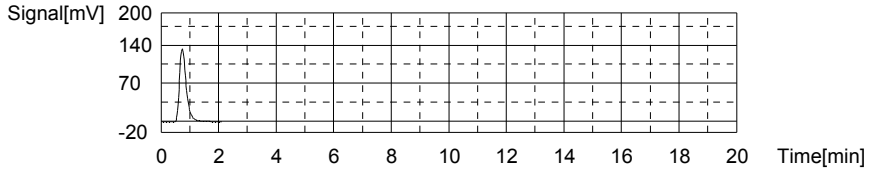

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	134.2	4.214mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 2:18:00 AM

Mean Area 134.2
Mean Conc. 4.214mg/L

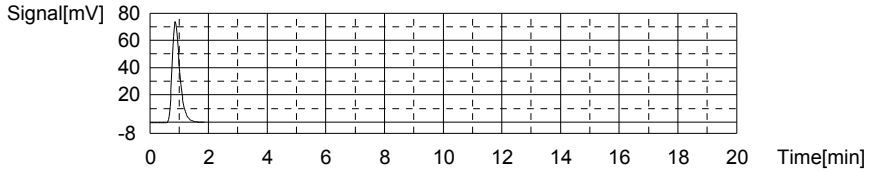

Sample

Sample Name: L14011219-07 (5)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.271mg/L TC:5.626mg/L IC:4.355mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	210.0	5.626mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 2:25:21 AM

Mean Area 210.0
Mean Conc. 5.626mg/L

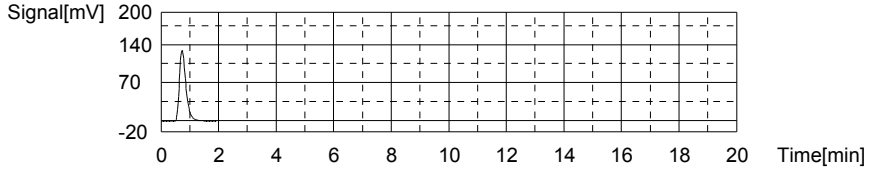

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	138.4	4.355mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 2:30:16 AM

Mean Area 138.4
Mean Conc. 4.355mg/L

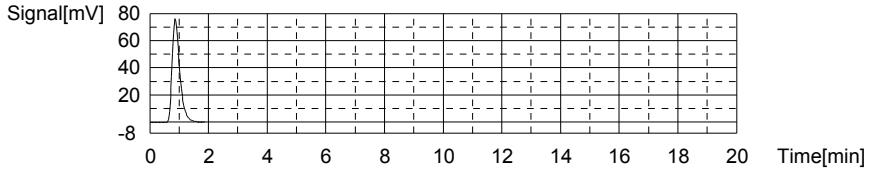

Sample

Sample Name: L14011219-08 (5)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.108mg/L TC:4.168mg/L IC:3.059mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	157.2	4.168mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 2:37:26 AM

Mean Area 157.2
Mean Conc. 4.168mg/L

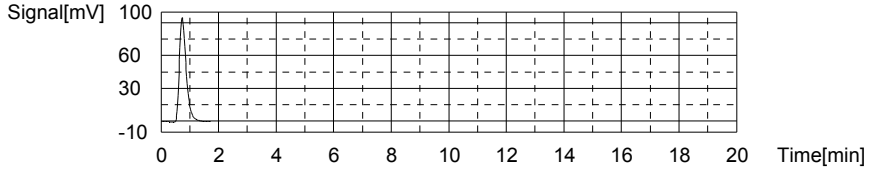

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	99.81	3.059mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 2:42:14 AM

Mean Area 99.81
Mean Conc. 3.059mg/L

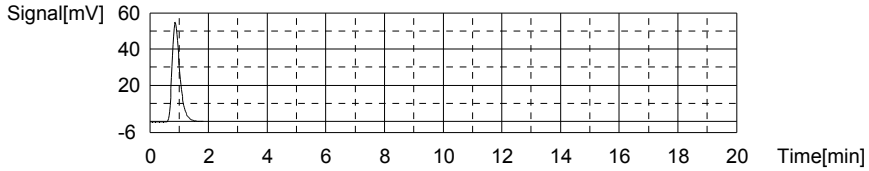

Sample

Sample Name: L14011219-09 (5) MS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.740mg/L TC:6.430mg/L IC:2.690mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	239.1	6.430mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 2:49:28 AM

Mean Area 239.1
Mean Conc. 6.430mg/L

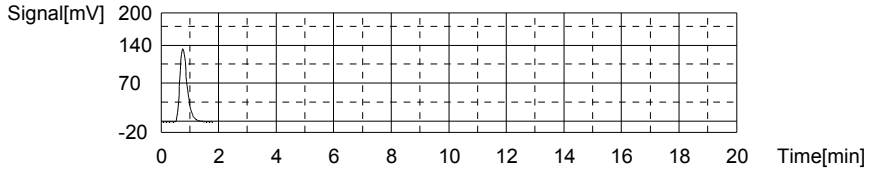

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	88.81	2.690mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 2:54:14 AM

Mean Area 88.81
Mean Conc. 2.690mg/L

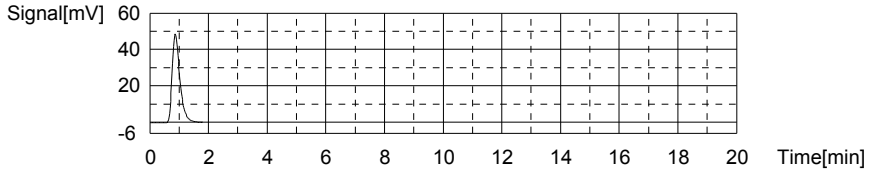

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:22.88mg/L TC:22.85mg/L IC:-0.03377mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	833.3	22.85mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 3:02:08 AM

Mean Area 833.3
Mean Conc. 22.85mg/L

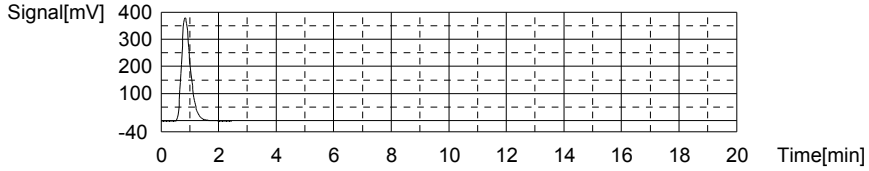

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.708	-0.03377mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 3:06:32 AM

Mean Area 7.708
Mean Conc. -0.03377mg/L

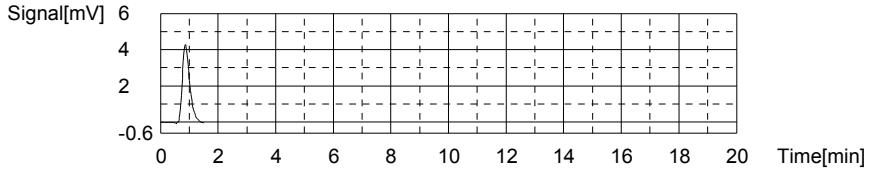

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.09957mg/L TC:0.08978mg/L IC:-0.00979mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.582	0.08978mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 3:11:36 AM

Mean Area 9.582
Mean Conc. 0.08978mg/L

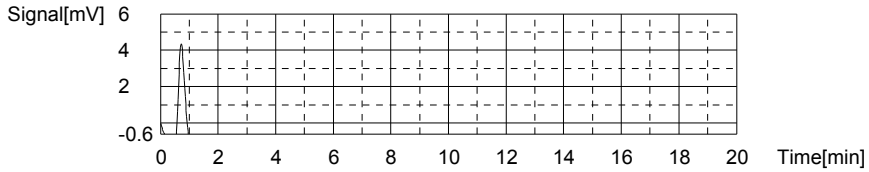

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.422	-0.00979mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 3:15:34 AM

Mean Area 8.422
Mean Conc. -0.00979mg/L

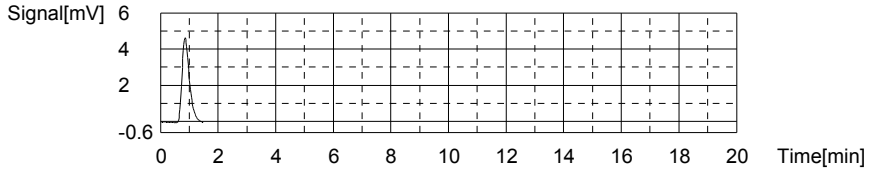

Sample

Sample Name: L14011219-10 (5) MSD
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.993mg/L TC:5.267mg/L IC:2.274mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	197.0	5.267mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 3:22:51 AM

Mean Area 197.0
Mean Conc. 5.267mg/L

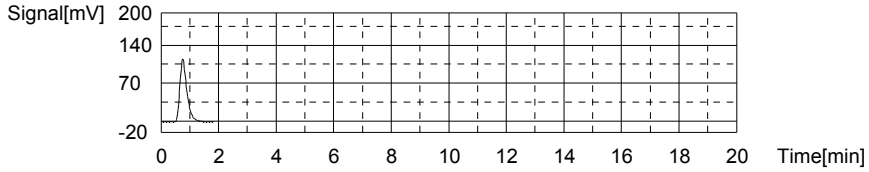

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	76.42	2.274mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 3:27:36 AM

Mean Area 76.42
Mean Conc. 2.274mg/L

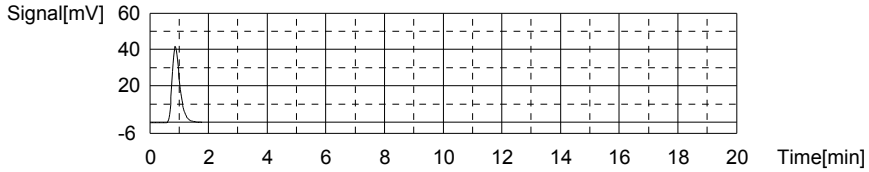

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.7783mg/L TC:2.246mg/L IC:1.468mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	87.64	2.246mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 3:34:48 AM

Mean Area 87.64
Mean Conc. 2.246mg/L

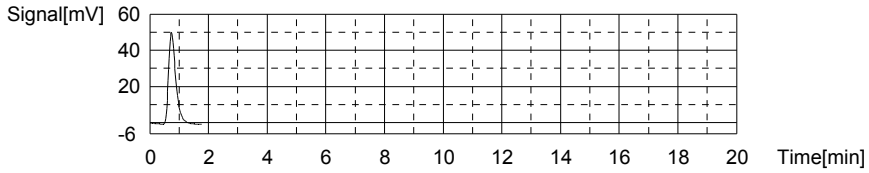

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	52.42	1.468mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 3:39:29 AM

Mean Area 52.42
Mean Conc. 1.468mg/L

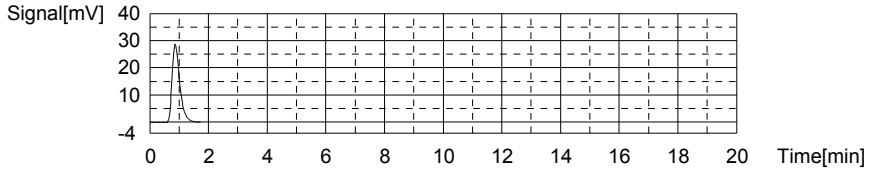

Sample

Sample Name: L14011219-14 (5)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.840mg/L TC:6.356mg/L IC:1.516mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	236.4	6.356mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 3:47:10 AM

Mean Area 236.4
Mean Conc. 6.356mg/L

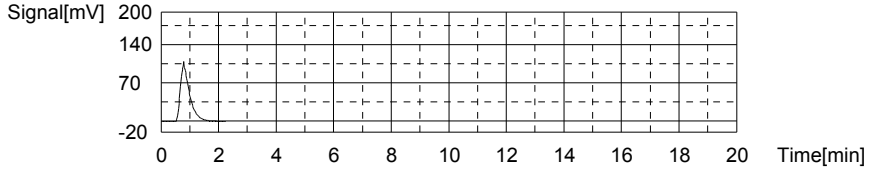

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	53.85	1.516mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 3:51:51 AM

Mean Area 53.85
Mean Conc. 1.516mg/L

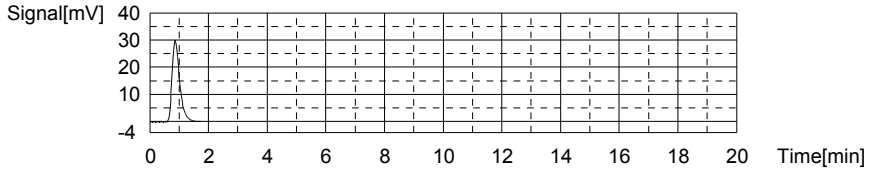

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.705mg/L TC:5.640mg/L IC:3.936mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	210.5	5.640mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 3:59:45 AM

Mean Area 210.5
Mean Conc. 5.640mg/L

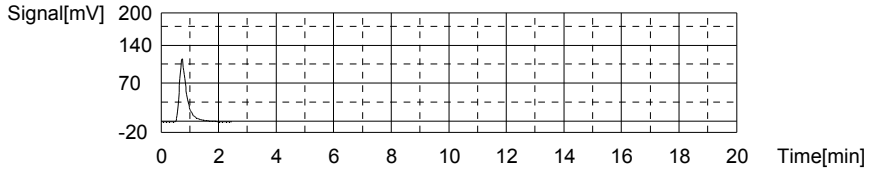

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	125.9	3.936mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 4:04:35 AM

Mean Area 125.9
Mean Conc. 3.936mg/L

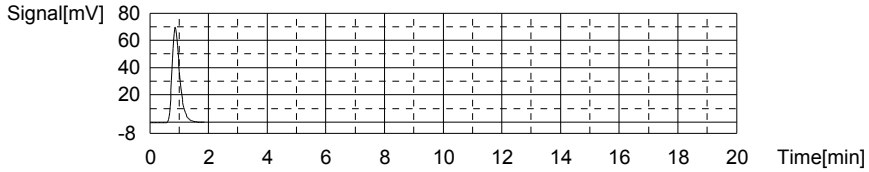

Sample

Sample Name: L14011250-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.138mg/L TC:4.590mg/L IC:3.452mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	172.5	4.590mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 4:12:04 AM

Mean Area 172.5
Mean Conc. 4.590mg/L

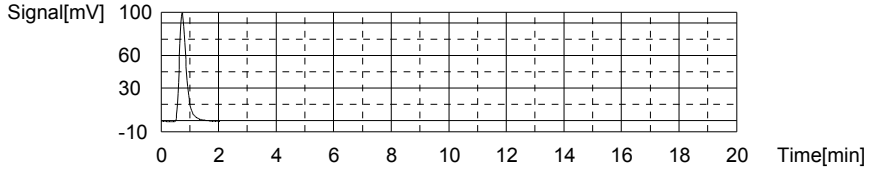

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	111.5	3.452mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 4:16:51 AM

Mean Area 111.5
Mean Conc. 3.452mg/L

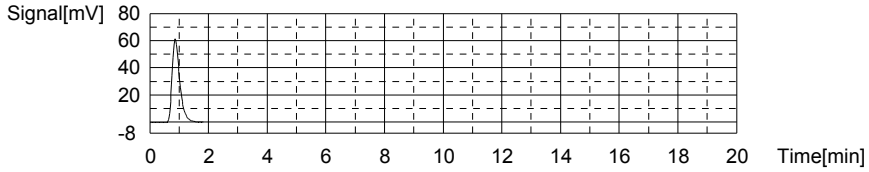

Sample

Sample Name: L14011250-02
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.5925mg/L TC:2.969mg/L IC:2.376mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	113.8	2.969mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 4:24:02 AM

Mean Area 113.8
Mean Conc. 2.969mg/L

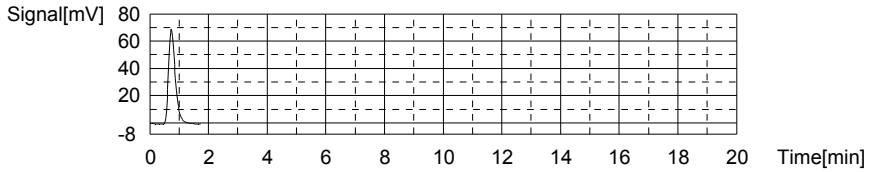

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	79.47	2.376mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 4:28:46 AM

Mean Area 79.47
Mean Conc. 2.376mg/L

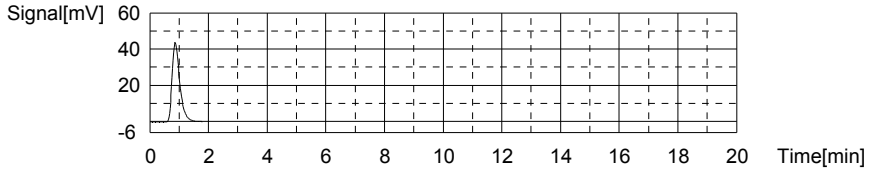

Sample

Sample Name: L14011250-03
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.217mg/L TC:5.267mg/L IC:4.050mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	197.0	5.267mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 4:36:10 AM

Mean Area 197.0
Mean Conc. 5.267mg/L

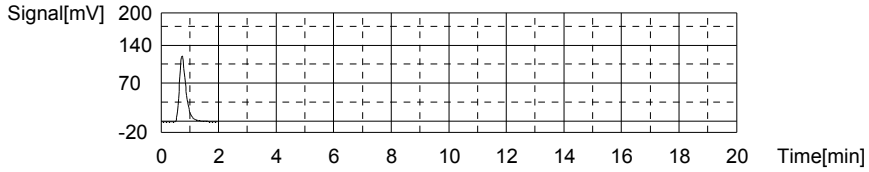

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	129.3	4.050mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 4:41:00 AM

Mean Area 129.3
Mean Conc. 4.050mg/L

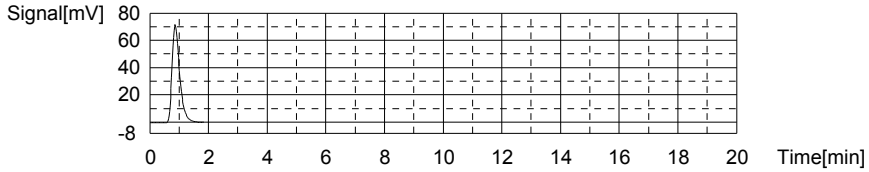

Sample

Sample Name: L14011250-04
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.229mg/L TC:6.706mg/L IC:5.477mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	249.1	6.706mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 4:48:31 AM

Mean Area 249.1
Mean Conc. 6.706mg/L

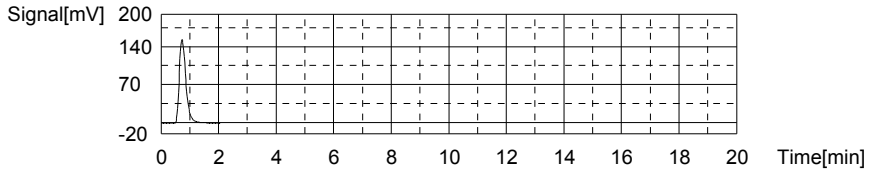

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	171.8	5.477mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 4:53:25 AM

Mean Area 171.8
Mean Conc. 5.477mg/L

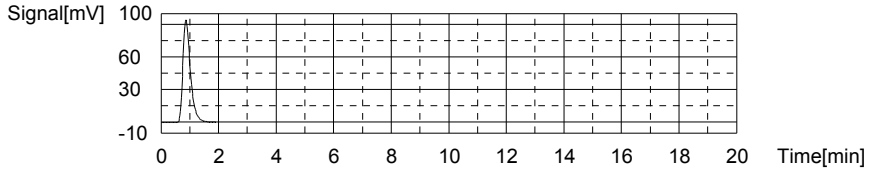

Sample

Sample Name: L14011250-05
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.166mg/L TC:3.950mg/L IC:2.784mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	149.3	3.950mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 5:00:38 AM

Mean Area 149.3
Mean Conc. 3.950mg/L

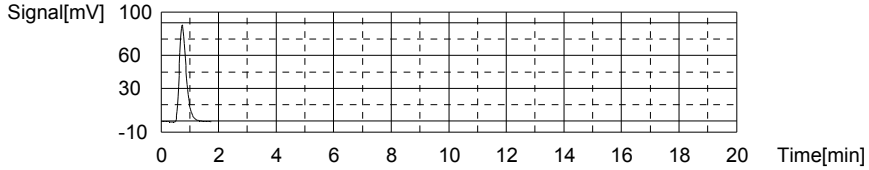

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	91.60	2.784mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 5:05:27 AM

Mean Area 91.60
Mean Conc. 2.784mg/L

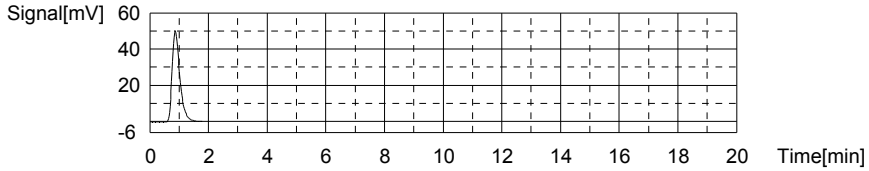

Sample

Sample Name: L14011250-06
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.851mg/L TC:4.008mg/L IC:2.157mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	151.4	4.008mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 5:12:42 AM

Mean Area 151.4
Mean Conc. 4.008mg/L

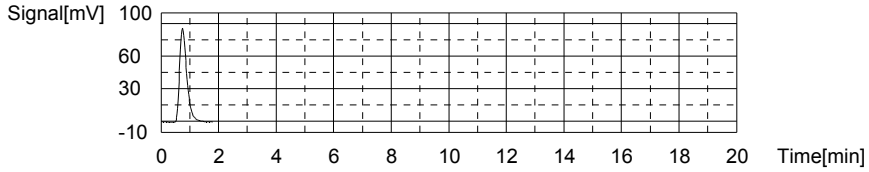

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	72.94	2.157mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 5:17:27 AM

Mean Area 72.94
Mean Conc. 2.157mg/L

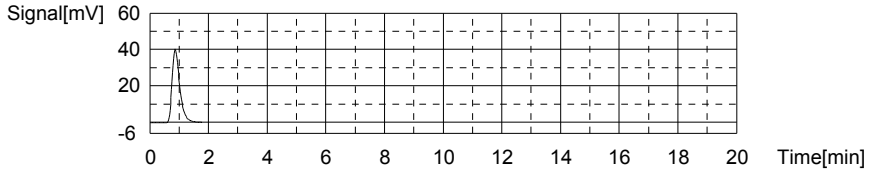

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:22.90mg/L TC:22.86mg/L IC:-0.04032mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	833.8	22.86mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 5:25:24 AM

Mean Area 833.8
Mean Conc. 22.86mg/L

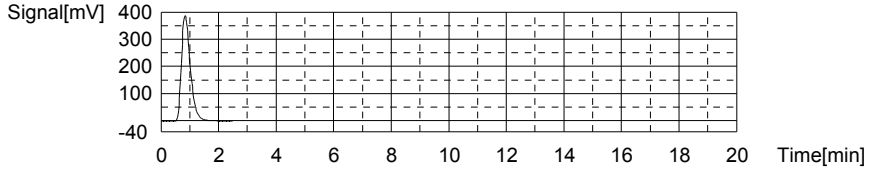

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.513	-0.04032mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 5:29:46 AM

Mean Area 7.513
Mean Conc. -0.04032mg/L

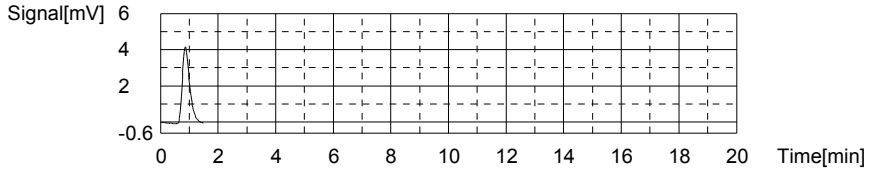

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.09299mg/L TC:0.07854mg/L IC:-0.01446mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.175	0.07854mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 5:34:50 AM

Mean Area 9.175
Mean Conc. 0.07854mg/L

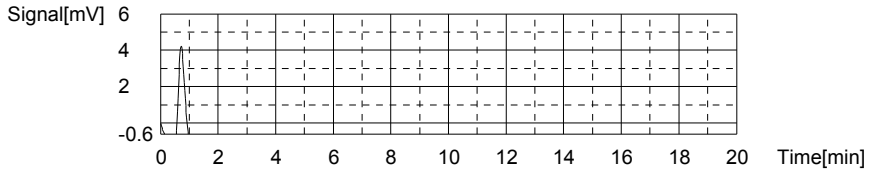

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.283	-0.01446mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 5:38:47 AM

Mean Area 8.283
Mean Conc. -0.01446mg/L

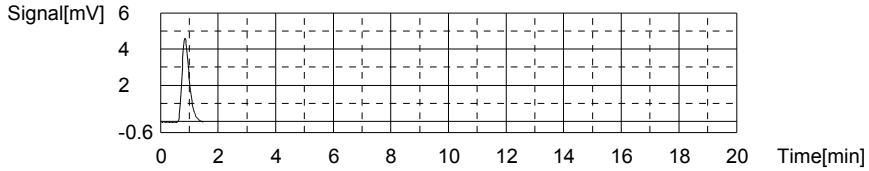

Sample

Sample Name: WG460779-05 (5) DUP
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.869mg/L TC:4.226mg/L IC:2.357mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	159.3	4.226mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 5:46:07 AM

Mean Area 159.3
Mean Conc. 4.226mg/L

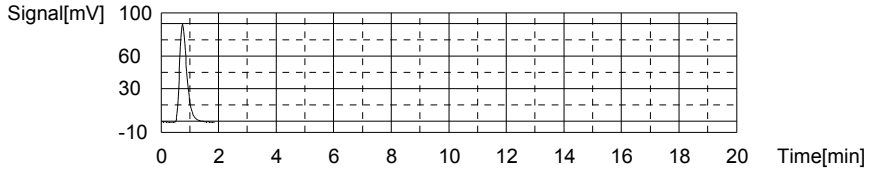

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	78.89	2.357mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 5:50:53 AM

Mean Area 78.89
Mean Conc. 2.357mg/L

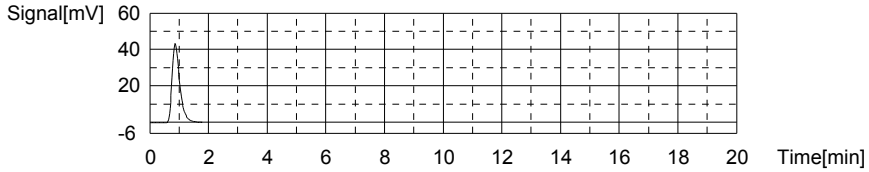

Sample

Sample Name: L14011287-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.725mg/L TC:9.066mg/L IC:3.341mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	328.7	8.905mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 5:59:15 AM
2	340.3	9.226mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 6:04:47 AM

Mean Area 334.5
Mean Conc. 9.066mg/L

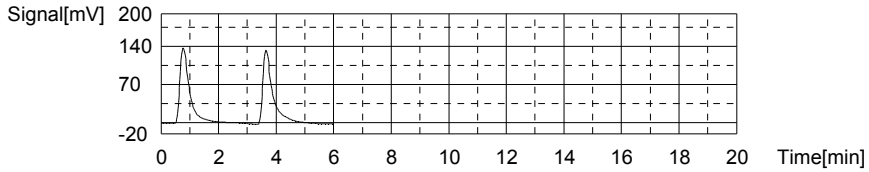

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	108.2	3.341mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 6:09:33 AM
2	108.2	3.341mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 6:14:09 AM

Mean Area 108.2
Mean Conc. 3.341mg/L

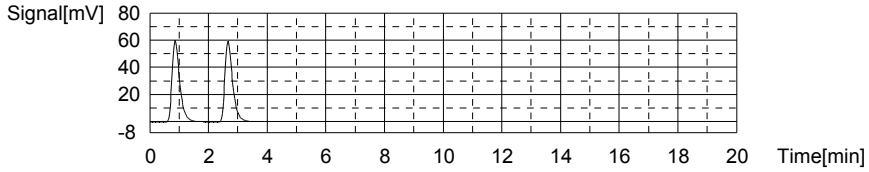

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.35mg/L TC:23.32mg/L IC:-0.03239mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	850.4	23.32mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 6:22:06 AM

Mean Area 850.4
Mean Conc. 23.32mg/L

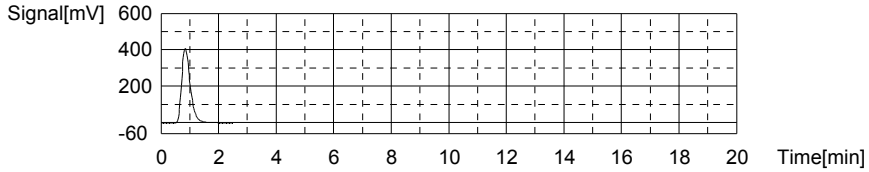

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.749	-0.03239mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 6:26:29 AM

Mean Area 7.749
Mean Conc. -0.03239mg/L

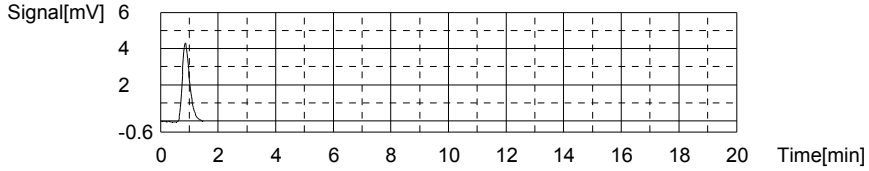

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.09491mg/L TC:0.08147mg/L IC:-0.01345mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.281	0.08147mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 6:31:33 AM

Mean Area 9.281
Mean Conc. 0.08147mg/L

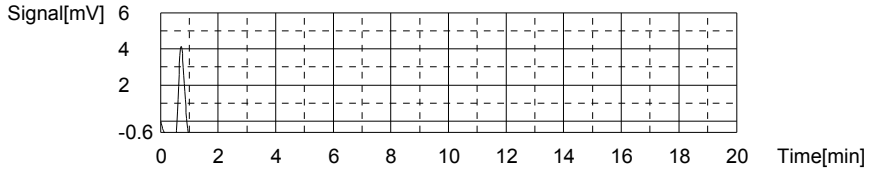

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.313	-0.01345mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 6:35:30 AM

Mean Area 8.313
Mean Conc. -0.01345mg/L

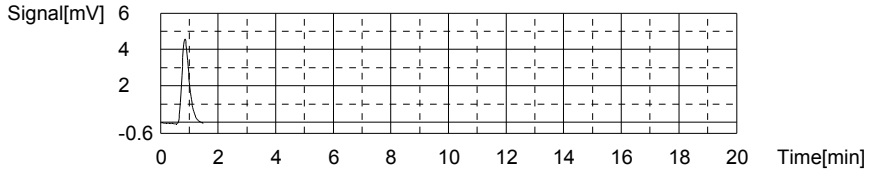

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:22.91mg/L TC:22.77mg/L IC:-0.1380mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	830.5	22.77mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 12:57:57 PM

Mean Area 830.5
Mean Conc. 22.77mg/L

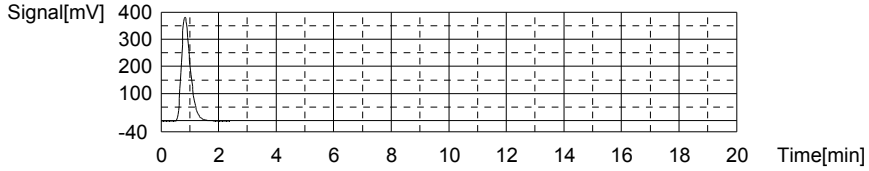

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.605	-0.1380mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 1:02:14 PM

Mean Area 4.605
Mean Conc. -0.1380mg/L

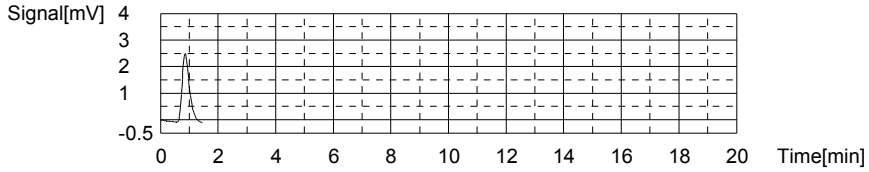

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1455mg/L TC:0.1027mg/L IC:-0.04284mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.05	0.1027mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 1:07:19 PM

Mean Area 10.05
Mean Conc. 0.1027mg/L

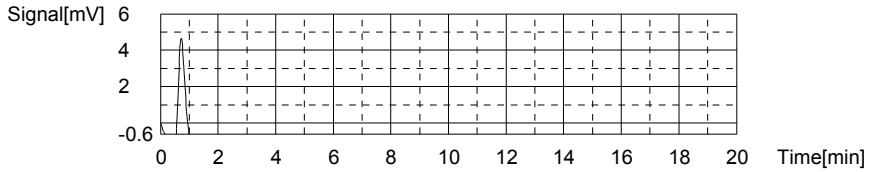

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.438	-0.04284mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 1:11:14 PM

Mean Area 7.438
Mean Conc. -0.04284mg/L

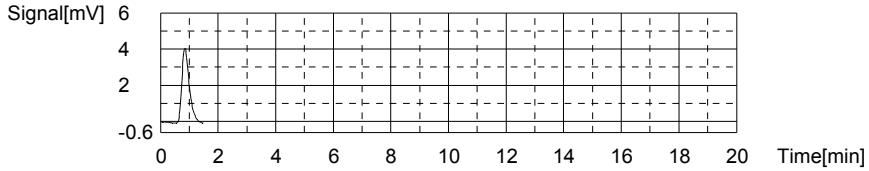

Sample

Sample Name: L14011229-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.361mg/L TC:17.12mg/L IC:9.757mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	636.3	17.40mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 1:20:07 PM
2	615.7	16.83mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 1:26:29 PM

Mean Area 626.0
Mean Conc. 17.12mg/L

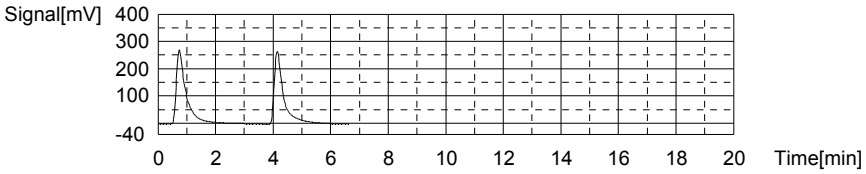

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	300.5	9.799mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 1:31:32 PM
2	298.0	9.715mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 1:36:22 PM

Mean Area 299.3
Mean Conc. 9.757mg/L

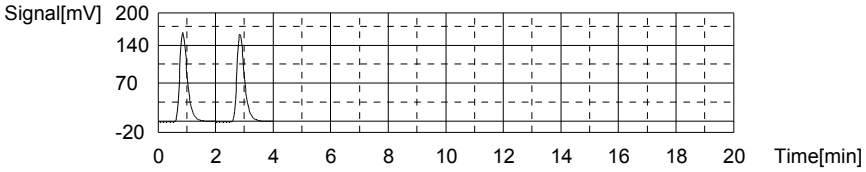

Sample

Sample Name: L1401023-02
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.023mg/L TC:3.624mg/L IC:0.6007mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	137.5	3.624mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 1:44:04 PM

Mean Area 137.5
Mean Conc. 3.624mg/L

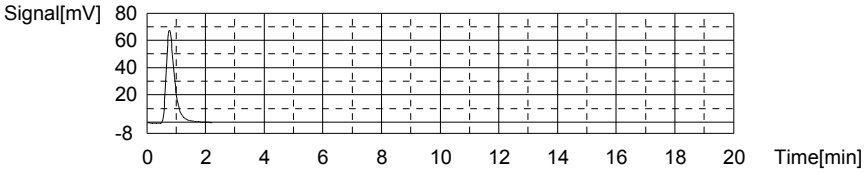

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	26.60	0.6007mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 1:48:33 PM

Mean Area 26.60
Mean Conc. 0.6007mg/L

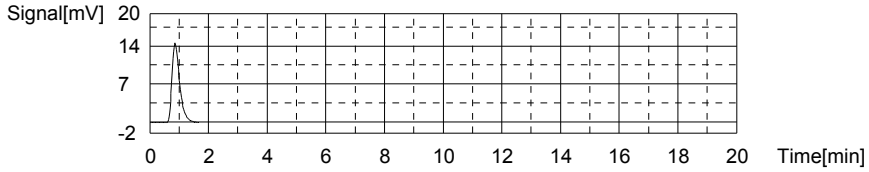

Sample

Sample Name: L14011028-02 (25)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.40mg/L TC:25.33mg/L IC:-0.06608mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	923.3	25.33mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 1:57:25 PM

Mean Area 923.3
Mean Conc. 25.33mg/L

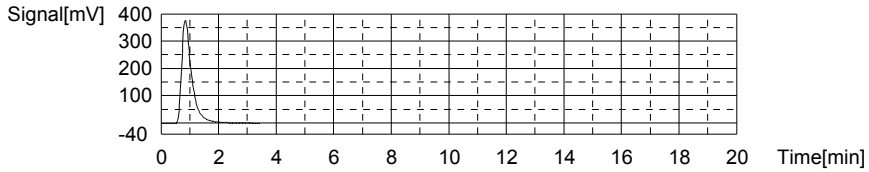

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.746	-0.06608mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 2:01:45 PM

Mean Area 6.746
Mean Conc. -0.06608mg/L

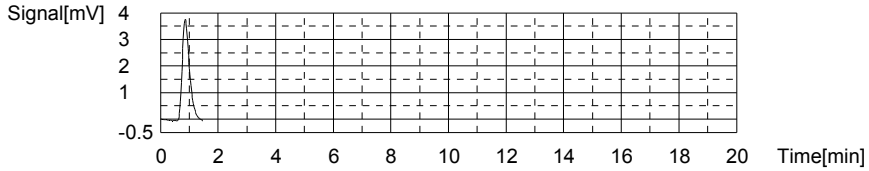

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-13.44mg/L TC:85.55mg/L IC:98.98mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3103	85.55mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 2:11:00 PM

Mean Area 3103
Mean Conc. 85.55mg/L

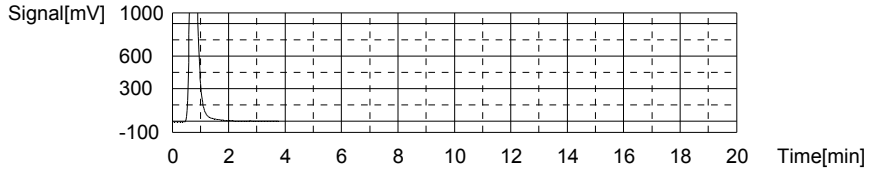

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2956	98.98mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 2:17:08 PM

Mean Area 2956
Mean Conc. 98.98mg/L

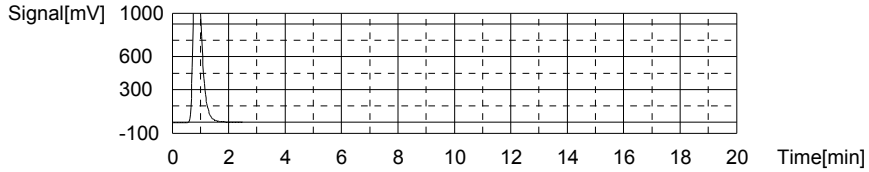

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-13.58mg/L TC:79.97mg/L IC:93.54mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2901	79.97mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 2:25:53 PM

Mean Area 2901
Mean Conc. 79.97mg/L

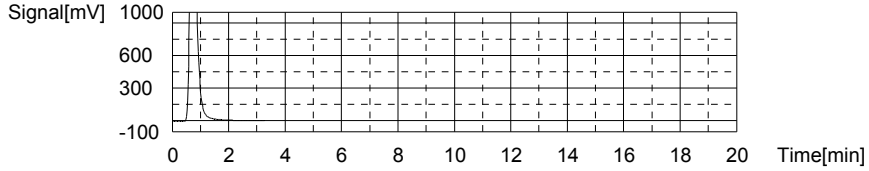

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2794	93.54mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 2:32:48 PM

Mean Area 2794
Mean Conc. 93.54mg/L

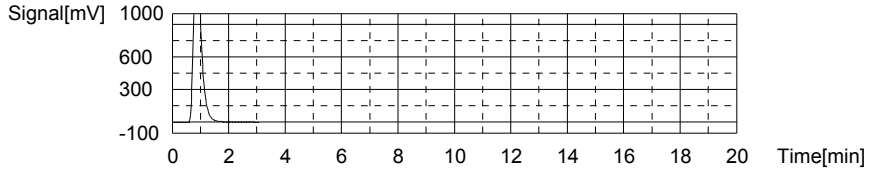

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.692mg/L TC:67.87mg/L IC:62.17mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2463	67.87mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 2:41:38 PM

Mean Area 2463
Mean Conc. 67.87mg/L

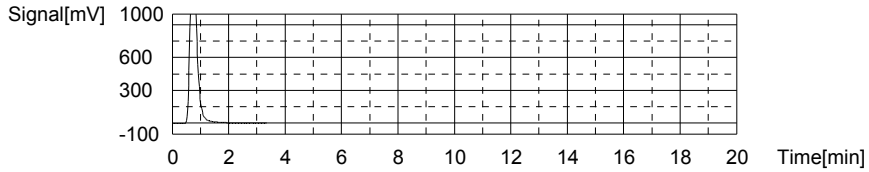

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1860	62.17mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 2:48:01 PM

Mean Area 1860
Mean Conc. 62.17mg/L

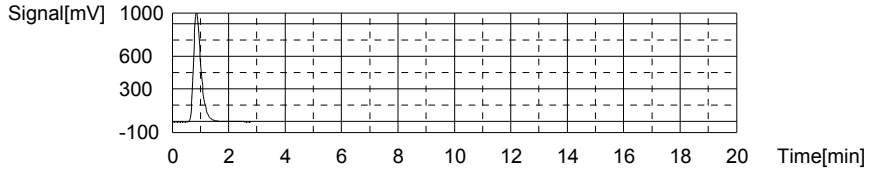

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.88mg/L TC:55.35mg/L IC:39.47mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2010	55.35mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 2:56:28 PM

Mean Area 2010
Mean Conc. 55.35mg/L

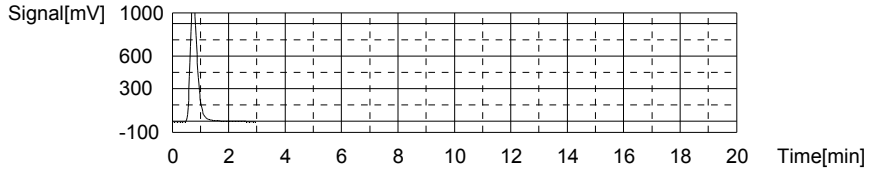

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1184	39.47mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 3:02:12 PM

Mean Area 1184
Mean Conc. 39.47mg/L

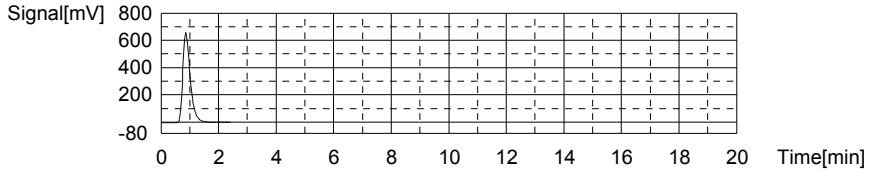

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.70mg/L TC:56.54mg/L IC:39.84mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2053	56.54mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 3:10:43 PM

Mean Area 2053
Mean Conc. 56.54mg/L

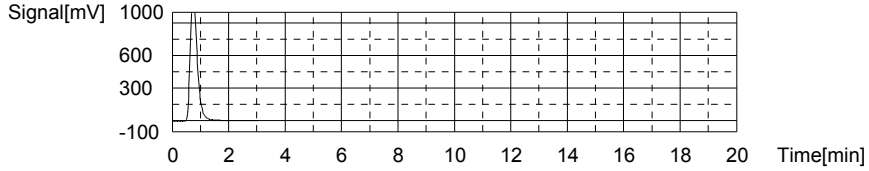

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1195	39.84mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 3:16:34 PM

Mean Area 1195
Mean Conc. 39.84mg/L

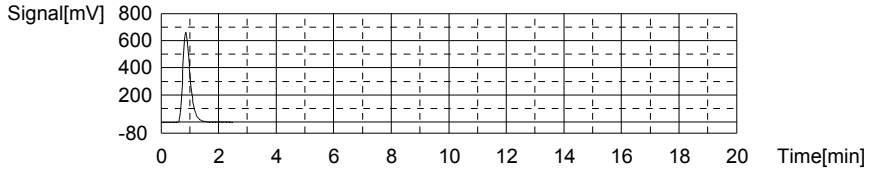

Sample

Sample Name: L14011219-13
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.307mg/L TC:42.84mg/L IC:38.53mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1557	42.84mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 3:25:15 PM

Mean Area 1557
Mean Conc. 42.84mg/L

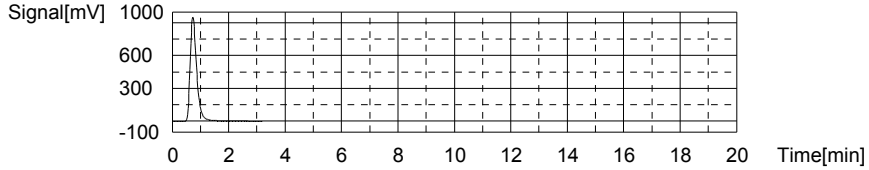

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1156	38.53mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 3:31:08 PM

Mean Area 1156
Mean Conc. 38.53mg/L

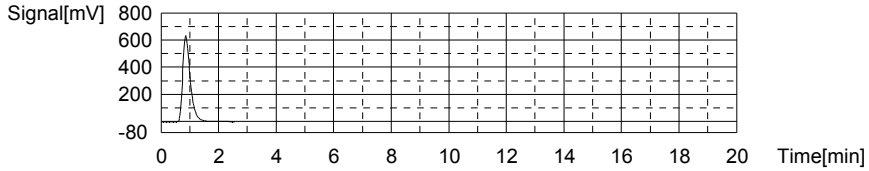

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.05mg/L TC:74.77mg/L IC:46.73mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2713	74.77mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 3:39:50 PM

Mean Area 2713
Mean Conc. 74.77mg/L

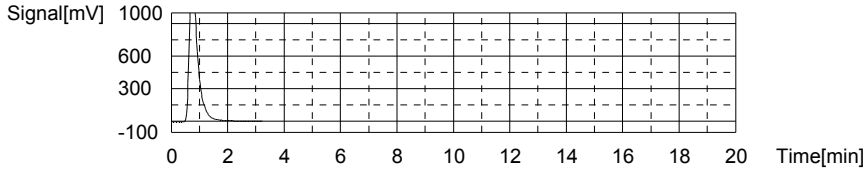

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1400	46.73mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 3:45:54 PM

Mean Area 1400
Mean Conc. 46.73mg/L

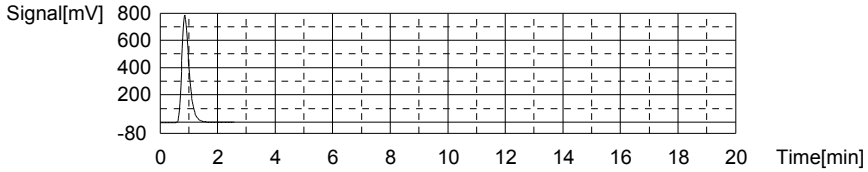

Sample

Sample Name: L14011242-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.945mg/L TC:47.84mg/L IC:37.89mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1738	47.84mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 3:56:14 PM

Mean Area 1738
Mean Conc. 47.84mg/L

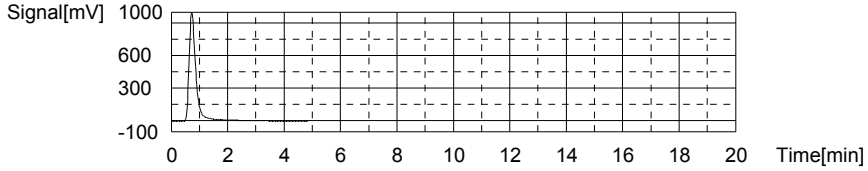

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1137	37.89mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 4:02:02 PM

Mean Area 1137
Mean Conc. 37.89mg/L

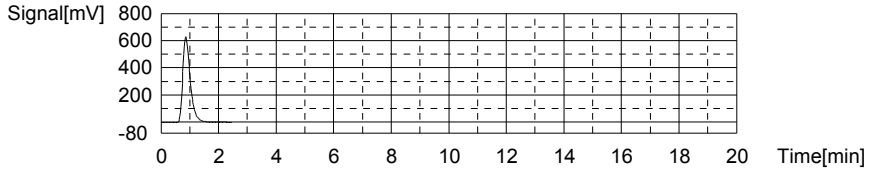

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:22.29mg/L TC:22.37mg/L IC:0.08452mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	816.1	22.37mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 4:09:50 PM

Mean Area 816.1
Mean Conc. 22.37mg/L

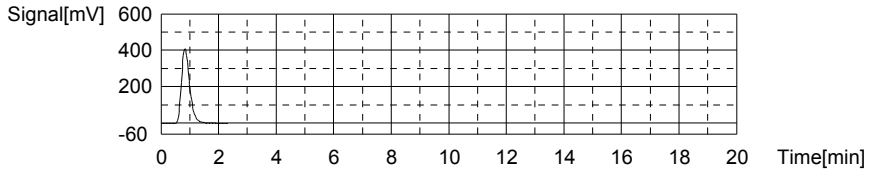

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.23	0.08452mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 4:14:19 PM

Mean Area 11.23
Mean Conc. 0.08452mg/L

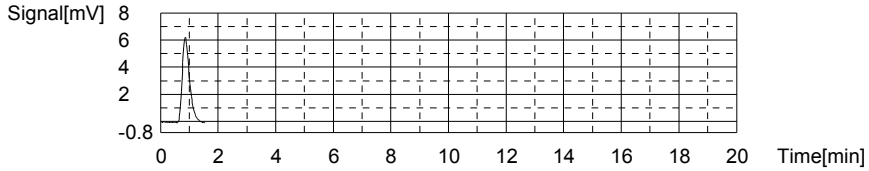

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1094mg/L TC:0.09879mg/L IC:-0.01063mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.908	0.09879mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	1/25/2014 4:19:22 PM

Mean Area 9.908
Mean Conc. 0.09879mg/L

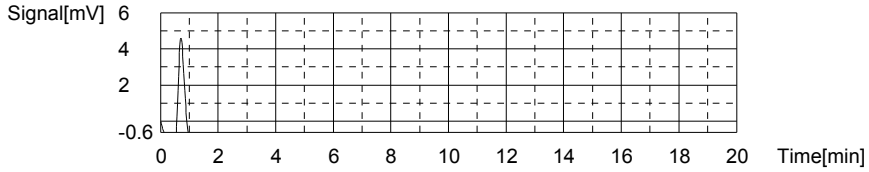

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.397	-0.01063mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	1/25/2014 4:23:17 PM

Mean Area 8.397
Mean Conc. -0.01063mg/L

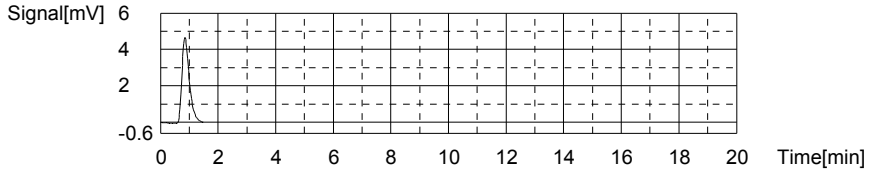

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
February 13, 2014

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AJF - AMANDA J. FICKIESEN	AML - TONY M. LONG
AZH - AFTER HOURS	BAF - BRICE A. FENTON
BJO - BRIAN J. OGDEN	BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER	CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS	CRW - CHRISTINA R. WILSON
CSH - CHRIS S. HILL	CTB - CHRIS T. BUCINA
DAK - DEAN A. K	DCM - DAVID C. MERCKLE
DDE - DEBRA D. ELLIOTT	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLR - DIANNA L. RAUCH
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
EDL - ERIN D. LONG	ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	HCB - HEIDI C. BROWN
HJR - HOLLY J. REED	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JDS - JARED D. SMITH
JKS - JANE K. SCHAAD	JLL - JOHN L. LENT
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS	KSC - KELLY S. CUNNINGHAM
LKN - LINDA K. NEDEFF	LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA	MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON	MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING	MLW - MATTHEW L. WARREN
MMB - MAREN M. BEERY	MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PSW - PEGGY S. WEBB
QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN
RM - RAYMOND MALEKE	RNP - RICK N. PETTY
RS - ROSEMARY SCOTT	RWC - RODNEY W. CAMPBELL
SAV - SARAH A. VANDENBERG	SEP - SUZANNE J. PAUGH
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TLC - TYLER L. CORDELL	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	TPA - TYLER P. AMRINE
VC - VICKI COLLIER	WJB - WILL J. BEASLEY
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
February 13, 2014

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, H1	Not detected; Sample analysis performed past holding time.
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Analyte was not detected. The concentration is below the reported LOD.
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Kathy Albertson	Project Manager:	Dave Wacker	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205	pH:		Program:	
Turn Around Time:	STANDARD				
Project Name/Location:	Longhorn				
Project Number:	60256135.0002JA				

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp	Grab	Matrix	Number of Containers	VOC	Dissolved Gases	Sulfide	Ferrous Iron	Anions	TOC	TIC	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 67	67WW08-012314			1/23/14	0955		✓	W	11	✓	✓	✓	✓	✓	✓	✓					
	67WW11-012314			1/23/14	1125		✓	W	3	✓											
	TRIP BLANK			1/23/14			✓	W	2	✓											

ERPIMS REQUIRED FIELDS

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 1/23/13	Time 1400	Received by: (Signat	Microbac OVD Received: 01/24/2014 09:57 By: CARA STRICKLER 221000048581	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laborat (Signature) Cara Strickler		Remarks:

•Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14011242
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 04-FEB-2014

Samplenum	Container ID	Products
L14011242-01	310248	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-JAN-2014 11:58	RS		<2
2	ANALYZ	V1	ORG4	24-JAN-2014 13:53	JDS	CLS	
3	STORE	ORG4	A1	10-FEB-2014 08:19	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-JAN-2014 11:58	RS		<2
2	ANALYZ	V1	ORG4	24-JAN-2014 13:53	JDS	CLS	
3	STORE	ORG4	A1	10-FEB-2014 08:19	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-JAN-2014 11:58	RS		<2
2	ANALYZ	V1	ORG4	24-JAN-2014 13:53	JDS	CLS	
3	STORE	ORG4	A1	10-FEB-2014 08:19	CLS	AWE	

Samplenum	Container ID	Products
L14011242-01	310249	RSK175

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-JAN-2014 11:58	RS		<2
2	ANALYZ	V1	ORG1	24-JAN-2014 13:51	JDS	CLS	
3	STORE	ORG1	A1	07-FEB-2014 08:13	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-JAN-2014 11:58	RS		<2
2	ANALYZ	V1	ORG1	24-JAN-2014 13:51	JDS	CLS	
3	STORE	ORG1	A1	07-FEB-2014 08:13	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-JAN-2014 11:58	RS		<2
2	ANALYZ	V1	ORG1	24-JAN-2014 13:51	JDS	CLS	
3	STORE	ORG1	A1	07-FEB-2014 08:13	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14011242
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 04-FEB-2014

Samplenum	Container ID	Products
L14011242-01	310250	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-JAN-2014 11:58	RS		
2	ANALYZ	W1	SEM	24-JAN-2014 13:33	JBK	CLS	
3	STORE	SEM	A1	28-JAN-2014 14:44	RS	JBK	

Samplenum	Container ID	Products
L14011242-01	310251	TIC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-JAN-2014 11:58	RS		
2	ANALYZ	W1	WET	28-JAN-2014 15:07	BAF	AZH	
3	STORE	WET	A1	03-FEB-2014 15:59	CLS	DCM	

Samplenum	Container ID	Products
L14011242-01	310252	FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-JAN-2014 11:58	RS		
2	ANALYZ	W1	WET	28-JAN-2014 08:47	TMM	RS	

Samplenum	Container ID	Products
L14011242-01	310253	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-JAN-2014 11:58	RS		<2
2	ANALYZ	W1	WET	24-JAN-2014 13:49	DCM	CLS	
3	STORE	WET	A1	03-FEB-2014 15:59	CLS	DCM	

Samplenum	Container ID	Products
L14011242-01	310254	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-JAN-2014 11:58	RS		
2	ANALYZ	W1	WET	24-JAN-2014 14:02	EPT	CLS	
3	ANALYZ	WET	A1	24-JAN-2014 17:27	RS	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14011242
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 04-FEB-2014

Samplenum	Container ID	Products
L14011242-02	310255	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-JAN-2014 11:58	RS		<2
2	ANALYZ	V1	ORG4	24-JAN-2014 13:53	JDS	CLS	
3	STORE	ORG4	A1	10-FEB-2014 08:19	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-JAN-2014 11:58	RS		<2
2	ANALYZ	V1	ORG4	24-JAN-2014 13:53	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-JAN-2014 11:58	RS		<2
2	ANALYZ	V1	ORG4	24-JAN-2014 13:53	JDS	CLS	
3	STORE	ORG4	A1	10-FEB-2014 08:19	CLS	AWE	

Samplenum	Container ID	Products
L14011242-03	310256	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-JAN-2014 11:58	RS		<2
2	ANALYZ	V1	ORG4	24-JAN-2014 13:54	JDS	CLS	
3	STORE	ORG4	A1	10-FEB-2014 08:19	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-JAN-2014 11:58	RS		<2
2	ANALYZ	V1	ORG4	24-JAN-2014 13:54	JDS	CLS	
3	STORE	ORG4	A1	10-FEB-2014 08:19	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14011242
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 04-FEB-2014

Samplenum	Container ID	Products
L14011242-04	310257	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-JAN-2014 11:58	RS		<2
2	ANALYZ	V1	ORG4	24-JAN-2014 13:54	JDS	CLS	
3	STORE	ORG4	A1	10-FEB-2014 08:19	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-JAN-2014 11:58	RS		<2
2	ANALYZ	V1	ORG4	24-JAN-2014 13:54	JDS	CLS	
3	STORE	ORG4	A1	10-FEB-2014 08:19	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	24-JAN-2014 11:58	RS		<2
2	STORE	ORG4	A1	10-FEB-2014 08:19	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - November 13, 2013

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Nitroguanidine
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL KNITRO-C-WUV-VIS

Nitrocellulose

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL HPLCOS-HPLC-UV

Nitroguanidine

OVL KNITRO-C-S/UV-VIS

Nitrocellulose

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L14011372

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Kathy Albertson – Team Chemist/Data Specialist
(740) 373-4071
Kathy.Albertson@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on February 11 2014

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0015256	I	1.0		J2317155396	X
0018766	I	1.0		J2317154137	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
67WW05-012314	L14011372-01	01/23/2014 15:05	01/28/2014 09:47
67WW02-012314	L14011372-02	01/23/2014 15:15	01/28/2014 09:47
67WW07-012314	L14011372-03	01/23/2014 15:33	01/28/2014 09:47
67WW09A-012314	L14011372-04	01/23/2014 16:55	01/28/2014 09:47
67WW10-012414	L14011372-05	01/24/2014 08:30	01/28/2014 09:47
67WW10MS-012414	L14011372-06	01/24/2014 08:30	01/28/2014 09:47
67WW10MSD-12414	L14011372-07	01/24/2014 08:30	01/28/2014 09:47
EQUIPMENT RINSE-012414	L14011372-08	01/24/2014 08:46	01/28/2014 09:47
67WW06-012414	L14011372-09	01/24/2014 09:55	01/28/2014 09:47
67WW12-012414	L14011372-10	01/24/2014 10:55	01/28/2014 09:47
67WW09-012414	L14011372-11	01/24/2014 13:15	01/28/2014 09:47
67WW13-012414	L14011372-12	01/24/2014 14:20	01/28/2014 09:47
67WW13FD-012414	L14011372-13	01/24/2014 14:20	01/28/2014 09:47
67WW14-012414	L14011372-14	01/24/2014 15:45	01/28/2014 09:47
TRIP BLANK	L14011372-15	01/24/2014 00:00	01/28/2014 09:47

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L14011372
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 13
2.0 Full Sample Data Package 56
2.1 Volatiles Data 57
2.1.1 Volatiles GCMS Data (8260) 58
2.1.1.1 Summary Data 59
2.1.1.2 QC Summary Data 102
2.1.1.3 Sample Data 157
2.1.1.4 Standards Data 321
2.1.1.5 Raw QC Data 464
3.0 Attachments 533

1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011372
Project Name:		**Method:**	8260
Prep Batch Number(s):	461584,461586	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-02-10 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2014-02-10 20:43:28

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011372
Project Name:		**Method:**	8260
Prep Batch Number(s):	461584,461586	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-02-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011372
Project Name:		**Method:**	8260
Prep Batch Number(s):	461584,461586	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-02-10 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			1
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			2
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011372
Project Name:		**Method:**	8260
Prep Batch Number(s):	461584,461586	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-02-10 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			3
Was the ICAL curve verified for each analyte?		X			2
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011372
Project Name:		**Method:**	8260
Prep Batch Number(s):	461584,461586	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-02-10 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14011372
Project Name:		**Method:**	8260
Prep Batch Number(s):	461584,461586	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-02-10 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Chloromethane, dichlorodifluoromethane, and 1,2,3-trichloropropane were outside the control limits in the LCS/LCSD analyzed 01-31-14 on HPMS9.
2) Chloromethane was outside the control limits in the MS/MSD analyses of sample 05.
3) Dichlorodifluoromethane was outside the control limits in the Alternate Source analyzed 01-03-14 on HPMS8. Acetone and 2-hexanone were outside the control limits in the Alternate Source analyzed 01-30-14 on HPMS9.
4) 1,2-Dibromo-3-chloropropane was outside the control limits in the CCV analyzed 01-30-14 on HPMS8.

1.2 Certificate of Analysis

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW05-012314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/30/2014 15:20
Workgroup #:	WG461586	**Analyst:**	MES	**Run Date:**	01/31/2014 01:27
Collect Date:	01/23/2014 15:05	**Dilution:**	1	**File ID:**	9M961148
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	112	85	120	
4-Bromofluorobenzene	102	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW02-012314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/30/2014 15:20
Workgroup #:	WG461586	**Analyst:**	MES	**Run Date:**	01/31/2014 01:56
Collect Date:	01/23/2014 15:15	**Dilution:**	1	**File ID:**	9M961149
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.406	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	111	85	120	
4-Bromofluorobenzene	86.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW07-012314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/30/2014 15:20
Workgroup #:	WG461586	**Analyst:**	MES	**Run Date:**	01/31/2014 02:25
Collect Date:	01/23/2014 15:33	**Dilution:**	1	**File ID:**	9M961150
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.35		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	97.3	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09A-012314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 00:30
Collect Date:	01/23/2014 16:55	**Dilution:**	1	**File ID:**	8M394553
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.3	85	115	
1,2-Dichloroethane-d4	79.2	70	120	
Toluene-d8	97.4	85	120	
4-Bromofluorobenzene	92.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW10-012414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 01:02
Collect Date:	01/24/2014 08:30	**Dilution:**	1	**File ID:**	8M394554
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.319	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.0	85	115	
1,2-Dichloroethane-d4	81.4	70	120	
Toluene-d8	96.6	85	120	
4-Bromofluorobenzene	93.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW10MS-012414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 05:21
Collect Date:	01/24/2014 08:30	**Dilution:**	1	**File ID:**	8M394562
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.7		10.0	5.00	2.50
Benzene	71-43-2	22.1		1.00	0.250	0.125
Bromobenzene	108-86-1	20.6		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.4		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.5		1.00	0.500	0.250
Bromoform	75-25-2	20.7		2.00	1.00	0.500
Bromomethane	74-83-9	21.9		2.00	1.00	0.500
2-Butanone	78-93-3	17.3		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.8		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.3		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.4		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.4		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	22.0		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.8		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	22.9		1.00	0.500	0.250
Chloroethane	75-00-3	21.2		2.00	1.00	0.500
Chloroform	67-66-3	21.1		1.00	0.250	0.125
Chloromethane	74-87-3	25.6		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.1		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	17.3	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.8		1.00	0.500	0.250
Dibromomethane	74-95-3	20.5		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.0		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.2		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.8		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	23.8		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.5		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.5		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.9		1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	21.5		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	22.6		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.9		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	18.5		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.8		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.8		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.6		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.8		1.00	0.500	0.250
2-Hexanone	591-78-6	16.6		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.6		1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.5		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	18.6		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	17.5		10.0	5.00	2.50
Methylene chloride	75-09-2	21.1		1.00	0.500	0.250
Naphthalene	91-20-3	18.1		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.9		1.00	0.250	0.125
Styrene	100-42-5	21.1		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	23.3		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.3		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.5		1.00	0.500	0.250
Toluene	108-88-3	21.7		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	18.7		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.8		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	21.5		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.9		1.00	0.500	0.250
Trichloroethene	79-01-6	22.2		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	19.4		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.4		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.1		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.8		1.00	0.500	0.250
Vinyl chloride	75-01-4	24.4		1.00	0.500	0.250
o-Xylene	95-47-6	19.3		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.3		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.8	85	115	
1,2-Dichloroethane-d4	81.8	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	92.2	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW10MSD-12414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 05:53
Collect Date:	01/24/2014 08:30	**Dilution:**	1	**File ID:**	8M394563
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	17.1		10.0	5.00	2.50
Benzene	71-43-2	21.8		1.00	0.250	0.125
Bromobenzene	108-86-1	20.9		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.3		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.0		1.00	0.500	0.250
Bromoform	75-25-2	20.0		2.00	1.00	0.500
Bromomethane	74-83-9	22.3		2.00	1.00	0.500
2-Butanone	78-93-3	16.3		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.9		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.7		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.8		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.1		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	21.5		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.6		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	22.2		1.00	0.500	0.250
Chloroethane	75-00-3	21.0		2.00	1.00	0.500
Chloroform	67-66-3	21.1		1.00	0.250	0.125
Chloromethane	74-87-3	24.8		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.8		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.2		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	16.3	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.6		1.00	0.500	0.250
Dibromomethane	74-95-3	19.6		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.2		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.3		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.8		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	22.2		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.4		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.3		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.6		1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	21.3		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.7		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.4		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	17.9		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.3		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.3		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.3		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.5		1.00	0.500	0.250
2-Hexanone	591-78-6	16.1		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.9		1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.3		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	18.7		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	16.3		10.0	5.00	2.50
Methylene chloride	75-09-2	20.9		1.00	0.500	0.250
Naphthalene	91-20-3	17.9		1.00	0.400	0.200
n-Propylbenzene	103-65-1	19.2		1.00	0.250	0.125
Styrene	100-42-5	20.9		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	23.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.4		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.4		1.00	0.500	0.250
Toluene	108-88-3	21.6		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	18.8		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.9		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	21.2		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.0		1.00	0.500	0.250
Trichloroethene	79-01-6	21.6		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	18.6		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.5		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.4		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	22.9		1.00	0.500	0.250
o-Xylene	95-47-6	19.0		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.1		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.1	85	115	
1,2-Dichloroethane-d4	78.4	70	120	
Toluene-d8	97.4	85	120	
4-Bromofluorobenzene	93.1	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	EQUIPMENT RINSE-012414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 01:34
Collect Date:	01/24/2014 08:46	**Dilution:**	1	**File ID:**	8M394555
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	6.63	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.492	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.250	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.3	85	115	
1,2-Dichloroethane-d4	86.1	70	120	
Toluene-d8	98.0	85	120	
4-Bromofluorobenzene	94.6	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW06-012414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 02:06
Collect Date:	01/24/2014 09:55	**Dilution:**	1	**File ID:**	8M394556
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.234	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	2.03		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	0.752	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.2	85	115	
1,2-Dichloroethane-d4	82.2	70	120	
Toluene-d8	97.8	85	120	
4-Bromofluorobenzene	95.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW12-012414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 02:38
Collect Date:	01/24/2014 10:55	**Dilution:**	1	**File ID:**	8M394557
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.1	85	115	
1,2-Dichloroethane-d4	87.2	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	95.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09-012414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 03:11
Collect Date:	01/24/2014 13:15	**Dilution:**	1	**File ID:**	8M394558
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	4.59		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.347	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	20.8		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.472	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.8	85	115	
1,2-Dichloroethane-d4	79.3	70	120	
Toluene-d8	99.1	85	120	
4-Bromofluorobenzene	95.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW13-012414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 04:16
Collect Date:	01/24/2014 14:20	**Dilution:**	2.5	**File ID:**	8M394560
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	0.626	U	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	Q	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	32.7		2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	22.9		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	572		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	1.67	J	2.50	1.25	0.625

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	1.25	U	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	2.99		2.50	1.25	0.625
Trichloroethene	79-01-6	2.86		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	2.37	J	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.7	85	115	
1,2-Dichloroethane-d4	81.0	70	120	
Toluene-d8	97.1	85	120	
4-Bromofluorobenzene	93.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW13FD-012414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 04:48
Collect Date:	01/24/2014 14:20	**Dilution:**	2.5	**File ID:**	8M394561
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	0.359	J	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	Q	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	32.4		2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	22.9		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	569		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	1.77	J	2.50	1.25	0.625

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	1.25	U	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	3.01		2.50	1.25	0.625
Trichloroethene	79-01-6	2.99		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	2.37	J	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.1	85	115	
1,2-Dichloroethane-d4	83.2	70	120	
Toluene-d8	96.4	85	120	
4-Bromofluorobenzene	95.6	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW14-012414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 03:44
Collect Date:	01/24/2014 15:45	**Dilution:**	1	**File ID:**	8M394559
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.275	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.666	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	2.58		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.1	85	115	
1,2-Dichloroethane-d4	83.0	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	93.9	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-15	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/30/2014 23:25
Collect Date:	01/24/2014 00:00	**Dilution:**	1	**File ID:**	8M394551
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.579	J	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.0	85	115	
1,2-Dichloroethane-d4	79.9	70	120	
Toluene-d8	98.5	85	120	
4-Bromofluorobenzene	93.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW05-012314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/30/2014 15:20
Workgroup #:	WG461586	**Analyst:**	MES	**Run Date:**	01/31/2014 01:27
Collect Date:	01/23/2014 15:05	**Dilution:**	1	**File ID:**	9M961148
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	112	85	120	
4-Bromofluorobenzene	102	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW02-012314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/30/2014 15:20
Workgroup #:	WG461586	**Analyst:**	MES	**Run Date:**	01/31/2014 01:56
Collect Date:	01/23/2014 15:15	**Dilution:**	1	**File ID:**	9M961149
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.406	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	111	85	120	
4-Bromofluorobenzene	86.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW07-012314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/30/2014 15:20
Workgroup #:	WG461586	**Analyst:**	MES	**Run Date:**	01/31/2014 02:25
Collect Date:	01/23/2014 15:33	**Dilution:**	1	**File ID:**	9M961150
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.35		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	97.3	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09A-012314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 00:30
Collect Date:	01/23/2014 16:55	**Dilution:**	1	**File ID:**	8M394553
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.3	85	115	
1,2-Dichloroethane-d4	79.2	70	120	
Toluene-d8	97.4	85	120	
4-Bromofluorobenzene	92.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW10-012414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 01:02
Collect Date:	01/24/2014 08:30	**Dilution:**	1	**File ID:**	8M394554
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.319	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.0	85	115	
1,2-Dichloroethane-d4	81.4	70	120	
Toluene-d8	96.6	85	120	
4-Bromofluorobenzene	93.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW10MS-012414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 05:21
Collect Date:	01/24/2014 08:30	**Dilution:**	1	**File ID:**	8M394562
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.7		10.0	5.00	2.50
Benzene	71-43-2	22.1		1.00	0.250	0.125
Bromobenzene	108-86-1	20.6		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.4		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.5		1.00	0.500	0.250
Bromoform	75-25-2	20.7		2.00	1.00	0.500
Bromomethane	74-83-9	21.9		2.00	1.00	0.500
2-Butanone	78-93-3	17.3		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.8		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.3		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.4		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.4		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	22.0		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.8		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	22.9		1.00	0.500	0.250
Chloroethane	75-00-3	21.2		2.00	1.00	0.500
Chloroform	67-66-3	21.1		1.00	0.250	0.125
Chloromethane	74-87-3	25.6		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.1		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	17.3	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.8		1.00	0.500	0.250
Dibromomethane	74-95-3	20.5		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.0		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.2		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.8		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	23.8		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.5		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.5		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.9		1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	21.5		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	22.6		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.9		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	18.5		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.8		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.8		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.6		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.8		1.00	0.500	0.250
2-Hexanone	591-78-6	16.6		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.6		1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.5		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	18.6		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	17.5		10.0	5.00	2.50
Methylene chloride	75-09-2	21.1		1.00	0.500	0.250
Naphthalene	91-20-3	18.1		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.9		1.00	0.250	0.125
Styrene	100-42-5	21.1		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	23.3		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.3		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.5		1.00	0.500	0.250
Toluene	108-88-3	21.7		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	18.7		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.8		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	21.5		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.9		1.00	0.500	0.250
Trichloroethene	79-01-6	22.2		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	19.4		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.4		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.1		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.8		1.00	0.500	0.250
Vinyl chloride	75-01-4	24.4		1.00	0.500	0.250
o-Xylene	95-47-6	19.3		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.3		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.8	85	115	
1,2-Dichloroethane-d4	81.8	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	92.2	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW10MSD-12414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 05:53
Collect Date:	01/24/2014 08:30	**Dilution:**	1	**File ID:**	8M394563
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	17.1		10.0	5.00	2.50
Benzene	71-43-2	21.8		1.00	0.250	0.125
Bromobenzene	108-86-1	20.9		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.3		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.0		1.00	0.500	0.250
Bromoform	75-25-2	20.0		2.00	1.00	0.500
Bromomethane	74-83-9	22.3		2.00	1.00	0.500
2-Butanone	78-93-3	16.3		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.9		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.7		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.8		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.1		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	21.5		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.6		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	22.2		1.00	0.500	0.250
Chloroethane	75-00-3	21.0		2.00	1.00	0.500
Chloroform	67-66-3	21.1		1.00	0.250	0.125
Chloromethane	74-87-3	24.8		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.8		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.2		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	16.3	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.6		1.00	0.500	0.250
Dibromomethane	74-95-3	19.6		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.2		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.3		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.8		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	22.2		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.4		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.3		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.6		1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	21.3		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.7		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.4		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	17.9		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.3		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.3		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.3		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.5		1.00	0.500	0.250
2-Hexanone	591-78-6	16.1		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.9		1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.3		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	18.7		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	16.3		10.0	5.00	2.50
Methylene chloride	75-09-2	20.9		1.00	0.500	0.250
Naphthalene	91-20-3	17.9		1.00	0.400	0.200
n-Propylbenzene	103-65-1	19.2		1.00	0.250	0.125
Styrene	100-42-5	20.9		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	23.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.4		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.4		1.00	0.500	0.250
Toluene	108-88-3	21.6		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	18.8		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.9		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	21.2		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.0		1.00	0.500	0.250
Trichloroethene	79-01-6	21.6		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	18.6		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.5		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.4		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	22.9		1.00	0.500	0.250
o-Xylene	95-47-6	19.0		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.1		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.1	85	115	
1,2-Dichloroethane-d4	78.4	70	120	
Toluene-d8	97.4	85	120	
4-Bromofluorobenzene	93.1	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	EQUIPMENT RINSE-012414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 01:34
Collect Date:	01/24/2014 08:46	**Dilution:**	1	**File ID:**	8M394555
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	6.63	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.492	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.250	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.3	85	115	
1,2-Dichloroethane-d4	86.1	70	120	
Toluene-d8	98.0	85	120	
4-Bromofluorobenzene	94.6	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW06-012414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 02:06
Collect Date:	01/24/2014 09:55	**Dilution:**	1	**File ID:**	8M394556
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.234	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	2.03		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	0.752	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.2	85	115	
1,2-Dichloroethane-d4	82.2	70	120	
Toluene-d8	97.8	85	120	
4-Bromofluorobenzene	95.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW12-012414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 02:38
Collect Date:	01/24/2014 10:55	**Dilution:**	1	**File ID:**	8M394557
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.1	85	115	
1,2-Dichloroethane-d4	87.2	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	95.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09-012414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 03:11
Collect Date:	01/24/2014 13:15	**Dilution:**	1	**File ID:**	8M394558
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	4.59		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.347	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	20.8		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.472	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.8	85	115	
1,2-Dichloroethane-d4	79.3	70	120	
Toluene-d8	99.1	85	120	
4-Bromofluorobenzene	95.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW13-012414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 04:16
Collect Date:	01/24/2014 14:20	**Dilution:**	2.5	**File ID:**	8M394560
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	0.626	U	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	Q	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	32.7		2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	22.9		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	572		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	1.67	J	2.50	1.25	0.625

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	1.25	U	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	2.99		2.50	1.25	0.625
Trichloroethene	79-01-6	2.86		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	2.37	J	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.7	85	115	
1,2-Dichloroethane-d4	81.0	70	120	
Toluene-d8	97.1	85	120	
4-Bromofluorobenzene	93.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW13FD-012414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 04:48
Collect Date:	01/24/2014 14:20	**Dilution:**	2.5	**File ID:**	8M394561
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	0.359	J	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	Q	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	32.4		2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	22.9		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	569		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	1.77	J	2.50	1.25	0.625

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	1.25	U	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	3.01		2.50	1.25	0.625
Trichloroethene	79-01-6	2.99		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	2.37	J	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.1	85	115	
1,2-Dichloroethane-d4	83.2	70	120	
Toluene-d8	96.4	85	120	
4-Bromofluorobenzene	95.6	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW14-012414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/31/2014 03:44
Collect Date:	01/24/2014 15:45	**Dilution:**	1	**File ID:**	8M394559
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.275	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.666	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	2.58		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.1	85	115	
1,2-Dichloroethane-d4	83.0	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	93.9	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14011372-15	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/03/2014 15:27
Workgroup #:	WG461584	**Analyst:**	MES	**Run Date:**	01/30/2014 23:25
Collect Date:	01/24/2014 00:00	**Dilution:**	1	**File ID:**	8M394551
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.579	J	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.0	85	115	
1,2-Dichloroethane-d4	79.9	70	120	
Toluene-d8	98.5	85	120	
4-Bromofluorobenzene	93.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14011372
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 081913
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 47153

Internal Standard: STD59587 Surrogate Standard: STD59627
CCV: STD59677 LCS: STD59678 MS/MSD: STD59678

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG441888(ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M957893	WG441887-01 50ng BFB STD	NA	1	1		08/19/13 15:08
9M957894	WG441887-02 50.0ug/L STD 8260	NA	1	1	STD59582	08/19/13 15:33
9M957895	WG441888-01 5.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 16:23
9M957896	WG441888-02 20.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 16:53
9M957897	WG441888-03 50.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 17:22
9M957898	WG441888-04 100.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 17:51
9M957899	WG441888-05 200.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 18:20
9M957900	WG441888-06 300.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 18:48
9M957901	WG441888-07 400.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 19:17
9M957902	WG441888-08 500.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 19:46
9M957903	RINSE	NA	1	1		08/19/13 20:16
9M957904	WG441888-09 100.0ug/L A9 ALT SRC 826	NA	1	1	STD59238	08/19/13 20:45

Approved: August 27, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 010314
Analyst1: MES Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 48737

Internal Standard: STD61796 Surrogate Standard: STD61656
CCV: STD62122 LCS: STD62141 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG458331,WG458387

Comments: File 8M393746 was a failing BFB standard-the file became corrupt.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M393743	RINSE	NA	1	1		01/03/14 08:35
8M393744	RINSE	NA	1	1		01/03/14 09:04
8M393745	RINSE	NA	1	1		01/03/14 09:48
8M393747	WG458331-01 50NG BFB STD 8260	NA	1	1	STD61669	01/03/14 10:33
8M393748	WG458331-02 0.3ug/L WATER STD 8260	NA	1	1	STD62122	01/03/14 10:56
8M393749	WG458331-03 0.4 ug/L WATER STD 8260	NA	1	1	STD62122	01/03/14 11:26
8M393750	WG458331-04 1 ug/L WATER STD 8260	NA	1	1	STD62122	01/03/14 11:56
8M393751	WG458331-05 2 ug/L WATER STD 8260	NA	1	1	STD62122	01/03/14 12:26
8M393752	WG458331-06 5 ug/L WATER STD 8260	NA	1	1	STD62122	01/03/14 12:56
8M393753	WG458331-07 20 ug/L WATER STD 8260	NA	1	1	STD62122	01/03/14 13:26
8M393754	WG458331-08 50 ug/L WATER STD 8260	NA	1	1	STD62122	01/03/14 13:56
8M393755	WG458331-09 100 ug/L WATER STD 8260	NA	1	1	STD62122	01/03/14 14:26
8M393756	WG458331-10 200 ug/L WATER STD 8260	NA	1	1	STD62122	01/03/14 14:56
8M393757	WG458331-11 300 ug/L WATER STD 8260	NA	1	1	STD62122	01/03/14 15:27
8M393758	RINSE	NA	1	1		01/03/14 15:57
8M393759	RINSE	NA	1	1		01/03/14 16:27
8M393760	WG458331-12 50ug/L ALT SOURCE	NA	1	1	STD62141	01/03/14 16:57
8M393761	RINSE	NA	1	1		01/03/14 17:27
8M393762	WG458387-01 BLANK 01/03	NA	1	1		01/03/14 17:57
8M393763	WG458387-02 20ug/L P/A 1	NA	1	1	STD62141	01/03/14 18:27
8M393764	WG458387-03 20ug/L P/A 2	NA	1	1	STD62141	01/03/14 18:57
8M393765	WG458387-04 20ug/L P/A 3	NA	1	1	STD62141	01/03/14 19:28
8M393766	WG458387-05 20ug/L P/A 4	NA	1	1	STD62141	01/03/14 19:58

Approved: January 06, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 010614
Analyst1: MES Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 48746

Internal Standard: STD61796 Surrogate Standard: STD62125
CCV: STD61847 LCS: STD62148 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG458457, WG458459

Comments: MDLs, LOD, and LOQ all need reanalyzed for cyclohexanone, isobutanol and 1-butanol.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M393767	RINSE	NA	1	1		01/06/14 08:30
8M393770	WG458457-01 50NG BFB STD 8260	NA	1	1	STD62146	01/06/14 09:59
8M393771	WG458457-02 5ug/L APPIX STD	NA	1	1	STD61847	01/06/14 10:22
8M393772	WG458457-03 20 ug/L APPIX STD	NA	1	1	STD61847	01/06/14 11:00
8M393773	WG458457-04 50 ug/L APPIX STD	NA	1	1	STD61847	01/06/14 11:29
8M393774	WG458457-05 100 ug/L APPIX STD	NA	1	1	STD61847	01/06/14 12:00
8M393775	WG458457-06 200 ug/L APPIX STD	NA	1	1	STD61847	01/06/14 12:27
8M393776	WG458457-07 300 ug/L APPIX STD	NA	1	1	STD61847	01/06/14 12:55
8M393777	WG458457-08 400 ug/L APPIX STD	NA	1	1	STD61847	01/06/14 13:23
8M393778	WG458457-09 500 ug/L APPIX STD	NA	1	1	STD61847	01/06/14 13:52
8M393779	RINSE	NA	1	1		01/06/14 14:20
8M393780	WG458457-10 100ug/L APPIX ALT SOURC	NA	1	1	STD62148	01/06/14 14:48
8M393781	WG458459-01 BLANK 01/06	NA	1	1		01/06/14 15:16
8M393782	L14010001-01 2.5ug/L APPIX MDL	NA	1	1	STD61847	01/06/14 15:44
8M393783	L14010006-02 2.5ug/L APPIX MDL	NA	1	1	STD61847	01/06/14 16:12
8M393784	L14010006-03 2.5ug/L APPIX MDL	NA	1	1	STD61847	01/06/14 16:40
8M393785	L14010006-04 2.5ug/L APPIX MDL	NA	1	1	STD61847	01/06/14 17:08
8M393786	L14010006-05 2.5ug/L APPIX MDL	NA	1	1	STD61847	01/06/14 17:36
8M393787	L14010006-06 2.5ug/L APPIX MDL	NA	1	1	STD61847	01/06/14 18:04
8M393788	L14010006-07 2.5ug/L APPIX MDL	NA	1	1	STD61847	01/06/14 18:32
8M393789	L14010003-01 5ug/L APPIX LOQ	NA	1	1	STD61847	01/06/14 19:00
8M393790	WG458459-02 100ug/L APPIX P/A	NA	1	1	STD62148	01/06/14 19:28
8M393791	WG458459-03 100ug/L APPIX P/A	NA	1	1	STD62148	01/06/14 19:56
8M393792	WG458459-04 100ug/L APPIX P/A	NA	1	1	STD62148	01/06/14 20:24
8M393793	WG458459-05 100ug/L APPIX P/A	NA	1	1	STD62148	01/06/14 20:52

Comments

Seq.	Rerun	Dil.	Reason	Analytes
26				
File ID: 8M393782				
Reported as both the first MDL and the LOD check.				

Approved: January 08, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 013014
Analyst1: ADC Analyst2: MES
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 49089

Internal Standard: STD62391 Surrogate Standard: STD62627
CCV: STD62504 LCS: STD62638 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG461445 (ICAL), WG461586

Comments: DCDF is failing in residual checks, but passes in the ALT SRC.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M961120	WG461445-01 50ng BFB STD	NA	1	1	STD62146	01/30/14 08:11
9M961121	WG461445-01 50ng BFB STD	NA	1	1	STD62146	01/30/14 08:30
9M961123	WG461445-02 0.3 ug/L STD	NA	1	1	STD62504	01/30/14 09:30
9M961124	WG461445-03 0.4 ug/L STD	NA	1	1	STD62504	01/30/14 09:58
9M961125	WG461445-04 1.0 ug/L STD	NA	1	1	STD62504	01/30/14 10:27
9M961126	WG461445-05 2.0 ug/L STD	NA	1	1	STD62504	01/30/14 10:56
9M961127	WG461445-06 5.0 ug/L STD	NA	1	1	STD62504	01/30/14 11:24
9M961128	WG461445-07 20.0 ug/L STD	NA	1	1	STD62504	01/30/14 11:53
9M961129	WG461445-08 50.0 ug/L STD	NA	1	1	STD62504	01/30/14 12:22
9M961130	WG461445-09 100.0 ug/L STD	NA	1	1	STD62504	01/30/14 12:51
9M961131	WG461445-10 200.0 ug/L STD	NA	1	1	STD62504	01/30/14 13:20
9M961132	WG461445-11 300.0 ug/L STD	NA	1	1	STD62504	01/30/14 13:49
9M961133	RINSE	NA	1	1	STD62504	01/30/14 14:18
9M961134	WG461445-04 1.0 ug/L STD	NA	1	1	STD62504	01/30/14 15:20
9M961135	WG461445-12 50.0 ug/L ALTSRC	NA	1	1	STD62504	01/30/14 15:49
9M961136	WG461585-01 50NG BFB STD 8260	NA	1	1	STD62146	01/30/14 19:37
9M961137	WG461585-02 50ug/L WATER CCV 8260	NA	1	1	STD62504	01/30/14 20:02
9M961138	WG461585-02 50ug/L WATER CCV 8260	NA	1	1	STD62504	01/30/14 20:35
9M961139	RINSE	NA	1	1		01/30/14 21:06
9M961140	WG461586-01 BLANK 1/30	NA	1	1		01/30/14 21:35
9M961141	L14011137-03 TB A 826-SPE	<2	1	1		01/30/14 22:04
9M961142	L14011137-04 AB A 826-SPE	<2	1	1		01/30/14 22:33
9M961143	L14011544-09 A 826-SPE	<2	1	1		01/30/14 23:02
9M961144	L14011544-13 A 826-SPE	<2	1	1		01/30/14 23:31
9M961145	L14011242-03 TB A 826-LOW	<2	1	1		01/31/14 00:00
9M961146	L14011242-02 A 826-LOW	<2	1	1		01/31/14 00:29
9M961147	L14011242-04 A 826-LOW	<2	1	1		01/31/14 00:58
9M961148	L14011372-01 A 826-LOW	<2	1	1		01/31/14 01:27
9M961149	L14011372-02 A 826-LOW	<2	1	1		01/31/14 01:56
9M961150	L14011372-03 A 826-LOW	<2	1	1		01/31/14 02:25
9M961151	L14011242-01 5X A 826-LOW	<2	1	5		01/31/14 02:54
9M961152	L14011137-01 A 826-SPE	<2	1	1		01/31/14 03:23
9M961153	L14011137-02 5X A 826-LOW	3	1	5		01/31/14 03:52
9M961154	WG461586-02 20ug/L LCS 8260	NA	1	1	STD62430	01/31/14 04:22

Approved: February 10, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 013014
Analyst1: ADC Analyst2: MES
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 49089

Internal Standard: STD62391 Surrogate Standard: STD62627
CCV: STD62504 LCS: STD62638 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG461445 (ICAL), WG461586

Comments: DCDF is failing in residual checks, but passes in the ALT SRC.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M961155	WG461586-03 20ug/L LCS DUP 8260	NA	1	1	STD62430	01/31/14 04:51
9M961156	ANTIFOAM BLANK	NA	1	1		01/31/14 05:20

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1				
File ID: 9M961120				
	WG461445-01 DNR RR			
5				
File ID: 9M961125				
	WG461445-04 DNR RR			
31	X	50	Over Calibration Range	11DCE
File ID: 9M961151				
	L14011242-01			
32				
File ID: 9M961152				
	L14011137-01 DNR RR STR C/O			
33	X	5	Analyzed too dilute	
File ID: 9M961153				
	L14011137-02			

Approved: February 10, 2014

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 013014
Analyst1: ADC Analyst2: MES
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 49000

Internal Standard: STD62283 Surrogate Standard: STD62125
CCV: STD62504 LCS: STD62430 MS/MSD: STD62430

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG461442; WG461584

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M394522	WG461441-01 50ng BFB STD 8260	NA	1	1	STD62146	01/30/14 07:55
8M394523	WG461441-02 50ug/L CCV STD 8260	NA	1	1	STD62504	01/30/14 08:22
8M394524	WG461xxx-01 100ug/L A9FOO	NA	1	1	STDXXXX	01/30/14 08:52
8M394525	WG461442-01 VBLK0130 BLANK STD 826	NA	1	1		01/30/14 09:22
8M394526	L14011015-09 B 826-SPE	<2	1	1		01/30/14 09:53
8M394527	L14011015-08 A 50X 826-SPE	4	1	50		01/30/14 10:23
8M394528	L14011015-13 A 200X 826-SPE	4	1	200		01/30/14 10:53
8M394529	L14011177-01 A 10X 826-TC-SPE	NA	17	10		01/30/14 11:23
8M394530	L14011177-02 A 10X 826-TC-SPE	NA	17	10		01/30/14 11:53
8M394531	L14011015-13 B 10X 826-SPE	4	1	10		01/30/14 12:23
8M394532	WG461442-02 20ug/L LCS STD 8260	NA	1	1	STD62430	01/30/14 12:54
8M394533	WG461442-03 20ug/L LCSDUP STD 8260	NA	1	1	STD62430	01/30/14 13:24
8M394534	L14011119-01 A 10X 826-TC	NA	17	10		01/30/14 13:54
8M394535	L14010987-03 A TB 826-LOW	<2	1	1		01/30/14 14:24
8M394536	L14011078-01 A TB 826-SPE2	<2	1	1		01/30/14 14:55
8M394537	L14011078-02 A 826-SPE2	<2	1	1		01/30/14 15:25
8M394538	L14010987-01 A 826-LOW	<2	1	1		01/30/14 15:55
8M394539	L14011326-01 A 826-SPE	3	1	1		01/30/14 16:26
8M394540	L14011023-03 A 10X 826-TC	NA	17	10		01/30/14 16:56
8M394541	L14011024-03 A 10X 826-TC	NA	17	10		01/30/14 17:28
8M394542	L14011028-03 A 10X 826-TC	NA	17	10		01/30/14 18:00
8M394543	ANTIFOAM BLANK	NA	1	1		01/30/14 18:30
8M394544	WG461583-01 50NG BFB STD 8260	NA	1	1	STD62146	01/30/14 19:38
8M394545	WG461583-02 50ug/L WATER CCV 8260	NA	1	1	STD62504	01/30/14 20:01
8M394546	RINSE	NA	1	1		01/30/14 20:33
8M394547	WG461584-01 BLANK 1/30	NA	1	1		01/30/14 21:04
8M394548	L14011375-31 A 826-LOW	NA	2	1		01/30/14 21:36
8M394549	L14011544-01 A 826-SPE	NA	1	1		01/30/14 22:22
8M394550	L14011544-05 A 826-SPE	NA	1	1		01/30/14 22:53
8M394551	L14011372-15 A 826-LOW	NA	1	1		01/30/14 23:25
8M394552	L14011082-01 A 826-LOW	NA	2	1		01/30/14 23:57
8M394553	L14011372-04 A 826-LOW	NA	1	1		01/31/14 00:30
8M394554	L14011372-05 A 826-LOW	NA	1	1		01/31/14 01:02
8M394555	L14011372-08 A 826-LOW	NA	1	1		01/31/14 01:34

Approved: February 03, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 013014
Analyst1: ADC Analyst2: MES
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 49000

Internal Standard: STD62283 Surrogate Standard: STD62125
CCV: STD62504 LCS: STD62430 MS/MSD: STD62430

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG461442; WG461584

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M394556	L14011372-09 A 826-LOW	NA	1	1		01/31/14 02:06
8M394557	L14011372-10 A 826-LOW	NA	1	1		01/31/14 02:38
8M394558	L14011372-11 A 826-LOW	NA	1	1		01/31/14 03:11
8M394559	L14011372-14 A 826-LOW	NA	1	1		01/31/14 03:44
8M394560	L14011372-12 A 2.5X 826-LOW	NA	1	2.5		01/31/14 04:16
8M394561	L14011372-13 A 2.5X 826-LOW	NA	1	2.5		01/31/14 04:48
8M394562	L14011372-06 MS A 826-LOW	NA	1	1	STD62430	01/31/14 05:21
8M394563	L14011372-07 MSD A 826-LOW	NA	1	1	STD62430	01/31/14 05:53
8M394564	WG461584-02 20ug/L LCS 8260	NA	1	1	STD62430	01/31/14 06:26

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 8M394524				
	Not needed, DNR.			
7	X	10	Analyzed too dilute	
File ID: 8M394528				
	DNR.			

Approved: February 03, 2014

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 19-AUG-2013
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: WG441888
Runlog ID: 55275
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	NA
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
26-AUG-2013

Secondary Reviewer:
27-AUG-2013

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-27-2013 08:13:37

Microbac Laboratories Inc.

Data Checklist

Date: 03-JAN-2014
Analyst: MES
Analyst: NA
Method: 8260/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 58139
Analytical Workgroups: WG458331,WG458387

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	NA
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	MES
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 06-JAN-2014

Secondary Reviewer: 06-JAN-2014

CHECKLIST1 - Modified 03/05/2008

Generated: JAN-06-2014 13:13:31

Microbac Laboratories Inc.

Data Checklist

Date: 06-JAN-2014
Analyst: MES
Analyst: NA
Method: 8260/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 58151
Analytical Workgroups: WG458457, WG458459

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	NA
Second Source standard % Difference	X
Continuing Calibration /Check Standards	NA
Project/Client Specific Requirements	NA
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	MES
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 07-JAN-2014

Secondary Reviewer: 08-JAN-2014

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-08-2014 08:47:38

Microbac Laboratories Inc.

Data Checklist

Date: 30-JAN-2014
Analyst: ADC
Analyst: MES
Method: 8260
Instrument: HPMS9
Curve Workgroup: WG461445
Runlog ID: 58792
Analytical Workgroups: WG461586

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 07-FEB-2014

Secondary Reviewer: 10-FEB-2014

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-10-2014 09:08:54

Microbac Laboratories Inc.

Data Checklist

Date: 30-JAN-2014
Analyst: ADC
Analyst: MES
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 58627
Analytical Workgroups: WG461442,WG461584

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	MES
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 03-FEB-2014

Secondary Reviewer: 03-FEB-2014

CHECKLIST1 - Modified 03/05/2008

Generated: FEB-03-2014 14:43:40

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG461584

Login Number: L14011372

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW09A-012314	04	01/23/14					01/31/2014	7.3	14		01/31/14	7.3	14	
67WW10-012414	05	01/24/14					01/31/2014	6.7	14		01/31/14	6.7	14	
67WW10MS-012414	06	01/24/14					01/31/2014	6.9	14		01/31/14	6.9	14	
67WW10MSD-12414	07	01/24/14					01/31/2014	6.9	14		01/31/14	6.9	14	
EQUIPMENT RINSE-012414	08	01/24/14					01/31/2014	6.7	14		01/31/14	6.7	14	
67WW06-012414	09	01/24/14					01/31/2014	6.7	14		01/31/14	6.7	14	
67WW12-012414	10	01/24/14					01/31/2014	6.7	14		01/31/14	6.7	14	
67WW09-012414	11	01/24/14					01/31/2014	6.6	14		01/31/14	6.6	14	
67WW13-012414	12	01/24/14					01/31/2014	6.6	14		01/31/14	6.6	14	
67WW13FD-012414	13	01/24/14					01/31/2014	6.6	14		01/31/14	6.6	14	
67WW14-012414	14	01/24/14					01/31/2014	6.5	14		01/31/14	6.5	14	
TRIP BLANK	15	01/24/14					01/30/2014	7	14		01/30/14	7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3344157
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG461586

Login Number: L14011372

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW05-012314	01	01/23/14					01/31/2014	7.4	14		01/31/14	7.4	14	
67WW02-012314	02	01/23/14					01/31/2014	7.4	14		01/31/14	7.4	14	
67WW07-012314	03	01/23/14					01/31/2014	7.5	14		01/31/14	7.5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3344157
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L14011372
Instrument Id: HPMS9
Workgroup (AAB#): WG461586

Method: 8260
CAL ID: HPMS9-30-JAN-14
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L14011372-01	1.00	01	106	106	102	112
L14011372-02	1.00	01	106	106	86.7	111
L14011372-03	1.00	01	106	101	97.3	107
WG461586-01	1.00	01	110	110	106	120
WG461586-02	1.00	01	109	109	101	113
WG461586-03	1.00	01	110	110	98.6	112

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3343758
Report generated: 02/10/2014 15:24

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L14011372
Instrument Id: HPMS8
Workgroup (AAB#): WG461584

Method: 8260
CAL ID: HPMS8-03-JAN-14
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L14011372-04	1.00	01	79.2	92.3	92.8	97.4
L14011372-05	1.00	01	81.4	95.0	93.7	96.6
L14011372-06	1.00	01	81.8	95.8	92.2	97.5
L14011372-07	1.00	01	78.4	94.1	93.1	97.4
L14011372-08	1.00	01	86.1	99.3	94.6	98.0
L14011372-09	1.00	01	82.2	96.2	95.8	97.8
L14011372-10	1.00	01	87.2	97.1	95.0	97.5
L14011372-11	1.00	01	79.3	92.8	95.8	99.1
L14011372-12	2.50	DL01	81.0	93.7	93.5	97.1
L14011372-13	2.50	DL01	83.2	95.1	95.6	96.4
L14011372-14	1.00	01	83.0	96.1	93.9	98.3
L14011372-15	1.00	01	79.9	94.0	93.4	98.5
WG461584-01	1.00	01	80.6	92.5	93.3	95.9
WG461584-02	1.00	01	77.2	93.3	94.4	98.2

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3343758
Report generated: 02/10/2014 15:24

METHOD BLANK SUMMARY

Login Number: L14011372
Blank File ID: 8M394547
Prep Date: 01/30/14 21:04
Analyzed Date: 01/30/14 21:04
Analyst: MES

Work Group: WG461584
Blank Sample ID: WG461584-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
TRIP BLANK	L14011372-15	8M394551	01/30/14 23:25	01
67WW09A-012314	L14011372-04	8M394553	01/31/14 00:30	01
67WW10-012414	L14011372-05	8M394554	01/31/14 01:02	01
EQUIPMENT RINSE-012414	L14011372-08	8M394555	01/31/14 01:34	01
67WW06-012414	L14011372-09	8M394556	01/31/14 02:06	01
67WW12-012414	L14011372-10	8M394557	01/31/14 02:38	01
67WW09-012414	L14011372-11	8M394558	01/31/14 03:11	01
67WW14-012414	L14011372-14	8M394559	01/31/14 03:44	01
67WW13-012414	L14011372-12	8M394560	01/31/14 04:16	DL01
67WW13FD-012414	L14011372-13	8M394561	01/31/14 04:48	DL01
67WW10MS-012414	L14011372-06	8M394562	01/31/14 05:21	01
67WW10MSD-12414	L14011372-07	8M394563	01/31/14 05:53	01
LCS	WG461584-02	8M394564	01/31/14 06:26	01

Report Name: BLANK_SUMMARY
PDF File ID: 3355122
Report generated 02/10/2014 15:24

METHOD BLANK SUMMARY

Login Number: L14011372
Blank File ID: 9M961140
Prep Date: 01/30/14 21:35
Analyzed Date: 01/30/14 21:35
Analyst: MES

Work Group: WG461586
Blank Sample ID: WG461586-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
67WW05-012314	L14011372-01	9M961148	01/31/14 01:27	01
67WW02-012314	L14011372-02	9M961149	01/31/14 01:56	01
67WW07-012314	L14011372-03	9M961150	01/31/14 02:25	01
LCS	WG461586-02	9M961154	01/31/14 04:22	01
LCS2	WG461586-03	9M961155	01/31/14 04:51	01

Report Name: BLANK_SUMMARY
PDF File ID: 3355122
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L14011372 Prep Date: 01/30/14 21:04 Sample ID: WG461584-01
Instrument ID: HPMS8 Run Date: 01/30/14 21:04 Prep Method: 5030B/5030C/503
File ID: 8M394547 Analyst: MES Method: 8260B
Workgroup (AAB#): WG461584 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-03-JAN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 3355123
10-FEB-2014 15:24

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14011372 Prep Date: 01/30/14 21:04 Sample ID: WG461584-01
Instrument ID: HPMS8 Run Date: 01/30/14 21:04 Prep Method: 5030B/5030C/503
File ID: 8M394547 Analyst: MES Method: 8260B
Workgroup (AAB#): WG461584 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-03-JAN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	92.5	85 - 115	PASS
1,2-Dichloroethane-d4	80.6	70 - 120	PASS
Toluene-d8	95.9	85 - 120	PASS
4-Bromofluorobenzene	93.3	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3355123
10-FEB-2014 15:24

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L14011372 Prep Date: 01/30/14 21:35 Sample ID: WG461586-01
Instrument ID: HPMS9 Run Date: 01/30/14 21:35 Prep Method: 5030B/5030C/503
File ID: 9M961140 Analyst: MES Method: 8260B
Workgroup (AAB#): WG461586 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS9-30-JAN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 3355123
10-FEB-2014 15:24

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14011372 Prep Date: 01/30/14 21:35 Sample ID: WG461586-01
Instrument ID: HPMS9 Run Date: 01/30/14 21:35 Prep Method: 5030B/5030C/503
File ID: 9M961140 Analyst: MES Method: 8260B
Workgroup (AAB#): WG461586 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS9-30-JAN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	110	70 - 120	PASS
Toluene-d8	120	85 - 120	PASS
4-Bromofluorobenzene	106	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3355123
10-FEB-2014 15:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14011372 | Run Date: 01/31/2014 | Sample ID: WG461584-02
Instrument ID: HPMS8 | Run Time: 06:26 | Prep Method: 5030B/5030C/503
File ID: 8M394564 | Analyst: MES | Method: 8260B
Workgroup (AAB#): WG461584 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD62430 | Cal ID: HPMS8-03-JAN-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	17.2	85.8	40 - 140	
Benzene	20.0	21.6	108	80 - 120	
Bromobenzene	20.0	20.1	100	75 - 125	
Bromochloromethane	20.0	19.7	98.6	65 - 130	
Bromodichloromethane	20.0	20.3	102	75 - 120	
Bromoform	20.0	18.6	92.8	70 - 130	
Bromomethane	20.0	22.4	112	30 - 145	
2-Butanone	20.0	15.9	79.3	30 - 150	
n-Butylbenzene	20.0	20.5	103	70 - 135	
sec-Butylbenzene	20.0	19.1	95.7	70 - 125	
tert-Butylbenzene	20.0	18.7	93.7	70 - 130	
Carbon disulfide	20.0	19.4	97.0	35 - 160	
Carbon tetrachloride	20.0	22.7	113	65 - 140	
Chlorobenzene	20.0	19.3	96.3	80 - 120	
Chlorodibromomethane	20.0	21.1	106	60 - 135	
Chloroethane	20.0	20.9	104	60 - 135	
Chloroform	20.0	20.3	102	65 - 135	
Chloromethane	20.0	24.5	123	40 - 125	
2-Chlorotoluene	20.0	18.3	91.6	75 - 125	
4-Chlorotoluene	20.0	20.7	103	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	16.1	80.7	50 - 130	
1,2-Dibromoethane	20.0	18.3	91.7	80 - 120	
Dibromomethane	20.0	19.0	94.8	75 - 125	
1,2-Dichlorobenzene	20.0	18.4	92.2	70 - 120	
1,3-Dichlorobenzene	20.0	19.0	95.1	75 - 125	
1,4-Dichlorobenzene	20.0	20.3	101	75 - 125	
Dichlorodifluoromethane	20.0	28.7	143	30 - 155	
1,1-Dichloroethane	20.0	20.8	104	70 - 135	
1,2-Dichloroethane	20.0	18.7	93.6	70 - 130	
1,1-Dichloroethene	20.0	19.8	99.2	70 - 130	
cis-1,2-Dichloroethene	20.0	21.1	105	70 - 125	
trans-1,2-Dichloroethene	20.0	21.3	106	60 - 140	
1,2-Dichloropropane	20.0	21.2	106	75 - 125	
1,3-Dichloropropane	20.0	18.4	92.2	75 - 125	
2,2-Dichloropropane	20.0	17.1	85.7	70 - 135	
cis-1,3-Dichloropropene	20.0	20.3	101	70 - 130	
trans-1,3-Dichloropropene	20.0	18.1	90.3	55 - 140	
1,1-Dichloropropene	20.0	21.1	105	75 - 130	
Ethylbenzene	20.0	20.4	102	75 - 125	
2-Hexanone	20.0	14.9	74.6	55 - 130	
Hexachlorobutadiene	20.0	19.5	97.7	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 3343753
Report generated: 02/10/2014 15:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14011372 Run Date: 01/31/2014 Sample ID: WG461584-02
Instrument ID: HPMS8 Run Time: 06:26 Prep Method: 5030B/5030C/503
File ID: 8M394564 Analyst: MES Method: 8260B
Workgroup (AAB#): WG461584 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD62430 Cal ID: HPMS8-03-JAN-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	19.5	97.3	75 - 125	
p-Isopropyltoluene	20.0	19.1	95.7	75 - 130	
4-Methyl-2-pentanone	20.0	16.2	80.8	60 - 135	
Methylene chloride	20.0	20.4	102	55 - 140	
Naphthalene	20.0	16.9	84.6	55 - 140	
n-Propylbenzene	20.0	19.4	97.2	70 - 130	
Styrene	20.0	20.1	101	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	22.2	111	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.2	91.1	65 - 130	
Tetrachloroethene	20.0	20.8	104	45 - 150	
Toluene	20.0	21.5	108	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.8	88.9	55 - 140	
1,2,4-Trichlorobenzene	20.0	18.1	90.5	65 - 135	
1,1,1-Trichloroethane	20.0	21.4	107	65 - 130	
1,1,2-Trichloroethane	20.0	19.1	95.3	75 - 125	
Trichloroethene	20.0	22.0	110	70 - 125	
Trichlorofluoromethane	20.0	21.4	107	60 - 145	
1,2,3-Trichloropropane	20.0	17.3	86.4	75 - 125	
1,2,4-Trimethylbenzene	20.0	21.3	107	75 - 130	
1,3,5-Trimethylbenzene	20.0	21.1	106	75 - 130	
Vinyl chloride	20.0	23.4	117	50 - 145	
o-Xylene	20.0	18.6	92.8	80 - 120	
m-,p-Xylene	40.0	40.5	101	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	93.3	85 - 115	PASS
1,2-Dichloroethane-d4	77.2	70 - 120	PASS
Toluene-d8	98.2	85 - 120	PASS
4-Bromofluorobenzene	94.4	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 3343753
Report generated: 02/10/2014 15:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14011372 Analyst: MES Prep Method: 5030B/5030C/503
Instrument ID: HPMS9 Matrix: Water Method: 8260B
Workgroup (AAB#): WG461586 Units: ug/L
QC Key: DOD4 Lot #: STD62430

Sample ID: WG461586-02 LCS File ID: 9M961154 Run Date: 01/31/2014 04:22
Sample ID: WG461586-03 LCS2 File ID: 9M961155 Run Date: 01/31/2014 04:51

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	22.7	114	20.0	21.3	106	6.63	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.6	103	20.0	20.0	100	3.10	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	22.3	112	20.0	20.8	104	7.08	65 - 130	30	
1,1,2-Trichloroethane	20.0	22.9	115	20.0	22.2	111	3.18	75 - 125	30	
1,1-Dichloroethane	20.0	20.1	101	20.0	19.8	99.0	1.53	70 - 135	30	
1,1-Dichloroethene	20.0	20.8	104	20.0	19.6	98.0	5.95	70 - 130	30	
1,1-Dichloropropene	20.0	21.0	105	20.0	20.3	101	3.72	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	23.6	118	20.0	22.8	114	3.25	55 - 140	30	
1,2,3-Trichloropropane	20.0	25.2	126	20.0	22.4	112	12.1	75 - 125	30	*
1,2,4-Trichlorobenzene	20.0	22.9	114	20.0	22.3	112	2.46	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	22.6	113	20.0	20.6	103	9.42	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	23.8	119	20.0	23.9	120	0.438	50 - 130	30	
1,2-Dibromoethane	20.0	22.3	112	20.0	21.6	108	3.53	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.9	104	20.0	19.8	98.9	5.36	70 - 120	30	
1,2-Dichloroethane	20.0	21.6	108	20.0	21.2	106	2.05	70 - 130	30	
1,2-Dichloropropane	20.0	20.9	105	20.0	20.6	103	1.68	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	23.0	115	20.0	20.6	103	11.0	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.1	100	20.0	18.5	92.7	7.86	75 - 125	30	
1,3-Dichloropropane	20.0	21.5	107	20.0	21.0	105	2.01	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.5	107	20.0	20.1	101	6.42	75 - 125	30	
2,2-Dichloropropane	20.0	18.0	90.1	20.0	17.0	85.2	5.55	70 - 135	30	
2-Butanone	20.0	23.7	118	20.0	24.6	123	3.96	30 - 150	30	
2-Chlorotoluene	20.0	19.5	97.5	20.0	18.2	91.1	6.72	75 - 125	30	
2-Hexanone	20.0	22.7	114	20.0	22.3	112	1.86	55 - 130	30	
4-Chlorotoluene	20.0	20.5	102	20.0	18.6	93.0	9.55	75 - 130	30	
4-Methyl-2-pentanone	20.0	21.0	105	20.0	20.8	104	1.25	60 - 135	30	
Acetone	20.0	26.3	132	20.0	27.2	136	3.22	40 - 140	30	
Benzene	20.0	21.0	105	20.0	20.2	101	4.04	80 - 120	30	
Bromobenzene	20.0	22.1	111	20.0	20.3	102	8.50	75 - 125	30	
Bromochloromethane	20.0	21.8	109	20.0	21.2	106	2.62	65 - 130	30	
Bromodichloromethane	20.0	20.7	104	20.0	20.2	101	2.61	75 - 120	30	
Bromoform	20.0	24.7	123	20.0	23.5	117	5.09	70 - 130	30	
Bromomethane	20.0	21.1	106	20.0	19.6	98.0	7.48	30 - 145	30	
Carbon disulfide	20.0	18.7	93.3	20.0	17.8	89.1	4.60	35 - 160	30	
Carbon tetrachloride	20.0	21.2	106	20.0	19.7	98.6	7.36	65 - 140	30	
Chlorobenzene	20.0	19.3	96.7	20.0	18.6	92.9	3.98	80 - 120	30	
Chloroethane	20.0	21.6	108	20.0	20.7	104	4.05	60 - 135	30	
Chloroform	20.0	21.7	108	20.0	21.4	107	1.47	65 - 135	30	
Chloromethane	20.0	25.3	126	20.0	25.6	128	1.38	40 - 125	30	*
cis-1,2-Dichloroethene	20.0	20.0	99.8	20.0	19.7	98.6	1.20	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3355124
Report generated: 02/10/2014 15:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14011372 Analyst: MES Prep Method: 5030B/5030C/503
Instrument ID: HPMS9 Matrix: Water Method: 8260B
Workgroup (AAB#): WG461586 Units: ug/L
QC Key: DOD4 Lot #: STD62430

Sample ID: WG461586-02 LCS File ID: 9M961154 Run Date: 01/31/2014 04:22
Sample ID: WG461586-03 LCS2 File ID: 9M961155 Run Date: 01/31/2014 04:51

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.6	108	20.0	21.3	107	1.26	70 - 130	30	
Chlorodibromomethane	20.0	21.7	109	20.0	20.8	104	4.22	60 - 135	30	
Dibromomethane	20.0	22.8	114	20.0	22.2	111	2.81	75 - 125	30	
Dichlorodifluoromethane	20.0	39.5	198	20.0	35.1	175	11.9	30 - 155	30	*
Ethylbenzene	20.0	21.5	107	20.0	20.1	100	6.67	75 - 125	30	
Hexachlorobutadiene	20.0	22.8	114	20.0	21.4	107	6.02	50 - 140	30	
Isopropylbenzene	20.0	19.4	97.2	20.0	18.2	90.8	6.84	75 - 125	30	
m-,p-Xylene	40.0	41.2	103	40.0	38.8	97.0	6.13	75 - 130	30	
Methylene chloride	20.0	21.5	107	20.0	20.4	102	5.07	55 - 140	30	
n-Butylbenzene	20.0	22.7	113	20.0	20.2	101	11.6	70 - 135	30	
n-Propylbenzene	20.0	20.2	101	20.0	18.5	92.6	8.81	70 - 130	30	
Naphthalene	20.0	24.6	123	20.0	24.4	122	0.919	55 - 140	30	
o-Xylene	20.0	19.3	96.6	20.0	18.8	93.8	2.91	80 - 120	30	
p-Isopropyltoluene	20.0	20.8	104	20.0	19.0	94.9	9.03	75 - 130	30	
sec-Butylbenzene	20.0	20.9	104	20.0	18.5	92.5	12.2	70 - 125	30	
Styrene	20.0	21.2	106	20.0	20.7	104	2.46	65 - 135	30	
tert-Butylbenzene	20.0	19.6	97.9	20.0	18.3	91.5	6.78	70 - 130	30	
Tetrachloroethene	20.0	21.0	105	20.0	18.9	94.7	10.2	45 - 150	30	
Toluene	20.0	21.5	108	20.0	20.2	101	6.44	75 - 120	30	
trans-1,2-Dichloroethene	20.0	21.0	105	20.0	20.0	100	4.51	60 - 140	30	
trans-1,3-Dichloropropene	20.0	20.7	104	20.0	20.0	100	3.56	55 - 140	30	
Trichloroethene	20.0	20.6	103	20.0	20.0	99.8	3.34	70 - 125	30	
Trichlorofluoromethane	20.0	23.1	115	20.0	22.0	110	4.51	60 - 145	30	
Vinyl chloride	20.0	26.2	131	20.0	24.6	123	6.26	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	109	110	70 - 120	PASS
Dibromofluoromethane	109	110	85 - 115	PASS
4-Bromofluorobenzene	101	98.6	75 - 120	PASS
Toluene-d8	113	112	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3355124
Report generated: 02/10/2014 15:24

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L14011372 Cal ID: HPMS8- 03-JAN-14 Worknum: WG461584

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L14011372-05 File ID: 8M394554 Dil: 1 Method: 5035A

Sample ID: L14011372-06 MS File ID: 8M394562 Dil: 1 Matrix: 8260B

Sample ID: L14011372-07 MSD File ID: 8M394563 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	23.3	116	20.0	23.1	115	0.868	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	21.5	107	20.0	21.2	106	1.18	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	19.3	96.6	20.0	19.4	97.2	0.562	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	20.9	104	20.0	20.0	100	4.32	75 - 125	30	
1,1-Dichloroethane	0.319	20.0	21.5	106	20.0	21.2	104	1.50	70 - 135	30	
1,1-Dichloroethene	U	20.0	19.6	98.1	20.0	19.3	96.6	1.53	70 - 130	30	
1,1-Dichloropropene	U	20.0	20.6	103	20.0	20.3	102	1.47	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	18.7	93.7	20.0	18.8	93.9	0.159	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	18.4	92	20.0	18.5	92.3	0.314	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	18.8	94.1	20.0	18.9	94.3	0.263	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	21.1	106	20.0	21.4	107	1.12	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	17.3	86.4	20.0	16.3	81.7	5.50	50 - 130	30	
1,2-Dibromoethane	U	20.0	19.8	99.2	20.0	19.6	98.1	1.10	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	19.0	95.1	20.0	19.2	96.2	1.16	70 - 120	30	
1,2-Dichloroethane	U	20.0	20.5	103	20.0	19.4	96.8	5.78	70 - 130	30	
1,2-Dichloropropane	U	20.0	22.6	113	20.0	21.7	109	3.96	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	20.8	104	20.0	21.0	105	1.18	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	19.2	96	20.0	19.3	96.6	0.579	75 - 125	30	
1,3-Dichloropropane	U	20.0	19.9	99.6	20.0	19.4	96.8	2.89	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	20.8	104	20.0	20.8	104	0.0102	75 - 125	30	
2,2-Dichloropropane	U	20.0	18.5	92.3	20.0	17.9	89.7	2.95	70 - 135	30	
2-Butanone	U	20.0	17.3	86.4	20.0	16.3	81.6	5.68	30 - 150	30	
2-Chlorotoluene	U	20.0	18.6	93.1	20.0	18.8	94.1	0.999	75 - 125	30	
2-Hexanone	U	20.0	16.6	83.1	20.0	16.1	80.4	3.35	55 - 130	30	
4-Chlorotoluene	U	20.0	20.1	101	20.0	20.2	101	0.607	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	17.5	87.3	20.0	16.3	81.7	6.61	60 - 135	30	
Acetone	U	20.0	18.7	93.3	20.0	17.1	85.4	8.81	40 - 140	30	
Benzene	U	20.0	22.1	111	20.0	21.8	109	1.41	80 - 120	30	
Bromobenzene	U	20.0	20.6	103	20.0	20.9	104	1.37	75 - 125	30	
Bromochloromethane	U	20.0	21.4	107	20.0	20.3	102	5.13	65 - 130	30	
Bromodichloromethane	U	20.0	21.5	108	20.0	21.0	105	2.39	75 - 120	30	
Bromoform	U	20.0	20.7	103	20.0	20.0	100	3.32	70 - 130	30	
Bromomethane	U	20.0	21.9	109	20.0	22.3	112	2.06	30 - 145	30	
Carbon disulfide	U	20.0	19.4	97.1	20.0	19.1	95.7	1.45	35 - 160	30	
Carbon tetrachloride	U	20.0	22.0	110	20.0	21.5	107	2.35	65 - 140	30	
Chlorobenzene	U	20.0	19.8	99	20.0	19.6	97.9	1.14	80 - 120	30	
Chloroethane	U	20.0	21.2	106	20.0	21.0	105	1.25	60 - 135	30	
Chloroform	U	20.0	21.1	105	20.0	21.1	106	0.295	65 - 135	30	
Chloromethane	U	20.0	25.6	128	20.0	24.8	124	3.35	40 - 125	30	*
cis-1,2-Dichloroethene	U	20.0	21.9	109	20.0	21.6	108	1.39	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	21.8	109	20.0	21.3	106	2.35	70 - 130	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 3343754
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L14011372 Cal ID: HPMS8 03-JAN-14 Worknum: WG461584
Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/
Parent ID: L14011372-05 File ID: 8M394554 Dil: 1 Method: 5035A
Sample ID: L14011372-06 MS File ID: 8M394562 Dil: 1 Matrix: 8260B
Sample ID: L14011372-07 MSD File ID: 8M394563 Dil: 1 Units: Water
ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	22.9	114	20.0	22.2	111	3.07	60 - 135	30	
Dibromomethane	U	20.0	20.5	103	20.0	19.6	98.2	4.41	75 - 125	30	
Dichlorodifluoromethane	U	20.0	23.8	119	20.0	22.2	111	7.14	30 - 155	30	
Ethylbenzene	U	20.0	20.8	104	20.0	20.5	102	1.42	75 - 125	30	
Hexachlorobutadiene	U	20.0	18.6	93.2	20.0	18.9	94.6	1.53	50 - 140	30	
Isopropylbenzene	U	20.0	19.5	97.7	20.0	19.3	96.7	1.04	75 - 125	30	
m-,p-Xylene	U	40.0	41.3	103	40.0	41.1	103	0.537	75 - 130	30	
Methylene chloride	U	20.0	21.1	106	20.0	20.9	104	1.37	55 - 140	30	
n-Butylbenzene	U	20.0	19.8	99.1	20.0	19.9	99.6	0.516	70 - 135	30	
n-Propylbenzene	U	20.0	18.9	94.6	20.0	19.2	96	1.48	70 - 130	30	
Naphthalene	U	20.0	18.1	90.7	20.0	17.9	89.7	1.07	55 - 140	30	
o-Xylene	U	20.0	19.3	96.4	20.0	19.0	94.9	1.64	80 - 120	30	
p-Isopropyltoluene	U	20.0	18.6	92.9	20.0	18.7	93.3	0.404	75 - 130	30	
sec-Butylbenzene	U	20.0	18.3	91.7	20.0	18.7	93.4	1.82	70 - 125	30	
Styrene	U	20.0	21.1	105	20.0	20.9	104	0.960	65 - 135	30	
tert-Butylbenzene	U	20.0	18.4	92	20.0	18.8	93.9	1.99	70 - 130	30	
Tetrachloroethene	U	20.0	20.5	103	20.0	20.4	102	0.458	45 - 150	30	
Toluene	U	20.0	21.7	109	20.0	21.6	108	0.604	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	21.5	108	20.0	21.3	107	1.02	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	19.8	99.2	20.0	19.3	96.5	2.78	55 - 140	30	
Trichloroethene	U	20.0	22.2	111	20.0	21.6	108	2.82	70 - 125	30	
Trichlorofluoromethane	U	20.0	19.4	97	20.0	18.6	93	4.17	60 - 145	30	
Vinyl chloride	U	20.0	24.4	122	20.0	22.9	115	6.35	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 3343754
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14011372
Instrument: HPMS8
Analyst: MES
Workgroup: WG458331

Tune ID: WG458331-01
Run Date: 01/03/2014
Run Time: 10:33
File ID: 8M393747
Cal ID: HPMS8 - 03-JAN-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.1	6745	PASS
75.0	95.0	30.0	60.0	46.1	14029	PASS
95.0	95.0	100	100	100	30459	PASS
96.0	95.0	5.00	9.00	6.20	1888	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	83.3	25373	PASS
175	174	5.00	9.00	7.75	1967	PASS
176	174	95.0	101	96.4	24472	PASS
177	176	5.00	9.00	6.48	1586	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG458331-02	STD	01	01/03/2014 10:56	
WG458331-03	STD	01	01/03/2014 11:26	
WG458331-04	STD	01	01/03/2014 11:56	
WG458331-05	STD	01	01/03/2014 12:26	
WG458331-06	STD	01	01/03/2014 12:56	
WG458331-07	STD	01	01/03/2014 13:26	
WG458331-08	STD-CCV	01	01/03/2014 13:56	
WG458331-09	STD	01	01/03/2014 14:26	
WG458331-10	STD	01	01/03/2014 14:56	
WG458331-11	STD	01	01/03/2014 15:27	
WG458331-12	SSCV	01	01/03/2014 16:57	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3355125
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14011372
Instrument: HPMS8
Analyst: MES
Workgroup: WG458457

Tune ID: WG458457-01
Run Date: 01/06/2014
Run Time: 09:59
File ID: 8M393770
Cal ID: HPMS8 - 06-JAN-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.3	8179	PASS
75.0	95.0	30.0	60.0	47.4	18190	PASS
95.0	95.0	100	100	100	38400	PASS
96.0	95.0	5.00	9.00	7.43	2855	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	84.6	32501	PASS
175	174	5.00	9.00	7.32	2380	PASS
176	174	95.0	101	96.2	31274	PASS
177	176	5.00	9.00	6.70	2096	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG458457-02	STD	01	01/06/2014 10:22	
WG458457-03	STD	01	01/06/2014 11:00	
WG458457-04	STD	01	01/06/2014 11:29	
WG458457-05	STD-CCV	01	01/06/2014 12:00	
WG458457-06	STD	01	01/06/2014 12:27	
WG458457-07	STD	01	01/06/2014 12:55	
WG458457-08	STD	01	01/06/2014 13:23	
WG458457-09	STD	01	01/06/2014 13:52	
WG458457-10	SSCV	01	01/06/2014 14:48	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3355125
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14011372
Instrument: HPMS8
Analyst: MES
Workgroup: WG461583

Tune ID: WG461583-01
Run Date: 01/30/2014
Run Time: 19:38
File ID: 8M394544
Cal ID: HPMS8 - 03-JAN-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.2	5846	PASS
75.0	95.0	30.0	60.0	48.2	11636	PASS
95.0	95.0	100	100	100	24153	PASS
96.0	95.0	5.00	9.00	7.27	1756	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	77.5	18719	PASS
175	174	5.00	9.00	8.41	1575	PASS
176	174	95.0	101	96.0	17972	PASS
177	176	5.00	9.00	6.40	1150	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG461583-02	CCV	01	01/30/2014 20:01	
WG461584-01	BLANK	01	01/30/2014 21:04	
L14011372-15	TRIP BLANK	01	01/30/2014 23:25	
L14011372-04	67WW09A-012314	01	01/31/2014 00:30	
L14011372-05	67WW10-012414	01	01/31/2014 01:02	
L14011372-08	EQUIPMENT RINSE-012414	01	01/31/2014 01:34	
L14011372-09	67WW06-012414	01	01/31/2014 02:06	
L14011372-10	67WW12-012414	01	01/31/2014 02:38	
L14011372-11	67WW09-012414	01	01/31/2014 03:11	
L14011372-14	67WW14-012414	01	01/31/2014 03:44	
L14011372-12	67WW13-012414	DL01	01/31/2014 04:16	
L14011372-13	67WW13FD-012414	DL01	01/31/2014 04:48	
L14011372-06	67WW10MS-012414	01	01/31/2014 05:21	
L14011372-07	67WW10MSD-12414	01	01/31/2014 05:53	
WG461584-02	LCS	01	01/31/2014 06:26	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3355125
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14011372
Instrument: HPMS9
Analyst: ADC
Workgroup: WG441887

Tune ID: WG441887-01
Run Date: 08/19/2013
Run Time: 15:08
File ID: 9M957893
Cal ID: HPMS9 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.7	8524	PASS
75.0	95.0	30.0	60.0	54.9	26372	PASS
95.0	95.0	100	100	100	48077	PASS
96.0	95.0	5.00	9.00	6.87	3304	PASS
173	174	0	2.00	0.270	117	PASS
174	95.0	50.0	100	90.1	43306	PASS
175	174	5.00	9.00	7.40	3205	PASS
176	174	95.0	101	98.9	42808	PASS
177	176	5.00	9.00	6.58	2817	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG441888-01	STD	01	08/19/2013 16:23	
WG441888-02	STD	01	08/19/2013 16:53	
WG441888-03	STD	01	08/19/2013 17:22	
WG441888-04	STD-CCV	01	08/19/2013 17:51	
WG441888-05	STD	01	08/19/2013 18:20	
WG441888-06	STD	01	08/19/2013 18:48	
WG441888-07	STD	01	08/19/2013 19:17	
WG441888-08	STD	01	08/19/2013 19:46	
WG441888-09	SSCV	01	08/19/2013 20:45	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3355125
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14011372
Instrument: HPMS9
Analyst: ADC
Workgroup: WG461445

Tune ID: WG461445-01
Run Date: 01/30/2014
Run Time: 08:30
File ID: 9M961121
Cal ID: HPMS9 - 30-JAN-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.6	10219	PASS
75.0	95.0	30.0	60.0	46.8	19440	PASS
95.0	95.0	100	100	100	41573	PASS
96.0	95.0	5.00	9.00	5.69	2365	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	85.9	35693	PASS
175	174	5.00	9.00	6.69	2388	PASS
176	174	95.0	101	95.7	34141	PASS
177	176	5.00	9.00	6.26	2138	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG461445-02	STD	01	01/30/2014 09:30	
WG461445-03	STD	01	01/30/2014 09:58	
WG461445-05	STD	01	01/30/2014 10:56	
WG461445-08	STD-CCV	01	01/30/2014 12:22	
WG461445-09	STD	01	01/30/2014 12:51	
WG461445-10	STD	01	01/30/2014 13:20	
WG461445-11	STD	01	01/30/2014 13:49	
WG461445-04	STD	01	01/30/2014 15:20	
WG461445-12	SSCV	01	01/30/2014 15:49	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3355125
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14011372
Instrument: HPMS9
Analyst: MES
Workgroup: WG461585

Tune ID: WG461585-01
Run Date: 01/30/2014
Run Time: 19:37
File ID: 9M961136
Cal ID: HPMS9 - 30-JAN-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	28.2	7518	PASS
75.0	95.0	30.0	60.0	50.1	13339	PASS
95.0	95.0	100	100	100	26639	PASS
96.0	95.0	5.00	9.00	7.62	2030	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	83.2	22158	PASS
175	174	5.00	9.00	7.61	1687	PASS
176	174	95.0	101	95.3	21114	PASS
177	176	5.00	9.00	6.96	1470	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG461585-02	CCV	01	01/30/2014 20:35	
WG461586-01	BLANK	01	01/30/2014 21:35	
L14011372-01	67WW05-012314	01	01/31/2014 01:27	
L14011372-02	67WW02-012314	01	01/31/2014 01:56	
L14011372-03	67WW07-012314	01	01/31/2014 02:25	
WG461586-02	LCS	01	01/31/2014 04:22	
WG461586-03	LCS2	01	01/31/2014 04:51	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3355125
Report generated 02/10/2014 15:24

Calibration Table Report
Method: 8260WTR.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Calibration: Mon Jan 06 09:01:47 2014
Curve: WG458331
Calibration Files

Compound	0.3 8M393748.D	0.4 8M393749.D	1 8M393750.D	2 8M393751.D	5 8M393752.D	20 8M393753.D	50 8M393754.D	100 8M393755.D	200 8M393756.D	300 8M393757.D	Avg	%RSD	Linear	Quadratic
Fluorobenzene	ISTD													
Dichlorodifluoromethane		0.203	0.191	0.199	0.212	0.246	0.264	0.251	0.234	0.228	0.225	11.240		
Chloromethane			0.444	0.445	0.437	0.433	0.450	0.415	0.382	0.360	0.421	7.831		
Vinyl Chloride		0.366	0.327	0.308	0.310	0.304	0.310	0.280	0.255	0.236	0.299	12.834		
1,3-Butadiene				0.357	0.359	0.359	0.274	0.150	0.114		0.269	41.530		0.995
Bromomethane			0.151	0.174	0.181	0.182	0.208	0.208	0.207	0.207	0.190	11.151		
Chloroethane		0.212	0.194	0.196	0.219	0.211	0.227	0.220	0.213	0.212	0.212	5.028		
Trichlorofluoromethane		0.412	0.391	0.403	0.448	0.429	0.460	0.438	0.421	0.420	0.425	5.158		
Diethyl ether			0.188	0.188	0.193	0.192	0.198	0.189		0.185	0.190	2.362		
Isoprene			0.377	0.389	0.426	0.427	0.447	0.430	0.408	0.399	0.413	5.715		
Acrolein			0.023	0.027	0.028	0.029	0.030	0.029		0.030	0.028	9.178		
1,1,2-Trichloro-1,2,2-Trifluoroe			0.214	0.236	0.266	0.255	0.278	0.267	0.253	0.251	0.253	7.858		
Acetone					0.047	0.045	0.047	0.045	0.042	0.041	0.044	5.846		
1,1-Dichloroethene		0.464	0.449	0.448	0.476	0.467	0.500	0.471	0.449	0.445	0.463	3.864		
Tert-Butyl Alcohol				0.011	0.010	0.011	0.011	0.011		0.012	0.011	5.142		
Dimethyl Sulfide			0.248	0.252	0.271	0.271	0.289	0.276	0.265	0.260	0.266	4.987		
Iodomethane			0.153	0.174	0.196	0.234	0.266	0.261	0.249	0.242	0.222	19.060	0.999	
Methyl acetate				0.155	0.152	0.133	0.138	0.131	0.123	0.127	0.137	8.919		
Methylene Chloride		0.271	0.255	0.249	0.267	0.260	0.276	0.264	0.254	0.251	0.261	3.590		
Carbon Disulfide			0.827	0.822	0.906	0.922	0.955	0.904	0.840	0.803	0.872	6.427		
Acrylonitrile			0.055	0.060	0.061	0.063	0.069	0.065		0.071	0.063	8.596		
Methyl Tert Butyl Ether			0.516	0.541	0.549	0.538	0.579	0.537	0.514	0.505	0.535	4.399		
trans-1,2-Dichloroethene		0.445	0.447	0.440	0.460	0.448	0.474	0.449	0.427	0.415	0.445	3.870		
n-Hexane		0.463	0.430	0.432	0.449	0.460	0.465	0.453	0.415	0.400	0.441	5.194		
Diisopropyl ether			1.071	1.055	1.087	1.082	1.090	1.015		0.945	1.049	5.013		
Vinyl Acetate				0.426	0.428	0.450	0.469	0.442	0.409	0.386	0.430	6.352		
1,1-Dichloroethane		0.592	0.526	0.535	0.558	0.546	0.576	0.545	0.522	0.506	0.545	4.940		
Ethyl-Tert-Butyl ether			0.849	0.847	0.863	0.864	0.882	0.824		0.781	0.844	3.939		
2-Butanone					0.065	0.069	0.075	0.070	0.068	0.069	0.069	4.475		
Propionitrile			0.019	0.020	0.021	0.022	0.022	0.022		0.023	0.021	6.985		
2,2-Dichloropropane		0.444	0.416	0.419	0.450	0.448	0.475	0.447	0.423	0.411	0.437	4.770		
cis-1,2-Dichloroethene		0.314	0.289	0.276	0.310	0.304	0.319	0.306	0.293	0.290	0.300	4.577		
Chloroform	0.505	0.531	0.479	0.474	0.487	0.489	0.506	0.479	0.454	0.441	0.485	5.360		
1-Bromopropane			0.050	0.054	0.058	0.059	0.062	0.059	0.058	0.057	0.057	6.624		
Bromochloromethane		0.148	0.162	0.153	0.156	0.156	0.166	0.157	0.151	0.151	0.156	3.684		
Tetrahydrofuran			0.045	0.045	0.044	0.044	0.046	0.043		0.042	0.044	2.552		
Dibromofluoromethane				0.292	0.286	0.264	0.280	0.268	0.258	0.254	0.272	5.369		
1,1,1-Trichloroethane		0.411	0.392	0.406	0.442	0.440	0.471	0.446	0.430	0.417	0.428	5.672		
Cyclohexane			0.541	0.562	0.587	0.594	0.606	0.583	0.546	0.529	0.568	4.956		
1,1-Dichloropropene		0.376	0.356	0.380	0.401	0.385	0.412	0.387	0.370	0.364	0.381	4.643		
Tert-Amyl-Methyl ether			0.575	0.592	0.608	0.598	0.612	0.574		0.554	0.588	3.553		
Carbon Tetrachloride		0.321	0.31	0.326	0.355	0.363	0.405	0.392	0.383	0.377	0.35908	9.40025		
1,2-Dichloroethane-d4				0.295	0.289	0.264	0.275	0.259	0.245	0.24	0.26653	7.8429		
Heptane											0	0		
1,2-Dichloroethane		0.35	0.325	0.34	0.357	0.35	0.366	0.344	0.322	0.313	0.3408	5.15324		
Benzene		1.118	1.093	1.053	1.12	1.094	1.13	1.06	0.981	0.924	1.06371	6.54933		
Trichloroethene		0.283	0.276	0.278	0.294	0.284	0.303	0.289	0.281	0.28	0.28543	2.99277		
Methylcyclohexane			0.415	0.412	0.458	0.456	0.47	0.456	0.426	0.414	0.43842	5.44539		
1,2-Dichloropropane		0.297	0.279	0.29	0.303	0.298	0.309	0.298	0.286	0.284	0.29378	3.35792		
Bromodichloromethane		0.274	0.311	0.31	0.324	0.34	0.367	0.354	0.34	0.333	0.32813	8.40917		
1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.00115	14.2693		
Dibromomethane		0.115	0.132	0.125	0.137	0.13	0.139	0.133	0.127	0.128	0.12956	5.50704		
2-Chloroethyl Vinyl Ether			0.119	0.13	0.126	0.132	0.14	0.133	0.129	0.13	0.12988	4.70405		
4-Methyl-2-Pentanone					0.06	0.058	0.062	0.059	0.058	0.06	0.05966	2.5405		
cis-1,3-Dichloropropene		0.372	0.382	0.386	0.412	0.419	0.443	0.423	0.404	0.397	0.4042	5.56146		
Dimethyl Disulfide					0.342	0.403	0.461	0.452	0.444	0.438	0.42307	10.5349		
Chlorobenzene-d5	ISTD													
Toluene-d8				1.486	1.366	1.235	1.252	1.177	1.142	1.061	1.24557	11.4565		
Toluene		1.654	1.547	1.542	1.596	1.538	1.547	1.432	1.338	1.169	1.48473	10.0685		
Ethyl Methacrylate			0.27	0.286	0.298	0.297	0.317	0.293	0.288	0.274	0.29028	5.04703		
Paraldehyde											0	0		
trans-1,3-Dichloropropene		0.373	0.394	0.397	0.437	0.445	0.47	0.44	0.431	0.402	0.4209	7.36555		
1,1,2-Trichloroethane		0.192	0.209	0.228	0.226	0.225	0.234	0.22	0.217	0.207	0.21758	5.93436		
2-Hexanone					0.061	0.07	0.074	0.069	0.069	0.067	0.06836	6.55527		
1,3-Dichloropropane		0.416	0.395	0.406	0.424	0.412	0.42	0.391	0.382	0.36	0.40051	5.16867		
Tetrachloroethene		0.289	0.286	0.296	0.309	0.304	0.315	0.297	0.301	0.285	0.29804	3.54231		
Dibromochloromethane		0.189	0.207	0.217	0.236	0.265	0.286	0.279	0.281	0.272	0.24797	14.7402		
1,2-Dibromoethane		0.188	0.217	0.226	0.219	0.226	0.234	0.22	0.217	0.206	0.2171	6.13478		
1-Chlorohexane		0.499	0.474	0.489	0.533	0.539	0.541	0.51	0.497	0.458	0.50459	5.75452		
Chlorobenzene		1.083	0.98	0.995	1.029	1.017	1.032	0.973	0.944	0.838	0.98804	6.99381		
1,1,1,2-Tetrachloroethane		0.255	0.282	0.289	0.314	0.335	0.355	0.344	0.348	0.319	0.31561	10.837		
Ethylbenzene		0.537	0.541	0.529	0.566	0.548	0.568	0.544	0.547	0.497	0.54209	3.86985		
m-,p-Xylene		0.675	0.655	0.64	0.672	0.667	0.68	0.64	0.612	0.523	0.6402	7.67294		
o-Xylene		0.674	0.626	0.642	0.674	0.662	0.678	0.644	0.641	0.592	0.64808	4.27822		
Styrene		1.127	1.002	1.052	1.105	1.107	1.14	1.069	1.024	0.919	1.0606	6.63684		
Bromoform			0.103	0.105	0.123	0.15	0.176	0.174	0.179	0.174	0.14798	22.2596	0.999	
Isopropylbenzene		1.736	1.573	1.649	1.721	1.677	1.703	1.569	1.463	1.26	1.59459	9.62101		
1,4-Dichlorobenzene-d4	ISTD													
1,1,2,2-Tetrachloroethane		0.38	0.425	0.413	0.429	0.437	0.45	0.425	0.413	0.411	0.42039	4.64977		
p-Bromofluorobenzene				1.078	0.983	0.929	0.936	0.88	0.85	0.829	0.92644	9.22697		

1,2,3-Trichloropropane			0.115	0.118	0.126	0.124	0.13	0.122	0.118	0.118	0.12147	4.15839	
trans-1,4-Dichloro-2-Butene			0.11	0.132	0.157	0.149	0.164	0.154	0.151	0.163	0.1475	12.3261	
n-Propylbenzene		4.09	3.698	3.682	3.961	3.838	3.821	3.462	3.043	2.644	3.58204	12.9928	
Bromobenzene	0.749	0.775	0.75	0.732	0.768	0.766	0.78	0.74	0.723	0.708	0.74904	3.14397	
1,3,5-Trimethylbenzene		2.844	2.59	2.535	2.686	2.642	2.657	2.467	2.274	2.061	2.52841	9.32729	
2-Chlorotoluene		2.757	2.23	2.324	2.393	2.632	2.343	2.143	2.187	1.928	2.32621	10.7988	
4-Chlorotoluene		2.166	2.04	2.332	2.437	2.086	2.406	2.241	1.792	1.709	2.13436	12.0239	
a-Methylstyrene			1.397	1.354	1.464	1.478	1.509	1.437	1.38	1.288	1.41344	5.14587	
tert-Butylbenzene		0.524	0.492	0.538	0.586	0.563	0.592	0.571	0.565	0.543	0.55273	5.72733	
1,2,4-Trimethylbenzene		2.757	2.611	2.623	2.763	2.691	2.711	2.512	2.313	2.078	2.56211	8.96786	
sec-Butylbenzene		3.474	3.059	3.033	3.27	3.189	3.231	2.973	2.696	2.397	3.03594	10.6502	
p-Isopropyltoluene		2.774	2.578	2.584	2.816	2.732	2.793	2.61	2.398	2.146	2.60348	8.35562	
1,3-Dichlorobenzene		1.472	1.431	1.415	1.474	1.467	1.49	1.407	1.355	1.28	1.42132	4.78201	
1,4-Dichlorobenzene	1.397	1.478	1.407	1.391	1.467	1.432	1.469	1.39	1.337	1.261	1.4029	4.73796	
n-Butylbenzene		2.768	2.404	2.444	2.584	2.54	2.579	2.373	2.166	1.938	2.42168	10.192	
1,2-Dichlorobenzene	1.216	1.333	1.268	1.23	1.302	1.292	1.311	1.228	1.193	1.136	1.25089	4.89533	
1,2-Dibromo-3-Chloropropane				0.044	0.066	0.07	0.078	0.075	0.076	0.076	0.06924	17.008	1.000
1,2,4-Trichlorobenzene		1.112	0.96	0.914	0.969	0.967	0.993	0.933	0.901	0.855	0.95588	7.53251	
Hexachlorobutadiene		0.409	0.414	0.387	0.433	0.416	0.434	0.407	0.398	0.38	0.40878	4.49996	
Naphthalene		1.593	1.459	1.477	1.54	1.537	1.56	1.439	1.35	1.271	1.46956	7.12982	
1,2,3-Trichlorobenzene	0.81	0.823	0.782	0.776	0.813	0.816	0.839	0.783	0.759	0.721	0.79222	4.43275	

Mon Jan 06 09:08:20 2014

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 01-06-14 HPMS8
Last Calibration: Tue Jan 07 08:20:19 2014
Curve:WG458457
Calibration Files

Compound	5 8M393771.D	20 8M393772.D	50 8M393773.D	100 8M393774.D	200 8M393775.D	300 8M393776.D	400 8M393777.D	500 8M393778.D	Avg	%RSD
Fluorobenzene	ISTD									
Acetonitrile	0.018	0.023	0.019	0.020	0.020	0.020	0.020	0.021	0.020	7.199
3-Chloro-1-propene	0.507	0.581	0.536	0.541	0.526	0.505	0.490	0.654	0.543	9.768
2-Chloro-1,3-butadiene	0.495	0.574	0.536	0.542	0.530	0.516	0.499	0.658	0.544	9.656
Ethyl Acetate	0.119	0.165	0.146	0.153	0.153	0.144	0.146	0.153	0.147	8.914
Methacrylonitrile	0.047	0.068	0.059	0.063	0.063	0.060	0.061	0.065	0.061	10.430
Isobutyl Alcohol		0.006	0.005	0.005	0.005	0.005	0.005	0.006	0.006	8.012
1-Butanol			0.003	0.003	0.003	0.003	0.003		0.003	10.353
Methyl methacrylate	0.134	0.189	0.160	0.168	0.168	0.158	0.159	0.170	0.163	9.483
2-Nitropropane	0.038	0.053	0.043	0.048	0.049	0.048	0.049	0.053	0.048	10.512
Chlorobenzene-d5	ISTD									
1,4-Dichlorobenzene-d4	ISTD									
Cyclohexanone			0.009	0.009	0.008	0.008	0.007	0.008	0.008	11.139

Wed Jan 08 09:06:48 2014

Calibration Table Report
Method: A9FOOWT.M
Title: FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Calibration: Tue Aug 20 15:10:19 2013
Curve: WG441888
Calibration Files

Compound	5 9M957895.D	20 9M957896.D	50 9M957897.D	100 9M957898.D	200 9M957899.D	300 9M957900.D	400 9M957901.D	500 9M957902.D	Avg	%RSD
Fluorobenzene	ISTD									
Acetonitrile	0.020	0.022	0.023	0.021	0.022	0.021	0.022	0.023	0.022	3.924
3-Chloro-1-propene	0.338	0.346	0.375	0.349	0.358	0.348	0.343	0.363	0.352	3.490
2-Chloro-1,3-butadiene	0.338	0.363	0.398	0.373	0.390	0.382	0.380	0.403	0.378	5.543
Ethyl Acetate	0.150	0.169	0.184	0.171	0.174	0.169	0.166	0.176	0.170	5.676
Methacrylonitrile	0.072	0.083	0.091	0.084	0.088	0.086	0.086	0.093	0.086	7.408
Isobutyl Alcohol	0.014	0.015	0.015	0.013	0.014	0.014	0.015	0.016	0.015	6.105
1-Butanol		0.003	0.003	0.003	0.004	0.004	0.004		0.004	12.474
Methyl methacrylate	0.164	0.173	0.191	0.178	0.183	0.180	0.177	0.189	0.179	4.819
2-Nitropropane	0.048	0.051	0.057	0.056	0.061	0.060	0.060	0.065	0.057	10.037
Chlorobenzene-d5	ISTD									
Cyclohexanone	0.044	0.032	0.036	0.034	0.035	0.034	0.035	0.037	0.036	10.211
1,4-Dichlorobenzene-d4	ISTD									

Tue Aug 20 15:10:40 2013

Calibration Table Report
Method: 8260WTR.M
Title: 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Calibration: Thu Jan 30 20:21:06 2014
Curve: WG461445
Calibration Files

Compound		0.3 (9M961123.D)	0.4 (9M961124.D)	1 (9M961134.D)	2 (9M961126.D)	5 (9M961127.D)	20 (9M961128.D)	50 (9M961129.D)	100 (9M961130.D)	200 (9M961131.D)	300 (9M961132.D)	Avg	%RSD	R^2 Linear	R^2 Quadratic
Fluorobenzene	ISTD														
Dichlorodifluoromethane				0.049	0.052	0.059	0.182	0.189	0.181	0.185	0.176	0.134	49.964	0.997	
Chloromethane				0.274	0.225	0.203	0.305	0.314	0.276	0.296	0.291	0.273	14.368		
Vinyl Chloride			0.219	0.226	0.242	0.227	0.301	0.319	0.295	0.304	0.274	0.268	14.574		
1,3-Butadiene						0.200	0.263	0.219	0.184	0.184	0.165	0.203	17.155		0.999
Bromomethane			0.248	0.212	0.206	0.168	0.184	0.199	0.184	0.201	0.194	0.199	11.192		
Chloroethane			0.186	0.153	0.194	0.194	0.216	0.233	0.213	0.224	0.215	0.203	11.992		
Trichlorofluoromethane			0.118	0.371	0.391	0.382	0.433	0.453	0.423	0.435	0.404	0.379	26.820	0.998	
Diethyl ether				0.239	0.222	0.261	0.248	0.269	0.250		0.248	0.248	6.124		
Isoprene			0.390	0.332	0.342	0.354	0.391	0.425	0.388	0.398	0.369	0.377	7.903		
Acrolein				0.028	0.025	0.030	0.031	0.037	0.033		0.034	0.031	12.566	0.995	
1,1,2-Trichloro-1,2,2-Trifluoroet			0.221	0.225	0.231	0.225	0.260	0.272	0.253	0.261	0.243	0.243	7.668		
Acetone						0.091	0.074	0.085	0.080	0.087	0.084	0.083	7.087		
1,1-Dichloroethene			0.408	0.426	0.459	0.446	0.507	0.525	0.485	0.495	0.460	0.468	8.244		
Tert-Butyl Alcohol				0.020	0.017	0.022	0.021	0.022	0.024		0.029	0.022	15.946		0.998
Dimethyl Sulfide			0.282	0.257	0.272	0.284	0.304	0.331	0.302	0.312	0.292	0.293	7.626		
Iodomethane				0.018	0.119	0.175	0.273	0.302	0.284	0.293	0.273	0.217	47.593		0.998
Methyl acetate				0.204	0.260	0.253	0.242	0.256	0.250	0.254	0.243	0.245	7.245		
Methylene Chloride			0.248	0.255	0.252	0.275	0.292	0.302	0.277	0.290	0.270	0.273	6.932		
Carbon Disulfide			0.779	0.952	0.757	0.719	0.831	0.891	0.821	0.830	0.770	0.817	8.755		
Acrylonitrile				0.087	0.083	0.106	0.107	0.119	0.116			0.103	14.639		
Methyl Tert Butyl Ether			0.694	0.651	0.694	0.717	0.728	0.779	0.726	0.759	0.711	0.718	5.230		
trans-1,2-Dichloroethene			0.429	0.493	0.446	0.464	0.475	0.495	0.455	0.472	0.436	0.463	5.071		
n-Hexane			0.356	0.423	0.364	0.390	0.458	0.486	0.459	0.465	0.425	0.425	10.913		
Diisopropyl ether				1.199	1.147	1.357	1.282	1.361	1.223		1.176	1.249	6.867		
Vinyl Acetate					0.396	0.445	0.540	0.623	0.593	0.614	0.560	0.539	16.146	0.998	
1,1-Dichloroethane			0.639	0.580	0.614	0.591	0.619	0.635	0.586	0.603	0.555	0.602	4.563		
Ethyl-Tert-Butyl ether				0.959	0.914	1.087	1.030	1.107	1.015		0.994	1.015	6.682		
2-Butanone						0.121	0.118	0.126	0.129	0.132	0.130	0.126	4.483		
Propionitrile				0.031	0.029	0.037	0.036	0.041	0.040		0.044	0.037	14.673	0.995	
2,2-Dichloropropane			0.436	0.398	0.459	0.461	0.468	0.494	0.453	0.466	0.428	0.451	6.098		
cis-1,2-Dichloroethene			0.345	0.289	0.306	0.291	0.303	0.317	0.289	0.300	0.281	0.303	6.319		
Chloroform		0.446	0.478	0.451	0.486	0.513	0.510	0.536	0.493	0.513	0.476	0.490	5.840		
1-Bromopropane				0.034	0.054	0.046	0.050	0.057	0.052	0.053	0.052	0.050	14.431	0.999	
Bromochloromethane			0.151	0.148	0.164	0.171	0.174	0.186	0.175	0.183	0.173	0.169	7.608		
Tetrahydrofuran				0.065	0.065	0.080	0.078	0.085	0.082		0.083	0.077	11.012		
Dibromofluoromethane				0.242	0.251	0.247	0.240	0.266	0.250	0.259	0.242	0.249	3.595		
1,1,1-Trichloroethane			0.501	0.364	0.438	0.433	0.437	0.460	0.425	0.441	0.411	0.434	8.454		
Cyclohexane			0.561	0.550	0.575	0.616	0.638	0.667	0.616	0.621	0.574	0.602	6.471		
1,1-Dichloropropene			0.317	0.324	0.373	0.367	0.385	0.409	0.375	0.387	0.359	0.366	8.048		
Tert-Amyl-Methyl ether				0.652	0.623	0.755	0.711	0.759	0.708		0.700	0.701	7.107		
Carbon Tetrachloride			0.36663	0.36776	0.40305	0.38917	0.39652	0.41855	0.39413	0.40469	0.37859	0.39101	4.45109		
1,2-Dichloroethane-d4					0.36424	0.31437	0.26879	0.29811	0.28088	0.29196	0.27261	0.29871	11.0015		
Heptane												0	0		
1,2-Dichloroethane			0.46759	0.41362	0.42381	0.44116	0.43939	0.46366	0.42179	0.43595	0.40659	0.43484	4.81403		
Benzene			1.16884	1.05586	1.15245	1.14858	1.13825	1.19483	1.08112	1.09825	0.99786	1.11512	5.58142		
Trichloroethene			0.29566	0.31389	0.31087	0.2943	0.30016	0.30747	0.28183	0.29031	0.26852	0.29589	4.89906		
Methylcyclohexane			0.46796	0.40367	0.40888	0.42394	0.44924	0.47863	0.4448	0.45214	0.42005	0.43881	5.95423		
1,2-Dichloropropane			0.29237	0.34193	0.3375	0.34778	0.34638	0.37138	0.33862	0.35185	0.33128	0.3399	6.22605		
1,4-Dioxane					0.00152	0.00178	0.00186	0.00214	0.00228			0.00192	15.6882	0.995	
Bromodichloromethane			0.33462	0.36151	0.41059	0.38797	0.40831	0.42802	0.39612	0.41322	0.38867	0.39212	7.33906		
Dibromomethane			0.14477	0.15335	0.17393	0.17316	0.18177	0.19274	0.18109	0.19099	0.18234	0.1749	9.25123		
2-Chloroethyl Vinyl Ether				0.14255	0.15147	0.15912	0.16142	0.18338	0.17923	0.18772	0.17985	0.16809	9.89115		
4-Methyl-2-Pentanone						0.0998	0.09629	0.11061	0.11091	0.11431	0.11711	0.10817	7.64677		
cis-1,3-Dichloropropene			0.42132	0.42169	0.44255	0.45664	0.4798	0.50353	0.46869	0.48928	0.45923	0.4603	6.19223		
Dimethyl Disulfide				0.4242	0.50286	0.50766	0.50309	0.5615	0.51663	0.53156	0.50174	0.50615	7.67979		
Chlorobenzene-d5	ISTD														
Toluene-d8					1.33106	1.27136	1.03367	1.08662	1.01147	1.03056	0.9346	1.09991	13.2453		
Toluene			1.6473	1.50286	1.49292	1.58699	1.59856	1.60558	1.45928	1.47055	1.28891	1.51699	7.171		
Ethyl Methacrylate				0.34729	0.41026	0.40513	0.44627	0.4739	0.44097	0.46432	0.44285	0.42887	9.44881		
trans-1,3-Dichloropropene			0.48268	0.51987	0.49063	0.536	0.57653	0.60158	0.56384	0.59493	0.54926	0.54615	7.82268		
1,1,2-Trichloroethane			0.25067	0.23954	0.26492	0.28849	0.30342	0.30493	0.28434	0.29987	0.28291	0.2799	8.36814		
2-Hexanone						0.23447	0.24146	0.26419	0.26785	0.28151	0.28008	0.26159	7.5016		
1,3-Dichloropropane			0.58282	0.49588	0.49623	0.55541	0.57245	0.58112	0.53809	0.55379	0.51993	0.54397	6.21106		
Tetrachloroethene			0.33291	0.35803	0.33247	0.33088	0.34988	0.35522	0.33426	0.34629	0.31513	0.33945	4.07805		
Dibromochloromethane			0.32657	0.32955	0.35149	0.34893	0.37789	0.39656	0.37035	0.38998	0.37286	0.36269	6.89505		
1,2-Dibromoethane			0.28329	0.30575	0.29613	0.30746	0.32892	0.33755	0.32371	0.34078	0.32173	0.31615	6.10531		
1-Chlorohexane			0.47455	0.41079	0.45336	0.44504	0.48967	0.51034	0.48472	0.49757	0.4597	0.46953	6.5305		
Chlorobenzene			1.1372	1.04896	1.10155	1.00791	1.08983	1.108	1.02447	1.03487	0.93768	1.0545	5.83623		
1,1,1,2-Tetrachloroethane			0.31793	0.37611	0.3865	0.40825	0.4139	0.42059	0.39668	0.4079	0.38434	0.39025	7.91646		
Ethylbenzene			0.58459	0.56002	0.55594	0.58695	0.59642	0.61016	0.57306	0.58034	0.52231	0.57442	4.49069		
m-,p-Xylene			0.7296	0.66999	0.71088	0.7212	0.73514	0.74335	0.68251	0.67662	0.59458	0.69599	6.67739		
o-Xylene			0.74324	0.66004	0.69315	0.73619	0.74603	0.75143	0.7071	0.72218	0.66629	0.71396	4.8297		
Styrene			1.17756	1.01792	1.16991	1.20116	1.26193	1.26988	1.20252	1.22283	1.12482	1.18317	6.47222		
Bromoform			0.21411	0.19934	0.22886	0.2371	0.27158	0.28489	0.28253			0.24549	13.9798		
Isopropylbenzene			2.02564	1.71599	1.76119	1.86369	1.89717	1.8774	1.77435	1.76721	1.57502	1.80641	7.08254		
1,4-Dichlorobenzene-d4	ISTD														
1,1,2,2-Tetrachloroethane			0.5285	0.55109	0.56868	0.63331	0.74372	0.7673	0.74558	0.77048	0.76212	0.67453	15.262	1	
p-Bromofluorobenzene					1.10548	1.10456	1.00761	1.03892	0.9635	0.96788	0.91106	1.01414	7.25795		
1,2,3-Trichloropropane			0.13018	0.18203	0.23578	0.24437	0.2376	0.23135	0.22376	0.22723	0.22015	0.21472	16.9575	0.999	

trans-1,4-Dichloro-2-Butene		0.25668	0.22043	0.24713	0.30207	0.32999	0.27895	0.31431	0.30678	0.28204	13.4151	0.998
n-Propylbenzene	3.78987	3.95543	4.02183	4.2378	4.43535	4.391	3.96261	3.74531	3.19456	3.97042	9.56045	
Bromobenzene	0.87287	0.90691	0.89941	0.86372	0.96569	0.97877	0.98538	0.90493	0.91102	0.83857	0.91273	5.44274
1,3,5-Trimethylbenzene	2.89219	2.89537	3.19372	3.31269	3.36303	3.3503	3.03065	2.96727	2.59148	3.0663	8.48643	
2-Chlorotoluene	2.58179	2.79945	2.60958	2.63646	2.74745	2.67678	2.43656	2.35719	2.41104	2.58403	5.93638	
4-Chlorotoluene	1.98188	2.4675	2.514	2.69769	2.65446	2.65336	2.46967	2.43105	1.83349	2.41146	12.5738	
a-Methylstyrene		1.30871	1.45225	1.64808	1.70841	1.72703	1.60917	1.56328	1.43496	1.55649	9.41749	
tert-Butylbenzene	0.70216	0.57882	0.72719	0.73967	0.73492	0.72908	0.66591	0.67633	0.61121	0.68503	8.4266	
1,2,4-Trimethylbenzene	2.96795	2.88539	2.9134	3.20297	3.32328	3.42949	3.40393	3.07707	2.96973	2.60011	3.07733	8.54249
sec-Butylbenzene	3.63588	3.45031	3.85769	4.17428	4.25047	4.17766	3.79132	3.61184	3.12661	3.78623	9.90608	
p-Isopropyltoluene	2.68259	2.74503	3.03296	3.16033	3.31984	3.33338	3.03489	2.9569	2.60124	2.98524	8.91105	
1,3-Dichlorobenzene	1.72322	1.63951	1.68234	1.78014	1.83791	1.84218	1.70568	1.71114	1.56602	1.7209	5.21124	
1,4-Dichlorobenzene	1.7338	1.62777	1.80611	1.58771	1.7964	1.80321	1.85644	1.72898	1.72681	1.57785	1.72451	5.63942
n-Butylbenzene	2.08073	2.47616	2.25872	2.54876	2.88525	2.97846	2.76297	2.72901	2.42263	2.57141	11.4704	
1,2-Dichlorobenzene	1.57303	1.65206	1.59322	1.65253	1.7908	1.78682	1.81416	1.68215	1.66147	1.54711	1.67533	5.62703
1,2-Dibromo-3-Chloropropane			0.13854	0.14149	0.15269	0.17134	0.16559	0.17793	0.17575	0.16048	10.1269	
1,2,4-Trichlorobenzene	0.99928	1.15634	1.18788	1.05363	1.17881	1.32035	1.36665	1.30046	1.37307	1.26768	1.22042	10.4696
Hexachlorobutadiene	0.58946	0.59957	0.56015	0.64005	0.723	0.76449	0.73225	0.75315	0.70242	0.67384	11.4779	
Naphthalene	2.1621	2.28506	2.29108	2.35426	2.60196	2.68535	2.53147	2.55623	2.30725	2.41942	7.34856	
1,2,3-Trichlorobenzene	1.14687	1.10333	1.11526	1.14142	1.26144	1.33159	1.23888	1.2931	1.18983	1.20241	6.83931	

Fri Feb 07 15:08:40 2014

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14011372 Run Date: 01/03/2014 Sample ID: WG458331-12
Instrument ID: HPMS8 Run Time: 16:57 Method: 8260B
File ID: 8M393760 Analyst: MES QC Key: DOD4
ICal Workgroup: WG458331 Cal ID: HPMS8 - 03-JAN-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.5	ug/L	0.489	1.00	20	
1,1-Dichloroethene	CCC	50.0	46.8	ug/L	0.434	6.40	20	
1,2-Dichloropropane	CCC	50.0	49.5	ug/L	0.291	1.10	20	
Ethylbenzene	CCC	50.0	49.7	ug/L	0.539	0.600	20	
Toluene	CCC	50.0	49.5	ug/L	1.47	1.00	20	
Vinyl Chloride	CCC	50.0	45.7	ug/L	0.274	8.60	20	
Bromoform	SPCC	50.0	49.0	ug/L	0.170	2.10	20	
Chlorobenzene	SPCC	50.0	52.0	ug/L	1.03	4.10	20	
Chloromethane	SPCC	50.0	48.9	ug/L	0.412	2.10	20	
1,1-Dichloroethane	SPCC	50.0	49.4	ug/L	0.539	1.10	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	50.8	ug/L	0.427	1.60	20	
Acetone		50.0	51.5	ug/L	0.0458	3.00	20	
Benzene		50.0	50.1	ug/L	1.07	0.300	20	
Bromobenzene		50.0	50.3	ug/L	0.754	0.700	20	
Bromochloromethane		50.0	50.2	ug/L	0.156	0.300	20	
Bromodichloromethane		50.0	51.9	ug/L	0.341	3.80	20	
Bromomethane		50.0	48.1	ug/L	0.183	3.70	20	
2-Butanone		50.0	50.1	ug/L	0.0694	0.300	20	
n-Butylbenzene		50.0	51.5	ug/L	2.49	3.00	20	
sec-Butylbenzene		50.0	53.0	ug/L	3.22	6.00	20	
tert-Butylbenzene		50.0	53.6	ug/L	0.592	7.10	20	
Carbon Disulfide		50.0	47.1	ug/L	0.822	5.80	20	
Carbon Tetrachloride		50.0	54.8	ug/L	0.393	9.60	20	
Dibromochloromethane		50.0	56.3	ug/L	0.279	12.6	20	
Chloroethane		50.0	49.2	ug/L	0.208	1.60	20	
2-Chlorotoluene		50.0	50.4	ug/L	2.35	0.900	20	
4-Chlorotoluene		50.0	55.4	ug/L	2.37	10.9	20	
1,2-Dibromo-3-Chloropropane		50.0	48.9	ug/L	0.0735	2.20	20	
1,2-Dibromoethane		50.0	49.8	ug/L	0.216	0.300	20	
Dibromomethane		50.0	51.5	ug/L	0.134	3.10	20	
1,2-Dichlorobenzene		50.0	52.4	ug/L	1.31	4.70	20	
1,3-Dichlorobenzene		50.0	52.3	ug/L	1.49	4.50	20	
1,4-Dichlorobenzene		50.0	50.1	ug/L	1.41	0.200	20	
Dichlorodifluoromethane		50.0	68.7	ug/L	0.310	37.5	20	*
1,2-Dichloroethane		50.0	49.0	ug/L	0.334	1.90	20	
cis-1,2-Dichloroethene		50.0	49.9	ug/L	0.299	0.300	20	
trans-1,2-Dichloroethene		50.0	48.3	ug/L	0.430	3.30	20	
1,3-Dichloropropane		50.0	48.3	ug/L	0.387	3.40	20	
2,2-Dichloropropane		50.0	50.5	ug/L	0.441	1.00	20	
cis-1,3-Dichloropropene		50.0	52.4	ug/L	0.423	4.70	20	
trans-1,3-Dichloropropene		50.0	49.2	ug/L	0.414	1.70	20	
1,1-Dichloropropene		50.0	49.8	ug/L	0.380	0.400	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3343755
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14011372 Run Date: 01/03/2014 Sample ID: WG458331-12
Instrument ID: HPMS8 Run Time: 16:57 Method: 8260B
File ID: 8M393760 Analyst: MES QC Key: DOD4
ICal Workgroup: WG458331 Cal ID: HPMS8 - 03-JAN-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	51.7	ug/L	0.0706	3.30	20	
Hexachlorobutadiene		50.0	49.8	ug/L	0.407	0.400	20	
Isopropylbenzene		50.0	52.9	ug/L	1.69	5.70	20	
p-Isopropyltoluene		50.0	51.7	ug/L	2.69	3.40	20	
4-Methyl-2-Pentanone		50.0	52.5	ug/L	0.0627	5.00	20	
Methylene Chloride		50.0	49.1	ug/L	0.256	1.80	20	
Naphthalene		50.0	49.8	ug/L	1.46	0.400	20	
n-Propylbenzene		50.0	52.1	ug/L	3.73	4.10	20	
Styrene		50.0	51.5	ug/L	1.09	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	52.9	ug/L	0.334	5.70	20	
Tetrachloroethene		50.0	50.7	ug/L	0.303	1.50	20	
1,2,3-Trichlorobenzene		50.0	50.2	ug/L	0.796	0.500	20	
1,2,4-Trichlorobenzene		50.0	49.3	ug/L	0.943	1.40	20	
1,1,1-Trichloroethane		50.0	52.8	ug/L	0.452	5.50	20	
1,1,2-Trichloroethane		50.0	50.2	ug/L	0.219	0.400	20	
Trichloroethene		50.0	50.4	ug/L	0.288	0.800	20	
Trichlorofluoromethane		50.0	52.9	ug/L	0.449	5.80	20	
1,2,3-Trichloropropane		50.0	49.3	ug/L	0.120	1.40	20	
1,2,4-Trimethylbenzene		50.0	50.8	ug/L	2.60	1.50	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.61	3.10	20	
o-Xylene		50.0	51.5	ug/L	0.667	2.90	20	
m-,p-Xylene		100	103	ug/L	0.660	3.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3343755
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14011372 Run Date: 01/30/2014 Sample ID: WG461445-12
Instrument ID: HPMS9 Run Time: 15:49 Method: 8260B
File ID: 9M961135 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG461445 Cal ID: HPMS9 - 30-JAN-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.5	ug/L	0.495	0.900	20	
1,1-Dichloroethene	CCC	50.0	46.1	ug/L	0.431	7.80	20	
1,2-Dichloropropane	CCC	50.0	50.8	ug/L	0.346	1.60	20	
Ethylbenzene	CCC	50.0	49.2	ug/L	0.565	1.70	20	
Toluene	CCC	50.0	49.5	ug/L	1.50	1.00	20	
Vinyl Chloride	CCC	50.0	43.8	ug/L	0.235	12.3	20	
Bromoform	SPCC	50.0	58.9	ug/L	0.289	17.9	20	
Chlorobenzene	SPCC	50.0	45.4	ug/L	0.958	9.10	20	
Chloromethane	SPCC	50.0	52.2	ug/L	0.285	4.50	20	
1,1-Dichloroethane	SPCC	50.0	47.5	ug/L	0.572	5.00	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	53.0	ug/L	0.804	6.00	20	
Acetone		50.0	67.4	ug/L	0.112	34.7	20	*
Benzene		50.0	49.5	ug/L	1.10	1.00	20	
Bromobenzene		50.0	47.2	ug/L	0.862	5.60	20	
Bromochloromethane		50.0	49.8	ug/L	0.169	0.400	20	
Bromodichloromethane		50.0	48.3	ug/L	0.379	3.40	20	
Bromomethane		50.0	44.0	ug/L	0.176	12.0	20	
2-Butanone		50.0	58.6	ug/L	0.148	17.1	20	
n-Butylbenzene		50.0	54.9	ug/L	2.82	9.80	20	
sec-Butylbenzene		50.0	45.0	ug/L	3.41	10.0	20	
tert-Butylbenzene		50.0	44.2	ug/L	0.606	11.6	20	
Carbon Disulfide		50.0	44.5	ug/L	0.728	10.9	20	
Carbon Tetrachloride		50.0	47.5	ug/L	0.372	5.00	20	
Dibromochloromethane		50.0	50.4	ug/L	0.366	0.900	20	
Chloroethane		50.0	48.3	ug/L	0.196	3.50	20	
2-Chlorotoluene		50.0	42.7	ug/L	2.20	14.7	20	
4-Chlorotoluene		50.0	46.6	ug/L	2.25	6.90	20	
1,2-Dibromo-3-Chloropropane		50.0	59.1	ug/L	0.190	18.2	20	
1,2-Dibromoethane		50.0	52.6	ug/L	0.333	5.20	20	
Dibromomethane		50.0	51.7	ug/L	0.181	3.40	20	
1,2-Dichlorobenzene		50.0	49.8	ug/L	1.67	0.500	20	
1,3-Dichlorobenzene		50.0	45.7	ug/L	1.57	8.60	20	
1,4-Dichlorobenzene		50.0	50.9	ug/L	1.76	1.80	20	
Dichlorodifluoromethane		50.0	42.7	ug/L	0.151	14.6	20	
1,2-Dichloroethane		50.0	49.7	ug/L	0.432	0.700	20	
cis-1,2-Dichloroethene		50.0	47.2	ug/L	0.286	5.60	20	
trans-1,2-Dichloroethene		50.0	48.7	ug/L	0.451	2.60	20	
1,3-Dichloropropane		50.0	52.0	ug/L	0.566	4.10	20	
2,2-Dichloropropane		50.0	48.2	ug/L	0.435	3.70	20	
cis-1,3-Dichloropropene		50.0	52.8	ug/L	0.487	5.70	20	
trans-1,3-Dichloropropene		50.0	51.0	ug/L	0.557	2.10	20	
1,1-Dichloropropene		50.0	49.3	ug/L	0.361	1.50	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3343755
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14011372 Run Date: 01/30/2014 Sample ID: WG461445-12
Instrument ID: HPMS9 Run Time: 15:49 Method: 8260B
File ID: 9M961135 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG461445 Cal ID: HPMS9 - 30-JAN-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	60.4	ug/L	0.316	20.9	20	*
Hexachlorobutadiene		50.0	57.0	ug/L	0.769	14.1	20	
Isopropylbenzene		50.0	45.2	ug/L	1.63	9.70	20	
p-Isopropyltoluene		50.0	47.3	ug/L	2.83	5.30	20	
4-Methyl-2-Pentanone		50.0	53.4	ug/L	0.116	6.90	20	
Methylene Chloride		50.0	50.7	ug/L	0.277	1.40	20	
Naphthalene		50.0	58.6	ug/L	2.83	17.1	20	
n-Propylbenzene		50.0	43.8	ug/L	3.48	12.3	20	
Styrene		50.0	51.4	ug/L	1.22	2.80	20	
1,1,1,2-Tetrachloroethane		50.0	51.2	ug/L	0.400	2.40	20	
Tetrachloroethene		50.0	48.4	ug/L	0.329	3.20	20	
1,2,3-Trichlorobenzene		50.0	56.8	ug/L	1.37	13.6	20	
1,2,4-Trichlorobenzene		50.0	57.7	ug/L	1.41	15.5	20	
1,1,1-Trichloroethane		50.0	47.4	ug/L	0.412	5.10	20	
1,1,2-Trichloroethane		50.0	53.9	ug/L	0.302	7.90	20	
Trichloroethene		50.0	46.6	ug/L	0.276	6.70	20	
Trichlorofluoromethane		50.0	47.2	ug/L	0.396	5.50	20	
1,2,3-Trichloropropane		50.0	52.6	ug/L	0.236	5.10	20	
1,2,4-Trimethylbenzene		50.0	50.6	ug/L	3.11	1.20	20	
1,3,5-Trimethylbenzene		50.0	48.7	ug/L	2.99	2.60	20	
o-Xylene		50.0	45.4	ug/L	0.649	9.10	20	
m-,p-Xylene		100	94.7	ug/L	0.659	5.30	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3343755
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14011372 Run Date: 01/30/2014 Sample ID: WG461583-02
Instrument ID: HPMS8 Run Time: 20:01 Method: 8260B
File ID: 8M394545 Analyst: MES QC Key: DOD4
Workgroup (AAB#): WG461584 Cal ID: HPMS8 - 03-JAN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.4	ug/L	0.498	2.82	20	
1,1-Dichloroethene	CCC	50.0	52.1	ug/L	0.482	4.11	20	
1,2-Dichloropropane	CCC	50.0	52.2	ug/L	0.307	4.47	20	
Ethylbenzene	CCC	50.0	53.5	ug/L	0.580	6.99	20	
Toluene	CCC	50.0	53.8	ug/L	1.60	7.52	20	
Vinyl Chloride	CCC	50.0	57.3	ug/L	0.343	14.5	20	
Bromoform	SPCC	50.0	50.1	ug/L	0.174	0.286	20	
Chlorobenzene	SPCC	50.0	52.6	ug/L	1.04	5.21	20	
Chloromethane	SPCC	50.0	57.2	ug/L	0.481	14.3	20	
1,1-Dichloroethane	SPCC	50.0	52.4	ug/L	0.571	4.75	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.5	ug/L	0.391	7.06	20	
Xylenes		150	161	ug/L	0.687	7.37	20	
Acetone		50.0	44.5	ug/L	0.0396	10.9	20	
Benzene		50.0	53.5	ug/L	1.14	6.95	20	
Bromobenzene		50.0	50.5	ug/L	0.757	1.00	20	
Bromochloromethane		50.0	50.7	ug/L	0.158	1.32	20	
Bromodichloromethane		50.0	53.8	ug/L	0.353	7.56	20	
Bromomethane		50.0	56.2	ug/L	0.214	12.5	20	
2-Butanone		50.0	42.8	ug/L	0.0593	14.3	20	
n-Butylbenzene		50.0	51.4	ug/L	2.49	2.78	20	
sec-Butylbenzene		50.0	51.4	ug/L	3.12	2.86	20	
tert-Butylbenzene		50.0	51.2	ug/L	0.566	2.44	20	
Carbon Disulfide		50.0	54.6	ug/L	0.952	9.12	20	
Carbon Tetrachloride		50.0	57.2	ug/L	0.411	14.4	20	
Dibromochloromethane		50.0	55.4	ug/L	0.275	10.7	20	
Chloroethane		50.0	53.4	ug/L	0.226	6.75	20	
2-Chlorotoluene		50.0	55.1	ug/L	2.56	10.2	20	
4-Chlorotoluene		50.0	47.2	ug/L	2.01	5.65	20	
1,2-Dibromo-3-Chloropropane		50.0	39.2	ug/L	0.0587	21.6	20	*
1,2-Dibromoethane		50.0	47.9	ug/L	0.208	4.14	20	
Dibromomethane		50.0	49.1	ug/L	0.127	1.85	20	
1,2-Dichlorobenzene		50.0	49.4	ug/L	1.24	1.19	20	
1,3-Dichlorobenzene		50.0	51.3	ug/L	1.46	2.54	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.42	1.02	20	
Dichlorodifluoromethane		50.0	59.1	ug/L	0.266	18.2	20	
1,2-Dichloroethane		50.0	47.0	ug/L	0.320	5.98	20	
cis-1,2-Dichloroethene		50.0	53.9	ug/L	0.324	7.74	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.464	4.17	20	
1,3-Dichloropropane		50.0	46.5	ug/L	0.373	6.97	20	
2,2-Dichloropropane		50.0	53.8	ug/L	0.470	7.64	20	
cis-1,3-Dichloropropene		50.0	51.2	ug/L	0.414	2.49	20	
trans-1,3-Dichloropropene		50.0	50.4	ug/L	0.424	0.776	20	

CCV - Modified 03/05/2008
PDF File ID: 3343756
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14011372 Run Date: 01/30/2014 Sample ID: WG461583-02
Instrument ID: HPMS8 Run Time: 20:01 Method: 8260B
File ID: 8M394545 Analyst: MES QC Key: DOD4
Workgroup (AAB#): WG461584 Cal ID: HPMS8 - 03-JAN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.9	ug/L	0.396	3.80	20	
2-Hexanone		50.0	41.8	ug/L	0.0572	16.3	20	
Hexachlorobutadiene		50.0	49.3	ug/L	0.403	1.33	20	
Isopropylbenzene		50.0	53.2	ug/L	1.70	6.38	20	
p-Isopropyltoluene		50.0	51.5	ug/L	2.68	2.97	20	
4-Methyl-2-Pentanone		50.0	41.7	ug/L	0.0498	16.6	20	
Methylene Chloride		50.0	51.7	ug/L	0.270	3.41	20	
Naphthalene		50.0	41.8	ug/L	1.23	16.5	20	
n-Propylbenzene		50.0	52.3	ug/L	3.75	4.64	20	
Styrene		50.0	52.8	ug/L	1.12	5.59	20	
1,1,1,2-Tetrachloroethane		50.0	57.9	ug/L	0.365	15.7	20	
Tetrachloroethene		50.0	53.6	ug/L	0.320	7.23	20	
1,2,3-Trichlorobenzene		50.0	43.7	ug/L	0.693	12.5	20	
1,2,4-Trichlorobenzene		50.0	45.0	ug/L	0.860	10.1	20	
1,1,1-Trichloroethane		50.0	53.9	ug/L	0.462	7.87	20	
1,1,2-Trichloroethane		50.0	48.9	ug/L	0.213	2.11	20	
Trichloroethene		50.0	53.1	ug/L	0.303	6.10	20	
Trichlorofluoromethane		50.0	50.8	ug/L	0.431	1.51	20	
1,2,3-Trichloropropane		50.0	45.6	ug/L	0.111	8.71	20	
1,2,4-Trimethylbenzene		50.0	51.7	ug/L	2.65	3.34	20	
1,3,5-Trimethylbenzene		50.0	50.8	ug/L	2.57	1.69	20	
o-Xylene		50.0	52.3	ug/L	0.677	4.51	20	
m-,p-Xylene		100	109	ug/L	0.697	8.80	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3343756
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14011372 Run Date: 01/30/2014 Sample ID: WG461585-02
Instrument ID: HPMS9 Run Time: 20:35 Method: 8260B
File ID: 9M961138 Analyst: MES QC Key: DOD4
Workgroup (AAB#): WG461586 Cal ID: HPMS9 - 30-JAN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.4	ug/L	0.494	0.726	20	
1,1-Dichloroethene	CCC	50.0	52.4	ug/L	0.490	4.78	20	
1,2-Dichloropropane	CCC	50.0	50.2	ug/L	0.341	0.338	20	
Ethylbenzene	CCC	50.0	52.2	ug/L	0.599	4.34	20	
Toluene	CCC	50.0	50.6	ug/L	1.54	1.21	20	
Vinyl Chloride	CCC	50.0	55.6	ug/L	0.297	11.1	20	
Bromoform	SPCC	50.0	54.4	ug/L	0.267	8.73	20	
Chlorobenzene	SPCC	50.0	49.5	ug/L	1.04	1.02	20	
Chloromethane	SPCC	50.0	50.5	ug/L	0.276	1.02	20	
1,1-Dichloroethane	SPCC	50.0	48.5	ug/L	0.584	3.02	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	50.0	ug/L	0.759	0.0568	20	
Xylenes		150	153	ug/L	0.715	1.87	20	
Acetone		50.0	46.9	ug/L	0.0782	6.19	20	
Benzene		50.0	49.7	ug/L	1.11	0.641	20	
Bromobenzene		50.0	51.3	ug/L	0.937	2.66	20	
Bromochloromethane		50.0	51.2	ug/L	0.174	2.41	20	
Bromodichloromethane		50.0	50.2	ug/L	0.394	0.399	20	
Bromomethane		50.0	47.0	ug/L	0.187	6.07	20	
2-Butanone		50.0	46.5	ug/L	0.117	6.99	20	
n-Butylbenzene		50.0	59.1	ug/L	3.04	18.3	20	
sec-Butylbenzene		50.0	54.7	ug/L	4.14	9.45	20	
tert-Butylbenzene		50.0	51.1	ug/L	0.700	2.24	20	
Carbon Disulfide		50.0	51.8	ug/L	0.847	3.68	20	
Carbon Tetrachloride		50.0	49.1	ug/L	0.384	1.76	20	
Dibromochloromethane		50.0	50.6	ug/L	0.367	1.26	20	
Chloroethane		50.0	52.0	ug/L	0.211	4.05	20	
2-Chlorotoluene		50.0	49.7	ug/L	2.57	0.519	20	
4-Chlorotoluene		50.0	54.8	ug/L	2.64	9.52	20	
1,2-Dibromo-3-Chloropropane		50.0	50.3	ug/L	0.161	0.570	20	
1,2-Dibromoethane		50.0	50.0	ug/L	0.316	0.0540	20	
Dibromomethane		50.0	50.2	ug/L	0.176	0.481	20	
1,2-Dichlorobenzene		50.0	51.7	ug/L	1.73	3.49	20	
1,3-Dichlorobenzene		50.0	52.8	ug/L	1.82	5.70	20	
1,4-Dichlorobenzene		50.0	52.7	ug/L	1.82	5.31	20	
Dichlorodifluoromethane		50.0	48.4	ug/L	0.171	3.27	20	
1,2-Dichloroethane		50.0	48.1	ug/L	0.419	3.74	20	
cis-1,2-Dichloroethene		50.0	47.8	ug/L	0.289	4.42	20	
trans-1,2-Dichloroethene		50.0	50.9	ug/L	0.471	1.73	20	
1,3-Dichloropropane		50.0	50.2	ug/L	0.546	0.370	20	
2,2-Dichloropropane		50.0	51.8	ug/L	0.467	3.52	20	
cis-1,3-Dichloropropene		50.0	50.9	ug/L	0.469	1.80	20	
trans-1,3-Dichloropropene		50.0	51.0	ug/L	0.557	2.04	20	

CCV - Modified 03/05/2008
PDF File ID: 3343756
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14011372 Run Date: 01/30/2014 Sample ID: WG461585-02
Instrument ID: HPMS9 Run Time: 20:35 Method: 8260B
File ID: 9M961138 Analyst: MES QC Key: DOD4
Workgroup (AAB#): WG461586 Cal ID: HPMS9 - 30-JAN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.8	ug/L	0.380	3.66	20	
2-Hexanone		50.0	45.8	ug/L	0.240	8.45	20	
Hexachlorobutadiene		50.0	57.5	ug/L	0.775	15.0	20	
Isopropylbenzene		50.0	50.7	ug/L	1.83	1.38	20	
p-Isopropyltoluene		50.0	55.4	ug/L	3.31	10.8	20	
4-Methyl-2-Pentanone		50.0	46.4	ug/L	0.100	7.21	20	
Methylene Chloride		50.0	51.2	ug/L	0.280	2.35	20	
Naphthalene		50.0	53.1	ug/L	2.57	6.19	20	
n-Propylbenzene		50.0	54.5	ug/L	4.33	8.99	20	
Styrene		50.0	51.5	ug/L	1.22	2.93	20	
1,1,1,2-Tetrachloroethane		50.0	51.4	ug/L	0.401	2.75	20	
Tetrachloroethene		50.0	51.2	ug/L	0.347	2.35	20	
1,2,3-Trichlorobenzene		50.0	53.6	ug/L	1.29	7.28	20	
1,2,4-Trichlorobenzene		50.0	56.1	ug/L	1.37	12.2	20	
1,1,1-Trichloroethane		50.0	49.0	ug/L	0.426	1.98	20	
1,1,2-Trichloroethane		50.0	50.9	ug/L	0.285	1.73	20	
Trichloroethene		50.0	46.1	ug/L	0.273	7.71	20	
Trichlorofluoromethane		50.0	50.1	ug/L	0.420	0.157	20	
1,2,3-Trichloropropane		50.0	49.4	ug/L	0.222	1.12	20	
1,2,4-Trimethylbenzene		50.0	54.1	ug/L	3.33	8.16	20	
1,3,5-Trimethylbenzene		50.0	53.5	ug/L	3.28	7.07	20	
o-Xylene		50.0	50.1	ug/L	0.715	0.181	20	
m-,p-Xylene		100	103	ug/L	0.715	2.71	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3343756
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14011372
Instrument ID: HPMS8
Workgroup (AAB#): WG461584

ICAL CCV Number: WG458331-08
CAL ID: HPMS8-03-JAN-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG458331-08	NA	NA	350886	634474	804428
Upper Limit	NA	NA	701772	1268948	1608856
Lower Limit	NA	NA	175443	317237	402214
L14011372-04	1.00	01	353210	665396	848609
L14011372-05	1.00	01	355614	664631	836774
L14011372-06	1.00	01	380244	670075	832333
L14011372-07	1.00	01	384729	697078	879005
L14011372-08	1.00	01	353006	647955	808954
L14011372-09	1.00	01	349927	651001	827029
L14011372-10	1.00	01	359947	653778	821647
L14011372-11	1.00	01	336369	643319	827168
L14011372-12	2.50	DL01	350898	650747	821838
L14011372-13	2.50	DL01	349231	654737	824099
L14011372-14	1.00	01	347029	641018	815382
L14011372-15	1.00	01	363644	674445	869735
WG461584-01	1.00	01	388545	720545	928237
WG461584-02	1.00	01	389316	715856	903688

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3343757
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14011372
Instrument ID: HPMS9
Workgroup (AAB#): WG461586

ICAL CCV Number: WG461445-08
CAL ID: HPMS9 - 30-JAN-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG461445-08	NA	NA	232079	474328	633808
Upper Limit	NA	NA	464158	948656	1267616
Lower Limit	NA	NA	116040	237164	316904
L14011372-01	1.00	01	179575	394018	554159
L14011372-02	1.00	01	221081	413022	571058
L14011372-03	1.00	01	189964	424917	574767
WG461586-01	1.00	01	207091	454300	639115
WG461586-02	1.00	01	186869	384017	527371
WG461586-03	1.00	01	189904	378940	513067

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3343757
Report generated 02/10/2014 15:24

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14011372
Instrument ID: HPMS8
Workgroup (AAB#): WG461584

ICAL CCV Number: WG458331-08
CAL ID: HPMS8-03-JAN-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG458331-08	NA	NA	17.91	14.88	11
Upper Limit	NA	NA	18.41	15.38	11.5
Lower Limit	NA	NA	17.41	14.38	10.5
L14011372-04	1.00	01	17.91	14.88	11
L14011372-05	1.00	01	17.91	14.88	11
L14011372-06	1.00	01	17.91	14.88	11
L14011372-07	1.00	01	17.91	14.88	11
L14011372-08	1.00	01	17.91	14.88	11
L14011372-09	1.00	01	17.91	14.88	11
L14011372-10	1.00	01	17.91	14.88	11
L14011372-11	1.00	01	17.91	14.88	11
L14011372-12	2.50	DL01	17.91	14.88	11
L14011372-13	2.50	DL01	17.91	14.88	11
L14011372-14	1.00	01	17.91	14.88	11
L14011372-15	1.00	01	17.91	14.88	11
WG461584-01	1.00	01	17.91	14.88	11
WG461584-02	1.00	01	17.91	14.88	11

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3355126
Report generated: 02/10/2014 15:24

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14011372
Instrument ID: HPMS9
Workgroup (AAB#): WG461586

ICAL CCV Number: WG461445-08
CAL ID: HPMS9 - 30-JAN-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG461445-08	NA	NA	17.84	14.81	10.92
Upper Limit	NA	NA	18.34	15.31	11.42
Lower Limit	NA	NA	17.34	14.31	10.42
L14011372-01	1.00	01	17.84	14.81	10.92
L14011372-02	1.00	01	17.84	14.81	10.92
L14011372-03	1.00	01	17.83	14.81	10.93
WG461586-01	1.00	01	17.84	14.81	10.92
WG461586-02	1.00	01	17.84	14.81	10.92
WG461586-03	1.00	01	17.84	14.81	10.92

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3355126
Report generated: 02/10/2014 15:24

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961148.D Vial: 11
Acq On : 31 Jan 2014 1:27 Operator: MES
Sample : L14011372-01 A 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 07 16:21:42 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	554159	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	394018	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	179575	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.88	111	146510	26.4991 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.00%		
43) 1,2-Dichloroethane-d4	10.51	65	175362	26.4848 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.92%		
58) Toluene-d8	12.91	98	485158	27.9867 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 111.96%#		
79) p-Bromofluorobenzene	16.31	95	186491	25.6007 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.40%		

Target Compounds					Qvalue
3) Chloromethane	3.77	50	1221	0.2017 ug/L	97
13) Acetone	6.45	43	4405	2.3839 ug/L #	78
15) Tert-Butyl Alcohol	6.79	59	508	0.7857 ug/L #	70
56) Dimethyl Disulfide	12.91	94	12806	1.1414 ug/L #	25

(#) = qualifier out of range (m) = manual integration
9M961148.D 8260WTR.M Fri Feb 07 16:21:45 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961148.D Vial: 11
Acq On : 31 Jan 2014 1:27 Operator: MES
Sample : L14011372-01 A 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 7 16:21 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration

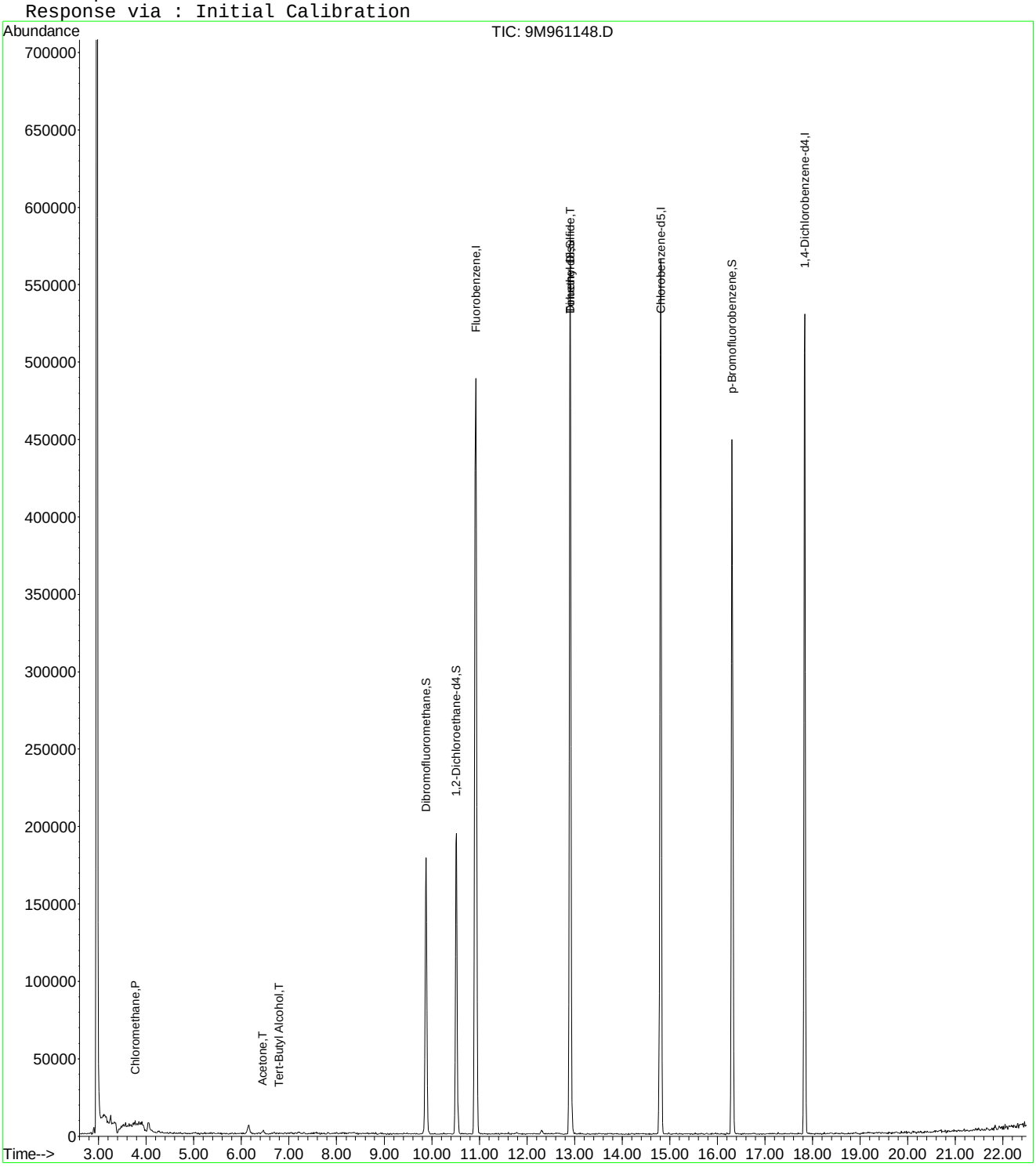

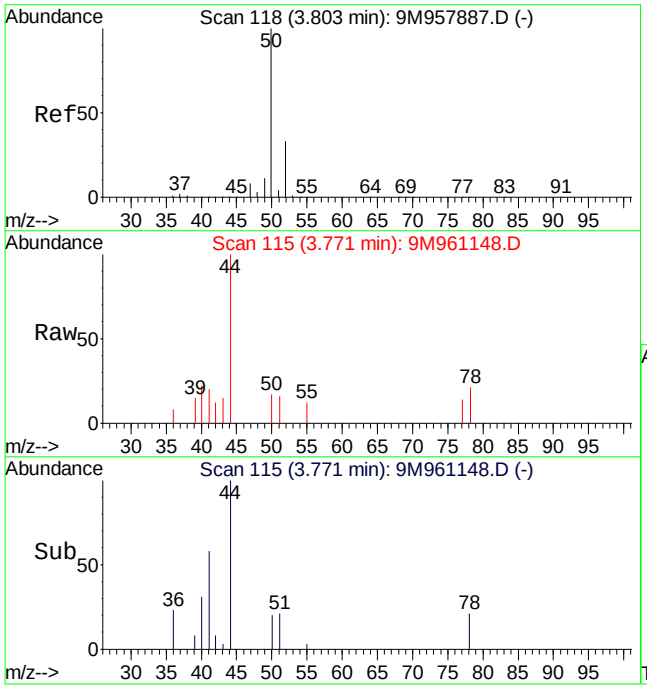

#3
Chloromethane
Concen: 0.20 ug/L
RT: 3.77 min Scan# 115
Delta R.T. -0.00 min
Lab File: 9M961148.D
Acq: 31 Jan 2014 1:27

Tgt Ion: 50 Resp: 1221

Ion	Ratio	Lower	Upper
50	100		
52	32.8	18.8	44.0

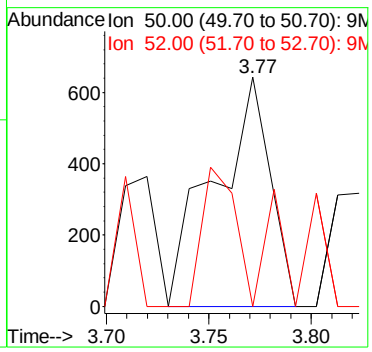

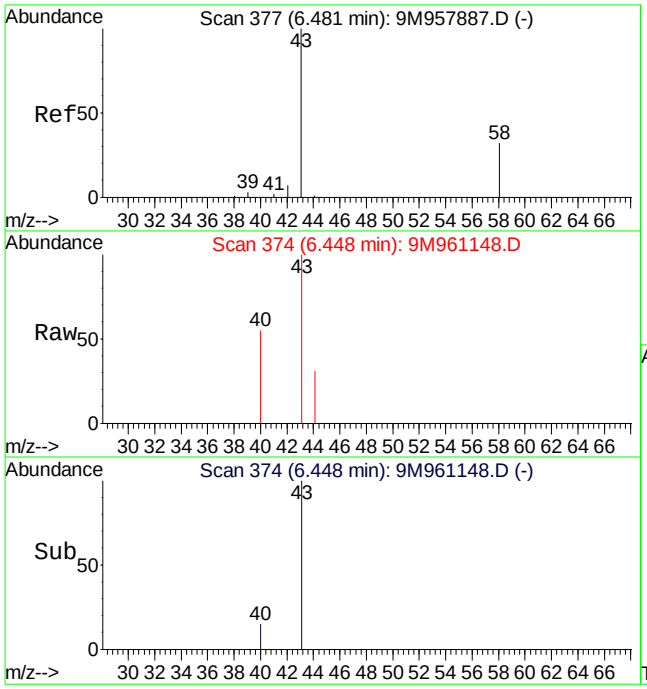

#13
Acetone
Concen: 2.38 ug/L
RT: 6.45 min Scan# 374
Delta R.T. -0.00 min
Lab File: 9M961148.D
Acq: 31 Jan 2014 1:27

Tgt Ion: 43 Resp: 4405

Ion	Ratio	Lower	Upper
43	100		
58	17.9	18.1	42.1#

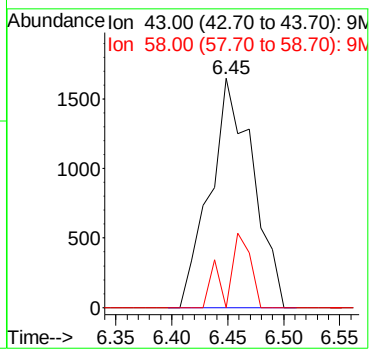

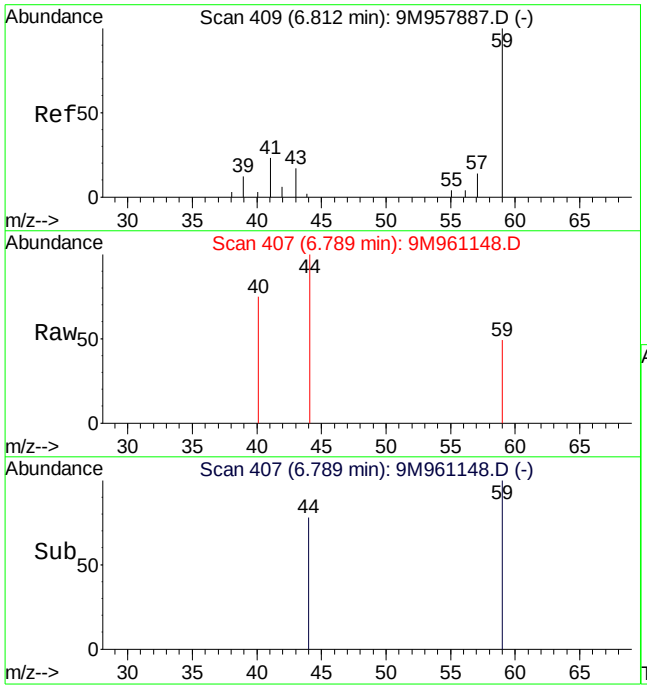

#15
Tert-Butyl Alcohol
Concen: 0.79 ug/L
RT: 6.79 min Scan# 407
Delta R.T. 0.01 min
Lab File: 9M961148.D
Acq: 31 Jan 2014 1:27

Tgt Ion: 59 Resp: 508

Ion	Ratio	Lower	Upper
59	100		
41	40.4	15.1	35.1#
57	0.0	6.3	14.7#

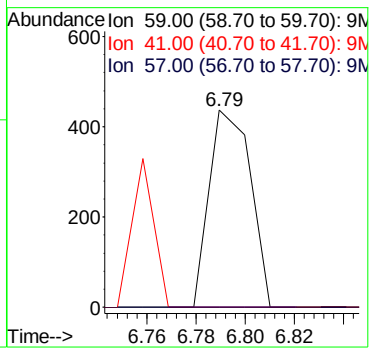

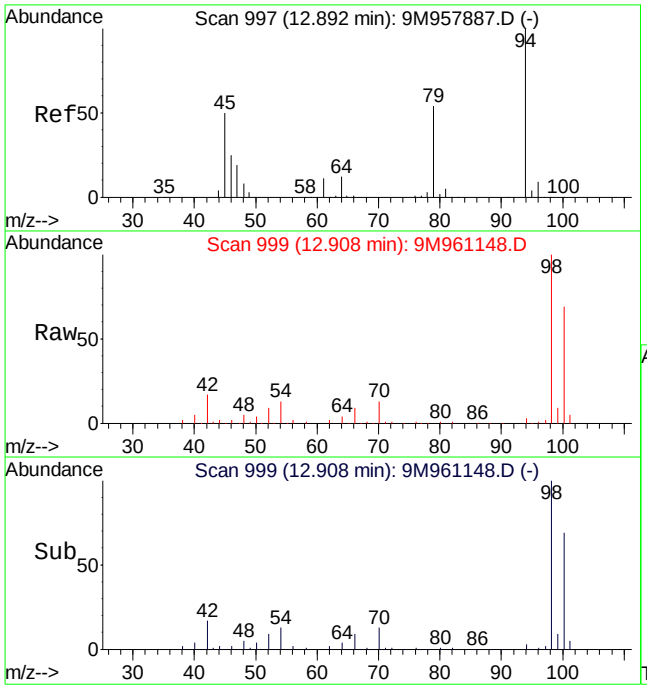

#56
Dimethyl Disulfide
Concen: 1.14 ug/L
RT: 12.91 min Scan# 999
Delta R.T. 0.06 min
Lab File: 9M961148.D
Acq: 31 Jan 2014 1:27

Tgt Ion: 94 Resp: 12806

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.8	74.2#

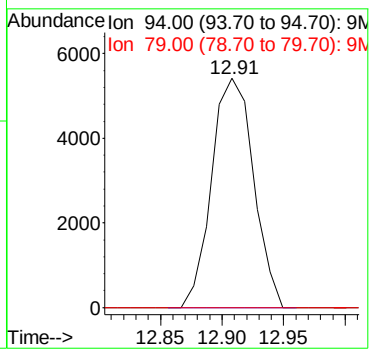

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961149.D Vial: 12
Acq On : 31 Jan 2014 1:56 Operator: MES
Sample : L14011372-02 A 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 07 16:21:48 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	571058	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	413022	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	221081	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.88	111	150315	26.3827 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.52%		
43) 1,2-Dichloroethane-d4	10.51	65	180550	26.4614 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.84%		
58) Toluene-d8	12.91	98	502020	27.6269 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 110.52%#		
79) p-Bromofluorobenzene	16.31	95	194278	21.6627 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 86.64%		

Target Compounds

					Qvalue
3) Chloromethane	3.78	50	991	0.1588 ug/L #	77
13) Acetone	6.45	43	1827	0.9595 ug/L #	72
27) 1,1-Dichloroethane	8.55	63	5583	0.4057 ug/L #	76
56) Dimethyl Disulfide	12.91	94	14183	1.2267 ug/L #	25

(#) = qualifier out of range (m) = manual integration
9M961149.D 8260WTR.M Fri Feb 07 16:21:50 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961149.D Vial: 12
Acq On : 31 Jan 2014 1:56 Operator: MES
Sample : L14011372-02 A 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 7 16:21 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration

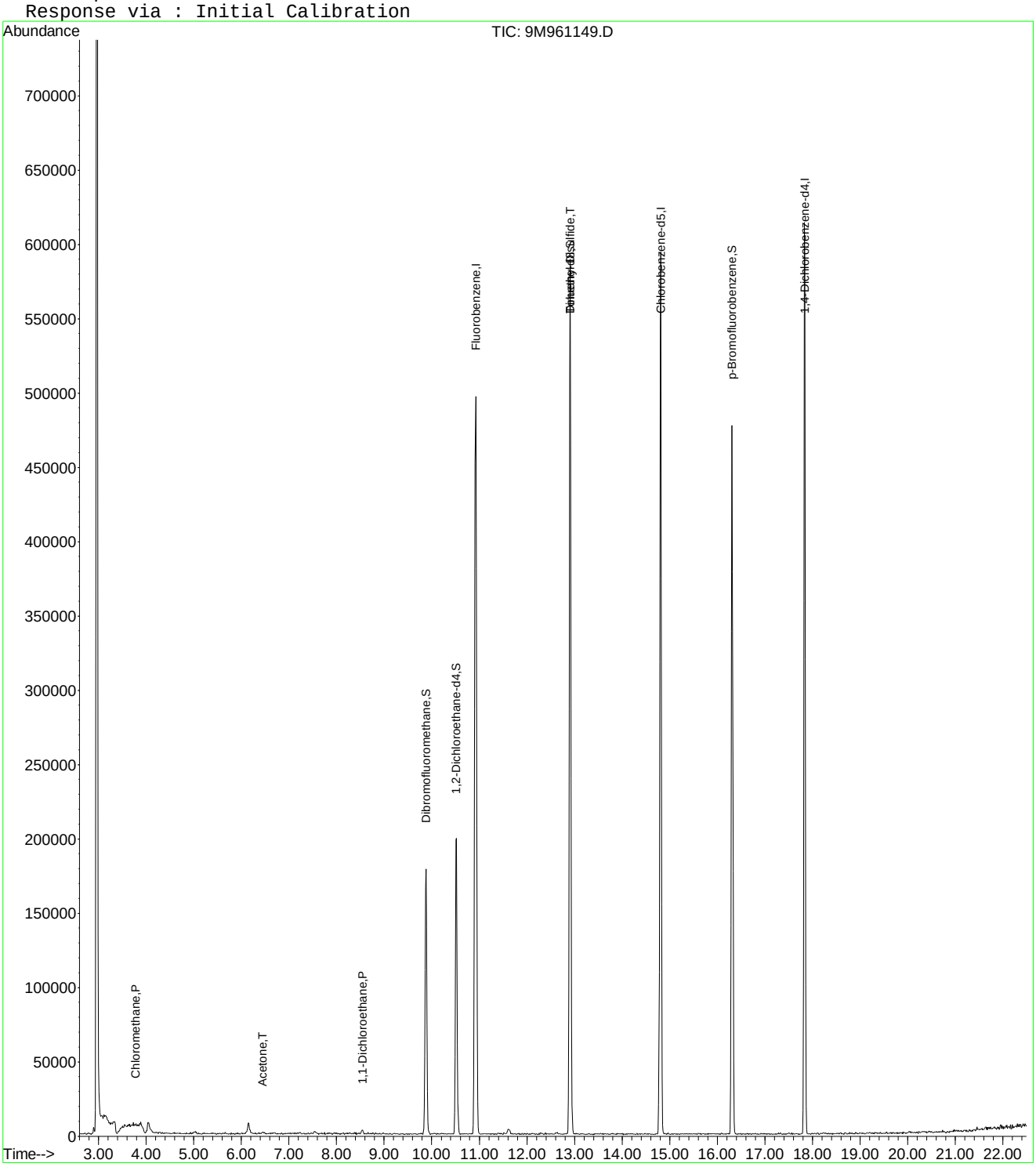

9M961149.D 8260WTR.M Fri Feb 07 16:21:50 2014 Page 2

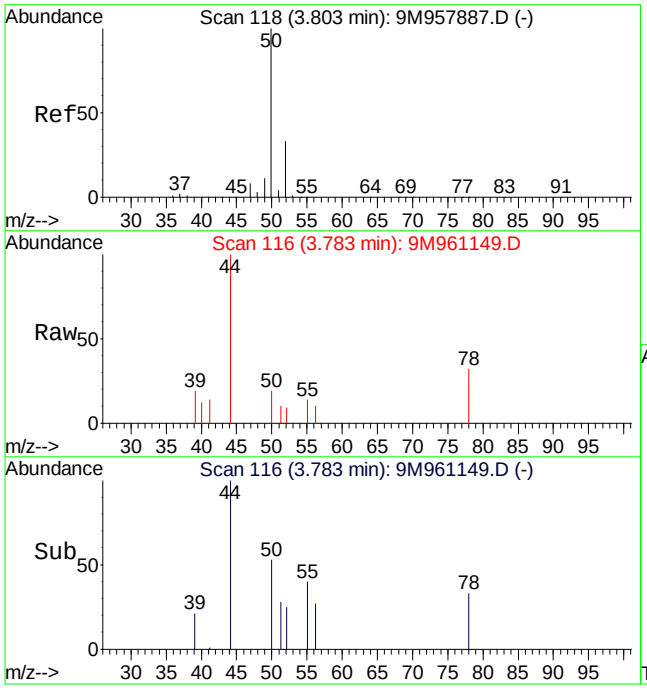

#3
Chloromethane
Concen: 0.16 ug/L
RT: 3.78 min Scan# 116
Delta R.T. 0.01 min
Lab File: 9M961149.D
Acq: 31 Jan 2014 1:56

Tgt Ion: 50 Resp: 991

Ion	Ratio	Lower	Upper
50	100		
52	44.3	18.8	44.0#

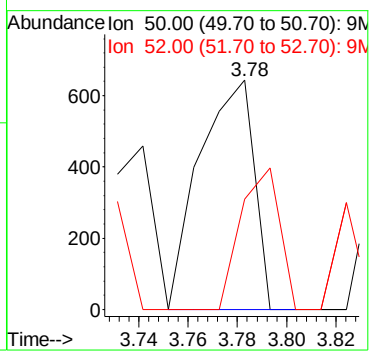

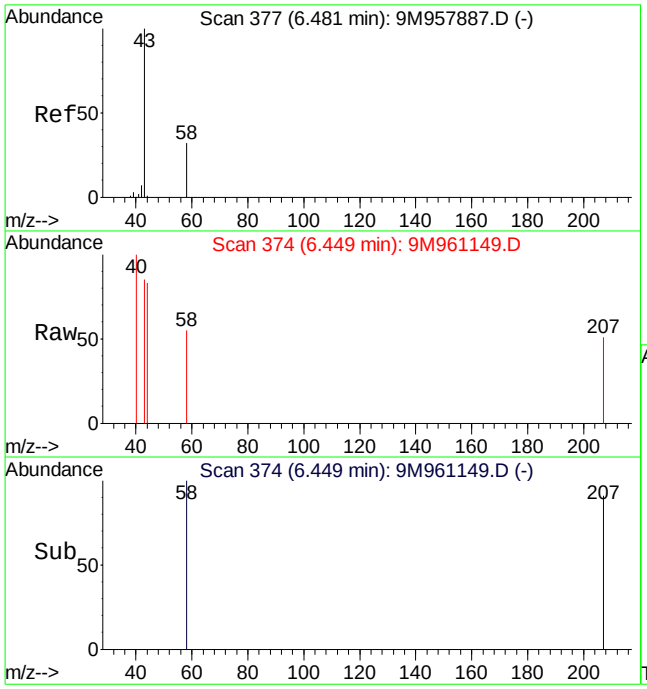

#13
Acetone
Concen: 0.96 ug/L
RT: 6.45 min Scan# 374
Delta R.T. -0.00 min
Lab File: 9M961149.D
Acq: 31 Jan 2014 1:56

Tgt Ion: 43 Resp: 1827

Ion	Ratio	Lower	Upper
43	100		
58	15.0	18.1	42.1#

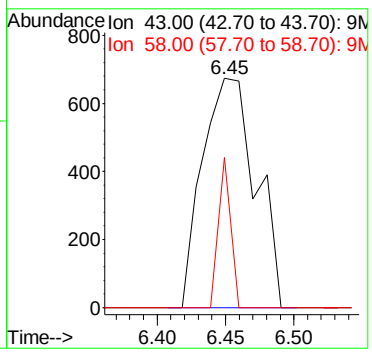

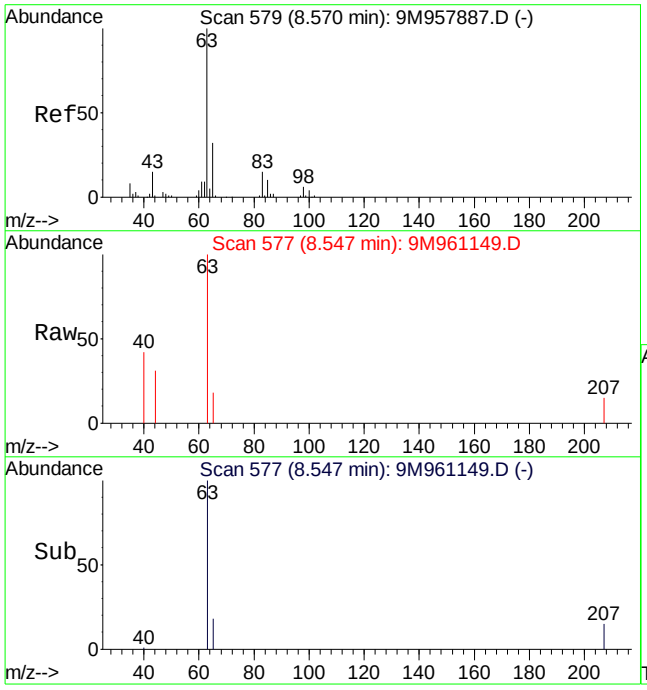

#27
1,1-Dichloroethane
Concen: 0.41 ug/L
RT: 8.55 min Scan# 577
Delta R.T. 0.01 min
Lab File: 9M961149.D
Acq: 31 Jan 2014 1:56

Tgt Ion: 63 Resp: 5583

Ion	Ratio	Lower	Upper
63	100		
65	18.1	18.0	42.0
83	0.0	7.0	16.2#

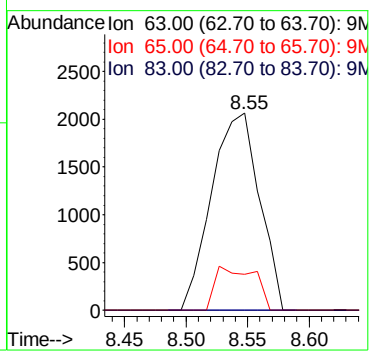

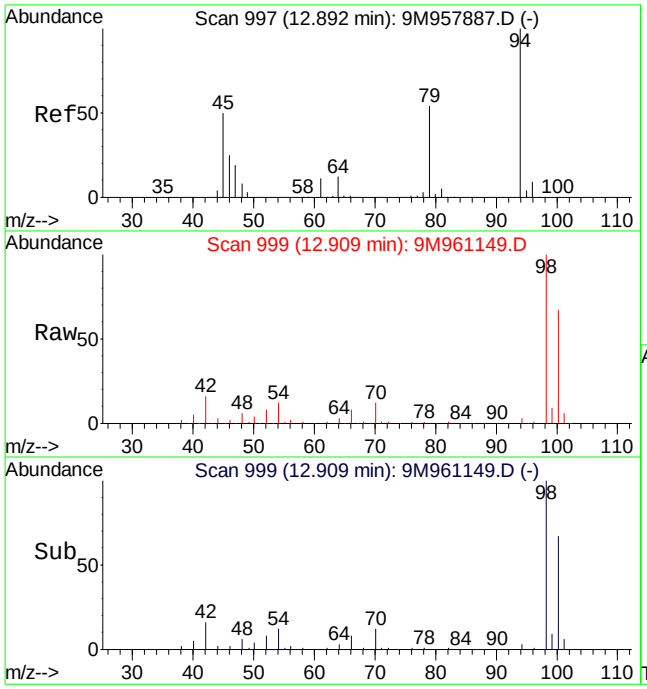

#56
Dimethyl Disulfide
Concen: 1.23 ug/L
RT: 12.91 min Scan# 999
Delta R.T. 0.06 min
Lab File: 9M961149.D
Acq: 31 Jan 2014 1:56

Tgt Ion: 94 Resp: 14183

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.8	74.2#

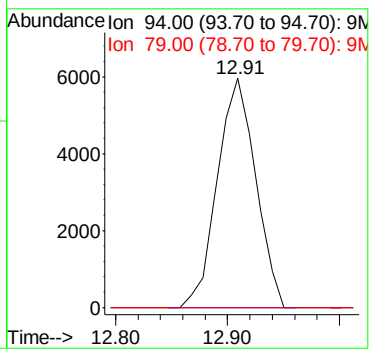

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961150.D Vial: 13
Acq On : 31 Jan 2014 2:25 Operator: MES
Sample : L14011372-03 A 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 07 16:21:53 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.93	96	574767	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	424917	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.83	152	189964	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.87	111	145375	25.3510 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.40%		
43) 1,2-Dichloroethane-d4	10.51	65	181677	26.4547 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.80%		
58) Toluene-d8	12.91	98	500200	26.7562 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 107.04%		
79) p-Bromofluorobenzene	16.31	95	187452	24.3253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.32%		

Target Compounds					Qvalue
3) Chloromethane	3.76	50	1038	0.1653 ug/L	85
13) Acetone	6.46	43	2216	1.1562 ug/L #	45
45) 1,2-Dichloroethane	10.64	62	13472	1.3476 ug/L	87
56) Dimethyl Disulfide	12.91	94	13087	1.1246 ug/L #	25

(#) = qualifier out of range (m) = manual integration
9M961150.D 8260WTR.M Fri Feb 07 16:21:55 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961150.D Vial: 13
Acq On : 31 Jan 2014 2:25 Operator: MES
Sample : L14011372-03 A 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 7 16:21 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration

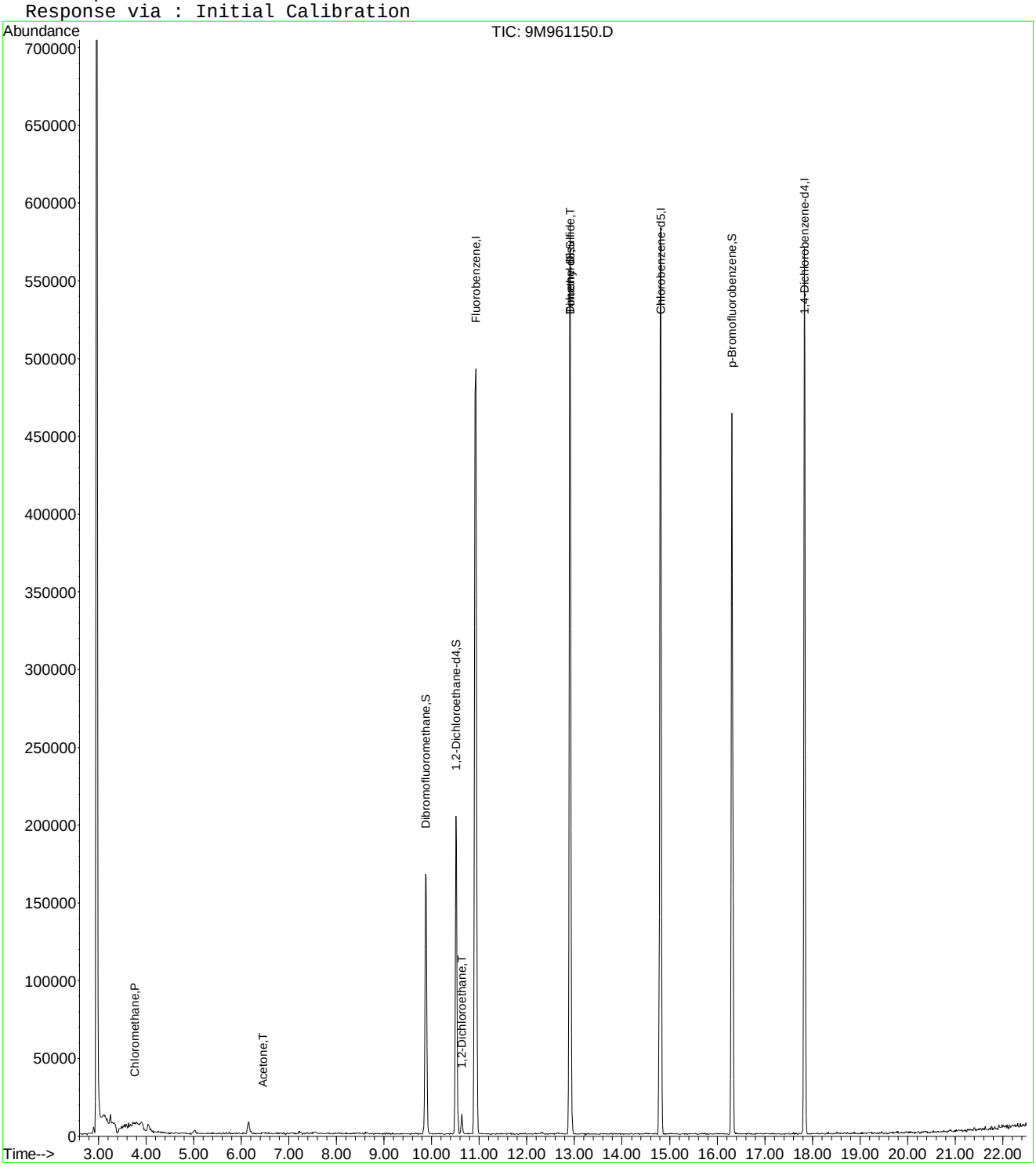

9M961150.D 8260WTR.M Fri Feb 07 16:21:55 2014 Page 2

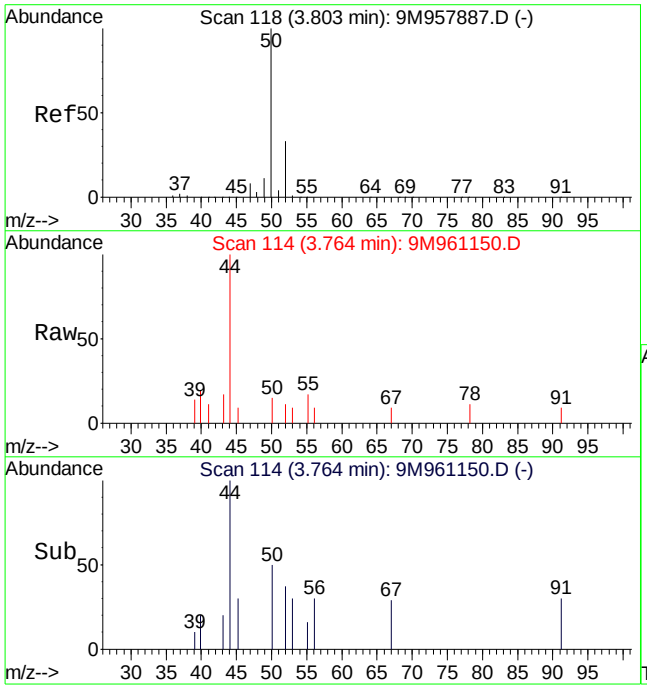

#3
Chloromethane
Concen: 0.17 ug/L
RT: 3.76 min Scan# 114
Delta R.T. -0.01 min
Lab File: 9M961150.D
Acq: 31 Jan 2014 2:25

Tgt Ion: 50 Resp: 1038

Ion	Ratio	Lower	Upper
50	100		
52	23.2	18.8	44.0

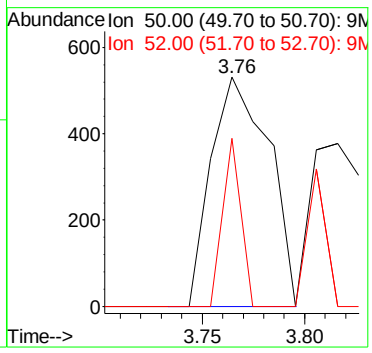

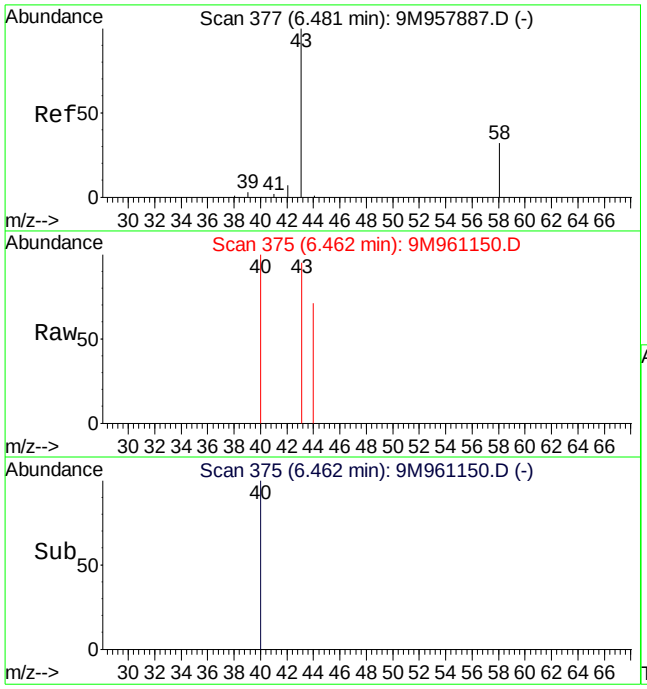

#13
Acetone
Concen: 1.16 ug/L
RT: 6.46 min Scan# 375
Delta R.T. 0.01 min
Lab File: 9M961150.D
Acq: 31 Jan 2014 2:25

Tgt Ion: 43 Resp: 2216

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.1#

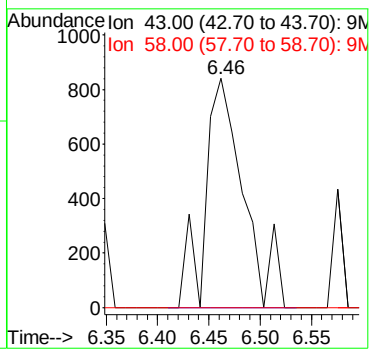

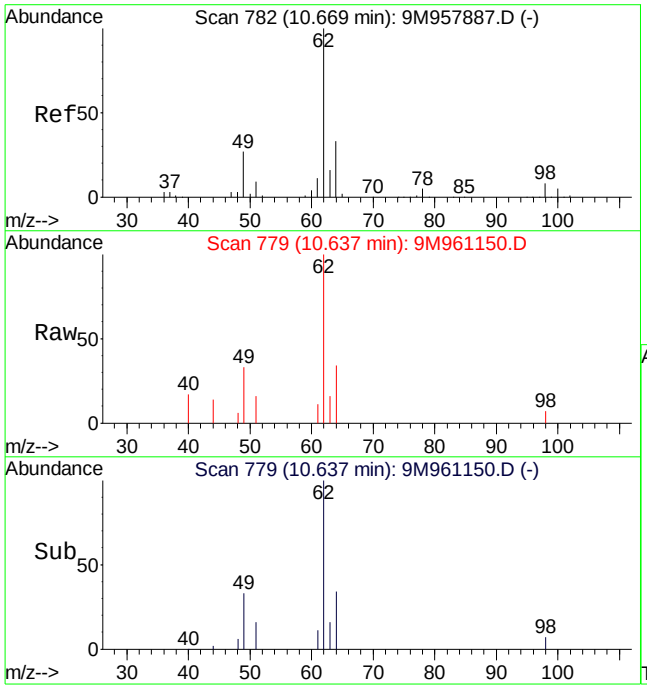

#45
1,2-Dichloroethane
Concen: 1.35 ug/L
RT: 10.64 min Scan# 779
Delta R.T. 0.00 min
Lab File: 9M961150.D
Acq: 31 Jan 2014 2:25

Tgt Ion: 62 Resp: 13472

Ion	Ratio	Lower	Upper
62	100		
64	30.9	18.2	42.6
49	27.1	24.8	57.8

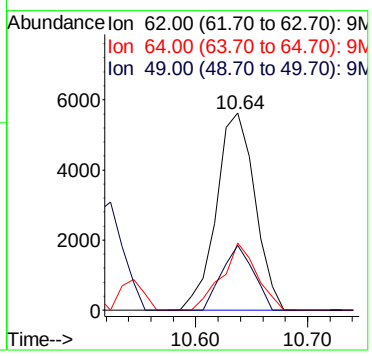

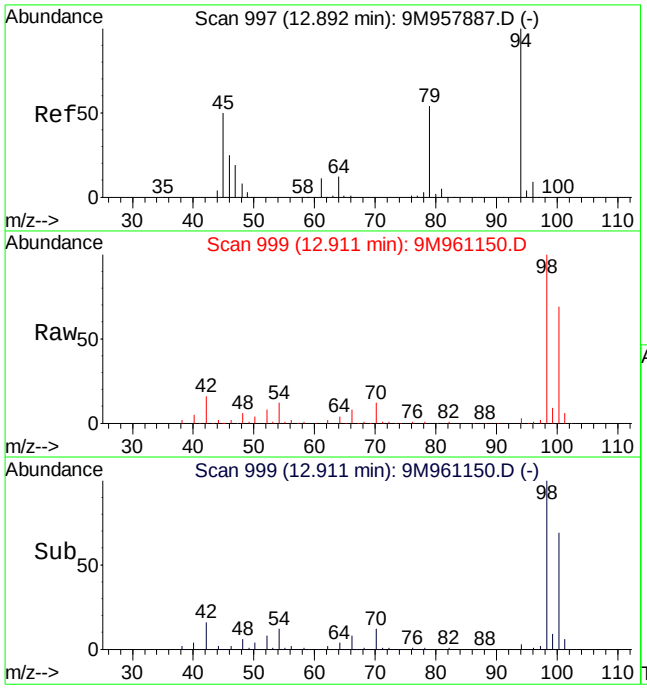

#56
Dimethyl Disulfide
Concen: 1.12 ug/L
RT: 12.91 min Scan# 999
Delta R.T. 0.06 min
Lab File: 9M961150.D
Acq: 31 Jan 2014 2:25

Tgt Ion: 94 Resp: 13087

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.8	74.2#

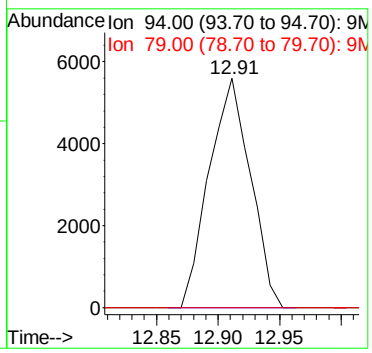

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394553.D Vial: 10
Acq On : 31 Jan 2014 00:30 Operator: MES
Sample : L14011372-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44:41 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	848609	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	665396	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	353210	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.96	111	213028	23.0695 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.28%		
43) 1,2-Dichloroethane-d4	10.60	65	179230	19.8106 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 79.24%#		
58) Toluene-d8	12.98	98	807163	24.3474 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.40%		
80) p-Bromofluorobenzene	16.38	95	303647	23.1984 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.80%		

Target Compounds					Qvalue
3) Chloromethane	3.84	50	1969	0.1379 ug/L #	1
13) Acetone	6.52	43	1610	1.0681 ug/L #	46
20) Carbon Disulfide	7.59	76	4229	0.1428 ug/L #	74
56) Dimethyl Disulfide	12.99	94	21988	1.5311 ug/L #	27

(#) = qualifier out of range (m) = manual integration
8M394553.D 8260WTR.M Fri Jan 31 17:44:42 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394553.D Vial: 10
Acq On : 31 Jan 2014 00:30 Operator: MES
Sample : L14011372-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration

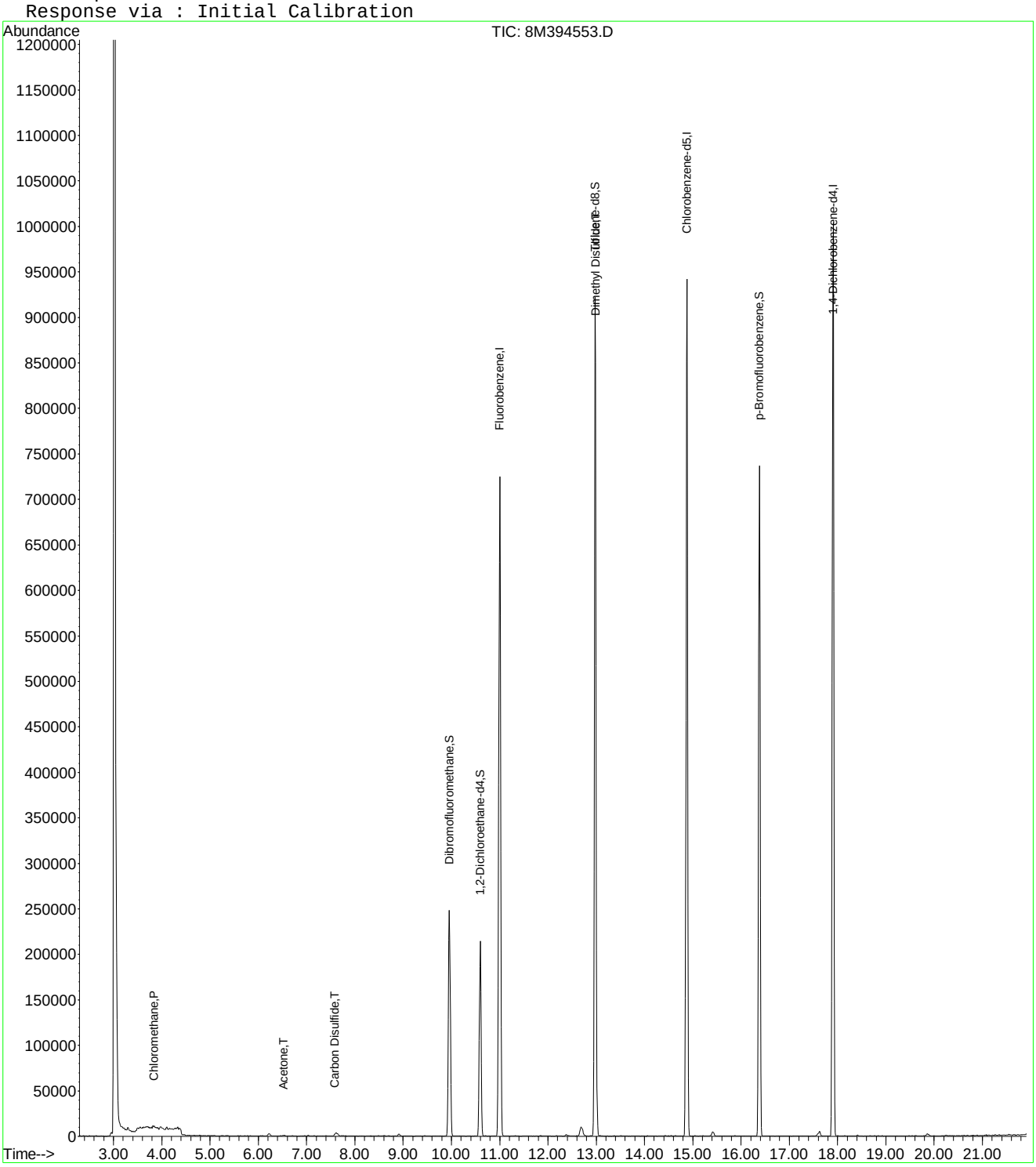

8M394553.D 8260WTR.M Fri Jan 31 17:44:42 2014 Page 2

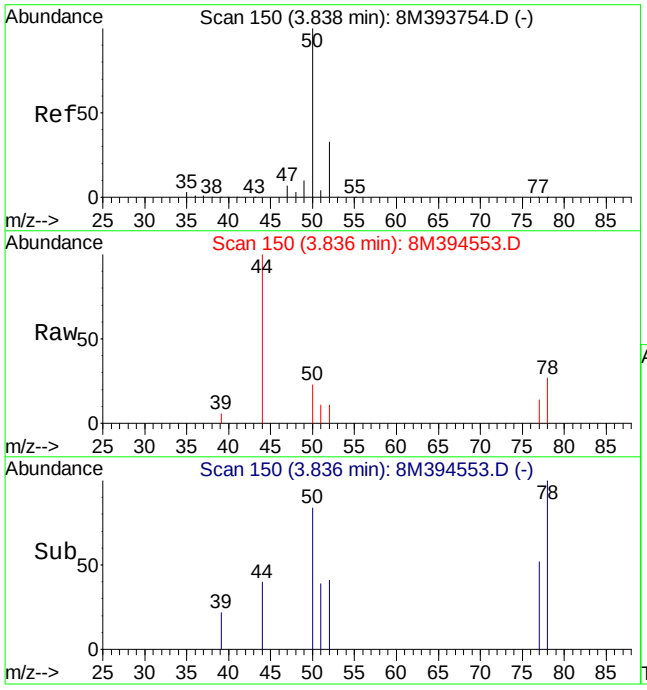

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.84 min Scan# 150
Delta R.T. -0.00 min
Lab File: 8M394553.D
Acq: 31 Jan 2014 00:30

Tgt Ion: 50 Resp: 1969

Ion	Ratio	Lower	Upper
50	100		
52	109.4	19.6	45.6#

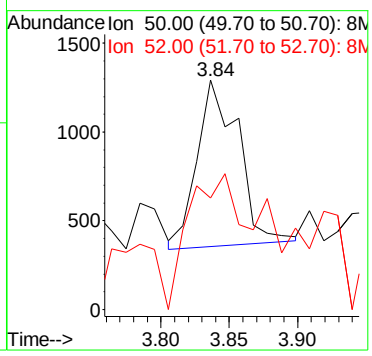

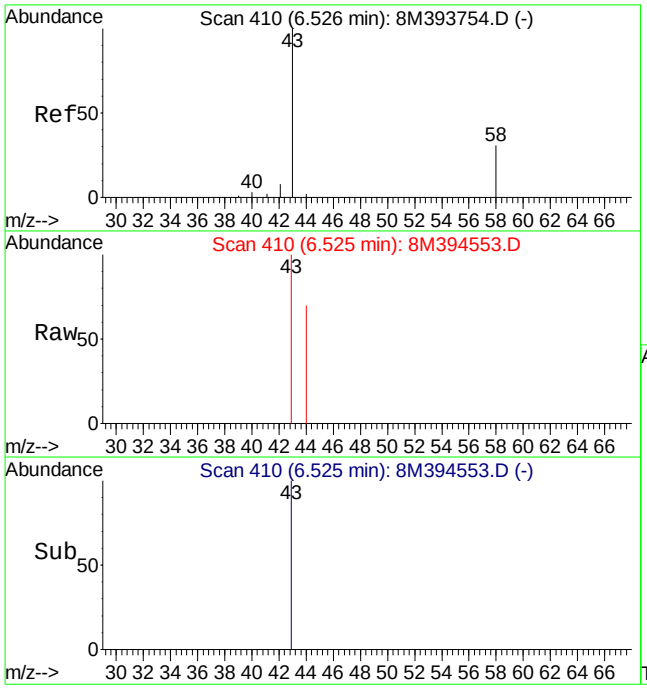

#13
Acetone
Concen: 1.07 ug/L
RT: 6.52 min Scan# 410
Delta R.T. -0.00 min
Lab File: 8M394553.D
Acq: 31 Jan 2014 00:30

Tgt Ion: 43 Resp: 1610

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.0	39.6#

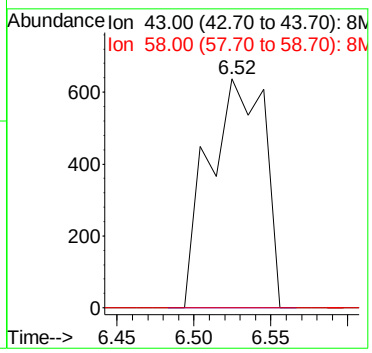

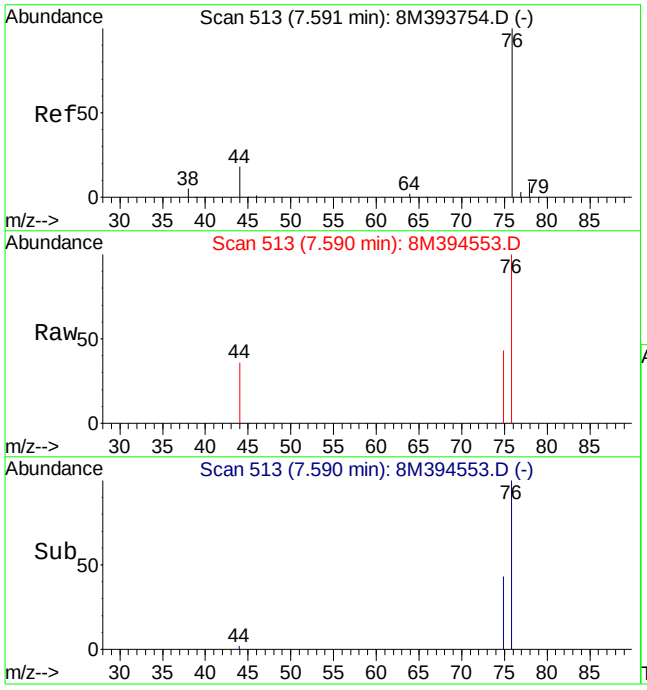

#20
Carbon Disulfide
Concen: 0.14 ug/L
RT: 7.59 min Scan# 513
Delta R.T. -0.00 min
Lab File: 8M394553.D
Acq: 31 Jan 2014 00:30

Tgt Ion: 76 Resp: 4229

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.8	13.4#

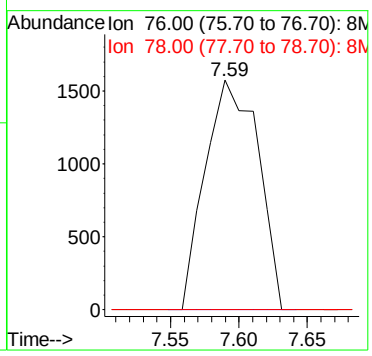

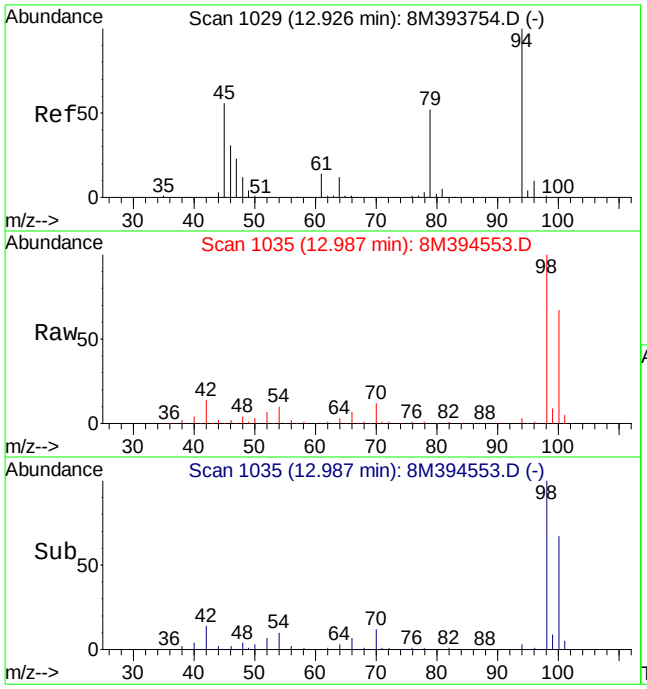

#56
Dimethyl Disulfide
Concen: 1.53 ug/L
RT: 12.99 min Scan# 1035
Delta R.T. 0.06 min
Lab File: 8M394553.D
Acq: 31 Jan 2014 00:30

Tgt Ion: 94 Resp: 21988

Ion	Ratio	Lower	Upper
94	100		
79	0.0	30.4	70.8#

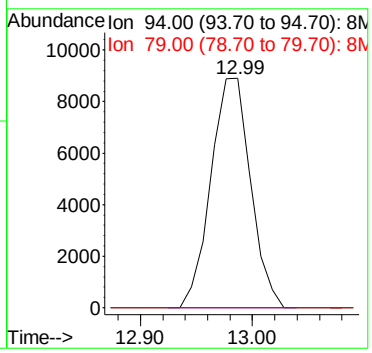

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394554.D Vial: 11
Acq On : 31 Jan 2014 1:02 Operator: MES
Sample : L14011372-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44:43 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	836774	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	664631	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	355614	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.96	111	216290	23.7540 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.00%		
43) 1,2-Dichloroethane-d4	10.60	65	181549	20.3507 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 81.40%		
58) Toluene-d8	12.98	98	799366	24.1399 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.56%		
80) p-Bromofluorobenzene	16.38	95	308570	23.4151 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.68%		

Target Compounds					Qvalue
7) Chloroethane	5.16	64	902	0.1274 ug/L #	44
13) Acetone	6.53	43	845	0.5685 ug/L #	46
20) Carbon Disulfide	7.59	76	4227	0.1448 ug/L #	74
27) 1,1-Dichloroethane	8.62	63	5827	0.3193 ug/L #	89
28) Ethyl-Tert-Butyl ether	8.91	59	3677	0.1301 ug/L #	41
36) Tetrahydrofuran	9.94	42	202	0.1365 ug/L #	40
56) Dimethyl Disulfide	12.98	94	22216	1.5689 ug/L #	27

(#) = qualifier out of range (m) = manual integration
8M394554.D 8260WTR.M Fri Jan 31 17:44:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394554.D Vial: 11
Acq On : 31 Jan 2014 1:02 Operator: MES
Sample : L14011372-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration

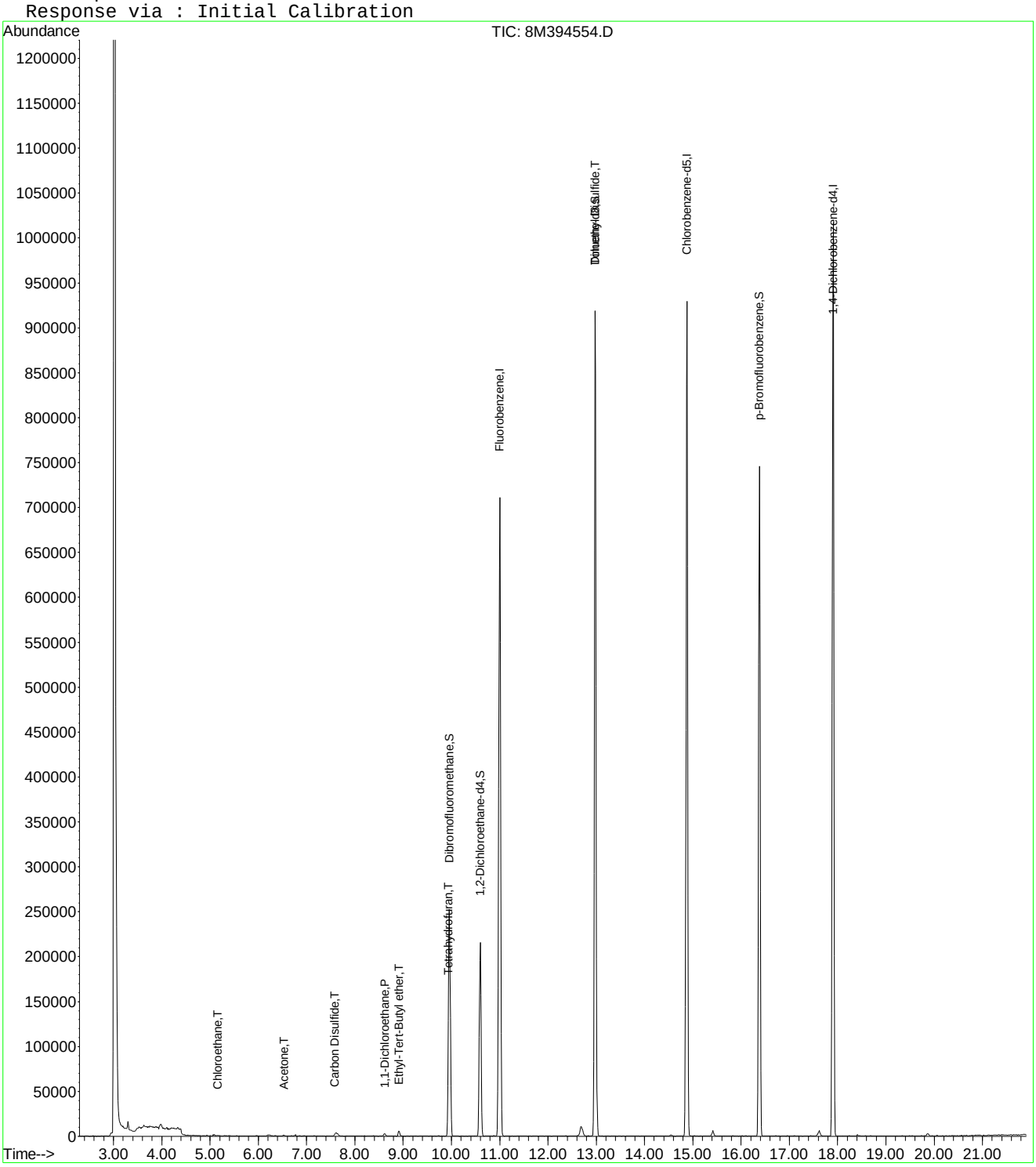

8M394554.D 8260WTR.M Fri Jan 31 17:44:43 2014 Page 2

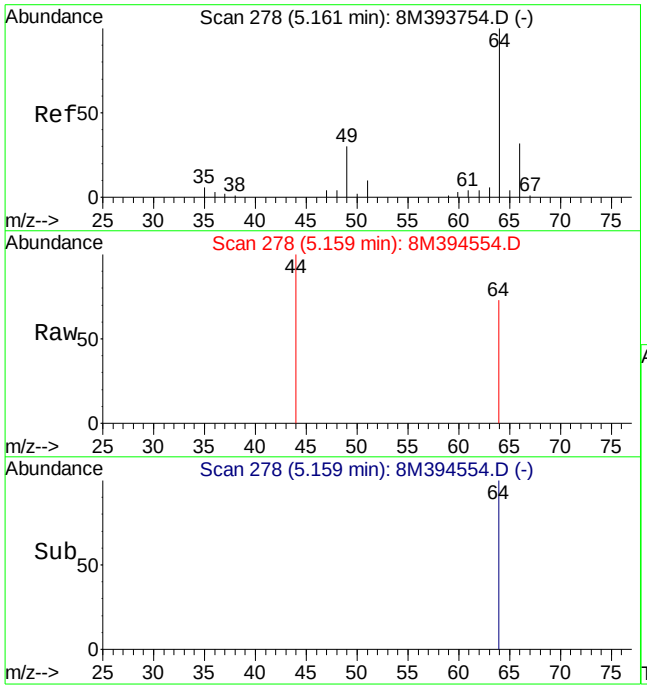

#7
Chloroethane
Concen: 0.13 ug/L
RT: 5.16 min Scan# 278
Delta R.T. -0.00 min
Lab File: 8M394554.D
Acq: 31 Jan 2014 1:02

Tgt Ion: 64 Resp: 902

Ion	Ratio	Lower	Upper
64	100		
66	0.0	18.8	44.0#
49	0.0	18.5	43.1#

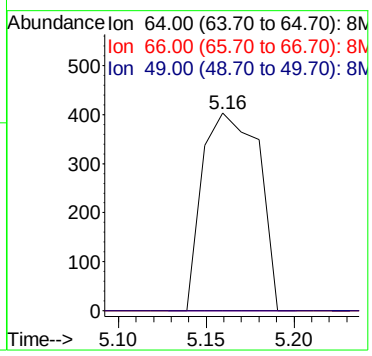

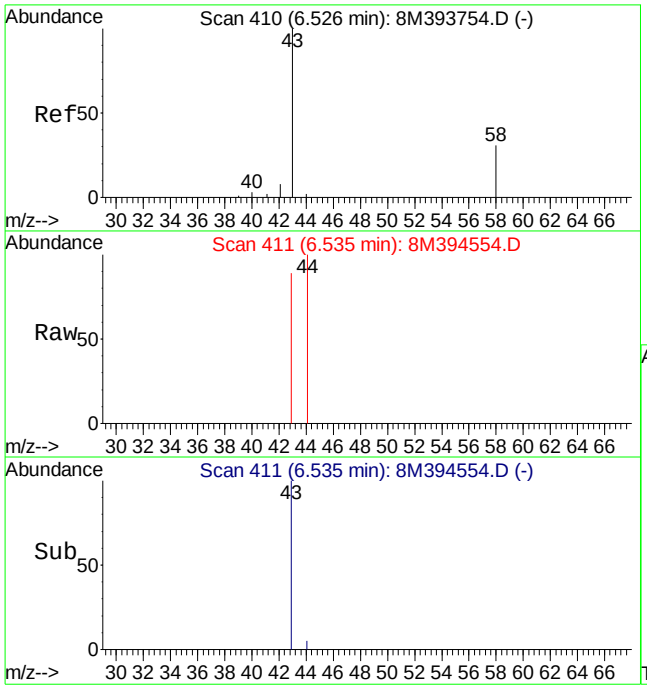

#13
Acetone
Concen: 0.57 ug/L
RT: 6.53 min Scan# 411
Delta R.T. 0.01 min
Lab File: 8M394554.D
Acq: 31 Jan 2014 1:02

Tgt Ion: 43 Resp: 845

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.0	39.6#

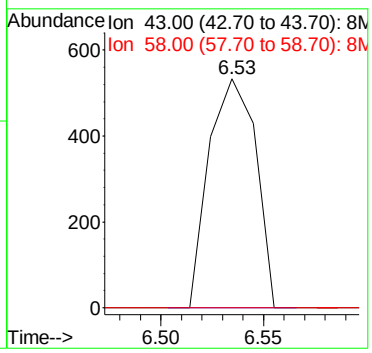

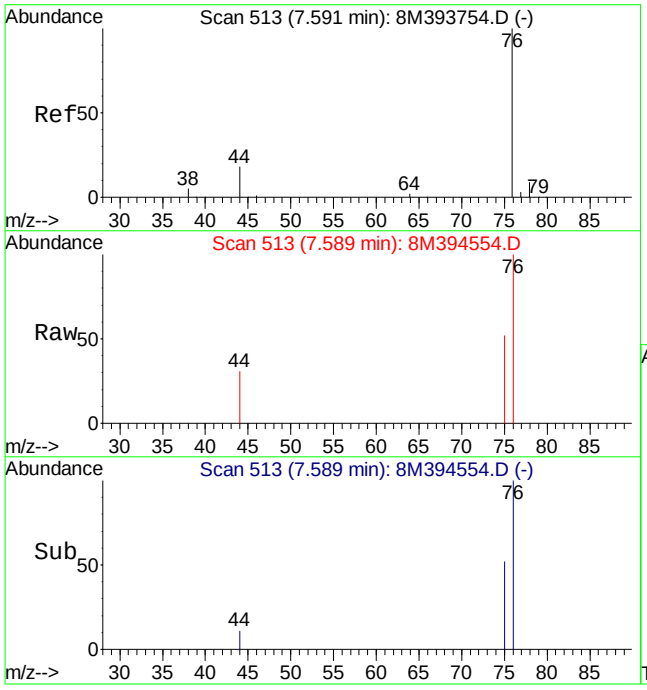

#20
Carbon Disulfide
Concen: 0.14 ug/L
RT: 7.59 min Scan# 513
Delta R.T. -0.00 min
Lab File: 8M394554.D
Acq: 31 Jan 2014 1:02

Tgt Ion: 76 Resp: 4227

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.8	13.4#

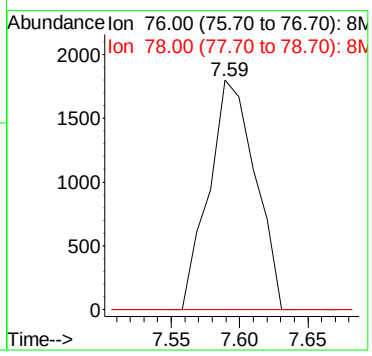

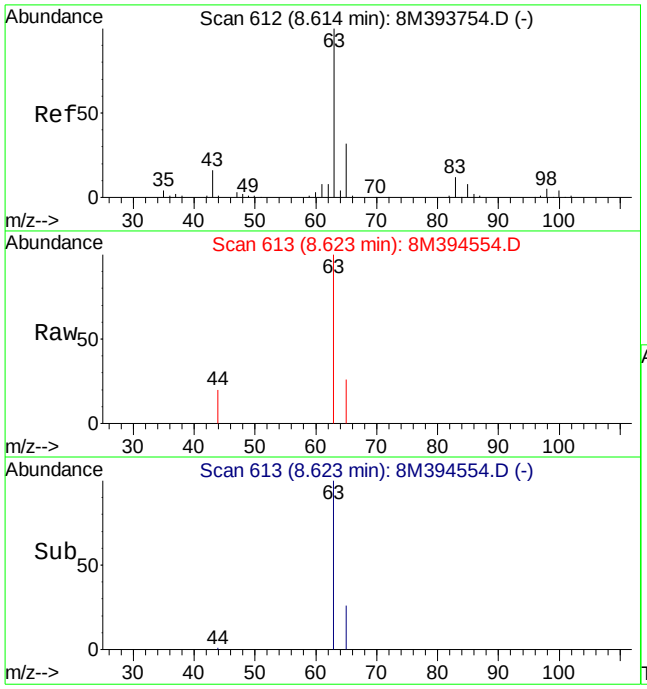

#27
1,1-Dichloroethane
Concen: 0.32 ug/L
RT: 8.62 min Scan# 613
Delta R.T. 0.01 min
Lab File: 8M394554.D
Acq: 31 Jan 2014 1:02

Tgt Ion: 63 Resp: 5827

Ion	Ratio	Lower	Upper
63	100		
65	29.5	18.7	43.5
83	0.0	7.4	17.2#

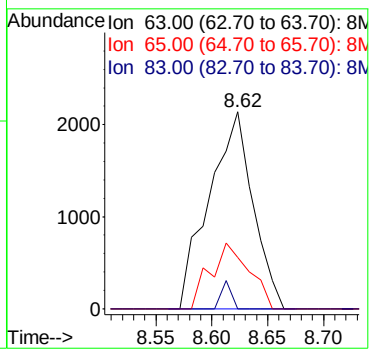

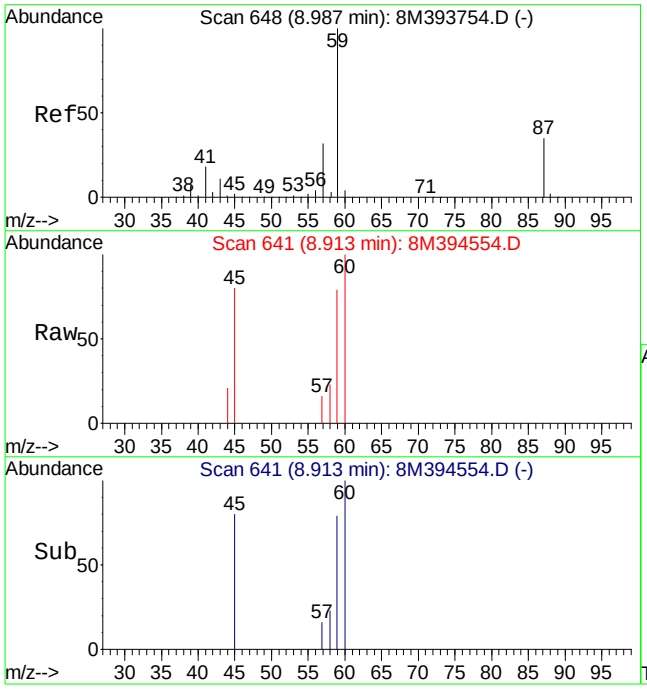

#28
Ethyl-Tert-Butyl ether
Concen: 0.13 ug/L
RT: 8.91 min Scan# 641
Delta R.T. -0.07 min
Lab File: 8M394554.D
Acq: 31 Jan 2014 1:02

Tgt Ion: 59 Resp: 3677

Ion	Ratio	Lower	Upper
59	100		
87	0.0	20.7	48.3#
57	0.0	19.2	44.8#

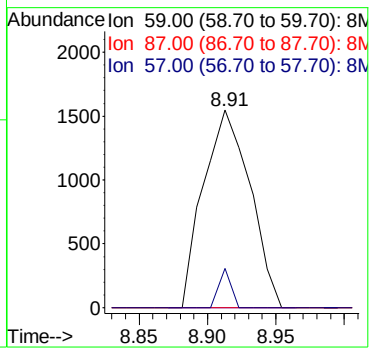

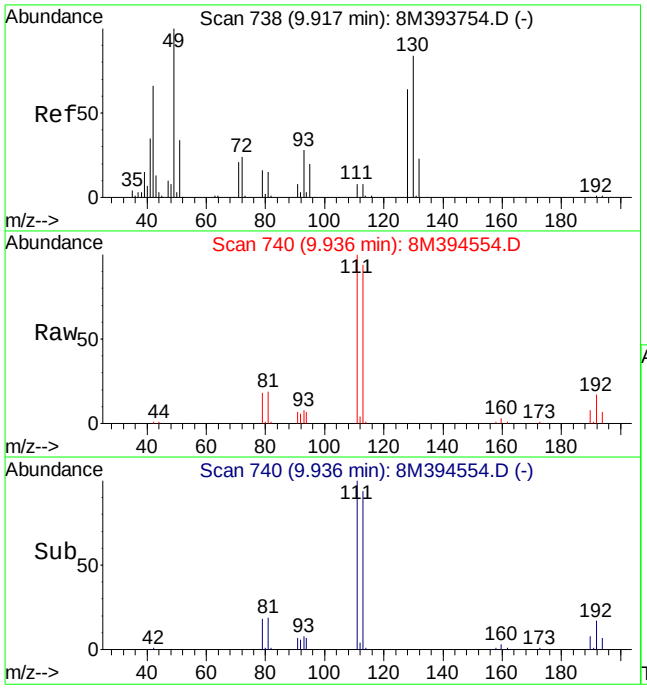

#36
Tetrahydrofuran
Concen: 0.14 ug/L
RT: 9.94 min Scan# 740
Delta R.T. 0.02 min
Lab File: 8M394554.D
Acq: 31 Jan 2014 1:02

Tgt Ion: 42 Resp: 202

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.4	50.0#
71	0.0	20.0	46.8#

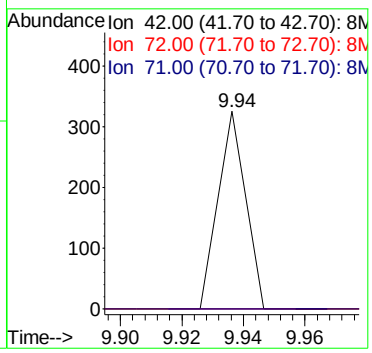

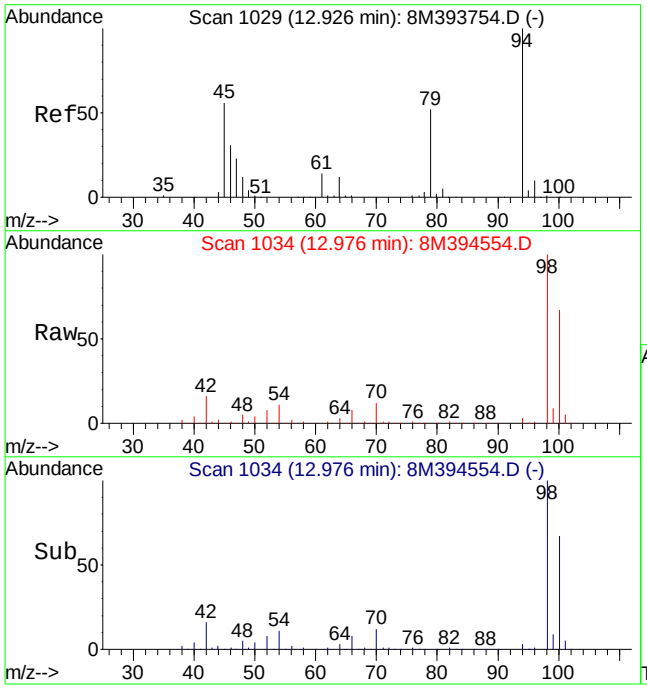

#56
Dimethyl Disulfide
Concen: 1.57 ug/L
RT: 12.98 min Scan# 1034
Delta R.T. 0.05 min
Lab File: 8M394554.D
Acq: 31 Jan 2014 1:02

Tgt Ion: 94 Resp: 22216

Ion	Ratio	Lower	Upper
94	100		
79	0.0	30.4	70.8#

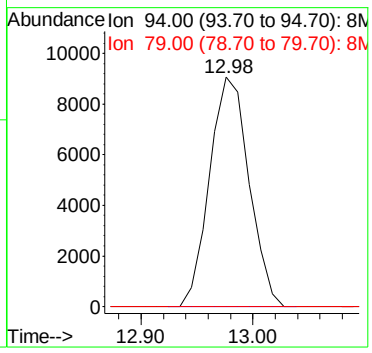

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\013014\8M394562.D Vial: 19
Acq On : 31 Jan 2014 5:21 Operator: MES
Sample : L14011372-06 MS A 826-LOW Inst : HPMS8
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 05:43:12 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	832333	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	670075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	380244	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.96	111	216978	23.9567 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.84%		
43) 1,2-Dichloroethane-d4	10.60	65	181493	20.4530 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 81.80%		
58) Toluene-d8	12.98	98	813890	24.3789 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.52%		
80) p-Bromofluorobenzene	16.38	95	324660	23.0403 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.16%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.36	85	178870	23.8450 ug/L	99
3) Chloromethane	3.84	50	358544	25.5981 ug/L	98
4) Vinyl Chloride	4.08	62	243441	24.4168 ug/L	100
5) 1,3-Butadiene	4.14	54	189905	20.2487 ug/L	100
6) Bromomethane	5.00	94	138307	21.8843 ug/L	97
7) Chloroethane	5.16	64	149557	21.2318 ug/L	98
8) Trichlorofluoromethane	5.66	101	274330	19.3982 ug/L	100
10) Isoprene	6.23	67	230573	16.7688 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.44	101	168533	20.0405 ug/L	96
13) Acetone	6.52	43	27587	18.6588 ug/L	99
14) 1,1-Dichloroethene	6.76	61	302458	19.6138 ug/L	99
15) Tert-Butyl Alcohol	6.76	59	10415	28.0870 ug/L #	59
16) Dimethyl Sulfide	7.02	62	189719	21.3854 ug/L	97
17) Iodomethane	7.28	142	106145	13.2898 ug/L	97
18) Methyl acetate	7.28	43	77681	17.0246 ug/L	97
19) Methylene Chloride	7.55	84	183604	21.1468 ug/L	91
20) Carbon Disulfide	7.60	76	564116	19.4250 ug/L	99
21) Acrylonitrile	7.72	53	41461	19.6341 ug/L	96
22) Methyl Tert Butyl Ether	7.75	73	348279	19.5581 ug/L	98
23) trans-1,2-Dichloroethene	7.99	61	318943	21.5308 ug/L	99
24) n-Hexane	8.07	57	225461	15.3569 ug/L	99
26) Vinyl Acetate	8.58	43	296969	20.7402 ug/L	99
27) 1,1-Dichloroethane	8.61	63	390045	21.4899 ug/L	100
28) Ethyl-Tert-Butyl ether	8.91	59	4062	0.1445 ug/L #	41
29) 2-Butanone	9.17	43	39829	17.2710 ug/L	97
31) 2,2-Dichloropropane	9.40	77	268660	18.4675 ug/L	99
32) cis-1,2-Dichloroethene	9.46	96	218611	21.8675 ug/L	93
33) Chloroform	9.67	83	339639	21.0527 ug/L	99
34) 1-Bromopropane	9.81	122	44723	23.5466 ug/L	94
35) Bromochloromethane	9.90	130	110814	21.3768 ug/L	96
36) Tetrahydrofuran	9.93	42	699	0.4748 ug/L #	40
38) 1,1,1-Trichloroethane	10.20	97	306501	21.4904 ug/L	99
39) Cyclohexane	10.24	56	314512	16.6173 ug/L	98
40) 1,1-Dichloropropene	10.40	75	261688	20.6147 ug/L	97
41) Tert-Amyl-Methyl ether	10.40	73	39317	2.0097 ug/L #	50
42) Carbon Tetrachloride	10.55	117	262805	21.9829 ug/L	99
45) 1,2-Dichloroethane	10.71	62	232782	20.5161 ug/L	96
46) Benzene	10.76	78	783339	22.1192 ug/L	100
47) Trichloroethene	11.51	130	210700	22.1719 ug/L	98
48) Methylcyclohexane	11.59	83	236528	16.2044 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M394562.D 8260WTR.M Fri Jan 31 05:43:13 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\013014\8M394562.D Vial: 19
Acq On : 31 Jan 2014 5:21 Operator: MES
Sample : L14011372-06 MS A 826-LOW Inst : HPMS8
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 05:43:12 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
49)	1,2-Dichloropropane	11.72	63	220956	22.5909	ug/L		94
50)	Bromodichloromethane	12.02	83	234957	21.5076	ug/L		99
52)	Dibromomethane	12.11	93	88517	20.5218	ug/L		98
54)	4-Methyl-2-Pentanone	12.33	58	34690	17.4637	ug/L		96
55)	cis-1,3-Dichloropropene	12.65	75	293343	21.7983	ug/L		99
56)	Dimethyl Disulfide	12.92	94	293762	20.8556	ug/L		98
59)	Toluene	13.08	91	864681	21.7282	ug/L		98
60)	Ethyl Methacrylate	13.16	69	146501	18.8295	ug/L		98
62)	trans-1,3-Dichloropropene	13.24	75	223913	19.8482	ug/L		99
63)	1,1,2-Trichloroethane	13.47	97	121844	20.8933	ug/L		99
64)	2-Hexanone	13.40	58	30469	16.6288	ug/L		91
65)	1,3-Dichloropropane	13.77	76	213834	19.9194	ug/L		100
66)	Tetrachloroethene	13.91	164	164097	20.5422	ug/L		98
67)	Dibromochloromethane	14.16	129	151993	22.8687	ug/L		98
68)	1,2-Dibromoethane	14.42	107	115467	19.8437	ug/L		97
69)	1-Chlorohexane	14.50	91	256463	18.9629	ug/L		100
70)	Chlorobenzene	14.93	112	524481	19.8049	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.95	131	197052	23.2939	ug/L		99
72)	Ethylbenzene	14.95	106	302099	20.7919	ug/L		96
73)	m-,p-Xylene	15.04	106	708571	41.2936	ug/L		97
74)	o-Xylene	15.60	106	335043	19.2881	ug/L		99
75)	Styrene	15.64	104	598837	21.0655	ug/L		96
76)	Bromoform	16.14	173	94202	20.6963	ug/L		100
77)	Isopropylbenzene	16.03	105	835074	19.5386	ug/L		98
79)	1,1,2,2-Tetrachloroethane	16.24	83	123593	19.3294	ug/L		98
81)	1,2,3-Trichloropropane	16.44	110	33986	18.3952	ug/L		79
82)	trans-1,4-Dichloro-2-Buten	16.48	53	21805	9.7194	ug/L	#	13
83)	n-Propylbenzene	16.53	91	1031124	18.9260	ug/L		97
84)	Bromobenzene	16.68	156	234478	20.5815	ug/L		96
85)	1,3,5-Trimethylbenzene	16.72	105	798312	20.7588	ug/L		98
86)	2-Chlorotoluene	16.81	91	659050	18.6272	ug/L		90
87)	4-Chlorotoluene	16.86	91	653335	20.1254	ug/L		90
88)	a-Methylstyrene	17.13	118	408081	18.9821	ug/L		99
89)	tert-Butylbenzene	17.19	134	154697	18.4011	ug/L		96
90)	1,2,4-Trimethylbenzene	17.25	105	823202	21.1245	ug/L		96
91)	sec-Butylbenzene	17.46	105	846751	18.3375	ug/L		98
92)	p-Isopropyltoluene	17.62	119	735708	18.5793	ug/L		98
93)	1,3-Dichlorobenzene	17.81	146	415233	19.2077	ug/L		96
94)	1,4-Dichlorobenzene	17.95	146	442844	20.7540	ug/L		97
95)	n-Butylbenzene	18.15	91	730141	19.8229	ug/L		98
96)	1,2-Dichlorobenzene	18.45	146	361724	19.0124	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.44	75	19293	17.2703	ug/L		93
98)	1,2,4-Trichlorobenzene	20.59	180	273480	18.8104	ug/L		99
99)	Hexachlorobutadiene	20.74	225	115877	18.6374	ug/L		98
100)	Naphthalene	20.96	128	405288	18.1323	ug/L		99
101)	1,2,3-Trichlorobenzene	21.27	180	225912	18.7486	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M394562.D 8260WTR.M Fri Jan 31 05:43:13 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\013014\8M394562.D Vial: 19
Acq On : 31 Jan 2014 5:21 Operator: MES
Sample : L14011372-06 MS A 826-LOW Inst : HPMS8
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 5:43 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration

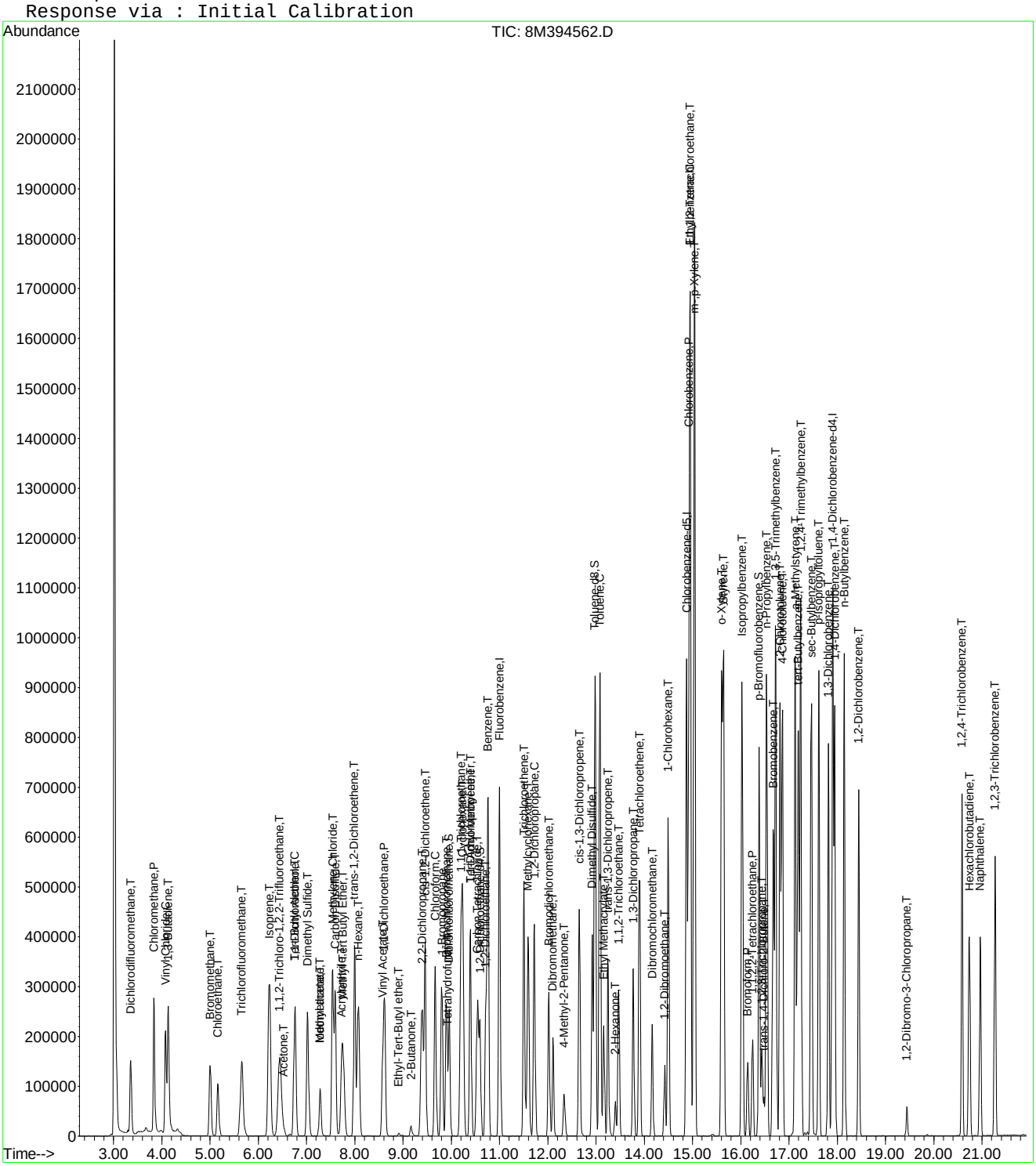

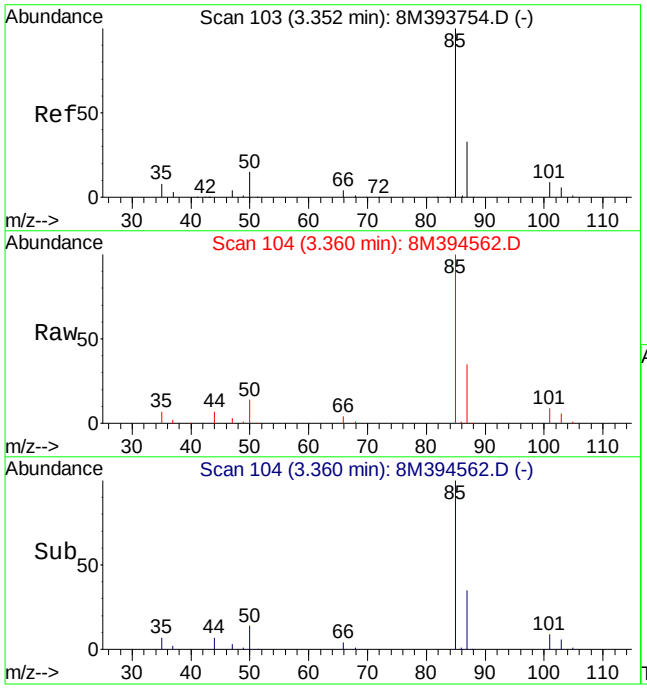

#2
Dichlorodifluoromethane
Concen: 23.85 ug/L
RT: 3.36 min Scan# 104
Delta R.T. 0.01 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 85 Resp: 178870

Ion	Ratio	Lower	Upper
85	100		
87	32.9	19.6	45.6

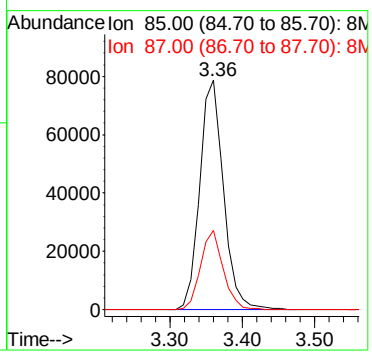

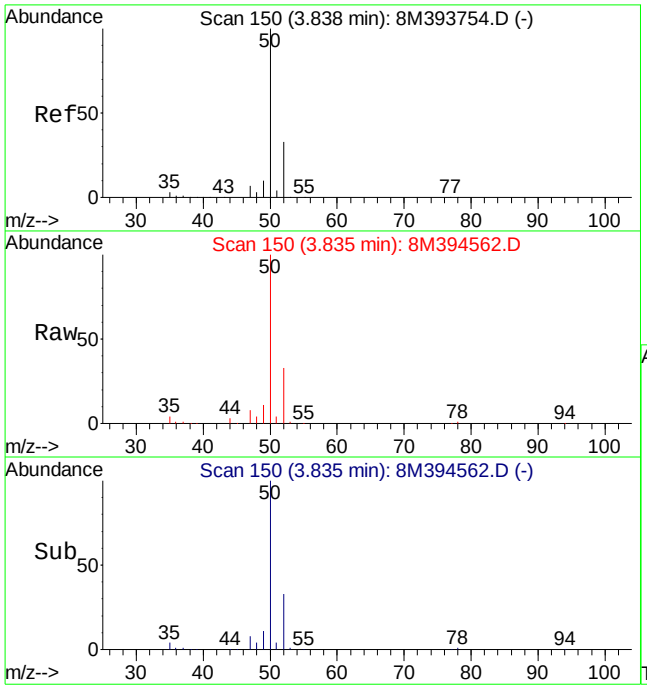

#3
Chloromethane
Concen: 25.60 ug/L
RT: 3.84 min Scan# 150
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 50 Resp: 358544

Ion	Ratio	Lower	Upper
50	100		
52	33.6	19.6	45.6

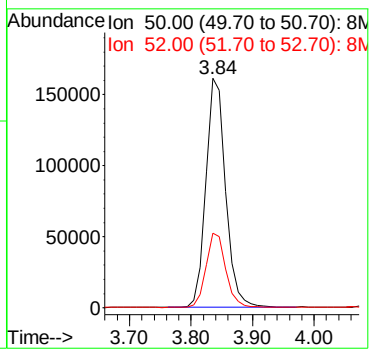

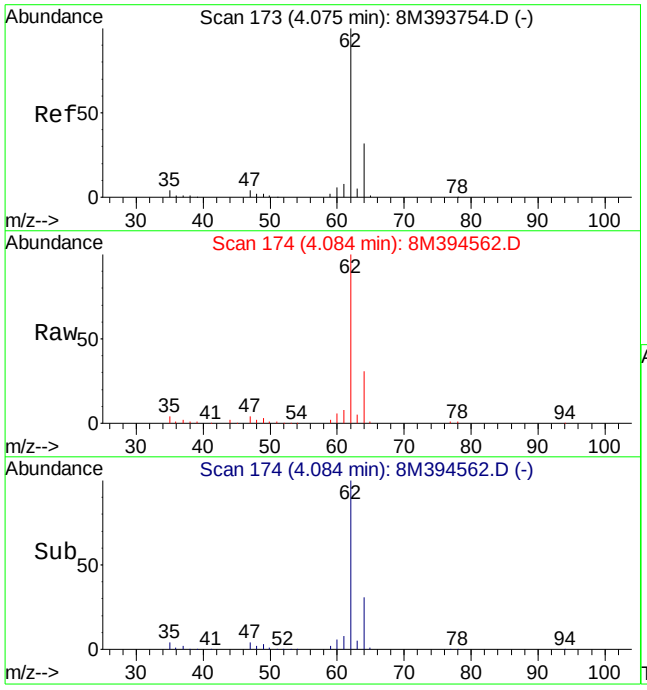

#4
Vinyl Chloride
Concen: 24.42 ug/L
RT: 4.08 min Scan# 174
Delta R.T. 0.01 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 62 Resp: 243441

Ion	Ratio	Lower	Upper
62	100		
64	31.0	18.7	43.7

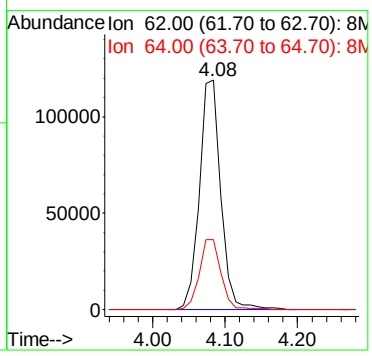

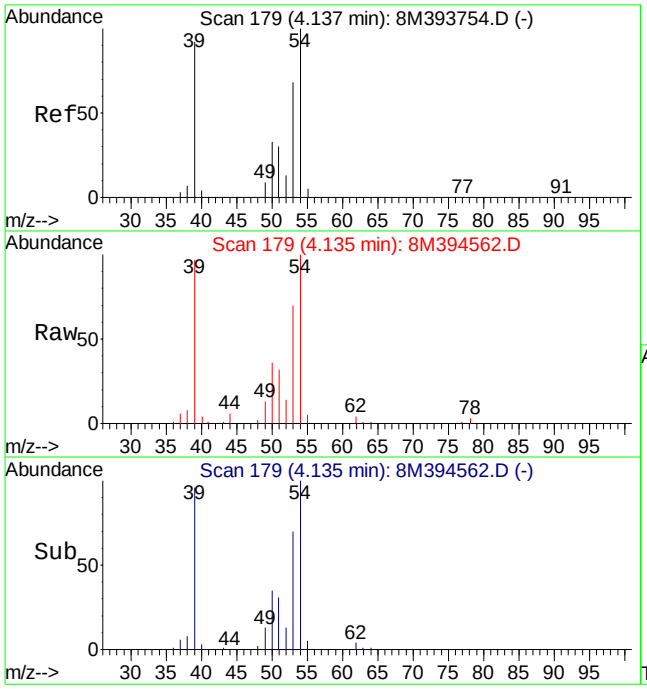

#5
1,3-Butadiene
Concen: 20.25 ug/L
RT: 4.14 min Scan# 179
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 54 Resp: 189905

Ion	Ratio	Lower	Upper
54	100		
39	93.3	55.7	130.1
53	68.6	41.0	95.8

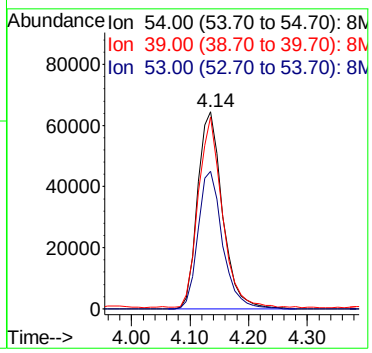

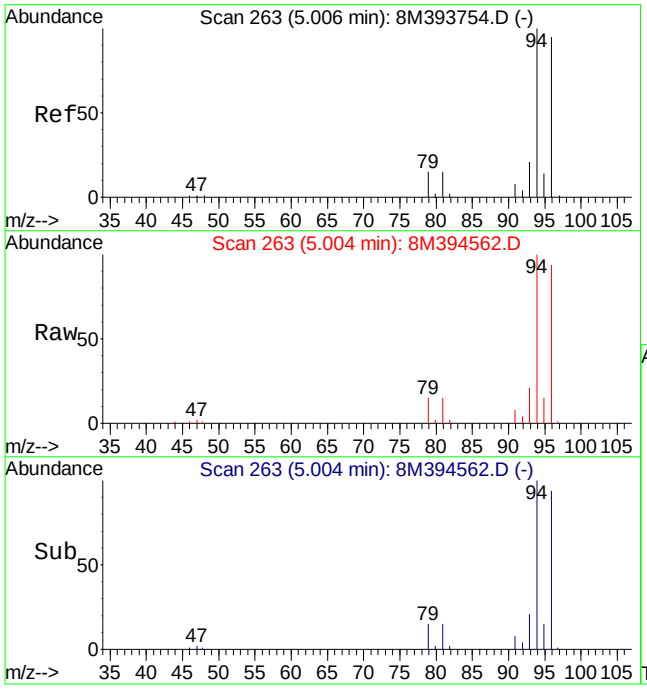

#6
Bromomethane
Concen: 21.88 ug/L
RT: 5.00 min Scan# 263
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 94 Resp: 138307

Ion	Ratio	Lower	Upper
94	100		
96	96.5	56.2	131.0

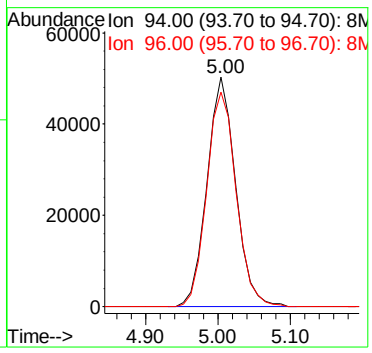

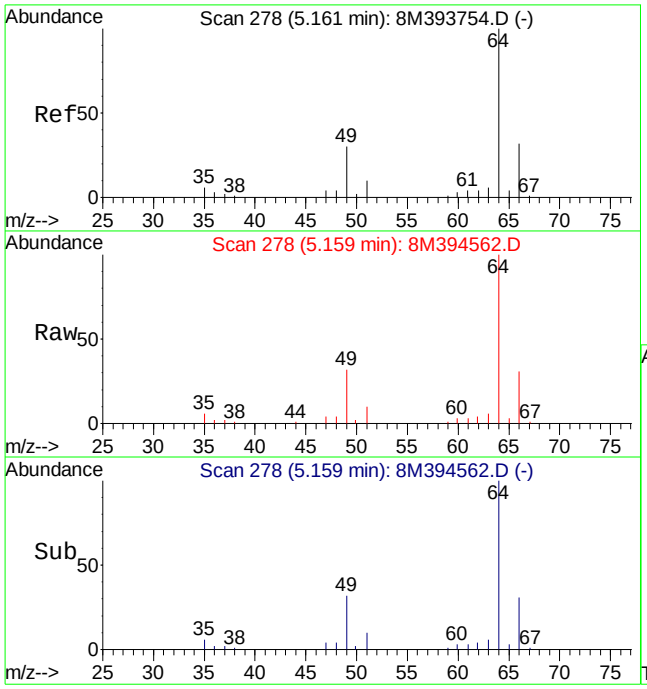

#7
Chloroethane
Concen: 21.23 ug/L
RT: 5.16 min Scan# 278
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 64 Resp: 149557

Ion	Ratio	Lower	Upper
64	100		
66	30.5	18.8	44.0
49	32.6	18.5	43.1

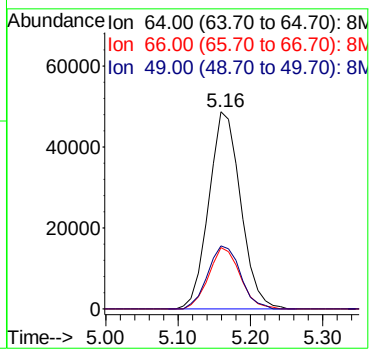

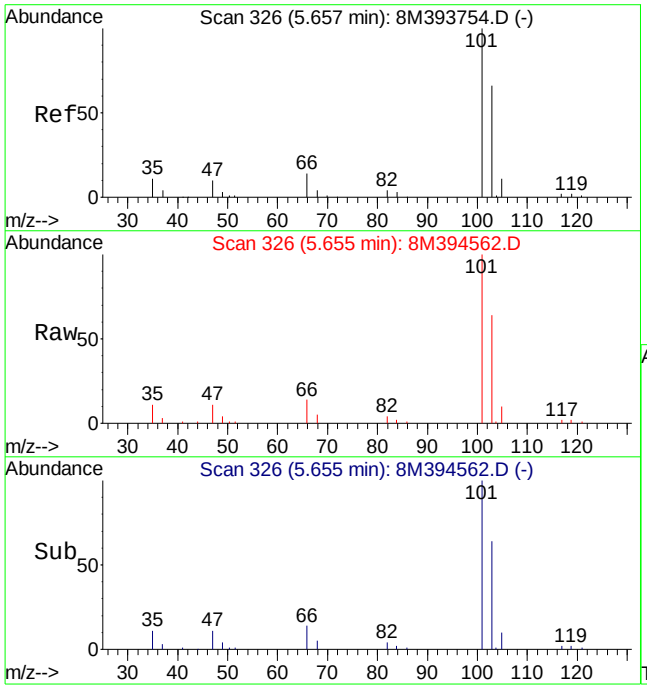

#8
Trichlorofluoromethane
Concen: 19.40 ug/L
RT: 5.66 min Scan# 326
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:101 Resp: 274330

Ion	Ratio	Lower	Upper
101	100		
103	64.8	38.9	90.9
66	13.1	8.0	18.6

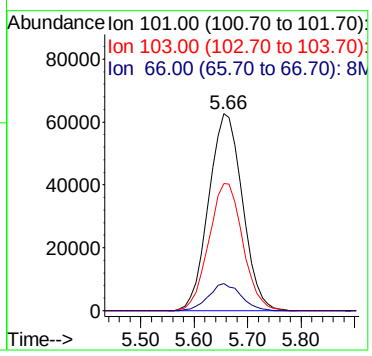

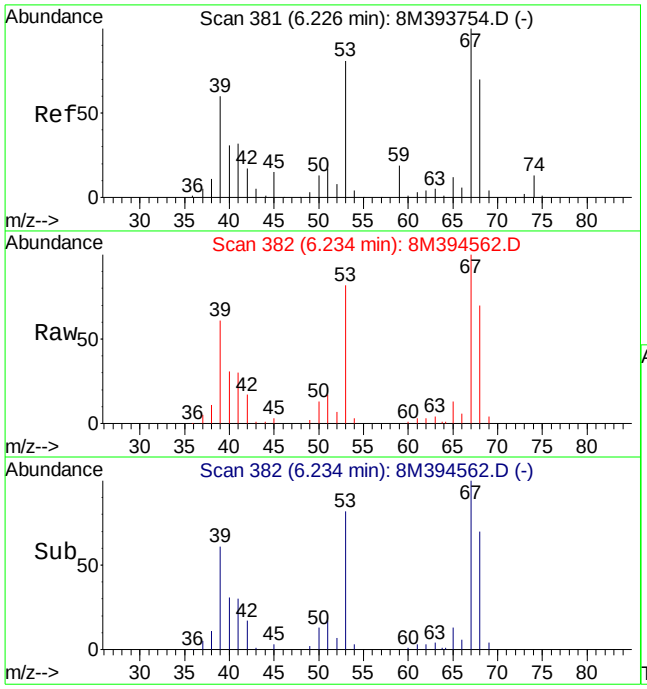

#10
Isoprene
Concen: 16.77 ug/L
RT: 6.23 min Scan# 382
Delta R.T. 0.01 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 67 Resp: 230573

Ion	Ratio	Lower	Upper
67	100		
53	83.6	48.9	114.1

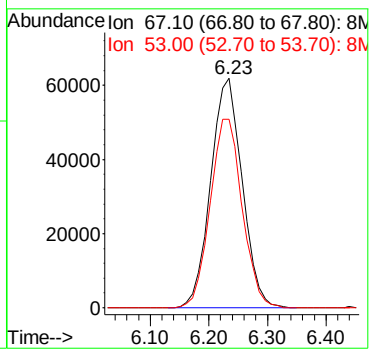

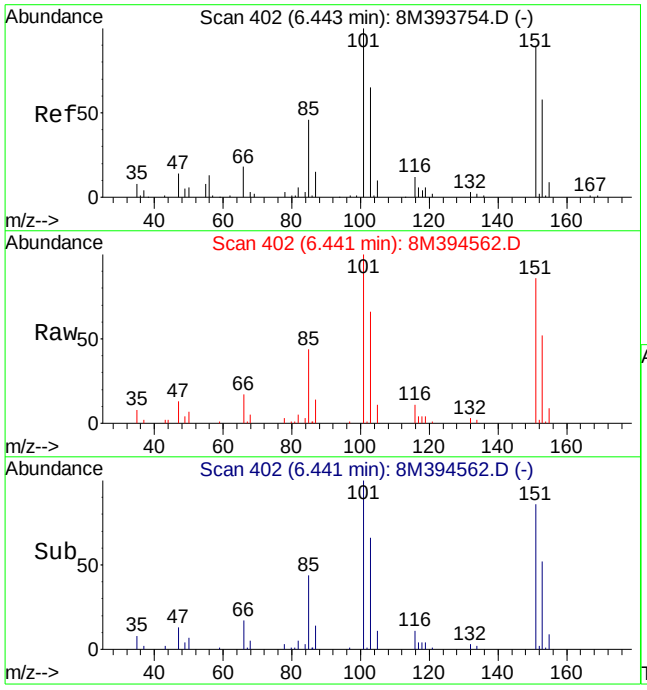

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 20.04 ug/L
RT: 6.44 min Scan# 402
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:101 Resp: 168533

Ion	Ratio	Lower	Upper
101	100		
151	85.9	49.8	129.8

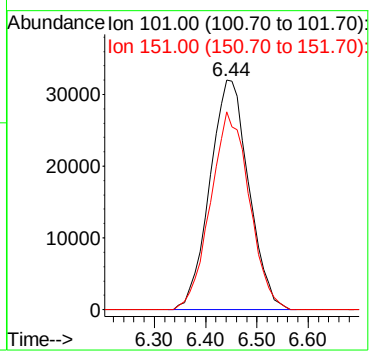

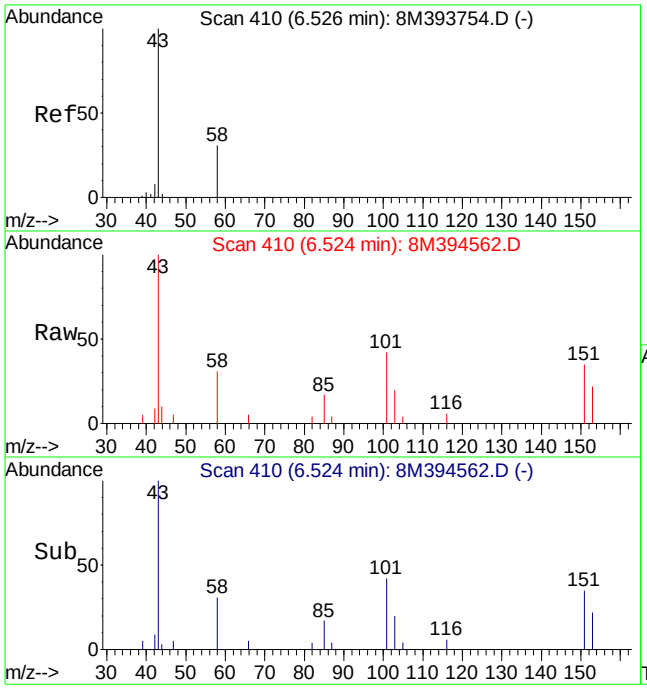

#13
Acetone
Concen: 18.66 ug/L
RT: 6.52 min Scan# 410
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 43 Resp: 27587

Ion	Ratio	Lower	Upper
43	100		
58	28.0	17.0	39.6

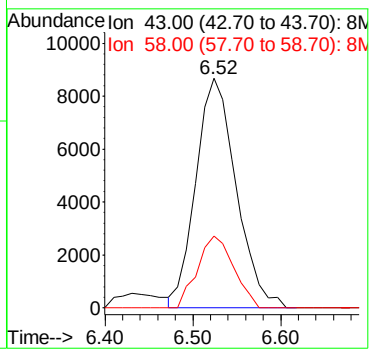

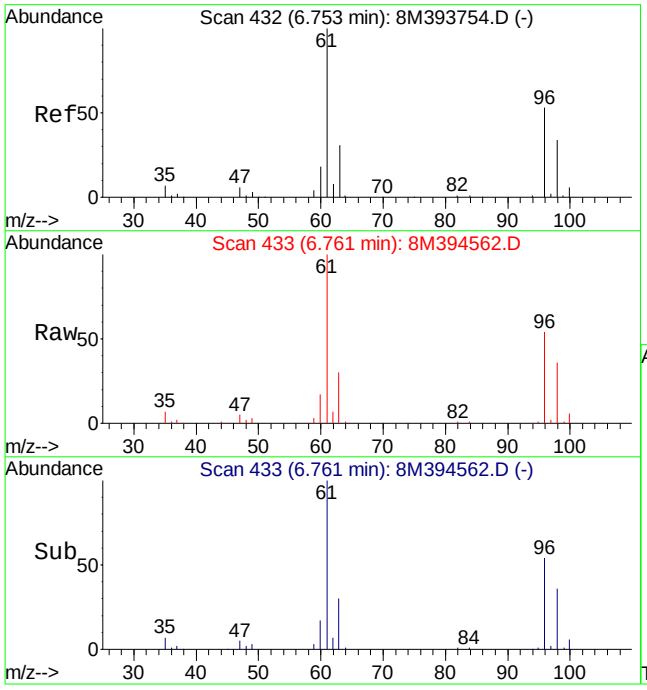

#14
1,1-Dichloroethene
Concen: 19.61 ug/L
RT: 6.76 min Scan# 433
Delta R.T. 0.01 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 61 Resp: 302458

Ion	Ratio	Lower	Upper
61	100		
96	54.9	32.5	75.7

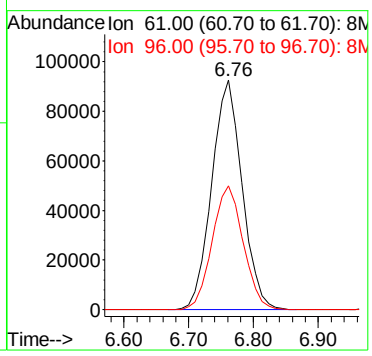

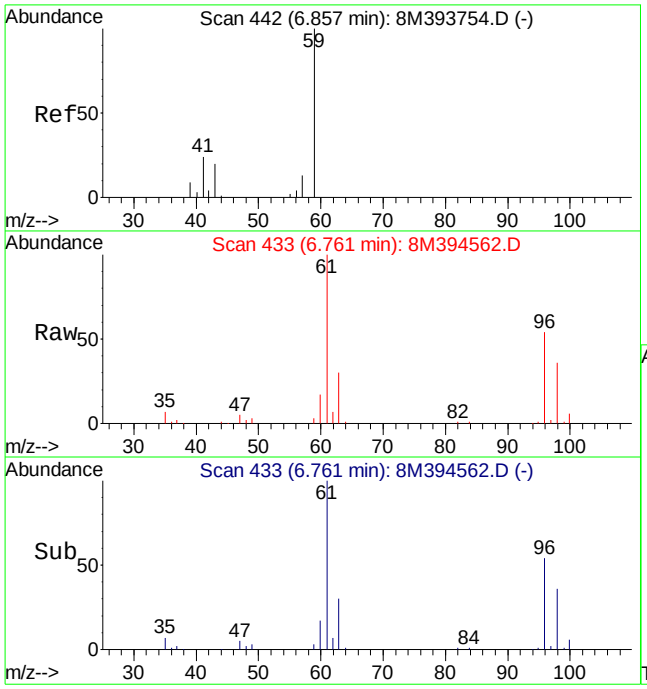

#15
Tert-Butyl Alcohol
Concen: 28.09 ug/L
RT: 6.76 min Scan# 433
Delta R.T. -0.10 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 59 Resp: 10415

Ion	Ratio	Lower	Upper
59	100		
41	0.0	13.7	32.1#
57	0.0	6.1	14.3#

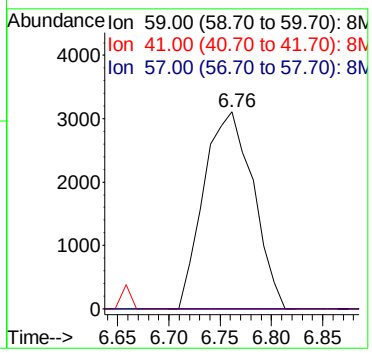

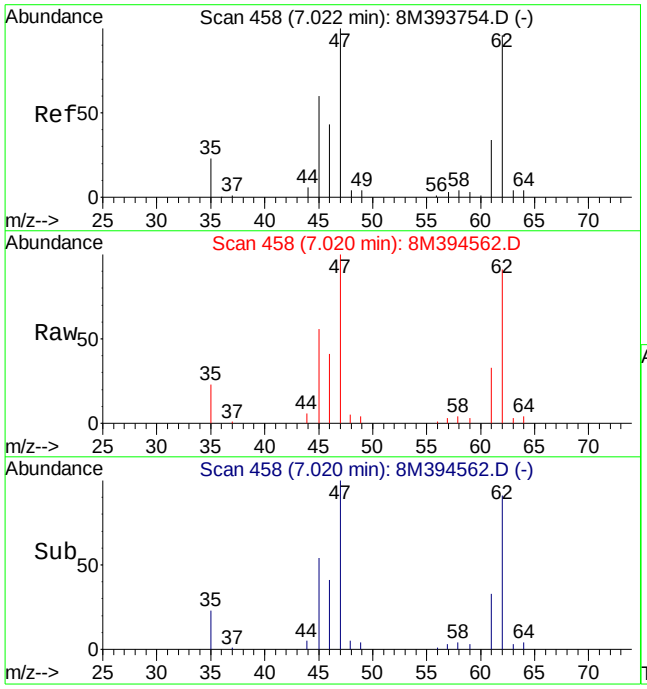

#16
Dimethyl Sulfide
Concen: 21.39 ug/L
RT: 7.02 min Scan# 458
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 62 Resp: 189719

Ion	Ratio	Lower	Upper
62	100		
47	106.8	62.4	145.6

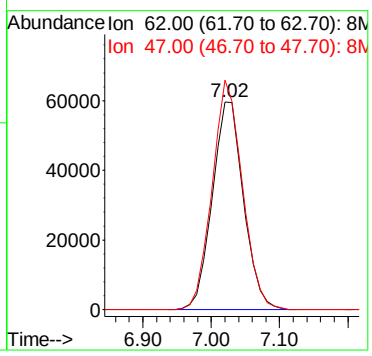

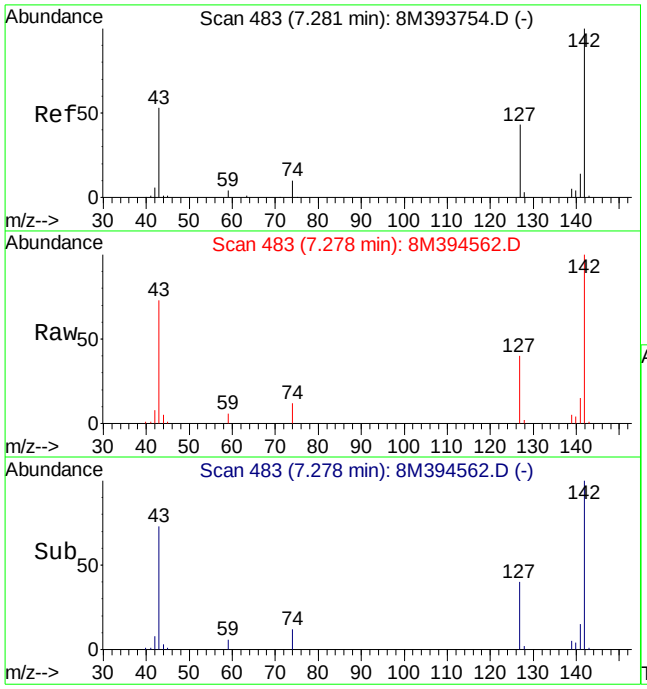

#17
Iodomethane
Concen: 13.29 ug/L
RT: 7.28 min Scan# 483
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:142 Resp: 106145

Ion	Ratio	Lower	Upper
142	100		
127	41.8	26.3	61.3

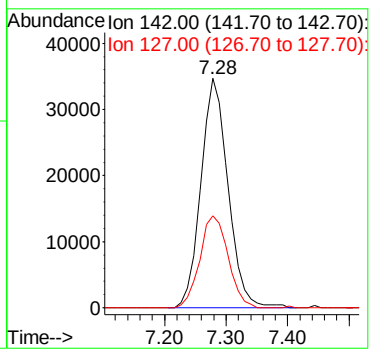

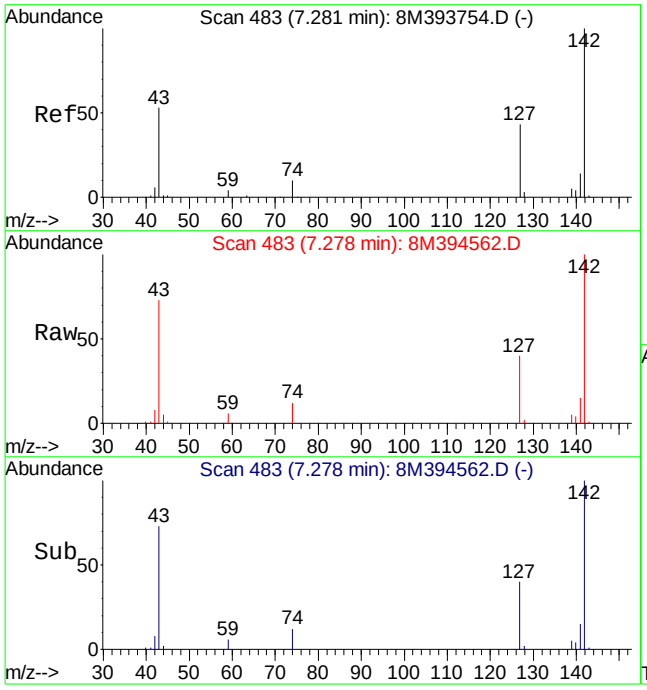

#18
Methyl acetate
Concen: 17.02 ug/L
RT: 7.28 min Scan# 483
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 43 Resp: 77681

Ion	Ratio	Lower	Upper
43	100		
74	16.3	10.7	24.9
59	7.3	4.6	10.6

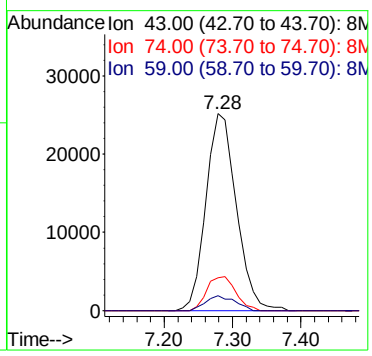

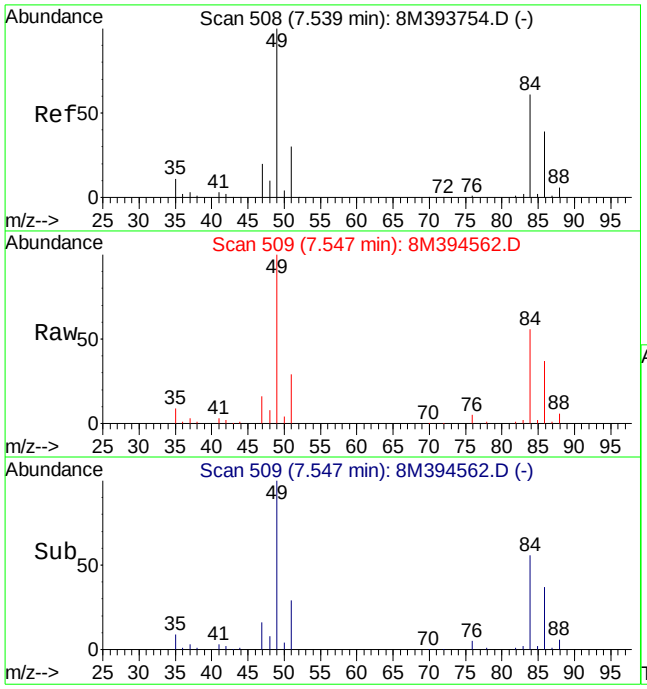

#19
Methylene Chloride
Concen: 21.15 ug/L
RT: 7.55 min Scan# 509
Delta R.T. 0.01 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 84 Resp: 183604

Ion	Ratio	Lower	Upper
84	100		
49	176.4	98.4	229.6

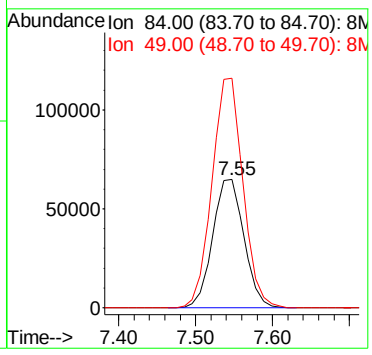

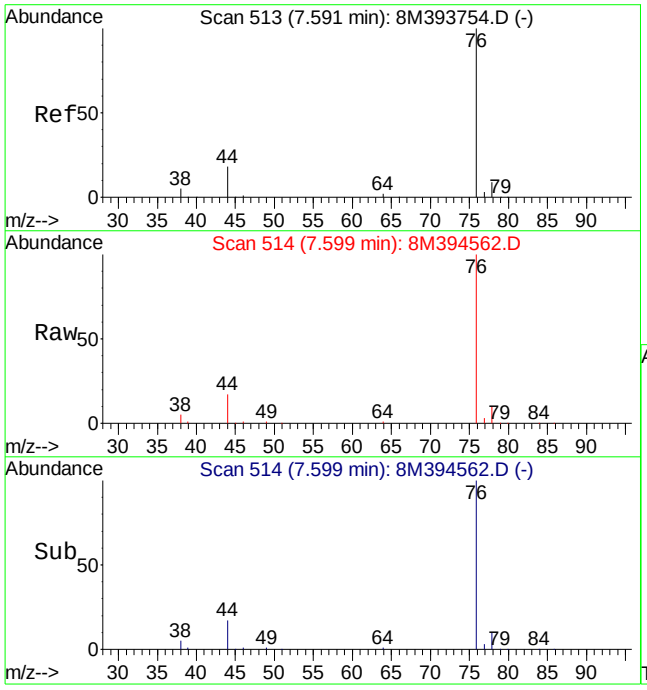

#20
Carbon Disulfide
Concen: 19.43 ug/L
RT: 7.60 min Scan# 514
Delta R.T. 0.01 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 76 Resp: 564116

Ion	Ratio	Lower	Upper
76	100		
78	9.3	5.8	13.4

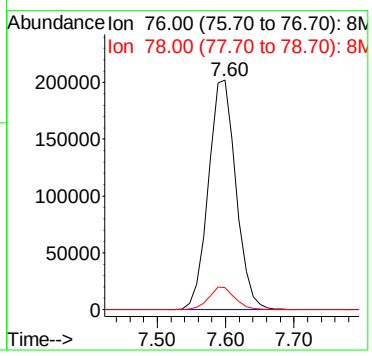

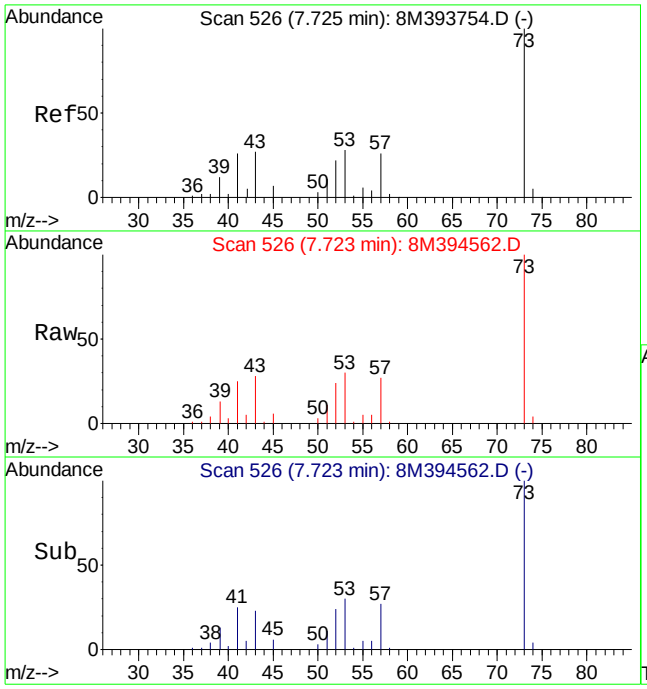

#21
Acrylonitrile
Concen: 19.63 ug/L
RT: 7.72 min Scan# 526
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 53 Resp: 41461

Ion	Ratio	Lower	Upper
53	100		
52	74.6	46.7	109.1

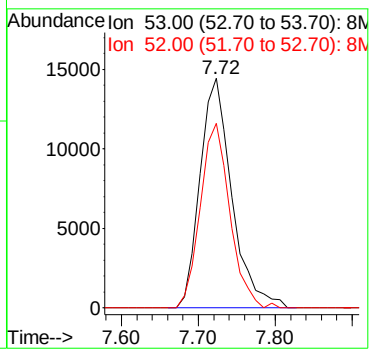

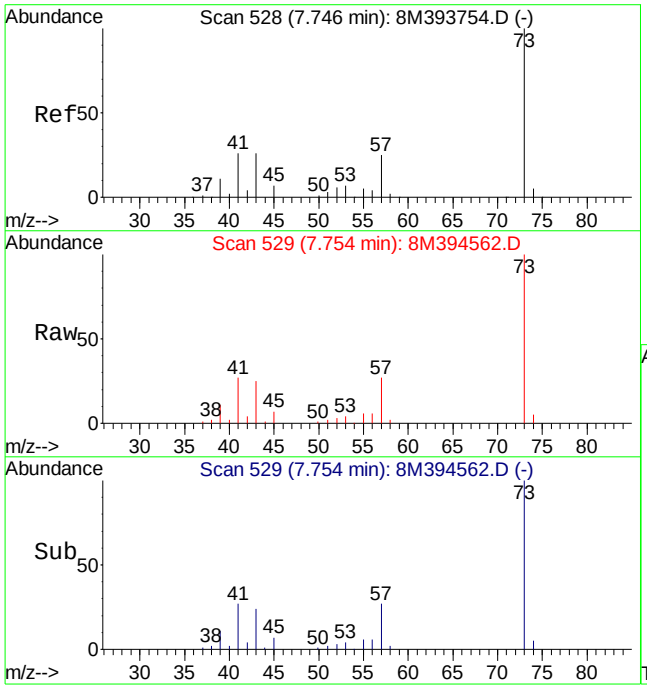

#22
Methyl Tert Butyl Ether
Concen: 19.56 ug/L
RT: 7.75 min Scan# 529
Delta R.T. 0.01 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 73 Resp: 348279

Ion	Ratio	Lower	Upper
73	100		
57	27.3	15.7	36.7

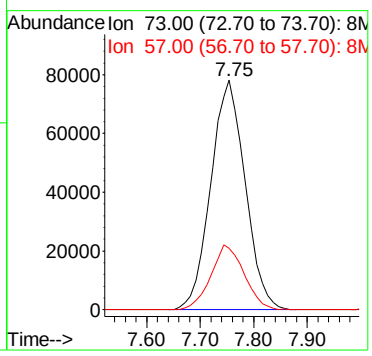

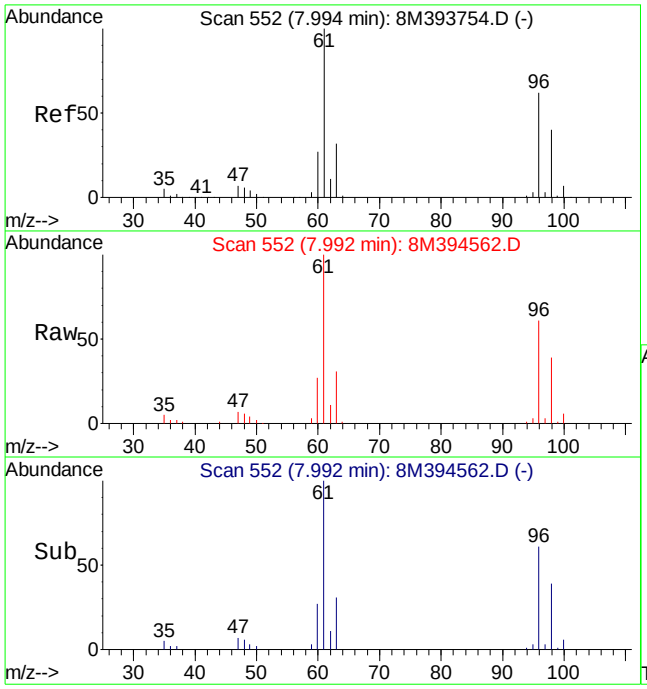

#23
trans-1,2-Dichloroethene
Concen: 21.53 ug/L
RT: 7.99 min Scan# 552
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 61 Resp: 318943

Ion	Ratio	Lower	Upper
61	100		
96	63.0	37.3	86.9

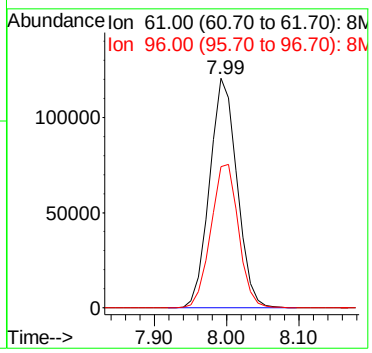

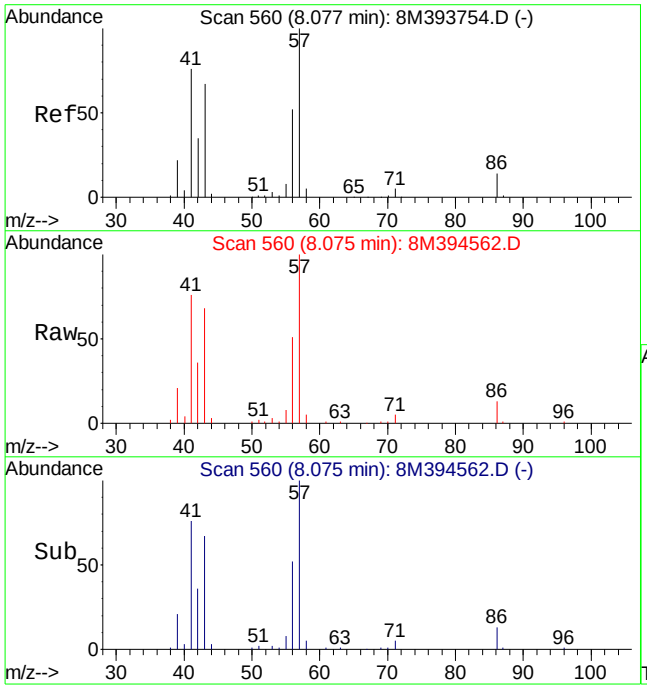

#24
n-Hexane
Concen: 15.36 ug/L
RT: 8.07 min Scan# 560
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 57 Resp: 225461

Ion	Ratio	Lower	Upper
57	100		
43	67.9	40.3	93.9

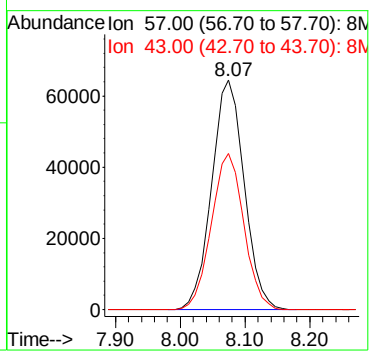

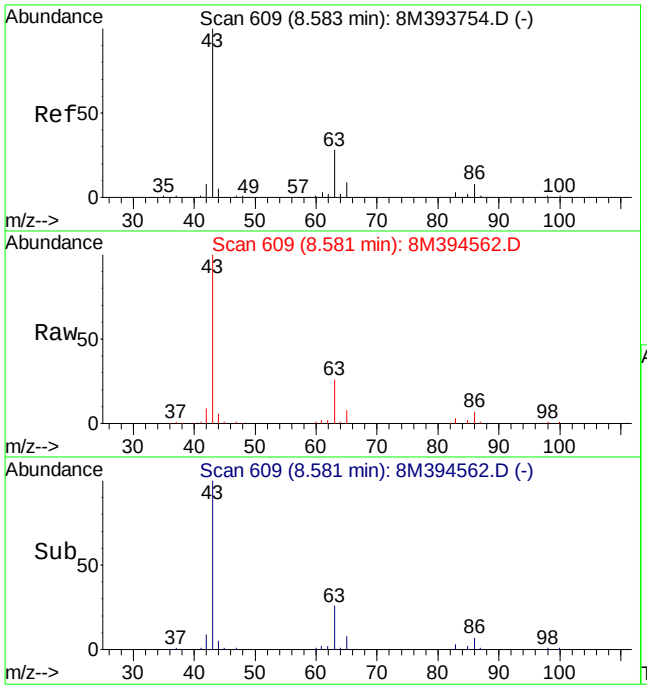

#26
Vinyl Acetate
Concen: 20.74 ug/L
RT: 8.58 min Scan# 609
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 43 Resp: 296969

Ion	Ratio	Lower	Upper
43	100		
86	7.4	4.7	11.1

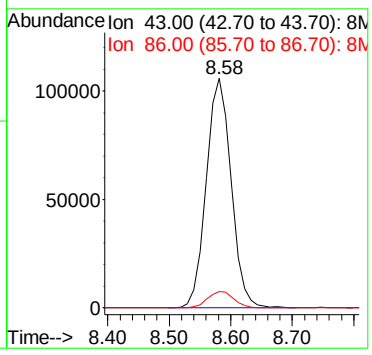

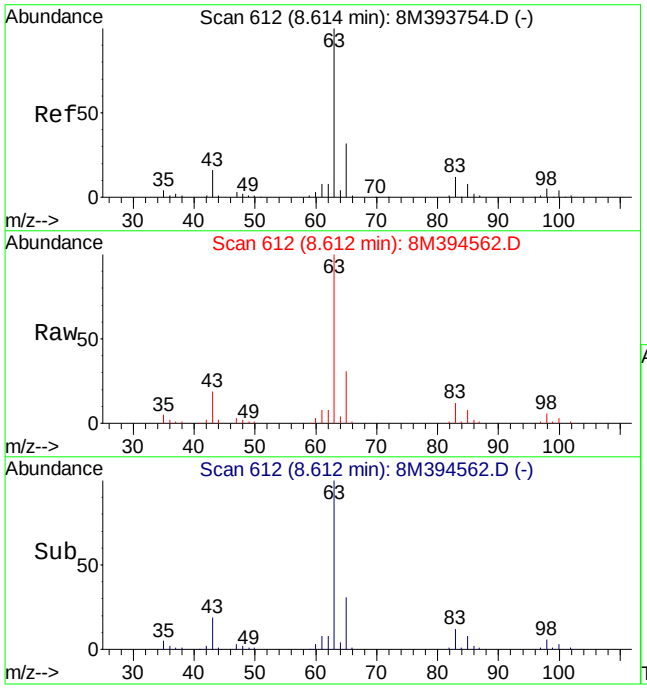

#27
1,1-Dichloroethane
Concen: 21.49 ug/L
RT: 8.61 min Scan# 612
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 63 Resp: 390045

Ion	Ratio	Lower	Upper
63	100		
65	30.9	18.7	43.5
83	12.2	7.4	17.2

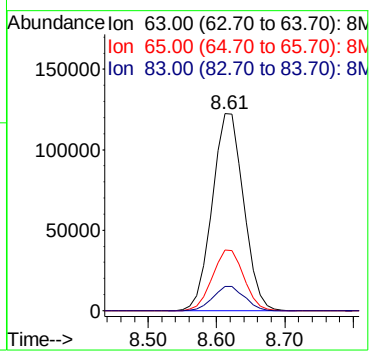

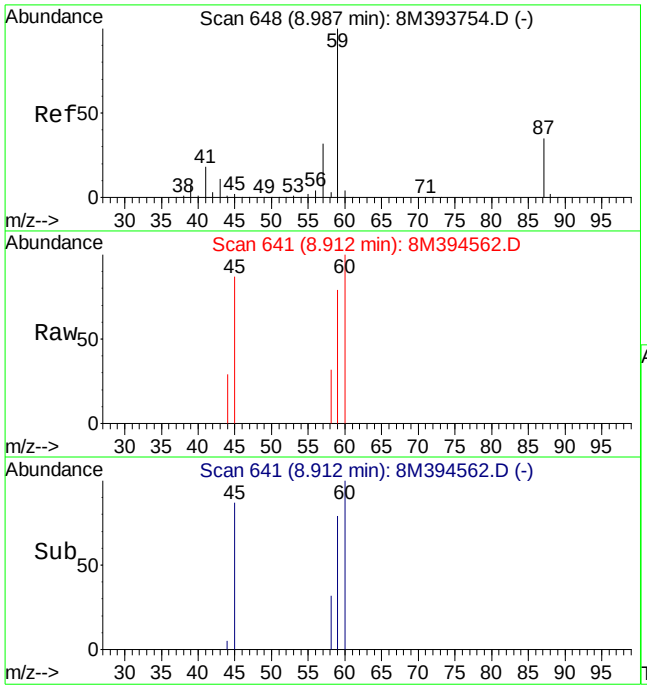

#28
Ethyl-Tert-Butyl ether
Concen: 0.14 ug/L
RT: 8.91 min Scan# 641
Delta R.T. -0.07 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 59 Resp: 4062

Ion	Ratio	Lower	Upper
59	100		
87	0.0	20.7	48.3#
57	0.0	19.2	44.8#

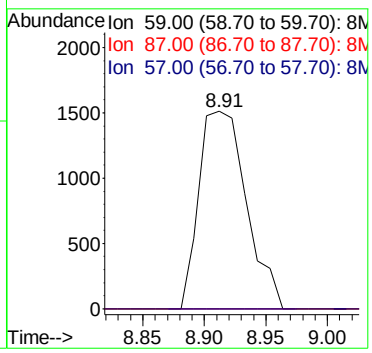

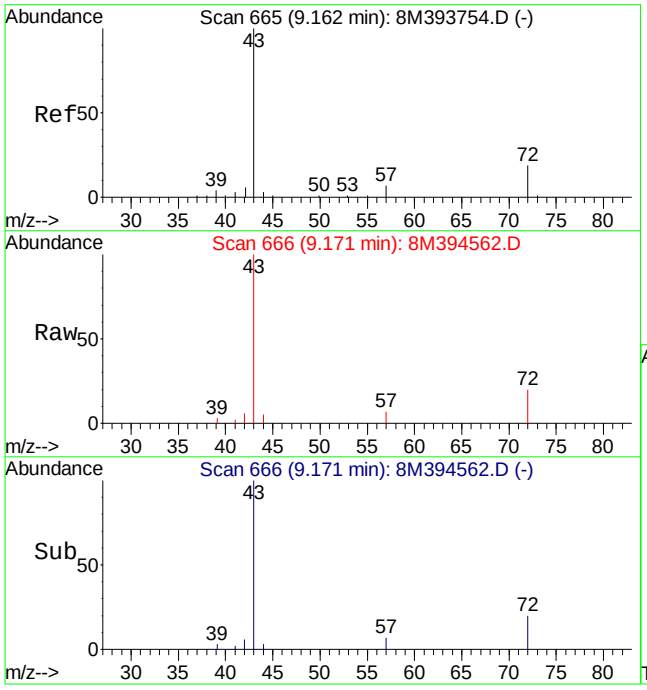

#29
2-Butanone
Concen: 17.27 ug/L
RT: 9.17 min Scan# 666
Delta R.T. 0.01 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 43 Resp: 39829

Ion	Ratio	Lower	Upper
43	100		
72	17.8	11.5	26.7

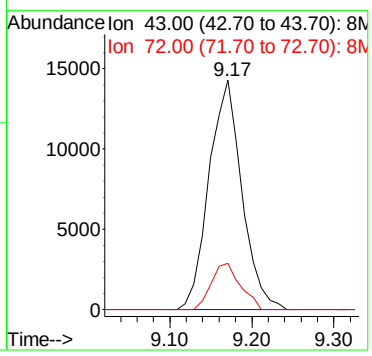

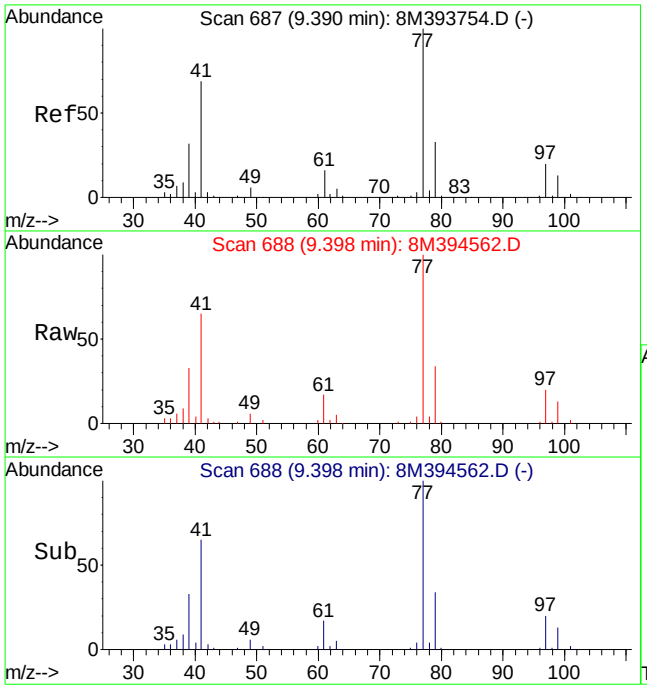

#31
2,2-Dichloropropane
Concen: 18.47 ug/L
RT: 9.40 min Scan# 688
Delta R.T. 0.01 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 77 Resp: 268660

Ion	Ratio	Lower	Upper
77	100		
79	31.9	19.3	45.1

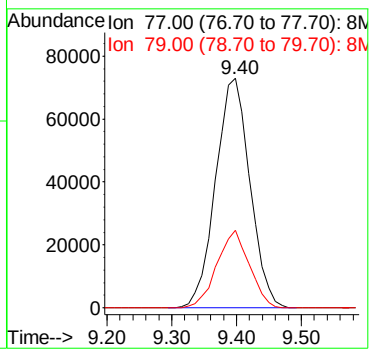

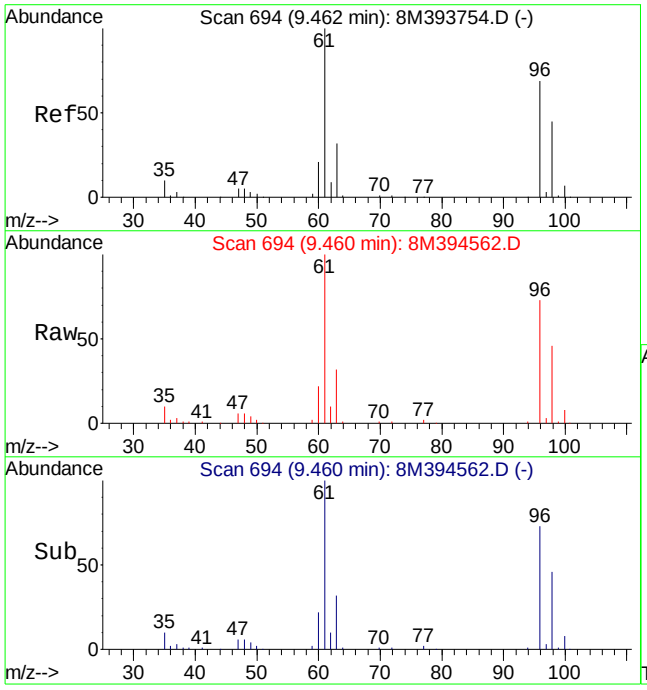

#32
cis-1,2-Dichloroethene
Concen: 21.87 ug/L
RT: 9.46 min Scan# 694
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 96 Resp: 218611

Ion	Ratio	Lower	Upper
96	100		
61	160.0	101.6	237.2

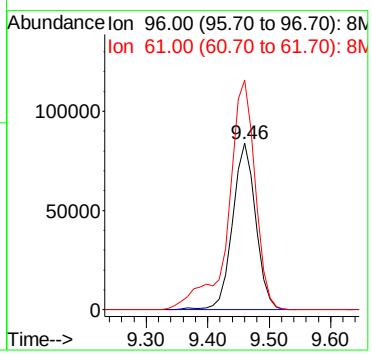

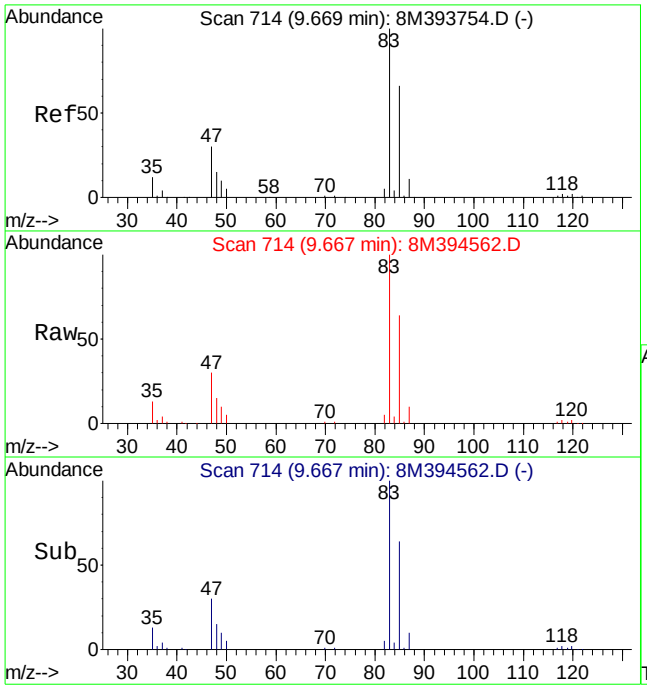

#33
Chloroform
Concen: 21.05 ug/L
RT: 9.67 min Scan# 714
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 83 Resp: 339639

Ion	Ratio	Lower	Upper
83	100		
85	65.2	39.5	92.3

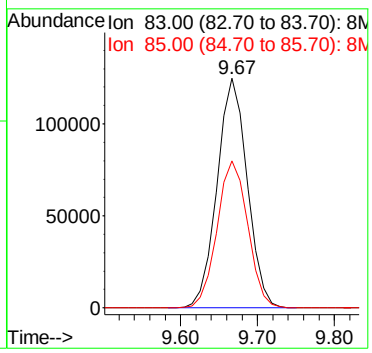

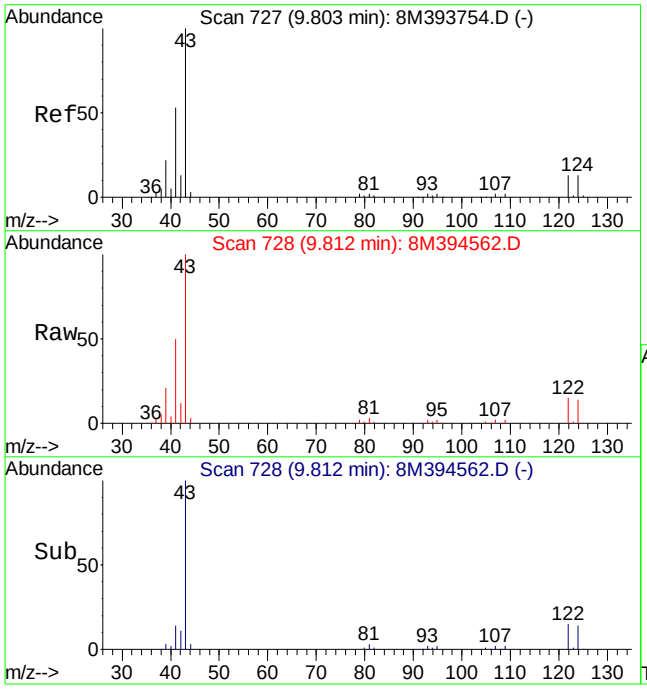

#34
1-Bromopropane
Concen: 23.55 ug/L
RT: 9.81 min Scan# 728
Delta R.T. 0.01 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:122 Resp: 44723

Ion	Ratio	Lower	Upper
122	100		
124	102.1	0.0	207.5

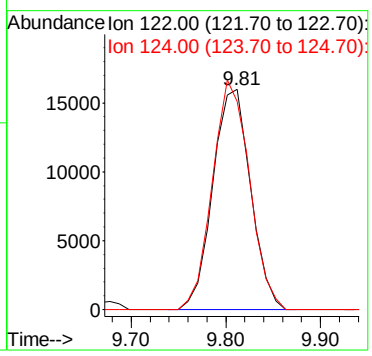

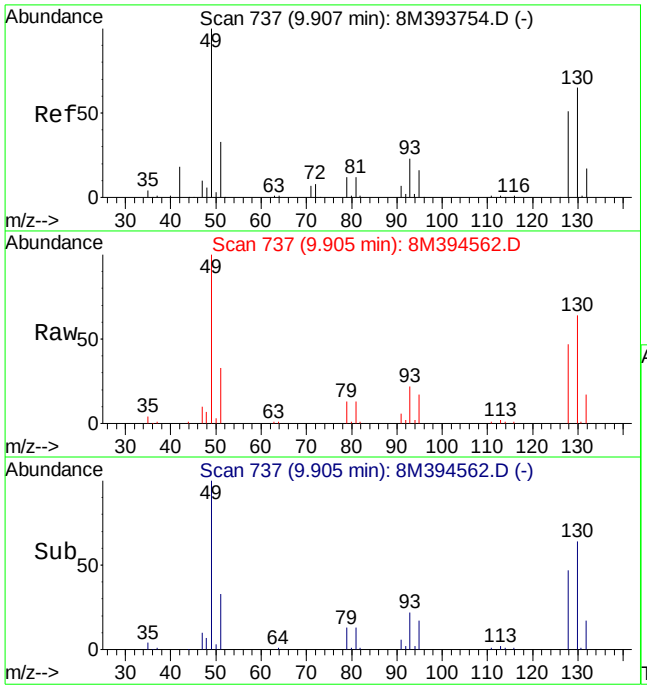

#35
Bromochloromethane
Concen: 21.38 ug/L
RT: 9.90 min Scan# 737
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:130 Resp: 110814

Ion	Ratio	Lower	Upper
130	100		
128	76.7	46.6	108.6
49	174.4	100.3	234.1

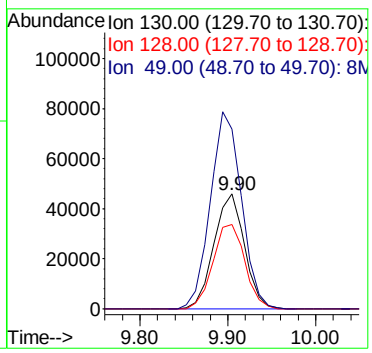

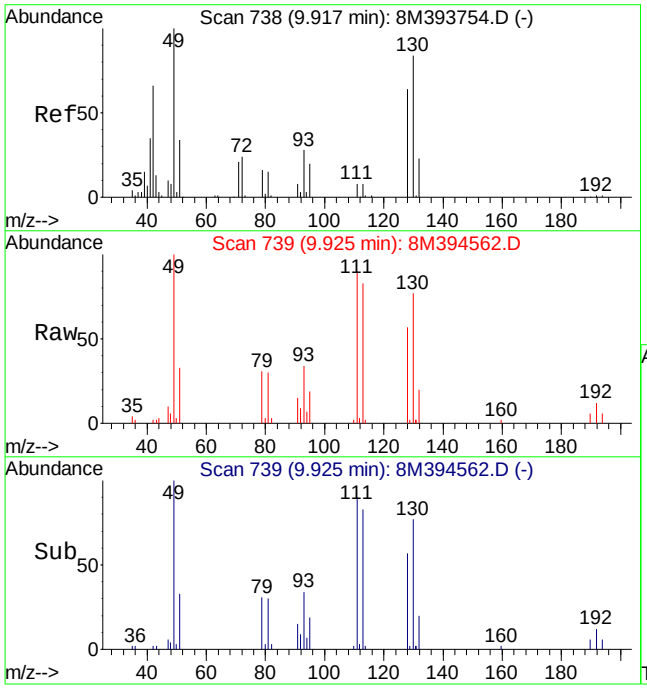

#36
Tetrahydrofuran
Concen: 0.47 ug/L
RT: 9.93 min Scan# 739
Delta R.T. 0.01 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 42 Resp: 699

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.4	50.0#
71	0.0	20.0	46.8#

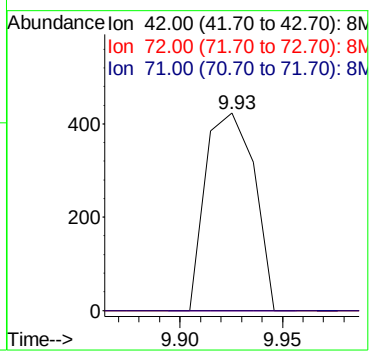

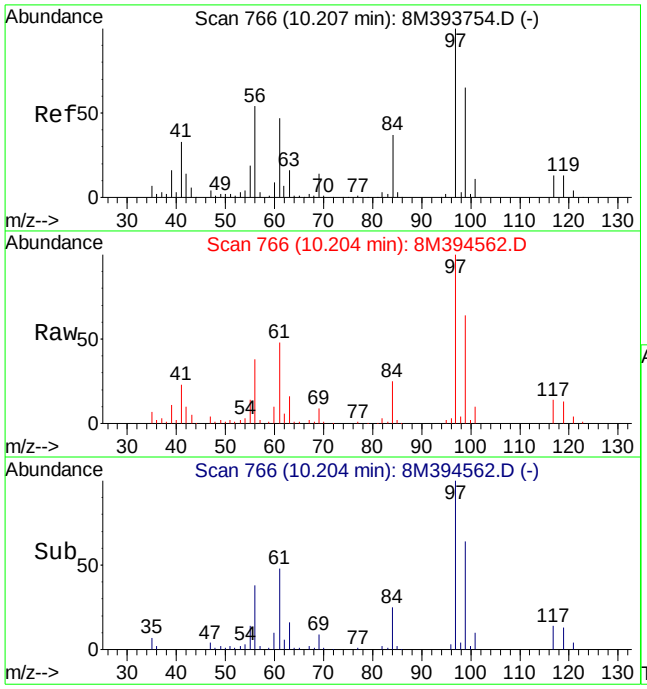

#38
1,1,1-Trichloroethane
Concen: 21.49 ug/L
RT: 10.20 min Scan# 766
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 97 Resp: 306501

Ion	Ratio	Lower	Upper
97	100		
99	64.2	38.8	90.6

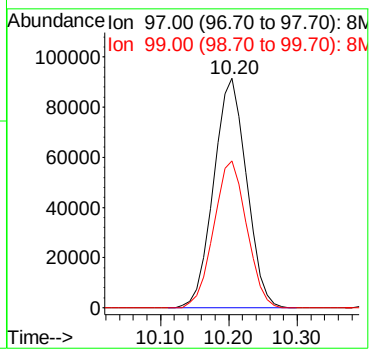

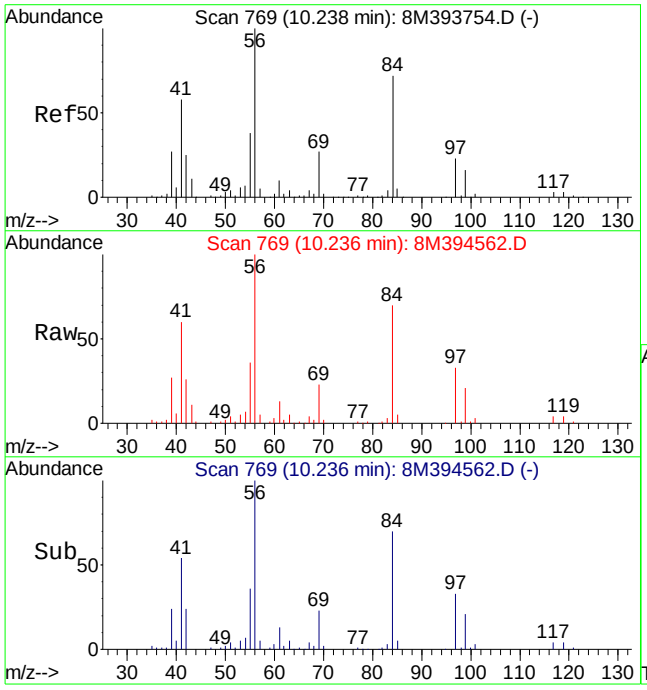

#39
Cyclohexane
Concen: 16.62 ug/L
RT: 10.24 min Scan# 769
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 56 Resp: 314512

Ion	Ratio	Lower	Upper
56	100		
84	70.6	43.1	100.5
69	24.9	16.0	37.4

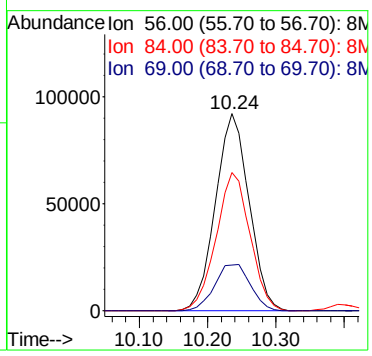

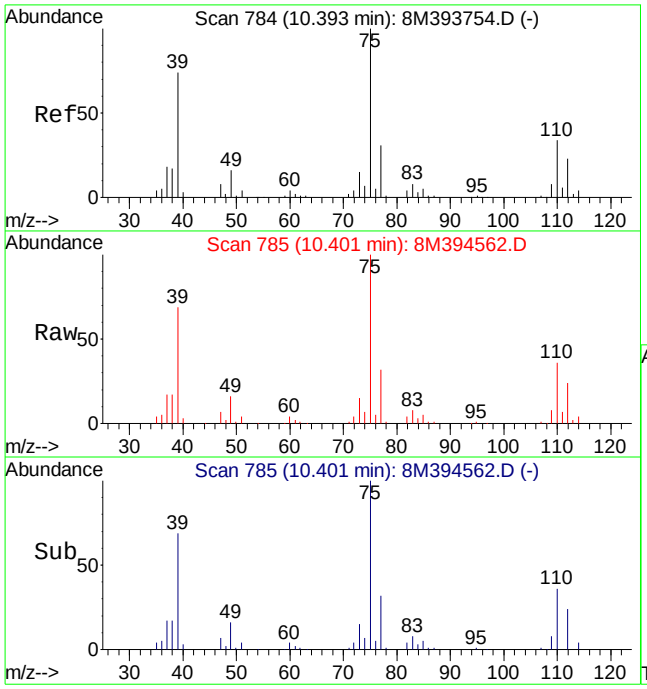

#40
1,1-Dichloropropene
Concen: 20.61 ug/L
RT: 10.40 min Scan# 785
Delta R.T. 0.01 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 75 Resp: 261688

Ion	Ratio	Lower	Upper
75	100		
110	36.3	20.9	48.7

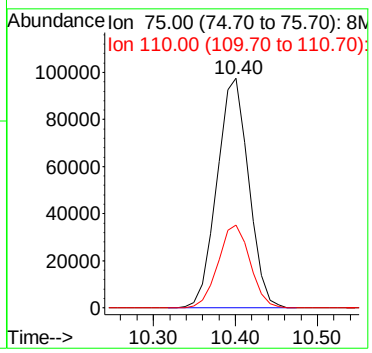

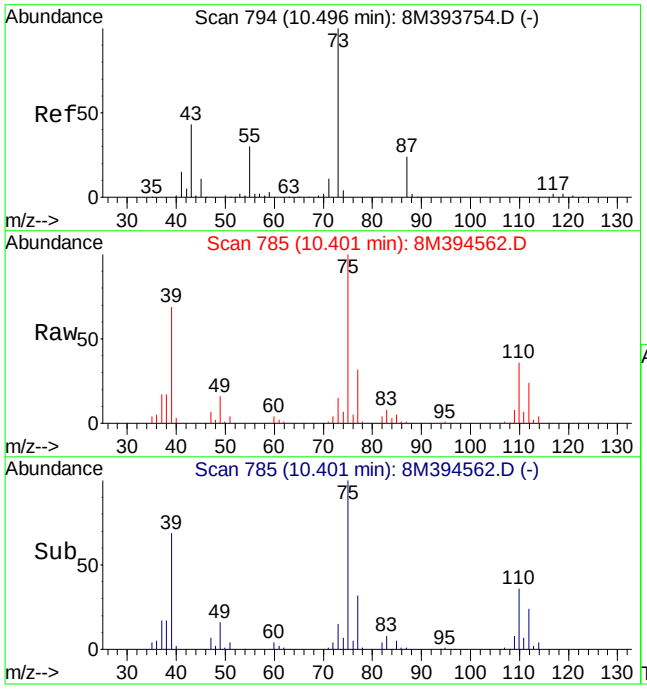

#41
Tert-Amyl-Methyl ether
Concen: 2.01 ug/L
RT: 10.40 min Scan# 785
Delta R.T. -0.10 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 73 Resp: 39317

Ion	Ratio	Lower	Upper
73	100		
55	0.0	17.2	40.0#
57	0.0	1.4	3.2#

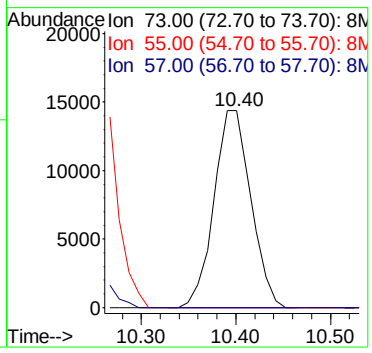

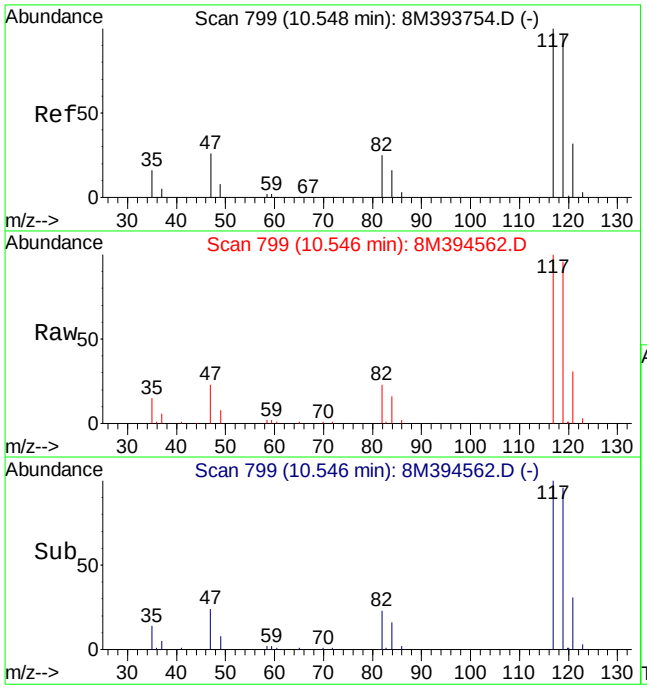

#42
Carbon Tetrachloride
Concen: 21.98 ug/L
RT: 10.55 min Scan# 799
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:117 Resp: 262805

Ion	Ratio	Lower	Upper
117	100		
119	95.4	58.0	135.2
82	23.8	14.8	34.4

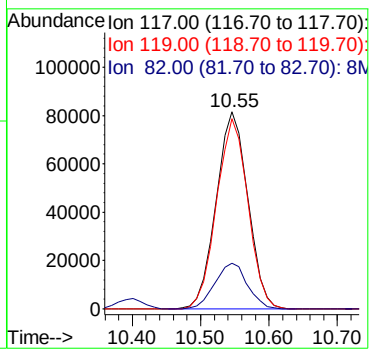

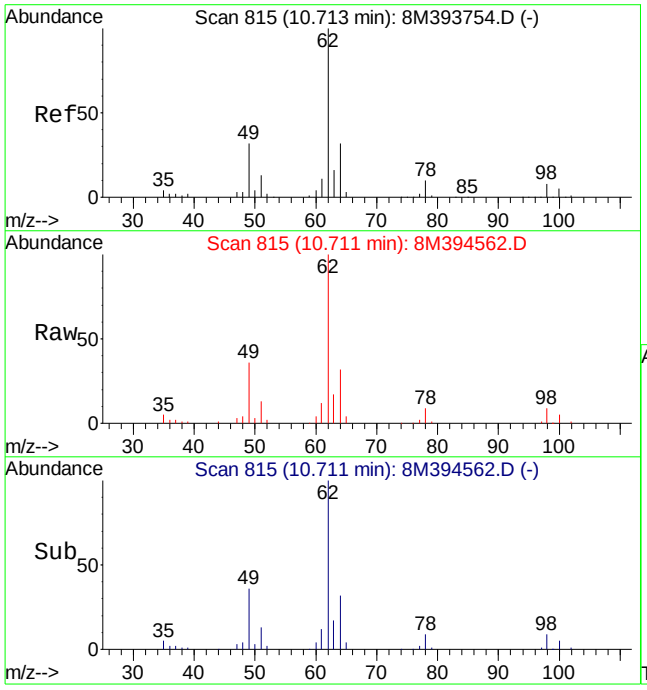

#45
1,2-Dichloroethane
Concen: 20.52 ug/L
RT: 10.71 min Scan# 815
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 62 Resp: 232782

Ion	Ratio	Lower	Upper
62	100		
64	31.1	19.2	44.8
49	43.9	24.2	56.4

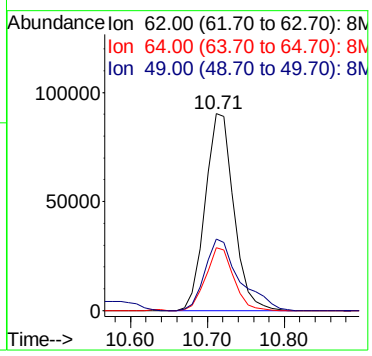

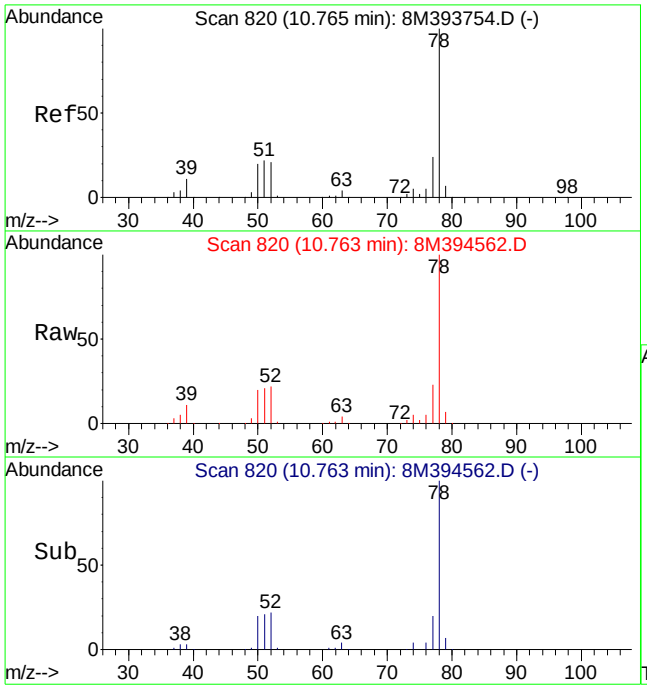

#46
Benzene
Concen: 22.12 ug/L
RT: 10.76 min Scan# 820
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 78 Resp: 783339

Ion	Ratio	Lower	Upper
78	100		
52	21.4	12.7	29.7
51	24.9	14.9	34.7

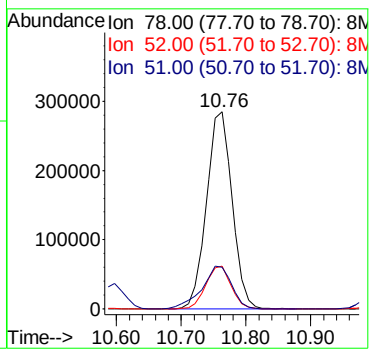

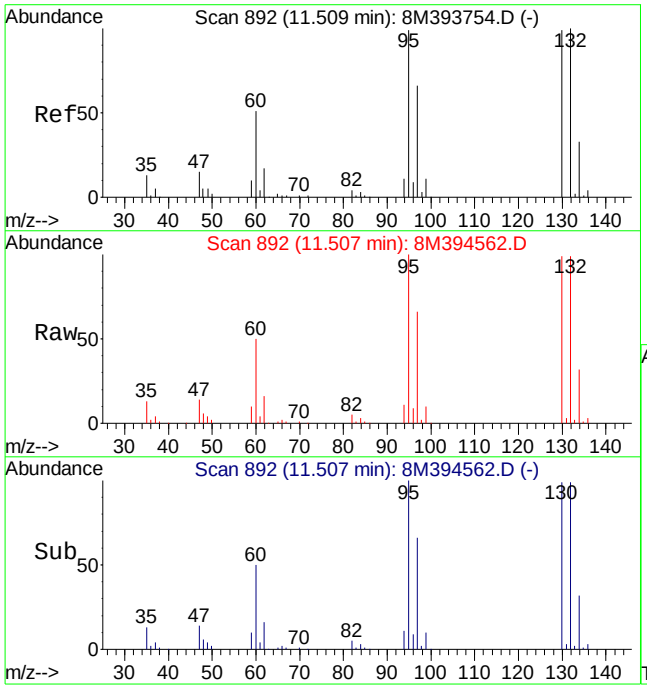

#47
Trichloroethene
Concen: 22.17 ug/L
RT: 11.51 min Scan# 892
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:130 Resp: 210700

Ion	Ratio	Lower	Upper
130	100		
132	99.7	61.0	142.2
95	100.2	61.6	143.6

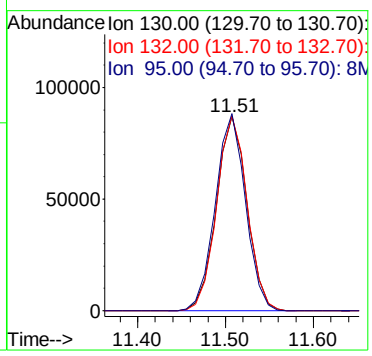

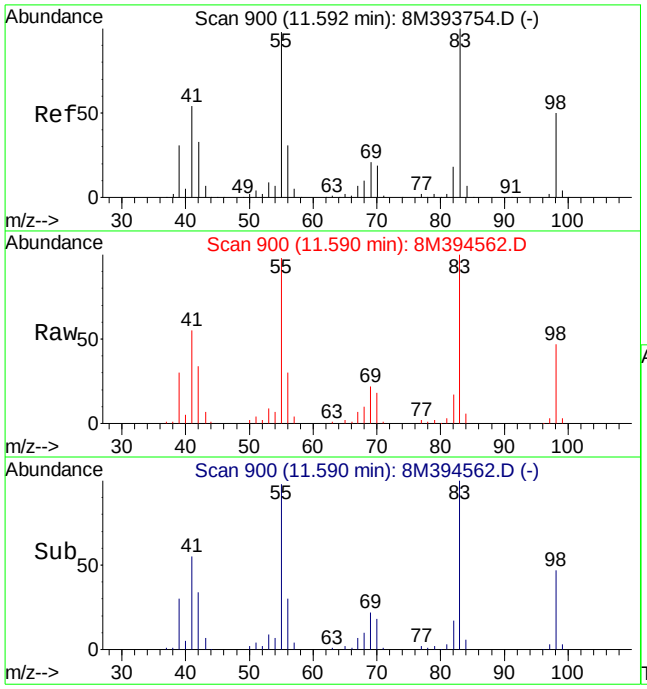

#48
Methylcyclohexane
Concen: 16.20 ug/L
RT: 11.59 min Scan# 900
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 83 Resp: 236528

Ion	Ratio	Lower	Upper
83	100		
55	97.0	58.1	135.5
98	47.0	29.4	68.6

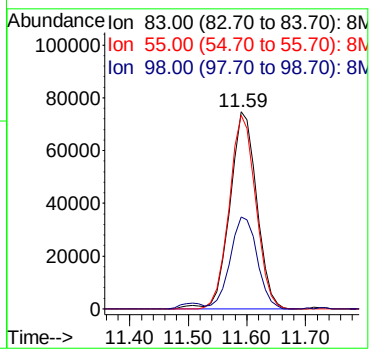

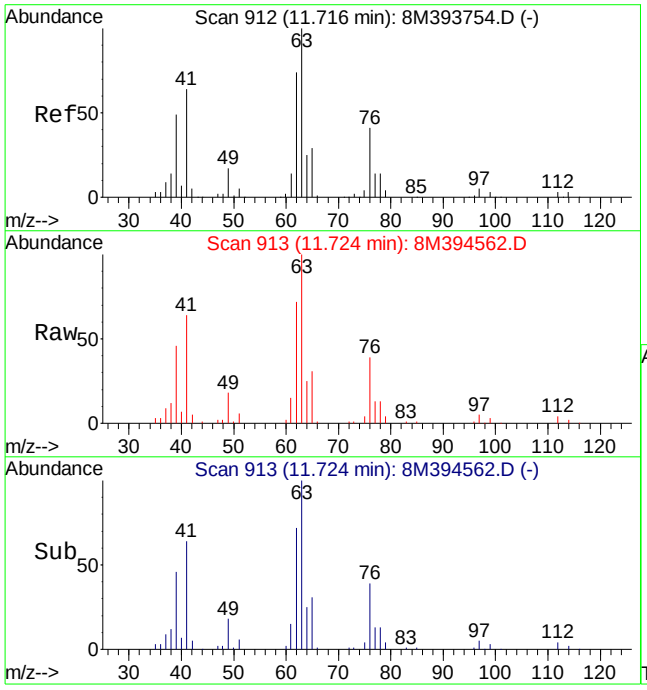

#49
1,2-Dichloropropane
Concen: 22.59 ug/L
RT: 11.72 min Scan# 913
Delta R.T. 0.01 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 63 Resp: 220956

Ion	Ratio	Lower	Upper
63	100		
76	37.6	24.7	57.7

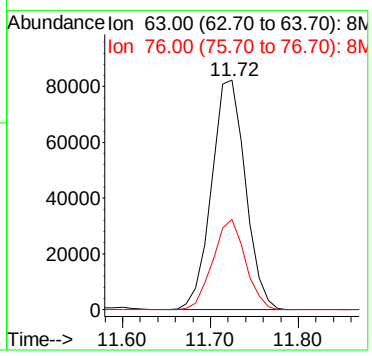

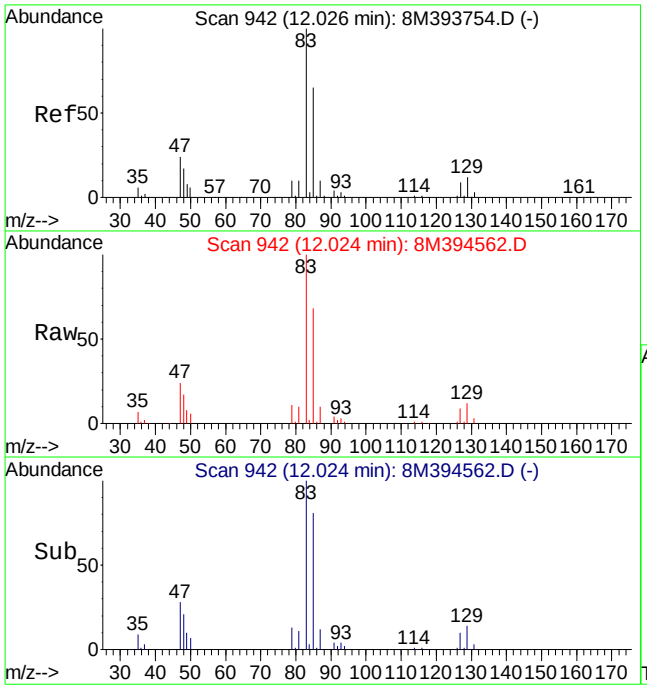

#50
Bromodichloromethane
Concen: 21.51 ug/L
RT: 12.02 min Scan# 942
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 83 Resp: 234957

Ion	Ratio	Lower	Upper
83	100		
85	65.6	38.6	90.2
129	11.3	6.9	16.1

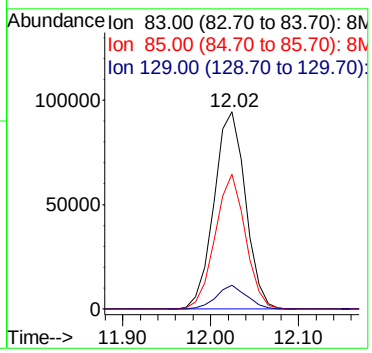

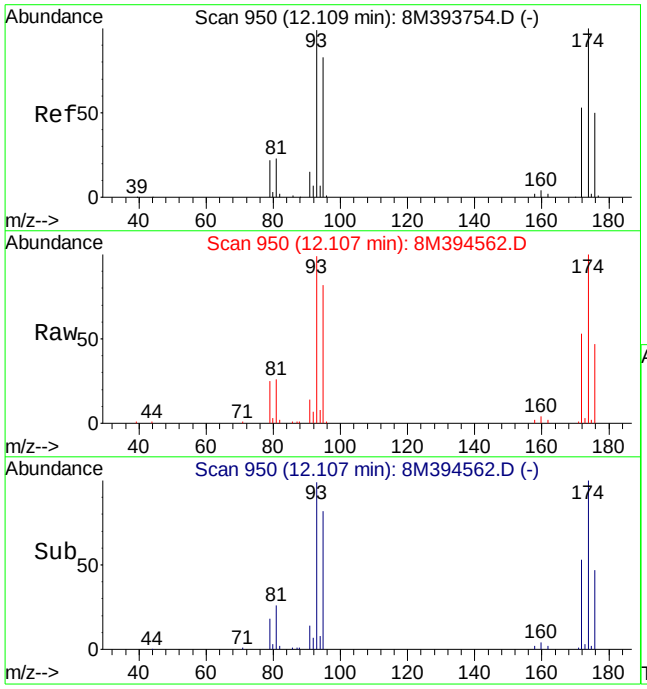

#52
Dibromomethane
Concen: 20.52 ug/L
RT: 12.11 min Scan# 950
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 93 Resp: 88517

Ion	Ratio	Lower	Upper
93	100		
95	82.9	50.3	117.3
174	108.1	62.6	146.0

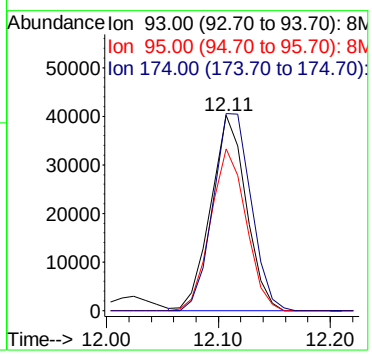

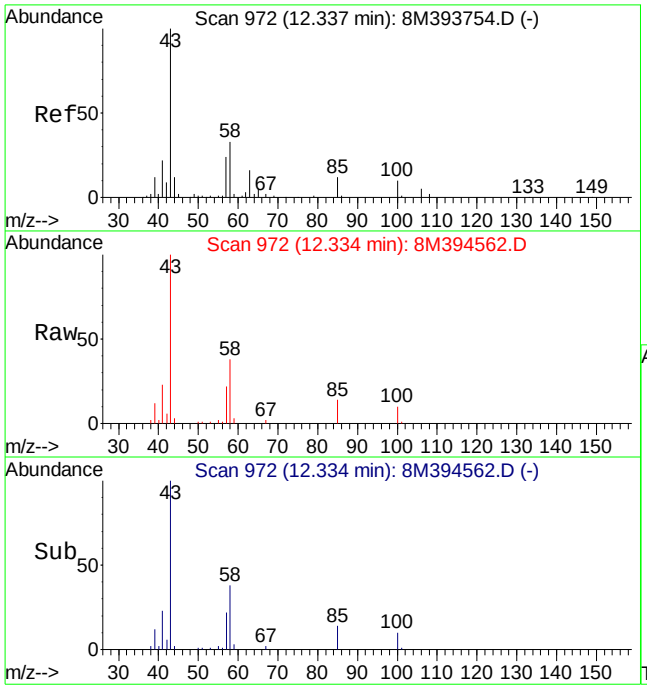

#54
4-Methyl-2-Pentanone
Concen: 17.46 ug/L
RT: 12.33 min Scan# 972
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 58 Resp: 34690

Ion	Ratio	Lower	Upper
58	100		
85	34.3	23.0	53.6
100	30.4	18.7	43.7

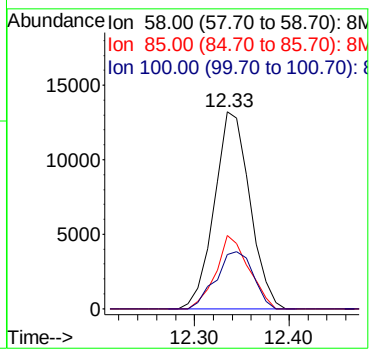

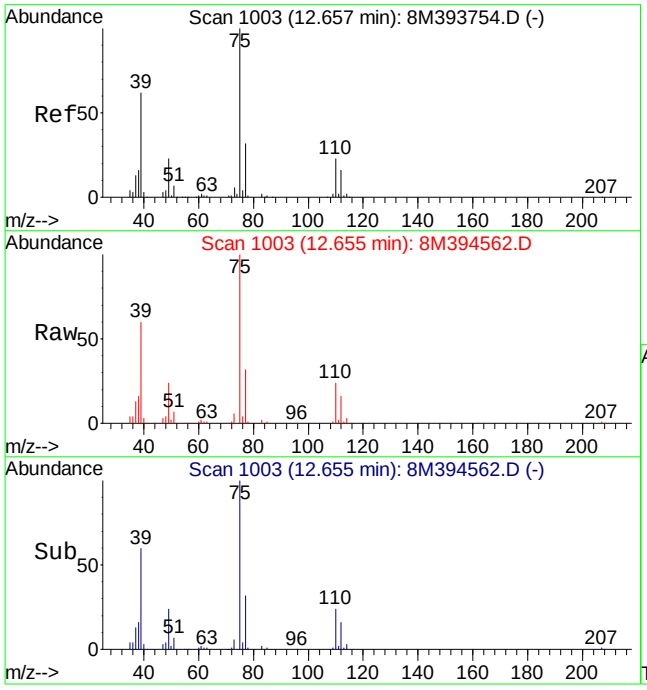

#55
cis-1,3-Dichloropropene
Concen: 21.80 ug/L
RT: 12.65 min Scan# 1003
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 75 Resp: 293343

Ion	Ratio	Lower	Upper
75	100		
77	31.5	19.2	44.8

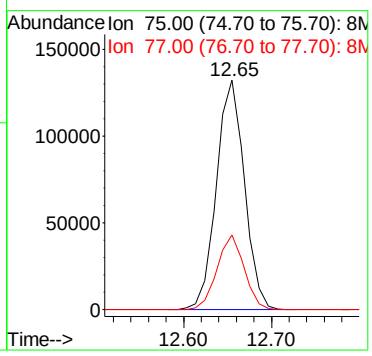

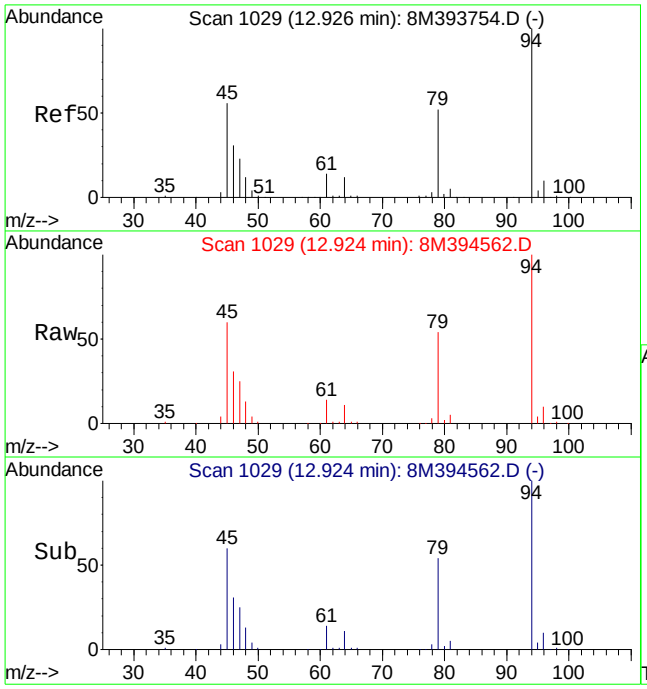

#56
Dimethyl Disulfide
Concen: 20.86 ug/L
RT: 12.92 min Scan# 1029
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 94 Resp: 293762

Ion	Ratio	Lower	Upper
94	100		
79	48.9	30.4	70.8

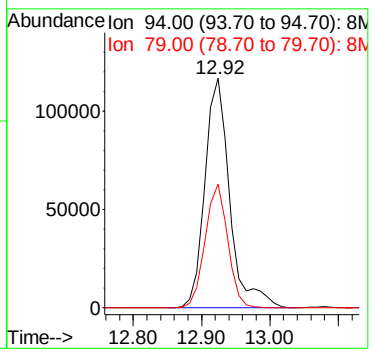

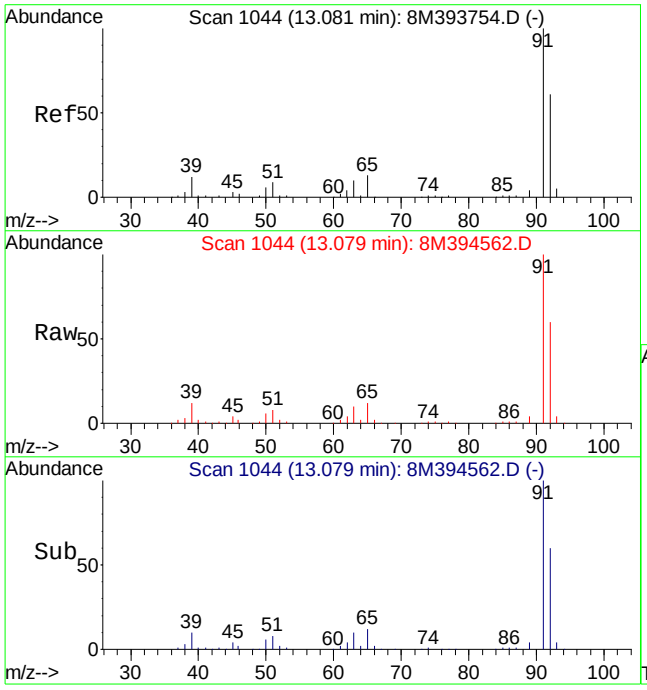

#59
Toluene
Concen: 21.73 ug/L
RT: 13.08 min Scan# 1044
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 91 Resp: 864681

Ion	Ratio	Lower	Upper
91	100		
92	59.0	36.4	84.8

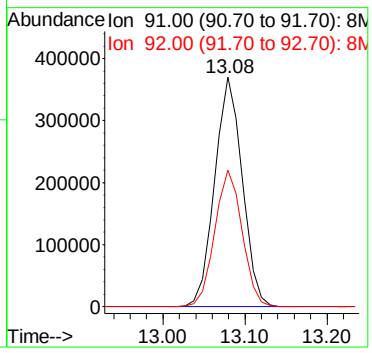

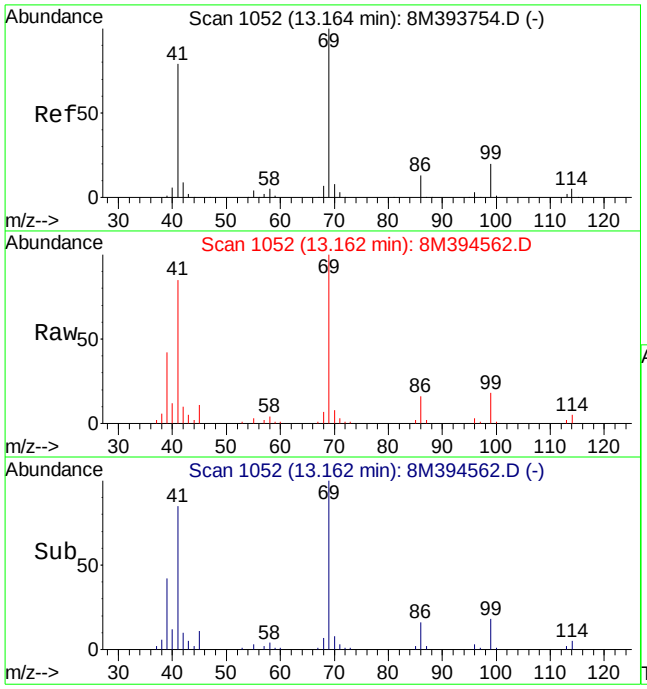

#60
Ethyl Methacrylate
Concen: 18.83 ug/L
RT: 13.16 min Scan# 1052
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 69 Resp: 146501

Ion	Ratio	Lower	Upper
69	100		
41	86.4	50.8	118.6

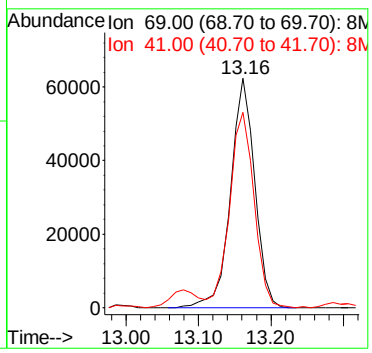

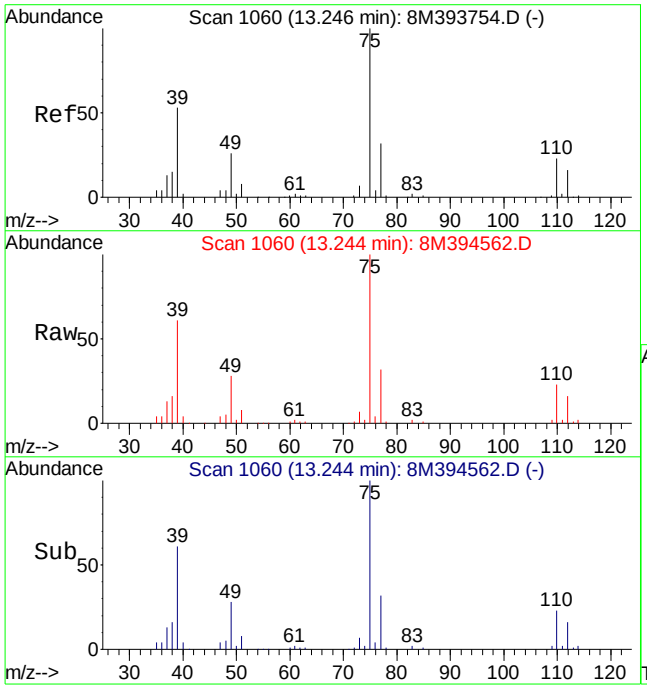

#62
trans-1,3-Dichloropropene
Concen: 19.85 ug/L
RT: 13.24 min Scan# 1060
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 75 Resp: 223913

Ion	Ratio	Lower	Upper
75	100		
77	31.4	19.2	44.8

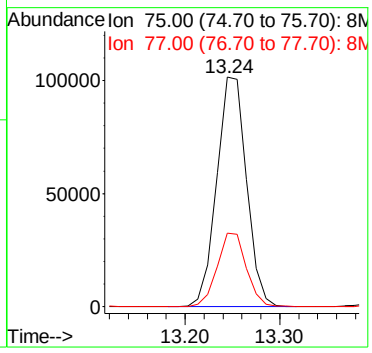

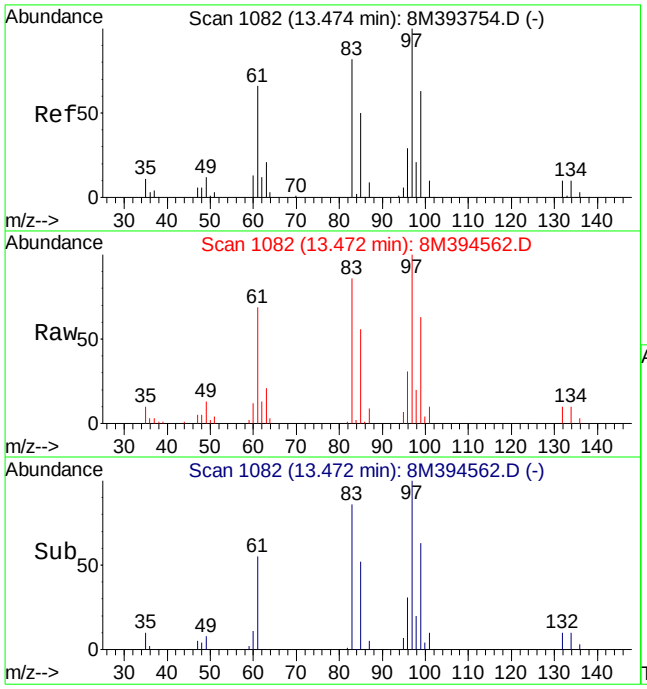

#63
1,1,2-Trichloroethane
Concen: 20.89 ug/L
RT: 13.47 min Scan# 1082
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 97 Resp: 121844

Ion	Ratio	Lower	Upper
97	100		
83	84.7	50.3	117.3

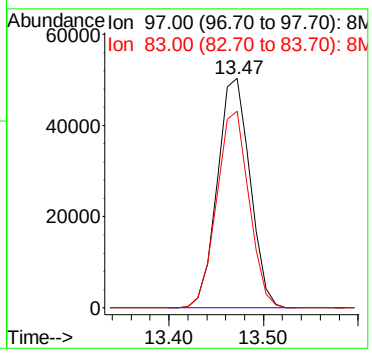

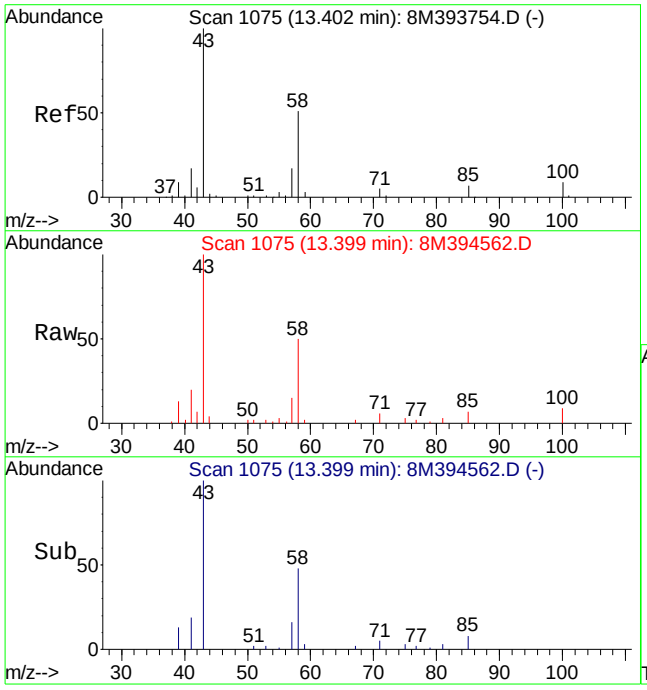

#64
2-Hexanone
Concen: 16.63 ug/L
RT: 13.40 min Scan# 1075
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 58 Resp: 30469

Ion	Ratio	Lower	Upper
58	100		
43	206.9	115.9	270.5
85	12.2	8.2	19.2

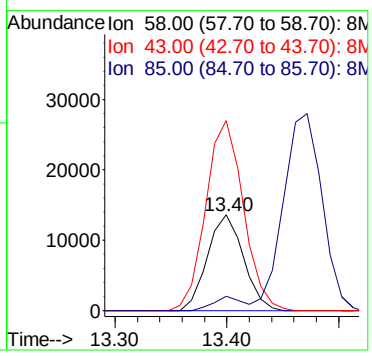

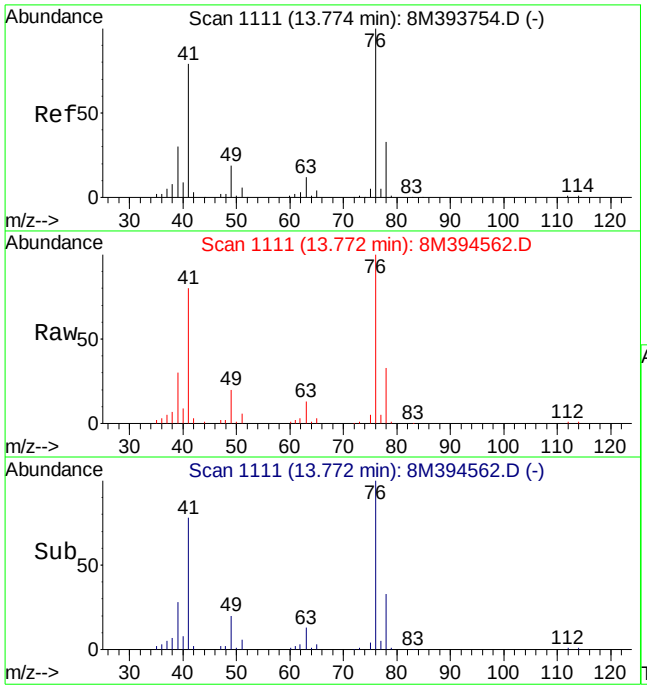

#65
1,3-Dichloropropane
Concen: 19.92 ug/L
RT: 13.77 min Scan# 1111
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 76 Resp: 213834

Ion	Ratio	Lower	Upper
76	100		
41	79.1	47.3	110.3

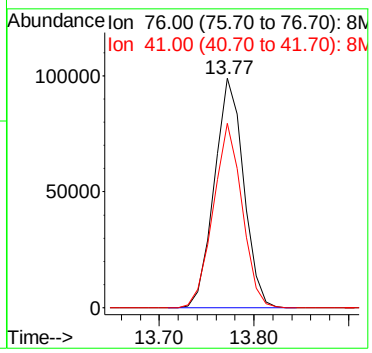

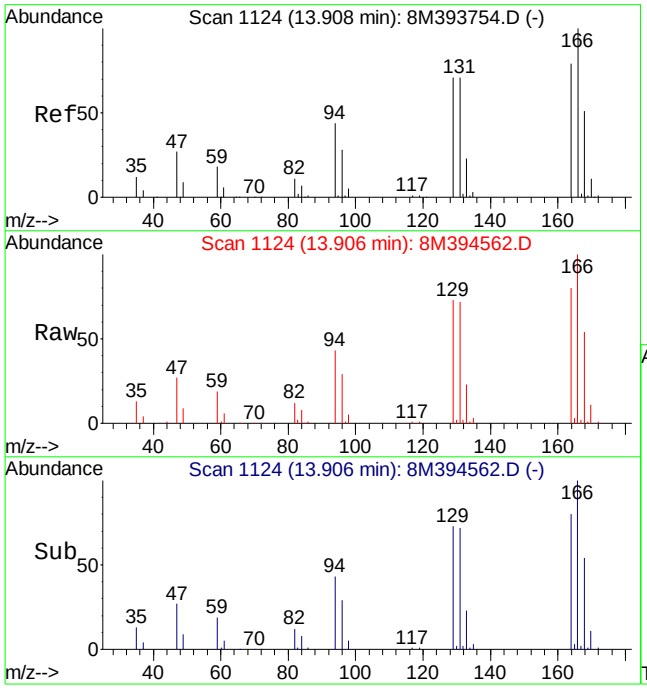

#66
Tetrachloroethene
Concen: 20.54 ug/L
RT: 13.91 min Scan# 1124
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:164 Resp: 164097

Ion	Ratio	Lower	Upper
164	100		
129	90.7	55.6	129.8
94	58.0	35.8	83.6

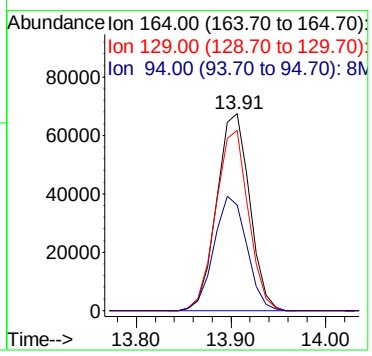

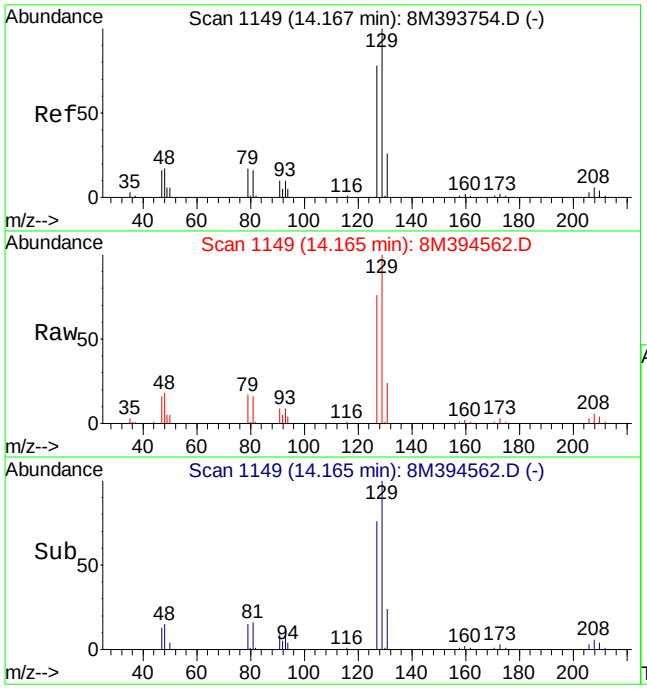

#67
Dibromochloromethane
Concen: 22.87 ug/L
RT: 14.16 min Scan# 1149
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:129 Resp: 151993

Ion	Ratio	Lower	Upper
129	100		
127	76.4	46.9	109.5

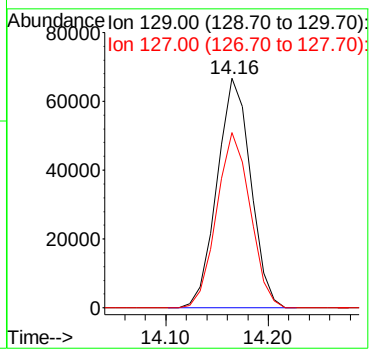

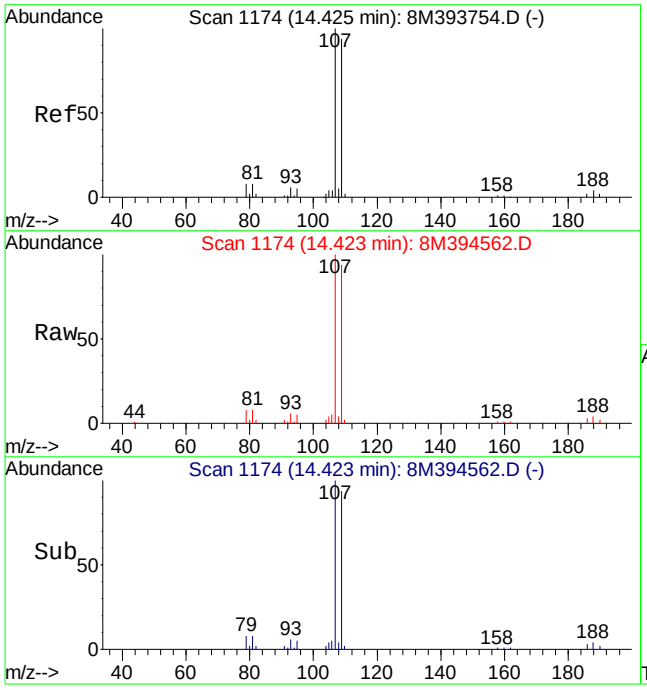

#68
1,2-Dibromoethane
Concen: 19.84 ug/L
RT: 14.42 min Scan# 1174
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:107 Resp: 115467

Ion	Ratio	Lower	Upper
107	100		
109	96.5	56.5	131.7

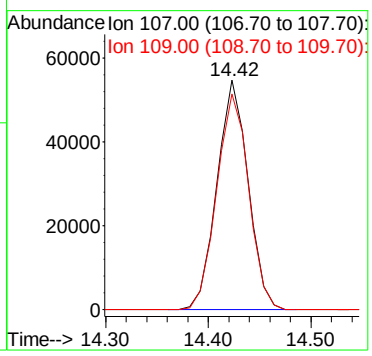

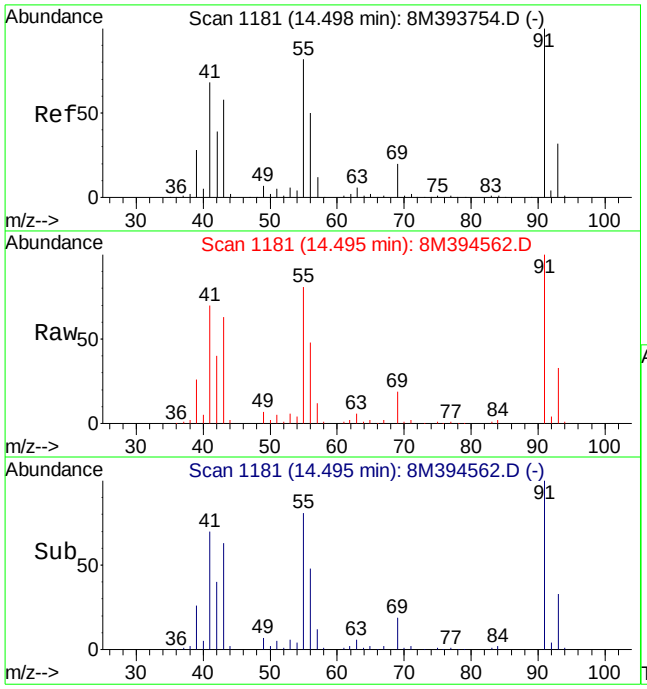

#69
1-Chlorohexane
Concen: 18.96 ug/L
RT: 14.50 min Scan# 1181
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 91 Resp: 256463

Ion	Ratio	Lower	Upper
91	100		
55	80.7	48.5	113.1

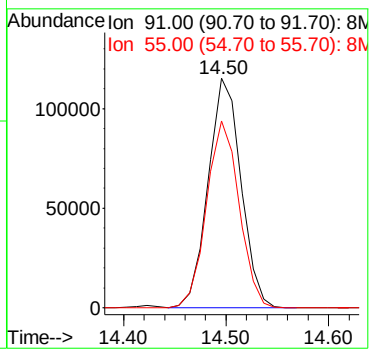

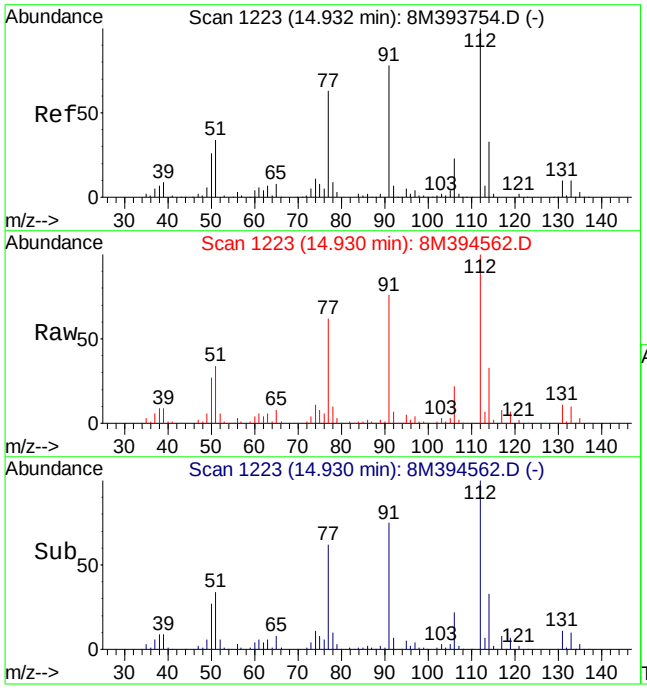

#70
Chlorobenzene
Concen: 19.80 ug/L
RT: 14.93 min Scan# 1223
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:112 Resp: 524481

Ion	Ratio	Lower	Upper
112	100		
77	74.2	44.8	104.4

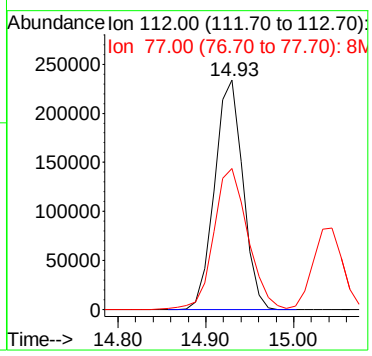

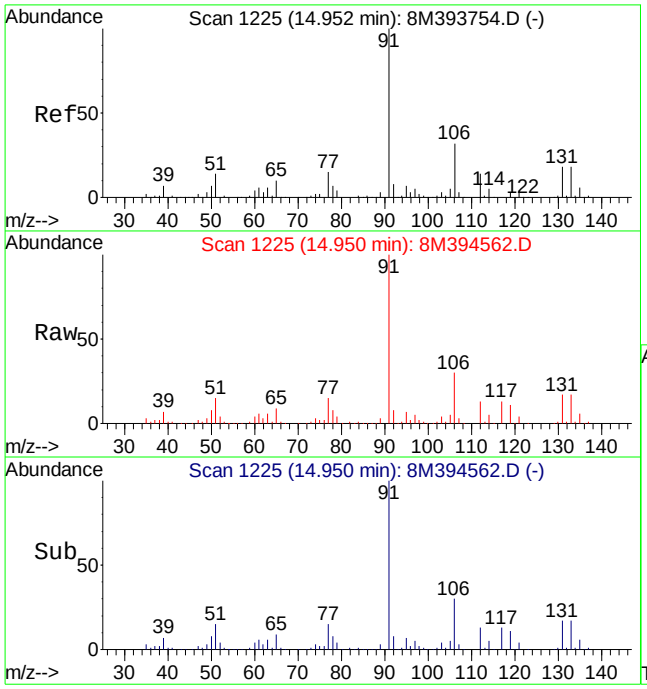

#71
1,1,1,2-Tetrachloroethane
Concen: 23.29 ug/L
RT: 14.95 min Scan# 1225
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:131 Resp: 197052

Ion	Ratio	Lower	Upper
131	100		
133	97.0	58.7	136.9

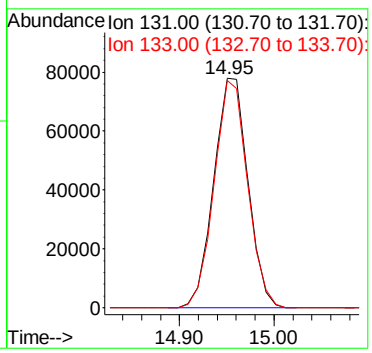

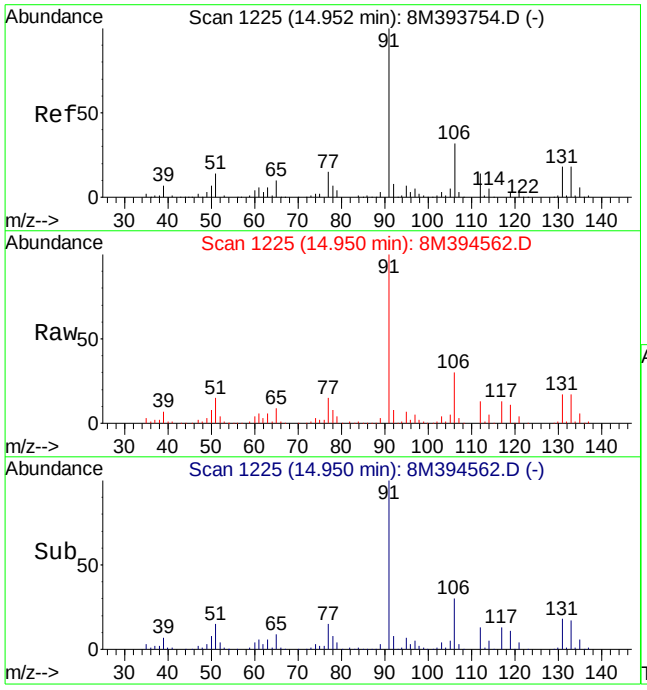

#72
Ethylbenzene
Concen: 20.79 ug/L
RT: 14.95 min Scan# 1225
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:106 Resp: 302099

Ion	Ratio	Lower	Upper
106	100		
91	329.1	192.1	448.1

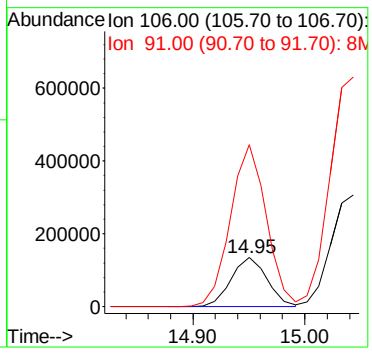

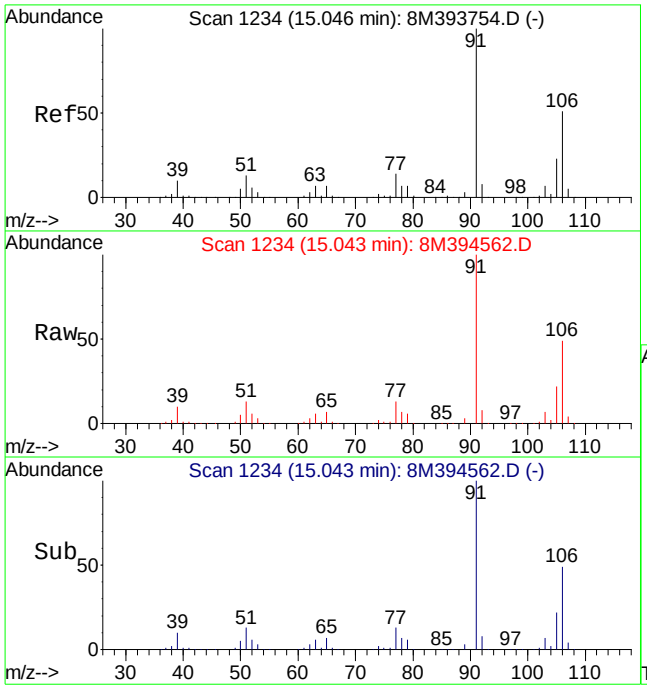

#73
m-,p-Xylene
Concen: 41.29 ug/L
RT: 15.04 min Scan# 1234
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:106 Resp: 708571

Ion	Ratio	Lower	Upper
106	100		
91	208.9	122.4	285.6

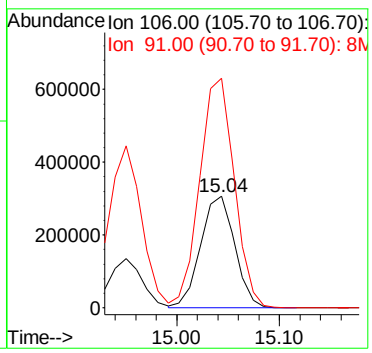

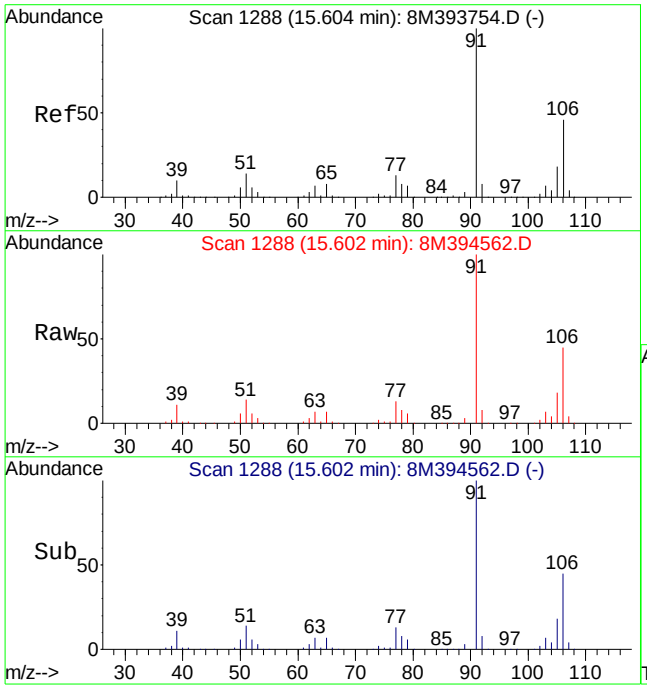

#74
o-Xylene
Concen: 19.29 ug/L
RT: 15.60 min Scan# 1288
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:106 Resp: 335043

Ion	Ratio	Lower	Upper
106	100		
91	218.3	130.1	303.7

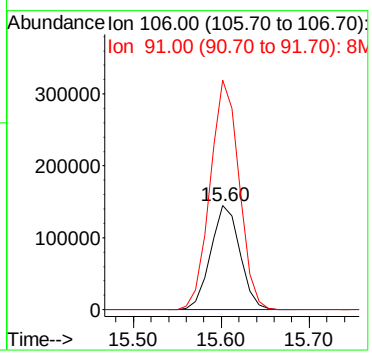

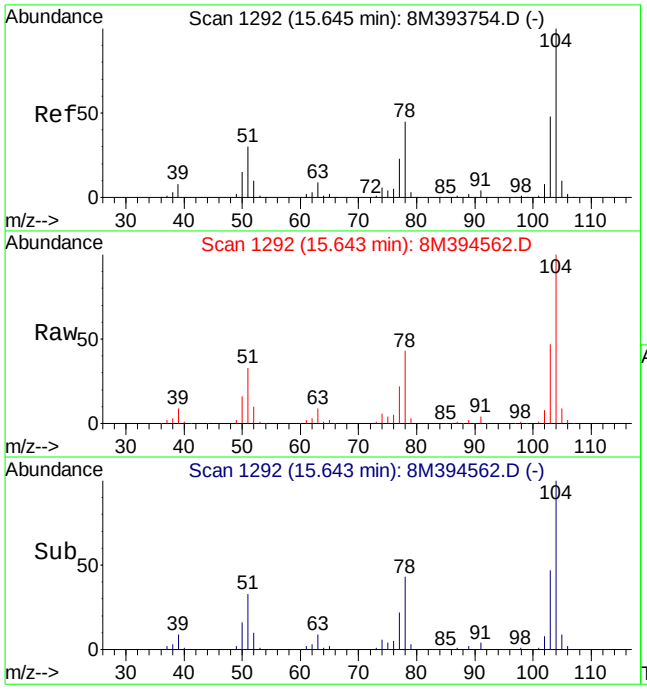

#75
Styrene
Concen: 21.07 ug/L
RT: 15.64 min Scan# 1292
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:104 Resp: 598837

Ion	Ratio	Lower	Upper
104	100		
78	50.8	32.2	75.0

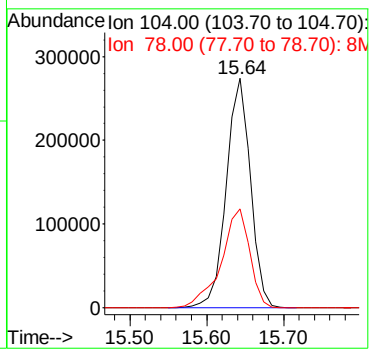

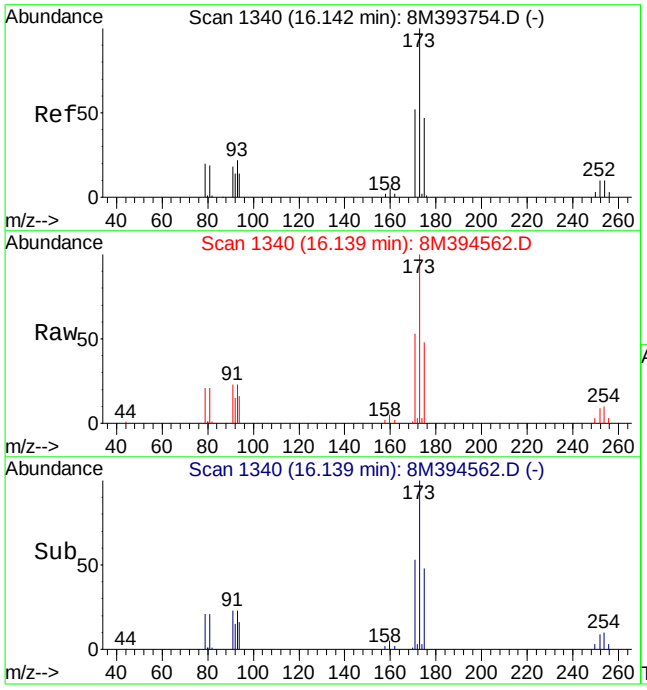

#76
Bromoform
Concen: 20.70 ug/L
RT: 16.14 min Scan# 1340
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:173 Resp: 94202

Ion	Ratio	Lower	Upper
173	100		
171	51.0	30.9	72.1
175	48.1	28.8	67.2

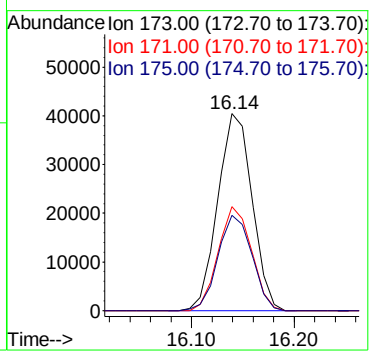

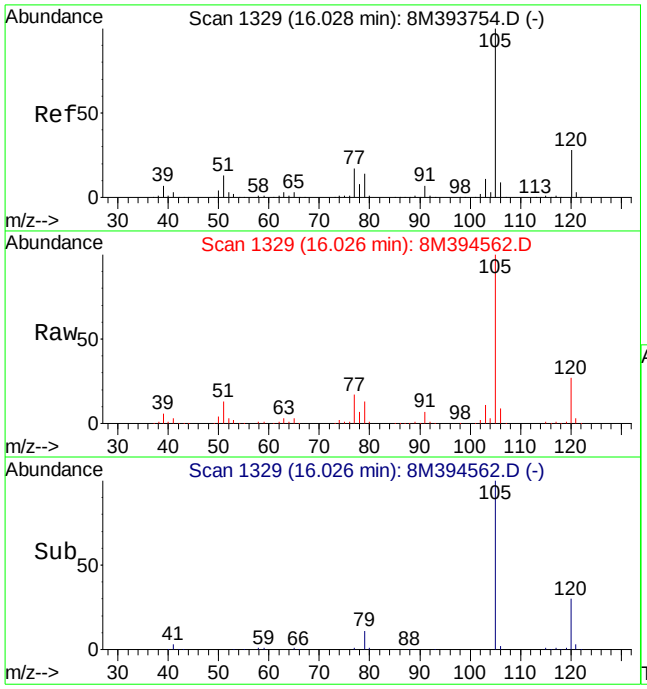

#77
Isopropylbenzene
Concen: 19.54 ug/L
RT: 16.03 min Scan# 1329
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:105 Resp: 835074

Ion	Ratio	Lower	Upper
105	100		
120	27.3	17.0	39.6

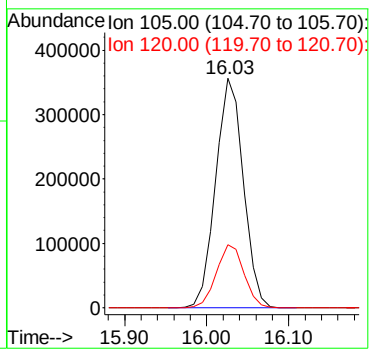

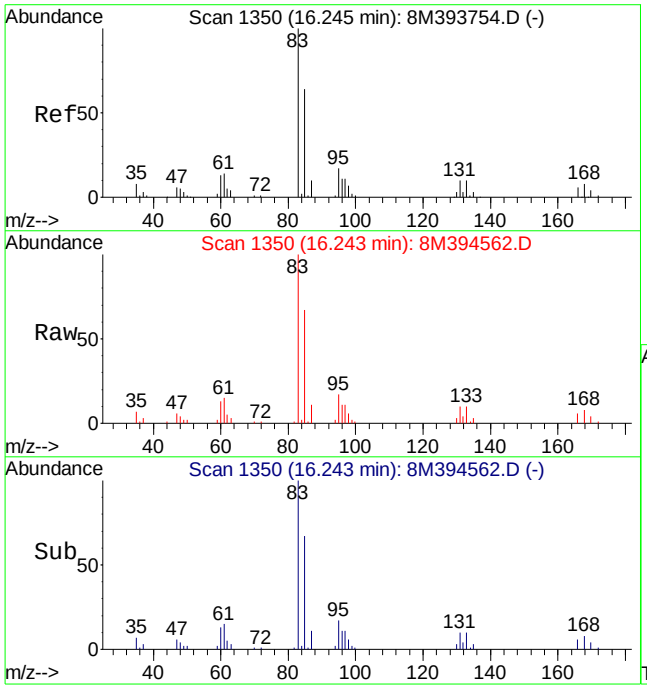

#79
1,1,2,2-Tetrachloroethane
Concen: 19.33 ug/L
RT: 16.24 min Scan# 1350
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 83 Resp: 123593

Ion	Ratio	Lower	Upper
83	100		
85	66.5	38.6	90.2
131	10.3	6.2	14.4

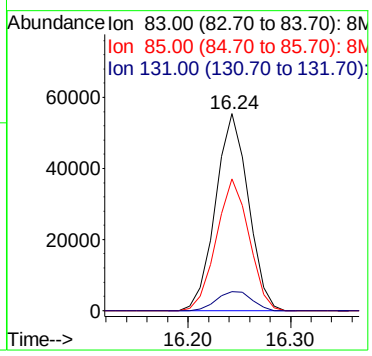

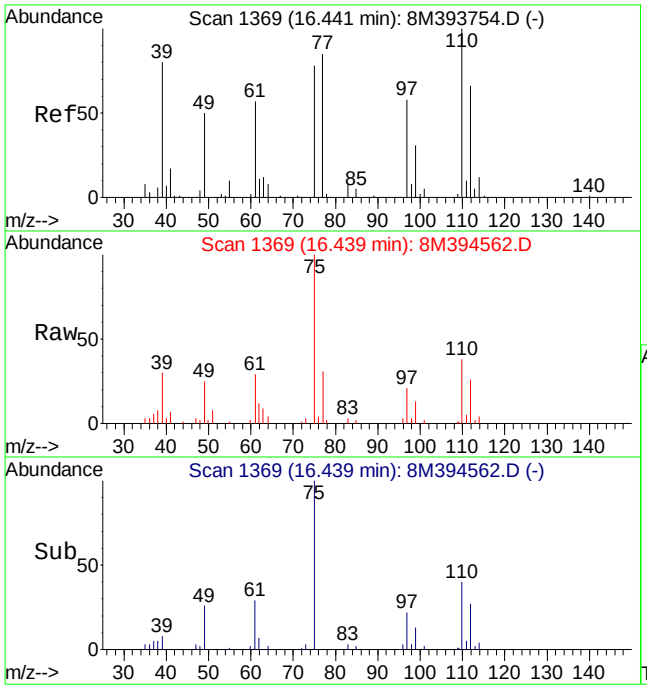

#81
1,2,3-Trichloropropane
Concen: 18.40 ug/L
RT: 16.44 min Scan# 1369
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:110 Resp: 33986

Ion	Ratio	Lower	Upper
110	100		
75	306.2	214.5	500.5
97	56.1	35.2	82.2

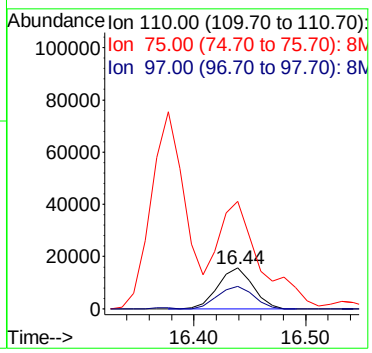

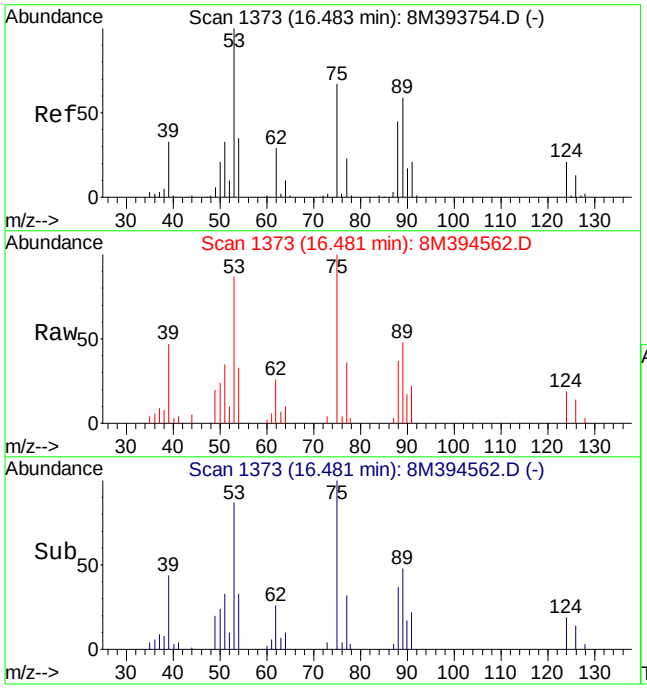

#82
trans-1,4-Dichloro-2-Butene
Concen: 9.72 ug/L
RT: 16.48 min Scan# 1373
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 53 Resp: 21805

Ion	Ratio	Lower	Upper
53	100		
75	477.2	169.4	395.4#
89	52.4	36.4	85.0

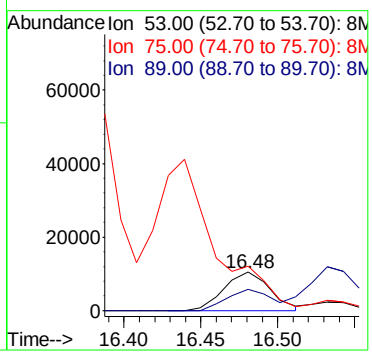

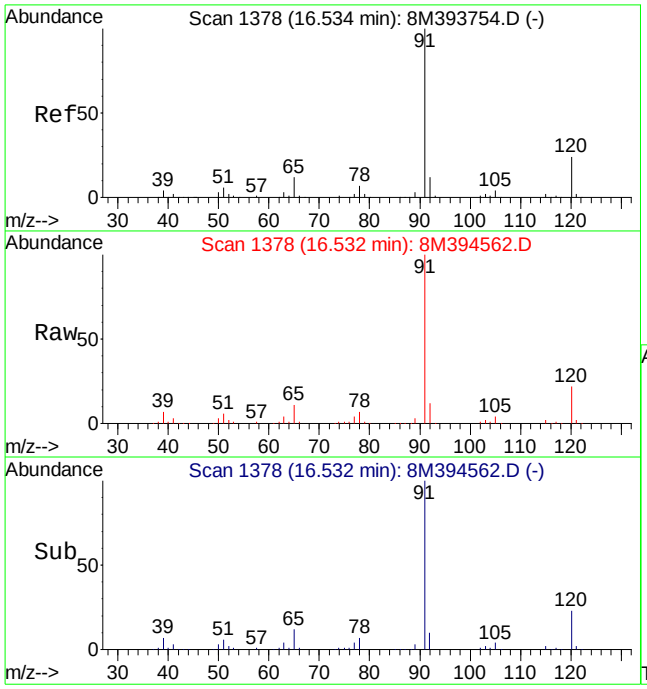

#83
n-Propylbenzene
Concen: 18.93 ug/L
RT: 16.53 min Scan# 1378
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 91 Resp: 1031124

Ion	Ratio	Lower	Upper
91	100		
120	22.2	14.1	32.9

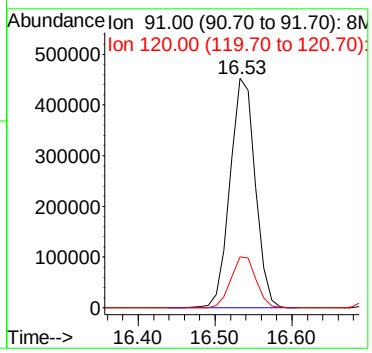

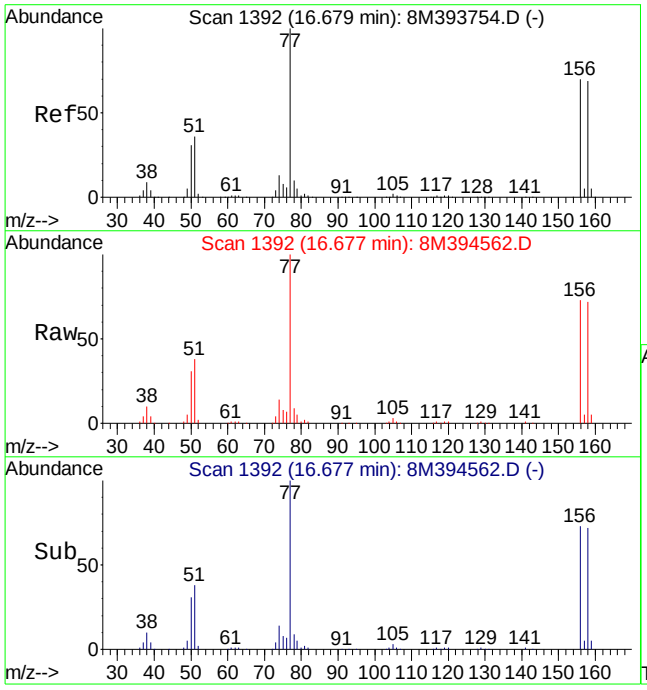

#84
Bromobenzene
Concen: 20.58 ug/L
RT: 16.68 min Scan# 1392
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:156 Resp: 234478

Ion	Ratio	Lower	Upper
156	100		
77	160.5	101.2	236.0
158	98.2	58.6	136.8

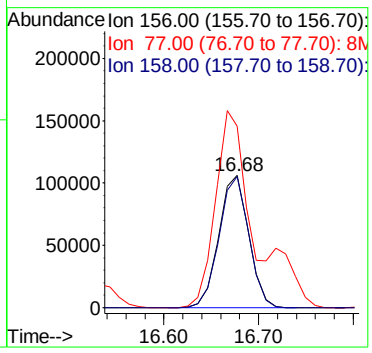

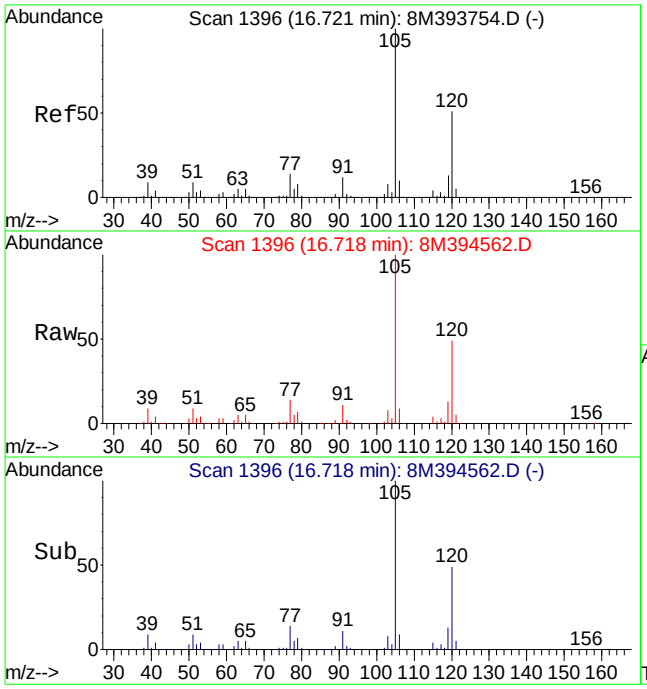

#85
1,3,5-Trimethylbenzene
Concen: 20.76 ug/L
RT: 16.72 min Scan# 1396
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:105 Resp: 798312

Ion	Ratio	Lower	Upper
105	100		
120	49.3	30.5	71.1

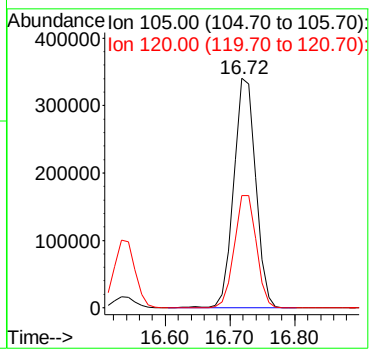

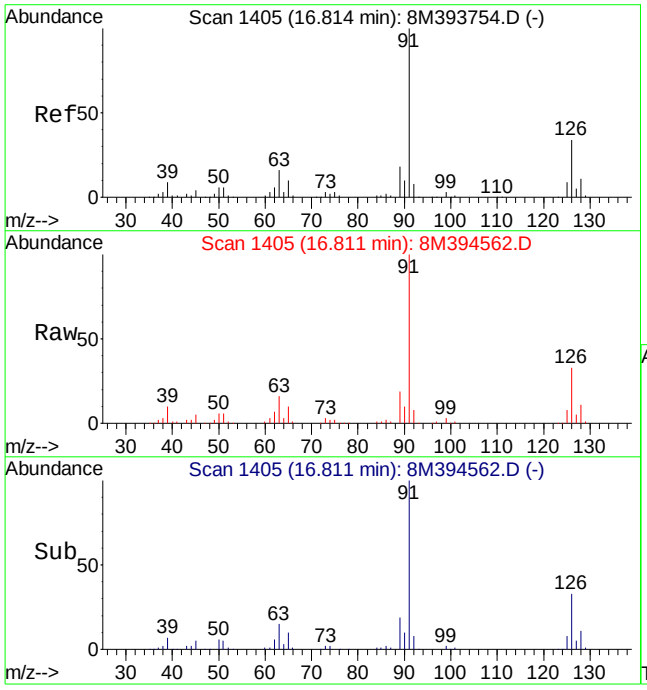

#86
2-Chlorotoluene
Concen: 18.63 ug/L
RT: 16.81 min Scan# 1405
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 91 Resp: 659050

Ion	Ratio	Lower	Upper
91	100		
126	38.2	19.7	45.9

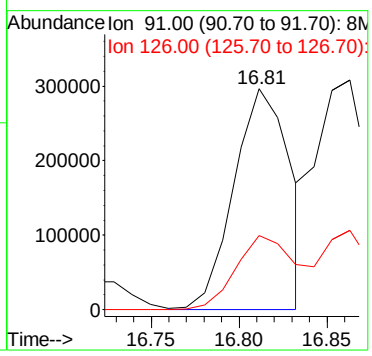

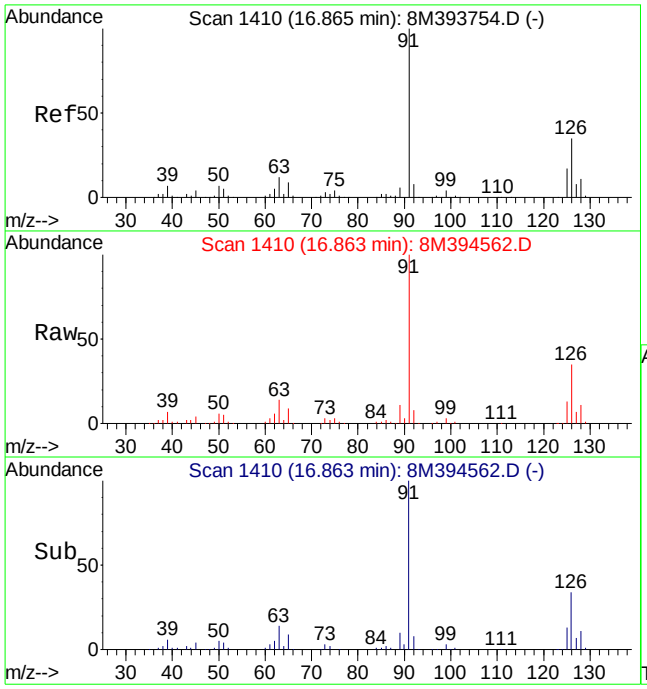

#87
4-Chlorotoluene
Concen: 20.13 ug/L
RT: 16.86 min Scan# 1410
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 91 Resp: 653335

Ion	Ratio	Lower	Upper
91	100		
126	28.5	20.4	47.6

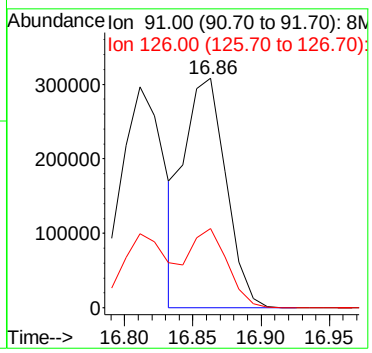

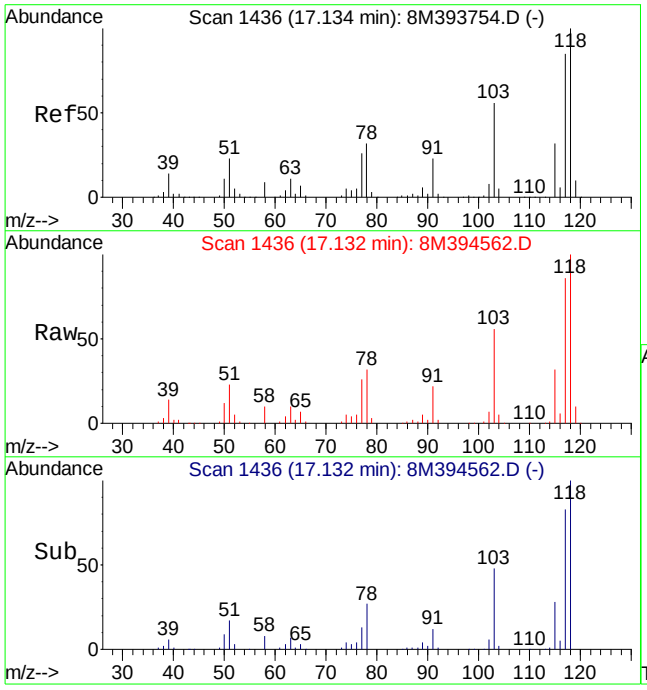

#88
a-Methylstyrene
Concen: 18.98 ug/L
RT: 17.13 min Scan# 1436
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:118 Resp: 408081

Ion	Ratio	Lower	Upper
118	100		
103	58.7	34.6	80.8

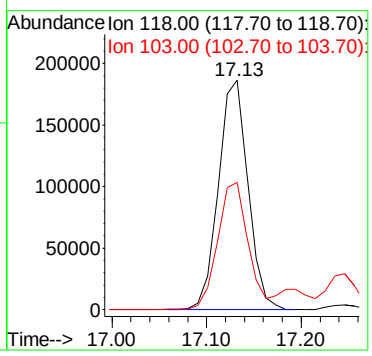

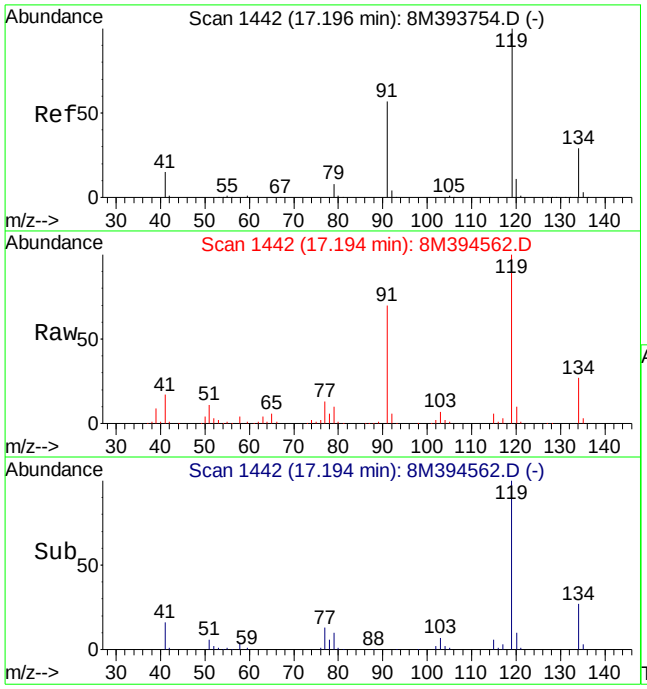

#89
tert-Butylbenzene
Concen: 18.40 ug/L
RT: 17.19 min Scan# 1442
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:134 Resp: 154697

Ion	Ratio	Lower	Upper
134	100		
119	472.1	275.2	642.2
91	324.1	190.3	443.9

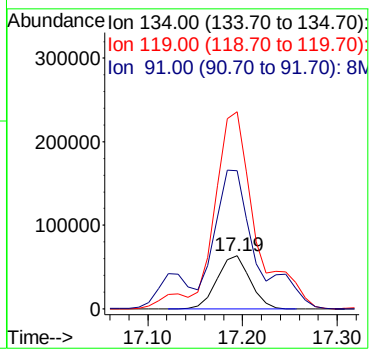

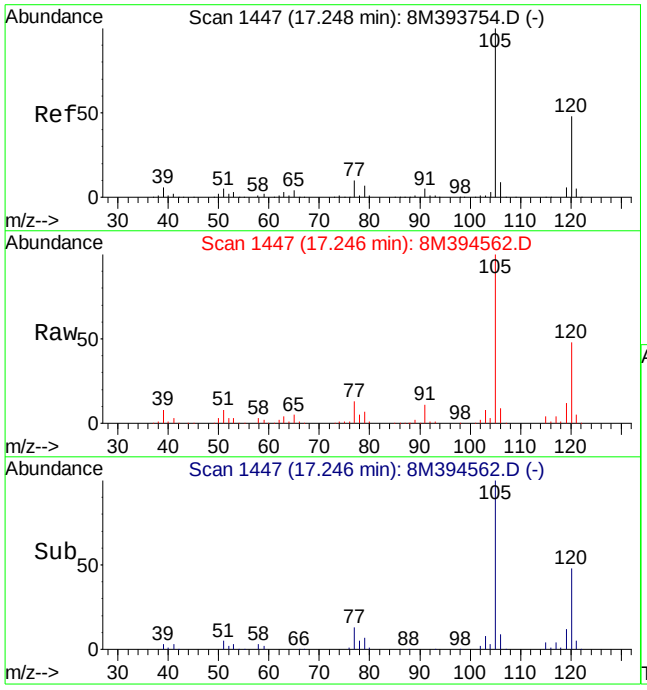

#90
1,2,4-Trimethylbenzene
Concen: 21.12 ug/L
RT: 17.25 min Scan# 1447
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:105 Resp: 823202

Ion	Ratio	Lower	Upper
105	100		
120	53.5	33.8	78.8

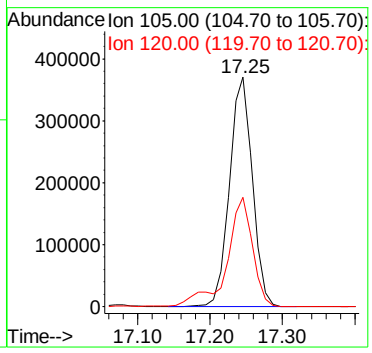

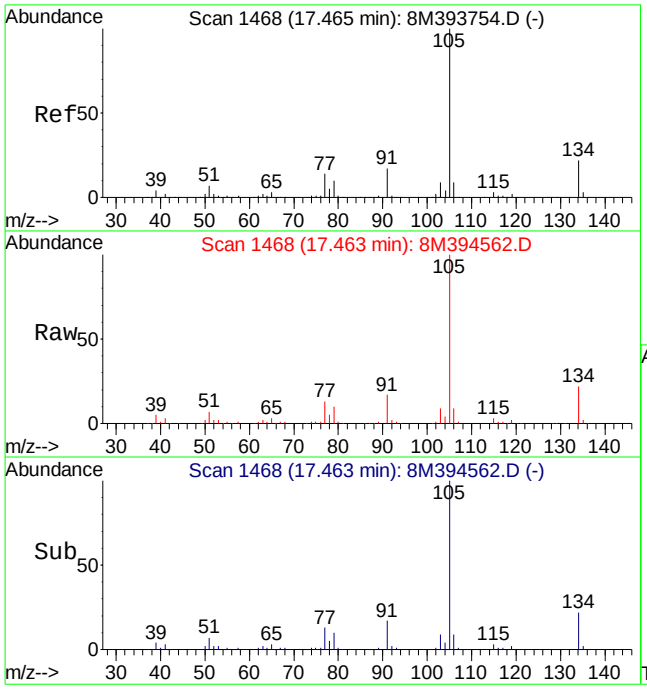

#91
sec-Butylbenzene
Concen: 18.34 ug/L
RT: 17.46 min Scan# 1468
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:105 Resp: 846751

Ion	Ratio	Lower	Upper
105	100		
134	21.1	13.1	30.7

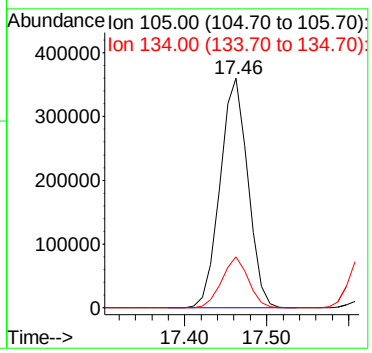

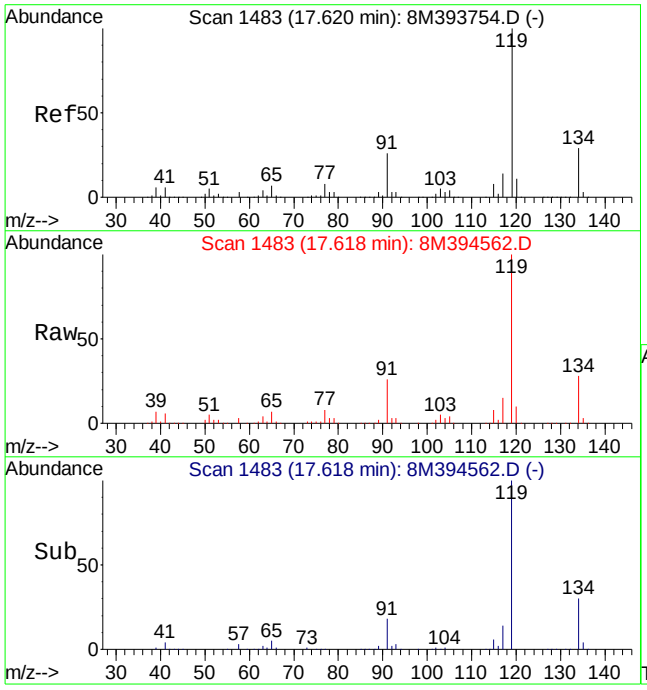

#92
p-Isopropyltoluene
Concen: 18.58 ug/L
RT: 17.62 min Scan# 1483
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:119 Resp: 735708

Ion	Ratio	Lower	Upper
119	100		
134	27.8	17.2	40.0

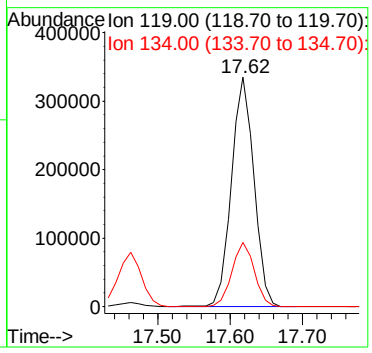

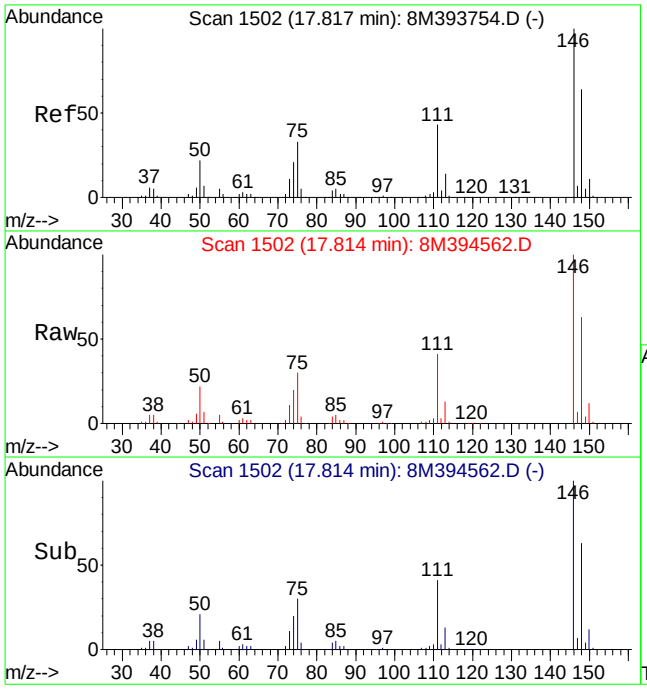

#93
1,3-Dichlorobenzene
Concen: 19.21 ug/L
RT: 17.81 min Scan# 1502
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:146 Resp: 415233

Ion	Ratio	Lower	Upper
146	100		
111	40.0	25.6	59.6

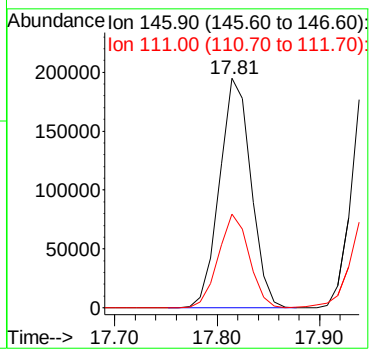

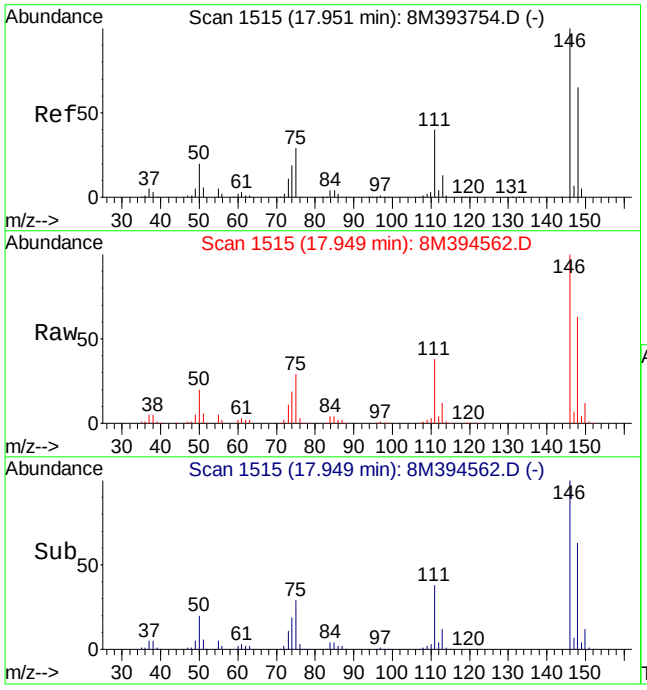

#94
1,4-Dichlorobenzene
Concen: 20.75 ug/L
RT: 17.95 min Scan# 1515
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:146 Resp: 442844

Ion	Ratio	Lower	Upper
146	100		
111	40.0	25.0	58.2

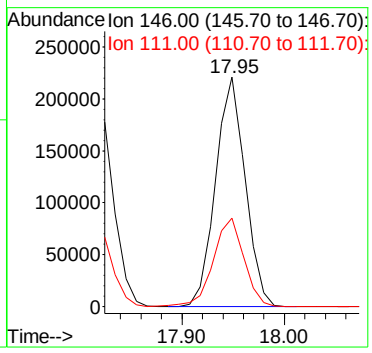

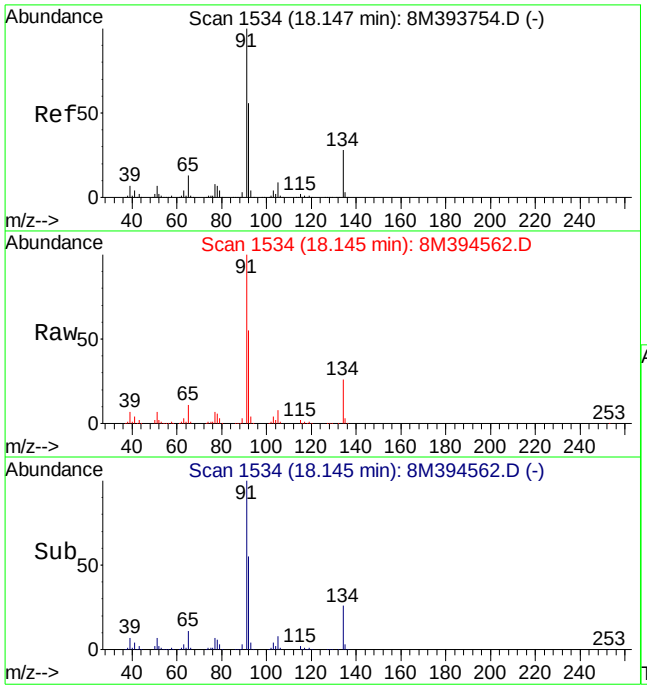

#95
n-Butylbenzene
Concen: 19.82 ug/L
RT: 18.15 min Scan# 1534
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 91 Resp: 730141

Ion	Ratio	Lower	Upper
91	100		
134	26.3	16.6	38.6
105	8.5	5.2	12.0

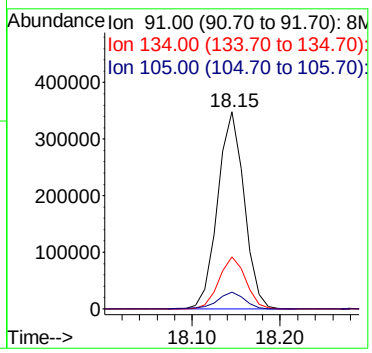

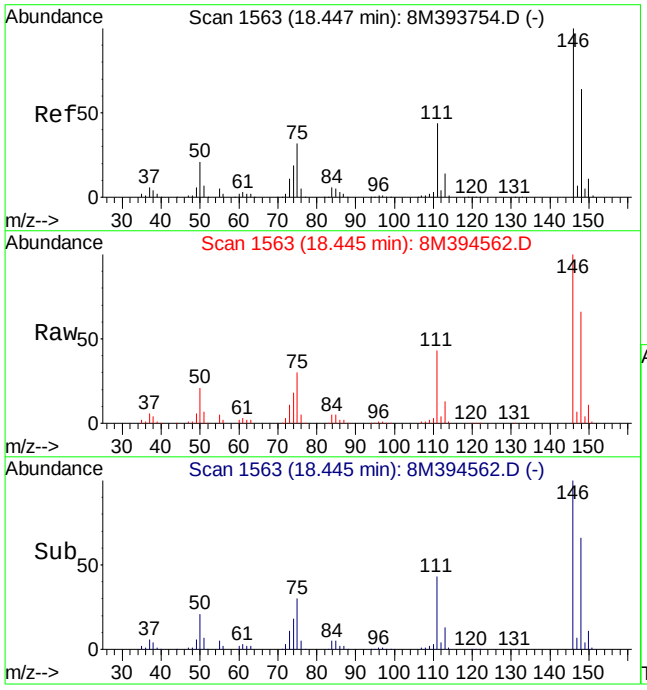

#96
1,2-Dichlorobenzene
Concen: 19.01 ug/L
RT: 18.45 min Scan# 1563
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:146 Resp: 361724

Ion	Ratio	Lower	Upper
146	100		
111	42.7	26.3	61.5

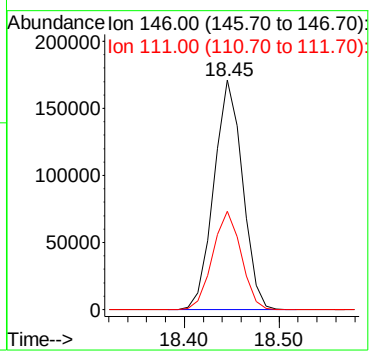

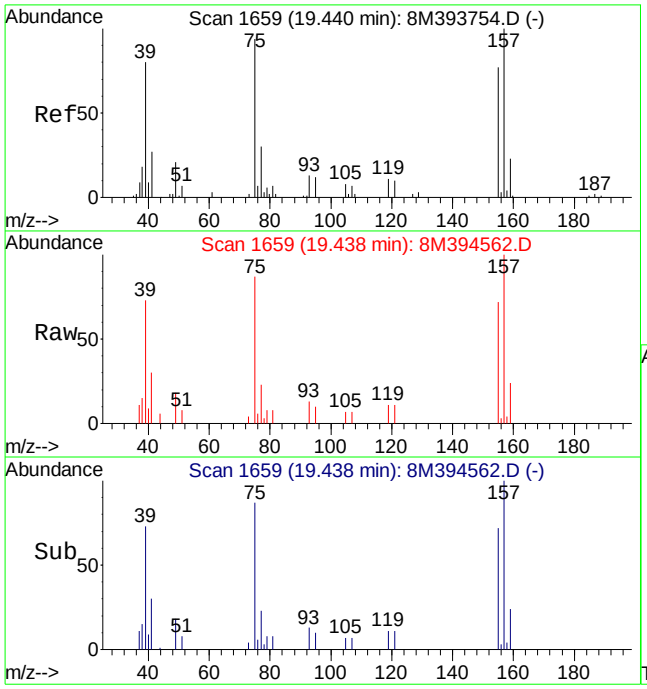

#97
1,2-Dibromo-3-Chloropropane
Concen: 17.27 ug/L
RT: 19.44 min Scan# 1659
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion: 75 Resp: 19293

Ion	Ratio	Lower	Upper
75	100		
157	119.7	67.6	157.8

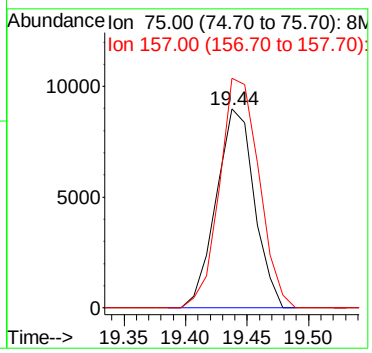

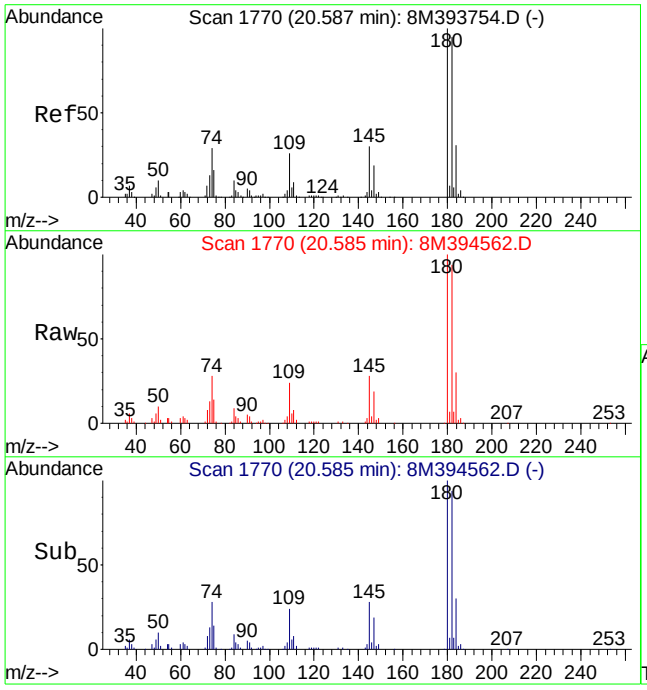

#98
1,2,4-Trichlorobenzene
Concen: 18.81 ug/L
RT: 20.59 min Scan# 1770
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:180 Resp: 273480

Ion	Ratio	Lower	Upper
180	100		
182	94.8	57.2	133.4
145	28.7	18.1	42.3

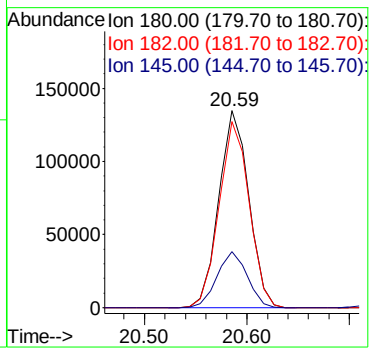

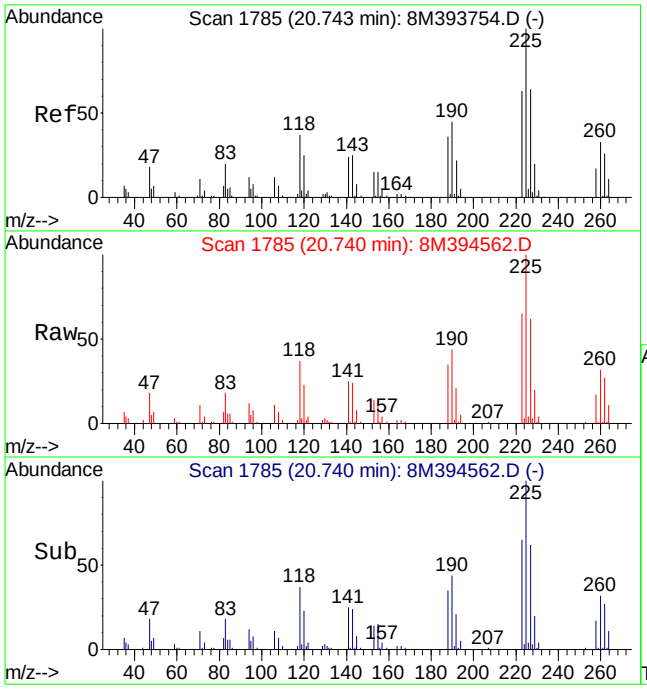

#99
Hexachlorobutadiene
Concen: 18.64 ug/L
RT: 20.74 min Scan# 1785
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:225 Resp: 115877

Ion	Ratio	Lower	Upper
225	100		
223	64.3	37.7	88.1
190	43.8	27.5	64.3

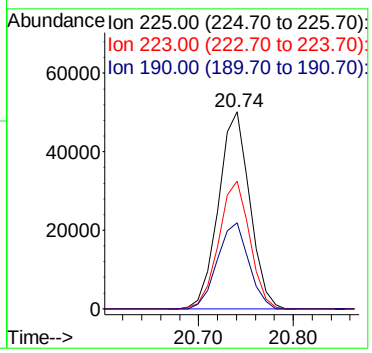

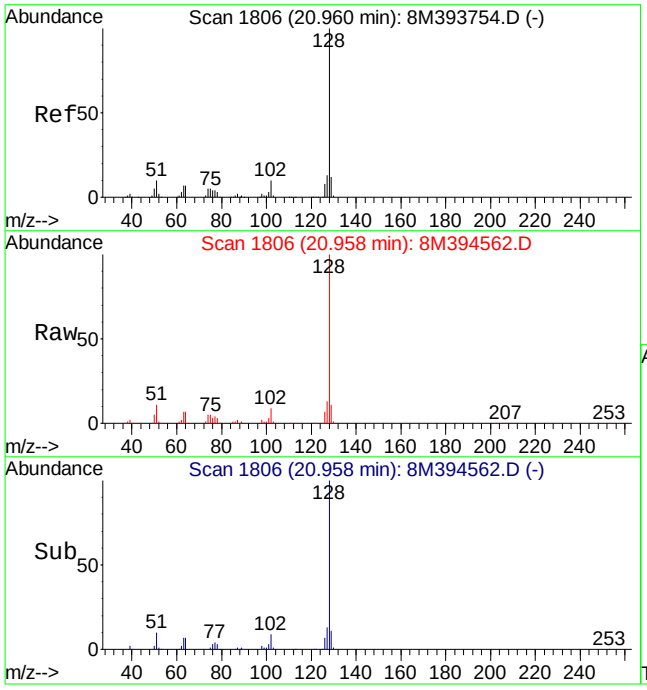

#100
Naphthalene
Concen: 18.13 ug/L
RT: 20.96 min Scan# 1806
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:128 Resp: 405288

Ion	Ratio	Lower	Upper
128	100		
127	12.5	7.7	17.9

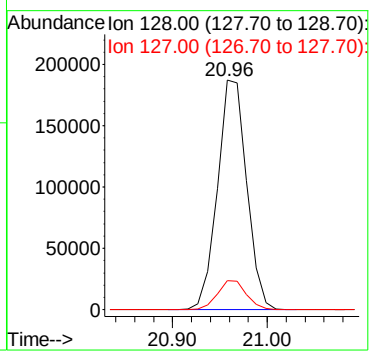

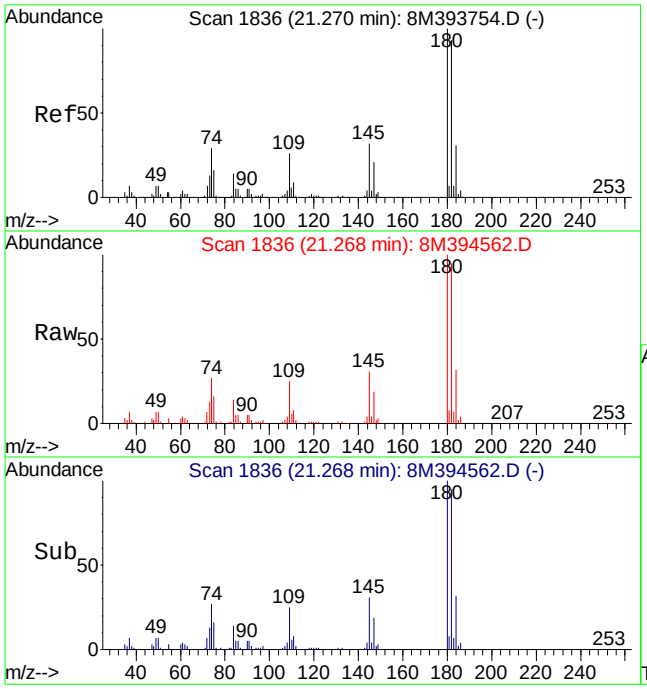

#101
1,2,3-Trichlorobenzene
Concen: 18.75 ug/L
RT: 21.27 min Scan# 1836
Delta R.T. -0.00 min
Lab File: 8M394562.D
Acq: 31 Jan 2014 5:21

Tgt Ion:180 Resp: 225912

Ion	Ratio	Lower	Upper
180	100		
182	94.9	56.6	132.0
145	30.3	18.8	44.0

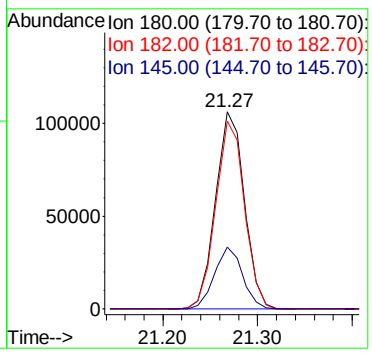

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\013014\8M394563.D Vial: 20
Acq On : 31 Jan 2014 5:53 Operator: MES
Sample : L14011372-07 MSD A 826-LOW Inst : HPMS8
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 06:15:41 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	879005	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	697078	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	384729	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.96	111	224925	23.5155 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.08%		
43) 1,2-Dichloroethane-d4	10.60	65	183571	19.5887 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.36%#		
58) Toluene-d8	12.98	98	845749	24.3518 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.40%		
80) p-Bromofluorobenzene	16.38	95	331659	23.2626 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.35	85	175870	22.2002 ug/L	98
3) Chloromethane	3.84	50	366191	24.7559 ug/L	98
4) Vinyl Chloride	4.07	62	241265	22.9137 ug/L	99
5) 1,3-Butadiene	4.13	54	126468	11.9932 ug/L	98
6) Bromomethane	5.00	94	149102	22.3397 ug/L	98
7) Chloroethane	5.16	64	155983	20.9683 ug/L	98
8) Trichlorofluoromethane	5.66	101	277886	18.6064 ug/L	100
10) Isoprene	6.22	67	234972	16.1814 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.44	101	164961	18.5743 ug/L	95
13) Acetone	6.52	43	26675	17.0840 ug/L	99
14) 1,1-Dichloroethene	6.76	61	314573	19.3163 ug/L	100
16) Dimethyl Sulfide	7.02	62	191407	20.4301 ug/L	95
17) Iodomethane	7.28	142	116593	13.8032 ug/L	96
18) Methyl acetate	7.28	43	76811	15.9402 ug/L	98
19) Methylene Chloride	7.54	84	191267	20.8597 ug/L	92
20) Carbon Disulfide	7.59	76	587162	19.1451 ug/L	99
21) Acrylonitrile	7.72	53	40904	18.3419 ug/L	96
22) Methyl Tert Butyl Ether	7.76	73	354546	18.8529 ug/L	99
23) trans-1,2-Dichloroethene	7.99	61	333408	21.3122 ug/L	98
24) n-Hexane	8.07	57	211919	13.6681 ug/L	98
26) Vinyl Acetate	8.58	43	296900	19.6344 ug/L	99
27) 1,1-Dichloroethane	8.61	63	405765	21.1690 ug/L	99
28) Ethyl-Tert-Butyl ether	8.92	59	4646	0.1565 ug/L #	45
29) 2-Butanone	9.16	43	39739	16.3171 ug/L	96
31) 2,2-Dichloropropane	9.39	77	275474	17.9305 ug/L	99
32) cis-1,2-Dichloroethene	9.46	96	227685	21.5658 ug/L	94
33) Chloroform	9.67	83	359743	21.1149 ug/L	99
34) 1-Bromopropane	9.80	122	46637	23.2506 ug/L	99
35) Bromochloromethane	9.90	130	111171	20.3070 ug/L	97
36) Tetrahydrofuran	9.93	42	430	0.2766 ug/L #	40
38) 1,1,1-Trichloroethane	10.21	97	319888	21.2381 ug/L	100
39) Cyclohexane	10.24	56	311673	15.5929 ug/L	96
40) 1,1-Dichloropropene	10.40	75	272325	20.3136 ug/L	99
41) Tert-Amyl-Methyl ether	10.40	73	40192	1.9454 ug/L #	52
42) Carbon Tetrachloride	10.55	117	271098	21.4726 ug/L	100
45) 1,2-Dichloroethane	10.71	62	232031	19.3641 ug/L	97
46) Benzene	10.75	78	815648	21.8086 ug/L	100
47) Trichloroethene	11.51	130	216320	21.5547 ug/L	99
48) Methylcyclohexane	11.59	83	224664	14.5744 ug/L	100
49) 1,2-Dichloropropane	11.72	63	224275	21.7127 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M394563.D 8260WTR.M Fri Jan 31 06:15:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\013014\8M394563.D Vial: 20
Acq On : 31 Jan 2014 5:53 Operator: MES
Sample : L14011372-07 MSD A 826-LOW Inst : HPMS8
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 06:15:41 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
50)	Bromodichloromethane	12.03	83	242267	20.9992	ug/L		99
52)	Dibromomethane	12.11	93	89451	19.6372	ug/L		97
54)	4-Methyl-2-Pentanone	12.34	58	34290	16.3457	ug/L		94
55)	cis-1,3-Dichloropropene	12.66	75	302606	21.2927	ug/L		100
56)	Dimethyl Disulfide	12.92	94	298303	20.0535	ug/L		97
59)	Toluene	13.08	91	894111	21.5974	ug/L		98
60)	Ethyl Methacrylate	13.16	69	148857	18.3911	ug/L		100
62)	trans-1,3-Dichloropropene	13.25	75	226546	19.3037	ug/L		100
63)	1,1,2-Trichloroethane	13.47	97	121393	20.0096	ug/L		98
64)	2-Hexanone	13.40	58	30653	16.0812	ug/L		92
65)	1,3-Dichloropropane	13.77	76	216116	19.3521	ug/L		99
66)	Tetrachloroethene	13.90	164	169929	20.4482	ug/L		97
67)	Dibromochloromethane	14.17	129	153332	22.1765	ug/L		99
68)	1,2-Dibromoethane	14.42	107	118802	19.6259	ug/L		100
69)	1-Chlorohexane	14.50	91	259751	18.4620	ug/L		99
70)	Chlorobenzene	14.93	112	539434	19.5805	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.95	131	203221	23.0926	ug/L		100
72)	Ethylbenzene	14.95	106	309851	20.4993	ug/L		95
73)	m-,p-Xylene	15.04	106	733175	41.0723	ug/L		98
74)	o-Xylene	15.60	106	342860	18.9735	ug/L		98
75)	Styrene	15.64	104	617016	20.8642	ug/L		96
76)	Bromoform	16.14	173	94680	20.0195	ug/L		99
77)	Isopropylbenzene	16.03	105	859731	19.3363	ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.24	83	125756	19.4384	ug/L		100
81)	1,2,3-Trichloropropane	16.44	110	34495	18.4530	ug/L		84
82)	trans-1,4-Dichloro-2-Buten	16.48	53	21374	9.4162	ug/L	#	11
83)	n-Propylbenzene	16.53	91	1058824	19.2078	ug/L		98
84)	Bromobenzene	16.68	156	240527	20.8663	ug/L		95
85)	1,3,5-Trimethylbenzene	16.72	105	817324	21.0054	ug/L		98
86)	2-Chlorotoluene	16.81	91	673519	18.8142	ug/L		98
87)	4-Chlorotoluene	16.86	91	665064	20.2479	ug/L		99
88)	a-Methylstyrene	17.13	118	412430	18.9608	ug/L		99
89)	tert-Butylbenzene	17.20	134	159675	18.7719	ug/L		97
90)	1,2,4-Trimethylbenzene	17.25	105	842269	21.3618	ug/L		97
91)	sec-Butylbenzene	17.46	105	872470	18.6742	ug/L		98
92)	p-Isopropyltoluene	17.62	119	747396	18.6544	ug/L		99
93)	1,3-Dichlorobenzene	17.82	146	422572	19.3194	ug/L		97
94)	1,4-Dichlorobenzene	17.95	146	448113	20.7561	ug/L		99
95)	n-Butylbenzene	18.15	91	742572	19.9254	ug/L		99
96)	1,2-Dichlorobenzene	18.45	146	370252	19.2338	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.44	75	18439	16.3464	ug/L		90
98)	1,2,4-Trichlorobenzene	20.59	180	277435	18.8600	ug/L		99
99)	Hexachlorobutadiene	20.74	225	119056	18.9255	ug/L		99
100)	Naphthalene	20.96	128	405722	17.9401	ug/L		100
101)	1,2,3-Trichlorobenzene	21.27	180	228940	18.7784	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M394563.D 8260WTR.M Fri Jan 31 06:15:43 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\013014\8M394563.D Vial: 20
Acq On : 31 Jan 2014 5:53 Operator: MES
Sample : L14011372-07 MSD A 826-LOW Inst : HPMS8
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 6:15 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration

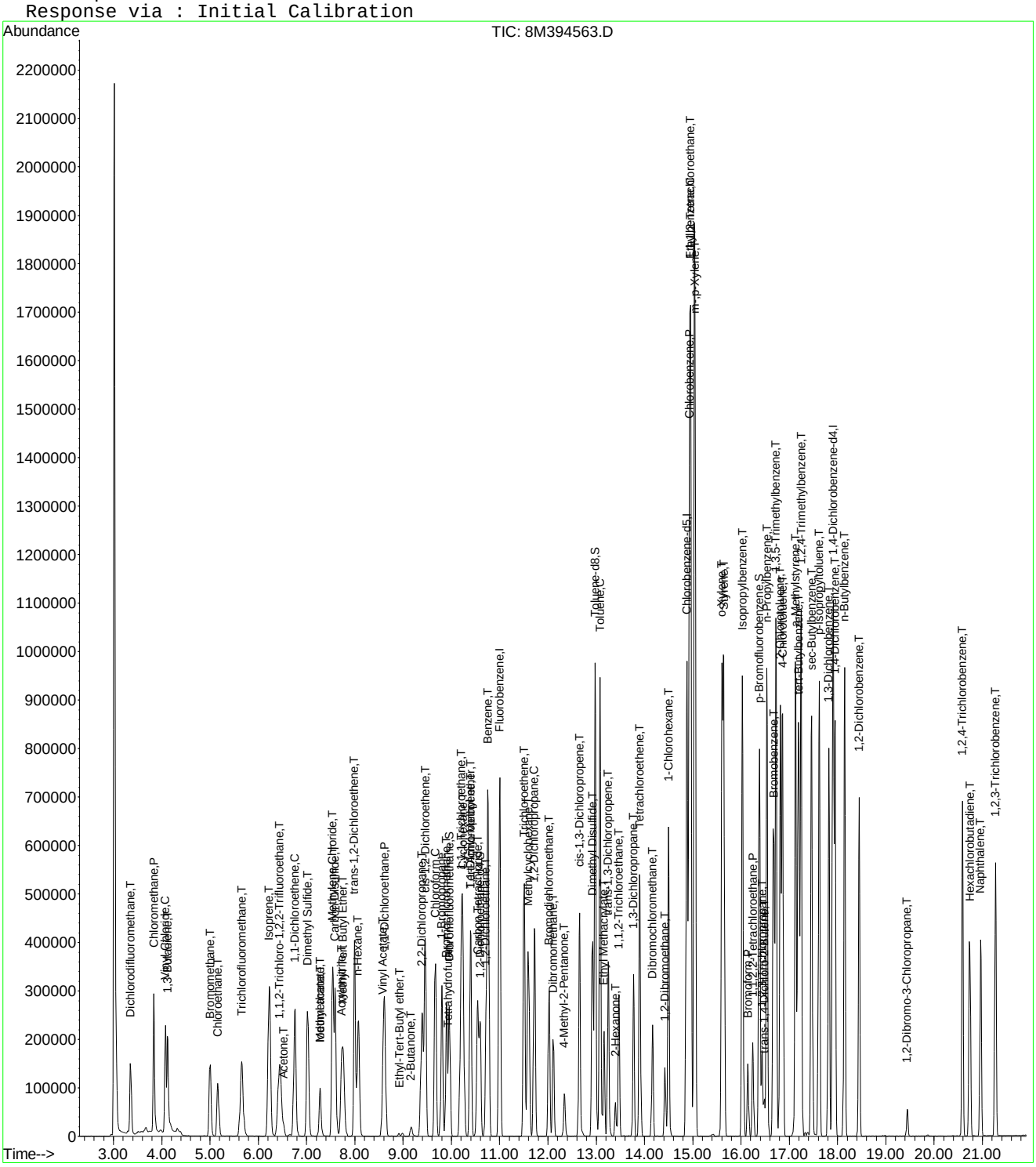

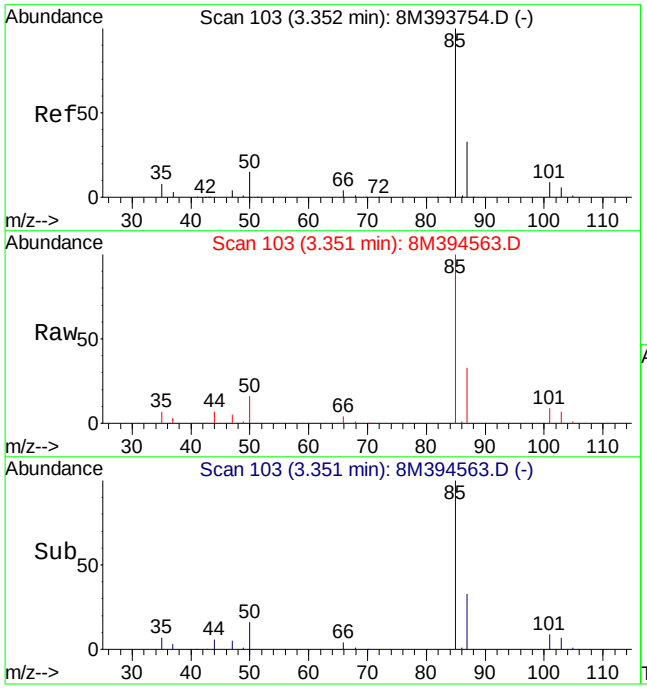

#2
Dichlorodifluoromethane
Concen: 22.20 ug/L
RT: 3.35 min Scan# 103
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 85 Resp: 175870

Ion	Ratio	Lower	Upper
85	100		
87	33.5	19.6	45.6

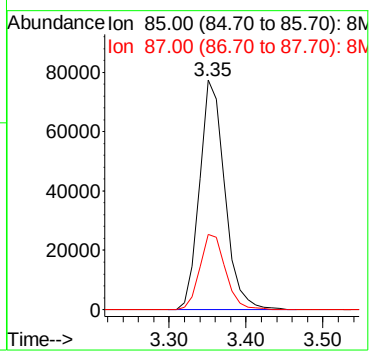

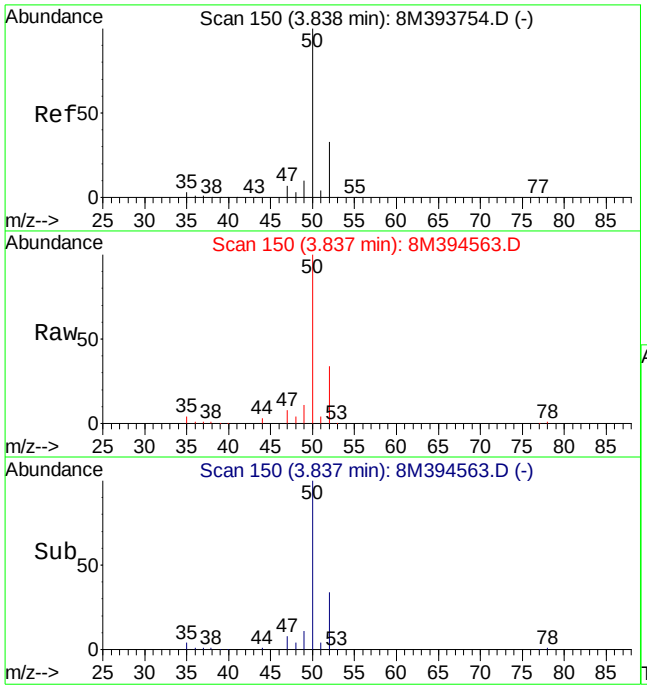

#3
Chloromethane
Concen: 24.76 ug/L
RT: 3.84 min Scan# 150
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 50 Resp: 366191

Ion	Ratio	Lower	Upper
50	100		
52	33.7	19.6	45.6

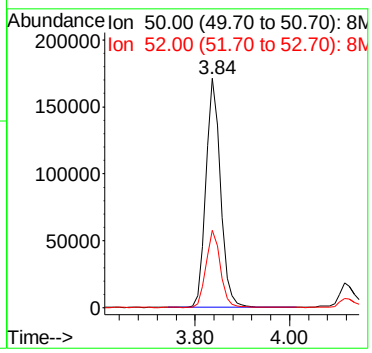

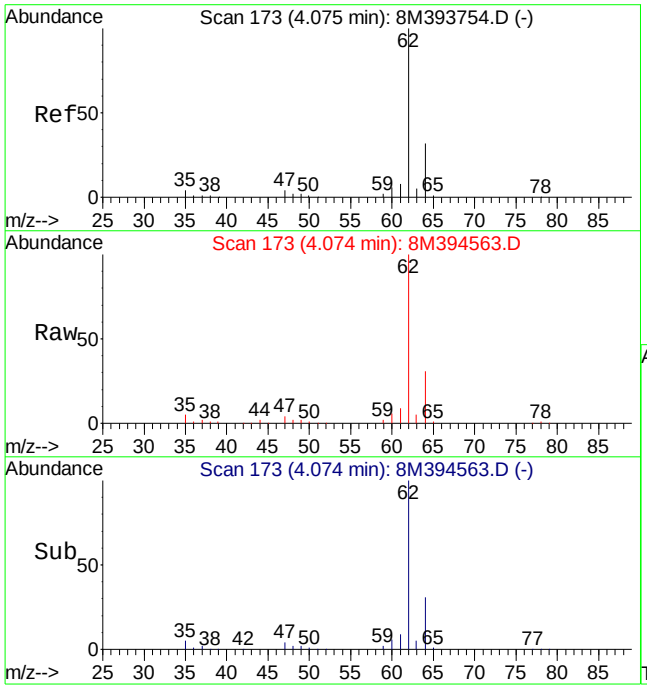

#4
Vinyl Chloride
Concen: 22.91 ug/L
RT: 4.07 min Scan# 173
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 62 Resp: 241265

Ion	Ratio	Lower	Upper
62	100		
64	30.8	18.7	43.7

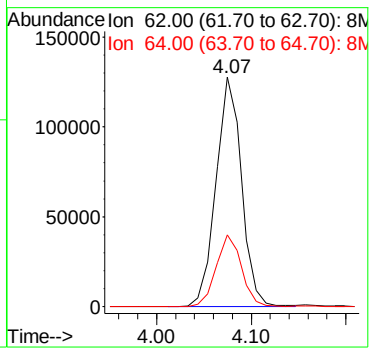

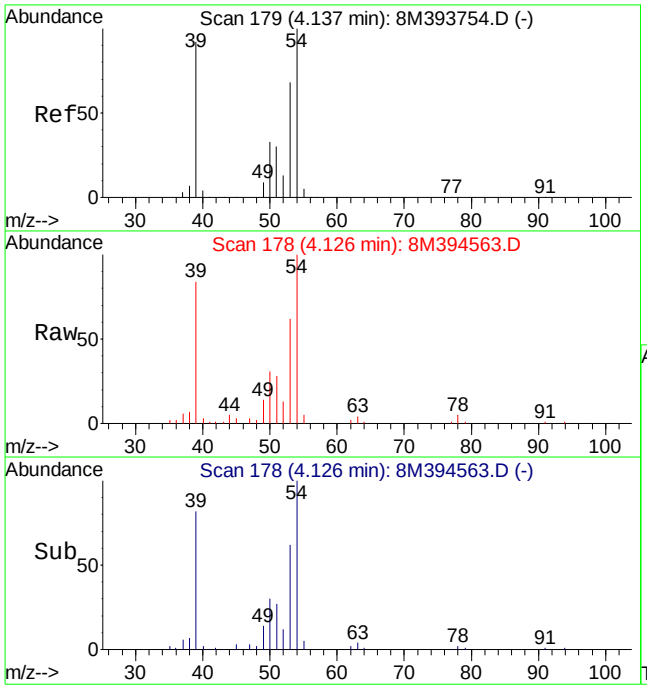

#5
1,3-Butadiene
Concen: 11.99 ug/L
RT: 4.13 min Scan# 178
Delta R.T. -0.01 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 54 Resp: 126468

Ion	Ratio	Lower	Upper
54	100		
39	90.6	55.7	130.1
53	66.6	41.0	95.8

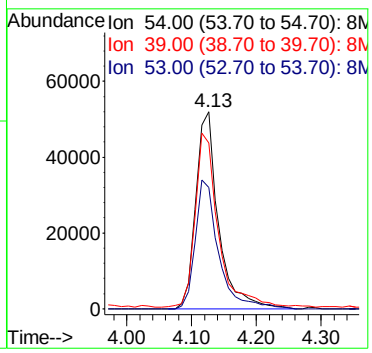

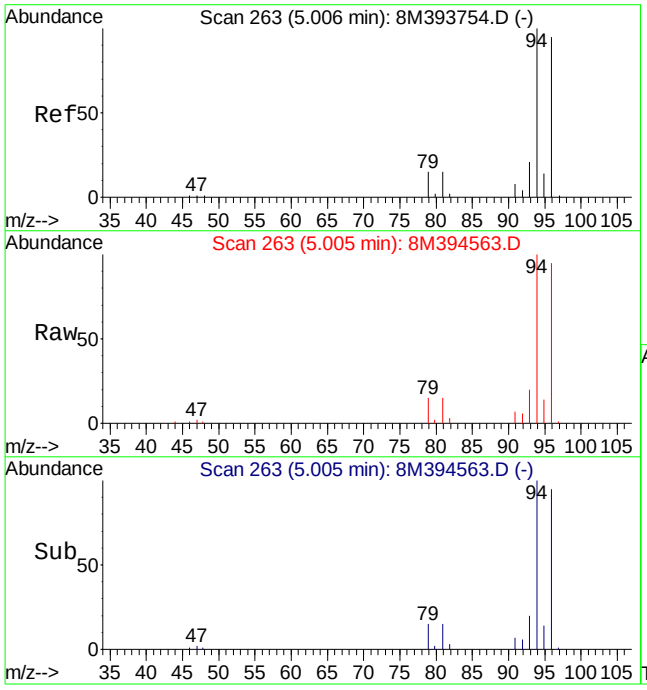

#6
Bromomethane
Concen: 22.34 ug/L
RT: 5.00 min Scan# 263
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 94 Resp: 149102

Ion	Ratio	Lower	Upper
94	100		
96	95.2	56.2	131.0

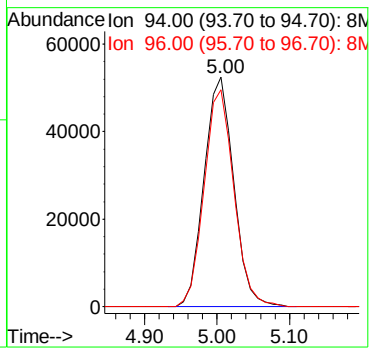

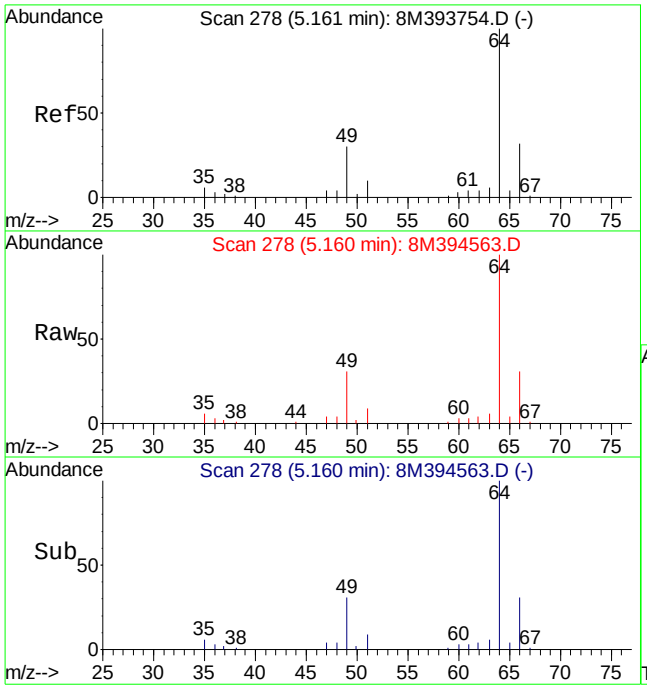

#7
Chloroethane
Concen: 20.97 ug/L
RT: 5.16 min Scan# 278
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 64 Resp: 155983

Ion	Ratio	Lower	Upper
64	100		
66	29.8	18.8	44.0
49	31.6	18.5	43.1

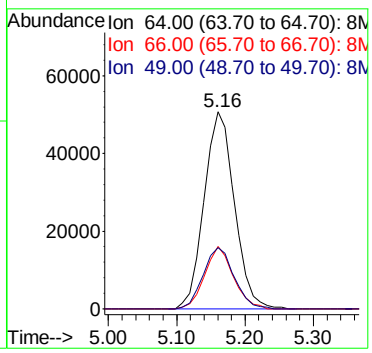

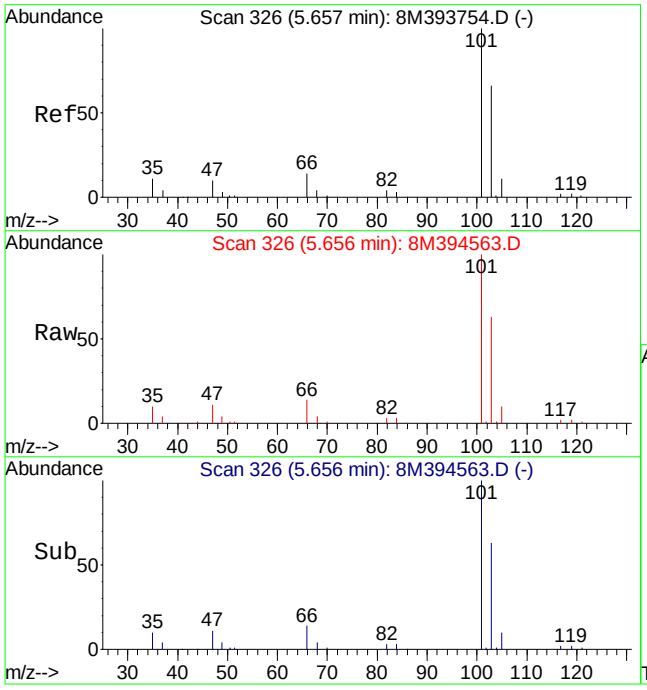

#8
Trichlorofluoromethane
Concen: 18.61 ug/L
RT: 5.66 min Scan# 326
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:101 Resp: 277886

Ion	Ratio	Lower	Upper
101	100		
103	64.7	38.9	90.9
66	13.1	8.0	18.6

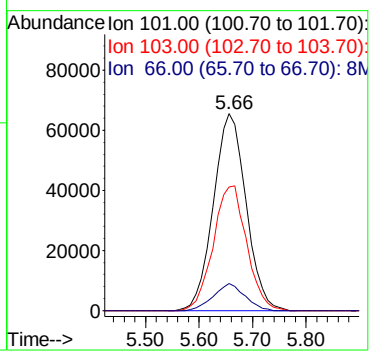

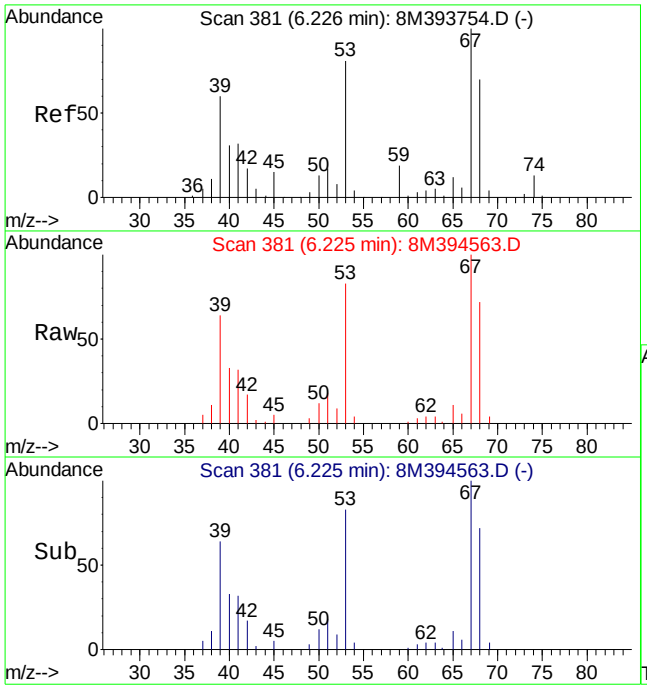

#10
Isoprene
Concen: 16.18 ug/L
RT: 6.22 min Scan# 381
Delta R.T. 0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 67 Resp: 234972

Ion	Ratio	Lower	Upper
67	100		
53	82.6	48.9	114.1

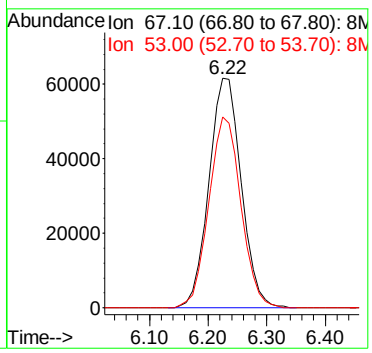

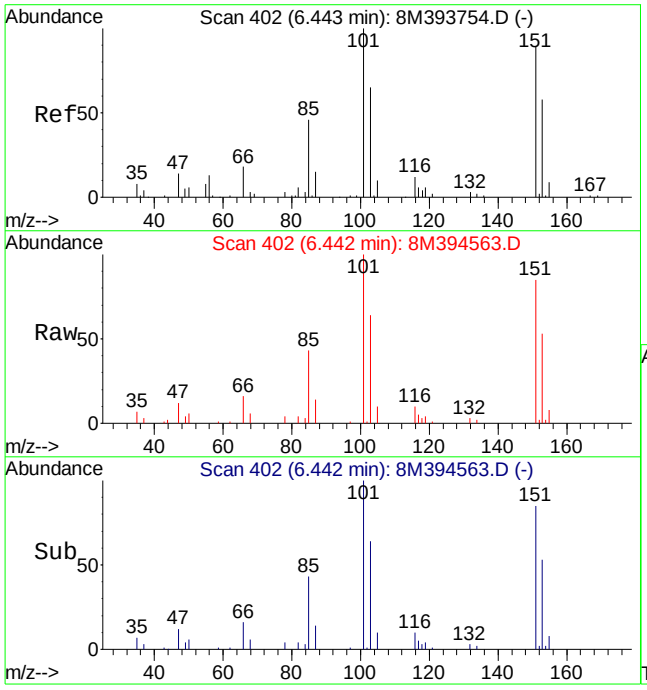

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 18.57 ug/L
RT: 6.44 min Scan# 402
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:101 Resp: 164961

Ion	Ratio	Lower	Upper
101	100		
151	85.2	49.8	129.8

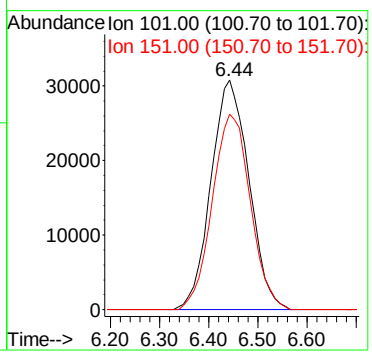

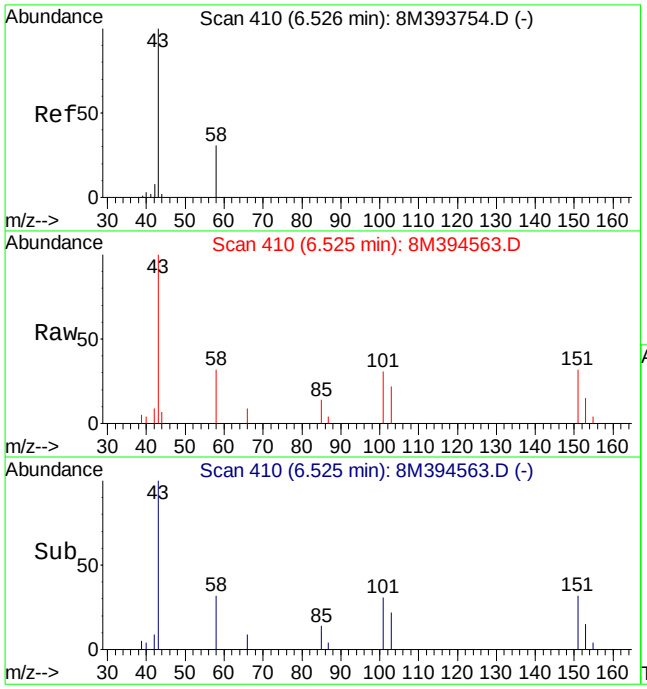

#13
Acetone
Concen: 17.08 ug/L
RT: 6.52 min Scan# 410
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 43 Resp: 26675

Ion	Ratio	Lower	Upper
43	100		
58	28.7	17.0	39.6

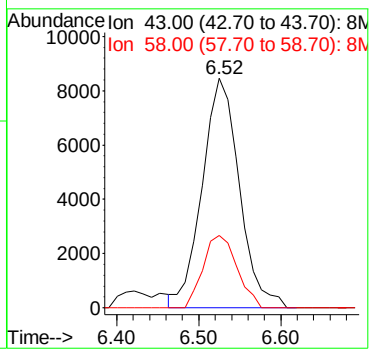

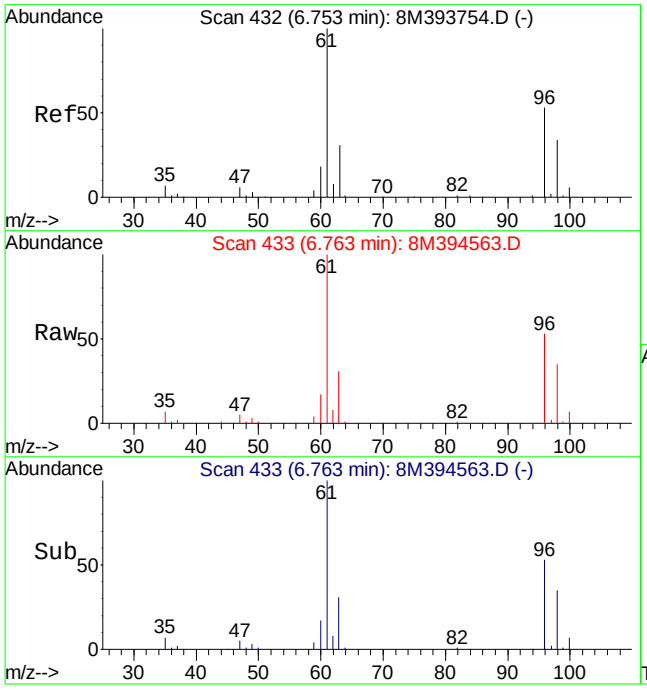

#14
1,1-Dichloroethene
Concen: 19.32 ug/L
RT: 6.76 min Scan# 433
Delta R.T. 0.01 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 61 Resp: 314573

Ion	Ratio	Lower	Upper
61	100		
96	54.2	32.5	75.7

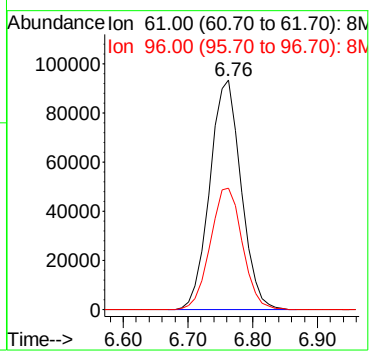

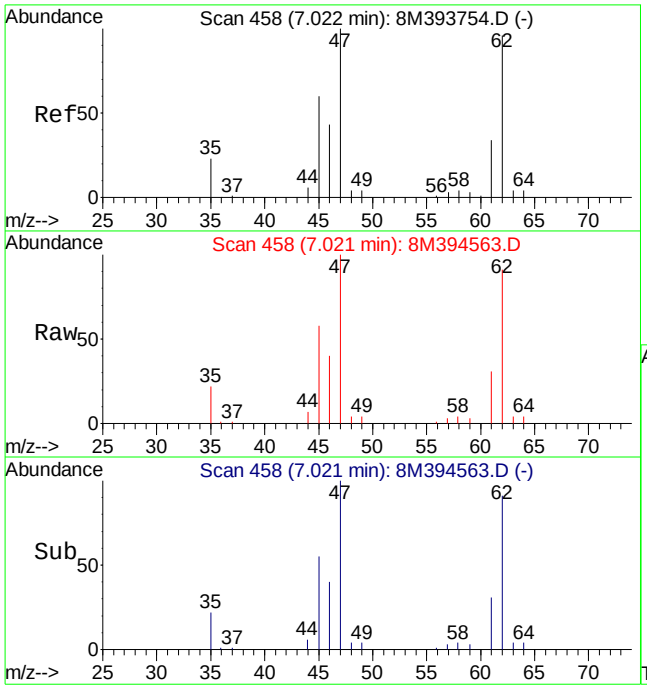

#16
Dimethyl Sulfide
Concen: 20.43 ug/L
RT: 7.02 min Scan# 458
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 62 Resp: 191407

Ion	Ratio	Lower	Upper
62	100		
47	109.5	62.4	145.6

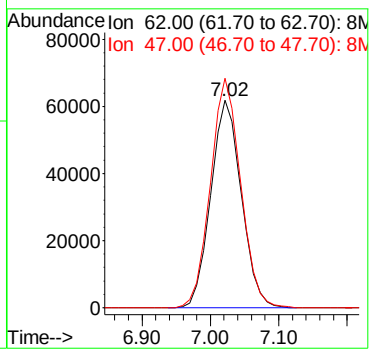

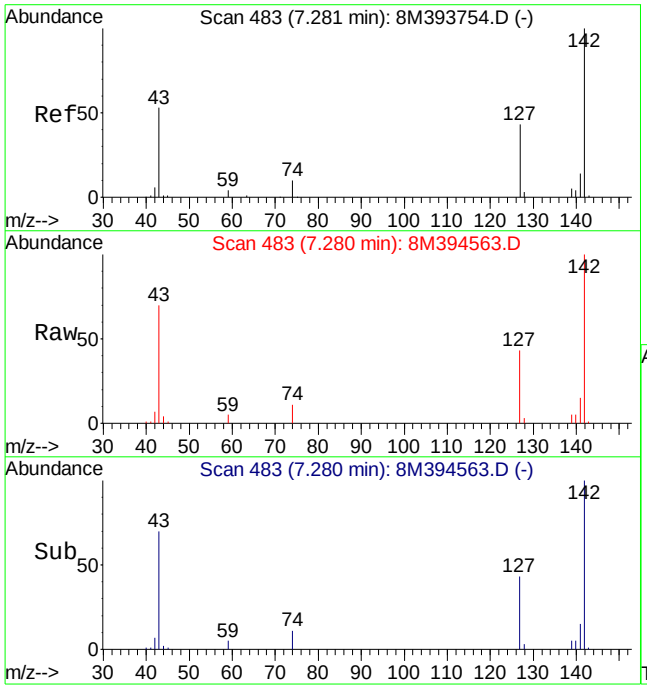

#17
Iodomethane
Concen: 13.80 ug/L
RT: 7.28 min Scan# 483
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:142 Resp: 116593

Ion	Ratio	Lower	Upper
142	100		
127	41.1	26.3	61.3

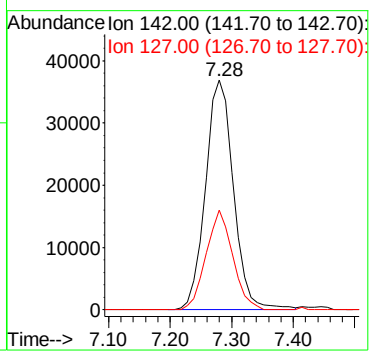

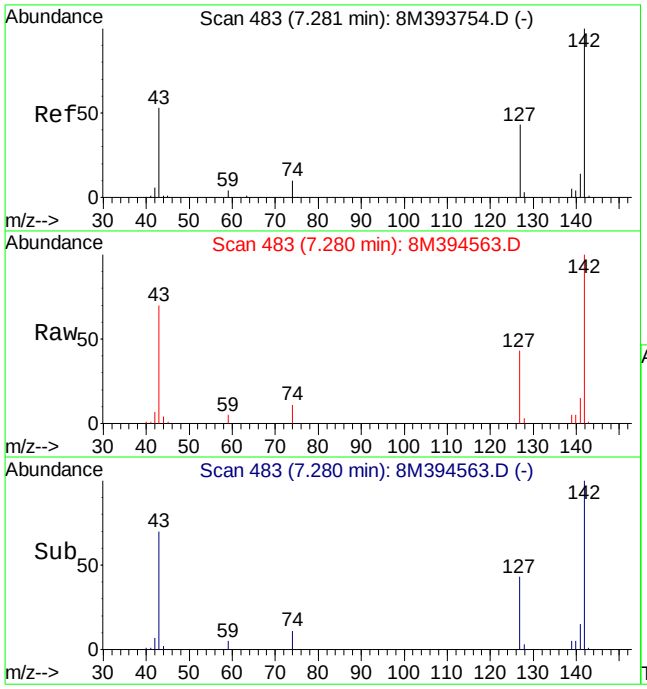

#18
Methyl acetate
Concen: 15.94 ug/L
RT: 7.28 min Scan# 483
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 43 Resp: 76811

Ion	Ratio	Lower	Upper
43	100		
74	16.5	10.7	24.9
59	7.6	4.6	10.6

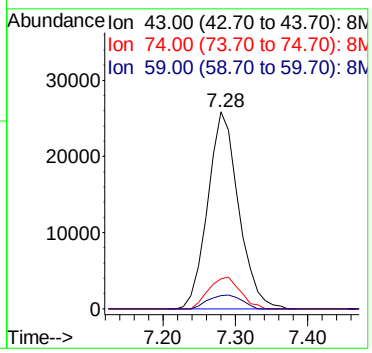

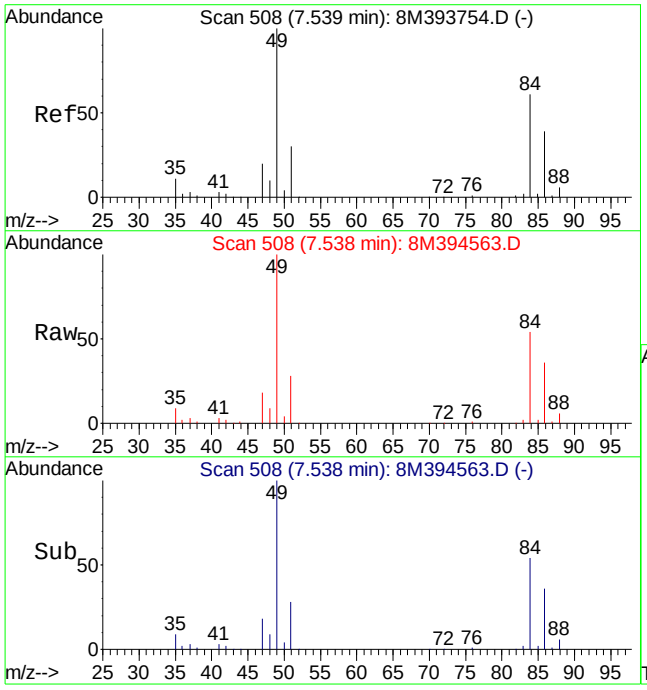

#19
Methylene Chloride
Concen: 20.86 ug/L
RT: 7.54 min Scan# 508
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 84 Resp: 191267

Ion	Ratio	Lower	Upper
84	100		
49	174.8	98.4	229.6

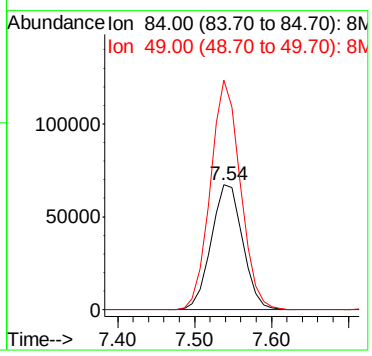

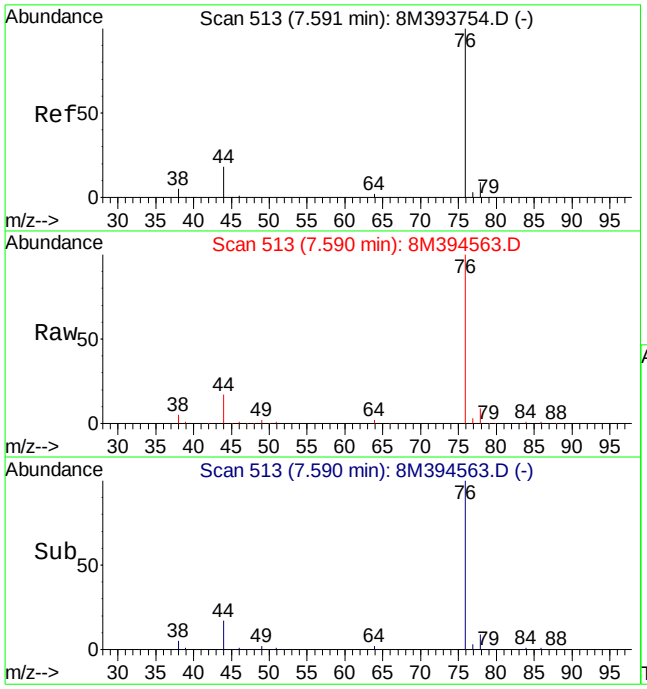

#20
Carbon Disulfide
Concen: 19.15 ug/L
RT: 7.59 min Scan# 513
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 76 Resp: 587162

Ion	Ratio	Lower	Upper
76	100		
78	9.1	5.8	13.4

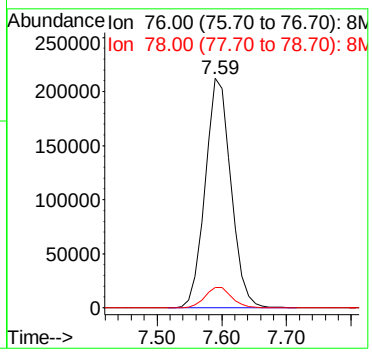

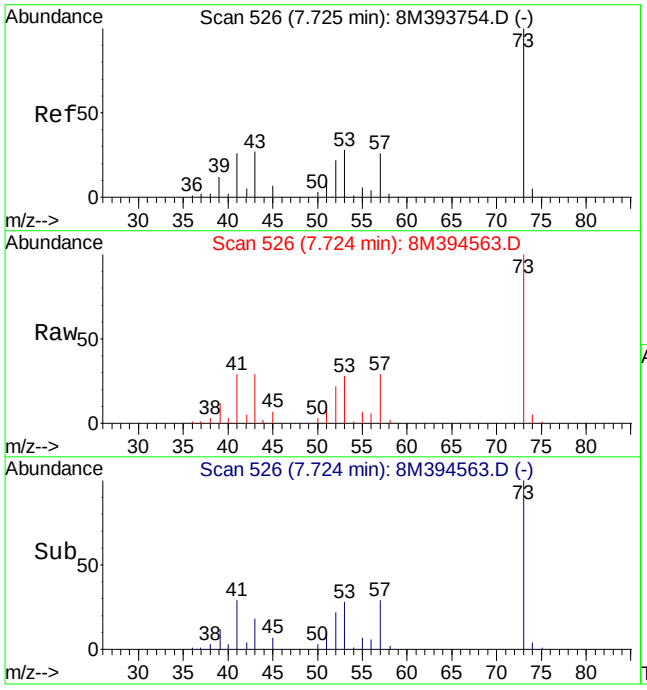

#21
Acrylonitrile
Concen: 18.34 ug/L
RT: 7.72 min Scan# 526
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 53 Resp: 40904

Ion	Ratio	Lower	Upper
53	100		
52	74.2	46.7	109.1

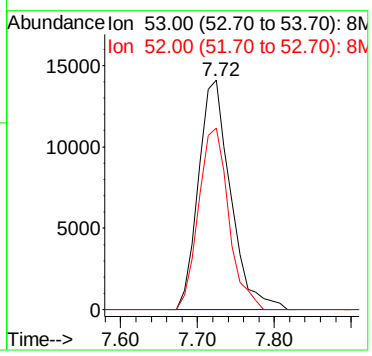

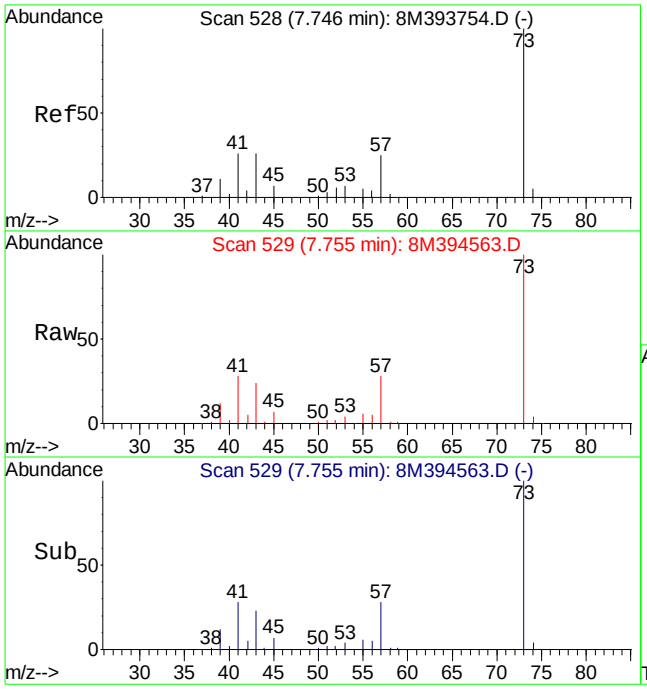

#22
Methyl Tert Butyl Ether
Concen: 18.85 ug/L
RT: 7.76 min Scan# 529
Delta R.T. 0.01 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 73 Resp: 354546

Ion	Ratio	Lower	Upper
73	100		
57	26.6	15.7	36.7

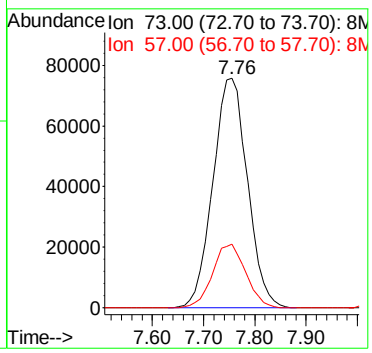

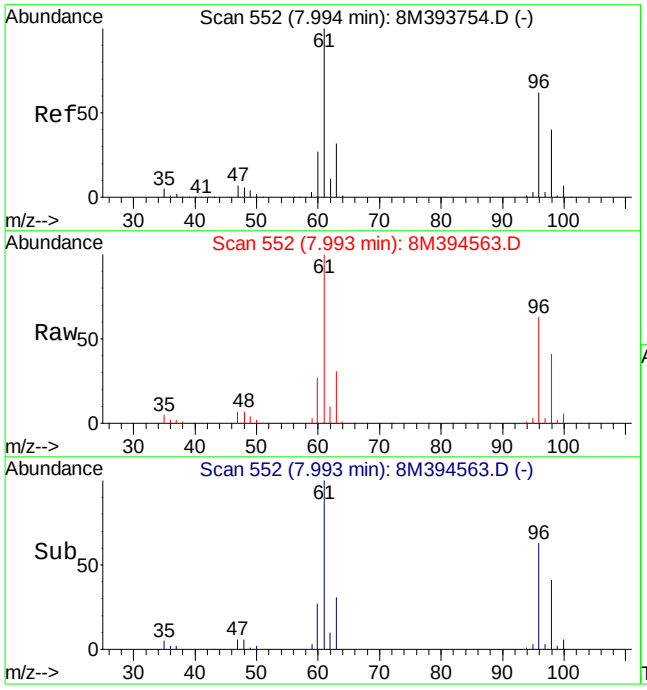

#23
trans-1,2-Dichloroethene
Concen: 21.31 ug/L
RT: 7.99 min Scan# 552
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 61 Resp: 333408

Ion	Ratio	Lower	Upper
61	100		
96	63.4	37.3	86.9

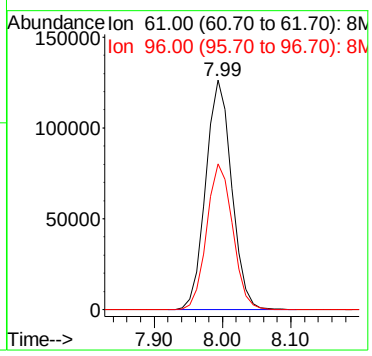

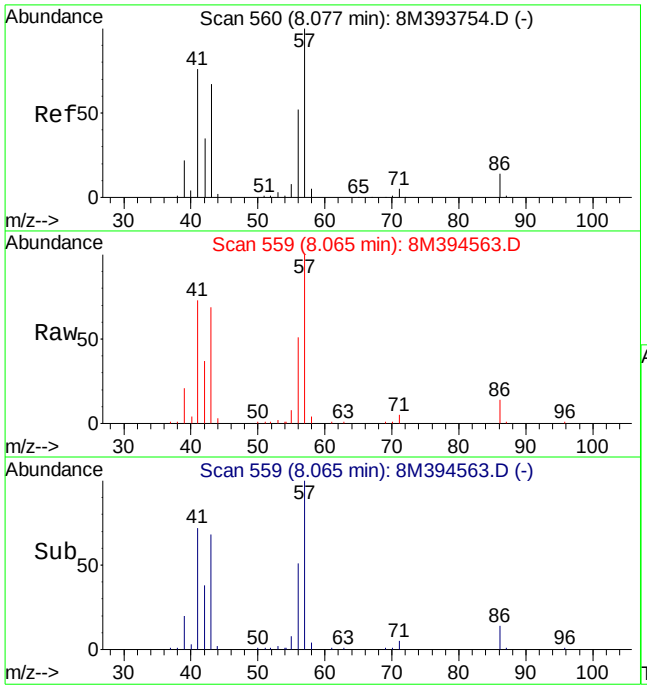

#24
n-Hexane
Concen: 13.67 ug/L
RT: 8.07 min Scan# 559
Delta R.T. -0.01 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 57 Resp: 211919

Ion	Ratio	Lower	Upper
57	100		
43	68.5	40.3	93.9

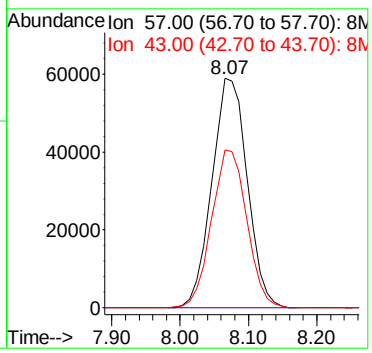

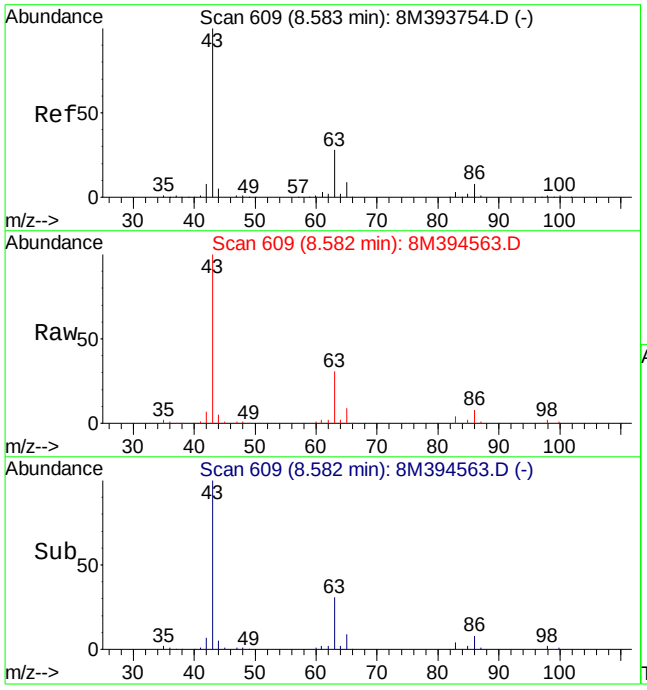

#26
Vinyl Acetate
Concen: 19.63 ug/L
RT: 8.58 min Scan# 609
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 43 Resp: 296900

Ion	Ratio	Lower	Upper
43	100		
86	7.6	4.7	11.1

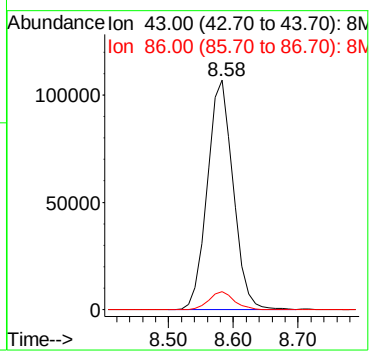

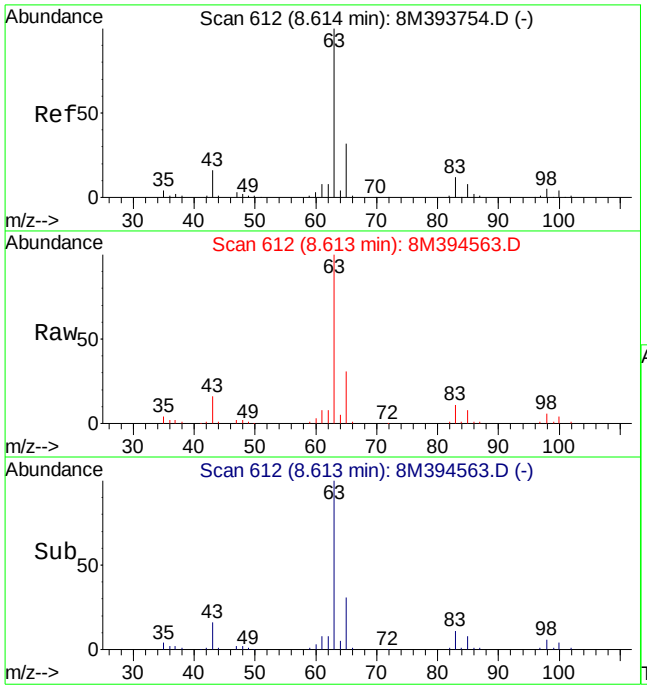

#27
1,1-Dichloroethane
Concen: 21.17 ug/L
RT: 8.61 min Scan# 612
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 63 Resp: 405765

Ion	Ratio	Lower	Upper
63	100		
65	30.7	18.7	43.5
83	12.3	7.4	17.2

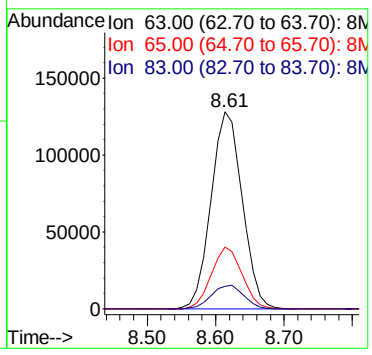

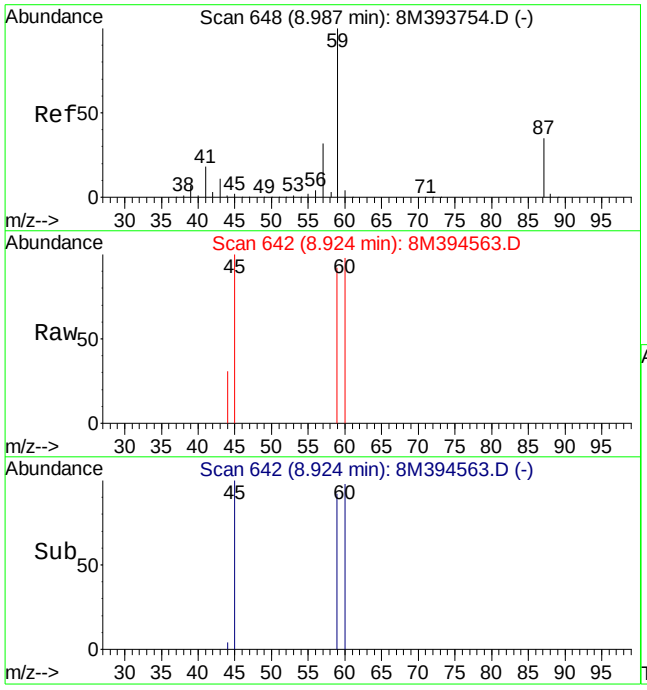

#28
Ethyl-Tert-Butyl ether
Concen: 0.16 ug/L
RT: 8.92 min Scan# 642
Delta R.T. -0.06 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 59 Resp: 4646

Ion	Ratio	Lower	Upper
59	100		
87	0.0	20.7	48.3#
57	4.3	19.2	44.8#

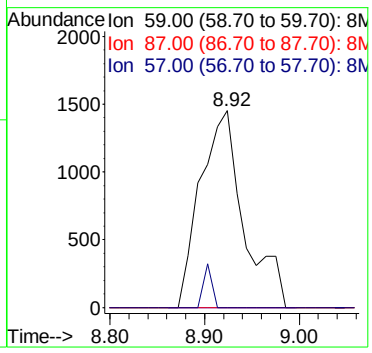

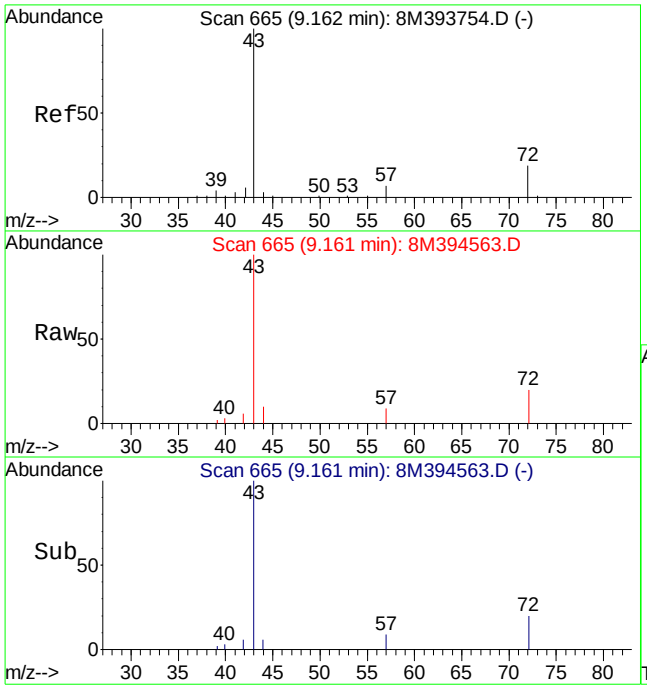

#29
2-Butanone
Concen: 16.32 ug/L
RT: 9.16 min Scan# 665
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 43 Resp: 39739

Ion	Ratio	Lower	Upper
43	100		
72	17.4	11.5	26.7

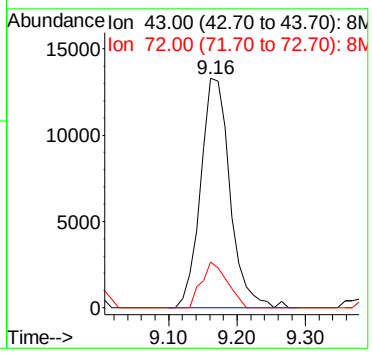

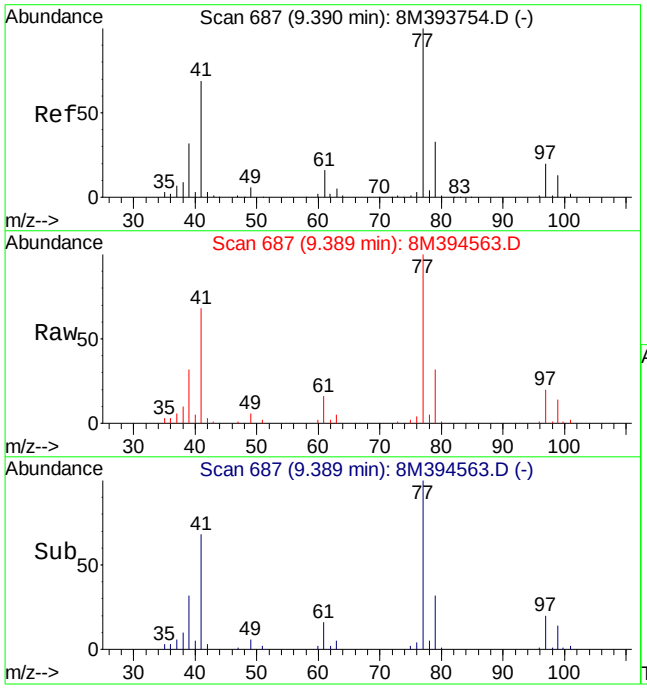

#31
2,2-Dichloropropane
Concen: 17.93 ug/L
RT: 9.39 min Scan# 687
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 77 Resp: 275474

Ion	Ratio	Lower	Upper
77	100		
79	31.9	19.3	45.1

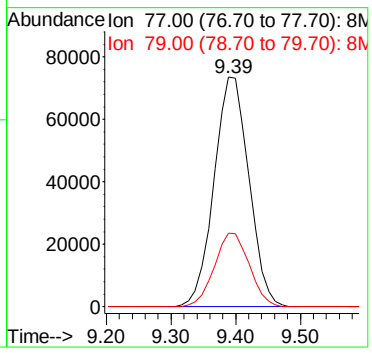

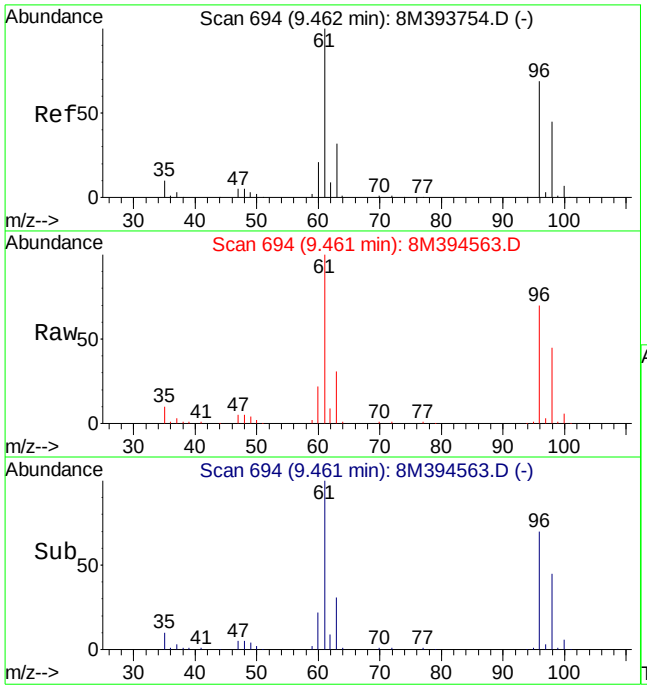

#32
cis-1,2-Dichloroethene
Concen: 21.57 ug/L
RT: 9.46 min Scan# 694
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 96 Resp: 227685

Ion	Ratio	Lower	Upper
96	100		
61	161.6	101.6	237.2

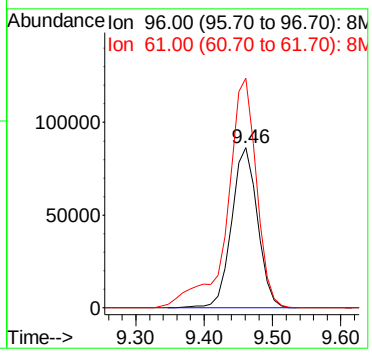

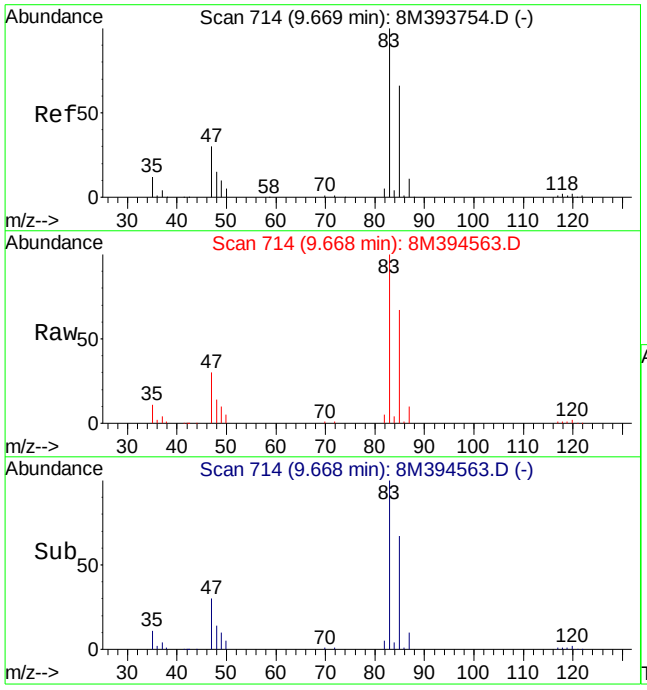

#33
Chloroform
Concen: 21.11 ug/L
RT: 9.67 min Scan# 714
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 83 Resp: 359743

Ion	Ratio	Lower	Upper
83	100		
85	65.3	39.5	92.3

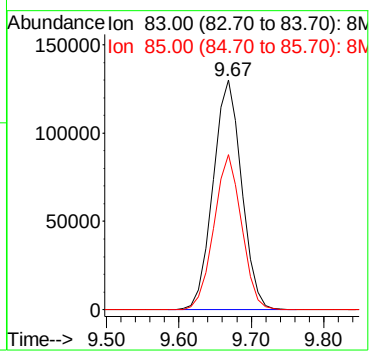

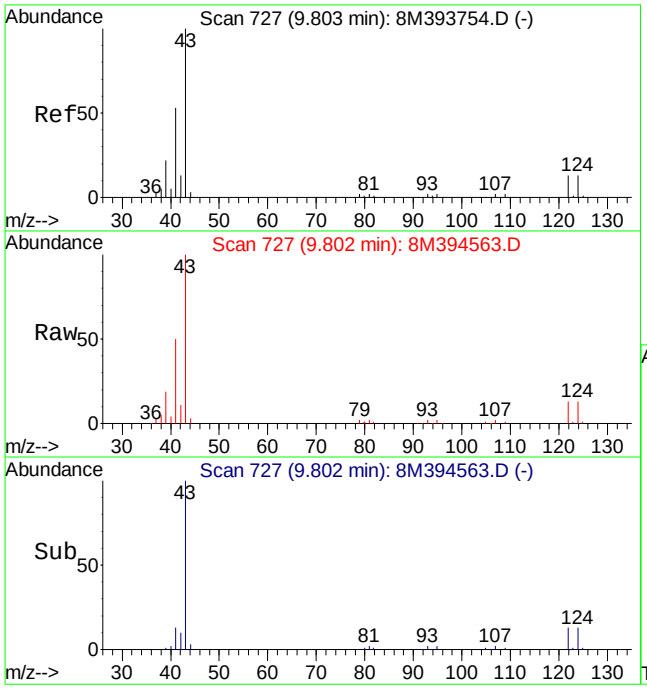

#34
1-Bromopropane
Concen: 23.25 ug/L
RT: 9.80 min Scan# 727
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:122 Resp: 46637

Ion	Ratio	Lower	Upper
122	100		
124	95.9	0.0	207.5

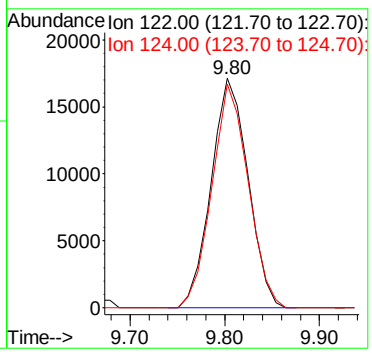

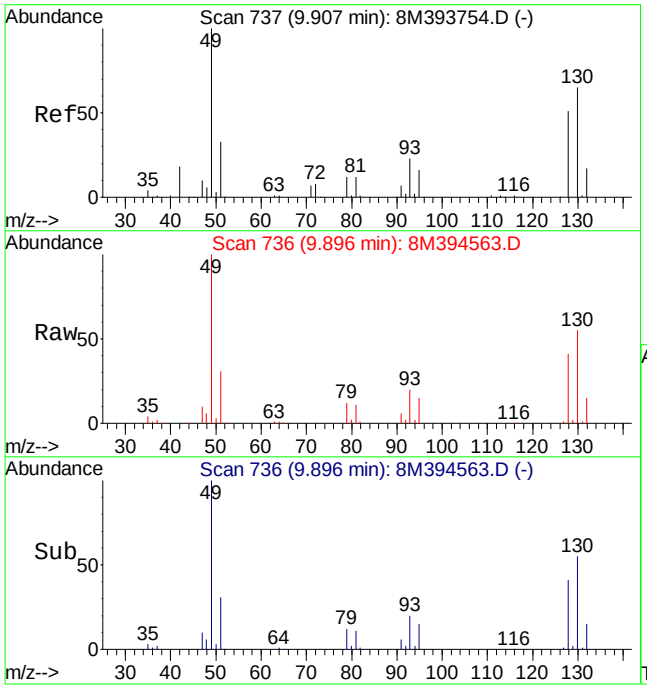

#35
Bromochloromethane
Concen: 20.31 ug/L
RT: 9.90 min Scan# 736
Delta R.T. -0.01 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:130 Resp: 111171

Ion	Ratio	Lower	Upper
130	100		
128	77.0	46.6	108.6
49	173.4	100.3	234.1

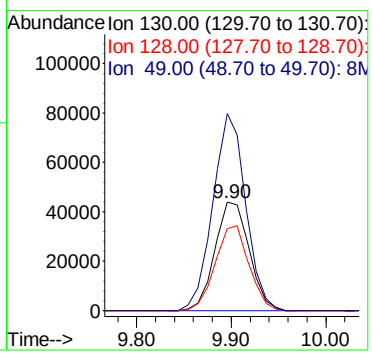

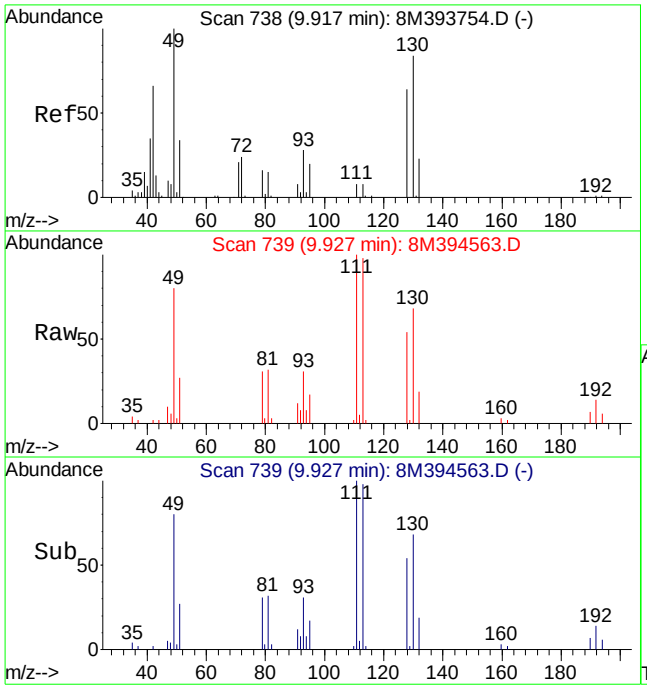

#36
Tetrahydrofuran
Concen: 0.28 ug/L
RT: 9.93 min Scan# 739
Delta R.T. 0.01 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 42 Resp: 430

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.4	50.0#
71	0.0	20.0	46.8#

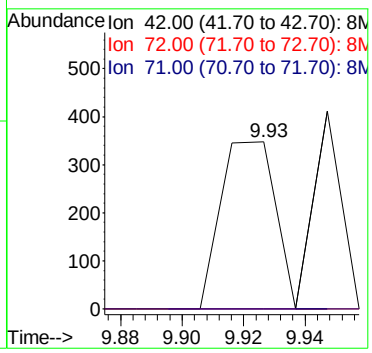

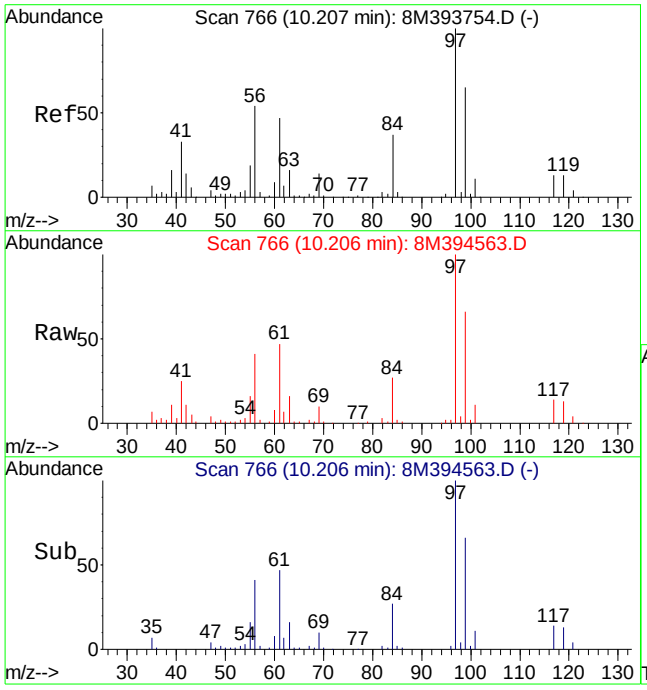

#38
1,1,1-Trichloroethane
Concen: 21.24 ug/L
RT: 10.21 min Scan# 766
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 97 Resp: 319888

Ion	Ratio	Lower	Upper
97	100		
99	64.8	38.8	90.6

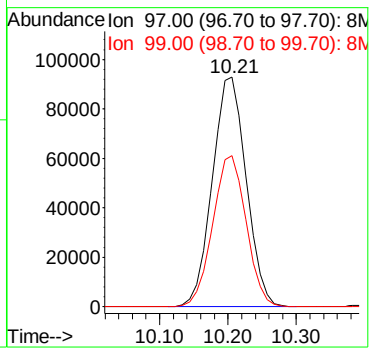

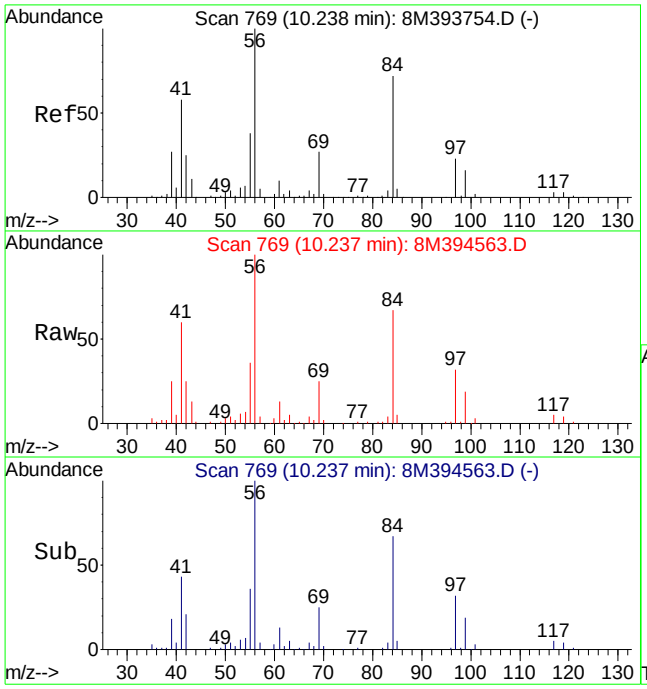

#39
Cyclohexane
Concen: 15.59 ug/L
RT: 10.24 min Scan# 769
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 56 Resp: 311673

Ion	Ratio	Lower	Upper
56	100		
84	68.9	43.1	100.5
69	24.7	16.0	37.4

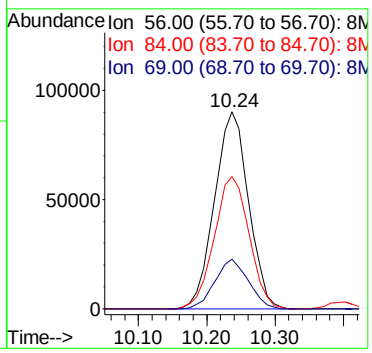

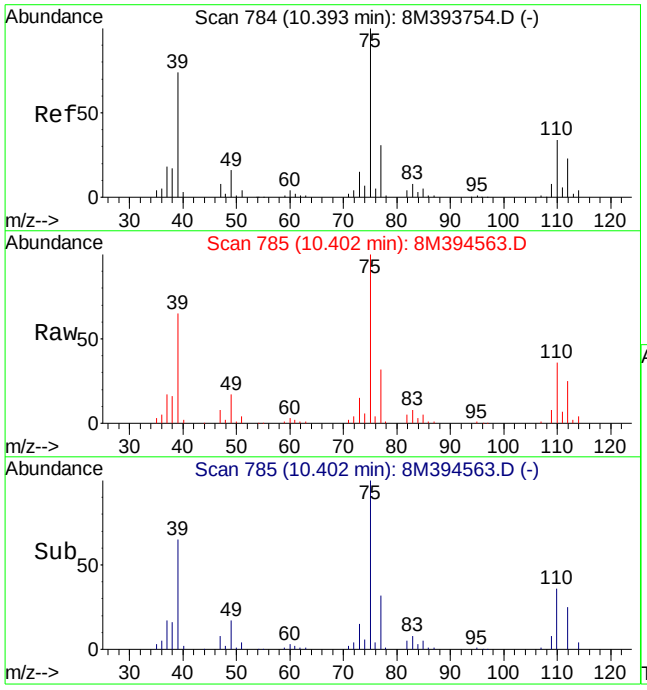

#40
1,1-Dichloropropene
Concen: 20.31 ug/L
RT: 10.40 min Scan# 785
Delta R.T. 0.01 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 75 Resp: 272325

Ion	Ratio	Lower	Upper
75	100		
110	35.5	20.9	48.7

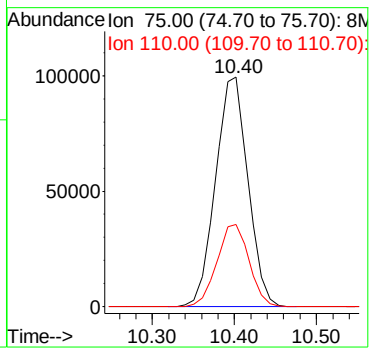

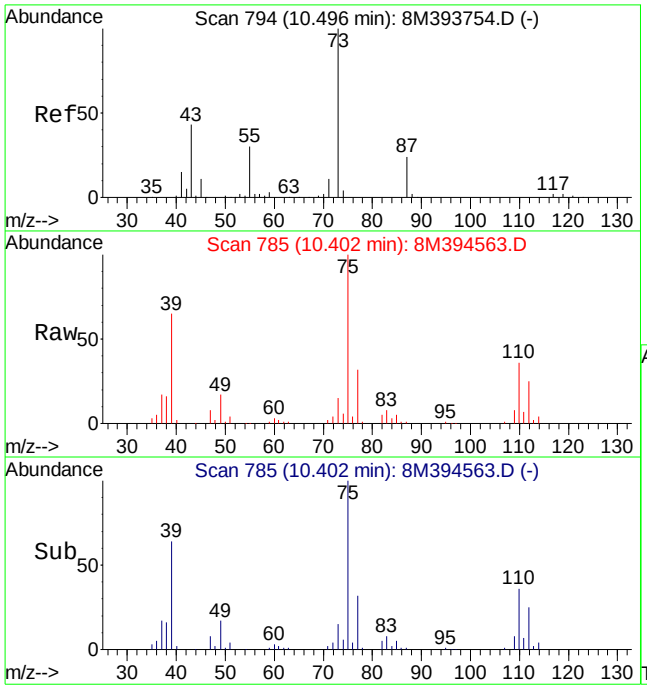

#41
Tert-Amyl-Methyl ether
Concen: 1.95 ug/L
RT: 10.40 min Scan# 785
Delta R.T. -0.09 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 73 Resp: 40192

Ion	Ratio	Lower	Upper
73	100		
55	1.1	17.2	40.0#
57	0.0	1.4	3.2#

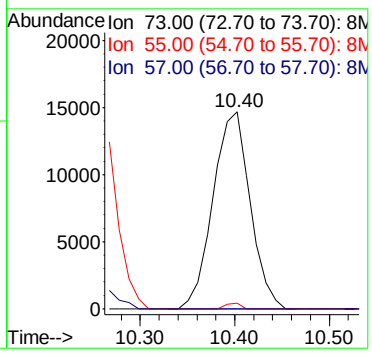

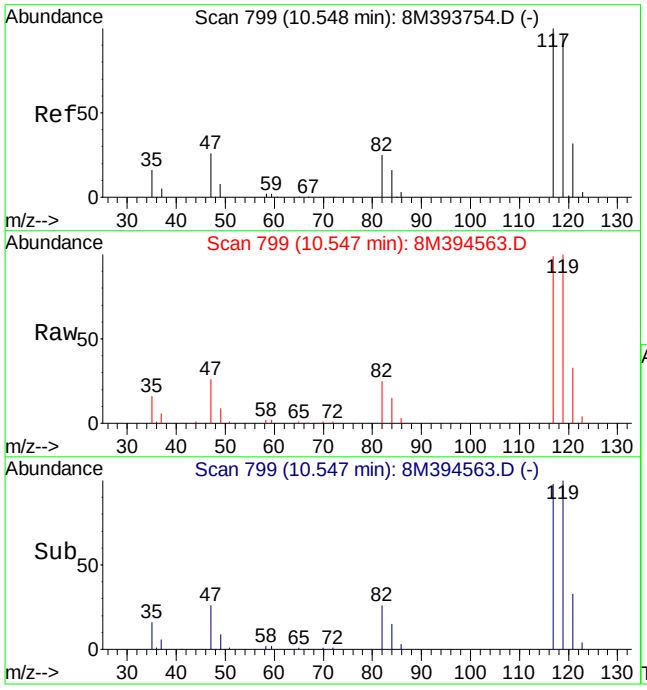

#42
Carbon Tetrachloride
Concen: 21.47 ug/L
RT: 10.55 min Scan# 799
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:117 Resp: 271098

Ion	Ratio	Lower	Upper
117	100		
119	96.4	58.0	135.2
82	24.8	14.8	34.4

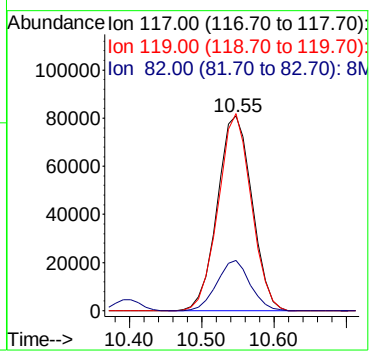

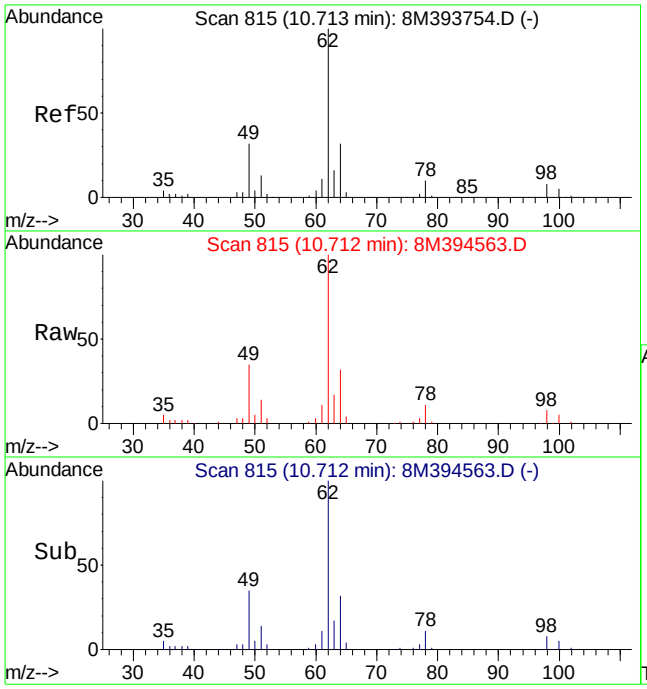

#45
1,2-Dichloroethane
Concen: 19.36 ug/L
RT: 10.71 min Scan# 815
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 62 Resp: 232031

Ion	Ratio	Lower	Upper
62	100		
64	31.9	19.2	44.8
49	43.2	24.2	56.4

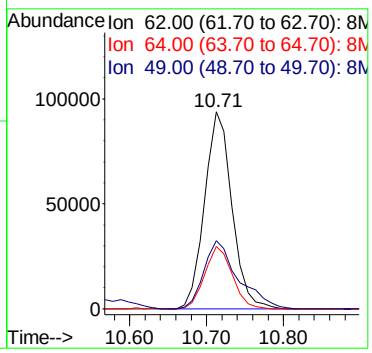

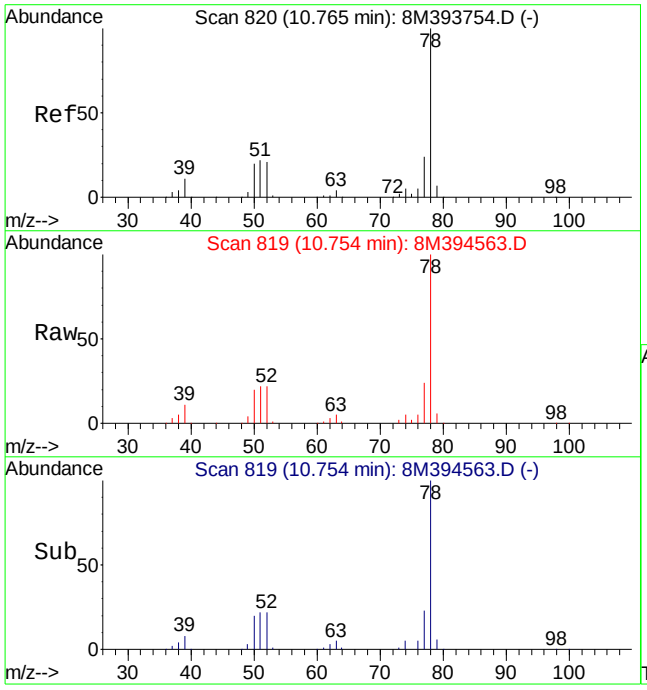

#46
Benzene
Concen: 21.81 ug/L
RT: 10.75 min Scan# 819
Delta R.T. -0.01 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 78 Resp: 815648

Ion	Ratio	Lower	Upper
78	100		
52	21.4	12.7	29.7
51	24.6	14.9	34.7

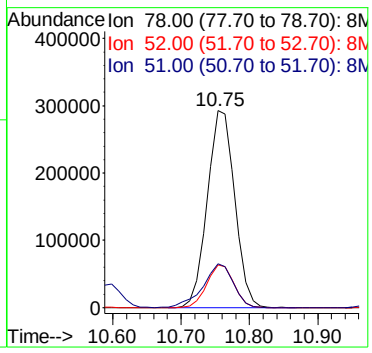

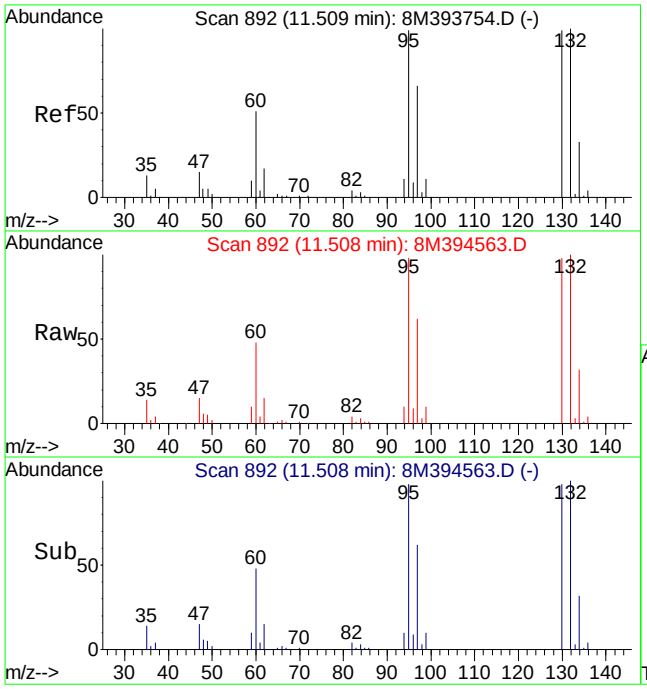

#47
Trichloroethene
Concen: 21.55 ug/L
RT: 11.51 min Scan# 892
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:130 Resp: 216320

Ion	Ratio	Lower	Upper
130	100		
132	101.9	61.0	142.2
95	101.6	61.6	143.6

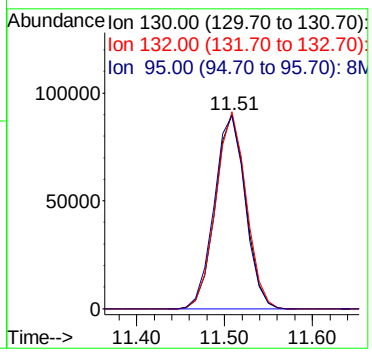

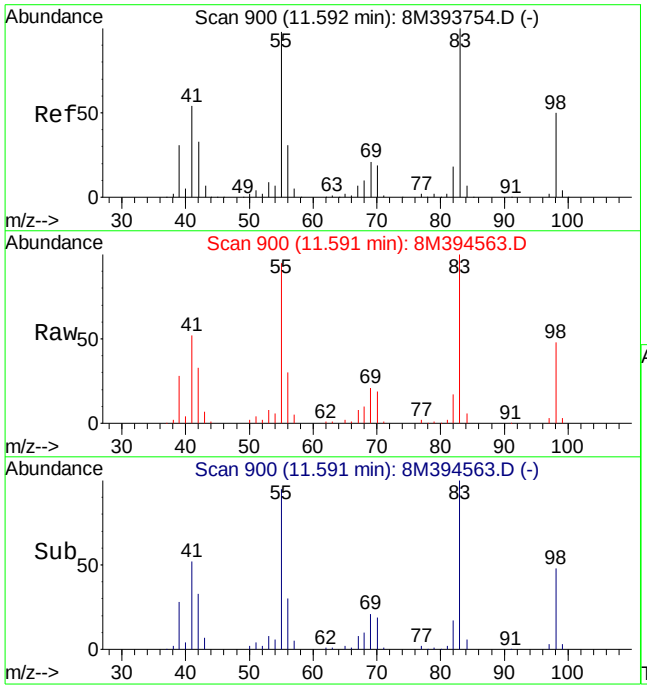

#48
Methylcyclohexane
Concen: 14.57 ug/L
RT: 11.59 min Scan# 900
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 83 Resp: 224664

Ion	Ratio	Lower	Upper
83	100		
55	96.9	58.1	135.5
98	48.2	29.4	68.6

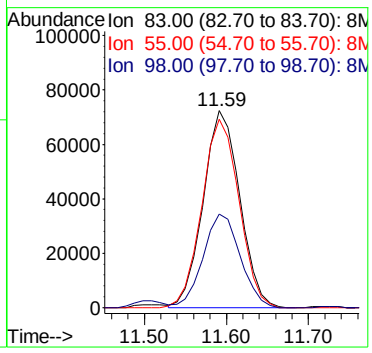

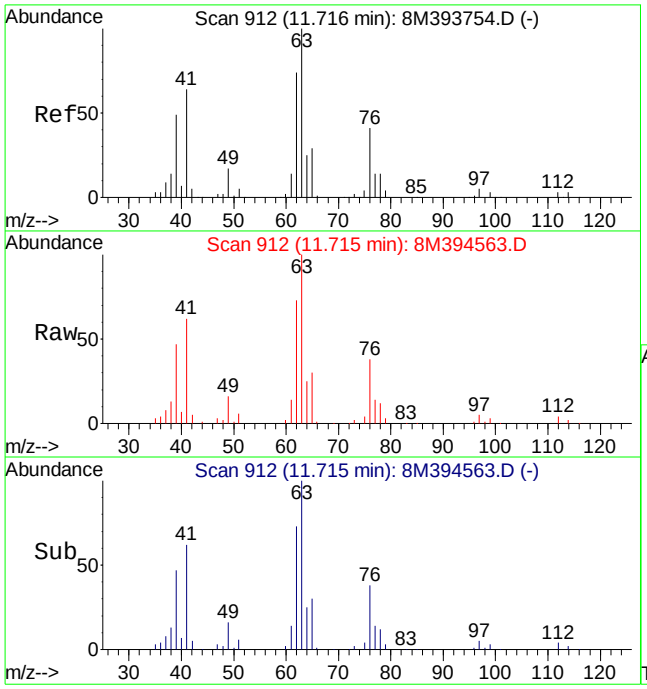

#49
1,2-Dichloropropane
Concen: 21.71 ug/L
RT: 11.72 min Scan# 912
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 63 Resp: 224275

Ion	Ratio	Lower	Upper
63	100		
76	38.4	24.7	57.7

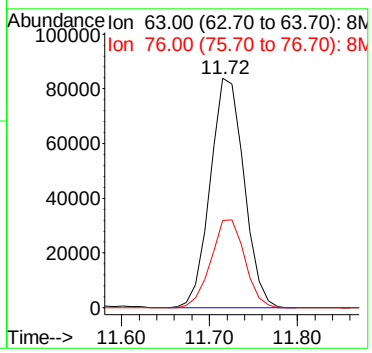

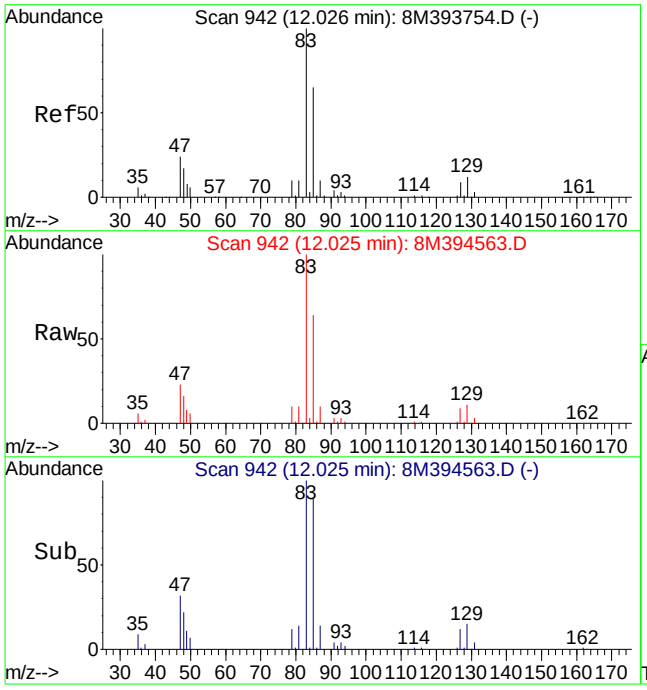

#50
Bromodichloromethane
Concen: 21.00 ug/L
RT: 12.03 min Scan# 942
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 83 Resp: 242267

Ion	Ratio	Lower	Upper
83	100		
85	65.0	38.6	90.2
129	11.6	6.9	16.1

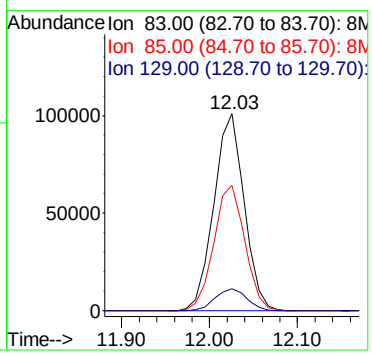

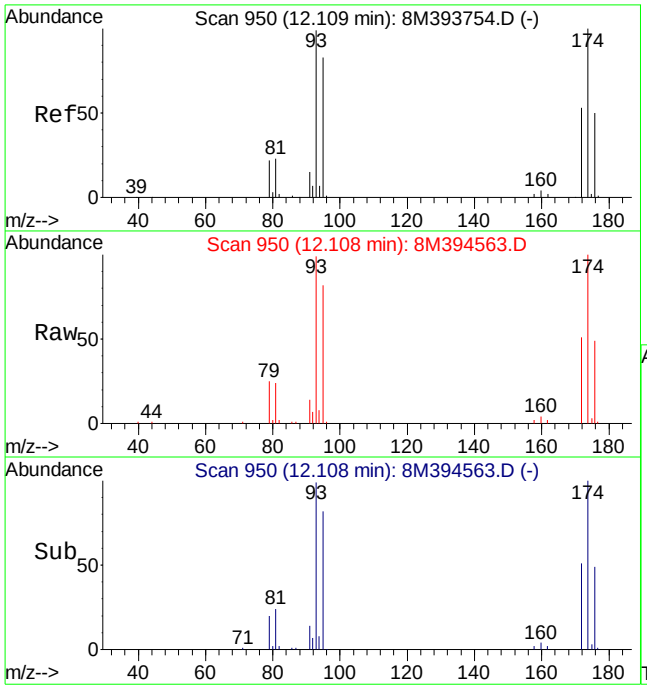

#52
Dibromomethane
Concen: 19.64 ug/L
RT: 12.11 min Scan# 950
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 93 Resp: 89451

Ion	Ratio	Lower	Upper
93	100		
95	84.4	50.3	117.3
174	109.9	62.6	146.0

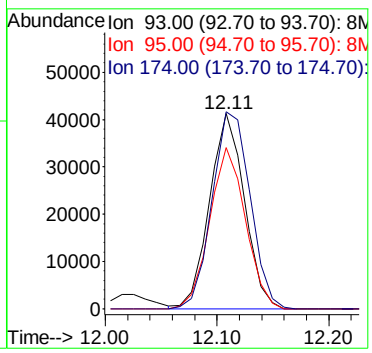

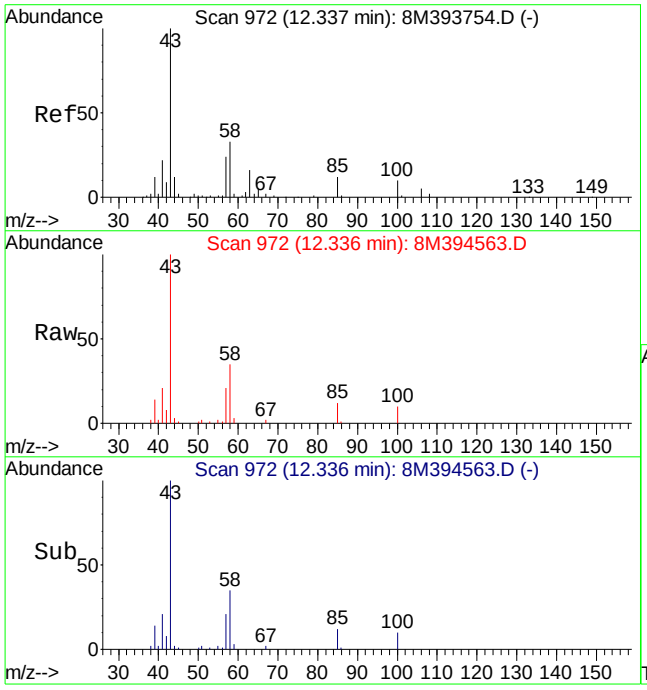

#54
4-Methyl-2-Pentanone
Concen: 16.35 ug/L
RT: 12.34 min Scan# 972
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 58 Resp: 34290

Ion	Ratio	Lower	Upper
58	100		
85	32.8	23.0	53.6
100	29.6	18.7	43.7

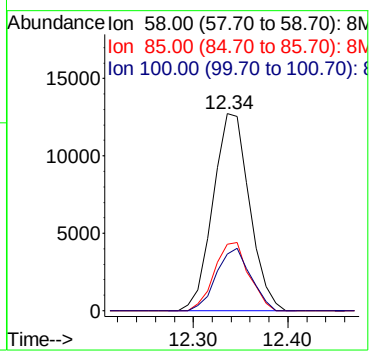

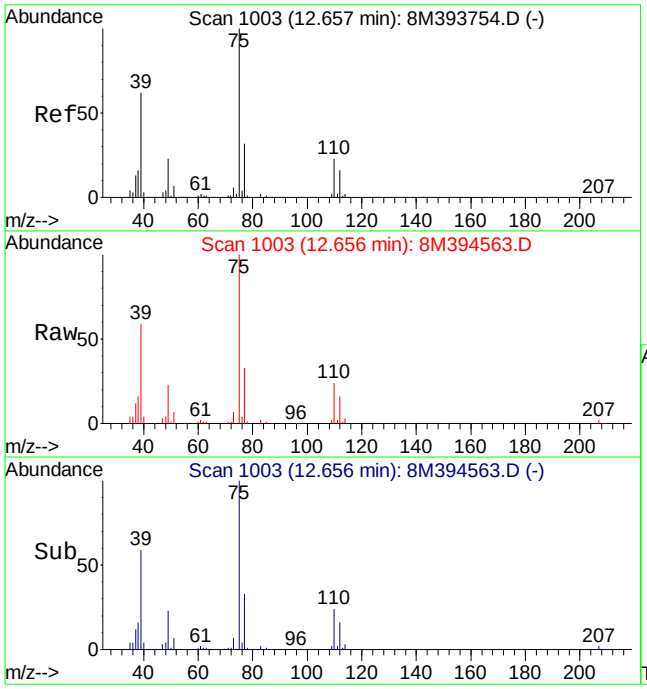

#55
cis-1,3-Dichloropropene
Concen: 21.29 ug/L
RT: 12.66 min Scan# 1003
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 75 Resp: 302606

Ion	Ratio	Lower	Upper
75	100		
77	32.1	19.2	44.8

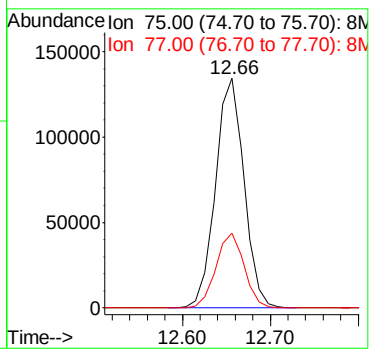

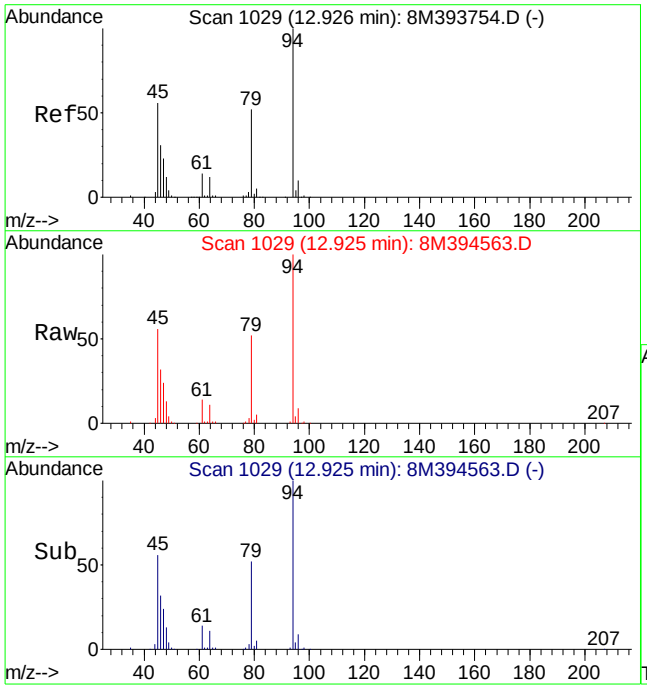

#56
Dimethyl Disulfide
Concen: 20.05 ug/L
RT: 12.92 min Scan# 1029
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 94 Resp: 298303

Ion	Ratio	Lower	Upper
94	100		
79	48.4	30.4	70.8

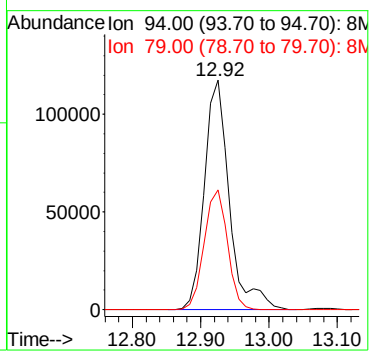

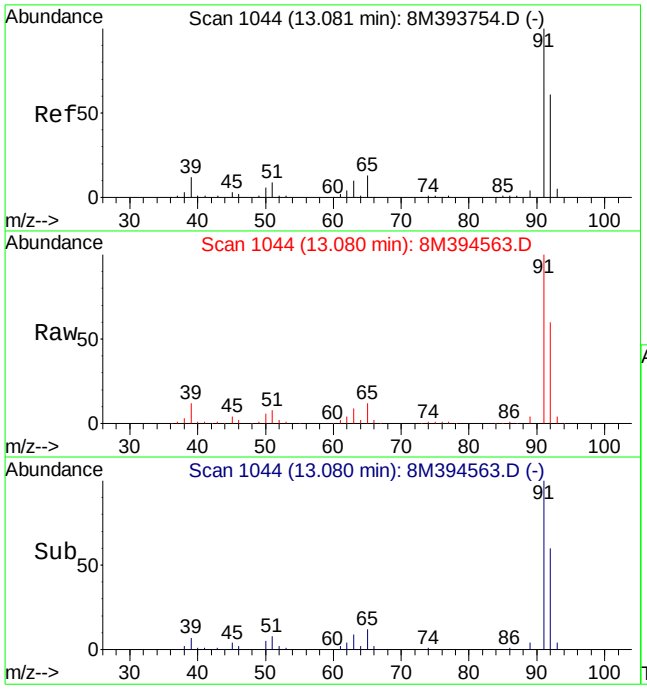

#59
Toluene
Concen: 21.60 ug/L
RT: 13.08 min Scan# 1044
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 91 Resp: 894111

Ion	Ratio	Lower	Upper
91	100		
92	59.0	36.4	84.8

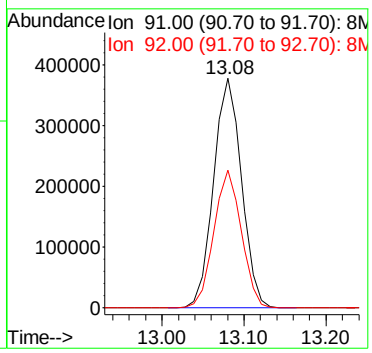

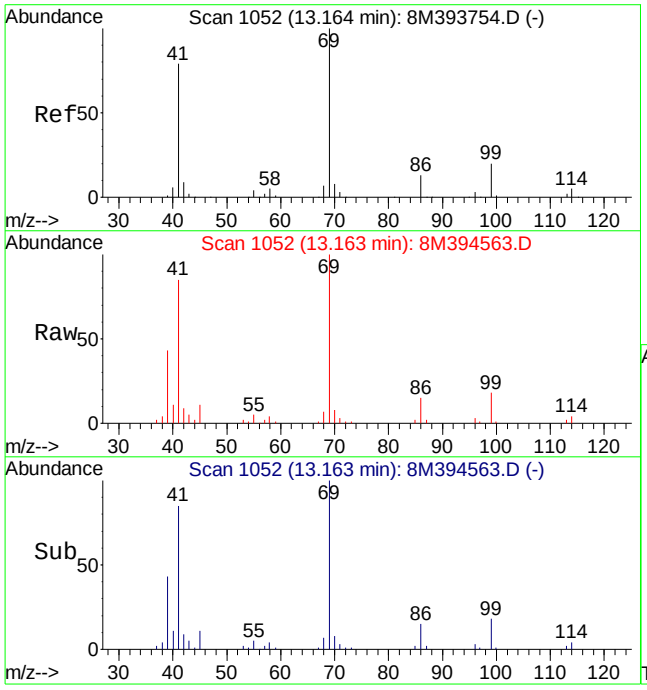

#60
Ethyl Methacrylate
Concen: 18.39 ug/L
RT: 13.16 min Scan# 1052
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 69 Resp: 148857

Ion	Ratio	Lower	Upper
69	100		
41	85.0	50.8	118.6

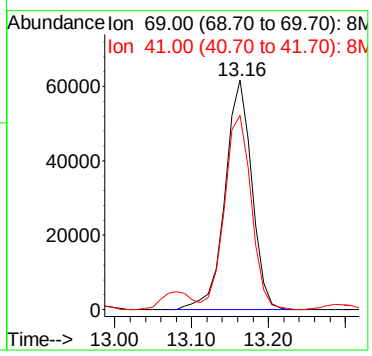

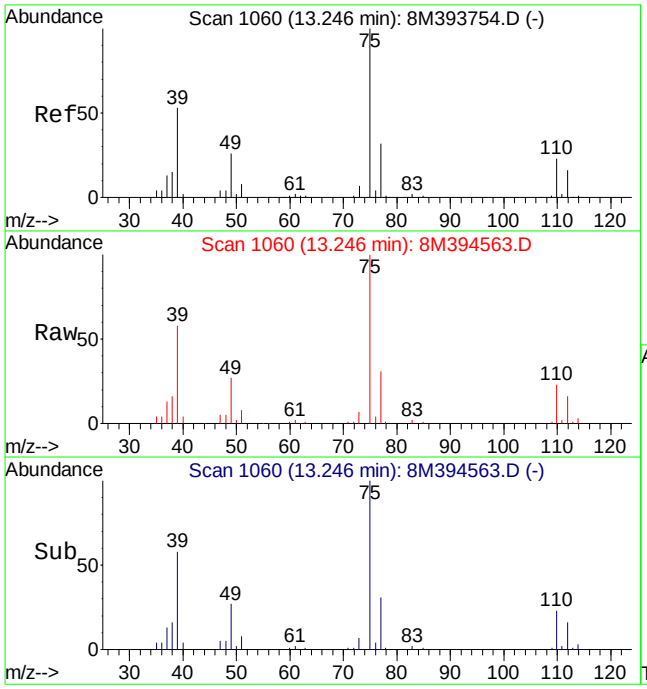

#62
trans-1,3-Dichloropropene
Concen: 19.30 ug/L
RT: 13.25 min Scan# 1060
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 75 Resp: 226546

Ion	Ratio	Lower	Upper
75	100		
77	32.1	19.2	44.8

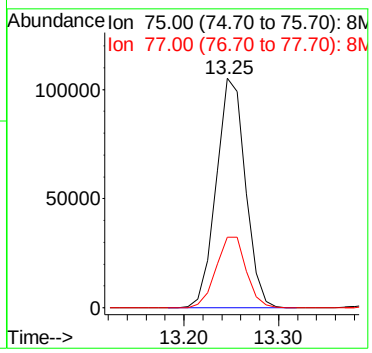

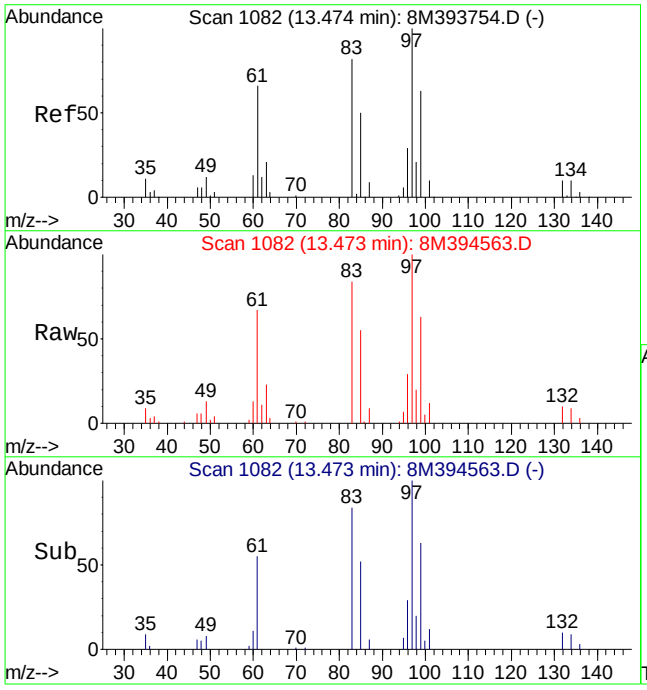

#63
1,1,2-Trichloroethane
Concen: 20.01 ug/L
RT: 13.47 min Scan# 1082
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 97 Resp: 121393

Ion	Ratio	Lower	Upper
97	100		
83	86.0	50.3	117.3

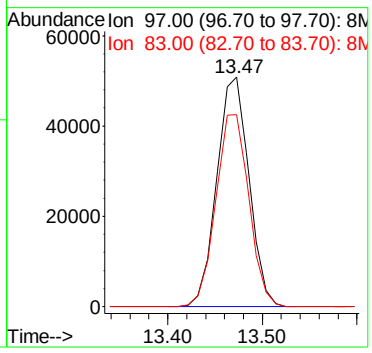

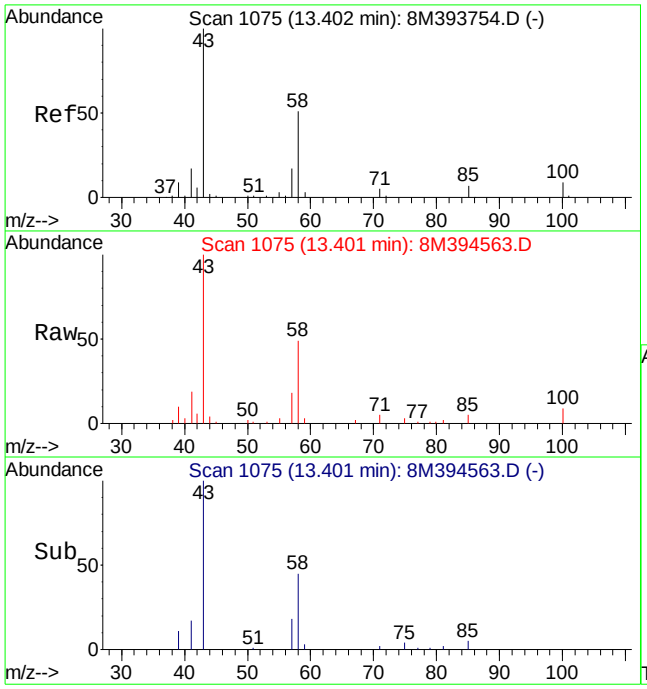

#64
2-Hexanone
Concen: 16.08 ug/L
RT: 13.40 min Scan# 1075
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 58 Resp: 30653

Ion	Ratio	Lower	Upper
58	100		
43	205.0	115.9	270.5
85	12.0	8.2	19.2

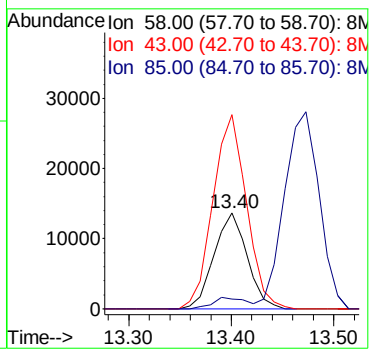

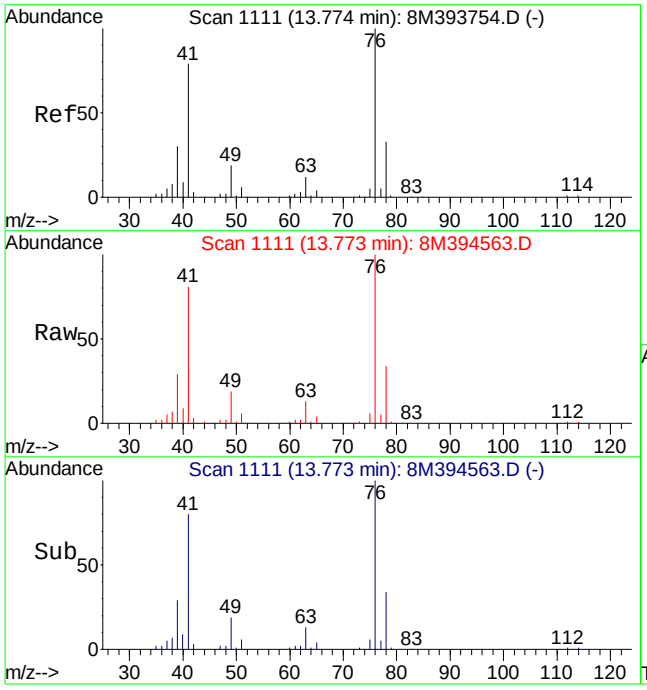

#65
1,3-Dichloropropane
Concen: 19.35 ug/L
RT: 13.77 min Scan# 1111
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 76 Resp: 216116

Ion	Ratio	Lower	Upper
76	100		
41	78.0	47.3	110.3

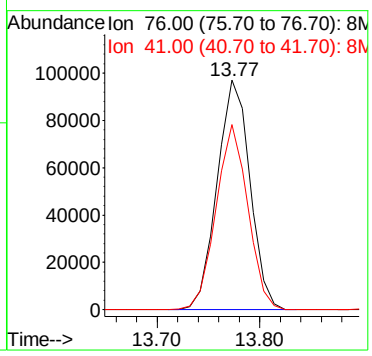

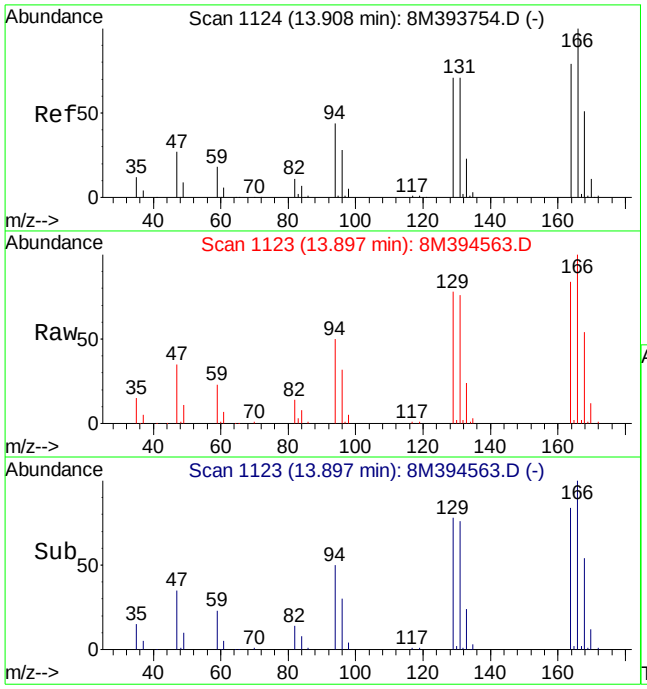

#66
Tetrachloroethene
Concen: 20.45 ug/L
RT: 13.90 min Scan# 1123
Delta R.T. -0.01 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:164 Resp: 169929

Ion	Ratio	Lower	Upper
164	100		
129	90.0	55.6	129.8
94	57.3	35.8	83.6

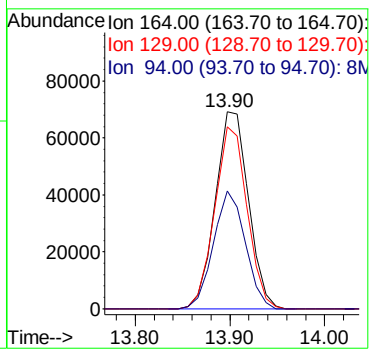

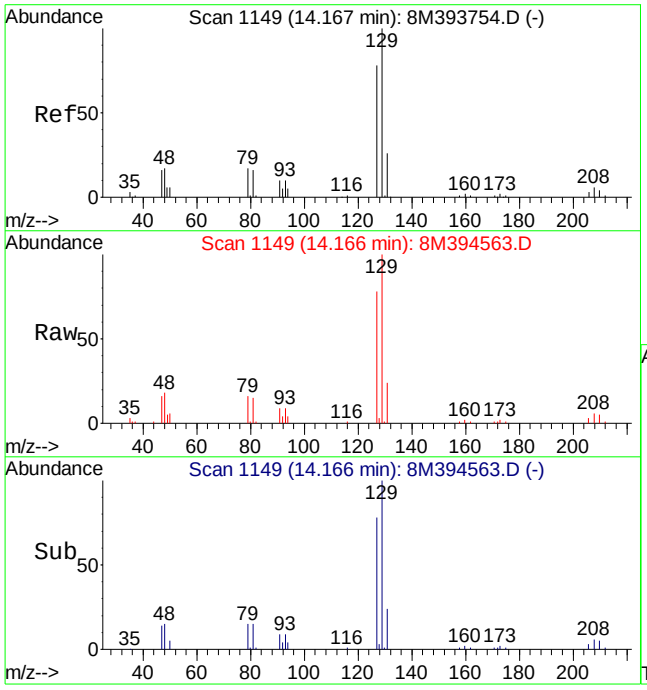

#67
Dibromochloromethane
Concen: 22.18 ug/L
RT: 14.17 min Scan# 1149
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:129 Resp: 153332

Ion	Ratio	Lower	Upper
129	100		
127	77.2	46.9	109.5

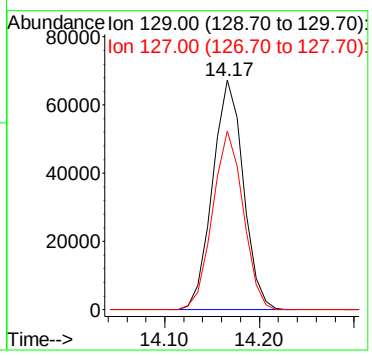

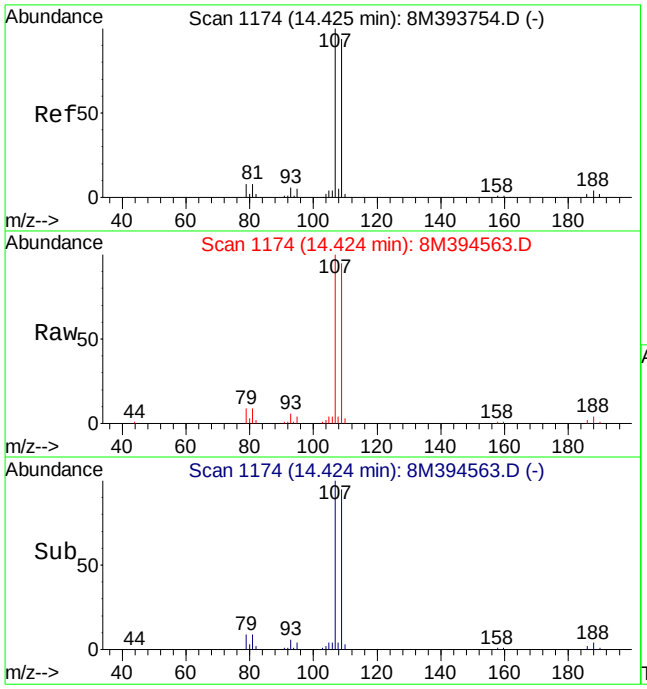

#68
1,2-Dibromoethane
Concen: 19.63 ug/L
RT: 14.42 min Scan# 1174
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:107 Resp: 118802

Ion	Ratio	Lower	Upper
107	100		
109	94.0	56.5	131.7

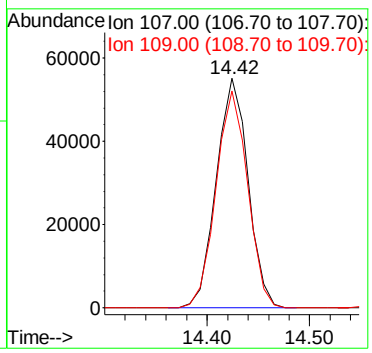

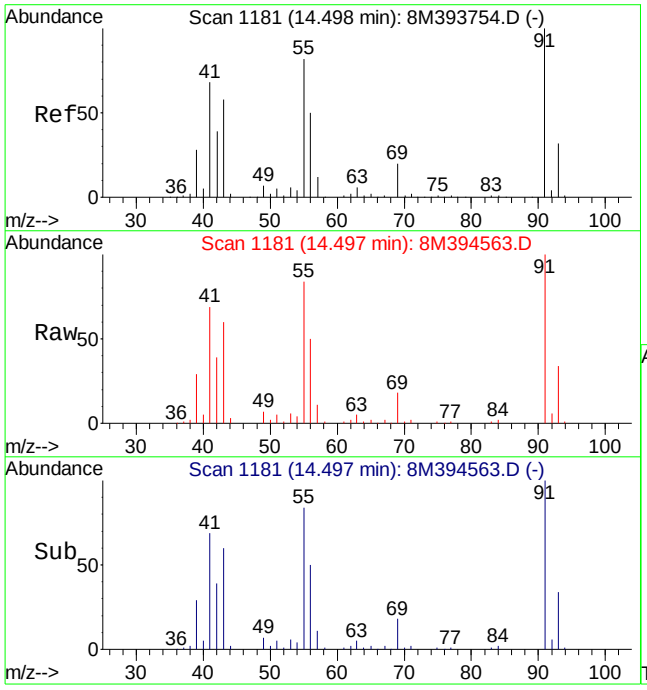

#69
1-Chlorohexane
Concen: 18.46 ug/L
RT: 14.50 min Scan# 1181
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 91 Resp: 259751

Ion	Ratio	Lower	Upper
91	100		
55	81.5	48.5	113.1

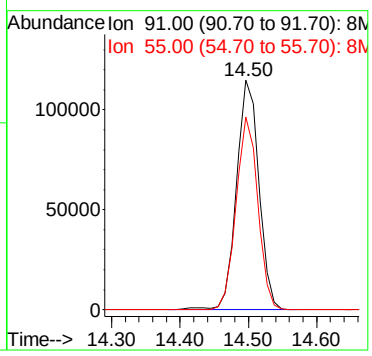

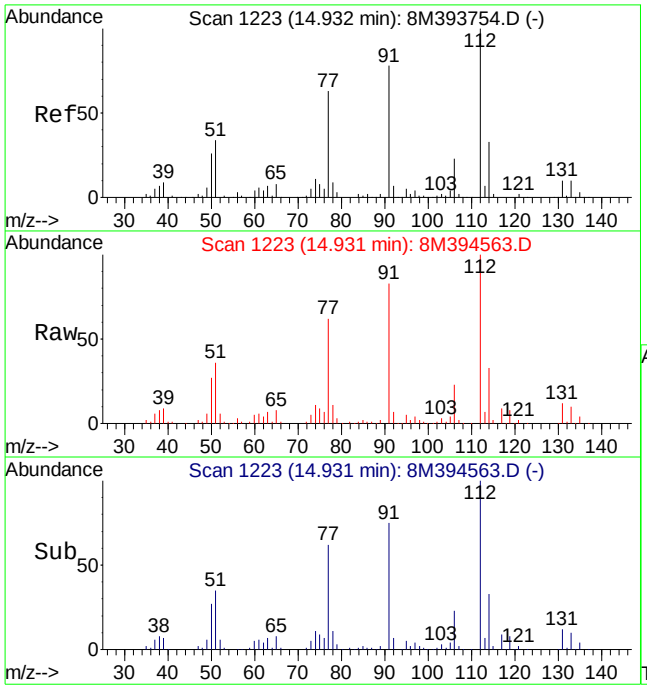

#70
Chlorobenzene
Concen: 19.58 ug/L
RT: 14.93 min Scan# 1223
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:112 Resp: 539434

Ion	Ratio	Lower	Upper
112	100		
77	74.7	44.8	104.4

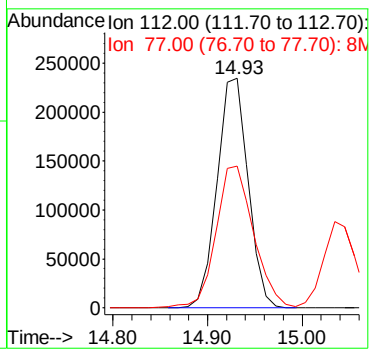

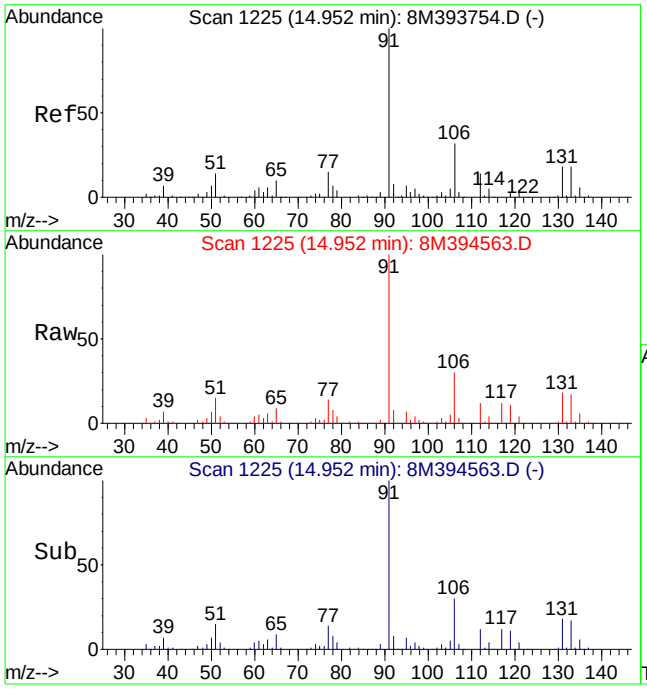

#71
1,1,1,2-Tetrachloroethane
Concen: 23.09 ug/L
RT: 14.95 min Scan# 1225
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:131 Resp: 203221

Ion	Ratio	Lower	Upper
131	100		
133	97.5	58.7	136.9

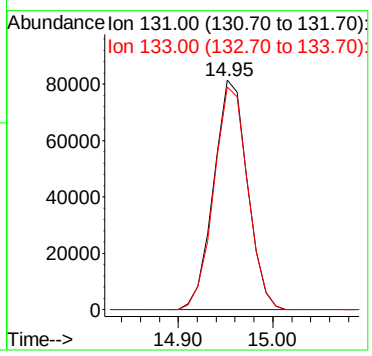

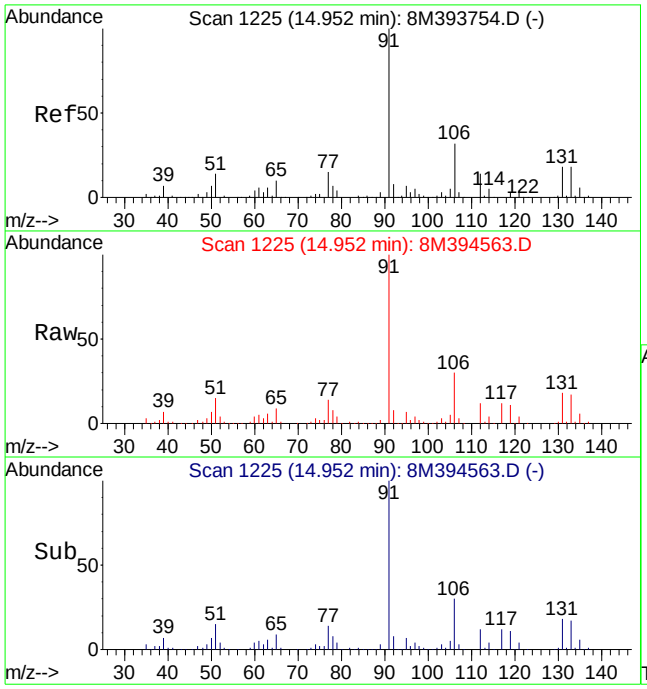

#72
Ethylbenzene
Concen: 20.50 ug/L
RT: 14.95 min Scan# 1225
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:106 Resp: 309851

Ion	Ratio	Lower	Upper
106	100		
91	331.1	192.1	448.1

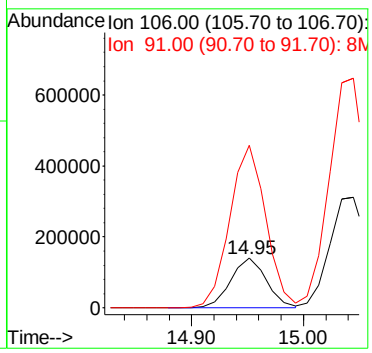

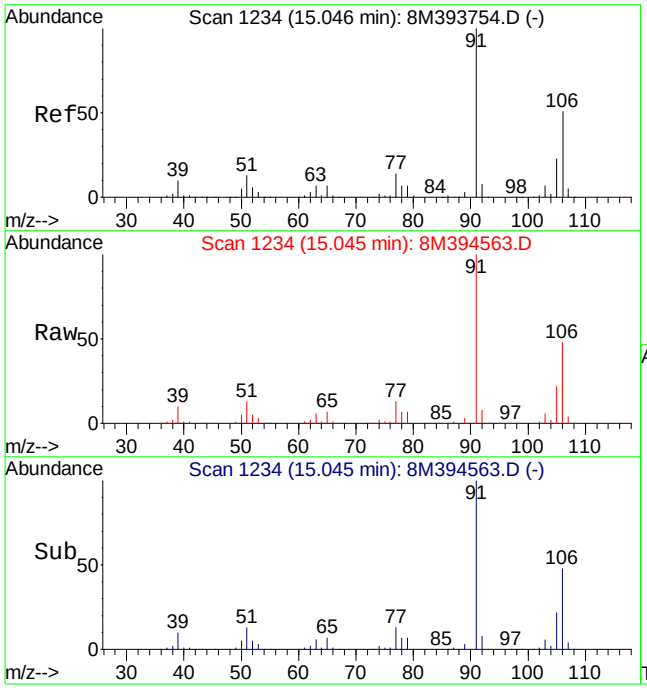

#73
m-,p-Xylene
Concen: 41.07 ug/L
RT: 15.04 min Scan# 1234
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:106 Resp: 733175

Ion	Ratio	Lower	Upper
106	100		
91	207.1	122.4	285.6

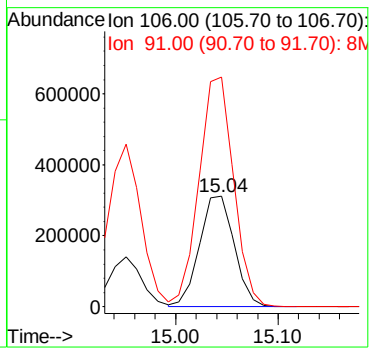

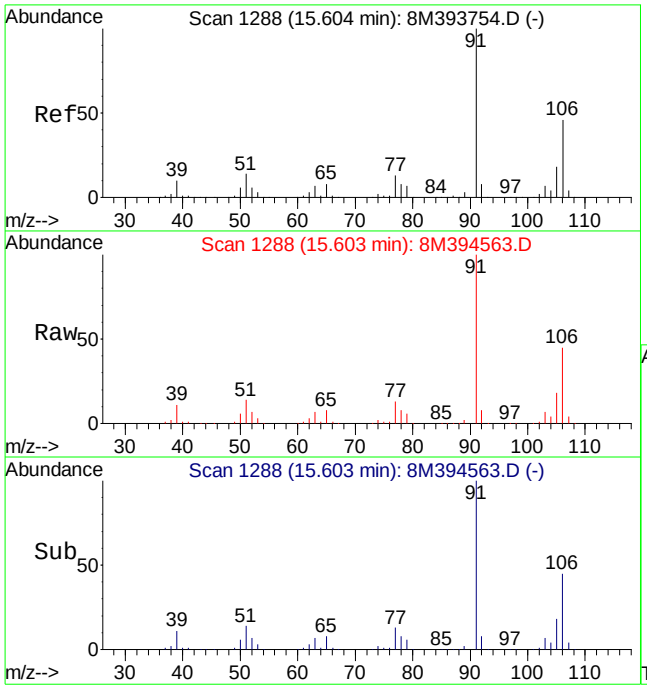

#74
o-Xylene
Concen: 18.97 ug/L
RT: 15.60 min Scan# 1288
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:106 Resp: 342860

Ion	Ratio	Lower	Upper
106	100		
91	220.5	130.1	303.7

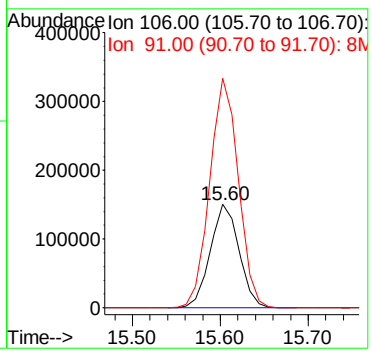

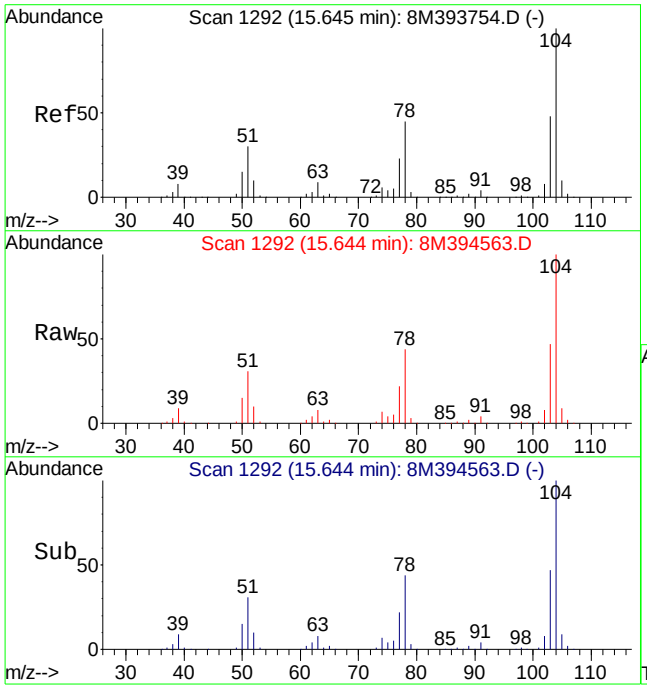

#75
Styrene
Concen: 20.86 ug/L
RT: 15.64 min Scan# 1292
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:104 Resp: 617016

Ion	Ratio	Lower	Upper
104	100		
78	50.6	32.2	75.0

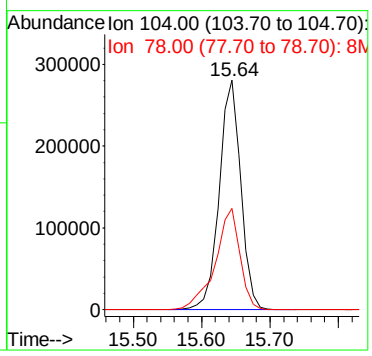

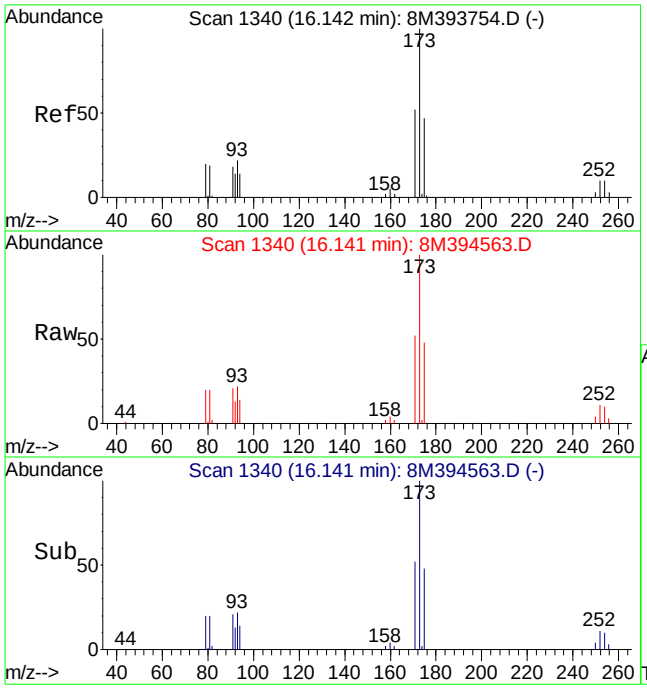

#76
Bromoform
Concen: 20.02 ug/L
RT: 16.14 min Scan# 1340
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:173 Resp: 94680

Ion	Ratio	Lower	Upper
173	100		
171	52.3	30.9	72.1
175	48.0	28.8	67.2

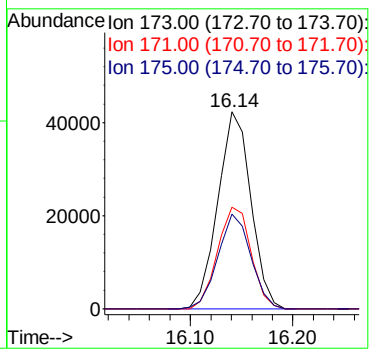

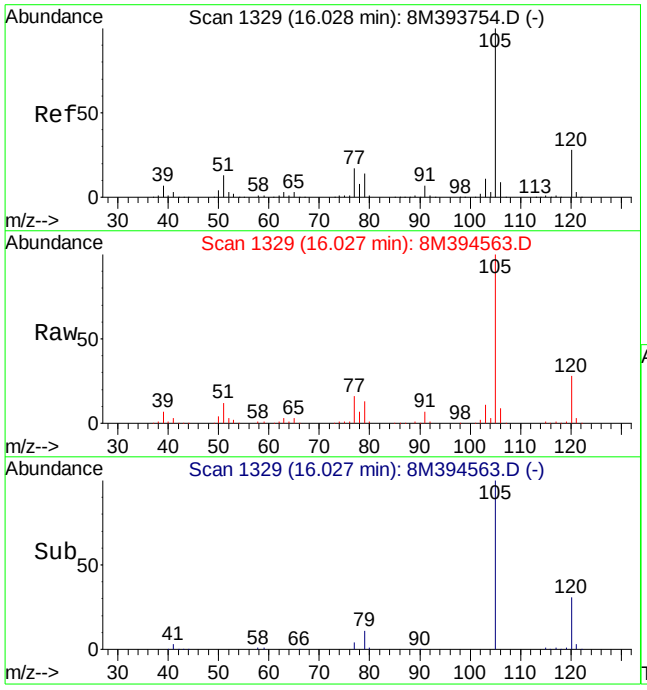

#77
Isopropylbenzene
Concen: 19.34 ug/L
RT: 16.03 min Scan# 1329
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:105 Resp: 859731

Ion	Ratio	Lower	Upper
105	100		
120	27.6	17.0	39.6

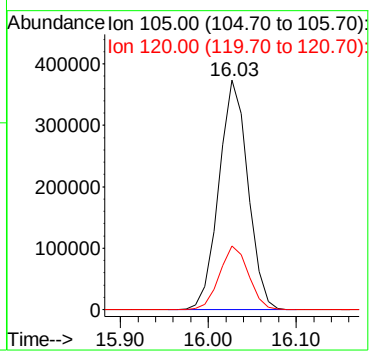

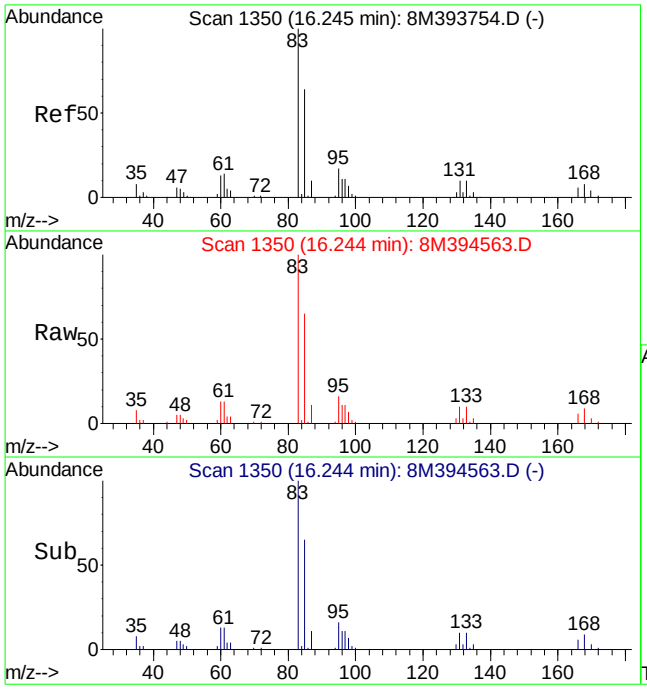

#79
1,1,2,2-Tetrachloroethane
Concen: 19.44 ug/L
RT: 16.24 min Scan# 1350
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 83 Resp: 125756

Ion	Ratio	Lower	Upper
83	100		
85	64.6	38.6	90.2
131	10.2	6.2	14.4

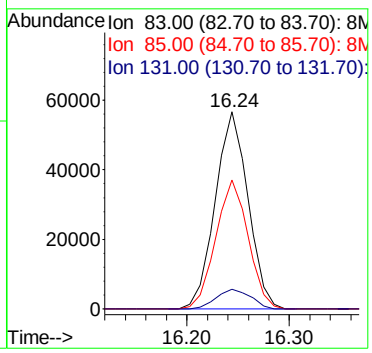

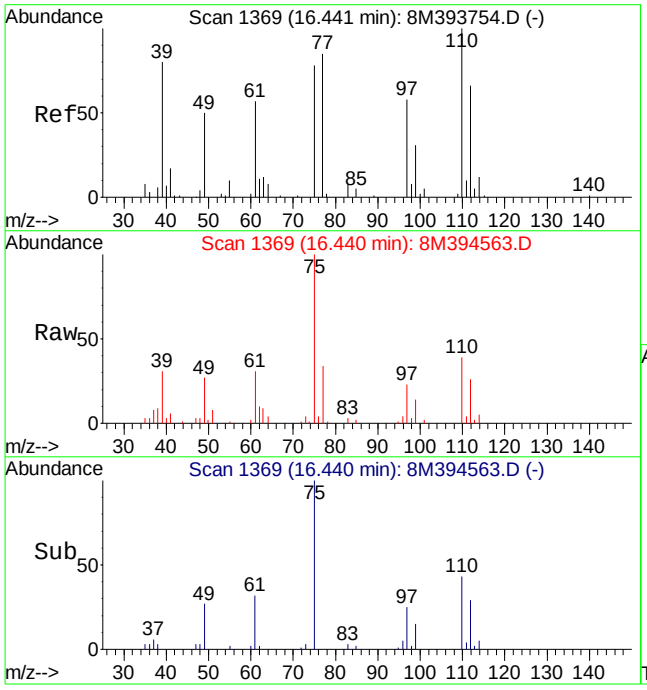

#81
1,2,3-Trichloropropane
Concen: 18.45 ug/L
RT: 16.44 min Scan# 1369
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:110 Resp: 34495

Ion	Ratio	Lower	Upper
110	100		
75	318.7	214.5	500.5
97	56.8	35.2	82.2

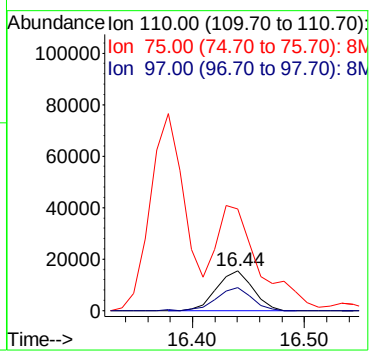

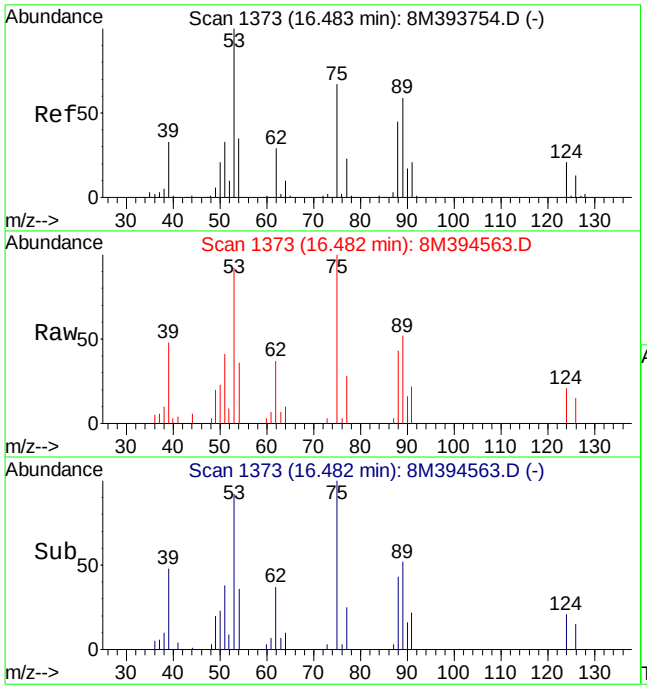

#82
trans-1,4-Dichloro-2-Butene
Concen: 9.42 ug/L
RT: 16.48 min Scan# 1373
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 53 Resp: 21374

Ion	Ratio	Lower	Upper
53	100		
75	483.2	169.4	395.4#
89	55.2	36.4	85.0

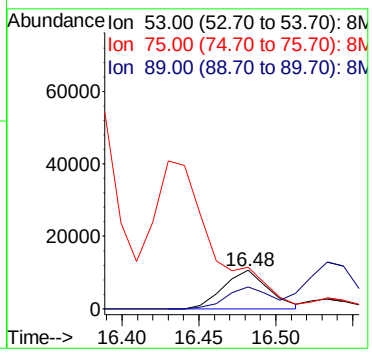

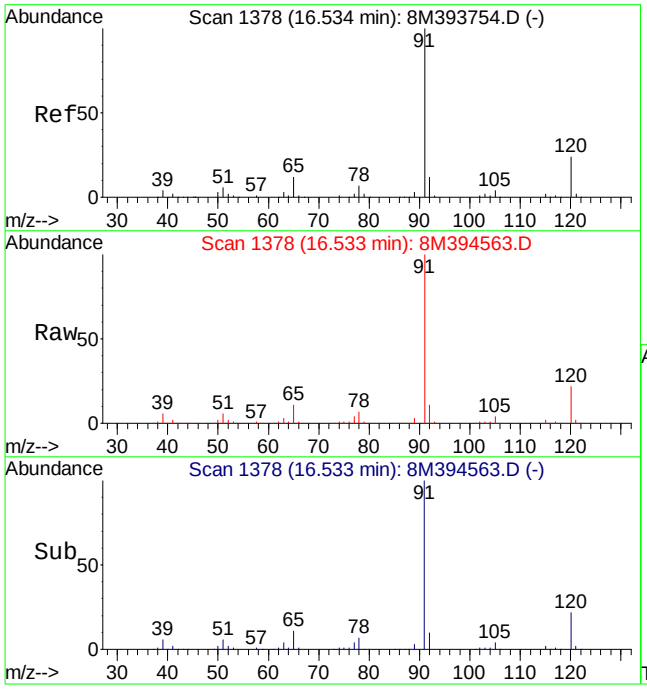

#83
n-Propylbenzene
Concen: 19.21 ug/L
RT: 16.53 min Scan# 1378
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 91 Resp: 1058824

Ion	Ratio	Lower	Upper
91	100		
120	22.3	14.1	32.9

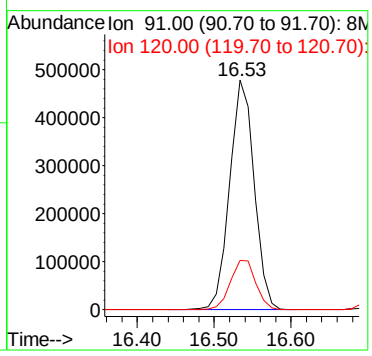

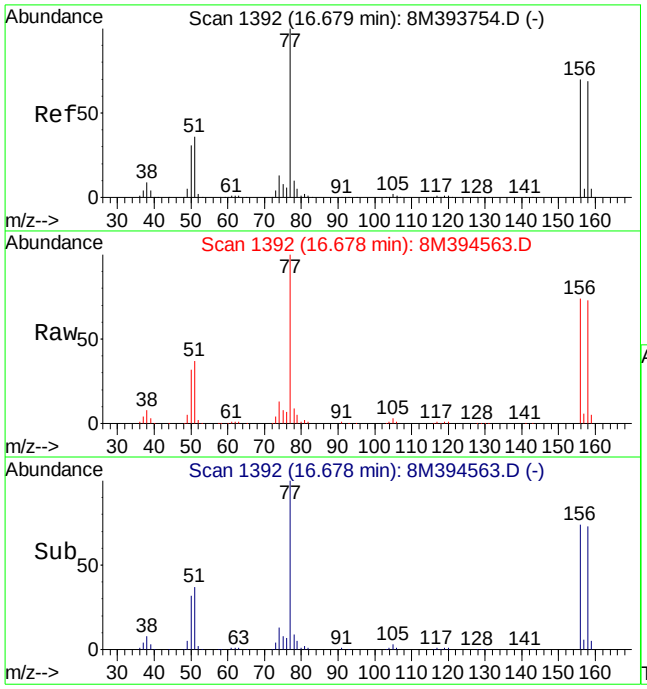

#84
Bromobenzene
Concen: 20.87 ug/L
RT: 16.68 min Scan# 1392
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:156 Resp: 240527

Ion	Ratio	Lower	Upper
156	100		
77	159.4	101.2	236.0
158	96.3	58.6	136.8

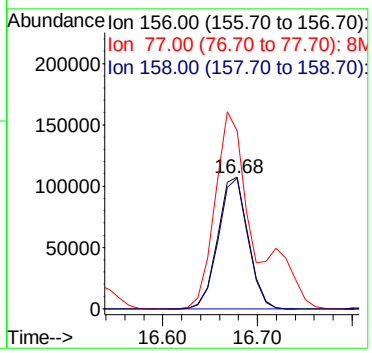

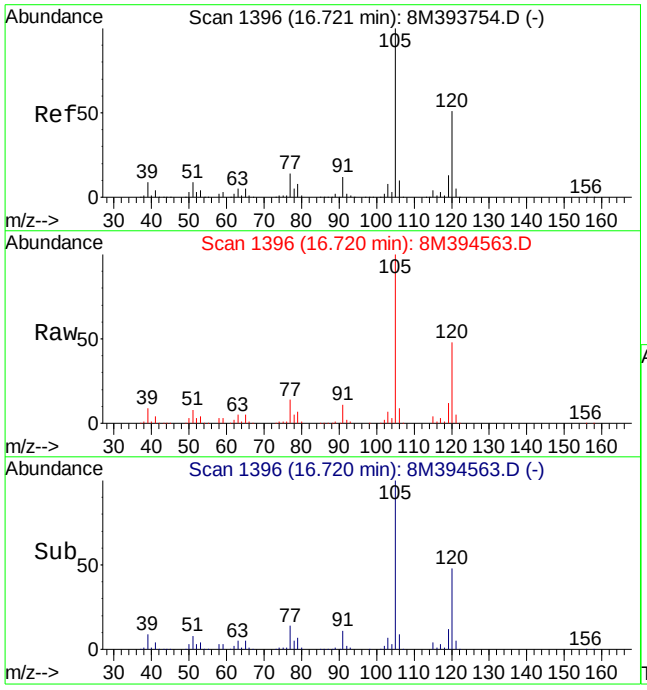

#85
1,3,5-Trimethylbenzene
Concen: 21.01 ug/L
RT: 16.72 min Scan# 1396
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:105 Resp: 817324

Ion	Ratio	Lower	Upper
105	100		
120	49.7	30.5	71.1

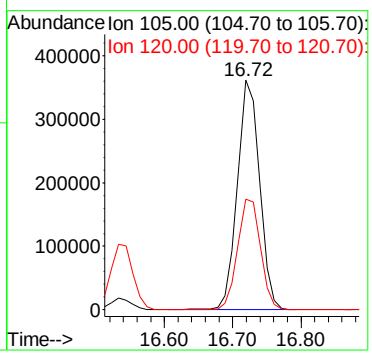

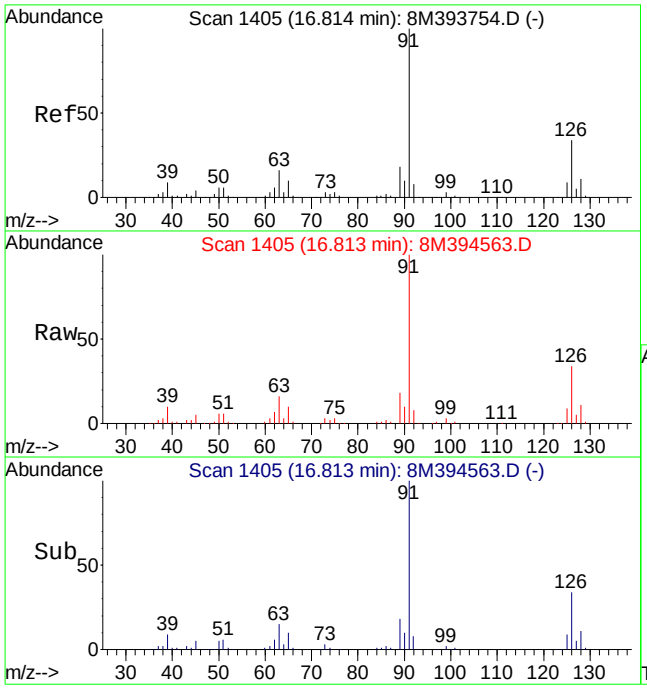

#86
2-Chlorotoluene
Concen: 18.81 ug/L
RT: 16.81 min Scan# 1405
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 91 Resp: 673519

Ion	Ratio	Lower	Upper
91	100		
126	33.8	19.7	45.9

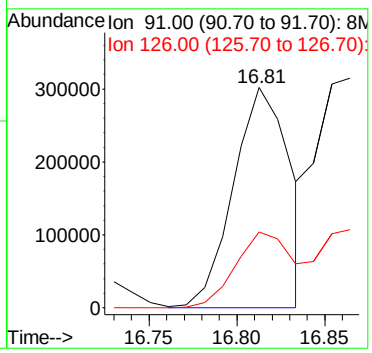

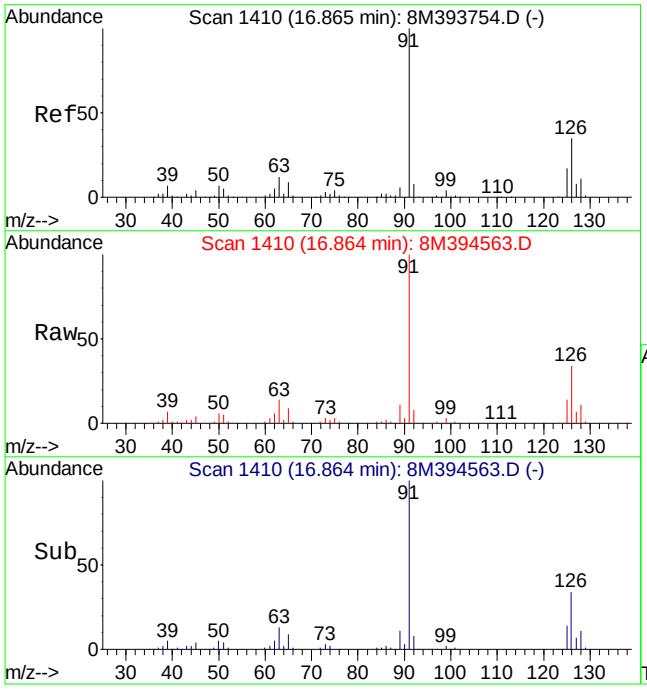

#87
4-Chlorotoluene
Concen: 20.25 ug/L
RT: 16.86 min Scan# 1410
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 91 Resp: 665064

Ion	Ratio	Lower	Upper
91	100		
126	34.3	20.4	47.6

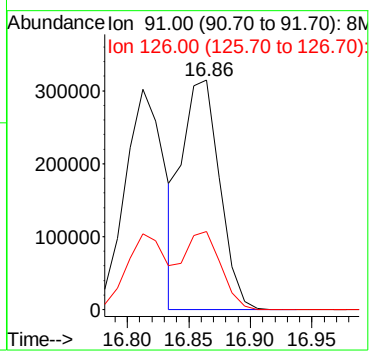

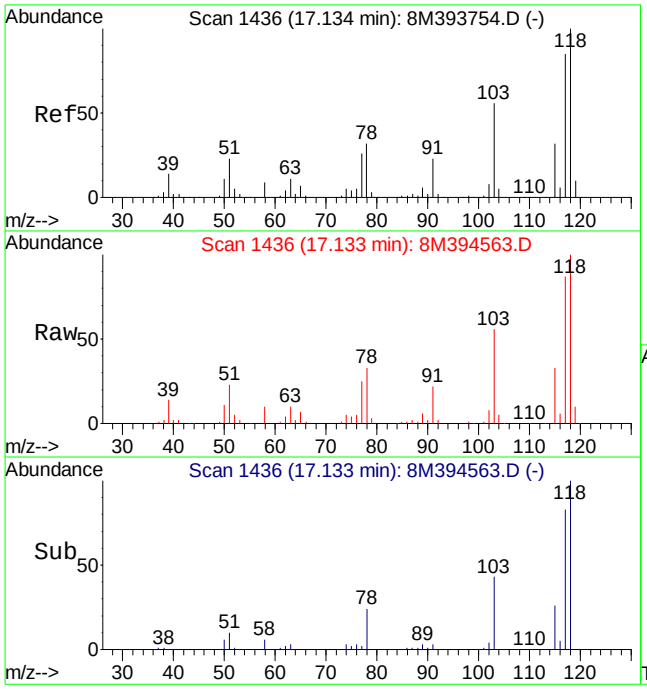

#88
a-Methylstyrene
Concen: 18.96 ug/L
RT: 17.13 min Scan# 1436
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:118 Resp: 412430

Ion	Ratio	Lower	Upper
118	100		
103	57.0	34.6	80.8

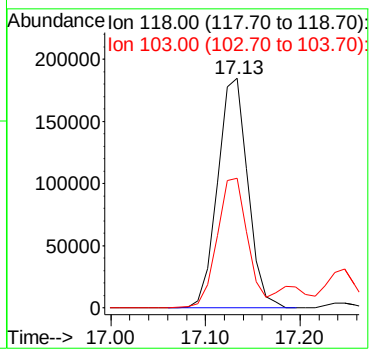

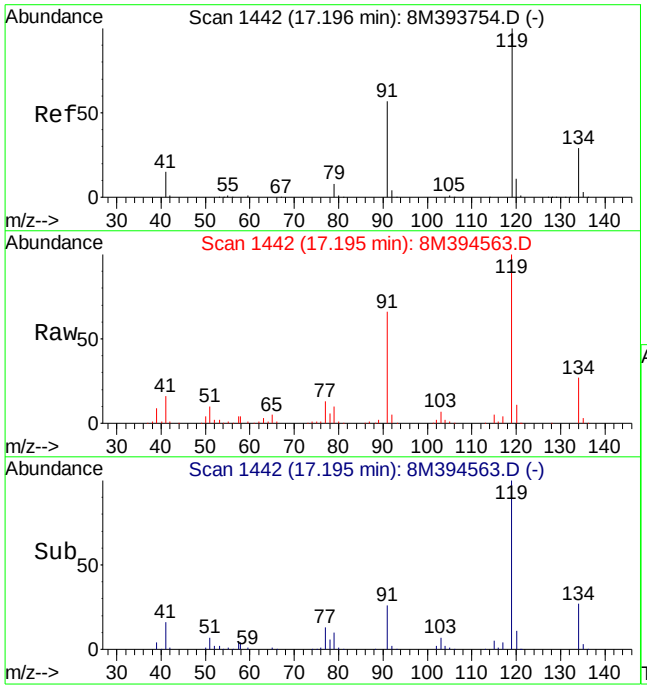

#89
tert-Butylbenzene
Concen: 18.77 ug/L
RT: 17.20 min Scan# 1442
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:134 Resp: 159675

Ion	Ratio	Lower	Upper
134	100		
119	469.5	275.2	642.2
91	316.6	190.3	443.9

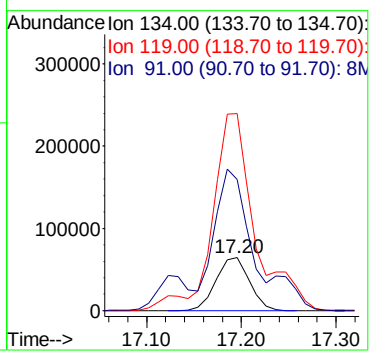

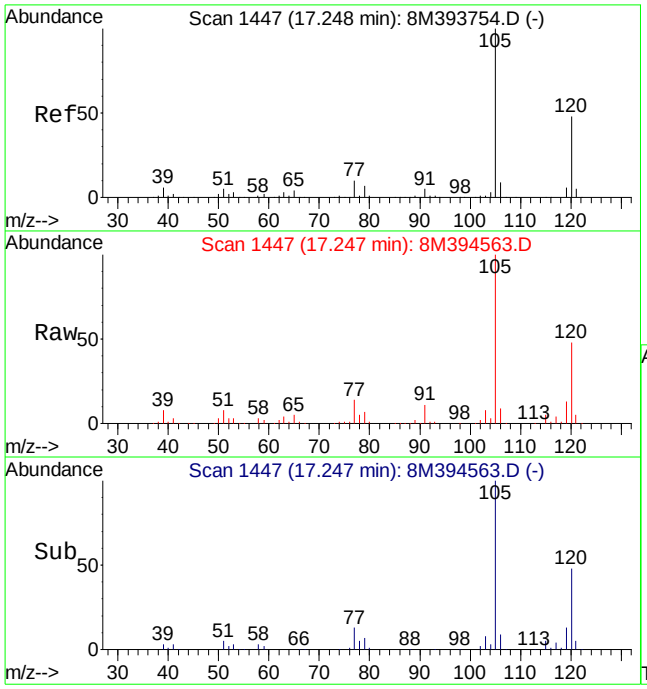

#90
1,2,4-Trimethylbenzene
Concen: 21.36 ug/L
RT: 17.25 min Scan# 1447
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:105 Resp: 842269

Ion	Ratio	Lower	Upper
105	100		
120	54.1	33.8	78.8

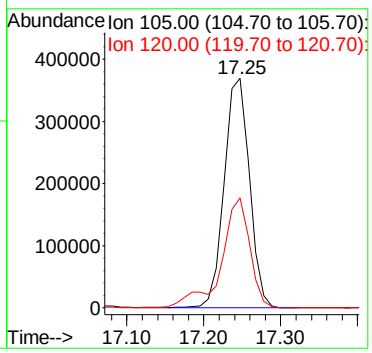

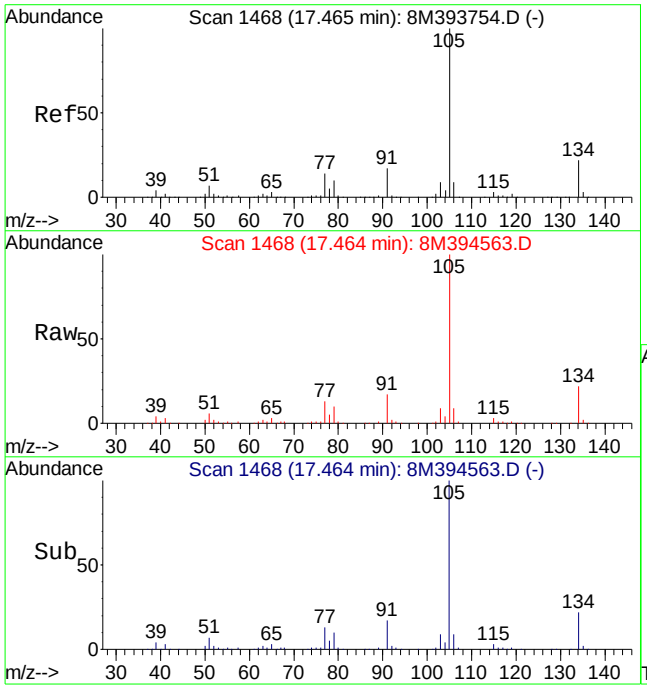

#91
sec-Butylbenzene
Concen: 18.67 ug/L
RT: 17.46 min Scan# 1468
Delta R.T. 0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:105 Resp: 872470

Ion	Ratio	Lower	Upper
105	100		
134	21.1	13.1	30.7

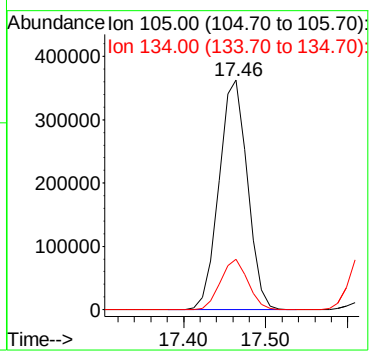

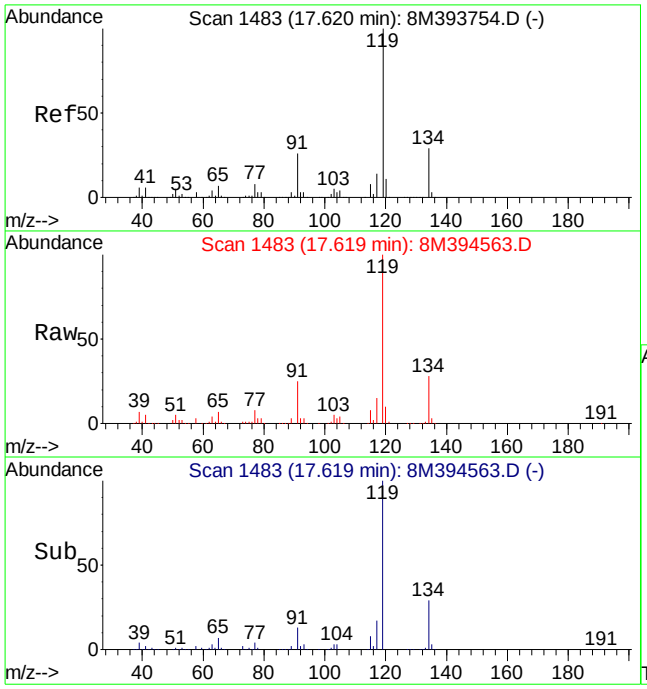

#92
p-Isopropyltoluene
Concen: 18.65 ug/L
RT: 17.62 min Scan# 1483
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:119 Resp: 747396

Ion	Ratio	Lower	Upper
119	100		
134	28.1	17.2	40.0

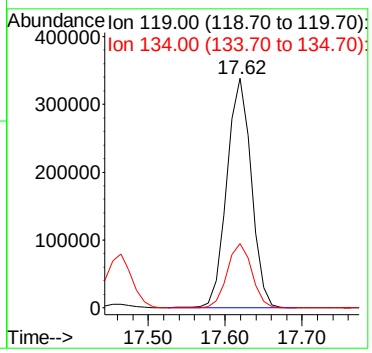

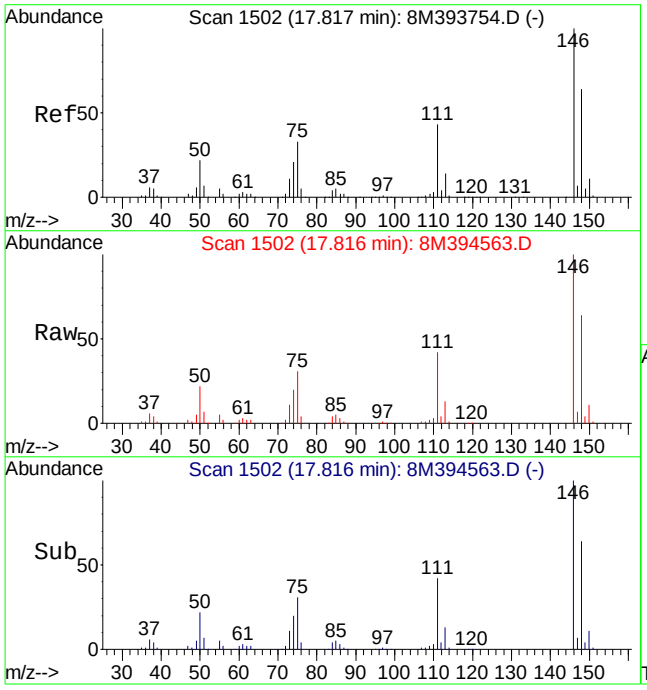

#93
1,3-Dichlorobenzene
Concen: 19.32 ug/L
RT: 17.82 min Scan# 1502
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:146 Resp: 422572

Ion	Ratio	Lower	Upper
146	100		
111	40.8	25.6	59.6

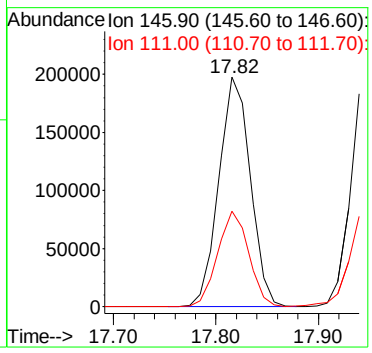

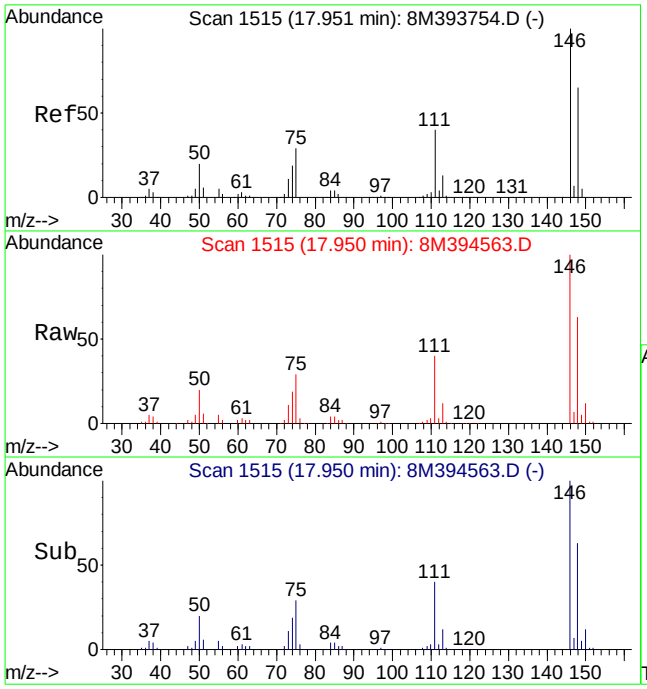

#94
1,4-Dichlorobenzene
Concen: 20.76 ug/L
RT: 17.95 min Scan# 1515
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:146 Resp: 448113

Ion	Ratio	Lower	Upper
146	100		
111	40.7	25.0	58.2

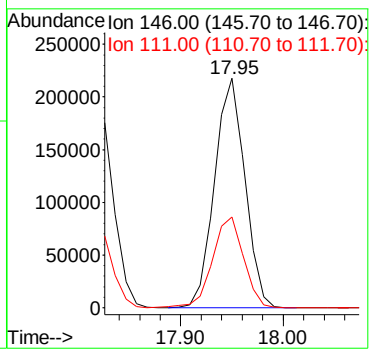

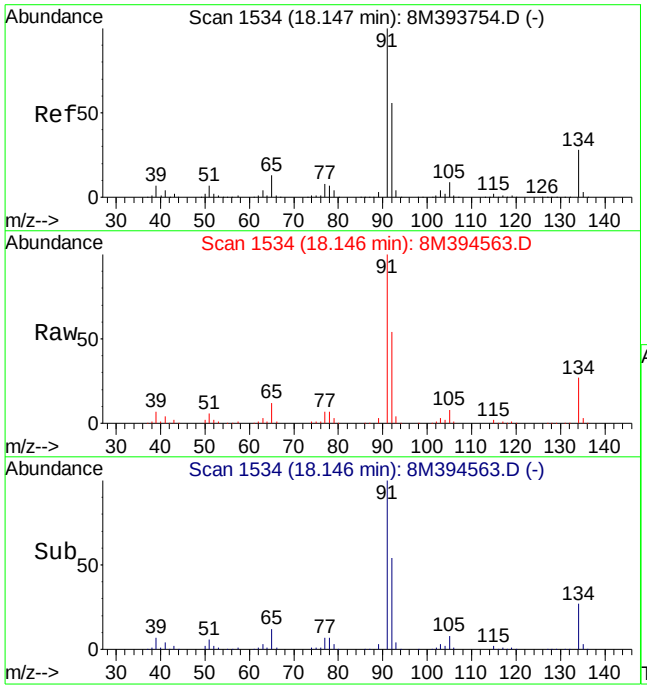

#95
n-Butylbenzene
Concen: 19.93 ug/L
RT: 18.15 min Scan# 1534
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 91 Resp: 742572

Ion	Ratio	Lower	Upper
91	100		
134	26.6	16.6	38.6
105	8.6	5.2	12.0

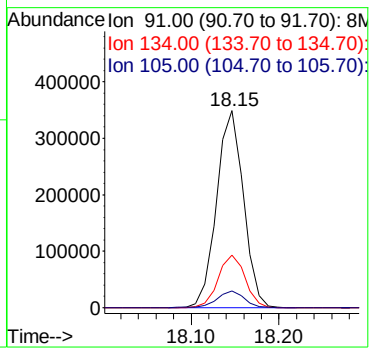

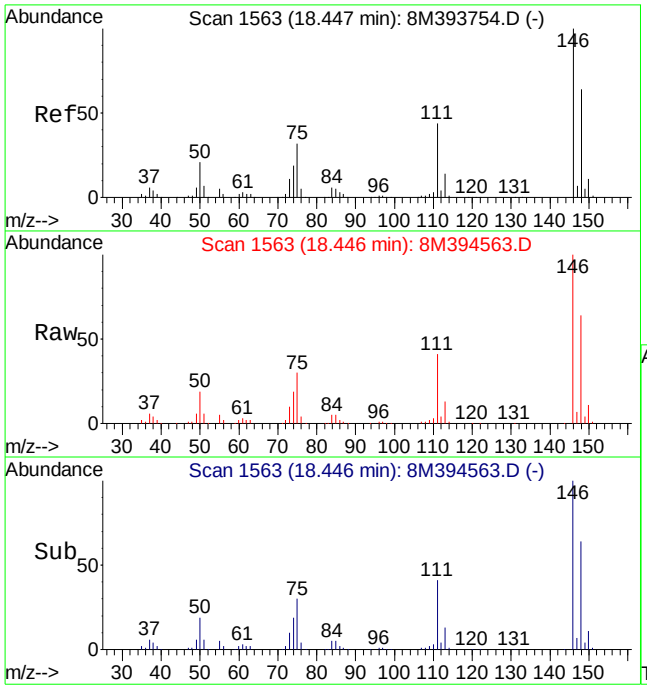

#96
1,2-Dichlorobenzene
Concen: 19.23 ug/L
RT: 18.45 min Scan# 1563
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:146 Resp: 370252

Ion	Ratio	Lower	Upper
146	100		
111	41.8	26.3	61.5

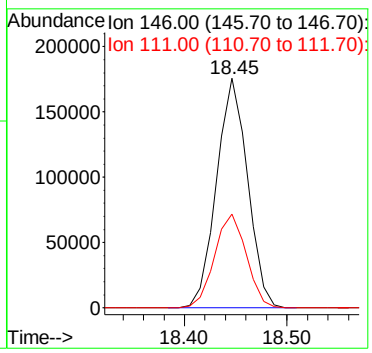

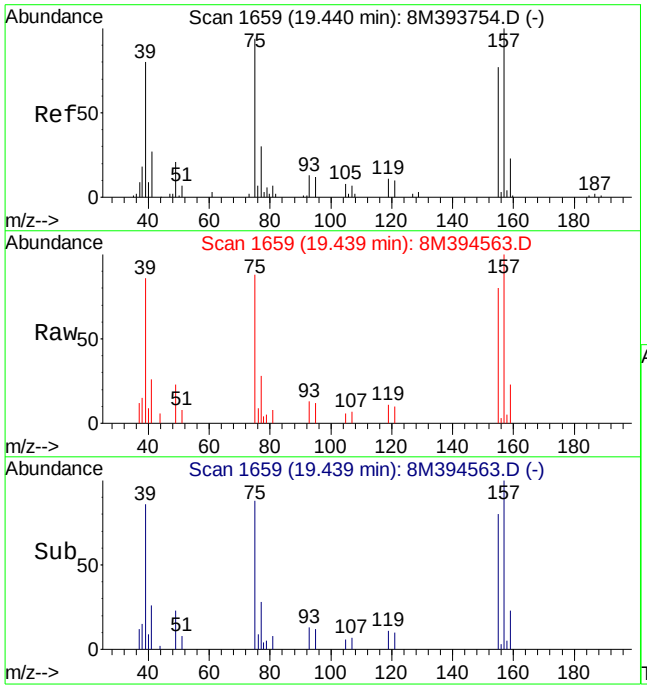

#97
1,2-Dibromo-3-Chloropropane
Concen: 16.35 ug/L
RT: 19.44 min Scan# 1659
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion: 75 Resp: 18439

Ion	Ratio	Lower	Upper
75	100		
157	123.8	67.6	157.8

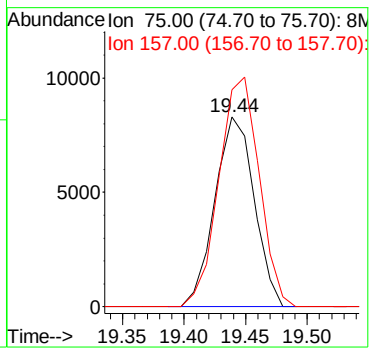

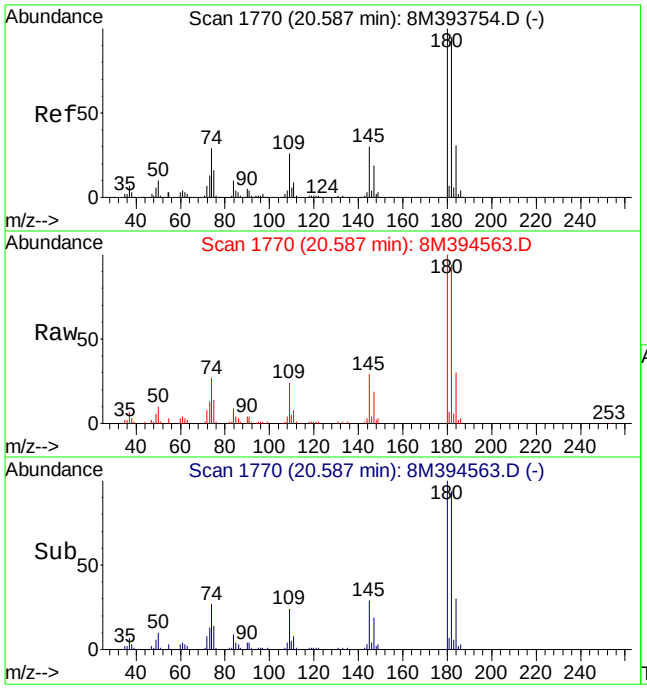

#98
1,2,4-Trichlorobenzene
Concen: 18.86 ug/L
RT: 20.59 min Scan# 1770
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:180 Resp: 277435

Ion	Ratio	Lower	Upper
180	100		
182	95.0	57.2	133.4
145	29.0	18.1	42.3

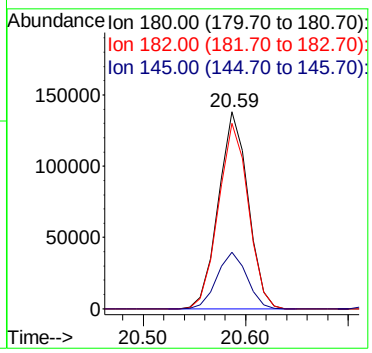

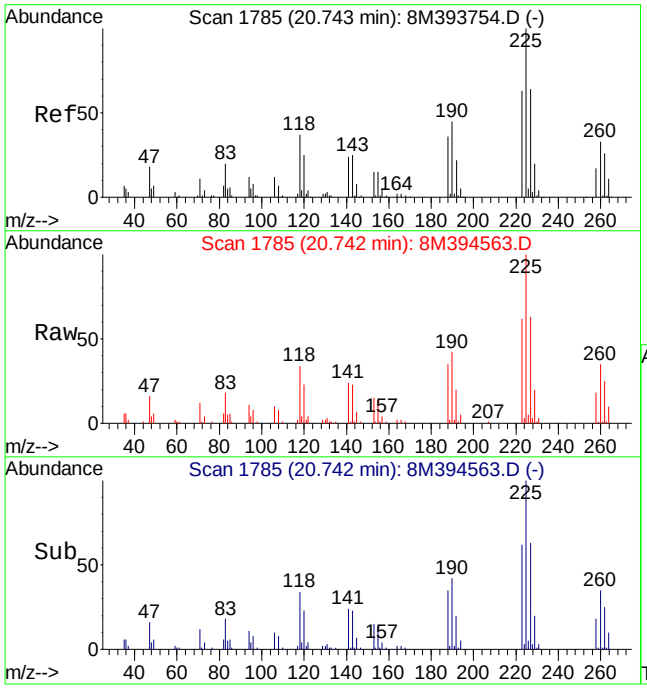

#99
Hexachlorobutadiene
Concen: 18.93 ug/L
RT: 20.74 min Scan# 1785
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:225 Resp: 119056

Ion	Ratio	Lower	Upper
225	100		
223	62.4	37.7	88.1
190	44.3	27.5	64.3

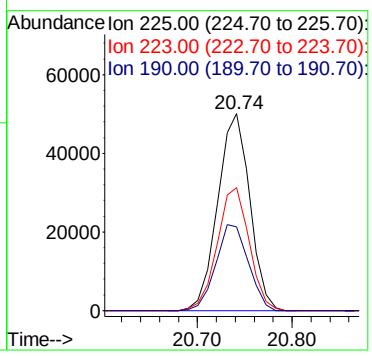

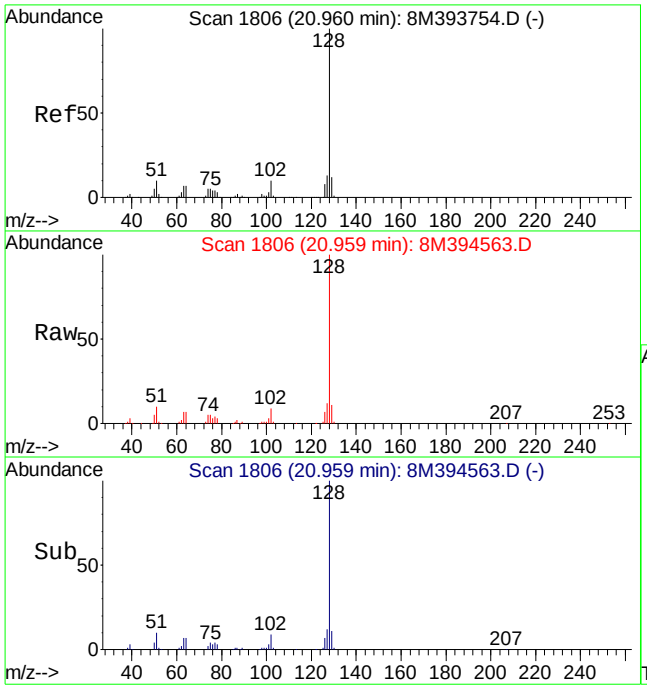

#100
Naphthalene
Concen: 17.94 ug/L
RT: 20.96 min Scan# 1806
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:128 Resp: 405722

Ion	Ratio	Lower	Upper
128	100		
127	12.8	7.7	17.9

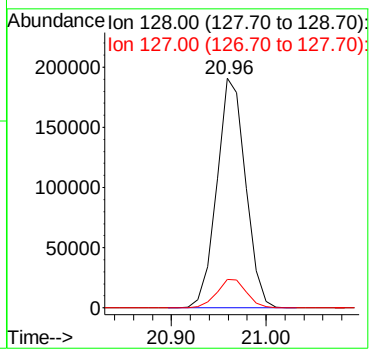

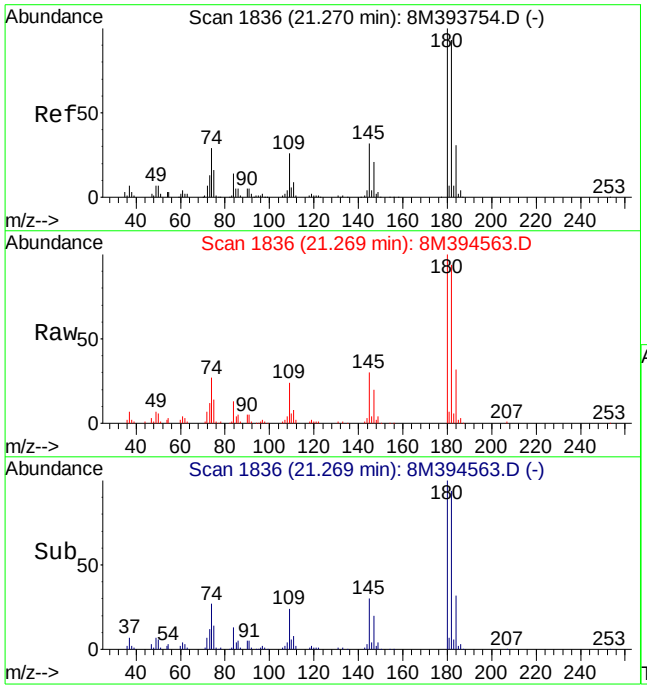

#101
1,2,3-Trichlorobenzene
Concen: 18.78 ug/L
RT: 21.27 min Scan# 1836
Delta R.T. -0.00 min
Lab File: 8M394563.D
Acq: 31 Jan 2014 5:53

Tgt Ion:180 Resp: 228940

Ion	Ratio	Lower	Upper
180	100		
182	95.6	56.6	132.0
145	30.0	18.8	44.0

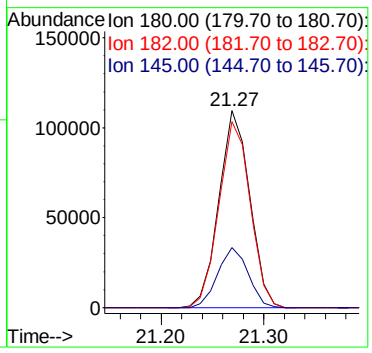

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394555.D Vial: 12
Acq On : 31 Jan 2014 1:34 Operator: MES
Sample : L14011372-08 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44:44 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	808954	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	647955	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	353006	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.96	111	218522	24.8245 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.28%		
43) 1,2-Dichloroethane-d4	10.60	65	185708	21.5328 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.12%		
58) Toluene-d8	12.98	98	791177	24.5076 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.04%		
80) p-Bromofluorobenzene	16.38	95	309239	23.6392 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.56%		

Target Compounds					Qvalue
3) Chloromethane	3.83	50	2743	0.2015 ug/L	77
13) Acetone	6.52	43	9524	6.6278 ug/L	89
19) Methylene Chloride	7.53	84	2111	0.2502 ug/L	80
29) 2-Butanone	9.18	43	751	0.3351 ug/L #	58
33) Chloroform	9.67	83	7719	0.4923 ug/L	89
36) Tetrahydrofuran	9.93	42	247	0.1726 ug/L #	40
56) Dimethyl Disulfide	12.98	94	21338	1.5587 ug/L #	27

(#) = qualifier out of range (m) = manual integration
8M394555.D 8260WTR.M Fri Jan 31 17:44:45 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394555.D Vial: 12
Acq On : 31 Jan 2014 1:34 Operator: MES
Sample : L14011372-08 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration

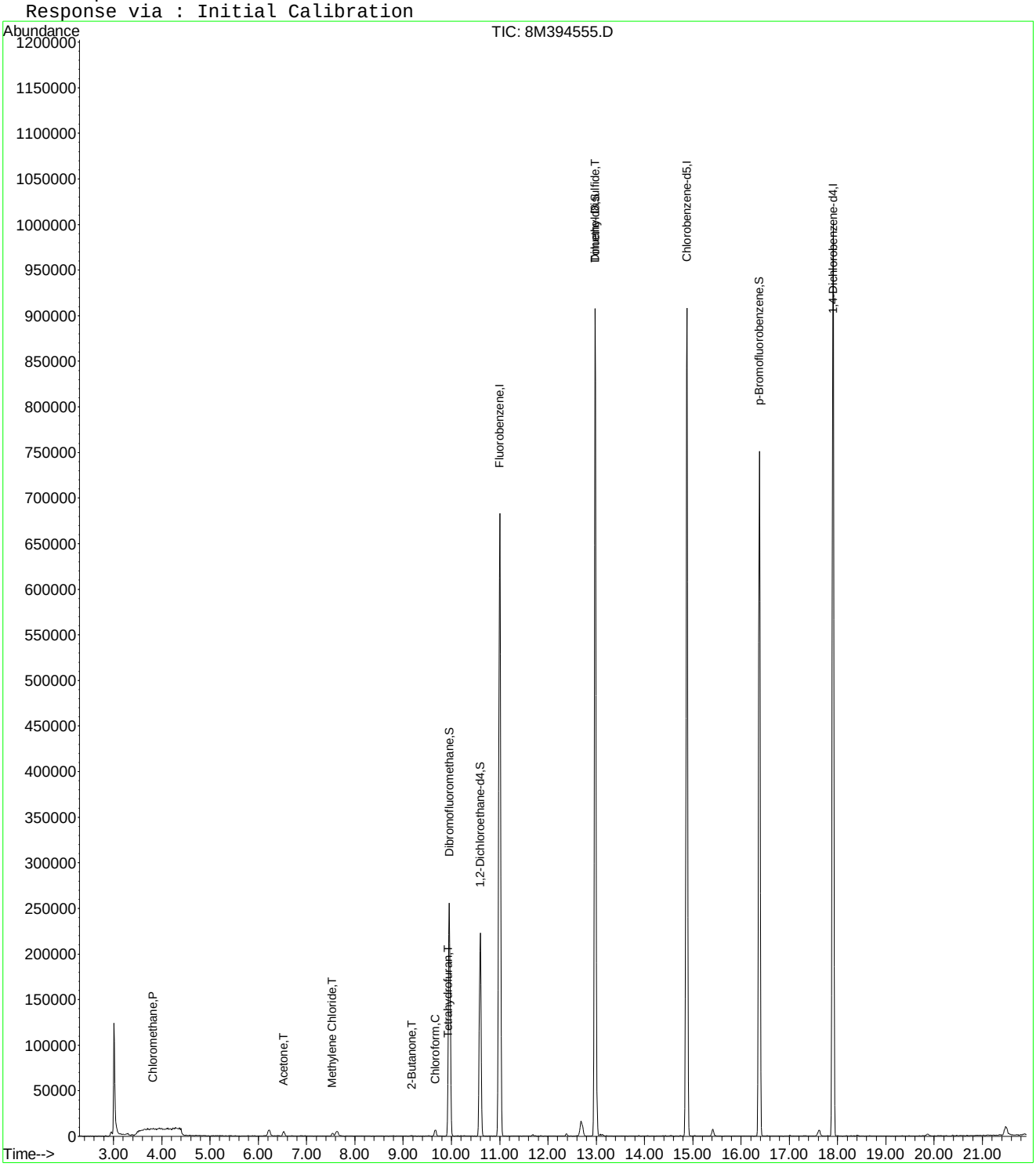

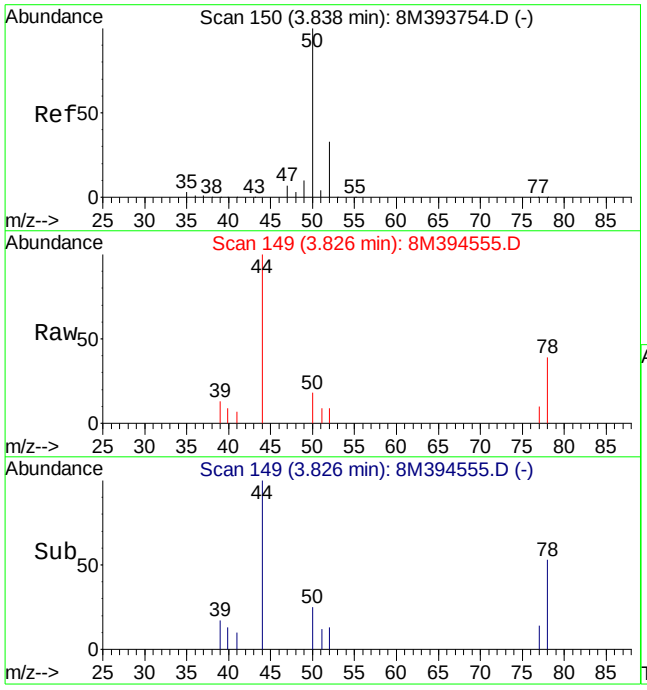

#3
Chloromethane
Concen: 0.20 ug/L
RT: 3.83 min Scan# 149
Delta R.T. -0.01 min
Lab File: 8M394555.D
Acq: 31 Jan 2014 1:34

Tgt Ion: 50 Resp: 2743

Ion	Ratio	Lower	Upper
50	100		
52	19.8	19.6	45.6

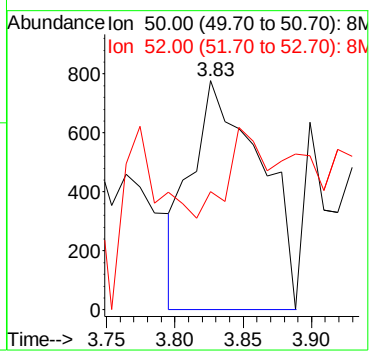

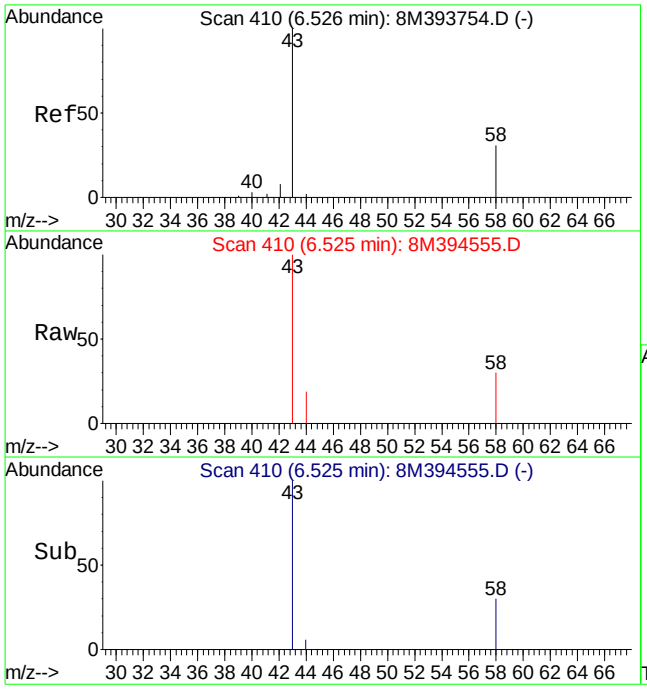

#13
Acetone
Concen: 6.63 ug/L
RT: 6.52 min Scan# 410
Delta R.T. -0.00 min
Lab File: 8M394555.D
Acq: 31 Jan 2014 1:34

Tgt Ion: 43 Resp: 9524

Ion	Ratio	Lower	Upper
43	100		
58	22.7	17.0	39.6

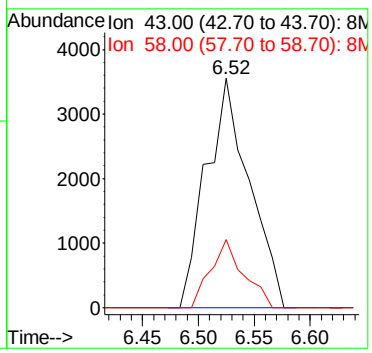

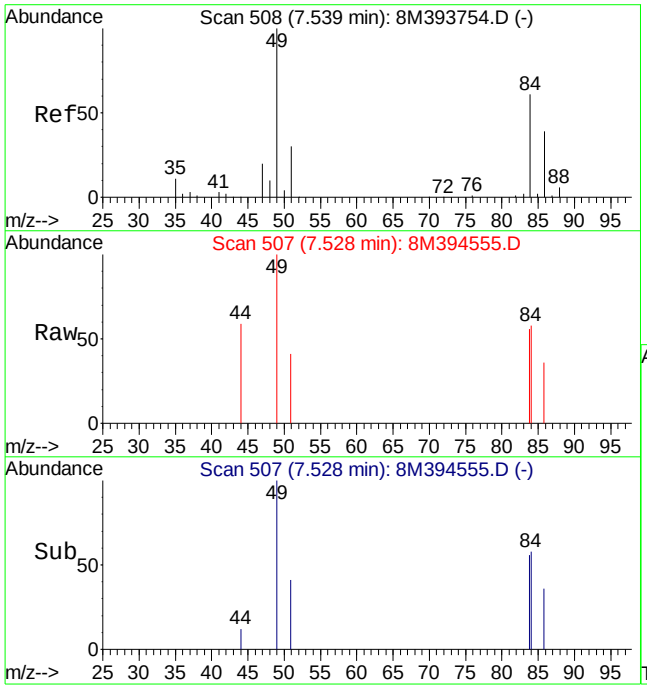

#19
Methylene Chloride
Concen: 0.25 ug/L
RT: 7.53 min Scan# 507
Delta R.T. -0.01 min
Lab File: 8M394555.D
Acq: 31 Jan 2014 1:34

Tgt Ion: 84 Resp: 2111

Ion	Ratio	Lower	Upper
84	100		
49	137.5	98.4	229.6

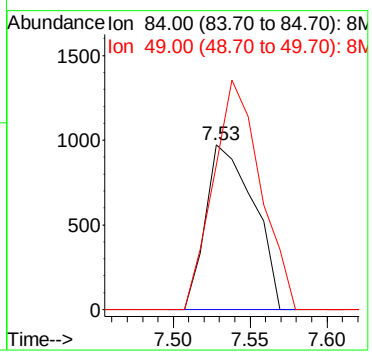

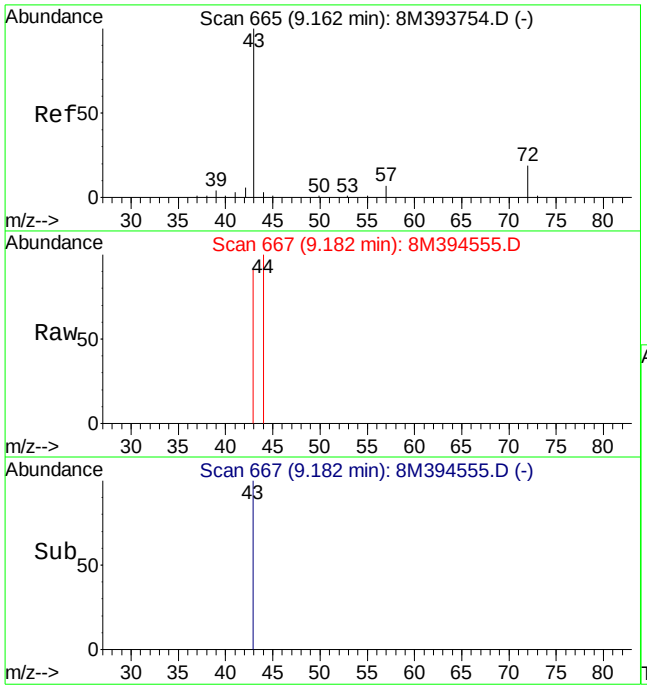

#29
2-Butanone
Concen: 0.34 ug/L
RT: 9.18 min Scan# 667
Delta R.T. 0.02 min
Lab File: 8M394555.D
Acq: 31 Jan 2014 1:34

Tgt Ion: 43 Resp: 751

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.5	26.7#

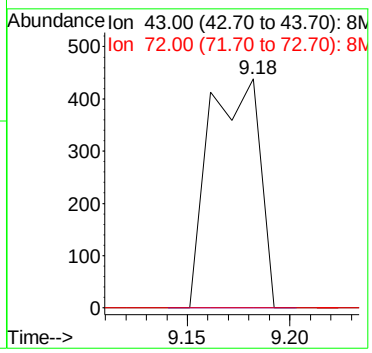

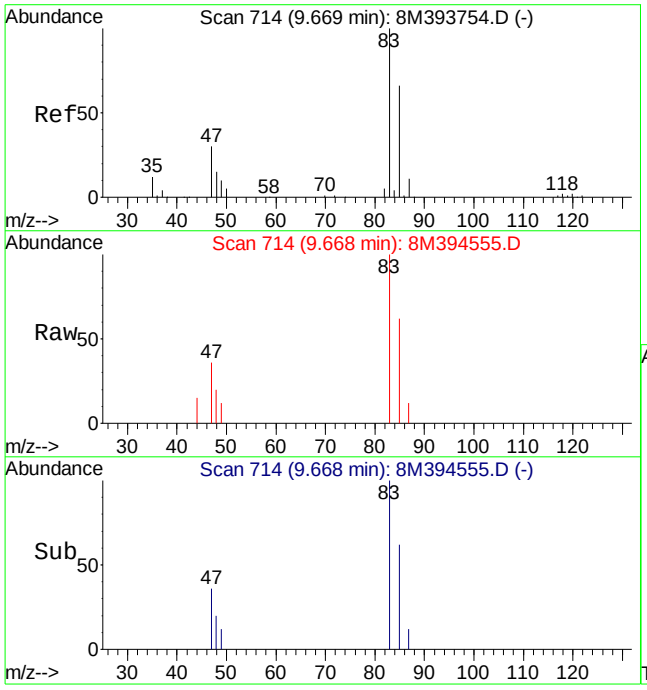

#33
Chloroform
Concen: 0.49 ug/L
RT: 9.67 min Scan# 714
Delta R.T. -0.00 min
Lab File: 8M394555.D
Acq: 31 Jan 2014 1:34

Tgt Ion: 83 Resp: 7719

Ion	Ratio	Lower	Upper
83	100		
85	57.5	39.5	92.3

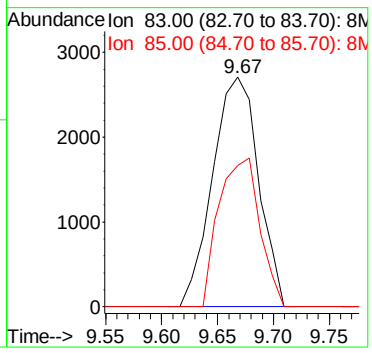

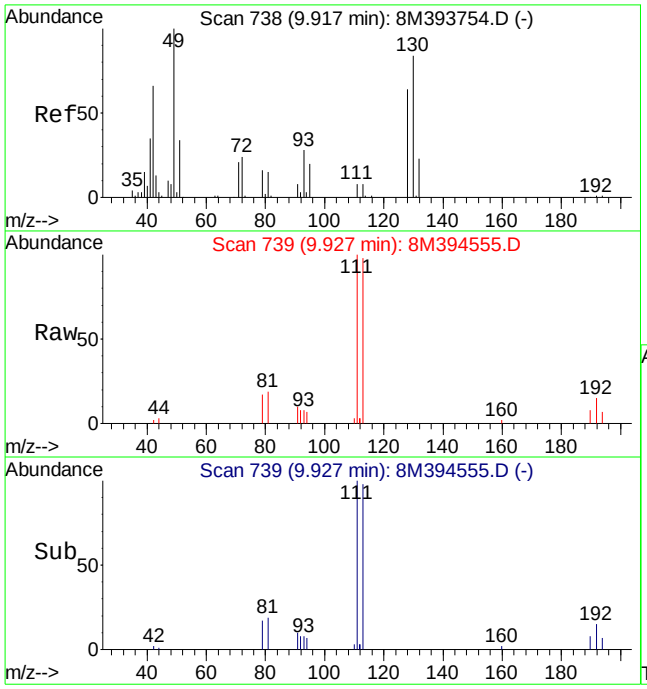

#36
Tetrahydrofuran
Concen: 0.17 ug/L
RT: 9.93 min Scan# 739
Delta R.T. 0.01 min
Lab File: 8M394555.D
Acq: 31 Jan 2014 1:34

Tgt Ion: 42 Resp: 247

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.4	50.0#
71	0.0	20.0	46.8#

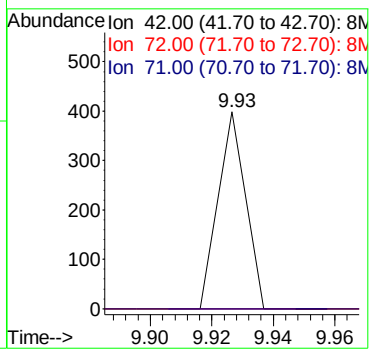

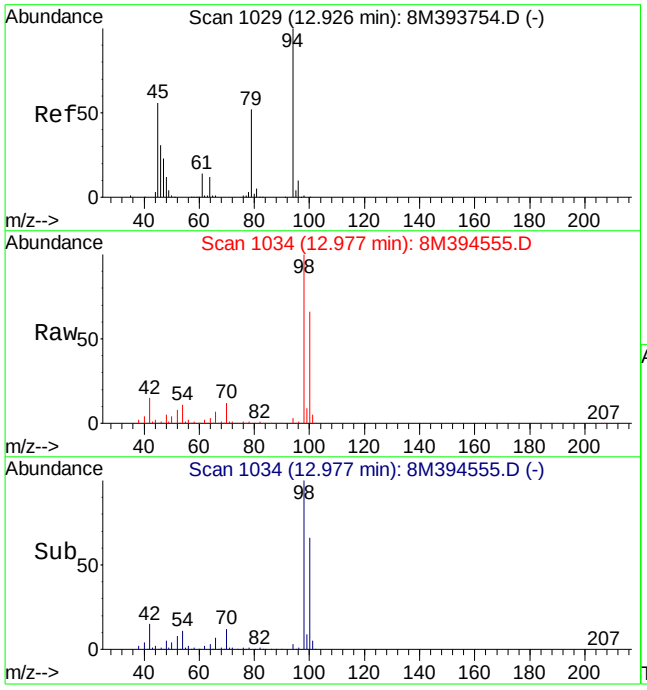

#56
Dimethyl Disulfide
Concen: 1.56 ug/L
RT: 12.98 min Scan# 1034
Delta R.T. 0.05 min
Lab File: 8M394555.D
Acq: 31 Jan 2014 1:34

Tgt Ion: 94 Resp: 21338

Ion	Ratio	Lower	Upper
94	100		
79	0.0	30.4	70.8#

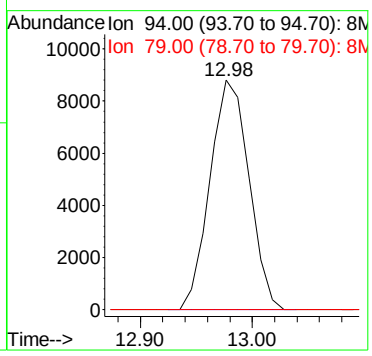

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394556.D Vial: 13
Acq On : 31 Jan 2014 2:06 Operator: MES
Sample : L14011372-09 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44:46 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	827029	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	651001	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	349927	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.96	111	216444	24.0510 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.20%		
43) 1,2-Dichloroethane-d4	10.60	65	181291	20.5612 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 82.24%		
58) Toluene-d8	12.98	98	792885	24.4455 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.80%		
80) p-Bromofluorobenzene	16.38	95	310482	23.9431 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.76%		

Target Compounds					Qvalue
4) Vinyl Chloride	4.08	62	1625	0.1640 ug/L #	43
13) Acetone	6.52	43	2025	1.3784 ug/L #	46
14) 1,1-Dichloroethene	6.76	61	11519	0.7518 ug/L	99
27) 1,1-Dichloroethane	8.61	63	4224	0.2342 ug/L #	91
45) 1,2-Dichloroethane	10.71	62	22908	2.0319 ug/L	94
56) Dimethyl Disulfide	12.98	94	23315	1.6659 ug/L #	27

(#) = qualifier out of range (m) = manual integration
8M394556.D 8260WTR.M Fri Jan 31 17:44:46 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394556.D Vial: 13
Acq On : 31 Jan 2014 2:06 Operator: MES
Sample : L14011372-09 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration

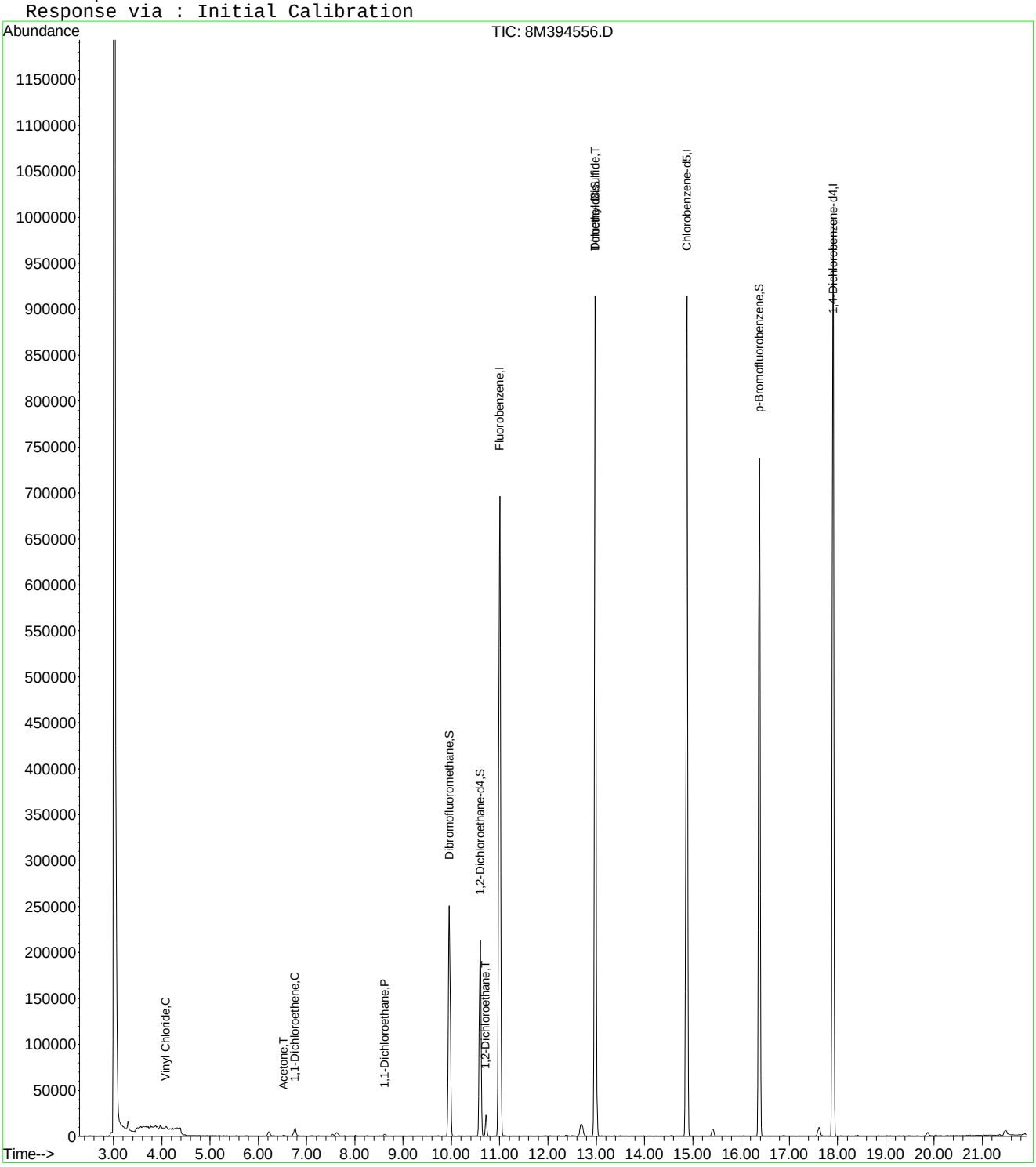

8M394556.D 8260WTR.M Fri Jan 31 17:44:46 2014 Page 2

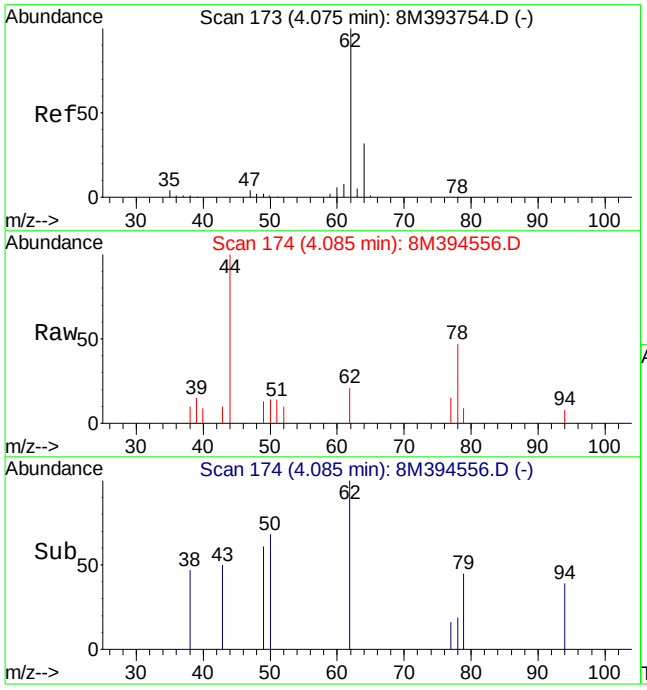

#4
Vinyl Chloride
Concen: 0.16 ug/L
RT: 4.08 min Scan# 174
Delta R.T. 0.01 min
Lab File: 8M394556.D
Acq: 31 Jan 2014 2:06

Tgt Ion: 62 Resp: 1625

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.7	43.7#

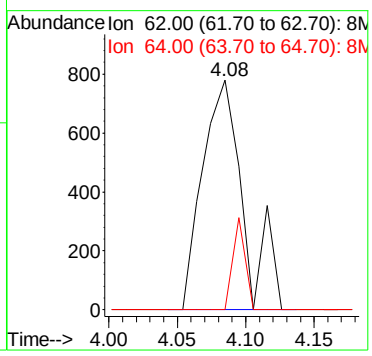

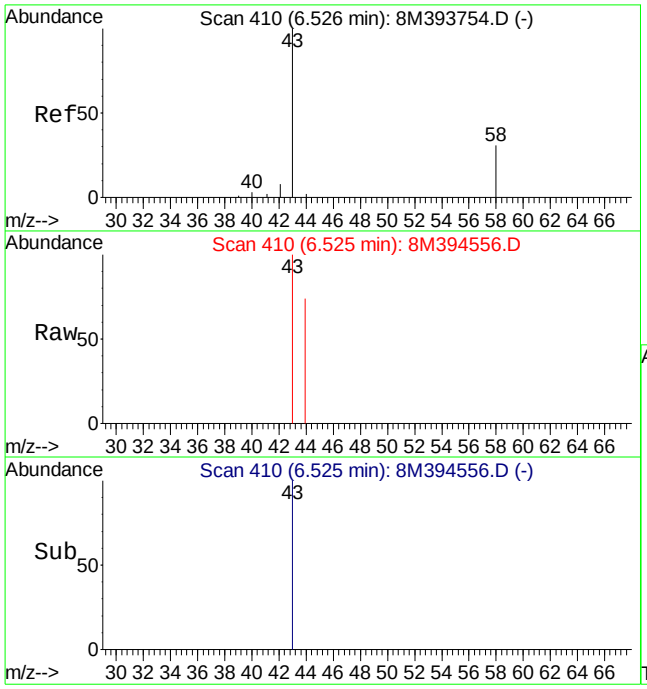

#13
Acetone
Concen: 1.38 ug/L
RT: 6.52 min Scan# 410
Delta R.T. -0.00 min
Lab File: 8M394556.D
Acq: 31 Jan 2014 2:06

Tgt Ion: 43 Resp: 2025

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.0	39.6#

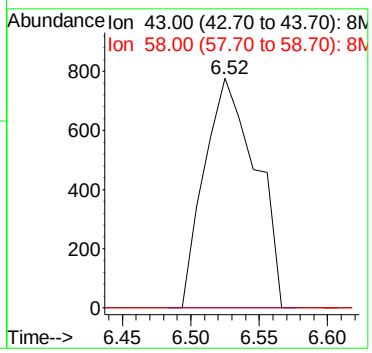

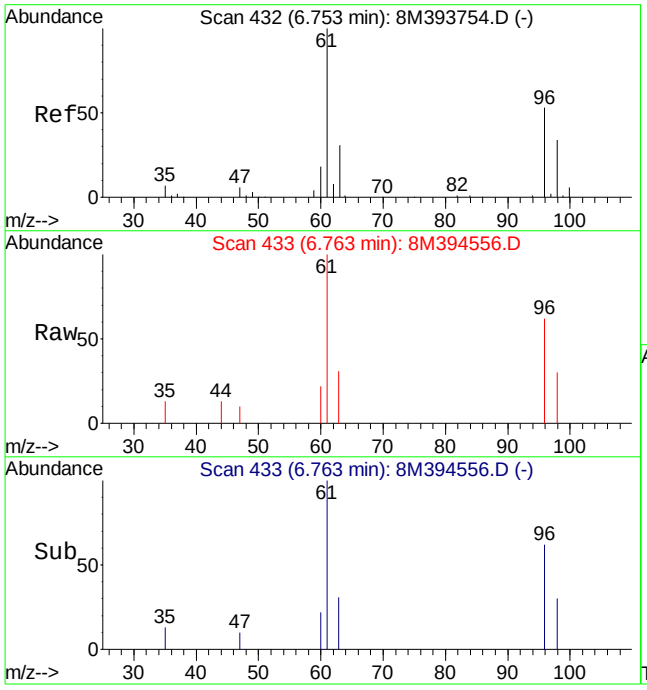

#14
1,1-Dichloroethene
Concen: 0.75 ug/L
RT: 6.76 min Scan# 433
Delta R.T. 0.01 min
Lab File: 8M394556.D
Acq: 31 Jan 2014 2:06

Tgt Ion: 61 Resp: 11519

Ion	Ratio	Lower	Upper
61	100		
96	54.9	32.5	75.7

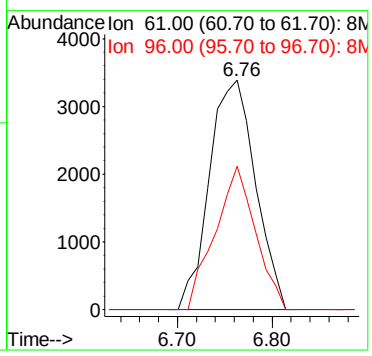

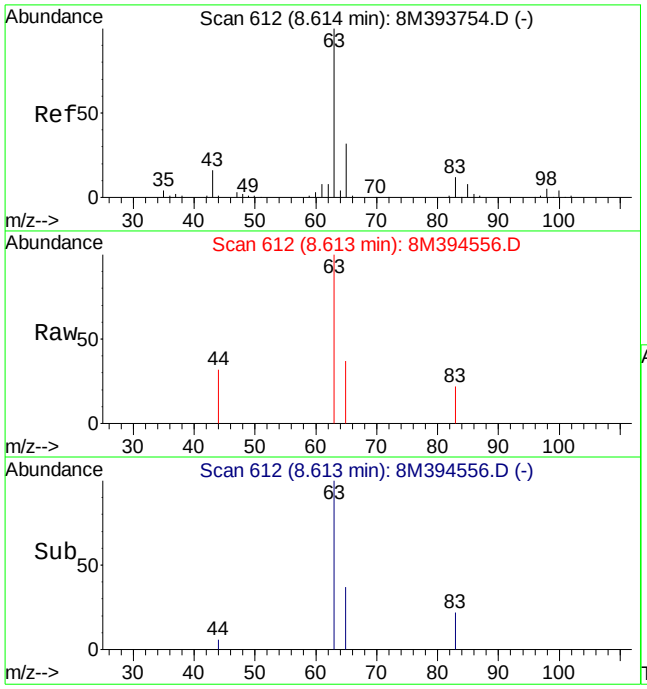

#27
1,1-Dichloroethane
Concen: 0.23 ug/L
RT: 8.61 min Scan# 612
Delta R.T. -0.00 min
Lab File: 8M394556.D
Acq: 31 Jan 2014 2:06

Tgt Ion: 63 Resp: 4224

Ion	Ratio	Lower	Upper
63	100		
65	31.3	18.7	43.5
83	0.0	7.4	17.2#

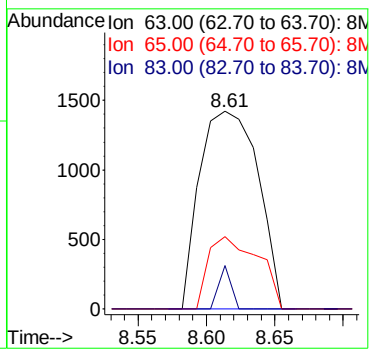

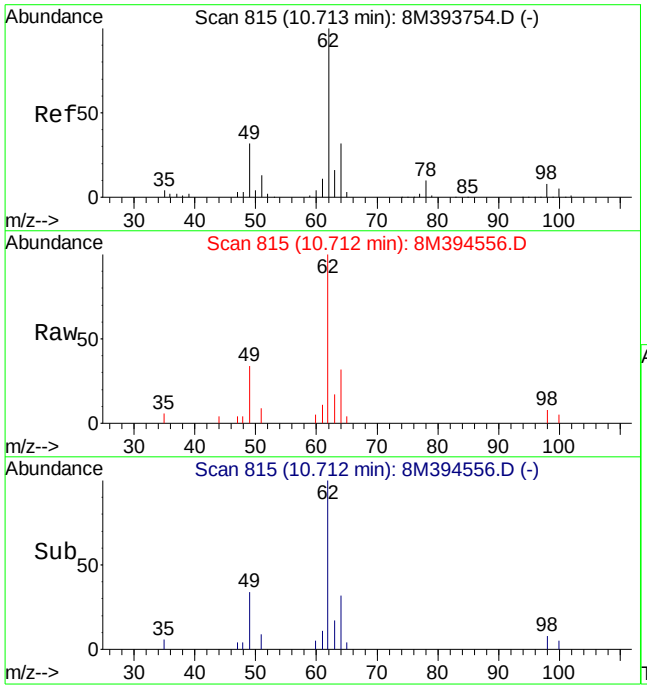

#45
1,2-Dichloroethane
Concen: 2.03 ug/L
RT: 10.71 min Scan# 815
Delta R.T. -0.00 min
Lab File: 8M394556.D
Acq: 31 Jan 2014 2:06

Tgt Ion: 62 Resp: 22908

Ion	Ratio	Lower	Upper
62	100		
64	31.0	19.2	44.8
49	34.8	24.2	56.4

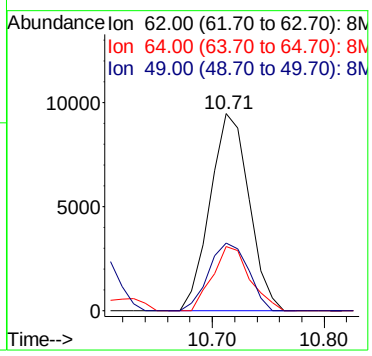

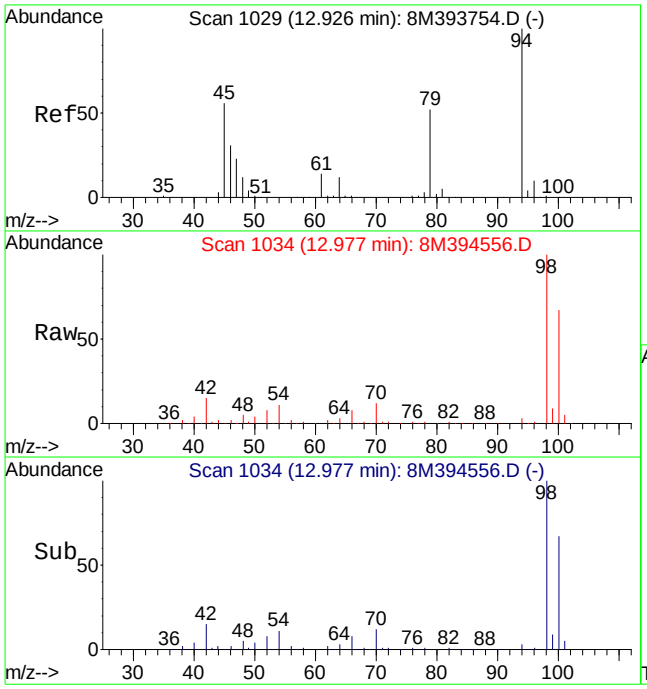

#56
Dimethyl Disulfide
Concen: 1.67 ug/L
RT: 12.98 min Scan# 1034
Delta R.T. 0.05 min
Lab File: 8M394556.D
Acq: 31 Jan 2014 2:06

Tgt Ion: 94 Resp: 23315

Ion	Ratio	Lower	Upper
94	100		
79	0.0	30.4	70.8#

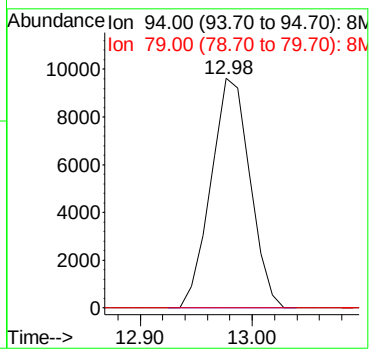

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394557.D Vial: 14
Acq On : 31 Jan 2014 2:38 Operator: MES
Sample : L14011372-10 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44:47 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	821647	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	653778	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	359947	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.96	111	217063	24.2778 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.12%		
43) 1,2-Dichloroethane-d4	10.60	65	190917	21.7948 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.16%		
58) Toluene-d8	12.98	98	794291	24.3849 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.52%		
80) p-Bromofluorobenzene	16.38	95	316736	23.7454 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.00%		

Target Compounds					Qvalue
3) Chloromethane	3.84	50	3190	0.2307 ug/L #	57
13) Acetone	6.55	43	1579	1.0819 ug/L #	46
16) Dimethyl Sulfide	7.02	62	2209	0.2522 ug/L	90
56) Dimethyl Disulfide	12.98	94	22279	1.6023 ug/L #	27

(#) = qualifier out of range (m) = manual integration
8M394557.D 8260WTR.M Fri Jan 31 17:44:48 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394557.D Vial: 14
Acq On : 31 Jan 2014 2:38 Operator: MES
Sample : L14011372-10 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration

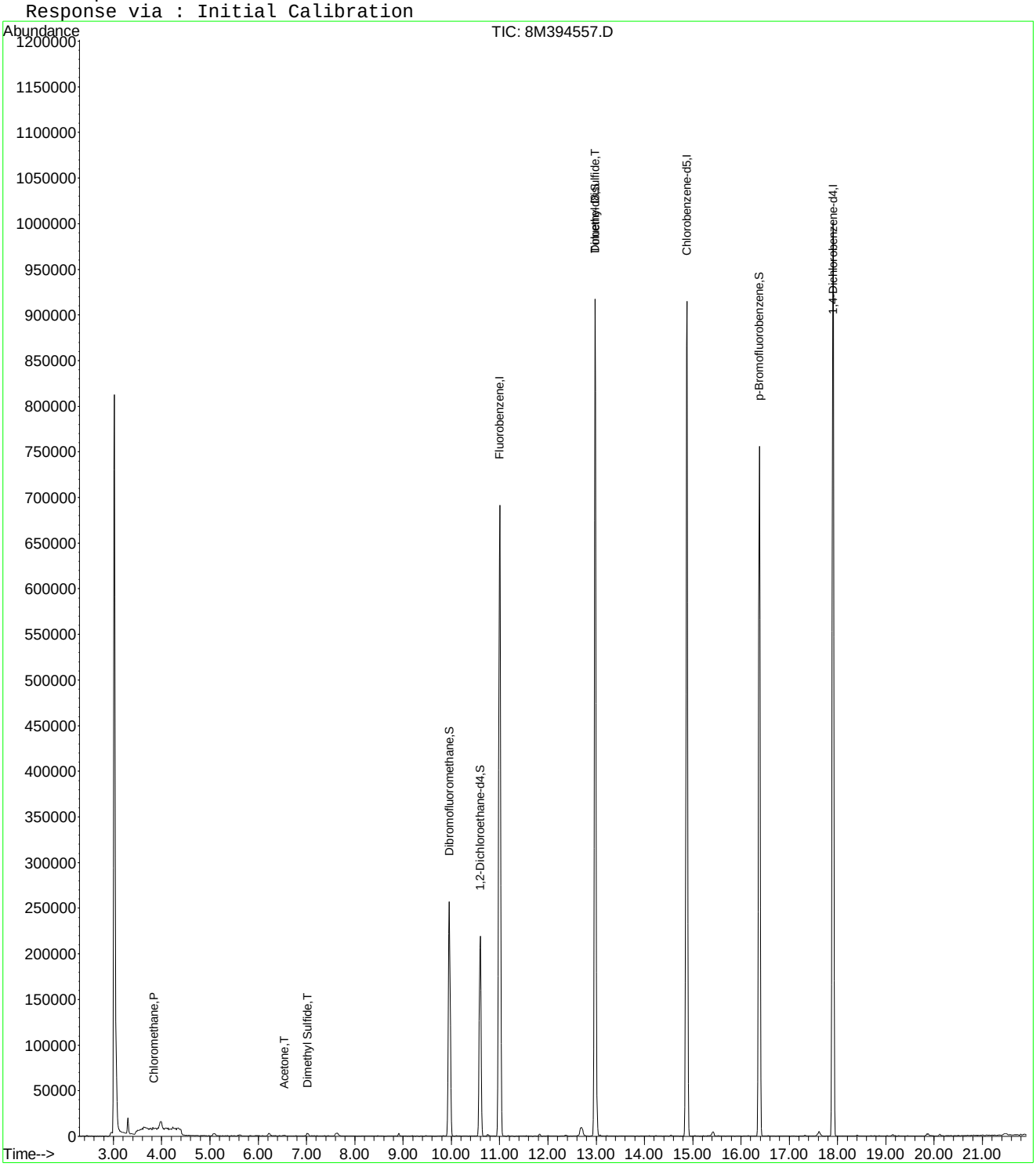

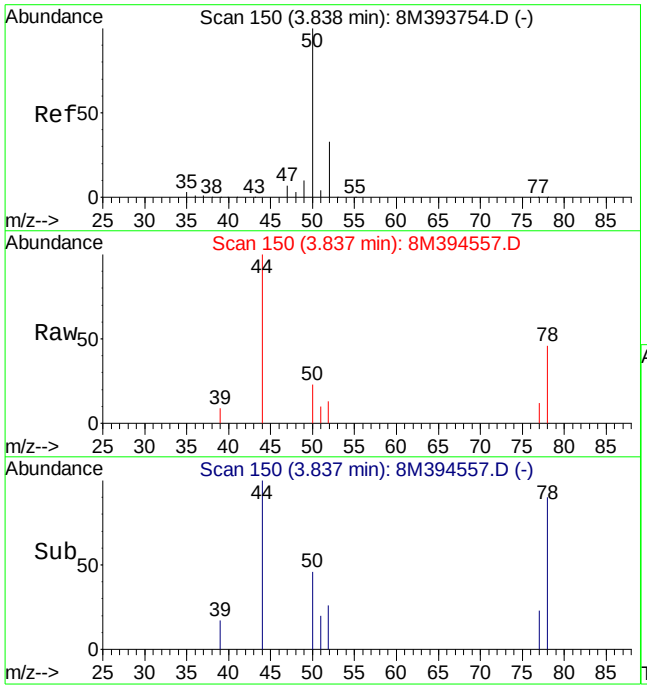

#3
Chloromethane
Concen: 0.23 ug/L
RT: 3.84 min Scan# 150
Delta R.T. -0.00 min
Lab File: 8M394557.D
Acq: 31 Jan 2014 2:38

Tgt Ion: 50 Resp: 3190

Ion	Ratio	Lower	Upper
50	100		
52	56.7	19.6	45.6#

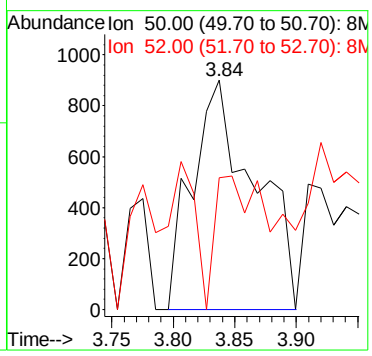

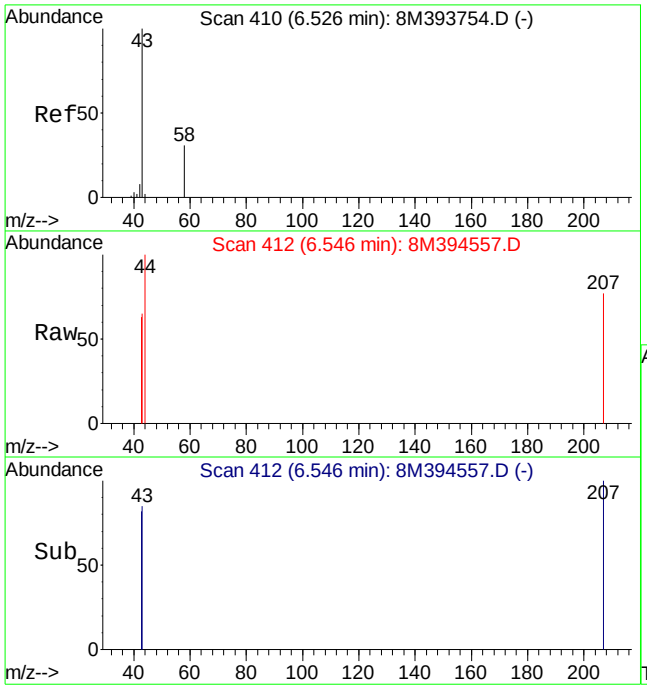

#13
Acetone
Concen: 1.08 ug/L
RT: 6.55 min Scan# 412
Delta R.T. 0.02 min
Lab File: 8M394557.D
Acq: 31 Jan 2014 2:38

Tgt Ion: 43 Resp: 1579

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.0	39.6#

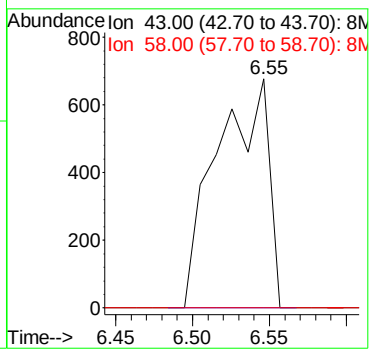

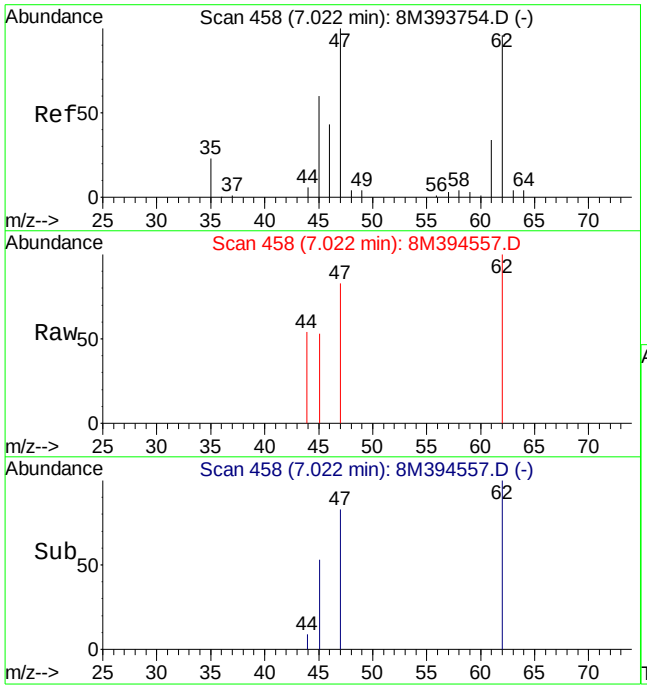

#16
Dimethyl Sulfide
Concen: 0.25 ug/L
RT: 7.02 min Scan# 458
Delta R.T. -0.00 min
Lab File: 8M394557.D
Acq: 31 Jan 2014 2:38

Tgt Ion: 62 Resp: 2209

Ion	Ratio	Lower	Upper
62	100		
47	114.0	62.4	145.6

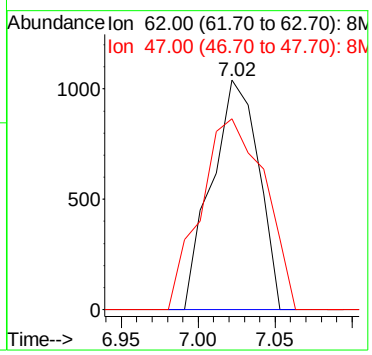

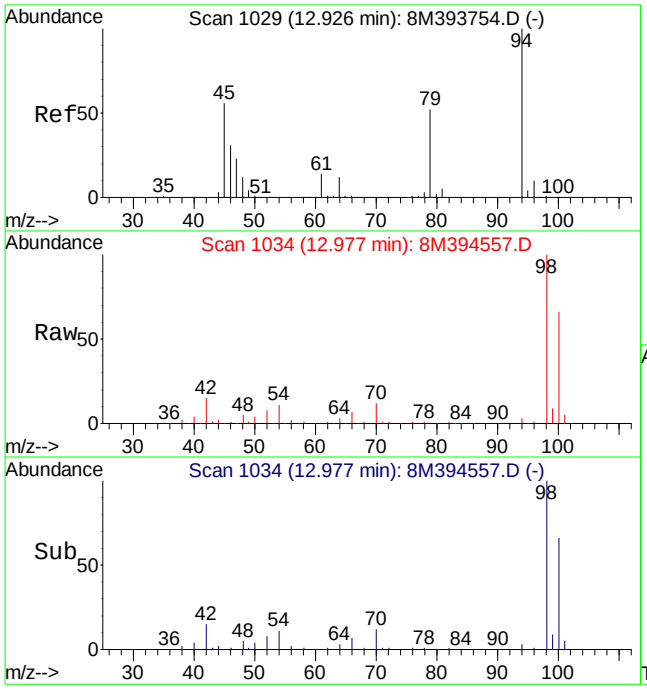

#56
Dimethyl Disulfide
Concen: 1.60 ug/L
RT: 12.98 min Scan# 1034
Delta R.T. 0.05 min
Lab File: 8M394557.D
Acq: 31 Jan 2014 2:38

Tgt Ion: 94 Resp: 22279

Ion	Ratio	Lower	Upper
94	100		
79	0.0	30.4	70.8#

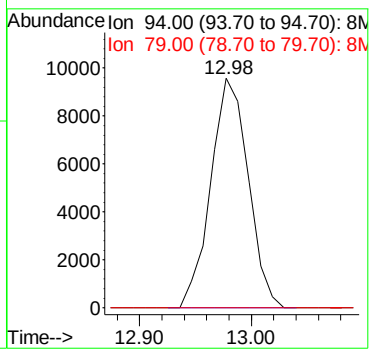

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394558.D Vial: 15
Acq On : 31 Jan 2014 3:11 Operator: MES
Sample : L14011372-11 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44:49 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	827168	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	643319	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	336369	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.96	111	208836	23.2017 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.80%		
43) 1,2-Dichloroethane-d4	10.60	65	174754	19.8165 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 79.28%#		
58) Toluene-d8	12.98	98	794388	24.7843 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.12%		
80) p-Bromofluorobenzene	16.38	95	298679	23.9613 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.84%		

Target Compounds

					Qvalue
3) Chloromethane	3.83	50	4764	0.3422 ug/L #	75
4) Vinyl Chloride	4.09	62	4680	0.4723 ug/L	86
13) Acetone	6.52	43	1074	0.7309 ug/L #	46
14) 1,1-Dichloroethene	6.76	61	319070	20.8202 ug/L	99
15) Tert-Butyl Alcohol	6.77	59	10789	29.2773 ug/L #	59
27) 1,1-Dichloroethane	8.61	63	82816	4.5913 ug/L	97
28) Ethyl-Tert-Butyl ether	8.91	59	5313	0.1902 ug/L #	41
45) 1,2-Dichloroethane	10.72	62	3911	0.3468 ug/L	83
56) Dimethyl Disulfide	12.98	94	20862	1.4903 ug/L #	27

(#) = qualifier out of range (m) = manual integration
8M394558.D 8260WTR.M Fri Jan 31 17:44:49 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394558.D Vial: 15
Acq On : 31 Jan 2014 3:11 Operator: MES
Sample : L14011372-11 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration

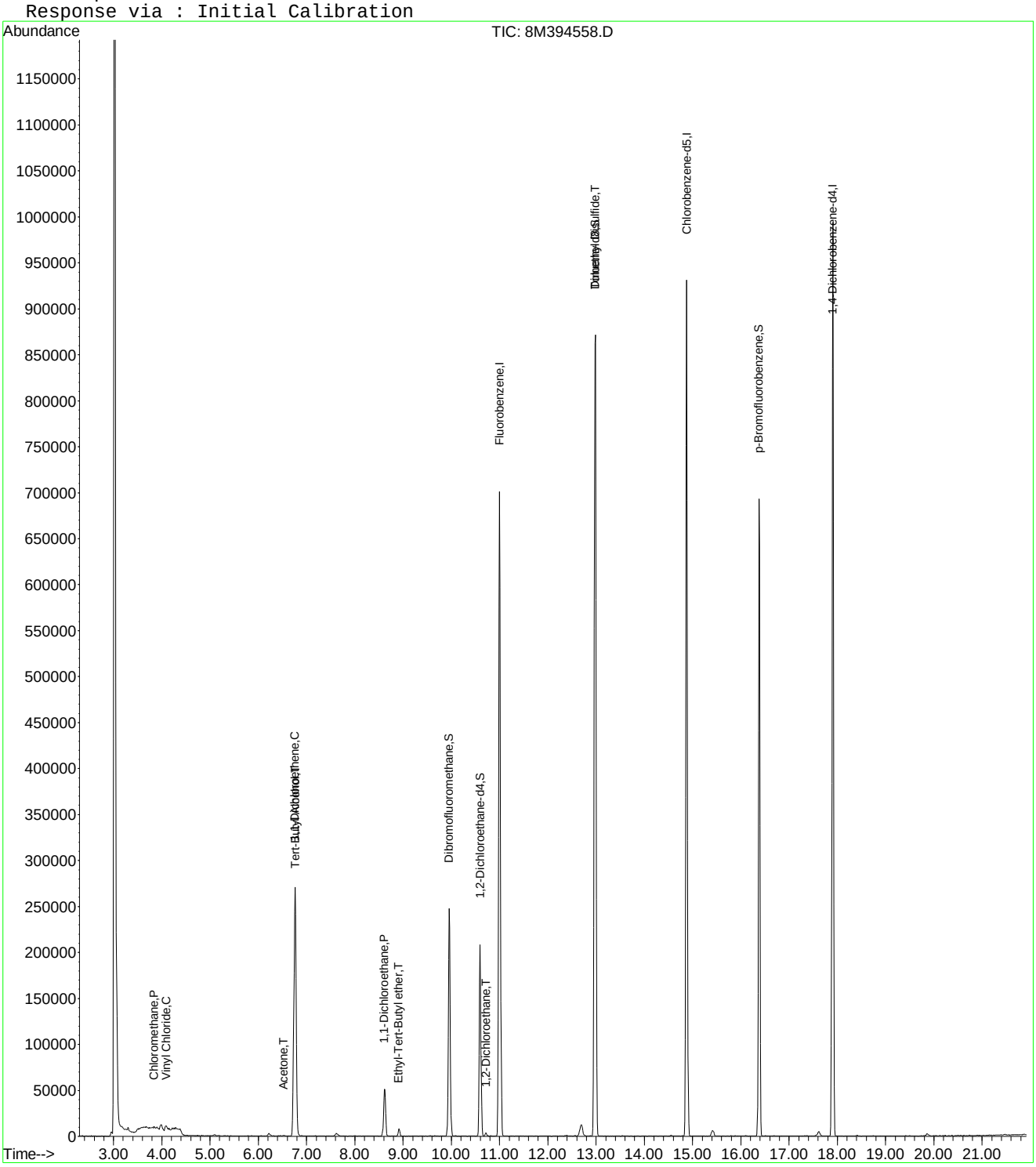

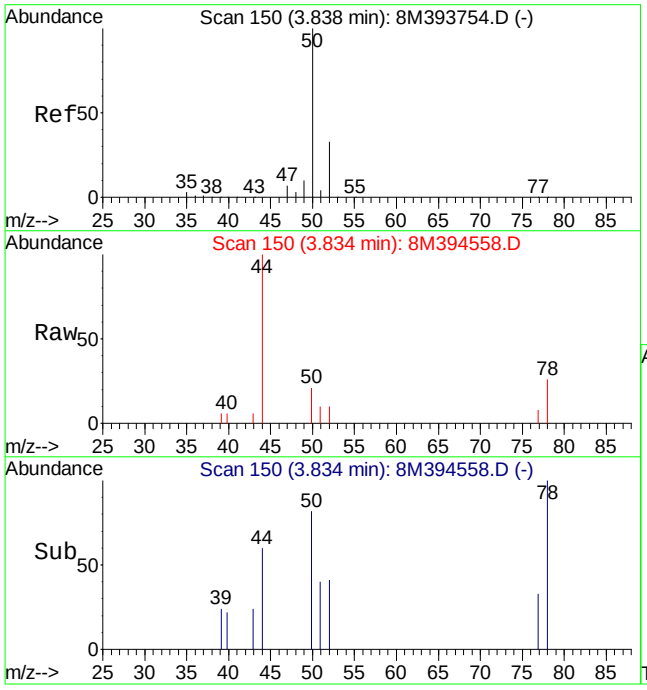

#3
Chloromethane
Concen: 0.34 ug/L
RT: 3.83 min Scan# 150
Delta R.T. -0.00 min
Lab File: 8M394558.D
Acq: 31 Jan 2014 3:11

Tgt Ion: 50 Resp: 4764

Ion	Ratio	Lower	Upper
50	100		
52	18.4	19.6	45.6#

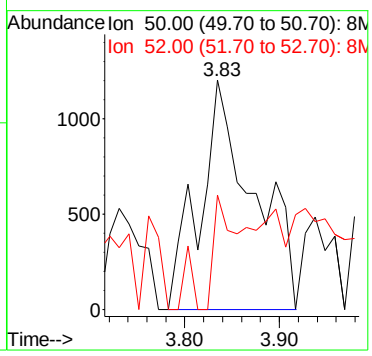

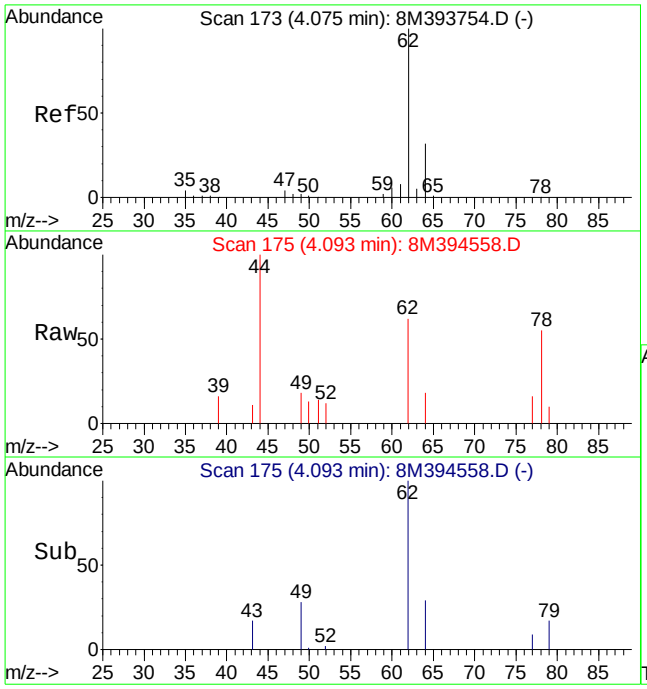

#4
Vinyl Chloride
Concen: 0.47 ug/L
RT: 4.09 min Scan# 175
Delta R.T. 0.02 min
Lab File: 8M394558.D
Acq: 31 Jan 2014 3:11

Tgt Ion: 62 Resp: 4680

Ion	Ratio	Lower	Upper
62	100		
64	23.6	18.7	43.7

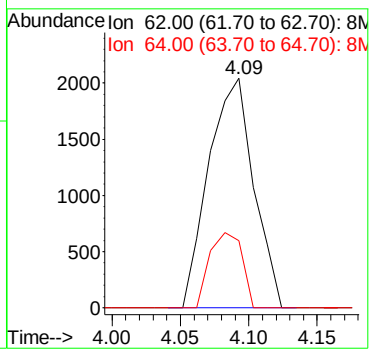

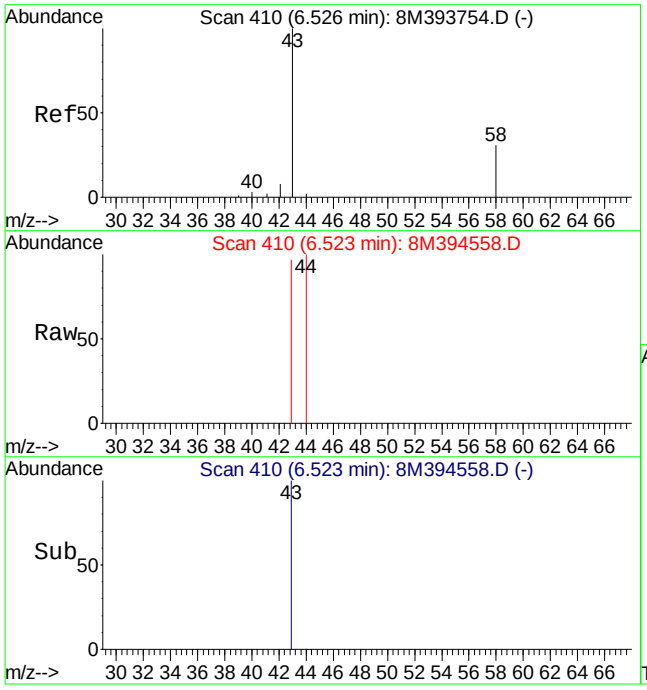

#13
Acetone
Concen: 0.73 ug/L
RT: 6.52 min Scan# 410
Delta R.T. -0.00 min
Lab File: 8M394558.D
Acq: 31 Jan 2014 3:11

Tgt Ion: 43 Resp: 1074

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.0	39.6#

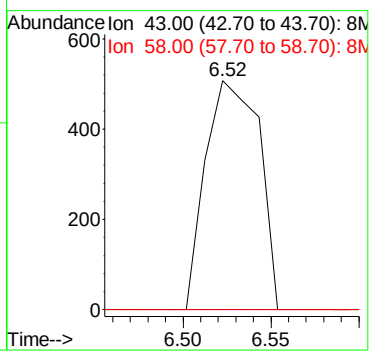

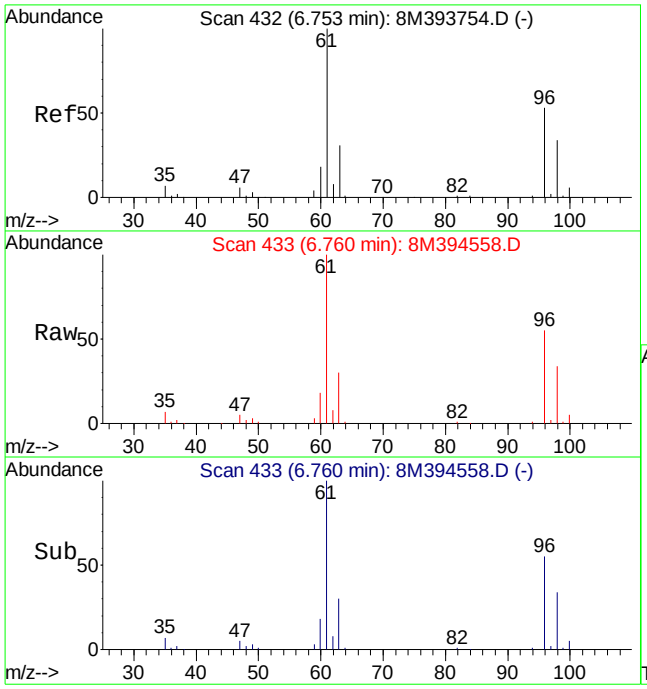

#14
1,1-Dichloroethene
Concen: 20.82 ug/L
RT: 6.76 min Scan# 433
Delta R.T. 0.01 min
Lab File: 8M394558.D
Acq: 31 Jan 2014 3:11

Tgt Ion: 61 Resp: 319070

Ion	Ratio	Lower	Upper
61	100		
96	55.0	32.5	75.7

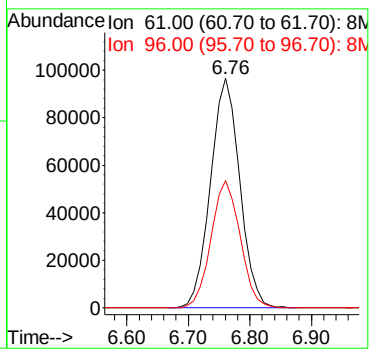

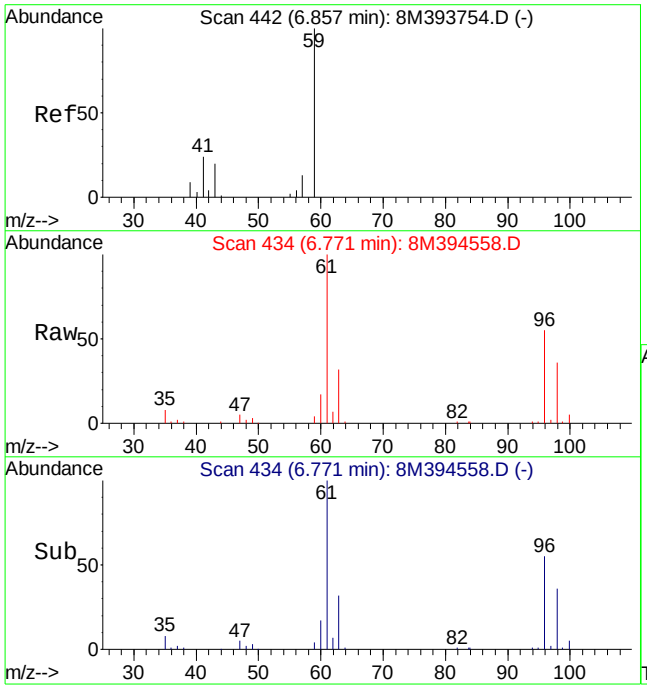

#15
Tert-Butyl Alcohol
Concen: 29.28 ug/L
RT: 6.77 min Scan# 434
Delta R.T. -0.09 min
Lab File: 8M394558.D
Acq: 31 Jan 2014 3:11

Tgt Ion: 59 Resp: 10789

Ion	Ratio	Lower	Upper
59	100		
41	0.0	13.7	32.1#
57	0.0	6.1	14.3#

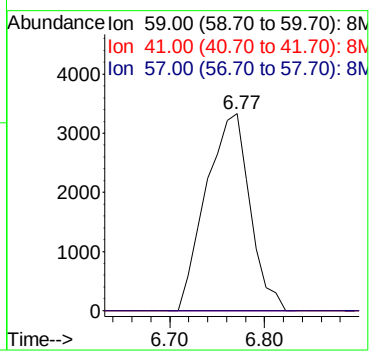

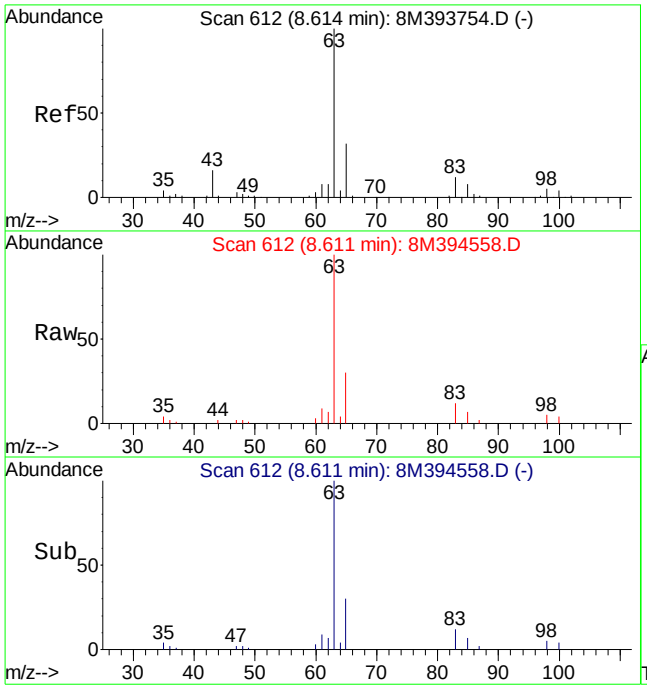

#27
1,1-Dichloroethane
Concen: 4.59 ug/L
RT: 8.61 min Scan# 612
Delta R.T. -0.00 min
Lab File: 8M394558.D
Acq: 31 Jan 2014 3:11

Tgt Ion: 63 Resp: 82816

Ion	Ratio	Lower	Upper
63	100		
65	29.2	18.7	43.5
83	12.1	7.4	17.2

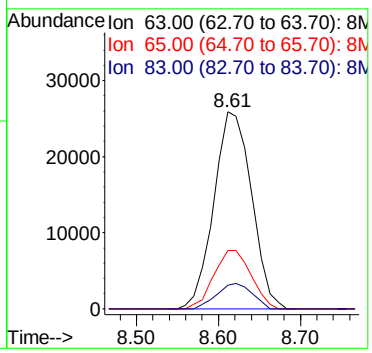

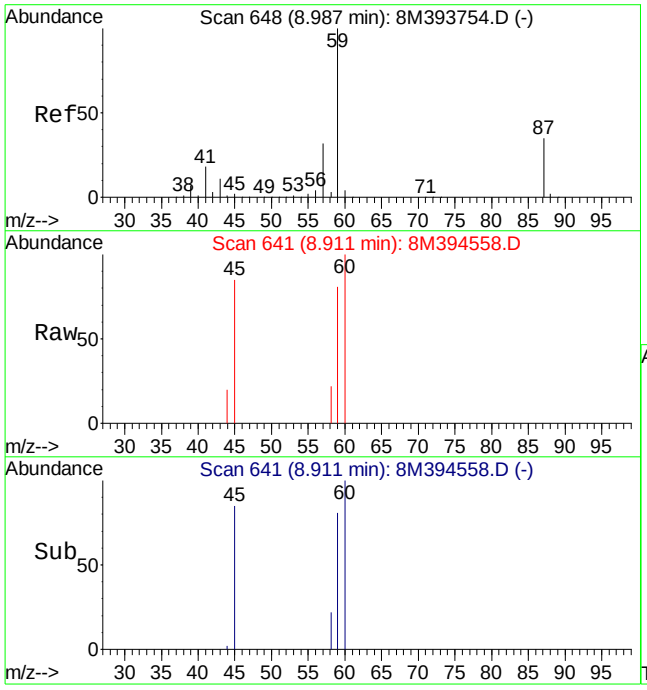

#28
Ethyl-Tert-Butyl ether
Concen: 0.19 ug/L
RT: 8.91 min Scan# 641
Delta R.T. -0.07 min
Lab File: 8M394558.D
Acq: 31 Jan 2014 3:11

Tgt Ion: 59 Resp: 5313

Ion	Ratio	Lower	Upper
59	100		
87	0.0	20.7	48.3#
57	0.0	19.2	44.8#

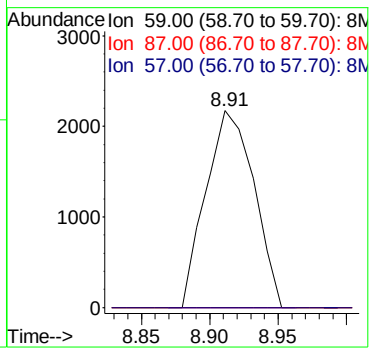

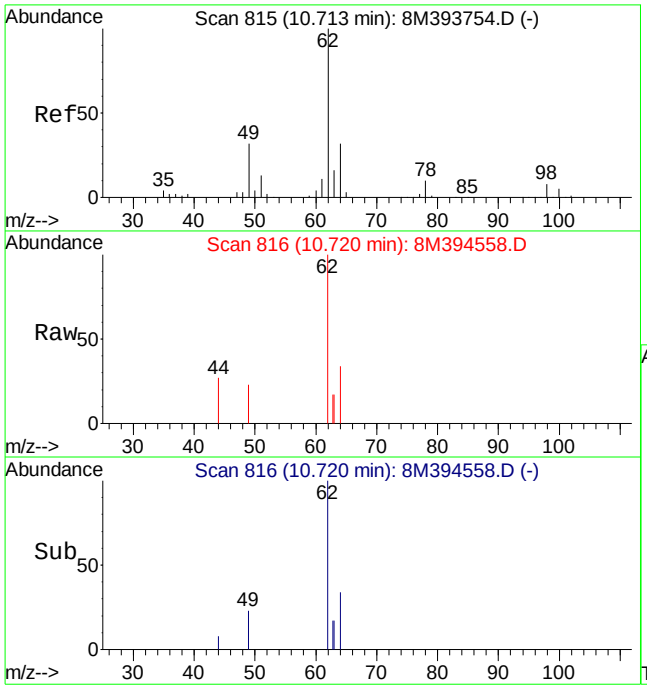

#45
1,2-Dichloroethane
Concen: 0.35 ug/L
RT: 10.72 min Scan# 816
Delta R.T. 0.01 min
Lab File: 8M394558.D
Acq: 31 Jan 2014 3:11

Tgt Ion: 62 Resp: 3911

Ion	Ratio	Lower	Upper
62	100		
64	26.7	19.2	44.8
49	25.5	24.2	56.4

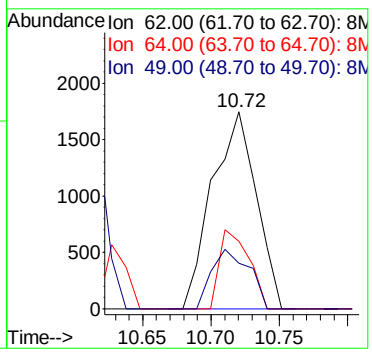

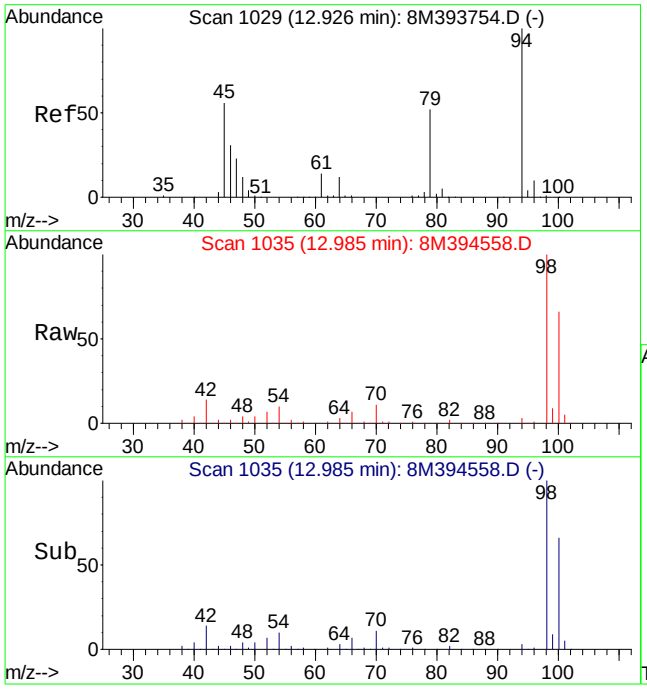

#56
Dimethyl Disulfide
Concen: 1.49 ug/L
RT: 12.98 min Scan# 1035
Delta R.T. 0.06 min
Lab File: 8M394558.D
Acq: 31 Jan 2014 3:11

Tgt Ion: 94 Resp: 20862

Ion	Ratio	Lower	Upper
94	100		
79	0.0	30.4	70.8#

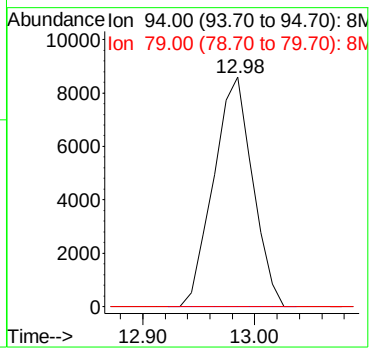

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394560.D Vial: 17
Acq On : 31 Jan 2014 4:16 Operator: MES
Sample : L14011372-12 A 2.5X 826-LOW Inst : HPMS8
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44:52 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	821838	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	650747	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	350898	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.95	111	209567	23.4339 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.72%		
43) 1,2-Dichloroethane-d4	10.60	65	177533	20.2622 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 81.04%		
58) Toluene-d8	12.98	98	787216	24.2802 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.12%		
80) p-Bromofluorobenzene	16.38	95	304070	23.3837 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.52%		

Target Compounds					Qvalue
4) Vinyl Chloride	4.08	62	9328	0.9475 ug/L	94
13) Acetone	6.53	43	1016	0.6960 ug/L #	46
14) 1,1-Dichloroethene	6.76	61	3481463	228.6488 ug/L	98
20) Carbon Disulfide	7.60	76	6261	0.2183 ug/L #	84
27) 1,1-Dichloroethane	8.62	63	234215	13.0691 ug/L	99
32) cis-1,2-Dichloroethene	9.46	96	6579	0.6665 ug/L	91
33) Chloroform	9.67	83	1950	0.1224 ug/L	92
45) 1,2-Dichloroethane	10.72	62	102460	9.1455 ug/L	94
47) Trichloroethene	11.51	130	10736	1.1442 ug/L	98
56) Dimethyl Disulfide	12.97	94	22749	1.6357 ug/L #	27
63) 1,1,2-Trichloroethane	13.47	97	6782	1.1975 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M394560.D 8260WTR.M Fri Jan 31 17:44:52 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394560.D Vial: 17
Acq On : 31 Jan 2014 4:16 Operator: MES
Sample : L14011372-12 A 2.5X 826-LOW Inst : HPMS8
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration

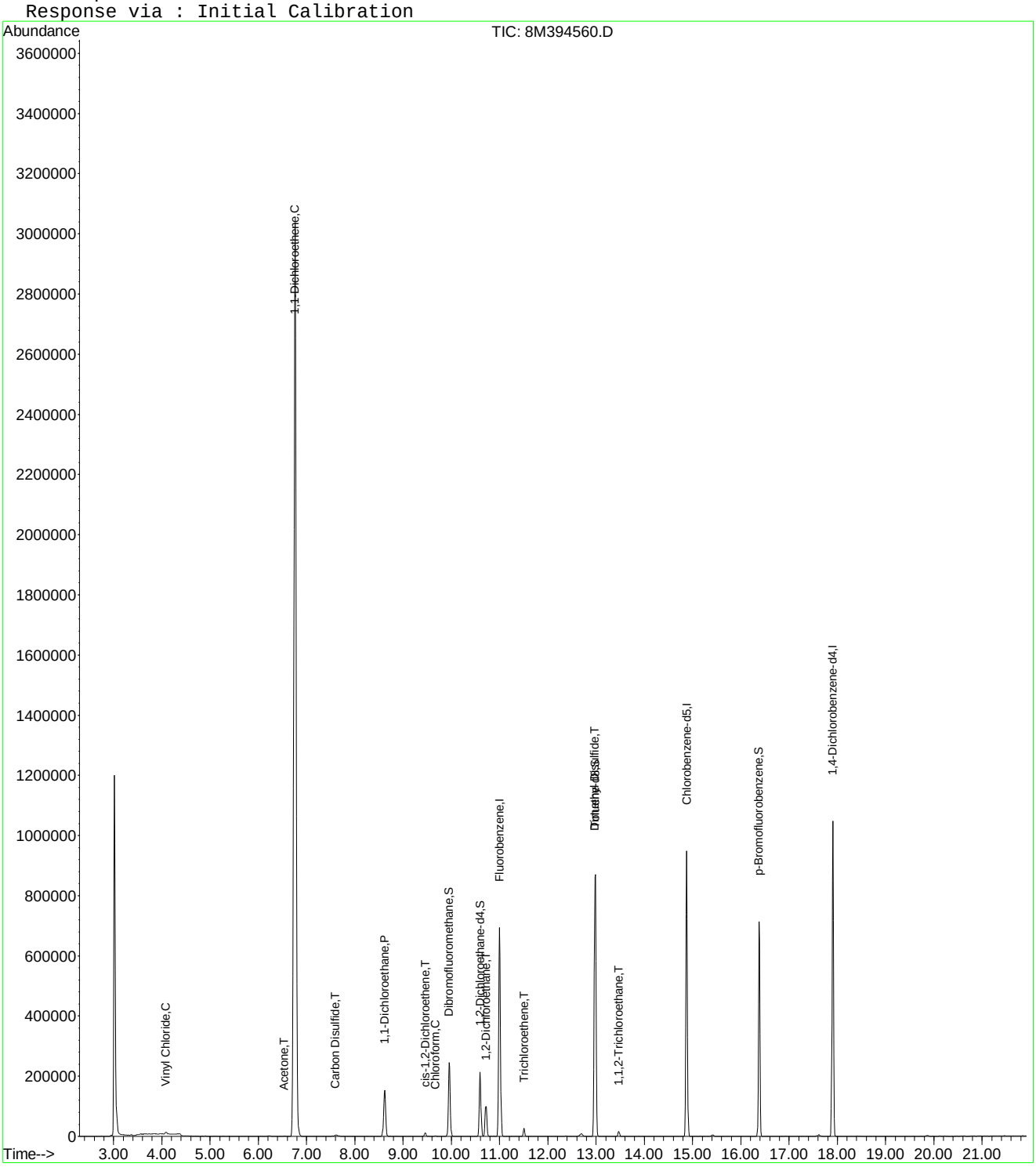

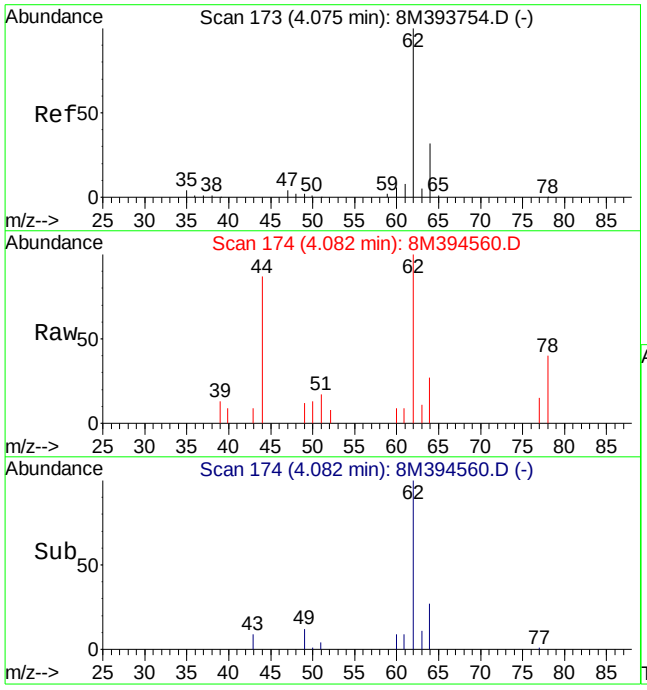

#4
Vinyl Chloride
Concen: 0.95 ug/L
RT: 4.08 min Scan# 174
Delta R.T. 0.01 min
Lab File: 8M394560.D
Acq: 31 Jan 2014 4:16

Tgt Ion: 62 Resp: 9328

Ion	Ratio	Lower	Upper
62	100		
64	27.8	18.7	43.7

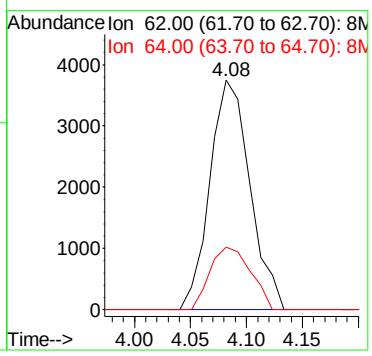

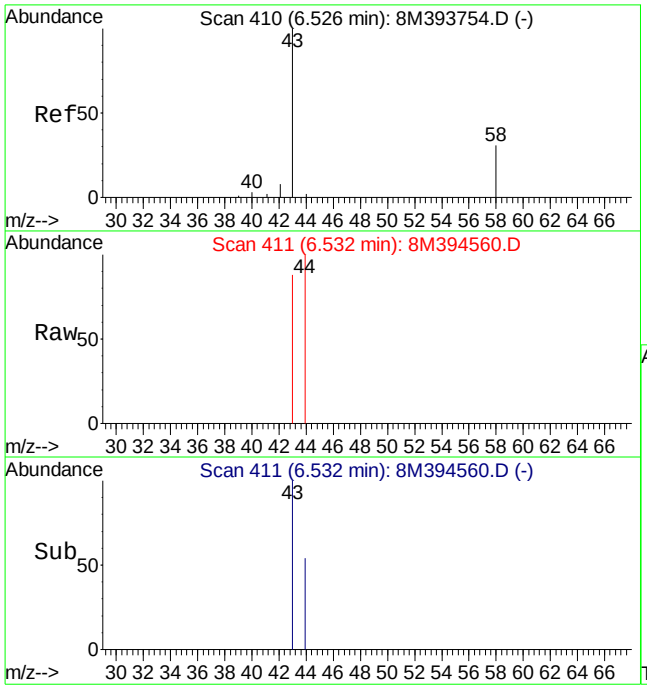

#13
Acetone
Concen: 0.70 ug/L
RT: 6.53 min Scan# 411
Delta R.T. 0.01 min
Lab File: 8M394560.D
Acq: 31 Jan 2014 4:16

Tgt Ion: 43 Resp: 1016

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.0	39.6#

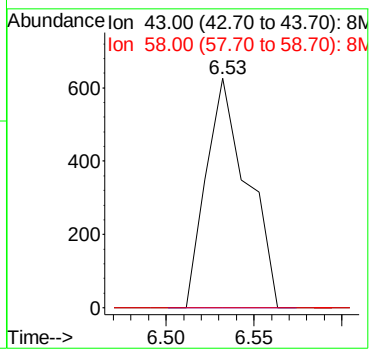

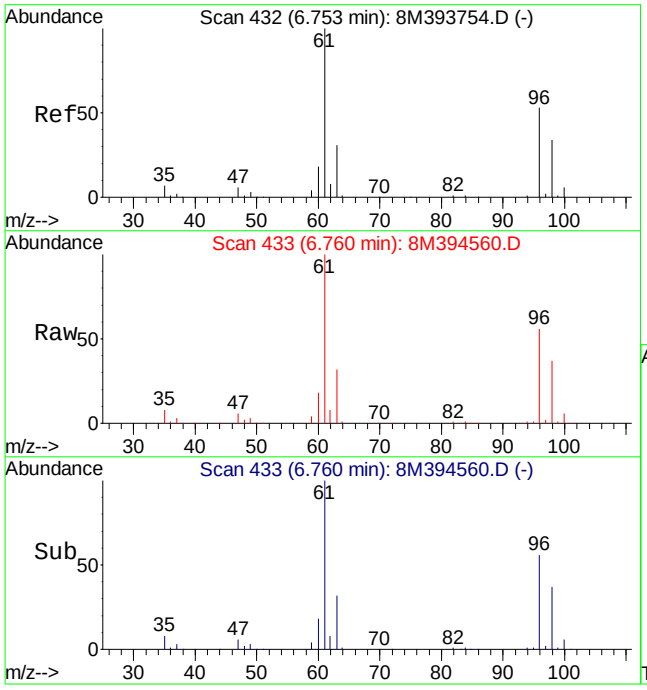

#14
1,1-Dichloroethene
Concen: 228.65 ug/L
RT: 6.76 min Scan# 433
Delta R.T. 0.01 min
Lab File: 8M394560.D
Acq: 31 Jan 2014 4:16

Tgt Ion: 61 Resp: 3481463

Ion	Ratio	Lower	Upper
61	100		
96	55.5	32.5	75.7

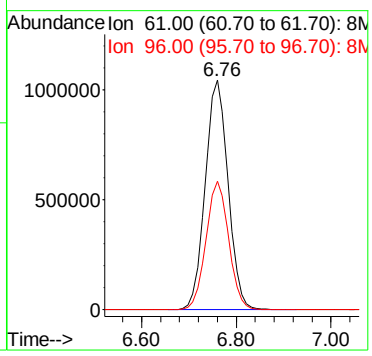

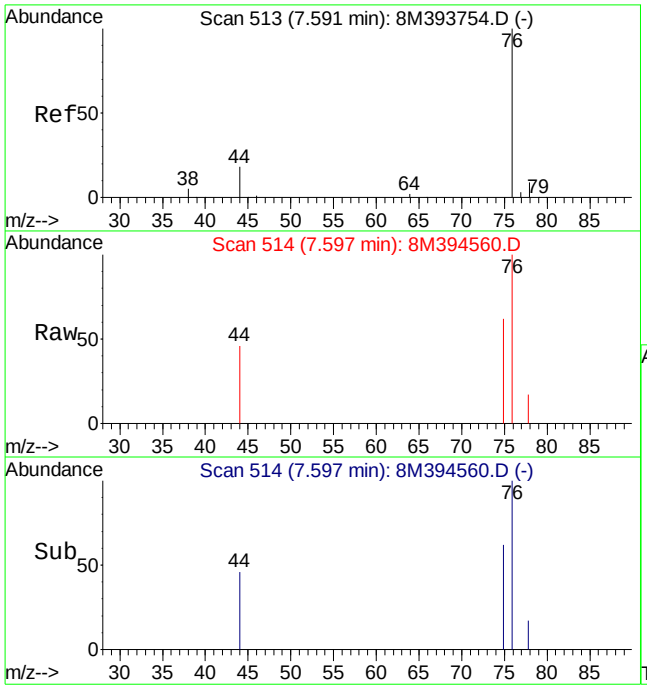

#20
Carbon Disulfide
Concen: 0.22 ug/L
RT: 7.60 min Scan# 514
Delta R.T. 0.01 min
Lab File: 8M394560.D
Acq: 31 Jan 2014 4:16

Tgt Ion: 76 Resp: 6261

Ion	Ratio	Lower	Upper
76	100		
78	3.8	5.8	13.4#

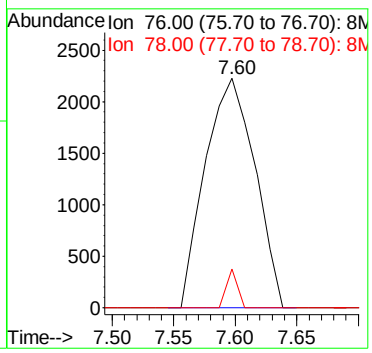

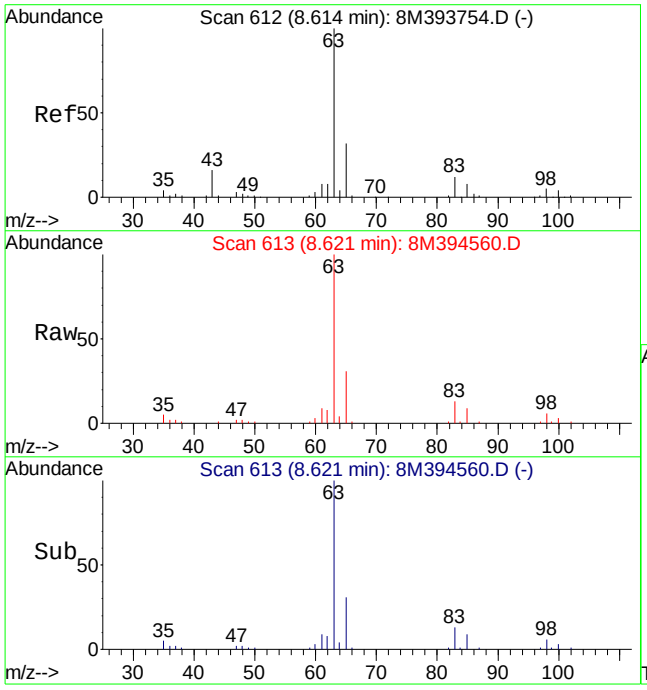

#27
1,1-Dichloroethane
Concen: 13.07 ug/L
RT: 8.62 min Scan# 613
Delta R.T. 0.01 min
Lab File: 8M394560.D
Acq: 31 Jan 2014 4:16

Tgt Ion: 63 Resp: 234215

Ion	Ratio	Lower	Upper
63	100		
65	31.4	18.7	43.5
83	12.1	7.4	17.2

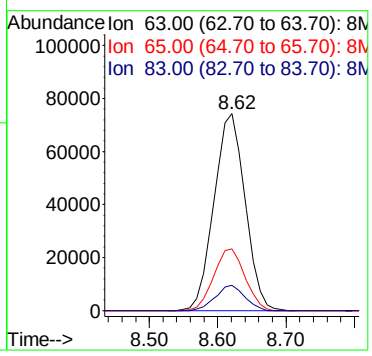

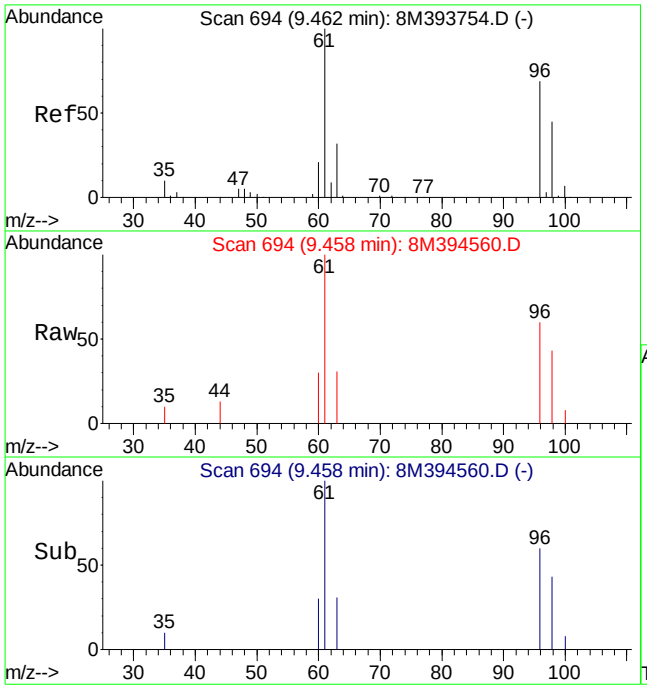

#32
cis-1,2-Dichloroethene
Concen: 0.67 ug/L
RT: 9.46 min Scan# 694
Delta R.T. -0.00 min
Lab File: 8M394560.D
Acq: 31 Jan 2014 4:16

Tgt Ion: 96 Resp: 6579

Ion	Ratio	Lower	Upper
96	100		
61	156.9	101.6	237.2

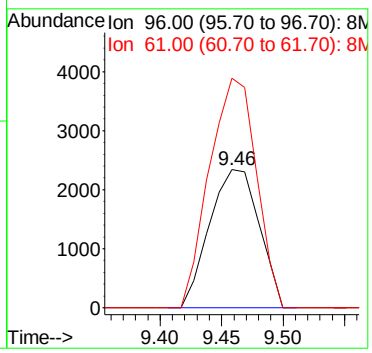

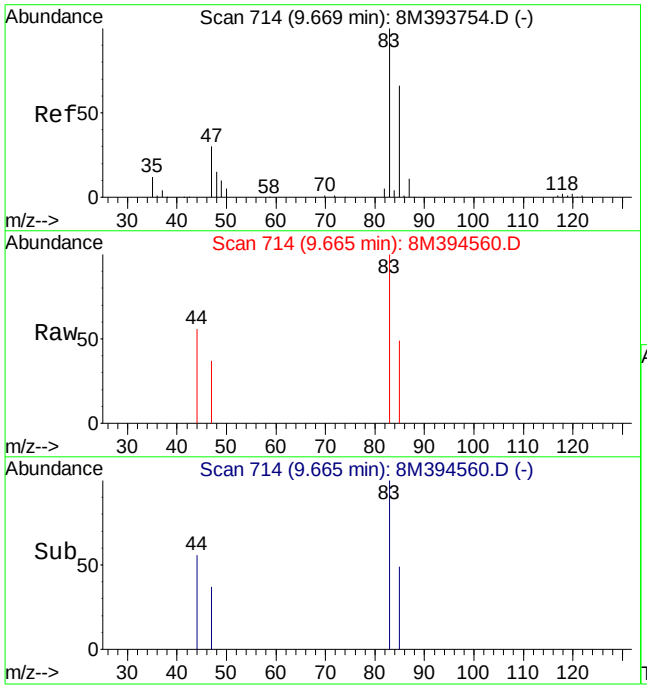

#33
Chloroform
Concen: 0.12 ug/L
RT: 9.67 min Scan# 714
Delta R.T. -0.00 min
Lab File: 8M394560.D
Acq: 31 Jan 2014 4:16

Tgt Ion: 83 Resp: 1950

Ion	Ratio	Lower	Upper
83	100		
85	59.4	39.5	92.3

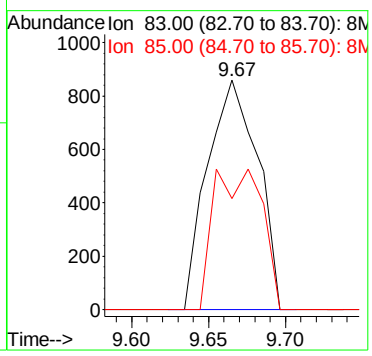

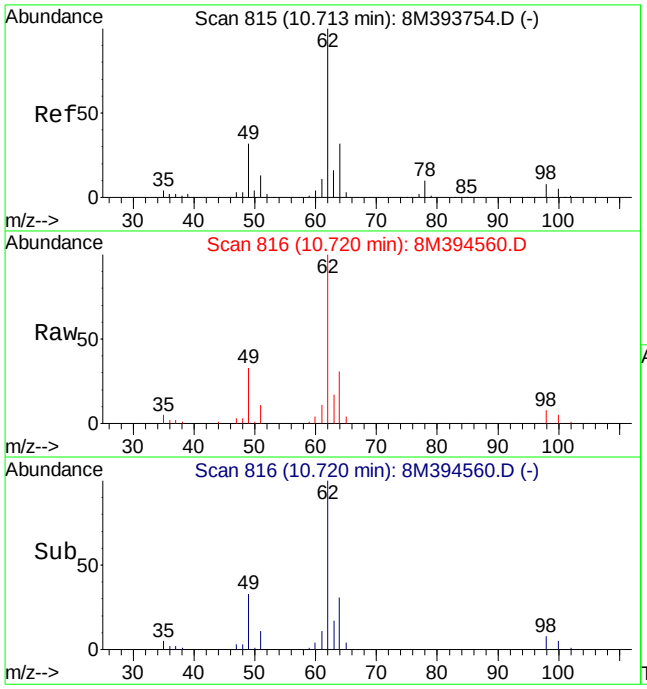

#45
1,2-Dichloroethane
Concen: 9.15 ug/L
RT: 10.72 min Scan# 816
Delta R.T. 0.01 min
Lab File: 8M394560.D
Acq: 31 Jan 2014 4:16

Tgt Ion: 62 Resp: 102460

Ion	Ratio	Lower	Upper
62	100		
64	31.7	19.2	44.8
49	33.8	24.2	56.4

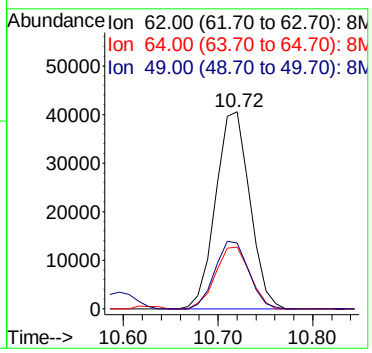

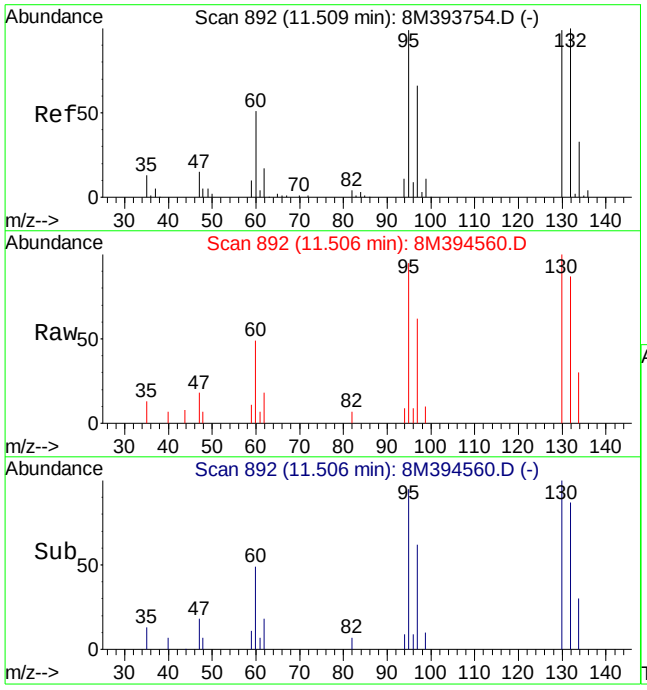

#47
Trichloroethene
Concen: 1.14 ug/L
RT: 11.51 min Scan# 892
Delta R.T. -0.00 min
Lab File: 8M394560.D
Acq: 31 Jan 2014 4:16

Tgt Ion:130 Resp: 10736

Ion	Ratio	Lower	Upper
130	100		
132	100.1	61.0	142.2
95	99.9	61.6	143.6

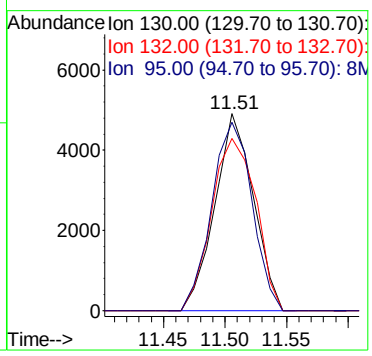

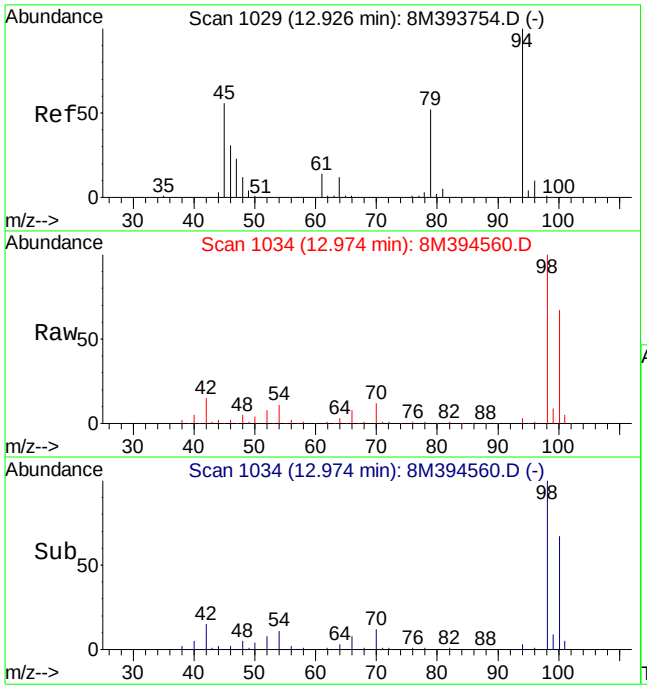

#56
Dimethyl Disulfide
Concen: 1.64 ug/L
RT: 12.97 min Scan# 1034
Delta R.T. 0.05 min
Lab File: 8M394560.D
Acq: 31 Jan 2014 4:16

Tgt Ion: 94 Resp: 22749

Ion	Ratio	Lower	Upper
94	100		
79	0.0	30.4	70.8#

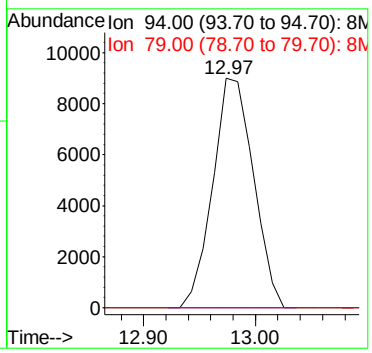

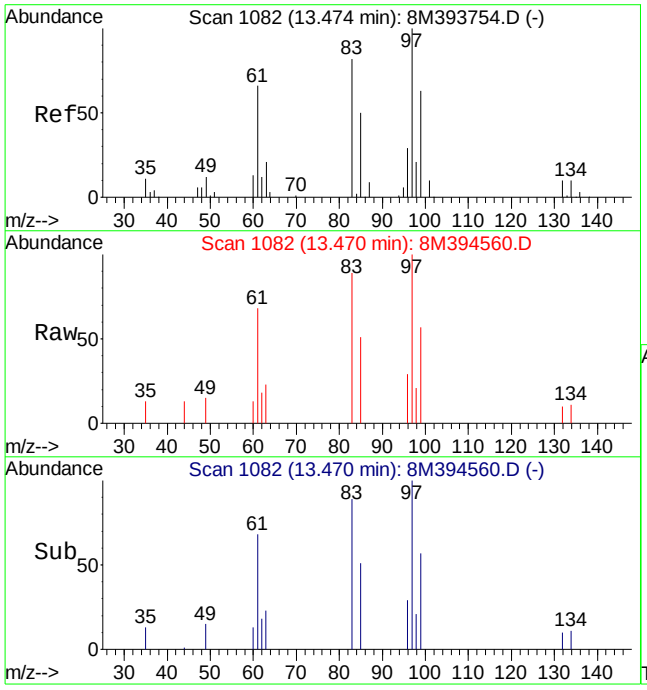

#63
1,1,2-Trichloroethane
Concen: 1.20 ug/L
RT: 13.47 min Scan# 1082
Delta R.T. -0.00 min
Lab File: 8M394560.D
Acq: 31 Jan 2014 4:16

Tgt Ion: 97 Resp: 6782

Ion	Ratio	Lower	Upper
97	100		
83	88.7	50.3	117.3

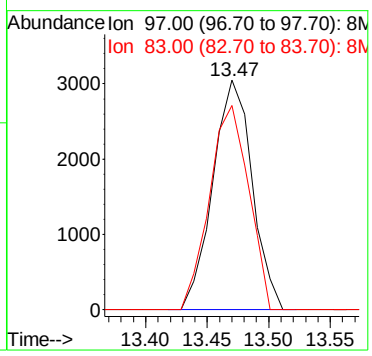

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394561.D Vial: 18
Acq On : 31 Jan 2014 4:48 Operator: MES
Sample : L14011372-13 A 2.5X 826-LOW Inst : HPMS8
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44:54 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	824099	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	654737	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	349231	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.96	111	213176	23.7721 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.08%		
43) 1,2-Dichloroethane-d4	10.60	65	182834	20.8100 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.24%		
58) Toluene-d8	12.98	98	785879	24.0913 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.36%		
80) p-Bromofluorobenzene	16.38	95	309370	23.9049 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.60%		

Target Compounds					Qvalue
3) Chloromethane	3.84	50	2359	0.1701 ug/L	78
4) Vinyl Chloride	4.08	62	9377	0.9499 ug/L	95
13) Acetone	6.55	43	1107	0.7562 ug/L #	46
14) 1,1-Dichloroethene	6.75	61	3476782	227.7149 ug/L	97
20) Carbon Disulfide	7.59	76	9825	0.3417 ug/L #	87
27) 1,1-Dichloroethane	8.61	63	232942	12.9624 ug/L	99
32) cis-1,2-Dichloroethene	9.45	96	7021	0.7093 ug/L	81
33) Chloroform	9.66	83	2291	0.1434 ug/L	79
45) 1,2-Dichloroethane	10.71	62	102709	9.1426 ug/L	94
47) Trichloroethene	11.51	130	11244	1.1950 ug/L	98
51) 1,4-Dioxane	12.01	88	239	6.2961 ug/L #	12
56) Dimethyl Disulfide	12.98	94	21149	1.5165 ug/L #	27
63) 1,1,2-Trichloroethane	13.46	97	6850	1.2021 ug/L	93

(#) = qualifier out of range (m) = manual integration
8M394561.D 8260WTR.M Fri Jan 31 17:44:54 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394561.D Vial: 18
Acq On : 31 Jan 2014 4:48 Operator: MES
Sample : L14011372-13 A 2.5X 826-LOW Inst : HPMS8
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration

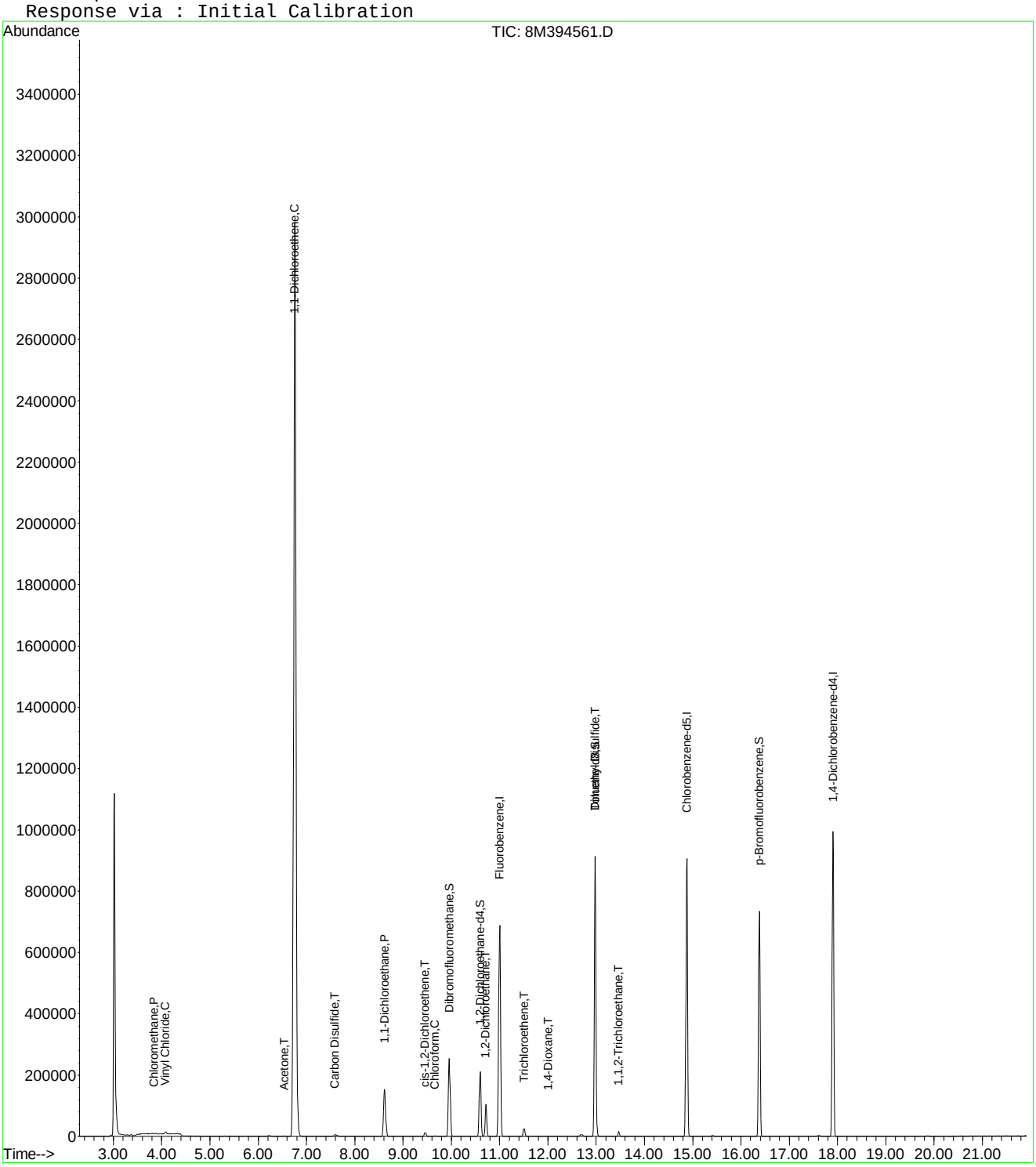

8M394561.D 8260WTR.M Fri Jan 31 17:44:54 2014 Page 2

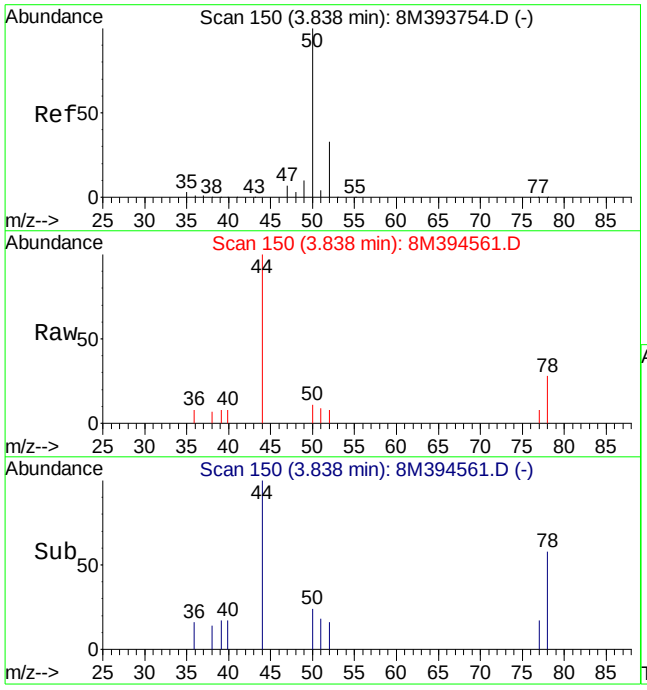

#3
Chloromethane
Concen: 0.17 ug/L
RT: 3.84 min Scan# 150
Delta R.T. 0.00 min
Lab File: 8M394561.D
Acq: 31 Jan 2014 4:48

Tgt Ion: 50 Resp: 2359

Ion	Ratio	Lower	Upper
50	100		
52	45.2	19.6	45.6

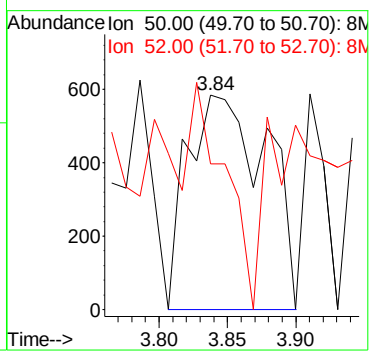

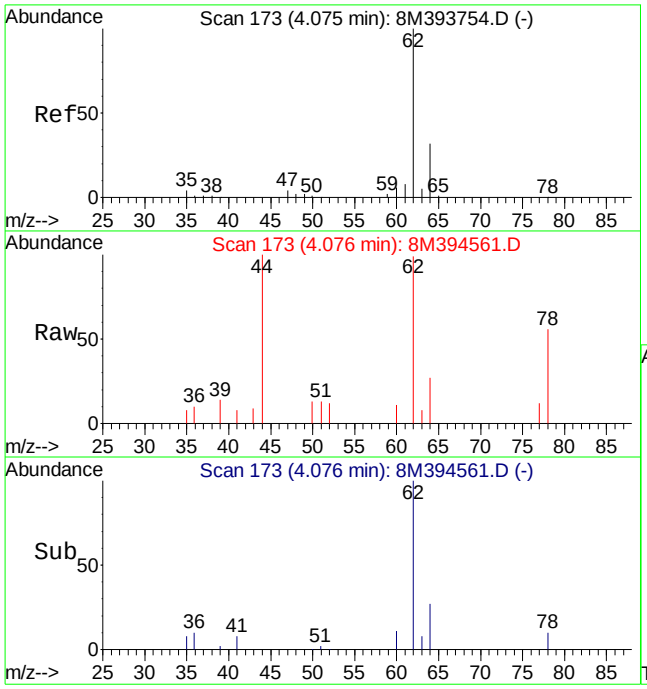

#4
Vinyl Chloride
Concen: 0.95 ug/L
RT: 4.08 min Scan# 173
Delta R.T. 0.00 min
Lab File: 8M394561.D
Acq: 31 Jan 2014 4:48

Tgt Ion: 62 Resp: 9377

Ion	Ratio	Lower	Upper
62	100		
64	28.4	18.7	43.7

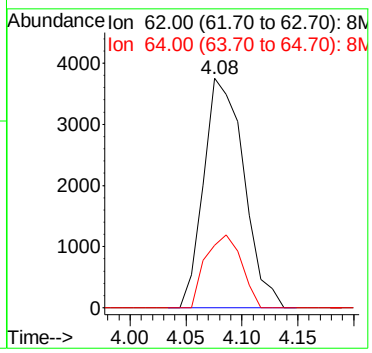

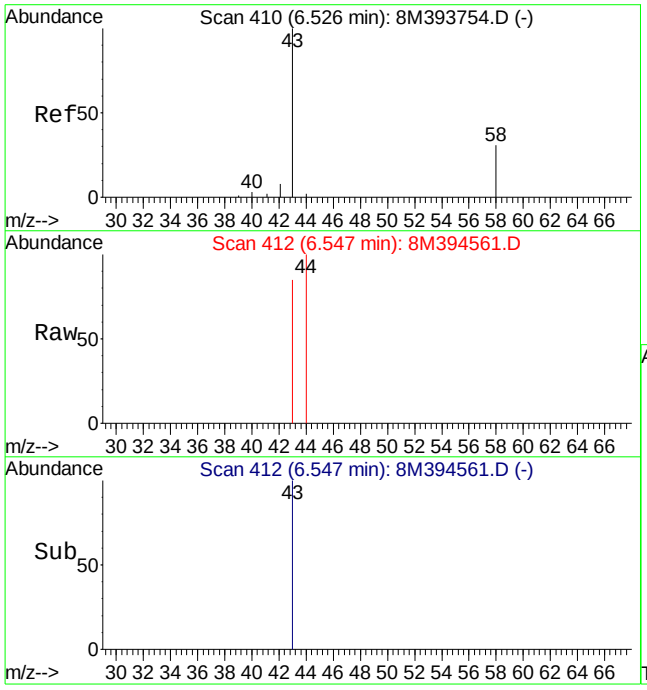

#13
Acetone
Concen: 0.76 ug/L
RT: 6.55 min Scan# 412
Delta R.T. 0.02 min
Lab File: 8M394561.D
Acq: 31 Jan 2014 4:48

Tgt Ion: 43 Resp: 1107

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.0	39.6#

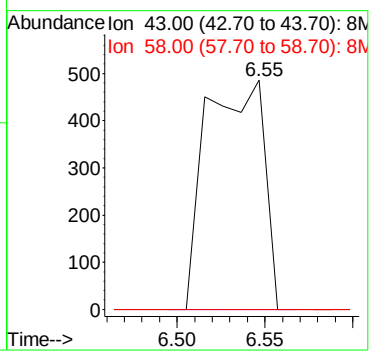

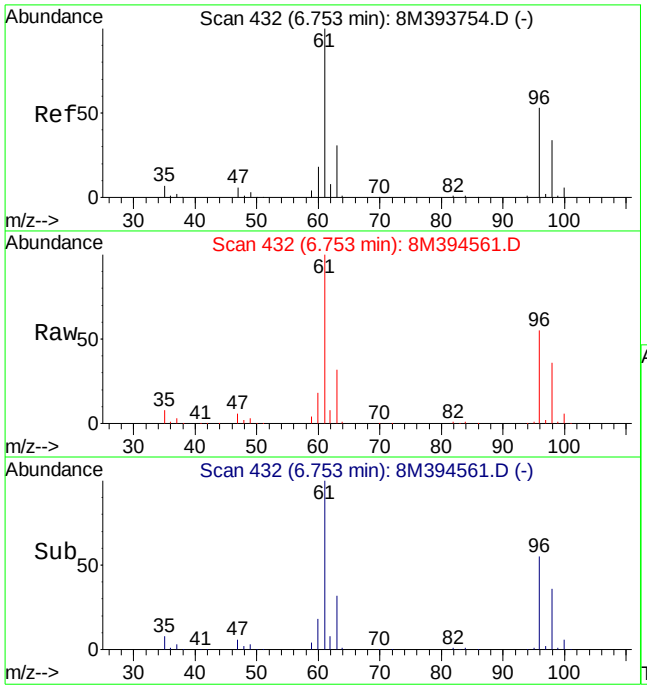

#14
1,1-Dichloroethene
Concen: 227.71 ug/L
RT: 6.75 min Scan# 432
Delta R.T. 0.00 min
Lab File: 8M394561.D
Acq: 31 Jan 2014 4:48

Tgt Ion: 61 Resp: 3476782

Ion	Ratio	Lower	Upper
61	100		
96	56.0	32.5	75.7

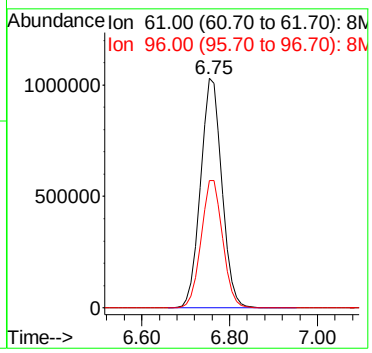

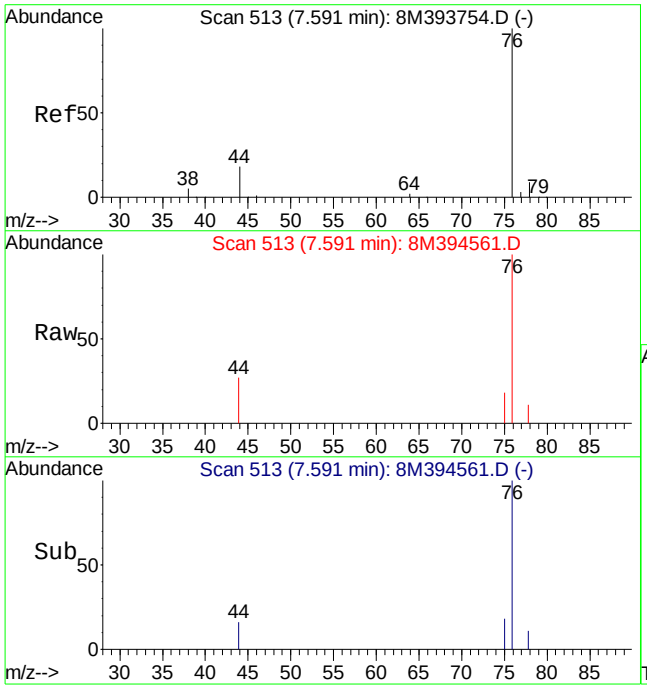

#20
Carbon Disulfide
Concen: 0.34 ug/L
RT: 7.59 min Scan# 513
Delta R.T. 0.00 min
Lab File: 8M394561.D
Acq: 31 Jan 2014 4:48

Tgt Ion: 76 Resp: 9825

Ion	Ratio	Lower	Upper
76	100		
78	4.9	5.8	13.4#

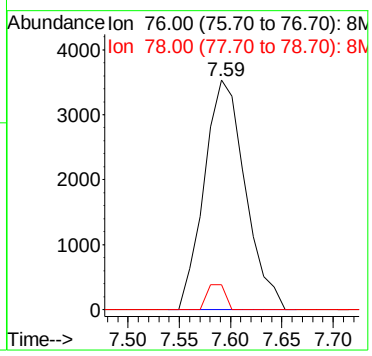

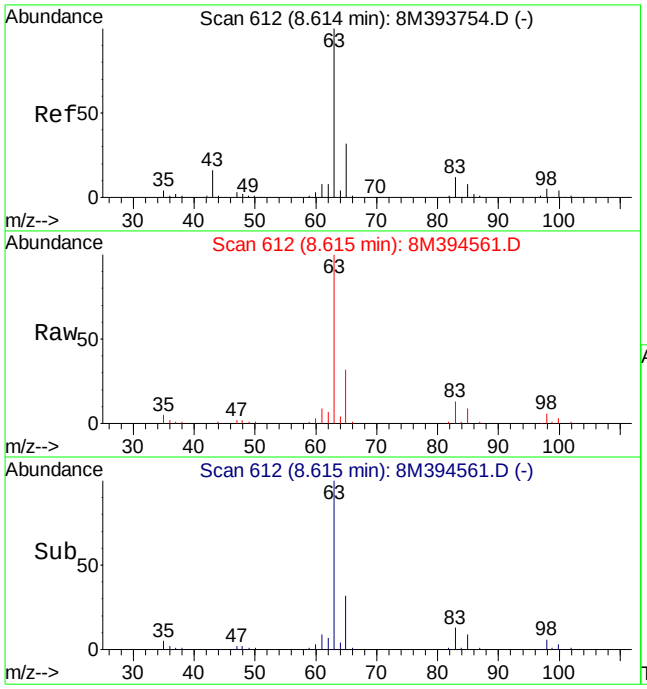

#27
1,1-Dichloroethane
Concen: 12.96 ug/L
RT: 8.61 min Scan# 612
Delta R.T. 0.00 min
Lab File: 8M394561.D
Acq: 31 Jan 2014 4:48

Tgt Ion: 63 Resp: 232942

Ion	Ratio	Lower	Upper
63	100		
65	31.6	18.7	43.5
83	12.1	7.4	17.2

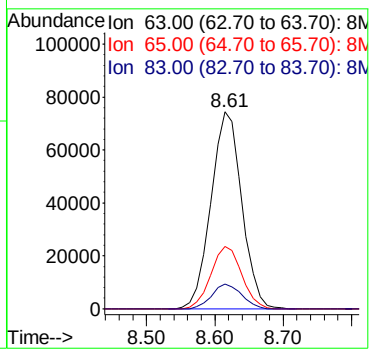

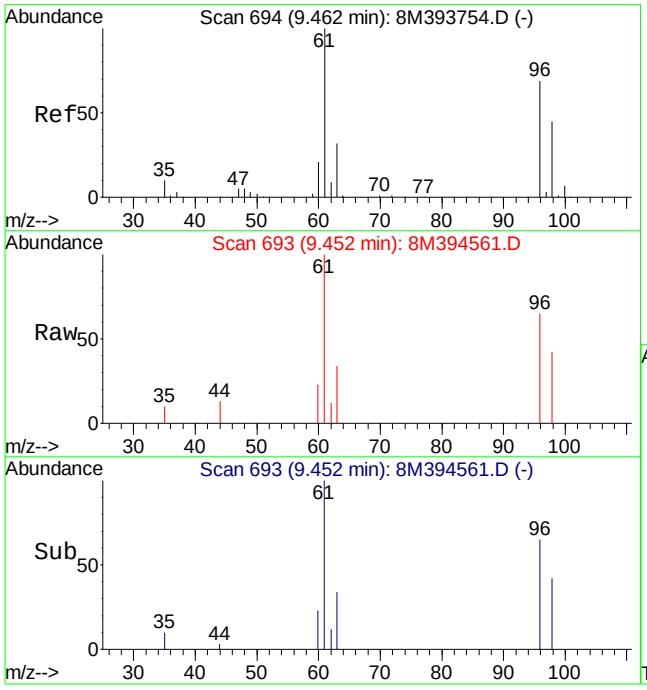

#32
cis-1,2-Dichloroethene
Concen: 0.71 ug/L
RT: 9.45 min Scan# 693
Delta R.T. -0.01 min
Lab File: 8M394561.D
Acq: 31 Jan 2014 4:48

Tgt Ion: 96 Resp: 7021

Ion	Ratio	Lower	Upper
96	100		
61	142.9	101.6	237.2

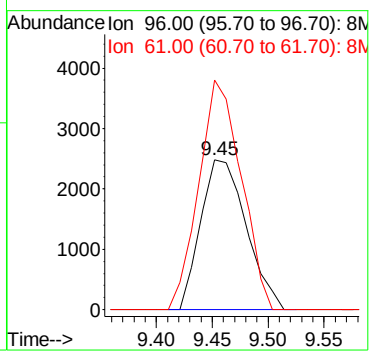

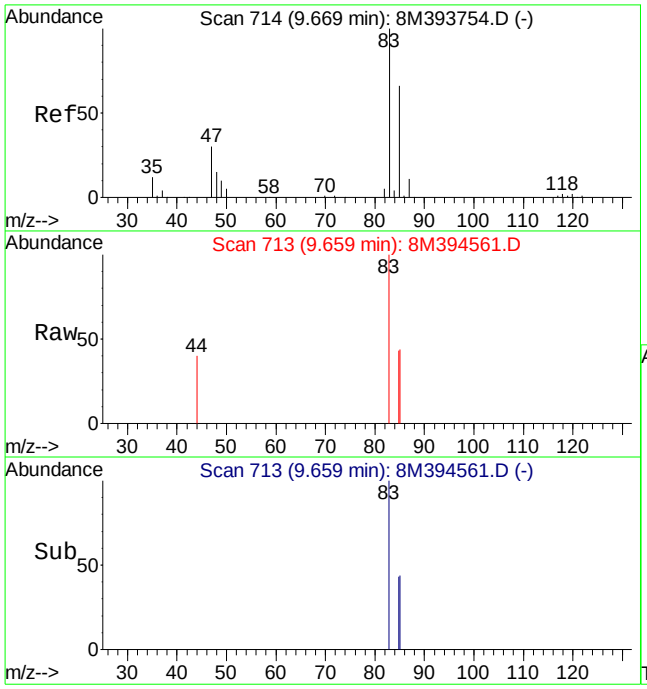

#33
Chloroform
Concen: 0.14 ug/L
RT: 9.66 min Scan# 713
Delta R.T. -0.01 min
Lab File: 8M394561.D
Acq: 31 Jan 2014 4:48

Tgt Ion: 83 Resp: 2291

Ion	Ratio	Lower	Upper
83	100		
85	49.0	39.5	92.3

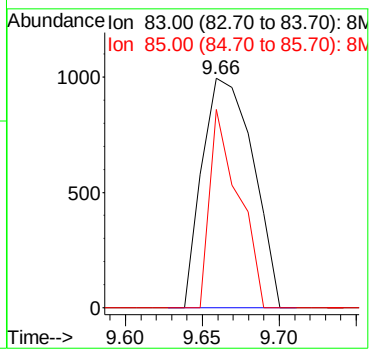

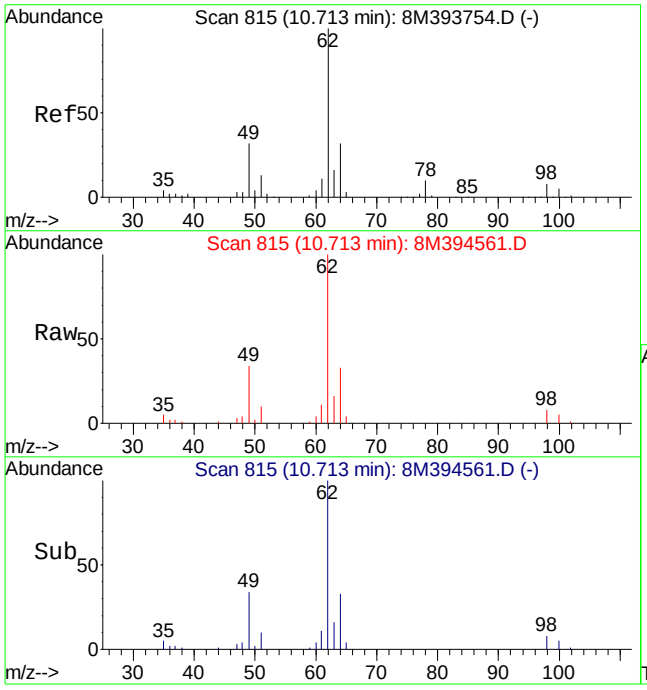

#45
1,2-Dichloroethane
Concen: 9.14 ug/L
RT: 10.71 min Scan# 815
Delta R.T. 0.00 min
Lab File: 8M394561.D
Acq: 31 Jan 2014 4:48

Tgt Ion: 62 Resp: 102709

Ion	Ratio	Lower	Upper
62	100		
64	32.2	19.2	44.8
49	34.2	24.2	56.4

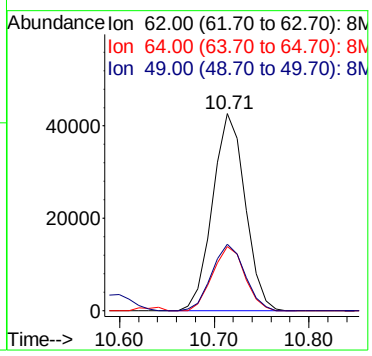

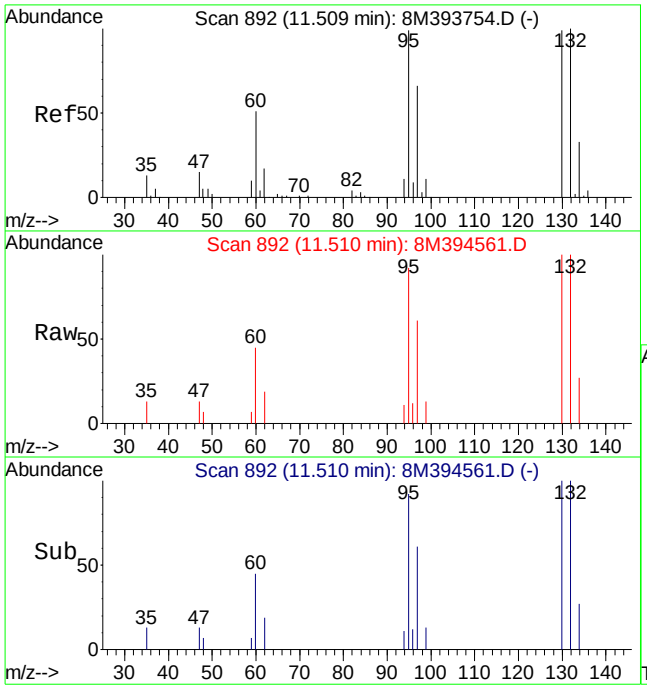

#47
Trichloroethene
Concen: 1.20 ug/L
RT: 11.51 min Scan# 892
Delta R.T. 0.00 min
Lab File: 8M394561.D
Acq: 31 Jan 2014 4:48

Tgt Ion:130 Resp: 11244

Ion	Ratio	Lower	Upper
130	100		
132	104.2	61.0	142.2
95	101.6	61.6	143.6

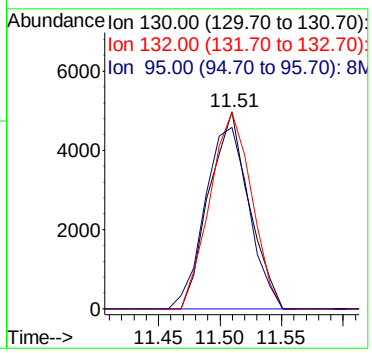

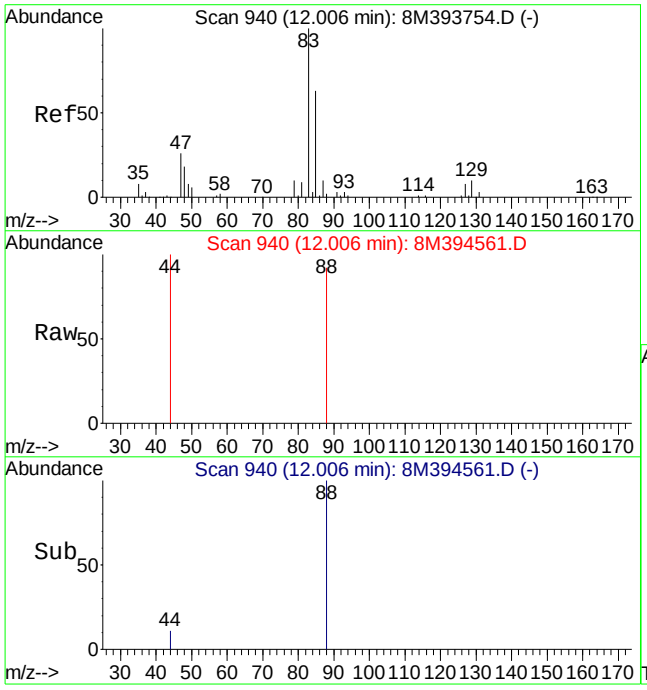

#51
1,4-Dioxane
Concen: 6.30 ug/L
RT: 12.01 min Scan# 940
Delta R.T. 0.00 min
Lab File: 8M394561.D
Acq: 31 Jan 2014 4:48

Tgt Ion: 88 Resp: 239

Ion	Ratio	Lower	Upper
88	100		
58	0.0	44.7	104.3#

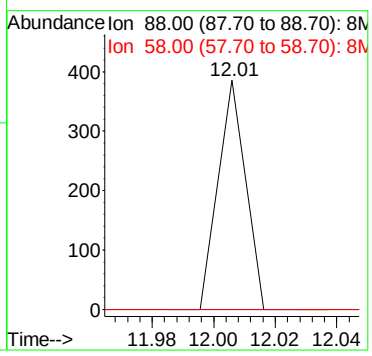

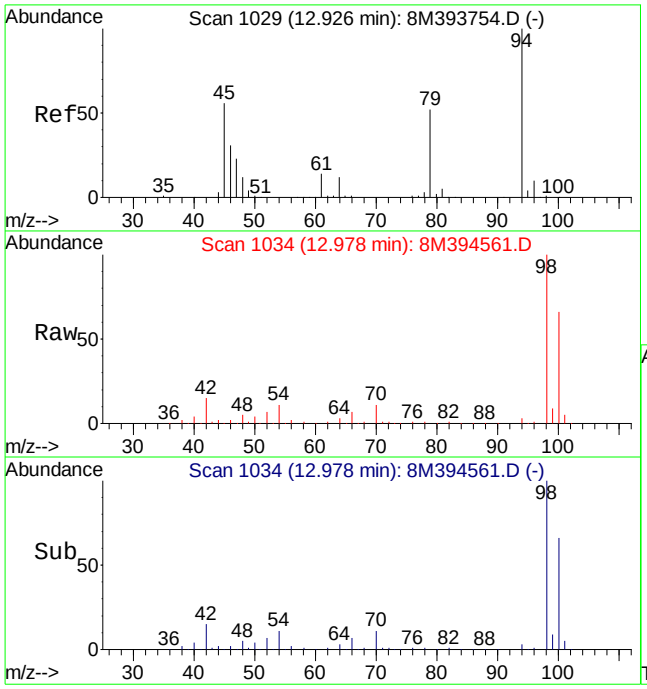

#56
Dimethyl Disulfide
Concen: 1.52 ug/L
RT: 12.98 min Scan# 1034
Delta R.T. 0.05 min
Lab File: 8M394561.D
Acq: 31 Jan 2014 4:48

Tgt Ion: 94 Resp: 21149

Ion	Ratio	Lower	Upper
94	100		
79	0.0	30.4	70.8#

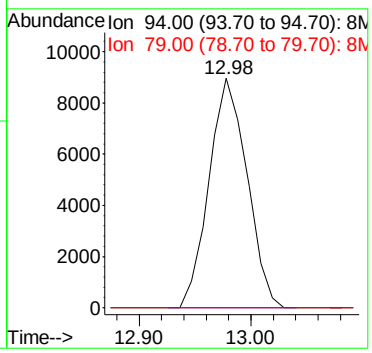

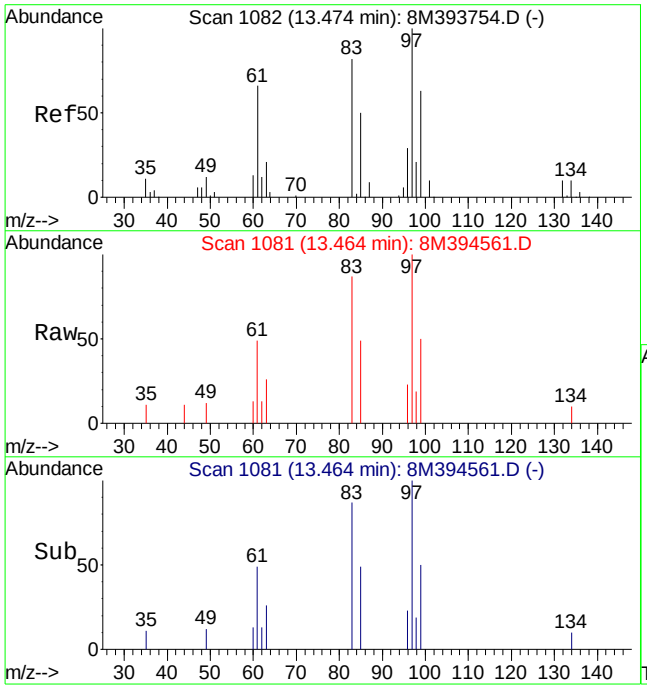

#63
1,1,2-Trichloroethane
Concen: 1.20 ug/L
RT: 13.46 min Scan# 1081
Delta R.T. -0.01 min
Lab File: 8M394561.D
Acq: 31 Jan 2014 4:48

Tgt Ion: 97 Resp: 6850

Ion	Ratio	Lower	Upper
97	100		
83	90.2	50.3	117.3

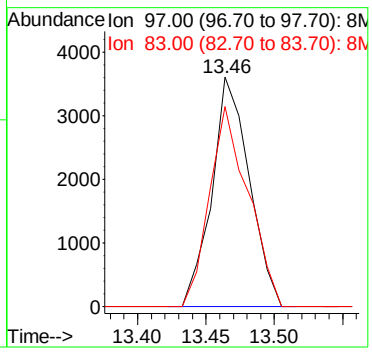

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394559.D Vial: 16
Acq On : 31 Jan 2014 3:44 Operator: MES
Sample : L14011372-14 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44:50 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	815382	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	641018	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	347029	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.96	111	213108	24.0186 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.08%		
43) 1,2-Dichloroethane-d4	10.60	65	180360	20.7478 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.00%		
58) Toluene-d8	12.97	98	784924	24.5770 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.32%		
80) p-Bromofluorobenzene	16.38	95	302013	23.4845 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.92%		

Target Compounds

					Qvalue
3) Chloromethane	3.83	50	1706	0.1243 ug/L #	1
13) Acetone	6.53	43	1069	0.7381 ug/L #	46
14) 1,1-Dichloroethene	6.76	61	39016	2.5827 ug/L	98
27) 1,1-Dichloroethane	8.62	63	4889	0.2750 ug/L	90
45) 1,2-Dichloroethane	10.72	62	7408	0.6665 ug/L	88
56) Dimethyl Disulfide	12.99	94	22081	1.6002 ug/L #	27

(#) = qualifier out of range (m) = manual integration
8M394559.D 8260WTR.M Fri Jan 31 17:44:51 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394559.D Vial: 16
Acq On : 31 Jan 2014 3:44 Operator: MES
Sample : L14011372-14 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration

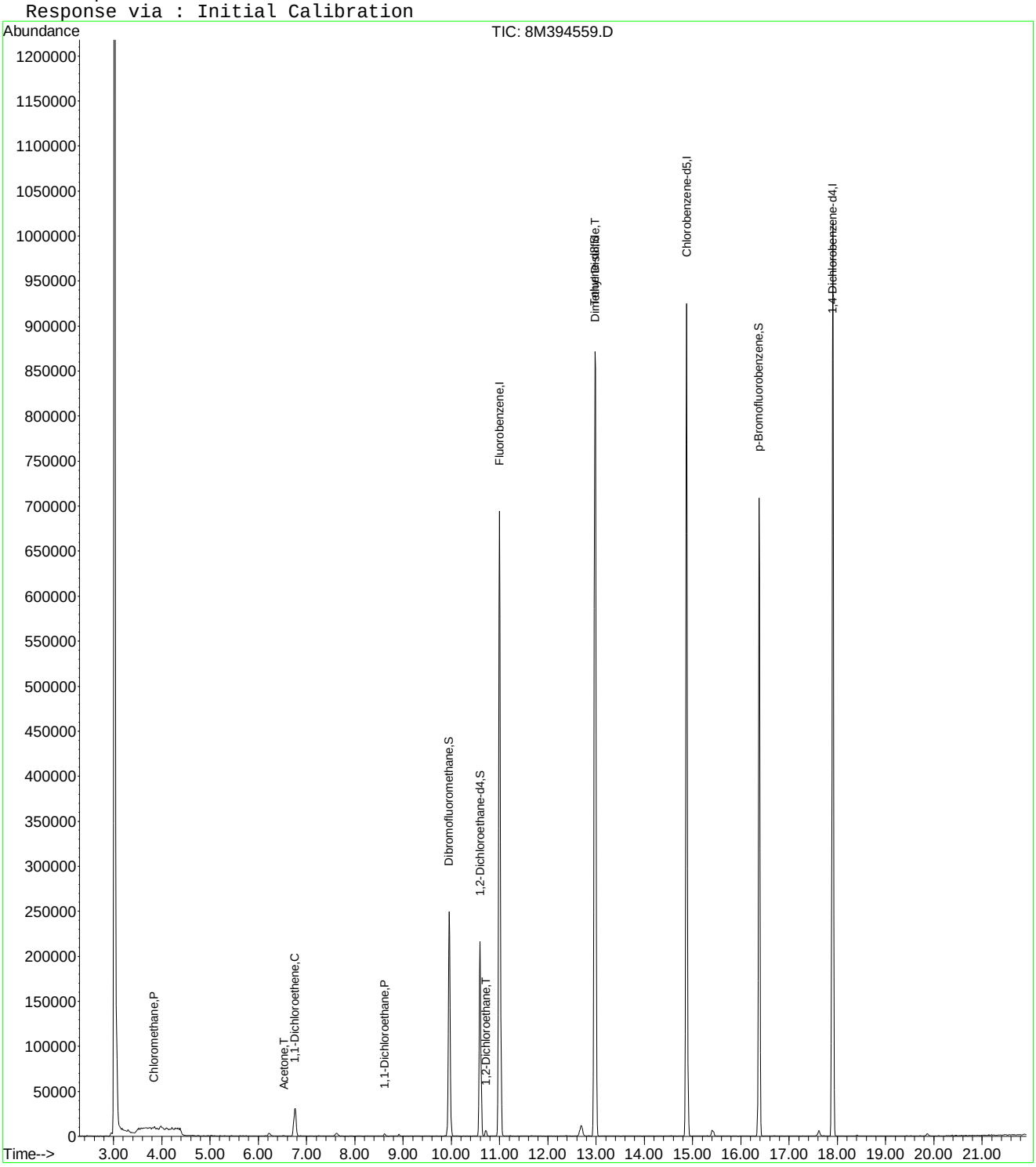

8M394559.D 8260WTR.M Fri Jan 31 17:44:51 2014 Page 2

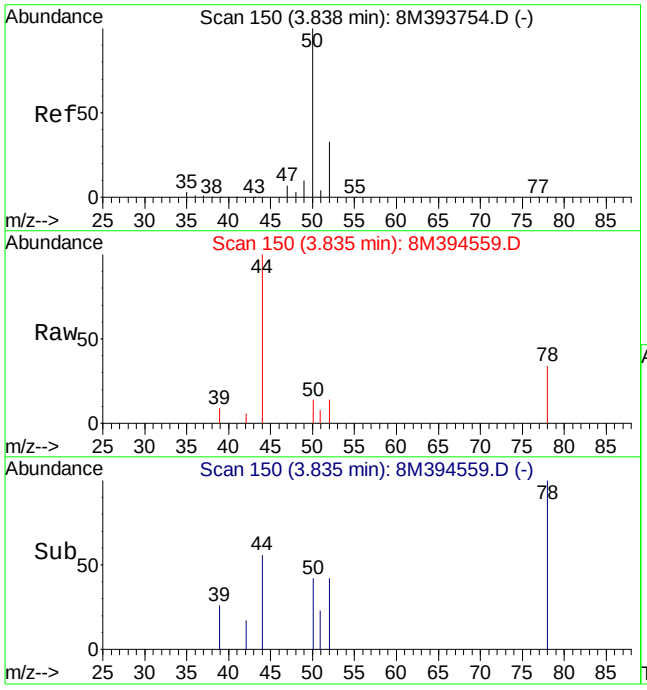

#3
Chloromethane
Concen: 0.12 ug/L
RT: 3.83 min Scan# 150
Delta R.T. -0.00 min
Lab File: 8M394559.D
Acq: 31 Jan 2014 3:44

Tgt Ion: 50 Resp: 1706

Ion	Ratio	Lower	Upper
50	100		
52	128.0	19.6	45.6#

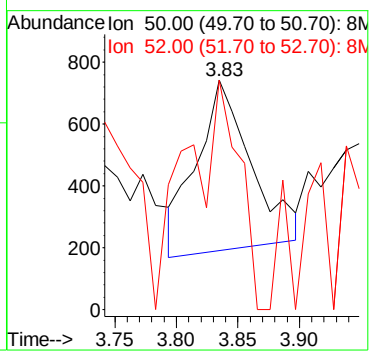

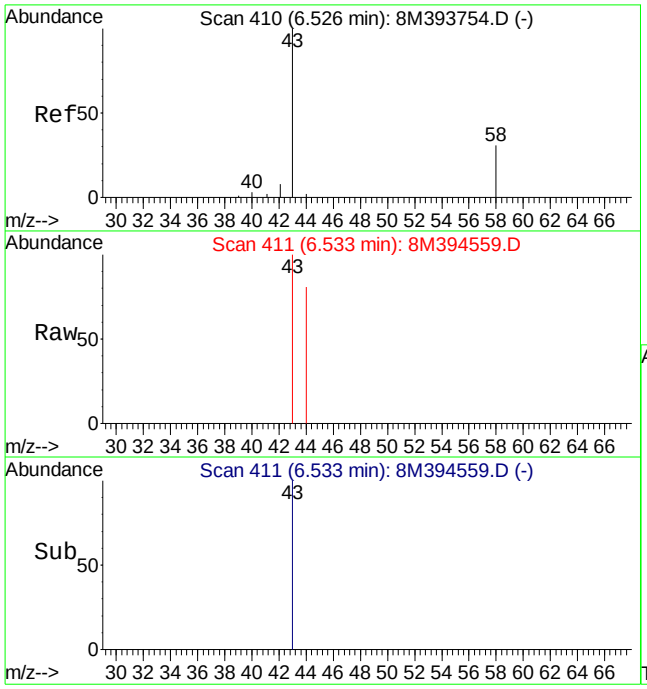

#13
Acetone
Concen: 0.74 ug/L
RT: 6.53 min Scan# 411
Delta R.T. 0.01 min
Lab File: 8M394559.D
Acq: 31 Jan 2014 3:44

Tgt Ion: 43 Resp: 1069

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.0	39.6#

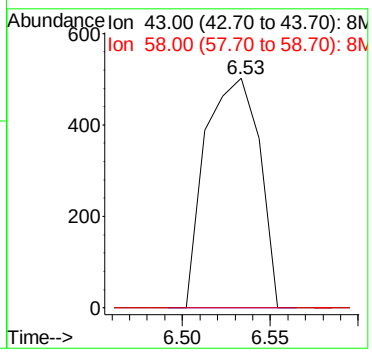

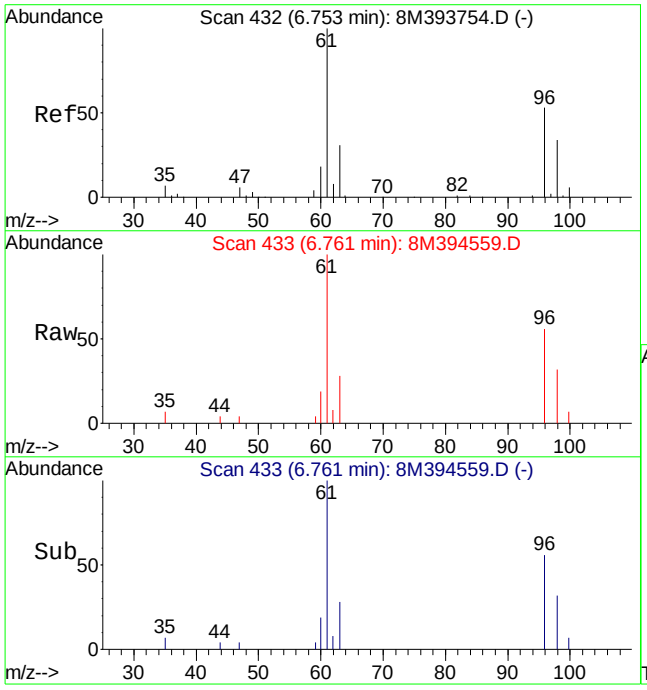

#14
1,1-Dichloroethene
Concen: 2.58 ug/L
RT: 6.76 min Scan# 433
Delta R.T. 0.01 min
Lab File: 8M394559.D
Acq: 31 Jan 2014 3:44

Tgt Ion: 61 Resp: 39016

Ion	Ratio	Lower	Upper
61	100		
96	55.8	32.5	75.7

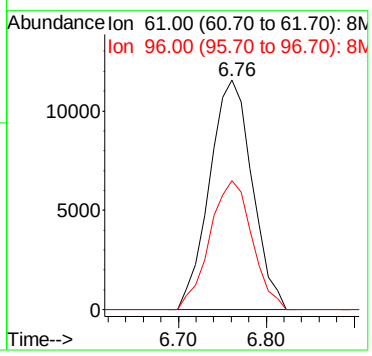

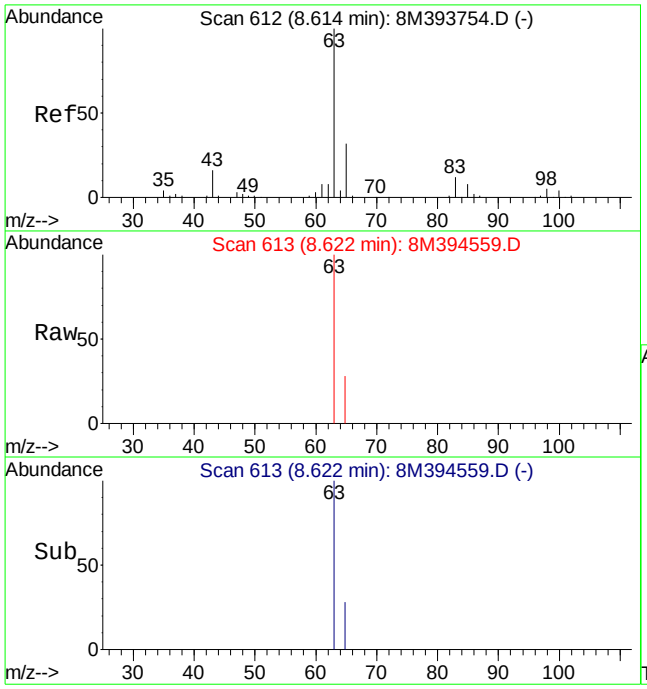

#27
1,1-Dichloroethane
Concen: 0.27 ug/L
RT: 8.62 min Scan# 613
Delta R.T. 0.01 min
Lab File: 8M394559.D
Acq: 31 Jan 2014 3:44

Tgt Ion: 63 Resp: 4889

Ion	Ratio	Lower	Upper
63	100		
65	25.5	18.7	43.5
83	8.2	7.4	17.2

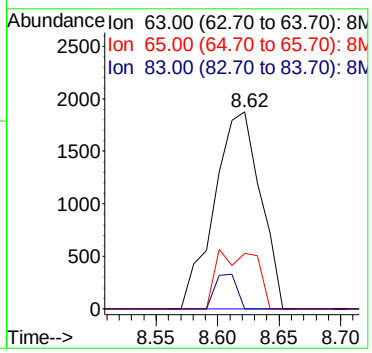

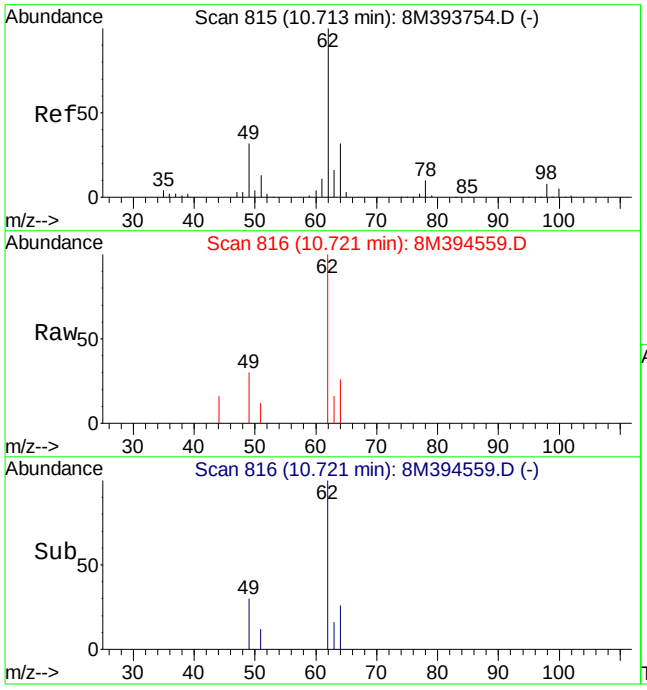

#45
1,2-Dichloroethane
Concen: 0.67 ug/L
RT: 10.72 min Scan# 816
Delta R.T. 0.01 min
Lab File: 8M394559.D
Acq: 31 Jan 2014 3:44

Tgt Ion: 62 Resp: 7408

Ion	Ratio	Lower	Upper
62	100		
64	31.7	19.2	44.8
49	27.2	24.2	56.4

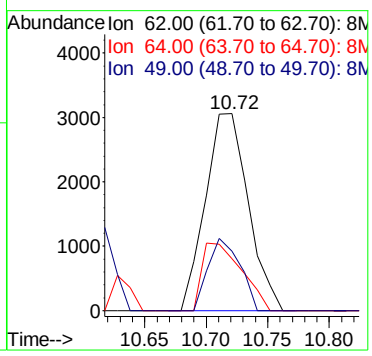

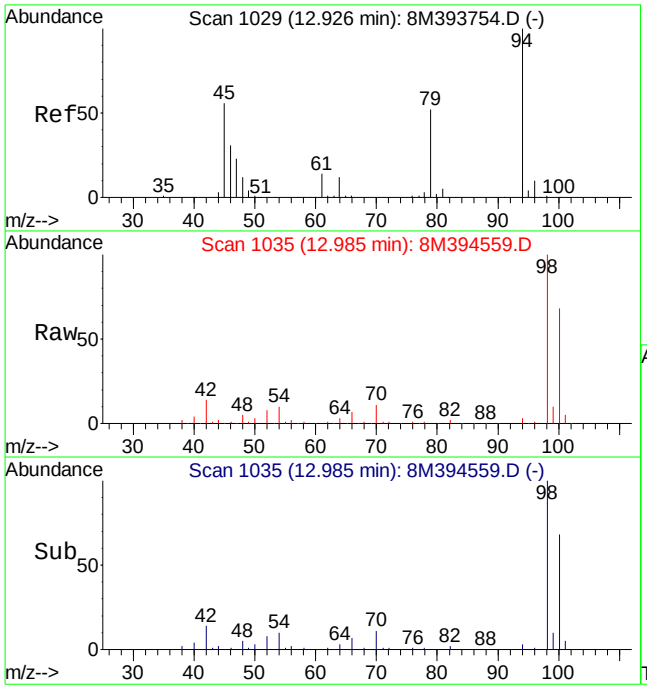

#56
Dimethyl Disulfide
Concen: 1.60 ug/L
RT: 12.99 min Scan# 1035
Delta R.T. 0.06 min
Lab File: 8M394559.D
Acq: 31 Jan 2014 3:44

Tgt Ion: 94 Resp: 22081

Ion	Ratio	Lower	Upper
94	100		
79	0.0	30.4	70.8#

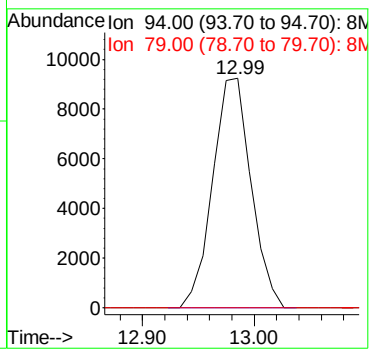

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394551.D Vial: 8
Acq On : 30 Jan 2014 23:25 Operator: MES
Sample : L14011372-15 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44:39 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	869735	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	674445	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	363644	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.96	111	222380	23.4973 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.00%		
43) 1,2-Dichloroethane-d4	10.60	65	185134	19.9661 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 79.88%#		
58) Toluene-d8	12.98	98	827129	24.6149 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.44%		
80) p-Bromofluorobenzene	16.38	95	314734	23.3555 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.44%		
Target Compounds					Qvalue
13) Acetone	6.53	43	3389	2.1936 ug/L #	62
56) Dimethyl Disulfide	12.98	94	22515	1.5297 ug/L #	27
72) Ethylbenzene	15.04	106	3053	0.2088 ug/L	59
73) m-,p-Xylene	15.04	106	3053	0.1768 ug/L	79
74) o-Xylene	15.60	106	2216	0.1267 ug/L	90
75) Styrene	15.64	104	16570	0.5791 ug/L	90

(#) = qualifier out of range (m) = manual integration
8M394551.D 8260WTR.M Fri Jan 31 17:44:39 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394551.D Vial: 8
Acq On : 30 Jan 2014 23:25 Operator: MES
Sample : L14011372-15 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration

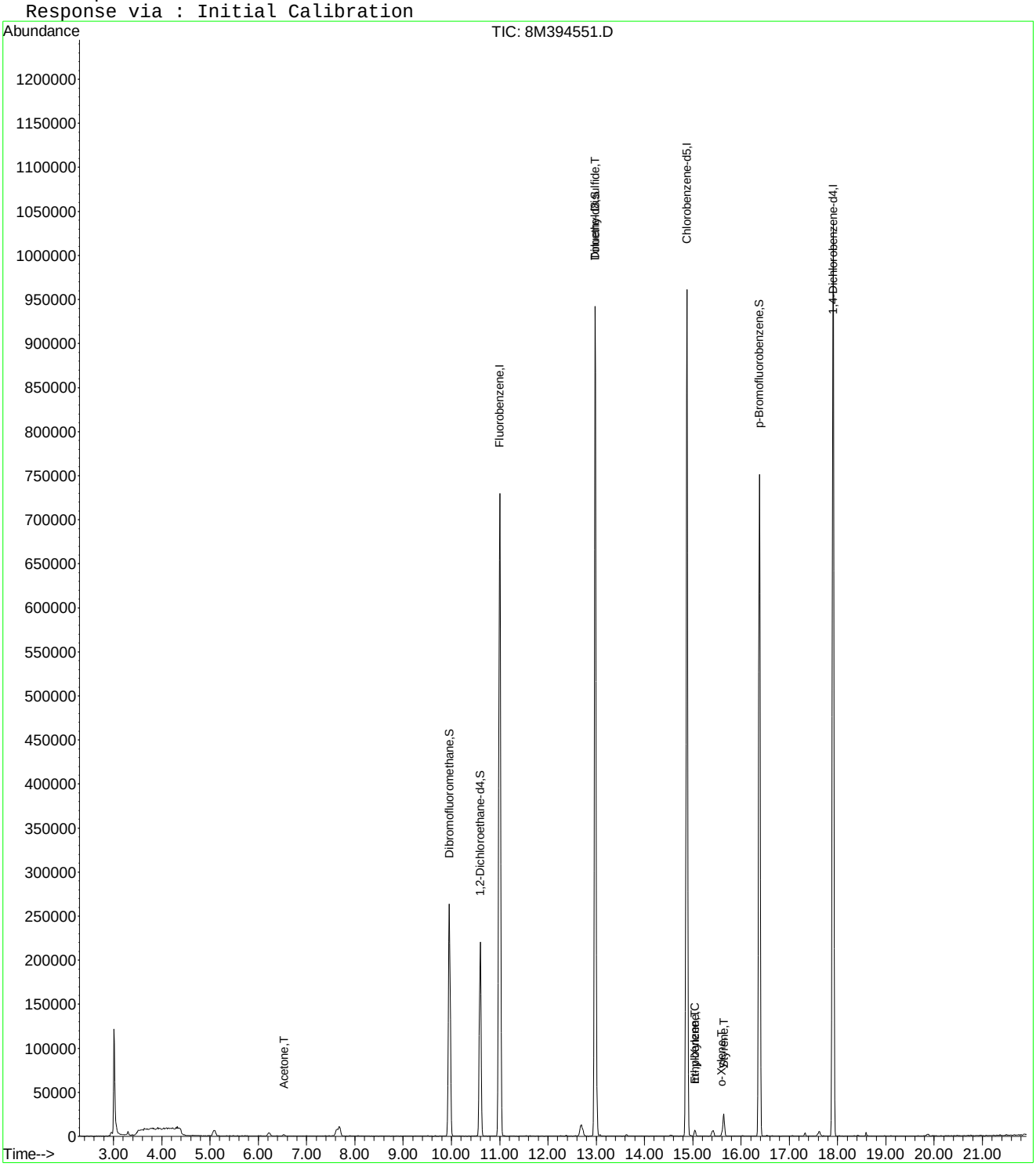

8M394551.D 8260WTR.M Fri Jan 31 17:44:40 2014 Page 2

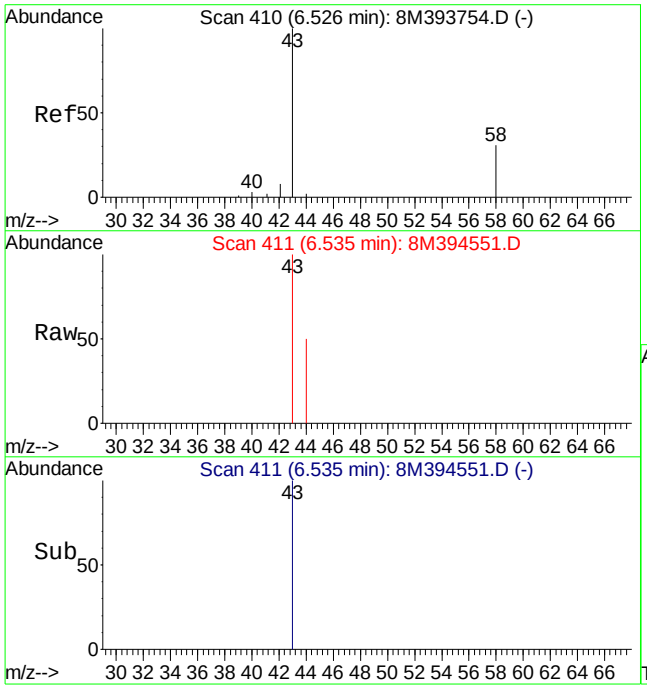

#13
Acetone
Concen: 2.19 ug/L
RT: 6.53 min Scan# 411
Delta R.T. 0.01 min
Lab File: 8M394551.D
Acq: 30 Jan 2014 23:25

Tgt Ion: 43 Resp: 3389

Ion	Ratio	Lower	Upper
43	100		
58	8.2	17.0	39.6#

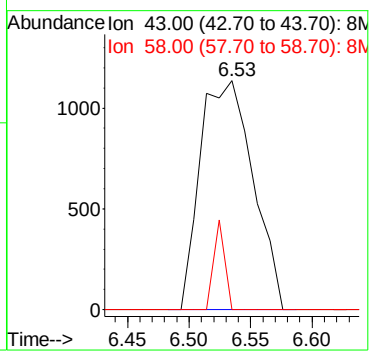

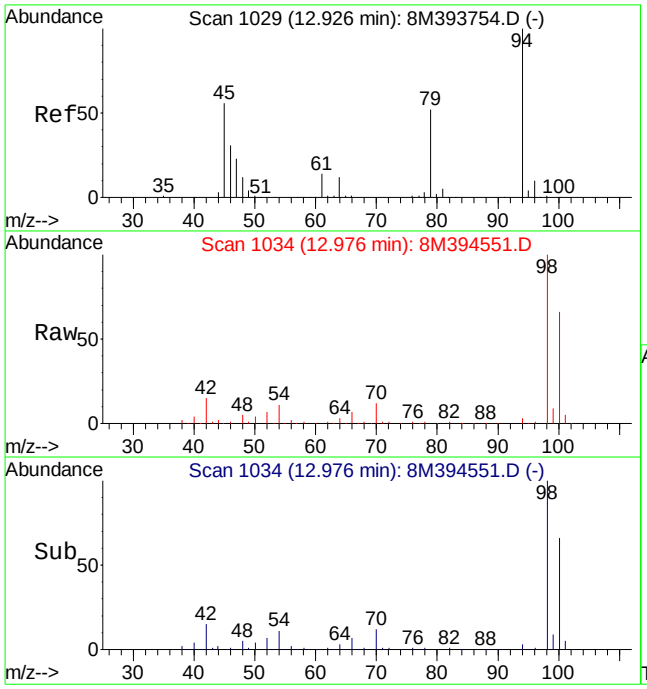

#56
Dimethyl Disulfide
Concen: 1.53 ug/L
RT: 12.98 min Scan# 1034
Delta R.T. 0.05 min
Lab File: 8M394551.D
Acq: 30 Jan 2014 23:25

Tgt Ion: 94 Resp: 22515

Ion	Ratio	Lower	Upper
94	100		
79	0.0	30.4	70.8#

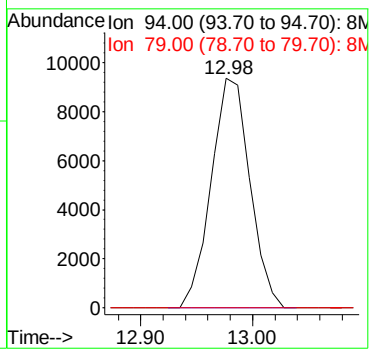

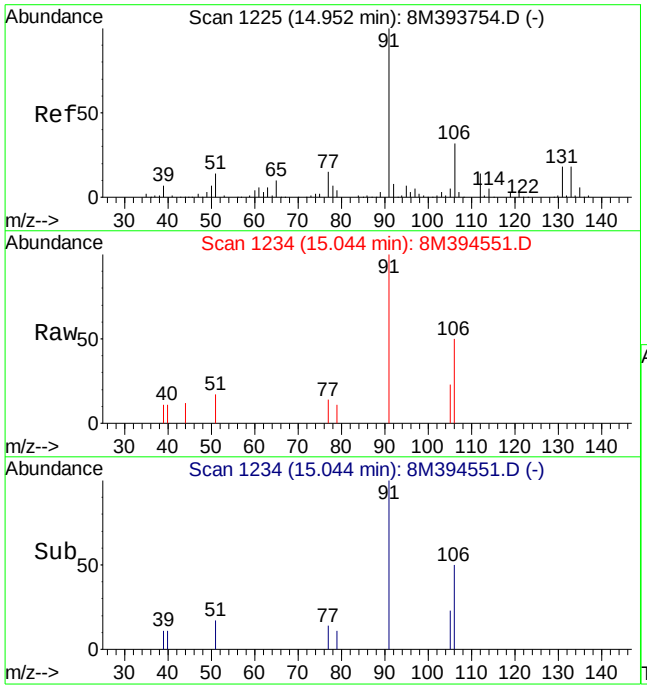

#72
Ethylbenzene
Concen: 0.21 ug/L
RT: 15.04 min Scan# 1234
Delta R.T. 0.09 min
Lab File: 8M394551.D
Acq: 30 Jan 2014 23:25

Tgt Ion:106 Resp: 3053

Ion	Ratio	Lower	Upper
106	100		
91	236.2	192.1	448.1

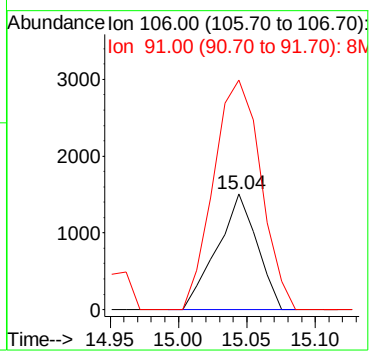

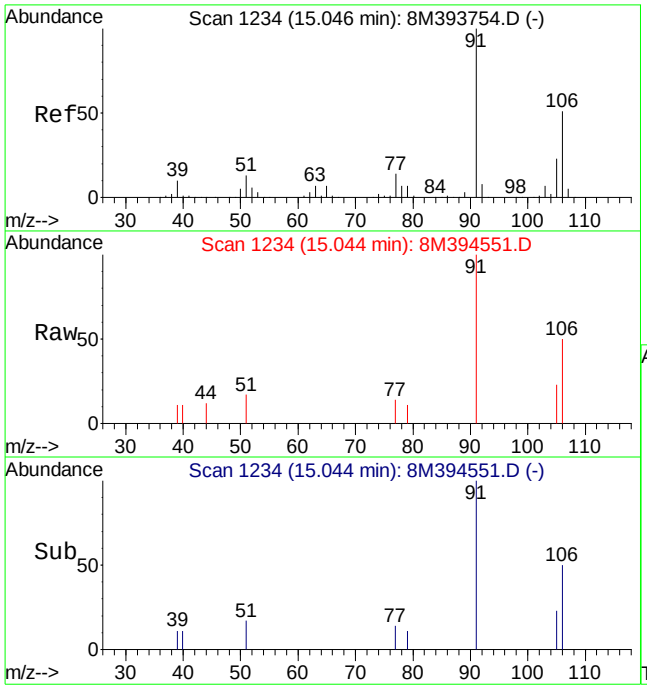

#73
m-,p-Xylene
Concen: 0.18 ug/L
RT: 15.04 min Scan# 1234
Delta R.T. -0.00 min
Lab File: 8M394551.D
Acq: 30 Jan 2014 23:25

Tgt Ion:106 Resp: 3053

Ion	Ratio	Lower	Upper
106	100		
91	236.2	122.4	285.6

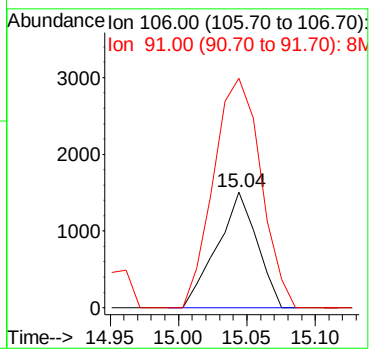

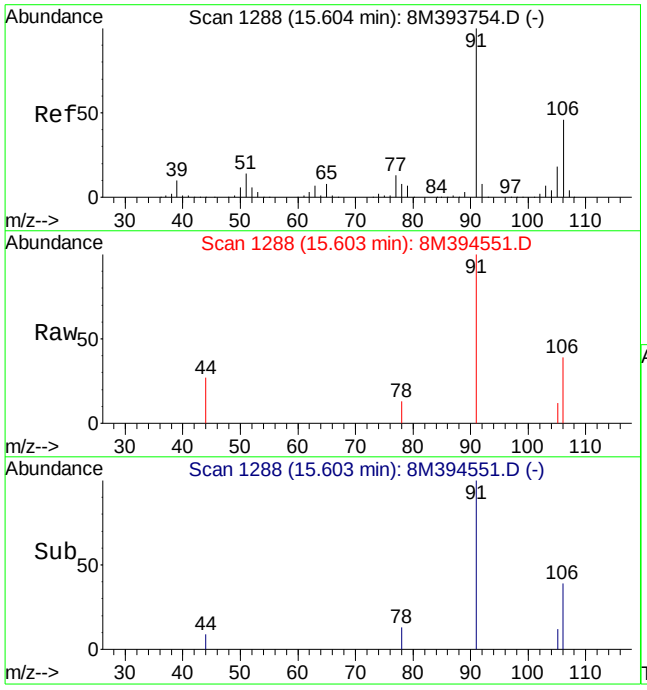

#74
o-Xylene
Concen: 0.13 ug/L
RT: 15.60 min Scan# 1288
Delta R.T. -0.00 min
Lab File: 8M394551.D
Acq: 30 Jan 2014 23:25

Tgt Ion:106 Resp: 2216

Ion	Ratio	Lower	Upper
106	100		
91	233.6	130.1	303.7

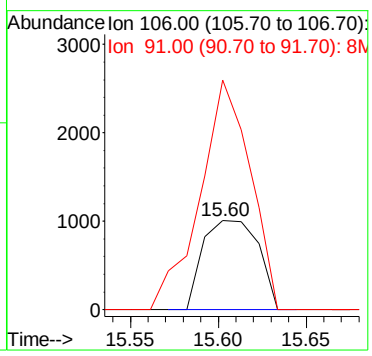

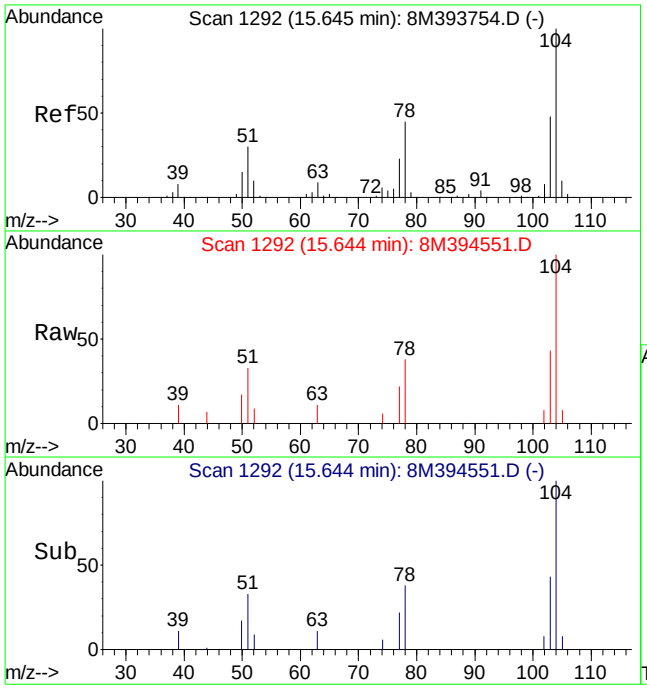

#75
Styrene
Concen: 0.58 ug/L
RT: 15.64 min Scan# 1292
Delta R.T. -0.00 min
Lab File: 8M394551.D
Acq: 30 Jan 2014 23:25

Tgt Ion:104 Resp: 16570

Ion	Ratio	Lower	Upper
104	100		
78	46.3	32.2	75.0

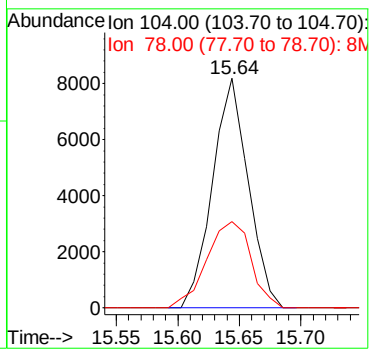

2.1.1.4 Standards Data

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393748.D Vial: 2
Acq On : 3 Jan 2014 10:56 Operator: MES
Sample : WG458331-02 0.3ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 11:18:22 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 10/13/13 HPMS 8
Last Update : Wed Dec 18 09:08:51 2013
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	844756	25.00 ug/L	-0.03
57) Chlorobenzene-d5	14.88	117	633082	25.00 ug/L	-0.03
78) 1,4-Dichlorobenzene-d4	17.91	152	339780	25.00 ug/L	-0.03

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0d	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.00%#
43) 1,2-Dichloroethane-d4	0.00	65	0d	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.00%#
58) Toluene-d8	0.00	98	0d	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.00%#
80) p-Bromofluorobenzene	0.00	95	0d	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.00%#

Target Compounds					Qvalue
33) Chloroform	9.67	83	5116	0.3002 ug/L	91
84) Bromobenzene	16.68	156	3053	0.2938 ug/L	84
94) 1,4-Dichlorobenzene	17.95	146	5698	0.2739 ug/L #	1
96) 1,2-Dichlorobenzene	18.46	146	4958	0.2583 ug/L	86
101) 1,2,3-Trichlorobenzene	21.28	180	3303	0.2521 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M393748.D 8260WTR.M Fri Jan 03 11:59:30 2014 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393748.D Vial: 2
Acq On : 3 Jan 2014 10:56 Operator: MES
Sample : WG458331-02 0.3ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 3 11:59 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 11:54:57 2014
Response via : Initial Calibration

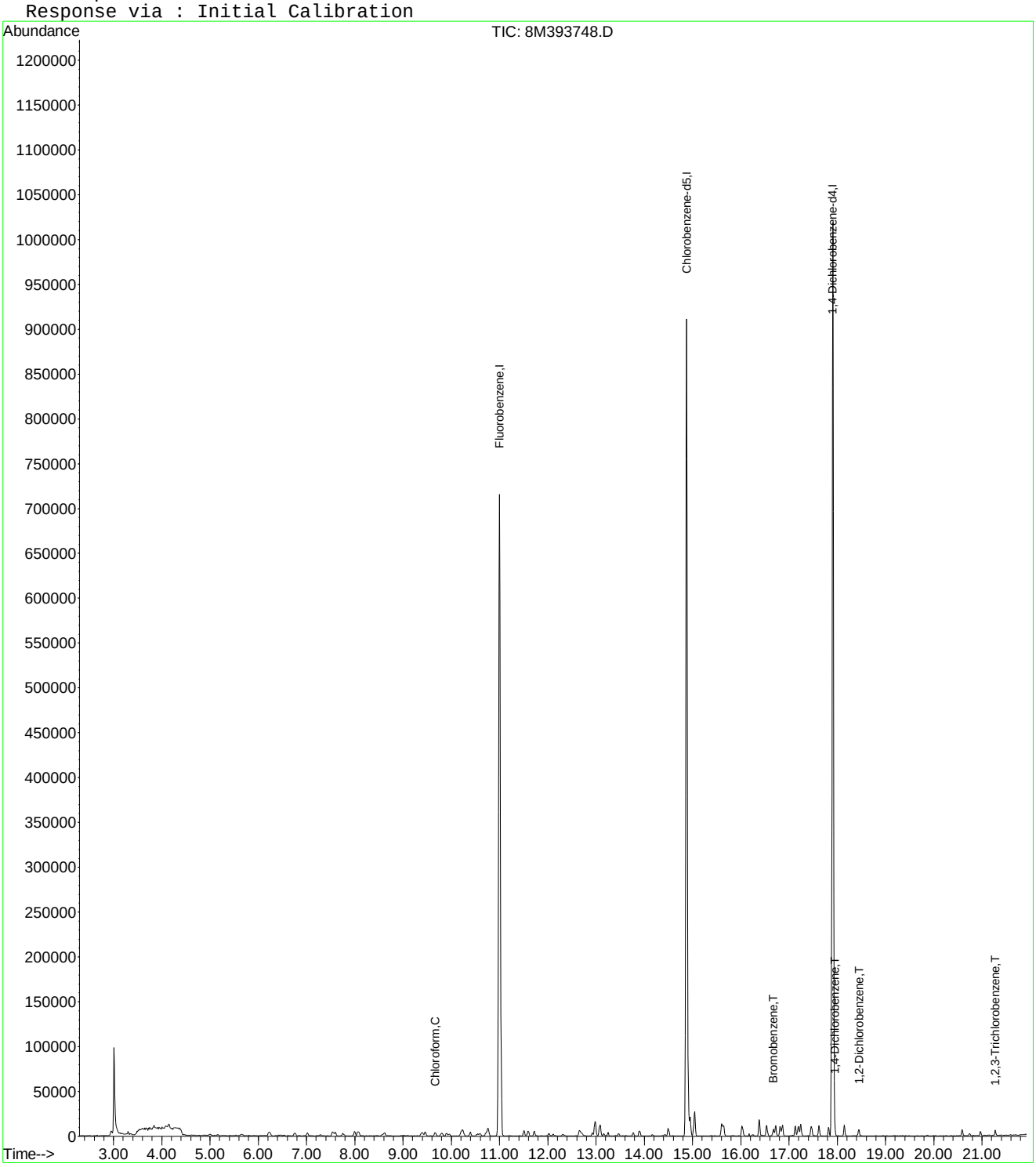

8M393748.D 8260WTR.M Fri Jan 03 11:59:30 2014 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393749.D Vial: 3
Acq On : 3 Jan 2014 11:26 Operator: MES
Sample : WG458331-03 0.4 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 12:06:27 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 11:59:43 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	805867	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	607486	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	325104	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0d	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0d	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0d	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0d	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.36	85	2616	0.2916 ug/L	96
3) Chloromethane	3.83	50	8311	0.7246 ug/L	88
4) Vinyl Chloride	4.08	62	4721	0.4813 ug/L	82
6) Bromomethane	5.00	94	2124	0.4187 ug/L	96
7) Chloroethane	5.16	64	2733	0.4519 ug/L #	73
8) Trichlorofluoromethane	5.66	101	5315	0.3367 ug/L #	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.46	101	2957	0.3647 ug/L	78
14) 1,1-Dichloroethene	6.77	61	5977	0.4051 ug/L	88
19) Methylene Chloride	7.55	84	3496	0.4324 ug/L	59
20) Carbon Disulfide	7.59	76	12045	0.5059 ug/L	91
22) Methyl Tert Butyl Ether	7.75	73	7038	0.3391 ug/L	92
23) trans-1,2-Dichloroethene	7.99	61	5741	0.4175 ug/L	88
24) n-Hexane	8.06	57	5964	0.5268 ug/L	96
27) 1,1-Dichloroethane	8.61	63	7635	0.4720 ug/L #	82
31) 2,2-Dichloropropane	9.40	77	5722	0.4241 ug/L	97
32) cis-1,2-Dichloroethene	9.47	96	4051	0.4502 ug/L	94
33) Chloroform	9.68	83	6852	0.4209 ug/L	87
35) Bromochloromethane	9.90	130	1911	0.3358 ug/L #	53
38) 1,1,1-Trichloroethane	10.20	97	5302	0.3550 ug/L	94
39) Cyclohexane	10.24	56	7998	0.5043 ug/L	71
40) 1,1-Dichloropropene	10.40	75	4851	0.4115 ug/L	84
42) Carbon Tetrachloride	10.54	117	4133	0.2921 ug/L	94
45) 1,2-Dichloroethane	10.72	62	4517	0.3383 ug/L	92
46) Benzene	10.76	78	14412	0.4475 ug/L	95
47) Trichloroethene	11.51	130	3654	0.3712 ug/L	88
48) Methylcyclohexane	11.59	83	5460	0.4439 ug/L #	74
49) 1,2-Dichloropropane	11.72	63	3834	0.4466 ug/L #	67
50) Bromodichloromethane	12.02	83	3529	0.2919 ug/L #	89
52) Dibromomethane	12.10	93	1483	0.3242 ug/L	79
55) cis-1,3-Dichloropropene	12.65	75	4801	0.3652 ug/L	82
59) Toluene	13.08	91	16074	0.5043 ug/L	95
60) Ethyl Methacrylate	13.17	69	2426	0.3211 ug/L	73
62) trans-1,3-Dichloropropene	13.25	75	3621	0.3065 ug/L	87
63) 1,1,2-Trichloroethane	13.46	97	1870	0.3247 ug/L	92
65) 1,3-Dichloropropane	13.78	76	4039	0.3893 ug/L	75
66) Tetrachloroethene	13.90	164	2806	0.3838 ug/L	88
67) Dibromochloromethane	14.16	129	1835	0.2125 ug/L	97
68) 1,2-Dibromoethane	14.42	107	1831	0.3018 ug/L	97
69) 1-Chlorohexane	14.50	91	4853	0.4794 ug/L #	57
70) Chlorobenzene	14.93	112	10531	0.4520 ug/L	91

(#) = qualifier out of range (m) = manual integration
8M393749.D 8260WTR.M Fri Jan 03 12:07:35 2014 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393749.D Vial: 3
Acq On : 3 Jan 2014 11:26 Operator: MES
Sample : WG458331-03 0.4 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 12:06:27 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 11:59:43 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
71)	1,1,1,2-Tetrachloroethane	14.96	131	2477	0.2657 ug/L		82
72)	Ethylbenzene	14.95	106	5223	0.4157 ug/L		67
73)	m-,p-Xylene	15.04	106	13123	0.8884 ug/L		70
74)	o-Xylene	15.61	106	6554	0.4419 ug/L		75
75)	Styrene	15.64	104	10956	0.4491 ug/L		90
77)	Isopropylbenzene	16.02	105	16878	0.4540 ug/L		96
79)	1,1,2,2-Tetrachloroethane	16.25	83	1979	0.3322 ug/L	#	93
83)	n-Propylbenzene	16.54	91	21274	0.5420 ug/L		88
84)	Bromobenzene	16.68	156	4029	0.4033 ug/L		82
85)	1,3,5-Trimethylbenzene	16.72	105	14792	0.4958 ug/L		94
86)	2-Chlorotoluene	16.81	91	14342	0.5483 ug/L		88
87)	4-Chlorotoluene	16.86	91	11268	0.4509 ug/L		86
88)	a-Methylstyrene	17.13	118	7057	0.4069 ug/L		97
89)	tert-Butylbenzene	17.18	134	2728	0.4159 ug/L	#	65
90)	1,2,4-Trimethylbenzene	17.24	105	14342	0.4596 ug/L		91
91)	sec-Butylbenzene	17.46	105	18072	0.5162 ug/L		89
92)	p-Isopropyltoluene	17.62	119	14429	0.4514 ug/L		94
93)	1,3-Dichlorobenzene	17.82	146	7659	0.4007 ug/L		92
94)	1,4-Dichlorobenzene	17.95	146	7688	0.3941 ug/L	#	66
95)	n-Butylbenzene	18.14	91	14397	0.5407 ug/L		83
96)	1,2-Dichlorobenzene	18.45	146	6933	0.3889 ug/L		87
98)	1,2,4-Trichlorobenzene	20.59	180	5783	0.4229 ug/L		95
99)	Hexachlorobutadiene	20.74	225	2129	0.4196 ug/L	#	87
100)	Naphthalene	20.97	128	8287	0.3240 ug/L		94
101)	1,2,3-Trichlorobenzene	21.28	180	4283	0.3502 ug/L		95

(#) = qualifier out of range (m) = manual integration
8M393749.D 8260WTR.M Fri Jan 03 12:07:35 2014 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393749.D Vial: 3
Acq On : 3 Jan 2014 11:26 Operator: MES
Sample : WG458331-03 0.4 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 3 12:07 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 11:59:43 2014
Response via : Initial Calibration

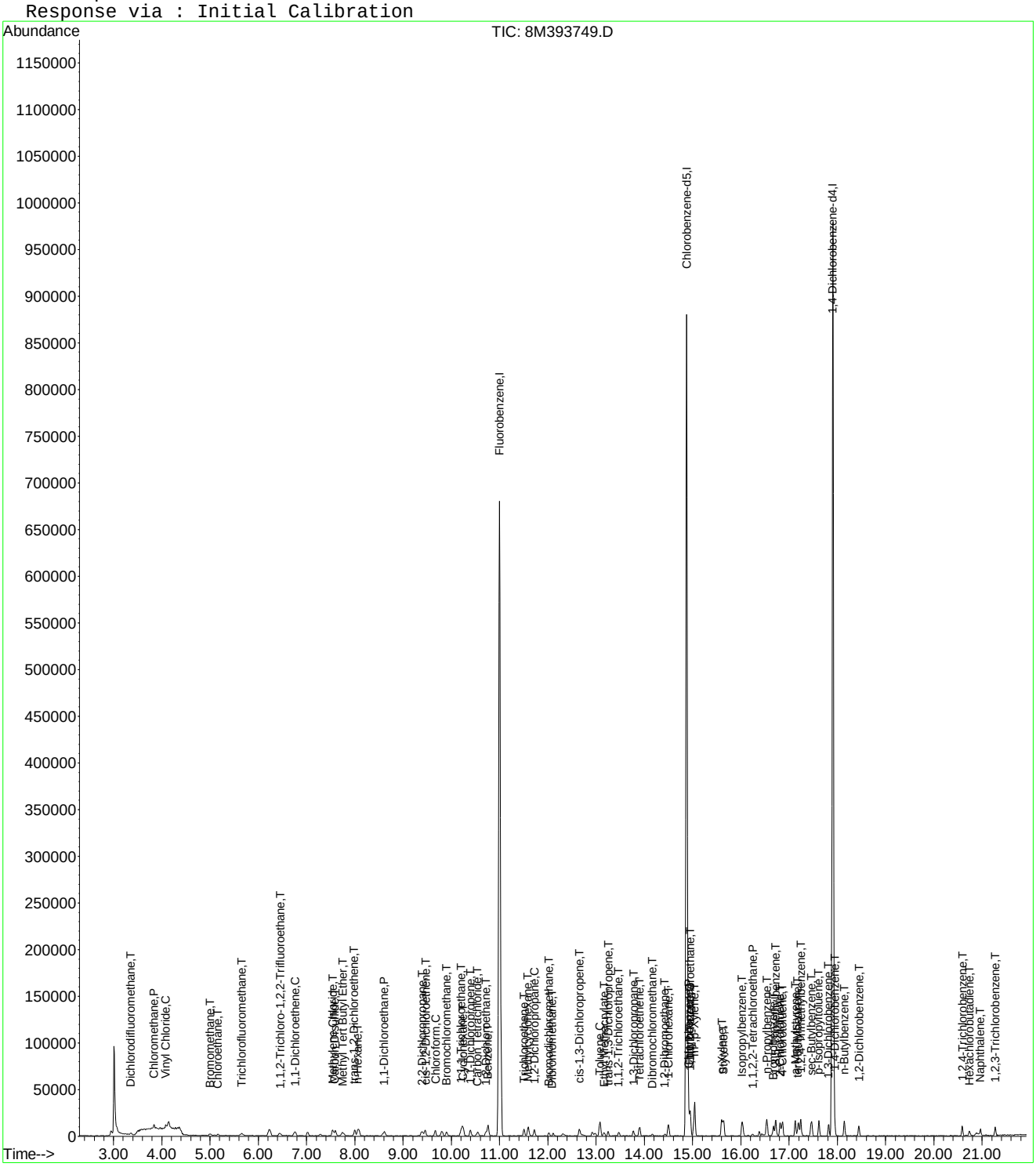

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393750.D Vial: 4
Acq On : 3 Jan 2014 11:56 Operator: MES
Sample : WG458331-04 1 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 14:30:48 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 12:07:39 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	800979	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	609089	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	328987	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.96	111	5232	0.5744 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.28%#	
43) 1,2-Dichloroethane-d4	10.60	65	4698	0.4400 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.76%#	
58) Toluene-d8	12.98	98	18821	0.6488 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.60%#	
80) p-Bromofluorobenzene	16.38	95	8445	0.7389 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.96%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.36	85	6135	0.7035 ug/L	97
3) Chloromethane	3.83	50	14216	1.2469 ug/L	90
4) Vinyl Chloride	4.08	62	10467	1.0646 ug/L	96
5) 1,3-Butadiene	4.14	54	11476	1.1665 ug/L	87
6) Bromomethane	5.01	94	4851	0.9620 ug/L	86
7) Chloroethane	5.17	64	6231	1.0020 ug/L	88
8) Trichlorofluoromethane	5.65	101	12517	0.8069 ug/L	95
9) Diethyl ether	6.19	59	29886	4.6871 ug/L	91
10) Isoprene	6.23	67	12070	1.1242 ug/L	84
11) Acrolein	6.43	56	1812	2.8636 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.46	101	6868	0.8449 ug/L	94
14) 1,1-Dichloroethene	6.77	61	14385	0.9760 ug/L	88
16) Dimethyl Sulfide	7.03	62	7943	1.0113 ug/L	96
17) Iodomethane	7.29	142	4892	0.6816 ug/L	96
19) Methylene Chloride	7.54	84	8167	1.0140 ug/L #	55
20) Carbon Disulfide	7.60	76	26481	1.0885 ug/L	97
21) Acrylonitrile	7.73	53	4438	1.7477 ug/L	94
22) Methyl Tert Butyl Ether	7.75	73	16539	0.8016 ug/L #	79
23) trans-1,2-Dichloroethene	8.00	61	14306	1.0448 ug/L	87
24) n-Hexane	8.07	57	13791	1.1727 ug/L	99
25) Diisopropyl ether	8.40	45	171494	4.8320 ug/L	90
26) Vinyl Acetate	8.58	43	14243	1.0042 ug/L #	78
27) 1,1-Dichloroethane	8.61	63	16864	1.0190 ug/L	93
28) Ethyl-Tert-Butyl ether	8.98	59	136072	4.8297 ug/L	89
30) Propionitrile	9.27	54	2965	3.3931 ug/L #	69
31) 2,2-Dichloropropane	9.40	77	13338	0.9752 ug/L	97
32) cis-1,2-Dichloroethene	9.46	96	9272	1.0092 ug/L	81
33) Chloroform	9.67	83	15361	0.9523 ug/L	97
34) 1-Bromopropane	9.81	122	1603	0.9026 ug/L	88
35) Bromochloromethane	9.90	130	5202	0.9285 ug/L #	66
36) Tetrahydrofuran	9.92	42	7228	3.3192 ug/L	80
38) 1,1,1-Trichloroethane	10.20	97	12560	0.8442 ug/L	99
39) Cyclohexane	10.24	56	17329	1.0993 ug/L	78
40) 1,1-Dichloropropene	10.40	75	11394	0.9723 ug/L	88
41) Tert-Amyl-Methyl ether	10.49	73	92116	4.3349 ug/L	90
42) Carbon Tetrachloride	10.56	117	9928	0.7117 ug/L	99
45) 1,2-Dichloroethane	10.72	62	10409	0.8053 ug/L	92
46) Benzene	10.76	78	35023	1.0854 ug/L	91
47) Trichloroethene	11.51	130	8846	0.9162 ug/L	90
48) Methylcyclohexane	11.59	83	13307	1.0885 ug/L	78

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393750.D Vial: 4
Acq On : 3 Jan 2014 11:56 Operator: MES
Sample : WG458331-04 1 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 14:30:48 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 12:07:39 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
49)	1,2-Dichloropropane	11.72	63	8923	1.0245 ug/L	84
50)	Bromodichloromethane	12.02	83	9975	0.8411 ug/L #	88
52)	Dibromomethane	12.11	93	4221	0.9265 ug/L	88
53)	2-Chloroethyl Vinyl Ether	12.31	63	3807	0.8352 ug/L #	63
55)	cis-1,3-Dichloropropene	12.65	75	12230	0.9313 ug/L	96
56)	Dimethyl Disulfide	12.92	94	8293	0.6080 ug/L	99
59)	Toluene	13.08	91	37687	1.1429 ug/L	99
60)	Ethyl Methacrylate	13.16	69	6584	0.8692 ug/L	79
62)	trans-1,3-Dichloropropene	13.25	75	9609	0.8112 ug/L	98
63)	1,1,2-Trichloroethane	13.47	97	5102	0.8919 ug/L	93
64)	2-Hexanone	13.40	58	1207	0.6364 ug/L #	23
65)	1,3-Dichloropropane	13.77	76	9616	0.9283 ug/L	84
66)	Tetrachloroethene	13.91	164	6956	0.9396 ug/L	90
67)	Dibromochloromethane	14.16	129	5036	0.6026 ug/L	100
68)	1,2-Dibromoethane	14.42	107	5298	0.8768 ug/L	96
69)	1-Chlorohexane	14.49	91	11557	1.1386 ug/L	77
70)	Chlorobenzene	14.93	112	23881	1.0117 ug/L	90
71)	1,1,1,2-Tetrachloroethane	14.96	131	6862	0.7554 ug/L	95
72)	Ethylbenzene	14.95	106	13191	1.0419 ug/L	81
73)	m-,p-Xylene	15.04	106	31892	2.1275 ug/L	81
74)	o-Xylene	15.61	106	15248	1.0254 ug/L	73
75)	Styrene	15.64	104	24418	0.9765 ug/L	85
76)	Bromoform	16.14	173	2513	0.4508 ug/L	90
77)	Isopropylbenzene	16.02	105	38335	1.0063 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.24	83	5590	0.9310 ug/L #	86
81)	1,2,3-Trichloropropane	16.44	110	1512	0.7292 ug/L	89
82)	trans-1,4-Dichloro-2-Buten	16.48	53	1445	0.5972 ug/L #	90
83)	n-Propylbenzene	16.54	91	48663	1.1779 ug/L	89
84)	Bromobenzene	16.68	156	9866	0.9668 ug/L	92
85)	1,3,5-Trimethylbenzene	16.73	105	34087	1.0869 ug/L	92
86)	2-Chlorotoluene	16.81	91	29347	1.0788 ug/L	97
87)	4-Chlorotoluene	16.86	91	26846	1.0352 ug/L	88
88)	a-Methylstyrene	17.13	118	18390	1.0479 ug/L	94
89)	tert-Butylbenzene	17.18	134	6480	0.9762 ug/L	65
90)	1,2,4-Trimethylbenzene	17.24	105	34357	1.0881 ug/L	96
91)	sec-Butylbenzene	17.46	105	40260	1.1363 ug/L	96
92)	p-Isopropyltoluene	17.62	119	33931	1.0489 ug/L	98
93)	1,3-Dichlorobenzene	17.82	146	18835	0.9759 ug/L	88
94)	1,4-Dichlorobenzene	17.95	146	18520	0.9446 ug/L #	52
95)	n-Butylbenzene	18.14	91	31632	1.1390 ug/L	86
96)	1,2-Dichlorobenzene	18.44	146	16690	0.9359 ug/L	90
98)	1,2,4-Trichlorobenzene	20.59	180	12637	0.9185 ug/L	98
99)	Hexachlorobutadiene	20.74	225	5452	1.0628 ug/L	89
100)	Naphthalene	20.97	128	19195	0.7654 ug/L	99
101)	1,2,3-Trichlorobenzene	21.28	180	10289	0.8480 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M393750.D 8260WTR.M Fri Jan 03 14:31:29 2014 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393750.D Vial: 4
Acq On : 3 Jan 2014 11:56 Operator: MES
Sample : WG458331-04 1 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 3 14:31 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 12:07:39 2014
Response via : Initial Calibration

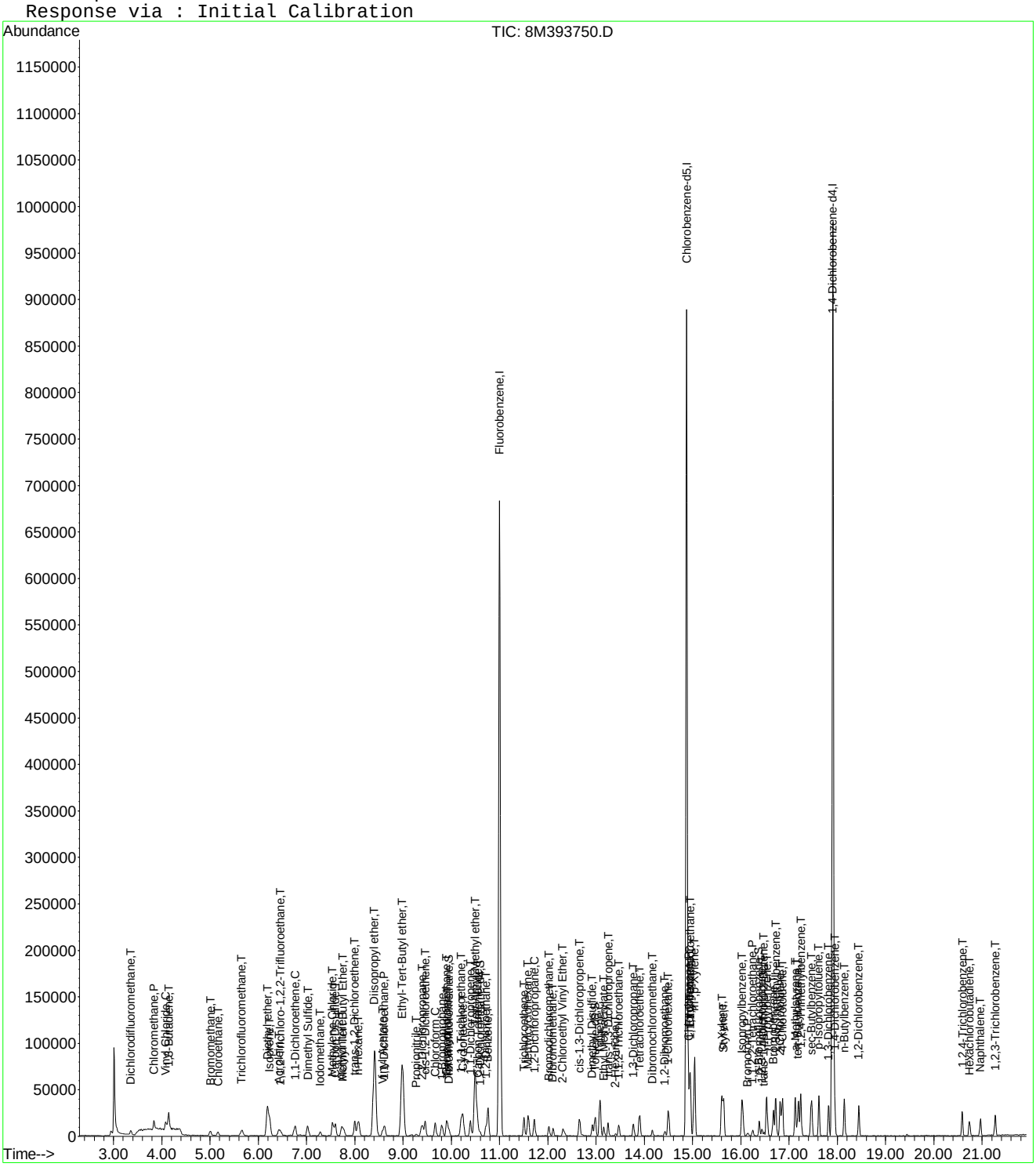

8M393750.D 8260WTR.M Fri Jan 03 14:31:29 2014 Page 3

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393751.D Vial: 5
Acq On : 3 Jan 2014 12:26 Operator: MES
Sample : WG458331-05 2 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 14:31:39 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 14:31:33 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	820948	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	621844	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	342034	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.96	111	9604	1.0032 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.00%#	
43) 1,2-Dichloroethane-d4	10.60	65	9683	0.9021 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.60%#	
58) Toluene-d8	12.98	98	36969	1.2146 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.84%#	
80) p-Bromofluorobenzene	16.38	95	14752	1.1802 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.72%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.35	85	13064	1.5049 ug/L	99
3) Chloromethane	3.84	50	29211	2.4919 ug/L	99
4) Vinyl Chloride	4.09	62	20203	1.9808 ug/L	95
5) 1,3-Butadiene	4.14	54	23448	2.3253 ug/L	86
6) Bromomethane	5.01	94	11438	2.1556 ug/L	96
7) Chloroethane	5.16	64	12860	1.9993 ug/L	98
8) Trichlorofluoromethane	5.66	101	26486	1.7023 ug/L	96
9) Diethyl ether	6.18	59	154073	23.8546 ug/L	88
10) Isoprene	6.23	67	25573	2.2905 ug/L	84
11) Acrolein	6.42	56	10942	16.8770 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.44	101	15523	1.8875 ug/L	90
13) Acetone	6.53	43	3361	1.7213 ug/L #	74
14) 1,1-Dichloroethene	6.76	61	29421	1.9455 ug/L	87
15) Tert-Butyl Alcohol	6.86	59	17291	40.4871 ug/L	92
16) Dimethyl Sulfide	7.02	62	16531	2.0535 ug/L	98
17) Iodomethane	7.28	142	11437	1.5507 ug/L	94
18) Methyl acetate	7.28	43	10190	1.7685 ug/L #	74
19) Methylene Chloride	7.54	84	16347	1.9911 ug/L	57
20) Carbon Disulfide	7.59	76	53971	2.1362 ug/L	100
21) Acrylonitrile	7.73	53	24457	9.9917 ug/L	98
22) Methyl Tert Butyl Ether	7.77	73	35504	1.7174 ug/L	89
23) trans-1,2-Dichloroethene	7.99	61	28903	2.0390 ug/L	86
24) n-Hexane	8.08	57	28397	2.3014 ug/L	99
25) Diisopropyl ether	8.41	45	866192	24.2631 ug/L	89
26) Vinyl Acetate	8.58	43	27946	1.9040 ug/L #	88
27) 1,1-Dichloroethane	8.61	63	35133	2.0625 ug/L	95
28) Ethyl-Tert-Butyl ether	8.99	59	695434	24.5357 ug/L	90
29) 2-Butanone	9.16	43	4298	1.3758 ug/L #	62
30) Propionitrile	9.28	54	16314	19.7671 ug/L	94
31) 2,2-Dichloropropane	9.39	77	27517	1.9580 ug/L	99
32) cis-1,2-Dichloroethene	9.46	96	18157	1.9358 ug/L	71
33) Chloroform	9.67	83	31122	1.9012 ug/L	97
34) 1-Bromopropane	9.80	122	3519	1.9450 ug/L	96
35) Bromochloromethane	9.90	130	10075	1.7636 ug/L #	59
36) Tetrahydrofuran	9.93	42	36842	18.2728 ug/L	86
38) 1,1,1-Trichloroethane	10.20	97	26685	1.7776 ug/L	99
39) Cyclohexane	10.24	56	36912	2.2457 ug/L	74
40) 1,1-Dichloropropene	10.40	75	24952	2.0776 ug/L	90
41) Tert-Amyl-Methyl ether	10.50	73	485881	23.2826 ug/L	91
42) Carbon Tetrachloride	10.55	117	21427	1.5469 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M393751.D 8260WTR.M Fri Jan 03 14:33:30 2014 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393751.D Vial: 5
Acq On : 3 Jan 2014 12:26 Operator: MES
Sample : WG458331-05 2 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 14:31:39 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 14:31:33 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.71	62	22348	1.7222 ug/L		93
46)	Benzene	10.75	78	69181	2.0784 ug/L		88
47)	Trichloroethene	11.51	130	18248	1.8451 ug/L		88
48)	Methylcyclohexane	11.59	83	27072	2.1606 ug/L		80
49)	1,2-Dichloropropane	11.73	63	19045	2.1113 ug/L		86
50)	Bromodichloromethane	12.02	83	20353	1.6962 ug/L		92
51)	1,4-Dioxane	12.02	88	1068	26.5174 ug/L	#	31
52)	Dibromomethane	12.11	93	8204	1.7679 ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.31	63	8514	1.8223 ug/L	#	76
54)	4-Methyl-2-Pentanone	12.34	58	3448	1.5214 ug/L	#	64
55)	cis-1,3-Dichloropropene	12.66	75	25330	1.8802 ug/L		94
56)	Dimethyl Disulfide	12.93	94	18990	1.3583 ug/L		99
59)	Toluene	13.08	91	76709	2.2506 ug/L		96
60)	Ethyl Methacrylate	13.16	69	14225	1.8421 ug/L		89
62)	trans-1,3-Dichloropropene	13.25	75	19748	1.6815 ug/L		100
63)	1,1,2-Trichloroethane	13.47	97	11361	1.9769 ug/L		94
64)	2-Hexanone	13.40	58	3046	1.5731 ug/L	#	59
65)	1,3-Dichloropropane	13.77	76	20204	1.9409 ug/L		83
66)	Tetrachloroethene	13.91	164	14733	1.9658 ug/L		93
67)	Dibromochloromethane	14.17	129	10796	1.3190 ug/L		94
68)	1,2-Dibromoethane	14.43	107	11261	1.8540 ug/L		97
69)	1-Chlorohexane	14.50	91	24319	2.2955 ug/L		74
70)	Chlorobenzene	14.93	112	49510	2.0605 ug/L		70
71)	1,1,1,2-Tetrachloroethane	14.95	131	14365	1.5995 ug/L		99
72)	Ethylbenzene	14.95	106	26321	2.0314 ug/L		74
73)	m-,p-Xylene	15.04	106	63650	4.1466 ug/L		79
74)	o-Xylene	15.60	106	31957	2.0940 ug/L		81
75)	Styrene	15.65	104	52354	2.0431 ug/L		89
76)	Bromoform	16.14	173	5237	0.9708 ug/L		98
77)	Isopropylbenzene	16.03	105	82041	2.1135 ug/L		96
79)	1,1,2,2-Tetrachloroethane	16.25	83	11312	1.8298 ug/L		98
81)	1,2,3-Trichloropropane	16.44	110	3241	1.5265 ug/L		88
82)	trans-1,4-Dichloro-2-Buten	16.47	53	3618	1.4899 ug/L	#	73
83)	n-Propylbenzene	16.53	91	100752	2.2941 ug/L		90
84)	Bromobenzene	16.68	156	20032	1.8969 ug/L		90
85)	1,3,5-Trimethylbenzene	16.72	105	69372	2.1057 ug/L		92
86)	2-Chlorotoluene	16.81	91	63583	2.2008 ug/L		86
87)	4-Chlorotoluene	16.86	91	63806	2.3925 ug/L		85
88)	a-Methylstyrene	17.12	118	37045	2.0305 ug/L		93
89)	tert-Butylbenzene	17.20	134	14708	2.1291 ug/L		88
90)	1,2,4-Trimethylbenzene	17.25	105	71764	2.1721 ug/L		94
91)	sec-Butylbenzene	17.47	105	82986	2.2241 ug/L		95
92)	p-Isopropyltoluene	17.62	119	70709	2.0872 ug/L		99
93)	1,3-Dichlorobenzene	17.82	146	38727	1.9442 ug/L		90
94)	1,4-Dichlorobenzene	17.95	146	38057	1.8932 ug/L	#	71
95)	n-Butylbenzene	18.15	91	66861	2.2894 ug/L		89
96)	1,2-Dichlorobenzene	18.45	146	33657	1.8303 ug/L		90
97)	1,2-Dibromo-3-Chloropropan	19.44	75	1213	0.8892 ug/L		82
98)	1,2,4-Trichlorobenzene	20.59	180	25001	1.7664 ug/L		98
99)	Hexachlorobutadiene	20.73	225	10598	1.9961 ug/L		99
100)	Naphthalene	20.96	128	40420	1.6009 ug/L		98
101)	1,2,3-Trichlorobenzene	21.27	180	21229	1.7254 ug/L		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393751.D Vial: 5
Acq On : 3 Jan 2014 12:26 Operator: MES
Sample : WG458331-05 2 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 3 14:31 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 14:31:33 2014
Response via : Initial Calibration

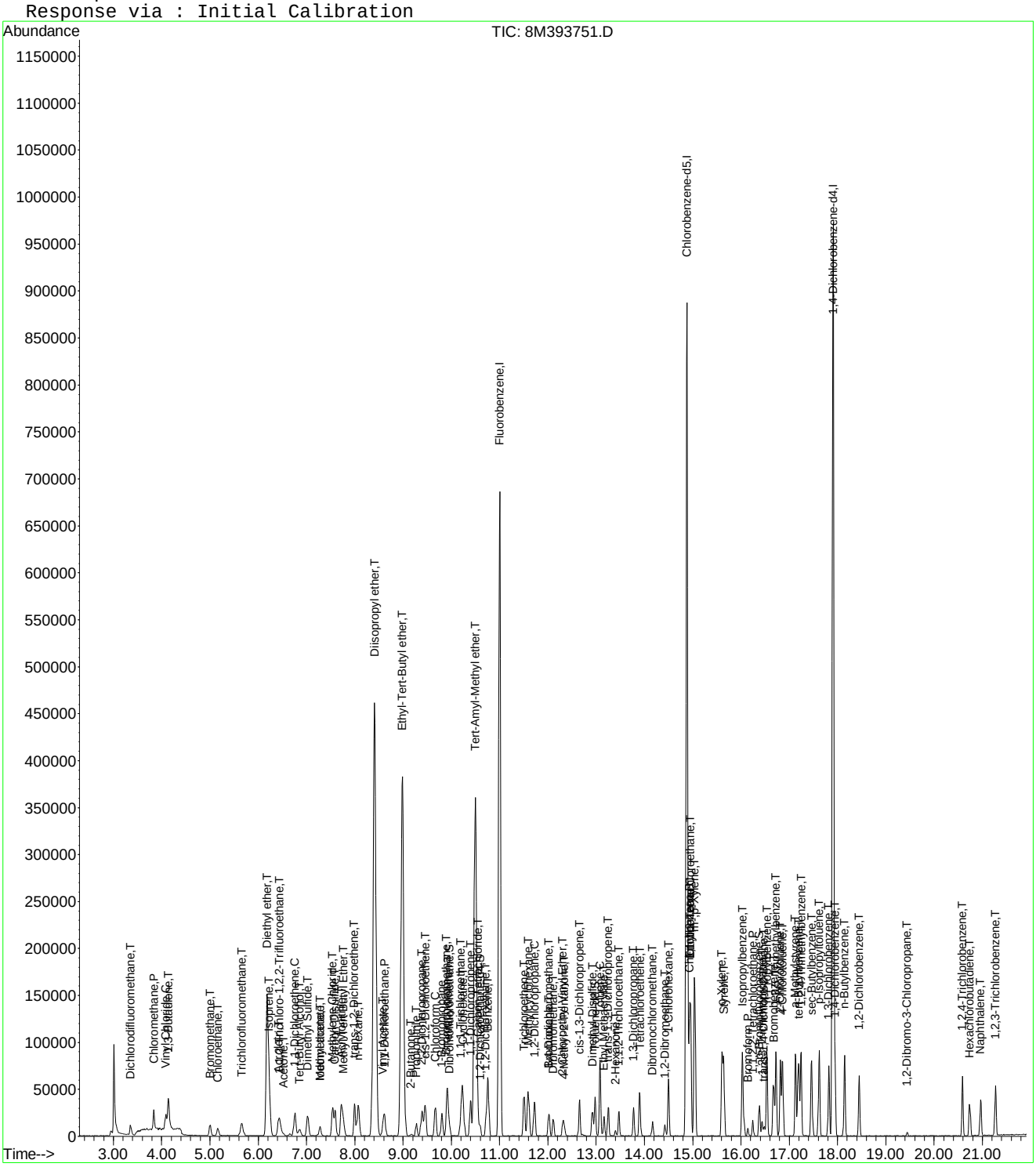

8M393751.D 8260WTR.M Fri Jan 03 14:33:31 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393752.D Vial: 6
Acq On : 3 Jan 2014 12:56 Operator: MES
Sample : WG458331-06 5 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 14:33:43 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 14:33:34 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	808972	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	620374	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	339018	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.96	111	23176	2.4584 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 9.84%#		
43) 1,2-Dichloroethane-d4	10.60	65	23362	2.2527 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 9.00%#		
58) Toluene-d8	12.98	98	84746	2.7480 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 11.00%#		
80) p-Bromofluorobenzene	16.38	95	33332	2.6328 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.52%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.35	85	34332	4.1216 ug/L	96
3) Chloromethane	3.84	50	70716	5.9739 ug/L	97
4) Vinyl Chloride	4.07	62	50103	4.9736 ug/L	96
5) 1,3-Butadiene	4.14	54	58132	5.7374 ug/L	85
6) Bromomethane	5.00	94	29215	5.4064 ug/L	99
7) Chloroethane	5.16	64	35354	5.5857 ug/L	95
8) Trichlorofluoromethane	5.66	101	72529	4.8353 ug/L	96
9) Diethyl ether	6.18	59	312096	49.9163 ug/L	88
10) Isoprene	6.22	67	68993	6.1997 ug/L	88
11) Acrolein	6.42	56	22745	33.7314 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.44	101	42974	5.3340 ug/L	86
13) Acetone	6.52	43	7603	3.9515 ug/L	88
14) 1,1-Dichloroethene	6.75	61	76996	5.1714 ug/L	88
15) Tert-Butyl Alcohol	6.86	59	33962	86.3295 ug/L	95
16) Dimethyl Sulfide	7.02	62	43904	5.5345 ug/L	98
17) Iodomethane	7.28	142	31662	4.3584 ug/L	96
18) Methyl acetate	7.28	43	24549	4.4554 ug/L #	81
19) Methylene Chloride	7.54	84	43271	5.3779 ug/L	67
20) Carbon Disulfide	7.60	76	146569	5.8301 ug/L	100
21) Acrylonitrile	7.72	53	49332	21.0129 ug/L	95
22) Methyl Tert Butyl Ether	7.75	73	88790	4.4408 ug/L	87
23) trans-1,2-Dichloroethene	7.99	61	74360	5.2969 ug/L	87
24) n-Hexane	8.08	57	72671	5.8174 ug/L	97
25) Diisopropyl ether	8.41	45	1758752	50.6813 ug/L	90
26) Vinyl Acetate	8.58	43	69256	4.8953 ug/L	93
27) 1,1-Dichloroethane	8.61	63	90296	5.3470 ug/L	96
28) Ethyl-Tert-Butyl ether	8.99	59	1396146	50.4763 ug/L	90
29) 2-Butanone	9.17	43	10541	3.6004 ug/L	86
30) Propionitrile	9.27	54	33350	42.8961 ug/L	99
31) 2,2-Dichloropropane	9.39	77	72799	5.2503 ug/L	99
32) cis-1,2-Dichloroethene	9.46	96	50236	5.4474 ug/L	78
33) Chloroform	9.67	83	78836	4.9369 ug/L	99
34) 1-Bromopropane	9.80	122	9397	5.1648 ug/L	95
35) Bromochloromethane	9.91	130	25311	4.5474 ug/L #	56
36) Tetrahydrofuran	9.92	42	70989	38.0766 ug/L	88
38) 1,1,1-Trichloroethane	10.21	97	71591	4.9050 ug/L	99
39) Cyclohexane	10.24	56	95037	5.7551 ug/L	78
40) 1,1-Dichloropropene	10.40	75	64939	5.4564 ug/L	91
41) Tert-Amyl-Methyl ether	10.49	73	983653	48.5810 ug/L	91
42) Carbon Tetrachloride	10.55	117	57456	4.3557 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M393752.D 8260WTR.M Fri Jan 03 14:33:44 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393752.D Vial: 6
Acq On : 3 Jan 2014 12:56 Operator: MES
Sample : WG458331-06 5 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 14:33:43 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 14:33:34 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.71	62	57718	4.6203 ug/L		91
46)	Benzene	10.76	78	181282	5.5174 ug/L		90
47)	Trichloroethene	11.51	130	47597	4.9198 ug/L		88
48)	Methylcyclohexane	11.59	83	74022	5.9950 ug/L		80
49)	1,2-Dichloropropane	11.71	63	49069	5.4886 ug/L		86
50)	Bromodichloromethane	12.03	83	52387	4.5189 ug/L		98
51)	1,4-Dioxane	12.00	88	3163	79.6970 ug/L		76
52)	Dibromomethane	12.11	93	22169	4.8794 ug/L		86
53)	2-Chloroethyl Vinyl Ether	12.31	63	20464	4.4449 ug/L		85
54)	4-Methyl-2-Pentanone	12.35	58	9759	4.3697 ug/L	#	69
55)	cis-1,3-Dichloropropene	12.66	75	66730	5.0565 ug/L		98
56)	Dimethyl Disulfide	12.92	94	55292	4.0134 ug/L		100
59)	Toluene	13.08	91	197968	5.7545 ug/L		98
60)	Ethyl Methacrylate	13.16	69	36914	4.8028 ug/L		88
62)	trans-1,3-Dichloropropene	13.26	75	54242	4.7140 ug/L		97
63)	1,1,2-Trichloroethane	13.47	97	28049	4.8939 ug/L		90
64)	2-Hexanone	13.40	58	7530	3.8980 ug/L	#	85
65)	1,3-Dichloropropane	13.77	76	52613	5.0952 ug/L		87
66)	Tetrachloroethene	13.91	164	38400	5.1400 ug/L		90
67)	Dibromochloromethane	14.17	129	29272	3.7509 ug/L		100
68)	1,2-Dibromoethane	14.42	107	27182	4.5274 ug/L		99
69)	1-Chlorohexane	14.50	91	66183	6.0980 ug/L		80
70)	Chlorobenzene	14.93	112	127706	5.3202 ug/L		80
71)	1,1,1,2-Tetrachloroethane	14.95	131	39002	4.4813 ug/L		100
72)	Ethylbenzene	14.95	106	70286	5.4319 ug/L		79
73)	m-,p-Xylene	15.04	106	166641	10.8323 ug/L		79
74)	o-Xylene	15.60	106	83607	5.4664 ug/L		82
75)	Styrene	15.64	104	137049	5.3218 ug/L		92
76)	Bromoform	16.15	173	15209	3.0015 ug/L		99
77)	Isopropylbenzene	16.03	105	213538	5.4769 ug/L		97
79)	1,1,2,2-Tetrachloroethane	16.24	83	29107	4.8472 ug/L		95
81)	1,2,3-Trichloropropane	16.44	110	8576	4.2158 ug/L		98
82)	trans-1,4-Dichloro-2-Buten	16.48	53	10619	4.5301 ug/L		53
83)	n-Propylbenzene	16.53	91	268558	6.0802 ug/L		90
84)	Bromobenzene	16.68	156	52075	5.0273 ug/L		90
85)	1,3,5-Trimethylbenzene	16.73	105	182119	5.5381 ug/L		94
86)	2-Chlorotoluene	16.81	91	162233	5.6553 ug/L		87
87)	4-Chlorotoluene	16.86	91	165270	6.0880 ug/L		88
88)	a-Methylstyrene	17.13	118	99292	5.4907 ug/L		91
89)	tert-Butylbenzene	17.19	134	39726	5.7135 ug/L		89
90)	1,2,4-Trimethylbenzene	17.25	105	187351	5.6948 ug/L		94
91)	sec-Butylbenzene	17.46	105	221712	5.9276 ug/L		96
92)	p-Isopropyltoluene	17.62	119	190907	5.6717 ug/L		98
93)	1,3-Dichlorobenzene	17.82	146	99968	5.1124 ug/L		90
94)	1,4-Dichlorobenzene	17.95	146	99446	5.0694 ug/L		83
95)	n-Butylbenzene	18.15	91	175231	5.9452 ug/L		89
96)	1,2-Dichlorobenzene	18.45	146	88285	4.9169 ug/L		90
97)	1,2-Dibromo-3-Chloropropan	19.44	75	4446	3.5525 ug/L		79
98)	1,2,4-Trichlorobenzene	20.59	180	65696	4.7400 ug/L		99
99)	Hexachlorobutadiene	20.74	225	29366	5.5797 ug/L		97
100)	Naphthalene	20.97	128	104451	4.3233 ug/L		100
101)	1,2,3-Trichlorobenzene	21.27	180	55098	4.6303 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M393752.D 8260WTR.M Fri Jan 03 14:33:44 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393752.D Vial: 6
Acq On : 3 Jan 2014 12:56 Operator: MES
Sample : WG458331-06 5 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 3 14:33 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 14:33:34 2014
Response via : Initial Calibration

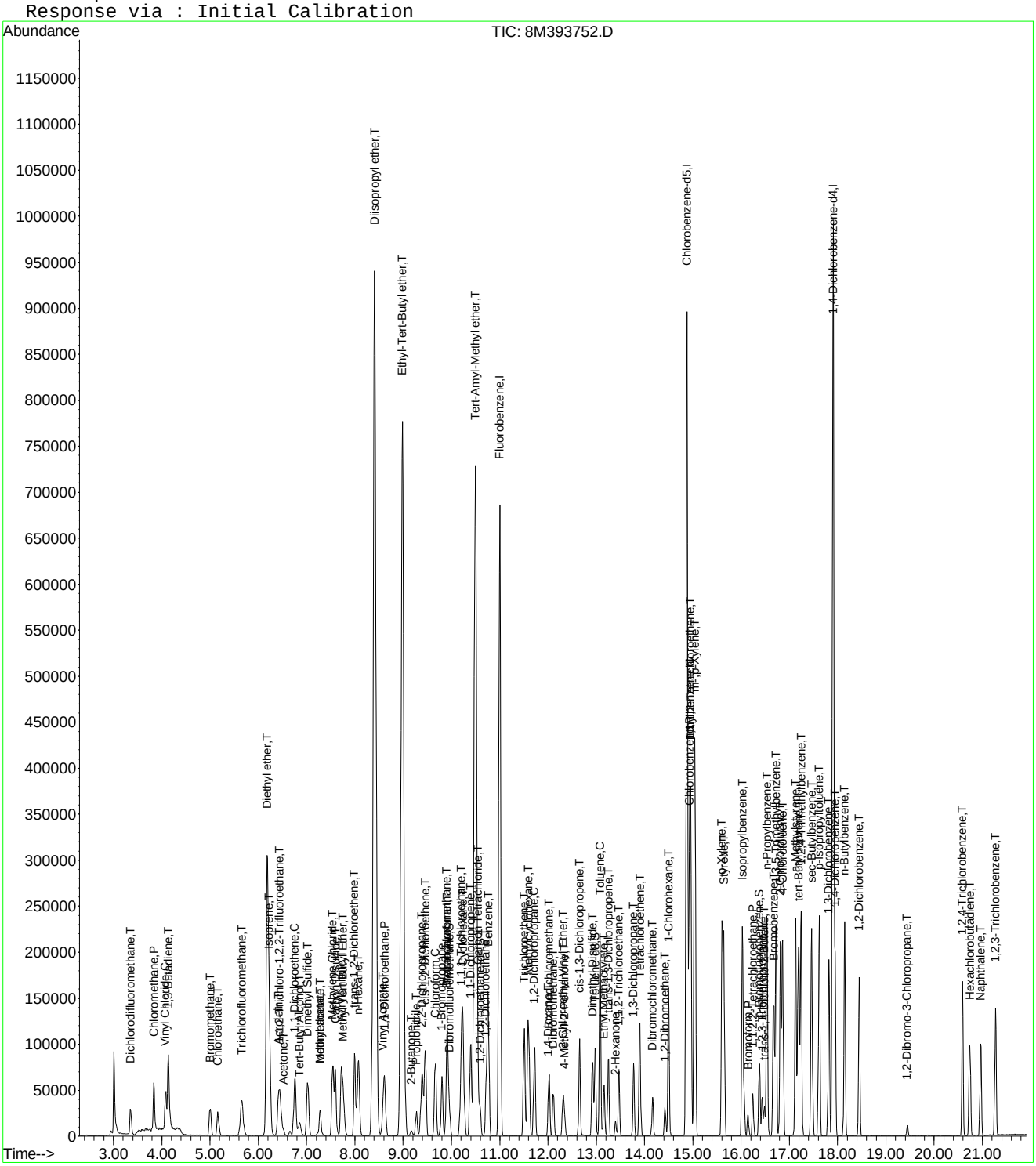

8M393752.D 8260WTR.M Fri Jan 03 14:33:44 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393753.D Vial: 7
Acq On : 3 Jan 2014 13:26 Operator: MES
Sample : WG458331-07 20 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 14:34:07 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 14:34:01 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	800820	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	613639	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	337139	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.96	111	84625	9.1109 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 36.44%#		
43) 1,2-Dichloroethane-d4	10.60	65	84551	8.4379 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 33.76%#		
58) Toluene-d8	12.99	98	303187	9.8032 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 39.20%#		
80) p-Bromofluorobenzene	16.38	95	125261	9.8382 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 39.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.36	85	157356	19.7569 ug/L	99
3) Chloromethane	3.83	50	277247	22.9754 ug/L	99
4) Vinyl Chloride	4.08	62	194599	19.4961 ug/L	97
5) 1,3-Butadiene	4.13	54	229900	22.4512 ug/L	83
6) Bromomethane	5.00	94	116580	21.0724 ug/L	98
7) Chloroethane	5.16	64	135275	21.3862 ug/L	96
8) Trichlorofluoromethane	5.65	101	274788	18.8101 ug/L	98
9) Diethyl ether	6.18	59	490963	79.7959 ug/L	88
10) Isoprene	6.23	67	273702	24.2735 ug/L	86
11) Acrolein	6.42	56	37413	52.6816 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.45	101	163431	20.5284 ug/L	87
13) Acetone	6.52	43	28789	16.0581 ug/L	100
14) 1,1-Dichloroethene	6.76	61	299159	20.3120 ug/L	89
15) Tert-Butyl Alcohol	6.85	59	56757	154.1871 ug/L	94
16) Dimethyl Sulfide	7.02	62	173578	21.6229 ug/L	96
17) Iodomethane	7.28	142	149716	20.9773 ug/L	98
18) Methyl acetate	7.29	43	85384	16.1703 ug/L	89
19) Methylene Chloride	7.55	84	166598	20.7416 ug/L	65
20) Carbon Disulfide	7.60	76	590627	23.2455 ug/L	100
21) Acrylonitrile	7.72	53	80411	35.4863 ug/L	96
22) Methyl Tert Butyl Ether	7.75	73	344900	17.8470 ug/L	88
23) trans-1,2-Dichloroethene	7.99	61	287104	20.6063 ug/L	87
24) n-Hexane	8.07	57	294986	23.3745 ug/L	100
25) Diisopropyl ether	8.40	45	2771896	81.0709 ug/L	90
26) Vinyl Acetate	8.58	43	288270	20.4460 ug/L	93
27) 1,1-Dichloroethane	8.62	63	349979	20.7649 ug/L	97
28) Ethyl-Tert-Butyl ether	8.98	59	2213636	81.1475 ug/L	90
29) 2-Butanone	9.16	43	44191	16.0803 ug/L	89
30) Propionitrile	9.27	54	55655	74.9701 ug/L	95
31) 2,2-Dichloropropane	9.40	77	286855	20.8294 ug/L	99
32) cis-1,2-Dichloroethene	9.46	96	194645	21.1492 ug/L	79
33) Chloroform	9.67	83	313538	19.8951 ug/L	98
34) 1-Bromopropane	9.81	122	37628	20.8913 ug/L	96
35) Bromochloromethane	9.90	130	99905	18.4552 ug/L #	56
36) Tetrahydrofuran	9.92	42	113063	65.3543 ug/L	89
38) 1,1,1-Trichloroethane	10.20	97	281829	19.7131 ug/L	100
39) Cyclohexane	10.24	56	380308	22.8506 ug/L	77
40) 1,1-Dichloropropene	10.40	75	246764	20.7459 ug/L	91
41) Tert-Amyl-Methyl ether	10.49	73	1532771	77.3624 ug/L	91
42) Carbon Tetrachloride	10.55	117	232343	18.3479 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M393753.D 8260WTR.M Fri Jan 03 14:34:08 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393753.D Vial: 7
Acq On : 3 Jan 2014 13:26 Operator: MES
Sample : WG458331-07 20 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 14:34:07 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 14:34:01 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.72	62	224416	18.5316 ug/L		93
46)	Benzene	10.76	78	701140	21.3500 ug/L		90
47)	Trichloroethene	11.51	130	182191	19.1905 ug/L		89
48)	Methylcyclohexane	11.60	83	292453	23.1410 ug/L		83
49)	1,2-Dichloropropane	11.72	63	190706	21.2865 ug/L		85
50)	Bromodichloromethane	12.02	83	217896	19.4323 ug/L		97
51)	1,4-Dioxane	12.00	88	5328	138.7817 ug/L	#	56
52)	Dibromomethane	12.11	93	83444	18.7491 ug/L		87
53)	2-Chloroethyl Vinyl Ether	12.31	63	84693	18.6496 ug/L		85
54)	4-Methyl-2-Pentanone	12.34	58	36983	16.8401 ug/L		77
55)	cis-1,3-Dichloropropene	12.65	75	268302	20.5446 ug/L		98
56)	Dimethyl Disulfide	12.92	94	257911	19.0548 ug/L		98
59)	Toluene	13.08	91	755262	21.8659 ug/L		99
60)	Ethyl Methacrylate	13.16	69	145704	19.2630 ug/L		90
62)	trans-1,3-Dichloropropene	13.25	75	218319	19.4297 ug/L		98
63)	1,1,2-Trichloroethane	13.47	97	110470	19.7280 ug/L		89
64)	2-Hexanone	13.40	58	34151	18.3840 ug/L		97
65)	1,3-Dichloropropane	13.77	76	202032	19.8289 ug/L		85
66)	Tetrachloroethene	13.91	164	149455	20.1915 ug/L		91
67)	Dibromochloromethane	14.16	129	130138	17.6768 ug/L		99
68)	1,2-Dibromoethane	14.42	107	110724	19.0211 ug/L		97
69)	1-Chlorohexane	14.49	91	264412	23.8836 ug/L		81
70)	Chlorobenzene	14.93	112	499284	20.9807 ug/L		87
71)	1,1,1,2-Tetrachloroethane	14.96	131	164548	19.6260 ug/L		99
72)	Ethylbenzene	14.95	106	268873	20.6819 ug/L		80
73)	m-,p-Xylene	15.04	106	654474	42.7464 ug/L		82
74)	o-Xylene	15.60	106	324767	21.2687 ug/L		82
75)	Styrene	15.64	104	543550	21.2024 ug/L		92
76)	Bromoform	16.15	173	73482	15.6932 ug/L		99
77)	Isopropylbenzene	16.03	105	823133	21.1731 ug/L		97
79)	1,1,2,2-Tetrachloroethane	16.24	83	117974	20.0171 ug/L		95
81)	1,2,3-Trichloropropane	16.44	110	33545	17.2854 ug/L		96
82)	trans-1,4-Dichloro-2-Buten	16.48	53	40260	17.5337 ug/L		61
83)	n-Propylbenzene	16.54	91	1035195	23.0150 ug/L		91
84)	Bromobenzene	16.68	156	206580	20.1892 ug/L		93
85)	1,3,5-Trimethylbenzene	16.73	105	712584	21.5967 ug/L		94
86)	2-Chlorotoluene	16.81	91	709825	24.7823 ug/L		89
87)	4-Chlorotoluene	16.86	91	562630	20.2349 ug/L		89
88)	a-Methylstyrene	17.13	118	398590	21.8395 ug/L		90
89)	tert-Butylbenzene	17.19	134	151891	21.6250 ug/L		88
90)	1,2,4-Trimethylbenzene	17.25	105	725909	21.9341 ug/L		96
91)	sec-Butylbenzene	17.46	105	860187	22.6975 ug/L		97
92)	p-Isopropyltoluene	17.62	119	736820	21.8132 ug/L		99
93)	1,3-Dichlorobenzene	17.82	146	395722	20.4376 ug/L		90
94)	1,4-Dichlorobenzene	17.95	146	386161	19.9451 ug/L		88
95)	n-Butylbenzene	18.14	91	685091	22.8868 ug/L		90
96)	1,2-Dichlorobenzene	18.44	146	348370	19.7320 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.44	75	18857	16.0633 ug/L		81
98)	1,2,4-Trichlorobenzene	20.58	180	260722	19.1842 ug/L		98
99)	Hexachlorobutadiene	20.74	225	112069	21.1217 ug/L		98
100)	Naphthalene	20.97	128	414545	17.8238 ug/L		100
101)	1,2,3-Trichlorobenzene	21.27	180	220119	18.9734 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M393753.D 8260WTR.M Fri Jan 03 14:34:08 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393753.D Vial: 7
Acq On : 3 Jan 2014 13:26 Operator: MES
Sample : WG458331-07 20 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 3 14:34 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 14:34:01 2014
Response via : Initial Calibration

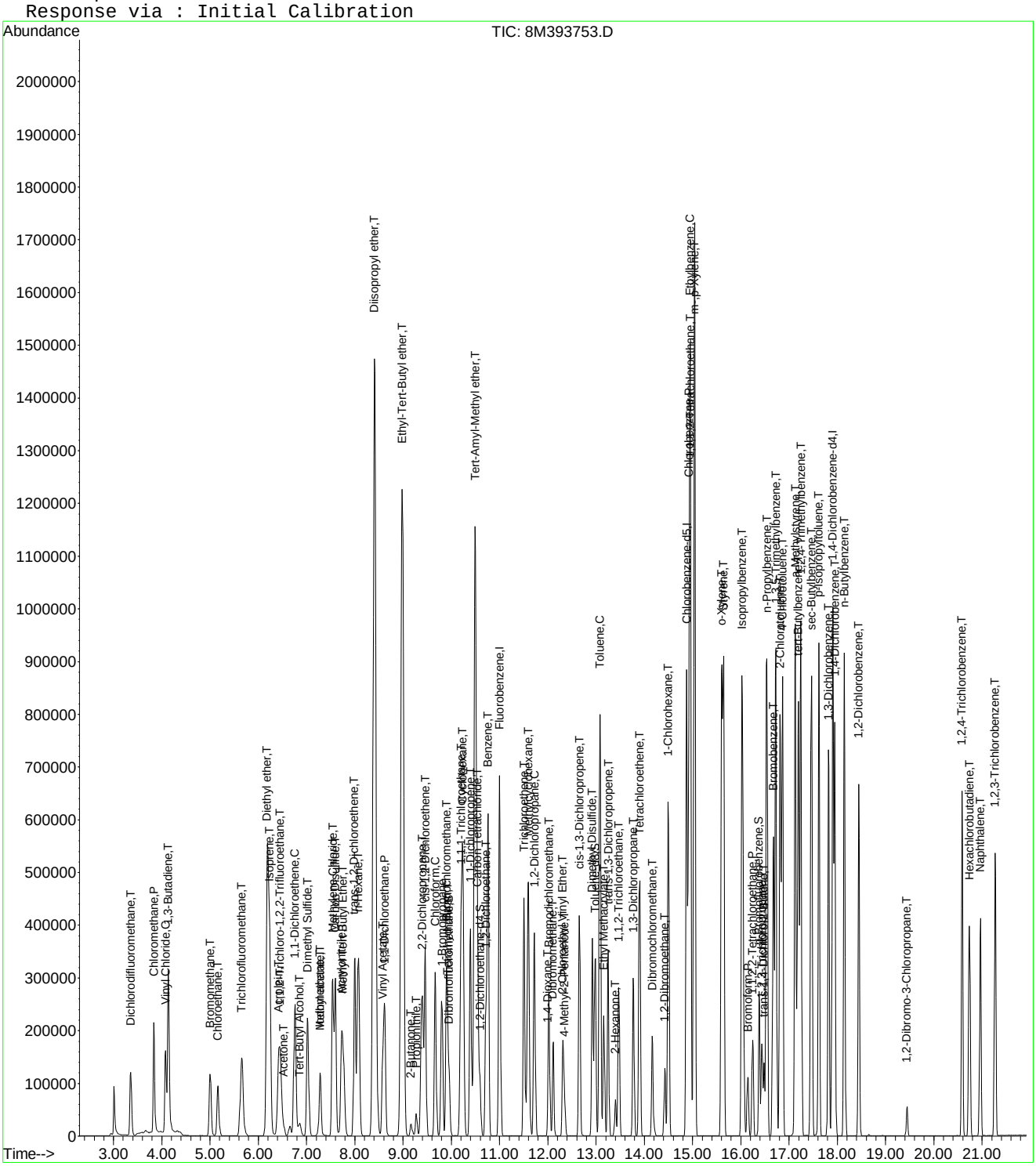

8M393753.D 8260WTR.M Fri Jan 03 14:34:08 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393754.D Vial: 8
Acq On : 3 Jan 2014 13:56 Operator: MES
Sample : WG458331-08 50 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 14:34:18 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 14:34:14 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	804428	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	634474	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	350886	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.96	111	225593	24.4033 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.60%		
43) 1,2-Dichloroethane-d4	10.60	65	221045	22.7223 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.88%		
58) Toluene-d8	12.98	98	794142	24.7673 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.08%		
80) p-Bromofluorobenzene	16.38	95	328401	24.5999 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.40%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.35	85	424228	54.1958 ug/L	99
3) Chloromethane	3.84	50	724638	58.1084 ug/L	99
4) Vinyl Chloride	4.08	62	498538	49.7123 ug/L	96
5) 1,3-Butadiene	4.14	54	440366	41.9323 ug/L	83
6) Bromomethane	5.01	94	334542	58.9061 ug/L	99
7) Chloroethane	5.16	64	365320	56.9777 ug/L	97
8) Trichlorofluoromethane	5.66	101	740683	51.3828 ug/L	99
9) Diethyl ether	6.18	59	637202	103.7317 ug/L	89
10) Isoprene	6.23	67	718778	61.9370 ug/L	84
11) Acrolein	6.42	56	48066	63.8664 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.44	101	447449	56.1621 ug/L	87
13) Acetone	6.53	43	75344	44.3098 ug/L	97
14) 1,1-Dichloroethene	6.75	61	804727	54.4239 ug/L	89
15) Tert-Butyl Alcohol	6.86	59	73433	203.3043 ug/L	95
16) Dimethyl Sulfide	7.02	62	464676	56.9913 ug/L	98
17) Iodomethane	7.28	142	428430	60.1874 ug/L	97
18) Methyl acetate	7.28	43	222614	43.5259 ug/L	92
19) Methylene Chloride	7.54	84	443832	54.7976 ug/L	68
20) Carbon Disulfide	7.59	76	1536319	58.6973 ug/L	100
21) Acrylonitrile	7.73	53	110980	50.2387 ug/L	100
22) Methyl Tert Butyl Ether	7.75	73	931431	49.3296 ug/L	89
23) trans-1,2-Dichloroethene	7.99	61	762703	54.4017 ug/L	87
24) n-Hexane	8.08	57	748790	57.4700 ug/L	100
25) Diisopropyl ether	8.41	45	3507762	102.5703 ug/L	90
26) Vinyl Acetate	8.58	43	755355	53.4874 ug/L	95
27) 1,1-Dichloroethane	8.61	63	926057	54.4815 ug/L	97
28) Ethyl-Tert-Butyl ether	8.99	59	2839254	103.8739 ug/L	90
29) 2-Butanone	9.16	43	120082	45.6815 ug/L	91
30) Propionitrile	9.28	54	71332	98.6771 ug/L	98
31) 2,2-Dichloropropane	9.39	77	764039	55.0773 ug/L	99
32) cis-1,2-Dichloroethene	9.46	96	512489	55.0053 ug/L	79
33) Chloroform	9.67	83	813288	51.5528 ug/L	99
34) 1-Bromopropane	9.80	122	100524	55.3170 ug/L	95
35) Bromochloromethane	9.91	130	267059	50.1466 ug/L #	60
36) Tetrahydrofuran	9.92	42	147128	90.2466 ug/L	89
38) 1,1,1-Trichloroethane	10.21	97	758088	53.4275 ug/L	100
39) Cyclohexane	10.24	56	975641	56.9933 ug/L	77
40) 1,1-Dichloropropene	10.39	75	662711	55.2264 ug/L	91
41) Tert-Amyl-Methyl ether	10.50	73	1970211	100.2247 ug/L	90
42) Carbon Tetrachloride	10.55	117	651362	52.5135 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M393754.D 8260WTR.M Fri Jan 03 14:34:19 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393754.D Vial: 8
Acq On : 3 Jan 2014 13:56 Operator: MES
Sample : WG458331-08 50 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 14:34:18 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 14:34:14 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.71	62	588941	49.5312	ug/L	92
46)	Benzene	10.76	78	1817498	54.6832	ug/L	90
47)	Trichloroethene	11.51	130	487140	51.6384	ug/L	89
48)	Methylcyclohexane	11.59	83	756337	57.7927	ug/L	82
49)	1,2-Dichloropropane	11.72	63	497401	54.8361	ug/L	86
50)	Bromodichloromethane	12.03	83	590450	53.3205	ug/L	97
51)	1,4-Dioxane	12.01	88	7487	197.8108	ug/L	79
52)	Dibromomethane	12.11	93	224149	50.9750	ug/L	86
53)	2-Chloroethyl Vinyl Ether	12.31	63	225958	50.3573	ug/L	85
54)	4-Methyl-2-Pentanone	12.34	58	99841	46.7828	ug/L	79
55)	cis-1,3-Dichloropropene	12.66	75	712447	54.4499	ug/L	98
56)	Dimethyl Disulfide	12.93	94	741803	54.5857	ug/L	98
59)	Toluene	13.08	91	1963093	54.2534	ug/L	100
60)	Ethyl Methacrylate	13.16	69	402027	52.1173	ug/L	90
62)	trans-1,3-Dichloropropene	13.25	75	596330	52.2012	ug/L	98
63)	1,1,2-Trichloroethane	13.47	97	296745	51.9566	ug/L	91
64)	2-Hexanone	13.40	58	94503	50.2275	ug/L	96
65)	1,3-Dichloropropane	13.77	76	532685	51.0536	ug/L	86
66)	Tetrachloroethene	13.91	164	399624	52.3958	ug/L	91
67)	Dibromochloromethane	14.17	129	362583	49.7593	ug/L	98
68)	1,2-Dibromoethane	14.43	107	297384	50.3430	ug/L	97
69)	1-Chlorohexane	14.50	91	686532	58.2020	ug/L	80
70)	Chlorobenzene	14.93	112	1309004	53.0475	ug/L	87
71)	1,1,1,2-Tetrachloroethane	14.95	131	450140	53.0810	ug/L	100
72)	Ethylbenzene	14.95	106	720824	53.1290	ug/L	83
73)	m-,p-Xylene	15.05	106	1725067	108.3028	ug/L	86
74)	o-Xylene	15.60	106	860024	54.0368	ug/L	85
75)	Styrene	15.65	104	1446167	54.3205	ug/L	92
76)	Bromoform	16.14	173	223242	48.8945	ug/L	99
77)	Isopropylbenzene	16.03	105	2160944	53.5211	ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.24	83	315544	51.9099	ug/L	95
81)	1,2,3-Trichloropropane	16.44	110	91011	46.6972	ug/L	92
82)	trans-1,4-Dichloro-2-Buten	16.48	53	115210	49.8754	ug/L	59
83)	n-Propylbenzene	16.53	91	2681542	56.0524	ug/L	91
84)	Bromobenzene	16.68	156	547421	51.6164	ug/L	92
85)	1,3,5-Trimethylbenzene	16.72	105	1864592	53.7437	ug/L	96
86)	2-Chlorotoluene	16.81	91	1644386	53.3697	ug/L	89
87)	4-Chlorotoluene	16.87	91	1688538	58.2533	ug/L	89
88)	a-Methylstyrene	17.13	118	1059104	54.7303	ug/L	91
89)	tert-Butylbenzene	17.20	134	415655	56.3481	ug/L	90
90)	1,2,4-Trimethylbenzene	17.25	105	1902487	54.7316	ug/L	97
91)	sec-Butylbenzene	17.46	105	2267500	56.4898	ug/L	98
92)	p-Isopropyltoluene	17.62	119	1960050	55.3057	ug/L	100
93)	1,3-Dichlorobenzene	17.82	146	1045390	51.9650	ug/L	89
94)	1,4-Dichlorobenzene	17.95	146	1030920	51.4572	ug/L	89
95)	n-Butylbenzene	18.15	91	1809581	56.7869	ug/L	91
96)	1,2-Dichlorobenzene	18.45	146	920238	50.5834	ug/L	89
97)	1,2-Dibromo-3-Chloropropan	19.44	75	54504	46.8029	ug/L	82
98)	1,2,4-Trichlorobenzene	20.59	180	696778	49.9608	ug/L	99
99)	Hexachlorobutadiene	20.74	225	304562	54.7646	ug/L	98
100)	Naphthalene	20.96	128	1094660	46.8053	ug/L	100
101)	1,2,3-Trichlorobenzene	21.27	180	588943	49.7843	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M393754.D 8260WTR.M Fri Jan 03 14:34:19 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393754.D Vial: 8
Acq On : 3 Jan 2014 13:56 Operator: MES
Sample : WG458331-08 50 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 3 14:34 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 14:34:14 2014
Response via : Initial Calibration

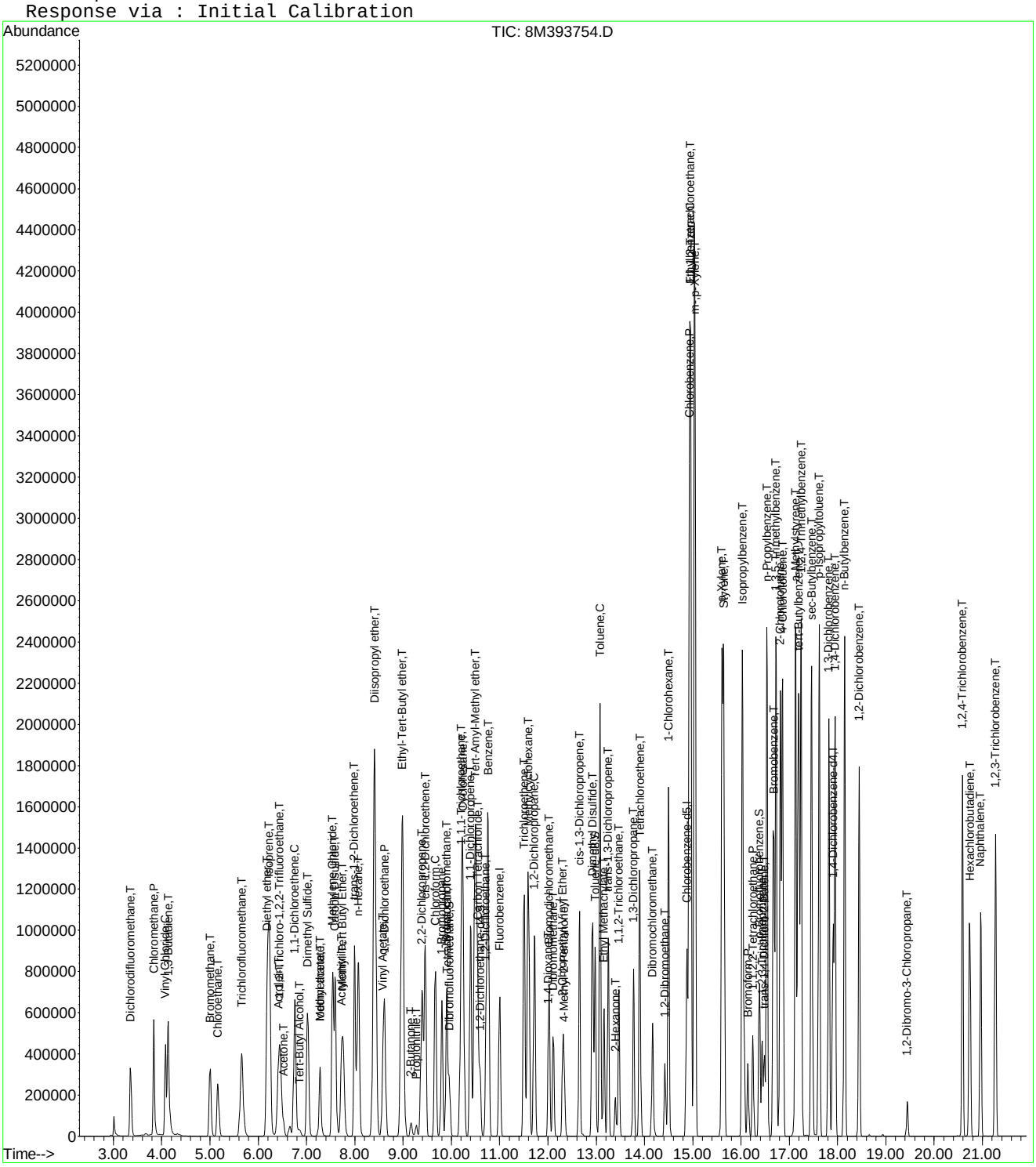

8M393754.D 8260WTR.M Fri Jan 03 14:34:19 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393755.D Vial: 9
Acq On : 3 Jan 2014 14:26 Operator: MES
Sample : WG458331-09 100 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 15:10:29 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 14:34:30 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	833898	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	669649	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	369980	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.96	111	447484	46.8771 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 187.52%#		
43) 1,2-Dichloroethane-d4	10.60	65	431422	43.9090 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 175.64%#		
58) Toluene-d8	12.98	98	1576209	46.1920 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 184.76%#		
80) p-Bromofluorobenzene	16.38	95	650976	45.8106 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 183.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.35	85	836552	104.5125 ug/L	99
3) Chloromethane	3.84	50	1383773	103.2876 ug/L	99
4) Vinyl Chloride	4.07	62	933426	89.6810 ug/L	99
5) 1,3-Butadiene	4.12	54	499624	46.7551 ug/L	99
6) Bromomethane	5.01	94	694084	115.0070 ug/L	99
7) Chloroethane	5.16	64	734431	108.6243 ug/L	100
8) Trichlorofluoromethane	5.66	101	1461970	98.8656 ug/L	100
9) Diethyl ether	6.18	59	1263023	198.9198 ug/L	100
10) Isoprene	6.23	67	1434209	115.9036 ug/L	99
11) Acrolein	6.42	56	97394	117.5639 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.44	101	889967	106.8976 ug/L	99
13) Acetone	6.53	43	150314	88.2524 ug/L	99
14) 1,1-Dichloroethene	6.75	61	1570526	101.7957 ug/L	99
15) Tert-Butyl Alcohol	6.87	59	150917	408.3789 ug/L	99
16) Dimethyl Sulfide	7.02	62	920118	106.4825 ug/L	100
17) Iodomethane	7.28	142	869520	117.6287 ug/L	98
18) Methyl acetate	7.28	43	436766	84.9214 ug/L	100
19) Methylene Chloride	7.54	84	879136	103.4632 ug/L	99
20) Carbon Disulfide	7.59	76	3016918	108.2339 ug/L	100
21) Acrylonitrile	7.72	53	217396	97.6972 ug/L	98
22) Methyl Tert Butyl Ether	7.75	73	1792342	93.2853 ug/L	99
23) trans-1,2-Dichloroethene	7.99	61	1499025	102.0975 ug/L	100
24) n-Hexane	8.08	57	1512170	108.8219 ug/L	100
25) Diisopropyl ether	8.41	45	6770198	191.4393 ug/L	99
26) Vinyl Acetate	8.58	43	1475112	100.1095 ug/L	100
27) 1,1-Dichloroethane	8.61	63	1816758	101.8463 ug/L	99
28) Ethyl-Tert-Butyl ether	8.99	59	5493962	193.9343 ug/L	98
29) 2-Butanone	9.16	43	232546	88.8245 ug/L	98
30) Propionitrile	9.28	54	146354	200.5600 ug/L	98
31) 2,2-Dichloropropane	9.40	77	1489605	102.6588 ug/L	99
32) cis-1,2-Dichloroethene	9.46	96	1020691	104.3646 ug/L	98
33) Chloroform	9.67	83	1597760	97.6307 ug/L	100
34) 1-Bromopropane	9.80	122	197528	104.0723 ug/L	98
35) Bromochloromethane	9.91	130	524942	96.0525 ug/L	100
36) Tetrahydrofuran	9.92	42	289505	183.5123 ug/L	99
38) 1,1,1-Trichloroethane	10.21	97	1487909	101.5640 ug/L	99
39) Cyclohexane	10.24	56	1945599	106.9367 ug/L	99
40) 1,1-Dichloropropene	10.39	75	1291714	102.6489 ug/L	99
41) Tert-Amyl-Methyl ether	10.50	73	3827154	189.9379 ug/L	100
42) Carbon Tetrachloride	10.55	117	1309127	103.4821 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393755.D Vial: 9
Acq On : 3 Jan 2014 14:26 Operator: MES
Sample : WG458331-09 100 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 15:10:29 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 14:34:30 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.71	62	1146487	94.6428	ug/L	100
46)	Benzene	10.76	78	3535188	101.2539	ug/L	99
47)	Trichloroethene	11.51	130	963284	99.0643	ug/L	99
48)	Methylcyclohexane	11.59	83	1521301	108.3920	ug/L	99
49)	1,2-Dichloropropane	11.73	63	994362	104.4746	ug/L	99
50)	Bromodichloromethane	12.03	83	1181464	103.8771	ug/L	100
51)	1,4-Dioxane	12.01	88	15632	418.6159	ug/L	93
52)	Dibromomethane	12.11	93	442539	98.3890	ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.30	63	443129	95.9210	ug/L	99
54)	4-Methyl-2-Pentanone	12.34	58	198296	91.7049	ug/L	98
55)	cis-1,3-Dichloropropene	12.66	75	1410927	103.7567	ug/L	99
56)	Dimethyl Disulfide	12.93	94	1506270	106.0931	ug/L	100
59)	Toluene	13.08	91	3835655	98.6281	ug/L	99
60)	Ethyl Methacrylate	13.16	69	784839	96.9057	ug/L	100
62)	trans-1,3-Dichloropropene	13.25	75	1178414	98.6726	ug/L	99
63)	1,1,2-Trichloroethane	13.47	97	588795	98.2761	ug/L	100
64)	2-Hexanone	13.40	58	185606	94.4714	ug/L	100
65)	1,3-Dichloropropane	13.77	76	1047987	95.5084	ug/L	99
66)	Tetrachloroethene	13.91	164	796353	98.7349	ug/L	99
67)	Dibromochloromethane	14.17	129	746881	100.7384	ug/L	100
68)	1,2-Dibromoethane	14.42	107	589391	95.7856	ug/L	100
69)	1-Chlorohexane	14.50	91	1367095	106.5924	ug/L	99
70)	Chlorobenzene	14.93	112	2607042	99.2861	ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.95	131	921332	104.4172	ug/L	100
72)	Ethylbenzene	14.95	106	1457453	100.1446	ug/L	94
73)	m-,p-Xylene	15.04	106	3430912	201.6987	ug/L	93
74)	o-Xylene	15.60	106	1724560	101.4889	ug/L	97
75)	Styrene	15.64	104	2863137	101.0435	ug/L	100
76)	Bromoform	16.14	173	465115	101.1294	ug/L	99
77)	Isopropylbenzene	16.03	105	4203461	97.7924	ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.24	83	628821	98.4290	ug/L	99
81)	1,2,3-Trichloropropane	16.44	110	180534	90.3464	ug/L	98
82)	trans-1,4-Dichloro-2-Buten	16.48	53	228448	95.4319	ug/L	98
83)	n-Propylbenzene	16.53	91	5123024	99.1860	ug/L	98
84)	Bromobenzene	16.68	156	1095681	98.0063	ug/L	99
85)	1,3,5-Trimethylbenzene	16.73	105	3651129	98.5056	ug/L	99
86)	2-Chlorotoluene	16.81	91	3170876	95.6944	ug/L	87
87)	4-Chlorotoluene	16.86	91	3316511	106.2436	ug/L	92
88)	a-Methylstyrene	17.13	118	2126295	102.3742	ug/L	99
89)	tert-Butylbenzene	17.20	134	845221	106.6095	ug/L	97
90)	1,2,4-Trimethylbenzene	17.25	105	3717103	99.9705	ug/L	98
91)	sec-Butylbenzene	17.46	105	4400441	101.7673	ug/L	98
92)	p-Isopropyltoluene	17.62	119	3862360	101.9985	ug/L	99
93)	1,3-Dichlorobenzene	17.82	146	2081775	98.0304	ug/L	100
94)	1,4-Dichlorobenzene	17.95	146	2056849	97.5024	ug/L	100
95)	n-Butylbenzene	18.15	91	3511926	101.8132	ug/L	98
96)	1,2-Dichlorobenzene	18.45	146	1817553	95.4083	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.44	75	111507	94.5187	ug/L	98
98)	1,2,4-Trichlorobenzene	20.59	180	1380268	94.7179	ug/L	100
99)	Hexachlorobutadiene	20.74	225	602834	101.5780	ug/L	99
100)	Naphthalene	20.97	128	2129308	89.1282	ug/L	99
101)	1,2,3-Trichlorobenzene	21.27	180	1158830	94.3033	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M393755.D 8260WTR.M Fri Jan 03 15:10:30 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393755.D Vial: 9
Acq On : 3 Jan 2014 14:26 Operator: MES
Sample : WG458331-09 100 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 3 15:10 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 14:34:30 2014
Response via : Initial Calibration

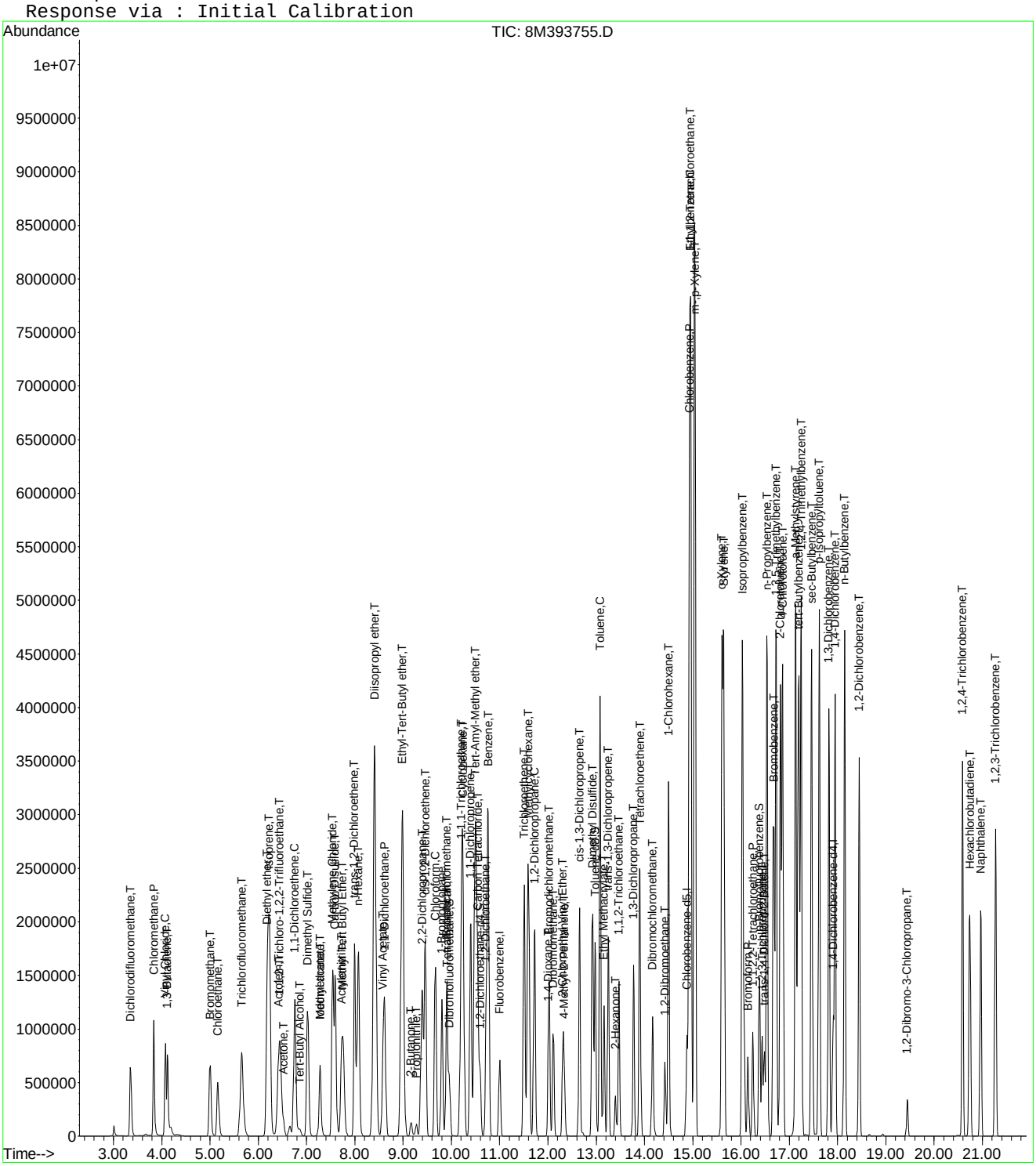

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393756.D Vial: 10
Acq On : 3 Jan 2014 14:56 Operator: MES
Sample : WG458331-10 200 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 15:22:00 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 15:10:42 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	865181	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	682130	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	384266	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.96	111	892548	90.6766 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 362.72%#		
43) 1,2-Dichloroethane-d4	10.60	65	847847	85.4811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 341.92%#		
58) Toluene-d8	12.98	98	3116884	89.4727 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 357.88%#		
80) p-Bromofluorobenzene	16.38	95	1306041	88.0218 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 352.08%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.35	85	1617917	198.0916 ug/L	99
3) Chloromethane	3.84	50	2641696	185.2012 ug/L	99
4) Vinyl Chloride	4.07	62	1768411	164.8480 ug/L	98
5) 1,3-Butadiene	4.11	54	787861	76.4382 ug/L	98
6) Bromomethane	5.00	94	1435436	224.9859 ug/L	99
7) Chloroethane	5.16	64	1473392	206.8976 ug/L	100
8) Trichlorofluoromethane	5.66	101	2914361	192.4203 ug/L	99
9) Diethyl ether	6.19	59	2748	0.4179 ug/L	89
10) Isoprene	6.22	67	2826985	214.9555 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.44	101	1754121	202.2426 ug/L	99
13) Acetone	6.52	43	291521	169.8842 ug/L	97
14) 1,1-Dichloroethene	6.76	61	3109570	193.6881 ug/L	98
16) Dimethyl Sulfide	7.02	62	1834043	200.5986 ug/L	99
17) Iodomethane	7.28	142	1723232	224.2976 ug/L	98
18) Methyl acetate	7.28	43	852229	165.1222 ug/L	99
19) Methylene Chloride	7.54	84	1758150	197.5644 ug/L	97
20) Carbon Disulfide	7.60	76	5814875	196.5448 ug/L	99
21) Acrylonitrile	7.74	53	39905	17.7497 ug/L #	31
22) Methyl Tert Butyl Ether	7.75	73	3555317	182.4236 ug/L	99
23) trans-1,2-Dichloroethene	7.99	61	2954182	192.4852 ug/L	98
24) n-Hexane	8.07	57	2871925	194.0307 ug/L	100
26) Vinyl Acetate	8.58	43	2829253	185.8469 ug/L	99
27) 1,1-Dichloroethane	8.61	63	3612936	193.4766 ug/L	99
29) 2-Butanone	9.16	43	469715	180.3105 ug/L	98
31) 2,2-Dichloropropane	9.40	77	2931139	193.8629 ug/L	98
32) cis-1,2-Dichloroethene	9.46	96	2030147	198.0594 ug/L	97
33) Chloroform	9.67	83	3143975	185.5316 ug/L	100
34) 1-Bromopropane	9.81	122	399128	201.9075 ug/L	100
35) Bromochloromethane	9.90	130	1043620	186.9141 ug/L	97
38) 1,1,1-Trichloroethane	10.20	97	2973811	196.9029 ug/L	99
39) Cyclohexane	10.24	56	3775683	196.0931 ug/L	99
40) 1,1-Dichloropropene	10.40	75	2563799	194.8149 ug/L	98
42) Carbon Tetrachloride	10.55	117	2650824	205.5149 ug/L	100
45) 1,2-Dichloroethane	10.71	62	2229079	180.7933 ug/L	99
46) Benzene	10.76	78	6789177	185.7296 ug/L	97
47) Trichloroethene	11.51	130	1945361	193.9559 ug/L	99
48) Methylcyclohexane	11.60	83	2947109	196.7275 ug/L	99
49) 1,2-Dichloropropane	11.72	63	1978426	198.0562 ug/L	99
50) Bromodichloromethane	12.02	83	2350631	201.5394 ug/L	99
51) 1,4-Dioxane	12.01	88	3630	96.0584 ug/L #	12

(#) = qualifier out of range (m) = manual integration
8M393756.D 8260WTR.M Fri Jan 03 15:22:01 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393756.D Vial: 10
Acq On : 3 Jan 2014 14:56 Operator: MES
Sample : WG458331-10 200 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 15:22:00 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 15:10:42 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
52)	Dibromomethane	12.11	93	882401	191.6515 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	890230	188.3816 ug/L	98
54)	4-Methyl-2-Pentanone	12.35	58	404653	184.9622 ug/L	99
55)	cis-1,3-Dichloropropene	12.66	75	2797148	198.4636 ug/L	98
56)	Dimethyl Disulfide	12.92	94	3070798	208.3219 ug/L	100
59)	Toluene	13.08	91	7301913	182.4847 ug/L	96
60)	Ethyl Methacrylate	13.16	69	1572179	193.3409 ug/L	97
62)	trans-1,3-Dichloropropene	13.25	75	2351259	196.3415 ug/L	98
63)	1,1,2-Trichloroethane	13.47	97	1181618	195.8357 ug/L	100
64)	2-Hexanone	13.40	58	376523	192.5273 ug/L	100
65)	1,3-Dichloropropane	13.77	76	2083505	188.0791 ug/L	98
66)	Tetrachloroethene	13.91	164	1642944	201.1023 ug/L	98
67)	Dibromochloromethane	14.16	129	1535949	211.7232 ug/L	100
68)	1,2-Dibromoethane	14.42	107	1183069	192.6880 ug/L	99
69)	1-Chlorohexane	14.51	91	2713009	203.5372 ug/L	99
70)	Chlorobenzene	14.93	112	5150482	192.0081 ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.96	131	1900111	215.1862 ug/L	100
72)	Ethylbenzene	14.95	106	2986206	199.8086 ug/L	81
73)	m-,p-Xylene	15.04	106	6675436	383.3478 ug/L	80
74)	o-Xylene	15.60	106	3499003	201.2148 ug/L	90
75)	Styrene	15.64	104	5587831	193.1988 ug/L	98
76)	Bromoform	16.14	173	978685	220.4464 ug/L	98
77)	Isopropylbenzene	16.03	105	7981431	182.3540 ug/L	94
79)	1,1,2,2-Tetrachloroethane	16.24	83	1269305	193.0506 ug/L	99
81)	1,2,3-Trichloropropane	16.44	110	361959	180.5276 ug/L #	39
82)	trans-1,4-Dichloro-2-Buten	16.48	53	462968	192.7853 ug/L #	46
83)	n-Propylbenzene	16.54	91	9353848	171.8750 ug/L	92
84)	Bromobenzene	16.68	156	2221980	192.0602 ug/L	95
85)	1,3,5-Trimethylbenzene	16.73	105	6989121	180.4597 ug/L	94
86)	2-Chlorotoluene	16.81	91	6721753	192.9384 ug/L	94
87)	4-Chlorotoluene	16.86	91	5508230	167.5109 ug/L	93
88)	a-Methylstyrene	17.13	118	4241045	194.8177 ug/L	99
89)	tert-Butylbenzene	17.19	134	1735859	207.9815 ug/L	91
90)	1,2,4-Trimethylbenzene	17.25	105	7110546	182.9428 ug/L	93
91)	sec-Butylbenzene	17.46	105	8287606	182.5298 ug/L	94
92)	p-Isopropyltoluene	17.62	119	7372115	186.4638 ug/L	95
93)	1,3-Dichlorobenzene	17.82	146	4166156	189.5046 ug/L	98
94)	1,4-Dichlorobenzene	17.95	146	4110689	188.7032 ug/L	99
95)	n-Butylbenzene	18.15	91	6658483	182.6788 ug/L	95
96)	1,2-Dichlorobenzene	18.45	146	3666747	187.3313 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.44	75	233713	200.2452 ug/L	100
98)	1,2,4-Trichlorobenzene	20.59	180	2770063	185.2450 ug/L	100
99)	Hexachlorobutadiene	20.74	225	1223925	197.5723 ug/L	98
100)	Naphthalene	20.97	128	4149145	172.8737 ug/L	98
101)	1,2,3-Trichlorobenzene	21.27	180	2332619	186.2008 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M393756.D 8260WTR.M Fri Jan 03 15:22:01 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393756.D Vial: 10
Acq On : 3 Jan 2014 14:56 Operator: MES
Sample : WG458331-10 200 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 3 15:22 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 15:10:42 2014
Response via : Initial Calibration

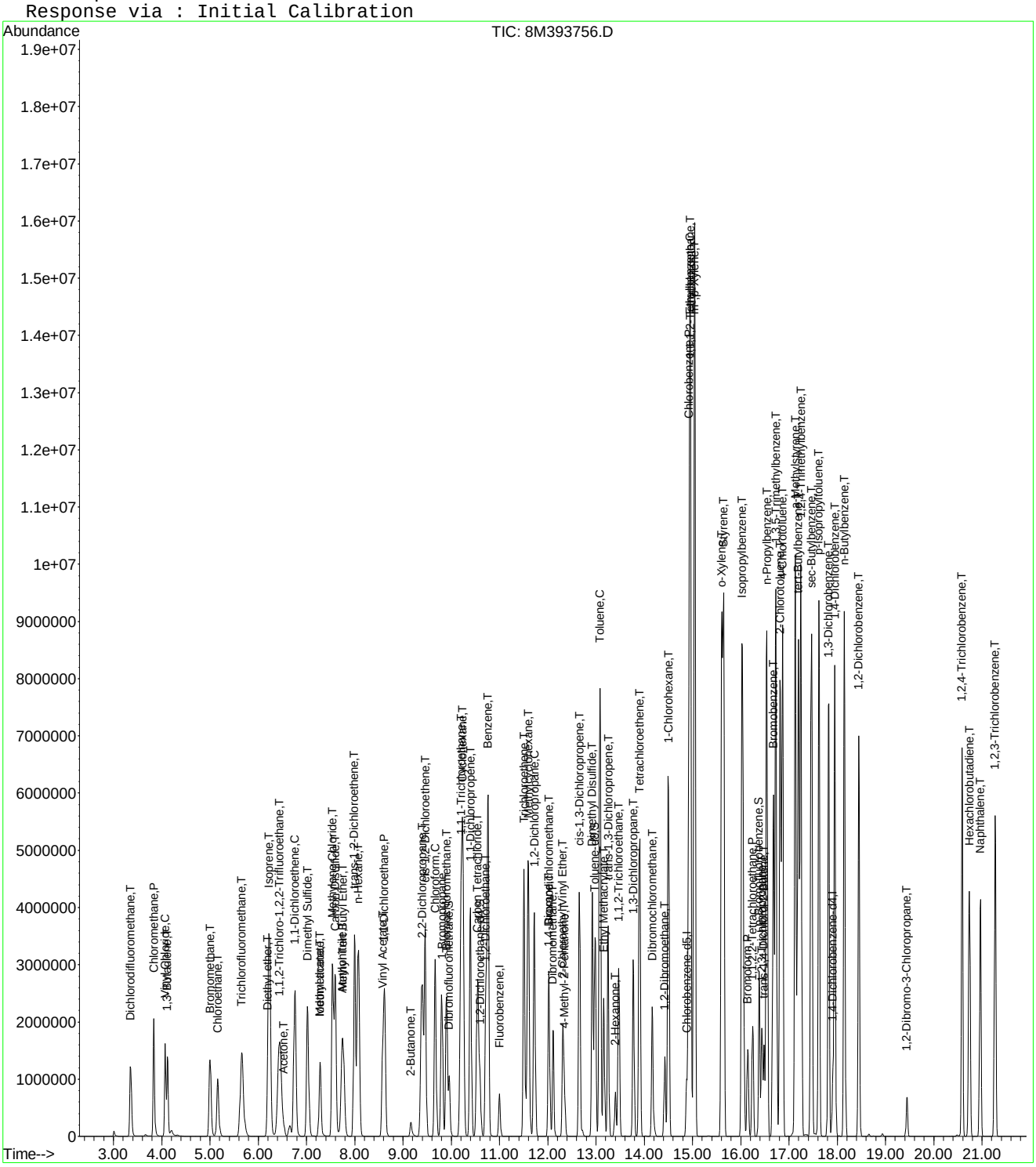

8M393756.D 8260WTR.M Fri Jan 03 15:22:02 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393757.D Vial: 11
Acq On : 3 Jan 2014 15:27 Operator: MES
Sample : WG458331-11 300 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 16:14:13 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 15:24:36 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	878625	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	733644	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	396194	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.95	111	1341569	135.6586 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 542.64%#		
43) 1,2-Dichloroethane-d4	10.60	65	1263352	129.4910 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 517.96%#		
58) Toluene-d8	12.98	98	4668668	124.2222 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 496.88%#		
80) p-Bromofluorobenzene	16.38	95	1971708	128.4727 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 513.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.36	85	2408860	297.0387 ug/L	98
3) Chloromethane	3.83	50	3799989	258.6052 ug/L	97
4) Vinyl Chloride	4.07	62	2489481	231.7040 ug/L	97
5) 1,3-Butadiene	4.11	54	1141545	119.6459 ug/L	98
6) Bromomethane	4.99	94	2183418	332.1162 ug/L	99
7) Chloroethane	5.16	64	2236624	305.2337 ug/L	99
8) Trichlorofluoromethane	5.65	101	4426439	292.3194 ug/L	99
9) Diethyl ether	6.18	59	1947469	291.6117 ug/L	99
10) Isoprene	6.22	67	4207519	309.4373 ug/L	98
11) Acrolein	6.43	56	155533	167.8632 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.44	101	2645825	300.7721 ug/L	99
13) Acetone	6.52	43	427103	261.3414 ug/L	96
14) 1,1-Dichloroethene	6.76	61	4691293	287.9793 ug/L	97
15) Tert-Butyl Alcohol	6.87	59	253129	653.6914 ug/L	99
16) Dimethyl Sulfide	7.02	62	2742747	291.2355 ug/L	98
17) Iodomethane	7.28	142	2550813	327.6892 ug/L	97
18) Methyl acetate	7.28	43	1336410	265.8207 ug/L	99
19) Methylene Chloride	7.54	84	2648224	291.3555 ug/L	95
20) Carbon Disulfide	7.60	76	8461519	277.2480 ug/L	97
21) Acrylonitrile	7.72	53	374837	164.1759 ug/L	95
22) Methyl Tert Butyl Ether	7.75	73	5324734	276.6519 ug/L	98
23) trans-1,2-Dichloroethene	7.99	61	4370732	279.8118 ug/L	97
24) n-Hexane	8.07	57	4218286	275.9621 ug/L	100
25) Diisopropyl ether	8.41	45	9968181	268.6869 ug/L	98
26) Vinyl Acetate	8.58	43	4074835	264.9512 ug/L	98
27) 1,1-Dichloroethane	8.62	63	5338914	279.9599 ug/L	98
28) Ethyl-Tert-Butyl ether	8.98	59	8235522	276.4928 ug/L	97
29) 2-Butanone	9.17	43	730166	290.2719 ug/L	97
30) Propionitrile	9.28	54	238489	316.8087 ug/L	99
31) 2,2-Dichloropropane	9.40	77	4332089	282.0636 ug/L	98
32) cis-1,2-Dichloroethene	9.46	96	3060249	292.1271 ug/L	95
33) Chloroform	9.67	83	4647964	271.4798 ug/L	99
34) 1-Bromopropane	9.81	122	596729	297.1090 ug/L	98
35) Bromochloromethane	9.90	130	1590049	285.8843 ug/L	96
36) Tetrahydrofuran	9.92	42	446993	285.6879 ug/L	96
38) 1,1,1-Trichloroethane	10.20	97	4392283	288.9496 ug/L	98
39) Cyclohexane	10.23	56	5575067	281.7638 ug/L	98
40) 1,1-Dichloropropene	10.40	75	3834252	286.0827 ug/L	97
41) Tert-Amyl-Methyl ether	10.49	73	5844038	278.9175 ug/L	100
42) Carbon Tetrachloride	10.54	117	3974415	309.3998 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393757.D Vial: 11
Acq On : 3 Jan 2014 15:27 Operator: MES
Sample : WG458331-11 300 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 03 16:14:13 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 15:24:36 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.72	62	3298562	269.8463 ug/L	98
46)	Benzene	10.76	78	9741140	261.3305 ug/L	96
47)	Trichloroethene	11.51	130	2955888	292.8266 ug/L	99
48)	Methylcyclohexane	11.60	83	4363502	281.8178 ug/L	98
49)	1,2-Dichloropropane	11.72	63	2995183	292.9592 ug/L	99
50)	Bromodichloromethane	12.02	83	3516039	301.1591 ug/L	98
51)	1,4-Dioxane	12.01	88	29643	772.4216 ug/L	91
52)	Dibromomethane	12.12	93	1345016	292.5904 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	1370507	291.7156 ug/L	98
54)	4-Methyl-2-Pentanone	12.34	58	632293	294.3057 ug/L	99
55)	cis-1,3-Dichloropropene	12.65	75	4184422	293.8012 ug/L	97
56)	Dimethyl Disulfide	12.92	94	4616075	309.6744 ug/L	99
59)	Toluene	13.08	91	10290904	237.0526 ug/L	92
60)	Ethyl Methacrylate	13.16	69	2410702	279.8490 ug/L	97
62)	trans-1,3-Dichloropropene	13.25	75	3534832	278.4982 ug/L	97
63)	1,1,2-Trichloroethane	13.47	97	1820014	283.2744 ug/L	99
64)	2-Hexanone	13.40	58	591177	289.0238 ug/L	97
65)	1,3-Dichloropropane	13.78	76	3167952	268.1947 ug/L	97
66)	Tetrachloroethene	13.90	164	2506842	285.8709 ug/L	98
67)	Dibromochloromethane	14.17	129	2396120	318.9470 ug/L	100
68)	1,2-Dibromoethane	14.42	107	1812283	279.9781 ug/L	99
69)	1-Chlorohexane	14.50	91	4034018	276.0622 ug/L	98
70)	Chlorobenzene	14.93	112	7381611	254.7637 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.96	131	2807052	299.2072 ug/L	100
72)	Ethylbenzene	14.96	106	4378875	272.4198 ug/L	70
73)	m-,p-Xylene	15.04	106	9201851	488.9903 ug/L	72
74)	o-Xylene	15.61	106	5211793	276.6520 ug/L	83
75)	Styrene	15.64	104	8093354	259.7984 ug/L	96
76)	Bromoform	16.15	173	1533990	338.2781 ug/L	98
77)	Isopropylbenzene	16.03	105	11089456	235.8023 ug/L	89
79)	1,1,2,2-Tetrachloroethane	16.25	83	1952778	290.9236 ug/L	99
81)	1,2,3-Trichloropropane	16.44	110	561720	282.0993 ug/L #	39
82)	trans-1,4-Dichloro-2-Buten	16.48	53	774744	322.6814 ug/L #	39
83)	n-Propylbenzene	16.54	91	12570271	222.1125 ug/L	85
84)	Bromobenzene	16.68	156	3366277	282.9814 ug/L	92
85)	1,3,5-Trimethylbenzene	16.73	105	9797719	244.4586 ug/L	91
86)	2-Chlorotoluene	16.82	91	9166602	249.9547 ug/L	90
87)	4-Chlorotoluene	16.86	91	8123681	240.9544 ug/L	88
88)	a-Methylstyrene	17.13	118	6125686	271.1853 ug/L	98
89)	tert-Butylbenzene	17.19	134	2581854	295.9144 ug/L	87
90)	1,2,4-Trimethylbenzene	17.24	105	9879518	245.6194 ug/L	88
91)	sec-Butylbenzene	17.46	105	11397802	241.6811 ug/L	90
92)	p-Isopropyltoluene	17.63	119	10204712	249.2735 ug/L	91
93)	1,3-Dichlorobenzene	17.82	146	6084375	269.1617 ug/L	96
94)	1,4-Dichlorobenzene	17.95	146	5994656	268.2046 ug/L	96
95)	n-Butylbenzene	18.14	91	9214051	241.8841 ug/L	91
96)	1,2-Dichlorobenzene	18.45	146	5399872	269.9696 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	19.45	75	360492	314.8696 ug/L	98
98)	1,2,4-Trichlorobenzene	20.59	180	4064885	266.0745 ug/L	99
99)	Hexachlorobutadiene	20.74	225	1806701	280.4506 ug/L	98
100)	Naphthalene	20.97	128	6043893	252.3769 ug/L	97
101)	1,2,3-Trichlorobenzene	21.28	180	3429144	269.3844 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M393757.D 8260WTR.M Fri Jan 03 16:14:13 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393757.D Vial: 11
Acq On : 3 Jan 2014 15:27 Operator: MES
Sample : WG458331-11 300 ug/L WATER STD 8260 Inst : HPMS8
Misc : 1,1 STD62122 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 3 16:14 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Fri Jan 03 15:24:36 2014
Response via : Initial Calibration

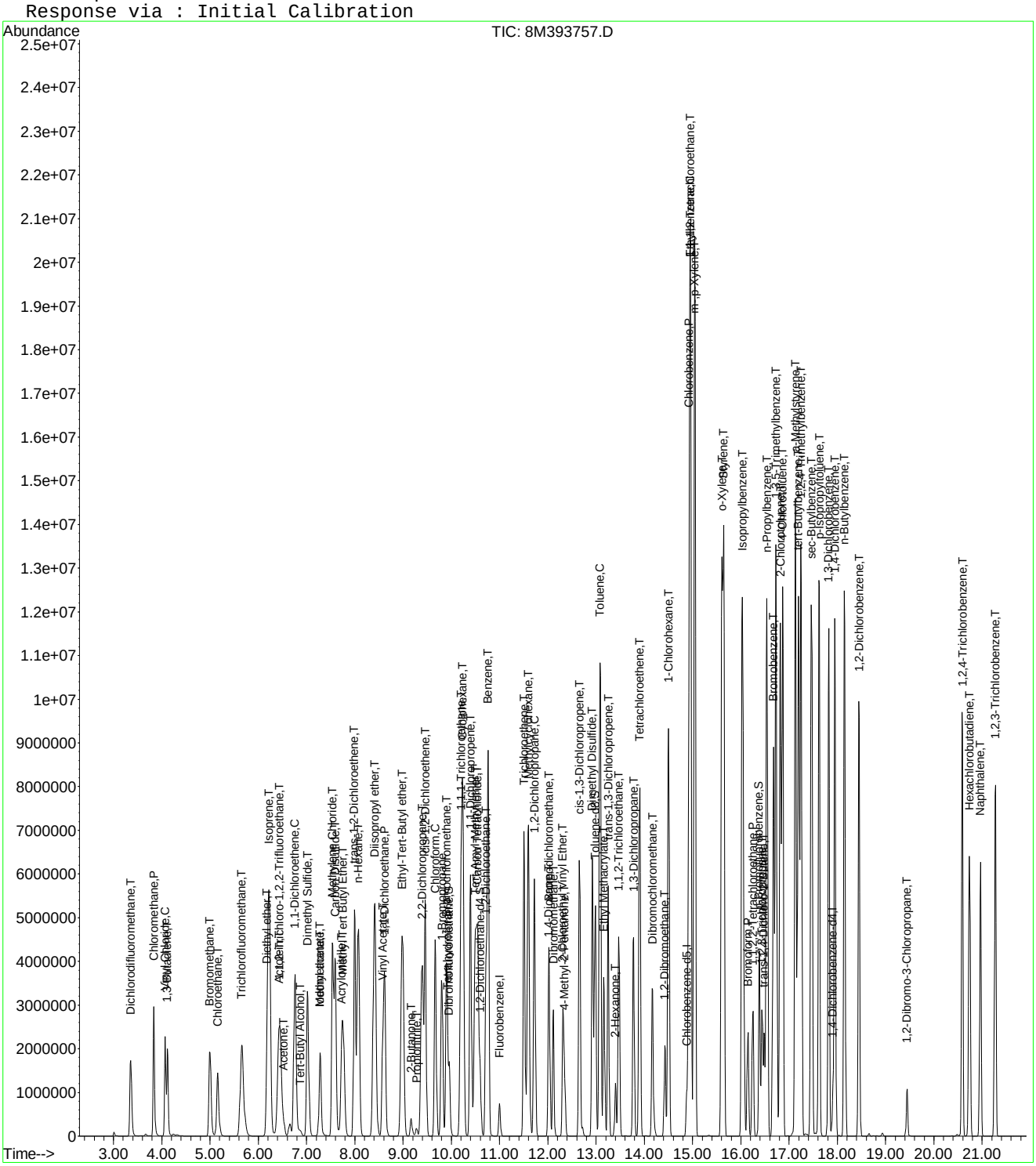

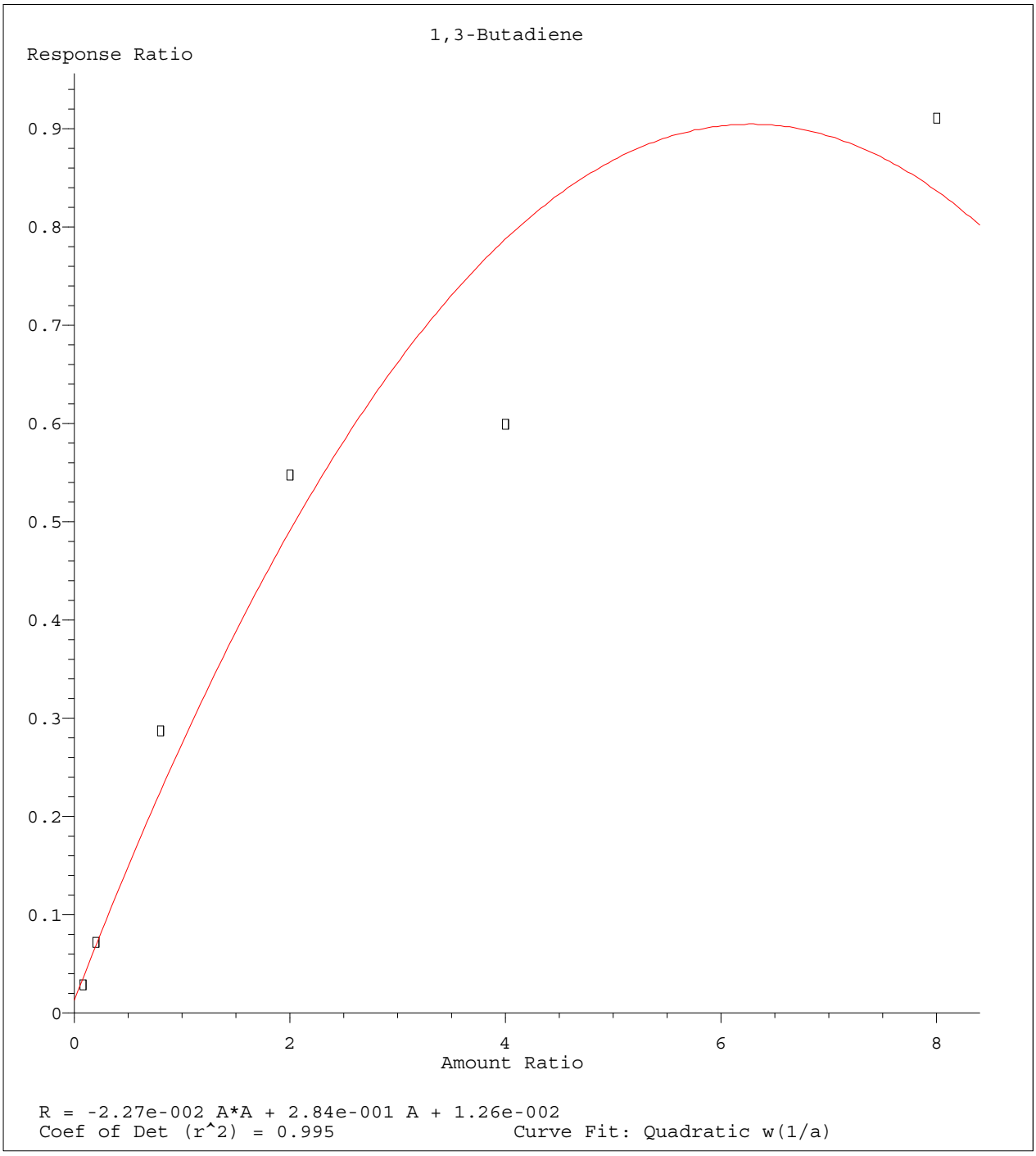

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jan 06 09:01:47 2014

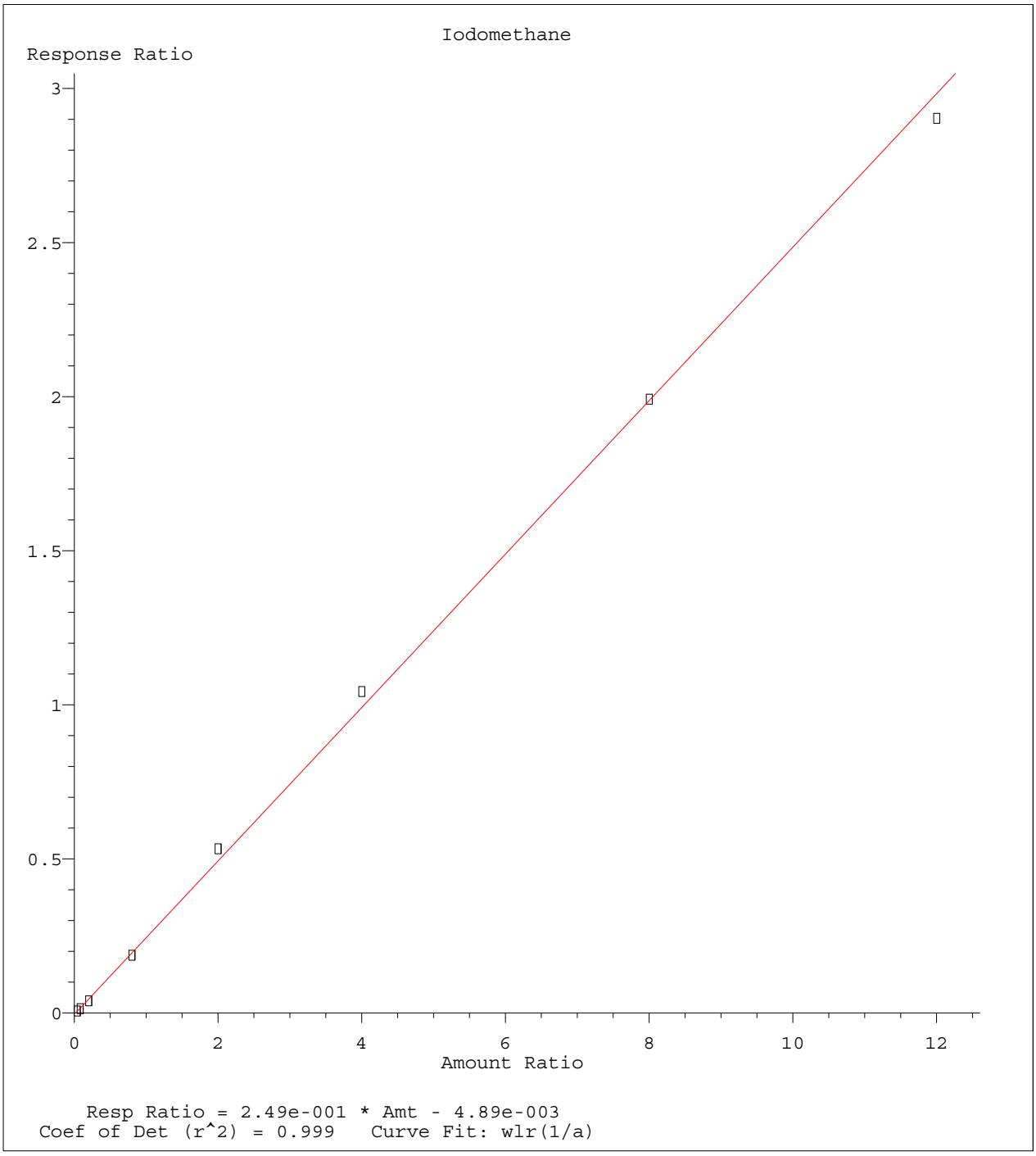

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jan 06 09:01:47 2014

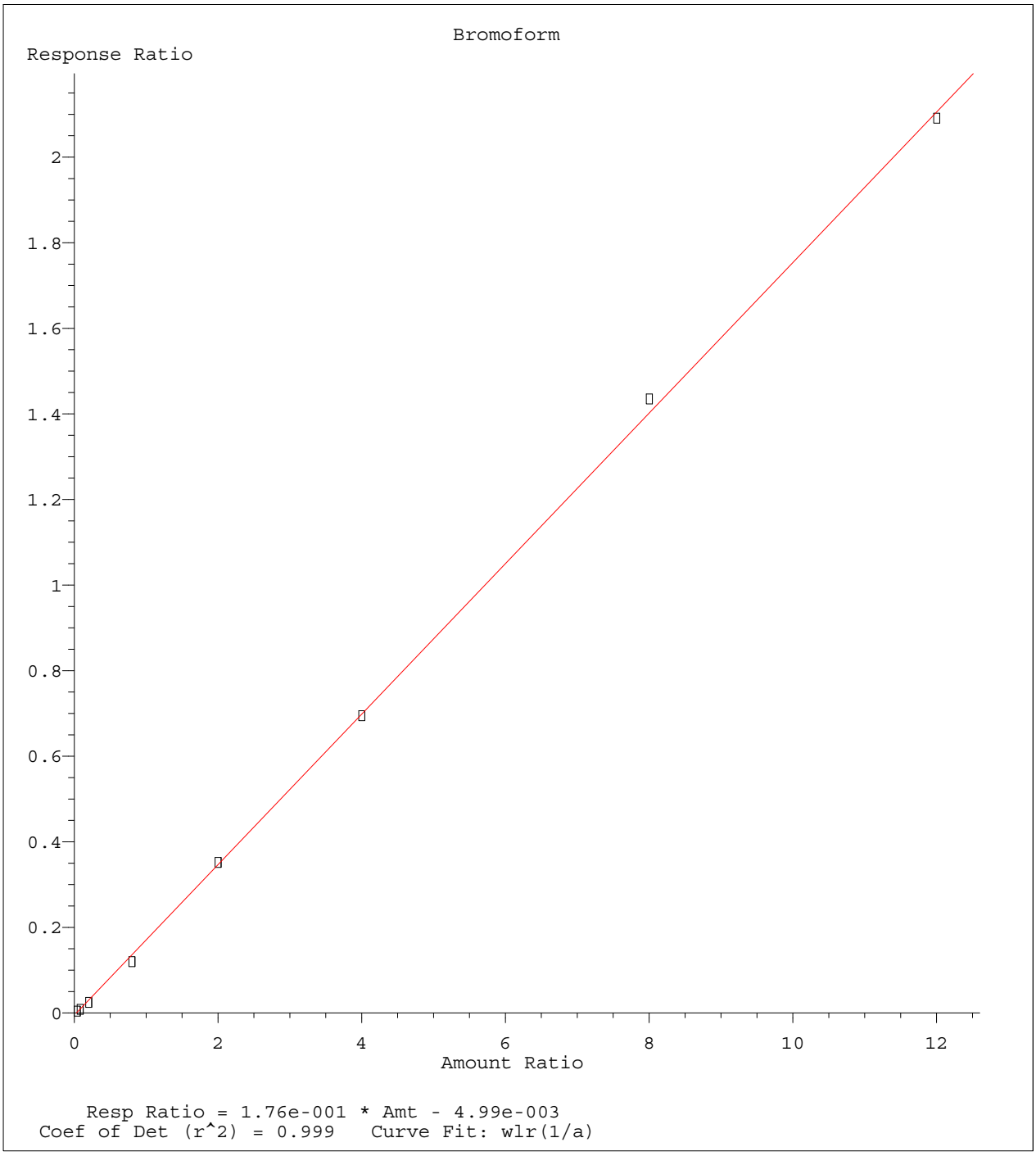

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jan 06 09:01:47 2014

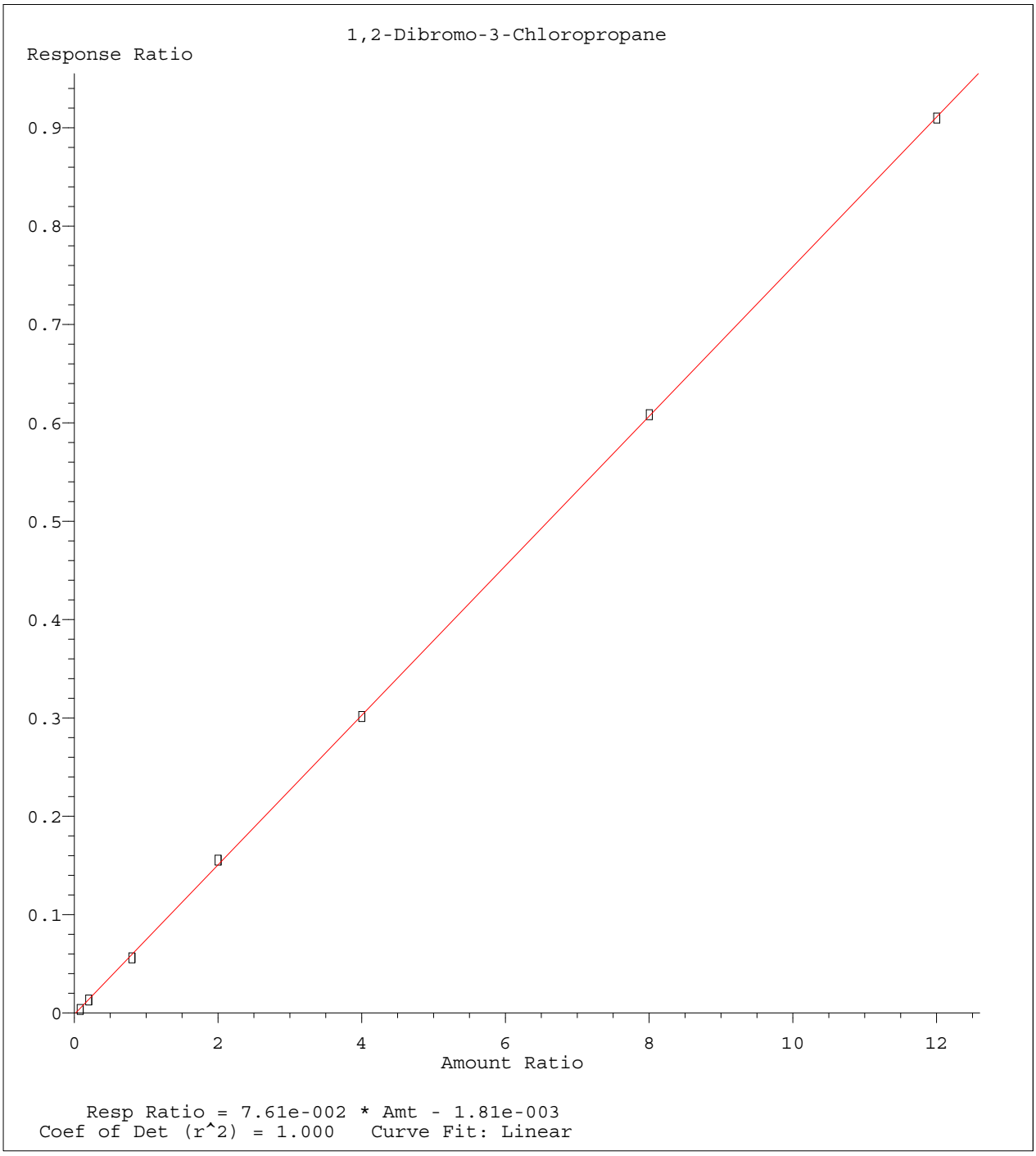

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jan 06 09:01:47 2014

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393760.D Vial: 14
Acq On : 3 Jan 2014 16:57 Operator: MES
Sample : WG458331-12 50ug/L ALT SOURCE Inst : HPMS8
Misc : 1,1 STD62141 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 06 09:07:50 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	825655	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	656100	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	363141	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.96	111	216647	24.1136 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.44%		
43) 1,2-Dichloroethane-d4	10.60	65	202096	22.9590 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.84%		
58) Toluene-d8	12.98	98	797551	24.3983 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.60%		
80) p-Bromofluorobenzene	16.38	95	348838	25.9221 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.68%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.35	85	511405	68.7264 ug/L	100
3) Chloromethane	3.84	50	679866	48.9312 ug/L	99
4) Vinyl Chloride	4.07	62	452170	45.7188 ug/L	99
5) 1,3-Butadiene	4.12	54	180201	19.2525 ug/L	99
6) Bromomethane	4.99	94	301721	48.1274 ug/L	99
7) Chloroethane	5.16	64	343876	49.2130 ug/L	100
8) Trichlorofluoromethane	5.66	101	741980	52.8908 ug/L	100
9) Diethyl ether	6.18	59	637705	101.5670 ug/L	99
10) Isoprene	6.23	67	667402	48.9306 ug/L	98
11) Acrolein	6.42	56	101692	110.4357 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.44	101	473673	56.7808 ug/L	95
13) Acetone	6.52	43	75566	51.5232 ug/L	100
14) 1,1-Dichloroethene	6.75	61	715848	46.7967 ug/L	99
15) Tert-Butyl Alcohol	6.87	59	76148	207.0155 ug/L	100
16) Dimethyl Sulfide	7.02	62	479394	54.4750 ug/L	99
17) Iodomethane	7.28	142	279121	34.4194 ug/L	98
18) Methyl acetate	7.28	43	229966	50.8072 ug/L	100
19) Methylene Chloride	7.54	84	422696	49.0783 ug/L	98
20) Carbon Disulfide	7.59	76	1356768	47.0974 ug/L	100
21) Acrylonitrile	7.72	53	112796	53.8473 ug/L	99
22) Methyl Tert Butyl Ether	7.76	73	940609	53.2484 ug/L	99
23) trans-1,2-Dichloroethene	7.99	61	710270	48.3357 ug/L	100
24) n-Hexane	8.08	57	675266	46.3666 ug/L	99
25) Diisopropyl ether	8.41	45	3433674	99.0881 ug/L	100
26) Vinyl Acetate	8.58	43	708522	49.8832 ug/L	100
27) 1,1-Dichloroethane	8.61	63	890018	49.4330 ug/L	100
28) Ethyl-Tert-Butyl ether	8.99	59	2767366	99.2427 ug/L	100
29) 2-Butanone	9.17	43	114678	50.1300 ug/L	99
30) Propionitrile	9.28	54	75325	108.2855 ug/L	98
31) 2,2-Dichloropropane	9.39	77	728407	50.4752 ug/L	99
32) cis-1,2-Dichloroethene	9.46	96	494392	49.8536 ug/L	97
33) Chloroform	9.67	83	807996	50.4891 ug/L	99
34) 1-Bromopropane	9.80	122	108293	57.4773 ug/L	99
35) Bromochloromethane	9.91	130	258011	50.1748 ug/L	99
36) Tetrahydrofuran	9.93	42	146333	100.2094 ug/L	100
38) 1,1,1-Trichloroethane	10.21	97	746364	52.7548 ug/L	100
39) Cyclohexane	10.24	56	903124	48.1026 ug/L	99
40) 1,1-Dichloropropene	10.39	75	626795	49.7757 ug/L	99
41) Tert-Amyl-Methyl ether	10.50	73	1990022	102.5450 ug/L	99
42) Carbon Tetrachloride	10.55	117	649661	54.7819 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M393760.D 8260WTR.M Mon Jan 06 09:07:52 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393760.D Vial: 14
Acq On : 3 Jan 2014 16:57 Operator: MES
Sample : WG458331-12 50ug/L ALT SOURCE Inst : HPMS8
Misc : 1,1 STD62141 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 06 09:07:50 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.71	62	551997	49.0433 ug/L		99
46)	Benzene	10.75	78	1761756	50.1491 ug/L		99
47)	Trichloroethene	11.51	130	475271	50.4172 ug/L		99
48)	Methylcyclohexane	11.59	83	730174	50.4284 ug/L		99
49)	1,2-Dichloropropane	11.73	63	479915	49.4641 ug/L		99
50)	Bromodichloromethane	12.03	83	562456	51.9027 ug/L		100
51)	1,4-Dioxane	12.02	88	7005	184.1889 ug/L		95
52)	Dibromomethane	12.11	93	220539	51.5434 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.30	63	182853	42.6287 ug/L		99
54)	4-Methyl-2-Pentanone	12.35	58	103470	52.5103 ug/L		99
55)	cis-1,3-Dichloropropene	12.66	75	699005	52.3631 ug/L		99
56)	Dimethyl Disulfide	12.93	94	719433	51.4892 ug/L		99
59)	Toluene	13.08	91	1928471	49.4920 ug/L		100
60)	Ethyl Methacrylate	13.16	69	413931	54.3349 ug/L		97
62)	trans-1,3-Dichloropropene	13.25	75	543102	49.1674 ug/L		100
63)	1,1,2-Trichloroethane	13.47	97	286770	50.2214 ug/L		100
64)	2-Hexanone	13.40	58	92673	51.6548 ug/L		98
65)	1,3-Dichloropropane	13.77	76	507642	48.2959 ug/L		99
66)	Tetrachloroethene	13.91	164	396882	50.7413 ug/L		99
67)	Dibromochloromethane	14.17	129	366435	56.3078 ug/L		99
68)	1,2-Dibromoethane	14.42	107	283991	49.8451 ug/L		99
69)	1-Chlorohexane	14.50	91	697183	52.6477 ug/L		98
70)	Chlorobenzene	14.93	112	1349086	52.0279 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.95	131	437912	52.8691 ug/L		99
72)	Ethylbenzene	14.95	106	706874	49.6866 ug/L		99
73)	m-,p-Xylene	15.04	106	1732663	103.1256 ug/L		100
74)	o-Xylene	15.60	106	875360	51.4671 ug/L		100
75)	Styrene	15.64	104	1433053	51.4848 ug/L		100
76)	Bromoform	16.14	173	222680	48.9628 ug/L		99
77)	Isopropylbenzene	16.03	105	2212725	52.8748 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.24	83	310173	50.7943 ug/L		100
81)	1,2,3-Trichloropropane	16.44	110	86969	49.2896 ug/L		87
82)	trans-1,4-Dichloro-2-Buten	16.48	53	69920	32.6341 ug/L	#	45
83)	n-Propylbenzene	16.53	91	2708742	52.0597 ug/L		99
84)	Bromobenzene	16.68	156	547652	50.3346 ug/L		100
85)	1,3,5-Trimethylbenzene	16.72	105	1893377	51.5530 ug/L		100
86)	2-Chlorotoluene	16.81	91	1704201	50.4355 ug/L		89
87)	4-Chlorotoluene	16.86	91	1718450	55.4285 ug/L		91
88)	a-Methylstyrene	17.13	118	1102310	53.6896 ug/L		99
89)	tert-Butylbenzene	17.20	134	430121	53.5724 ug/L		99
90)	1,2,4-Trimethylbenzene	17.25	105	1889611	50.7738 ug/L		100
91)	sec-Butylbenzene	17.46	105	2336417	52.9811 ug/L		99
92)	p-Isopropyltoluene	17.62	119	1955922	51.7204 ug/L		100
93)	1,3-Dichlorobenzene	17.82	146	1079150	52.2701 ug/L		100
94)	1,4-Dichlorobenzene	17.95	146	1021264	50.1159 ug/L		99
95)	n-Butylbenzene	18.15	91	1811682	51.5026 ug/L		100
96)	1,2-Dichlorobenzene	18.45	146	951586	52.3715 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.44	75	53360	48.8844 ug/L		97
98)	1,2,4-Trichlorobenzene	20.59	180	684697	49.3126 ug/L		100
99)	Hexachlorobutadiene	20.74	225	295846	49.8244 ug/L		100
100)	Naphthalene	20.96	128	1063028	49.7991 ug/L		100
101)	1,2,3-Trichlorobenzene	21.27	180	578247	50.2493 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M393760.D 8260WTR.M Mon Jan 06 09:07:52 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010314\8M393760.D Vial: 14
Acq On : 3 Jan 2014 16:57 Operator: MES
Sample : WG458331-12 50ug/L ALT SOURCE Inst : HPMS8
Misc : 1,1 STD62141 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 6 9:07 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration

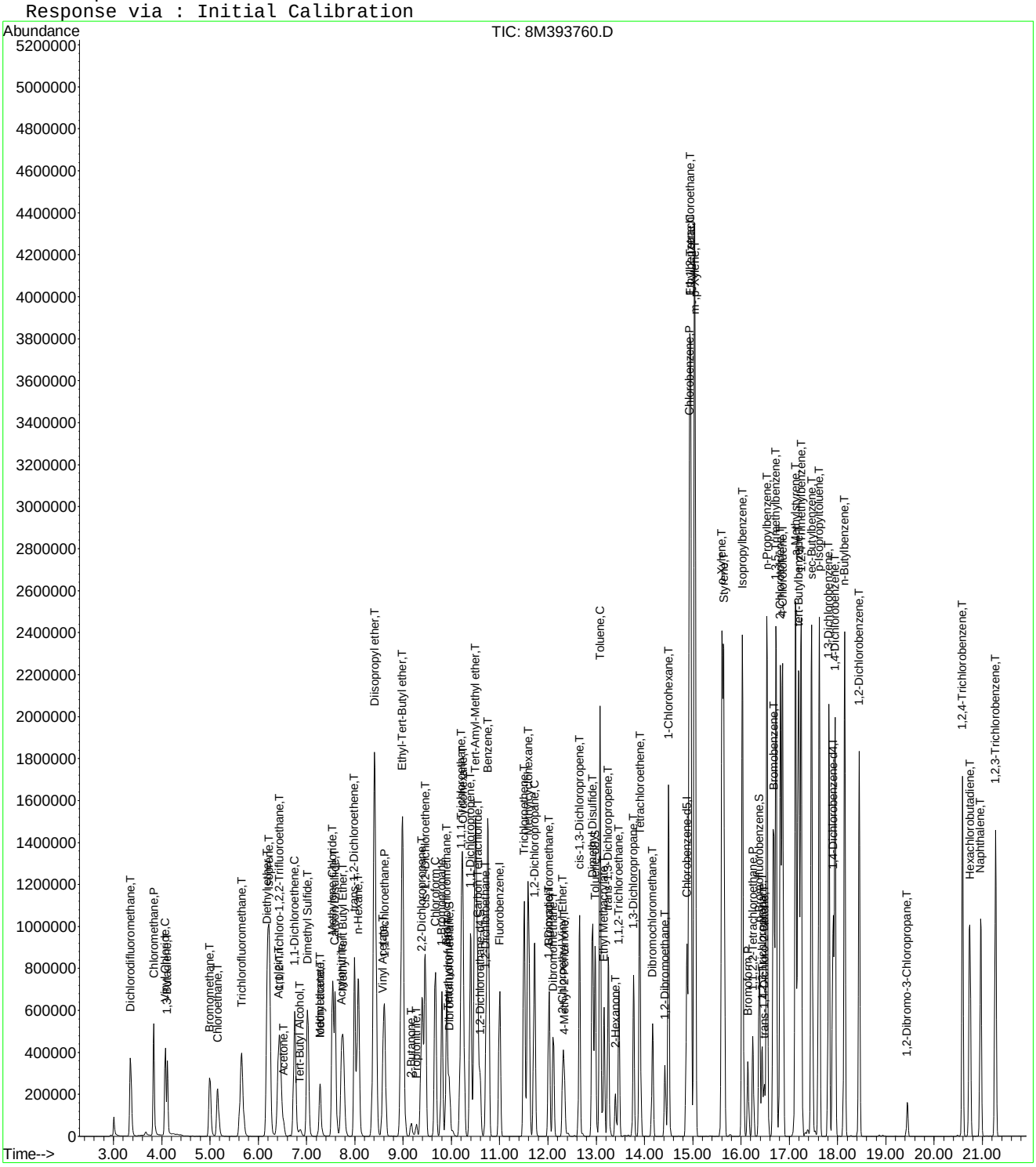

8M393760.D 8260WTR.M Mon Jan 06 09:07:53 2014 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\010314\8M393760.D Vial: 14
Acq On : 3 Jan 2014 16:57 Operator: MES
Sample : WG458331-12 50ug/L ALT SOURCE Inst : HPMS8
Misc : 1,1 STD62141 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	103	0.00
2	T	Dichlorodifluoromethane	50.0000	68.7264	-37.5#	121	0.00
3	P	Chloromethane	50.0000	48.9312	2.1	94	0.00
4	C	Vinyl Chloride	50.0000	45.7189	8.6	91	0.00
5	T	1,3-Butadiene	50.0000	19.2525	61.5#	41	-0.02
6	T	Bromomethane	50.0000	48.1274	3.7	90	-0.01
7	T	Chloroethane	50.0000	49.2130	1.6	94	0.00
8	T	Trichlorofluoromethane	50.0000	52.8907	-5.8	100	0.00
9	T	Diethyl ether	100.0000	101.5670	-1.6	100	0.00
10	T	Isoprene	50.0000	48.9306	2.1	93	0.00
11	T	Acrolein	50.0000	110.4357	-120.9#	212	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	56.7808	-13.6	106	0.00
13	T	Acetone	50.0000	51.5232	-3.0	100	0.00
14	C	1,1-Dichloroethene	50.0000	46.7967	6.4	89	0.00
15	T	Tert-Butyl Alcohol	200.0000	207.0155	-3.5	104	0.00
16	T	Dimethyl Sulfide	50.0000	54.4750	-8.9	103	0.00
17	T	Iodomethane	50.0000	34.4194	31.2#	65	0.00
18	T	Methyl acetate	50.0000	50.8072	-1.6	103	0.00
19	T	Methylene Chloride	50.0000	49.0783	1.8	95	0.00
20	T	Carbon Disulfide	50.0000	47.0974	5.8	88	0.00
21	T	Acrylonitrile	50.0000	53.8473	-7.7	102	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.2484	-6.5	101	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.3357	3.3	93	0.00
24	T	n-Hexane	50.0000	46.3666	7.3	90	0.00
25	T	Diisopropyl ether	100.0000	99.0881	0.9	98	0.00
26	T	Vinyl Acetate	50.0000	49.8832	0.2	94	0.00
27	P	1,1-Dichloroethane	50.0000	49.4329	1.1	96	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.2427	0.8	97	0.00
29	T	2-Butanone	50.0000	50.1300	-0.3	95	0.00
30	T	Propionitrile	100.0000	108.2855	-8.3	106	0.00
31	T	2,2-Dichloropropane	50.0000	50.4752	-1.0	95	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.8536	0.3	96	0.00
33	C	Chloroform	50.0000	50.4891	-1.0	99	0.00
34		1-Bromopropane	50.0000	57.4773	-15.0	108	0.00
35	T	Bromochloromethane	50.0000	50.1748	-0.3	97	0.00
36	T	Tetrahydrofuran	100.0000	100.2094	-0.2	99	0.00
37	S	Dibromofluoromethane	25.0000	24.1136	3.5	96	0.00
38	T	1,1,1-Trichloroethane	50.0000	52.7548	-5.5	98	0.00
39	T	Cyclohexane	50.0000	48.1026	3.8	93	0.00
40	T	1,1-Dichloropropene	50.0000	49.7757	0.4	95	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.5450	-2.5	101	0.00
42	T	Carbon Tetrachloride	50.0000	54.7819	-9.6	100	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.9590	8.2	91	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.74#
45	T	1,2-Dichloroethane	50.0000	49.0433	1.9	94	0.00
46	T	Benzene	50.0000	50.1491	-0.3	97	-0.01
47	T	Trichloroethene	50.0000	50.4172	-0.8	98	0.00
48	T	Methylcyclohexane	50.0000	50.4284	-0.9	97	0.00
49	C	1,2-Dichloropropane	50.0000	49.4641	1.1	96	0.00
50	T	Bromodichloromethane	50.0000	51.9027	-3.8	95	0.00
51	T	1,4-Dioxane	200.0000	184.1889	7.9	94	0.01
52	T	Dibromomethane	50.0000	51.5434	-3.1	98	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	42.6287	14.7	81	0.00
54	T	4-Methyl-2-Pentanone	50.0000	52.5103	-5.0	104	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\010314\8M393760.D Vial: 14
Acq On : 3 Jan 2014 16:57 Operator: MES
Sample : WG458331-12 50ug/L ALT SOURCE Inst : HPMS8
Misc : 1,1 STD62141 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.3631	-4.7	98	0.00
56	T	Dimethyl Disulfide	50.0000	51.4892	-3.0	97	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	103	0.00
58	S	Toluene-d8	25.0000	24.3983	2.4	100	0.00
59	C	Toluene	50.0000	49.4920	1.0	98	0.00
60	T	Ethyl Methacrylate	50.0000	54.3349	-8.7	103	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.34#
62	T	trans-1,3-Dichloropropene	50.0000	49.1674	1.7	91	0.00
63	T	1,1,2-Trichloroethane	50.0000	50.2214	-0.4	97	0.00
64	T	2-Hexanone	50.0000	51.6548	-3.3	98	0.00
65	T	1,3-Dichloropropane	50.0000	48.2959	3.4	95	0.00
66	T	Tetrachloroethene	50.0000	50.7413	-1.5	99	0.00
67	T	Dibromochloromethane	50.0000	56.3078	-12.6	101	0.00
68	T	1,2-Dibromoethane	50.0000	49.8451	0.3	95	0.00
69	T	1-Chlorohexane	50.0000	52.6477	-5.3	102	0.00
70	P	Chlorobenzene	50.0000	52.0279	-4.1	103	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.8691	-5.7	97	0.00
72	C	Ethylbenzene	50.0000	49.6866	0.6	98	0.00
73	T	m-,p-Xylene	100.0000	103.1256	-3.1	100	0.00
74	T	o-Xylene	50.0000	51.4671	-2.9	102	0.00
75	T	Styrene	50.0000	51.4848	-3.0	99	0.00
76	P	Bromoform	50.0000	48.9628	2.1	100	0.00
77	T	Isopropylbenzene	50.0000	52.8748	-5.7	102	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	103	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	50.7943	-1.6	98	0.00
80	S	p-Bromofluorobenzene	25.0000	25.9221	-3.7	106	0.00
81	T	1,2,3-Trichloropropane	50.0000	49.2897	1.4	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	32.6341	34.7#	61	0.00
83	T	n-Propylbenzene	50.0000	52.0597	-4.1	101	0.00
84	T	Bromobenzene	50.0000	50.3346	-0.7	100	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.5530	-3.1	102	0.00
86	T	2-Chlorotoluene	50.0000	50.4355	-0.9	104	0.00
87	T	4-Chlorotoluene	50.0000	55.4285	-10.9	102	0.00
88	T	a-Methylstyrene	50.0000	53.6896	-7.4	104	0.00
89	T	tert-Butylbenzene	50.0000	53.5724	-7.1	103	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.7738	-1.5	99	0.00
91	T	sec-Butylbenzene	50.0000	52.9812	-6.0	103	0.00
92	T	p-Isopropyltoluene	50.0000	51.7204	-3.4	100	0.00
93	T	1,3-Dichlorobenzene	50.0000	52.2701	-4.5	103	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.1159	-0.2	99	0.00
95	T	n-Butylbenzene	50.0000	51.5026	-3.0	100	0.00
96	T	1,2-Dichlorobenzene	50.0000	52.3715	-4.7	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.8844	2.2	98	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.3126	1.4	98	0.00
99	T	Hexachlorobutadiene	50.0000	49.8244	0.4	97	0.00
100	T	Naphthalene	50.0000	49.7991	0.4	97	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.2493	-0.5	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M393760.D 8260WTR.M Mon Jan 06 09:07:57 2014 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010614\8M393771.D Vial: 2
Acq On : 6 Jan 2014 10:22 Operator: MES
Sample : WG458457-02 5ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 06 11:27:59 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 11:27:49 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	1053772	25.00 ug/L	-0.05
11) Chlorobenzene-d5	14.88	117	799421	25.00 ug/L	-0.05
12) 1,4-Dichlorobenzene-d4	17.91	152	421409	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.98	41	3745	3.9007 ug/L #	1
3) 3-Chloro-1-propene	7.36	41	106748	5.4601 ug/L	94
4) 2-Chloro-1,3-butadiene	8.75	53	104305	5.5400 ug/L	88
5) Ethyl Acetate	9.38	43	25141	3.5552 ug/L	92
6) Methacrylonitrile	9.54	67	9871	3.3941 ug/L	93
9) Methyl methacrylate	11.70	41	28166	3.8349 ug/L	92
10) 2-Nitropropane	12.04	43	8024	3.5876 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M393771.D A9FOOWTR.M Mon Jan 06 11:29:44 2014 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010614\8M393771.D Vial: 2
Acq On : 6 Jan 2014 10:22 Operator: MES
Sample : WG458457-02 5ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 6 11:29 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 11:29:06 2014
Response via : Initial Calibration

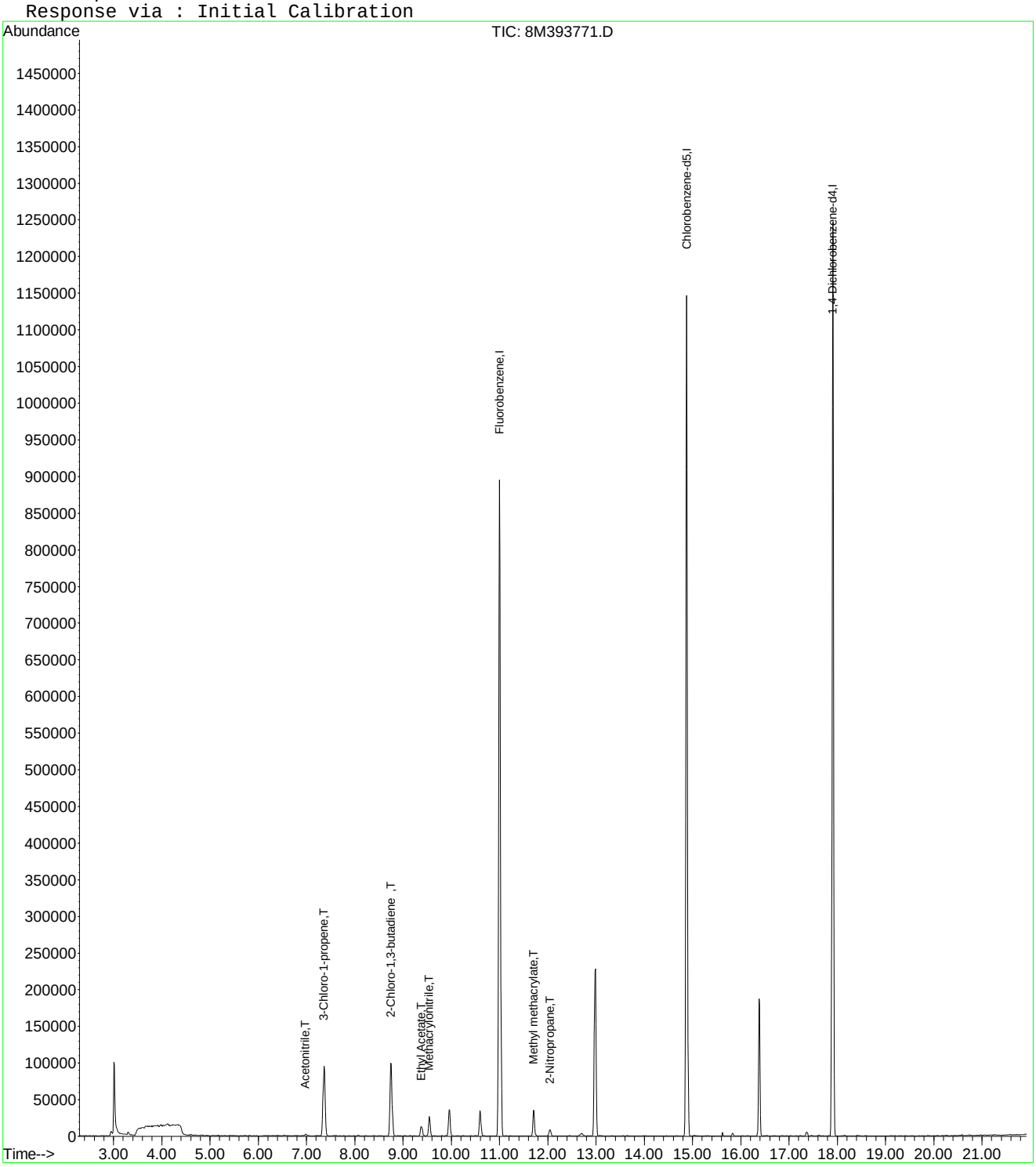

8M393771.D A9FOOWTR.M Mon Jan 06 11:29:44 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010614\8M393772.D Vial: 3
Acq On : 6 Jan 2014 11:00 Operator: MES
Sample : WG458457-03 20 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 06 11:28:04 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 11:27:49 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	902967	25.00 ug/L	-0.05
11) Chlorobenzene-d5	14.88	117	697320	25.00 ug/L	-0.05
12) 1,4-Dichlorobenzene-d4	17.91	152	378412	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.98	41	16292	19.8035 ug/L	93
3) 3-Chloro-1-propene	7.36	41	419870	25.0629 ug/L	96
4) 2-Chloro-1,3-butadiene	8.75	53	414533	25.6942 ug/L	89
5) Ethyl Acetate	9.38	43	119111	19.6567 ug/L	96
6) Methacrylonitrile	9.54	67	49450	19.8427 ug/L	91
7) Isobutyl Alcohol	9.55	43	8860	43.1070 ug/L #	87
8) 1-Butanol	10.48	56	1516	17.4625 ug/L	86
9) Methyl methacrylate	11.70	41	136230	21.6459 ug/L	92
10) 2-Nitropropane	12.04	43	38516	20.0967 ug/L	94
13) Cyclohexanone	16.14	55	4249	17.0859 ug/L	80

(#) = qualifier out of range (m) = manual integration
8M393772.D A9FOOWTR.M Mon Jan 06 11:28:05 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010614\8M393772.D Vial: 3
Acq On : 6 Jan 2014 11:00 Operator: MES
Sample : WG458457-03 20 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 6 11:28 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 11:27:49 2014
Response via : Initial Calibration

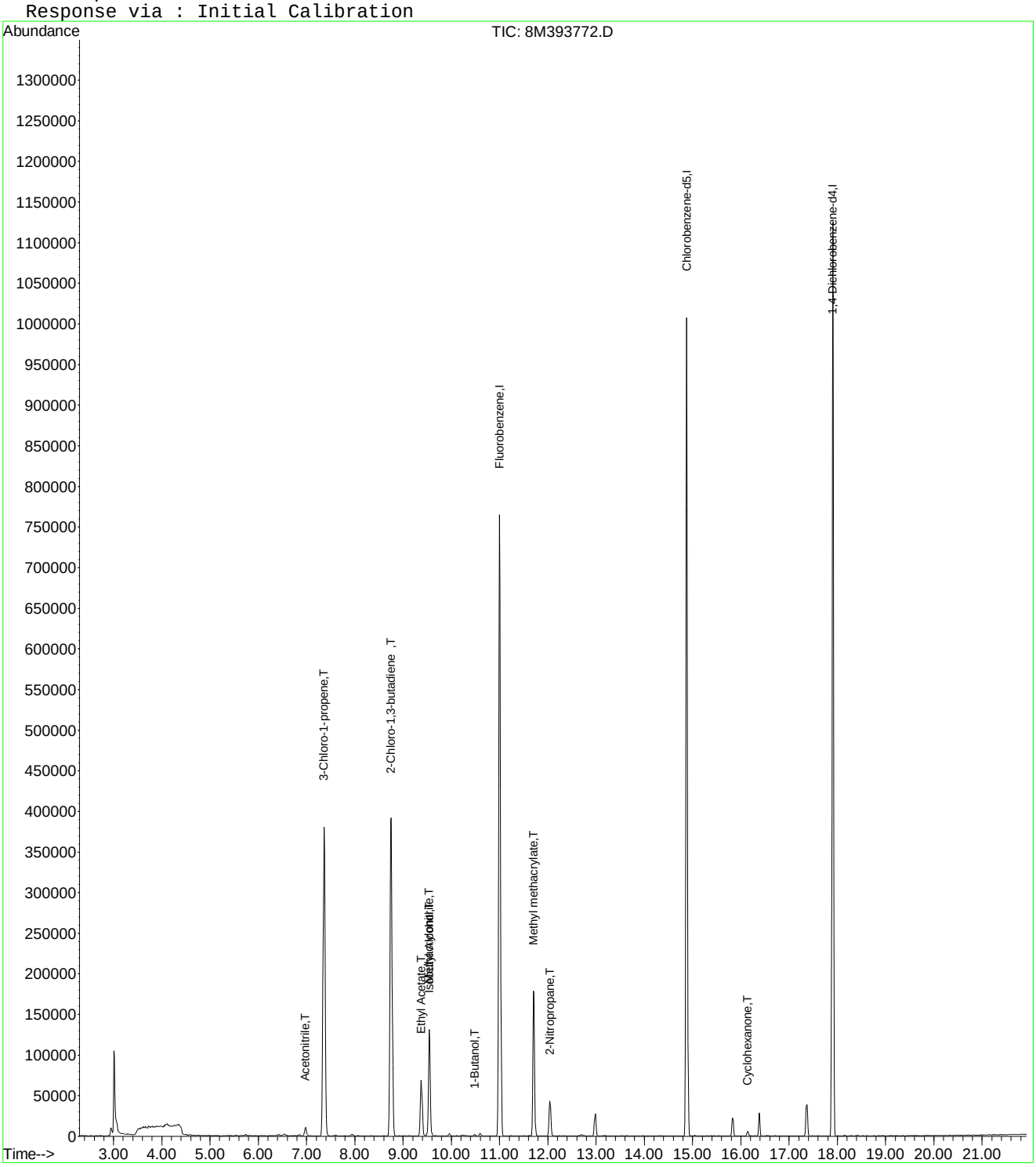

8M393772.D A9FOOWTR.M Mon Jan 06 11:28:05 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010614\8M393773.D Vial: 4
Acq On : 6 Jan 2014 11:29 Operator: MES
Sample : WG458457-04 50 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 06 11:51:30 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 11:29:48 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	914220	25.00 ug/L	-0.05
11) Chlorobenzene-d5	14.88	117	704846	25.00 ug/L	-0.05
12) 1,4-Dichlorobenzene-d4	17.91	152	383428	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.97	41	35060	42.9427 ug/L	94
3) 3-Chloro-1-propene	7.36	41	980745	54.7405 ug/L	96
4) 2-Chloro-1,3-butadiene	8.75	53	980463	56.2246 ug/L	89
5) Ethyl Acetate	9.38	43	267369	44.6416 ug/L	95
6) Methacrylonitrile	9.54	67	108778	44.0937 ug/L	87
7) Isobutyl Alcohol	9.54	43	18910	89.0438 ug/L #	99
8) 1-Butanol	10.48	56	4641	52.8006 ug/L	89
9) Methyl methacrylate	11.71	41	291737	45.2024 ug/L	91
10) 2-Nitropropane	12.05	43	78860	40.0767 ug/L	91
13) Cyclohexanone	16.14	55	7118	28.2482 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M393773.D A9FOOWTR.M Mon Jan 06 11:51:30 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010614\8M393773.D Vial: 4
Acq On : 6 Jan 2014 11:29 Operator: MES
Sample : WG458457-04 50 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 6 11:51 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 11:29:48 2014
Response via : Initial Calibration

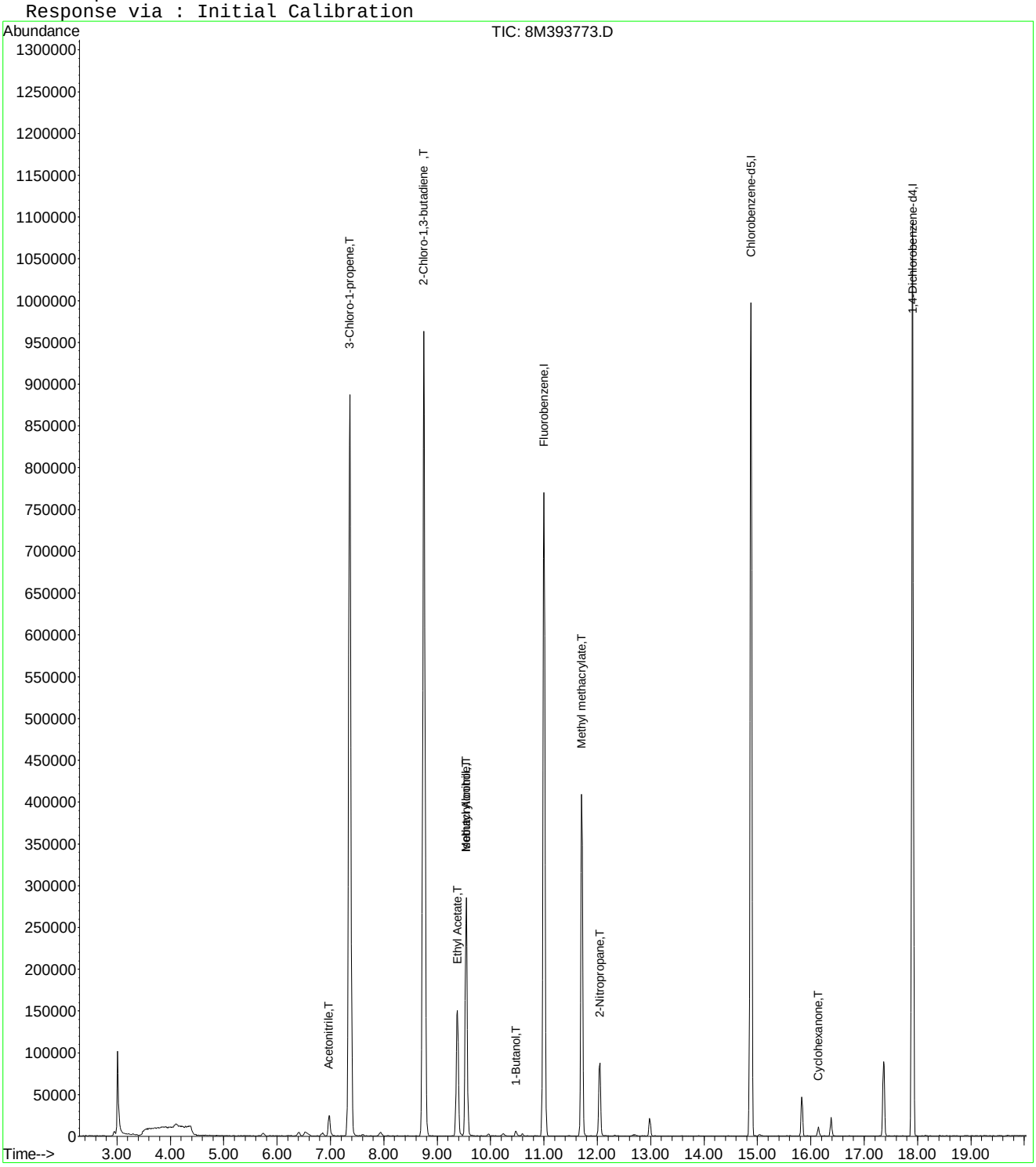

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010614\Snapshot\8M393774.D Vial: 5
Acq On : 6 Jan 2014 12:00 Operator: MES
Sample : WG458457-05 100 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 06 12:22:02 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 11:52:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	871494	25.00 ug/L	-0.05
11) Chlorobenzene-d5	14.88	117	674646	25.00 ug/L	-0.05
12) 1,4-Dichlorobenzene-d4	17.91	152	364801	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.97	41	68154	89.6474 ug/L	93
3) 3-Chloro-1-propene	7.36	41	1886172	108.7563 ug/L	96
4) 2-Chloro-1,3-butadiene	8.75	53	1889366	111.2885 ug/L	88
5) Ethyl Acetate	9.37	43	533735	95.3198 ug/L	96
6) Methacrylonitrile	9.54	67	218527	95.3345 ug/L	88
7) Isobutyl Alcohol	9.54	43	37053	185.7087 ug/L #	92
8) 1-Butanol	10.47	56	9100	102.9292 ug/L	97
9) Methyl methacrylate	11.71	41	587146	96.6971 ug/L	91
10) 2-Nitropropane	12.05	43	167428	90.8451 ug/L	93
13) Cyclohexanone	16.14	55	13163	54.9055 ug/L	82

(#) = qualifier out of range (m) = manual integration
8M393774.D A9FOOWTR.M Mon Jan 06 12:22:02 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010614\Snapshot\8M393774.D Vial: 5
Acq On : 6 Jan 2014 12:00 Operator: MES
Sample : WG458457-05 100 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 6 12:22 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 11:52:17 2014
Response via : Initial Calibration

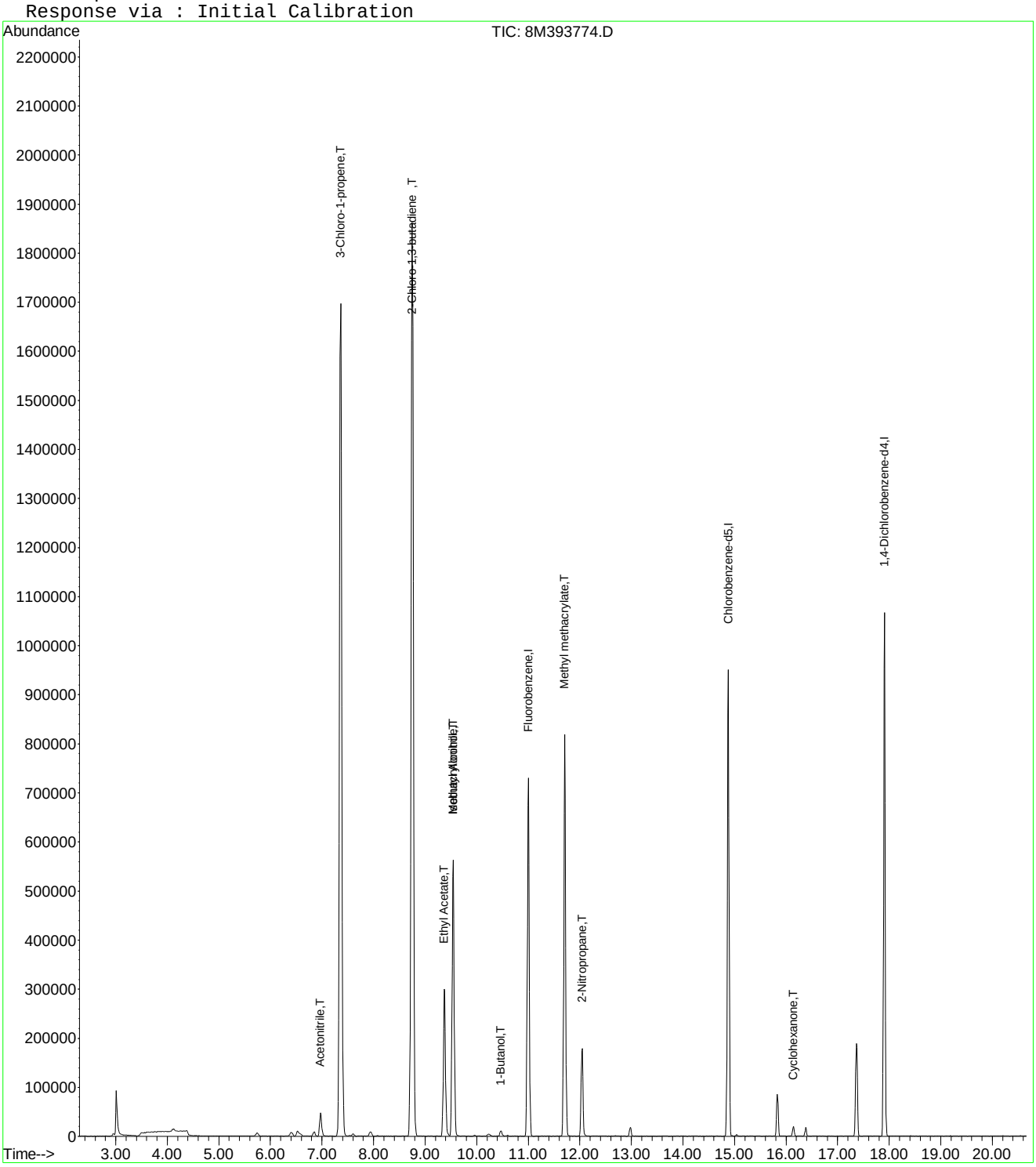

8M393774.D A9FOOWTR.M Mon Jan 06 12:22:02 2014 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010614\8M393775.D Vial: 6
Acq On : 6 Jan 2014 12:27 Operator: MES
Sample : WG458457-06 200 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 06 13:31:29 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 11:52:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	861606	25.00 ug/L	-0.05
11) Chlorobenzene-d5	14.88	117	674719	25.00 ug/L	-0.05
12) 1,4-Dichlorobenzene-d4	17.91	152	360502	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.97	41	139115	185.0871 ug/L	98
3) 3-Chloro-1-propene	7.36	41	3622437	211.2660 ug/L	95
4) 2-Chloro-1,3-butadiene	8.75	53	3655751	217.8043 ug/L	87
5) Ethyl Acetate	9.38	43	1054142	190.4199 ug/L	97
6) Methacrylonitrile	9.54	67	433841	191.4394 ug/L	87
7) Isobutyl Alcohol	9.54	43	74465m	377.4999 ug/L	
8) 1-Butanol	10.47	56	19969	228.4595 ug/L	90
9) Methyl methacrylate	11.70	41	1161000	193.3994 ug/L	90
10) 2-Nitropropane	12.05	43	340918	187.1022 ug/L	95
13) Cyclohexanone	16.14	55	23764	100.3064 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M393775.D A9FOOWTR.M Mon Jan 06 13:40:15 2014 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010614\8M393775.D Vial: 6
Acq On : 6 Jan 2014 12:27 Operator: MES
Sample : WG458457-06 200 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 6 13:39 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 13:31:56 2014
Response via : Initial Calibration

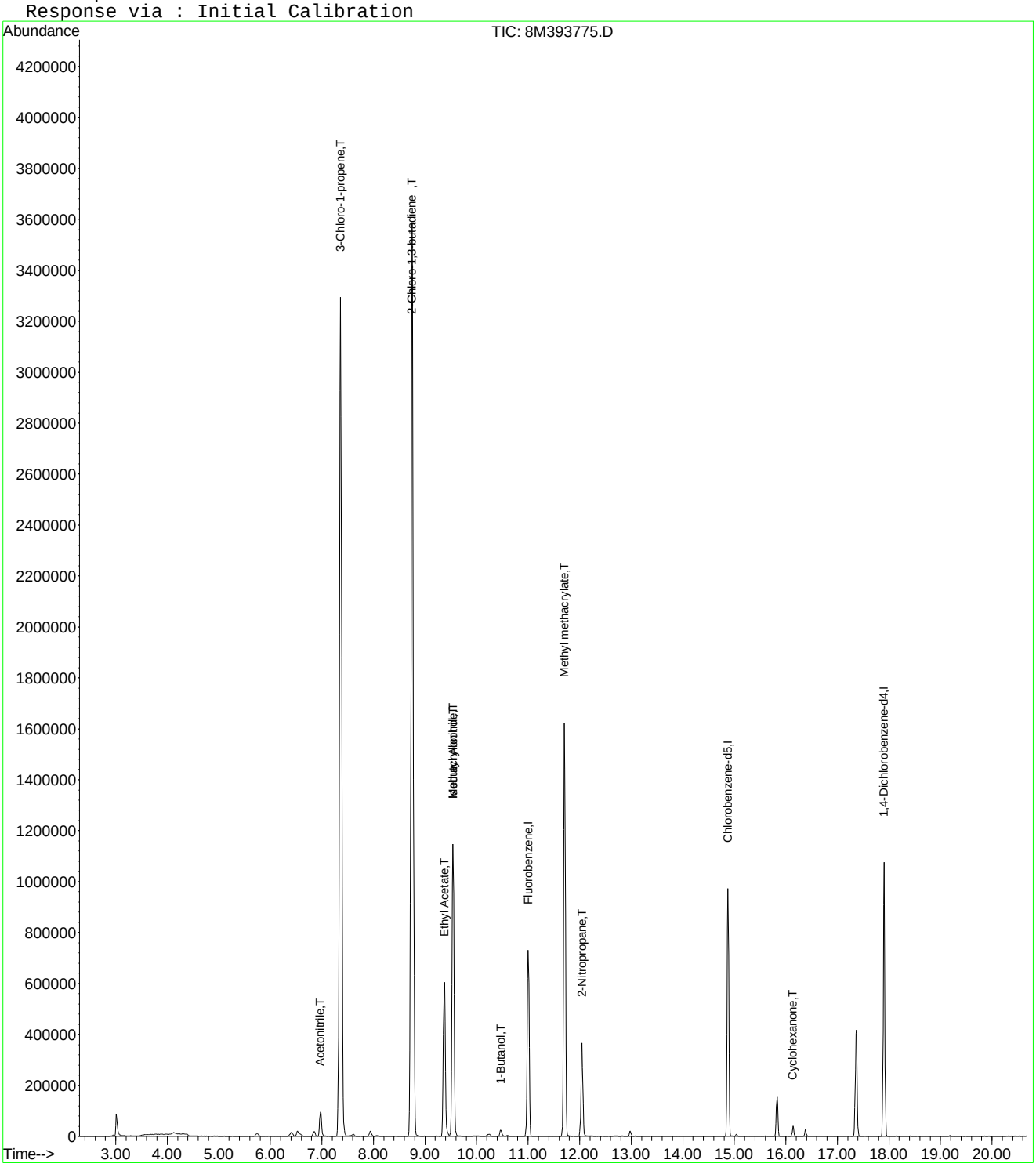

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\2\DATA\010614\8M393775.D Vial: 6
Acq On : 6 Jan 2014 12:27 Operator: MES
Sample : WG458457-06 200 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 6 13:31 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 13:31:56 2014
Response via : Multiple Level Calibration

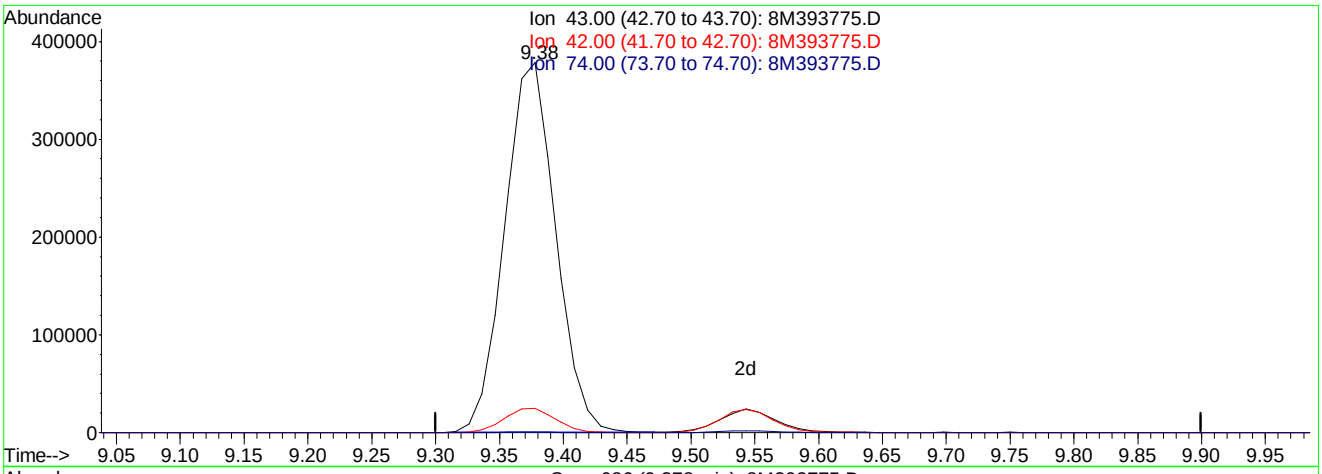

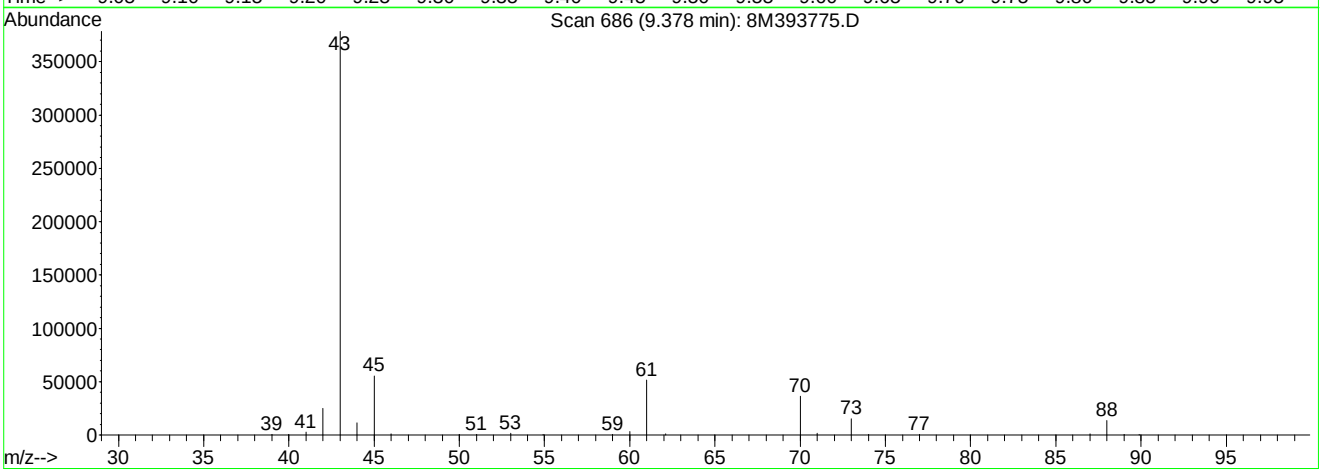

TIC: 8M393775.D

(7) Isobutyl Alcohol (T)

9.38min 5317.73ug/L

response 1048967

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	6.71
74.00	4.20	0.12
0.00	0.00	0.00

8M393775.D A9FOOWTR.M Mon Jan 06 13:39:46 2014

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\2\DATA\010614\8M393775.D Vial: 6
Acq On : 6 Jan 2014 12:27 Operator: MES
Sample : WG458457-06 200 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 6 13:39 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 13:31:56 2014
Response via : Multiple Level Calibration

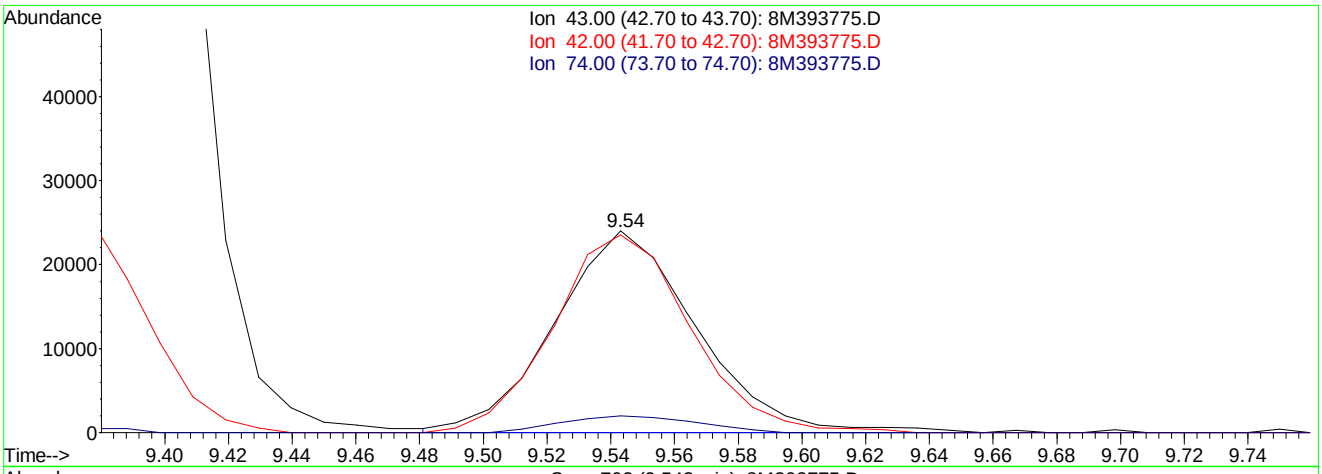

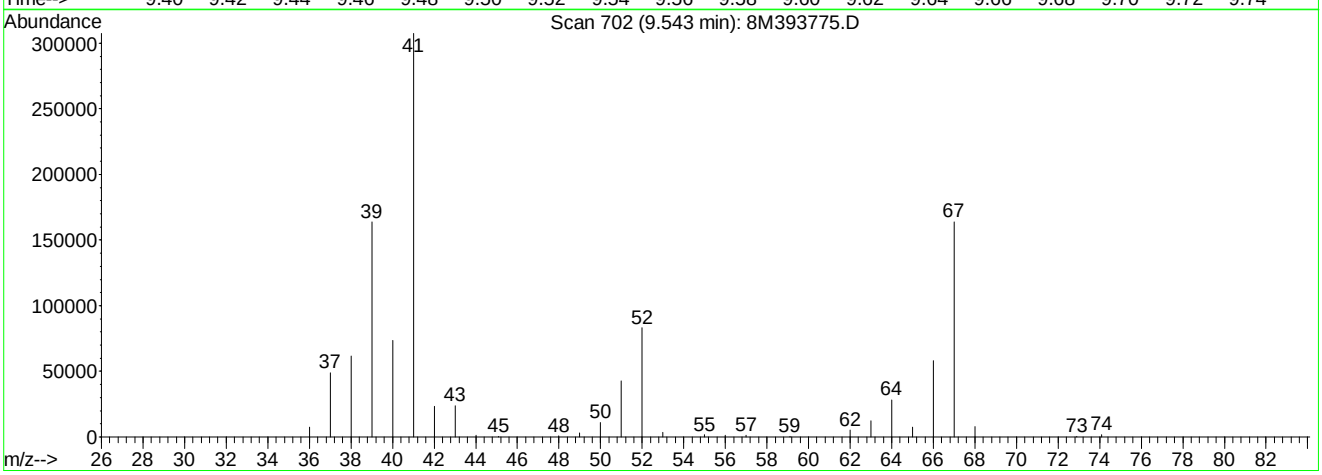

TIC: 8M393775.D

(7) Isobutyl Alcohol (T)

9.54min 377.50ug/L mint

response 74465

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	94.57#
74.00	4.20	1.71
0.00	0.00	0.00

8M393775.D A9FOOWTR.M Mon Jan 6 2014

Analyst: 01/07/2014 12:13 Supervisor: 01/08/2014 08:38

#1 - Data system fails to select correct peak

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010614\8M393776.D Vial: 7
Acq On : 6 Jan 2014 12:55 Operator: MES
Sample : WG458457-07 300 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 06 13:32:02 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 13:31:56 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	868072	25.00 ug/L	-0.05
11) Chlorobenzene-d5	14.88	117	679842	25.00 ug/L	-0.05
12) 1,4-Dichlorobenzene-d4	17.91	152	367617	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.97	41	204254	279.9755 ug/L	97
3) 3-Chloro-1-propene	7.36	41	5265209	299.1005 ug/L	94
4) 2-Chloro-1,3-butadiene	8.75	53	5375703	308.5114 ug/L	85
5) Ethyl Acetate	9.37	43	1497055	278.4218 ug/L	97
6) Methacrylonitrile	9.54	67	625082	283.7642 ug/L	87
7) Isobutyl Alcohol	9.54	43	114419m	131.0044 ug/L	
8) 1-Butanol	10.46	56	32964	352.8815 ug/L	95
9) Methyl methacrylate	11.71	41	1647187	280.6355 ug/L	89
10) 2-Nitropropane	12.05	43	499841	284.6284 ug/L	96
13) Cyclohexanone	16.14	55	33550	165.5451 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M393776.D A9FOOWTR.M Mon Jan 06 13:40:24 2014 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010614\8M393776.D Vial: 7
Acq On : 6 Jan 2014 12:55 Operator: MES
Sample : WG458457-07 300 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 6 13:40 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 13:40:19 2014
Response via : Initial Calibration

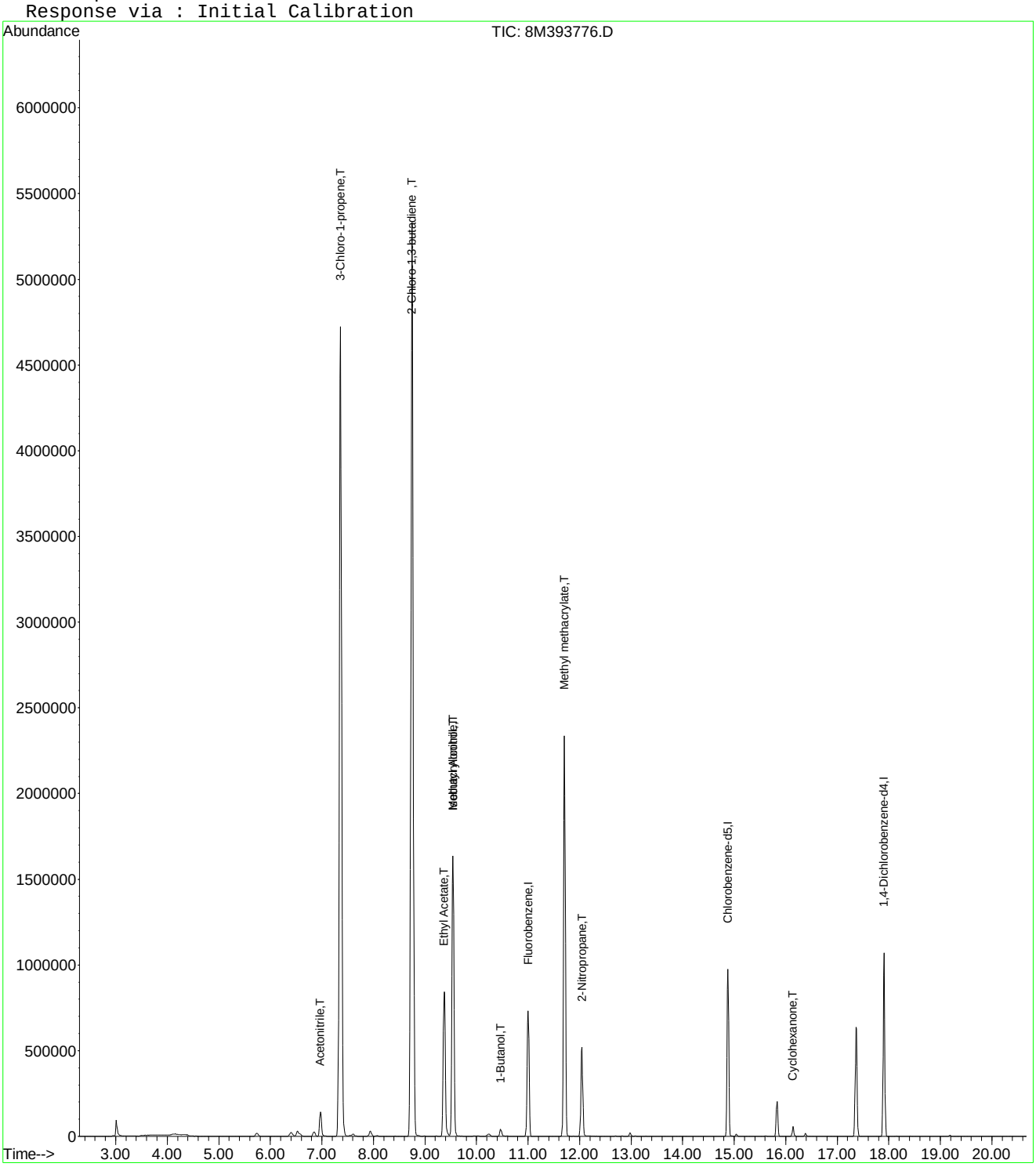

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\2\DATA\010614\8M393776.D Vial: 7
Acq On : 6 Jan 2014 12:55 Operator: MES
Sample : WG458457-07 300 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 6 13:32 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 13:31:56 2014
Response via : Multiple Level Calibration

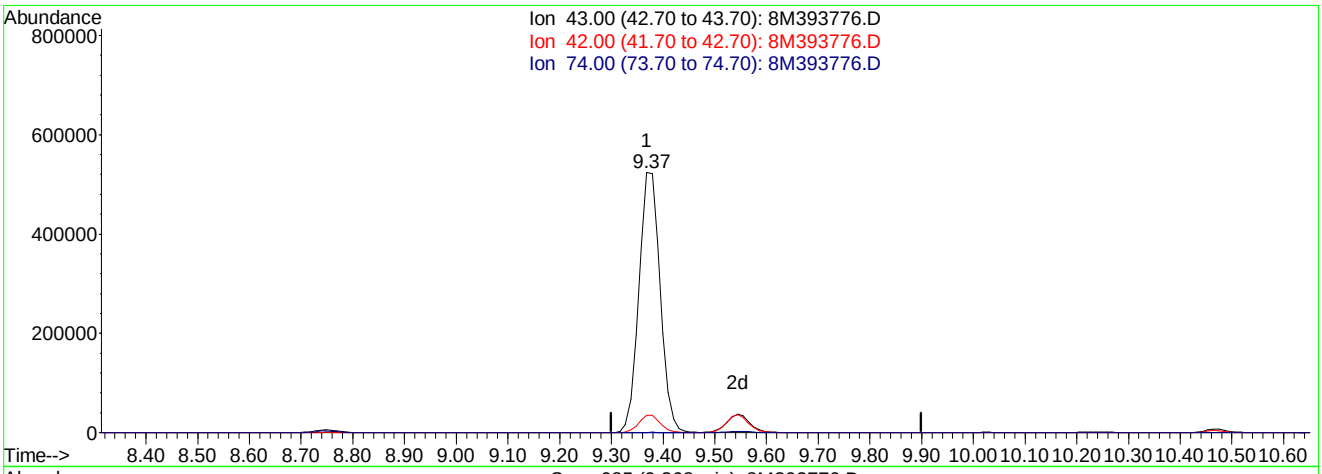

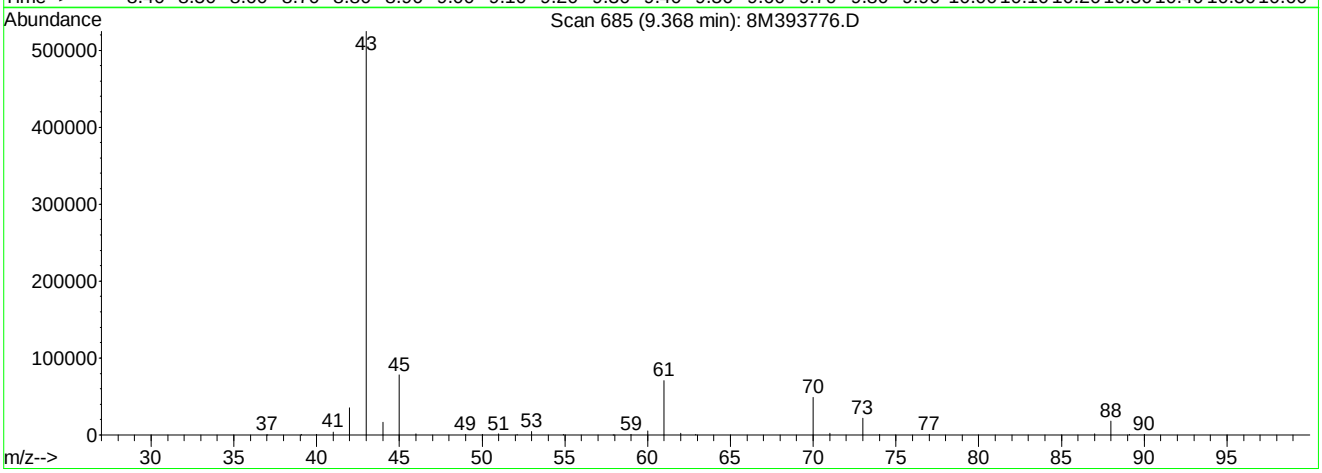

TIC: 8M393776.D

(7) Isobutyl Alcohol (T)

9.37min 1705.97ug/L

response 1489991

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	6.78
74.00	4.20	0.13
0.00	0.00	0.00

8M393776.D A9FOOWTR.M Mon Jan 06 13:40:00 2014

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\2\DATA\010614\8M393776.D Vial: 7
Acq On : 6 Jan 2014 12:55 Operator: MES
Sample : WG458457-07 300 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 6 13:40 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 13:31:56 2014
Response via : Multiple Level Calibration

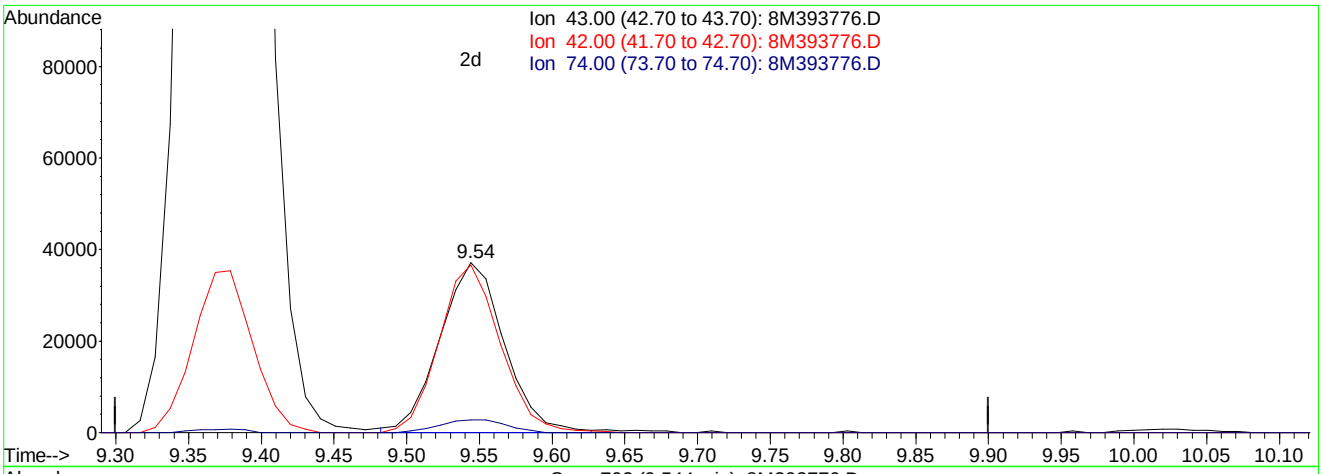

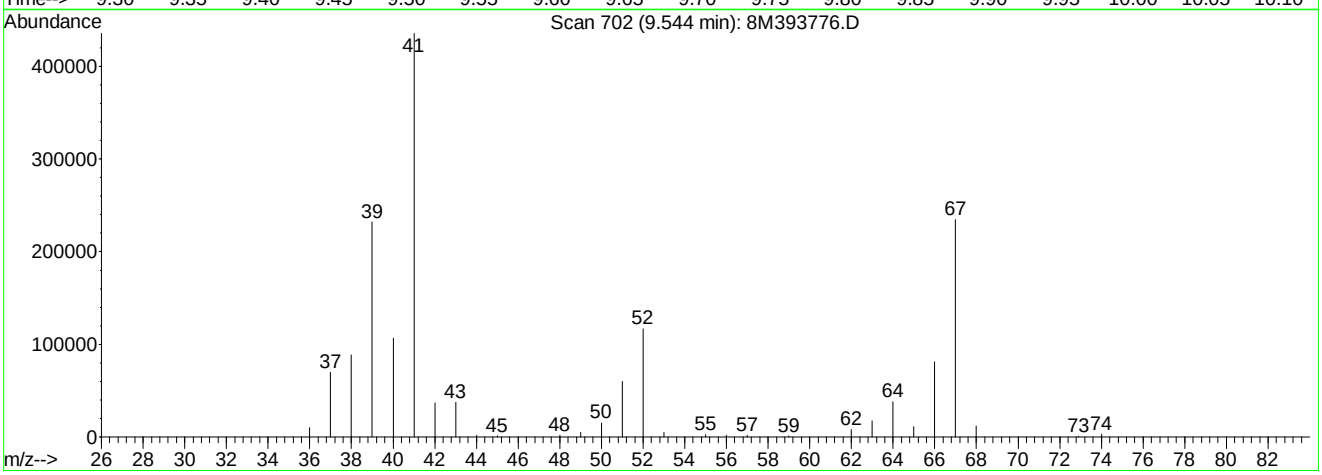

TIC: 8M393776.D

(7) Isobutyl Alcohol (T)

9.54min 131.00ug/L mint

response 114419

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	88.26#
74.00	4.20	1.67
0.00	0.00	0.00

8M393776.D A9FOOWTR.M Mon Jan 6 2014

Analyst: 01/07/2014 12:13 Supervisor: 01/08/2014 08:38

#1 - Data system fails to select correct peak

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010614\8M393777.D Vial: 8
Acq On : 6 Jan 2014 13:23 Operator: MES
Sample : WG458457-08 400 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 06 14:21:16 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 13:40:28 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	870348	25.00 ug/L	-0.05
11) Chlorobenzene-d5	14.88	117	687312	25.00 ug/L	-0.05
12) 1,4-Dichlorobenzene-d4	17.91	152	367289	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.97	41	273535	373.9600 ug/L	98
3) 3-Chloro-1-propene	7.36	41	6823135	386.5879 ug/L	94
4) 2-Chloro-1,3-butadiene	8.75	53	6947947	397.6997 ug/L	84
5) Ethyl Acetate	9.38	43	2028744	376.3185 ug/L	97
6) Methacrylonitrile	9.54	67	845610	382.8720 ug/L	86
7) Isobutyl Alcohol	9.54	43	151163m	772.2472 ug/L	
8) 1-Butanol	10.46	56	44142	471.3069 ug/L	96
9) Methyl methacrylate	11.71	41	2218087	376.9130 ug/L	89
10) 2-Nitropropane	12.05	43	685097	389.1001 ug/L	97
13) Cyclohexanone	16.14	55	39952	197.3104 ug/L	91

(#) = qualifier out of range (m) = manual integration
8M393777.D A9FOOWTR.M Mon Jan 06 14:23:10 2014 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010614\8M393777.D Vial: 8
Acq On : 6 Jan 2014 13:23 Operator: MES
Sample : WG458457-08 400 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 6 14:22 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 14:23:04 2014
Response via : Initial Calibration

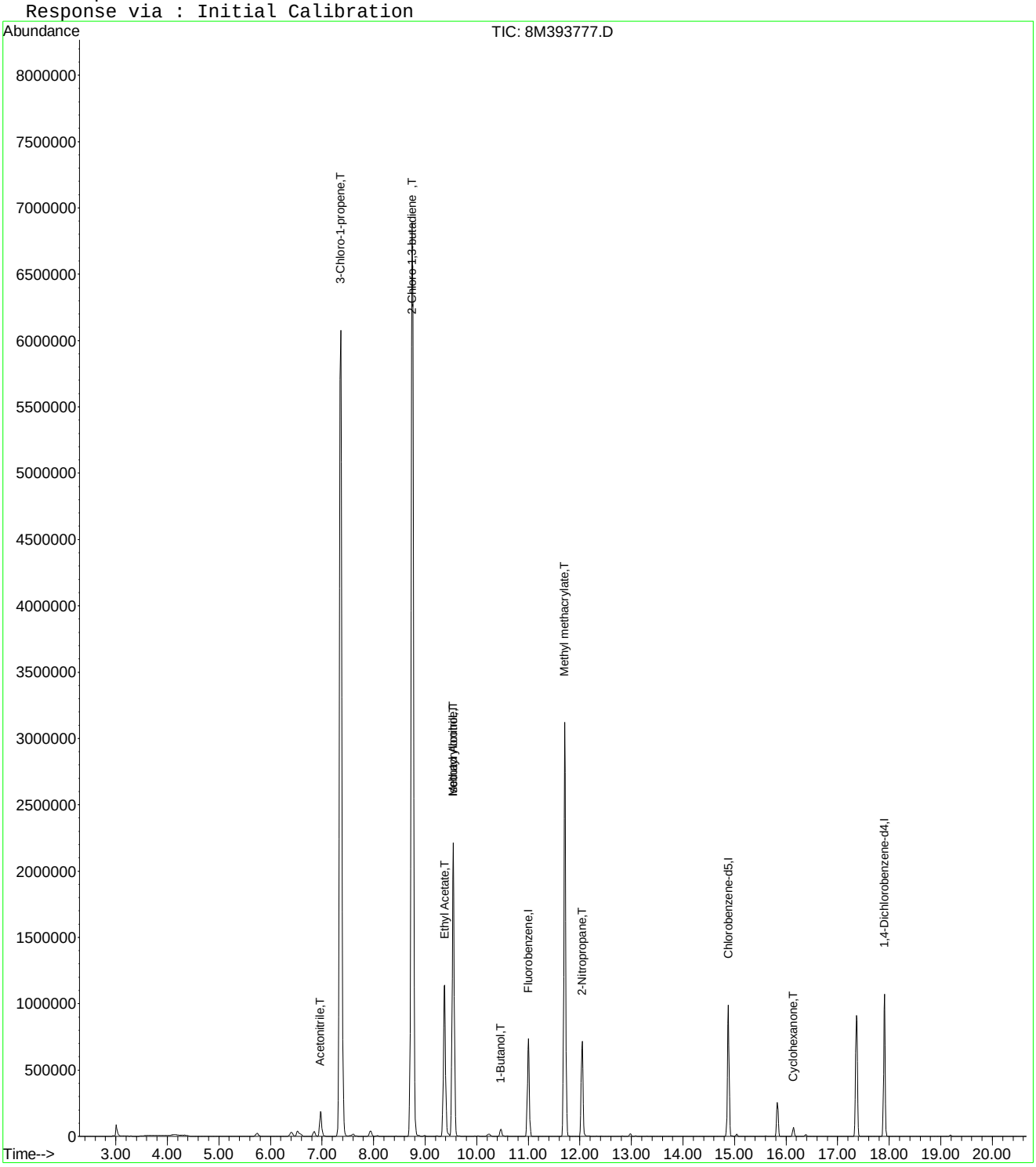

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\2\DATA\010614\8M393777.D Vial: 8
Acq On : 6 Jan 2014 13:23 Operator: MES
Sample : WG458457-08 400 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 6 14:21 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 14:21:35 2014
Response via : Multiple Level Calibration

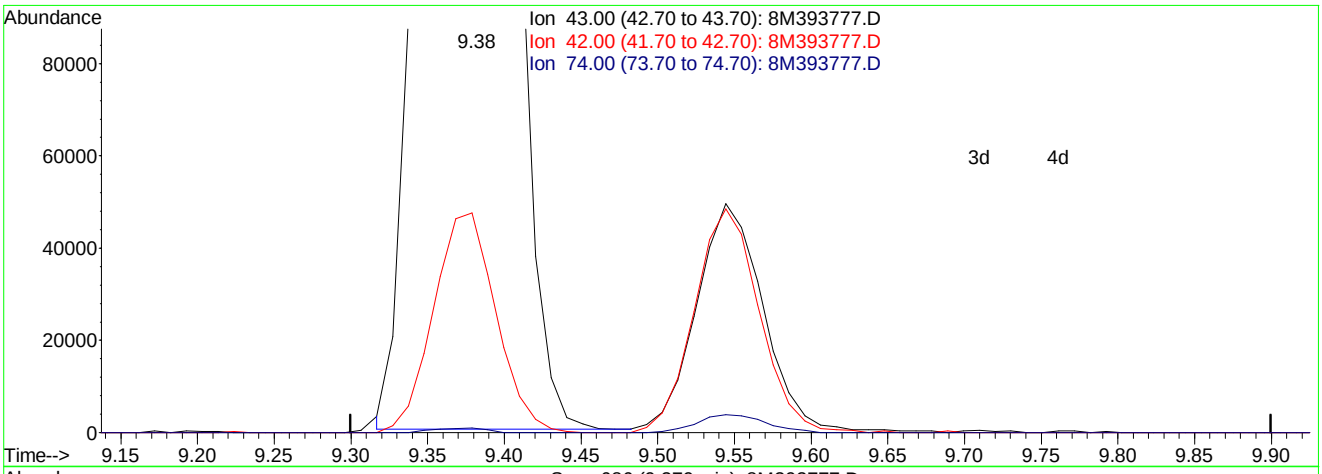

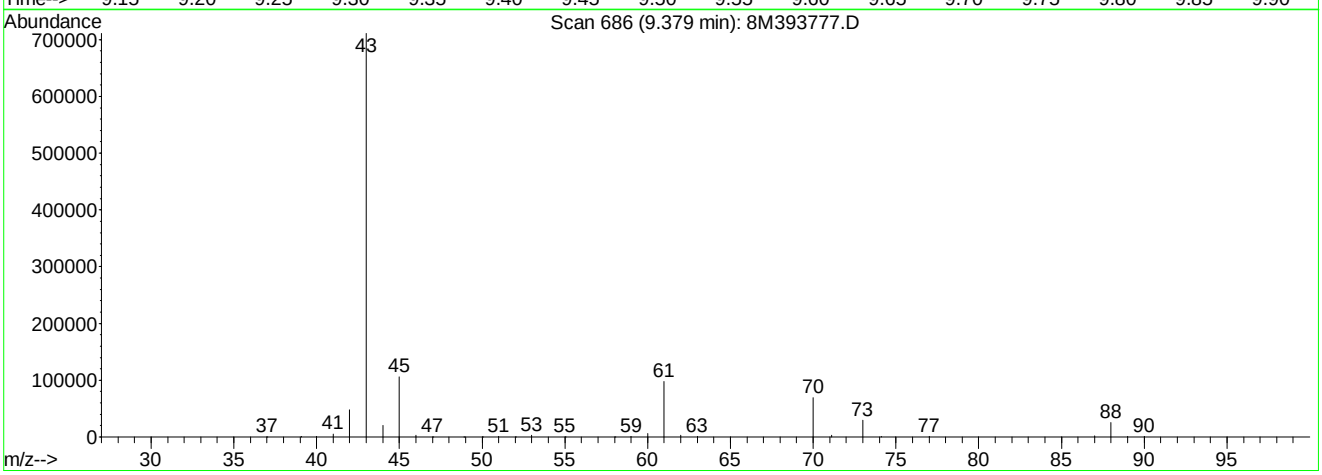

TIC: 8M393777.D

(7) Isobutyl Alcohol (T)

9.38min 10315.46ug/L

response 2019192

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	6.66
74.00	4.20	0.11
0.00	0.00	0.00

8M393777.D A9FOOWTR.M Mon Jan 06 14:22:40 2014

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\2\DATA\010614\8M393777.D Vial: 8
Acq On : 6 Jan 2014 13:23 Operator: MES
Sample : WG458457-08 400 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 6 14:22 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 14:21:35 2014
Response via : Multiple Level Calibration

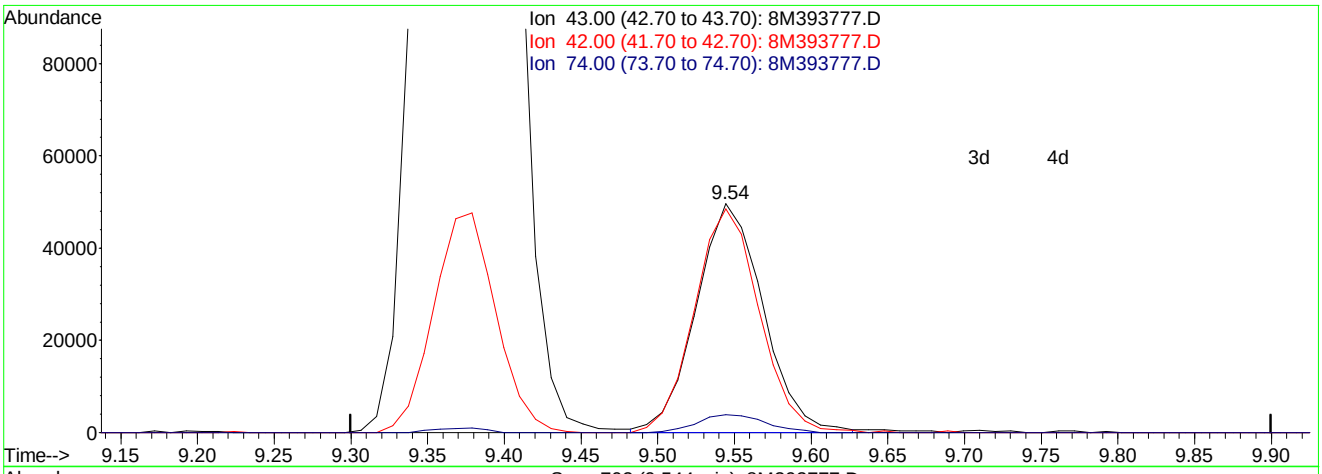

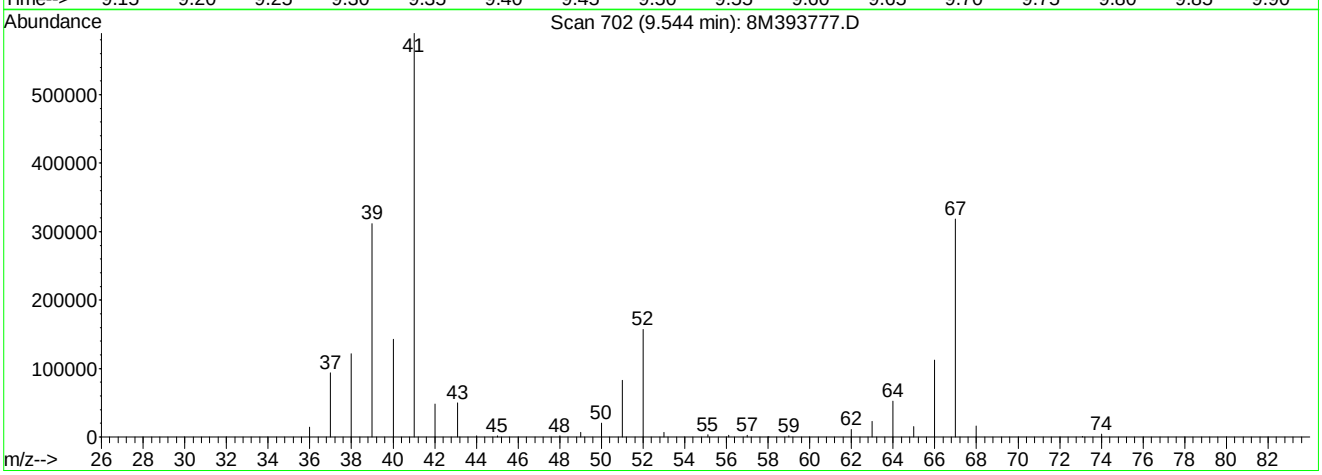

TIC: 8M393777.D

(7) Isobutyl Alcohol (T)

9.54min 772.25ug/L mint

response 151163

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	89.03#
74.00	4.20	1.51
0.00	0.00	0.00

8M393777.D A9FOOWTR.M Mon Jan 6 2014

Analyst: 01/07/2014 12:13 Supervisor: 01/08/2014 08:38

#1 - Data system fails to select correct peak

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010614\8M393778.D Vial: 9
Acq On : 6 Jan 2014 13:52 Operator: MES
Sample : WG458457-09 500 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 06 14:21:21 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 13:40:28 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	861239	25.00 ug/L	-0.05
11) Chlorobenzene-d5	14.88	117	648285	25.00 ug/L	-0.05
12) 1,4-Dichlorobenzene-d4	17.91	152	336347	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.98	41	367543	507.7964 ug/L	98
3) 3-Chloro-1-propene	7.36	41	11262741	644.8781 ug/L	91
4) 2-Chloro-1,3-butadiene	8.75	53	11329450	655.3554 ug/L	77
5) Ethyl Acetate	9.38	43	2634033	493.7633 ug/L	98
6) Methacrylonitrile	9.54	67	1118399	511.7402 ug/L	86
7) Isobutyl Alcohol	9.54	43	219290m	1132.1368 ug/L	
8) 1-Butanol	10.47	56	66633	718.9694 ug/L	96
9) Methyl methacrylate	11.70	41	2934642	503.9494 ug/L	88
10) 2-Nitropropane	12.04	43	908924	521.6822 ug/L	97
13) Cyclohexanone	16.14	55	56352	303.9074 ug/L	90

(#) = qualifier out of range (m) = manual integration
8M393778.D A9FOOWTR.M Mon Jan 06 14:23:01 2014 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\010614\8M393778.D Vial: 9
Acq On : 6 Jan 2014 13:52 Operator: MES
Sample : WG458457-09 500 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 6 14:22 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 14:22:23 2014
Response via : Initial Calibration

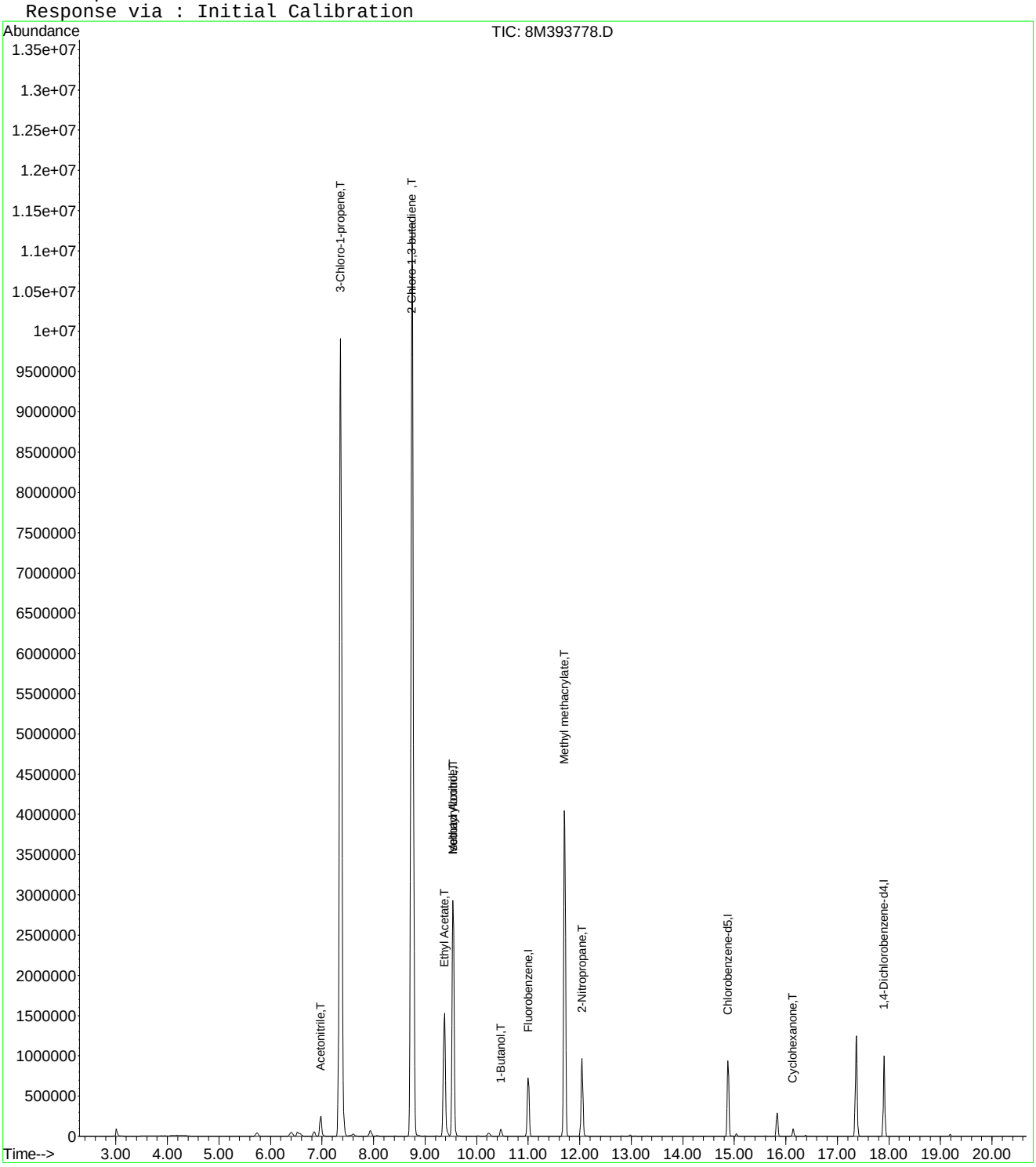

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\2\DATA\010614\8M393778.D Vial: 9
Acq On : 6 Jan 2014 13:52 Operator: MES
Sample : WG458457-09 500 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 6 14:21 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 14:21:35 2014
Response via : Multiple Level Calibration

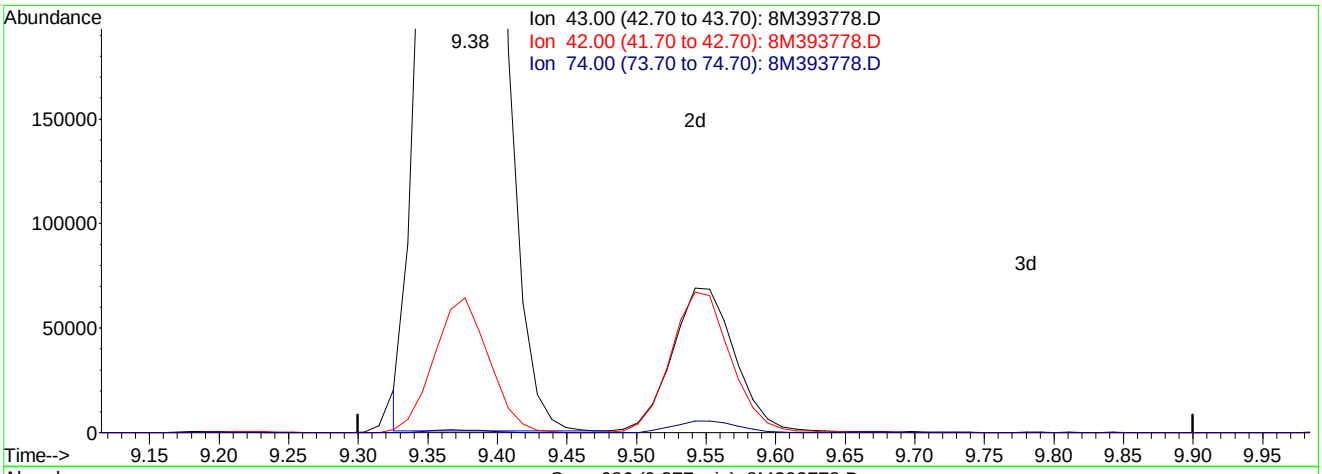

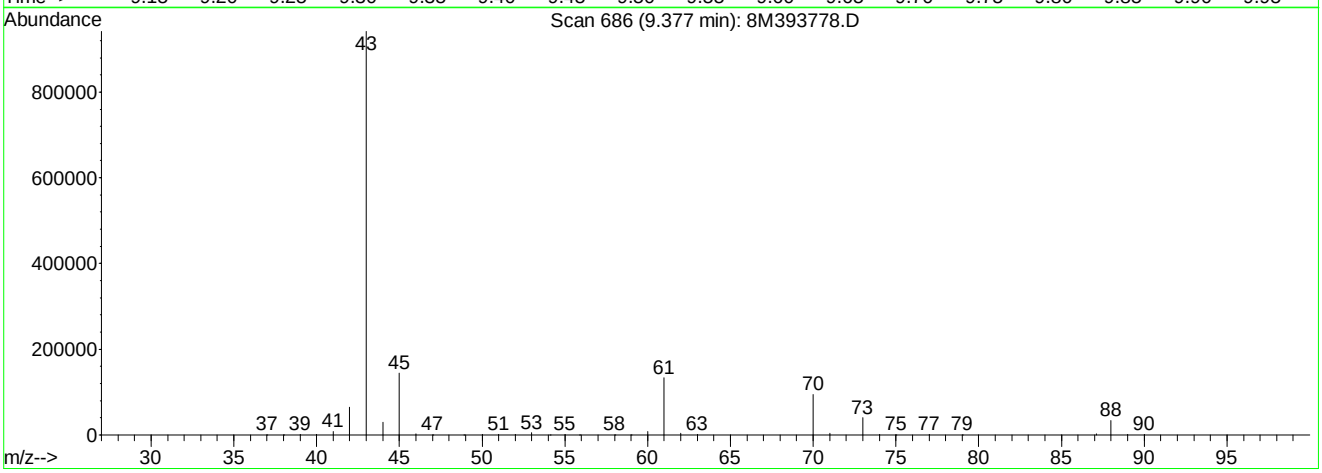

TIC: 8M393778.D

(7) Isobutyl Alcohol (T)

9.38min 13474.04ug/L

response 2609863

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	6.74
74.00	4.20	0.14
0.00	0.00	0.00

8M393778.D A9FOOWTR.M Mon Jan 06 14:22:52 2014

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\2\DATA\010614\8M393778.D Vial: 9
Acq On : 6 Jan 2014 13:52 Operator: MES
Sample : WG458457-09 500 ug/L APPIX STD Inst : HPMS8
Misc : 1,1 STD61847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 6 14:22 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Mon Jan 06 14:21:35 2014
Response via : Multiple Level Calibration

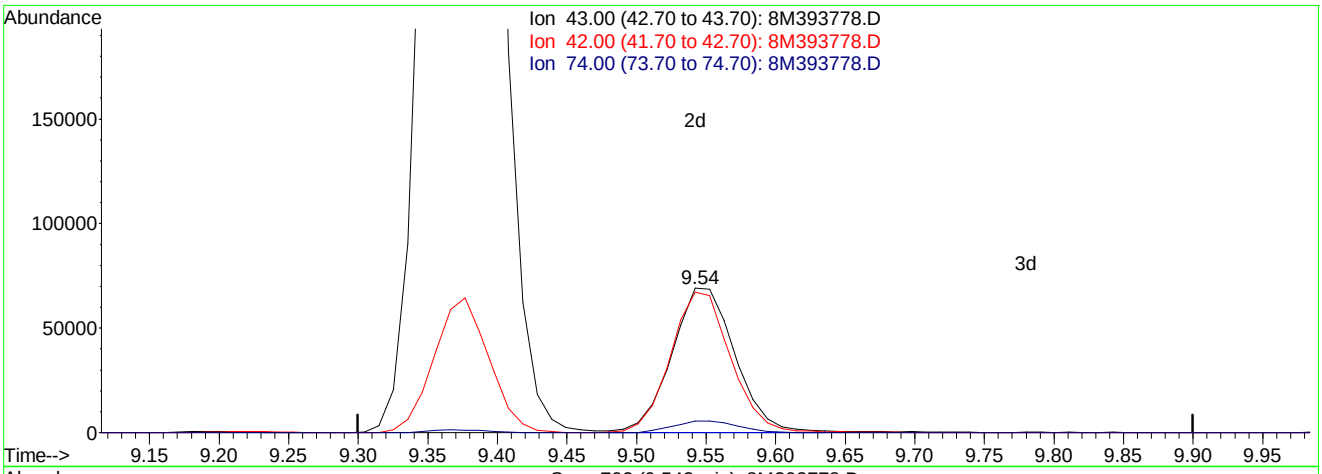

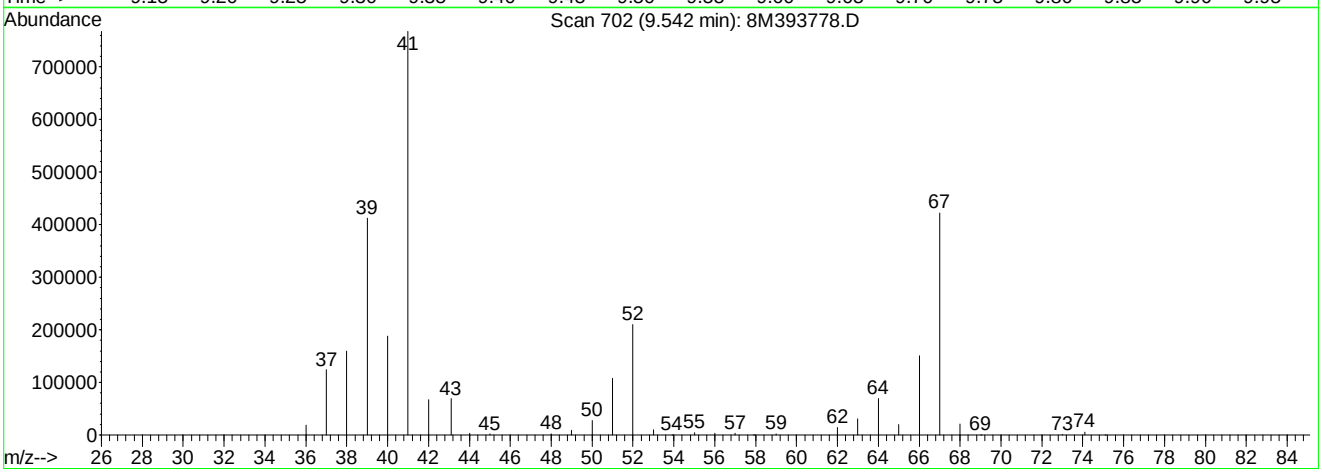

TIC: 8M393778.D

(7) Isobutyl Alcohol (T)

9.54min 1132.14ug/L mint

response 219290

Ion	Exp%	Act%
43.00	100	100
42.00	0.00	80.20#
74.00	4.20	1.70
0.00	0.00	0.00

8M393778.D A9FOOWTR.M Mon Jan 6 2014

Analyst: 01/07/2014 12:13 Supervisor: 01/08/2014 08:38

#1 - Data system fails to select correct peak

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010614\8M393780.D Vial: 11
Acq On : 6 Jan 2014 14:48 Operator: MES
Sample : WG458457-10 100ug/L APPIX ALT SOURCE Inst : HPMS8
Misc : 1,1 STD62148 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 07 11:35:10 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Tue Jan 07 08:20:19 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	847141	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.88	117	656439	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.91	152	353678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.98	41	66284	97.9157 ug/L	98
3) 3-Chloro-1-propene	7.36	41	1955362	106.3676 ug/L	100
4) 2-Chloro-1,3-butadiene	8.75	53	1595114	86.5702 ug/L	99
5) Ethyl Acetate	9.38	43	538249	107.8025 ug/L	100
6) Methacrylonitrile	9.54	67	205473	99.7996 ug/L	98
7) Isobutyl Alcohol	9.54	43	36874	193.8009 ug/L	99
8) 1-Butanol	10.46	56	8359	85.7723 ug/L	97
9) Methyl methacrylate	11.71	41	557315	100.7135 ug/L	99
10) 2-Nitropropane	12.05	43	147827	91.3716 ug/L	97
13) Cyclohexanone	16.14	55	12634	108.6352 ug/L	91

(#) = qualifier out of range (m) = manual integration
8M393780.D A9FOOWTR.M Tue Jan 07 11:35:11 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\010614\8M393780.D Vial: 11
Acq On : 6 Jan 2014 14:48 Operator: MES
Sample : WG458457-10 100ug/L APPIX ALT SOURCE Inst : HPMS8
Misc : 1,1 STD62148 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 7 11:35 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Tue Jan 07 08:20:19 2014
Response via : Initial Calibration

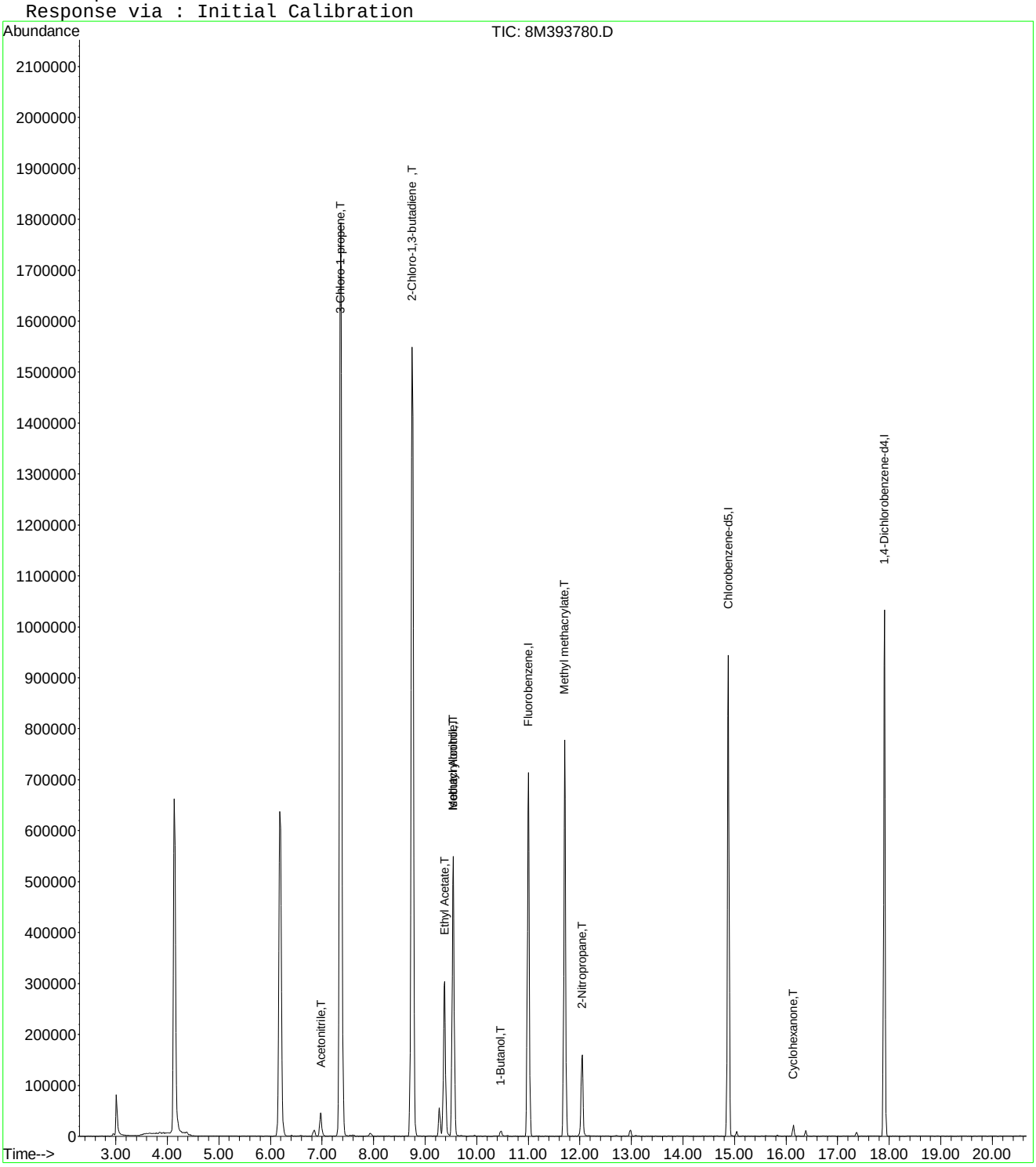

8M393780.D A9FOOWTR.M Tue Jan 07 11:35:11 2014 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\010614\8M393780.D Vial: 11
Acq On : 6 Jan 2014 14:48 Operator: MES
Sample : WG458457-10 100ug/L APPIX ALT SOURCE Inst : HPMS8
Misc : 1,1 STD62148 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 01-04-14 HPMS8
Last Update : Tue Jan 07 08:20:19 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	97	0.00
2	T	Acetonitrile	100.0000	97.9157	2.1	97	0.00
3	T	3-Chloro-1-propene	100.0000	106.3676	-6.4	104	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	86.5702	13.4	84	0.00
5	T	Ethyl Acetate	100.0000	107.8025	-7.8	101	0.00
6	T	Methacrylonitrile	100.0000	99.7996	0.2	94	0.00
7	T	Isobutyl Alcohol	200.0000	193.8009	3.1	100	0.00
8	T	1-Butanol	100.0000	85.7723	14.2	92	0.00
9	T	Methyl methacrylate	100.0000	100.7135	-0.7	95	0.00
10	T	2-Nitropropane	100.0000	91.3716	8.6	88	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	97	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	97	0.00
13	T	Cyclohexanone	100.0000	108.6352	-8.6	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M393780.D A9FOOWTR.M Tue Jan 07 11:35:14 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957895.D Vial: 3
Acq On : 19 Aug 2013 16:23 Operator: adc
Sample : WG441888-01 5.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:37 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	643130	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	439679	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	231000	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.94	41	2569	4.6165 ug/L #	16
3) 3-Chloro-1-propene	7.32	41	43441	4.7909 ug/L	90
4) 2-Chloro-1,3-butadiene	8.71	53	43442	4.4636 ug/L	98
5) Ethyl Acetate	9.34	43	19334	4.4239 ug/L	96
6) Methacrylonitrile	9.50	67	9285	4.2205 ug/L	88
7) Isobutyl Alcohol	9.51	43	1864	4.9961 ug/L #	84
9) Methyl methacrylate	11.67	41	21094	4.5700 ug/L	95
10) 2-Nitropropane	12.01	43	6118	4.1497 ug/L	83
12) Cyclohexanone	16.11	55	3867	6.1515 ug/L	83

(#) = qualifier out of range (m) = manual integration
9M957895.D A9FOOWT.M Tue Aug 20 15:11:38 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957895.D Vial: 3
Acq On : 19 Aug 2013 16:23 Operator: adc
Sample : WG441888-01 5.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

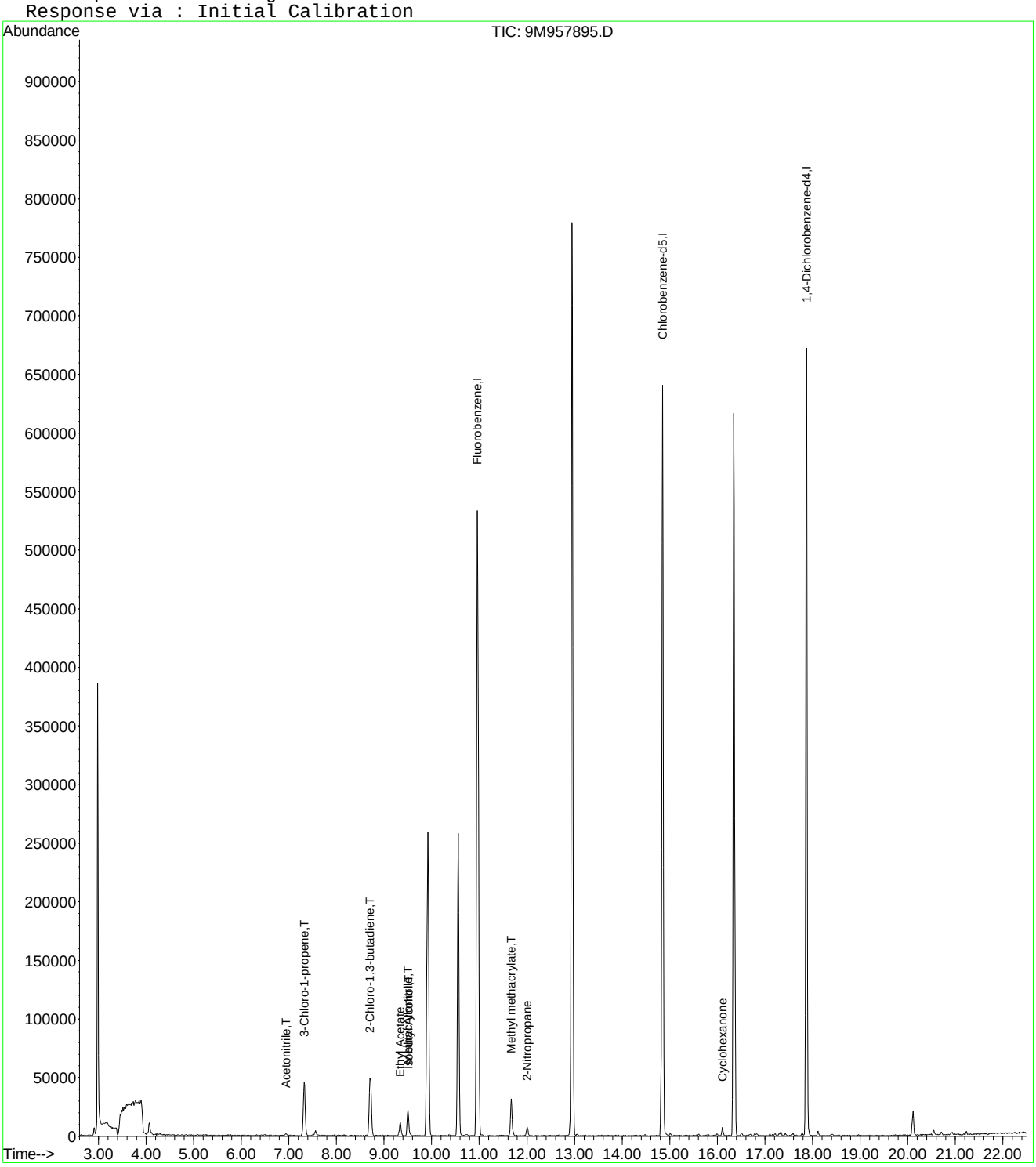

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957896.D Vial: 4
Acq On : 19 Aug 2013 16:53 Operator: adc
Sample : WG441888-02 20.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:39 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	597162	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	410709	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	204391	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.94	41	10346	20.0230 ug/L #	94
3) 3-Chloro-1-propene	7.32	41	165346	19.6389 ug/L	99
4) 2-Chloro-1,3-butadiene	8.71	53	173321	19.1794 ug/L	98
5) Ethyl Acetate	9.33	43	80571	19.8547 ug/L	98
6) Methacrylonitrile	9.49	67	39572	19.3720 ug/L	100
7) Isobutyl Alcohol	9.50	43	7225	20.8558 ug/L #	84
8) 1-Butanol	10.43	56	1470	17.5760 ug/L #	28
9) Methyl methacrylate	11.67	41	82730	19.3029 ug/L	99
10) 2-Nitropropane	12.01	43	24248	17.7129 ug/L	96
12) Cyclohexanone	16.11	55	10457	17.8080 ug/L	93

(#) = qualifier out of range (m) = manual integration
9M957896.D A9FOOWT.M Tue Aug 20 15:11:40 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957896.D Vial: 4
Acq On : 19 Aug 2013 16:53 Operator: adc
Sample : WG441888-02 20.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

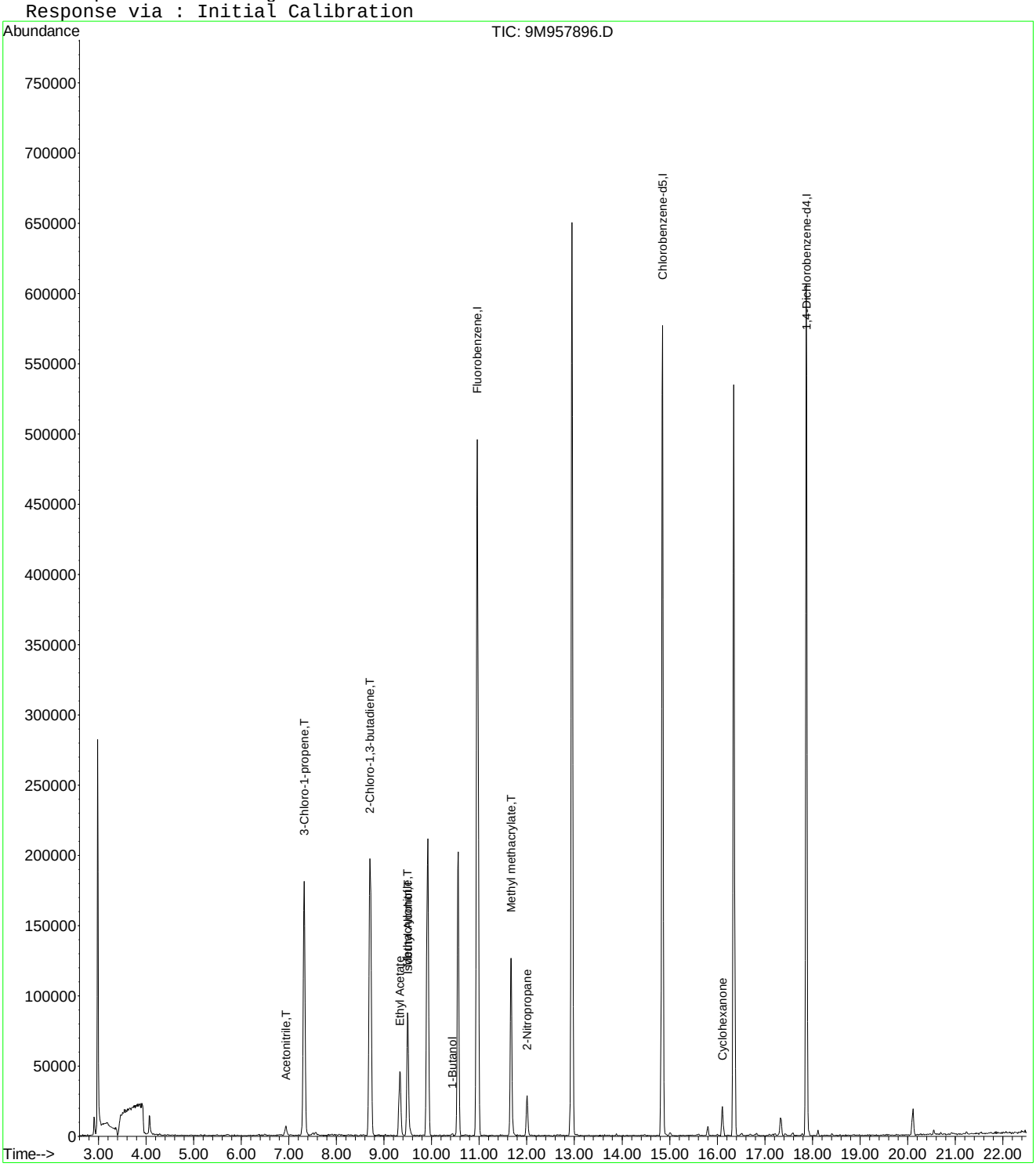

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957897.D Vial: 5
Acq On : 19 Aug 2013 17:22 Operator: adc
Sample : WG441888-03 50.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:40 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	543956	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	378286	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.87	152	186935	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	24663	52.3999 ug/L #	95
3) 3-Chloro-1-propene	7.32	41	408290	53.2380 ug/L	99
4) 2-Chloro-1,3-butadiene	8.70	53	433367	52.6464 ug/L	100
5) Ethyl Acetate	9.33	43	199641	54.0087 ug/L	99
6) Methacrylonitrile	9.50	67	98625	53.0031 ug/L	97
7) Isobutyl Alcohol	9.50	43	15873	50.3010 ug/L	98
8) 1-Butanol	10.42	56	3593	47.1615 ug/L	91
9) Methyl methacrylate	11.67	41	207430	53.1325 ug/L	99
10) 2-Nitropropane	12.00	43	62334	49.9883 ug/L	97
12) Cyclohexanone	16.11	55	27156	50.2096 ug/L	97

(#) = qualifier out of range (m) = manual integration
9M957897.D A9FOOWT.M Tue Aug 20 15:11:41 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957897.D Vial: 5
Acq On : 19 Aug 2013 17:22 Operator: adc
Sample : WG441888-03 50.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

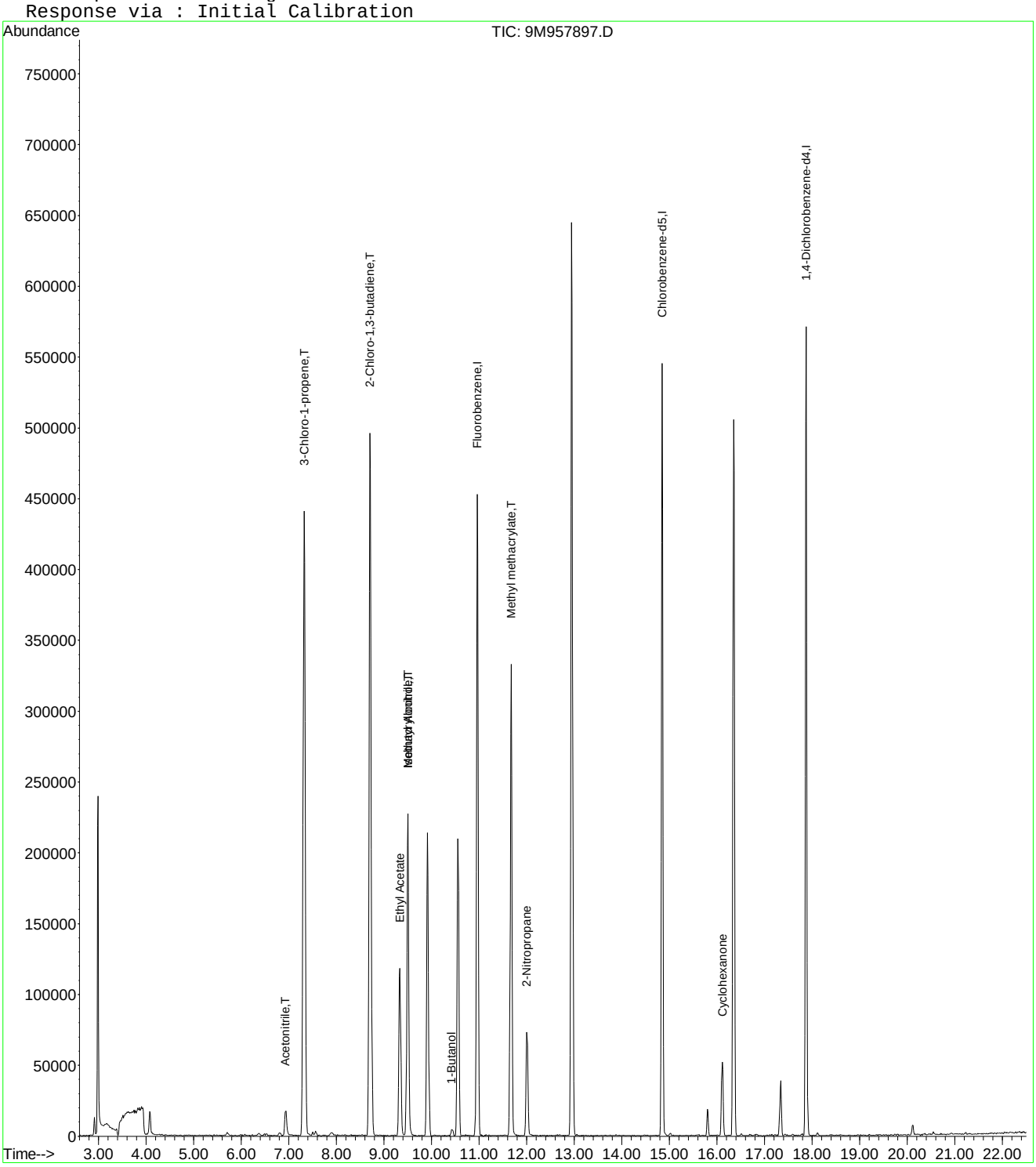

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957898.D Vial: 6
Acq On : 19 Aug 2013 17:51 Operator: adc
Sample : WG441888-04 100.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:42 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	576048	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	389894	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	192883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	49019	98.3454 ug/L #	100
3) 3-Chloro-1-propene	7.32	41	803367	98.9172 ug/L	100
4) 2-Chloro-1,3-butadiene	8.70	53	860009	98.6554 ug/L	100
5) Ethyl Acetate	9.34	43	394422	100.7581 ug/L	100
6) Methacrylonitrile	9.50	67	193914	98.4076 ug/L	100
7) Isobutyl Alcohol	9.50	43	30821	92.2294 ug/L	100
8) 1-Butanol	10.42	56	6864	85.0771 ug/L	100
9) Methyl methacrylate	11.67	41	411094	99.4339 ug/L	100
10) 2-Nitropropane	12.00	43	129933	98.3938 ug/L	100
12) Cyclohexanone	16.11	55	53010	95.0938 ug/L	100

(#) = qualifier out of range (m) = manual integration
9M957898.D A9FOOWT.M Tue Aug 20 15:11:43 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957898.D Vial: 6
Acq On : 19 Aug 2013 17:51 Operator: adc
Sample : WG441888-04 100.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

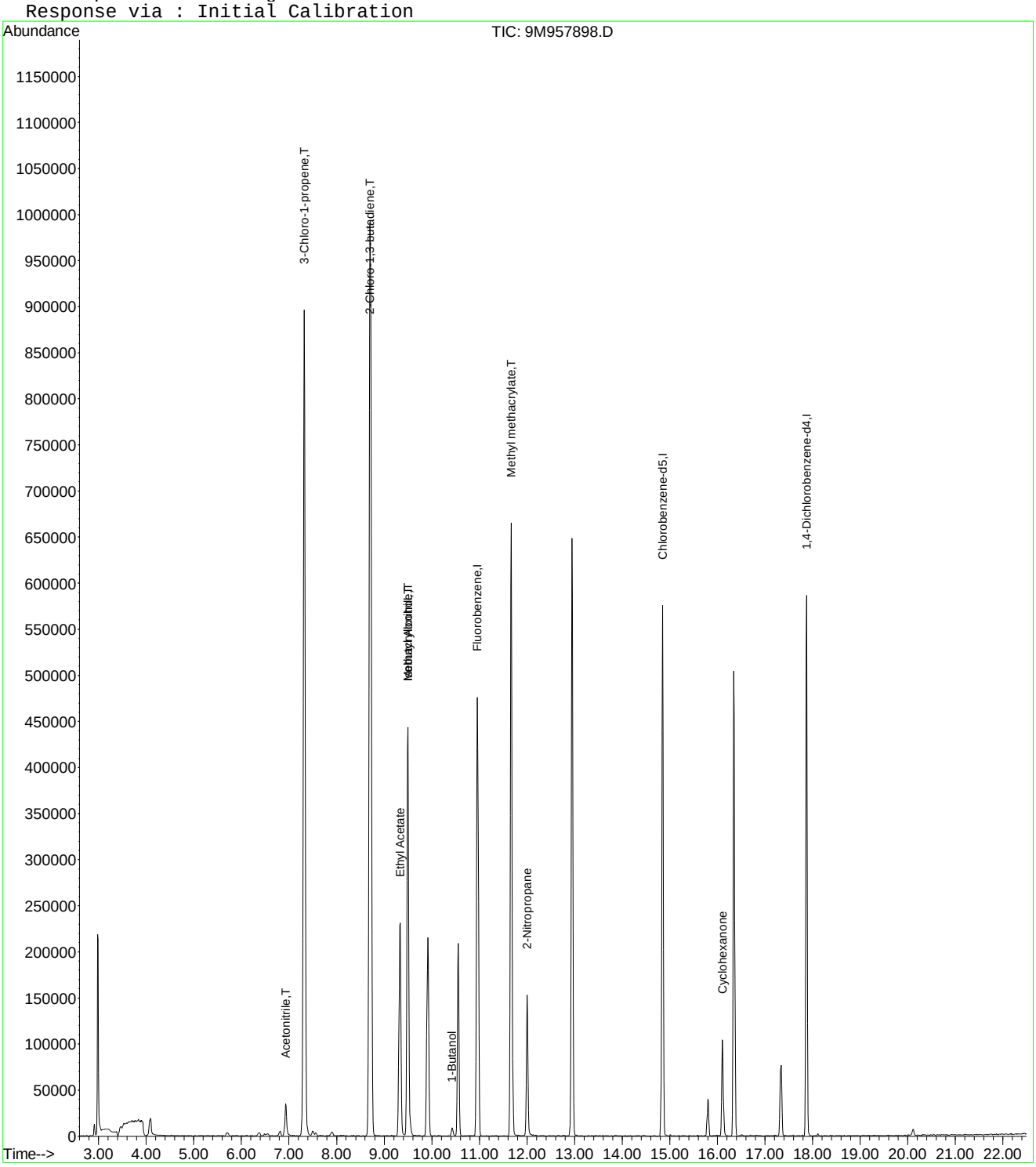

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957899.D Vial: 7
Acq On : 19 Aug 2013 18:20 Operator: adc
Sample : WG441888-05 200.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:44 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	570456	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	385619	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	194966	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	99623	201.8300 ug/L #	97
3) 3-Chloro-1-propene	7.32	41	1635978	203.4097 ug/L	100
4) 2-Chloro-1,3-butadiene	8.70	53	1777598	205.9150 ug/L	99
5) Ethyl Acetate	9.33	43	796090	205.3608 ug/L	100
6) Methacrylonitrile	9.50	67	402877	206.4564 ug/L	96
7) Isobutyl Alcohol	9.50	43	61854	186.9075 ug/L	94
8) 1-Butanol	10.43	56	17315	216.7176 ug/L	91
9) Methyl methacrylate	11.67	41	835832	204.1498 ug/L	98
10) 2-Nitropropane	12.00	43	277669	212.3304 ug/L	98
12) Cyclohexanone	16.11	55	106553	193.2629 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M957899.D A9FOOWT.M Tue Aug 20 15:11:44 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957899.D Vial: 7
Acq On : 19 Aug 2013 18:20 Operator: adc
Sample : WG441888-05 200.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

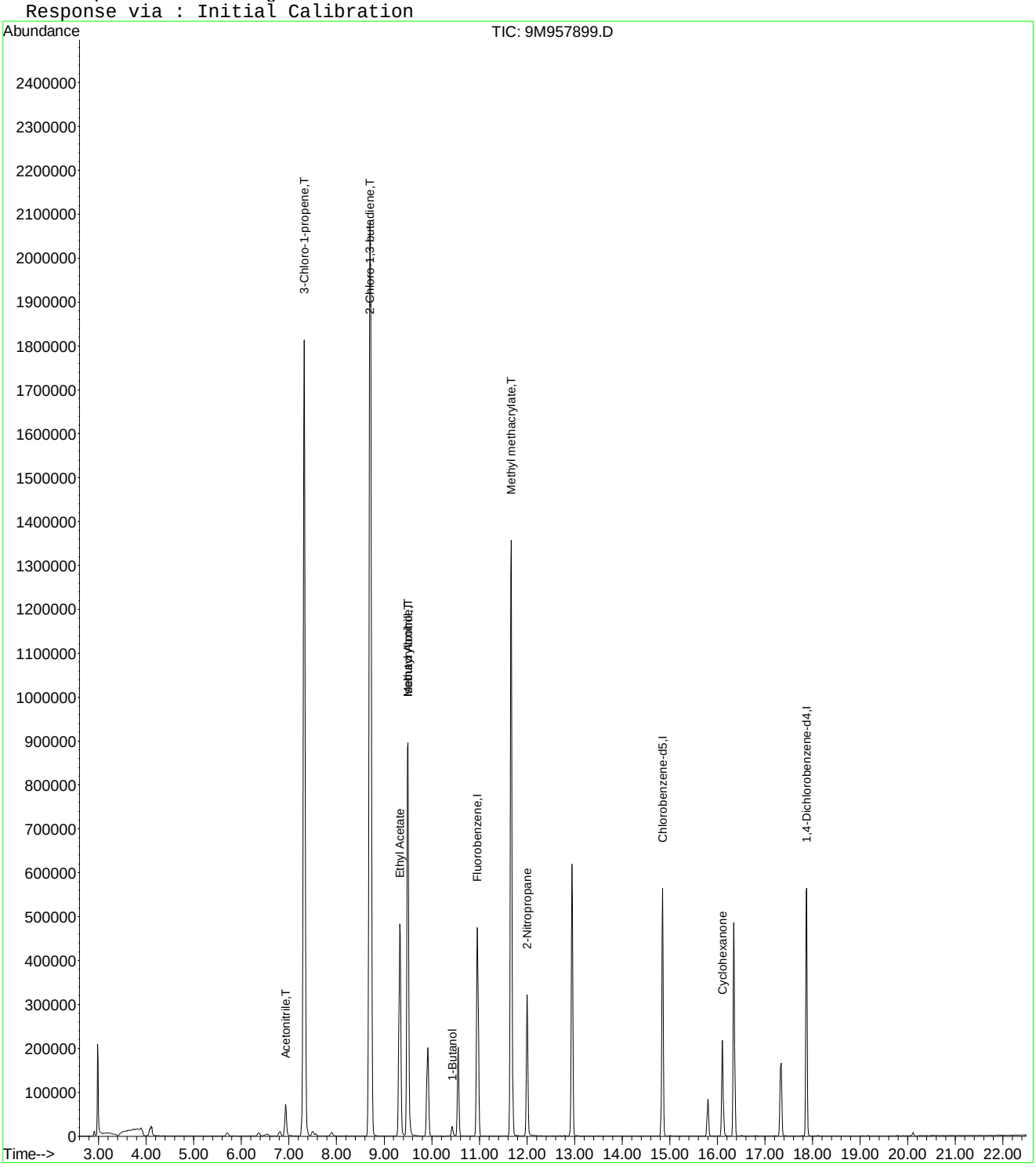

9M957899.D A9FOOWT.M Tue Aug 20 15:11:45 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957900.D Vial: 8
Acq On : 19 Aug 2013 18:48 Operator: adc
Sample : WG441888-06 300.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:45 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	592665	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	402629	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	202256	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	152817	297.9962 ug/L #	98
3) 3-Chloro-1-propene	7.32	41	2473810	296.0557 ug/L	99
4) 2-Chloro-1,3-butadiene	8.70	53	2716896	302.9287 ug/L	96
5) Ethyl Acetate	9.32	43	1204380	299.0417 ug/L	100
6) Methacrylonitrile	9.50	67	614447	303.0771 ug/L	97
7) Isobutyl Alcohol	9.50	43	100051	291.0002 ug/L	95
8) 1-Butanol	10.42	56	27392	329.9958 ug/L	92
9) Methyl methacrylate	11.67	41	1277690	300.3782 ug/L	98
10) 2-Nitropropane	12.00	43	426305	313.7748 ug/L	98
12) Cyclohexanone	16.11	55	164262	285.3469 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M957900.D A9FOOWT.M Tue Aug 20 15:11:46 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957900.D Vial: 8
Acq On : 19 Aug 2013 18:48 Operator: adc
Sample : WG441888-06 300.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

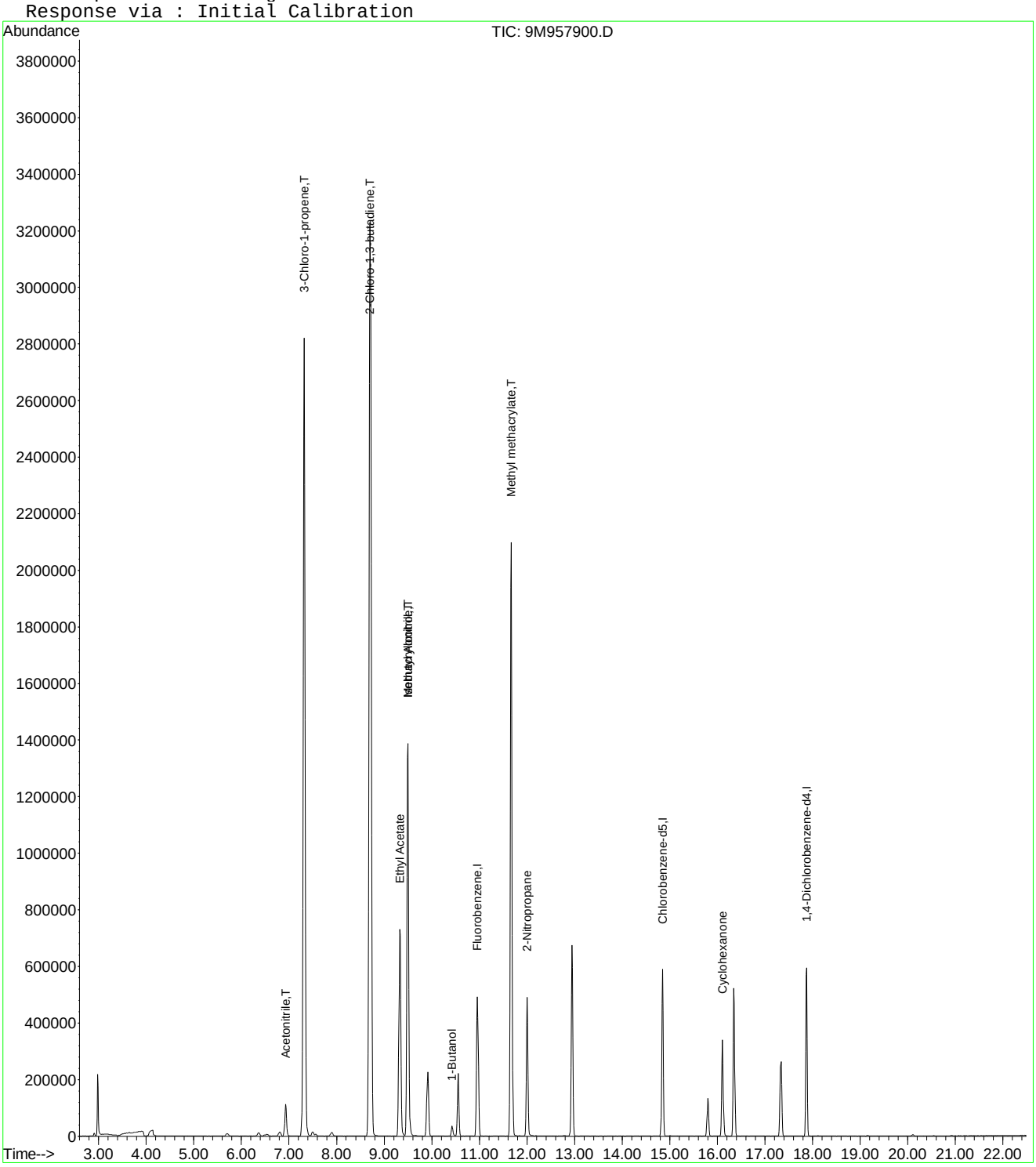

9M957900.D A9FOOWT.M Tue Aug 20 15:11:46 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957901.D Vial: 9
Acq On : 19 Aug 2013 19:17 Operator: adc
Sample : WG441888-07 400.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:47 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	594215	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	396612	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	201290	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	204659	398.0481 ug/L #	97
3) 3-Chloro-1-propene	7.32	41	3257505	388.8283 ug/L	98
4) 2-Chloro-1,3-butadiene	8.70	53	3609438	401.3956 ug/L	95
5) Ethyl Acetate	9.33	43	1573860	389.7624 ug/L	99
6) Methacrylonitrile	9.50	67	822198	404.4928 ug/L	95
7) Isobutyl Alcohol	9.50	43	139506	404.6974 ug/L	95
8) 1-Butanol	10.43	56	38071	457.4510 ug/L	87
9) Methyl methacrylate	11.67	41	1682799	394.5852 ug/L	97
10) 2-Nitropropane	12.00	43	574030	421.4033 ug/L	98
12) Cyclohexanone	16.11	55	220458	388.7775 ug/L	97

(#) = qualifier out of range (m) = manual integration
9M957901.D A9FOOWT.M Tue Aug 20 15:11:48 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957901.D Vial: 9
Acq On : 19 Aug 2013 19:17 Operator: adc
Sample : WG441888-07 400.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

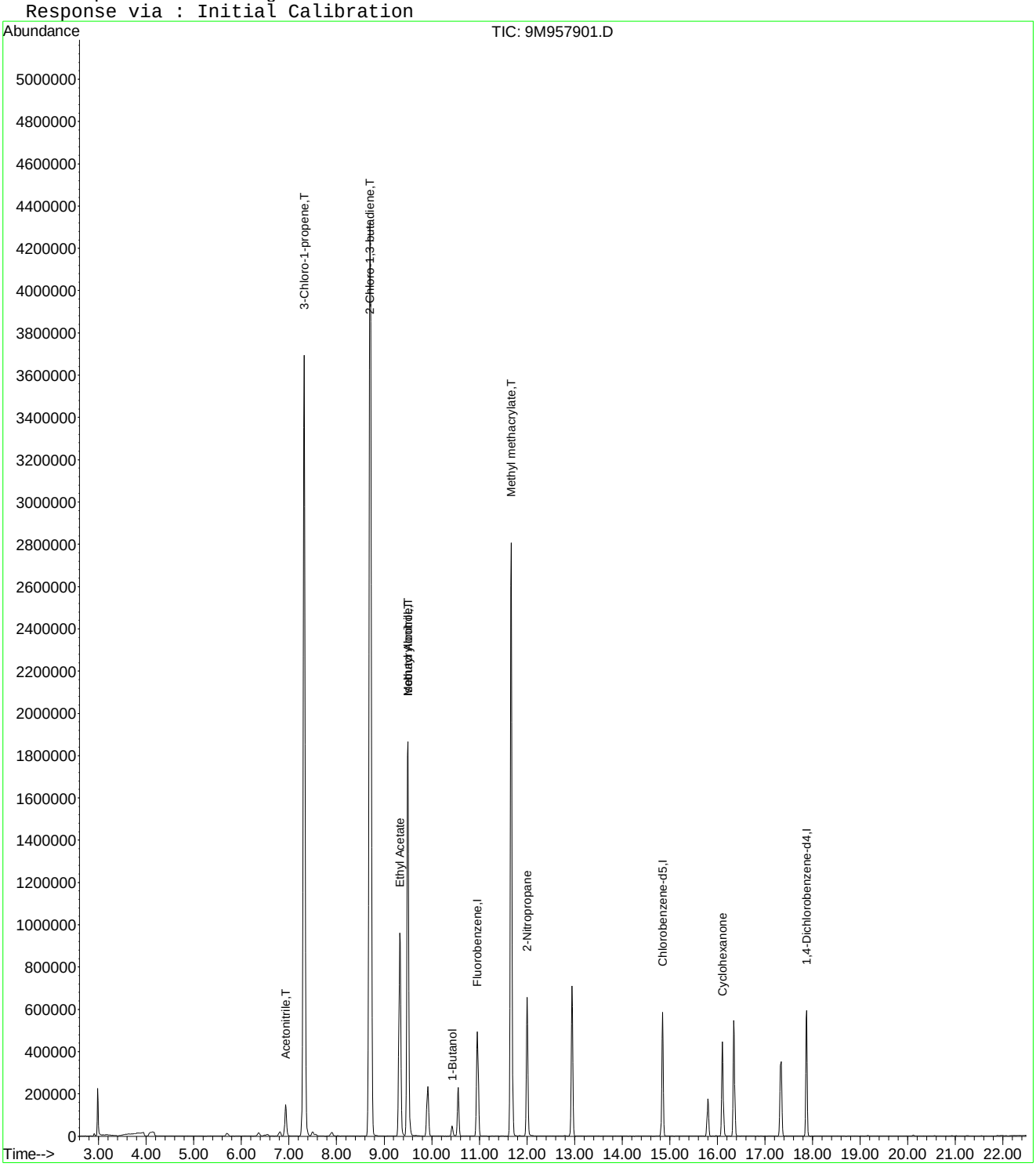

9M957901.D A9FOOWT.M Tue Aug 20 15:11:48 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957902.D Vial: 10
Acq On : 19 Aug 2013 19:46 Operator: adc
Sample : WG441888-08 500.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:48 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	558878	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	375431	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	195195	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	253035	523.2532 ug/L #	96
3) 3-Chloro-1-propene	7.32	41	4057841	514.9848 ug/L	97
4) 2-Chloro-1,3-butadiene	8.71	53	4507808	532.9974 ug/L	93
5) Ethyl Acetate	9.33	43	1968668	518.3617 ug/L	99
6) Methacrylonitrile	9.50	67	1041348	544.6993 ug/L	94
7) Isobutyl Alcohol	9.50	43	180492	556.7011 ug/L	98
8) 1-Butanol	10.42	56	50726	648.0485 ug/L	87
9) Methyl methacrylate	11.67	41	2116667	527.7007 ug/L	96
10) 2-Nitropropane	12.00	43	730036	569.8155 ug/L	96
12) Cyclohexanone	16.11	55	277715	517.3808 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M957902.D A9FOOWT.M Tue Aug 20 15:11:49 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957902.D Vial: 10
Acq On : 19 Aug 2013 19:46 Operator: adc
Sample : WG441888-08 500.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

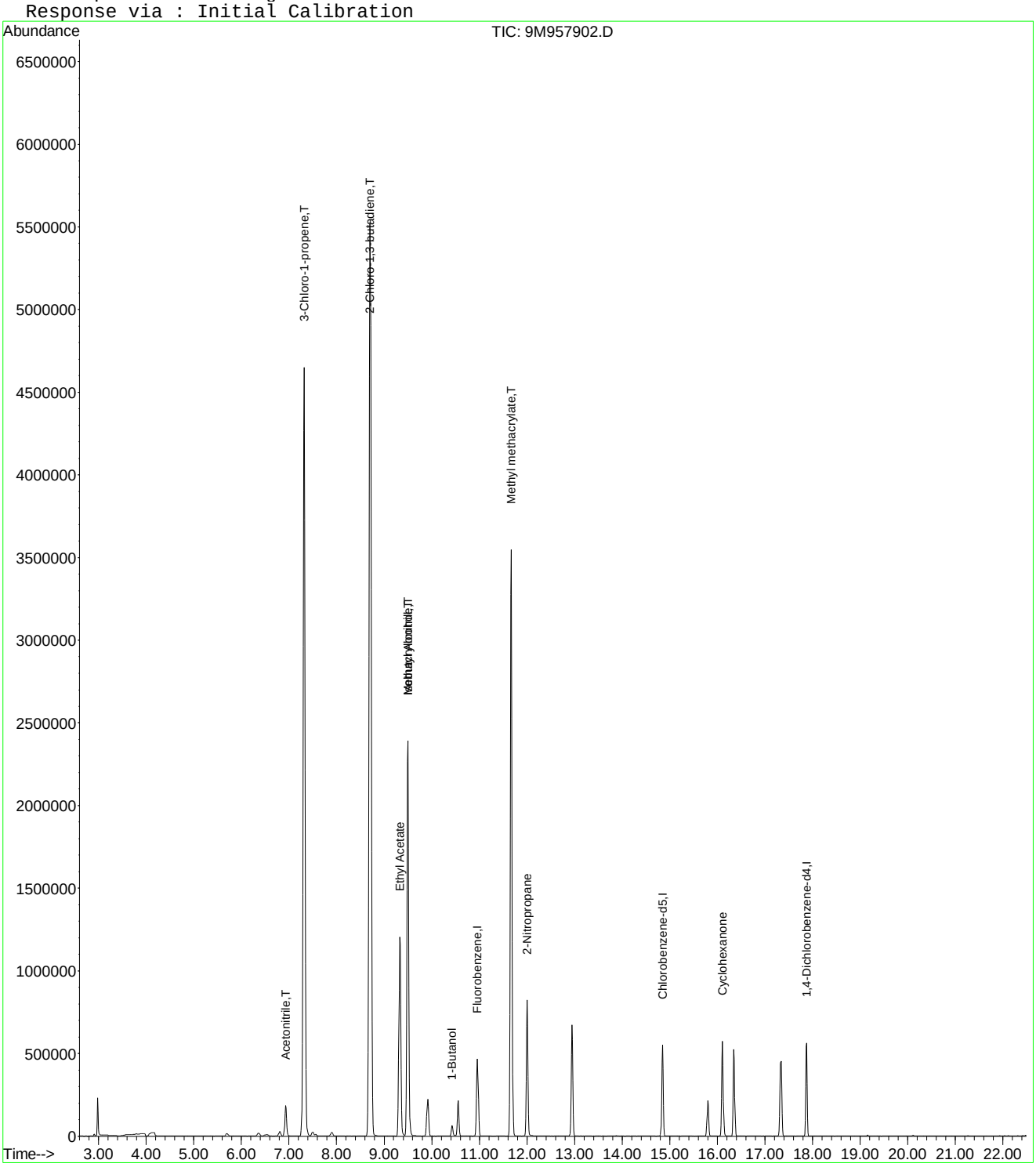

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957904.D Vial: 12
Acq On : 19 Aug 2013 20:45 Operator: adc
Sample : WG441888-09 100.0ug/L A9 ALT SRC 8260 Inst : HPMS9
Misc : 1,1 STD59238 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:51 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	586208	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	409219	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	211008	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	50132	98.8352 ug/L #	98
3) 3-Chloro-1-propene	7.32	41	816431	98.7834 ug/L	100
4) 2-Chloro-1,3-butadiene	8.70	53	671697	75.7179 ug/L	99
5) Ethyl Acetate	9.33	43	396368	99.5003 ug/L	99
6) Methacrylonitrile	9.50	67	193448	96.4696 ug/L	98
7) Isobutyl Alcohol	9.50	43	31033	91.2543 ug/L	97
8) 1-Butanol	10.42	56	7261	88.4379 ug/L	91
9) Methyl methacrylate	11.67	41	399116	94.8636 ug/L	100
10) 2-Nitropropane	12.00	43	115876	86.2281 ug/L	100
12) Cyclohexanone	16.11	55	11072	18.9239 ug/L	96

(#) = qualifier out of range (m) = manual integration
9M957904.D A9FOOWT.M Tue Aug 20 15:11:52 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957904.D Vial: 12
Acq On : 19 Aug 2013 20:45 Operator: adc
Sample : WG441888-09 100.0ug/L A9 ALT SRC 8260 Inst : HPMS9
Misc : 1,1 STD59238 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

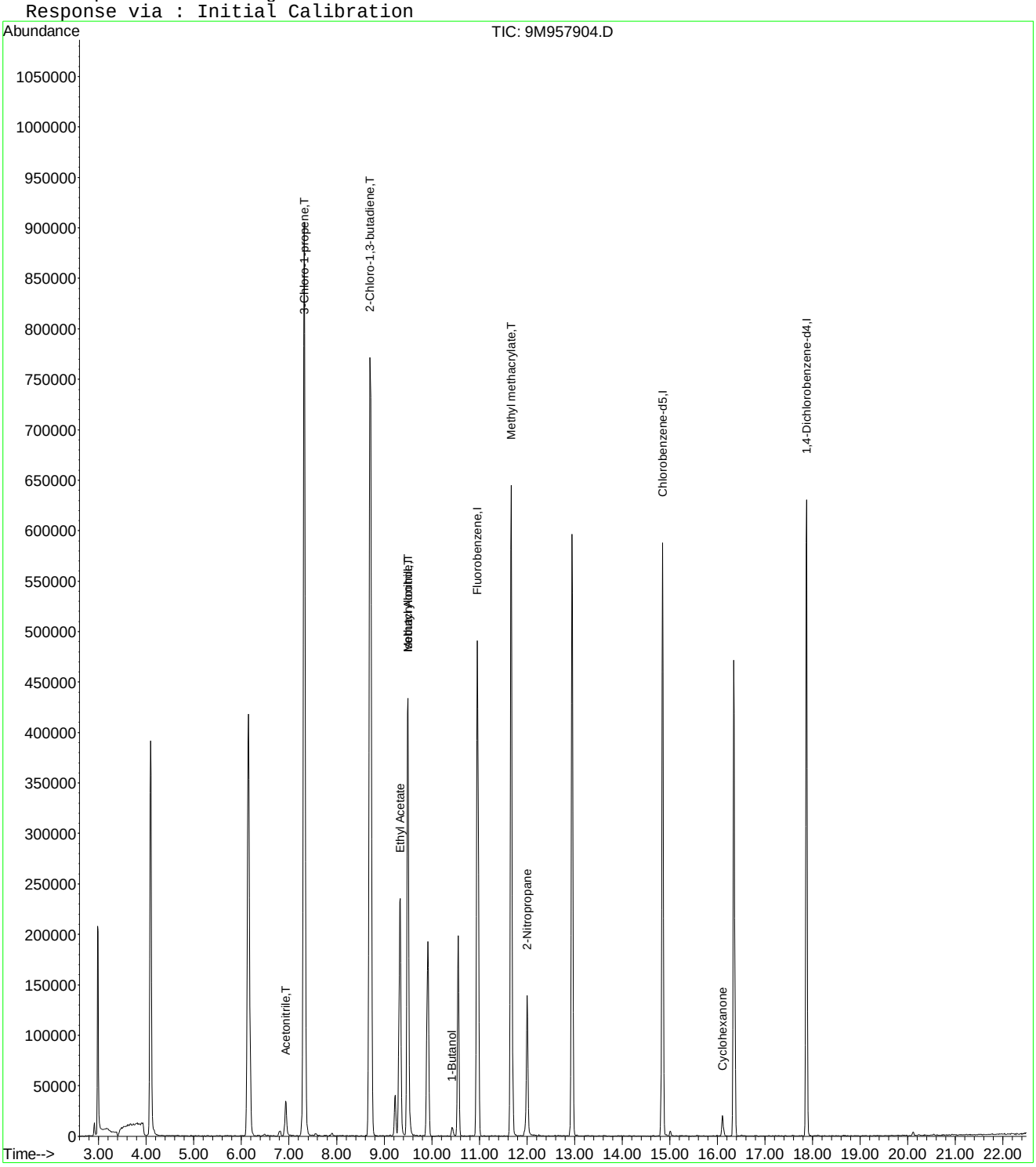

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\081913\9M957904.D Vial: 12
Acq On : 19 Aug 2013 20:45 Operator: adc
Sample : WG441888-09 100.0ug/L A9 ALT SRC 8260 Inst : HPMS9
Misc : 1,1 STD59238 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	102	0.00
2	T	Acetonitrile	100.0000	98.8352	1.2	102	0.00
3	T	3-Chloro-1-propene	100.0000	98.7834	1.2	102	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	75.7179	24.3	78	0.00
5		Ethyl Acetate	100.0000	99.5003	0.5	100	0.00
6	T	Methacrylonitrile	100.0000	96.4696	3.5	100	0.00
7	T	Isobutyl Alcohol	100.0000	91.2543	8.7	101	0.00
8		1-Butanol	100.0000	88.4379	11.6	106	0.00
9	T	Methyl methacrylate	100.0000	94.8636	5.1	97	0.00
10		2-Nitropropane	100.0000	86.2281	13.8	89	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
12		Cyclohexanone	100.0000	18.9239	81.1#	21	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M957904.D A9FOOWT.M Tue Aug 20 15:12:04 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961123.D Vial: 2
Acq On : 30 Jan 2014 9:30 Operator: ADC
Sample : WG461445-02 0.3 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 16:36:13 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 15:47:59 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.93	96	785712	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	580099	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.83	152	278868	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.87	111	243	0.0310 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.12%#	
43) 1,2-Dichloroethane-d4	10.52	65	887	0.0945 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.36%#	
58) Toluene-d8	12.92	98	3003	0.1177 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.48%#	
79) p-Bromofluorobenzene	16.31	95	1387	0.1226 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.48%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	470	1.3201 ug/L #	62
3) Chloromethane	3.78	50	5940	0.6920 ug/L #	64
4) Vinyl Chloride	4.02	62	2949	0.3507 ug/L	94
5) 1,3-Butadiene	4.09	54	2754	Below Cal #	45
6) Bromomethane	4.94	94	2184	0.3483 ug/L	96
7) Chloroethane	5.08	64	1997	0.3129 ug/L #	59
8) Trichlorofluoromethane	5.60	101	3241	0.4562 ug/L #	84
10) Isoprene	6.17	67	3595	0.3038 ug/L	82
12) 1,1,2-Trichloro-1,2,2-Trif	6.37	101	2026	0.2649 ug/L	98
13) Acetone	6.45	43	2571	0.9813 ug/L #	45
14) 1,1-Dichloroethene	6.69	61	4442	0.3021 ug/L	91
15) Tert-Butyl Alcohol	6.79	59	242	Below Cal #	3
16) Dimethyl Sulfide	6.96	62	2064	0.2244 ug/L	68
17) Iodomethane	7.23	142	531	1.1213 ug/L #	35
18) Methyl acetate	7.18	43	1857	0.2410 ug/L #	68
19) Methylene Chloride	7.45	84	2639	0.3070 ug/L	77
20) Carbon Disulfide	7.53	76	7014	0.2733 ug/L #	84
22) Methyl Tert Butyl Ether	7.67	73	6089	0.2699 ug/L #	65
23) trans-1,2-Dichloroethene	7.93	61	4411	0.3032 ug/L	99
24) n-Hexane	8.00	57	3869	0.2895 ug/L	96
26) Vinyl Acetate	8.51	43	2808	0.8983 ug/L #	81
27) 1,1-Dichloroethane	8.55	63	4717	0.2491 ug/L #	88
31) 2,2-Dichloropropane	9.32	77	4528	0.3191 ug/L	83
32) cis-1,2-Dichloroethene	9.39	96	3023	0.3180 ug/L	70
33) Chloroform	9.58	83	4207	0.2731 ug/L	84
35) Bromochloromethane	9.82	130	1075	0.2019 ug/L	85
38) 1,1,1-Trichloroethane	10.13	97	3741	0.2740 ug/L	100
39) Cyclohexane	10.16	56	5488	0.2901 ug/L	96
40) 1,1-Dichloropropene	10.32	75	3151	0.2737 ug/L	80
42) Carbon Tetrachloride	10.47	117	3479	0.2831 ug/L #	86
45) 1,2-Dichloroethane	10.64	62	3216	0.2353 ug/L	86
46) Benzene	10.69	78	10951	0.3125 ug/L	92
47) Trichloroethene	11.43	130	2693	0.2896 ug/L	87
48) Methylcyclohexane	11.53	83	4803	0.3483 ug/L	81
49) 1,2-Dichloropropane	11.65	63	3060	0.2864 ug/L	83
51) Bromodichloromethane	11.95	83	3119	0.2531 ug/L #	76
52) Dibromomethane	12.04	174	1548	0.2816 ug/L	87
53) 2-Chloroethyl Vinyl Ether	12.25	63	822	0.1556 ug/L	98
55) cis-1,3-Dichloropropene	12.58	75	3832	0.2649 ug/L	91
56) Dimethyl Disulfide	12.85	94	4638	0.2916 ug/L	95

(#) = qualifier out of range (m) = manual integration
9M961123.D 8260WTR.M Thu Jan 30 16:36:15 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961123.D Vial: 2
Acq On : 30 Jan 2014 9:30 Operator: ADC
Sample : WG461445-02 0.3 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 16:36:13 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 15:47:59 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
59)	Toluene	13.02	91	11046	0.3138 ug/L	99
60)	Ethyl Methacrylate	13.11	69	2288	0.2299 ug/L #	58
61)	trans-1,3-Dichloropropene	13.19	75	3109	0.2453 ug/L #	77
62)	1,1,2-Trichloroethane	13.40	97	1621	0.2496 ug/L	86
63)	2-Hexanone	13.36	43	746	0.1229 ug/L #	33
64)	1,3-Dichloropropane	13.71	76	3491	0.2766 ug/L	83
65)	Tetrachloroethene	13.84	164	2269	0.2881 ug/L	82
66)	Dibromochloromethane	14.10	129	1625	0.1931 ug/L #	63
67)	1,2-Dibromoethane	14.36	107	1972	0.2688 ug/L	92
68)	1-Chlorohexane	14.44	91	2815	0.2584 ug/L	99
69)	Chlorobenzene	14.85	112	7653	0.3128 ug/L	85
70)	1,1,1,2-Tetrachloroethane	14.89	131	2399	0.2649 ug/L	85
71)	Ethylbenzene	14.88	106	3649	0.2738 ug/L	77
72)	m-,p-Xylene	14.97	106	9329	0.5777 ug/L	98
73)	o-Xylene	15.54	106	5009	0.3024 ug/L	92
74)	Styrene	15.57	104	7591	0.2765 ug/L	91
75)	Bromoform	16.08	173	1225	0.4714 ug/L #	54
76)	Isopropylbenzene	15.96	105	12400	0.2958 ug/L	83
78)	1,1,2,2-Tetrachloroethane	16.17	83	1619	0.4324 ug/L #	66
80)	1,2,3-Trichloropropane	16.37	110	242	0.1881 ug/L #	1
81)	trans-1,4-Dichloro-2-Buten	16.42	53	334	0.4614 ug/L #	1
82)	n-Propylbenzene	16.47	91	13397	0.3025 ug/L	100
83)	Bromobenzene	16.61	156	2921	0.2869 ug/L	95
84)	1,3,5-Trimethylbenzene	16.65	105	9782	0.2860 ug/L	100
85)	2-Chlorotoluene	16.75	91	8965	0.3110 ug/L	99
86)	4-Chlorotoluene	16.79	91	5819	0.2163 ug/L	91
87)	a-Methylstyrene	17.07	118	4145	0.2387 ug/L	95
88)	tert-Butylbenzene	17.13	134	2177	0.2849 ug/L	90
89)	1,2,4-Trimethylbenzene	17.18	105	9932	0.2893 ug/L	95
90)	sec-Butylbenzene	17.40	105	12025	0.2847 ug/L	92
91)	p-Isopropyltoluene	17.55	119	9564	0.2872 ug/L	100
92)	1,3-Dichlorobenzene	17.75	146	4733	0.2466 ug/L	96
93)	1,4-Dichlorobenzene	17.88	146	5802	0.3016 ug/L #	12
94)	n-Butylbenzene	18.07	91	7552	0.2633 ug/L	96
95)	1,2-Dichlorobenzene	18.38	146	5264	0.2817 ug/L	91
97)	1,2,4-Trichlorobenzene	20.51	180	3344	0.2456 ug/L	87
98)	Hexachlorobutadiene	20.66	225	1872	0.2491 ug/L	88
99)	Naphthalene	20.88	128	6615	0.2451 ug/L #	76
100)	1,2,3-Trichlorobenzene	21.19	180	3649	0.2721 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M961123.D 8260WTR.M Thu Jan 30 16:36:15 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961123.D Vial: 2
Acq On : 30 Jan 2014 9:30 Operator: ADC
Sample : WG461445-02 0.3 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 16:36 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 15:47:59 2014
Response via : Initial Calibration

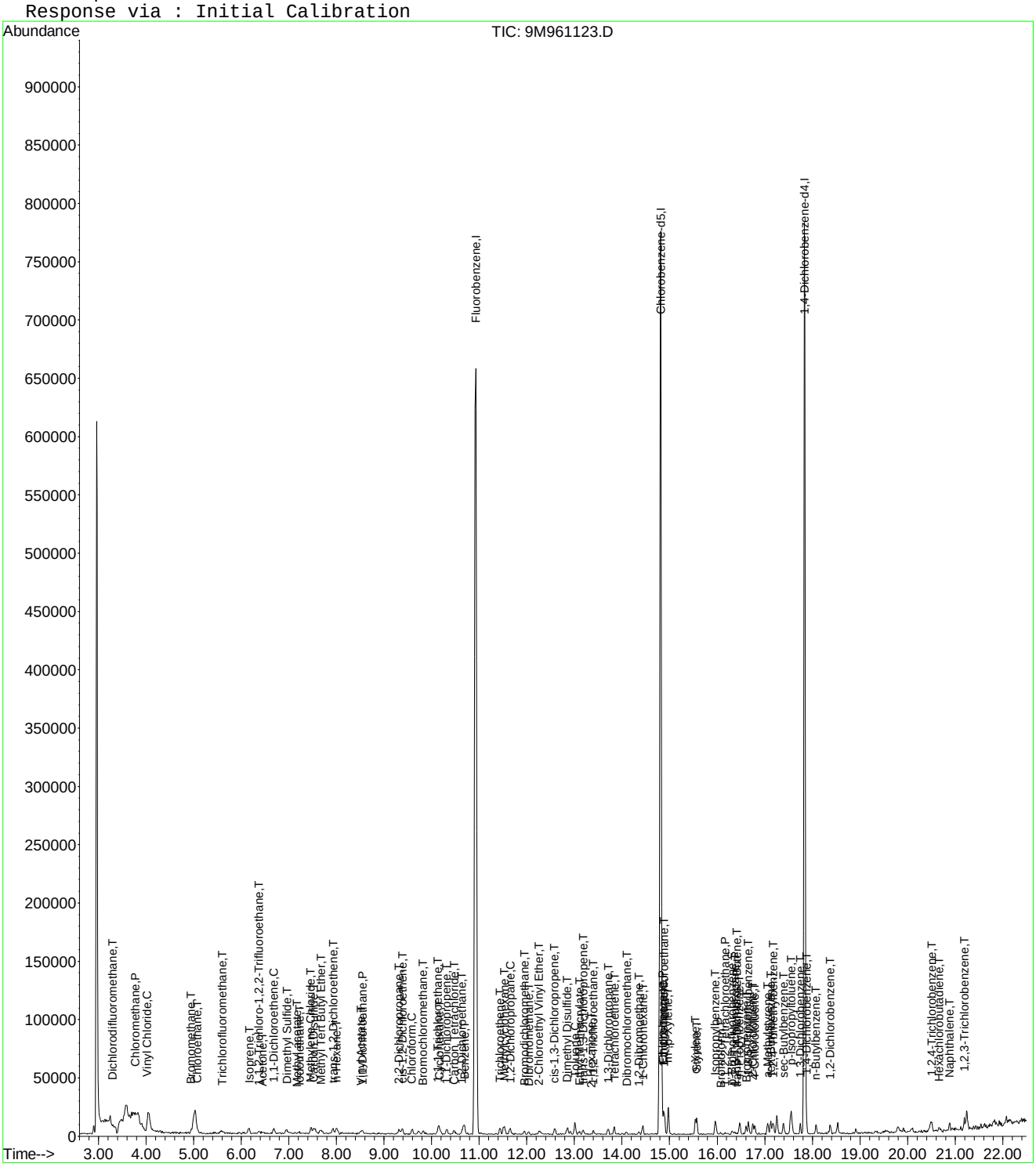

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961124.D Vial: 3
Acq On : 30 Jan 2014 9:58 Operator: ADC
Sample : WG461445-03 0.4 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 16:53:24 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.93	96	683422	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	492436	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	257331	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	10.52	65	1025	0.1255 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.52%#	
58) Toluene-d8	12.92	98	3391	0.1565 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.64%#	
79) p-Bromofluorobenzene	16.32	95	1621	0.1553 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.64%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	221	1.2148 ug/L #	62
3) Chloromethane	3.77	50	6264	0.8390 ug/L #	63
4) Vinyl Chloride	4.03	62	2398	0.3279 ug/L	88
6) Bromomethane	4.93	94	2707	0.4964 ug/L	85
7) Chloroethane	5.10	64	2030	0.3657 ug/L #	60
8) Trichlorofluoromethane	5.57	101	1286	0.3231 ug/L #	1
10) Isoprene	6.16	67	4268	0.4146 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.37	101	2417	0.3633 ug/L	56
13) Acetone	6.46	43	1839	0.8070 ug/L #	45
14) 1,1-Dichloroethene	6.68	61	4456	0.3484 ug/L	76
16) Dimethyl Sulfide	6.96	62	3081	0.3851 ug/L	88
17) Iodomethane	7.21	142	525	1.1295 ug/L #	35
18) Methyl acetate	7.23	43	2250	0.3358 ug/L #	68
19) Methylene Chloride	7.46	84	2717	0.3634 ug/L	80
20) Carbon Disulfide	7.52	76	8515	0.3814 ug/L	94
22) Methyl Tert Butyl Ether	7.69	73	7590	0.3868 ug/L	99
23) trans-1,2-Dichloroethene	7.92	61	4691	0.3707 ug/L	89
24) n-Hexane	7.99	57	3897	0.3353 ug/L	95
26) Vinyl Acetate	8.51	43	3759	0.9801 ug/L #	81
27) 1,1-Dichloroethane	8.54	63	6987	0.4243 ug/L #	88
29) 2-Butanone	9.10	43	450	0.1306 ug/L #	60
31) 2,2-Dichloropropane	9.32	77	4767	0.3863 ug/L	79
32) cis-1,2-Dichloroethene	9.39	96	3768	0.4557 ug/L	71
33) Chloroform	9.59	83	5223	0.3898 ug/L	83
34) 1-Bromopropane	9.74	122	195	0.3888 ug/L #	2
35) Bromochloromethane	9.83	130	1648	0.3558 ug/L	91
38) 1,1,1-Trichloroethane	10.11	97	5481	0.4615 ug/L #	68
39) Cyclohexane	10.16	56	6136	0.3728 ug/L	90
40) 1,1-Dichloropropene	10.32	75	3470	0.3465 ug/L #	70
42) Carbon Tetrachloride	10.47	117	4009	0.3751 ug/L #	88
45) 1,2-Dichloroethane	10.64	62	5113	0.4301 ug/L	88
46) Benzene	10.68	78	12781	0.4193 ug/L	93
47) Trichloroethene	11.43	130	3233	0.3997 ug/L	92
48) Methylcyclohexane	11.52	83	5117	0.4266 ug/L	86
49) 1,2-Dichloropropane	11.65	63	3197	0.3441 ug/L	78
51) Bromodichloromethane	11.95	83	3659	0.3414 ug/L #	89
52) Dibromomethane	12.04	174	1583	0.3311 ug/L	83
53) 2-Chloroethyl Vinyl Ether	12.24	63	1421	0.3092 ug/L #	51
54) 4-Methyl-2-Pentanone	12.27	58	630	0.2130 ug/L #	46
55) cis-1,3-Dichloropropene	12.58	75	4607	0.3661 ug/L	89

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961124.D Vial: 3
Acq On : 30 Jan 2014 9:58 Operator: ADC
Sample : WG461445-03 0.4 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 16:53:24 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.85	94	5204	0.3761 ug/L	90
59)	Toluene	13.00	91	12979	0.4344 ug/L	93
60)	Ethyl Methacrylate	13.11	69	2647	0.3133 ug/L #	58
61)	trans-1,3-Dichloropropene	13.18	75	3803	0.3535 ug/L	88
62)	1,1,2-Trichloroethane	13.40	97	1975	0.3582 ug/L	92
63)	2-Hexanone	13.34	43	1291	0.2505 ug/L #	30
64)	1,3-Dichloropropane	13.70	76	4592	0.4286 ug/L	95
65)	Tetrachloroethene	13.83	164	2623	0.3923 ug/L	89
66)	Dibromochloromethane	14.10	129	2573	0.3602 ug/L	99
67)	1,2-Dibromoethane	14.36	107	2232	0.3584 ug/L	90
68)	1-Chlorohexane	14.43	91	3739	0.4043 ug/L	95
69)	Chlorobenzene	14.85	112	8960	0.4314 ug/L	96
70)	1,1,1,2-Tetrachloroethane	14.89	131	2505	0.3259 ug/L	70
71)	Ethylbenzene	14.88	106	4606	0.4071 ug/L	96
72)	m-,p-Xylene	14.98	106	11497	0.8386 ug/L	96
73)	o-Xylene	15.54	106	5856	0.4164 ug/L	91
74)	Styrene	15.58	104	9278	0.3981 ug/L	96
75)	Bromoform	16.08	173	1687	0.3489 ug/L	89
76)	Isopropylbenzene	15.96	105	15960	0.4485 ug/L	98
78)	1,1,2,2-Tetrachloroethane	16.18	83	2176	0.5193 ug/L #	85
80)	1,2,3-Trichloropropane	16.37	110	536	0.3234 ug/L #	89
81)	trans-1,4-Dichloro-2-Buten	16.41	53	316	0.4639 ug/L	93
82)	n-Propylbenzene	16.48	91	15604	0.3818 ug/L	95
83)	Bromobenzene	16.61	156	3734	0.3974 ug/L	72
84)	1,3,5-Trimethylbenzene	16.66	105	11908	0.3773 ug/L	95
85)	2-Chlorotoluene	16.74	91	10630	0.3997 ug/L	96
86)	4-Chlorotoluene	16.80	91	8160	0.3287 ug/L	90
87)	a-Methylstyrene	17.07	118	5624	0.3510 ug/L	95
88)	tert-Butylbenzene	17.13	134	2891	0.4100 ug/L	88
89)	1,2,4-Trimethylbenzene	17.18	105	11880	0.3751 ug/L	91
90)	sec-Butylbenzene	17.39	105	14970	0.3841 ug/L	97
91)	p-Isopropyltoluene	17.55	119	11045	0.3594 ug/L	96
92)	1,3-Dichlorobenzene	17.75	146	7095	0.4005 ug/L	99
93)	1,4-Dichlorobenzene	17.88	146	6702	0.3776 ug/L	83
94)	n-Butylbenzene	18.08	91	8567	0.3237 ug/L	91
95)	1,2-Dichlorobenzene	18.38	146	6802	0.3944 ug/L	89
97)	1,2,4-Trichlorobenzene	20.52	180	4761	0.3790 ug/L	96
98)	Hexachlorobutadiene	20.66	225	2427	0.3499 ug/L #	73
99)	Naphthalene	20.89	128	8902	0.3575 ug/L	94
100)	1,2,3-Trichlorobenzene	21.19	180	4722	0.3815 ug/L	87

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961124.D Vial: 3
Acq On : 30 Jan 2014 9:58 Operator: ADC
Sample : WG461445-03 0.4 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 16:53 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration

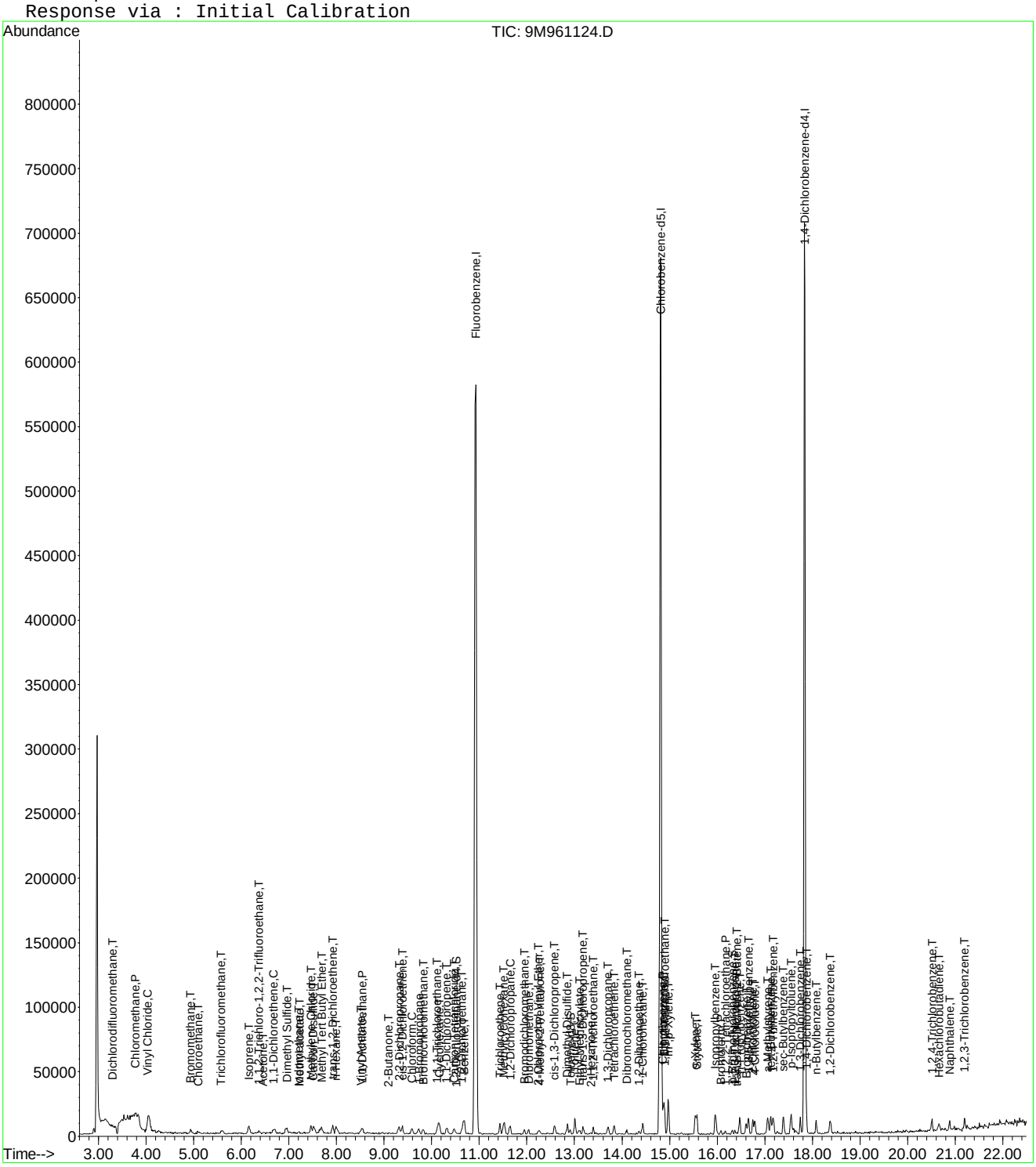

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961126.D Vial: 5
Acq On : 30 Jan 2014 10:56 Operator: ADC
Sample : WG461445-05 2.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 16:57:06 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	638324	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	459896	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	210949	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.88	111	6407	1.0060 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.04%#	
43) 1,2-Dichloroethane-d4	10.51	65	9300	1.2194 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.88%#	
58) Toluene-d8	12.91	98	24486	1.2102 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.84%#	
79) p-Bromofluorobenzene	16.31	95	9328	1.0901 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.36%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	2660	1.7440 ug/L #	62
3) Chloromethane	3.78	50	11507	1.6501 ug/L	87
4) Vinyl Chloride	4.02	62	12363	1.8098 ug/L	85
5) 1,3-Butadiene	4.07	54	12639	1.7601 ug/L	87
6) Bromomethane	4.94	94	10511	2.0636 ug/L	91
7) Chloroethane	5.09	64	9924	1.9140 ug/L	94
8) Trichlorofluoromethane	5.59	101	19950	2.0666 ug/L	96
9) Diethyl ether	6.12	59	141858	22.3869 ug/L	97
10) Isoprene	6.15	67	17452	1.8152 ug/L	98
11) Acrolein	6.37	56	7955	10.1910 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.37	101	11811	1.9006 ug/L	98
13) Acetone	6.45	43	5238	2.4609 ug/L	87
14) 1,1-Dichloroethene	6.69	61	23462	1.9639 ug/L	96
15) Tert-Butyl Alcohol	6.77	59	22001	44.5943 ug/L #	96
16) Dimethyl Sulfide	6.94	62	13874	1.8566 ug/L	91
17) Iodomethane	7.21	142	6068	1.8973 ug/L	90
18) Methyl acetate	7.21	43	13260	2.1186 ug/L #	85
19) Methylene Chloride	7.46	84	12871	1.8432 ug/L	79
20) Carbon Disulfide	7.52	76	38660	1.8540 ug/L	99
21) Acrylonitrile	7.65	53	26438	10.0536 ug/L	100
22) Methyl Tert Butyl Ether	7.68	73	35464	1.9352 ug/L	96
23) trans-1,2-Dichloroethene	7.93	61	22774	1.9270 ug/L	100
24) n-Hexane	8.00	57	18587	1.7121 ug/L	92
25) Diisopropyl ether	8.33	45	731985	22.9473 ug/L	100
26) Vinyl Acetate	8.52	43	20239	2.0938 ug/L	94
27) 1,1-Dichloroethane	8.54	63	31352	2.0384 ug/L	96
28) Ethyl-Tert-Butyl ether	8.91	59	583423	22.5141 ug/L	99
29) 2-Butanone	9.08	43	6872	2.1359 ug/L #	76
30) Propionitrile	9.19	54	18648	20.3104 ug/L	99
31) 2,2-Dichloropropane	9.32	77	23446	2.0340 ug/L	100
32) cis-1,2-Dichloroethene	9.37	96	15647	2.0258 ug/L	92
33) Chloroform	9.59	83	24807	1.9820 ug/L	99
34) 1-Bromopropane	9.72	122	2758	2.3000 ug/L	81
35) Bromochloromethane	9.83	130	8396	1.9409 ug/L	94
36) Tetrahydrofuran	9.84	42	41315	21.0010 ug/L	97
38) 1,1,1-Trichloroethane	10.13	97	22388	2.0183 ug/L	96
39) Cyclohexane	10.16	56	29367	1.9105 ug/L	99
40) 1,1-Dichloropropene	10.32	75	19061	2.0377 ug/L	98
41) Tert-Amyl-Methyl ether	10.42	73	397439	22.2029 ug/L	99
42) Carbon Tetrachloride	10.48	117	20582	2.0616 ug/L	89

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961126.D Vial: 5
Acq On : 30 Jan 2014 10:56 Operator: ADC
Sample : WG461445-05 2.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 16:57:06 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.63	62	21642	1.9492 ug/L	99
46)	Benzene	10.69	78	58851	2.0670 ug/L	98
47)	Trichloroethene	11.44	130	15875	2.1013 ug/L	95
48)	Methylcyclohexane	11.51	83	20880	1.8636 ug/L	94
49)	1,2-Dichloropropane	11.65	63	17235	1.9859 ug/L	94
50)	1,4-Dioxane	11.93	88	1943	53.5700 ug/L	75
51)	Bromodichloromethane	11.95	83	20967	2.0942 ug/L	97
52)	Dibromomethane	12.04	174	8882	1.9889 ug/L	92
53)	2-Chloroethyl Vinyl Ether	12.25	63	7735	1.8022 ug/L	89
54)	4-Methyl-2-Pentanone	12.27	58	4223	1.5290 ug/L	91
55)	cis-1,3-Dichloropropene	12.59	75	22599	1.9228 ug/L	99
56)	Dimethyl Disulfide	12.85	94	25679	1.9870 ug/L	98
59)	Toluene	13.01	91	54927	1.9683 ug/L	99
60)	Ethyl Methacrylate	13.09	69	15094	1.9132 ug/L	95
61)	trans-1,3-Dichloropropene	13.18	75	18051	1.7967 ug/L	100
62)	1,1,2-Trichloroethane	13.39	97	9747	1.8930 ug/L	99
63)	2-Hexanone	13.33	43	8265	1.7175 ug/L #	90
64)	1,3-Dichloropropane	13.70	76	18257	1.8245 ug/L	86
65)	Tetrachloroethene	13.84	164	12232	1.9588 ug/L	98
66)	Dibromochloromethane	14.10	129	12932	1.9383 ug/L	97
67)	1,2-Dibromoethane	14.36	107	10895	1.8734 ug/L	100
68)	1-Chlorohexane	14.44	91	16680	1.9311 ug/L	98
69)	Chlorobenzene	14.86	112	40528	2.0892 ug/L	95
70)	1,1,1,2-Tetrachloroethane	14.89	131	14220	1.9808 ug/L	98
71)	Ethylbenzene	14.88	106	20454	1.9357 ug/L	97
72)	m-,p-Xylene	14.98	106	52309	4.0856 ug/L	97
73)	o-Xylene	15.53	106	25502	1.9417 ug/L	96
74)	Styrene	15.57	104	43043	1.9776 ug/L	98
75)	Bromoform	16.07	173	8420	1.8645 ug/L	96
76)	Isopropylbenzene	15.96	105	64797	1.9499 ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.17	83	9597	1.7337 ug/L	96
80)	1,2,3-Trichloropropane	16.37	110	3979	2.1919 ug/L #	91
81)	trans-1,4-Dichloro-2-Buten	16.41	53	3720	1.7999 ug/L #	40
82)	n-Propylbenzene	16.47	91	67872	2.0259 ug/L	99
83)	Bromobenzene	16.61	156	14576	1.8926 ug/L	83
84)	1,3,5-Trimethylbenzene	16.66	105	53897	2.0831 ug/L	96
85)	2-Chlorotoluene	16.74	91	44039	2.0198 ug/L	100
86)	4-Chlorotoluene	16.79	91	42426	2.0850 ug/L	99
87)	a-Methylstyrene	17.06	118	24508	1.8661 ug/L	96
88)	tert-Butylbenzene	17.12	134	12272	2.1231 ug/L	98
89)	1,2,4-Trimethylbenzene	17.18	105	54053	2.0817 ug/L	98
90)	sec-Butylbenzene	17.39	105	65102	2.0377 ug/L	98
91)	p-Isopropyltoluene	17.55	119	51184	2.0320 ug/L	100
92)	1,3-Dichlorobenzene	17.74	146	28391	1.9552 ug/L	98
93)	1,4-Dichlorobenzene	17.88	146	26794	1.8413 ug/L	84
94)	n-Butylbenzene	18.08	91	38118	1.7568 ug/L	97
95)	1,2-Dichlorobenzene	18.38	146	27888	1.9728 ug/L	98
96)	1,2-Dibromo-3-Chloropropan	19.38	157	2338	1.7266 ug/L	98
97)	1,2,4-Trichlorobenzene	20.51	180	17781	1.7267 ug/L	98
98)	Hexachlorobutadiene	20.67	225	9453	1.6626 ug/L	95
99)	Naphthalene	20.89	128	38664	1.8939 ug/L	96
100)	1,2,3-Trichlorobenzene	21.20	180	18821	1.8550 ug/L	95

(#) = qualifier out of range (m) = manual integration
9M961126.D 8260WTR.M Thu Jan 30 16:58:35 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961126.D Vial: 5
Acq On : 30 Jan 2014 10:56 Operator: ADC
Sample : WG461445-05 2.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 16:57 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration

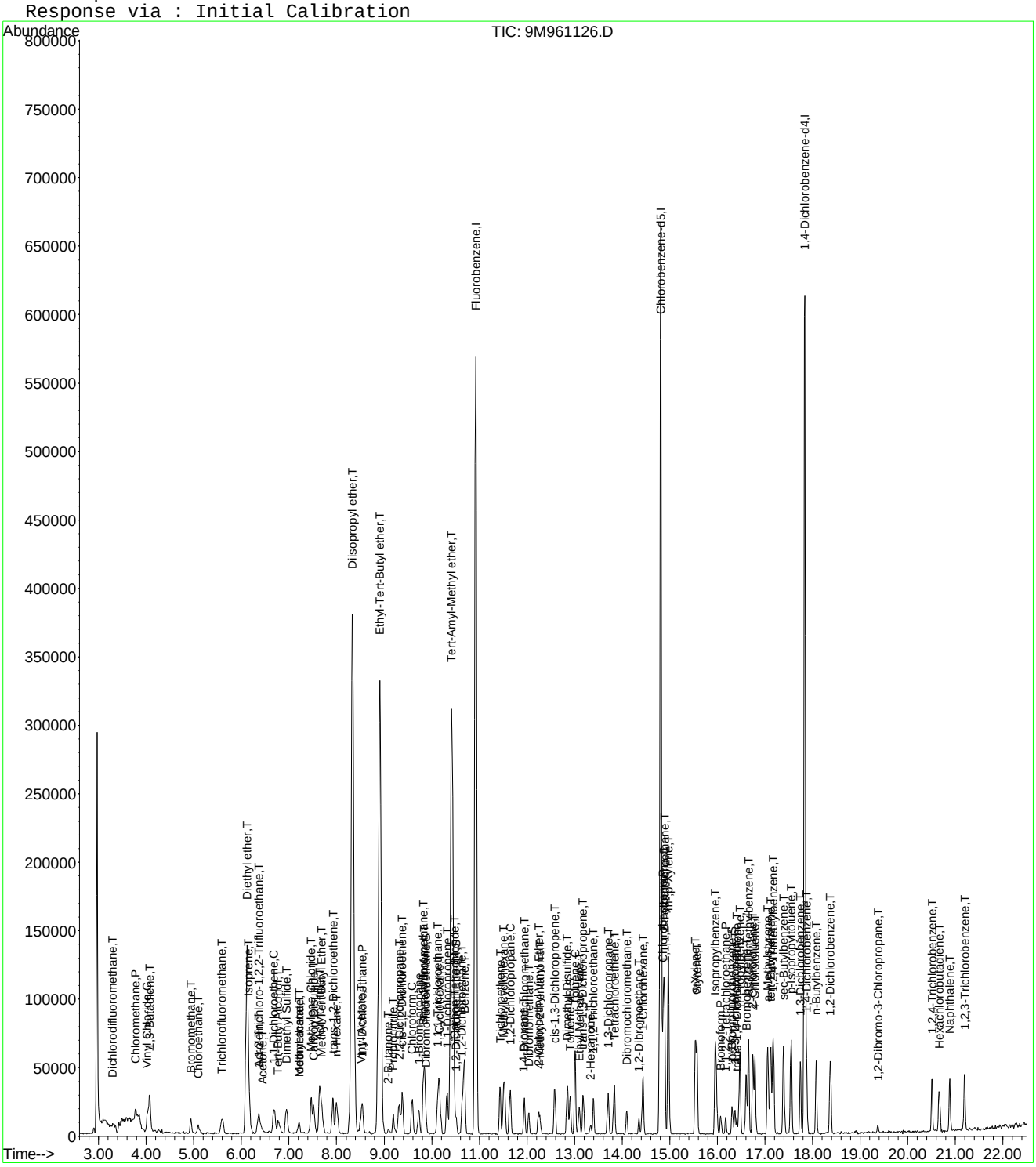

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961129.D Vial: 8
Acq On : 30 Jan 2014 12:22 Operator: ADC
Sample : WG461445-08 50.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:36 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	633808	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	474328	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	232079	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.88	111	168299	26.6147 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.44%		
43) 1,2-Dichloroethane-d4	10.51	65	188942	24.9498 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.80%		
58) Toluene-d8	12.91	98	515415	24.6980 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.80%		
79) p-Bromofluorobenzene	16.31	95	241112	25.6108 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.31	85	239594	53.2213 ug/L	100
3) Chloromethane	3.77	50	397878	57.4610 ug/L	100
4) Vinyl Chloride	4.02	62	404540	59.6420 ug/L	100
5) 1,3-Butadiene	4.06	54	277897	52.2246 ug/L	100
6) Bromomethane	4.94	94	251639	49.7551 ug/L	100
7) Chloroethane	5.10	64	295328	57.3630 ug/L	100
8) Trichlorofluoromethane	5.59	101	574115	53.9823 ug/L	100
9) Diethyl ether	6.12	59	682840	108.5281 ug/L	100
10) Isoprene	6.16	67	538770	56.4372 ug/L	100
11) Acrolein	6.35	56	46588	55.5387 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.37	101	344206	55.7823 ug/L	100
13) Acetone	6.45	43	107716	50.9675 ug/L	100
14) 1,1-Dichloroethene	6.69	61	665560	56.1075 ug/L	100
15) Tert-Butyl Alcohol	6.78	59	113247	205.0151 ug/L	100
16) Dimethyl Sulfide	6.95	62	419496	56.5373 ug/L	100
17) Iodomethane	7.20	142	382681	54.1160 ug/L	100
18) Methyl acetate	7.20	43	324952	52.2888 ug/L	100
19) Methylene Chloride	7.46	84	383327	55.2861 ug/L	100
20) Carbon Disulfide	7.51	76	1129535	54.5537 ug/L	100
21) Acrylonitrile	7.64	53	151091	57.8648 ug/L	100
22) Methyl Tert Butyl Ether	7.68	73	987319	54.2597 ug/L	100
23) trans-1,2-Dichloroethene	7.92	61	627510	53.4749 ug/L	100
24) n-Hexane	8.00	57	616377	57.1802 ug/L	100
25) Diisopropyl ether	8.33	45	3449642	108.9150 ug/L	100
26) Vinyl Acetate	8.51	43	792168	53.8590 ug/L	100
27) 1,1-Dichloroethane	8.54	63	805417	52.7376 ug/L	100
28) Ethyl-Tert-Butyl ether	8.91	59	2805741	109.0438 ug/L	100
29) 2-Butanone	9.08	43	159953	50.0703 ug/L	100
30) Propionitrile	9.19	54	104524	101.5129 ug/L	100
31) 2,2-Dichloropropane	9.31	77	626274	54.7182 ug/L	100
32) cis-1,2-Dichloroethene	9.37	96	401706	52.3795 ug/L	100
33) Chloroform	9.59	83	679286	54.6595 ug/L	100
34) 1-Bromopropane	9.73	122	72537	54.4572 ug/L	100
35) Bromochloromethane	9.82	130	235164	54.7507 ug/L	100
36) Tetrahydrofuran	9.84	42	216594	110.8821 ug/L	100
38) 1,1,1-Trichloroethane	10.12	97	582904	52.9239 ug/L	100
39) Cyclohexane	10.16	56	845043	55.3669 ug/L	100
40) 1,1-Dichloropropene	10.31	75	518191	55.7907 ug/L	100
41) Tert-Amyl-Methyl ether	10.42	73	1924548	108.2807 ug/L	100
42) Carbon Tetrachloride	10.47	117	530557	53.5215 ug/L	100

(#) = qualifier out of range (m) = manual integration
9M961129.D 8260WTR.M Thu Jan 30 17:06:37 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961129.D Vial: 8
Acq On : 30 Jan 2014 12:22 Operator: ADC
Sample : WG461445-08 50.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:36 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.64	62	587744	53.3140 ug/L	100
46)	Benzene	10.68	78	1514587	53.5743 ug/L	100
47)	Trichloroethene	11.43	130	389748	51.9559 ug/L	100
48)	Methylcyclohexane	11.52	83	606721	54.5372 ug/L	100
49)	1,2-Dichloropropane	11.65	63	470768	54.6308 ug/L	100
50)	1,4-Dioxane	11.93	88	10867	203.4385 ug/L	100
51)	Bromodichloromethane	11.95	83	542568	54.5787 ug/L	100
52)	Dibromomethane	12.04	174	244323	55.0994 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.24	63	232461	54.5489 ug/L	100
54)	4-Methyl-2-Pentanone	12.27	58	140209	51.1260 ug/L	100
55)	cis-1,3-Dichloropropene	12.58	75	638288	54.6961 ug/L	100
56)	Dimethyl Disulfide	12.85	94	711761	55.4668 ug/L	100
59)	Toluene	13.01	91	1523145	52.9199 ug/L	100
60)	Ethyl Methacrylate	13.09	69	449570	55.2497 ug/L	100
61)	trans-1,3-Dichloropropene	13.18	75	570689	55.0747 ug/L	100
62)	1,1,2-Trichloroethane	13.39	97	289275	54.4717 ug/L	100
63)	2-Hexanone	13.33	43	250621	50.4957 ug/L	100
64)	1,3-Dichloropropane	13.70	76	551279	53.4147 ug/L	100
65)	Tetrachloroethene	13.83	164	336982	52.3226 ug/L	100
66)	Dibromochloromethane	14.10	129	376196	54.6693 ug/L	100
67)	1,2-Dibromoethane	14.36	107	320215	53.3845 ug/L	100
68)	1-Chlorohexane	14.44	91	484141	54.3465 ug/L	100
69)	Chlorobenzene	14.86	112	1051115	52.5371 ug/L	100
70)	1,1,1,2-Tetrachloroethane	14.88	131	398997	53.8882 ug/L	100
71)	Ethylbenzene	14.88	106	578833	53.1109 ug/L	100
72)	m-,p-Xylene	14.98	106	1410365	106.8052 ug/L	100
73)	o-Xylene	15.53	106	712850	52.6241 ug/L	100
74)	Styrene	15.58	104	1204676	53.6641 ug/L	100
75)	Bromoform	16.07	173	270259	58.0250 ug/L	100
76)	Isopropylbenzene	15.96	105	1781011	51.9651 ug/L	100
78)	1,1,2,2-Tetrachloroethane	16.17	83	356150	50.5593 ug/L	100
80)	1,2,3-Trichloropropane	16.37	110	107384	51.6177 ug/L	100
81)	trans-1,4-Dichloro-2-Buten	16.41	53	153167	54.1053 ug/L	100
82)	n-Propylbenzene	16.46	91	2038119	55.2965 ug/L	100
83)	Bromobenzene	16.61	156	457373	53.9802 ug/L	100
84)	1,3,5-Trimethylbenzene	16.66	105	1555070	54.6310 ug/L	100
85)	2-Chlorotoluene	16.74	91	1242448	51.7946 ug/L	100
86)	4-Chlorotoluene	16.79	91	1231577	55.0157 ug/L	100
87)	a-Methylstyrene	17.06	118	801615	55.4785 ug/L	100
88)	tert-Butylbenzene	17.13	134	338409	53.2150 ug/L	100
89)	1,2,4-Trimethylbenzene	17.18	105	1579962	55.3065 ug/L	100
90)	sec-Butylbenzene	17.39	105	1939092	55.1691 ug/L	100
91)	p-Isopropyltoluene	17.55	119	1547216	55.8311 ug/L	100
92)	1,3-Dichlorobenzene	17.75	146	855061	53.5235 ug/L	100
93)	1,4-Dichlorobenzene	17.88	146	861680	53.8252 ug/L	100
94)	n-Butylbenzene	18.08	91	1382474	57.9148 ug/L	100
95)	1,2-Dichlorobenzene	18.38	146	842056	54.1432 ug/L	100
96)	1,2-Dibromo-3-Chloropropan	19.37	157	79530	53.3856 ug/L	100
97)	1,2,4-Trichlorobenzene	20.52	180	634343	55.9913 ug/L	100
98)	Hexachlorobutadiene	20.66	225	354842	56.7262 ug/L	100
99)	Naphthalene	20.89	128	1246427	55.4958 ug/L	100
100)	1,2,3-Trichlorobenzene	21.19	180	618069	55.3717 ug/L	100

(#) = qualifier out of range (m) = manual integration
9M961129.D 8260WTR.M Thu Jan 30 17:06:38 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961129.D Vial: 8
Acq On : 30 Jan 2014 12:22 Operator: ADC
Sample : WG461445-08 50.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration

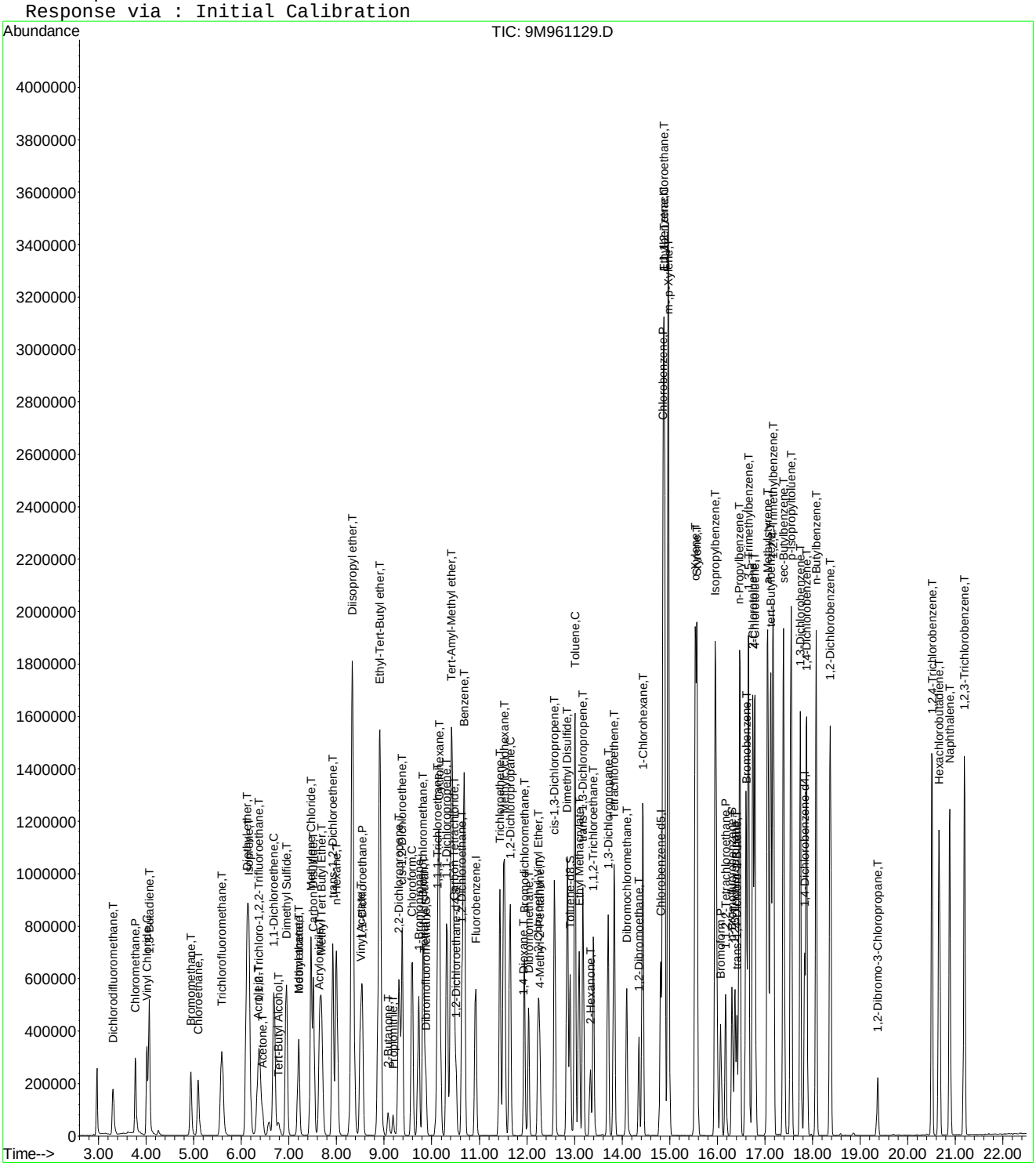

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961130.D Vial: 9
Acq On : 30 Jan 2014 12:51 Operator: ADC
Sample : WG461445-09 100.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:39 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.93	96	681141	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	501929	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	255914	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.87	111	340376	50.0864 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 200.36%#		
43) 1,2-Dichloroethane-d4	10.51	65	382631	47.0152 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 188.08%#		
58) Toluene-d8	12.91	98	1015372	45.9798 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 183.92%#		
79) p-Bromofluorobenzene	16.31	95	493144	47.5029 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 190.00%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	492704	100.7705 ug/L	100
3) Chloromethane	3.77	50	752611	101.1379 ug/L	98
4) Vinyl Chloride	4.01	62	803644	110.2491 ug/L	99
5) 1,3-Butadiene	4.06	54	500615	90.9045 ug/L	99
6) Bromomethane	4.93	94	502560	92.4631 ug/L	98
7) Chloroethane	5.10	64	581607	105.1181 ug/L	99
8) Trichlorofluoromethane	5.59	101	1151244	100.5427 ug/L	99
9) Diethyl ether	6.11	59	1361499	201.3545 ug/L	100
10) Isoprene	6.16	67	1057237	103.0516 ug/L	99
11) Acrolein	6.35	56	88640	97.6081 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.38	101	689388	103.9592 ug/L	99
13) Acetone	6.45	43	218862	96.3617 ug/L	99
14) 1,1-Dichloroethene	6.68	61	1321444	103.6580 ug/L	100
15) Tert-Butyl Alcohol	6.78	59	261552	387.8886 ug/L	97
16) Dimethyl Sulfide	6.95	62	821746	103.0542 ug/L	100
17) Iodomethane	7.20	142	772979	100.7791 ug/L	100
18) Methyl acetate	7.20	43	680346	101.8685 ug/L	100
19) Methylene Chloride	7.46	84	754330	101.2346 ug/L	100
20) Carbon Disulfide	7.51	76	2235871	100.4828 ug/L	99
21) Acrylonitrile	7.64	53	316637	112.8388 ug/L	100
22) Methyl Tert Butyl Ether	7.67	73	1977709	101.1354 ug/L	100
23) trans-1,2-Dichloroethene	7.92	61	1239938	98.3219 ug/L	100
24) n-Hexane	8.00	57	1250394	107.9361 ug/L	99
25) Diisopropyl ether	8.33	45	6666655	195.8585 ug/L	99
26) Vinyl Acetate	8.50	43	1620077	101.8197 ug/L	98
27) 1,1-Dichloroethane	8.54	63	1596201	97.2540 ug/L	99
28) Ethyl-Tert-Butyl ether	8.91	59	5531499	200.0401 ug/L	99
29) 2-Butanone	9.09	43	352797	102.7621 ug/L	100
30) Propionitrile	9.19	54	219652	195.7976 ug/L	98
31) 2,2-Dichloropropane	9.31	77	1233938	100.3187 ug/L	99
32) cis-1,2-Dichloroethene	9.37	96	788565	95.6778 ug/L	99
33) Chloroform	9.58	83	1344385	100.6601 ug/L	99
34) 1-Bromopropane	9.73	122	142351	99.2342 ug/L	100
35) Bromochloromethane	9.82	130	476307	103.1874 ug/L	96
36) Tetrahydrofuran	9.84	42	446568	212.7273 ug/L	99
38) 1,1,1-Trichloroethane	10.12	97	1156789	97.7303 ug/L	99
39) Cyclohexane	10.16	56	1677720	102.2850 ug/L	99
40) 1,1-Dichloropropene	10.32	75	1021812	102.3679 ug/L	99
41) Tert-Amyl-Methyl ether	10.42	73	3852445	201.6878 ug/L	99
42) Carbon Tetrachloride	10.47	117	1073841	100.7992 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M961130.D 8260WTR.M Thu Jan 30 17:06:41 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961130.D Vial: 9
Acq On : 30 Jan 2014 12:51 Operator: ADC
Sample : WG461445-09 100.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:39 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.64	62	1149188	96.9984	ug/L	100
46)	Benzene	10.68	78	2945584	96.9515	ug/L	100
47)	Trichloroethene	11.43	130	767857	95.2472	ug/L	99
48)	Methylcyclohexane	11.52	83	1211898	101.3655	ug/L	98
49)	1,2-Dichloropropane	11.65	63	922593	99.6234	ug/L	100
50)	1,4-Dioxane	11.93	88	24832	408.6694	ug/L	100
51)	Bromodichloromethane	11.95	83	1079262	101.0222	ug/L	99
52)	Dibromomethane	12.03	174	493379	103.5341	ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.24	63	488310	106.6232	ug/L	100
54)	4-Methyl-2-Pentanone	12.27	58	302183	102.5314	ug/L	99
55)	cis-1,3-Dichloropropene	12.58	75	1276966	101.8215	ug/L	100
56)	Dimethyl Disulfide	12.85	94	1407596	102.0700	ug/L	100
59)	Toluene	13.01	91	2929822	96.1956	ug/L	99
60)	Ethyl Methacrylate	13.10	69	885347	102.8212	ug/L	99
61)	trans-1,3-Dichloropropene	13.18	75	1132028	103.2396	ug/L	99
62)	1,1,2-Trichloroethane	13.40	97	570879	101.5875	ug/L	100
63)	2-Hexanone	13.33	43	537759	102.3909	ug/L	99
64)	1,3-Dichloropropane	13.71	76	1080323	98.9189	ug/L	100
65)	Tetrachloroethene	13.83	164	671104	98.4712	ug/L	100
66)	Dibromochloromethane	14.10	129	743561	102.1133	ug/L	98
67)	1,2-Dibromoethane	14.36	107	649923	102.3933	ug/L	97
68)	1-Chlorohexane	14.44	91	973183	103.2358	ug/L	100
69)	Chlorobenzene	14.85	112	2056839	97.1522	ug/L	98
70)	1,1,1,2-Tetrachloroethane	14.88	131	796416	101.6485	ug/L	99
71)	Ethylbenzene	14.88	106	1150532	99.7621	ug/L	98
72)	m-,p-Xylene	14.98	106	2740584	196.1283	ug/L	99
73)	o-Xylene	15.53	106	1419661	99.0394	ug/L	98
74)	Styrene	15.58	104	2414315	101.6352	ug/L	99
75)	Bromoform	16.07	173	567241	115.0904	ug/L	99
76)	Isopropylbenzene	15.96	105	3562390	98.2253	ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.18	83	763218	98.0276	ug/L	99
80)	1,2,3-Trichloropropane	16.37	110	229050	99.7607	ug/L	97
81)	trans-1,4-Dichloro-2-Buten	16.41	53	285545	91.2213	ug/L	83
82)	n-Propylbenzene	16.46	91	4056352	99.8035	ug/L	98
83)	Bromobenzene	16.61	156	926339	99.1460	ug/L	99
84)	1,3,5-Trimethylbenzene	16.66	105	3102348	98.8375	ug/L	98
85)	2-Chlorotoluene	16.74	91	2494203	94.2931	ug/L	91
86)	4-Chlorotoluene	16.80	91	2528097	102.4143	ug/L	88
87)	a-Methylstyrene	17.06	118	1647236	103.3848	ug/L	99
88)	tert-Butylbenzene	17.13	134	681661	97.2081	ug/L	99
89)	1,2,4-Trimethylbenzene	17.18	105	3149860	99.9914	ug/L	98
90)	sec-Butylbenzene	17.39	105	3881003	100.1343	ug/L	100
91)	p-Isopropyltoluene	17.55	119	3106680	101.6631	ug/L	100
92)	1,3-Dichlorobenzene	17.75	146	1746032	99.1155	ug/L	99
93)	1,4-Dichlorobenzene	17.88	146	1769885	100.2597	ug/L	99
94)	n-Butylbenzene	18.08	91	2828333	107.4497	ug/L	99
95)	1,2-Dichlorobenzene	18.38	146	1721942	100.4068	ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.37	157	169506	103.1859	ug/L	98
97)	1,2,4-Trichlorobenzene	20.52	180	1331227	106.5590	ug/L	99
98)	Hexachlorobutadiene	20.66	225	749575	108.6691	ug/L	99
99)	Naphthalene	20.89	128	2591353	104.6314	ug/L	100
100)	1,2,3-Trichlorobenzene	21.19	180	1268192	103.0332	ug/L	99

(#) = qualifier out of range (m) = manual integration
9M961130.D 8260WTR.M Thu Jan 30 17:06:41 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961130.D Vial: 9
Acq On : 30 Jan 2014 12:51 Operator: ADC
Sample : WG461445-09 100.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration

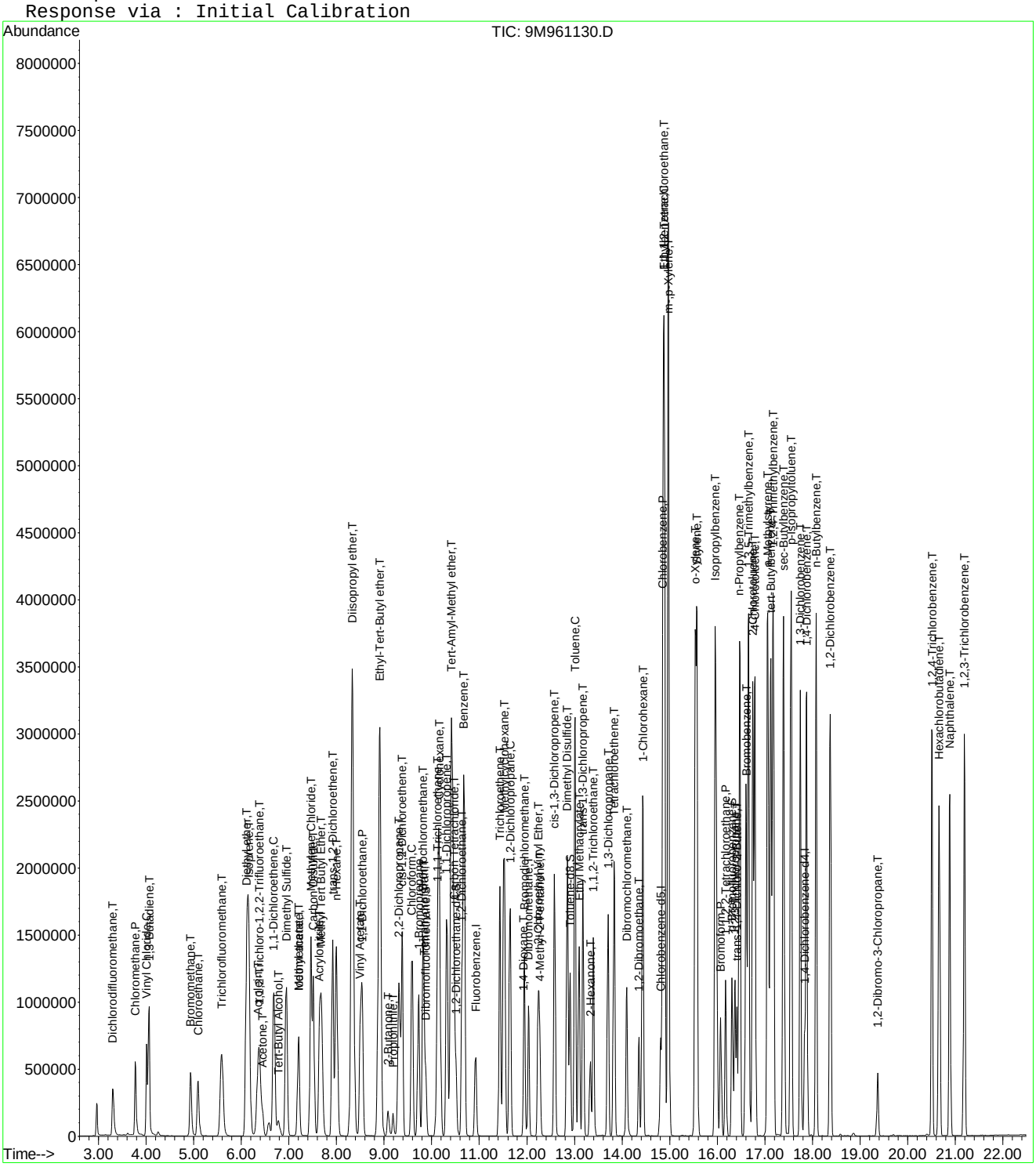

9M961130.D 8260WTR.M Thu Jan 30 17:06:42 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961131.D Vial: 10
Acq On : 30 Jan 2014 13:20 Operator: ADC
Sample : WG461445-10 200.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:43 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	635182	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	475591	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	254469	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.88	111	657491	103.7503 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 415.00%#		
43) 1,2-Dichloroethane-d4	10.51	65	741786	97.7408 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 390.96%#		
58) Toluene-d8	12.91	98	1960506	93.6955 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 374.80%#		
79) p-Bromofluorobenzene	16.31	95	985179	95.4378 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 381.76%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	939535	204.8399 ug/L	99
3) Chloromethane	3.77	50	1504651	216.8294 ug/L	98
4) Vinyl Chloride	4.01	62	1542367	226.9019 ug/L	98
5) 1,3-Butadiene	4.05	54	934296	202.3389 ug/L	99
6) Bromomethane	4.93	94	1021983	201.6336 ug/L	97
7) Chloroethane	5.09	64	1138318	220.6228 ug/L	99
8) Trichlorofluoromethane	5.58	101	2211763	206.9144 ug/L	100
9) Diethyl ether	6.13	59	3015	0.4782 ug/L	79
10) Isoprene	6.15	67	2022431	211.3952 ug/L	100
11) Acrolein	6.40	56	186	1.1505 ug/L #	1
12) 1,1,2-Trichloro-1,2,2-Trif	6.38	101	1326532	214.5140 ug/L	100
13) Acetone	6.45	43	442929	209.1255 ug/L	99
14) 1,1-Dichloroethene	6.68	61	2516319	211.6697 ug/L	99
15) Tert-Butyl Alcohol	6.68	59	88575	164.8770 ug/L #	57
16) Dimethyl Sulfide	6.95	62	1584825	213.1318 ug/L	100
17) Iodomethane	7.20	142	1486783	206.7403 ug/L	99
18) Methyl acetate	7.20	43	1288649	206.9110 ug/L	99
19) Methylene Chloride	7.46	84	1471213	211.7297 ug/L	98
20) Carbon Disulfide	7.51	76	4219900	203.3697 ug/L	99
21) Acrylonitrile	7.67	53	46733	17.8591 ug/L #	31
22) Methyl Tert Butyl Ether	7.67	73	3856961	211.5070 ug/L	99
23) trans-1,2-Dichloroethene	7.92	61	2400793	204.1474 ug/L	100
24) n-Hexane	8.00	57	2361694	218.6163 ug/L	99
26) Vinyl Acetate	8.50	43	3118945	209.4102 ug/L	98
27) 1,1-Dichloroethane	8.54	63	3064474	200.2234 ug/L	99
29) 2-Butanone	9.09	43	671392	209.7119 ug/L	98
30) Propionitrile	9.16	54	207	3.0238 ug/L #	60
31) 2,2-Dichloropropane	9.31	77	2365543	206.2329 ug/L	98
32) cis-1,2-Dichloroethene	9.37	96	1524597	198.3662 ug/L	99
33) Chloroform	9.59	83	2606883	209.3119 ug/L	99
34) 1-Bromopropane	9.73	122	271276	202.5273 ug/L	97
35) Bromochloromethane	9.82	130	929357	215.9043 ug/L	95
38) 1,1,1-Trichloroethane	10.12	97	2242948	203.2044 ug/L	100
39) Cyclohexane	10.16	56	3157345	206.4207 ug/L	99
40) 1,1-Dichloropropene	10.32	75	1968662	211.4963 ug/L	99
42) Carbon Tetrachloride	10.47	117	2056395	206.9963 ug/L	98
45) 1,2-Dichloroethane	10.64	62	2215264	200.5108 ug/L	99
46) Benzene	10.68	78	5580705	196.9750 ug/L	99
47) Trichloroethene	11.43	130	1475221	196.2310 ug/L	98
48) Methylcyclohexane	11.52	83	2297532	206.0747 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M961131.D 8260WTR.M Thu Jan 30 17:06:45 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961131.D Vial: 10
Acq On : 30 Jan 2014 13:20 Operator: ADC
Sample : WG461445-10 200.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:43 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
49)	1,2-Dichloropropane	11.65	63	1787907	207.0307 ug/L	99
50)	1,4-Dioxane	11.94	88	2812	68.2700 ug/L #	6
51)	Bromodichloromethane	11.95	83	2099748	210.7637 ug/L	100
52)	Dibromomethane	12.03	174	970515	218.3957 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.24	63	953876	223.3505 ug/L	100
54)	4-Methyl-2-Pentanone	12.27	58	580843	211.3414 ug/L	98
55)	cis-1,3-Dichloropropene	12.58	75	2486245	212.5900 ug/L	100
56)	Dimethyl Disulfide	12.85	94	2701123	210.0405 ug/L	98
59)	Toluene	13.01	91	5595031	193.8765 ug/L	98
60)	Ethyl Methacrylate	13.10	69	1766605	216.5296 ug/L	98
61)	trans-1,3-Dichloropropene	13.18	75	2263531	217.8635 ug/L	100
62)	1,1,2-Trichloroethane	13.40	97	1140922	214.2698 ug/L	98
63)	2-Hexanone	13.33	43	1071068	215.2283 ug/L	98
64)	1,3-Dichloropropane	13.71	76	2107033	203.6131 ug/L	100
65)	Tetrachloroethene	13.83	164	1317545	204.0298 ug/L	99
66)	Dibromochloromethane	14.10	129	1483783	215.0526 ug/L	98
67)	1,2-Dibromoethane	14.36	107	1296585	215.5854 ug/L	98
68)	1-Chlorohexane	14.44	91	1893128	211.9456 ug/L	99
69)	Chlorobenzene	14.86	112	3937381	196.2766 ug/L	99
70)	1,1,1,2-Tetrachloroethane	14.88	131	1551938	209.0470 ug/L	99
71)	Ethylbenzene	14.88	106	2208029	202.0599 ug/L	93
72)	m-,p-Xylene	14.98	106	5148729	388.8713 ug/L	92
73)	o-Xylene	15.53	106	2747682	202.3012 ug/L	96
74)	Styrene	15.58	104	4652554	206.7047 ug/L	98
75)	Bromoform	16.07	173	1166547	249.7943 ug/L	97
76)	Isopropylbenzene	15.96	105	6723758	195.6602 ug/L	97
78)	1,1,2,2-Tetrachloroethane	16.18	83	1568508	202.3446 ug/L	100
80)	1,2,3-Trichloropropane	16.37	110	462591	202.5272 ug/L	90
81)	trans-1,4-Dichloro-2-Buten	16.41	53	639852	205.1141 ug/L	87
82)	n-Propylbenzene	16.47	91	7624517	188.6607 ug/L	96
83)	Bromobenzene	16.61	156	1854618	199.6269 ug/L	98
84)	1,3,5-Trimethylbenzene	16.66	105	6040636	193.5410 ug/L	97
85)	2-Chlorotoluene	16.74	91	4798657	182.4428 ug/L	98
86)	4-Chlorotoluene	16.80	91	4949155	201.6308 ug/L	98
87)	a-Methylstyrene	17.06	118	3182445	200.8727 ug/L	100
88)	tert-Butylbenzene	17.13	134	1376848	197.4601 ug/L	96
89)	1,2,4-Trimethylbenzene	17.18	105	6045642	193.0070 ug/L	96
90)	sec-Butylbenzene	17.39	105	7352812	190.7883 ug/L	97
91)	p-Isopropyltoluene	17.55	119	6019517	198.1014 ug/L	97
92)	1,3-Dichlorobenzene	17.75	146	3483449	198.8648 ug/L	97
93)	1,4-Dichlorobenzene	17.88	146	3515351	200.2668 ug/L	99
94)	n-Butylbenzene	18.08	91	5555578	212.2575 ug/L	98
95)	1,2-Dichlorobenzene	18.38	146	3382336	198.3447 ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.37	157	362229	221.7571 ug/L	100
97)	1,2,4-Trichlorobenzene	20.52	180	2795240	225.0175 ug/L	98
98)	Hexachlorobutadiene	20.66	225	1533226	223.5404 ug/L	99
99)	Naphthalene	20.89	128	5203844	211.3094 ug/L	98
100)	1,2,3-Trichlorobenzene	21.19	180	2632429	215.0840 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M961131.D 8260WTR.M Thu Jan 30 17:06:45 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961131.D Vial: 10
Acq On : 30 Jan 2014 13:20 Operator: ADC
Sample : WG461445-10 200.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration

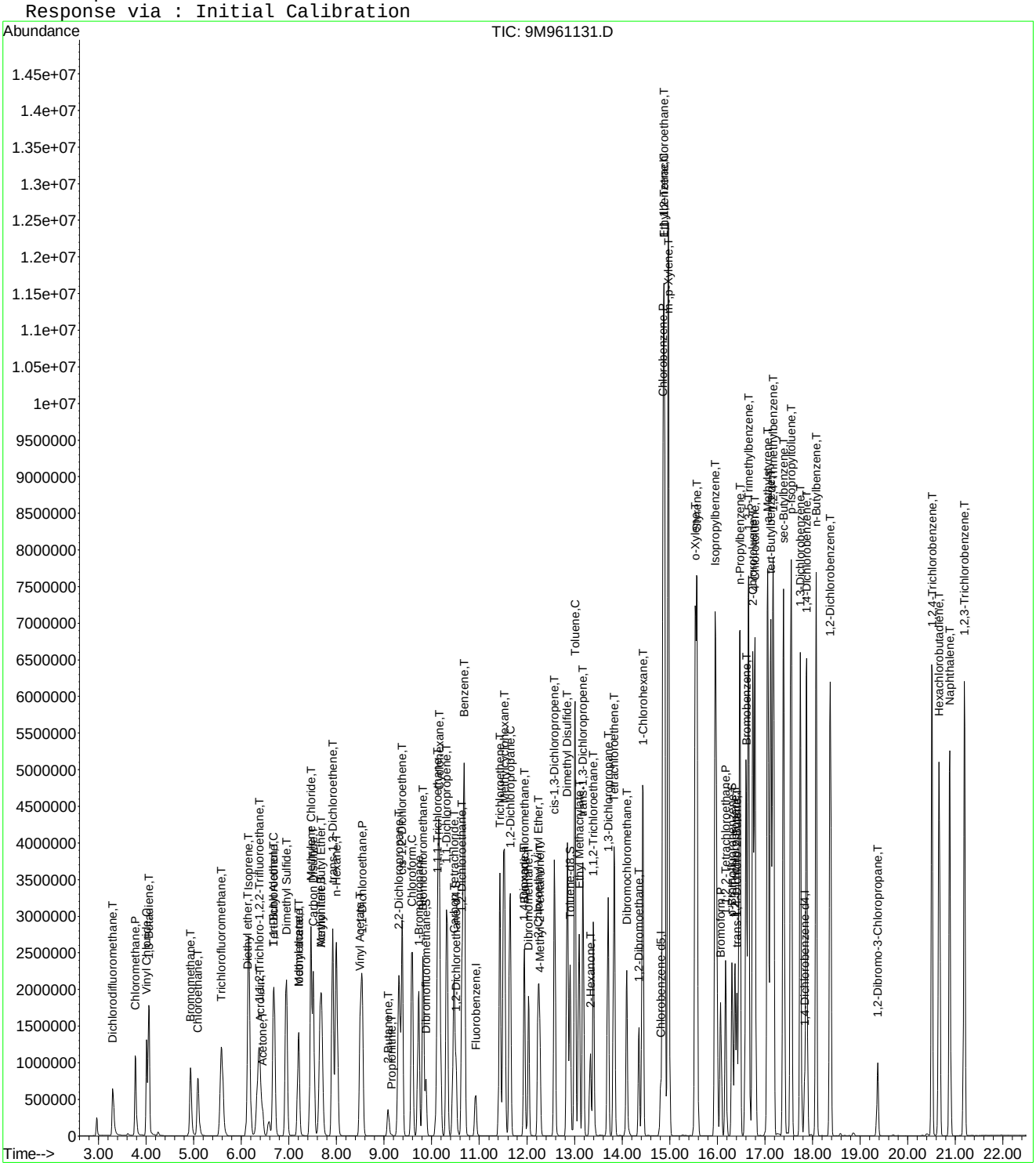

9M961131.D 8260WTR.M Thu Jan 30 17:06:46 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961132.D Vial: 11
Acq On : 30 Jan 2014 13:49 Operator: ADC
Sample : WG461445-11 300.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:46 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	639184	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	491237	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	273810	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.88	111	928586	145.6110 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 582.44%#		
43) 1,2-Dichloroethane-d4	10.52	65	1045485	136.8949 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 547.56%#		
58) Toluene-d8	12.91	98	2754659	127.4562 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 509.84%#		
79) p-Bromofluorobenzene	16.31	95	1496743	134.7529 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 539.00%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	1350113	292.0113 ug/L	99
3) Chloromethane	3.78	50	2233179	319.7998 ug/L	98
4) Vinyl Chloride	4.01	62	2105304	307.7779 ug/L	98
5) 1,3-Butadiene	4.05	54	1265245	301.8013 ug/L	99
6) Bromomethane	4.93	94	1484668	291.0857 ug/L	99
7) Chloroethane	5.09	64	1645641	316.9526 ug/L	99
8) Trichlorofluoromethane	5.58	101	3098604	287.9820 ug/L	99
9) Diethyl ether	6.12	59	1904286	300.1147 ug/L	98
10) Isoprene	6.15	67	2830482	294.0046 ug/L	99
11) Acrolein	6.35	56	130511	152.6182 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.37	101	1864200	299.5730 ug/L	100
13) Acetone	6.45	43	640489	300.5085 ug/L	99
14) 1,1-Dichloroethene	6.68	61	3530364	295.1105 ug/L	98
15) Tert-Butyl Alcohol	6.79	59	437471	605.0486 ug/L	97
16) Dimethyl Sulfide	6.95	62	2238879	299.2057 ug/L	99
17) Iodomethane	7.20	142	2094340	288.9744 ug/L	99
18) Methyl acetate	7.20	43	1866515	297.8192 ug/L	98
19) Methylene Chloride	7.46	84	2072373	296.3784 ug/L	96
20) Carbon Disulfide	7.51	76	5908030	282.9430 ug/L	98
21) Acrylonitrile	7.64	53	491762	186.7509 ug/L	95
22) Methyl Tert Butyl Ether	7.68	73	5454798	297.2559 ug/L	99
23) trans-1,2-Dichloroethene	7.92	61	3343709	282.5465 ug/L	99
24) n-Hexane	8.00	57	3259279	299.8145 ug/L	100
25) Diisopropyl ether	8.33	45	9023525	282.5021 ug/L	98
26) Vinyl Acetate	8.50	43	4297097	286.4310 ug/L	98
27) 1,1-Dichloroethane	8.54	63	4253459	276.1680 ug/L	99
28) Ethyl-Tert-Butyl ether	8.91	59	7620853	293.6899 ug/L	98
29) 2-Butanone	9.08	43	995371	308.9614 ug/L	98
30) Propionitrile	9.20	54	335224	316.6615 ug/L	97
31) 2,2-Dichloropropane	9.31	77	3283972	284.5109 ug/L	98
32) cis-1,2-Dichloroethene	9.37	96	2157322	278.9330 ug/L	100
33) Chloroform	9.59	83	3649750	291.2111 ug/L	99
34) 1-Bromopropane	9.73	122	397510	294.7964 ug/L	98
35) Bromochloromethane	9.82	130	1327339	306.4311 ug/L	92
36) Tetrahydrofuran	9.84	42	638197	323.9676 ug/L	96
38) 1,1,1-Trichloroethane	10.12	97	3149695	283.5664 ug/L	100
39) Cyclohexane	10.16	56	4403241	286.0724 ug/L	98
40) 1,1-Dichloropropene	10.31	75	2756146	294.2430 ug/L	97
41) Tert-Amyl-Methyl ether	10.42	73	5366455	299.3931 ug/L	99
42) Carbon Tetrachloride	10.47	117	2903839	290.4697 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961132.D Vial: 11
Acq On : 30 Jan 2014 13:49 Operator: ADC
Sample : WG461445-11 300.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:46 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.64	62	3118668	280.5134 ug/L	99
46)	Benzene	10.68	78	7653812	268.4554 ug/L	98
47)	Trichloroethene	11.43	130	2059635	272.2533 ug/L	99
48)	Methylcyclohexane	11.52	83	3221899	287.1755 ug/L	97
49)	1,2-Dichloropropane	11.65	63	2541005	292.3935 ug/L	99
50)	1,4-Dioxane	11.94	88	42293	724.4263 ug/L	96
51)	Bromodichloromethane	11.95	83	2981182	297.3647 ug/L	100
52)	Dibromomethane	12.04	174	1398592	312.7556 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.24	63	1379523	320.9935 ug/L	100
54)	4-Methyl-2-Pentanone	12.27	58	898268	324.7910 ug/L	98
55)	cis-1,3-Dichloropropene	12.58	75	3522393	299.3015 ug/L	100
56)	Dimethyl Disulfide	12.85	94	3848422	297.3814 ug/L	98
59)	Toluene	13.01	91	7597896	254.8934 ug/L	96
60)	Ethyl Methacrylate	13.10	69	2610527	309.7766 ug/L	98
61)	trans-1,3-Dichloropropene	13.18	75	3237810	301.7115 ug/L	99
62)	1,1,2-Trichloroethane	13.39	97	1667704	303.2261 ug/L	98
63)	2-Hexanone	13.33	43	1651037	321.2045 ug/L	97
64)	1,3-Dichloropropane	13.70	76	3064892	286.7425 ug/L	97
65)	Tetrachloroethene	13.83	164	1857626	278.5024 ug/L	100
66)	Dibromochloromethane	14.10	129	2197974	308.4178 ug/L	98
67)	1,2-Dibromoethane	14.36	107	1896544	305.2980 ug/L	98
68)	1-Chlorohexane	14.44	91	2709876	293.7220 ug/L	97
69)	Chlorobenzene	14.86	112	5527497	266.7671 ug/L	98
70)	1,1,1,2-Tetrachloroethane	14.89	131	2265610	295.4590 ug/L	98
71)	Ethylbenzene	14.88	106	3078927	272.7831 ug/L	88
72)	m-,p-Xylene	14.98	106	7009949	512.5819 ug/L	87
73)	o-Xylene	15.53	106	3927673	279.9690 ug/L	93
74)	Styrene	15.58	104	6630644	285.2050 ug/L	96
75)	Bromoform	16.07	173	1827272	378.8141 ug/L	97
76)	Isopropylbenzene	15.96	105	9284516	261.5726 ug/L	94
78)	1,1,2,2-Tetrachloroethane	16.17	83	2504104	300.1052 ug/L	100
80)	1,2,3-Trichloropropane	16.37	110	723363	294.2842 ug/L #	37
81)	trans-1,4-Dichloro-2-Buten	16.41	53	1007977	300.1290 ug/L #	48
82)	n-Propylbenzene	16.47	91	10496419	241.3770 ug/L	92
83)	Bromobenzene	16.61	156	2755290	275.6243 ug/L	96
84)	1,3,5-Trimethylbenzene	16.66	105	8514879	253.5446 ug/L	94
85)	2-Chlorotoluene	16.74	91	7921998	279.9158 ug/L	93
86)	4-Chlorotoluene	16.80	91	6024338	228.0976 ug/L	83
87)	a-Methylstyrene	17.06	118	4714883	276.5773 ug/L	98
88)	tert-Butylbenzene	17.13	134	2008261	267.6696 ug/L	96
89)	1,2,4-Trimethylbenzene	17.18	105	8543235	253.4770 ug/L	93
90)	sec-Butylbenzene	17.39	105	10273250	247.7375 ug/L	94
91)	p-Isopropyltoluene	17.55	119	8546951	261.4103 ug/L	95
92)	1,3-Dichlorobenzene	17.75	146	5145500	272.9994 ug/L	95
93)	1,4-Dichlorobenzene	17.88	146	5184357	274.4864 ug/L	96
94)	n-Butylbenzene	18.08	91	7963463	282.7622 ug/L	96
95)	1,2-Dichlorobenzene	18.38	146	5083368	277.0390 ug/L	96
96)	1,2-Dibromo-3-Chloropropan	19.37	157	577466	328.5536 ug/L	99
97)	1,2,4-Trichlorobenzene	20.52	180	4165244	311.6185 ug/L	99
98)	Hexachlorobutadiene	20.66	225	2307951	312.7246 ug/L	100
99)	Naphthalene	20.89	128	7580977	286.0917 ug/L	96
100)	1,2,3-Trichlorobenzene	21.20	180	3909436	296.8597 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M961132.D 8260WTR.M Thu Jan 30 17:06:48 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961132.D Vial: 11
Acq On : 30 Jan 2014 13:49 Operator: ADC
Sample : WG461445-11 300.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration

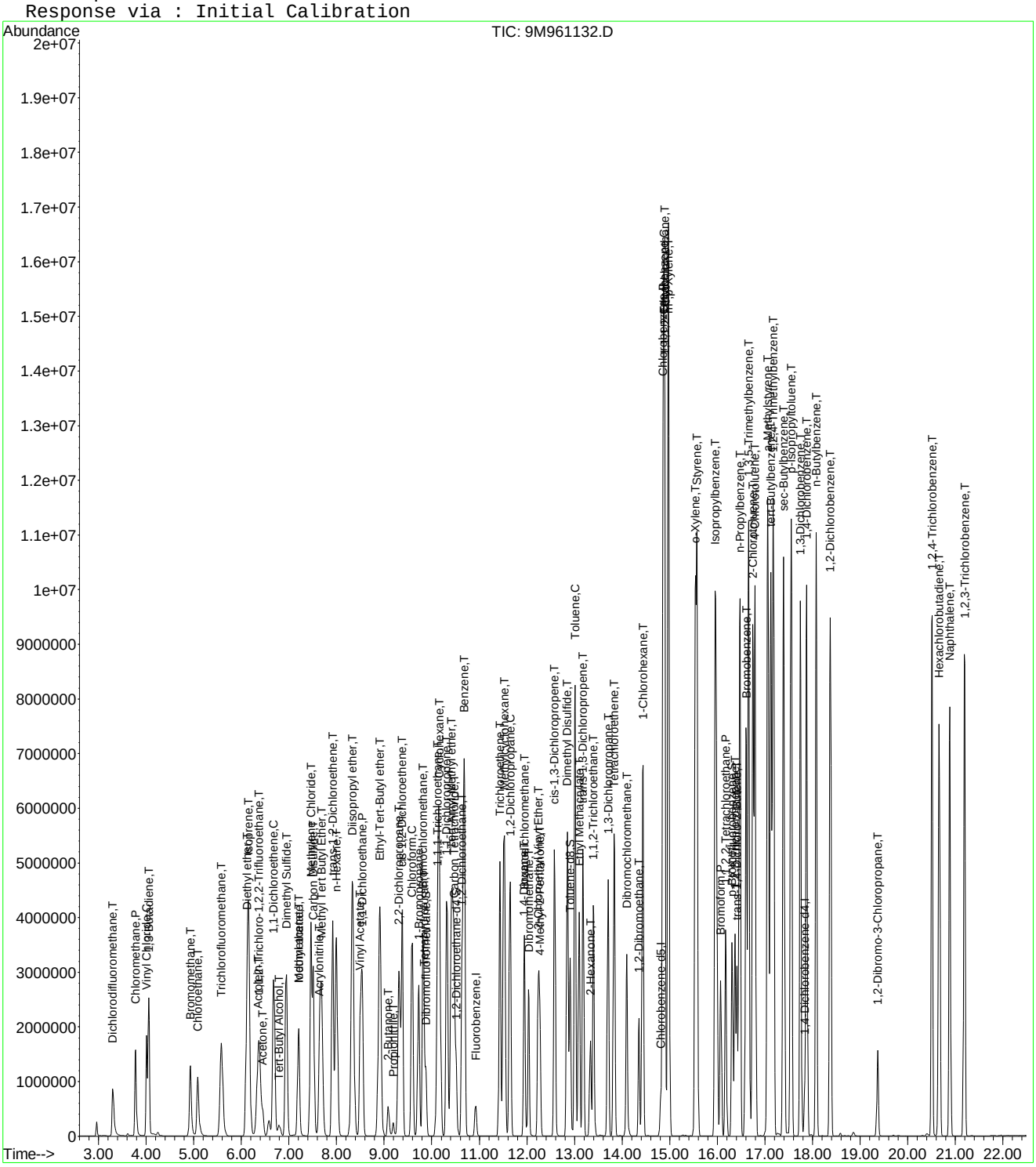

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961134.D Vial: 13
Acq On : 30 Jan 2014 15:20 Operator: ADC
Sample : WG461445-04 1.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:53 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	708690	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	507433	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	239797	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.88	111	3427	0.4847 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.92%#	
43) 1,2-Dichloroethane-d4	10.52	65	4183	0.4940 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.96%#	
58) Toluene-d8	12.91	98	12851	0.5756 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.32%#	
79) p-Bromofluorobenzene	16.32	95	5281	0.5429 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.16%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.31	85	1399	1.4421 ug/L #	62
3) Chloromethane	3.77	50	7766	1.0030 ug/L	82
4) Vinyl Chloride	4.01	62	6419	0.8464 ug/L	96
5) 1,3-Butadiene	4.07	54	7978	0.7736 ug/L	83
6) Bromomethane	4.94	94	6010	1.0628 ug/L	83
7) Chloroethane	5.10	64	4332	0.7525 ug/L	91
8) Trichlorofluoromethane	5.58	101	10529	1.0933 ug/L #	93
9) Diethyl ether	6.12	59	33805	4.8051 ug/L	97
10) Isoprene	6.15	67	9415	0.8820 ug/L	97
11) Acrolein	6.36	56	1986	3.0148 ug/L	73
12) 1,1,2-Trichloro-1,2,2-Trif	6.36	101	6368	0.9230 ug/L	89
13) Acetone	6.44	43	2695	1.1404 ug/L #	45
14) 1,1-Dichloroethene	6.69	61	12064	0.9095 ug/L	95
15) Tert-Butyl Alcohol	6.80	59	5643	10.2629 ug/L #	89
16) Dimethyl Sulfide	6.96	62	7273	0.8766 ug/L	94
17) Iodomethane	7.20	142	507	1.1248 ug/L #	35
18) Methyl acetate	7.20	43	5779	0.8317 ug/L #	92
19) Methylene Chloride	7.46	84	7234	0.9331 ug/L	83
20) Carbon Disulfide	7.52	76	26982	1.1655 ug/L	100
21) Acrylonitrile	7.65	53	6142	2.1037 ug/L	91
22) Methyl Tert Butyl Ether	7.67	73	18442	0.9064 ug/L	90
23) trans-1,2-Dichloroethene	7.92	61	13979	1.0654 ug/L	98
24) n-Hexane	7.99	57	11995	0.9952 ug/L	89
25) Diisopropyl ether	8.34	45	169877	4.7968 ug/L	99
26) Vinyl Acetate	8.52	43	13260	1.5415 ug/L #	86
27) 1,1-Dichloroethane	8.55	63	16442	0.9628 ug/L	96
28) Ethyl-Tert-Butyl ether	8.91	59	135874	4.7227 ug/L	100
29) 2-Butanone	9.09	43	3130	0.8763 ug/L	84
30) Propionitrile	9.19	54	4339	6.4925 ug/L #	81
31) 2,2-Dichloropropane	9.32	77	11287	0.8820 ug/L	99
32) cis-1,2-Dichloroethene	9.38	96	8204	0.9567 ug/L	83
33) Chloroform	9.59	83	12789	0.9203 ug/L	99
34) 1-Bromopropane	9.74	122	966	0.8992 ug/L	84
35) Bromochloromethane	9.82	130	4205	0.8756 ug/L	85
36) Tetrahydrofuran	9.85	42	9269	4.2437 ug/L	97
38) 1,1,1-Trichloroethane	10.13	97	10322	0.8381 ug/L	98
39) Cyclohexane	10.17	56	15588	0.9134 ug/L	96
40) 1,1-Dichloropropene	10.33	75	9188	0.8847 ug/L	92
41) Tert-Amyl-Methyl ether	10.43	73	92479	4.6534 ug/L	96
42) Carbon Tetrachloride	10.46	117	10425	0.9405 ug/L	94

(#) = qualifier out of range (m) = manual integration
9M961134.D 8260WTR.M Thu Jan 30 17:06:55 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961134.D Vial: 13
Acq On : 30 Jan 2014 15:20 Operator: ADC
Sample : WG461445-04 1.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:53 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.64	62	11725	0.9512 ug/L	95
46)	Benzene	10.69	78	29931	0.9469 ug/L	98
47)	Trichloroethene	11.44	130	8898	1.0608 ug/L	89
48)	Methylcyclohexane	11.51	83	11443	0.9199 ug/L	96
49)	1,2-Dichloropropane	11.65	63	9693	1.0060 ug/L	87
51)	Bromodichloromethane	11.95	83	10248	0.9220 ug/L	93
52)	Dibromomethane	12.03	174	4347	0.8767 ug/L	89
53)	2-Chloroethyl Vinyl Ether	12.25	63	4041	0.8481 ug/L	94
54)	4-Methyl-2-Pentanone	12.29	58	2350	0.7664 ug/L #	69
55)	cis-1,3-Dichloropropene	12.58	75	11954	0.9161 ug/L	98
56)	Dimethyl Disulfide	12.86	94	12025	0.8381 ug/L	97
59)	Toluene	13.01	91	30504	0.9907 ug/L	98
60)	Ethyl Methacrylate	13.10	69	7049	0.8098 ug/L #	78
61)	trans-1,3-Dichloropropene	13.19	75	10552	0.9519 ug/L	92
62)	1,1,2-Trichloroethane	13.41	97	4862	0.8558 ug/L	93
63)	2-Hexanone	13.34	43	3481	0.6556 ug/L #	88
64)	1,3-Dichloropropane	13.72	76	10065	0.9116 ug/L	84
65)	Tetrachloroethene	13.84	164	7267	1.0547 ug/L	84
66)	Dibromochloromethane	14.10	129	6689	0.9086 ug/L	95
67)	1,2-Dibromoethane	14.36	107	6206	0.9671 ug/L	90
68)	1-Chlorohexane	14.44	91	8338	0.8749 ug/L	96
69)	Chlorobenzene	14.86	112	21291	0.9947 ug/L	88
70)	1,1,1,2-Tetrachloroethane	14.88	131	7634	0.9638 ug/L	95
71)	Ethylbenzene	14.88	106	11367	0.9749 ug/L	91
72)	m-,p-Xylene	14.98	106	27198	1.9253 ug/L	98
73)	o-Xylene	15.53	106	13397	0.9245 ug/L	99
74)	Styrene	15.58	104	20661	0.8603 ug/L	93
75)	Bromoform	16.07	173	4046	0.8120 ug/L	97
76)	Isopropylbenzene	15.97	105	34830	0.9499 ug/L	95
78)	1,1,2,2-Tetrachloroethane	16.18	83	5286	0.9648 ug/L #	96
80)	1,2,3-Trichloropropane	16.37	110	1746	0.9023 ug/L	96
81)	trans-1,4-Dichloro-2-Buten	16.41	53	2462	1.1999 ug/L #	91
82)	n-Propylbenzene	16.47	91	37940	0.9962 ug/L	96
83)	Bromobenzene	16.61	156	8627	0.9854 ug/L	69
84)	1,3,5-Trimethylbenzene	16.66	105	27772	0.9443 ug/L	99
85)	2-Chlorotoluene	16.74	91	26852	1.0834 ug/L	85
86)	4-Chlorotoluene	16.80	91	23668	1.0232 ug/L	99
87)	a-Methylstyrene	17.06	118	12553	0.8408 ug/L	93
88)	tert-Butylbenzene	17.13	134	5552	0.8450 ug/L	74
89)	1,2,4-Trimethylbenzene	17.18	105	27945	0.9467 ug/L	98
90)	sec-Butylbenzene	17.39	105	33095	0.9113 ug/L	97
91)	p-Isopropyltoluene	17.55	119	26330	0.9195 ug/L	98
92)	1,3-Dichlorobenzene	17.75	146	15726	0.9527 ug/L	96
93)	1,4-Dichlorobenzene	17.88	146	17324	1.0473 ug/L #	73
94)	n-Butylbenzene	18.08	91	23751	0.9630 ug/L	92
95)	1,2-Dichlorobenzene	18.38	146	15282	0.9510 ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.38	157	1205	0.7828 ug/L	75
97)	1,2,4-Trichlorobenzene	20.52	180	11394	0.9733 ug/L	89
98)	Hexachlorobutadiene	20.67	225	5751	0.8898 ug/L	92
99)	Naphthalene	20.89	128	21918	0.9445 ug/L	95
100)	1,2,3-Trichlorobenzene	21.20	180	10583	0.9176 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M961134.D 8260WTR.M Thu Jan 30 17:06:55 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961134.D Vial: 13
Acq On : 30 Jan 2014 15:20 Operator: ADC
Sample : WG461445-04 1.0 ug/L STD Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration

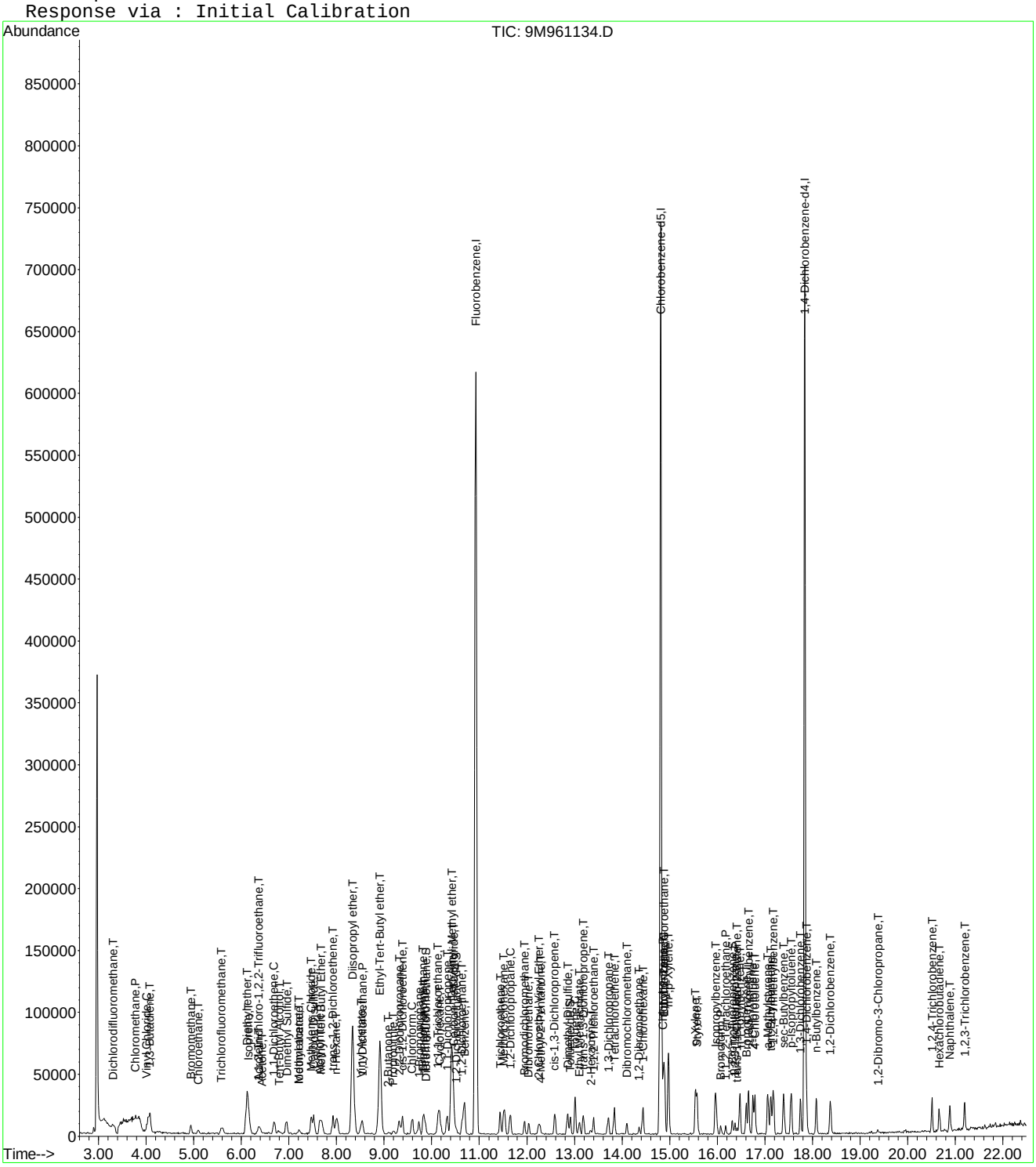

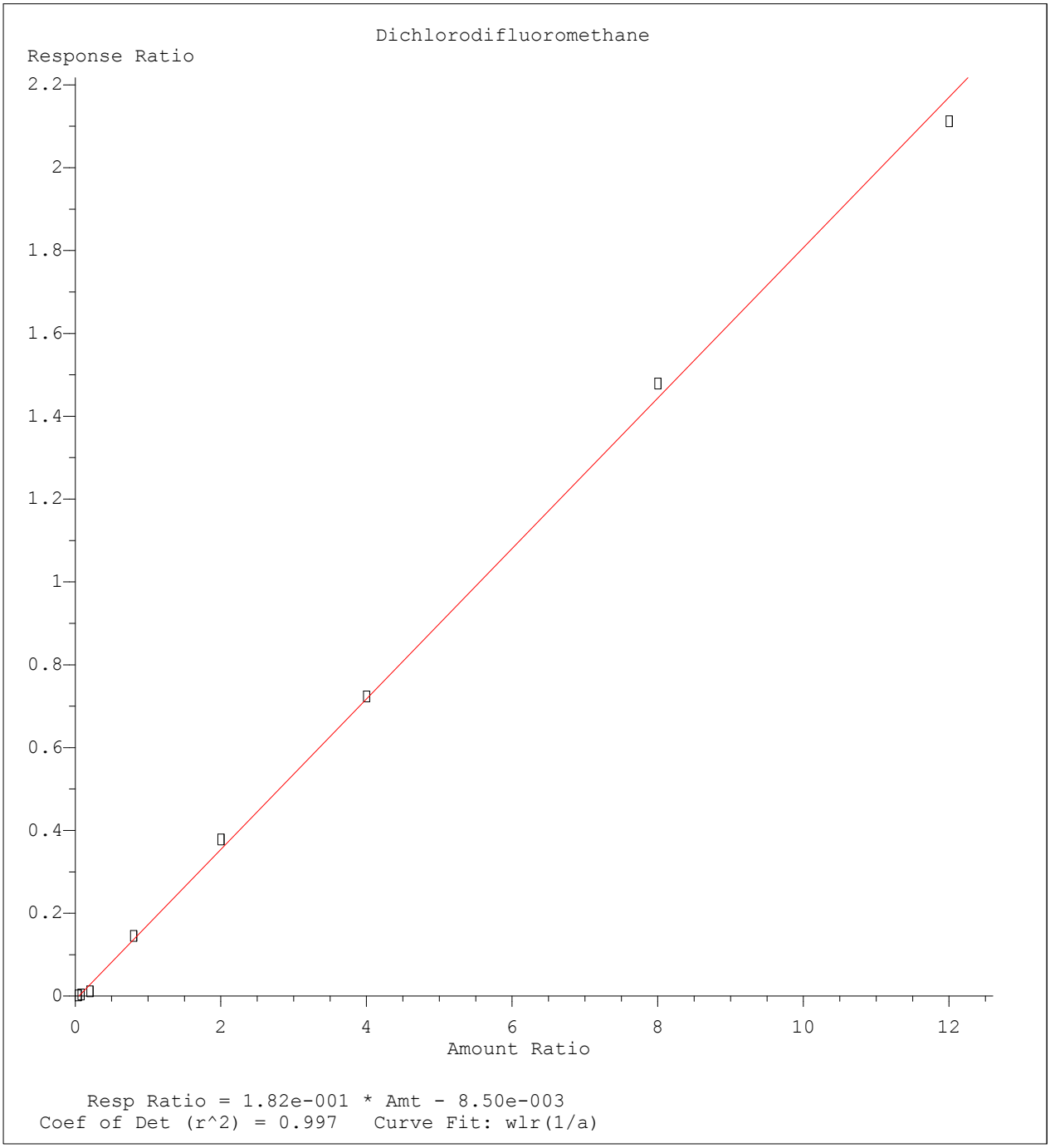

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

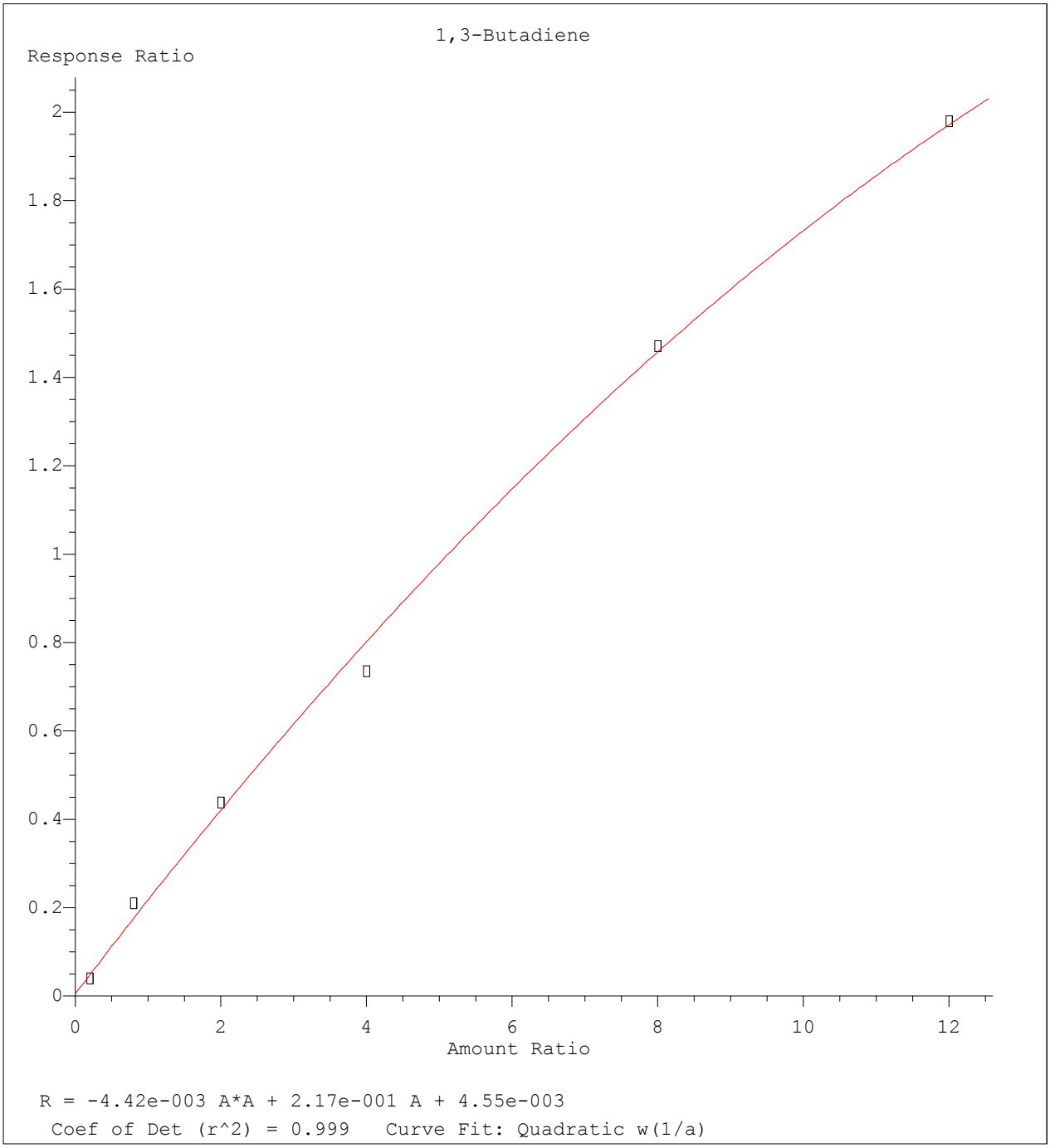

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

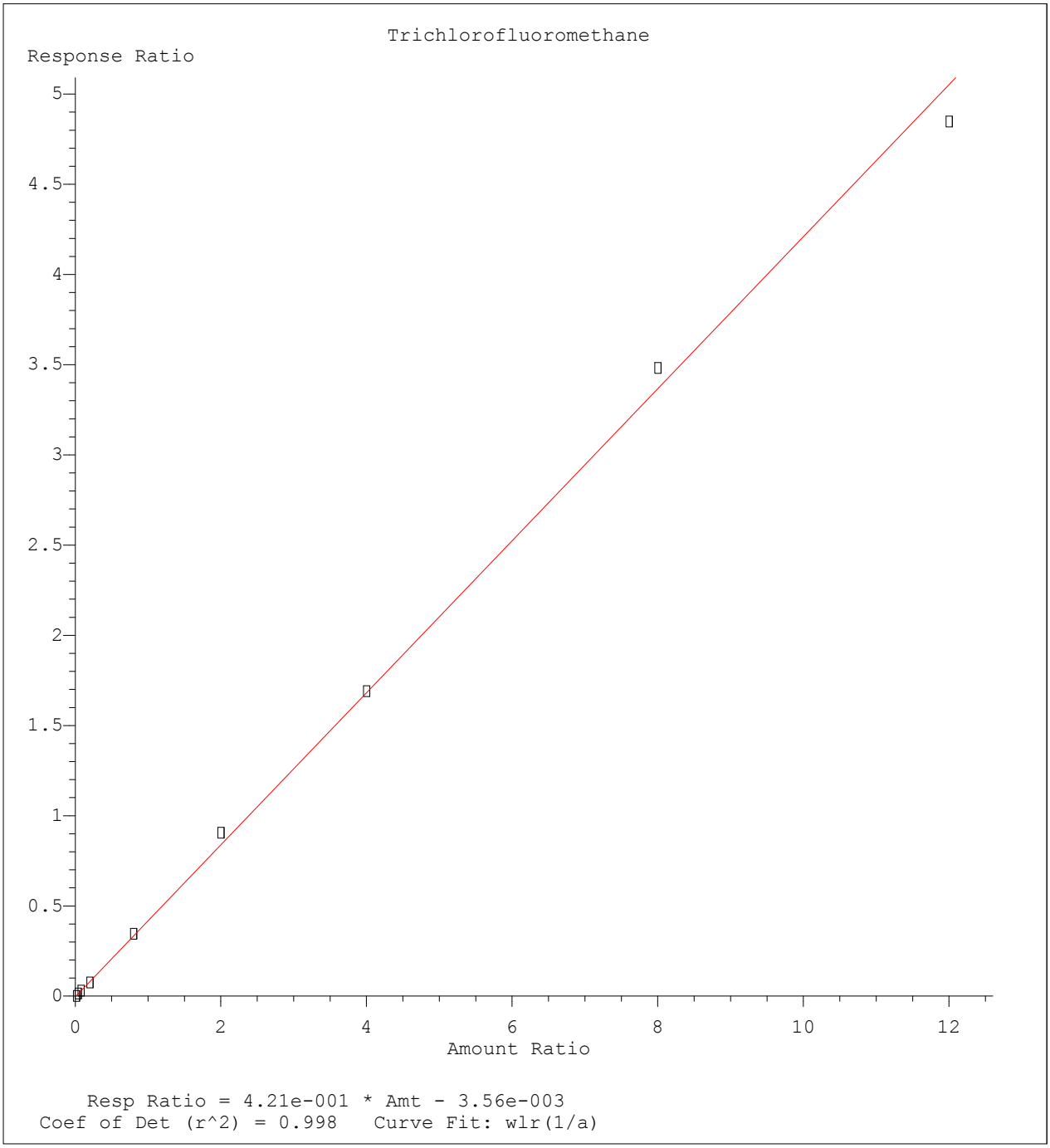

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

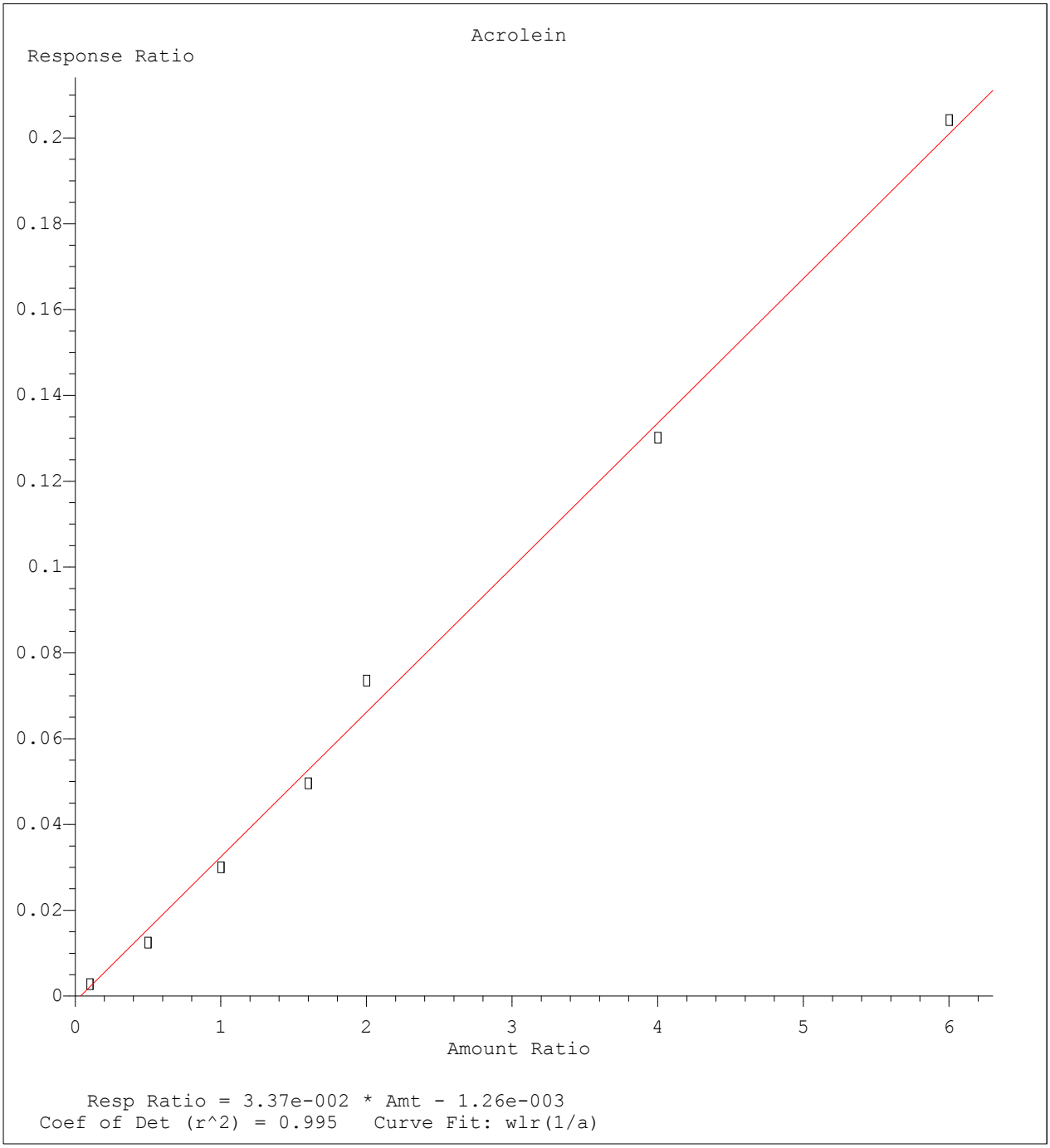

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

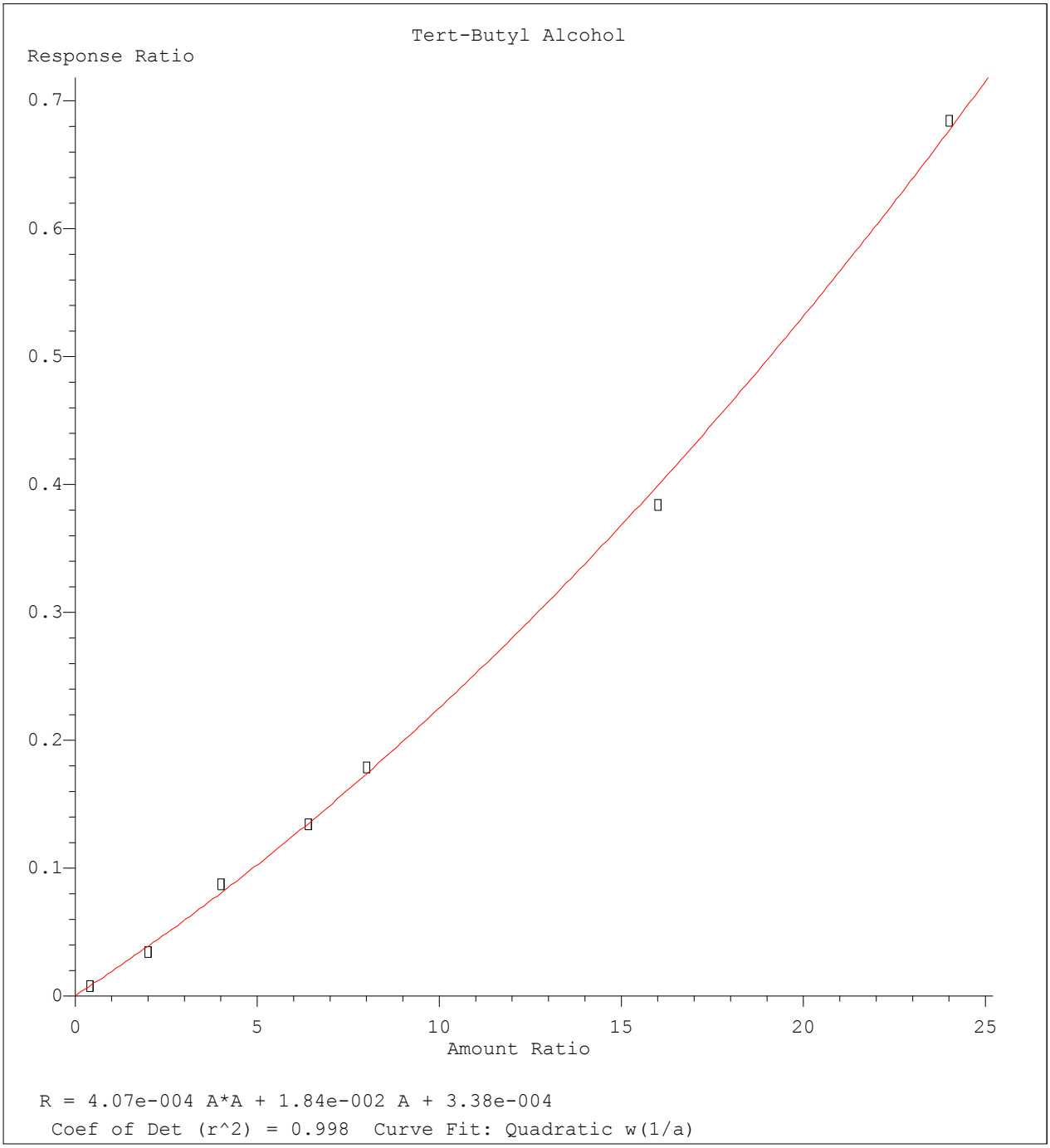

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

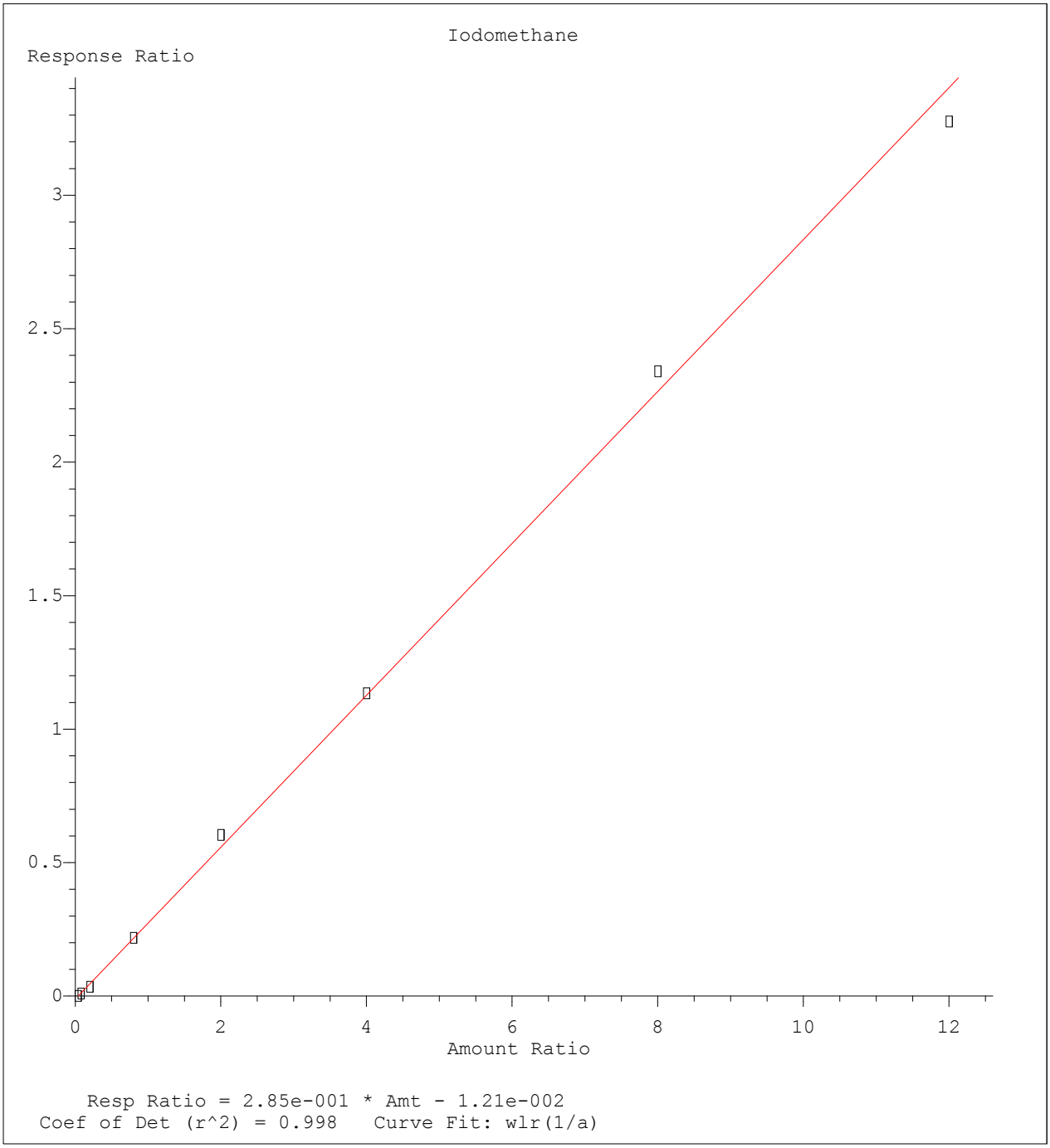

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

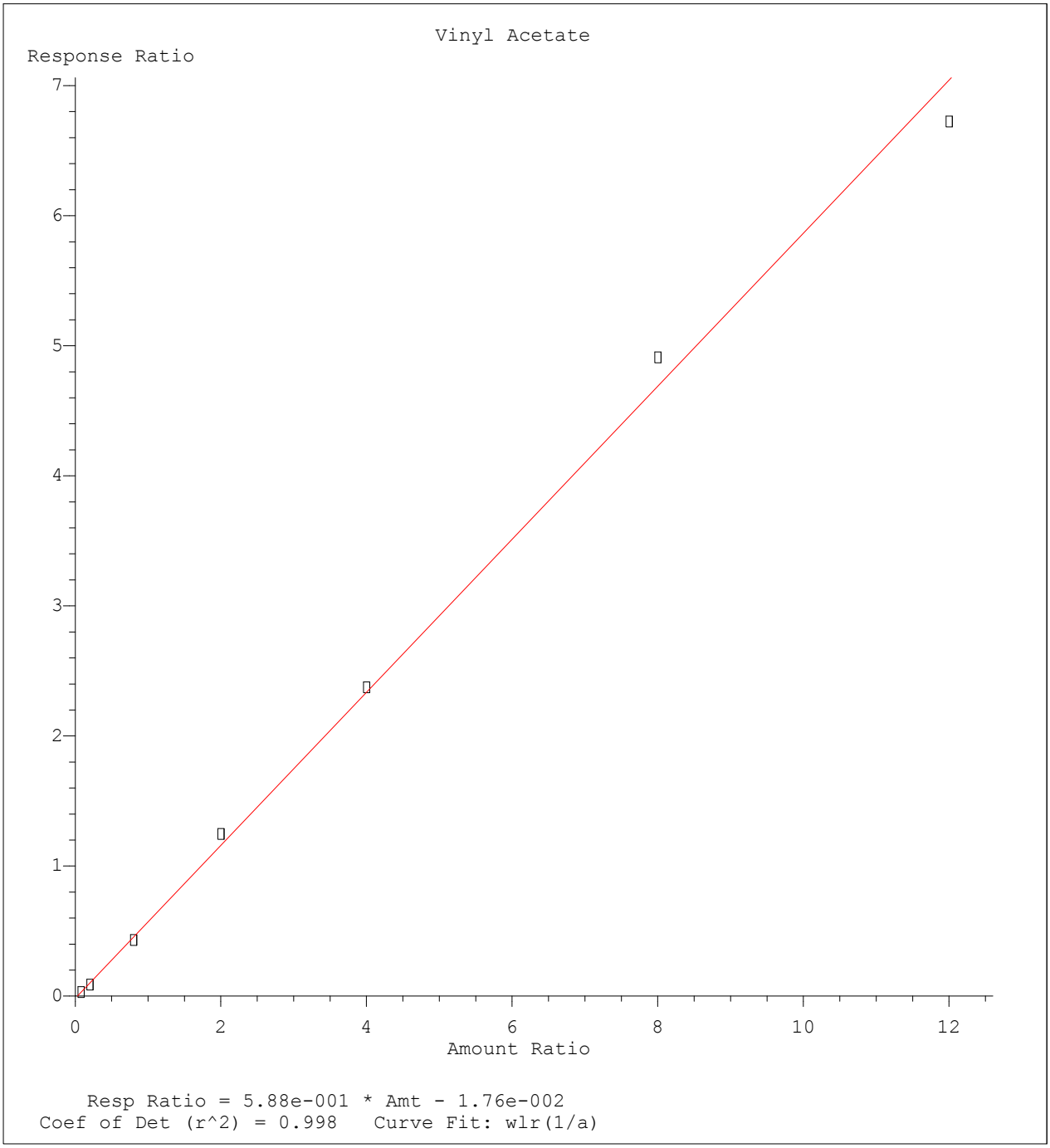

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

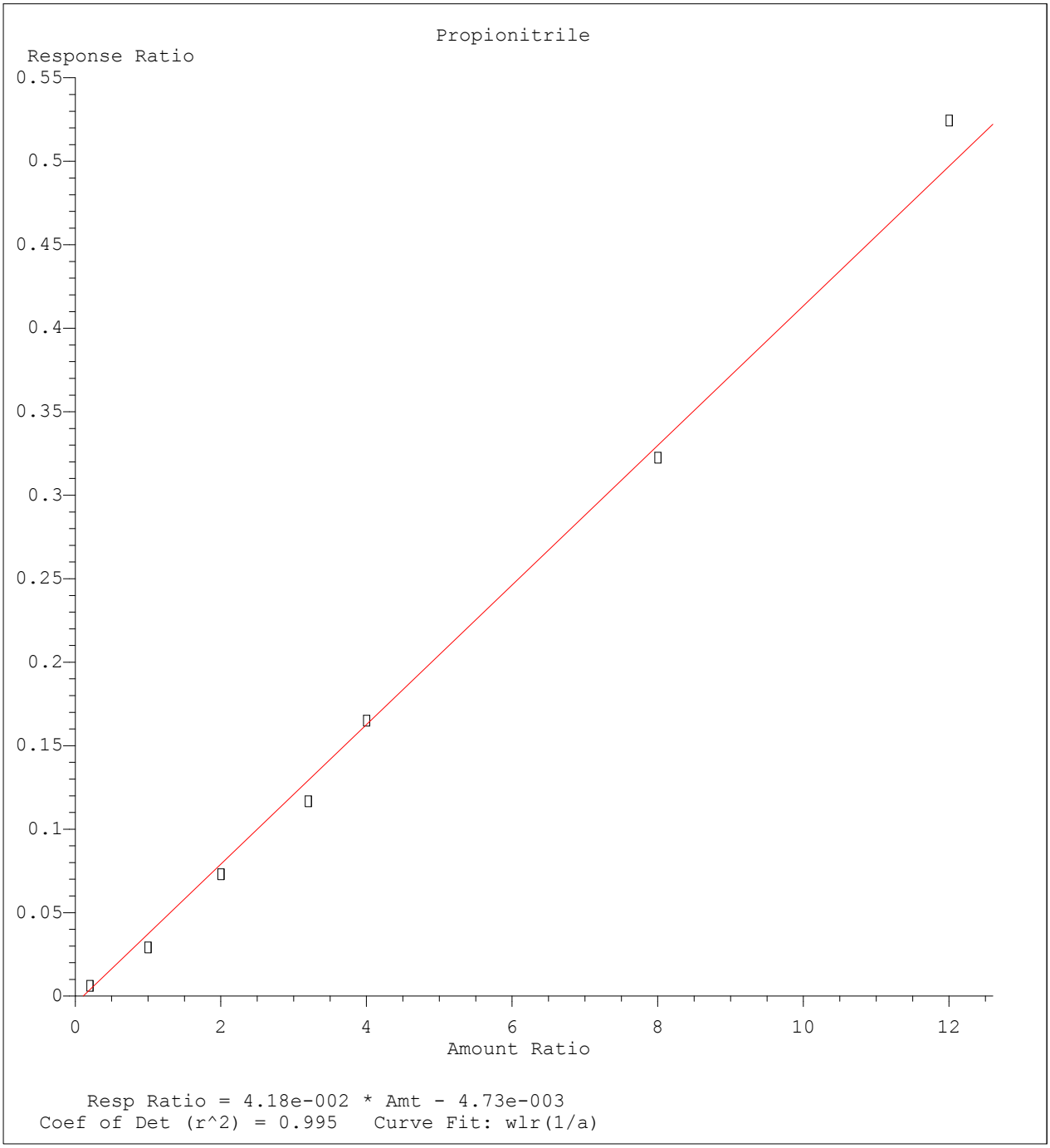

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

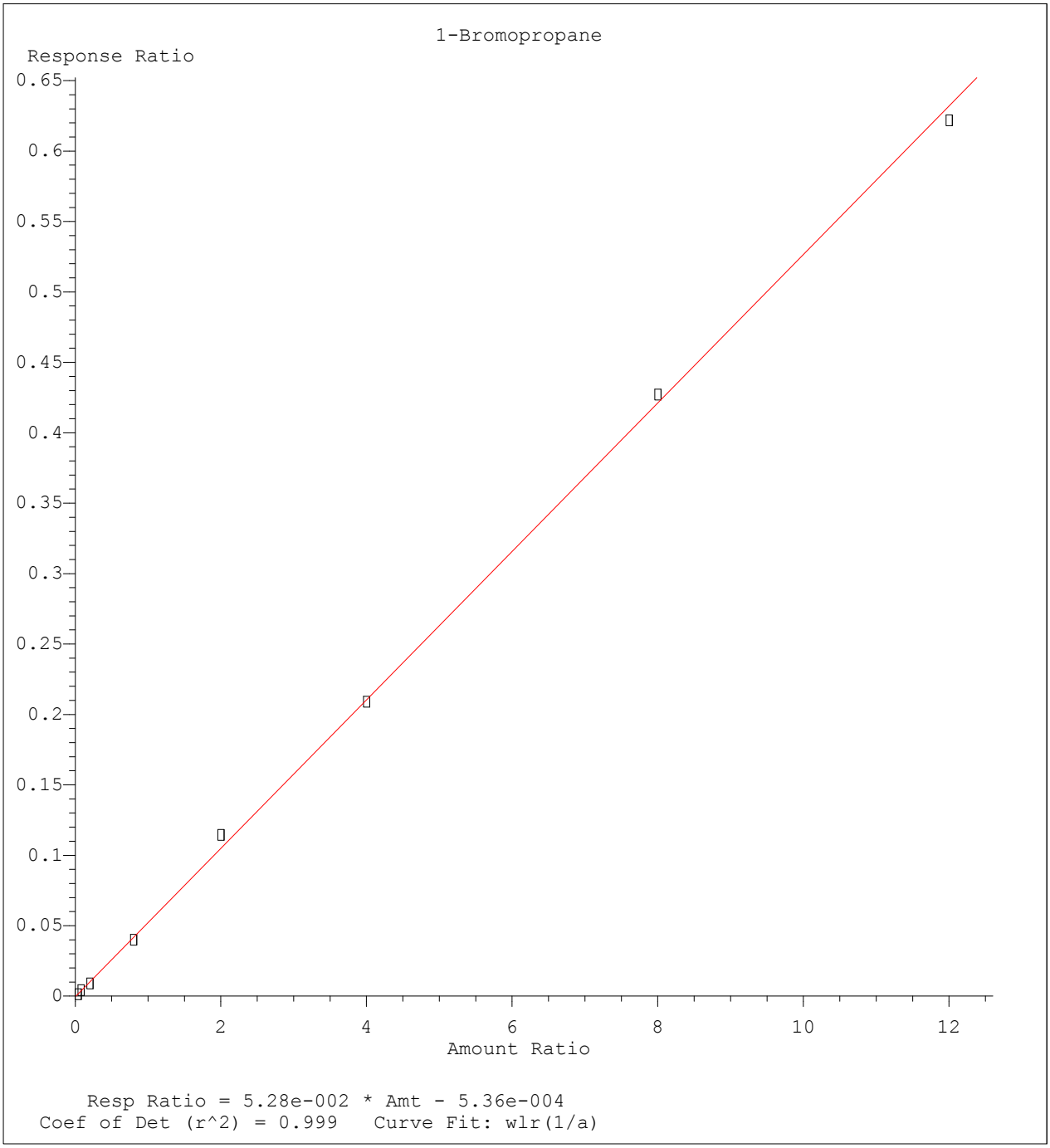

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

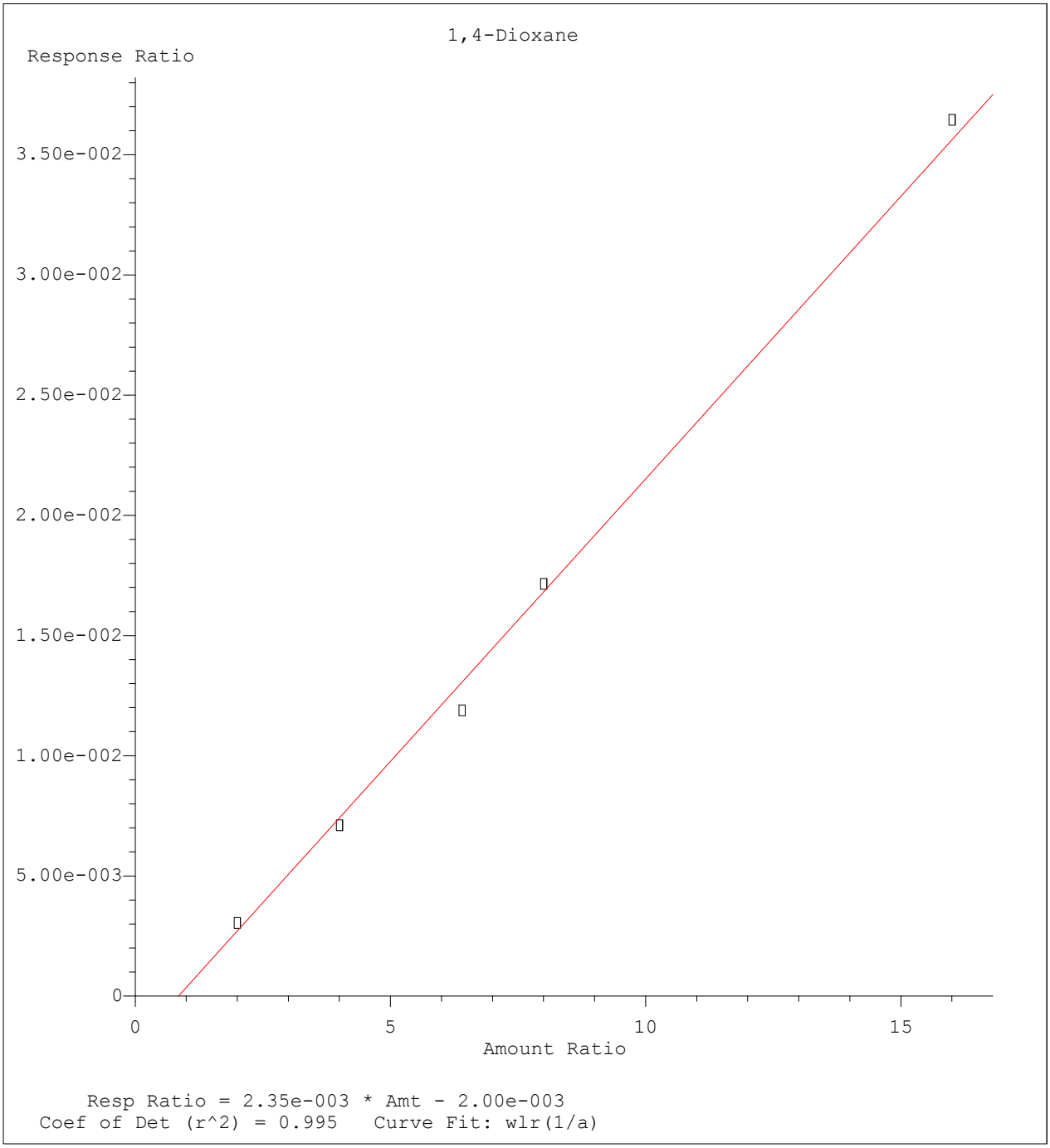

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

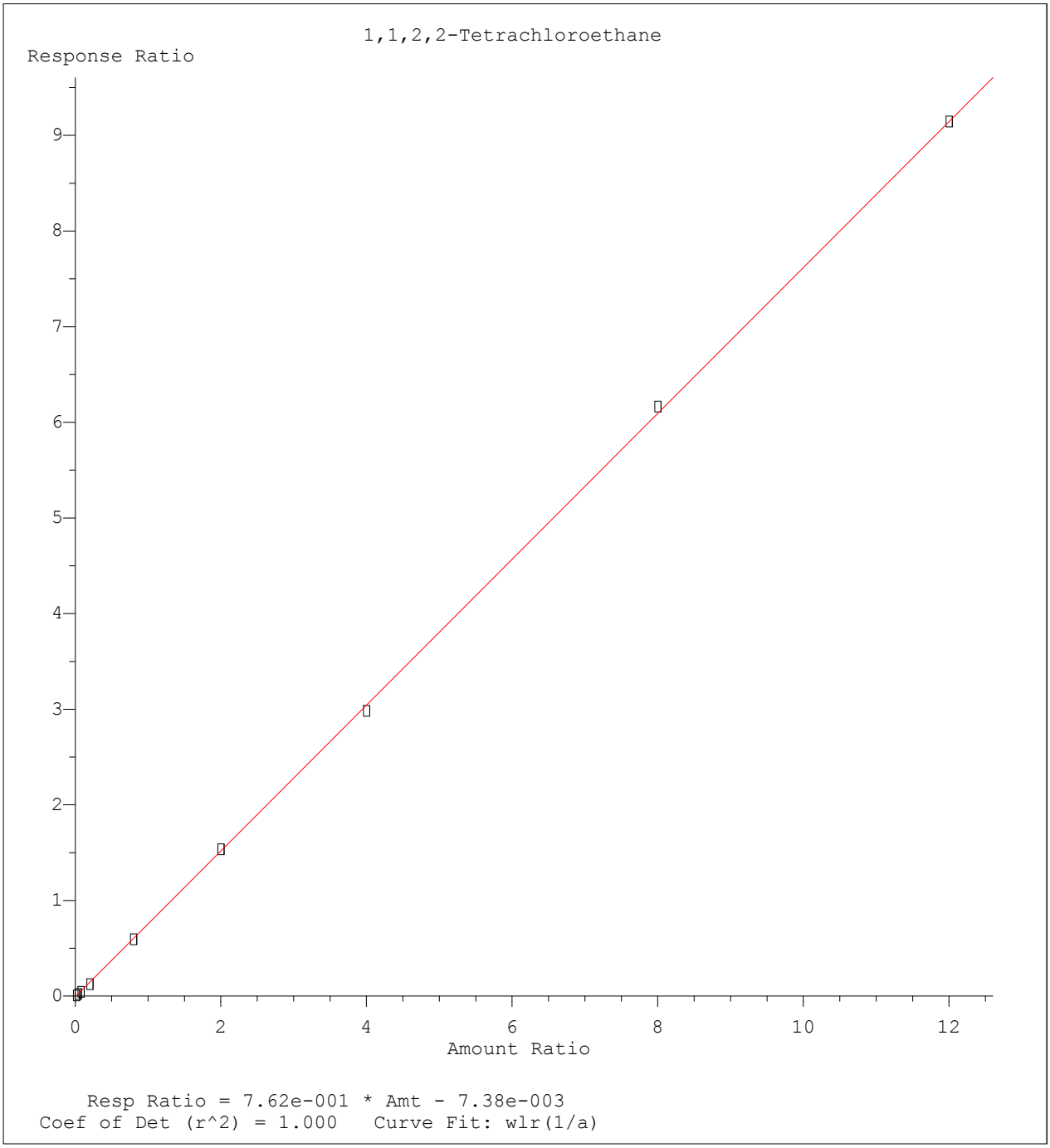

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

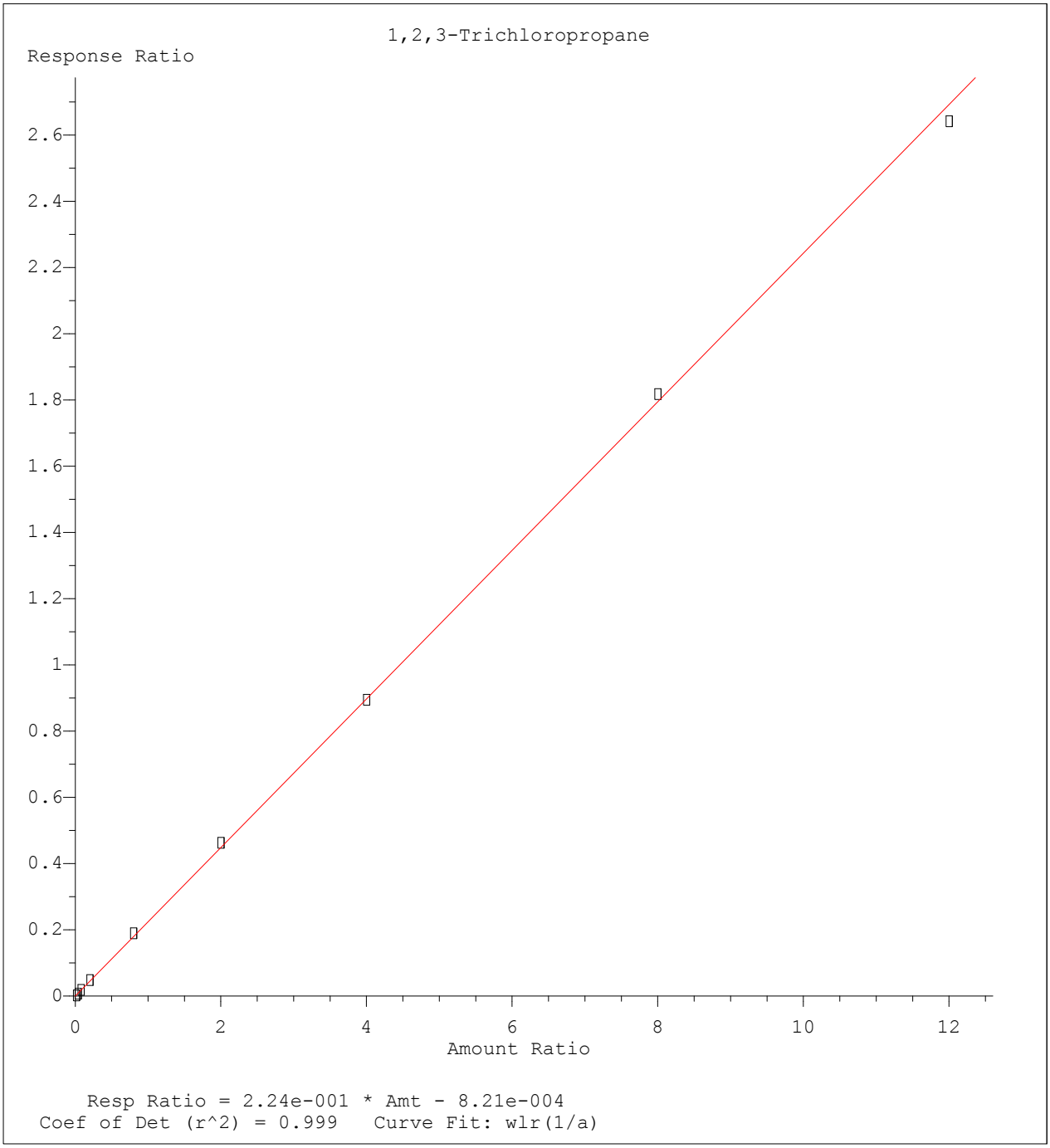

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

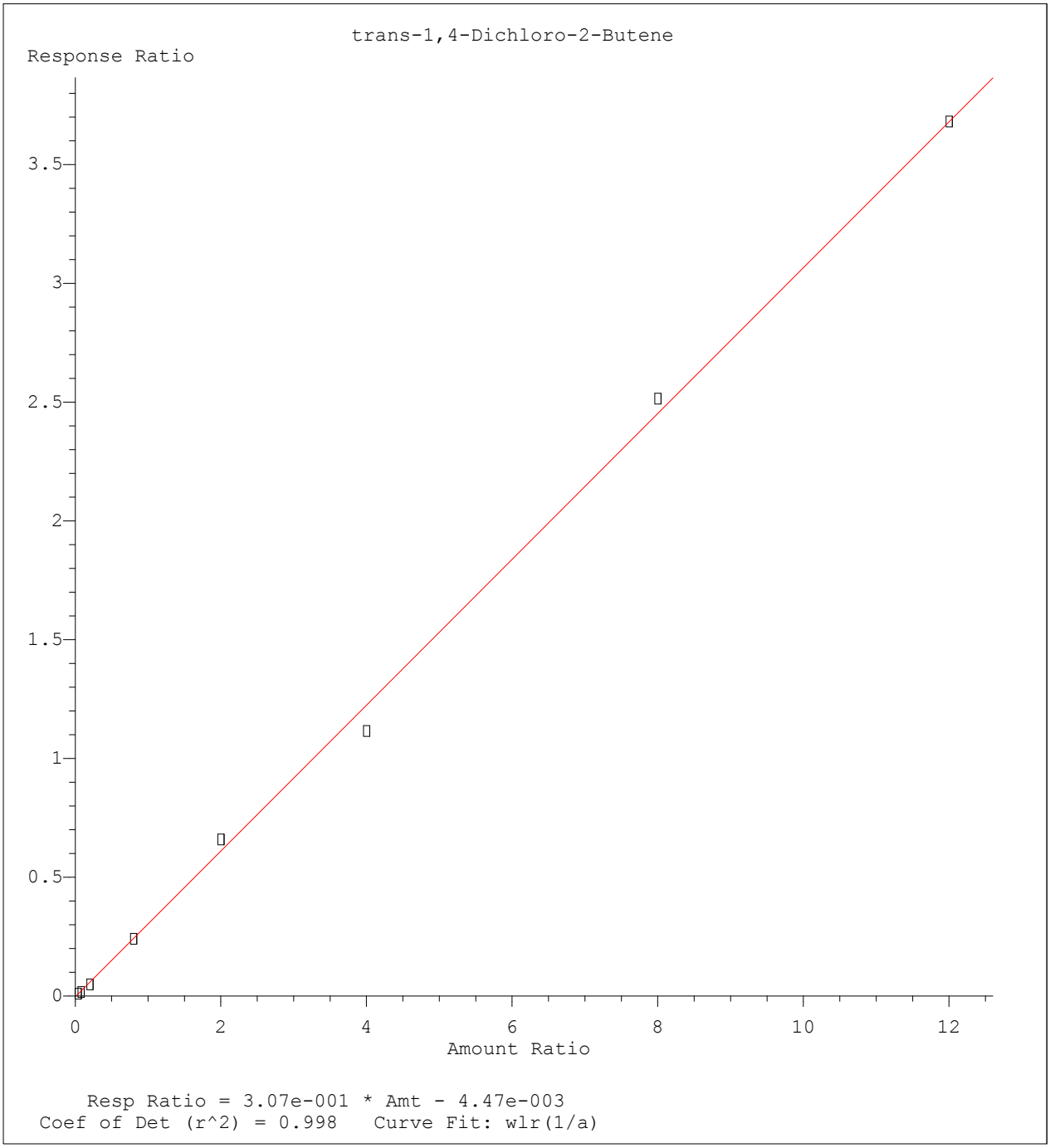

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Jan 30 20:21:06 2014

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961135.D Vial: 14
Acq On : 30 Jan 2014 15:49 Operator: ADC
Sample : WG461445-12 50.0 ug/L ALTSRC Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:57 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	594353	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	433062	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	227731	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.88	111	158695	26.7619 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.04%		
43) 1,2-Dichloroethane-d4	10.51	65	183175	25.7939 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.16%		
58) Toluene-d8	12.91	98	533955	28.0246 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 112.08%#		
79) p-Bromofluorobenzene	16.31	95	212815	23.0367 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.16%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	179343	42.7184 ug/L	99
3) Chloromethane	3.78	50	339236	52.2442 ug/L	98
4) Vinyl Chloride	4.01	62	278859	43.8418 ug/L	100
5) 1,3-Butadiene	4.05	54	171130	33.5742 ug/L	99
6) Bromomethane	4.92	94	208624	43.9883 ug/L	98
7) Chloroethane	5.08	64	233044	48.2701 ug/L	99
8) Trichlorofluoromethane	5.58	101	470724	47.2255 ug/L	100
9) Diethyl ether	6.12	59	622753	105.5486 ug/L	100
10) Isoprene	6.15	67	431455	48.1960 ug/L	99
11) Acrolein	6.34	56	108689	136.7840 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.37	101	301027	52.0232 ug/L	91
13) Acetone	6.46	43	133517	67.3695 ug/L	98
14) 1,1-Dichloroethene	6.68	61	512844	46.1033 ug/L	99
15) Tert-Butyl Alcohol	6.79	59	129534	243.1949 ug/L	99
16) Dimethyl Sulfide	6.94	62	380054	54.6218 ug/L	99
17) Iodomethane	7.20	142	189448	29.0701 ug/L	98
18) Methyl acetate	7.20	43	304146	52.1897 ug/L	97
19) Methylene Chloride	7.46	84	329758	50.7172 ug/L	99
20) Carbon Disulfide	7.51	76	864748	44.5377 ug/L	100
21) Acrylonitrile	7.64	53	147227	60.1280 ug/L	99
22) Methyl Tert Butyl Ether	7.68	73	900168	52.7542 ug/L	100
23) trans-1,2-Dichloroethene	7.92	61	535950	48.7043 ug/L	99
24) n-Hexane	8.00	57	465423	46.0427 ug/L	99
25) Diisopropyl ether	8.33	45	3008151	101.2807 ug/L	99
26) Vinyl Acetate	8.50	43	820238	59.3917 ug/L	98
27) 1,1-Dichloroethane	8.54	63	680332	47.5044 ug/L	99
28) Ethyl-Tert-Butyl ether	8.91	59	2466370	102.2175 ug/L	100
29) 2-Butanone	9.08	43	175415	58.5555 ug/L	99
30) Propionitrile	9.20	54	106789	110.3443 ug/L	100
31) 2,2-Dichloropropane	9.31	77	516895	48.1596 ug/L	99
32) cis-1,2-Dichloroethene	9.38	96	339471	47.2029 ug/L	98
33) Chloroform	9.59	83	588152	50.4680 ug/L	99
34) 1-Bromopropane	9.72	122	68737	55.0274 ug/L	99
35) Bromochloromethane	9.82	130	200580	49.7989 ug/L	98
36) Tetrahydrofuran	9.84	42	211415	115.4155 ug/L	99
38) 1,1,1-Trichloroethane	10.13	97	490014	47.4434 ug/L	100
39) Cyclohexane	10.16	56	669906	46.8057 ug/L	99
40) 1,1-Dichloropropene	10.31	75	428996	49.2537 ug/L	98
41) Tert-Amyl-Methyl ether	10.42	73	1793517	107.6072 ug/L	99
42) Carbon Tetrachloride	10.47	117	441613	47.5063 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961135.D Vial: 14
Acq On : 30 Jan 2014 15:49 Operator: ADC
Sample : WG461445-12 50.0 ug/L ALTSRC Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06:57 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.63	62	513470	49.6685 ug/L	99
46)	Benzene	10.68	78	1312773	49.5183 ug/L	100
47)	Trichloroethene	11.43	130	328137	46.6465 ug/L	100
48)	Methylcyclohexane	11.52	83	477226	45.7447 ug/L	99
49)	1,2-Dichloropropane	11.65	63	410702	50.8242 ug/L	99
50)	1,4-Dioxane	11.94	88	12202	239.4061 ug/L	92
51)	Bromodichloromethane	11.95	83	450367	48.3113 ug/L	99
52)	Dibromomethane	12.04	174	215015	51.7088 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.24	63	159402	39.8880 ug/L	99
54)	4-Methyl-2-Pentanone	12.27	58	137442	53.4440 ug/L	100
55)	cis-1,3-Dichloropropene	12.58	75	578314	52.8465 ug/L	99
56)	Dimethyl Disulfide	12.85	94	610255	50.7135 ug/L	100
59)	Toluene	13.01	91	1300513	49.4904 ug/L	100
60)	Ethyl Methacrylate	13.09	69	408445	54.9788 ug/L	100
61)	trans-1,3-Dichloropropene	13.18	75	482729	51.0252 ug/L	100
62)	1,1,2-Trichloroethane	13.40	97	261485	53.9306 ug/L	99
63)	2-Hexanone	13.33	43	273845	60.4325 ug/L	100
64)	1,3-Dichloropropane	13.70	76	490321	52.0353 ug/L	100
65)	Tetrachloroethene	13.84	164	284590	48.3984 ug/L	97
66)	Dibromochloromethane	14.10	129	316872	50.4361 ug/L	99
67)	1,2-Dibromoethane	14.35	107	287962	52.5820 ug/L	96
68)	1-Chlorohexane	14.44	91	407905	50.1519 ug/L	98
69)	Chlorobenzene	14.86	112	829942	45.4352 ug/L	98
70)	1,1,1,2-Tetrachloroethane	14.88	131	346272	51.2236 ug/L	98
71)	Ethylbenzene	14.88	106	489229	49.1667 ug/L	100
72)	m-,p-Xylene	14.97	106	1141516	94.6829 ug/L	98
73)	o-Xylene	15.53	106	561995	45.4410 ug/L	98
74)	Styrene	15.57	104	1053675	51.4102 ug/L	99
75)	Bromoform	16.07	173	250641	58.9408 ug/L	97
76)	Isopropylbenzene	15.96	105	1412810	45.1500 ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.17	83	366296	52.9808 ug/L	98
80)	1,2,3-Trichloropropane	16.37	110	107292	52.5565 ug/L	91
81)	trans-1,4-Dichloro-2-Buten	16.41	53	82586	29.8939 ug/L #	8
82)	n-Propylbenzene	16.47	91	1585123	43.8273 ug/L	100
83)	Bromobenzene	16.61	156	392513	47.2097 ug/L	99
84)	1,3,5-Trimethylbenzene	16.66	105	1360703	48.7154 ug/L	98
85)	2-Chlorotoluene	16.74	91	1004168	42.6605 ug/L	98
86)	4-Chlorotoluene	16.79	91	1022858	46.5644 ug/L	100
87)	a-Methylstyrene	17.06	118	731267	51.5761 ug/L	99
88)	tert-Butylbenzene	17.12	134	275817	44.2005 ug/L	98
89)	1,2,4-Trimethylbenzene	17.18	105	1417816	50.5782 ug/L	99
90)	sec-Butylbenzene	17.39	105	1552705	45.0194 ug/L	99
91)	p-Isopropyltoluene	17.55	119	1287274	47.3380 ug/L	99
92)	1,3-Dichlorobenzene	17.74	146	716439	45.7026 ug/L	100
93)	1,4-Dichlorobenzene	17.88	146	799621	50.9023 ug/L	99
94)	n-Butylbenzene	18.08	91	1285971	54.9007 ug/L	100
95)	1,2-Dichlorobenzene	18.37	146	759518	49.7685 ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.37	157	86371	59.0847 ug/L	99
97)	1,2,4-Trichlorobenzene	20.51	180	641850	57.7356 ug/L	100
98)	Hexachlorobutadiene	20.66	225	350117	57.0395 ug/L	99
99)	Naphthalene	20.89	128	1290446	58.5527 ug/L	100
100)	1,2,3-Trichlorobenzene	21.20	180	622008	56.7885 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M961135.D 8260WTR.M Thu Jan 30 17:06:59 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961135.D Vial: 14
Acq On : 30 Jan 2014 15:49 Operator: ADC
Sample : WG461445-12 50.0 ug/L ALTSRC Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 17:06 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Initial Calibration

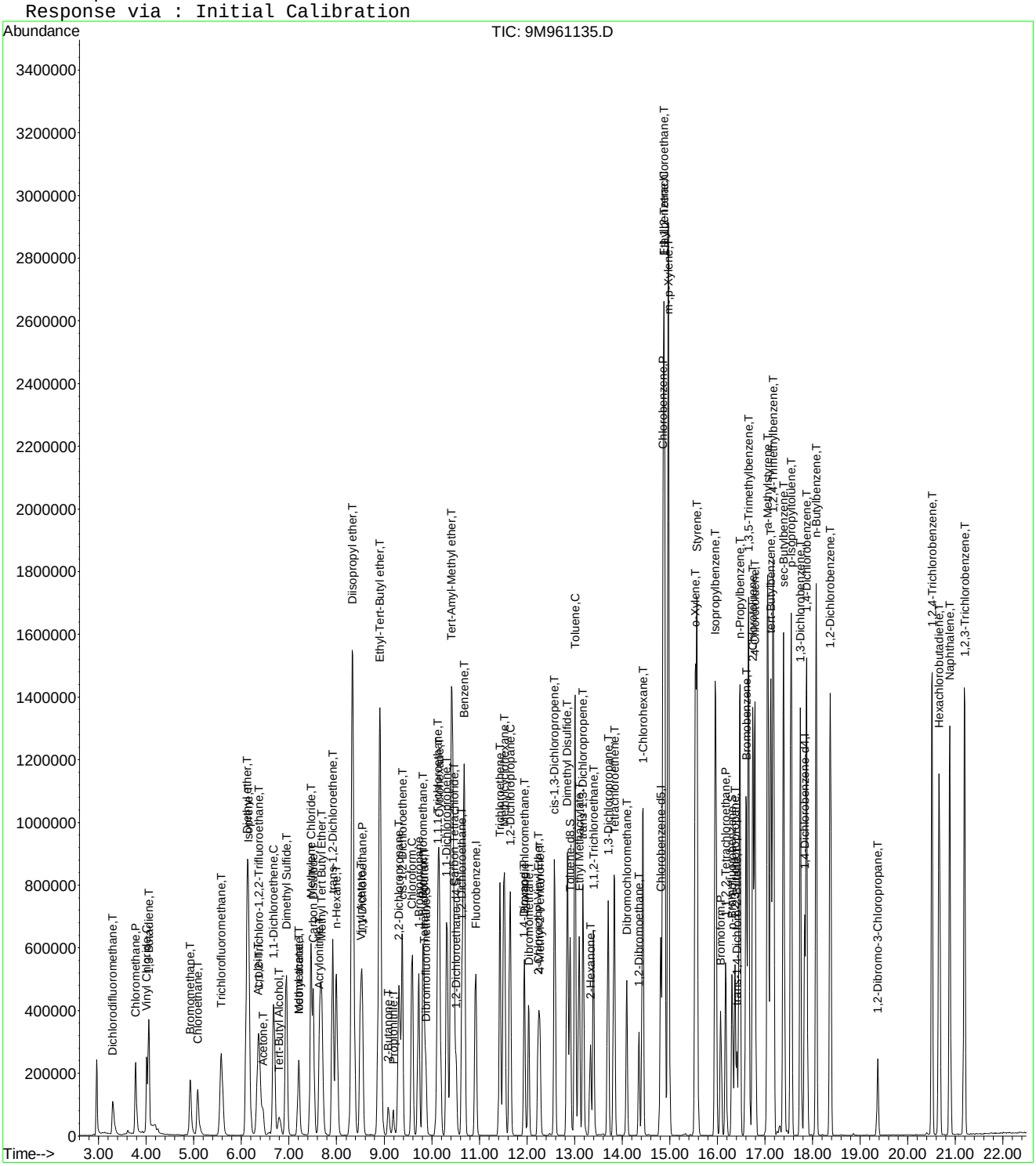

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\013014\9M961135.D Vial: 14
Acq On : 30 Jan 2014 15:49 Operator: ADC
Sample : WG461445-12 50.0 ug/L ALTSRC Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	50.0000	42.7184	14.6	75	-0.01
3	P	Chloromethane	50.0000	52.2442	-4.5	85	0.00
4	C	Vinyl Chloride	50.0000	43.8418	12.3	69	-0.01
5	T	1,3-Butadiene	50.0000	33.5742	32.9#	62	-0.01
6	T	Bromomethane	50.0000	43.9883	12.0	83	-0.02
7	T	Chloroethane	50.0000	48.2701	3.5	79	-0.01
8	T	Trichlorofluoromethane	50.0000	47.2255	5.5	82	-0.01
9	T	Diethyl ether	100.0000	105.5486	-5.5	91	0.00
10	T	Isoprene	50.0000	48.1960	3.6	80	-0.01
11	T	Acrolein	50.0000	136.7840	-173.6#	233	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.0232	-4.0	87	0.00
13	T	Acetone	50.0000	67.3695	-34.7#	124	0.00
14	C	1,1-Dichloroethene	50.0000	46.1033	7.8	77	-0.01
15	T	Tert-Butyl Alcohol	200.0000	243.1949	-21.6	114	0.00
16	T	Dimethyl Sulfide	50.0000	54.6218	-9.2	91	0.00
17	T	Iodomethane	50.0000	29.0701	41.9#	50	0.00
18	T	Methyl acetate	50.0000	52.1897	-4.4	94	0.00
19	T	Methylene Chloride	50.0000	50.7172	-1.4	86	0.00
20	T	Carbon Disulfide	50.0000	44.5376	10.9	77	0.00
21	T	Acrylonitrile	50.0000	60.1280	-20.3	97	0.00
22	T	Methyl Tert Butyl Ether	50.0000	52.7542	-5.5	91	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.7043	2.6	85	0.00
24	T	n-Hexane	50.0000	46.0427	7.9	76	0.00
25	T	Diisopropyl ether	100.0000	101.2807	-1.3	87	0.00
26	T	Vinyl Acetate	50.0000	59.3917	-18.8	104	0.00
27	P	1,1-Dichloroethane	50.0000	47.5044	5.0	84	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.2175	-2.2	88	0.00
29	T	2-Butanone	50.0000	58.5555	-17.1	110	0.00
30	T	Propionitrile	100.0000	110.3443	-10.3	102	0.00
31	T	2,2-Dichloropropane	50.0000	48.1596	3.7	83	0.00
32	T	cis-1,2-Dichloroethene	50.0000	47.2029	5.6	85	0.00
33	C	Chloroform	50.0000	50.4680	-0.9	87	0.00
34		1-Bromopropane	50.0000	55.0274	-10.1	95	0.00
35	T	Bromochloromethane	50.0000	49.7989	0.4	85	0.00
36	T	Tetrahydrofuran	100.0000	115.4155	-15.4	98	0.00
37	S	Dibromofluoromethane	25.0000	26.7619	-7.0	94	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.4434	5.1	84	0.00
39	T	Cyclohexane	50.0000	46.8057	6.4	79	0.00
40	T	1,1-Dichloropropene	50.0000	49.2537	1.5	83	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	107.6072	-7.6	93	0.00
42	T	Carbon Tetrachloride	50.0000	47.5063	5.0	83	0.00
43	S	1,2-Dichloroethane-d4	25.0000	25.7939	-3.2	97	0.00
44		Heptane	-1.0000	0.0000	0.0	93	-0.01
45	T	1,2-Dichloroethane	50.0000	49.6685	0.7	87	0.00
46	T	Benzene	50.0000	49.5183	1.0	87	0.00
47	T	Trichloroethene	50.0000	46.6465	6.7	84	0.00
48	T	Methylcyclohexane	50.0000	45.7447	8.5	79	0.00
49	C	1,2-Dichloropropane	50.0000	50.8242	-1.6	87	0.00
50	T	1,4-Dioxane	200.0000	239.4061	-19.7	112	0.00
51	T	Bromodichloromethane	50.0000	48.3113	3.4	83	0.00
52	T	Dibromomethane	50.0000	51.7088	-3.4	88	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	39.8880	20.2	69	0.00
54	T	4-Methyl-2-Pentanone	50.0000	53.4440	-6.9	98	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\013014\9M961135.D Vial: 14
Acq On : 30 Jan 2014 15:49 Operator: ADC
Sample : WG461445-12 50.0 ug/L ALTSRC Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 16:52:29 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.8465	-5.7	91	0.00
56	T	Dimethyl Disulfide	50.0000	50.7135	-1.4	86	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	91	0.00
58	S	Toluene-d8	25.0000	28.0246	-12.1	104	0.00
59	C	Toluene	50.0000	49.4904	1.0	85	0.00
60	T	Ethyl Methacrylate	50.0000	54.9788	-10.0	91	0.00
61	T	trans-1,3-Dichloropropene	50.0000	51.0252	-2.1	85	0.00
62	T	1,1,2-Trichloroethane	50.0000	53.9306	-7.9	90	0.00
63	T	2-Hexanone	50.0000	60.4325	-20.9	109	0.00
64	T	1,3-Dichloropropane	50.0000	52.0353	-4.1	89	0.00
65	T	Tetrachloroethene	50.0000	48.3984	3.2	84	0.00
66	T	Dibromochloromethane	50.0000	50.4361	-0.9	84	0.00
67	T	1,2-Dibromoethane	50.0000	52.5820	-5.2	90	0.00
68	T	1-Chlorohexane	50.0000	50.1519	-0.3	84	0.00
69	P	Chlorobenzene	50.0000	45.4352	9.1	79	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	51.2236	-2.4	87	0.00
71	C	Ethylbenzene	50.0000	49.1667	1.7	85	0.00
72	T	m-,p-Xylene	100.0000	94.6829	5.3	81	0.00
73	T	o-Xylene	50.0000	45.4410	9.1	79	0.00
74	T	Styrene	50.0000	51.4102	-2.8	87	0.00
75	P	Bromoform	50.0000	58.9408	-17.9	93	0.00
76	T	Isopropylbenzene	50.0000	45.1500	9.7	79	0.00
77	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	98	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.9808	-6.0	103	0.00
79	S	p-Bromofluorobenzene	25.0000	23.0367	7.9	88	0.00
80	T	1,2,3-Trichloropropane	50.0000	52.5565	-5.1	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	29.8939	40.2#	54	0.00
82	T	n-Propylbenzene	50.0000	43.8273	12.3	78	0.00
83	T	Bromobenzene	50.0000	47.2097	5.6	86	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	48.7154	2.6	88	0.00
85	T	2-Chlorotoluene	50.0000	42.6605	14.7	81	0.00
86	T	4-Chlorotoluene	50.0000	46.5644	6.9	83	0.00
87	T	a-Methylstyrene	50.0000	51.5761	-3.2	91	0.00
88	T	tert-Butylbenzene	50.0000	44.2005	11.6	82	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	50.5782	-1.2	90	0.00
90	T	sec-Butylbenzene	50.0000	45.0194	10.0	80	0.00
91	T	p-Isopropyltoluene	50.0000	47.3380	5.3	83	0.00
92	T	1,3-Dichlorobenzene	50.0000	45.7026	8.6	84	0.00
93	T	1,4-Dichlorobenzene	50.0000	50.9023	-1.8	93	0.00
94	T	n-Butylbenzene	50.0000	54.9007	-9.8	93	0.00
95	T	1,2-Dichlorobenzene	50.0000	49.7685	0.5	90	0.00
96	T	1,2-Dibromo-3-Chloropropane	50.0000	59.0847	-18.2	109	0.00
97	T	1,2,4-Trichlorobenzene	50.0000	57.7356	-15.5	101	0.00
98	T	Hexachlorobutadiene	50.0000	57.0395	-14.1	99	0.00
99	T	Naphthalene	50.0000	58.5527	-17.1	104	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	56.7885	-13.6	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M961135.D 8260WTR.M Thu Jan 30 17:07:47 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\013014\8M394545.D Vial: 2
Acq On : 30 Jan 2014 20:01 Operator: MES
Sample : WG461583-02 50ug/L WATER CCV 8260 Inst : HPMS8
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 20:23:35 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	968455	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	763103	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	429949	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.96	111	246726	23.4123 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.64%		
43) 1,2-Dichloroethane-d4	10.60	65	205895	19.9416 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 79.76%#		
58) Toluene-d8	12.97	98	923743	24.2962 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.20%		
80) p-Bromofluorobenzene	16.38	95	366705	23.0155 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.08%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.36	85	515727	59.0878 ug/L	100
3) Chloromethane	3.83	50	931515	57.1573 ug/L	100
4) Vinyl Chloride	4.08	62	664389	57.2711 ug/L	100
5) 1,3-Butadiene	4.13	54	705118	87.0327 ug/L	97
6) Bromomethane	5.00	94	413533	56.2362 ug/L	100
7) Chloroethane	5.16	64	437472	53.3762 ug/L	99
8) Trichlorofluoromethane	5.65	101	835175	50.7556 ug/L	100
9) Diethyl ether	6.18	59	688065	93.4289 ug/L	97
10) Isoprene	6.23	67	814679	50.9212 ug/L	99
11) Acrolein	6.42	56	36167	33.4853 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.44	101	525191	53.6734 ug/L	99
13) Acetone	6.52	43	76633	44.5463 ug/L	96
14) 1,1-Dichloroethene	6.76	61	934016	52.0557 ug/L	99
15) Tert-Butyl Alcohol	6.85	59	60928	141.2149 ug/L	95
16) Dimethyl Sulfide	7.02	62	500858	48.5219 ug/L	96
17) Iodomethane	7.28	142	480567	50.2928 ug/L	99
18) Methyl acetate	7.28	43	251518	47.3751 ug/L	97
19) Methylene Chloride	7.55	84	522362	51.7073 ug/L	94
20) Carbon Disulfide	7.60	76	1843573	54.5596 ug/L	99
21) Acrylonitrile	7.72	53	117553	47.8435 ug/L	99
22) Methyl Tert Butyl Ether	7.75	73	923826	44.5869 ug/L	97
23) trans-1,2-Dichloroethene	7.99	61	897777	52.0874 ug/L	98
24) n-Hexane	8.07	57	927562	54.2991 ug/L	97
25) Diisopropyl ether	8.40	45	4217648	103.7653 ug/L	98
26) Vinyl Acetate	8.58	43	786850	47.2293 ug/L	99
27) 1,1-Dichloroethane	8.62	63	1106126	52.3771 ug/L	100
28) Ethyl-Tert-Butyl ether	8.98	59	3028749	92.6008 ug/L	98
29) 2-Butanone	9.16	43	114955	42.8415 ug/L	98
30) Propionitrile	9.27	54	70983	86.9971 ug/L	99
31) 2,2-Dichloropropane	9.40	77	911008	53.8202 ug/L	100
32) cis-1,2-Dichloroethene	9.46	96	626614	53.8696 ug/L	96
33) Chloroform	9.67	83	964986	51.4077 ug/L	99
34) 1-Bromopropane	9.81	122	118615	53.6728 ug/L	99
35) Bromochloromethane	9.90	130	305558	50.6594 ug/L	96
36) Tetrahydrofuran	9.92	42	150248	87.7190 ug/L	95
38) 1,1,1-Trichloroethane	10.20	97	895058	53.9363 ug/L	100
39) Cyclohexane	10.23	56	1173042	53.2664 ug/L	96
40) 1,1-Dichloropropene	10.40	75	766584	51.9005 ug/L	99
41) Tert-Amyl-Methyl ether	10.49	73	2057575	90.3923 ug/L	100
42) Carbon Tetrachloride	10.55	117	795945	57.2206 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M394545.D 8260WTR.M Thu Jan 30 20:23:36 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\013014\8M394545.D Vial: 2
Acq On : 30 Jan 2014 20:01 Operator: MES
Sample : WG461583-02 50ug/L WATER CCV 8260 Inst : HPMS8
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 20:23:35 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.71	62	620604	47.0085 ug/L	97
46)	Benzene	10.76	78	2203487	53.4745 ug/L	99
47)	Trichloroethene	11.51	130	586604	53.0520 ug/L	99
48)	Methylcyclohexane	11.59	83	869381	51.1892 ug/L	99
49)	1,2-Dichloropropane	11.72	63	594475	52.2370 ug/L	95
50)	Bromodichloromethane	12.02	83	683588	53.7793 ug/L	100
51)	1,4-Dioxane	12.00	88	5215	116.9039 ug/L	98
52)	Dibromomethane	12.11	93	246291	49.0744 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.31	63	212075	42.1510 ug/L	99
54)	4-Methyl-2-Pentanone	12.34	58	96405	41.7108 ug/L	97
55)	cis-1,3-Dichloropropene	12.65	75	802418	51.2466 ug/L	99
56)	Dimethyl Disulfide	12.92	94	842075	51.3801 ug/L	99
59)	Toluene	13.08	91	2436302	53.7576 ug/L	98
60)	Ethyl Methacrylate	13.16	69	404000	45.5952 ug/L	99
62)	trans-1,3-Dichloropropene	13.25	75	647361	50.3882 ug/L	100
63)	1,1,2-Trichloroethane	13.47	97	325066	48.9456 ug/L	100
64)	2-Hexanone	13.40	58	87321	41.8469 ug/L	93
65)	1,3-Dichloropropane	13.77	76	568657	46.5147 ug/L	100
66)	Tetrachloroethene	13.91	164	487751	53.6148 ug/L	97
67)	Dibromochloromethane	14.16	129	419098	55.3699 ug/L	100
68)	1,2-Dibromoethane	14.42	107	317608	47.9287 ug/L	100
69)	1-Chlorohexane	14.49	91	804164	52.2112 ug/L	99
70)	Chlorobenzene	14.93	112	1586561	52.6066 ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.96	131	557397	57.8584 ug/L	100
72)	Ethylbenzene	14.95	106	885171	53.4948 ug/L	100
73)	m-,p-Xylene	15.04	106	2126060	108.7965 ug/L	99
74)	o-Xylene	15.60	106	1033750	52.2571 ug/L	100
75)	Styrene	15.64	104	1709172	52.7946 ug/L	97
76)	Bromoform	16.15	173	265330	50.1428 ug/L	99
77)	Isopropylbenzene	16.03	105	2588948	53.1902 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.24	83	335976	46.4705 ug/L	100
81)	1,2,3-Trichloropropane	16.44	110	95354	45.6445 ug/L	95
82)	trans-1,4-Dichloro-2-Buten	16.48	53	112838	44.4819 ug/L	95
83)	n-Propylbenzene	16.54	91	3223034	52.3187 ug/L	99
84)	Bromobenzene	16.68	156	650541	50.5004 ug/L	95
85)	1,3,5-Trimethylbenzene	16.73	105	2210825	50.8428 ug/L	99
86)	2-Chlorotoluene	16.81	91	2204882	55.1137 ug/L	99
87)	4-Chlorotoluene	16.86	91	1731674	47.1760 ug/L	98
88)	a-Methylstyrene	17.13	118	1225950	50.4333 ug/L	99
89)	tert-Butylbenzene	17.19	134	486867	51.2176 ug/L	99
90)	1,2,4-Trimethylbenzene	17.25	105	2276644	51.6679 ug/L	99
91)	sec-Butylbenzene	17.46	105	2685332	51.4313 ug/L	99
92)	p-Isopropyltoluene	17.62	119	2305147	51.4834 ug/L	100
93)	1,3-Dichlorobenzene	17.82	146	1253249	51.2705 ug/L	97
94)	1,4-Dichlorobenzene	17.95	146	1218701	50.5118 ug/L	97
95)	n-Butylbenzene	18.14	91	2140246	51.3889 ug/L	99
96)	1,2-Dichlorobenzene	18.44	146	1062831	49.4048 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	19.45	75	50518	39.2089 ug/L	91
98)	1,2,4-Trichlorobenzene	20.58	180	739079	44.9582 ug/L	99
99)	Hexachlorobutadiene	20.74	225	346842	49.3363 ug/L	99
100)	Naphthalene	20.97	128	1055366	41.7579 ug/L	99
101)	1,2,3-Trichlorobenzene	21.28	180	595884	43.7358 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M394545.D 8260WTR.M Thu Jan 30 20:23:36 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\013014\8M394545.D Vial: 2
Acq On : 30 Jan 2014 20:01 Operator: MES
Sample : WG461583-02 50ug/L WATER CCV 8260 Inst : HPMS8
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 20:23 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration

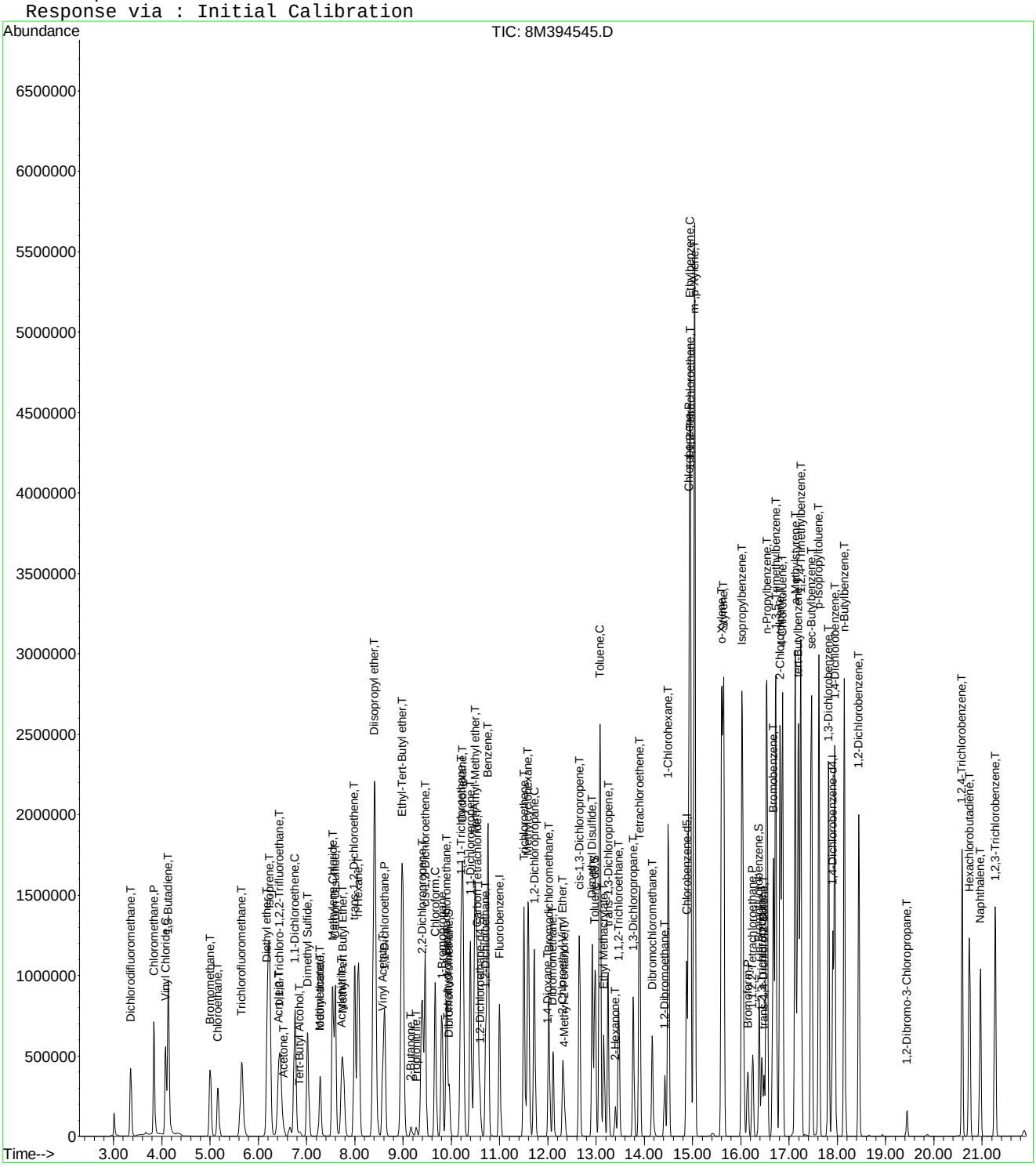

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 3 Jan 2014 13:56
CCV date: 30 Jan 2014 20:01
CCV Filename: 8M394545.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	804428	11.00	634474	14.88	350886	17.91
CCV	968455	11.00	763103	14.88	429949	17.91

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\013014\8M394545.D Vial: 2
Acq On : 30 Jan 2014 20:01 Operator: MES
Sample : WG461583-02 50ug/L WATER CCV 8260 Inst : HPMS8
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	120	0.00
2	T	Dichlorodifluoromethane	0.2253	0.2663	-18.2	122	0.00
3	P	Chloromethane	0.4207	0.4809	-14.3	129	0.00
4	C	Vinyl Chloride	0.2995	0.3430	-14.5	133	0.00
5	T	1,3-Butadiene	0.2687	0.3640	-35.5#	160#	0.00
6	T	Bromomethane	0.1898	0.2135	-12.5	124	0.00
7	T	Chloroethane	0.2116	0.2259	-6.8	120	0.00
8	T	Trichlorofluoromethane	0.4248	0.4312	-1.5	113	0.00
9	T	Diethyl ether	0.1901	0.1776	6.6	108	0.00
10	T	Isoprene	0.4130	0.4206	-1.8	113	0.00
11	T	Acrolein	0.0279	0.0187	33.0#	75	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2526	0.2712	-7.3	117	0.00
13	T	Acetone	0.0444	0.0396	10.9	102	0.00
14	C	1,1-Dichloroethene	0.4632	0.4822	-4.1	116	0.00
15	T	Tert-Butyl Alcohol	0.0111	0.0079	29.4#	83	0.00
16	T	Dimethyl Sulfide	0.2665	0.2586	3.0	108	0.00
17	T	Iodomethane	0.2218	0.2481	-11.9	112	0.00
18	T	Methyl acetate	0.1371	0.1299	5.2	113	0.00
19	T	Methylene Chloride	0.2608	0.2697	-3.4	118	0.00
20	T	Carbon Disulfide	0.8723	0.9518	-9.1	120	0.00
21	T	Acrylonitrile	0.0634	0.0607	4.3	106	0.00
22	T	Methyl Tert Butyl Ether	0.5349	0.4770	10.8	99	0.00
23	T	trans-1,2-Dichloroethene	0.4449	0.4635	-4.2	118	0.00
24	T	n-Hexane	0.4410	0.4789	-8.6	124	0.00
25	T	Diisopropyl ether	1.0493	1.0888	-3.8	120	0.00
26	T	Vinyl Acetate	0.4301	0.4062	5.5	104	0.00
27	P	1,1-Dichloroethane	0.5452	0.5711	-4.8	119	0.00
28	T	Ethyl-Tert-Butyl ether	0.8443	0.7819	7.4	107	0.00
29	T	2-Butanone	0.0693	0.0594	14.3	96	0.00
30	T	Propionitrile	0.0211	0.0183	13.0	100	0.00
31	T	2,2-Dichloropropane	0.4370	0.4703	-7.6	119	0.00
32	T	cis-1,2-Dichloroethene	0.3003	0.3235	-7.7	122	0.00
33	C	Chloroform	0.4846	0.4982	-2.8	119	0.00
34		1-Bromopropane	0.0570	0.0612	-7.3	118	0.00
35	T	Bromochloromethane	0.1557	0.1578	-1.3	114	0.00
36	T	Tetrahydrofuran	0.0442	0.0388	12.3	102	0.00
37	S	Dibromofluoromethane	0.2720	0.2548	6.4	109	0.00
38	T	1,1,1-Trichloroethane	0.4284	0.4621	-7.9	118	0.00
39	T	Cyclohexane	0.5685	0.6056	-6.5	120	0.00
40	T	1,1-Dichloropropene	0.3813	0.3958	-3.8	116	0.00
41	T	Tert-Amyl-Methyl ether	0.5876	0.5312	9.6	104	0.00
42	T	Carbon Tetrachloride	0.3591	0.4109	-14.4	122	0.00
43	S	1,2-Dichloroethane-d4	0.2665	0.2126	20.2	93	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.74#
45	T	1,2-Dichloroethane	0.3408	0.3204	6.0	105	0.00
46	T	Benzene	1.0637	1.1376	-6.9	121	0.00
47	T	Trichloroethene	0.2854	0.3029	-6.1	120	0.00
48	T	Methylcyclohexane	0.4384	0.4489	-2.4	115	0.00
49	C	1,2-Dichloropropane	0.2938	0.3069	-4.5	120	0.00
50	T	Bromodichloromethane	0.3281	0.3529	-7.6	116	0.00
51	T	1,4-Dioxane	0.0012	0.0007	41.7#	70	0.00
52	T	Dibromomethane	0.1296	0.1272	1.8	110	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1299	0.1095	15.7	94	0.00
54	T	4-Methyl-2-Pentanone	0.0597	0.0498	16.6	97	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\013014\8M394545.D Vial: 2
Acq On : 30 Jan 2014 20:01 Operator: MES
Sample : WG461583-02 50ug/L WATER CCV 8260 Inst : HPMS8
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4042	0.4143	-2.5	113	0.00
56	T	Dimethyl Disulfide	0.4231	0.4348	-2.8	114	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	120	0.00
58	S	Toluene-d8	1.2456	1.2105	2.8	116	0.00
59	C	Toluene	1.4847	1.5963	-7.5	124	0.00
60	T	Ethyl Methacrylate	0.2903	0.2647	8.8	100	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.34#
62	T	trans-1,3-Dichloropropene	0.4209	0.4242	-0.8	109	0.00
63	T	1,1,2-Trichloroethane	0.2176	0.2130	2.1	110	0.00
64	T	2-Hexanone	0.0684	0.0572	16.3	92	0.00
65	T	1,3-Dichloropropane	0.4005	0.3726	7.0	107	0.00
66	T	Tetrachloroethene	0.2980	0.3196	-7.2	122	0.00
67	T	Dibromochloromethane	0.2480	0.2746	-10.7	116	0.00
68	T	1,2-Dibromoethane	0.2171	0.2081	4.1	107	0.00
69	T	1-Chlorohexane	0.5046	0.5269	-4.4	117	0.00
70	P	Chlorobenzene	0.9880	1.0396	-5.2	121	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3156	0.3652	-15.7	124	0.00
72	C	Ethylbenzene	0.5421	0.5800	-7.0	123	0.00
73	T	m-,p-Xylene	0.6402	0.6965	-8.8	123	0.00
74	T	o-Xylene	0.6481	0.6773	-4.5	120	0.00
75	T	Styrene	1.0606	1.1199	-5.6	118	0.00
76	P	Bromoform	0.1480	0.1739	-17.5	119	0.00
77	T	Isopropylbenzene	1.5946	1.6963	-6.4	120	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	123	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4204	0.3907	7.1	106	0.00
80	S	p-Bromofluorobenzene	0.9264	0.8529	7.9	112	0.00
81	T	1,2,3-Trichloropropane	0.1215	0.1109	8.7	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1475	0.1312	11.0	98	0.00
83	T	n-Propylbenzene	3.5820	3.7482	-4.6	120	0.00
84	T	Bromobenzene	0.7490	0.7565	-1.0	119	0.00
85	T	1,3,5-Trimethylbenzene	2.5284	2.5710	-1.7	119	0.00
86	T	2-Chlorotoluene	2.3262	2.5641	-10.2	134	0.00
87	T	4-Chlorotoluene	2.1344	2.0138	5.6	103	0.00
88	T	a-Methylstyrene	1.4134	1.4257	-0.9	116	0.00
89	T	tert-Butylbenzene	0.5527	0.5662	-2.4	117	0.00
90	T	1,2,4-Trimethylbenzene	2.5621	2.6476	-3.3	120	0.00
91	T	sec-Butylbenzene	3.0359	3.1229	-2.9	118	0.00
92	T	p-Isopropyltoluene	2.6035	2.6807	-3.0	118	0.00
93	T	1,3-Dichlorobenzene	1.4213	1.4574	-2.5	120	0.00
94	T	1,4-Dichlorobenzene	1.4029	1.4173	-1.0	118	0.00
95	T	n-Butylbenzene	2.4217	2.4890	-2.8	118	0.00
96	T	1,2-Dichlorobenzene	1.2509	1.2360	1.2	115	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0692	0.0587	15.2	93	0.00
98	T	1,2,4-Trichlorobenzene	0.9559	0.8595	10.1	106	0.00
99	T	Hexachlorobutadiene	0.4088	0.4033	1.3	114	0.00
100	T	Naphthalene	1.4696	1.2273	16.5	96	0.00
101	T	1,2,3-Trichlorobenzene	0.7922	0.6930	12.5	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M394545.D 8260WTR.M Thu Jan 30 20:23:46 2014 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\013014\8M394545.D Vial: 2
Acq On : 30 Jan 2014 20:01 Operator: MES
Sample : WG461583-02 50ug/L WATER CCV 8260 Inst : HPMS8
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	120	0.00
2	T	Dichlorodifluoromethane	50.0000	59.0878	-18.2	122	0.00
3	P	Chloromethane	50.0000	57.1573	-14.3	129	0.00
4	C	Vinyl Chloride	50.0000	57.2711	-14.5	133	0.00
5	T	1,3-Butadiene	50.0000	87.0327	-74.1#	160	0.00
6	T	Bromomethane	50.0000	56.2362	-12.5	124	0.00
7	T	Chloroethane	50.0000	53.3762	-6.8	120	0.00
8	T	Trichlorofluoromethane	50.0000	50.7556	-1.5	113	0.00
9	T	Diethyl ether	100.0000	93.4289	6.6	108	0.00
10	T	Isoprene	50.0000	50.9212	-1.8	113	0.00
11	T	Acrolein	50.0000	33.4853	33.0#	75	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.6734	-7.3	117	0.00
13	T	Acetone	50.0000	44.5463	10.9	102	0.00
14	C	1,1-Dichloroethene	50.0000	52.0557	-4.1	116	0.00
15	T	Tert-Butyl Alcohol	200.0000	141.2149	29.4#	83	0.00
16	T	Dimethyl Sulfide	50.0000	48.5219	3.0	108	0.00
17	T	Iodomethane	50.0000	50.2928	-0.6	112	0.00
18	T	Methyl acetate	50.0000	47.3751	5.2	113	0.00
19	T	Methylene Chloride	50.0000	51.7073	-3.4	118	0.00
20	T	Carbon Disulfide	50.0000	54.5596	-9.1	120	0.00
21	T	Acrylonitrile	50.0000	47.8436	4.3	106	0.00
22	T	Methyl Tert Butyl Ether	50.0000	44.5869	10.8	99	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.0874	-4.2	118	0.00
24	T	n-Hexane	50.0000	54.2991	-8.6	124	0.00
25	T	Diisopropyl ether	100.0000	103.7653	-3.8	120	0.00
26	T	Vinyl Acetate	50.0000	47.2293	5.5	104	0.00
27	P	1,1-Dichloroethane	50.0000	52.3771	-4.8	119	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	92.6008	7.4	107	0.00
29	T	2-Butanone	50.0000	42.8415	14.3	96	0.00
30	T	Propionitrile	100.0000	86.9971	13.0	100	0.00
31	T	2,2-Dichloropropane	50.0000	53.8202	-7.6	119	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.8696	-7.7	122	0.00
33	C	Chloroform	50.0000	51.4078	-2.8	119	0.00
34		1-Bromopropane	50.0000	53.6728	-7.3	118	0.00
35	T	Bromochloromethane	50.0000	50.6594	-1.3	114	0.00
36	T	Tetrahydrofuran	100.0000	87.7190	12.3	102	0.00
37	S	Dibromofluoromethane	25.0000	23.4123	6.4	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	53.9363	-7.9	118	0.00
39	T	Cyclohexane	50.0000	53.2664	-6.5	120	0.00
40	T	1,1-Dichloropropene	50.0000	51.9004	-3.8	116	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	90.3923	9.6	104	0.00
42	T	Carbon Tetrachloride	50.0000	57.2206	-14.4	122	0.00
43	S	1,2-Dichloroethane-d4	25.0000	19.9416	20.2	93	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.74#
45	T	1,2-Dichloroethane	50.0000	47.0085	6.0	105	0.00
46	T	Benzene	50.0000	53.4745	-6.9	121	0.00
47	T	Trichloroethene	50.0000	53.0520	-6.1	120	0.00
48	T	Methylcyclohexane	50.0000	51.1892	-2.4	115	0.00
49	C	1,2-Dichloropropane	50.0000	52.2370	-4.5	120	0.00
50	T	Bromodichloromethane	50.0000	53.7793	-7.6	116	0.00
51	T	1,4-Dioxane	200.0000	116.9039	41.5#	70	0.00
52	T	Dibromomethane	50.0000	49.0744	1.9	110	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	42.1510	15.7	94	0.00
54	T	4-Methyl-2-Pentanone	50.0000	41.7108	16.6	97	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\013014\8M394545.D Vial: 2
Acq On : 30 Jan 2014 20:01 Operator: MES
Sample : WG461583-02 50ug/L WATER CCV 8260 Inst : HPMS8
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.2466	-2.5	113	0.00
56	T	Dimethyl Disulfide	50.0000	51.3802	-2.8	114	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	120	0.00
58	S	Toluene-d8	25.0000	24.2962	2.8	116	0.00
59	C	Toluene	50.0000	53.7576	-7.5	124	0.00
60	T	Ethyl Methacrylate	50.0000	45.5952	8.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.34#
62	T	trans-1,3-Dichloropropene	50.0000	50.3882	-0.8	109	0.00
63	T	1,1,2-Trichloroethane	50.0000	48.9456	2.1	110	0.00
64	T	2-Hexanone	50.0000	41.8469	16.3	92	0.00
65	T	1,3-Dichloropropane	50.0000	46.5147	7.0	107	0.00
66	T	Tetrachloroethene	50.0000	53.6148	-7.2	122	0.00
67	T	Dibromochloromethane	50.0000	55.3699	-10.7	116	0.00
68	T	1,2-Dibromoethane	50.0000	47.9287	4.1	107	0.00
69	T	1-Chlorohexane	50.0000	52.2112	-4.4	117	0.00
70	P	Chlorobenzene	50.0000	52.6066	-5.2	121	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	57.8584	-15.7	124	0.00
72	C	Ethylbenzene	50.0000	53.4948	-7.0	123	0.00
73	T	m-,p-Xylene	100.0000	108.7965	-8.8	123	0.00
74	T	o-Xylene	50.0000	52.2571	-4.5	120	0.00
75	T	Styrene	50.0000	52.7946	-5.6	118	0.00
76	P	Bromoform	50.0000	50.1428	-0.3	119	0.00
77	T	Isopropylbenzene	50.0000	53.1902	-6.4	120	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	123	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	46.4705	7.1	106	0.00
80	S	p-Bromofluorobenzene	25.0000	23.0155	7.9	112	0.00
81	T	1,2,3-Trichloropropane	50.0000	45.6445	8.7	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	44.4819	11.0	98	0.00
83	T	n-Propylbenzene	50.0000	52.3187	-4.6	120	0.00
84	T	Bromobenzene	50.0000	50.5004	-1.0	119	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.8428	-1.7	119	0.00
86	T	2-Chlorotoluene	50.0000	55.1137	-10.2	134	0.00
87	T	4-Chlorotoluene	50.0000	47.1760	5.6	103	0.00
88	T	a-Methylstyrene	50.0000	50.4333	-0.9	116	0.00
89	T	tert-Butylbenzene	50.0000	51.2176	-2.4	117	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.6679	-3.3	120	0.00
91	T	sec-Butylbenzene	50.0000	51.4313	-2.9	118	0.00
92	T	p-Isopropyltoluene	50.0000	51.4834	-3.0	118	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.2705	-2.5	120	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.5118	-1.0	118	0.00
95	T	n-Butylbenzene	50.0000	51.3889	-2.8	118	0.00
96	T	1,2-Dichlorobenzene	50.0000	49.4049	1.2	115	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	39.2089	21.6	93	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	44.9582	10.1	106	0.00
99	T	Hexachlorobutadiene	50.0000	49.3363	1.3	114	0.00
100	T	Naphthalene	50.0000	41.7579	16.5	96	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	43.7358	12.5	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M394545.D 8260WTR.M Thu Jan 30 20:23:43 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961138.D Vial: 3
Acq On : 30 Jan 2014 20:35 Operator: MES
Sample : WG461585-02 50ug/L WATER CCV 8260 Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 20:58:20 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.93	96	669904	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	485544	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	234623	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.88	111	179909	26.9177 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.68%		
43) 1,2-Dichloroethane-d4	10.52	65	208149	26.0050 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.04%		
58) Toluene-d8	12.91	98	595809	27.8909 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 111.56%#		
79) p-Bromofluorobenzene	16.31	95	236327	24.8304 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.32%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	229601	48.3627 ug/L	97
3) Chloromethane	3.77	50	369670	50.5106 ug/L	99
4) Vinyl Chloride	4.01	62	398301	55.5581 ug/L	99
5) 1,3-Butadiene	4.06	54	275010	48.7170 ug/L	98
6) Bromomethane	4.94	94	251061	46.9661 ug/L	99
7) Chloroethane	5.10	64	283098	52.0247 ug/L	99
8) Trichlorofluoromethane	5.59	101	562757	50.0785 ug/L	100
9) Diethyl ether	6.11	59	704339	105.9132 ug/L	99
10) Isoprene	6.16	67	538604	53.3798 ug/L	100
11) Acrolein	6.35	56	70762	79.4040 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.38	101	353843	54.2543 ug/L	98
13) Acetone	6.45	43	104776	46.9051 ug/L	97
14) 1,1-Dichloroethene	6.69	61	656844	52.3891 ug/L	99
15) Tert-Butyl Alcohol	6.78	59	115772	199.1549 ug/L	98
16) Dimethyl Sulfide	6.95	62	404373	51.5626 ug/L	99
17) Iodomethane	7.20	142	349044	46.8452 ug/L	97
18) Methyl acetate	7.20	43	320010	48.7190 ug/L	100
19) Methylene Chloride	7.46	84	375032	51.1753 ug/L	100
20) Carbon Disulfide	7.51	76	1134425	51.8377 ug/L	100
21) Acrylonitrile	7.64	53	155750	56.4351 ug/L	99
22) Methyl Tert Butyl Ether	7.68	73	952993	49.5513 ug/L	98
23) trans-1,2-Dichloroethene	7.92	61	630857	50.8634 ug/L	99
24) n-Hexane	8.00	57	693502	60.8684 ug/L	100
25) Diisopropyl ether	8.33	45	3429585	102.4473 ug/L	100
26) Vinyl Acetate	8.51	43	805885	51.8673 ug/L	98
27) 1,1-Dichloroethane	8.54	63	782745	48.4914 ug/L	100
28) Ethyl-Tert-Butyl ether	8.91	59	2776830	102.1052 ug/L	100
29) 2-Butanone	9.09	43	157021	46.5040 ug/L	99
30) Propionitrile	9.19	54	103618	95.3863 ug/L	99
31) 2,2-Dichloropropane	9.31	77	626132	51.7581 ug/L	98
32) cis-1,2-Dichloroethene	9.39	96	387385	47.7904 ug/L	96
33) Chloroform	9.59	83	661533	50.3628 ug/L	99
34) 1-Bromopropane	9.73	122	68642	48.7829 ug/L	99
35) Bromochloromethane	9.82	130	232458	51.2046 ug/L	96
36) Tetrahydrofuran	9.84	42	209799	101.6163 ug/L	100
38) 1,1,1-Trichloroethane	10.13	97	570515	49.0080 ug/L	100
39) Cyclohexane	10.16	56	859042	53.2514 ug/L	100
40) 1,1-Dichloropropene	10.32	75	508806	51.8286 ug/L	99
41) Tert-Amyl-Methyl ether	10.42	73	1916993	102.0441 ug/L	99
42) Carbon Tetrachloride	10.47	117	514630	49.1176 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M961138.D 8260WTR.M Thu Jan 30 20:58:22 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961138.D Vial: 3
Acq On : 30 Jan 2014 20:35 Operator: MES
Sample : WG461585-02 50ug/L WATER CCV 8260 Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 20:58:20 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.64	62	560825	48.1310 ug/L	99
46)	Benzene	10.68	78	1484461	49.6794 ug/L	100
47)	Trichloroethene	11.43	130	365880	46.1461 ug/L	98
48)	Methylcyclohexane	11.52	83	628054	53.4128 ug/L	98
49)	1,2-Dichloropropane	11.65	63	456939	50.1688 ug/L	99
50)	1,4-Dioxane	11.93	88	10401	186.2273 ug/L	96
51)	Bromodichloromethane	11.95	83	527456	50.1996 ug/L	99
52)	Dibromomethane	12.04	174	235466	50.2407 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.24	63	224390	49.8178 ug/L	97
54)	4-Methyl-2-Pentanone	12.27	58	134487	46.3972 ug/L	97
55)	cis-1,3-Dichloropropene	12.58	75	627836	50.9015 ug/L	99
56)	Dimethyl Disulfide	12.85	94	672955	49.6170 ug/L	98
59)	Toluene	13.01	91	1491009	50.6067 ug/L	100
60)	Ethyl Methacrylate	13.10	69	416773	50.0360 ug/L	100
61)	trans-1,3-Dichloropropene	13.18	75	541154	51.0181 ug/L	100
62)	1,1,2-Trichloroethane	13.40	97	276497	50.8628 ug/L	100
63)	2-Hexanone	13.33	43	232557	45.7738 ug/L	100
64)	1,3-Dichloropropane	13.71	76	530193	50.1849 ug/L	99
65)	Tetrachloroethene	13.84	164	337399	51.1773 ug/L	100
66)	Dibromochloromethane	14.10	129	356647	50.6312 ug/L	99
67)	1,2-Dibromoethane	14.36	107	306840	49.9730 ug/L	98
68)	1-Chlorohexane	14.44	91	486003	53.2952 ug/L	100
69)	Chlorobenzene	14.86	112	1013517	49.4877 ug/L	99
70)	1,1,1,2-Tetrachloroethane	14.88	131	389365	51.3726 ug/L	98
71)	Ethylbenzene	14.88	106	581996	52.1676 ug/L	98
72)	m-,p-Xylene	14.98	106	1388426	102.7149 ug/L	100
73)	o-Xylene	15.53	106	694573	50.0905 ug/L	99
74)	Styrene	15.58	104	1182654	51.4661 ug/L	100
75)	Bromoform	16.07	173	259207	54.3666 ug/L	98
76)	Isopropylbenzene	15.96	105	1778409	50.6906 ug/L	100
78)	1,1,2,2-Tetrachloroethane	16.18	83	356255	50.0284 ug/L	100
80)	1,2,3-Trichloropropane	16.37	110	103977	49.4420 ug/L	91
81)	trans-1,4-Dichloro-2-Buten	16.41	53	142341	49.7653 ug/L	87
82)	n-Propylbenzene	16.48	91	2030512	54.4928 ug/L	100
83)	Bromobenzene	16.60	156	439690	51.3305 ug/L	98
84)	1,3,5-Trimethylbenzene	16.66	105	1540616	53.5364 ug/L	99
85)	2-Chlorotoluene	16.74	91	1206252	49.7404 ug/L	99
86)	4-Chlorotoluene	16.80	91	1239332	54.7618 ug/L	99
87)	a-Methylstyrene	17.06	118	788601	53.9861 ug/L	97
88)	tert-Butylbenzene	17.13	134	328661	51.1218 ug/L	98
89)	1,2,4-Trimethylbenzene	17.18	105	1561799	54.0779 ug/L	100
90)	sec-Butylbenzene	17.40	105	1944527	54.7238 ug/L	99
91)	p-Isopropyltoluene	17.55	119	1552697	55.4213 ug/L	100
92)	1,3-Dichlorobenzene	17.75	146	853554	52.8499 ug/L	100
93)	1,4-Dichlorobenzene	17.88	146	852193	52.6554 ug/L	100
94)	n-Butylbenzene	18.08	91	1427036	59.1334 ug/L	99
95)	1,2-Dichlorobenzene	18.38	146	813580	51.7450 ug/L	100
96)	1,2-Dibromo-3-Chloropropan	19.37	157	75732	50.2849 ug/L	98
97)	1,2,4-Trichlorobenzene	20.52	180	642630	56.1077 ug/L	99
98)	Hexachlorobutadiene	20.66	225	363476	57.4765 ug/L	98
99)	Naphthalene	20.89	128	1205552	53.0939 ug/L	99
100)	1,2,3-Trichlorobenzene	21.20	180	605299	53.6396 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M961138.D 8260WTR.M Thu Jan 30 20:58:22 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961138.D Vial: 3
Acq On : 30 Jan 2014 20:35 Operator: MES
Sample : WG461585-02 50ug/L WATER CCV 8260 Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 30 20:58 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration

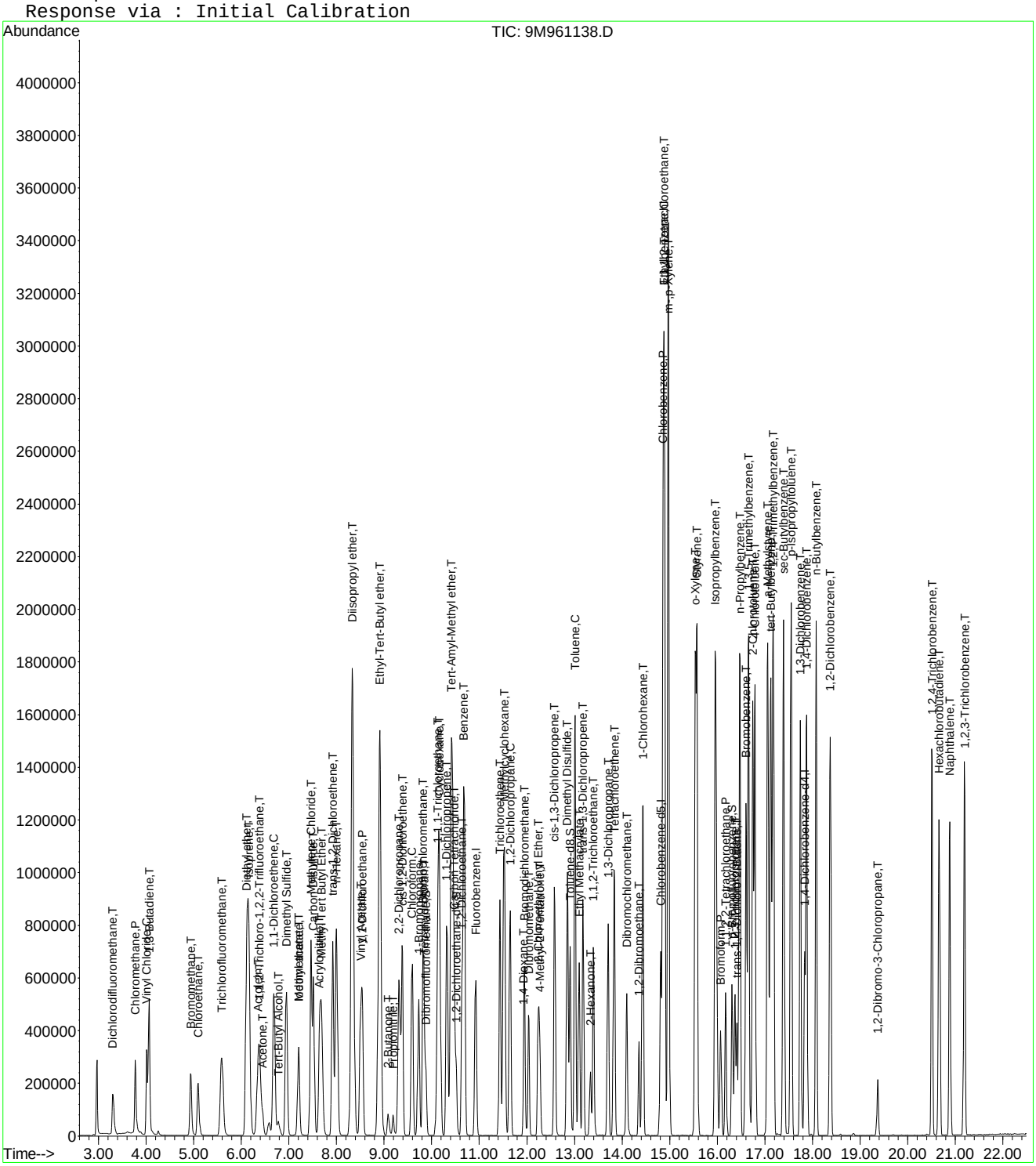

9M961138.D 8260WTR.M Thu Jan 30 20:58:23 2014 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS9
Initial cal date: 30 Jan 2014 12:22
CCV date: 30 Jan 2014 20:35
CCV Filename: 9M961138.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	633808	10.92	711761	12.85	1781011	15.96
CCV	669904	10.93	672955	12.85	1778409	15.96

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\013014\9M961138.D Vial: 3
Acq On : 30 Jan 2014 20:35 Operator: MES
Sample : WG461585-02 50ug/L WATER CCV 8260 Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	106	0.00
2	T	Dichlorodifluoromethane	0.1341	0.1714	-27.8#	96	0.00
3	P	Chloromethane	0.2731	0.2759	-1.0	93	0.00
4	C	Vinyl Chloride	0.2675	0.2973	-11.1	98	0.00
5	T	1,3-Butadiene	0.2025	0.2053	-1.4	99	0.00
6	T	Bromomethane	0.1995	0.1874	6.1	100	0.00
7	T	Chloroethane	0.2031	0.2113	-4.1	96	0.00
8	T	Trichlorofluoromethane	0.3787	0.4200	-10.9	98	0.00
9	T	Diethyl ether	0.2482	0.2628	-5.9	103	0.00
10	T	Isoprene	0.3766	0.4020	-6.8	100	0.00
11	T	Acrolein	0.0310	0.0528	-70.2#	152	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2434	0.2641	-8.5	103	0.01
13	T	Acetone	0.0834	0.0782	6.2	97	0.00
14	C	1,1-Dichloroethene	0.4679	0.4903	-4.8	99	0.00
15	T	Tert-Butyl Alcohol	0.0221	0.0216	2.4	102	0.00
16	T	Dimethyl Sulfide	0.2927	0.3018	-3.1	96	0.00
17	T	Iodomethane	0.2170	0.2605	-20.1	91	0.00
18	T	Methyl acetate	0.2451	0.2389	2.6	98	0.00
19	T	Methylene Chloride	0.2735	0.2799	-2.3	98	0.00
20	T	Carbon Disulfide	0.8167	0.8467	-3.7	100	0.00
21	T	Acrylonitrile	0.1030	0.1163	-12.9	103	0.00
22	T	Methyl Tert Butyl Ether	0.7177	0.7113	0.9	97	0.00
23	T	trans-1,2-Dichloroethene	0.4629	0.4709	-1.7	101	0.00
24	T	n-Hexane	0.4252	0.5176	-21.7	113	0.00
25	T	Diisopropyl ether	1.2493	1.2799	-2.4	99	0.00
26	T	Vinyl Acetate	0.5389	0.6015	-11.6	102	0.00
27	P	1,1-Dichloroethane	0.6024	0.5842	3.0	97	0.00
28	T	Ethyl-Tert-Butyl ether	1.0149	1.0363	-2.1	99	0.00
29	T	2-Butanone	0.1260	0.1172	7.0	98	0.00
30	T	Propionitrile	0.0369	0.0387	-4.9	99	0.00
31	T	2,2-Dichloropropane	0.4515	0.4673	-3.5	100	0.00
32	T	cis-1,2-Dichloroethene	0.3025	0.2891	4.4	96	0.01
33	C	Chloroform	0.4902	0.4938	-0.7	97	0.00
34		1-Bromopropane	0.0498	0.0512	-2.9	95	0.00
35	T	Bromochloromethane	0.1694	0.1735	-2.4	99	0.00
36	T	Tetrahydrofuran	0.0770	0.0783	-1.6	97	0.00
37	S	Dibromofluoromethane	0.2494	0.2686	-7.7	107	0.00
38	T	1,1,1-Trichloroethane	0.4344	0.4258	2.0	98	0.01
39	T	Cyclohexane	0.6020	0.6412	-6.5	102	0.00
40	T	1,1-Dichloropropene	0.3664	0.3798	-3.7	98	0.00
41	T	Tert-Amyl-Methyl ether	0.7011	0.7154	-2.0	100	0.00
42	T	Carbon Tetrachloride	0.3910	0.3841	1.8	97	0.00
43	S	1,2-Dichloroethane-d4	0.2987	0.3107	-4.0	110	0.01
44		Heptane	0.0000	0.0000	0.0	97	0.00
45	T	1,2-Dichloroethane	0.4348	0.4186	3.7	95	0.00
46	T	Benzene	1.1151	1.1080	0.6	98	0.00
47	T	Trichloroethene	0.2959	0.2731	7.7	94	0.00
48	T	Methylcyclohexane	0.4388	0.4688	-6.8	104	0.00
49	C	1,2-Dichloropropane	0.3399	0.3411	-0.3	97	0.00
50	T	1,4-Dioxane	0.0019	0.0019	-1.0	96	0.00
51	T	Bromodichloromethane	0.3921	0.3937	-0.4	97	0.00
52	T	Dibromomethane	0.1749	0.1757	-0.5	96	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1681	0.1675	0.4	97	0.00
54	T	4-Methyl-2-Pentanone	0.1082	0.1004	7.2	96	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\013014\9M961138.D Vial: 3
Acq On : 30 Jan 2014 20:35 Operator: MES
Sample : WG461585-02 50ug/L WATER CCV 8260 Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4603	0.4686	-1.8	98	0.00
56	T	Dimethyl Disulfide	0.5061	0.5023	0.8	95	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	102	0.00
58	S	Toluene-d8	1.0999	1.2271	-11.6	116	0.00
59	C	Toluene	1.5170	1.5354	-1.2	98	0.00
60	T	Ethyl Methacrylate	0.4289	0.4292	-0.1	93	0.00
61	T	trans-1,3-Dichloropropene	0.5462	0.5573	-2.0	95	0.00
62	T	1,1,2-Trichloroethane	0.2799	0.2847	-1.7	96	0.00
63	T	2-Hexanone	0.2616	0.2395	8.5	93	0.00
64	T	1,3-Dichloropropane	0.5440	0.5460	-0.4	96	0.00
65	T	Tetrachloroethene	0.3394	0.3474	-2.4	100	0.01
66	T	Dibromochloromethane	0.3627	0.3673	-1.3	95	0.00
67	T	1,2-Dibromoethane	0.3161	0.3160	0.1	96	0.00
68	T	1-Chlorohexane	0.4695	0.5005	-6.6	100	0.00
69	P	Chlorobenzene	1.0545	1.0437	1.0	96	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3902	0.4010	-2.7	98	0.00
71	C	Ethylbenzene	0.5744	0.5993	-4.3	101	0.00
72	T	m-,p-Xylene	0.6960	0.7149	-2.7	98	0.00
73	T	o-Xylene	0.7140	0.7153	-0.2	97	0.00
74	T	Styrene	1.1832	1.2179	-2.9	98	0.00
75	P	Bromoform	0.2455	0.2669	-8.7	96	0.00
76	T	Isopropylbenzene	1.8064	1.8314	-1.4	100	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	101	0.00
78	P	1,1,2,2-Tetrachloroethane	0.6745	0.7592	-12.6	100	0.00
79	S	p-Bromofluorobenzene	1.0141	1.0073	0.7	98	0.00
80	T	1,2,3-Trichloropropane	0.2147	0.2216	-3.2	97	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2820	0.3033	-7.6	93	0.00
82	T	n-Propylbenzene	3.9704	4.3272	-9.0	100	0.01
83	T	Bromobenzene	0.9127	0.9370	-2.7	96	0.00
84	T	1,3,5-Trimethylbenzene	3.0663	3.2832	-7.1	99	0.00
85	T	2-Chlorotoluene	2.5840	2.5706	0.5	97	0.00
86	T	4-Chlorotoluene	2.4115	2.6411	-9.5	101	0.00
87	T	a-Methylstyrene	1.5565	1.6806	-8.0	98	0.00
88	T	tert-Butylbenzene	0.6850	0.7004	-2.2	97	0.00
89	T	1,2,4-Trimethylbenzene	3.0773	3.3283	-8.2	99	0.00
90	T	sec-Butylbenzene	3.7862	4.1439	-9.4	100	0.00
91	T	p-Isopropyltoluene	2.9852	3.3089	-10.8	100	0.00
92	T	1,3-Dichlorobenzene	1.7209	1.8190	-5.7	100	0.00
93	T	1,4-Dichlorobenzene	1.7245	1.8161	-5.3	99	0.00
94	T	n-Butylbenzene	2.5714	3.0411	-18.3	103	0.00
95	T	1,2-Dichlorobenzene	1.6753	1.7338	-3.5	97	0.00
96	T	1,2-Dibromo-3-Chloropropane	0.1605	0.1614	-0.6	95	0.00
97	T	1,2,4-Trichlorobenzene	1.2204	1.3695	-12.2	101	0.00
98	T	Hexachlorobutadiene	0.6738	0.7746	-15.0	102	0.00
99	T	Naphthalene	2.4194	2.5691	-6.2	97	0.00
100	T	1,2,3-Trichlorobenzene	1.2024	1.2899	-7.3	98	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M961138.D 8260WTR.M Thu Jan 30 20:58:32 2014 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\013014\9M961138.D Vial: 3
Acq On : 30 Jan 2014 20:35 Operator: MES
Sample : WG461585-02 50ug/L WATER CCV 8260 Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	106	0.00
2	T	Dichlorodifluoromethane	50.0000	48.3627	3.3	96	0.00
3	P	Chloromethane	50.0000	50.5106	-1.0	93	0.00
4	C	Vinyl Chloride	50.0000	55.5581	-11.1	98	0.00
5	T	1,3-Butadiene	50.0000	48.7170	2.6	99	0.00
6	T	Bromomethane	50.0000	46.9661	6.1	100	0.00
7	T	Chloroethane	50.0000	52.0247	-4.0	96	0.00
8	T	Trichlorofluoromethane	50.0000	50.0785	-0.2	98	0.00
9	T	Diethyl ether	100.0000	105.9132	-5.9	103	0.00
10	T	Isoprene	50.0000	53.3798	-6.8	100	0.00
11	T	Acrolein	50.0000	79.4040	-58.8#	152	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.2543	-8.5	103	0.01
13	T	Acetone	50.0000	46.9051	6.2	97	0.00
14	C	1,1-Dichloroethene	50.0000	52.3891	-4.8	99	0.00
15	T	Tert-Butyl Alcohol	200.0000	199.1549	0.4	102	0.00
16	T	Dimethyl Sulfide	50.0000	51.5626	-3.1	96	0.00
17	T	Iodomethane	50.0000	46.8452	6.3	91	0.00
18	T	Methyl acetate	50.0000	48.7190	2.6	98	0.00
19	T	Methylene Chloride	50.0000	51.1753	-2.4	98	0.00
20	T	Carbon Disulfide	50.0000	51.8377	-3.7	100	0.00
21	T	Acrylonitrile	50.0000	56.4351	-12.9	103	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.5513	0.9	97	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.8634	-1.7	101	0.00
24	T	n-Hexane	50.0000	60.8684	-21.7	113	0.00
25	T	Diisopropyl ether	100.0000	102.4473	-2.4	99	0.00
26	T	Vinyl Acetate	50.0000	51.8673	-3.7	102	0.00
27	P	1,1-Dichloroethane	50.0000	48.4914	3.0	97	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.1052	-2.1	99	0.00
29	T	2-Butanone	50.0000	46.5040	7.0	98	0.00
30	T	Propionitrile	100.0000	95.3863	4.6	99	0.00
31	T	2,2-Dichloropropane	50.0000	51.7581	-3.5	100	0.00
32	T	cis-1,2-Dichloroethene	50.0000	47.7904	4.4	96	0.01
33	C	Chloroform	50.0000	50.3628	-0.7	97	0.00
34		1-Bromopropane	50.0000	48.7829	2.4	95	0.00
35	T	Bromochloromethane	50.0000	51.2046	-2.4	99	0.00
36	T	Tetrahydrofuran	100.0000	101.6163	-1.6	97	0.00
37	S	Dibromofluoromethane	25.0000	26.9177	-7.7	107	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.0080	2.0	98	0.01
39	T	Cyclohexane	50.0000	53.2514	-6.5	102	0.00
40	T	1,1-Dichloropropene	50.0000	51.8286	-3.7	98	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.0442	-2.0	100	0.00
42	T	Carbon Tetrachloride	50.0000	49.1176	1.8	97	0.00
43	S	1,2-Dichloroethane-d4	25.0000	26.0050	-4.0	110	0.01
44		Heptane	-1.0000	0.0000	0.0	97	0.00
45	T	1,2-Dichloroethane	50.0000	48.1310	3.7	95	0.00
46	T	Benzene	50.0000	49.6794	0.6	98	0.00
47	T	Trichloroethene	50.0000	46.1461	7.7	94	0.00
48	T	Methylcyclohexane	50.0000	53.4128	-6.8	104	0.00
49	C	1,2-Dichloropropane	50.0000	50.1688	-0.3	97	0.00
50	T	1,4-Dioxane	200.0000	186.2273	6.9	96	0.00
51	T	Bromodichloromethane	50.0000	50.1996	-0.4	97	0.00
52	T	Dibromomethane	50.0000	50.2407	-0.5	96	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	49.8178	0.4	97	0.00
54	T	4-Methyl-2-Pentanone	50.0000	46.3972	7.2	96	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\013014\9M961138.D Vial: 3
Acq On : 30 Jan 2014 20:35 Operator: MES
Sample : WG461585-02 50ug/L WATER CCV 8260 Inst : HPMS9
Misc : 1,1 STD62504 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	50.9015	-1.8	98	0.00
56	T	Dimethyl Disulfide	50.0000	49.6170	0.8	95	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	102	0.00
58	S	Toluene-d8	25.0000	27.8909	-11.6	116	0.00
59	C	Toluene	50.0000	50.6067	-1.2	98	0.00
60	T	Ethyl Methacrylate	50.0000	50.0360	-0.1	93	0.00
61	T	trans-1,3-Dichloropropene	50.0000	51.0181	-2.0	95	0.00
62	T	1,1,2-Trichloroethane	50.0000	50.8628	-1.7	96	0.00
63	T	2-Hexanone	50.0000	45.7738	8.5	93	0.00
64	T	1,3-Dichloropropane	50.0000	50.1849	-0.4	96	0.00
65	T	Tetrachloroethene	50.0000	51.1773	-2.4	100	0.01
66	T	Dibromochloromethane	50.0000	50.6312	-1.3	95	0.00
67	T	1,2-Dibromoethane	50.0000	49.9730	0.1	96	0.00
68	T	1-Chlorohexane	50.0000	53.2953	-6.6	100	0.00
69	P	Chlorobenzene	50.0000	49.4877	1.0	96	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	51.3726	-2.7	98	0.00
71	C	Ethylbenzene	50.0000	52.1676	-4.3	101	0.00
72	T	m-,p-Xylene	100.0000	102.7149	-2.7	98	0.00
73	T	o-Xylene	50.0000	50.0905	-0.2	97	0.00
74	T	Styrene	50.0000	51.4661	-2.9	98	0.00
75	P	Bromoform	50.0000	54.3666	-8.7	96	0.00
76	T	Isopropylbenzene	50.0000	50.6906	-1.4	100	0.00
77	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	50.0284	-0.1	100	0.00
79	S	p-Bromofluorobenzene	25.0000	24.8303	0.7	98	0.00
80	T	1,2,3-Trichloropropane	50.0000	49.4420	1.1	97	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	49.7653	0.5	93	0.00
82	T	n-Propylbenzene	50.0000	54.4928	-9.0	100	0.01
83	T	Bromobenzene	50.0000	51.3305	-2.7	96	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	53.5364	-7.1	99	0.00
85	T	2-Chlorotoluene	50.0000	49.7404	0.5	97	0.00
86	T	4-Chlorotoluene	50.0000	54.7618	-9.5	101	0.00
87	T	a-Methylstyrene	50.0000	53.9861	-8.0	98	0.00
88	T	tert-Butylbenzene	50.0000	51.1217	-2.2	97	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	54.0779	-8.2	99	0.00
90	T	sec-Butylbenzene	50.0000	54.7238	-9.4	100	0.00
91	T	p-Isopropyltoluene	50.0000	55.4213	-10.8	100	0.00
92	T	1,3-Dichlorobenzene	50.0000	52.8499	-5.7	100	0.00
93	T	1,4-Dichlorobenzene	50.0000	52.6554	-5.3	99	0.00
94	T	n-Butylbenzene	50.0000	59.1334	-18.3	103	0.00
95	T	1,2-Dichlorobenzene	50.0000	51.7450	-3.5	97	0.00
96	T	1,2-Dibromo-3-Chloropropane	50.0000	50.2850	-0.6	95	0.00
97	T	1,2,4-Trichlorobenzene	50.0000	56.1077	-12.2	101	0.00
98	T	Hexachlorobutadiene	50.0000	57.4765	-15.0	102	0.00
99	T	Naphthalene	50.0000	53.0939	-6.2	97	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	53.6396	-7.3	98	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M961138.D 8260WTR.M Thu Jan 30 20:58:29 2014 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\2\DATA\010314\8M393747.D Vial: 2
Acq On : 3 Jan 2014 10:33 Operator: MES
Sample : WG458331-01 50NG BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD61669 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

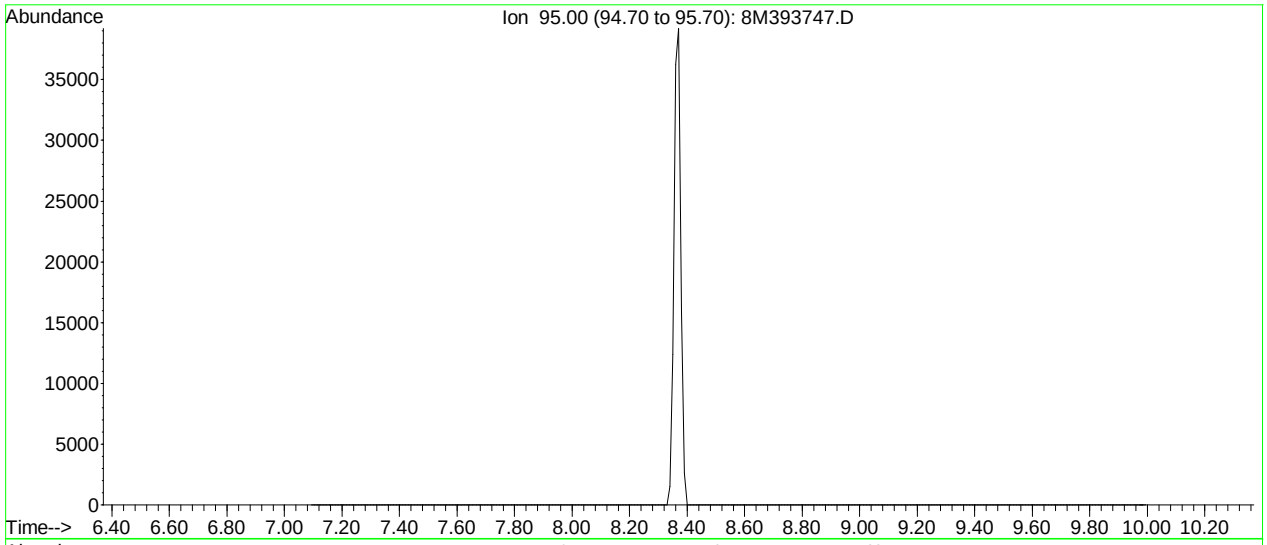

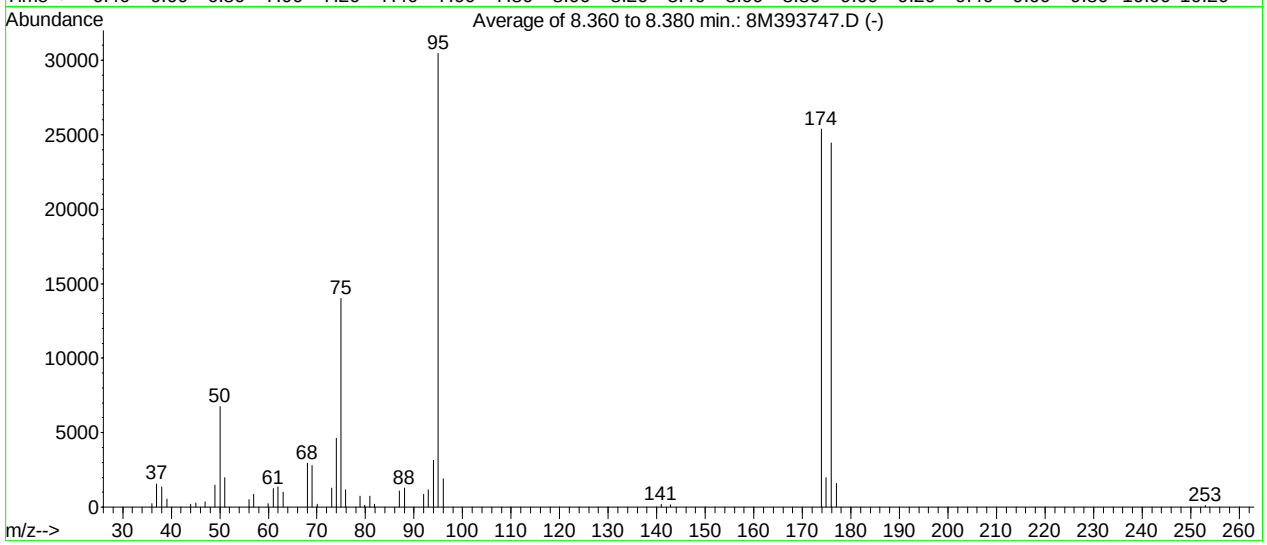

AutoFind: Scans 125, 126, 127; Background Corrected with Scan 120

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.1	6745	PASS
75	95	30	60	46.1	14029	PASS
95	95	100	100	100.0	30459	PASS
96	95	5	9	6.2	1888	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	83.3	25373	PASS
175	174	5	9	7.8	1967	PASS
176	174	95	101	96.4	24472	PASS
177	176	5	9	6.5	1586	PASS

8M393747.D BFB.M Fri Jan 03 10:46:00 2014

BFB

```
Data File : C:\MSDCHEM\2\DATA\010614\8M393770.D          Vial: 1
Acq On    :  6 Jan 2014   9:59                        Operator: MES
Sample    : WG458457-01 50NG BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD62146                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

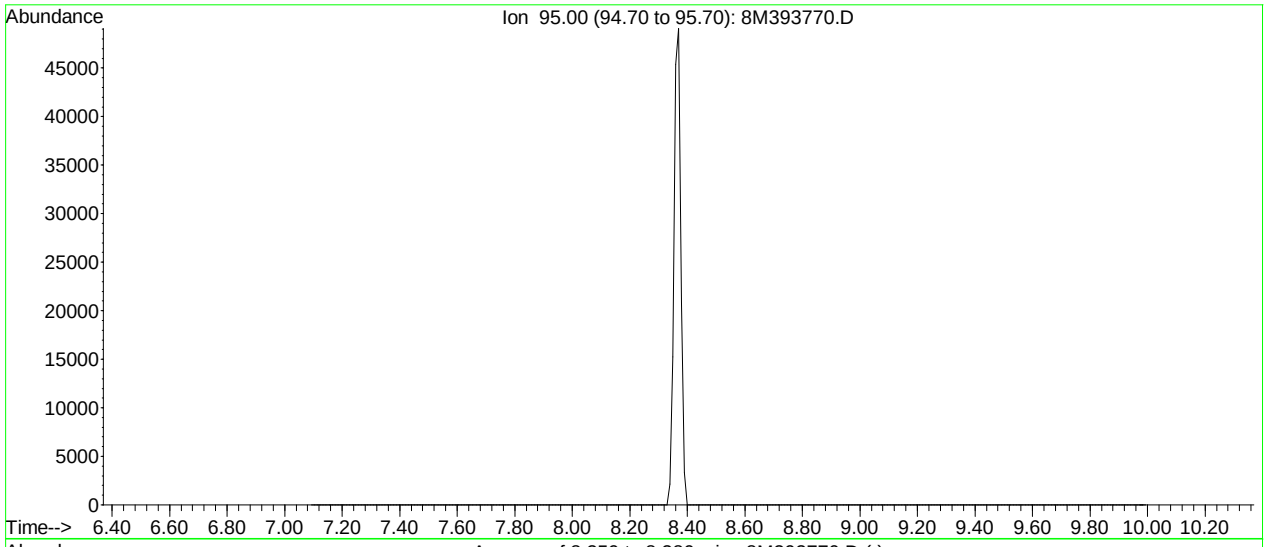

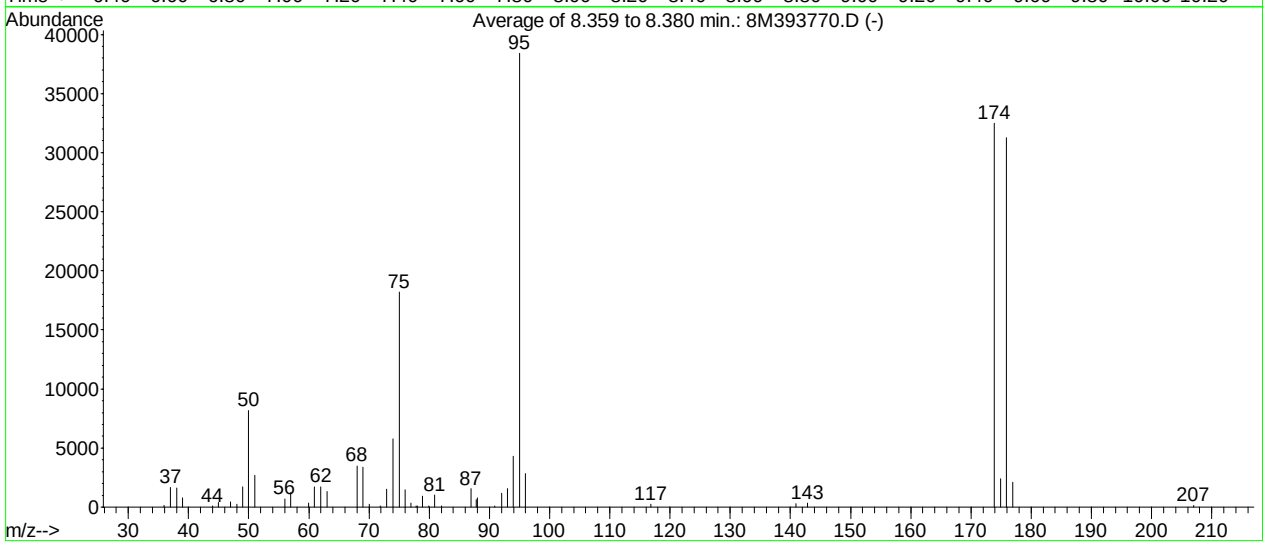

AutoFind: Scans 125, 126, 127; Background Corrected with Scan 120

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.3	8179	PASS
75	95	30	60	47.4	18190	PASS
95	95	100	100	100.0	38400	PASS
96	95	5	9	7.4	2855	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	84.6	32501	PASS
175	174	5	9	7.3	2380	PASS
176	174	95	101	96.2	31274	PASS
177	176	5	9	6.7	2096	PASS

8M393770.D BFB.M Mon Jan 06 10:13:00 2014

BFB

```
Data File : C:\MSDCHEM\1\DATA\013014\9M961121.D          Vial: 2
Acq On    : 30 Jan 2014   8:30                        Operator: ADC
Sample    : WG461445-01 50ng BFB STD                  Inst    : HPMS9
Misc      : 1,1 STD62146                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B SL SOP: OVL MSV01 Analysis 01/30/13  HPMS 9
```

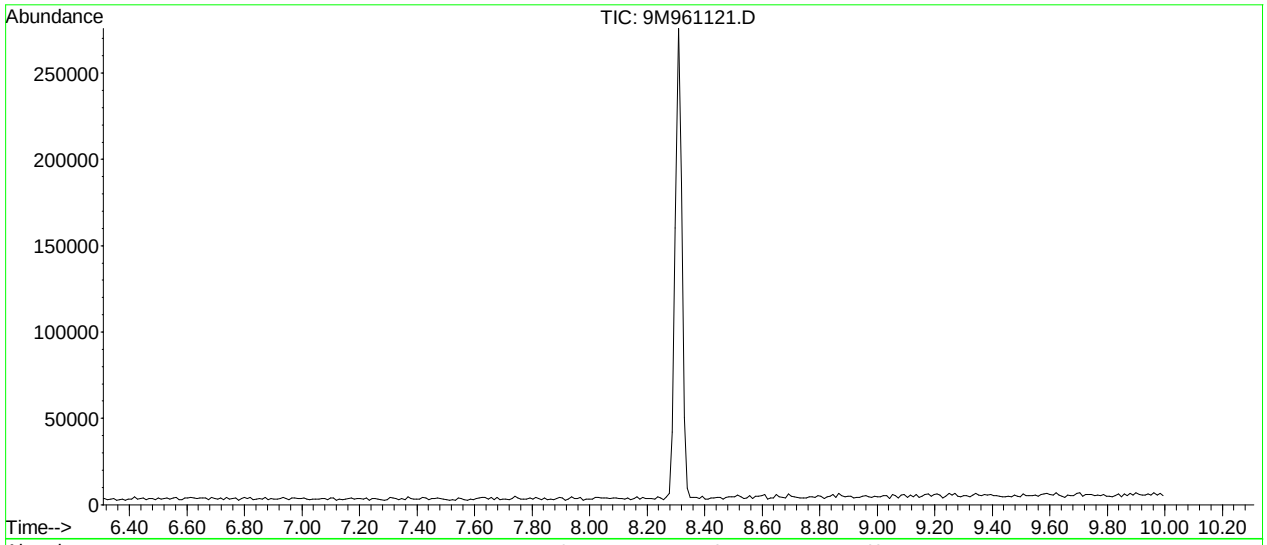

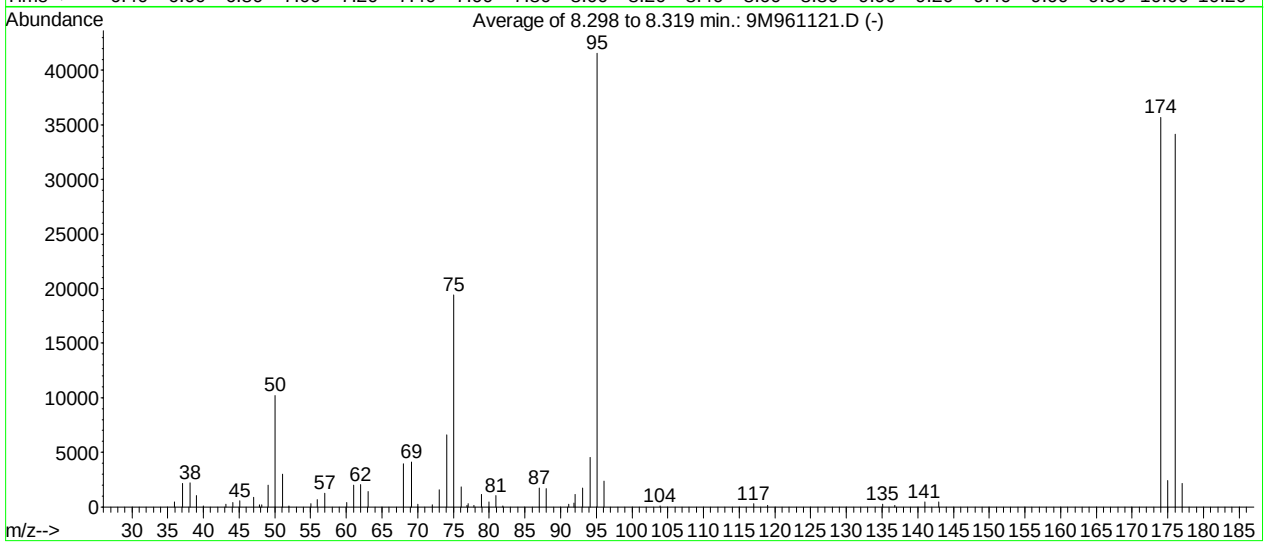

AutoFind: Scans 311, 312, 313; Background Corrected with Scan 306

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.6	10219	PASS
75	95	30	60	46.8	19440	PASS
95	95	100	100	100.0	41573	PASS
96	95	5	9	5.7	2365	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.9	35693	PASS
175	174	5	9	6.7	2388	PASS
176	174	95	101	95.7	34141	PASS
177	176	5	9	6.3	2138	PASS

9M961121.D 8260WTR.M Fri Feb 07 16:05:06 2014

BFB

Data File : C:\MSDCHEM\1\DATA\013014\9M961136.D Vial: 1
Acq On : 30 Jan 2014 19:37 Operator: MES
Sample : WG461585-01 50NG BFB STD 8260 Inst : HPMS9
Misc : 1,1 STD62146 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : BFB (SOP:OVL MSV01)

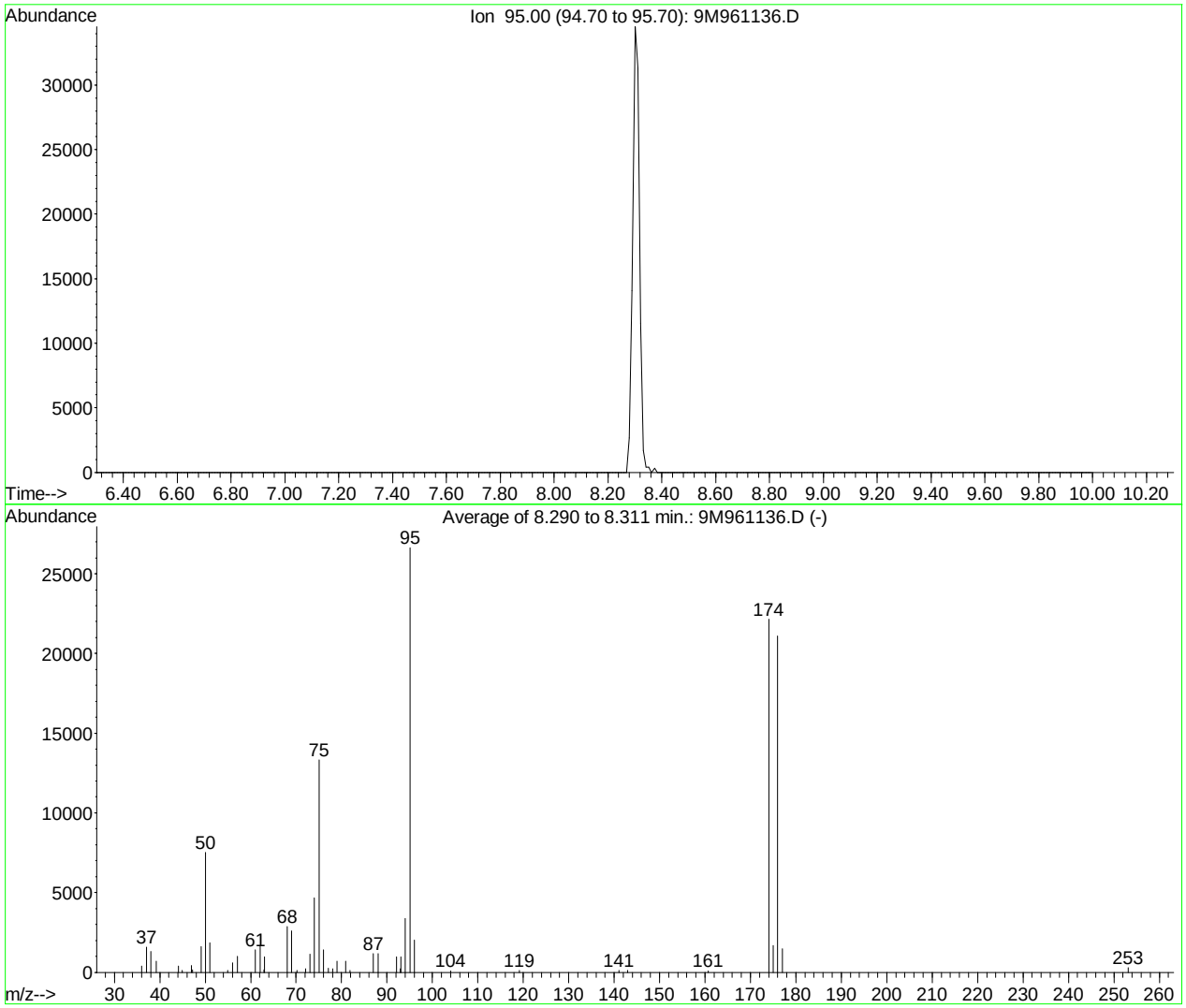

AutoFind: Scans 310, 311, 312; Background Corrected with Scan 306

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	28.2	7518	PASS
75	95	30	60	50.1	13339	PASS
95	95	100	100	100.0	26639	PASS
96	95	5	9	7.6	2030	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	83.2	22158	PASS
175	174	5	9	7.6	1687	PASS
176	174	95	101	95.3	21114	PASS
177	176	5	9	7.0	1470	PASS

9M961136.D BFB.M Thu Jan 30 19:52:27 2014

BFB

```
Data File : C:\MSDCHEM\2\DATA\013014\8M394544.D          Vial: 1
Acq On    : 30 Jan 2014  19:38                       Operator: MES
Sample    : WG461583-01 50NG BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD62146                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

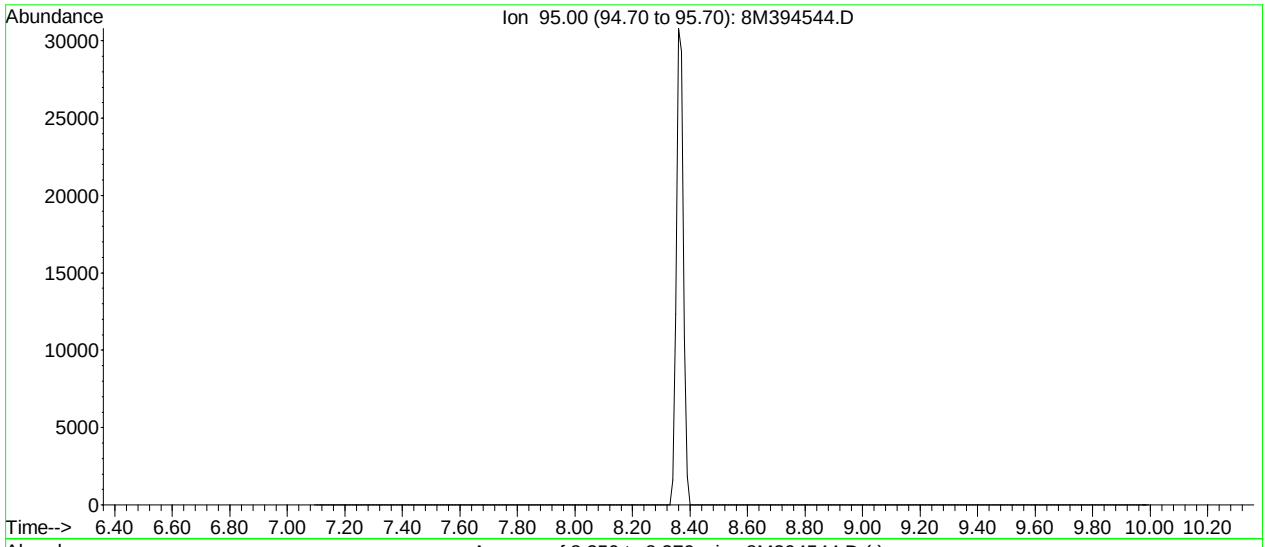

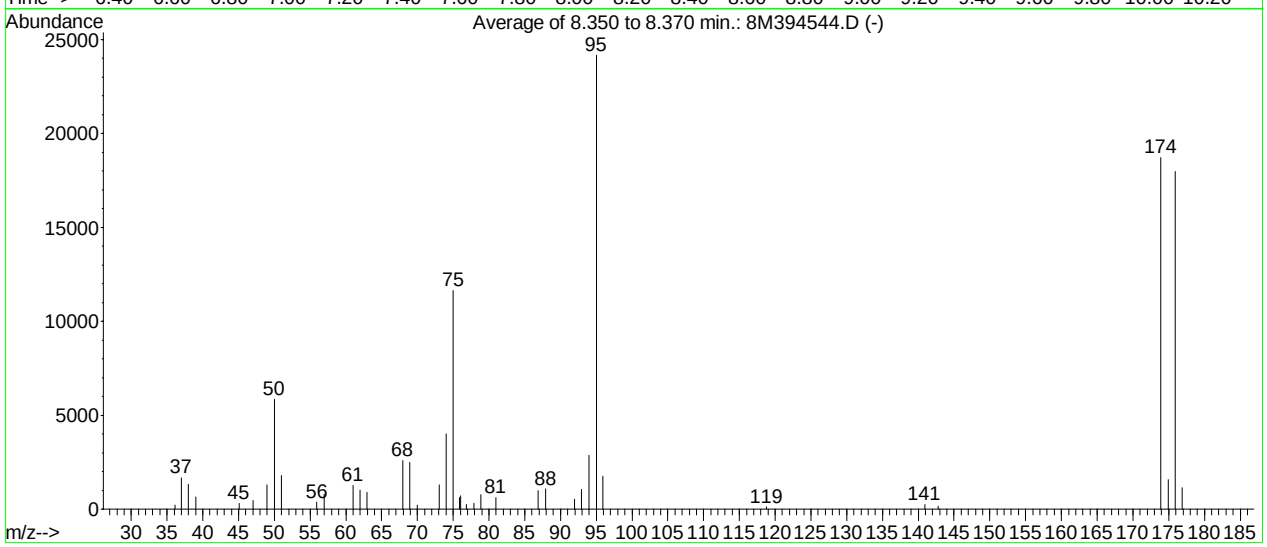

AutoFind: Scans 124, 125, 126; Background Corrected with Scan 120

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.2	5846	PASS
75	95	30	60	48.2	11636	PASS
95	95	100	100	100.0	24153	PASS
96	95	5	9	7.3	1756	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	77.5	18719	PASS
175	174	5	9	8.4	1575	PASS
176	174	95	101	96.0	17972	PASS
177	176	5	9	6.4	1150	PASS

8M394544.D BFB.M Thu Jan 30 19:52:52 2014

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394547.D Vial: 4
Acq On : 30 Jan 2014 21:04 Operator: MES
Sample : WG461584-01 BLANK 1/30 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44:33 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	928237	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	720545	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	388545	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.96	111	233702	23.1373 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.56%		
43) 1,2-Dichloroethane-d4	10.60	65	199459	20.1553 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 80.64%		
58) Toluene-d8	12.97	98	860389	23.9665 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.88%		
80) p-Bromofluorobenzene	16.38	95	335715	23.3158 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.28%		
Target Compounds					Qvalue
56) Dimethyl Disulfide	12.97	94	24890	1.5845 ug/L #	27

(#) = qualifier out of range (m) = manual integration
8M394547.D 8260WTR.M Fri Jan 31 17:44:34 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\013014\8M394547.D Vial: 4
Acq On : 30 Jan 2014 21:04 Operator: MES
Sample : WG461584-01 BLANK 1/30 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 17:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration

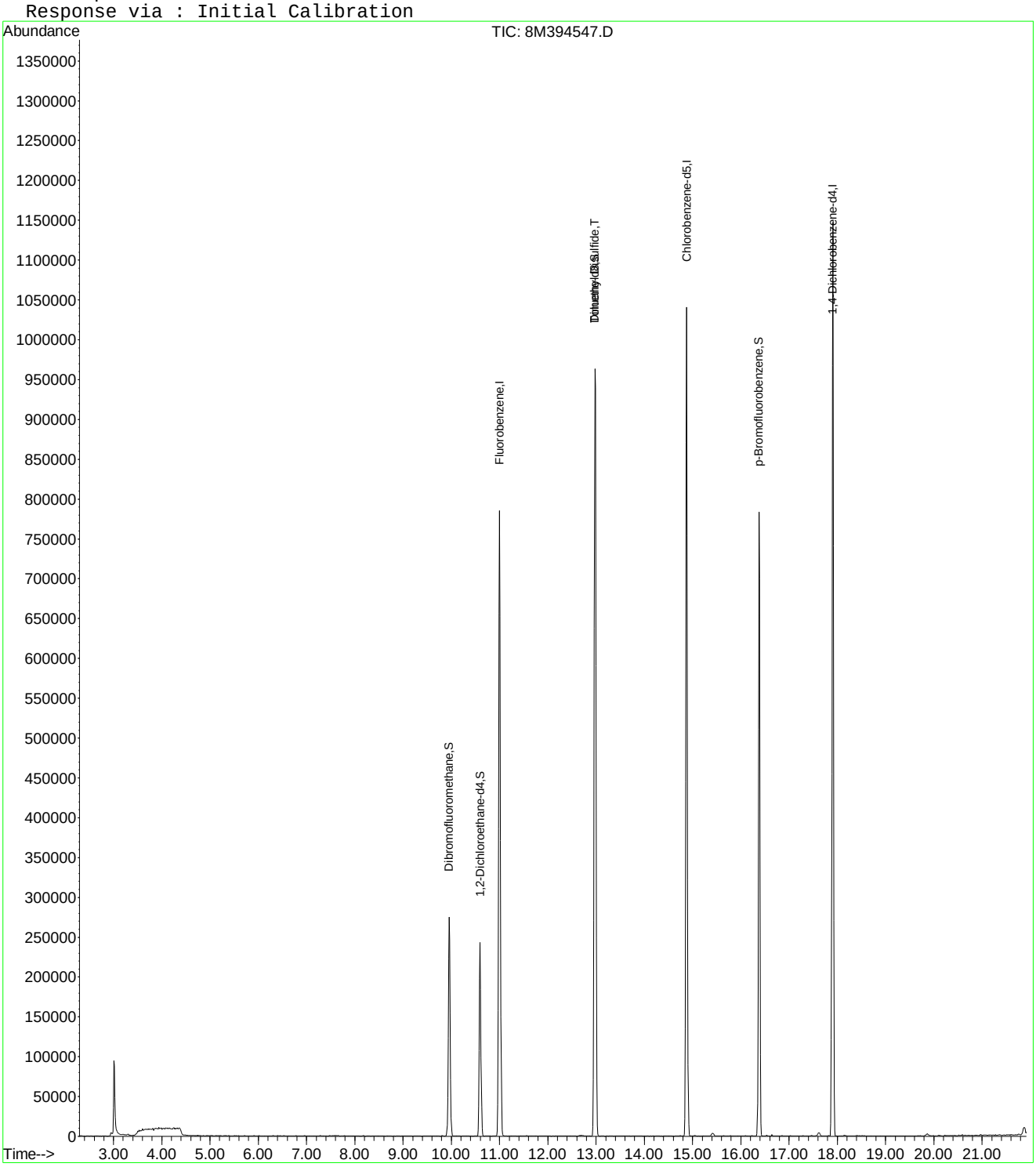

8M394547.D 8260WTR.M Fri Jan 31 17:44:34 2014 Page 2

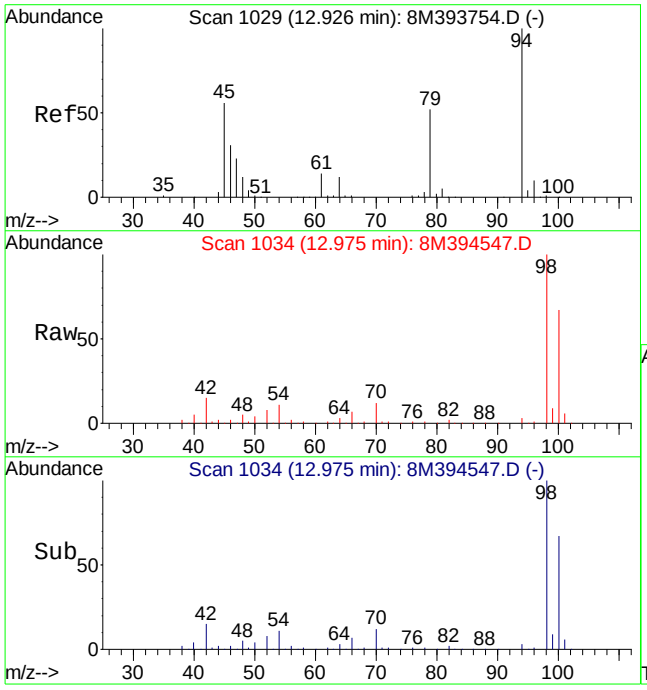

#56
Dimethyl Disulfide
Concen: 1.58 ug/L
RT: 12.97 min Scan# 1034
Delta R.T. 0.05 min
Lab File: 8M394547.D
Acq: 30 Jan 2014 21:04

Tgt Ion: 94 Resp: 24890

Ion	Ratio	Lower	Upper
94	100		
79	0.0	30.4	70.8#

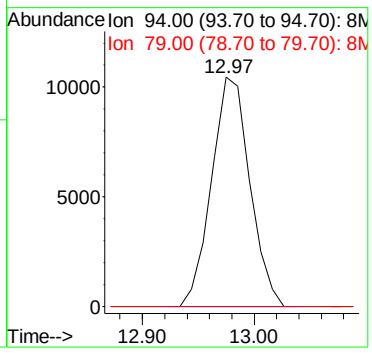

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961140.D Vial: 4
Acq On : 30 Jan 2014 21:35 Operator: MES
Sample : WG461586-01 BLANK 1/30 Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 07 16:20:54 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	639115	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	454300	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	207091	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.88	111	174798	27.4129 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.64%		
43) 1,2-Dichloroethane-d4	10.52	65	209729	27.4647 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.84%		
58) Toluene-d8	12.91	98	597129	29.8751 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 119.52%#		
79) p-Bromofluorobenzene	16.31	95	222423	26.4764 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.92%		

Target Compounds					Qvalue
3) Chloromethane	3.77	50	2355	0.3373 ug/L #	64
5) 1,3-Butadiene	4.06	54	190	Below Cal #	1
20) Carbon Disulfide	7.51	76	3897	0.1867 ug/L #	75
24) n-Hexane	8.01	57	1416	0.1303 ug/L #	61
26) Vinyl Acetate	8.44	43	208	0.7602 ug/L #	81
56) Dimethyl Disulfide	12.90	94	15738	1.2163 ug/L #	25

(#) = qualifier out of range (m) = manual integration
9M961140.D 8260WTR.M Fri Feb 07 16:20:56 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\013014\9M961140.D Vial: 4
Acq On : 30 Jan 2014 21:35 Operator: MES
Sample : WG461586-01 BLANK 1/30 Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 7 16:20 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration

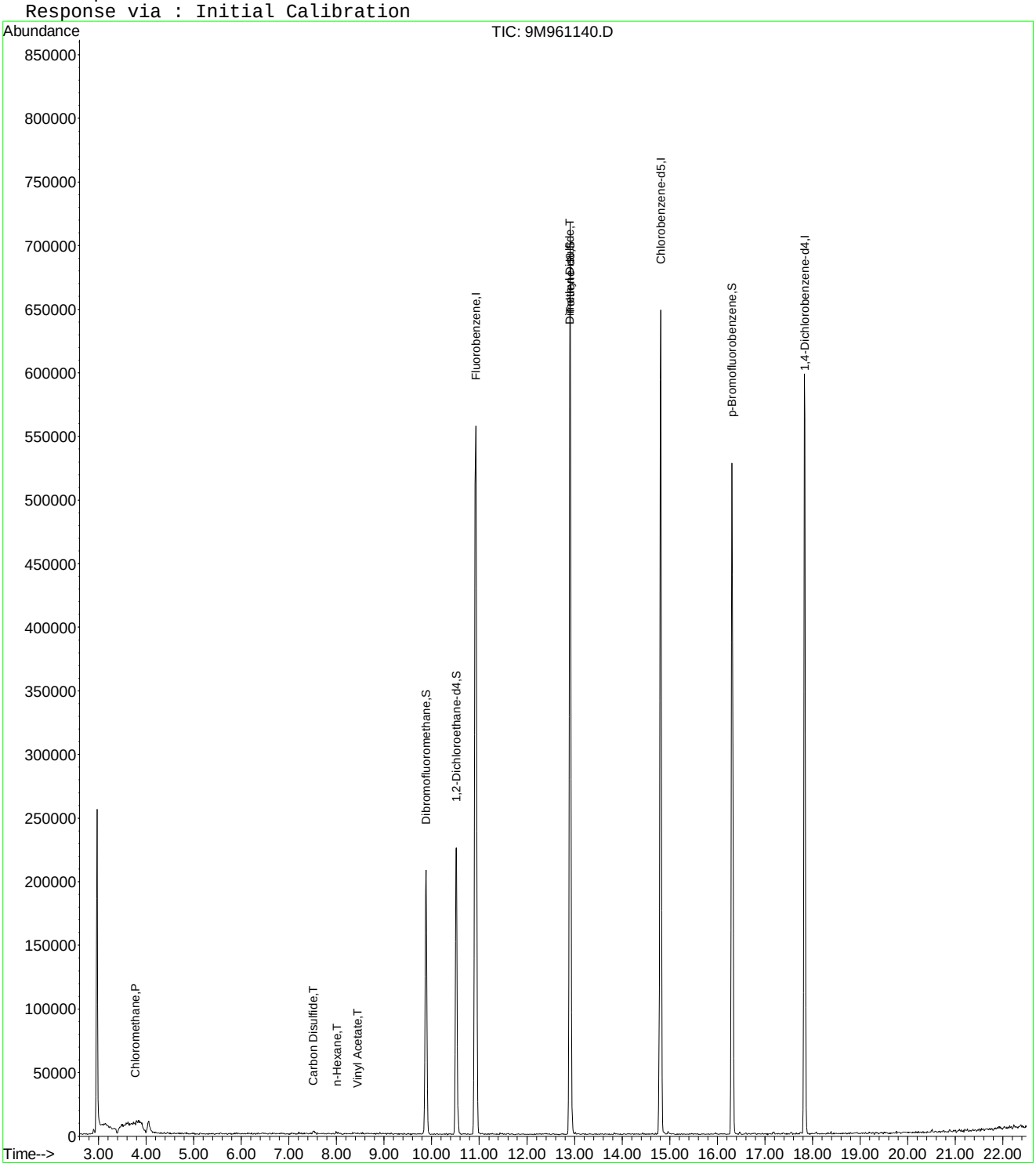

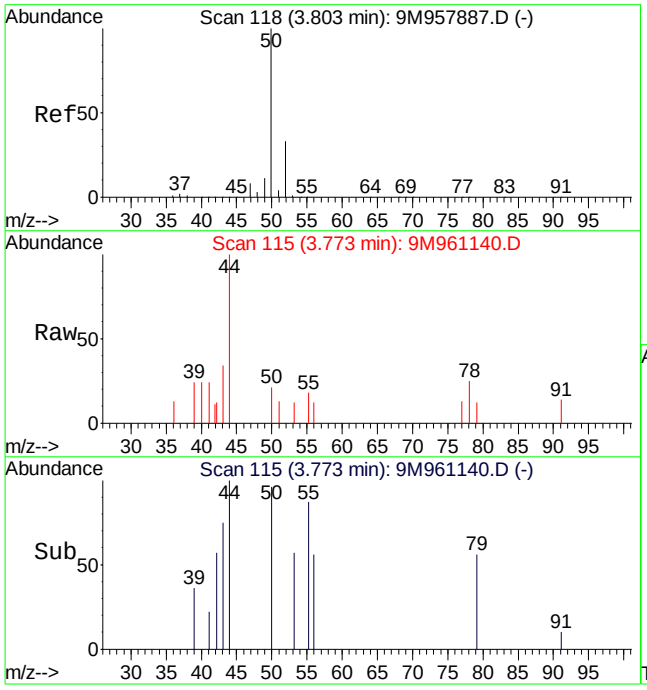

#3
Chloromethane
Concen: 0.34 ug/L
RT: 3.77 min Scan# 115
Delta R.T. 0.00 min
Lab File: 9M961140.D
Acq: 30 Jan 2014 21:35

Tgt Ion: 50 Resp: 2355

Ion	Ratio	Lower	Upper
50	100		
52	11.3	18.8	44.0#

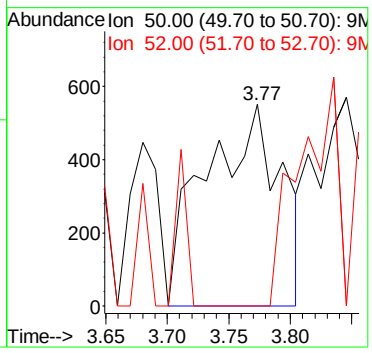

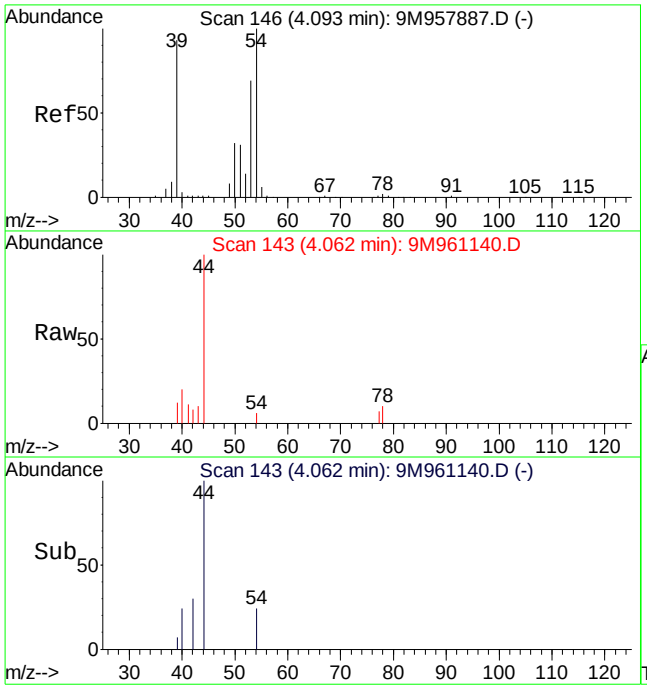

#5
1,3-Butadiene
Concen: Below Cal
RT: 4.06 min Scan# 143
Delta R.T. 0.00 min
Lab File: 9M961140.D
Acq: 30 Jan 2014 21:35

Tgt Ion: 54 Resp: 190

Ion	Ratio	Lower	Upper
54	100		
39	1582.6	56.7	132.3#
53	0.0	41.7	97.3#

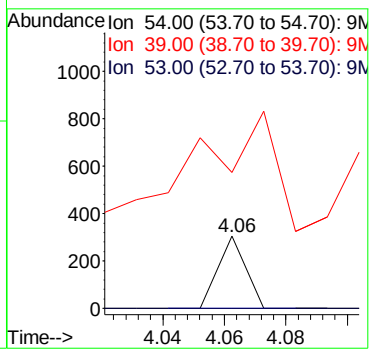

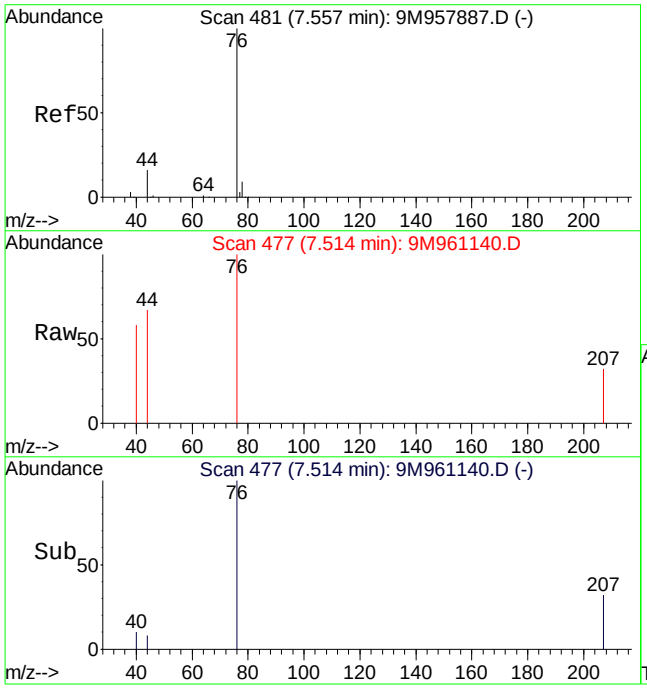

#20
Carbon Disulfide
Concen: 0.19 ug/L
RT: 7.51 min Scan# 477
Delta R.T. 0.00 min
Lab File: 9M961140.D
Acq: 30 Jan 2014 21:35

Tgt Ion: 76 Resp: 3897

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.5	12.7#

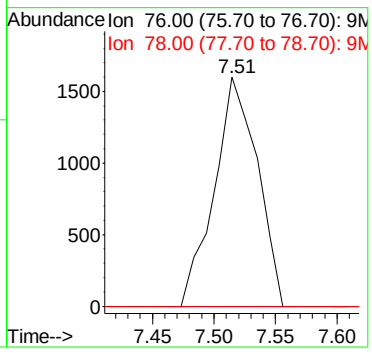

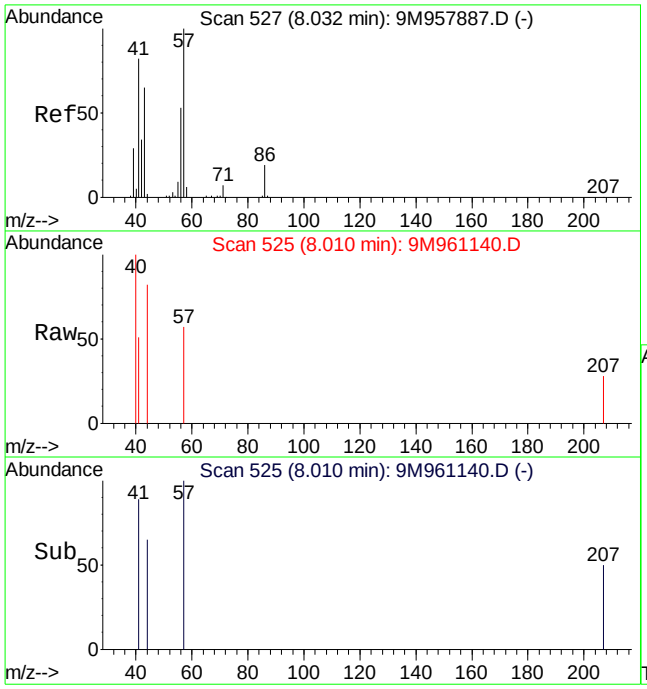

#24
n-Hexane
Concen: 0.13 ug/L
RT: 8.01 min Scan# 525
Delta R.T. 0.01 min
Lab File: 9M961140.D
Acq: 30 Jan 2014 21:35

Tgt Ion: 57 Resp: 1416

Ion	Ratio	Lower	Upper
57	100		
43	36.7	40.7	95.1#

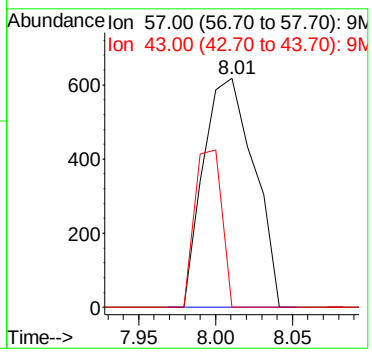

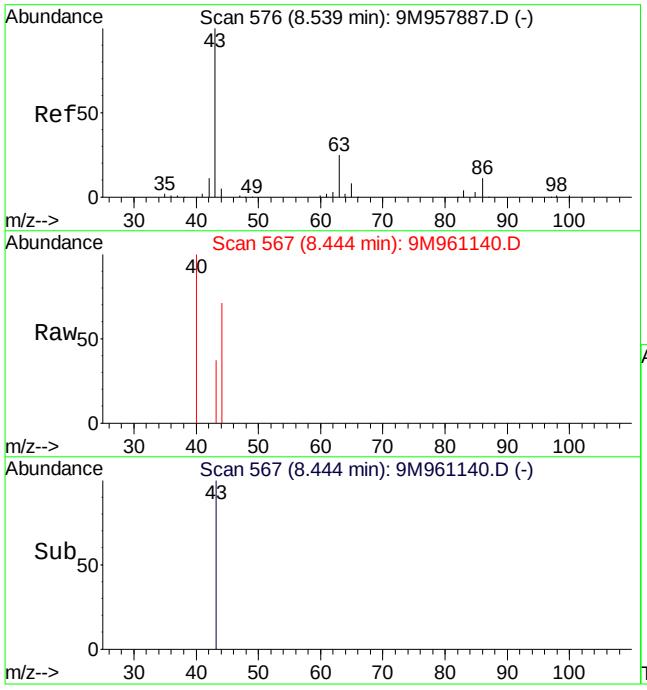

#26
Vinyl Acetate
Concen: 0.76 ug/L
RT: 8.44 min Scan# 567
Delta R.T. -0.06 min
Lab File: 9M961140.D
Acq: 30 Jan 2014 21:35

Tgt Ion: 43 Resp: 208

Ion	Ratio	Lower	Upper
43	100		
86	0.0	3.9	9.1#

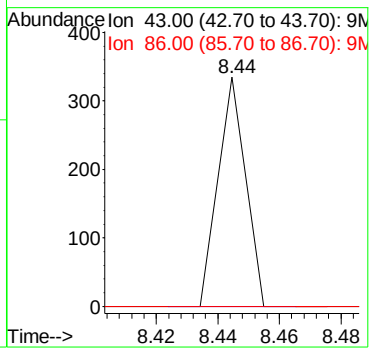

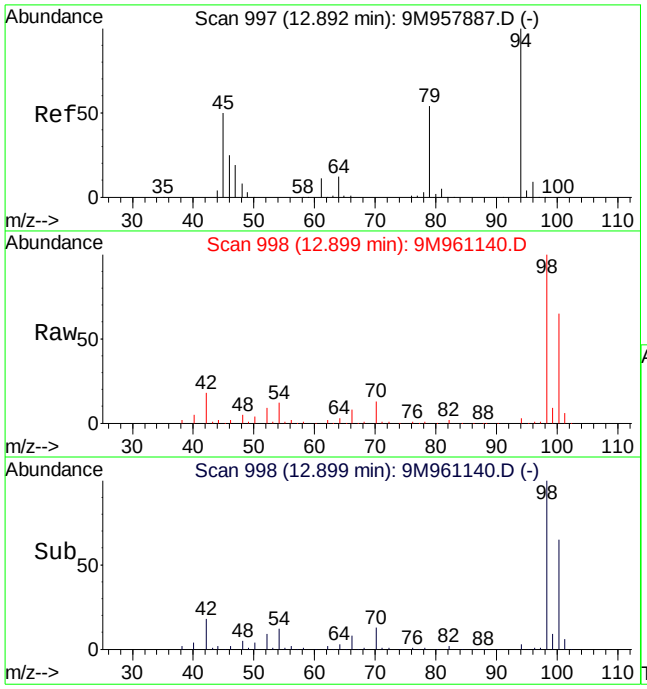

#56
Dimethyl Disulfide
Concen: 1.22 ug/L
RT: 12.90 min Scan# 998
Delta R.T. 0.05 min
Lab File: 9M961140.D
Acq: 30 Jan 2014 21:35

Tgt Ion: 94 Resp: 15738

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.8	74.2#

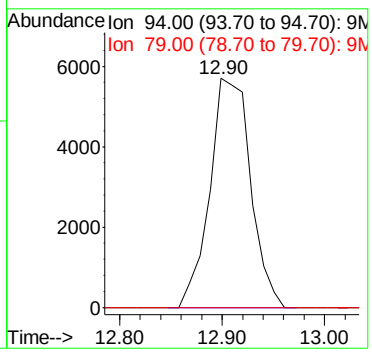

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\013014\8M394564.D Vial: 21
Acq On : 31 Jan 2014 6:26 Operator: MES
Sample : WG461584-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 06:48:39 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.00	96	903688	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.88	117	715856	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.91	152	389316	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.96	111	229348	23.3230 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.28%		
43) 1,2-Dichloroethane-d4	10.60	65	185878	19.2932 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 77.16%#		
58) Toluene-d8	12.98	98	875525	24.5479 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.20%		
80) p-Bromofluorobenzene	16.38	95	340373	23.5925 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.36%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.36	85	233349	28.6513 ug/L	99
3) Chloromethane	3.83	50	372691	24.5071 ug/L	97
4) Vinyl Chloride	4.07	62	253216	23.3919 ug/L	100
5) 1,3-Butadiene	4.12	54	123177	11.2745 ug/L	98
6) Bromomethane	5.00	94	153959	22.4374 ug/L	99
7) Chloroethane	5.16	64	159489	20.8540 ug/L	98
8) Trichlorofluoromethane	5.65	101	328817	21.4152 ug/L	100
9) Diethyl ether	6.18	59	591494	86.0722 ug/L	96
10) Isoprene	6.23	67	281240	18.8387 ug/L	99
11) Acrolein	6.43	56	49793	49.4050 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.44	101	207597	22.7365 ug/L	94
13) Acetone	6.52	43	27533	17.1518 ug/L	97
14) 1,1-Dichloroethene	6.76	61	332171	19.8398 ug/L	100
15) Tert-Butyl Alcohol	6.85	59	43071	106.9817 ug/L	98
16) Dimethyl Sulfide	7.02	62	195545	20.3016 ug/L	97
17) Iodomethane	7.28	142	120766	13.9030 ug/L	97
18) Methyl acetate	7.28	43	83939	16.9436 ug/L	96
19) Methylene Chloride	7.55	84	192310	20.4006 ug/L	95
20) Carbon Disulfide	7.60	76	611704	19.4005 ug/L	100
21) Acrylonitrile	7.72	53	40012	17.4518 ug/L	99
22) Methyl Tert Butyl Ether	7.75	73	345616	17.8761 ug/L	98
23) trans-1,2-Dichloroethene	7.99	61	342027	21.2660 ug/L	99
24) n-Hexane	8.07	57	257848	16.1761 ug/L	100
25) Diisopropyl ether	8.40	45	3679584	97.0155 ug/L	98
26) Vinyl Acetate	8.58	43	256246	16.4831 ug/L	99
27) 1,1-Dichloroethane	8.61	63	409813	20.7962 ug/L	100
28) Ethyl-Tert-Butyl ether	8.98	59	2654882	86.9876 ug/L	98
29) 2-Butanone	9.17	43	39721	15.8642 ug/L	96
30) Propionitrile	9.27	54	58673	77.0636 ug/L	98
31) 2,2-Dichloropropane	9.40	77	270597	17.1320 ug/L	99
32) cis-1,2-Dichloroethene	9.46	96	228871	21.0861 ug/L	95
33) Chloroform	9.67	83	355631	20.3034 ug/L	100
34) 1-Bromopropane	9.81	122	49185	23.8511 ug/L	100
35) Bromochloromethane	9.90	130	110965	19.7158 ug/L	97
36) Tetrahydrofuran	9.91	42	125400	78.4592 ug/L	96
38) 1,1,1-Trichloroethane	10.20	97	331458	21.4052 ug/L	98
39) Cyclohexane	10.23	56	397965	19.3663 ug/L	97
40) 1,1-Dichloropropene	10.40	75	290142	21.0515 ug/L	99
41) Tert-Amyl-Methyl ether	10.49	73	1832098	86.2552 ug/L	99
42) Carbon Tetrachloride	10.54	117	294470	22.6867 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M394564.D 8260WTR.M Fri Jan 31 06:48:40 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\013014\8M394564.D Vial: 21
Acq On : 31 Jan 2014 6:26 Operator: MES
Sample : WG461584-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 06:48:39 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.71	62	230591	18.7183 ug/L		97
46)	Benzene	10.76	78	831411	21.6229 ug/L		99
47)	Trichloroethene	11.51	130	226726	21.9745 ug/L		99
48)	Methylcyclohexane	11.59	83	288375	18.1964 ug/L		99
49)	1,2-Dichloropropane	11.72	63	224754	21.1647 ug/L		95
50)	Bromodichloromethane	12.02	83	240904	20.3107 ug/L		99
51)	1,4-Dioxane	12.02	88	2895	69.5479 ug/L	#	63
52)	Dibromomethane	12.11	93	88831	18.9685 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.31	63	54579	11.6253 ug/L		97
54)	4-Methyl-2-Pentanone	12.34	58	34834	16.1515 ug/L		93
55)	cis-1,3-Dichloropropene	12.65	75	296261	20.2768 ug/L		100
56)	Dimethyl Disulfide	12.92	94	299198	19.5643 ug/L		96
59)	Toluene	13.08	91	915888	21.5431 ug/L		98
60)	Ethyl Methacrylate	13.16	69	146493	17.6243 ug/L		99
62)	trans-1,3-Dichloropropene	13.25	75	217561	18.0518 ug/L		99
63)	1,1,2-Trichloroethane	13.47	97	118780	19.0653 ug/L		100
64)	2-Hexanone	13.40	58	29194	14.9140 ug/L		89
65)	1,3-Dichloropropane	13.77	76	211368	18.4305 ug/L		99
66)	Tetrachloroethene	13.91	164	177531	20.8026 ug/L		98
67)	Dibromochloromethane	14.16	129	149978	21.1224 ug/L		99
68)	1,2-Dibromoethane	14.42	107	114041	18.3452 ug/L		99
69)	1-Chlorohexane	14.49	91	287916	19.9270 ug/L		99
70)	Chlorobenzene	14.93	112	544771	19.2555 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.96	131	200565	22.1929 ug/L		99
72)	Ethylbenzene	14.95	106	317086	20.4277 ug/L		95
73)	m-,p-Xylene	15.04	106	742998	40.5307 ug/L		97
74)	o-Xylene	15.60	106	344414	18.5596 ug/L		97
75)	Styrene	15.64	104	610608	20.1059 ug/L		95
76)	Bromoform	16.14	173	89876	18.5589 ug/L		98
77)	Isopropylbenzene	16.02	105	888964	19.4693 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.24	83	119244	18.2146 ug/L		99
81)	1,2,3-Trichloropropane	16.44	110	32697	17.2851 ug/L		85
82)	trans-1,4-Dichloro-2-Buten	16.48	53	21042	9.1607 ug/L	#	5
83)	n-Propylbenzene	16.53	91	1084827	19.4477 ug/L		98
84)	Bromobenzene	16.68	156	233948	20.0564 ug/L		96
85)	1,3,5-Trimethylbenzene	16.73	105	832256	21.1372 ug/L		98
86)	2-Chlorotoluene	16.81	91	663733	18.3224 ug/L		91
87)	4-Chlorotoluene	16.86	91	687238	20.6765 ug/L		91
88)	a-Methylstyrene	17.13	118	443435	20.1460 ug/L		100
89)	tert-Butylbenzene	17.19	134	161244	18.7330 ug/L		93
90)	1,2,4-Trimethylbenzene	17.24	105	851138	21.3324 ug/L		97
91)	sec-Butylbenzene	17.46	105	905241	19.1473 ug/L		99
92)	p-Isopropyltoluene	17.62	119	775933	19.1385 ug/L		99
93)	1,3-Dichlorobenzene	17.81	146	421114	19.0259 ug/L		97
94)	1,4-Dichlorobenzene	17.95	146	442505	20.2548 ug/L		97
95)	n-Butylbenzene	18.14	91	774124	20.5273 ug/L		98
96)	1,2-Dichlorobenzene	18.44	146	359060	18.4326 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.45	75	18406	16.1330 ug/L		95
98)	1,2,4-Trichlorobenzene	20.58	180	269311	18.0920 ug/L		98
99)	Hexachlorobutadiene	20.74	225	124372	19.5376 ug/L		99
100)	Naphthalene	20.97	128	387141	16.9168 ug/L		99
101)	1,2,3-Trichlorobenzene	21.27	180	219350	17.7798 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M394564.D 8260WTR.M Fri Jan 31 06:48:40 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\013014\8M394564.D Vial: 21
Acq On : 31 Jan 2014 6:26 Operator: MES
Sample : WG461584-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 6:48 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 01-03-14 HPMS 8
Last Update : Mon Jan 06 09:01:47 2014
Response via : Initial Calibration

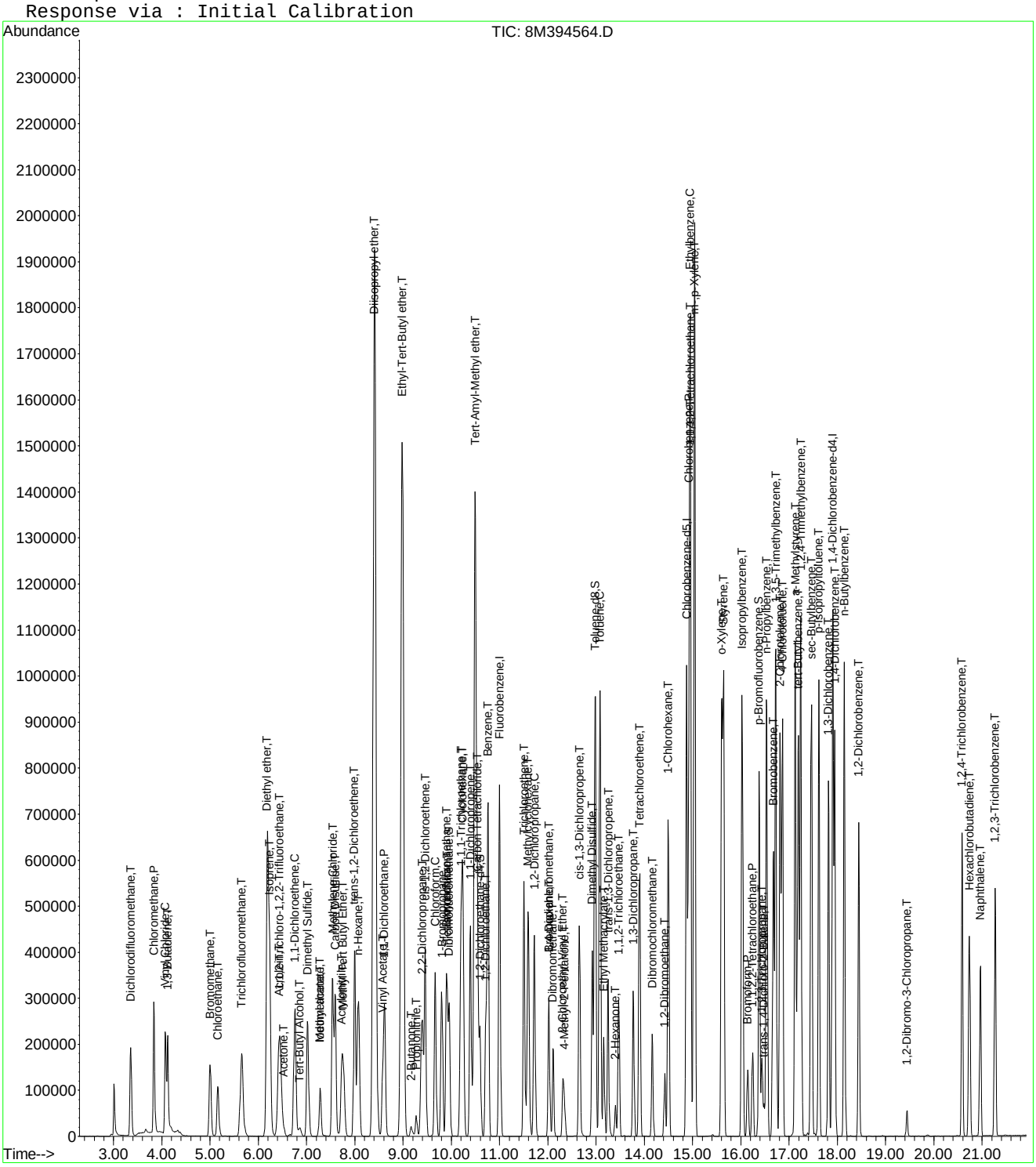

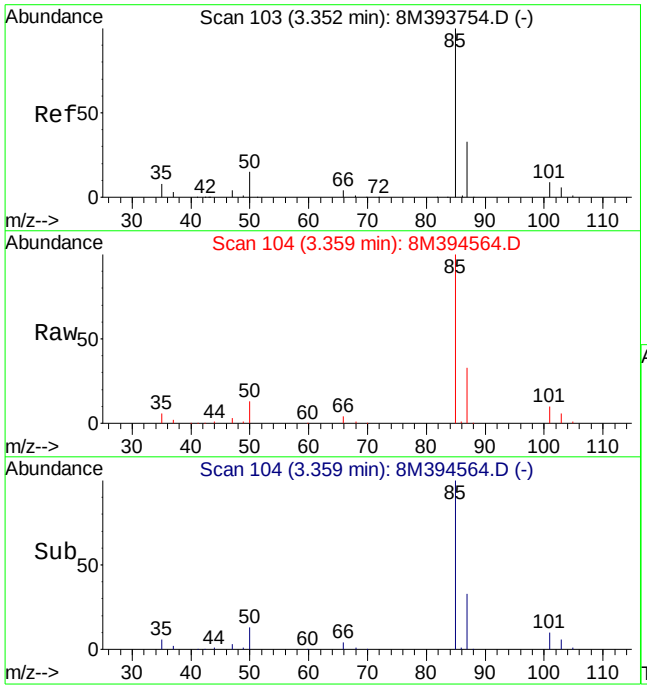

#2
Dichlorodifluoromethane
Concen: 28.65 ug/L
RT: 3.36 min Scan# 104
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 85 Resp: 233349

Ion	Ratio	Lower	Upper
85	100		
87	33.2	19.6	45.6

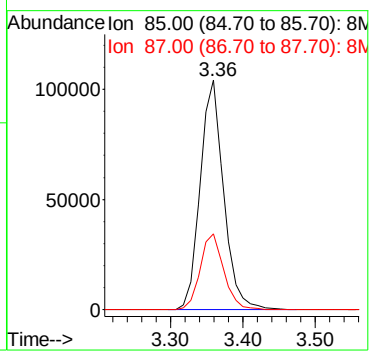

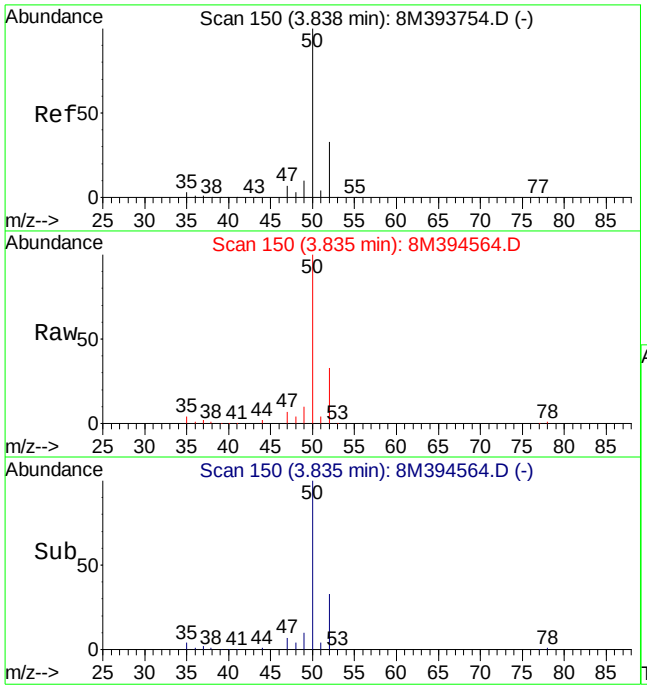

#3
Chloromethane
Concen: 24.51 ug/L
RT: 3.83 min Scan# 150
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 50 Resp: 372691

Ion	Ratio	Lower	Upper
50	100		
52	34.2	19.6	45.6

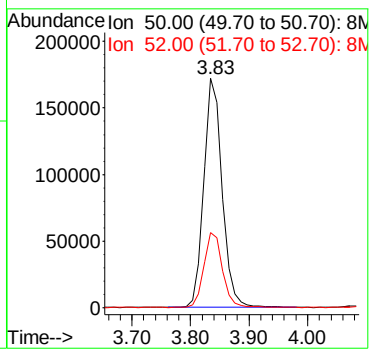

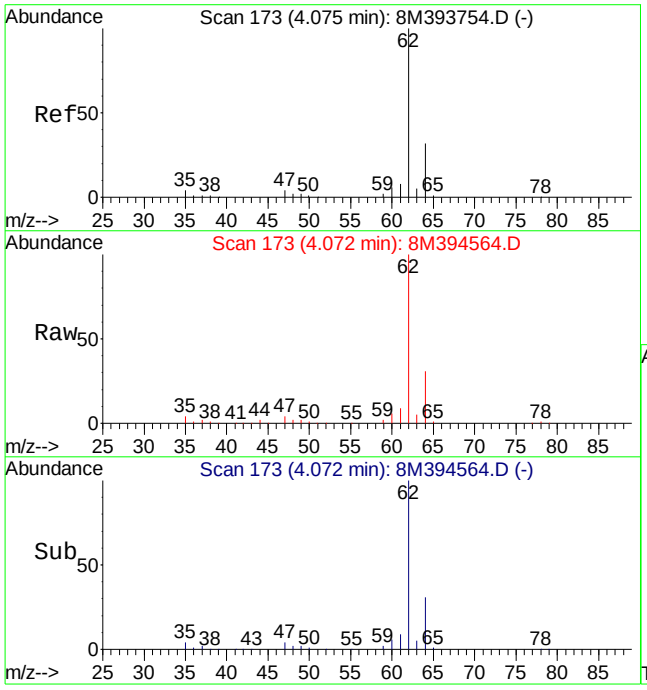

#4
Vinyl Chloride
Concen: 23.39 ug/L
RT: 4.07 min Scan# 173
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 62 Resp: 253216

Ion	Ratio	Lower	Upper
62	100		
64	31.4	18.7	43.7

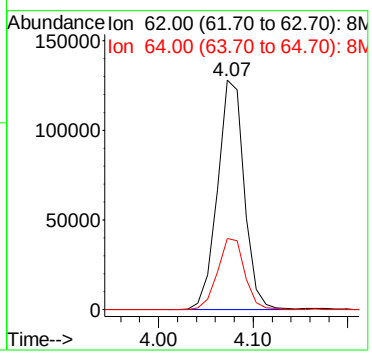

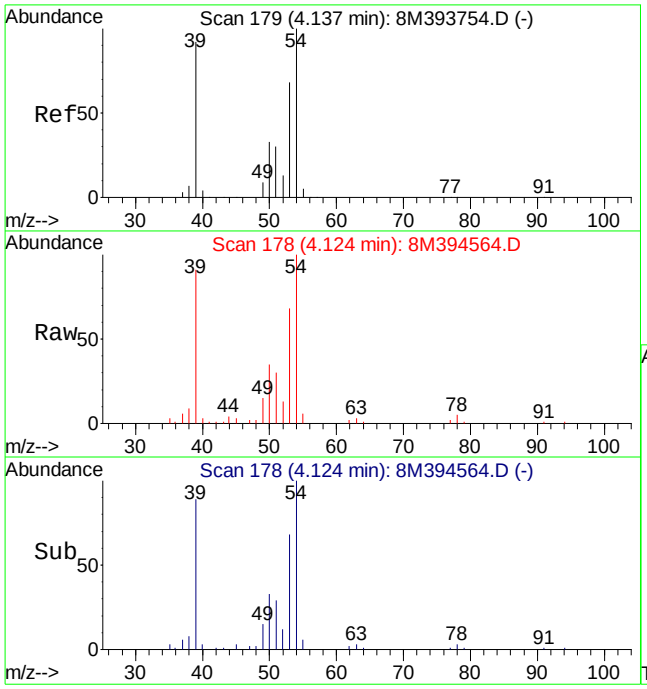

#5
1,3-Butadiene
Concen: 11.27 ug/L
RT: 4.12 min Scan# 178
Delta R.T. -0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 54 Resp: 123177

Ion	Ratio	Lower	Upper
54	100		
39	89.6	55.7	130.1
53	68.6	41.0	95.8

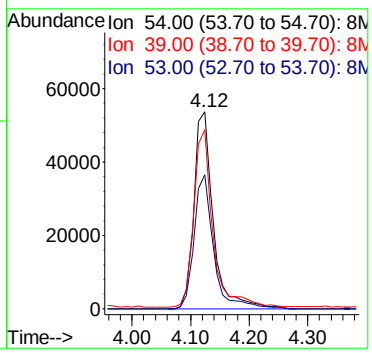

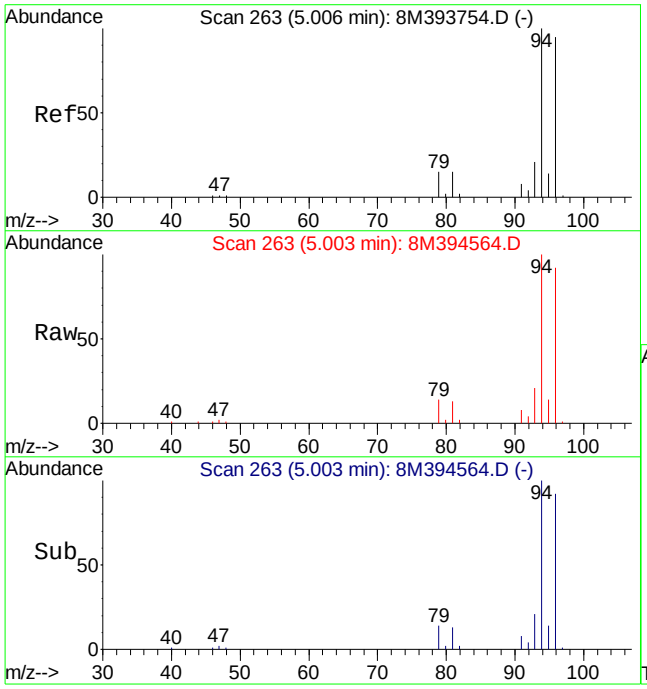

#6
Bromomethane
Concen: 22.44 ug/L
RT: 5.00 min Scan# 263
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 94 Resp: 153959

Ion	Ratio	Lower	Upper
94	100		
96	94.9	56.2	131.0

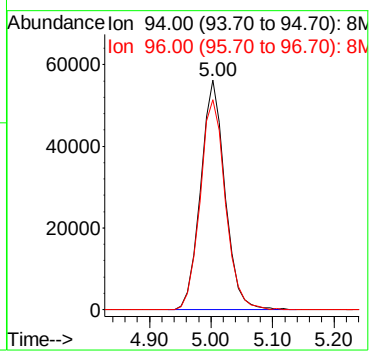

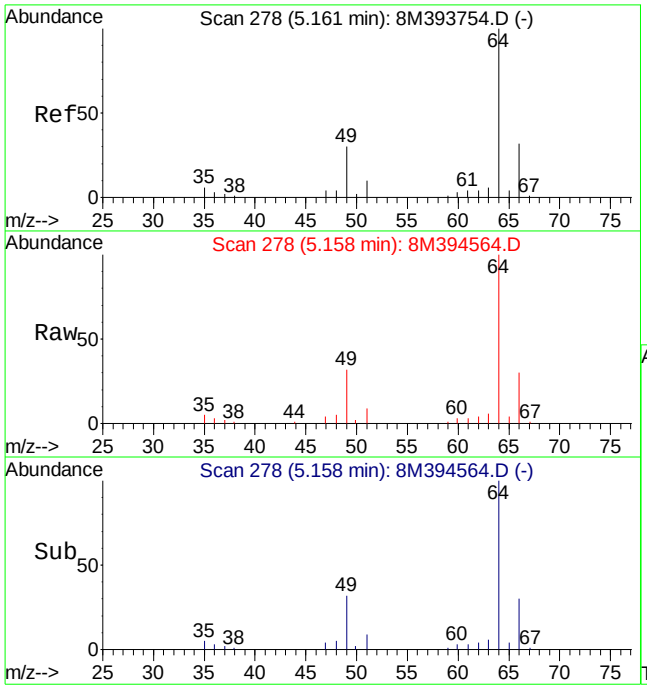

#7
Chloroethane
Concen: 20.85 ug/L
RT: 5.16 min Scan# 278
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 64 Resp: 159489

Ion	Ratio	Lower	Upper
64	100		
66	30.0	18.8	44.0
49	31.3	18.5	43.1

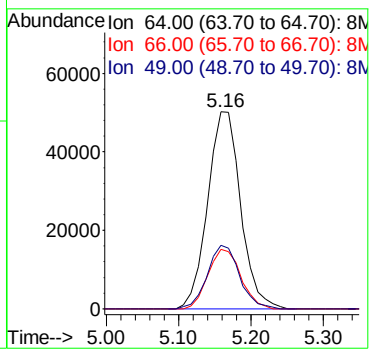

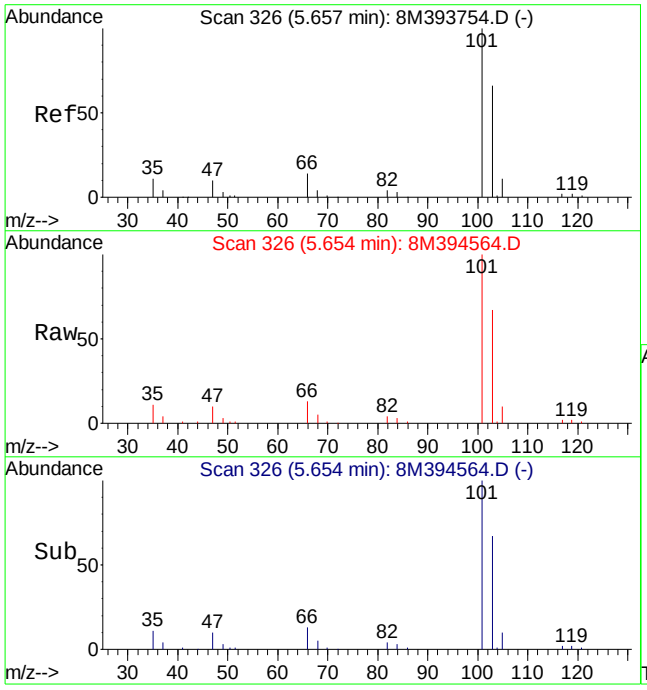

#8
Trichlorofluoromethane
Concen: 21.42 ug/L
RT: 5.65 min Scan# 326
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:101 Resp: 328817

Ion	Ratio	Lower	Upper
101	100		
103	65.0	38.9	90.9
66	12.9	8.0	18.6

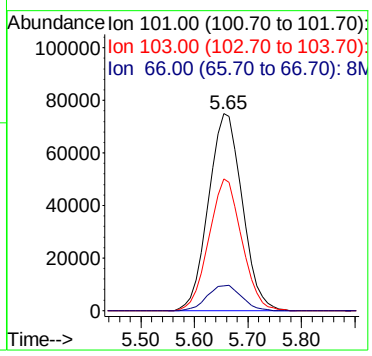

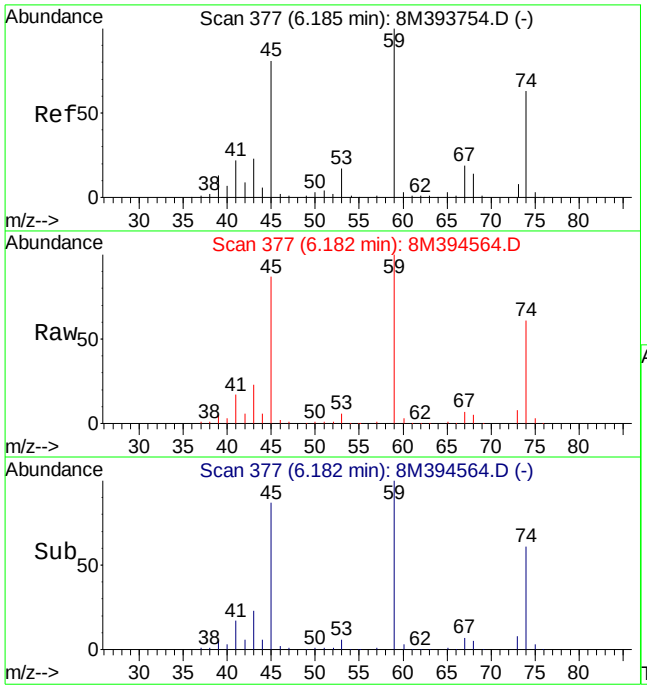

#9
Diethyl ether
Concen: 86.07 ug/L
RT: 6.18 min Scan# 377
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 59 Resp: 591494

Ion	Ratio	Lower	Upper
59	100		
45	86.0	48.9	114.1
74	61.0	37.6	87.6

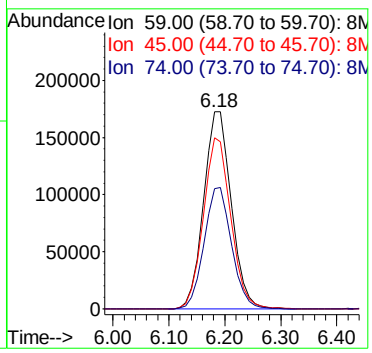

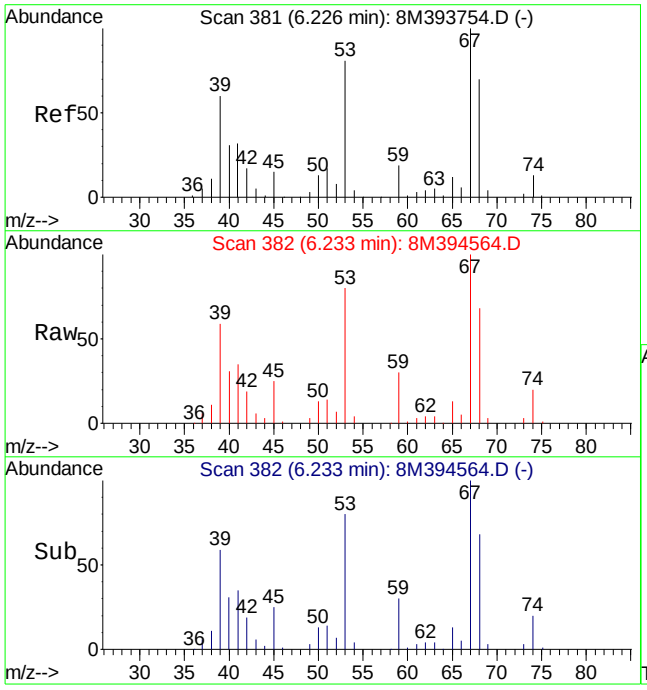

#10
Isoprene
Concen: 18.84 ug/L
RT: 6.23 min Scan# 382
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 67 Resp: 281240

Ion	Ratio	Lower	Upper
67	100		
53	82.6	48.9	114.1

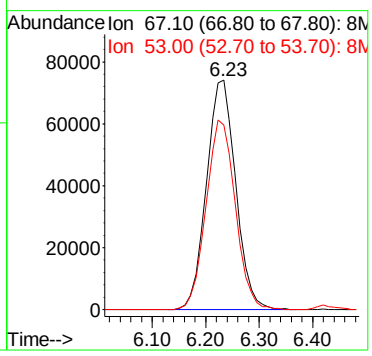

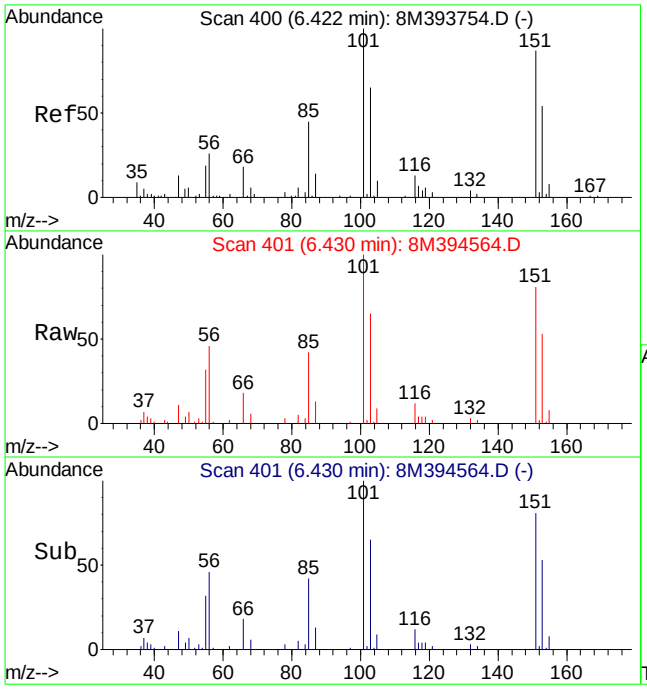

#11
Acrolein
Concen: 49.41 ug/L
RT: 6.43 min Scan# 401
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 56 Resp: 49793

Ion	Ratio	Lower	Upper
56	100		
55	67.8	44.0	102.8

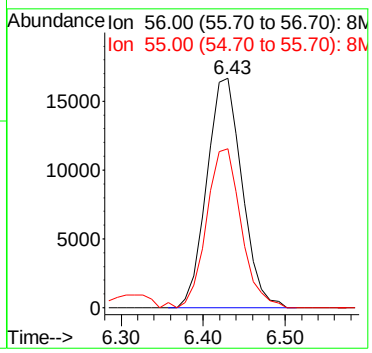

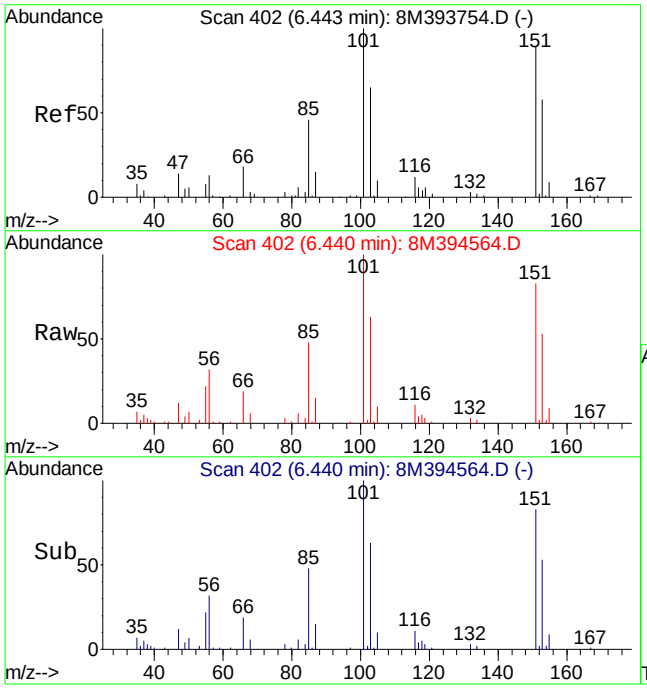

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 22.74 ug/L
RT: 6.44 min Scan# 402
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:101 Resp: 207597

Ion	Ratio	Lower	Upper
101	100		
151	84.5	49.8	129.8

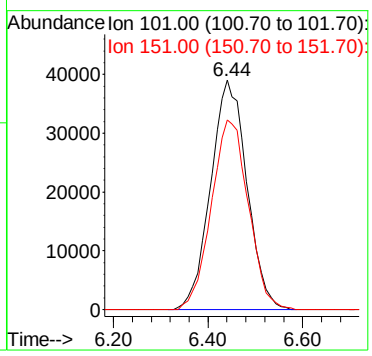

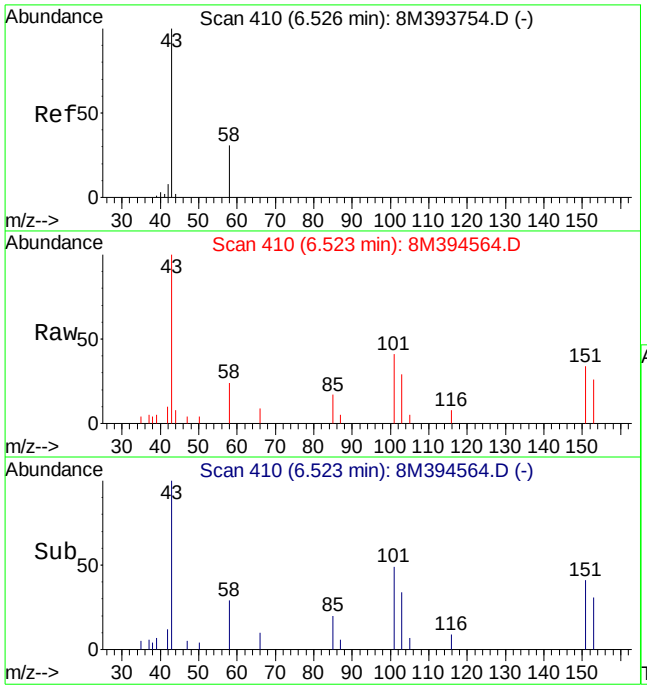

#13
Acetone
Concen: 17.15 ug/L
RT: 6.52 min Scan# 410
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 43 Resp: 27533

Ion	Ratio	Lower	Upper
43	100		
58	26.9	17.0	39.6

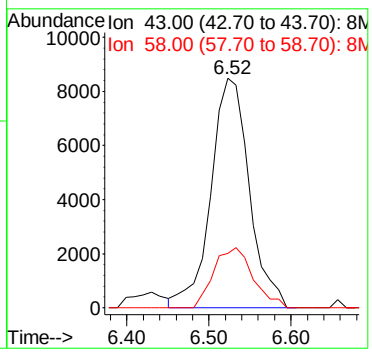

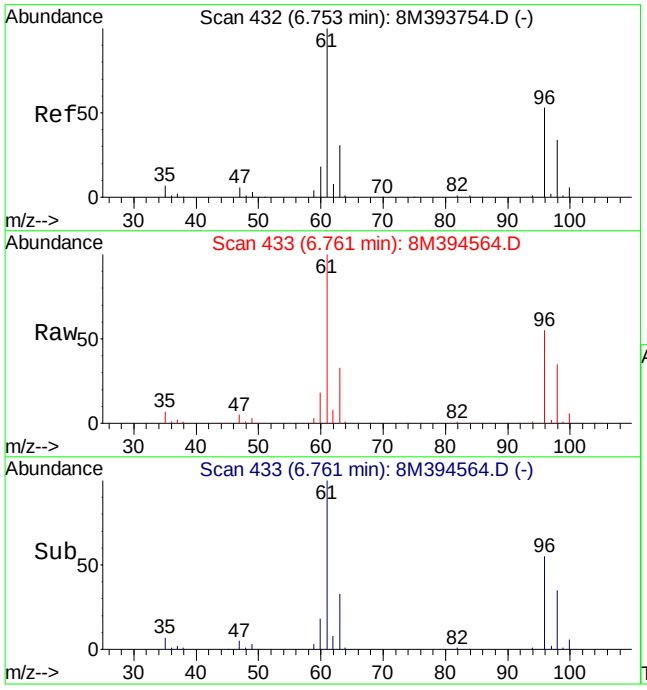

#14
1,1-Dichloroethene
Concen: 19.84 ug/L
RT: 6.76 min Scan# 433
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 61 Resp: 332171

Ion	Ratio	Lower	Upper
61	100		
96	54.4	32.5	75.7

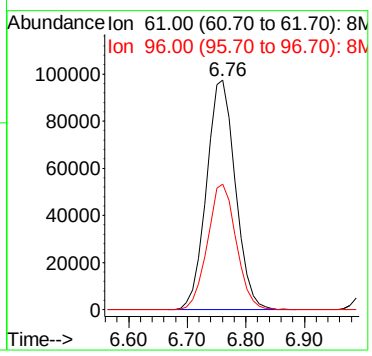

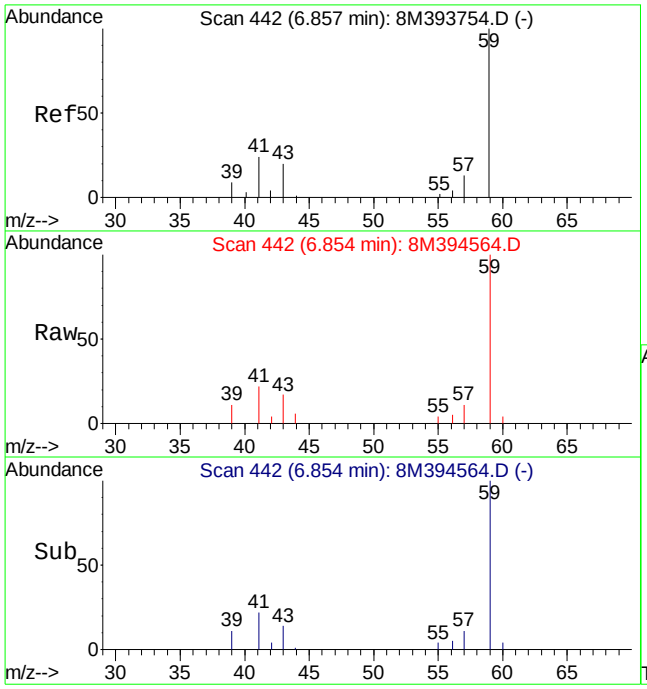

#15
Tert-Butyl Alcohol
Concen: 106.98 ug/L
RT: 6.85 min Scan# 442
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 59 Resp: 43071

Ion	Ratio	Lower	Upper
59	100		
41	23.8	13.7	32.1
57	9.0	6.1	14.3

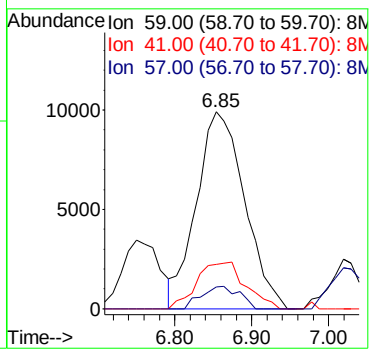

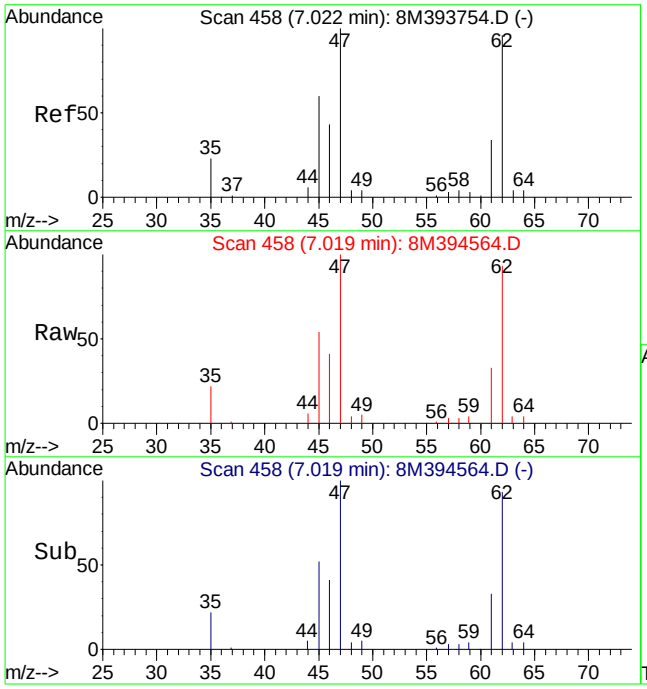

#16
Dimethyl Sulfide
Concen: 20.30 ug/L
RT: 7.02 min Scan# 458
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 62 Resp: 195545

Ion	Ratio	Lower	Upper
62	100		
47	107.4	62.4	145.6

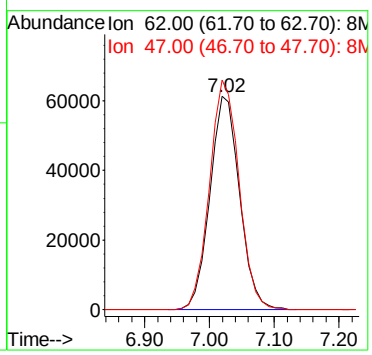

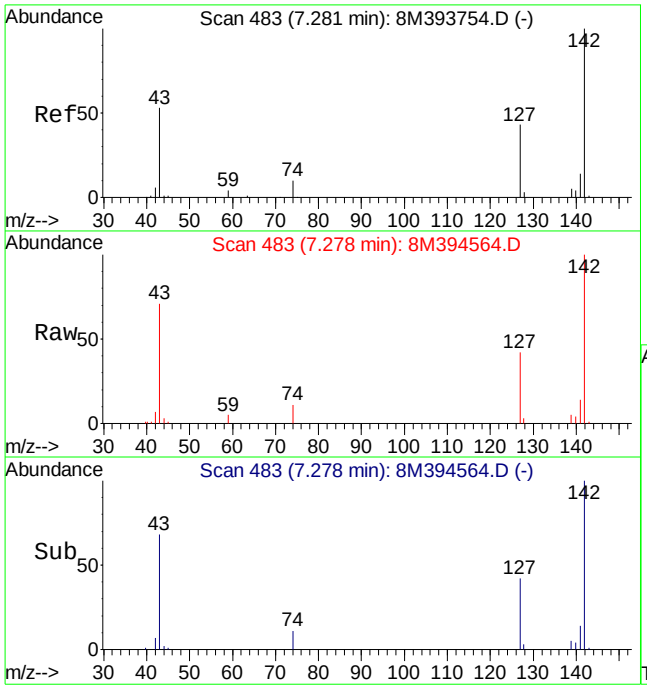

#17
Iodomethane
Concen: 13.90 ug/L
RT: 7.28 min Scan# 483
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:142 Resp: 120766

Ion	Ratio	Lower	Upper
142	100		
127	41.6	26.3	61.3

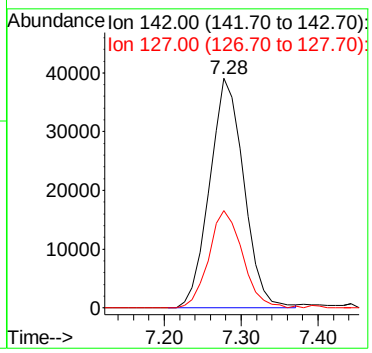

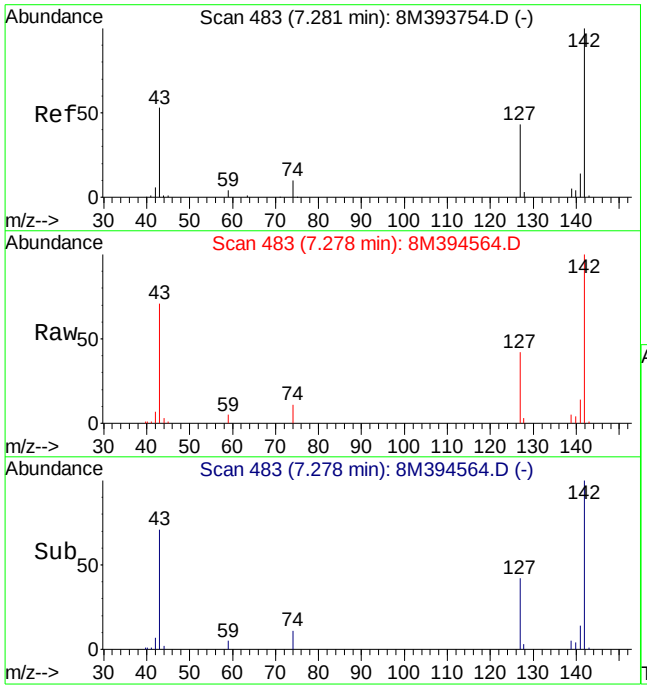

#18
Methyl acetate
Concen: 16.94 ug/L
RT: 7.28 min Scan# 483
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 43 Resp: 83939

Ion	Ratio	Lower	Upper
43	100		
74	15.4	10.7	24.9
59	7.8	4.6	10.6

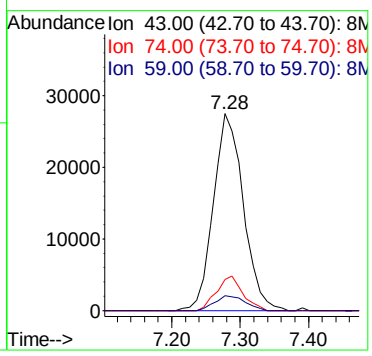

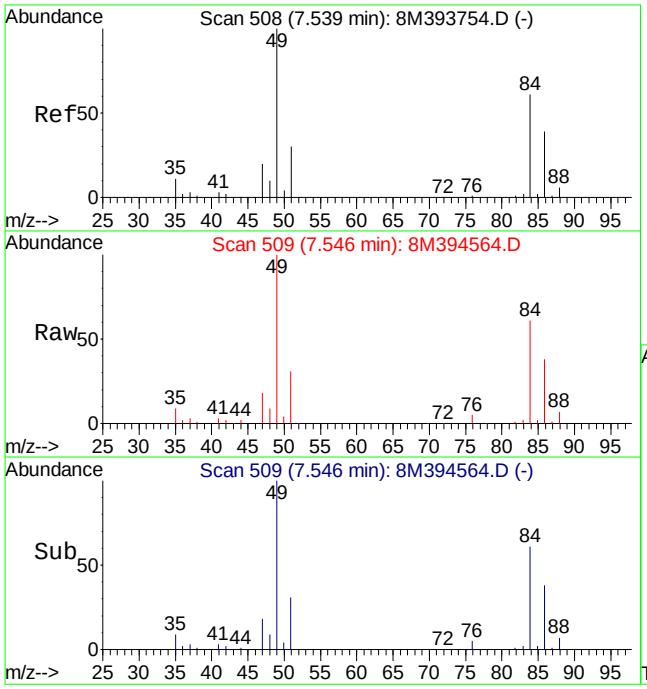

#19
Methylene Chloride
Concen: 20.40 ug/L
RT: 7.55 min Scan# 509
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 84 Resp: 192310

Ion	Ratio	Lower	Upper
84	100		
49	170.2	98.4	229.6

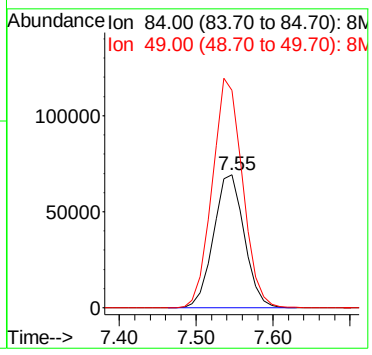

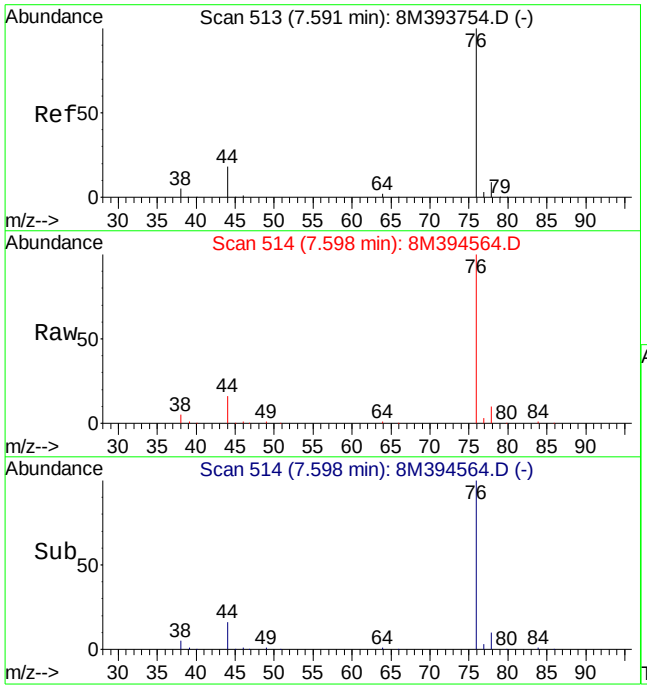

#20
Carbon Disulfide
Concen: 19.40 ug/L
RT: 7.60 min Scan# 514
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 76 Resp: 611704

Ion	Ratio	Lower	Upper
76	100		
78	9.5	5.8	13.4

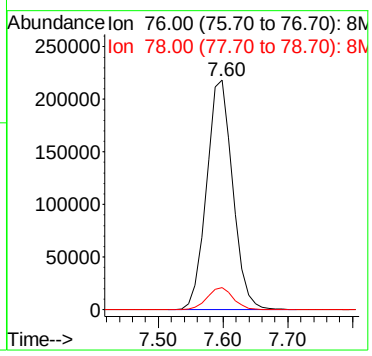

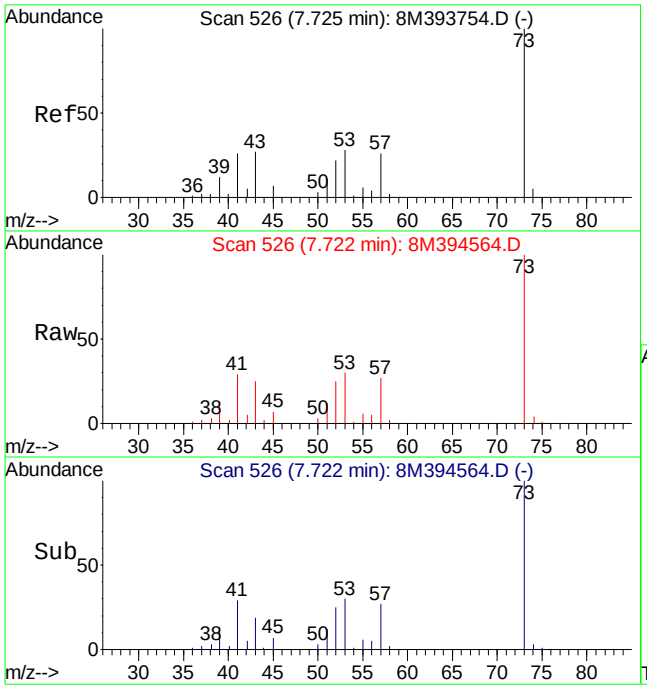

#21
Acrylonitrile
Concen: 17.45 ug/L
RT: 7.72 min Scan# 526
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 53 Resp: 40012

Ion	Ratio	Lower	Upper
53	100		
52	76.7	46.7	109.1

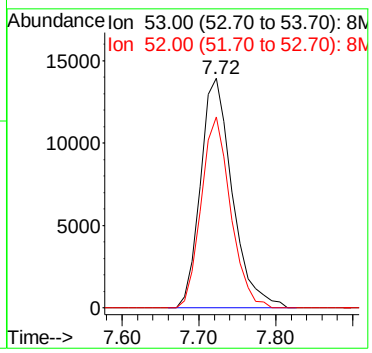

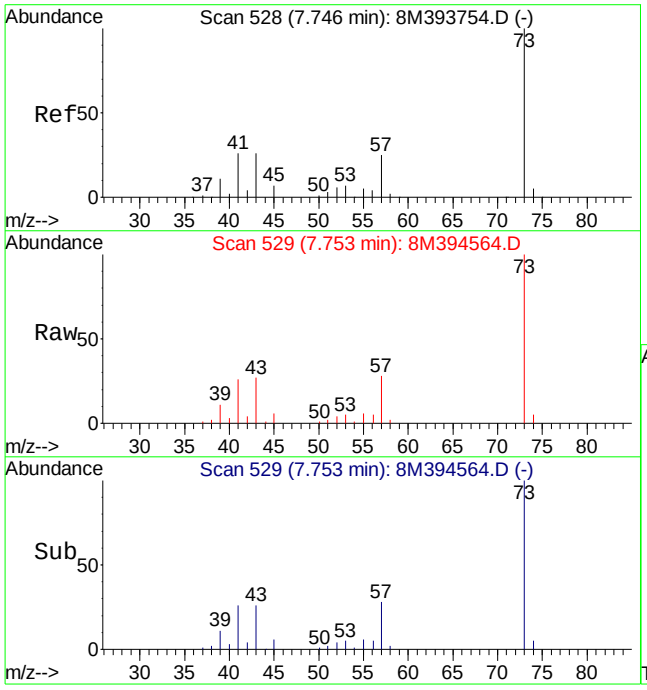

#22
Methyl Tert Butyl Ether
Concen: 17.88 ug/L
RT: 7.75 min Scan# 529
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 73 Resp: 345616

Ion	Ratio	Lower	Upper
73	100		
57	27.0	15.7	36.7

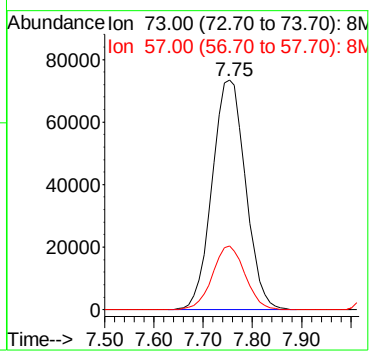

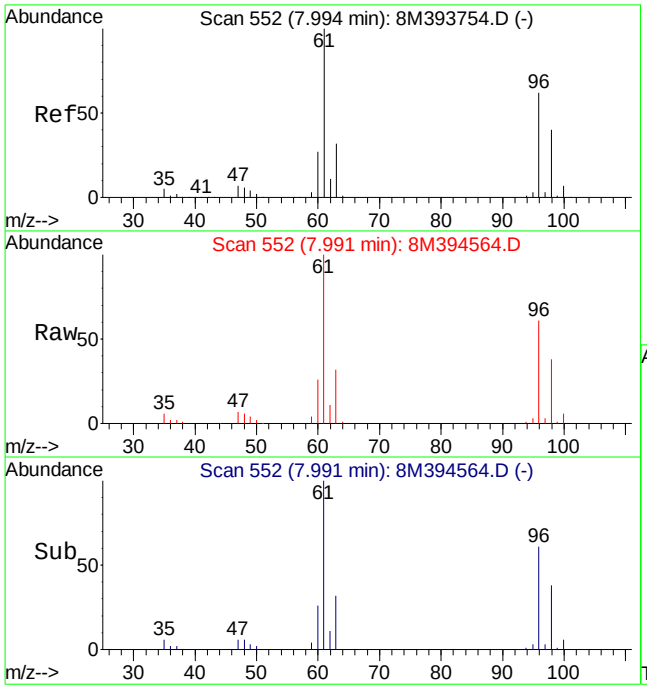

#23
trans-1,2-Dichloroethene
Concen: 21.27 ug/L
RT: 7.99 min Scan# 552
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 61 Resp: 342027

Ion	Ratio	Lower	Upper
61	100		
96	63.2	37.3	86.9

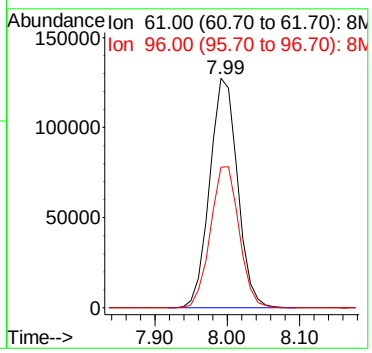

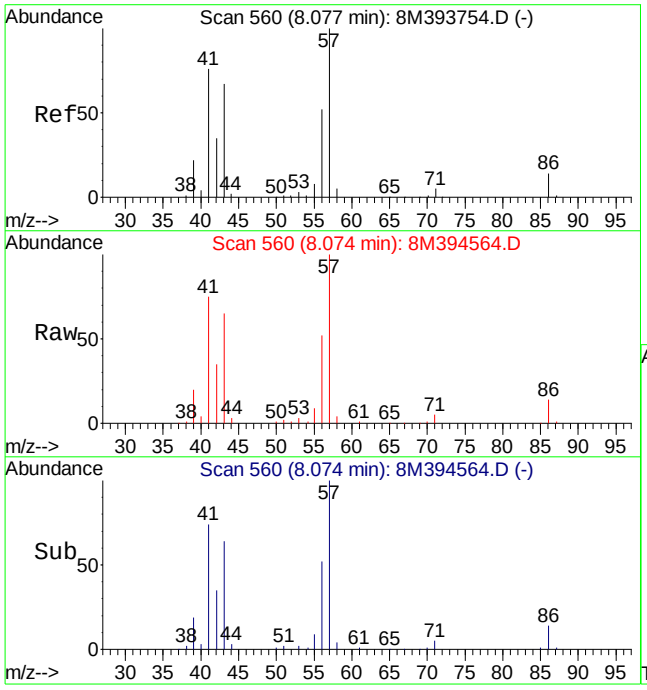

#24
n-Hexane
Concen: 16.18 ug/L
RT: 8.07 min Scan# 560
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 57 Resp: 257848

Ion	Ratio	Lower	Upper
57	100		
43	67.5	40.3	93.9

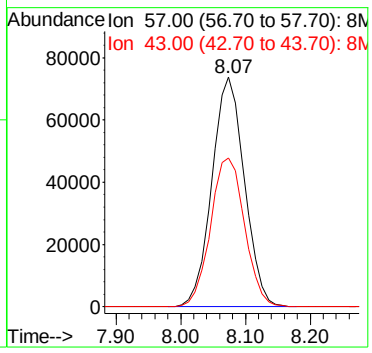

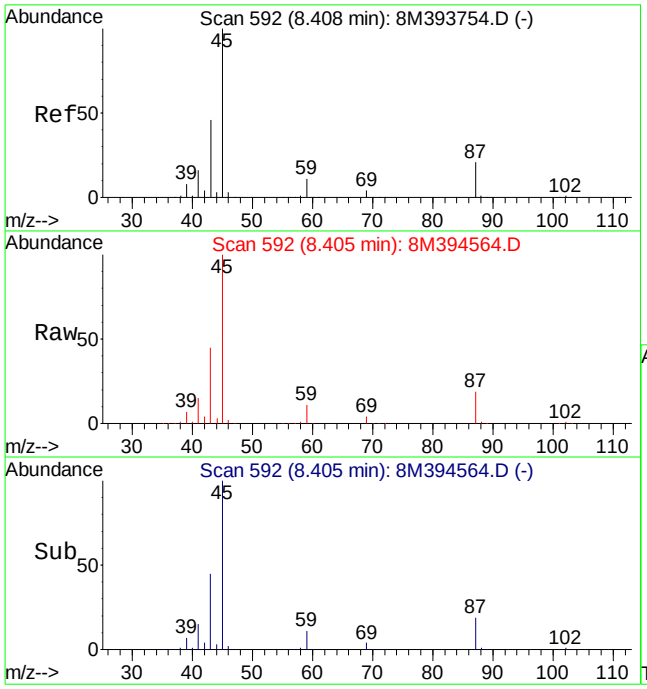

#25
Diisopropyl ether
Concen: 97.02 ug/L
RT: 8.40 min Scan# 592
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 45 Resp: 3679584

Ion	Ratio	Lower	Upper
45	100		
43	44.9	27.5	64.3
87	19.0	12.4	29.0

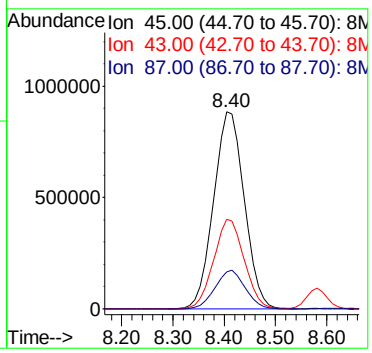

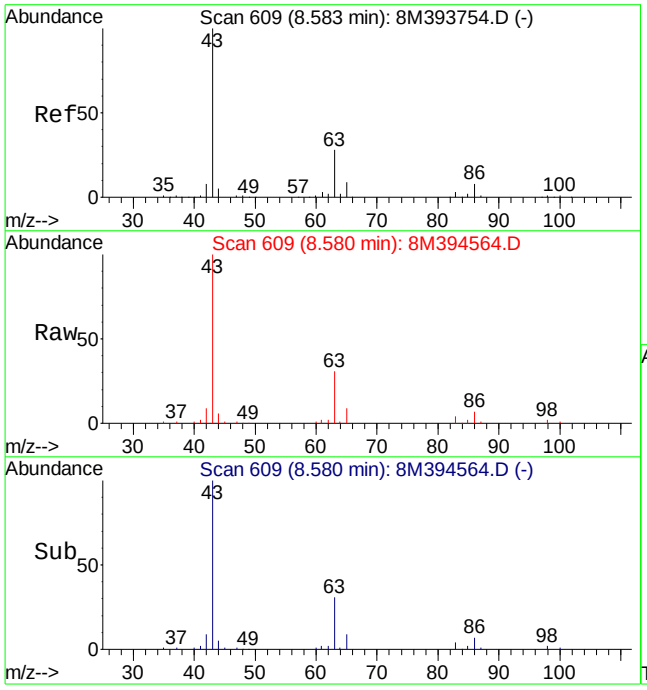

#26
Vinyl Acetate
Concen: 16.48 ug/L
RT: 8.58 min Scan# 609
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 43 Resp: 256246

Ion	Ratio	Lower	Upper
43	100		
86	7.6	4.7	11.1

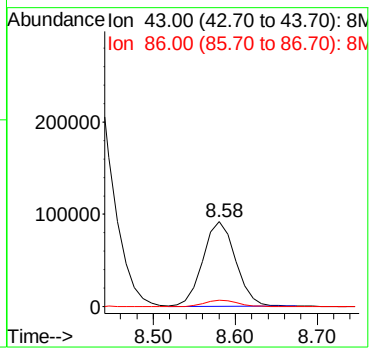

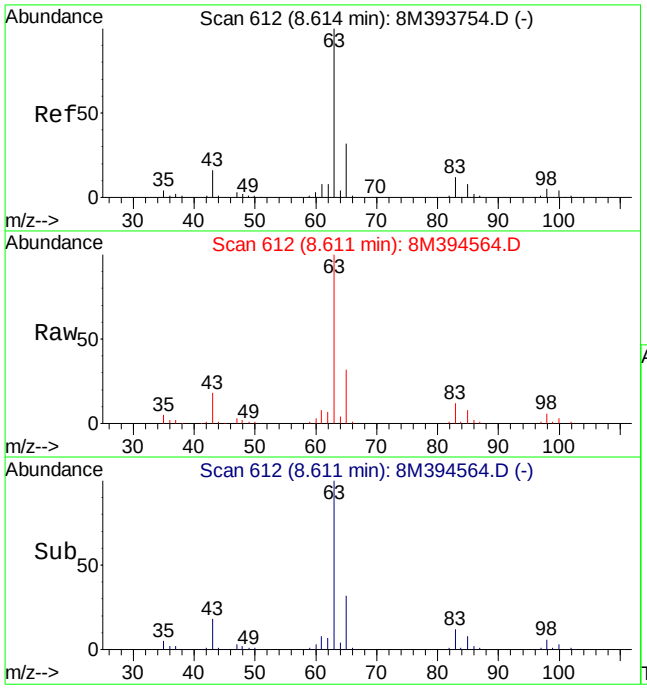

#27
1,1-Dichloroethane
Concen: 20.80 ug/L
RT: 8.61 min Scan# 612
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 63 Resp: 409813

Ion	Ratio	Lower	Upper
63	100		
65	31.2	18.7	43.5
83	12.1	7.4	17.2

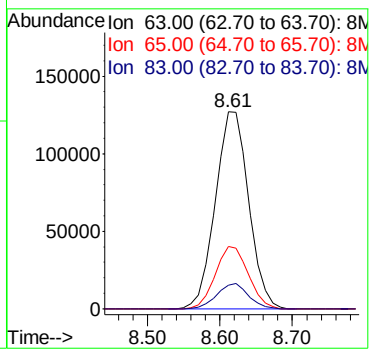

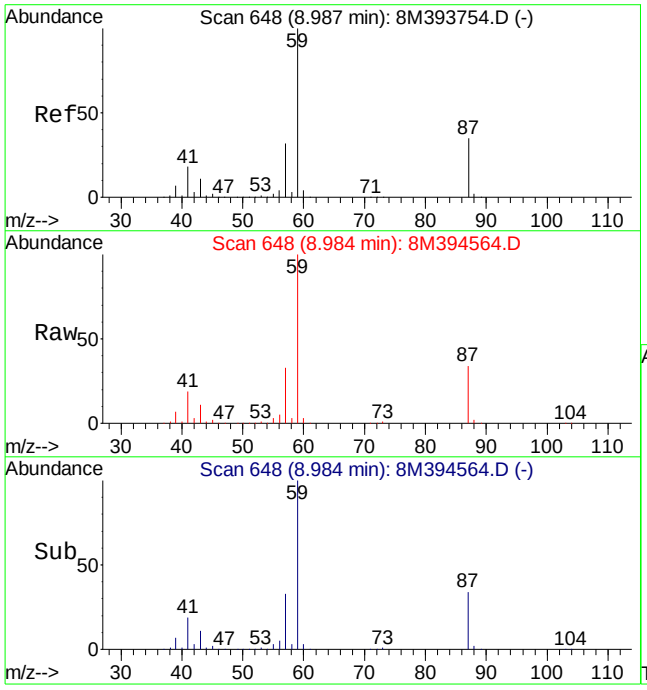

#28
Ethyl-Tert-Butyl ether
Concen: 86.99 ug/L
RT: 8.98 min Scan# 648
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 59 Resp: 2654882

Ion	Ratio	Lower	Upper
59	100		
87	33.7	20.7	48.3
57	33.0	19.2	44.8

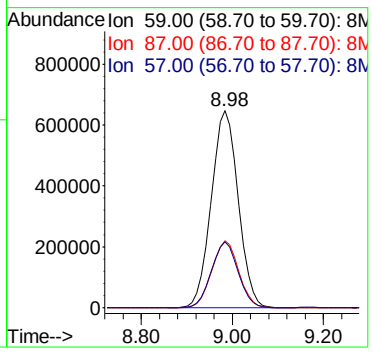

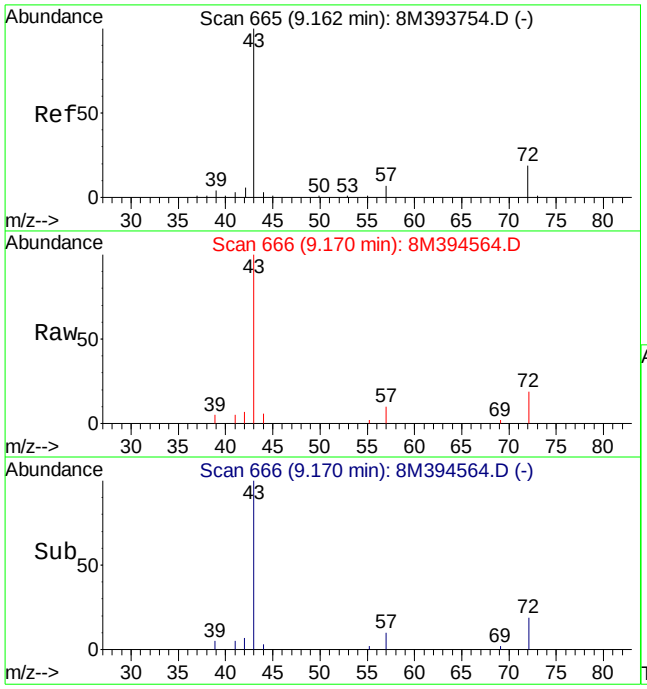

#29
2-Butanone
Concen: 15.86 ug/L
RT: 9.17 min Scan# 666
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 43 Resp: 39721

Ion	Ratio	Lower	Upper
43	100		
72	17.4	11.5	26.7

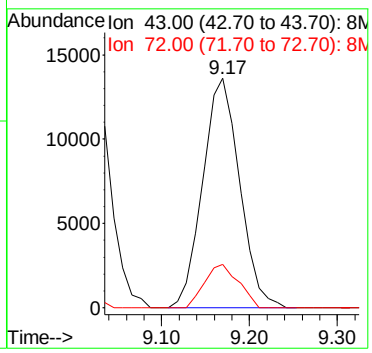

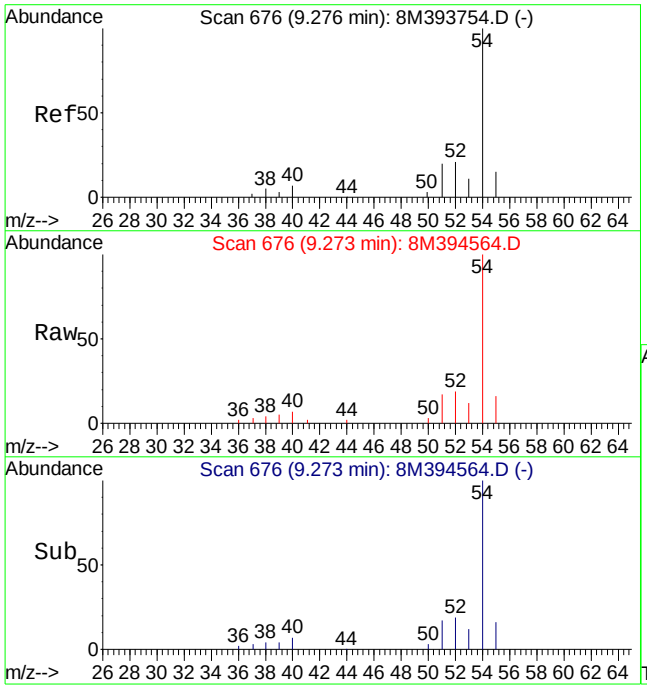

#30
Propionitrile
Concen: 77.06 ug/L
RT: 9.27 min Scan# 676
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 54 Resp: 58673

Ion	Ratio	Lower	Upper
54	100		
52	20.1	12.7	29.5

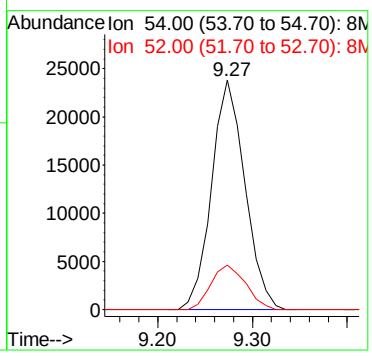

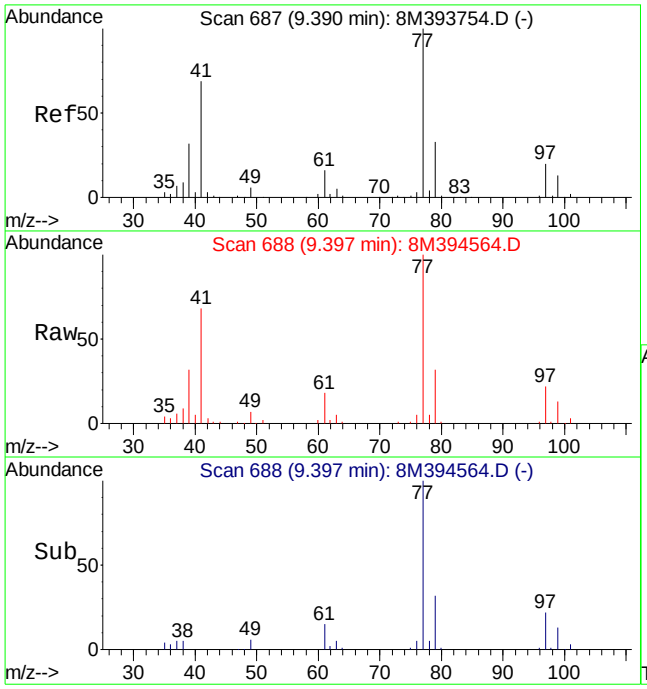

#31
2,2-Dichloropropane
Concen: 17.13 ug/L
RT: 9.40 min Scan# 688
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 77 Resp: 270597

Ion	Ratio	Lower	Upper
77	100		
79	32.5	19.3	45.1

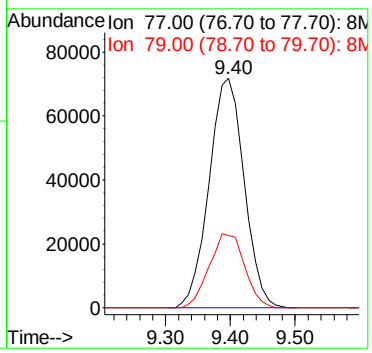

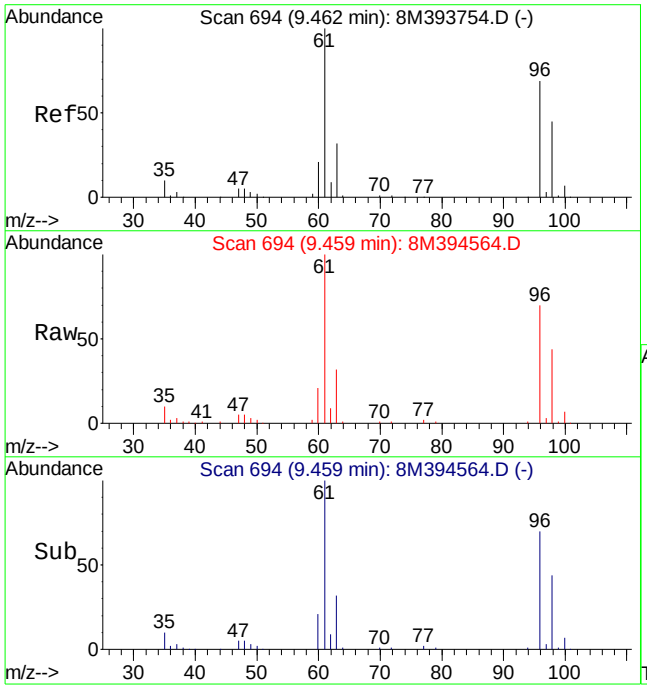

#32
cis-1,2-Dichloroethene
Concen: 21.09 ug/L
RT: 9.46 min Scan# 694
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 96 Resp: 228871

Ion	Ratio	Lower	Upper
96	100		
61	162.1	101.6	237.2

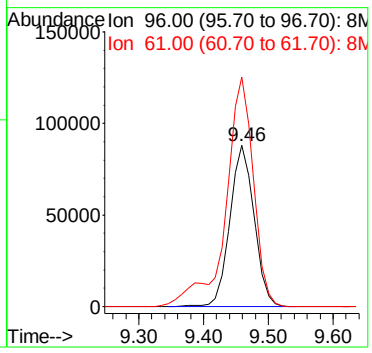

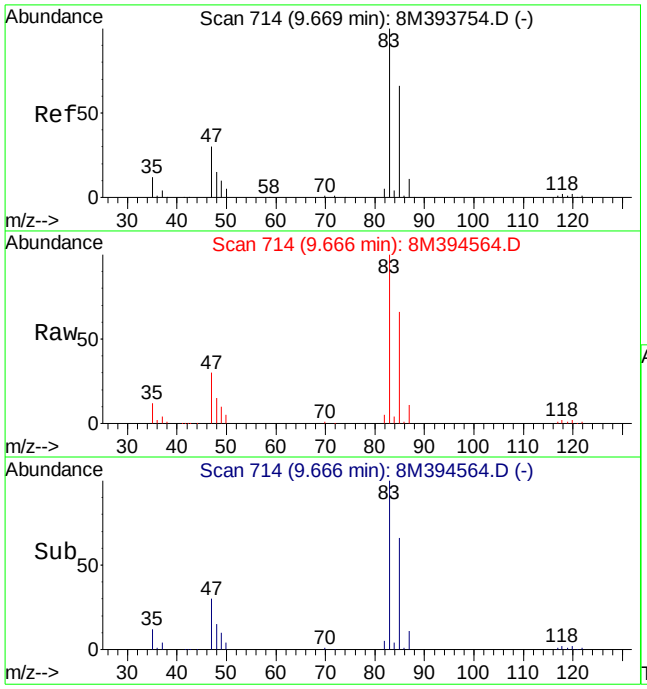

#33
Chloroform
Concen: 20.30 ug/L
RT: 9.67 min Scan# 714
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 83 Resp: 355631

Ion	Ratio	Lower	Upper
83	100		
85	66.0	39.5	92.3

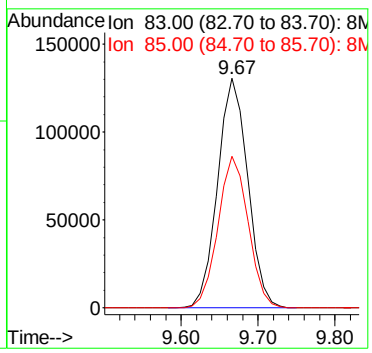

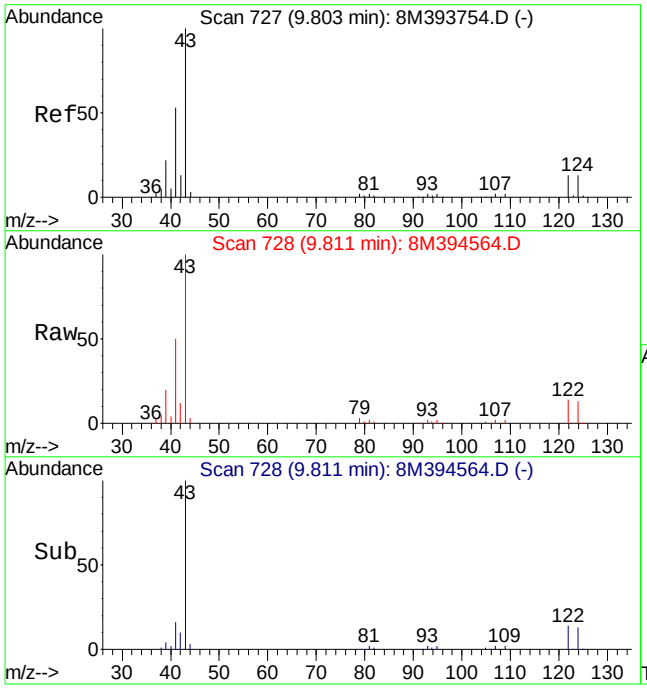

#34
1-Bromopropane
Concen: 23.85 ug/L
RT: 9.81 min Scan# 728
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:122 Resp: 49185

Ion	Ratio	Lower	Upper
122	100		
124	96.8	0.0	207.5

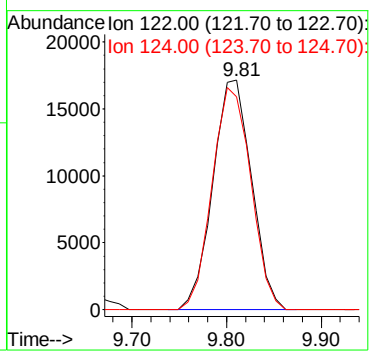

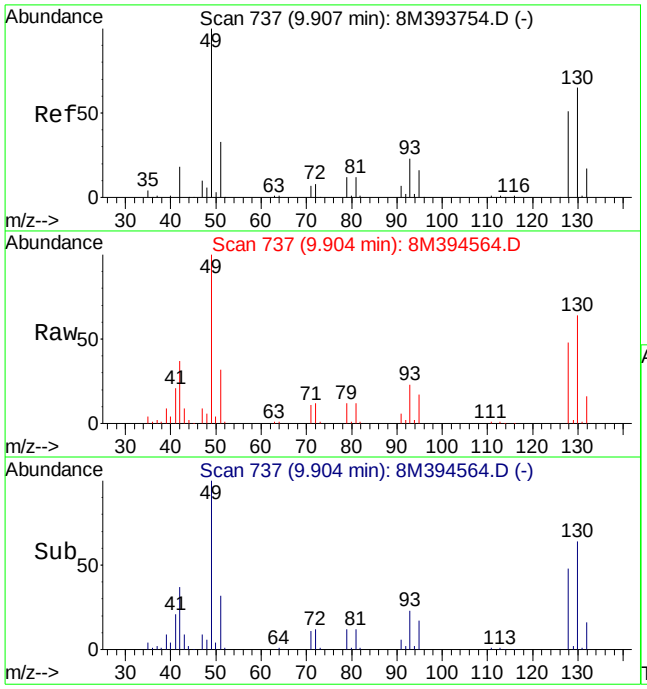

#35
Bromochloromethane
Concen: 19.72 ug/L
RT: 9.90 min Scan# 737
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:130 Resp: 110965

Ion	Ratio	Lower	Upper
130	100		
128	79.2	46.6	108.6
49	172.0	100.3	234.1

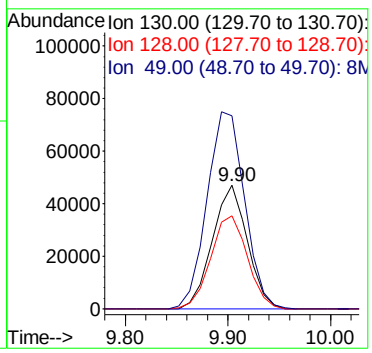

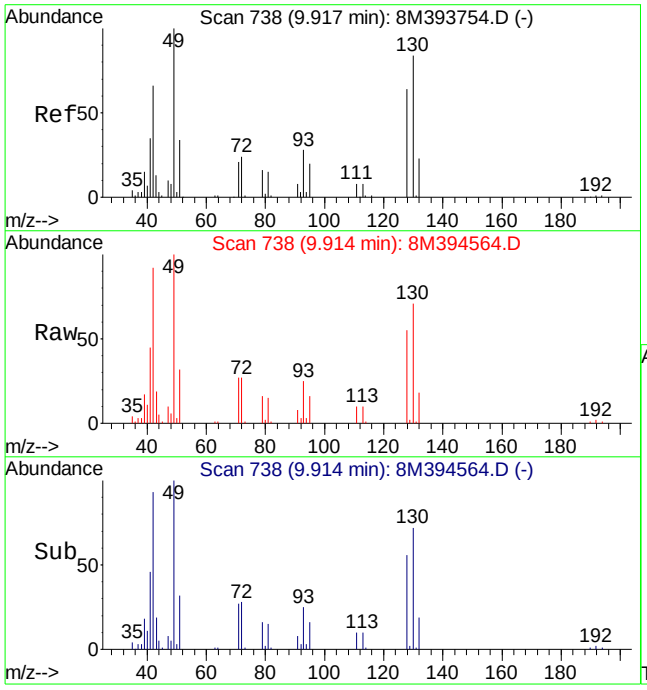

#36
Tetrahydrofuran
Concen: 78.46 ug/L
RT: 9.91 min Scan# 738
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 42 Resp: 125400

Ion	Ratio	Lower	Upper
42	100		
72	33.0	21.4	50.0
71	31.3	20.0	46.8

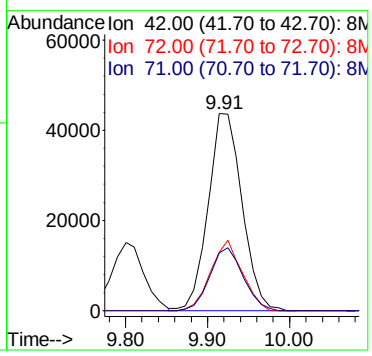

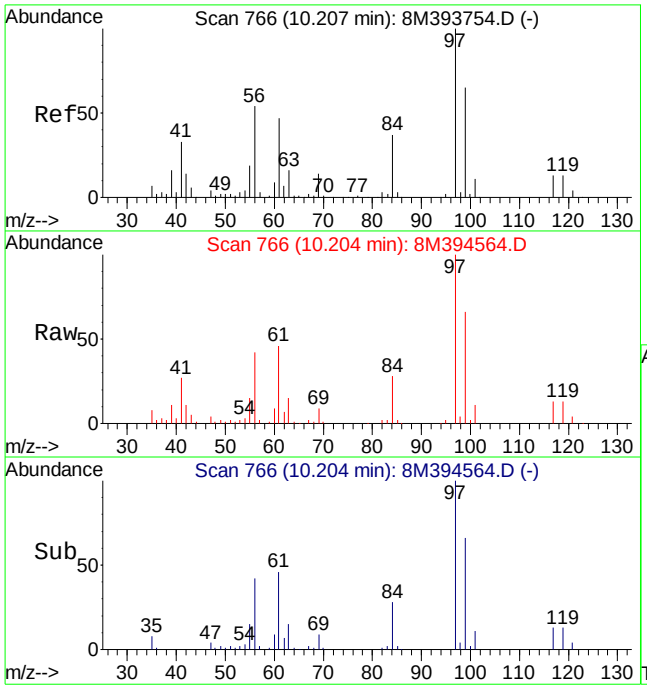

#38
1,1,1-Trichloroethane
Concen: 21.41 ug/L
RT: 10.20 min Scan# 766
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 97 Resp: 331458

Ion	Ratio	Lower	Upper
97	100		
99	65.9	38.8	90.6

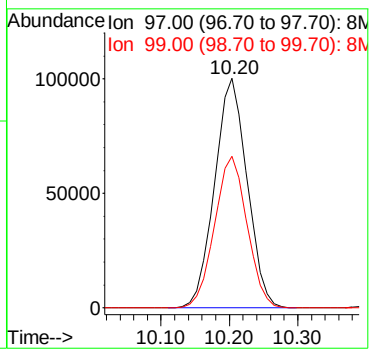

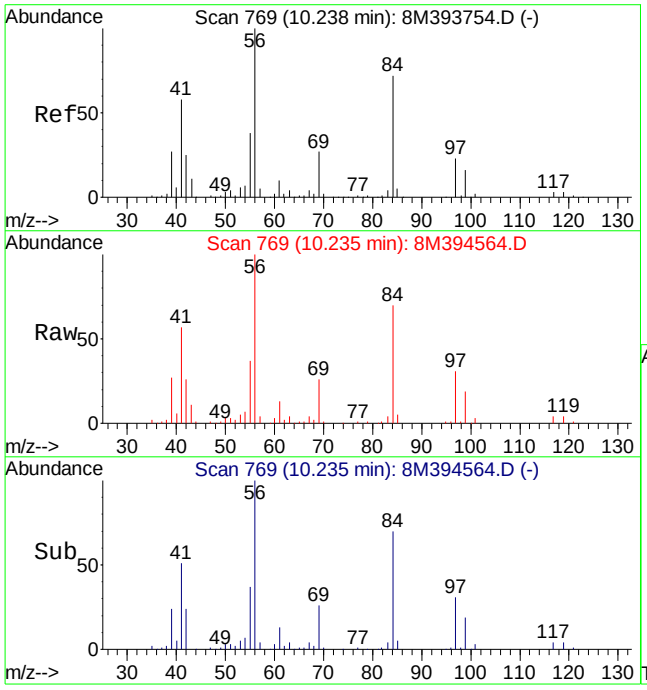

#39
Cyclohexane
Concen: 19.37 ug/L
RT: 10.23 min Scan# 769
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 56 Resp: 397965

Ion	Ratio	Lower	Upper
56	100		
84	69.0	43.1	100.5
69	24.8	16.0	37.4

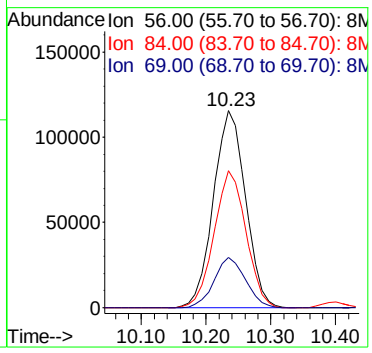

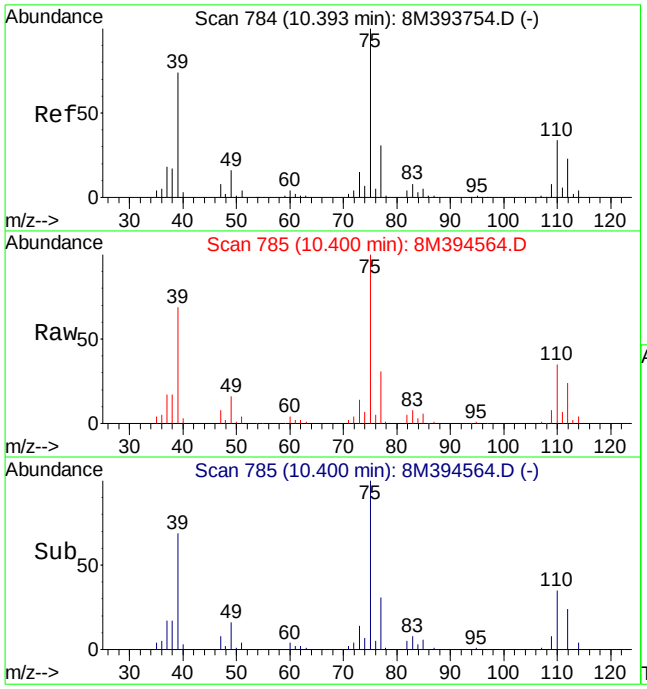

#40
1,1-Dichloropropene
Concen: 21.05 ug/L
RT: 10.40 min Scan# 785
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 75 Resp: 290142

Ion	Ratio	Lower	Upper
75	100		
110	35.4	20.9	48.7

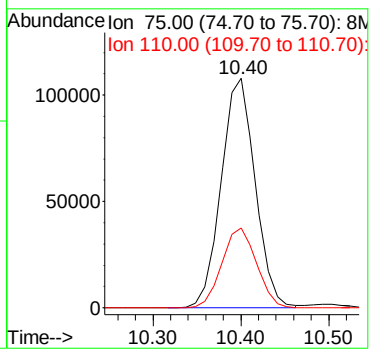

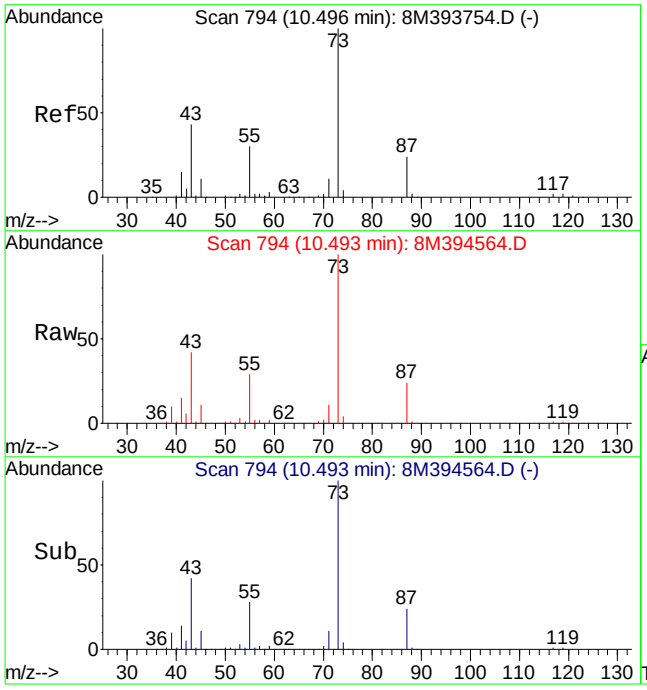

#41
Tert-Amyl-Methyl ether
Concen: 86.26 ug/L
RT: 10.49 min Scan# 794
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 73 Resp: 1832098

Ion	Ratio	Lower	Upper
73	100		
55	29.2	17.2	40.0
57	2.3	1.4	3.2

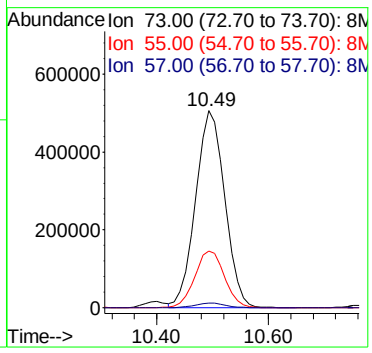

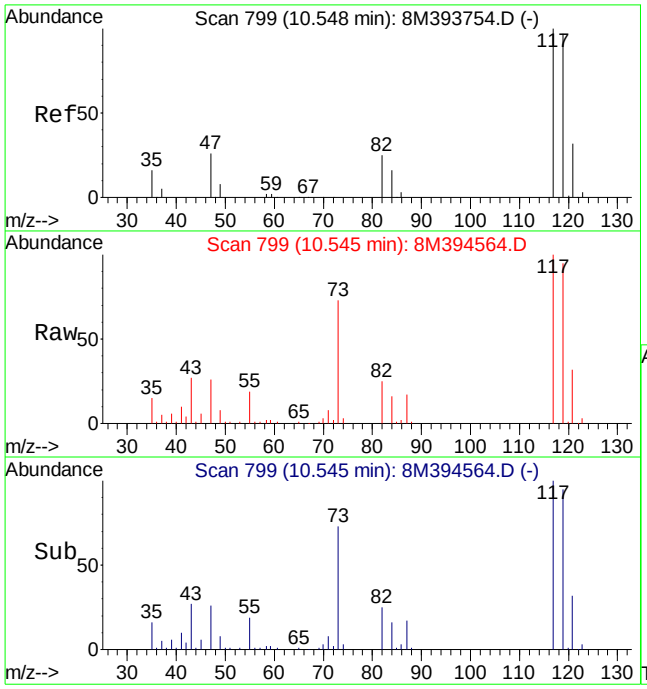

#42
Carbon Tetrachloride
Concen: 22.69 ug/L
RT: 10.54 min Scan# 799
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:117 Resp: 294470

Ion	Ratio	Lower	Upper
117	100		
119	96.2	58.0	135.2
82	24.3	14.8	34.4

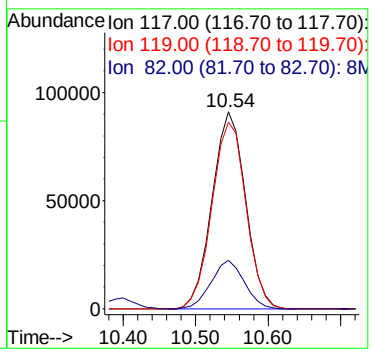

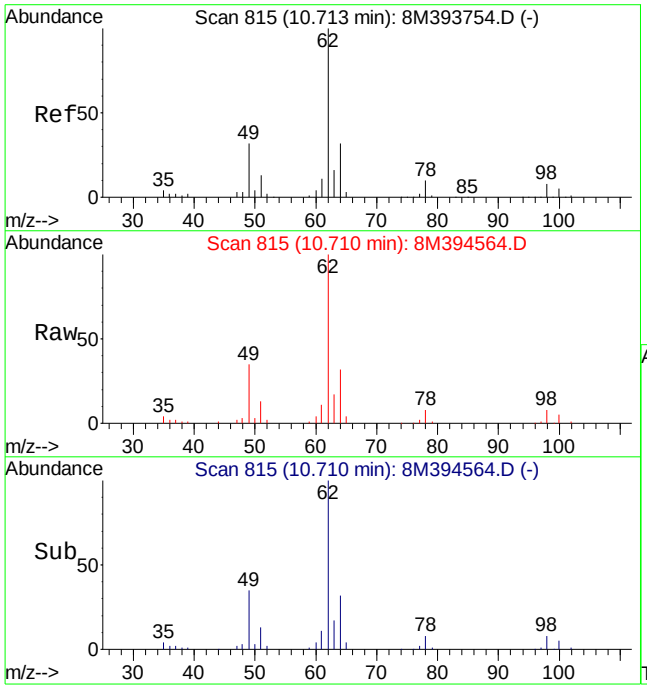

#45
1,2-Dichloroethane
Concen: 18.72 ug/L
RT: 10.71 min Scan# 815
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 62 Resp: 230591

Ion	Ratio	Lower	Upper
62	100		
64	31.8	19.2	44.8
49	43.9	24.2	56.4

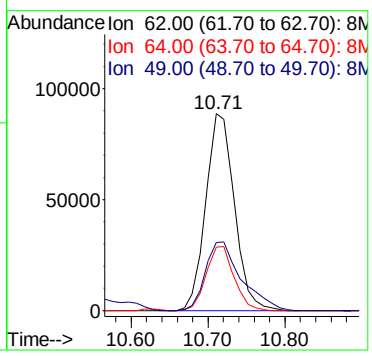

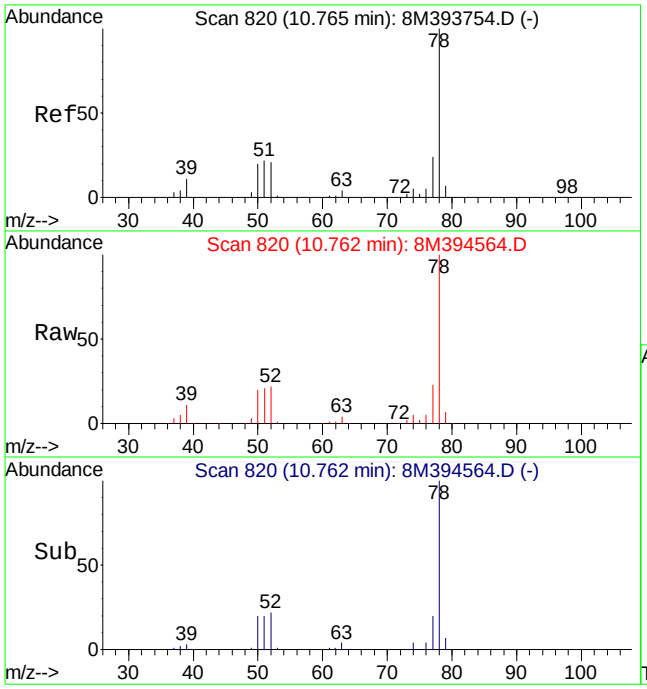

#46
Benzene
Concen: 21.62 ug/L
RT: 10.76 min Scan# 820
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 78 Resp: 831411

Ion	Ratio	Lower	Upper
78	100		
52	21.7	12.7	29.7
51	24.4	14.9	34.7

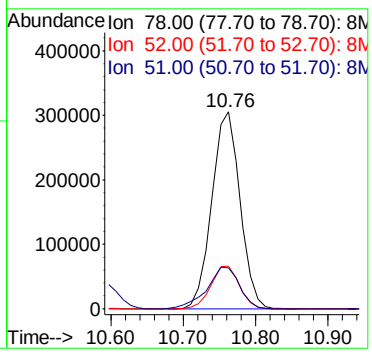

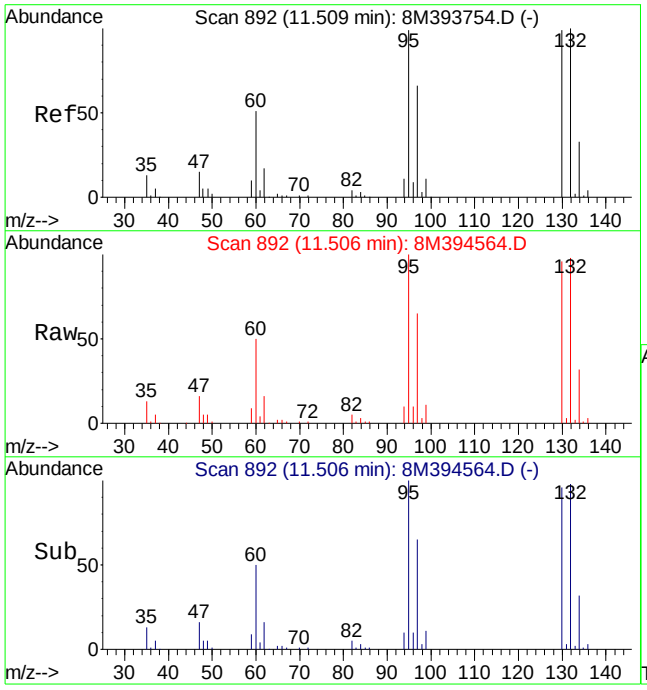

#47
Trichloroethene
Concen: 21.97 ug/L
RT: 11.51 min Scan# 892
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:130 Resp: 226726

Ion	Ratio	Lower	Upper
130	100		
132	101.0	61.0	142.2
95	102.0	61.6	143.6

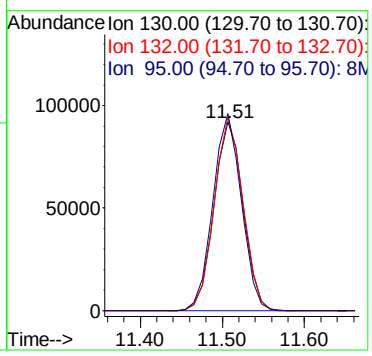

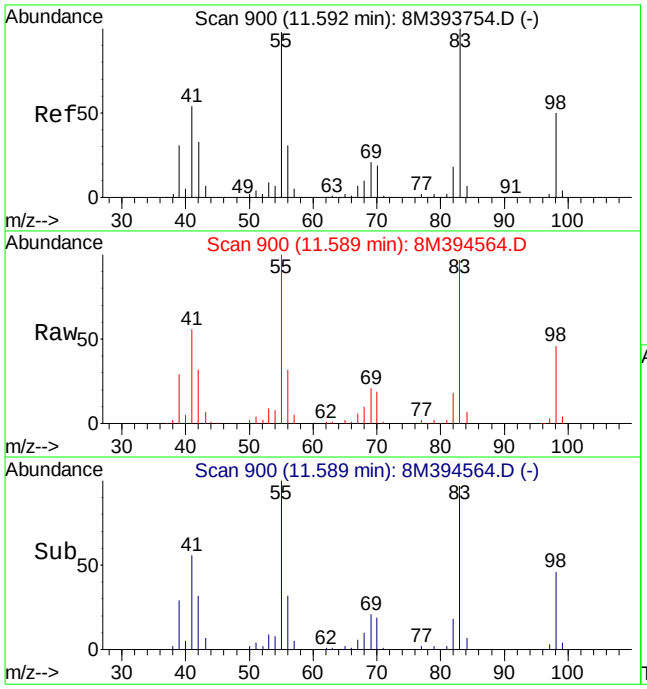

#48
Methylcyclohexane
Concen: 18.20 ug/L
RT: 11.59 min Scan# 900
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 83 Resp: 288375

Ion	Ratio	Lower	Upper
83	100		
55	98.5	58.1	135.5
98	49.1	29.4	68.6

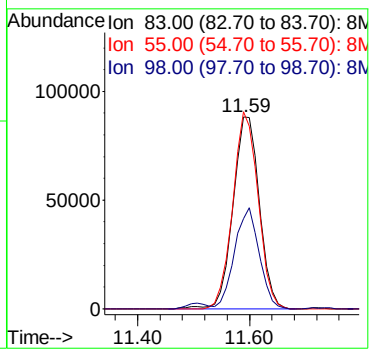

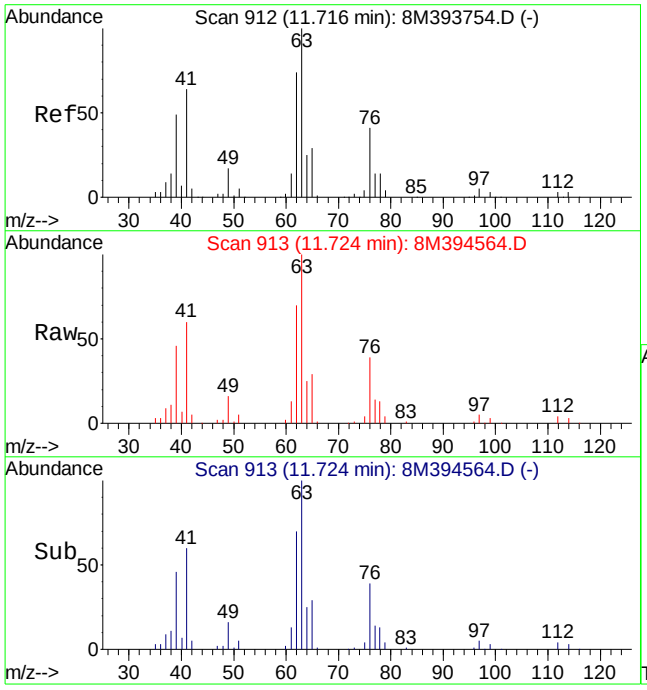

#49
1,2-Dichloropropane
Concen: 21.16 ug/L
RT: 11.72 min Scan# 913
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 63 Resp: 224754

Ion	Ratio	Lower	Upper
63	100		
76	38.2	24.7	57.7

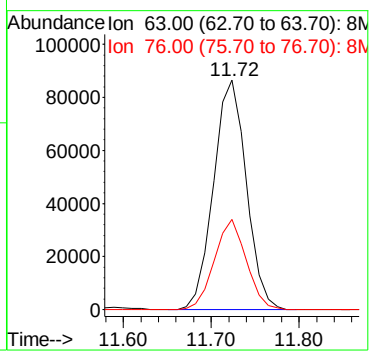

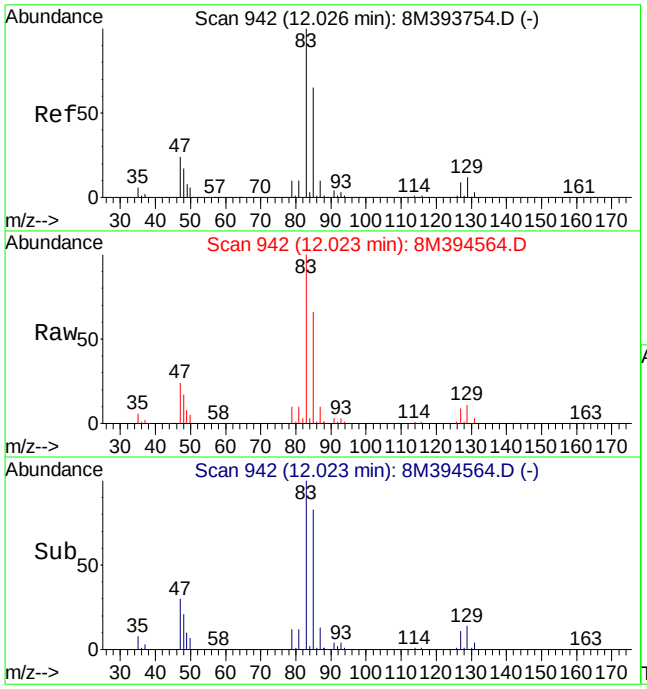

#50
Bromodichloromethane
Concen: 20.31 ug/L
RT: 12.02 min Scan# 942
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 83 Resp: 240904

Ion	Ratio	Lower	Upper
83	100		
85	63.8	38.6	90.2
129	11.3	6.9	16.1

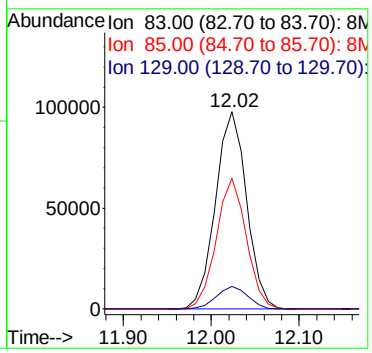

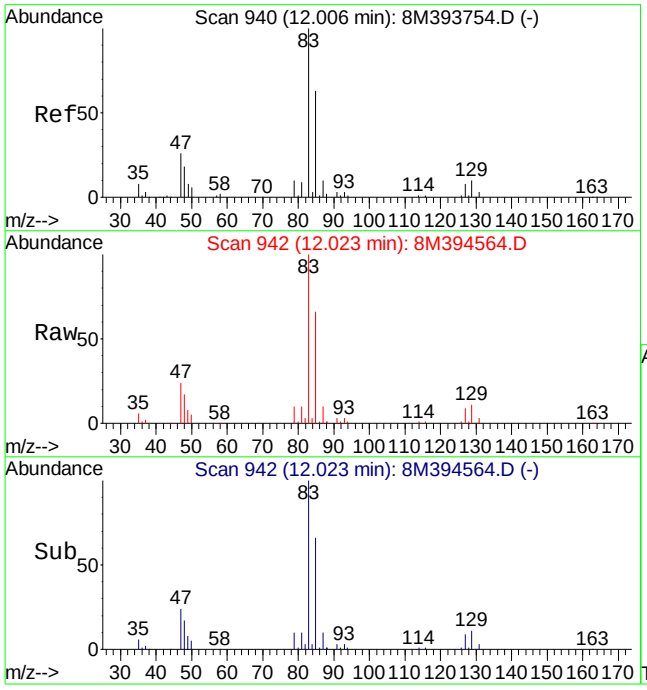

#51
1,4-Dioxane
Concen: 69.55 ug/L
RT: 12.02 min Scan# 942
Delta R.T. 0.02 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 88 Resp: 2895

Ion	Ratio	Lower	Upper
88	100		
58	43.0	44.7	104.3#

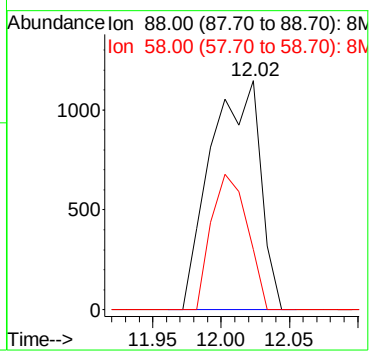

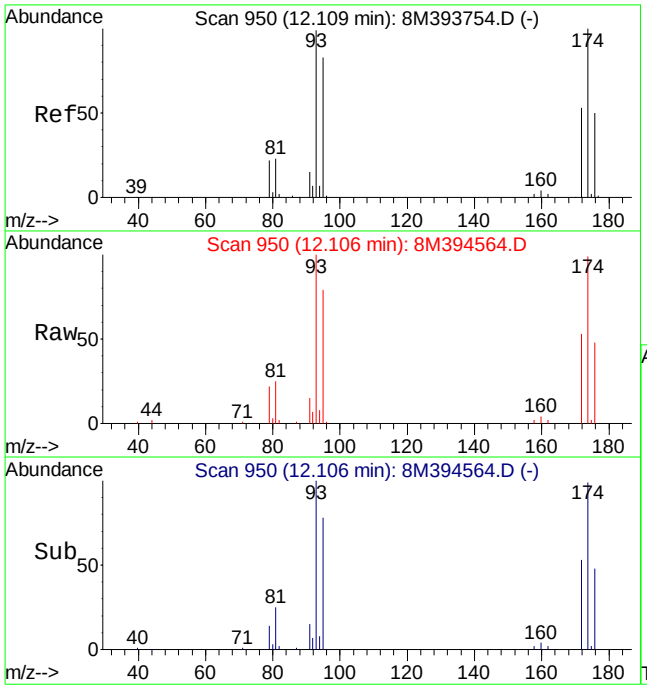

#52
Dibromomethane
Concen: 18.97 ug/L
RT: 12.11 min Scan# 950
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 93 Resp: 88831

Ion	Ratio	Lower	Upper
93	100		
95	82.5	50.3	117.3
174	108.8	62.6	146.0

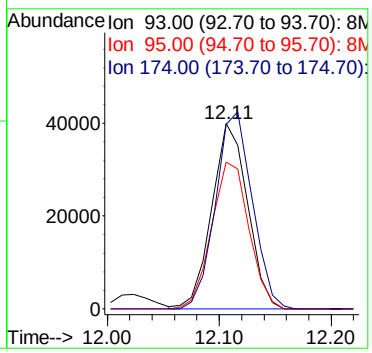

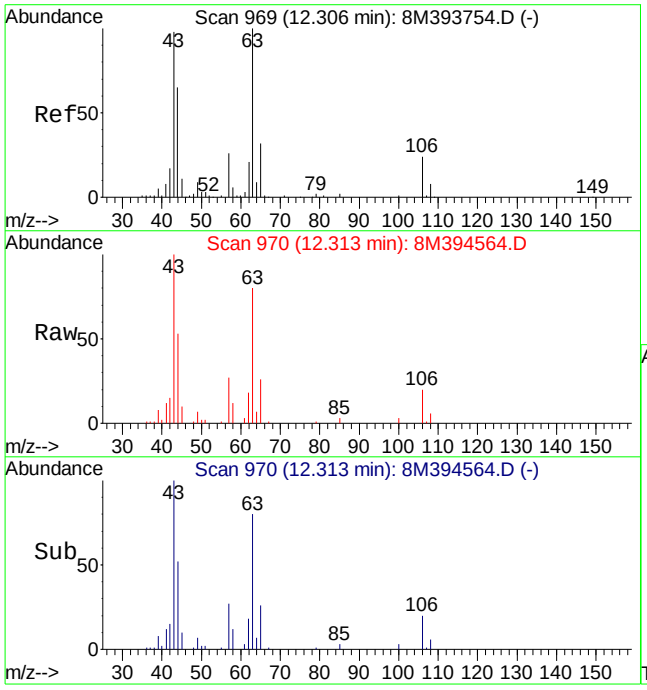

#53
2-Chloroethyl Vinyl Ether
Concen: 11.63 ug/L
RT: 12.31 min Scan# 970
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 63 Resp: 54579

Ion	Ratio	Lower	Upper
63	100		
106	23.5	14.9	34.7

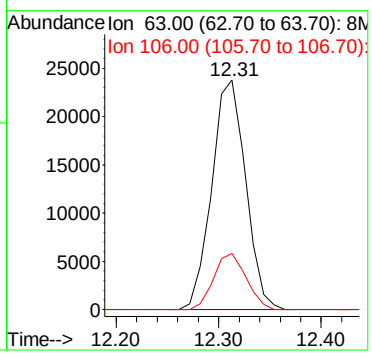

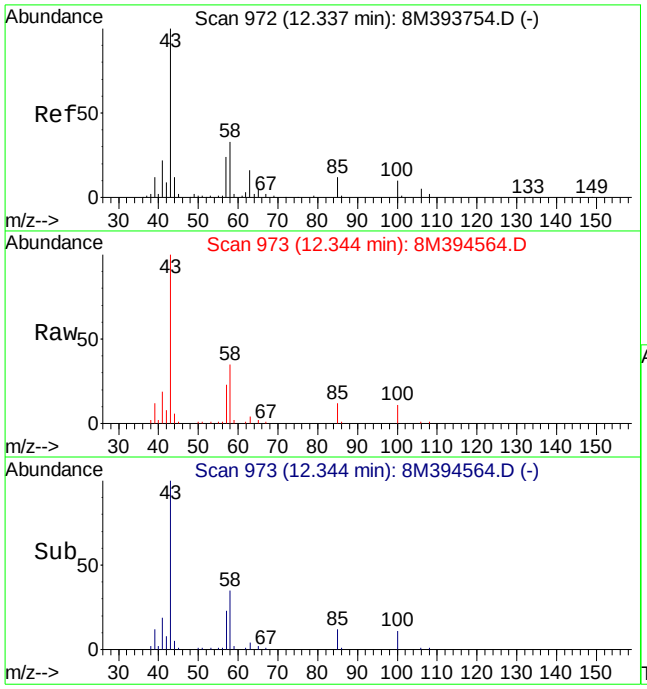

#54
4-Methyl-2-Pentanone
Concen: 16.15 ug/L
RT: 12.34 min Scan# 973
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 58 Resp: 34834

Ion	Ratio	Lower	Upper
58	100		
85	32.7	23.0	53.6
100	29.0	18.7	43.7

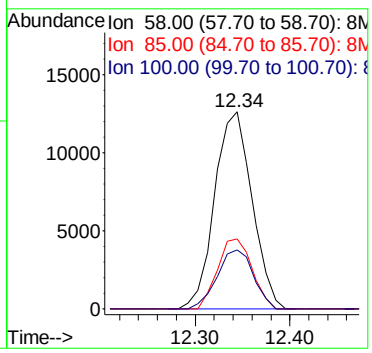

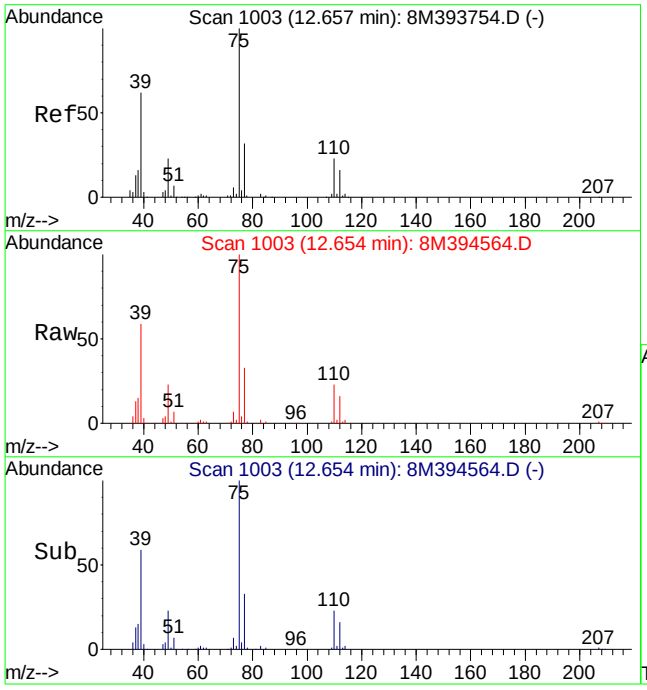

#55
cis-1,3-Dichloropropene
Concen: 20.28 ug/L
RT: 12.65 min Scan# 1003
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 75 Resp: 296261

Ion	Ratio	Lower	Upper
75	100		
77	31.7	19.2	44.8

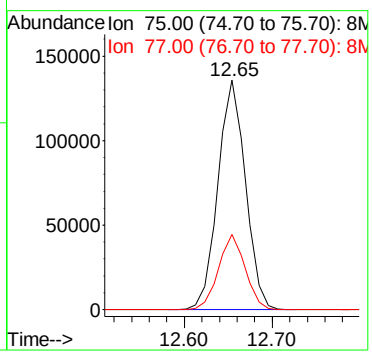

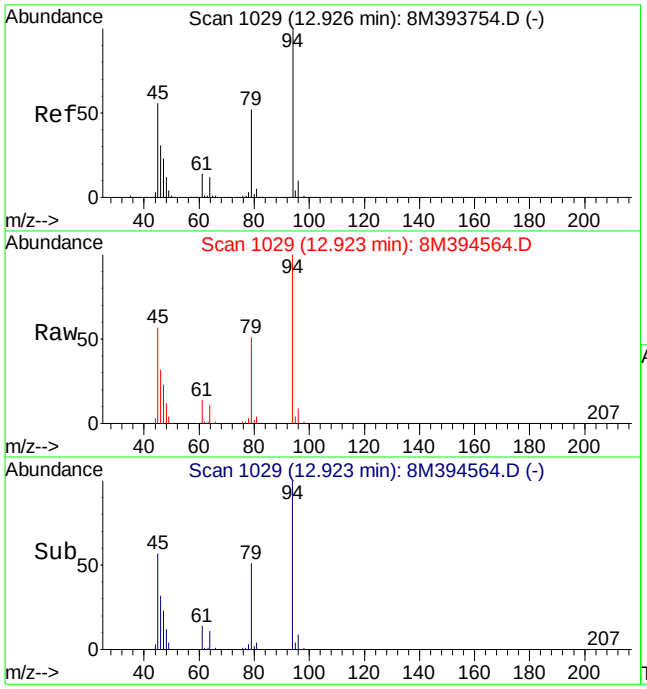

#56
Dimethyl Disulfide
Concen: 19.56 ug/L
RT: 12.92 min Scan# 1029
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 94 Resp: 299198

Ion	Ratio	Lower	Upper
94	100		
79	47.8	30.4	70.8

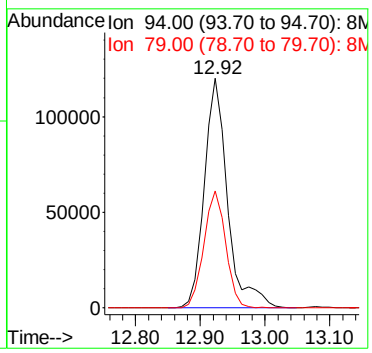

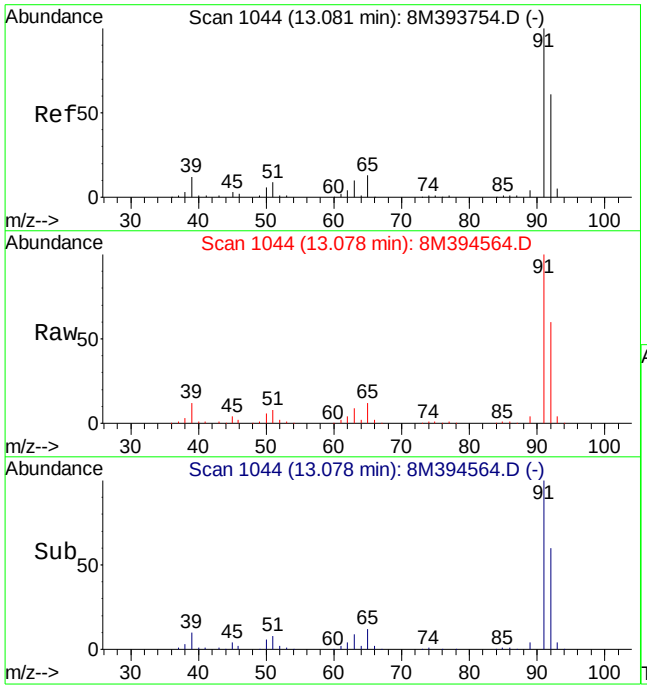

#59
Toluene
Concen: 21.54 ug/L
RT: 13.08 min Scan# 1044
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 91 Resp: 915888

Ion	Ratio	Lower	Upper
91	100		
92	59.3	36.4	84.8

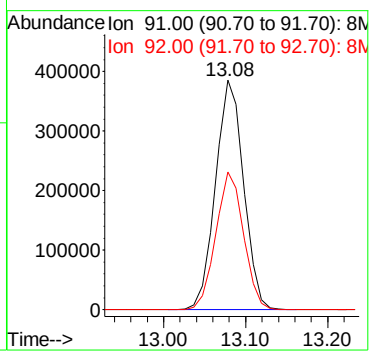

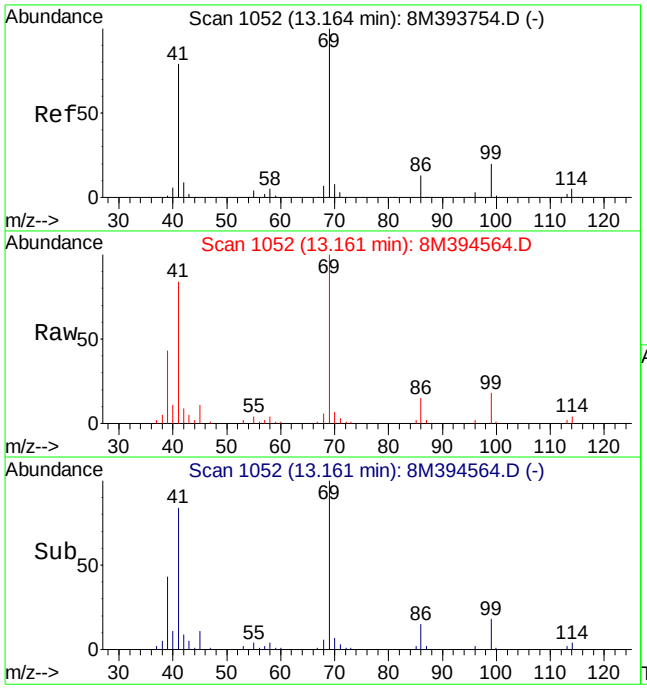

#60
Ethyl Methacrylate
Concen: 17.62 ug/L
RT: 13.16 min Scan# 1052
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 69 Resp: 146493

Ion	Ratio	Lower	Upper
69	100		
41	84.2	50.8	118.6

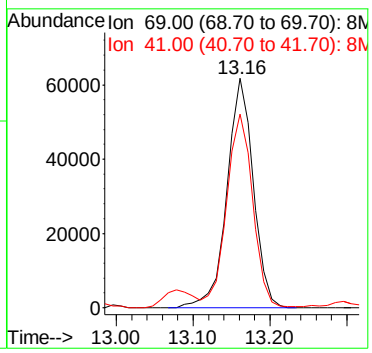

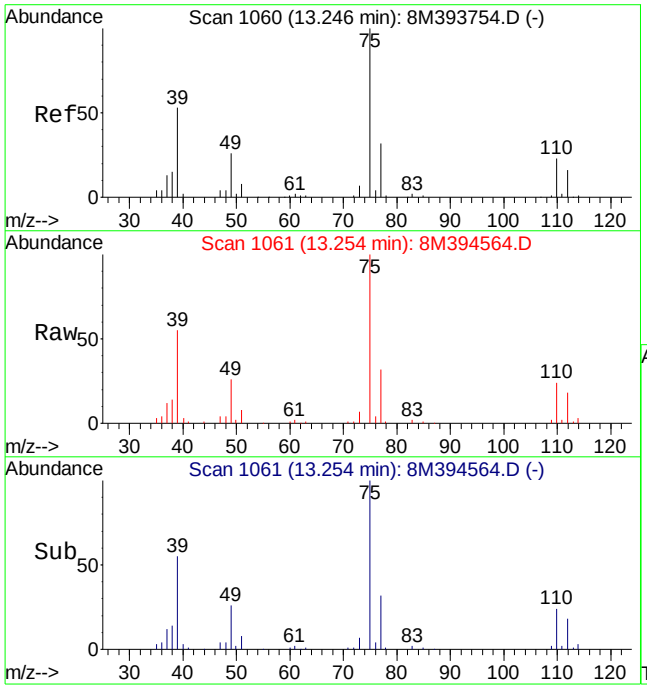

#62
trans-1,3-Dichloropropene
Concen: 18.05 ug/L
RT: 13.25 min Scan# 1061
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 75 Resp: 217561

Ion	Ratio	Lower	Upper
75	100		
77	31.7	19.2	44.8

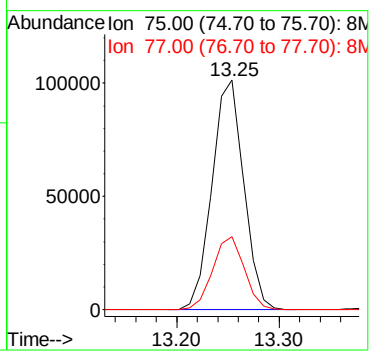

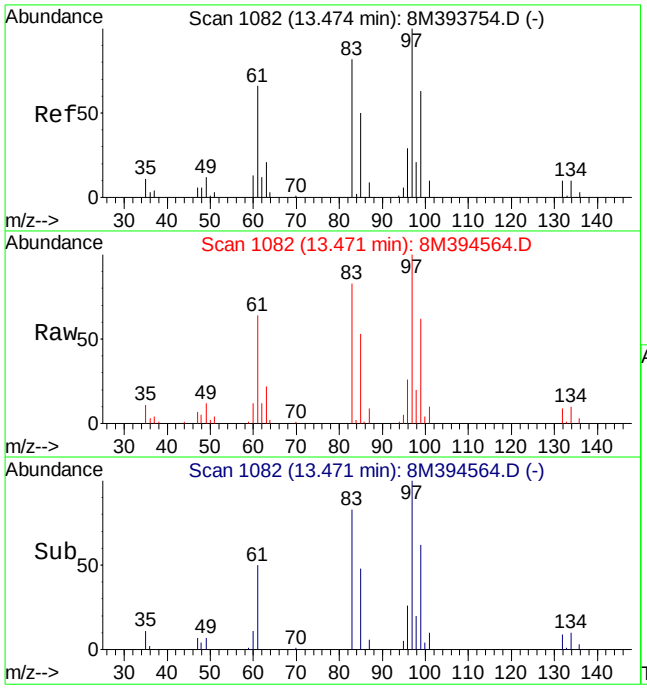

#63
1,1,2-Trichloroethane
Concen: 19.07 ug/L
RT: 13.47 min Scan# 1082
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 97 Resp: 118780

Ion	Ratio	Lower	Upper
97	100		
83	84.0	50.3	117.3

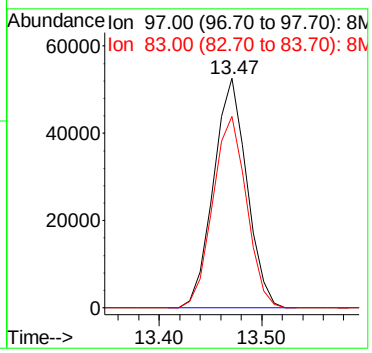

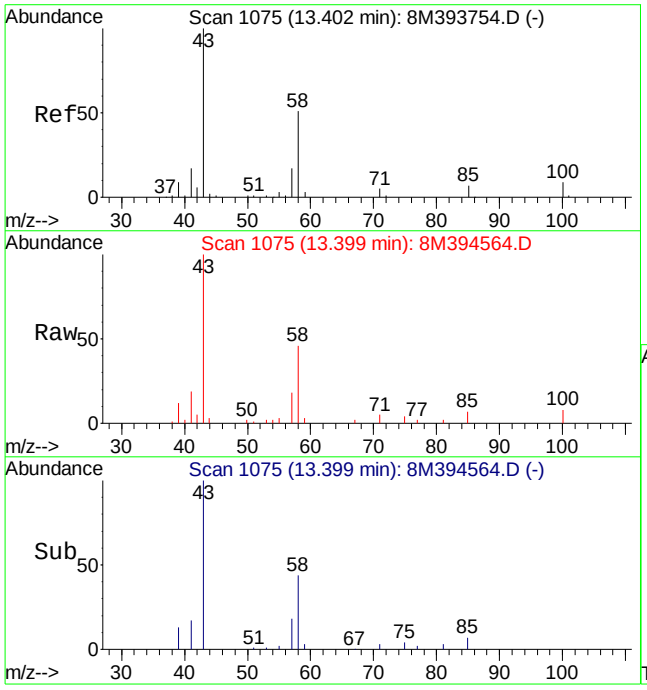

#64
2-Hexanone
Concen: 14.91 ug/L
RT: 13.40 min Scan# 1075
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 58 Resp: 29194

Ion	Ratio	Lower	Upper
58	100		
43	210.5	115.9	270.5
85	12.9	8.2	19.2

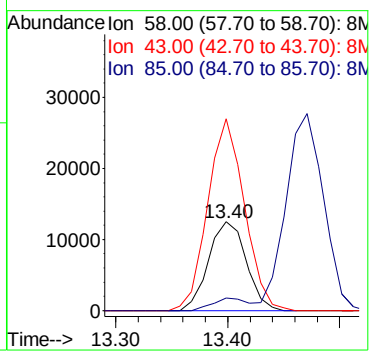

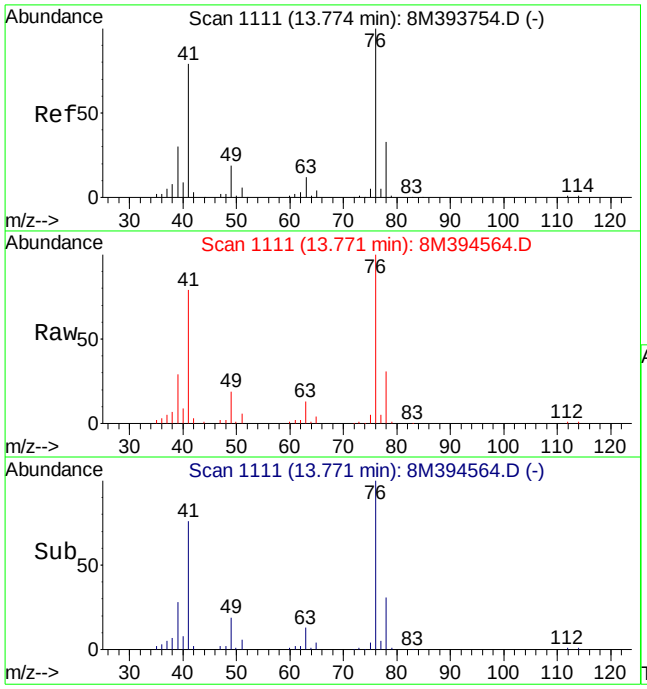

#65
1,3-Dichloropropane
Concen: 18.43 ug/L
RT: 13.77 min Scan# 1111
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 76 Resp: 211368

Ion	Ratio	Lower	Upper
76	100		
41	77.6	47.3	110.3

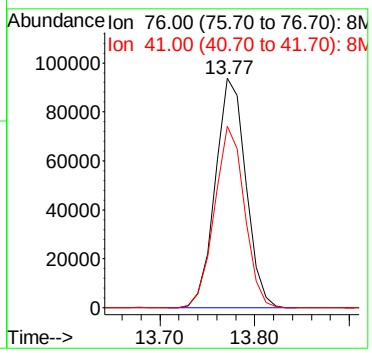

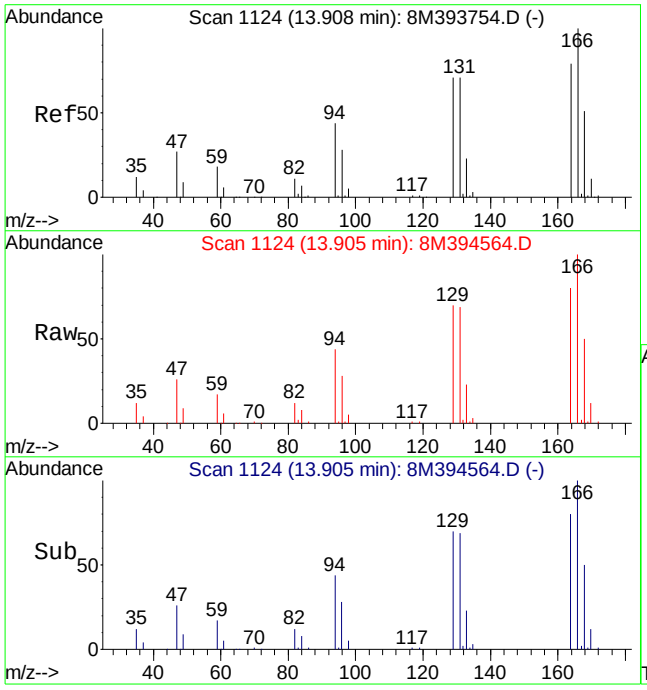

#66
Tetrachloroethene
Concen: 20.80 ug/L
RT: 13.91 min Scan# 1124
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:164 Resp: 177531

Ion	Ratio	Lower	Upper
164	100		
129	90.7	55.6	129.8
94	57.4	35.8	83.6

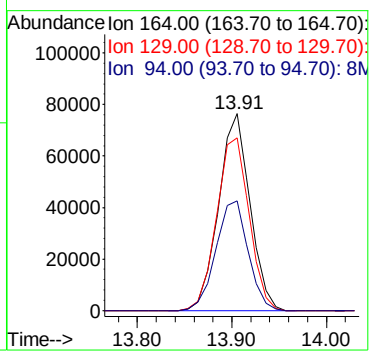

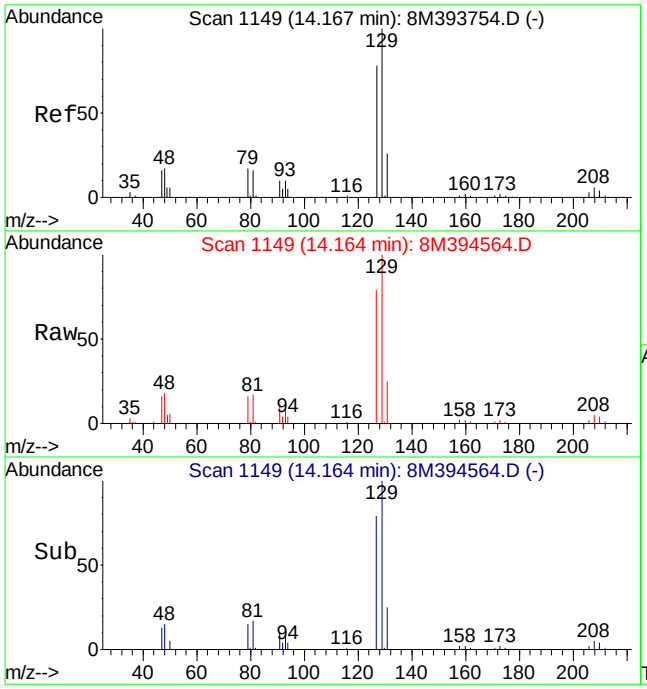

#67
Dibromochloromethane
Concen: 21.12 ug/L
RT: 14.16 min Scan# 1149
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:129 Resp: 149978

Ion	Ratio	Lower	Upper
129	100		
127	77.3	46.9	109.5

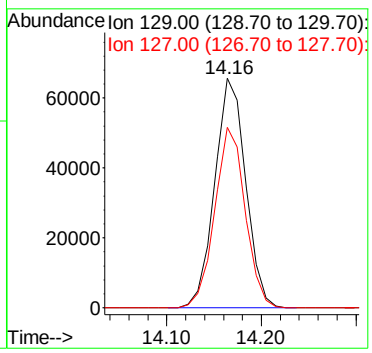

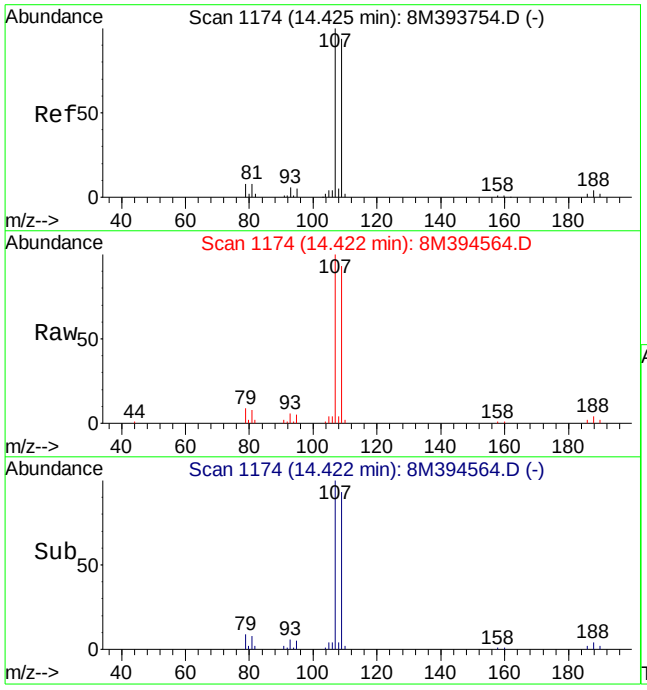

#68
1,2-Dibromoethane
Concen: 18.35 ug/L
RT: 14.42 min Scan# 1174
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:107 Resp: 114041

Ion	Ratio	Lower	Upper
107	100		
109	95.1	56.5	131.7

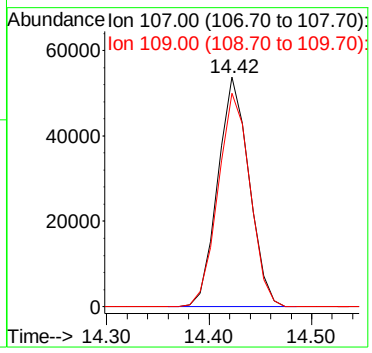

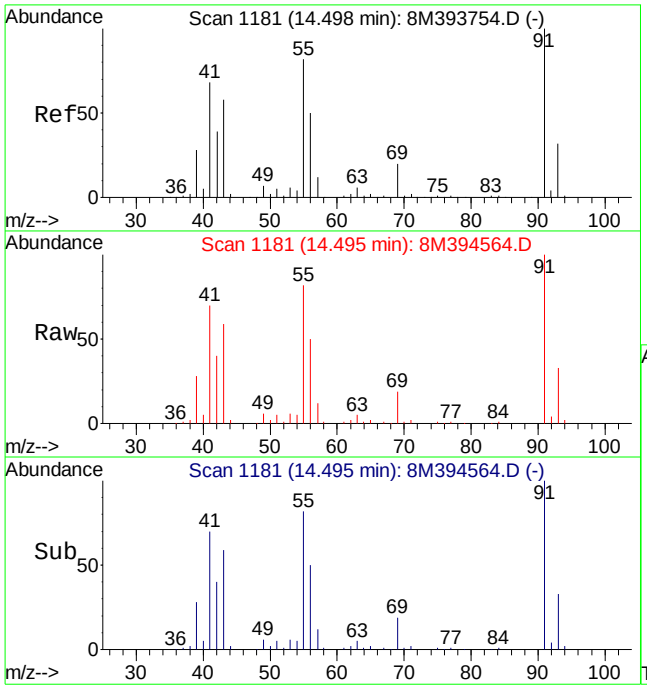

#69
1-Chlorohexane
Concen: 19.93 ug/L
RT: 14.49 min Scan# 1181
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 91 Resp: 287916

Ion	Ratio	Lower	Upper
91	100		
55	79.9	48.5	113.1

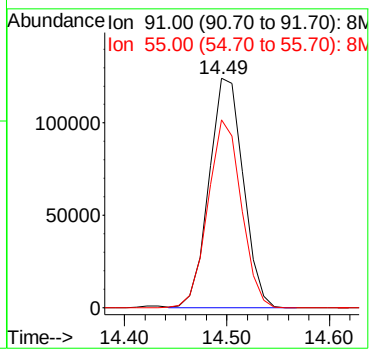

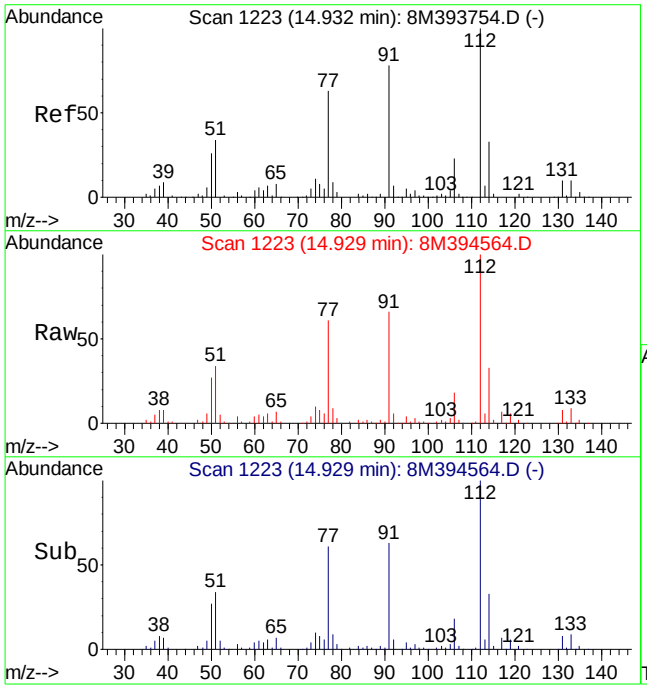

#70
Chlorobenzene
Concen: 19.26 ug/L
RT: 14.93 min Scan# 1223
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:112 Resp: 544771

Ion	Ratio	Lower	Upper
112	100		
77	73.8	44.8	104.4

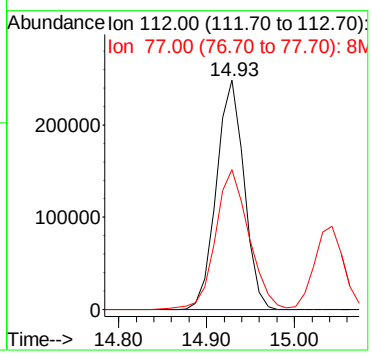

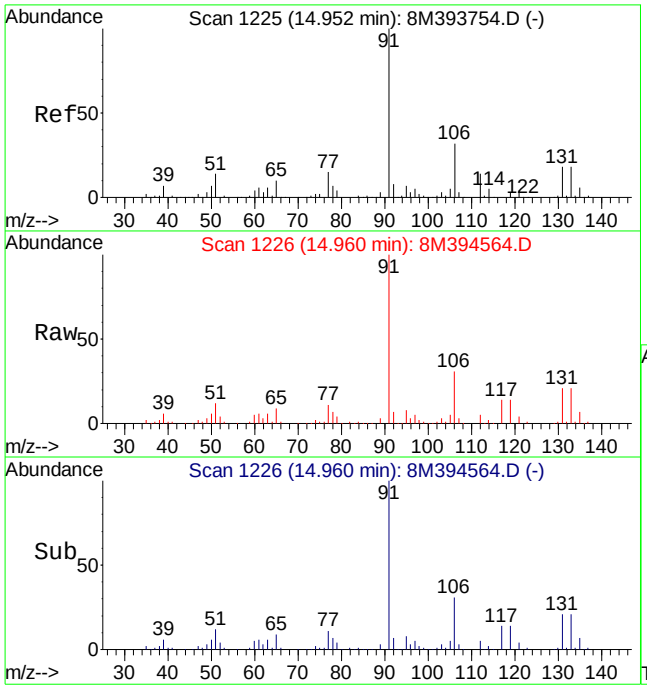

#71
1,1,1,2-Tetrachloroethane
Concen: 22.19 ug/L
RT: 14.96 min Scan# 1226
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:131 Resp: 200565

Ion	Ratio	Lower	Upper
131	100		
133	98.8	58.7	136.9

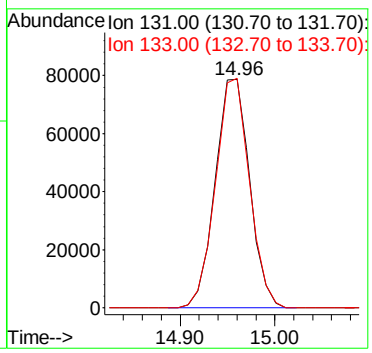

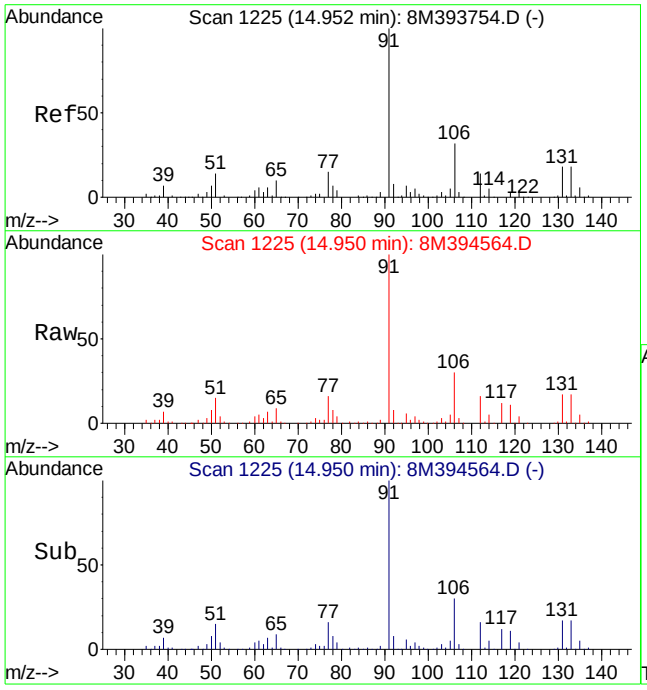

#72
Ethylbenzene
Concen: 20.43 ug/L
RT: 14.95 min Scan# 1225
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:106 Resp: 317086

Ion	Ratio	Lower	Upper
106	100		
91	330.0	192.1	448.1

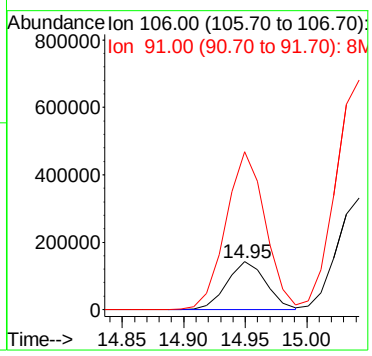

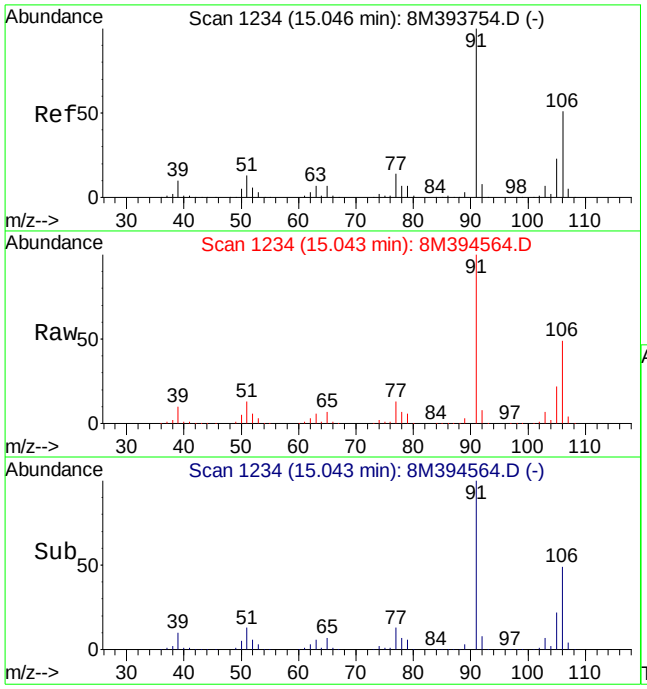

#73
m-,p-Xylene
Concen: 40.53 ug/L
RT: 15.04 min Scan# 1234
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:106 Resp: 742998

Ion	Ratio	Lower	Upper
106	100		
91	209.4	122.4	285.6

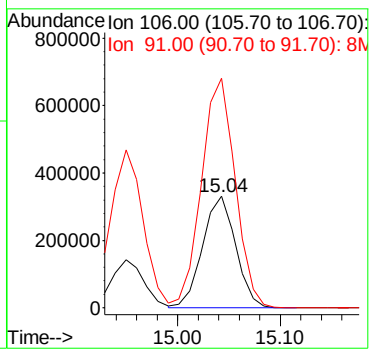

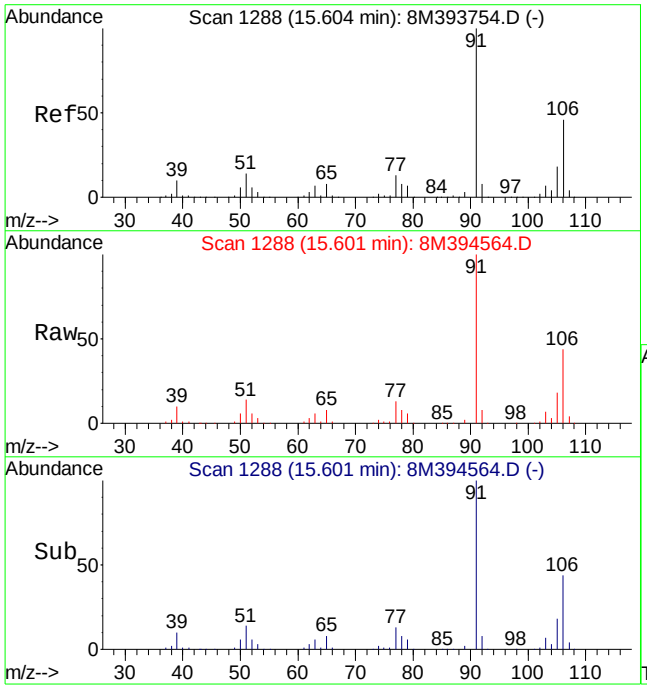

#74
o-Xylene
Concen: 18.56 ug/L
RT: 15.60 min Scan# 1288
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:106 Resp: 344414

Ion	Ratio	Lower	Upper
106	100		
91	222.4	130.1	303.7

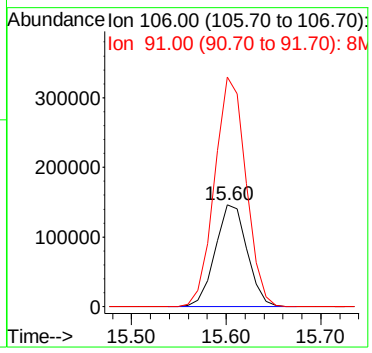

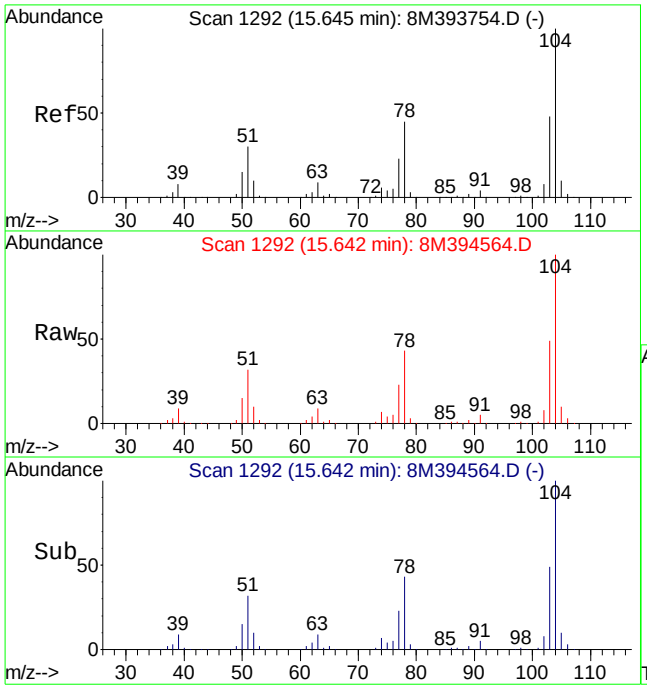

#75
Styrene
Concen: 20.11 ug/L
RT: 15.64 min Scan# 1292
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:104 Resp: 610608

Ion	Ratio	Lower	Upper
104	100		
78	50.4	32.2	75.0

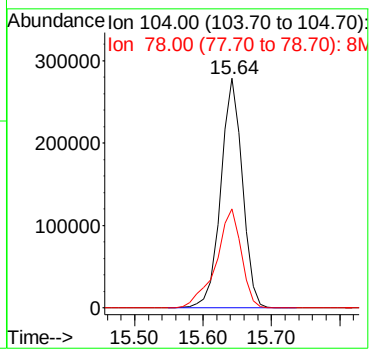

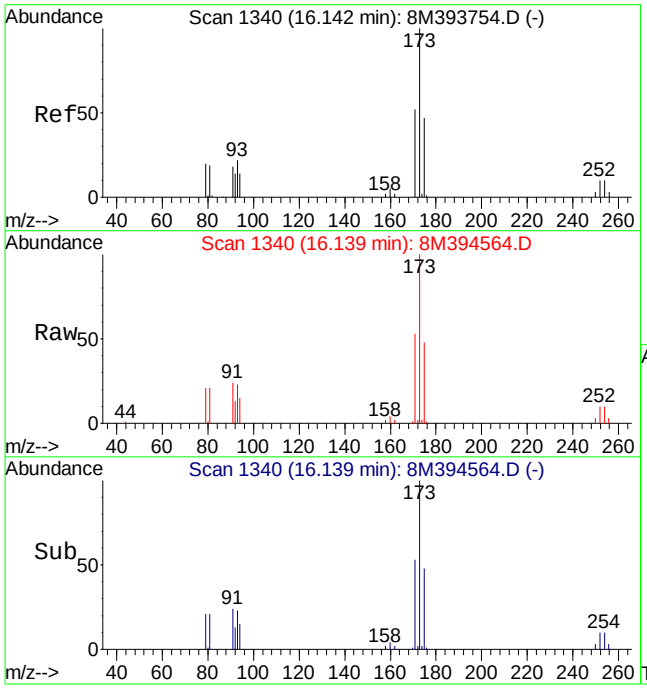

#76
Bromoform
Concen: 18.56 ug/L
RT: 16.14 min Scan# 1340
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:173 Resp: 89876

Ion	Ratio	Lower	Upper
173	100		
171	53.2	30.9	72.1
175	49.4	28.8	67.2

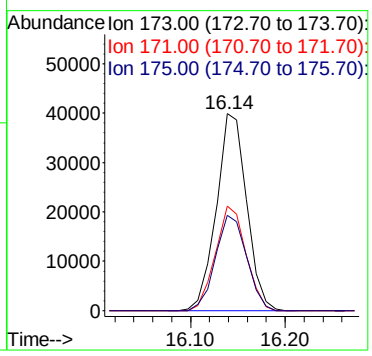

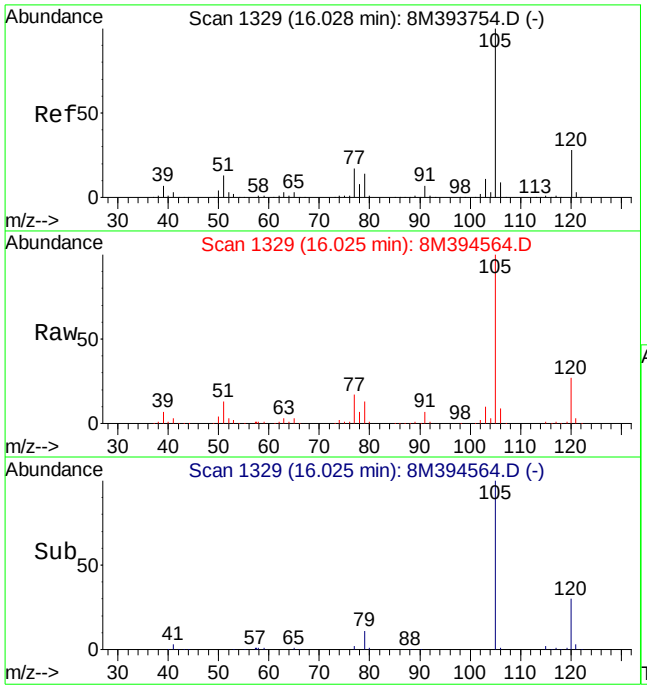

#77
Isopropylbenzene
Concen: 19.47 ug/L
RT: 16.02 min Scan# 1329
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:105 Resp: 888964

Ion	Ratio	Lower	Upper
105	100		
120	27.6	17.0	39.6

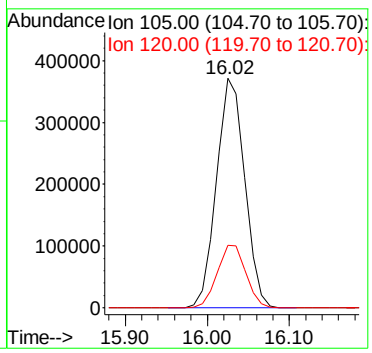

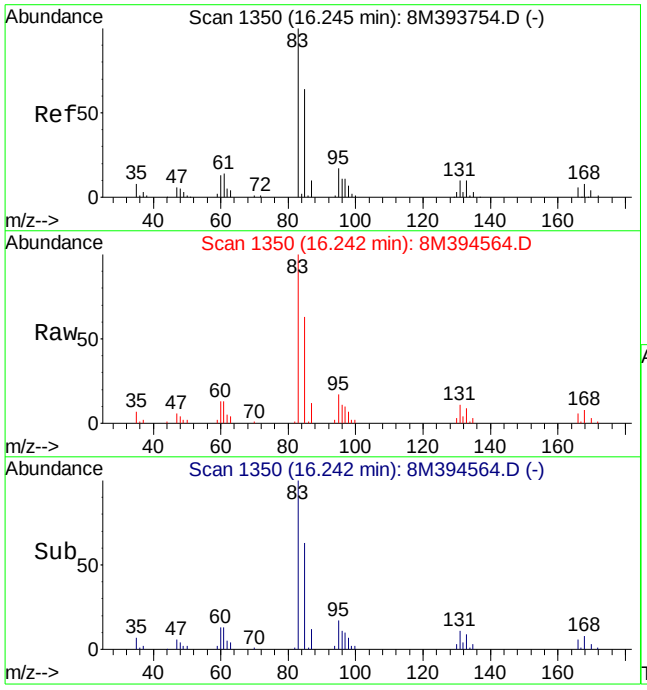

#79
1,1,2,2-Tetrachloroethane
Concen: 18.21 ug/L
RT: 16.24 min Scan# 1350
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 83 Resp: 119244

Ion	Ratio	Lower	Upper
83	100		
85	64.9	38.6	90.2
131	9.9	6.2	14.4

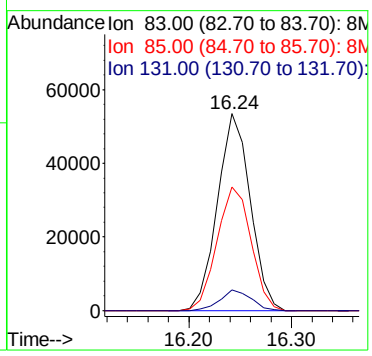

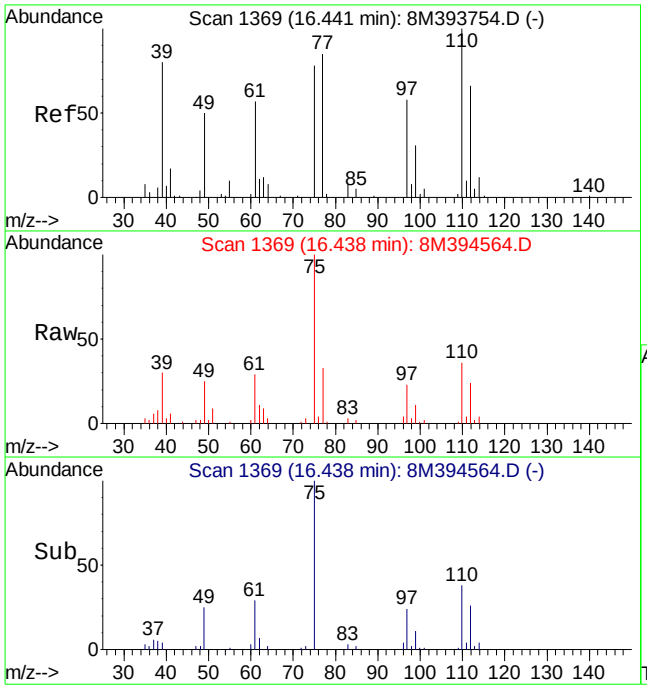

#81
1,2,3-Trichloropropane
Concen: 17.29 ug/L
RT: 16.44 min Scan# 1369
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:110 Resp: 32697

Ion	Ratio	Lower	Upper
110	100		
75	319.2	214.5	500.5
97	59.9	35.2	82.2

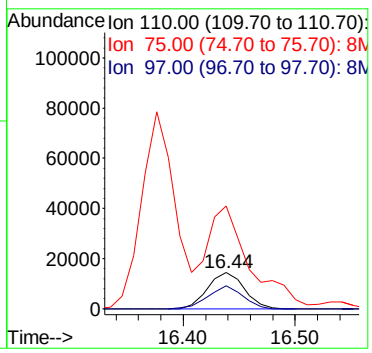

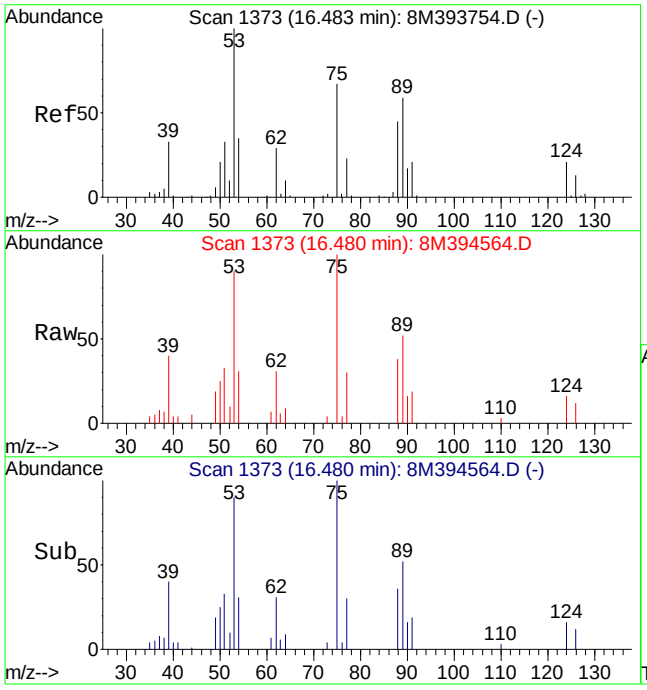

#82
trans-1,4-Dichloro-2-Butene
Concen: 9.16 ug/L
RT: 16.48 min Scan# 1373
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 53 Resp: 21042

Ion	Ratio	Lower	Upper
53	100		
75	496.0	169.4	395.4#
89	51.8	36.4	85.0

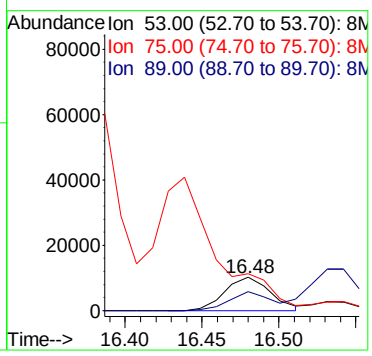

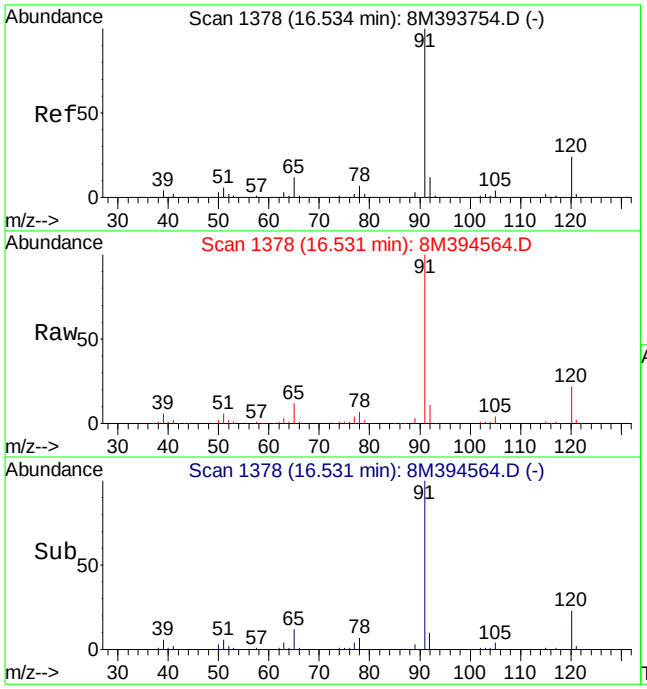

#83
n-Propylbenzene
Concen: 19.45 ug/L
RT: 16.53 min Scan# 1378
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 91 Resp: 1084827

Ion	Ratio	Lower	Upper
91	100		
120	22.7	14.1	32.9

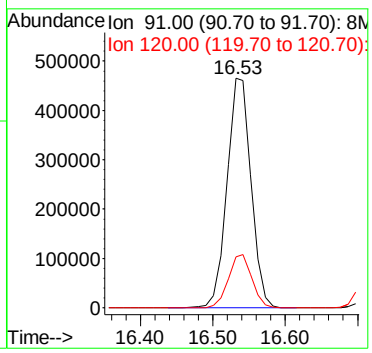

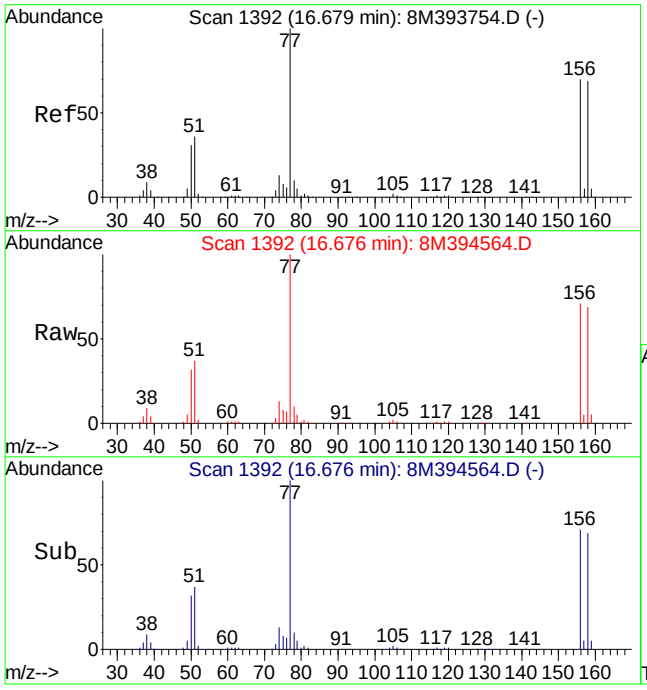

#84
Bromobenzene
Concen: 20.06 ug/L
RT: 16.68 min Scan# 1392
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:156 Resp: 233948

Ion	Ratio	Lower	Upper
156	100		
77	160.8	101.2	236.0
158	97.5	58.6	136.8

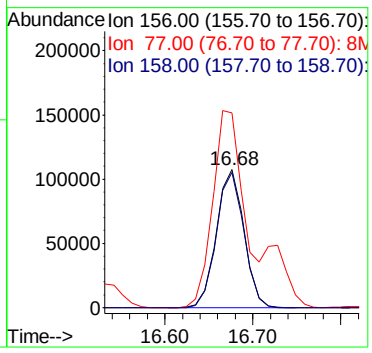

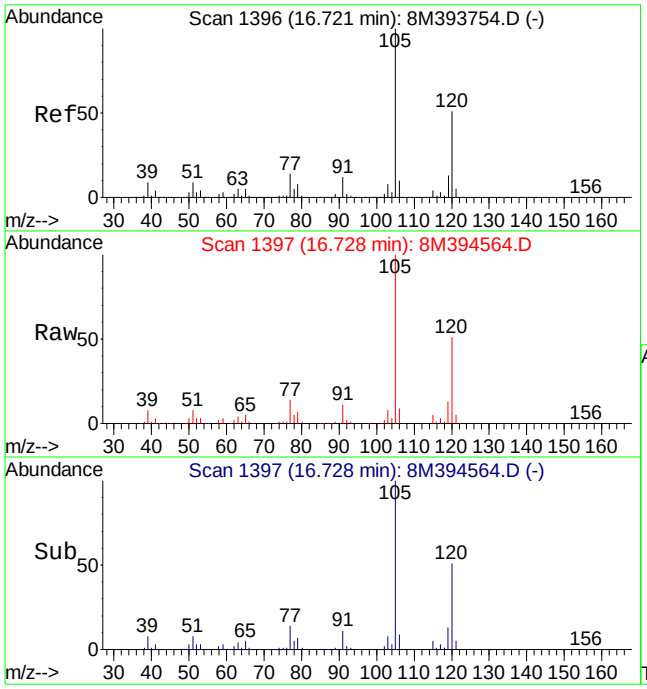

#85
1,3,5-Trimethylbenzene
Concen: 21.14 ug/L
RT: 16.73 min Scan# 1397
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:105 Resp: 832256

Ion	Ratio	Lower	Upper
105	100		
120	49.1	30.5	71.1

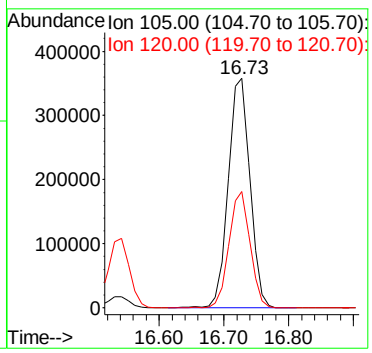

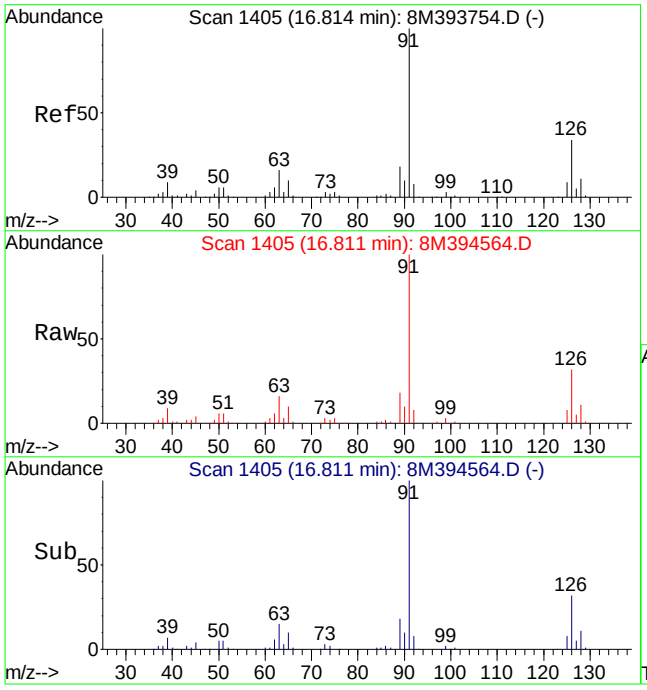

#86
2-Chlorotoluene
Concen: 18.32 ug/L
RT: 16.81 min Scan# 1405
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 91 Resp: 663733

Ion	Ratio	Lower	Upper
91	100		
126	37.9	19.7	45.9

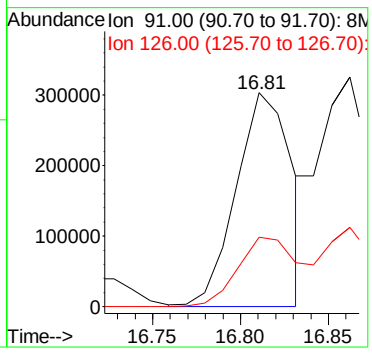

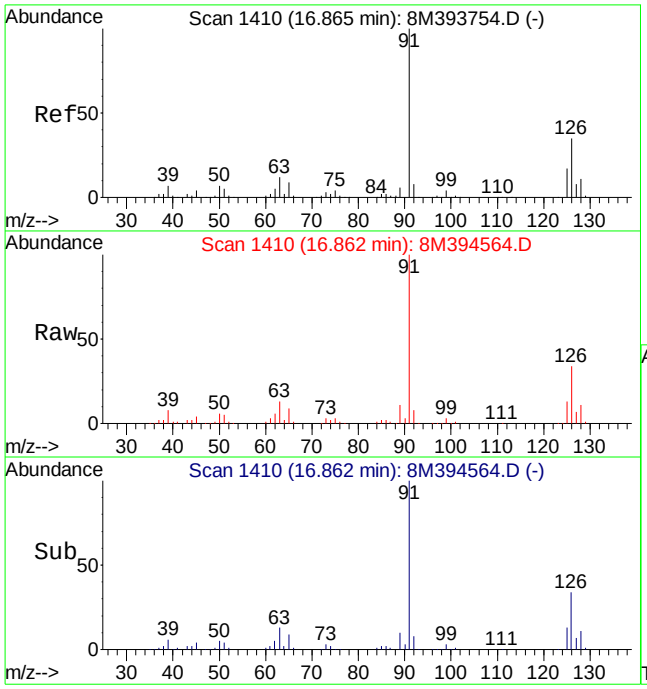

#87
4-Chlorotoluene
Concen: 20.68 ug/L
RT: 16.86 min Scan# 1410
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 91 Resp: 687238

Ion	Ratio	Lower	Upper
91	100		
126	29.0	20.4	47.6

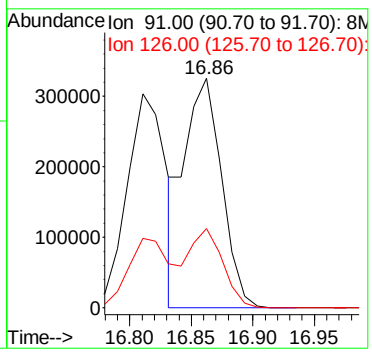

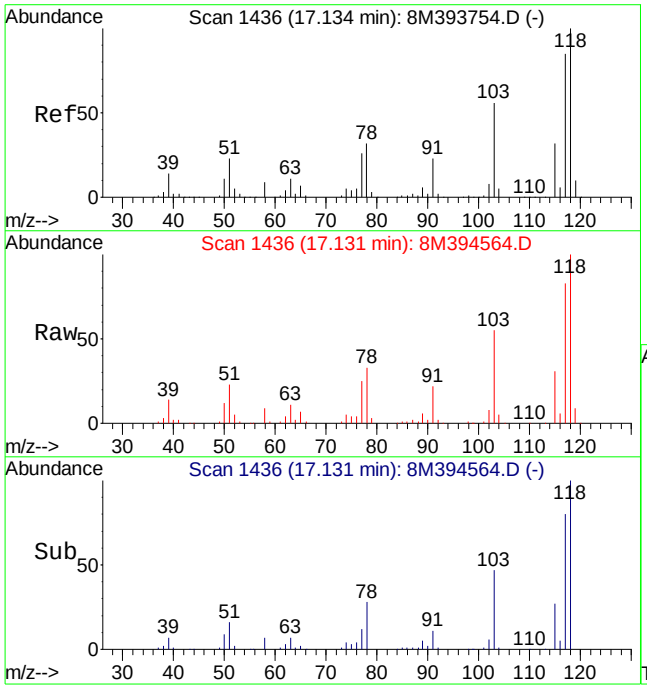

#88
a-Methylstyrene
Concen: 20.15 ug/L
RT: 17.13 min Scan# 1436
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:118 Resp: 443435

Ion	Ratio	Lower	Upper
118	100		
103	57.8	34.6	80.8

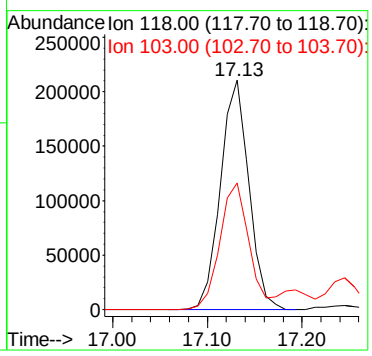

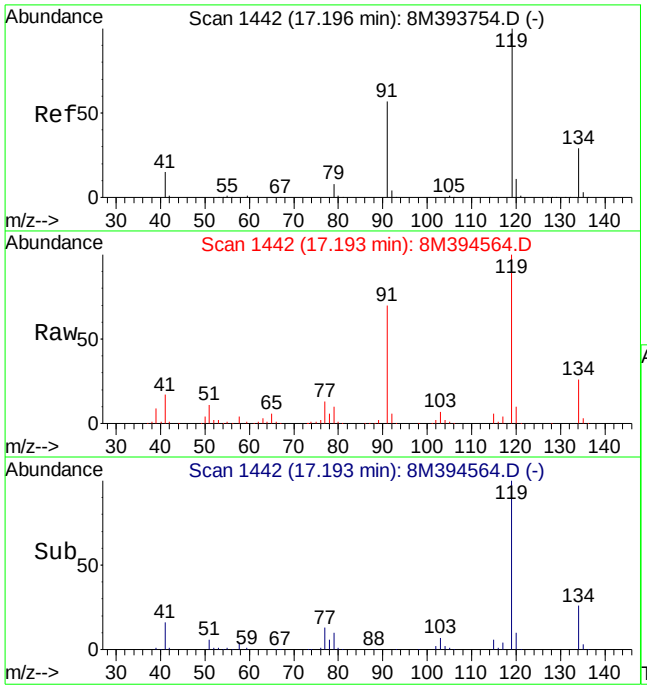

#89
tert-Butylbenzene
Concen: 18.73 ug/L
RT: 17.19 min Scan# 1442
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:134 Resp: 161244

Ion	Ratio	Lower	Upper
134	100		
119	478.3	275.2	642.2
91	330.8	190.3	443.9

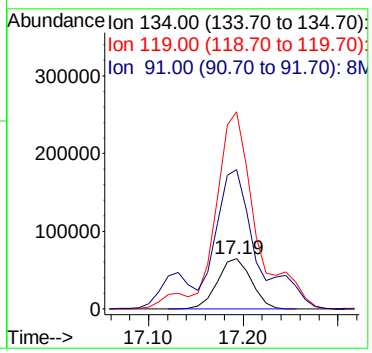

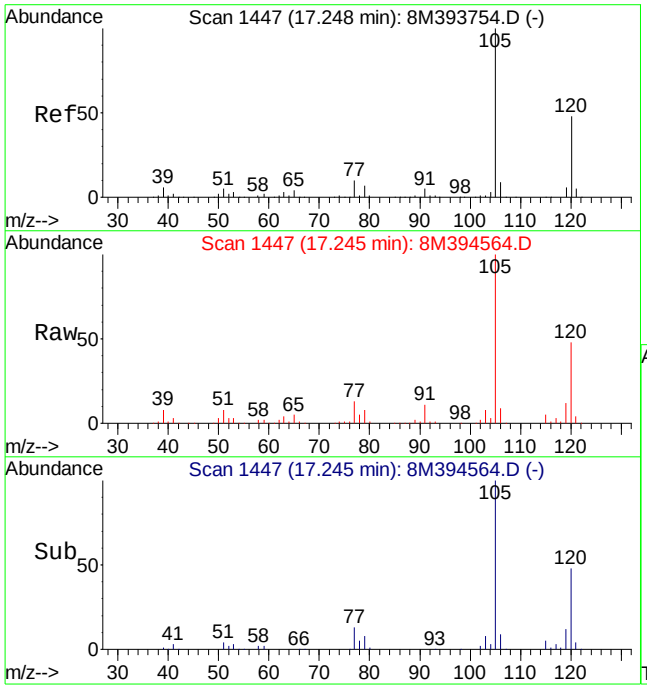

#90
1,2,4-Trimethylbenzene
Concen: 21.33 ug/L
RT: 17.24 min Scan# 1447
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:105 Resp: 851138

Ion	Ratio	Lower	Upper
105	100		
120	53.9	33.8	78.8

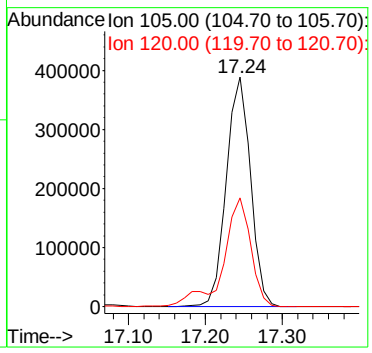

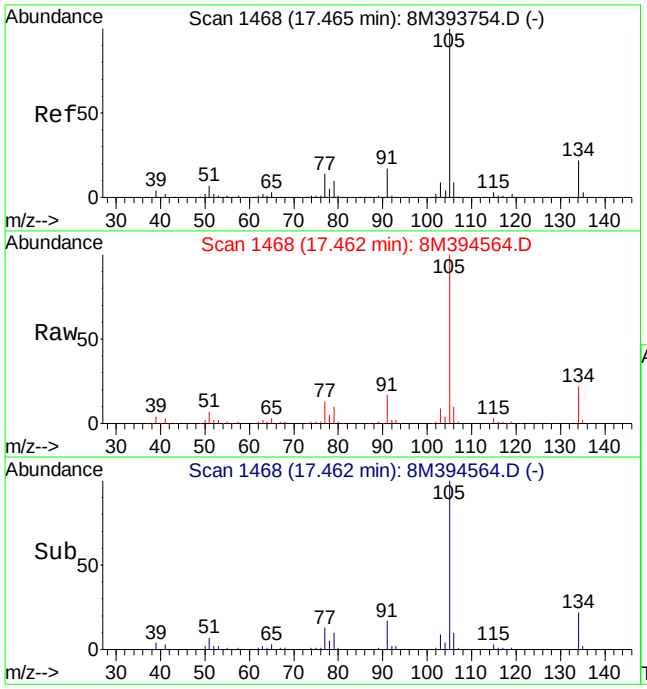

#91
sec-Butylbenzene
Concen: 19.15 ug/L
RT: 17.46 min Scan# 1468
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:105 Resp: 905241

Ion	Ratio	Lower	Upper
105	100		
134	21.4	13.1	30.7

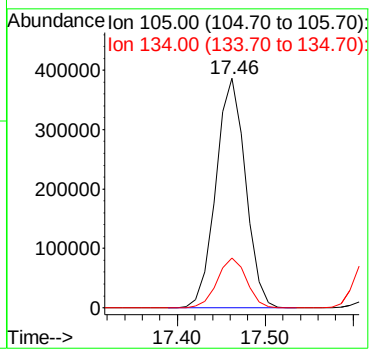

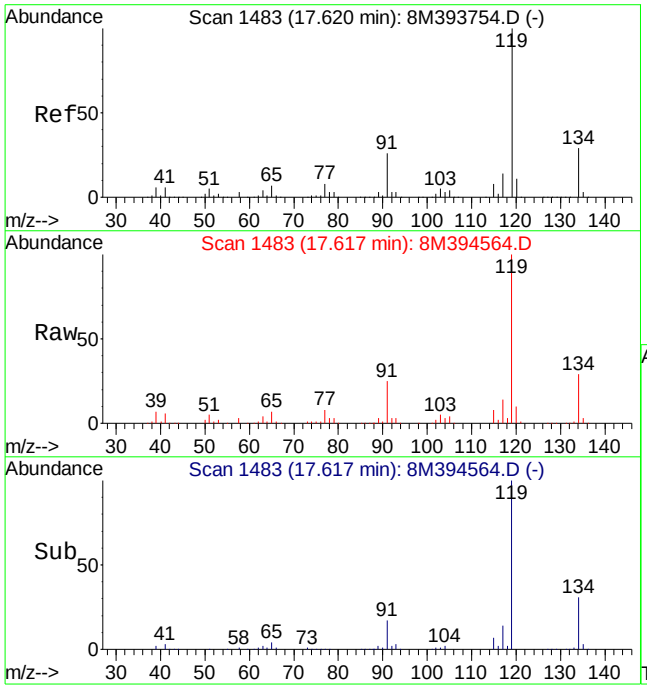

#92
p-Isopropyltoluene
Concen: 19.14 ug/L
RT: 17.62 min Scan# 1483
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:119 Resp: 775933

Ion	Ratio	Lower	Upper
119	100		
134	27.9	17.2	40.0

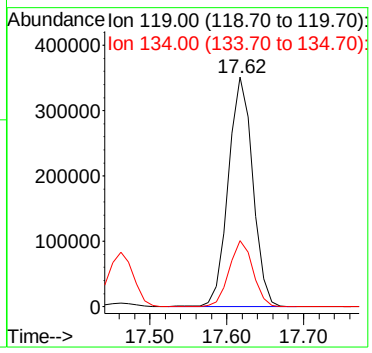

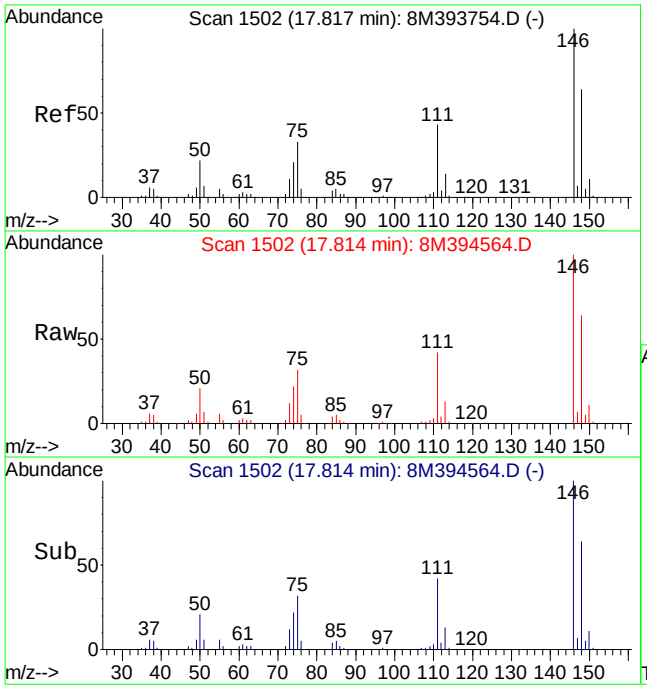

#93
1,3-Dichlorobenzene
Concen: 19.03 ug/L
RT: 17.81 min Scan# 1502
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:146 Resp: 421114

Ion	Ratio	Lower	Upper
146	100		
111	40.4	25.6	59.6

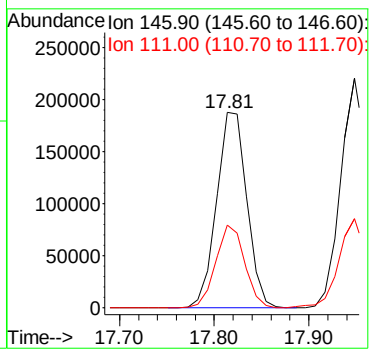

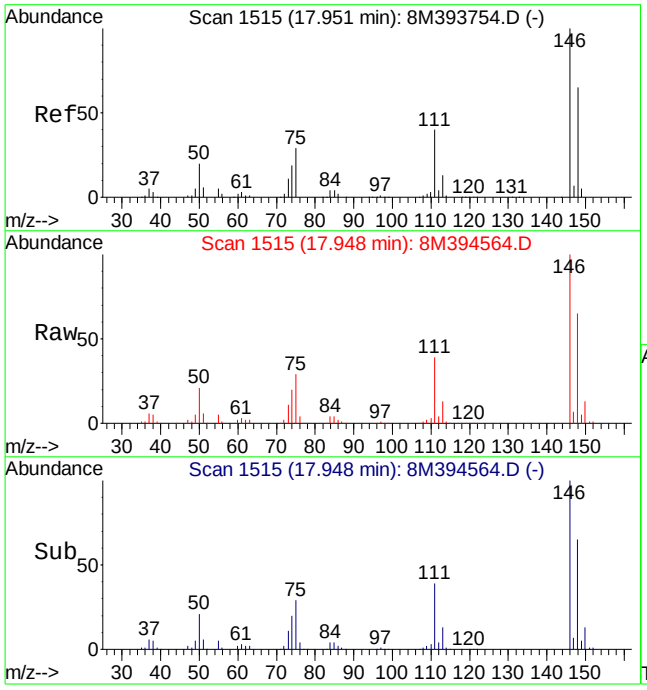

#94
1,4-Dichlorobenzene
Concen: 20.25 ug/L
RT: 17.95 min Scan# 1515
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:146 Resp: 442505

Ion	Ratio	Lower	Upper
146	100		
111	39.8	25.0	58.2

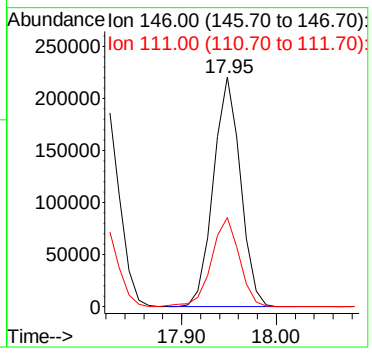

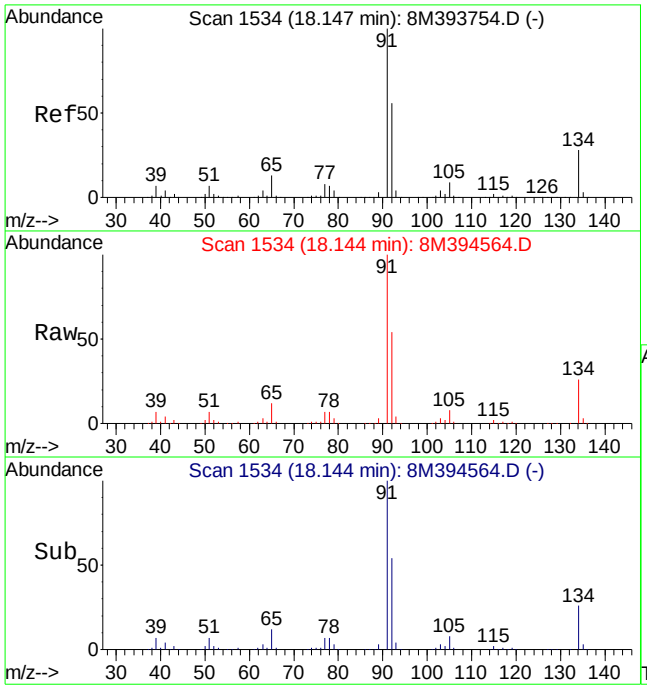

#95
n-Butylbenzene
Concen: 20.53 ug/L
RT: 18.14 min Scan# 1534
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 91 Resp: 774124

Ion	Ratio	Lower	Upper
91	100		
134	26.3	16.6	38.6
105	8.6	5.2	12.0

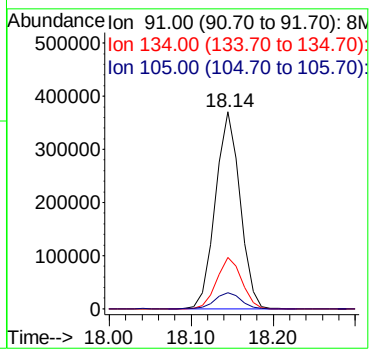

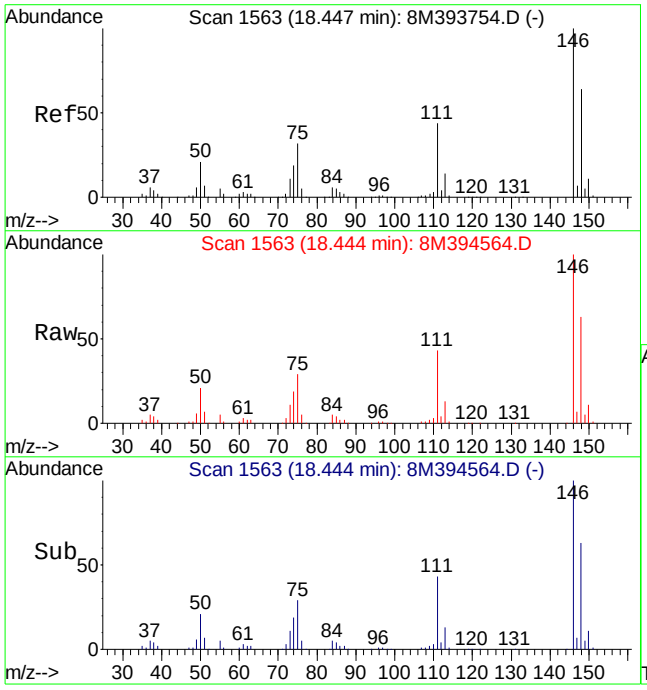

#96
1,2-Dichlorobenzene
Concen: 18.43 ug/L
RT: 18.44 min Scan# 1563
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:146 Resp: 359060

Ion	Ratio	Lower	Upper
146	100		
111	42.2	26.3	61.5

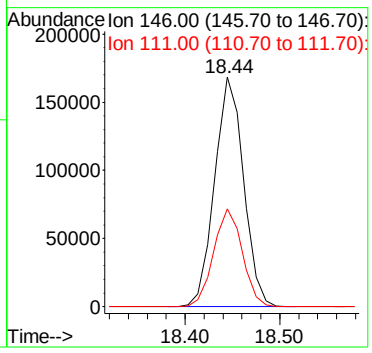

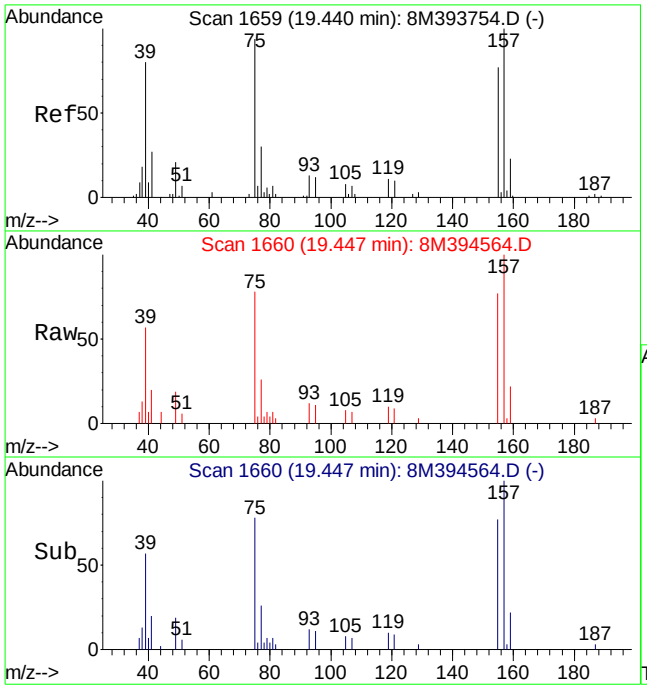

#97
1,2-Dibromo-3-Chloropropane
Concen: 16.13 ug/L
RT: 19.45 min Scan# 1660
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion: 75 Resp: 18406

Ion	Ratio	Lower	Upper
75	100		
157	118.3	67.6	157.8

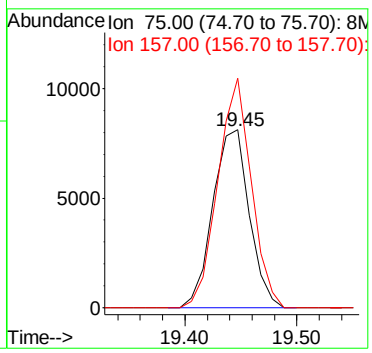

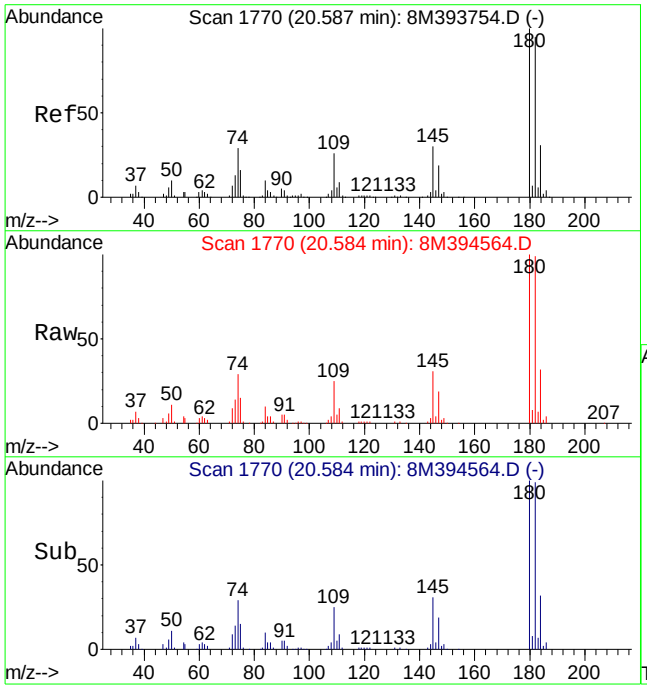

#98
1,2,4-Trichlorobenzene
Concen: 18.09 ug/L
RT: 20.58 min Scan# 1770
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:180 Resp: 269311

Ion	Ratio	Lower	Upper
180	100		
182	97.1	57.2	133.4
145	29.7	18.1	42.3

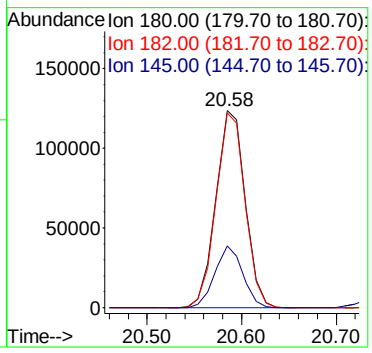

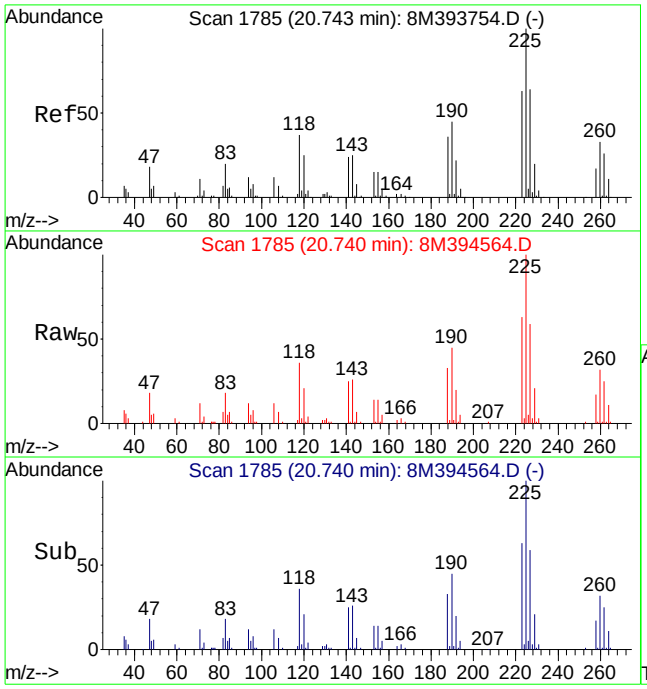

#99
Hexachlorobutadiene
Concen: 19.54 ug/L
RT: 20.74 min Scan# 1785
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:225 Resp: 124372

Ion	Ratio	Lower	Upper
225	100		
223	63.1	37.7	88.1
190	45.1	27.5	64.3

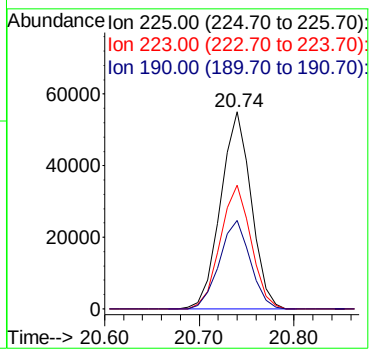

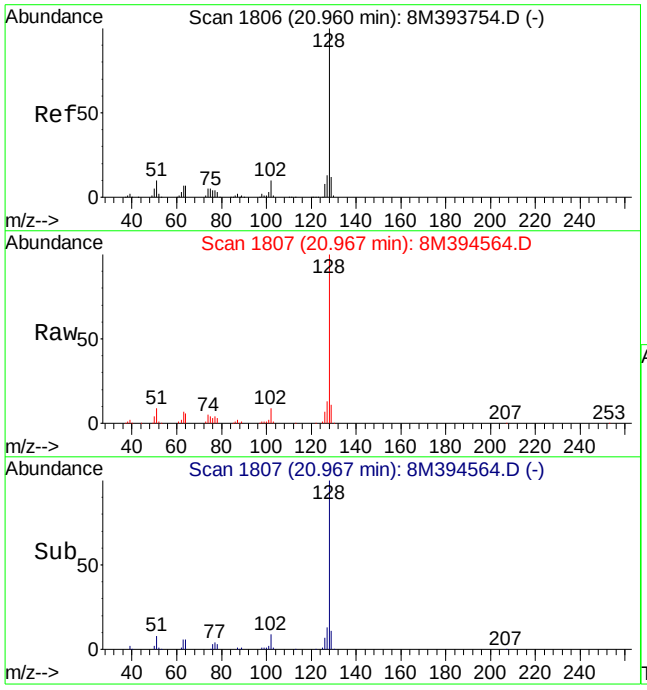

#100
Naphthalene
Concen: 16.92 ug/L
RT: 20.97 min Scan# 1807
Delta R.T. 0.01 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:128 Resp: 387141

Ion	Ratio	Lower	Upper
128	100		
127	12.4	7.7	17.9

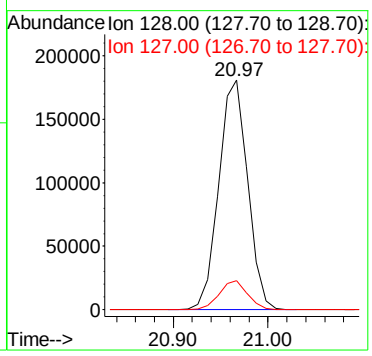

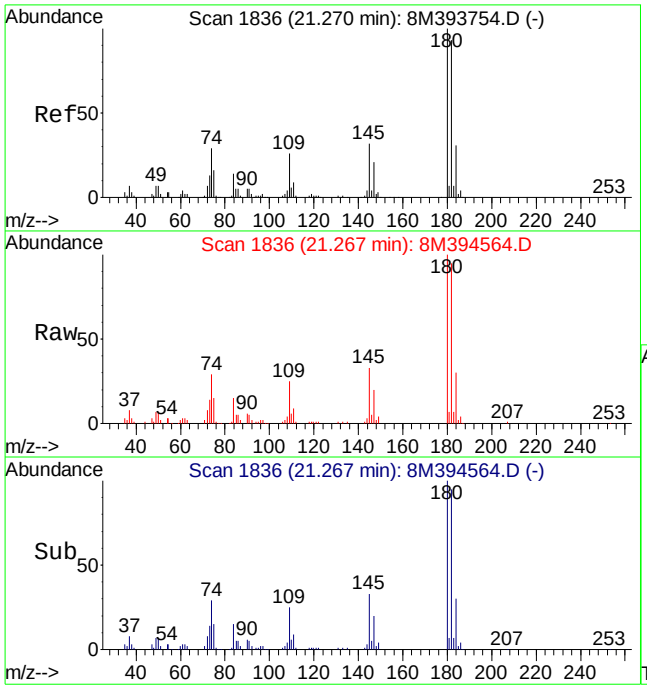

#101
1,2,3-Trichlorobenzene
Concen: 17.78 ug/L
RT: 21.27 min Scan# 1836
Delta R.T. -0.00 min
Lab File: 8M394564.D
Acq: 31 Jan 2014 6:26

Tgt Ion:180 Resp: 219350

Ion	Ratio	Lower	Upper
180	100		
182	96.3	56.6	132.0
145	31.1	18.8	44.0

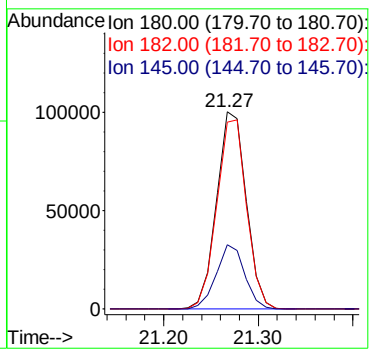

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013014\9M961154.D Vial: 17
Acq On : 31 Jan 2014 4:22 Operator: MES
Sample : WG461586-02 20ug/L LCS 8260 Inst : HPMS9
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 04:44:41 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	527371	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	384017	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	186869	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.88	111	143628	27.2974 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.20%		
43) 1,2-Dichloroethane-d4	10.52	65	171532	27.2223 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.88%		
58) Toluene-d8	12.91	98	476874	28.2252 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 112.92%#		
79) p-Bromofluorobenzene	16.31	95	191363	25.2442 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	146908	39.5269 ug/L	95
3) Chloromethane	3.78	50	145649	25.2797 ug/L	100
4) Vinyl Chloride	4.01	62	147951	26.2150 ug/L	96
5) 1,3-Butadiene	4.05	54	63473	13.4939 ug/L	98
6) Bromomethane	4.93	94	88917	21.1293 ug/L	100
7) Chloroethane	5.09	64	92554	21.6055 ug/L	97
8) Trichlorofluoromethane	5.59	101	203053	23.0673 ug/L	97
9) Diethyl ether	6.12	59	548708	104.8108 ug/L	99
10) Isoprene	6.15	67	159012	20.0186 ug/L	97
11) Acrolein	6.35	56	85751	121.7268 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.37	101	115376	22.4717 ug/L	95
13) Acetone	6.45	43	46289	26.3228 ug/L	100
14) 1,1-Dichloroethene	6.69	61	205288	20.7988 ug/L	99
15) Tert-Butyl Alcohol	6.79	59	113735	241.0301 ug/L	98
16) Dimethyl Sulfide	6.94	62	139063	22.5248 ug/L	96
17) Iodomethane	7.20	142	69573	12.6541 ug/L	99
18) Methyl acetate	7.20	43	115744	22.3836 ug/L	98
19) Methylene Chloride	7.46	84	123957	21.4862 ug/L	99
20) Carbon Disulfide	7.51	76	321494	18.6612 ug/L	99
21) Acrylonitrile	7.64	53	53493	24.6215 ug/L	100
22) Methyl Tert Butyl Ether	7.68	73	329083	21.7354 ug/L	100
23) trans-1,2-Dichloroethene	7.92	61	204674	20.9621 ug/L	100
24) n-Hexane	8.00	57	150230	16.7493 ug/L	100
25) Diisopropyl ether	8.33	45	2684958	101.8809 ug/L	99
26) Vinyl Acetate	8.51	43	231787	19.4236 ug/L	98
27) 1,1-Dichloroethane	8.54	63	255552	20.1104 ug/L	99
28) Ethyl-Tert-Butyl ether	8.91	59	2198780	102.7015 ug/L	99
29) 2-Butanone	9.08	43	62899	23.6632 ug/L	99
30) Propionitrile	9.19	54	92471	107.7536 ug/L	96
31) 2,2-Dichloropropane	9.32	77	171534	18.0119 ug/L	99
32) cis-1,2-Dichloroethene	9.38	96	127325	19.9530 ug/L	100
33) Chloroform	9.59	83	224140	21.6757 ug/L	100
34) 1-Bromopropane	9.72	122	25937	23.5469 ug/L	96
35) Bromochloromethane	9.82	130	77797	21.7682 ug/L	93
36) Tetrahydrofuran	9.84	42	185167	113.9253 ug/L	98
38) 1,1,1-Trichloroethane	10.13	97	189148	20.6394 ug/L	100
39) Cyclohexane	10.16	56	251892	19.8348 ug/L	98
40) 1,1-Dichloropropene	10.31	75	162596	21.0389 ug/L	98
41) Tert-Amyl-Methyl ether	10.42	73	1611011	108.9337 ug/L	100
42) Carbon Tetrachloride	10.47	117	175050	21.2227 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M961154.D 8260WTR.M Fri Jan 31 04:44:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013014\9M961154.D Vial: 17
Acq On : 31 Jan 2014 4:22 Operator: MES
Sample : WG461586-02 20ug/L LCS 8260 Inst : HPMS9
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 04:44:41 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.63	62	198155	21.6023	ug/L		100
46)	Benzene	10.68	78	494908	21.0392	ug/L		99
47)	Trichloroethene	11.43	130	128760	20.6288	ug/L		98
48)	Methylcyclohexane	11.52	83	180396	19.4882	ug/L		97
49)	1,2-Dichloropropane	11.65	63	150114	20.9360	ug/L		97
50)	1,4-Dioxane	11.93	88	9789	218.4907	ug/L		99
51)	Bromodichloromethane	11.95	83	171332	20.7133	ug/L		99
52)	Dibromomethane	12.04	174	84085	22.7899	ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.24	63	56077	15.8147	ug/L		98
54)	4-Methyl-2-Pentanone	12.27	58	47996	21.0336	ug/L		98
55)	cis-1,3-Dichloropropene	12.58	75	209822	21.6089	ug/L		99
56)	Dimethyl Disulfide	12.85	94	228947	21.4425	ug/L		96
59)	Toluene	13.01	91	501063	21.5030	ug/L		100
60)	Ethyl Methacrylate	13.09	69	150857	22.8995	ug/L		99
61)	trans-1,3-Dichloropropene	13.18	75	174051	20.7471	ug/L		99
62)	1,1,2-Trichloroethane	13.39	97	98588	22.9304	ug/L		99
63)	2-Hexanone	13.33	43	91299	22.7212	ug/L		99
64)	1,3-Dichloropropane	13.70	76	179406	21.4711	ug/L		97
65)	Tetrachloroethene	13.84	164	109328	20.9673	ug/L		99
66)	Dibromochloromethane	14.10	129	121090	21.7353	ug/L		98
67)	1,2-Dibromoethane	14.36	107	108536	22.3499	ug/L		100
68)	1-Chlorohexane	14.44	91	149426	20.7183	ug/L		98
69)	Chlorobenzene	14.86	112	313222	19.3373	ug/L		98
70)	1,1,1,2-Tetrachloroethane	14.89	131	136228	22.7258	ug/L		98
71)	Ethylbenzene	14.88	106	189467	21.4730	ug/L		97
72)	m-,p-Xylene	14.98	106	440910	41.2419	ug/L		100
73)	o-Xylene	15.53	106	211821	19.3145	ug/L		99
74)	Styrene	15.57	104	386178	21.2486	ug/L		100
75)	Bromoform	16.07	173	93137	24.6994	ug/L		97
76)	Isopropylbenzene	15.96	105	539418	19.4401	ug/L		99
78)	1,1,2,2-Tetrachloroethane	16.17	83	125958	22.3429	ug/L		98
80)	1,2,3-Trichloropropane	16.37	110	42192	25.2345	ug/L		70
81)	trans-1,4-Dichloro-2-Buten	16.41	53	25798	11.6055	ug/L	#	1
82)	n-Propylbenzene	16.47	91	600378	20.2298	ug/L		99
83)	Bromobenzene	16.61	156	150892	22.1171	ug/L		98
84)	1,3,5-Trimethylbenzene	16.66	105	526467	22.9699	ug/L		99
85)	2-Chlorotoluene	16.74	91	376567	19.4961	ug/L		90
86)	4-Chlorotoluene	16.79	91	368841	20.4627	ug/L		98
87)	a-Methylstyrene	17.06	118	261442	22.4715	ug/L		98
88)	tert-Butylbenzene	17.12	134	100252	19.5787	ug/L		92
89)	1,2,4-Trimethylbenzene	17.18	105	520319	22.6203	ug/L		100
90)	sec-Butylbenzene	17.39	105	591104	20.8862	ug/L		100
91)	p-Isopropyltoluene	17.55	119	463606	20.7765	ug/L		98
92)	1,3-Dichlorobenzene	17.74	146	257924	20.0511	ug/L		100
93)	1,4-Dichlorobenzene	17.88	146	276633	21.4606	ug/L		99
94)	n-Butylbenzene	18.08	91	435737	22.6702	ug/L		100
95)	1,2-Dichlorobenzene	18.38	146	261372	20.8718	ug/L		99
96)	1,2-Dibromo-3-Chloropropan	19.37	157	28553	23.8037	ug/L		98
97)	1,2,4-Trichlorobenzene	20.51	180	208877	22.8974	ug/L		99
98)	Hexachlorobutadiene	20.66	225	114682	22.7689	ug/L		99
99)	Naphthalene	20.89	128	444487	24.5783	ug/L		98
100)	1,2,3-Trichlorobenzene	21.20	180	211871	23.5733	ug/L		99

(#) = qualifier out of range (m) = manual integration
9M961154.D 8260WTR.M Fri Jan 31 04:44:43 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013014\9M961154.D Vial: 17
Acq On : 31 Jan 2014 4:22 Operator: MES
Sample : WG461586-02 20ug/L LCS 8260 Inst : HPMS9
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 4:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration

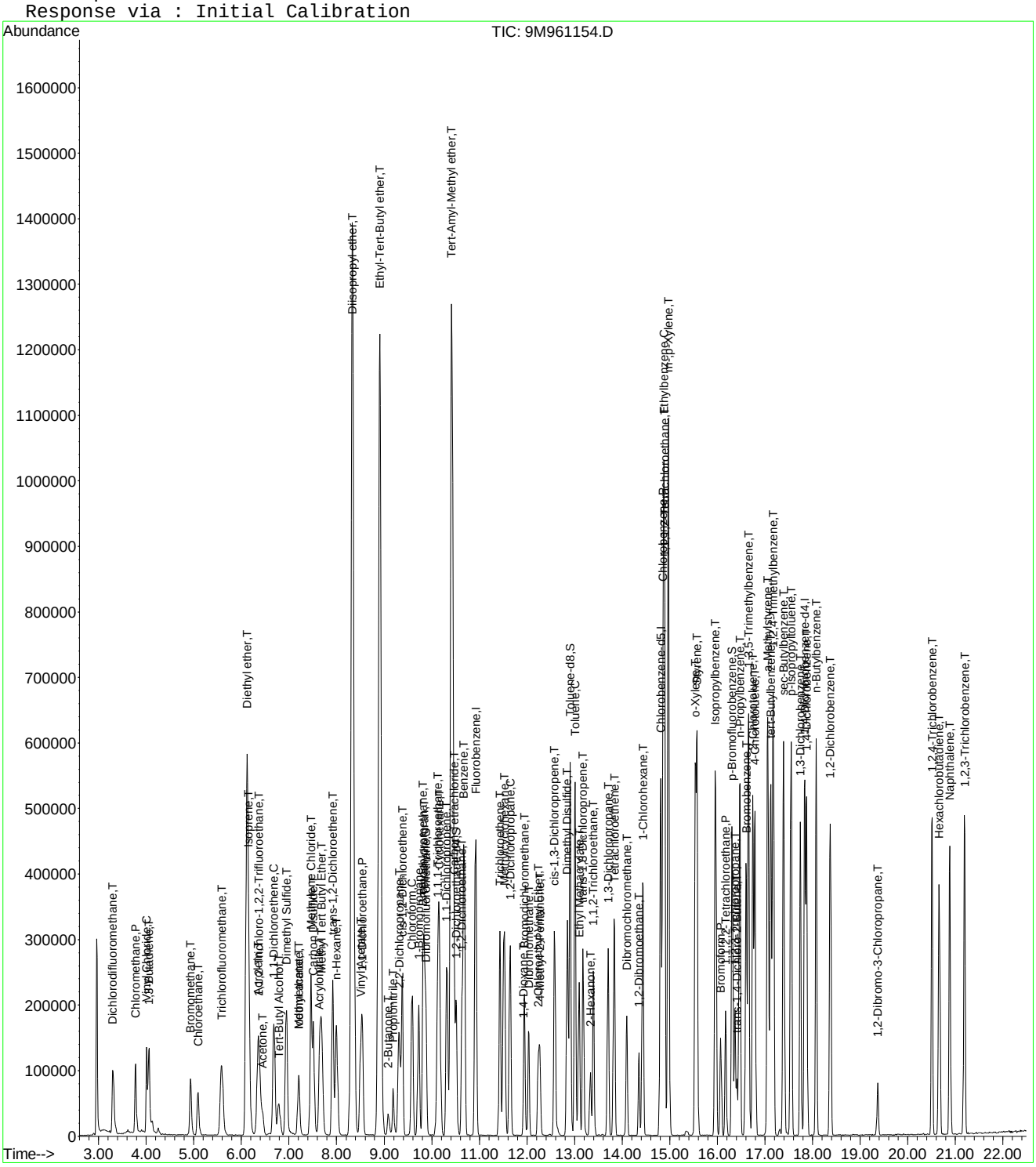

9M961154.D 8260WTR.M Fri Jan 31 04:44:44 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013014\9M961155.D Vial: 18
Acq On : 31 Jan 2014 4:51 Operator: MES
Sample : WG461586-03 20ug/L LCS DUP 8260 Inst : HPMS9
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 05:13:49 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.92	96	513067	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	378940	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.84	152	189904	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.87	111	140853	27.5163 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.08%		
43) 1,2-Dichloroethane-d4	10.51	65	168398	27.4700 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.88%		
58) Toluene-d8	12.91	98	465217	27.9042 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 111.60%#		
79) p-Bromofluorobenzene	16.31	95	189959	24.6585 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.64%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.30	85	126402	35.0930 ug/L	98
3) Chloromethane	3.78	50	143672	25.6318 ug/L	100
4) Vinyl Chloride	4.01	62	135198	24.6232 ug/L	99
5) 1,3-Butadiene	4.06	54	60194	13.1363 ug/L	97
6) Bromomethane	4.93	94	80270	19.6063 ug/L	97
7) Chloroethane	5.09	64	86471	20.7482 ug/L	99
8) Trichlorofluoromethane	5.59	101	188745	22.0491 ug/L	99
9) Diethyl ether	6.11	59	538646	105.7573 ug/L	99
10) Isoprene	6.15	67	148393	19.2025 ug/L	98
11) Acrolein	6.35	56	87225	127.2287 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.37	101	111709	22.3640 ug/L	93
13) Acetone	6.45	43	46508	27.1847 ug/L	99
14) 1,1-Dichloroethene	6.68	61	188173	19.5963 ug/L	97
15) Tert-Butyl Alcohol	6.79	59	106918	234.0753 ug/L	98
16) Dimethyl Sulfide	6.95	62	135772	22.6048 ug/L	99
17) Iodomethane	7.20	142	70837	13.1938 ug/L	98
18) Methyl acetate	7.20	43	115437	22.9466 ug/L	98
19) Methylene Chloride	7.46	84	114629	20.4233 ug/L	97
20) Carbon Disulfide	7.51	76	298720	17.8227 ug/L	99
21) Acrylonitrile	7.64	53	52278	24.7331 ug/L	100
22) Methyl Tert Butyl Ether	7.68	73	327924	22.2626 ug/L	100
23) trans-1,2-Dichloroethene	7.92	61	190344	20.0379 ug/L	100
24) n-Hexane	7.99	57	135986	15.5839 ug/L	98
25) Diisopropyl ether	8.33	45	2622411	102.2817 ug/L	100
26) Vinyl Acetate	8.51	43	237472	20.4151 ug/L	100
27) 1,1-Dichloroethane	8.54	63	244848	19.8052 ug/L	99
28) Ethyl-Tert-Butyl ether	8.91	59	2145837	103.0229 ug/L	100
29) 2-Butanone	9.09	43	63664	24.6187 ug/L	96
30) Propionitrile	9.19	54	89299	106.9793 ug/L	95
31) 2,2-Dichloropropane	9.31	77	157867	17.0389 ug/L	98
32) cis-1,2-Dichloroethene	9.37	96	122397	19.7155 ug/L	96
33) Chloroform	9.59	83	214876	21.3592 ug/L	98
34) 1-Bromopropane	9.73	122	25106	23.4292 ug/L	96
35) Bromochloromethane	9.82	130	73731	21.2057 ug/L	99
36) Tetrahydrofuran	9.84	42	190003	120.1598 ug/L	99
38) 1,1,1-Trichloroethane	10.12	97	178408	20.0102 ug/L	99
39) Cyclohexane	10.16	56	233769	18.9209 ug/L	99
40) 1,1-Dichloropropene	10.32	75	152405	20.2701 ug/L	97
41) Tert-Amyl-Methyl ether	10.42	73	1553646	107.9837 ug/L	100
42) Carbon Tetrachloride	10.47	117	158207	19.7154 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M961155.D 8260WTR.M Fri Jan 31 05:13:50 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013014\9M961155.D Vial: 18
Acq On : 31 Jan 2014 4:51 Operator: MES
Sample : WG461586-03 20ug/L LCS DUP 8260 Inst : HPMS9
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 05:13:49 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.64	62	188862	21.1632	ug/L		99
46)	Benzene	10.68	78	462423	20.2062	ug/L		99
47)	Trichloroethene	11.43	130	121151	19.9509	ug/L		98
48)	Methylcyclohexane	11.52	83	160754	17.8504	ug/L		98
49)	1,2-Dichloropropane	11.65	63	143607	20.5868	ug/L		98
50)	1,4-Dioxane	11.93	88	7213	170.6310	ug/L		95
51)	Bromodichloromethane	11.95	83	162384	20.1788	ug/L		98
52)	Dibromomethane	12.03	174	79541	22.1593	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.24	63	53898	15.6240	ug/L		99
54)	4-Methyl-2-Pentanone	12.27	58	46113	20.7718	ug/L		96
55)	cis-1,3-Dichloropropene	12.58	75	201575	21.3383	ug/L		100
56)	Dimethyl Disulfide	12.85	94	222048	21.3762	ug/L		97
59)	Toluene	13.01	91	463596	20.1616	ug/L		99
60)	Ethyl Methacrylate	13.10	69	140519	21.6160	ug/L		99
61)	trans-1,3-Dichloropropene	13.18	75	165747	20.0220	ug/L		98
62)	1,1,2-Trichloroethane	13.39	97	94243	22.2135	ug/L		99
63)	2-Hexanone	13.33	43	88430	22.3021	ug/L		99
64)	1,3-Dichloropropane	13.71	76	173515	21.0443	ug/L		95
65)	Tetrachloroethene	13.83	164	97416	18.9331	ug/L		98
66)	Dibromochloromethane	14.10	129	114554	20.8376	ug/L		99
67)	1,2-Dibromoethane	14.36	107	103384	21.5742	ug/L		98
68)	1-Chlorohexane	14.44	91	136796	19.2212	ug/L		99
69)	Chlorobenzene	14.86	112	297026	18.5831	ug/L		96
70)	1,1,1,2-Tetrachloroethane	14.88	131	125802	21.2677	ug/L		99
71)	Ethylbenzene	14.88	106	174888	20.0862	ug/L		100
72)	m-,p-Xylene	14.98	106	409198	38.7885	ug/L		100
73)	o-Xylene	15.53	106	203022	18.7602	ug/L		99
74)	Styrene	15.58	104	371800	20.7315	ug/L		97
75)	Bromoform	16.07	173	87341	23.4726	ug/L		98
76)	Isopropylbenzene	15.96	105	497089	18.1546	ug/L		99
78)	1,1,2,2-Tetrachloroethane	16.18	83	119153	20.8147	ug/L		100
80)	1,2,3-Trichloropropane	16.37	110	37975	22.3598	ug/L		71
81)	trans-1,4-Dichloro-2-Buten	16.41	53	26074	11.5442	ug/L	#	15
82)	n-Propylbenzene	16.46	91	558669	18.5236	ug/L		98
83)	Bromobenzene	16.61	156	140835	20.3131	ug/L		99
84)	1,3,5-Trimethylbenzene	16.65	105	479458	20.5846	ug/L		100
85)	2-Chlorotoluene	16.74	91	357819	18.2294	ug/L		100
86)	4-Chlorotoluene	16.80	91	340671	18.5978	ug/L		99
87)	a-Methylstyrene	17.06	118	243619	20.6050	ug/L		100
88)	tert-Butylbenzene	17.13	134	95201	18.2951	ug/L		97
89)	1,2,4-Trimethylbenzene	17.18	105	481219	20.5861	ug/L		100
90)	sec-Butylbenzene	17.39	105	531853	18.4923	ug/L		99
91)	p-Isopropyltoluene	17.55	119	430423	18.9811	ug/L		100
92)	1,3-Dichlorobenzene	17.75	146	242297	18.5352	ug/L		98
93)	1,4-Dichlorobenzene	17.88	146	263631	20.1251	ug/L		98
94)	n-Butylbenzene	18.08	91	394288	20.1859	ug/L		98
95)	1,2-Dichlorobenzene	18.38	146	251743	19.7816	ug/L		99
96)	1,2-Dibromo-3-Chloropropan	19.37	157	29144	23.9081	ug/L		99
97)	1,2,4-Trichlorobenzene	20.52	180	207118	22.3417	ug/L		98
98)	Hexachlorobutadiene	20.66	225	109739	21.4394	ug/L		98
99)	Naphthalene	20.89	128	447574	24.3534	ug/L		99
100)	1,2,3-Trichlorobenzene	21.19	180	208424	22.8192	ug/L		99

(#) = qualifier out of range (m) = manual integration
9M961155.D 8260WTR.M Fri Jan 31 05:13:51 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\013014\9M961155.D Vial: 18
Acq On : 31 Jan 2014 4:51 Operator: MES
Sample : WG461586-03 20ug/L LCS DUP 8260 Inst : HPMS9
Misc : 1,1 STD62430 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 31 5:13 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B SL SOP: OVL MSV01 Analysis 01/30/13 HPMS 9
Last Update : Thu Jan 30 20:21:06 2014
Response via : Initial Calibration

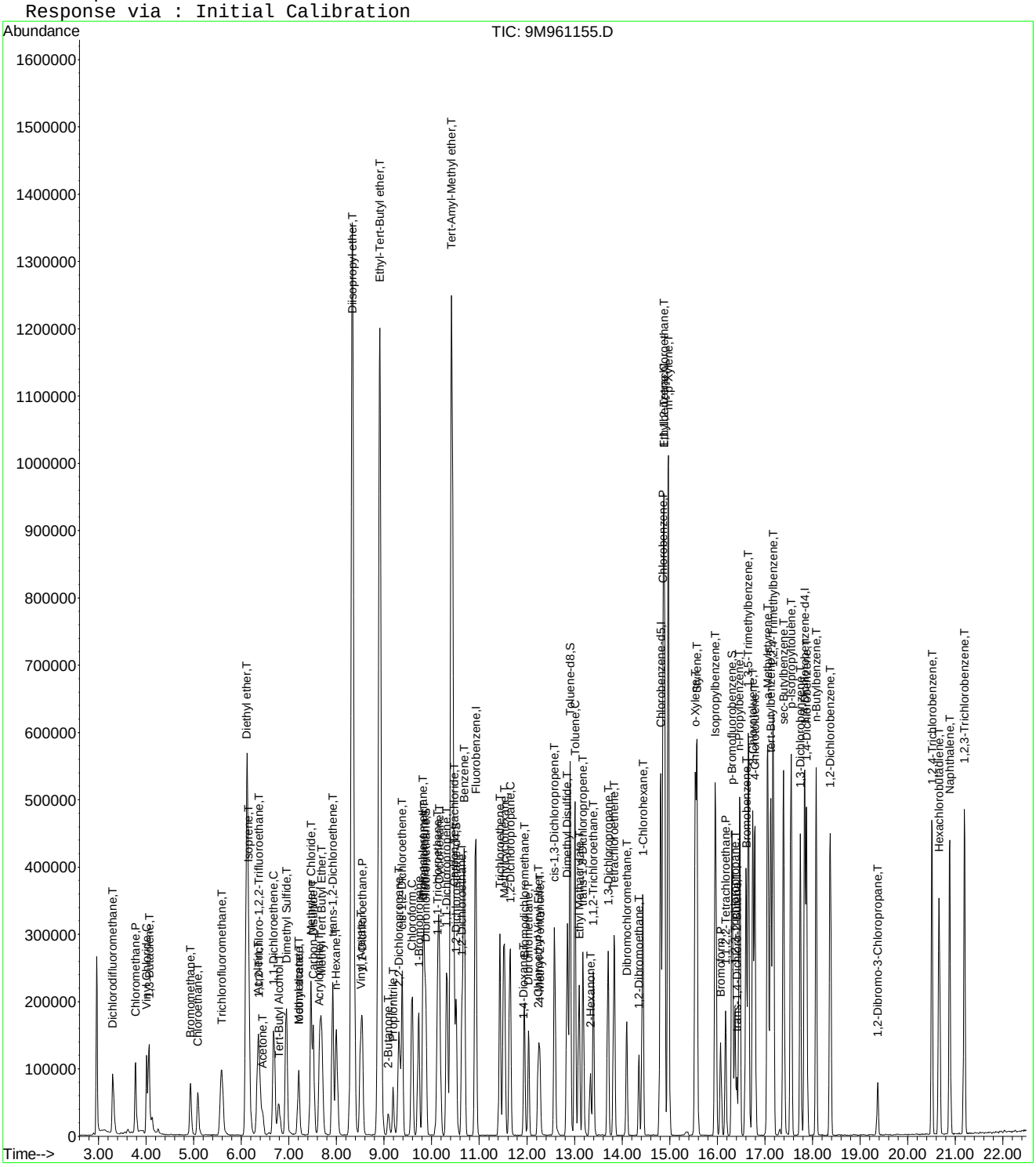

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
February 11, 2014

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AJF - AMANDA J. FICKIESEN
AML - TONY M. LONG
AZH - AFTER HOURS
BAF - BRICE A. FENTON
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CRW - CHRISTINA R. WILSON
CSH - CHRIS S. HILL
CTB - CHRIS T. BUCINA
DAK - DEAN A. K
DCM - DAVID C. MERCKLE
DDE - DEBRA D. ELLIOTT
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLR - DIANNA L. RAUCH
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EDL - ERIN D. LONG
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HCB - HEIDI C. BROWN
HJR - HOLLY J. REED
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JKS - JANE K. SCHAAD
JLL - JOHN L. LENT
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KSC - KELLY S. CUNNINGHAM
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLW - MATTHEW L. WARREN
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RS - ROSEMARY SCOTT
RWC - RODNEY W. CAMPBELL
SAV - SARAH A. VANDENBERG
SEP - SUZANNE J. PAUGH
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TLC - TYLER L. CORDELL
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
TPA - TYLER P. AMRINE
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
February 11, 2014

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, H1	Not detected; Sample analysis performed past holding time.
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Analyte was not detected. The concentration is below the reported LOD.
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Kathy Albertson	Project Manager:	Dave Wacker	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205			Program:	
Turn Around Time:	STANDARD	pH:			
Project Name/Location:	Longhorn				
Project Number:	60256135.0002JA				

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 67	67WW05-012314			1/23/14	1505		✓	W	3	✓					
	67WW02-012314			1/23/14	1515		✓	W	3	✓					
	67WW07-012314			1/23/14	1533		✓	W	3	✓					
	67WW09A-012314			1/23/14	1655		✓	W	3	✓					
	67WW10-012414			1/24/14	0830		✓	W	3	✓					
	67WW10MS-012414			1/24/14	0830		✓	W	3	✓					
	67WW10MSD-012414			1/24/14	0830		✓	W	3	✓					
	Equipment Rinse-012414			1/24/14	0846		✓	W	3	✓					
	67WW06-012414			1/24/14	0955		✓	W	3	✓					
	67WW12-012414			1/24/14	1055		✓	W	3	✓					
	67WW09-012414			1/24/14	1315		✓	W	3	✓					
	67WW13-012414			1/24/14	1420		✓	W	3	✓					
	67WW13FD-012414			1/24/14	1420		✓	W	3	✓					
	67WW14-012414			1/24/14	1545		✓	W	3	✓					

Comments: **STANDARD TAT**

ERPIMS REQUIRED FIELDS

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time
Scott Beesinger	1/27/14	1500			
Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Time	Remarks:

Microbac OVD
Received: 01/28/2014 09:47
By: ROSEMARY SCOTT
221000048712

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Kathy Albertson	Project Manager:	Dave Wacker
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002JA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp-	Grab	Matrix	Number of Containers	VOC	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 67	TRip Blank			1/24/14			✓	W	2	✓					

Comments: STANDARD TAT

Relinquished by: (Signature) Scott Beesinger	Date 1/27/14	Time 1500	R
Relinquished by: (Signature)	Date	Time	R (S

Microbac OVD
Received: 01/28/2014 09:47
By: ROSEMARY SCOTT
221000048712

Date	Time	Relinquished by: (Signature)
Time	Remarks:	

•Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14011372
Account: 2551
Project: 2551.096
Samples: 15
Due Date: 07-FEB-2014

Samplenum	Container ID	Products
L14011372-01	311460	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:50	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:50	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:50	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Samplenum	Container ID	Products
L14011372-02	311461	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:50	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:50	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:50	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14011372
Account: 2551
Project: 2551.096
Samples: 15
Due Date: 07-FEB-2014

Samplenum	Container ID	Products
L14011372-03	311462	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Samplenum	Container ID	Products
L14011372-04	311463	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:50	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:50	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:50	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14011372
Account: 2551
Project: 2551.096
Samples: 15
Due Date: 07-FEB-2014

Samplenum	Container ID	Products
L14011372-05	311464	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	

Samplenum	Container ID	Products
L14011372-06	311465	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14011372
Account: 2551
Project: 2551.096
Samples: 15
Due Date: 07-FEB-2014

Samplenum	Container ID	Products
L14011372-07	311466	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Samplenum	Container ID	Products
L14011372-08	311467	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14011372
Account: 2551
Project: 2551.096
Samples: 15
Due Date: 07-FEB-2014

Samplenum	Container ID	Products
L14011372-09	311468	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:25	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:25	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:25	CLS	AWE	

Samplenum	Container ID	Products
L14011372-10	311469	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	28-JAN-2014 15:08	MBK		<2
2	STORE	ORG4	A1	11-FEB-2014 08:25	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:24	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14011372
Account: 2551
Project: 2551.096
Samples: 15
Due Date: 07-FEB-2014

Samplenum	Container ID	Products
L14011372-11	311470	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:25	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:25	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	

Samplenum	Container ID	Products
L14011372-12	311471	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:25	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:25	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:25	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14011372
Account: 2551
Project: 2551.096
Samples: 15
Due Date: 07-FEB-2014

Samplenum	Container ID	Products
L14011372-13	311472	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:25	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:25	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	

Samplenum	Container ID	Products
L14011372-14	311473	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:25	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:25	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:25	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14011372
Account: 2551
Project: 2551.096
Samples: 15
Due Date: 07-FEB-2014

Samplenum	Container ID	Products
L14011372-15	311474	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:25	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	28-JAN-2014 15:08	MBK		<2
2	ANALYZ	V1	ORG4	28-JAN-2014 15:51	JDS	CLS	
3	STORE	ORG4	A1	11-FEB-2014 08:25	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - November 13, 2013

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Nitroguanidine
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL KNITRO-C-WUV-VIS

Nitrocellulose

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL HPLCOS-HPLC-UV

Nitroguanidine

OVL KNITRO-C-S/UV-VIS

Nitrocellulose

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L14050603

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Kathy Albertson – Team Chemist/Data Specialist
(740) 373-4071
Kathy.Albertson@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on May 29 2014

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110640	I	4.0		J2317158624	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
67WW09A-050614	L14050603-01	05/06/2014 09:10	05/08/2014 11:00
67WW10-050614	L14050603-02	05/06/2014 10:20	05/08/2014 11:00
67WW02-050614	L14050603-03	05/06/2014 10:50	05/08/2014 11:00
67WW05-050614	L14050603-04	05/06/2014 12:15	05/08/2014 11:00
67WW12-050614	L14050603-05	05/06/2014 14:10	05/08/2014 11:00
67WW12MS-050614	L14050603-06	05/06/2014 14:10	05/08/2014 11:00
67WW12MSD-050614	L14050603-07	05/06/2014 14:10	05/08/2014 11:00
67WW13-050614	L14050603-08	05/06/2014 15:20	05/08/2014 11:00
67WW13FD-050614	L14050603-09	05/06/2014 15:20	05/08/2014 11:00
67WW07-050614	L14050603-10	05/06/2014 16:20	05/08/2014 11:00
67WW14-050714	L14050603-11	05/07/2014 08:15	05/08/2014 11:00
67WW01-050714	L14050603-12	05/07/2014 08:45	05/08/2014 11:00
67WW08-050714	L14050603-13	05/07/2014 10:05	05/08/2014 11:00
TRIP BLANK	L14050603-14	05/07/2014 00:01	05/08/2014 11:00

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L14050603
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 45
2.0 Full Sample Data Package 94
2.1 Volatiles Data 95
2.1.1 Volatiles GCMS Data (8260) 96
2.1.1.1 Summary Data 97
2.1.1.2 QC Summary Data 138
2.1.1.3 Sample Data 204
2.1.1.4 Standards Data 271
2.1.1.5 Raw QC Data 423
2.1.2 RSK 175 463
2.1.2.1 Summary Data 464
2.1.2.2 QC Summary Data 470
2.1.2.3 Sample Data 493
2.1.2.4 Standards Data 498
2.1.2.5 Raw QC Data 534
2.2 General Chemistry Data 539
2.2.1 Method 9056 540
2.2.1.1 Summary Data 541
2.2.1.2 QC Summary Data 547
2.2.1.3 Sample Data 579
2.2.1.4 Standards Data 585
2.2.1.5 Raw QC Data 611
2.2.2 Ferrous Iron Data 616
2.2.2.1 Summary Data 617
2.2.2.2 QC Summary Data 619
2.2.2.3 Raw Data 626
2.2.3 Sulfide Data 634
2.2.3.1 Summary Data 635
2.2.3.2 QC Summary Data 639
2.2.3.3 Raw Data 646
2.2.4 Total Organic Carbon Data 649
2.2.4.1 Summary Data 650
2.2.4.2 QC Summary Data 653
2.2.4.3 Raw Data 665
3.0 Attachments 800

1.0 Summary Data

1.1 Narratives

Microbac Laboratories
Case Narrative

Login Number: L14050603
Department: Volatiles - GC
Analyst: Qin Xu

Analysis RSK-175

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes/Sample Duplicates: The MS/MSD results were not associated with this sample delivery group (SDG), due to insufficient volume of sample. Microbac Laboratories recommends site specific MS/MSD samples to avoid possible data qualifications.

SAMPLES

Samples: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

Narrative ID: 82933
Approved By: Michael Albertson

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	8260
Prep Batch Number(s):	476502,476633,476699	**Reviewer Name:**	Michelle Taylor
LRC Date:	2014-05-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michelle Taylor	Michelle Taylor	Data Specialist	2014-05-29 12:14:29

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	8260
Prep Batch Number(s):	476502,476633,476699	**Reviewer Name:**	Michelle Taylor
LRC Date:	2014-05-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	8260
Prep Batch Number(s):	476502,476633,476699	**Reviewer Name:**	Michelle Taylor
LRC Date:	2014-05-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			1
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			2
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	8260
Prep Batch Number(s):	476502,476633,476699	**Reviewer Name:**	Michelle Taylor
LRC Date:	2014-05-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			3
Was the ICAL curve verified for each analyte?		X			4
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	8260
Prep Batch Number(s):	476502,476633,476699	**Reviewer Name:**	Michelle Taylor
LRC Date:	2014-05-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	8260
Prep Batch Number(s):	476502,476633,476699	**Reviewer Name:**	Michelle Taylor
LRC Date:	2014-05-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) 2,2-Dichloropropane was below the lower advisory limit in the LCS analysed 05/19/14 on HPMS17. Chloromethane and Dichlorodifluoromethane exceeded the upper advisory limits in the LCS analyzed 05/19/14 on HPMS9. Chloromethane and Dichlorodifluoromethane exceeded the upper advisory limits in the LCS/LCSD analyzed 05/20/14 on HPMS9.
2) Chloromethane and Dichlorodifluoromethane exceeded the upper advisory limits in the MS/MSD analyzed 04/14/14 on HPMS9.
3) Chloromethane and 2,2-Dichloropropane exceeded the upper control limits in the CCV analyzed 05/19/14 on HPMS9. Chloromethane exceeded the upper control limit in the CCV analyzed 05/20/14 on HPMS9. Chloromethane exceeded the upper control limit in the CCV analyzed 05/20/14 on HPMS9.
4) Chloromethane, 2-Chlorotoluene and Dichlorodifluoromethane exceeded the upper control limits in the ICV analyzed 05/18/14 on HPMS17. Trichlorofluoromethane was below the lower control limit in the ICV analyzed 05/18/14 on HPMS17. Vinyl Chloride was below the lower control limit in the ICV analyzed 05/18/14 on HPMS9. Dichlorodifluoromethane exceeded the upper control limits in the ICV analyzed 04/14/14 on HPMS9.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	475561	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-05-19 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2014-05-19 13:14:07

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	475561	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-05-19 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	475561	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-05-19 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	475561	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-05-19 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	475561	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-05-19 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	475561	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-05-19 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There were no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG475071	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2014-05-09 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Jeremy Kinney		Chemist I	2014-05-12 19:28:40

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG475071	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2014-05-09 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG475071	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2014-05-09 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				1
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG475071	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2014-05-09 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG475071	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2014-05-09 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG475071	**Reviewer Name:**	Jeremy Kinney
LRC Date:	2014-05-09 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -12 and -13 were analyzed at dilution only due to high analyte concentrations (CL and or SO4) which were greater than 200 ppm. Any sample with a single anion load greater than 200 ppm (or a total anion load greater than 400 ppm) will be diluted to prevent oversaturation of the suppressor membranes and damage to the analytical column.

Fraction -04 was analyzed at a dilution only due to the concentration of the target analyte being greater than the uppermost point of the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG475674	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-05-23 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2014-05-23 15:47:14

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG475674	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-05-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG475674	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-05-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG475674	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-05-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG475674	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-05-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG475674	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-05-23 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	S
Prep Batch Number(s):	WG475518	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-05-23 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2014-05-23 15:46:38

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	S
Prep Batch Number(s):	WG475518	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-05-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	S
Prep Batch Number(s):	WG475518	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-05-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	S
Prep Batch Number(s):	WG475518	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-05-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	S
Prep Batch Number(s):	WG475518	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-05-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	S
Prep Batch Number(s):	WG475518	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-05-23 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG476762, WG476559	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-05-23 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2014-05-23 15:40:33

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG476762, WG476559	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-05-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG476762, WG476559	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-05-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG476762, WG476559	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-05-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG476762, WG476559	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-05-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14050603
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG476762, WG476559	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-05-23 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW09A-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2014 22:36
Workgroup #:	WG476502	**Analyst:**	FJB/MDA	**Run Date:**	05/19/2014 04:05
Collect Date:	05/06/2014 09:10	**Dilution:**	1	**File ID:**	17M005104
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.1	85	115	
1,2-Dichloroethane-d4	89.7	70	120	
Toluene-d8	99.0	85	120	
4-Bromofluorobenzene	106	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW10-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2014 22:36
Workgroup #:	WG476502	**Analyst:**	FJB/MDA	**Run Date:**	05/19/2014 04:25
Collect Date:	05/06/2014 10:20	**Dilution:**	1	**File ID:**	17M005105
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.6	85	115	
1,2-Dichloroethane-d4	88.2	70	120	
Toluene-d8	97.1	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW02-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2014 22:36
Workgroup #:	WG476502	**Analyst:**	FJB/MDA	**Run Date:**	05/19/2014 04:44
Collect Date:	05/06/2014 10:50	**Dilution:**	1	**File ID:**	17M005106
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.440	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.5	85	115	
1,2-Dichloroethane-d4	90.5	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	110	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW05-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2014 22:36
Workgroup #:	WG476502	**Analyst:**	FJB/MDA	**Run Date:**	05/19/2014 05:04
Collect Date:	05/06/2014 12:15	**Dilution:**	1	**File ID:**	17M005107
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.3	85	115	
1,2-Dichloroethane-d4	88.0	70	120	
Toluene-d8	99.4	85	120	
4-Bromofluorobenzene	110	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-04	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW05-050614	**Prep Method:**	9056	**Prep Date:**	05/20/2014 14:42
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	11/06/2013 10:26
Workgroup #:	WG476854	**Analyst:**	ALS	**Run Date:**	05/20/2014 15:51
Collect Date:	05/06/2014 12:15	**Dilution:**	50	**File ID:**	I1_052014-07
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	697		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L14050603-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW12-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/14/2014 21:47
Workgroup #:	WG476633	**Analyst:**	ADC	**Run Date:**	05/19/2014 22:31
Collect Date:	05/06/2014 14:10	**Dilution:**	1	**File ID:**	9M963380
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.161	B	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	97.3	75	120	

B	The reported result is associated with a contaminated method blank.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW12MS-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/14/2014 21:47
Workgroup #:	WG476633	**Analyst:**	ADC	**Run Date:**	05/19/2014 17:30
Collect Date:	05/06/2014 14:10	**Dilution:**	1	**File ID:**	9M963370
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.7		10.0	5.00	2.50
Benzene	71-43-2	20.8		1.00	0.250	0.125
Bromobenzene	108-86-1	21.1		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.2		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.2		1.00	0.500	0.250
Bromoform	75-25-2	17.3		2.00	1.00	0.500
Bromomethane	74-83-9	23.4		2.00	1.00	0.500
2-Butanone	78-93-3	22.6		10.0	5.00	2.50
n-Butylbenzene	104-51-8	22.4		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.4		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.1		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.1		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.5		1.00	0.500	0.250
Chlorobenzene	108-90-7	18.8		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.4		1.00	0.500	0.250
Chloroethane	75-00-3	21.8		2.00	1.00	0.500
Chloroform	67-66-3	21.0		1.00	0.250	0.125
Chloromethane	74-87-3	32.6	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	21.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	19.0		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.6		1.00	0.500	0.250
Dibromomethane	74-95-3	20.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.6		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.1		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.7		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	33.5		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	20.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.8		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.7		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.0		1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	21.5		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.5		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.6		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	21.9	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.8		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.5		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.4		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.1		1.00	0.500	0.250
2-Hexanone	591-78-6	21.5		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.4		1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.0		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.3		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.3		10.0	5.00	2.50
Methylene chloride	75-09-2	19.6		1.00	0.500	0.250
Naphthalene	91-20-3	22.5		1.00	0.400	0.200
n-Propylbenzene	103-65-1	19.8		1.00	0.250	0.125
Styrene	100-42-5	20.4		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	20.7		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.3		1.00	0.500	0.250
Toluene	108-88-3	20.0		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	22.2		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.3		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	21.0		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.5		1.00	0.500	0.250
Trichloroethene	79-01-6	20.0		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.6		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	20.5		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	22.0		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	25.6		1.00	0.500	0.250
o-Xylene	95-47-6	18.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	39.6		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	98.9	85	120	
4-Bromofluorobenzene	92.6	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW12MSD-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/14/2014 21:47
Workgroup #:	WG476633	**Analyst:**	ADC	**Run Date:**	05/19/2014 18:00
Collect Date:	05/06/2014 14:10	**Dilution:**	1	**File ID:**	9M963371
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.7		10.0	5.00	2.50
Benzene	71-43-2	20.5		1.00	0.250	0.125
Bromobenzene	108-86-1	20.9		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.5		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.4		1.00	0.500	0.250
Bromoform	75-25-2	17.3		2.00	1.00	0.500
Bromomethane	74-83-9	23.8		2.00	1.00	0.500
2-Butanone	78-93-3	22.5		10.0	5.00	2.50
n-Butylbenzene	104-51-8	22.4		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.9		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.0		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.6		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.2		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.5		1.00	0.500	0.250
Chloroethane	75-00-3	21.9		2.00	1.00	0.500
Chloroform	67-66-3	20.7		1.00	0.250	0.125
Chloromethane	74-87-3	32.8	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.8		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	21.6		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	18.7		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.1		1.00	0.500	0.250
Dibromomethane	74-95-3	20.2		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.1		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.4		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	21.3		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	33.6		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	20.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.8		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.2		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	20.5		1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	21.4		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.2		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.7		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	21.1	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.7		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.5		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.4		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.2		1.00	0.500	0.250
2-Hexanone	591-78-6	21.6		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.9		1.00	0.500	0.250
Isopropylbenzene	98-82-8	18.9		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.4		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.2		10.0	5.00	2.50
Methylene chloride	75-09-2	19.6		1.00	0.500	0.250
Naphthalene	91-20-3	22.9		1.00	0.400	0.200
n-Propylbenzene	103-65-1	19.9		1.00	0.250	0.125
Styrene	100-42-5	20.5		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.9		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	20.7		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.9		1.00	0.500	0.250
Toluene	108-88-3	19.9		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	22.2		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.4		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	20.9		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.2		1.00	0.500	0.250
Trichloroethene	79-01-6	19.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.2		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	20.5		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	22.1		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.3		1.00	0.500	0.250
Vinyl chloride	75-01-4	26.1		1.00	0.500	0.250
o-Xylene	95-47-6	18.8		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	39.4		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	97.8	85	120	
4-Bromofluorobenzene	92.7	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW13-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2014 22:36
Workgroup #:	WG476502	**Analyst:**	FJB/MDA	**Run Date:**	05/19/2014 06:22
Collect Date:	05/06/2014 15:20	**Dilution:**	2	**File ID:**	17M005111
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	10.0	U	20.0	10.0	5.00
Benzene	71-43-2	1.21	J	2.00	0.500	0.250
Bromobenzene	108-86-1	0.500	U	2.00	0.500	0.250
Bromochloromethane	74-97-5	0.800	U	2.00	0.800	0.400
Bromodichloromethane	75-27-4	1.00	U	2.00	1.00	0.500
Bromoform	75-25-2	2.00	U	4.00	2.00	1.00
Bromomethane	74-83-9	2.00	U	4.00	2.00	1.00
2-Butanone	78-93-3	10.0	U	20.0	10.0	5.00
n-Butylbenzene	104-51-8	1.00	U	2.00	1.00	0.500
sec-Butylbenzene	135-98-8	1.00	U	2.00	1.00	0.500
tert-Butylbenzene	98-06-6	1.00	U	2.00	1.00	0.500
Carbon disulfide	75-15-0	2.00	U	4.00	2.00	1.00
Carbon tetrachloride	56-23-5	1.00	U	2.00	1.00	0.500
Chlorobenzene	108-90-7	0.500	U	2.00	0.500	0.250
Chlorodibromomethane	124-48-1	1.00	U	2.00	1.00	0.500
Chloroethane	75-00-3	2.00	Q	4.00	2.00	1.00
Chloroform	67-66-3	0.500	U	2.00	0.500	0.250
Chloromethane	74-87-3	2.00	U	4.00	2.00	1.00
2-Chlorotoluene	95-49-8	0.500	U	2.00	0.500	0.250
4-Chlorotoluene	106-43-4	1.00	U	2.00	1.00	0.500
1,2-Dibromo-3-chloropropane	96-12-8	4.00	U	10.0	4.00	2.00
1,2-Dibromoethane	106-93-4	1.00	U	2.00	1.00	0.500
Dibromomethane	74-95-3	1.00	U	2.00	1.00	0.500
1,2-Dichlorobenzene	95-50-1	0.500	U	2.00	0.500	0.250
1,3-Dichlorobenzene	541-73-1	1.00	U	2.00	1.00	0.500
1,4-Dichlorobenzene	106-46-7	0.500	U	2.00	0.500	0.250
Dichlorodifluoromethane	75-71-8	1.00	U	2.00	1.00	0.500
1,1-Dichloroethane	75-34-3	15.5		2.00	0.500	0.250
1,2-Dichloroethane	107-06-2	13.7		2.00	1.00	0.500
1,1-Dichloroethene	75-35-4	240		4.00	2.00	1.00
cis-1,2-Dichloroethene	156-59-2	0.755	J	2.00	1.00	0.500

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.00	U	2.00	1.00	0.500
1,2-Dichloropropane	78-87-5	0.800	U	2.00	0.800	0.400
1,3-Dichloropropane	142-28-9	0.800	U	2.00	0.800	0.400
2,2-Dichloropropane	594-20-7	1.00	U	2.00	1.00	0.500
cis-1,3-Dichloropropene	10061-01-5	1.00	U	2.00	1.00	0.500
trans-1,3-Dichloropropene	10061-02-6	2.00	U	4.00	2.00	1.00
1,1-Dichloropropene	563-58-6	1.00	U	2.00	1.00	0.500
Ethylbenzene	100-41-4	1.00	U	2.00	1.00	0.500
2-Hexanone	591-78-6	10.0	U	20.0	10.0	5.00
Hexachlorobutadiene	87-68-3	1.00	U	2.00	1.00	0.500
Isopropylbenzene	98-82-8	1.00	U	2.00	1.00	0.500
p-Isopropyltoluene	99-87-6	1.00	U	2.00	1.00	0.500
4-Methyl-2-pentanone	108-10-1	10.0	U	20.0	10.0	5.00
Methylene chloride	75-09-2	1.00	U	2.00	1.00	0.500
Naphthalene	91-20-3	0.800	U	2.00	0.800	0.400
n-Propylbenzene	103-65-1	0.500	U	2.00	0.500	0.250
Styrene	100-42-5	0.500	U	2.00	0.500	0.250
1,1,1,2-Tetrachloroethane	630-20-6	1.00	U	2.00	1.00	0.500
1,1,2,2-Tetrachloroethane	79-34-5	0.800	U	2.00	0.800	0.400
Tetrachloroethene	127-18-4	1.00	U	2.00	1.00	0.500
Toluene	108-88-3	1.00	U	2.00	1.00	0.500
1,2,3-Trichlorobenzene	87-61-6	0.600	U	2.00	0.600	0.300
1,2,4-Trichlorobenzene	120-82-1	0.800	U	2.00	0.800	0.400
1,1,1-Trichloroethane	71-55-6	1.00	U	2.00	1.00	0.500
1,1,2-Trichloroethane	79-00-5	1.99	J	2.00	1.00	0.500
Trichloroethene	79-01-6	1.25	J	2.00	1.00	0.500
Trichlorofluoromethane	75-69-4	1.00	U	2.00	1.00	0.500
1,2,3-Trichloropropane	96-18-4	2.00	U	4.00	2.00	1.00
1,2,4-Trimethylbenzene	95-63-6	1.00	U	2.00	1.00	0.500
1,3,5-Trimethylbenzene	108-67-8	1.00	U	2.00	1.00	0.500
Vinyl chloride	75-01-4	0.644	J	2.00	1.00	0.500
o-Xylene	95-47-6	1.00	U	2.00	1.00	0.500
m-,p-Xylene	179601-23-1	2.00	U	4.00	2.00	1.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.3	85	115	
1,2-Dichloroethane-d4	86.9	70	120	
Toluene-d8	97.9	85	120	
4-Bromofluorobenzene	111	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW13FD-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2014 22:36
Workgroup #:	WG476502	**Analyst:**	FJB/MDA	**Run Date:**	05/19/2014 06:42
Collect Date:	05/06/2014 15:20	**Dilution:**	2	**File ID:**	17M005112
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	10.0	U	20.0	10.0	5.00
Benzene	71-43-2	0.790	J	2.00	0.500	0.250
Bromobenzene	108-86-1	0.500	U	2.00	0.500	0.250
Bromochloromethane	74-97-5	0.800	U	2.00	0.800	0.400
Bromodichloromethane	75-27-4	1.00	U	2.00	1.00	0.500
Bromoform	75-25-2	2.00	U	4.00	2.00	1.00
Bromomethane	74-83-9	2.00	U	4.00	2.00	1.00
2-Butanone	78-93-3	10.0	U	20.0	10.0	5.00
n-Butylbenzene	104-51-8	1.00	U	2.00	1.00	0.500
sec-Butylbenzene	135-98-8	1.00	U	2.00	1.00	0.500
tert-Butylbenzene	98-06-6	1.00	U	2.00	1.00	0.500
Carbon disulfide	75-15-0	2.00	U	4.00	2.00	1.00
Carbon tetrachloride	56-23-5	1.00	U	2.00	1.00	0.500
Chlorobenzene	108-90-7	0.500	U	2.00	0.500	0.250
Chlorodibromomethane	124-48-1	1.00	U	2.00	1.00	0.500
Chloroethane	75-00-3	2.00	Q	4.00	2.00	1.00
Chloroform	67-66-3	0.500	U	2.00	0.500	0.250
Chloromethane	74-87-3	2.00	U	4.00	2.00	1.00
2-Chlorotoluene	95-49-8	0.500	U	2.00	0.500	0.250
4-Chlorotoluene	106-43-4	1.00	U	2.00	1.00	0.500
1,2-Dibromo-3-chloropropane	96-12-8	4.00	U	10.0	4.00	2.00
1,2-Dibromoethane	106-93-4	1.00	U	2.00	1.00	0.500
Dibromomethane	74-95-3	1.00	U	2.00	1.00	0.500
1,2-Dichlorobenzene	95-50-1	0.500	U	2.00	0.500	0.250
1,3-Dichlorobenzene	541-73-1	1.00	U	2.00	1.00	0.500
1,4-Dichlorobenzene	106-46-7	0.500	U	2.00	0.500	0.250
Dichlorodifluoromethane	75-71-8	1.00	U	2.00	1.00	0.500
1,1-Dichloroethane	75-34-3	14.4		2.00	0.500	0.250
1,2-Dichloroethane	107-06-2	12.9		2.00	1.00	0.500
1,1-Dichloroethene	75-35-4	228		4.00	2.00	1.00
cis-1,2-Dichloroethene	156-59-2	0.684	J	2.00	1.00	0.500

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.00	U	2.00	1.00	0.500
1,2-Dichloropropane	78-87-5	0.800	U	2.00	0.800	0.400
1,3-Dichloropropane	142-28-9	0.800	U	2.00	0.800	0.400
2,2-Dichloropropane	594-20-7	1.00	U	2.00	1.00	0.500
cis-1,3-Dichloropropene	10061-01-5	1.00	U	2.00	1.00	0.500
trans-1,3-Dichloropropene	10061-02-6	2.00	U	4.00	2.00	1.00
1,1-Dichloropropene	563-58-6	1.00	U	2.00	1.00	0.500
Ethylbenzene	100-41-4	1.00	U	2.00	1.00	0.500
2-Hexanone	591-78-6	10.0	U	20.0	10.0	5.00
Hexachlorobutadiene	87-68-3	1.00	U	2.00	1.00	0.500
Isopropylbenzene	98-82-8	1.00	U	2.00	1.00	0.500
p-Isopropyltoluene	99-87-6	1.00	U	2.00	1.00	0.500
4-Methyl-2-pentanone	108-10-1	10.0	U	20.0	10.0	5.00
Methylene chloride	75-09-2	1.00	U	2.00	1.00	0.500
Naphthalene	91-20-3	0.800	U	2.00	0.800	0.400
n-Propylbenzene	103-65-1	0.500	U	2.00	0.500	0.250
Styrene	100-42-5	0.500	U	2.00	0.500	0.250
1,1,1,2-Tetrachloroethane	630-20-6	1.00	U	2.00	1.00	0.500
1,1,2,2-Tetrachloroethane	79-34-5	0.800	U	2.00	0.800	0.400
Tetrachloroethene	127-18-4	1.00	U	2.00	1.00	0.500
Toluene	108-88-3	1.00	U	2.00	1.00	0.500
1,2,3-Trichlorobenzene	87-61-6	0.600	U	2.00	0.600	0.300
1,2,4-Trichlorobenzene	120-82-1	0.800	U	2.00	0.800	0.400
1,1,1-Trichloroethane	71-55-6	1.00	U	2.00	1.00	0.500
1,1,2-Trichloroethane	79-00-5	1.95	J	2.00	1.00	0.500
Trichloroethene	79-01-6	1.27	J	2.00	1.00	0.500
Trichlorofluoromethane	75-69-4	1.00	U	2.00	1.00	0.500
1,2,3-Trichloropropane	96-18-4	2.00	U	4.00	2.00	1.00
1,2,4-Trimethylbenzene	95-63-6	1.00	U	2.00	1.00	0.500
1,3,5-Trimethylbenzene	108-67-8	1.00	U	2.00	1.00	0.500
Vinyl chloride	75-01-4	0.619	J	2.00	1.00	0.500
o-Xylene	95-47-6	1.00	U	2.00	1.00	0.500
m-,p-Xylene	179601-23-1	2.00	U	4.00	2.00	1.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	85.9	85	115	
1,2-Dichloroethane-d4	83.6	70	120	
Toluene-d8	94.1	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW07-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2014 22:36
Workgroup #:	WG476502	**Analyst:**	FJB/MDA	**Run Date:**	05/19/2014 05:23
Collect Date:	05/06/2014 16:20	**Dilution:**	1	**File ID:**	17M005108
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.44		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.9	85	115	
1,2-Dichloroethane-d4	90.3	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW14-050714	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/14/2014 21:47
Workgroup #:	WG476633	**Analyst:**	ADC	**Run Date:**	05/20/2014 00:02
Collect Date:	05/07/2014 08:15	**Dilution:**	1	**File ID:**	9M963383
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.130	B	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.538	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.897	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	4.27		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	110	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	99.8	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW01-050714	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/14/2014 21:47
Workgroup #:	WG476633	**Analyst:**	ADC	**Run Date:**	05/20/2014 00:32
Collect Date:	05/07/2014 08:45	**Dilution:**	1	**File ID:**	9M963384
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.140	B	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	11.0		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	12.2		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	257		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.29		1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	3.00		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	2.15		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	99.7	85	120	
4-Bromofluorobenzene	95.7	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-12	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW01-050714	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/13/2014 10:58
Workgroup #:	WG475561	**Analyst:**	QX	**Run Date:**	05/13/2014 13:43
Collect Date:	05/07/2014 08:45	**Dilution:**	1	**File ID:**	16G42896
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	33.5		5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-12	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW01-050714	**Prep Method:**	9056	**Prep Date:**	05/09/2014 08:46
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	11/06/2013 10:26
Workgroup #:	WG475071	**Analyst:**	JBK	**Run Date:**	05/09/2014 09:54
Collect Date:	05/07/2014 08:45	**Dilution:**	5	**File ID:**	I1_050914-07
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfate	14808-79-8	167		10.0	5.00	2.50
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-12	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW01-050714	**Prep Method:**	9056	**Prep Date:**	05/09/2014 08:46
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	11/06/2013 10:26
Workgroup #:	WG475071	**Analyst:**	JBK	**Run Date:**	05/09/2014 10:12
Collect Date:	05/07/2014 08:45	**Dilution:**	50	**File ID:**	I1_050914-08
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	981		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-12	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW01-050714	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	04/14/2014 16:15
Workgroup #:	WG475674	**Analyst:**	TMM	**Run Date:**	05/13/2014 12:15
Collect Date:	05/07/2014 08:45	**Dilution:**	50	**File ID:**	1V.1405131215-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		5.69		2.00	2.00	1.00

Certificate of Analysis

Sample #:	L14050603-12	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW01-050714	**Prep Method:**	EPA 376.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	EPA 376.1	**Cal Date:**	
Workgroup #:	WG475518	**Analyst:**	DLP	**Run Date:**	05/12/2014 18:00
Collect Date:	05/07/2014 08:45	**Dilution:**	1	**File ID:**	ET.1405121800-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-12	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW01-050714	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG476559	**Analyst:**	DCM	**Run Date:**	05/19/2014 16:52
Collect Date:	05/07/2014 08:45	**Dilution:**	1	**File ID:**	TC05192014.024
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	5.25		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L14050603-12	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW01-050714	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG476559	**Analyst:**	DCM	**Run Date:**	05/19/2014 16:52
Collect Date:	05/07/2014 08:45	**Dilution:**	1	**File ID:**	TC05192014.024
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		23.4		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L14050603-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW08-050714	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/14/2014 21:47
Workgroup #:	WG476633	**Analyst:**	ADC	**Run Date:**	05/20/2014 01:03
Collect Date:	05/07/2014 10:05	**Dilution:**	10	**File ID:**	9M963385
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	3.37	B	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	4.88	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	Q	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	57.3		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	101		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	1590		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	5.00	U	10.0	5.00	2.50
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.01	J	10.0	5.00	2.50
Trichloroethene	79-01-6	4.41	J	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	95.7	75	120	

B	The reported result is associated with a contaminated method blank.
J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-13	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW08-050714	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/13/2014 10:58
Workgroup #:	WG475561	**Analyst:**	QX	**Run Date:**	05/13/2014 14:02
Collect Date:	05/07/2014 10:05	**Dilution:**	1	**File ID:**	16G42898
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	6.97		5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-13	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-050714	**Prep Method:**	9056	**Prep Date:**	05/09/2014 08:46
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	11/06/2013 10:26
Workgroup #:	WG475071	**Analyst:**	JBK	**Run Date:**	05/09/2014 10:30
Collect Date:	05/07/2014 10:05	**Dilution:**	10	**File ID:**	I1_050914-09
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfate	14808-79-8	365		20.0	10.0	5.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-13	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-050714	**Prep Method:**	9056	**Prep Date:**	05/09/2014 08:46
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	11/06/2013 10:26
Workgroup #:	WG475071	**Analyst:**	JBK	**Run Date:**	05/09/2014 10:47
Collect Date:	05/07/2014 10:05	**Dilution:**	100	**File ID:**	I1_050914-10
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1380		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-13	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW08-050714	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	04/14/2014 16:15
Workgroup #:	WG475674	**Analyst:**	TMM	**Run Date:**	05/13/2014 12:15
Collect Date:	05/07/2014 10:05	**Dilution:**	1	**File ID:**	1V.1405131215-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.282		0.0400	0.0400	0.0200

Certificate of Analysis

Sample #:	L14050603-13	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW08-050714	**Prep Method:**	EPA 376.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	EPA 376.1	**Cal Date:**	
Workgroup #:	WG475518	**Analyst:**	DLP	**Run Date:**	05/12/2014 18:00
Collect Date:	05/07/2014 10:05	**Dilution:**	1	**File ID:**	ET.1405121800-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-13	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-050714	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG476762	**Analyst:**	DCM	**Run Date:**	05/20/2014 20:34
Collect Date:	05/07/2014 10:05	**Dilution:**	3	**File ID:**	TC05202014.031
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	10.6		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L14050603-13	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-050714	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG476762	**Analyst:**	DCM	**Run Date:**	05/20/2014 20:34
Collect Date:	05/07/2014 10:05	**Dilution:**	3	**File ID:**	TC05202014.031
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		80.6		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L14050603-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/14/2014 21:47
Workgroup #:	WG476699	**Analyst:**	TMB	**Run Date:**	05/20/2014 11:23
Collect Date:	05/07/2014 00:01	**Dilution:**	1	**File ID:**	9M963398
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	97.9	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW09A-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2014 22:36
Workgroup #:	WG476502	**Analyst:**	FJB/MDA	**Run Date:**	05/19/2014 04:05
Collect Date:	05/06/2014 09:10	**Dilution:**	1	**File ID:**	17M005104
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.1	85	115	
1,2-Dichloroethane-d4	89.7	70	120	
Toluene-d8	99.0	85	120	
4-Bromofluorobenzene	106	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW10-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2014 22:36
Workgroup #:	WG476502	**Analyst:**	FJB/MDA	**Run Date:**	05/19/2014 04:25
Collect Date:	05/06/2014 10:20	**Dilution:**	1	**File ID:**	17M005105
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.6	85	115	
1,2-Dichloroethane-d4	88.2	70	120	
Toluene-d8	97.1	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW02-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2014 22:36
Workgroup #:	WG476502	**Analyst:**	FJB/MDA	**Run Date:**	05/19/2014 04:44
Collect Date:	05/06/2014 10:50	**Dilution:**	1	**File ID:**	17M005106
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.440	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.5	85	115	
1,2-Dichloroethane-d4	90.5	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	110	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW05-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2014 22:36
Workgroup #:	WG476502	**Analyst:**	FJB/MDA	**Run Date:**	05/19/2014 05:04
Collect Date:	05/06/2014 12:15	**Dilution:**	1	**File ID:**	17M005107
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.3	85	115	
1,2-Dichloroethane-d4	88.0	70	120	
Toluene-d8	99.4	85	120	
4-Bromofluorobenzene	110	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW12-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/14/2014 21:47
Workgroup #:	WG476633	**Analyst:**	ADC	**Run Date:**	05/19/2014 22:31
Collect Date:	05/06/2014 14:10	**Dilution:**	1	**File ID:**	9M963380
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.161	B	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	97.3	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW12MS-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/14/2014 21:47
Workgroup #:	WG476633	**Analyst:**	ADC	**Run Date:**	05/19/2014 17:30
Collect Date:	05/06/2014 14:10	**Dilution:**	1	**File ID:**	9M963370
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.7		10.0	5.00	2.50
Benzene	71-43-2	20.8		1.00	0.250	0.125
Bromobenzene	108-86-1	21.1		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.2		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.2		1.00	0.500	0.250
Bromoform	75-25-2	17.3		2.00	1.00	0.500
Bromomethane	74-83-9	23.4		2.00	1.00	0.500
2-Butanone	78-93-3	22.6		10.0	5.00	2.50
n-Butylbenzene	104-51-8	22.4		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.4		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.1		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.1		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.5		1.00	0.500	0.250
Chlorobenzene	108-90-7	18.8		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.4		1.00	0.500	0.250
Chloroethane	75-00-3	21.8		2.00	1.00	0.500
Chloroform	67-66-3	21.0		1.00	0.250	0.125
Chloromethane	74-87-3	32.6	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	21.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	19.0		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.6		1.00	0.500	0.250
Dibromomethane	74-95-3	20.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.6		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.1		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.7		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	33.5		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	20.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.8		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.7		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.0		1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	21.5		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.5		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.6		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	21.9	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.8		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.5		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.4		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.1		1.00	0.500	0.250
2-Hexanone	591-78-6	21.5		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.4		1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.0		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.3		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.3		10.0	5.00	2.50
Methylene chloride	75-09-2	19.6		1.00	0.500	0.250
Naphthalene	91-20-3	22.5		1.00	0.400	0.200
n-Propylbenzene	103-65-1	19.8		1.00	0.250	0.125
Styrene	100-42-5	20.4		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	20.7		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.3		1.00	0.500	0.250
Toluene	108-88-3	20.0		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	22.2		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.3		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	21.0		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.5		1.00	0.500	0.250
Trichloroethene	79-01-6	20.0		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.6		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	20.5		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	22.0		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	25.6		1.00	0.500	0.250
o-Xylene	95-47-6	18.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	39.6		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	98.9	85	120	
4-Bromofluorobenzene	92.6	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW12MSD-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/14/2014 21:47
Workgroup #:	WG476633	**Analyst:**	ADC	**Run Date:**	05/19/2014 18:00
Collect Date:	05/06/2014 14:10	**Dilution:**	1	**File ID:**	9M963371
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.7		10.0	5.00	2.50
Benzene	71-43-2	20.5		1.00	0.250	0.125
Bromobenzene	108-86-1	20.9		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.5		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.4		1.00	0.500	0.250
Bromoform	75-25-2	17.3		2.00	1.00	0.500
Bromomethane	74-83-9	23.8		2.00	1.00	0.500
2-Butanone	78-93-3	22.5		10.0	5.00	2.50
n-Butylbenzene	104-51-8	22.4		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.9		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.0		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.6		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.2		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.5		1.00	0.500	0.250
Chloroethane	75-00-3	21.9		2.00	1.00	0.500
Chloroform	67-66-3	20.7		1.00	0.250	0.125
Chloromethane	74-87-3	32.8	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.8		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	21.6		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	18.7		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.1		1.00	0.500	0.250
Dibromomethane	74-95-3	20.2		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.1		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.4		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	21.3		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	33.6		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	20.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.8		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.2		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	20.5		1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	21.4		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.2		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.7		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	21.1	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.7		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.5		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.4		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.2		1.00	0.500	0.250
2-Hexanone	591-78-6	21.6		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.9		1.00	0.500	0.250
Isopropylbenzene	98-82-8	18.9		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.4		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.2		10.0	5.00	2.50
Methylene chloride	75-09-2	19.6		1.00	0.500	0.250
Naphthalene	91-20-3	22.9		1.00	0.400	0.200
n-Propylbenzene	103-65-1	19.9		1.00	0.250	0.125
Styrene	100-42-5	20.5		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.9		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	20.7		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.9		1.00	0.500	0.250
Toluene	108-88-3	19.9		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	22.2		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.4		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	20.9		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.2		1.00	0.500	0.250
Trichloroethene	79-01-6	19.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.2		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	20.5		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	22.1		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.3		1.00	0.500	0.250
Vinyl chloride	75-01-4	26.1		1.00	0.500	0.250
o-Xylene	95-47-6	18.8		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	39.4		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	97.8	85	120	
4-Bromofluorobenzene	92.7	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW13-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2014 22:36
Workgroup #:	WG476502	**Analyst:**	FJB/MDA	**Run Date:**	05/19/2014 06:22
Collect Date:	05/06/2014 15:20	**Dilution:**	2	**File ID:**	17M005111
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	10.0	U	20.0	10.0	5.00
Benzene	71-43-2	1.21	J	2.00	0.500	0.250
Bromobenzene	108-86-1	0.500	U	2.00	0.500	0.250
Bromochloromethane	74-97-5	0.800	U	2.00	0.800	0.400
Bromodichloromethane	75-27-4	1.00	U	2.00	1.00	0.500
Bromoform	75-25-2	2.00	U	4.00	2.00	1.00
Bromomethane	74-83-9	2.00	U	4.00	2.00	1.00
2-Butanone	78-93-3	10.0	U	20.0	10.0	5.00
n-Butylbenzene	104-51-8	1.00	U	2.00	1.00	0.500
sec-Butylbenzene	135-98-8	1.00	U	2.00	1.00	0.500
tert-Butylbenzene	98-06-6	1.00	U	2.00	1.00	0.500
Carbon disulfide	75-15-0	2.00	U	4.00	2.00	1.00
Carbon tetrachloride	56-23-5	1.00	U	2.00	1.00	0.500
Chlorobenzene	108-90-7	0.500	U	2.00	0.500	0.250
Chlorodibromomethane	124-48-1	1.00	U	2.00	1.00	0.500
Chloroethane	75-00-3	2.00	Q	4.00	2.00	1.00
Chloroform	67-66-3	0.500	U	2.00	0.500	0.250
Chloromethane	74-87-3	2.00	U	4.00	2.00	1.00
2-Chlorotoluene	95-49-8	0.500	U	2.00	0.500	0.250
4-Chlorotoluene	106-43-4	1.00	U	2.00	1.00	0.500
1,2-Dibromo-3-chloropropane	96-12-8	4.00	U	10.0	4.00	2.00
1,2-Dibromoethane	106-93-4	1.00	U	2.00	1.00	0.500
Dibromomethane	74-95-3	1.00	U	2.00	1.00	0.500
1,2-Dichlorobenzene	95-50-1	0.500	U	2.00	0.500	0.250
1,3-Dichlorobenzene	541-73-1	1.00	U	2.00	1.00	0.500
1,4-Dichlorobenzene	106-46-7	0.500	U	2.00	0.500	0.250
Dichlorodifluoromethane	75-71-8	1.00	U	2.00	1.00	0.500
1,1-Dichloroethane	75-34-3	15.5		2.00	0.500	0.250
1,2-Dichloroethane	107-06-2	13.7		2.00	1.00	0.500
1,1-Dichloroethene	75-35-4	240		4.00	2.00	1.00
cis-1,2-Dichloroethene	156-59-2	0.755	J	2.00	1.00	0.500

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.00	U	2.00	1.00	0.500
1,2-Dichloropropane	78-87-5	0.800	U	2.00	0.800	0.400
1,3-Dichloropropane	142-28-9	0.800	U	2.00	0.800	0.400
2,2-Dichloropropane	594-20-7	1.00	U	2.00	1.00	0.500
cis-1,3-Dichloropropene	10061-01-5	1.00	U	2.00	1.00	0.500
trans-1,3-Dichloropropene	10061-02-6	2.00	U	4.00	2.00	1.00
1,1-Dichloropropene	563-58-6	1.00	U	2.00	1.00	0.500
Ethylbenzene	100-41-4	1.00	U	2.00	1.00	0.500
2-Hexanone	591-78-6	10.0	U	20.0	10.0	5.00
Hexachlorobutadiene	87-68-3	1.00	U	2.00	1.00	0.500
Isopropylbenzene	98-82-8	1.00	U	2.00	1.00	0.500
p-Isopropyltoluene	99-87-6	1.00	U	2.00	1.00	0.500
4-Methyl-2-pentanone	108-10-1	10.0	U	20.0	10.0	5.00
Methylene chloride	75-09-2	1.00	U	2.00	1.00	0.500
Naphthalene	91-20-3	0.800	U	2.00	0.800	0.400
n-Propylbenzene	103-65-1	0.500	U	2.00	0.500	0.250
Styrene	100-42-5	0.500	U	2.00	0.500	0.250
1,1,1,2-Tetrachloroethane	630-20-6	1.00	U	2.00	1.00	0.500
1,1,2,2-Tetrachloroethane	79-34-5	0.800	U	2.00	0.800	0.400
Tetrachloroethene	127-18-4	1.00	U	2.00	1.00	0.500
Toluene	108-88-3	1.00	U	2.00	1.00	0.500
1,2,3-Trichlorobenzene	87-61-6	0.600	U	2.00	0.600	0.300
1,2,4-Trichlorobenzene	120-82-1	0.800	U	2.00	0.800	0.400
1,1,1-Trichloroethane	71-55-6	1.00	U	2.00	1.00	0.500
1,1,2-Trichloroethane	79-00-5	1.99	J	2.00	1.00	0.500
Trichloroethene	79-01-6	1.25	J	2.00	1.00	0.500
Trichlorofluoromethane	75-69-4	1.00	U	2.00	1.00	0.500
1,2,3-Trichloropropane	96-18-4	2.00	U	4.00	2.00	1.00
1,2,4-Trimethylbenzene	95-63-6	1.00	U	2.00	1.00	0.500
1,3,5-Trimethylbenzene	108-67-8	1.00	U	2.00	1.00	0.500
Vinyl chloride	75-01-4	0.644	J	2.00	1.00	0.500
o-Xylene	95-47-6	1.00	U	2.00	1.00	0.500
m-,p-Xylene	179601-23-1	2.00	U	4.00	2.00	1.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.3	85	115	
1,2-Dichloroethane-d4	86.9	70	120	
Toluene-d8	97.9	85	120	
4-Bromofluorobenzene	111	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW13FD-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2014 22:36
Workgroup #:	WG476502	**Analyst:**	FJB/MDA	**Run Date:**	05/19/2014 06:42
Collect Date:	05/06/2014 15:20	**Dilution:**	2	**File ID:**	17M005112
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	10.0	U	20.0	10.0	5.00
Benzene	71-43-2	0.790	J	2.00	0.500	0.250
Bromobenzene	108-86-1	0.500	U	2.00	0.500	0.250
Bromochloromethane	74-97-5	0.800	U	2.00	0.800	0.400
Bromodichloromethane	75-27-4	1.00	U	2.00	1.00	0.500
Bromoform	75-25-2	2.00	U	4.00	2.00	1.00
Bromomethane	74-83-9	2.00	U	4.00	2.00	1.00
2-Butanone	78-93-3	10.0	U	20.0	10.0	5.00
n-Butylbenzene	104-51-8	1.00	U	2.00	1.00	0.500
sec-Butylbenzene	135-98-8	1.00	U	2.00	1.00	0.500
tert-Butylbenzene	98-06-6	1.00	U	2.00	1.00	0.500
Carbon disulfide	75-15-0	2.00	U	4.00	2.00	1.00
Carbon tetrachloride	56-23-5	1.00	U	2.00	1.00	0.500
Chlorobenzene	108-90-7	0.500	U	2.00	0.500	0.250
Chlorodibromomethane	124-48-1	1.00	U	2.00	1.00	0.500
Chloroethane	75-00-3	2.00	Q	4.00	2.00	1.00
Chloroform	67-66-3	0.500	U	2.00	0.500	0.250
Chloromethane	74-87-3	2.00	U	4.00	2.00	1.00
2-Chlorotoluene	95-49-8	0.500	U	2.00	0.500	0.250
4-Chlorotoluene	106-43-4	1.00	U	2.00	1.00	0.500
1,2-Dibromo-3-chloropropane	96-12-8	4.00	U	10.0	4.00	2.00
1,2-Dibromoethane	106-93-4	1.00	U	2.00	1.00	0.500
Dibromomethane	74-95-3	1.00	U	2.00	1.00	0.500
1,2-Dichlorobenzene	95-50-1	0.500	U	2.00	0.500	0.250
1,3-Dichlorobenzene	541-73-1	1.00	U	2.00	1.00	0.500
1,4-Dichlorobenzene	106-46-7	0.500	U	2.00	0.500	0.250
Dichlorodifluoromethane	75-71-8	1.00	U	2.00	1.00	0.500
1,1-Dichloroethane	75-34-3	14.4		2.00	0.500	0.250
1,2-Dichloroethane	107-06-2	12.9		2.00	1.00	0.500
1,1-Dichloroethene	75-35-4	228		4.00	2.00	1.00
cis-1,2-Dichloroethene	156-59-2	0.684	J	2.00	1.00	0.500

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.00	U	2.00	1.00	0.500
1,2-Dichloropropane	78-87-5	0.800	U	2.00	0.800	0.400
1,3-Dichloropropane	142-28-9	0.800	U	2.00	0.800	0.400
2,2-Dichloropropane	594-20-7	1.00	U	2.00	1.00	0.500
cis-1,3-Dichloropropene	10061-01-5	1.00	U	2.00	1.00	0.500
trans-1,3-Dichloropropene	10061-02-6	2.00	U	4.00	2.00	1.00
1,1-Dichloropropene	563-58-6	1.00	U	2.00	1.00	0.500
Ethylbenzene	100-41-4	1.00	U	2.00	1.00	0.500
2-Hexanone	591-78-6	10.0	U	20.0	10.0	5.00
Hexachlorobutadiene	87-68-3	1.00	U	2.00	1.00	0.500
Isopropylbenzene	98-82-8	1.00	U	2.00	1.00	0.500
p-Isopropyltoluene	99-87-6	1.00	U	2.00	1.00	0.500
4-Methyl-2-pentanone	108-10-1	10.0	U	20.0	10.0	5.00
Methylene chloride	75-09-2	1.00	U	2.00	1.00	0.500
Naphthalene	91-20-3	0.800	U	2.00	0.800	0.400
n-Propylbenzene	103-65-1	0.500	U	2.00	0.500	0.250
Styrene	100-42-5	0.500	U	2.00	0.500	0.250
1,1,1,2-Tetrachloroethane	630-20-6	1.00	U	2.00	1.00	0.500
1,1,2,2-Tetrachloroethane	79-34-5	0.800	U	2.00	0.800	0.400
Tetrachloroethene	127-18-4	1.00	U	2.00	1.00	0.500
Toluene	108-88-3	1.00	U	2.00	1.00	0.500
1,2,3-Trichlorobenzene	87-61-6	0.600	U	2.00	0.600	0.300
1,2,4-Trichlorobenzene	120-82-1	0.800	U	2.00	0.800	0.400
1,1,1-Trichloroethane	71-55-6	1.00	U	2.00	1.00	0.500
1,1,2-Trichloroethane	79-00-5	1.95	J	2.00	1.00	0.500
Trichloroethene	79-01-6	1.27	J	2.00	1.00	0.500
Trichlorofluoromethane	75-69-4	1.00	U	2.00	1.00	0.500
1,2,3-Trichloropropane	96-18-4	2.00	U	4.00	2.00	1.00
1,2,4-Trimethylbenzene	95-63-6	1.00	U	2.00	1.00	0.500
1,3,5-Trimethylbenzene	108-67-8	1.00	U	2.00	1.00	0.500
Vinyl chloride	75-01-4	0.619	J	2.00	1.00	0.500
o-Xylene	95-47-6	1.00	U	2.00	1.00	0.500
m-,p-Xylene	179601-23-1	2.00	U	4.00	2.00	1.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	85.9	85	115	
1,2-Dichloroethane-d4	83.6	70	120	
Toluene-d8	94.1	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW07-050614	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2014 22:36
Workgroup #:	WG476502	**Analyst:**	FJB/MDA	**Run Date:**	05/19/2014 05:23
Collect Date:	05/06/2014 16:20	**Dilution:**	1	**File ID:**	17M005108
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.44		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.9	85	115	
1,2-Dichloroethane-d4	90.3	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW14-050714	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/14/2014 21:47
Workgroup #:	WG476633	**Analyst:**	ADC	**Run Date:**	05/20/2014 00:02
Collect Date:	05/07/2014 08:15	**Dilution:**	1	**File ID:**	9M963383
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.130	B	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.538	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.897	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	4.27		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	110	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	99.8	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW01-050714	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/14/2014 21:47
Workgroup #:	WG476633	**Analyst:**	ADC	**Run Date:**	05/20/2014 00:32
Collect Date:	05/07/2014 08:45	**Dilution:**	1	**File ID:**	9M963384
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.140	B	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	11.0		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	12.2		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	257		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.29		1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	3.00		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	2.15		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	99.7	85	120	
4-Bromofluorobenzene	95.7	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW08-050714	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/14/2014 21:47
Workgroup #:	WG476633	**Analyst:**	ADC	**Run Date:**	05/20/2014 01:03
Collect Date:	05/07/2014 10:05	**Dilution:**	10	**File ID:**	9M963385
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	3.37	B	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	4.88	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	Q	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	57.3		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	101		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	1590		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.01	J	10.0	5.00	2.50
Trichloroethene	79-01-6	4.41	J	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	95.7	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/14/2014 21:47
Workgroup #:	WG476699	**Analyst:**	TMB	**Run Date:**	05/20/2014 11:23
Collect Date:	05/07/2014 00:01	**Dilution:**	1	**File ID:**	9M963398
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	97.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 081913
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 47153

Internal Standard: STD59587 Surrogate Standard: STD59627
CCV: STD59677 LCS: STD59678 MS/MSD: STD59678

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG441888(ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M957893	WG441887-01 50ng BFB STD	NA	1	1		08/19/13 15:08
9M957894	WG441887-02 50.0ug/L STD 8260	NA	1	1	STD59582	08/19/13 15:33
9M957895	WG441888-01 5.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 16:23
9M957896	WG441888-02 20.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 16:53
9M957897	WG441888-03 50.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 17:22
9M957898	WG441888-04 100.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 17:51
9M957899	WG441888-05 200.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 18:20
9M957900	WG441888-06 300.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 18:48
9M957901	WG441888-07 400.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 19:17
9M957902	WG441888-08 500.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 19:46
9M957903	RINSE	NA	1	1		08/19/13 20:16
9M957904	WG441888-09 100.0ug/L A9 ALT SRC 826	NA	1	1	STD59238	08/19/13 20:45

Approved: August 27, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 101313
Analyst1: MES Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 17
Method: 624 SOP: MSV10 Rev: 10
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 47805

Internal Standard: STD60409 Surrogate Standard: STD60842
CCV: STD60752 LCS: STD60749 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG448463

Comments: Rerun MDLs for isobutanol and cyclohexanone.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M000183	WG448462-01 50NG BFB STD 8260	NA	1	1	STD60561	10/13/13 16:29
17M000184	WG448462-01 50NG BFB STD 8260	NA	1	1	STD60561	10/13/13 16:45
17M000185	WG448466-02 50ug/L WATER STD 8260	NA	1	1	STD60687	10/13/13 17:20
17M000186	WG448462-02 5ug/L APPIX STD	NA	1	1	STD60752	10/13/13 17:48
17M000187	WG448462-03 20ug/L APPIX STD	NA	1	1	STD60752	10/13/13 18:15
17M000188	WG448462-04 50ug/L APPIX STD	NA	1	1	STD60752	10/13/13 18:43
17M000189	WG448462-05 100ug/L APPIX STD	NA	1	1	STD60752	10/13/13 19:11
17M000190	WG448462-06 200ug/L APPIX STD	NA	1	1	STD60752	10/13/13 19:39
17M000191	WG448462-07 300ug/L APPIX STD	NA	1	1	STD60752	10/13/13 20:07
17M000192	WG448462-08 400ug/L APPIX STD	NA	1	1	STD60752	10/13/13 20:35
17M000193	WG448462-09 500ug/L APPIX STD	NA	1	1	STD60752	10/13/13 21:03
17M000194	RINSE	NA	1	1		10/13/13 21:31
17M000195	WG448462-10 100ug/L APPIX ALT SRC	NA	1	1	STD60749	10/13/13 22:00
17M000196	RINSE	NA	1	1		10/13/13 22:27
17M000197	L13100005-12 BLANK	NA	1	1		10/13/13 22:55
17M000198	L13100005-13 BLANK	NA	1	1		10/13/13 23:23
17M000199	L13100005-01 MDL	NA	1	1	STD60752	10/13/13 23:51
17M000200	L13100005-02 MDL	NA	1	1	STD60752	10/14/13 00:18
17M000201	L13100005-03 MDL	NA	1	1	STD60752	10/14/13 00:47
17M000202	L13100005-04 MDL	NA	1	1	STD60752	10/14/13 01:14
17M000203	L13100005-05 MDL	NA	1	1	STD60752	10/14/13 01:43
17M000204	L13100005-06 MDL	NA	1	1	STD60752	10/14/13 02:11
17M000205	L13100005-07 MDL	NA	1	1	STD60752	10/14/13 02:39

Approved: October 18, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 041414
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 5030C/5035A SOP: PAT01 Rev: 16
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID: 49812

Internal Standard: STD63891 Surrogate Standard: STD93931
CCV: STD63936 LCS: STD63935 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG471242 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M962409	WG471242-01 50ng BFB STD 8260	NA	1	1	STD63746	04/14/14 16:19
9M962410	RINSE	NA	1	1	STD63645	04/14/14 16:43
9M962411	WG471242-02 0.3ug/L STD 8260	NA	1	1	STD63895	04/14/14 17:14
9M962412	WG471242-03 0.4ug/L STD 8260	NA	1	1	STD63895	04/14/14 17:44
9M962413	WG471242-04 1.0ug/L STD 8260	NA	1	1	STD63895	04/14/14 18:15
9M962414	WG471242-05 2.0ug/L STD 8260	NA	1	1	STD63895	04/14/14 18:45
9M962415	WG471242-06 5.0ug/L STD 8260	NA	1	1	STD63895	04/14/14 19:15
9M962416	WG471242-07 20.0ug/L STD 8260	NA	1	1	STD63895	04/14/14 19:46
9M962417	WG471242-08 50.0ug/L STD 8260	NA	1	1	STD63895	04/14/14 20:16
9M962418	WG471242-09 100.0ug/L STD 8260	NA	1	1	STD63895	04/14/14 20:46
9M962419	WG471242-10 200.0ug/L STD 8260	NA	1	1	STD63895	04/14/14 21:16
9M962420	WG471242-11 300.0ug/L STD 8260	NA	1	1	STD63895	04/14/14 21:47
9M962421	RINSE	NA	1	1	STD63895	04/14/14 22:16
9M962422	WG471242-12 50.0ug/L SSCV 8260	NA	1	1	STD63713	04/14/14 22:47

Approved: April 17, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 051814
Analyst1: FJB Analyst2: MDA
Method: 8260B SOP: MSV01 Rev: 19
Method: 5030C/5035A SOP: PAT01 Rev: 16
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID: 50340

Internal Standard: STD64603 Surrogate Standard: STD64074
CCV: STD64486 LCS: STD64452 MS/MSD: STD64452

Column 1 ID: 624-VMS Column 2 ID: NA
Workgroups:

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M005068	WG476501-01 50ng BFB	NA	1	1	STD64405	05/18/14 16:00
17M005069	WG476501-02 20ug/L CCV 8260	NA	1	1	STD64486	05/18/14 16:18
17M005070	WG476501-01 50ng BFB	NA	1	1	STD64405	05/18/14 16:36
17M005071	WG476501-02 20ug/L CCV 8260	NA	1	1	STD64486	05/18/14 16:53
17M005072	WG476501-01 50ng BFB	NA	1	1	STD64405	05/18/14 17:18
17M005073	WG476501-01 50ng BFB	NA	1	1	STD64405	05/18/14 17:33
17M005074	WG476501-02 50ug/L CCV 8260	NA	1	1	STD64486	05/18/14 17:53
17M005075	WG476501-02 50ug/L CCV 8260	NA	1	1	STD64486	05/18/14 18:32
17M005076	RINSE	NA	1	1		05/18/14 19:06
17M005077	WG476501-01 50ngBFB	NA	1	1	STD64405	05/18/14 19:23
17M005078	WG476501-02 0.3ug/L STD 8260	NA	1	1	STD64594	05/18/14 19:41
17M005079	WG476501-03 0.4ug/L STD 8260	NA	1	1	STD64594	05/18/14 20:00
17M005080	WG476501-04 1.0ug/L STD 8260	NA	1	1	STD64594	05/18/14 20:20
17M005081	WG476501-05 2.0ug/L STD 8260	NA	1	1	STD64594	05/18/14 20:39
17M005082	WG476501-06 5.0ug/L STD 8260	NA	1	1	STD64594	05/18/14 20:59
17M005083	WG476501-07 20ug/L STD 8260	NA	1	1	STD64594	05/18/14 21:18
17M005084	WG476501-08 50ug/L STD 8260	NA	1	1	STD64594	05/18/14 21:38
17M005085	WG476501-09 100ug/L STD 8260	NA	1	1	STD64594	05/18/14 21:57
17M005086	WG476501-10 200ug/L STD 8260	NA	1	1	STD64594	05/18/14 22:17
17M005087	WG476501-11 300ug/L STD 8260	NA	1	1	STD64594	05/18/14 22:36
17M005088	RINSE	NA	1	1		05/18/14 22:56
17M005089	WG476501-12 50ug/L ICV 8260	NA	1	1	STD64452	05/18/14 23:15
17M005090	RINSE	NA	1	1		05/18/14 23:35
17M005091	WG476502-01 BLANK 8260	NA	1	1		05/18/14 23:55
17M005092	WG476502-02 20ug/L LCS 8260	NA	1	1	STD64452	05/19/14 00:14
17M005093	L14050420-04 MS A 20X 8260	<2	1	20		05/19/14 00:34
17M005094	L14050420-05 MSD A 20X 8260	<2	1	20		05/19/14 00:49
17M005095	L14050415-01 B D1 100,000X 8260	4	1	100000		05/19/14 01:09
17M005096	L14050415-02 B D1 100,000X 8260	<2	1	100000		05/19/14 01:28
17M005097	L14050415-03 B D1 2000X 8260	<2	1	2000		05/19/14 01:48
17M005098	L14050415-06 B 5X 8260	<2	1	5		05/19/14 02:08
17M005099	L14050415-07 B D1 2500X 8260	4	1	2500		05/19/14 02:27
17M005100	L14050460-01 B 8260	<2	1	1		05/19/14 02:47
17M005101	L14050415-09 B 8260	<2	1	1		05/19/14 03:06

Approved: May 28, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 051814
Analyst1: FJB Analyst2: MDA
Method: 8260B SOP: MSV01 Rev: 19
Method: 5030C/5035A SOP: PAT01 Rev: 16
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID: 50340

Internal Standard: STD64603 Surrogate Standard: STD64074
CCV: STD64486 LCS: STD64452 MS/MSD: STD64452

Column 1 ID: 624-VMS Column 2 ID: NA
Workgroups:

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M005102	L14050360-03 B 8260	<2	1	1		05/19/14 03:26
17M005103	L14050420-01 A TB 8260	<2	1	1		05/19/14 03:45
17M005104	L14050603-01 A 8260	<2	1	1		05/19/14 04:05
17M005105	L14050603-02 A 8260	<2	1	1		05/19/14 04:25
17M005106	L14050603-03 A 8260	<2	1	1		05/19/14 04:44
17M005107	L14050603-04 A 8260	<2	1	1		05/19/14 05:04
17M005108	L14050603-10 A 8260	<2	1	1		05/19/14 05:23
17M005109	L14050420-03 A 20X 8260	<2	1	20		05/19/14 05:43
17M005110	L14050420-02 A 10X 8260	<2	1	10		05/19/14 06:03
17M005111	L14050603-08 A 2X 8260	<2	1	2		05/19/14 06:22
17M005112	L14050603-09 A 2X 8260	<2	1	2		05/19/14 06:42
17M005113	RINSE	NA	1	1		05/19/14 07:02

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5 File ID: 17M005072				
	RR, BFB failed.			
8 File ID: 17M005075				
	needs ICAL			
52 File ID: 17M005094				
	needs dilution			
28 File ID: 17M005095				
	L14050415-01 analyzed out of hold due to elevated pH.			
31 File ID: 17M005098				
	needs dilution			
32 File ID: 17M005099				
	L14050415-07 analyzed out of hold due to elevated pH.			
49 File ID: 17M005100				

Approved: May 28, 2014

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS17	Dataset:	051814		
Analyst1:	FJB	Analyst2:	MDA		
Method:	8260B	SOP:	MSV01	Rev:	19
Method:	5030C/5035A	SOP:	PAT01	Rev:	16
Method:	624	SOP:	MSV10	Rev:	12
Maintenance Log ID:	50340				

Internal Standard: STD64603 Surrogate Standard: STD64074

CCV: STD64486 LCS: STD64452 MS/MSD: STD64452

Column 1 ID: 624-VMS Column 2 ID: NA

Workgroups:

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			L14050460-01 trip blank analyzed out of hold.	
35 File ID: 17M005102				
			DNR	
43 File ID: 17M005110				
			needs dilution	

Approved: May 28, 2014

Page: 3

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 051914
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16

Maintenance Log ID: 50285

Internal Standard: STD63891 Surrogate Standard: STD64521
CCV: STD64308 LCS: STD64451 MS/MSD: STD64451

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG476633

Comments: Dilution analyses for 333-01,392-01, and 923-01 were all analyzed OOH.
L14050314-16 to -19 were analyzed OOH when evaluated to the hour.
L1405314-16 to -19, 603-05,526-02, and 603-11 to 13 all have F flag hits of benzene. Benzene was 0.37ppb in the blank.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M963362	WG476631-01 BFB 50ng 8260	NA	1	1	STD64405	05/19/14 13:32
9M963363	WG476631-02 50ug/L CCV 8260	NA	1	1	STD64308	05/19/14 13:57
9M963364	WG476631-02 50ug/L CCV 8260	NA	1	1	STD64308	05/19/14 14:29
9M963365	WG476XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	05/19/14 15:00
9M963366	WG476633-01 VBLK0519 BLANK 8260	NA	1	1		05/19/14 15:30
9M963367	WG476633-02 20ug/L LCS 8260	NA	1	1	STD64451	05/19/14 16:00
9M963368	L14050526-03 A MS 826-SPE	<2	1	1	STD64451	05/19/14 16:30
9M963369	L14050526-04 A MSD 826-SPE	<2	1	1	STD64451	05/19/14 17:00
9M963370	L14050603-06 B MS 826-LOW	<2	1	1	STD64451	05/19/14 17:30
9M963371	L14050603-07 B MSD 826-LOW	<2	1	1	STD64451	05/19/14 18:00
9M963372	L14050923-01 B D1 10X 826-SPE	6	1	10		05/19/14 18:31
9M963373	L14050392-01 B D1 500X 826-SPE	<2	1	500		05/19/14 19:00
9M963374	L14050333-01 B D1 100X 826-SPE	<2	1	100		05/19/14 19:31
9M963375	L14050526-07 A 826-A9	<2	1	1		05/19/14 20:01
9M963376	L14050314-16 B 826-SPE2	<2	1	1		05/19/14 20:31
9M963377	L14050314-17 B 826-SPE2	<2	1	1		05/19/14 21:00
9M963378	L14050314-18 B 826-SPE2	<2	1	1		05/19/14 21:31
9M963379	L14050314-19 B 826-SPE2	<2	1	1		05/19/14 22:01
9M963380	L14050603-05 B 826-LOW	<2	1	1		05/19/14 22:31
9M963381	L14050526-02 A 826-A9	<2	1	1		05/19/14 23:01
9M963382	L14050526-01 A 826-A9	<2	1	1		05/19/14 23:32
9M963383	L14050603-11 A 826-LOW	<2	1	1		05/20/14 00:02
9M963384	L14050603-12 A 826-LOW	<2	1	1		05/20/14 00:32
9M963385	L14050603-13 A 10X 826-LOW	<2	1	10		05/20/14 01:03
9M963386	RINSE	NA	1	1		05/20/14 01:33
9M963387	RINSE	NA	1	1		05/20/14 02:04

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				

Approved: May 22, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 051914
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16

Maintenance Log ID: 50285

Internal Standard: STD63891 Surrogate Standard: STD64521
CCV: STD64308 LCS: STD64451 MS/MSD: STD64451

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG476633

Comments: Dilution analyses for 333-01,392-01, and 923-01 were all analyzed OOH.
L14050314-16 to -19 were analyzed OOH when evaluated to the hour.
L1405314-16 to -19, 603-05,526-02, and 603-11 to 13 all have F flag hits of benzene. Benzene was 0.37ppb in the blank.

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 9M963363				
	RR CCV, vc is high.			
14	X	1	Carry-over contamination	
File ID: 9M963375				
	L14050526-07			

Approved: May 22, 2014

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 052014
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 19
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16

Maintenance Log ID: 50298

Internal Standard: STD63891 Surrogate Standard: STD64521
CCV: STD64308/STD64408 LCS: STD64600 MS/MSD: STD64502

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG476699,WG476875

Comments: 495-03,326-17, and 526-07 are all trip blanks and were all analyzed out of hold.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M963388	WG476698-01 50ng BFB STD 8260	NA	1	1	STD64405	05/20/14 06:25
9M963389	WG476698-02 50ug/L CCV STD 8260	NA	1	1	STD64308	05/20/14 06:50
9M963390	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD64408	05/20/14 07:21
9M963391	WG476699-01 VBLK0520 BLANK STD 826	NA	1	1		05/20/14 07:51
9M963392	WG476699-02 20ug/L LCS STD 8260	NA	1	1	STD64600	05/20/14 08:22
9M963393	WG476699-03 20ug/L LCSDUP STD 8260	NA	1	1	STD64600	05/20/14 08:52
9M963394	L14050591-01 A TB 826-SPE	<2	1	1		05/20/14 09:22
9M963395	L14050526-07 B TB 826-SPE	<2	1	1		05/20/14 09:52
9M963396	L14050326-17 A TB 826-LOW	<2	1	1		05/20/14 10:23
9M963397	L14050495-03 A TB 826-LOW	<2	1	1		05/20/14 10:53
9M963398	L14050603-14 A TB 826-LOW	<2	1	1		05/20/14 11:23
9M963399	L14050591-03 A FB 826-SPE	<2	1	1		05/20/14 11:54
9M963400	L14050591-02 A FB 826-SPE	<2	1	1		05/20/14 12:24
9M963401	L14050591-04 A 826-SPE	<2	1	1		05/20/14 12:54
9M963402	L14050591-05 A 826-SPE	<2	1	1		05/20/14 13:24
9M963403	L14050591-07 A 826-SPE	<2	1	1		05/20/14 13:54
9M963404	L14050591-06 A 826-SPE	<2	1	1		05/20/14 14:25
9M963405	L14050730-01 A 826-SPE1	<2	1	1		05/20/14 14:55
9M963406	L14050827-05 A 826-SPE	<2	1	1		05/20/14 15:25
9M963407	L14050827-04 A 826-SPE	<2	1	1		05/20/14 15:55
9M963408	L14051236-01 B D1 10X 826-AP-SPE D1	6	1	10		05/20/14 16:25
9M963409	WG476874-01 BFB 50ng 8260	NA	1	1	STD64405	05/20/14 18:33
9M963410	WG476874-02 50ug/L CCV 8260	NA	1	1	STD64405	05/20/14 18:58
9M963411	WG476878-01 100ug/L CCV A9	NA	1	1	STD64408	05/20/14 19:31
9M963412	WG476875-01 VBLK0520 BLANK 8260	NA	1	1		05/20/14 20:01
9M963413	WG476875-02 20ug/L LCS 8260	NA	1	1	STD64600	05/20/14 20:31
9M963414	L14051275-06 MS A 826-A9-SPE	NA	1	1	STD64626	05/20/14 21:01
9M963415	L14051275-07 MSD A 826-A9-SPE	NA	1	1	STD64626	05/20/14 21:31
9M963416	WG476875-03 100ug/L LCS A9	NA	1	1		05/20/14 22:01
9M963417	L14051274-01 TB A 826-A9-SPE	NA	1	1		05/20/14 22:31
9M963418	L14051222-05 AB A 826-A9-SPE	NA	1	1		05/20/14 23:02
9M963419	L14051275-03 AB A 826-A9-SPE	NA	1	1		05/20/14 23:32
9M963420	L14051275-05 REF A 826-A9-SPE	NA	1	1		05/21/14 00:03
9M963421	L14051222-01 A 826-A9-SPE	NA	1	1		05/21/14 00:33

Approved: May 23, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 052014
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 19
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16

Maintenance Log ID: 50298

Internal Standard: STD63891 Surrogate Standard: STD64521
CCV: STD64308/STD64408 LCS: STD64600 MS/MSD: STD64502

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG476699,WG476875

Comments: 495-03,326-17, and 526-07 are all trip blanks and were all analyzed out of hold.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M963422	L14051222-02 A 826-A9-SPE	NA	1	1		05/21/14 01:03
9M963423	L14051274-02 A 826-A9-SPE	NA	1	1		05/21/14 01:34
9M963424	L14051274-03 A 826-A9-SPE	NA	1	1		05/21/14 02:04
9M963425	L14051274-04 A 826-A9-SPE	NA	1	1		05/21/14 02:34
9M963426	L14051275-01 A 826-A9-SPE	NA	1	1		05/21/14 03:05
9M963427	L14051275-02 A 826-A9-SPE	NA	1	1		05/21/14 03:35
9M963428	L14051275-04 A 826-A9-SPE	NA	1	1		05/21/14 04:06
9M963429	L14051237-05 A 826-A9-SPE	NA	1	1		05/21/14 04:36
9M963430	L14051237-06 A 826-A9-SPE	NA	1	1		05/21/14 05:06
9M963431	L14051237-07 A 826-A9-SPE	NA	1	1		05/21/14 05:36
9M963432	L14051222-03 A 826-A9-SPE	NA	1	1		05/21/14 06:06
9M963433	L14051222-04 A 826-A9-SPE	NA	1	1		05/21/14 06:36
9M963434	CCV	NA	1	1		05/21/14 07:06
9M963435	RINSE	NA	1	1		05/21/14 07:37

Comments

Seq.	Rerun	Dil.	Reason	Analytes
8				
File ID: 9M963395				
L14050526-07 reporting TCE and benzene only.				

Approved: May 23, 2014

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 19-AUG-2013
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: WG441888
Runlog ID: 55275
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	NA
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
26-AUG-2013

Secondary Reviewer:
27-AUG-2013

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-27-2013 08:13:37

Microbac Laboratories Inc.

Data Checklist

Date: 13-OCT-2013
Analyst: MES
Analyst: NA
Method: 8260/624
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 56448
Analytical Workgroups: WG448463

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	NA
Recoveries	NA
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	NA
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	MES
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 17-OCT-2013

Secondary Reviewer: 18-OCT-2013

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-18-2013 08:13:54

Microbac Laboratories Inc.

Data Checklist

Date: 14-APR-2014
Analyst: ADC
Analyst: NA
Method: 8260/624
Instrument: HPMS9
Curve Workgroup: WG471242
Runlog ID: 60228
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	NA
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
16-APR-2014

Secondary Reviewer:
17-APR-2014

CHECKLIST1 - Modified 03/05/2008
Generated: APR-17-2014 10:08:19

Microbac Laboratories Inc.

Data Checklist

Date: 18-MAY-2014
Analyst: FJB
Analyst: MDA
Method: 8260/624
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 61156
Analytical Workgroups: WG476502,WG476501

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	WTD
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	MDA
Secondary Reviewer	MES
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-MAY-2014

Secondary Reviewer:
28-MAY-2014

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-28-2014 16:46:24

Microbac Laboratories Inc.

Data Checklist

Date: 19-MAY-2014
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 61075
Analytical Workgroups: WG476633

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	MES
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 22-MAY-2014

Secondary Reviewer: 22-MAY-2014

CHECKLIST1 - Modified 03/05/2008

Generated: MAY-22-2014 15:45:30

Microbac Laboratories Inc.

Data Checklist

Date: 20-MAY-2014
Analyst: TMB
Analyst: FJB
Method: 8260B
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 61091
Analytical Workgroups: WG476699,WG476875

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	MES
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 23-MAY-2014

Secondary Reviewer: 23-MAY-2014

CHECKLIST1 - Modified 03/05/2008

Generated: MAY-23-2014 11:31:57

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG476502

Login Number: L14050603

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW09A-050614	01	05/06/14					05/19/2014	12.8	14		05/19/14	12.8	14	
67WW10-050614	02	05/06/14					05/19/2014	12.8	14		05/19/14	12.8	14	
67WW02-050614	03	05/06/14					05/19/2014	12.7	14		05/19/14	12.7	14	
67WW05-050614	04	05/06/14					05/19/2014	12.7	14		05/19/14	12.7	14	
67WW13-050614	08	05/06/14					05/19/2014	12.6	14		05/19/14	12.6	14	
67WW13FD-050614	09	05/06/14					05/19/2014	12.6	14		05/19/14	12.6	14	
67WW07-050614	10	05/06/14					05/19/2014	12.5	14		05/19/14	12.5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3562257
Report generated 05/29/2014 08:12

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG476633

Login Number: L14050603

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW12-050614	05	05/06/14					05/19/2014	13.3	14		05/19/14	13.3	14	
67WW12MS-050614	06	05/06/14					05/19/2014	13.1	14		05/19/14	13.1	14	
67WW12MSD-050614	07	05/06/14					05/19/2014	13.2	14		05/19/14	13.2	14	
67WW14-050714	11	05/07/14					05/20/2014	12.7	14		05/20/14	12.7	14	
67WW01-050714	12	05/07/14					05/20/2014	12.7	14		05/20/14	12.7	14	
67WW08-050714	13	05/07/14					05/20/2014	12.6	14		05/20/14	12.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3562257
Report generated 05/29/2014 08:12

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG476699

Login Number: L14050603

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
TRIP BLANK	14	05/07/14					05/20/2014	13.5	14		05/20/14	13.5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3562257
Report generated 05/29/2014 08:12

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L14050603
Instrument Id: HPMS9
Workgroup (AAB#): WG476633

Method: 8260
CAL ID: HPMS9-14-APR-14
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L14050603-05	1.00	01	105	105	97.3	100
L14050603-06	1.00	01	103	102	92.6	98.9
L14050603-07	1.00	01	100	101	92.7	97.8
L14050603-11	1.00	01	110	108	99.8	103
L14050603-12	1.00	01	107	104	95.7	99.7
L14050603-13	10.0	DL01	106	106	95.7	100
WG476633-01	1.00	01	104	105	95.5	101
WG476633-02	1.00	01	106	106	91.8	100

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3562263
Report generated: 05/29/2014 08:13

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L14050603
Instrument Id: HPMS9
Workgroup (AAB#): WG476699

Method: 8260
CAL ID: HPMS9 - 14-APR-14
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L14050603-14	1.00	01	105	103	97.9	101
WG476699-01	1.00	01	105	103	97.5	101
WG476699-02	1.00	01	107	108	98.7	105
WG476699-03	1.00	01	103	103	90.5	99.3

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3562263
Report generated: 05/29/2014 08:13

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L14050603
Instrument Id: HPMS17
Workgroup (AAB#): WG476502

Method: 8260
CAL ID: HPMS17-18-MAY-14
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L14050603-01	1.00	01	89.7	93.1	106	99.0
L14050603-02	1.00	01	88.2	90.6	102	97.1
L14050603-03	1.00	01	90.5	92.5	110	101
L14050603-04	1.00	01	88.0	90.3	110	99.4
L14050603-08	2.00	DL01	86.9	90.3	111	97.9
L14050603-09	2.00	DL01	83.6	85.9	101	94.1
L14050603-10	1.00	01	90.3	92.9	107	100
WG476502-01	1.00	01	88.7	94.7	109	100
WG476502-02	1.00	01	83.9	90.2	96.5	92.4

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3562263
Report generated: 05/29/2014 08:13

METHOD BLANK SUMMARY

Login Number: L14050603
Blank File ID: 17M005091
Prep Date: 05/18/14 23:55
Analyzed Date: 05/18/14 23:55
Analyst: FJB/MDA

Work Group: WG476502
Blank Sample ID: WG476502-01
Instrument ID: HPMS17
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG476502-02	17M005092	05/19/14 00:14	01
67WW09A-050614	L14050603-01	17M005104	05/19/14 04:05	01
67WW10-050614	L14050603-02	17M005105	05/19/14 04:25	01
67WW02-050614	L14050603-03	17M005106	05/19/14 04:44	01
67WW05-050614	L14050603-04	17M005107	05/19/14 05:04	01
67WW07-050614	L14050603-10	17M005108	05/19/14 05:23	01
67WW13-050614	L14050603-08	17M005111	05/19/14 06:22	DL01
67WW13FD-050614	L14050603-09	17M005112	05/19/14 06:42	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 3575370
Report generated 05/29/2014 08:12

METHOD BLANK SUMMARY

Login Number: L14050603
Blank File ID: 9M963366
Prep Date: 05/19/14 15:30
Analyzed Date: 05/19/14 15:30
Analyst: ADC

Work Group: WG476633
Blank Sample ID: WG476633-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG476633-02	9M963367	05/19/14 16:00	01
67WW12MS-050614	L14050603-06	9M963370	05/19/14 17:30	01
67WW12MSD-050614	L14050603-07	9M963371	05/19/14 18:00	01
67WW12-050614	L14050603-05	9M963380	05/19/14 22:31	01
67WW14-050714	L14050603-11	9M963383	05/20/14 00:02	01
67WW01-050714	L14050603-12	9M963384	05/20/14 00:32	01
67WW08-050714	L14050603-13	9M963385	05/20/14 01:03	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 3575370
Report generated 05/29/2014 08:12

METHOD BLANK SUMMARY

Login Number: L14050603
Blank File ID: 9M963391
Prep Date: 05/20/14 07:51
Analyzed Date: 05/20/14 07:51
Analyst: TMB

Work Group: WG476699
Blank Sample ID: WG476699-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG476699-02	9M963392	05/20/14 08:22	01
LCS2	WG476699-03	9M963393	05/20/14 08:52	01
TRIP BLANK	L14050603-14	9M963398	05/20/14 11:23	01

Report Name: BLANK_SUMMARY
PDF File ID: 3575370
Report generated 05/29/2014 08:12

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L14050603 Prep Date: 05/18/14 23:55 Sample ID: WG476502-01
Instrument ID: HPMS17 Run Date: 05/18/14 23:55 Prep Method: 5030B/5030C/503
File ID: 17M005091 Analyst: FJB/MDA Method: 8260B
Workgroup (AAB#): WG476502 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-18-MAY-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.154	1	J
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.853	1	J
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.158	1	J
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.310	1	J
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 3575371
29-MAY-2014 08:12

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14050603 Prep Date: 05/18/14 23:55 Sample ID: WG476502-01
Instrument ID: HPMS17 Run Date: 05/18/14 23:55 Prep Method: 5030B/5030C/503
File ID: 17M005091 Analyst: FJB/MDA Method: 8260B
Workgroup (AAB#): WG476502 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-18-MAY-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.255	1	J
n-Propylbenzene	0.125	1.00	0.167	1	J
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.240	1	J
1,2,4-Trichlorobenzene	0.200	1.00	0.407	1	J
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.7	85 - 115	PASS
1,2-Dichloroethane-d4	88.7	70 - 120	PASS
Toluene-d8	100	85 - 120	PASS
4-Bromofluorobenzene	109	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3575371
29-MAY-2014 08:12

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14050603 Prep Date: 05/19/14 15:30 Sample ID: WG476633-01
Instrument ID: HPMS9 Run Date: 05/19/14 15:30 Prep Method: 5030B/5030C/503
File ID: 9M963366 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG476633 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS9-14-APR-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.372	1	J
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 3575371
29-MAY-2014 08:12

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14050603 Prep Date: 05/19/14 15:30 Sample ID: WG476633-01
Instrument ID: HPMS9 Run Date: 05/19/14 15:30 Prep Method: 5030B/5030C/503
File ID: 9M963366 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG476633 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS9-14-APR-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	105	85 - 115	PASS
1,2-Dichloroethane-d4	104	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	95.5	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3575371
29-MAY-2014 08:12

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14050603 Prep Date: 05/20/14 07:51 Sample ID: WG476699-01
Instrument ID: HPMS9 Run Date: 05/20/14 07:51 Prep Method: 5030B/5030C/503
File ID: 9M963391 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG476699 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS9-14-APR-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 3575371
29-MAY-2014 08:12

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14050603 Prep Date: 05/20/14 07:51 Sample ID: WG476699-01
Instrument ID: HPMS9 Run Date: 05/20/14 07:51 Prep Method: 5030B/5030C/503
File ID: 9M963391 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG476699 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS9-14-APR-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	103	85 - 115	PASS
1,2-Dichloroethane-d4	105	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	97.5	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3575371
29-MAY-2014 08:12

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14050603 | Run Date: 05/19/2014 | Sample ID: WG476502-02
Instrument ID: HPMS17 | Run Time: 00:14 | Prep Method: 5030B/5030C/503
File ID: 17M005092 | Analyst: FJB/MDA | Method: 8260B
Workgroup (AAB#): WG476502 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD64452 | Cal ID: HPMS17-18-MAY-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	23.1	115	40 - 140	
Benzene	20.0	17.9	89.7	80 - 120	
Bromobenzene	20.0	17.7	88.5	75 - 125	
Bromochloromethane	20.0	18.7	93.6	65 - 130	
Bromodichloromethane	20.0	18.1	90.7	75 - 120	
Bromoform	20.0	15.8	78.9	70 - 130	
Bromomethane	20.0	18.9	94.3	30 - 145	
2-Butanone	20.0	20.1	101	30 - 150	
n-Butylbenzene	20.0	18.7	93.3	70 - 135	
sec-Butylbenzene	20.0	17.0	84.8	70 - 125	
tert-Butylbenzene	20.0	17.2	86.2	70 - 130	
Carbon disulfide	20.0	13.7	68.6	35 - 160	
Carbon tetrachloride	20.0	18.2	90.9	65 - 140	
Chlorobenzene	20.0	16.9	84.6	80 - 120	
Chlorodibromomethane	20.0	19.6	98.1	60 - 135	
Chloroethane	20.0	18.8	94.2	60 - 135	
Chloroform	20.0	18.3	91.5	65 - 135	
Chloromethane	20.0	19.7	98.3	40 - 125	
2-Chlorotoluene	20.0	15.3	76.7	75 - 125	
4-Chlorotoluene	20.0	16.6	82.9	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.5	97.5	50 - 130	
1,2-Dibromoethane	20.0	18.8	94.0	80 - 120	
Dibromomethane	20.0	18.2	91.1	75 - 125	
1,2-Dichlorobenzene	20.0	17.8	88.9	70 - 120	
1,3-Dichlorobenzene	20.0	16.4	82.2	75 - 125	
1,4-Dichlorobenzene	20.0	18.0	90.1	75 - 125	
Dichlorodifluoromethane	20.0	20.2	101	30 - 155	
1,1-Dichloroethane	20.0	18.1	90.5	70 - 135	
1,2-Dichloroethane	20.0	18.8	93.9	70 - 130	
1,1-Dichloroethene	20.0	16.4	82.2	70 - 130	
cis-1,2-Dichloroethene	20.0	18.3	91.6	70 - 125	
trans-1,2-Dichloroethene	20.0	19.0	95.0	60 - 140	
1,2-Dichloropropane	20.0	18.1	90.7	75 - 125	
1,3-Dichloropropane	20.0	19.1	95.5	75 - 125	
2,2-Dichloropropane	20.0	13.9	69.7	70 - 135	*
cis-1,3-Dichloropropene	20.0	17.7	88.7	70 - 130	
trans-1,3-Dichloropropene	20.0	17.0	84.8	55 - 140	
1,1-Dichloropropene	20.0	18.0	90.1	75 - 130	
Ethylbenzene	20.0	17.8	89.1	75 - 125	
2-Hexanone	20.0	20.5	102	55 - 130	
Hexachlorobutadiene	20.0	17.3	86.6	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 3562258
Report generated: 05/28/2014 16:35

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14050603 Run Date: 05/19/2014 Sample ID: WG476502-02
Instrument ID: HPMS17 Run Time: 00:14 Prep Method: 5030B/5030C/503
File ID: 17M005092 Analyst: FJB/MDA Method: 8260B
Workgroup (AAB#): WG476502 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD64452 Cal ID: HPMS17 - 18-MAY-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	17.1	85.5	75 - 125	
p-Isopropyltoluene	20.0	16.9	84.3	75 - 130	
4-Methyl-2-pentanone	20.0	19.2	96.1	60 - 135	
Methylene chloride	20.0	18.4	91.8	55 - 140	
Naphthalene	20.0	18.5	92.3	55 - 140	
n-Propylbenzene	20.0	16.5	82.6	70 - 130	
Styrene	20.0	18.1	90.3	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	18.6	93.1	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	16.9	84.7	65 - 130	
Tetrachloroethene	20.0	18.3	91.7	45 - 150	
Toluene	20.0	18.6	92.8	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.3	86.7	55 - 140	
1,2,4-Trichlorobenzene	20.0	17.3	86.3	65 - 135	
1,1,1-Trichloroethane	20.0	18.2	91.2	65 - 130	
1,1,2-Trichloroethane	20.0	20.1	101	75 - 125	
Trichloroethene	20.0	19.4	97.0	70 - 125	
Trichlorofluoromethane	20.0	19.9	99.5	60 - 145	
1,2,3-Trichloropropane	20.0	18.1	90.5	75 - 125	
1,2,4-Trimethylbenzene	20.0	18.1	90.7	75 - 130	
1,3,5-Trimethylbenzene	20.0	18.3	91.4	75 - 130	
Vinyl chloride	20.0	18.3	91.3	50 - 145	
o-Xylene	20.0	17.0	84.9	80 - 120	
m-,p-Xylene	40.0	34.4	86.0	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	90.2	85 - 115	PASS
1,2-Dichloroethane-d4	83.9	70 - 120	PASS
Toluene-d8	92.4	85 - 120	PASS
4-Bromofluorobenzene	96.5	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 3562258
Report generated: 05/28/2014 16:35

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14050603 Run Date: 05/19/2014 Sample ID: WG476633-02
Instrument ID: HPMS9 Run Time: 16:00 Prep Method: 5030B/5030C/503
File ID: 9M963367 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG476633 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD64451 Cal ID: HPMS9-14-APR-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	22.7	113	40 - 140	
Benzene	20.0	20.5	102	80 - 120	
Bromobenzene	20.0	20.2	101	75 - 125	
Bromochloromethane	20.0	20.2	101	65 - 130	
Bromodichloromethane	20.0	20.8	104	75 - 120	
Bromoform	20.0	17.0	85.2	70 - 130	
Bromomethane	20.0	23.1	116	30 - 145	
2-Butanone	20.0	23.2	116	30 - 150	
n-Butylbenzene	20.0	21.8	109	70 - 135	
sec-Butylbenzene	20.0	19.3	96.5	70 - 125	
tert-Butylbenzene	20.0	18.7	93.7	70 - 130	
Carbon disulfide	20.0	19.9	99.3	35 - 160	
Carbon tetrachloride	20.0	21.1	105	65 - 140	
Chlorobenzene	20.0	18.7	93.3	80 - 120	
Chlorodibromomethane	20.0	19.9	99.7	60 - 135	
Chloroethane	20.0	21.7	108	60 - 135	
Chloroform	20.0	20.6	103	65 - 135	
Chloromethane	20.0	31.9	160	40 - 125	*
2-Chlorotoluene	20.0	18.6	93.1	75 - 125	
4-Chlorotoluene	20.0	19.3	96.6	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	18.3	91.5	50 - 130	
1,2-Dibromoethane	20.0	19.3	96.5	80 - 120	
Dibromomethane	20.0	19.7	98.7	75 - 125	
1,2-Dichlorobenzene	20.0	18.9	94.7	70 - 120	
1,3-Dichlorobenzene	20.0	18.3	91.6	75 - 125	
1,4-Dichlorobenzene	20.0	20.5	102	75 - 125	
Dichlorodifluoromethane	20.0	31.9	159	30 - 155	*
1,1-Dichloroethane	20.0	20.7	104	70 - 135	
1,2-Dichloroethane	20.0	21.8	109	70 - 130	
1,1-Dichloroethene	20.0	19.7	98.5	70 - 130	
cis-1,2-Dichloroethene	20.0	21.0	105	70 - 125	
trans-1,2-Dichloroethene	20.0	21.3	106	60 - 140	
1,2-Dichloropropane	20.0	21.2	106	75 - 125	
1,3-Dichloropropane	20.0	19.3	96.7	75 - 125	
2,2-Dichloropropane	20.0	21.0	105	70 - 135	
cis-1,3-Dichloropropene	20.0	21.2	106	70 - 130	
trans-1,3-Dichloropropene	20.0	19.0	94.9	55 - 140	
1,1-Dichloropropene	20.0	20.9	104	75 - 130	
Ethylbenzene	20.0	19.7	98.5	75 - 125	
2-Hexanone	20.0	21.7	109	55 - 130	
Hexachlorobutadiene	20.0	18.3	91.3	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 3562258
Report generated: 05/28/2014 16:35

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14050603 Run Date: 05/19/2014 Sample ID: WG476633-02
Instrument ID: HPMS9 Run Time: 16:00 Prep Method: 5030B/5030C/503
File ID: 9M963367 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG476633 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD64451 Cal ID: HPMS9-14-APR-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	18.7	93.5	75 - 125	
p-Isopropyltoluene	20.0	19.9	99.6	75 - 130	
4-Methyl-2-pentanone	20.0	21.3	106	60 - 135	
Methylene chloride	20.0	19.6	98.0	55 - 140	
Naphthalene	20.0	21.5	108	55 - 140	
n-Propylbenzene	20.0	19.2	95.8	70 - 130	
Styrene	20.0	20.3	101	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.4	97.2	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.2	90.8	65 - 130	
Tetrachloroethene	20.0	19.3	96.6	45 - 150	
Toluene	20.0	19.5	97.6	75 - 120	
1,2,3-Trichlorobenzene	20.0	21.6	108	55 - 140	
1,2,4-Trichlorobenzene	20.0	18.7	93.3	65 - 135	
1,1,1-Trichloroethane	20.0	21.1	105	65 - 130	
1,1,2-Trichloroethane	20.0	19.8	98.9	75 - 125	
Trichloroethene	20.0	20.8	104	70 - 125	
Trichlorofluoromethane	20.0	23.9	119	60 - 145	
1,2,3-Trichloropropane	20.0	19.4	97.2	75 - 125	
1,2,4-Trimethylbenzene	20.0	21.1	105	75 - 130	
1,3,5-Trimethylbenzene	20.0	21.2	106	75 - 130	
Vinyl chloride	20.0	25.5	127	50 - 145	
o-Xylene	20.0	18.0	90.0	80 - 120	
m-,p-Xylene	40.0	39.7	99.4	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	106	85 - 115	PASS
1,2-Dichloroethane-d4	106	70 - 120	PASS
Toluene-d8	100	85 - 120	PASS
4-Bromofluorobenzene	91.8	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 3562258
Report generated: 05/28/2014 16:35

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14050603 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS9 Matrix: Water Method: 8260B
Workgroup (AAB#): WG476699 Units: ug/L
QC Key: DOD4 Lot #: STD64600

Sample ID: WG476699-02 LCS File ID: 9M963392 Run Date: 05/20/2014 08:22
Sample ID: WG476699-03 LCS2 File ID: 9M963393 Run Date: 05/20/2014 08:52

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.6	103	20.0	19.8	98.9	4.15	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.1	110	20.0	21.1	106	4.49	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	20.6	103	20.0	19.4	97.1	5.87	65 - 130	30	
1,1,2-Trichloroethane	20.0	21.1	105	20.0	20.2	101	4.36	75 - 125	30	
1,1-Dichloroethane	20.0	21.6	108	20.0	20.9	105	2.98	70 - 135	30	
1,1-Dichloroethene	20.0	21.0	105	20.0	19.9	99.5	5.44	70 - 130	30	
1,1-Dichloropropene	20.0	21.5	107	20.0	20.5	103	4.49	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	24.0	120	20.0	22.1	110	8.58	55 - 140	30	
1,2,3-Trichloropropane	20.0	22.6	113	20.0	21.8	109	3.38	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	20.4	102	20.0	19.7	98.4	3.40	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	22.7	113	20.0	21.7	108	4.43	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	20.5	103	20.0	20.0	100	2.58	50 - 130	30	
1,2-Dibromoethane	20.0	20.7	104	20.0	20.2	101	2.70	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.8	104	20.0	19.9	99.4	4.49	70 - 120	30	
1,2-Dichloroethane	20.0	22.9	115	20.0	22.1	110	3.78	70 - 130	30	
1,2-Dichloropropane	20.0	21.9	109	20.0	21.1	105	3.80	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	22.7	114	20.0	21.6	108	5.01	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.2	101	20.0	19.0	94.9	6.35	75 - 125	30	
1,3-Dichloropropane	20.0	21.1	106	20.0	20.1	101	4.95	75 - 125	30	
1,4-Dichlorobenzene	20.0	22.0	110	20.0	20.6	103	6.40	75 - 125	30	
2,2-Dichloropropane	20.0	22.2	111	20.0	22.1	110	0.489	70 - 135	30	
2-Butanone	20.0	25.8	129	20.0	25.3	126	1.99	30 - 150	30	
2-Chlorotoluene	20.0	20.8	104	20.0	18.0	89.9	14.6	75 - 125	30	
2-Hexanone	20.0	24.1	120	20.0	23.3	116	3.43	55 - 130	30	
4-Chlorotoluene	20.0	20.8	104	20.0	21.0	105	0.897	75 - 130	30	
4-Methyl-2-pentanone	20.0	22.0	110	20.0	21.3	107	3.03	60 - 135	30	
Acetone	20.0	24.8	124	20.0	23.1	116	7.05	40 - 140	30	
Benzene	20.0	21.2	106	20.0	20.6	103	2.52	80 - 120	30	
Bromobenzene	20.0	22.2	111	20.0	20.6	103	7.48	75 - 125	30	
Bromochloromethane	20.0	20.7	103	20.0	21.1	105	1.85	65 - 130	30	
Bromodichloromethane	20.0	21.2	106	20.0	20.8	104	2.14	75 - 120	30	
Bromoform	20.0	17.8	89.1	20.0	16.9	84.5	5.22	70 - 130	30	
Bromomethane	20.0	25.4	127	20.0	24.4	122	3.98	30 - 145	30	
Carbon disulfide	20.0	19.6	97.8	20.0	19.4	97.0	0.755	35 - 160	30	
Carbon tetrachloride	20.0	21.3	107	20.0	20.6	103	3.42	65 - 140	30	
Chlorobenzene	20.0	19.7	98.6	20.0	18.9	94.6	4.18	80 - 120	30	
Chloroethane	20.0	22.8	114	20.0	22.7	114	0.423	60 - 135	30	
Chloroform	20.0	21.1	106	20.0	20.8	104	1.64	65 - 135	30	
Chloromethane	20.0	37.8	189	20.0	36.7	183	3.03	40 - 125	30	*
cis-1,2-Dichloroethene	20.0	21.2	106	20.0	20.8	104	1.90	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3564703
Report generated: 05/29/2014 08:12

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14050603 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS9 Matrix: Water Method: 8260B
Workgroup (AAB#): WG476699 Units: ug/L
QC Key: DOD4 Lot #: STD64600

Sample ID: WG476699-02 LCS File ID: 9M963392 Run Date: 05/20/2014 08:22
Sample ID: WG476699-03 LCS2 File ID: 9M963393 Run Date: 05/20/2014 08:52

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.7	109	20.0	21.9	110	0.992	70 - 130	30	
Chlorodibromomethane	20.0	21.3	106	20.0	20.4	102	4.42	60 - 135	30	
Dibromomethane	20.0	20.6	103	20.0	20.3	102	1.12	75 - 125	30	
Dichlorodifluoromethane	20.0	36.5	183	20.0	30.8	154	16.9	30 - 155	30	*
Ethylbenzene	20.0	20.8	104	20.0	20.1	100	3.84	75 - 125	30	
Hexachlorobutadiene	20.0	19.3	96.6	20.0	18.1	90.5	6.59	50 - 140	30	
Isopropylbenzene	20.0	19.7	98.5	20.0	19.1	95.4	3.20	75 - 125	30	
m-,p-Xylene	40.0	41.1	103	40.0	39.8	99.5	3.30	75 - 130	30	
Methylene chloride	20.0	20.6	103	20.0	20.0	100	2.69	55 - 140	30	
n-Butylbenzene	20.0	23.9	119	20.0	21.9	109	8.68	70 - 135	30	
n-Propylbenzene	20.0	20.9	104	20.0	19.4	96.8	7.54	70 - 130	30	
Naphthalene	20.0	24.7	123	20.0	23.0	115	7.11	55 - 140	30	
o-Xylene	20.0	19.0	95.1	20.0	18.6	92.9	2.35	80 - 120	30	
p-Isopropyltoluene	20.0	21.3	107	20.0	20.1	101	5.94	75 - 130	30	
sec-Butylbenzene	20.0	20.7	103	20.0	19.3	96.5	6.90	70 - 125	30	
Styrene	20.0	21.4	107	20.0	20.5	102	4.57	65 - 135	30	
tert-Butylbenzene	20.0	20.5	102	20.0	18.5	92.7	9.98	70 - 130	30	
Tetrachloroethene	20.0	20.5	103	20.0	19.5	97.6	4.86	45 - 150	30	
Toluene	20.0	20.9	104	20.0	20.0	100	4.24	75 - 120	30	
trans-1,2-Dichloroethene	20.0	22.1	111	20.0	21.6	108	2.33	60 - 140	30	
trans-1,3-Dichloropropene	20.0	20.2	101	20.0	19.6	97.9	3.32	55 - 140	30	
Trichloroethene	20.0	21.6	108	20.0	20.7	103	4.26	70 - 125	30	
Trichlorofluoromethane	20.0	24.4	122	20.0	22.5	113	8.08	60 - 145	30	
Vinyl chloride	20.0	27.6	138	20.0	26.7	134	3.46	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	107	103	70 - 120	PASS
Dibromofluoromethane	108	103	85 - 115	PASS
4-Bromofluorobenzene	98.7	90.5	75 - 120	PASS
Toluene-d8	105	99.3	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3564703
Report generated: 05/29/2014 08:12

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L14050603 Cal ID: HPMS9- 14-APR-14 Worknum: WG476633
Instrument ID: HPMS9 Contract #: Prep Method: 5030B/5030C/
Parent ID: L14050603-05 File ID: 9M963380 Dil: 1 Method: 5035A
Sample ID: L14050603-06 MS File ID: 9M963370 Dil: 1 Matrix: 8260B
Sample ID: L14050603-07 MSD File ID: 9M963371 Dil: 1 Units: Water
ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	20.1	101	20.0	19.9	99.7	0.810	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	21.0	105	20.0	20.9	105	0.316	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	20.7	104	20.0	20.7	103	0.120	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	19.5	97.7	20.0	20.2	101	3.50	75 - 125	30	
1,1-Dichloroethane	U	20.0	20.7	104	20.0	20.7	104	0.114	70 - 135	30	
1,1-Dichloroethene	U	20.0	19.7	98.7	20.0	19.2	96.1	2.66	70 - 130	30	
1,1-Dichloropropene	U	20.0	20.4	102	20.0	20.4	102	0.317	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	22.2	111	20.0	22.2	111	0.251	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	20.5	102	20.0	20.5	103	0.0626	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	19.3	96.7	20.0	19.4	97.1	0.447	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	22.0	110	20.0	22.1	110	0.329	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	19.0	95	20.0	18.7	93.6	1.49	50 - 130	30	
1,2-Dibromoethane	U	20.0	19.6	97.9	20.0	20.1	101	2.85	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	19.6	98.1	20.0	20.1	100	2.44	70 - 120	30	
1,2-Dichloroethane	U	20.0	21.8	109	20.0	21.8	109	0.144	70 - 130	30	
1,2-Dichloropropane	U	20.0	21.5	108	20.0	21.2	106	1.46	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	22.0	110	20.0	22.3	111	1.29	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	19.1	95.7	20.0	19.4	97.1	1.48	75 - 125	30	
1,3-Dichloropropane	U	20.0	19.6	98	20.0	19.7	98.6	0.675	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	20.7	103	20.0	21.3	106	2.83	75 - 125	30	
2,2-Dichloropropane	U	20.0	21.9	109	20.0	21.1	105	3.66	70 - 135	30	
2-Butanone	U	20.0	22.6	113	20.0	22.5	112	0.629	30 - 150	30	
2-Chlorotoluene	U	20.0	18.6	93.1	20.0	18.8	93.8	0.793	75 - 125	30	
2-Hexanone	U	20.0	21.5	108	20.0	21.6	108	0.564	55 - 130	30	
4-Chlorotoluene	U	20.0	21.4	107	20.0	21.6	108	0.844	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	20.3	102	20.0	20.2	101	0.790	60 - 135	30	
Acetone	U	20.0	21.7	108	20.0	21.7	109	0.100	40 - 140	30	
Benzene	0.161	20.0	20.8	103	20.0	20.5	102	1.05	80 - 120	30	
Bromobenzene	U	20.0	21.1	105	20.0	20.9	104	1.03	75 - 125	30	
Bromochloromethane	U	20.0	20.2	101	20.0	20.5	102	1.14	65 - 130	30	
Bromodichloromethane	U	20.0	21.2	106	20.0	21.4	107	0.751	75 - 120	30	
Bromoform	U	20.0	17.3	86.7	20.0	17.3	86.6	0.163	70 - 130	30	
Bromomethane	U	20.0	23.4	117	20.0	23.8	119	1.46	30 - 145	30	
Carbon disulfide	U	20.0	19.1	95.3	20.0	19.2	96.2	0.955	35 - 160	30	
Carbon tetrachloride	U	20.0	20.5	102	20.0	20.6	103	0.548	65 - 140	30	
Chlorobenzene	U	20.0	18.8	94.2	20.0	19.2	95.9	1.78	80 - 120	30	
Chloroethane	U	20.0	21.8	109	20.0	21.9	110	0.517	60 - 135	30	
Chloroform	U	20.0	21.0	105	20.0	20.7	104	1.24	65 - 135	30	
Chloromethane	U	20.0	32.6	163	20.0	32.8	164	0.790	40 - 125	30	*
cis-1,2-Dichloroethene	U	20.0	21.0	105	20.0	20.5	102	2.37	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	21.8	109	20.0	21.7	108	0.431	70 - 130	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 3562259
Report generated 05/29/2014 08:12

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L14050603 Cal ID: HPMS9 14-APR-14 Worknum: WG476633

Instrument ID: HPMS9 Contract #: Prep Method: 5030B/5030C/

Parent ID: L14050603-05 File ID: 9M963380 Dil: 1 Method: 5035A

Sample ID: L14050603-06 MS File ID: 9M963370 Dil: 1 Matrix: 8260B

Sample ID: L14050603-07 MSD File ID: 9M963371 Dil: 1 Units: Water

ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	20.4	102	20.0	20.5	102	0.329	60 - 135	30	
Dibromomethane	U	20.0	20.4	102	20.0	20.2	101	0.769	75 - 125	30	
Dichlorodifluoromethane	U	20.0	33.5	167	20.0	33.6	168	0.360	30 - 155	30	*
Ethylbenzene	U	20.0	20.1	101	20.0	20.2	101	0.383	75 - 125	30	
Hexachlorobutadiene	U	20.0	18.4	92.2	20.0	18.9	94.6	2.56	50 - 140	30	
Isopropylbenzene	U	20.0	19.0	94.9	20.0	18.9	94.7	0.161	75 - 125	30	
m-,p-Xylene	U	40.0	39.6	98.9	40.0	39.4	98.6	0.315	75 - 130	30	
Methylene chloride	U	20.0	19.6	97.9	20.0	19.6	98	0.102	55 - 140	30	
n-Butylbenzene	U	20.0	22.4	112	20.0	22.4	112	0.159	70 - 135	30	
n-Propylbenzene	U	20.0	19.8	98.9	20.0	19.9	99.5	0.639	70 - 130	30	
Naphthalene	U	20.0	22.5	112	20.0	22.9	115	2.16	55 - 140	30	
o-Xylene	U	20.0	18.6	93.1	20.0	18.8	94	0.974	80 - 120	30	
p-Isopropyltoluene	U	20.0	20.3	102	20.0	20.4	102	0.301	75 - 130	30	
sec-Butylbenzene	U	20.0	19.4	97.1	20.0	19.9	99.4	2.38	70 - 125	30	
Styrene	U	20.0	20.4	102	20.0	20.5	103	0.597	65 - 135	30	
tert-Butylbenzene	U	20.0	19.1	95.5	20.0	19.0	95.2	0.236	70 - 130	30	
Tetrachloroethene	U	20.0	19.3	96.3	20.0	19.9	99.4	3.16	45 - 150	30	
Toluene	U	20.0	20.0	100	20.0	19.9	99.7	0.362	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	21.5	107	20.0	21.4	107	0.367	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	19.5	97.6	20.0	19.5	97.3	0.324	55 - 140	30	
Trichloroethene	U	20.0	20.0	100	20.0	19.7	98.7	1.28	70 - 125	30	
Trichlorofluoromethane	U	20.0	23.6	118	20.0	23.2	116	1.47	60 - 145	30	
Vinyl chloride	U	20.0	25.6	128	20.0	26.1	130	1.87	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 3562259
Report generated 05/29/2014 08:12

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14050603
Instrument: HPMS17
Analyst: MES
Workgroup: WG448462

Tune ID: WG448462-01
Run Date: 10/13/2013
Run Time: 16:45
File ID: 17M000184
Cal ID: HPMS17 - 13-OCT-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.4	9603	PASS
75.0	95.0	30.0	60.0	46.9	24464	PASS
95.0	95.0	100	100	100	52213	PASS
96.0	95.0	5.00	9.00	7.19	3755	PASS
173	174	0	2.00	1.14	488	PASS
174	95.0	50.0	100	82.2	42925	PASS
175	174	5.00	9.00	7.26	3116	PASS
176	174	95.0	101	97.1	41672	PASS
177	176	5.00	9.00	6.38	2660	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG448462-02	STD	01	10/13/2013 17:48	
WG448462-03	STD	01	10/13/2013 18:15	
WG448462-04	STD	01	10/13/2013 18:43	
WG448462-05	STD-CCV	01	10/13/2013 19:11	
WG448462-06	STD	01	10/13/2013 19:39	
WG448462-07	STD	01	10/13/2013 20:07	
WG448462-08	STD	01	10/13/2013 20:35	
WG448462-09	STD	01	10/13/2013 21:03	
WG448462-10	SSCV	01	10/13/2013 22:00	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3575372
Report generated 05/29/2014 08:12

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14050603
Instrument: HPMS17
Analyst: FJB/MDA
Workgroup: WG476501

Tune ID: WG476501-01
Run Date: 05/18/2014
Run Time: 19:23
File ID: 17M005077
Cal ID: HPMS17 - 18-MAY-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.2	3606	PASS
75.0	95.0	30.0	60.0	53.8	8387	PASS
95.0	95.0	100	100	100	15576	PASS
96.0	95.0	5.00	9.00	6.70	1044	PASS
173	174	0	2.00	0.737	90	PASS
174	95.0	50.0	100	78.4	12207	PASS
175	174	5.00	9.00	7.23	882	PASS
176	174	95.0	101	97.6	11915	PASS
177	176	5.00	9.00	6.35	757	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG476501-02	STD	01	05/18/2014 19:41	
WG476501-03	STD	01	05/18/2014 20:00	
WG476501-04	STD	01	05/18/2014 20:20	
WG476501-05	STD	01	05/18/2014 20:39	
WG476501-06	STD	01	05/18/2014 20:59	
WG476501-07	STD	01	05/18/2014 21:18	
WG476501-08	STD-CCV	01	05/18/2014 21:38	
WG476501-09	STD	01	05/18/2014 21:57	
WG476501-10	STD	01	05/18/2014 22:17	
WG476501-11	STD	01	05/18/2014 22:36	
WG476501-12	SSCV	01	05/18/2014 23:15	
WG476502-01	BLANK	01	05/18/2014 23:55	
WG476502-02	LCS	01	05/19/2014 00:14	
L14050603-01	67WW09A-050614	01	05/19/2014 04:05	
L14050603-02	67WW10-050614	01	05/19/2014 04:25	
L14050603-03	67WW02-050614	01	05/19/2014 04:44	
L14050603-04	67WW05-050614	01	05/19/2014 05:04	
L14050603-10	67WW07-050614	01	05/19/2014 05:23	
L14050603-08	67WW13-050614	DL01	05/19/2014 06:22	
L14050603-09	67WW13FD-050614	DL01	05/19/2014 06:42	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3575372
Report generated 05/29/2014 08:12

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14050603
Instrument: HPMS9
Analyst: ADC
Workgroup: WG441887

Tune ID: WG441887-01
Run Date: 08/19/2013
Run Time: 15:08
File ID: 9M957893
Cal ID: HPMS9 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.7	8524	PASS
75.0	95.0	30.0	60.0	54.9	26372	PASS
95.0	95.0	100	100	100	48077	PASS
96.0	95.0	5.00	9.00	6.87	3304	PASS
173	174	0	2.00	0.270	117	PASS
174	95.0	50.0	100	90.1	43306	PASS
175	174	5.00	9.00	7.40	3205	PASS
176	174	95.0	101	98.9	42808	PASS
177	176	5.00	9.00	6.58	2817	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG441888-01	STD	01	08/19/2013 16:23	
WG441888-02	STD	01	08/19/2013 16:53	
WG441888-03	STD	01	08/19/2013 17:22	
WG441888-04	STD-CCV	01	08/19/2013 17:51	
WG441888-05	STD	01	08/19/2013 18:20	
WG441888-06	STD	01	08/19/2013 18:48	
WG441888-07	STD	01	08/19/2013 19:17	
WG441888-08	STD	01	08/19/2013 19:46	
WG441888-09	SSCV	01	08/19/2013 20:45	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3575372
Report generated 05/29/2014 08:12

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14050603
Instrument: HPMS9
Analyst: ADC
Workgroup: WG471242

Tune ID: WG471242-01
Run Date: 04/14/2014
Run Time: 16:19
File ID: 9M962409
Cal ID: HPMS9 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	11516	PASS
75.0	95.0	30.0	60.0	45.2	25760	PASS
95.0	95.0	100	100	100	56944	PASS
96.0	95.0	5.00	9.00	7.05	4013	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	83.9	47770	PASS
175	174	5.00	9.00	6.65	3178	PASS
176	174	95.0	101	95.5	45618	PASS
177	176	5.00	9.00	6.00	2735	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG471242-02	STD	01	04/14/2014 17:14	
WG471242-03	STD	01	04/14/2014 17:44	
WG471242-04	STD	01	04/14/2014 18:15	
WG471242-05	STD	01	04/14/2014 18:45	
WG471242-06	STD	01	04/14/2014 19:15	
WG471242-07	STD	01	04/14/2014 19:46	
WG471242-08	STD-CCV	01	04/14/2014 20:16	
WG471242-09	STD	01	04/14/2014 20:46	
WG471242-10	STD	01	04/14/2014 21:16	
WG471242-11	STD	01	04/14/2014 21:47	
WG471242-12	SSCV	01	04/14/2014 22:47	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3575372
Report generated 05/29/2014 08:12

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14050603
Instrument: HPMS9
Analyst: ADC
Workgroup: WG476631

Tune ID: WG476631-01
Run Date: 05/19/2014
Run Time: 13:32
File ID: 9M963362
Cal ID: HPMS9 - 14-APR-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.8	12340	PASS
75.0	95.0	30.0	60.0	47.3	23540	PASS
95.0	95.0	100	100	100	49746	PASS
96.0	95.0	5.00	9.00	6.38	3172	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	77.4	38494	PASS
175	174	5.00	9.00	7.97	3069	PASS
176	174	95.0	101	98.4	37887	PASS
177	176	5.00	9.00	6.87	2601	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG476631-02	CCV	01	05/19/2014 14:29	
WG476633-01	BLANK	01	05/19/2014 15:30	
WG476633-02	LCS	01	05/19/2014 16:00	
L14050603-06	67WW12MS-050614	01	05/19/2014 17:30	
L14050603-07	67WW12MSD-050614	01	05/19/2014 18:00	
L14050603-05	67WW12-050614	01	05/19/2014 22:31	
L14050603-11	67WW14-050714	01	05/20/2014 00:02	
L14050603-12	67WW01-050714	01	05/20/2014 00:32	
L14050603-13	67WW08-050714	DL01	05/20/2014 01:03	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3575372
Report generated 05/29/2014 08:12

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14050603
Instrument: HPMS9
Analyst: TMB
Workgroup: WG476698

Tune ID: WG476698-01
Run Date: 05/20/2014
Run Time: 06:25
File ID: 9M963388
Cal ID: HPMS9 - 14-APR-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	7734	PASS
75.0	95.0	30.0	60.0	47.5	16357	PASS
95.0	95.0	100	100	100	34432	PASS
96.0	95.0	5.00	9.00	6.52	2245	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	87.3	30048	PASS
175	174	5.00	9.00	7.55	2268	PASS
176	174	95.0	101	98.9	29720	PASS
177	176	5.00	9.00	7.48	2224	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG476698-02	CCV	01	05/20/2014 06:50	
WG476699-01	BLANK	01	05/20/2014 07:51	
WG476699-02	LCS	01	05/20/2014 08:22	
WG476699-03	LCS2	01	05/20/2014 08:52	
L14050603-14	TRIP BLANK	01	05/20/2014 11:23	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3575372
Report generated 05/29/2014 08:12

Response Factor Report HPMS17

Method Path : D:\MassHunter\GCMS\1\methods\
Method File : A9FOOWT.M
Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
Last Update : Thu Oct 17 17:39:37 2013
Response Via : Initial Calibration
Curve:WG448462
Calibration Files
5 =17M000186.D 20 =17M000187.D 50 =17M000188.D 100 =17M000189.D 200 =17M000190.D 300 =17M000191.D 400 =17M00019
500 =17M000193.D

		Compound	5	20	50	100	200	300	400	500	Avg	%RSD	Linear	Quadratic
1)	I	Fluorobenzene	----------ISTD----------											
2)	T	Acetonitrile	0.015	0.016	0.016	0.018	0.018	0.019	0.018	0.017		6.99		
3)	T	3-Chloro-1-pro...	0.338	0.384	0.374	0.368	0.350	0.333	0.318	0.306	0.346	8.00		
4)	T	2-Chloro-1,3-b...	0.284	0.344	0.339	0.340	0.330	0.319	0.309	0.299	0.320	6.81		
5)	T	Methacrylonitrile	0.055	0.065	0.068	0.067	0.070	0.066	0.066	0.064	0.065	6.65		
6)	T	Ethyl Acetate	0.124	0.142	0.149	0.150	0.156	0.149	0.150	0.146	0.146	6.70		
7)	T	Isobutyl Alcohol	0.004	0.005	0.004	0.005	0.005	0.005	0.005	0.005		7.94		
8)	T	1-Butanol		0.002	0.002	0.002	0.003	0.003	0.003	0.002		24.53	0.996	
9)	T	Methyl methacr...	0.110	0.132	0.142	0.147	0.151	0.141	0.140	0.135	0.137	9.17		
10)	T	2-Nitropropane	0.039	0.048	0.051	0.056	0.055	0.056	0.055	0.051		12.15		
11)		Chlorobenzene-d5	----------ISTD----------											
12)	T	Cyclohexanone		0.004	0.004	0.005	0.005	0.006	0.006	0.005		18.06	0.993	
13)	I	1,4-Dichlorobenzen...	----------ISTD----------											

(#) = Out of Range

A9FOOWT.M Thu Oct 17 17:45:24 2013

Calibration Table Report
Method: 8260VMS.M
Title: 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
Last Calibration: Mon May 19 11:12:15 2014
Curve: WG476501
Calibration Files

Compound	0.3 17M005078.D	0.4 17M005079.D	1 17M005080.D	2 17M005081.D	5 17M005082.D	20 17M005083.D	50 17M005084.D	100 17M005085.D	200 17M005086.D	300 17M005087.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD													
Dichlorodifluoromethane			0.177	0.158	0.186	0.186	0.234	0.241	0.255	0.233	0.209	17.220	0.996	
Chloromethane		0.215	0.237	0.225	0.230	0.214	0.275	0.285	0.301	0.291	0.252	13.875		
Vinyl Chloride		0.358	0.370	0.346	0.375	0.326	0.383	0.379	0.423	0.411	0.375	8.031		
1,3-Butadiene					0.297	0.313	0.309	0.300	0.332	0.323	0.312	4.337		
Bromomethane			0.162	0.165	0.179	0.176	0.216	0.224	0.254	0.239	0.202	17.677	0.995	
Chloroethane			0.312	0.308	0.347	0.292	0.379	0.296	0.279	0.225	0.305	14.980		
Trichlorofluoromethane		0.601	0.556	0.509	0.600	0.501	0.595	0.586	0.659		0.576	9.061		
Diethyl ether			0.161	0.239	0.219	0.237	0.250	0.237	0.271	0.267	0.235	14.669		
1,1-Dichloroethene			0.358	0.338	0.379	0.327	0.459	0.486	0.551	0.535	0.429	20.944		0.996
Carbon Disulfide			0.677	0.605	0.652	0.667	0.751	0.780	0.927		0.723	14.973		
1,1,2-Trichloro-1,2,2-Trifluoroet		0.208	0.199	0.182	0.215	0.176	0.222	0.234	0.270	0.264	0.219	14.981		
Acrolein				0.020	0.017	0.017	0.022	0.023	0.026	0.024	0.021	15.667	0.996	
Methylene Chloride		0.287	0.259	0.258	0.277	0.248	0.286	0.286	0.311	0.296	0.279	7.271		
Acetone					0.045	0.041	0.049	0.049	0.056	0.052	0.049	10.443		
trans-1,2-Dichloroethene		0.246	0.250	0.240	0.259	0.227	0.274	0.275	0.303	0.290	0.263	9.376		
Methyl Tert Butyl Ether		0.647	0.670	0.679	0.731	0.683	0.789	0.771	0.842	0.804	0.735	9.409		
1,1-Dichloroethane		0.557	0.495	0.511	0.571	0.507	0.593	0.577	0.625	0.578	0.557	7.885		
Acrylonitrile			0.046	0.066	0.072	0.067	0.078	0.078	0.085	0.081	0.072	17.087	0.998	
Vinyl Acetate					0.030	0.029	0.035	0.032	0.034	0.032	0.032	7.085		
cis-1,2-Dichloroethene		0.332	0.308	0.294	0.320	0.286	0.317	0.304	0.334	0.309	0.311	5.160		
2,2-Dichloropropane		0.476	0.443	0.425	0.468	0.408	0.477	0.453	0.487	0.445	0.454	5.742		
Cyclohexane		0.503	0.496	0.449	0.501	0.526	0.541	0.529	0.575	0.545	0.518	6.941		
Bromochloromethane		0.119	0.146	0.154	0.169	0.158	0.173	0.166	0.184	0.177	0.161	12.076		
Chloroform	0.476	0.593	0.540	0.515	0.555	0.494	0.560	0.534	0.571	0.527	0.536	6.618		
Carbon Tetrachloride		0.396	0.369	0.359	0.407	0.359	0.433	0.404	0.426	0.394	0.394	6.853		
Dibromofluoromethane					0.317	0.280	0.281	0.270	0.280	0.266	0.282	6.363		
1,1,1-Trichloroethane		0.459	0.457	0.441	0.498	0.439	0.509	0.478	0.508	0.473	0.474	5.669		
1,1-Dichloropropene		0.409	0.377	0.366	0.412	0.359	0.425	0.399	0.427	0.395	0.396	6.256		
2-Butanone				0.072	0.082	0.079	0.089	0.086	0.092	0.084	0.083	8.079		
Benzene		1.290	1.151	1.136	1.205	1.106	1.228	1.181	1.285	1.197	1.198	5.281		
1,2-Dichloroethane-d4				0.443	0.410	0.365	0.367	0.354	0.360	0.333	0.376	9.951		
1,2-Dichloroethane		0.410	0.408	0.439	0.454	0.436	0.476	0.441	0.468	0.430	0.440	5.259		
Trichloroethene		0.306	0.271	0.266	0.270	0.244	0.279	0.262	0.282	0.271	0.272	6.105		
Dibromomethane		0.152	0.158	0.161	0.180	0.171	0.184	0.177	0.190	0.179	0.172	7.429		
1,2-Dichloropropane		0.305	0.314	0.319	0.337	0.322	0.347	0.332	0.362	0.340	0.331	5.373		
Bromodichloromethane		0.403	0.391	0.399	0.443	0.417	0.456	0.433	0.471	0.438	0.428	6.385		
1,4-Dioxane						0.001	0.001	0.001	0.002	0.002	0.001	34.094	0.998	
2-Chloroethyl Vinyl Ether				0.060	0.065	0.070	0.078	0.076	0.082	0.077	0.072	10.989		
cis-1,3-Dichloropropene		0.457	0.451	0.463	0.495	0.476	0.516	0.495	0.550	0.521	0.492	6.750		
4-Methyl-2-Pentanone					0.090	0.092	0.105	0.099	0.107	0.101	0.099	6.604		
trans-1,3-Dichloropropene		0.385	0.385	0.388	0.434	0.425	0.464	0.451	0.498		0.42865	9.69328		
Chlorobenzene-d5	ISTD													
Toluene-d8				1.79	1.648	1.51	1.487	1.433	1.406	1.266	1.50542	11.313		
Toluene		1.78	1.693	1.691	1.856	1.675	1.917	1.791	1.865	1.675	1.77152	5.2333		
Tetrachloroethene		0.435	0.429	0.393	0.429	0.389	0.45	0.418	0.432	0.406	0.42001	4.87729		
1,1,2-Trichloroethane	0.226	0.235	0.307	0.322	0.347	0.323	0.347	0.313	0.317	0.295	0.30327	13.7309		
Dibromochloromethane		0.301	0.316	0.336	0.384	0.377	0.416	0.383	0.384	0.35	0.36077	10.3834		
1,3-Dichloropropane		0.556	0.575	0.59	0.637	0.601	0.626	0.581	0.581	0.529	0.58633	5.64546		
1,2-Dibromoethane		0.298	0.309	0.302	0.336	0.326	0.35	0.326	0.326	0.294	0.31844	5.91509		
2-Hexanone				0.17	0.194	0.204	0.225	0.203	0.201	0.177	0.19617	9.42474		
Chlorobenzene		1.148	1.099	1.074	1.146	1.024	1.168	1.121	1.176	1.11	1.11846	4.32176		
1-Chlorohexane		0.097	0.097	0.098	0.11	0.114	0.121	0.11	0.119	0.115	0.10881	8.8288		
Ethylbenzene		0.624	0.603	0.601	0.653	0.58	0.685	0.661	0.698	0.661	0.64058	6.3276		
1,1,1,2-Tetrachloroethane		0.323	0.356	0.36	0.402	0.378	0.42	0.389	0.414	0.385	0.38065	8.09602		
m-,p-Xylene		0.782	0.712	0.712	0.791	0.725	0.867	0.862	0.955	0.836	0.80495	10.2942		
o-Xylene		0.719	0.691	0.677	0.766	0.729	0.843	0.802	0.843	0.784	0.76152	8.07324		
Styrene		1.208	1.148	1.165	1.288	1.221	1.444	1.403	1.558	1.405	1.31561	10.8358		
Bromoform			0.198	0.228	0.275	0.28	0.338	0.343	0.397	0.362	0.30272	22.7064	0.995	
Isopropylbenzene		1.952	1.854	1.801	2.07	1.887	2.202	2.094	2.179	1.979	2.00208	7.1282		
1,4-Dichlorobenzene-d4	ISTD													
1,3,5-Trimethylbenzene	2.889	3.024	2.899	3.036	3.381	2.918	3.38	3.389	3.236	2.836	3.09895	7.27295		
p-Bromofluorobenzene					1.317	1.114	1.094	1.014	0.947	0.888	1.06228	14.2495		
Bromobenzene	0.883	0.847	0.8	0.813	0.951	0.832	0.919	0.863	0.899	0.91	0.87176	5.6469		
n-Propylbenzene		4.682	4.445	4.363	5.035	4.263	4.865	4.433	4.244	3.781	4.45685	8.31868		
1,1,2,2-Tetrachloroethane		0.8	0.727	0.785	0.867	0.8	0.838	0.778	0.713	0.671	0.77536	7.97676		
2-Chlorotoluene		3.195	2.911	3.027	3.433	2.866	2.912	2.63	2.667	2.414	2.89517	10.5812		
1,2,3-Trichloropropane		0.216	0.189	0.235	0.267	0.234	0.26	0.256	0.269	0.25	0.24166	10.9233		
1,2,4-Trimethylbenzene	2.827	3.132	2.871	3.006	3.408	2.941	3.328	3.202	3.28	2.711	3.07057	7.63508		
4-Chlorotoluene		2.934	2.746	2.834	3.235	2.822	2.995	2.93	2.558	2.512	2.8408	7.80116		
tert-Butylbenzene		0.647	0.545	0.592	0.684	0.579	0.642	0.599	0.568	0.581	0.60414	7.34671		
sec-Butylbenzene		4.045	3.569	3.692	4.359	3.765	4.192	4.008	3.841	3.129	3.84433	9.51267		
p-Isopropyltoluene		3.089	2.818	2.858	3.337	2.928	3.363	3.36	3.156	2.635	3.06047	8.69469		
1,3-Dichlorobenzene		1.739	1.601	1.603	1.815	1.587	1.822	1.725	1.799	1.561	1.69467	6.29386		
1,4-Dichlorobenzene	1.982	1.74	1.726	1.725	1.853	1.703	1.9	1.822	1.618	1.511	1.75801	7.79312		
n-Butylbenzene		3.249	2.943	3.048	3.647	3.145	3.61	3.267	2.828	2.737	3.16377	10.0447		
1,2-Dichlorobenzene	1.469	1.775	1.533	1.603	1.832	1.582	1.722	1.544	1.434	1.435	1.59301	8.84469		
1,2-Dibromo-3-Chloropropane				0.128	0.157	0.141	0.153	0.136	0.124	0.112	0.13587	11.6562		
Hexachlorobutadiene		0.601	0.54	0.522	0.655	0.567	0.65	0.615	0.692	0.753	0.62168	11.9668		

1,2,4-Trichlorobenzene		1.344	1.075	1.191	1.4	1.176	1.29	1.325	1.335	1.329	1.2741	8.17507
Naphthalene		1.946	1.929	2.048	2.332	2.054	2.213	2.218	2.12	2.015	2.09738	6.43498
1,2,3-Trichlorobenzene	1.045	1.087	0.997	1.029	1.219	1.063	1.145	1.206	1.266	1.265	1.13216	8.9228

Thu May 22 16:57:39 2014

Calibration Table Report
Method: A9FOOWT.M
Title: FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Calibration: Tue Aug 20 15:10:19 2013
Curve: WG441888
Calibration Files

Compound	5 9M957895.D	20 9M957896.D	50 9M957897.D	100 9M957898.D	200 9M957899.D	300 9M957900.D	400 9M957901.D	500 9M957902.D	Avg	%RSD
Fluorobenzene	ISTD									
Acetonitrile	0.020	0.022	0.023	0.021	0.022	0.021	0.022	0.023	0.022	3.924
3-Chloro-1-propene	0.338	0.346	0.375	0.349	0.358	0.348	0.343	0.363	0.352	3.490
2-Chloro-1,3-butadiene	0.338	0.363	0.398	0.373	0.390	0.382	0.380	0.403	0.378	5.543
Ethyl Acetate	0.150	0.169	0.184	0.171	0.174	0.169	0.166	0.176	0.170	5.676
Methacrylonitrile	0.072	0.083	0.091	0.084	0.088	0.086	0.086	0.093	0.086	7.408
Isobutyl Alcohol	0.014	0.015	0.015	0.013	0.014	0.014	0.015	0.016	0.015	6.105
1-Butanol		0.003	0.003	0.003	0.004	0.004	0.004		0.004	12.474
Methyl methacrylate	0.164	0.173	0.191	0.178	0.183	0.180	0.177	0.189	0.179	4.819
2-Nitropropane	0.048	0.051	0.057	0.056	0.061	0.060	0.060	0.065	0.057	10.037
Chlorobenzene-d5	ISTD									
Cyclohexanone	0.044	0.032	0.036	0.034	0.035	0.034	0.035	0.037	0.036	10.211
1,4-Dichlorobenzene-d4	ISTD									

Tue Aug 20 15:10:40 2013

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Calibration: Tue Apr 15 12:15:18 2014
Curve: WG471242
Calibration Files

Compound	0.3 9M962411.D	0.4 9M962412.D	1 9M962413.D	2 9M962414.D	5 9M962415.D	20 9M962416.D	50 9M962417.D	100 9M962418.D	200 9M962419.D	300 9M962420.D	Avg	%RSD	R^2 Linear	R^2 Quadratic
Fluorobenzene	ISTD													
Dichlorodifluoromethane			0.160	0.145	0.150	0.176	0.204	0.204	0.193	0.199	0.179	13.656		
Chloromethane			0.313	0.309	0.305	0.279	0.299	0.315	0.297	0.318	0.304	4.239		
Vinyl Chloride		0.305	0.296	0.313	0.344	0.323	0.380	0.371	0.349	0.254	0.326	12.062		
1,3-Butadiene					0.235	0.205	0.199	0.198	0.189	0.184	0.202	9.029		
Bromomethane		0.204	0.171	0.189	0.178	0.164	0.199	0.207	0.200	0.210	0.191	8.687		
Chloroethane		0.237	0.227	0.216	0.230	0.214	0.254	0.254	0.243	0.248	0.236	6.416		
Trichlorofluoromethane		0.280	0.311	0.344	0.359	0.337	0.390	0.390	0.368	0.370	0.350	10.421		
Diethyl ether			0.292	0.322	0.324	0.311	0.325	0.340		0.318	0.319	4.594		
Isoprene		0.334	0.356	0.370	0.379	0.361	0.416	0.424	0.399	0.401	0.382	7.815		
Acrolein			0.043	0.052	0.051	0.049	0.052	0.054		0.050	0.050	7.267		
1,1,2-Trichloro-1,2,2-Trifluoroe		0.110	0.208	0.223	0.225	0.208	0.243	0.244	0.231	0.233	0.214	19.213	0.999	
Acetone					0.106	0.081	0.091	0.096	0.088	0.091	0.092	9.033		
1,1-Dichloroethene		0.523	0.479	0.487	0.518	0.463	0.544	0.540	0.508	0.510	0.508	5.369		
Tert-Butyl Alcohol			0.031	0.035	0.034	0.034	0.036	0.042		0.045	0.037	13.441		
Dimethyl Sulfide		0.255	0.275	0.279	0.311	0.272	0.314	0.321	0.299	0.299	0.292	7.715		
Iodomethane			0.122	0.149	0.191	0.204	0.247	0.256	0.249	0.252	0.209	24.656	0.999	
Methyl acetate			0.224	0.217	0.254	0.221	0.244	0.258	0.232	0.239	0.236	6.446		
Methylene Chloride		0.305	0.305	0.288	0.284	0.259	0.295	0.297	0.281	0.283	0.289	4.894		
Carbon Disulfide		0.879	0.751	0.721	0.774	0.701	0.797	0.809	0.755	0.753	0.771	6.828		
Acrylonitrile			0.136	0.142	0.142	0.140	0.155	0.164		0.165	0.149	8.060		
Methyl Tert Butyl Ether		0.769	0.769	0.743	0.801	0.704	0.801	0.818	0.758	0.766	0.770	4.480		
trans-1,2-Dichloroethene		0.500	0.475	0.460	0.491	0.450	0.526	0.525	0.494	0.497	0.491	5.253		
n-Hexane		0.427	0.428	0.410	0.434	0.430	0.508	0.522	0.481	0.489	0.459	8.986		
Diisopropyl ether			1.018	1.144	1.187	1.109	1.173	1.174		1.086	1.127	5.369		
Vinyl Acetate				0.493	0.530	0.560	0.551	0.613	0.522	0.574	0.549	7.073		
1,1-Dichloroethane		0.620	0.599	0.608	0.623	0.579	0.664	0.661	0.613	0.615	0.620	4.404		
Ethyl-Tert-Butyl ether			1.078	1.215	1.242	1.172	1.230	1.251		1.173	1.194	5.044		
2-Butanone					0.151	0.128	0.147	0.157	0.142	0.149	0.146	6.669		
Propionitrile			0.045	0.054	0.054	0.051	0.056	0.059		0.059	0.054	9.270		
2,2-Dichloropropane		0.434	0.380	0.370	0.365	0.344	0.388	0.385	0.361	0.360	0.376	6.818		
cis-1,2-Dichloroethene		0.265	0.286	0.295	0.298	0.274	0.319	0.321	0.303	0.305	0.296	6.332		
Chloroform	0.492	0.473	0.450	0.442	0.496	0.429	0.500	0.498	0.468	0.469	0.472	5.312		
1-Bromopropane			0.038	0.047	0.051	0.046	0.055	0.056	0.054	0.055	0.050	12.445		
Bromochloromethane		0.161	0.176	0.174	0.184	0.168	0.196	0.197	0.187	0.188	0.181	6.763		
Tetrahydrofuran			0.086	0.090	0.092	0.085	0.093	0.098		0.093	0.091	4.998		
Dibromofluoromethane			0.293	0.245	0.261	0.249	0.276	0.284	0.269	0.278	0.269	6.185		
1,1,1-Trichloroethane		0.353	0.409	0.384	0.420	0.379	0.446	0.445	0.422	0.424	0.409	7.661		
Cyclohexane		0.631	0.659	0.649	0.675	0.632	0.733	0.734	0.682	0.674	0.674	5.650		
1,1-Dichloropropene		0.281	0.332	0.309	0.345	0.315	0.368	0.372	0.350	0.353	0.336	8.865		
Tert-Amyl-Methyl ether			0.692	0.775	0.785	0.745	0.782	0.799		0.767	0.764	4.668		
Carbon Tetrachloride		0.34338	0.32844	0.32781	0.37715	0.33697	0.38758	0.39089	0.3717	0.37318	0.35968	7.05975		
1,2-Dichloroethane-d4				0.36189	0.32396	0.31543	0.34312	0.35493	0.33356	0.34131	0.33917	4.83148		
Heptane											0	0		
1,2-Dichloroethane		0.4265	0.39328	0.40027	0.44651	0.39323	0.4572	0.45872	0.4268	0.42905	0.42573	6.03537		
Benzene		1.21804	1.09011	1.06548	1.12856	1.00486	1.14624	1.12277	1.03005	1.00252	1.08985	6.58591		
Trichloroethene		0.23508	0.2776	0.27952	0.28905	0.25909	0.30265	0.30355	0.28331	0.28365	0.27928	7.62767		
Methylcyclohexane		0.41939	0.40829	0.40081	0.41169	0.39947	0.45814	0.46398	0.43408	0.43534	0.42569	5.58832		
1,2-Dichloropropane		0.3453	0.35778	0.35084	0.38561	0.34332	0.39288	0.39577	0.37396	0.3773	0.36919	5.52852		
1,4-Dioxane				0.00277	0.00277	0.00276	0.00309	0.00338		0.00379	0.00309	13.6201		
Bromodichloromethane		0.31168	0.33821	0.33791	0.35932	0.33474	0.39655	0.39961	0.37993	0.38428	0.36025	8.68286		
Dibromomethane		0.18407	0.17733	0.17784	0.18267	0.17408	0.2029	0.20566	0.1967	0.19978	0.189	6.46469		
2-Chloroethyl Vinyl Ether			0.19778	0.19925	0.21379	0.20085	0.22743	0.24051	0.22745	0.22611	0.21665	7.41839		
4-Methyl-2-Pentanone					0.14569	0.14097	0.15895	0.17337	0.16266	0.17596	0.1596	8.895		
cis-1,3-Dichloropropene		0.43612	0.39358	0.40698	0.4368	0.40566	0.46973	0.47732	0.44928	0.45676	0.43692	6.77396		
Dimethyl Disulfide			0.42444	0.4453	0.48888	0.47788	0.56804	0.58533	0.54821	0.55346	0.51144	11.7689		
Chlorobenzene-d5	ISTD													
Toluene-d8				1.36423	1.39275	1.34561	1.41779	1.43046	1.31168	1.28427	1.36383	3.96767		
Toluene		1.57176	1.56124	1.49947	1.62171	1.48937	1.67846	1.62738	1.45226	1.36226	1.54043	6.4279		
Ethyl Methacrylate			0.39862	0.37958	0.42385	0.42783	0.49936	0.52187	0.48184	0.49056	0.45294	11.492		
trans-1,3-Dichloropropene		0.51525	0.51472	0.49759	0.55073	0.51122	0.59629	0.60405	0.55225	0.54852	0.5434	6.94189		
1,1,2-Trichloroethane		0.30803	0.30116	0.30963	0.33009	0.31008	0.35384	0.35469	0.32662	0.33197	0.32512	6.06082		
2-Hexanone					0.29576	0.26542	0.30583	0.33929	0.30981	0.32968	0.30763	8.50076		
1,3-Dichloropropane		0.55853	0.53448	0.53825	0.59586	0.53016	0.59644	0.59771	0.54888	0.5458	0.56068	5.03427		
Tetrachloroethene		0.31514	0.30276	0.2747	0.33562	0.3044	0.35203	0.3522	0.32756	0.32198	0.32071	7.77927		
Dibromochloromethane		0.36765	0.33747	0.34693	0.38275	0.36066	0.41807	0.43464	0.40499	0.41394	0.38523	8.89851		
1,2-Dibromoethane		0.25284	0.32129	0.31448	0.33413	0.31474	0.36342	0.3704	0.34513	0.34853	0.32944	10.6452		
1-Chlorohexane		0.41817	0.39086	0.37443	0.44834	0.43466	0.5116	0.51668	0.48645	0.48101	0.45136	11.3445		
Chlorobenzene		1.07296	0.9944	0.98088	1.03283	0.94785	1.09073	1.0778	0.97553	0.93644	1.01216	5.7513		
1,1,1,2-Tetrachloroethane		0.34968	0.39731	0.37662	0.39452	0.36585	0.41599	0.4134	0.38921	0.38771	0.38781	5.50612		
Ethylbenzene		0.52878	0.54892	0.52445	0.59125	0.52264	0.61932	0.60711	0.55653	0.53635	0.55948	6.63998		
m-,p-Xylene		0.66873	0.63442	0.63189	0.69773	0.64419	0.73461	0.72428	0.64544	0.60723	0.66539	6.64232		
o-Xylene		0.67404	0.68219	0.64388	0.72177	0.64645	0.74417	0.75023	0.69749	0.6858	0.694	5.54351		
Styrene		0.93995	0.96759	0.97309	1.08885	1.05992	1.25507	1.26985	1.17357	1.14177	1.09663	11.2119		
Bromoform			0.21488	0.23112	0.27478	0.27205	0.3219	0.34243	0.33186	0.35249	0.29269	17.8133	0.998	
Isopropylbenzene		1.59217	1.58918	1.54832	1.7487	1.60456	1.85736	1.83418	1.64876	1.57121	1.66605	7.03821		
1,4-Dichlorobenzene-d4	ISTD													
1,1,2,2-Tetrachloroethane		0.71483	0.73627	0.75041	0.81114	0.74914	0.83925	0.86978	0.81148	0.82267	0.78944	6.72333		
p-Bromofluorobenzene					1.05774	0.99699	1.07588	1.05414	1.01719	0.97512	1.02951	3.81726		
1,2,3-Trichloropropane			0.21781	0.23044	0.25458	0.23227	0.26134	0.26294	0.24523	0.24223	0.24336	6.55173		

trans-1,4-Dichloro-2-Butene		0.20885	0.23728	0.28957	0.27695	0.32034	0.3324	0.31476	0.30834	0.28606	15.1104	0.999
n-Propylbenzene	3.46884	3.49121	3.65253	4.01292	3.70744	4.1867	3.95743	3.48711	2.97069	3.65943	9.96019	
Bromobenzene	0.86419	0.87795	0.76876	0.79247	0.89645	0.83941	0.96011	0.92921	0.88652	0.82644	0.86415	6.84024
1,3,5-Trimethylbenzene	2.53966	2.5539	2.72115	2.98747	2.71681	3.05488	2.91201	2.65555	2.35116	2.7214	8.42803	
2-Chlorotoluene	2.63291	2.5243	2.53368	2.7898	2.62099	2.51268	2.66428	2.51923	2.24957	2.56083	5.77469	
4-Chlorotoluene	1.98749	2.04007	2.04693	2.17273	1.92998	2.63825	2.24971	2.00523	1.79751	2.09643	11.5094	
a-Methylstyrene		1.22811	1.1938	1.39347	1.35834	1.58974	1.5946	1.50056	1.39732	1.40699	10.659	
tert-Butylbenzene	0.59891	0.64843	0.62035	0.66902	0.611	0.69013	0.65987	0.62147	0.58057	0.6333	5.64047	
1,2,4-Trimethylbenzene	2.58711	2.67375	2.65265	3.05479	2.75683	3.0943	2.958	2.68861	2.37727	2.76037	8.4796	
sec-Butylbenzene	3.38621	3.11218	3.34695	3.72258	3.39078	3.84034	3.65871	3.27741	2.86075	3.39954	9.04649	
p-Isopropyltoluene	2.38385	2.55814	2.555	2.9122	2.75708	3.19247	3.05307	2.75891	2.45709	2.73642	10.0671	
1,3-Dichlorobenzene	1.52691	1.54727	1.53978	1.64632	1.54837	1.77779	1.746	1.63586	1.53476	1.61145	5.96226	
1,4-Dichlorobenzene	1.59484	1.51558	1.48835	1.54848	1.67582	1.53365	1.79131	1.7648	1.65274	1.55096	1.61165	6.54067
n-Butylbenzene	2.00024	2.03361	2.0119	2.32311	2.35217	2.81081	2.75795	2.5285	2.30086	2.34657	13.0519	
1,2-Dichlorobenzene	1.50879	1.44311	1.51496	1.6088	1.72648	1.55111	1.7944	1.756	1.62277	1.54646	1.60729	7.29143
1,2-Dibromo-3-Chloropropane				0.17031	0.16297	0.17028	0.2066	0.21009	0.20365	0.20439	0.18976	10.926
1,2,4-Trichlorobenzene	0.91385	0.7762	0.83713	0.93798	1.05016	1.06128	1.28818	1.3081	1.27137	1.21944	1.06637	18.4896	0.998
Hexachlorobutadiene	0.43319	0.45491	0.49913	0.56966	0.57913	0.70514	0.71231	0.69975	0.65872	0.59022	18.6191	0.998
Naphthalene	2.06681	2.25432	2.21003	2.62951	2.5518	3.05416	3.03904	2.75341	2.47103	2.5589	13.699	
1,2,3-Trichlorobenzene	0.84183	0.92979	0.96087	1.09333	1.084	1.27357	1.29935	1.25547	1.19161	1.10331	14.9484	

Tue Apr 15 12:20:03 2014

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14050603 Run Date: 05/18/2014 Sample ID: WG476501-12
Instrument ID: HPMS17 Run Time: 23:15 Method: 8260B
File ID: 17M005089 Analyst: FJB/MDA QC Key: DOD4
ICal Workgroup: WG476501 Cal ID: HPMS17 - 18-MAY-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.9	ug/L	0.525	2.20	20	
1,1-Dichloroethene	CCC	50.0	48.3	ug/L	0.448	3.50	20	
1,2-Dichloropropane	CCC	50.0	47.8	ug/L	0.316	4.50	20	
Ethylbenzene	CCC	50.0	48.8	ug/L	0.625	2.50	20	
Toluene	CCC	50.0	50.2	ug/L	1.78	0.400	20	
Vinyl Chloride	CCC	50.0	50.9	ug/L	0.382	1.90	20	
Bromoform	SPCC	50.0	43.3	ug/L	0.312	13.4	20	
Chlorobenzene	SPCC	50.0	46.3	ug/L	1.03	7.50	20	
Chloromethane	SPCC	50.0	61.3	ug/L	0.309	22.6	20	*
1,1-Dichloroethane	SPCC	50.0	49.1	ug/L	0.547	1.90	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.4	ug/L	0.720	7.10	20	
Acetone		50.0	55.7	ug/L	0.0543	11.5	20	
Benzene		50.0	48.5	ug/L	1.16	3.00	20	
Bromobenzene		50.0	46.8	ug/L	0.816	6.40	20	
Bromochloromethane		50.0	50.7	ug/L	0.163	1.50	20	
Bromodichloromethane		50.0	48.3	ug/L	0.414	3.30	20	
Bromomethane		50.0	50.3	ug/L	0.237	0.700	20	
2-Butanone		50.0	51.4	ug/L	0.0856	2.80	20	
n-Butylbenzene		50.0	50.2	ug/L	3.18	0.400	20	
sec-Butylbenzene		50.0	44.8	ug/L	3.44	10.4	20	
tert-Butylbenzene		50.0	44.5	ug/L	0.538	11.0	20	
Carbon Disulfide		50.0	40.5	ug/L	0.585	19.1	20	
Carbon Tetrachloride		50.0	51.4	ug/L	0.405	2.70	20	
Dibromochloromethane		50.0	52.6	ug/L	0.380	5.20	20	
Chloroethane		50.0	43.1	ug/L	0.263	13.8	20	
2-Chlorotoluene		50.0	39.0	ug/L	2.26	21.9	20	*
4-Chlorotoluene		50.0	42.4	ug/L	2.41	15.2	20	
1,2-Dibromo-3-Chloropropane		50.0	47.9	ug/L	0.130	4.20	20	
1,2-Dibromoethane		50.0	49.3	ug/L	0.314	1.40	20	
Dibromomethane		50.0	48.5	ug/L	0.167	3.00	20	
1,2-Dichlorobenzene		50.0	44.3	ug/L	1.41	11.3	20	
1,3-Dichlorobenzene		50.0	44.7	ug/L	1.51	10.7	20	
1,4-Dichlorobenzene		50.0	47.8	ug/L	1.68	4.30	20	
Dichlorodifluoromethane		50.0	67.5	ug/L	0.322	35.0	20	*
1,2-Dichloroethane		50.0	48.7	ug/L	0.429	2.60	20	
cis-1,2-Dichloroethene		50.0	49.5	ug/L	0.308	1.00	20	
trans-1,2-Dichloroethene		50.0	53.0	ug/L	0.278	6.00	20	
1,3-Dichloropropane		50.0	49.0	ug/L	0.575	2.00	20	
2,2-Dichloropropane		50.0	45.3	ug/L	0.411	9.40	20	
cis-1,3-Dichloropropene		50.0	48.9	ug/L	0.481	2.20	20	
trans-1,3-Dichloropropene		50.0	46.6	ug/L	0.399	6.90	20	
1,1-Dichloropropene		50.0	49.4	ug/L	0.392	1.20	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3562260
Report generated 05/29/2014 08:12

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14050603 Run Date: 05/18/2014 Sample ID: WG476501-12
Instrument ID: HPMS17 Run Time: 23:15 Method: 8260B
File ID: 17M005089 Analyst: FJB/MDA QC Key: DOD4
ICal Workgroup: WG476501 Cal ID: HPMS17 - 18-MAY-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.3	ug/L	0.205	4.60	20	
Hexachlorobutadiene		50.0	47.8	ug/L	0.595	4.40	20	
Isopropylbenzene		50.0	47.3	ug/L	1.90	5.30	20	
p-Isopropyltoluene		50.0	45.9	ug/L	2.81	8.30	20	
4-Methyl-2-Pentanone		50.0	49.6	ug/L	0.0980	0.800	20	
Methylene Chloride		50.0	50.8	ug/L	0.284	1.70	20	
Naphthalene		50.0	47.2	ug/L	1.98	5.70	20	
n-Propylbenzene		50.0	43.5	ug/L	3.88	13.0	20	
Styrene		50.0	50.3	ug/L	1.32	0.600	20	
1,1,1,2-Tetrachloroethane		50.0	49.9	ug/L	0.380	0.100	20	
Tetrachloroethene		50.0	49.7	ug/L	0.417	0.600	20	
1,2,3-Trichlorobenzene		50.0	46.0	ug/L	1.04	7.90	20	
1,2,4-Trichlorobenzene		50.0	46.5	ug/L	1.18	7.10	20	
1,1,1-Trichloroethane		50.0	49.5	ug/L	0.469	0.900	20	
1,1,2-Trichloroethane		50.0	51.8	ug/L	0.314	3.50	20	
Trichloroethene		50.0	49.0	ug/L	0.267	1.90	20	
Trichlorofluoromethane		50.0	33.4	ug/L	0.385	33.2	20	*
1,2,3-Trichloropropane		50.0	45.5	ug/L	0.220	8.90	20	
1,2,4-Trimethylbenzene		50.0	48.0	ug/L	2.95	4.10	20	
1,3,5-Trimethylbenzene		50.0	48.3	ug/L	3.00	3.30	20	
o-Xylene		50.0	46.9	ug/L	0.714	6.20	20	
m-,p-Xylene		100	96.4	ug/L	0.776	3.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3562260
Report generated 05/29/2014 08:12

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14050603 Run Date: 04/14/2014 Sample ID: WG471242-12
Instrument ID: HPMS9 Run Time: 22:47 Method: 8260B
File ID: 9M962422 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG471242 Cal ID: HPMS9 - 14-APR-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.9	ug/L	0.452	4.30	20	
1,1-Dichloroethene	CCC	50.0	46.2	ug/L	0.470	7.60	20	
1,2-Dichloropropane	CCC	50.0	48.9	ug/L	0.361	2.10	20	
Ethylbenzene	CCC	50.0	50.0	ug/L	0.560	0.100	20	
Toluene	CCC	50.0	50.0	ug/L	1.54	0	20	
Vinyl Chloride	CCC	50.0	37.4	ug/L	0.244	25.2	20	*
Bromoform	SPCC	50.0	46.3	ug/L	0.312	7.40	20	
Chlorobenzene	SPCC	50.0	46.6	ug/L	0.944	6.70	20	
Chloromethane	SPCC	50.0	57.2	ug/L	0.348	14.4	20	
1,1-Dichloroethane	SPCC	50.0	47.4	ug/L	0.588	5.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	48.1	ug/L	0.759	3.80	20	
Acetone		50.0	44.4	ug/L	0.0817	11.2	20	
Benzene		50.0	48.8	ug/L	1.06	2.30	20	
Bromobenzene		50.0	47.6	ug/L	0.823	4.70	20	
Bromochloromethane		50.0	49.1	ug/L	0.178	1.90	20	
Bromodichloromethane		50.0	49.0	ug/L	0.353	1.90	20	
Bromomethane		50.0	51.1	ug/L	0.196	2.20	20	
2-Butanone		50.0	44.9	ug/L	0.131	10.1	20	
n-Butylbenzene		50.0	56.2	ug/L	2.64	12.4	20	
sec-Butylbenzene		50.0	45.8	ug/L	3.12	8.30	20	
tert-Butylbenzene		50.0	43.9	ug/L	0.556	12.3	20	
Carbon Disulfide		50.0	45.7	ug/L	0.704	8.70	20	
Carbon Tetrachloride		50.0	48.5	ug/L	0.349	3.00	20	
Dibromochloromethane		50.0	49.9	ug/L	0.385	0.200	20	
Chloroethane		50.0	48.9	ug/L	0.231	2.20	20	
2-Chlorotoluene		50.0	46.9	ug/L	2.40	6.30	20	
4-Chlorotoluene		50.0	42.7	ug/L	1.79	14.6	20	
1,2-Dibromo-3-Chloropropane		50.0	52.6	ug/L	0.200	5.20	20	
1,2-Dibromoethane		50.0	50.3	ug/L	0.331	0.600	20	
Dibromomethane		50.0	49.1	ug/L	0.186	1.90	20	
1,2-Dichlorobenzene		50.0	50.4	ug/L	1.62	0.900	20	
1,3-Dichlorobenzene		50.0	47.4	ug/L	1.53	5.30	20	
1,4-Dichlorobenzene		50.0	52.5	ug/L	1.69	4.90	20	
Dichlorodifluoromethane		50.0	81.8	ug/L	0.293	63.6	20	*
1,2-Dichloroethane		50.0	48.2	ug/L	0.410	3.70	20	
cis-1,2-Dichloroethene		50.0	50.0	ug/L	0.296	0	20	
trans-1,2-Dichloroethene		50.0	49.4	ug/L	0.485	1.20	20	
1,3-Dichloropropane		50.0	48.1	ug/L	0.539	3.80	20	
2,2-Dichloropropane		50.0	43.7	ug/L	0.329	12.6	20	
cis-1,3-Dichloropropene		50.0	50.5	ug/L	0.442	1.10	20	
trans-1,3-Dichloropropene		50.0	46.5	ug/L	0.505	7.10	20	
1,1-Dichloropropene		50.0	50.5	ug/L	0.339	1.00	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3562260
Report generated 05/29/2014 08:12

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14050603 Run Date: 04/14/2014 Sample ID: WG471242-12
Instrument ID: HPMS9 Run Time: 22:47 Method: 8260B
File ID: 9M962422 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG471242 Cal ID: HPMS9 - 14-APR-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.1	ug/L	0.296	3.90	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.706	4.20	20	
Isopropylbenzene		50.0	48.0	ug/L	1.60	4.00	20	
p-Isopropyltoluene		50.0	48.7	ug/L	2.66	2.70	20	
4-Methyl-2-Pentanone		50.0	47.0	ug/L	0.150	6.00	20	
Methylene Chloride		50.0	47.4	ug/L	0.274	5.10	20	
Naphthalene		50.0	59.5	ug/L	3.05	19.1	20	
n-Propylbenzene		50.0	44.8	ug/L	3.28	10.5	20	
Styrene		50.0	53.4	ug/L	1.17	6.90	20	
1,1,1,2-Tetrachloroethane		50.0	48.5	ug/L	0.376	3.00	20	
Tetrachloroethene		50.0	49.3	ug/L	0.316	1.50	20	
1,2,3-Trichlorobenzene		50.0	59.5	ug/L	1.31	19.0	20	
1,2,4-Trichlorobenzene		50.0	52.7	ug/L	1.31	5.30	20	
1,1,1-Trichloroethane		50.0	48.9	ug/L	0.400	2.30	20	
1,1,2-Trichloroethane		50.0	49.7	ug/L	0.323	0.500	20	
Trichloroethene		50.0	50.6	ug/L	0.283	1.20	20	
Trichlorofluoromethane		50.0	54.2	ug/L	0.379	8.30	20	
1,2,3-Trichloropropane		50.0	49.7	ug/L	0.242	0.500	20	
1,2,4-Trimethylbenzene		50.0	50.3	ug/L	2.78	0.500	20	
1,3,5-Trimethylbenzene		50.0	49.4	ug/L	2.69	1.20	20	
o-Xylene		50.0	46.0	ug/L	0.639	8.00	20	
m-,p-Xylene		100	98.0	ug/L	0.652	2.00	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3562260
Report generated 05/29/2014 08:12

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14050603 Run Date: 05/19/2014 Sample ID: WG476631-02
Instrument ID: HPMS9 Run Time: 14:29 Method: 8260B
File ID: 9M963364 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG476633 Cal ID: HPMS9 - 14-APR-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.1	ug/L	0.492	4.22	20	
1,1-Dichloroethene	CCC	50.0	53.7	ug/L	0.546	7.42	20	
1,2-Dichloropropane	CCC	50.0	52.9	ug/L	0.391	5.89	20	
Ethylbenzene	CCC	50.0	50.9	ug/L	0.569	1.76	20	
Toluene	CCC	50.0	50.0	ug/L	1.54	0.0110	20	
Vinyl Chloride	CCC	50.0	55.2	ug/L	0.360	10.3	20	
Bromoform	SPCC	50.0	42.4	ug/L	0.285	15.2	20	
Chlorobenzene	SPCC	50.0	50.3	ug/L	1.02	0.574	20	
Chloromethane	SPCC	50.0	67.0	ug/L	0.408	33.9	20	*
1,1-Dichloroethane	SPCC	50.0	53.7	ug/L	0.667	7.47	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.1	ug/L	0.729	7.71	20	
Xylenes		150	155	ug/L	0.700	3.57	20	
Acetone		50.0	47.1	ug/L	0.0867	5.84	20	
Benzene		50.0	50.6	ug/L	1.10	1.18	20	
Bromobenzene		50.0	50.7	ug/L	0.877	1.47	20	
Bromochloromethane		50.0	51.2	ug/L	0.186	2.47	20	
Bromodichloromethane		50.0	54.0	ug/L	0.389	7.99	20	
Bromomethane		50.0	49.8	ug/L	0.191	0.307	20	
2-Butanone		50.0	50.3	ug/L	0.147	0.611	20	
n-Butylbenzene		50.0	58.9	ug/L	2.76	17.7	20	
sec-Butylbenzene		50.0	53.1	ug/L	3.61	6.27	20	
tert-Butylbenzene		50.0	49.9	ug/L	0.632	0.152	20	
Carbon Disulfide		50.0	47.5	ug/L	0.732	5.05	20	
Carbon Tetrachloride		50.0	55.9	ug/L	0.402	11.9	20	
Dibromochloromethane		50.0	50.7	ug/L	0.391	1.45	20	
Chloroethane		50.0	52.1	ug/L	0.246	4.24	20	
2-Chlorotoluene		50.0	49.6	ug/L	2.54	0.890	20	
4-Chlorotoluene		50.0	54.2	ug/L	2.27	8.48	20	
1,2-Dibromo-3-Chloropropane		50.0	44.7	ug/L	0.170	10.7	20	
1,2-Dibromoethane		50.0	48.0	ug/L	0.316	3.98	20	
Dibromomethane		50.0	50.6	ug/L	0.191	1.29	20	
1,2-Dichlorobenzene		50.0	50.8	ug/L	1.63	1.59	20	
1,3-Dichlorobenzene		50.0	52.1	ug/L	1.68	4.20	20	
1,4-Dichlorobenzene		50.0	53.0	ug/L	1.71	6.07	20	
Dichlorodifluoromethane		50.0	47.8	ug/L	0.171	4.34	20	
1,2-Dichloroethane		50.0	54.4	ug/L	0.464	8.89	20	
cis-1,2-Dichloroethene		50.0	51.5	ug/L	0.305	2.91	20	
trans-1,2-Dichloroethene		50.0	54.3	ug/L	0.533	8.59	20	
1,3-Dichloropropane		50.0	47.3	ug/L	0.531	5.31	20	
2,2-Dichloropropane		50.0	60.6	ug/L	0.456	21.3	20	*
cis-1,3-Dichloropropene		50.0	53.8	ug/L	0.471	7.69	20	
trans-1,3-Dichloropropene		50.0	51.0	ug/L	0.554	1.97	20	

CCV - Modified 03/05/2008
PDF File ID: 3562261
Report generated 05/29/2014 08:13

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14050603 Run Date: 05/19/2014 Sample ID: WG476631-02
Instrument ID: HPMS9 Run Time: 14:29 Method: 8260B
File ID: 9M963364 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG476633 Cal ID: HPMS9 - 14-APR-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	55.2	ug/L	0.371	10.5	20	
2-Hexanone		50.0	47.5	ug/L	0.292	4.99	20	
Hexachlorobutadiene		50.0	51.0	ug/L	0.690	1.92	20	
Isopropylbenzene		50.0	52.5	ug/L	1.75	4.95	20	
p-Isopropyltoluene		50.0	55.7	ug/L	3.05	11.3	20	
4-Methyl-2-Pentanone		50.0	45.4	ug/L	0.145	9.15	20	
Methylene Chloride		50.0	48.2	ug/L	0.278	3.56	20	
Naphthalene		50.0	51.5	ug/L	2.64	2.98	20	
n-Propylbenzene		50.0	54.1	ug/L	3.96	8.12	20	
Styrene		50.0	52.8	ug/L	1.16	5.51	20	
1,1,1,2-Tetrachloroethane		50.0	50.0	ug/L	0.388	0.0392	20	
Tetrachloroethene		50.0	53.2	ug/L	0.342	6.47	20	
1,2,3-Trichlorobenzene		50.0	53.8	ug/L	1.19	7.53	20	
1,2,4-Trichlorobenzene		50.0	49.4	ug/L	1.23	1.28	20	
1,1,1-Trichloroethane		50.0	55.0	ug/L	0.450	9.92	20	
1,1,2-Trichloroethane		50.0	48.2	ug/L	0.314	3.53	20	
Trichloroethene		50.0	52.1	ug/L	0.291	4.19	20	
Trichlorofluoromethane		50.0	58.2	ug/L	0.407	16.4	20	
1,2,3-Trichloropropane		50.0	45.8	ug/L	0.223	8.31	20	
1,2,4-Trimethylbenzene		50.0	52.5	ug/L	2.90	5.04	20	
1,3,5-Trimethylbenzene		50.0	52.5	ug/L	2.86	4.93	20	
o-Xylene		50.0	50.8	ug/L	0.704	1.50	20	
m-,p-Xylene		100	105	ug/L	0.696	4.61	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3562261
Report generated 05/29/2014 08:13

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14050603 Run Date: 05/20/2014 Sample ID: WG476698-02
Instrument ID: HPMS9 Run Time: 06:50 Method: 8260B
File ID: 9M963389 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG476699 Cal ID: HPMS9 - 14-APR-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.2	ug/L	0.493	4.48	20	
1,1-Dichloroethene	CCC	50.0	53.8	ug/L	0.547	7.69	20	
1,2-Dichloropropane	CCC	50.0	52.9	ug/L	0.391	5.90	20	
Ethylbenzene	CCC	50.0	51.4	ug/L	0.575	2.82	20	
Toluene	CCC	50.0	49.5	ug/L	1.53	0.902	20	
Vinyl Chloride	CCC	50.0	55.0	ug/L	0.359	9.98	20	
Bromoform	SPCC	50.0	41.6	ug/L	0.280	16.7	20	
Chlorobenzene	SPCC	50.0	50.7	ug/L	1.03	1.41	20	
Chloromethane	SPCC	50.0	71.8	ug/L	0.437	43.6	20	*
1,1-Dichloroethane	SPCC	50.0	53.8	ug/L	0.667	7.59	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	44.7	ug/L	0.705	10.7	20	
Xylenes		150	154	ug/L	0.694	2.55	20	
Acetone		50.0	46.9	ug/L	0.0863	6.19	20	
Benzene		50.0	50.3	ug/L	1.10	0.640	20	
Bromobenzene		50.0	50.4	ug/L	0.872	0.889	20	
Bromochloromethane		50.0	51.4	ug/L	0.187	2.84	20	
Bromodichloromethane		50.0	54.0	ug/L	0.389	7.93	20	
Bromomethane		50.0	52.1	ug/L	0.200	4.23	20	
2-Butanone		50.0	54.1	ug/L	0.158	8.18	20	
n-Butylbenzene		50.0	58.5	ug/L	2.75	17.0	20	
sec-Butylbenzene		50.0	53.1	ug/L	3.61	6.18	20	
tert-Butylbenzene		50.0	49.9	ug/L	0.633	0.116	20	
Carbon Disulfide		50.0	46.8	ug/L	0.721	6.50	20	
Carbon Tetrachloride		50.0	55.1	ug/L	0.396	10.1	20	
Dibromochloromethane		50.0	50.9	ug/L	0.392	1.81	20	
Chloroethane		50.0	51.0	ug/L	0.241	2.05	20	
2-Chlorotoluene		50.0	47.7	ug/L	2.44	4.69	20	
4-Chlorotoluene		50.0	56.2	ug/L	2.36	12.4	20	
1,2-Dibromo-3-Chloropropane		50.0	42.3	ug/L	0.161	15.4	20	
1,2-Dibromoethane		50.0	48.0	ug/L	0.316	3.97	20	
Dibromomethane		50.0	50.0	ug/L	0.189	0.0560	20	
1,2-Dichlorobenzene		50.0	51.1	ug/L	1.64	2.21	20	
1,3-Dichlorobenzene		50.0	52.5	ug/L	1.69	4.99	20	
1,4-Dichlorobenzene		50.0	52.4	ug/L	1.69	4.88	20	
Dichlorodifluoromethane		50.0	48.7	ug/L	0.174	2.58	20	
1,2-Dichloroethane		50.0	54.7	ug/L	0.466	9.45	20	
cis-1,2-Dichloroethene		50.0	52.1	ug/L	0.309	4.29	20	
trans-1,2-Dichloroethene		50.0	54.3	ug/L	0.533	8.64	20	
1,3-Dichloropropane		50.0	47.8	ug/L	0.536	4.33	20	
2,2-Dichloropropane		50.0	60.0	ug/L	0.451	20.0	20	
cis-1,3-Dichloropropene		50.0	53.6	ug/L	0.469	7.25	20	
trans-1,3-Dichloropropene		50.0	51.4	ug/L	0.559	2.85	20	

CCV - Modified 03/05/2008
PDF File ID: 3562261
Report generated 05/29/2014 08:13

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14050603 Run Date: 05/20/2014 Sample ID: WG476698-02
Instrument ID: HPMS9 Run Time: 06:50 Method: 8260B
File ID: 9M963389 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG476699 Cal ID: HPMS9 - 14-APR-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	54.5	ug/L	0.367	9.06	20	
2-Hexanone		50.0	52.4	ug/L	0.322	4.74	20	
Hexachlorobutadiene		50.0	50.3	ug/L	0.681	0.635	20	
Isopropylbenzene		50.0	52.2	ug/L	1.74	4.36	20	
p-Isopropyltoluene		50.0	55.7	ug/L	3.05	11.3	20	
4-Methyl-2-Pentanone		50.0	48.5	ug/L	0.155	3.04	20	
Methylene Chloride		50.0	48.8	ug/L	0.282	2.38	20	
Naphthalene		50.0	50.3	ug/L	2.57	0.568	20	
n-Propylbenzene		50.0	53.7	ug/L	3.93	7.48	20	
Styrene		50.0	52.7	ug/L	1.16	5.43	20	
1,1,1,2-Tetrachloroethane		50.0	50.2	ug/L	0.390	0.439	20	
Tetrachloroethene		50.0	52.6	ug/L	0.337	5.19	20	
1,2,3-Trichlorobenzene		50.0	52.6	ug/L	1.16	5.15	20	
1,2,4-Trichlorobenzene		50.0	49.4	ug/L	1.23	1.18	20	
1,1,1-Trichloroethane		50.0	54.7	ug/L	0.448	9.40	20	
1,1,2-Trichloroethane		50.0	47.7	ug/L	0.310	4.67	20	
Trichloroethene		50.0	52.5	ug/L	0.293	5.07	20	
Trichlorofluoromethane		50.0	57.2	ug/L	0.400	14.4	20	
1,2,3-Trichloropropane		50.0	45.4	ug/L	0.221	9.18	20	
1,2,4-Trimethylbenzene		50.0	52.7	ug/L	2.91	5.33	20	
1,3,5-Trimethylbenzene		50.0	52.3	ug/L	2.85	4.56	20	
o-Xylene		50.0	50.5	ug/L	0.700	0.916	20	
m-,p-Xylene		100	103	ug/L	0.688	3.37	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3562261
Report generated 05/29/2014 08:13

Tune File : D:\MassHunter\GCMS\1\data\051814\17M005077.D
Tune Time : 18 May 2014 19:23

Daily Calibration File : D:\MassHunter\GCMS\1\data\051814\17M005084.D

File	Sample	Surrogate Recovery %				Internal Standard Responses		
						252683	178596	99897
17M005078.D	WG476501-0	1*	2*	2*	3*	265293	182302	91385
17M005079.D	WG476501-0	1*	1*	1*	2*	238781	168236	85443
17M005080.D	WG476501-0	3*	3*	3*	4*	241058	168819	87193
17M005081.D	WG476501-0	4*	5*	5*	6*	233713	164813	82050
17M005082.D	WG476501-0	11*	11*	11*	12*	220560	152191	76170
17M005083.D	WG476501-0	40*	39*	40*	42*	244821	171066	94757
17M005084.D	WG476501-0	100	98	99	103	252683	178596	99897
17M005085.D	WG476501-0	192*	188*	190*	191*	274531	201251	114422
17M005086.D	WG476501-1	397*	383*	374*	357*	269846	214382	133704
17M005087.D	WG476501-1	565*	532*	505*	502*	296187	245798	149343
17M005088.D	RINSE	92	84	93	95	272323	184687	96646
17M005089.D	WG476501-1	94	86	94	93	291963	207913	124220
17M005090.D	RINSE	93	84	95	98	265861	181087	95020
17M005091.D	WG476502-0	95	89	100	109	246218	166608	84732
17M005092.D	WG476502-0	90	84	92	96	286849	200440	113813
17M005093.D	L14050420-	91	86	95	97	275971	190404	110396
17M005094.D	L14050420-	69*	25*	202*	172*	22350*	7363*	1733*
17M005095.D	L14050415-	91	87	100	107	246414	166221	86649
17M005096.D	L14050415-	91	87	98	111	242828	166894	83036

17M005097.D	L14050415-	89	87	95	106	236382	163909	83673
17M005098.D	L14050415-	86*	86	97	99	250448	167004	88079
17M005099.D	L14050415-	89	87	96	100	238127	163687	85506
17M005100.D	L14050460-	89	85	96	103	219361	151489	77398
17M005101.D	L14050415-	85*	84	92	99	219561	152505	78379
17M005102.D	L14050360-	88	86	100	103	237288	160528	90235
17M005103.D	L14050420-	94	90	101	112	230174	151975	76809
17M005104.D	L14050603-	93	90	99	106	213921	146791	74407
17M005105.D	L14050603-	91	88	97	102	212984	147960	74414
17M005106.D	L14050603-	92	90	101	110	202099	139571	69786
17M005107.D	L14050603-	90	88	99	110	203411	138493	69037
17M005108.D	L14050603-	93	90	100	107	196728	136597	70705
17M005109.D	L14050420-	85*	83	95	96	224568	151178	81677
17M005110.D	L14050420-	88	88	101	105	220998	144488	76731
17M005111.D	L14050603-	90	87	98	111	214493	146490	73569
17M005112.D	L14050603-	86*	84	94	101	224063	154854	79091

(fails) - fails 12hr time check * - fails criteria

Created: Thu May 29 13:34:46 2014 HPMS17

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14050603
Instrument ID: HPMS9
Workgroup (AAB#): WG476633

ICAL CCV Number: WG471242-08
CAL ID: HPMS9 - 14-APR-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG471242-08	NA	NA	279955	536567	745675
Upper Limit	NA	NA	559910	1073134	1491350
Lower Limit	NA	NA	139978	268284	372838
L14050603-05	1.00	01	215886	455855	621183
L14050603-06	1.00	01	249778	499252	662371
L14050603-07	1.00	01	236449	478003	638912
L14050603-11	1.00	01	199481	428044	582578
L14050603-12	1.00	01	212131	456036	619467
L14050603-13	10.0	DL01	211294	446889	610655
WG476633-01	1.00	01	224433	473663	647345
WG476633-02	1.00	01	246062	481569	634992

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3562262
Report generated 05/29/2014 08:13

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14050603
Instrument ID: HPMS9
Workgroup (AAB#): WG476699

ICAL CCV Number: WG471242-08
CAL ID: HPMS9 - 14-APR-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG471242-08	NA	NA	279955	536567	745675
Upper Limit	NA	NA	559910	1073134	1491350
Lower Limit	NA	NA	139978	268284	372838
L14050603-14	1.00	01	220583	465759	635996
WG476699-01	1.00	01	222732	472020	638726
WG476699-02	1.00	01	220554	446364	604099
WG476699-03	1.00	01	233389	460285	613098

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3562262
Report generated 05/29/2014 08:13

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005104.D
Acq On : 19 May 2014 04:05
Operator : FJB/MDA
Sample : L14050603-01 A 8260
Misc : 1,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 22 09:43:38 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	4.935	96	213921	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.833	117	146791	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.187	152	74407	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	3.930	111	56241	23.2867 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.147%		
32) 1,2-Dichloroethane-d4	4.596	65	72172	22.4312 ug/L	0.0100
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.725%		
44) Toluene-d8	6.532	98	218752	24.7477 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.991%		
63) p-Bromofluorobenzene	8.605	95	83937	26.5485 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.194%		
Target Compounds					Qvalue
11) Carbon Disulfide	1.782	76	1323	0.2140 ug/L #	73

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005104.D
Acq On : 19 May 2014 04:05
Operator : FJB/MDA
Sample : L14050603-01 A 8260
Misc : 1,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 22 09:43:38 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

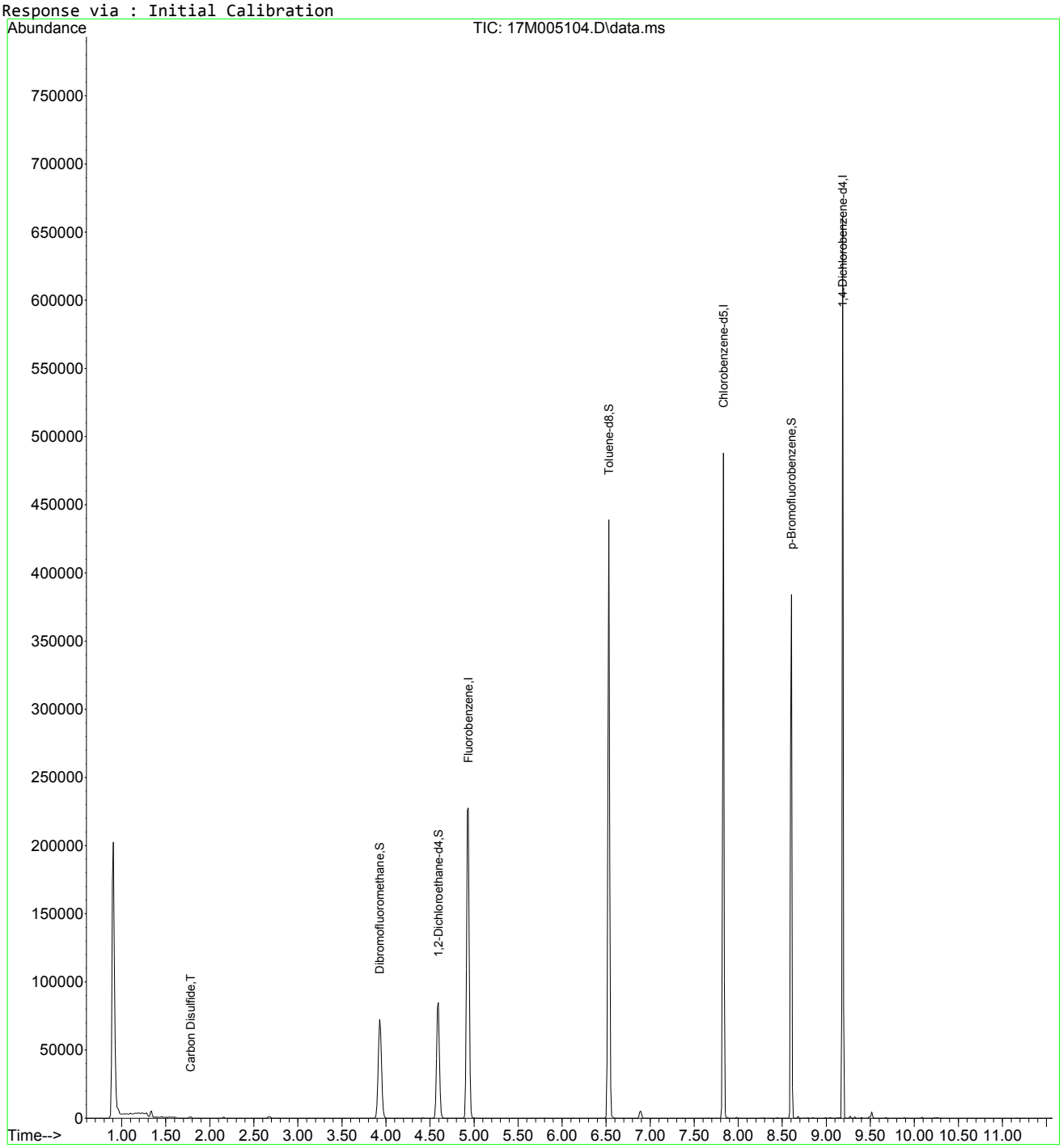

8260VMS.M Thu May 22 09:43:39 2014 Page: 2

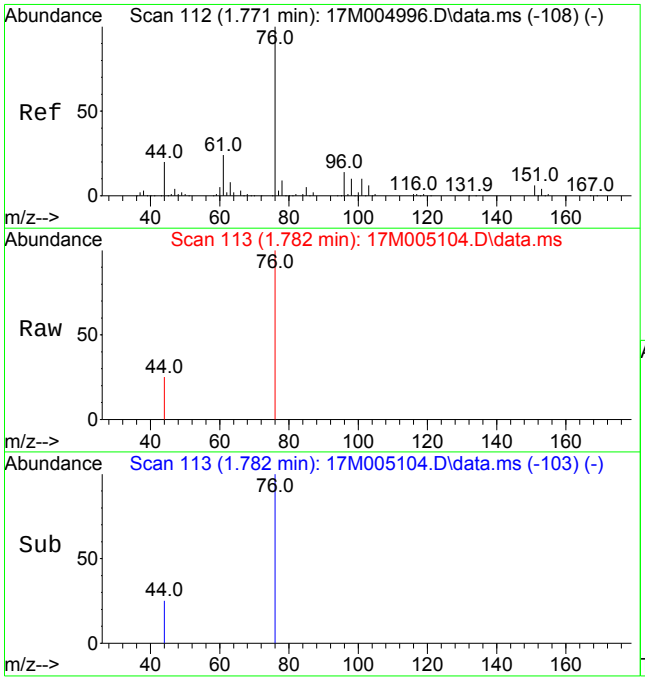

#11
Carbon Disulfide
Concen: 0.2140 ug/L
RT: 1.782 min Scan# 113
Delta R.T. 0.010 min
Lab File: 17M005104.D
Acq: 19 May 2014 04:05

Tgt Ion: 76 Resp: 1323

Ion	Ratio	Lower	Upper
76	100		
78	0.0	8.2	12.2#

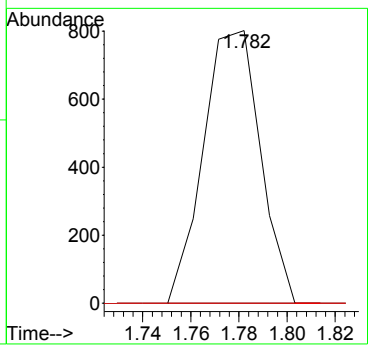

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005105.D
Acq On : 19 May 2014 04:25
Operator : FJB/MDA
Sample : L14050603-02 A 8260
Misc : 1,1
ALS Vial : 28 Sample Multiplier: 1

Quant Time: May 22 09:43:41 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	4.934	96	212984	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.833	117	147960	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.187	152	74414	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	3.930	111	54485	22.6589 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.636%		
32) 1,2-Dichloroethane-d4	4.596	65	70638	22.0510 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.204%		
44) Toluene-d8	6.532	98	216215	24.2675 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.070%		
63) p-Bromofluorobenzene	8.605	95	80821	25.5606 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.242%		
Target Compounds					Qvalue
11) Carbon Disulfide	1.771	76	1393	0.2263 ug/L #	73
18) 1,1-Dichloroethane	2.798	63	656	0.1382 ug/L #	43

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005105.D
Acq On : 19 May 2014 04:25
Operator : FJB/MDA
Sample : L14050603-02 A 8260
Misc : 1,1
ALS Vial : 28 Sample Multiplier: 1

Quant Time: May 22 09:43:41 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

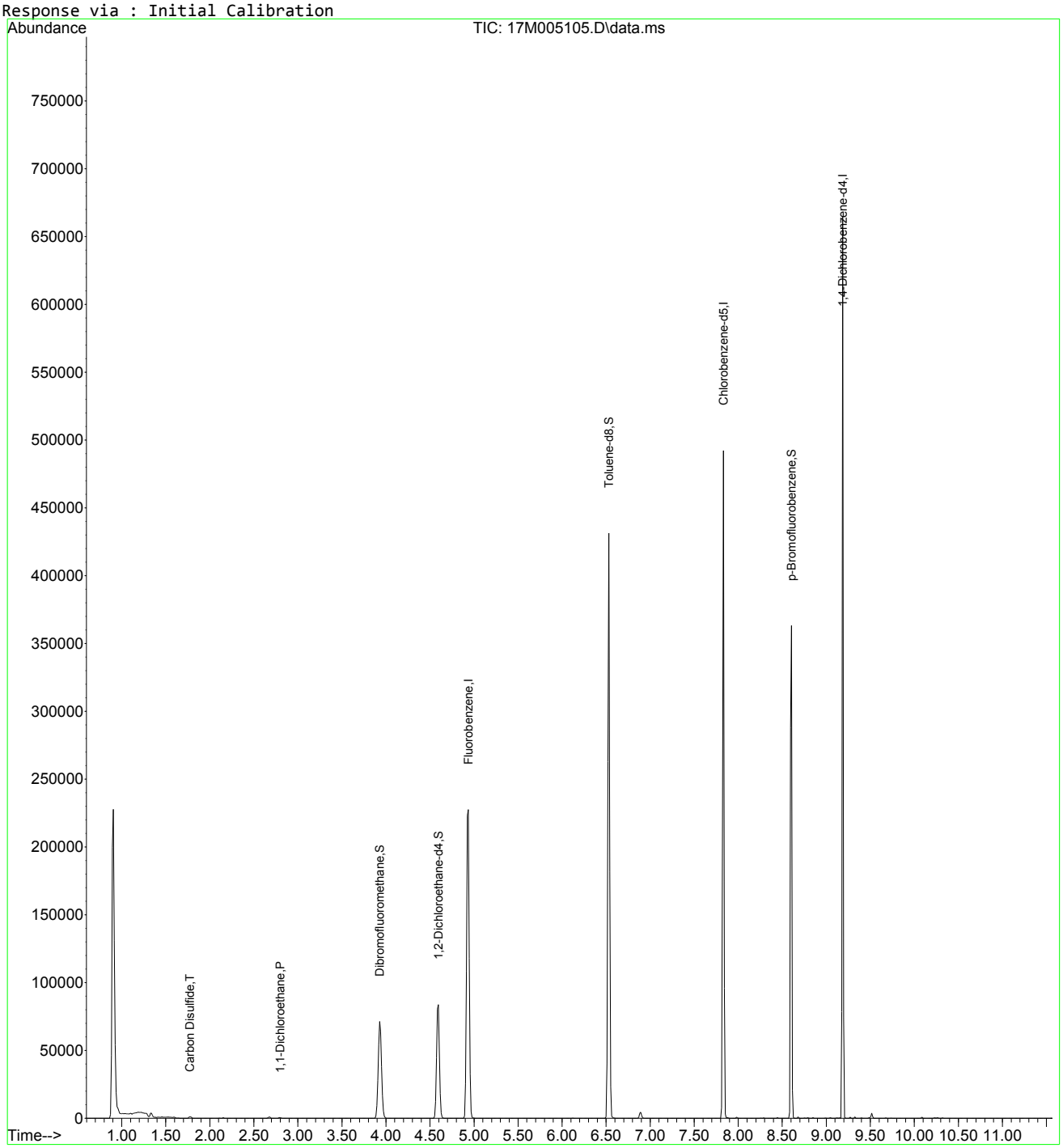

8260VMS.M Thu May 22 09:43:42 2014 Page: 2

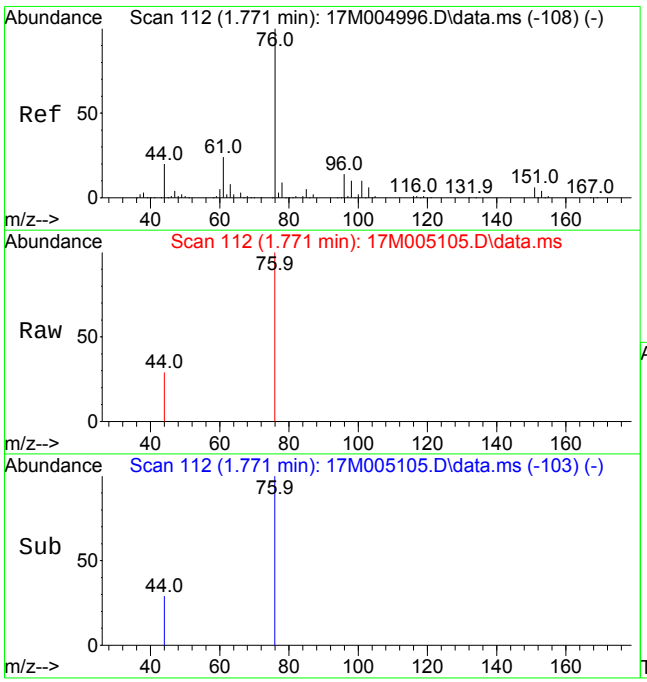

#11
Carbon Disulfide
Concen: 0.2263 ug/L
RT: 1.771 min Scan# 112
Delta R.T. -0.001 min
Lab File: 17M005105.D
Acq: 19 May 2014 04:25

Tgt Ion: 76 Resp: 1393

Ion	Ratio	Lower	Upper
76	100		
78	0.0	8.2	12.2#

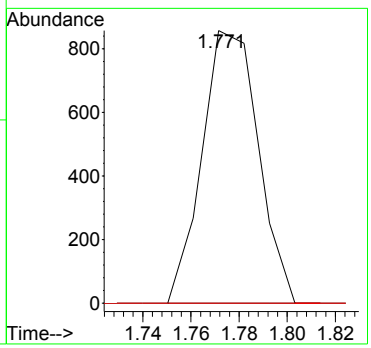

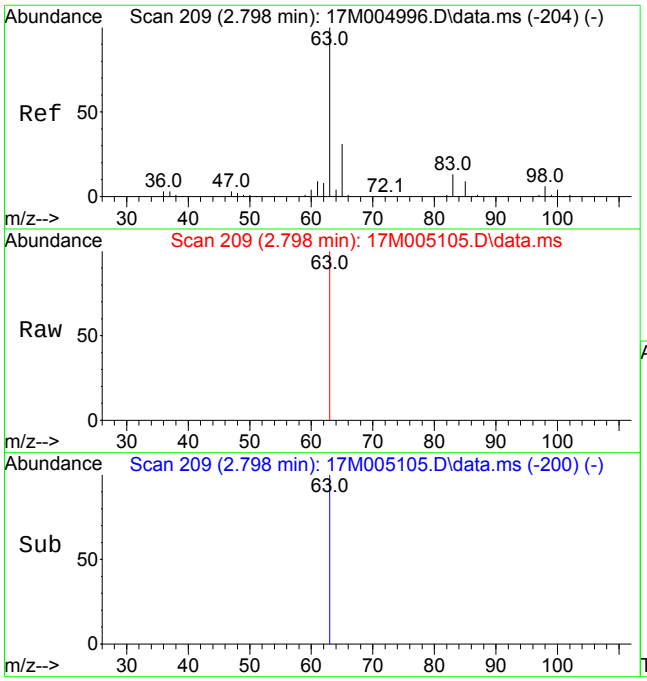

#18
1,1-Dichloroethane
Concen: 0.1382 ug/L
RT: 2.798 min Scan# 209
Delta R.T. -0.000 min
Lab File: 17M005105.D
Acq: 19 May 2014 04:25

Tgt Ion: 63 Resp: 656

Ion	Ratio	Lower	Upper
63	100		
65	0.0	25.0	37.6#

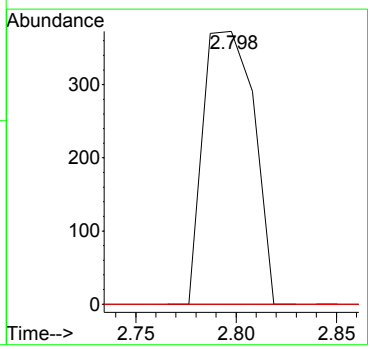

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005106.D
Acq On : 19 May 2014 04:44
Operator : FJB/MDA
Sample : L14050603-03 A 8260
Misc : 1,1
ALS Vial : 29 Sample Multiplier: 1

Quant Time: May 22 09:43:44 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	4.934	96	202099	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.833	117	139571	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.187	152	69786	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	3.930	111	52739	23.1141 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.456%		
32) 1,2-Dichloroethane-d4	4.596	65	68756	22.6195 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.478%		
44) Toluene-d8	6.532	98	211320	25.1436 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.574%		
63) p-Bromofluorobenzene	8.605	95	81534	27.4961 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.984%		
Target Compounds					Qvalue
18) 1,1-Dichloroethane	2.798	63	1981	0.4398 ug/L	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005106.D
Acq On : 19 May 2014 04:44
Operator : FJB/MDA
Sample : L14050603-03 A 8260
Misc : 1,1
ALS Vial : 29 Sample Multiplier: 1

Quant Time: May 22 09:43:44 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

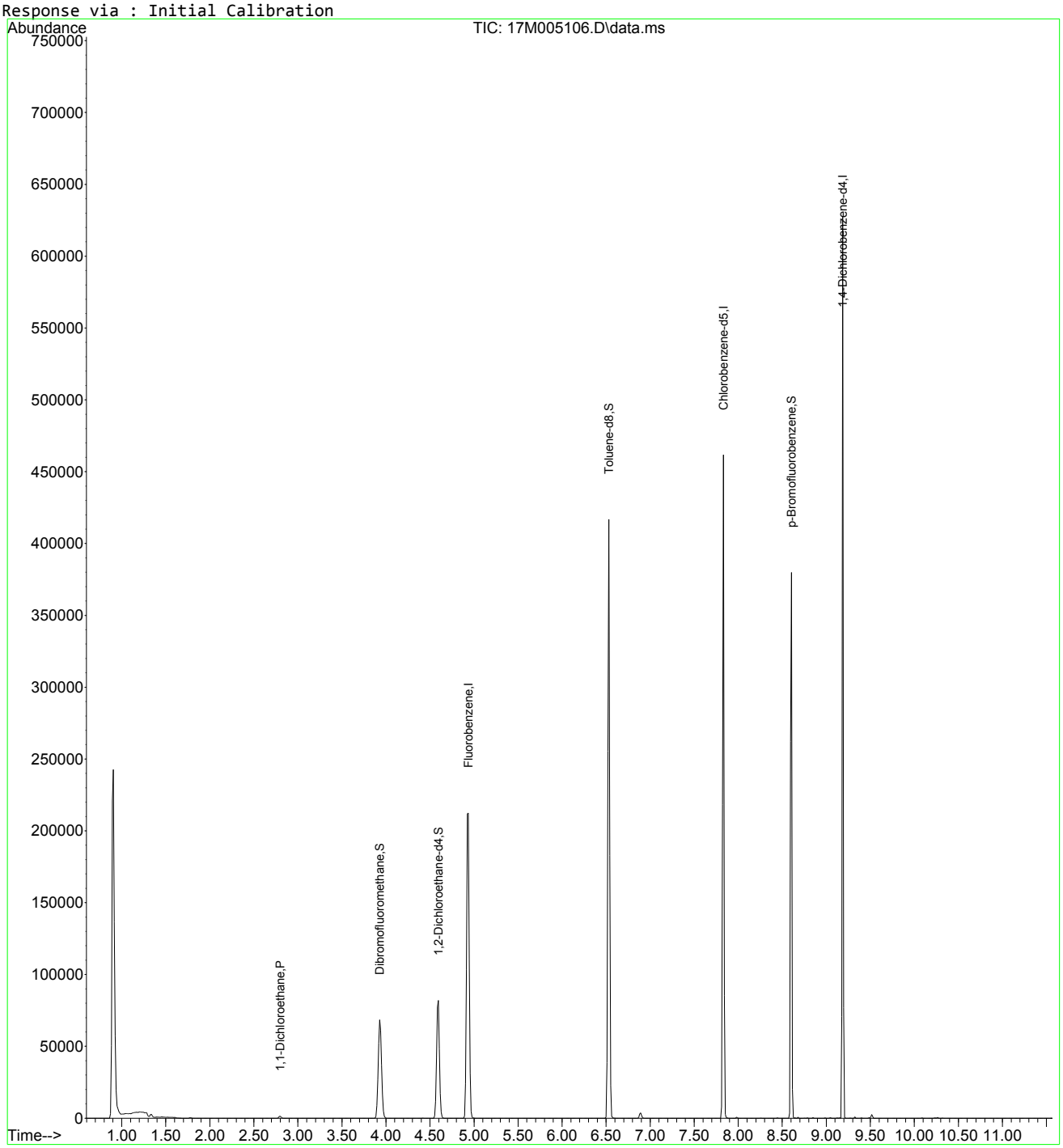

8260VMS.M Thu May 22 09:43:45 2014 Page: 2

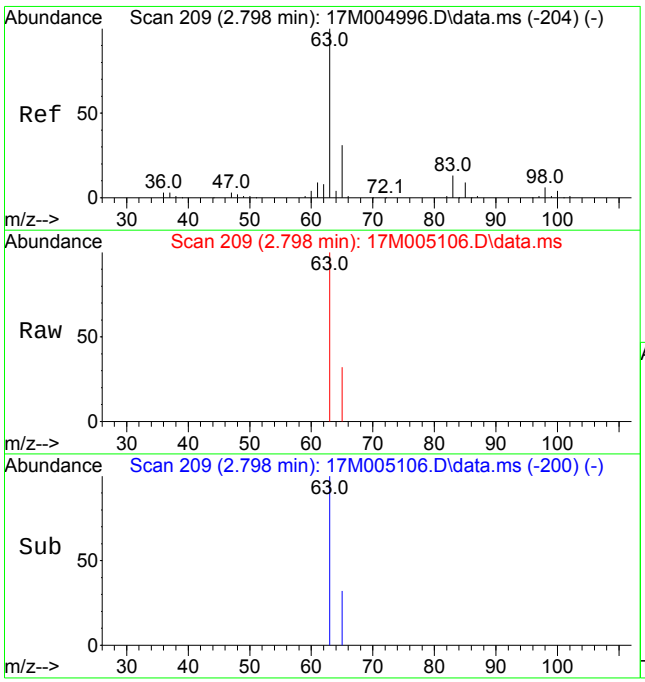

#18
1,1-Dichloroethane
Concen: 0.4398 ug/L
RT: 2.798 min Scan# 209
Delta R.T. -0.000 min
Lab File: 17M005106.D
Acq: 19 May 2014 04:44

Tgt Ion: 63 Resp: 1981

Ion	Ratio	Lower	Upper
63	100		
65	27.1	25.0	37.6

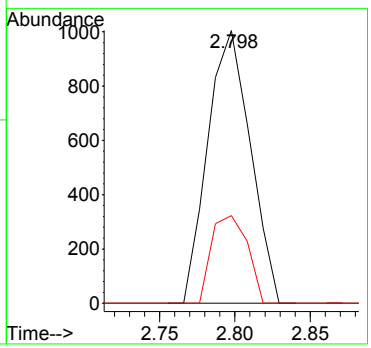

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005107.D
Acq On : 19 May 2014 05:04
Operator : FJB/MDA
Sample : L14050603-04 A 8260
Misc : 1,1
ALS Vial : 30 Sample Multiplier: 1

Quant Time: May 22 09:43:47 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	4.935	96	203411	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.833	117	138493	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.187	152	69037	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	3.930	111	51851	22.5783 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.313%		
32) 1,2-Dichloroethane-d4	4.596	65	67276	21.9899 ug/L	0.0101
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.960%		
44) Toluene-d8	6.532	98	207293	24.8565 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.426%		
63) p-Bromofluorobenzene	8.605	95	80450	27.4249 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.700%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005107.D
Acq On : 19 May 2014 05:04
Operator : FJB/MDA
Sample : L14050603-04 A 8260
Misc : 1,1
ALS Vial : 30 Sample Multiplier: 1

Quant Time: May 22 09:43:47 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

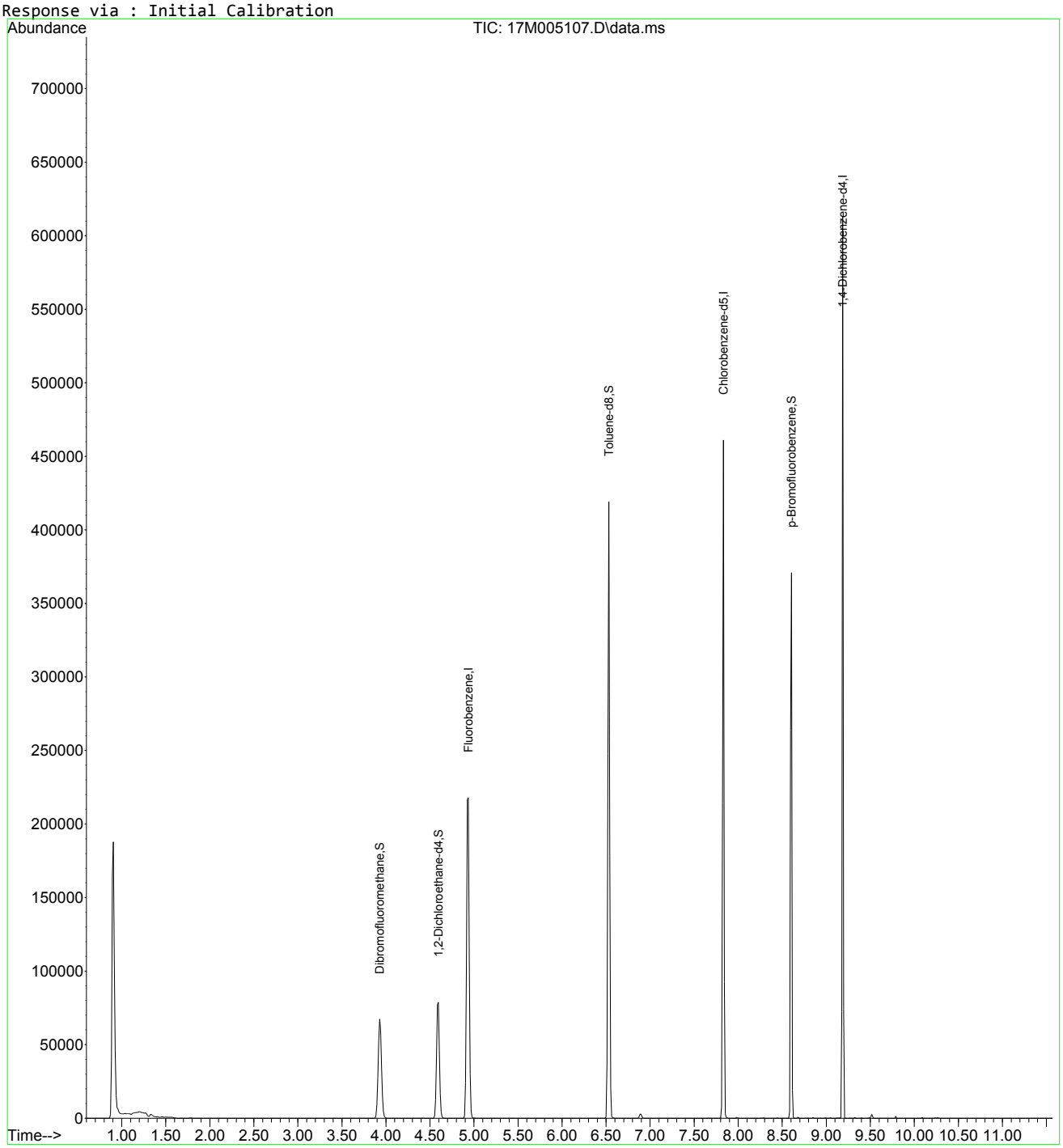

8260VMS.M Thu May 22 09:43:47 2014 Page: 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051914\9M963380.D Vial: 17
Acq On : 19 May 2014 22:31 Operator: ADC
Sample : L14050603-05 B 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 09:08:51 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.10	96	621183	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.98	117	455855	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	215886	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.06	111	175820	26.2596 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.04%		
43) 1,2-Dichloroethane-d4	10.69	65	221030	26.2274 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.92%		
58) Toluene-d8	13.08	98	624411	25.1087 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.44%		
79) p-Bromofluorobenzene	16.48	95	216246	24.3239 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.28%		

Target Compounds					Qvalue
3) Chloromethane	3.91	50	3060	0.4046 ug/L #	1
13) Acetone	6.62	43	1759	0.7692 ug/L #	33
46) Benzene	10.86	78	4369	0.1613 ug/L #	82
56) Dimethyl Disulfide	13.08	94	16149	1.2708 ug/L #	28

(#) = qualifier out of range (m) = manual integration
9M963380.D 8260WT.M Tue May 20 09:08:53 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051914\9M963380.D Vial: 17
Acq On : 19 May 2014 22:31 Operator: ADC
Sample : L14050603-05 B 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 9:08 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

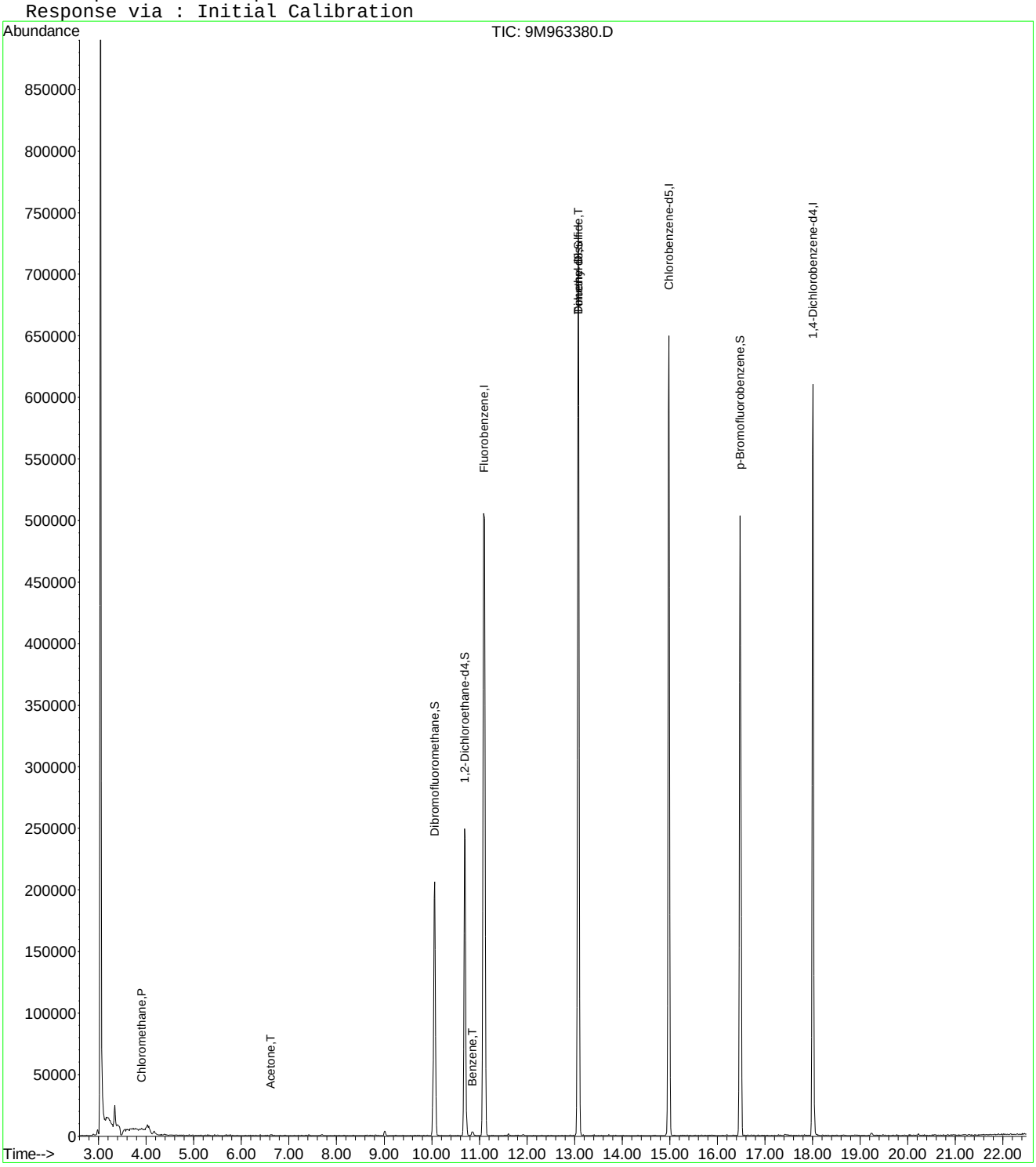

9M963380.D 8260WT.M Tue May 20 09:08:54 2014 Page 2

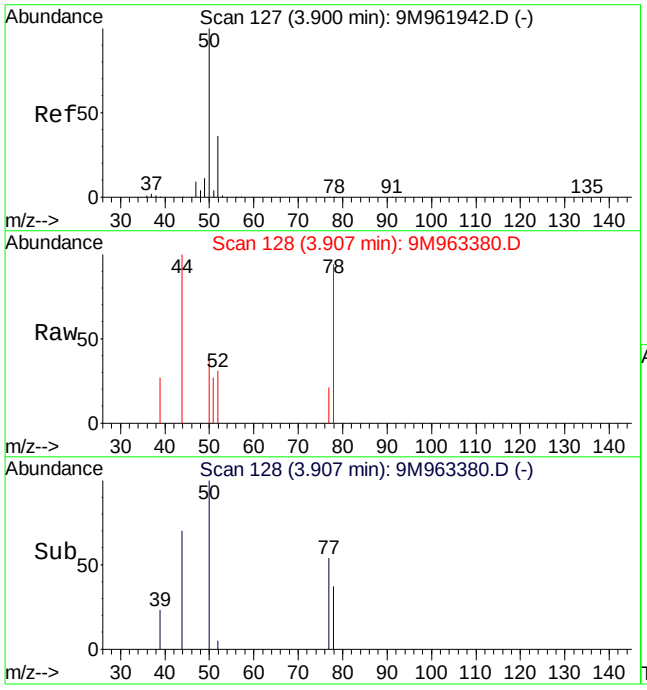

#3
Chloromethane
Concen: 0.40 ug/L
RT: 3.91 min Scan# 128
Delta R.T. 0.02 min
Lab File: 9M963380.D
Acq: 19 May 2014 22:31

Tgt Ion: 50 Resp: 3060

Ion	Ratio	Lower	Upper
50	100		
52	99.7	21.0	49.0#

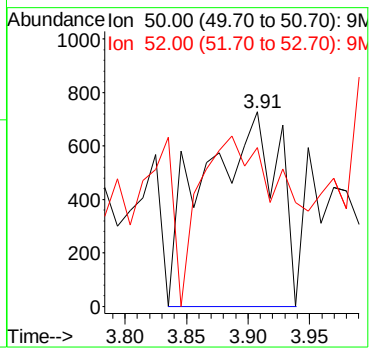

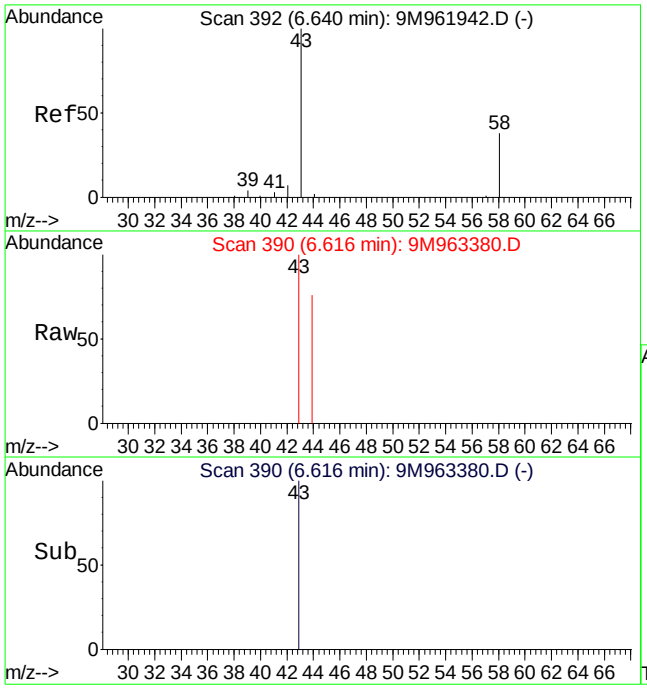

#13
Acetone
Concen: 0.77 ug/L
RT: 6.62 min Scan# 390
Delta R.T. 0.01 min
Lab File: 9M963380.D
Acq: 19 May 2014 22:31

Tgt Ion: 43 Resp: 1759

Ion	Ratio	Lower	Upper
43	100		
58	0.0	25.4	59.4#

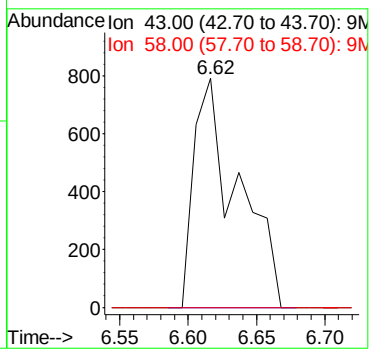

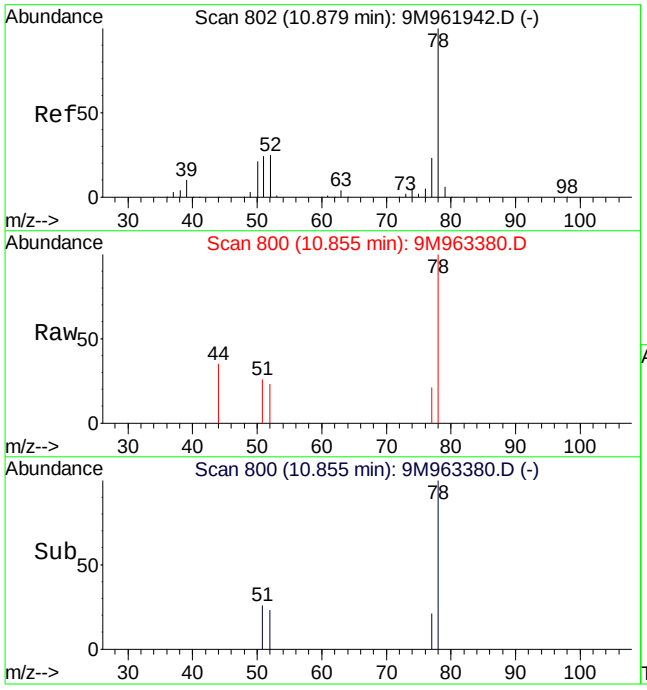

#46
Benzene
Concen: 0.16 ug/L
RT: 10.86 min Scan# 800
Delta R.T. -0.00 min
Lab File: 9M963380.D
Acq: 19 May 2014 22:31

Tgt Ion: 78 Resp: 4369

Ion	Ratio	Lower	Upper
78	100		
77	10.4	13.9	32.3#
52	18.7	14.4	33.6

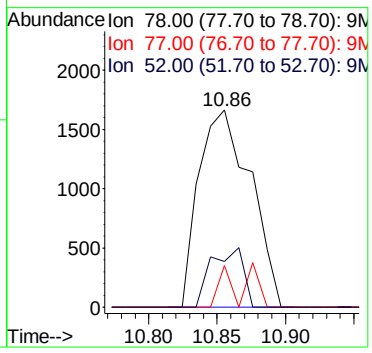

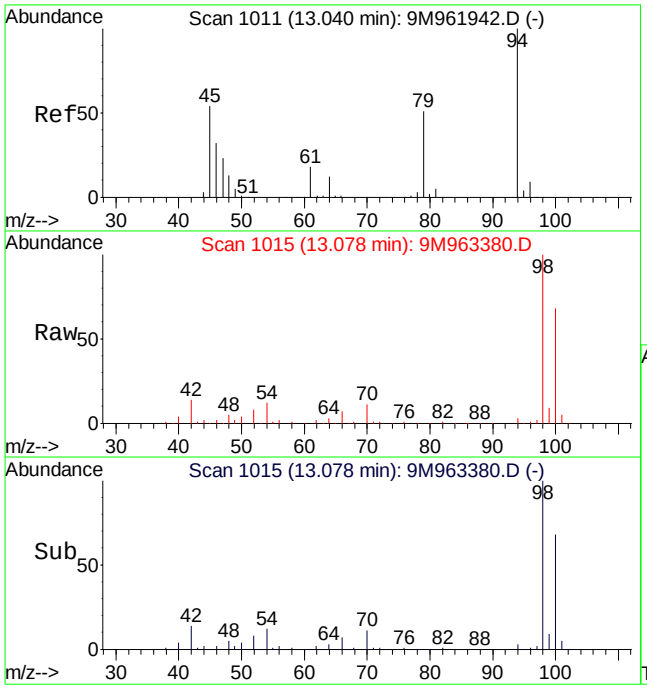

#56
Dimethyl Disulfide
Concen: 1.27 ug/L
RT: 13.08 min Scan# 1015
Delta R.T. 0.05 min
Lab File: 9M963380.D
Acq: 19 May 2014 22:31

Tgt Ion: 94 Resp: 16149

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.9#

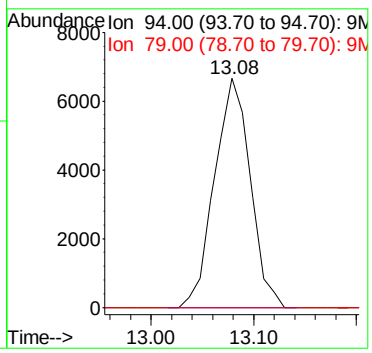

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051914\9M963370.D Vial: 7
Acq On : 19 May 2014 17:30 Operator: ADC
Sample : L14050603-06 B MS 826-LOW Inst : HPMS9
Misc : 1,1 STD64451 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 19 17:53:23 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.09	96	662371	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.98	117	499252	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	249778	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.06	111	182861	25.6129 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.44%		
43) 1,2-Dichloroethane-d4	10.69	65	232276	25.8480 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.40%		
58) Toluene-d8	13.08	98	673272	24.7201 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.88%		
79) p-Bromofluorobenzene	16.48	95	238199	23.1577 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.64%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	158778	33.4702 ug/L	97
3) Chloromethane	3.89	50	262842	32.5900 ug/L	98
4) Vinyl Chloride	4.13	62	221057	25.5956 ug/L	99
5) 1,3-Butadiene	4.19	54	1875	0.3509 ug/L #	9
6) Bromomethane	5.08	94	118921	23.4446 ug/L	98
7) Chloroethane	5.23	64	136383	21.8223 ug/L	96
8) Trichlorofluoromethane	5.74	101	218403	23.5620 ug/L	99
10) Isoprene	6.31	67	219343	21.6597 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.52	101	122154	19.8581 ug/L	97
13) Acetone	6.62	43	52864	21.6788 ug/L	93
14) 1,1-Dichloroethene	6.84	61	265779	19.7431 ug/L	95
15) Tert-Butyl Alcohol	6.85	59	8668	8.8945 ug/L #	66
16) Dimethyl Sulfide	7.11	62	270913	35.0591 ug/L	90
17) Iodomethane	7.38	142	173656	26.8821 ug/L	99
18) Methyl acetate	7.37	43	144094	23.0397 ug/L	97
19) Methylene Chloride	7.63	84	149775	19.5846 ug/L	79
20) Carbon Disulfide	7.69	76	389481	19.0630 ug/L	100
21) Acrylonitrile	7.82	53	93337	23.6139 ug/L	98
22) Methyl Tert Butyl Ether	7.85	73	437474	21.4487 ug/L	97
23) trans-1,2-Dichloroethene	8.08	61	279099	21.4575 ug/L	97
24) n-Hexane	8.17	57	266146	21.8991 ug/L	93
27) 1,1-Dichloroethane	8.71	63	340371	20.7114 ug/L	99
29) 2-Butanone	9.26	43	87344	22.6225 ug/L	91
31) 2,2-Dichloropropane	9.49	77	217977	21.8694 ug/L	99
32) cis-1,2-Dichloroethene	9.55	96	164458	20.9627 ug/L	93
33) Chloroform	9.76	83	261937	20.9629 ug/L	100
35) Bromochloromethane	10.00	130	97122	20.2188 ug/L	85
38) 1,1,1-Trichloroethane	10.30	97	227666	21.0026 ug/L	98
39) Cyclohexane	10.34	56	390133	21.8363 ug/L	94
40) 1,1-Dichloropropene	10.49	75	182088	20.4486 ug/L	98
42) Carbon Tetrachloride	10.65	117	195289	20.4929 ug/L	99
45) 1,2-Dichloroethane	10.81	62	246270	21.8332 ug/L	97
46) Benzene	10.85	78	599513	20.7621 ug/L	98
47) Trichloroethene	11.61	130	148021	20.0046 ug/L	98
48) Methylcyclohexane	11.69	83	232298	20.5965 ug/L	95
49) 1,2-Dichloropropane	11.82	63	210500	21.5197 ug/L	99
51) Bromodichloromethane	12.12	83	202365	21.2018 ug/L	100
52) Dibromomethane	12.21	174	101984	20.3659 ug/L	99
54) 4-Methyl-2-Pentanone	12.44	58	85980	20.3332 ug/L	97
55) cis-1,3-Dichloropropene	12.75	75	251808	21.7526 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051914\9M963370.D Vial: 7
Acq On : 19 May 2014 17:30 Operator: ADC
Sample : L14050603-06 B MS 826-LOW Inst : HPMS9
Misc : 1,1 STD64451 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 19 17:53:23 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
56)	Dimethyl Disulfide	13.03	94	309991	22.8766	ug/L	97
59)	Toluene	13.18	91	615745	20.0160	ug/L	99
60)	Ethyl Methacrylate	13.25	69	196627	21.7382	ug/L	100
61)	trans-1,3-Dichloropropene	13.35	75	211784	19.5161	ug/L	97
62)	1,1,2-Trichloroethane	13.56	97	126891	19.5435	ug/L	100
63)	2-Hexanone	13.49	43	132225	21.5229	ug/L	93
64)	1,3-Dichloropropane	13.87	76	219351	19.5905	ug/L	89
65)	Tetrachloroethene	14.00	164	123300	19.2518	ug/L	97
66)	Dibromochloromethane	14.27	129	156830	20.3856	ug/L	100
67)	1,2-Dibromoethane	14.53	107	128791	19.5763	ug/L	99
68)	1-Chlorohexane	14.60	91	191808	21.2798	ug/L	88
69)	Chlorobenzene	15.03	112	380963	18.8476	ug/L	97
70)	1,1,1,2-Tetrachloroethane	15.05	131	155699	20.1042	ug/L	97
71)	Ethylbenzene	15.05	106	224900	20.1290	ug/L	97
72)	m-,p-Xylene	15.14	106	525768	39.5673	ug/L	99
73)	o-Xylene	15.70	106	258092	18.6223	ug/L	99
74)	Styrene	15.75	104	447000	20.4112	ug/L	100
75)	Bromoform	16.25	173	113962	17.3408	ug/L	100
76)	Isopropylbenzene	16.13	105	631426	18.9782	ug/L	100
78)	1,1,2,2-Tetrachloroethane	16.35	83	163361	20.7117	ug/L	97
80)	1,2,3-Trichloropropane	16.54	110	49838	20.4977	ug/L	73
81)	trans-1,4-Dichloro-2-Buten	16.58	53	43270	14.1671	ug/L	78
82)	n-Propylbenzene	16.63	91	723094	19.7773	ug/L	100
83)	Bromobenzene	16.78	156	182024	21.0826	ug/L	100
84)	1,3,5-Trimethylbenzene	16.82	105	597949	21.9916	ug/L	100
85)	2-Chlorotoluene	16.91	91	476286	18.6154	ug/L	100
86)	4-Chlorotoluene	16.96	91	448823	21.4279	ug/L	98
87)	a-Methylstyrene	17.22	118	325382	23.1466	ug/L	98
88)	tert-Butylbenzene	17.29	134	120803	19.0920	ug/L	96
89)	1,2,4-Trimethylbenzene	17.34	105	606394	21.9874	ug/L	99
90)	sec-Butylbenzene	17.55	105	659666	19.4218	ug/L	100
91)	p-Isopropyltoluene	17.71	119	555259	20.3094	ug/L	99
92)	1,3-Dichlorobenzene	17.92	146	308194	19.1422	ug/L	100
93)	1,4-Dichlorobenzene	18.05	146	332943	20.6769	ug/L	98
94)	n-Butylbenzene	18.24	91	524930	22.3900	ug/L	100
95)	1,2-Dichlorobenzene	18.55	146	314946	19.6123	ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.55	157	36033	19.0060	ug/L	97
97)	1,2,4-Trichlorobenzene	20.69	180	238845	19.3361	ug/L	99
98)	Hexachlorobutadiene	20.83	225	123533	18.4418	ug/L	98
99)	Naphthalene	21.07	128	574075	22.4544	ug/L	100
100)	1,2,3-Trichlorobenzene	21.37	180	244923	22.2186	ug/L	98

(#) = qualifier out of range (m) = manual integration
9M963370.D 8260WT.M Mon May 19 17:53:25 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051914\9M963370.D Vial: 7
Acq On : 19 May 2014 17:30 Operator: ADC
Sample : L14050603-06 B MS 826-LOW Inst : HPMS9
Misc : 1,1 STD64451 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 19 17:53 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

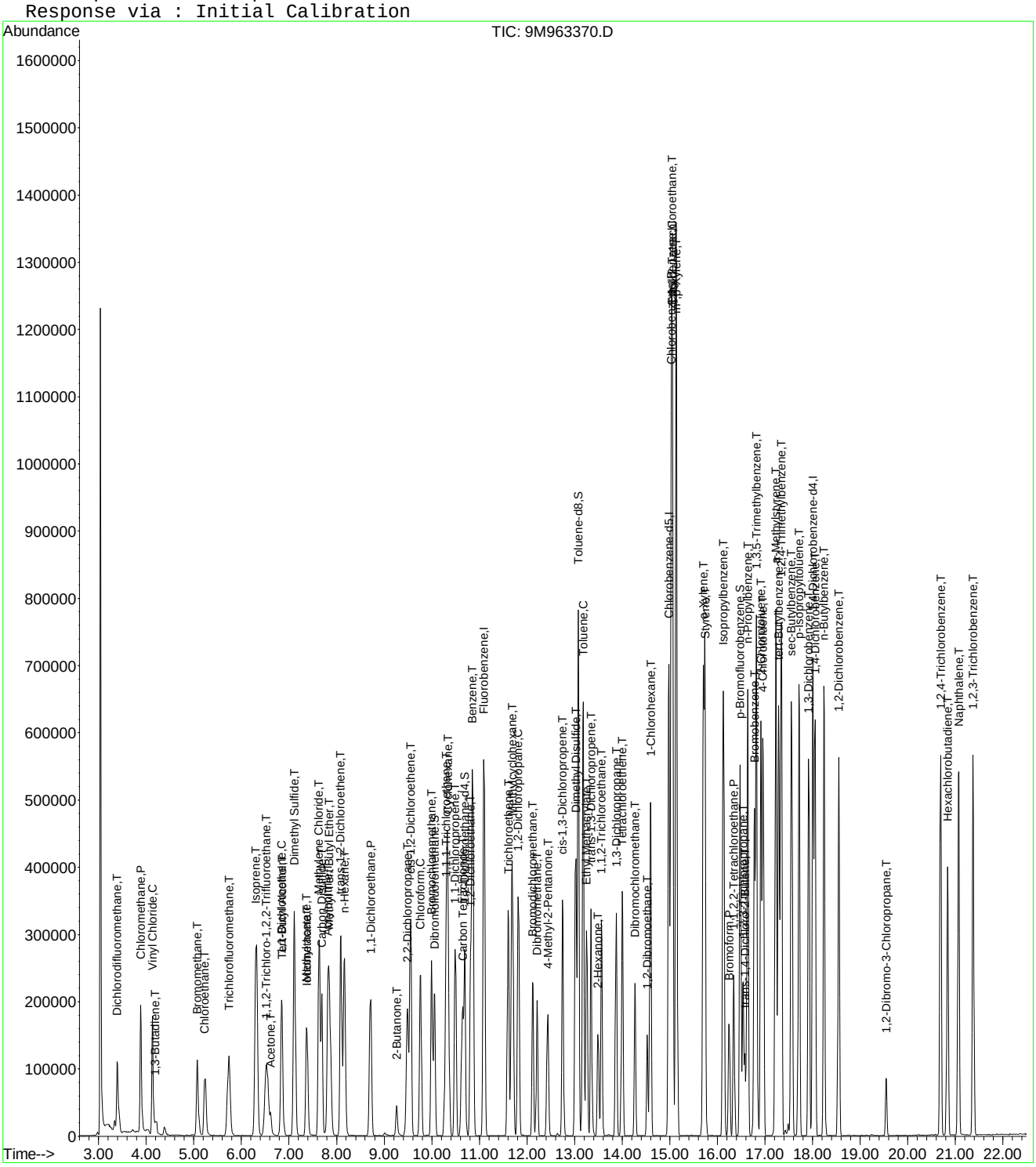

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051914\9M963371.D Vial: 8
Acq On : 19 May 2014 18:00 Operator: ADC
Sample : L14050603-07 B MSD 826-LOW Inst : HPMS9
Misc : 1,1 STD64451 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 19 18:23:26 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.09	96	638912	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.98	117	478003	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	236449	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.06	111	174605	25.3545 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.40%		
43) 1,2-Dichloroethane-d4	10.69	65	217047	25.0401 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.16%		
58) Toluene-d8	13.08	98	637720	24.4557 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.84%		
79) p-Bromofluorobenzene	16.48	95	225599	23.1691 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.68%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	153707	33.5909 ug/L	97
3) Chloromethane	3.89	50	255545	32.8486 ug/L	97
4) Vinyl Chloride	4.13	62	217249	26.0782 ug/L	98
5) 1,3-Butadiene	4.18	54	1634	0.3170 ug/L #	26
6) Bromomethane	5.07	94	116393	23.7888 ug/L	98
7) Chloroethane	5.23	64	132235	21.9355 ug/L	97
8) Trichlorofluoromethane	5.75	101	207596	23.2184 ug/L	99
10) Isoprene	6.32	67	203237	20.8061 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.53	101	115270	19.4310 ug/L	96
13) Acetone	6.62	43	51043	21.7006 ug/L	97
14) 1,1-Dichloroethene	6.84	61	249638	19.2250 ug/L	97
16) Dimethyl Sulfide	7.11	62	257038	34.4848 ug/L	89
17) Iodomethane	7.37	142	164192	26.3652 ug/L	100
18) Methyl acetate	7.37	43	137992	22.8741 ug/L	95
19) Methylene Chloride	7.63	84	144618	19.6046 ug/L	79
20) Carbon Disulfide	7.69	76	379290	19.2459 ug/L	100
21) Acrylonitrile	7.81	53	90969	23.8598 ug/L	98
22) Methyl Tert Butyl Ether	7.85	73	425604	21.6329 ug/L	99
23) trans-1,2-Dichloroethene	8.08	61	268228	21.3789 ug/L	97
24) n-Hexane	8.16	57	251773	21.4771 ug/L	94
27) 1,1-Dichloroethane	8.70	63	328691	20.7351 ug/L	100
29) 2-Butanone	9.26	43	83722	22.4806 ug/L	92
31) 2,2-Dichloropropane	9.49	77	202691	21.0825 ug/L	99
32) cis-1,2-Dichloroethene	9.55	96	154915	20.4713 ug/L	89
33) Chloroform	9.76	83	249540	20.7040 ug/L	100
35) Bromochloromethane	10.00	130	94756	20.4506 ug/L	87
38) 1,1,1-Trichloroethane	10.30	97	218911	20.9365 ug/L	97
39) Cyclohexane	10.33	56	368552	21.3858 ug/L	94
40) 1,1-Dichloropropene	10.49	75	175083	20.3839 ug/L	99
41) Tert-Amyl-Methyl ether	10.49	73	24563	1.2584 ug/L #	48
42) Carbon Tetrachloride	10.65	117	189408	20.6056 ug/L	98
45) 1,2-Dichloroethane	10.81	62	237207	21.8018 ug/L	98
46) Benzene	10.85	78	572254	20.5458 ug/L	97
47) Trichloroethene	11.60	130	140961	19.7499 ug/L	99
48) Methylcyclohexane	11.69	83	215461	19.8051 ug/L	93
49) 1,2-Dichloropropane	11.82	63	200102	21.2078 ug/L	99
51) Bromodichloromethane	12.13	83	196669	21.3616 ug/L	100
52) Dibromomethane	12.21	174	97618	20.2098 ug/L	99
54) 4-Methyl-2-Pentanone	12.44	58	82282	20.1731 ug/L	98
55) cis-1,3-Dichloropropene	12.75	75	241846	21.6591 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051914\9M963371.D Vial: 8
Acq On : 19 May 2014 18:00 Operator: ADC
Sample : L14050603-07 B MSD 826-LOW Inst : HPMS9
Misc : 1,1 STD64451 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 19 18:23:26 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	13.03	94	295675	22.6213 ug/L	98
59)	Toluene	13.18	91	587405	19.9436 ug/L	100
60)	Ethyl Methacrylate	13.25	69	188388	21.7532 ug/L	100
61)	trans-1,3-Dichloropropene	13.35	75	202115	19.4530 ug/L	99
62)	1,1,2-Trichloroethane	13.56	97	125813	20.2389 ug/L	98
63)	2-Hexanone	13.49	43	127313	21.6446 ug/L	93
64)	1,3-Dichloropropane	13.87	76	211438	19.7232 ug/L	88
65)	Tetrachloroethene	14.00	164	121845	19.8703 ug/L	99
66)	Dibromochloromethane	14.27	129	150650	20.4528 ug/L	99
67)	1,2-Dibromoethane	14.53	107	126870	20.1416 ug/L	99
68)	1-Chlorohexane	14.60	91	181766	21.0622 ug/L	92
69)	Chlorobenzene	15.03	112	371296	19.1859 ug/L	100
70)	1,1,1,2-Tetrachloroethane	15.05	131	147870	19.9421 ug/L	99
71)	Ethylbenzene	15.05	106	216155	20.2063 ug/L	97
72)	m-,p-Xylene	15.14	106	501805	39.4427 ug/L	97
73)	o-Xylene	15.70	106	249526	18.8046 ug/L	97
74)	Styrene	15.75	104	430538	20.5334 ug/L	99
75)	Bromoform	16.25	173	108927	17.3125 ug/L	99
76)	Isopropylbenzene	16.13	105	603580	18.9477 ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.34	83	154458	20.6868 ug/L	99
80)	1,2,3-Trichloropropane	16.54	110	47208	20.5106 ug/L	68
81)	trans-1,4-Dichloro-2-Buten	16.58	53	42193	14.5810 ug/L	88
82)	n-Propylbenzene	16.63	91	688898	19.9042 ug/L	100
83)	Bromobenzene	16.78	156	170545	20.8666 ug/L	96
84)	1,3,5-Trimethylbenzene	16.82	105	573399	22.2775 ug/L	100
85)	2-Chlorotoluene	16.91	91	454458	18.7636 ug/L	100
86)	4-Chlorotoluene	16.95	91	428474	21.6096 ug/L	99
87)	a-Methylstyrene	17.22	118	304195	22.8593 ug/L	98
88)	tert-Butylbenzene	17.29	134	114087	19.0470 ug/L	93
89)	1,2,4-Trimethylbenzene	17.34	105	575925	22.0598 ug/L	99
90)	sec-Butylbenzene	17.55	105	639485	19.8890 ug/L	99
91)	p-Isopropyltoluene	17.71	119	527215	20.3707 ug/L	99
92)	1,3-Dichlorobenzene	17.92	146	296090	19.4272 ug/L	99
93)	1,4-Dichlorobenzene	18.05	146	324218	21.2700 ug/L	99
94)	n-Butylbenzene	18.24	91	496130	22.3545 ug/L	100
95)	1,2-Dichlorobenzene	18.55	146	305505	20.0968 ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.55	157	33604	18.7240 ug/L	89
97)	1,2,4-Trichlorobenzene	20.69	180	227122	19.4227 ug/L	99
98)	Hexachlorobutadiene	20.83	225	120023	18.9205 ug/L	100
99)	Naphthalene	21.07	128	555326	22.9455 ug/L	99
100)	1,2,3-Trichlorobenzene	21.37	180	231272	22.1629 ug/L	100

(#) = qualifier out of range (m) = manual integration
9M963371.D 8260WT.M Mon May 19 18:23:28 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051914\9M963371.D Vial: 8
Acq On : 19 May 2014 18:00 Operator: ADC
Sample : L14050603-07 B MSD 826-LOW Inst : HPMS9
Misc : 1,1 STD64451 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 19 18:23 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

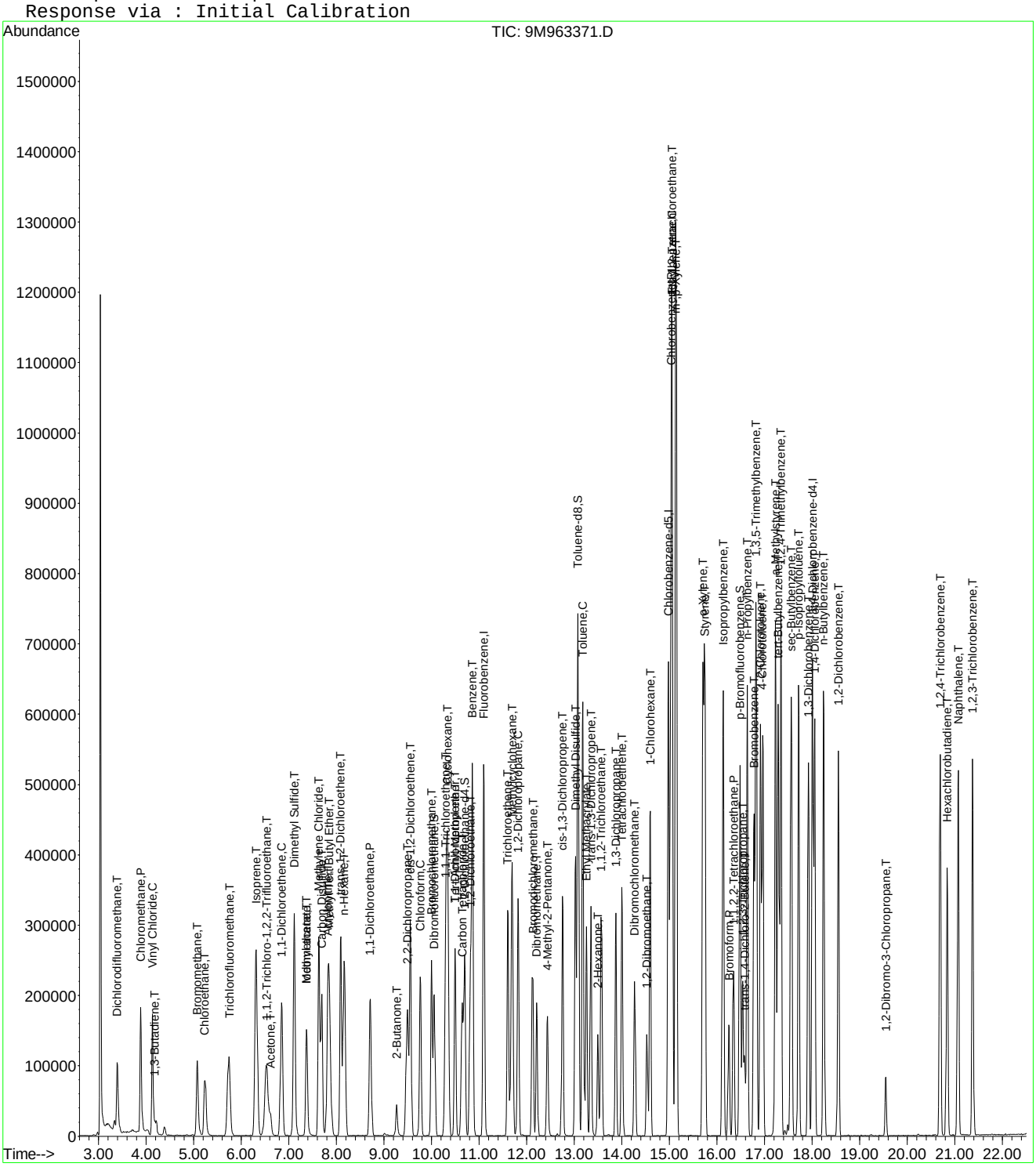

9M963371.D 8260WT.M Mon May 19 18:23:29 2014 Page 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005111.D
Acq On : 19 May 2014 06:22
Operator : FJB/MDA
Sample : L14050603-08 A 2X 8260
Misc : 1,2
ALS Vial : 34 Sample Multiplier: 1

Quant Time: May 22 09:44:01 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	4.935	96	214493	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.833	117	146490	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.187	152	73569	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	3.930	111	54650	22.5676 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.270%		
32) 1,2-Dichloroethane-d4	4.596	65	70081	21.7232 ug/L	0.0101
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.893%		
44) Toluene-d8	6.532	98	215802	24.4642 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.857%		
63) p-Bromofluorobenzene	8.605	95	87031	27.8407 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.363%		
Target Compounds					Qvalue
4) Vinyl Chloride	1.137	62	1035	0.3220 ug/L	89
10) 1,1-Dichloroethene	1.761	61	504971	120.1127 ug/L	97
12) 1,1,2-Trichloro-1,2,2-...	1.761	101	536	0.2854 ug/L #	14
15) Acetone	2.195	43	227	0.5432 ug/L #	39
18) 1,1-Dichloroethane	2.798	63	37075	7.7562 ug/L	98
21) cis-1,2-Dichloroethene	3.348	96	1009	0.3776 ug/L	95
31) Benzene	4.416	78	6240	0.6073 ug/L #	92
33) 1,2-Dichloroethane	4.670	62	25964	6.8735 ug/L	99
34) Trichloroethene	5.125	130	1459	0.6246 ug/L	92
47) 1,1,2-Trichloroethane	7.103	97	1766	0.9938 ug/L	87

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005111.D
Acq On : 19 May 2014 06:22
Operator : FJB/MDA
Sample : L14050603-08 A 2X 8260
Misc : 1,2
ALS Vial : 34 Sample Multiplier: 1

Quant Time: May 22 09:44:01 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

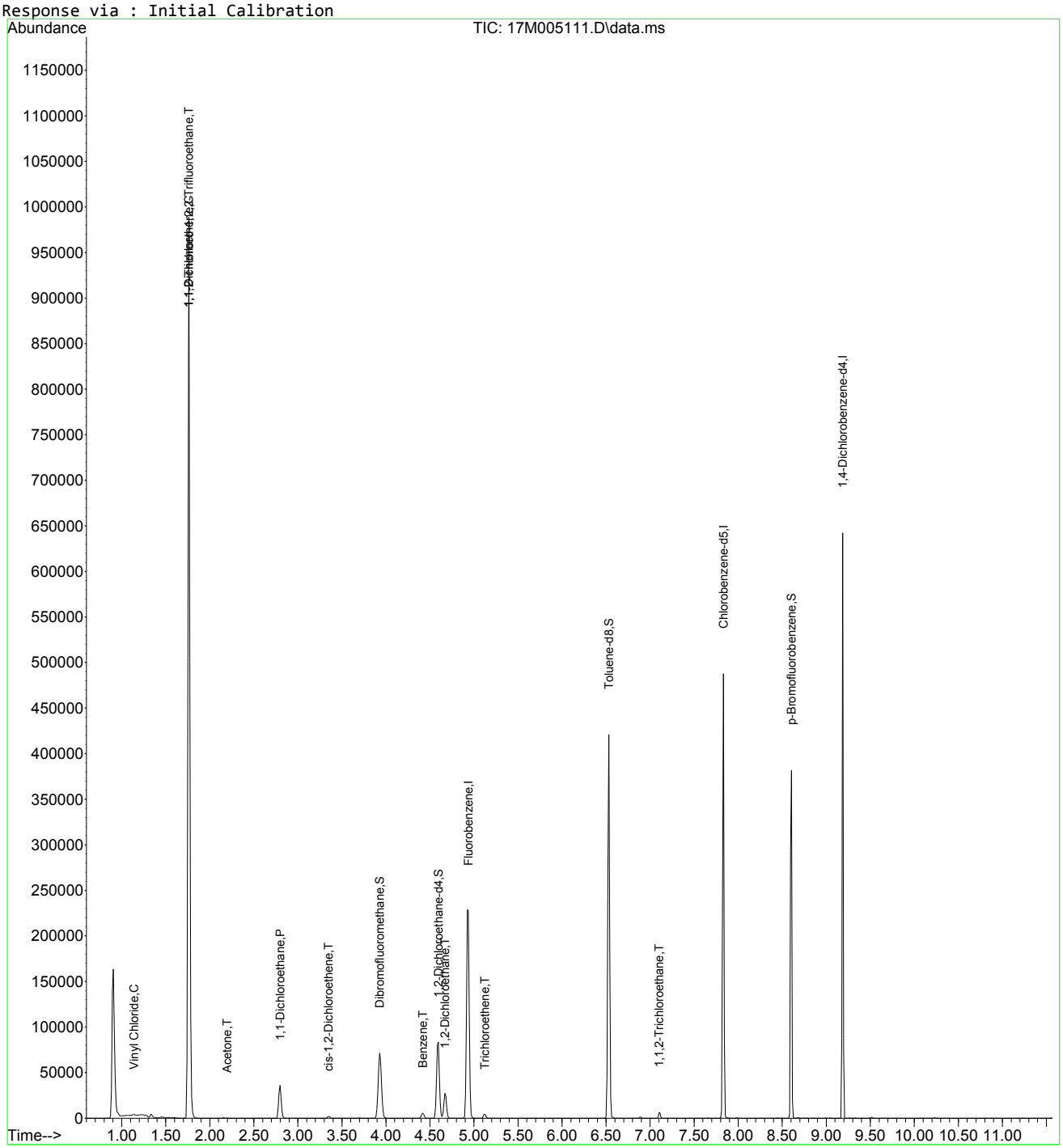

8260VMS.M Thu May 22 09:44:02 2014 Page: 2

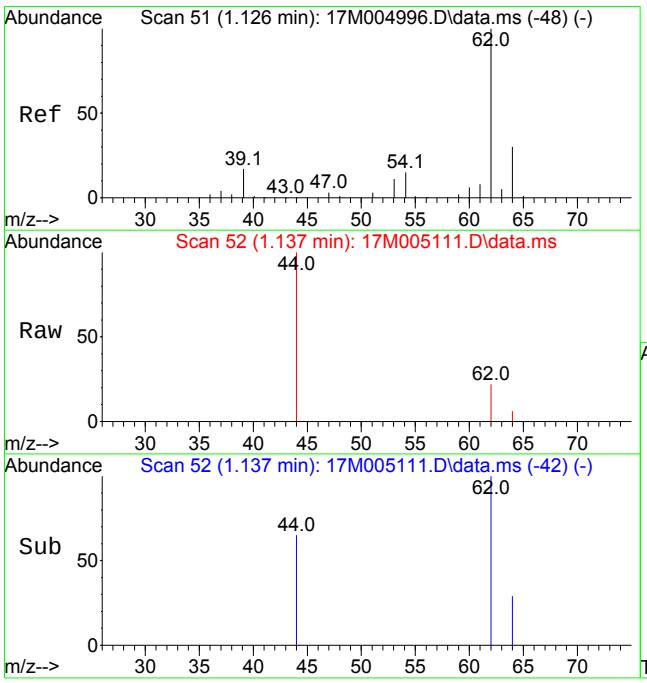

#4
Vinyl Chloride
Concen: 0.3220 ug/L
RT: 1.137 min Scan# 52
Delta R.T. 0.011 min
Lab File: 17M005111.D
Acq: 19 May 2014 06:22

Tgt Ion: 62 Resp: 1035

Ion	Ratio	Lower	Upper
62	100		
64	24.7	18.4	43.0

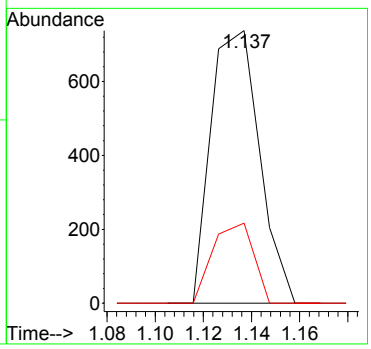

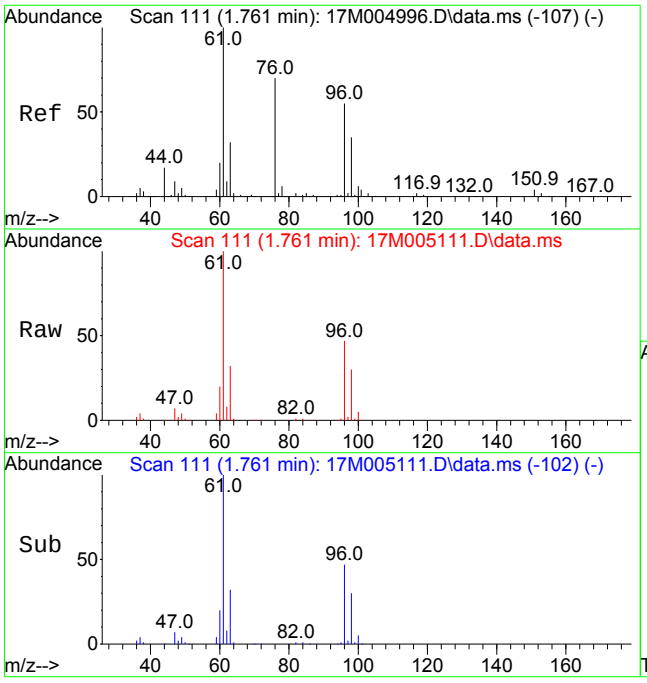

#10
1,1-Dichloroethene
Concen: 120.1127 ug/L
RT: 1.761 min Scan# 111
Delta R.T. 0.000 min
Lab File: 17M005111.D
Acq: 19 May 2014 06:22

Tgt Ion: 61 Resp: 504971

Ion	Ratio	Lower	Upper
61	100		
96	48.8	40.4	60.6

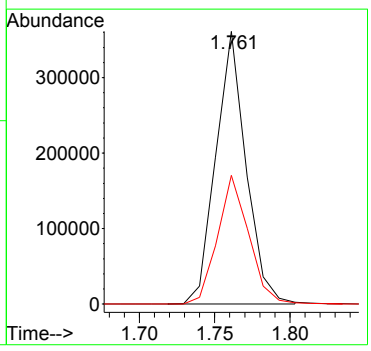

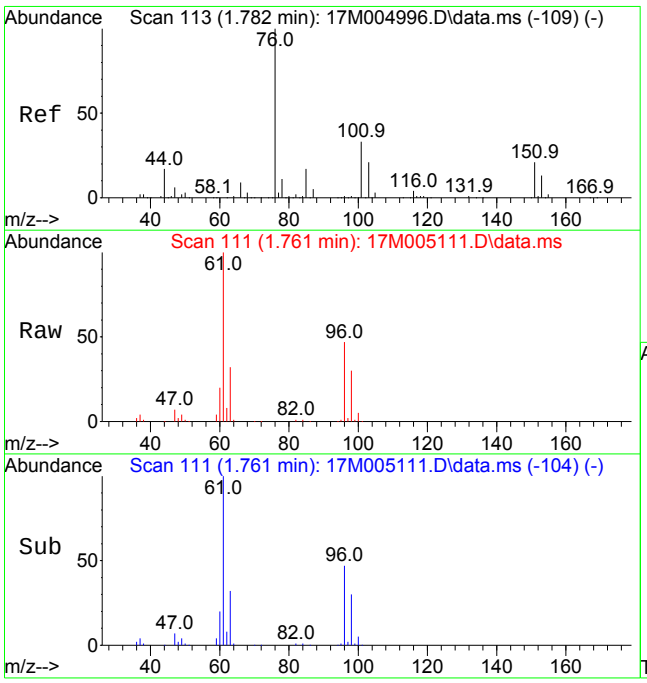

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.2854 ug/L
RT: 1.761 min Scan# 111
Delta R.T. -0.021 min
Lab File: 17M005111.D
Acq: 19 May 2014 06:22

Tgt Ion:101 Resp: 536

Ion	Ratio	Lower	Upper
101	100		
151	0.0	60.6	90.8#
103	0.0	51.8	77.8#

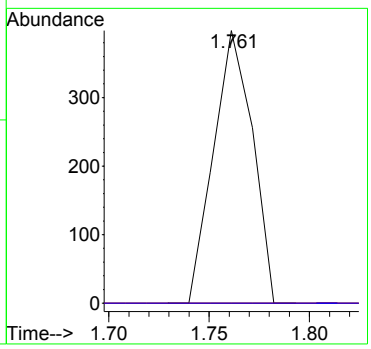

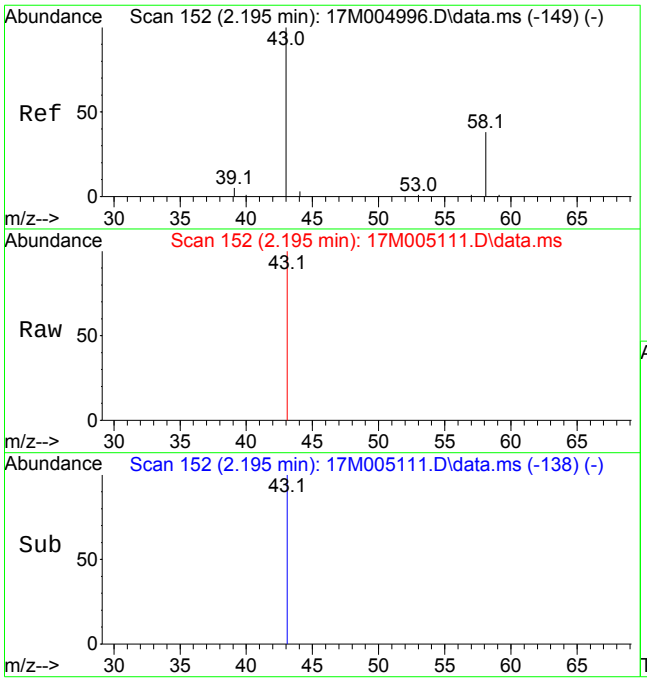

#15
Acetone
Concen: 0.5432 ug/L
RT: 2.195 min Scan# 152
Delta R.T. -0.000 min
Lab File: 17M005111.D
Acq: 19 May 2014 06:22

Tgt Ion: 43 Resp: 227

Ion	Ratio	Lower	Upper
43	100		
58	0.0	21.5	50.3#

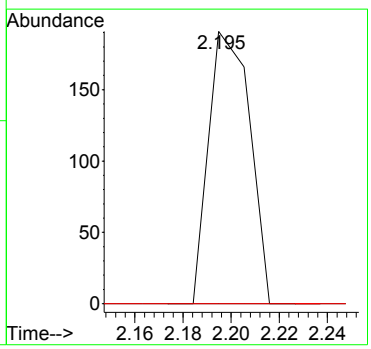

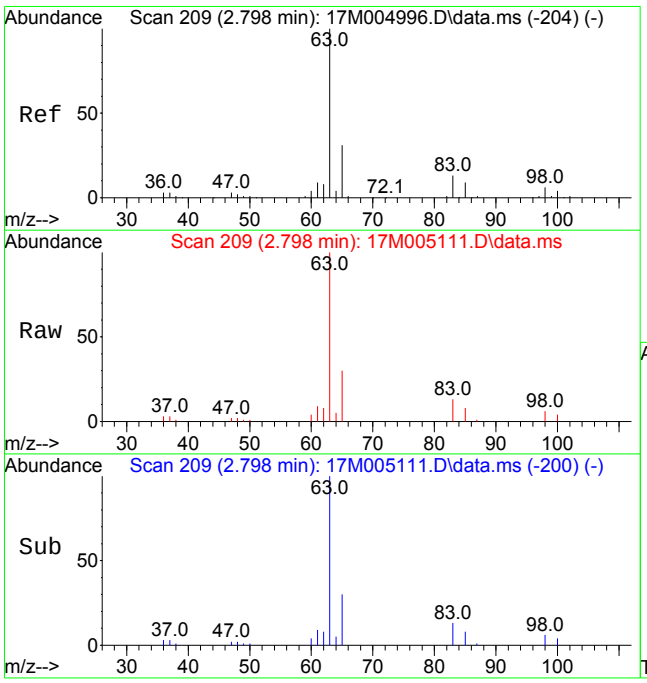

#18
1,1-Dichloroethane
Concen: 7.7562 ug/L
RT: 2.798 min Scan# 209
Delta R.T. -0.000 min
Lab File: 17M005111.D
Acq: 19 May 2014 06:22

Tgt Ion: 63 Resp: 37075

Ion	Ratio	Lower	Upper
63	100		
65	30.1	25.0	37.6

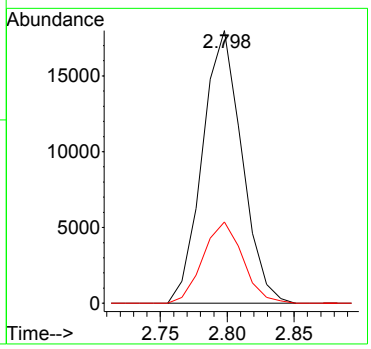

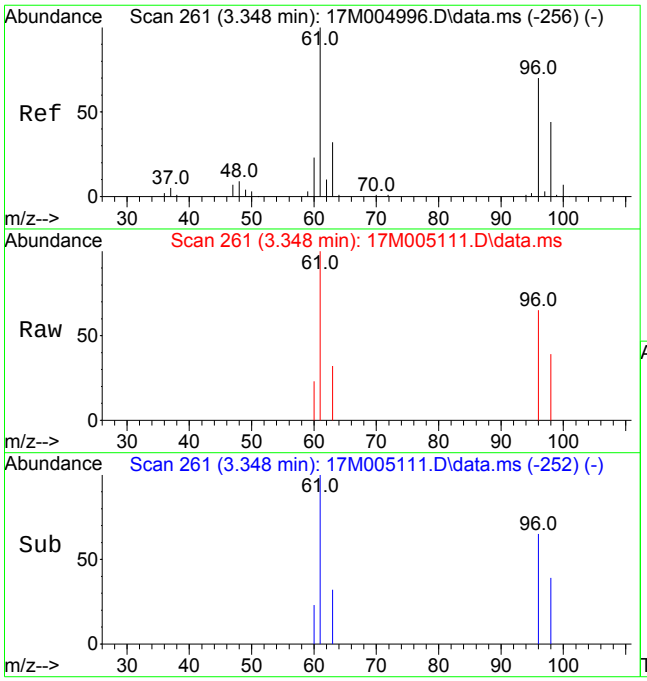

#21
cis-1,2-Dichloroethene
Concen: 0.3776 ug/L
RT: 3.348 min Scan# 261
Delta R.T. -0.000 min
Lab File: 17M005111.D
Acq: 19 May 2014 06:22

Tgt Ion: 96 Resp: 1009

Ion	Ratio	Lower	Upper
96	100		
61	158.1	120.9	181.3

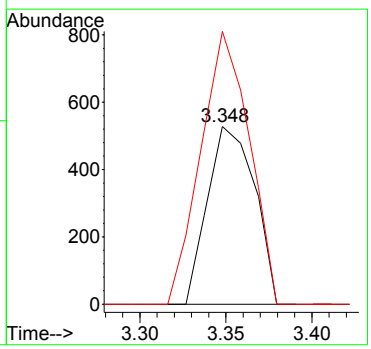

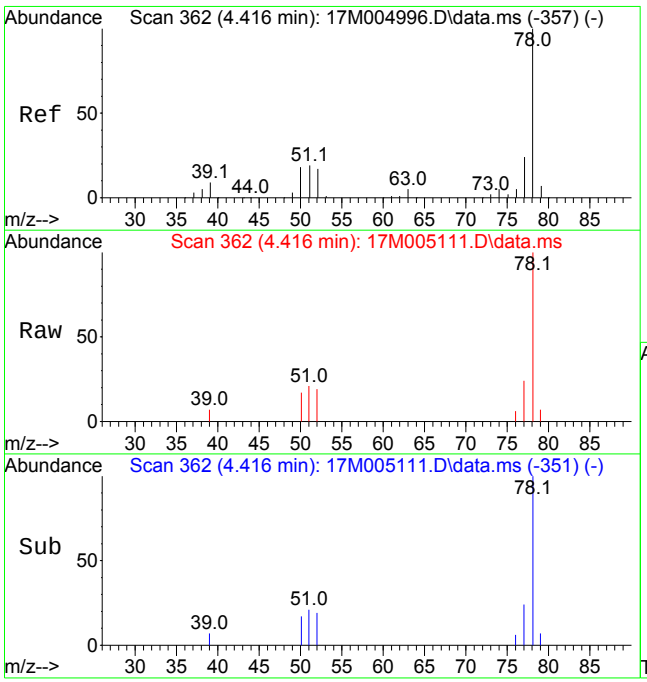

#31
Benzene
Concen: 0.6073 ug/L
RT: 4.416 min Scan# 362
Delta R.T. 0.000 min
Lab File: 17M005111.D
Acq: 19 May 2014 06:22

Tgt Ion: 78 Resp: 6240

Ion	Ratio	Lower	Upper
78	100		
52	14.2	14.2	21.4#

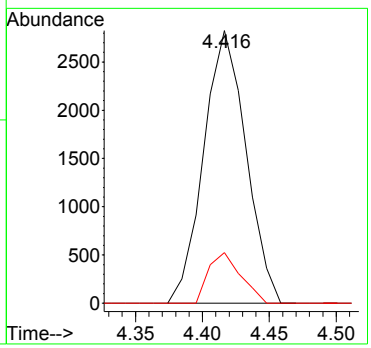

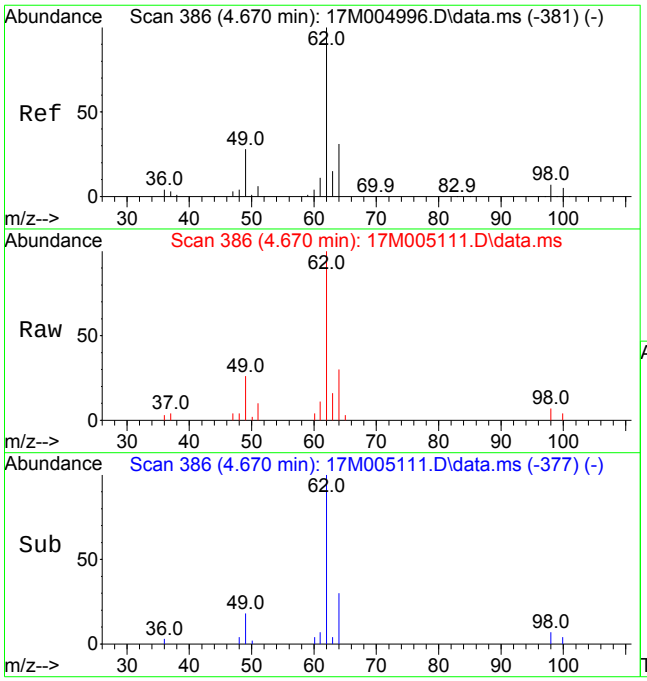

#33
1,2-Dichloroethane
Concen: 6.8735 ug/L
RT: 4.670 min Scan# 386
Delta R.T. 0.000 min
Lab File: 17M005111.D
Acq: 19 May 2014 06:22

Tgt Ion: 62 Resp: 25964

Ion	Ratio	Lower	Upper
62	100		
49	25.6	15.3	35.7
98	6.8	4.4	10.4

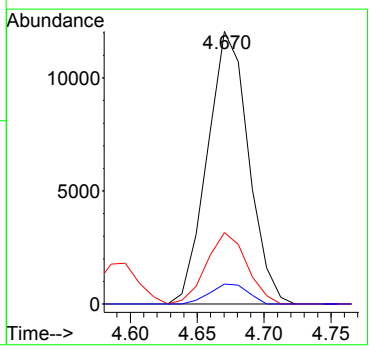

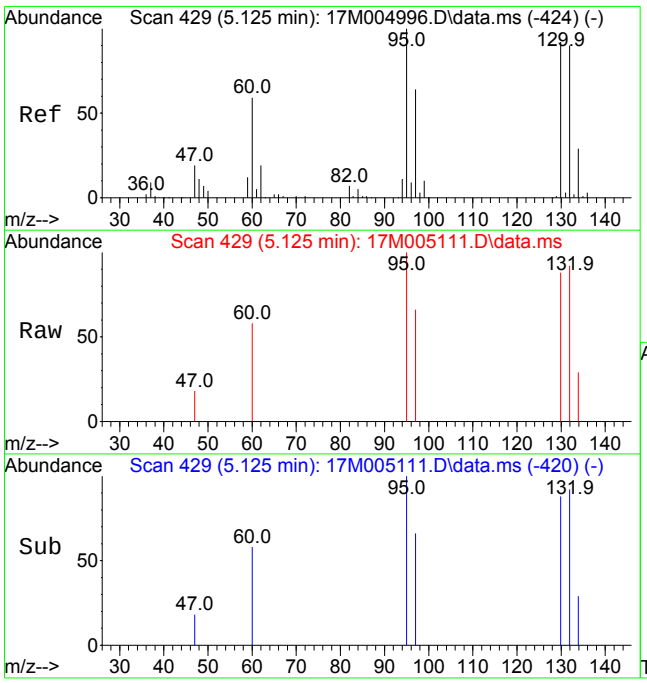

#34
Trichloroethene
Concen: 0.6246 ug/L
RT: 5.125 min Scan# 429
Delta R.T. 0.000 min
Lab File: 17M005111.D
Acq: 19 May 2014 06:22

Tgt Ion:130 Resp: 1459

Ion	Ratio	Lower	Upper
130	100		
60	74.2	40.8	95.2

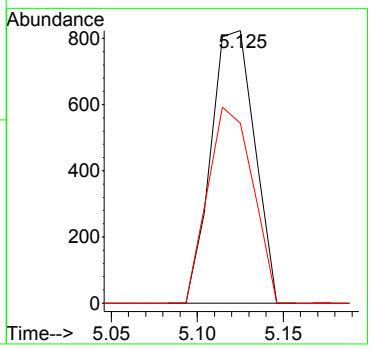

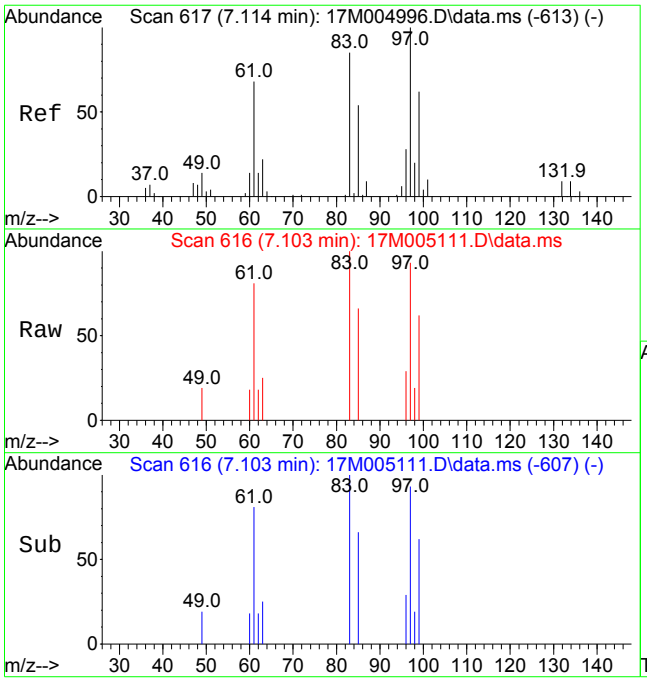

#47
1,1,2-Trichloroethane
Concen: 0.9938 ug/L
RT: 7.103 min Scan# 616
Delta R.T. 0.000 min
Lab File: 17M005111.D
Acq: 19 May 2014 06:22

Tgt Ion: 97 Resp: 1766

Ion	Ratio	Lower	Upper
97	100		
83	101.7	51.7	120.5
99	67.1	37.2	86.8

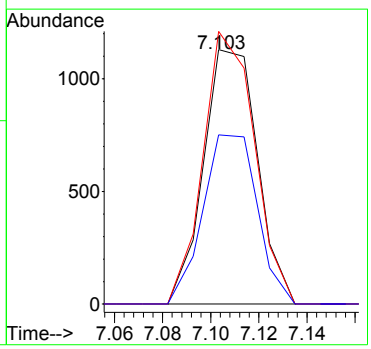

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005112.D
Acq On : 19 May 2014 06:42
Operator : FJB/MDA
Sample : L14050603-09 A 2X 8260
Misc : 1,2
ALS Vial : 35 Sample Multiplier: 1

Quant Time: May 22 09:44:04 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	4.935	96	224063	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.833	117	154854	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.187	152	79091	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	3.930	111	54300	21.4654 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 85.862%#		
32) 1,2-Dichloroethane-d4	4.586	65	70417	20.8951 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.580%		
44) Toluene-d8	6.532	98	219429	23.5318 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.127%		
63) p-Bromofluorobenzene	8.605	95	84728	25.2116 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.846%		
Target Compounds					Qvalue
4) Vinyl Chloride	1.126	62	1039	0.3094 ug/L	97
10) 1,1-Dichloroethene	1.761	61	497532	113.7912 ug/L	98
12) 1,1,2-Trichloro-1,2,2-...	1.761	101	528	0.2691 ug/L #	14
18) 1,1-Dichloroethane	2.798	63	35916	7.1928 ug/L	100
21) cis-1,2-Dichloroethene	3.348	96	955	0.3421 ug/L	87
31) Benzene	4.416	78	4240	0.3950 ug/L #	89
33) 1,2-Dichloroethane	4.670	62	25487	6.4591 ug/L	97
34) Trichloroethene	5.114	130	1544	0.6328 ug/L	100
47) 1,1,2-Trichloroethane	7.103	97	1835	0.9769 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005112.D
Acq On : 19 May 2014 06:42
Operator : FJB/MDA
Sample : L14050603-09 A 2X 8260
Misc : 1,2
ALS Vial : 35 Sample Multiplier: 1

Quant Time: May 22 09:44:04 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

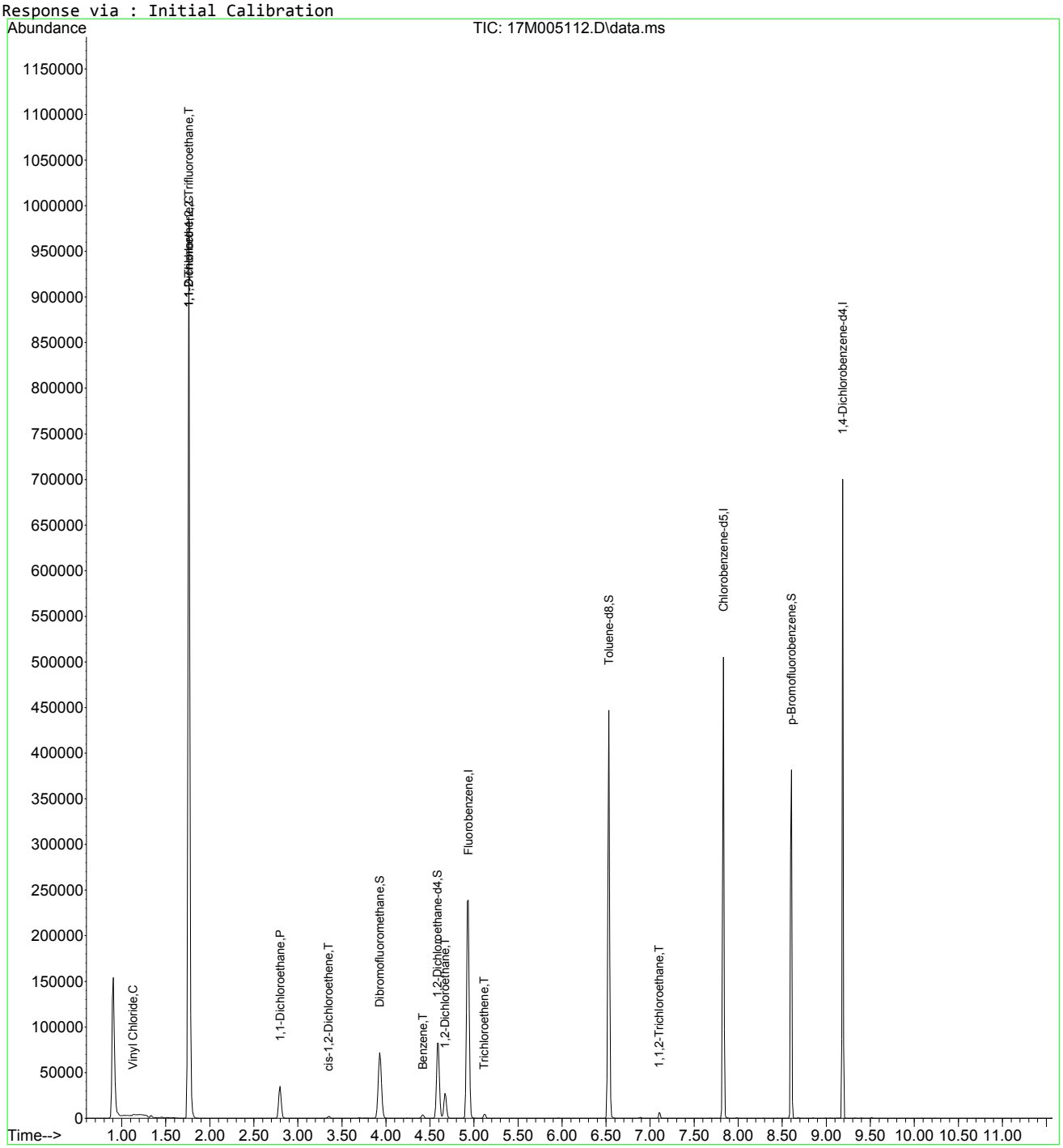

8260VMS.M Thu May 22 09:44:05 2014 Page: 2

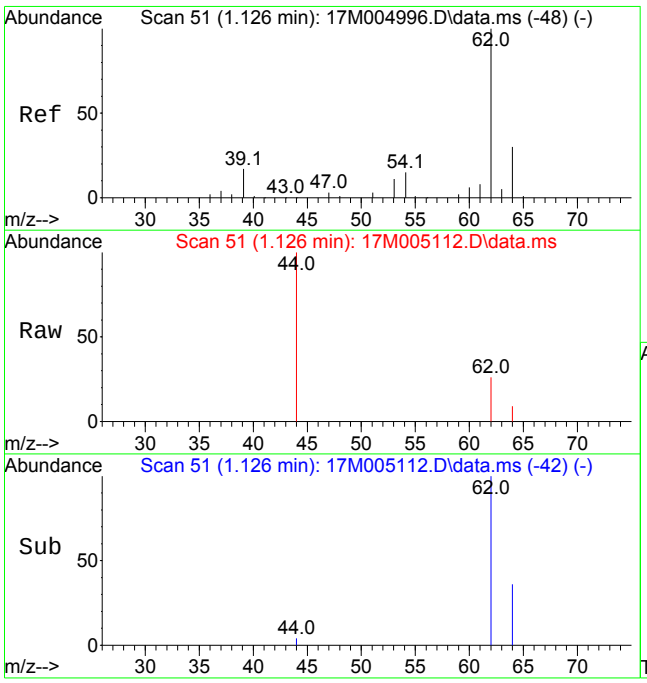

#4
Vinyl Chloride
Concen: 0.3094 ug/L
RT: 1.126 min Scan# 51
Delta R.T. 0.000 min
Lab File: 17M005112.D
Acq: 19 May 2014 06:42

Tgt Ion: 62 Resp: 1039

Ion	Ratio	Lower	Upper
62	100		
64	28.9	18.4	43.0

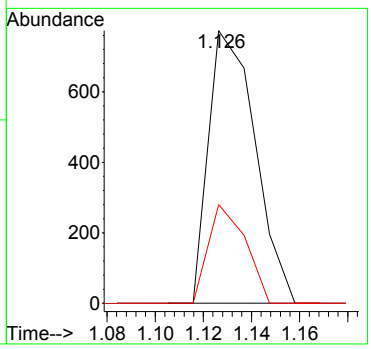

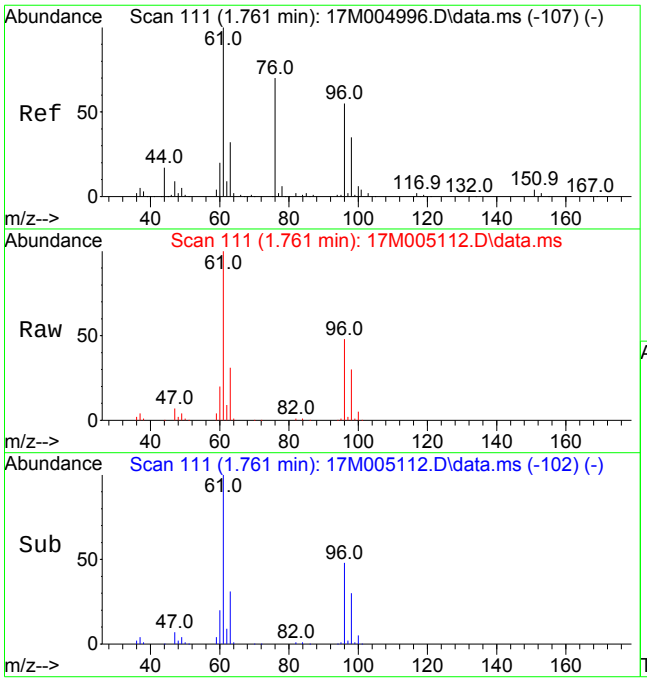

#10
1,1-Dichloroethene
Concen: 113.7912 ug/L
RT: 1.761 min Scan# 111
Delta R.T. 0.000 min
Lab File: 17M005112.D
Acq: 19 May 2014 06:42

Tgt Ion: 61 Resp: 497532

Ion	Ratio	Lower	Upper
61	100		
96	49.5	40.4	60.6

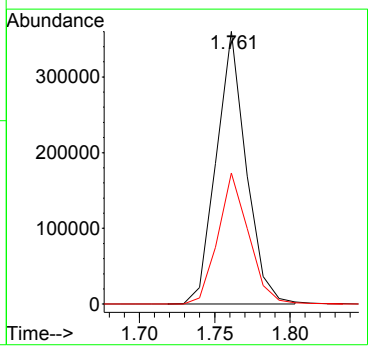

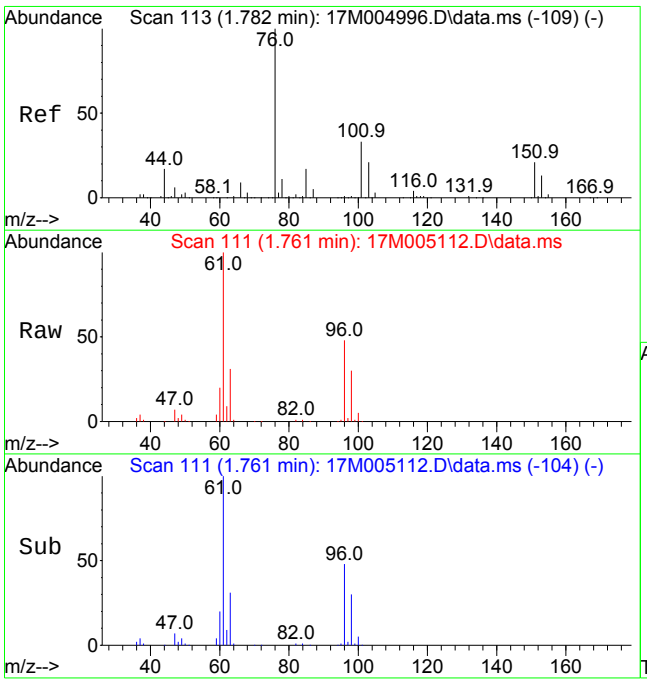

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.2691 ug/L
RT: 1.761 min Scan# 111
Delta R.T. -0.021 min
Lab File: 17M005112.D
Acq: 19 May 2014 06:42

Tgt Ion:101 Resp: 528

Ion	Ratio	Lower	Upper
101	100		
151	0.0	60.6	90.8#
103	0.0	51.8	77.8#

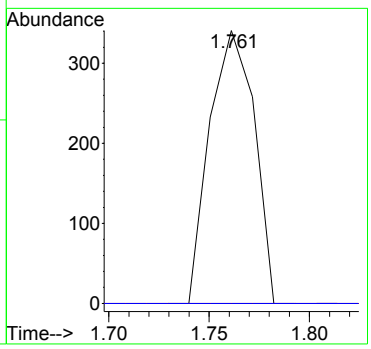

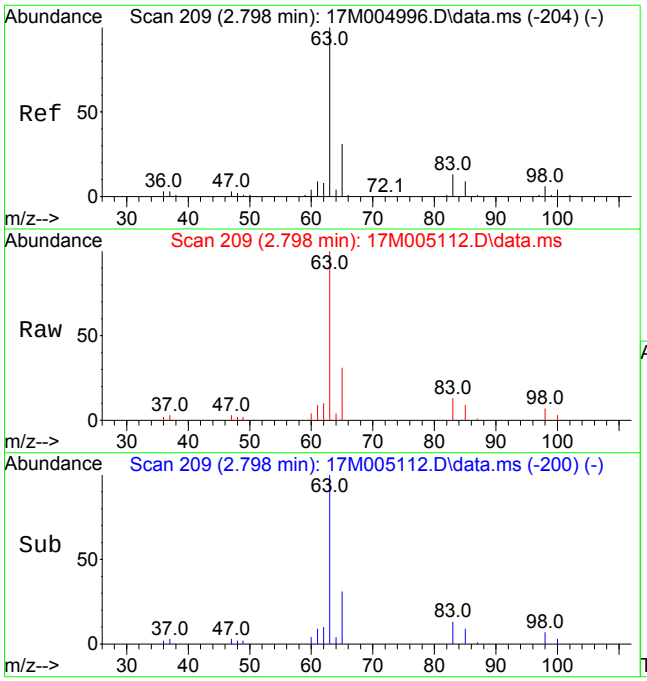

#18
1,1-Dichloroethane
Concen: 7.1928 ug/L
RT: 2.798 min Scan# 209
Delta R.T. -0.000 min
Lab File: 17M005112.D
Acq: 19 May 2014 06:42

Tgt Ion: 63 Resp: 35916

Ion	Ratio	Lower	Upper
63	100		
65	31.2	25.0	37.6

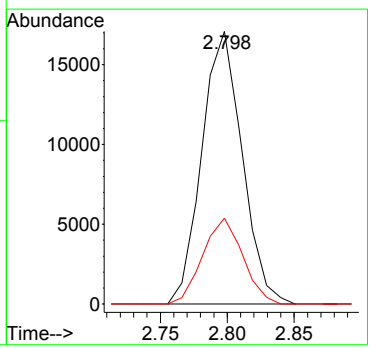

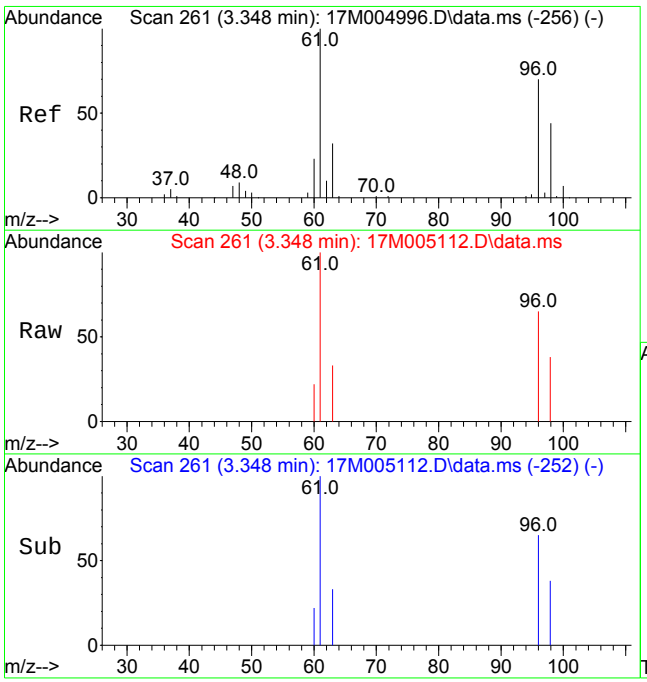

#21
cis-1,2-Dichloroethene
Concen: 0.3421 ug/L
RT: 3.348 min Scan# 261
Delta R.T. -0.000 min
Lab File: 17M005112.D
Acq: 19 May 2014 06:42

Tgt Ion: 96 Resp: 955

Ion	Ratio	Lower	Upper
96	100		
61	167.3	120.9	181.3

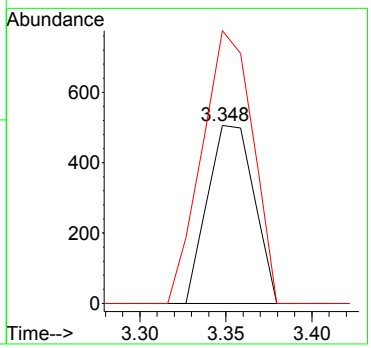

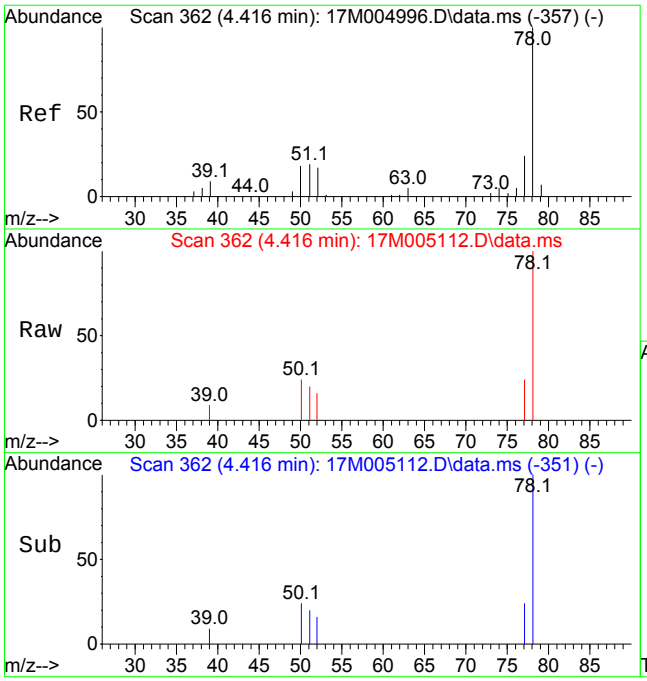

#31
Benzene
Concen: 0.3950 ug/L
RT: 4.416 min Scan# 362
Delta R.T. 0.000 min
Lab File: 17M005112.D
Acq: 19 May 2014 06:42

Tgt Ion: 78 Resp: 4240

Ion	Ratio	Lower	Upper
78	100		
52	13.1	14.2	21.4#

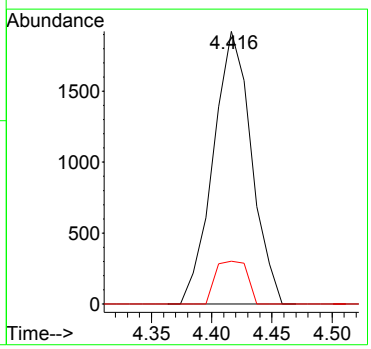

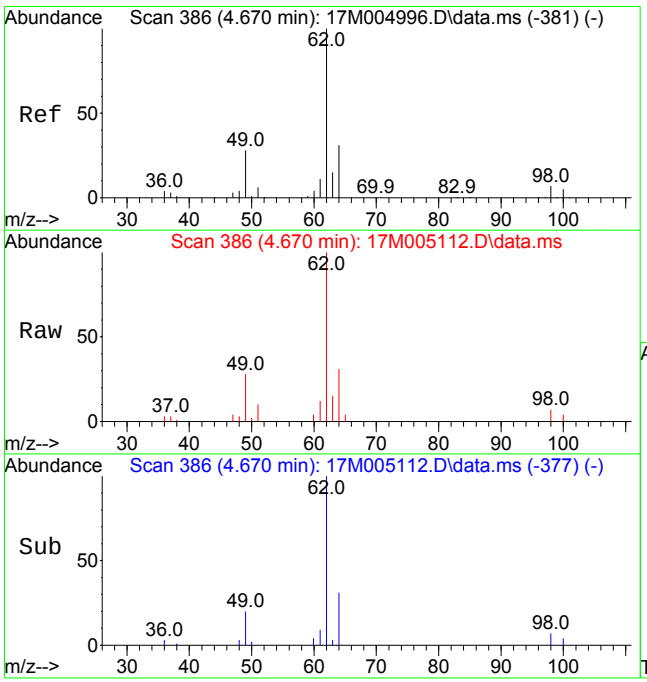

#33
1,2-Dichloroethane
Concen: 6.4591 ug/L
RT: 4.670 min Scan# 386
Delta R.T. 0.000 min
Lab File: 17M005112.D
Acq: 19 May 2014 06:42

Tgt Ion: 62 Resp: 25487

Ion	Ratio	Lower	Upper
62	100		
49	27.0	15.3	35.7
98	6.6	4.4	10.4

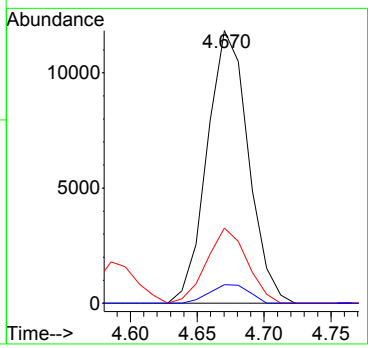

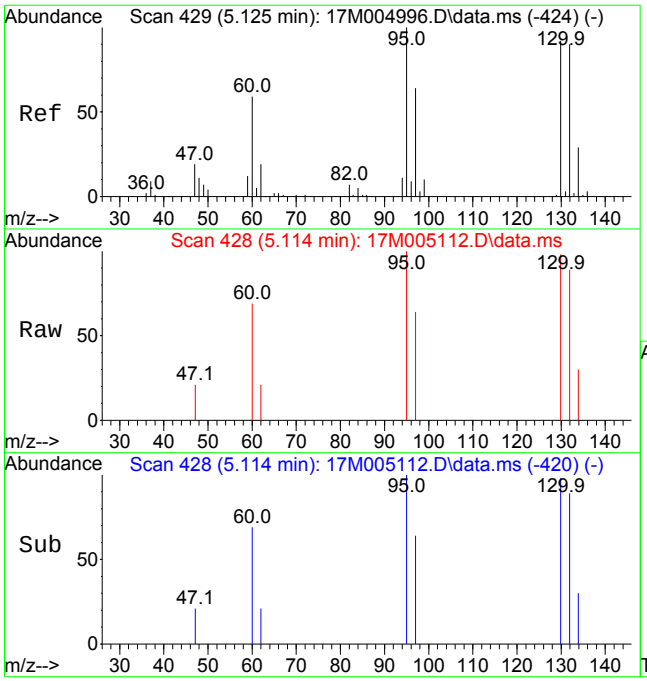

#34
Trichloroethene
Concen: 0.6328 ug/L
RT: 5.114 min Scan# 428
Delta R.T. -0.011 min
Lab File: 17M005112.D
Acq: 19 May 2014 06:42

Tgt Ion:130 Resp: 1544

Ion	Ratio	Lower	Upper
130	100		
60	68.1	40.8	95.2

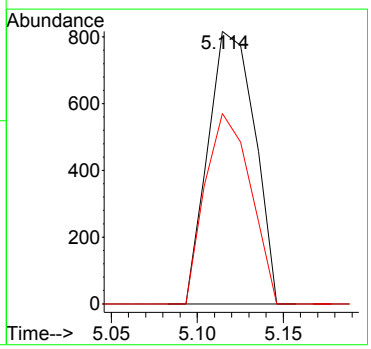

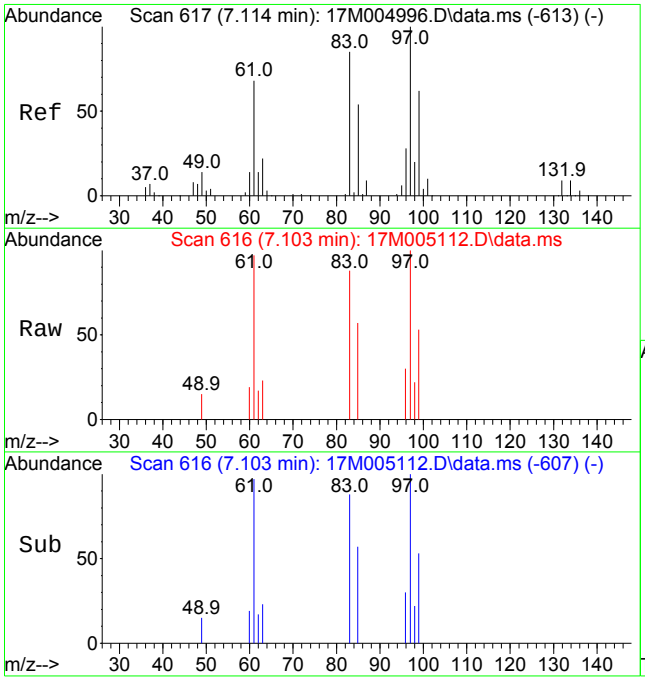

#47
1,1,2-Trichloroethane
Concen: 0.9769 ug/L
RT: 7.103 min Scan# 616
Delta R.T. 0.000 min
Lab File: 17M005112.D
Acq: 19 May 2014 06:42

Tgt Ion: 97 Resp: 1835

Ion	Ratio	Lower	Upper
97	100		
83	89.2	51.7	120.5
99	62.0	37.2	86.8

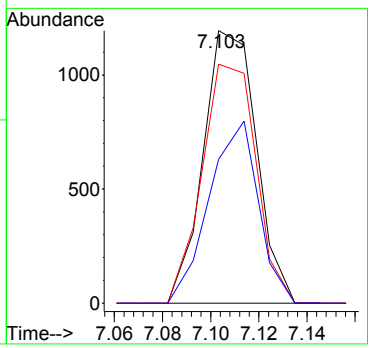

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005108.D
Acq On : 19 May 2014 05:23
Operator : FJB/MDA
Sample : L14050603-10 A 8260
Misc : 1,1
ALS Vial : 31 Sample Multiplier: 1

Quant Time: May 22 09:43:50 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	4.935	96	196728	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.833	117	136597	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.187	152	70705	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	3.930	111	51597	23.2309 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.924%		
32) 1,2-Dichloroethane-d4	4.596	65	66832	22.5868 ug/L	0.0100
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.347%		
44) Toluene-d8	6.532	98	205926	25.0353 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.141%		
63) p-Bromofluorobenzene	8.605	95	80117	26.6671 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.668%		
Target Compounds					Qvalue
33) 1,2-Dichloroethane	4.670	62	5000	1.4432 ug/L #	91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005108.D
Acq On : 19 May 2014 05:23
Operator : FJB/MDA
Sample : L14050603-10 A 8260
Misc : 1,1
ALS Vial : 31 Sample Multiplier: 1

Quant Time: May 22 09:43:50 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

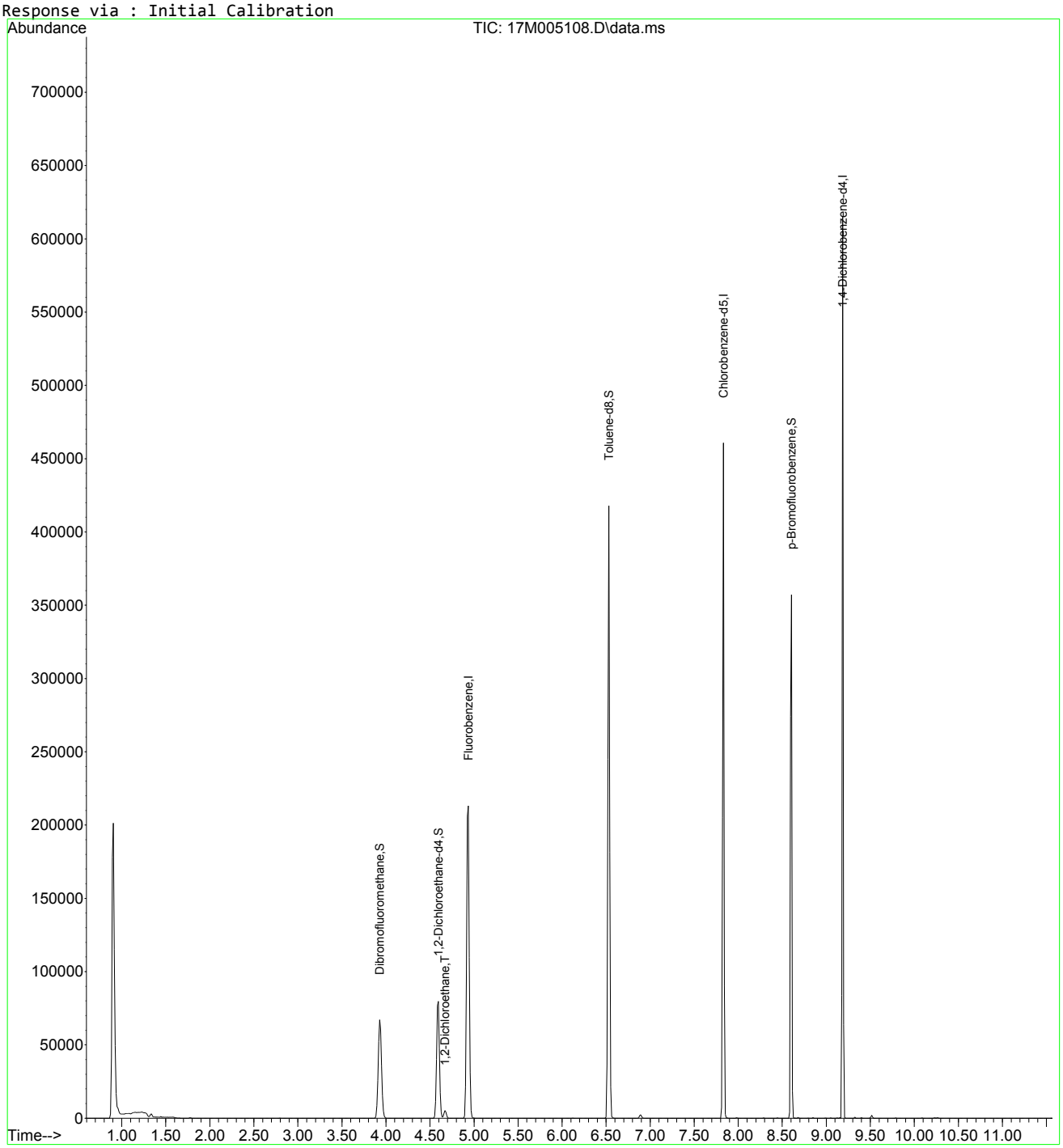

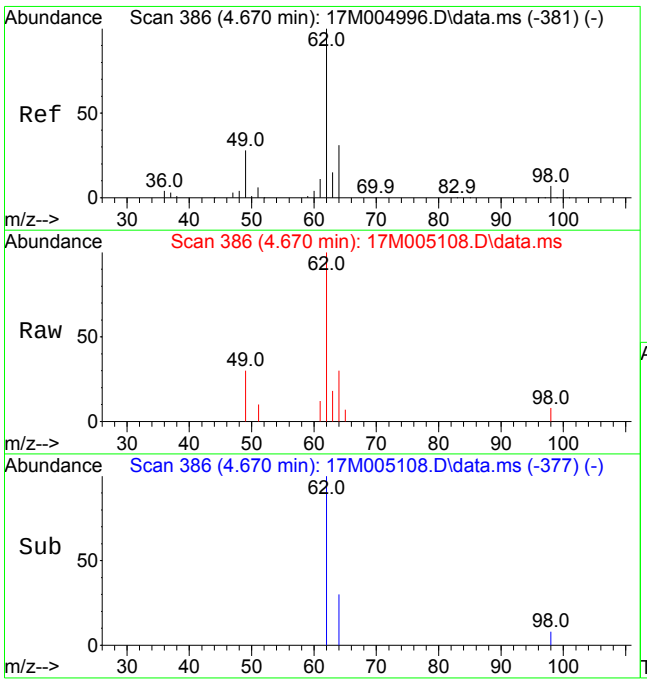

#33
1,2-Dichloroethane
Concen: 1.4432 ug/L
RT: 4.670 min Scan# 386
Delta R.T. 0.000 min
Lab File: 17M005108.D
Acq: 19 May 2014 05:23

Tgt Ion: 62 Resp: 5000

Ion	Ratio	Lower	Upper
62	100		
49	28.1	15.3	35.7
98	0.0	4.4	10.4#

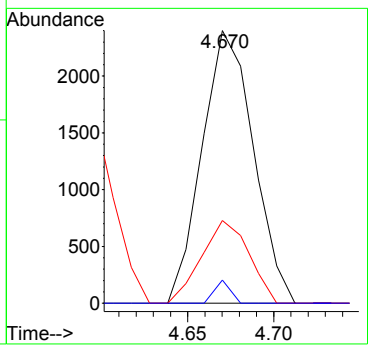

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051914\9M963383.D Vial: 20
Acq On : 20 May 2014 00:02 Operator: ADC
Sample : L14050603-11 A 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 09:09:10 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.10	96	582578	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.98	117	428044	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	199481	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.05	111	169245	26.9526 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.80%		
43) 1,2-Dichloroethane-d4	10.69	65	216372	27.3760 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.52%		
58) Toluene-d8	13.08	98	603369	25.8389 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.36%		
79) p-Bromofluorobenzene	16.48	95	204903	24.9434 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.76%		

Target Compounds					Qvalue
3) Chloromethane	3.88	50	3370	0.4751 ug/L	89
14) 1,1-Dichloroethene	6.85	61	50528	4.2675 ug/L	93
27) 1,1-Dichloroethane	8.71	63	7782	0.5384 ug/L #	92
45) 1,2-Dichloroethane	10.81	62	8896	0.8967 ug/L	93
46) Benzene	10.86	78	3314	0.1305 ug/L #	58
50) 1,4-Dioxane	12.11	88	212	2.9422 ug/L #	4
56) Dimethyl Disulfide	13.08	94	15722	1.3192 ug/L #	28

(#) = qualifier out of range (m) = manual integration
9M963383.D 8260WT.M Tue May 20 09:09:12 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051914\9M963383.D Vial: 20
Acq On : 20 May 2014 00:02 Operator: ADC
Sample : L14050603-11 A 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 9:09 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

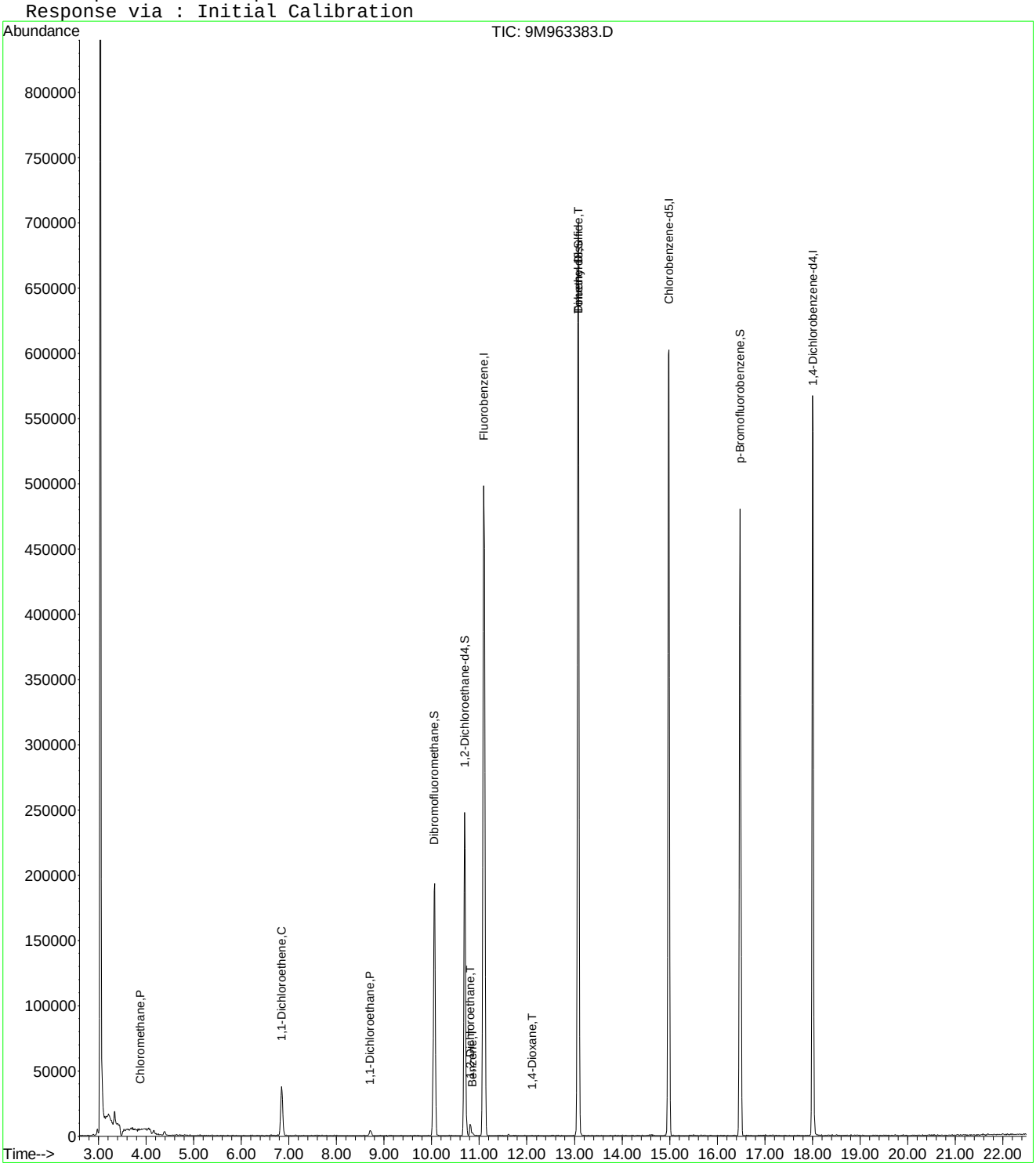

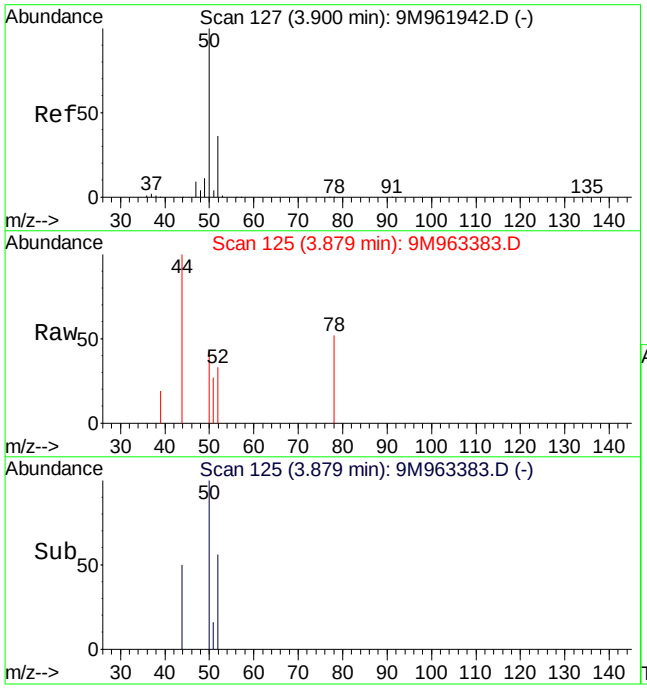

#3
Chloromethane
Concen: 0.48 ug/L
RT: 3.88 min Scan# 125
Delta R.T. -0.01 min
Lab File: 9M963383.D
Acq: 20 May 2014 00:02

Tgt Ion: 50 Resp: 3370

Ion	Ratio	Lower	Upper
50	100		
52	28.7	21.0	49.0

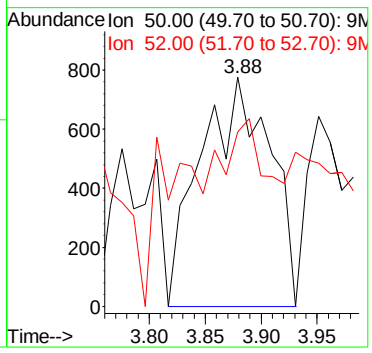

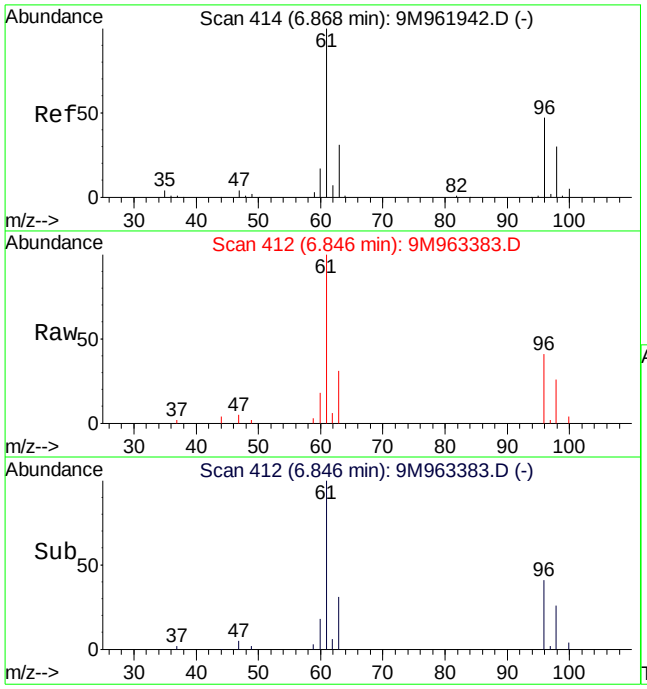

#14
1,1-Dichloroethene
Concen: 4.27 ug/L
RT: 6.85 min Scan# 412
Delta R.T. 0.00 min
Lab File: 9M963383.D
Acq: 20 May 2014 00:02

Tgt Ion: 61 Resp: 50528

Ion	Ratio	Lower	Upper
61	100		
96	43.2	29.0	67.6

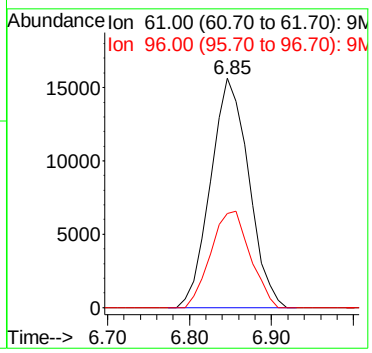

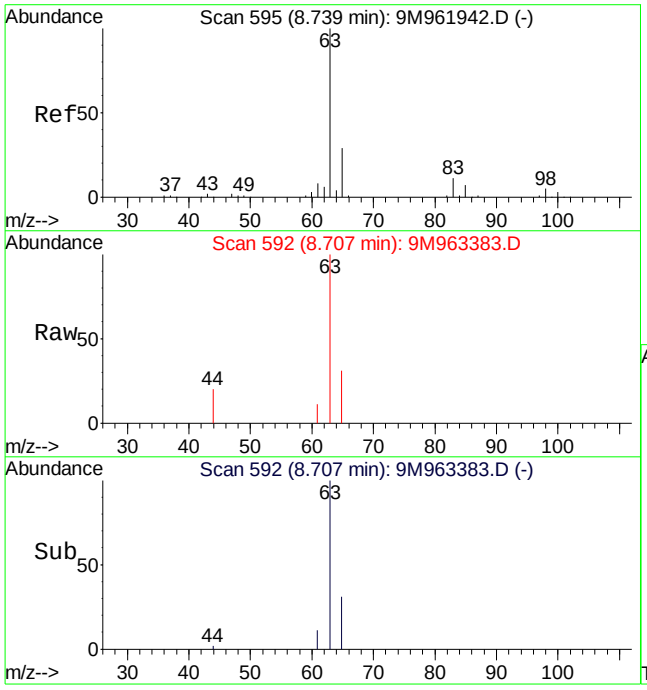

#27
1,1-Dichloroethane
Concen: 0.54 ug/L
RT: 8.71 min Scan# 592
Delta R.T. -0.01 min
Lab File: 9M963383.D
Acq: 20 May 2014 00:02

Tgt Ion: 63 Resp: 7782

Ion	Ratio	Lower	Upper
63	100		
65	27.3	17.5	40.9
83	3.0	6.1	14.1#

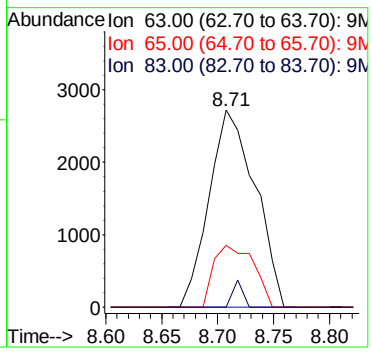

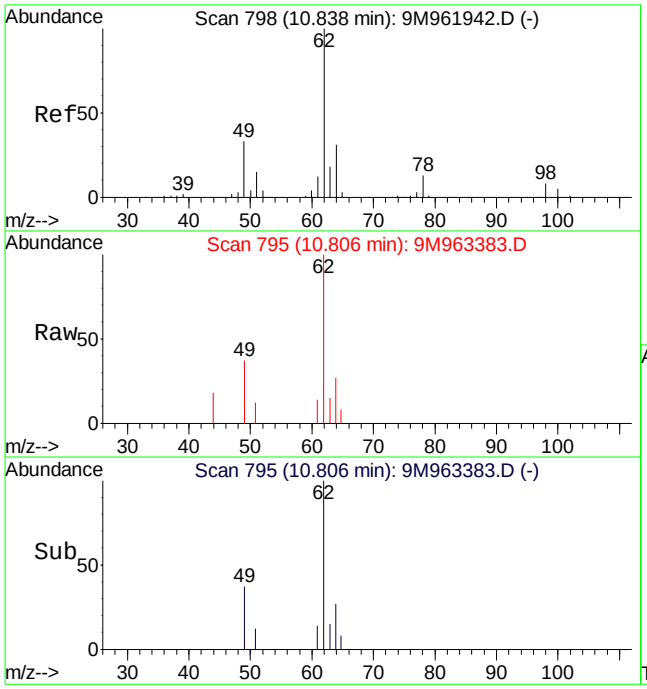

#45
1,2-Dichloroethane
Concen: 0.90 ug/L
RT: 10.81 min Scan# 795
Delta R.T. -0.01 min
Lab File: 9M963383.D
Acq: 20 May 2014 00:02

Tgt Ion: 62 Resp: 8896

Ion	Ratio	Lower	Upper
62	100		
64	36.5	18.7	43.7
49	35.0	22.7	52.9

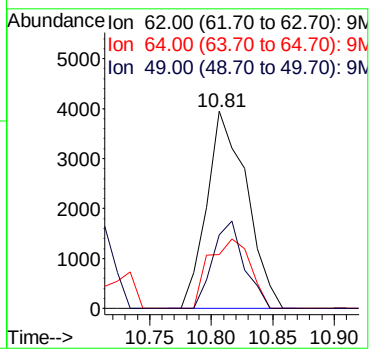

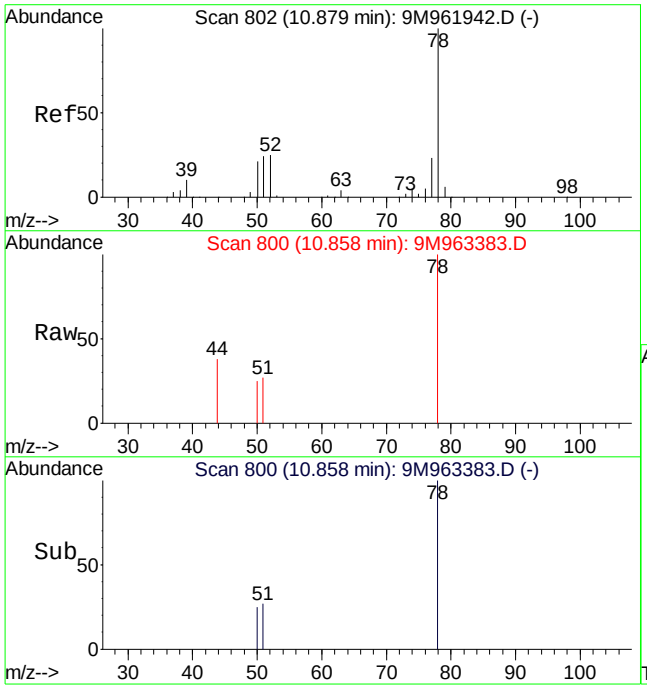

#46
Benzene
Concen: 0.13 ug/L
RT: 10.86 min Scan# 800
Delta R.T. 0.00 min
Lab File: 9M963383.D
Acq: 20 May 2014 00:02

Tgt Ion: 78 Resp: 3314

Ion	Ratio	Lower	Upper
78	100		
77	6.0	13.9	32.3#
52	0.0	14.4	33.6#

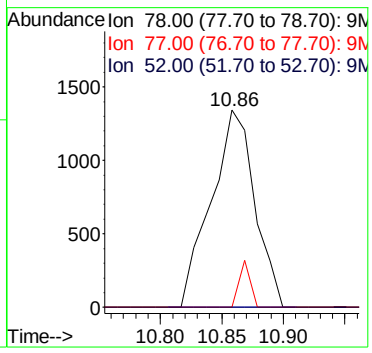

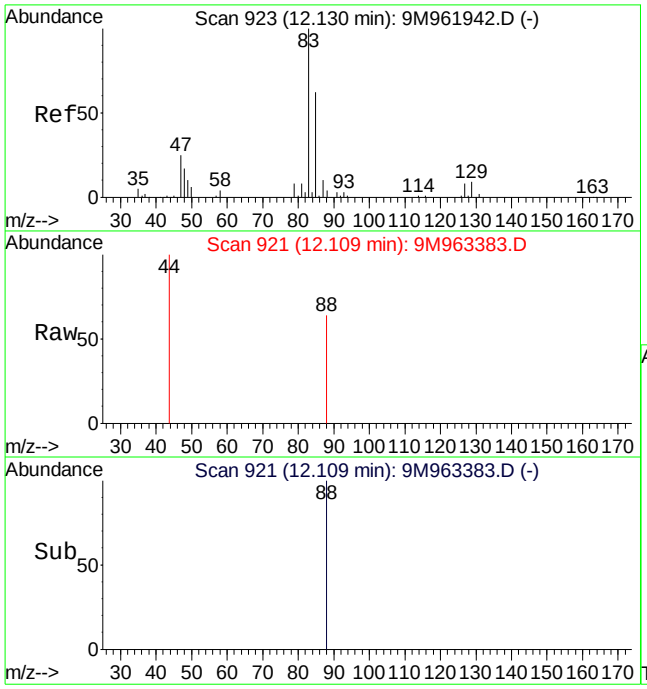

#50
1,4-Dioxane
Concen: 2.94 ug/L
RT: 12.11 min Scan# 921
Delta R.T. 0.00 min
Lab File: 9M963383.D
Acq: 20 May 2014 00:02

Tgt Ion: 88 Resp: 212

Ion	Ratio	Lower	Upper
88	100		
58	0.0	54.2	126.4#

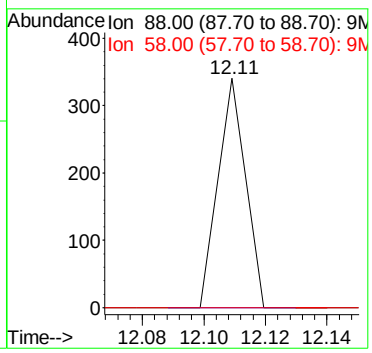

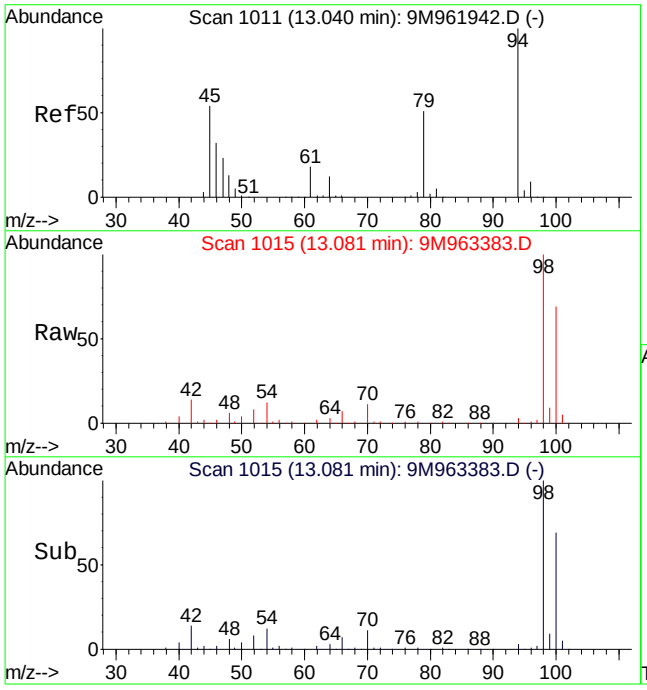

#56
Dimethyl Disulfide
Concen: 1.32 ug/L
RT: 13.08 min Scan# 1015
Delta R.T. 0.05 min
Lab File: 9M963383.D
Acq: 20 May 2014 00:02

Tgt Ion: 94 Resp: 15722

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.9#

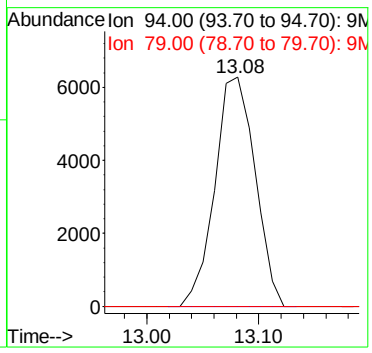

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051914\9M963384.D Vial: 21
Acq On : 20 May 2014 00:32 Operator: ADC
Sample : L14050603-12 A 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 09:09:17 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.10	96	619467	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.98	117	456036	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	212131	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.06	111	173184	25.9375 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.76%		
43) 1,2-Dichloroethane-d4	10.69	65	225595	26.8432 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.36%		
58) Toluene-d8	13.08	98	619833	24.9147 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.64%		
79) p-Bromofluorobenzene	16.48	95	208985	23.9232 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.68%		

Target Compounds					Qvalue
3) Chloromethane	3.89	50	2427	0.3218 ug/L #	12
4) Vinyl Chloride	4.14	62	17394	2.1535 ug/L	98
13) Acetone	6.63	43	1508	0.6612 ug/L #	33
14) 1,1-Dichloroethene	6.84	61	3237509	257.1513 ug/L	95
15) Tert-Butyl Alcohol	6.98	59	205	0.2249 ug/L #	66
27) 1,1-Dichloroethane	8.72	63	169080	11.0010 ug/L	99
32) cis-1,2-Dichloroethene	9.55	96	9456	1.2888 ug/L	95
45) 1,2-Dichloroethane	10.81	62	128900	12.2192 ug/L	98
46) Benzene	10.87	78	3788	0.1403 ug/L #	85
47) Trichloroethene	11.61	130	20767	3.0010 ug/L	97
50) 1,4-Dioxane	12.10	88	500	6.5259 ug/L	88
56) Dimethyl Disulfide	13.08	94	16403	1.2943 ug/L #	28
59) Toluene	13.18	91	6923	0.2464 ug/L	97
62) 1,1,2-Trichloroethane	13.56	97	919	0.1550 ug/L	63

(#) = qualifier out of range (m) = manual integration
9M963384.D 8260WT.M Tue May 20 09:09:19 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051914\9M963384.D Vial: 21
Acq On : 20 May 2014 00:32 Operator: ADC
Sample : L14050603-12 A 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 9:09 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

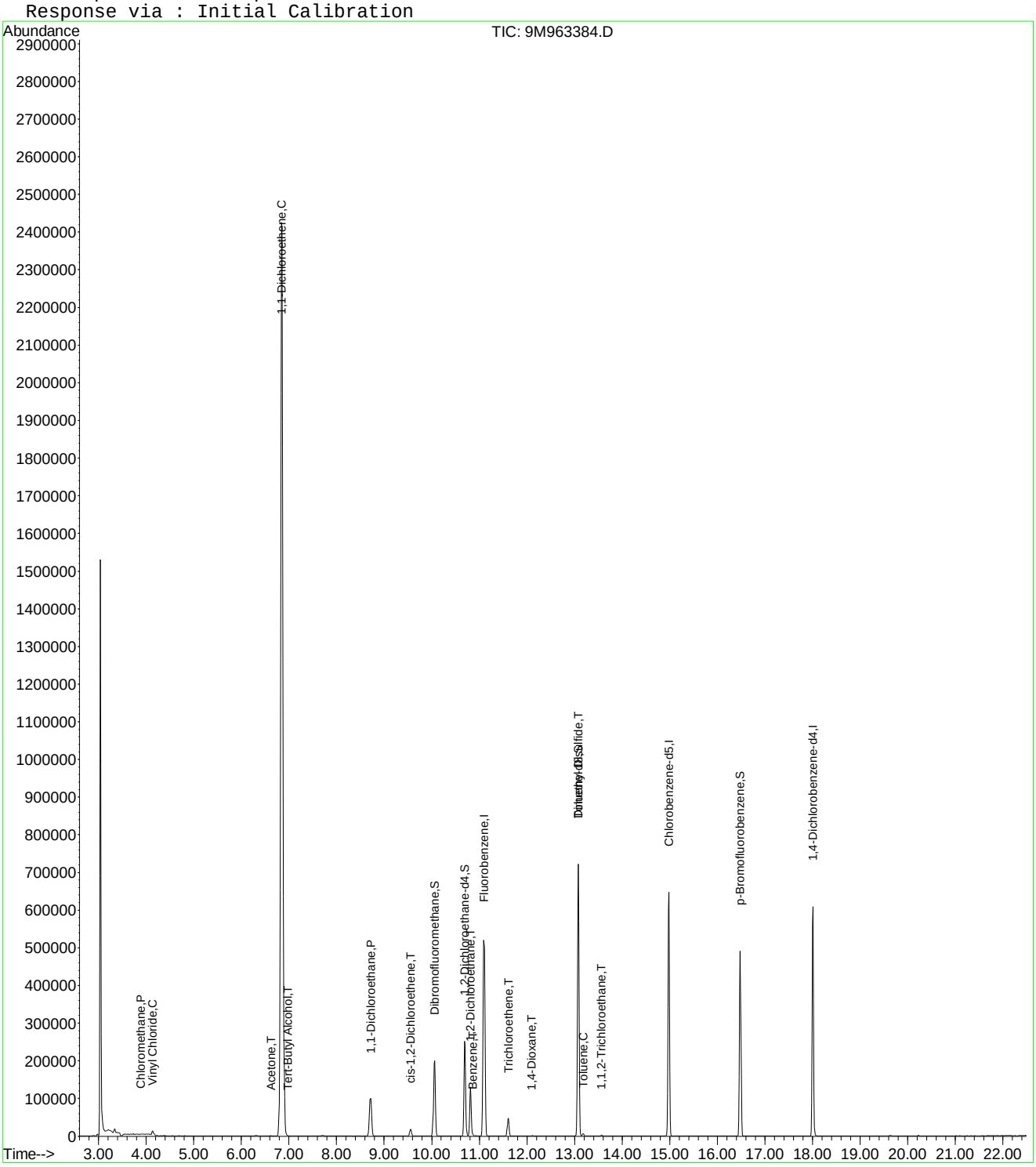

9M963384.D 8260WT.M Tue May 20 09:09:20 2014 Page 2

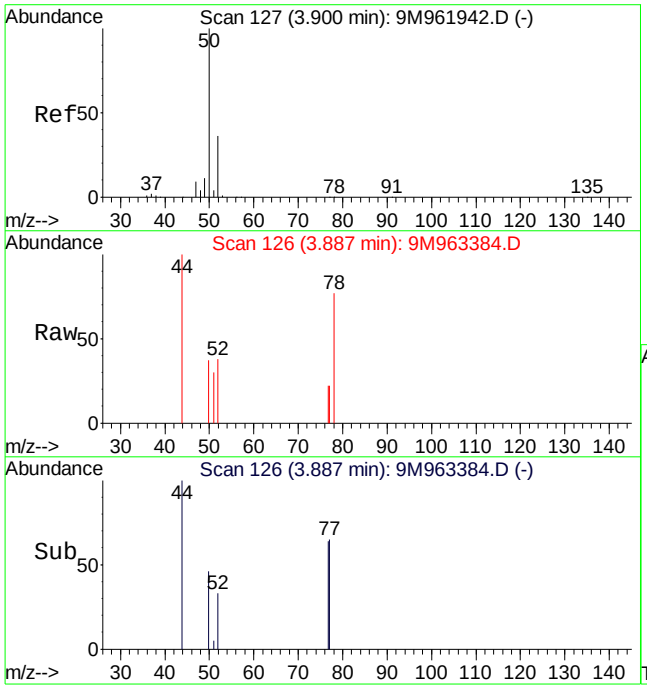

#3
Chloromethane
Concen: 0.32 ug/L
RT: 3.89 min Scan# 126
Delta R.T. -0.00 min
Lab File: 9M963384.D
Acq: 20 May 2014 00:32

Tgt Ion: 50 Resp: 2427

Ion	Ratio	Lower	Upper
50	100		
52	85.9	21.0	49.0#

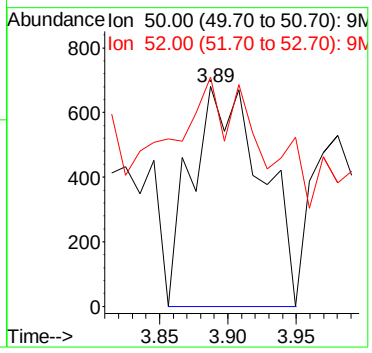

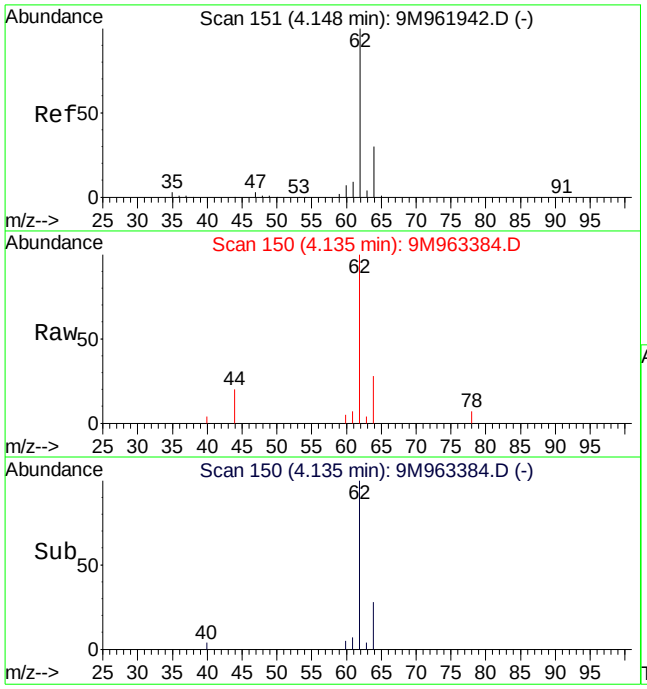

#4
Vinyl Chloride
Concen: 2.15 ug/L
RT: 4.14 min Scan# 150
Delta R.T. -0.00 min
Lab File: 9M963384.D
Acq: 20 May 2014 00:32

Tgt Ion: 62 Resp: 17394

Ion	Ratio	Lower	Upper
62	100		
64	30.7	17.9	41.9

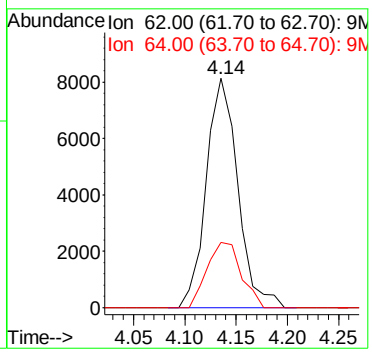

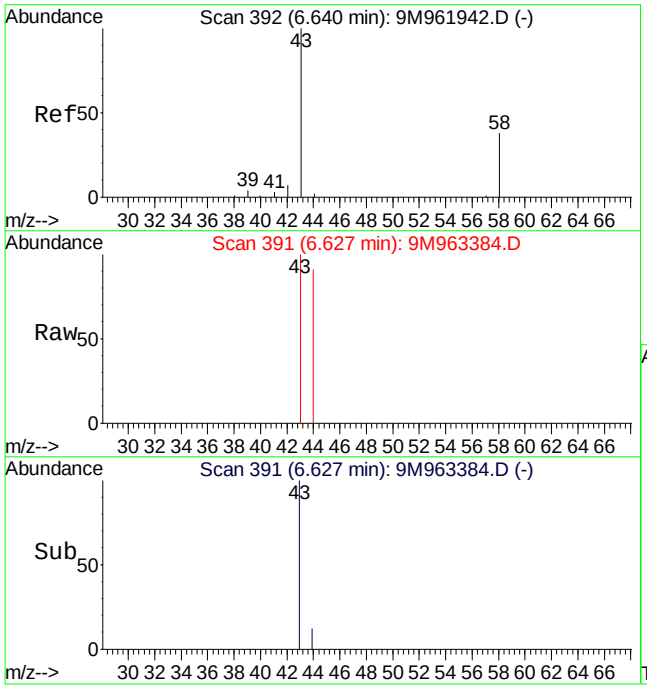

#13
Acetone
Concen: 0.66 ug/L
RT: 6.63 min Scan# 391
Delta R.T. 0.02 min
Lab File: 9M963384.D
Acq: 20 May 2014 00:32

Tgt Ion: 43 Resp: 1508

Ion	Ratio	Lower	Upper
43	100		
58	0.0	25.4	59.4#

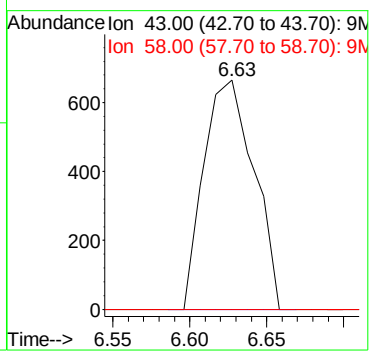

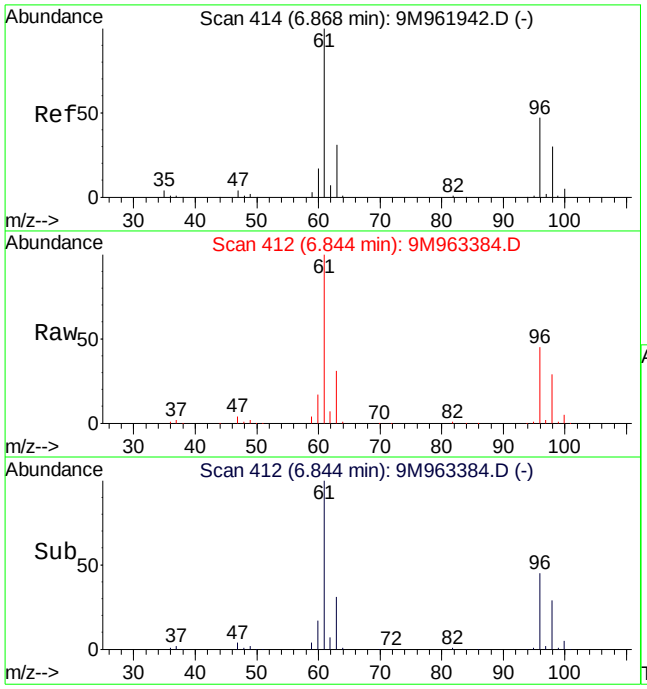

#14
1,1-Dichloroethene
Concen: 257.15 ug/L
RT: 6.84 min Scan# 412
Delta R.T. -0.00 min
Lab File: 9M963384.D
Acq: 20 May 2014 00:32

Tgt Ion: 61 Resp: 3237509

Ion	Ratio	Lower	Upper
61	100		
96	45.0	29.0	67.6

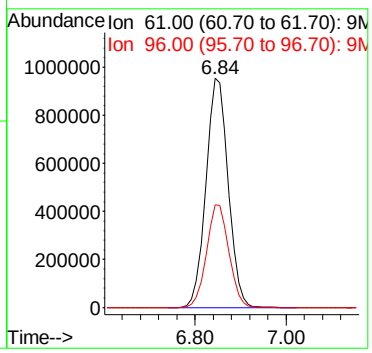

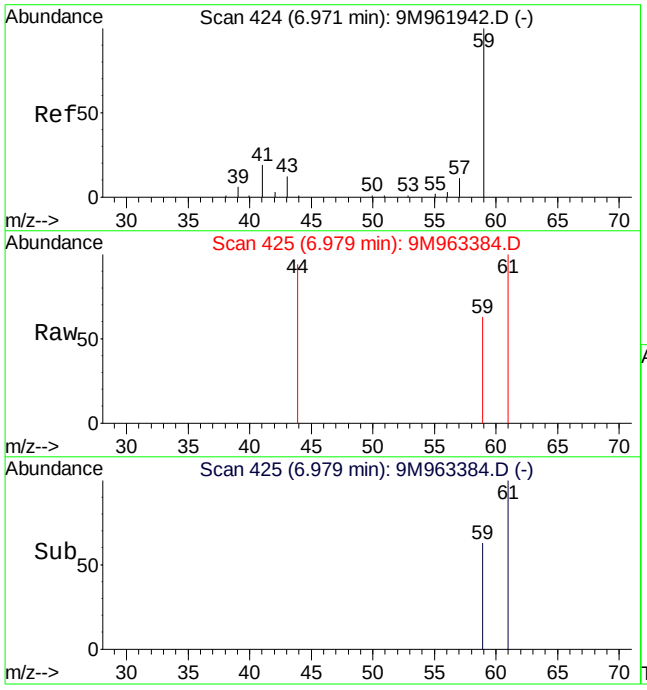

#15
Tert-Butyl Alcohol
Concen: 0.22 ug/L
RT: 6.98 min Scan# 425
Delta R.T. 0.03 min
Lab File: 9M963384.D
Acq: 20 May 2014 00:32

Tgt Ion: 59 Resp: 205

Ion	Ratio	Lower	Upper
59	100		
41	0.0	10.0	23.2#
57	0.0	5.8	13.6#

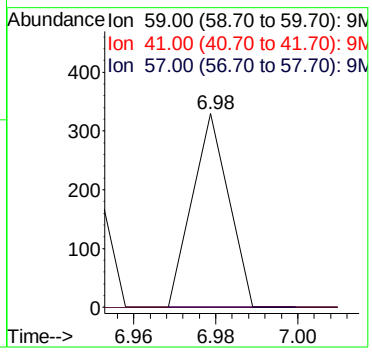

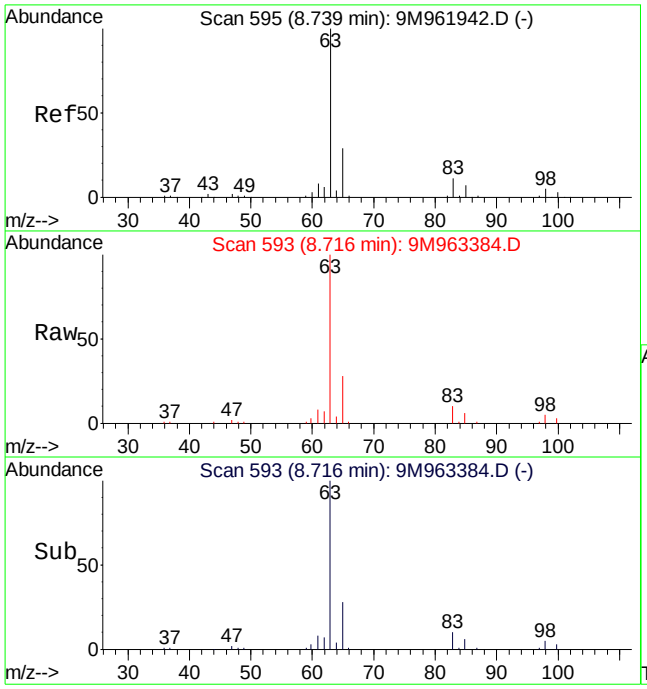

#27
1,1-Dichloroethane
Concen: 11.00 ug/L
RT: 8.72 min Scan# 593
Delta R.T. -0.00 min
Lab File: 9M963384.D
Acq: 20 May 2014 00:32

Tgt Ion: 63 Resp: 169080

Ion	Ratio	Lower	Upper
63	100		
65	29.7	17.5	40.9
83	9.6	6.1	14.1

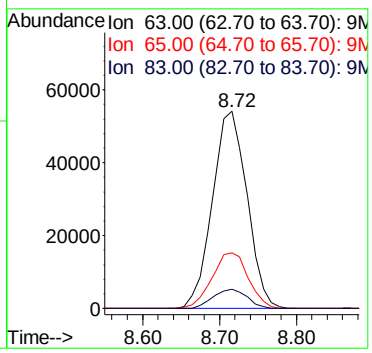

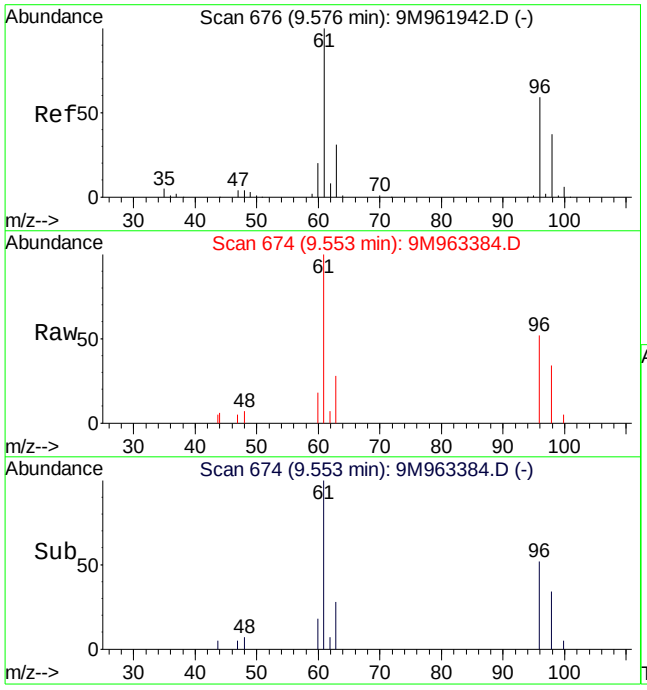

#32
cis-1,2-Dichloroethene
Concen: 1.29 ug/L
RT: 9.55 min Scan# 674
Delta R.T. -0.01 min
Lab File: 9M963384.D
Acq: 20 May 2014 00:32

Tgt Ion: 96 Resp: 9456

Ion	Ratio	Lower	Upper
96	100		
61	182.2	114.1	266.1

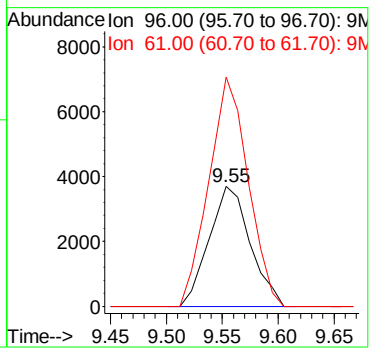

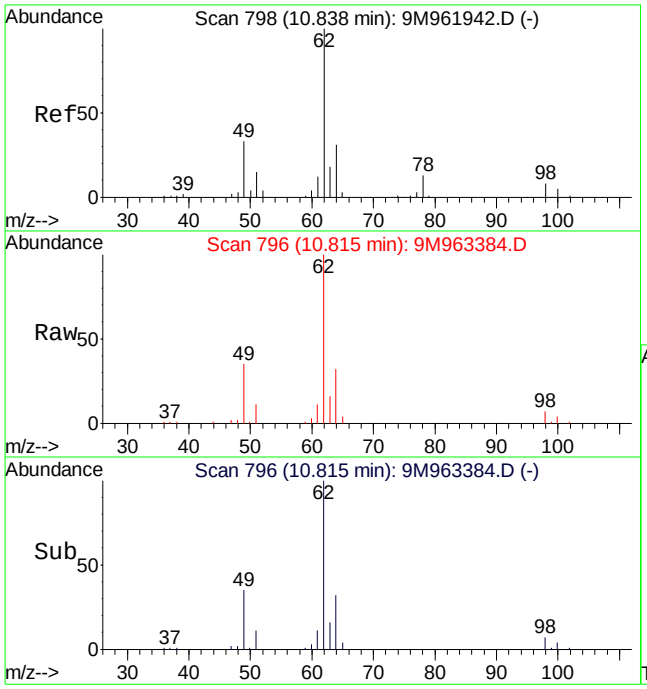

#45
1,2-Dichloroethane
Concen: 12.22 ug/L
RT: 10.81 min Scan# 796
Delta R.T. -0.00 min
Lab File: 9M963384.D
Acq: 20 May 2014 00:32

Tgt Ion: 62 Resp: 128900

Ion	Ratio	Lower	Upper
62	100		
64	32.0	18.7	43.7
49	36.5	22.7	52.9

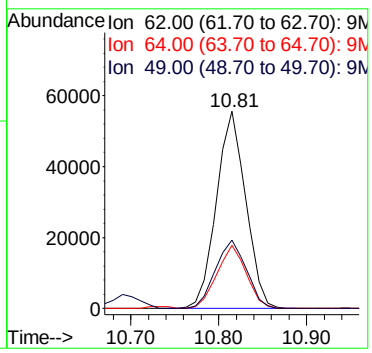

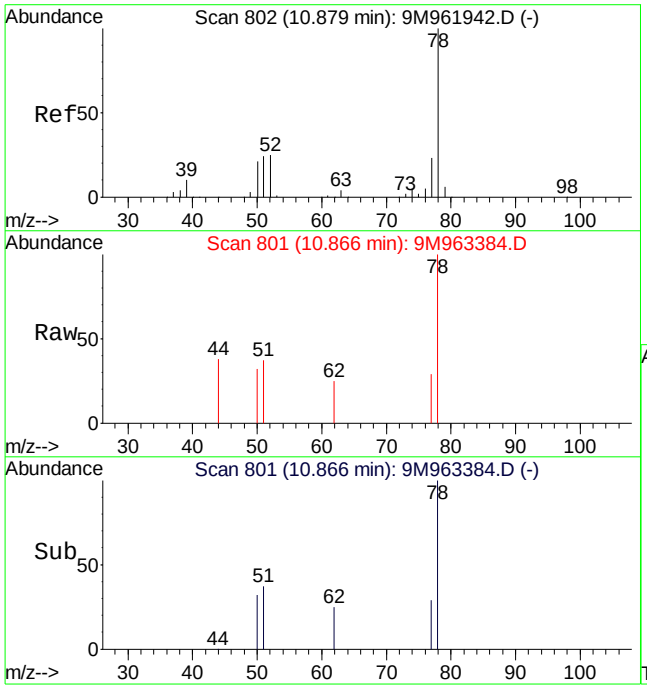

#46
Benzene
Concen: 0.14 ug/L
RT: 10.87 min Scan# 801
Delta R.T. 0.01 min
Lab File: 9M963384.D
Acq: 20 May 2014 00:32

Tgt Ion: 78 Resp: 3788

Ion	Ratio	Lower	Upper
78	100		
77	20.6	13.9	32.3
52	12.3	14.4	33.6#

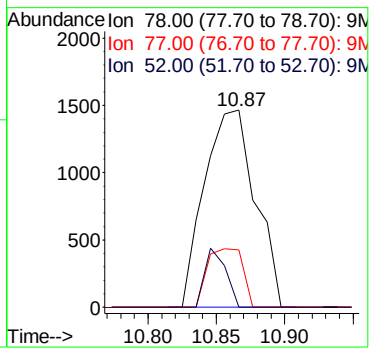

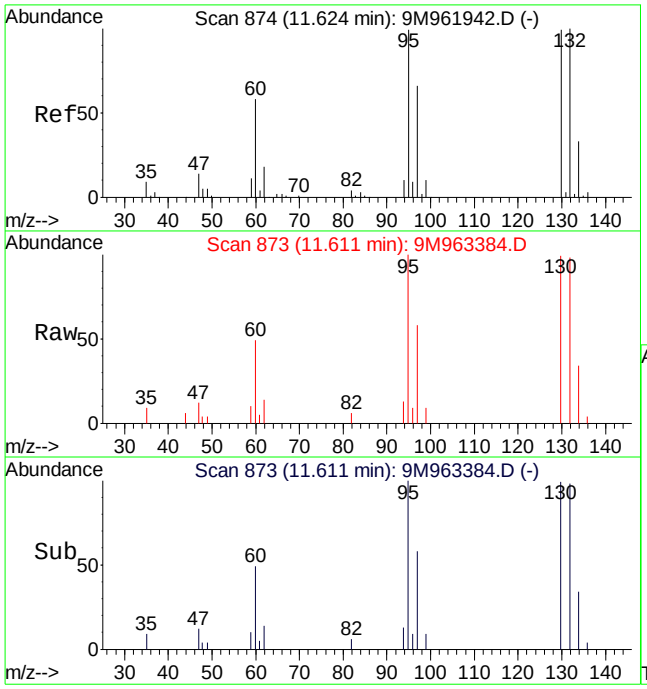

#47
Trichloroethene
Concen: 3.00 ug/L
RT: 11.61 min Scan# 873
Delta R.T. -0.00 min
Lab File: 9M963384.D
Acq: 20 May 2014 00:32

Tgt Ion:130 Resp: 20767

Ion	Ratio	Lower	Upper
130	100		
132	106.5	62.9	146.7
95	104.6	59.7	139.3

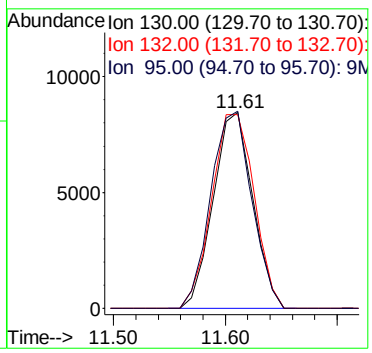

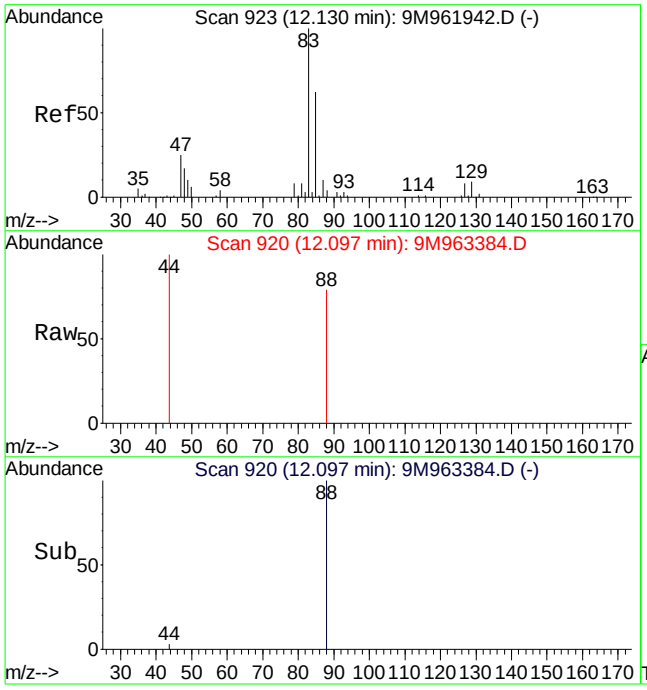

#50
1,4-Dioxane
Concen: 6.53 ug/L
RT: 12.10 min Scan# 920
Delta R.T. -0.01 min
Lab File: 9M963384.D
Acq: 20 May 2014 00:32

Tgt Ion: 88 Resp: 500

Ion	Ratio	Lower	Upper
88	100		
58	101.4	54.2	126.4

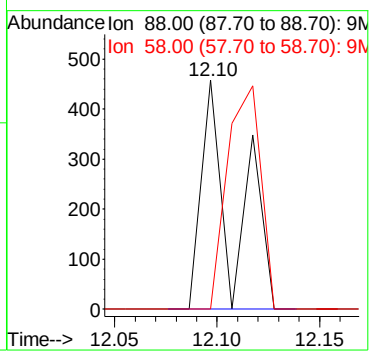

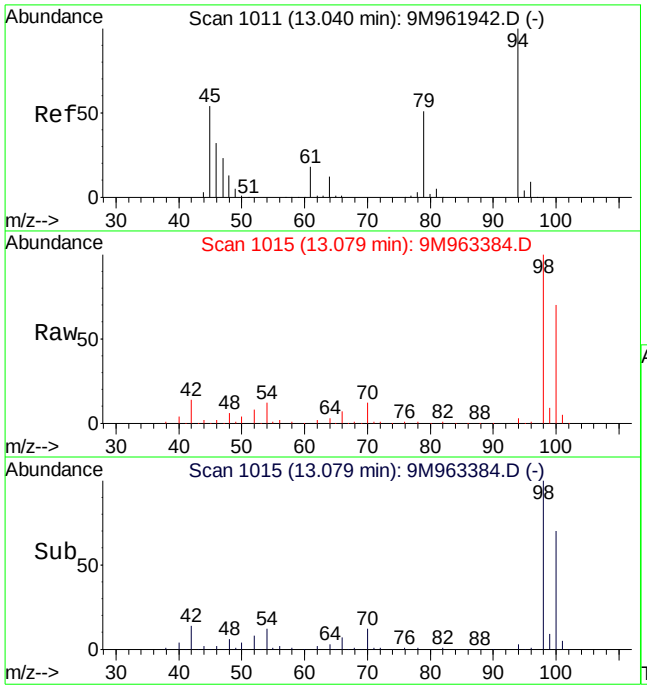

#56
Dimethyl Disulfide
Concen: 1.29 ug/L
RT: 13.08 min Scan# 1015
Delta R.T. 0.05 min
Lab File: 9M963384.D
Acq: 20 May 2014 00:32

Tgt Ion: 94 Resp: 16403

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.9#

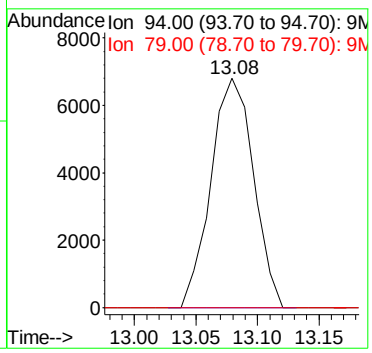

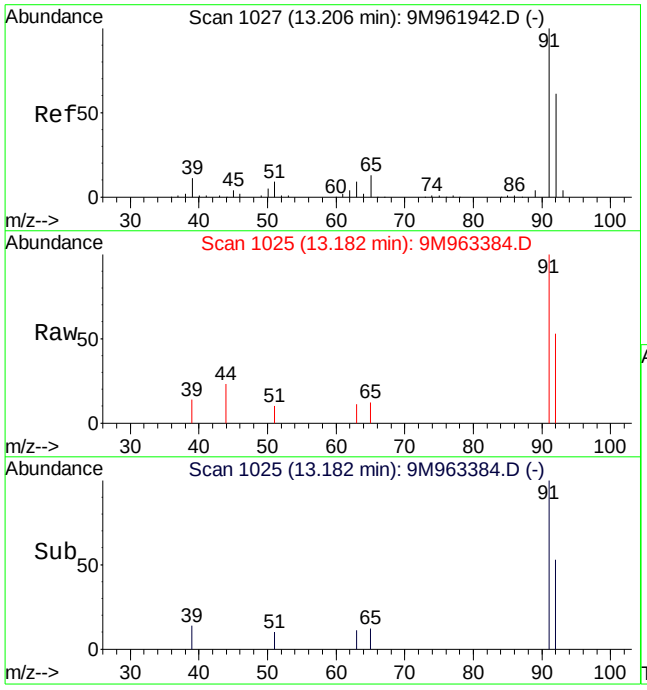

#59
Toluene
Concen: 0.25 ug/L
RT: 13.18 min Scan# 1025
Delta R.T. -0.00 min
Lab File: 9M963384.D
Acq: 20 May 2014 00:32

Tgt Ion: 91 Resp: 6923

Ion	Ratio	Lower	Upper
91	100		
92	62.8	36.4	84.8

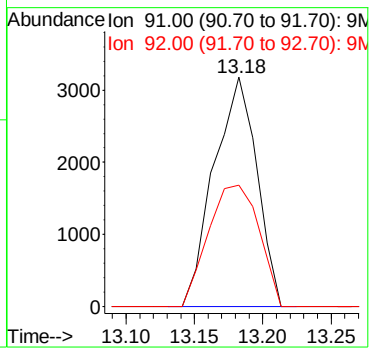

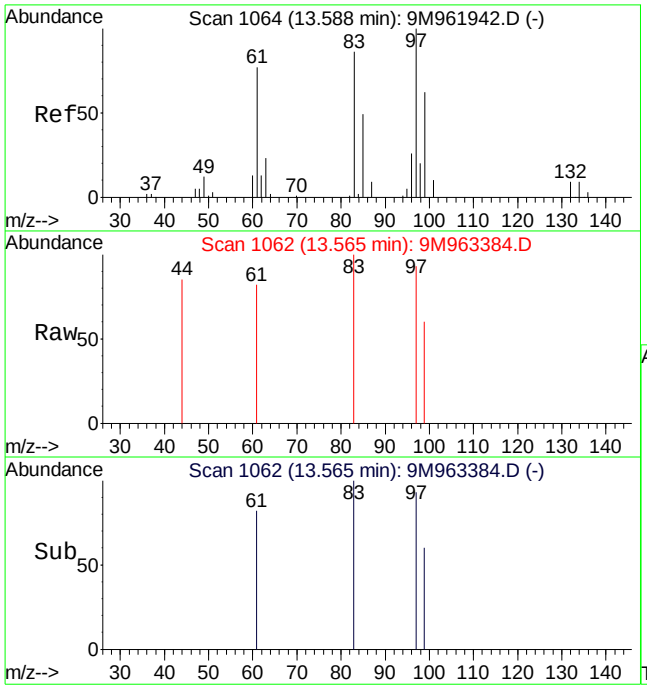

#62
1,1,2-Trichloroethane
Concen: 0.15 ug/L
RT: 13.56 min Scan# 1062
Delta R.T. -0.01 min
Lab File: 9M963384.D
Acq: 20 May 2014 00:32

Tgt Ion: 97 Resp: 919

Ion	Ratio	Lower	Upper
97	100		
83	116.8	50.2	117.0

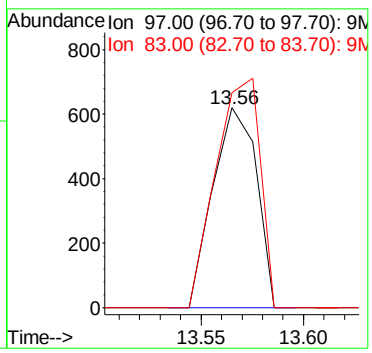

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051914\9M963385.D Vial: 22
Acq On : 20 May 2014 1:03 Operator: ADC
Sample : L14050603-13 A 10X 826-LOW Inst : HPMS9
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 09:09:26 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.10	96	610655	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.98	117	446889	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	211294	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.05	111	174126	26.4549 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.80%		
43) 1,2-Dichloroethane-d4	10.69	65	220082	26.5651 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.28%		
58) Toluene-d8	13.08	98	612359	25.1181 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.48%		
79) p-Bromofluorobenzene	16.48	95	208153	23.9224 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.68%		

Target Compounds					Qvalue
3) Chloromethane	3.88	50	1720	0.2313 ug/L #	45
4) Vinyl Chloride	4.14	62	997	0.1252 ug/L #	45
13) Acetone	6.62	43	486	0.2162 ug/L #	33
14) 1,1-Dichloroethene	6.85	61	1976327	159.2425 ug/L	95
27) 1,1-Dichloroethane	8.72	63	86807	5.7295 ug/L	97
32) cis-1,2-Dichloroethene	9.57	96	1700	0.2350 ug/L	97
33) Chloroform	9.75	83	5626	0.4884 ug/L	95
45) 1,2-Dichloroethane	10.82	62	105286	10.1247 ug/L	97
46) Benzene	10.86	78	8980	0.3373 ug/L	95
47) Trichloroethene	11.60	130	3009	0.4411 ug/L	88
50) 1,4-Dioxane	12.11	88	668	8.8444 ug/L	95
56) Dimethyl Disulfide	13.08	94	16893	1.3522 ug/L #	28
62) 1,1,2-Trichloroethane	13.57	97	2913	0.5012 ug/L	89

(#) = qualifier out of range (m) = manual integration
9M963385.D 8260WT.M Tue May 20 09:09:28 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051914\9M963385.D Vial: 22
Acq On : 20 May 2014 1:03 Operator: ADC
Sample : L14050603-13 A 10X 826-LOW Inst : HPMS9
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 9:09 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

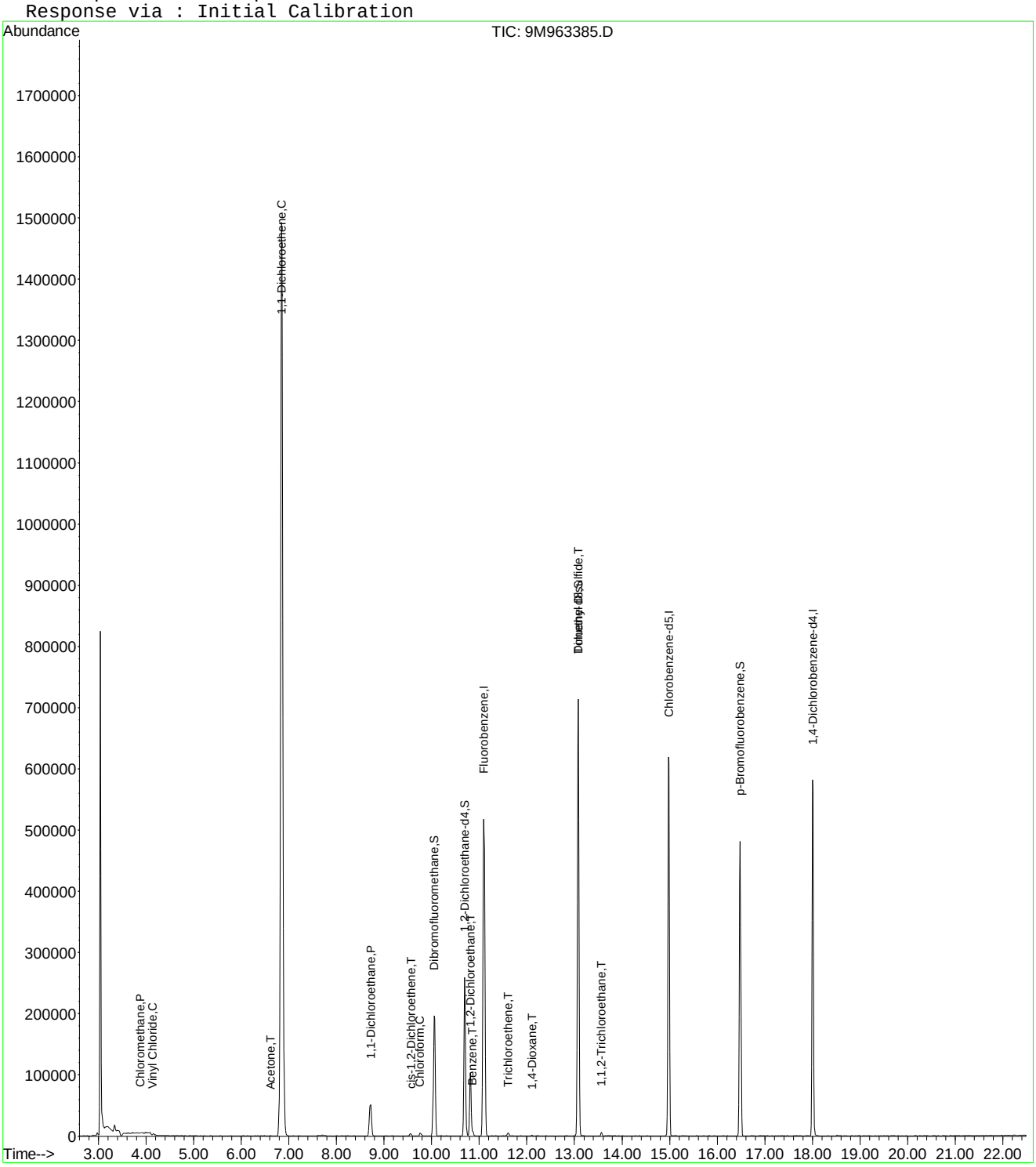

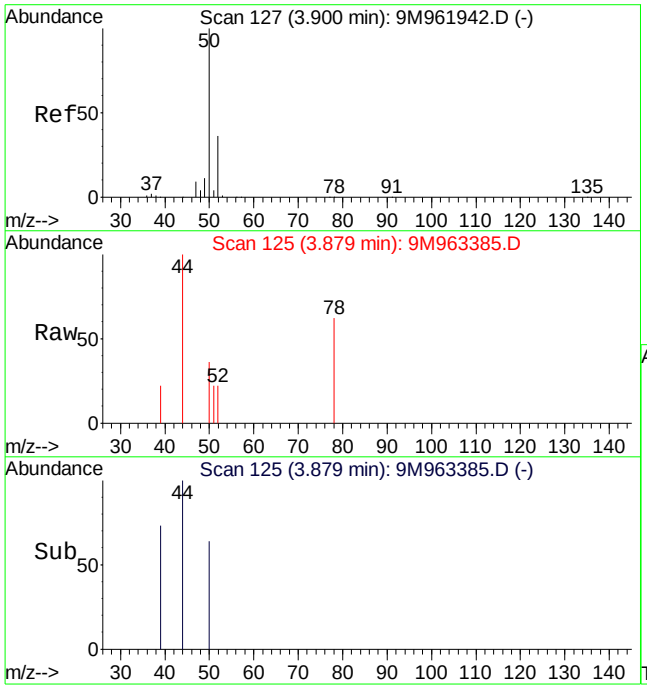

#3
Chloromethane
Concen: 0.23 ug/L
RT: 3.88 min Scan# 125
Delta R.T. -0.01 min
Lab File: 9M963385.D
Acq: 20 May 2014 1:03

Tgt Ion: 50 Resp: 1720

Ion	Ratio	Lower	Upper
50	100		
52	67.0	21.0	49.0#

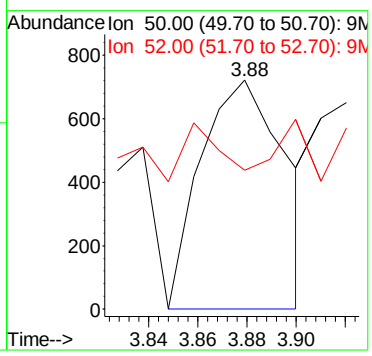

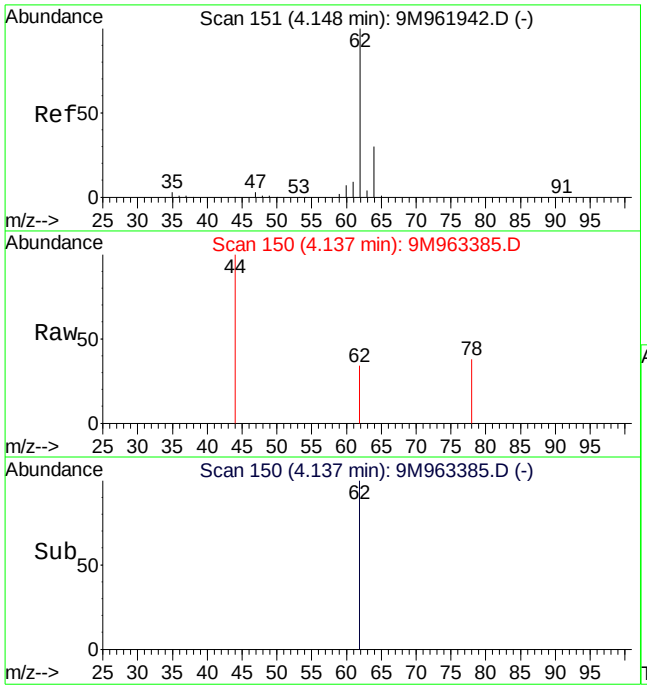

#4
Vinyl Chloride
Concen: 0.13 ug/L
RT: 4.14 min Scan# 150
Delta R.T. 0.00 min
Lab File: 9M963385.D
Acq: 20 May 2014 1:03

Tgt Ion: 62 Resp: 997

Ion	Ratio	Lower	Upper
62	100		
64	0.0	17.9	41.9#

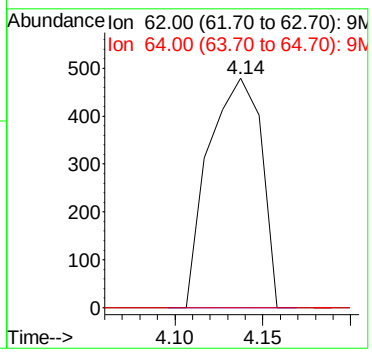

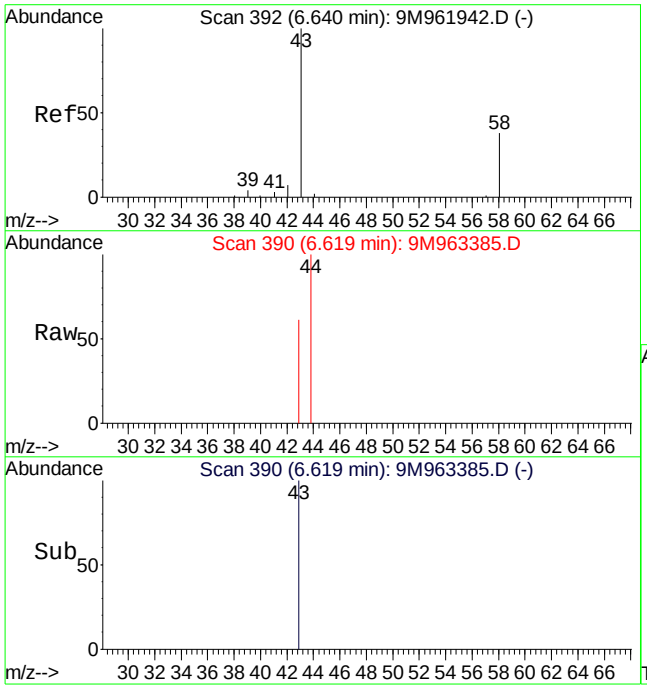

#13
Acetone
Concen: 0.22 ug/L
RT: 6.62 min Scan# 390
Delta R.T. 0.01 min
Lab File: 9M963385.D
Acq: 20 May 2014 1:03

Tgt Ion: 43 Resp: 486

Ion	Ratio	Lower	Upper
43	100		
58	0.0	25.4	59.4#

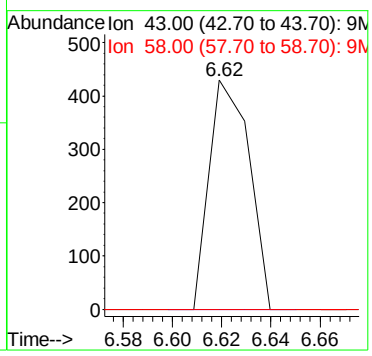

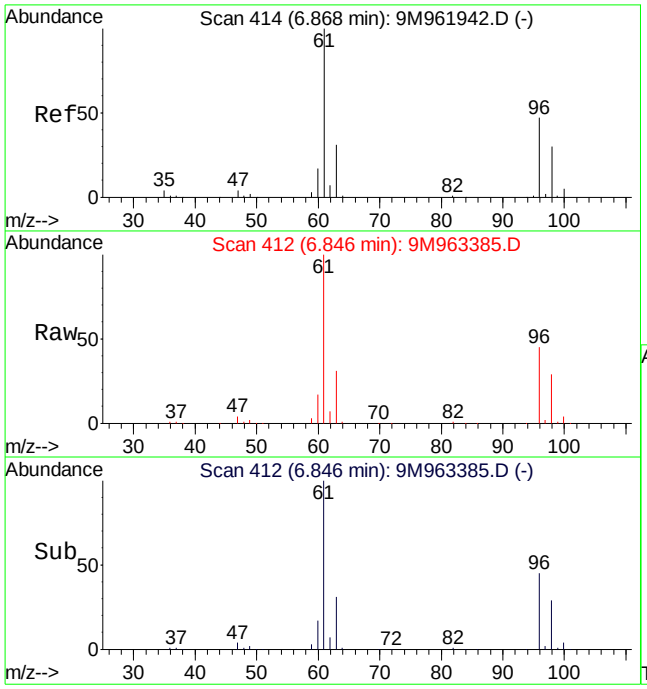

#14
1,1-Dichloroethene
Concen: 159.24 ug/L
RT: 6.85 min Scan# 412
Delta R.T. 0.00 min
Lab File: 9M963385.D
Acq: 20 May 2014 1:03

Tgt Ion: 61 Resp: 1976327

Ion	Ratio	Lower	Upper
61	100		
96	44.9	29.0	67.6

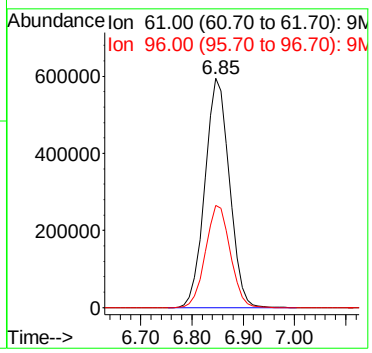

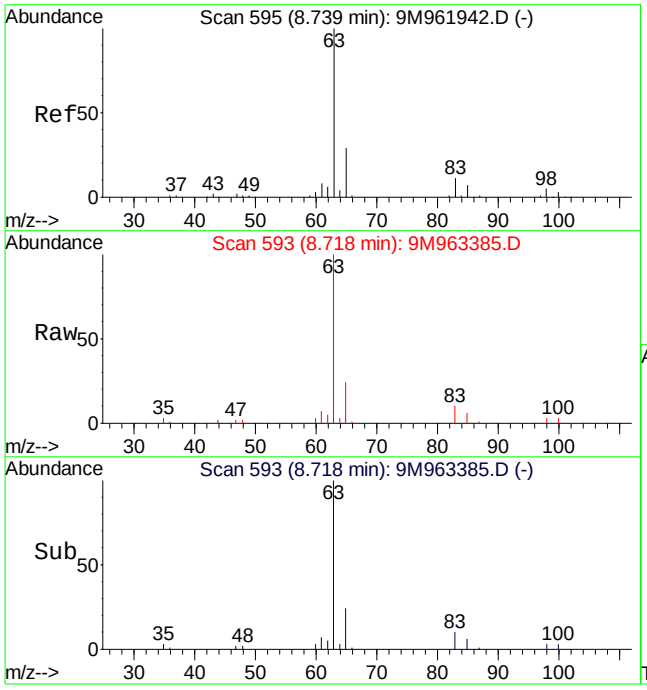

#27
1,1-Dichloroethane
Concen: 5.73 ug/L
RT: 8.72 min Scan# 593
Delta R.T. 0.00 min
Lab File: 9M963385.D
Acq: 20 May 2014 1:03

Tgt Ion: 63 Resp: 86807

Ion	Ratio	Lower	Upper
63	100		
65	27.2	17.5	40.9
83	10.1	6.1	14.1

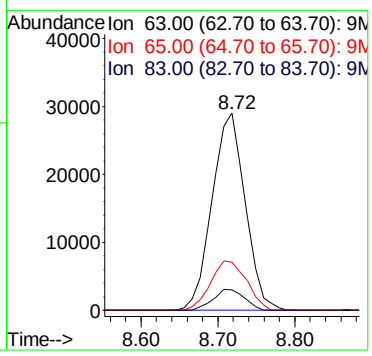

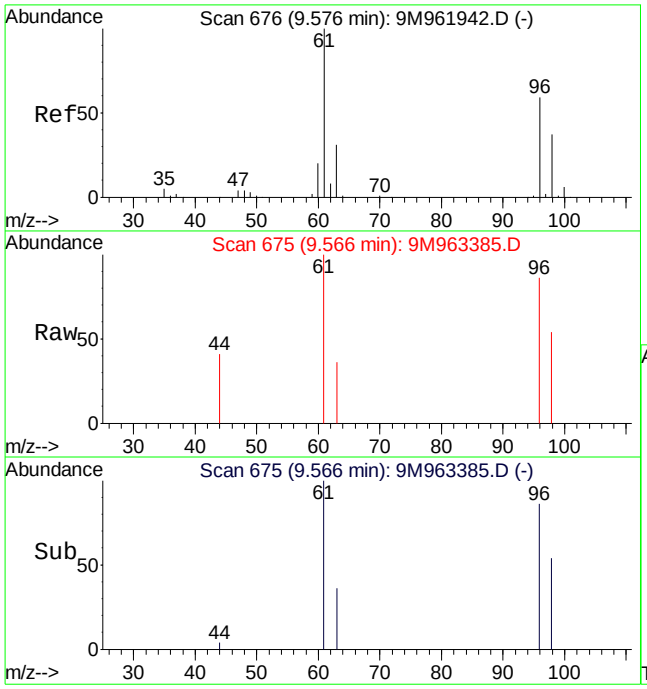

#32
cis-1,2-Dichloroethene
Concen: 0.24 ug/L
RT: 9.57 min Scan# 675
Delta R.T. 0.00 min
Lab File: 9M963385.D
Acq: 20 May 2014 1:03

Tgt Ion: 96 Resp: 1700

Ion	Ratio	Lower	Upper
96	100		
61	194.8	114.1	266.1

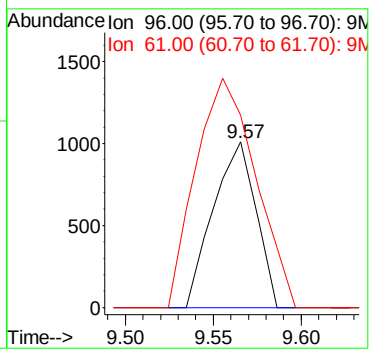

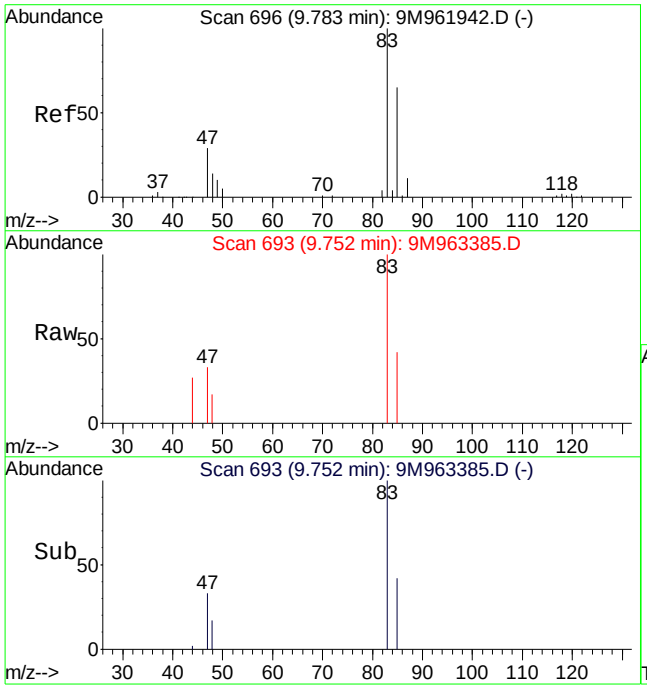

#33
Chloroform
Concen: 0.49 ug/L
RT: 9.75 min Scan# 693
Delta R.T. -0.02 min
Lab File: 9M963385.D
Acq: 20 May 2014 1:03

Tgt Ion: 83 Resp: 5626

Ion	Ratio	Lower	Upper
83	100		
85	68.9	38.9	90.7

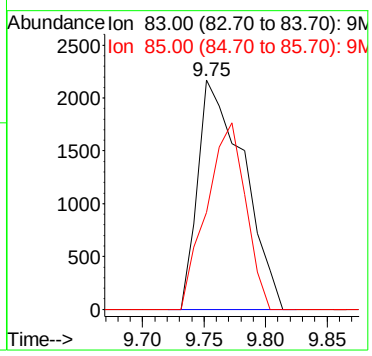

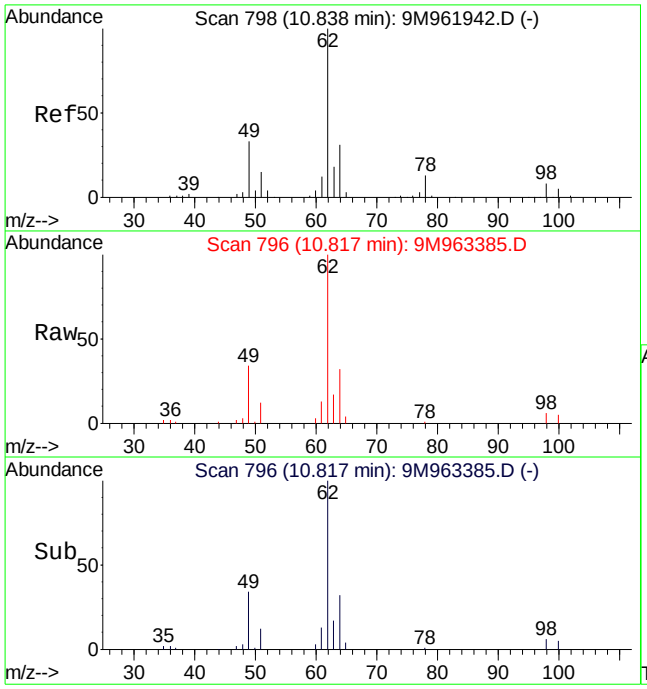

#45
1,2-Dichloroethane
Concen: 10.12 ug/L
RT: 10.82 min Scan# 796
Delta R.T. 0.00 min
Lab File: 9M963385.D
Acq: 20 May 2014 1:03

Tgt Ion: 62 Resp: 105286

Ion	Ratio	Lower	Upper
62	100		
64	31.5	18.7	43.7
49	34.7	22.7	52.9

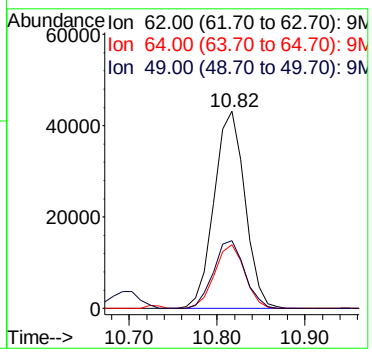

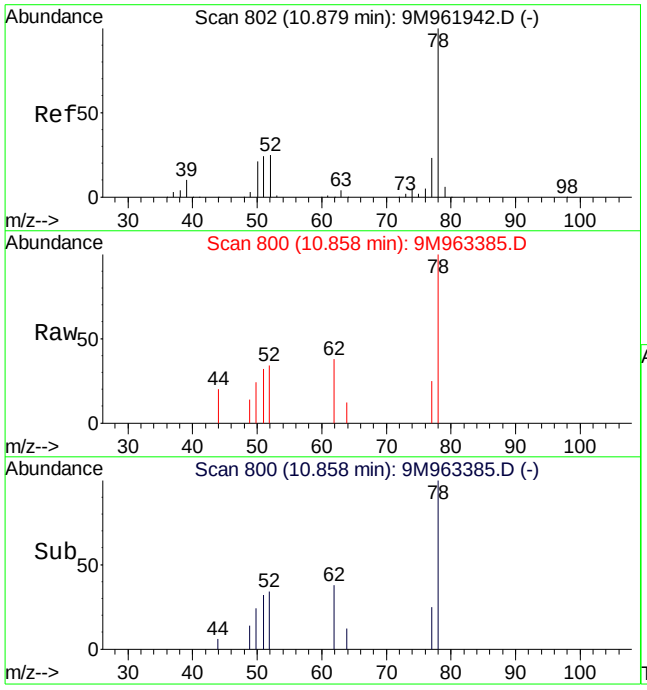

#46
Benzene
Concen: 0.34 ug/L
RT: 10.86 min Scan# 800
Delta R.T. 0.00 min
Lab File: 9M963385.D
Acq: 20 May 2014 1:03

Tgt Ion: 78 Resp: 8980

Ion	Ratio	Lower	Upper
78	100		
77	18.7	13.9	32.3
52	24.9	14.4	33.6

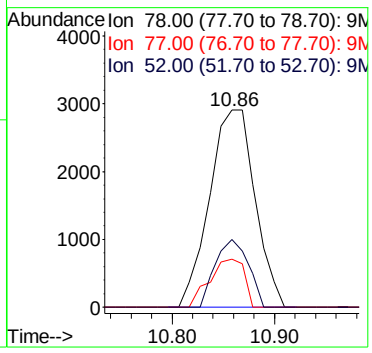

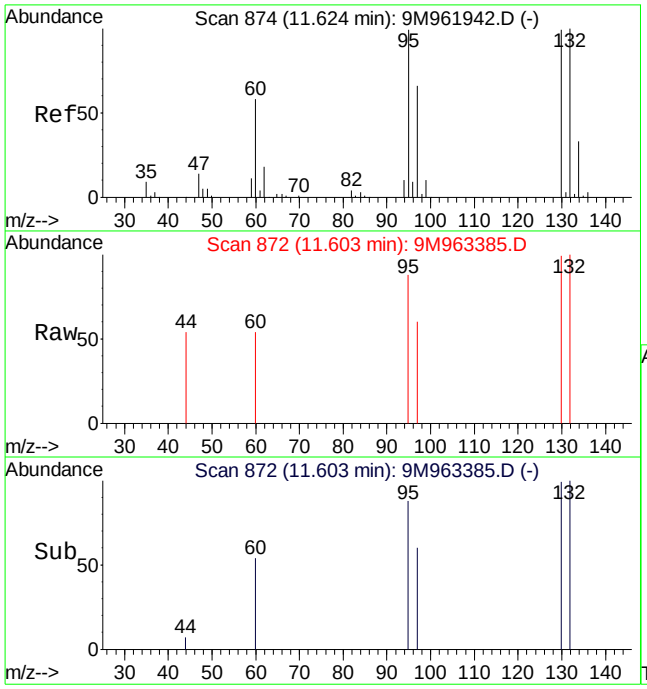

#47
Trichloroethene
Concen: 0.44 ug/L
RT: 11.60 min Scan# 872
Delta R.T. -0.01 min
Lab File: 9M963385.D
Acq: 20 May 2014 1:03

Tgt Ion:130 Resp: 3009

Ion	Ratio	Lower	Upper
130	100		
132	99.0	62.9	146.7
95	81.3	59.7	139.3

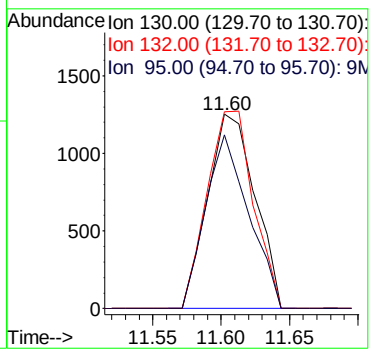

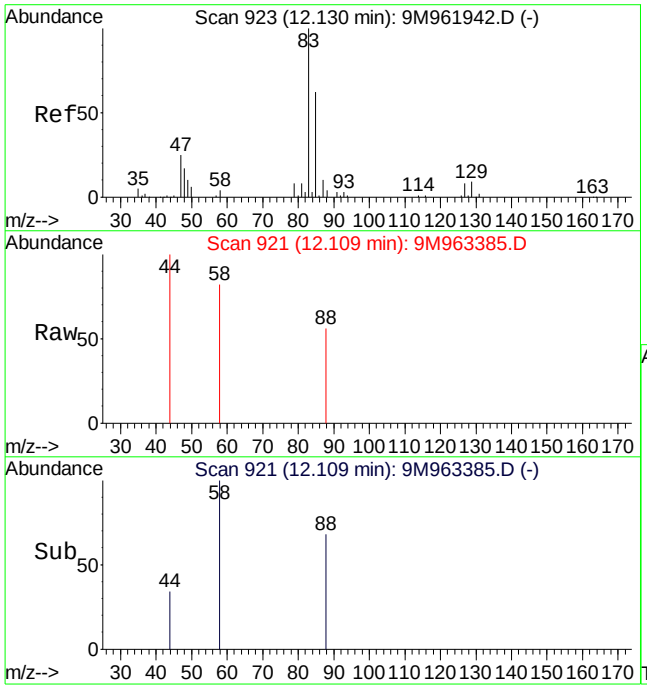

#50
1,4-Dioxane
Concen: 8.84 ug/L
RT: 12.11 min Scan# 921
Delta R.T. 0.00 min
Lab File: 9M963385.D
Acq: 20 May 2014 1:03

Tgt Ion: 88 Resp: 668

Ion	Ratio	Lower	Upper
88	100		
58	95.1	54.2	126.4

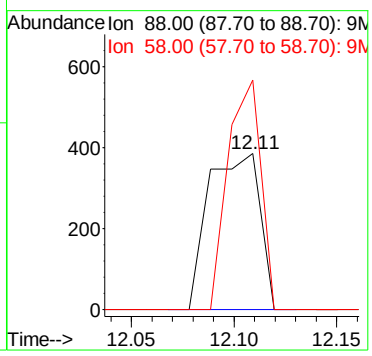

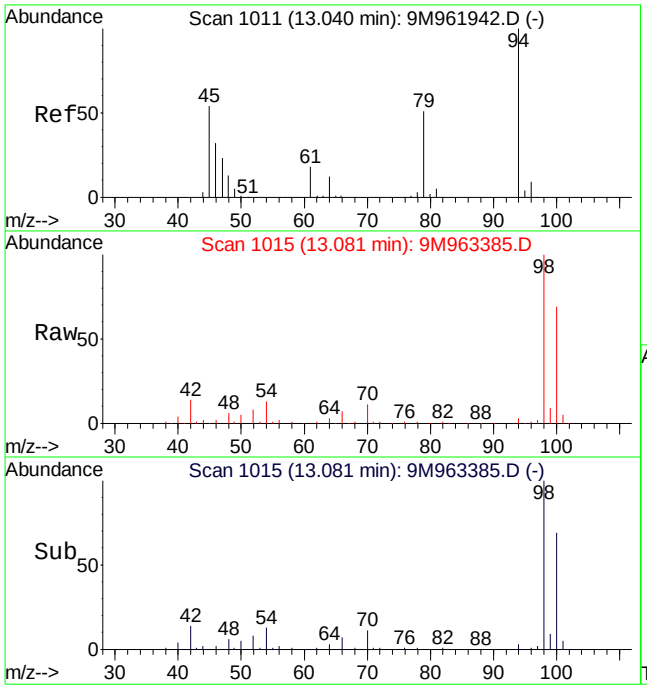

#56
Dimethyl Disulfide
Concen: 1.35 ug/L
RT: 13.08 min Scan# 1015
Delta R.T. 0.05 min
Lab File: 9M963385.D
Acq: 20 May 2014 1:03

Tgt Ion: 94 Resp: 16893

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.9#

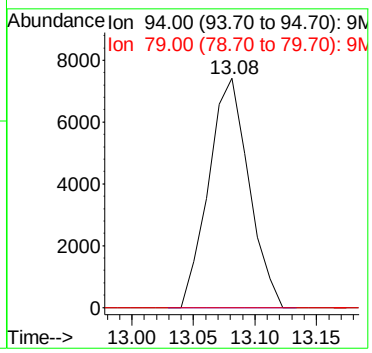

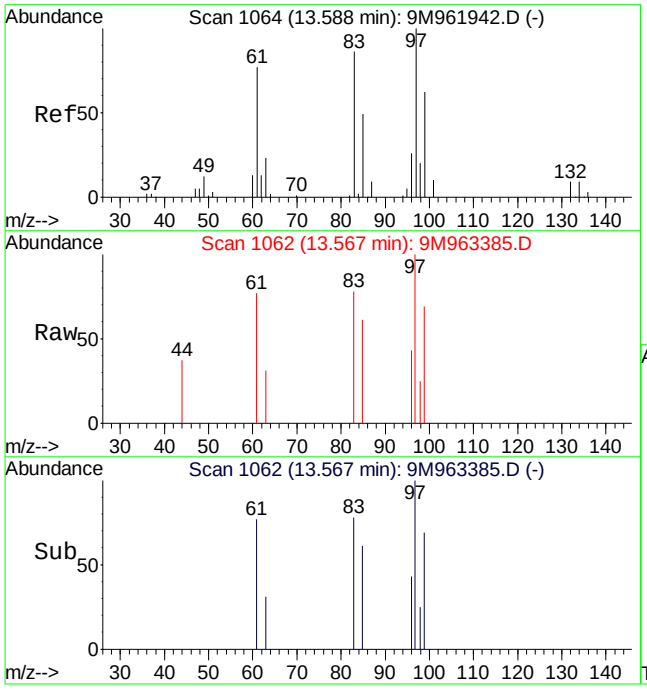

#62
1,1,2-Trichloroethane
Concen: 0.50 ug/L
RT: 13.57 min Scan# 1062
Delta R.T. -0.01 min
Lab File: 9M963385.D
Acq: 20 May 2014 1:03

Tgt Ion: 97 Resp: 2913

Ion	Ratio	Lower	Upper
97	100		
83	73.7	50.2	117.0

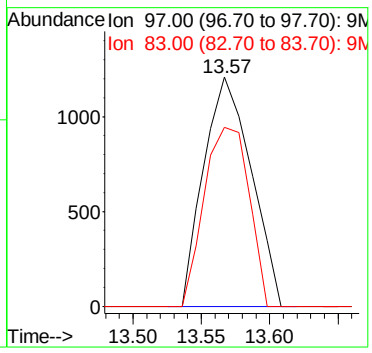

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\052014\9M963398.D Vial: 10
Acq On : 20 May 2014 11:23 Operator: TMB
Sample : L14050603-14 A TB 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 21 10:20:18 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.09	96	635996	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.98	117	465759	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	220583	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.05	111	176844	25.7973 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.20%		
43) 1,2-Dichloroethane-d4	10.69	65	225873	26.1778 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.72%		
58) Toluene-d8	13.08	98	639075	25.1519 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.60%		
79) p-Bromofluorobenzene	16.48	95	222216	24.4631 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.84%		

Target Compounds

					Qvalue
3) Chloromethane	3.88	50	3598	0.4646 ug/L	86
13) Acetone	6.63	43	4258	1.8186 ug/L	84
56) Dimethyl Disulfide	13.08	94	17242	1.3252 ug/L #	28

(#) = qualifier out of range (m) = manual integration
9M963398.D 8260WT.M Wed May 21 10:20:21 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\052014\9M963398.D Vial: 10
Acq On : 20 May 2014 11:23 Operator: TMB
Sample : L14050603-14 A TB 826-LOW Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 21 10:20 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

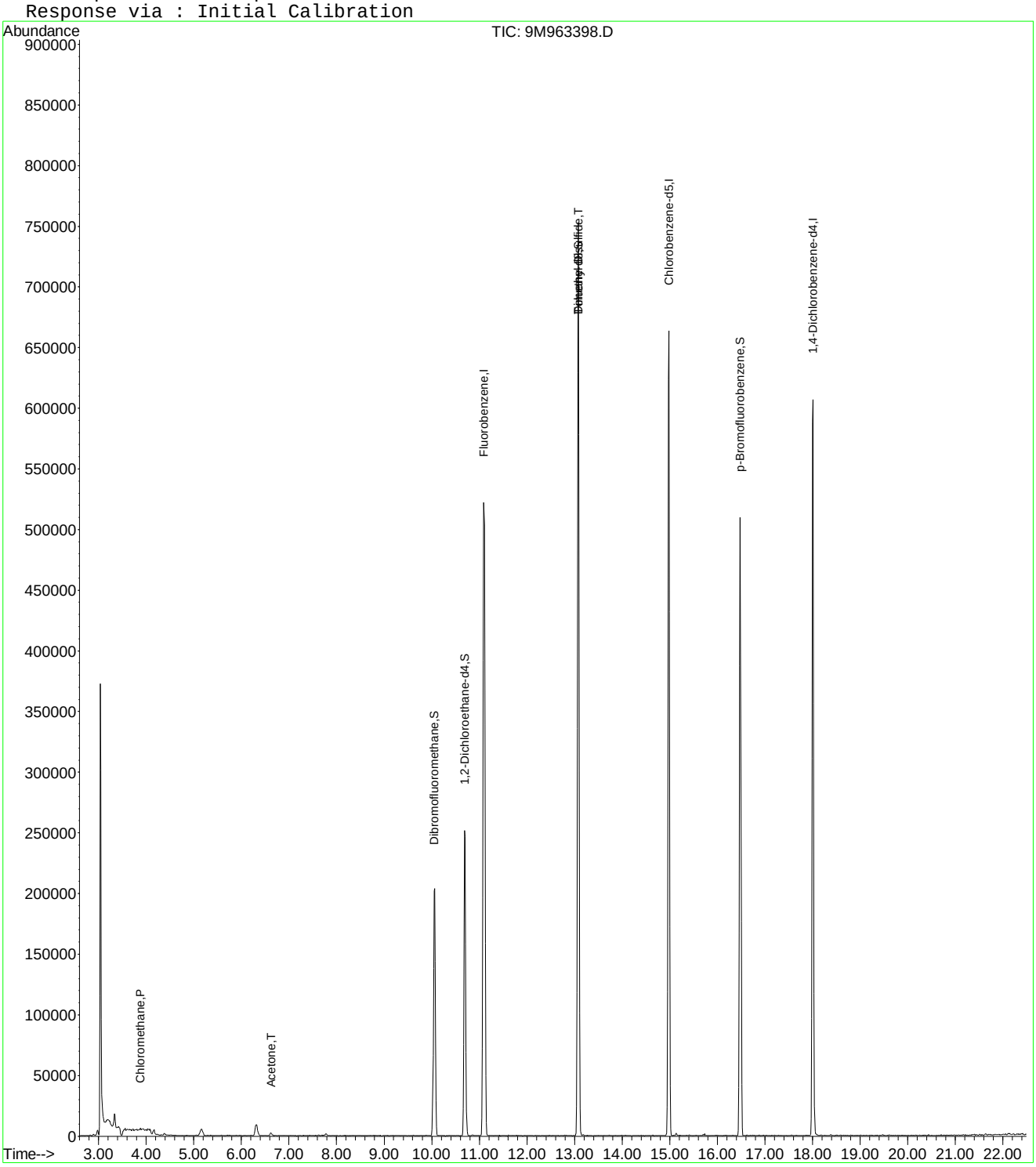

9M963398.D 8260WT.M Wed May 21 10:20:21 2014 Page 2

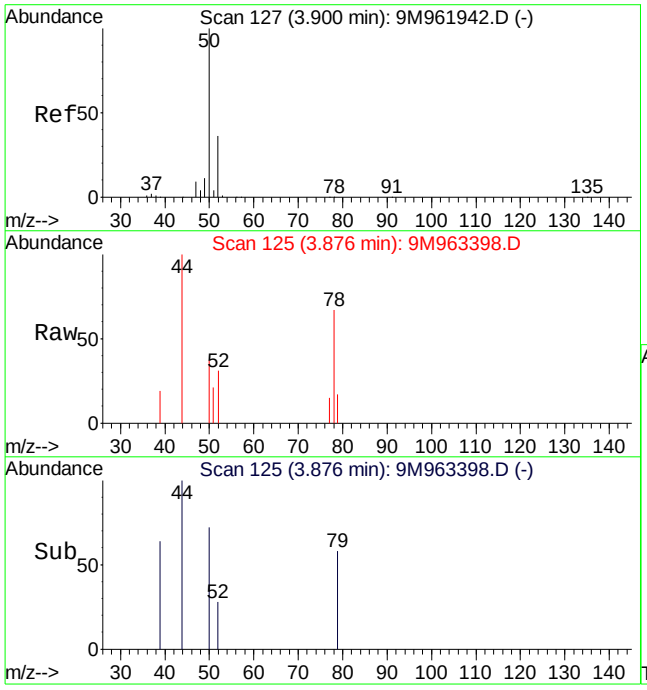

#3
Chloromethane
Concen: 0.46 ug/L
RT: 3.88 min Scan# 125
Delta R.T. -0.01 min
Lab File: 9M963398.D
Acq: 20 May 2014 11:23

Tgt Ion: 50 Resp: 3598

Ion	Ratio	Lower	Upper
50	100		
52	43.4	21.0	49.0

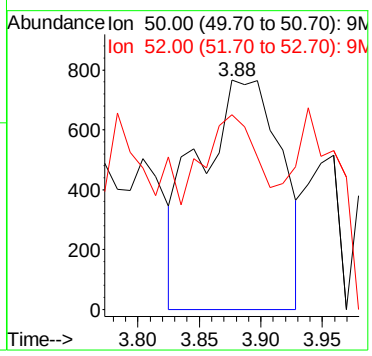

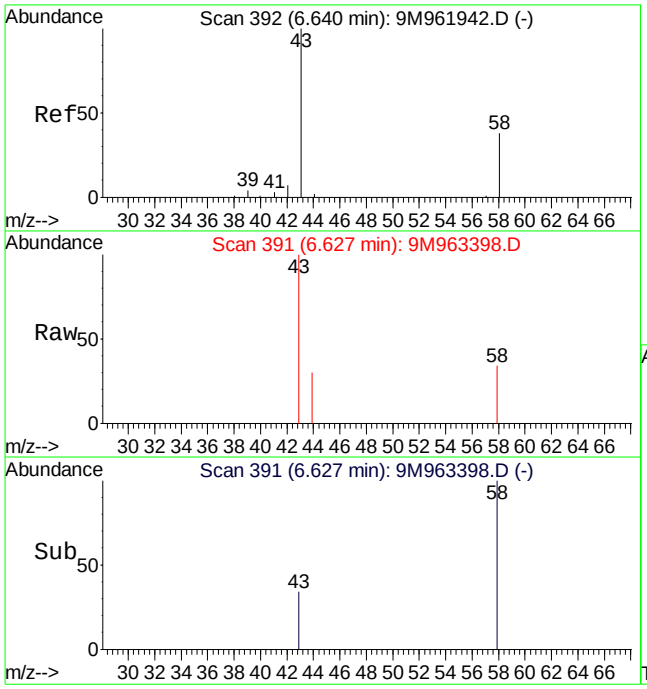

#13
Acetone
Concen: 1.82 ug/L
RT: 6.63 min Scan# 391
Delta R.T. 0.02 min
Lab File: 9M963398.D
Acq: 20 May 2014 11:23

Tgt Ion: 43 Resp: 4258

Ion	Ratio	Lower	Upper
43	100		
58	32.0	25.4	59.4

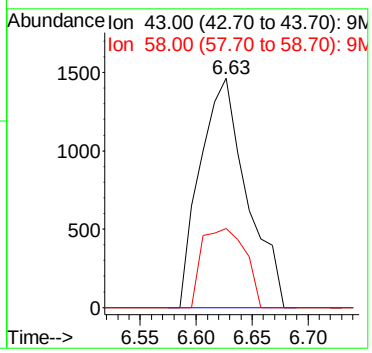

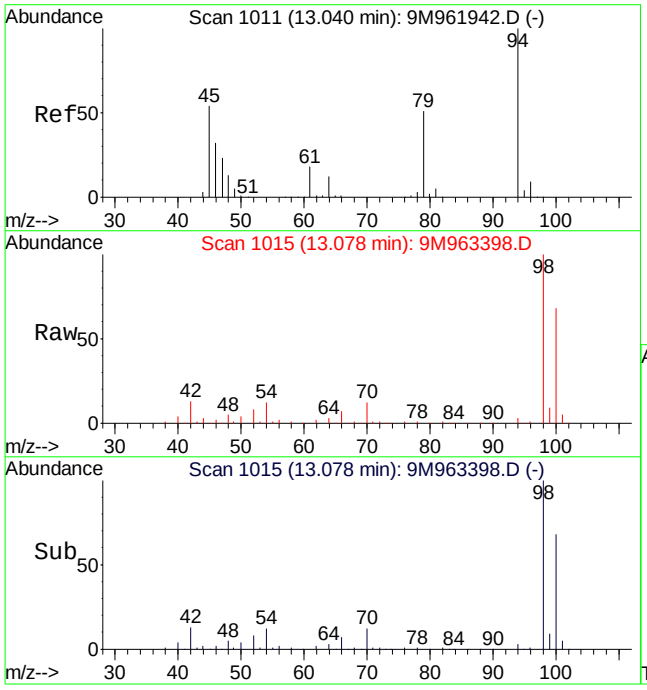

#56
Dimethyl Disulfide
Concen: 1.33 ug/L
RT: 13.08 min Scan# 1015
Delta R.T. 0.05 min
Lab File: 9M963398.D
Acq: 20 May 2014 11:23

Tgt Ion: 94 Resp: 17242

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.9#

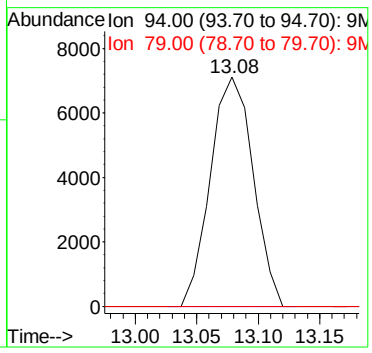

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000186.D
Acq On : 13 Oct 2013 17:48
Operator : MES
Sample : WG448462-02 5ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 17 17:42:57 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.192	96	834735	25.0000 ug/L	0.00
11) Chlorobenzene-d5	13.996	117	596678	25.0000 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.971	152	298748	25.0000 ug/L	0.00
Target Compounds					Qvalue
2) Acetonitrile	6.139	41	2125	3.70 ug/L #	72
3) 3-Chloro-1-propene	6.513	41	56439	4.88 ug/L #	87
4) 2-Chloro-1,3-butadiene	7.933	53	47335	4.42 ug/L	98
5) Methacrylonitrile	8.762	67	9230	4.25 ug/L	98
6) Ethyl Acetate	8.627	43	20657	4.25 ug/L #	87
7) Isobutyl Alcohol	8.793	43	984	6.08 ug/L #	48
8) 1-Butanol	9.415	56	1024	34.64 ug/L #	16
9) Methyl methacrylate	10.939	41	18354	4.00 ug/L	99
10) 2-Nitropropane	11.249	43	5280	3.08 ug/L	90
12) Cyclohexanone	15.479	55	199	17.31 ug/L #	23

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000186.D
Acq On : 13 Oct 2013 17:48
Operator : MES
Sample : WG448462-02 5ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 17 17:42:57 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

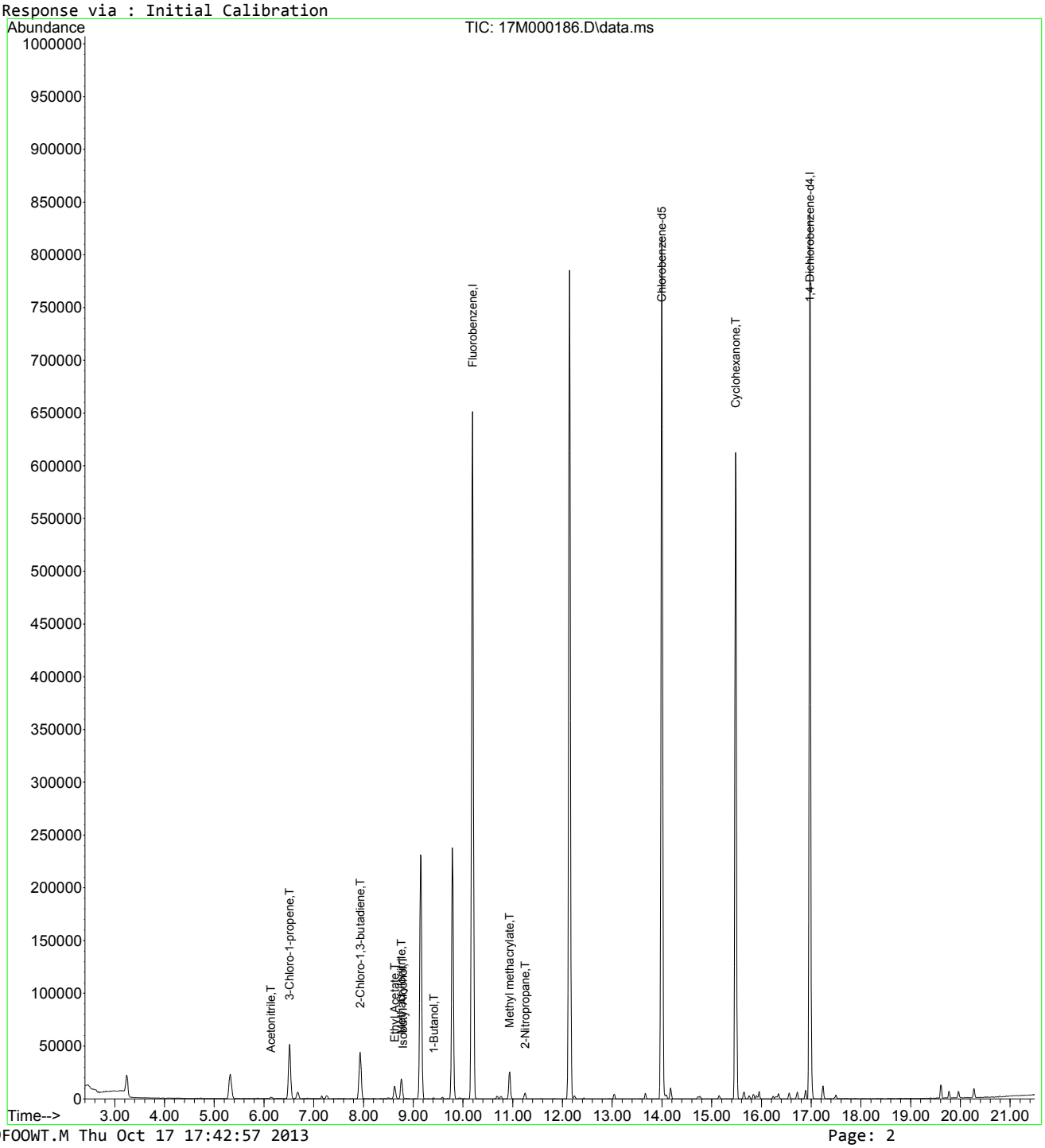

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000186.D
Acq On : 13 Oct 2013 17:48
Operator : MES
Sample : WG448462-02 5ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 17 17:43:35 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.00
2	T	Acetonitrile	5.000	3.703	25.9#	0	0.01
3	T	3-Chloro-1-propene	5.000	4.880	2.4	100	0.00
4	T	2-Chloro-1,3-butadiene	5.000	4.424	11.5	100	0.00
5	T	Methacrylonitrile	5.000	4.254	14.9	100	0.00
6	T	Ethyl Acetate	5.000	4.247	15.1	100	0.01
7	T	Isobutyl Alcohol	5.000	6.076	-21.5	0	0.01
8	T	1-Butanol	-1.000	34.643	0.0	0	-0.30
9	T	Methyl methacrylate	5.000	4.002	20.0	100	0.01
10	T	2-Nitropropane	-1.000	3.076	0.0	0	0.00
11		Chlorobenzene-d5	25.000	25.000	0.0	100	0.00
12	T	Cyclohexanone	-1.000	17.312	0.0	0	0.23
13	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000187.D
Acq On : 13 Oct 2013 18:15
Operator : MES
Sample : WG448462-03 20ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 17 17:43:00 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.192	96	769796	25.0000 ug/L	0.00
11) Chlorobenzene-d5	13.996	117	542862	25.0000 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.981	152	283988	25.0000 ug/L	0.01
Target Compounds					Qvalue
2) Acetonitrile	6.129	41	9431	17.82 ug/L #	91
3) 3-Chloro-1-propene	6.512	41	236510	22.18 ug/L	99
4) 2-Chloro-1,3-butadiene	7.932	53	212042	21.49 ug/L	99
5) Methacrylonitrile	8.761	67	39753	19.87 ug/L	99
6) Ethyl Acetate	8.616	43	87278	19.46 ug/L	100
7) Isobutyl Alcohol	8.782	43	5450	36.49 ug/L #	97
8) 1-Butanol	9.725	56	885	33.83 ug/L #	48
9) Methyl methacrylate	10.938	41	81246	19.21 ug/L	100
10) 2-Nitropropane	11.249	43	24099	15.23 ug/L	93
12) Cyclohexanone	15.240	55	1683	31.57 ug/L #	89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000187.D
Acq On : 13 Oct 2013 18:15
Operator : MES
Sample : WG448462-03 20ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 17 17:43:00 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

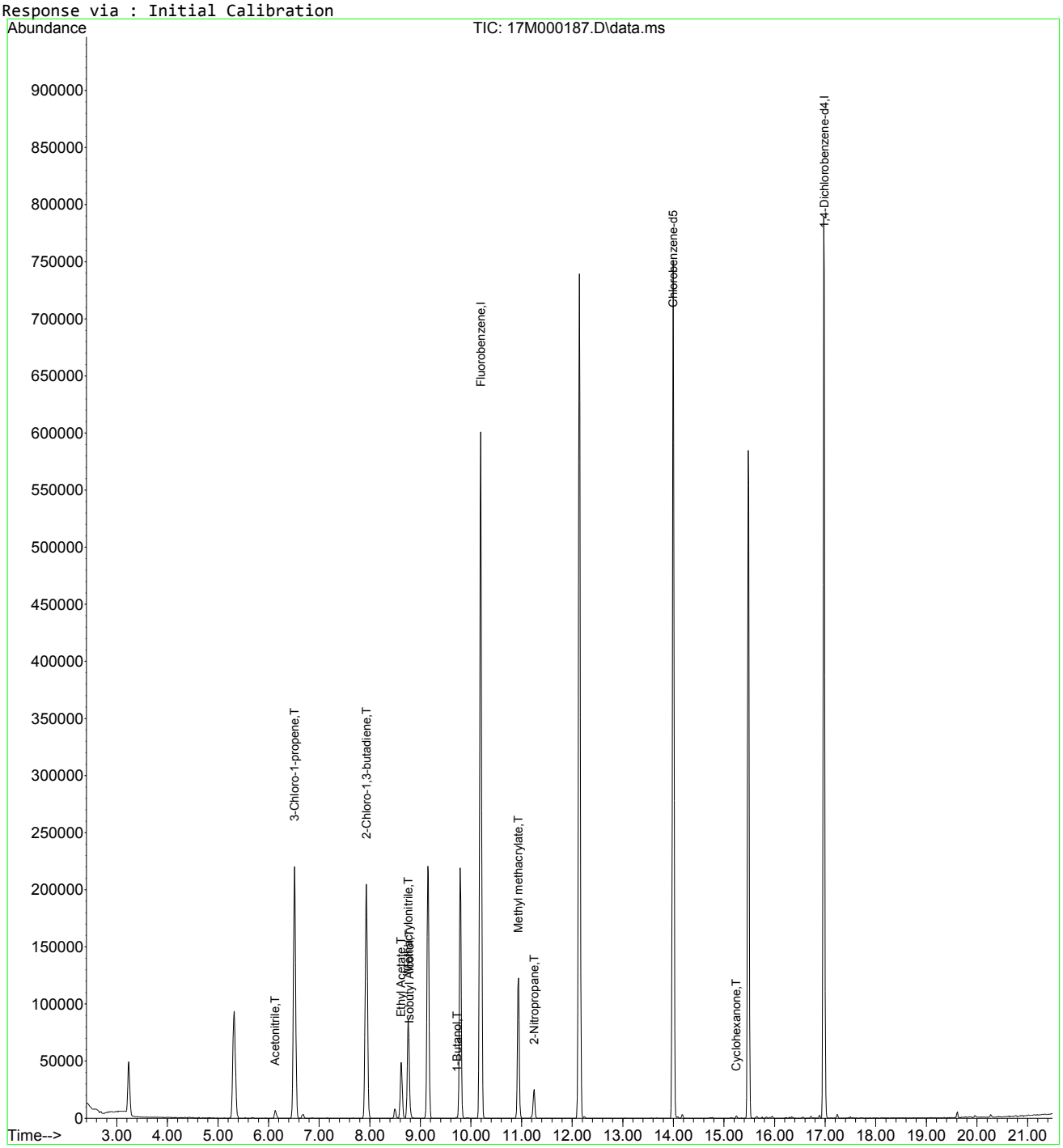

A9FOOWT.M Thu Oct 17 17:43:00 2013 Page: 2

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000188.D
Acq On : 13 Oct 2013 18:43
Operator : MES
Sample : WG448462-04 50ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 17 17:43:02 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.192	96	764083	25.0000 ug/L	0.00
11) Chlorobenzene-d5	13.996	117	535993	25.0000 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.981	152	263764	25.0000 ug/L	0.01
Target Compounds					Qvalue
2) Acetonitrile	6.129	41	25091	47.77 ug/L #	99
3) 3-Chloro-1-propene	6.512	41	571105	53.95 ug/L	100
4) 2-Chloro-1,3-butadiene	7.932	53	517543	52.84 ug/L	100
5) Methacrylonitrile	8.762	67	103271	52.00 ug/L	99
6) Ethyl Acetate	8.616	43	227233	51.04 ug/L	100
7) Isobutyl Alcohol	8.782	43	14258	96.18 ug/L #	96
8) 1-Butanol	9.715	56	2582	56.98 ug/L	98
9) Methyl methacrylate	10.928	41	217667	51.85 ug/L	99
10) 2-Nitropropane	11.249	43	72850	46.37 ug/L	97
12) Cyclohexanone	15.240	55	4463	57.76 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000188.D
Acq On : 13 Oct 2013 18:43
Operator : MES
Sample : WG448462-04 50ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 17 17:43:02 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

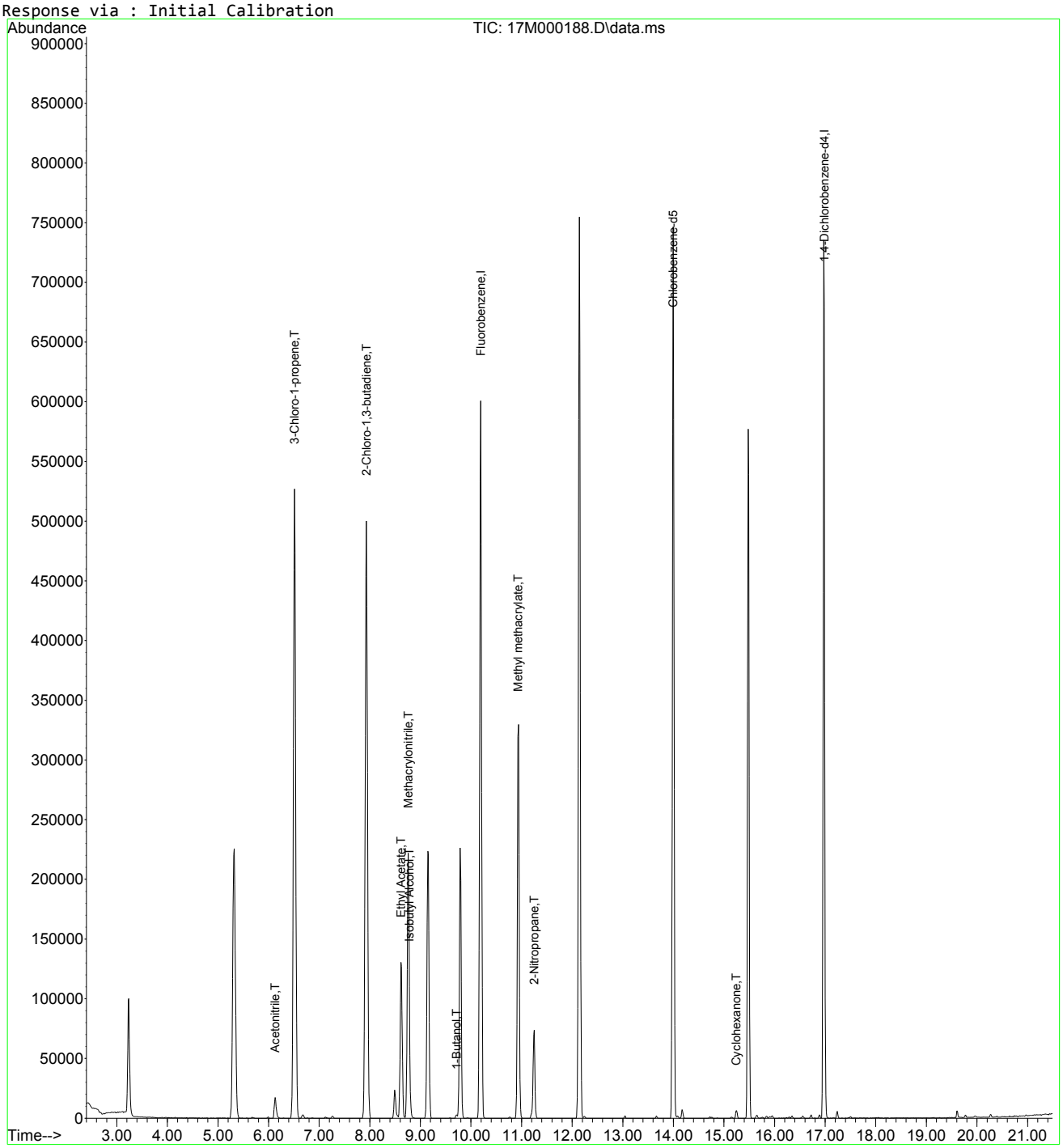

A9FOOWT.M Thu Oct 17 17:43:02 2013 Page: 2

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000189.D
Acq On : 13 Oct 2013 19:11
Operator : MES
Sample : WG448462-05 100ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 17 17:43:04 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.192	96	762819	25.0000 ug/L	0.00
11) Chlorobenzene-d5	13.996	117	543994	25.0000 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.971	152	279020	25.0000 ug/L	0.00
Target Compounds					Qvalue
2) Acetonitrile	6.129	41	49660	94.69 ug/L #	100
3) 3-Chloro-1-propene	6.512	41	1123358	106.29 ug/L	100
4) 2-Chloro-1,3-butadiene	7.932	53	1036798	106.03 ug/L	100
5) Methacrylonitrile	8.762	67	205353	103.57 ug/L	100
6) Ethyl Acetate	8.616	43	457591	102.95 ug/L	100
7) Isobutyl Alcohol	8.782	43	27086	183.01 ug/L	100
8) 1-Butanol	9.715	56	5648	96.66 ug/L	100
9) Methyl methacrylate	10.928	41	448267	106.96 ug/L	100
10) 2-Nitropropane	11.249	43	155172	98.94 ug/L	100
12) Cyclohexanone	15.250	55	9042	97.58 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000189.D
Acq On : 13 Oct 2013 19:11
Operator : MES
Sample : WG448462-05 100ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 17 17:43:04 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

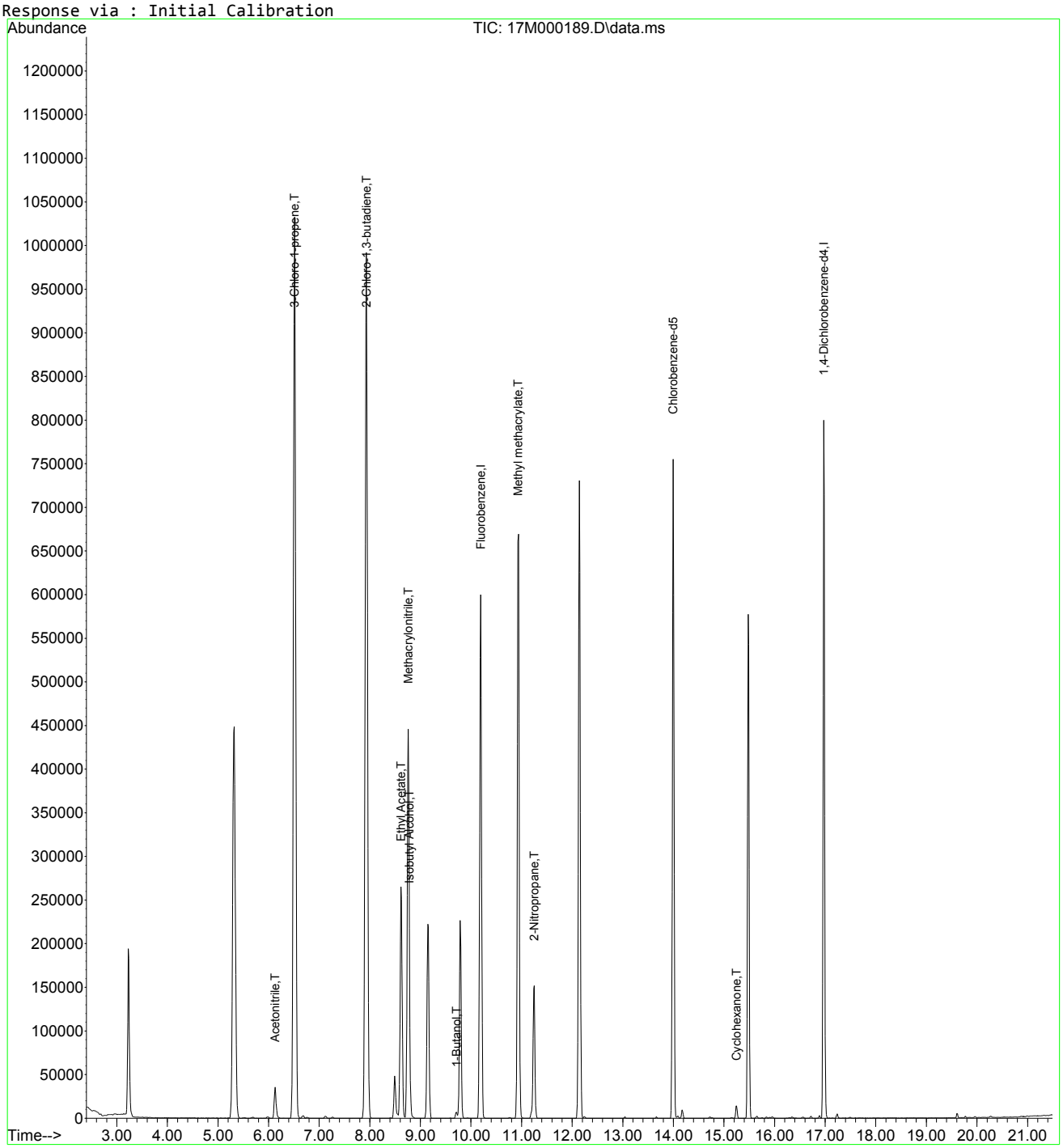

A9FOOWT.M Thu Oct 17 17:43:04 2013 Page: 2

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000190.D
Acq On : 13 Oct 2013 19:39
Operator : MES
Sample : WG448462-06 200ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 17 17:43:06 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.192	96	735626	25.0000 ug/L	0.00
11) Chlorobenzene-d5	13.996	117	520486	25.0000 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.971	152	259787	25.0000 ug/L	0.00
Target Compounds					Qvalue
2) Acetonitrile	6.129	41	104743	207.11 ug/L #	98
3) 3-Chloro-1-propene	6.512	41	2062227	202.34 ug/L	100
4) 2-Chloro-1,3-butadiene	7.932	53	1943243	206.08 ug/L	100
5) Methacrylonitrile	8.762	67	410090	214.48 ug/L	100
6) Ethyl Acetate	8.616	43	919702	214.56 ug/L	100
7) Isobutyl Alcohol	8.782	43	57001	399.37 ug/L	98
8) 1-Butanol	9.705	56	13539	194.38 ug/L	98
9) Methyl methacrylate	10.928	41	887601	219.62 ug/L	100
10) 2-Nitropropane	11.249	43	329942	218.15 ug/L	100
12) Cyclohexanone	15.240	55	19663	191.13 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000190.D
Acq On : 13 Oct 2013 19:39
Operator : MES
Sample : WG448462-06 200ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 17 17:43:06 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

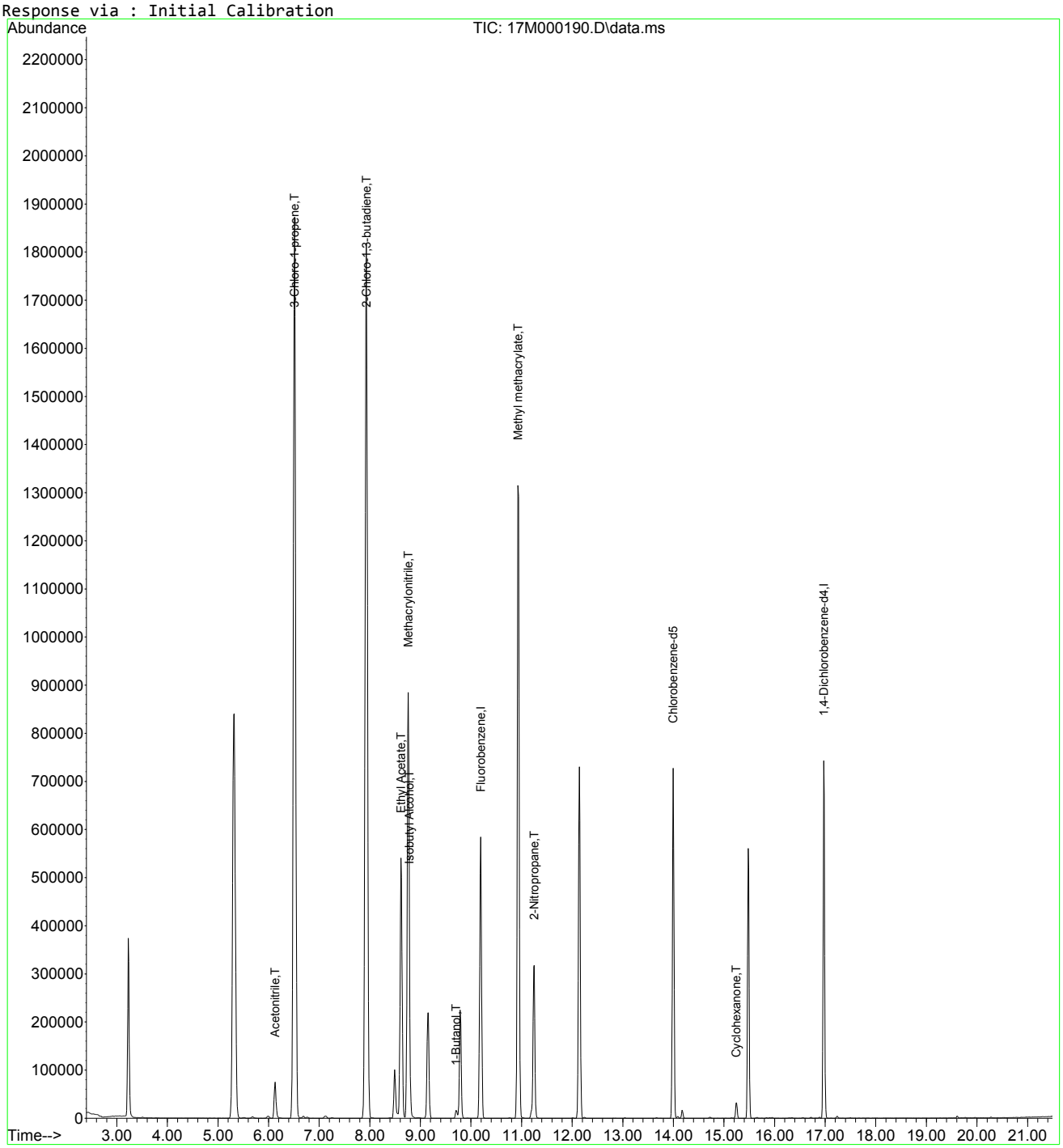

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000191.D
Acq On : 13 Oct 2013 20:07
Operator : MES
Sample : WG448462-07 300ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 17 17:43:08 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.192	96	745118	25.0000 ug/L	0.00
11) Chlorobenzene-d5	13.996	117	526334	25.0000 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.971	152	266080	25.0000 ug/L	0.00
Target Compounds					Qvalue
2) Acetonitrile	6.129	41	157466	307.40 ug/L #	99
3) 3-Chloro-1-propene	6.512	41	2977166	288.39 ug/L	100
4) 2-Chloro-1,3-butadiene	7.932	53	2856242	299.04 ug/L	100
5) Methacrylonitrile	8.762	67	587249	303.22 ug/L	100
6) Ethyl Acetate	8.616	43	1333314	307.09 ug/L	100
7) Isobutyl Alcohol	8.782	43	87294	603.83 ug/L	98
8) 1-Butanol	9.705	56	22963	291.08 ug/L	96
9) Methyl methacrylate	10.928	41	1264197	308.82 ug/L	99
10) 2-Nitropropane	11.249	43	491384	320.75 ug/L	99
12) Cyclohexanone	15.250	55	32886	289.25 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000191.D
Acq On : 13 Oct 2013 20:07
Operator : MES
Sample : WG448462-07 300ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 17 17:43:08 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

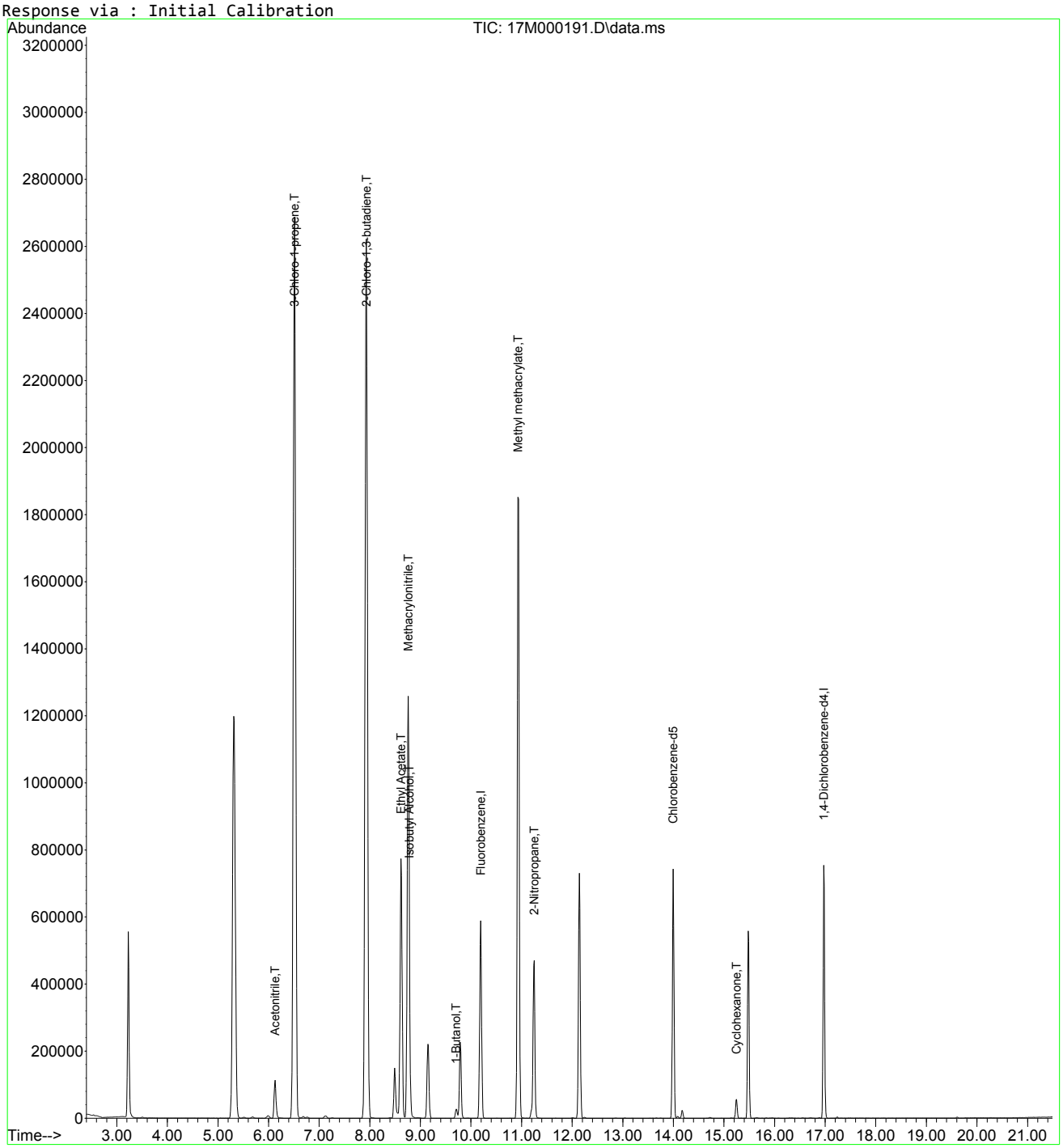

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000192.D
Acq On : 13 Oct 2013 20:35
Operator : MES
Sample : WG448462-08 400ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 17 17:43:10 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.192	96	728958	25.0000 ug/L	0.00
11) Chlorobenzene-d5	13.996	117	513477	25.0000 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.971	152	258316	25.0000 ug/L	0.00
Target Compounds					Qvalue
2) Acetonitrile	6.129	41	215922	430.86 ug/L #	98
3) 3-Chloro-1-propene	6.512	41	3707052	367.06 ug/L	100
4) 2-Chloro-1,3-butadiene	7.932	53	3605435	385.84 ug/L	99
5) Methacrylonitrile	8.762	67	767786	405.22 ug/L	99
6) Ethyl Acetate	8.616	43	1747197	411.34 ug/L	100
7) Isobutyl Alcohol	8.782	43	125947	890.51 ug/L #	95
8) 1-Butanol	9.715	56	36038	418.14 ug/L	96
9) Methyl methacrylate	10.928	41	1636030	408.51 ug/L	99
10) 2-Nitropropane	11.249	43	653312	435.90 ug/L	99
12) Cyclohexanone	15.240	55	51645	423.92 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000192.D
Acq On : 13 Oct 2013 20:35
Operator : MES
Sample : WG448462-08 400ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 17 17:43:10 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

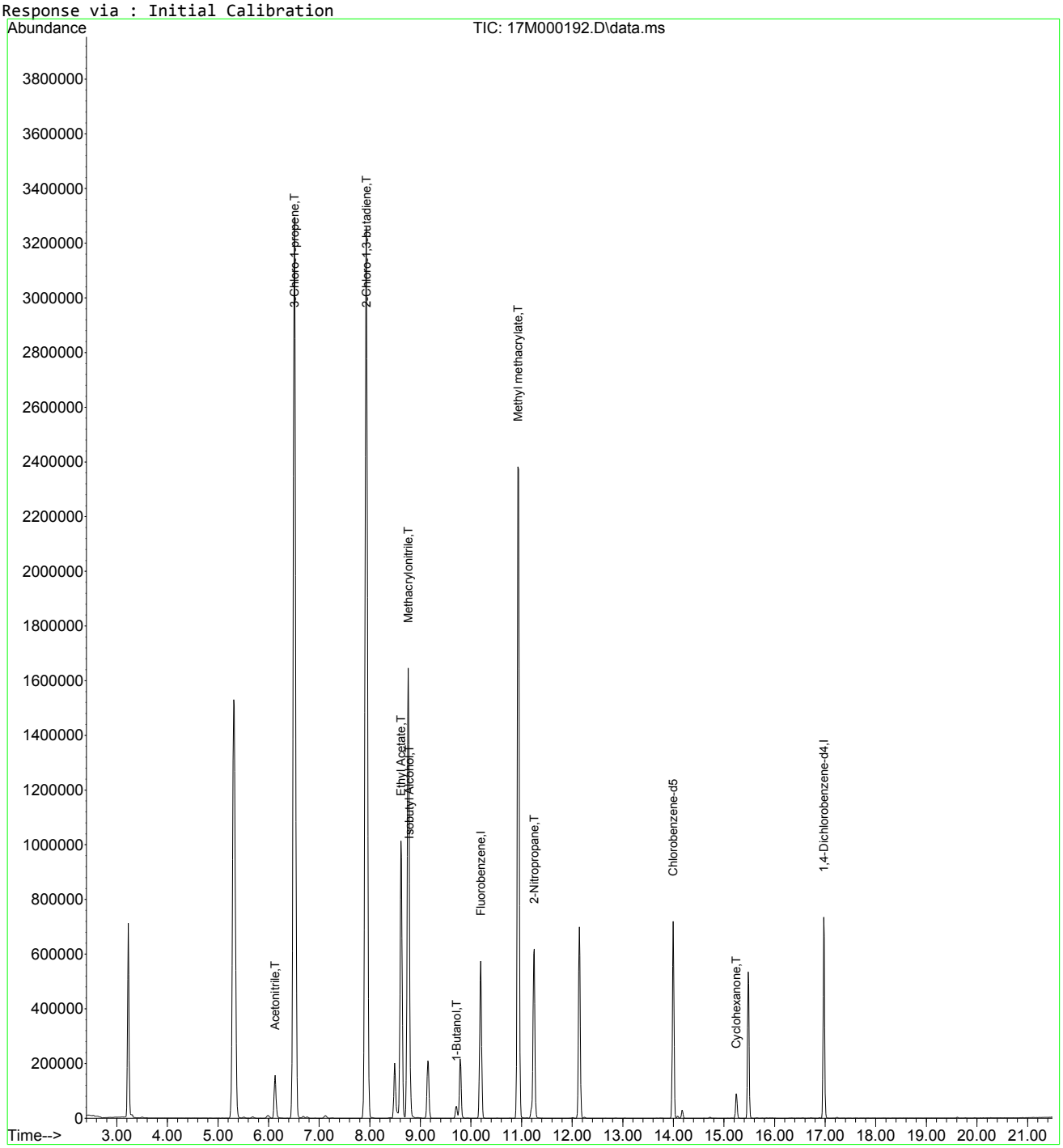

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000193.D
Acq On : 13 Oct 2013 21:03
Operator : MES
Sample : WG448462-09 500ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 17 17:43:12 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.192	96	759233	25.0000 ug/L	0.00
11) Chlorobenzene-d5	13.996	117	544729	25.0000 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.971	152	285472	25.0000 ug/L	0.00
Target Compounds					Qvalue
2) Acetonitrile	6.129	41	279066	534.65 ug/L #	99
3) 3-Chloro-1-propene	6.512	41	4641883	441.29 ug/L	99
4) 2-Chloro-1,3-butadiene	7.932	53	4534980	465.97 ug/L	100
5) Methacrylonitrile	8.761	67	970860	491.97 ug/L	100
6) Ethyl Acetate	8.616	43	2217784	501.31 ug/L	100
7) Isobutyl Alcohol	8.782	43	161004	1092.99 ug/L #	96
8) 1-Butanol	9.715	56	46748	492.64 ug/L	96
9) Methyl methacrylate	10.928	41	2051591	491.84 ug/L	98
10) 2-Nitropropane	11.249	43	836858	536.10 ug/L	99
12) Cyclohexanone	15.240	55	65947	490.06 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000193.D
Acq On : 13 Oct 2013 21:03
Operator : MES
Sample : WG448462-09 500ug/L APPIX STD
Misc : 1,1 STD60752
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 17 17:43:12 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

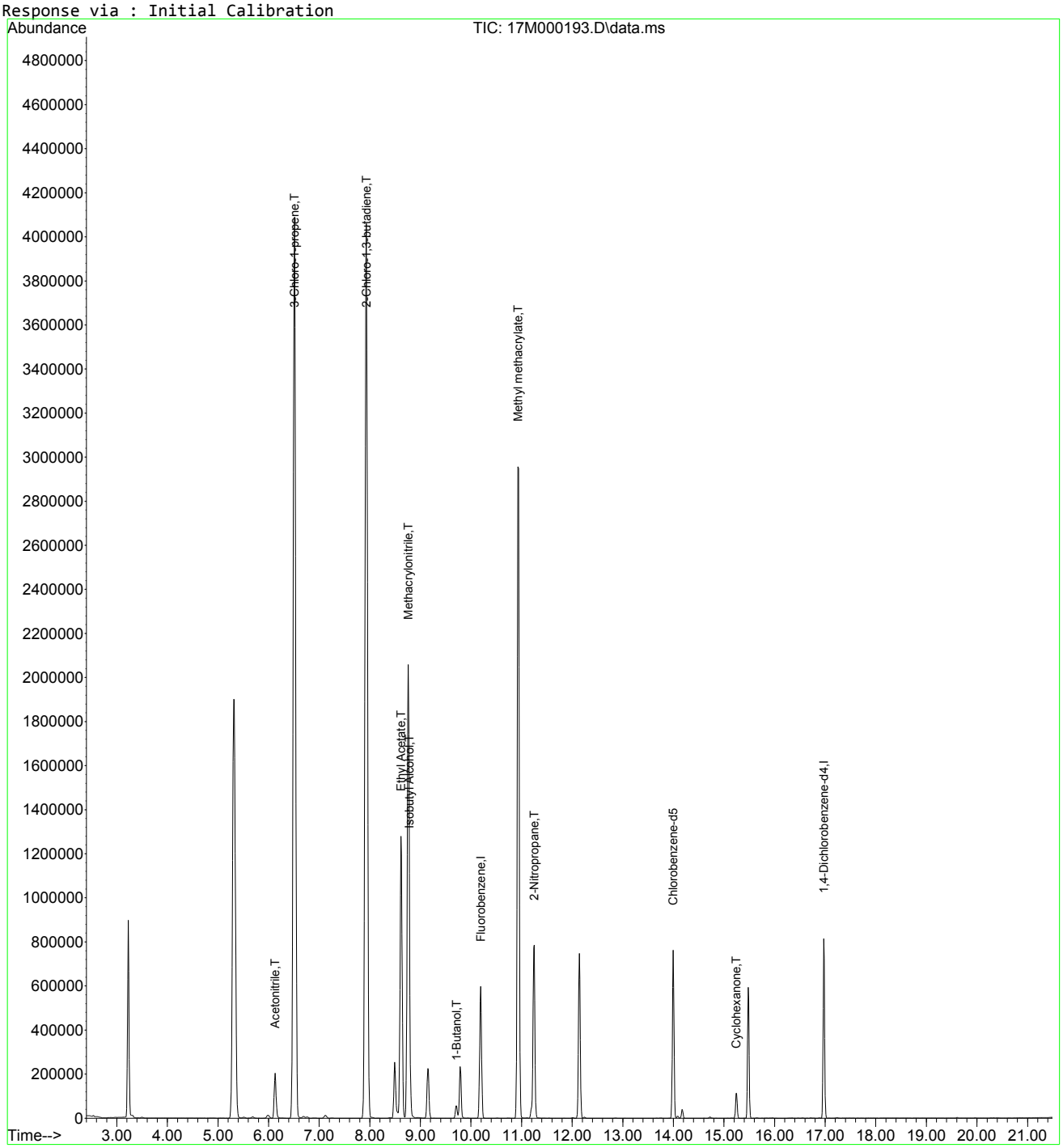

1-Butanol

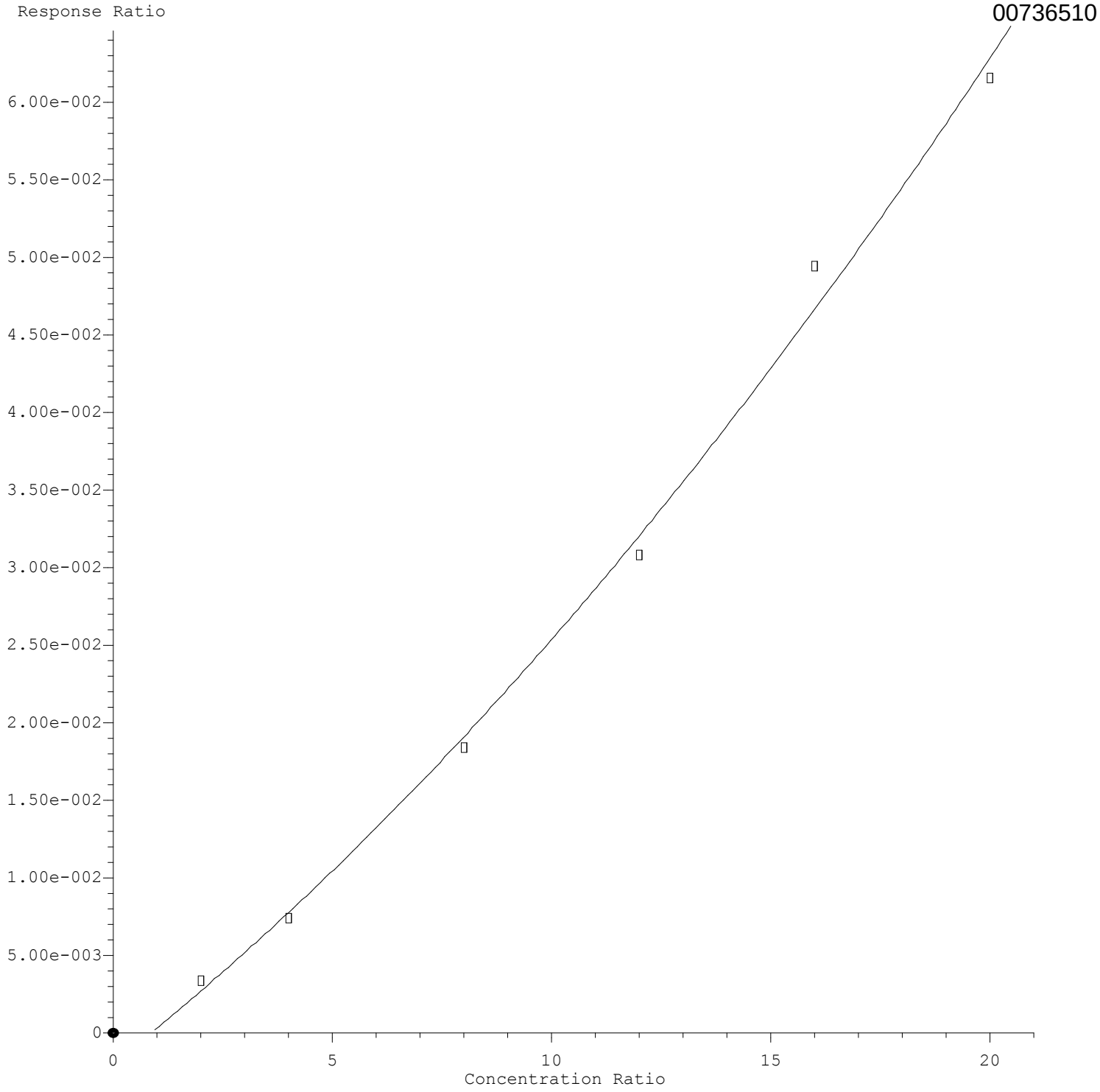

R = 5.08e-005 A*A + 2.22e-003 A - 1.95e-003
Coef of Det (r^2) = 0.995563 Curve Fit: Quadratic
Method Name: D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Calibration Table Last Updated: Thu Oct 17 17:48:22 2013

Cyclohexanone

00736511

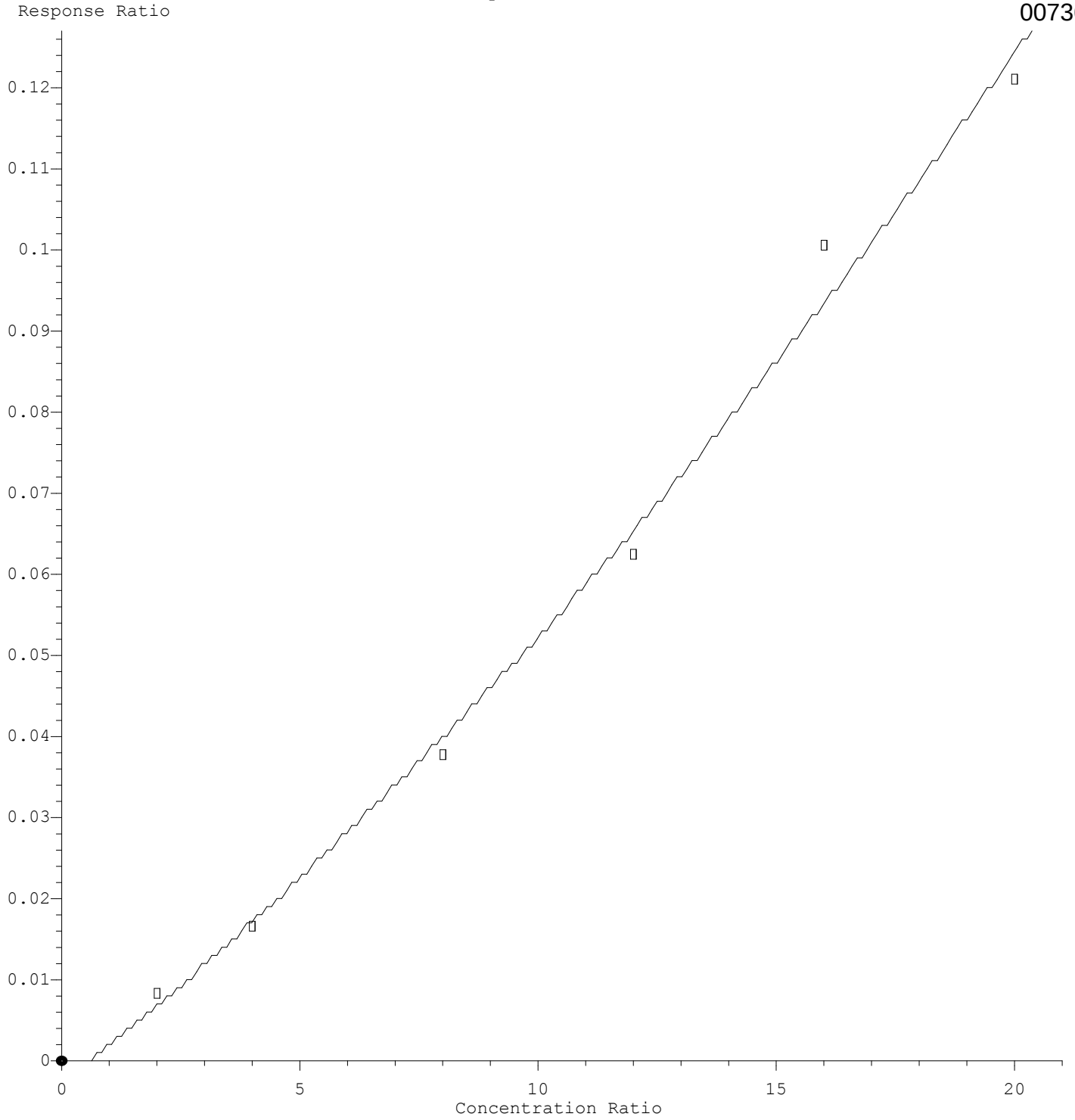

R = 8.36e-005 A*A + 4.69e-003 A - 2.95e-003
Coef of Det (r^2) = 0.992665 Curve Fit: Quadratic
Method Name: D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Calibration Table Last Updated: Thu Oct 17 17:48:22 2013

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000195.D
Acq On : 13 Oct 2013 22:00
Operator : MES
Sample : WG448462-10 100ug/L APPIX ALT SRC
Misc : 1,1 STD60749
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 17 17:44:26 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	10.192	96	737303	25.0000 ug/L	0.00
11) Chlorobenzene-d5	13.996	117	523223	25.0000 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	16.981	152	266615	25.0000 ug/L	0.01
Target Compounds					Qvalue
2) Acetonitrile	6.129	41	50664	99.95 ug/L #	100
3) 3-Chloro-1-propene	6.512	41	1059147	103.69 ug/L	100
4) 2-Chloro-1,3-butadiene	7.932	53	1242553	131.47 ug/L	99
5) Methacrylonitrile	8.761	67	206460	107.73 ug/L	100
6) Ethyl Acetate	8.616	43	431934	100.54 ug/L	100
7) Isobutyl Alcohol	8.782	43	27315	190.94 ug/L	99
8) 1-Butanol	9.715	56	5884	102.15 ug/L	97
9) Methyl methacrylate	10.928	41	453602	111.98 ug/L	99
10) 2-Nitropropane	11.249	43	153443	101.22 ug/L	99
12) Cyclohexanone	15.250	55	65010	500.01 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000195.D
Acq On : 13 Oct 2013 22:00
Operator : MES
Sample : WG448462-10 100ug/L APPIX ALT SRC
Misc : 1,1 STD60749
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 17 17:44:26 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

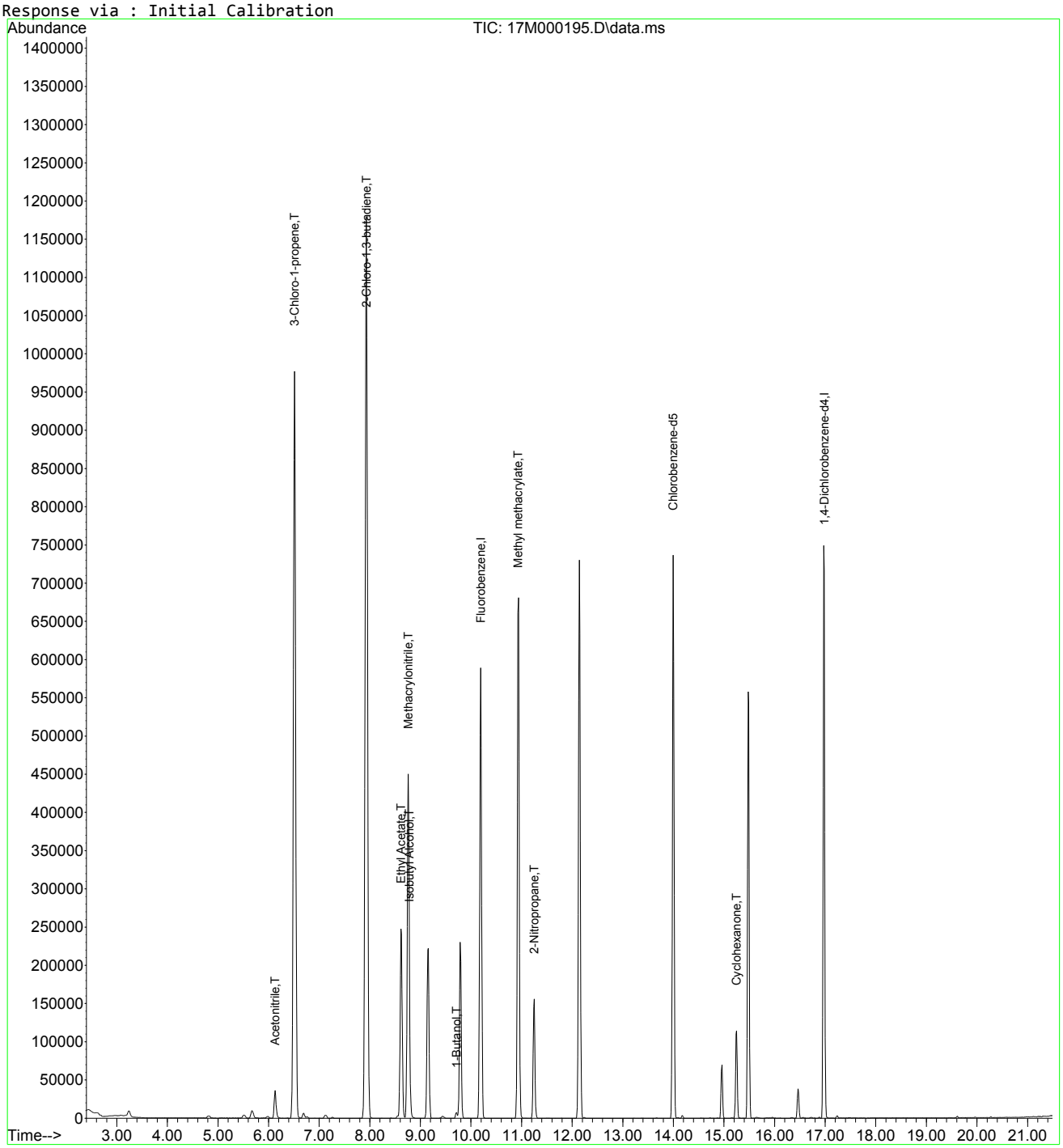

A9FOOWT.M Thu Oct 17 17:44:26 2013 Page: 2

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\101313\
Data File : 17M000195.D
Acq On : 13 Oct 2013 22:00
Operator : MES
Sample : WG448462-10 100ug/L APPIX ALT SRC
Misc : 1,1 STD60749
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 17 17:44:26 2013
Quant Method : D:\MassHunter\GCMS\1\methods\A9FOOWT.M
Quant Title : Appendix IX (SOP:OVL MSV01) WATER 10/13/13 HPMS17
QLast Update : Thu Oct 17 17:39:37 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	97	0.00
2	T	Acetonitrile	100.000	99.953	0.0	102	0.00
3	T	3-Chloro-1-propene	100.000	103.685	-3.7	94	0.00
4	T	2-Chloro-1,3-butadiene	100.000	131.470	-31.5#	120	0.00
5	T	Methacrylonitrile	100.000	107.732	-7.7	101	0.00
6	T	Ethyl Acetate	100.000	100.539	-0.5	94	0.00
7	T	Isobutyl Alcohol	200.000	190.945	4.5	101	0.00
8	T	1-Butanol	100.000	102.146	-2.1	104	0.00
9	T	Methyl methacrylate	100.000	111.979	-12.0	101	0.00
10	T	2-Nitropropane	100.000	101.221	-1.2	99	0.00
11		Chlorobenzene-d5	25.000	25.000	0.0	96	0.00
12	T	Cyclohexanone	100.000	500.013	-400.0#	719	0.00
13	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	96	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005078.D
Acq On : 18 May 2014 19:41
Operator : FJB/MDA
Sample : WG476501-02 0.3ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 19 11:44:07 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.935	96	265293	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.833	117	182302	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.187	152	91385	25.00000	ug/L	0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	3.930	111	875	0.2921	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 1.168%#			
32) 1,2-Dichloroethane-d4	4.585	65	1632	0.4090	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 1.636%#			
44) Toluene-d8	6.532	98	4625	0.4213	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 1.685%#			
63) p-Bromofluorobenzene	8.605	95	3091	0.7960	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 3.184%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.978	85	513	0.4880	ug/L #	65
3) Chloromethane	1.095	50	597	0.2229	ug/L #	41
4) Vinyl Chloride	1.126	62	1094	0.2751	ug/L	98
5) 1,3-Butadiene	1.137	54	929	0.2802	ug/L	89
6) Bromomethane	1.306	94	435	0.5295	ug/L	97
7) Chloroethane	1.380	64	943	0.2916	ug/L #	48
8) Trichlorofluoromethane	1.454	101	1659	0.2715	ug/L	98
9) Diethyl ether	1.645	59	526	0.2110	ug/L	85
10) 1,1-Dichloroethene	1.761	61	988	0.5811	ug/L #	83
11) Carbon Disulfide	1.782	76	3251	0.4239	ug/L #	93
12) 1,1,2-Trichloro-1,2,2-...	1.793	101	691	0.2974	ug/L #	79
14) Methylene Chloride	2.152	84	783	0.2647	ug/L	95
16) trans-1,2-Dichloroethene	2.279	96	755	0.2709	ug/L	87
17) Methyl Tert Butyl Ether	2.364	73	1873	0.2400	ug/L #	85
18) 1,1-Dichloroethane	2.798	63	1599	0.2705	ug/L	91
21) cis-1,2-Dichloroethene	3.358	96	1056	0.3195	ug/L	98
22) 2,2-Dichloropropane	3.464	77	1307	0.2715	ug/L	91
23) Cyclohexane	3.559	56	1570	0.2854	ug/L	95
24) Bromochloromethane	3.581	130	258	0.1514	ug/L #	11
25) Chloroform	3.697	83	1515	0.2661	ug/L	94
26) Carbon Tetrachloride	3.834	117	1066	0.2548	ug/L #	84
28) 1,1,1-Trichloroethane	3.919	97	1346	0.2678	ug/L	87
29) 1,1-Dichloropropene	4.109	75	1144	0.2720	ug/L	89
31) Benzene	4.416	78	3553	0.2796	ug/L	92
33) 1,2-Dichloroethane	4.670	62	1235	0.2643	ug/L #	56
34) Trichloroethene	5.125	130	1031	0.3569	ug/L	97
35) Dibromomethane	5.548	93	503	0.2749	ug/L #	64
36) 1,2-Dichloropropane	5.654	63	755	0.2150	ug/L	94
37) Bromodichloromethane	5.760	83	1123	0.2472	ug/L	99
40) cis-1,3-Dichloropropene	6.363	75	1440	0.2760	ug/L #	86
42) trans-1,3-Dichloropropene	6.976	75	1126	0.2475	ug/L	91
45) Toluene	6.574	91	3594	0.2782	ug/L	94
46) Tetrachloroethene	6.913	166	902	0.2945	ug/L	98
47) 1,1,2-Trichloroethane	7.103	97	494	0.2234	ug/L	94
48) Dibromochloromethane	7.251	129	615	0.2338	ug/L	100
49) 1,3-Dichloropropane	7.336	76	1064	0.2489	ug/L	95
50) 1,2-Dibromoethane	7.421	107	540	0.2325	ug/L	97
52) Chlorobenzene	7.844	112	2577	0.3160	ug/L #	1
53) 1-Chlorohexane	7.854	69	266	0.3353	ug/L #	32
54) Ethylbenzene	7.875	106	1216	0.2603	ug/L	92
55) 1,1,1,2-Tetrachloroethane	7.897	131	657	0.2367	ug/L #	46
56) m-,p-Xylene	7.981	106	3279	0.5586	ug/L	98
57) o-Xylene	8.256	106	1540	0.2773	ug/L	95
58) Styrene	8.288	104	2328	0.2427	ug/L	88

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005078.D
Acq On : 18 May 2014 19:41
Operator : FJB/MDA
Sample : WG476501-02 0.3ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 19 11:44:07 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
59) Bromoform	8.299	173	355	0.9198 ug/L #	35
60) Isopropylbenzene	8.447	105	4045	0.2771 ug/L	99
62) 1,3,5-Trimethylbenzene	8.796	105	3168	0.2797 ug/L	95
64) Bromobenzene	8.648	156	968	0.3038 ug/L	95
65) n-Propylbenzene	8.679	91	5250	0.3223 ug/L #	96
66) 1,1,2,2-Tetrachloroethane	8.732	83	703	0.2480 ug/L	98
67) 2-Chlorotoluene	8.753	91	2793	0.2639 ug/L	97
69) 1,2,4-Trimethylbenzene	8.986	105	3100	0.2762 ug/L	93
70) 4-Chlorotoluene	8.849	91	3194	0.3076 ug/L	94
72) sec-Butylbenzene	9.050	105	4120	0.2932 ug/L	97
73) p-Isopropyltoluene	9.124	119	3147	0.2813 ug/L	97
74) 1,3-Dichlorobenzene	9.155	146	1972	0.3183 ug/L	95
75) 1,4-Dichlorobenzene	9.198	146	2173	0.3381 ug/L	88
76) n-Butylbenzene	9.325	91	3506	0.3032 ug/L	96
77) 1,2-Dichlorobenzene	9.399	146	1611	0.2767 ug/L #	32
79) Hexachlorobutadiene	10.076	225	718	0.3160 ug/L	93
80) 1,2,4-Trichlorobenzene	10.086	180	1457	0.3128 ug/L	96
81) Naphthalene	10.235	128	2132	0.2781 ug/L	95
82) 1,2,3-Trichlorobenzene	10.319	180	1146	0.2769 ug/L	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005078.D
Acq On : 18 May 2014 19:41
Operator : FJB/MDA
Sample : WG476501-02 0.3ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 19 11:44:07 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

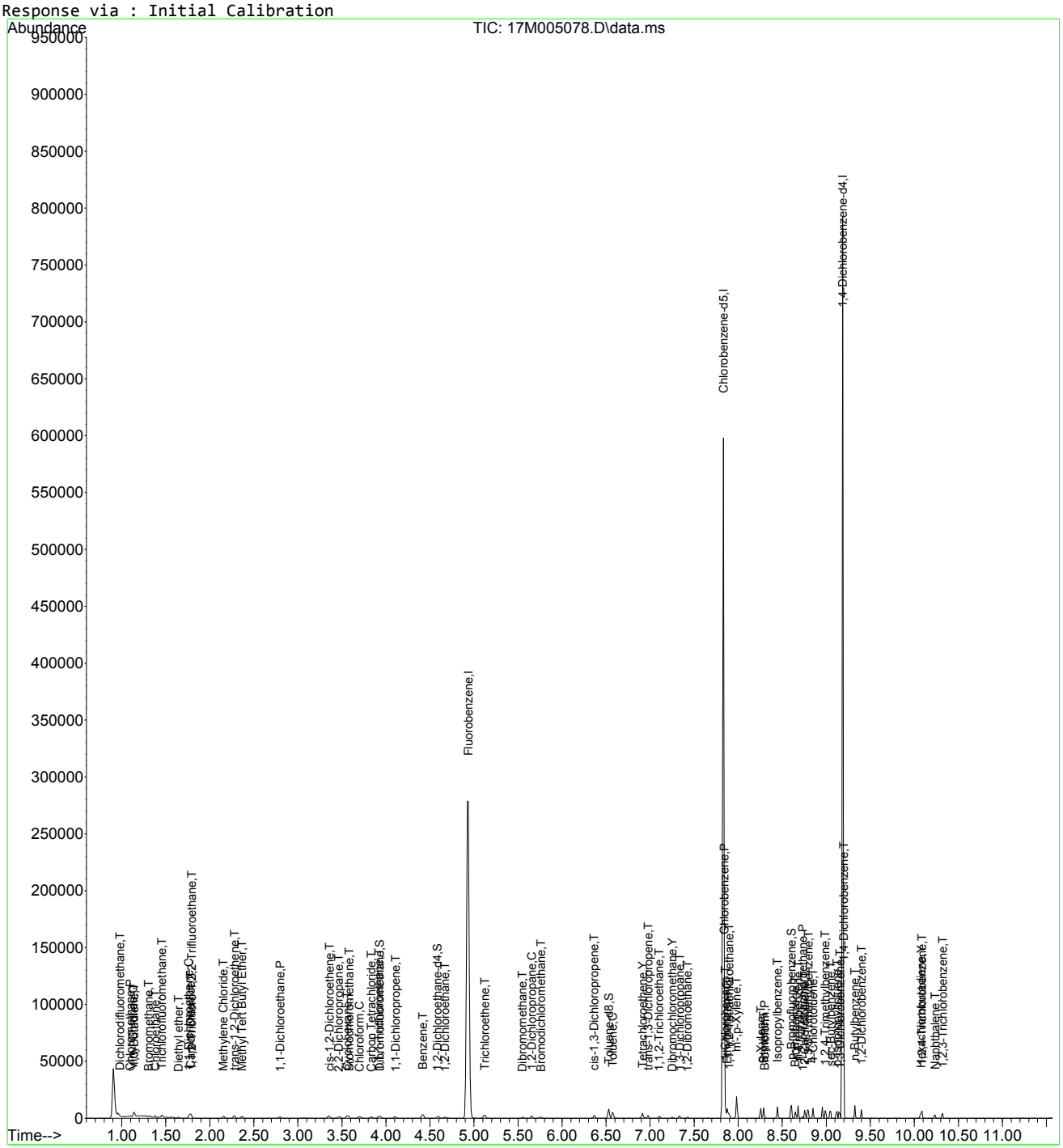

8260VMS.M Mon May 19 11:55:06 2014 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005079.D
Acq On : 18 May 2014 20:00
Operator : FJB/MDA
Sample : WG476501-03 0.4ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 19 12:01:21 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:01:16 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.935	96	238781	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.833	117	168236	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.187	152	85443	25.00000	ug/L	0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	3.940	111	586	0.2174	ug/L	0.0103
Spiked Amount 25.000	Range 86 - 118		Recovery = 0.870%#			
32) 1,2-Dichloroethane-d4	4.586	65	1113	0.3099	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 1.240%#			
44) Toluene-d8	6.532	98	3255	0.3213	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 1.285%#			
63) p-Bromofluorobenzene	8.605	95	1935	0.5330	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 2.132%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.989	85	738	0.9121	ug/L #	65
3) Chloromethane	1.095	50	820	0.3401	ug/L	83
4) Vinyl Chloride	1.126	62	1366	0.3817	ug/L	97
5) 1,3-Butadiene	1.137	54	1141	0.3823	ug/L	88
6) Bromomethane	1.306	94	619	0.9633	ug/L	92
7) Chloroethane	1.380	64	1168	0.4013	ug/L	95
8) Trichlorofluoromethane	1.454	101	2295	0.4172	ug/L	99
9) Diethyl ether	1.645	59	778	0.3467	ug/L	89
10) 1,1-Dichloroethene	1.761	61	1375	1.0832	ug/L #	85
11) Carbon Disulfide	1.772	76	3085	0.4470	ug/L #	94
12) 1,1,2-Trichloro-1,2,2-...	1.793	101	796	0.3807	ug/L	92
14) Methylene Chloride	2.152	84	1097	0.4120	ug/L	83
15) Acetone	2.195	43	212	0.4557	ug/L #	39
16) trans-1,2-Dichloroethene	2.279	96	939	0.3744	ug/L	95
17) Methyl Tert Butyl Ether	2.364	73	2473	0.3521	ug/L #	80
18) 1,1-Dichloroethane	2.798	63	2128	0.3999	ug/L #	88
21) cis-1,2-Dichloroethene	3.358	96	1267	0.4259	ug/L	100
22) 2,2-Dichloropropane	3.464	77	1819	0.4198	ug/L	92
23) Cyclohexane	3.559	56	1923	0.3884	ug/L	93
24) Bromochloromethane	3.581	130	456	0.2972	ug/L	84
25) Chloroform	3.697	83	2264	0.4419	ug/L	88
26) Carbon Tetrachloride	3.835	117	1514	0.4021	ug/L	95
28) 1,1,1-Trichloroethane	3.930	97	1755	0.3880	ug/L	93
29) 1,1-Dichloropropene	4.099	75	1562	0.4126	ug/L	92
31) Benzene	4.416	78	4930	0.4310	ug/L	93
33) 1,2-Dichloroethane	4.681	62	1567	0.3726	ug/L #	90
34) Trichloroethene	5.125	130	1169	0.4496	ug/L	81
35) Dibromomethane	5.548	93	581	0.3528	ug/L #	80
36) 1,2-Dichloropropane	5.654	63	1165	0.3686	ug/L	79
37) Bromodichloromethane	5.749	83	1540	0.3767	ug/L	100
39) 2-Chloroethyl Vinyl Ether	6.352	63	201	0.2905	ug/L #	45
40) cis-1,3-Dichloropropene	6.363	75	1747	0.3720	ug/L	96
41) 4-Methyl-2-Pentanone	6.955	58	217	0.2298	ug/L #	30
42) trans-1,3-Dichloropropene	6.976	75	1471	0.3593	ug/L	95
45) Toluene	6.574	91	4792	0.4020	ug/L	100
46) Tetrachloroethene	6.913	166	1171	0.4143	ug/L	93
47) 1,1,2-Trichloroethane	7.114	97	632	0.3097	ug/L	90
48) Dibromochloromethane	7.251	129	811	0.3341	ug/L	92
49) 1,3-Dichloropropane	7.336	76	1497	0.3794	ug/L	92
50) 1,2-Dibromoethane	7.421	107	803	0.3747	ug/L	80
51) 2-Hexanone	7.664	43	387	0.2932	ug/L	97
52) Chlorobenzene	7.844	112	3089	0.4104	ug/L #	16
53) 1-Chlorohexane	7.854	69	260	0.3551	ug/L #	1
54) Ethylbenzene	7.876	106	1680	0.3897	ug/L #	1

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005079.D
Acq On : 18 May 2014 20:00
Operator : FJB/MDA
Sample : WG476501-03 0.4ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 19 12:01:21 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:01:16 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
55) 1,1,1,2-Tetrachloroethane	7.897	131	869	0.3392 ug/L #	45
56) m-,p-Xylene	7.981	106	4211	0.7774 ug/L	100
57) o-Xylene	8.256	106	1936	0.3778 ug/L	93
58) Styrene	8.288	104	3252	0.3673 ug/L	97
59) Bromoform	8.299	173	491	0.9859 ug/L #	83
60) Isopropylbenzene	8.447	105	5255	0.3900 ug/L	99
62) 1,3,5-Trimethylbenzene	8.785	105	4134	0.3903 ug/L	99
64) Bromobenzene	8.648	156	1158	0.3887 ug/L	85
65) n-Propylbenzene	8.680	91	6401	0.4202 ug/L #	95
66) 1,1,2,2-Tetrachloroethane	8.732	83	1094	0.4128 ug/L	86
67) 2-Chlorotoluene	8.754	91	3821	0.3862 ug/L	100
68) 1,2,3-Trichloropropane	8.796	110	295	0.3572 ug/L	78
69) 1,2,4-Trimethylbenzene	8.986	105	4282	0.4080 ug/L	100
70) 4-Chlorotoluene	8.849	91	4011	0.4131 ug/L	94
72) sec-Butylbenzene	9.039	105	5530	0.4209 ug/L	97
73) p-Isopropyltoluene	9.124	119	4223	0.4037 ug/L	99
74) 1,3-Dichlorobenzene	9.145	146	2378	0.4106 ug/L	95
75) 1,4-Dichlorobenzene	9.145	146	2379	0.3959 ug/L	98
76) n-Butylbenzene	9.325	91	4442	0.4108 ug/L	100
77) 1,2-Dichlorobenzene	9.399	146	2426	0.4456 ug/L	97
79) Hexachlorobutadiene	10.076	225	821	0.3864 ug/L	98
80) 1,2,4-Trichlorobenzene	10.086	180	1838	0.4221 ug/L	92
81) Naphthalene	10.235	128	2660	0.3711 ug/L	97
82) 1,2,3-Trichlorobenzene	10.319	180	1486	0.3840 ug/L	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005079.D
Acq On : 18 May 2014 20:00
Operator : FJB/MDA
Sample : WG476501-03 0.4ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 19 12:01:21 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:01:16 2014
Response via : Initial Calibration

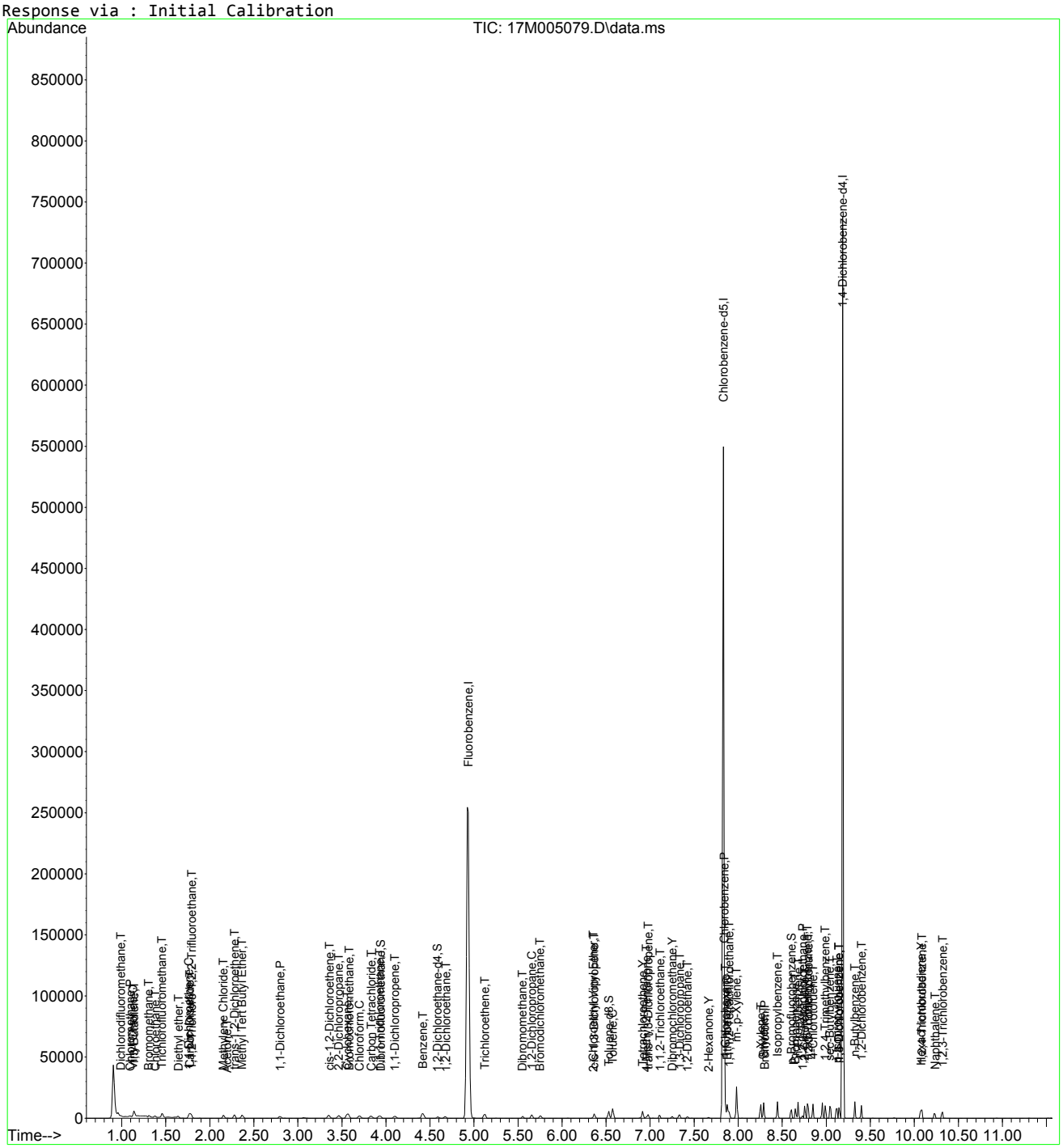

8260VMS.M Mon May 19 12:01:22 2014 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005080.D
Acq On : 18 May 2014 20:20
Operator : FJB/MDA
Sample : WG476501-04 1.0ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 19 12:05:00 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.935	96	241058	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.833	117	168819	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.187	152	87193	25.00000	ug/L	0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	3.930	111	1847	0.6787	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 2.715%#			
32) 1,2-Dichloroethane-d4	4.596	65	2855	0.7874	ug/L	0.0100
Spiked Amount 25.000	Range 80 - 120		Recovery = 3.150%#			
44) Toluene-d8	6.532	98	7313	0.7194	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 2.878%#			
63) p-Bromofluorobenzene	8.595	95	3453	0.9320	ug/L	-0.0102
Spiked Amount 25.000	Range 86 - 115		Recovery = 3.728%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.989	85	1705	1.3259	ug/L	95
3) Chloromethane	1.084	50	2282	0.9376	ug/L	86
4) Vinyl Chloride	1.126	62	3566	0.9870	ug/L	97
5) 1,3-Butadiene	1.137	54	2898	0.9619	ug/L	98
6) Bromomethane	1.306	94	1561	1.3698	ug/L	96
7) Chloroethane	1.380	64	3009	1.0241	ug/L	99
8) Trichlorofluoromethane	1.454	101	5363	0.9658	ug/L	98
9) Diethyl ether	1.645	59	1550	0.6842	ug/L	92
10) 1,1-Dichloroethene	1.761	61	3450	1.2958	ug/L	90
11) Carbon Disulfide	1.772	76	6526	0.9366	ug/L	96
12) 1,1,2-Trichloro-1,2,2-...	1.793	101	1922	0.9105	ug/L	96
14) Methylene Chloride	2.152	84	2496	0.9286	ug/L	88
15) Acetone	2.195	43	538	1.1456	ug/L #	39
16) trans-1,2-Dichloroethene	2.279	96	2410	0.9518	ug/L	86
17) Methyl Tert Butyl Ether	2.364	73	6460	0.9112	ug/L	98
18) 1,1-Dichloroethane	2.798	63	4770	0.8879	ug/L	99
19) Acrylonitrile	2.840	53	445	1.1016	ug/L	79
21) cis-1,2-Dichloroethene	3.348	96	2969	0.9887	ug/L	89
22) 2,2-Dichloropropane	3.464	77	4269	0.9760	ug/L	99
23) Cyclohexane	3.559	56	4785	0.9573	ug/L	95
24) Bromochloromethane	3.580	130	1409	0.9098	ug/L	98
25) Chloroform	3.697	83	5206	1.0064	ug/L	94
26) Carbon Tetrachloride	3.834	117	3558	0.9361	ug/L	98
28) 1,1,1-Trichloroethane	3.930	97	4405	0.9645	ug/L	95
29) 1,1-Dichloropropene	4.099	75	3632	0.9503	ug/L	91
30) 2-Butanone	4.109	43	611	0.7613	ug/L #	35
31) Benzene	4.416	78	11094	0.9607	ug/L	94
33) 1,2-Dichloroethane	4.670	62	3936	0.9272	ug/L #	93
34) Trichloroethene	5.114	130	2612	0.9950	ug/L	100
35) Dibromomethane	5.548	93	1521	0.9149	ug/L	96
36) 1,2-Dichloropropane	5.654	63	3031	0.9499	ug/L	93
37) Bromodichloromethane	5.760	83	3769	0.9132	ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.342	63	410	0.5869	ug/L #	45
40) cis-1,3-Dichloropropene	6.363	75	4346	0.9167	ug/L	100
41) 4-Methyl-2-Pentanone	6.955	58	684	0.7174	ug/L	94
42) trans-1,3-Dichloropropene	6.976	75	3708	0.8971	ug/L	97
45) Toluene	6.574	91	11431	0.9556	ug/L	100
46) Tetrachloroethene	6.913	166	2896	1.0211	ug/L	92
47) 1,1,2-Trichloroethane	7.103	97	2076	1.0137	ug/L	97
48) Dibromochloromethane	7.251	129	2132	0.8751	ug/L	96
49) 1,3-Dichloropropane	7.336	76	3886	0.9815	ug/L	96
50) 1,2-Dibromoethane	7.421	107	2087	0.9705	ug/L	98
51) 2-Hexanone	7.664	43	1233	0.9308	ug/L	85
52) Chlorobenzene	7.844	112	7419	0.9823	ug/L #	63

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005080.D
Acq On : 18 May 2014 20:20
Operator : FJB/MDA
Sample : WG476501-04 1.0ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 19 12:05:00 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) 1-Chlorohexane	7.854	69	652	0.8874 ug/L #	42
54) Ethylbenzene	7.875	106	4075	0.9420 ug/L	93
55) 1,1,1,2-Tetrachloroethane	7.897	131	2403	0.9349 ug/L #	46
56) m-,p-Xylene	7.981	106	9622	1.7702 ug/L	98
57) o-Xylene	8.256	106	4668	0.9078 ug/L	99
58) Styrene	8.288	104	7752	0.8726 ug/L	94
59) Bromoform	8.299	173	1336	1.3259 ug/L	99
60) Isopropylbenzene	8.447	105	12519	0.9260 ug/L	98
62) 1,3,5-Trimethylbenzene	8.785	105	10111	0.9355 ug/L	99
64) Bromobenzene	8.648	156	2790	0.9176 ug/L	87
65) n-Propylbenzene	8.679	91	15502	0.9973 ug/L	98
66) 1,1,2,2-Tetrachloroethane	8.732	83	2537	0.9382 ug/L	93
67) 2-Chlorotoluene	8.753	91	8921	0.8835 ug/L	97
68) 1,2,3-Trichloropropane	8.796	110	658	0.7807 ug/L #	71
69) 1,2,4-Trimethylbenzene	8.986	105	10013	0.9350 ug/L	97
70) 4-Chlorotoluene	8.849	91	9578	0.9667 ug/L	99
71) tert-Butylbenzene	8.954	134	1902	0.9027 ug/L	86
72) sec-Butylbenzene	9.050	105	12446	0.9283 ug/L	99
73) p-Isopropyltoluene	9.124	119	9827	0.9206 ug/L	97
74) 1,3-Dichlorobenzene	9.145	146	5583	0.9446 ug/L	98
75) 1,4-Dichlorobenzene	9.198	146	6019	0.9817 ug/L	98
76) n-Butylbenzene	9.325	91	10265	0.9303 ug/L	96
77) 1,2-Dichlorobenzene	9.399	146	5345	0.9620 ug/L	97
78) 1,2-Dibromo-3-Chloropr...	9.769	75	452	0.9539 ug/L	78
79) Hexachlorobutadiene	10.065	225	1883	0.8684 ug/L	95
80) 1,2,4-Trichlorobenzene	10.086	180	3750	0.8439 ug/L	94
81) Naphthalene	10.234	128	6729	0.9199 ug/L	97
82) 1,2,3-Trichlorobenzene	10.319	180	3477	0.8806 ug/L	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005080.D
Acq On : 18 May 2014 20:20
Operator : FJB/MDA
Sample : WG476501-04 1.0ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 19 12:05:00 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

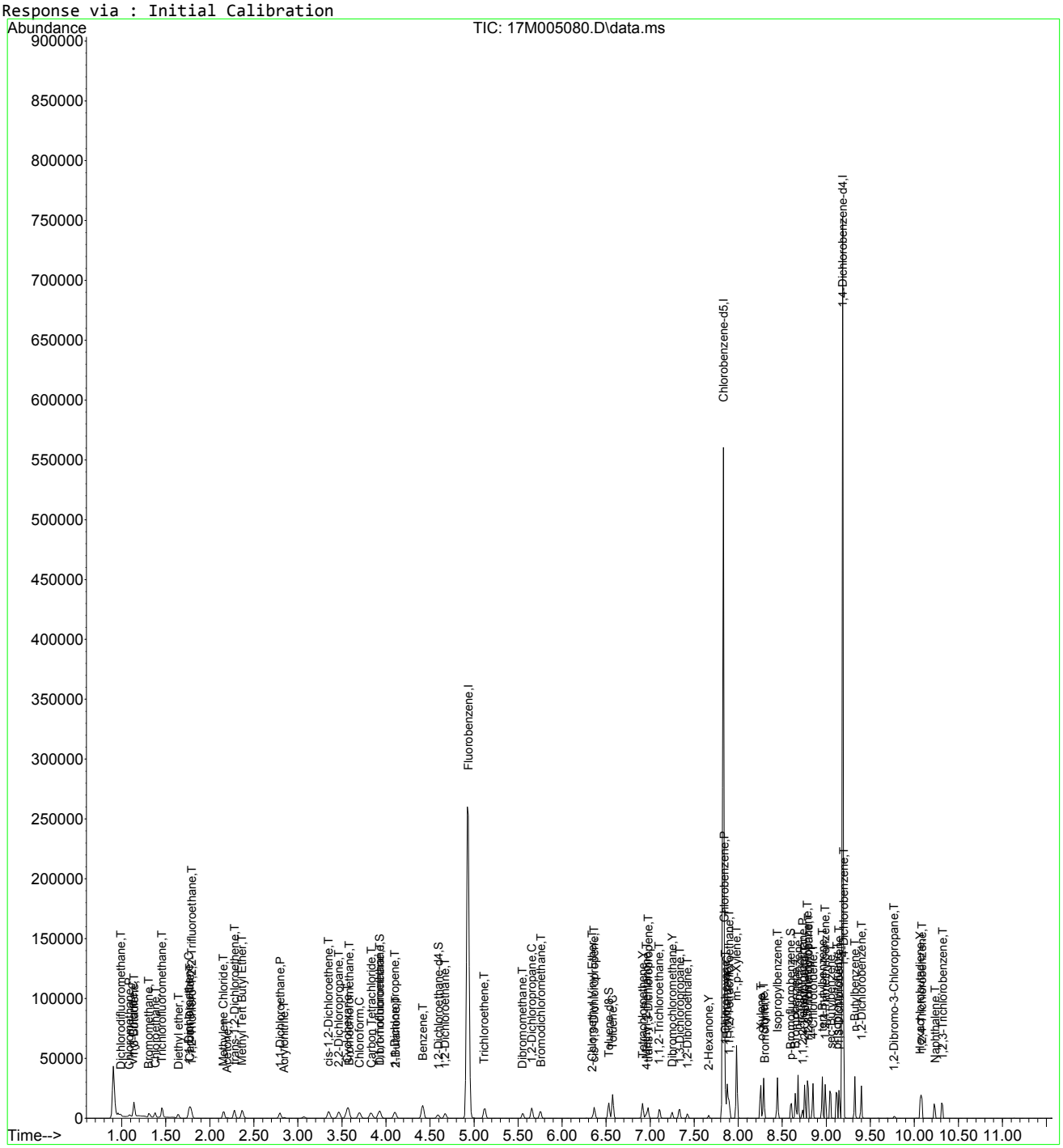

8260VMS.M Mon May 19 12:05:16 2014 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005081.D
Acq On : 18 May 2014 20:39
Operator : FJB/MDA
Sample : WG476501-05 2.0ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 19 12:10:28 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.935	96	233713	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.833	117	164813	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.187	152	82050	25.00000	ug/L	0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	3.930	111	2909	1.1025	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 4.410%#			
32) 1,2-Dichloroethane-d4	4.596	65	4142	1.1783	ug/L	0.0101
Spiked Amount 25.000	Range 80 - 120		Recovery = 4.713%#			
44) Toluene-d8	6.532	98	11798	1.1888	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 4.755%#			
63) p-Bromofluorobenzene	8.595	95	4864	1.3951	ug/L	-0.0102
Spiked Amount 25.000	Range 86 - 115		Recovery = 5.580%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.989	85	2949	1.9022	ug/L	94
3) Chloromethane	1.095	50	4211	1.7845	ug/L	91
4) Vinyl Chloride	1.137	62	6472	1.8476	ug/L	96
5) 1,3-Butadiene	1.137	54	5027	1.7210	ug/L	96
6) Bromomethane	1.306	94	3087	2.0746	ug/L	98
7) Chloroethane	1.380	64	5758	2.0213	ug/L	96
8) Trichlorofluoromethane	1.454	101	9513	1.7670	ug/L	99
9) Diethyl ether	1.634	59	4465	2.0329	ug/L	97
10) 1,1-Dichloroethene	1.761	61	6315	1.9958	ug/L	96
11) Carbon Disulfide	1.772	76	11306	1.6735	ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.793	101	3399	1.6608	ug/L	98
14) Methylene Chloride	2.152	84	4824	1.8511	ug/L	93
15) Acetone	2.195	43	881	1.9349	ug/L #	39
16) trans-1,2-Dichloroethene	2.279	96	4481	1.8253	ug/L	91
17) Methyl Tert Butyl Ether	2.364	73	12698	1.8473	ug/L	98
18) 1,1-Dichloroethane	2.798	63	9561	1.8357	ug/L	99
19) Acrylonitrile	2.851	53	1231	2.1550	ug/L	94
20) Vinyl Acetate	3.073	86	277	0.9256	ug/L #	1
21) cis-1,2-Dichloroethene	3.348	96	5498	1.8884	ug/L	97
22) 2,2-Dichloropropane	3.464	77	7955	1.8758	ug/L	91
23) Cyclohexane	3.559	56	8398	1.7329	ug/L	95
24) Bromochloromethane	3.581	130	2880	1.9181	ug/L	94
25) Chloroform	3.697	83	9624	1.9190	ug/L	100
26) Carbon Tetrachloride	3.834	117	6721	1.8238	ug/L	98
28) 1,1,1-Trichloroethane	3.930	97	8252	1.8637	ug/L	99
29) 1,1-Dichloropropene	4.099	75	6836	1.8448	ug/L	94
30) 2-Butanone	4.120	43	1337	1.7182	ug/L #	81
31) Benzene	4.416	78	21243	1.8973	ug/L	97
33) 1,2-Dichloroethane	4.670	62	8212	1.9952	ug/L	98
34) Trichloroethene	5.125	130	4972	1.9536	ug/L	98
35) Dibromomethane	5.548	93	3015	1.8706	ug/L	97
36) 1,2-Dichloropropane	5.654	63	5965	1.9281	ug/L	97
37) Bromodichloromethane	5.749	83	7467	1.8661	ug/L	100
39) 2-Chloroethyl Vinyl Ether	6.342	63	1115	1.6464	ug/L	92
40) cis-1,3-Dichloropropene	6.363	75	8664	1.8850	ug/L	97
41) 4-Methyl-2-Pentanone	6.955	58	1482	1.6032	ug/L	92
42) trans-1,3-Dichloropropene	6.976	75	7260	1.8117	ug/L	97
45) Toluene	6.574	91	22295	1.9090	ug/L	99
46) Tetrachloroethene	6.913	166	5177	1.8697	ug/L	96
47) 1,1,2-Trichloroethane	7.103	97	4252	2.1268	ug/L	99
48) Dibromochloromethane	7.251	129	4424	1.8601	ug/L	99
49) 1,3-Dichloropropane	7.336	76	7779	2.0125	ug/L	98
50) 1,2-Dibromoethane	7.421	107	3983	1.8973	ug/L	95
51) 2-Hexanone	7.664	43	2239	1.7313	ug/L	96

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005081.D
Acq On : 18 May 2014 20:39
Operator : FJB/MDA
Sample : WG476501-05 2.0ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 19 12:10:28 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52) Chlorobenzene	7.844	112	14162	1.9207 ug/L	83
53) 1-Chlorohexane	7.854	69	1287	1.7942 ug/L #	69
54) Ethylbenzene	7.875	106	7926	1.8768 ug/L	99
55) 1,1,1,2-Tetrachloroethane	7.897	131	4741	1.8893 ug/L #	46
56) m-,p-Xylene	7.981	106	18784	3.5397 ug/L	99
57) o-Xylene	8.256	106	8929	1.7786 ug/L	92
58) Styrene	8.288	104	15367	1.7718 ug/L	99
59) Bromoform	8.299	173	3009	2.0297 ug/L	91
60) Isopropylbenzene	8.447	105	23744	1.7990 ug/L	100
62) 1,3,5-Trimethylbenzene	8.796	105	19930	1.9595 ug/L	97
64) Bromobenzene	8.648	156	5334	1.8643 ug/L	84
65) n-Propylbenzene	8.679	91	28640	1.9580 ug/L	99
66) 1,1,2,2-Tetrachloroethane	8.732	83	5154	2.0254 ug/L	99
67) 2-Chlorotoluene	8.753	91	17705	1.8633 ug/L	98
68) 1,2,3-Trichloropropane	8.796	110	1543	1.9455 ug/L	89
69) 1,2,4-Trimethylbenzene	8.986	105	19732	1.9580 ug/L	99
70) 4-Chlorotoluene	8.849	91	18604	1.9954 ug/L	99
71) tert-Butylbenzene	8.954	134	3883	1.9583 ug/L	99
72) sec-Butylbenzene	9.050	105	24234	1.9207 ug/L	98
73) p-Isopropyltoluene	9.124	119	18760	1.8677 ug/L	98
74) 1,3-Dichlorobenzene	9.155	146	10520	1.8914 ug/L	96
75) 1,4-Dichlorobenzene	9.198	146	11326	1.9630 ug/L	99
76) n-Butylbenzene	9.325	91	20008	1.9269 ug/L	97
77) 1,2-Dichlorobenzene	9.399	146	10525	2.0131 ug/L	95
78) 1,2-Dibromo-3-Chloropr...	9.780	75	841	1.8860 ug/L	88
79) Hexachlorobutadiene	10.076	225	3429	1.6806 ug/L	97
80) 1,2,4-Trichlorobenzene	10.086	180	7816	1.8691 ug/L	99
81) Naphthalene	10.234	128	13445	1.9532 ug/L	99
82) 1,2,3-Trichlorobenzene	10.319	180	6755	1.8179 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005081.D
Acq On : 18 May 2014 20:39
Operator : FJB/MDA
Sample : WG476501-05 2.0ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 19 12:10:28 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

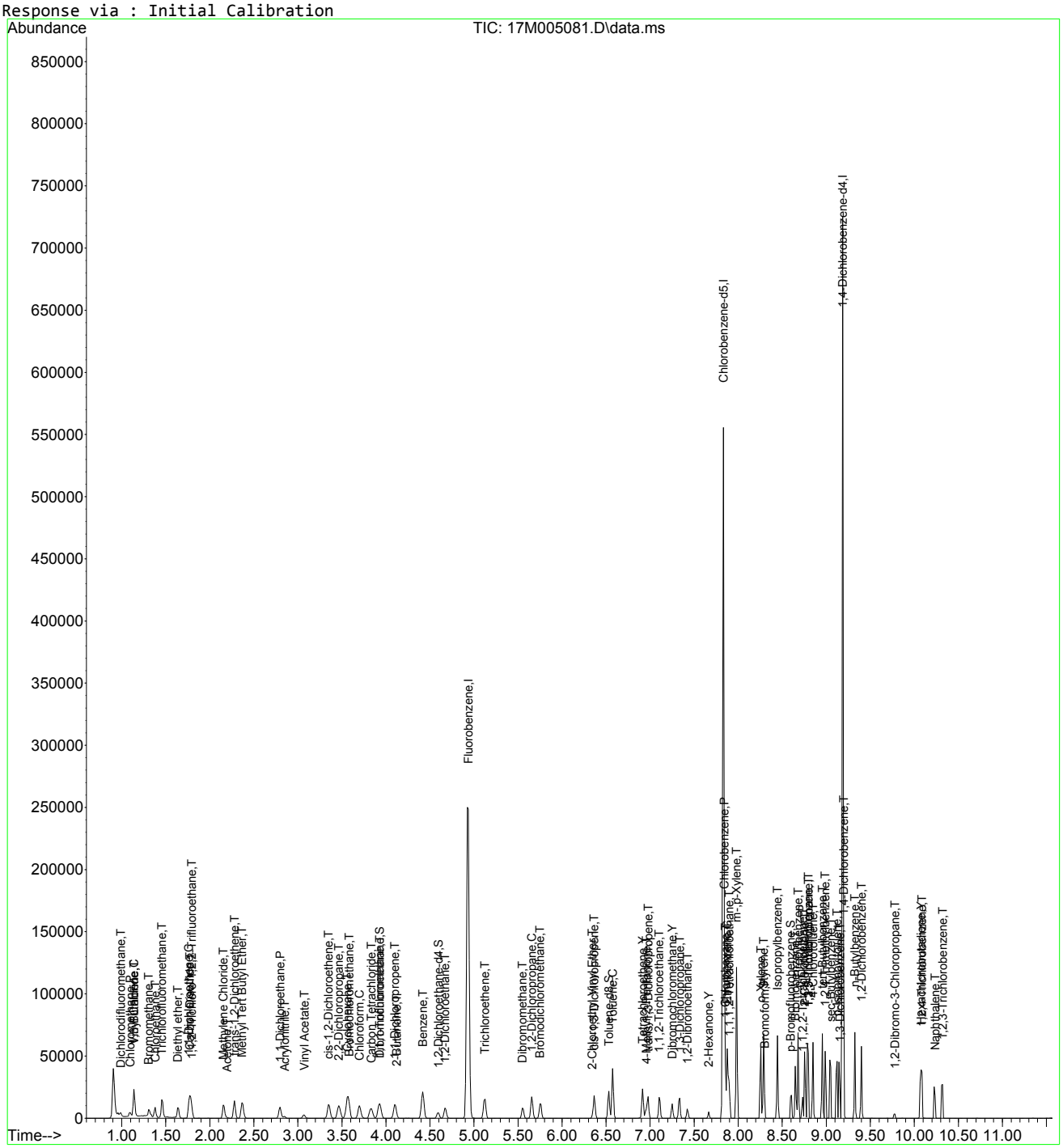

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005082.D
Acq On : 18 May 2014 20:59
Operator : FJB/MDA
Sample : WG476501-06 5.0ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 19 12:12:28 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	4.935	96	220560	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.833	117	152191	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.187	152	76170	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	3.930	111	6985	2.8051 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 11.220%#		
32) 1,2-Dichloroethane-d4	4.596	65	9038	2.7245 ug/L	0.0101
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.898%#		
44) Toluene-d8	6.532	98	25079	2.7366 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.946%#		
63) p-Bromofluorobenzene	8.605	95	10034	3.1002 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 12.401%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.989	85	8213	4.4608 ug/L	94
3) Chloromethane	1.095	50	10147	4.5564 ug/L	96
4) Vinyl Chloride	1.126	62	16560	5.0095 ug/L	99
5) 1,3-Butadiene	1.137	54	13107	4.7547 ug/L	96
6) Bromomethane	1.306	94	7888	4.4358 ug/L	98
7) Chloroethane	1.380	64	15314	5.6966 ug/L	97
8) Trichlorofluoromethane	1.454	101	26466	5.2091 ug/L	99
9) Diethyl ether	1.645	59	9667	4.6638 ug/L	97
10) 1,1-Dichloroethene	1.761	61	16708	4.6734 ug/L	89
11) Carbon Disulfide	1.772	76	28754	4.5101 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.793	101	9501	4.9193 ug/L	98
13) Acrolein	1.983	56	757	4.6741 ug/L	100
14) Methylene Chloride	2.152	84	12224	4.9704 ug/L	91
15) Acetone	2.195	43	1994	4.6406 ug/L	89
16) trans-1,2-Dichloroethene	2.279	96	11441	4.9382 ug/L	93
17) Methyl Tert Butyl Ether	2.364	73	32256	4.9724 ug/L	98
18) 1,1-Dichloroethane	2.798	63	25198	5.1265 ug/L	100
19) Acrylonitrile	2.840	53	3164	4.9500 ug/L	92
20) Vinyl Acetate	3.073	86	1317	4.6632 ug/L	87
21) cis-1,2-Dichloroethene	3.348	96	14107	5.1343 ug/L	95
22) 2,2-Dichloropropane	3.464	77	20647	5.1589 ug/L	92
23) Cyclohexane	3.559	56	22111	4.8346 ug/L	93
24) Bromochloromethane	3.581	130	7474	5.2745 ug/L	100
25) Chloroform	3.697	83	24491	5.1747 ug/L	98
26) Carbon Tetrachloride	3.834	117	17932	5.1561 ug/L	98
28) 1,1,1-Trichloroethane	3.930	97	21836	5.2257 ug/L	98
29) 1,1-Dichloropropene	4.099	75	18161	5.1932 ug/L	98
30) 2-Butanone	4.109	43	3597	4.8982 ug/L #	95
31) Benzene	4.416	78	53155	5.0306 ug/L	97
33) 1,2-Dichloroethane	4.670	62	20023	5.1549 ug/L	97
34) Trichloroethene	5.125	130	11890	4.9503 ug/L	100
35) Dibromomethane	5.548	93	7956	5.2305 ug/L	99
36) 1,2-Dichloropropane	5.654	63	14879	5.0963 ug/L	98
37) Bromodichloromethane	5.749	83	19554	5.1783 ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.352	63	2859	4.4732 ug/L	99
40) cis-1,3-Dichloropropene	6.363	75	21839	5.0347 ug/L	100
41) 4-Methyl-2-Pentanone	6.955	58	3992	4.5761 ug/L	97
42) trans-1,3-Dichloropropene	6.976	75	19132	5.0590 ug/L	99
45) Toluene	6.574	91	56491	5.2382 ug/L	99
46) Tetrachloroethene	6.913	166	13064	5.1094 ug/L	95
47) 1,1,2-Trichloroethane	7.103	97	10557	5.7183 ug/L	99
48) Dibromochloromethane	7.251	129	11681	5.3187 ug/L	100
49) 1,3-Dichloropropane	7.336	76	19403	5.4360 ug/L	100
50) 1,2-Dibromoethane	7.421	107	10232	5.2781 ug/L	98

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005082.D
Acq On : 18 May 2014 20:59
Operator : FJB/MDA
Sample : WG476501-06 5.0ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 19 12:12:28 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) 2-Hexanone	7.664	43	5902	4.9423 ug/L	92
52) Chlorobenzene	7.844	112	34879	5.1227 ug/L	91
53) 1-Chlorohexane	7.854	69	3351	5.0591 ug/L	87
54) Ethylbenzene	7.875	106	19869	5.0951 ug/L	99
55) 1,1,1,2-Tetrachloroethane	7.897	131	12222	5.2744 ug/L	98
56) m-,p-Xylene	7.981	106	48176	9.8314 ug/L	100
57) o-Xylene	8.256	106	23322	5.0308 ug/L	93
58) Styrene	8.288	104	39211	4.8959 ug/L	96
59) Bromoform	8.299	173	8381	4.5348 ug/L	99
60) Isopropylbenzene	8.447	105	63022	5.1708 ug/L	99
62) 1,3,5-Trimethylbenzene	8.796	105	51513	5.4558 ug/L	97
64) Bromobenzene	8.648	156	14495	5.4573 ug/L	94
65) n-Propylbenzene	8.679	91	76702	5.6485 ug/L	99
66) 1,1,2,2-Tetrachloroethane	8.732	83	13201	5.5880 ug/L	99
67) 2-Chlorotoluene	8.753	91	46433	5.2639 ug/L	96
68) 1,2,3-Trichloropropane	8.796	110	4067	5.5237 ug/L	94
69) 1,2,4-Trimethylbenzene	8.986	105	51913	5.5490 ug/L	100
70) 4-Chlorotoluene	8.849	91	49288	5.6945 ug/L	99
71) tert-Butylbenzene	8.954	134	10424	5.6631 ug/L	96
72) sec-Butylbenzene	9.050	105	66398	5.6688 ug/L	98
73) p-Isopropyltoluene	9.124	119	50836	5.4518 ug/L	99
74) 1,3-Dichlorobenzene	9.155	146	27646	5.3543 ug/L	98
75) 1,4-Dichlorobenzene	9.198	146	28224	5.2693 ug/L	98
76) n-Butylbenzene	9.325	91	55554	5.7632 ug/L	100
77) 1,2-Dichlorobenzene	9.399	146	27912	5.7508 ug/L	99
78) 1,2-Dibromo-3-Chloropr...	9.769	75	2386	5.7639 ug/L	82
79) Hexachlorobutadiene	10.076	225	9973	5.2652 ug/L	99
80) 1,2,4-Trichlorobenzene	10.086	180	21334	5.4957 ug/L	98
81) Naphthalene	10.234	128	35523	5.5589 ug/L	98
82) 1,2,3-Trichlorobenzene	10.319	180	18570	5.3834 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005082.D
Acq On : 18 May 2014 20:59
Operator : FJB/MDA
Sample : WG476501-06 5.0ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 19 12:12:28 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

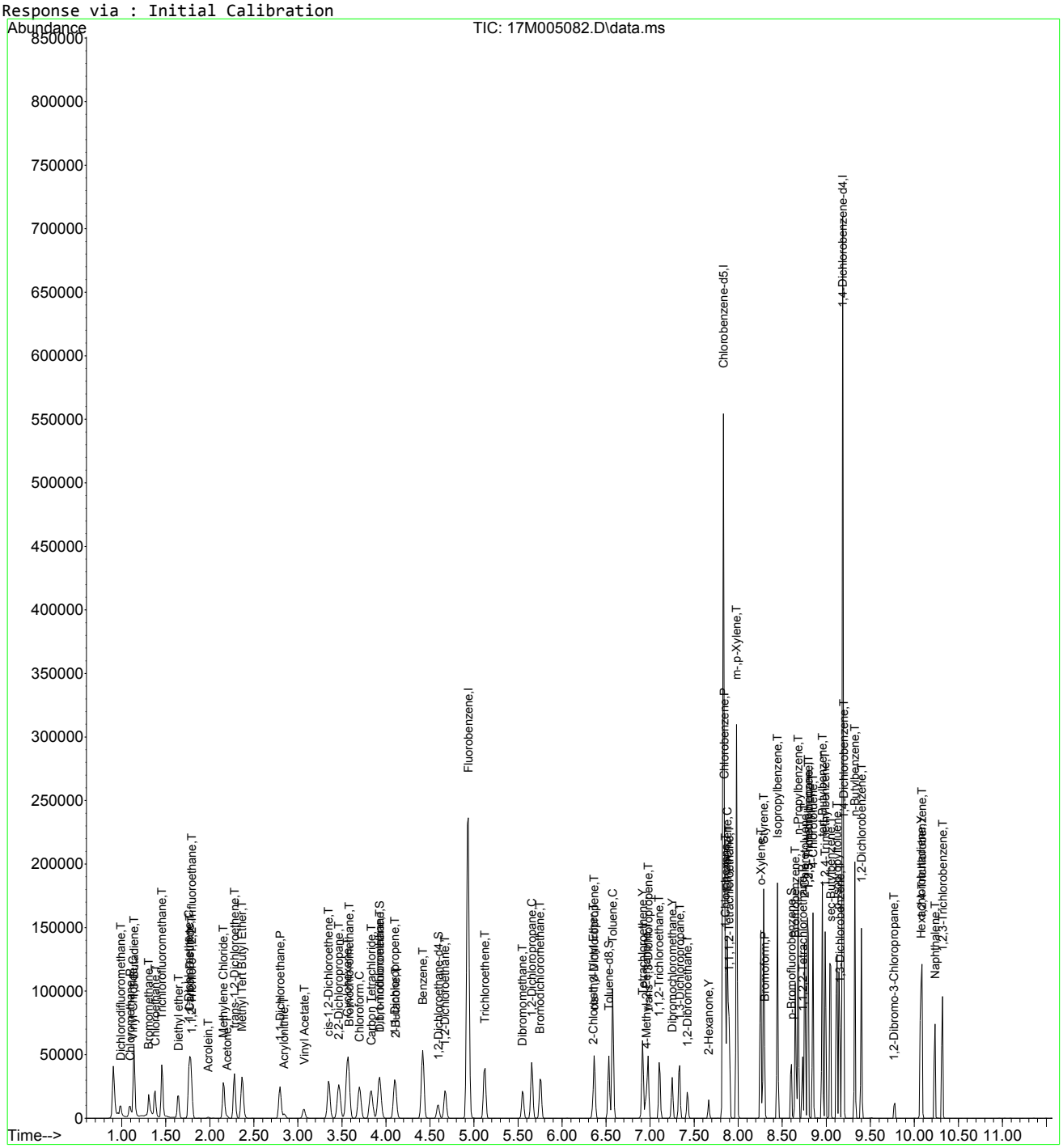

8260VMS.M Mon May 19 12:12:29 2014 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005083.D
Acq On : 18 May 2014 21:18
Operator : FJB/MDA
Sample : WG476501-07 20ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 19 12:12:32 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	4.935	96	244821	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.833	117	171066	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.187	152	94757	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	3.930	111	27390	9.9095 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 39.638%#		
32) 1,2-Dichloroethane-d4	4.596	65	35701	9.6955 ug/L	0.0101
Spiked Amount 25.000	Range 80 - 120		Recovery = 38.782%#		
44) Toluene-d8	6.532	98	103292	10.0273 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 40.109%#		
63) p-Bromofluorobenzene	8.605	95	42217	10.4852 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.941%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.989	85	36523	16.0948 ug/L	99
3) Chloromethane	1.095	50	41860	16.9341 ug/L	98
4) Vinyl Chloride	1.137	62	63915	17.4187 ug/L	100
5) 1,3-Butadiene	1.137	54	61221	20.0076 ug/L	99
6) Bromomethane	1.306	94	34568	15.4731 ug/L	97
7) Chloroethane	1.380	64	57105	19.1371 ug/L	98
8) Trichlorofluoromethane	1.454	101	98146	17.4030 ug/L	99
9) Diethyl ether	1.634	59	46339	20.1405 ug/L	99
10) 1,1-Dichloroethene	1.761	61	64090	14.8022 ug/L	94
11) Carbon Disulfide	1.772	76	130553	18.4480 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.793	101	34424	16.0573 ug/L	97
13) Acrolein	1.983	56	3355	15.2903 ug/L	96
14) Methylene Chloride	2.152	84	48639	17.8172 ug/L	92
15) Acetone	2.195	43	8023	16.8214 ug/L	96
16) trans-1,2-Dichloroethene	2.279	96	44508	17.3069 ug/L	94
17) Methyl Tert Butyl Ether	2.364	73	133790	18.5806 ug/L	98
18) 1,1-Dichloroethane	2.798	63	99290	18.1985 ug/L	100
19) Acrylonitrile	2.851	53	13058	16.9552 ug/L	98
20) Vinyl Acetate	3.073	86	5776	18.4249 ug/L	95
21) cis-1,2-Dichloroethene	3.348	96	55938	18.3414 ug/L	96
22) 2,2-Dichloropropane	3.464	77	79950	17.9968 ug/L	97
23) Cyclohexane	3.559	56	103024	20.2939 ug/L	99
24) Bromochloromethane	3.581	130	30861	19.6206 ug/L	100
25) Chloroform	3.697	83	96730	18.4128 ug/L	100
26) Carbon Tetrachloride	3.834	117	70393	18.2349 ug/L	99
28) 1,1,1-Trichloroethane	3.930	97	85583	18.4518 ug/L	99
29) 1,1-Dichloropropene	4.099	75	70263	18.1010 ug/L	98
30) 2-Butanone	4.110	43	15437	18.9380 ug/L	98
31) Benzene	4.416	78	216562	18.4645 ug/L	99
33) 1,2-Dichloroethane	4.670	62	85379	19.8027 ug/L	98
34) Trichloroethene	5.125	130	47875	17.9572 ug/L	100
35) Dibromomethane	5.548	93	33401	19.7828 ug/L	97
36) 1,2-Dichloropropane	5.654	63	62972	19.4316 ug/L	99
37) Bromodichloromethane	5.749	83	81611	19.4704 ug/L	99
38) 1,4-Dioxane	5.961	88	232	43.2534 ug/L #	11
39) 2-Chloroethyl Vinyl Ether	6.352	63	13698	19.3083 ug/L	99
40) cis-1,3-Dichloropropene	6.363	75	93207	19.3583 ug/L	99
41) 4-Methyl-2-Pentanone	6.955	58	18012	18.6015 ug/L	99
42) trans-1,3-Dichloropropene	6.976	75	83212	19.8231 ug/L	100
45) Toluene	6.574	91	229276	18.9142 ug/L	99
46) Tetrachloroethene	6.913	166	53260	18.5319 ug/L	99
47) 1,1,2-Trichloroethane	7.103	97	44199	21.2993 ug/L	99
48) Dibromochloromethane	7.251	129	51555	20.8844 ug/L	99
49) 1,3-Dichloropropane	7.336	76	82273	20.5065 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005083.D
Acq On : 18 May 2014 21:18
Operator : FJB/MDA
Sample : WG476501-07 20ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 19 12:12:32 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.421	107	44556	20.4480 ug/L	99
51) 2-Hexanone	7.664	43	27931	20.8085 ug/L	95
52) Chlorobenzene	7.844	112	140163	18.3143 ug/L	97
53) 1-Chlorohexane	7.854	69	15572	20.9154 ug/L	81
54) Ethylbenzene	7.876	106	79310	18.0938 ug/L	94
55) 1,1,1,2-Tetrachloroethane	7.897	131	51663	19.8350 ug/L	99
56) m-,p-Xylene	7.981	106	198502	36.0391 ug/L	98
57) o-Xylene	8.256	106	99718	19.1368 ug/L	97
58) Styrene	8.288	104	167107	18.5628 ug/L	96
59) Bromoform	8.299	173	38367	16.0498 ug/L	99
60) Isopropylbenzene	8.447	105	258292	18.8541 ug/L	100
62) 1,3,5-Trimethylbenzene	8.796	105	221200	18.8321 ug/L	98
64) Bromobenzene	8.658	156	63092	19.0943 ug/L	96
65) n-Propylbenzene	8.680	91	323154	19.1298 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.732	83	60637	20.6330 ug/L	99
67) 2-Chlorotoluene	8.754	91	192273	17.5216 ug/L	97
68) 1,2,3-Trichloropropane	8.796	110	17706	19.3308 ug/L	95
69) 1,2,4-Trimethylbenzene	8.986	105	222945	19.1561 ug/L	100
70) 4-Chlorotoluene	8.849	91	213954	19.8705 ug/L	99
71) tert-Butylbenzene	8.955	134	43910	19.1757 ug/L	100
72) sec-Butylbenzene	9.050	105	285415	19.5878 ug/L	98
73) p-Isopropyltoluene	9.124	119	221932	19.1320 ug/L	100
74) 1,3-Dichlorobenzene	9.156	146	120328	18.7331 ug/L	97
75) 1,4-Dichlorobenzene	9.198	146	129134	19.3798 ug/L	99
76) n-Butylbenzene	9.325	91	238405	19.8811 ug/L	99
77) 1,2-Dichlorobenzene	9.399	146	119937	19.8639 ug/L	99
78) 1,2-Dibromo-3-Chloropr...	9.769	75	10653	20.6867 ug/L	99
79) Hexachlorobutadiene	10.076	225	42963	18.2329 ug/L	98
80) 1,2,4-Trichlorobenzene	10.086	180	89123	18.4551 ug/L	100
81) Naphthalene	10.235	128	155721	19.5884 ug/L	100
82) 1,2,3-Trichlorobenzene	10.319	180	80601	18.7828 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005083.D
Acq On : 18 May 2014 21:18
Operator : FJB/MDA
Sample : WG476501-07 20ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 19 12:12:32 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

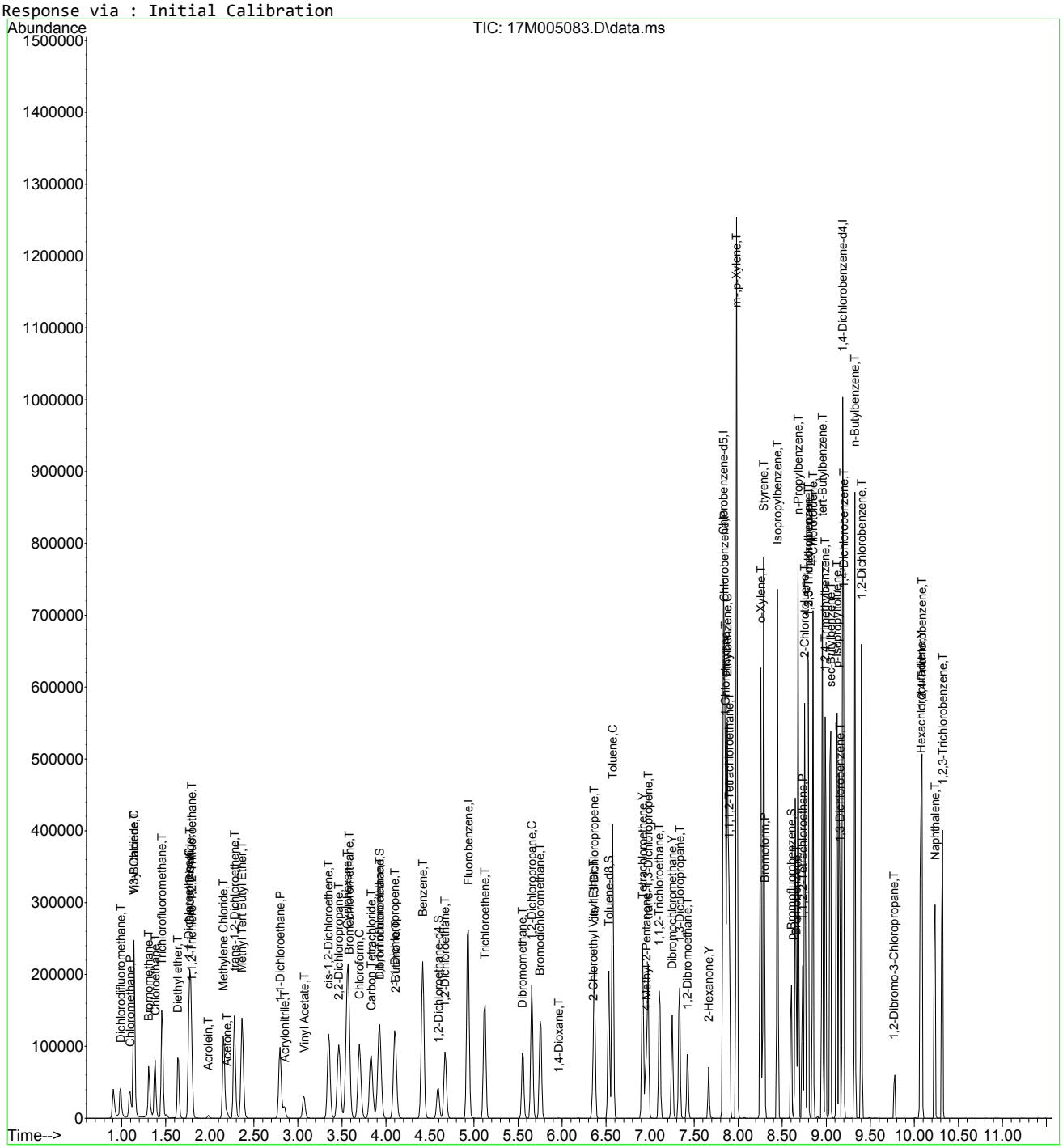

8260VMS.M Mon May 19 12:12:33 2014 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005084.D
Acq On : 18 May 2014 21:38
Operator : FJB/MDA
Sample : WG476501-08 50ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 19 12:12:35 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	4.935	96	252683	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.833	117	178596	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.187	152	99897	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	3.930	111	71046	24.9042 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.617%		
32) 1,2-Dichloroethane-d4	4.586	65	92738	24.4016 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.606%		
44) Toluene-d8	6.532	98	265529	24.6901 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.760%		
63) p-Bromofluorobenzene	8.605	95	109239	25.7351 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.940%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.978	85	118157	49.1876 ug/L	100
3) Chloromethane	1.084	50	138781	54.3959 ug/L	100
4) Vinyl Chloride	1.126	62	193660	51.1359 ug/L	100
5) 1,3-Butadiene	1.137	54	156156	49.4454 ug/L	100
6) Bromomethane	1.306	94	109079	45.8827 ug/L	100
7) Chloroethane	1.370	64	191430	62.1563 ug/L	100
8) Trichlorofluoromethane	1.454	101	300591	51.6417 ug/L	100
9) Diethyl ether	1.634	59	126248	53.1644 ug/L	100
10) 1,1-Dichloroethene	1.761	61	232066	49.4535 ug/L	100
11) Carbon Disulfide	1.772	76	379532	51.9618 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.782	101	112076	50.6519 ug/L	100
13) Acrolein	1.983	56	10940	45.8739 ug/L	100
14) Methylene Chloride	2.152	84	144520	51.2928 ug/L	100
15) Acetone	2.195	43	24995	50.7751 ug/L	100
16) trans-1,2-Dichloroethene	2.279	96	138540	52.1951 ug/L	100
17) Methyl Tert Butyl Ether	2.364	73	398898	53.6749 ug/L	100
18) 1,1-Dichloroethane	2.798	63	299476	53.1821 ug/L	100
19) Acrylonitrile	2.840	53	39320	48.4440 ug/L	100
20) Vinyl Acetate	3.062	86	17794	54.9952 ug/L	100
21) cis-1,2-Dichloroethene	3.348	96	160291	50.9221 ug/L	100
22) 2,2-Dichloropropane	3.464	77	240919	52.5436 ug/L	100
23) Cyclohexane	3.559	56	273341	52.1680 ug/L	100
24) Bromochloromethane	3.581	130	87532	53.9190 ug/L	100
25) Chloroform	3.697	83	282974	52.1888 ug/L	100
26) Carbon Tetrachloride	3.834	117	218975	54.9592 ug/L	100
28) 1,1,1-Trichloroethane	3.919	97	255964	53.4690 ug/L	100
29) 1,1-Dichloropropene	4.099	75	214893	53.6379 ug/L	100
30) 2-Butanone	4.109	43	45042	53.5379 ug/L	100
31) Benzene	4.416	78	620365	51.2479 ug/L	100
33) 1,2-Dichloroethane	4.670	62	240457	54.0360 ug/L	100
34) Trichloroethene	5.125	130	141117	51.2840 ug/L	100
35) Dibromomethane	5.548	93	92792	53.2490 ug/L	100
36) 1,2-Dichloropropane	5.654	63	175409	52.4428 ug/L	100
37) Bromodichloromethane	5.749	83	230416	53.2613 ug/L	100
38) 1,4-Dioxane	5.961	88	1178	97.0153 ug/L	100
39) 2-Chloroethyl Vinyl Ether	6.352	63	39575	54.0481 ug/L	100
40) cis-1,3-Dichloropropene	6.363	75	260979	52.5166 ug/L	100
41) 4-Methyl-2-Pentanone	6.955	58	52822	52.8535 ug/L	100
42) trans-1,3-Dichloropropene	6.976	75	234431	54.1096 ug/L	100
45) Toluene	6.574	91	684738	54.1060 ug/L	100
46) Tetrachloroethene	6.913	166	160847	53.6072 ug/L	100
47) 1,1,2-Trichloroethane	7.103	97	123877	57.1789 ug/L	100
48) Dibromochloromethane	7.251	129	148733	57.7100 ug/L	100
49) 1,3-Dichloropropane	7.336	76	223568	53.3748 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005084.D
Acq On : 18 May 2014 21:38
Operator : FJB/MDA
Sample : WG476501-08 50ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 19 12:12:35 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.421	107	125006	54.9498 ug/L	100
51) 2-Hexanone	7.664	43	80424	57.3896 ug/L	100
52) Chlorobenzene	7.844	112	417298	52.2270 ug/L	100
53) 1-Chlorohexane	7.854	69	43094	55.4409 ug/L	100
54) Ethylbenzene	7.886	106	244802	53.4943 ug/L	100
55) 1,1,1,2-Tetrachloroethane	7.897	131	150044	55.1776 ug/L	100
56) m-,p-Xylene	7.981	106	619529	107.7364 ug/L	100
57) o-Xylene	8.256	106	300988	55.3270 ug/L	100
58) Styrene	8.288	104	515685	54.8688 ug/L	100
59) Bromoform	8.299	173	120724	46.7868 ug/L	100
60) Isopropylbenzene	8.447	105	786375	54.9814 ug/L	100
62) 1,3,5-Trimethylbenzene	8.796	105	675383	54.5411 ug/L	100
64) Bromobenzene	8.658	156	183546	52.6907 ug/L	100
65) n-Propylbenzene	8.679	91	971925	54.5748 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.732	83	167337	54.0100 ug/L	100
67) 2-Chlorotoluene	8.754	91	552121	47.7253 ug/L	97
68) 1,2,3-Trichloropropane	8.796	110	52002	53.8528 ug/L	100
69) 1,2,4-Trimethylbenzene	8.997	105	664870	54.1882 ug/L	100
70) 4-Chlorotoluene	8.849	91	598314	52.7079 ug/L	100
71) tert-Butylbenzene	8.955	134	128172	53.0934 ug/L	100
72) sec-Butylbenzene	9.050	105	837587	54.5251 ug/L	100
73) p-Isopropyltoluene	9.124	119	672001	54.9503 ug/L	100
74) 1,3-Dichlorobenzene	9.156	146	363991	53.7518 ug/L	100
75) 1,4-Dichlorobenzene	9.198	146	379612	54.0390 ug/L	100
76) n-Butylbenzene	9.325	91	721312	57.0566 ug/L	100
77) 1,2-Dichlorobenzene	9.399	146	344128	54.0617 ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.769	75	30574	56.3157 ug/L	100
79) Hexachlorobutadiene	10.076	225	129866	52.2775 ug/L	100
80) 1,2,4-Trichlorobenzene	10.086	180	257809	50.6388 ug/L	100
81) Naphthalene	10.235	128	442218	52.7651 ug/L	100
82) 1,2,3-Trichlorobenzene	10.319	180	228717	50.5566 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005084.D
Acq On : 18 May 2014 21:38
Operator : FJB/MDA
Sample : WG476501-08 50ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 19 12:12:35 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

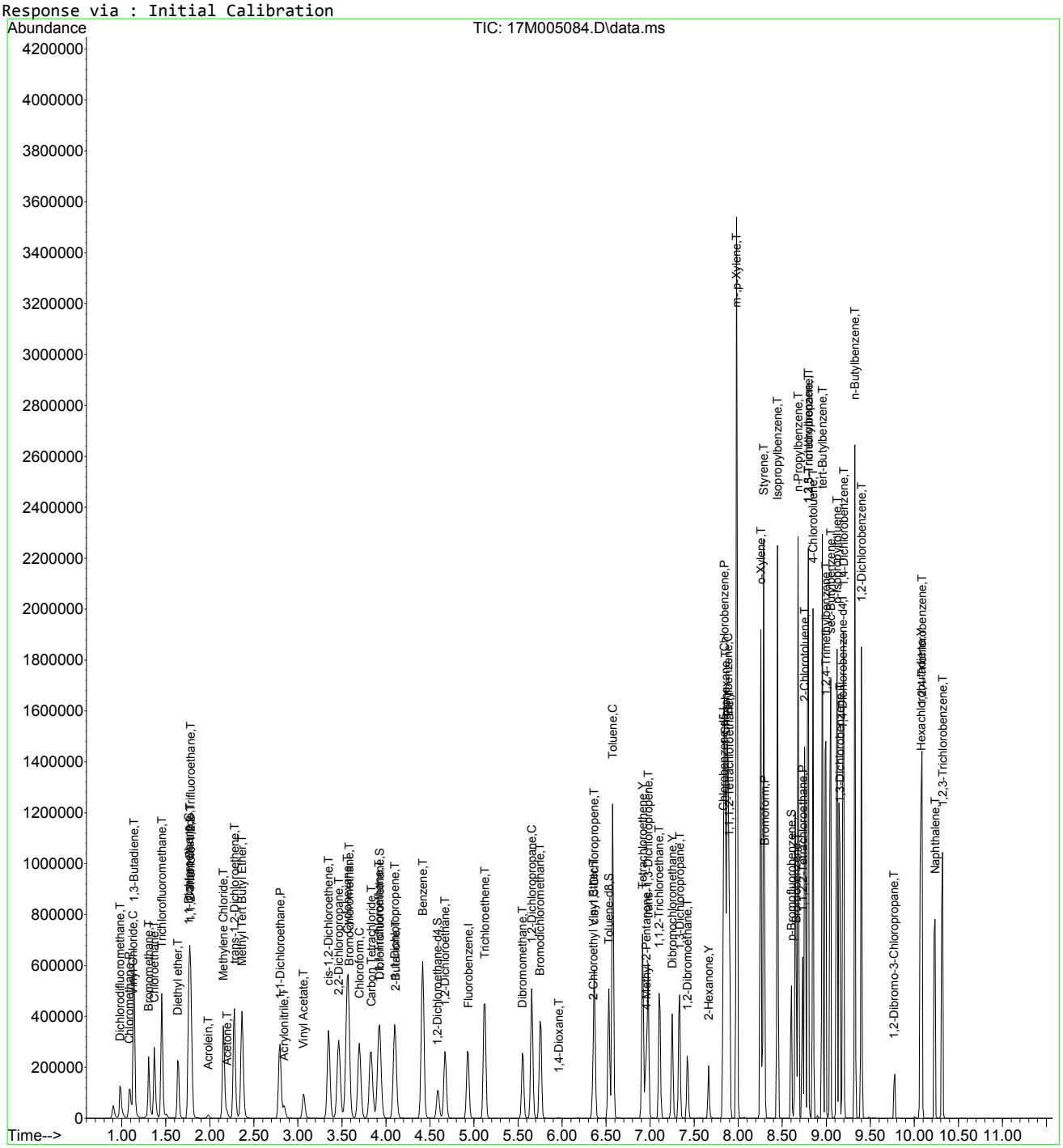

8260VMS.M Mon May 19 12:12:36 2014 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005085.D
Acq On : 18 May 2014 21:57
Operator : FJB/MDA
Sample : WG476501-09 100ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 19 12:12:38 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	4.935	96	274531	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.833	117	201251	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.187	152	114422	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	3.930	111	148420	47.8861 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 191.544%#		
32) 1,2-Dichloroethane-d4	4.586	65	194334	47.0646 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 188.258%#		
44) Toluene-d8	6.532	98	576606	47.5799 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 190.320%#		
63) p-Bromofluorobenzene	8.605	95	231967	47.7109 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 190.844%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.978	85	264138	100.5824 ug/L	100
3) Chloromethane	1.084	50	313048	112.9358 ug/L	100
4) Vinyl Chloride	1.126	62	416697	101.2723 ug/L	100
5) 1,3-Butadiene	1.137	54	329650	96.0738 ug/L	98
6) Bromomethane	1.306	94	245623	94.3537 ug/L	99
7) Chloroethane	1.370	64	325366	97.2371 ug/L	93
8) Trichlorofluoromethane	1.454	101	644049	101.8423 ug/L	100
9) Diethyl ether	1.645	59	259852	100.7180 ug/L	100
10) 1,1-Dichloroethene	1.761	61	533996	100.6180 ug/L	99
11) Carbon Disulfide	1.772	76	856692	107.9555 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.782	101	257076	106.9373 ug/L	98
13) Acrolein	1.983	56	24849	94.6761 ug/L	98
14) Methylene Chloride	2.152	84	314115	102.6128 ug/L	100
15) Acetone	2.195	43	54286	101.5009 ug/L	95
16) trans-1,2-Dichloroethene	2.279	96	302045	104.7397 ug/L	99
17) Methyl Tert Butyl Ether	2.364	73	846840	104.8806 ug/L	99
18) 1,1-Dichloroethane	2.798	63	633505	103.5472 ug/L	99
19) Acrylonitrile	2.840	53	85492	96.4136 ug/L	99
20) Vinyl Acetate	3.062	86	34915	99.3226 ug/L	91
21) cis-1,2-Dichloroethene	3.348	96	333421	97.4934 ug/L	99
22) 2,2-Dichloropropane	3.464	77	497334	99.8348 ug/L	97
23) Cyclohexane	3.559	56	581224	102.1004 ug/L	99
24) Bromochloromethane	3.581	130	181898	103.1306 ug/L	98
25) Chloroform	3.697	83	586563	99.5704 ug/L	99
26) Carbon Tetrachloride	3.834	117	443209	102.3856 ug/L	99
28) 1,1,1-Trichloroethane	3.919	97	522716	100.5018 ug/L	100
29) 1,1-Dichloropropene	4.099	75	437750	100.5681 ug/L	98
30) 2-Butanone	4.109	43	94059	102.9031 ug/L	100
31) Benzene	4.416	78	1296481	98.5778 ug/L	100
33) 1,2-Dichloroethane	4.670	62	484686	100.2515 ug/L	99
34) Trichloroethene	5.125	130	287611	96.2040 ug/L	100
35) Dibromomethane	5.548	93	194575	102.7714 ug/L	97
36) 1,2-Dichloropropane	5.654	63	364396	100.2749 ug/L	99
37) Bromodichloromethane	5.749	83	476025	101.2777 ug/L	100
38) 1,4-Dioxane	5.961	88	2934	184.2273 ug/L	92
39) 2-Chloroethyl Vinyl Ether	6.352	63	83526	104.9943 ug/L	100
40) cis-1,3-Dichloropropene	6.363	75	543823	100.7240 ug/L	100
41) 4-Methyl-2-Pentanone	6.955	58	108349	99.7858 ug/L	99
42) trans-1,3-Dichloropropene	6.976	75	494832	105.1239 ug/L	100
45) Toluene	6.574	91	1441845	101.1052 ug/L	100
46) Tetrachloroethene	6.913	166	336092	99.4036 ug/L	99
47) 1,1,2-Trichloroethane	7.114	97	251660	103.0844 ug/L	99
48) Dibromochloromethane	7.251	129	308381	106.1855 ug/L	100
49) 1,3-Dichloropropane	7.336	76	467702	99.0899 ug/L	96

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005085.D
Acq On : 18 May 2014 21:57
Operator : FJB/MDA
Sample : WG476501-09 100ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 19 12:12:38 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.421	107	262138	102.2585 ug/L	99
51) 2-Hexanone	7.664	43	163375	103.4586 ug/L	100
52) Chlorobenzene	7.844	112	902683	100.2577 ug/L	98
53) 1-Chlorohexane	7.865	69	88539	101.0839 ug/L	89
54) Ethylbenzene	7.886	106	531859	103.1390 ug/L	98
55) 1,1,1,2-Tetrachloroethane	7.907	131	313395	102.2751 ug/L	99
56) m-,p-Xylene	7.992	106	1387975	214.1983 ug/L	96
57) o-Xylene	8.256	106	645413	105.2832 ug/L	98
58) Styrene	8.288	104	1129193	106.6210 ug/L	100
59) Bromoform	8.299	173	276318	94.2206 ug/L	99
60) Isopropylbenzene	8.447	105	1685739	104.5948 ug/L	100
62) 1,3,5-Trimethylbenzene	8.796	105	1551036	109.3549 ug/L	99
64) Bromobenzene	8.658	156	395131	99.0315 ug/L	93
65) n-Propylbenzene	8.679	91	2029097	99.4729 ug/L	99
66) 1,1,2,2-Tetrachloroethane	8.732	83	355855	100.2764 ug/L	95
67) 2-Chlorotoluene	8.764	91	1167271	88.0904 ug/L	97
68) 1,2,3-Trichloropropane	8.796	110	117073	105.8492 ug/L	97
69) 1,2,4-Trimethylbenzene	8.997	105	1465559	104.2831 ug/L	99
70) 4-Chlorotoluene	8.849	91	1340845	103.1260 ug/L	99
71) tert-Butylbenzene	8.955	134	273933	99.0684 ug/L	98
72) sec-Butylbenzene	9.050	105	1834408	104.2571 ug/L	100
73) p-Isopropyltoluene	9.124	119	1537822	109.7865 ug/L	100
74) 1,3-Dichlorobenzene	9.156	146	789359	101.7701 ug/L	96
75) 1,4-Dichlorobenzene	9.198	146	833684	103.6124 ug/L	99
76) n-Butylbenzene	9.325	91	1495124	103.2531 ug/L	100
77) 1,2-Dichlorobenzene	9.399	146	706764	96.9365 ug/L	98
78) 1,2-Dibromo-3-Chloropr...	9.780	75	62366	100.2924 ug/L	99
79) Hexachlorobutadiene	10.076	225	281541	98.9473 ug/L	99
80) 1,2,4-Trichlorobenzene	10.086	180	606581	104.0201 ug/L	99
81) Naphthalene	10.235	128	1015146	105.7502 ug/L	100
82) 1,2,3-Trichlorobenzene	10.319	180	552117	106.5500 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005085.D
Acq On : 18 May 2014 21:57
Operator : FJB/MDA
Sample : WG476501-09 100ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 19 12:12:38 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

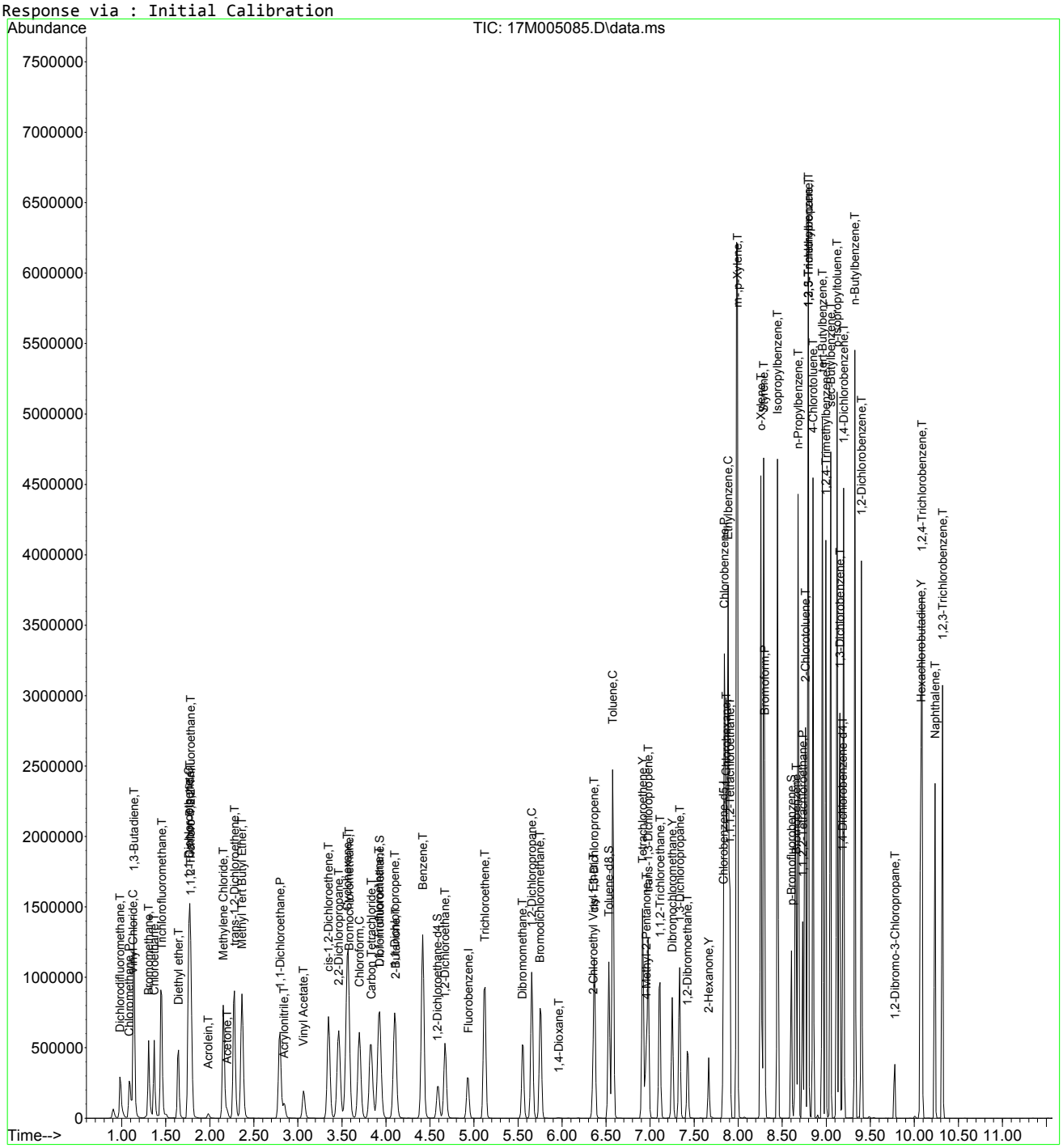

8260VMS.M Mon May 19 12:12:39 2014 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005086.D
Acq On : 18 May 2014 22:17
Operator : FJB/MDA
Sample : WG476501-10 200ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 19 12:12:41 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	4.935	96	269846	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.833	117	214382	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.198	152	133704	25.00000 ug/L	# 0.0107
System Monitoring Compounds					
27) Dibromofluoromethane	3.930	111	302024	99.1366 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 396.546%#		
32) 1,2-Dichloroethane-d4	4.596	65	389025	95.8514 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 383.406%#		
44) Toluene-d8	6.532	98	1205423	93.3757 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 373.503%#		
63) p-Bromofluorobenzene	8.605	95	506437	89.1419 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 356.568%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.978	85	551513	212.9953 ug/L	100
3) Chloromethane	1.084	50	650174	238.6304 ug/L	100
4) Vinyl Chloride	1.126	62	913433	225.8511 ug/L	100
5) 1,3-Butadiene	1.137	54	717789	212.8258 ug/L	97
6) Bromomethane	1.306	94	549043	213.6897 ug/L	99
7) Chloroethane	1.370	64	601234	182.8011 ug/L	92
8) Trichlorofluoromethane	1.444	101	1422705	228.8757 ug/L	100
9) Diethyl ether	1.645	59	585576	230.9083 ug/L	99
10) 1,1-Dichloroethene	1.750	61	1189230	211.6244 ug/L	99
11) Carbon Disulfide	1.772	76	2002243	256.6920 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.782	101	582211	246.3902 ug/L	98
13) Acrolein	1.983	56	55075	212.0680 ug/L	97
14) Methylene Chloride	2.152	84	671798	223.2683 ug/L	98
15) Acetone	2.195	43	120113	228.4796 ug/L	97
16) trans-1,2-Dichloroethene	2.269	96	653080	230.3994 ug/L	99
17) Methyl Tert Butyl Ether	2.364	73	1818557	229.1374 ug/L	99
18) 1,1-Dichloroethane	2.798	63	1349644	224.4310 ug/L	99
19) Acrylonitrile	2.851	53	182059	208.2596 ug/L	100
20) Vinyl Acetate	3.062	86	73583	212.9555 ug/L	96
21) cis-1,2-Dichloroethene	3.348	96	720928	214.4615 ug/L	99
22) 2,2-Dichloropropane	3.464	77	1052006	214.8460 ug/L	94
23) Cyclohexane	3.559	56	1240920	221.7702 ug/L	99
24) Bromochloromethane	3.580	130	397054	229.0259 ug/L	99
25) Chloroform	3.697	83	1233686	213.0570 ug/L	98
26) Carbon Tetrachloride	3.824	117	919739	216.1574 ug/L	99
28) 1,1,1-Trichloroethane	3.919	97	1093190	213.8352 ug/L	99
29) 1,1-Dichloropropene	4.099	75	921855	215.4627 ug/L	96
30) 2-Butanone	4.109	43	197673	220.0143 ug/L	100
31) Benzene	4.416	78	2775003	214.6604 ug/L	99
33) 1,2-Dichloroethane	4.670	62	1010469	212.6320 ug/L	99
34) Trichloroethene	5.125	130	608305	207.0067 ug/L	98
35) Dibromomethane	5.548	93	409401	219.9934 ug/L	99
36) 1,2-Dichloropropane	5.654	63	781111	218.6789 ug/L	98
37) Bromodichloromethane	5.760	83	1017658	220.2730 ug/L	100
38) 1,4-Dioxane	5.961	88	6941	401.8431 ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.352	63	176542	225.7706 ug/L	100
40) cis-1,3-Dichloropropene	6.373	75	1187368	223.7361 ug/L	100
41) 4-Methyl-2-Pentanone	6.955	58	229937	215.4409 ug/L	100
42) trans-1,3-Dichloropropene	6.976	75	1075628	232.4777 ug/L	98
45) Toluene	6.585	91	3198975	210.5792 ug/L	99
46) Tetrachloroethene	6.923	166	740458	205.5862 ug/L	99
47) 1,1,2-Trichloroethane	7.114	97	544431	209.3492 ug/L	99
48) Dibromochloromethane	7.251	129	658561	212.8743 ug/L	99
49) 1,3-Dichloropropane	7.336	76	995791	198.0514 ug/L	94

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005086.D
Acq On : 18 May 2014 22:17
Operator : FJB/MDA
Sample : WG476501-10 200ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 19 12:12:41 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.431	107	558392	204.4835 ug/L	100
51) 2-Hexanone	7.664	43	344074	204.5420 ug/L	100
52) Chlorobenzene	7.844	112	2016565	210.2540 ug/L	99
53) 1-Chlorohexane	7.865	69	204740	219.4319 ug/L	96
54) Ethylbenzene	7.886	106	1196473	217.8106 ug/L	97
55) 1,1,1,2-Tetrachloroethane	7.907	131	709704	217.4227 ug/L	100
56) m-,p-Xylene	7.992	106	3276861	474.7251 ug/L	87
57) o-Xylene	8.256	106	1445382	221.3369 ug/L	98
58) Styrene	8.299	104	2671637	236.8109 ug/L	100
59) Bromoform	8.299	173	681212	217.0216 ug/L	99
60) Isopropylbenzene	8.447	105	3737473	217.6946 ug/L	99
62) 1,3,5-Trimethylbenzene	8.796	105	3461525	208.8570 ug/L	100
64) Bromobenzene	8.658	156	961940	206.3218 ug/L	94
65) n-Propylbenzene	8.690	91	4539736	190.4574 ug/L	97
66) 1,1,2,2-Tetrachloroethane	8.732	83	762664	183.9178 ug/L	95
67) 2-Chlorotoluene	8.764	91	2852791	184.2435 ug/L	97
68) 1,2,3-Trichloropropane	8.796	110	287361	222.3432 ug/L	99
69) 1,2,4-Trimethylbenzene	8.997	105	3508819	213.6667 ug/L	95
70) 4-Chlorotoluene	8.849	91	2736491	180.1145 ug/L	98
71) tert-Butylbenzene	8.954	134	607989	188.1705 ug/L	99
72) sec-Butylbenzene	9.050	105	4107996	199.8043 ug/L	99
73) p-Isopropyltoluene	9.124	119	3376026	206.2594 ug/L	99
74) 1,3-Dichlorobenzene	9.155	146	1924496	212.3380 ug/L	100
75) 1,4-Dichlorobenzene	9.198	146	1730516	184.0564 ug/L	99
76) n-Butylbenzene	9.325	91	3024526	178.7509 ug/L	97
77) 1,2-Dichlorobenzene	9.399	146	1533980	180.0519 ug/L	97
78) 1,2-Dibromo-3-Chloropr...	9.780	75	133104	183.1793 ug/L	95
79) Hexachlorobutadiene	10.076	225	740664	222.7658 ug/L	99
80) 1,2,4-Trichlorobenzene	10.086	180	1428161	209.5901 ug/L	99
81) Naphthalene	10.234	128	2267982	202.1890 ug/L	100
82) 1,2,3-Trichlorobenzene	10.319	180	1353837	223.5908 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005086.D
Acq On : 18 May 2014 22:17
Operator : FJB/MDA
Sample : WG476501-10 200ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 19 12:12:41 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

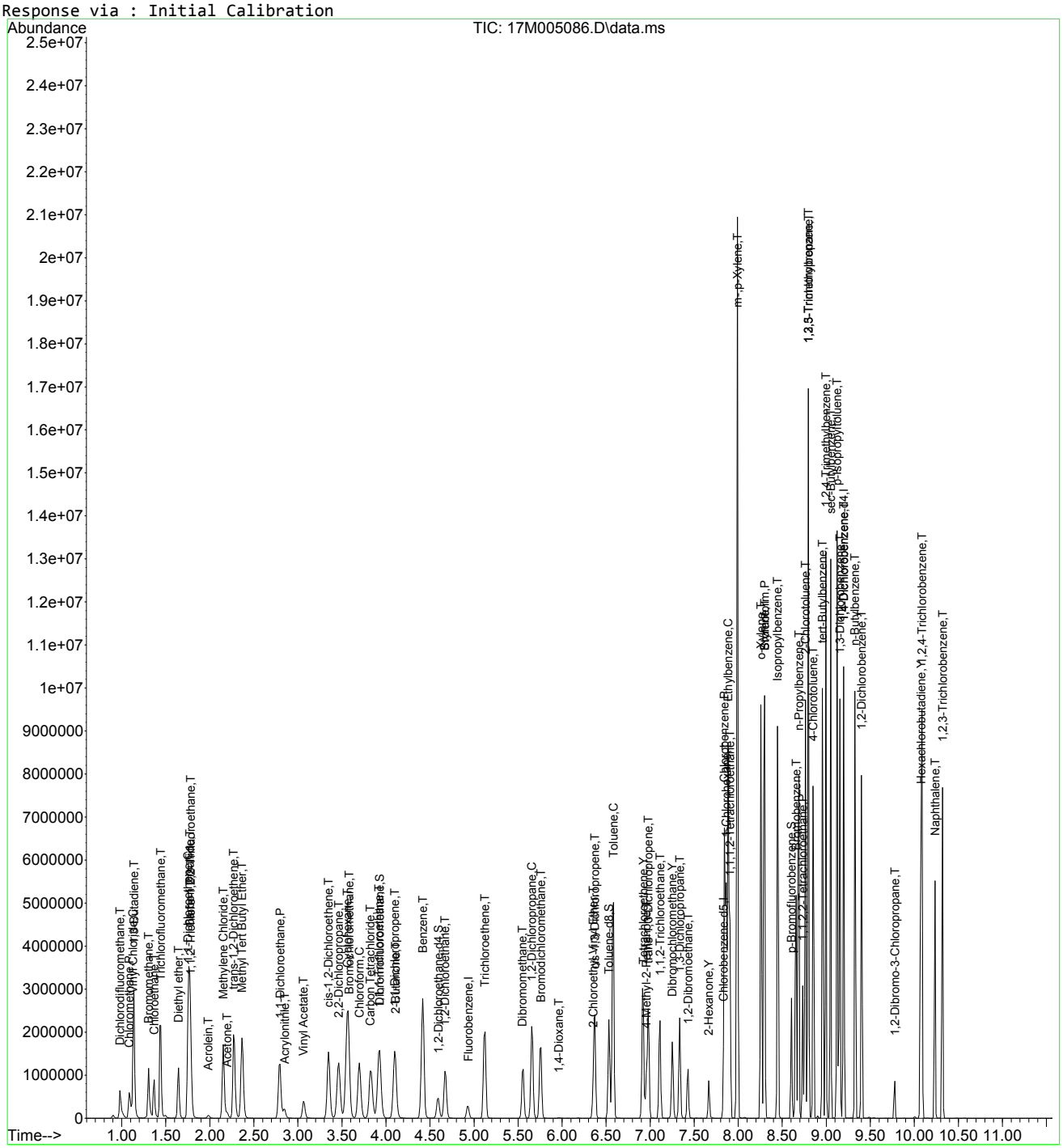

8260VMS.M Mon May 19 12:12:42 2014 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005087.D
Acq On : 18 May 2014 22:36
Operator : FJB/MDA
Sample : WG476501-11 300ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 19 12:12:44 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	4.924	96	296187	25.00000 ug/L	-0.0108
43) Chlorobenzene-d5	7.844	117	245798	25.00000 ug/L	0.0109
61) 1,4-Dichlorobenzene-d4	9.198	152	149343	25.00000 ug/L	# 0.0109
System Monitoring Compounds					
27) Dibromofluoromethane	3.930	111	472376	141.2636 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 565.054%#		
32) 1,2-Dichloroethane-d4	4.596	65	592359	132.9707 ug/L	0.0102
Spiked Amount 25.000	Range 80 - 120		Recovery = 531.883%#		
44) Toluene-d8	6.532	98	1866968	126.1366 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 504.546%#		
63) p-Bromofluorobenzene	8.606	95	796099	125.4535 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 501.814%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.978	85	828946	291.4509 ug/L	99
3) Chloromethane	1.084	50	1033069	345.4422 ug/L	99
4) Vinyl Chloride	1.126	62	1461485	329.2228 ug/L	99
5) 1,3-Butadiene	1.137	54	1149335	310.4732 ug/L	97
6) Bromomethane	1.306	94	848875	300.7204 ug/L	99
7) Chloroethane	1.359	64	800931	221.8606 ug/L	93
8) Trichlorofluoromethane	1.433	101	1165895	170.8812 ug/L	98
9) Diethyl ether	1.645	59	947432	340.3724 ug/L	98
10) 1,1-Dichloroethene	1.751	61	1901118	293.1146 ug/L	96
11) Carbon Disulfide	1.761	76	3355982	391.9811 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.772	101	938569	361.8755 ug/L	97
13) Acrolein	1.983	56	86131	301.6766 ug/L	100
14) Methylene Chloride	2.153	84	1052774	318.7671 ug/L	95
15) Acetone	2.205	43	183131	317.3725 ug/L	95
16) trans-1,2-Dichloroethene	2.269	96	1029903	331.0253 ug/L	96
17) Methyl Tert Butyl Ether	2.364	73	2857315	328.0025 ug/L	100
18) 1,1-Dichloroethane	2.787	63	2055414	311.3959 ug/L	99
19) Acrylonitrile	2.851	53	285135	296.9345 ug/L	100
20) Vinyl Acetate	3.073	86	112436	296.4604 ug/L	99
21) cis-1,2-Dichloroethene	3.348	96	1098762	297.7907 ug/L	98
22) 2,2-Dichloropropane	3.464	77	1582615	294.4655 ug/L	91
23) Cyclohexane	3.560	56	1935603	315.1561 ug/L	98
24) Bromochloromethane	3.581	130	627477	329.7485 ug/L	99
25) Chloroform	3.697	83	1872270	294.5843 ug/L	98
26) Carbon Tetrachloride	3.824	117	1401047	299.9910 ug/L	99
28) 1,1,1-Trichloroethane	3.919	97	1674862	298.4781 ug/L	98
29) 1,1-Dichloropropene	4.099	75	1403816	298.9301 ug/L	93
30) 2-Butanone	4.120	43	300143	304.3559 ug/L	99
31) Benzene	4.416	78	4256199	299.9579 ug/L	98
33) 1,2-Dichloroethane	4.670	62	1527451	292.8349 ug/L	99
34) Trichloroethene	5.125	130	961441	298.0819 ug/L	95
35) Dibromomethane	5.559	93	637191	311.9467 ug/L	98
36) 1,2-Dichloropropane	5.654	63	1209984	308.6198 ug/L	98
37) Bromodichloromethane	5.760	83	1556914	307.0252 ug/L	100
38) 1,4-Dioxane	5.971	88	11953	613.6609 ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.352	63	272160	317.0981 ug/L	99
40) cis-1,3-Dichloropropene	6.373	75	1851775	317.8989 ug/L	99
41) 4-Methyl-2-Pentanone	6.966	58	359370	306.7688 ug/L	99
42) trans-1,3-Dichloropropene	6.987	75	1694146	333.5954 ug/L	98
45) Toluene	6.585	91	4940979	283.6793 ug/L	98
46) Tetrachloroethene	6.924	166	1196398	289.7205 ug/L	98
47) 1,1,2-Trichloroethane	7.114	97	871495	292.2828 ug/L	98
48) Dibromochloromethane	7.251	129	1033531	291.3806 ug/L	99
49) 1,3-Dichloropropane	7.336	76	1560989	270.7819 ug/L	91

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005087.D
Acq On : 18 May 2014 22:36
Operator : FJB/MDA
Sample : WG476501-11 300ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 19 12:12:44 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.431	107	866038	276.6088 ug/L	99
51) 2-Hexanone	7.664	43	520949	270.1070 ug/L	99
52) Chlorobenzene	7.854	112	3274897	297.8103 ug/L	98
53) 1-Chlorohexane	7.865	69	338065	316.0147 ug/L	95
54) Ethylbenzene	7.897	106	1948400	309.3600 ug/L	94
55) 1,1,1,2-Tetrachloroethane	7.907	131	1136610	303.7030 ug/L	100
56) m-,p-Xylene	7.992	106	4933517	623.3770 ug/L	78
57) o-Xylene	8.256	106	2312280	308.8315 ug/L	98
58) Styrene	8.299	104	4145424	320.4817 ug/L	96
59) Bromoform	8.299	173	1066420	296.0309 ug/L	98
60) Isopropylbenzene	8.457	105	5837413	296.5514 ug/L	95
62) 1,3,5-Trimethylbenzene	8.796	105	5083303	274.5915 ug/L	96
64) Bromobenzene	8.658	156	1631196	313.2296 ug/L	93
65) n-Propylbenzene	8.690	91	6776866	254.5397 ug/L	93
66) 1,1,2,2-Tetrachloroethane	8.732	83	1202340	259.5837 ug/L	94
67) 2-Chlorotoluene	8.764	91	4326870	250.1817 ug/L	94
68) 1,2,3-Trichloropropane	8.796	110	448264	310.5198 ug/L	95
69) 1,2,4-Trimethylbenzene	8.997	105	4857827	264.8363 ug/L	90
70) 4-Chlorotoluene	8.859	91	4502489	265.3180 ug/L	95
71) tert-Butylbenzene	8.965	134	1041355	288.5454 ug/L	91
72) sec-Butylbenzene	9.050	105	5607465	244.1749 ug/L	93
73) p-Isopropyltoluene	9.124	119	4722552	258.3118 ug/L	97
74) 1,3-Dichlorobenzene	9.156	146	2798080	276.3951 ug/L	93
75) 1,4-Dichlorobenzene	9.198	146	2708779	257.9339 ug/L	100
76) n-Butylbenzene	9.325	91	4905172	259.5403 ug/L	91
77) 1,2-Dichlorobenzene	9.409	146	2572308	270.3090 ug/L	98
78) 1,2-Dibromo-3-Chloropr...	9.780	75	200814	247.4223 ug/L	86
79) Hexachlorobutadiene	10.076	225	1350022	363.5195 ug/L	99
80) 1,2,4-Trichlorobenzene	10.087	180	2382582	313.0409 ug/L	99
81) Naphthalene	10.235	128	3611706	288.2637 ug/L	98
82) 1,2,3-Trichlorobenzene	10.319	180	2266211	335.0791 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005087.D
Acq On : 18 May 2014 22:36
Operator : FJB/MDA
Sample : WG476501-11 300ug/L STD 8260
Misc : 1,1 STD64594
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 19 12:12:44 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

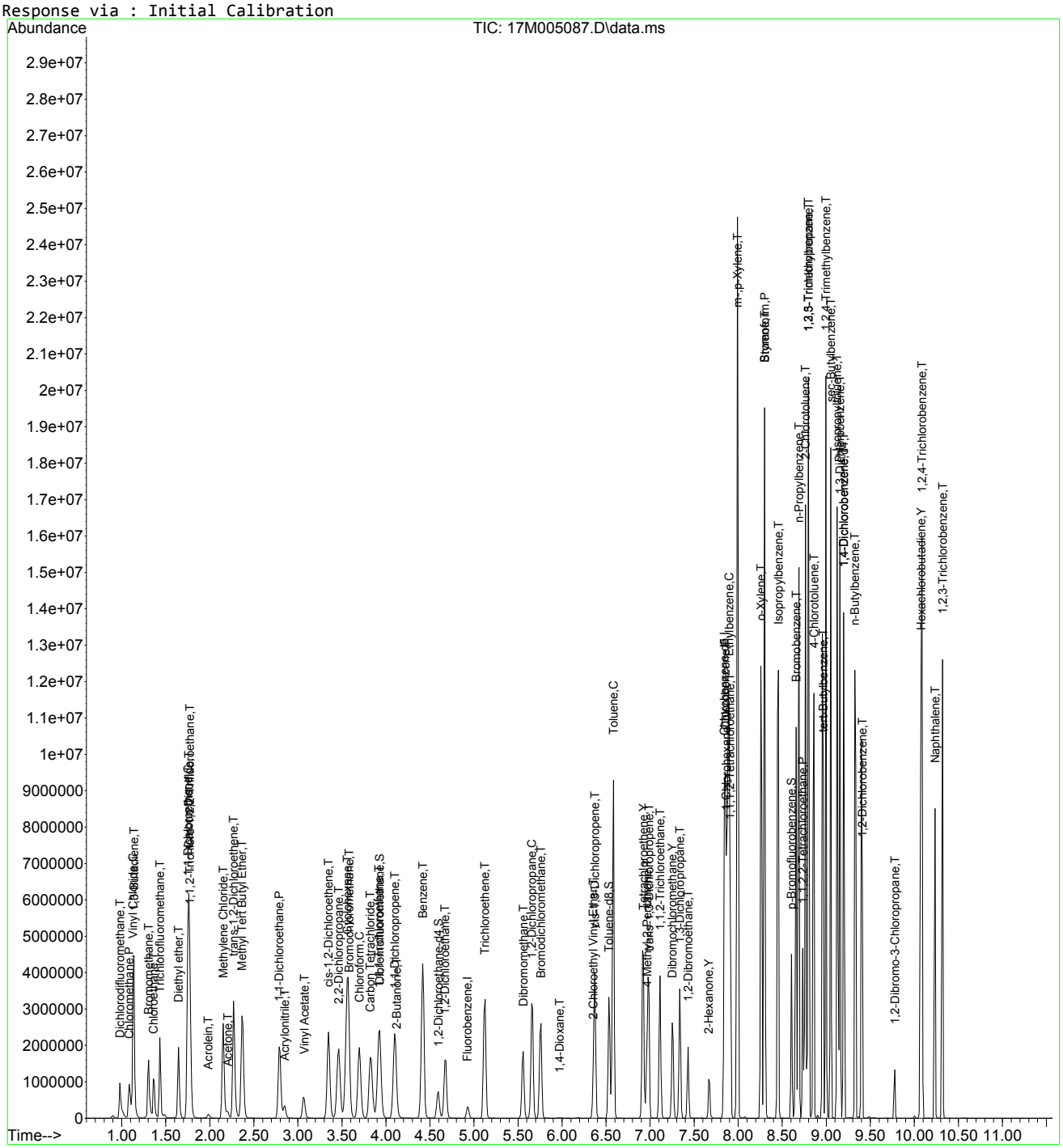

8260VMS.M Mon May 19 12:12:45 2014 Page: 3

Dichlorodifluoromethane

00736545

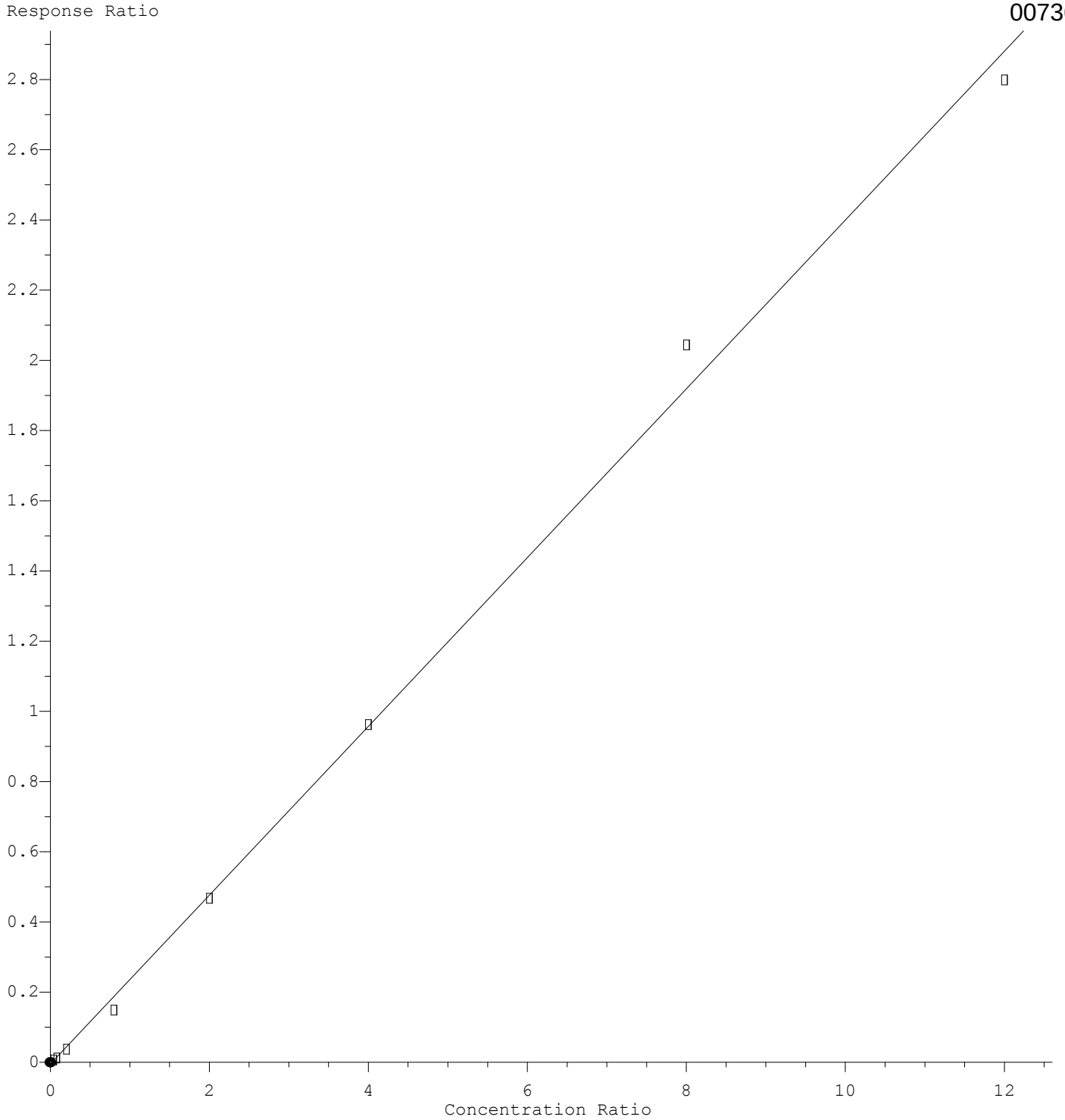

Response = 2.406e-001 * Amt - 5.686e-003
Coef of Det (r^2) = 0.996839 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Mon May 19 11:12:15 2014

Bromomethane

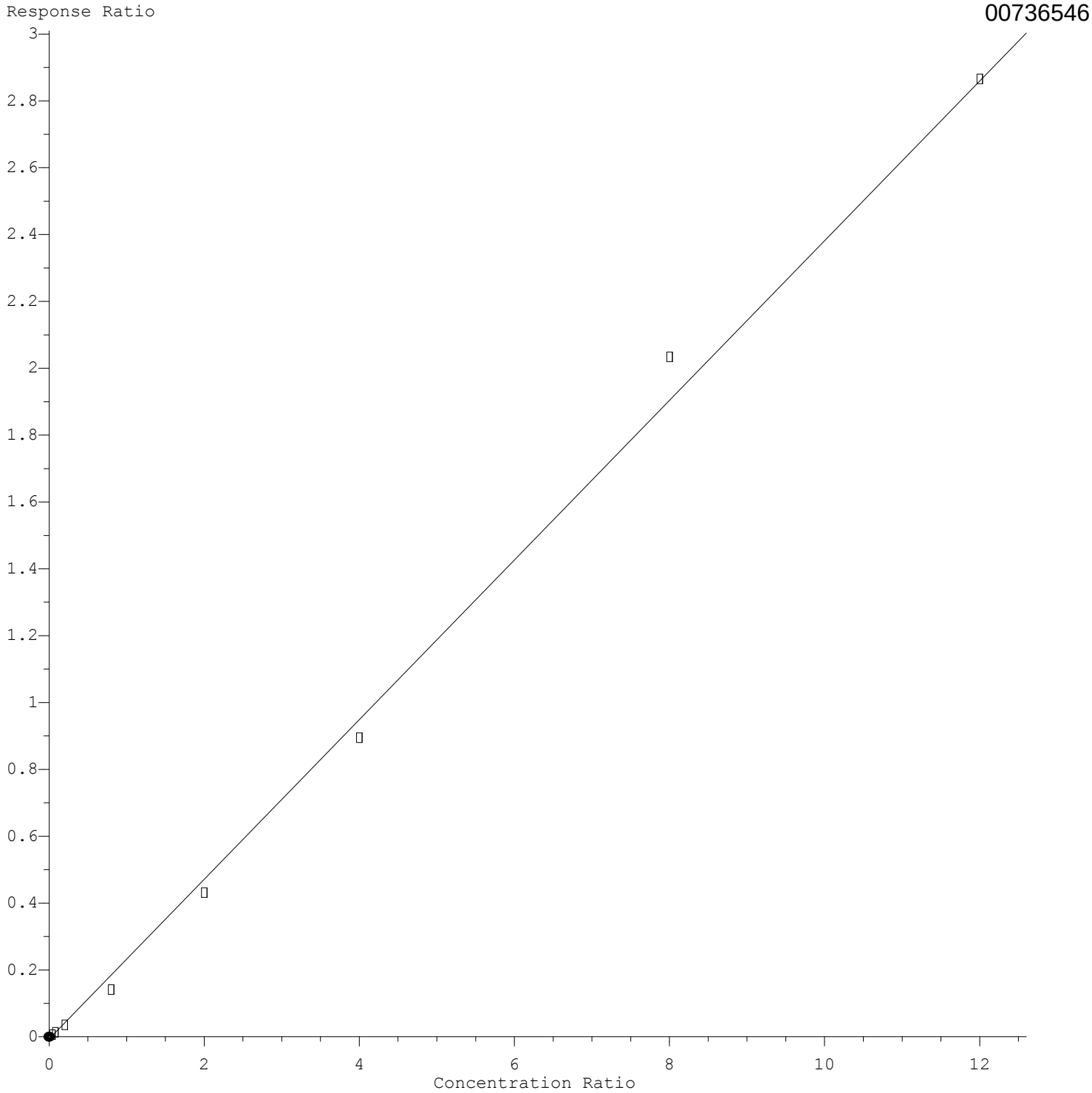

Response = 2.388e-001 * Amt - 6.609e-003
Coef of Det (r^2) = 0.995621 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Mon May 19 11:12:15 2014

1,1-Dichloroethene

00736547

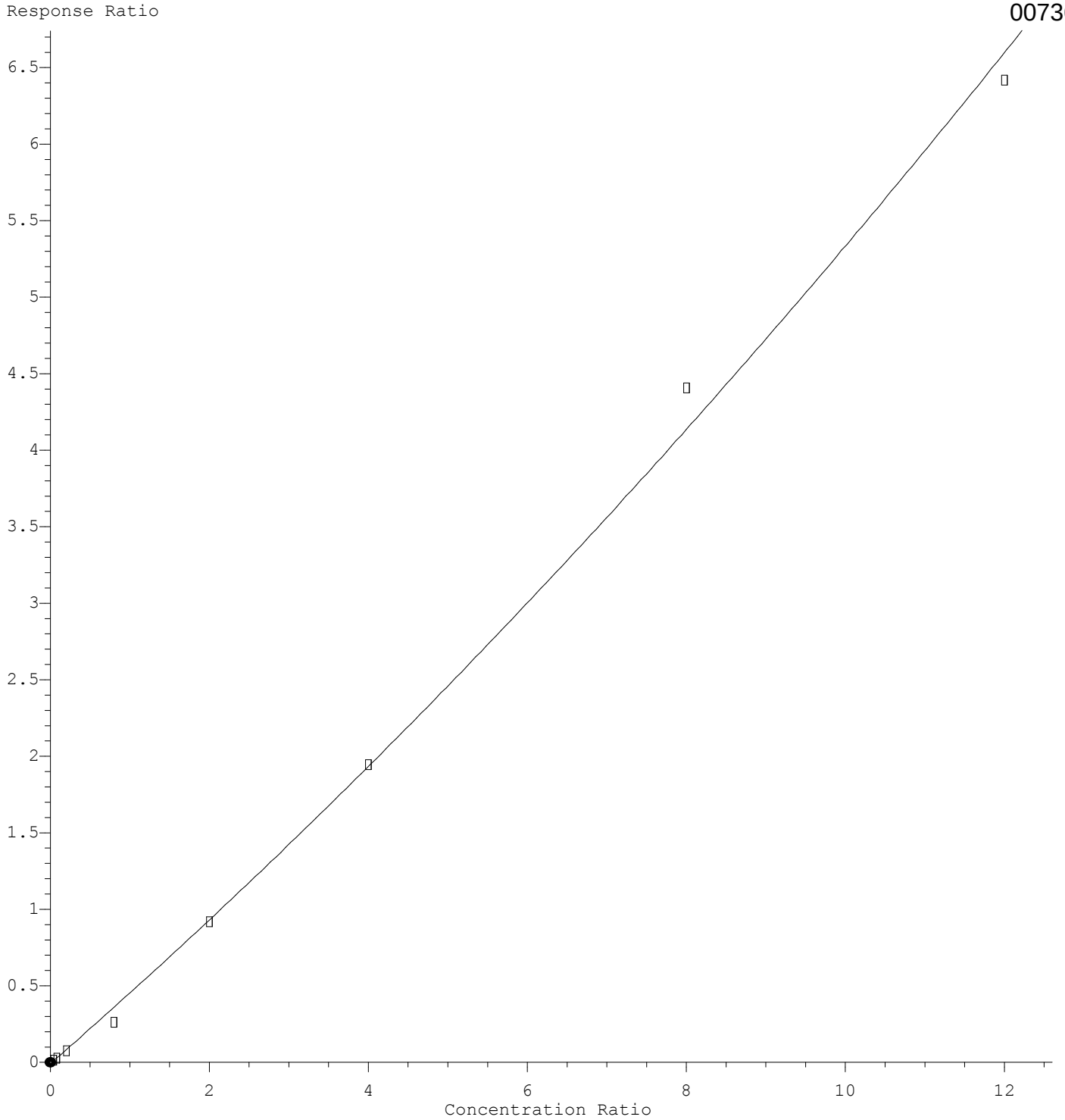

R = 8.138e-003 A*A + 4.528e-001 A - 9.181e-003
Coef of Det (r^2) = 0.996535 Curve Fit: Quadratic w(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Mon May 19 11:12:15 2014

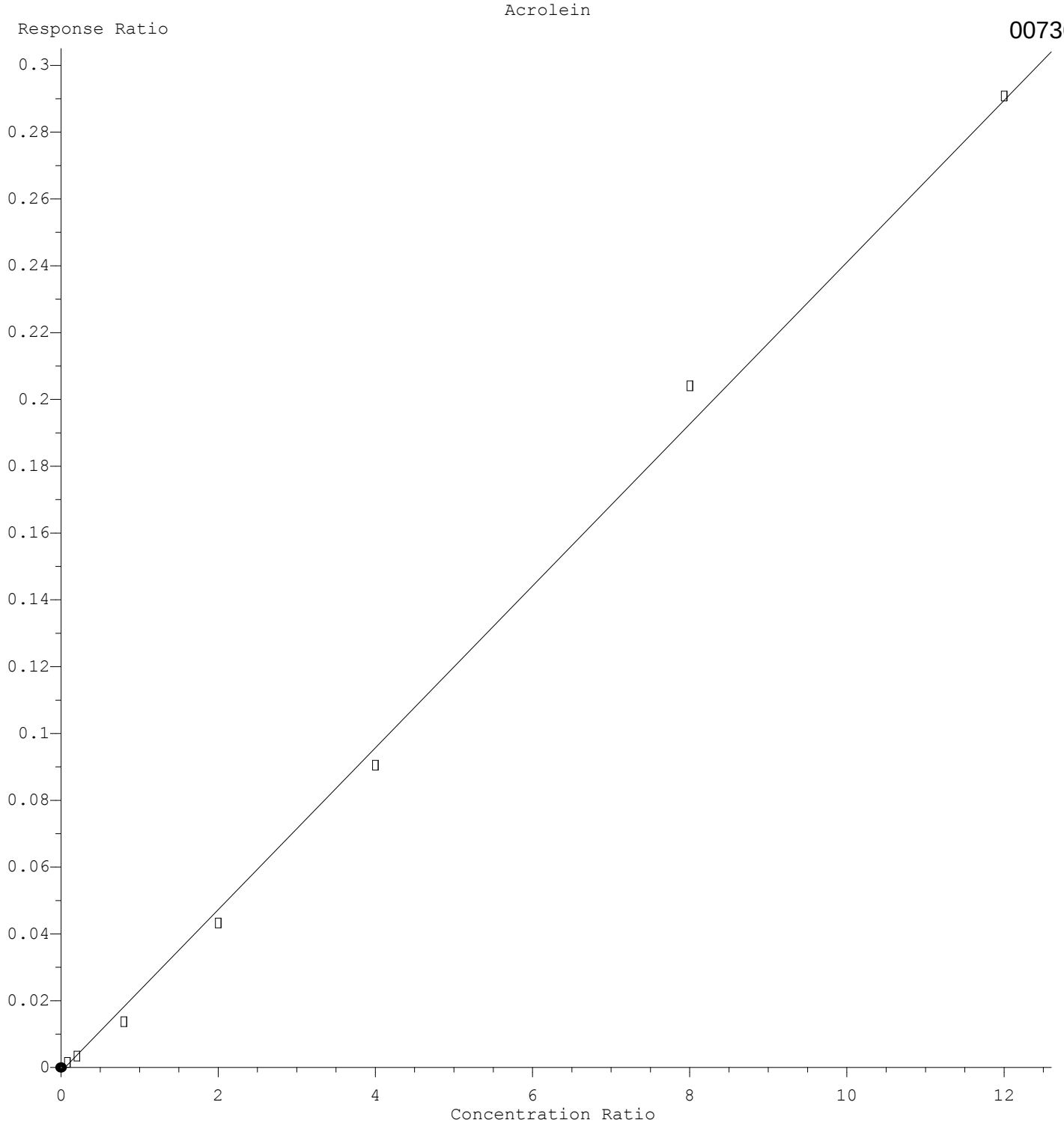

Response = 2.419e-002 * Amt - 1.090e-003
Coef of Det (r^2) = 0.995521 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Mon May 19 11:12:15 2014

Acrylonitrile

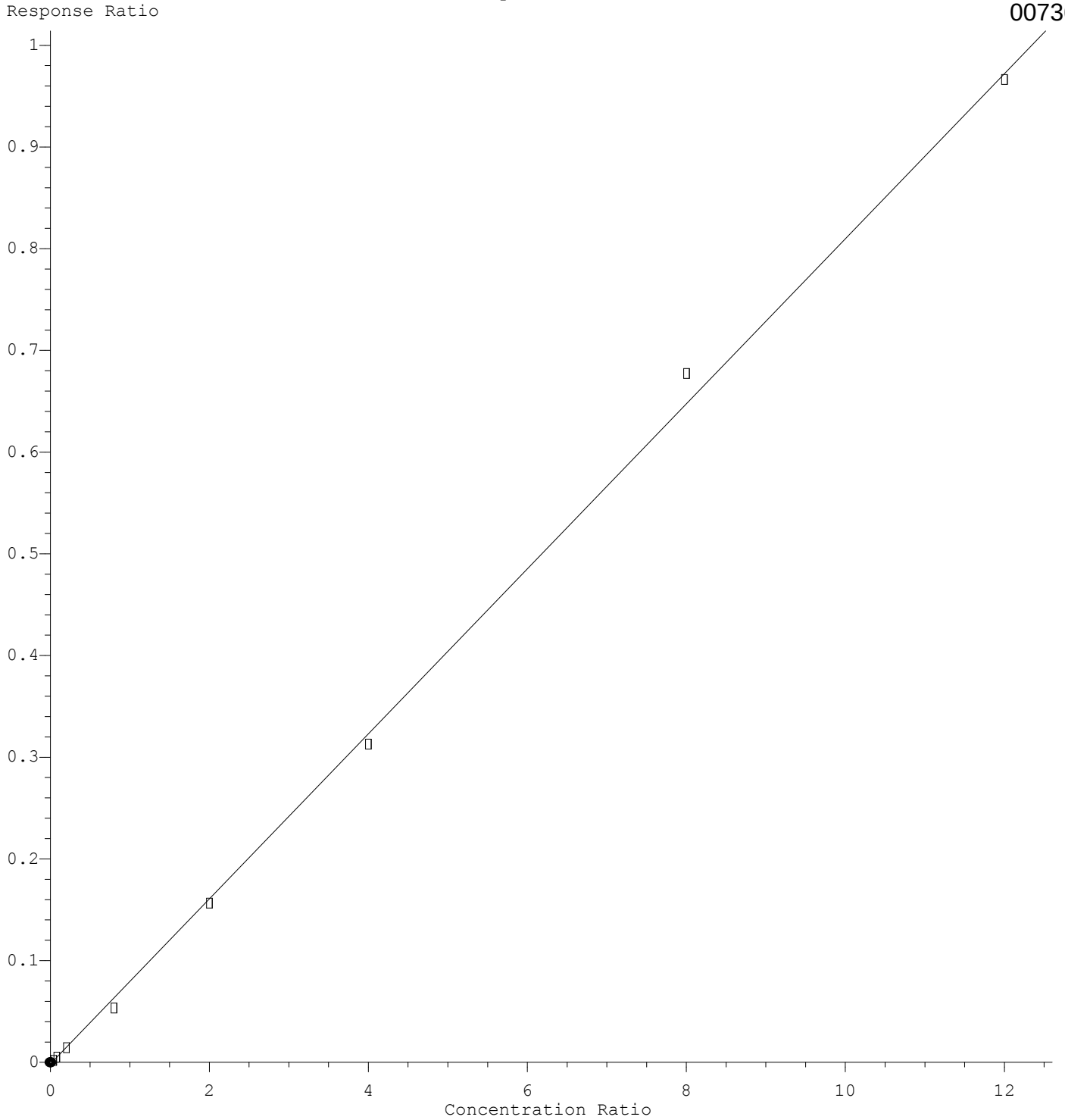

Response = 8.120e-002 * Amt - 1.732e-003
Coef of Det (r^2) = 0.998379 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Mon May 19 11:12:15 2014

1,4-Dioxane

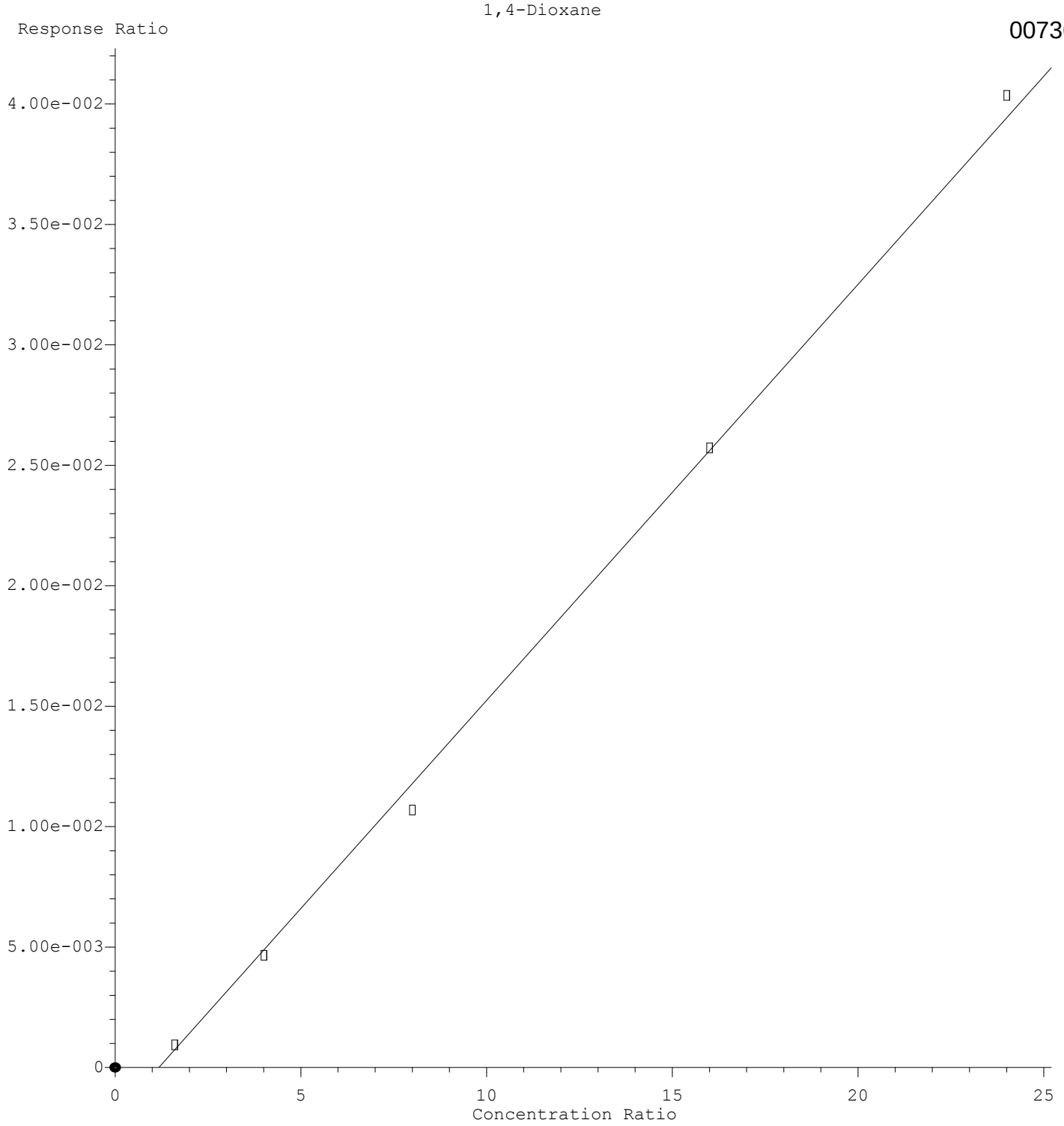

Response = 1.727e-003 * Amt - 2.041e-003
Coef of Det (r^2) = 0.997529 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Mon May 19 11:12:15 2014

Bromoform

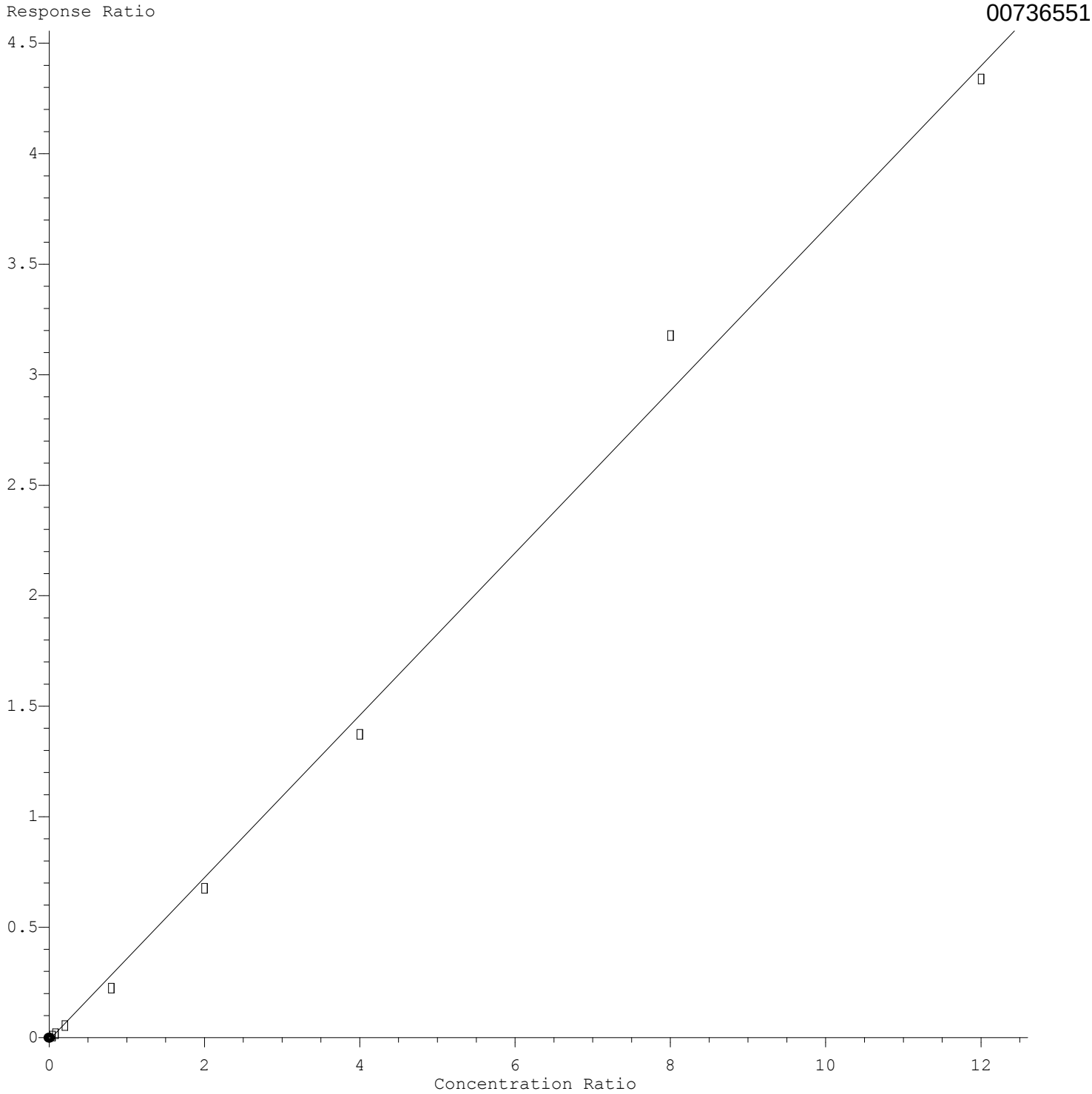

Response = 3.674e-001 * Amt - 1.157e-002
Coef of Det (r^2) = 0.995394 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Mon May 19 11:12:15 2014

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005089.D
Acq On : 18 May 2014 23:15
Operator : FJB/MDA
Sample : WG476501-12 50ug/L ICV 8260
Misc : 1,1 STD64452
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 19 12:12:50 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	4.924	96	291963	25.00000 ug/L	-0.0111
43) Chlorobenzene-d5	7.833	117	207913	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.187	152	124220	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	3.930	111	77781	23.5969 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.388%		
32) 1,2-Dichloroethane-d4	4.585	65	93899	21.3831 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.532%		
44) Toluene-d8	6.532	98	295088	23.5696 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.278%		
63) p-Bromofluorobenzene	8.605	95	122601	23.2275 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.910%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.978	85	188031	67.5216 ug/L	100
3) Chloromethane	1.084	50	180674	61.2886 ug/L	99
4) Vinyl Chloride	1.126	62	222875	50.9325 ug/L	100
5) 1,3-Butadiene	1.137	54	179469	49.1819 ug/L	100
6) Bromomethane	1.306	94	138464	50.3390 ug/L	99
7) Chloroethane	1.359	64	153433	43.1164 ug/L	92
8) Trichlorofluoromethane	1.433	101	224676	33.4064 ug/L	97
9) Diethyl ether	1.645	59	770301	280.7404 ug/L	98
10) 1,1-Dichloroethene	1.750	61	261361	48.2555 ug/L	99
11) Carbon Disulfide	1.761	76	341531	40.4682 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.772	101	145455	56.8931 ug/L	97
13) Acrolein	1.983	56	949	4.4863 ug/L	89
14) Methylene Chloride	2.152	84	165521	50.8428 ug/L	96
15) Acetone	2.205	43	31705	55.7408 ug/L	99
16) trans-1,2-Dichloroethene	2.269	96	162554	53.0030 ug/L	97
17) Methyl Tert Butyl Ether	2.364	73	464721	54.1190 ug/L	98
18) 1,1-Dichloroethane	2.787	63	319167	49.0535 ug/L	100
19) Acrylonitrile	2.851	53	31976	34.2536 ug/L	99
20) Vinyl Acetate	3.062	86	28948	77.4316 ug/L	97
21) cis-1,2-Dichloroethene	3.348	96	180098	49.5170 ug/L	96
22) 2,2-Dichloropropane	3.464	77	240018	45.3045 ug/L	97
23) Cyclohexane	3.549	56	311271	51.4146 ug/L #	78
24) Bromochloromethane	3.570	130	95148	50.7251 ug/L	99
25) Chloroform	3.697	83	306320	48.8939 ug/L	99
26) Carbon Tetrachloride	3.824	117	236412	51.3527 ug/L	99
28) 1,1,1-Trichloroethane	3.919	97	274021	49.5399 ug/L	99
29) 1,1-Dichloropropene	4.099	75	228711	49.4066 ug/L	97
30) 2-Butanone	4.109	43	49975	51.4096 ug/L	99
31) Benzene	4.416	78	678172	48.4860 ug/L	99
33) 1,2-Dichloroethane	4.670	62	250359	48.6919 ug/L	100
34) Trichloroethene	5.114	130	155902	49.0346 ug/L	95
35) Dibromomethane	5.548	93	97655	48.5002 ug/L	98
36) 1,2-Dichloropropane	5.654	63	184630	47.7732 ug/L	100
37) Bromodichloromethane	5.749	83	241661	48.3453 ug/L	99
38) 1,4-Dioxane	5.961	88	8030	427.6275 ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.352	63	107093	126.5810 ug/L	97
40) cis-1,3-Dichloropropene	6.363	75	280883	48.9175 ug/L	100
41) 4-Methyl-2-Pentanone	6.955	58	57248	49.5756 ug/L	100
42) trans-1,3-Dichloropropene	6.976	75	233150	46.5739 ug/L	100
45) Toluene	6.574	91	739856	50.2179 ug/L	99
46) Tetrachloroethene	6.913	166	173571	49.6910 ug/L	99
47) 1,1,2-Trichloroethane	7.114	97	130552	51.7629 ug/L	99
48) Dibromochloromethane	7.251	129	157881	52.6216 ug/L	99
49) 1,3-Dichloropropane	7.336	76	238958	49.0047 ug/L	96

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005089.D
Acq On : 18 May 2014 23:15
Operator : FJB/MDA
Sample : WG476501-12 50ug/L ICV 8260
Misc : 1,1 STD64452
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 19 12:12:50 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.420	107	130573	49.3037 ug/L	100
51) 2-Hexanone	7.664	43	85312	52.2935 ug/L	100
52) Chlorobenzene	7.844	112	430295	46.2599 ug/L	97
53) 1-Chlorohexane	7.854	69	46641	51.5432 ug/L	96
54) Ethylbenzene	7.886	106	259778	48.7624 ug/L	99
55) 1,1,1,2-Tetrachloroethane	7.897	131	158069	49.9322 ug/L	99
56) m-,p-Xylene	7.981	106	645662	96.4486 ug/L	100
57) o-Xylene	8.256	106	296990	46.8943 ug/L	97
58) Styrene	8.288	104	550410	50.3057 ug/L	99
59) Bromoform	8.299	173	129895	43.3022 ug/L	99
60) Isopropylbenzene	8.447	105	788187	47.3375 ug/L	100
62) 1,3,5-Trimethylbenzene	8.796	105	744462	48.3478 ug/L	99
64) Bromobenzene	8.658	156	202739	46.8045 ug/L	97
65) n-Propylbenzene	8.679	91	962783	43.4759 ug/L	99
66) 1,1,2,2-Tetrachloroethane	8.732	83	178940	46.4463 ug/L	99
67) 2-Chlorotoluene	8.753	91	561486	39.0314 ug/L	96
68) 1,2,3-Trichloropropane	8.796	110	54673	45.5325 ug/L	99
69) 1,2,4-Trimethylbenzene	8.997	105	731731	47.9601 ug/L	99
70) 4-Chlorotoluene	8.849	91	598349	42.3899 ug/L	99
71) tert-Butylbenzene	8.954	134	133596	44.5043 ug/L	98
72) sec-Butylbenzene	9.050	105	855742	44.7992 ug/L	99
73) p-Isopropyltoluene	9.124	119	697238	45.8503 ug/L	100
74) 1,3-Dichlorobenzene	9.155	146	376018	44.6552 ug/L	98
75) 1,4-Dichlorobenzene	9.198	146	417905	47.8416 ug/L	99
76) n-Butylbenzene	9.325	91	788933	50.1862 ug/L	100
77) 1,2-Dichlorobenzene	9.399	146	351039	44.3493 ug/L	99
78) 1,2-Dibromo-3-Chloropr...	9.769	75	32325	47.8825 ug/L	99
79) Hexachlorobutadiene	10.076	225	147693	47.8123 ug/L	99
80) 1,2,4-Trichlorobenzene	10.086	180	294218	46.4746 ug/L	99
81) Naphthalene	10.234	128	491445	47.1570 ug/L	100
82) 1,2,3-Trichlorobenzene	10.319	180	258960	46.0334 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005089.D
Acq On : 18 May 2014 23:15
Operator : FJB/MDA
Sample : WG476501-12 50ug/L ICV 8260
Misc : 1,1 STD64452
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 19 12:12:50 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

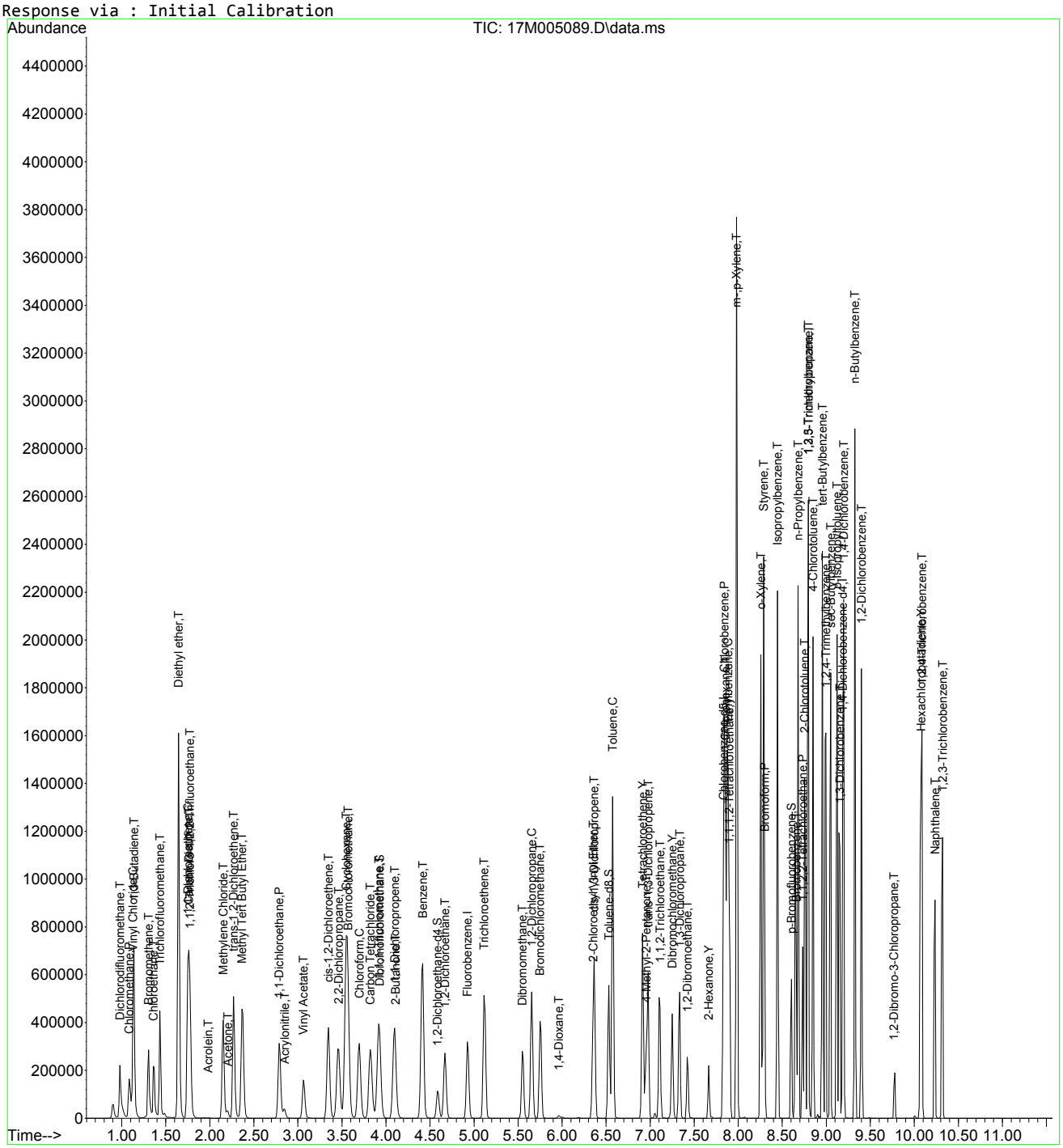

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005089.D
Acq On : 18 May 2014 23:15
Operator : FJB/MDA
Sample : WG476501-12 50ug/L ICV 8260
Misc : 1,1 STD64452
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 19 12:12:50 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	116	-0.011
2	T	Dichlorodifluoromethane	50.000	67.522	-35.0#	159	0.000
3	P	Chloromethane	50.000	61.289	-22.6	130	0.000
4	C	Vinyl Chloride	50.000	50.933	-1.9#	115	0.000
5	T	1,3-Butadiene	50.000	49.182	1.6	115	0.000
6	T	Bromomethane	50.000	50.339	-0.7	127	0.000
7	T	Chloroethane	50.000	43.116	13.8	80	-0.011
8	T	Trichlorofluoromethane	50.000	33.406	33.2#	75	-0.021
9	T	Diethyl ether	50.000	280.740	-461.5#	610	0.011
10	C	1,1-Dichloroethene	50.000	48.256	3.5#	113	-0.011
11	T	Carbon Disulfide	50.000	40.468	19.1	90	-0.011
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	56.893	-13.8	130	-0.010
13	T	Acrolein	50.000	4.486	91.0#	9	0.000
14	T	Methylene Chloride	50.000	50.843	-1.7	115	0.000
15	T	Acetone	50.000	55.741	-11.5	127	0.010
16	T	trans-1,2-Dichloroethene	50.000	53.003	-6.0	117	-0.010
17	T	Methyl Tert Butyl Ether	50.000	54.119	-8.2	117	0.000
18	P	1,1-Dichloroethane	50.000	49.053	1.9	107	-0.011
19	T	Acrylonitrile	50.000	34.254	31.5#	81	0.011
20	T	Vinyl Acetate	50.000	77.432	-54.9#	163	0.000
21	T	cis-1,2-Dichloroethene	50.000	49.517	1.0	112	0.000
22	T	2,2-Dichloropropane	50.000	45.304	9.4	100	0.000
23	T	Cyclohexane	50.000	51.415	-2.8	114	-0.010
24	T	Bromochloromethane	50.000	50.725	-1.5	109	-0.011
25	C	Chloroform	50.000	48.894	2.2#	108	0.000
26	T	Carbon Tetrachloride	50.000	51.353	-2.7	108	-0.010
27	S	Dibromofluoromethane	25.000	23.597	5.6	109	0.000
28	T	1,1,1-Trichloroethane	50.000	49.540	0.9	107	0.000
29	T	1,1-Dichloropropene	50.000	49.407	1.2	106	0.000
30	T	2-Butanone	50.000	51.410	-2.8	111	0.000
31	T	Benzene	50.000	48.486	3.0	109	0.000
32	S	1,2-Dichloroethane-d4	25.000	21.383	14.5	101	0.000
33	T	1,2-Dichloroethane	50.000	48.692	2.6	104	0.000
34	T	Trichloroethene	50.000	49.035	1.9	110	-0.011
35	T	Dibromomethane	50.000	48.500	3.0	105	0.000
36	C	1,2-Dichloropropane	50.000	47.773	4.5#	105	0.000
37	T	Bromodichloromethane	50.000	48.345	3.3	105	0.000
38	T	1,4-Dioxane	100.000	427.628	-327.6#	682	0.000
39	T	2-Chloroethyl Vinyl Ether	50.000	126.581	-153.2#	271	0.000
40	T	cis-1,3-Dichloropropene	50.000	48.918	2.2	108	0.000
41	T	4-Methyl-2-Pentanone	50.000	49.576	0.8	108	0.000
42	T	trans-1,3-Dichloropropene	50.000	46.574	6.9	99	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	116	0.000
44	S	Toluene-d8	25.000	23.570	5.7	111	0.000
45	C	Toluene	50.000	50.218	-0.4#	108	0.000
46	Y	Tetrachloroethene	50.000	49.691	0.6	108	0.000
47	T	1,1,2-Trichloroethane	50.000	51.763	-3.5	105	0.011
48	Y	Dibromochloromethane	50.000	52.622	-5.2	106	0.000
49	T	1,3-Dichloropropane	50.000	49.005	2.0	107	0.000
50	T	1,2-Dibromoethane	50.000	49.304	1.4	104	0.000
51	Y	2-Hexanone	50.000	52.293	-4.6	106	0.000
52	P	Chlorobenzene	50.000	46.260	7.5	103	0.000
53	T	1-Chlorohexane	50.000	51.543	-3.1	108	0.000
54	C	Ethylbenzene	50.000	48.762	2.5#	106	0.000
55	T	1,1,1,2-Tetrachloroethane	50.000	49.932	0.1	105	0.000

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005089.D
Acq On : 18 May 2014 23:15
Operator : FJB/MDA
Sample : WG476501-12 50ug/L ICV 8260
Misc : 1,1 STD64452
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 19 12:12:50 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	100.000	96.449	3.6	104	0.000
57	T	o-Xylene	50.000	46.894	6.2	99	0.000
58	T	Styrene	50.000	50.306	-0.6	107	0.000
59	P	Bromoform	50.000	43.302	13.4	108	0.000
60	T	Isopropylbenzene	50.000	47.338	5.3	100	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	124	0.000
62	T	1,3,5-Trimethylbenzene	50.000	48.348	3.3	110	0.000
63	S	p-Bromofluorobenzene	25.000	23.228	7.1	112	0.000
64	T	Bromobenzene	50.000	46.804	6.4	110	0.000
65	T	n-Propylbenzene	50.000	43.476	13.0	99	0.000
66	P	1,1,2,2-Tetrachloroethane	50.000	46.446	7.1	107	0.000
67	T	2-Chlorotoluene	50.000	39.031	21.9	96	0.000
68	T	1,2,3-Trichloropropane	50.000	45.533	8.9	105	0.000
69	T	1,2,4-Trimethylbenzene	50.000	47.960	4.1	110	0.000
70	T	4-Chlorotoluene	50.000	42.390	15.2	100	0.000
71	T	tert-Butylbenzene	50.000	44.504	11.0	104	0.000
72	T	sec-Butylbenzene	50.000	44.799	10.4	102	0.000
73	T	p-Isopropyltoluene	50.000	45.850	8.3	104	0.000
74	T	1,3-Dichlorobenzene	50.000	44.655	10.7	103	0.000
75	T	1,4-Dichlorobenzene	50.000	47.842	4.3	110	0.000
76	T	n-Butylbenzene	50.000	50.186	-0.4	109	0.000
77	T	1,2-Dichlorobenzene	50.000	44.349	11.3	102	0.000
78	T	1,2-Dibromo-3-Chloropropane	50.000	47.882	4.2	106	0.000
79	Y	Hexachlorobutadiene	50.000	47.812	4.4	114	0.000
80	T	1,2,4-Trichlorobenzene	50.000	46.475	7.0	114	0.000
81	T	Naphthalene	50.000	47.157	5.7	111	0.000
82	T	1,2,3-Trichlorobenzene	50.000	46.033	7.9	113	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957895.D Vial: 3
Acq On : 19 Aug 2013 16:23 Operator: adc
Sample : WG441888-01 5.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:37 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	643130	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	439679	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	231000	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.94	41	2569	4.6165 ug/L #	16
3) 3-Chloro-1-propene	7.32	41	43441	4.7909 ug/L	90
4) 2-Chloro-1,3-butadiene	8.71	53	43442	4.4636 ug/L	98
5) Ethyl Acetate	9.34	43	19334	4.4239 ug/L	96
6) Methacrylonitrile	9.50	67	9285	4.2205 ug/L	88
7) Isobutyl Alcohol	9.51	43	1864	4.9961 ug/L #	84
9) Methyl methacrylate	11.67	41	21094	4.5700 ug/L	95
10) 2-Nitropropane	12.01	43	6118	4.1497 ug/L	83
12) Cyclohexanone	16.11	55	3867	6.1515 ug/L	83

(#) = qualifier out of range (m) = manual integration
9M957895.D A9FOOWT.M Tue Aug 20 15:11:38 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957895.D Vial: 3
Acq On : 19 Aug 2013 16:23 Operator: adc
Sample : WG441888-01 5.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

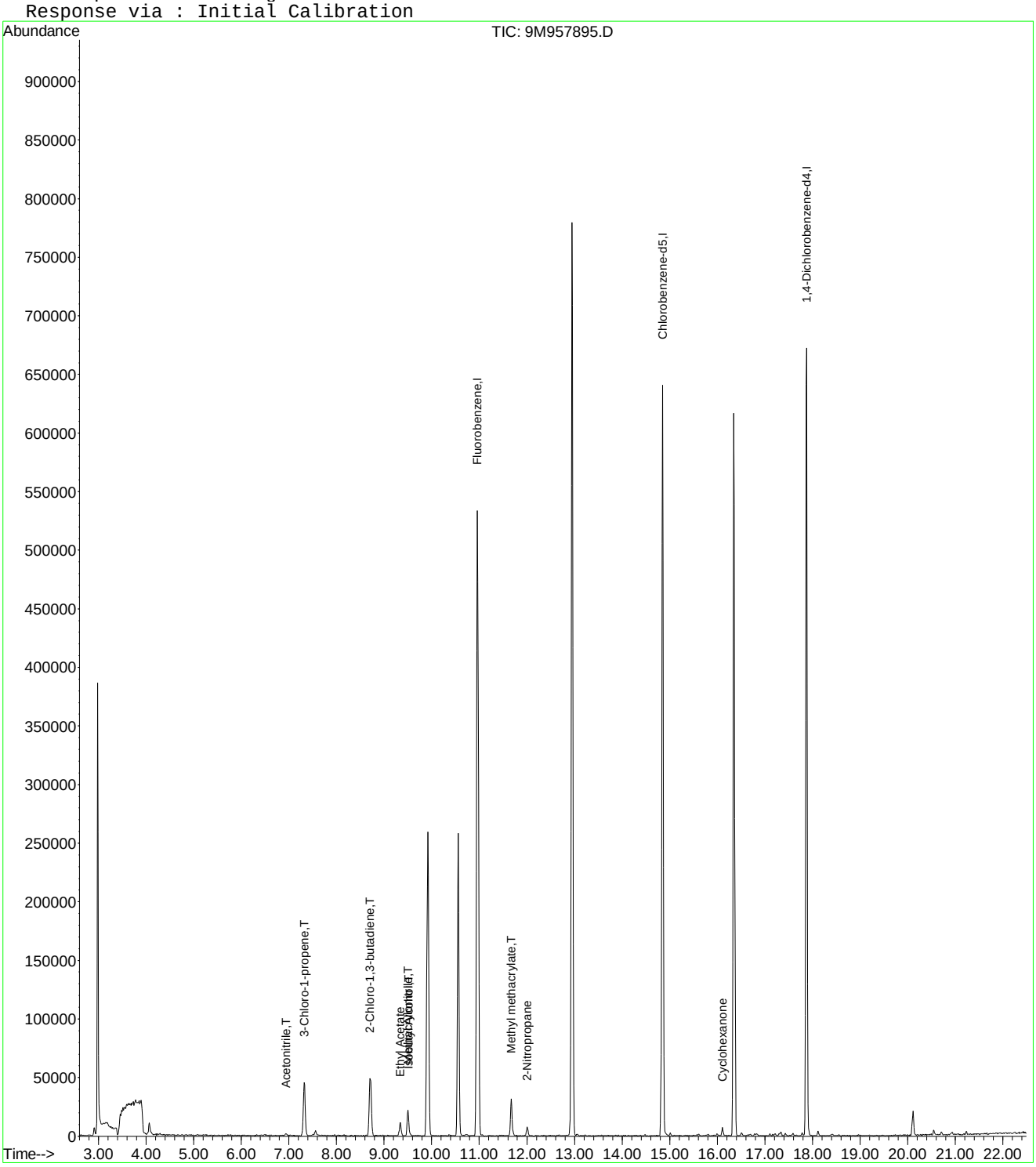

9M957895.D A9FOOWT.M Tue Aug 20 15:11:38 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957896.D Vial: 4
Acq On : 19 Aug 2013 16:53 Operator: adc
Sample : WG441888-02 20.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:39 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	597162	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	410709	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	204391	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.94	41	10346	20.0230 ug/L #	94
3) 3-Chloro-1-propene	7.32	41	165346	19.6389 ug/L	99
4) 2-Chloro-1,3-butadiene	8.71	53	173321	19.1794 ug/L	98
5) Ethyl Acetate	9.33	43	80571	19.8547 ug/L	98
6) Methacrylonitrile	9.49	67	39572	19.3720 ug/L	100
7) Isobutyl Alcohol	9.50	43	7225	20.8558 ug/L #	84
8) 1-Butanol	10.43	56	1470	17.5760 ug/L #	28
9) Methyl methacrylate	11.67	41	82730	19.3029 ug/L	99
10) 2-Nitropropane	12.01	43	24248	17.7129 ug/L	96
12) Cyclohexanone	16.11	55	10457	17.8080 ug/L	93

(#) = qualifier out of range (m) = manual integration
9M957896.D A9FOOWT.M Tue Aug 20 15:11:40 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957896.D Vial: 4
Acq On : 19 Aug 2013 16:53 Operator: adc
Sample : WG441888-02 20.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

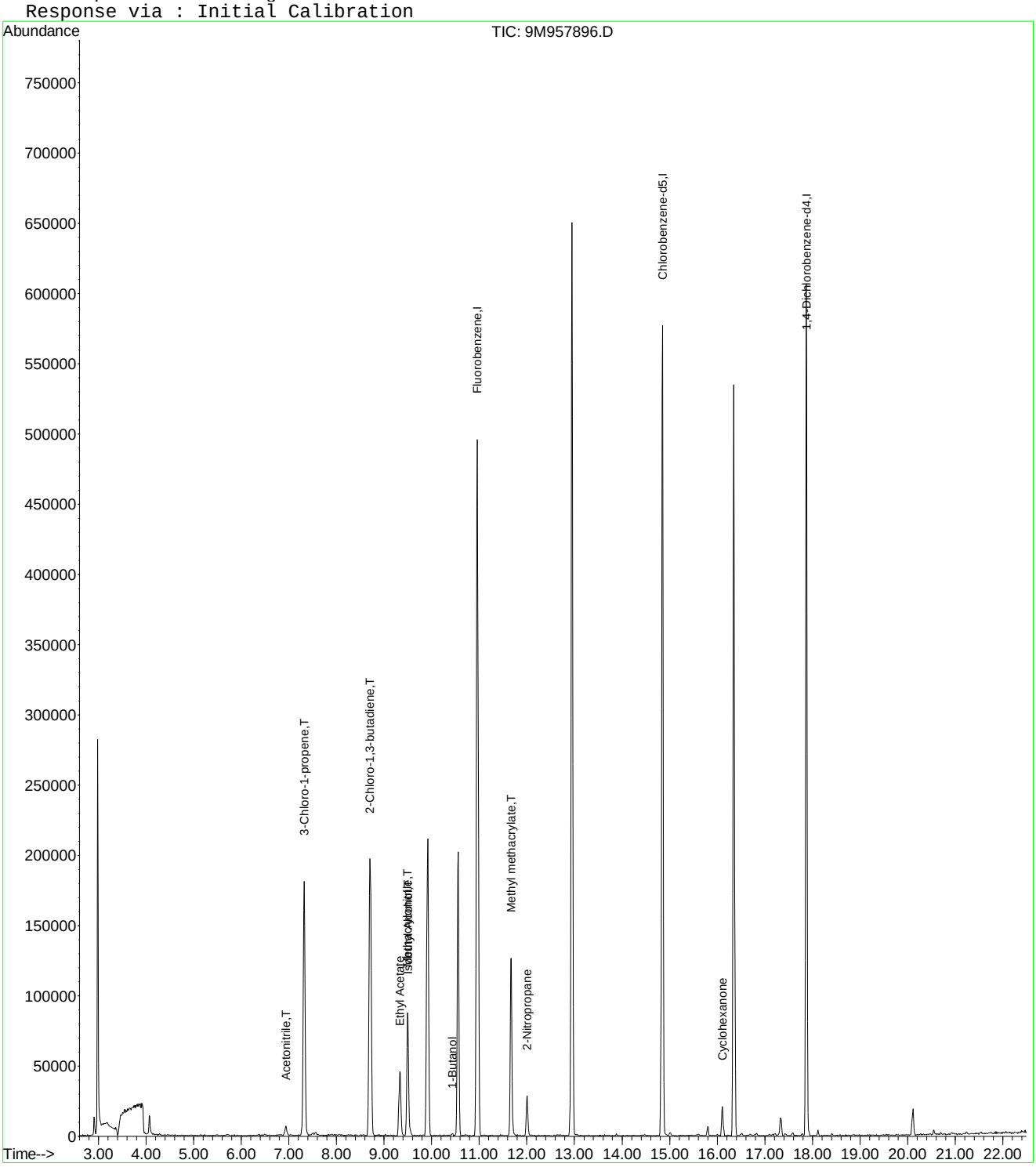

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957897.D Vial: 5
Acq On : 19 Aug 2013 17:22 Operator: adc
Sample : WG441888-03 50.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:40 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	543956	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	378286	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.87	152	186935	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	24663	52.3999 ug/L #	95
3) 3-Chloro-1-propene	7.32	41	408290	53.2380 ug/L	99
4) 2-Chloro-1,3-butadiene	8.70	53	433367	52.6464 ug/L	100
5) Ethyl Acetate	9.33	43	199641	54.0087 ug/L	99
6) Methacrylonitrile	9.50	67	98625	53.0031 ug/L	97
7) Isobutyl Alcohol	9.50	43	15873	50.3010 ug/L	98
8) 1-Butanol	10.42	56	3593	47.1615 ug/L	91
9) Methyl methacrylate	11.67	41	207430	53.1325 ug/L	99
10) 2-Nitropropane	12.00	43	62334	49.9883 ug/L	97
12) Cyclohexanone	16.11	55	27156	50.2096 ug/L	97

(#) = qualifier out of range (m) = manual integration
9M957897.D A9FOOWT.M Tue Aug 20 15:11:41 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957897.D Vial: 5
Acq On : 19 Aug 2013 17:22 Operator: adc
Sample : WG441888-03 50.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

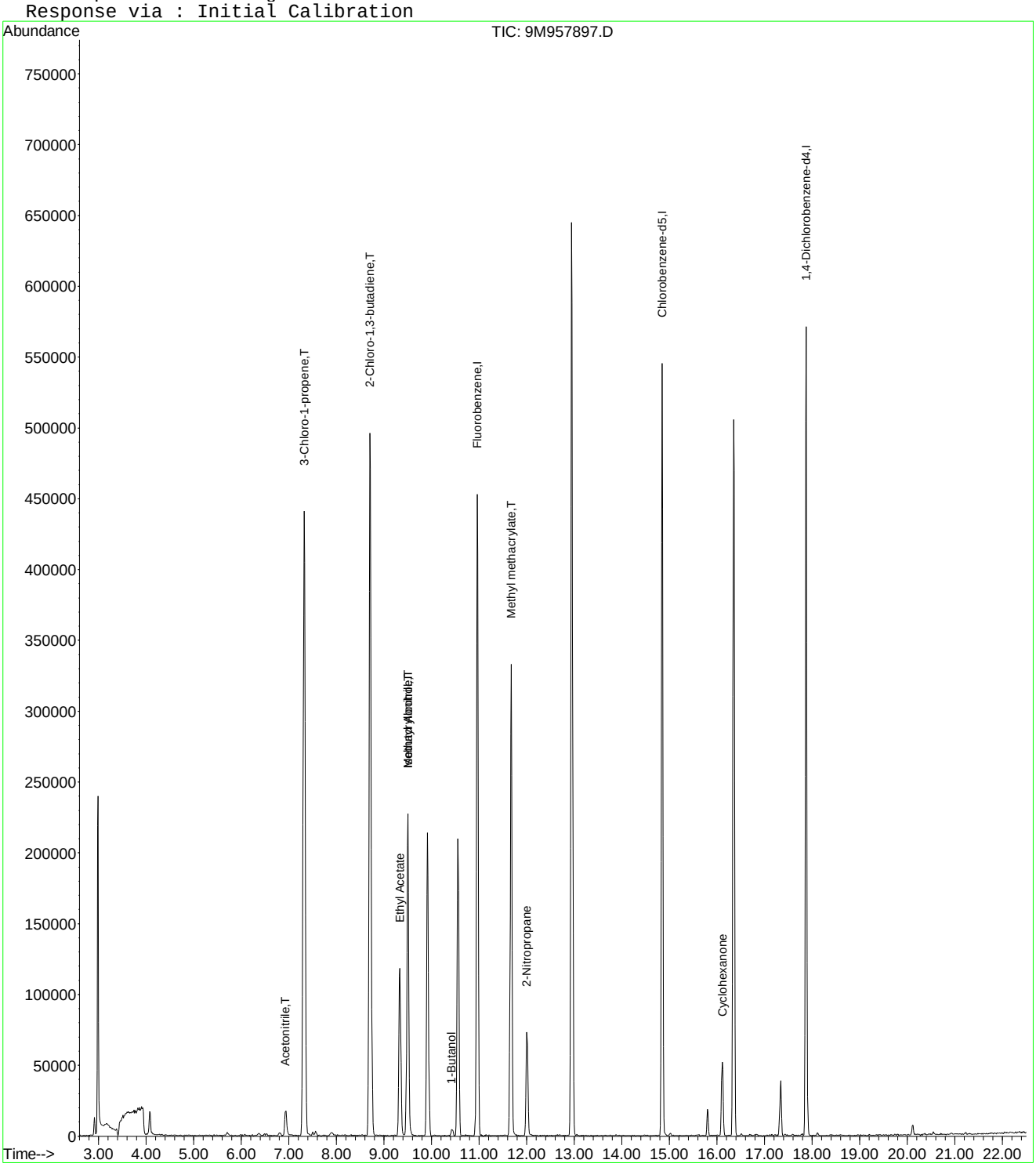

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957898.D Vial: 6
Acq On : 19 Aug 2013 17:51 Operator: adc
Sample : WG441888-04 100.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:42 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	576048	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	389894	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	192883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	49019	98.3454 ug/L #	100
3) 3-Chloro-1-propene	7.32	41	803367	98.9172 ug/L	100
4) 2-Chloro-1,3-butadiene	8.70	53	860009	98.6554 ug/L	100
5) Ethyl Acetate	9.34	43	394422	100.7581 ug/L	100
6) Methacrylonitrile	9.50	67	193914	98.4076 ug/L	100
7) Isobutyl Alcohol	9.50	43	30821	92.2294 ug/L	100
8) 1-Butanol	10.42	56	6864	85.0771 ug/L	100
9) Methyl methacrylate	11.67	41	411094	99.4339 ug/L	100
10) 2-Nitropropane	12.00	43	129933	98.3938 ug/L	100
12) Cyclohexanone	16.11	55	53010	95.0938 ug/L	100

(#) = qualifier out of range (m) = manual integration
9M957898.D A9FOOWT.M Tue Aug 20 15:11:43 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957898.D Vial: 6
Acq On : 19 Aug 2013 17:51 Operator: adc
Sample : WG441888-04 100.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

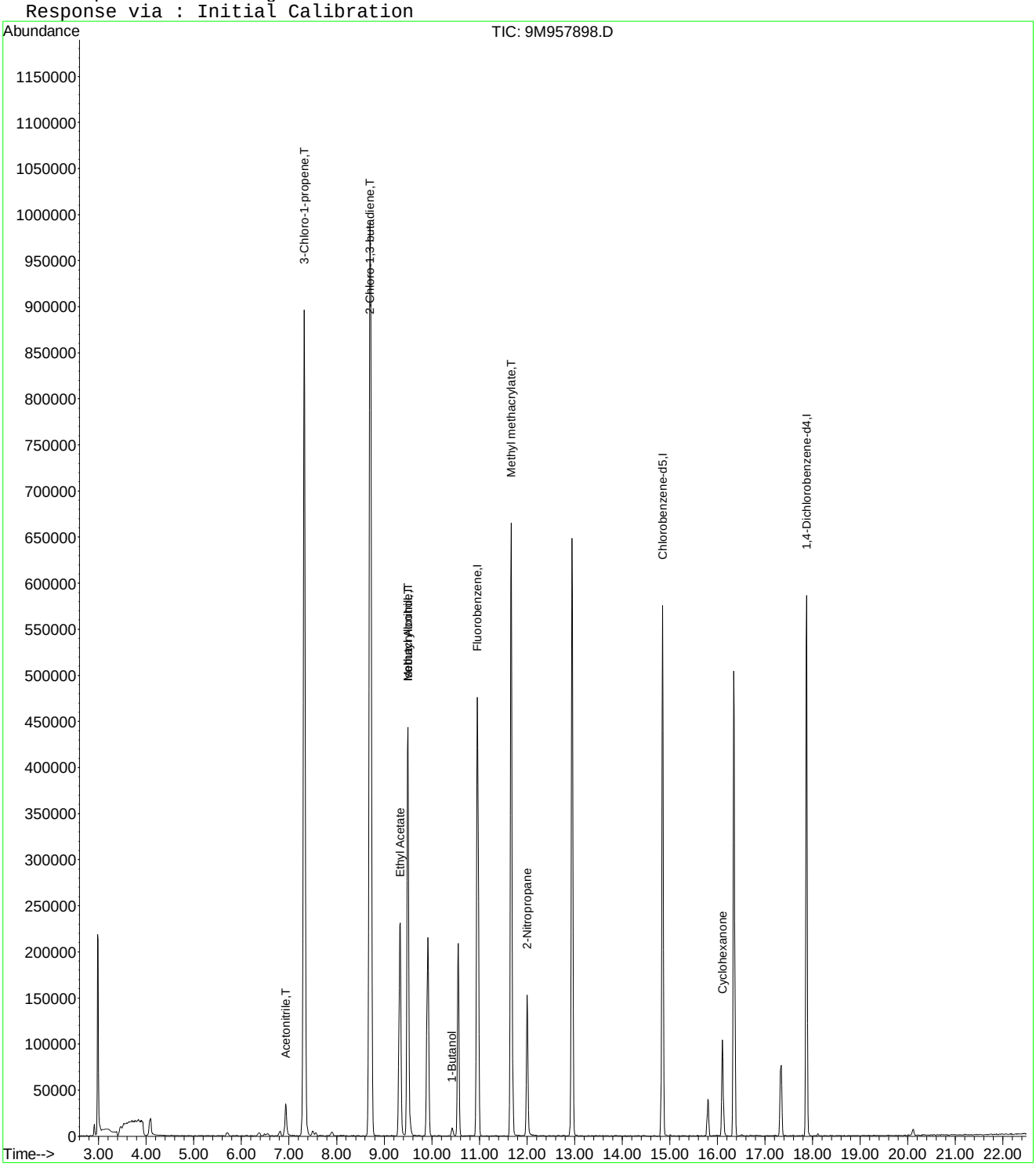

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957899.D Vial: 7
Acq On : 19 Aug 2013 18:20 Operator: adc
Sample : WG441888-05 200.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:44 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	570456	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	385619	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	194966	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	99623	201.8300 ug/L #	97
3) 3-Chloro-1-propene	7.32	41	1635978	203.4097 ug/L	100
4) 2-Chloro-1,3-butadiene	8.70	53	1777598	205.9150 ug/L	99
5) Ethyl Acetate	9.33	43	796090	205.3608 ug/L	100
6) Methacrylonitrile	9.50	67	402877	206.4564 ug/L	96
7) Isobutyl Alcohol	9.50	43	61854	186.9075 ug/L	94
8) 1-Butanol	10.43	56	17315	216.7176 ug/L	91
9) Methyl methacrylate	11.67	41	835832	204.1498 ug/L	98
10) 2-Nitropropane	12.00	43	277669	212.3304 ug/L	98
12) Cyclohexanone	16.11	55	106553	193.2629 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M957899.D A9FOOWT.M Tue Aug 20 15:11:44 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957899.D Vial: 7
Acq On : 19 Aug 2013 18:20 Operator: adc
Sample : WG441888-05 200.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

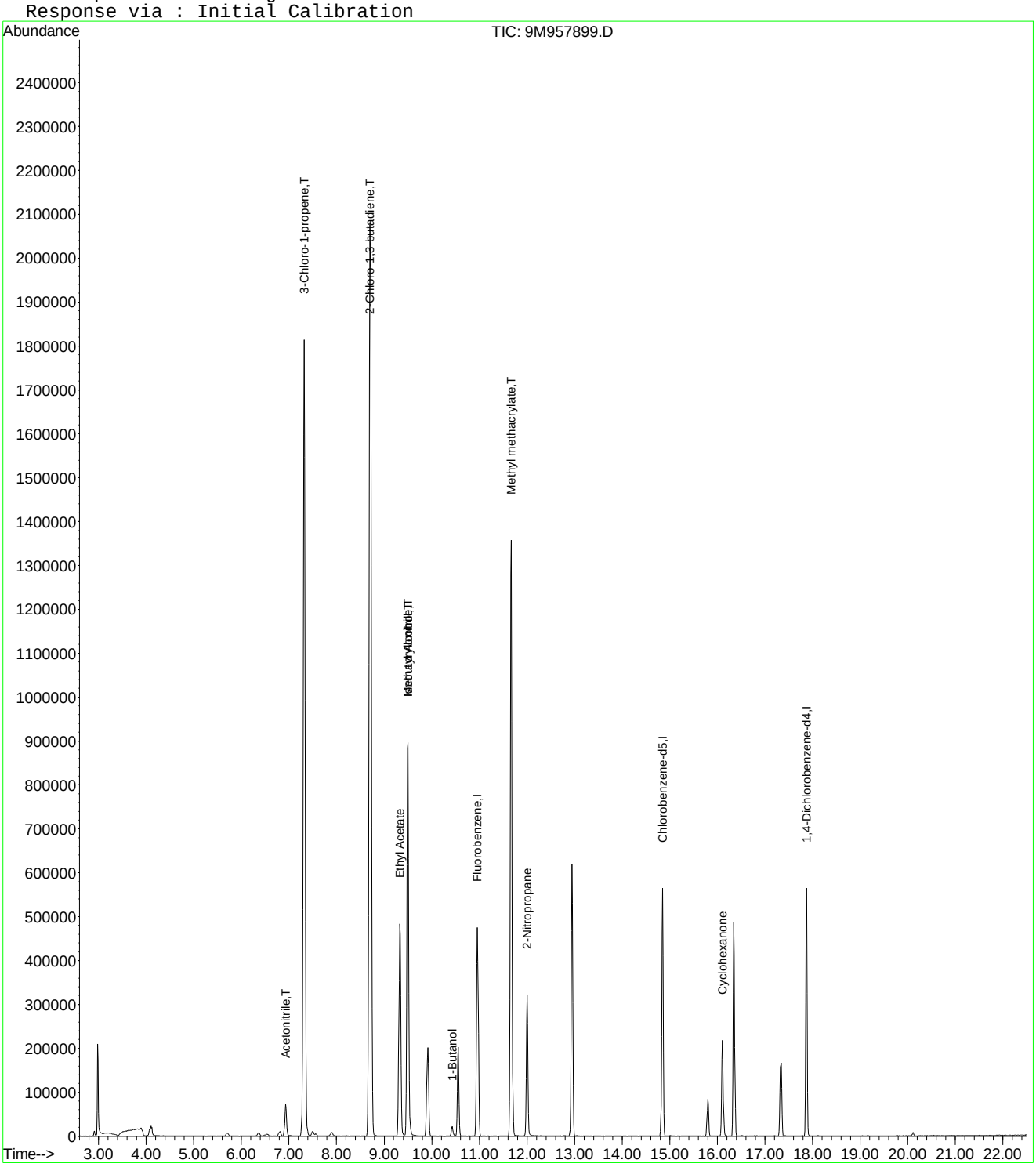

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957900.D Vial: 8
Acq On : 19 Aug 2013 18:48 Operator: adc
Sample : WG441888-06 300.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:45 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	592665	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	402629	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	202256	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	152817	297.9962 ug/L #	98
3) 3-Chloro-1-propene	7.32	41	2473810	296.0557 ug/L	99
4) 2-Chloro-1,3-butadiene	8.70	53	2716896	302.9287 ug/L	96
5) Ethyl Acetate	9.32	43	1204380	299.0417 ug/L	100
6) Methacrylonitrile	9.50	67	614447	303.0771 ug/L	97
7) Isobutyl Alcohol	9.50	43	100051	291.0002 ug/L	95
8) 1-Butanol	10.42	56	27392	329.9958 ug/L	92
9) Methyl methacrylate	11.67	41	1277690	300.3782 ug/L	98
10) 2-Nitropropane	12.00	43	426305	313.7748 ug/L	98
12) Cyclohexanone	16.11	55	164262	285.3469 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M957900.D A9FOOWT.M Tue Aug 20 15:11:46 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957900.D Vial: 8
Acq On : 19 Aug 2013 18:48 Operator: adc
Sample : WG441888-06 300.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

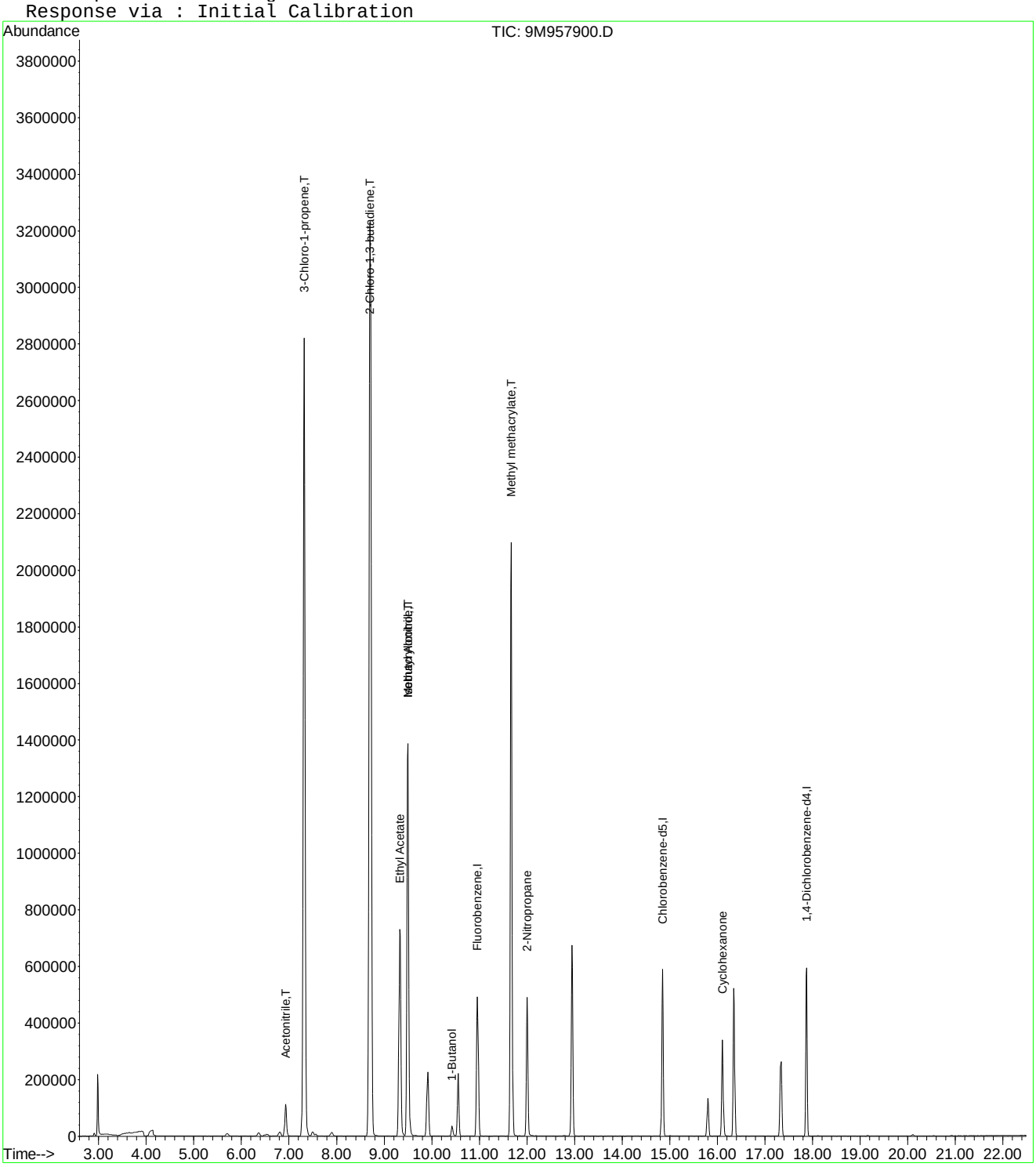

9M957900.D A9FOOWT.M Tue Aug 20 15:11:46 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957901.D Vial: 9
Acq On : 19 Aug 2013 19:17 Operator: adc
Sample : WG441888-07 400.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:47 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	594215	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	396612	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	201290	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	204659	398.0481 ug/L #	97
3) 3-Chloro-1-propene	7.32	41	3257505	388.8283 ug/L	98
4) 2-Chloro-1,3-butadiene	8.70	53	3609438	401.3956 ug/L	95
5) Ethyl Acetate	9.33	43	1573860	389.7624 ug/L	99
6) Methacrylonitrile	9.50	67	822198	404.4928 ug/L	95
7) Isobutyl Alcohol	9.50	43	139506	404.6974 ug/L	95
8) 1-Butanol	10.43	56	38071	457.4510 ug/L	87
9) Methyl methacrylate	11.67	41	1682799	394.5852 ug/L	97
10) 2-Nitropropane	12.00	43	574030	421.4033 ug/L	98
12) Cyclohexanone	16.11	55	220458	388.7775 ug/L	97

(#) = qualifier out of range (m) = manual integration
9M957901.D A9FOOWT.M Tue Aug 20 15:11:48 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957901.D Vial: 9
Acq On : 19 Aug 2013 19:17 Operator: adc
Sample : WG441888-07 400.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

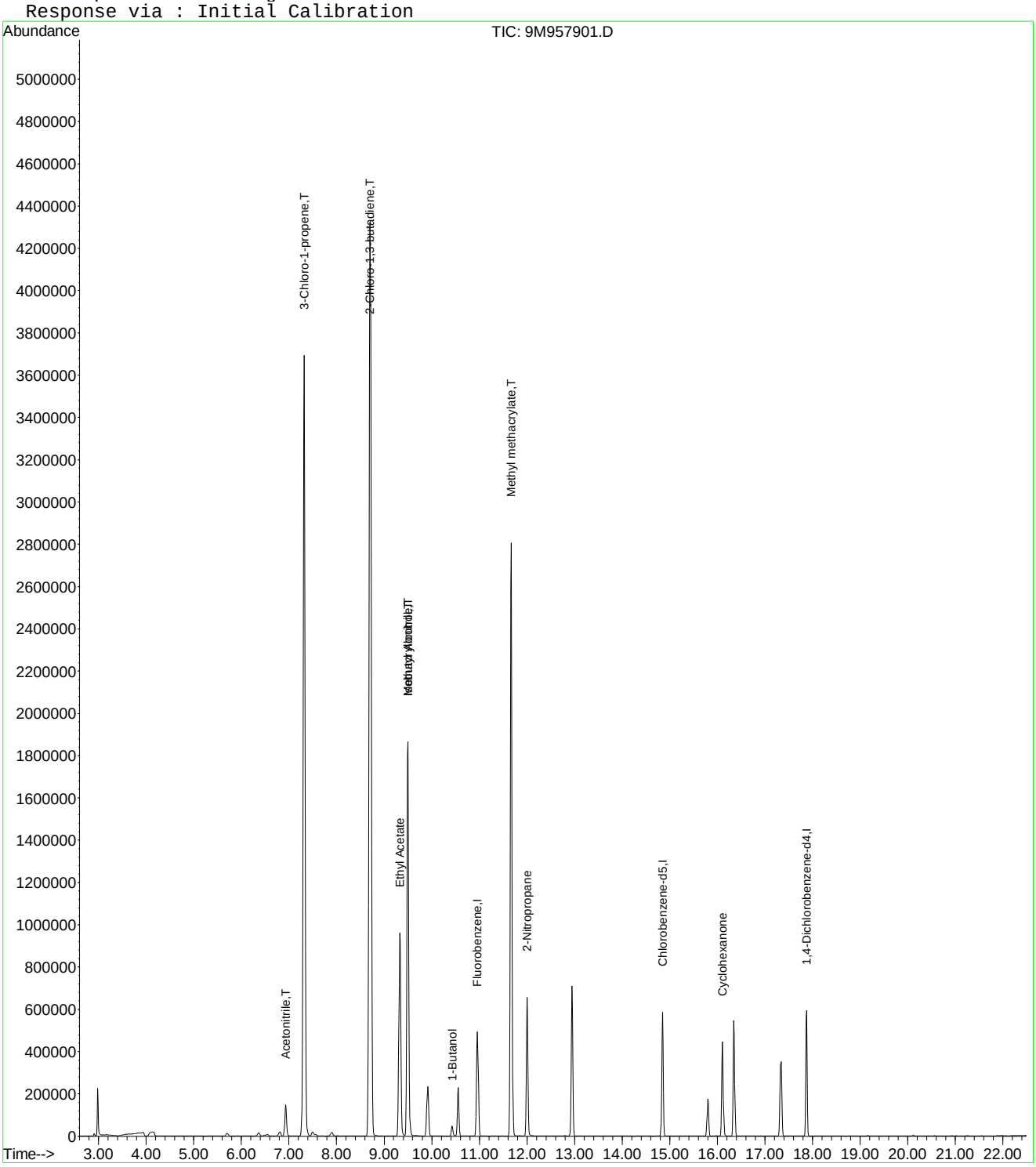

9M957901.D A9FOOWT.M Tue Aug 20 15:11:48 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957902.D Vial: 10
Acq On : 19 Aug 2013 19:46 Operator: adc
Sample : WG441888-08 500.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:48 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	558878	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	375431	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	195195	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	253035	523.2532 ug/L #	96
3) 3-Chloro-1-propene	7.32	41	4057841	514.9848 ug/L	97
4) 2-Chloro-1,3-butadiene	8.71	53	4507808	532.9974 ug/L	93
5) Ethyl Acetate	9.33	43	1968668	518.3617 ug/L	99
6) Methacrylonitrile	9.50	67	1041348	544.6993 ug/L	94
7) Isobutyl Alcohol	9.50	43	180492	556.7011 ug/L	98
8) 1-Butanol	10.42	56	50726	648.0485 ug/L	87
9) Methyl methacrylate	11.67	41	2116667	527.7007 ug/L	96
10) 2-Nitropropane	12.00	43	730036	569.8155 ug/L	96
12) Cyclohexanone	16.11	55	277715	517.3808 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M957902.D A9FOOWT.M Tue Aug 20 15:11:49 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957902.D Vial: 10
Acq On : 19 Aug 2013 19:46 Operator: adc
Sample : WG441888-08 500.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

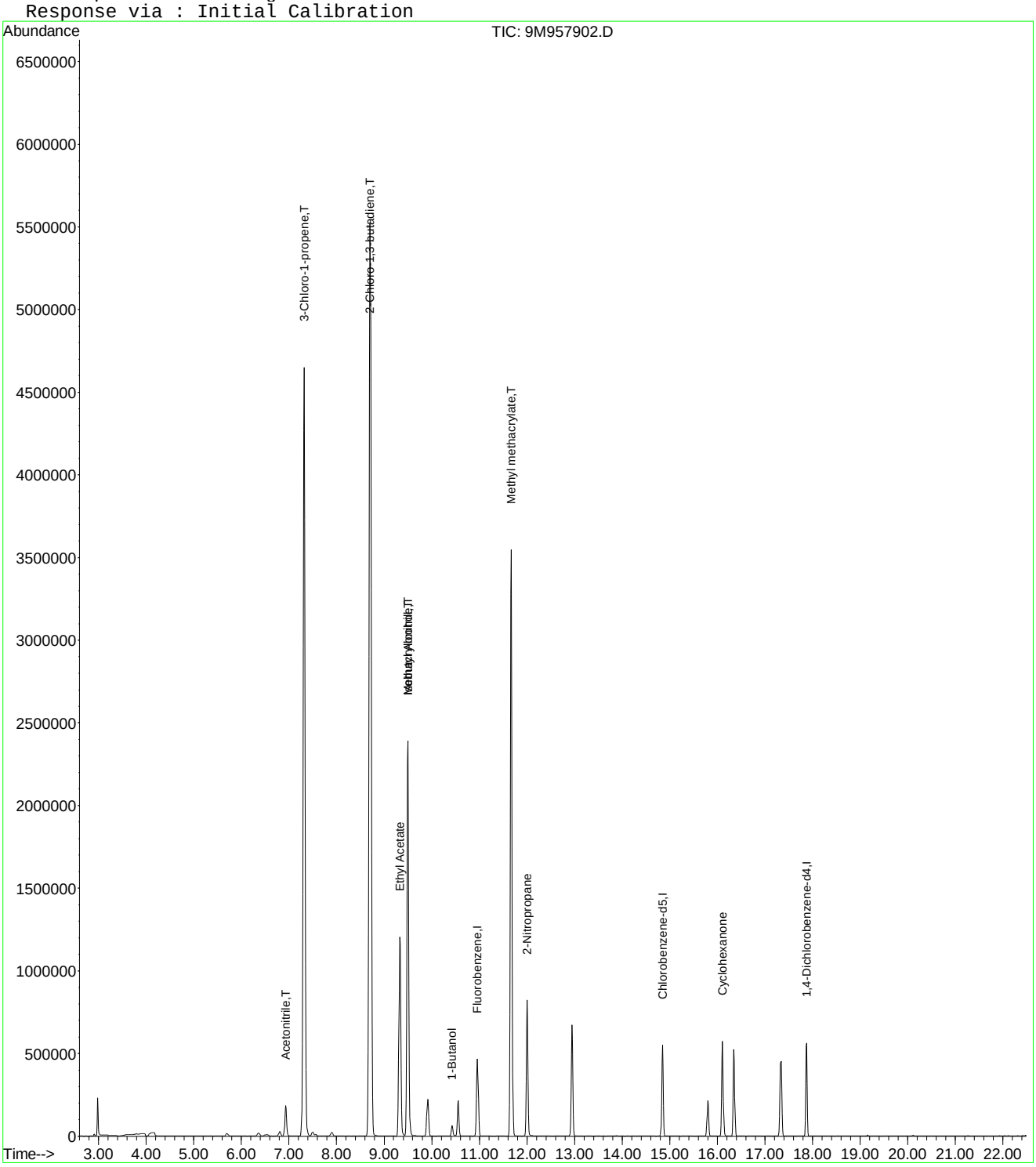

9M957902.D A9FOOWT.M Tue Aug 20 15:11:50 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957904.D Vial: 12
Acq On : 19 Aug 2013 20:45 Operator: adc
Sample : WG441888-09 100.0ug/L A9 ALT SRC 8260 Inst : HPMS9
Misc : 1,1 STD59238 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:51 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	586208	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	409219	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	211008	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	50132	98.8352 ug/L #	98
3) 3-Chloro-1-propene	7.32	41	816431	98.7834 ug/L	100
4) 2-Chloro-1,3-butadiene	8.70	53	671697	75.7179 ug/L	99
5) Ethyl Acetate	9.33	43	396368	99.5003 ug/L	99
6) Methacrylonitrile	9.50	67	193448	96.4696 ug/L	98
7) Isobutyl Alcohol	9.50	43	31033	91.2543 ug/L	97
8) 1-Butanol	10.42	56	7261	88.4379 ug/L	91
9) Methyl methacrylate	11.67	41	399116	94.8636 ug/L	100
10) 2-Nitropropane	12.00	43	115876	86.2281 ug/L	100
12) Cyclohexanone	16.11	55	11072	18.9239 ug/L	96

(#) = qualifier out of range (m) = manual integration
9M957904.D A9FOOWT.M Tue Aug 20 15:11:52 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957904.D Vial: 12
Acq On : 19 Aug 2013 20:45 Operator: adc
Sample : WG441888-09 100.0ug/L A9 ALT SRC 8260 Inst : HPMS9
Misc : 1,1 STD59238 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

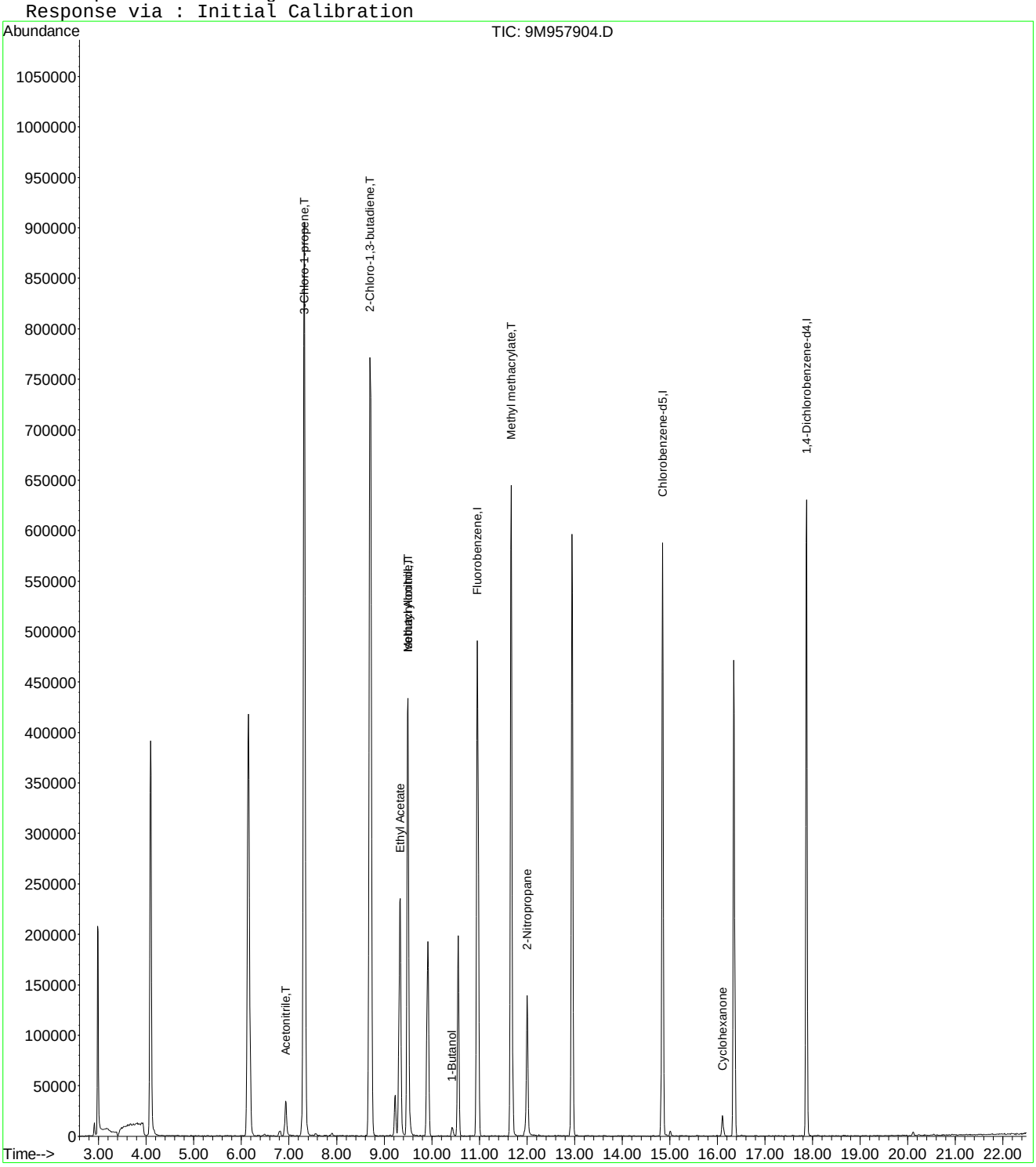

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\081913\9M957904.D Vial: 12
Acq On : 19 Aug 2013 20:45 Operator: adc
Sample : WG441888-09 100.0ug/L A9 ALT SRC 8260 Inst : HPMS9
Misc : 1,1 STD59238 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	102	0.00
2	T	Acetonitrile	100.0000	98.8352	1.2	102	0.00
3	T	3-Chloro-1-propene	100.0000	98.7834	1.2	102	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	75.7179	24.3	78	0.00
5		Ethyl Acetate	100.0000	99.5003	0.5	100	0.00
6	T	Methacrylonitrile	100.0000	96.4696	3.5	100	0.00
7	T	Isobutyl Alcohol	100.0000	91.2543	8.7	101	0.00
8		1-Butanol	100.0000	88.4379	11.6	106	0.00
9	T	Methyl methacrylate	100.0000	94.8636	5.1	97	0.00
10		2-Nitropropane	100.0000	86.2281	13.8	89	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
12		Cyclohexanone	100.0000	18.9239	81.1#	21	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M957904.D A9FOOWT.M Tue Aug 20 15:12:04 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962411.D Vial: 2
Acq On : 14 Apr 2014 17:14 Operator: ADC
Sample : WG471242-02 0.3ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:10:20 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:07:33 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.10	96	754196	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.98	117	545259	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	270194	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.06	111	709	0.0872 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.36%#	
43) 1,2-Dichloroethane-d4	10.70	65	1816	0.1775 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.72%#	
58) Toluene-d8	13.08	98	8898	0.2991 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.20%#	
79) p-Bromofluorobenzene	16.48	95	3049	0.2740 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	1363	0.2523 ug/L #	67
3) Chloromethane	3.90	50	3527	0.3841 ug/L #	41
4) Vinyl Chloride	4.14	62	3514	0.3573 ug/L	93
5) 1,3-Butadiene	4.20	54	3540	0.5818 ug/L #	32
6) Bromomethane	5.09	94	2209	0.3825 ug/L	77
7) Chloroethane	5.23	64	2016	0.2833 ug/L #	65
8) Trichlorofluoromethane	5.75	101	3290	0.3117 ug/L #	85
10) Isoprene	6.32	67	3844	0.3334 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.52	101	1623	0.4129 ug/L	76
13) Acetone	6.64	43	1631	0.5874 ug/L	77
14) 1,1-Dichloroethene	6.85	61	5156	0.3364 ug/L	91
16) Dimethyl Sulfide	7.12	62	2390	0.2716 ug/L	100
17) Iodomethane	7.38	142	277	0.7905 ug/L #	37
18) Methyl acetate	7.38	43	1671	0.2347 ug/L #	65
19) Methylene Chloride	7.64	84	3262	0.3746 ug/L	92
20) Carbon Disulfide	7.69	76	7359	0.3163 ug/L #	80
22) Methyl Tert Butyl Ether	7.85	73	7615	0.3279 ug/L	88
23) trans-1,2-Dichloroethene	8.09	61	5080	0.3430 ug/L	96
24) n-Hexane	8.17	57	3607	0.2607 ug/L	96
26) Vinyl Acetate	8.68	43	4940	0.2983 ug/L #	77
27) 1,1-Dichloroethane	8.71	63	6165	0.3295 ug/L #	90
29) 2-Butanone	9.28	43	833	0.1895 ug/L #	56
31) 2,2-Dichloropropane	9.50	77	4184	0.3687 ug/L	96
32) cis-1,2-Dichloroethene	9.56	96	2795	0.3129 ug/L	100
33) Chloroform	9.76	83	4451	0.3128 ug/L	97
35) Bromochloromethane	10.01	130	1508	0.2757 ug/L	96
38) 1,1,1-Trichloroethane	10.31	97	3414	0.2766 ug/L	98
39) Cyclohexane	10.35	56	6215	0.3055 ug/L	94
40) 1,1-Dichloropropene	10.50	75	3485	0.3437 ug/L	93
42) Carbon Tetrachloride	10.65	117	3144	0.2898 ug/L #	93
45) 1,2-Dichloroethane	10.81	62	4290	0.3340 ug/L	82
46) Benzene	10.86	78	12412	0.3775 ug/L	94
47) Trichloroethene	11.61	130	2882	0.3421 ug/L	93
48) Methylcyclohexane	11.70	83	3694	0.2876 ug/L	90
49) 1,2-Dichloropropane	11.82	63	3424	0.3074 ug/L	83
51) Bromodichloromethane	12.13	83	2823	0.2598 ug/L #	94
52) Dibromomethane	12.22	174	1592	0.2792 ug/L	92
53) 2-Chloroethyl Vinyl Ether	12.40	63	1644	0.2515 ug/L #	53
54) 4-Methyl-2-Pentanone	12.45	58	1359	0.2823 ug/L #	47
55) cis-1,3-Dichloropropene	12.76	75	4036	0.3062 ug/L #	77

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962411.D Vial: 2
Acq On : 14 Apr 2014 17:14 Operator: ADC
Sample : WG471242-02 0.3ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:10:20 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:07:33 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
56)	Dimethyl Disulfide	13.04	94	3662	0.2373	ug/L	93
59)	Toluene	13.18	91	11359	0.3381	ug/L	98
60)	Ethyl Methacrylate	13.26	69	2794	0.2828	ug/L #	56
61)	trans-1,3-Dichloropropene	13.36	75	3485	0.2940	ug/L	82
62)	1,1,2-Trichloroethane	13.57	97	1890	0.2665	ug/L	99
63)	2-Hexanone	13.49	43	1289	0.1921	ug/L #	82
64)	1,3-Dichloropropane	13.87	76	4091	0.3345	ug/L	91
65)	Tetrachloroethene	14.01	164	2333	0.3335	ug/L	84
66)	Dibromochloromethane	14.28	129	2445	0.2910	ug/L	76
67)	1,2-Dibromoethane	14.54	107	2178	0.3031	ug/L	84
68)	1-Chlorohexane	14.60	91	2520	0.2560	ug/L	90
69)	Chlorobenzene	15.03	112	7099	0.3216	ug/L	92
70)	1,1,1,2-Tetrachloroethane	15.05	131	2344	0.2771	ug/L	87
71)	Ethylbenzene	15.06	106	3440	0.2819	ug/L	74
72)	m-,p-Xylene	15.15	106	9184	0.6328	ug/L	93
73)	o-Xylene	15.71	106	5136	0.3393	ug/L	95
74)	Styrene	15.76	104	6324	0.2644	ug/L #	65
75)	Bromoform	16.25	173	1131	0.5301	ug/L	86
76)	Isopropylbenzene	16.14	105	11191	0.3080	ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.36	83	2172	0.2546	ug/L #	84
80)	1,2,3-Trichloropropane	16.54	110	522	0.1985	ug/L #	17
81)	trans-1,4-Dichloro-2-Buten	16.58	53	249	0.4811	ug/L #	1
82)	n-Propylbenzene	16.63	91	12327	0.3117	ug/L	97
83)	Bromobenzene	16.78	156	2802	0.3000	ug/L	82
84)	1,3,5-Trimethylbenzene	16.82	105	9180	0.3121	ug/L	98
85)	2-Chlorotoluene	16.92	91	8900	0.3216	ug/L	88
86)	4-Chlorotoluene	16.97	91	7410	0.3270	ug/L	88
87)	a-Methylstyrene	17.23	118	3046	0.2003	ug/L	92
88)	tert-Butylbenzene	17.30	134	1734	0.2533	ug/L #	39
89)	1,2,4-Trimethylbenzene	17.35	105	9870	0.3308	ug/L	79
90)	sec-Butylbenzene	17.56	105	11307	0.3077	ug/L	96
91)	p-Isopropyltoluene	17.72	119	8388	0.2836	ug/L	92
92)	1,3-Dichlorobenzene	17.93	146	4853	0.2786	ug/L	91
93)	1,4-Dichlorobenzene	18.05	146	5171	0.2969	ug/L #	1
94)	n-Butylbenzene	18.25	91	6913	0.2726	ug/L #	88
95)	1,2-Dichlorobenzene	18.55	146	4892	0.2816	ug/L	90
97)	1,2,4-Trichlorobenzene	20.70	180	2963	0.4111	ug/L	93
98)	Hexachlorobutadiene	20.84	225	1450	0.4762	ug/L #	74
99)	Naphthalene	21.07	128	6955	0.2515	ug/L #	85
100)	1,2,3-Trichlorobenzene	21.38	180	2835	0.2377	ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962411.D Vial: 2
Acq On : 14 Apr 2014 17:14 Operator: ADC
Sample : WG471242-02 0.3ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:10 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:09:20 2014
Response via : Initial Calibration

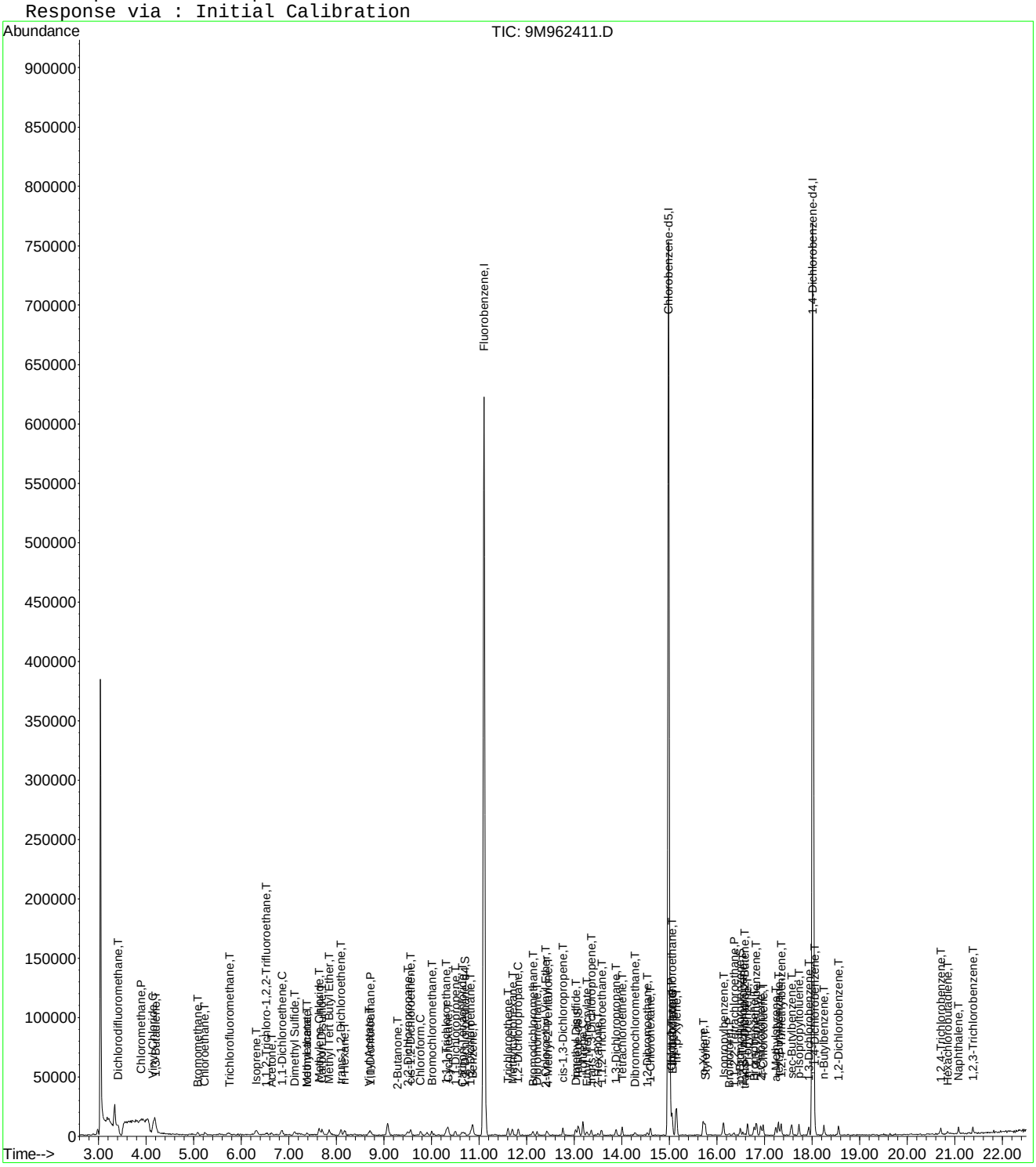

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962412.D Vial: 3
Acq On : 14 Apr 2014 17:44 Operator: ADC
Sample : WG471242-03 0.4ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:15:30 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:09:20 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.10	96	747358	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.98	117	535667	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	264750	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.06	111	236	0.0293 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.12%#	
43) 1,2-Dichloroethane-d4	10.70	65	778	0.0767 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.32%#	
58) Toluene-d8	13.08	98	5361	0.1835 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.72%#	
79) p-Bromofluorobenzene	16.48	95	2262	0.2075 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	1422	0.2657 ug/L #	67
3) Chloromethane	3.89	50	7125	0.7830 ug/L	76
4) Vinyl Chloride	4.13	62	3642	0.3737 ug/L	95
5) 1,3-Butadiene	4.19	54	4787	0.7939 ug/L #	69
6) Bromomethane	5.07	94	2445	0.4272 ug/L	97
7) Chloroethane	5.23	64	2832	0.4016 ug/L #	74
8) Trichlorofluoromethane	5.74	101	3344	0.3197 ug/L #	87
10) Isoprene	6.31	67	3993	0.3495 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.52	101	1312	0.3706 ug/L #	5
13) Acetone	6.62	43	2248	0.8170 ug/L	81
14) 1,1-Dichloroethene	6.84	61	6251	0.4115 ug/L	83
16) Dimethyl Sulfide	7.11	62	3050	0.3498 ug/L	94
17) Iodomethane	7.37	142	767	0.8562 ug/L #	37
18) Methyl acetate	7.38	43	2475	0.3507 ug/L #	65
19) Methylene Chloride	7.64	84	3642	0.4221 ug/L	91
20) Carbon Disulfide	7.70	76	10506	0.4557 ug/L #	84
22) Methyl Tert Butyl Ether	7.85	73	9199	0.3997 ug/L	85
23) trans-1,2-Dichloroethene	8.09	61	5980	0.4075 ug/L	98
24) n-Hexane	8.17	57	5111	0.3727 ug/L	100
26) Vinyl Acetate	8.67	43	5829	0.3552 ug/L #	77
27) 1,1-Dichloroethane	8.71	63	7413	0.3998 ug/L #	83
29) 2-Butanone	9.27	43	1448	0.3324 ug/L #	56
31) 2,2-Dichloropropane	9.49	77	5188	0.4613 ug/L #	71
32) cis-1,2-Dichloroethene	9.56	96	3164	0.3574 ug/L	100
33) Chloroform	9.77	83	5655	0.4011 ug/L	94
35) Bromochloromethane	10.01	130	1931	0.3563 ug/L	91
38) 1,1,1-Trichloroethane	10.31	97	4222	0.3452 ug/L	91
39) Cyclohexane	10.34	56	7546	0.3743 ug/L	91
40) 1,1-Dichloropropene	10.50	75	3362	0.3346 ug/L	98
42) Carbon Tetrachloride	10.65	117	4106	0.3819 ug/L #	87
45) 1,2-Dichloroethane	10.81	62	5100	0.4007 ug/L	84
46) Benzene	10.87	78	14565	0.4470 ug/L	97
47) Trichloroethene	11.61	130	2811	0.3367 ug/L	78
48) Methylcyclohexane	11.70	83	5015	0.3941 ug/L	93
49) 1,2-Dichloropropane	11.82	63	4129	0.3741 ug/L	90
51) Bromodichloromethane	12.13	83	3727	0.3461 ug/L #	92
52) Dibromomethane	12.22	174	2201	0.3896 ug/L	88
53) 2-Chloroethyl Vinyl Ether	12.41	63	2109	0.3256 ug/L #	74
54) 4-Methyl-2-Pentanone	12.44	58	1343	0.2815 ug/L #	47
55) cis-1,3-Dichloropropene	12.75	75	5215	0.3993 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M962412.D 8260WT.M Tue Apr 15 12:17:12 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962412.D Vial: 3
Acq On : 14 Apr 2014 17:44 Operator: ADC
Sample : WG471242-03 0.4ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:15:30 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:09:20 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	13.03	94	5332	0.3487 ug/L	98
59)	Toluene	13.18	91	13471	0.4081 ug/L	97
60)	Ethyl Methacrylate	13.26	69	3394	0.3497 ug/L	88
61)	trans-1,3-Dichloropropene	13.36	75	4416	0.3793 ug/L	92
62)	1,1,2-Trichloroethane	13.57	97	2640	0.3790 ug/L	92
63)	2-Hexanone	13.50	43	1865	0.2829 ug/L #	72
64)	1,3-Dichloropropane	13.87	76	4787	0.3985 ug/L	99
65)	Tetrachloroethene	14.01	164	2701	0.3931 ug/L	86
66)	Dibromochloromethane	14.28	129	3151	0.3817 ug/L	81
67)	1,2-Dibromoethane	14.54	107	2167	0.3070 ug/L	97
68)	1-Chlorohexane	14.60	91	3584	0.3706 ug/L	97
69)	Chlorobenzene	15.03	112	9196	0.4240 ug/L	97
70)	1,1,1,2-Tetrachloroethane	15.06	131	2997	0.3607 ug/L	94
71)	Ethylbenzene	15.05	106	4532	0.3780 ug/L	90
72)	m-,p-Xylene	15.15	106	11463	0.8040 ug/L	99
73)	o-Xylene	15.70	106	5777	0.3885 ug/L	97
74)	Styrene	15.75	104	8056	0.3429 ug/L	74
75)	Bromoform	16.25	173	1484	0.8448 ug/L	87
76)	Isopropylbenzene	16.13	105	13646	0.3823 ug/L	100
78)	1,1,2,2-Tetrachloroethane	16.36	83	3028	0.3622 ug/L #	90
80)	1,2,3-Trichloropropane	16.54	110	942	0.3655 ug/L #	83
81)	trans-1,4-Dichloro-2-Buten	16.58	53	898	0.6773 ug/L #	60
82)	n-Propylbenzene	16.64	91	14694	0.3792 ug/L	99
83)	Bromobenzene	16.78	156	3719	0.4064 ug/L	92
84)	1,3,5-Trimethylbenzene	16.83	105	10758	0.3733 ug/L	99
85)	2-Chlorotoluene	16.91	91	11153	0.4113 ug/L	94
86)	4-Chlorotoluene	16.97	91	8419	0.3792 ug/L #	46
87)	a-Methylstyrene	17.22	118	4823	0.3237 ug/L	78
88)	tert-Butylbenzene	17.30	134	2537	0.3783 ug/L	82
89)	1,2,4-Trimethylbenzene	17.35	105	10959	0.3749 ug/L	96
90)	sec-Butylbenzene	17.56	105	14344	0.3984 ug/L	89
91)	p-Isopropyltoluene	17.72	119	10098	0.3485 ug/L	93
92)	1,3-Dichlorobenzene	17.93	146	6468	0.3790 ug/L	97
93)	1,4-Dichlorobenzene	18.06	146	6420	0.3762 ug/L #	33
94)	n-Butylbenzene	18.25	91	8473	0.3410 ug/L #	90
95)	1,2-Dichlorobenzene	18.56	146	6113	0.3591 ug/L	87
96)	1,2-Dibromo-3-Chloropropan	19.56	157	640	0.3185 ug/L #	8
97)	1,2,4-Trichlorobenzene	20.70	180	3288	0.4402 ug/L	88
98)	Hexachlorobutadiene	20.84	225	1835	0.5337 ug/L #	78
99)	Naphthalene	21.08	128	8755	0.3231 ug/L	93
100)	1,2,3-Trichlorobenzene	21.38	180	3566	0.3052 ug/L	92

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962412.D Vial: 3
Acq On : 14 Apr 2014 17:44 Operator: ADC
Sample : WG471242-03 0.4ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:15 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

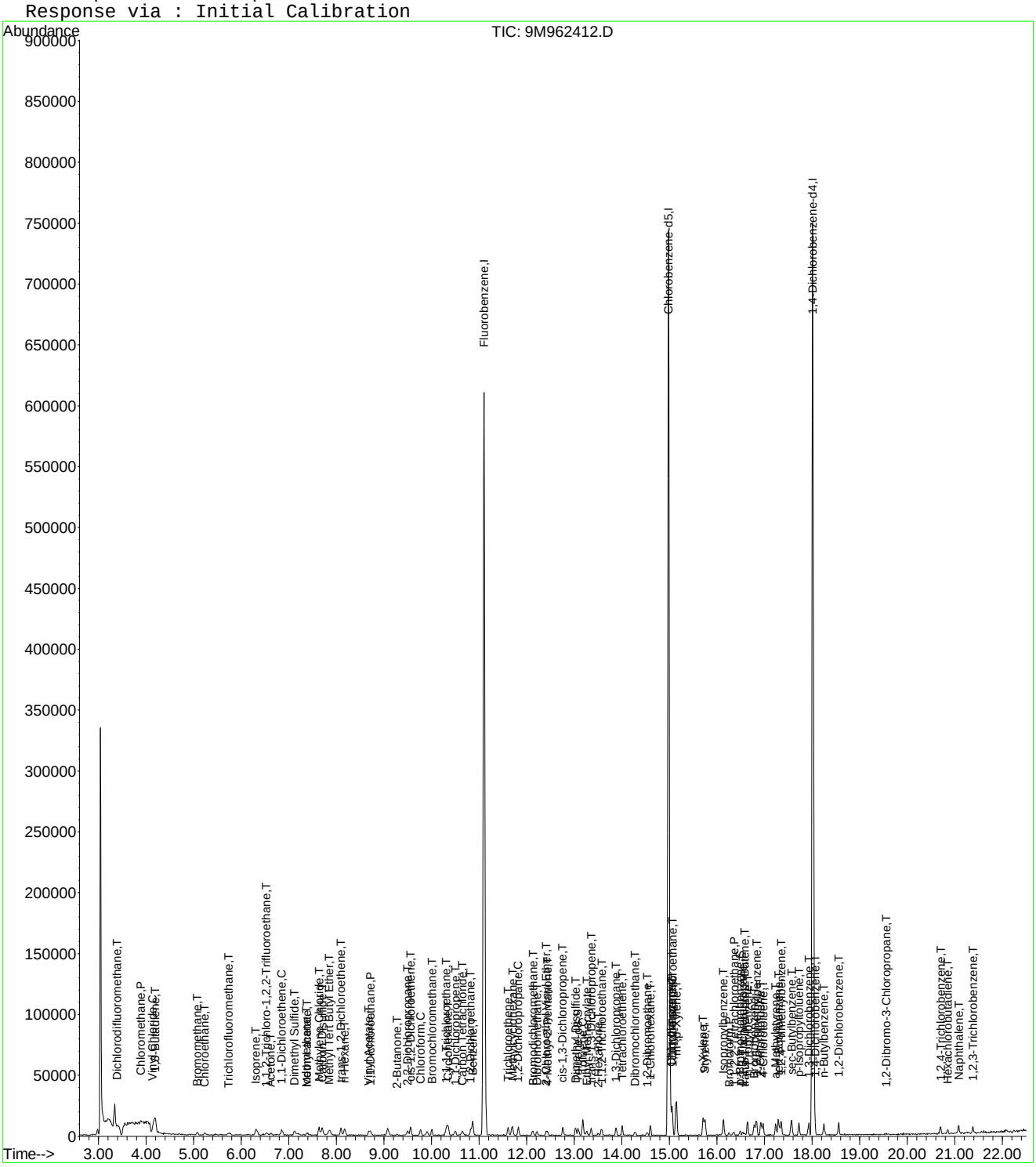

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962413.D Vial: 4
Acq On : 14 Apr 2014 18:15 Operator: ADC
Sample : WG471242-04 1.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:15:31 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.10	96	744515	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.98	117	531452	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	259280	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.06	111	4360	0.5433 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.16%#	
43) 1,2-Dichloroethane-d4	10.71	65	5601	0.5545 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.20%#	
58) Toluene-d8	13.09	98	19405	0.6693 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.68%#	
79) p-Bromofluorobenzene	16.48	95	6214	0.5820 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.32%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	4776	0.8957 ug/L #	67
3) Chloromethane	3.89	50	9333	1.0295 ug/L	98
4) Vinyl Chloride	4.13	62	8809	0.9074 ug/L	90
5) 1,3-Butadiene	4.19	54	10595	1.7639 ug/L	86
6) Bromomethane	5.08	94	5107	0.8957 ug/L	100
7) Chloroethane	5.25	64	6762	0.9626 ug/L	91
8) Trichlorofluoromethane	5.74	101	9273	0.8900 ug/L #	87
9) Diethyl ether	6.27	59	43521	4.5825 ug/L	100
10) Isoprene	6.32	67	10601	0.9313 ug/L	99
11) Acrolein	6.52	56	3170	2.1244 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.53	101	6207	1.0727 ug/L	98
13) Acetone	6.63	43	3913	1.4276 ug/L	87
14) 1,1-Dichloroethene	6.86	61	14259	0.9423 ug/L	93
15) Tert-Butyl Alcohol	6.95	59	9346	8.5321 ug/L #	89
16) Dimethyl Sulfide	7.12	62	8176	0.9413 ug/L	97
17) Iodomethane	7.38	142	3633	1.2402 ug/L	88
18) Methyl acetate	7.38	43	6658	0.9471 ug/L #	78
19) Methylene Chloride	7.64	84	9093	1.0578 ug/L	94
20) Carbon Disulfide	7.69	76	22370	0.9741 ug/L #	85
21) Acrylonitrile	7.82	53	10119	2.2776 ug/L	92
22) Methyl Tert Butyl Ether	7.86	73	22911	0.9994 ug/L	94
23) trans-1,2-Dichloroethene	8.09	61	14152	0.9680 ug/L	99
24) n-Hexane	8.17	57	12734	0.9322 ug/L	98
25) Diisopropyl ether	8.51	45	151609	4.5162 ug/L	99
26) Vinyl Acetate	8.67	43	14737	0.9015 ug/L	93
27) 1,1-Dichloroethane	8.71	63	17840	0.9658 ug/L	98
28) Ethyl-Tert-Butyl ether	9.08	59	160445	4.5104 ug/L	99
29) 2-Butanone	9.28	43	3845	0.8860 ug/L	85
30) Propionitrile	9.37	54	6714	4.1734 ug/L	88
31) 2,2-Dichloropropane	9.49	77	11324	1.0108 ug/L	95
32) cis-1,2-Dichloroethene	9.56	96	8526	0.9669 ug/L	89
33) Chloroform	9.76	83	13390	0.9534 ug/L	95
34) 1-Bromopropane	9.90	122	1140	0.7627 ug/L	91
35) Bromochloromethane	10.01	130	5233	0.9692 ug/L	94
36) Tetrahydrofuran	10.03	42	12742	4.7078 ug/L	93
38) 1,1,1-Trichloroethane	10.32	97	12173	0.9991 ug/L	96
39) Cyclohexane	10.34	56	19635	0.9777 ug/L	92
40) 1,1-Dichloropropene	10.50	75	9901	0.9892 ug/L	97
41) Tert-Amyl-Methyl ether	10.60	73	103096	4.5324 ug/L	98
42) Carbon Tetrachloride	10.65	117	9781	0.9131 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962413.D Vial: 4
Acq On : 14 Apr 2014 18:15 Operator: ADC
Sample : WG471242-04 1.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:15:31 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.81	62	11712	0.9238 ug/L	99
46)	Benzene	10.86	78	32464	1.0002 ug/L	99
47)	Trichloroethene	11.61	130	8267	0.9940 ug/L	99
48)	Methylcyclohexane	11.70	83	12159	0.9591 ug/L	93
49)	1,2-Dichloropropane	11.83	63	10655	0.9691 ug/L	96
51)	Bromodichloromethane	12.13	83	10072	0.9388 ug/L	97
52)	Dibromomethane	12.22	174	5281	0.9382 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.42	63	5890	0.9129 ug/L	99
54)	4-Methyl-2-Pentanone	12.45	58	4220	0.8879 ug/L	91
55)	cis-1,3-Dichloropropene	12.76	75	11721	0.9008 ug/L	100
56)	Dimethyl Disulfide	13.03	94	12640	0.8299 ug/L	96
59)	Toluene	13.18	91	33189	1.0135 ug/L	99
60)	Ethyl Methacrylate	13.26	69	8474	0.8801 ug/L	88
61)	trans-1,3-Dichloropropene	13.36	75	10942	0.9472 ug/L	98
62)	1,1,2-Trichloroethane	13.57	97	6402	0.9263 ug/L	99
63)	2-Hexanone	13.50	43	5639	0.8623 ug/L #	83
64)	1,3-Dichloropropane	13.87	76	11362	0.9533 ug/L	100
65)	Tetrachloroethene	14.01	164	6436	0.9440 ug/L	98
66)	Dibromochloromethane	14.28	129	7174	0.8760 ug/L	96
67)	1,2-Dibromoethane	14.54	107	6830	0.9753 ug/L	99
68)	1-Chlorohexane	14.60	91	8309	0.8660 ug/L	98
69)	Chlorobenzene	15.03	112	21139	0.9825 ug/L	75
70)	1,1,1,2-Tetrachloroethane	15.05	131	8446	1.0245 ug/L	93
71)	Ethylbenzene	15.05	106	11669	0.9811 ug/L	89
72)	m-,p-Xylene	15.15	106	26973	1.9069 ug/L	96
73)	o-Xylene	15.71	106	14502	0.9830 ug/L	99
74)	Styrene	15.74	104	20569	0.8823 ug/L	93
75)	Bromoform	16.25	173	4568	1.2709 ug/L	95
76)	Isopropylbenzene	16.13	105	33783	0.9539 ug/L	98
78)	1,1,2,2-Tetrachloroethane	16.35	83	7636	0.9326 ug/L	96
80)	1,2,3-Trichloropropane	16.54	110	2259	0.8950 ug/L	94
81)	trans-1,4-Dichloro-2-Buten	16.57	53	2166	1.0714 ug/L	57
82)	n-Propylbenzene	16.63	91	36208	0.9540 ug/L	98
83)	Bromobenzene	16.78	156	7973	0.8896 ug/L	82
84)	1,3,5-Trimethylbenzene	16.82	105	26487	0.9385 ug/L	96
85)	2-Chlorotoluene	16.92	91	26180	0.9857 ug/L	91
86)	4-Chlorotoluene	16.96	91	21158	0.9731 ug/L	91
87)	a-Methylstyrene	17.23	118	12737	0.8729 ug/L	100
88)	tert-Butylbenzene	17.30	134	6725	1.0239 ug/L	86
89)	1,2,4-Trimethylbenzene	17.35	105	27730	0.9686 ug/L	94
90)	sec-Butylbenzene	17.56	105	32277	0.9155 ug/L	96
91)	p-Isopropyltoluene	17.72	119	26531	0.9348 ug/L	100
92)	1,3-Dichlorobenzene	17.93	146	16047	0.9602 ug/L	97
93)	1,4-Dichlorobenzene	18.05	146	15436	0.9235 ug/L	88
94)	n-Butylbenzene	18.25	91	21091	0.8666 ug/L	95
95)	1,2-Dichlorobenzene	18.56	146	15712	0.9426 ug/L	98
96)	1,2-Dibromo-3-Chloropropan	19.55	157	984	0.5000 ug/L #	60
97)	1,2,4-Trichlorobenzene	20.70	180	8682	0.8620 ug/L	94
98)	Hexachlorobutadiene	20.84	225	4718	0.9474 ug/L	94
99)	Naphthalene	21.07	128	23380	0.8810 ug/L	97
100)	1,2,3-Trichlorobenzene	21.38	180	9643	0.8427 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962413.D Vial: 4
Acq On : 14 Apr 2014 18:15 Operator: ADC
Sample : WG471242-04 1.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:15 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

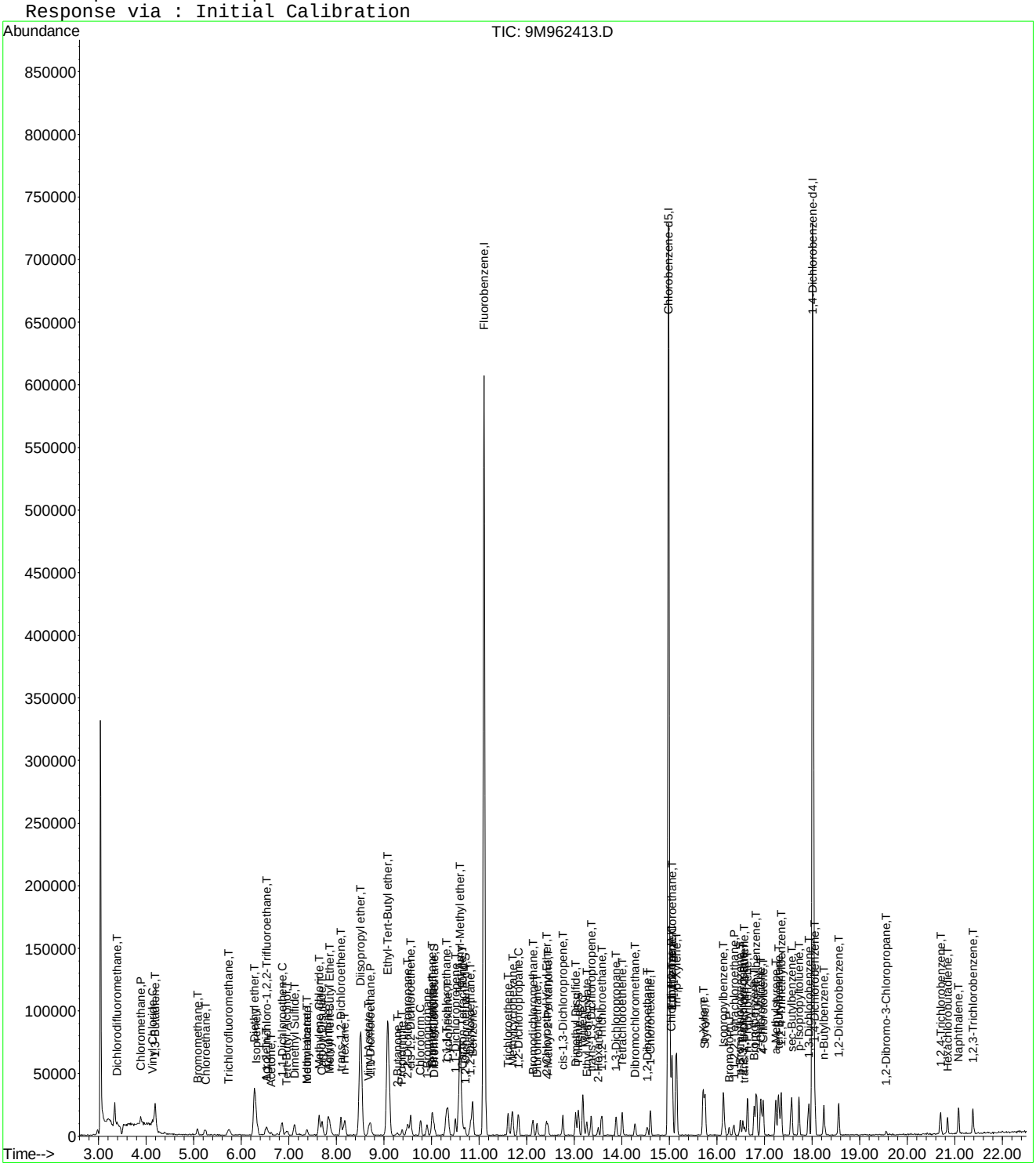

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962414.D Vial: 5
Acq On : 14 Apr 2014 18:45 Operator: ADC
Sample : WG471242-05 2.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:15:33 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.10	96	740909	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.98	117	536088	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	261507	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.07	111	7269	0.9102 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.64%#	
43) 1,2-Dichloroethane-d4	10.70	65	10725	1.0670 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.28%#	
58) Toluene-d8	13.09	98	29254	1.0003 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#	
79) p-Bromofluorobenzene	16.48	95	10805	1.0033 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	8603	1.6213 ug/L	97
3) Chloromethane	3.89	50	18341	2.0331 ug/L	92
4) Vinyl Chloride	4.13	62	18572	1.9225 ug/L	99
5) 1,3-Butadiene	4.20	54	17146	2.8684 ug/L	93
6) Bromomethane	5.07	94	11189	1.9720 ug/L	98
7) Chloroethane	5.24	64	12796	1.8304 ug/L	91
8) Trichlorofluoromethane	5.74	101	20370	1.9646 ug/L	96
9) Diethyl ether	6.27	59	238320	25.2156 ug/L	99
10) Isoprene	6.32	67	21905	1.9338 ug/L	95
11) Acrolein	6.51	56	19333	13.0191 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	13218	2.0866 ug/L	87
13) Acetone	6.62	43	6862	2.5157 ug/L	93
14) 1,1-Dichloroethene	6.84	61	28872	1.9174 ug/L	99
15) Tert-Butyl Alcohol	6.96	59	51365	47.1201 ug/L	99
16) Dimethyl Sulfide	7.12	62	16516	1.9108 ug/L	98
17) Iodomethane	7.38	142	8840	1.9429 ug/L	98
18) Methyl acetate	7.38	43	12836	1.8348 ug/L	99
19) Methylene Chloride	7.64	84	17096	1.9985 ug/L	97
20) Carbon Disulfide	7.69	76	42707	1.8687 ug/L	94
21) Acrylonitrile	7.81	53	52662	11.9110 ug/L	92
22) Methyl Tert Butyl Ether	7.85	73	44017	1.9293 ug/L	95
23) trans-1,2-Dichloroethene	8.09	61	27283	1.8752 ug/L	100
24) n-Hexane	8.17	57	24305	1.7879 ug/L	98
25) Diisopropyl ether	8.50	45	847709	25.3749 ug/L	100
26) Vinyl Acetate	8.67	43	29232	1.7970 ug/L	98
27) 1,1-Dichloroethane	8.71	63	36054	1.9613 ug/L	96
28) Ethyl-Tert-Butyl ether	9.08	59	899999	25.4239 ug/L	99
29) 2-Butanone	9.27	43	8426	1.9510 ug/L	96
30) Propionitrile	9.38	54	40112	25.0550 ug/L	95
31) 2,2-Dichloropropane	9.49	77	21953	1.9691 ug/L	98
32) cis-1,2-Dichloroethene	9.56	96	17499	1.9941 ug/L	94
33) Chloroform	9.77	83	26192	1.8740 ug/L	99
34) 1-Bromopropane	9.90	122	2762	1.8569 ug/L	83
35) Bromochloromethane	10.01	130	10324	1.9214 ug/L	94
36) Tetrahydrofuran	10.03	42	66526	24.6993 ug/L	97
38) 1,1,1-Trichloroethane	10.31	97	22768	1.8777 ug/L	94
39) Cyclohexane	10.34	56	38439	1.9234 ug/L	97
40) 1,1-Dichloropropene	10.49	75	18290	1.8363 ug/L	98
41) Tert-Amyl-Methyl ether	10.60	73	574378	25.3745 ug/L	100
42) Carbon Tetrachloride	10.65	117	19430	1.8228 ug/L	96

(#) = qualifier out of range (m) = manual integration
9M962414.D 8260WT.M Tue Apr 15 12:17:53 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962414.D Vial: 5
Acq On : 14 Apr 2014 18:45 Operator: ADC
Sample : WG471242-05 2.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:15:33 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.81	62	23725	1.8804 ug/L	94
46)	Benzene	10.86	78	63154	1.9553 ug/L	98
47)	Trichloroethene	11.61	130	16568	2.0018 ug/L	94
48)	Methylcyclohexane	11.69	83	23757	1.8831 ug/L	98
49)	1,2-Dichloropropane	11.83	63	20795	1.9005 ug/L	99
50)	1,4-Dioxane	12.12	88	4099	44.7304 ug/L	84
51)	Bromodichloromethane	12.13	83	20029	1.8760 ug/L	96
52)	Dibromomethane	12.22	174	10541	1.8819 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.41	63	11810	1.8394 ug/L	95
54)	4-Methyl-2-Pentanone	12.44	58	7990	1.6892 ug/L	98
55)	cis-1,3-Dichloropropene	12.76	75	24123	1.8630 ug/L	100
56)	Dimethyl Disulfide	13.03	94	26394	1.7413 ug/L	94
59)	Toluene	13.18	91	64308	1.9468 ug/L	100
60)	Ethyl Methacrylate	13.25	69	16279	1.6761 ug/L	96
61)	trans-1,3-Dichloropropene	13.36	75	21340	1.8314 ug/L	98
62)	1,1,2-Trichloroethane	13.57	97	13279	1.9047 ug/L	99
63)	2-Hexanone	13.50	43	11000	1.6675 ug/L	94
64)	1,3-Dichloropropane	13.87	76	23084	1.9200 ug/L	100
65)	Tetrachloroethene	14.00	164	11781	1.7131 ug/L	89
66)	Dibromochloromethane	14.28	129	14879	1.8012 ug/L	96
67)	1,2-Dibromoethane	14.53	107	13487	1.9092 ug/L	96
68)	1-Chlorohexane	14.60	91	16058	1.6591 ug/L	89
69)	Chlorobenzene	15.03	112	42067	1.9382 ug/L	90
70)	1,1,1,2-Tetrachloroethane	15.06	131	16152	1.9423 ug/L	96
71)	Ethylbenzene	15.05	106	22492	1.8748 ug/L	93
72)	m-,p-Xylene	15.15	106	54200	3.7986 ug/L	98
73)	o-Xylene	15.70	106	27614	1.8556 ug/L	96
74)	Styrene	15.75	104	41733	1.7747 ug/L	98
75)	Bromoform	16.25	173	9912	1.9947 ug/L	91
76)	Isopropylbenzene	16.13	105	66403	1.8587 ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.34	83	15699	1.9011 ug/L	99
80)	1,2,3-Trichloropropane	16.54	110	4821	1.8939 ug/L	96
81)	trans-1,4-Dichloro-2-Buten	16.58	53	4964	1.9156 ug/L	78
82)	n-Propylbenzene	16.64	91	76413	1.9962 ug/L	100
83)	Bromobenzene	16.78	156	16579	1.8341 ug/L	86
84)	1,3,5-Trimethylbenzene	16.82	105	56928	1.9998 ug/L	99
85)	2-Chlorotoluene	16.91	91	53006	1.9788 ug/L	91
86)	4-Chlorotoluene	16.97	91	42823	1.9528 ug/L	92
87)	a-Methylstyrene	17.23	118	24975	1.6970 ug/L	100
88)	tert-Butylbenzene	17.30	134	12978	1.9591 ug/L	98
89)	1,2,4-Trimethylbenzene	17.35	105	55495	1.9220 ug/L	97
90)	sec-Butylbenzene	17.56	105	70020	1.9691 ug/L	97
91)	p-Isopropyltoluene	17.72	119	53452	1.8674 ug/L	98
92)	1,3-Dichlorobenzene	17.93	146	32213	1.9110 ug/L	97
93)	1,4-Dichlorobenzene	18.05	146	32395	1.9216 ug/L	89
94)	n-Butylbenzene	18.25	91	42090	1.7148 ug/L	98
95)	1,2-Dichlorobenzene	18.56	146	33657	2.0019 ug/L	97
96)	1,2-Dibromo-3-Chloropropan	19.55	157	3563	1.7951 ug/L	94
97)	1,2,4-Trichlorobenzene	20.70	180	19623	1.6939 ug/L	95
98)	Hexachlorobutadiene	20.84	225	10442	1.7455 ug/L	97
99)	Naphthalene	21.07	128	46235	1.7273 ug/L	95
100)	1,2,3-Trichlorobenzene	21.38	180	20102	1.7418 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M962414.D 8260WT.M Tue Apr 15 12:17:54 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962414.D Vial: 5
Acq On : 14 Apr 2014 18:45 Operator: ADC
Sample : WG471242-05 2.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:15 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

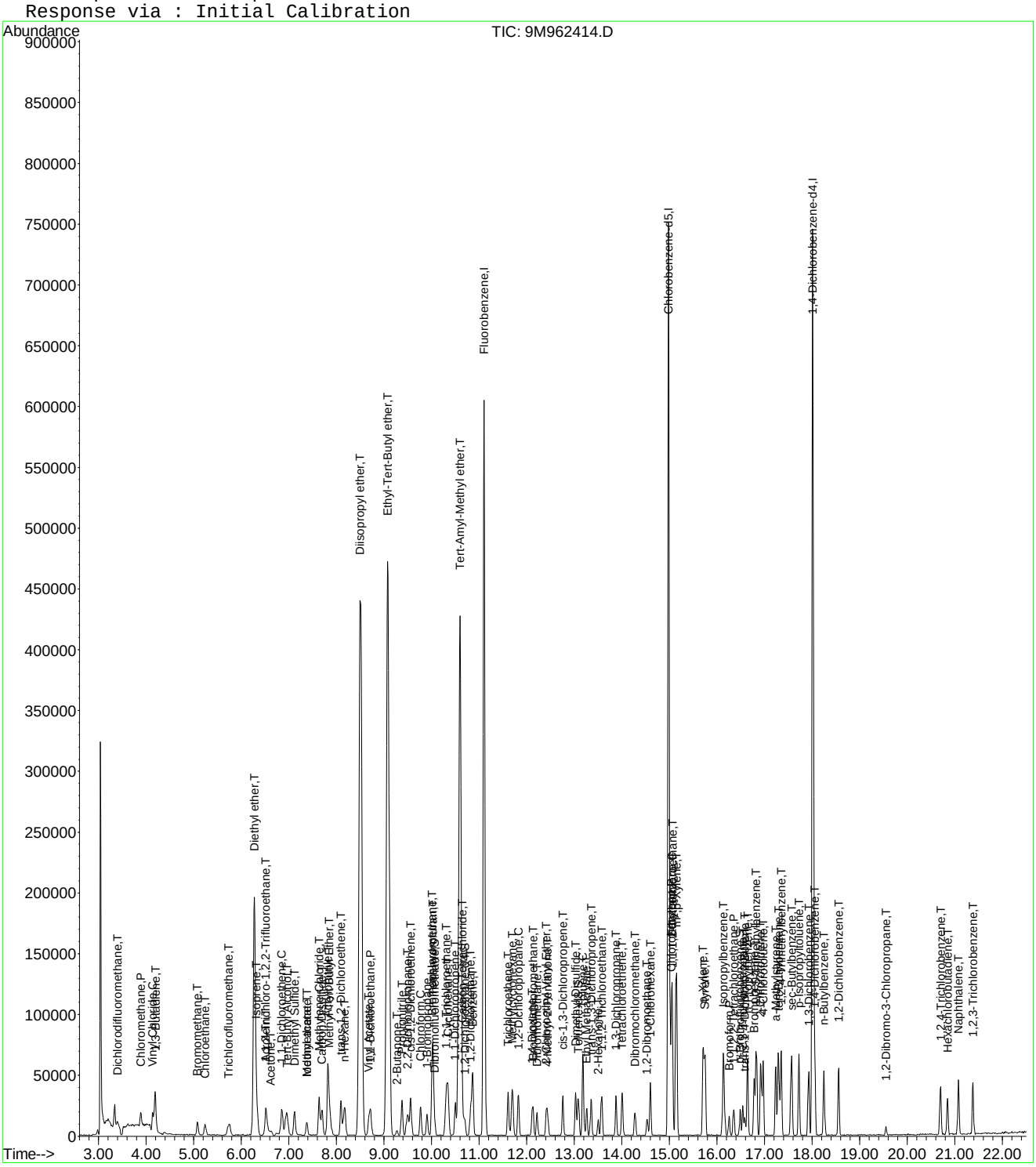

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962415.D Vial: 6
Acq On : 14 Apr 2014 19:15 Operator: ADC
Sample : WG471242-06 5.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:18:42 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.10	96	759611	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.98	117	546709	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	268326	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.06	111	19835	2.4226 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.68%#	
43) 1,2-Dichloroethane-d4	10.70	65	24608	2.3879 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.56%#	
58) Toluene-d8	13.08	98	76143	2.5530 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	10.20%#	
79) p-Bromofluorobenzene	16.49	95	28382	2.5686 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	10.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	22837	4.1978 ug/L	96
3) Chloromethane	3.89	50	46399	5.0166 ug/L	98
4) Vinyl Chloride	4.13	62	52266	5.2770 ug/L	97
5) 1,3-Butadiene	4.19	54	35746	5.8327 ug/L	97
6) Bromomethane	5.09	94	27032	4.6470 ug/L	95
7) Chloroethane	5.24	64	34965	4.8785 ug/L	99
8) Trichlorofluoromethane	5.74	101	54519	5.1287 ug/L	97
9) Diethyl ether	6.27	59	492369	50.8128 ug/L	99
10) Isoprene	6.32	67	57624	4.9618 ug/L	100
11) Acrolein	6.51	56	38815	25.4950 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.53	101	34156	4.9804 ug/L	98
13) Acetone	6.62	43	16042	5.7365 ug/L	99
14) 1,1-Dichloroethene	6.85	61	78677	5.0963 ug/L	96
15) Tert-Butyl Alcohol	6.95	59	102550	91.7589 ug/L	99
16) Dimethyl Sulfide	7.11	62	47198	5.3260 ug/L	99
17) Iodomethane	7.38	142	28975	4.5554 ug/L	96
18) Methyl acetate	7.38	43	38594	5.3810 ug/L	94
19) Methylene Chloride	7.64	84	43135	4.9183 ug/L	99
20) Carbon Disulfide	7.69	76	117618	5.0198 ug/L	100
21) Acrylonitrile	7.82	53	107682	23.7557 ug/L	95
22) Methyl Tert Butyl Ether	7.85	73	121672	5.2018 ug/L	96
23) trans-1,2-Dichloroethene	8.09	61	74627	5.0029 ug/L	98
24) n-Hexane	8.17	57	65886	4.7273 ug/L	97
25) Diisopropyl ether	8.51	45	1802635	52.6306 ug/L	100
26) Vinyl Acetate	8.67	43	80569	4.8308 ug/L	97
27) 1,1-Dichloroethane	8.71	63	94707	5.0252 ug/L	99
28) Ethyl-Tert-Butyl ether	9.08	59	1886933	51.9913 ug/L	99
29) 2-Butanone	9.27	43	22865	5.1640 ug/L	98
30) Propionitrile	9.38	54	81801	49.8370 ug/L	96
31) 2,2-Dichloropropane	9.49	77	55411	4.8477 ug/L	99
32) cis-1,2-Dichloroethene	9.56	96	45256	5.0301 ug/L	97
33) Chloroform	9.77	83	75355	5.2587 ug/L	97
34) 1-Bromopropane	9.91	122	7729	5.0682 ug/L	100
35) Bromochloromethane	10.01	130	27942	5.0723 ug/L	98
36) Tetrahydrofuran	10.03	42	139197	50.4077 ug/L	99
38) 1,1,1-Trichloroethane	10.31	97	63855	5.1367 ug/L	98
39) Cyclohexane	10.34	56	102609	5.0080 ug/L	97
40) 1,1-Dichloropropene	10.49	75	52419	5.1331 ug/L	99
41) Tert-Amyl-Methyl ether	10.60	73	1193144	51.4121 ug/L	100
42) Carbon Tetrachloride	10.65	117	57297	5.2429 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962415.D Vial: 6
Acq On : 14 Apr 2014 19:15 Operator: ADC
Sample : WG471242-06 5.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:18:42 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.81	62	67835	5.2441 ug/L	97
46)	Benzene	10.87	78	171454	5.1776 ug/L	99
47)	Trichloroethene	11.61	130	43913	5.1750 ug/L	100
48)	Methylcyclohexane	11.69	83	62545	4.8356 ug/L	98
49)	1,2-Dichloropropane	11.83	63	58582	5.2223 ug/L	97
50)	1,4-Dioxane	12.11	88	8415	89.5680 ug/L	97
51)	Bromodichloromethane	12.13	83	54588	4.9871 ug/L	99
52)	Dibromomethane	12.22	174	27751	4.8324 ug/L	96
53)	2-Chloroethyl Vinyl Ether	12.41	63	32480	4.9342 ug/L	96
54)	4-Methyl-2-Pentanone	12.44	58	22134	4.5643 ug/L	98
55)	cis-1,3-Dichloropropene	12.76	75	66360	4.9987 ug/L	99
56)	Dimethyl Disulfide	13.03	94	74271	4.7794 ug/L	100
59)	Toluene	13.18	91	177321	5.2638 ug/L	99
60)	Ethyl Methacrylate	13.26	69	46344	4.6788 ug/L	99
61)	trans-1,3-Dichloropropene	13.35	75	60218	5.0674 ug/L	99
62)	1,1,2-Trichloroethane	13.57	97	36093	5.0764 ug/L	99
63)	2-Hexanone	13.50	43	32339	4.8070 ug/L	96
64)	1,3-Dichloropropane	13.87	76	65152	5.3137 ug/L	96
65)	Tetrachloroethene	14.01	164	36697	5.2324 ug/L	98
66)	Dibromochloromethane	14.28	129	41851	4.9678 ug/L	96
67)	1,2-Dibromoethane	14.53	107	36534	5.0712 ug/L	99
68)	1-Chlorohexane	14.60	91	49022	4.9666 ug/L	99
69)	Chlorobenzene	15.03	112	112931	5.1021 ug/L	97
70)	1,1,1,2-Tetrachloroethane	15.06	131	43138	5.0866 ug/L	100
71)	Ethylbenzene	15.05	106	64648	5.2839 ug/L	99
72)	m-,p-Xylene	15.15	106	152583	10.4861 ug/L	99
73)	o-Xylene	15.70	106	78920	5.2001 ug/L	98
74)	Styrene	15.75	104	119057	4.9645 ug/L	99
75)	Bromoform	16.25	173	30045	4.6624 ug/L	98
76)	Isopropylbenzene	16.13	105	191206	5.2480 ug/L	97
78)	1,1,2,2-Tetrachloroethane	16.35	83	43530	5.1374 ug/L	98
80)	1,2,3-Trichloropropane	16.54	110	13662	5.2306 ug/L	96
81)	trans-1,4-Dichloro-2-Buten	16.58	53	15540	5.0078 ug/L	92
82)	n-Propylbenzene	16.63	91	215354	5.4830 ug/L	99
83)	Bromobenzene	16.78	156	48108	5.1869 ug/L	96
84)	1,3,5-Trimethylbenzene	16.82	105	160323	5.4888 ug/L	97
85)	2-Chlorotoluene	16.92	91	149715	5.4471 ug/L	89
86)	4-Chlorotoluene	16.97	91	116600	5.1820 ug/L	88
87)	a-Methylstyrene	17.23	118	74781	4.9520 ug/L	99
88)	tert-Butylbenzene	17.30	134	35903	5.2820 ug/L	97
89)	1,2,4-Trimethylbenzene	17.35	105	163936	5.5333 ug/L	100
90)	sec-Butylbenzene	17.57	105	199773	5.4751 ug/L	98
91)	p-Isopropyltoluene	17.72	119	156284	5.3212 ug/L	100
92)	1,3-Dichlorobenzene	17.93	146	88350	5.1082 ug/L	97
93)	1,4-Dichlorobenzene	18.05	146	89933	5.1991 ug/L	97
94)	n-Butylbenzene	18.25	91	124670	4.9500 ug/L	99
95)	1,2-Dichlorobenzene	18.56	146	92652	5.3708 ug/L	97
96)	1,2-Dibromo-3-Chloropropan	19.55	157	8746	4.2943 ug/L	91
97)	1,2,4-Trichlorobenzene	20.70	180	56357	4.3966 ug/L	98
98)	Hexachlorobutadiene	20.84	225	30571	4.4632 ug/L	97
99)	Naphthalene	21.07	128	141113	5.1380 ug/L	100
100)	1,2,3-Trichlorobenzene	21.38	180	58674	4.9548 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962415.D Vial: 6
Acq On : 14 Apr 2014 19:15 Operator: ADC
Sample : WG471242-06 5.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:18 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

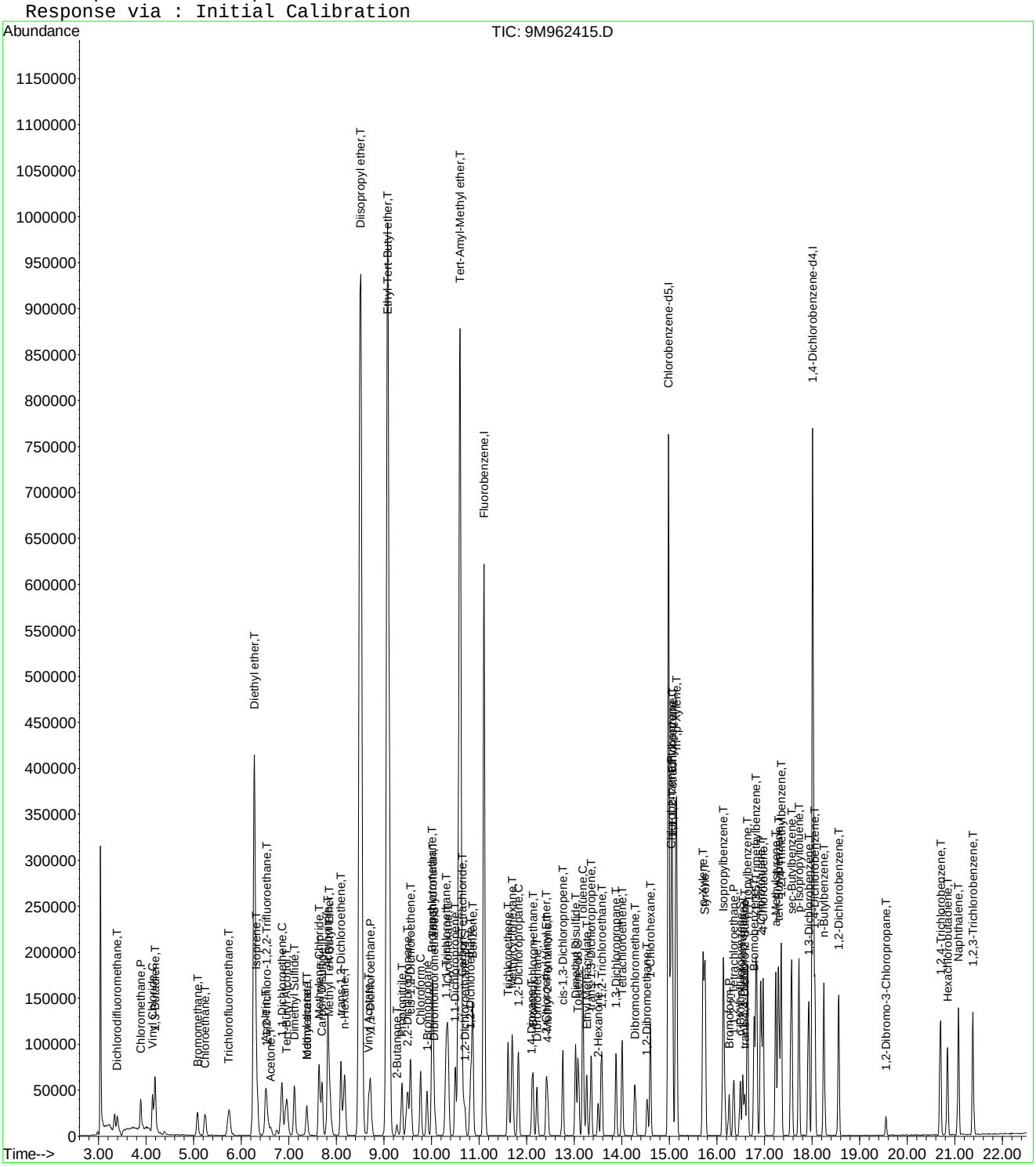

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962416.D Vial: 7
Acq On : 14 Apr 2014 19:46 Operator: ADC
Sample : WG471242-07 20.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:18:45 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.11	96	781662	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.98	117	554501	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	279826	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.06	111	77866	9.2420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 36.96%#		
43) 1,2-Dichloroethane-d4	10.70	65	98623	9.3000 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 37.20%#		
58) Toluene-d8	13.08	98	298457	9.8664 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 39.48%#		
79) p-Bromofluorobenzene	16.48	95	111593	9.6841 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 38.72%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	110182	19.6816 ug/L	99
3) Chloromethane	3.89	50	174185	18.3013 ug/L	98
4) Vinyl Chloride	4.14	62	201881	19.8079 ug/L	99
5) 1,3-Butadiene	4.18	54	128332	20.3495 ug/L	99
6) Bromomethane	5.08	94	102828	17.1782 ug/L	99
7) Chloroethane	5.23	64	133967	18.1644 ug/L	98
8) Trichlorofluoromethane	5.74	101	210799	19.2710 ug/L	98
9) Diethyl ether	6.27	59	778181	78.0432 ug/L	99
10) Isoprene	6.32	67	225811	18.8954 ug/L	100
11) Acrolein	6.51	56	61375	39.1759 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.52	101	130201	17.9538 ug/L	99
13) Acetone	6.62	43	50635	17.5958 ug/L	99
14) 1,1-Dichloroethene	6.85	61	289686	18.2349 ug/L	98
15) Tert-Butyl Alcohol	6.95	59	171515	149.1376 ug/L	99
16) Dimethyl Sulfide	7.11	62	170165	18.6605 ug/L	100
17) Iodomethane	7.37	142	127577	17.0196 ug/L	97
18) Methyl acetate	7.37	43	138447	18.7584 ug/L	100
19) Methylene Chloride	7.63	84	162258	17.9789 ug/L	100
20) Carbon Disulfide	7.69	76	438153	18.1725 ug/L	100
21) Acrylonitrile	7.82	53	175685	37.6644 ug/L	97
22) Methyl Tert Butyl Ether	7.85	73	439995	18.2801 ug/L	98
23) trans-1,2-Dichloroethene	8.10	61	281598	18.3456 ug/L	99
24) n-Hexane	8.17	57	268839	18.7448 ug/L	99
25) Diisopropyl ether	8.50	45	2774197	78.7119 ug/L	100
26) Vinyl Acetate	8.68	43	350053	20.3967 ug/L	100
27) 1,1-Dichloroethane	8.72	63	361916	18.6616 ug/L	99
28) Ethyl-Tert-Butyl ether	9.08	59	2931832	78.5029 ug/L	99
29) 2-Butanone	9.26	43	80314	17.6271 ug/L	99
30) Propionitrile	9.37	54	126451	74.8666 ug/L	97
31) 2,2-Dichloropropane	9.49	77	215098	18.2871 ug/L	99
32) cis-1,2-Dichloroethene	9.55	96	171461	18.5199 ug/L	97
33) Chloroform	9.77	83	268565	18.2132 ug/L	99
34) 1-Bromopropane	9.91	122	28557	18.1975 ug/L	92
35) Bromochloromethane	10.00	130	105064	18.5342 ug/L	99
36) Tetrahydrofuran	10.02	42	212993	74.9557 ug/L	99
38) 1,1,1-Trichloroethane	10.30	97	236981	18.5256 ug/L	99
39) Cyclohexane	10.34	56	395249	18.7465 ug/L	100
40) 1,1-Dichloropropene	10.50	75	196681	18.7166 ug/L	99
41) Tert-Amyl-Methyl ether	10.59	73	1864230	78.0629 ug/L	100
42) Carbon Tetrachloride	10.65	117	210717	18.7374 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M962416.D 8260WT.M Tue Apr 15 12:18:47 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962416.D Vial: 7
Acq On : 14 Apr 2014 19:46 Operator: ADC
Sample : WG471242-07 20.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:18:45 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.82	62	245899	18.4733 ug/L	99
46)	Benzene	10.86	78	628367	18.4403 ug/L	99
47)	Trichloroethene	11.61	130	162014	18.5541 ug/L	98
48)	Methylcyclohexane	11.69	83	249802	18.7684 ug/L	98
49)	1,2-Dichloropropane	11.82	63	214687	18.5982 ug/L	99
50)	1,4-Dioxane	12.11	88	13806	142.8035 ug/L	99
51)	Bromodichloromethane	12.13	83	209321	18.5837 ug/L	99
52)	Dibromomethane	12.22	174	108855	18.4206 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.41	63	125600	18.5421 ug/L	99
54)	4-Methyl-2-Pentanone	12.44	58	88151	17.6652 ug/L	96
55)	cis-1,3-Dichloropropene	12.76	75	253672	18.5693 ug/L	98
56)	Dimethyl Disulfide	13.03	94	298835	18.6877 ug/L	99
59)	Toluene	13.18	91	660684	19.3370 ug/L	99
60)	Ethyl Methacrylate	13.26	69	189786	18.8913 ug/L	99
61)	trans-1,3-Dichloropropene	13.35	75	226776	18.8154 ug/L	99
62)	1,1,2-Trichloroethane	13.58	97	137550	19.0744 ug/L	100
63)	2-Hexanone	13.49	43	117740	17.2556 ug/L	100
64)	1,3-Dichloropropane	13.88	76	235179	18.9113 ug/L	100
65)	Tetrachloroethene	14.01	164	135032	18.9829 ug/L	99
66)	Dibromochloromethane	14.27	129	159988	18.7241 ug/L	99
67)	1,2-Dibromoethane	14.53	107	139617	19.1074 ug/L	100
68)	1-Chlorohexane	14.60	91	192814	19.2601 ug/L	99
69)	Chlorobenzene	15.03	112	420468	18.7293 ug/L	99
70)	1,1,1,2-Tetrachloroethane	15.07	131	162291	18.8675 ug/L	100
71)	Ethylbenzene	15.05	106	231844	18.6830 ug/L	93
72)	m-,p-Xylene	15.14	106	571529	38.7256 ug/L	99
73)	o-Xylene	15.71	106	286765	18.6296 ug/L	99
74)	Styrene	15.75	104	470181	19.3305 ug/L	99
75)	Bromoform	16.25	173	120680	16.5633 ug/L	99
76)	Isopropylbenzene	16.13	105	711784	19.2619 ug/L	100
78)	1,1,2,2-Tetrachloroethane	16.35	83	167704	18.9791 ug/L	99
80)	1,2,3-Trichloropropane	16.54	110	51997	19.0893 ug/L	94
81)	trans-1,4-Dichloro-2-Buten	16.59	53	61998	18.0054 ug/L	98
82)	n-Propylbenzene	16.64	91	829951	20.2624 ug/L	99
83)	Bromobenzene	16.78	156	187912	19.4275 ug/L	97
84)	1,3,5-Trimethylbenzene	16.82	105	608188	19.9663 ug/L	100
85)	2-Chlorotoluene	16.92	91	586738	20.4699 ug/L	91
86)	4-Chlorotoluene	16.97	91	432047	18.4120 ug/L	91
87)	a-Methylstyrene	17.23	118	304079	19.3084 ug/L	99
88)	tert-Butylbenzene	17.29	134	136778	19.2955 ug/L	98
89)	1,2,4-Trimethylbenzene	17.35	105	617146	19.9744 ug/L	100
90)	sec-Butylbenzene	17.57	105	759063	19.9484 ug/L	99
91)	p-Isopropyltoluene	17.72	119	617203	20.1510 ug/L	100
92)	1,3-Dichlorobenzene	17.93	146	346619	19.2171 ug/L	99
93)	1,4-Dichlorobenzene	18.05	146	343325	19.0321 ug/L	98
94)	n-Butylbenzene	18.25	91	526558	20.0477 ug/L	99
95)	1,2-Dichlorobenzene	18.55	146	347233	19.3010 ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.55	157	38119	17.9472 ug/L	97
97)	1,2,4-Trichlorobenzene	20.69	180	237579	17.1897 ug/L	99
98)	Hexachlorobutadiene	20.85	225	129644	17.2935 ug/L	100
99)	Naphthalene	21.07	128	571248	19.9445 ug/L	100
100)	1,2,3-Trichlorobenzene	21.38	180	242664	19.6498 ug/L	97

(#) = qualifier out of range (m) = manual integration
9M962416.D 8260WT.M Tue Apr 15 12:18:48 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962416.D Vial: 7
Acq On : 14 Apr 2014 19:46 Operator: ADC
Sample : WG471242-07 20.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:18 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

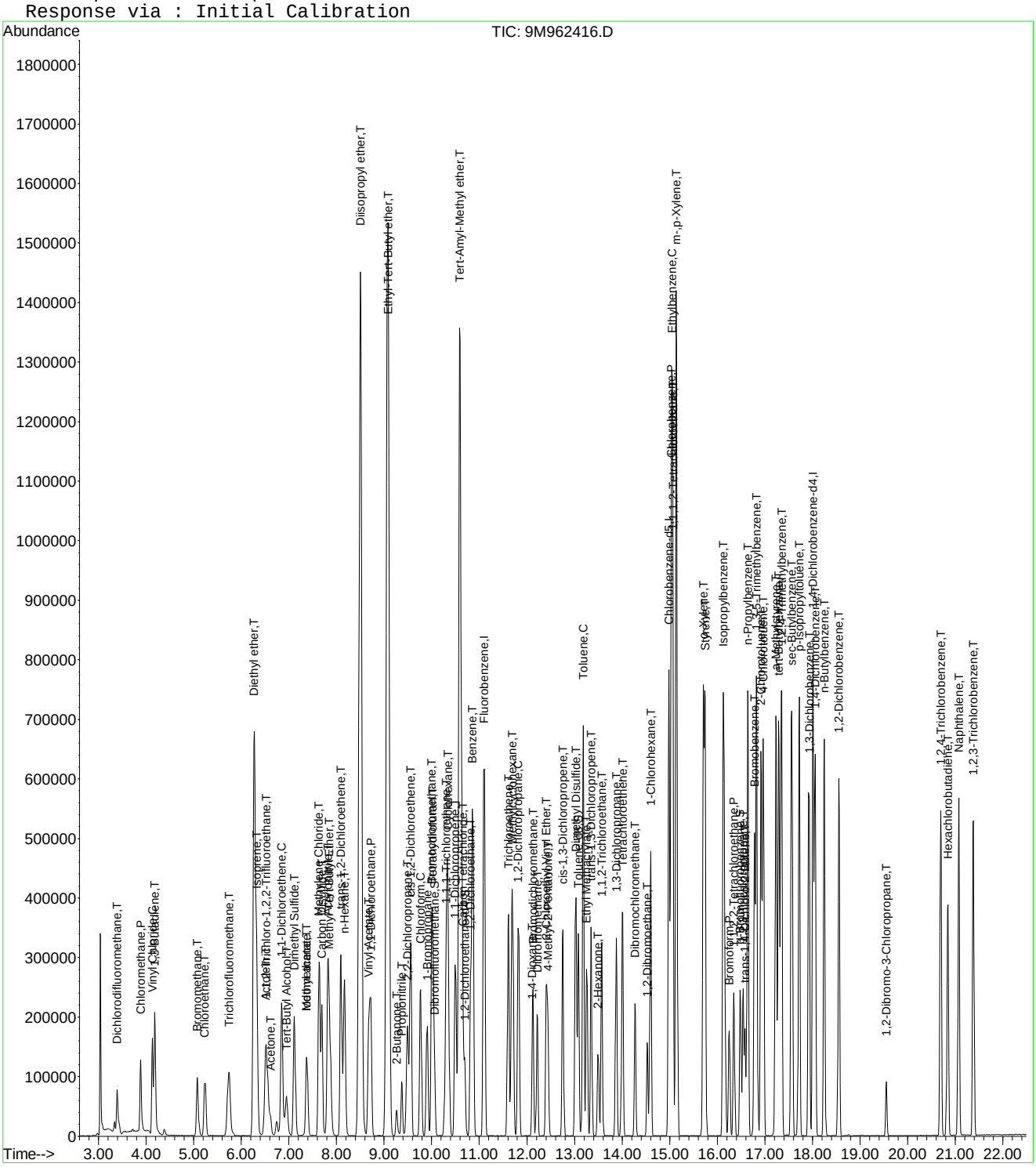

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962417.D Vial: 8
Acq On : 14 Apr 2014 20:16 Operator: ADC
Sample : WG471242-08 50.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:18:49 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.11	96	745675	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.98	117	536567	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	279955	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.06	111	206114	25.6447 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.56%		
43) 1,2-Dichloroethane-d4	10.70	65	255858	25.2914 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.16%		
58) Toluene-d8	13.08	98	760742	25.9892 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
79) p-Bromofluorobenzene	16.48	95	301199	26.1261 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.52%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	304661	57.0475 ug/L	100
3) Chloromethane	3.89	50	445311	49.0461 ug/L	100
4) Vinyl Chloride	4.14	62	566231	58.2379 ug/L	100
5) 1,3-Butadiene	4.18	54	297500	49.4509 ug/L	100
6) Bromomethane	5.08	94	296572	51.9358 ug/L	100
7) Chloroethane	5.23	64	378792	53.8384 ug/L	100
8) Trichlorofluoromethane	5.74	101	581047	55.6822 ug/L	100
9) Diethyl ether	6.27	59	967930	101.7579 ug/L	100
10) Isoprene	6.32	67	620026	54.3863 ug/L	100
11) Acrolein	6.51	56	76807	51.3922 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.53	101	362519	52.0496 ug/L	100
13) Acetone	6.61	43	136228	49.6241 ug/L	100
14) 1,1-Dichloroethene	6.85	61	811459	53.5443 ug/L	100
15) Tert-Butyl Alcohol	6.95	59	216432	197.2767 ug/L	100
16) Dimethyl Sulfide	7.11	62	468894	53.9010 ug/L	100
17) Iodomethane	7.37	142	367814	49.9125 ug/L	100
18) Methyl acetate	7.37	43	363633	51.6470 ug/L	100
19) Methylene Chloride	7.64	84	439584	51.0585 ug/L	100
20) Carbon Disulfide	7.69	76	1188731	51.6822 ug/L	100
21) Acrylonitrile	7.82	53	230543	51.8105 ug/L	100
22) Methyl Tert Butyl Ether	7.85	73	1194378	52.0167 ug/L	100
23) trans-1,2-Dichloroethene	8.10	61	784089	53.5472 ug/L	100
24) n-Hexane	8.17	57	756924	55.3236 ug/L	100
25) Diisopropyl ether	8.50	45	3497614	104.0266 ug/L	100
26) Vinyl Acetate	8.68	43	821305	50.1650 ug/L	100
27) 1,1-Dichloroethane	8.72	63	990070	53.5150 ug/L	100
28) Ethyl-Tert-Butyl ether	9.08	59	3670111	103.0137 ug/L	100
29) 2-Butanone	9.26	43	218897	50.3616 ug/L	100
30) Propionitrile	9.37	54	167100	103.7078 ug/L	100
31) 2,2-Dichloropropane	9.49	77	578226	51.5319 ug/L	100
32) cis-1,2-Dichloroethene	9.56	96	475039	53.7864 ug/L	100
33) Chloroform	9.77	83	745219	52.9772 ug/L	100
34) 1-Bromopropane	9.91	122	82390	55.0356 ug/L	100
35) Bromochloromethane	10.00	130	291910	53.9807 ug/L	100
36) Tetrahydrofuran	10.03	42	277313	102.3008 ug/L	100
38) 1,1,1-Trichloroethane	10.30	97	665838	54.5627 ug/L	100
39) Cyclohexane	10.34	56	1093479	54.3662 ug/L	100
40) 1,1-Dichloropropene	10.50	75	548460	54.7117 ug/L	100
41) Tert-Amyl-Methyl ether	10.59	73	2331064	102.3219 ug/L	100
42) Carbon Tetrachloride	10.65	117	578023	53.8795 ug/L	100

(#) = qualifier out of range (m) = manual integration
9M962417.D 8260WT.M Tue Apr 15 12:18:51 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962417.D Vial: 8
Acq On : 14 Apr 2014 20:16 Operator: ADC
Sample : WG471242-08 50.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:18:49 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.82	62	681852	53.6966 ug/L	100
46)	Benzene	10.86	78	1709438	52.5870 ug/L	100
47)	Trichloroethene	11.61	130	451359	54.1850 ug/L	100
48)	Methylcyclohexane	11.69	83	683245	53.8116 ug/L	100
49)	1,2-Dichloropropane	11.82	63	585923	53.2079 ug/L	100
50)	1,4-Dioxane	12.11	88	18416	199.6806 ug/L	100
51)	Bromodichloromethane	12.13	83	591399	55.0390 ug/L	100
52)	Dibromomethane	12.22	174	302602	53.6779 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.41	63	339177	52.4886 ug/L	100
54)	4-Methyl-2-Pentanone	12.44	58	237045	49.7955 ug/L	100
55)	cis-1,3-Dichloropropene	12.76	75	700539	53.7558 ug/L	100
56)	Dimethyl Disulfide	13.03	94	847144	55.5331 ug/L	100
59)	Toluene	13.18	91	1801210	54.4800 ug/L	100
60)	Ethyl Methacrylate	13.26	69	535876	55.1241 ug/L	100
61)	trans-1,3-Dichloropropene	13.35	75	639899	54.8664 ug/L	100
62)	1,1,2-Trichloroethane	13.58	97	379723	54.4171 ug/L	100
63)	2-Hexanone	13.49	43	328201	49.7077 ug/L	100
64)	1,3-Dichloropropane	13.88	76	640060	53.1891 ug/L	100
65)	Tetrachloroethene	14.01	164	377776	54.8831 ug/L	100
66)	Dibromochloromethane	14.27	129	448647	54.2620 ug/L	100
67)	1,2-Dibromoethane	14.53	107	389997	55.1573 ug/L	100
68)	1-Chlorohexane	14.60	91	549010	56.6732 ug/L	100
69)	Chlorobenzene	15.03	112	1170496	53.8813 ug/L	100
70)	1,1,1,2-Tetrachloroethane	15.07	131	446413	53.6333 ug/L	100
71)	Ethylbenzene	15.06	106	664618	55.3479 ug/L	100
72)	m-,p-Xylene	15.14	106	1576664	110.4022 ug/L	100
73)	o-Xylene	15.71	106	798591	53.6142 ug/L	100
74)	Styrene	15.75	104	1346861	57.2241 ug/L	100
75)	Bromoform	16.25	173	345438	47.7384 ug/L	100
76)	Isopropylbenzene	16.13	105	1993192	55.7413 ug/L	100
78)	1,1,2,2-Tetrachloroethane	16.35	83	469903	53.1546 ug/L	100
80)	1,2,3-Trichloropropane	16.54	110	146327	53.6952 ug/L	100
81)	trans-1,4-Dichloro-2-Buten	16.59	53	179360	51.2939 ug/L	100
82)	n-Propylbenzene	16.64	91	2344177	57.2043 ug/L	100
83)	Bromobenzene	16.78	156	537577	55.5523 ug/L	100
84)	1,3,5-Trimethylbenzene	16.82	105	1710457	56.1270 ug/L	100
85)	2-Chlorotoluene	16.92	91	1406873	49.0599 ug/L	100
86)	4-Chlorotoluene	16.97	91	1477183	62.9223 ug/L	100
87)	a-Methylstyrene	17.23	118	890114	56.4944 ug/L	100
88)	tert-Butylbenzene	17.29	134	386411	54.4865 ug/L	100
89)	1,2,4-Trimethylbenzene	17.35	105	1732529	56.0487 ug/L	100
90)	sec-Butylbenzene	17.57	105	2150246	56.4832 ug/L	100
91)	p-Isopropyltoluene	17.72	119	1787495	58.3328 ug/L	100
92)	1,3-Dichlorobenzene	17.93	146	995404	55.1612 ug/L	100
93)	1,4-Dichlorobenzene	18.05	146	1002970	55.5736 ug/L	100
94)	n-Butylbenzene	18.25	91	1573803	59.8920 ug/L	100
95)	1,2-Dichlorobenzene	18.55	146	1004701	55.8206 ug/L	100
96)	1,2-Dibromo-3-Chloropropan	19.55	157	115676	54.4376 ug/L	100
97)	1,2,4-Trichlorobenzene	20.69	180	721264	51.7724 ug/L	100
98)	Hexachlorobutadiene	20.85	225	394817	52.0706 ug/L	100
99)	Naphthalene	21.07	128	1710056	59.6772 ug/L	100
100)	1,2,3-Trichlorobenzene	21.38	180	713083	57.7156 ug/L	100

(#) = qualifier out of range (m) = manual integration
9M962417.D 8260WT.M Tue Apr 15 12:18:52 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962417.D Vial: 8
Acq On : 14 Apr 2014 20:16 Operator: ADC
Sample : WG471242-08 50.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:18 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

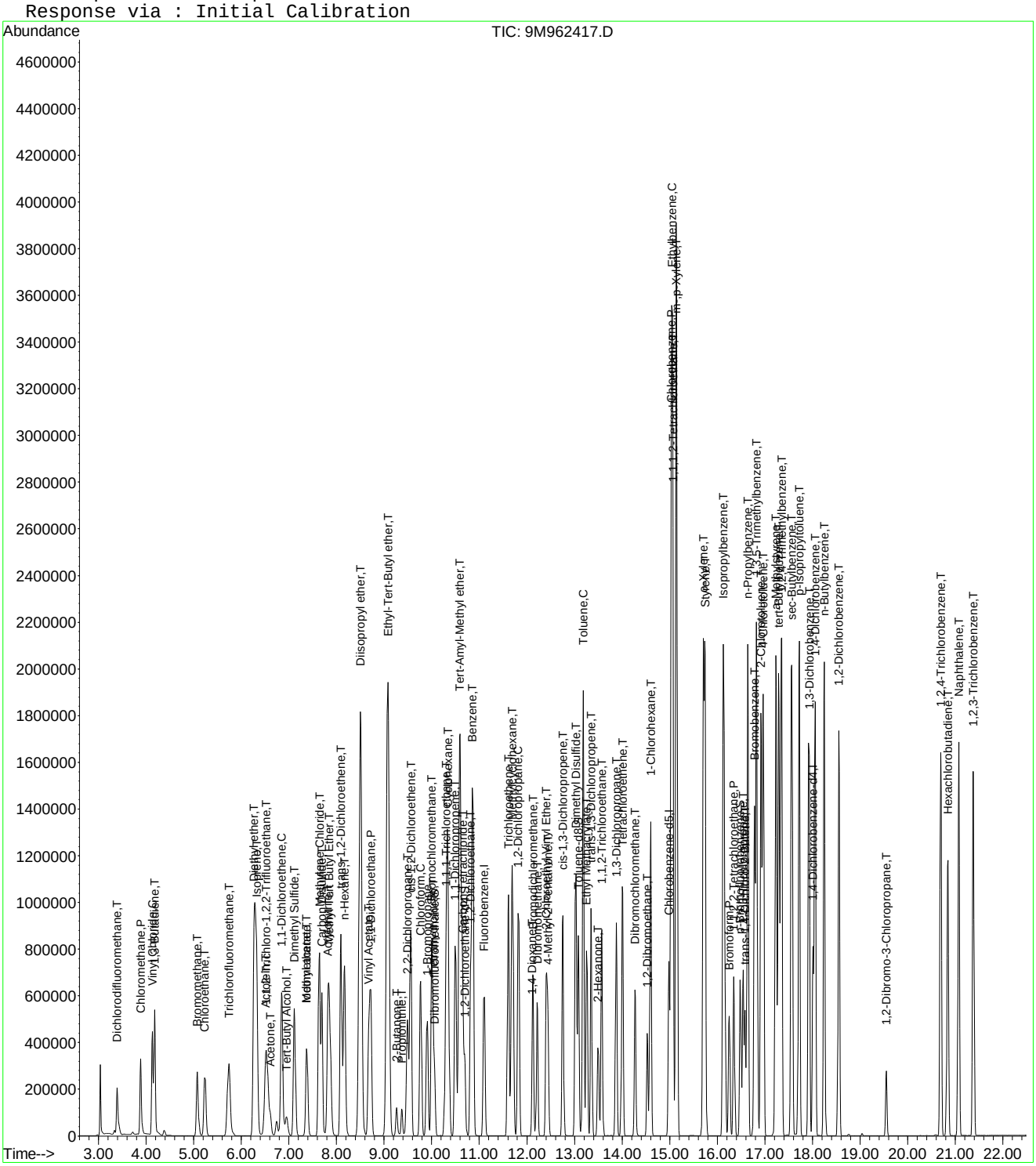

9M962417.D 8260WT.M Tue Apr 15 12:18:52 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962418.D Vial: 9
Acq On : 14 Apr 2014 20:46 Operator: ADC
Sample : WG471242-09 100.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:18:53 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.10	96	717908	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.98	117	523955	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	290661	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.06	111	407864	52.7091 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 210.84%#		
43) 1,2-Dichloroethane-d4	10.70	65	509610	52.3230 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 209.28%#		
58) Toluene-d8	13.08	98	1498989	52.4426 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 209.76%#		
79) p-Bromofluorobenzene	16.48	95	612796	51.1963 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	586201	114.0112 ug/L	99
3) Chloromethane	3.89	50	905362	103.5725 ug/L	99
4) Vinyl Chloride	4.13	62	1063990	113.6659 ug/L	99
5) 1,3-Butadiene	4.18	54	568488	98.1498 ug/L	99
6) Bromomethane	5.08	94	594842	108.1979 ug/L	97
7) Chloroethane	5.23	64	729273	107.6620 ug/L	99
8) Trichlorofluoromethane	5.74	101	1119910	111.4728 ug/L	100
9) Diethyl ether	6.27	59	1953122	213.2722 ug/L	99
10) Isoprene	6.32	67	1216692	110.8513 ug/L	99
11) Acrolein	6.51	56	154807	107.5890 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.53	101	699612	104.1495 ug/L	100
13) Acetone	6.62	43	276024	104.4369 ug/L	99
14) 1,1-Dichloroethene	6.84	61	1551253	106.3187 ug/L	100
15) Tert-Butyl Alcohol	6.96	59	481113	455.4935 ug/L	99
16) Dimethyl Sulfide	7.11	62	922598	110.1579 ug/L	100
17) Iodomethane	7.37	142	735185	102.8123 ug/L	100
18) Methyl acetate	7.37	43	739633	109.1136 ug/L	99
19) Methylene Chloride	7.64	84	852670	102.8698 ug/L	99
20) Carbon Disulfide	7.69	76	2324115	104.9533 ug/L	100
21) Acrylonitrile	7.82	53	472167	110.2154 ug/L	99
22) Methyl Tert Butyl Ether	7.85	73	2348524	106.2372 ug/L	100
23) trans-1,2-Dichloroethene	8.09	61	1506922	106.8915 ug/L	100
24) n-Hexane	8.17	57	1499634	113.8477 ug/L	100
25) Diisopropyl ether	8.51	45	6742906	208.3053 ug/L	98
26) Vinyl Acetate	8.67	43	1760113	111.6652 ug/L	100
27) 1,1-Dichloroethane	8.71	63	1898198	106.5693 ug/L	99
28) Ethyl-Tert-Butyl ether	9.08	59	7184553	209.4577 ug/L	99
29) 2-Butanone	9.26	43	450673	107.6966 ug/L	97
30) Propionitrile	9.38	54	339652	218.9525 ug/L	97
31) 2,2-Dichloropropane	9.49	77	1104284	102.2209 ug/L	99
32) cis-1,2-Dichloroethene	9.56	96	921927	108.4227 ug/L	99
33) Chloroform	9.77	83	1429800	105.5751 ug/L	99
34) 1-Bromopropane	9.90	122	161888	112.3220 ug/L	99
35) Bromochloromethane	10.01	130	566412	108.7935 ug/L	100
36) Tetrahydrofuran	10.03	42	563534	215.9283 ug/L	99
38) 1,1,1-Trichloroethane	10.31	97	1278122	108.7879 ug/L	99
39) Cyclohexane	10.34	56	2107320	108.8253 ug/L	100
40) 1,1-Dichloropropene	10.50	75	1067272	110.5836 ug/L	99
41) Tert-Amyl-Methyl ether	10.60	73	4588886	209.2197 ug/L	99
42) Carbon Tetrachloride	10.65	117	1122485	108.6775 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962418.D Vial: 9
Acq On : 14 Apr 2014 20:46 Operator: ADC
Sample : WG471242-09 100.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:18:53 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.81	62	1317287	107.7502 ug/L	99
46)	Benzene	10.87	78	3224186	103.0210 ug/L	99
47)	Trichloroethene	11.61	130	871673	108.6905 ug/L	98
48)	Methylcyclohexane	11.69	83	1332370	108.9947 ug/L	100
49)	1,2-Dichloropropane	11.83	63	1136512	107.1989 ug/L	99
50)	1,4-Dioxane	12.11	88	38877	437.8386 ug/L	96
51)	Bromodichloromethane	12.13	83	1147535	110.9268 ug/L	100
52)	Dibromomethane	12.22	174	590581	108.8139 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.41	63	690651	111.0141 ug/L	99
54)	4-Methyl-2-Pentanone	12.44	58	497846	108.6264 ug/L	100
55)	cis-1,3-Dichloropropene	12.76	75	1370680	109.2471 ug/L	99
56)	Dimethyl Disulfide	13.03	94	1680863	114.4478 ug/L	100
59)	Toluene	13.18	91	3410689	105.6440 ug/L	99
60)	Ethyl Methacrylate	13.26	69	1093746	115.2188 ug/L	99
61)	trans-1,3-Dichloropropene	13.35	75	1265979	111.1608 ug/L	100
62)	1,1,2-Trichloroethane	13.57	97	743372	109.0949 ug/L	100
63)	2-Hexanone	13.50	43	711098	110.2918 ug/L	100
64)	1,3-Dichloropropane	13.87	76	1252693	106.6047 ug/L	100
65)	Tetrachloroethene	14.01	164	738140	109.8178 ug/L	99
66)	Dibromochloromethane	14.28	129	910929	112.8251 ug/L	99
67)	1,2-Dibromoethane	14.54	107	776284	112.4327 ug/L	99
68)	1-Chlorohexane	14.60	91	1082876	114.4738 ug/L	98
69)	Chlorobenzene	15.03	112	2258870	106.4852 ug/L	100
70)	1,1,1,2-Tetrachloroethane	15.06	131	866416	106.5992 ug/L	100
71)	Ethylbenzene	15.05	106	1272385	108.5120 ug/L	99
72)	m-,p-Xylene	15.15	106	3035915	217.6998 ug/L	96
73)	o-Xylene	15.70	106	1572350	108.1022 ug/L	97
74)	Styrene	15.75	104	2661380	115.7959 ug/L	100
75)	Bromoform	16.25	173	717663	100.8419 ug/L	100
76)	Isopropylbenzene	16.13	105	3844121	110.0919 ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.35	83	1011242	110.1766 ug/L	98
80)	1,2,3-Trichloropropane	16.54	110	305702	108.0466 ug/L	96
81)	trans-1,4-Dichloro-2-Buten	16.58	53	386459	106.0113 ug/L	93
82)	n-Propylbenzene	16.63	91	4601083	108.1433 ug/L	99
83)	Bromobenzene	16.78	156	1080342	107.5287 ug/L	100
84)	1,3,5-Trimethylbenzene	16.83	105	3385632	107.0042 ug/L	99
85)	2-Chlorotoluene	16.92	91	3097612	104.0400 ug/L	91
86)	4-Chlorotoluene	16.97	91	2615615	107.3114 ug/L	89
87)	a-Methylstyrene	17.23	118	1853952	113.3339 ug/L	99
88)	tert-Butylbenzene	17.30	134	767189	104.1941 ug/L	98
89)	1,2,4-Trimethylbenzene	17.35	105	3439096	107.1595 ug/L	99
90)	sec-Butylbenzene	17.57	105	4253775	107.6235 ug/L	99
91)	p-Isopropyltoluene	17.72	119	3549635	111.5716 ug/L	99
92)	1,3-Dichlorobenzene	17.93	146	2029981	108.3498 ug/L	100
93)	1,4-Dichlorobenzene	18.05	146	2051829	109.5023 ug/L	100
94)	n-Butylbenzene	18.25	91	3206510	117.5309 ug/L	100
95)	1,2-Dichlorobenzene	18.56	146	2041605	109.2524 ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.55	157	244263	110.7172 ug/L	97
97)	1,2,4-Trichlorobenzene	20.70	180	1520856	104.9487 ug/L	99
98)	Hexachlorobutadiene	20.84	225	828160	104.9145 ug/L	100
99)	Naphthalene	21.07	128	3533319	118.7634 ug/L	99
100)	1,2,3-Trichlorobenzene	21.38	180	1510678	117.7678 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M962418.D 8260WT.M Tue Apr 15 12:18:55 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962418.D Vial: 9
Acq On : 14 Apr 2014 20:46 Operator: ADC
Sample : WG471242-09 100.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:18 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

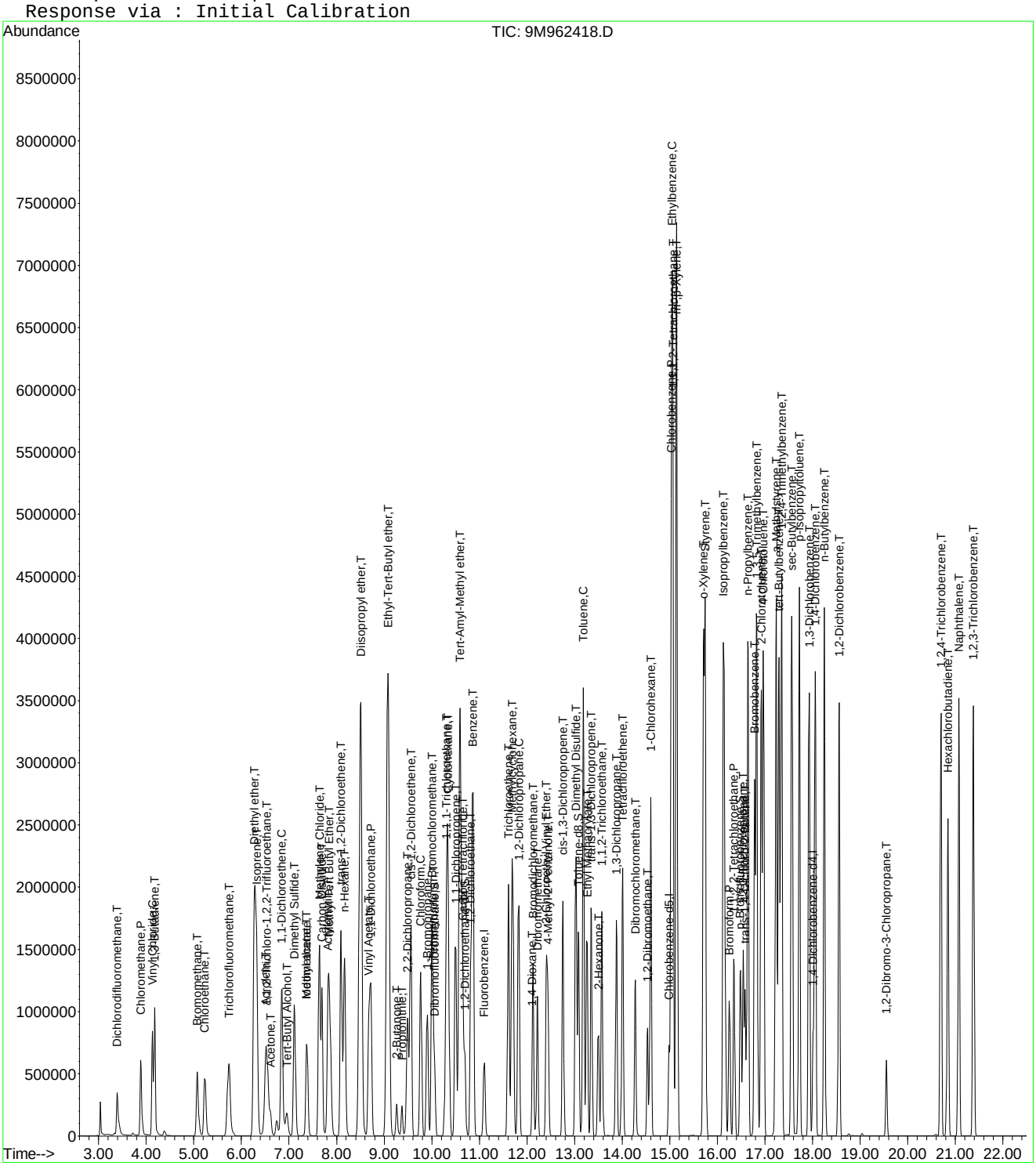

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962419.D Vial: 10
Acq On : 14 Apr 2014 21:16 Operator: ADC
Sample : WG471242-10 200.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:18:57 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.10	96	734644	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.98	117	547254	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	302640	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.06	111	791715	99.9841 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 399.92%#		
43) 1,2-Dichloroethane-d4	10.70	65	980193	98.3463 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 393.40%#		
58) Toluene-d8	13.08	98	2871299	96.1766 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 384.72%#		
79) p-Bromofluorobenzene	16.48	95	1231368	98.8031 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 395.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	1135807	215.8725 ug/L	99
3) Chloromethane	3.89	50	1744084	194.9761 ug/L	100
4) Vinyl Chloride	4.13	62	2048661	213.8724 ug/L	99
5) 1,3-Butadiene	4.18	54	1108735	187.0629 ug/L	100
6) Bromomethane	5.07	94	1172852	208.4742 ug/L	98
7) Chloroethane	5.23	64	1426150	205.7451 ug/L	99
8) Trichlorofluoromethane	5.73	101	2165506	210.6381 ug/L	100
9) Diethyl ether	6.28	59	4689	0.5004 ug/L	94
10) Isoprene	6.31	67	2347336	208.9909 ug/L	98
11) Acrolein	6.53	56	1021	0.6934 ug/L #	39
12) 1,1,2-Trichloro-1,2,2-Trif	6.52	101	1356979	197.2440 ug/L	100
13) Acetone	6.62	43	514403	190.1965 ug/L	98
14) 1,1-Dichloroethene	6.84	61	2987917	200.1187 ug/L	99
15) Tert-Butyl Alcohol	6.97	59	209	0.1934 ug/L #	66
16) Dimethyl Sulfide	7.11	62	1758860	205.2231 ug/L	100
17) Iodomethane	7.37	142	1460743	198.9148 ug/L	99
18) Methyl acetate	7.37	43	1365492	196.8538 ug/L	99
19) Methylene Chloride	7.63	84	1653119	194.8960 ug/L	95
20) Carbon Disulfide	7.69	76	4439823	195.9277 ug/L	99
21) Acrylonitrile	7.85	53	50298	11.4733 ug/L #	32
22) Methyl Tert Butyl Ether	7.85	73	4453501	196.8680 ug/L	99
23) trans-1,2-Dichloroethene	8.10	61	2901484	201.1243 ug/L	99
24) n-Hexane	8.17	57	2828667	209.8518 ug/L	99
26) Vinyl Acetate	8.67	43	3065042	190.0227 ug/L	99
27) 1,1-Dichloroethane	8.72	63	3602458	197.6429 ug/L	98
29) 2-Butanone	9.26	43	837008	195.4617 ug/L	97
30) Propionitrile	9.38	54	196	0.1235 ug/L #	62
31) 2,2-Dichloropropane	9.49	77	2119003	191.6825 ug/L	100
32) cis-1,2-Dichloroethene	9.56	96	1778069	204.3451 ug/L	98
33) Chloroform	9.77	83	2751744	198.5574 ug/L	99
34) 1-Bromopropane	9.90	122	315131	213.6650 ug/L	99
35) Bromochloromethane	10.01	130	1101897	206.8252 ug/L	98
36) Tetrahydrofuran	10.03	42	434	0.1625 ug/L #	41
38) 1,1,1-Trichloroethane	10.30	97	2478470	206.1502 ug/L	99
39) Cyclohexane	10.34	56	4005548	202.1405 ug/L	99
40) 1,1-Dichloropropene	10.49	75	2058291	208.4080 ug/L	99
41) Tert-Amyl-Methyl ether	10.49	73	280243	12.4860 ug/L #	53
42) Carbon Tetrachloride	10.65	117	2184538	206.6858 ug/L	100
45) 1,2-Dichloroethane	10.81	62	2508353	200.5018 ug/L	100
46) Benzene	10.86	78	6053760	189.0264 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962419.D Vial: 10
Acq On : 14 Apr 2014 21:16 Operator: ADC
Sample : WG471242-10 200.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:18:57 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
47)	Trichloroethene	11.61	130	1665038	202.8869 ug/L	99
48)	Methylcyclohexane	11.69	83	2551132	203.9414 ug/L	99
49)	1,2-Dichloropropane	11.83	63	2197801	202.5799 ug/L	100
50)	1,4-Dioxane	12.12	88	2524	27.7781 ug/L #	4
51)	Bromodichloromethane	12.13	83	2232911	210.9278 ug/L	99
52)	Dibromomethane	12.22	174	1156009	208.1411 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.41	63	1336772	209.9755 ug/L	98
54)	4-Methyl-2-Pentanone	12.44	58	955962	203.8322 ug/L	100
55)	cis-1,3-Dichloropropene	12.76	75	2640499	205.6610 ug/L	99
56)	Dimethyl Disulfide	13.03	94	3221894	214.3771 ug/L	99
59)	Toluene	13.18	91	6358053	188.5524 ug/L	97
60)	Ethyl Methacrylate	13.25	69	2109501	212.7608 ug/L	99
61)	trans-1,3-Dichloropropene	13.35	75	2417760	203.2561 ug/L	99
62)	1,1,2-Trichloroethane	13.58	97	1429956	200.9213 ug/L	100
63)	2-Hexanone	13.49	43	1356352	201.4147 ug/L	100
64)	1,3-Dichloropropane	13.88	76	2403019	195.7916 ug/L	99
65)	Tetrachloroethene	14.01	164	1434066	204.2718 ug/L	100
66)	Dibromochloromethane	14.27	129	1773071	210.2579 ug/L	100
67)	1,2-Dibromoethane	14.53	107	1511010	209.5290 ug/L	99
68)	1-Chlorohexane	14.60	91	2129714	215.5528 ug/L	100
69)	Chlorobenzene	15.03	112	4270903	192.7626 ug/L	98
70)	1,1,1,2-Tetrachloroethane	15.06	131	1703962	200.7209 ug/L	99
71)	Ethylbenzene	15.05	106	2436504	198.9442 ug/L	93
72)	m-,p-Xylene	15.15	106	5651521	388.0063 ug/L	89
73)	o-Xylene	15.71	106	3053638	201.0055 ug/L	94
74)	Styrene	15.75	104	5137924	214.0321 ug/L	98
75)	Bromoform	16.25	173	1452875	194.8557 ug/L	100
76)	Isopropylbenzene	16.13	105	7218309	197.9241 ug/L	96
78)	1,1,2,2-Tetrachloroethane	16.35	83	1964681	205.5828 ug/L	100
80)	1,2,3-Trichloropropane	16.54	110	593723	201.5380 ug/L	97
81)	trans-1,4-Dichloro-2-Buten	16.58	53	762072	200.4083 ug/L	91
82)	n-Propylbenzene	16.64	91	8442719	190.5823 ug/L	95
83)	Bromobenzene	16.78	156	2146363	205.1761 ug/L	100
84)	1,3,5-Trimethylbenzene	16.82	105	6429409	195.1607 ug/L	97
85)	2-Chlorotoluene	16.93	91	6099359	196.7514 ug/L	92
86)	4-Chlorotoluene	16.97	91	4854902	191.2991 ug/L	85
87)	a-Methylstyrene	17.24	118	3633029	213.2998 ug/L	97
88)	tert-Butylbenzene	17.30	134	1504646	196.2617 ug/L	97
89)	1,2,4-Trimethylbenzene	17.35	105	6509452	194.8010 ug/L	96
90)	sec-Butylbenzene	17.57	105	7934997	192.8145 ug/L	97
91)	p-Isopropyltoluene	17.72	119	6679649	201.6433 ug/L	97
92)	1,3-Dichlorobenzene	17.93	146	3960604	203.0290 ug/L	98
93)	1,4-Dichlorobenzene	18.05	146	4001470	205.0983 ug/L	99
94)	n-Butylbenzene	18.25	91	6121790	215.5056 ug/L	98
95)	1,2-Dichlorobenzene	18.56	146	3928913	201.9260 ug/L	97
96)	1,2-Dibromo-3-Chloropropan	19.55	157	493067	214.6465 ug/L	100
97)	1,2,4-Trichlorobenzene	20.70	180	3078149	203.8233 ug/L	99
98)	Hexachlorobutadiene	20.84	225	1694178	205.8605 ug/L	99
99)	Naphthalene	21.07	128	6666338	215.2027 ug/L	97
100)	1,2,3-Trichlorobenzene	21.38	180	3039638	227.5815 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M962419.D 8260WT.M Tue Apr 15 12:19:00 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962419.D Vial: 10
Acq On : 14 Apr 2014 21:16 Operator: ADC
Sample : WG471242-10 200.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:18 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

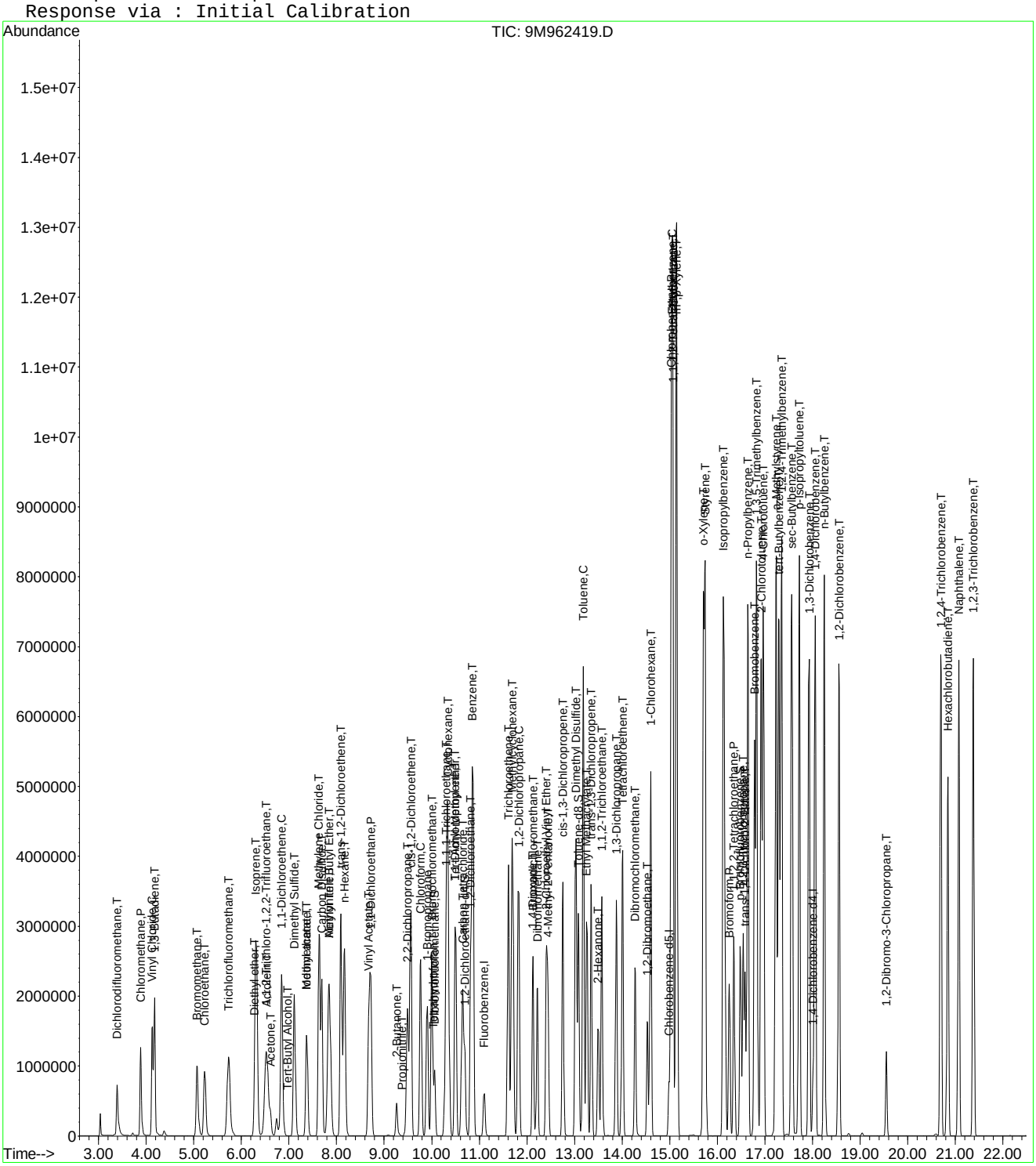

9M962419.D 8260WT.M Tue Apr 15 12:19:00 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962420.D Vial: 11
Acq On : 14 Apr 2014 21:47 Operator: ADC
Sample : WG471242-11 300.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:19:01 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.11	96	674828	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.98	117	518952	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	314438	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.06	111	1123888	154.5144 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 618.04%#		
43) 1,2-Dichloroethane-d4	10.70	65	1381936	150.9449 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 603.76%#		
58) Toluene-d8	13.08	98	3998846	141.2497 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 565.00%#		
79) p-Bromofluorobenzene	16.48	95	1839692	142.0755 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 568.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	1608850	332.8834 ug/L	100
3) Chloromethane	3.89	50	2573574	313.2092 ug/L	100
4) Vinyl Chloride	4.14	62	2060023	234.1211 ug/L	98
5) 1,3-Butadiene	4.17	54	1486582	273.0440 ug/L	100
6) Bromomethane	5.07	94	1703617	329.6590 ug/L	99
7) Chloroethane	5.22	64	2009774	315.6425 ug/L	99
8) Trichlorofluoromethane	5.73	101	2995876	317.2380 ug/L	100
9) Diethyl ether	6.27	59	2578727	299.5614 ug/L	98
10) Isoprene	6.31	67	3249317	314.9402 ug/L	97
11) Acrolein	6.51	56	204055	150.8690 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.52	101	1886932	298.4927 ug/L	99
13) Acetone	6.62	43	734198	295.5263 ug/L	100
14) 1,1-Dichloroethene	6.85	61	4132752	301.3299 ug/L	99
15) Tert-Butyl Alcohol	6.97	59	732477	737.7425 ug/L	100
16) Dimethyl Sulfide	7.11	62	2420344	307.4368 ug/L	99
17) Iodomethane	7.37	142	2037135	301.6023 ug/L	99
18) Methyl acetate	7.37	43	1936412	303.9038 ug/L	99
19) Methylene Chloride	7.63	84	2292551	294.2400 ug/L	93
20) Carbon Disulfide	7.69	76	6099767	293.0403 ug/L	99
21) Acrylonitrile	7.82	53	667999	165.8815 ug/L	98
22) Methyl Tert Butyl Ether	7.85	73	6204396	298.5774 ug/L	99
23) trans-1,2-Dichloroethene	8.09	61	4024795	303.7190 ug/L	99
24) n-Hexane	8.16	57	3956645	319.5522 ug/L	99
25) Diisopropyl ether	8.50	45	8794817	289.0385 ug/L	97
26) Vinyl Acetate	8.68	43	4646976	313.6341 ug/L	99
27) 1,1-Dichloroethane	8.72	63	4981623	297.5343 ug/L	98
28) Ethyl-Tert-Butyl ether	9.08	59	9502670	294.7257 ug/L	98
29) 2-Butanone	9.26	43	1208776	307.2995 ug/L	97
30) Propionitrile	9.38	54	480629	329.6108 ug/L	95
31) 2,2-Dichloropropane	9.49	77	2913146	286.8779 ug/L	100
32) cis-1,2-Dichloroethene	9.55	96	2466927	308.6426 ug/L	98
33) Chloroform	9.77	83	3794632	298.0792 ug/L	99
34) 1-Bromopropane	9.91	122	444282	327.9327 ug/L	98
35) Bromochloromethane	10.00	130	1521798	310.9591 ug/L	96
36) Tetrahydrofuran	10.03	42	752677	306.8130 ug/L	98
38) 1,1,1-Trichloroethane	10.30	97	3430937	310.6680 ug/L	99
39) Cyclohexane	10.34	56	5457999	299.8532 ug/L	98
40) 1,1-Dichloropropene	10.50	75	2861900	315.4612 ug/L	99
41) Tert-Amyl-Methyl ether	10.60	73	6208724	301.1434 ug/L	99
42) Carbon Tetrachloride	10.65	117	3022008	311.2651 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M962420.D 8260WT.M Tue Apr 15 12:19:03 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962420.D Vial: 11
Acq On : 14 Apr 2014 21:47 Operator: ADC
Sample : WG471242-11 300.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:19:01 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.82	62	3474402	302.3385 ug/L	99
46)	Benzene	10.86	78	8118355	275.9619 ug/L	97
47)	Trichloroethene	11.61	130	2296942	304.6939 ug/L	99
48)	Methylcyclohexane	11.69	83	3525375	306.8044 ug/L	99
49)	1,2-Dichloropropane	11.82	63	3055330	306.5843 ug/L	100
50)	1,4-Dioxane	12.11	88	61306	734.5138 ug/L	97
51)	Bromodichloromethane	12.13	83	3111857	320.0117 ug/L	98
52)	Dibromomethane	12.22	174	1617816	317.1097 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.41	63	1830995	313.0994 ug/L	99
54)	4-Methyl-2-Pentanone	12.44	58	1424949	330.7618 ug/L	99
55)	cis-1,3-Dichloropropene	12.76	75	3698796	313.6246 ug/L	98
56)	Dimethyl Disulfide	13.03	94	4481879	324.6467 ug/L	98
59)	Toluene	13.18	91	8483369	265.3005 ug/L	95
60)	Ethyl Methacrylate	13.26	69	3054950	324.9210 ug/L	98
61)	trans-1,3-Dichloropropene	13.35	75	3415885	302.8275 ug/L	98
62)	1,1,2-Trichloroethane	13.58	97	2067311	306.3169 ug/L	100
63)	2-Hexanone	13.49	43	2053055	321.5001 ug/L	99
64)	1,3-Dichloropropane	13.88	76	3398928	292.0388 ug/L	98
65)	Tetrachloroethene	14.01	164	2005129	301.1919 ug/L	99
66)	Dibromochloromethane	14.27	129	2577753	322.3512 ug/L	100
67)	1,2-Dibromoethane	14.53	107	2170429	317.3834 ug/L	99
68)	1-Chlorohexane	14.60	91	2995476	319.7127 ug/L	100
69)	Chlorobenzene	15.03	112	5831624	277.5584 ug/L	95
70)	1,1,1,2-Tetrachloroethane	15.07	131	2414411	299.9202 ug/L	99
71)	Ethylbenzene	15.05	106	3340087	287.5966 ug/L	87
72)	m-,p-Xylene	15.15	106	7562968	547.5546 ug/L	81
73)	o-Xylene	15.71	106	4270747	296.4532 ug/L	90
74)	Styrene	15.75	104	7110314	312.3502 ug/L	95
75)	Bromoform	16.25	173	2195078	310.0726 ug/L	99
76)	Isopropylbenzene	16.13	105	9784565	282.9218 ug/L	94
78)	1,1,2,2-Tetrachloroethane	16.35	83	3104135	312.6271 ug/L	100
80)	1,2,3-Trichloropropane	16.54	110	913987	298.6100 ug/L	96
81)	trans-1,4-Dichloro-2-Buten	16.59	53	1163434	294.2864 ug/L	91
82)	n-Propylbenzene	16.64	91	11209188	243.5374 ug/L	91
83)	Bromobenzene	16.78	156	3118352	286.9062 ug/L	100
84)	1,3,5-Trimethylbenzene	16.82	105	8871545	259.1862 ug/L	94
85)	2-Chlorotoluene	16.93	91	8488201	263.5363 ug/L	94
86)	4-Chlorotoluene	16.97	91	6782469	257.2240 ug/L	83
87)	a-Methylstyrene	17.24	118	5272442	297.9372 ug/L	95
88)	tert-Butylbenzene	17.30	134	2190646	275.0202 ug/L	94
89)	1,2,4-Trimethylbenzene	17.35	105	8970036	258.3641 ug/L	93
90)	sec-Butylbenzene	17.57	105	10794324	252.4525 ug/L	93
91)	p-Isopropyltoluene	17.72	119	9271231	269.3760 ug/L	93
92)	1,3-Dichlorobenzene	17.93	146	5791061	285.7235 ug/L	96
93)	1,4-Dichlorobenzene	18.05	146	5852167	288.7025 ug/L	96
94)	n-Butylbenzene	18.25	91	8681740	294.1563 ug/L	95
95)	1,2-Dichlorobenzene	18.56	146	5835205	288.6471 ug/L	96
96)	1,2-Dibromo-3-Chloropropan	19.55	157	771201	323.1296 ug/L	100
97)	1,2,4-Trichlorobenzene	20.70	180	4601261	293.1621 ug/L	99
98)	Hexachlorobutadiene	20.85	225	2485531	290.5712 ug/L	99
99)	Naphthalene	21.07	128	9323833	289.6984 ug/L	93
100)	1,2,3-Trichlorobenzene	21.38	180	4496261	324.0096 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M962420.D 8260WT.M Tue Apr 15 12:19:03 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962420.D Vial: 11
Acq On : 14 Apr 2014 21:47 Operator: ADC
Sample : WG471242-11 300.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD63895 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:19 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

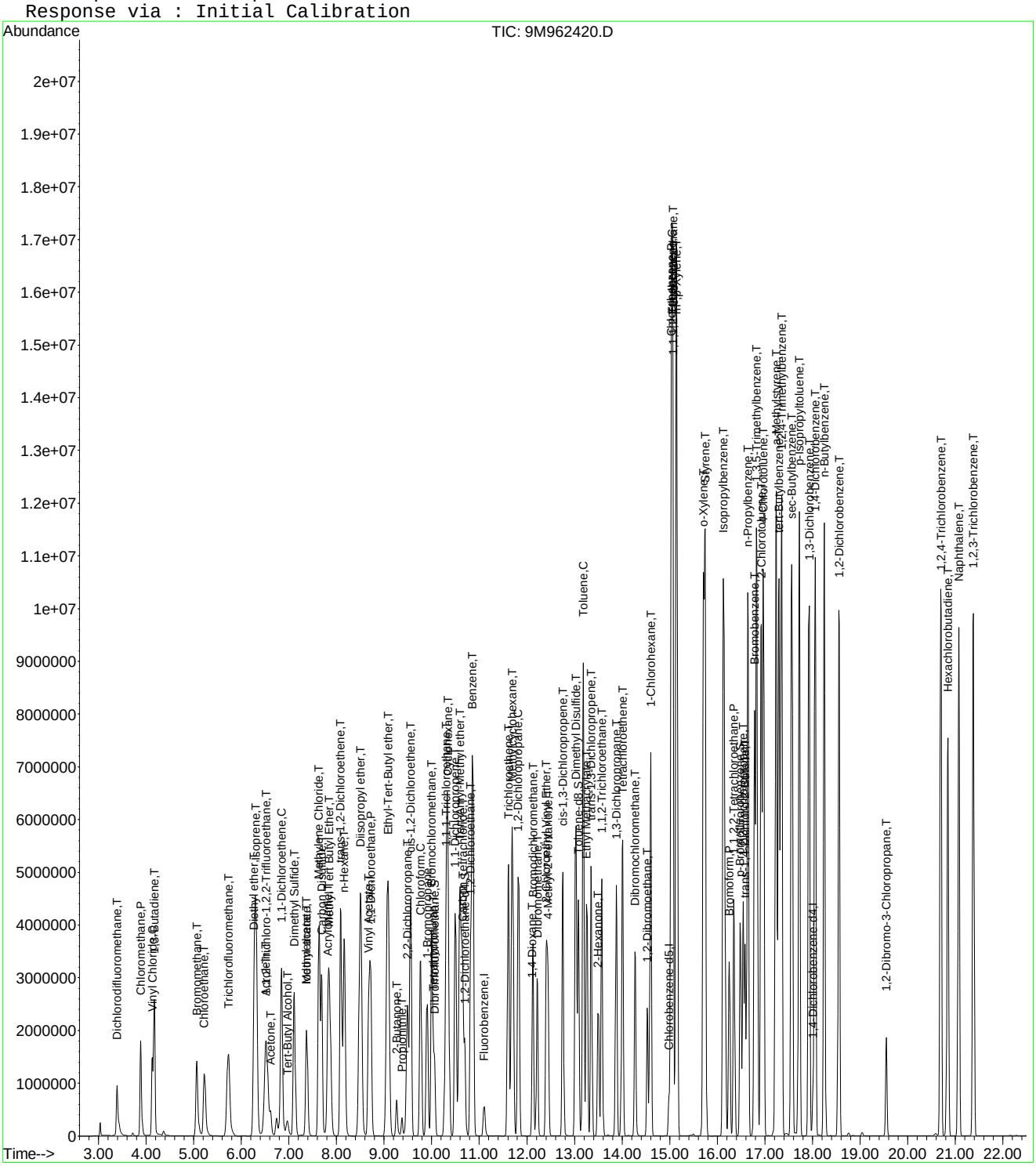

9M962420.D 8260WT.M Tue Apr 15 12:19:04 2014 Page 3

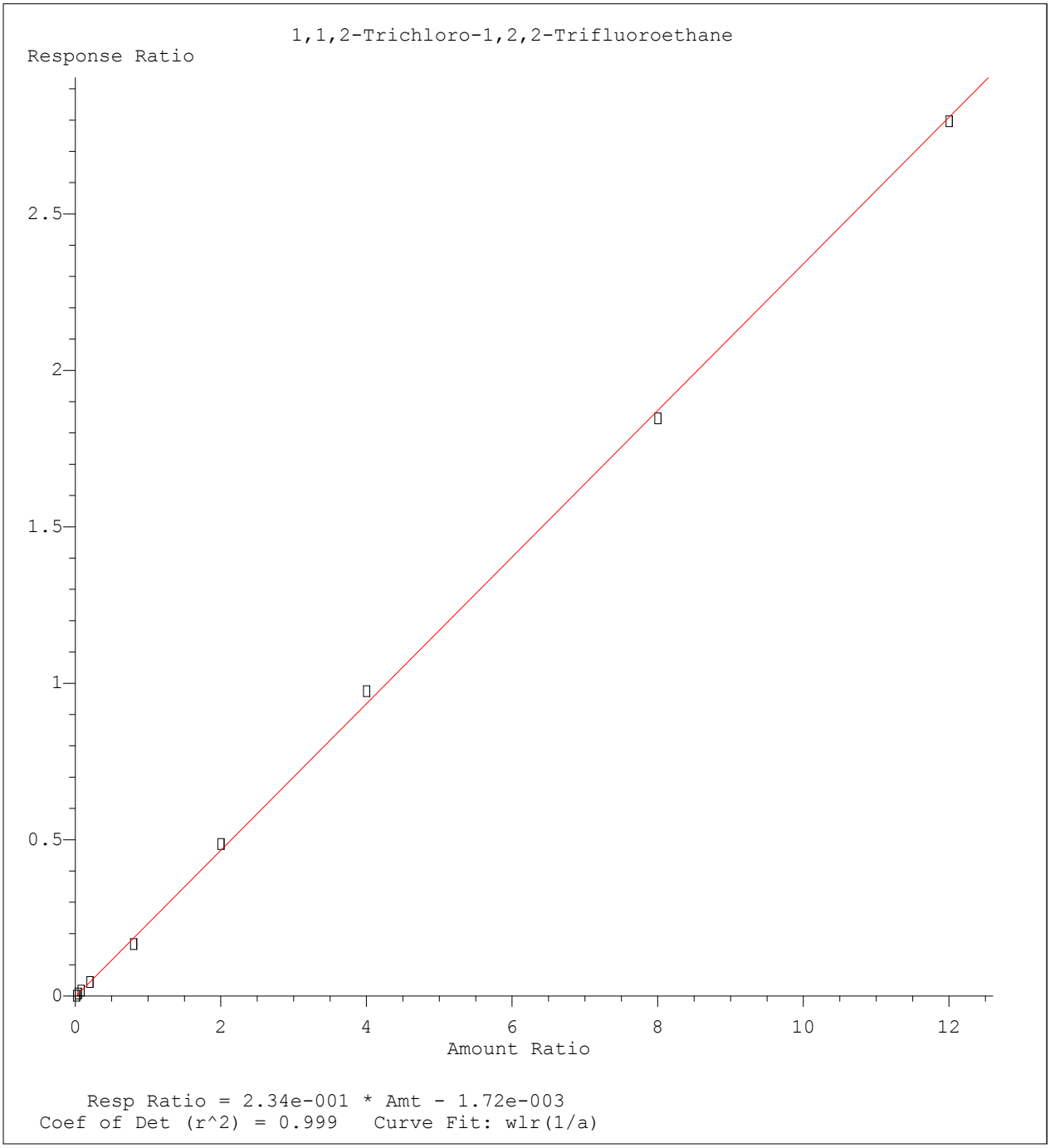

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Tue Apr 15 12:15:18 2014

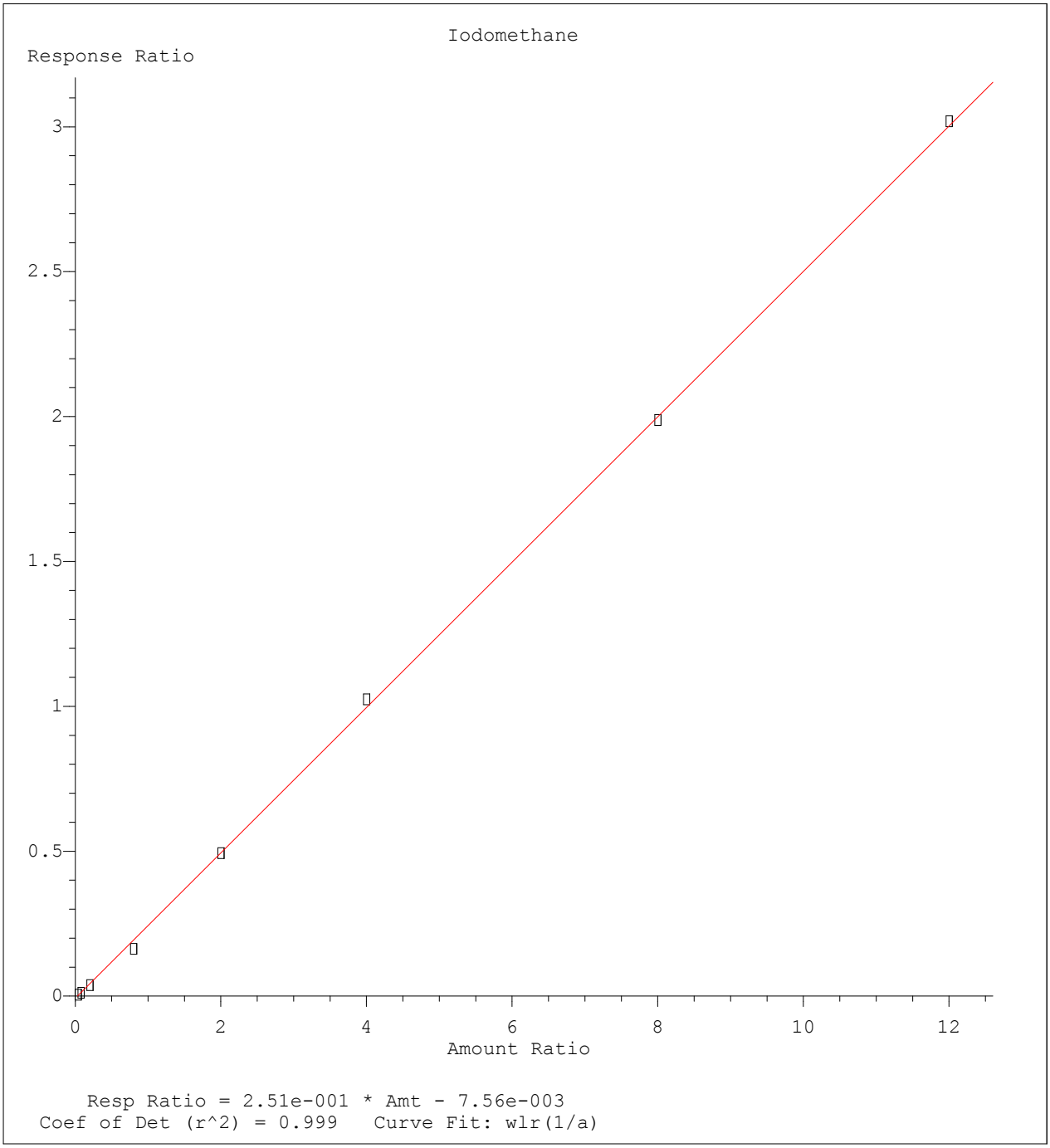

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Tue Apr 15 12:15:18 2014

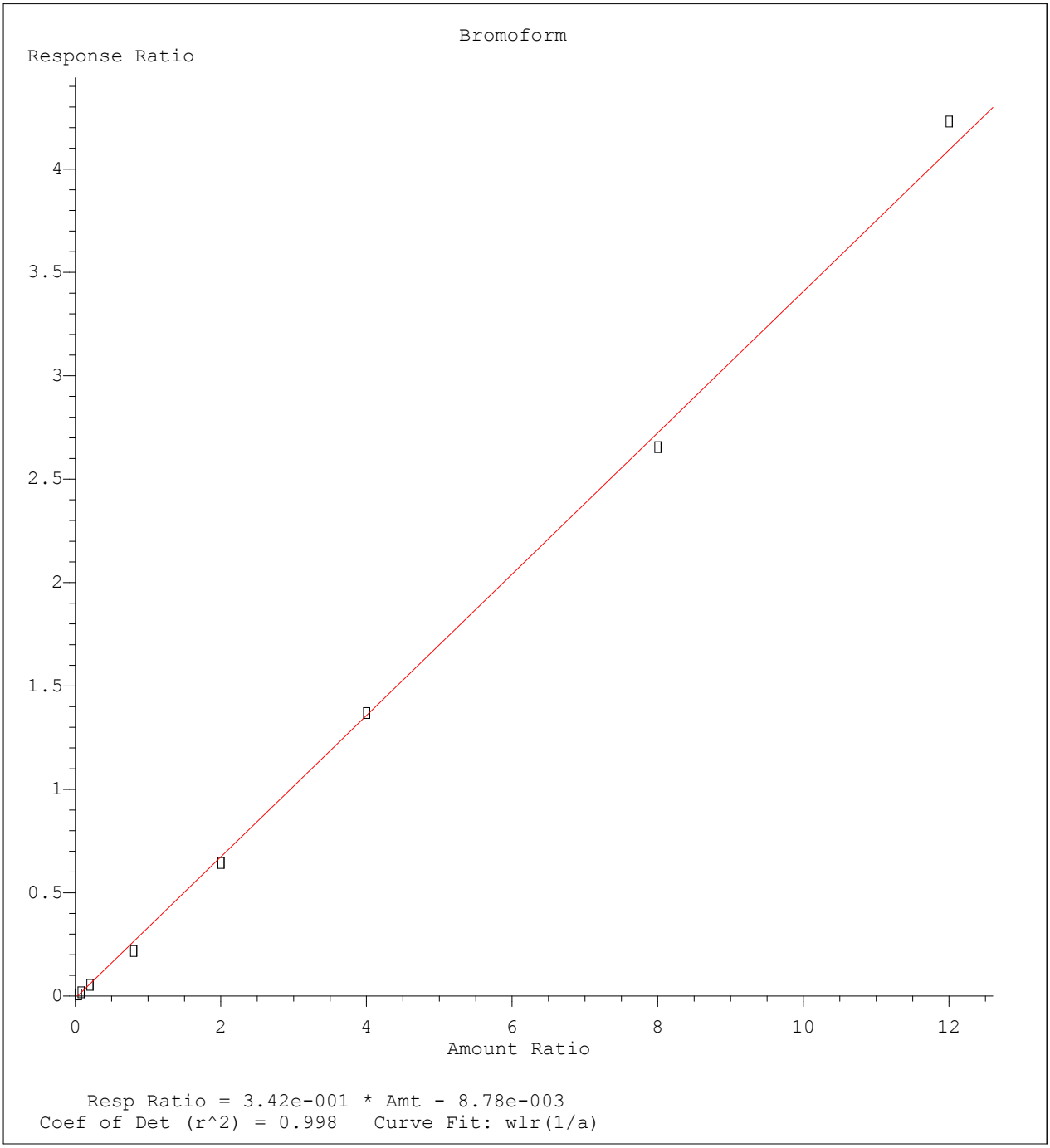

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Tue Apr 15 12:15:18 2014

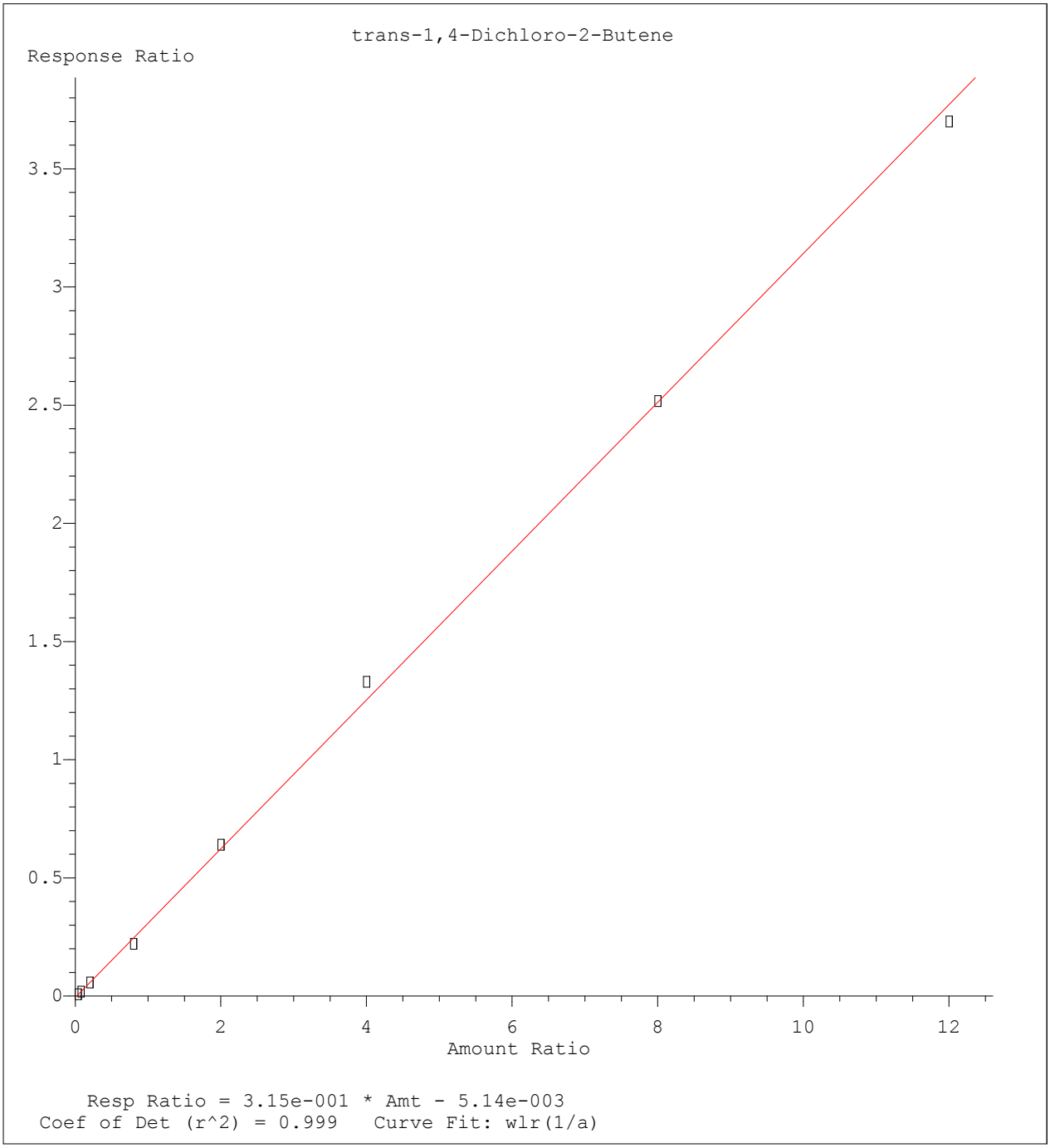

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Tue Apr 15 12:15:18 2014

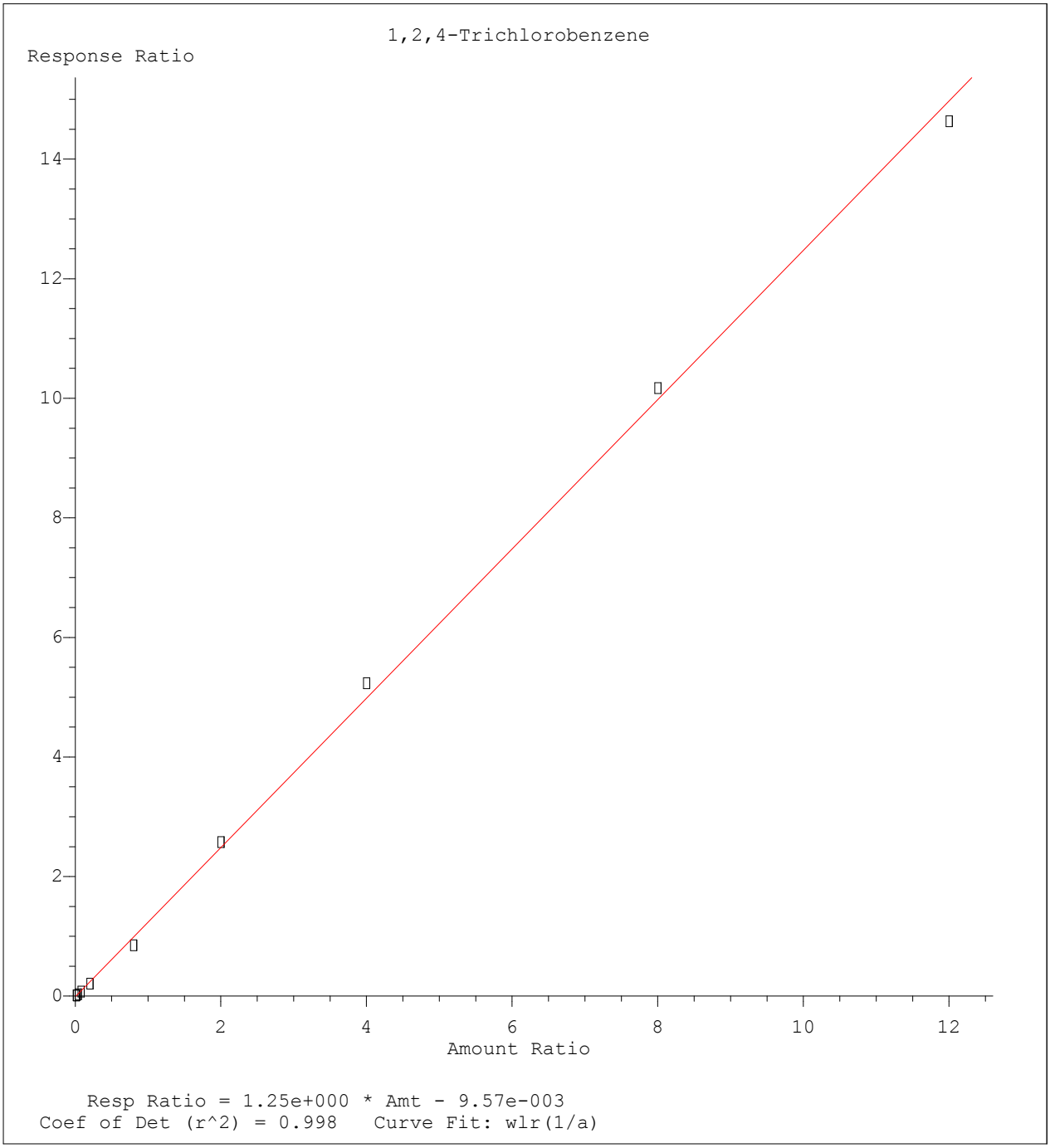

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Tue Apr 15 12:15:18 2014

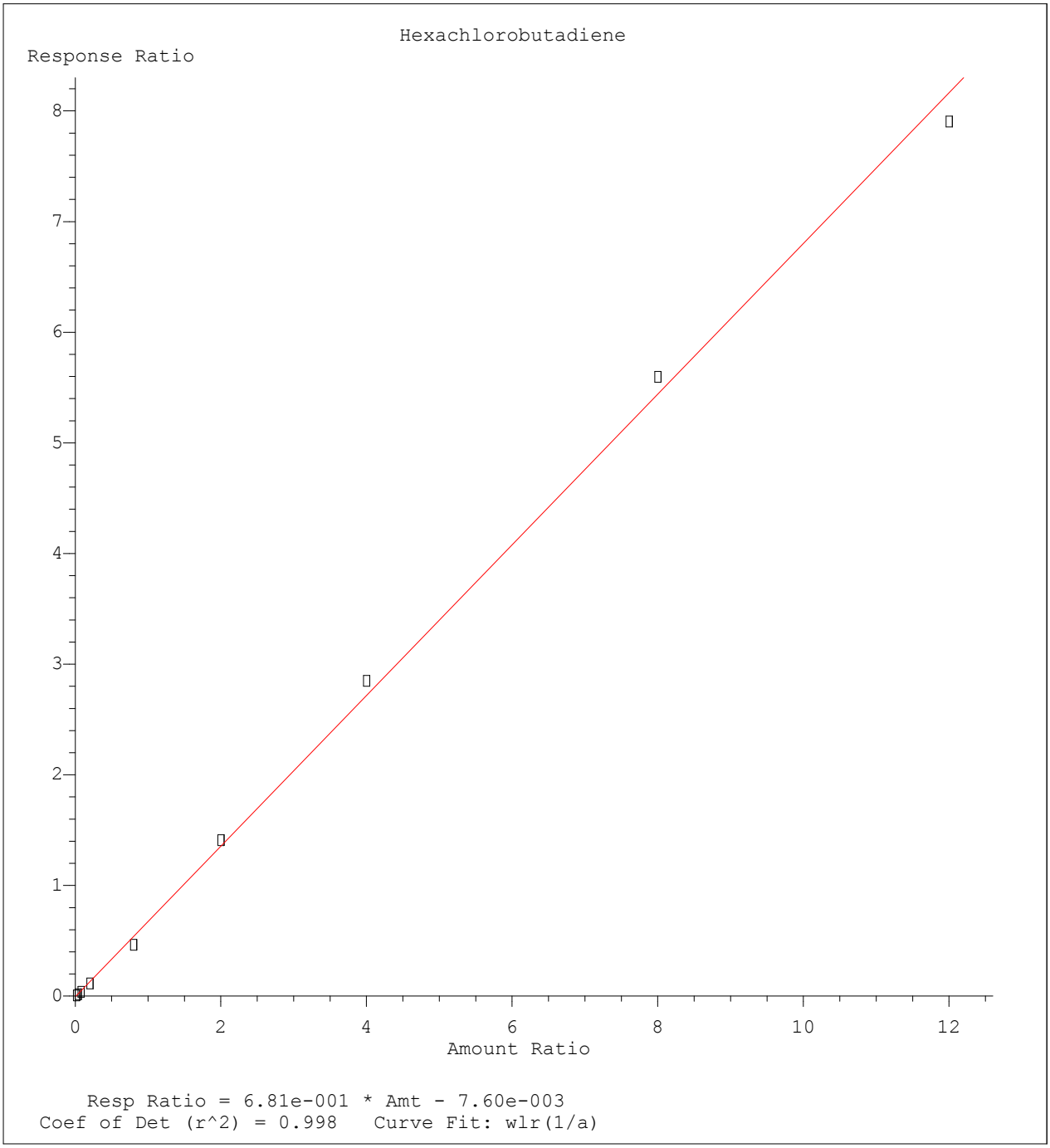

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Tue Apr 15 12:15:18 2014

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962422.D Vial: 13
Acq On : 14 Apr 2014 22:47 Operator: ADC
Sample : WG471242-12 50.0ug/L SSCV 8260 Inst : HPMS9
Misc : 1,1 STD63713 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:19:09 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.11	96	694664	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.98	117	509208	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	292844	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.06	111	168479	22.5014 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.00%		
43) 1,2-Dichloroethane-d4	10.70	65	198407	21.0526 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 84.20%		
58) Toluene-d8	13.08	98	630971	22.7140 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 90.84%		
79) p-Bromofluorobenzene	16.48	95	251845	20.8836 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 83.52%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	407079	81.8227 ug/L	100
3) Chloromethane	3.89	50	484026	57.2249 ug/L	99
4) Vinyl Chloride	4.13	62	338737	37.3981 ug/L	99
5) 1,3-Butadiene	4.17	54	226147	40.3509 ug/L	97
6) Bromomethane	5.06	94	271783	51.0897 ug/L	98
7) Chloroethane	5.22	64	320644	48.9204 ug/L	99
8) Trichlorofluoromethane	5.73	101	526546	54.1647 ug/L	100
9) Diethyl ether	6.28	59	882801	99.6235 ug/L	98
10) Isoprene	6.31	67	556551	52.4034 ug/L	96
11) Acrolein	6.51	56	149080	107.0756 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.52	101	342892	52.8440 ug/L	95
13) Acetone	6.62	43	113537	44.3955 ug/L	99
14) 1,1-Dichloroethene	6.85	61	652343	46.2059 ug/L	100
15) Tert-Butyl Alcohol	6.97	59	222141	217.3491 ug/L	99
16) Dimethyl Sulfide	7.11	62	640552	79.0408 ug/L	98
17) Iodomethane	7.37	142	461980	67.0319 ug/L	99
18) Methyl acetate	7.37	43	326115	49.7196 ug/L	98
19) Methylene Chloride	7.63	84	380505	47.4418 ug/L	94
20) Carbon Disulfide	7.68	76	978472	45.6647 ug/L	99
21) Acrylonitrile	7.82	53	197906	47.7419 ug/L	99
22) Methyl Tert Butyl Ether	7.85	73	1036323	48.4474 ug/L	97
23) trans-1,2-Dichloroethene	8.09	61	673696	49.3868 ug/L	99
24) n-Hexane	8.16	57	610775	47.9197 ug/L	97
25) Diisopropyl ether	8.50	45	3037600	96.9790 ug/L	99
26) Vinyl Acetate	8.68	43	667520	43.7659 ug/L	99
27) 1,1-Dichloroethane	8.72	63	817044	47.4056 ug/L	100
28) Ethyl-Tert-Butyl ether	9.08	59	3302401	99.4994 ug/L	99
29) 2-Butanone	9.26	43	181935	44.9315 ug/L	97
30) Propionitrile	9.38	54	155219	103.4081 ug/L	98
31) 2,2-Dichloropropane	9.49	77	456716	43.6917 ug/L	99
32) cis-1,2-Dichloroethene	9.55	96	411184	49.9751 ug/L	97
33) Chloroform	9.77	83	627213	47.8625 ug/L	100
34) 1-Bromopropane	9.90	122	91588	65.6724 ug/L	98
35) Bromochloromethane	10.00	130	247198	49.0693 ug/L	95
36) Tetrahydrofuran	10.03	42	240473	95.2247 ug/L	97
38) 1,1,1-Trichloroethane	10.30	97	555485	48.8624 ug/L	100
39) Cyclohexane	10.34	56	894880	47.7593 ug/L	97
40) 1,1-Dichloropropene	10.50	75	471432	50.4811 ug/L	99
41) Tert-Amyl-Methyl ether	10.60	73	2184398	102.9250 ug/L	98
42) Carbon Tetrachloride	10.65	117	484837	48.5120 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962422.D Vial: 13
Acq On : 14 Apr 2014 22:47 Operator: ADC
Sample : WG471242-12 50.0ug/L SSCV 8260 Inst : HPMS9
Misc : 1,1 STD63713 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:19:09 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.82	62	569874	48.1738 ug/L	99
46)	Benzene	10.86	78	1479128	48.8433 ug/L	98
47)	Trichloroethene	11.61	130	392470	50.5753 ug/L	99
48)	Methylcyclohexane	11.69	83	588814	49.7797 ug/L	98
49)	1,2-Dichloropropane	11.82	63	502054	48.9396 ug/L	99
50)	1,4-Dioxane	12.11	88	18818	219.0225 ug/L	95
51)	Bromodichloromethane	12.13	83	490866	49.0374 ug/L	99
52)	Dibromomethane	12.22	174	257679	49.0657 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.41	63	285176	47.3725 ug/L	99
54)	4-Methyl-2-Pentanone	12.44	58	208511	47.0179 ug/L	99
55)	cis-1,3-Dichloropropene	12.76	75	613618	50.5436 ug/L	99
56)	Dimethyl Disulfide	13.03	94	761376	53.5758 ug/L	100
59)	Toluene	13.18	91	1569538	50.0234 ug/L	100
60)	Ethyl Methacrylate	13.26	69	493973	53.5438 ug/L	100
61)	trans-1,3-Dichloropropene	13.35	75	514199	46.4574 ug/L	98
62)	1,1,2-Trichloroethane	13.58	97	329387	49.7397 ug/L	100
63)	2-Hexanone	13.49	43	301093	48.0522 ug/L	98
64)	1,3-Dichloropropane	13.88	76	549031	48.0759 ug/L	96
65)	Tetrachloroethene	14.01	164	321820	49.2659 ug/L	98
66)	Dibromochloromethane	14.27	129	391695	49.9192 ug/L	99
67)	1,2-Dibromoethane	14.53	107	337533	50.3022 ug/L	100
68)	1-Chlorohexane	14.60	91	489246	53.2174 ug/L	98
69)	Chlorobenzene	15.03	112	961621	46.6445 ug/L	100
70)	1,1,1,2-Tetrachloroethane	15.05	131	383145	48.5053 ug/L	100
71)	Ethylbenzene	15.05	106	570270	50.0424 ug/L	97
72)	m-,p-Xylene	15.14	106	1328571	98.0284 ug/L	98
73)	o-Xylene	15.71	106	650527	46.0203 ug/L	100
74)	Styrene	15.75	104	1193676	53.4406 ug/L	98
75)	Bromoform	16.25	173	317763	46.2929 ug/L	99
76)	Isopropylbenzene	16.13	105	1628718	47.9958 ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.35	83	444726	48.0925 ug/L	98
80)	1,2,3-Trichloropropane	16.54	110	141796	49.7424 ug/L	74
81)	trans-1,4-Dichloro-2-Buten	16.59	53	117501	32.2767 ug/L	69
82)	n-Propylbenzene	16.64	91	1919248	44.7735 ug/L	100
83)	Bromobenzene	16.78	156	482258	47.6423 ug/L	98
84)	1,3,5-Trimethylbenzene	16.82	105	1575056	49.4091 ug/L	99
85)	2-Chlorotoluene	16.92	91	1405941	46.8695 ug/L	90
86)	4-Chlorotoluene	16.97	91	1048027	42.6771 ug/L	88
87)	a-Methylstyrene	17.23	118	888257	53.8952 ug/L	99
88)	tert-Butylbenzene	17.29	134	325426	43.8676 ug/L	96
89)	1,2,4-Trimethylbenzene	17.35	105	1625473	50.2709 ug/L	99
90)	sec-Butylbenzene	17.57	105	1825608	45.8448 ug/L	100
91)	p-Isopropyltoluene	17.72	119	1559783	48.6614 ug/L	99
92)	1,3-Dichlorobenzene	17.93	146	893989	47.3608 ug/L	99
93)	1,4-Dichlorobenzene	18.05	146	990183	52.4503 ug/L	100
94)	n-Butylbenzene	18.25	91	1544465	56.1886 ug/L	100
95)	1,2-Dichlorobenzene	18.55	146	949400	50.4265 ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.55	157	116883	52.5847 ug/L	99
97)	1,2,4-Trichlorobenzene	20.70	180	767447	52.6595 ug/L	99
98)	Hexachlorobutadiene	20.85	225	413379	52.1189 ug/L	99
99)	Naphthalene	21.07	128	1784927	59.5485 ug/L	100
100)	1,2,3-Trichlorobenzene	21.38	180	769296	59.5249 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M962422.D 8260WT.M Tue Apr 15 12:19:11 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\041414\9M962422.D Vial: 13
Acq On : 14 Apr 2014 22:47 Operator: ADC
Sample : WG471242-12 50.0ug/L SSCV 8260 Inst : HPMS9
Misc : 1,1 STD63713 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 15 12:19 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

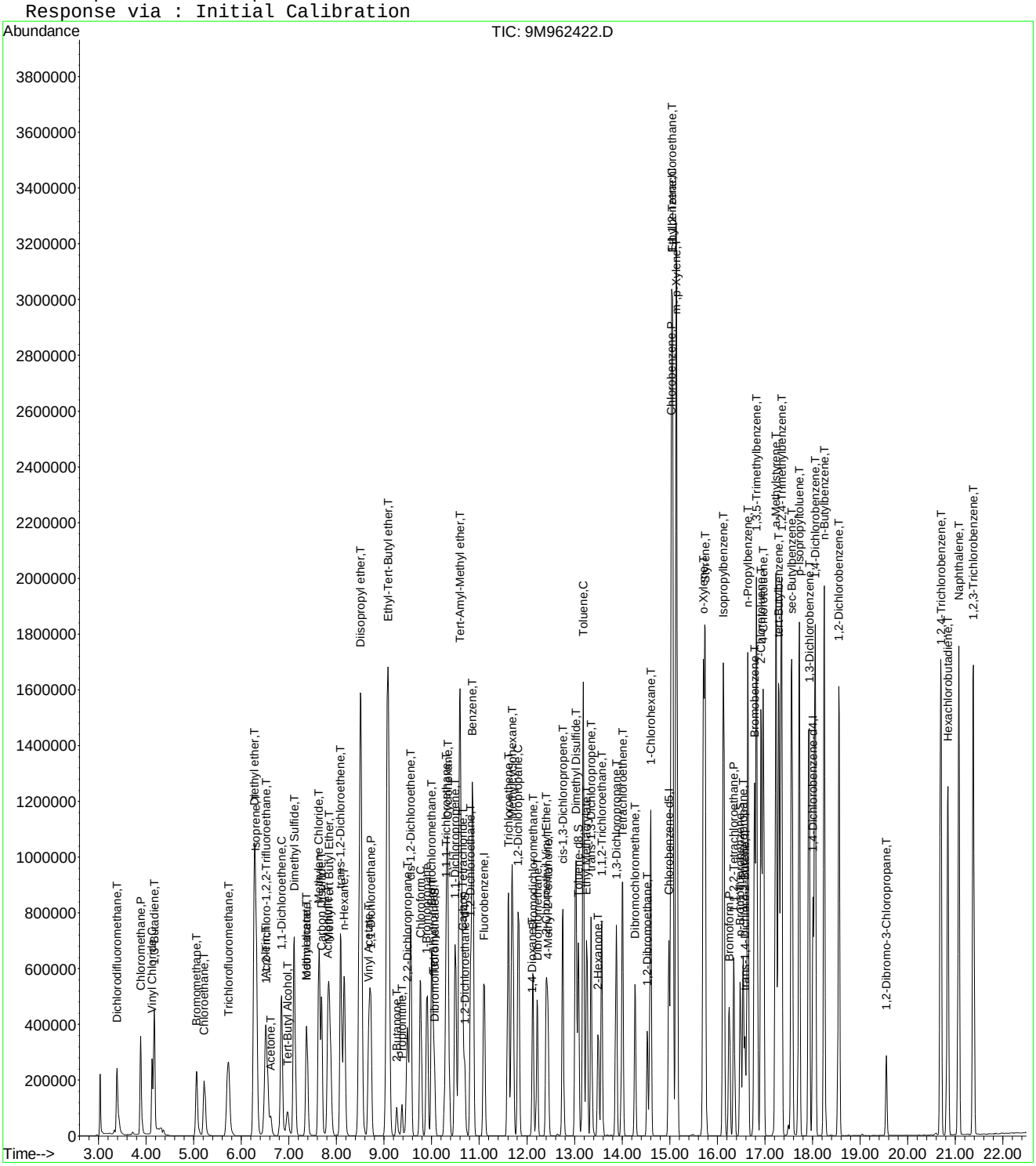

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\041414\9M962422.D Vial: 13
Acq On : 14 Apr 2014 22:47 Operator: ADC
Sample : WG471242-12 50.0ug/L SSCV 8260 Inst : HPMS9
Misc : 1,1 STD63713 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	93	0.00
2	T	Dichlorodifluoromethane	50.0000	81.8227	-63.6#	134	0.00
3	P	Chloromethane	50.0000	57.2249	-14.4	109	0.00
4	C	Vinyl Chloride	50.0000	37.3981	25.2#	60	-0.01
5	T	1,3-Butadiene	50.0000	40.3509	19.3	76	-0.01
6	T	Bromomethane	50.0000	51.0897	-2.2	92	-0.02
7	T	Chloroethane	50.0000	48.9204	2.2	85	-0.01
8	T	Trichlorofluoromethane	50.0000	54.1647	-8.3	91	-0.01
9	T	Diethyl ether	100.0000	99.6235	0.4	91	0.01
10	T	Isoprene	50.0000	52.4034	-4.8	90	-0.01
11	T	Acrolein	50.0000	107.0756	-114.2#	194	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.8440	-5.7	95	0.00
13	T	Acetone	50.0000	44.3955	11.2	83	0.01
14	C	1,1-Dichloroethene	50.0000	46.2059	7.6	80	0.00
15	T	Tert-Butyl Alcohol	200.0000	217.3491	-8.7	103	0.02
16	T	Dimethyl Sulfide	50.0000	79.0408	-58.1#	137	0.00
17	T	Iodomethane	50.0000	67.0319	-34.1#	126	0.00
18	T	Methyl acetate	50.0000	49.7196	0.6	90	0.00
19	T	Methylene Chloride	50.0000	47.4418	5.1	87	-0.01
20	T	Carbon Disulfide	50.0000	45.6647	8.7	82	-0.01
21	T	Acrylonitrile	50.0000	47.7419	4.5	86	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.4475	3.1	87	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.3868	1.2	86	-0.01
24	T	n-Hexane	50.0000	47.9197	4.2	81	-0.01
25	T	Diisopropyl ether	100.0000	96.9790	3.0	87	0.00
26	T	Vinyl Acetate	50.0000	43.7659	12.5	81	0.00
27	P	1,1-Dichloroethane	50.0000	47.4056	5.2	83	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.4994	0.5	90	0.00
29	T	2-Butanone	50.0000	44.9315	10.1	83	0.00
30	T	Propionitrile	100.0000	103.4081	-3.4	93	0.01
31	T	2,2-Dichloropropane	50.0000	43.6917	12.6	79	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.9751	0.0	87	-0.01
33	C	Chloroform	50.0000	47.8625	4.3	84	0.00
34		1-Bromopropane	50.0000	65.6724	-31.3#	111	-0.01
35	T	Bromochloromethane	50.0000	49.0693	1.9	85	0.00
36	T	Tetrahydrofuran	100.0000	95.2247	4.8	87	0.00
37	S	Dibromofluoromethane	25.0000	22.5014	10.0	82	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.8624	2.3	83	0.00
39	T	Cyclohexane	50.0000	47.7593	4.5	82	0.00
40	T	1,1-Dichloropropene	50.0000	50.4811	-1.0	86	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.9250	-2.9	94	0.01
42	T	Carbon Tetrachloride	50.0000	48.5120	3.0	84	0.00
43	S	1,2-Dichloroethane-d4	25.0000	21.0526	15.8	78	0.00
44		Heptane	-1.0000	0.0000	0.0	96	0.00
45	T	1,2-Dichloroethane	50.0000	48.1738	3.7	84	0.00
46	T	Benzene	50.0000	48.8433	2.3	87	0.00
47	T	Trichloroethene	50.0000	50.5753	-1.2	87	0.00
48	T	Methylcyclohexane	50.0000	49.7797	0.4	86	0.00
49	C	1,2-Dichloropropane	50.0000	48.9396	2.1	86	0.00
50	T	1,4-Dioxane	200.0000	219.0225	-9.5	102	0.00
51	T	Bromodichloromethane	50.0000	49.0374	1.9	83	0.00
52	T	Dibromomethane	50.0000	49.0657	1.9	85	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	47.3725	5.3	84	0.00
54	T	4-Methyl-2-Pentanone	50.0000	47.0179	6.0	88	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\041414\9M962422.D Vial: 13
Acq On : 14 Apr 2014 22:47 Operator: ADC
Sample : WG471242-12 50.0ug/L SSCV 8260 Inst : HPMS9
Misc : 1,1 STD63713 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	50.5436	-1.1	88	0.00
56	T	Dimethyl Disulfide	50.0000	53.5758	-7.2	90	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	95	0.00
58	S	Toluene-d8	25.0000	22.7140	9.1	83	0.00
59	C	Toluene	50.0000	50.0234	-0.0	87	0.00
60	T	Ethyl Methacrylate	50.0000	53.5438	-7.1	92	0.00
61	T	trans-1,3-Dichloropropene	50.0000	46.4574	7.1	80	0.00
62	T	1,1,2-Trichloroethane	50.0000	49.7397	0.5	87	0.00
63	T	2-Hexanone	50.0000	48.0522	3.9	92	0.00
64	T	1,3-Dichloropropane	50.0000	48.0759	3.8	86	0.00
65	T	Tetrachloroethene	50.0000	49.2659	1.5	85	0.00
66	T	Dibromochloromethane	50.0000	49.9192	0.2	87	0.00
67	T	1,2-Dibromoethane	50.0000	50.3022	-0.6	87	0.00
68	T	1-Chlorohexane	50.0000	53.2174	-6.4	89	0.00
69	P	Chlorobenzene	50.0000	46.6445	6.7	82	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	48.5053	3.0	86	-0.01
71	C	Ethylbenzene	50.0000	50.0424	-0.1	86	0.00
72	T	m-,p-Xylene	100.0000	98.0284	2.0	84	0.00
73	T	o-Xylene	50.0000	46.0203	8.0	81	0.00
74	T	Styrene	50.0000	53.4406	-6.9	89	0.00
75	P	Bromoform	50.0000	46.2929	7.4	92	0.00
76	T	Isopropylbenzene	50.0000	47.9958	4.0	82	0.00
77	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	105	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	48.0925	3.8	95	0.00
79	S	p-Bromofluorobenzene	25.0000	20.8836	16.5	84	0.00
80	T	1,2,3-Trichloropropane	50.0000	49.7424	0.5	97	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	32.2767	35.4#	66	0.00
82	T	n-Propylbenzene	50.0000	44.7735	10.5	82	0.00
83	T	Bromobenzene	50.0000	47.6423	4.7	90	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	49.4091	1.2	92	0.00
85	T	2-Chlorotoluene	50.0000	46.8695	6.3	100	0.00
86	T	4-Chlorotoluene	50.0000	42.6771	14.6	71	0.00
87	T	a-Methylstyrene	50.0000	53.8952	-7.8	100	0.00
88	T	tert-Butylbenzene	50.0000	43.8676	12.3	84	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	50.2709	-0.5	94	0.00
90	T	sec-Butylbenzene	50.0000	45.8448	8.3	85	0.00
91	T	p-Isopropyltoluene	50.0000	48.6614	2.7	87	0.00
92	T	1,3-Dichlorobenzene	50.0000	47.3608	5.3	90	0.00
93	T	1,4-Dichlorobenzene	50.0000	52.4503	-4.9	99	0.00
94	T	n-Butylbenzene	50.0000	56.1886	-12.4	98	0.00
95	T	1,2-Dichlorobenzene	50.0000	50.4265	-0.9	94	0.00
96	T	1,2-Dibromo-3-Chloropropane	50.0000	52.5847	-5.2	101	0.00
97	T	1,2,4-Trichlorobenzene	50.0000	52.6595	-5.3	106	0.01
98	T	Hexachlorobutadiene	50.0000	52.1189	-4.2	105	0.00
99	T	Naphthalene	50.0000	59.5485	-19.1	104	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	59.5249	-19.0	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M962422.D 8260WT.M Tue Apr 15 12:20:24 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051914\9M963364.D Vial: 3
Acq On : 19 May 2014 14:29 Operator: ADC
Sample : WG476631-02 50ug/L CCV 8260 Inst : HPMS9
Misc : 1,1 STD64308 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 19 14:52:32 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.10	96	672377	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.97	117	511385	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.00	152	270960	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.05	111	192969	26.6265 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.52%		
43) 1,2-Dichloroethane-d4	10.69	65	239495	26.2547 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.00%		
58) Toluene-d8	13.08	98	708483	25.3958 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.60%		
79) p-Bromofluorobenzene	16.48	95	262623	23.5362 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.16%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	230330	47.8308 ug/L	99
3) Chloromethane	3.89	50	548261	66.9677 ug/L	98
4) Vinyl Chloride	4.14	62	483503	55.1503 ug/L	99
5) 1,3-Butadiene	4.18	54	322753	59.4969 ug/L	98
6) Bromomethane	5.08	94	256662	49.8465 ug/L	97
7) Chloroethane	5.23	64	330660	52.1207 ug/L	97
8) Trichlorofluoromethane	5.74	101	547506	58.1876 ug/L	99
9) Diethyl ether	6.27	59	933059	108.7852 ug/L	94
10) Isoprene	6.31	67	512969	49.9008 ug/L	90
11) Acrolein	6.50	56	83249	61.7749 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.53	101	337766	53.7762 ug/L	100
13) Acetone	6.61	43	116544	47.0818 ug/L	90
14) 1,1-Dichloroethene	6.85	61	733970	53.7108 ug/L	95
15) Tert-Butyl Alcohol	6.94	59	181606	183.5783 ug/L	98
16) Dimethyl Sulfide	7.10	62	566093	72.1684 ug/L	87
17) Iodomethane	7.37	142	453087	67.9106 ug/L	98
18) Methyl acetate	7.36	43	421956	66.4639 ug/L	95
19) Methylene Chloride	7.63	84	374343	48.2206 ug/L	78
20) Carbon Disulfide	7.68	76	984667	47.4770 ug/L	100
21) Acrylonitrile	7.81	53	213361	53.1762 ug/L	98
22) Methyl Tert Butyl Ether	7.84	73	1023156	49.4174 ug/L	98
23) trans-1,2-Dichloroethene	8.09	61	716875	54.2940 ug/L	96
24) n-Hexane	8.16	57	802895	65.0809 ug/L	93
25) Diisopropyl ether	8.50	45	3756767	123.9149 ug/L	98
26) Vinyl Acetate	8.67	43	650936	44.0932 ug/L	97
27) 1,1-Dichloroethane	8.71	63	896450	53.7369 ug/L	99
28) Ethyl-Tert-Butyl ether	9.07	59	3538837	110.1573 ug/L	99
29) 2-Butanone	9.26	43	197161	50.3057 ug/L	95
30) Propionitrile	9.37	54	148544	102.2414 ug/L	98
31) 2,2-Dichloropropane	9.49	77	613552	60.6410 ug/L	100
32) cis-1,2-Dichloroethene	9.56	96	409775	51.4547 ug/L	89
33) Chloroform	9.76	83	660938	52.1078 ug/L	100
34) 1-Bromopropane	9.90	122	67150	49.7453 ug/L	100
35) Bromochloromethane	10.00	130	249826	51.2347 ug/L	85
36) Tetrahydrofuran	10.02	42	268693	109.9263 ug/L	91
38) 1,1,1-Trichloroethane	10.30	97	604749	54.9591 ug/L	98
39) Cyclohexane	10.33	56	997991	55.0278 ug/L	95
40) 1,1-Dichloropropene	10.50	75	499245	55.2313 ug/L	99
41) Tert-Amyl-Methyl ether	10.59	73	2104975	102.4703 ug/L	97
42) Carbon Tetrachloride	10.64	117	541132	55.9395 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051914\9M963364.D Vial: 3
Acq On : 19 May 2014 14:29 Operator: ADC
Sample : WG476631-02 50ug/L CCV 8260 Inst : HPMS9
Misc : 1,1 STD64308 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 19 14:52:32 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.81	62	623421	54.4471 ug/L	97
46)	Benzene	10.86	78	1482879	50.5903 ug/L	97
47)	Trichloroethene	11.60	130	391290	52.0946 ug/L	99
48)	Methylcyclohexane	11.70	83	609873	53.2692 ug/L	91
49)	1,2-Dichloropropane	11.82	63	525703	52.9435 ug/L	99
50)	1,4-Dioxane	12.10	88	14771	177.6181 ug/L	100
51)	Bromodichloromethane	12.12	83	523162	53.9961 ug/L	98
52)	Dibromomethane	12.21	174	257429	50.6429 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.40	63	96135	16.4990 ug/L	95
54)	4-Methyl-2-Pentanone	12.43	58	194993	45.4271 ug/L	97
55)	cis-1,3-Dichloropropene	12.75	75	632733	53.8456 ug/L	100
56)	Dimethyl Disulfide	13.02	94	703172	51.1202 ug/L	100
59)	Toluene	13.17	91	1575336	49.9945 ug/L	100
60)	Ethyl Methacrylate	13.26	69	426590	46.0430 ug/L	98
61)	trans-1,3-Dichloropropene	13.35	75	566746	50.9870 ug/L	99
62)	1,1,2-Trichloroethane	13.57	97	320791	48.2355 ug/L	99
63)	2-Hexanone	13.49	43	298925	47.5031 ug/L	92
64)	1,3-Dichloropropane	13.87	76	542987	47.3443 ug/L	87
65)	Tetrachloroethene	14.00	164	349238	53.2355 ug/L	99
66)	Dibromochloromethane	14.27	129	399729	50.7263 ug/L	100
67)	1,2-Dibromoethane	14.53	107	323532	48.0104 ug/L	98
68)	1-Chlorohexane	14.59	91	490416	53.1175 ug/L	90
69)	Chlorobenzene	15.02	112	1041141	50.2868 ug/L	100
70)	1,1,1,2-Tetrachloroethane	15.06	131	396795	50.0196 ug/L	100
71)	Ethylbenzene	15.05	106	582300	50.8806 ug/L	98
72)	m-,p-Xylene	15.14	106	1423793	104.6071 ug/L	100
73)	o-Xylene	15.71	106	720480	50.7520 ug/L	98
74)	Styrene	15.74	104	1183368	52.7536 ug/L	99
75)	Bromoform	16.24	173	291821	42.3876 ug/L	99
76)	Isopropylbenzene	16.13	105	1788283	52.4735 ug/L	100
78)	1,1,2,2-Tetrachloroethane	16.35	83	394849	46.1474 ug/L	100
80)	1,2,3-Trichloropropane	16.53	110	120925	45.8469 ug/L	99
81)	trans-1,4-Dichloro-2-Buten	16.58	53	170061	50.2574 ug/L	81
82)	n-Propylbenzene	16.64	91	2144071	54.0581 ug/L	100
83)	Bromobenzene	16.78	156	475205	50.7371 ug/L	100
84)	1,3,5-Trimethylbenzene	16.82	105	1547540	52.4668 ug/L	99
85)	2-Chlorotoluene	16.92	91	1375412	49.5550 ug/L	91
86)	4-Chlorotoluene	16.96	91	1232410	54.2386 ug/L	88
87)	a-Methylstyrene	17.23	118	802479	52.6231 ug/L	99
88)	tert-Butylbenzene	17.29	134	342680	49.9242 ug/L	98
89)	1,2,4-Trimethylbenzene	17.34	105	1571289	52.5199 ug/L	100
90)	sec-Butylbenzene	17.56	105	1957728	53.1333 ug/L	100
91)	p-Isopropyltoluene	17.71	119	1650818	55.6609 ug/L	100
92)	1,3-Dichlorobenzene	17.92	146	909913	52.0976 ug/L	100
93)	1,4-Dichlorobenzene	18.05	146	926386	53.0341 ug/L	99
94)	n-Butylbenzene	18.24	91	1496842	58.8542 ug/L	100
95)	1,2-Dichlorobenzene	18.55	146	884910	50.7972 ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.54	157	91853	44.6614 ug/L	98
97)	1,2,4-Trichlorobenzene	20.69	180	665465	49.3618 ug/L	99
98)	Hexachlorobutadiene	20.84	225	373923	50.9581 ug/L	99
99)	Naphthalene	21.06	128	1428078	51.4912 ug/L	100
100)	1,2,3-Trichlorobenzene	21.37	180	642955	53.7671 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M963364.D 8260WT.M Mon May 19 14:52:34 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051914\9M963364.D Vial: 3
Acq On : 19 May 2014 14:29 Operator: ADC
Sample : WG476631-02 50ug/L CCV 8260 Inst : HPMS9
Misc : 1,1 STD64308 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 19 14:52 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

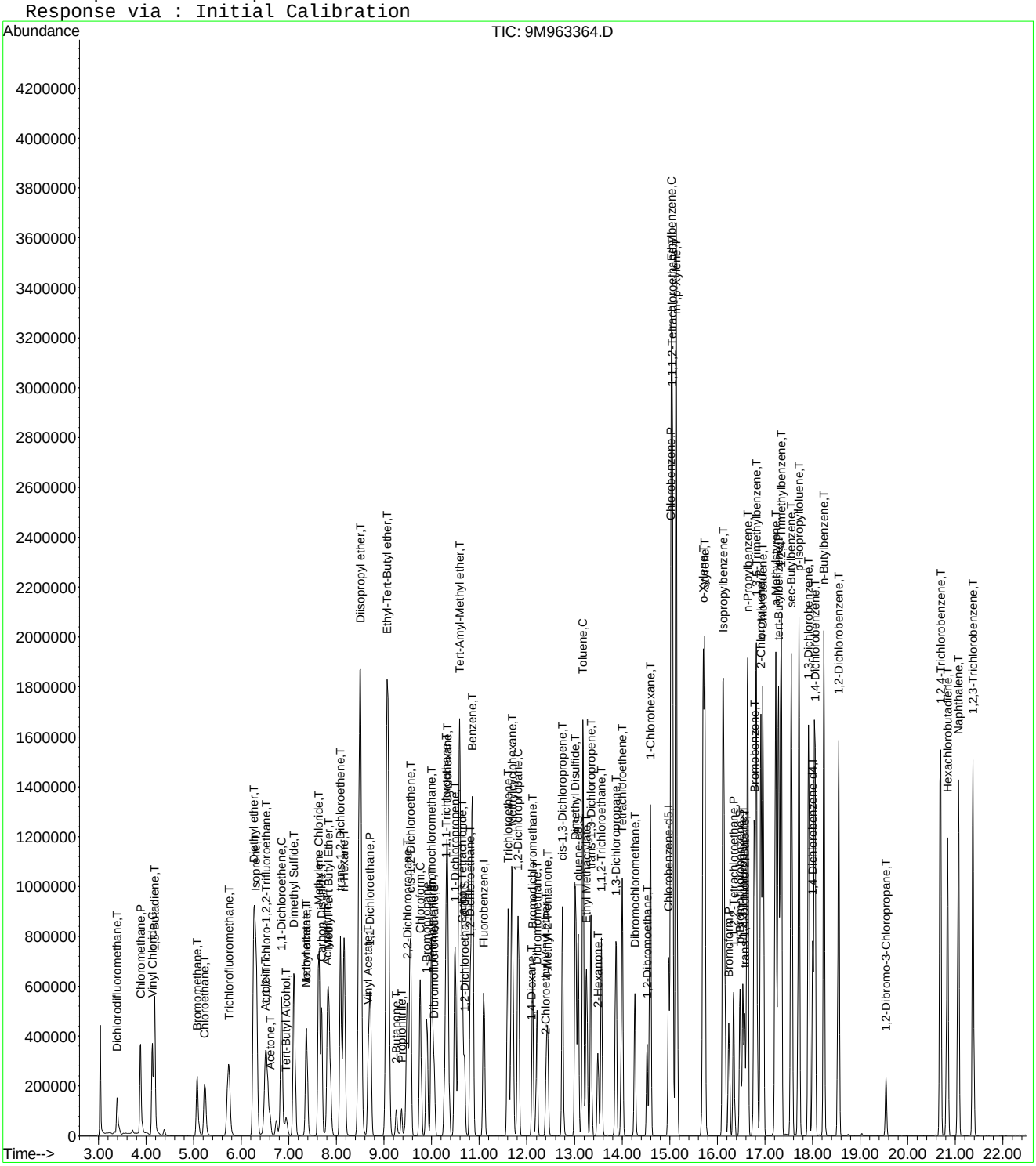

9M963364.D 8260WT.M Mon May 19 14:52:35 2014 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051914\9M963364.D Vial: 3
Acq On : 19 May 2014 14:29 Operator: ADC
Sample : WG476631-02 50ug/L CCV 8260 Inst : HPMS9
Misc : 1,1 STD64308 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	90	0.00
2	T	Dichlorodifluoromethane	0.1790	0.1713	4.3	76	0.00
3	P	Chloromethane	0.3044	0.4077	-33.9#	123	0.00
4	C	Vinyl Chloride	0.3260	0.3595	-10.3	85	0.00
5	T	1,3-Butadiene	0.2017	0.2400	-19.0	108	0.00
6	T	Bromomethane	0.1915	0.1909	0.3	87	0.00
7	T	Chloroethane	0.2359	0.2459	-4.2	87	0.00
8	T	Trichlorofluoromethane	0.3498	0.4071	-16.4	94	0.00
9	T	Diethyl ether	0.3189	0.3469	-8.8	96	0.00
10	T	Isoprene	0.3822	0.3815	0.2	83	0.00
11	T	Acrolein	0.0501	0.0619	-23.5	108	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2139	0.2512	-17.4	93	0.00
13	T	Acetone	0.0920	0.0867	5.8	86	0.00
14	C	1,1-Dichloroethene	0.5081	0.5458	-7.4	90	0.00
15	T	Tert-Butyl Alcohol	0.0368	0.0338	8.2	84	0.00
16	T	Dimethyl Sulfide	0.2917	0.4210	-44.3#	121	0.00
17	T	Iodomethane	0.2086	0.3369	-61.5#	123	0.00
18	T	Methyl acetate	0.2361	0.3138	-32.9#	116	0.00
19	T	Methylene Chloride	0.2887	0.2784	3.6	85	0.00
20	T	Carbon Disulfide	0.7711	0.7322	5.0	83	0.00
21	T	Acrylonitrile	0.1492	0.1587	-6.4	93	0.00
22	T	Methyl Tert Butyl Ether	0.7698	0.7609	1.2	86	0.00
23	T	trans-1,2-Dichloroethene	0.4909	0.5331	-8.6	91	0.00
24	T	n-Hexane	0.4587	0.5971	-30.2#	106	0.00
25	T	Diisopropyl ether	1.1272	1.3968	-23.9	107	0.00
26	T	Vinyl Acetate	0.5489	0.4841	11.8	79	0.00
27	P	1,1-Dichloroethane	0.6203	0.6666	-7.5	91	0.00
28	T	Ethyl-Tert-Butyl ether	1.1945	1.3158	-10.2	96	0.00
29	T	2-Butanone	0.1457	0.1466	-0.6	90	0.00
30	T	Propionitrile	0.0540	0.0552	-2.2	89	0.00
31	T	2,2-Dichloropropane	0.3762	0.4563	-21.3	106	0.00
32	T	cis-1,2-Dichloroethene	0.2961	0.3047	-2.9	86	0.00
33	C	Chloroform	0.4716	0.4915	-4.2	89	0.00
34		1-Bromopropane	0.0502	0.0499	0.5	82	0.00
35	T	Bromochloromethane	0.1813	0.1858	-2.5	86	0.00
36	T	Tetrahydrofuran	0.0909	0.0999	-9.9	97	0.00
37	S	Dibromofluoromethane	0.2695	0.2870	-6.5	94	0.00
38	T	1,1,1-Trichloroethane	0.4091	0.4497	-9.9	91	0.00
39	T	Cyclohexane	0.6743	0.7421	-10.1	91	0.00
40	T	1,1-Dichloropropene	0.3361	0.3713	-10.5	91	0.00
41	T	Tert-Amyl-Methyl ether	0.7638	0.7827	-2.5	90	0.00
42	T	Carbon Tetrachloride	0.3597	0.4024	-11.9	94	0.00
43	S	1,2-Dichloroethane-d4	0.3392	0.3562	-5.0	94	0.00
44		Heptane	0.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	0.4257	0.4636	-8.9	91	0.00
46	T	Benzene	1.0899	1.1027	-1.2	87	0.00
47	T	Trichloroethene	0.2793	0.2910	-4.2	87	0.00
48	T	Methylcyclohexane	0.4257	0.4535	-6.5	89	0.00
49	C	1,2-Dichloropropane	0.3692	0.3909	-5.9	90	0.00
50	T	1,4-Dioxane	0.0031	0.0027	11.0	80	0.00
51	T	Bromodichloromethane	0.3603	0.3890	-8.0	88	0.00
52	T	Dibromomethane	0.1890	0.1914	-1.3	85	0.00
53	T	2-Chloroethyl Vinyl Ether	0.2167	0.0715	67.0#	28#	0.00
54	T	4-Methyl-2-Pentanone	0.1596	0.1450	9.1	82	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051914\9M963364.D Vial: 3
Acq On : 19 May 2014 14:29 Operator: ADC
Sample : WG476631-02 50ug/L CCV 8260 Inst : HPMS9
Misc : 1,1 STD64308 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4369	0.4705	-7.7	90	0.00
56	T	Dimethyl Disulfide	0.5114	0.5229	-2.2	83	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	95	0.00
58	S	Toluene-d8	1.3638	1.3854	-1.6	93	0.00
59	C	Toluene	1.5404	1.5403	0.0	87	0.00
60	T	Ethyl Methacrylate	0.4529	0.4171	7.9	80	0.00
61	T	trans-1,3-Dichloropropene	0.5434	0.5541	-2.0	89	0.00
62	T	1,1,2-Trichloroethane	0.3251	0.3136	3.5	84	0.00
63	T	2-Hexanone	0.3076	0.2923	5.0	91	0.00
64	T	1,3-Dichloropropane	0.5607	0.5309	5.3	85	0.00
65	T	Tetrachloroethene	0.3207	0.3415	-6.5	92	0.00
66	T	Dibromochloromethane	0.3852	0.3908	-1.5	89	0.00
67	T	1,2-Dibromoethane	0.3294	0.3163	4.0	83	0.00
68	T	1-Chlorohexane	0.4514	0.4795	-6.2	89	0.00
69	P	Chlorobenzene	1.0122	1.0180	-0.6	89	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3878	0.3880	-0.0	89	0.00
71	C	Ethylbenzene	0.5595	0.5693	-1.8	88	0.00
72	T	m-,p-Xylene	0.6654	0.6960	-4.6	90	0.00
73	T	o-Xylene	0.6940	0.7044	-1.5	90	0.00
74	T	Styrene	1.0966	1.1570	-5.5	88	0.00
75	P	Bromoform	0.2927	0.2853	2.5	84	0.00
76	T	Isopropylbenzene	1.6661	1.7485	-4.9	90	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	97	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7894	0.7286	7.7	84	0.00
79	S	p-Bromofluorobenzene	1.0295	0.9692	5.9	87	0.00
80	T	1,2,3-Trichloropropane	0.2434	0.2231	8.3	83	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2861	0.3138	-9.7	95	0.00
82	T	n-Propylbenzene	3.6594	3.9564	-8.1	91	0.00
83	T	Bromobenzene	0.8641	0.8769	-1.5	88	0.00
84	T	1,3,5-Trimethylbenzene	2.7214	2.8557	-4.9	90	0.00
85	T	2-Chlorotoluene	2.5608	2.5380	0.9	98	0.00
86	T	4-Chlorotoluene	2.0964	2.2742	-8.5	83	0.00
87	T	a-Methylstyrene	1.4070	1.4808	-5.2	90	0.00
88	T	tert-Butylbenzene	0.6333	0.6323	0.2	89	0.00
89	T	1,2,4-Trimethylbenzene	2.7604	2.8995	-5.0	91	0.00
90	T	sec-Butylbenzene	3.3995	3.6126	-6.3	91	0.00
91	T	p-Isopropyltoluene	2.7364	3.0462	-11.3	92	0.00
92	T	1,3-Dichlorobenzene	1.6115	1.6790	-4.2	91	0.00
93	T	1,4-Dichlorobenzene	1.6117	1.7094	-6.1	92	0.00
94	T	n-Butylbenzene	2.3466	2.7621	-17.7	95	0.00
95	T	1,2-Dichlorobenzene	1.6073	1.6329	-1.6	88	0.00
96	T	1,2-Dibromo-3-Chloropropane	0.1898	0.1695	10.7	79	0.00
97	T	1,2,4-Trichlorobenzene	1.0664	1.2280	-15.2	92	0.00
98	T	Hexachlorobutadiene	0.5902	0.6900	-16.9	95	0.00
99	T	Naphthalene	2.5589	2.6352	-3.0	84	0.00
100	T	1,2,3-Trichlorobenzene	1.1033	1.1864	-7.5	90	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M963364.D 8260WT.M Mon May 19 15:08:26 2014 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051914\9M963364.D Vial: 3
Acq On : 19 May 2014 14:29 Operator: ADC
Sample : WG476631-02 50ug/L CCV 8260 Inst : HPMS9
Misc : 1,1 STD64308 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	90	0.00
2	T	Dichlorodifluoromethane	50.0000	47.8308	4.3	76	0.00
3	P	Chloromethane	50.0000	66.9677	-33.9#	123	0.00
4	C	Vinyl Chloride	50.0000	55.1503	-10.3	85	0.00
5	T	1,3-Butadiene	50.0000	59.4969	-19.0	108	0.00
6	T	Bromomethane	50.0000	49.8465	0.3	87	0.00
7	T	Chloroethane	50.0000	52.1207	-4.2	87	0.00
8	T	Trichlorofluoromethane	50.0000	58.1876	-16.4	94	0.00
9	T	Diethyl ether	100.0000	108.7852	-8.8	96	0.00
10	T	Isoprene	50.0000	49.9008	0.2	83	0.00
11	T	Acrolein	50.0000	61.7749	-23.5	108	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.7762	-7.6	93	0.00
13	T	Acetone	50.0000	47.0818	5.8	86	0.00
14	C	1,1-Dichloroethene	50.0000	53.7108	-7.4	90	0.00
15	T	Tert-Butyl Alcohol	200.0000	183.5783	8.2	84	0.00
16	T	Dimethyl Sulfide	50.0000	72.1684	-44.3#	121	0.00
17	T	Iodomethane	50.0000	67.9106	-35.8#	123	0.00
18	T	Methyl acetate	50.0000	66.4639	-32.9#	116	0.00
19	T	Methylene Chloride	50.0000	48.2206	3.6	85	0.00
20	T	Carbon Disulfide	50.0000	47.4770	5.0	83	0.00
21	T	Acrylonitrile	50.0000	53.1762	-6.4	93	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.4174	1.2	86	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.2940	-8.6	91	0.00
24	T	n-Hexane	50.0000	65.0809	-30.2#	106	0.00
25	T	Diisopropyl ether	100.0000	123.9149	-23.9	107	0.00
26	T	Vinyl Acetate	50.0000	44.0932	11.8	79	0.00
27	P	1,1-Dichloroethane	50.0000	53.7369	-7.5	91	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	110.1573	-10.2	96	0.00
29	T	2-Butanone	50.0000	50.3057	-0.6	90	0.00
30	T	Propionitrile	100.0000	102.2414	-2.2	89	0.00
31	T	2,2-Dichloropropane	50.0000	60.6410	-21.3	106	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.4547	-2.9	86	0.00
33	C	Chloroform	50.0000	52.1078	-4.2	89	0.00
34		1-Bromopropane	50.0000	49.7453	0.5	82	0.00
35	T	Bromochloromethane	50.0000	51.2347	-2.5	86	0.00
36	T	Tetrahydrofuran	100.0000	109.9263	-9.9	97	0.00
37	S	Dibromofluoromethane	25.0000	26.6265	-6.5	94	0.00
38	T	1,1,1-Trichloroethane	50.0000	54.9590	-9.9	91	0.00
39	T	Cyclohexane	50.0000	55.0278	-10.1	91	0.00
40	T	1,1-Dichloropropene	50.0000	55.2313	-10.5	91	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.4703	-2.5	90	0.00
42	T	Carbon Tetrachloride	50.0000	55.9395	-11.9	94	0.00
43	S	1,2-Dichloroethane-d4	25.0000	26.2547	-5.0	94	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	50.0000	54.4471	-8.9	91	0.00
46	T	Benzene	50.0000	50.5903	-1.2	87	0.00
47	T	Trichloroethene	50.0000	52.0946	-4.2	87	0.00
48	T	Methylcyclohexane	50.0000	53.2692	-6.5	89	0.00
49	C	1,2-Dichloropropane	50.0000	52.9435	-5.9	90	0.00
50	T	1,4-Dioxane	200.0000	177.6181	11.2	80	0.00
51	T	Bromodichloromethane	50.0000	53.9961	-8.0	88	0.00
52	T	Dibromomethane	50.0000	50.6429	-1.3	85	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	16.4990	67.0#	28	0.00
54	T	4-Methyl-2-Pentanone	50.0000	45.4271	9.1	82	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051914\9M963364.D Vial: 3
Acq On : 19 May 2014 14:29 Operator: ADC
Sample : WG476631-02 50ug/L CCV 8260 Inst : HPMS9
Misc : 1,1 STD64308 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8456	-7.7	90	0.00
56	T	Dimethyl Disulfide	50.0000	51.1202	-2.2	83	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	95	0.00
58	S	Toluene-d8	25.0000	25.3958	-1.6	93	0.00
59	C	Toluene	50.0000	49.9945	0.0	87	0.00
60	T	Ethyl Methacrylate	50.0000	46.0430	7.9	80	0.00
61	T	trans-1,3-Dichloropropene	50.0000	50.9870	-2.0	89	0.00
62	T	1,1,2-Trichloroethane	50.0000	48.2355	3.5	84	0.00
63	T	2-Hexanone	50.0000	47.5031	5.0	91	0.00
64	T	1,3-Dichloropropane	50.0000	47.3443	5.3	85	0.00
65	T	Tetrachloroethene	50.0000	53.2355	-6.5	92	0.00
66	T	Dibromochloromethane	50.0000	50.7263	-1.5	89	0.00
67	T	1,2-Dibromoethane	50.0000	48.0104	4.0	83	0.00
68	T	1-Chlorohexane	50.0000	53.1175	-6.2	89	0.00
69	P	Chlorobenzene	50.0000	50.2868	-0.6	89	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	50.0196	-0.0	89	0.00
71	C	Ethylbenzene	50.0000	50.8806	-1.8	88	0.00
72	T	m-,p-Xylene	100.0000	104.6071	-4.6	90	0.00
73	T	o-Xylene	50.0000	50.7520	-1.5	90	0.00
74	T	Styrene	50.0000	52.7536	-5.5	88	0.00
75	P	Bromoform	50.0000	42.3876	15.2	84	0.00
76	T	Isopropylbenzene	50.0000	52.4736	-4.9	90	0.00
77	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	97	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	46.1474	7.7	84	0.00
79	S	p-Bromofluorobenzene	25.0000	23.5362	5.9	87	0.00
80	T	1,2,3-Trichloropropane	50.0000	45.8469	8.3	83	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	50.2574	-0.5	95	0.00
82	T	n-Propylbenzene	50.0000	54.0581	-8.1	91	0.00
83	T	Bromobenzene	50.0000	50.7371	-1.5	88	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	52.4668	-4.9	90	0.00
85	T	2-Chlorotoluene	50.0000	49.5550	0.9	98	0.00
86	T	4-Chlorotoluene	50.0000	54.2386	-8.5	83	0.00
87	T	a-Methylstyrene	50.0000	52.6231	-5.2	90	0.00
88	T	tert-Butylbenzene	50.0000	49.9242	0.2	89	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	52.5199	-5.0	91	0.00
90	T	sec-Butylbenzene	50.0000	53.1333	-6.3	91	0.00
91	T	p-Isopropyltoluene	50.0000	55.6609	-11.3	92	0.00
92	T	1,3-Dichlorobenzene	50.0000	52.0976	-4.2	91	0.00
93	T	1,4-Dichlorobenzene	50.0000	53.0341	-6.1	92	0.00
94	T	n-Butylbenzene	50.0000	58.8542	-17.7	95	0.00
95	T	1,2-Dichlorobenzene	50.0000	50.7972	-1.6	88	0.00
96	T	1,2-Dibromo-3-Chloropropane	50.0000	44.6614	10.7	79	0.00
97	T	1,2,4-Trichlorobenzene	50.0000	49.3618	1.3	92	0.00
98	T	Hexachlorobutadiene	50.0000	50.9581	-1.9	95	0.00
99	T	Naphthalene	50.0000	51.4912	-3.0	84	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	53.7671	-7.5	90	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M963364.D 8260WT.M Mon May 19 15:08:23 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\052014\9M963389.D Vial: 2
Acq On : 20 May 2014 6:50 Operator: TMB
Sample : WG476698-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD64308 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 07:12:50 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.09	96	665233	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.98	117	501979	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	265776	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.05	111	204252	28.4860 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.96%		
43) 1,2-Dichloroethane-d4	10.69	65	250902	27.8006 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.20%		
58) Toluene-d8	13.08	98	737470	26.9302 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 107.72%		
79) p-Bromofluorobenzene	16.48	95	270106	24.6790 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.72%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	232066	48.7088 ug/L	97
3) Chloromethane	3.89	50	581707	71.8160 ug/L	99
4) Vinyl Chloride	4.14	62	476970	54.9894 ug/L	98
5) 1,3-Butadiene	4.18	54	322432	60.0760 ug/L	99
6) Bromomethane	5.08	94	265485	52.1137 ug/L	99
7) Chloroethane	5.23	64	320274	51.0257 ug/L	94
8) Trichlorofluoromethane	5.74	101	532421	57.1921 ug/L	100
9) Diethyl ether	6.27	59	908035	107.0046 ug/L	92
10) Isoprene	6.31	67	490621	48.2393 ug/L	87
11) Acrolein	6.50	56	79378	59.5350 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	326506	52.5459 ug/L	100
13) Acetone	6.61	43	114867	46.9027 ug/L	93
14) 1,1-Dichloroethene	6.85	61	728018	53.8473 ug/L	95
15) Tert-Butyl Alcohol	6.94	59	170418	174.1188 ug/L	96
16) Dimethyl Sulfide	7.11	62	562906	72.5327 ug/L	84
17) Iodomethane	7.37	142	457364	69.2726 ug/L	98
18) Methyl acetate	7.37	43	387538	61.6981 ug/L	94
19) Methylene Chloride	7.63	84	374895	48.8103 ug/L	73
20) Carbon Disulfide	7.69	76	959337	46.7525 ug/L	100
21) Acrylonitrile	7.81	53	208285	52.4686 ug/L	97
22) Methyl Tert Butyl Ether	7.84	73	990219	48.3402 ug/L	97
23) trans-1,2-Dichloroethene	8.09	61	709623	54.3219 ug/L	95
24) n-Hexane	8.16	57	779677	63.8776 ug/L	90
25) Diisopropyl ether	8.50	45	3814329	127.1646 ug/L	97
26) Vinyl Acetate	8.67	43	761406	52.1301 ug/L	96
27) 1,1-Dichloroethane	8.71	63	887849	53.7928 ug/L	100
28) Ethyl-Tert-Butyl ether	9.07	59	3470157	109.1794 ug/L	98
29) 2-Butanone	9.25	43	209740	54.0899 ug/L	91
30) Propionitrile	9.37	54	142731	99.2954 ug/L	94
31) 2,2-Dichloropropane	9.49	77	600408	59.9792 ug/L	99
32) cis-1,2-Dichloroethene	9.55	96	410879	52.1474 ug/L	89
33) Chloroform	9.76	83	655552	52.2382 ug/L	100
34) 1-Bromopropane	9.91	122	64797	48.5177 ug/L	99
35) Bromochloromethane	10.00	130	248070	51.4209 ug/L	82
36) Tetrahydrofuran	10.02	42	266252	110.0975 ug/L	87
38) 1,1,1-Trichloroethane	10.30	97	595500	54.6997 ug/L	97
39) Cyclohexane	10.33	56	962828	53.6591 ug/L	94
40) 1,1-Dichloropropene	10.50	75	487678	54.5311 ug/L	99
41) Tert-Amyl-Methyl ether	10.59	73	2043803	100.5609 ug/L	96
42) Carbon Tetrachloride	10.64	117	526898	55.0530 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M963389.D 8260WT.M Tue May 20 07:12:52 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\052014\9M963389.D Vial: 2
Acq On : 20 May 2014 6:50 Operator: TMB
Sample : WG476698-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD64308 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 07:12:50 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.82	62	619965	54.7268 ug/L	97
46)	Benzene	10.86	78	1459283	50.3199 ug/L	96
47)	Trichloroethene	11.60	130	390394	52.5335 ug/L	98
48)	Methylcyclohexane	11.69	83	576171	50.8659 ug/L	91
49)	1,2-Dichloropropane	11.82	63	520164	52.9482 ug/L	98
50)	1,4-Dioxane	12.11	88	13730	166.8733 ug/L	83
51)	Bromodichloromethane	12.12	83	517295	53.9640 ug/L	99
52)	Dibromomethane	12.21	174	251320	49.9720 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.41	63	285290	49.4881 ug/L	97
54)	4-Methyl-2-Pentanone	12.43	58	205880	48.4785 ug/L	97
55)	cis-1,3-Dichloropropene	12.75	75	623468	53.6270 ug/L	99
56)	Dimethyl Disulfide	13.02	94	684241	50.2782 ug/L	100
59)	Toluene	13.18	91	1532588	49.5492 ug/L	99
60)	Ethyl Methacrylate	13.26	69	405077	44.5403 ug/L	100
61)	trans-1,3-Dichloropropene	13.35	75	561092	51.4242 ug/L	99
62)	1,1,2-Trichloroethane	13.57	97	311168	47.6652 ug/L	100
63)	2-Hexanone	13.49	43	323492	52.3704 ug/L	89
64)	1,3-Dichloropropane	13.88	76	538525	47.8350 ug/L	85
65)	Tetrachloroethene	14.00	164	338696	52.5960 ug/L	98
66)	Dibromochloromethane	14.27	129	393765	50.9057 ug/L	99
67)	1,2-Dibromoethane	14.53	107	317619	48.0161 ug/L	99
68)	1-Chlorohexane	14.60	91	465367	51.3489 ug/L	86
69)	Chlorobenzene	15.02	112	1030457	50.7033 ug/L	99
70)	1,1,1,2-Tetrachloroethane	15.05	131	391055	50.2197 ug/L	100
71)	Ethylbenzene	15.05	106	577532	51.4095 ug/L	99
72)	m-,p-Xylene	15.14	106	1381126	103.3737 ug/L	100
73)	o-Xylene	15.71	106	703134	50.4582 ug/L	99
74)	Styrene	15.74	104	1160720	52.7135 ug/L	99
75)	Bromoform	16.24	173	281234	41.6269 ug/L	99
76)	Isopropylbenzene	16.13	105	1745576	52.1802 ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.35	83	374758	44.6536 ug/L	99
80)	1,2,3-Trichloropropane	16.54	110	117481	45.4100 ug/L	96
81)	trans-1,4-Dichloro-2-Buten	16.57	53	162217	48.8856 ug/L	81
82)	n-Propylbenzene	16.64	91	2090766	53.7423 ug/L	99
83)	Bromobenzene	16.78	156	463424	50.4444 ug/L	98
84)	1,3,5-Trimethylbenzene	16.82	105	1512494	52.2788 ug/L	99
85)	2-Chlorotoluene	16.92	91	1297372	47.6550 ug/L	91
86)	4-Chlorotoluene	16.96	91	1253023	56.2214 ug/L	89
87)	a-Methylstyrene	17.23	118	764197	51.0902 ug/L	100
88)	tert-Butylbenzene	17.29	134	336243	49.9419 ug/L	99
89)	1,2,4-Trimethylbenzene	17.34	105	1545446	52.6637 ug/L	99
90)	sec-Butylbenzene	17.56	105	1918719	53.0903 ug/L	100
91)	p-Isopropyltoluene	17.71	119	1618990	55.6525 ug/L	100
92)	1,3-Dichlorobenzene	17.92	146	899288	52.4935 ug/L	99
93)	1,4-Dichlorobenzene	18.05	146	898494	52.4407 ug/L	100
94)	n-Butylbenzene	18.24	91	1459532	58.5065 ug/L	100
95)	1,2-Dichlorobenzene	18.55	146	873205	51.1030 ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.55	157	85318	42.2931 ug/L	98
97)	1,2,4-Trichlorobenzene	20.69	180	653361	49.4091 ug/L	100
98)	Hexachlorobutadiene	20.83	225	362132	50.3174 ug/L	99
99)	Naphthalene	21.06	128	1367919	50.2842 ug/L	100
100)	1,2,3-Trichlorobenzene	21.37	180	616672	52.5751 ug/L	100

(#) = qualifier out of range (m) = manual integration
9M963389.D 8260WT.M Tue May 20 07:12:52 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\052014\9M963389.D Vial: 2
Acq On : 20 May 2014 6:50 Operator: TMB
Sample : WG476698-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD64308 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 7:12 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

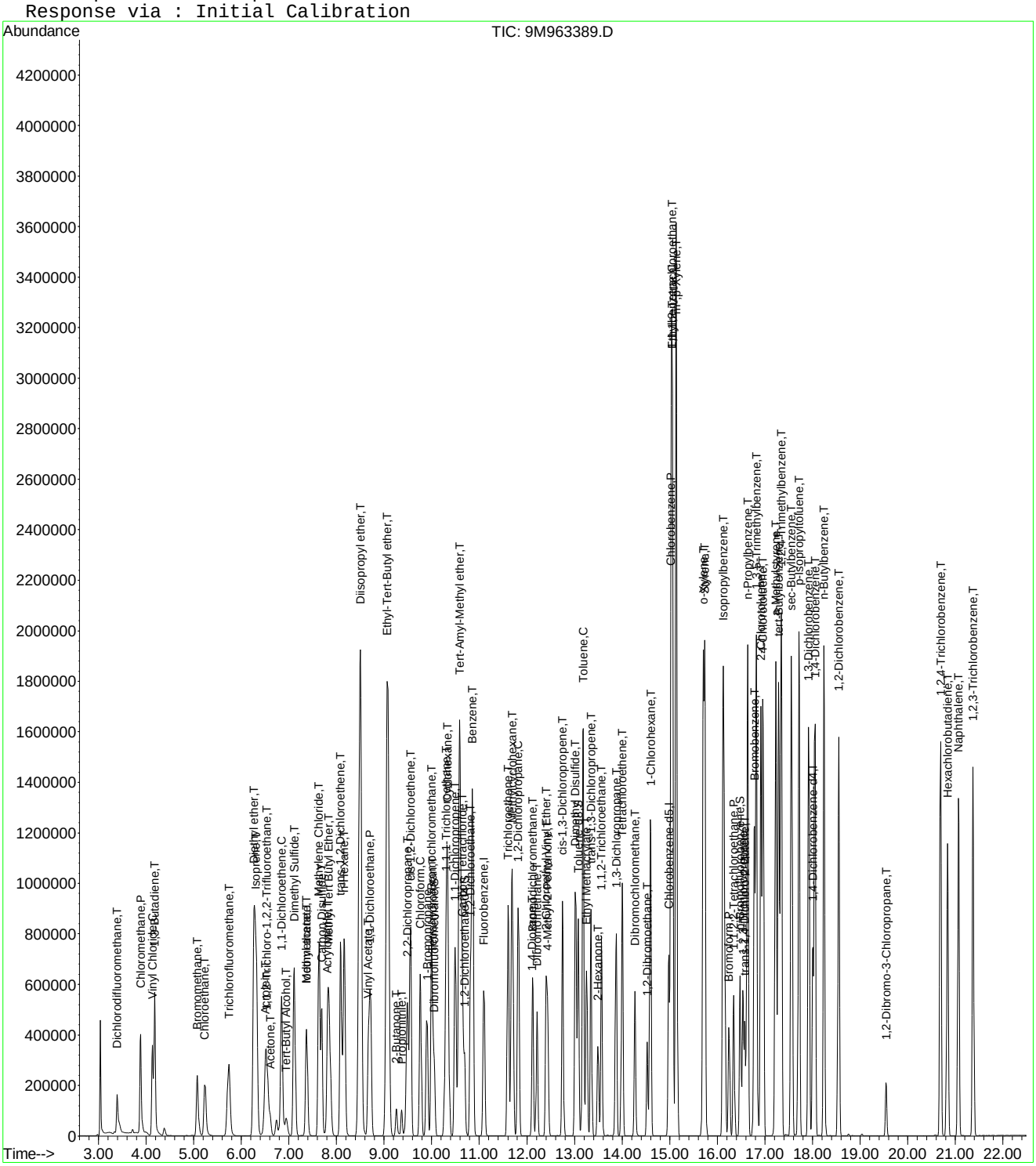

Continuing Calibration Area and RT check

Instrument: HPMS9
Initial cal date: 14 Apr 2014 20:16
CCV date: 20 May 2014 6:50
CCV Filename: 9M963389.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	745675	11.11	536567	14.94	279955	17.97
CCV	665233	11.09	501979	14.94	265776	17.97

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\052014\9M963389.D Vial: 2
Acq On : 20 May 2014 6:50 Operator: TMB
Sample : WG476698-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD64308 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	89	-0.01
2	T	Dichlorodifluoromethane	0.1790	0.1744	2.6	76	0.00
3	P	Chloromethane	0.3044	0.4372	-43.6#	131	0.00
4	C	Vinyl Chloride	0.3260	0.3585	-10.0	84	0.00
5	T	1,3-Butadiene	0.2017	0.2424	-20.2	108	0.00
6	T	Bromomethane	0.1915	0.1995	-4.2	90	0.00
7	T	Chloroethane	0.2359	0.2407	-2.1	85	0.00
8	T	Trichlorofluoromethane	0.3498	0.4002	-14.4	92	0.00
9	T	Diethyl ether	0.3189	0.3413	-7.0	94	0.00
10	T	Isoprene	0.3822	0.3688	3.5	79	-0.01
11	T	Acrolein	0.0501	0.0597	-19.1	103	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2139	0.2454	-14.7	90	0.01
13	T	Acetone	0.0920	0.0863	6.2	84	0.00
14	C	1,1-Dichloroethene	0.5081	0.5472	-7.7	90	0.00
15	T	Tert-Butyl Alcohol	0.0368	0.0320	12.9	79	-0.01
16	T	Dimethyl Sulfide	0.2917	0.4231	-45.1#	120	0.00
17	T	Iodomethane	0.2086	0.3438	-64.8#	124	0.00
18	T	Methyl acetate	0.2361	0.2913	-23.4	107	0.00
19	T	Methylene Chloride	0.2887	0.2818	2.4	85	-0.01
20	T	Carbon Disulfide	0.7711	0.7210	6.5	81	0.00
21	T	Acrylonitrile	0.1492	0.1565	-4.9	90	-0.01
22	T	Methyl Tert Butyl Ether	0.7698	0.7443	3.3	83	-0.01
23	T	trans-1,2-Dichloroethene	0.4909	0.5334	-8.6	91	-0.01
24	T	n-Hexane	0.4587	0.5860	-27.8#	103	-0.01
25	T	Diisopropyl ether	1.1272	1.4335	-27.2#	109	0.00
26	T	Vinyl Acetate	0.5489	0.5723	-4.3	93	-0.01
27	P	1,1-Dichloroethane	0.6203	0.6673	-7.6	90	-0.01
28	T	Ethyl-Tert-Butyl ether	1.1945	1.3041	-9.2	95	-0.01
29	T	2-Butanone	0.1457	0.1576	-8.2	96	-0.01
30	T	Propionitrile	0.0540	0.0536	0.7	85	0.00
31	T	2,2-Dichloropropane	0.3762	0.4513	-20.0	104	0.00
32	T	cis-1,2-Dichloroethene	0.2961	0.3088	-4.3	86	-0.01
33	C	Chloroform	0.4716	0.4927	-4.5	88	-0.01
34		1-Bromopropane	0.0502	0.0487	3.0	79	0.00
35	T	Bromochloromethane	0.1813	0.1865	-2.8	85	0.00
36	T	Tetrahydrofuran	0.0909	0.1001	-10.1	96	-0.01
37	S	Dibromofluoromethane	0.2695	0.3070	-13.9	99	-0.01
38	T	1,1,1-Trichloroethane	0.4091	0.4476	-9.4	89	0.00
39	T	Cyclohexane	0.6743	0.7237	-7.3	88	-0.01
40	T	1,1-Dichloropropene	0.3361	0.3665	-9.1	89	0.00
41	T	Tert-Amyl-Methyl ether	0.7638	0.7681	-0.6	88	0.00
42	T	Carbon Tetrachloride	0.3597	0.3960	-10.1	91	-0.01
43	S	1,2-Dichloroethane-d4	0.3392	0.3772	-11.2	98	-0.01
44		Heptane	0.0000	0.0000	0.0	103	0.00
45	T	1,2-Dichloroethane	0.4257	0.4660	-9.5	91	0.00
46	T	Benzene	1.0899	1.0968	-0.6	85	0.00
47	T	Trichloroethene	0.2793	0.2934	-5.1	86	-0.01
48	T	Methylcyclohexane	0.4257	0.4331	-1.7	84	0.00
49	C	1,2-Dichloropropane	0.3692	0.3910	-5.9	89	0.00
50	T	1,4-Dioxane	0.0031	0.0026	16.5	75	0.00
51	T	Bromodichloromethane	0.3603	0.3888	-7.9	87	-0.01
52	T	Dibromomethane	0.1890	0.1889	0.1	83	-0.01
53	T	2-Chloroethyl Vinyl Ether	0.2167	0.2144	1.0	84	0.00
54	T	4-Methyl-2-Pentanone	0.1596	0.1547	3.0	87	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\052014\9M963389.D Vial: 2
Acq On : 20 May 2014 6:50 Operator: TMB
Sample : WG476698-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD64308 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4369	0.4686	-7.3	89	-0.01
56	T	Dimethyl Disulfide	0.5114	0.5143	-0.6	81	-0.01
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	94	0.00
58	S	Toluene-d8	1.3638	1.4691	-7.7	97	0.00
59	C	Toluene	1.5404	1.5266	0.9	85	0.00
60	T	Ethyl Methacrylate	0.4529	0.4035	10.9	76	0.00
61	T	trans-1,3-Dichloropropene	0.5434	0.5589	-2.8	88	0.00
62	T	1,1,2-Trichloroethane	0.3251	0.3099	4.7	82	-0.01
63	T	2-Hexanone	0.3076	0.3222	-4.7	99	0.00
64	T	1,3-Dichloropropane	0.5607	0.5364	4.3	84	0.00
65	T	Tetrachloroethene	0.3207	0.3374	-5.2	90	-0.01
66	T	Dibromochloromethane	0.3852	0.3922	-1.8	88	0.00
67	T	1,2-Dibromoethane	0.3294	0.3164	4.0	81	0.00
68	T	1-Chlorohexane	0.4514	0.4635	-2.7	85	0.00
69	P	Chlorobenzene	1.0122	1.0264	-1.4	88	-0.01
70	T	1,1,1,2-Tetrachloroethane	0.3878	0.3895	-0.4	88	-0.01
71	C	Ethylbenzene	0.5595	0.5753	-2.8	87	0.00
72	T	m-,p-Xylene	0.6654	0.6878	-3.4	88	0.00
73	T	o-Xylene	0.6940	0.7004	-0.9	88	0.00
74	T	Styrene	1.0966	1.1561	-5.4	86	-0.01
75	P	Bromoform	0.2927	0.2801	4.3	81	-0.01
76	T	Isopropylbenzene	1.6661	1.7387	-4.4	88	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	95	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7894	0.7050	10.7	80	0.00
79	S	p-Bromofluorobenzene	1.0295	1.0163	1.3	90	0.00
80	T	1,2,3-Trichloropropane	0.2434	0.2210	9.2	80	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2861	0.3052	-6.7	90	-0.01
82	T	n-Propylbenzene	3.6594	3.9333	-7.5	89	0.00
83	T	Bromobenzene	0.8641	0.8718	-0.9	86	0.00
84	T	1,3,5-Trimethylbenzene	2.7214	2.8454	-4.6	88	0.00
85	T	2-Chlorotoluene	2.5608	2.4407	4.7	92	0.00
86	T	4-Chlorotoluene	2.0964	2.3573	-12.4	85	-0.01
87	T	a-Methylstyrene	1.4070	1.4377	-2.2	86	0.00
88	T	tert-Butylbenzene	0.6333	0.6326	0.1	87	0.00
89	T	1,2,4-Trimethylbenzene	2.7604	2.9074	-5.3	89	-0.01
90	T	sec-Butylbenzene	3.3995	3.6096	-6.2	89	-0.01
91	T	p-Isopropyltoluene	2.7364	3.0458	-11.3	91	-0.01
92	T	1,3-Dichlorobenzene	1.6115	1.6918	-5.0	90	-0.01
93	T	1,4-Dichlorobenzene	1.6117	1.6903	-4.9	90	0.00
94	T	n-Butylbenzene	2.3466	2.7458	-17.0	93	-0.01
95	T	1,2-Dichlorobenzene	1.6073	1.6427	-2.2	87	0.00
96	T	1,2-Dibromo-3-Chloropropane	0.1898	0.1605	15.4	74	0.00
97	T	1,2,4-Trichlorobenzene	1.0664	1.2292	-15.3	91	0.00
98	T	Hexachlorobutadiene	0.5902	0.6813	-15.4	92	-0.01
99	T	Naphthalene	2.5589	2.5734	-0.6	80	-0.01
100	T	1,2,3-Trichlorobenzene	1.1033	1.1601	-5.1	86	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M963389.D 8260WT.M Tue May 20 07:13:32 2014 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\052014\9M963389.D Vial: 2
Acq On : 20 May 2014 6:50 Operator: TMB
Sample : WG476698-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD64308 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	89	-0.01
2	T	Dichlorodifluoromethane	50.0000	48.7088	2.6	76	0.00
3	P	Chloromethane	50.0000	71.8160	-43.6#	131	0.00
4	C	Vinyl Chloride	50.0000	54.9894	-10.0	84	0.00
5	T	1,3-Butadiene	50.0000	60.0760	-20.2	108	0.00
6	T	Bromomethane	50.0000	52.1138	-4.2	90	0.00
7	T	Chloroethane	50.0000	51.0257	-2.1	85	0.00
8	T	Trichlorofluoromethane	50.0000	57.1921	-14.4	92	0.00
9	T	Diethyl ether	100.0000	107.0046	-7.0	94	0.00
10	T	Isoprene	50.0000	48.2394	3.5	79	-0.01
11	T	Acrolein	50.0000	59.5350	-19.1	103	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.5459	-5.1	90	0.01
13	T	Acetone	50.0000	46.9027	6.2	84	0.00
14	C	1,1-Dichloroethene	50.0000	53.8473	-7.7	90	0.00
15	T	Tert-Butyl Alcohol	200.0000	174.1188	12.9	79	-0.01
16	T	Dimethyl Sulfide	50.0000	72.5327	-45.1#	120	0.00
17	T	Iodomethane	50.0000	69.2726	-38.5#	124	0.00
18	T	Methyl acetate	50.0000	61.6981	-23.4	107	0.00
19	T	Methylene Chloride	50.0000	48.8103	2.4	85	-0.01
20	T	Carbon Disulfide	50.0000	46.7525	6.5	81	0.00
21	T	Acrylonitrile	50.0000	52.4686	-4.9	90	-0.01
22	T	Methyl Tert Butyl Ether	50.0000	48.3402	3.3	83	-0.01
23	T	trans-1,2-Dichloroethene	50.0000	54.3219	-8.6	91	-0.01
24	T	n-Hexane	50.0000	63.8776	-27.8#	103	-0.01
25	T	Diisopropyl ether	100.0000	127.1646	-27.2#	109	0.00
26	T	Vinyl Acetate	50.0000	52.1301	-4.3	93	-0.01
27	P	1,1-Dichloroethane	50.0000	53.7929	-7.6	90	-0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	109.1794	-9.2	95	-0.01
29	T	2-Butanone	50.0000	54.0900	-8.2	96	-0.01
30	T	Propionitrile	100.0000	99.2954	0.7	85	0.00
31	T	2,2-Dichloropropane	50.0000	59.9792	-20.0	104	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.1474	-4.3	86	-0.01
33	C	Chloroform	50.0000	52.2382	-4.5	88	-0.01
34		1-Bromopropane	50.0000	48.5177	3.0	79	0.00
35	T	Bromochloromethane	50.0000	51.4209	-2.8	85	0.00
36	T	Tetrahydrofuran	100.0000	110.0974	-10.1	96	-0.01
37	S	Dibromofluoromethane	25.0000	28.4860	-13.9	99	-0.01
38	T	1,1,1-Trichloroethane	50.0000	54.6997	-9.4	89	0.00
39	T	Cyclohexane	50.0000	53.6591	-7.3	88	-0.01
40	T	1,1-Dichloropropene	50.0000	54.5311	-9.1	89	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.5609	-0.6	88	0.00
42	T	Carbon Tetrachloride	50.0000	55.0530	-10.1	91	-0.01
43	S	1,2-Dichloroethane-d4	25.0000	27.8006	-11.2	98	-0.01
44		Heptane	-1.0000	0.0000	0.0	103	0.00
45	T	1,2-Dichloroethane	50.0000	54.7268	-9.5	91	0.00
46	T	Benzene	50.0000	50.3199	-0.6	85	0.00
47	T	Trichloroethene	50.0000	52.5335	-5.1	86	-0.01
48	T	Methylcyclohexane	50.0000	50.8659	-1.7	84	0.00
49	C	1,2-Dichloropropane	50.0000	52.9482	-5.9	89	0.00
50	T	1,4-Dioxane	200.0000	166.8733	16.6	75	0.00
51	T	Bromodichloromethane	50.0000	53.9640	-7.9	87	-0.01
52	T	Dibromomethane	50.0000	49.9720	0.1	83	-0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	49.4881	1.0	84	0.00
54	T	4-Methyl-2-Pentanone	50.0000	48.4785	3.0	87	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\052014\9M963389.D Vial: 2
Acq On : 20 May 2014 6:50 Operator: TMB
Sample : WG476698-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD64308 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.6270	-7.3	89	-0.01
56	T	Dimethyl Disulfide	50.0000	50.2781	-0.6	81	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	94	0.00
58	S	Toluene-d8	25.0000	26.9302	-7.7	97	0.00
59	C	Toluene	50.0000	49.5492	0.9	85	0.00
60	T	Ethyl Methacrylate	50.0000	44.5403	10.9	76	0.00
61	T	trans-1,3-Dichloropropene	50.0000	51.4242	-2.8	88	0.00
62	T	1,1,2-Trichloroethane	50.0000	47.6652	4.7	82	-0.01
63	T	2-Hexanone	50.0000	52.3704	-4.7	99	0.00
64	T	1,3-Dichloropropane	50.0000	47.8350	4.3	84	0.00
65	T	Tetrachloroethene	50.0000	52.5960	-5.2	90	-0.01
66	T	Dibromochloromethane	50.0000	50.9057	-1.8	88	0.00
67	T	1,2-Dibromoethane	50.0000	48.0161	4.0	81	0.00
68	T	1-Chlorohexane	50.0000	51.3489	-2.7	85	0.00
69	P	Chlorobenzene	50.0000	50.7033	-1.4	88	-0.01
70	T	1,1,1,2-Tetrachloroethane	50.0000	50.2197	-0.4	88	-0.01
71	C	Ethylbenzene	50.0000	51.4095	-2.8	87	0.00
72	T	m-,p-Xylene	100.0000	103.3737	-3.4	88	0.00
73	T	o-Xylene	50.0000	50.4582	-0.9	88	0.00
74	T	Styrene	50.0000	52.7135	-5.4	86	-0.01
75	P	Bromoform	50.0000	41.6269	16.7	81	-0.01
76	T	Isopropylbenzene	50.0000	52.1801	-4.4	88	0.00
77	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	95	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	44.6536	10.7	80	0.00
79	S	p-Bromofluorobenzene	25.0000	24.6790	1.3	90	0.00
80	T	1,2,3-Trichloropropane	50.0000	45.4100	9.2	80	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	48.8856	2.2	90	-0.01
82	T	n-Propylbenzene	50.0000	53.7423	-7.5	89	0.00
83	T	Bromobenzene	50.0000	50.4444	-0.9	86	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	52.2788	-4.6	88	0.00
85	T	2-Chlorotoluene	50.0000	47.6550	4.7	92	0.00
86	T	4-Chlorotoluene	50.0000	56.2214	-12.4	85	-0.01
87	T	a-Methylstyrene	50.0000	51.0902	-2.2	86	0.00
88	T	tert-Butylbenzene	50.0000	49.9419	0.1	87	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	52.6637	-5.3	89	-0.01
90	T	sec-Butylbenzene	50.0000	53.0903	-6.2	89	-0.01
91	T	p-Isopropyltoluene	50.0000	55.6525	-11.3	91	-0.01
92	T	1,3-Dichlorobenzene	50.0000	52.4935	-5.0	90	-0.01
93	T	1,4-Dichlorobenzene	50.0000	52.4407	-4.9	90	0.00
94	T	n-Butylbenzene	50.0000	58.5065	-17.0	93	-0.01
95	T	1,2-Dichlorobenzene	50.0000	51.1030	-2.2	87	0.00
96	T	1,2-Dibromo-3-Chloropropane	50.0000	42.2931	15.4	74	0.00
97	T	1,2,4-Trichlorobenzene	50.0000	49.4091	1.2	91	0.00
98	T	Hexachlorobutadiene	50.0000	50.3174	-0.6	92	-0.01
99	T	Naphthalene	50.0000	50.2842	-0.6	80	-0.01
100	T	1,2,3-Trichlorobenzene	50.0000	52.5751	-5.2	86	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M963389.D 8260WT.M Tue May 20 07:13:34 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\052014\9M963410.D Vial: 2
Acq On : 20 May 2014 18:58 Operator: FJB
Sample : WG476874-02 50ug/L CCV 8260 Inst : HPMS9
Misc : 1,1 STD64405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 19:20:37 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.09	96	658460	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.98	117	499351	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	263422	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.05	111	189524	26.7038 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.80%		
43) 1,2-Dichloroethane-d4	10.69	65	234471	26.2472 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.00%		
58) Toluene-d8	13.08	98	677138	24.8572 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.44%		
79) p-Bromofluorobenzene	16.48	95	241307	22.2447 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 88.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	214104	45.4010 ug/L	96
3) Chloromethane	3.89	50	569278	71.0045 ug/L	99
4) Vinyl Chloride	4.13	62	464239	54.0722 ug/L	99
5) 1,3-Butadiene	4.18	54	319635	60.1675 ug/L	99
6) Bromomethane	5.07	94	250834	49.7443 ug/L	100
7) Chloroethane	5.24	64	310377	49.9576 ug/L	94
8) Trichlorofluoromethane	5.74	101	512458	55.6139 ug/L	99
9) Diethyl ether	6.26	59	886476	105.5386 ug/L	92
10) Isoprene	6.32	67	494694	49.1401 ug/L	86
11) Acrolein	6.51	56	74125	56.1670 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.52	101	303800	49.4056 ug/L	99
13) Acetone	6.62	43	111578	46.0283 ug/L	92
14) 1,1-Dichloroethene	6.84	61	704574	52.6494 ug/L	94
15) Tert-Butyl Alcohol	6.95	59	166252	171.6095 ug/L	96
16) Dimethyl Sulfide	7.11	62	553299	72.0282 ug/L	83
17) Iodomethane	7.37	142	455967	69.7659 ug/L	97
18) Methyl acetate	7.37	43	425397	68.4221 ug/L	93
19) Methylene Chloride	7.63	84	361245	47.5169 ug/L	72
20) Carbon Disulfide	7.69	76	957524	47.1441 ug/L	99
21) Acrylonitrile	7.81	53	206718	52.6095 ug/L	99
22) Methyl Tert Butyl Ether	7.84	73	923032	45.5237 ug/L	96
23) trans-1,2-Dichloroethene	8.08	61	685653	53.0269 ug/L	96
24) n-Hexane	8.17	57	772779	63.9637 ug/L	90
25) Diisopropyl ether	8.50	45	3795848	127.8502 ug/L	97
26) Vinyl Acetate	8.67	43	568925	39.3524 ug/L	96
27) 1,1-Dichloroethane	8.71	63	846927	51.8413 ug/L	100
28) Ethyl-Tert-Butyl ether	9.08	59	3384312	107.5738 ug/L	98
29) 2-Butanone	9.26	43	185033	48.2091 ug/L	91
30) Propionitrile	9.37	54	141161	99.2133 ug/L	97
31) 2,2-Dichloropropane	9.49	77	579203	58.4560 ug/L	98
32) cis-1,2-Dichloroethene	9.55	96	394395	50.5702 ug/L	89
33) Chloroform	9.76	83	626404	50.4290 ug/L	99
34) 1-Bromopropane	9.90	122	64876	49.0765 ug/L	97
35) Bromochloromethane	10.00	130	233260	48.8484 ug/L	79
36) Tetrahydrofuran	10.02	42	250341	104.5829 ug/L	88
38) 1,1,1-Trichloroethane	10.30	97	562258	52.1775 ug/L	95
39) Cyclohexane	10.33	56	983231	55.3598 ug/L	93
40) 1,1-Dichloropropene	10.49	75	464413	52.4638 ug/L	99
41) Tert-Amyl-Methyl ether	10.59	73	1945847	96.7260 ug/L	95
42) Carbon Tetrachloride	10.64	117	506508	53.4669 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\052014\9M963410.D Vial: 2
Acq On : 20 May 2014 18:58 Operator: FJB
Sample : WG476874-02 50ug/L CCV 8260 Inst : HPMS9
Misc : 1,1 STD64405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 19:20:37 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.81	62	591467	52.7482 ug/L	95
46)	Benzene	10.85	78	1389891	48.4201 ug/L	95
47)	Trichloroethene	11.61	130	365097	49.6347 ug/L	99
48)	Methylcyclohexane	11.69	83	585816	52.2494 ug/L	91
49)	1,2-Dichloropropane	11.82	63	495660	50.9729 ug/L	99
50)	1,4-Dioxane	12.10	88	12950	159.0122 ug/L	84
51)	Bromodichloromethane	12.13	83	495404	52.2119 ug/L	99
52)	Dibromomethane	12.21	174	235267	47.2612 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.41	63	94472	16.5562 ug/L	94
54)	4-Methyl-2-Pentanone	12.44	58	171128	40.7100 ug/L	96
55)	cis-1,3-Dichloropropene	12.75	75	587737	51.0736 ug/L	100
56)	Dimethyl Disulfide	13.03	94	673046	49.9642 ug/L	99
59)	Toluene	13.18	91	1466618	47.6659 ug/L	100
60)	Ethyl Methacrylate	13.25	69	401648	44.3957 ug/L	99
61)	trans-1,3-Dichloropropene	13.35	75	527288	48.5804 ug/L	98
62)	1,1,2-Trichloroethane	13.56	97	295098	45.4415 ug/L	100
63)	2-Hexanone	13.49	43	271033	44.1087 ug/L	90
64)	1,3-Dichloropropane	13.87	76	506328	45.2118 ug/L	83
65)	Tetrachloroethene	14.00	164	323500	50.5006 ug/L	98
66)	Dibromochloromethane	14.27	129	371345	48.2599 ug/L	98
67)	1,2-Dibromoethane	14.53	107	299984	45.5888 ug/L	99
68)	1-Chlorohexane	14.60	91	473359	52.5056 ug/L	86
69)	Chlorobenzene	15.03	112	972971	48.1267 ug/L	100
70)	1,1,1,2-Tetrachloroethane	15.05	131	369193	47.6617 ug/L	100
71)	Ethylbenzene	15.05	106	550259	49.2396 ug/L	99
72)	m-,p-Xylene	15.14	106	1318739	99.2237 ug/L	100
73)	o-Xylene	15.70	106	669613	48.3056 ug/L	98
74)	Styrene	15.75	104	1097095	50.0862 ug/L	99
75)	Bromoform	16.24	173	261873	39.0063 ug/L	100
76)	Isopropylbenzene	16.13	105	1646492	49.4773 ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.34	83	350902	42.1847 ug/L	98
80)	1,2,3-Trichloropropane	16.54	110	108031	42.1304 ug/L	96
81)	trans-1,4-Dichloro-2-Buten	16.58	53	166335	50.5604 ug/L	74
82)	n-Propylbenzene	16.63	91	1995714	51.7574 ug/L	99
83)	Bromobenzene	16.78	156	433384	47.5960 ug/L	96
84)	1,3,5-Trimethylbenzene	16.82	105	1444255	50.3662 ug/L	100
85)	2-Chlorotoluene	16.91	91	1209156	44.8116 ug/L	91
86)	4-Chlorotoluene	16.97	91	1224376	55.4270 ug/L	90
87)	a-Methylstyrene	17.22	118	778144	52.4875 ug/L	99
88)	tert-Butylbenzene	17.29	134	320614	48.0461 ug/L	99
89)	1,2,4-Trimethylbenzene	17.34	105	1464291	50.3441 ug/L	99
90)	sec-Butylbenzene	17.55	105	1798631	50.2122 ug/L	100
91)	p-Isopropyltoluene	17.72	119	1527259	52.9684 ug/L	100
92)	1,3-Dichlorobenzene	17.92	146	840278	49.4873 ug/L	99
93)	1,4-Dichlorobenzene	18.05	146	849862	50.0455 ug/L	99
94)	n-Butylbenzene	18.24	91	1387442	56.1137 ug/L	99
95)	1,2-Dichlorobenzene	18.55	146	819750	48.4034 ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.55	157	78311	39.1665 ug/L	96
97)	1,2,4-Trichlorobenzene	20.69	180	610139	46.5639 ug/L	98
98)	Hexachlorobutadiene	20.84	225	337360	47.3110 ug/L	99
99)	Naphthalene	21.07	128	1279341	47.4483 ug/L	100
100)	1,2,3-Trichlorobenzene	21.37	180	585866	50.3950 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M963410.D 8260WT.M Tue May 20 19:20:39 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\052014\9M963410.D Vial: 2
Acq On : 20 May 2014 18:58 Operator: FJB
Sample : WG476874-02 50ug/L CCV 8260 Inst : HPMS9
Misc : 1,1 STD64405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 19:20 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

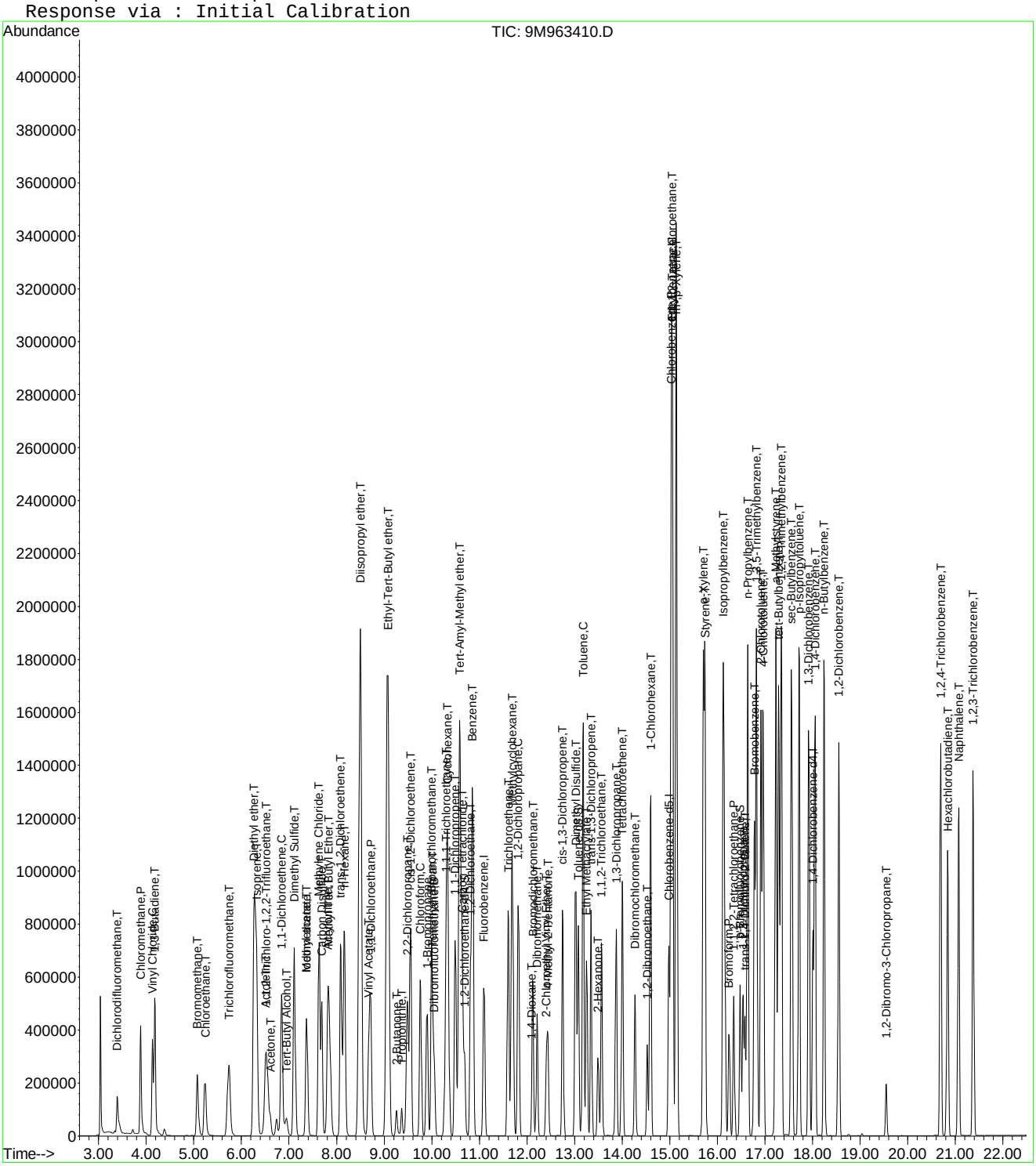

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\052014\9M963410.D Vial: 2
Acq On : 20 May 2014 18:58 Operator: FJB
Sample : WG476874-02 50ug/L CCV 8260 Inst : HPMS9
Misc : 1,1 STD64405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	88	-0.01
2	T	Dichlorodifluoromethane	0.1790	0.1626	9.2	70	0.00
3	P	Chloromethane	0.3044	0.4323	-42.0#	128	0.00
4	C	Vinyl Chloride	0.3260	0.3525	-8.1	82	0.00
5	T	1,3-Butadiene	0.2017	0.2427	-20.3	107	0.00
6	T	Bromomethane	0.1915	0.1905	0.5	85	0.00
7	T	Chloroethane	0.2359	0.2357	0.1	82	0.00
8	T	Trichlorofluoromethane	0.3498	0.3891	-11.2	88	0.00
9	T	Diethyl ether	0.3189	0.3366	-5.5	92	0.00
10	T	Isoprene	0.3822	0.3756	1.7	80	0.00
11	T	Acrolein	0.0501	0.0563	-12.3	97	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2139	0.2307	-7.9	84	0.00
13	T	Acetone	0.0920	0.0847	7.9	82	0.00
14	C	1,1-Dichloroethene	0.5081	0.5350	-5.3	87	0.00
15	T	Tert-Butyl Alcohol	0.0368	0.0316	14.2	77	0.00
16	T	Dimethyl Sulfide	0.2917	0.4202	-44.1#	118	0.00
17	T	Iodomethane	0.2086	0.3462	-66.0#	124	0.00
18	T	Methyl acetate	0.2361	0.3230	-36.8#	117	0.00
19	T	Methylene Chloride	0.2887	0.2743	5.0	82	-0.01
20	T	Carbon Disulfide	0.7711	0.7271	5.7	81	0.00
21	T	Acrylonitrile	0.1492	0.1570	-5.2	90	0.00
22	T	Methyl Tert Butyl Ether	0.7698	0.7009	9.0	77	-0.01
23	T	trans-1,2-Dichloroethene	0.4909	0.5206	-6.1	87	-0.01
24	T	n-Hexane	0.4587	0.5868	-27.9#	102	0.00
25	T	Diisopropyl ether	1.1272	1.4412	-27.9#	109	0.00
26	T	Vinyl Acetate	0.5489	0.4320	21.3	69	0.00
27	P	1,1-Dichloroethane	0.6203	0.6431	-3.7	86	0.00
28	T	Ethyl-Tert-Butyl ether	1.1945	1.2849	-7.6	92	0.00
29	T	2-Butanone	0.1457	0.1405	3.6	85	0.00
30	T	Propionitrile	0.0540	0.0536	0.8	84	0.00
31	T	2,2-Dichloropropane	0.3762	0.4398	-16.9	100	0.00
32	T	cis-1,2-Dichloroethene	0.2961	0.2995	-1.1	83	-0.01
33	C	Chloroform	0.4716	0.4757	-0.9	84	-0.01
34		1-Bromopropane	0.0502	0.0493	1.9	79	0.00
35	T	Bromochloromethane	0.1813	0.1771	2.3	80	0.00
36	T	Tetrahydrofuran	0.0909	0.0950	-4.6	90	-0.01
37	S	Dibromofluoromethane	0.2695	0.2878	-6.8	92	-0.01
38	T	1,1,1-Trichloroethane	0.4091	0.4270	-4.4	84	0.00
39	T	Cyclohexane	0.6743	0.7466	-10.7	90	-0.01
40	T	1,1-Dichloropropene	0.3361	0.3527	-4.9	85	0.00
41	T	Tert-Amyl-Methyl ether	0.7638	0.7388	3.3	83	0.00
42	T	Carbon Tetrachloride	0.3597	0.3846	-6.9	88	-0.01
43	S	1,2-Dichloroethane-d4	0.3392	0.3561	-5.0	92	-0.01
44		Heptane	0.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	0.4257	0.4491	-5.5	87	0.00
46	T	Benzene	1.0899	1.0554	3.2	81	0.00
47	T	Trichloroethene	0.2793	0.2772	0.7	81	0.00
48	T	Methylcyclohexane	0.4257	0.4448	-4.5	86	0.00
49	C	1,2-Dichloropropane	0.3692	0.3764	-1.9	85	0.00
50	T	1,4-Dioxane	0.0031	0.0025	20.4	70	-0.01
51	T	Bromodichloromethane	0.3603	0.3762	-4.4	84	0.00
52	T	Dibromomethane	0.1890	0.1787	5.5	78	-0.01
53	T	2-Chloroethyl Vinyl Ether	0.2167	0.0717	66.9#	28#	0.00
54	T	4-Methyl-2-Pentanone	0.1596	0.1300	18.6	72	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\052014\9M963410.D Vial: 2
Acq On : 20 May 2014 18:58 Operator: FJB
Sample : WG476874-02 50ug/L CCV 8260 Inst : HPMS9
Misc : 1,1 STD64405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4369	0.4463	-2.1	84	-0.01
56	T	Dimethyl Disulfide	0.5114	0.5111	0.1	79	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	93	0.00
58	S	Toluene-d8	1.3638	1.3560	0.6	89	0.00
59	C	Toluene	1.5404	1.4685	4.7	81	0.00
60	T	Ethyl Methacrylate	0.4529	0.4022	11.2	75	0.00
61	T	trans-1,3-Dichloropropene	0.5434	0.5280	2.8	82	0.00
62	T	1,1,2-Trichloroethane	0.3251	0.2955	9.1	78	-0.01
63	T	2-Hexanone	0.3076	0.2714	11.8	83	0.00
64	T	1,3-Dichloropropane	0.5607	0.5070	9.6	79	0.00
65	T	Tetrachloroethene	0.3207	0.3239	-1.0	86	-0.01
66	T	Dibromochloromethane	0.3852	0.3718	3.5	83	0.00
67	T	1,2-Dibromoethane	0.3294	0.3004	8.8	77	0.00
68	T	1-Chlorohexane	0.4514	0.4740	-5.0	86	0.00
69	P	Chlorobenzene	1.0122	0.9742	3.7	83	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3878	0.3697	4.7	83	-0.01
71	C	Ethylbenzene	0.5595	0.5510	1.5	83	0.00
72	T	m-,p-Xylene	0.6654	0.6602	0.8	84	0.00
73	T	o-Xylene	0.6940	0.6705	3.4	84	0.00
74	T	Styrene	1.0966	1.0985	-0.2	81	0.00
75	P	Bromoform	0.2927	0.2622	10.4	76	-0.01
76	T	Isopropylbenzene	1.6661	1.6486	1.0	83	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	94	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7894	0.6661	15.6	75	0.00
79	S	p-Bromofluorobenzene	1.0295	0.9161	11.0	80	0.00
80	T	1,2,3-Trichloropropane	0.2434	0.2051	15.7	74	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2861	0.3157	-10.4	93	0.00
82	T	n-Propylbenzene	3.6594	3.7881	-3.5	85	0.00
83	T	Bromobenzene	0.8641	0.8226	4.8	81	0.00
84	T	1,3,5-Trimethylbenzene	2.7214	2.7413	-0.7	84	0.00
85	T	2-Chlorotoluene	2.5608	2.2951	10.4	86	0.00
86	T	4-Chlorotoluene	2.0964	2.3240	-10.9	83	0.00
87	T	a-Methylstyrene	1.4070	1.4770	-5.0	87	0.00
88	T	tert-Butylbenzene	0.6333	0.6086	3.9	83	0.00
89	T	1,2,4-Trimethylbenzene	2.7604	2.7794	-0.7	85	-0.01
90	T	sec-Butylbenzene	3.3995	3.4140	-0.4	84	-0.01
91	T	p-Isopropyltoluene	2.7364	2.8989	-5.9	85	0.00
92	T	1,3-Dichlorobenzene	1.6115	1.5949	1.0	84	-0.01
93	T	1,4-Dichlorobenzene	1.6117	1.6131	-0.1	85	0.00
94	T	n-Butylbenzene	2.3466	2.6335	-12.2	88	-0.01
95	T	1,2-Dichlorobenzene	1.6073	1.5560	3.2	82	0.00
96	T	1,2-Dibromo-3-Chloropropane	0.1898	0.1486	21.7	68	0.00
97	T	1,2,4-Trichlorobenzene	1.0664	1.1581	-8.6	85	0.00
98	T	Hexachlorobutadiene	0.5902	0.6403	-8.5	85	0.00
99	T	Naphthalene	2.5589	2.4283	5.1	75	0.00
100	T	1,2,3-Trichlorobenzene	1.1033	1.1120	-0.8	82	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M963410.D 8260WT.M Wed May 21 08:56:58 2014 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\052014\9M963410.D Vial: 2
Acq On : 20 May 2014 18:58 Operator: FJB
Sample : WG476874-02 50ug/L CCV 8260 Inst : HPMS9
Misc : 1,1 STD64405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	88	-0.01
2	T	Dichlorodifluoromethane	50.0000	45.4010	9.2	70	0.00
3	P	Chloromethane	50.0000	71.0045	-42.0#	128	0.00
4	C	Vinyl Chloride	50.0000	54.0722	-8.1	82	0.00
5	T	1,3-Butadiene	50.0000	60.1675	-20.3	107	0.00
6	T	Bromomethane	50.0000	49.7443	0.5	85	0.00
7	T	Chloroethane	50.0000	49.9576	0.1	82	0.00
8	T	Trichlorofluoromethane	50.0000	55.6139	-11.2	88	0.00
9	T	Diethyl ether	100.0000	105.5386	-5.5	92	0.00
10	T	Isoprene	50.0000	49.1401	1.7	80	0.00
11	T	Acrolein	50.0000	56.1670	-12.3	97	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.4056	1.2	84	0.00
13	T	Acetone	50.0000	46.0283	7.9	82	0.00
14	C	1,1-Dichloroethene	50.0000	52.6494	-5.3	87	0.00
15	T	Tert-Butyl Alcohol	200.0000	171.6095	14.2	77	0.00
16	T	Dimethyl Sulfide	50.0000	72.0282	-44.1#	118	0.00
17	T	Iodomethane	50.0000	69.7660	-39.5#	124	0.00
18	T	Methyl acetate	50.0000	68.4221	-36.8#	117	0.00
19	T	Methylene Chloride	50.0000	47.5169	5.0	82	-0.01
20	T	Carbon Disulfide	50.0000	47.1441	5.7	81	0.00
21	T	Acrylonitrile	50.0000	52.6095	-5.2	90	0.00
22	T	Methyl Tert Butyl Ether	50.0000	45.5237	9.0	77	-0.01
23	T	trans-1,2-Dichloroethene	50.0000	53.0269	-6.1	87	-0.01
24	T	n-Hexane	50.0000	63.9637	-27.9#	102	0.00
25	T	Diisopropyl ether	100.0000	127.8502	-27.9#	109	0.00
26	T	Vinyl Acetate	50.0000	39.3524	21.3	69	0.00
27	P	1,1-Dichloroethane	50.0000	51.8413	-3.7	86	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	107.5738	-7.6	92	0.00
29	T	2-Butanone	50.0000	48.2091	3.6	85	0.00
30	T	Propionitrile	100.0000	99.2133	0.8	84	0.00
31	T	2,2-Dichloropropane	50.0000	58.4560	-16.9	100	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.5702	-1.1	83	-0.01
33	C	Chloroform	50.0000	50.4290	-0.9	84	-0.01
34		1-Bromopropane	50.0000	49.0765	1.8	79	0.00
35	T	Bromochloromethane	50.0000	48.8484	2.3	80	0.00
36	T	Tetrahydrofuran	100.0000	104.5829	-4.6	90	-0.01
37	S	Dibromofluoromethane	25.0000	26.7038	-6.8	92	-0.01
38	T	1,1,1-Trichloroethane	50.0000	52.1775	-4.4	84	0.00
39	T	Cyclohexane	50.0000	55.3598	-10.7	90	-0.01
40	T	1,1-Dichloropropene	50.0000	52.4638	-4.9	85	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	96.7260	3.3	83	0.00
42	T	Carbon Tetrachloride	50.0000	53.4669	-6.9	88	-0.01
43	S	1,2-Dichloroethane-d4	25.0000	26.2472	-5.0	92	-0.01
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	50.0000	52.7482	-5.5	87	0.00
46	T	Benzene	50.0000	48.4201	3.2	81	0.00
47	T	Trichloroethene	50.0000	49.6347	0.7	81	0.00
48	T	Methylcyclohexane	50.0000	52.2494	-4.5	86	0.00
49	C	1,2-Dichloropropane	50.0000	50.9729	-1.9	85	0.00
50	T	1,4-Dioxane	200.0000	159.0122	20.5	70	-0.01
51	T	Bromodichloromethane	50.0000	52.2119	-4.4	84	0.00
52	T	Dibromomethane	50.0000	47.2612	5.5	78	-0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	16.5562	66.9#	28	0.00
54	T	4-Methyl-2-Pentanone	50.0000	40.7100	18.6	72	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\052014\9M963410.D Vial: 2
Acq On : 20 May 2014 18:58 Operator: FJB
Sample : WG476874-02 50ug/L CCV 8260 Inst : HPMS9
Misc : 1,1 STD64405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.0736	-2.1	84	-0.01
56	T	Dimethyl Disulfide	50.0000	49.9643	0.1	79	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	93	0.00
58	S	Toluene-d8	25.0000	24.8572	0.6	89	0.00
59	C	Toluene	50.0000	47.6659	4.7	81	0.00
60	T	Ethyl Methacrylate	50.0000	44.3957	11.2	75	0.00
61	T	trans-1,3-Dichloropropene	50.0000	48.5804	2.8	82	0.00
62	T	1,1,2-Trichloroethane	50.0000	45.4415	9.1	78	-0.01
63	T	2-Hexanone	50.0000	44.1087	11.8	83	0.00
64	T	1,3-Dichloropropane	50.0000	45.2118	9.6	79	0.00
65	T	Tetrachloroethene	50.0000	50.5006	-1.0	86	-0.01
66	T	Dibromochloromethane	50.0000	48.2599	3.5	83	0.00
67	T	1,2-Dibromoethane	50.0000	45.5888	8.8	77	0.00
68	T	1-Chlorohexane	50.0000	52.5056	-5.0	86	0.00
69	P	Chlorobenzene	50.0000	48.1267	3.7	83	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	47.6617	4.7	83	-0.01
71	C	Ethylbenzene	50.0000	49.2396	1.5	83	0.00
72	T	m-,p-Xylene	100.0000	99.2237	0.8	84	0.00
73	T	o-Xylene	50.0000	48.3056	3.4	84	0.00
74	T	Styrene	50.0000	50.0862	-0.2	81	0.00
75	P	Bromoform	50.0000	39.0063	22.0	76	-0.01
76	T	Isopropylbenzene	50.0000	49.4773	1.0	83	0.00
77	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	94	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	42.1847	15.6	75	0.00
79	S	p-Bromofluorobenzene	25.0000	22.2447	11.0	80	0.00
80	T	1,2,3-Trichloropropane	50.0000	42.1304	15.7	74	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	50.5604	-1.1	93	0.00
82	T	n-Propylbenzene	50.0000	51.7574	-3.5	85	0.00
83	T	Bromobenzene	50.0000	47.5960	4.8	81	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	50.3662	-0.7	84	0.00
85	T	2-Chlorotoluene	50.0000	44.8116	10.4	86	0.00
86	T	4-Chlorotoluene	50.0000	55.4270	-10.9	83	0.00
87	T	a-Methylstyrene	50.0000	52.4875	-5.0	87	0.00
88	T	tert-Butylbenzene	50.0000	48.0461	3.9	83	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	50.3441	-0.7	85	-0.01
90	T	sec-Butylbenzene	50.0000	50.2122	-0.4	84	-0.01
91	T	p-Isopropyltoluene	50.0000	52.9684	-5.9	85	0.00
92	T	1,3-Dichlorobenzene	50.0000	49.4873	1.0	84	-0.01
93	T	1,4-Dichlorobenzene	50.0000	50.0455	-0.1	85	0.00
94	T	n-Butylbenzene	50.0000	56.1137	-12.2	88	-0.01
95	T	1,2-Dichlorobenzene	50.0000	48.4034	3.2	82	0.00
96	T	1,2-Dibromo-3-Chloropropane	50.0000	39.1665	21.7	68	0.00
97	T	1,2,4-Trichlorobenzene	50.0000	46.5639	6.9	85	0.00
98	T	Hexachlorobutadiene	50.0000	47.3110	5.4	85	0.00
99	T	Naphthalene	50.0000	47.4483	5.1	75	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	50.3950	-0.8	82	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M963410.D 8260WT.M Wed May 21 08:56:55 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\052014\9M963411.D Vial: 2
Acq On : 20 May 2014 19:31 Operator: FJB
Sample : WG476878-01 100ug/L CCV A9 Inst : HPMS9
Misc : 1,1 STD64408 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 19:53:39 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.09	96	645913	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.98	117	472426	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	226545	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.05	111	182208	26.1717 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.68%		
43) 1,2-Dichloroethane-d4	10.69	65	227716	25.9862 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.96%		
58) Toluene-d8	13.08	98	658989	25.5696 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.28%		
79) p-Bromofluorobenzene	16.48	95	228159	24.4564 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.84%		

Target Compounds					Qvalue
3) Chloromethane	3.89	50	1379	0.1753 ug/L #	1
13) Acetone	6.61	43	9249	3.8895 ug/L	91
20) Carbon Disulfide	7.69	76	3712	0.1863 ug/L	95
56) Dimethyl Disulfide	13.08	94	18507	1.4006 ug/L #	28
97) 1,2,4-Trichlorobenzene	20.69	180	1302	0.3066 ug/L #	73
99) Naphthalene	21.07	128	3231	0.1393 ug/L #	68

(#) = qualifier out of range (m) = manual integration
9M963411.D 8260WT.M Tue May 20 19:53:41 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\052014\9M963411.D Vial: 2
Acq On : 20 May 2014 19:31 Operator: FJB
Sample : WG476878-01 100ug/L CCV A9 Inst : HPMS9
Misc : 1,1 STD64408 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 19:53 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

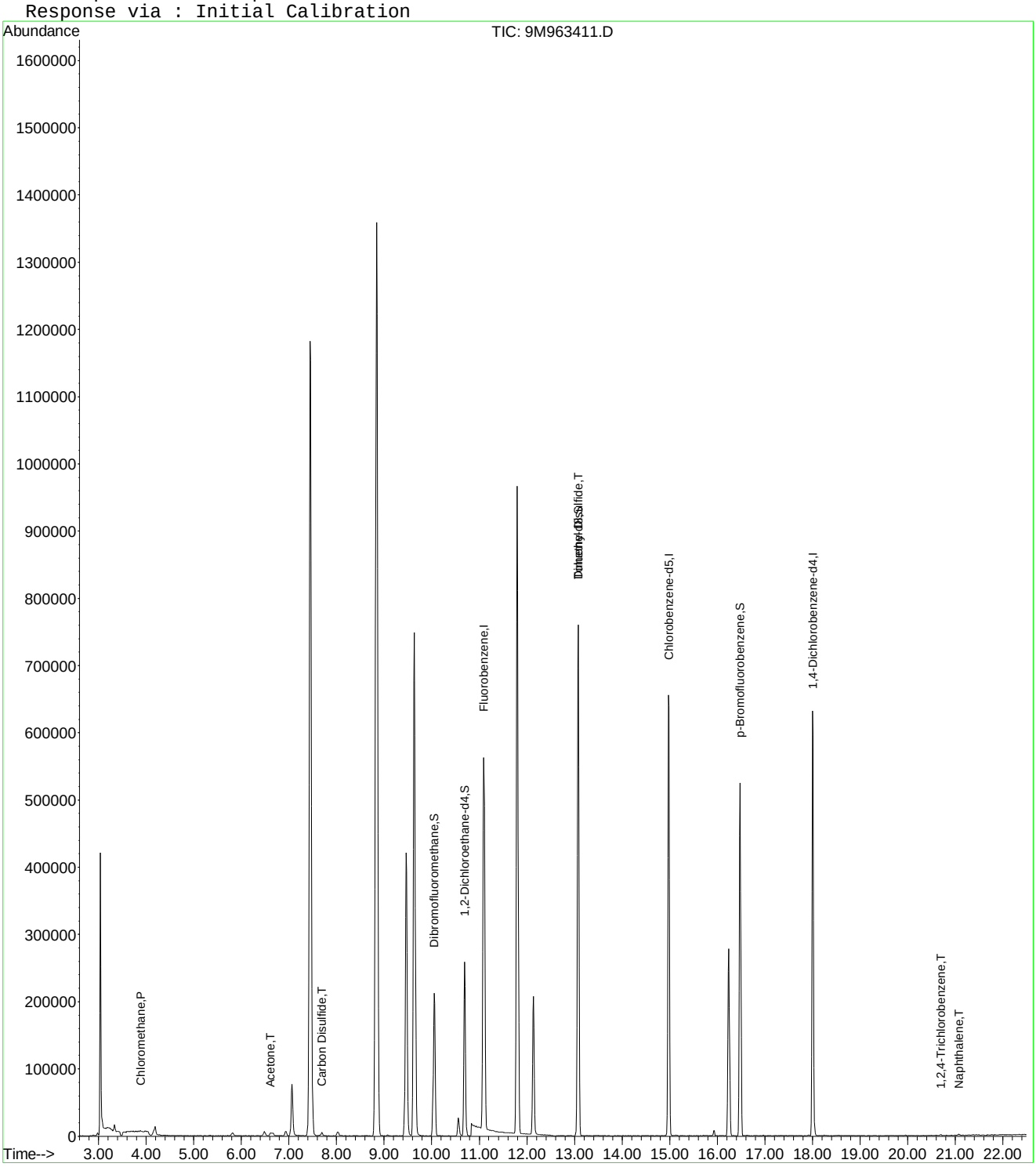

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\052014\9M963411.D Vial: 2
Acq On : 20 May 2014 19:31 Operator: FJB
Sample : WG476878-01 100ug/L CCV A9 Inst : HPMS9
Misc : 1,1 STD64408 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 23 08:45:38 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Wed Mar 26 09:30:59 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.09	96	645913	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.98	117	472426	25.00 ug/L	-0.02
13) 1,4-Dichlorobenzene-d4	18.01	152	226545	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.06	41	113804	203.6253 ug/L #	90
3) 3-Chloro-1-propene	7.44	41	1510515	165.8698 ug/L	87
4) 2-Chloro-1,3-butadiene	8.84	53	1554312	159.0160 ug/L	69
5) Ethyl Acetate	9.46	43	743014	169.2780 ug/L	98
6) Methacrylonitrile	9.64	67	271730	122.9820 ug/L	59
7) Isobutyl Alcohol	9.63	43	75848	202.4190 ug/L #	14
8) 1-Butanol	10.56	56	24670	272.7025 ug/L	70
9) Methyl methacrylate	11.80	41	737065	158.9952 ug/L	74
10) 2-Nitropropane	12.14	43	213015	143.8610 ug/L	86

(#) = qualifier out of range (m) = manual integration
9M963411.D A9FOOWT.M Fri May 23 08:45:38 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\052014\9M963411.D Vial: 2
Acq On : 20 May 2014 19:31 Operator: FJB
Sample : WG476878-01 100ug/L CCV A9 Inst : HPMS9
Misc : 1,1 STD64408 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 23 8:45 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Wed Mar 26 09:30:59 2014
Response via : Initial Calibration

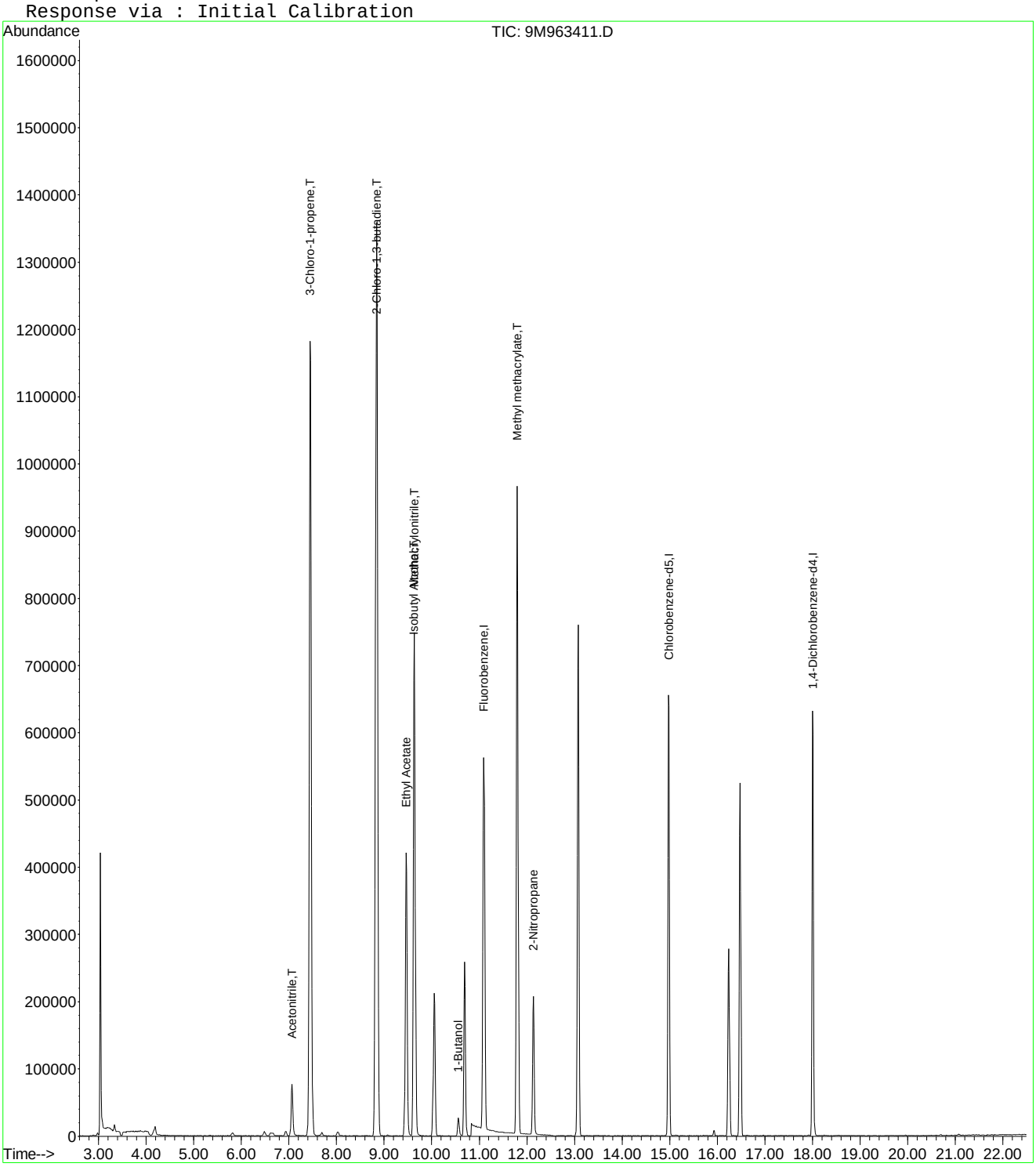

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\052014\9M963411.D Vial: 2
Acq On : 20 May 2014 19:31 Operator: FJB
Sample : WG476878-01 100ug/L CCV A9 Inst : HPMS9
Misc : 1,1 STD64408 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Wed Mar 26 09:30:59 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	112	-0.02
2	T	Acetonitrile	100.0000	203.6253	-103.6#	232	0.04
3	T	3-Chloro-1-propene	100.0000	165.8698	-65.9	188	0.02
4	T	2-Chloro-1,3-butadiene	100.0000	159.0160	-59.0	181	0.01
5		Ethyl Acetate	100.0000	169.2780	-69.3	188	0.00
6	T	Methacrylonitrile	100.0000	122.9820	-23.0	140	0.00
7	T	Isobutyl Alcohol	100.0000	202.4190	-102.4#	246	0.00
8		1-Butanol	100.0000	272.7025	-172.7#	359	-0.01
9	T	Methyl methacrylate	100.0000	158.9952	-59.0	179	-0.04
10		2-Nitropropane	100.0000	143.8610	-43.9	164	-0.04
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	121	-0.02
12		Cyclohexanone	100.0000	0.0000	100.0#	0	-15.94#
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	117	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M963411.D A9FOOWT.M Fri May 23 08:45:42 2014 Page 1

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\041414\9M962409.D          Vial: 1
Acq On    : 14 Apr 2014  16:19                       Operator: ADC
Sample    : WG471242-01 50ng BFB STD 8260            Inst    : HPMS9
Misc      : 1,1 STD63746                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 SOP: OVL MSV01 WATER 04/14/14  HPMS9
```

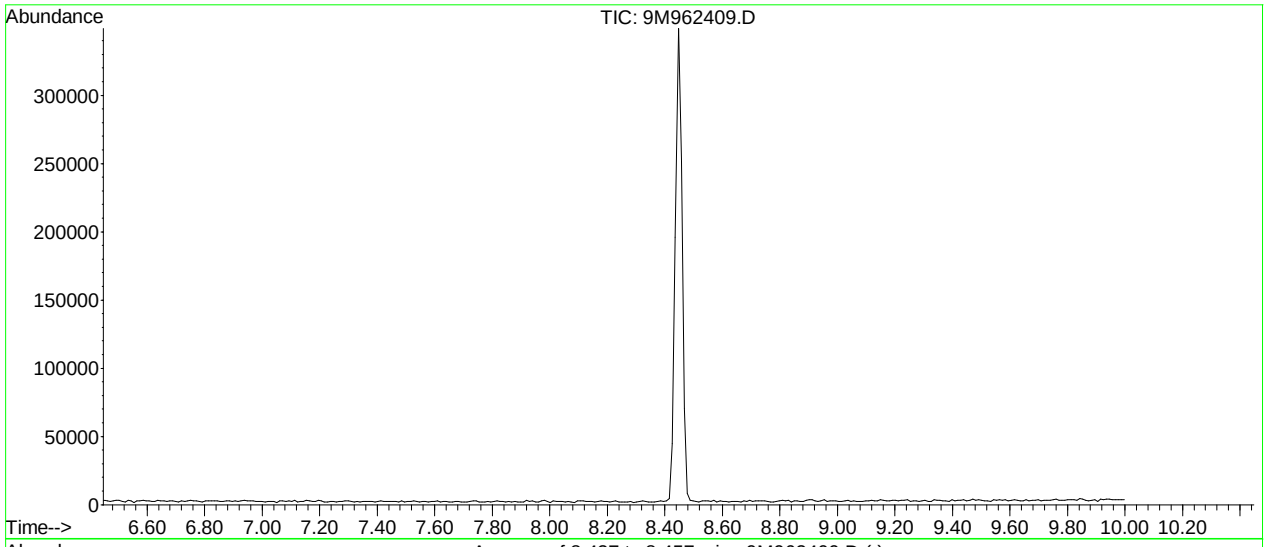

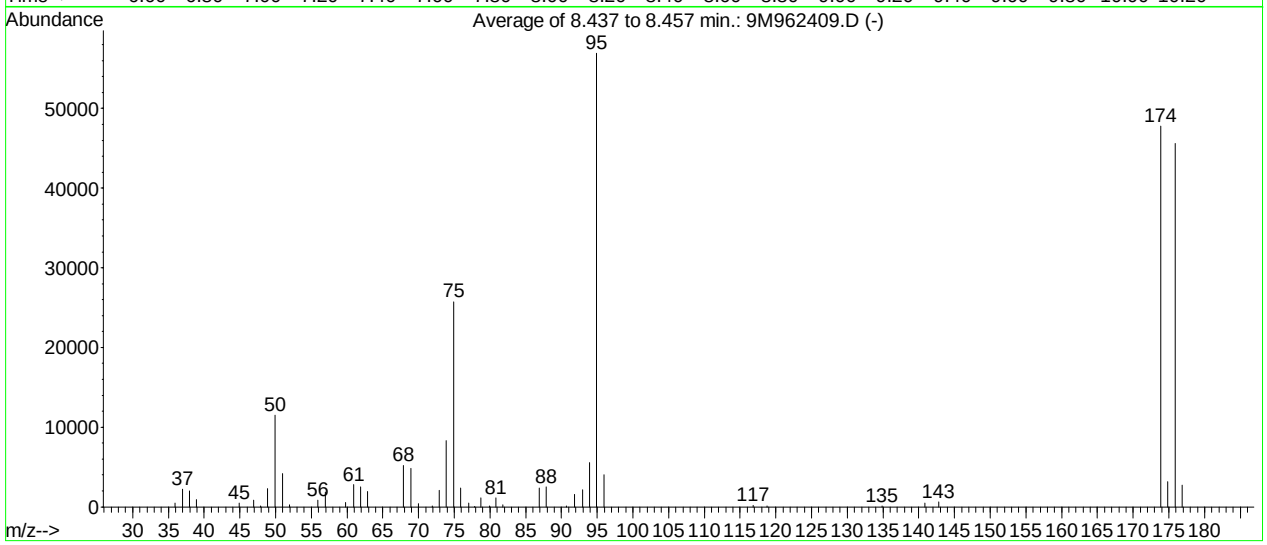

AutoFind: Scans 324, 325, 326; Background Corrected with Scan 319

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	11516	PASS
75	95	30	60	45.2	25760	PASS
95	95	100	100	100.0	56944	PASS
96	95	5	9	7.0	4013	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	83.9	47770	PASS
175	174	5	9	6.7	3178	PASS
176	174	95	101	95.5	45618	PASS
177	176	5	9	6.0	2735	PASS

9M962409.D 8260WT.M Tue Apr 15 12:27:37 2014

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005077.D
Acq On : 18 May 2014 19:23
Operator : FJB/MDA
Sample : WG476501-01 50ngBFB
Misc : 1,1 STD64405
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
Last Update : Sat May 17 08:58:40 2014

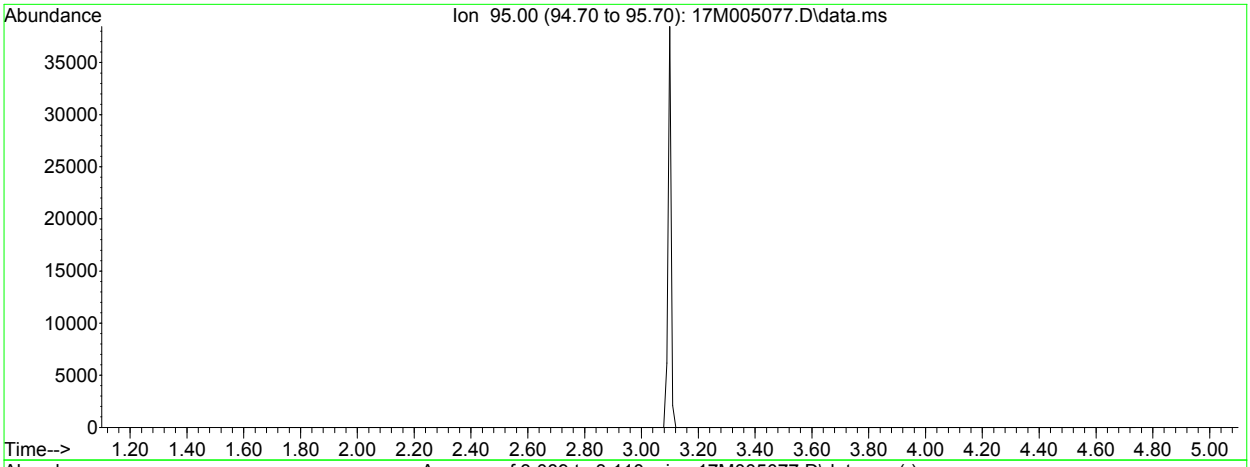

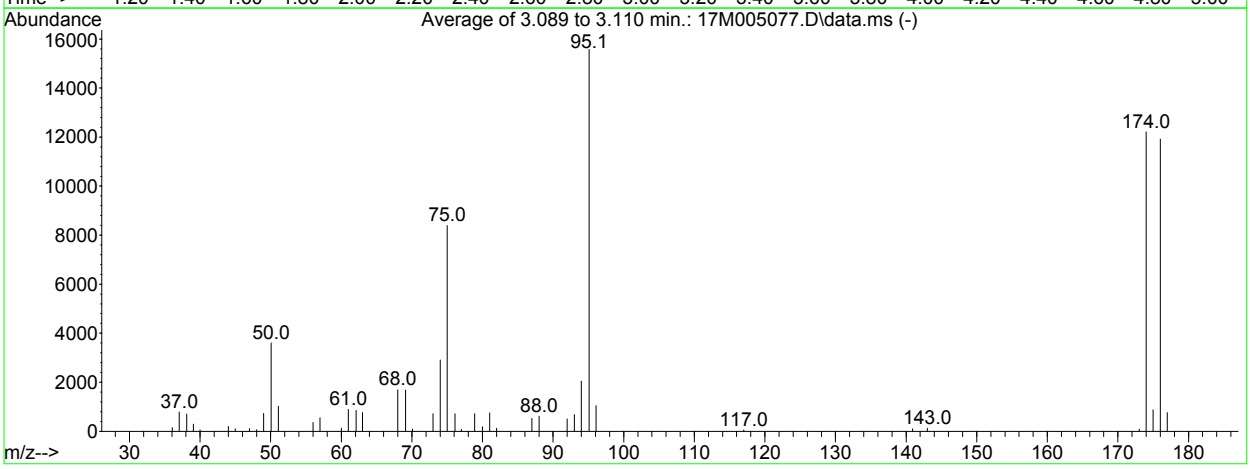

AutoFind: Scans 142, 143, 144; Background Corrected with Scan 140

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.2	3606	PASS
75	95	30	60	53.8	8387	PASS
95	95	100	100	100.0	15576	PASS
96	95	5	9	6.7	1044	PASS
173	174	0.00	2	0.7	90	PASS
174	95	50	100	78.4	12207	PASS
175	174	5	9	7.2	882	PASS
176	174	95	101	97.6	11915	PASS
177	176	5	9	6.4	757	PASS

BFB

```
Data File : C:\MSDCHEM\1\DATA\051914\9M963362.D          Vial: 1
Acq On    : 19 May 2014  13:32                        Operator: ADC
Sample    : WG476631-01 BFB 50ng 8260                 Inst    : HPMS9
Misc      : 1,1 STD64405                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 SOP: OVL MSV01 WATER 04/14/14  HPMS9
```

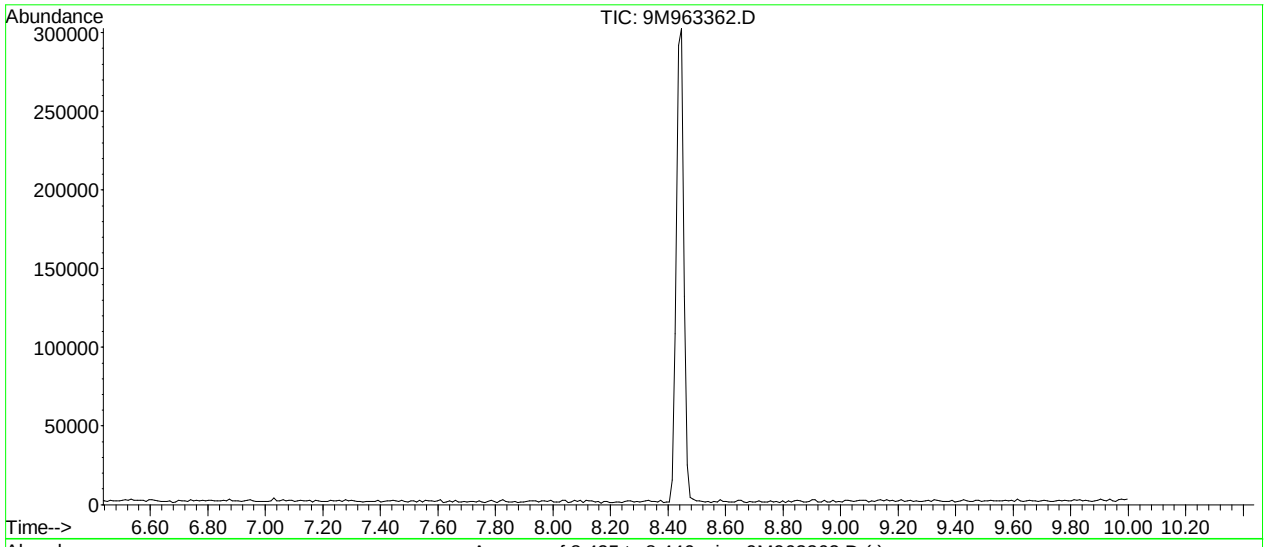

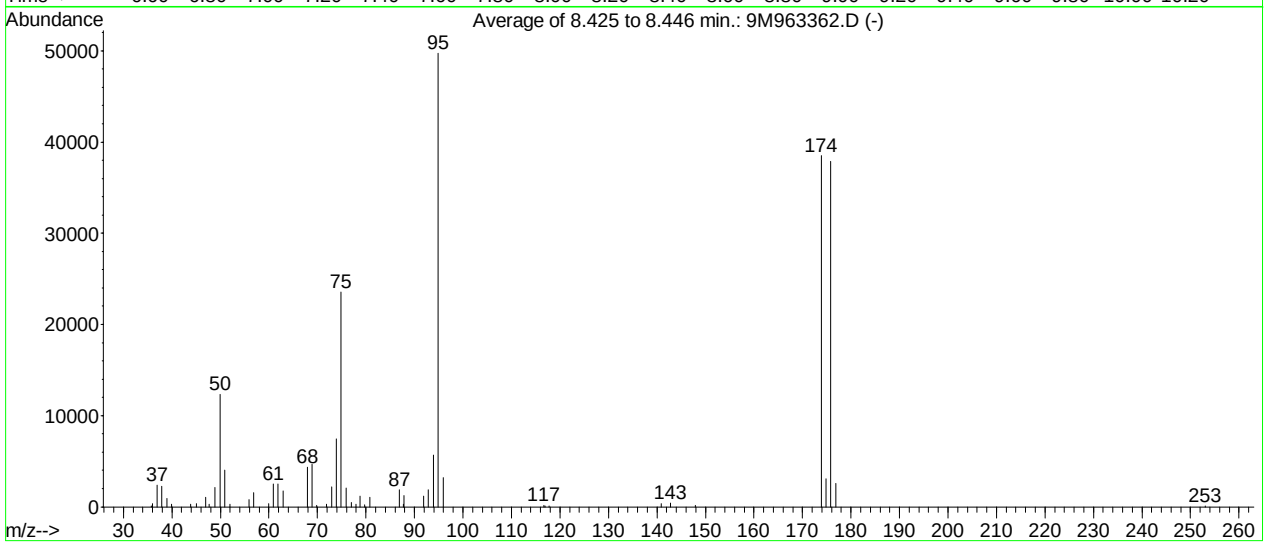

AutoFind: Scans 323, 324, 325; Background Corrected with Scan 319

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.8	12340	PASS
75	95	30	60	47.3	23540	PASS
95	95	100	100	100.0	49746	PASS
96	95	5	9	6.4	3172	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	77.4	38494	PASS
175	174	5	9	8.0	3069	PASS
176	174	95	101	98.4	37887	PASS
177	176	5	9	6.9	2601	PASS

9M963362.D 8260WT.M Mon May 19 15:08:37 2014

BFB

```
Data File : C:\MSDCHEM\1\DATA\052014\9M963388.D          Vial: 1
Acq On    : 20 May 2014   6:25                       Operator: TMB
Sample    : WG476698-01 50ng BFB STD 8260            Inst    : HPMS9
Misc      : 1,1 STD64405                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : BFB (SOP:OVL MSV01)
```

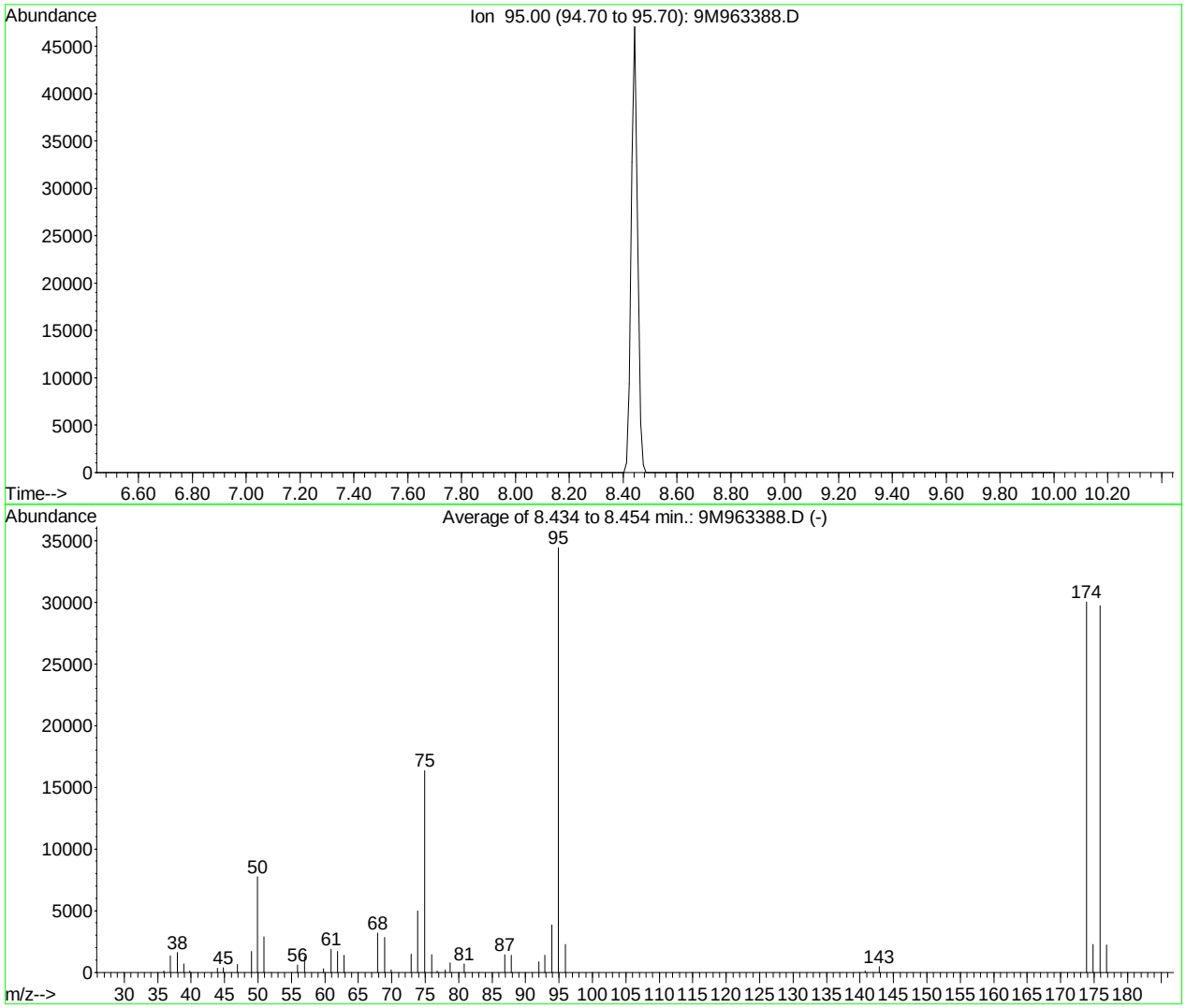

AutoFind: Scans 324, 325, 326; Background Corrected with Scan 319

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	7734	PASS
75	95	30	60	47.5	16357	PASS
95	95	100	100	100.0	34432	PASS
96	95	5	9	6.5	2245	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	87.3	30048	PASS
175	174	5	9	7.5	2268	PASS
176	174	95	101	98.9	29720	PASS
177	176	5	9	7.5	2224	PASS

9M963388.D BFB.M Tue May 20 06:36:46 2014

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005091.D
Acq On : 18 May 2014 23:55
Operator : FJB/MDA
Sample : WG476502-01 BLANK 8260
Misc : 1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: May 22 09:43:03 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	4.935	96	246218	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.833	117	166608	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.187	152	84732	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	3.930	111	65802	23.6716 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.686%		
32) 1,2-Dichloroethane-d4	4.596	65	82103	22.1705 ug/L	0.0102
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.682%		
44) Toluene-d8	6.532	98	252054	25.1235 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.494%		
63) p-Bromofluorobenzene	8.605	95	98185	27.2708 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.083%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.989	85	245	0.6943 ug/L #	65
6) Bromomethane	1.306	94	378	0.8526 ug/L	90
11) Carbon Disulfide	1.772	76	3556	0.4996 ug/L #	92
16) trans-1,2-Dichloroethene	2.279	96	498	0.1925 ug/L	92
29) 1,1-Dichloropropene	4.099	75	564	0.1445 ug/L #	62
34) Trichloroethene	5.125	130	452	0.1686 ug/L	77
42) trans-1,3-Dichloropropene	6.976	75	574	0.1360 ug/L #	47
46) Tetrachloroethene	6.913	166	458	0.1636 ug/L #	65
52) Chlorobenzene	7.844	112	1096	0.1470 ug/L #	1
56) m-,p-Xylene	7.981	106	1199	0.2235 ug/L	98
58) Styrene	8.288	104	1070	0.1220 ug/L #	30
64) Bromobenzene	8.658	156	456	0.1543 ug/L	88
65) n-Propylbenzene	8.680	91	2516	0.1666 ug/L #	92
70) 4-Chlorotoluene	8.849	91	2109	0.2190 ug/L #	52
73) p-Isopropyltoluene	9.124	119	1345	0.1297 ug/L	98
74) 1,3-Dichlorobenzene	9.156	146	1426	0.2483 ug/L	95
75) 1,4-Dichlorobenzene	9.156	146	1426	0.2393 ug/L	93
76) n-Butylbenzene	9.325	91	2642	0.2464 ug/L	91
77) 1,2-Dichlorobenzene	9.399	146	855	0.1584 ug/L #	32
79) Hexachlorobutadiene	10.065	225	654	0.3104 ug/L	96
80) 1,2,4-Trichlorobenzene	10.086	180	1759	0.4073 ug/L	93
81) Naphthalene	10.224	128	1810	0.2546 ug/L #	68
82) 1,2,3-Trichlorobenzene	10.319	180	920	0.2398 ug/L	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005091.D
Acq On : 18 May 2014 23:55
Operator : FJB/MDA
Sample : WG476502-01 BLANK 8260
Misc : 1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: May 22 09:43:03 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 11:12:15 2014
Response via : Initial Calibration

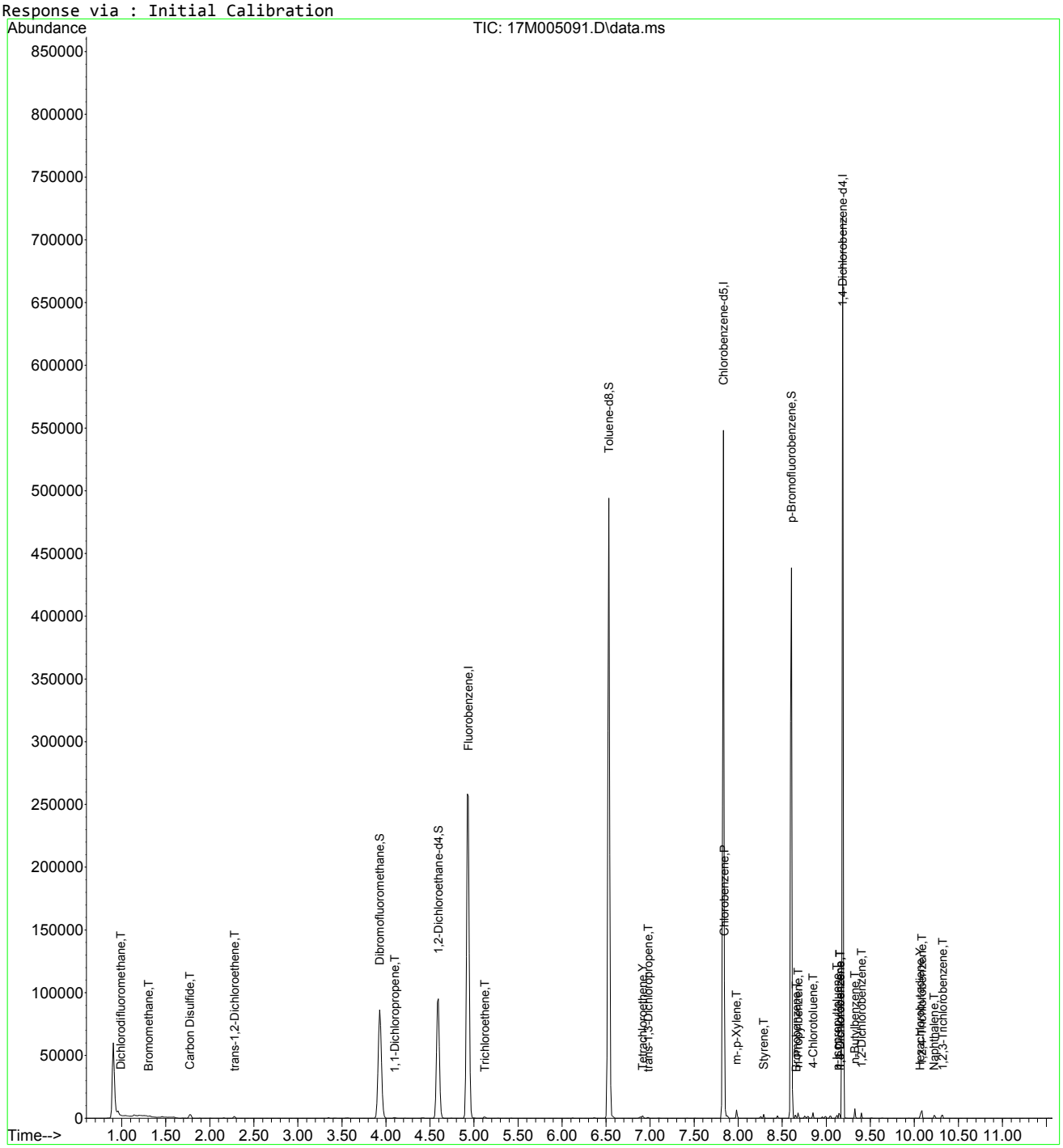

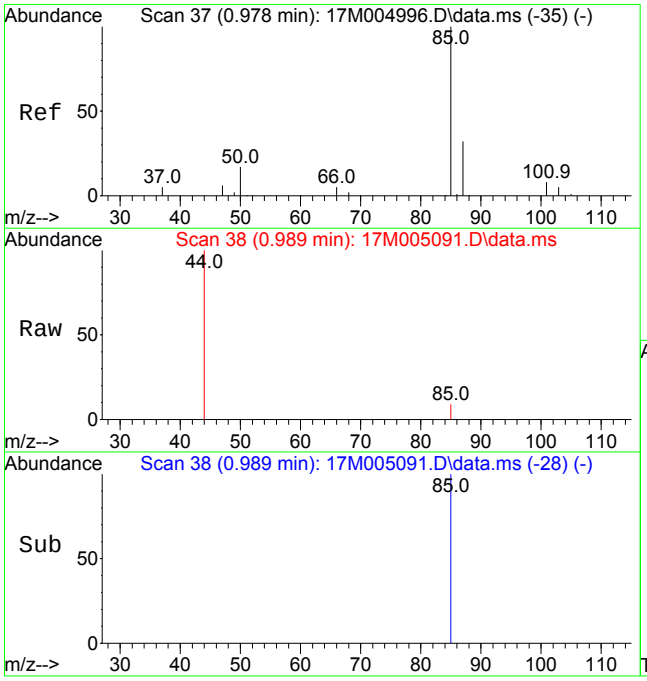

#2
Dichlorodifluoromethane
Concen: 0.6943 ug/L
RT: 0.989 min Scan# 38
Delta R.T. 0.011 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion: 85 Resp: 245

Ion	Ratio	Lower	Upper
85	100		
50	0.0	8.6	20.2#

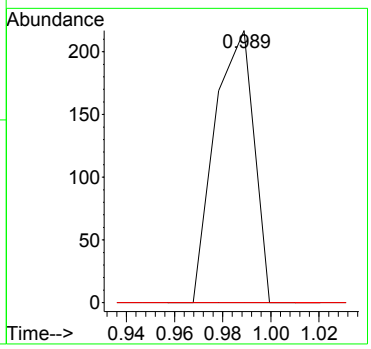

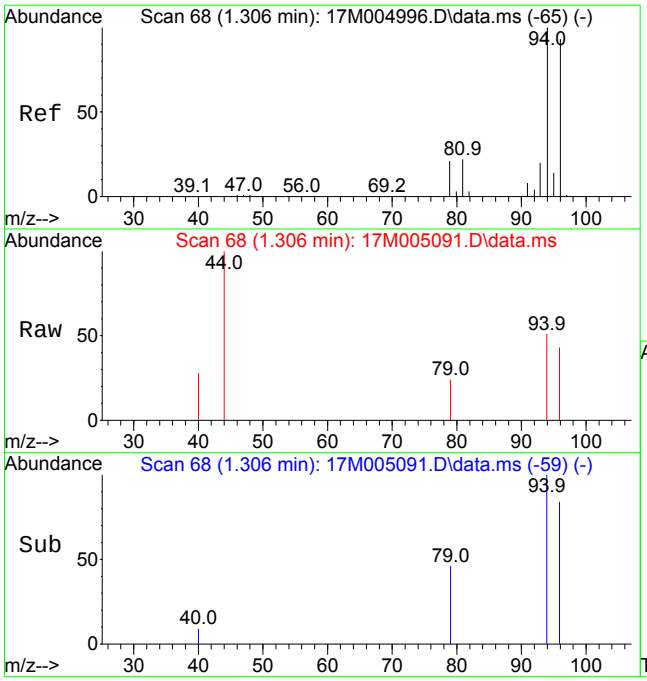

#6
Bromomethane
Concen: 0.8526 ug/L
RT: 1.306 min Scan# 68
Delta R.T. 0.000 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion: 94 Resp: 378

Ion	Ratio	Lower	Upper
94	100		
96	82.5	55.4	129.4

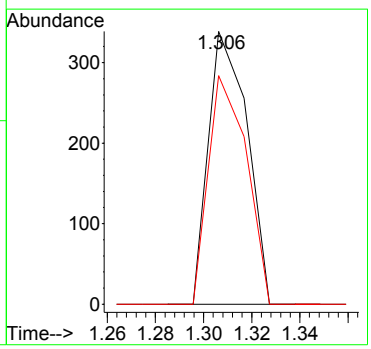

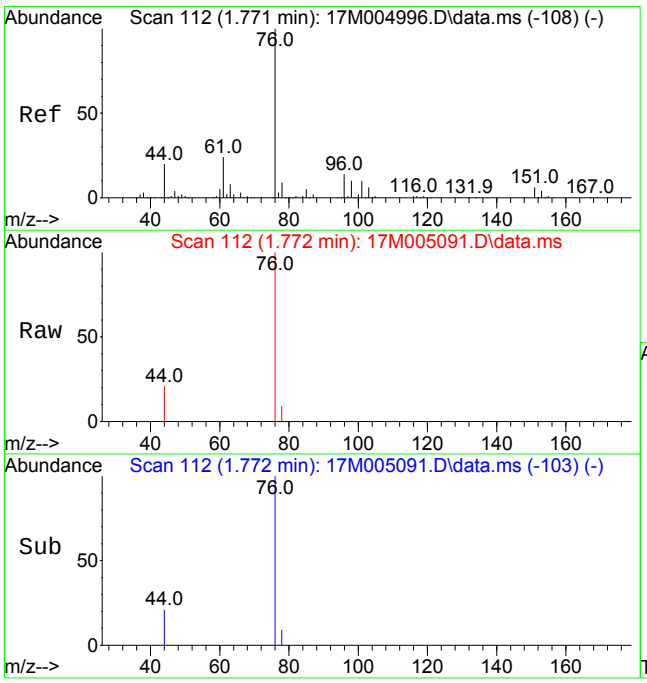

#11
Carbon Disulfide
Concen: 0.4996 ug/L
RT: 1.772 min Scan# 112
Delta R.T. -0.000 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion: 76 Resp: 3556

Ion	Ratio	Lower	Upper
76	100		
78	7.3	8.2	12.2#

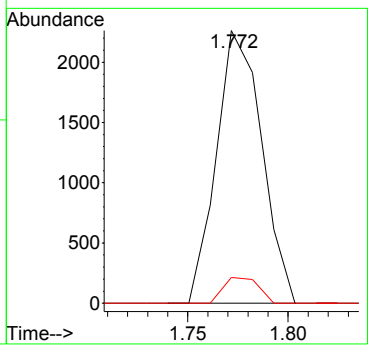

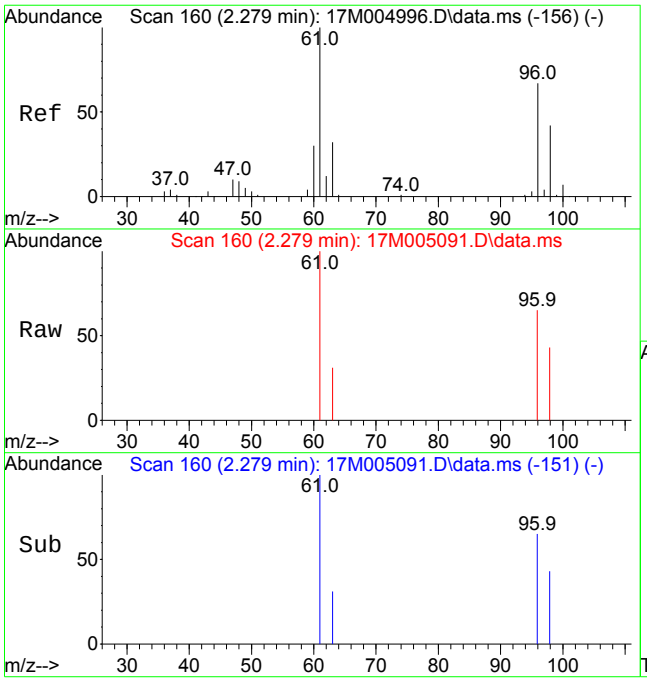

#16
trans-1,2-Dichloroethene
Concen: 0.1925 ug/L
RT: 2.279 min Scan# 160
Delta R.T. 0.000 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion: 96 Resp: 498

Ion	Ratio	Lower	Upper
96	100		
61	154.4	132.5	198.7

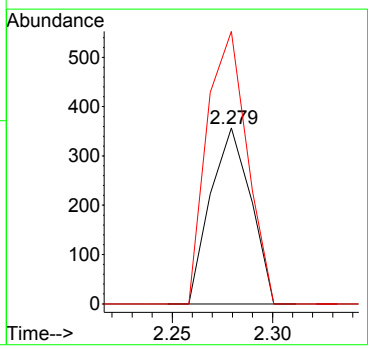

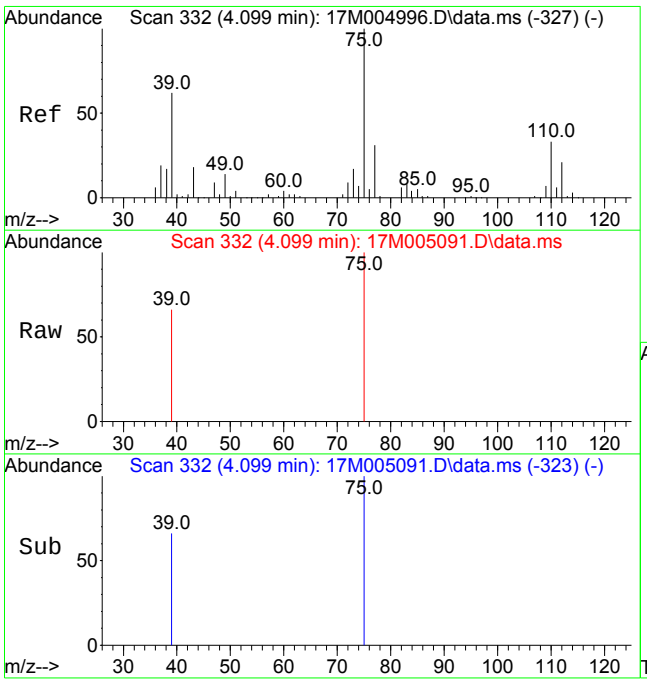

#29
1,1-Dichloropropene
Concen: 0.1445 ug/L
RT: 4.099 min Scan# 332
Delta R.T. 0.000 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion: 75 Resp: 564

Ion	Ratio	Lower	Upper
75	100		
39	39.4	35.2	82.0
110	0.0	20.0	46.8#

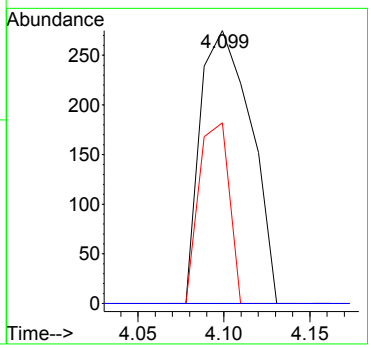

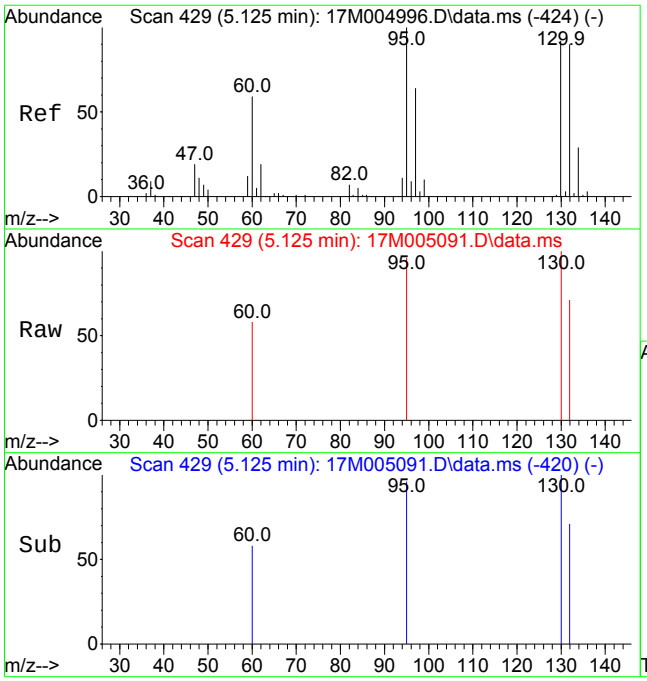

#34
Trichloroethene
Concen: 0.1686 ug/L
RT: 5.125 min Scan# 429
Delta R.T. 0.000 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion:130 Resp: 452

Ion	Ratio	Lower	Upper
130	100		
60	49.1	40.8	95.2

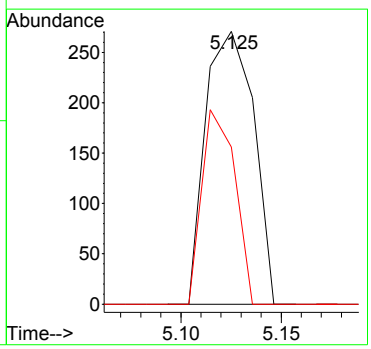

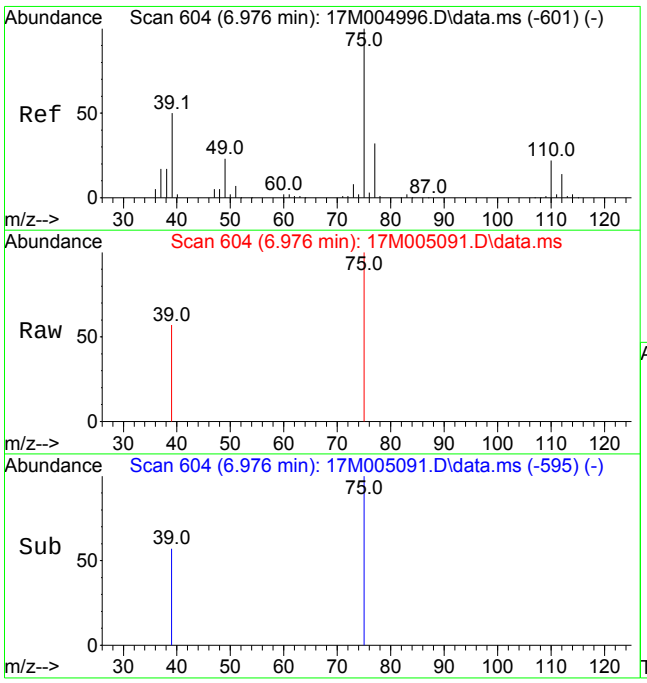

#42
trans-1,3-Dichloropropene
Concen: 0.1360 ug/L
RT: 6.976 min Scan# 604
Delta R.T. 0.000 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion: 75 Resp: 574

Ion	Ratio	Lower	Upper
75	100		
77	0.0	19.3	44.9#
49	0.0	13.4	31.4#

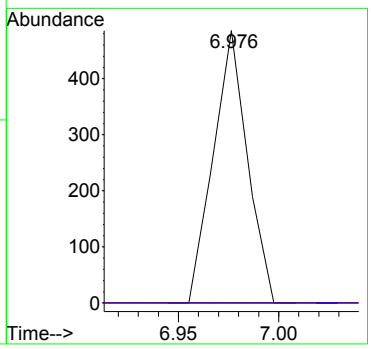

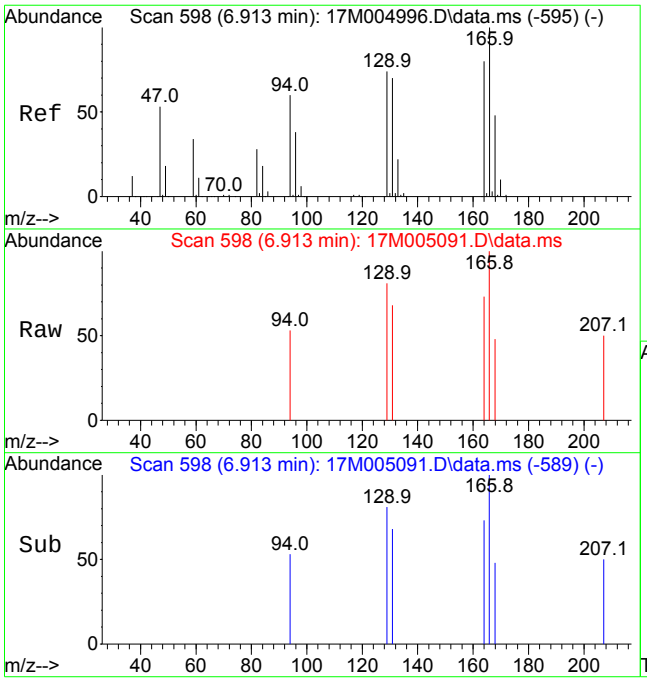

#46
Tetrachloroethene
Concen: 0.1636 ug/L
RT: 6.913 min Scan# 598
Delta R.T. -0.000 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion:166 Resp: 458

Ion	Ratio	Lower	Upper
166	100		
129	70.1	52.6	78.8
94	0.0	40.6	60.8#

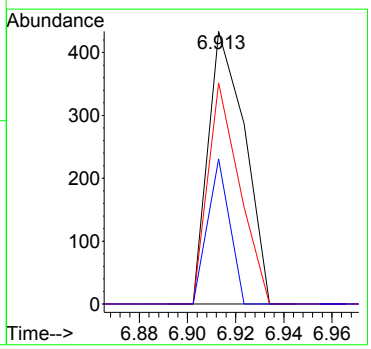

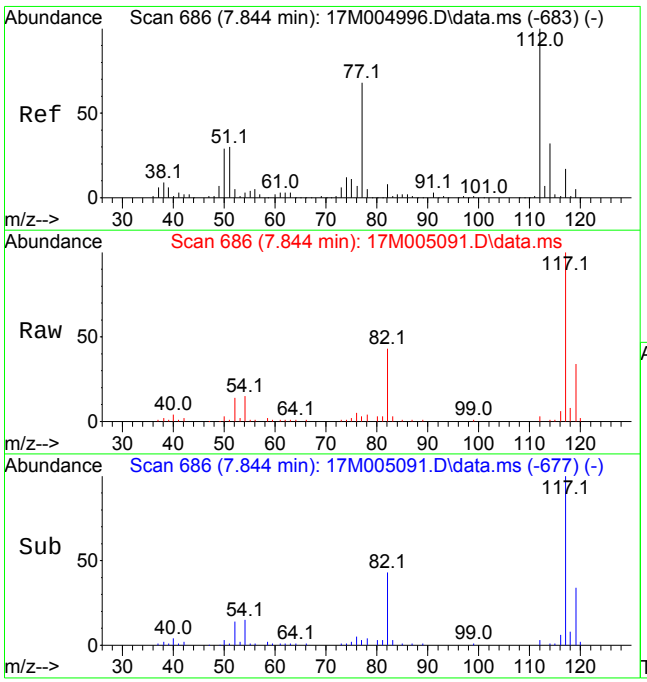

#52
Chlorobenzene
Concen: 0.1470 ug/L
RT: 7.844 min Scan# 686
Delta R.T. -0.000 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion:112 Resp: 1096

Ion	Ratio	Lower	Upper
112	100		
77	261.7	40.0	93.2#

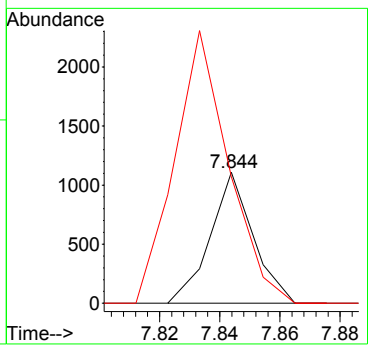

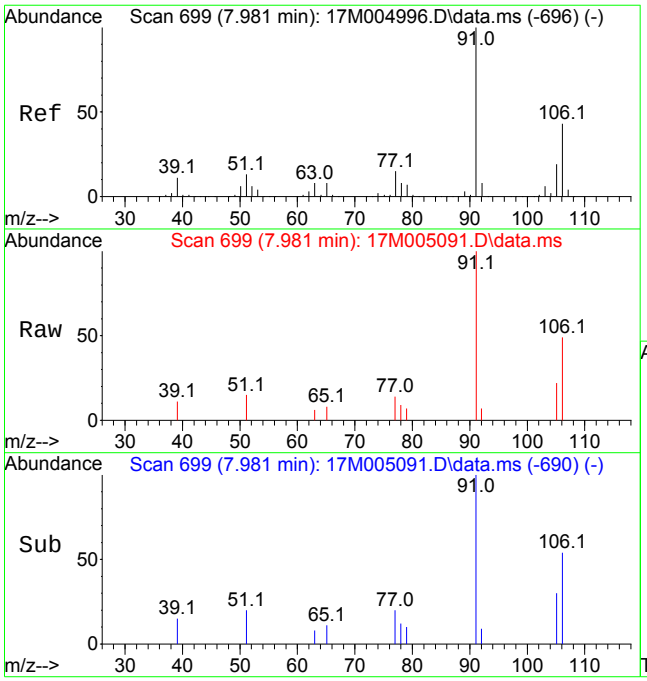

#56
m-,p-Xylene
Concen: 0.2235 ug/L
RT: 7.981 min Scan# 699
Delta R.T. 0.000 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion:106 Resp: 1199

Ion	Ratio	Lower	Upper
106	100		
91	210.1	128.0	298.8

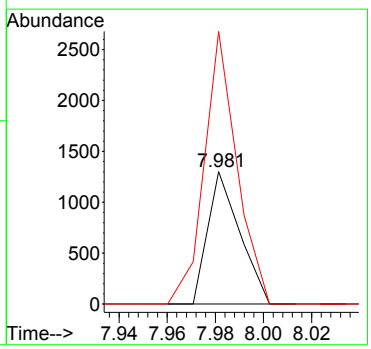

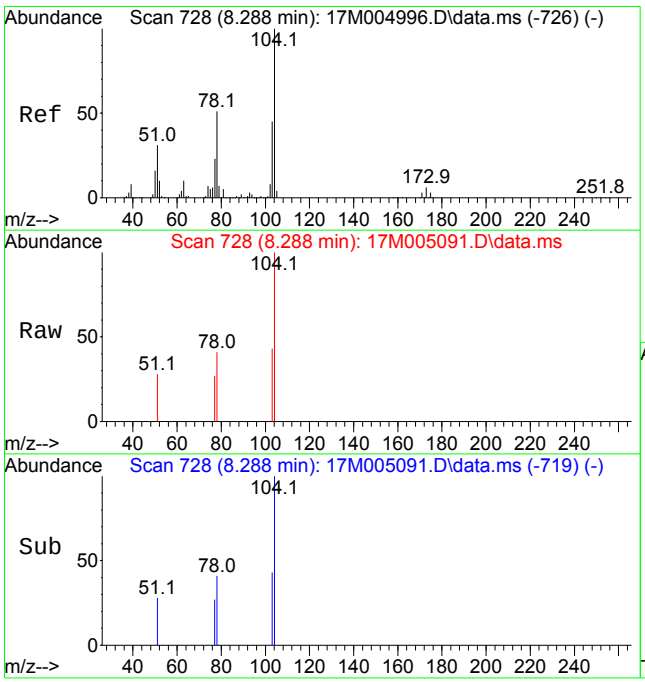

#58
Styrene
Concen: 0.1220 ug/L
RT: 8.288 min Scan# 728
Delta R.T. 0.000 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion:104 Resp: 1070

Ion	Ratio	Lower	Upper
104	100		
78	0.0	27.8	64.8#

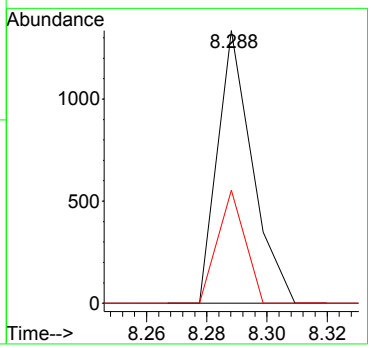

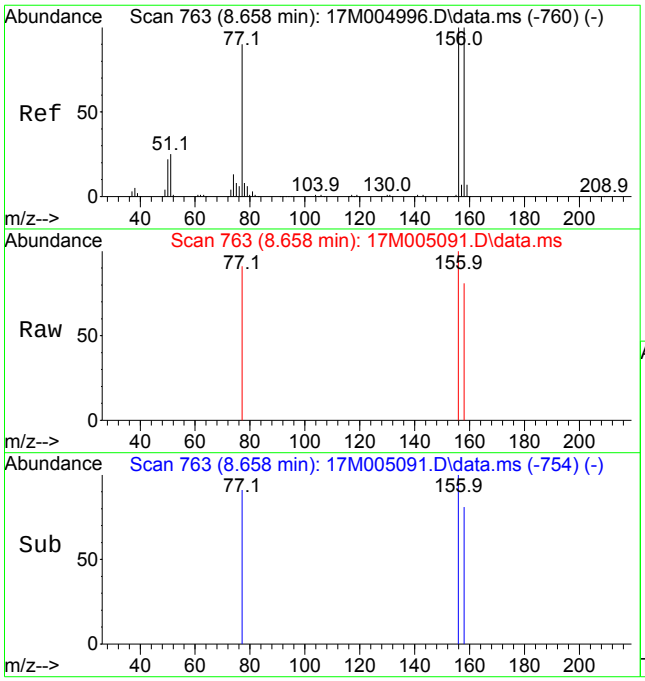

#64
Bromobenzene
Concen: 0.1543 ug/L
RT: 8.658 min Scan# 763
Delta R.T. 0.000 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion:156 Resp: 456

Ion	Ratio	Lower	Upper
156	100		
158	91.0	78.2	117.4
77	192.1	137.1	205.7

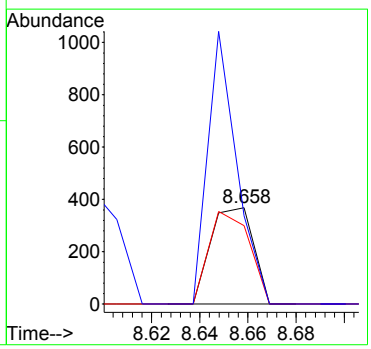

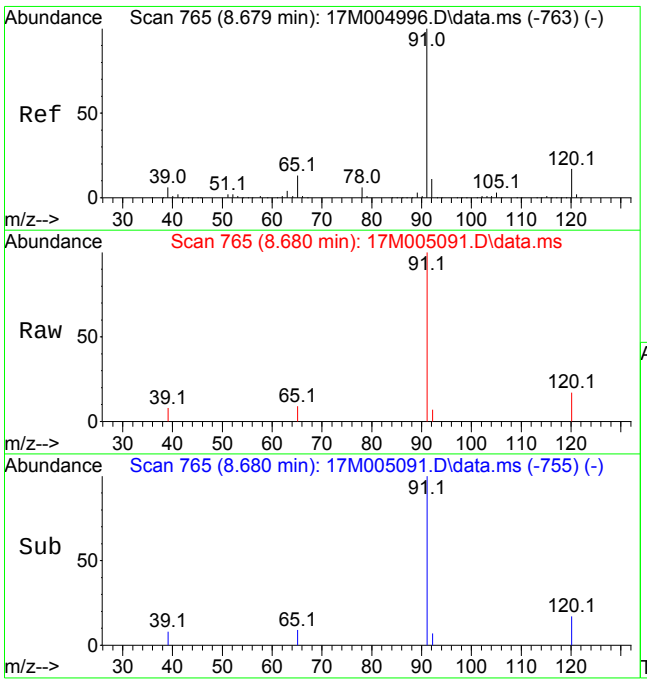

#65
n-Propylbenzene
Concen: 0.1666 ug/L
RT: 8.680 min Scan# 765
Delta R.T. 0.001 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion: 91 Resp: 2516

Ion	Ratio	Lower	Upper
91	100		
120	17.5	12.5	29.1
105	0.0	2.1	4.9#

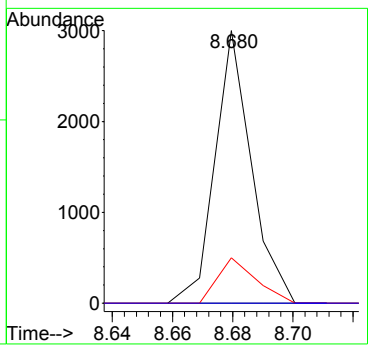

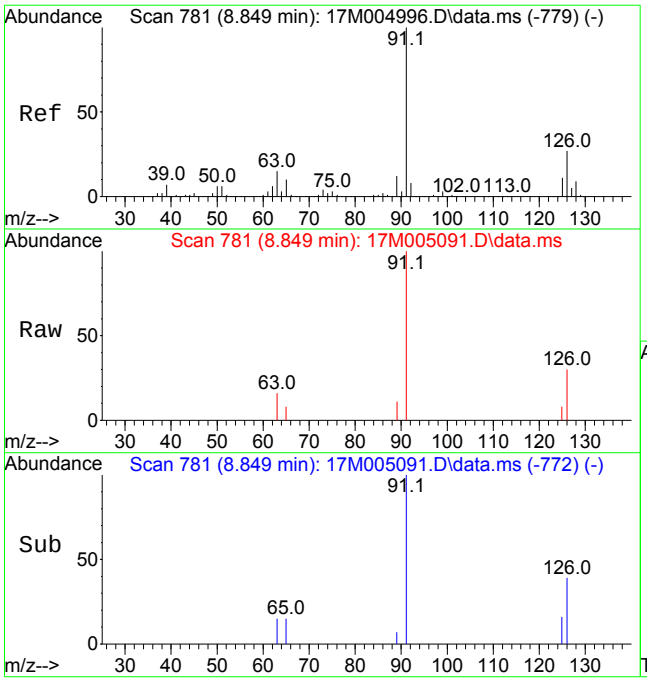

#70
4-Chlorotoluene
Concen: 0.2190 ug/L
RT: 8.849 min Scan# 781
Delta R.T. -0.000 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion: 91 Resp: 2109

Ion	Ratio	Lower	Upper
91	100		
126	0.0	17.6	41.0#
63	0.0	9.1	21.1#

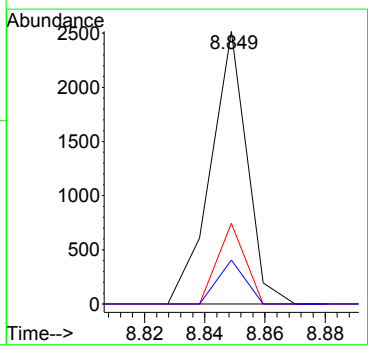

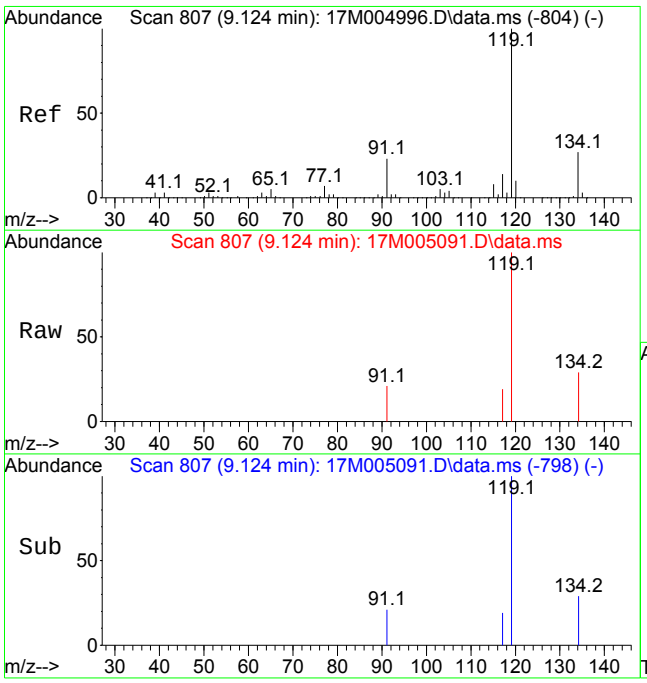

#73
p-Isopropyltoluene
Concen: 0.1297 ug/L
RT: 9.124 min Scan# 807
Delta R.T. -0.000 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion:119 Resp: 1345

Ion	Ratio	Lower	Upper
119	100		
134	26.9	15.5	36.3

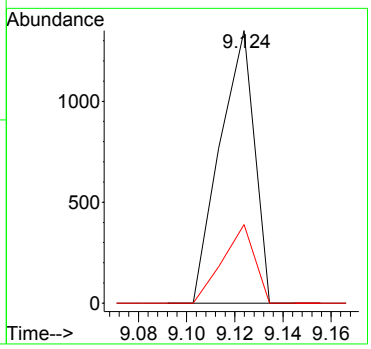

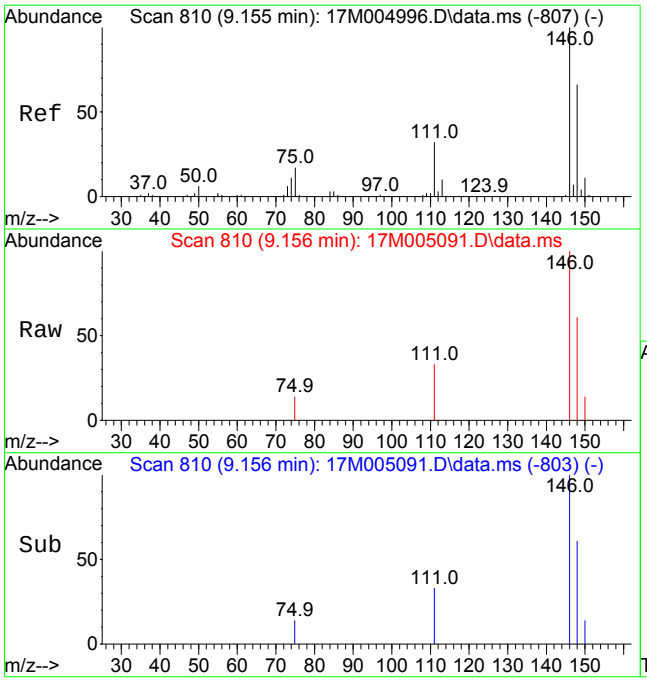

#74
1,3-Dichlorobenzene
Concen: 0.2483 ug/L
RT: 9.156 min Scan# 810
Delta R.T. -0.000 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion:146 Resp: 1426

Ion	Ratio	Lower	Upper
146	100		
111	44.2	24.7	57.7

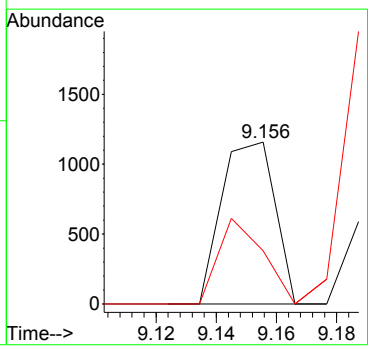

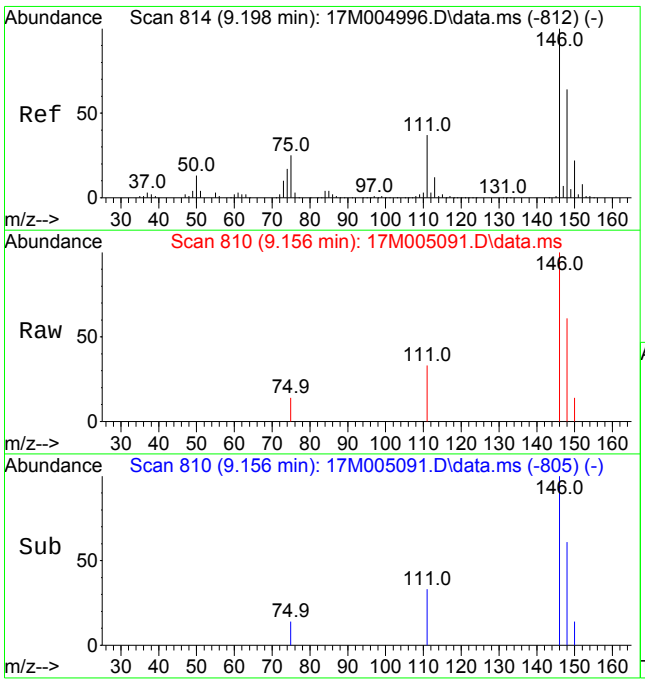

#75
1,4-Dichlorobenzene
Concen: 0.2393 ug/L
RT: 9.156 min Scan# 810
Delta R.T. -0.042 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion:146 Resp: 1426

Ion	Ratio	Lower	Upper
146	100		
148	59.5	52.1	78.1

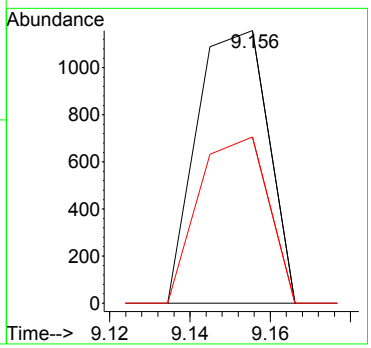

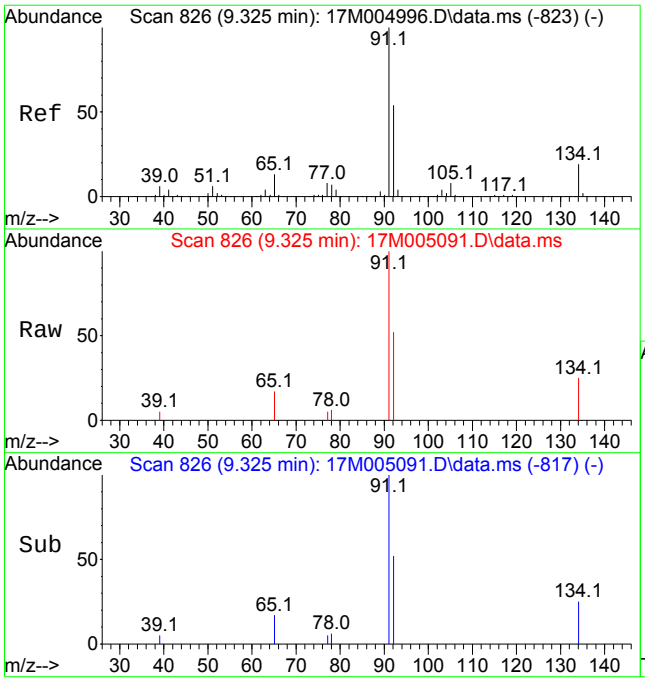

#76
n-Butylbenzene
Concen: 0.2464 ug/L
RT: 9.325 min Scan# 826
Delta R.T. -0.000 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion: 91 Resp: 2642

Ion	Ratio	Lower	Upper
91	100		
134	25.4	12.8	29.8

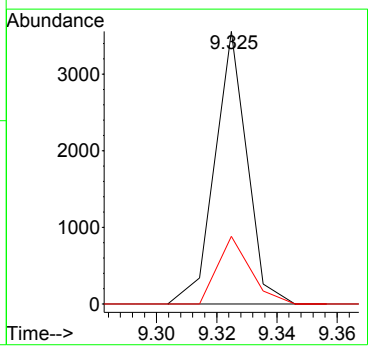

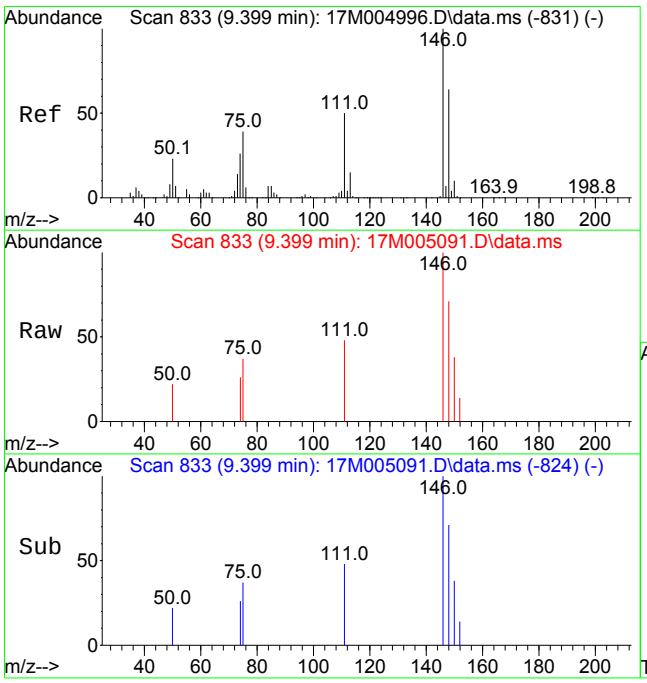

#77
1,2-Dichlorobenzene
Concen: 0.1584 ug/L
RT: 9.399 min Scan# 833
Delta R.T. -0.000 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion:146 Resp: 855

Ion	Ratio	Lower	Upper
146	100		
111	0.0	26.5	61.7#

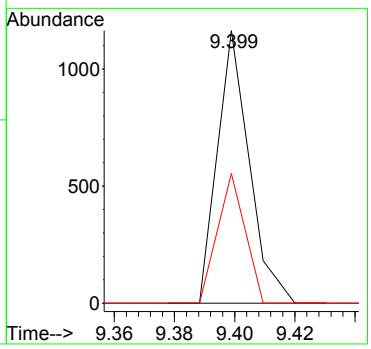

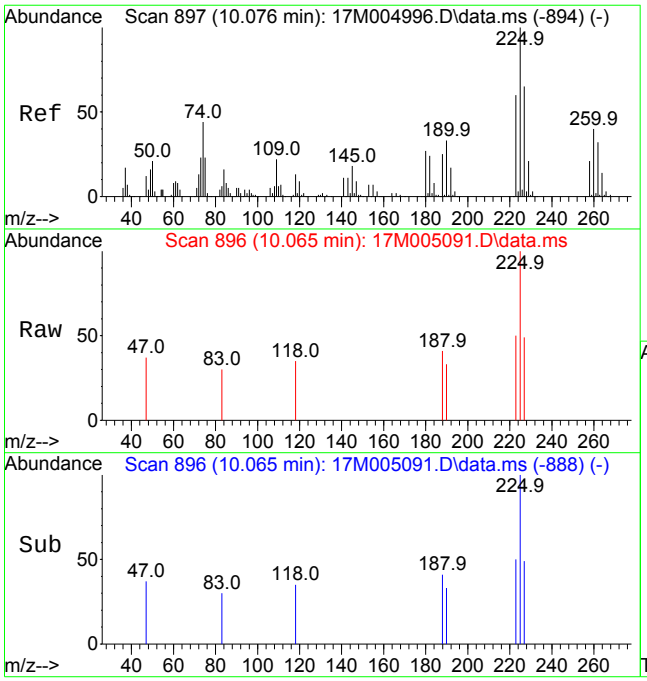

#79
Hexachlorobutadiene
Concen: 0.3104 ug/L
RT: 10.065 min Scan# 896
Delta R.T. -0.011 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion:225 Resp: 654

Ion	Ratio	Lower	Upper
225	100		
223	59.0	50.0	75.0
227	60.7	50.7	76.1

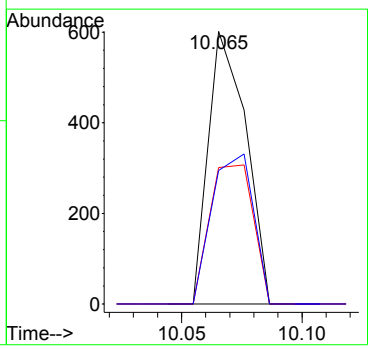

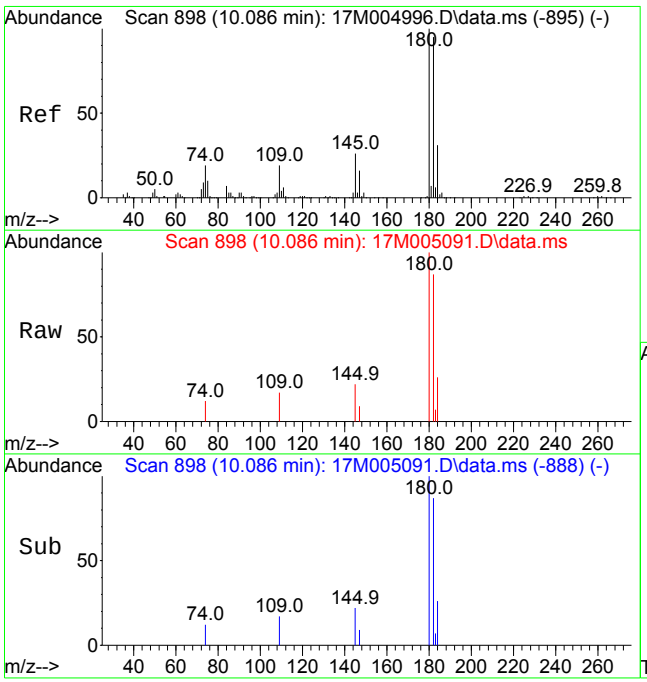

#80
1,2,4-Trichlorobenzene
Concen: 0.4073 ug/L
RT: 10.086 min Scan# 898
Delta R.T. 0.000 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion:180 Resp: 1759

Ion	Ratio	Lower	Upper
180	100		
182	87.4	57.1	133.3
145	28.5	18.2	42.4

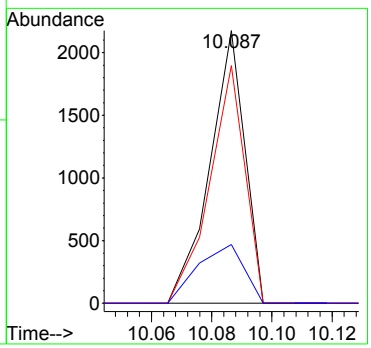

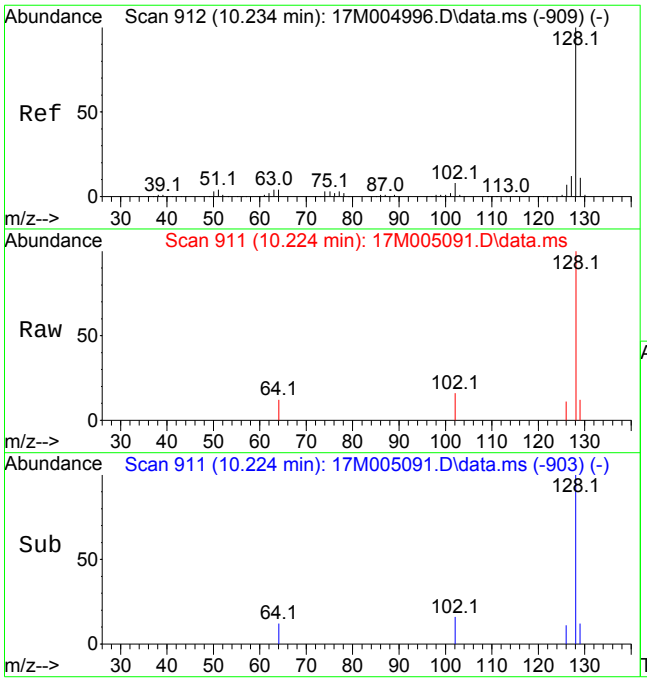

#81
Naphthalene
Concen: 0.2546 ug/L
RT: 10.224 min Scan# 911
Delta R.T. -0.011 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion:128 Resp: 1810

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.6	17.8#

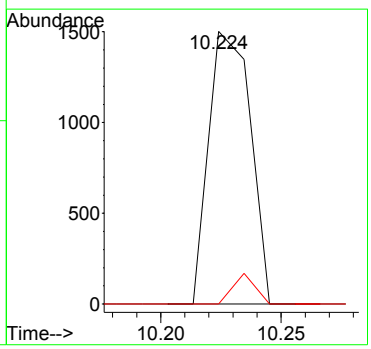

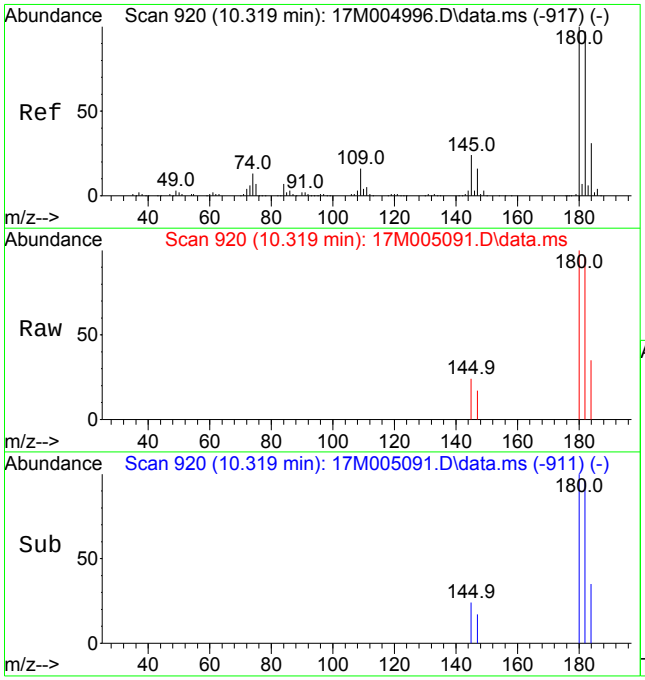

#82
1,2,3-Trichlorobenzene
Concen: 0.2398 ug/L
RT: 10.319 min Scan# 920
Delta R.T. 0.000 min
Lab File: 17M005091.D
Acq: 18 May 2014 23:55

Tgt Ion:180 Resp: 920

Ion	Ratio	Lower	Upper
180	100		
182	102.3	56.7	132.3
145	32.0	17.5	40.7

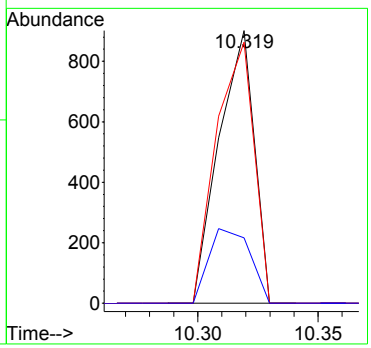

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051914\9M963366.D Vial: 3
Acq On : 19 May 2014 15:30 Operator: ADC
Sample : WG476633-01 VBLK0519 BLANK 8260 Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 09:07:42 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.09	96	647345	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.98	117	473663	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	224433	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.06	111	182537	26.1610 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.64%		
43) 1,2-Dichloroethane-d4	10.69	65	227699	25.9268 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.72%		
58) Toluene-d8	13.08	98	652266	25.2427 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.96%		
79) p-Bromofluorobenzene	16.48	95	220755	23.8854 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.56%		

Target Compounds

					Qvalue
3) Chloromethane	3.90	50	1204	0.1528 ug/L #	17
13) Acetone	6.63	43	775	0.3252 ug/L #	33
20) Carbon Disulfide	7.69	76	2747	0.1376 ug/L	95
46) Benzene	10.86	78	10488	0.3716 ug/L	94
47) Trichloroethene	11.60	130	1437	0.1987 ug/L	88
56) Dimethyl Disulfide	13.08	94	17780	1.3426 ug/L #	28
97) 1,2,4-Trichlorobenzene	20.69	180	189	0.2084 ug/L #	65

(#) = qualifier out of range (m) = manual integration
9M963366.D 8260WT.M Tue May 20 09:07:44 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051914\9M963366.D Vial: 3
Acq On : 19 May 2014 15:30 Operator: ADC
Sample : WG476633-01 VBLK0519 BLANK 8260 Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 9:07 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

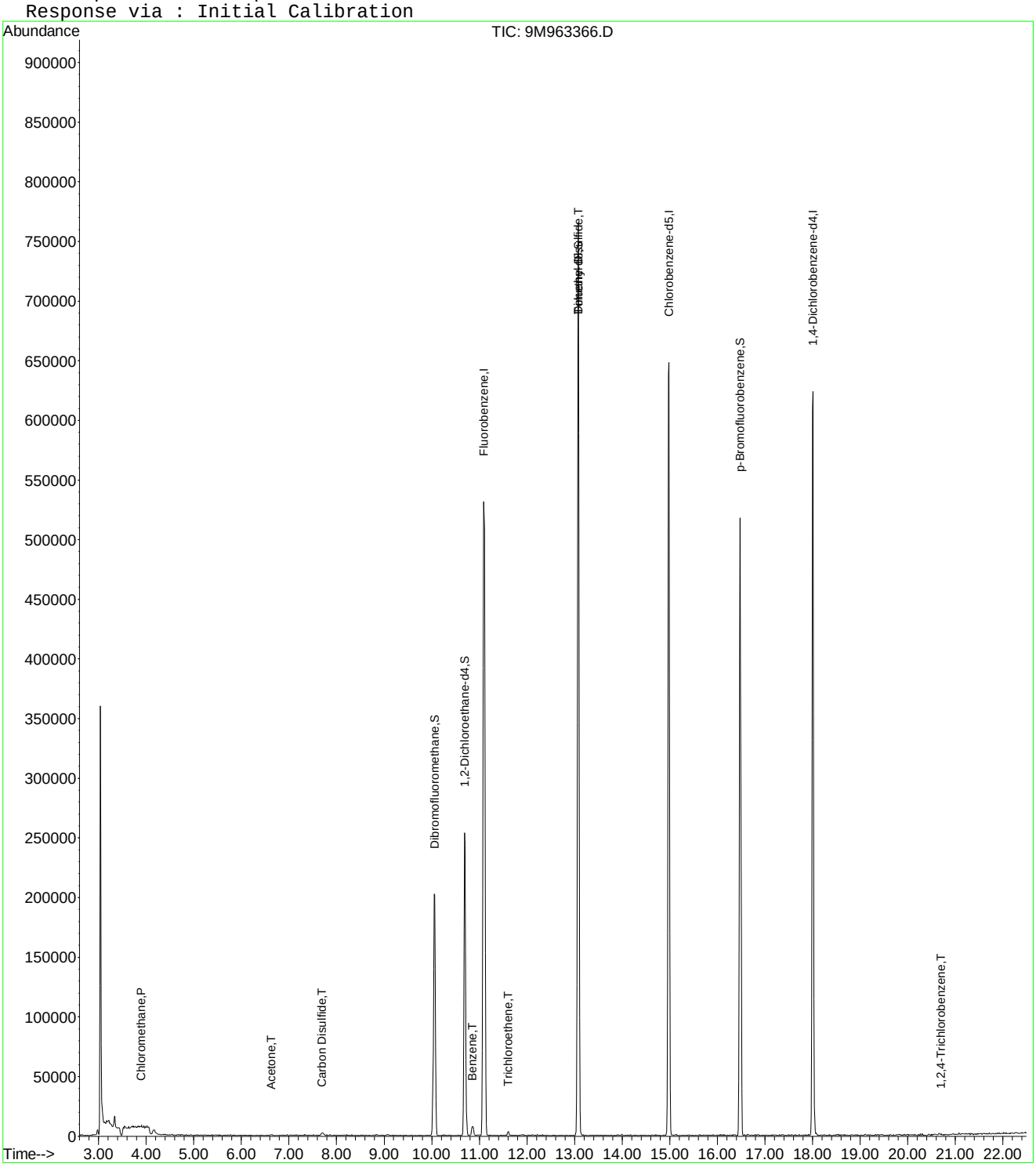

9M963366.D 8260WT.M Tue May 20 09:07:45 2014 Page 2

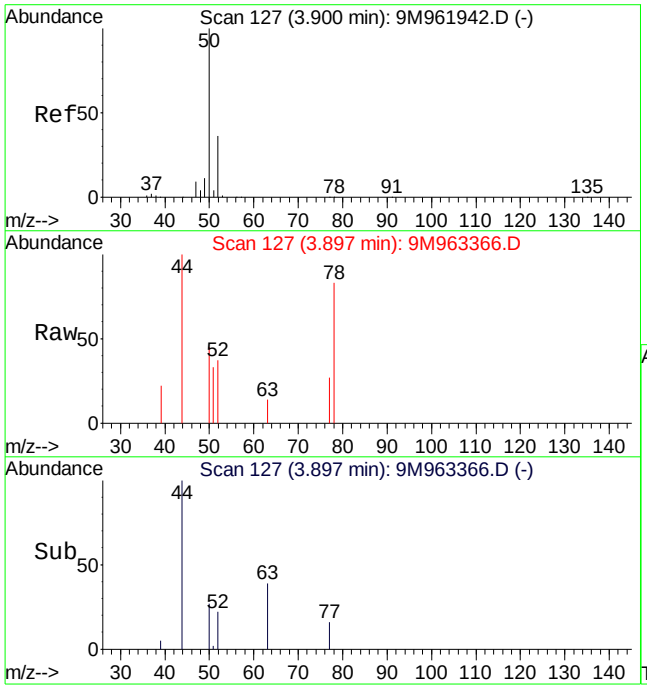

#3
Chloromethane
Concen: 0.15 ug/L
RT: 3.90 min Scan# 127
Delta R.T. 0.01 min
Lab File: 9M963366.D
Acq: 19 May 2014 15:30

Tgt Ion: 50 Resp: 1204

Ion	Ratio	Lower	Upper
50	100		
52	83.1	21.0	49.0#

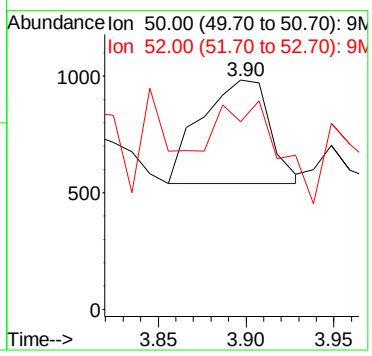

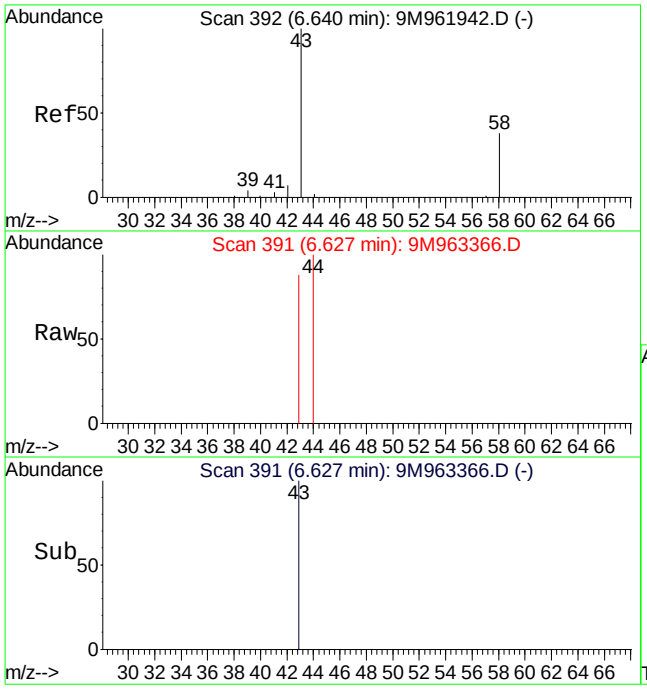

#13
Acetone
Concen: 0.33 ug/L
RT: 6.63 min Scan# 391
Delta R.T. 0.02 min
Lab File: 9M963366.D
Acq: 19 May 2014 15:30

Tgt Ion: 43 Resp: 775

Ion	Ratio	Lower	Upper
43	100		
58	0.0	25.4	59.4#

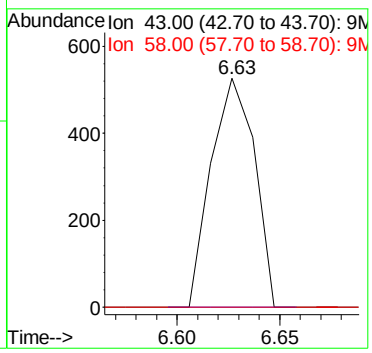

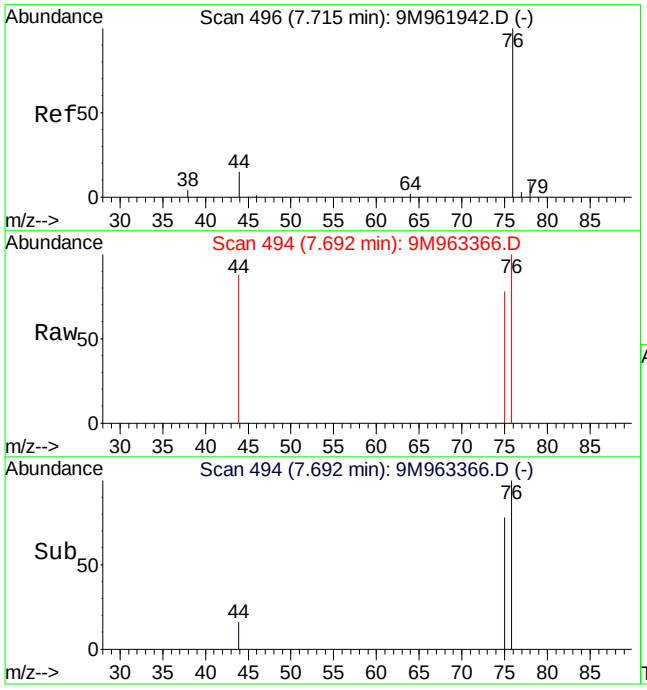

#20
Carbon Disulfide
Concen: 0.14 ug/L
RT: 7.69 min Scan# 494
Delta R.T. -0.00 min
Lab File: 9M963366.D
Acq: 19 May 2014 15:30

Tgt Ion: 76 Resp: 2747

Ion	Ratio	Lower	Upper
76	100		
78	7.6	5.6	13.0

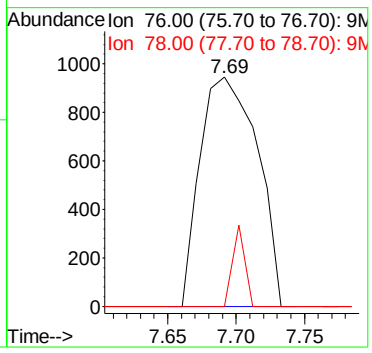

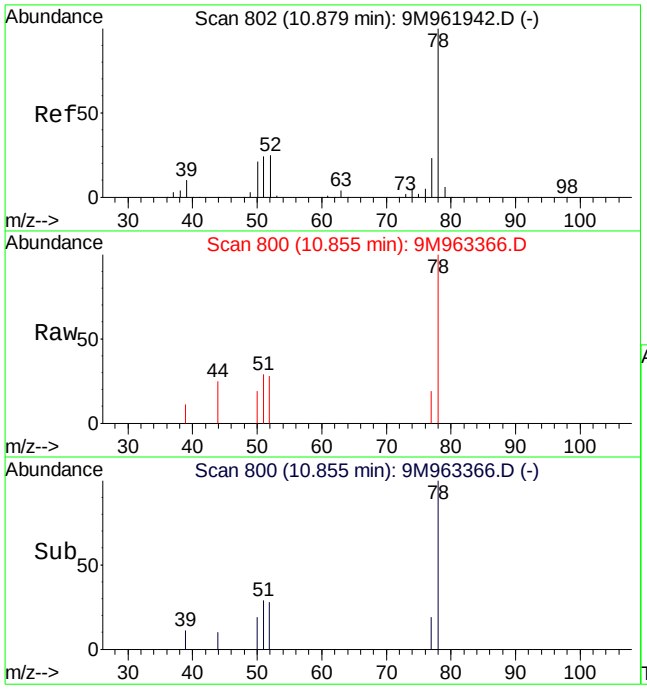

#46
Benzene
Concen: 0.37 ug/L
RT: 10.86 min Scan# 800
Delta R.T. -0.00 min
Lab File: 9M963366.D
Acq: 19 May 2014 15:30

Tgt Ion: 78 Resp: 10488

Ion	Ratio	Lower	Upper
78	100		
77	18.2	13.9	32.3
52	24.5	14.4	33.6

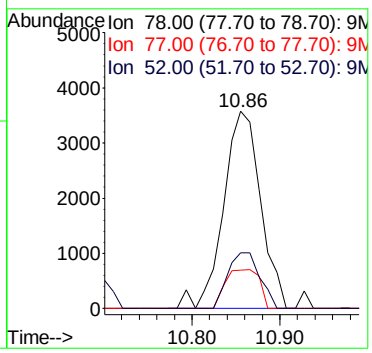

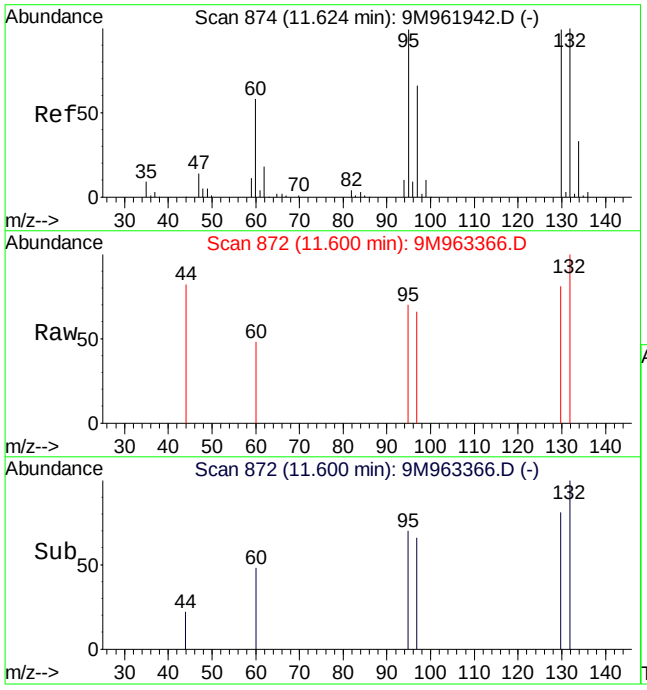

#47
Trichloroethene
Concen: 0.20 ug/L
RT: 11.60 min Scan# 872
Delta R.T. -0.01 min
Lab File: 9M963366.D
Acq: 19 May 2014 15:30

Tgt Ion:130 Resp: 1437

Ion	Ratio	Lower	Upper
130	100		
132	126.3	62.9	146.7
95	97.6	59.7	139.3

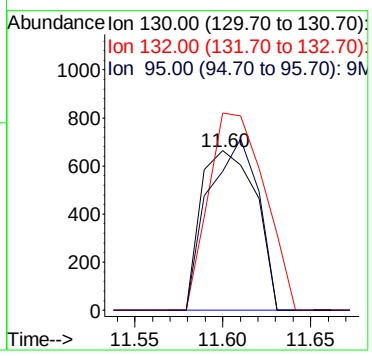

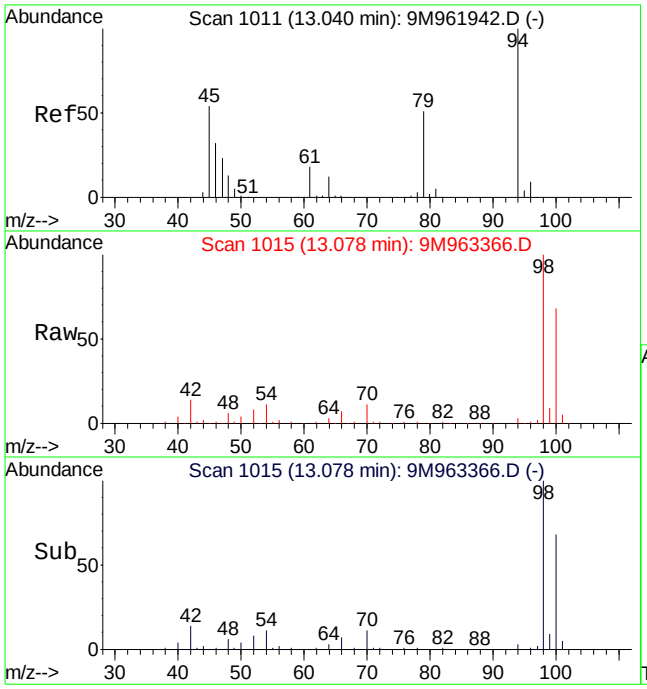

#56
Dimethyl Disulfide
Concen: 1.34 ug/L
RT: 13.08 min Scan# 1015
Delta R.T. 0.05 min
Lab File: 9M963366.D
Acq: 19 May 2014 15:30

Tgt Ion: 94 Resp: 17780

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.9#

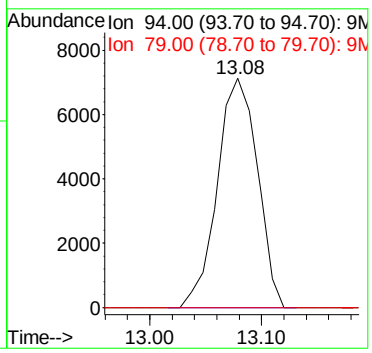

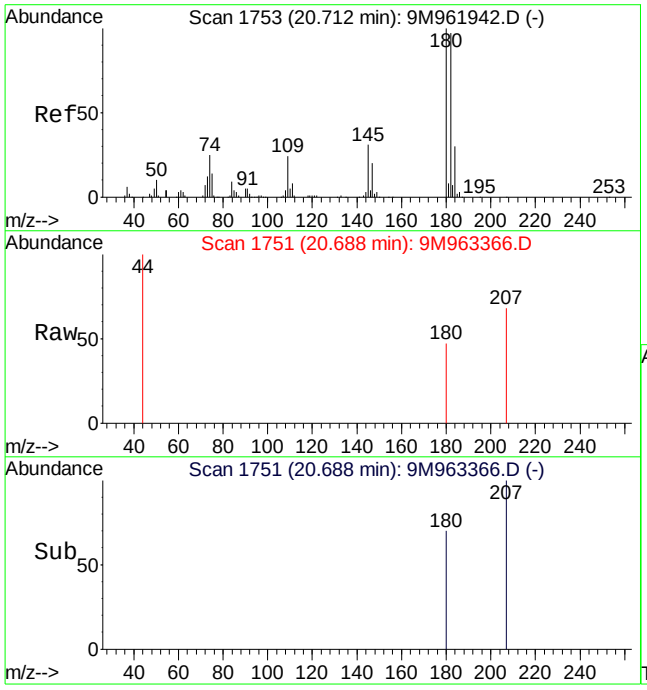

#97
1,2,4-Trichlorobenzene
Concen: 0.21 ug/L
RT: 20.69 min Scan# 1751
Delta R.T. -0.00 min
Lab File: 9M963366.D
Acq: 19 May 2014 15:30

Tgt Ion:180 Resp: 189

Ion	Ratio	Lower	Upper
180	100		
182	122.2	56.7	132.3
145	0.0	18.2	42.4#

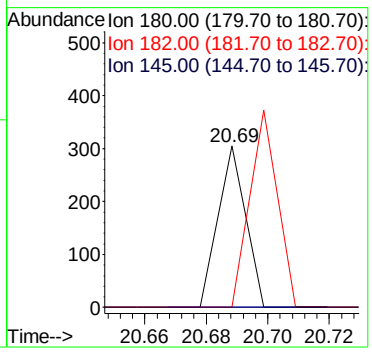

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\052014\9M963391.D Vial: 4
Acq On : 20 May 2014 7:51 Operator: TMB
Sample : WG476699-01 VBLK0520 BLANK STD 8260 Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 21 10:19:54 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.09	96	638726	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.98	117	472020	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	222732	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.06	111	177544	25.7888 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.16%		
43) 1,2-Dichloroethane-d4	10.69	65	227069	26.2039 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.80%		
58) Toluene-d8	13.08	98	647653	25.1514 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.60%		
79) p-Bromofluorobenzene	16.48	95	223519	24.3692 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.48%		

Target Compounds					Qvalue
56) Dimethyl Disulfide	13.08	94	16849	1.2894 ug/L #	28

(#) = qualifier out of range (m) = manual integration
9M963391.D 8260WT.M Wed May 21 10:19:56 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\052014\9M963391.D Vial: 4
Acq On : 20 May 2014 7:51 Operator: TMB
Sample : WG476699-01 VBLK0520 BLANK STD 8260 Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 21 10:19 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

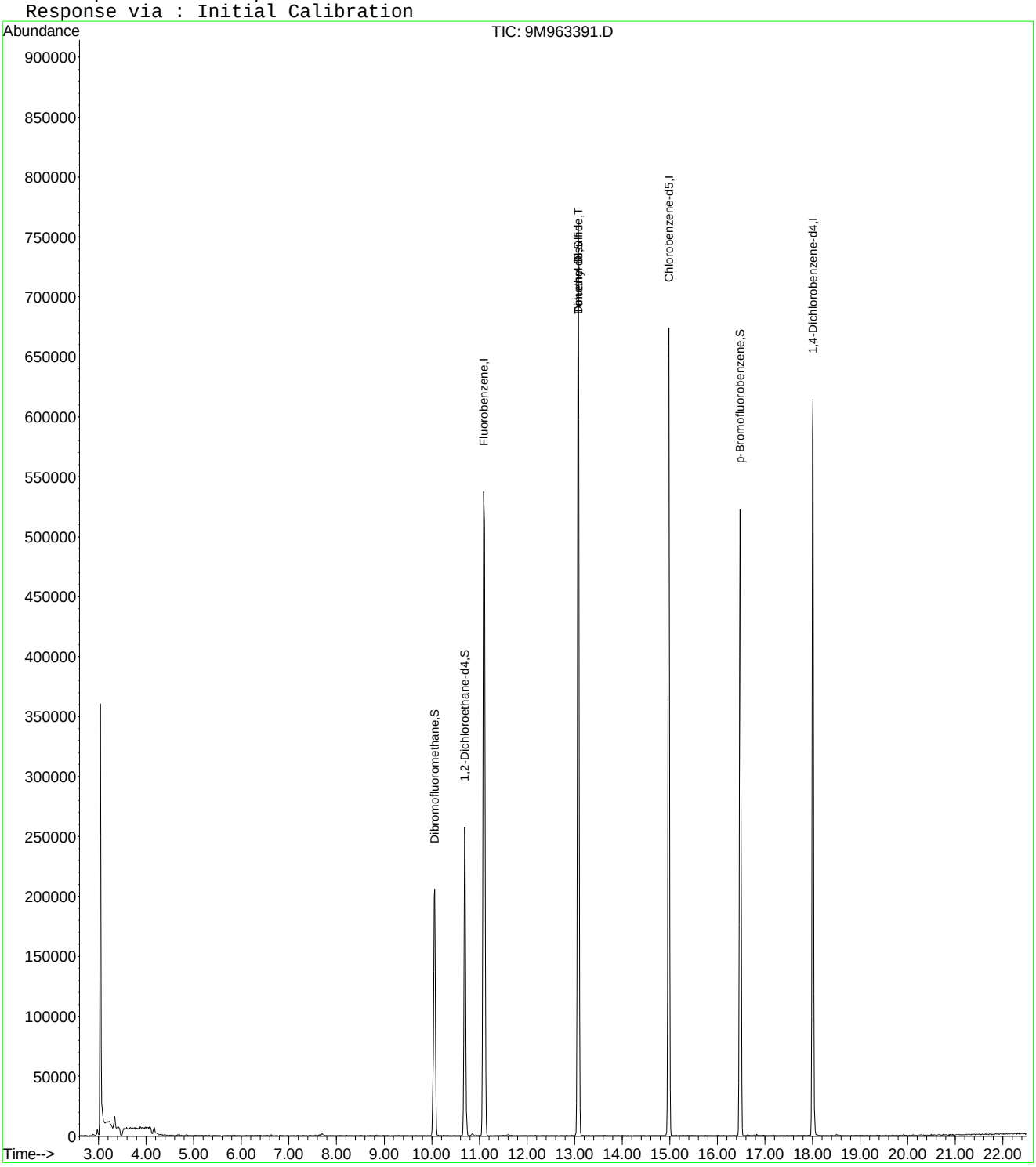

9M963391.D 8260WT.M Wed May 21 10:19:56 2014 Page 2

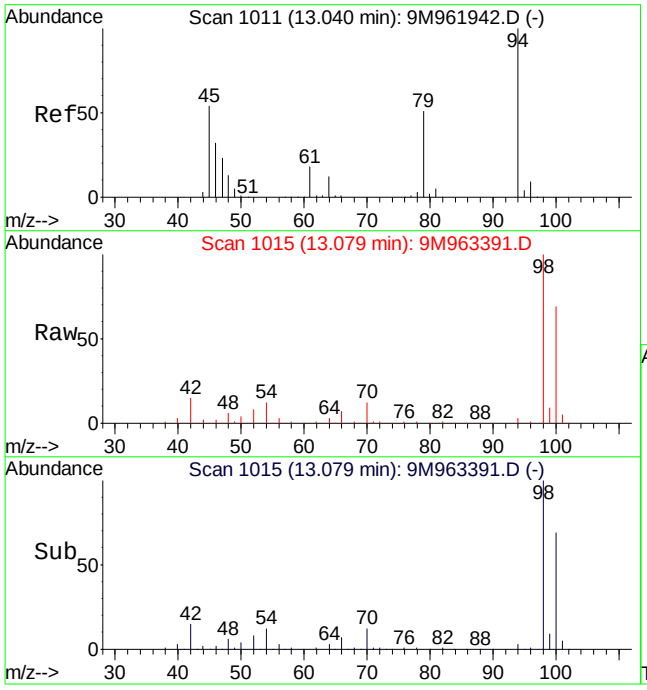

#56
Dimethyl Disulfide
Concen: 1.29 ug/L
RT: 13.08 min Scan# 1015
Delta R.T. 0.05 min
Lab File: 9M963391.D
Acq: 20 May 2014 7:51

Tgt Ion: 94 Resp: 16849

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.5	68.9#

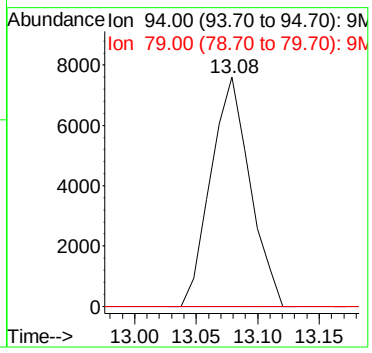

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005092.D
Acq On : 19 May 2014 00:14
Operator : FJB/MDA
Sample : WG476502-02 20ug/L LCS 8260
Misc : 1,1 STD64452
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 19 12:12:59 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	4.924	96	286849	25.00000 ug/L	-0.0110
43) Chlorobenzene-d5	7.833	117	200440	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.187	152	113813	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	3.930	111	73041	22.5539 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.216%		
32) 1,2-Dichloroethane-d4	4.585	65	90469	20.9693 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.877%		
44) Toluene-d8	6.532	98	278833	23.1016 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.406%		
63) p-Bromofluorobenzene	8.605	95	116611	24.1128 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.451%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.978	85	54237	20.2410 ug/L	99
3) Chloromethane	1.084	50	56947	19.6621 ug/L	100
4) Vinyl Chloride	1.126	62	78524	18.2646 ug/L	99
5) 1,3-Butadiene	1.137	54	61162	17.0597 ug/L	98
6) Bromomethane	1.306	94	49798	18.8656 ug/L	99
7) Chloroethane	1.370	64	65868	18.8396 ug/L	96
8) Trichlorofluoromethane	1.444	101	131502	19.9012 ug/L	99
9) Diethyl ether	1.645	59	264186	98.0006 ug/L	99
10) 1,1-Dichloroethene	1.750	61	83828	16.4467 ug/L	97
11) Carbon Disulfide	1.772	76	113697	13.7122 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.782	101	42241	16.8167 ug/L	96
13) Acrolein	1.983	56	637	3.4220 ug/L	100
14) Methylene Chloride	2.152	84	58740	18.3647 ug/L	97
15) Acetone	2.195	43	12886	23.0589 ug/L	98
16) trans-1,2-Dichloroethene	2.279	96	57249	18.9996 ug/L	96
17) Methyl Tert Butyl Ether	2.364	73	169719	20.1170 ug/L	99
18) 1,1-Dichloroethane	2.787	63	115720	18.1023 ug/L	100
19) Acrylonitrile	2.851	53	11813	13.2128 ug/L	98
20) Vinyl Acetate	3.062	86	6487	17.6611 ug/L	97
21) cis-1,2-Dichloroethene	3.348	96	65476	18.3232 ug/L	97
22) 2,2-Dichloropropane	3.464	77	72561	13.9404 ug/L	98
23) Cyclohexane	3.559	56	100883	16.9606 ug/L #	73
24) Bromochloromethane	3.581	130	34510	18.7259 ug/L	100
25) Chloroform	3.697	83	112589	18.2915 ug/L	99
26) Carbon Tetrachloride	3.824	117	82266	18.1882 ug/L	100
28) 1,1,1-Trichloroethane	3.919	97	99075	18.2310 ug/L	99
29) 1,1-Dichloropropene	4.099	75	81974	18.0239 ug/L	99
30) 2-Butanone	4.109	43	19207	20.1106 ug/L	98
31) Benzene	4.416	78	246546	17.9411 ug/L	99
33) 1,2-Dichloroethane	4.670	62	94833	18.7727 ug/L	99
34) Trichloroethene	5.125	130	60622	19.4069 ug/L	98
35) Dibromomethane	5.548	93	36033	18.2148 ug/L	100
36) 1,2-Dichloropropane	5.654	63	68887	18.1424 ug/L	100
37) Bromodichloromethane	5.749	83	89128	18.1483 ug/L	100
38) 1,4-Dioxane	5.961	88	3058	183.8415 ug/L	95
39) 2-Chloroethyl Vinyl Ether	6.342	63	39870	47.9654 ug/L	98
40) cis-1,3-Dichloropropene	6.363	75	100099	17.7437 ug/L	100
41) 4-Methyl-2-Pentanone	6.955	58	21800	19.2149 ug/L	99
42) trans-1,3-Dichloropropene	6.976	75	83388	16.9545 ug/L	100
45) Toluene	6.574	91	263473	18.5500 ug/L	99
46) Tetrachloroethene	6.913	166	61744	18.3355 ug/L	99
47) 1,1,2-Trichloroethane	7.103	97	48922	20.1204 ug/L	100
48) Dibromochloromethane	7.251	129	56741	19.6168 ug/L	99
49) 1,3-Dichloropropane	7.336	76	89778	19.0978 ug/L	97

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005092.D
Acq On : 19 May 2014 00:14
Operator : FJB/MDA
Sample : WG476502-02 20ug/L LCS 8260
Misc : 1,1 STD64452
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 19 12:12:59 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.421	107	47980	18.7924 ug/L	98
51) 2-Hexanone	7.664	43	32229	20.4919 ug/L	97
52) Chlorobenzene	7.844	112	151722	16.9194 ug/L	98
53) 1-Chlorohexane	7.854	69	17052	19.5468 ug/L	88
54) Ethylbenzene	7.875	106	91497	17.8150 ug/L	99
55) 1,1,1,2-Tetrachloroethane	7.897	131	56819	18.6177 ug/L	99
56) m-,p-Xylene	7.981	106	221978	34.3952 ug/L	99
57) o-Xylene	8.256	106	103685	16.9821 ug/L	98
58) Styrene	8.288	104	190418	18.0525 ug/L	97
59) Bromoform	8.299	173	44187	15.7890 ug/L	99
60) Isopropylbenzene	8.447	105	274331	17.0903 ug/L	100
62) 1,3,5-Trimethylbenzene	8.796	105	257854	18.2771 ug/L	99
64) Bromobenzene	8.648	156	70238	17.6979 ug/L	97
65) n-Propylbenzene	8.679	91	335343	16.5276 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.732	83	59770	16.9327 ug/L	98
67) 2-Chlorotoluene	8.753	91	202075	15.3316 ug/L	98
68) 1,2,3-Trichloropropane	8.796	110	19909	18.0966 ug/L	96
69) 1,2,4-Trimethylbenzene	8.986	105	253673	18.1469 ug/L	98
70) 4-Chlorotoluene	8.849	91	214350	16.5741 ug/L	99
71) tert-Butylbenzene	8.954	134	47431	17.2453 ug/L	98
72) sec-Butylbenzene	9.050	105	296982	16.9691 ug/L	100
73) p-Isopropyltoluene	9.124	119	234943	16.8625 ug/L	99
74) 1,3-Dichlorobenzene	9.155	146	126824	16.4386 ug/L	99
75) 1,4-Dichlorobenzene	9.198	146	144199	18.0173 ug/L	100
76) n-Butylbenzene	9.325	91	268742	18.6586 ug/L	98
77) 1,2-Dichlorobenzene	9.399	146	128982	17.7852 ug/L	97
78) 1,2-Dibromo-3-Chloropr...	9.769	75	12066	19.5075 ug/L	99
79) Hexachlorobutadiene	10.076	225	49010	17.3167 ug/L	99
80) 1,2,4-Trichlorobenzene	10.086	180	100118	17.2607 ug/L	98
81) Naphthalene	10.235	128	176242	18.4578 ug/L	100
82) 1,2,3-Trichlorobenzene	10.319	180	89389	17.3430 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051814\
Data File : 17M005092.D
Acq On : 19 May 2014 00:14
Operator : FJB/MDA
Sample : WG476502-02 20ug/L LCS 8260
Misc : 1,1 STD64452
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 19 12:12:59 2014
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 5/18/14 HPMS17
QLast Update : Mon May 19 12:04:55 2014
Response via : Initial Calibration

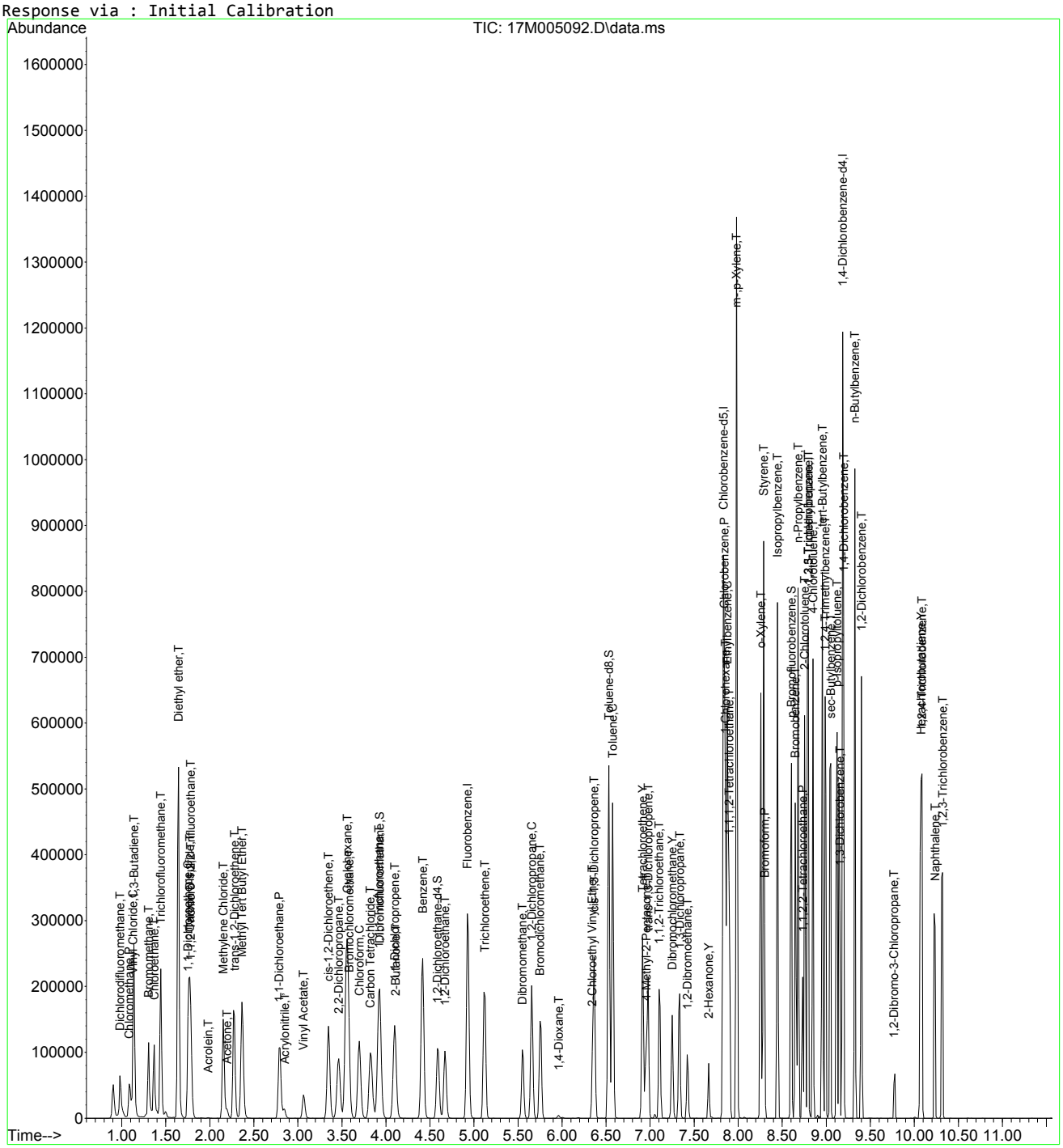

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051914\9M963367.D Vial: 4
Acq On : 19 May 2014 16:00 Operator: ADC
Sample : WG476633-02 20ug/L LCS 8260 Inst : HPMS9
Misc : 1,1 STD64451 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 19 16:23:06 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.10	96	634992	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.97	117	481569	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.00	152	246062	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.05	111	180944	26.4372 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.76%		
43) 1,2-Dichloroethane-d4	10.69	65	227887	26.4530 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.80%		
58) Toluene-d8	13.08	98	657994	25.0463 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.20%		
79) p-Bromofluorobenzene	16.48	95	232463	22.9413 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.76%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	144924	31.8670 ug/L	99
3) Chloromethane	3.89	50	246810	31.9217 ug/L	99
4) Vinyl Chloride	4.13	62	210805	25.4609 ug/L	99
5) 1,3-Butadiene	4.18	54	128884	25.1575 ug/L	99
6) Bromomethane	5.07	94	112554	23.1462 ug/L	97
7) Chloroethane	5.23	64	129823	21.6683 ug/L	97
8) Trichlorofluoromethane	5.73	101	212010	23.8585 ug/L	99
9) Diethyl ether	6.27	59	940935	116.1622 ug/L	94
10) Isoprene	6.31	67	227903	23.4753 ug/L	90
11) Acrolein	6.51	56	202067	158.7717 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.52	101	121934	20.6695 ug/L	92
13) Acetone	6.62	43	52991	22.6678 ug/L	94
14) 1,1-Dichloroethene	6.85	61	254309	19.7056 ug/L	96
15) Tert-Butyl Alcohol	6.95	59	198604	212.5806 ug/L	96
16) Dimethyl Sulfide	7.12	62	270999	36.5823 ug/L	88
17) Iodomethane	7.37	142	156531	25.3209 ug/L	99
18) Methyl acetate	7.37	43	150962	25.1786 ug/L	96
19) Methylene Chloride	7.63	84	143764	19.6091 ug/L	78
20) Carbon Disulfide	7.68	76	388894	19.8550 ug/L	100
21) Acrylonitrile	7.81	53	90208	23.8063 ug/L	98
22) Methyl Tert Butyl Ether	7.84	73	428561	21.9177 ug/L	99
23) trans-1,2-Dichloroethene	8.09	61	265404	21.2844 ug/L	97
24) n-Hexane	8.16	57	271349	23.2899 ug/L	92
25) Diisopropyl ether	8.50	45	3692147	128.9534 ug/L	98
26) Vinyl Acetate	8.68	43	370146	26.5492 ug/L	96
27) 1,1-Dichloroethane	8.71	63	326855	20.7466 ug/L	100
28) Ethyl-Tert-Butyl ether	9.07	59	3518837	115.9835 ug/L	98
29) 2-Butanone	9.27	43	85887	23.2043 ug/L	94
30) Propionitrile	9.37	54	163157	118.9110 ug/L	97
31) 2,2-Dichloropropane	9.49	77	200513	20.9847 ug/L	99
32) cis-1,2-Dichloroethene	9.56	96	157708	20.9690 ug/L	95
33) Chloroform	9.76	83	246365	20.5668 ug/L	100
34) 1-Bromopropane	9.91	122	32427	25.4365 ug/L	97
35) Bromochloromethane	10.00	130	93137	20.2252 ug/L	87
36) Tetrahydrofuran	10.02	42	282470	122.3664 ug/L	91
38) 1,1,1-Trichloroethane	10.30	97	219143	21.0880 ug/L	98
39) Cyclohexane	10.33	56	402435	23.4961 ug/L	95
40) 1,1-Dichloropropene	10.50	75	178254	20.8812 ug/L	98
41) Tert-Amyl-Methyl ether	10.59	73	2205408	113.6802 ug/L	97
42) Carbon Tetrachloride	10.64	117	192408	21.0612 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051914\9M963367.D Vial: 4
Acq On : 19 May 2014 16:00 Operator: ADC
Sample : WG476633-02 20ug/L LCS 8260 Inst : HPMS9
Misc : 1,1 STD64451 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 19 16:23:06 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.82	62	236252	21.8481 ug/L	96
46)	Benzene	10.86	78	566669	20.4708 ug/L	96
47)	Trichloroethene	11.60	130	147829	20.8400 ug/L	99
48)	Methylcyclohexane	11.70	83	238952	22.1000 ug/L	93
49)	1,2-Dichloropropane	11.82	63	198536	21.1717 ug/L	99
50)	1,4-Dioxane	12.10	88	14715	187.3623 ug/L	77
51)	Bromodichloromethane	12.12	83	190542	20.8239 ug/L	99
52)	Dibromomethane	12.21	174	94788	19.7451 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.40	63	105403	19.1546 ug/L	97
54)	4-Methyl-2-Pentanone	12.43	58	86334	21.2972 ug/L	96
55)	cis-1,3-Dichloropropene	12.75	75	235732	21.2419 ug/L	99
56)	Dimethyl Disulfide	13.02	94	302755	23.3060 ug/L	99
59)	Toluene	13.17	91	579484	19.5290 ug/L	100
60)	Ethyl Methacrylate	13.26	69	188143	21.5641 ug/L	100
61)	trans-1,3-Dichloropropene	13.35	75	198623	18.9754 ug/L	98
62)	1,1,2-Trichloroethane	13.57	97	123861	19.7774 ug/L	96
63)	2-Hexanone	13.49	43	128793	21.7341 ug/L	93
64)	1,3-Dichloropropane	13.88	76	208883	19.3406 ug/L	86
65)	Tetrachloroethene	14.00	164	119313	19.3133 ug/L	97
66)	Dibromochloromethane	14.27	129	147957	19.9385 ug/L	98
67)	1,2-Dibromoethane	14.53	107	122518	19.3067 ug/L	100
68)	1-Chlorohexane	14.59	91	190472	21.9076 ug/L	90
69)	Chlorobenzene	15.03	112	363701	18.6543 ug/L	99
70)	1,1,1,2-Tetrachloroethane	15.06	131	145240	19.4424 ug/L	98
71)	Ethylbenzene	15.05	106	212367	19.7052 ug/L	98
72)	m-,p-Xylene	15.14	106	509442	39.7465 ug/L	100
73)	o-Xylene	15.71	106	240509	17.9909 ug/L	99
74)	Styrene	15.74	104	428027	20.2625 ug/L	99
75)	Bromoform	16.25	173	108004	17.0489 ug/L	98
76)	Isopropylbenzene	16.13	105	600316	18.7057 ug/L	100
78)	1,1,2,2-Tetrachloroethane	16.35	83	141090	18.1582 ug/L	99
80)	1,2,3-Trichloropropane	16.55	110	46542	19.4312 ug/L	77
81)	trans-1,4-Dichloro-2-Buten	16.58	53	42121	14.0040 ug/L	78
82)	n-Propylbenzene	16.64	91	690261	19.1644 ug/L	99
83)	Bromobenzene	16.77	156	171431	20.1556 ug/L	99
84)	1,3,5-Trimethylbenzene	16.82	105	566782	21.1602 ug/L	100
85)	2-Chlorotoluene	16.92	91	469197	18.6153 ug/L	91
86)	4-Chlorotoluene	16.96	91	398779	19.3262 ug/L	90
87)	a-Methylstyrene	17.23	118	317307	22.9131 ug/L	99
88)	tert-Butylbenzene	17.29	134	116792	18.7368 ug/L	97
89)	1,2,4-Trimethylbenzene	17.34	105	572606	21.0758 ug/L	99
90)	sec-Butylbenzene	17.56	105	645576	19.2940 ug/L	99
91)	p-Isopropyltoluene	17.71	119	536525	19.9206 ug/L	100
92)	1,3-Dichlorobenzene	17.92	146	290575	18.3205 ug/L	99
93)	1,4-Dichlorobenzene	18.05	146	325088	20.4939 ug/L	99
94)	n-Butylbenzene	18.24	91	502889	21.7738 ug/L	98
95)	1,2-Dichlorobenzene	18.55	146	299707	18.9452 ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.54	157	34160	18.2902 ug/L	96
97)	1,2,4-Trichlorobenzene	20.69	180	226881	18.6517 ug/L	100
98)	Hexachlorobutadiene	20.84	225	120524	18.2670 ug/L	99
99)	Naphthalene	21.06	128	542619	21.5445 ug/L	99
100)	1,2,3-Trichlorobenzene	21.37	180	235019	21.6421 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M963367.D 8260WT.M Mon May 19 16:23:09 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\051914\9M963367.D Vial: 4
Acq On : 19 May 2014 16:00 Operator: ADC
Sample : WG476633-02 20ug/L LCS 8260 Inst : HPMS9
Misc : 1,1 STD64451 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 19 16:23 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

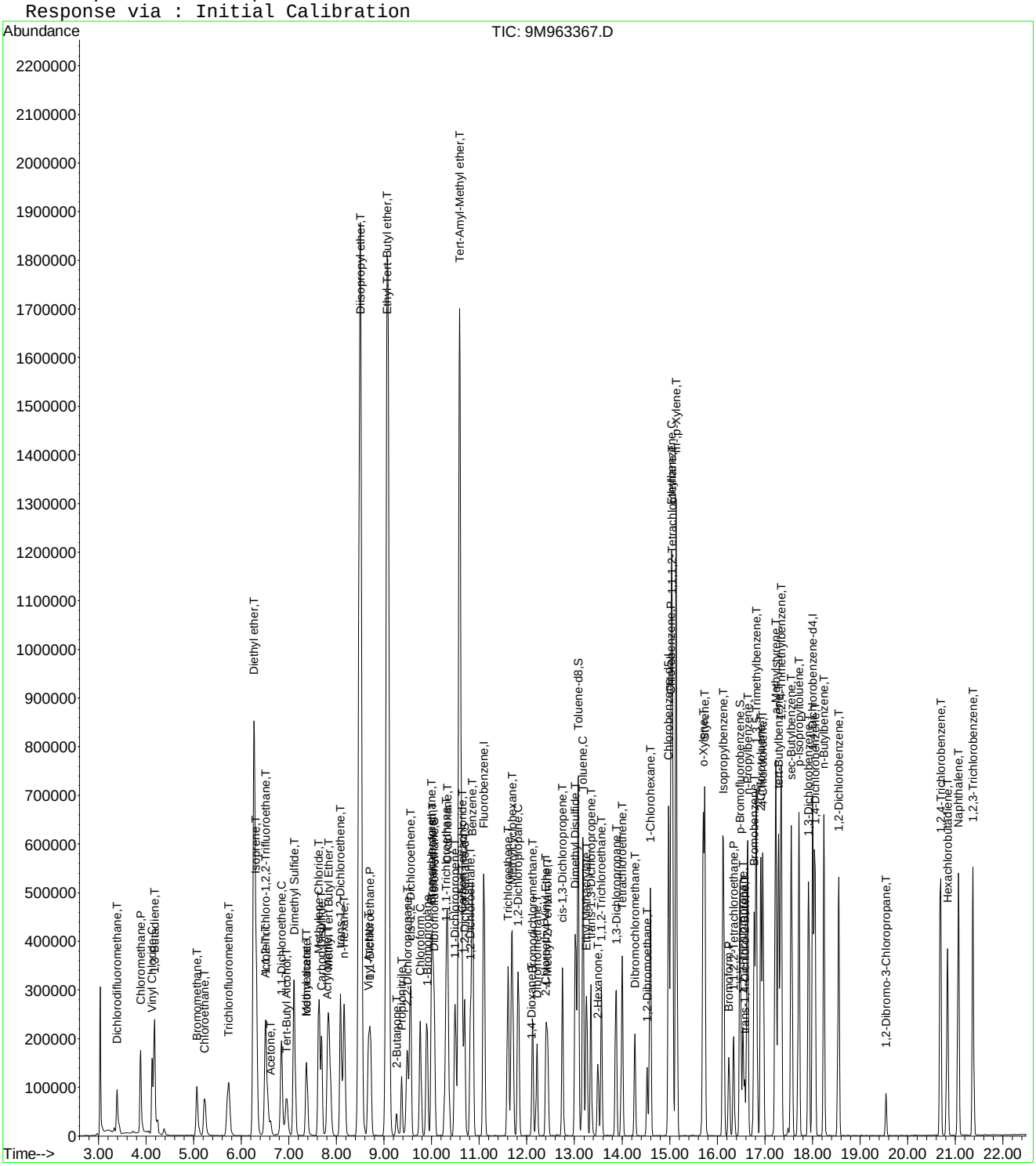

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\052014\9M963392.D Vial: 4
Acq On : 20 May 2014 8:22 Operator: TMB
Sample : WG476699-02 20ug/L LCS STD 8260 Inst : HPMS9
Misc : 1,1 STD64600 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 08:44:37 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.10	96	604099	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.97	117	446364	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.00	152	220554	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.05	111	175583	26.9658 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.88%		
43) 1,2-Dichloroethane-d4	10.69	65	219014	26.7231 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.88%		
58) Toluene-d8	13.08	98	636324	26.1318 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.52%		
79) p-Bromofluorobenzene	16.47	95	224097	24.6735 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.68%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	157970	36.5120 ug/L	97
3) Chloromethane	3.89	50	278087	37.8062 ug/L	98
4) Vinyl Chloride	4.13	62	217778	27.6482 ug/L	97
5) 1,3-Butadiene	4.18	54	121775	24.9854 ug/L	99
6) Bromomethane	5.07	94	117621	25.4251 ug/L	97
7) Chloroethane	5.23	64	130181	22.8392 ug/L	96
8) Trichlorofluoromethane	5.73	101	206438	24.4195 ug/L	100
9) Diethyl ether	6.27	59	913017	118.4798 ug/L	93
10) Isoprene	6.31	67	207658	22.4838 ug/L	89
11) Acrolein	6.51	56	201274	166.2362 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.53	101	109722	19.5604 ug/L	98
13) Acetone	6.62	43	55219	24.8288 ug/L	89
14) 1,1-Dichloroethene	6.85	61	258095	21.0217 ug/L	94
15) Tert-Butyl Alcohol	6.95	59	214522	241.3613 ug/L	96
16) Dimethyl Sulfide	7.11	62	253096	35.9128 ug/L	86
17) Iodomethane	7.37	142	153887	26.1411 ug/L	99
18) Methyl acetate	7.37	43	159052	27.8845 ug/L	93
19) Methylene Chloride	7.63	84	143380	20.5568 ug/L	78
20) Carbon Disulfide	7.68	76	364358	19.5536 ug/L	99
21) Acrylonitrile	7.82	53	93076	25.8193 ug/L	99
22) Methyl Tert Butyl Ether	7.85	73	420934	22.6285 ug/L	99
23) trans-1,2-Dichloroethene	8.09	61	262602	22.1366 ug/L	97
24) n-Hexane	8.16	57	237787	21.4530 ug/L	92
25) Diisopropyl ether	8.50	45	3599340	132.1407 ug/L	98
26) Vinyl Acetate	8.68	43	383718	28.9301 ug/L	96
27) 1,1-Dichloroethane	8.71	63	323406	21.5774 ug/L	99
28) Ethyl-Tert-Butyl ether	9.07	59	3416743	118.3776 ug/L	98
29) 2-Butanone	9.27	43	90802	25.7867 ug/L	93
30) Propionitrile	9.37	54	167967	128.6769 ug/L	98
31) 2,2-Dichloropropane	9.49	77	201619	22.1795 ug/L	98
32) cis-1,2-Dichloroethene	9.56	96	151397	21.1593 ug/L	90
33) Chloroform	9.76	83	240949	21.1433 ug/L	99
34) 1-Bromopropane	9.90	122	31979	26.3679 ug/L	95
35) Bromochloromethane	10.00	130	90557	20.6706 ug/L	81
36) Tetrahydrofuran	10.02	42	303053	137.9967 ug/L	88
38) 1,1,1-Trichloroethane	10.30	97	218421	22.0934 ug/L	96
39) Cyclohexane	10.33	56	363042	22.2801 ug/L	94
40) 1,1-Dichloropropene	10.50	75	174241	21.4549 ug/L	97
41) Tert-Amyl-Methyl ether	10.59	73	2127279	115.2605 ug/L	97
42) Carbon Tetrachloride	10.64	117	185459	21.3387 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\052014\9M963392.D Vial: 4
Acq On : 20 May 2014 8:22 Operator: TMB
Sample : WG476699-02 20ug/L LCS STD 8260 Inst : HPMS9
Misc : 1,1 STD64600 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 08:44:37 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.82	62	235921	22.9332 ug/L	97
46)	Benzene	10.86	78	557653	21.1753 ug/L	96
47)	Trichloroethene	11.60	130	145747	21.5972 ug/L	98
48)	Methylcyclohexane	11.70	83	206108	20.0372 ug/L	92
49)	1,2-Dichloropropane	11.82	63	195284	21.8899 ug/L	100
50)	1,4-Dioxane	12.10	88	16608	222.2794 ug/L	89
51)	Bromodichloromethane	12.12	83	184864	21.2365 ug/L	99
52)	Dibromomethane	12.21	174	93979	20.5777 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.40	63	107777	20.5876 ug/L	96
54)	4-Methyl-2-Pentanone	12.43	58	84862	22.0046 ug/L	95
55)	cis-1,3-Dichloropropene	12.75	75	229374	21.7260 ug/L	100
56)	Dimethyl Disulfide	13.02	94	286738	23.2018 ug/L	99
59)	Toluene	13.17	91	573737	20.8603 ug/L	100
60)	Ethyl Methacrylate	13.26	69	185595	22.9498 ug/L	99
61)	trans-1,3-Dichloropropene	13.35	75	196443	20.2473 ug/L	98
62)	1,1,2-Trichloroethane	13.57	97	122221	21.0547 ug/L	100
63)	2-Hexanone	13.50	43	132326	24.0915 ug/L	90
64)	1,3-Dichloropropane	13.87	76	211465	21.1240 ug/L	88
65)	Tetrachloroethene	14.00	164	117391	20.5009 ug/L	99
66)	Dibromochloromethane	14.27	129	146413	21.2866 ug/L	99
67)	1,2-Dibromoethane	14.53	107	121817	20.7102 ug/L	99
68)	1-Chlorohexane	14.59	91	176912	21.9528 ug/L	88
69)	Chlorobenzene	15.03	112	356515	19.7279 ug/L	100
70)	1,1,1,2-Tetrachloroethane	15.06	131	142750	20.6162 ug/L	99
71)	Ethylbenzene	15.05	106	208260	20.8483 ug/L	97
72)	m-,p-Xylene	15.14	106	488537	41.1217 ug/L	98
73)	o-Xylene	15.71	106	235661	19.0186 ug/L	99
74)	Styrene	15.74	104	419486	21.4244 ug/L	100
75)	Bromoform	16.25	173	104767	17.8124 ug/L	99
76)	Isopropylbenzene	16.12	105	585939	19.6977 ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.34	83	143496	20.6037 ug/L	100
80)	1,2,3-Trichloropropane	16.54	110	48439	22.5621 ug/L	77
81)	trans-1,4-Dichloro-2-Buten	16.58	53	43747	16.1620 ug/L	78
82)	n-Propylbenzene	16.64	91	674294	20.8863 ug/L	99
83)	Bromobenzene	16.77	156	169242	22.1995 ug/L	99
84)	1,3,5-Trimethylbenzene	16.82	105	545089	22.7039 ug/L	99
85)	2-Chlorotoluene	16.92	91	470133	20.8097 ug/L	91
86)	4-Chlorotoluene	16.96	91	384182	20.7721 ug/L	90
87)	a-Methylstyrene	17.23	118	296979	23.9254 ug/L	100
88)	tert-Butylbenzene	17.29	134	114411	20.4777 ug/L	98
89)	1,2,4-Trimethylbenzene	17.34	105	552318	22.6802 ug/L	99
90)	sec-Butylbenzene	17.56	105	620334	20.6838 ug/L	100
91)	p-Isopropyltoluene	17.71	119	515045	21.3347 ug/L	99
92)	1,3-Dichlorobenzene	17.92	146	287649	20.2335 ug/L	99
93)	1,4-Dichlorobenzene	18.04	146	313019	22.0153 ug/L	99
94)	n-Butylbenzene	18.24	91	494512	23.8874 ug/L	99
95)	1,2-Dichlorobenzene	18.55	146	294874	20.7954 ug/L	100
96)	1,2-Dibromo-3-Chloropropan	19.55	157	34401	20.5495 ug/L	97
97)	1,2,4-Trichlorobenzene	20.69	180	222206	20.3624 ug/L	99
98)	Hexachlorobutadiene	20.84	225	114412	19.3297 ug/L	97
99)	Naphthalene	21.06	128	557498	24.6953 ug/L	100
100)	1,2,3-Trichlorobenzene	21.37	180	233925	24.0327 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\052014\9M963392.D Vial: 4
Acq On : 20 May 2014 8:22 Operator: TMB
Sample : WG476699-02 20ug/L LCS STD 8260 Inst : HPMS9
Misc : 1,1 STD64600 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:44 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

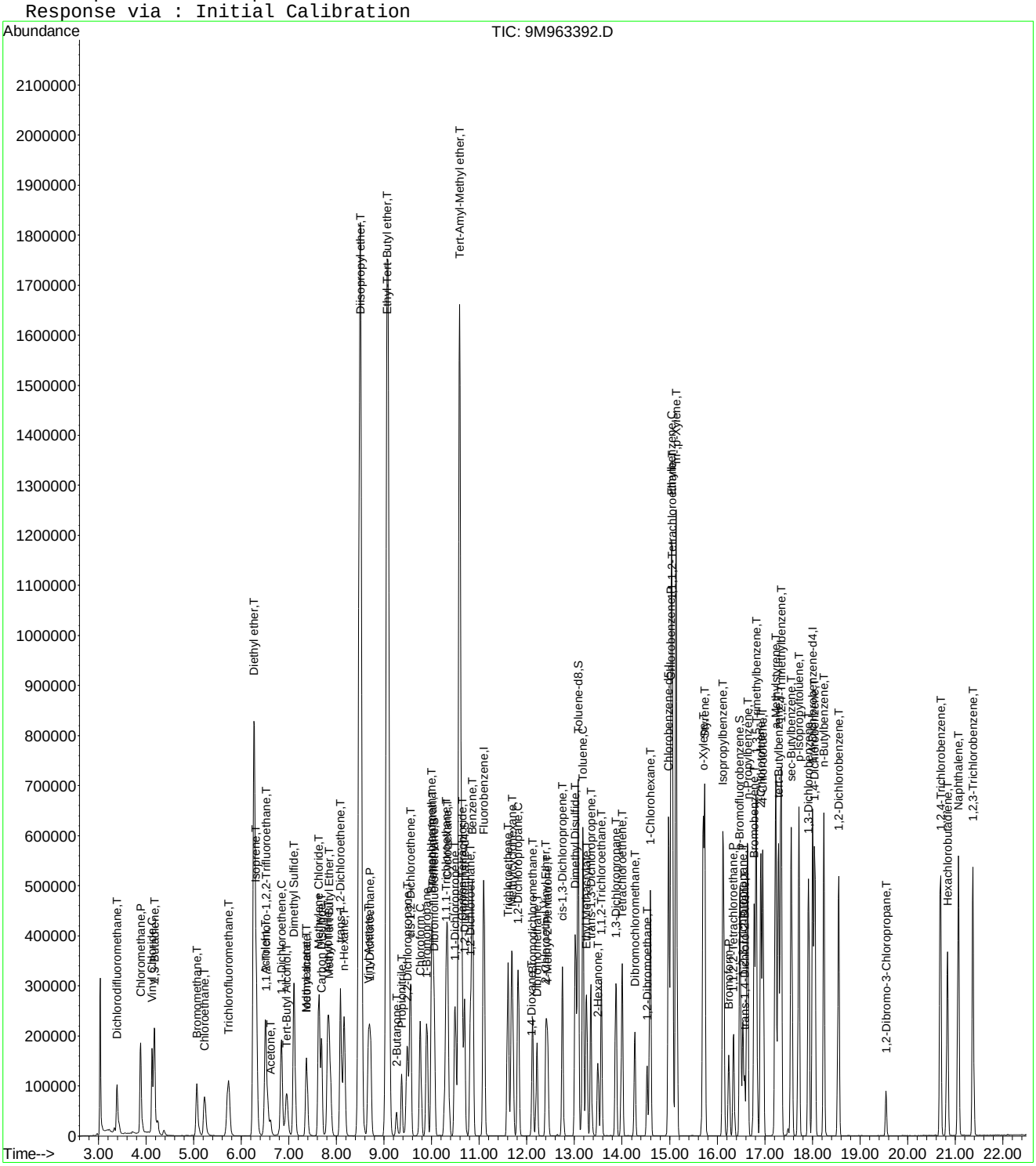

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\052014\9M963393.D Vial: 5
Acq On : 20 May 2014 8:52 Operator: TMB
Sample : WG476699-03 20ug/L LCSDUP STD 8260 Inst : HPMS9
Misc : 1,1 STD64600 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 10:19:24 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.09	96	613098	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.98	117	460285	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	18.01	152	233389	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.05	111	170755	25.8394 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.36%		
43) 1,2-Dichloroethane-d4	10.69	65	214984	25.8464 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.40%		
58) Toluene-d8	13.08	98	623496	24.8306 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.32%		
79) p-Bromofluorobenzene	16.48	95	217371	22.6168 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.48%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	135335	30.8212 ug/L	99
3) Chloromethane	3.89	50	273795	36.6764 ug/L	96
4) Vinyl Chloride	4.13	62	213510	26.7085 ug/L	97
5) 1,3-Butadiene	4.18	54	116610	23.5745 ug/L	99
6) Bromomethane	5.06	94	114718	24.4336 ug/L	98
7) Chloroethane	5.23	64	131562	22.7427 ug/L	97
8) Trichlorofluoromethane	5.74	101	193233	22.5219 ug/L	98
9) Diethyl ether	6.26	59	897420	114.7465 ug/L	93
10) Isoprene	6.32	67	199891	21.3252 ug/L	90
11) Acrolein	6.51	56	199308	162.1963 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	99336	17.4688 ug/L	95
13) Acetone	6.62	43	52226	23.1384 ug/L	90
14) 1,1-Dichloroethene	6.84	61	248074	19.9089 ug/L	95
15) Tert-Butyl Alcohol	6.96	59	207479	230.0108 ug/L	96
16) Dimethyl Sulfide	7.11	62	251810	35.2059 ug/L	86
17) Iodomethane	7.37	142	154862	25.9269 ug/L	99
18) Methyl acetate	7.37	43	156851	27.0950 ug/L	95
19) Methylene Chloride	7.63	84	141658	20.0118 ug/L	78
20) Carbon Disulfide	7.69	76	367006	19.4066 ug/L	100
21) Acrylonitrile	7.81	53	92440	25.2665 ug/L	100
22) Methyl Tert Butyl Ether	7.85	73	413788	21.9179 ug/L	97
23) trans-1,2-Dichloroethene	8.08	61	260386	21.6276 ug/L	95
24) n-Hexane	8.16	57	206953	18.3971 ug/L	93
25) Diisopropyl ether	8.50	45	3562874	128.8821 ug/L	97
26) Vinyl Acetate	8.67	43	388978	28.8962 ug/L	96
27) 1,1-Dichloroethane	8.71	63	318601	20.9448 ug/L	100
28) Ethyl-Tert-Butyl ether	9.08	59	3390741	115.7524 ug/L	98
29) 2-Butanone	9.26	43	90336	25.2778 ug/L	91
30) Propionitrile	9.37	54	163249	123.2268 ug/L	99
31) 2,2-Dichloropropane	9.49	77	203625	22.0714 ug/L	99
32) cis-1,2-Dichloroethene	9.55	96	150753	20.7601 ug/L	92
33) Chloroform	9.76	83	240549	20.7983 ug/L	98
34) 1-Bromopropane	9.90	122	31229	25.3716 ug/L	95
35) Bromochloromethane	10.00	130	93623	21.0568 ug/L	84
36) Tetrahydrofuran	10.02	42	290863	130.5019 ug/L	90
38) 1,1,1-Trichloroethane	10.30	97	211949	21.1241 ug/L	98
39) Cyclohexane	10.34	56	336190	20.3293 ug/L	95
40) 1,1-Dichloropropene	10.49	75	169070	20.5126 ug/L	98
41) Tert-Amyl-Methyl ether	10.59	73	2112606	112.7853 ug/L	97
42) Carbon Tetrachloride	10.64	117	181899	20.6219 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M963393.D 8260WT.M Tue May 20 10:19:25 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\052014\9M963393.D Vial: 5
Acq On : 20 May 2014 8:52 Operator: TMB
Sample : WG476699-03 20ug/L LCSDUP STD 8260 Inst : HPMS9
Misc : 1,1 STD64600 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 10:19:24 2014 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.81	62	230561	22.0832 ug/L	96
46)	Benzene	10.85	78	551859	20.6477 ug/L	96
47)	Trichloroethene	11.61	130	141752	20.6969 ug/L	100
48)	Methylcyclohexane	11.69	83	188404	18.0472 ug/L	93
49)	1,2-Dichloropropane	11.82	63	190795	21.0728 ug/L	100
50)	1,4-Dioxane	12.11	88	15225	200.7786 ug/L	79
51)	Bromodichloromethane	12.13	83	183644	20.7867 ug/L	99
52)	Dibromomethane	12.21	174	94312	20.3475 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.41	63	109177	20.5489 ug/L	94
54)	4-Methyl-2-Pentanone	12.44	58	83559	21.3488 ug/L	98
55)	cis-1,3-Dichloropropene	12.75	75	235112	21.9426 ug/L	99
56)	Dimethyl Disulfide	13.03	94	287491	22.9213 ug/L	98
59)	Toluene	13.18	91	567075	19.9945 ug/L	100
60)	Ethyl Methacrylate	13.25	69	185716	22.2702 ug/L	99
61)	trans-1,3-Dichloropropene	13.35	75	195949	19.5855 ug/L	98
62)	1,1,2-Trichloroethane	13.56	97	120654	20.1561 ug/L	99
63)	2-Hexanone	13.49	43	131851	23.2790 ug/L	92
64)	1,3-Dichloropropane	13.87	76	207518	20.1027 ug/L	87
65)	Tetrachloroethene	14.00	164	115305	19.5276 ug/L	98
66)	Dibromochloromethane	14.27	129	144444	20.3652 ug/L	100
67)	1,2-Dibromoethane	14.53	107	122270	20.1585 ug/L	98
68)	1-Chlorohexane	14.60	91	177270	21.3319 ug/L	88
69)	Chlorobenzene	15.03	112	352564	18.9192 ug/L	99
70)	1,1,1,2-Tetrachloroethane	15.05	131	141213	19.7774 ug/L	99
71)	Ethylbenzene	15.05	106	206672	20.0636 ug/L	97
72)	m-,p-Xylene	15.14	106	487435	39.7880 ug/L	99
73)	o-Xylene	15.70	106	237373	18.5774 ug/L	98
74)	Styrene	15.75	104	413262	20.4682 ug/L	99
75)	Bromoform	16.25	173	102336	16.9067 ug/L	98
76)	Isopropylbenzene	16.13	105	585154	19.0764 ug/L	100
78)	1,1,2,2-Tetrachloroethane	16.34	83	143189	19.4290 ug/L	97
80)	1,2,3-Trichloropropane	16.54	110	49553	21.8117 ug/L	61
81)	trans-1,4-Dichloro-2-Buten	16.58	53	40483	14.1848 ug/L	85
82)	n-Propylbenzene	16.63	91	661689	19.3687 ug/L	99
83)	Bromobenzene	16.78	156	166182	20.5993 ug/L	96
84)	1,3,5-Trimethylbenzene	16.82	105	548632	21.5948 ug/L	100
85)	2-Chlorotoluene	16.91	91	429932	17.9837 ug/L	91
86)	4-Chlorotoluene	16.97	91	410202	20.9593 ug/L	99
87)	a-Methylstyrene	17.22	118	296043	22.5384 ug/L	100
88)	tert-Butylbenzene	17.29	134	109556	18.5303 ug/L	93
89)	1,2,4-Trimethylbenzene	17.34	105	559104	21.6963 ug/L	98
90)	sec-Butylbenzene	17.55	105	612628	19.3035 ug/L	100
91)	p-Isopropyltoluene	17.72	119	513565	20.1035 ug/L	99
92)	1,3-Dichlorobenzene	17.92	146	285643	18.9874 ug/L	100
93)	1,4-Dichlorobenzene	18.05	146	310689	20.6497 ug/L	100
94)	n-Butylbenzene	18.24	91	479743	21.8995 ug/L	99
95)	1,2-Dichlorobenzene	18.55	146	298322	19.8816 ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.55	157	35475	20.0256 ug/L	99
97)	1,2,4-Trichlorobenzene	20.69	180	227191	19.6807 ug/L	100
98)	Hexachlorobutadiene	20.84	225	113231	18.0962 ug/L	99
99)	Naphthalene	21.07	128	549421	22.9991 ug/L	100
100)	1,2,3-Trichlorobenzene	21.37	180	227174	22.0556 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\052014\9M963393.D Vial: 5
Acq On : 20 May 2014 8:52 Operator: TMB
Sample : WG476699-03 20ug/L LCSDUP STD 8260 Inst : HPMS9
Misc : 1,1 STD64600 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 10:19 2014 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 04/14/14 HPMS9
Last Update : Tue Apr 15 12:15:18 2014
Response via : Initial Calibration

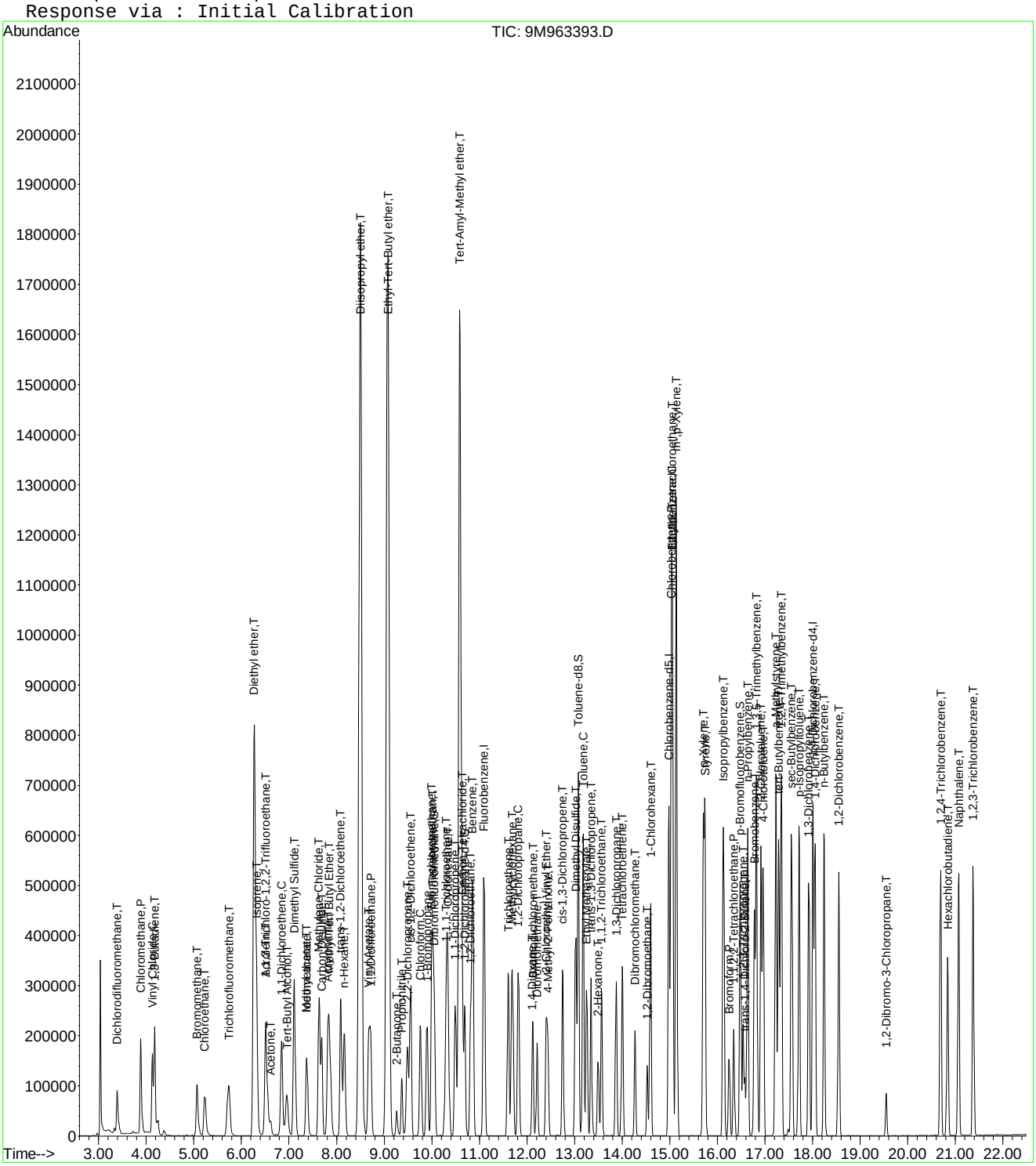

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac Laboratories
Case Narrative

Login Number: L14050603
Department: Volatiles - GC
Analyst: Qin Xu

Analysis RSK-175

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes/Sample Duplicates: The MS/MSD results were not associated with this sample delivery group (SDG), due to insufficient volume of sample. Microbac Laboratories recommends site specific MS/MSD samples to avoid possible data qualifications.

SAMPLES

Samples: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

Narrative ID: 82933
Approved By: Michael Albertson

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-12	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW01-050714	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/13/2014 10:58
Workgroup #:	WG475561	**Analyst:**	QX	**Run Date:**	05/13/2014 13:43
Collect Date:	05/07/2014 08:45	**Dilution:**	1	**File ID:**	16G42896
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	33.5		5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-13	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW08-050714	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/13/2014 10:58
Workgroup #:	WG475561	**Analyst:**	QX	**Run Date:**	05/13/2014 14:02
Collect Date:	05/07/2014 10:05	**Dilution:**	1	**File ID:**	16G42898
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	6.97		5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:	
y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:		
Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 031314
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 49437

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD61380 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG466847,WG466875

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G41958	RINSE RSK175	NA	1	1		03/13/14 09:49
16G41959	WG466847-01 0.667umol/mol STD RSK17	NA	1	1	STD55748	03/13/14 10:01
16G41960	WG466847-02 1.67umol/mol STD RSK175	NA	1	1	STD55748	03/13/14 10:11
16G41961	WG466847-03 33.3umol/mol STD RSK175	NA	1	1	STD55748	03/13/14 10:20
16G41962	WG466847-04 66.67umol/mol STD RSK17	NA	1	1	STD55748	03/13/14 10:29
16G41963	WG466847-05 133umol/mol STD RSK175	NA	1	1	STD55748	03/13/14 10:40
16G41964	WG466847-06 333umol/mol STD RSK175	NA	1	1	STD55748	03/13/14 10:49
16G41965	WG466847-07 533umol/mol STD RSK175	NA	1	1	STD55748	03/13/14 10:58
16G41966	RINSE RSK175	NA	1	1		03/13/14 11:08
16G41967	WG466847-08 133umol/mol ICV RSK175	NA	1	1	STD61380	03/13/14 11:41
16G41968	WG466875-01 BLANK RSK175	NA	1	1		03/13/14 12:01
16G41969	WG466875-02 67umol/mol LCS RSK175	NA	1	1	STD61380	03/13/14 12:15
16G41970	WG466875-03 67umol/mol LCS2 RSK175	NA	1	1	STD61380	03/13/14 12:24
16G41971	L14030575-01 A RSK175	<2	1	1		03/13/14 12:34
16G41972	L14030576-01 A RSK175	<2	1	1		03/13/14 12:43
16G41973	WG466875-03 67umol/mol LCS2 RSK175	NA	1	1	STD61380	03/13/14 12:53
16G41974	L14030659-01 A RSK175	<2	1	1		03/13/14 13:04
16G41975	L14030660-01 A RSK175	<2	1	1		03/13/14 13:13
16G41976	L14030661-01 A RSK175	<2	1	1		03/13/14 13:24
16G41977	L14030662-01 A RSK175	<2	1	1		03/13/14 13:34
16G41978	WG466847-09 133umol/mol CCV RSK175	NA	1	1	STD55748	03/13/14 13:44
16G41979	L14030663-01 A RSK175	<2	1	1		03/13/14 13:53
16G41980	L14030672-01 A RSK175	<2	1	1		03/13/14 14:03
16G41981	L14030599-01 A RSK175	<2	1	1		03/13/14 14:12
16G41982	L14030599-03 A RSK175	<2	1	1		03/13/14 14:22
16G41983	L14030599-05 A RSK175	<2	1	1		03/13/14 14:31
16G41984	L14030689-01 A RSK175	<2	1	1		03/13/14 14:41
16G41985	L14030689-03 A RSK175	5	1	1		03/13/14 14:50
16G41986	L14030689-05 A RSK175	<2	1	1		03/13/14 15:00
16G41987	L14030576-01 B RSK175	<2	1	1		03/13/14 15:09
16G41988	L14030575-01 B 50X RSK175	<2	1	50		03/13/14 15:19
16G41989	WG466847-10 133umol/mol CCV STD RSK	NA	1	1	STD55748	03/13/14 15:28
16G41990	L14030575-01 B 20X RSK175	<2	1	20		03/13/14 15:38
16G41991	L14030599-01 B RSK175	<2	1	1		03/13/14 15:47

Approved: March 13, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 031314
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 49437

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD61380 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG466847,WG466875

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G41992	WG466847-11 133umol/MOL CCV STD RSK	NA	1	1	STD55748	03/13/14 15:57

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13				
File ID: 16G41970				
	DNR.			
14	X	50	Over Calibration Range	M,E,co2
File ID: 16G41971				
15	X	1	Carry-over contamination	
File ID: 16G41972				
24	X	1		
File ID: 16G41981				
	Sample's cap leaking, need rerun.			
31	X	20	Analyzed too dilute	CO2
File ID: 16G41988				

Approved: March 13, 2014

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 051314
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 50145

Internal Standard: NA Surrogate Standard: NA
CCV: STD63668 LCS: STD63476 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: wg475561,wg475675

Comments: Power out around 6:00, missing run L14050667-08.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G42871	WG475559-01 133umol/mol CCV RSK175	NA	1	1	STD63668	05/13/14 08:46
16G42872	WG475559-01 133umol/mol CCV RSK175	NA	1	1	STD63668	05/13/14 09:11
16G42875	WG475559-01 133umol/mol CCV RSK175	NA	1	1	STD63476	05/13/14 10:10
16G42876	WG475561-01 BLANK RSK175	NA	1	1		05/13/14 10:27
16G42877	WG475561-02 67umol/mol LCS RSK175	NA	1	1	STD63476	05/13/14 10:40
16G42878	L14050703-16 A REF RSK175	NA	1	1		05/13/14 10:50
16G42879	L14050703-17 A MS RSK175	NA	1	1	STD63476	05/13/14 10:59
16G42880	L14050703-18 A MSD RSK175	NA	1	1	STD63476	05/13/14 11:09
16G42881	L14050703-12 A RSK175	6	1	1		05/13/14 11:18
16G42882	L14050703-13 A RSK175	5	1	1		05/13/14 11:28
16G42883	L14050703-14 A RSK175	7	1	1		05/13/14 11:38
16G42884	L14050703-15 A RSK175	7	1	1		05/13/14 11:47
16G42885	L14050703-19 A RSK175	7	1	1		05/13/14 11:57
16G42886	WG475559-02 133umol/mol CCV RSK175	NA	1	1	STD63668	05/13/14 12:06
16G42887	L14050703-20 A RSK175	7	1	1		05/13/14 12:16
16G42888	L14050703-21 A RSK175	6	1	1		05/13/14 12:26
16G42889	L14050703-22 A RSK175	7	1	1		05/13/14 12:35
16G42890	L14050703-23 A RSK175	6	1	1		05/13/14 12:45
16G42891	L14050703-24 A RSK175	6	1	1		05/13/14 12:54
16G42892	L14050703-25 A RSK175	7	1	1		05/13/14 13:04
16G42893	L14050626-01 A RSK175	<2	1	1		05/13/14 13:14
16G42894	L14050290-01 A RSK175	<2	1	1		05/13/14 13:23
16G42895	L14050292-01 A RSK175	<2	1	1		05/13/14 13:33
16G42896	L14050603-12 A RSK175	6	1	1		05/13/14 13:43
16G42897	WG475559-03 133umol/mol CCV RSK175	NA	1	1	STD63668	05/13/14 13:53
16G42898	L14050603-13 A RSK175	7	1	1		05/13/14 14:02
16G42899	L14050667-01 A RSK175	<2	1	1		05/13/14 14:12
16G42900	WG475559-04 133umol/mol CCV RSK175	NA	1	1	STD63668	05/13/14 14:22
16G42902	WG475675-01 BLANK RSK175	NA	1	1		05/13/14 14:50
16G42903	WG475675-02 67umol/mol LCS RSK175	NA	1	1	STD63476	05/13/14 15:02
16G42904	WG475675-03 67umol/mol LCS2 RSK175	NA	1	1	STD63476	05/13/14 15:12
16G42905	L14050703-13 B RSK175	5	1	1		05/13/14 15:21
16G42906	L14050703-16 B 50X RSK175	7	1	50		05/13/14 15:31
16G42907	L14050703-21 B RSK175	5	1	1		05/13/14 15:40

Approved: May 15, 2014

Microbac

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 051314
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 50145

Internal Standard: NA Surrogate Standard: NA
CCV: STD63668 LCS: STD63476 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: wg475561,wg475675

Comments: Power out around 6:00, missing run L14050667-08.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G42908	L14050703-22 B 10X RSK175	7	1	10		05/13/14 15:50
16G42909	L14050703-12 B 25X RSK175	5	1	25		05/13/14 15:59
16G42910	L14050703-24 B 20X RSK175	6	1	20		05/13/14 16:09
16G42911	L14050703-23 B 25X RSK175	6	1	25		05/13/14 16:18
16G42912	WG475559-05 133umol/mol CCV RSK175	NA	1	1	STD63668	05/13/14 16:28
16G42913	L14050703-25 B 25X RSK175	7	1	25		05/13/14 16:38
16G42914	L14050703-14 B 25X RSK175	6	1	25		05/13/14 16:47
16G42915	L14050703-15 B 20X RSK175	7	1	20		05/13/14 16:57
16G42916	L14050703-19 B 25X RSK175	7	1	25		05/13/14 17:07
16G42917	L14050703-20 B 25X RSK175	7	1	25		05/13/14 17:16
16G42918	L14050703-16 B 20X RSK175	7	1	20		05/13/14 17:26
16G42919	L14050626-01 B 10X RSK175	<2	1	10		05/13/14 17:35
16G42920	L14050667-03 A RSK175	<2	1	1		05/13/14 17:45
16G42921	L14050667-06 A RSK175	<2	1	1		05/13/14 17:55
16G42922	L14050667-07 A RSK175	<2	1	1		05/13/14 18:06
16G42923	WG475559-06 133umol/mol CCV RSK175	NA	1	1	STD63668	05/13/14 18:21
16G42925	WG475559-07 133umol/mol CCV RSK175	NA	1	1	STD63668	05/14/14 00:02
16G42926	L14050667-09 A RSK175	<2	1	1		05/14/14 00:12
16G42927	L14050667-10 A RSK175	<2	1	1		05/14/14 00:22
16G42928	WG475559-08 133umol/mol CCV RSK175	NA	1	1	STD63668	05/14/14 00:31

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 16G42872				
RUN TWO BLANK NG. BLANK VIAL CONTAIMNATION.				
55	X	50	Over Calibration Range	M &CO2
File ID: 16G42878				
9	X	25	Over Calibration Range	M
File ID: 16G42881				
10	X	1	Carry-over contamination	
File ID: 16G42882				

Approved: May 15, 2014

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 051314
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 50145

Internal Standard: NA Surrogate Standard: NA
CCV: STD63668 LCS: STD63476 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: wg475561,wg475675

Comments: Power out around 6:00, missing run L14050667-08.

Comments

Seq.	Rerun	Dil.	Reason	Analytes
11	X	25	Over Calibration Range	M & CO2
File ID: 16G42883				
12	X	20	Over Calibration Range	M & CO2
File ID: 16G42884				
13	X	25	Over Calibration Range	M & CO2
File ID: 16G42885				
15	X	25	Over Calibration Range	M
File ID: 16G42887				
16	X	1	Carry-over contamination	
File ID: 16G42888				
17	X	10	Over Calibration Range	M
File ID: 16G42889				
18	X	25	Over Calibration Range	M & CO2
File ID: 16G42890				
19	X	20	Over Calibration Range	M
File ID: 16G42891				
20	X	25	Over Calibration Range	M
File ID: 16G42892				
21	X	10	Over Calibration Range	M
File ID: 16G42893				
22	X	1	Carry-over contamination	
File ID: 16G42894				

Approved: May 15, 2014

Page: 3

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 051314
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 50145

Internal Standard: NA Surrogate Standard: NA
CCV: STD63668 LCS: STD63476 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: wg475561,wg475675

Comments: Power out around 6:00, missing run L14050667-08.

Comments

Seq.	Rerun	Dil.	Reason	Analytes
46	X	10	Check Standard Failure	M
File ID: 16G42919				
50				
File ID: 16G42923				
DNR. POWER OUT RERUN CCV.				
53	X	5	Over Calibration Range	M
File ID: 16G42927				

Approved: May 15, 2014

Page: 4

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B184959

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG466847-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG466847-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG466847-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG466847-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG466847-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG466847-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG466847-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG466847-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B188217

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG475559-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG475559-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG475559-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG475559-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L14050703-24	15	mL	15	mL					5.47	mL	5.47	mL	40
L14050667-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L14050603-12	15	mL	15	mL					5.47	mL	5.47	mL	40
WG475561-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L14050703-12	15	mL	15	mL					5.47	mL	5.47	mL	40
L14050703-14	15	mL	15	mL					5.47	mL	5.47	mL	40
L14050703-21	15	mL	15	mL					5.47	mL	5.47	mL	40
L14050292-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L14050703-18	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L14050290-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L14050603-13	15	mL	15	mL					5.47	mL	5.47	mL	40
WG475561-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L14050703-25	15	mL	15	mL					5.47	mL	5.47	mL	40
L14050626-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L14050703-16	15	mL	15	mL					5.47	mL	5.47	mL	40
L14050703-13	15	mL	15	mL					5.47	mL	5.47	mL	40
L14050703-22	15	mL	15	mL					5.47	mL	5.47	mL	40
WG475561-04	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
WG475561-05	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L14050703-19	15	mL	15	mL					5.47	mL	5.47	mL	40
L14050703-20	15	mL	15	mL					5.47	mL	5.47	mL	40
L14050703-15	15	mL	15	mL					5.47	mL	5.47	mL	40
L14050703-23	15	mL	15	mL					5.47	mL	5.47	mL	40
WG475561-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L14050703-17	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAR-2014
Analyst: QX
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 59485
Analytical Workgroups: WG466847,WG466875

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	QX
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
13-MAR-2014

Secondary Reviewer:
13-MAR-2014

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-14-2014 14:08:08

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2014
Analyst: QX
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 60849
Analytical Workgroups: WG475561, WG475675

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	X
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	QX
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
13-MAY-2014

Secondary Reviewer:
15-MAY-2014

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-15-2014 11:03:43

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG475561

Login Number: L14050603

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW01-050714	12	05/07/14					05/13/2014	6.2	14		05/13/14	6.2	14	
67WW08-050714	13	05/07/14					05/13/2014	6.2	14		05/13/14	6.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3540443
Report generated 05/16/2014 15:41

METHOD BLANK SUMMARY

Login Number: L14050603
Blank File ID: 16G42876
Prep Date: 05/13/14 10:27
Analyzed Date: 05/13/14 10:27
Analyst: QX

Work Group: WG475561
Blank Sample ID: WG475561-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG475561-02	16G42877	05/13/14 10:40	01
67WW01-050714	L14050603-12	16G42896	05/13/14 13:43	01
67WW08-050714	L14050603-13	16G42898	05/13/14 14:02	01

Report Name: BLANK_SUMMARY
PDF File ID: 3540445
Report generated 05/16/2014 15:41

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14050603 Prep Date: 05/13/14 10:27 Sample ID: WG475561-01
Instrument ID: HP16 Run Date: 05/13/14 10:27 Prep Method: 5021
File ID: 16G42876 Analyst: QX Method: RSK175
Workgroup (AAB#): WG475561 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 13-MAR-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Methane	1.00	5.00	1.00	1	U
Ethene	1.00	5.00	1.00	1	U
Ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3540446
16-MAY-2014 15:41

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14050603 Run Date: 05/13/2014 Sample ID: WG475561-02
Instrument ID: HP16 Run Time: 10:40 Prep Method: 5021
File ID: 16G42877 Analyst: QX Method: RSK175
Workgroup (AAB#): WG475561 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD63476 Cal ID: HP16 - 13-MAR-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Methane	114	107	93.7	85 - 115	
Ethene	200	189	94.4	85 - 115	
Ethane	214	207	96.8	85 - 115	

LCS - Modified 03/06/2008
PDF File ID: 3540447
Report generated: 05/16/2014 15:41

Calibration Table Report
Method: RSK2EXT.M
Title: RSK175 HP16 (SOP: OVL RSK01) 031314
Last Calibration: Thu Mar 13 11:22:17 2014
Curve: WG466847
Calibration Files

		0.66	1.67	33.3	66.6	133	333	533		
		16G41959.D	16G41960.D	16G41961.D	16G41962.D	16G41963.D	16G41964.D	16G41965.D		
	Compound								Avg	%RSD
T	methane		152113	156358	148471	147571	160534	162326	154562	4.000
T	ethene		218893	264109	246356	248452	274862	280776	255575	8.856
T	acetylene		136921	226200	214096	219566	245127	247304	214869	18.841
T	ethane	215636	239717	274357	255218	257659	285198	292687	260067	10.315
T	propane	315871	358077	397923	363595	371800	416474	433753	379642	10.464
	Signal #2								0.000	0.000
T	carbon dioxide		5637	5700	5415	5391	5892	5813	5641	3.627

Thu Mar 13 11:29:59 2014

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14050603 Run Date: 03/13/2014 Sample ID: WG466847-08
Instrument ID: HP16 Run Time: 11:41 Method: RSK175
File ID: 16G41967 Analyst: QX QC Key: DOD4
ICal Workgroup: WG466847 Cal ID: HP16 - 13-MAR-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
methane		228	211	ug/L	143000	7.20	15	
ethene		398	389	ug/L	250000	2.30	15	
ethane		427	424	ug/L	258000	0.700	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3540449
Report generated 05/16/2014 15:41

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14050603
Run Date: 05/13/2014
Sample ID: WG475559-01
Instrument ID: HP16
Run Time: 10:10
Method: RSK175
File ID: 16G42875
Analyst: QX
QC Key: DOD4
Workgroup (AAB#): WG475561
Cal ID: HP16 - 13-MAR-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	221	ug/L	150000	3.03	15	
ethene		398	419	ug/L	269000	5.19	15	
ethane		427	444	ug/L	271000	4.03	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3540450
Report generated 05/16/2014 15:41

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14050603
Run Date: 05/13/2014
Sample ID: WG475559-02
Instrument ID: HP16
Run Time: 12:06
Method: RSK175
File ID: 16G42886
Analyst: QX
QC Key: DOD4
Workgroup (AAB#): WG475561
Cal ID: HP16 - 13-MAR-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	241	ug/L	164000	5.84	15	
ethene		398	407	ug/L	261000	2.11	15	
ethane		427	432	ug/L	263000	1.26	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3540450
Report generated 05/16/2014 15:41

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14050603
Run Date: 05/13/2014
Sample ID: WG475559-03
Instrument ID: HP16
Run Time: 13:53
Method: RSK175
File ID: 16G42897
Analyst: QX
QC Key: DOD4
Workgroup (AAB#): WG475561
Cal ID: HP16 - 13-MAR-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	231	ug/L	156000	1.23	15	
ethene		398	430	ug/L	276000	7.84	15	
ethane		427	455	ug/L	277000	6.68	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3540450
Report generated 05/16/2014 15:41

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14050603
Run Date: 05/13/2014
Sample ID: WG475559-04
Instrument ID: HP16
Run Time: 14:22
Method: RSK175
File ID: 16G42900
Analyst: QX
QC Key: DOD4
Workgroup (AAB#): WG475561
Cal ID: HP16 - 13-MAR-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	255	ug/L	173000	11.9	15	
ethene		398	422	ug/L	271000	6.03	15	
ethane		427	452	ug/L	275000	5.87	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3540450
Report generated 05/16/2014 15:41

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\051314\16G42896.D\FID1A.CH Vial: 22
Signal #2 : C:\MSDchem\1\DATA\051314\16G42896.D\TCD2B.CH
Acq On : 13 May 2014 13:43 Operator: QX
Sample : L14050603-12 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: May 13 13:48:35 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	3020453	19.542	umol/
2) T	ethene	1.05	17518	0.069	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.38	5192	0.020	umol/
5) T	propane	3.81	21059	0.055	umol/
7) T	carbon dioxide	0.20	132116070	23419.078	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G42896.D RSK2EXT.M Tue May 13 13:48:36 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\051314\16G42896.D\FID1A.CH Vial: 22
Signal #2 : C:\MSDchem\1\DATA\051314\16G42896.D\TCD2B.CH
Acq On : 13 May 2014 13:43 Operator: QX
Sample : L14050603-12 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: May 13 13:48 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

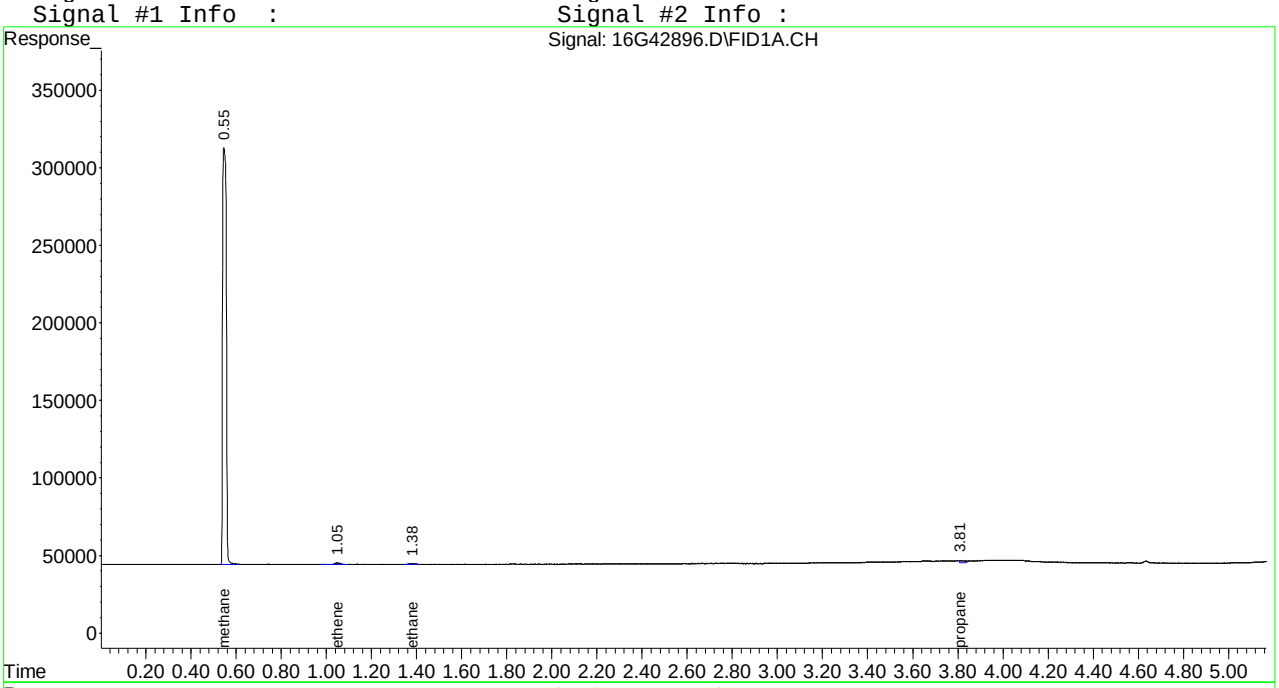

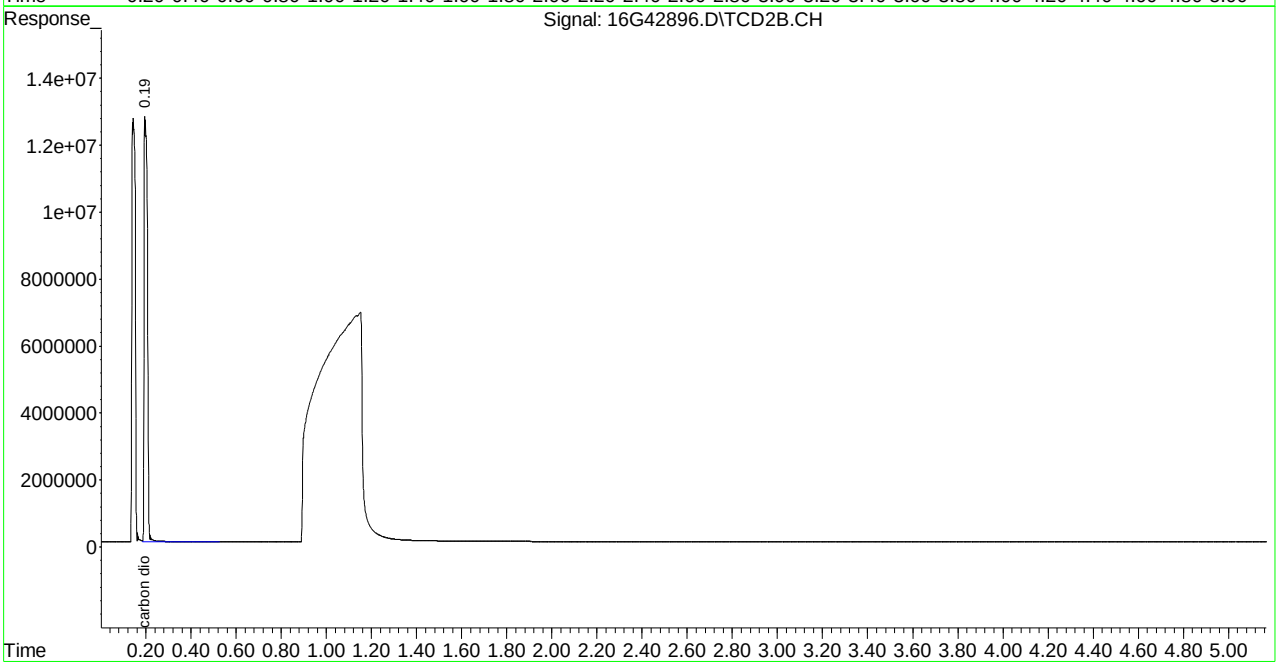

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\051314\16G42898.D\FID1A.CH Vial: 24
Signal #2 : C:\MSDchem\1\DATA\051314\16G42898.D\TCD2B.CH
Acq On : 13 May 2014 14:02 Operator: QX
Sample : L14050603-13 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: May 13 14:08:02 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	629230	4.071	umol/
2) T	ethene	1.05	35731	0.140	umol/
3) T	acetylene	1.12	8317	0.039	umol/
4) T	ethane	1.38	10617	0.041	umol/
5) T	propane	3.82	90936	0.240	umol/
7) T	carbon dioxide	0.20	77093926	13665.776	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G42898.D RSK2EXT.M Tue May 13 14:08:02 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\051314\16G42898.D\FID1A.CH Vial: 24
Signal #2 : C:\MSDchem\1\DATA\051314\16G42898.D\TCD2B.CH
Acq On : 13 May 2014 14:02 Operator: QX
Sample : L14050603-13 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: May 13 14:08 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

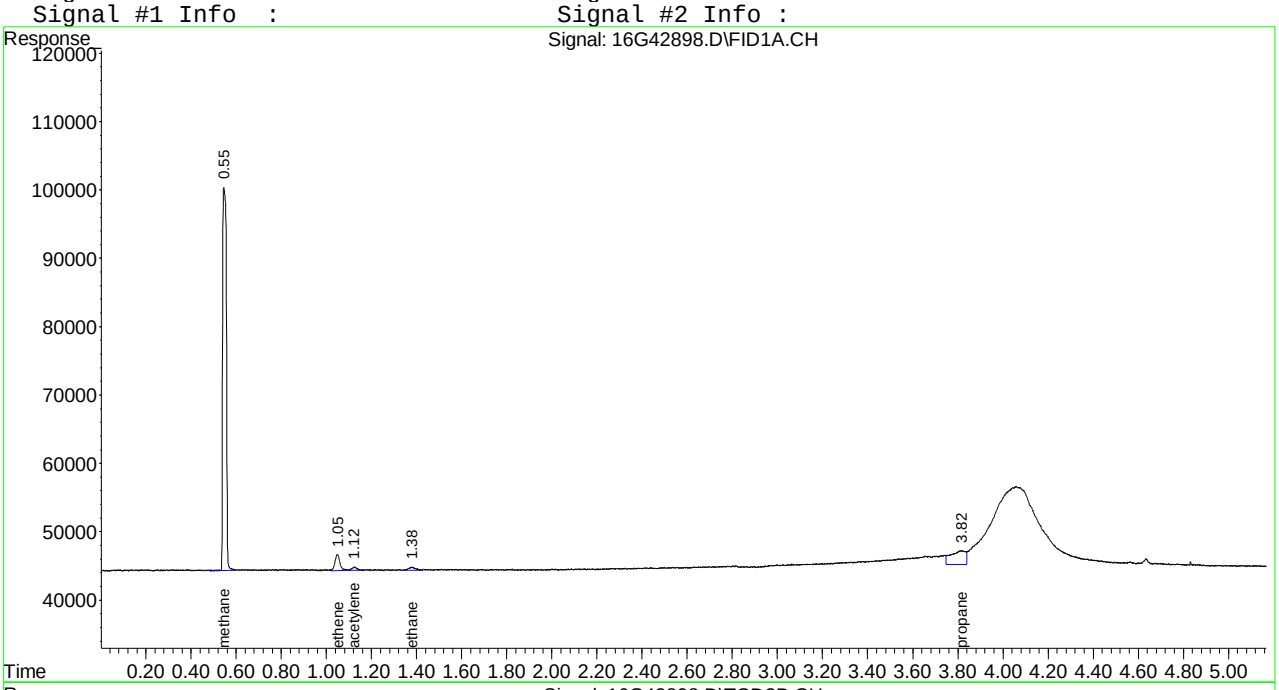

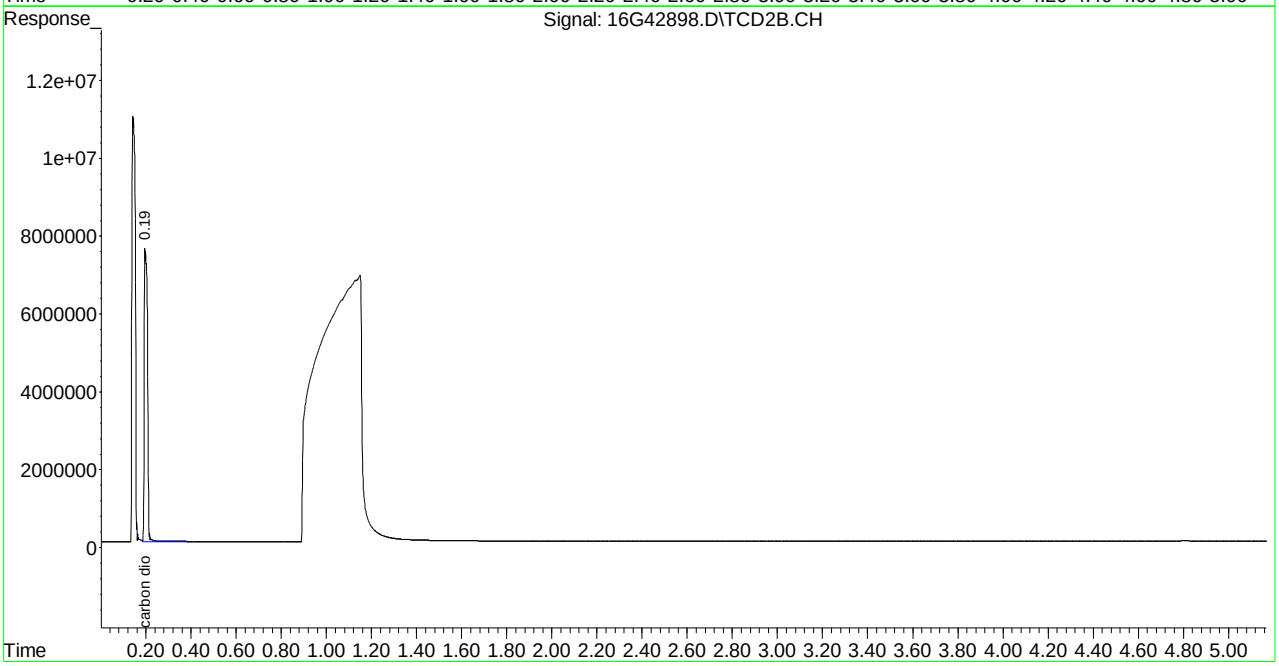

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41959.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41959.D\TCD2B.CH
Acq On : 13 Mar 2014 10:01 Operator: QX
Sample : WG466847-01 0.667umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:42:36 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	108329	0.701	umol/
2) T	ethene	1.03	120201	0.470	umol/
3) T	acetylene	1.10	72933	0.339	umol/
4) T	ethane	1.35	143829	0.553	umol/
5) T	propane	3.81	210686	0.555	umol/
7) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41959.D RSK2EXT.M Thu Mar 13 11:42:50 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41959.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41959.D\TCD2B.CH
Acq On : 13 Mar 2014 10:01 Operator: QX
Sample : WG466847-01 0.667umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:42 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

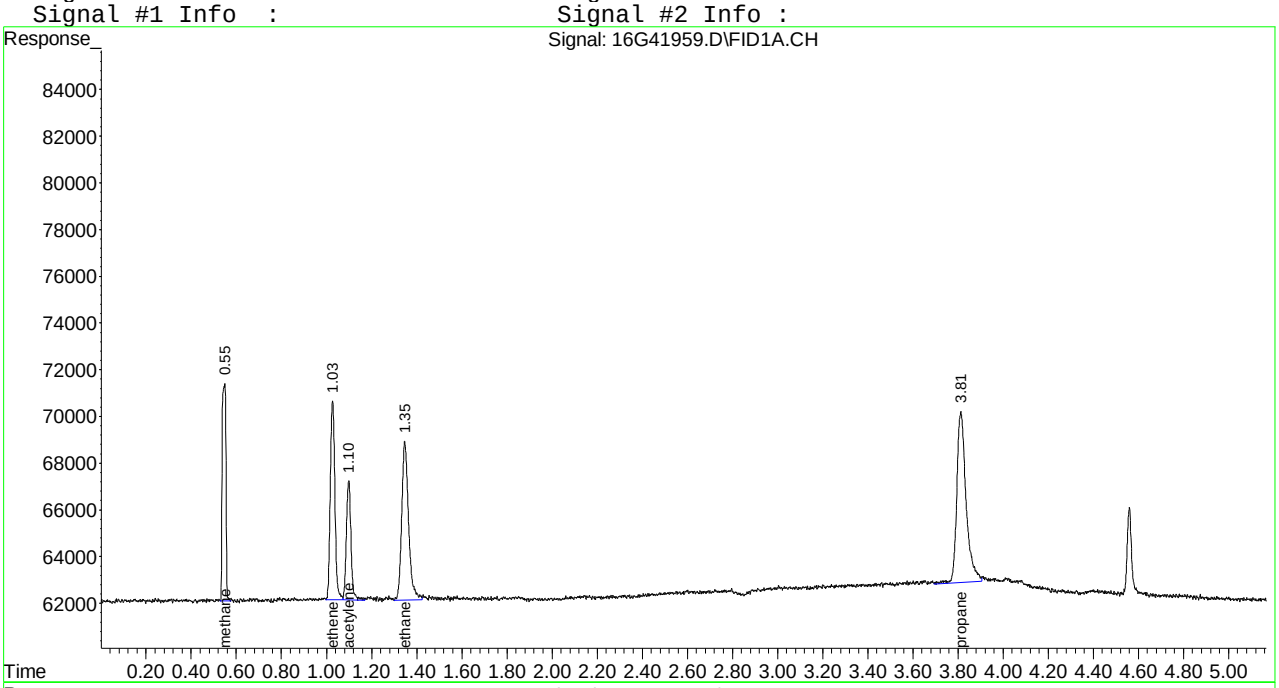

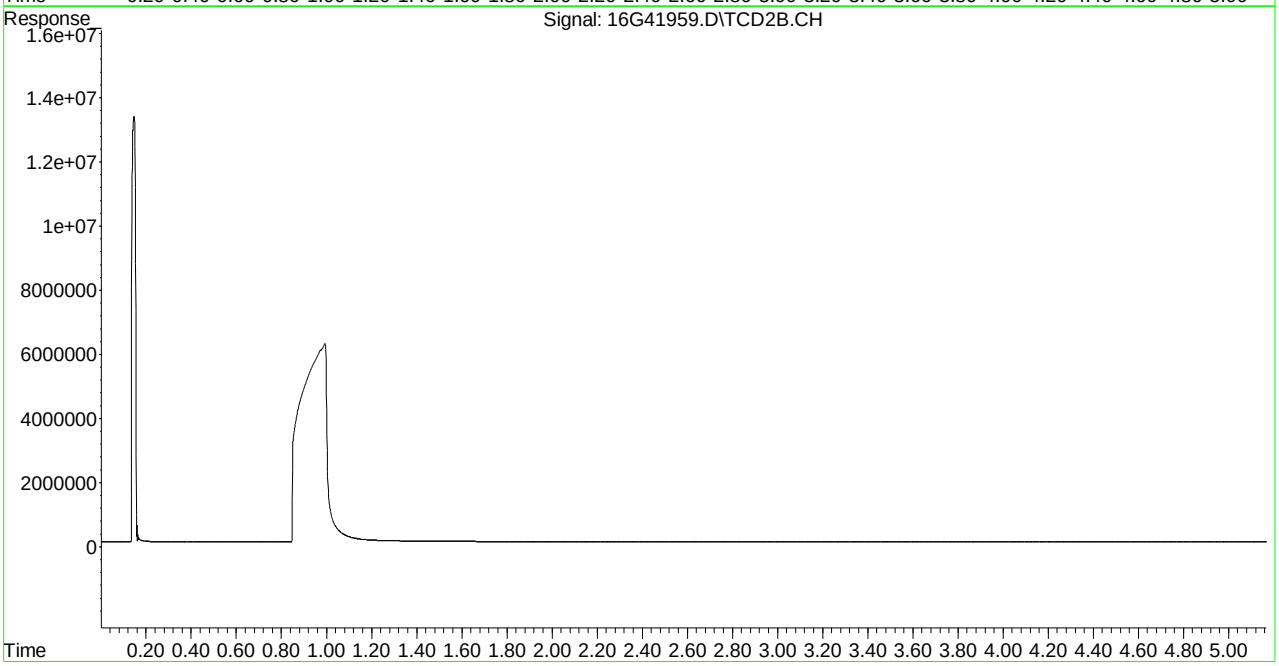

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41960.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41960.D\TCD2B.CH
Acq On : 13 Mar 2014 10:11 Operator: QX
Sample : WG466847-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:45:14 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	254028	1.644	umol/
2) T	ethene	1.05	365552	1.430	umol/
3) T	acetylene	1.12	228658	1.064	umol/
4) T	ethane	1.38	400328	1.539	umol/
5) T	propane	3.82	597989	1.575	umol/
7) T	carbon dioxide	0.20	11274112	1998.465	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41960.D RSK2EXT.M Thu Mar 13 11:45:19 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41960.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41960.D\TCD2B.CH
Acq On : 13 Mar 2014 10:11 Operator: QX
Sample : WG466847-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:45 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

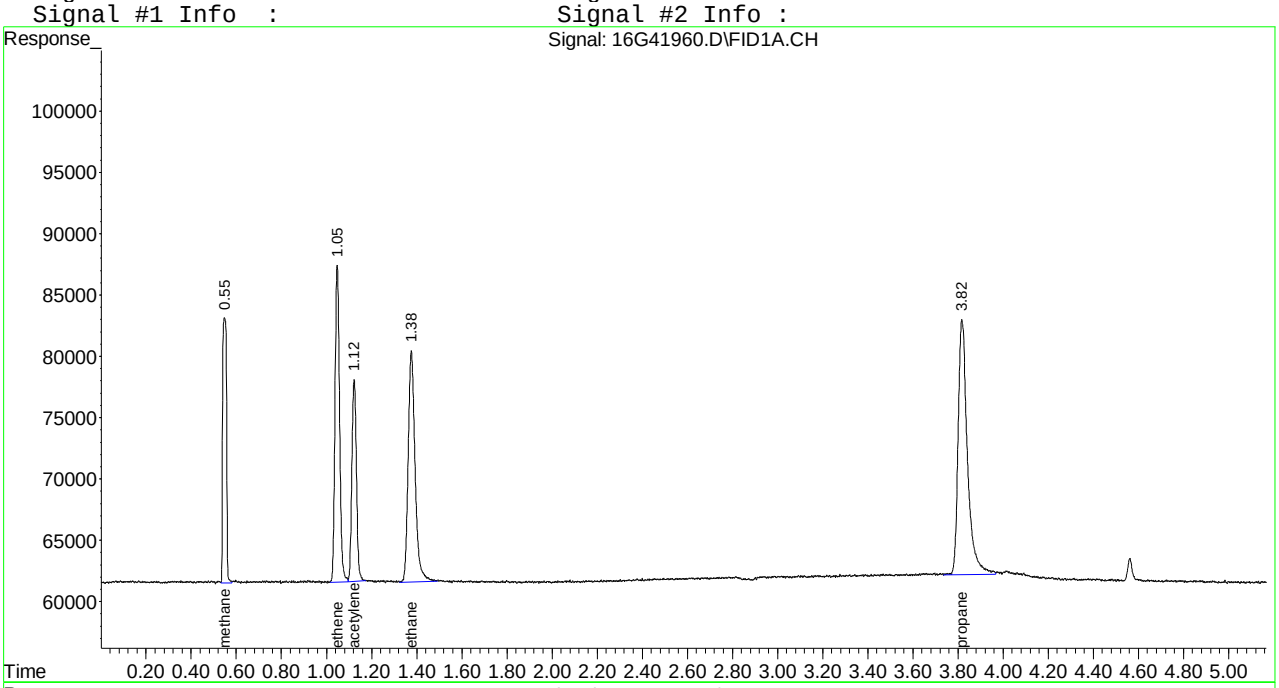

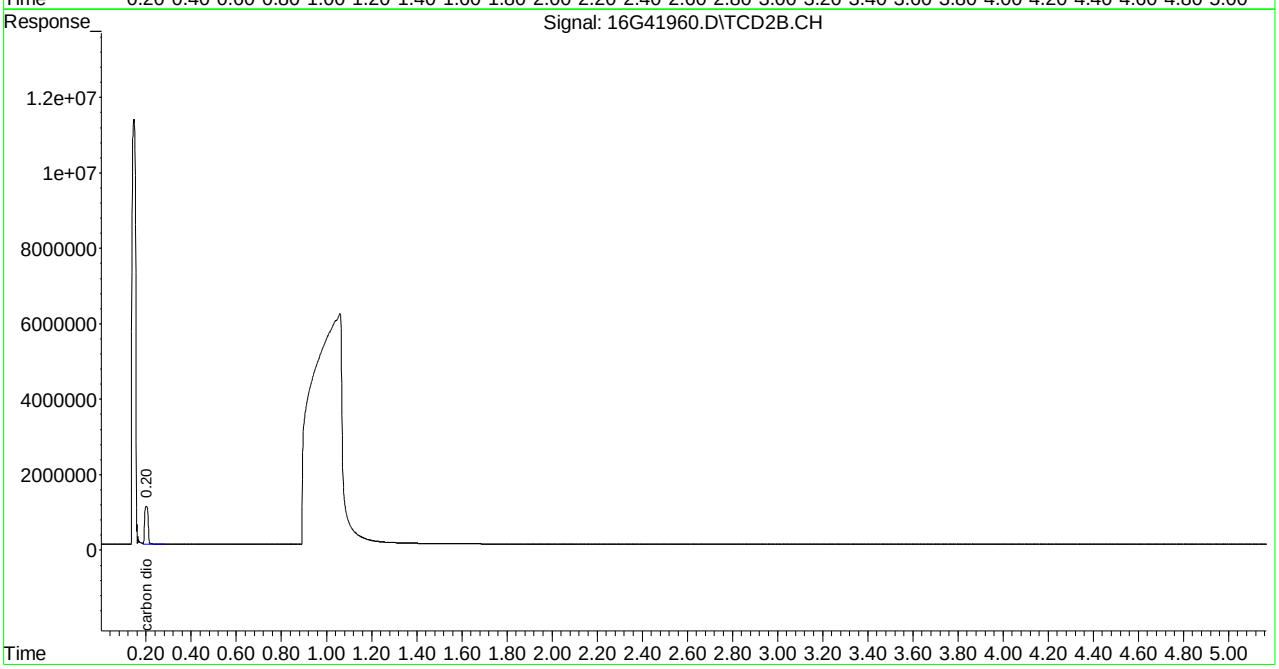

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41961.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41961.D\TCD2B.CH
Acq On : 13 Mar 2014 10:20 Operator: QX
Sample : WG466847-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:45:55 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	5212985	33.727	umol/
2) T	ethene	1.05	8805403	34.453	umol/
3) T	acetylene	1.12	7541524	35.098	umol/
4) T	ethane	1.38	9147062	35.172	umol/
5) T	propane	3.82	13266759	34.945	umol/
7) T	carbon dioxide	0.20	18998918	3367.775	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41961.D RSK2EXT.M Thu Mar 13 11:45:58 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41961.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41961.D\TCD2B.CH
Acq On : 13 Mar 2014 10:20 Operator: QX
Sample : WG466847-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:45 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

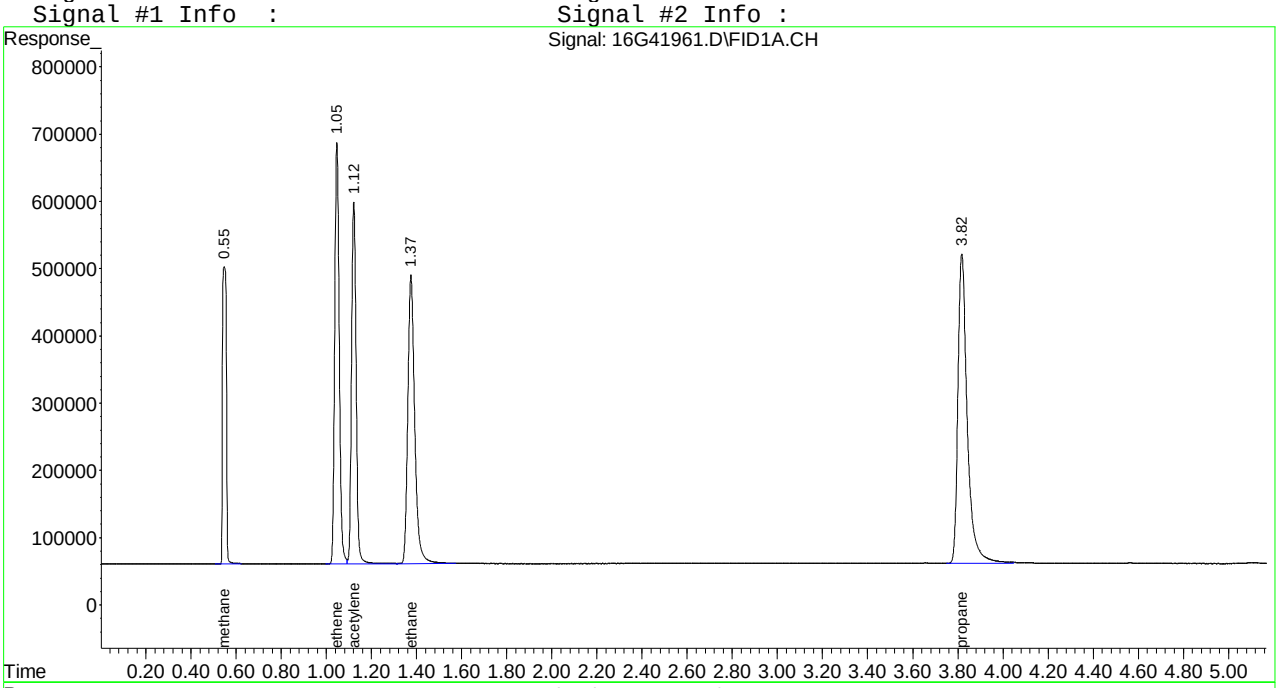

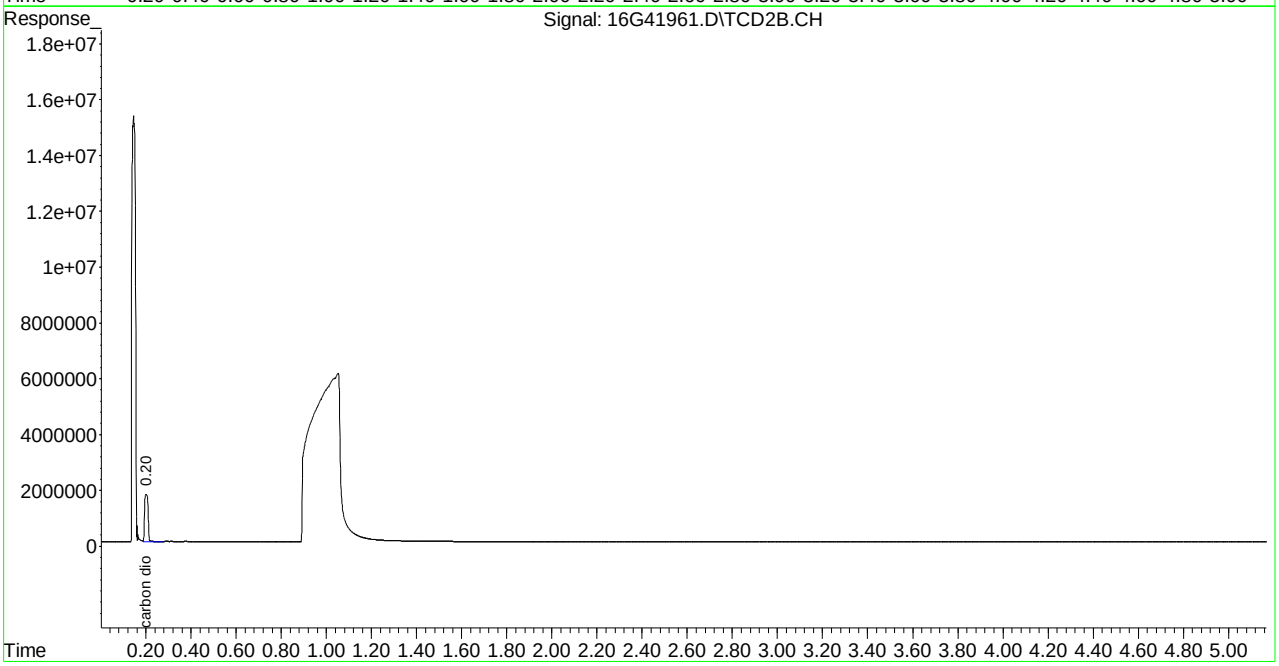

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41962.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41962.D\TCD2B.CH
Acq On : 13 Mar 2014 10:29 Operator: QX
Sample : WG466847-04 66.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:46:38 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	9898540	64.042	umol/
2) T	ethene	1.05	16424567	64.265	umol/
3) T	acetylene	1.12	14273762	66.430	umol/
4) T	ethane	1.37	17015384	65.427	umol/
5) T	propane	3.82	24240900	63.852	umol/
7) T	carbon dioxide	0.20	36105055	6400.032	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41962.D RSK2EXT.M Thu Mar 13 11:46:41 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41962.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41962.D\TCD2B.CH
Acq On : 13 Mar 2014 10:29 Operator: QX
Sample : WG466847-04 66.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:46 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

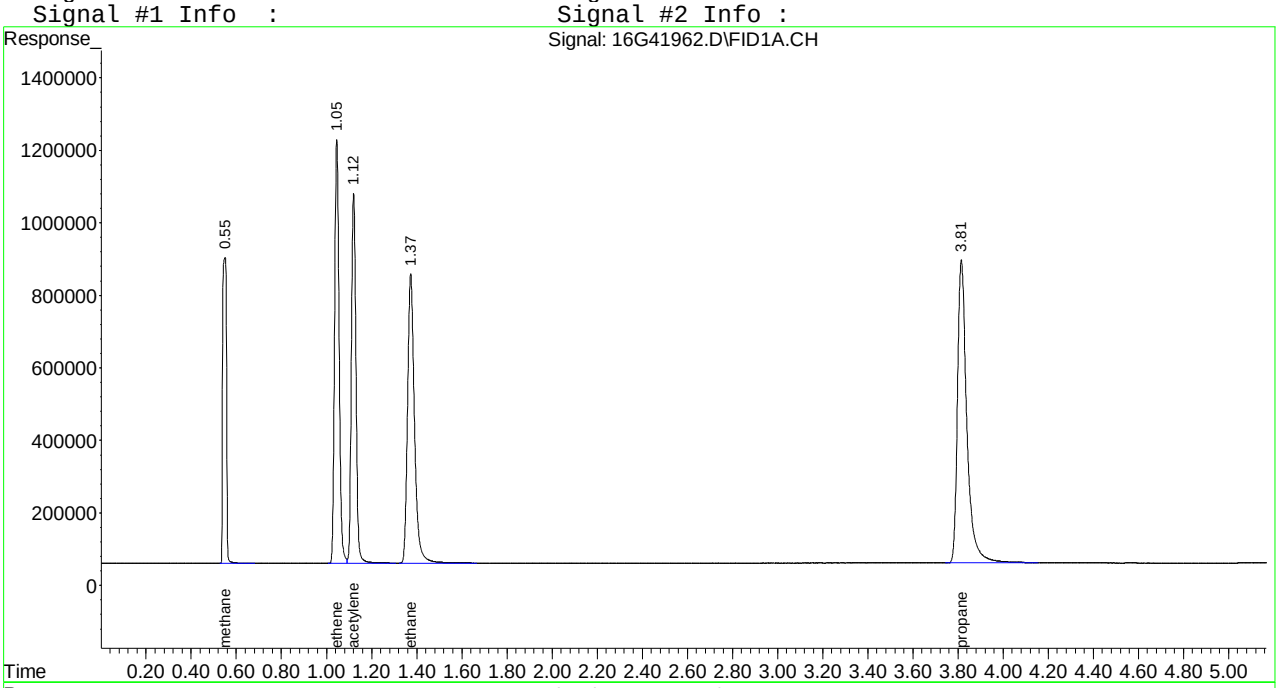

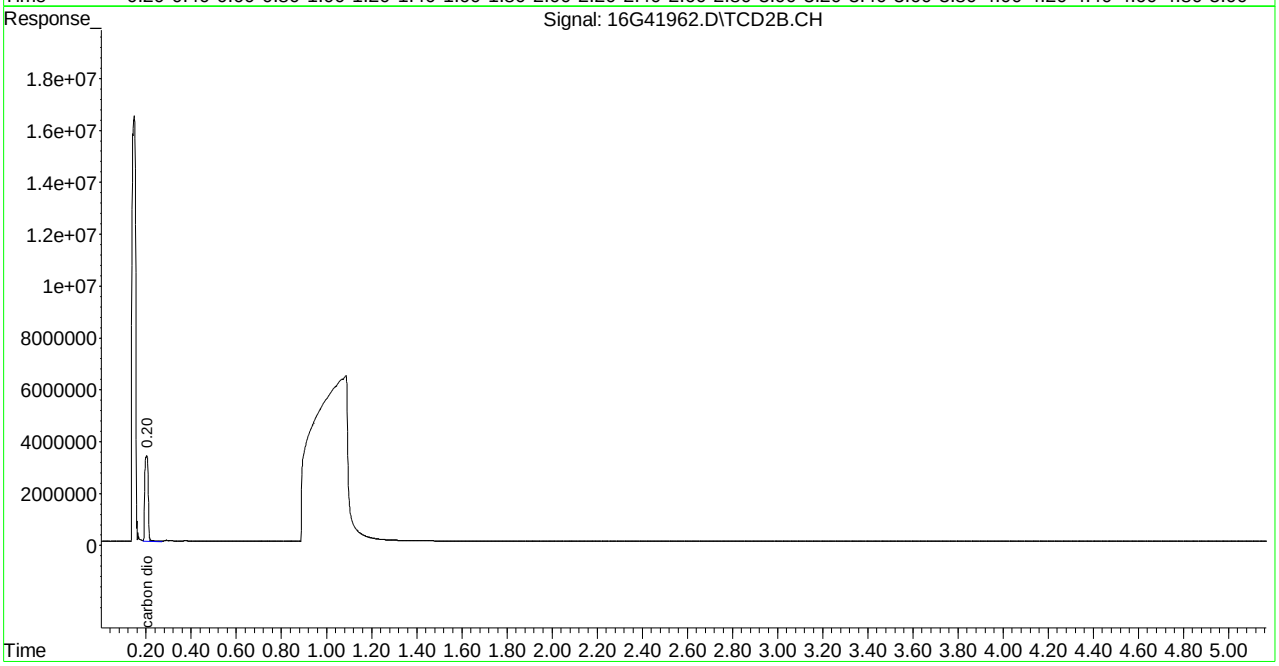

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41963.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41963.D\TCD2B.CH
Acq On : 13 Mar 2014 10:40 Operator: QX
Sample : WG466847-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:46:56 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	19626984	126.984 umol/
2) T	ethene	1.05	33044160	129.293 umol/
3) T	acetylene	1.12	29202213	135.907 umol/
4) T	ethane	1.38	34268625	131.768 umol/
5) T	propane	3.81	49449452	130.253 umol/
7) T	carbon dioxide	0.20	71877377	12741.083 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41963.D RSK2EXT.M Thu Mar 13 11:47:05 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41963.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41963.D\TCD2B.CH
Acq On : 13 Mar 2014 10:40 Operator: QX
Sample : WG466847-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:46 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

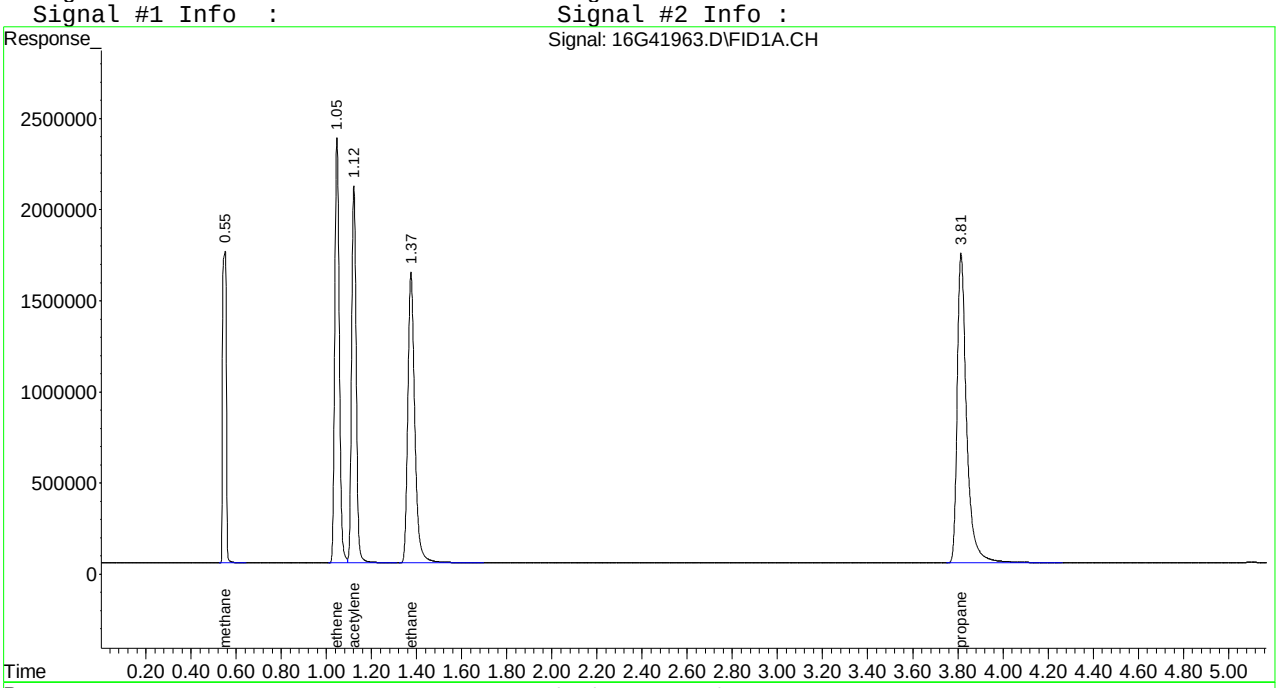

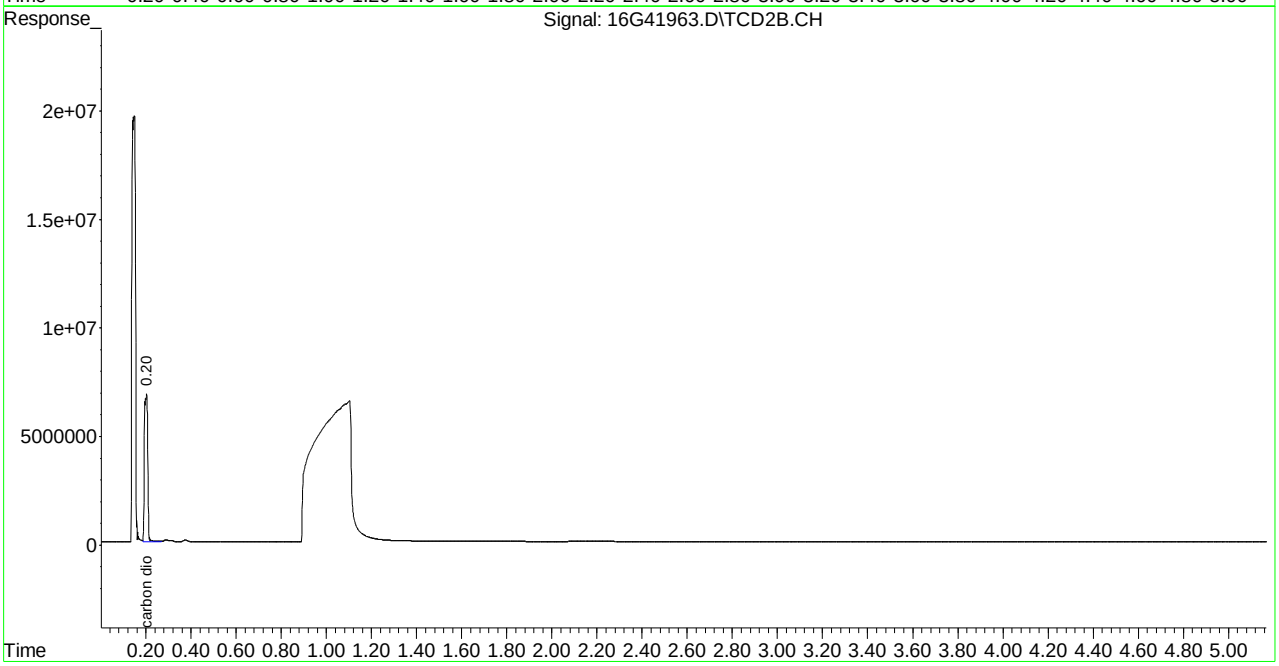

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41964.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41964.D\TCD2B.CH
Acq On : 13 Mar 2014 10:49 Operator: QX
Sample : WG466847-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:47:11 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	53457758	345.866	umol/
2) T	ethene	1.05	91529171	358.131	umol/
3) T	acetylene	1.12	81627444	379.894	umol/
4) T	ethane	1.37	94970902	365.178	umol/
5) T	propane	3.81	138685770	365.307	umol/
7) T	carbon dioxide	0.20	196381761	34810.903	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41964.D RSK2EXT.M Thu Mar 13 11:47:17 2014 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41964.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41964.D\TCD2B.CH
Acq On : 13 Mar 2014 10:49 Operator: QX
Sample : WG466847-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:47 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

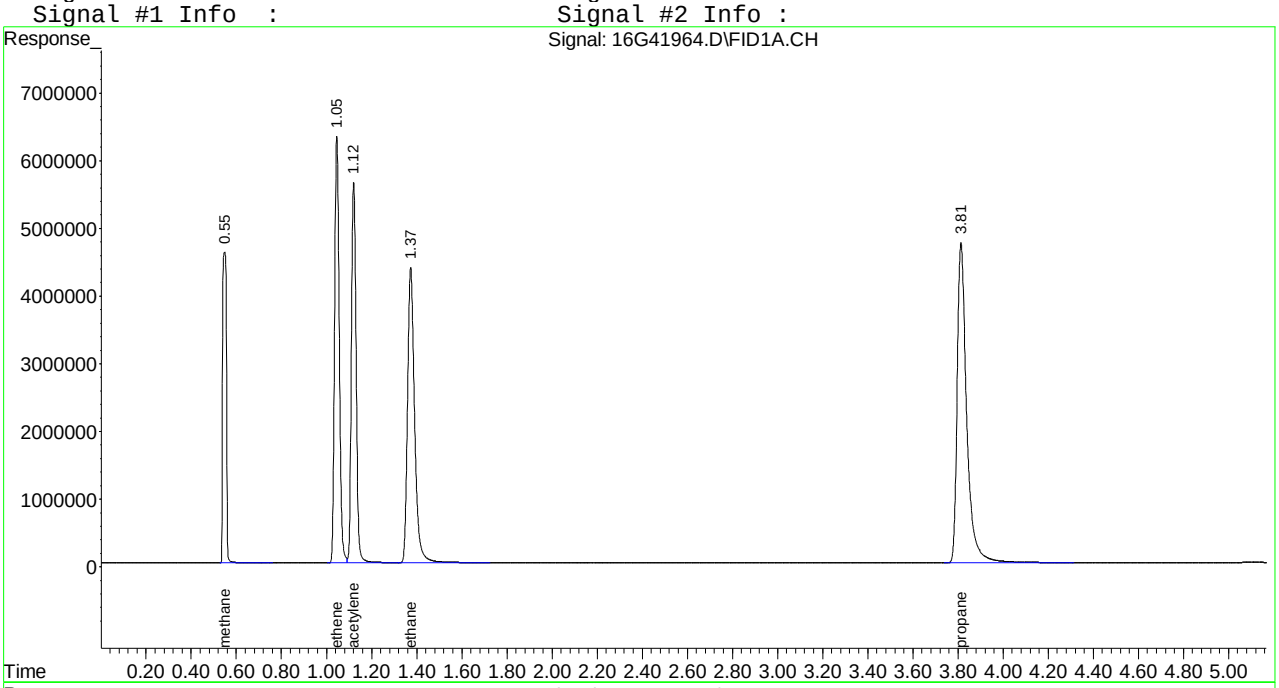

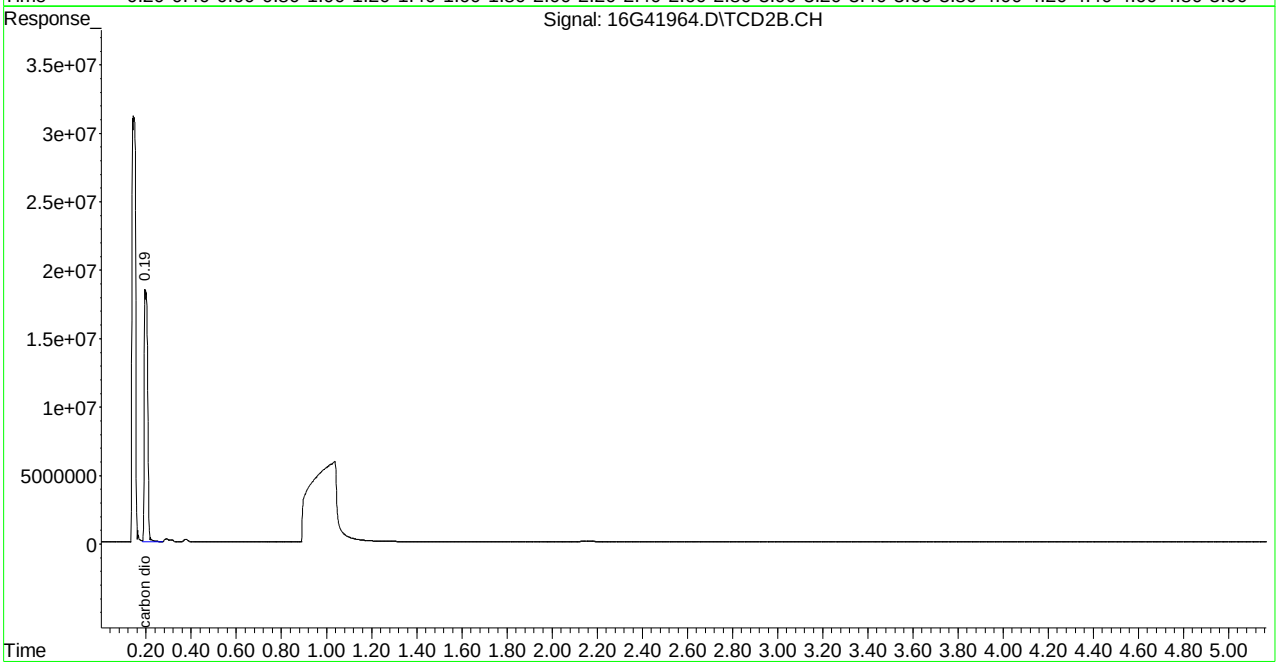

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41965.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41965.D\TCD2B.CH
Acq On : 13 Mar 2014 10:58 Operator: QX
Sample : WG466847-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:47:57 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	86519546	559.772	umol/
2) T	ethene	1.04	149653536	585.557	umol/
3) T	acetylene	1.12	131813106	613.458	umol/
4) T	ethane	1.37	156002379	599.854	umol/
5) T	propane	3.81	231190381	608.970	umol/
7) T	carbon dioxide	0.20	310029022	54956.175	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41965.D RSK2EXT.M Thu Mar 13 11:48:04 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41965.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41965.D\TCD2B.CH
Acq On : 13 Mar 2014 10:58 Operator: QX
Sample : WG466847-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:47 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

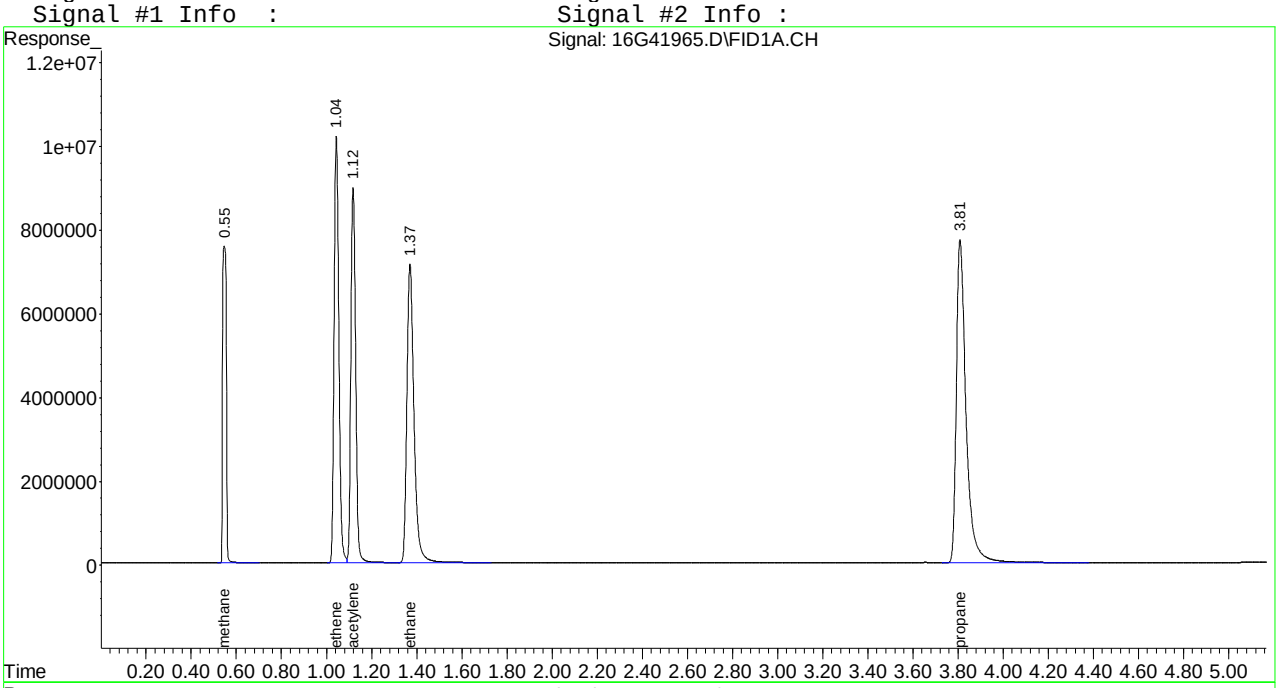

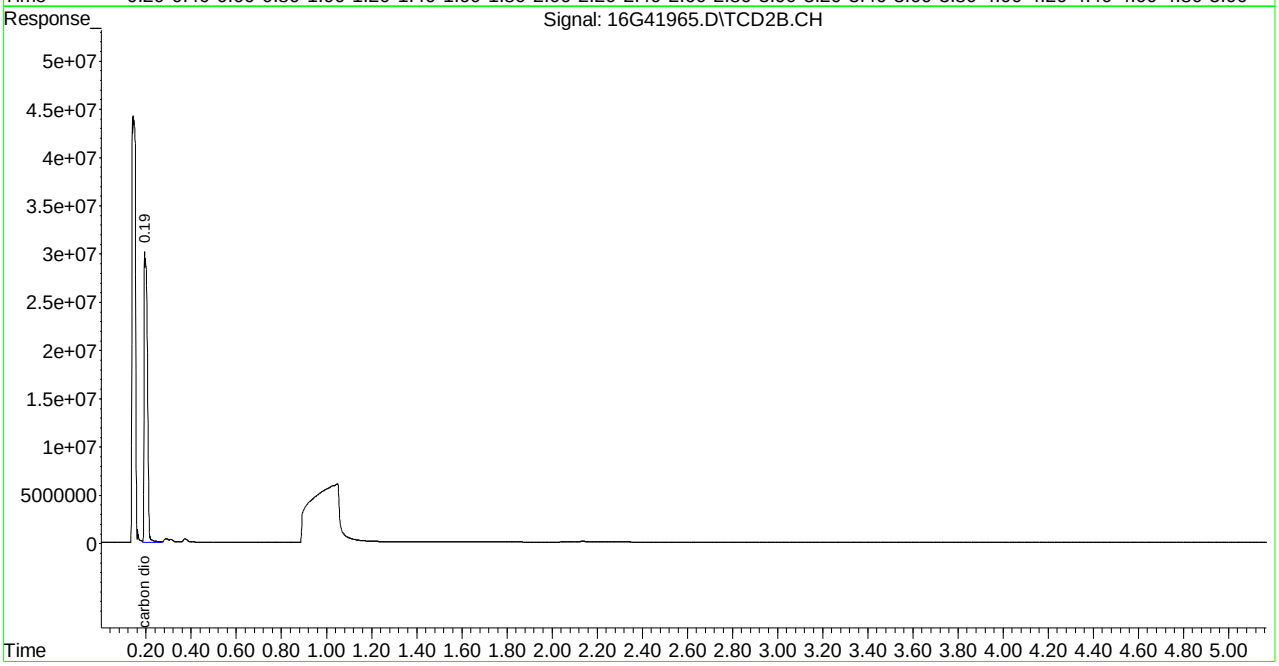

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41967.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41967.D\TCD2B.CH
Acq On : 13 Mar 2014 11:41 Operator: QX
Sample : WG466847-08 133umol/mol ICV RSK175 Inst : HP16
Misc : 1,1 STD61380 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:46:27 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	19083746	123.470	umol/
2) T	ethene	1.05	33210011	129.942	umol/
3) T	acetylene	1.12	32532725	151.407	umol/
4) T	ethane	1.38	34352966	132.093	umol/
5) T	propane	3.82	49603756	130.659	umol/
7) T	carbon dioxide	0.20	77078172	13662.984	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41967.D RSK2EXT.M Thu Mar 13 11:48:29 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41967.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41967.D\TCD2B.CH
Acq On : 13 Mar 2014 11:41 Operator: QX
Sample : WG466847-08 133umol/mol ICV RSK175 Inst : HP16
Misc : 1,1 STD61380 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:46 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

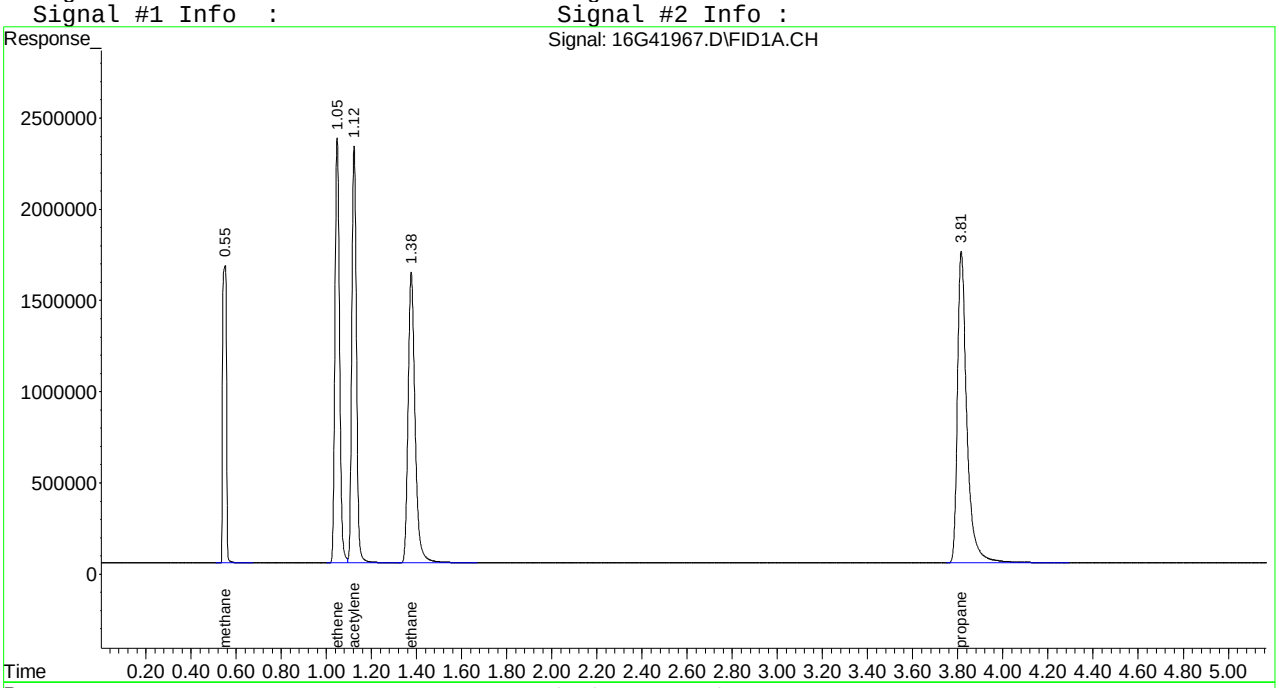

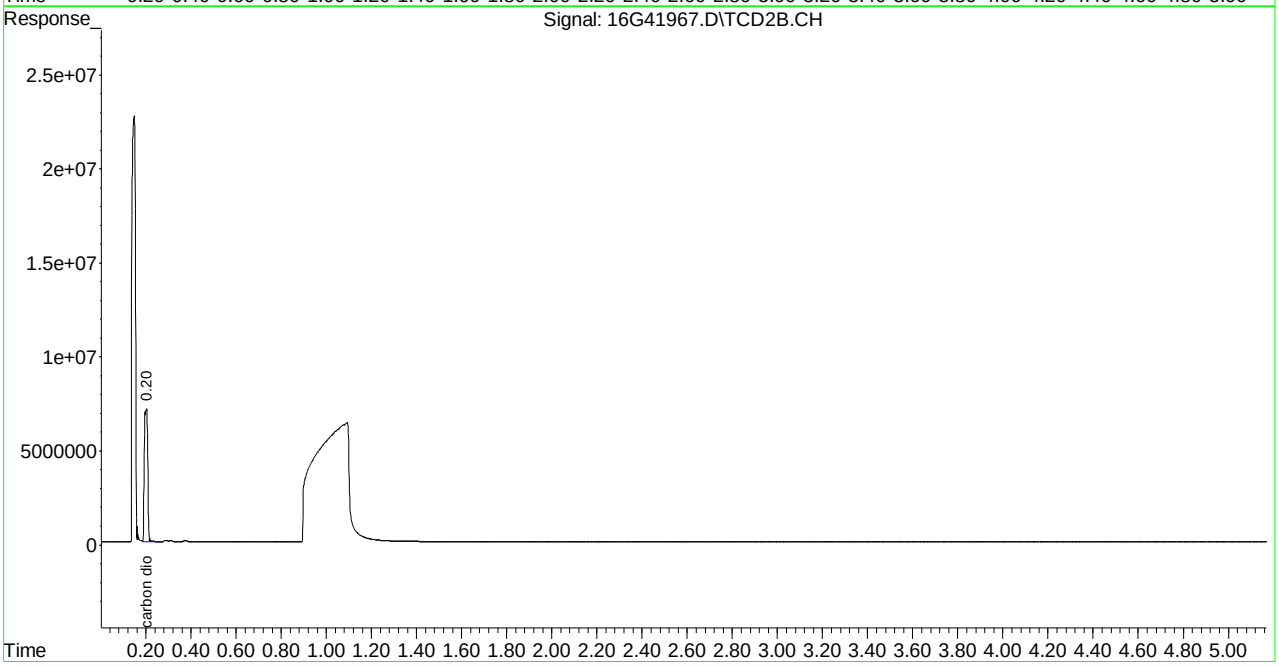

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41967.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41967.D\TCD2B.CH
Acq On : 13 Mar 2014 11:41 Operator: QX
Sample : WG466847-08 133umol/mol ICV RSK175 Inst : HP16
Misc : 1,1 STD61380 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e

Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	123.470	7.2	97	0.00
2	T	ethene	133.000	129.942	2.3	101	0.00
3	T	acetylene	133.000	151.407	-13.8	111	0.00
4	T	ethane	133.000	132.093	0.7	100	0.00
5	T	propane	133.000	130.659	1.8	100	0.00

Signal #2

7	T	carbon dioxide	13333.000	13662.984	-2.5	107	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G41967.D RSK2EXT.M Thu Mar 13 11:48:51 2014 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41967.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41967.D\TCD2B.CH
Acq On    : 13 Mar 2014  11:41                      Operator: QX
Sample    : WG466847-08 133umol/mol ICV RSK175      Inst    : HP16
Misc      : 1,1 STD61380                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e

Method       : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\051314\16G42875.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\051314\16G42875.D\TCD2B.CH
Acq On : 13 May 2014 10:10 Operator: QX
Sample : WG475559-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD63476 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: May 13 10:15:50 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	19933206	128.966	umol/
2) T	ethene	1.05	35754423	139.898	umol/
3) T	acetylene	1.12	33886876	157.709	umol/
4) T	ethane	1.38	35982530	138.358	umol/
5) T	propane	3.82	52633208	138.639	umol/
7) T	carbon dioxide	0.20	82375015	14601.909	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G42875.D RSK2EXT.M Tue May 13 10:15:51 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\051314\16G42875.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\051314\16G42875.D\TCD2B.CH
Acq On : 13 May 2014 10:10 Operator: QX
Sample : WG475559-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD63476 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: May 13 10:15 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

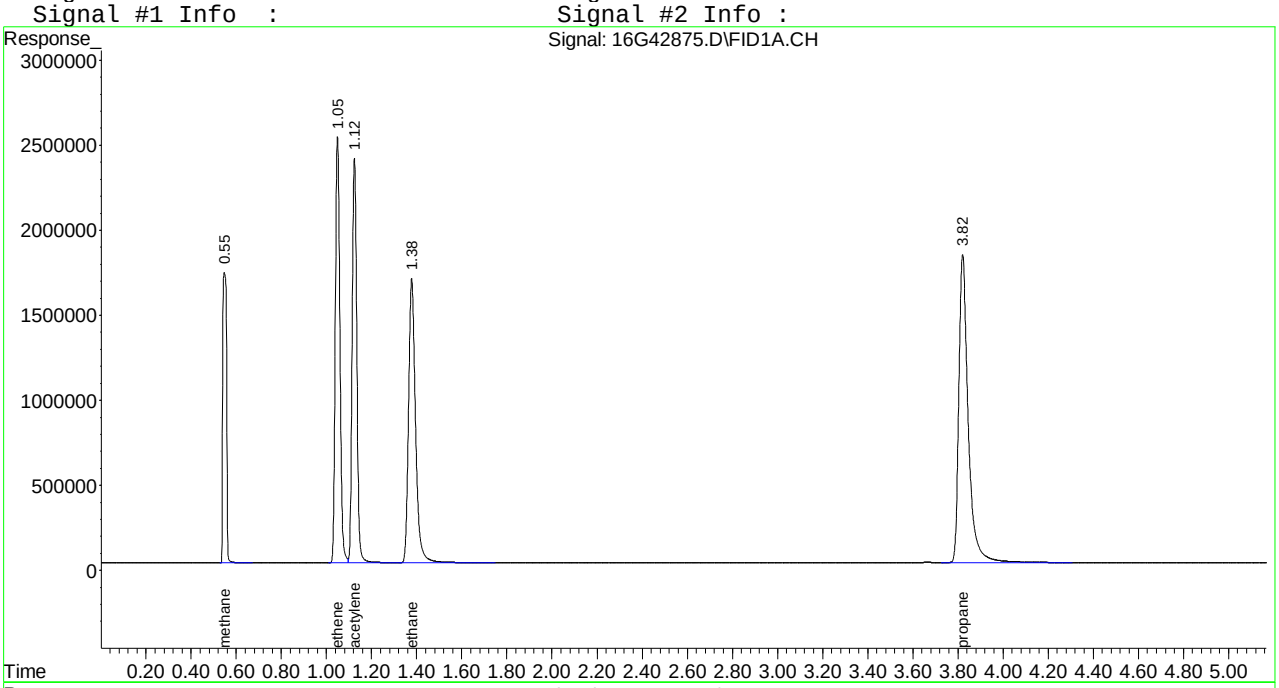

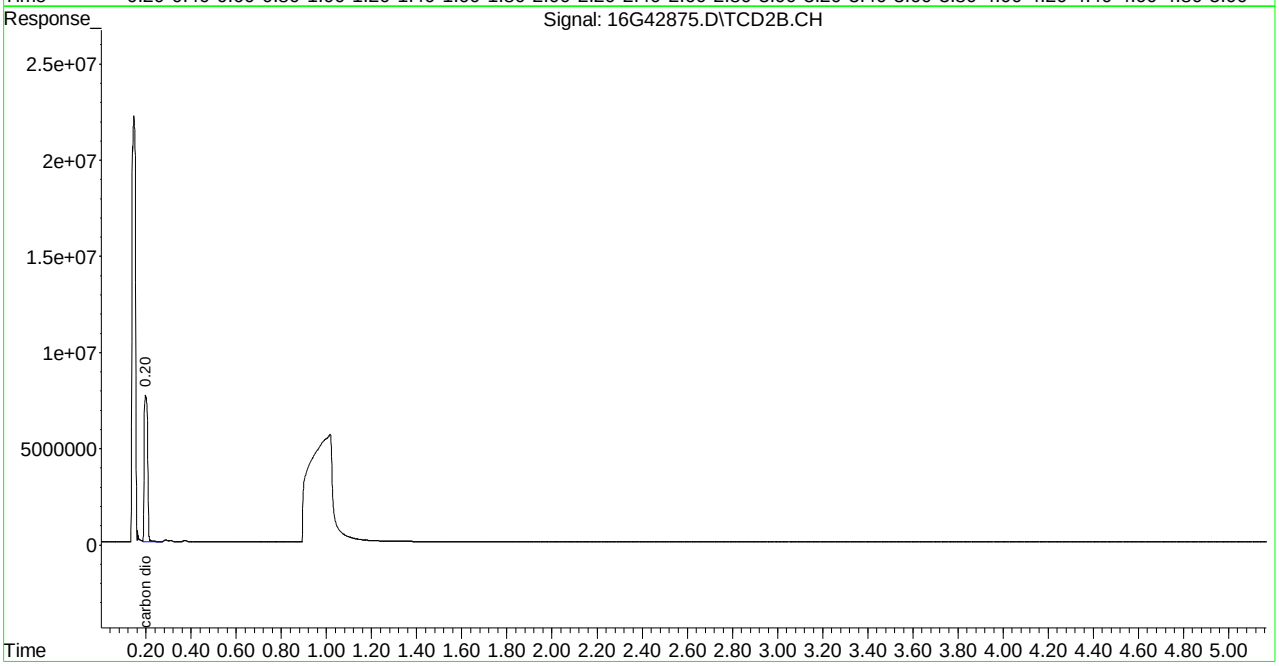

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\051314\16G42875.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\051314\16G42875.D\TCD2B.CH
Acq On : 13 May 2014 10:10 Operator: QX
Sample : WG475559-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD63476 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e

Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	128.966	3.0	102	0.00
2	T	ethene	133.000	139.898	-5.2	108	0.00
3	T	acetylene	133.000	157.709	-18.6#	116	0.00
4	T	ethane	133.000	138.358	-4.0	105	0.00
5	T	propane	133.000	138.639	-4.2	106	0.00

Signal #2

7	T	carbon dioxide	13333.000	14601.909	-9.5	115	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G42875.D RSK2EXT.M Tue May 13 10:16:08 2014 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\051314\16G42875.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\051314\16G42875.D\TCD2B.CH
Acq On    : 13 May 2014  10:10                      Operator: QX
Sample    : WG475559-01 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD63476                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e

Method       : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\051314\16G42886.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\051314\16G42886.D\TCD2B.CH
Acq On : 13 May 2014 12:06 Operator: QX
Sample : WG475559-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD63668 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: May 13 12:12:10 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	21757875	140.771	umol/
2) T	ethene	1.05	34710095	135.812	umol/
3) T	acetylene	1.12	32112852	149.453	umol/
4) T	ethane	1.38	35025346	134.678	umol/
5) T	propane	3.82	52009213	136.995	umol/
7) T	carbon dioxide	0.20	77495908	13737.032	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G42886.D RSK2EXT.M Tue May 13 12:12:10 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\051314\16G42886.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\051314\16G42886.D\TCD2B.CH
Acq On : 13 May 2014 12:06 Operator: QX
Sample : WG475559-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD63668 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: May 13 12:12 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

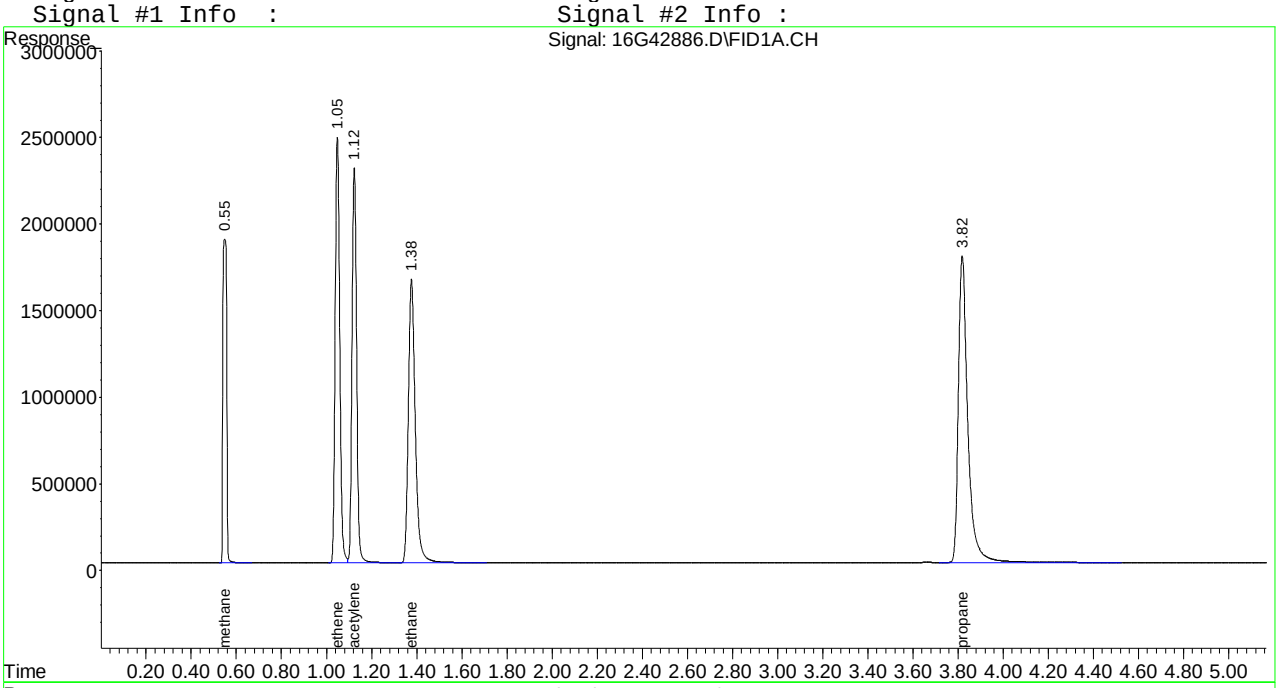

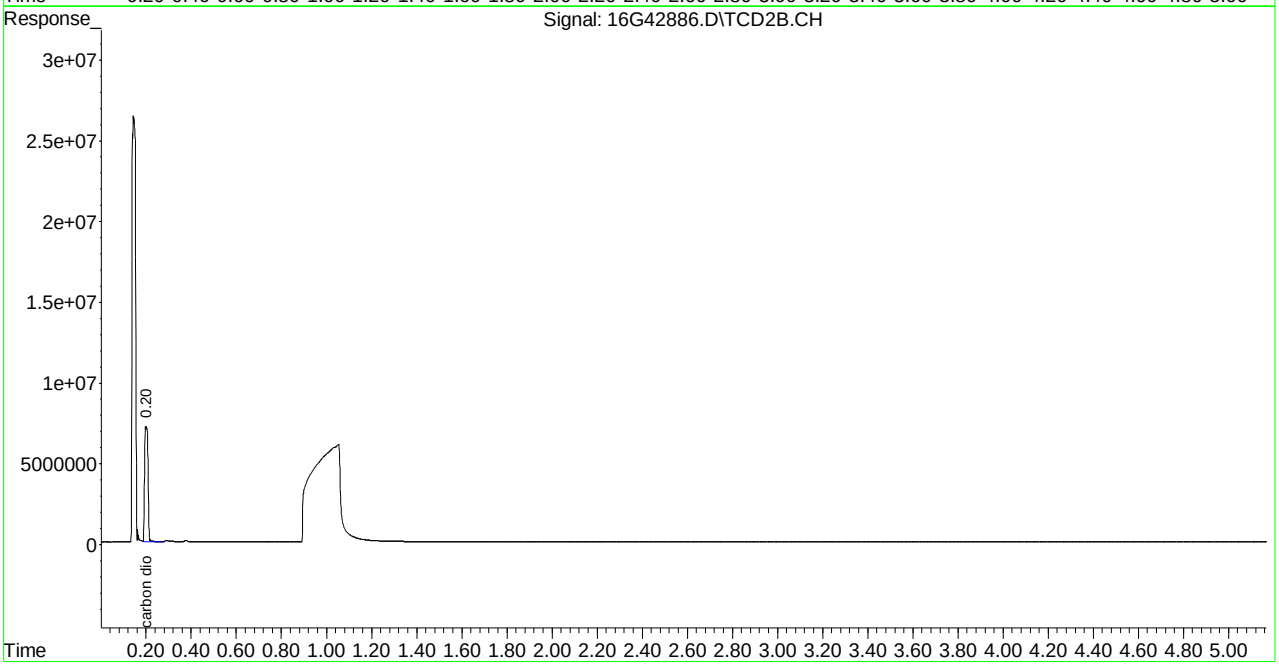

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\051314\16G42886.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\051314\16G42886.D\TCD2B.CH
Acq On : 13 May 2014 12:06 Operator: QX
Sample : WG475559-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD63668 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e

Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	140.771	-5.8	111	0.00
2	T	ethene	133.000	135.812	-2.1	105	0.00
3	T	acetylene	133.000	149.453	-12.4	110	0.00
4	T	ethane	133.000	134.678	-1.3	102	0.00
5	T	propane	133.000	136.995	-3.0	105	0.00

Signal #2

7	T	carbon dioxide	13333.000	13737.032	-3.0	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G42886.D RSK2EXT.M Tue May 13 12:12:21 2014 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\051314\16G42886.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\051314\16G42886.D\TCD2B.CH
Acq On    : 13 May 2014  12:06                      Operator: QX
Sample    : WG475559-02 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD63668                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e

Method       : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\051314\16G42897.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDchem\1\DATA\051314\16G42897.D\TCD2B.CH
Acq On    : 13 May 2014  13:53                        Operator: QX
Sample    : WG475559-03 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD63668                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e
Quant Time: May 13 13:58:14 2014  Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	20809267	134.634 umol/
2) T	ethene	1.05	36656891	143.429 umol/
3) T	acetylene	1.12	34436378	160.267 umol/
4) T	ethane	1.38	36900939	141.890 umol/
5) T	propane	3.82	54641188	143.928 umol/
7) T	carbon dioxide	0.20	84685330	15011.439 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G42897.D RSK2EXT.M Tue May 13 13:58:15 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\051314\16G42897.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDchem\1\DATA\051314\16G42897.D\TCD2B.CH
Acq On : 13 May 2014 13:53 Operator: QX
Sample : WG475559-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD63668 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: May 13 13:58 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

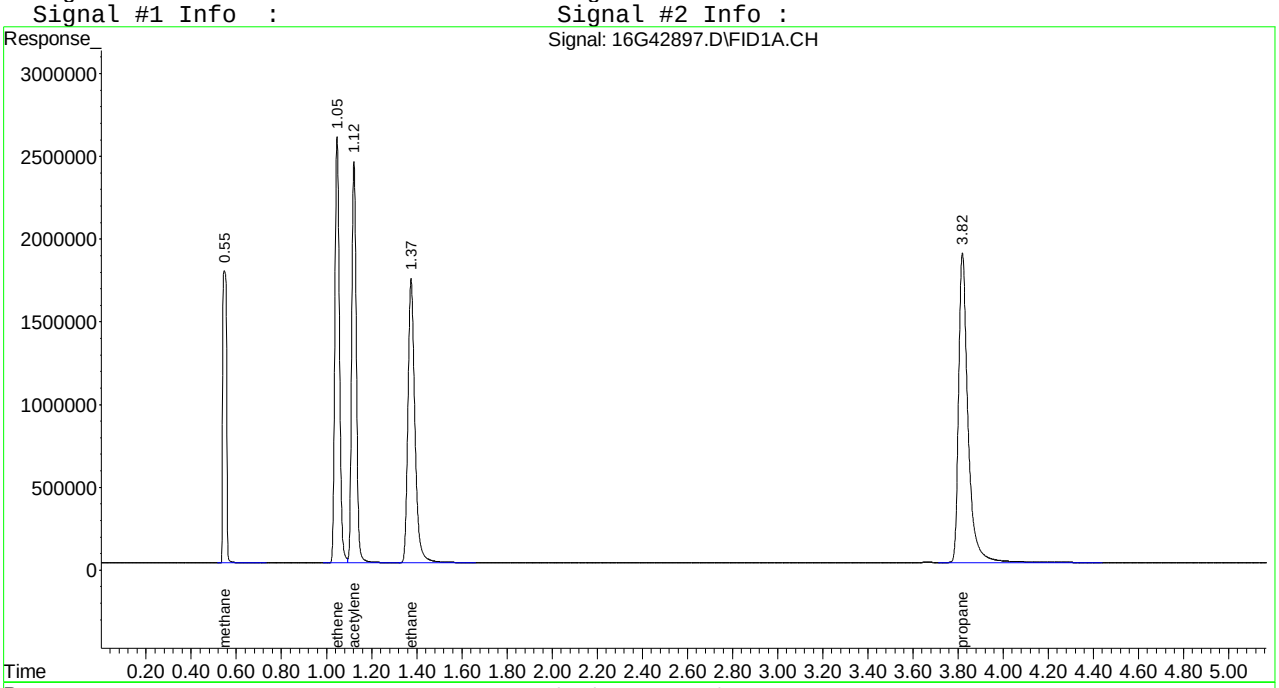

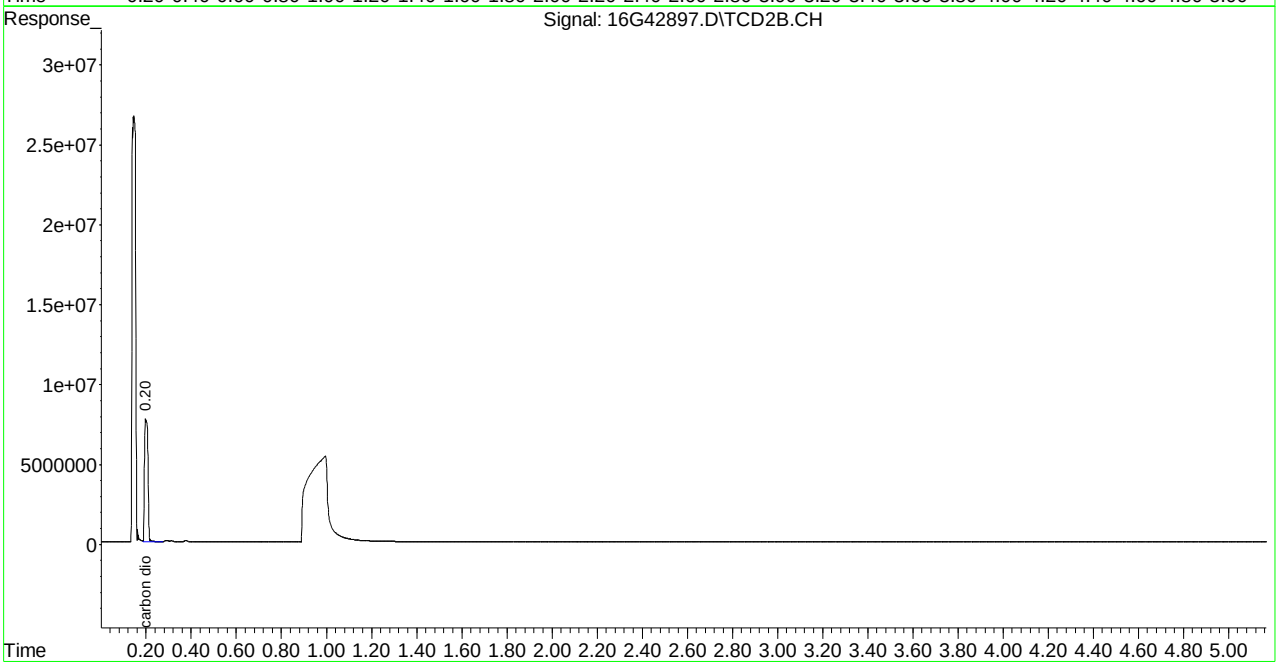

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\051314\16G42897.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDCHEM\1\DATA\051314\16G42897.D\TCD2B.CH
Acq On : 13 May 2014 13:53 Operator: QX
Sample : WG475559-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD63668 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e

Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	134.634	-1.2	106	0.00
2	T	ethene	133.000	143.429	-7.8	111	0.00
3	T	acetylene	133.000	160.267	-20.5#	118	0.00
4	T	ethane	133.000	141.890	-6.7	108	0.00
5	T	propane	133.000	143.928	-8.2	110	0.00

Signal #2

7	T	carbon dioxide	13333.000	15011.439	-12.6	118	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G42897.D RSK2EXT.M Tue May 13 13:58:41 2014 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\051314\16G42897.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDCHEM\1\DATA\051314\16G42897.D\TCD2B.CH
Acq On    : 13 May 2014  13:53                        Operator: QX
Sample    : WG475559-03 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD63668                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e

Method       : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\051314\16G42900.D\FID1A.CH Vial: 26
Signal #2 : C:\MSDchem\1\DATA\051314\16G42900.D\TCD2B.CH
Acq On : 13 May 2014 14:22 Operator: QX
Sample : WG475559-04 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD63668 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: May 13 14:27:27 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	23007268	148.855 umol/
2) T	ethene	1.05	36039740	141.014 umol/
3) T	acetylene	1.12	31704494	147.553 umol/
4) T	ethane	1.38	36621025	140.814 umol/
5) T	propane	3.82	54599811	143.819 umol/
7) T	carbon dioxide	0.20	75217181	13333.102 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G42900.D RSK2EXT.M Tue May 13 14:27:28 2014 Page 1

Signal #1 : C:\MSDchem\1\DATA\051314\16G42900.D\FID1A.CH Vial: 26
Signal #2 : C:\MSDchem\1\DATA\051314\16G42900.D\TCD2B.CH
Acq On : 13 May 2014 14:22 Operator: QX
Sample : WG475559-04 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD63668 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: May 13 14:27 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

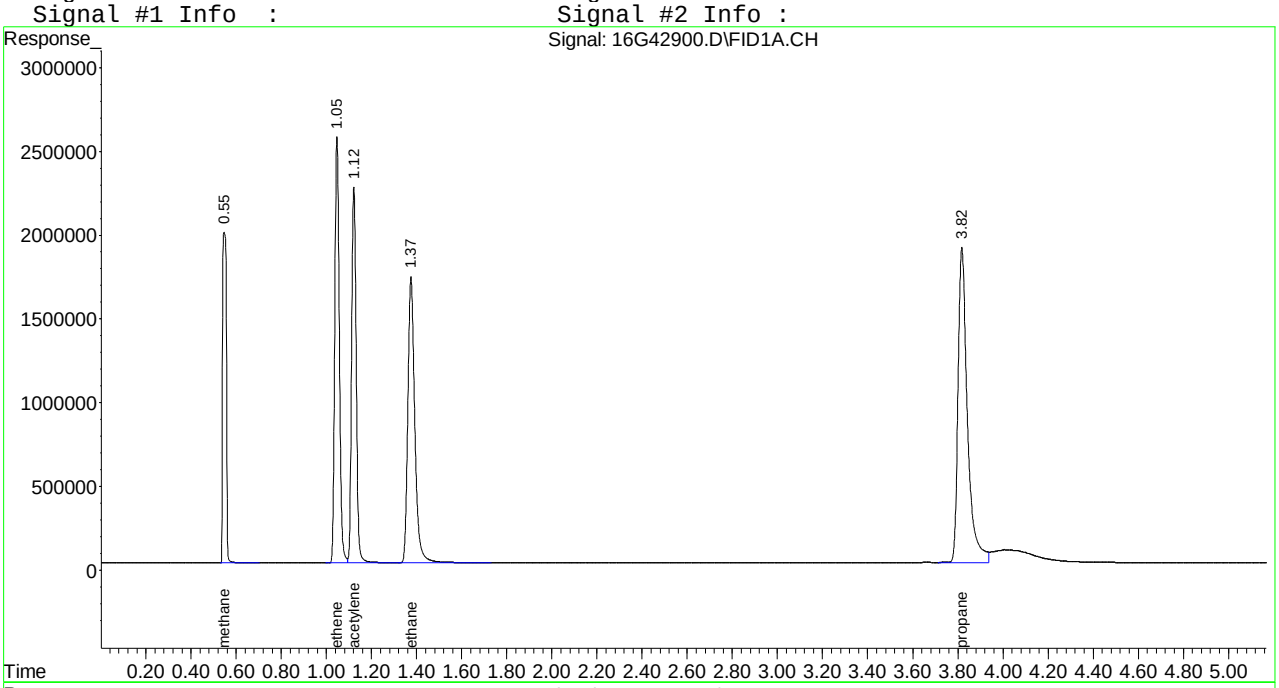

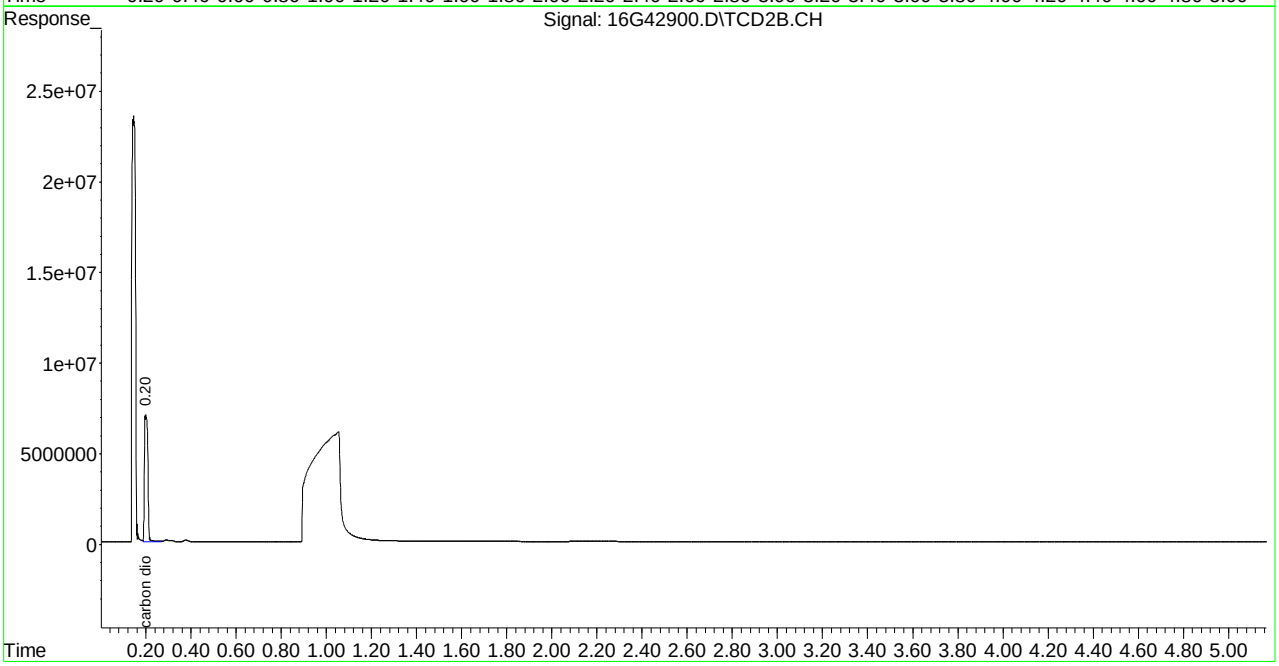

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\051314\16G42900.D\FID1A.CH Vial: 26
Signal #2 : C:\MSDCHEM\1\DATA\051314\16G42900.D\TCD2B.CH
Acq On : 13 May 2014 14:22 Operator: QX
Sample : WG475559-04 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD63668 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e

Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	148.855	-11.9	117	0.00
2	T	ethene	133.000	141.014	-6.0	109	0.00
3	T	acetylene	133.000	147.553	-10.9	109	0.00
4	T	ethane	133.000	140.814	-5.9	107	0.00
5	T	propane	133.000	143.819	-8.1	110	0.00

Signal #2

7	T	carbon dioxide	13333.000	13333.102	-0.0	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G42900.D RSK2EXT.M Tue May 13 14:28:09 2014 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\051314\16G42900.D\FID1A.CH Vial: 26
Signal #2 : C:\MSDCHEM\1\DATA\051314\16G42900.D\TCD2B.CH
Acq On    : 13 May 2014  14:22                        Operator: QX
Sample    : WG475559-04 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD63668                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e

Method       : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L14050603 **Run Date:** 05/13/2014 **Sample ID:** WG475559-01
Instrument: HP16 **Run Time:** 10:10 **Method:** RSK175
Workgroup (AAB#): WG475561 **File ID:** 16G42875

RT Standard	Analysis Date	File ID	Analyst
WG459566-01	01/16/2014	16G41288	QX
WG459109-09	01/13/2014	16G41276	FJB
WG458963-01	01/10/2014	16G41231	MDA

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.55	.55	.55	.55	0.520	0.580
ETHENE	1.04	1.05	1.05	1.05	1.020	1.080
ETHANE	1.37	1.37	1.38	1.38	1.350	1.410
PROPANE	3.82	3.82	3.82	3.82	3.790	3.850
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.12	1.12	1.12	1.12	1.090	1.150

RT_WIN - Modified 01/06/2010
PDF File ID: 3540451
Report generated 05/16/2014 15:41

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\051314\16G42876.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\051314\16G42876.D\TCD2B.CH
Acq On : 13 May 2014 10:27 Operator: QX
Sample : WG475561-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: May 13 10:32:45 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	19668	0.127	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	1.12	3249	0.015	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
7) T	carbon dioxide	0.20	616369	109.258	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G42876.D RSK2EXT.M Tue May 13 10:32:57 2014 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\051314\16G42876.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\051314\16G42876.D\TCD2B.CH
Acq On : 13 May 2014 10:27 Operator: QX
Sample : WG475561-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: May 13 10:32 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

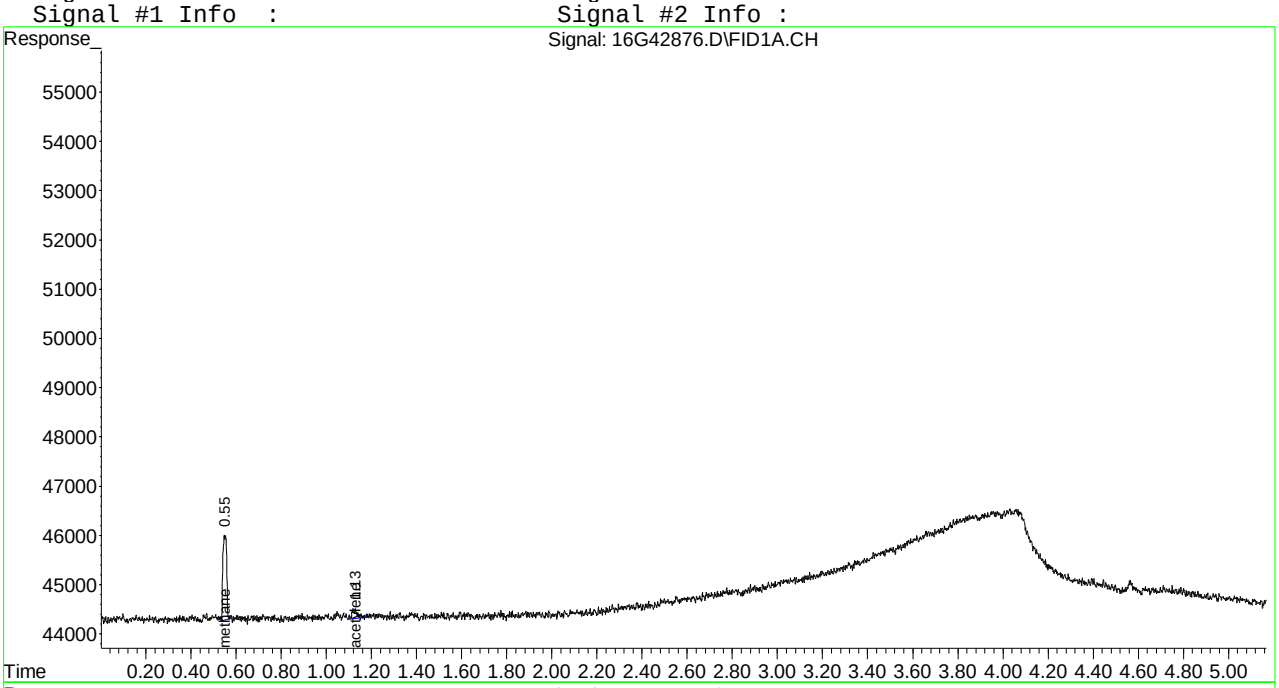

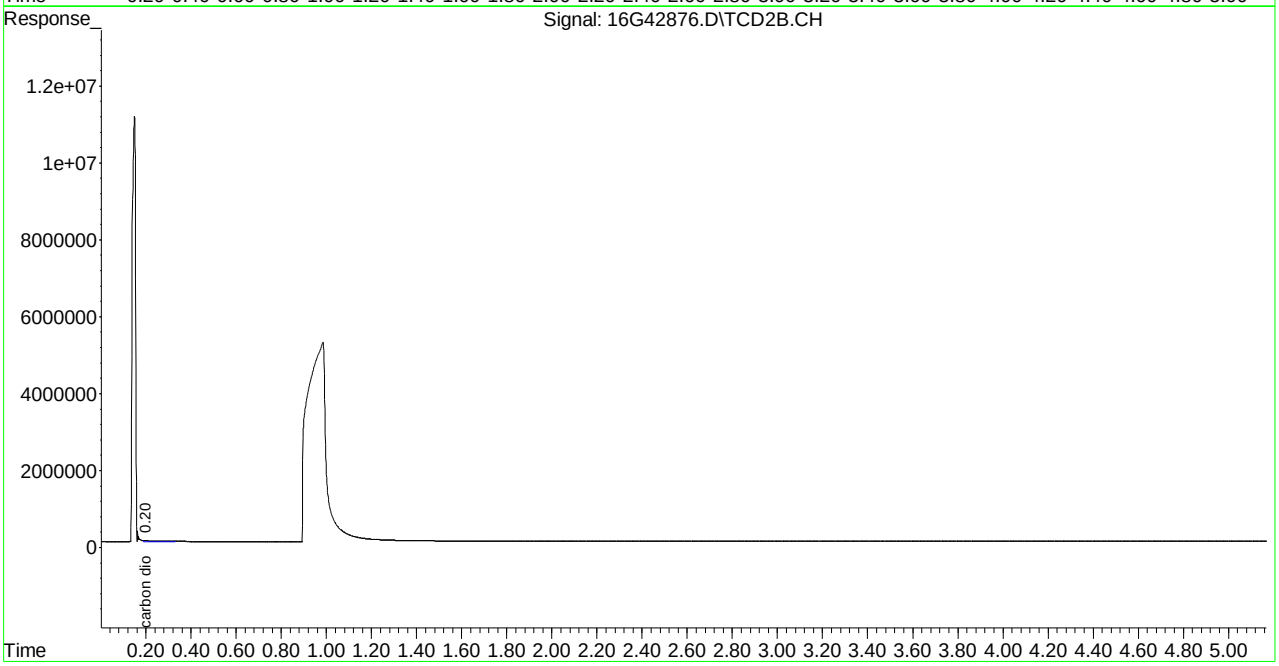

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\051314\16G42877.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\051314\16G42877.D\TCD2B.CH
Acq On : 13 May 2014 10:40 Operator: QX
Sample : WG475561-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD63476 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: May 13 10:45:37 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	9650285	62.436	umol/
2) T	ethene	1.05	16091629	62.962	umol/
3) T	acetylene	1.12	14119197	65.711	umol/
4) T	ethane	1.38	16774116	64.499	umol/
5) T	propane	3.82	24861624	65.487	umol/
7) T	carbon dioxide	0.20	24303262	4308.030	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G42877.D RSK2EXT.M Tue May 13 10:45:37 2014 Page 1

```
Signal #1 : C:\MSDchem\1\DATA\051314\16G42877.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\051314\16G42877.D\TCD2B.CH
Acq On    : 13 May 2014  10:40                        Operator: QX
Sample    : WG475561-02 67umol/mol LCS RSK175         Inst    : HP16
Misc      : 1,1 STD63476                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e
Quant Time: May 13 10:45 2014  Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

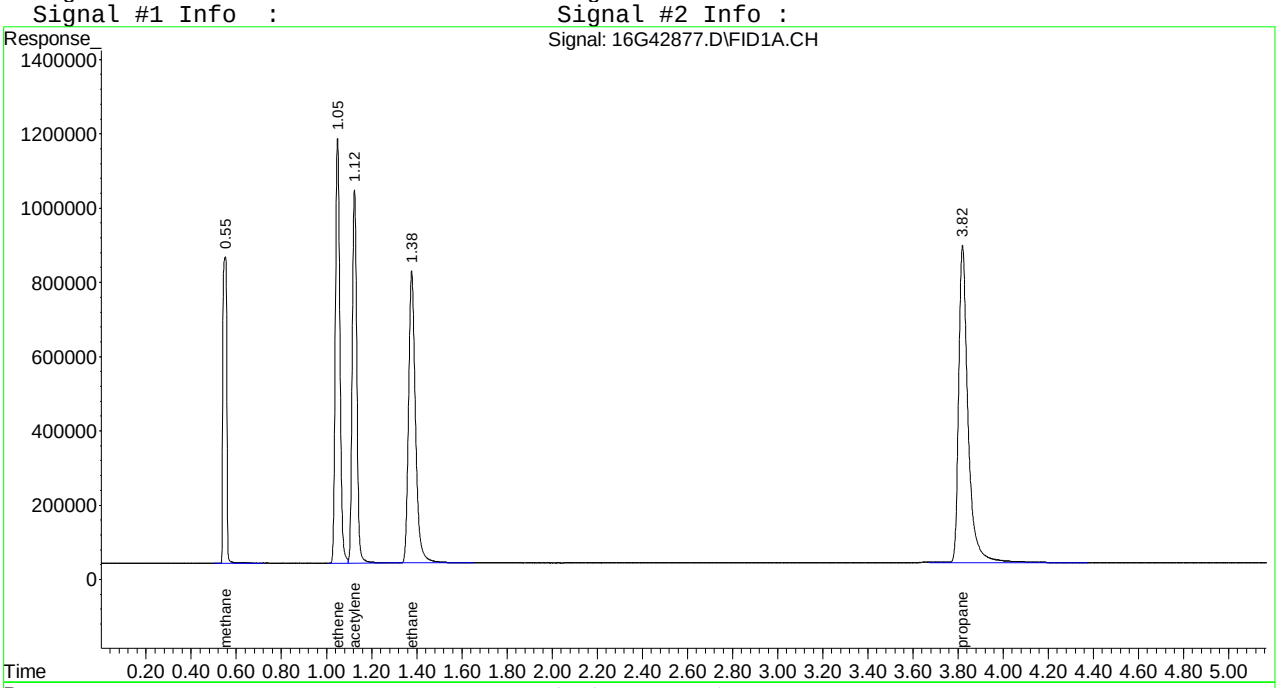

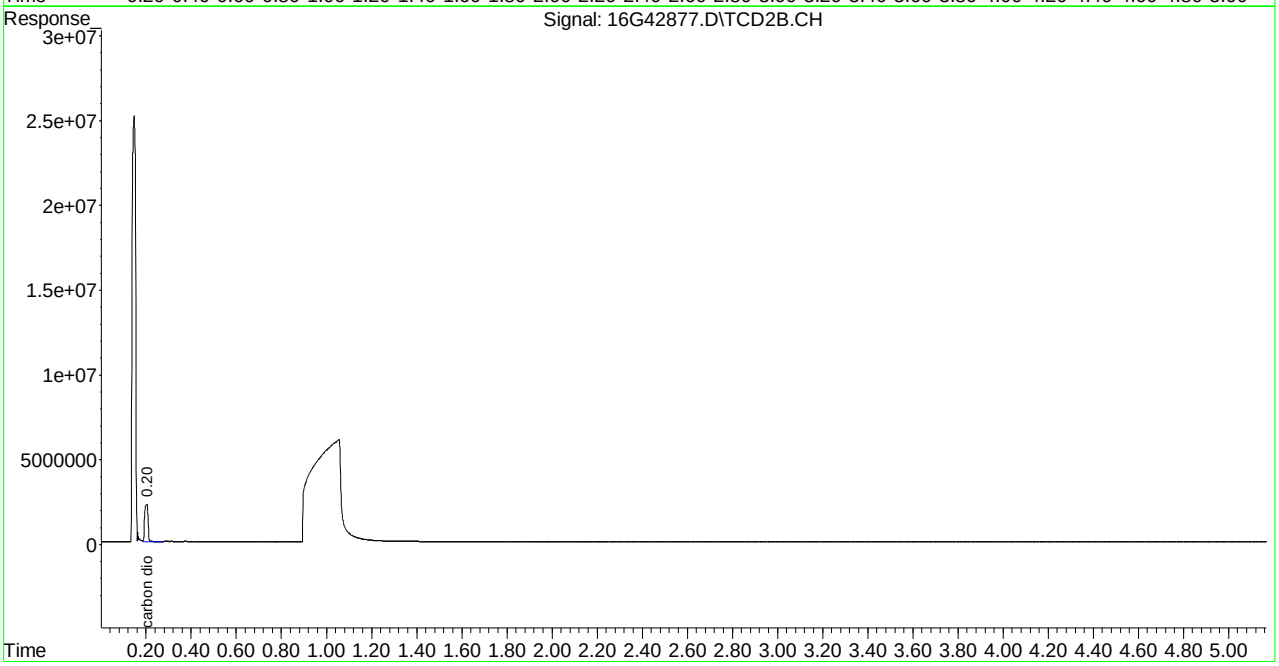

2.2 General Chemistry Data

2.2.1 Method 9056

2.2.1.1 Summary Data

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-04	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW05-050614	**Prep Method:**	9056	**Prep Date:**	05/20/2014 14:42
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	11/06/2013 10:26
Workgroup #:	WG476854	**Analyst:**	ALS	**Run Date:**	05/20/2014 15:51
Collect Date:	05/06/2014 12:15	**Dilution:**	50	**File ID:**	I1_052014-07
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	697		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L14050603-12	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW01-050714	**Prep Method:**	9056	**Prep Date:**	05/09/2014 08:46
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	11/06/2013 10:26
Workgroup #:	WG475071	**Analyst:**	JBK	**Run Date:**	05/09/2014 09:54
Collect Date:	05/07/2014 08:45	**Dilution:**	5	**File ID:**	I1_050914-07
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1280	J	2.00	1.00	0.500
Sulfate	14808-79-8	167		10.0	5.00	2.50
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-12	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW01-050714	**Prep Method:**	9056	**Prep Date:**	05/09/2014 08:46
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	11/06/2013 10:26
Workgroup #:	WG475071	**Analyst:**	JBK	**Run Date:**	05/09/2014 10:12
Collect Date:	05/07/2014 08:45	**Dilution:**	50	**File ID:**	I1_050914-08
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	981		20.0	10.0	5.00
Sulfate	14808-79-8	245		100	50.0	25.0
Nitrate	14797-55-8	10.0	U	20.0	10.0	5.00
Nitrite	14797-65-0	10.0	U	20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-13	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-050714	**Prep Method:**	9056	**Prep Date:**	05/09/2014 08:46
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	11/06/2013 10:26
Workgroup #:	WG475071	**Analyst:**	JBK	**Run Date:**	05/09/2014 10:30
Collect Date:	05/07/2014 10:05	**Dilution:**	10	**File ID:**	I1_050914-09
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1820	J	4.00	2.00	1.00
Sulfate	14808-79-8	365		20.0	10.0	5.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-13	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-050714	**Prep Method:**	9056	**Prep Date:**	05/09/2014 08:46
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	11/06/2013 10:26
Workgroup #:	WG475071	**Analyst:**	JBK	**Run Date:**	05/09/2014 10:47
Collect Date:	05/07/2014 10:05	**Dilution:**	100	**File ID:**	I1_050914-10
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1380		40.0	20.0	10.0
Sulfate	14808-79-8	547		200	100	50.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.2.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(-c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 110613 ICAL IC1.SEQ
Analyst1: JBK Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 14

Maintenance Log ID: 48076 Syringe Filter Lot#: 00166429
Eluent ID#: RGT28571

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG450536 (ICAL) WG451714 (LOD/LOQ)

Internal STD: NA Surrogate STD: NA Calibration STD STD60856

CCV STD: STD60856 LCS STD: STD60857 MS/MSD STD: NA

Comments: WG450536 300/9056 ICAL
Q4 2013 WATER LOD/LOQ Verification

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_110613-01	WG450536-01 STD \#6	1	1		11/06/13 08:59
2	I1_110613-02	WG450536-02 STD \#5	1	1		11/06/13 09:17
3	I1_110613-03	WG450536-03 STD \#4	1	1		11/06/13 09:34
4	I1_110613-04	WG450536-04 STD \#3	1	1		11/06/13 09:51
5	I1_110613-05	WG450536-05 STD \#2	1	1		11/06/13 10:09
6	I1_110613-06	WG450536-06 STD \#1	1	1		11/06/13 10:26
7	I1_110613-07	WG450536-07 ALT STD	1	1		11/06/13 11:07
8	I1_110613-08	L13100001-01 LOD (F,CL,BR,SO4)	1	1		11/06/13 11:24
9	I1_110613-09	L13100003-01 LOQ (F,CL,BR,SO4)	1	1		11/06/13 11:42
10	I1_110613-10	L13100001-01 LOD (NO2,NO3)	1	1		11/06/13 11:59
11	I1_110613-11	L13100003-01 LOQ (NO2,NO3)	1	1		11/06/13 12:16
12	I1_110613-12	LEVEL 4 (CCV/LCS)	1	1		11/06/13 12:34
13	I1_110613-13	LEVEL 6 (LCR)	1	1		11/06/13 12:51
14	I1_110613-14	WG451714-01 BLANK	1	1		11/06/13 13:09
15	I1_110613-15	END	1	1		11/06/13 13:26

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 08-NOV-13

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 050914 IC1.SEQ
Analyst1: ALS Analyst2: JBK
Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 50125 Syringe Filter Lot#: 00177388
Eluent ID#: RGT30332

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG475071 WG475155

Internal STD: NA Surrogate STD: NA Calibration STD STD60856 (11/6/13)

CCV STD: STD60856 LCS STD: STD60856 MS/MSD STD: STD60856

Comments: L14050603-12,13; L14050058-10,12,14 Were analyzed at dilutions only due to high analyte concentrations (>200ppm).

L14050027-01-03; L14050048-03; L14050058-1,4,6,8; L14050061-1,2,4; L14050119-03 Were analyzed at dilutions only due to one or more of the target analytes being near or greater than the ICAL.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_050914-01	ELUENT	1	1		05/09/14 08:08
2	I1_050914-02	DI WATER	1	1		05/09/14 08:26
3	I1_050914-03	WG475074-01 ANION CCV	1	1		05/09/14 08:43
4	I1_050914-04	WG475074-02 ANION CCB	1	1		05/09/14 09:01
5	I1_050914-05	WG475071-01 ANION BLANK	1	1		05/09/14 09:19
6	I1_050914-06	WG475071-02 ANION LCS	1	1		05/09/14 09:37
7	I1_050914-07	L14050603-12 1/5 (CL,NO2,NO3,SO4)	1	5		05/09/14 09:54
8	I1_050914-08	L14050603-12 1/50 RR CL	1	50		05/09/14 10:12
9	I1_050914-09	L14050603-13 1/10 (CL,NO2,NO3,SO40	1	10		05/09/14 10:30
10	I1_050914-10	L14050603-13 1/100 RR CL	1	100		05/09/14 10:47
11	I1_050914-11	L14050027-01 1/3 (F,CL,SO4)	1	3		05/09/14 11:05
12	I1_050914-12	WG475071-04 1/3 DUP 02701	1	3		05/09/14 11:23
13	I1_050914-13	L14050027-02 1/3 MS	1	3		05/09/14 11:41
14	I1_050914-14	L14050027-03 1/3 MSD	1	3		05/09/14 11:58
15	I1_050914-15	WG475074-03 ANION CCV	1	1		05/09/14 12:16
16	I1_050914-16	WG475074-04 ANION CCB	1	1		05/09/14 12:34
17	I1_050914-17	L14050027-04 (F,CL,SO4)	1	1		05/09/14 12:51
18	I1_050914-18	L14050027-04 1/2 RR CL NR	1	2		05/09/14 13:09
19	I1_050914-19	L14050048-01 (CL,SO4)	1	1		05/09/14 13:27
20	I1_050914-20	L14050048-02 (CL,SO4)	1	1		05/09/14 13:45
21	I1_050914-21	L14050048-03 1/5 (CL,SO4)	1	5		05/09/14 14:02
22	I1_050914-22	L14050058-01 1/15 (CL,SO4)	1	15		05/09/14 14:20
23	I1_050914-23	L14050058-04 1/4 (CL,SO4)	1	4		05/09/14 14:38
24	I1_050914-24	L14050058-06 1/3 (CL,SO4)	1	3		05/09/14 14:55
25	I1_050914-25	L14050058-08 1/5 (CL,SO4)	1	5		05/09/14 15:13
26	I1_050914-26	L14050058-10 1/5 (CL,SO4)	1	5		05/09/14 15:31
27	I1_050914-27	WG475074-05 ANION CCV	1	1		05/09/14 15:48
28	I1_050914-28	WG475074-06 ANION CCB	1	1		05/09/14 16:06
29	I1_050914-29	L14050058-10 1/50 RR CL	1	50		05/09/14 16:24
30	I1_050914-30	L14050058-12 1/5 (CL,SO4)	1	5		05/09/14 16:42
31	I1_050914-31	L14050058-12 1/50 RR CL	1	50		05/09/14 16:59

Page: 1 Approved: 12-MAY-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 050914 IC1.SEQ
Analyst1: ALS Analyst2: JBK
Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 50125 Syringe Filter Lot#: 00177388
Eluent ID#: RGT30332
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG475071 WG475155
Internal STD: NA Surrogate STD: NA STD60856 (11/6/13)
CCV STD: STD60856 LCS STD: STD60856 STD60856

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
32	I1_050914-32	L14050058-14 1/2 (CL,SO4)	1	2		05/09/14 17:17
33	I1_050914-33	L14050058-14 1/20 RR CL	1	20		05/09/14 17:35
34	I1_050914-34	L14050058-16 (CL,SO4)	1	1		05/09/14 17:52
35	I1_050914-35	L14050061-01 1/2 (SO4)	1	2		05/09/14 18:10
36	I1_050914-36	L14050061-02 1/15 (SO4)	1	15		05/09/14 18:28
37	I1_050914-37	L14050061-04 1/15 (SO4)	1	15		05/09/14 18:45
38	I1_050914-38	L14050061-08 (SO4)	1	1		05/09/14 19:03
39	I1_050914-39	WG475074-07 ANION CCV	1	1		05/09/14 19:21
40	I1_050914-40	WG475074-08 ANION CCB	1	1		05/09/14 19:39
41	I1_050914-41	L14050667-01 (NO3,SO4)	1	1		05/09/14 19:56
42	I1_050914-42	WG475155-01 ANION BLANK	1	1		05/09/14 20:14
43	I1_050914-43	WG475155-02 ANION LCS	1	1		05/09/14 20:32
44	I1_050914-44	L14050667-03 (NO3,SO4)	1	1		05/09/14 20:49
45	I1_050914-45	L14050667-06 (NO3,SO4)	1	1		05/09/14 21:07
46	I1_050914-46	L14050667-07 (NO3,SO4)	1	1		05/09/14 21:25
47	I1_050914-47	L14050667-08 (NO3,SO4)	1	1		05/09/14 21:43
48	I1_050914-48	L14050667-09 (NO3,SO4)	1	1		05/09/14 22:00
49	I1_050914-49	L14050667-10 (NO3,SO4)	1	1		05/09/14 22:18
50	I1_050914-50	WG475155-04 DUP 667-10	1	1		05/09/14 22:36
51	I1_050914-51	WG475074-09 ANION CCV	1	1		05/09/14 22:53
52	I1_050914-52	WG475074-10 ANION CCB	1	1		05/09/14 23:11
53	I1_050914-53	WG475155-05 MS 667-10	1	1		05/09/14 23:29
54	I1_050914-54	WG475155-06 MSD 667-10	1	1		05/09/14 23:46
55	I1_050914-55	L14050119-01 (F,CL,SO4)	1	1		05/10/14 00:04
56	I1_050914-56	L14050119-01 1/3 RR CL	1	3		05/10/14 00:22
57	I1_050914-57	L14050119-02 (F,CL,SO4)	1	1		05/10/14 00:40
58	I1_050914-58	L14050119-02 1/5 RR CL	1	5		05/10/14 00:57
59	I1_050914-59	L14050119-03 1/3 (F,CL,SO4)	1	3		05/10/14 01:15
60	I1_050914-60	WG475074-11 ANION CCV	1	1		05/10/14 01:33
61	I1_050914-61	WG475074-12 ANION CCB	1	1		05/10/14 01:50
62	I1_050914-62	END	1	1		05/10/14 02:08

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18				
	L14050027-04 1/2 RR CL NR; Caught at 1x			

Page: 2 Approved: 12-MAY-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 050914 IC1.SEQ
Analyst1: ALS Analyst2: JBK
Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 50125 Syringe Filter Lot#: 00177388
Eluent ID#: RGT30332
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG475071 WG475155
Internal STD: NA Surrogate STD: NA STD60856 (11/6/13)
CCV STD: STD60856 LCS STD: STD60856 STD60856

Comments

Seq.	Rerun	Dil.	Reason	Analytes
29	X	250	Over Calibration Range	CL
	L14050058-10 1/50 RR CL; Possible bad dilution RR at 50x			

Page: 3 Approved: 12-MAY-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 052014 IC1.SEQ
Analyst1: ALS Analyst2: JBK
Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 50260 Syringe Filter Lot#: 00177388
Eluent ID#: RGT30423

Workgroups: Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
WG476854, WG476856

Internal STD: NA Surrogate STD: NA Calibration STD STD60856 (11/6/13)
CCV STD: STD63859 LCS STD: STD63859 MS/MSD STD: STD63859

Comments: L14050736, 1062, 1063, 1174, 1179 dilutions due to the concentration of the target anlyte being near or greater than the uppermost point of the calibration curve.

L14050723, 0894 dilutions due to one or more of the target analytes being near or greater than the ICAL.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_052014-01	ELUENT	1	1		05/20/14 14:04
2	I1_052014-02	DI WATER	1	1		05/20/14 14:22
3	I1_052014-03	WG476859-01 ANION CCV	1	1		05/20/14 14:40
4	I1_052014-04	WG476859-02 ANION CCB	1	1		05/20/14 14:57
5	I1_052014-05	WG476854-01 ANION BLANK	1	1		05/20/14 15:15
6	I1_052014-06	WG476854-02 ANION LCS	1	1		05/20/14 15:33
7	I1_052014-07	L14050603-04 1/50 (CL)	1	50		05/20/14 15:51
8	I1_052014-08	L14051062-02 (SO4)	1	1		05/20/14 16:08
9	I1_052014-09	L14051062-04 1/2 (SO4)	1	2		05/20/14 16:26
10	I1_052014-10	L14051062-06 1/5 (SO4)	1	5		05/20/14 16:44
11	I1_052014-11	L14051062-08 (SO4)	1	1		05/20/14 17:01
12	I1_052014-12	L14051062-10 1/2 (SO4)	1	2		05/20/14 17:19
13	I1_052014-13	L14051062-12 (SO4)	1	1		05/20/14 17:37
14	I1_052014-14	L14051062-14 (SO4)	1	1		05/20/14 17:54
15	I1_052014-15	WG476859-03 ANION CCV	1	1		05/20/14 18:12
16	I1_052014-16	WG476859-04 ANION CCB	1	1		05/20/14 18:30
17	I1_052014-17	L14051062-16 (SO4)	1	1		05/20/14 18:48
18	I1_052014-18	L14051062-18 (SO4)	1	1		05/20/14 19:05
19	I1_052014-19	L14051062-20 1/2 (SO4)	1	2		05/20/14 19:23
20	I1_052014-20	L14051062-22 1/3 (SO4)	1	3		05/20/14 19:41
21	I1_052014-21	L14051062-24 1/10 (SO4)	1	10		05/20/14 19:58
22	I1_052014-22	L14051062-26 (SO4)	1	1		05/20/14 20:16
23	I1_052014-23	WG476854-04 DUP 1062-26	1	1		05/20/14 20:34
24	I1_052014-24	WG476854-05 MS 1062-26	1	1		05/20/14 20:52
25	I1_052014-25	WG476854-06 MSD 1062-26	1	1		05/20/14 21:09
26	I1_052014-26	L14051062-28 1/2 (SO4)	1	2		05/20/14 21:27
27	I1_052014-27	WG476859-05 ANION CCV	1	1		05/20/14 21:45
28	I1_052014-28	WG476859-06 ANION CCB	1	1		05/20/14 22:02
29	I1_052014-29	L14051062-30 (SO4)	1	1		05/20/14 22:20
30	I1_052014-30	L14051063-01 (SO4)	1	1		05/20/14 22:38
31	I1_052014-31	L14051063-03 1/2 (SO4)	1	2		05/20/14 22:56
32	I1_052014-32	L14051063-05 1/3 (SO4)	1	3		05/20/14 23:13

Page: 1 Approved: 21-MAY-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 052014 IC1.SEQ
Analyst1: ALS Analyst2: JBK
Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 50260 Syringe Filter Lot#: 00177388
Eluent ID#: RGT30423
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG476854, WG476856
Internal STD: NA Surrogate STD: NA STD60856 (11/6/13)
CCV STD: STD63859 LCS STD: STD63859 STD63859

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
33	I1_052014-33	L14051224-01 1/2000 (CL)	1	2000		05/20/14 23:31
34	I1_052014-34	WG476856-01 ANION BLANK	1	1		05/20/14 23:49
35	I1_052014-35	WG476856-02 ANION LCS	1	1		05/21/14 00:06
36	I1_052014-36	L14050736-01 (SO4)	1	1		05/21/14 00:24
37	I1_052014-37	L14050736-03 (SO4)	1	1		05/21/14 00:42
38	I1_052014-38	L14050736-05 1/3 (SO4)	1	3		05/21/14 00:59
39	I1_052014-39	WG476859-07 ANION CCV	1	1		05/21/14 01:17
40	I1_052014-40	WG476859-08 ANION CCB	1	1		05/21/14 01:35
41	I1_052014-41	L14050736-07 1/5 (SO4)	1	5		05/21/14 01:53
42	I1_052014-42	L14051179-02 (SO4)	1	1		05/21/14 02:10
43	I1_052014-43	L14051179-04 RS (SO4)	1	1		05/21/14 02:28
44	I1_052014-44	WG476856-04 DUP 1179-04	1	1		05/21/14 02:46
45	I1_052014-45	L14051179-06 MS	1	1		05/21/14 03:03
46	I1_052014-46	L14051179-08 SD	1	1		05/21/14 03:21
47	I1_052014-47	L14051179-10 (SO4)	1	1		05/21/14 03:39
48	I1_052014-48	L14051179-12 (SO4)	1	1		05/21/14 03:57
49	I1_052014-49	L14051179-14 (SO4)	1	1		05/21/14 04:14
50	I1_052014-50	L14051179-16 (SO4)	1	1		05/21/14 04:32
51	I1_052014-51	WG476859-08 ANION CCV	1	1		05/21/14 04:50
52	I1_052014-52	WG476859-09 ANION CCB	1	1		05/21/14 05:07
53	I1_052014-53	L14051174-02 (SO4)	1	1		05/21/14 05:25
54	I1_052014-54	L14051174-04 (SO4)	1	1		05/21/14 05:43
55	I1_052014-55	L14051174-06 (SO4)	1	1		05/21/14 06:01
56	I1_052014-56	L14051174-08 (SO4)	1	1		05/21/14 06:18
57	I1_052014-57	L14051174-10 1/5 (SO4)	1	5		05/21/14 06:36
58	I1_052014-58	L14051174-12 1/10 (SO4)	1	10		05/21/14 06:54
59	I1_052014-59	L14050723-01 1/2 (F,CL,SO4)	1	2		05/21/14 07:11
60	I1_052014-60	L14050723-02 1/2 (F,CL,SO4)	1	2		05/21/14 07:29
61	I1_052014-61	L14050894-01 1/5 (F,CL,SO4)	1	5		05/21/14 07:47
62	I1_052014-62	L14050894-02 1/2 (F,CL,SO4)	1	2		05/21/14 08:04
63	I1_052014-63	WG476859-10 ANION CCV	1	1		05/21/14 08:22
64	I1_052014-64	WG476859-11 ANION CCB	1	1		05/21/14 08:40
65	I1_052014-65	END	1	1		05/21/14 08:58

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 21-MAY-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 052014 IC1.SEQ

Analyst1: ALS Analyst2: JBK

Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 50260 Syringe Filter Lot#: 00177388

Eluent ID#: RGT30423

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG476854, WG476856

Internal STD: NA Surrogate STD: NA STD60856 (11/6/13)

CCV STD: STD63859 LCS STD: STD63859 STD63859

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7				
	L14050603-04 1/50 (CL): Dilution due to the target analyte being greater than the ICAL.			
33				
	L14051224-01 1/2000 (CL): Sample is brine waste. Dilution due to very high Cl concentration.			

Page: 3 Approved: 21-MAY-14

Microbac Laboratories Inc.

Data Checklist

Date: 06-NOV-2013
Analyst: JBK
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 56920
Analytical Workgroups: WG450536 (ICAL) WG451714 (LOD/LOQ)

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	WG450536
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	JBK
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MDC

Primary Reviewer:
06-NOV-2013

Secondary Reviewer:
08-NOV-2013

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-08-2013 15:40:54

Microbac Laboratories Inc.

Data Checklist

Date: 09-MAY-2014
Analyst: ALS
Analyst: JBK
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 60817
Analytical Workgroups: 05-0027,0048,0058,0061,0603,0119,0667

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	NA
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	JBK
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MDC

Primary Reviewer:
12-MAY-2014

Secondary Reviewer:
12-MAY-2014

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-12-2014 16:15:11

Microbac Laboratories Inc.

Data Checklist

Date: 20-MAY-2014
Analyst: ALS
Analyst: JBK
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 61036
Analytical Workgroups: 05-0603,1062,1063,1224,0736,1179,1174,0723,0894

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	NA
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	ALS
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MDC

Primary Reviewer: 21-MAY-2014

Secondary Reviewer: 21-MAY-2014

CHECKLIST1 - Modified 03/05/2008

Generated: MAY-21-2014 14:10:01

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG475071

Login Number: L14050603

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW01-050714	12	05/07/14					05/09/2014	2	2		05/09/14	2	2	
67WW01-050714	12	05/07/14					05/09/2014	2	2		05/09/14	2.1	2	*
67WW08-050714	13	05/07/14					05/09/2014	1.9	2		05/09/14	2	2	
67WW08-050714	13	05/07/14					05/09/2014	1.9	2		05/09/14	2	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3535864
Report generated 05/22/2014 09:04

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG476854

Login Number: L14050603

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW05-050614	04	05/06/14					05/20/2014	14.1	2	*	05/20/14	14.2	2	*

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3535864
Report generated 05/22/2014 09:04

METHOD BLANK SUMMARY

Login Number: L14050603
Blank File ID: I1_050914-05
Prep Date: 05/09/14 08:46
Analyzed Date: 05/09/14 09:19
Analyst: JBK

Work Group: WG475071
Blank Sample ID: WG475071-01
Instrument ID: IC1
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG475071-02	I1_050914-06	05/09/14 09:37	01
67WW01-050714	L14050603-12	I1_050914-07	05/09/14 09:54	DL01
67WW01-050714	L14050603-12	I1_050914-08	05/09/14 10:12	DL02
67WW08-050714	L14050603-13	I1_050914-09	05/09/14 10:30	DL01
67WW08-050714	L14050603-13	I1_050914-10	05/09/14 10:47	DL02
DUP	WG475071-04	I1_050914-12	05/09/14 11:23	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 3535865
Report generated 05/22/2014 09:04

METHOD BLANK SUMMARY

Login Number: L14050603
Blank File ID: I1_052014-05
Prep Date: 05/20/14 14:42
Analyzed Date: 05/20/14 15:15
Analyst: ALS

Work Group: WG476854
Blank Sample ID: WG476854-01
Instrument ID: IC1
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG476854-02	I1_052014-06	05/20/14 15:33	01
67WW05-050614	L14050603-04	I1_052014-07	05/20/14 15:51	DL01
DUP	WG476854-04	I1_052014-23	05/20/14 20:34	01

Report Name: BLANK_SUMMARY
PDF File ID: 3535865
Report generated 05/22/2014 09:04

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14050603 Prep Date: 05/09/14 08:46 Sample ID: WG475071-01
Instrument ID: IC1 Run Date: 05/09/14 09:19 Prep Method: 9056
File ID: I1 050914-05 Analyst: JBK Method: 9056
Workgroup (AAB#): WG475071 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1-06-NOV-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3535866
22-MAY-2014 09:04

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14050603 Prep Date: 05/20/14 14:42 Sample ID: WG476854-01
Instrument ID: IC1 Run Date: 05/20/14 15:15 Prep Method: 9056
File ID: I1 052014-05 Analyst: ALS Method: 9056
Workgroup (AAB#): WG476854 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1-06-NOV-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3535866
22-MAY-2014 09:04

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14050603 Run Date: 05/09/2014 Sample ID: WG475071-02
Instrument ID: IC1 Run Time: 09:37 Prep Method: 9056
File ID: I1 050914-06 Analyst: JBK Method: 9056
Workgroup (AAB#): WG475071 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD63859 Cal ID: IC1-06-NOV-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	7.52	94.0	90 - 110	
Sulfate	40.0	38.4	96.1	90 - 110	
Nitrate	5.42	5.14	94.9	90 - 110	
Nitrite	4.87	5.12	105	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 3535867
Report generated: 05/22/2014 09:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14050603 Run Date: 05/20/2014 Sample ID: WG476854-02
Instrument ID: IC1 Run Time: 15:33 Prep Method: 9056
File ID: I1 052014-06 Analyst: ALS Method: 9056
Workgroup (AAB#): WG476854 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD63859 Cal ID: IC1-06-NOV-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	7.67	95.9	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 3535867
Report generated: 05/22/2014 09:05

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L14050603
Analytical Method: 9056
ICAL Workgroup: WG450536

Instrument ID: IC1
Initial Calibration Date: 06-NOV-13 10:26
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.674	7.25	0.99900	
Nitrate		2.334	9.44	0.99900	
Nitrite		3.178	8.02	1.00000	
Sulfate		7.597	10.2	0.99900	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 3535868
Report generated 05/22/2014 09:05

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L14050603
Analytical Method: 9056
Instrument ID: IC1
Initial Calibration Date: 06-NOV-13 10:26
Column ID: F

Analyte	WG450536-01			WG450536-02			WG450536-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.80400000	4.996	12.0	2.19100000	5.477	8.00	1.39700000	5.727
Nitrate	16.3	8.11700000	2.004	8.13	3.67800000	2.211	5.42	2.33900000	2.318
Nitrite	14.6	5.06600000	2.885	7.31	2.45400000	2.978	4.87	1.59100000	3.062
Sulfate	120	18.5710000	6.462	60.0	8.42900000	7.118	40.0	5.34100000	7.489

INT_CAL - Modified 03/06/2008
PDF File ID: 3535868
Report generated 05/22/2014 09:05

INITIAL CALIBRATION DATA

Login Number: L14050603
Analytical Method: 9056

Instrument ID: IC1
Initial Calibration Date: 06-NOV-13 10:26
Column ID: F

Analyte	WG450536-04			WG450536-05			WG450536-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.682000000	5.865	1.00	0.169000000	5.917	0.200	0.0330000000	6.061
Nitrate	2.71	1.13400000	2.390	0.678	0.275000000	2.464	0.134	0.0510000000	2.619
Nitrite	2.44	0.766000000	3.180	0.609	0.180000000	3.383	0.122	0.0340000000	3.582
Sulfate	20.0	2.56800000	7.788	5.00	0.606000000	8.251	1.00	0.118000000	8.475

INT_CAL - Modified 03/06/2008
PDF File ID: 3535868
Report generated 05/22/2014 09:05

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14050603 Run Date: 11/06/2013 Sample ID: WG450536-07
Instrument ID: IC1 Run Time: 11:07 Method: 9056
File ID: I1 110613-07 Analyst: JBK QC Key: DOD4
ICal Workgroup: WG450536 Cal ID: IC1 - 06-NOV-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.82	mg/L	5.71	2.30	10	
Sulfate		40.0	39.6	mg/L	7.46	1.00	10	
Nitrate		5.42	5.31	mg/L	2.32	2.10	10	
Nitrite		4.87	4.85	mg/L	3.09	0.400	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3535869
Report generated 05/22/2014 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14050603
Run Date: 05/09/2014
Sample ID: WG475074-02
Instrument ID: IC1
Run Time: 09:01
Method: 9056
File ID: I1_050914-04
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG475071
Cal ID: IC1 - 06-NOV-13
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3535871
Report generated 05/22/2014 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14050603
Run Date: 05/09/2014
Sample ID: WG475074-04
Instrument ID: IC1
Run Time: 12:34
Method: 9056
File ID: I1 050914-16
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG475071
Cal ID: IC1 - 06-NOV-13
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3535871
Report generated 05/22/2014 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14050603
Run Date: 05/20/2014
Sample ID: WG476859-02
Instrument ID: IC1
Run Time: 14:57
Method: 9056
File ID: I1 052014-04
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG476854
Cal ID: IC1 - 06-NOV-13
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3535871
Report generated 05/22/2014 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14050603
Run Date: 05/20/2014
Sample ID: WG476859-04
Instrument ID: IC1
Run Time: 18:30
Method: 9056
File ID: I1 052014-16
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG476854
Cal ID: IC1 - 06-NOV-13
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3535871
Report generated 05/22/2014 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14050603 Run Date: 05/09/2014 Sample ID: WG475074-01
Instrument ID: IC1 Run Time: 08:43 Method: 9056
File ID: I1 050914-03 Analyst: JBK QC Key: DOD4
Workgroup (AAB#): WG475071 Cal ID: IC1 - 06-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.51	mg/L	5.82	6.19	10	
Sulfate		40.0	38.4	mg/L	7.41	3.97	10	
Nitrate		5.42	5.12	mg/L	2.34	5.56	10	
Nitrite		4.87	5.08	mg/L	2.89	4.30	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3535870
Report generated 05/22/2014 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14050603 Run Date: 05/09/2014 Sample ID: WG475074-03
Instrument ID: IC1 Run Time: 12:16 Method: 9056
File ID: I1 050914-15 Analyst: JBK QC Key: DOD4
Workgroup (AAB#): WG475071 Cal ID: IC1 - 06-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.62	mg/L	5.72	4.71	10	
Sulfate		40.0	39.0	mg/L	7.29	2.49	10	
Nitrate		5.42	5.23	mg/L	2.28	3.53	10	
Nitrite		4.87	5.19	mg/L	2.82	6.58	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3535870
Report generated 05/22/2014 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14050603
Run Date: 05/20/2014
Sample ID: WG476859-01
Instrument ID: IC1
Run Time: 14:40
Method: 9056
File ID: I1 052014-03
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG476854
Cal ID: IC1 - 06-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.70	mg/L	5.80	3.73	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3535870
Report generated 05/22/2014 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14050603
Run Date: 05/20/2014
Sample ID: WG476859-03
Instrument ID: IC1
Run Time: 18:12
Method: 9056
File ID: I1 052014-15
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG476854
Cal ID: IC1 - 06-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.71	mg/L	5.78	3.58	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3535870
Report generated 05/22/2014 09:05

2.2.1.3 Sample Data

7 L14050603-04 1/50 (CL)

1,50 ALS (CL>ICAL)

Sample Name:	**L14050603-04 1/50 (CL)**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2014 15:51**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

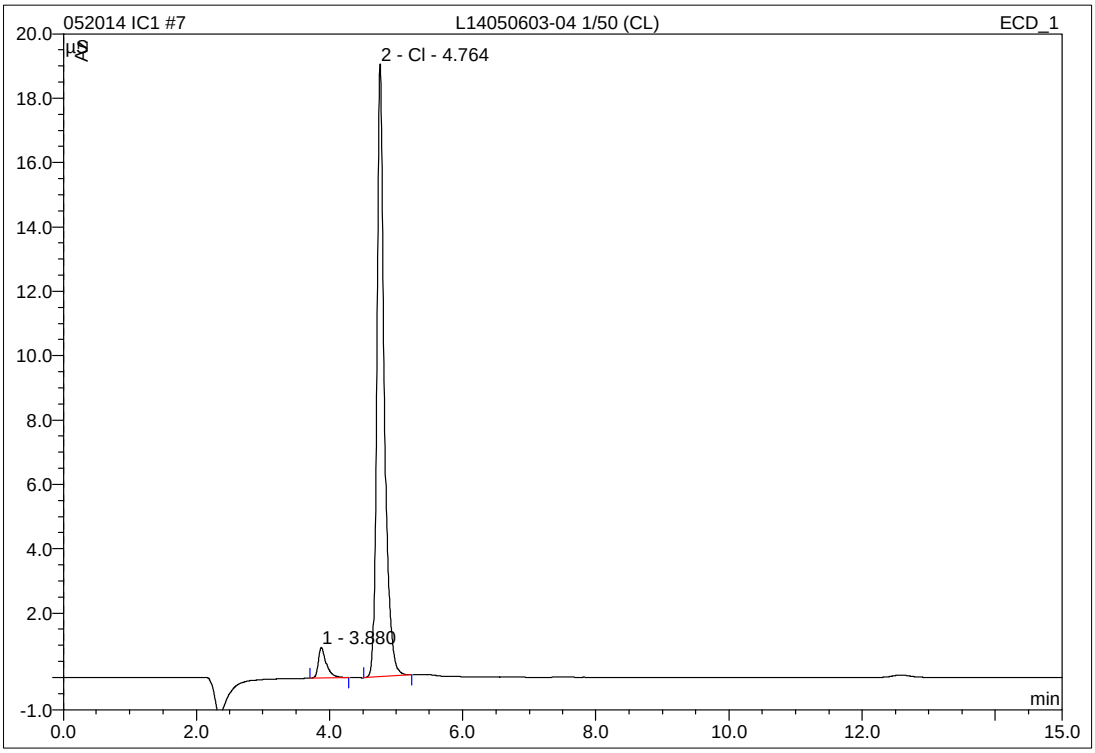

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.88	n.a.	0.952	0.135	5.12	n.a.	BMB
2	4.76	Cl	19.041	2.501	94.88	13.938	BMB
Total:			19.992	2.636	100.00	13.938	

7 L14050603-12 1/5 (CL,NO2,NO3,SO4)

1,5 JBK (HIGH CL, RR 1/50)

Sample Name:	**L14050603-12 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/9/2014 9:54**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

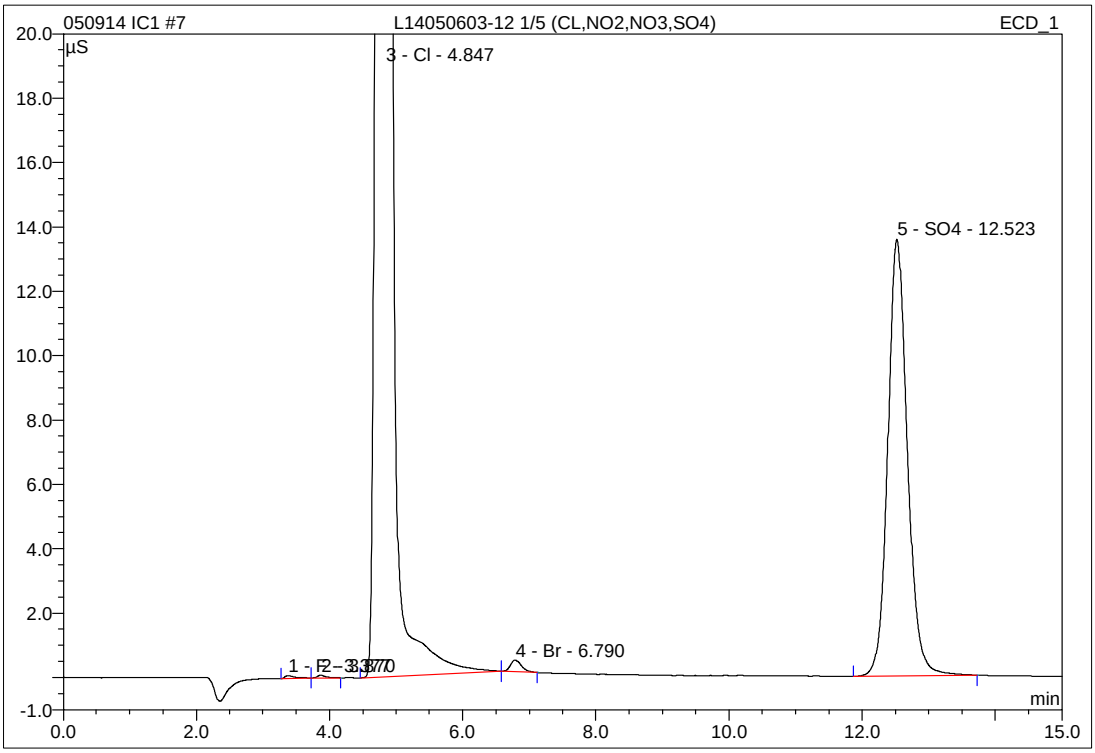

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.38	F	0.086	0.014	0.03	0.545	BMB
2	3.87	n.a.	0.082	0.012	0.02	n.a.	bMB
3	4.85	Cl	354.852	50.870	91.50	256.407	BMb
4	6.79	Br	0.362	0.069	0.12	1.136	bMB
5	12.52	SO4	13.562	4.629	8.33	33.452	BMB
Total:			368.944	55.594	100.00	291.539	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

8 L14050603-12 1/50 RR CL

1,50 JBK

Sample Name:	**L14050603-12 1/50 RR CL**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/9/2014 10:12**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

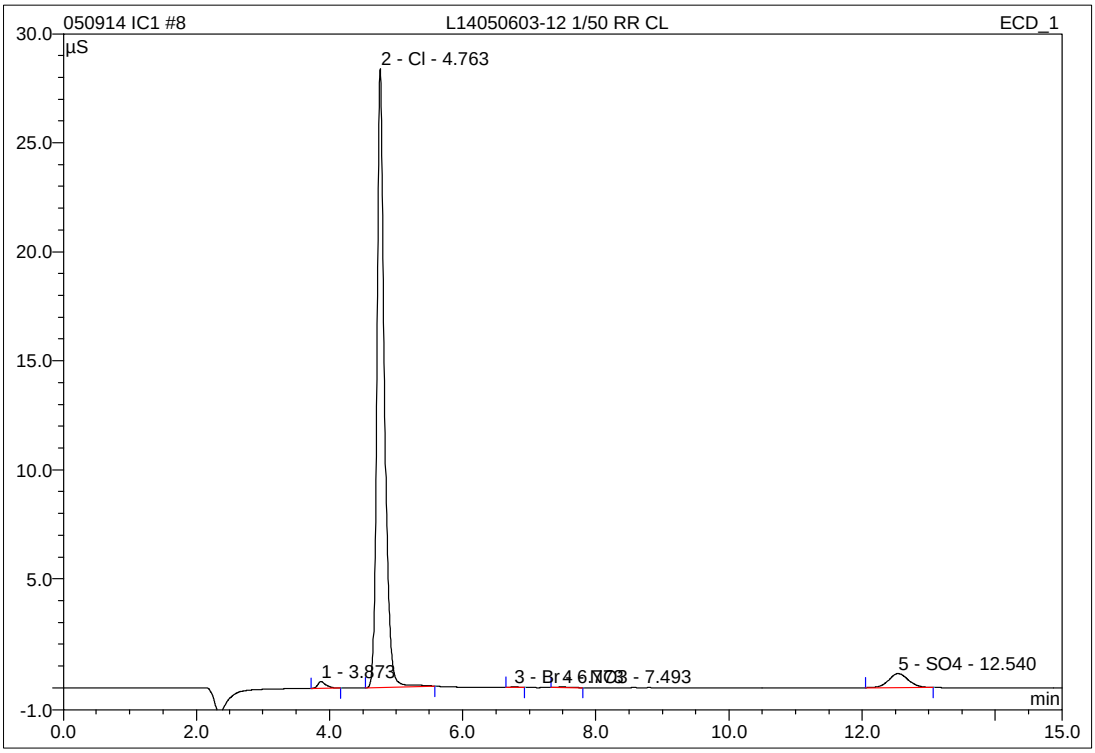

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.87	n.a.	0.312	0.044	1.09	n.a.	BMB
2	4.76	Cl	28.375	3.782	93.20	19.612	BMB
3	6.77	Br	0.027	0.004	0.10	0.265	BMB
4	7.49	NO3	0.030	0.006	0.16	0.455	BMB
5	12.54	SO4	0.641	0.221	5.45	4.907	BMB
Total:			29.385	4.059	100.00	25.238	

9 L14050603-13 1/10 (CL,NO2,NO3,SO40

1,10 JBK (HIGH CL, RR 1/100)

Sample Name:	**L14050603-13 1/10 (CL,NO2,NO3,SO40**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/9/2014 10:30**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

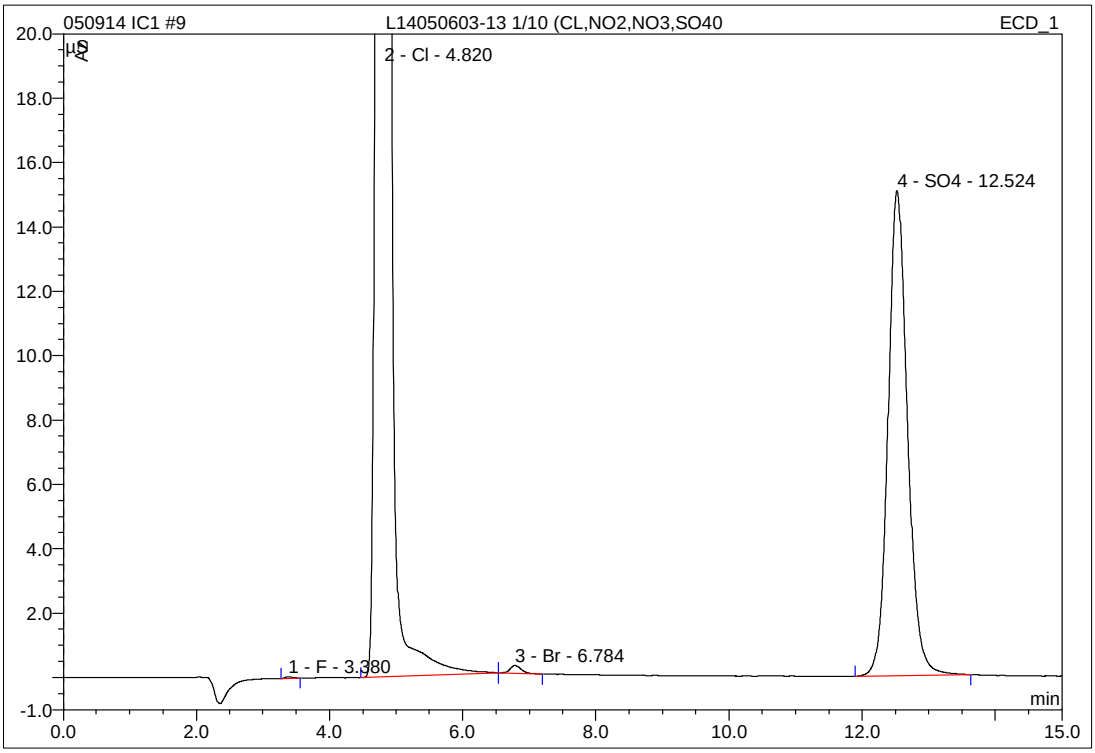

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.38	F	0.048	0.006	0.01	0.516	BMB
2	4.82	Cl	262.216	36.027	87.49	181.763	BMB
3	6.78	Br	0.245	0.048	0.12	0.847	bMB
4	12.52	SO4	15.063	5.099	12.38	36.501	BMB
Total:			277.571	41.180	100.00	219.626	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

10 L14050603-13 1/100 RR CL

1,100 JBK

Sample Name:	**L14050603-13 1/100 RR CL**	*Injection Volume:*	**20.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/9/2014 10:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

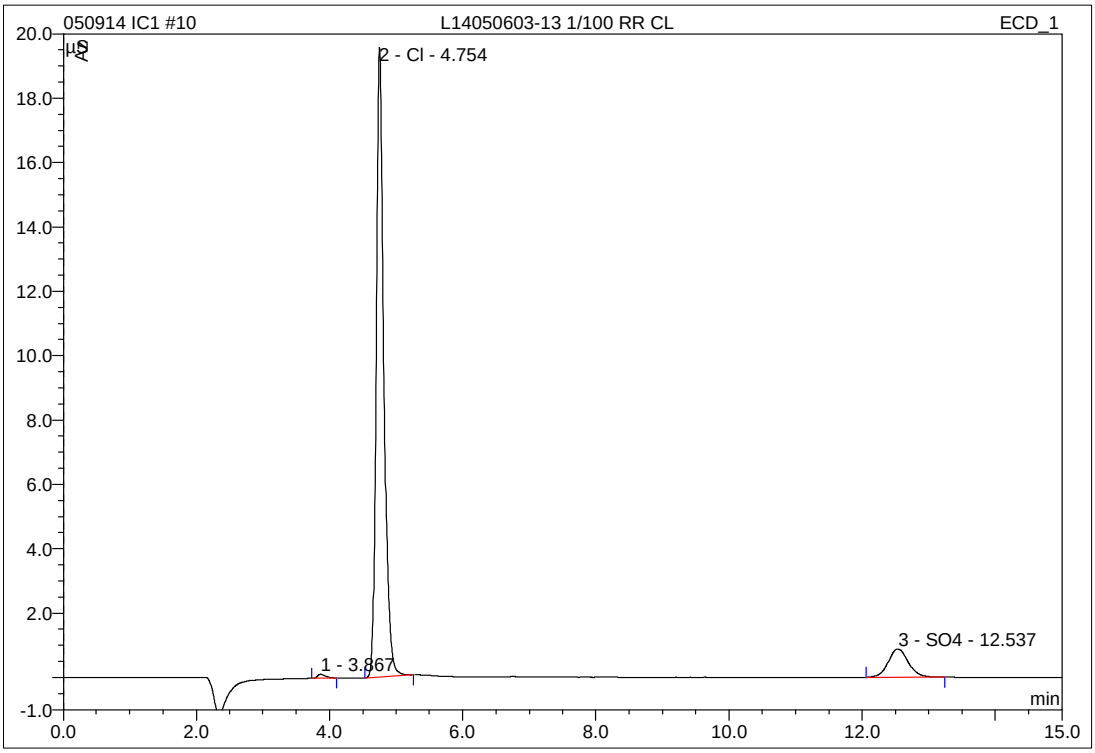

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.87	n.a.	0.121	0.017	0.57	n.a.	BMB
2	4.75	Cl	19.571	2.619	88.97	13.761	BMB
3	12.54	SO4	0.879	0.308	10.46	5.467	BMB
Total:			20.571	2.944	100.00	19.228	

2.2.1.4 Standards Data

1 WG450536-01 STD #6

1,1 JBK STD60856

Sample Name:	**WG450536-01 STD #6**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 8:59**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

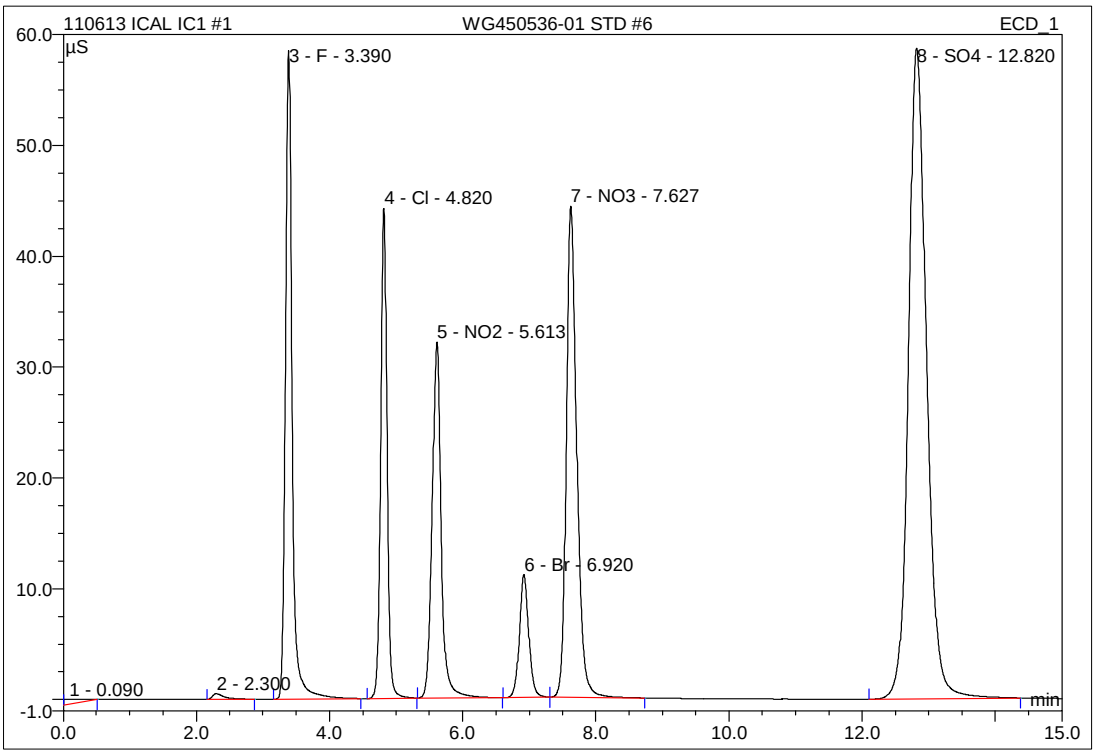

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	0.09	n.a.	0.431	0.132	0.29	n.a.	BMB
2	2.30	n.a.	0.527	0.110	0.24	n.a.	BMB
3	3.39	F	58.509	6.644	14.68	25.442	BMB
4	4.82	Cl	44.229	4.804	10.62	26.751	BMB
5	5.61	NO2	32.141	5.066	11.19	15.551	BMB
6	6.92	Br	11.090	1.809	4.00	25.227	BMb
7	7.63	NO3	44.330	8.117	17.94	18.347	bMB
8	12.82	SO4	58.721	18.571	41.04	136.882	BMB
Total:			249.979	45.254	100.00	248.200	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2 WG450536-02 STD #5

1,1 JBK STD60856

Sample Name:	**WG450536-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

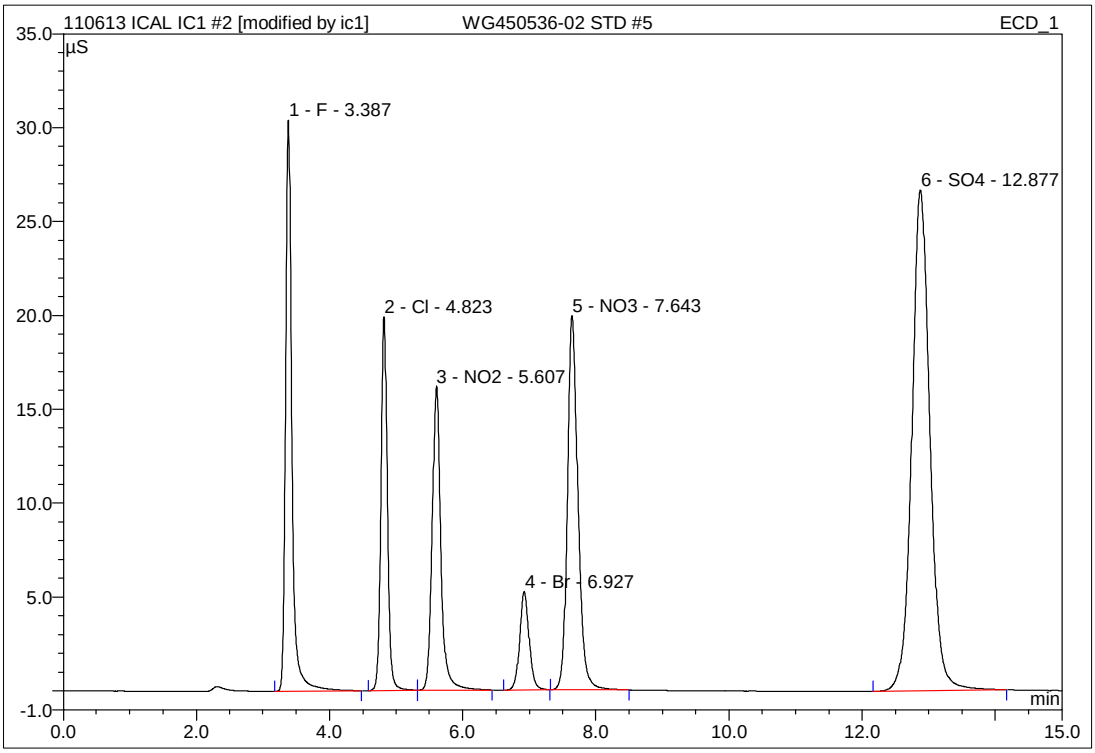

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.39	F	30.428	3.264	15.63	12.514	BMB*
2	4.82	Cl	19.929	2.191	10.49	12.214	BMB
3	5.61	NO2	16.200	2.454	11.75	7.542	BMB
4	6.93	Br	5.239	0.867	4.15	12.094	BMB
5	7.64	NO3	19.921	3.678	17.61	8.325	BMB
6	12.88	SO4	26.681	8.429	40.36	62.207	BMB
Total:			118.398	20.883	100.00	114.896	

2 WG450536-02 STD #5

1,1 JBK STD60856

Sample Name:	**WG450536-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

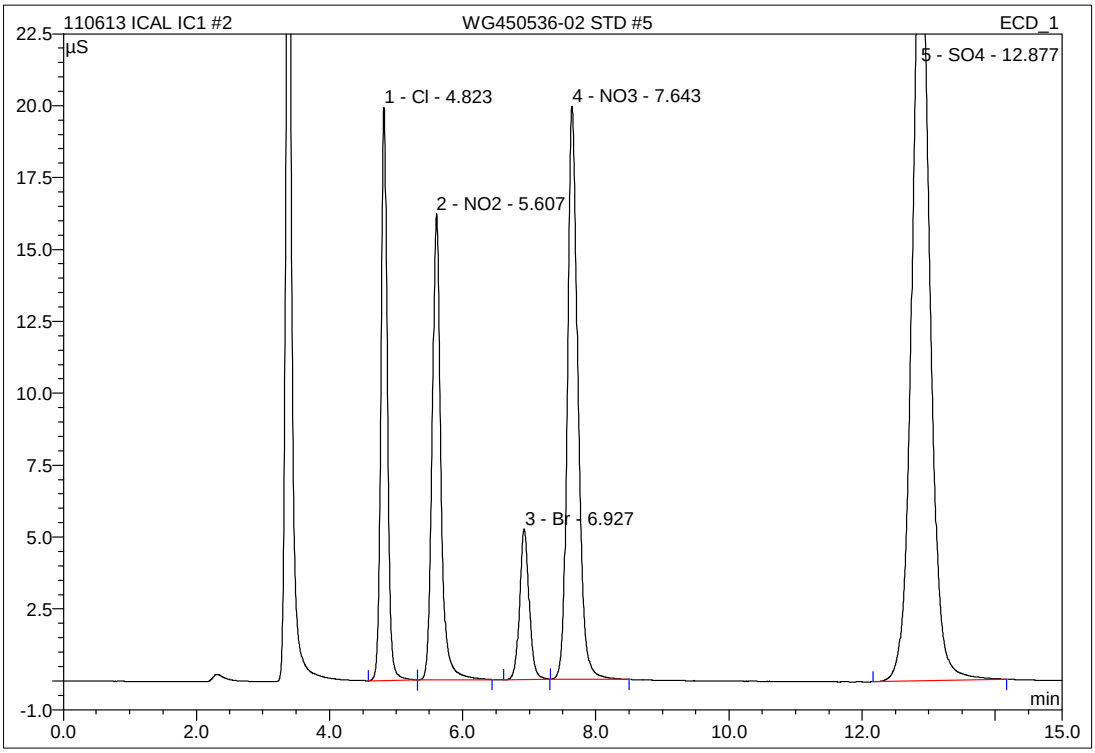

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.82	Cl	19.929	2.191	12.44	12.214	BMB
2	5.61	NO2	16.200	2.454	13.93	7.542	BMB
3	6.93	Br	5.239	0.867	4.92	12.094	BMB
4	7.64	NO3	19.921	3.678	20.87	8.325	BMB
5	12.88	SO4	26.681	8.429	47.84	62.207	BMB
Total:			87.970	17.619	100.00	102.381	

00736810

2 WG450536-02 STD #5

1,1 JBK STD60856

#753019

Sample Name:	**WG450536-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

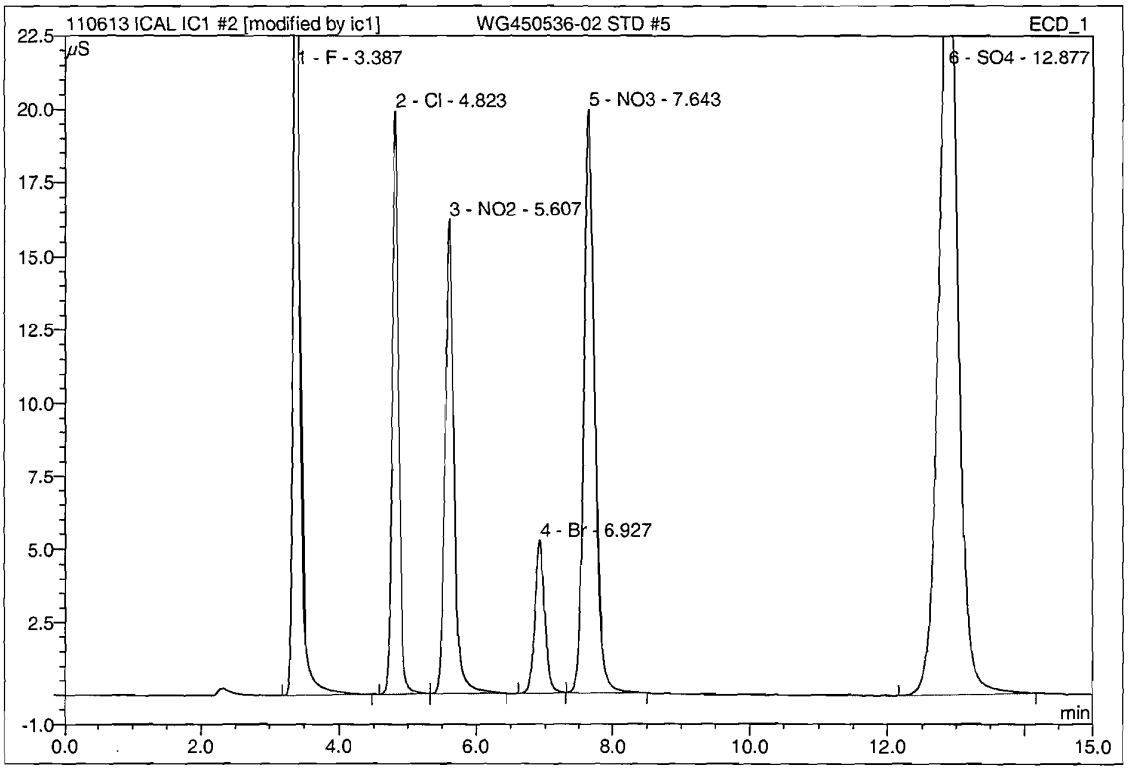

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.39	F	30.428	3.264	15.63	12.514	BMB*
2	4.82	Cl	19.929	2.191	10.49	12.214	BMB
3	5.61	NO2	16.200	2.454	11.75	7.542	BMB
4	6.93	Br	5.239	0.867	4.15	12.094	BMB
5	7.64	NO3	19.921	3.678	17.61	8.325	BMB
6	12.88	SO4	26.681	8.429	40.36	62.207	BMB
Total:			118.398	20.883	100.00	114.896	

JBK #1
11/11/13
11/11/13

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG450536-03 STD #4

1,1 JBK STD60856

Sample Name:	**WG450536-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

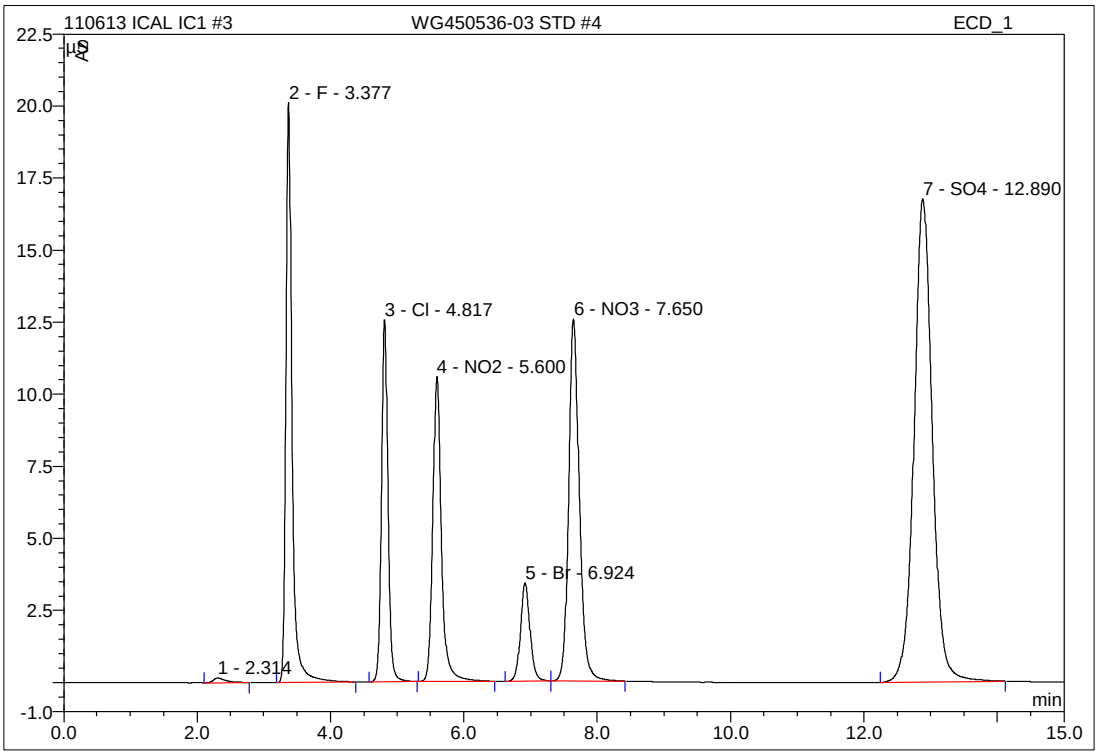

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.31	n.a.	0.162	0.036	0.27	n.a.	BMB
2	3.38	F	20.121	2.119	15.83	8.136	BMB
3	4.82	Cl	12.573	1.397	10.43	7.794	BMB
4	5.60	NO2	10.582	1.591	11.88	4.896	BMB
5	6.92	Br	3.413	0.568	4.25	7.930	BMB
6	7.65	NO3	12.548	2.339	17.46	5.302	BMB
7	12.89	SO4	16.761	5.341	39.89	39.473	BMB
Total:			76.160	13.391	100.00	73.532	

3 WG450536-03 STD #4

1,1 JBK STD60856

Sample Name:	**WG450536-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

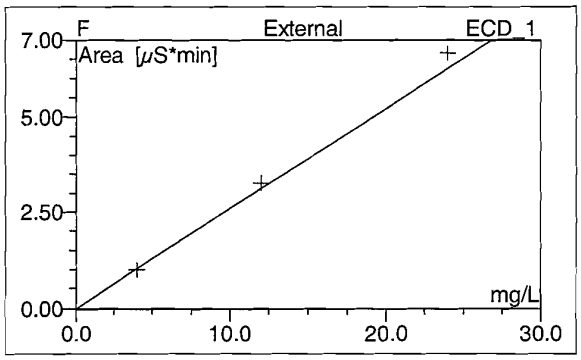

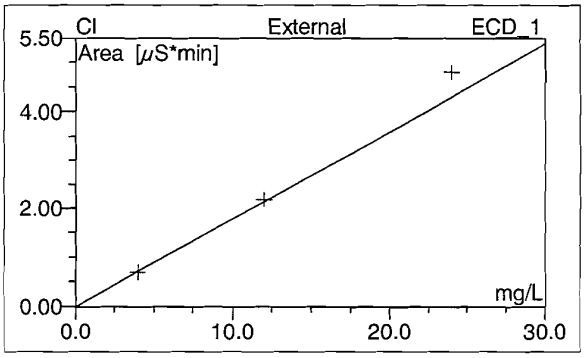

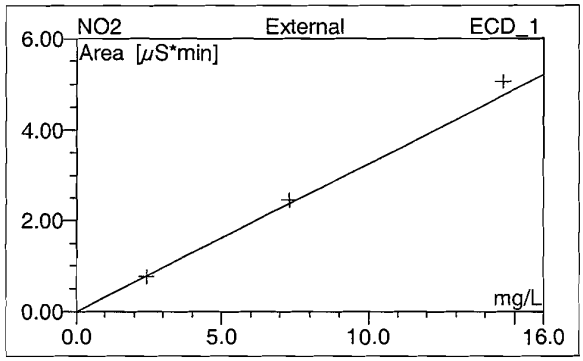

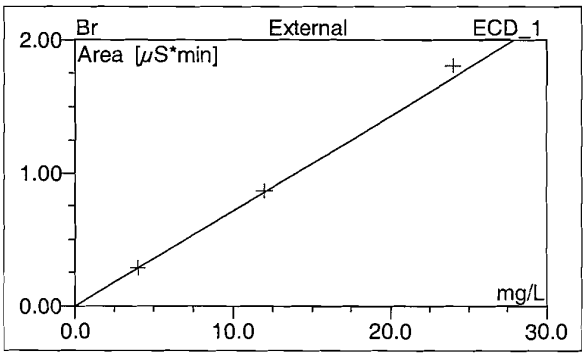

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.31	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.38	F	YYLOff	3	99.9997	-0.0079	0.2615	0.0000
3	4.82	Cl	YYLOff	3	99.8983	-0.0037	0.1797	0.0000
4	5.60	NO2	YYLOff	3	99.9953	-0.0063	0.3262	0.0000
5	6.92	Br	YYLOff	3	99.9728	-0.0002	0.0717	0.0000
6	7.65	NO3	YYLOff	3	99.8870	-0.0100	0.4430	0.0000
7	12.89	SO4	YYLOff	3	99.8991	-0.0203	0.1358	0.0000
Average:					99.9420	-0.0081	0.2363	0.0000

3 WG450536-03 STD #4

1,1 JBK STD60856

Sample Name:	**WG450536-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

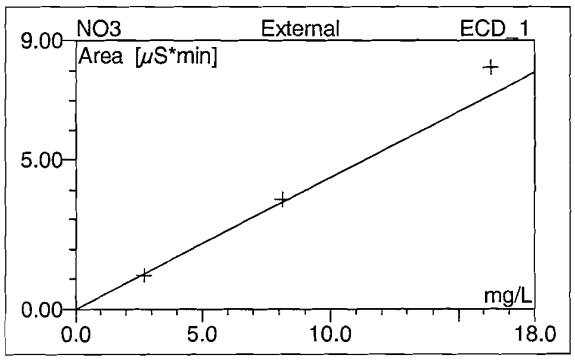

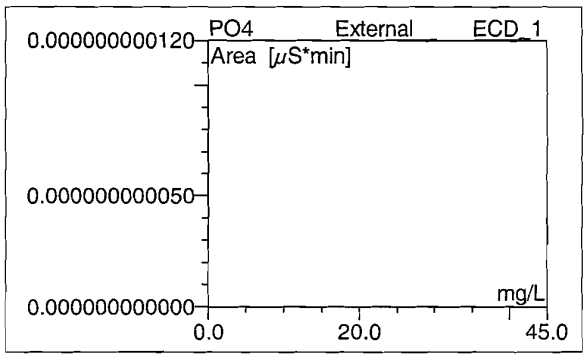

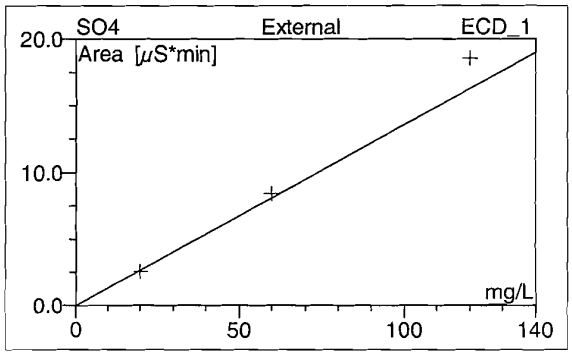

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.31	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.38	F	YYLOff	3	99.9997	-0.0079	0.2615	0.0000
3	4.82	Cl	YYLOff	3	99.8983	-0.0037	0.1797	0.0000
4	5.60	NO2	YYLOff	3	99.9953	-0.0063	0.3262	0.0000
5	6.92	Br	YYLOff	3	99.9728	-0.0002	0.0717	0.0000
6	7.65	NO3	YYLOff	3	99.8870	-0.0100	0.4430	0.0000
7	12.89	SO4	YYLOff	3	99.8991	-0.0203	0.1358	0.0000
Average:					99.9420	-0.0081	0.2363	0.0000

4 WG450536-04 STD #3

1,1 JBK STD60856

Sample Name:	**WG450536-04 STD #3**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:51**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

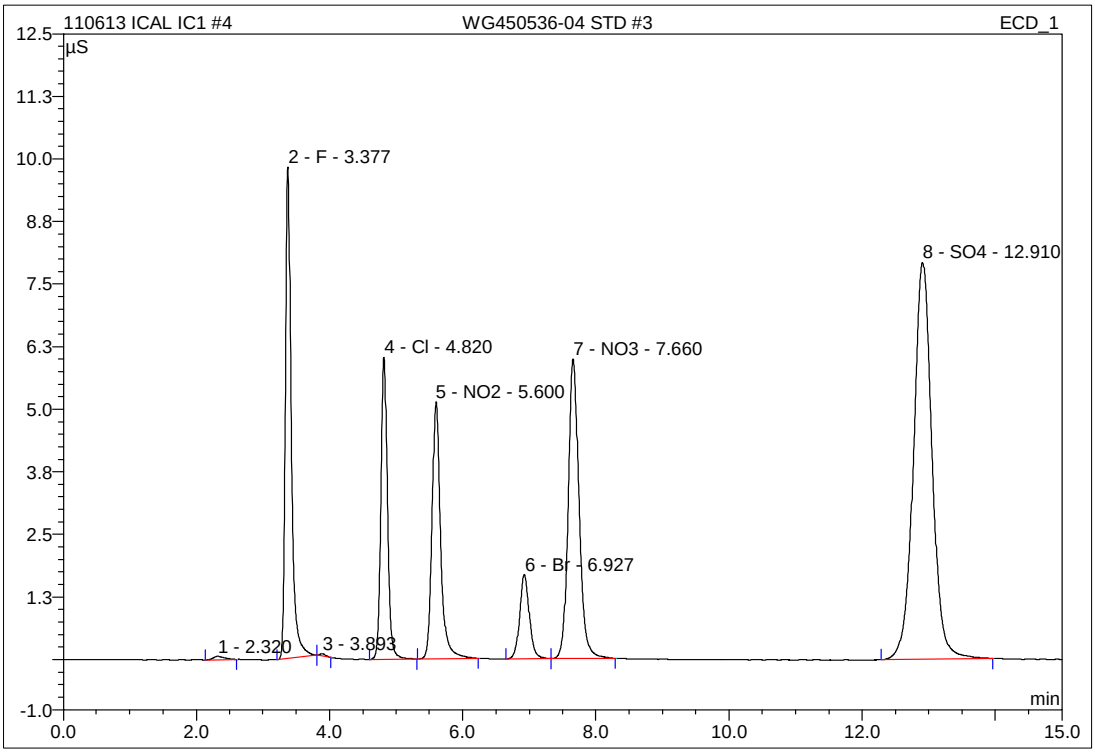

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.32	n.a.	0.067	0.013	0.20	n.a.	BMB
2	3.38	F	9.819	0.992	15.39	3.825	BMb
3	3.89	n.a.	0.050	0.005	0.07	n.a.	bMB
4	4.82	Cl	6.037	0.682	10.59	3.818	BMB
5	5.60	NO2	5.131	0.766	11.89	2.368	BMB
6	6.93	Br	1.688	0.285	4.42	3.973	BMB
7	7.66	NO3	5.989	1.134	17.59	2.582	BMB
8	12.91	SO4	7.924	2.568	39.85	19.058	BMB
Total:			36.705	6.445	100.00	35.624	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

5 WG450536-05 STD #2

1,1 JBK STD60856

Sample Name:	**WG450536-05 STD #2**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 10:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

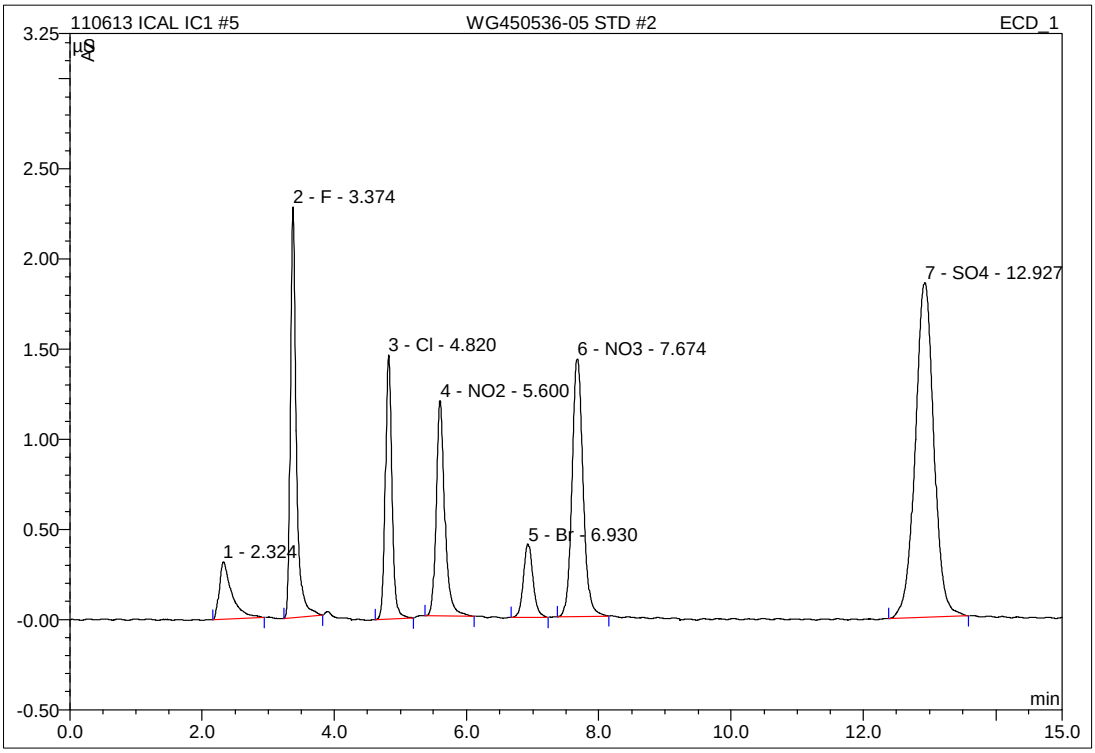

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.32	n.a.	0.319	0.071	4.41	n.a.	BMB
2	3.37	F	2.278	0.237	14.76	0.936	BMB
3	4.82	Cl	1.466	0.169	10.54	0.962	BMB
4	5.60	NO2	1.196	0.180	11.18	0.570	BMB
5	6.93	Br	0.407	0.068	4.26	0.956	BMB
6	7.67	NO3	1.430	0.275	17.11	0.643	BMB
7	12.93	SO4	1.857	0.606	37.74	4.612	BMB
Total:			8.952	1.606	100.00	8.680	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

6 WG450536-06 STD #1

1,1 JBK STD60856

Sample Name:	**WG450536-06 STD #1**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 10:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

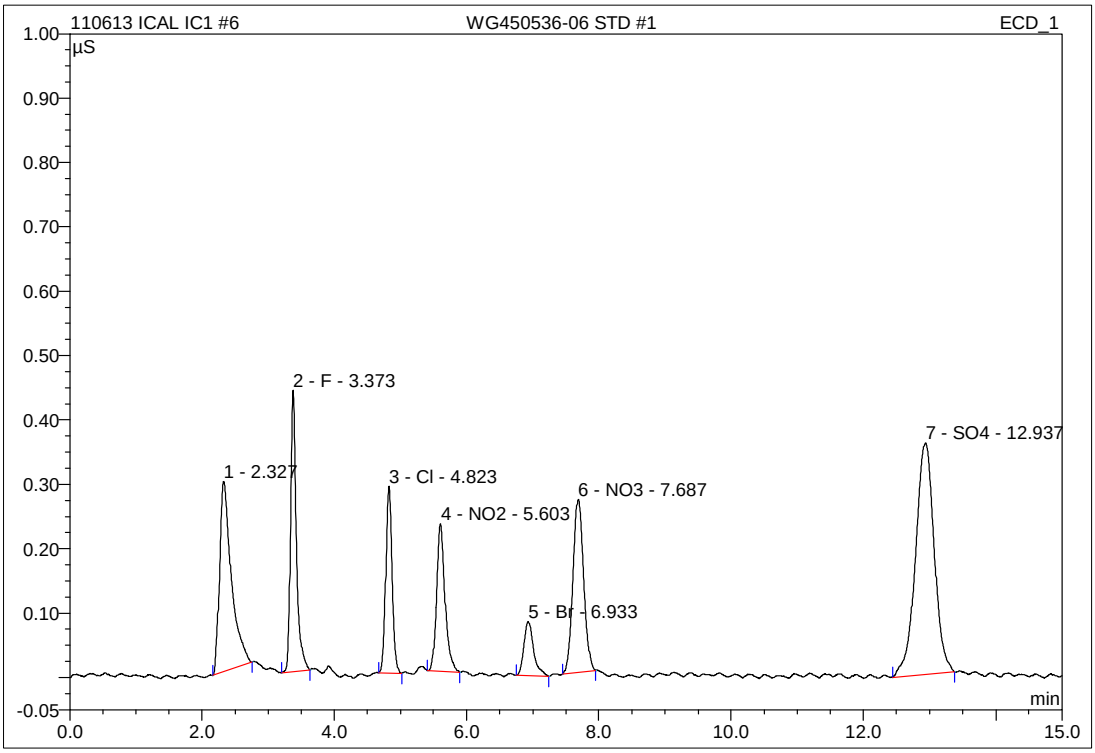

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.33	n.a.	0.296	0.062	17.32	n.a.	BMB
2	3.37	F	0.438	0.045	12.67	0.202	BMB
3	4.82	Cl	0.291	0.033	9.15	0.202	BMB
4	5.60	NO2	0.229	0.034	9.53	0.123	BMB
5	6.93	Br	0.084	0.014	4.01	0.202	BMB
6	7.69	NO3	0.269	0.051	14.23	0.137	BMB
7	12.94	SO4	0.360	0.118	33.08	1.016	BMB
Total:			1.966	0.356	100.00	1.882	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

7 WG450536-07 ALT STD

1,1 JBK STD60857

Sample Name:	**WG450536-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 11:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

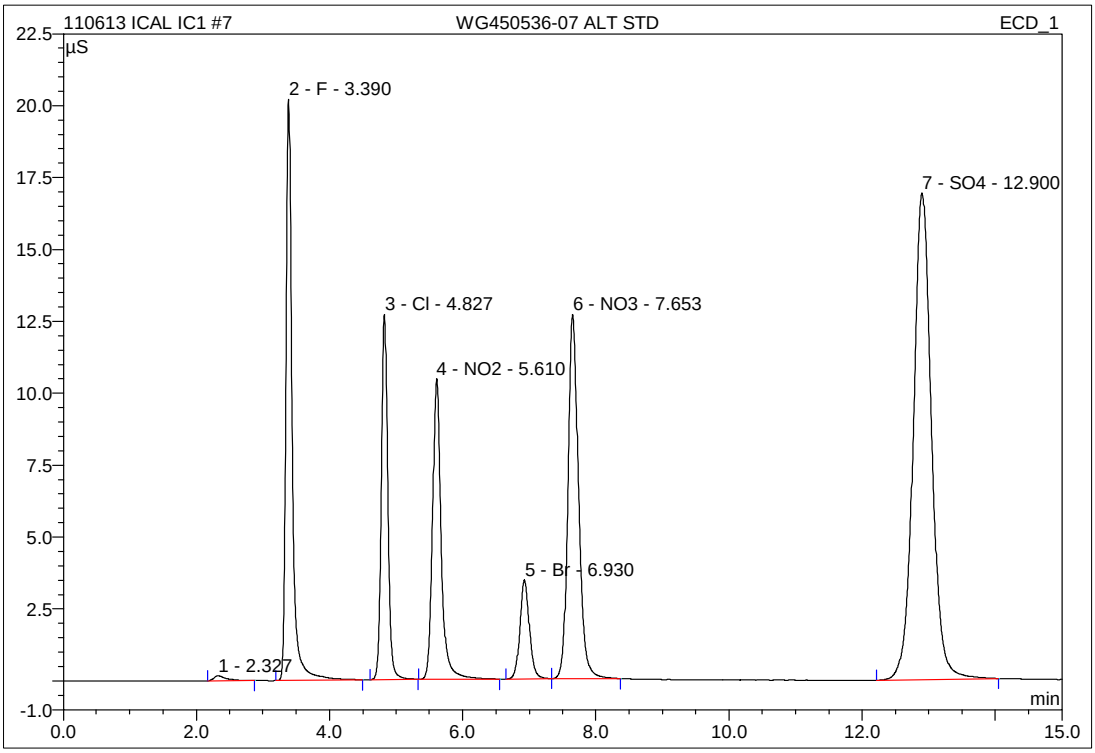

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.33	n.a.	0.171	0.038	0.28	n.a.	BMB
2	3.39	F	20.200	2.127	15.86	8.165	BMB
3	4.83	Cl	12.689	1.401	10.45	7.817	BMB
4	5.61	NO2	10.450	1.577	11.76	4.853	BMB
5	6.93	Br	3.435	0.567	4.23	7.912	BMB
6	7.65	NO3	12.659	2.341	17.46	5.308	BMB
7	12.90	SO4	16.913	5.360	39.97	39.614	BMB
Total:			76.517	13.411	100.00	73.669	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

7 WG450536-07 ALT STD

1,1 JBK STD60857

Sample Name:	**WG450536-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 11:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

WG450536-07 ALT S	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	8.1653	2.07	PASS
Cl	8.00	7.8171	-2.29	PASS
NO2-N	4.8714	4.8526	-0.38	PASS
Br	8.00	7.9119	-1.10	PASS
NO3-N	5.4216	5.3082	-2.09	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	39.6139	-0.97	PASS

3 WG475074-01 ANION CCV

1,1 JBK STD63859 _____ psi @ _____

Sample Name:	**WG475074-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/9/2014 8:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

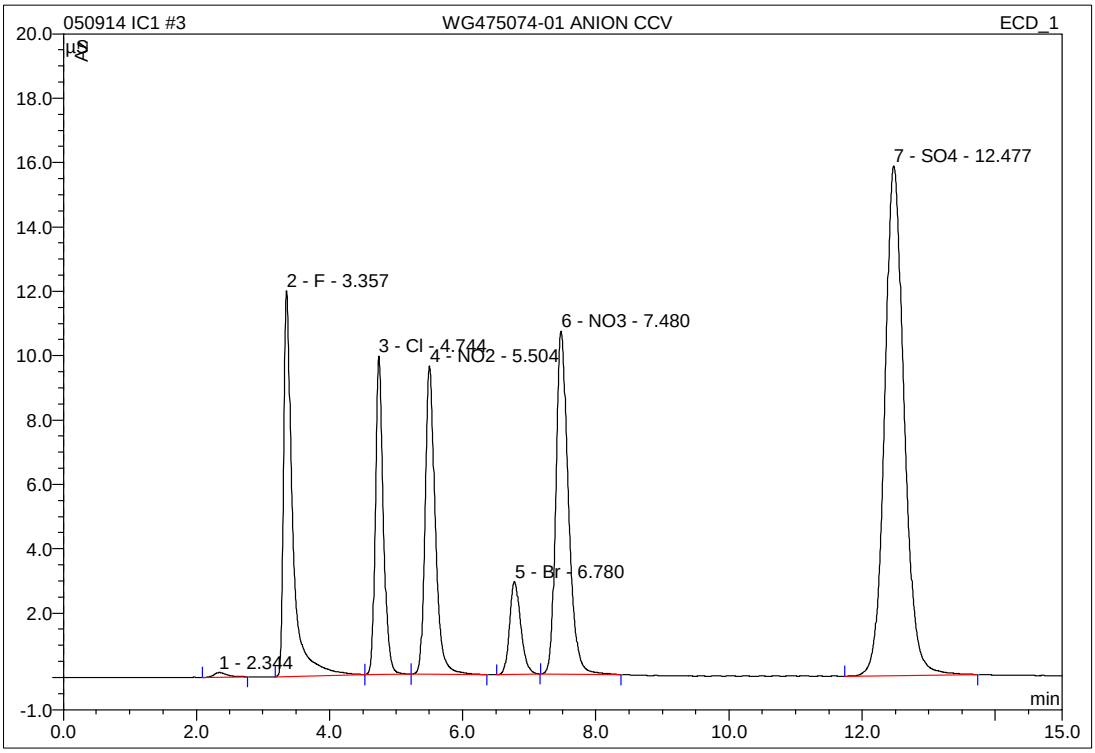

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.34	n.a.	0.145	0.034	0.26	n.a.	BMB
2	3.36	F	11.987	1.902	14.33	7.214	BMB
3	4.74	Cl	9.892	1.375	10.36	7.505	BMB
4	5.50	NO2	9.583	1.688	12.72	5.081	BMB
5	6.78	Br	2.884	0.561	4.23	7.705	BMB
6	7.48	NO3	10.662	2.321	17.48	5.120	BMB
7	12.48	SO4	15.840	5.395	40.63	38.414	BMB
Total:			60.994	13.277	100.00	71.039	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG475074-01 ANION CCV

1,1 JBK STD63859 _____ psi @ _____

Sample Name:	**WG475074-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/9/2014 8:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG475074-01 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.2135	-9.83	PASS
Cl	8.00	7.5055	-6.18	PASS
NO2-N	4.8714	5.0813	4.31	PASS
Br	8.00	7.7047	-3.69	PASS
NO3-N	5.4216	5.1203	-5.56	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.4141	-3.96	PASS

15 WG475074-03 ANION CCV

1,1 JBK STD63859

Sample Name:	**WG475074-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/9/2014 12:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

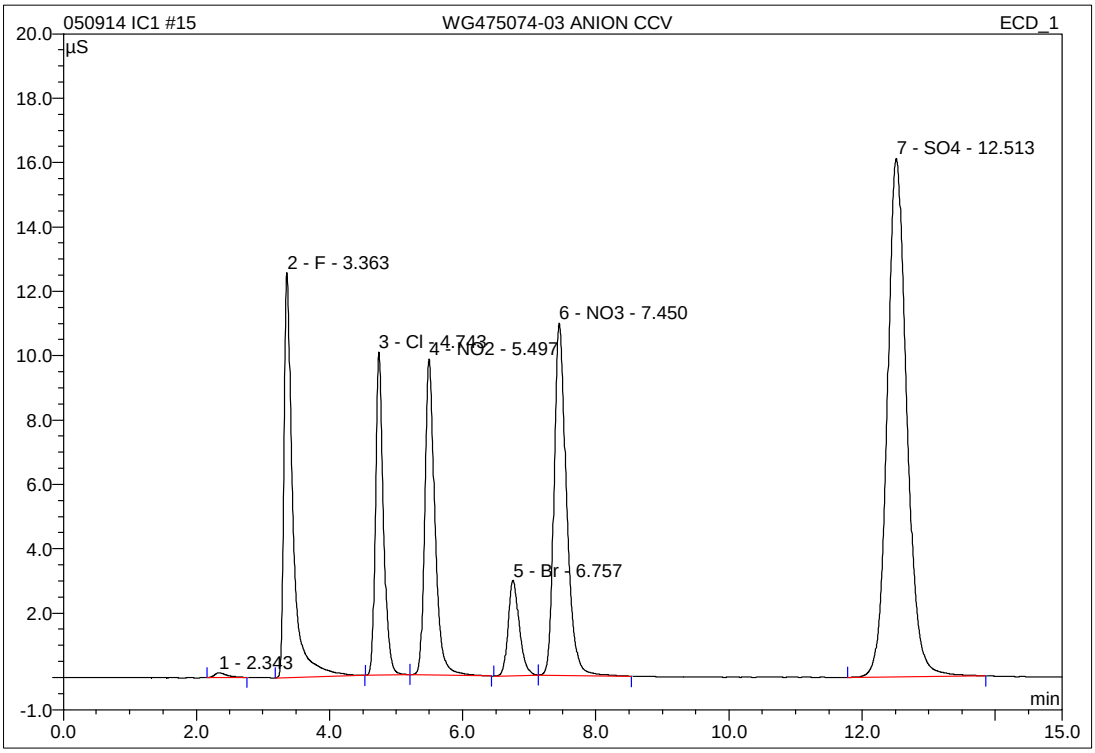

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.34	n.a.	0.147	0.033	0.24	n.a.	BMB
2	3.36	F	12.581	1.963	14.48	7.429	BMB
3	4.74	Cl	10.037	1.398	10.31	7.623	BMb
4	5.50	NO2	9.809	1.727	12.74	5.192	bMB
5	6.76	Br	2.959	0.574	4.24	7.880	BMb
6	7.45	NO3	10.936	2.375	17.52	5.230	bMB
7	12.51	SO4	16.112	5.486	40.46	39.004	BMB
Total:			62.582	13.557	100.00	72.357	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

15 WG475074-03 ANION CCV

1,1 JBK STD63859

Sample Name:	**WG475074-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/9/2014 12:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG475074-03 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.4286	-7.14	PASS
Cl	8.00	7.6229	-4.71	PASS
NO2-N	4.8714	5.1917	6.58	PASS
Br	8.00	7.8804	-1.49	PASS
NO3-N	5.4216	5.2299	-3.54	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	39.0039	-2.49	PASS

3 WG476859-01 ANION CCV

1,1 ALS STD63859 _____ psi @ _____

Sample Name:	**WG476859-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2014 14:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

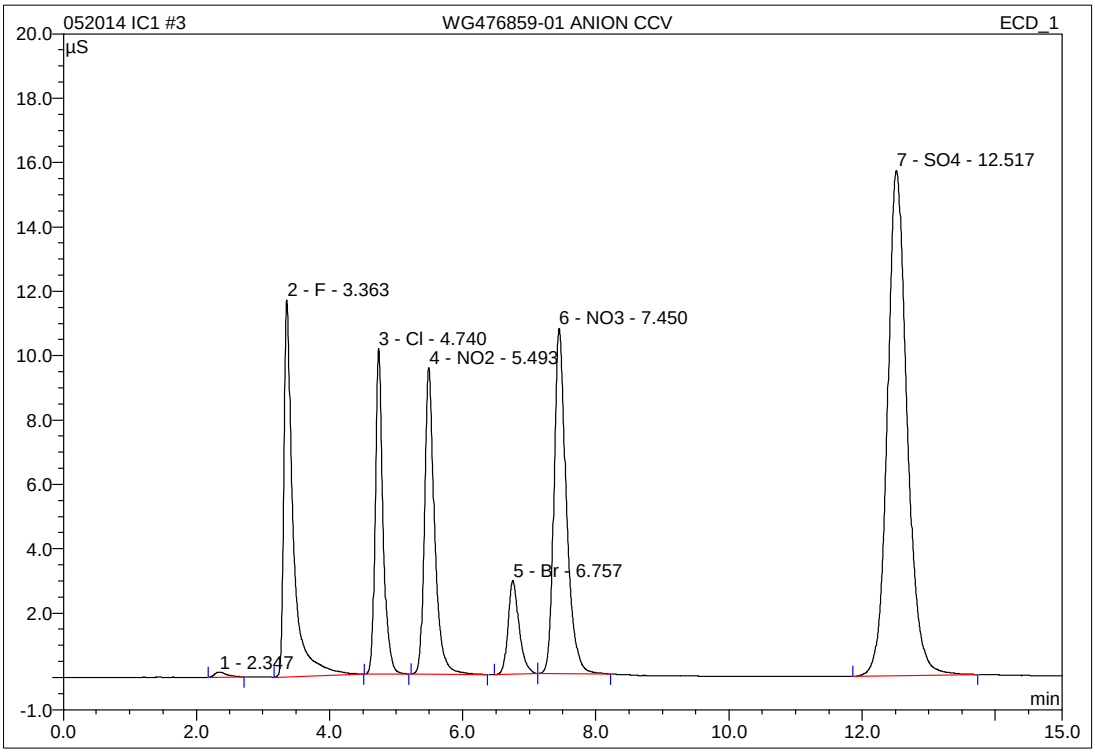

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.35	n.a.	0.159	0.034	0.26	n.a.	BMB
2	3.36	F	11.714	1.907	14.37	7.086	BMB
3	4.74	Cl	10.122	1.380	10.40	7.702	BMB
4	5.49	NO2	9.530	1.677	12.64	4.980	BMB
5	6.76	Br	2.906	0.559	4.21	7.800	BMB
6	7.45	NO3	10.733	2.313	17.43	5.243	BMB
7	12.52	SO4	15.703	5.401	40.70	39.912	BMB
Total:			60.867	13.271	100.00	72.724	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG476859-01 ANION CCV

1,1 ALS STD63859 _____ psi @ _____

Sample Name:	**WG476859-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2014 14:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG476859-01 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.0857	-11.43	FAIL
Cl	8.00	7.7017	-3.73	PASS
NO2-N	4.8714	4.9803	2.24	PASS
Br	8.00	7.8004	-2.50	PASS
NO3-N	5.4216	5.2435	-3.29	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	39.9119	-0.22	PASS

15 WG476859-03 ANION CCV

1,1 ALS STD63859

Sample Name:	**WG476859-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2014 18:12**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

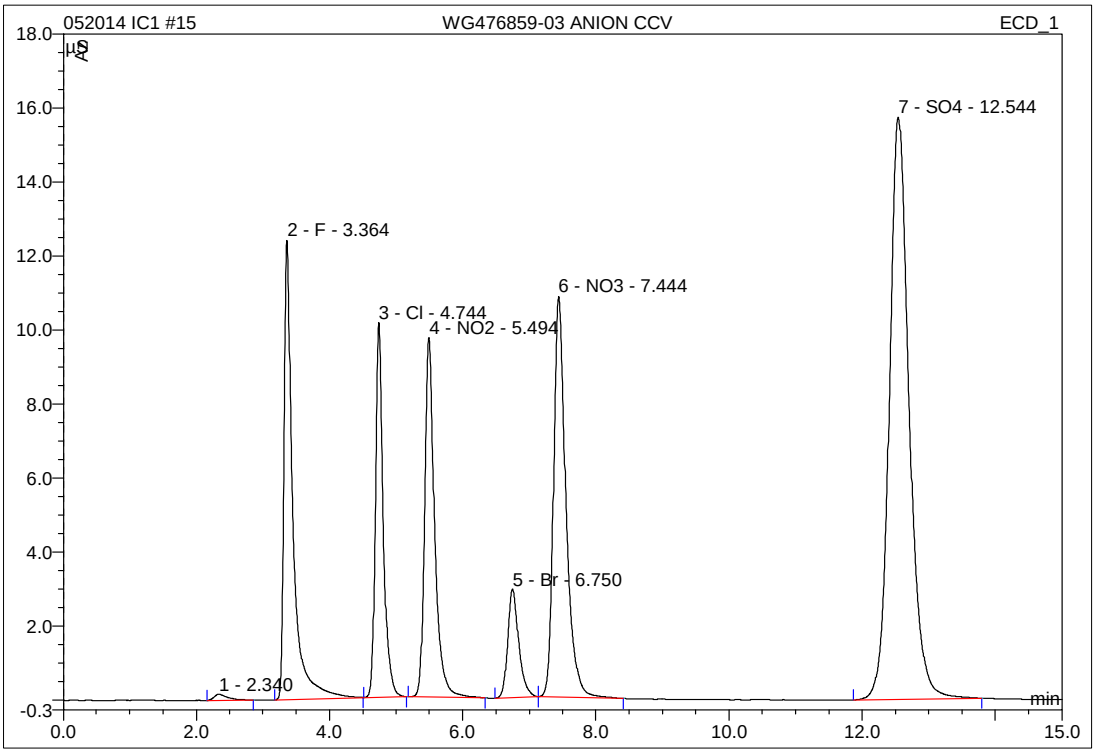

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.34	n.a.	0.165	0.040	0.30	n.a.	BMB
2	3.36	F	12.399	1.930	14.46	7.169	BMB
3	4.74	Cl	10.120	1.383	10.36	7.714	BMB
4	5.49	NO2	9.701	1.692	12.68	5.024	BMB
5	6.75	Br	2.925	0.561	4.20	7.828	BMb
6	7.44	NO3	10.807	2.334	17.49	5.292	bMB
7	12.54	SO4	15.712	5.406	40.51	39.953	BMB
Total:			61.830	13.347	100.00	72.980	

15 WG476859-03 ANION CCV

1,1 ALS STD63859

Sample Name:	**WG476859-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2014 18:12**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG476859-03 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.1691	-10.39	FAIL
Cl	8.00	7.7143	-3.57	PASS
NO2-N	4.8714	5.0236	3.12	PASS
Br	8.00	7.8279	-2.15	PASS
NO3-N	5.4216	5.2916	-2.40	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	39.9534	-0.12	PASS

4 WG475074-02 ANION CCB

1,1 JBK

Sample Name:	**WG475074-02 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/9/2014 9:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

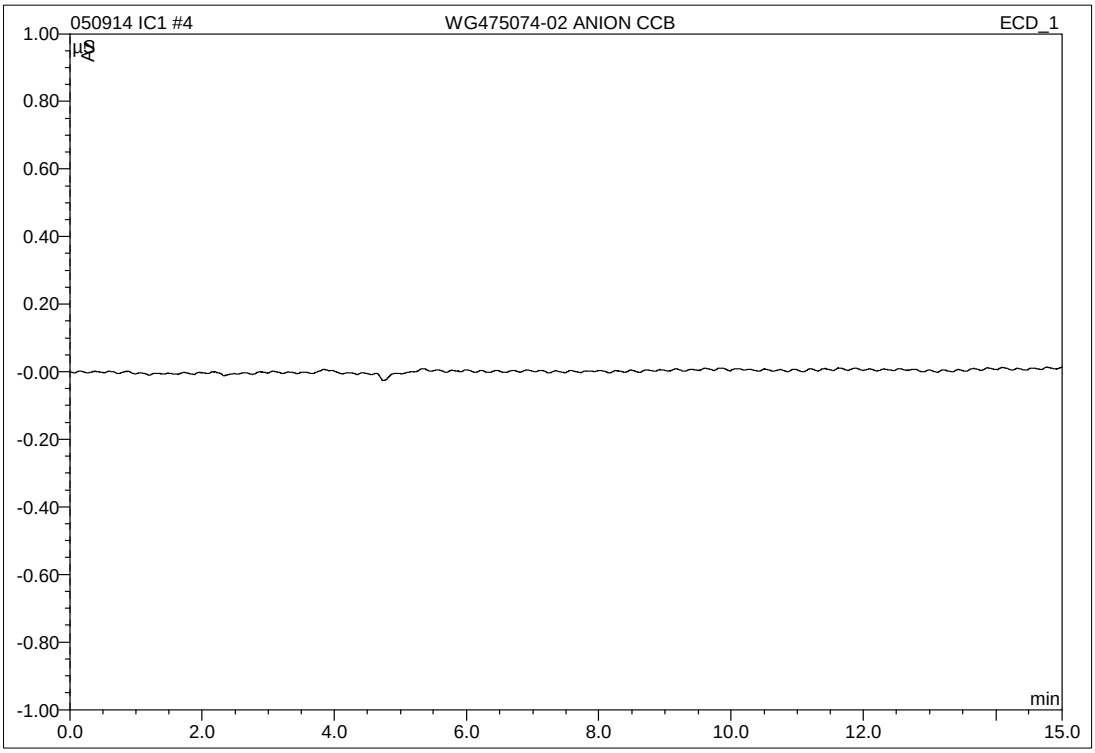

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

16 WG475074-04 ANION CCB

1,1 JBK

Sample Name:	**WG475074-04 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/9/2014 12:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

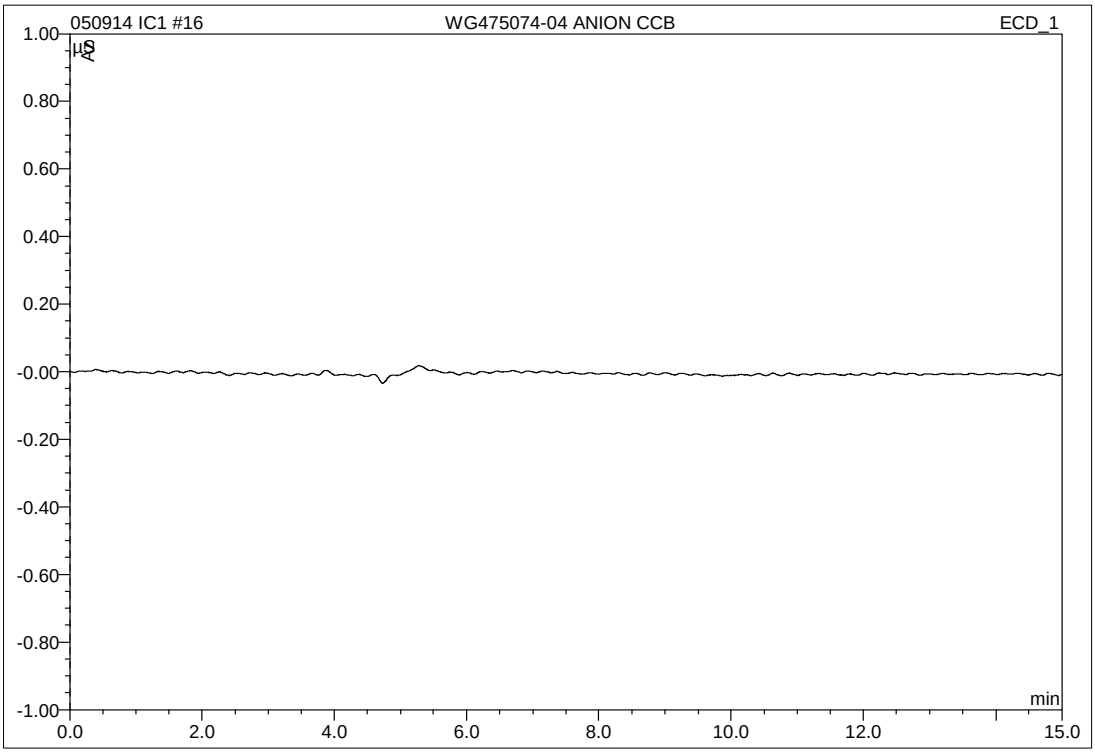

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG476859-02 ANION CCB

1,1 ALS

Sample Name:	**WG476859-02 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2014 14:57**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

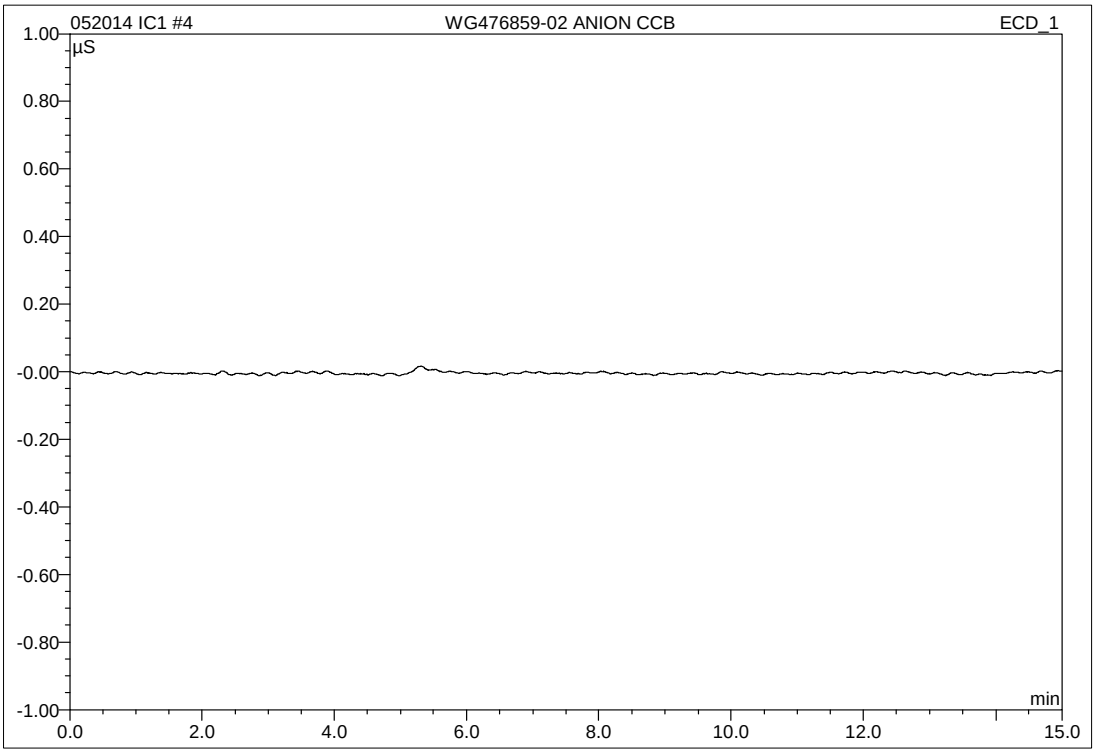

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

16 WG476859-04 ANION CCB

1,1 ALS

Sample Name:	**WG476859-04 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2014 18:30**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

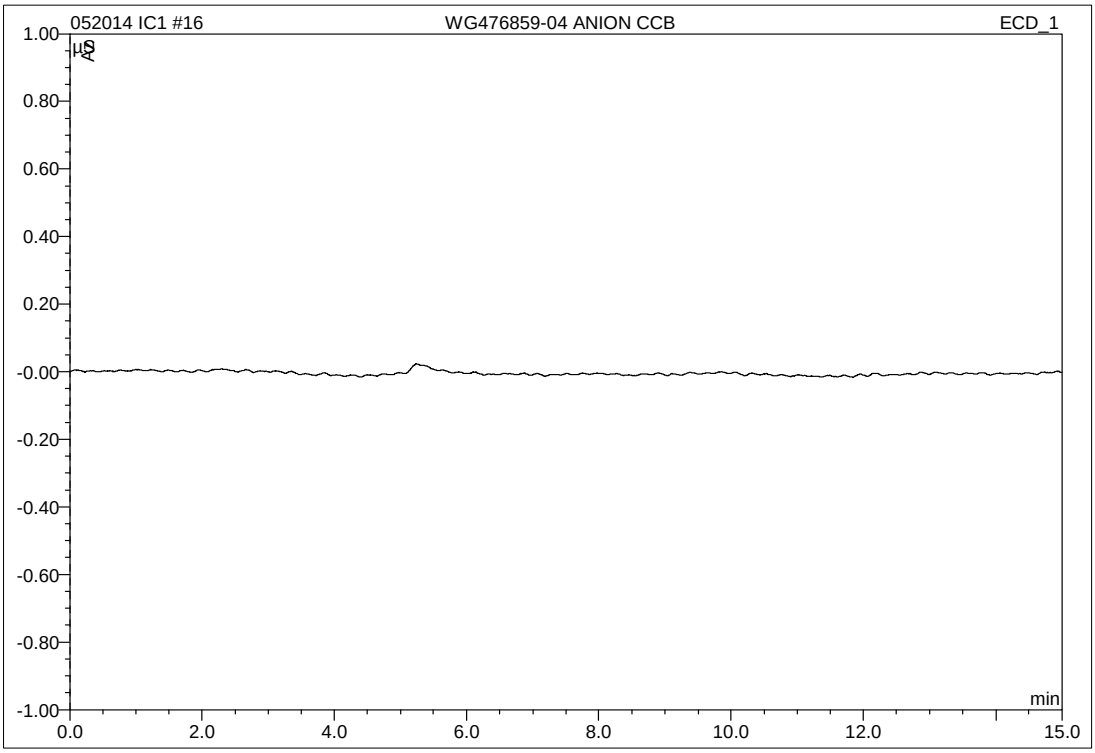

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/6/2013	6/6/2013	6/7/2013
File #	WG433163-01	WG433163-05	WG433448-01
Time	12:58	18:54	12:23

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.31	3.30	3.31	0.017
Cl	4.90	4.89	4.92	0.046
NO2-N	5.79	5.78	5.83	0.079
Br	7.34	7.31	7.43	0.187
NO3-N	8.21	8.18	8.32	0.221
SO4	13.74	13.74	13.67	0.121

2.2.1.5 Raw QC Data

5 WG475071-01 ANION BLANK

1,1 JBK

Sample Name:	**WG475071-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/9/2014 9:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

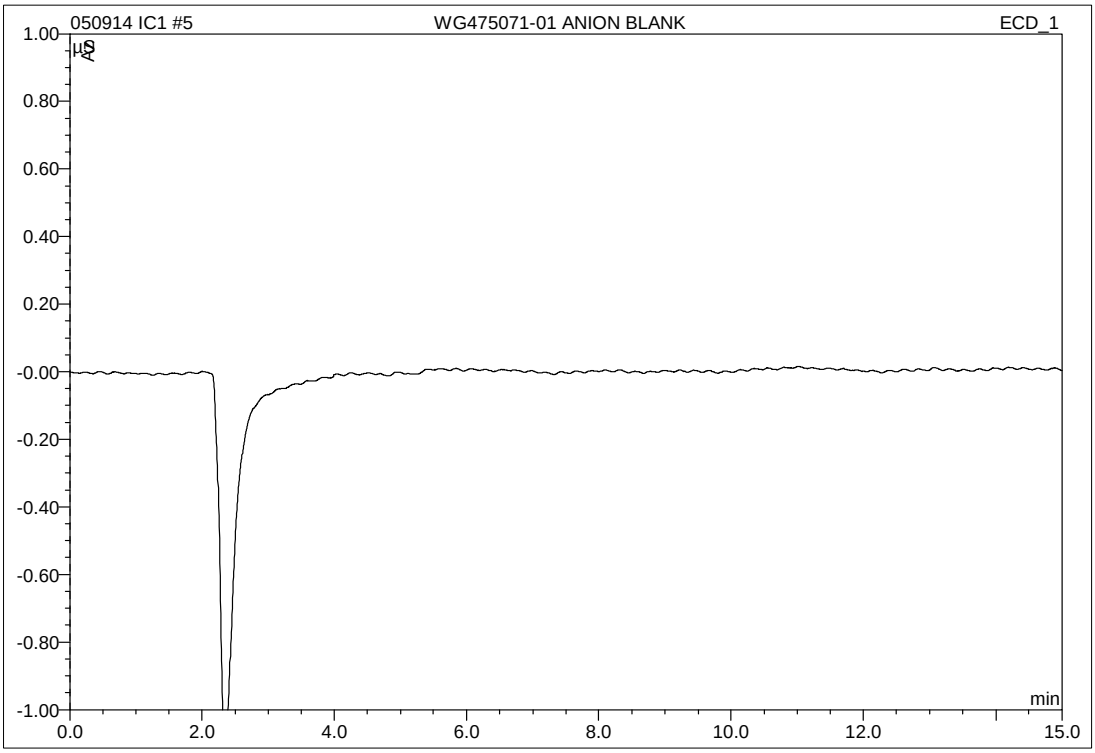

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

5 WG476854-01 ANION BLANK

1,1 ALS

Sample Name:	**WG476854-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2014 15:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

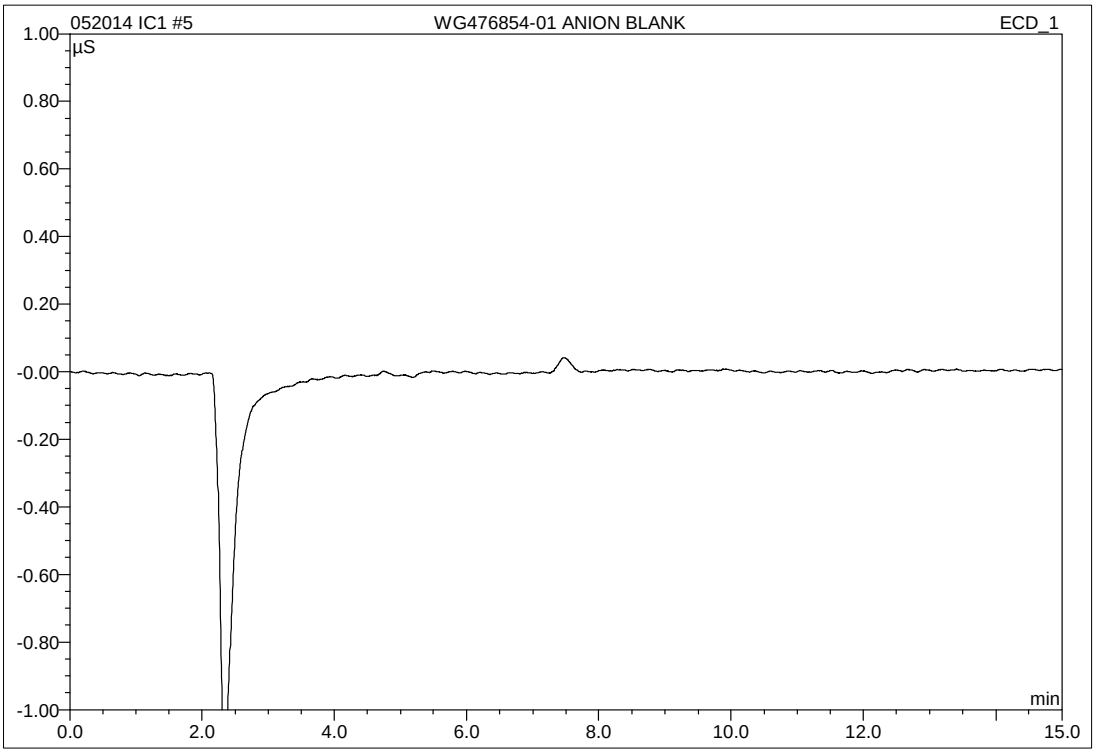

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

6 WG475071-02 ANION LCS

1,1 JBK

Sample Name:	**WG475071-02 ANION LCS**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/9/2014 9:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

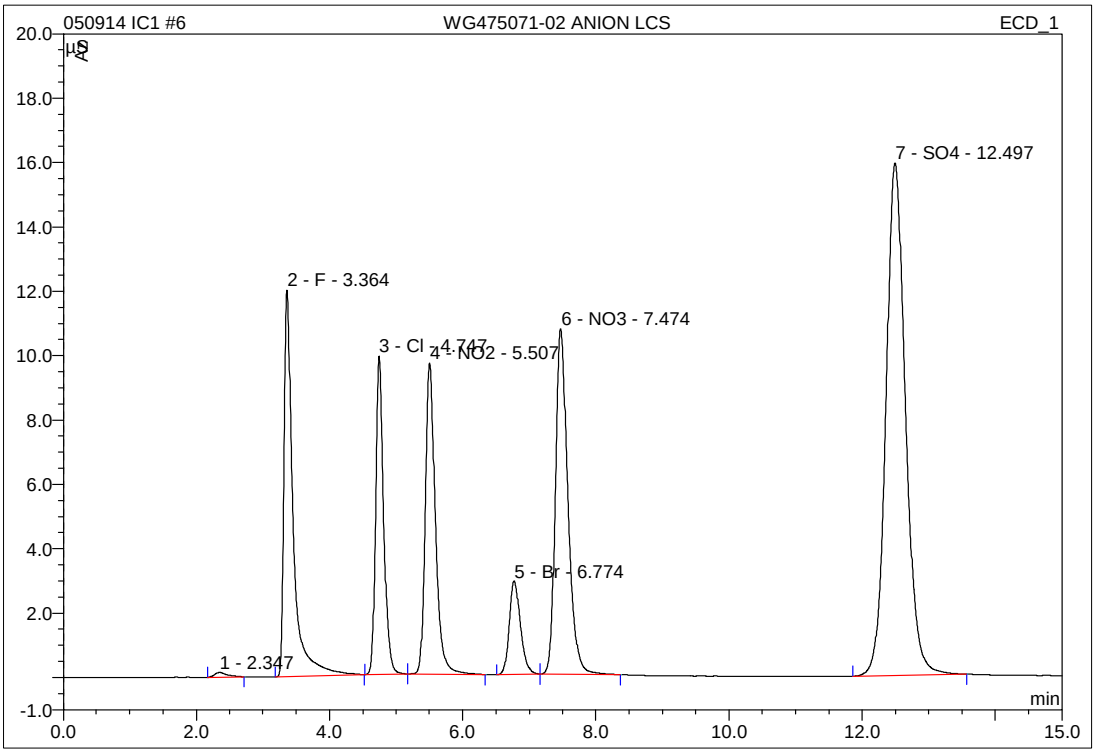

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.35	n.a.	0.145	0.032	0.24	n.a.	BMB
2	3.36	F	12.024	1.925	14.44	7.293	BMB
3	4.75	Cl	9.890	1.378	10.34	7.521	BMb
4	5.51	NO2	9.665	1.700	12.76	5.115	bMB
5	6.77	Br	2.907	0.566	4.24	7.768	BMB
6	7.47	NO3	10.736	2.332	17.49	5.142	BMB
7	12.50	SO4	15.922	5.399	40.50	38.445	BMB
Total:			61.290	13.332	100.00	71.283	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

6 WG476854-02 ANION LCS

1,1 ALS

Sample Name:	**WG476854-02 ANION LCS**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2014 15:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

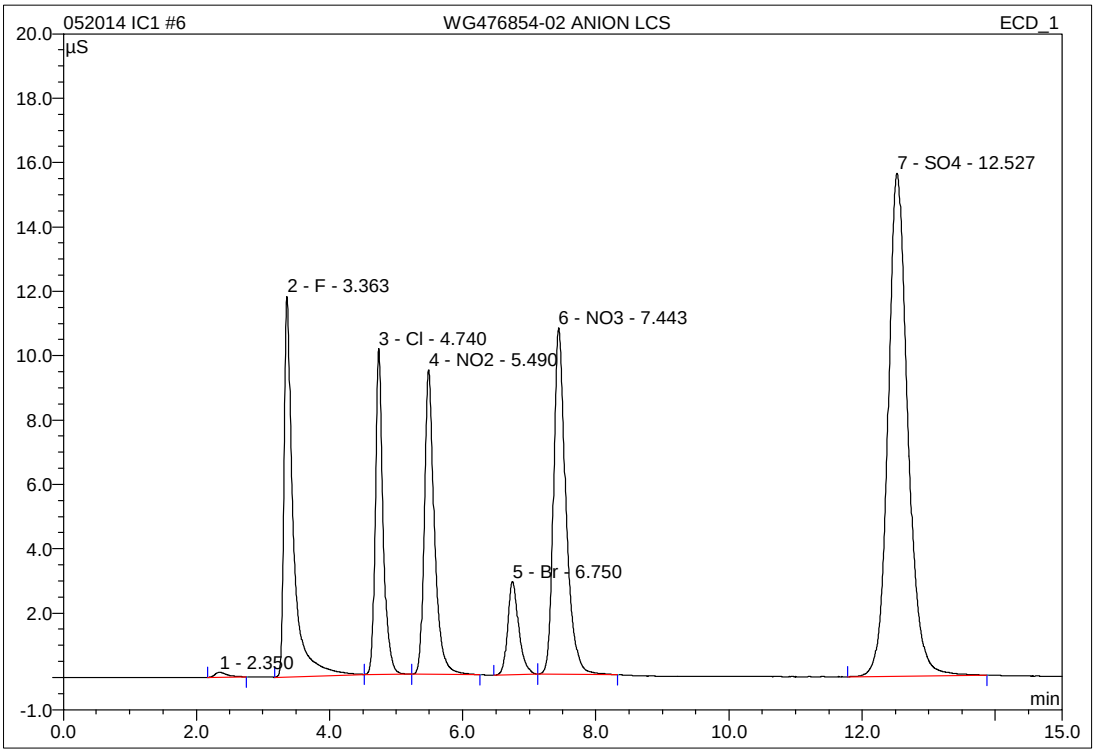

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.35	n.a.	0.153	0.033	0.25	n.a.	BMB
2	3.36	F	11.825	1.897	14.34	7.052	BMB
3	4.74	Cl	10.117	1.374	10.39	7.668	bMB
4	5.49	NO2	9.461	1.664	12.58	4.943	BMB
5	6.75	Br	2.907	0.560	4.23	7.809	BMB
6	7.44	NO3	10.761	2.320	17.54	5.260	bMB
7	12.53	SO4	15.624	5.380	40.67	39.762	BMB
Total:			60.847	13.230	100.00	72.495	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.2.2 Ferrous Iron Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-12	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW01-050714	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	04/14/2014 16:15
Workgroup #:	WG475674	**Analyst:**	TMM	**Run Date:**	05/13/2014 12:15
Collect Date:	05/07/2014 08:45	**Dilution:**	50	**File ID:**	1V.1405131215-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		5.69		2.00	2.00	1.00

Certificate of Analysis

Sample #:	L14050603-13	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW08-050714	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	04/14/2014 16:15
Workgroup #:	WG475674	**Analyst:**	TMM	**Run Date:**	05/13/2014 12:15
Collect Date:	05/07/2014 10:05	**Dilution:**	1	**File ID:**	1V.1405131215-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.282		0.0400	0.0400	0.0200

2.2.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2014
Analyst: TMM
Analyst: NA
Method: FERROUS
Instrument: UV-120-1V
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG475674

Calibration/Linearity	4/14
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TMM
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
14-MAY-2014
Tammy Morris

Secondary Reviewer:
15-MAY-2014
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-15-2014 16:58:45

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM3500Fe-B-1997 AAB#: WG475674

Login Number: L14050603

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW01-050714	12	05/07/14					05/13/2014	6.1	7		05/13/14	6.1	7	
67WW08-050714	13	05/07/14					05/13/2014	6.1	7		05/13/14	6.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3545475
Report generated 05/15/2014 15:54

METHOD BLANK SUMMARY

Login Number: L14050603
Blank File ID: 1V.1405131215-02
Prep Date: 05/13/14 12:15
Analyzed Date: 05/13/14 12:15
Analyst: TMM

Work Group: WG475674
Blank Sample ID: WG475674-01
Instrument ID: UV-120-1V
Method: SM3500Fe-B-1997

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG475674-02	1V.1405131215-03	05/13/14 12:15	
LCS2	WG475674-03	1V.1405131215-04	05/13/14 12:15	
67WW01-050714	L14050603-12	1V.1405131215-06	05/13/14 12:15	
67WW08-050714	L14050603-13	1V.1405131215-07	05/13/14 12:15	
DUP	WG475674-05	1V.1405131215-12	05/13/14 12:15	

Report Name: BLANK_SUMMARY
PDF File ID: 3545476
Report generated 05/15/2014 15:54

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14050603 Prep Date: 05/13/14 12:15 Sample ID: WG475674-01
Instrument ID: UV-120-1V Run Date: 05/13/14 12:15 Prep Method: SM3500Fe-B-1997
File ID: 1V.1405131215-02 Analyst: TMM Method: SM3500Fe-B-1997
Workgroup (AAB#): WG475674 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-120 - 14-APR-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Ferrous - Laboratory	0.0200	0.0400	0.0200	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3545477
15-MAY-2014 15:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14050603 Analyst: TMM Prep Method: SM3500Fe-B-1997
Instrument ID: UV-120-1V Matrix: Water Method: SM3500Fe-B-1997
Workgroup (AAB#): WG475674 Units: mg/L
QC Key: DOD4 Lot #: STD61518

Sample ID: WG475674-02 LCS File ID: 1V.1405131215-03 Run Date: 05/13/2014 12:15
Sample ID: WG475674-03 LCS2 File ID: 1V.1405131215-04 Run Date: 05/13/2014 12:15

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Iron, Ferrous - Laboratory	0.200	0.195	97.5	0.200	0.192	96.0	1.55	75 - 125	25	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3545479
Report generated: 05/15/2014 15:54

2.2.2.3 Raw Data

Curves

Wg.470878

Parameter: Ferrous Iron

Spectrophotometer: UV-120-1V

Calibration (Curve) standard stock: Std

Concentration: 100mg/L

Recipe for preparation of curve standards found in:
SOP: 3500 Revision: _____ Page: 8

Second Source Stock: Std (concentration: 100mg/L)

Daily Preparation: 2(100)/1000

concentration = =0.2

Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance
0	50	10cm	510	0.003
0.04				0.036
0.08				0.078
0.2				0.189
0.4				0.386
0.6				0.604
2nd Source				0.204

Analyst: Tammy Morris

Date/Time: 4/14/14 @ ~~1615~~ 1615 4/14/14

Tmm 4/14/14

DCN#101823

Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG470878
Analytical Method: FERROUS
Instrument ID: UV-120-1V

Analyst: TMM
Initial Calibration Date: 04/14/2014

Analyte: FERROUS IRON
Number of Points: 6
Slope: 0.998415
Y-Intercept: -0.00365130
Coef. Of Correlation (R^2): 0.999042
Coef. Of Correlation (R): 0.999521

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00300	0.00	0.00	-0.00365130
0.0400	0.0360	0.00160	0.00144	0.0362853
0.0800	0.0780	0.00640	0.00624	0.0762219
0.200	0.189	0.0400	0.0378	0.196032
0.400	0.386	0.160	0.154	0.395715
0.600	0.604	0.360	0.362	0.595398

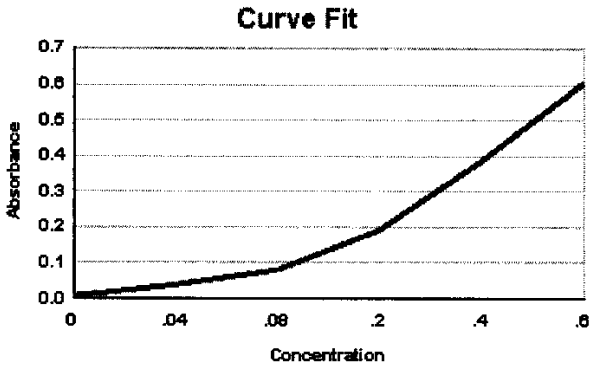

WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 04/14/2014 16:25

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG470878
File ID: 1V.1404141615-07
CCV ID: WG470878-07
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 04/14/2014
Run Time: 16:15
Analyst: TMM
Cal ID: UV-120 - 14-APR-14 16:15:06

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.2	0.208	1.02	4.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 04/14/2014 16:26

WORKGROUP: WG475674

Ferrous Iron

SM 3500Fe-B

SOP K3500 Revision # 7

Instrument: UV-120-IV

Curve Reference: 4/1/14

CCV: Std 63720
Daily Dilution: 3(100)/1000
Daily Dilution: = 0.3

RGTS: 28280
RGTS: 28783
RGTS: 29998

LCS: Std 61518
Daily Dilution: 2/1000
Daily Dilution: = 0.2

Spike: Std 61518
Daily Dilution: 0.1(100)/50
Daily Dilution: = 0.2

Sample	Blank	Volume (mL)	Dilution	Cell Size (nm)	Absorbance
CCV: 0.3 mg/L	✓	50		10cm	0.308
BLANK	✓	50			0.003
LCS: 0.2 mg/L	✓	50			0.191
LCS DUP: (0.2 mg/L)	✓	50			0.188
05-667-01	✓	50			0.007
03	✓	50			0.004
06	✓	50			0.003
07	✓	50			0.003
08	✓	50			0.005
09	✓	50			0.005
10	✓	50			0.004
05-603-12 5/13/14	✓	50	1/50		0.110
13 5/13/14	✓	50			0.278
05-933-01 5/13/14	✓	50	1/50		0.179
02 B 5/13/14	✓	50			0.455
03 C 1/2	✓	50	1/2		0.432
04 D	✓	50			0.010
		50			
		50			
		50			
		50			
		50			
		50			
		50			
DUP: 05-667-10	✓	50		10cm	0.005
MS: (0.2)	✓	50			0.178
MSD: (0.2)	✓	50			0.184
CCV: (0.3)	✓	50			0.303

Samples Run out of hold per Client

Analyst: Tammy Morris Date/Time: 5/13/14 @ 1215

*Samples were analyzed in the laboratory and not immediately in the field.

DCN#102588

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG475674
Analyte: FERROUS IRON

Analyst: TMM
Date: 05/13/2014

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG475674-01	50	50	0.00300	0.9984	-0.003651	0.0066619	0.0066619	1	mg/L
WG475674-02	50	50	0.191	0.9984	-0.003651	0.19496	0.19496	1	mg/L
WG475674-03	50	50	0.188	0.9984	-0.003651	0.19196	0.19196	1	mg/L
L14050667-01	50	50	0.00700	0.9984	-0.003651	0.010668	ND	1	ug/L
L14050667-03	50	50	0.00400	0.9984	-0.003651	0.0076634	ND	1	ug/L
L14050667-06	50	50	0.00300	0.9984	-0.003651	0.0066619	ND	1	ug/L
L14050667-07	50	50	0.00300	0.9984	-0.003651	0.0066619	ND	1	ug/L
L14050667-08	50	50	0.00500	0.9984	-0.003651	0.0086650	ND	1	ug/L
L14050667-09	50	50	0.00500	0.9984	-0.003651	0.0086650	ND	1	ug/L
L14050667-10	50	50	0.00400	0.9984	-0.003651	0.0076634	ND	1	ug/L
WG475674-04	50	50	0.00400	0.9984	-0.003651	0.0076634	0.0076634	1	mg/L
L14050603-12	50	50	0.110	0.9984	-0.003651	0.11383	5.6916	50	mg/L
L14050603-13	50	50	0.278	0.9984	-0.003651	0.28210	0.28210	1	mg/L
L14050933-01	50	50	0.179	0.9984	-0.003651	0.18294	9147.1	50	ug/L
L14050933-02	50	50	0.455	0.9984	-0.003651	0.45938	459.38	1	ug/L
L14050933-03	50	50	0.432	0.9984	-0.003651	0.43634	872.69	2	ug/L
L14050933-04	50	50	0.0100	0.9984	-0.003651	0.013673	ND	1	ug/L
WG475674-05	50	50	0.00500	0.9984	-0.003651	0.0086650	0.0086650	1	mg/L
WG475674-06	50	50	0.178	0.9984	-0.003651	0.18194	0.18194	1	mg/L
WG475674-07	50	50	0.184	0.9984	-0.003651	0.18795	0.18795	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 05/14/2014 09:58

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG475806
File ID: 1V.1405131215-01
CCV ID: WG475806-01
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 05/13/2014
Run Time: 12:15
Analyst: TMM
Cal ID: UV-120 - 08-MAY-14

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.312	1.03	4.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 05/14/2014 09:49

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG475806
File ID: 1V.1405131215-21
CCV ID: WG475806-02
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 05/13/2014
Run Time: 12:15
Analyst: TMM
Cal ID: UV-120 - 08-MAY-14

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.307	1.01	2.3	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 05/14/2014 09:49

[redacted]

2.2.3 Sulfide Data

2.2.3.1 Summary Data

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-12	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW01-050714	**Prep Method:**	EPA 376.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	EPA 376.1	**Cal Date:**	
Workgroup #:	WG475518	**Analyst:**	DLP	**Run Date:**	05/12/2014 18:00
Collect Date:	05/07/2014 08:45	**Dilution:**	1	**File ID:**	ET.1405121800-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-13	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW08-050714	**Prep Method:**	EPA 376.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	EPA 376.1	**Cal Date:**	
Workgroup #:	WG475518	**Analyst:**	DLP	**Run Date:**	05/12/2014 18:00
Collect Date:	05/07/2014 10:05	**Dilution:**	1	**File ID:**	ET.1405121800-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.2.3.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 12-MAY-2014
Analyst: DLP
Analyst: NA
Method: SULFIDE
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG475518

Calibration/Linearity	05-12-14
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	DLP
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
13-MAY-2014

Secondary Reviewer:
15-MAY-2014

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-15-2014 16:06:24

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: EPA 376.1 AAB#: WG475518

Login Number: L14050603

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW01-050714	12	05/07/14					05/12/2014	5.4	7		05/12/14	5.4	7	
67WW08-050714	13	05/07/14					05/12/2014	5.3	7		05/12/14	5.3	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3545281
Report generated 05/15/2014 15:41

METHOD BLANK SUMMARY

Login Number: L14050603
Blank File ID: ET.1405121800-01
Prep Date: 05/12/14 18:00
Analyzed Date: 05/12/14 18:00
Analyst: DLP

Work Group: WG475518
Blank Sample ID: WG475518-01
Instrument ID: BURET
Method: EPA 376.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG475518-02	ET.1405121800-02	05/12/14 18:00	
LCS2	WG475518-03	ET.1405121800-03	05/12/14 18:00	
67WW01-050714	L14050603-12	ET.1405121800-04	05/12/14 18:00	
67WW08-050714	L14050603-13	ET.1405121800-05	05/12/14 18:00	

Report Name: BLANK_SUMMARY
PDF File ID: 3545282
Report generated 05/15/2014 15:41

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14050603 Prep Date: 05/12/14 18:00 Sample ID: WG475518-01
Instrument ID: BURET Run Date: 05/12/14 18:00 Prep Method: EPA 376.1
File ID: ET.1405121800-01 Analyst: DLP Method: EPA 376.1
Workgroup (AAB#): WG475518 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3545283
15-MAY-2014 15:41

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14050603 Analyst: DLP Prep Method: EPA 376.1
Instrument ID: BURET Matrix: Water Method: EPA 376.1
Workgroup (AAB#): WG475518 Units: mg/L
QC Key: DOD4 Lot #: STD64488

Sample ID: WG475518-02 LCS File ID: ET.1405121800-02 Run Date: 05/12/2014 18:00
Sample ID: WG475518-03 LCS2 File ID: ET.1405121800-03 Run Date: 05/12/2014 18:00

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	25.7	25.7	100	25.7	25.5	99.3	0.778	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3545284
Report generated: 05/15/2014 15:41

2.2.3.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG475518

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: 16

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: STD 64488

Iodine standardization (0.025N) COA: 17320
mL 0.025N titrant: 10
Volume I: 10 mL
Normality I: 0.02495

(0.1 N I) COA: 17321
mL 0.025 N titrant: 8
Volume I: 2 mL
Normality I: 0.0998

Stock standardization (in duplicate) 5 mL stock
mL I 1) 10 2) 10
N I 1) 0.0998 2) 0.0998
mL 0.025 titrant 1) 18.5 2) 18.5
LCS daily dilution: (2)(716)/200 = 28.74 mg/L

1716 = stock conc (mg/L)

Titrant: T-1400-10-02

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	0.02495 N Sodium Thiosulfate (mL)
BLANK	200	15	0.02495	15.1
LCS (mL)	200	20		7.1
LCSDUP (mL)	200	20		7.2
05-603-12	500	15		15.0
05-603-13	530	15		15.0

Analyst: [signature] Date/Time: 05-12-14/1800

DCN#102560

Microbac Laboratories Inc.
TITRAMETRIC REPORT

Workgroup (AAB#): WG475518
Product: EPA 376.1\9034
Analyte: Sulfide

Analyst: DLP
Run Date: 05/12/2014 18:00

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG475518-01	200.0	15	.02495	15.1	.02495	1	-0.200	-0.1996	mg/L
WG475518-02	200.0	20	.02495	7.1	.02495	1	25.7	25.75	mg/L
WG475518-03	200.0	20	.02495	7.2	.02495	1	25.5	25.55	mg/L
L14050603-12	500.0	15	.02495	15	.02495	1	0	ND	mg/L
L14050603-13	530.0	15	.02495	15	.02495	1	0	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 05/13/2014 17:48

[redacted]

2.2.4 Total Organic Carbon Data

2.2.4.1 Summary Data

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14050603-12	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW01-050714	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG476559	**Analyst:**	DCM	**Run Date:**	05/19/2014 16:52
Collect Date:	05/07/2014 08:45	**Dilution:**	1	**File ID:**	TC05192014.024
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	5.25		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L14050603-12	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW01-050714	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG476559	**Analyst:**	DCM	**Run Date:**	05/19/2014 16:52
Collect Date:	05/07/2014 08:45	**Dilution:**	1	**File ID:**	TC05192014.024
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		23.4		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L14050603-13	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-050714	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG476762	**Analyst:**	DCM	**Run Date:**	05/20/2014 20:34
Collect Date:	05/07/2014 10:05	**Dilution:**	3	**File ID:**	TC05202014.031
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	10.6		6.00	3.00	1.50

Certificate of Analysis

Microbac

Lab Report #: L14050603
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Sample #:	L14050603-13	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-050714	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG476762	**Analyst:**	DCM	**Run Date:**	05/20/2014 20:34
Collect Date:	05/07/2014 10:05	**Dilution:**	3	**File ID:**	TC05202014.031
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		80.6		6.00	3.00	1.50

2.2.4.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 19-MAY-2014
Analyst: EPT
Analyst: DCM
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG476559

Calibration/Linearity	07/09/13
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
20-MAY-2014
Ethan Tido

Secondary Reviewer:
21-MAY-2014
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-21-2014 14:04:48

Microbac Laboratories Inc.

Data Checklist

Date: 20-MAY-2014
Analyst: DCM
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG476765 WG476766 WG476762

Calibration/Linearity	07-09-2014
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
22-MAY-2014

Secondary Reviewer:
22-MAY-2014

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-22-2014 17:46:20

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG476559

Login Number: L14050603

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW01-050714	12	05/07/14					05/19/2014	12.3	28		05/19/14	12.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3558593
Report generated 05/22/2014 16:34

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG476762

Login Number: L14050603

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-050714	13	05/07/14					05/20/2014	13.4	28		05/20/14	13.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3558593
Report generated 05/22/2014 16:34

METHOD BLANK SUMMARY

Login Number: L14050603
Blank File ID: TC05192014.003
Prep Date: 05/19/14 12:16
Analyzed Date: 05/19/14 12:16
Analyst: DCM

Work Group: WG476559
Blank Sample ID: WG476559-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG476559-02	TC05192014.004	05/19/14 12:28	01
LCS2	WG476559-03	TC05192014.005	05/19/14 12:40	01
67WW01-050714	L14050603-12	TC05192014.024	05/19/14 16:52	01
67WW01-050714	L14050603-12	TC05192014.024	05/19/14 16:52	01
DUP	WG476559-10	TC05192014.065	05/20/14 01:22	01

Report Name: BLANK_SUMMARY
PDF File ID: 3558594
Report generated 05/22/2014 16:34

METHOD BLANK SUMMARY

Login Number: L14050603
Blank File ID: TC05202014.003
Prep Date: 05/20/14 14:39
Analyzed Date: 05/20/14 14:39
Analyst: DCM

Work Group: WG476762
Blank Sample ID: WG476762-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG476762-02	TC05202014.004	05/20/14 14:51	01
LCS2	WG476762-03	TC05202014.005	05/20/14 15:03	01
67WW08-050714	L14050603-13	TC05202014.031	05/20/14 20:34	DL01
67WW08-050714	L14050603-13	TC05202014.031	05/20/14 20:34	DL01
DUP	WG476762-08	TC05202014.061	05/21/14 07:49	01

Report Name: BLANK_SUMMARY
PDF File ID: 3558594
Report generated 05/22/2014 16:34

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14050603 Prep Date: 05/19/14 12:16 Sample ID: WG476559-01
Instrument ID: TOC-VWP Run Date: 05/19/14 12:16 Prep Method: 415.1
File ID: TC05192014.003 Analyst: DCM Method: 415.1
Workgroup (AAB#): WG476559 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-09-JUL-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3558595
22-MAY-2014 16:34

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14050603 Prep Date: 05/20/14 14:39 Sample ID: WG476762-01
Instrument ID: TOC-VWP Run Date: 05/20/14 14:39 Prep Method: 415.1
File ID: TC05202014.003 Analyst: DCM Method: 415.1
Workgroup (AAB#): WG476762 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-09-JUL-13

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3558595
22-MAY-2014 16:34

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14050603 Analyst: DCM Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG476559 Units: mg/L
QC Key: DOD4 Lot #: STD63965

Sample ID: WG476559-02 LCS File ID: TC05192014.004 Run Date: 05/19/2014 12:28
Sample ID: WG476559-03 LCS2 File ID: TC05192014.005 Run Date: 05/19/2014 12:40

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	24.8	99.4	25.0	24.9	99.4	0.0402	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3558596
Report generated: 05/22/2014 16:34

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14050603 Analyst: DCM Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG476762 Units: mg/L
QC Key: DOD4 Lot #: STD63965

Sample ID: WG476762-02 LCS File ID: TC05202014.004 Run Date: 05/20/2014 14:51
Sample ID: WG476762-03 LCS2 File ID: TC05202014.005 Run Date: 05/20/2014 15:03

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	24.7	98.9	25.0	24.2	96.7	2.21	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3558596
Report generated: 05/22/2014 16:34

2.2.4.3 Raw Data

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L

see below

MS (TOC): _____

Calibration Curve Date: _____

Reagent: _____

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 15

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full

☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate

☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC curve		27	Std 58866		52		
3	TC ICV		28			53	see SOP	
4	TIC ICV		29	TIC Curve		54	for curve	
5			30	Std 58877		55	points	
6			31			56		
7			32			57		
8			33	TC ICV		58	7/9/13	
9			34	Std 57523		59	~~see~~ 5/200 (1000)	
10			35			60	= 25mg/L	
11			36	TIC ICV		61		
12			37	Std 58878		62		
13			38			63		
14			39			64		
15	all points		40	analyzed	its	65	duplicate	
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: Brie Jenson Date/Time: 7/9/13/1400

DCN#96473

C:\TOC3201\Data\07-09-2013-BAF-TOC.t32

	Analy	Sample Name	Result	Status	Date / Time	Vial
1	TOC		TOC:2.208mg/L TC:26.74mg/L IC:24.53mg/L	Complete	7/9/2013 5:17:57 PM	1
2	TOC		TOC:23.65mg/L TC:23.65mg/L IC:0.00022mg/L	Complete	7/9/2013 5:29:56 PM	2
3	TOC		TOC:22.05mg/L TC:22.22mg/L IC:0.1735mg/L	Complete	7/9/2013 5:42:12 PM	3
4	TOC		!!Error!! TOC:24.67mg/L TC:24.54mg/L IC:-0.1326mg	Complete	7/9/2013 5:54:31 PM	4

7/11/2013 12:57:57 PM

1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-07-09-2013.2013_07_09_13_54_59.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	9.370	500uL	1	*******		7/9/2013 2:00:04 PM
2	10.94	500uL	1	*******		7/9/2013 2:03:54 PM

Acid Add. 0.000%
Mean Area 10.16

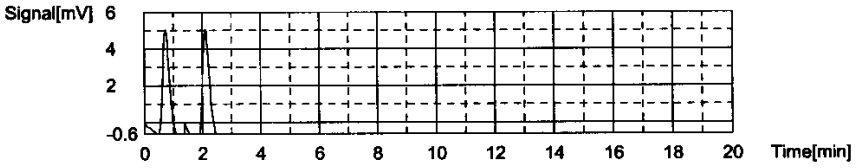

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	43.95	500uL	1	*******		7/9/2013 2:09:31 PM
2	40.43	500uL	1	*******		7/9/2013 2:13:23 PM

Acid Add. 0.000%
Mean Area 42.19

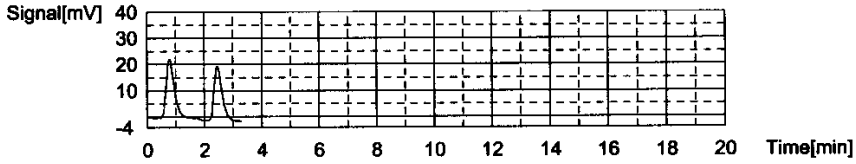

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	180.9	500uL	1	*******		7/9/2013 2:19:14 PM
2	179.0	500uL	1	*******		7/9/2013 2:23:23 PM

Acid Add. 0.000%
Mean Area 179.9

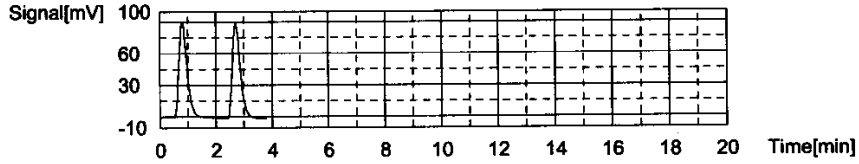

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	357.3	500uL	1	*******		7/9/2013 2:29:25 PM
2	358.1	500uL	1	*******		7/9/2013 2:33:50 PM

Acid Add. 0.000%
Mean Area 357.7

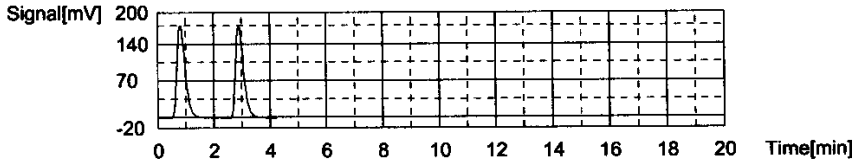

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	900.5	500uL	1	*******		7/9/2013 2:40:10 PM
2	968.7	500uL	1	*******		7/9/2013 2:44:47 PM

Acid Add. 0.000%
Mean Area 934.6

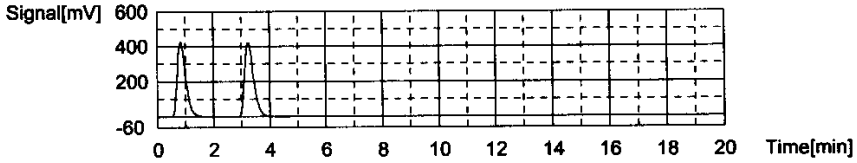

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1813	500uL	1	*******		7/9/2013 2:51:11 PM
2	1802	500uL	1	*******		7/9/2013 2:57:12 PM

Acid Add. 0.000%
Mean Area 1808

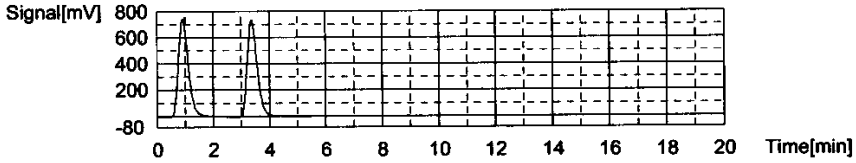

Slope: 36.20
Intercept 6.332
r^2 0.999673
Zero Shift No

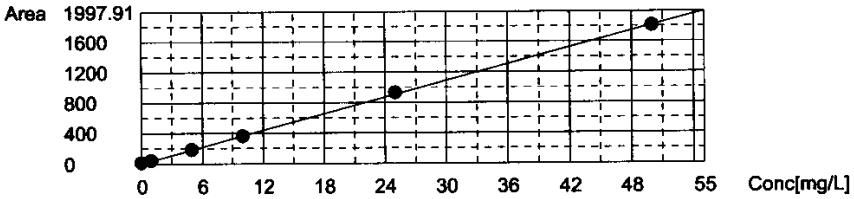

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-07-09-2013.2013_07_09_14_57_12.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	6.571	500uL	1	*******		7/9/2013 3:02:59 PM
2	6.428	500uL	1	*******		7/9/2013 3:07:04 PM

Acid Add. 10.00%
Mean Area 6.500

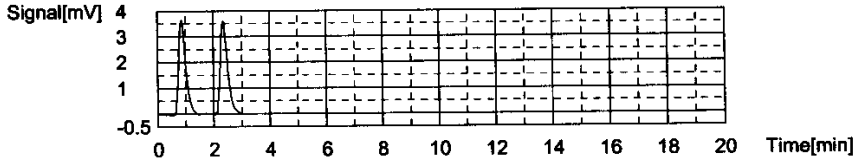

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	33.29	500uL	1	*******		7/9/2013 3:14:33 PM
2	33.59	500uL	1	*******		7/9/2013 3:18:50 PM

Acid Add. 10.00%
Mean Area 33.44

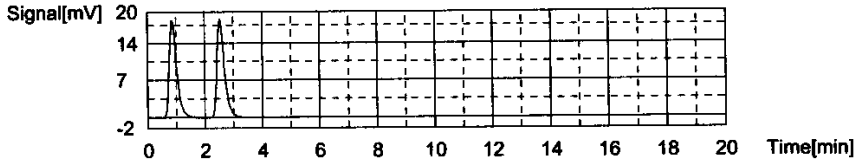

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	158.6	500uL	1	*******		7/9/2013 3:26:34 PM
2	158.4	500uL	1	*******		7/9/2013 3:31:09 PM

Acid Add. 10.00%
Mean Area 158.5

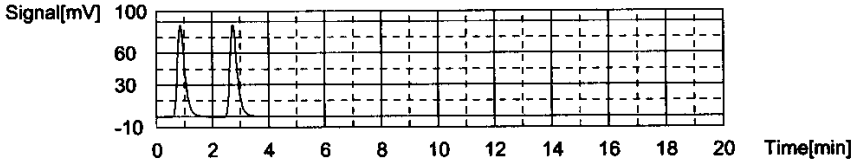

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	312.7	500uL	1	*******		7/9/2013 3:39:08 PM
2	313.0	500uL	1	*******		7/9/2013 3:44:01 PM

Acid Add. 10.00%
Mean Area 312.9

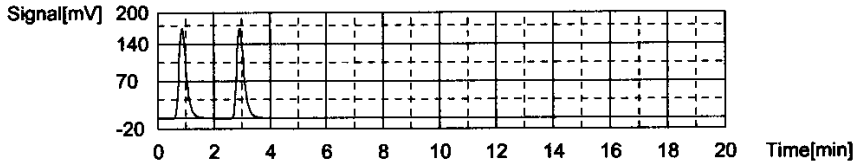

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	755.5	500uL	1	*******		7/9/2013 3:52:43 PM
2	755.7	500uL	1	*******		7/9/2013 3:58:05 PM

Acid Add. 10.00%
Mean Area 755.6

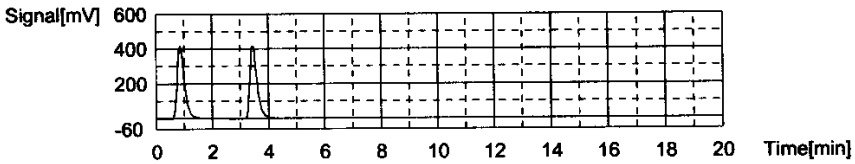

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1495	500uL	1	*******		7/9/2013 4:07:15 PM
2	1495	500uL	1	*******		7/9/2013 4:13:10 PM

Acid Add. 10.00%
Mean Area 1495

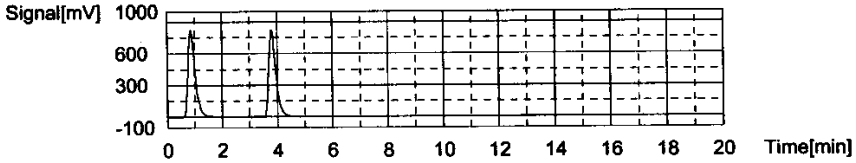

Slope: 29.78
Intercept 8.713
r^2 0.999949
Zero Shift No

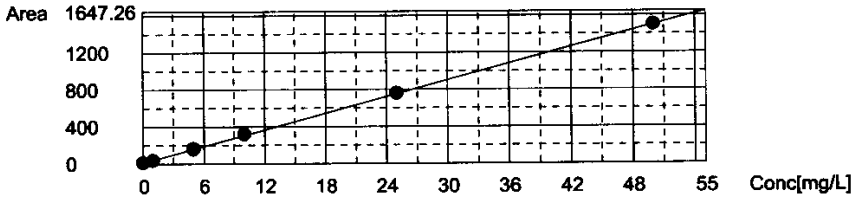

Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-07-09-2013.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:23.67mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	868.0	23.80mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	7/9/2013 4:21:01 PM
2	858.5	23.54mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	7/9/2013 4:25:50 PM

Mean Area 863.3
Mean Conc. 23.67mg/L

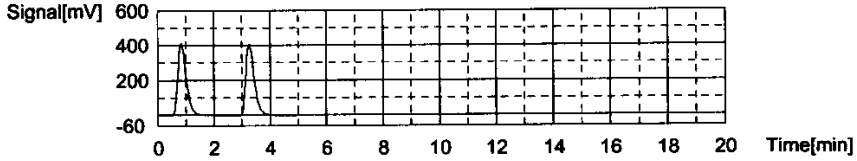

Sample

Sample Name:	TIC ICV
Sample ID:	Untitled
Origin:	TICCURVE-07-09-2013.cal
Status	Completed
Chk. Result	

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:25.62mg/L

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	769.8	25.56mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	7/9/2013 4:32:54 PM
2	773.1	25.67mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	7/9/2013 4:38:08 PM

Mean Area	771.5
Mean Conc.	25.62mg/L

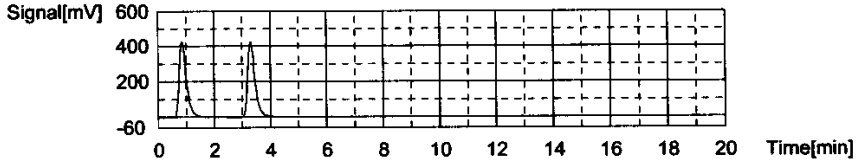

WORKGROUP: WG476762 WG476765 WG476766

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 63130 (5/200)(1000) = 25mg/L

LCS (TOC): Std 63965 (5/200)(1000) = 25mg/L

CCV (TIC): Std 62285 (5/200)(1000) = 25mg/L

MS (TOC): Std 63965 0.4(1000)/40 = 10

Calibration Curve Date: 7/9/13

Reagent: RGT 30288 RGT 29580

☑ SM5310-C : Matrix 2 WG 476766

☑ EPA 415.1/9060A(mod): Matrix 1 WG 476762 SOP: K 4151 Rev. 16

WG 476766 Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full
☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate
☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution
1	TIC	
2	CCV	
3	Blk	
4	LCS	
5	LCSDUP	
6	05-0396-07	
7	-08	
8	-28	
9	05-0703-01	1/250
10	-02	1/200
11	-03	1/200
12	-04	1/100
13	-05	1/100
14	CCV	
15	CCB	
16	-07 Ref	1/100
17	-08 MS	1/100
18	-09 MSD	1/100
19	05-1050-06	
20	-07	
21	-08	
22	-09	
23	-10	
24	-11	
25	-12	

Position	Sample ID	Dilution
26	CCV	
27	CCB	
28	05-1060-13	1/2
29	-14	1/2
30	-15	1/3
31	05-0603-13	1/3
32	Blk	
33	LCS	
34	LCSDUP	
35	05-1162-01	
36	-02	
37	05-1247-09	
38	CCV	
39	CCB	
40	05-1270-01	
41	05-1322-01	
42	-02	
43	-03	
44	-04	
45	-05	
46	-06	
47	-07	
48	-08	
49	-09	
50	CCV	

Position	Sample ID	Dilution
51	CCB	
52	05-1322-10	
53	-11	
54	-12	
55	-13	
56	-14	
57	-15	
58	05-1325-01	
59	M DUP 05-1270-01	
60	MS 05-1270-01	
61	DUP 05-1050-06	
62	CCV	
63	CCB	
64	Blk	
65	LCS	
66	LCSDUP	
67	05-0703-10	1/100
68	-11	1/100
69	-12	1/100
70	-13	
71	-14	1/50
72	-15	1/100
73	-16 Ref	1/50
74	~~DUP -16~~	~~1/50~~
75	~~MS -17~~	

CCV
CCB

63 DUP-16 1/50
64 MS -17 1/50
1 MSD -18 1/50
2 CCV
6 CCB

Analyst: Ethan Todd

David Merkle

Date/Time: 05/20/14

pg. 1

DCN#102754

WORKGROUP: WG476762

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L see pg. 1

MS (TOC): _____

Calibration Curve Date: _____

Reagent: _____

☐ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K _____ Rev. _____

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☐ drain reservoir filled
☐ ASI water bottle full
☐ dilution water bottle full
☐ 3rd bottle full
☐ sufficient gas
☐ sufficient persulfate
☐ sufficient acid
☐ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1			26			51		
2			27			52		
3	05-703-02	1/100	28			53		
4	03	1/50	29			54		
5	04	1/50	30			55		
6	05-1650-15		31			56		
7	05-1322-01	~~1/3~~ 1/5	32			57		
8	02	1/3	33			58		
9	03	1/3	34			59		
10	04	1/3	35			60		
11	05	1/3	36			61		
12	06	1/3	37			62		
13	CCV		38			63		
14	CCB		39			64		
15	07	1/3	40			65		
16	08	1/3	41			66		
17	09	1/3	42			67		
18	~~CCV~~ 05-703-12	1/10	43			68		
19	~~CCB~~ CCV		44			69		
20	CCB		45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: _____ Date/Time: _____

DCN#102754

pg. 2

C:\TOC3201\Data\05-20-2014-DCM-TOC.t32

	Analy	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	TOC:1.790mg/L TC:25.76mg/L IC:23.97mg/L	Completed	5/20/2014 2:21:58 PM	1
2	TOC	CCV	!!Error!! TOC:24.12mg/L TC:24.01mg/L IC:-0.1076mg/L	Completed	5/20/2014 2:34:08 PM	2
3	TOC	WG476762-01 BKL	!!Error!! TOC:0.1446mg/L TC:0.06948mg/L IC:-0.07514mg/	Completed	5/20/2014 2:43:10 PM	0
4	TOC	WG476762-02 LCS	!!Error!! TOC:24.72mg/L TC:24.59mg/L IC:-0.1256mg/L	Completed	5/20/2014 2:55:29 PM	4
5	TOC	WG476762-03 LCSDUP	!!Error!! TOC:24.18mg/L TC:24.07mg/L IC:-0.1072mg/L	Completed	5/20/2014 3:07:46 PM	5
6	TOC	L14050396-07	TOC:2.760mg/L TC:20.11mg/L IC:17.35mg/L	Completed	5/20/2014 3:20:50 PM	6
7	TOC	L14050396-08	TOC:2.769mg/L TC:17.94mg/L IC:15.17mg/L	Completed	5/20/2014 3:34:03 PM	7
8	TOC	L14050396-28	TOC:2.454mg/L TC:23.51mg/L IC:21.06mg/L	Completed	5/20/2014 3:47:29 PM	8
9	TOC	L14050703-01 (250)	TOC:22.82mg/L TC:23.39mg/L IC:0.5701mg/L	Completed	5/20/2014 4:06:35 PM	9
10	TOC		TOC:4.527mg/L TC:5.005mg/L IC:0.4781mg/L	Completed	5/20/2014 4:18:35 PM	10
11	TOC		TOC:1.657mg/L TC:1.933mg/L IC:0.2766mg/L	Completed	5/20/2014 4:30:19 PM	11
12	TOC		TOC:5.843mg/L TC:6.660mg/L IC:0.8170mg/L	Completed	5/20/2014 4:42:23 PM	12
13	TOC	L14050703-05 (100)	TOC:11.30mg/L TC:12.35mg/L IC:1.047mg/L	Completed	5/20/2014 4:54:43 PM	13
14	TOC	CCV	!!Error!! TOC:24.35mg/L TC:24.27mg/L IC:-0.07508mg/L	Completed	5/20/2014 5:07:08 PM	14
15	TOC	CCB	!!Error!! TOC:0.1240mg/L TC:0.05323mg/L IC:-0.07074mg/	Completed	5/20/2014 5:16:06 PM	0
16	TOC	L14050703-07 (200)	TOC:34.75mg/L TC:35.35mg/L IC:0.6027mg/L	Completed	5/20/2014 5:29:00 PM	16
17	TOC	L14050703-08 (200) MS	TOC:29.78mg/L TC:30.16mg/L IC:0.3811mg/L	Completed	5/20/2014 5:41:45 PM	17
18	TOC	L14050703-09 (200) MSD	TOC:33.82mg/L TC:34.14mg/L IC:0.3193mg/L	Completed	5/20/2014 5:54:36 PM	18
19	TOC	L14051050-06	TOC:2.402mg/L TC:16.00mg/L IC:13.59mg/L	Completed	5/20/2014 6:07:33 PM	19
20	TOC	L14051050-07	TOC:11.65mg/L TC:19.36mg/L IC:7.707mg/L	Completed	5/20/2014 6:20:58 PM	20
21	TOC	L14051050-08	TOC:11.81mg/L TC:18.43mg/L IC:6.616mg/L	Completed	5/20/2014 6:34:16 PM	21
22	TOC	L14051050-09	TOC:11.78mg/L TC:19.77mg/L IC:7.993mg/L	Completed	5/20/2014 6:47:40 PM	22
23	TOC	L14051050-10	TOC:13.21mg/L TC:29.58mg/L IC:16.37mg/L	Completed	5/20/2014 7:01:23 PM	23
24	TOC	L14051050-11	TOC:12.58mg/L TC:29.74mg/L IC:17.17mg/L	Completed	5/20/2014 7:15:04 PM	24
25	TOC	L14051050-12	TOC:12.00mg/L TC:27.03mg/L IC:15.03mg/L	Completed	5/20/2014 7:28:42 PM	25
26	TOC	CCV	!!Error!! TOC:24.51mg/L TC:24.50mg/L IC:-0.01782mg/L	Completed	5/20/2014 7:41:08 PM	26
27	TOC	CCB	!!Error!! TOC:0.1151mg/L TC:0.05605mg/L IC:-0.05906mg/	Completed	5/20/2014 7:50:05 PM	0
28	TOC	L14051050-13 (2)	TOC:7.010mg/L TC:8.696mg/L IC:1.686mg/L	Completed	5/20/2014 8:02:16 PM	28
29	TOC	L14051050-14 (2)	TOC:4.499mg/L TC:6.198mg/L IC:1.699mg/L	Completed	5/20/2014 8:14:18 PM	29
30	TOC		TOC:2.022mg/L TC:3.831mg/L IC:1.809mg/L	Completed	5/20/2014 8:26:13 PM	30
31	TOC	L14050603-13 (3)	TOC:3.528mg/L TC:30.38mg/L IC:26.85mg/L	Completed	5/20/2014 8:39:49 PM	31
32	TOC	WG476765-01 BLK	!!Error!! TOC:0.1332mg/L TC:0.08490mg/L IC:-0.04833mg/	Completed	5/20/2014 8:56:26 PM	0
33	TOC	WG476765-02 LCS	!!Error!! TOC:24.85mg/L TC:24.77mg/L IC:-0.07400mg/L	Completed	5/20/2014 9:17:32 PM	33
34	TOC	WG476765-03 LCSDUP	!!Error!! TOC:24.61mg/L TC:24.54mg/L IC:-0.07516mg/L	Completed	5/20/2014 9:38:33 PM	34
35	TOC	L14051162-01	TOC:5.389mg/L TC:14.29mg/L IC:8.896mg/L	Completed	5/20/2014 10:01:27 PM	35
36	TOC	L14051162-02	TOC:5.429mg/L TC:14.17mg/L IC:8.738mg/L	Completed	5/20/2014 10:24:10 PM	36
37	TOC	L14051247-09	!!Error!! TOC:0.1307mg/L TC:0.1264mg/L IC:-0.00428mg/L	Completed	5/20/2014 10:42:42 PM	37
38	TOC	CCV	!!Error!! TOC:24.03mg/L TC:23.96mg/L IC:-0.06319mg/L	Completed	5/20/2014 10:54:57 PM	38
39	TOC	CCB	!!Error!! TOC:0.1304mg/L TC:0.06754mg/L IC:-0.06282mg/	Completed	5/20/2014 11:03:59 PM	0
40	TOC	L14051270-01	TOC:5.886mg/L TC:11.84mg/L IC:5.952mg/L	Completed	5/20/2014 11:26:25 PM	40
41	TOC	<Untitled>	TOC:3.163mg/L TC:90.64mg/L IC:87.48mg/L	Completed	5/20/2014 11:56:25 PM	41
42	TOC	<Untitled>	!!Error!! TOC:-0.7929mg/L TC:93.96mg/L IC:94.75mg/L	Completed	5/21/2014 12:26:54 AM	42
43	TOC	<Untitled>	!!Error!! TOC:-1.301mg/L TC:89.39mg/L IC:90.69mg/L	Completed	5/21/2014 12:56:31 AM	43
44	TOC	<Untitled>	TOC:4.093mg/L TC:89.91mg/L IC:85.82mg/L	Completed	5/21/2014 1:26:38 AM	44
45	TOC	<Untitled>	TOC:8.351mg/L TC:84.26mg/L IC:75.91mg/L	Completed	5/21/2014 1:55:04 AM	45
46	TOC	<Untitled>	TOC:4.866mg/L TC:85.39mg/L IC:80.53mg/L	Completed	5/21/2014 2:24:38 AM	46
47	TOC	<Untitled>	TOC:2.946mg/L TC:87.99mg/L IC:85.04mg/L	Completed	5/21/2014 2:53:10 AM	47
48	TOC	<Untitled>	TOC:2.892mg/L TC:82.24mg/L IC:79.35mg/L	Completed	5/21/2014 3:22:26 AM	48
49	TOC	<Untitled>	TOC:9.222mg/L TC:80.38mg/L IC:71.16mg/L	Completed	5/21/2014 3:51:08 AM	49
50	TOC	CCV	TOC:25.63mg/L TC:25.98mg/L IC:0.3448mg/L	Completed	5/21/2014 4:03:42 AM	50
51	TOC	CCB	TOC:0.1121mg/L TC:0.1477mg/L IC:0.03565mg/L	Completed	5/21/2014 4:12:46 AM	0
52	TOC	L14051322-10	TOC:6.331mg/L TC:26.06mg/L IC:19.73mg/L	Completed	5/21/2014 4:36:17 AM	52
53	TOC	L14051322-11	TOC:7.100mg/L TC:22.14mg/L IC:15.05mg/L	Completed	5/21/2014 5:00:05 AM	53
54	TOC	L14051322-12	TOC:7.359mg/L TC:24.15mg/L IC:16.79mg/L	Completed	5/21/2014 5:23:21 AM	54
55	TOC	L14051322-13	TOC:7.435mg/L TC:21.91mg/L IC:14.48mg/L	Completed	5/21/2014 5:46:24 AM	55
56	TOC	L14051322-14	TOC:7.052mg/L TC:18.92mg/L IC:11.86mg/L	Completed	5/21/2014 6:11:16 AM	56
57	TOC	L14051322-15	TOC:7.440mg/L TC:22.92mg/L IC:15.48mg/L	Completed	5/21/2014 6:35:14 AM	57
58	TOC	L14051325-01	TOC:2.782mg/L TC:4.048mg/L IC:1.265mg/L	Completed	5/21/2014 6:57:27 AM	58
59	TOC	WG476765-05 DUP	TOC:6.070mg/L TC:8.428mg/L IC:2.357mg/L	Completed	5/21/2014 7:19:39 AM	59
60	TOC	WG476765-06 MS	TOC:16.96mg/L TC:17.56mg/L IC:0.6061mg/L	Completed	5/21/2014 7:42:20 AM	60
61	TOC	WG476762-08 DUP	TOC:1.619mg/L TC:3.190mg/L IC:1.571mg/L	Completed	5/21/2014 7:54:18 AM	61
62	TOC	CCV	!!Error!! TOC:25.39mg/L TC:25.39mg/L IC:-0.00519mg/L	Completed	5/21/2014 8:06:42 AM	62
63	TOC	CCB	!!Error!! TOC:0.1134mg/L TC:0.08030mg/L IC:-0.03313mg/	Completed	5/21/2014 8:15:44 AM	0
64	TOC	WG476766-01 BLK	!!Error!! TOC:0.09451mg/L TC:0.06122mg/L IC:-0.03330mg	Completed	5/21/2014 8:24:40 AM	0
65	TOC	WG476766-02 LCS	!!Error!! TOC:24.37mg/L TC:24.36mg/L IC:-0.01503mg/L	Completed	5/21/2014 8:37:16 AM	65
66	TOC	WG476766-03 LCSDUP	!!Error!! TOC:23.69mg/L TC:23.67mg/L IC:-0.01221mg/L	Completed	5/21/2014 8:49:34 AM	66
67	TOC	L14050703-10 (100)	TOC:10.25mg/L TC:10.32mg/L IC:0.07343mg/L	Completed	5/21/2014 9:01:40 AM	67

5/21/2014 6:28:55 PM 1/2

C:\TOC3201\Data\05-20-2014-DCM-TOC.t32

	Analy	Sample Name	Result	Status	Date / Time	Vial
68	TOC	L14050703-11 (100)	TOC:10.46mg/L TC:10.54mg/L IC:0.07444mg/L	Completed	5/21/2014 9:14:05 AM	68
69	TOC		TOC:0.5458mg/L TC:0.5687mg/L IC:0.02296mg/L	Completed	5/21/2014 9:25:49 AM	3
70	TOC	L14050703-13	TOC:0.4607mg/L TC:0.4676mg/L IC:0.00694mg/L	Completed	5/21/2014 9:37:23 AM	15
71	TOC	L14050703-14 (50)	TOC:39.58mg/L TC:39.83mg/L IC:0.2420mg/L	Completed	5/21/2014 9:51:01 AM	27
72	TOC	L14050703-15 (100	TOC:5.800mg/L TC:5.869mg/L IC:0.06907mg/L	Completed	5/21/2014 10:03:09 AM	32
73	TOC	L14050703-16 (50)	TOC:27.86mg/L TC:28.09mg/L IC:0.2283mg/L	Completed	5/21/2014 10:16:49 AM	39
74	TOC	CCV	TOC:28.07mg/L TC:28.31mg/L IC:0.2380mg/L	Completed	5/21/2014 10:30:21 AM	51
75	TOC	CCB	!!Error!! TOC:0.1828mg/L TC:0.1287mg/L IC:-0.05409mg/L	Completed	5/21/2014 10:41:11 AM	0
76	TOC	WG476766-05 (50) DUP	TOC:28.86mg/L TC:29.02mg/L IC:0.1695mg/L	Completed	5/21/2014 10:54:17 AM	63
77	TOC	L14050703-17 (50) MS	TOC:27.41mg/L TC:27.56mg/L IC:0.1554mg/L	Completed	5/21/2014 11:13:25 AM	64
78	TOC	L14050703-18 (50) MSD	TOC:28.86mg/L TC:29.08mg/L IC:0.2205mg/L	Completed	5/21/2014 11:27:29 AM	1
79	TOC	CCV	!!Error!! TOC:24.71mg/L TC:24.68mg/L IC:-0.02262mg/L	Completed	5/21/2014 11:39:42 AM	2
80	TOC	CCB	!!Error!! TOC:0.1470mg/L TC:0.09196mg/L IC:-0.05499mg/	Completed	5/21/2014 11:48:38 AM	0
81	TOC	L14050703-02 (100)	TOC:32.96mg/L TC:36.57mg/L IC:3.603mg/L	Completed	5/21/2014 12:01:49 PM	3
82	TOC	L14050703-03 (50)	TOC:8.090mg/L TC:9.707mg/L IC:1.617mg/L	Completed	5/21/2014 12:14:22 PM	4
83	TOC	L14050703-04 (50)	TOC:14.38mg/L TC:16.41mg/L IC:2.024mg/L	Completed	5/21/2014 12:27:26 PM	5
84	TOC	L14051050-15	TOC:6.503mg/L TC:11.93mg/L IC:5.430mg/L	Completed	5/21/2014 12:40:05 PM	6
85	TOC	L14051322-01 (5)	TOC:7.488mg/L TC:27.33mg/L IC:19.85mg/L	Completed	5/21/2014 1:50:21 PM	7
86	TOC	L14051322-02 (3)	TOC:12.61mg/L TC:49.03mg/L IC:36.41mg/L	Completed	5/21/2014 2:19:25 PM	8
87	TOC	L14051322-03 (3)	TOC:10.91mg/L TC:42.56mg/L IC:31.65mg/L	Completed	5/21/2014 2:47:46 PM	9
88	TOC	L14051322-04 (3)	TOC:9.304mg/L TC:38.11mg/L IC:28.81mg/L	Completed	5/21/2014 3:13:46 PM	10
89	TOC	L14051322-05 (3)	TOC:8.488mg/L TC:33.53mg/L IC:25.04mg/L	Completed	5/21/2014 3:39:20 PM	11
90	TOC	L14051322-06 (3)	TOC:10.58mg/L TC:43.32mg/L IC:32.75mg/L	Completed	5/21/2014 4:07:41 PM	12
91	TOC	CCV	TOC:27.25mg/L TC:27.33mg/L IC:0.07948mg/L	Completed	5/21/2014 4:22:01 PM	13
92	TOC	CCB	!!Error!! TOC:0.1179mg/L TC:0.1016mg/L IC:-0.01630mg/L	Completed	5/21/2014 4:30:59 PM	0
93	TOC	L14051322-07 (3)	TOC:9.013mg/L TC:33.46mg/L IC:24.45mg/L	Completed	5/21/2014 4:57:12 PM	15
94	TOC	L14051322-08 (3)	TOC:7.717mg/L TC:30.88mg/L IC:23.16mg/L	Completed	5/21/2014 5:22:43 PM	16
95	TOC	L14051322-09 (3)	TOC:7.161mg/L TC:28.02mg/L IC:20.86mg/L	Completed	5/21/2014 5:48:34 PM	17
96	TOC	L14050703-12 (10)	TOC:2.882mg/L TC:4.474mg/L IC:1.592mg/L	Completed	5/21/2014 6:00:48 PM	18
97	TOC	CCV	!!Error!! TOC:24.80mg/L TC:24.78mg/L IC:-0.01684mg/L	Completed	5/21/2014 6:13:02 PM	19
98	TOC	CCB	!!Error!! TOC:0.1303mg/L TC:0.1022mg/L IC:-0.02816mg/L	Completed	5/21/2014 6:22:02 PM	0

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.790mg/L TC:25.76mg/L IC:23.97mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	938.9	25.76mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 2:16:27 PM

Mean Area 938.9
Mean Conc. 25.76mg/L

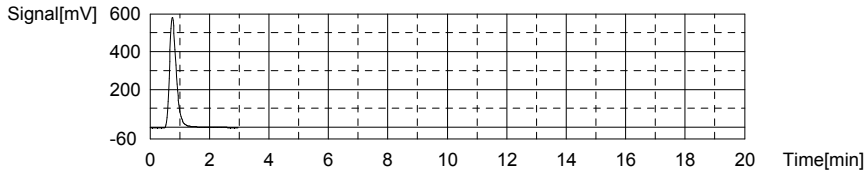

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	722.5	23.97mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 2:21:58 PM

Mean Area 722.5
Mean Conc. 23.97mg/L

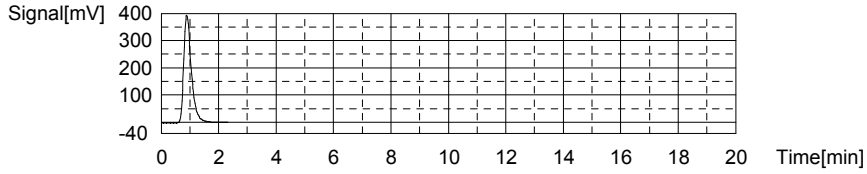

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.12mg/L TC:24.01mg/L IC:-0.1076mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	875.6	24.01mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 2:29:48 PM

Mean Area 875.6
Mean Conc. 24.01mg/L

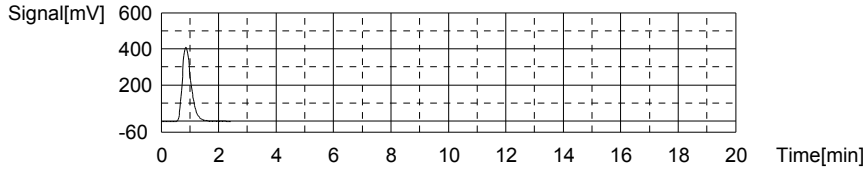

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.510	-0.1076mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 2:34:08 PM

Mean Area 5.510
Mean Conc. -0.1076mg/L

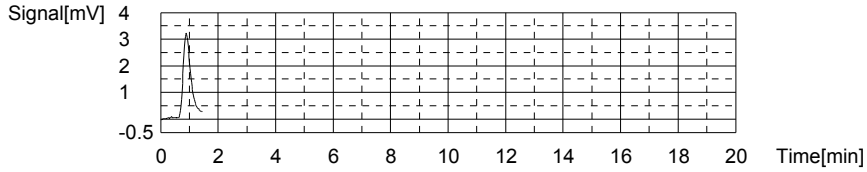

Sample

Sample Name: WG476762-01 BKL
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1446mg/L TC:0.06948mg/L IC:-0.07514mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.847	0.06948mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 2:39:09 PM

Mean Area 8.847
Mean Conc. 0.06948mg/L

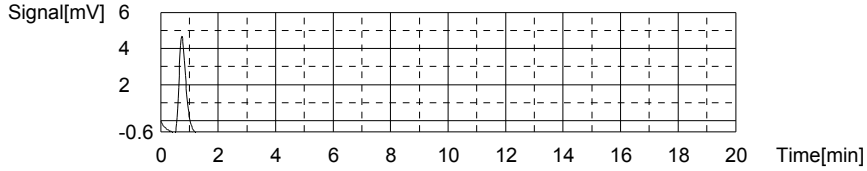

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.476	-0.07514mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 2:43:10 PM

Mean Area 6.476
Mean Conc. -0.07514mg/L

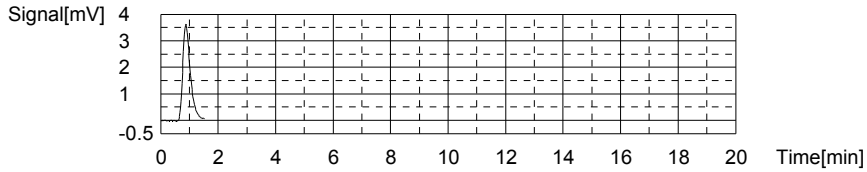

Sample

Sample Name: WG476762-02 LCS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.72mg/L TC:24.59mg/L IC:-0.1256mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	896.6	24.59mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 2:51:08 PM

Mean Area 896.6
Mean Conc. 24.59mg/L

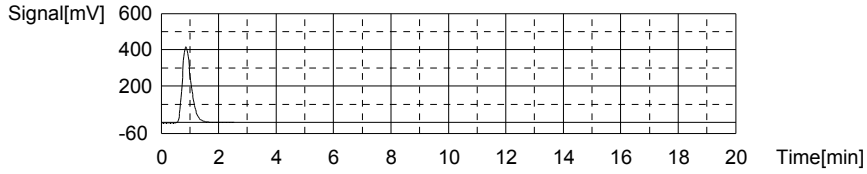

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.974	-0.1256mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 2:55:29 PM

Mean Area 4.974
Mean Conc. -0.1256mg/L

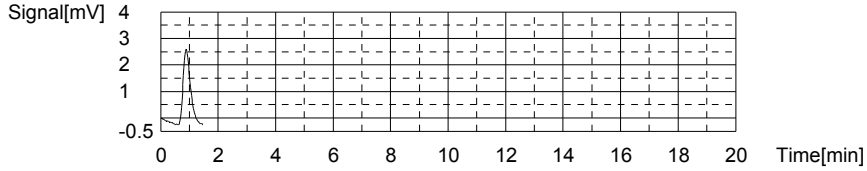

Sample

Sample Name: WG476762-03 LCSDUP
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.18mg/L TC:24.07mg/L IC:-0.1072mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	877.6	24.07mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 3:03:22 PM

Mean Area 877.6
Mean Conc. 24.07mg/L

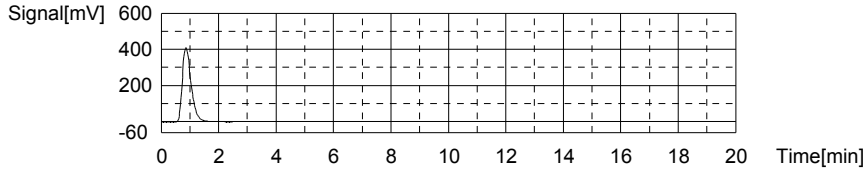

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.522	-0.1072mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 3:07:46 PM

Mean Area 5.522
Mean Conc. -0.1072mg/L

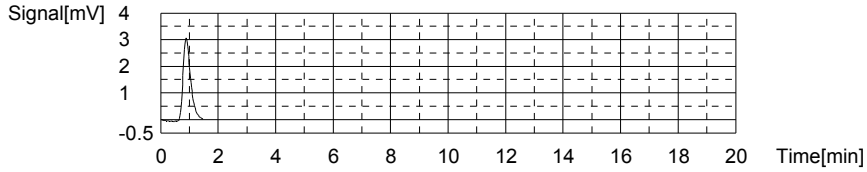

Sample

Sample Name: L14050396-07
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.760mg/L TC:20.11mg/L IC:17.35mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	734.4	20.11mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 3:15:29 PM

Mean Area 734.4
Mean Conc. 20.11mg/L

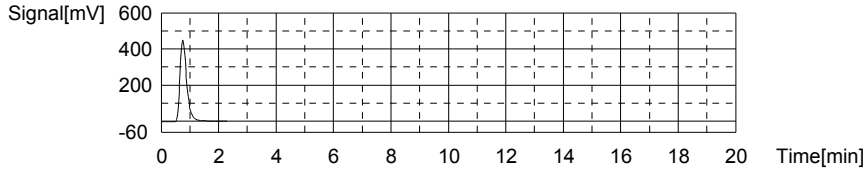

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	525.4	17.35mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 3:20:50 PM

Mean Area 525.4
Mean Conc. 17.35mg/L

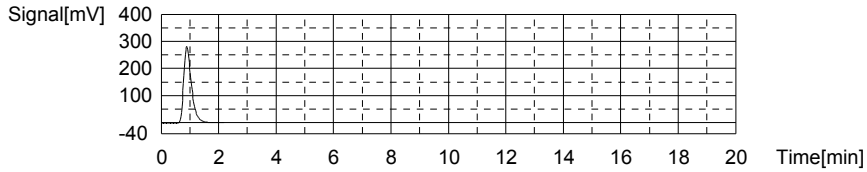

Sample

Sample Name: L14050396-08
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.769mg/L TC:17.94mg/L IC:15.17mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	655.7	17.94mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 3:28:40 PM

Mean Area 655.7
Mean Conc. 17.94mg/L

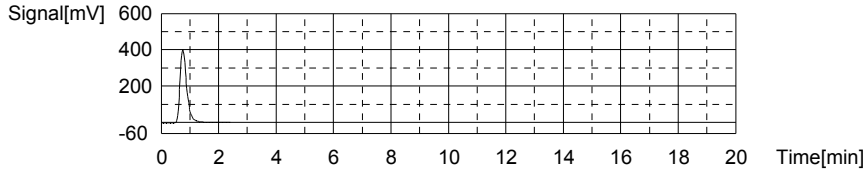

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	460.4	15.17mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 3:34:03 PM

Mean Area 460.4
Mean Conc. 15.17mg/L

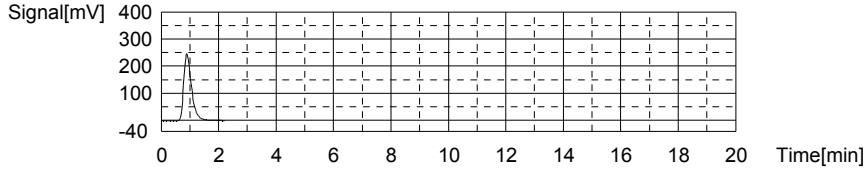

Sample

Sample Name: L14050396-28
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.454mg/L TC:23.51mg/L IC:21.06mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	857.4	23.51mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 3:42:07 PM

Mean Area 857.4
Mean Conc. 23.51mg/L

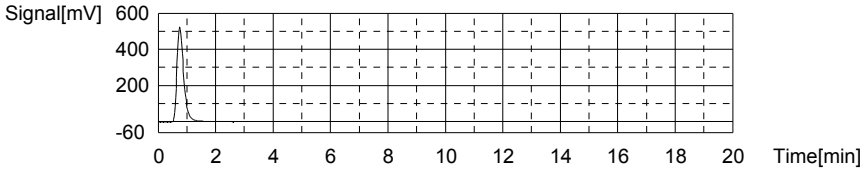

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	635.7	21.06mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 3:47:29 PM

Mean Area 635.7
Mean Conc. 21.06mg/L

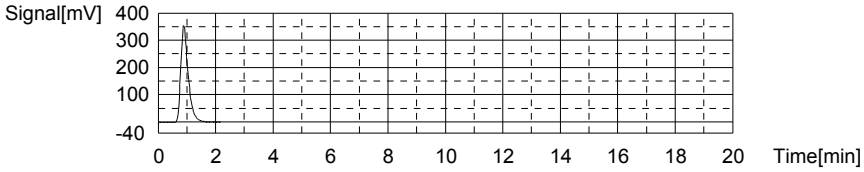

Sample

Sample Name: L14050703-01 (250)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:22.82mg/L TC:23.39mg/L IC:0.5701mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	853.0	23.39mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 4:01:59 PM

Mean Area 853.0
Mean Conc. 23.39mg/L

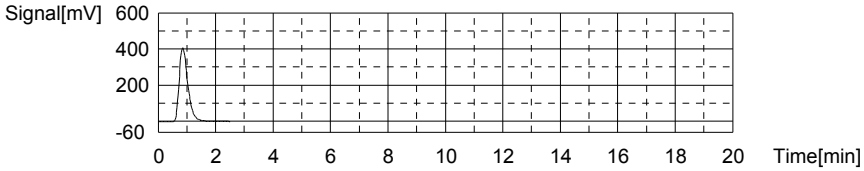

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	25.69	0.5701mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 4:06:35 PM

Mean Area 25.69
Mean Conc. 0.5701mg/L

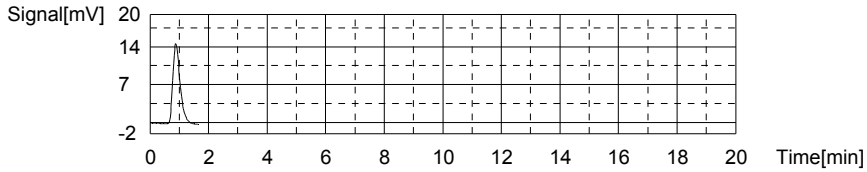

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.527mg/L TC:5.005mg/L IC:0.4781mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	187.5	5.005mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 4:13:59 PM

Mean Area 187.5
Mean Conc. 5.005mg/L

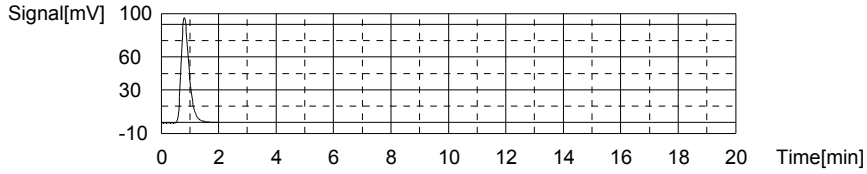

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	22.95	0.4781mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 4:18:35 PM

Mean Area 22.95
Mean Conc. 0.4781mg/L

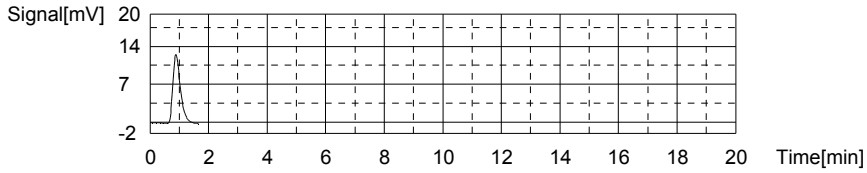

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.657mg/L TC:1.933mg/L IC:0.2766mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	76.31	1.933mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 4:25:46 PM

Mean Area 76.31
Mean Conc. 1.933mg/L

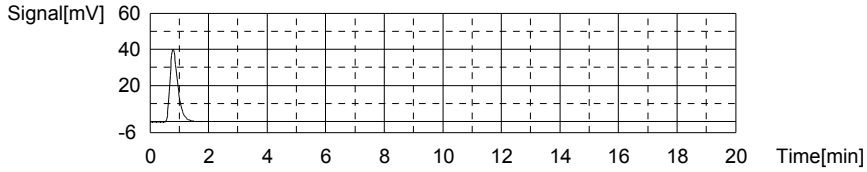

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	16.95	0.2766mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 4:30:19 PM

Mean Area 16.95
Mean Conc. 0.2766mg/L

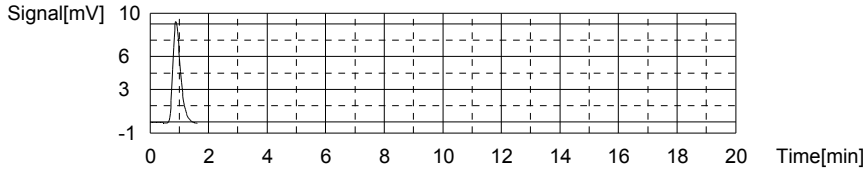

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.843mg/L TC:6.660mg/L IC:0.8170mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	247.4	6.660mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 4:37:45 PM

Mean Area 247.4
Mean Conc. 6.660mg/L

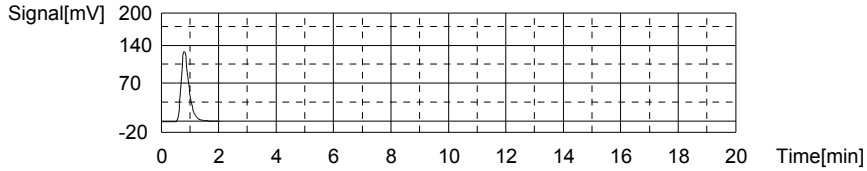

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	33.04	0.8170mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 4:42:23 PM

Mean Area 33.04
Mean Conc. 0.8170mg/L

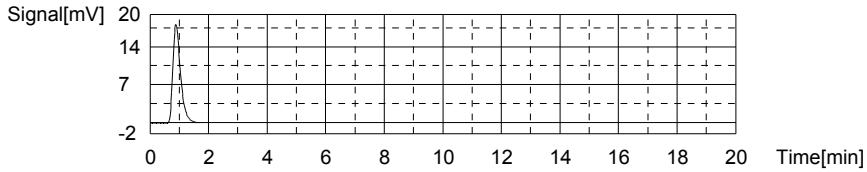

Sample

Sample Name: L14050703-05 (100)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:11.30mg/L TC:12.35mg/L IC:1.047mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	453.3	12.35mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 4:50:04 PM

Mean Area 453.3
Mean Conc. 12.35mg/L

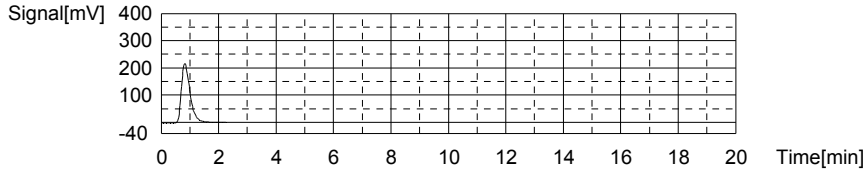

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	39.89	1.047mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 4:54:43 PM

Mean Area 39.89
Mean Conc. 1.047mg/L

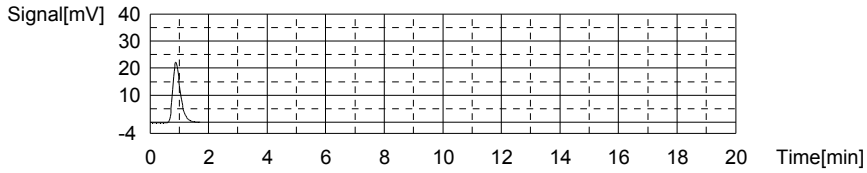

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.35mg/L TC:24.27mg/L IC:-0.07508mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	885.0	24.27mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 5:02:39 PM

Mean Area 885.0
Mean Conc. 24.27mg/L

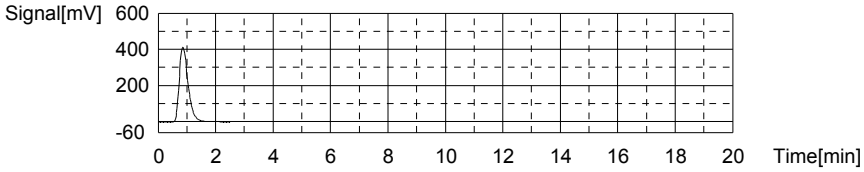

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.478	-0.07508mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 5:07:08 PM

Mean Area 6.478
Mean Conc. -0.07508mg/L

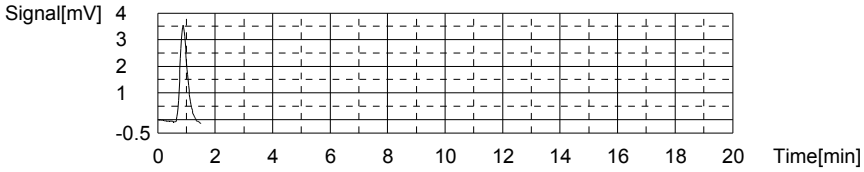

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1240mg/L TC:0.05323mg/L IC:-0.07074mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.259	0.05323mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 5:12:08 PM

Mean Area 8.259
Mean Conc. 0.05323mg/L

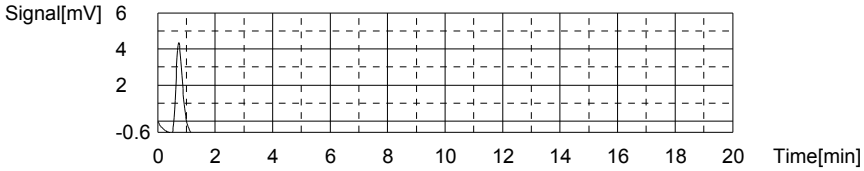

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.607	-0.07074mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 5:16:06 PM

Mean Area 6.607
Mean Conc. -0.07074mg/L

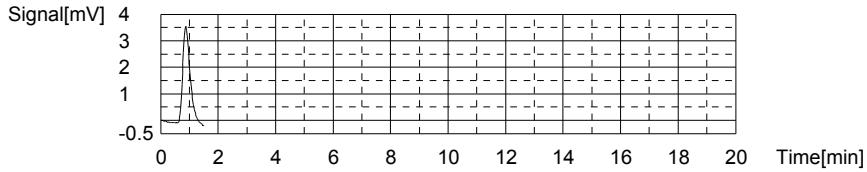

Sample

Sample Name: L14050703-07 (200)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:34.75mg/L TC:35.35mg/L IC:0.6027mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1286	35.35mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 5:24:28 PM

Mean Area 1286
Mean Conc. 35.35mg/L

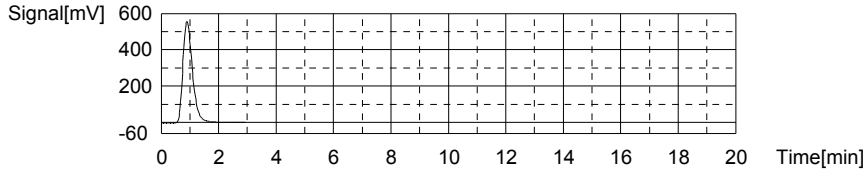

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	26.66	0.6027mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 5:29:00 PM

Mean Area 26.66
Mean Conc. 0.6027mg/L

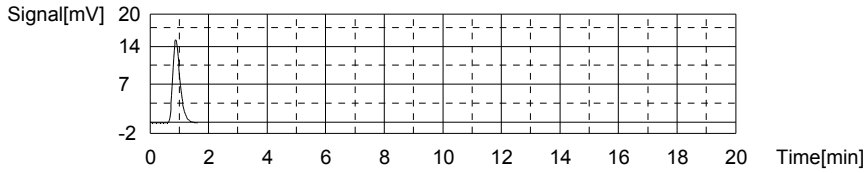

Sample

Sample Name: L14050703-08 (200) MS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:29.78mg/L TC:30.16mg/L IC:0.3811mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1098	30.16mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 5:37:15 PM

Mean Area 1098
Mean Conc. 30.16mg/L

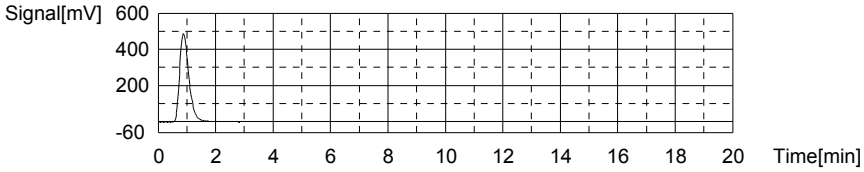

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	20.06	0.3811mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 5:41:45 PM

Mean Area 20.06
Mean Conc. 0.3811mg/L

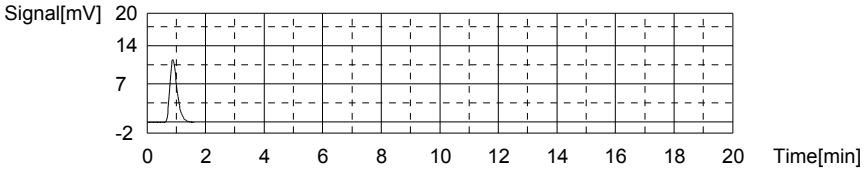

Sample

Sample Name: L14050703-09 (200) MSD
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:33.82mg/L TC:34.14mg/L IC:0.3193mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1242	34.14mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 5:50:04 PM

Mean Area 1242
Mean Conc. 34.14mg/L

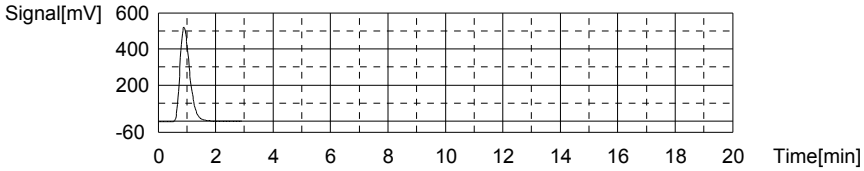

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	18.22	0.3193mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 5:54:36 PM

Mean Area 18.22
Mean Conc. 0.3193mg/L

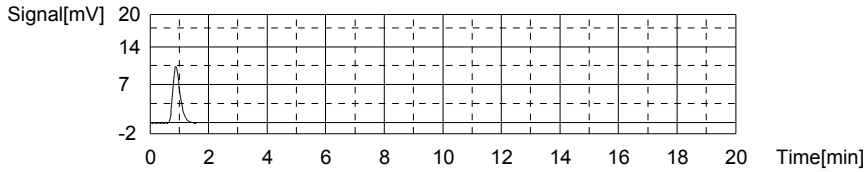

Sample

Sample Name: L14051050-06
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.402mg/L TC:16.00mg/L IC:13.59mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	585.4	16.00mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 6:02:17 PM

Mean Area 585.4
Mean Conc. 16.00mg/L

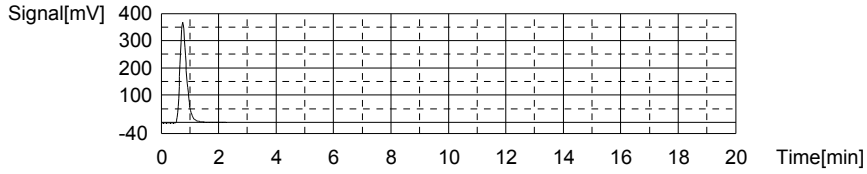

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	413.5	13.59mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 6:07:33 PM

Mean Area 413.5
Mean Conc. 13.59mg/L

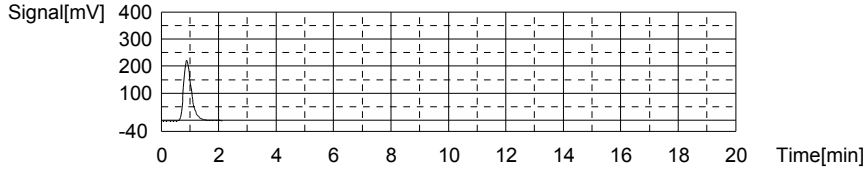

Sample

Sample Name: L14051050-07
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:11.65mg/L TC:19.36mg/L IC:7.707mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	707.1	19.36mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 6:15:57 PM

Mean Area 707.1
Mean Conc. 19.36mg/L

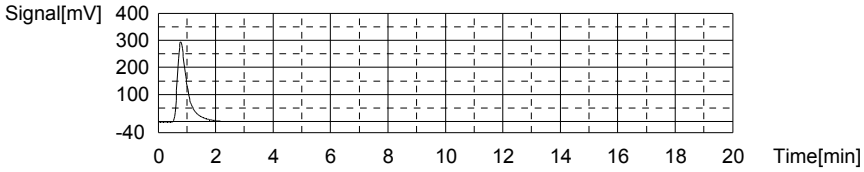

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	238.2	7.707mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 6:20:58 PM

Mean Area 238.2
Mean Conc. 7.707mg/L

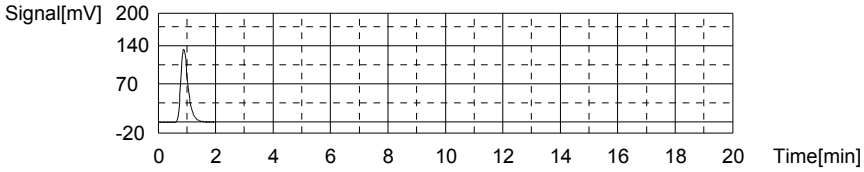

Sample

Sample Name: L14051050-08
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:11.81mg/L TC:18.43mg/L IC:6.616mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	673.3	18.43mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 6:29:17 PM

Mean Area 673.3
Mean Conc. 18.43mg/L

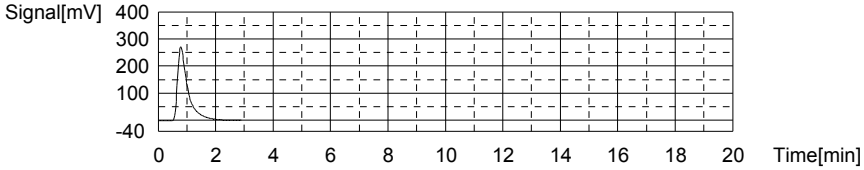

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	205.7	6.616mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 6:34:16 PM

Mean Area 205.7
Mean Conc. 6.616mg/L

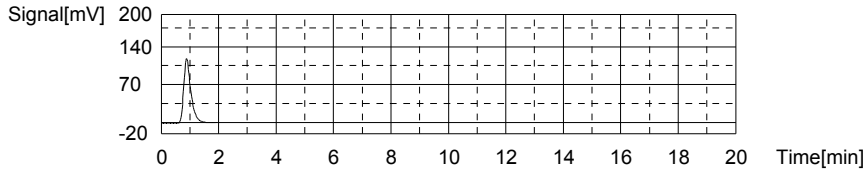

Sample

Sample Name: L14051050-09
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:11.78mg/L TC:19.77mg/L IC:7.993mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	722.0	19.77mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 6:42:41 PM

Mean Area 722.0
Mean Conc. 19.77mg/L

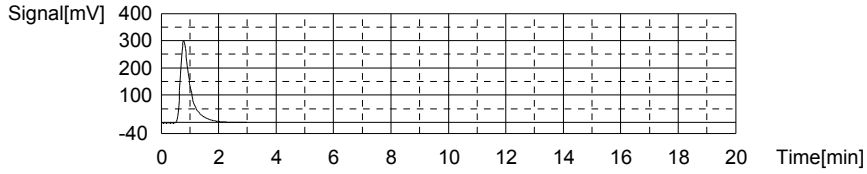

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	246.7	7.993mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 6:47:40 PM

Mean Area 246.7
Mean Conc. 7.993mg/L

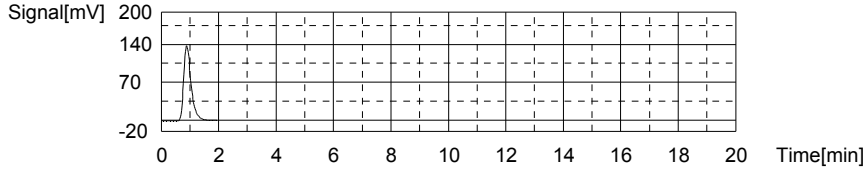

Sample

Sample Name: L14051050-10
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.21mg/L TC:29.58mg/L IC:16.37mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1077	29.58mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 6:56:02 PM

Mean Area 1077
Mean Conc. 29.58mg/L

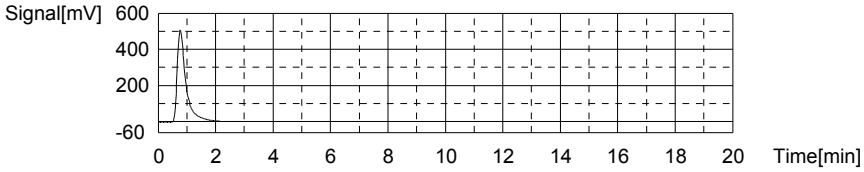

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	496.1	16.37mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 7:01:23 PM

Mean Area 496.1
Mean Conc. 16.37mg/L

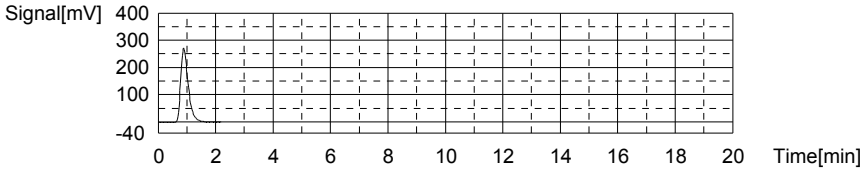

Sample

Sample Name: L14051050-11
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.58mg/L TC:29.74mg/L IC:17.17mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1083	29.74mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 7:09:47 PM

Mean Area 1083
Mean Conc. 29.74mg/L

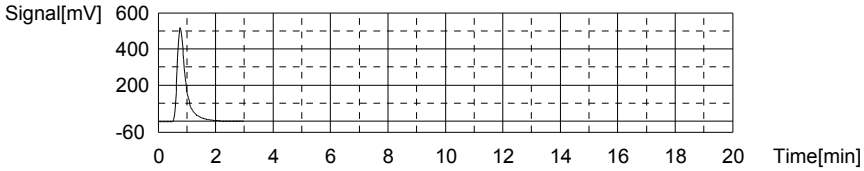

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	519.9	17.17mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 7:15:04 PM

Mean Area 519.9
Mean Conc. 17.17mg/L

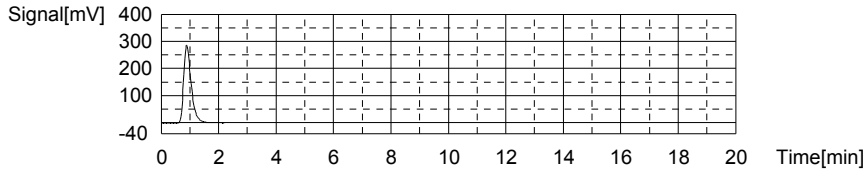

Sample

Sample Name: L14051050-12
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.00mg/L TC:27.03mg/L IC:15.03mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	984.7	27.03mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 7:23:25 PM

Mean Area 984.7
Mean Conc. 27.03mg/L

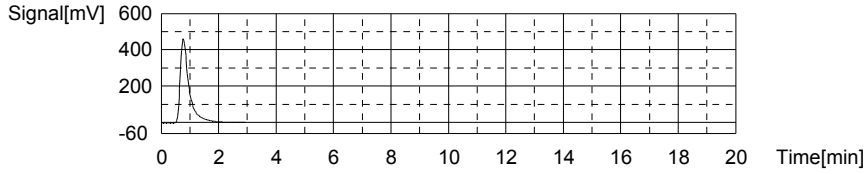

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	456.3	15.03mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 7:28:42 PM

Mean Area 456.3
Mean Conc. 15.03mg/L

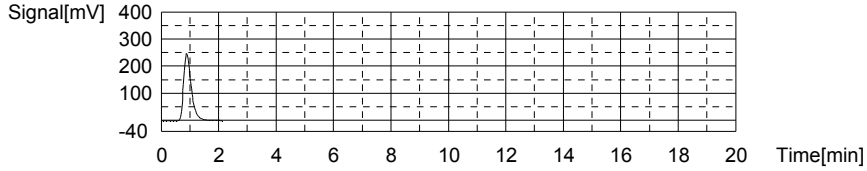

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.51mg/L TC:24.50mg/L IC:-0.01782mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	893.1	24.50mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 7:36:38 PM

Mean Area 893.1
Mean Conc. 24.50mg/L

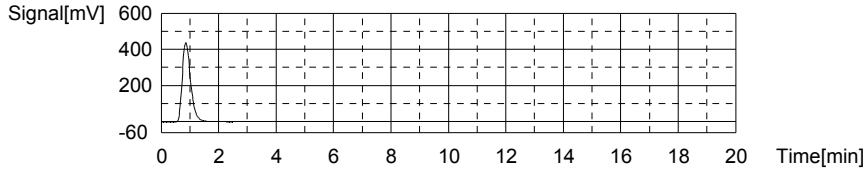

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.183	-0.01782mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 7:41:08 PM

Mean Area 8.183
Mean Conc. -0.01782mg/L

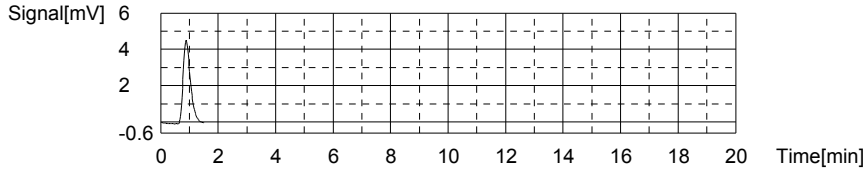

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1151mg/L TC:0.05605mg/L IC:-0.05906mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.361	0.05605mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 7:46:08 PM

Mean Area 8.361
Mean Conc. 0.05605mg/L

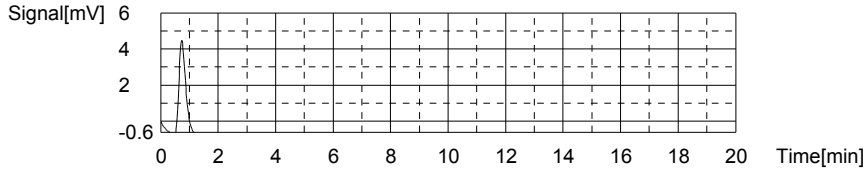

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.955	-0.05906mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 7:50:05 PM

Mean Area 6.955
Mean Conc. -0.05906mg/L

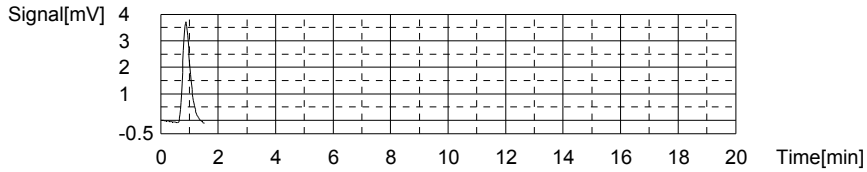

Sample

Sample Name: L14051050-13 (2)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.010mg/L TC:8.696mg/L IC:1.686mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	321.1	8.696mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 7:57:31 PM

Mean Area 321.1
Mean Conc. 8.696mg/L

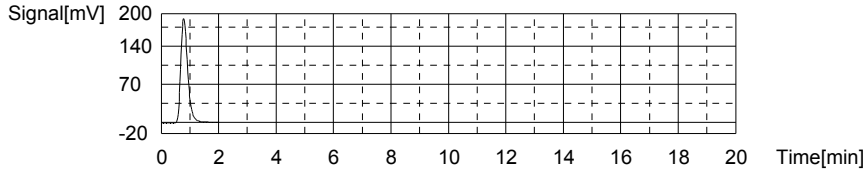

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	58.91	1.686mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 8:02:16 PM

Mean Area 58.91
Mean Conc. 1.686mg/L

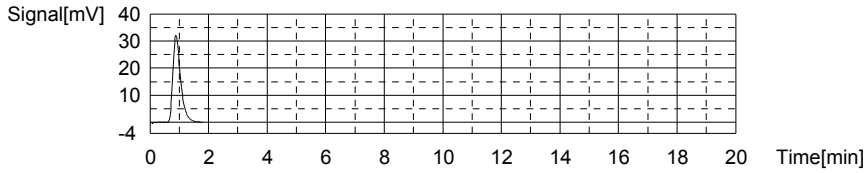

Sample

Sample Name: L14051050-14 (2)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.499mg/L TC:6.198mg/L IC:1.699mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	230.7	6.198mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 8:09:32 PM

Mean Area 230.7
Mean Conc. 6.198mg/L

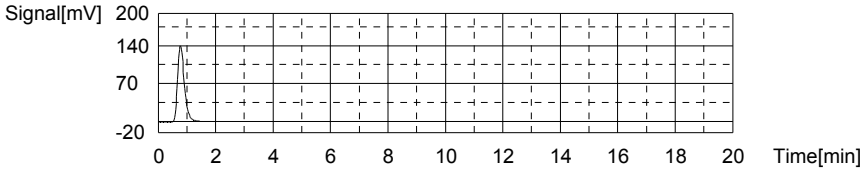

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	59.30	1.699mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 8:14:18 PM

Mean Area 59.30
Mean Conc. 1.699mg/L

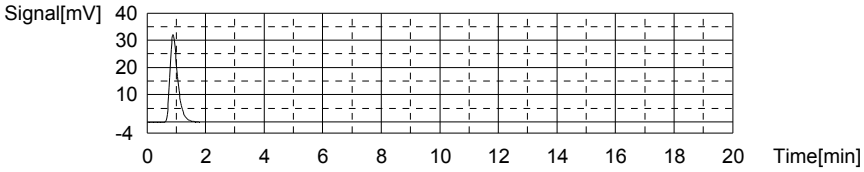

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.022mg/L TC:3.831mg/L IC:1.809mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	145.0	3.831mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 8:21:29 PM

Mean Area 145.0
Mean Conc. 3.831mg/L

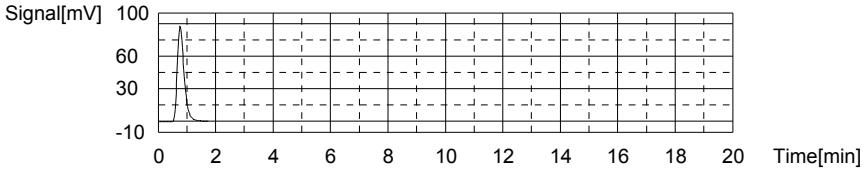

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	62.58	1.809mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 8:26:13 PM

Mean Area 62.58
Mean Conc. 1.809mg/L

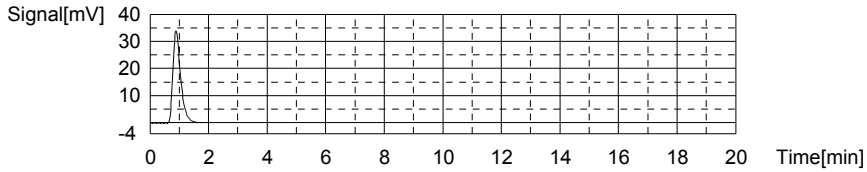

Sample

Sample Name: L14050603-13 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.528mg/L TC:30.38mg/L IC:26.85mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1106	30.38mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 8:34:11 PM

Mean Area 1106
Mean Conc. 30.38mg/L

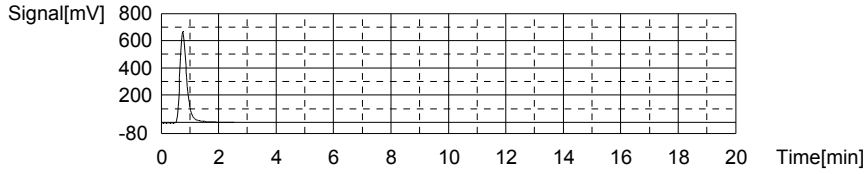

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	808.2	26.85mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 8:39:49 PM

Mean Area 808.2
Mean Conc. 26.85mg/L

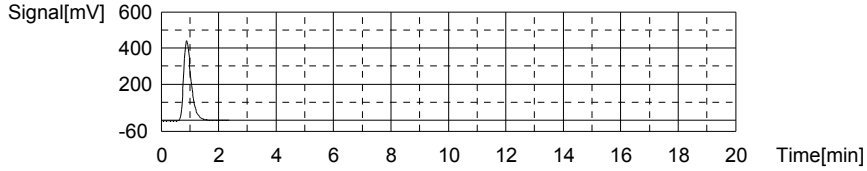

Sample

Sample Name: WG476765-01 BLK
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1332mg/L TC:0.08490mg/L IC:-0.04833mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.19	0.1066mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 8:44:52 PM
2	8.621	0.06323mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 8:48:22 PM

Mean Area 9.406
Mean Conc. 0.08490mg/L

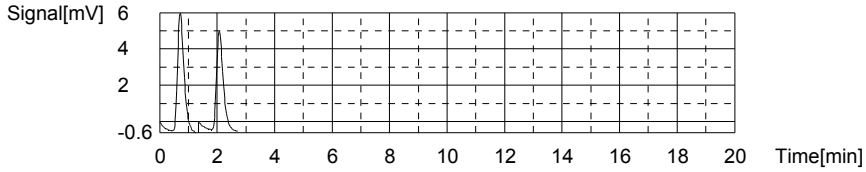

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.599	-0.03743mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/20/2014 8:52:27 PM
2	6.950	-0.05922mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/20/2014 8:56:26 PM

Mean Area 7.274
Mean Conc. -0.04833mg/L

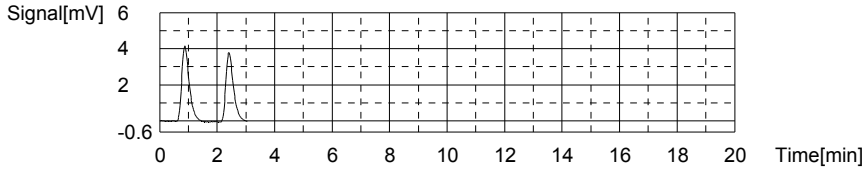

Sample

Sample Name: WG476765-02 LCS
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.85mg/L TC:24.77mg/L IC:-0.07400mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	906.2	24.86mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 9:04:17 PM
2	899.9	24.68mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 9:08:56 PM

Mean Area 903.1
Mean Conc. 24.77mg/L

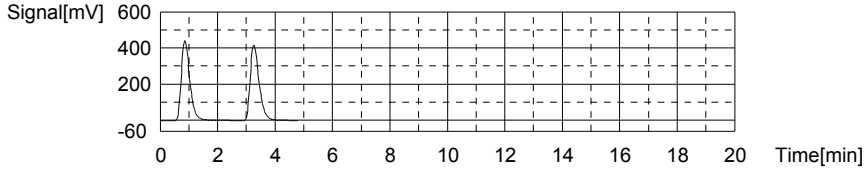

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.563	-0.07222mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 9:13:22 PM
2	6.457	-0.07578mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 9:17:32 PM

Mean Area 6.510
Mean Conc. -0.07400mg/L

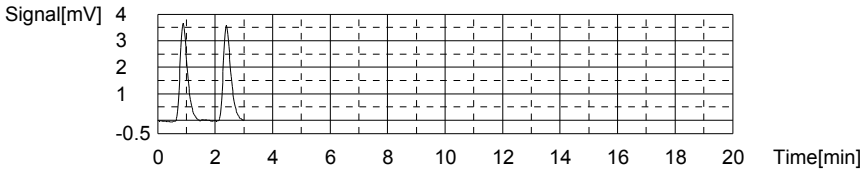

Sample

Sample Name: WG476765-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.61mg/L TC:24.54mg/L IC:-0.07516mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	894.0	24.52mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 9:25:23 PM
2	895.0	24.55mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 9:29:59 PM

Mean Area 894.5
Mean Conc. 24.54mg/L

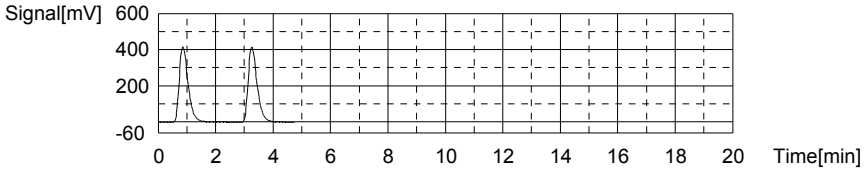

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.511	-0.07397mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 9:34:21 PM
2	6.440	-0.07635mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 9:38:33 PM

Mean Area 6.476
Mean Conc. -0.07516mg/L

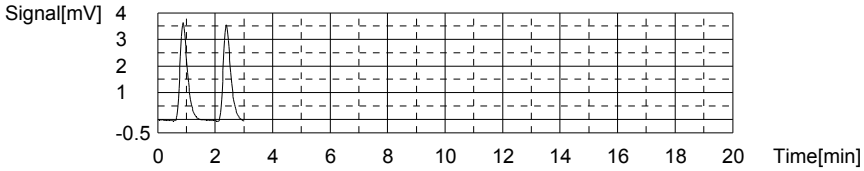

Sample

Sample Name: L14051162-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.389mg/L TC:14.29mg/L IC:8.896mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	515.4	14.06mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 9:46:33 PM
2	531.5	14.51mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 9:51:26 PM

Mean Area 523.5
Mean Conc. 14.29mg/L

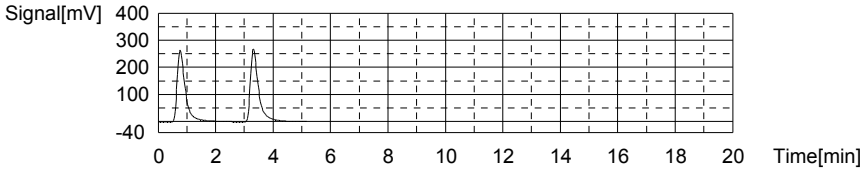

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	274.8	8.936mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 9:56:35 PM
2	272.4	8.856mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 10:01:27 PM

Mean Area 273.6
Mean Conc. 8.896mg/L

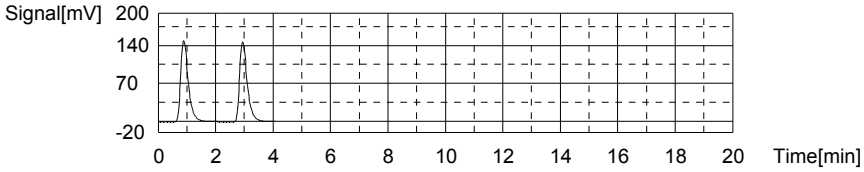

Sample

Sample Name: L14051162-02
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.429mg/L TC:14.17mg/L IC:8.738mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	514.6	14.04mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 10:09:16 PM
2	523.7	14.29mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 10:14:16 PM

Mean Area 519.2
Mean Conc. 14.17mg/L

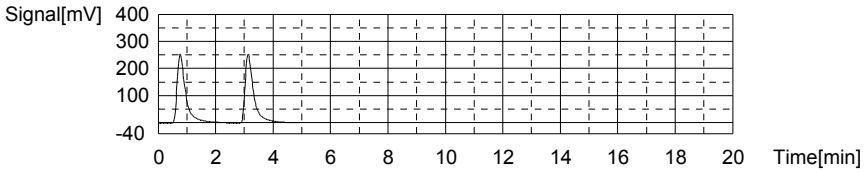

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	268.8	8.735mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 10:19:22 PM
2	269.0	8.742mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 10:24:10 PM

Mean Area 268.9
Mean Conc. 8.738mg/L

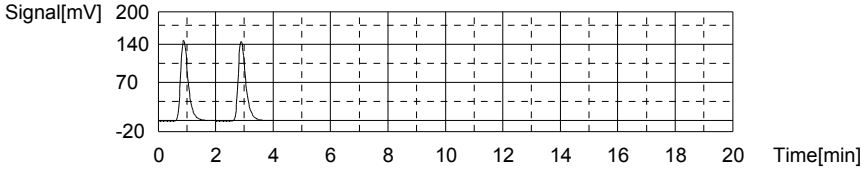

Sample

Sample Name: L14051247-09
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1307mg/L TC:0.1264mg/L IC:-0.00428mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.88	0.1533mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 10:30:49 PM
2	9.934	0.09950mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 10:34:18 PM

Mean Area 10.91
Mean Conc. 0.1264mg/L

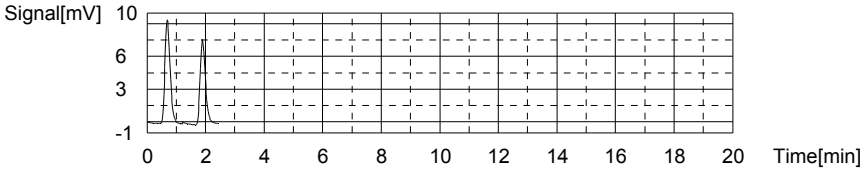

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.754	0.00136mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 10:38:38 PM
2	8.418	-0.00992mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 10:42:42 PM

Mean Area 8.586
Mean Conc. -0.00428mg/L

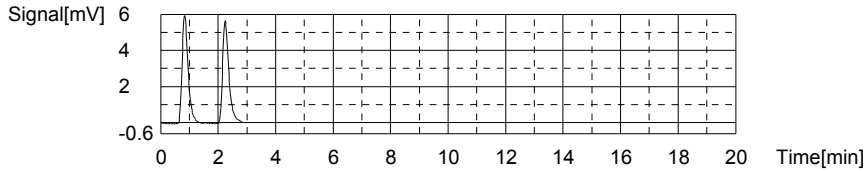

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.03mg/L TC:23.96mg/L IC:-0.06319mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	873.8	23.96mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 10:50:36 PM

Mean Area 873.8
Mean Conc. 23.96mg/L

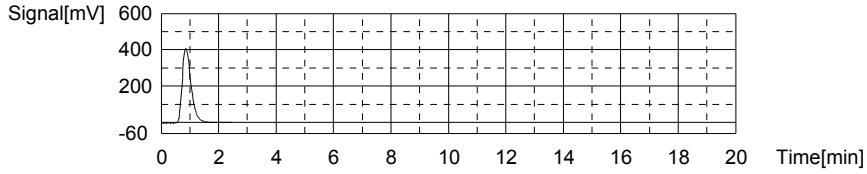

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.832	-0.06319mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 10:54:57 PM

Mean Area 6.832
Mean Conc. -0.06319mg/L

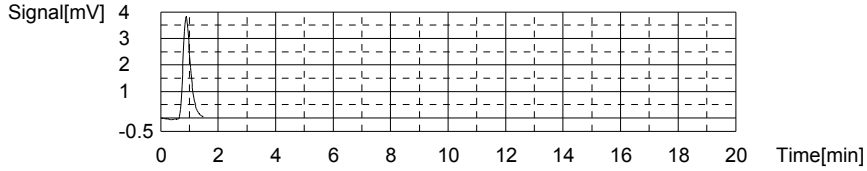

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1304mg/L TC:0.06754mg/L IC:-0.06282mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.777	0.06754mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 10:59:58 PM

Mean Area 8.777
Mean Conc. 0.06754mg/L

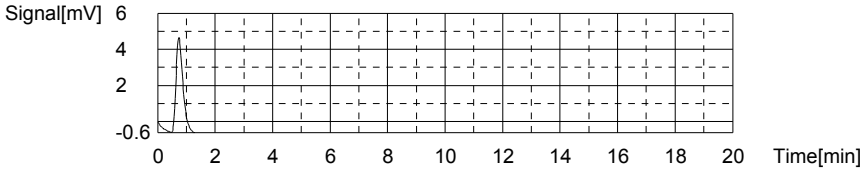

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.843	-0.06282mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 11:03:59 PM

Mean Area 6.843
Mean Conc. -0.06282mg/L

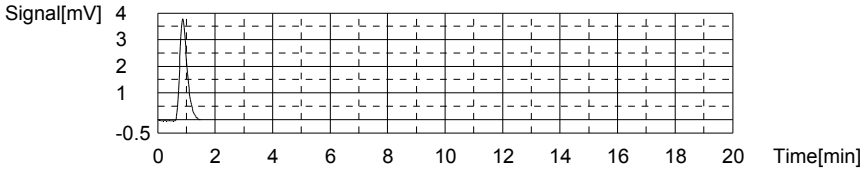

Sample

Sample Name: L14051270-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.886mg/L TC:11.84mg/L IC:5.952mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	422.3	11.49mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 11:11:55 PM
2	447.4	12.18mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/20/2014 11:16:44 PM

Mean Area 434.9
Mean Conc. 11.84mg/L

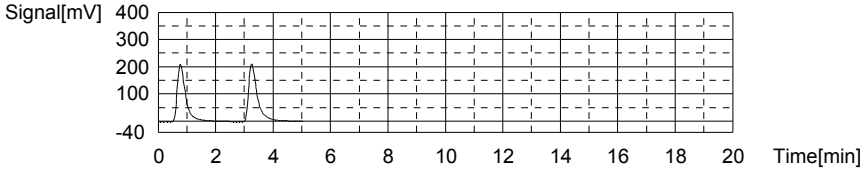

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	186.5	5.971mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 11:21:41 PM
2	185.4	5.934mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 11:26:25 PM

Mean Area 185.9
Mean Conc. 5.952mg/L

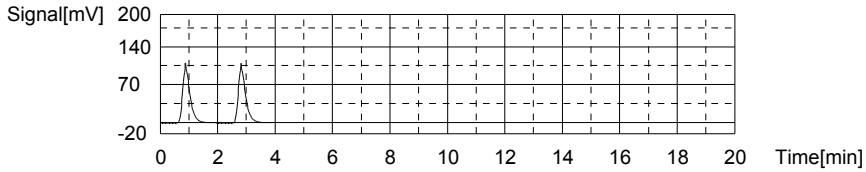

Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.163mg/L TC:90.64mg/L IC:87.48mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3239	89.30mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 11:36:15 PM
2	3336	91.98mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 11:43:25 PM

Mean Area 3288
Mean Conc. 90.64mg/L

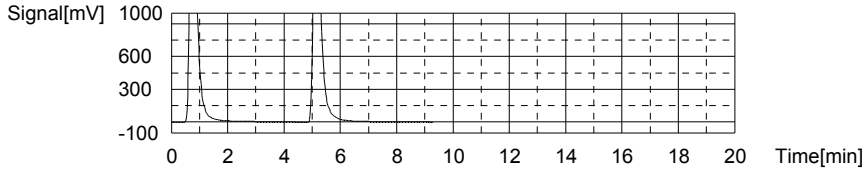

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2644	88.50mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/20/2014 11:50:04 PM
2	2583	86.46mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/20/2014 11:56:25 PM

Mean Area 2614
Mean Conc. 87.48mg/L

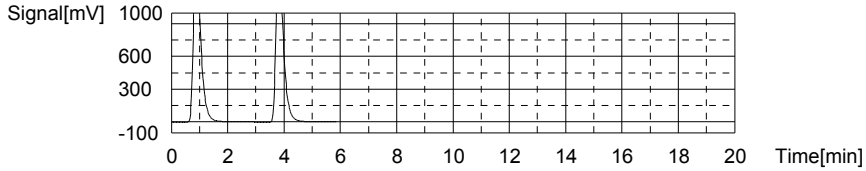

Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-0.7929mg/L TC:93.96mg/L IC:94.75mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3400	93.75mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 12:06:37 AM
2	3415	94.16mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 12:13:31 AM

Mean Area 3408
Mean Conc. 93.96mg/L

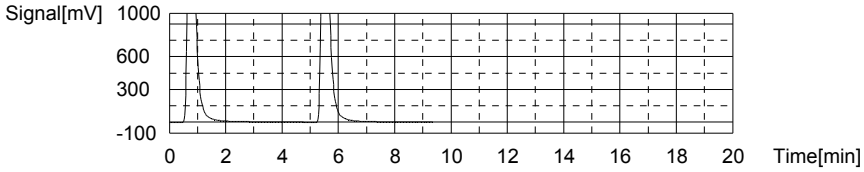

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2858	95.69mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 12:20:18 AM
2	2802	93.81mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 12:26:54 AM

Mean Area 2830
Mean Conc. 94.75mg/L

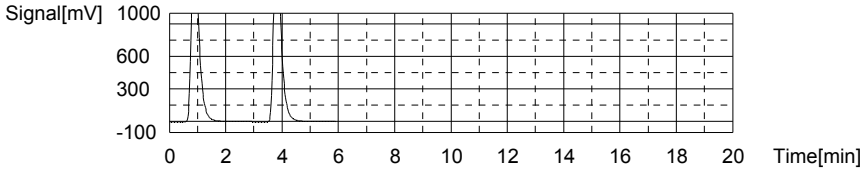

Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-1.301mg/L TC:89.39mg/L IC:90.69mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3195	88.09mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 12:36:30 AM
2	3289	90.68mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 12:43:18 AM

Mean Area 3242
Mean Conc. 89.39mg/L

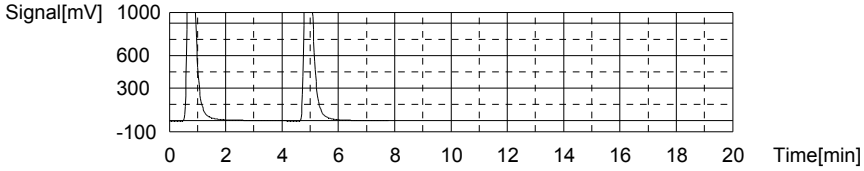

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2722	91.12mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 12:50:08 AM
2	2696	90.25mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 12:56:31 AM

Mean Area 2709
Mean Conc. 90.69mg/L

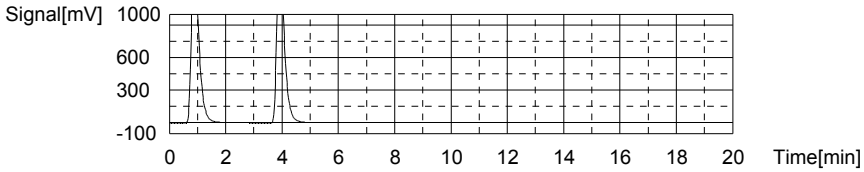

Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.093mg/L TC:89.91mg/L IC:85.82mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3171	87.42mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 1:06:07 AM
2	3351	92.40mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 1:13:38 AM

Mean Area 3261
Mean Conc. 89.91mg/L

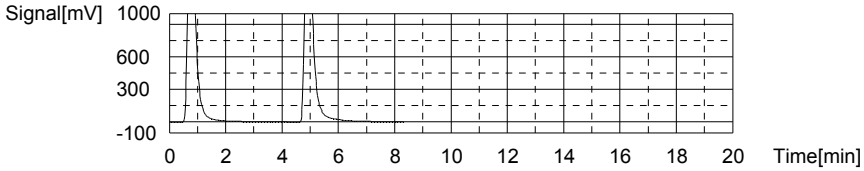

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2578	86.29mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 1:20:15 AM
2	2550	85.35mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 1:26:38 AM

Mean Area 2564
Mean Conc. 85.82mg/L

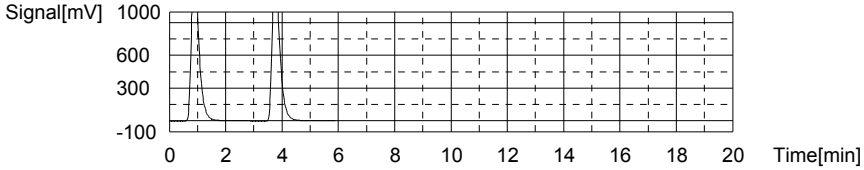

Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.351mg/L TC:84.26mg/L IC:75.91mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3027	83.45mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 1:35:29 AM
2	3086	85.08mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 1:42:26 AM

Mean Area 3057
Mean Conc. 84.26mg/L

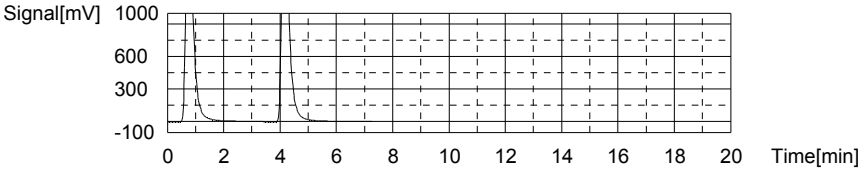

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2381	79.67mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 1:48:56 AM
2	2157	72.15mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 1:55:04 AM

Mean Area 2269
Mean Conc. 75.91mg/L

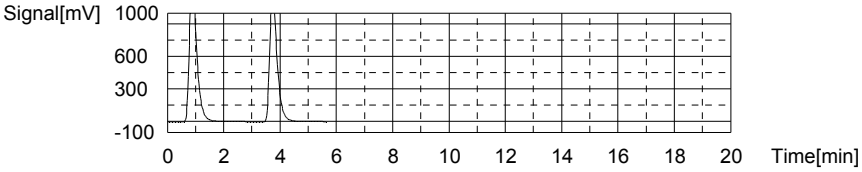

Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.866mg/L TC:85.39mg/L IC:80.53mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3053	84.16mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 2:04:15 AM
2	3142	86.62mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 2:11:56 AM

Mean Area 3098
Mean Conc. 85.39mg/L

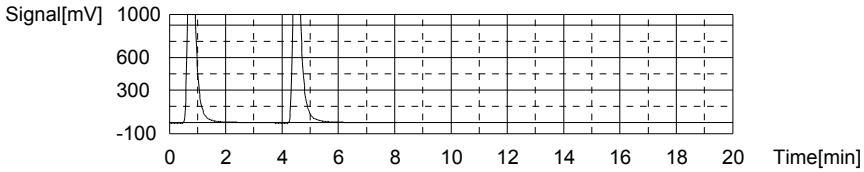

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2396	80.18mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 2:18:27 AM
2	2417	80.88mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 2:24:38 AM

Mean Area 2407
Mean Conc. 80.53mg/L

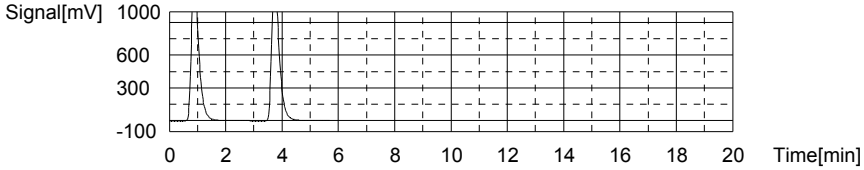

Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.946mg/L TC:87.99mg/L IC:85.04mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3189	87.92mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 2:34:29 AM
2	3194	88.06mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 2:40:23 AM

Mean Area 3192
Mean Conc. 87.99mg/L

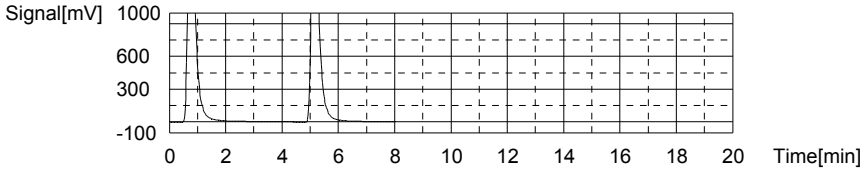

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2550	85.35mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 2:46:54 AM
2	2532	84.74mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 2:53:10 AM

Mean Area 2541
Mean Conc. 85.04mg/L

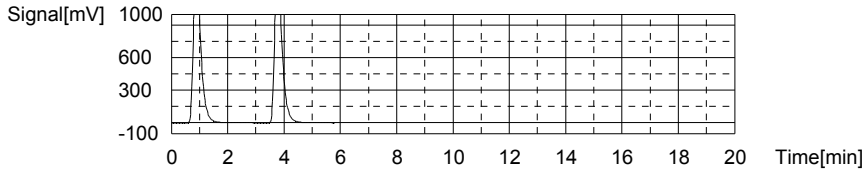

Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.892mg/L TC:82.24mg/L IC:79.35mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2916	80.38mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 3:02:16 AM
2	3051	84.11mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 3:09:32 AM

Mean Area 2984
Mean Conc. 82.24mg/L

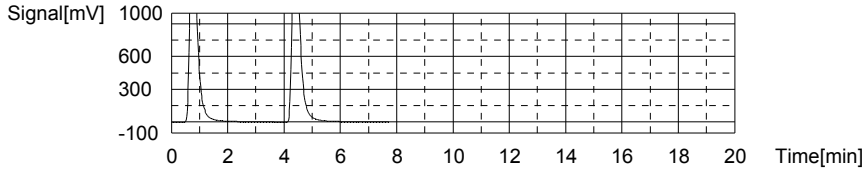

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2373	79.40mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 3:16:02 AM
2	2370	79.30mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 3:22:26 AM

Mean Area 2372
Mean Conc. 79.35mg/L

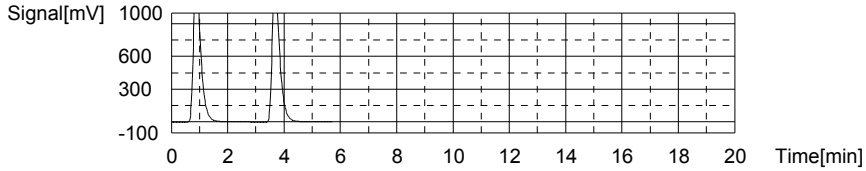

Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.222mg/L TC:80.38mg/L IC:71.16mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2919	80.46mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 3:31:46 AM
2	2913	80.30mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 3:38:39 AM

Mean Area 2916
Mean Conc. 80.38mg/L

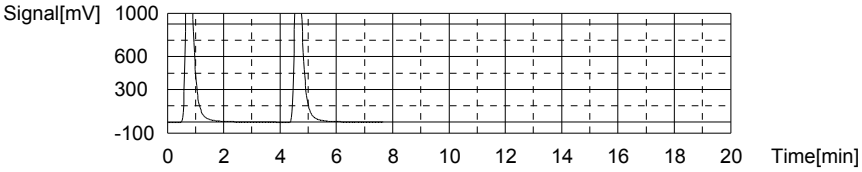

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2151	71.95mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 3:44:59 AM
2	2104	70.37mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 3:51:08 AM

Mean Area 2128
Mean Conc. 71.16mg/L

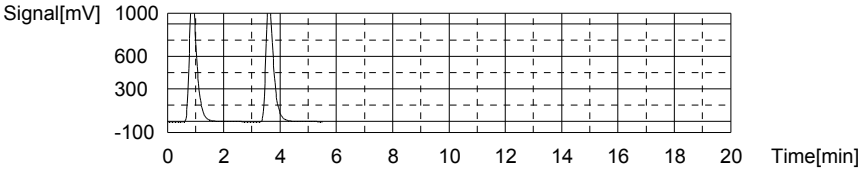

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.63mg/L TC:25.98mg/L IC:0.3448mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	946.6	25.98mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 3:59:03 AM

Mean Area 946.6
Mean Conc. 25.98mg/L

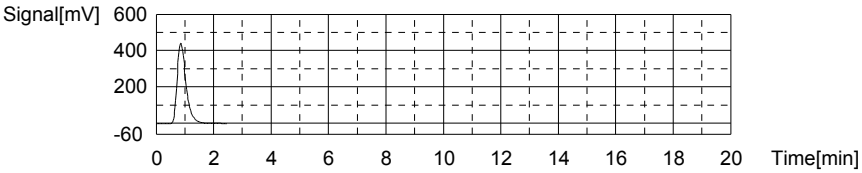

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	18.98	0.3448mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 4:03:42 AM

Mean Area 18.98
Mean Conc. 0.3448mg/L

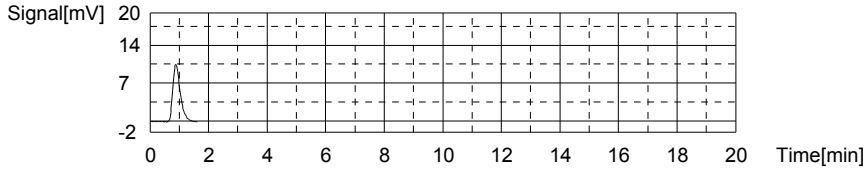

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1121mg/L TC:0.1477mg/L IC:0.03565mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.68	0.1477mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 4:08:44 AM

Mean Area 11.68
Mean Conc. 0.1477mg/L

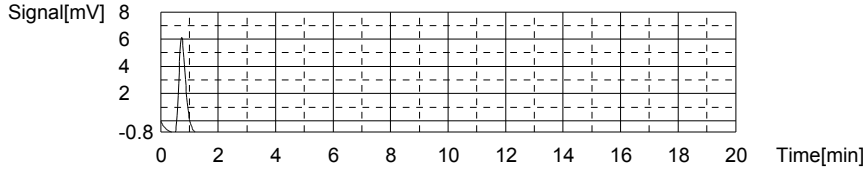

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.775	0.03565mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 4:12:46 AM

Mean Area 9.775
Mean Conc. 0.03565mg/L

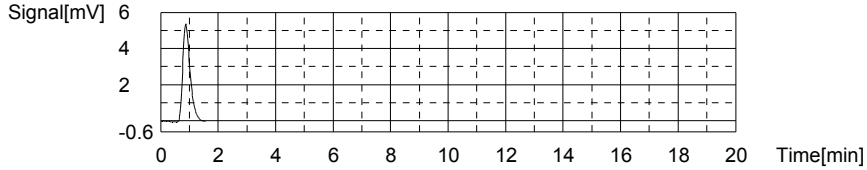

Sample

Sample Name: L14051322-10
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.331mg/L TC:26.06mg/L IC:19.73mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	942.3	25.86mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 4:20:52 AM
2	957.3	26.27mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 4:25:35 AM

Mean Area 949.8
Mean Conc. 26.06mg/L

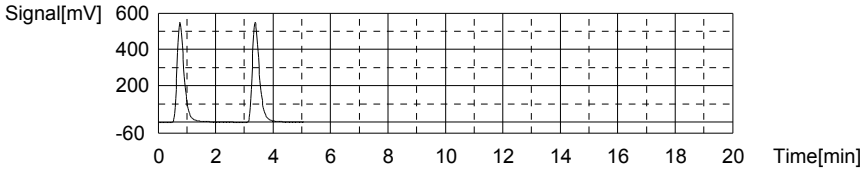

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	597.0	19.76mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 4:31:04 AM
2	595.5	19.71mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 4:36:17 AM

Mean Area 596.3
Mean Conc. 19.73mg/L

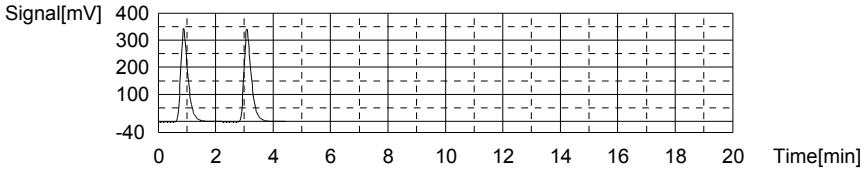

Sample

Sample Name: L14051322-11
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.100mg/L TC:22.14mg/L IC:15.05mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	814.8	22.33mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 4:44:02 AM
2	801.1	21.96mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 4:49:45 AM

Mean Area 808.0
Mean Conc. 22.14mg/L

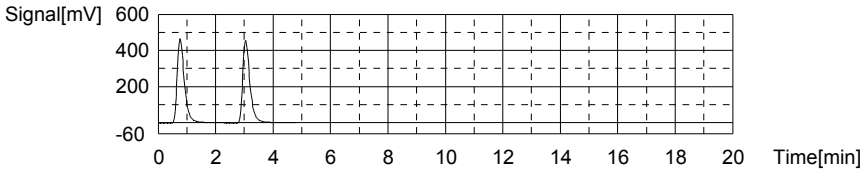

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	464.1	15.29mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 4:55:02 AM
2	449.3	14.80mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 5:00:05 AM

Mean Area 456.7
Mean Conc. 15.05mg/L

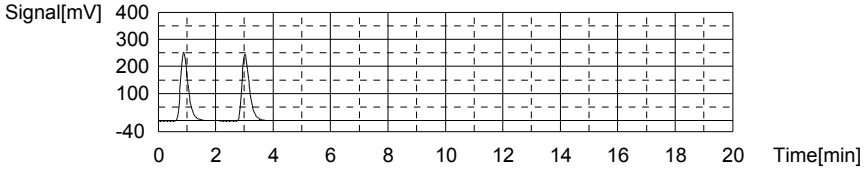

Sample

Sample Name: L14051322-12
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.359mg/L TC:24.15mg/L IC:16.79mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	896.0	24.58mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 5:08:22 AM
2	865.0	23.72mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 5:12:52 AM

Mean Area 880.5
Mean Conc. 24.15mg/L

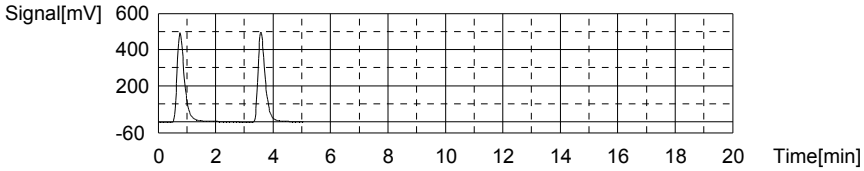

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	505.5	16.68mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 5:18:13 AM
2	511.8	16.90mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 5:23:21 AM

Mean Area 508.6
Mean Conc. 16.79mg/L

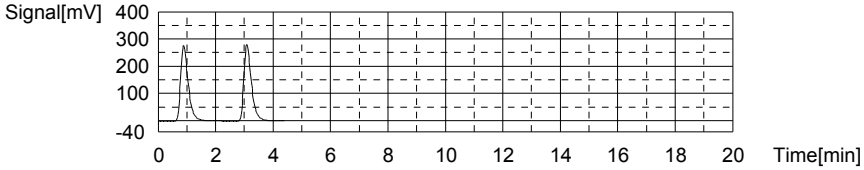

Sample

Sample Name: L14051322-13
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.435mg/L TC:21.91mg/L IC:14.48mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	796.5	21.83mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 5:31:17 AM
2	802.5	21.99mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 5:36:13 AM

Mean Area 799.5
Mean Conc. 21.91mg/L

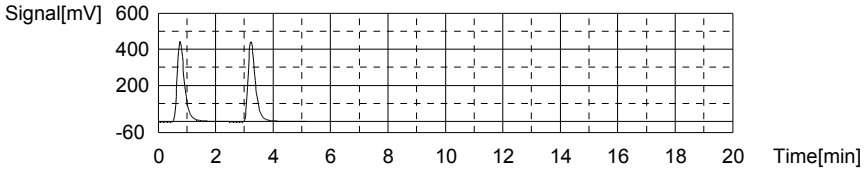

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	439.6	14.47mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 5:41:23 AM
2	439.9	14.48mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 5:46:24 AM

Mean Area 439.8
Mean Conc. 14.48mg/L

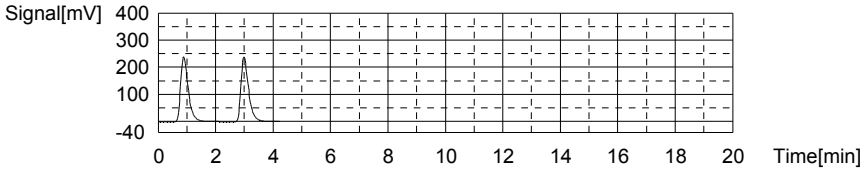

Sample

Sample Name: L14051322-14
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.052mg/L TC:18.92mg/L IC:11.86mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	672.5	18.40mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 5:54:24 AM
2	709.6	19.43mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 6:01:02 AM

Mean Area 691.0
Mean Conc. 18.92mg/L

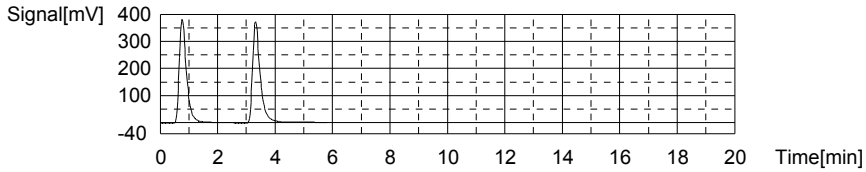

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	364.1	11.94mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 6:06:17 AM
2	359.8	11.79mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 6:11:16 AM

Mean Area 362.0
Mean Conc. 11.86mg/L

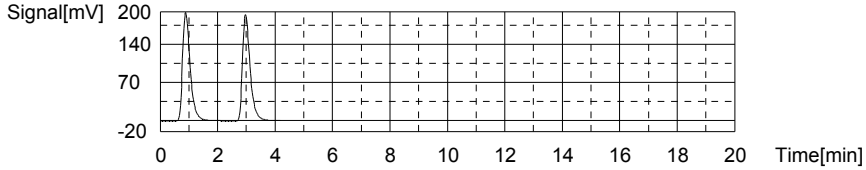

Sample

Sample Name: L14051322-15
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.440mg/L TC:22.92mg/L IC:15.48mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	832.1	22.81mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 6:19:03 AM
2	839.7	23.02mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 6:25:00 AM

Mean Area 835.9
Mean Conc. 22.92mg/L

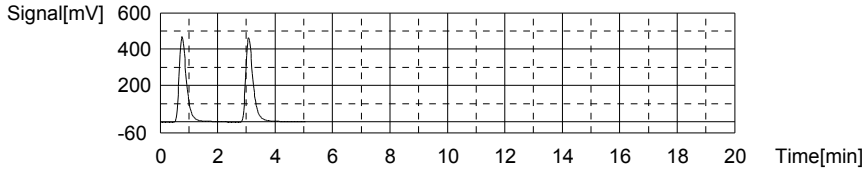

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	464.7	15.31mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 6:30:14 AM
2	474.4	15.64mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 6:35:14 AM

Mean Area 469.6
Mean Conc. 15.48mg/L

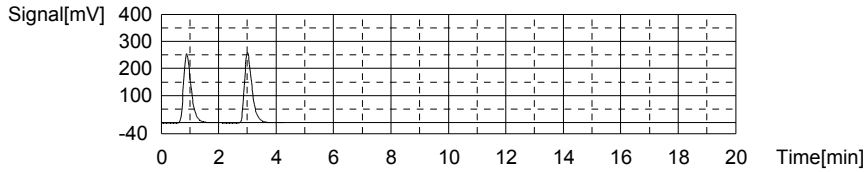

Sample

Sample Name: L14051325-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.782mg/L TC:4.048mg/L IC:1.265mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	152.9	4.049mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 6:43:19 AM
2	152.8	4.046mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 6:48:14 AM

Mean Area 152.9
Mean Conc. 4.048mg/L

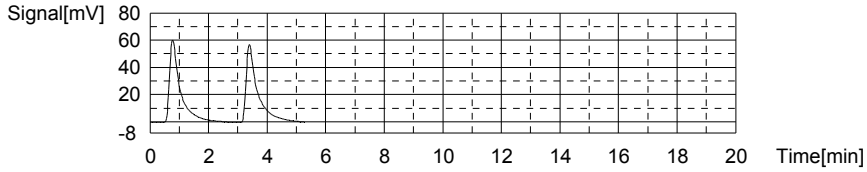

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	48.71	1.343mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 6:53:00 AM
2	44.06	1.187mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 6:57:27 AM

Mean Area 46.39
Mean Conc. 1.265mg/L

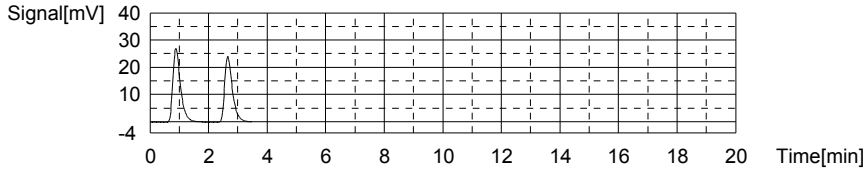

Sample

Sample Name: WG146765-05 DUP
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.070mg/L TC:8.428mg/L IC:2.357mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	309.0	8.361mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 7:05:24 AM
2	313.8	8.494mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 7:10:19 AM

Mean Area 311.4
Mean Conc. 8.428mg/L

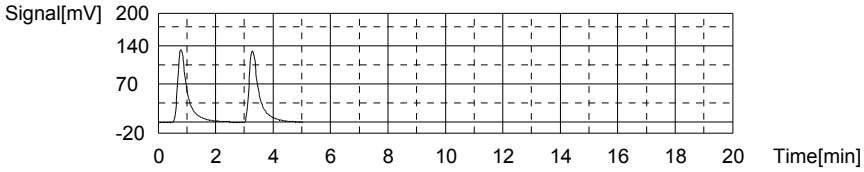

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	79.93	2.392mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 7:15:05 AM
2	77.87	2.323mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 7:19:39 AM

Mean Area 78.90
Mean Conc. 2.357mg/L

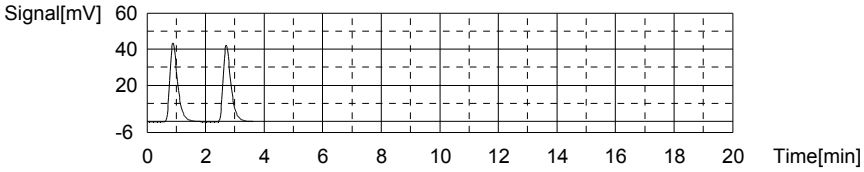

Sample

Sample Name: WG476765-06 MS
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.96mg/L TC:17.56mg/L IC:0.6061mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	635.5	17.38mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 7:27:45 AM
2	648.6	17.74mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 7:33:22 AM

Mean Area 642.0
Mean Conc. 17.56mg/L

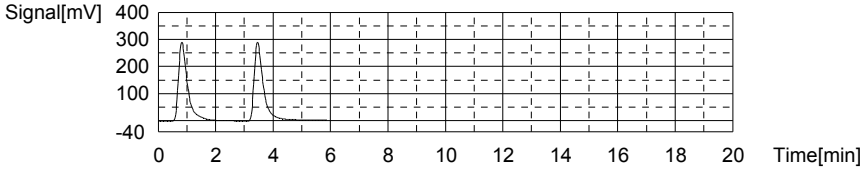

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	33.83	0.8435mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 7:38:02 AM
2	19.69	0.3686mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 7:42:20 AM

Mean Area 26.76
Mean Conc. 0.6061mg/L

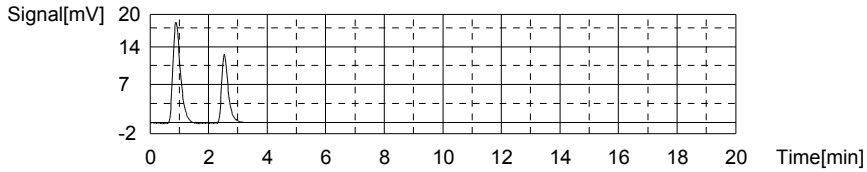

Sample

Sample Name: WG476762-08 DUP
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.619mg/L TC:3.190mg/L IC:1.571mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	121.8	3.190mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 7:49:37 AM

Mean Area 121.8
Mean Conc. 3.190mg/L

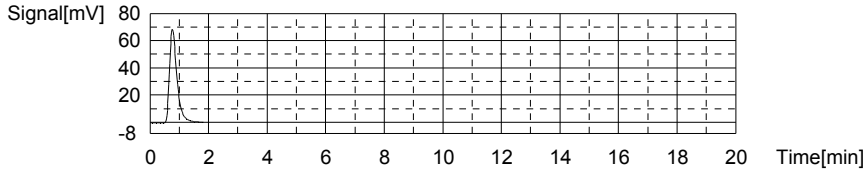

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	55.49	1.571mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 7:54:18 AM

Mean Area 55.49
Mean Conc. 1.571mg/L

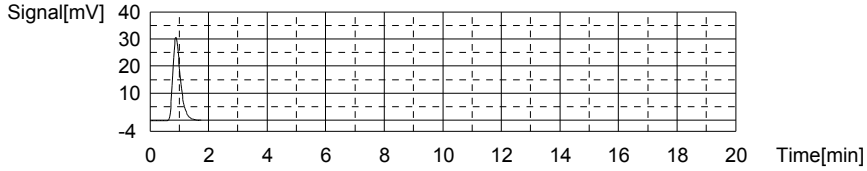

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.39mg/L TC:25.39mg/L IC:-0.00519mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	925.4	25.39mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 8:02:13 AM

Mean Area 925.4
Mean Conc. 25.39mg/L

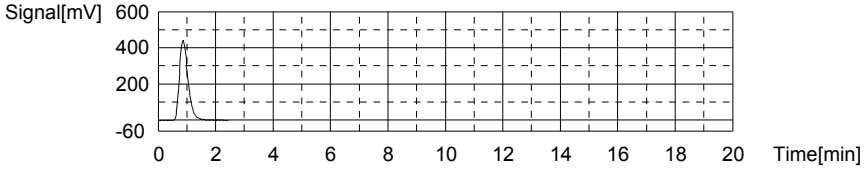

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.559	-0.00519mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 8:06:42 AM

Mean Area 8.559
Mean Conc. -0.00519mg/L

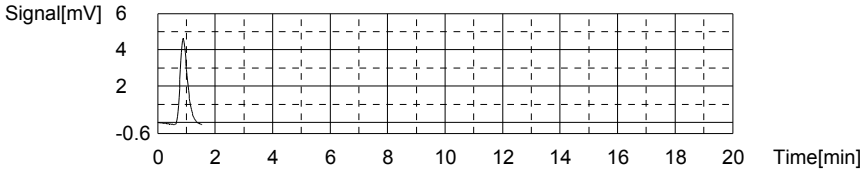

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1134mg/L TC:0.08030mg/L IC:-0.03313mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.239	0.08030mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 8:11:42 AM

Mean Area 9.239
Mean Conc. 0.08030mg/L

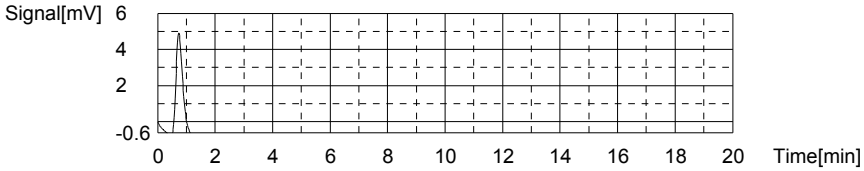

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.727	-0.03313mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 8:15:44 AM

Mean Area 7.727
Mean Conc. -0.03313mg/L

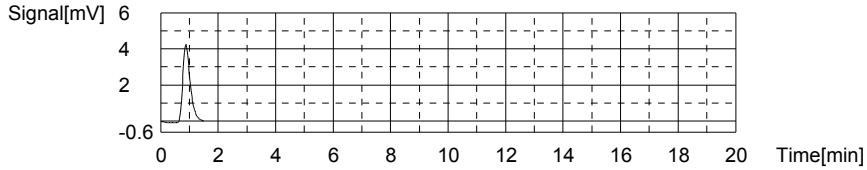

Sample

Sample Name: WG476766-01 BLK
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.09451mg/L TC:0.06122mg/L IC:-0.03330mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.548	0.06122mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 8:20:42 AM

Mean Area 8.548
Mean Conc. 0.06122mg/L

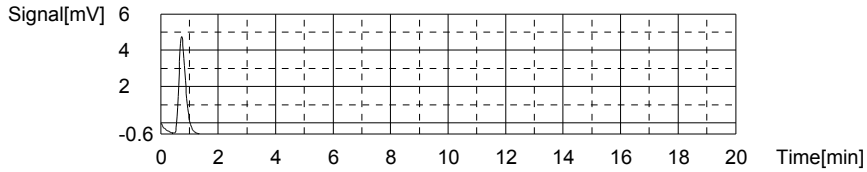

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.722	-0.03330mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 8:24:40 AM

Mean Area 7.722
Mean Conc. -0.03330mg/L

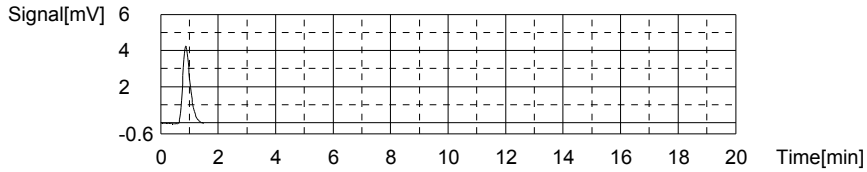

Sample

Sample Name: WG476766-02 LCS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.37mg/L TC:24.36mg/L IC:-0.01503mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	888.0	24.36mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/21/2014 8:32:50 AM

Mean Area 888.0
Mean Conc. 24.36mg/L

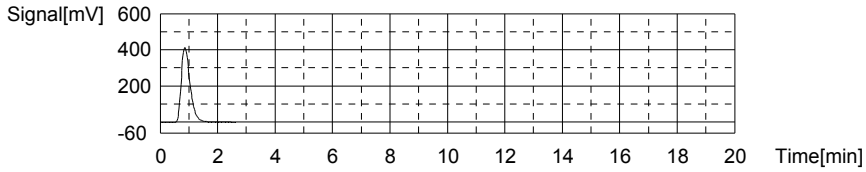

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.266	-0.01503mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 8:37:16 AM

Mean Area 8.266
Mean Conc. -0.01503mg/L

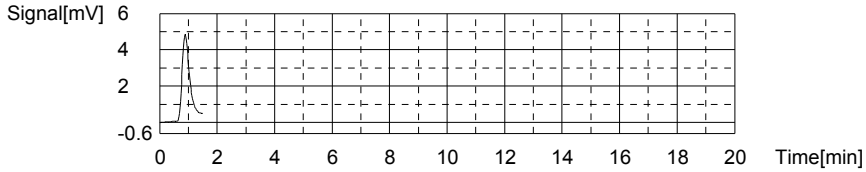

Sample

Sample Name: WG476766-03 LCSDUP
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.69mg/L TC:23.67mg/L IC:-0.01221mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	863.3	23.67mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/21/2014 8:45:09 AM

Mean Area 863.3
Mean Conc. 23.67mg/L

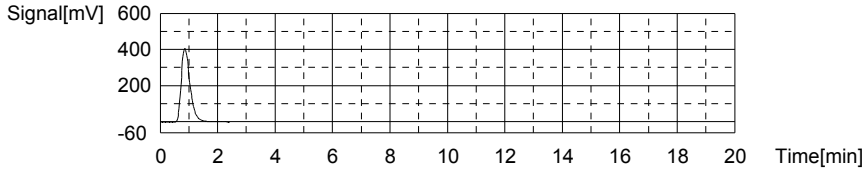

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.350	-0.01221mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 8:49:34 AM

Mean Area 8.350
Mean Conc. -0.01221mg/L

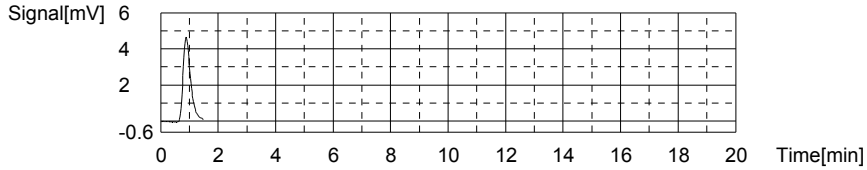

Sample

Sample Name: L14050703-10 (100)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.25mg/L TC:10.32mg/L IC:0.07343mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	379.9	10.32mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 8:57:10 AM

Mean Area 379.9
Mean Conc. 10.32mg/L

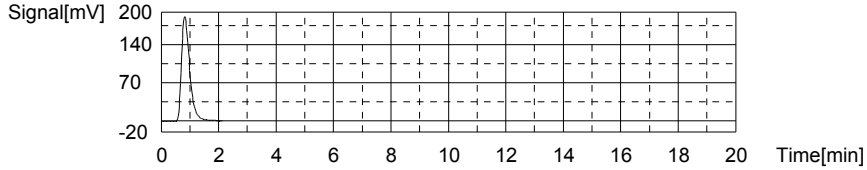

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.90	0.07343mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 9:01:40 AM

Mean Area 10.90
Mean Conc. 0.07343mg/L

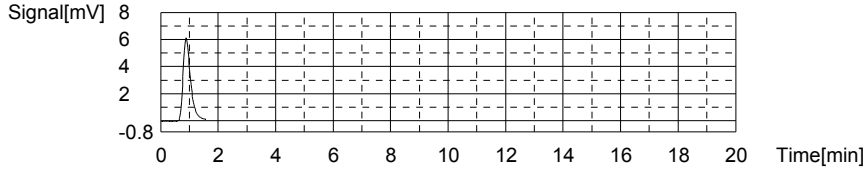

Sample

Sample Name: L14050703-11 (100)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.46mg/L TC:10.54mg/L IC:0.07444mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	387.8	10.54mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 9:09:29 AM

Mean Area 387.8
Mean Conc. 10.54mg/L

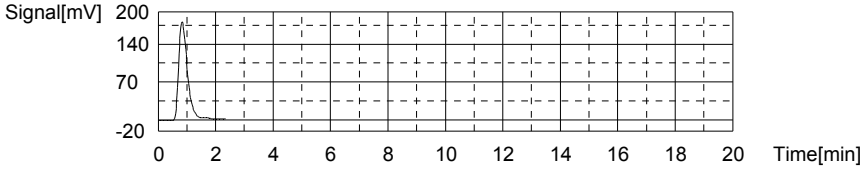

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.93	0.07444mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 9:14:05 AM

Mean Area 10.93
Mean Conc. 0.07444mg/L

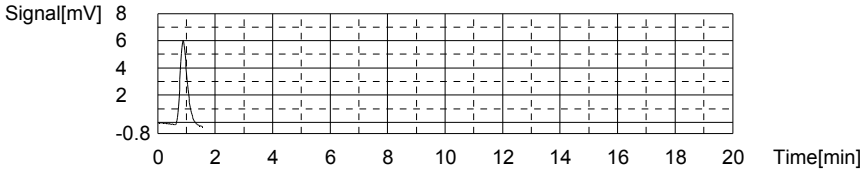

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.5458mg/L TC:0.5687mg/L IC:0.02296mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	26.92	0.5687mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 9:21:12 AM

Mean Area 26.92
Mean Conc. 0.5687mg/L

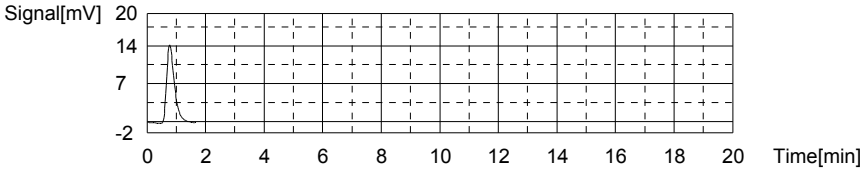

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.397	0.02296mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 9:25:49 AM

Mean Area 9.397
Mean Conc. 0.02296mg/L

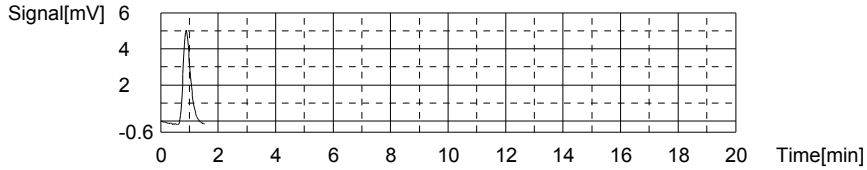

Sample

Sample Name: L1405703-13
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.4607mg/L TC:0.4676mg/L IC:0.00694mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	23.26	0.4676mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 9:32:54 AM

Mean Area 23.26
Mean Conc. 0.4676mg/L

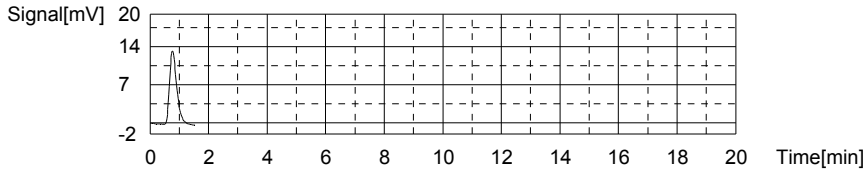

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.920	0.00694mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 9:37:23 AM

Mean Area 8.920
Mean Conc. 0.00694mg/L

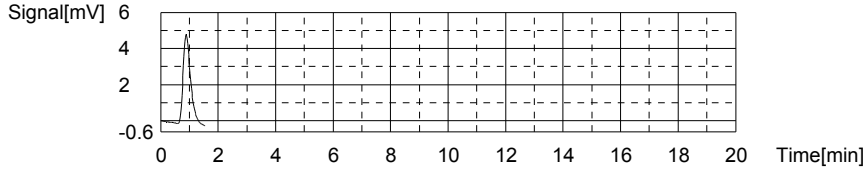

Sample

Sample Name: L1405703-14 (50)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:39.58mg/L TC:39.83mg/L IC:0.2420mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1448	39.83mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 9:46:28 AM

Mean Area 1448
Mean Conc. 39.83mg/L

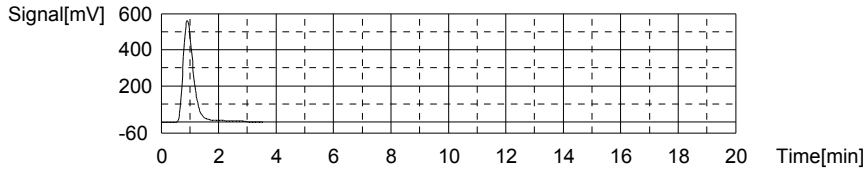

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.92	0.2420mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 9:51:01 AM

Mean Area 15.92
Mean Conc. 0.2420mg/L

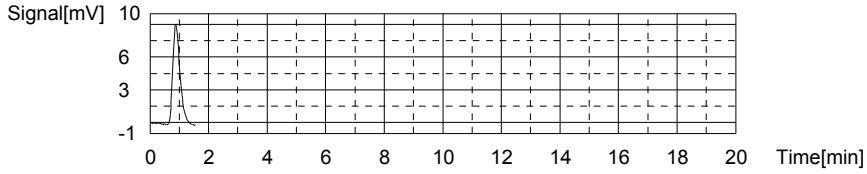

Sample

Sample Name: L1405703-15 (100
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.800mg/L TC:5.869mg/L IC:0.06907mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	218.8	5.869mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 9:58:41 AM

Mean Area 218.8
Mean Conc. 5.869mg/L

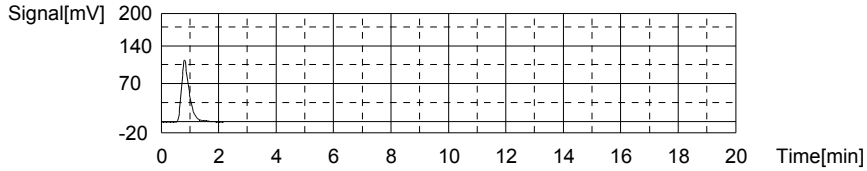

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.77	0.06907mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 10:03:09 AM

Mean Area 10.77
Mean Conc. 0.06907mg/L

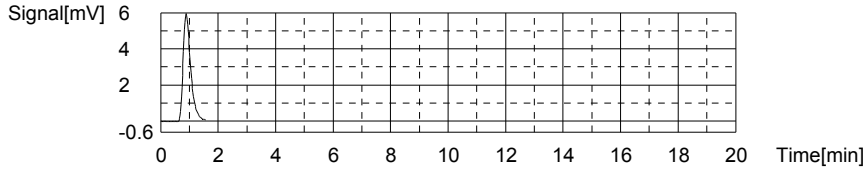

Sample

Sample Name: L14050703-16 (50)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.86mg/L TC:28.09mg/L IC:0.2283mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1023	28.09mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 10:12:16 AM

Mean Area 1023
Mean Conc. 28.09mg/L

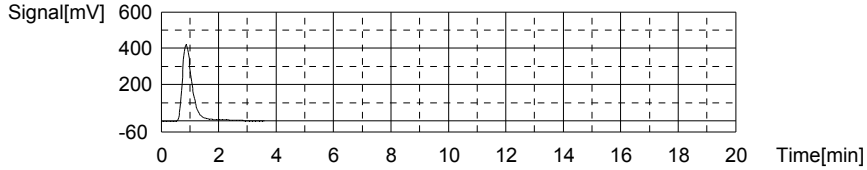

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.51	0.2283mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 10:16:49 AM

Mean Area 15.51
Mean Conc. 0.2283mg/L

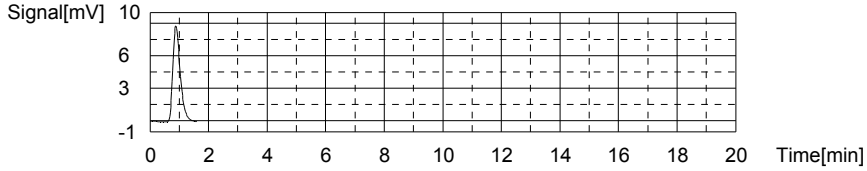

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.07mg/L TC:28.31mg/L IC:0.2380mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1031	28.31mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 10:25:50 AM

Mean Area 1031
Mean Conc. 28.31mg/L

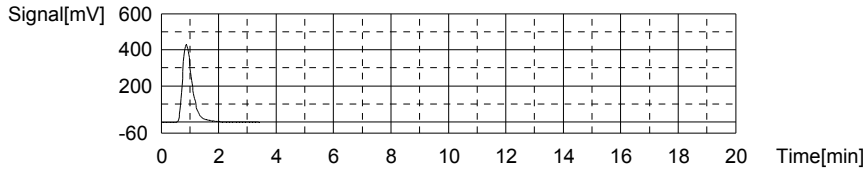

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.80	0.2380mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 10:30:21 AM

Mean Area 15.80
Mean Conc. 0.2380mg/L

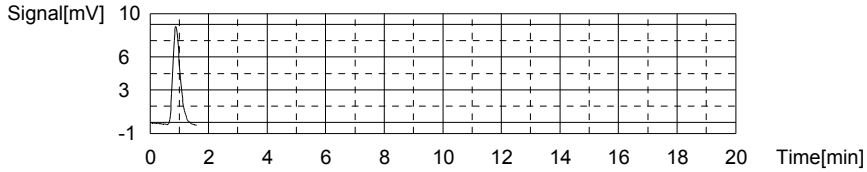

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1828mg/L TC:0.1287mg/L IC:-0.05409mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.99	0.1287mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 10:37:16 AM

Mean Area 10.99
Mean Conc. 0.1287mg/L

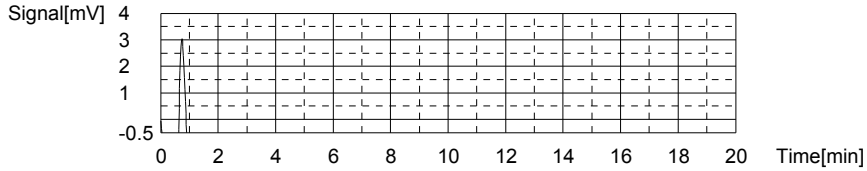

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.103	-0.05409mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 10:41:11 AM

Mean Area 7.103
Mean Conc. -0.05409mg/L

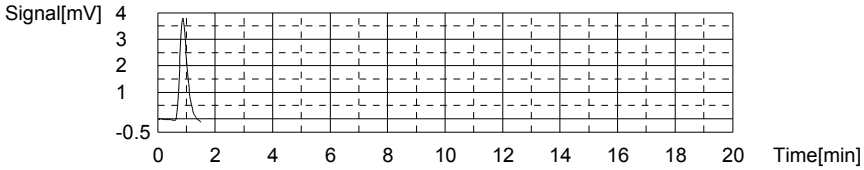

Sample

Sample Name: WG476766-05 (50) DUP
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.86mg/L TC:29.02mg/L IC:0.1695mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1057	29.02mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 10:49:49 AM

Mean Area 1057
Mean Conc. 29.02mg/L

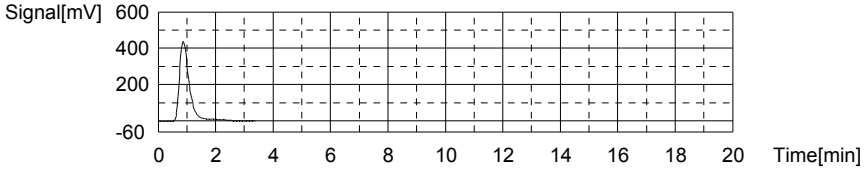

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.76	0.1695mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 10:54:17 AM

Mean Area 13.76
Mean Conc. 0.1695mg/L

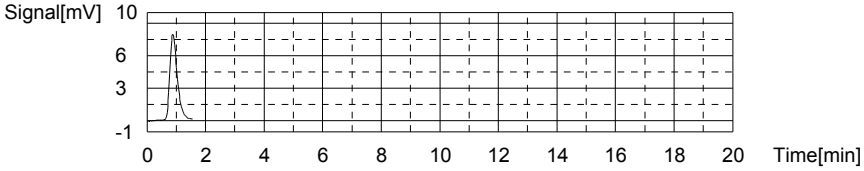

Sample

Sample Name: L14050703-17 (50) MS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.41mg/L TC:27.56mg/L IC:0.1554mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1004	27.56mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 11:08:58 AM

Mean Area 1004
Mean Conc. 27.56mg/L

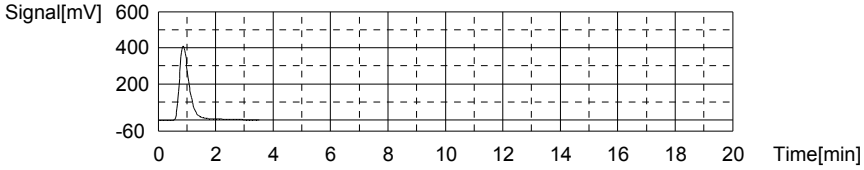

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.34	0.1554mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 11:13:25 AM

Mean Area 13.34
Mean Conc. 0.1554mg/L

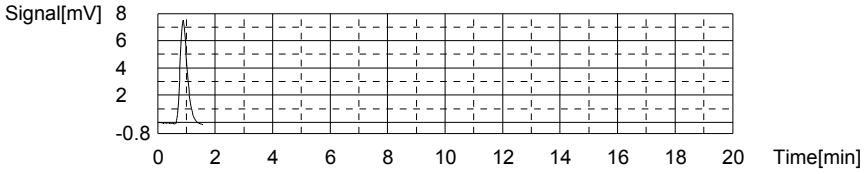

Sample

Sample Name: L14050703-18 (50) MSD
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.86mg/L TC:29.08mg/L IC:0.2205mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1059	29.08mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 11:23:00 AM

Mean Area 1059
Mean Conc. 29.08mg/L

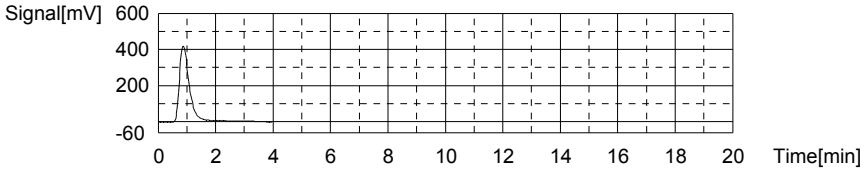

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.28	0.2205mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 11:27:29 AM

Mean Area 15.28
Mean Conc. 0.2205mg/L

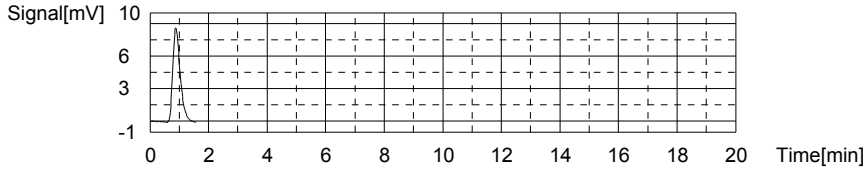

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.71mg/L TC:24.68mg/L IC:-0.02262mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	899.9	24.68mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 11:35:20 AM

Mean Area 899.9
Mean Conc. 24.68mg/L

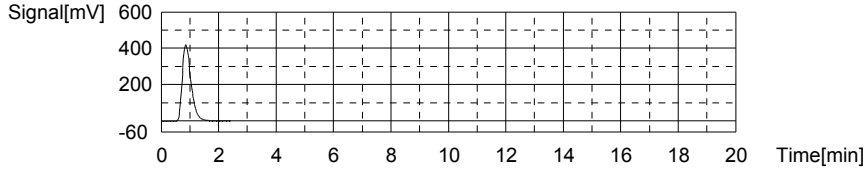

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.040	-0.02262mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 11:39:42 AM

Mean Area 8.040
Mean Conc. -0.02262mg/L

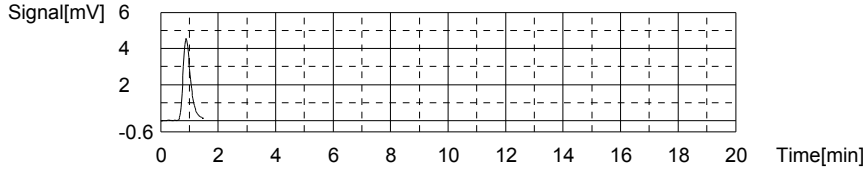

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1470mg/L TC:0.09196mg/L IC:-0.05499mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.661	0.09196mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 11:44:41 AM

Mean Area 9.661
Mean Conc. 0.09196mg/L

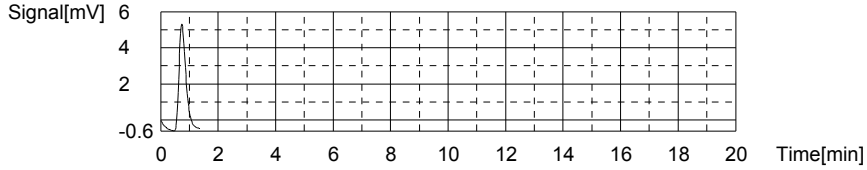

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.076	-0.05499mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 11:48:38 AM

Mean Area 7.076
Mean Conc. -0.05499mg/L

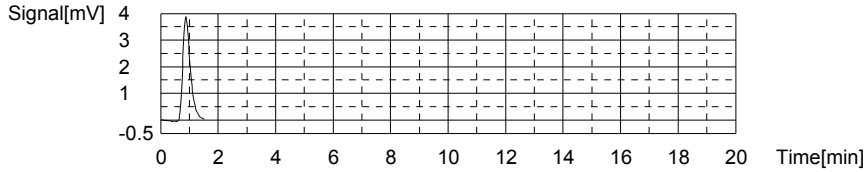

Sample

Sample Name: L14050703-02 (100)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:32.96mg/L TC:36.57mg/L IC:3.603mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1330	36.57mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 11:56:56 AM

Mean Area 1330
Mean Conc. 36.57mg/L

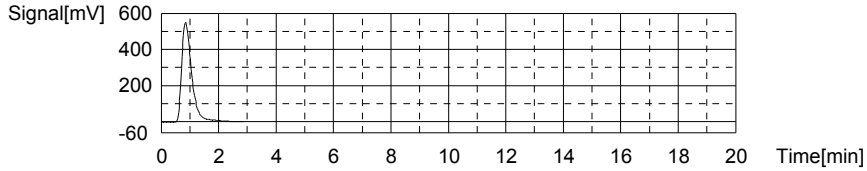

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	116.0	3.603mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 12:01:49 PM

Mean Area 116.0
Mean Conc. 3.603mg/L

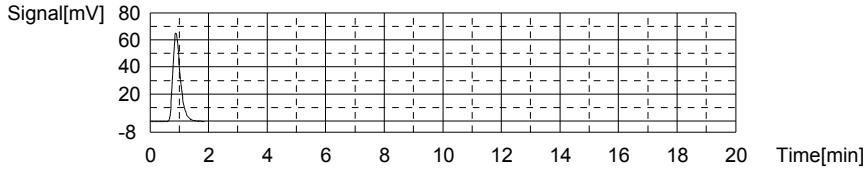

Sample

Sample Name: L14050703-03 (50)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.090mg/L TC:9.707mg/L IC:1.617mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	357.7	9.707mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 12:09:40 PM

Mean Area 357.7
Mean Conc. 9.707mg/L

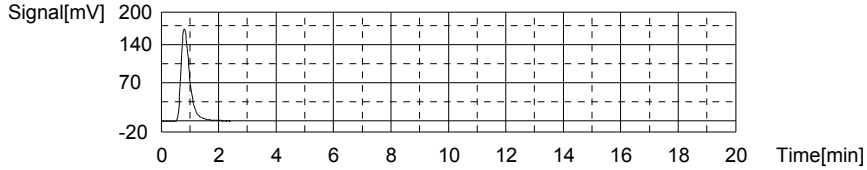

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	56.85	1.617mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 12:14:22 PM

Mean Area 56.85
Mean Conc. 1.617mg/L

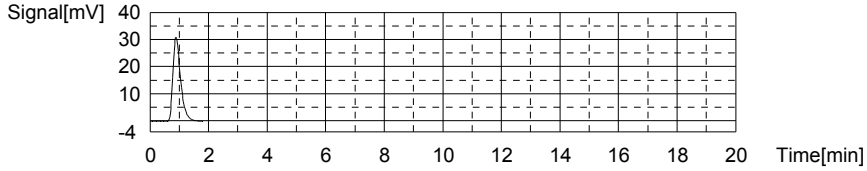

Sample

Sample Name: L14050703-04 (50)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:14.38mg/L TC:16.41mg/L IC:2.024mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	600.3	16.41mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 12:22:40 PM

Mean Area 600.3
Mean Conc. 16.41mg/L

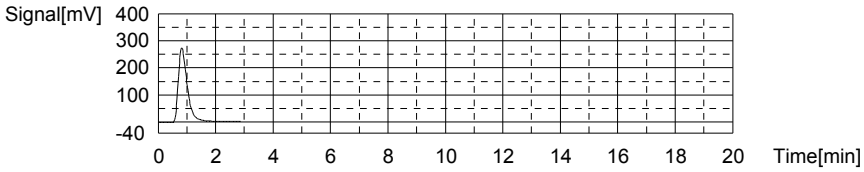

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	68.98	2.024mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 12:27:26 PM

Mean Area 68.98
Mean Conc. 2.024mg/L

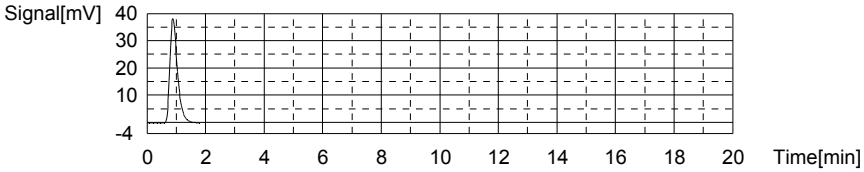

Sample

Sample Name: L14051050-15
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.503mg/L TC:11.93mg/L IC:5.430mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	438.3	11.93mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 12:35:04 PM

Mean Area 438.3
Mean Conc. 11.93mg/L

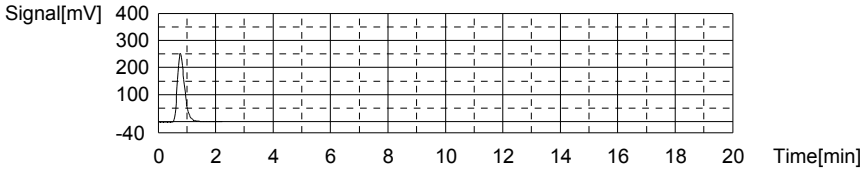

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	170.4	5.430mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 12:40:05 PM

Mean Area 170.4
Mean Conc. 5.430mg/L

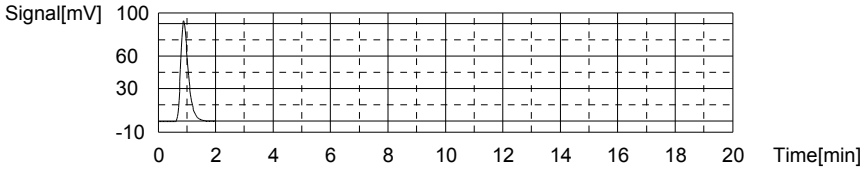

Sample

Sample Name: L14051322-01 (5)
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.488mg/L TC:27.33mg/L IC:19.85mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	991.7	27.22mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 1:33:41 PM
2	999.9	27.45mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 1:39:42 PM

Mean Area 995.8
Mean Conc. 27.33mg/L

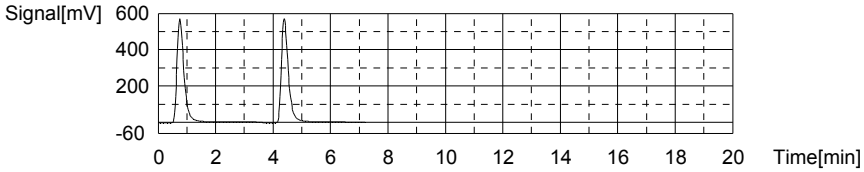

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	625.4	20.71mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 1:45:12 PM
2	573.9	18.98mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 1:50:21 PM

Mean Area 599.6
Mean Conc. 19.85mg/L

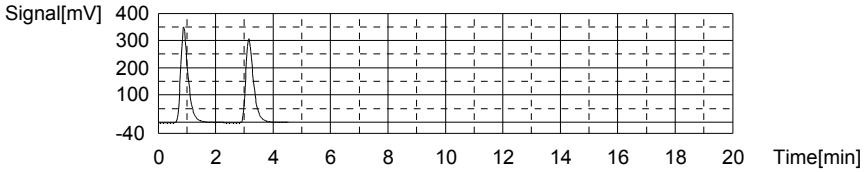

Sample

Sample Name: L14051322-02 (3)
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.61mg/L TC:49.03mg/L IC:36.41mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1775	48.86mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 2:00:41 PM
2	1787	49.19mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 2:08:09 PM

Mean Area 1781
Mean Conc. 49.03mg/L

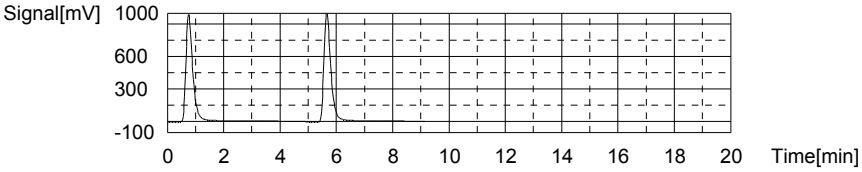

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1088	36.25mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 2:13:56 PM
2	1098	36.58mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 2:19:25 PM

Mean Area 1093
Mean Conc. 36.41mg/L

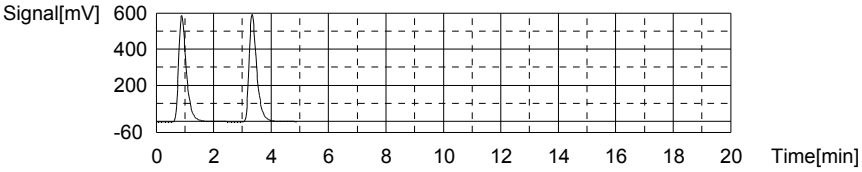

Sample

Sample Name: L14051322-03 (3)
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.91mg/L TC:42.56mg/L IC:31.65mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1549	42.62mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 2:29:15 PM
2	1545	42.51mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 2:36:30 PM

Mean Area 1547
Mean Conc. 42.56mg/L

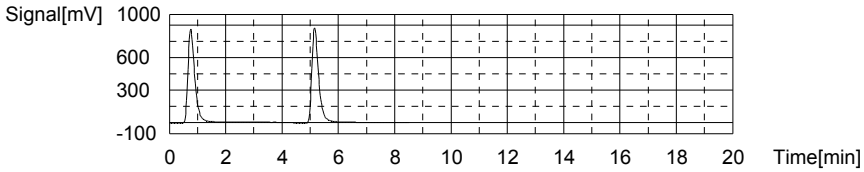

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	952.3	31.69mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 2:42:13 PM
2	950.0	31.61mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 2:47:46 PM

Mean Area 951.2
Mean Conc. 31.65mg/L

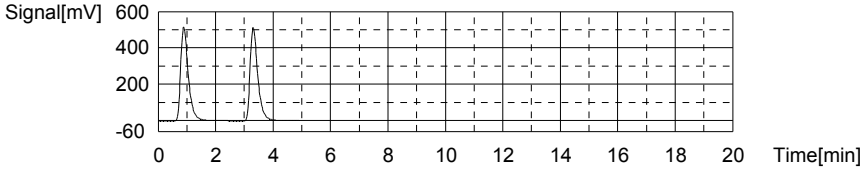

Sample

Sample Name: L14051322-04 (3)
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.304mg/L TC:38.11mg/L IC:28.81mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1382	38.00mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 2:56:19 PM
2	1390	38.22mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 3:02:47 PM

Mean Area 1386
Mean Conc. 38.11mg/L

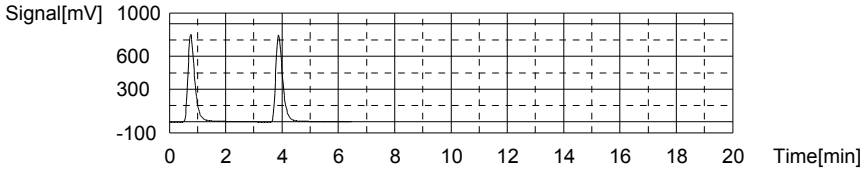

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	881.8	29.32mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 3:08:26 PM
2	851.3	28.30mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 3:13:46 PM

Mean Area 866.6
Mean Conc. 28.81mg/L

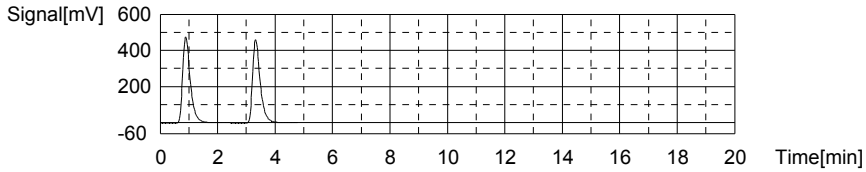

Sample

Sample Name: L14051322-05 (3)
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.488mg/L TC:33.53mg/L IC:25.04mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1201	33.00mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 3:22:12 PM
2	1239	34.05mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 3:28:23 PM

Mean Area 1220
Mean Conc. 33.53mg/L

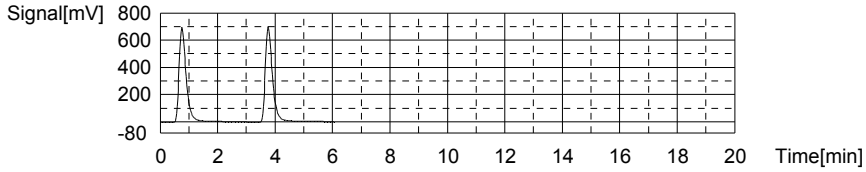

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	756.5	25.11mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 3:33:57 PM
2	752.1	24.97mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 3:39:20 PM

Mean Area 754.3
Mean Conc. 25.04mg/L

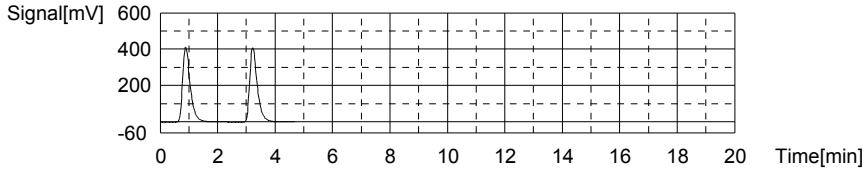

Sample

Sample Name: L14051322-06 (3)
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.58mg/L TC:43.32mg/L IC:32.75mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1561	42.95mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 3:48:44 PM
2	1588	43.69mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 3:56:21 PM

Mean Area 1575
Mean Conc. 43.32mg/L

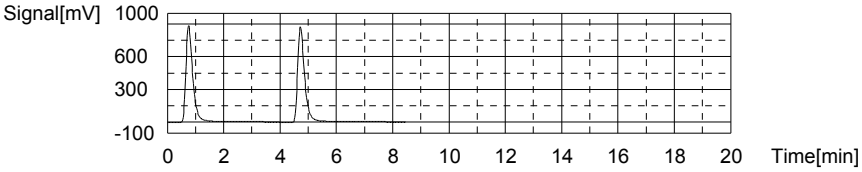

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	995.4	33.14mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 4:02:06 PM
2	972.1	32.35mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 4:07:41 PM

Mean Area 983.8
Mean Conc. 32.75mg/L

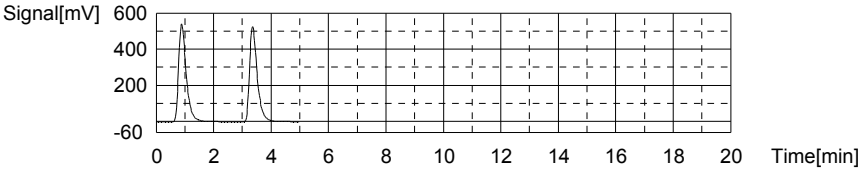

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.25mg/L TC:27.33mg/L IC:0.07948mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	995.7	27.33mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 4:17:28 PM

Mean Area 995.7
Mean Conc. 27.33mg/L

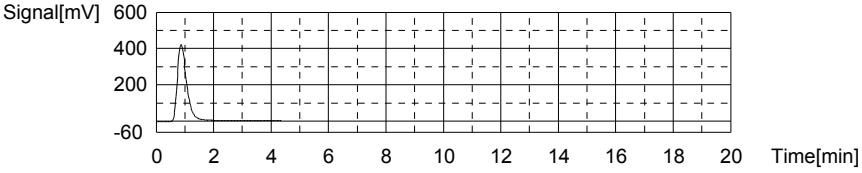

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.08	0.07948mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 4:22:01 PM

Mean Area 11.08
Mean Conc. 0.07948mg/L

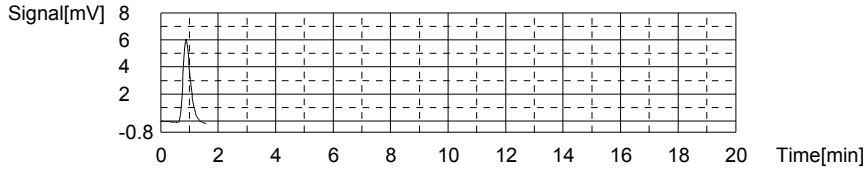

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1179mg/L TC:0.1016mg/L IC:-0.01630mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.01	0.1016mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 4:27:01 PM

Mean Area 10.01
Mean Conc. 0.1016mg/L

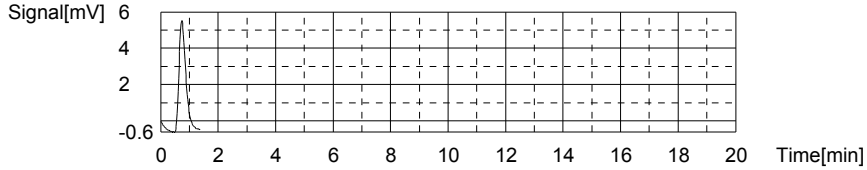

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.228	-0.01630mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 4:30:59 PM

Mean Area 8.228
Mean Conc. -0.01630mg/L

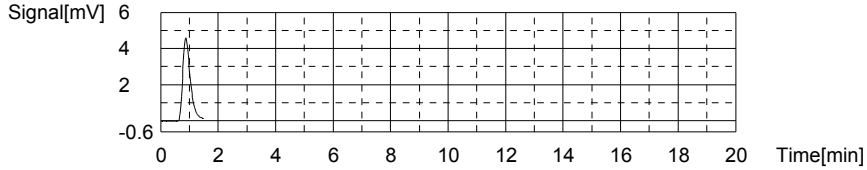

Sample

Sample Name: L14051322-07 (3)
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.013mg/L TC:33.46mg/L IC:24.45mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1196	32.86mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 4:39:40 PM
2	1239	34.05mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 4:46:15 PM

Mean Area 1218
Mean Conc. 33.46mg/L

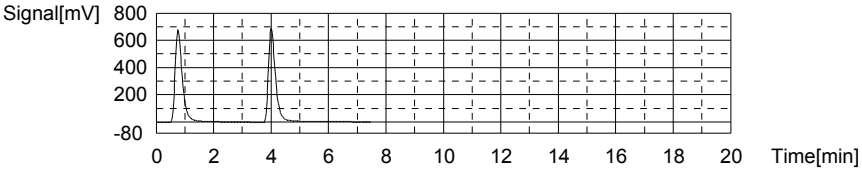

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	742.8	24.65mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 4:51:51 PM
2	730.4	24.24mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 4:57:12 PM

Mean Area 736.6
Mean Conc. 24.45mg/L

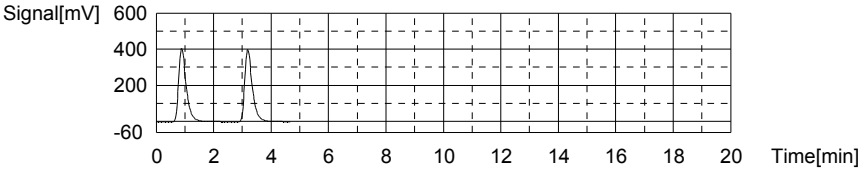

Sample

Sample Name: L14051322-08 (3)
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.717mg/L TC:30.88mg/L IC:23.16mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1114	30.60mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 5:05:32 PM
2	1134	31.15mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 5:11:55 PM

Mean Area 1124
Mean Conc. 30.88mg/L

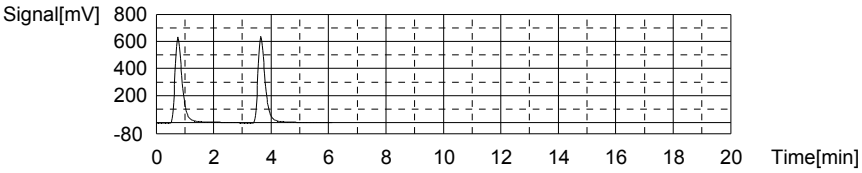

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	700.5	23.23mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 5:17:27 PM
2	696.1	23.09mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 5:22:43 PM

Mean Area 698.3
Mean Conc. 23.16mg/L

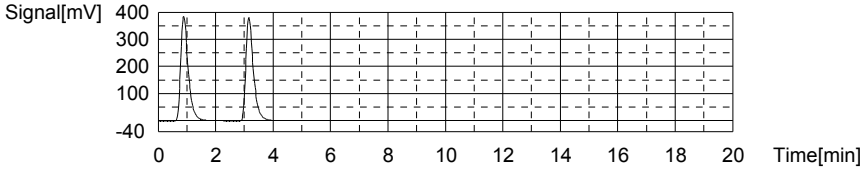

Sample

Sample Name: L14051322-09 (3)
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.161mg/L TC:28.02mg/L IC:20.86mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	964.2	26.46mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 5:30:36 PM
2	1077	29.58mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 5:37:46 PM

Mean Area 1021
Mean Conc. 28.02mg/L

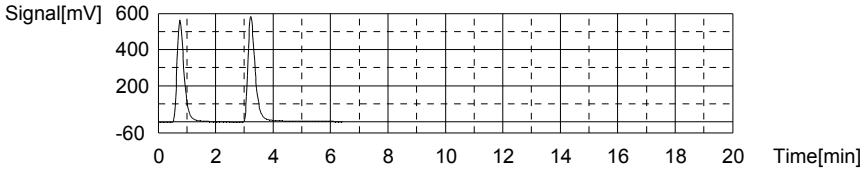

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	635.5	21.05mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 5:43:23 PM
2	624.1	20.67mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 5:48:34 PM

Mean Area 629.8
Mean Conc. 20.86mg/L

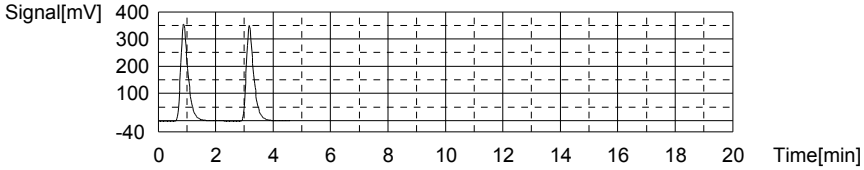

Sample

Sample Name: L14050703-12 (10)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.882mg/L TC:4.474mg/L IC:1.592mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	168.3	4.474mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 5:55:59 PM

Mean Area 168.3
Mean Conc. 4.474mg/L

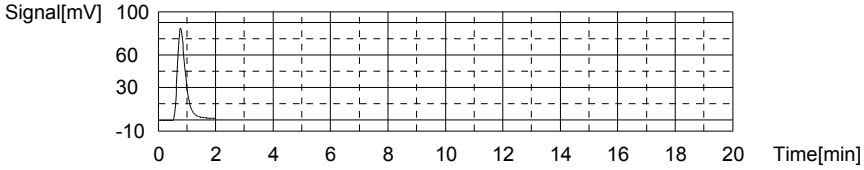

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	56.12	1.592mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/21/2014 6:00:48 PM

Mean Area 56.12
Mean Conc. 1.592mg/L

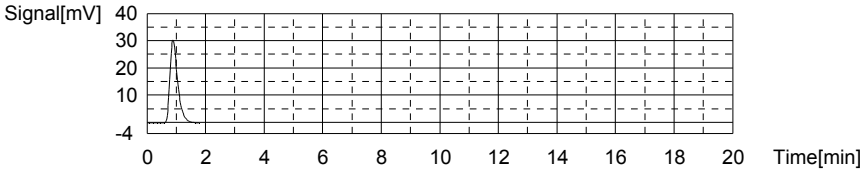

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.80mg/L TC:24.78mg/L IC:-0.01684mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	903.3	24.78mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/21/2014 6:08:36 PM

Mean Area 903.3
Mean Conc. 24.78mg/L

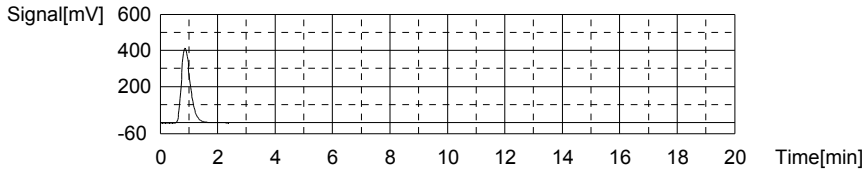

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.212	-0.01684mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 6:13:02 PM

Mean Area 8.212
Mean Conc. -0.01684mg/L

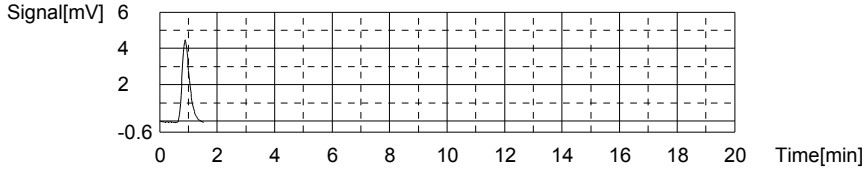

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1303mg/L TC:0.1022mg/L IC:-0.02816mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.03	0.1022mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	5/21/2014 6:18:03 PM

Mean Area 10.03
Mean Conc. 0.1022mg/L

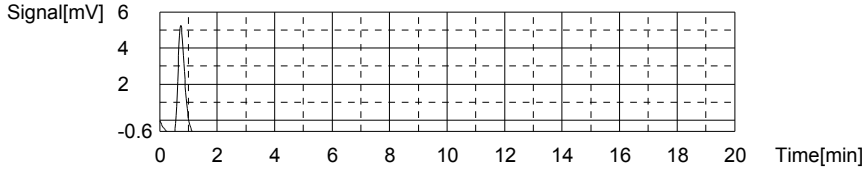

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.875	-0.02816mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/21/2014 6:22:02 PM

Mean Area 7.875
Mean Conc. -0.02816mg/L

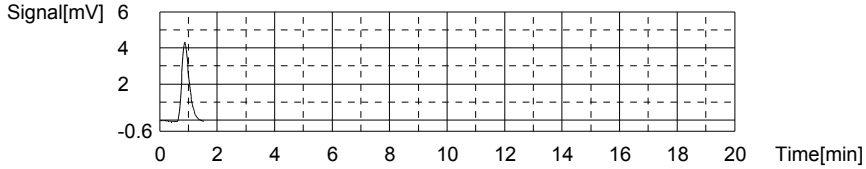

WORKGROUP: WG476559

WG476567

WG476570

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 63130
(5/200)(1000) = 25mg/L

LCS (TOC): Std 63965
(5/200)(1000) = 25mg/L

CCV (TIC): Std 62285
(5/200)(1000) = 25mg/L

MS (TOC): Std 63965
(.4)(1000)/40 = 10

Calibration Curve Date: 7/9/13

Reagent: 29580
30288

☐ SM5310-C : Matrix 2 WG 476570

☐ EPA 415.1/9060A(mod): Matrix 1 WG 476559 SOP: K 4151 Rev. 16
WG 476567 Instrument: Shimadza TOC-VWP/ASI

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full

DAILY CHECK
☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate

☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution
1	TIC	
2	CCV	
3	Blk	
4	LCS	
5	LCSDUP	
6	05-433-01	
7	MS 02	
8	MSD 03	
9	~~05-517-02~~	
10	05-517 -03	1/3
11	-04	1/3
12	-05	1/3
13	Ref -06	
14	CCV	
15	CCB	
16	-07 MS	
17	-08 MSD	
18	-09	
19	05-591-04	
20	-05	1/3
21	-06	1/3
22	-07	1/3
23	05-599-01	
24	05-603-12	
25	-13	

05-1090-01

TIC

TIC

Position	Sample ID	Dilution
26	CCV	
27	CCB	
28	05-612-02	1/3
29	-03	1/3
30	-04	1/3
31	-05	1/3
32	05-0669-01	
33	-02	
34	Blk	
35	LCS	
36	LCSDUP	
37	05-517-02	1/3
38	CCV	
39	CCB	
40	05-694-04 Ref	
41	-05	1/2
42	-06 MS	
43	-07 MSD	
44	-08	1/2
45	-09	
46	-10	1/3
47	-11	1/2
48	-13	
49	05-698-02	1/3
50	CCV	

Position	Sample ID	Dilution
51	CCB	
52	05-698-03	
53	-04	
54	-05	
55	-06	1/2
56	-07	1/2
57	-08	
58	05-1050-01	
59	-02	
60	-03	
61	-04	
62	CCV	
63	CCB	
64	05-1050-05	
65	DUP 05-517-06	
66	DUP 05-694-04	
67	Blk	
68	LCS	
69	LCSDUP	
70	05-996-01	
71	02	
72	DUP 996-02	
73	MS 996-02	
74	CCV	
75	CCB	

63 05-1090-01 1/10

Analyst: Gabriel Todd

Date/Time: 05/19/14 1200

David Merchle

67 CCV
0 CCB

DCN#102717

C:\TOC3201\Data\05-19-2014-DCM-TOC.t32

	Analy	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	TOC:1.894mg/L TC:26.96mg/L IC:25.07mg/L	Completed	5/19/2014 11:59:13 AM	1
2	TOC	CCV	!!Error!! TOC:24.44mg/L TC:24.36mg/L IC:-0.08220mg/L	Completed	5/19/2014 12:11:31 PM	2
3	TOC	WG476559-01 BLK	!!Error!! TOC:0.1404mg/L TC:0.05660mg/L IC:-0.08381mg	Completed	5/19/2014 12:20:28 PM	0
4	TOC	WG476559-02 LCS	!!Error!! TOC:24.84mg/L TC:24.74mg/L IC:-0.1007mg/L	Completed	5/19/2014 12:32:38 PM	4
5	TOC	WG476559-03 LCSDUP	!!Error!! TOC:24.85mg/L TC:24.75mg/L IC:-0.1010mg/L	Completed	5/19/2014 12:45:03 PM	5
6	TOC	L14050433-01	TOC:1.453mg/L TC:6.494mg/L IC:5.041mg/L	Completed	5/19/2014 12:57:20 PM	6
7	TOC	L14050433-02 MS	TOC:10.84mg/L TC:15.18mg/L IC:4.342mg/L	Completed	5/19/2014 1:09:59 PM	7
8	TOC	L14050433-03 MSD	TOC:10.92mg/L TC:15.13mg/L IC:4.218mg/L	Completed	5/19/2014 1:22:33 PM	8
9	TOC		TOC:108.9mg/L TC:212.0mg/L IC:103.1mg/L	Completed	5/19/2014 1:39:36 PM	9
10	TOC	L14050517-03 (3)	TOC:4.314mg/L TC:34.55mg/L IC:30.24mg/L	Completed	5/19/2014 1:53:06 PM	10
11	TOC	L14050517-04 (3)	TOC:10.60mg/L TC:46.68mg/L IC:36.08mg/L	Completed	5/19/2014 2:11:23 PM	11
12	TOC	L14050517-05 (3)	TOC:4.148mg/L TC:22.32mg/L IC:18.17mg/L	Completed	5/19/2014 2:24:44 PM	12
13	TOC	L14050517-06	TOC:3.424mg/L TC:26.24mg/L IC:22.82mg/L	Completed	5/19/2014 2:38:03 PM	13
14	TOC	CCV	TOC:24.22mg/L TC:24.25mg/L IC:0.02920mg/L	Completed	5/19/2014 2:50:26 PM	14
15	TOC	CCB	!!Error!! TOC:0.1247mg/L TC:0.06765mg/L IC:-0.05701mg	Completed	5/19/2014 2:59:25 PM	0
16	TOC	L14050517-07 MS	TOC:13.66mg/L TC:31.32mg/L IC:17.66mg/L	Completed	5/19/2014 3:12:52 PM	16
17	TOC	L14050517-08 MSD	TOC:13.11mg/L TC:30.88mg/L IC:17.76mg/L	Completed	5/19/2014 3:26:01 PM	17
18	TOC	L14050517-09	TOC:1.873mg/L TC:13.23mg/L IC:11.36mg/L	Completed	5/19/2014 3:38:41 PM	18
19	TOC	L14050591-04	TOC:13.99mg/L TC:41.12mg/L IC:27.13mg/L	Completed	5/19/2014 3:52:16 PM	19
20	TOC	L14050591-05 (3)	TOC:10.84mg/L TC:25.85mg/L IC:15.00mg/L	Completed	5/19/2014 4:05:39 PM	20
21	TOC	L14050591-06 (3)	TOC:14.67mg/L TC:26.88mg/L IC:12.21mg/L	Completed	5/19/2014 4:19:11 PM	21
22	TOC	L14050591-07 (3)	TOC:8.077mg/L TC:13.17mg/L IC:5.091mg/L	Completed	5/19/2014 4:31:55 PM	22
23	TOC	L14050599-01	TOC:1.281mg/L TC:5.159mg/L IC:3.879mg/L	Completed	5/19/2014 4:43:56 PM	23
24	TOC	L14050603-12	TOC:5.251mg/L TC:28.67mg/L IC:23.41mg/L	Completed	5/19/2014 4:58:28 PM	24
25	TOC		!!Error!! TOC:-4.925mg/L TC:76.29mg/L IC:81.22mg/L	Completed	5/19/2014 5:14:49 PM	25
26	TOC	CCV	TOC:24.82mg/L TC:24.86mg/L IC:0.04724mg/L	Completed	5/19/2014 5:27:21 PM	26
27	TOC	CCB	!!Error!! TOC:0.1179mg/L TC:0.05790mg/L IC:-0.06003mg	Completed	5/19/2014 5:36:21 PM	0
28	TOC	L14050612-02 (3)	TOC:8.598mg/L TC:21.42mg/L IC:12.82mg/L	Completed	5/19/2014 5:49:29 PM	28
29	TOC	L14050612-03 (3)	TOC:3.348mg/L TC:26.57mg/L IC:23.23mg/L	Completed	5/19/2014 6:02:54 PM	29
30	TOC	L14050612-04 (3)	TOC:7.334mg/L TC:35.54mg/L IC:28.21mg/L	Completed	5/19/2014 6:17:03 PM	30
31	TOC	L14050612-05 (3)	TOC:6.296mg/L TC:20.43mg/L IC:14.14mg/L	Completed	5/19/2014 6:30:03 PM	31
32	TOC	L14050669-01	TOC:0.7144mg/L TC:3.494mg/L IC:2.779mg/L	Completed	5/19/2014 6:42:04 PM	32
33	TOC	L14050669-02	TOC:0.6419mg/L TC:3.607mg/L IC:2.965mg/L	Completed	5/19/2014 6:54:02 PM	33
34	TOC	WG476567-01 BLK	!!Error!! TOC:0.1001mg/L TC:0.04133mg/L IC:-0.05879mg	Completed	5/19/2014 7:03:00 PM	0
35	TOC	WG476567-02 LCS	!!Error!! TOC:24.84mg/L TC:24.78mg/L IC:-0.06295mg/L	Completed	5/19/2014 7:15:19 PM	35
36	TOC	WG476567-03 LCSDUP	!!Error!! TOC:25.10mg/L TC:25.03mg/L IC:-0.07071mg/L	Completed	5/19/2014 7:27:44 PM	36
37	TOC	L14050517-02 (3)	TOC:4.186mg/L TC:20.53mg/L IC:16.34mg/L	Completed	5/19/2014 7:41:13 PM	37
38	TOC	CCV	!!Error!! TOC:24.33mg/L TC:24.32mg/L IC:-0.01355mg/L	Completed	5/19/2014 7:53:32 PM	38
39	TOC	CCB	!!Error!! TOC:0.1248mg/L TC:0.05801mg/L IC:-0.06675mg	Completed	5/19/2014 8:02:28 PM	0
40	TOC	L14050694-04	TOC:18.23mg/L TC:34.58mg/L IC:16.35mg/L	Completed	5/19/2014 8:16:01 PM	40
41	TOC	L14050694-05 (2)	TOC:16.31mg/L TC:26.82mg/L IC:10.51mg/L	Completed	5/19/2014 8:29:23 PM	41
42	TOC	L14050694-06 MS	TOC:27.44mg/L TC:36.21mg/L IC:8.772mg/L	Completed	5/19/2014 8:43:12 PM	42
43	TOC	L14050694-07 MSD	TOC:27.05mg/L TC:34.80mg/L IC:7.744mg/L	Completed	5/19/2014 8:56:53 PM	43
44	TOC	L14050694-08 (2)	TOC:9.272mg/L TC:16.19mg/L IC:6.921mg/L	Completed	5/19/2014 9:09:55 PM	44
45	TOC	L14050694-09	TOC:5.028mg/L TC:5.030mg/L IC:0.00180mg/L	Completed	5/19/2014 9:21:37 PM	45
46	TOC	L14050694-10 (3)	TOC:8.025mg/L TC:14.70mg/L IC:6.679mg/L	Completed	5/19/2014 9:34:24 PM	46
47	TOC	L14050694-11 (2)	TOC:14.83mg/L TC:27.59mg/L IC:12.75mg/L	Completed	5/19/2014 9:48:00 PM	47
48	TOC	L14050694-13	TOC:16.50mg/L TC:32.86mg/L IC:16.37mg/L	Completed	5/19/2014 10:01:18 PM	48
49	TOC	L14050698-02 (3)	TOC:10.05mg/L TC:22.57mg/L IC:12.52mg/L	Completed	5/19/2014 10:14:28 PM	49
50	TOC	CCV	!!Error!! TOC:24.67mg/L TC:24.65mg/L IC:-0.01916mg/L	Completed	5/19/2014 10:26:50 PM	50
51	TOC	CCB	!!Error!! TOC:0.1248mg/L TC:0.06508mg/L IC:-0.05969mg	Completed	5/19/2014 10:35:50 PM	0
52	TOC	L14050698-03	!!Error!! TOC:0.3765mg/L TC:0.3165mg/L IC:-0.05993mg/L	Completed	5/19/2014 10:47:18 PM	52
53	TOC	L14050698-04	TOC:12.55mg/L TC:39.30mg/L IC:26.75mg/L	Completed	5/19/2014 11:01:05 PM	53
54	TOC	L14050698-05	TOC:10.62mg/L TC:44.85mg/L IC:34.23mg/L	Completed	5/19/2014 11:14:56 PM	54
55	TOC	L14050698-06 (2)	TOC:6.722mg/L TC:11.55mg/L IC:4.832mg/L	Completed	5/19/2014 11:27:29 PM	55
56	TOC	L14050698-07 (2)	TOC:3.642mg/L TC:9.207mg/L IC:5.564mg/L	Completed	5/19/2014 11:39:49 PM	56
57	TOC	L14050698-08	TOC:8.148mg/L TC:35.60mg/L IC:27.45mg/L	Completed	5/19/2014 11:53:16 PM	57
58	TOC	L14051050-01	TOC:1.805mg/L TC:5.472mg/L IC:3.667mg/L	Completed	5/20/2014 12:05:32 AM	58
59	TOC	L14051050-02	TOC:1.693mg/L TC:5.276mg/L IC:3.583mg/L	Completed	5/20/2014 12:17:42 AM	59
60	TOC	L14051050-03	TOC:1.672mg/L TC:5.104mg/L IC:3.432mg/L	Completed	5/20/2014 12:29:51 AM	60
61	TOC	L140501050-04	TOC:1.476mg/L TC:4.582mg/L IC:3.106mg/L	Completed	5/20/2014 12:42:00 AM	61
62	TOC	CCV	!!Error!! TOC:24.81mg/L TC:24.76mg/L IC:-0.04975mg/L	Completed	5/20/2014 12:54:18 AM	62
63	TOC	CCB	!!Error!! TOC:0.1183mg/L TC:0.06058mg/L IC:-0.05771mg	Completed	5/20/2014 1:03:17 AM	0
64	TOC	L14051050-05	TOC:1.475mg/L TC:3.864mg/L IC:2.389mg/L	Completed	5/20/2014 1:15:25 AM	64
65	TOC	WG476559-10 DUP	TOC:1.671mg/L TC:5.267mg/L IC:3.596mg/L	Completed	5/20/2014 1:27:42 AM	65
66	TOC	WG476567-07 DUP	TOC:16.90mg/L TC:22.20mg/L IC:5.296mg/L	Completed	5/20/2014 1:40:56 AM	66
67	TOC	WG476570-01 BLK	!!Error!! TOC:0.1143mg/L TC:0.06543mg/L IC:-0.04883mg	Completed	5/20/2014 1:57:24 AM	0

5/20/2014 10:20:50 AM 1/2

C:\TOC3201\Data\05-19-2014-DCM-TOC.t32

	Analy	Sample Name	Result	Status	Date / Time	Vial
68	TOC	WG476570-02 LCS	!!Error!! TOC:25.00mg/L TC:24.94mg/L IC:-0.06142mg/L	Completed	5/20/2014 2:18:41 AM	68
69	TOC	WG476570-03 LCSDUP	!!Error!! TOC:24.87mg/L TC:24.80mg/L IC:-0.06428mg/L	Completed	5/20/2014 2:39:56 AM	3
70	TOC	L14050996-01	TOC:5.143mg/L TC:7.085mg/L IC:1.942mg/L	Completed	5/20/2014 3:02:01 AM	15
71	TOC	L14050996-02	TOC:5.547mg/L TC:7.263mg/L IC:1.716mg/L	Completed	5/20/2014 3:24:16 AM	27
72	TOC	WG476570-05 DUP	TOC:5.855mg/L TC:7.966mg/L IC:2.111mg/L	Completed	5/20/2014 3:48:07 AM	34
73	TOC	WG476570-06 MS	TOC:17.51mg/L TC:17.91mg/L IC:0.4051mg/L	Completed	5/20/2014 4:10:51 AM	39
74	TOC	CCV	!!Error!! TOC:25.72mg/L TC:25.67mg/L IC:-0.04962mg/L	Completed	5/20/2014 4:23:15 AM	51
75	TOC	CCB	!!Error!! TOC:0.1313mg/L TC:0.08158mg/L IC:-0.04969mg/	Completed	5/20/2014 4:32:22 AM	0
76	TOC	L14051090-01 (10)	TOC:15.02mg/L TC:24.89mg/L IC:9.877mg/L	Completed	5/20/2014 4:45:16 AM	63
77	TOC	CCV	!!Error!! TOC:25.47mg/L TC:25.42mg/L IC:-0.04710mg/L	Completed	5/20/2014 4:57:44 AM	67
78	TOC	CCB	!!Error!! TOC:0.1153mg/L TC:0.06768mg/L IC:-0.04760mg/	Completed	5/20/2014 5:06:48 AM	0

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.894mg/L TC:26.96mg/L IC:25.07mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	982.4	26.96mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 11:53:24 AM

Mean Area 982.4
Mean Conc. 26.96mg/L

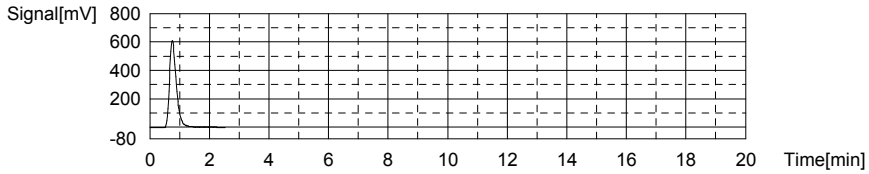

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	755.2	25.07mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 11:59:13 AM

Mean Area 755.2
Mean Conc. 25.07mg/L

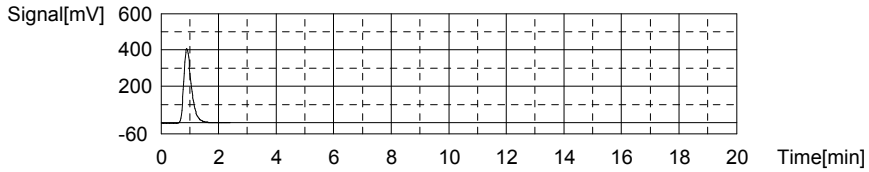

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.44mg/L TC:24.36mg/L IC:-0.08220mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	888.1	24.36mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 12:07:04 PM

Mean Area 888.1
Mean Conc. 24.36mg/L

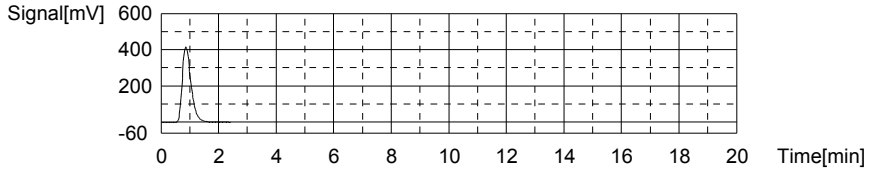

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.266	-0.08220mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 12:11:31 PM

Mean Area 6.266
Mean Conc. -0.08220mg/L

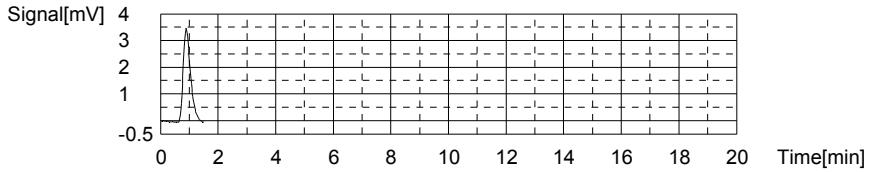

Sample

Sample Name: WG476559-01 BLK
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1404mg/L TC:0.05660mg/L IC:-0.08381mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.381	0.05660mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 12:16:31 PM

Mean Area 8.381
Mean Conc. 0.05660mg/L

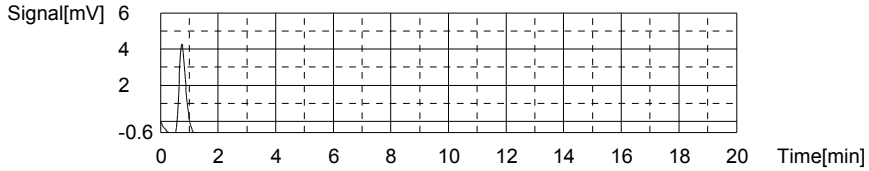

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.218	-0.08381mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 12:20:28 PM

Mean Area 6.218
Mean Conc. -0.08381mg/L

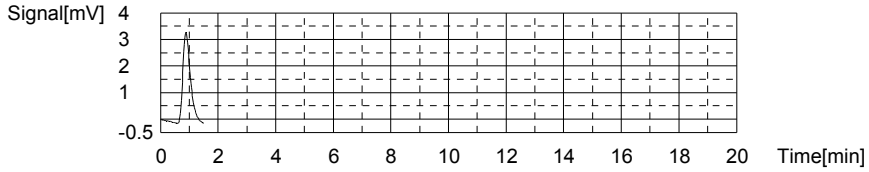

Sample

Sample Name: WG476559-02 LCS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.84mg/L TC:24.74mg/L IC:-0.1007mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	902.0	24.74mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 12:28:16 PM

Mean Area 902.0
Mean Conc. 24.74mg/L

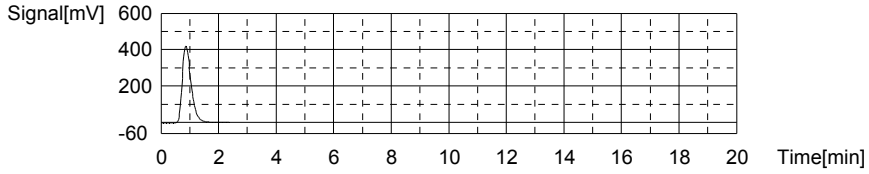

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.715	-0.1007mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 12:32:38 PM

Mean Area 5.715
Mean Conc. -0.1007mg/L

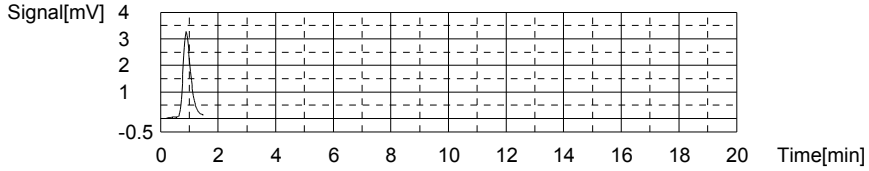

Sample

Sample Name: WG476559-03 LCSDUP
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.85mg/L TC:24.75mg/L IC:-0.1010mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	902.1	24.75mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 12:40:40 PM

Mean Area 902.1
Mean Conc. 24.75mg/L

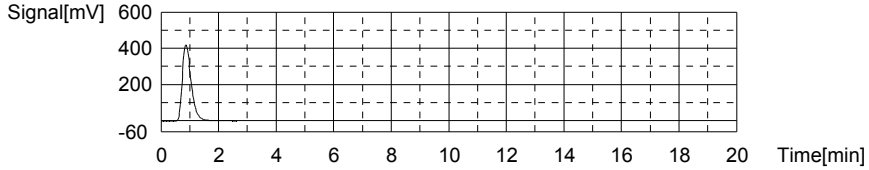

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.705	-0.1010mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 12:45:03 PM

Mean Area 5.705
Mean Conc. -0.1010mg/L

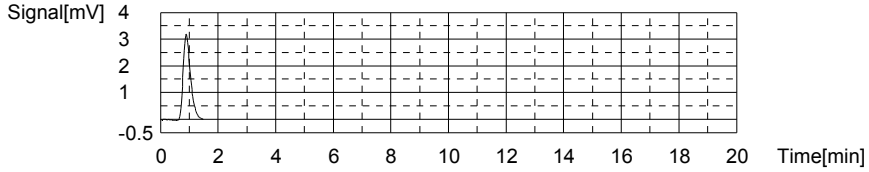

Sample

Sample Name: L14050433-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.453mg/L TC:6.494mg/L IC:5.041mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	241.4	6.494mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 12:52:27 PM

Mean Area 241.4
Mean Conc. 6.494mg/L

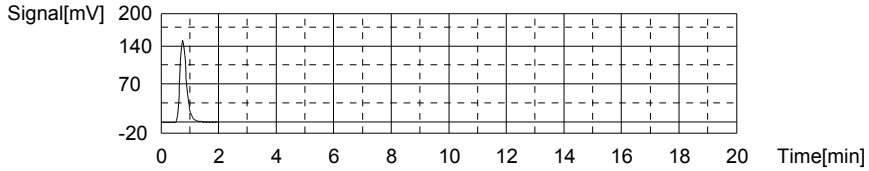

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	158.8	5.041mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 12:57:20 PM

Mean Area 158.8
Mean Conc. 5.041mg/L

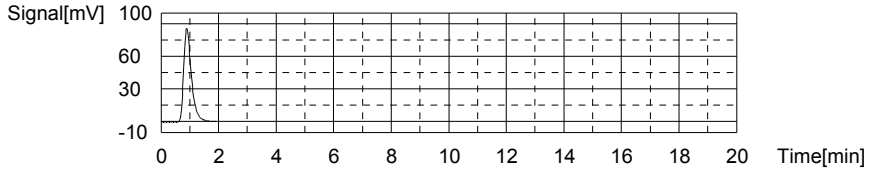

Sample

Sample Name: L14050433-02 MS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.84mg/L TC:15.18mg/L IC:4.342mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	555.9	15.18mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 1:05:01 PM

Mean Area 555.9
Mean Conc. 15.18mg/L

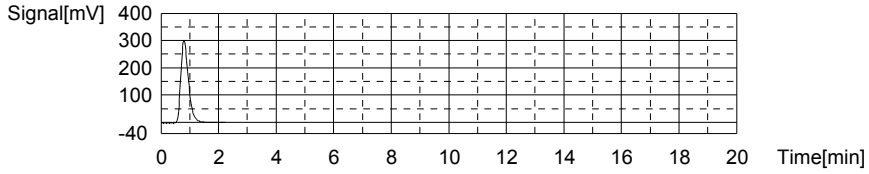

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	138.0	4.342mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 1:09:59 PM

Mean Area 138.0
Mean Conc. 4.342mg/L

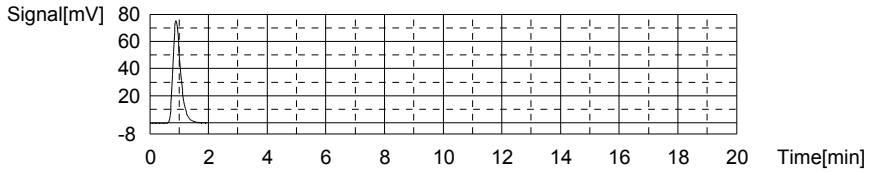

Sample

Sample Name: L14050433-03 MSD
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.92mg/L TC:15.13mg/L IC:4.218mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	554.2	15.13mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 1:17:39 PM

Mean Area 554.2
Mean Conc. 15.13mg/L

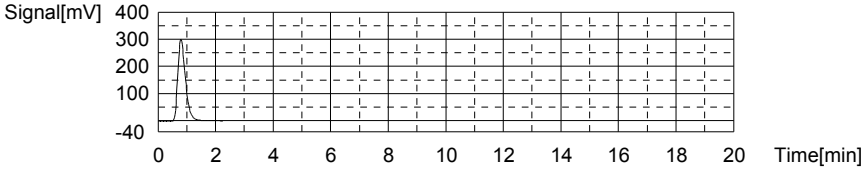

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	134.3	4.218mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 1:22:33 PM

Mean Area 134.3
Mean Conc. 4.218mg/L

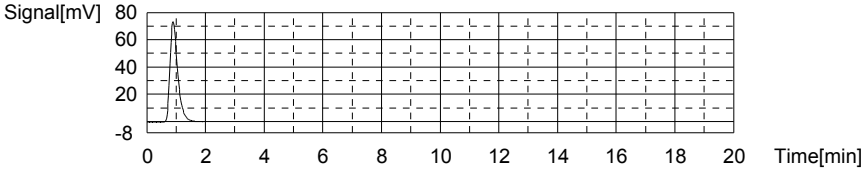

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:108.9mg/L TC:212.0mg/L IC:103.1mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7680	212.0mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 1:32:53 PM

Mean Area 7680
Mean Conc. 212.0mg/L

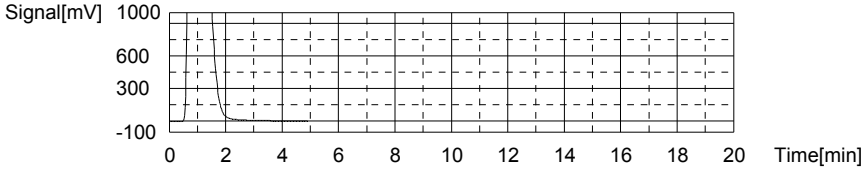

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3078	103.1mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 1:39:36 PM

Mean Area 3078
Mean Conc. 103.1mg/L

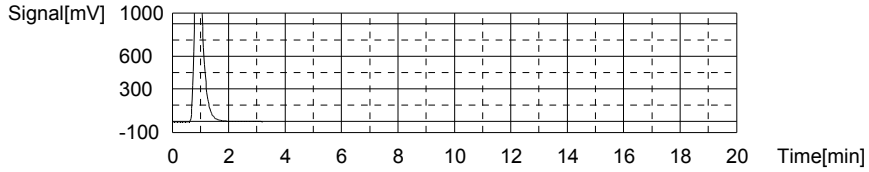

Sample

Sample Name: L14050517-03 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.314mg/L TC:34.55mg/L IC:30.24mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1257	34.55mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 1:47:19 PM

Mean Area 1257
Mean Conc. 34.55mg/L

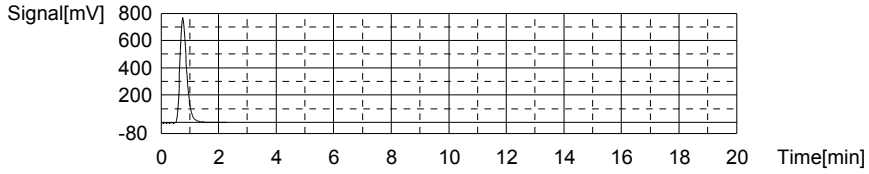

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	909.0	30.24mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 1:53:06 PM

Mean Area 909.0
Mean Conc. 30.24mg/L

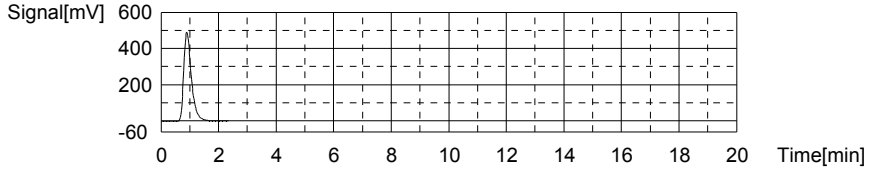

Sample

Sample Name: L14050517-04 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.60mg/L TC:46.68mg/L IC:36.08mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1696	46.68mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 2:05:28 PM

Mean Area 1696
Mean Conc. 46.68mg/L

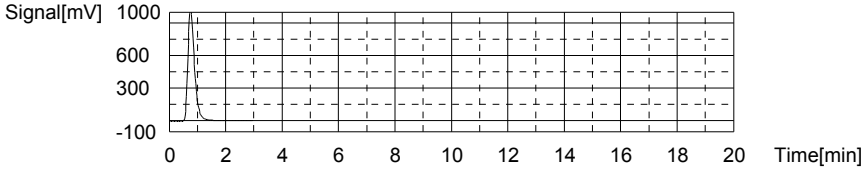

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1083	36.08mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 2:11:23 PM

Mean Area 1083
Mean Conc. 36.08mg/L

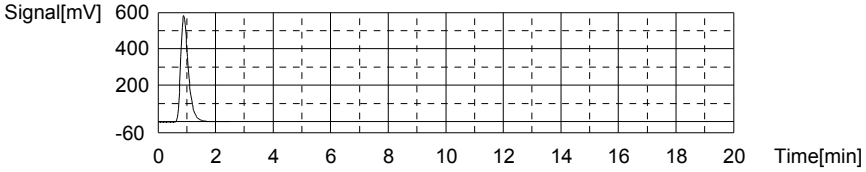

Sample

Sample Name: L14050517-05 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.148mg/L TC:22.32mg/L IC:18.17mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	814.3	22.32mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 2:19:15 PM

Mean Area 814.3
Mean Conc. 22.32mg/L

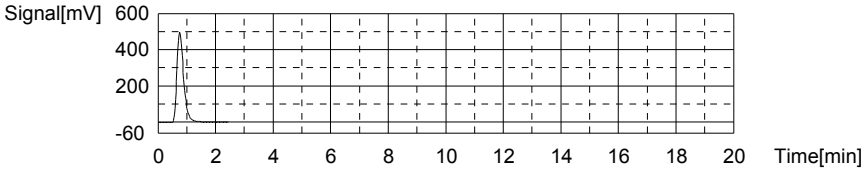

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	549.8	18.17mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 2:24:44 PM

Mean Area 549.8
Mean Conc. 18.17mg/L

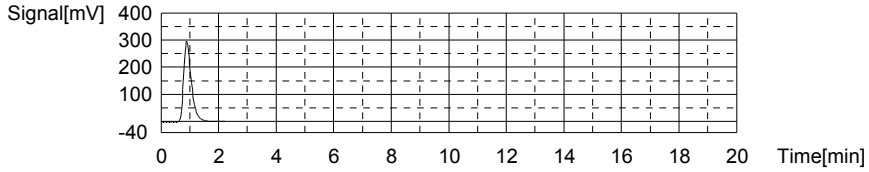

Sample

Sample Name: L14050517-06
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.424mg/L TC:26.24mg/L IC:22.82mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	956.2	26.24mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 2:32:32 PM

Mean Area 956.2
Mean Conc. 26.24mg/L

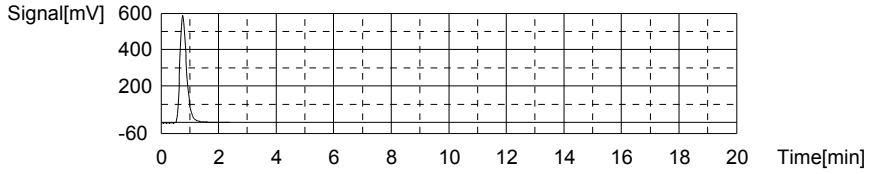

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	688.1	22.82mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 2:38:03 PM

Mean Area 688.1
Mean Conc. 22.82mg/L

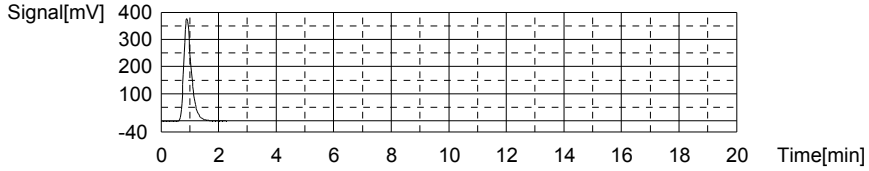

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:24.22mg/L TC:24.25mg/L IC:0.02920mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	884.3	24.25mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 2:45:59 PM

Mean Area 884.3
Mean Conc. 24.25mg/L

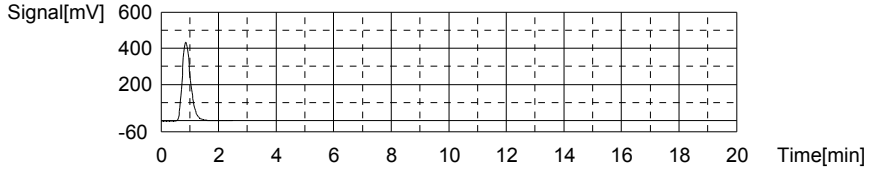

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.583	0.02920mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 2:50:26 PM

Mean Area 9.583
Mean Conc. 0.02920mg/L

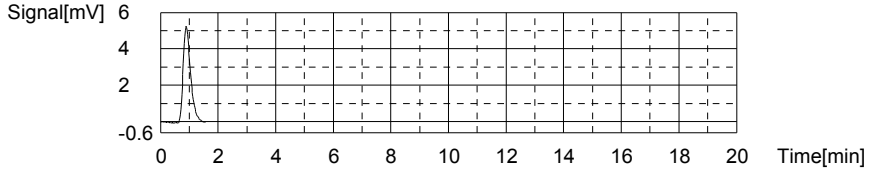

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1247mg/L TC:0.06765mg/L IC:-0.05701mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.781	0.06765mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 2:55:26 PM

Mean Area 8.781
Mean Conc. 0.06765mg/L

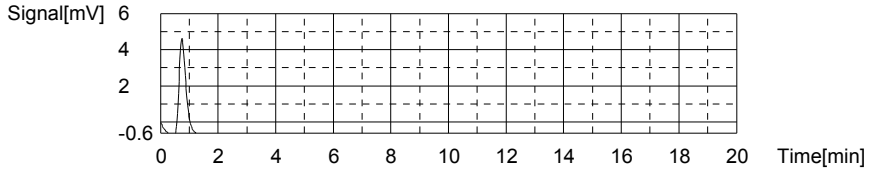

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.016	-0.05701mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 2:59:25 PM

Mean Area 7.016
Mean Conc. -0.05701mg/L

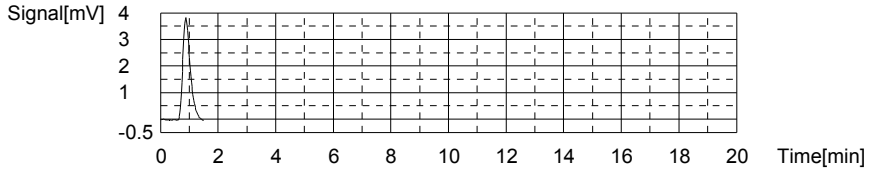

Sample

Sample Name: L14050517-07 MS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.66mg/L TC:31.32mg/L IC:17.66mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1140	31.32mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 3:07:25 PM

Mean Area 1140
Mean Conc. 31.32mg/L

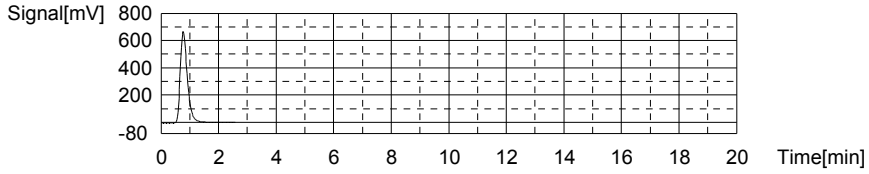

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	534.5	17.66mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 3:12:52 PM

Mean Area 534.5
Mean Conc. 17.66mg/L

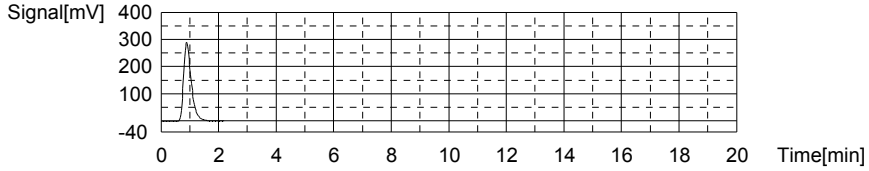

Sample

Sample Name: L14050517-08 MSD
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.11mg/L TC:30.88mg/L IC:17.76mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1124	30.88mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 3:20:37 PM

Mean Area 1124
Mean Conc. 30.88mg/L

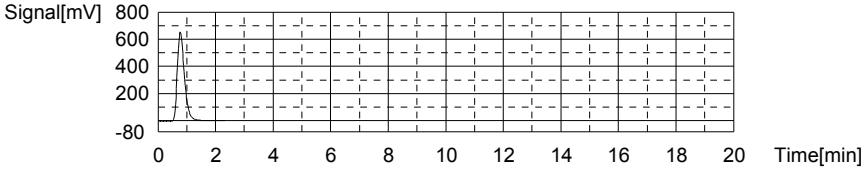

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	537.6	17.76mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/19/2014 3:26:01 PM

Mean Area 537.6
Mean Conc. 17.76mg/L

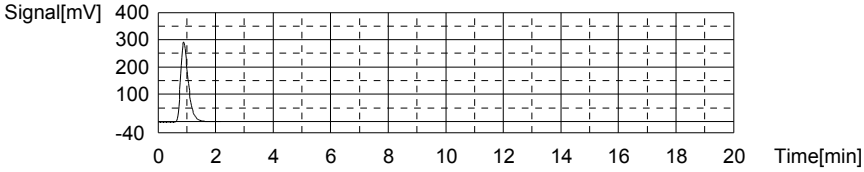

Sample

Sample Name: L14050517-09
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.873mg/L TC:13.23mg/L IC:11.36mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	485.4	13.23mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 3:33:36 PM

Mean Area 485.4
Mean Conc. 13.23mg/L

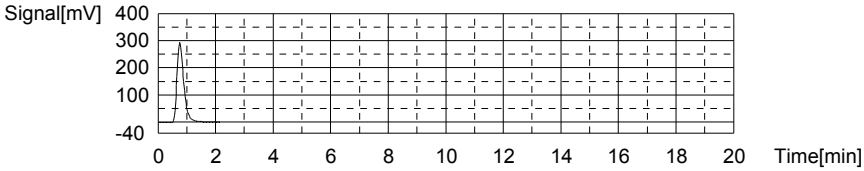

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	347.0	11.36mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/19/2014 3:38:41 PM

Mean Area 347.0
Mean Conc. 11.36mg/L

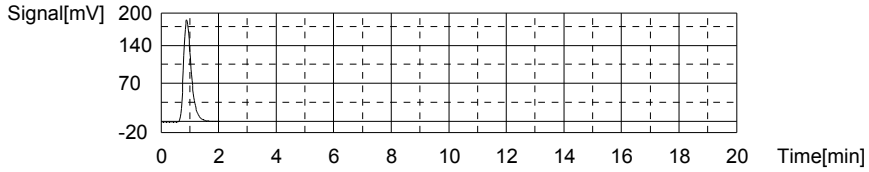

Sample

Sample Name: L14050591-04
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.99mg/L TC:41.12mg/L IC:27.13mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1495	41.12mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 3:46:46 PM

Mean Area 1495
Mean Conc. 41.12mg/L

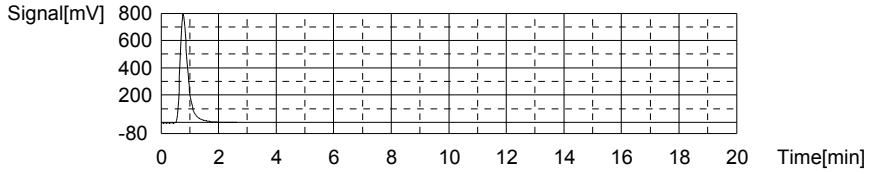

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	816.6	27.13mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 3:52:16 PM

Mean Area 816.6
Mean Conc. 27.13mg/L

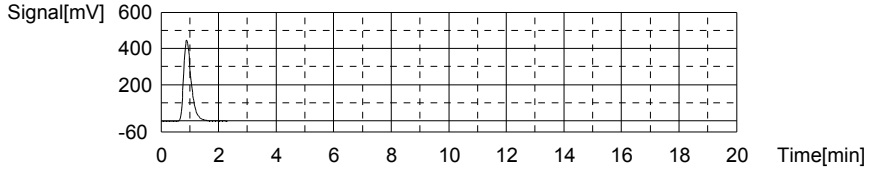

Sample

Sample Name: L14050591-05 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.84mg/L TC:25.85mg/L IC:15.00mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	941.9	25.85mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 4:00:19 PM

Mean Area 941.9
Mean Conc. 25.85mg/L

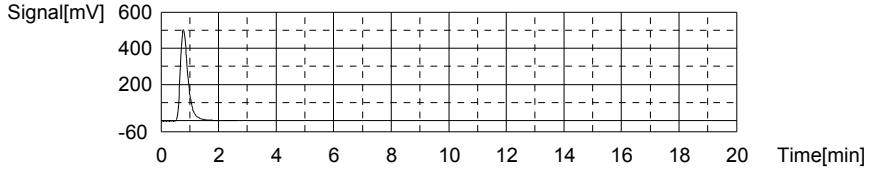

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	455.4	15.00mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 4:05:39 PM

Mean Area 455.4
Mean Conc. 15.00mg/L

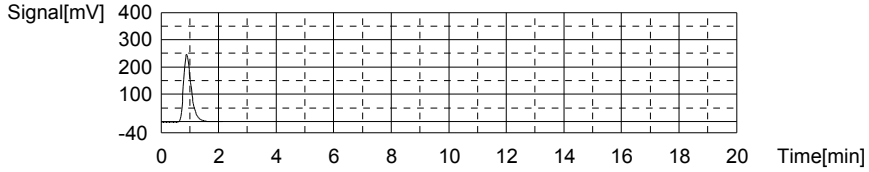

Sample

Sample Name: L14050591-06 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:14.67mg/L TC:26.88mg/L IC:12.21mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	979.4	26.88mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 4:13:51 PM

Mean Area 979.4
Mean Conc. 26.88mg/L

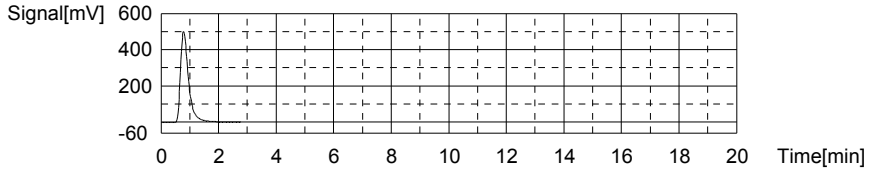

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	372.2	12.21mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 4:19:11 PM

Mean Area 372.2
Mean Conc. 12.21mg/L

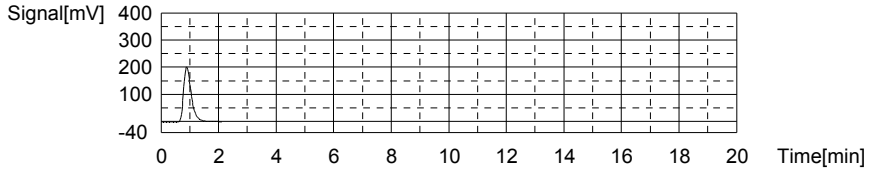

Sample

Sample Name: L14050591-07 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.077mg/L TC:13.17mg/L IC:5.091mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	483.0	13.17mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 4:26:55 PM

Mean Area 483.0
Mean Conc. 13.17mg/L

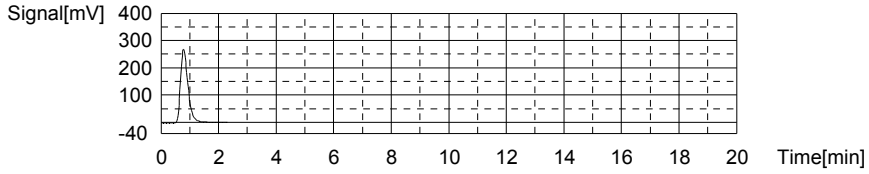

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	160.3	5.091mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 4:31:55 PM

Mean Area 160.3
Mean Conc. 5.091mg/L

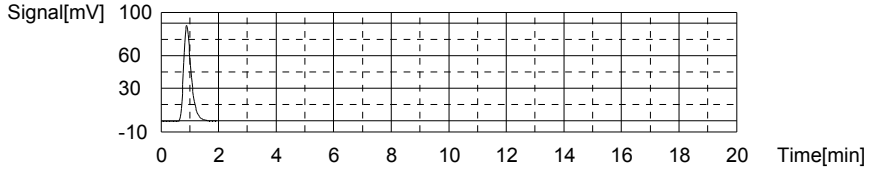

Sample

Sample Name: L14050599-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.281mg/L TC:5.159mg/L IC:3.879mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	193.1	5.159mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 4:39:06 PM

Mean Area 193.1
Mean Conc. 5.159mg/L

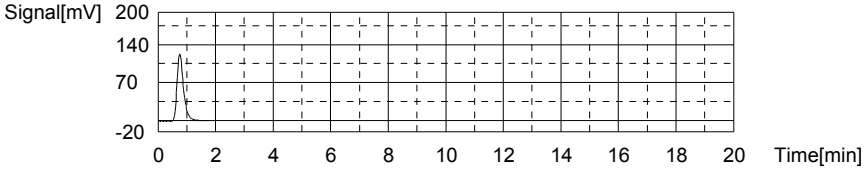

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	124.2	3.879mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 4:43:56 PM

Mean Area 124.2
Mean Conc. 3.879mg/L

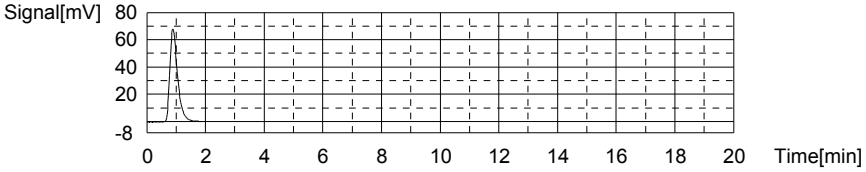

Sample

Sample Name: L14050603-12
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.251mg/L TC:28.67mg/L IC:23.41mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1044	28.67mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 4:52:54 PM

Mean Area 1044
Mean Conc. 28.67mg/L

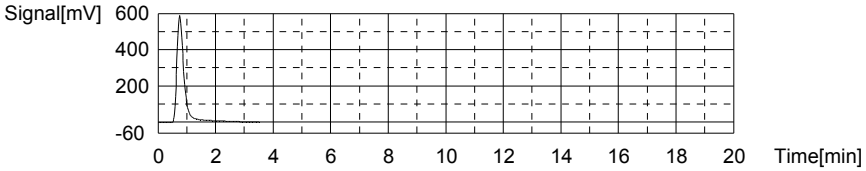

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	705.9	23.41mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 4:58:28 PM

Mean Area 705.9
Mean Conc. 23.41mg/L

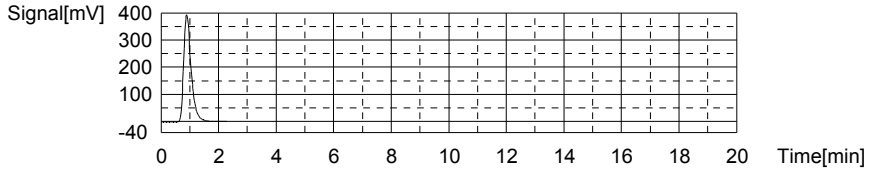

Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-4.925mg/L TC:76.29mg/L IC:81.22mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2768	76.29mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 5:08:06 PM

Mean Area 2768
Mean Conc. 76.29mg/L

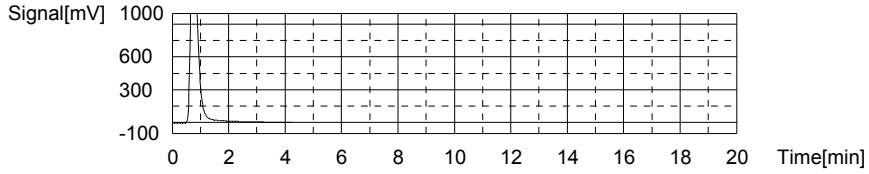

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2427	81.22mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 5:14:49 PM

Mean Area 2427
Mean Conc. 81.22mg/L

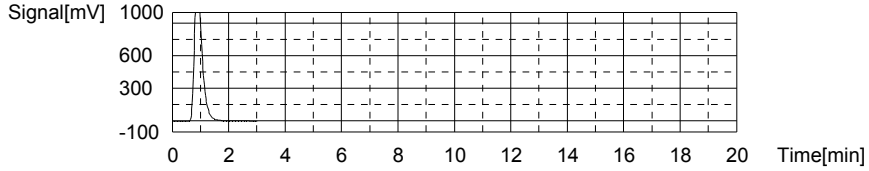

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:24.82mg/L TC:24.86mg/L IC:0.04724mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	906.4	24.86mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 5:22:45 PM

Mean Area 906.4
Mean Conc. 24.86mg/L

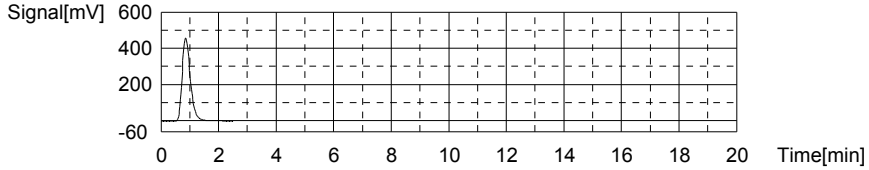

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.12	0.04724mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 5:27:21 PM

Mean Area 10.12
Mean Conc. 0.04724mg/L

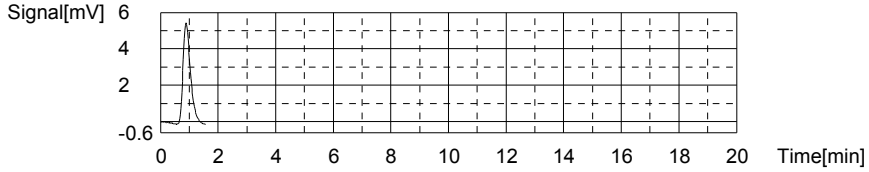

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1179mg/L TC:0.05790mg/L IC:-0.06003mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.428	0.05790mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 5:32:20 PM

Mean Area 8.428
Mean Conc. 0.05790mg/L

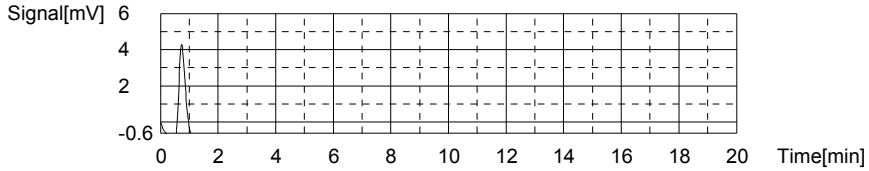

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.926	-0.06003mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 5:36:21 PM

Mean Area 6.926
Mean Conc. -0.06003mg/L

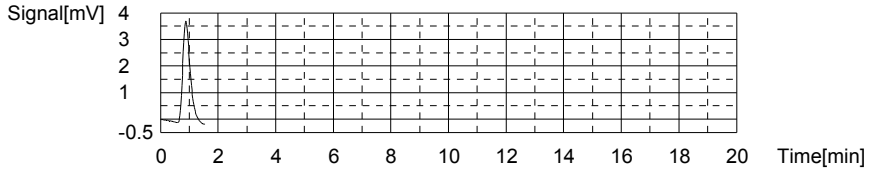

Sample

Sample Name: L14050612-02 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.598mg/L TC:21.42mg/L IC:12.82mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	781.7	21.42mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 5:44:11 PM

Mean Area 781.7
Mean Conc. 21.42mg/L

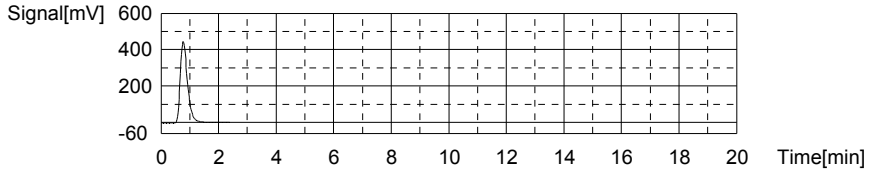

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	390.5	12.82mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 5:49:29 PM

Mean Area 390.5
Mean Conc. 12.82mg/L

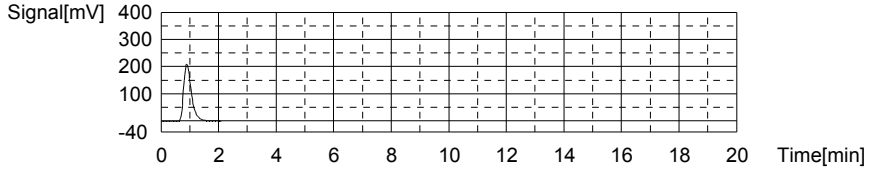

Sample

Sample Name: L14050612-03 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.348mg/L TC:26.57mg/L IC:23.23mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	968.3	26.57mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 5:57:19 PM

Mean Area 968.3
Mean Conc. 26.57mg/L

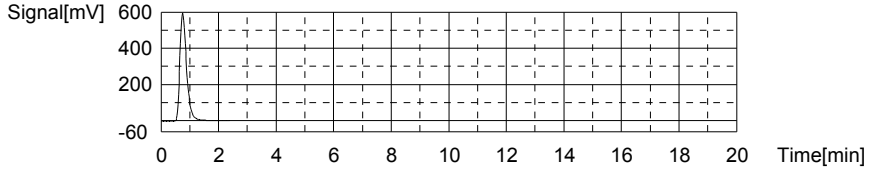

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	700.3	23.23mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 6:02:54 PM

Mean Area 700.3
Mean Conc. 23.23mg/L

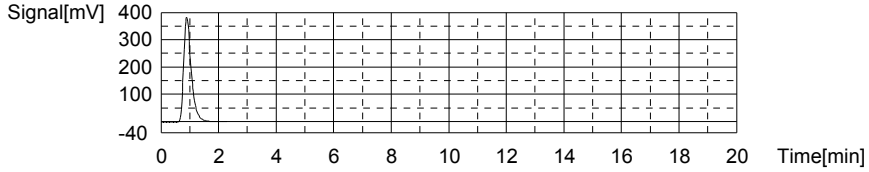

Sample

Sample Name: L14050612-04 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.334mg/L TC:35.54mg/L IC:28.21mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1293	35.54mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 6:11:20 PM

Mean Area 1293
Mean Conc. 35.54mg/L

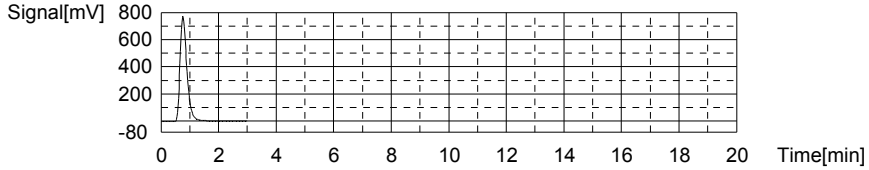

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	848.7	28.21mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 6:17:03 PM

Mean Area 848.7
Mean Conc. 28.21mg/L

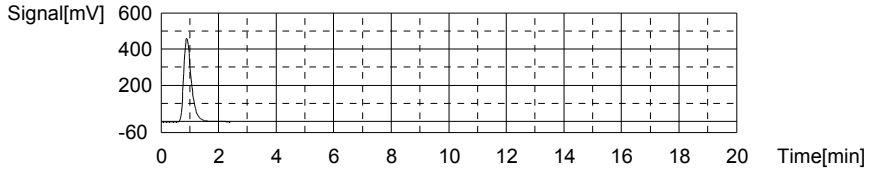

Sample

Sample Name: L14050612-05 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.296mg/L TC:20.43mg/L IC:14.14mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	745.9	20.43mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 6:24:42 PM

Mean Area 745.9
Mean Conc. 20.43mg/L

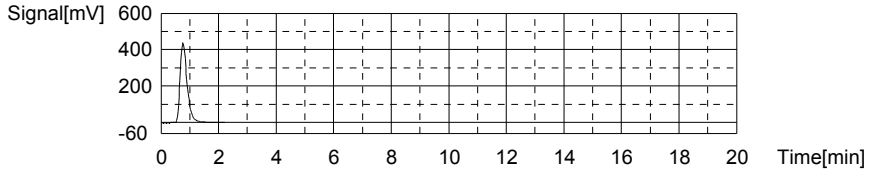

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	429.6	14.14mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 6:30:03 PM

Mean Area 429.6
Mean Conc. 14.14mg/L

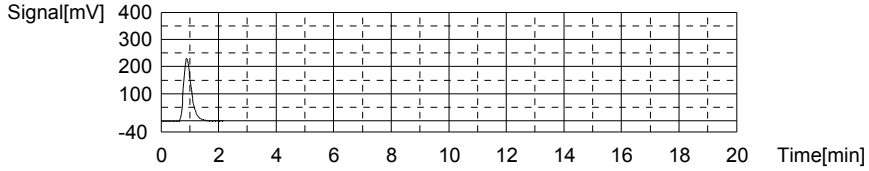

Sample

Sample Name: L14050669-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.7144mg/L TC:3.494mg/L IC:2.779mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	132.8	3.494mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 6:37:14 PM

Mean Area 132.8
Mean Conc. 3.494mg/L

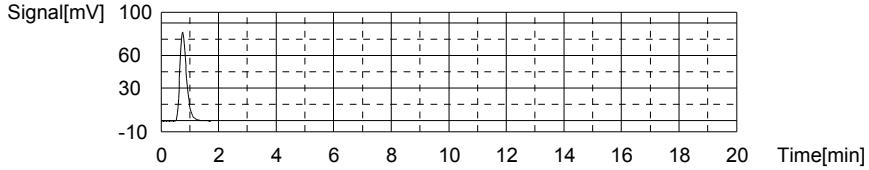

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	91.47	2.779mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 6:42:04 PM

Mean Area 91.47
Mean Conc. 2.779mg/L

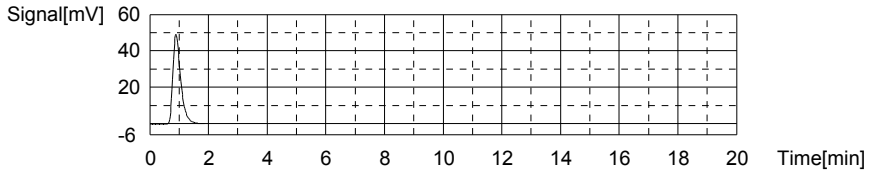

Sample

Sample Name: L14050669-02
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.6419mg/L TC:3.607mg/L IC:2.965mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	136.9	3.607mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 6:49:13 PM

Mean Area 136.9
Mean Conc. 3.607mg/L

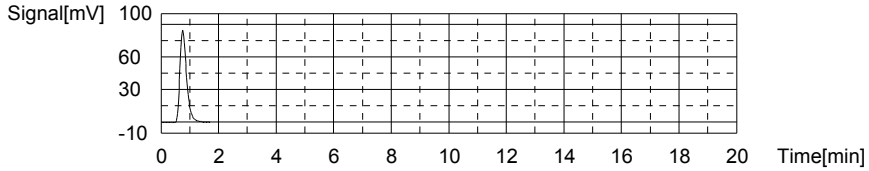

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	97.00	2.965mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 6:54:02 PM

Mean Area 97.00
Mean Conc. 2.965mg/L

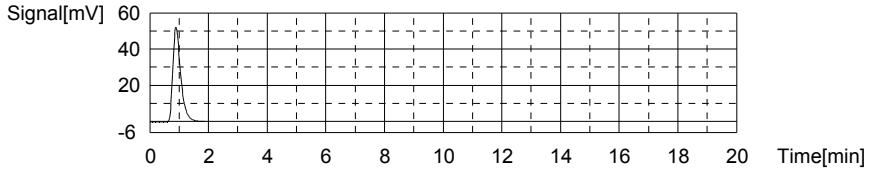

Sample

Sample Name: WG476567-01 BLK
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1001mg/L TC:0.04133mg/L IC:-0.05879mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.828	0.04133mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 6:58:59 PM

Mean Area 7.828
Mean Conc. 0.04133mg/L

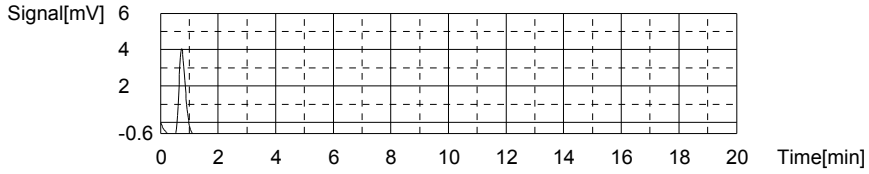

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.963	-0.05879mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 7:03:00 PM

Mean Area 6.963
Mean Conc. -0.05879mg/L

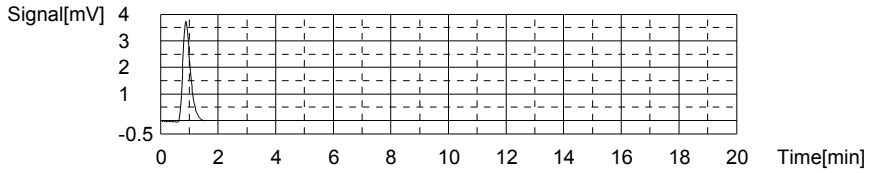

Sample

Sample Name: WG476567-02 LCS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.84mg/L TC:24.78mg/L IC:-0.06295mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	903.4	24.78mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 7:10:50 PM

Mean Area 903.4
Mean Conc. 24.78mg/L

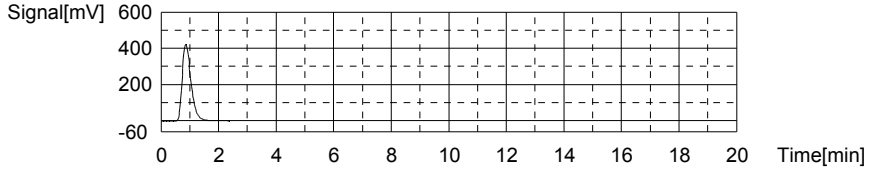

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.839	-0.06295mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 7:15:19 PM

Mean Area 6.839
Mean Conc. -0.06295mg/L

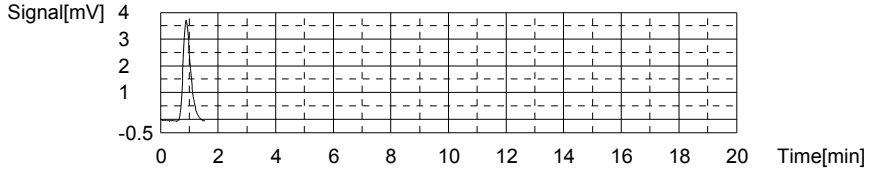

Sample

Sample Name: WG476567-03 LCSDUP
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.10mg/L TC:25.03mg/L IC:-0.07071mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	912.4	25.03mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 7:23:23 PM

Mean Area 912.4
Mean Conc. 25.03mg/L

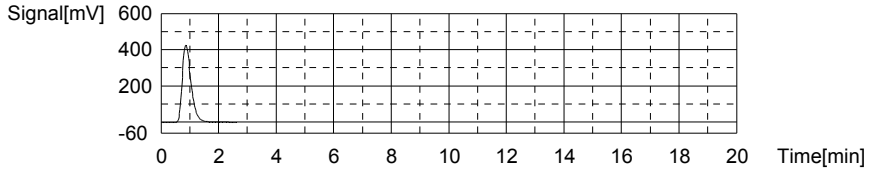

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.608	-0.07071mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 7:27:44 PM

Mean Area 6.608
Mean Conc. -0.07071mg/L

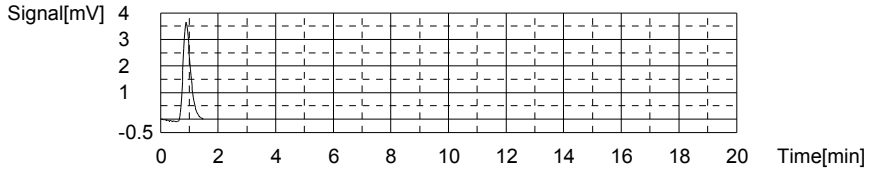

Sample

Sample Name: L14050517-02 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.186mg/L TC:20.53mg/L IC:16.34mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	749.4	20.53mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 7:35:47 PM

Mean Area 749.4
Mean Conc. 20.53mg/L

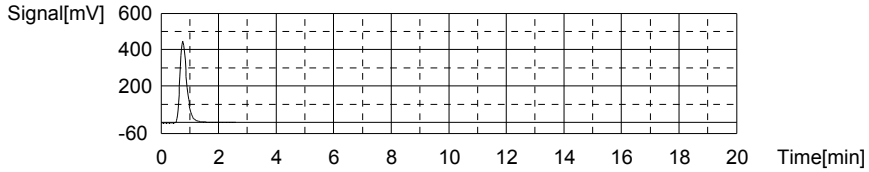

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	495.3	16.34mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 7:41:13 PM

Mean Area 495.3
Mean Conc. 16.34mg/L

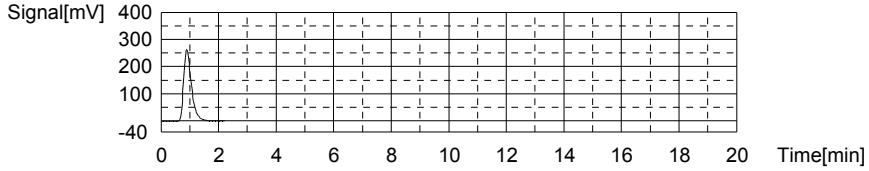

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.33mg/L TC:24.32mg/L IC:-0.01355mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	886.6	24.32mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 7:49:04 PM

Mean Area 886.6
Mean Conc. 24.32mg/L

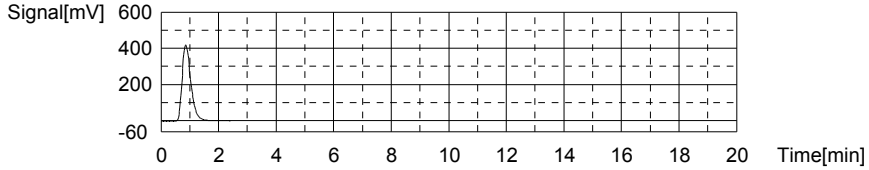

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.310	-0.01355mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 7:53:32 PM

Mean Area 8.310
Mean Conc. -0.01355mg/L

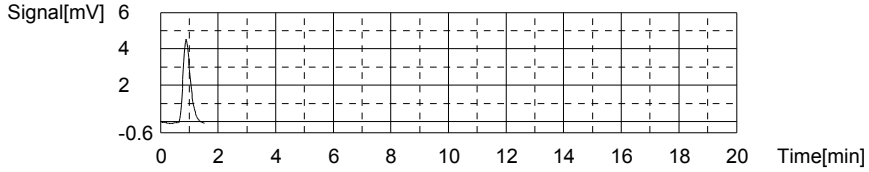

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1248mg/L TC:0.05801mg/L IC:-0.06675mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.432	0.05801mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 7:58:35 PM

Mean Area 8.432
Mean Conc. 0.05801mg/L

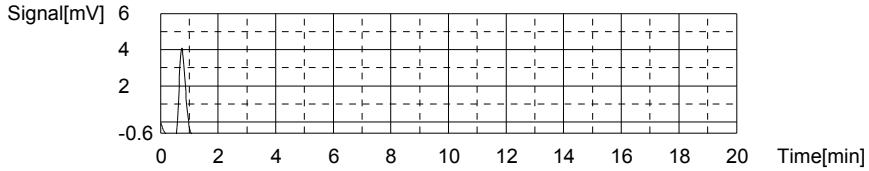

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.726	-0.06675mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 8:02:28 PM

Mean Area 6.726
Mean Conc. -0.06675mg/L

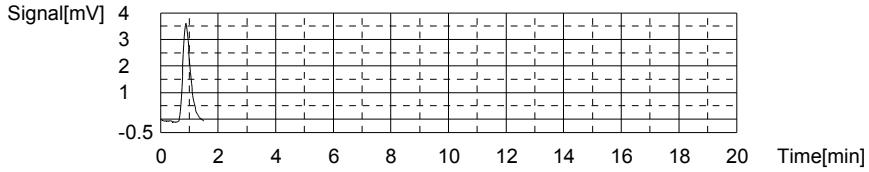

Sample

Sample Name: L14050694-04
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:18.23mg/L TC:34.58mg/L IC:16.35mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1258	34.58mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 8:10:38 PM

Mean Area 1258
Mean Conc. 34.58mg/L

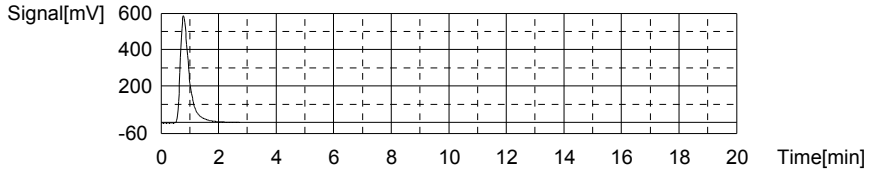

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	495.6	16.35mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 8:16:01 PM

Mean Area 495.6
Mean Conc. 16.35mg/L

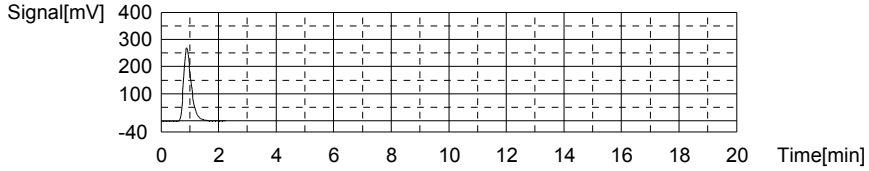

Sample

Sample Name: L14050694-05 (2)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.31mg/L TC:26.82mg/L IC:10.51mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	977.2	26.82mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 8:24:15 PM

Mean Area 977.2
Mean Conc. 26.82mg/L

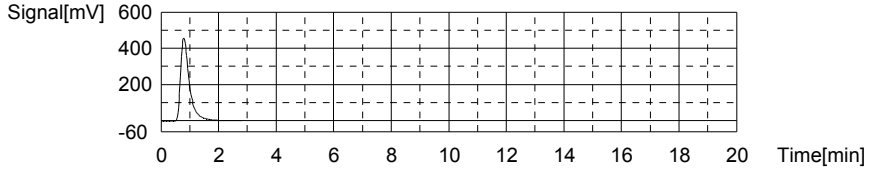

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	321.7	10.51mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 8:29:23 PM

Mean Area 321.7
Mean Conc. 10.51mg/L

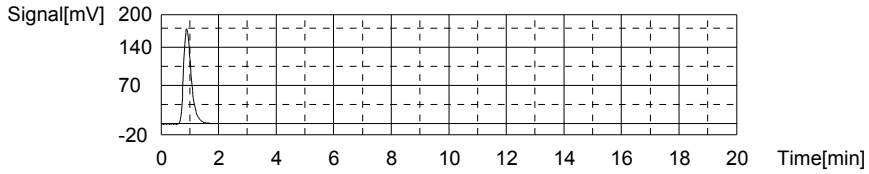

Sample

Sample Name: L14050694-06 MS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.44mg/L TC:36.21mg/L IC:8.772mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1317	36.21mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 8:38:01 PM

Mean Area 1317
Mean Conc. 36.21mg/L

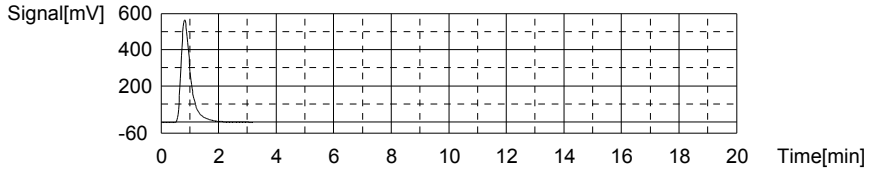

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	269.9	8.772mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 8:43:12 PM

Mean Area 269.9
Mean Conc. 8.772mg/L

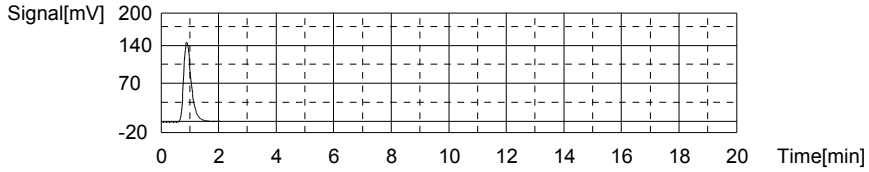

Sample

Sample Name: L14050694-07 MSD
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.05mg/L TC:34.80mg/L IC:7.744mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1266	34.80mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 8:51:47 PM

Mean Area 1266
Mean Conc. 34.80mg/L

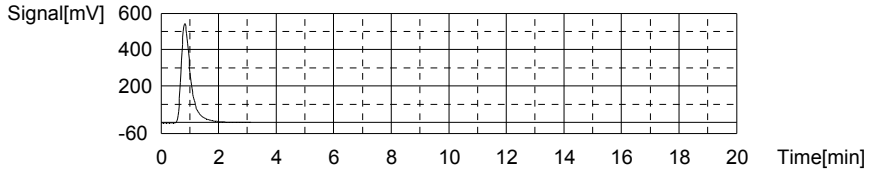

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	239.3	7.744mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 8:56:53 PM

Mean Area 239.3
Mean Conc. 7.744mg/L

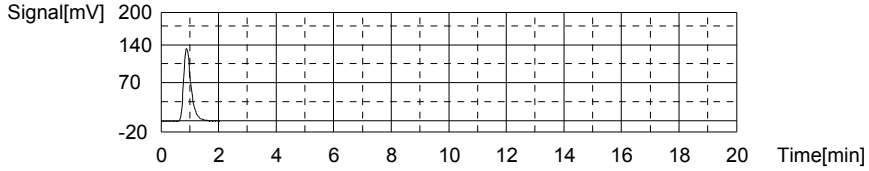

Sample

Sample Name: L14050694-08 (2)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.272mg/L TC:16.19mg/L IC:6.921mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	592.5	16.19mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 9:04:51 PM

Mean Area 592.5
Mean Conc. 16.19mg/L

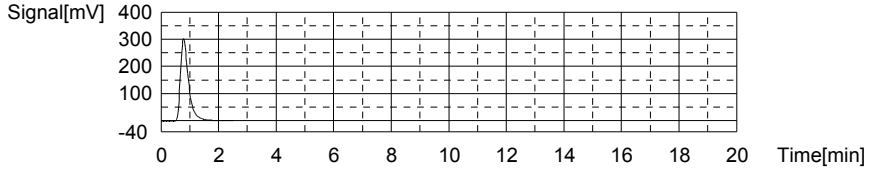

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	214.8	6.921mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 9:09:55 PM

Mean Area 214.8
Mean Conc. 6.921mg/L

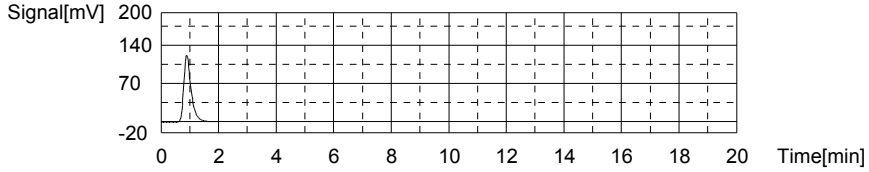

Sample

Sample Name: L14050694-09
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.028mg/L TC:5.030mg/L IC:0.00180mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	188.4	5.030mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 9:17:09 PM

Mean Area 188.4
Mean Conc. 5.030mg/L

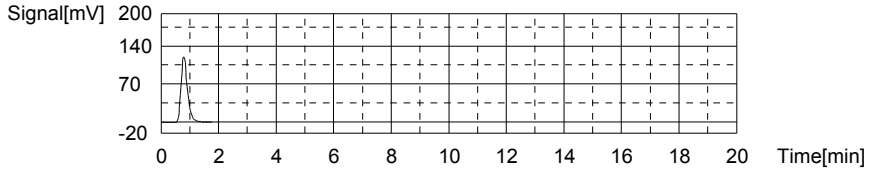

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.767	0.00180mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 9:21:37 PM

Mean Area 8.767
Mean Conc. 0.00180mg/L

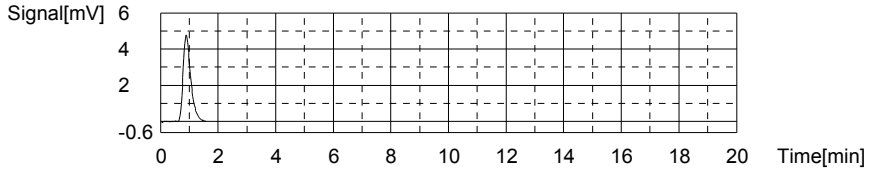

Sample

Sample Name: L14050694-10 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.025mg/L TC:14.70mg/L IC:6.679mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	538.6	14.70mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 9:29:23 PM

Mean Area 538.6
Mean Conc. 14.70mg/L

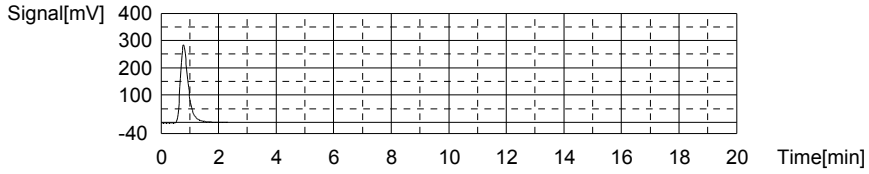

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	207.6	6.679mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 9:34:24 PM

Mean Area 207.6
Mean Conc. 6.679mg/L

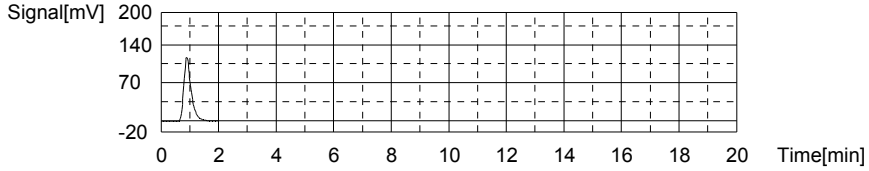

Sample

Sample Name: L14050694-11 (2)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:14.83mg/L TC:27.59mg/L IC:12.75mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1005	27.59mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 9:42:47 PM

Mean Area 1005
Mean Conc. 27.59mg/L

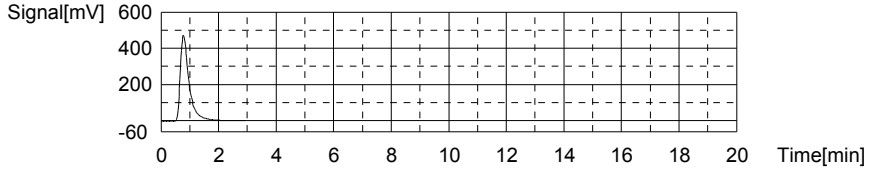

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	388.5	12.75mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 9:48:00 PM

Mean Area 388.5
Mean Conc. 12.75mg/L

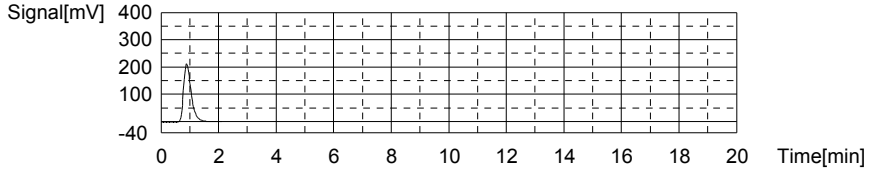

Sample

Sample Name: L14050694-13
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.50mg/L TC:32.86mg/L IC:16.37mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1196	32.86mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 9:55:54 PM

Mean Area 1196
Mean Conc. 32.86mg/L

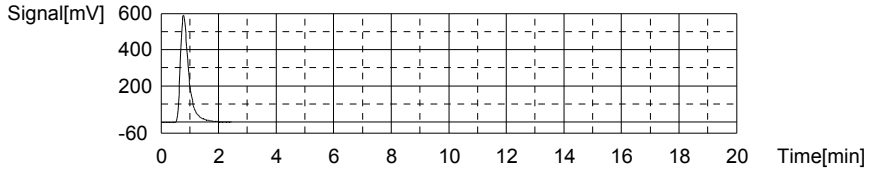

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	496.1	16.37mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 10:01:18 PM

Mean Area 496.1
Mean Conc. 16.37mg/L

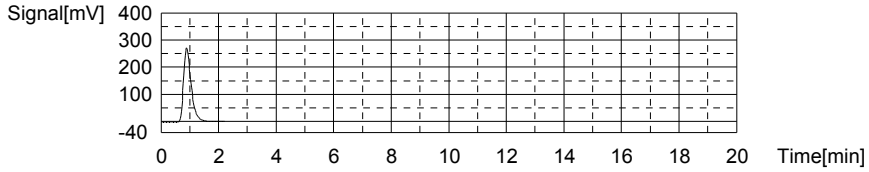

Sample

Sample Name: L14050698-02 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.05mg/L TC:22.57mg/L IC:12.52mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	823.5	22.57mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 10:09:13 PM

Mean Area 823.5
Mean Conc. 22.57mg/L

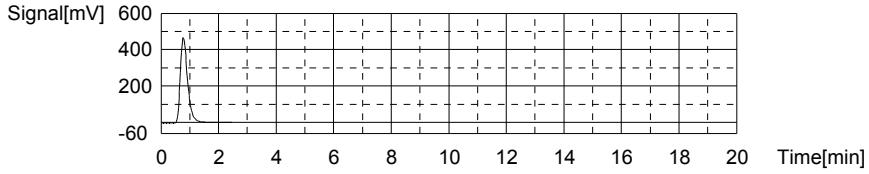

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	381.6	12.52mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 10:14:28 PM

Mean Area 381.6
Mean Conc. 12.52mg/L

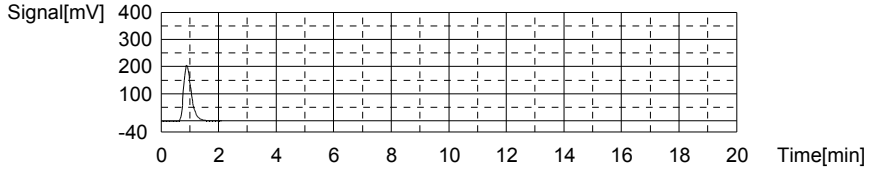

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.67mg/L TC:24.65mg/L IC:-0.01916mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	898.8	24.65mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 10:22:24 PM

Mean Area 898.8
Mean Conc. 24.65mg/L

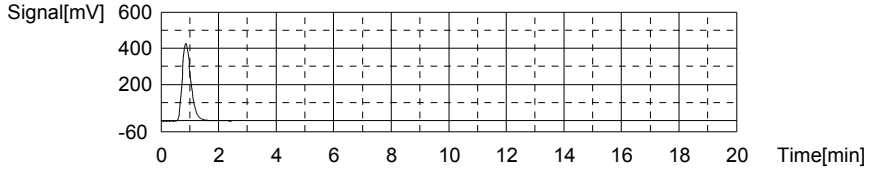

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.143	-0.01916mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 10:26:50 PM

Mean Area 8.143
Mean Conc. -0.01916mg/L

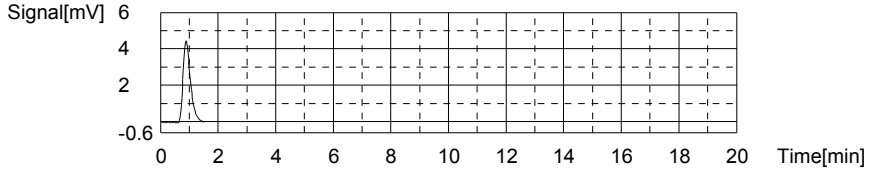

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1248mg/L TC:0.06508mg/L IC:-0.05969mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.688	0.06508mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 10:31:51 PM

Mean Area 8.688
Mean Conc. 0.06508mg/L

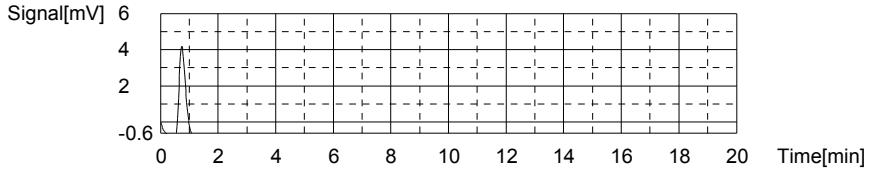

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.936	-0.05969mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 10:35:50 PM

Mean Area 6.936
Mean Conc. -0.05969mg/L

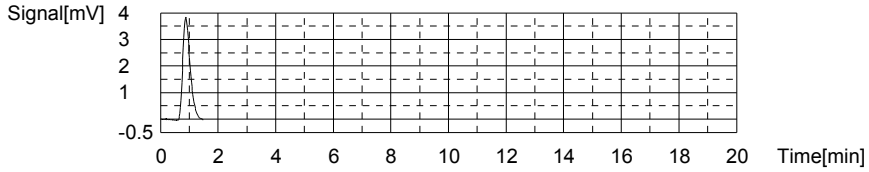

Sample

Sample Name: L14050698-03
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3765mg/L TC:0.3165mg/L IC:-0.05993mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.79	0.3165mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 10:42:48 PM

Mean Area 17.79
Mean Conc. 0.3165mg/L

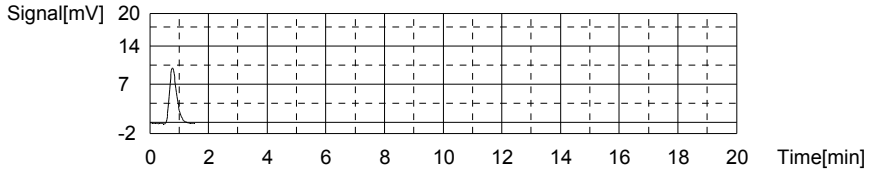

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.929	-0.05993mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 10:47:18 PM

Mean Area 6.929
Mean Conc. -0.05993mg/L

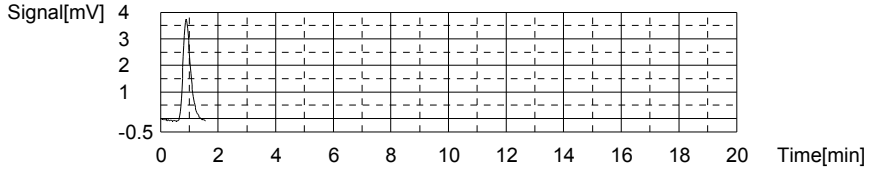

Sample

Sample Name: L14050698-04
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.55mg/L TC:39.30mg/L IC:26.75mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1429	39.30mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 10:55:24 PM

Mean Area 1429
Mean Conc. 39.30mg/L

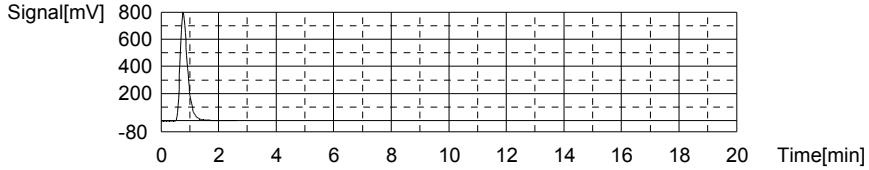

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	805.2	26.75mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 11:01:05 PM

Mean Area 805.2
Mean Conc. 26.75mg/L

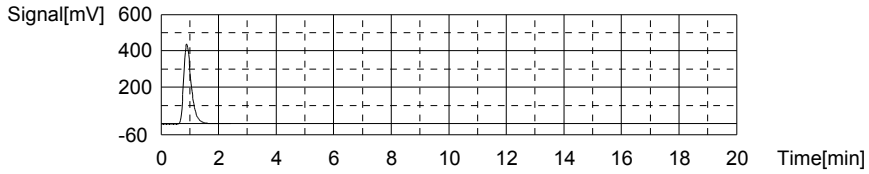

Sample

Sample Name: L14050698-05
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.62mg/L TC:44.85mg/L IC:34.23mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1630	44.85mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 11:09:10 PM

Mean Area 1630
Mean Conc. 44.85mg/L

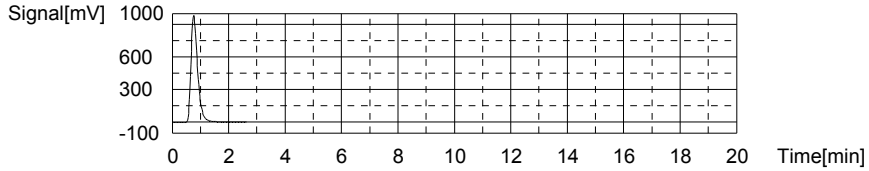

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1028	34.23mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 11:14:56 PM

Mean Area 1028
Mean Conc. 34.23mg/L

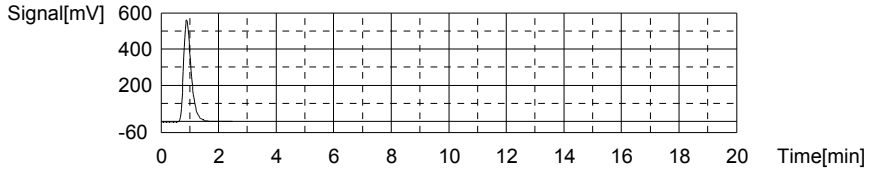

Sample

Sample Name: L14050698-06 (2)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.722mg/L TC:11.55mg/L IC:4.832mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	424.6	11.55mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 11:22:34 PM

Mean Area 424.6
Mean Conc. 11.55mg/L

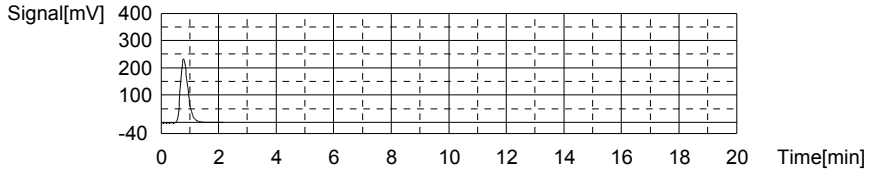

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	152.6	4.832mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 11:27:29 PM

Mean Area 152.6
Mean Conc. 4.832mg/L

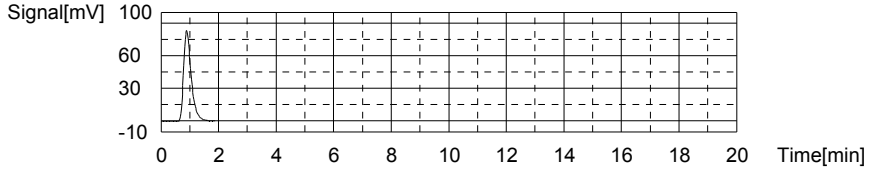

Sample

Sample Name: L14050698-07 (2)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.642mg/L TC:9.207mg/L IC:5.564mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	339.6	9.207mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 11:34:50 PM

Mean Area 339.6
Mean Conc. 9.207mg/L

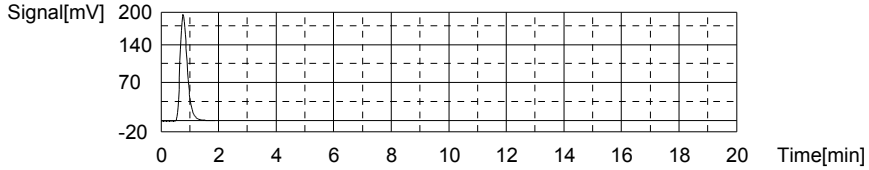

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	174.4	5.564mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 11:39:49 PM

Mean Area 174.4
Mean Conc. 5.564mg/L

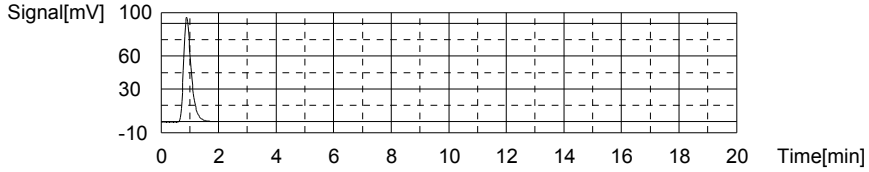

Sample

Sample Name: L14050698-08
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.148mg/L TC:35.60mg/L IC:27.45mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1295	35.60mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/19/2014 11:47:38 PM

Mean Area 1295
Mean Conc. 35.60mg/L

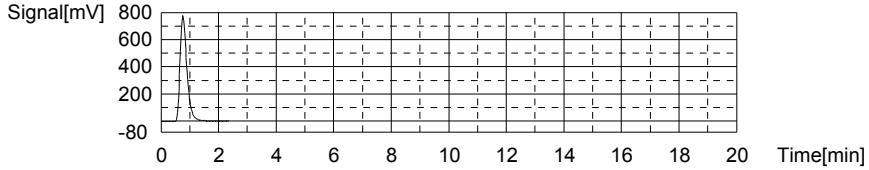

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	826.1	27.45mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/19/2014 11:53:16 PM

Mean Area 826.1
Mean Conc. 27.45mg/L

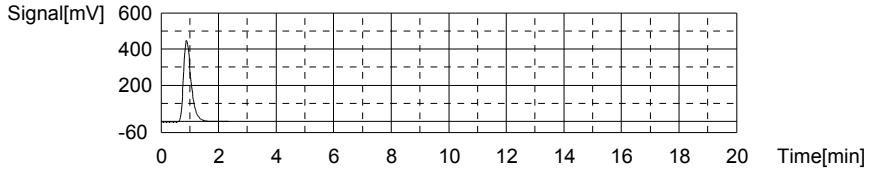

Sample

Sample Name: L14051050-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.805mg/L TC:5.472mg/L IC:3.667mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	204.4	5.472mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 12:00:39 AM

Mean Area 204.4
Mean Conc. 5.472mg/L

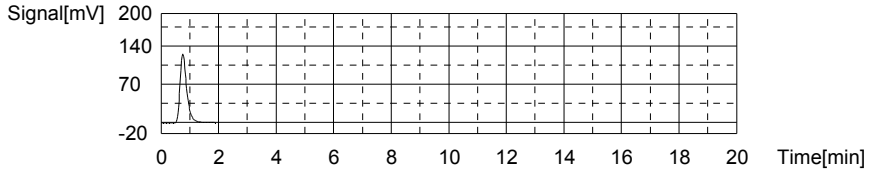

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	117.9	3.667mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 12:05:32 AM

Mean Area 117.9
Mean Conc. 3.667mg/L

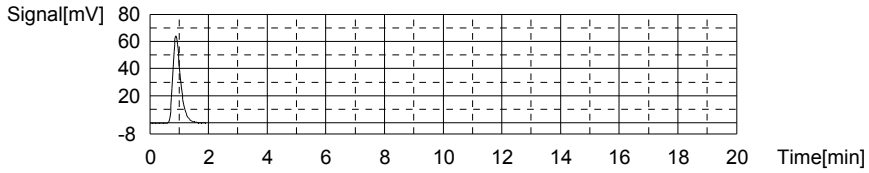

Sample

Sample Name: L14051050-02
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.693mg/L TC:5.276mg/L IC:3.583mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	197.3	5.276mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 12:12:49 AM

Mean Area 197.3
Mean Conc. 5.276mg/L

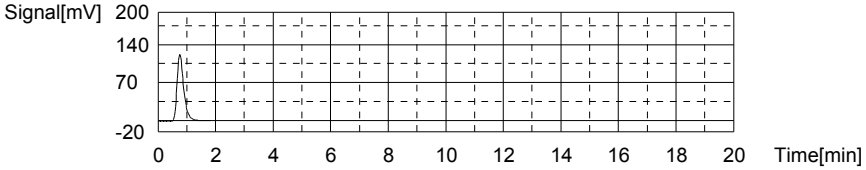

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	115.4	3.583mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 12:17:42 AM

Mean Area 115.4
Mean Conc. 3.583mg/L

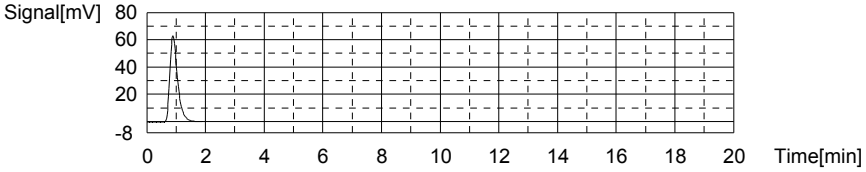

Sample

Sample Name: L14051050-03
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.672mg/L TC:5.104mg/L IC:3.432mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	191.1	5.104mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 12:24:56 AM

Mean Area 191.1
Mean Conc. 5.104mg/L

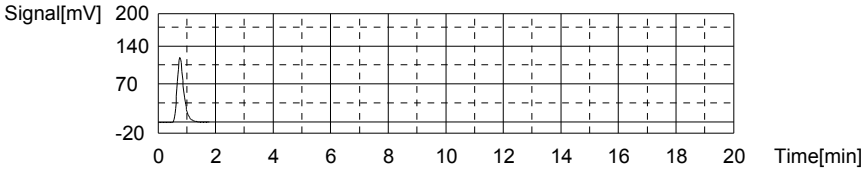

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	110.9	3.432mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 12:29:51 AM

Mean Area 110.9
Mean Conc. 3.432mg/L

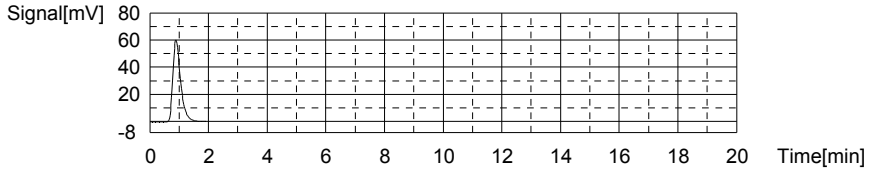

Sample

Sample Name: L140501050-04
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.476mg/L TC:4.582mg/L IC:3.106mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	172.2	4.582mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 12:37:10 AM

Mean Area 172.2
Mean Conc. 4.582mg/L

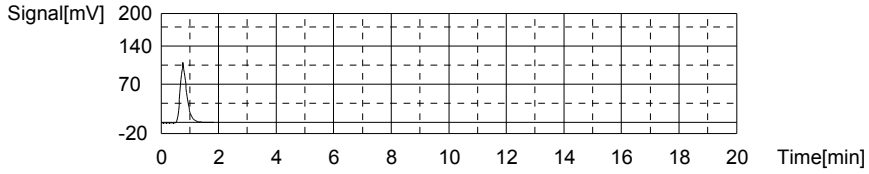

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	101.2	3.106mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 12:42:00 AM

Mean Area 101.2
Mean Conc. 3.106mg/L

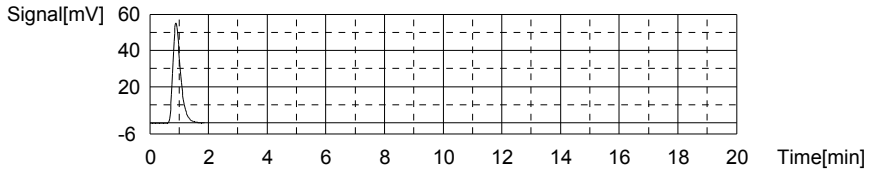

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.81mg/L TC:24.76mg/L IC:-0.04975mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	902.6	24.76mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 12:49:54 AM

Mean Area 902.6
Mean Conc. 24.76mg/L

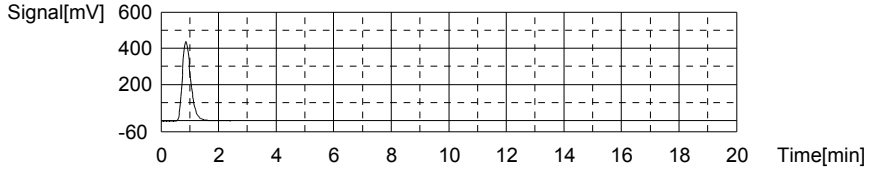

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.232	-0.04975mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 12:54:18 AM

Mean Area 7.232
Mean Conc. -0.04975mg/L

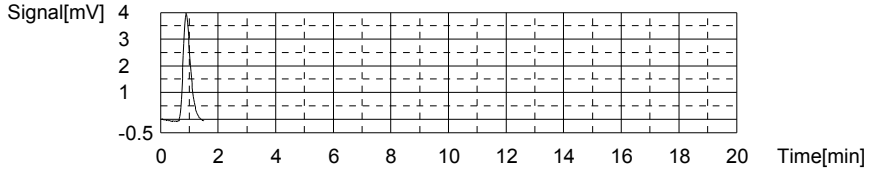

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1183mg/L TC:0.06058mg/L IC:-0.05771mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.525	0.06058mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 12:59:18 AM

Mean Area 8.525
Mean Conc. 0.06058mg/L

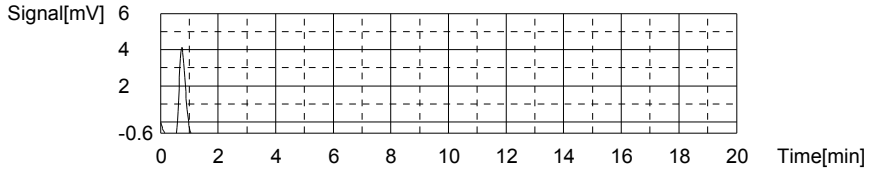

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.995	-0.05771mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 1:03:17 AM

Mean Area 6.995
Mean Conc. -0.05771mg/L

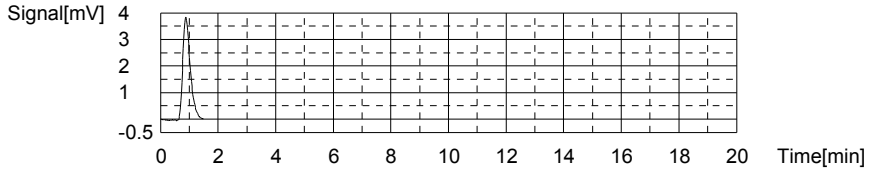

Sample

Sample Name: L14051050-05
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.475mg/L TC:3.864mg/L IC:2.389mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	146.2	3.864mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 1:10:39 AM

Mean Area 146.2
Mean Conc. 3.864mg/L

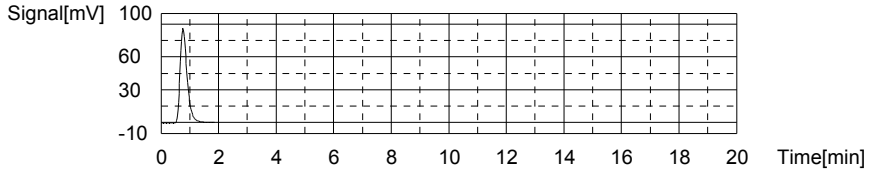

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	79.85	2.389mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 1:15:25 AM

Mean Area 79.85
Mean Conc. 2.389mg/L

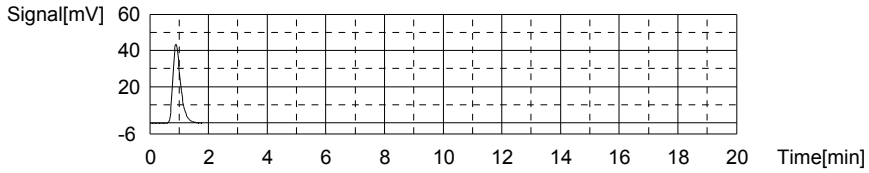

Sample

Sample Name: WG476559-10 DUP
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.671mg/L TC:5.267mg/L IC:3.596mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	197.0	5.267mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 1:22:49 AM

Mean Area 197.0
Mean Conc. 5.267mg/L

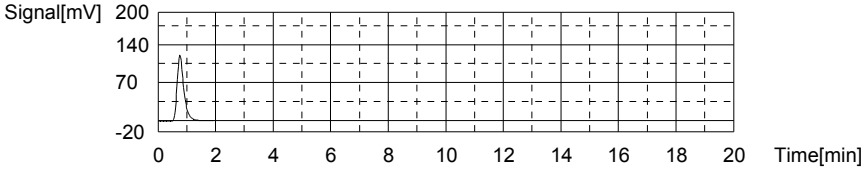

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	115.8	3.596mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/20/2014 1:27:42 AM

Mean Area 115.8
Mean Conc. 3.596mg/L

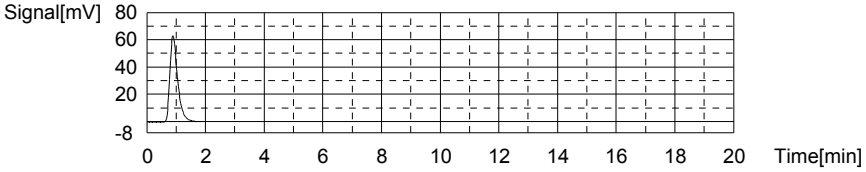

Sample

Sample Name: WG476567-07 DUP
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.90mg/L TC:22.20mg/L IC:5.296mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	809.9	22.20mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 1:35:56 AM

Mean Area 809.9
Mean Conc. 22.20mg/L

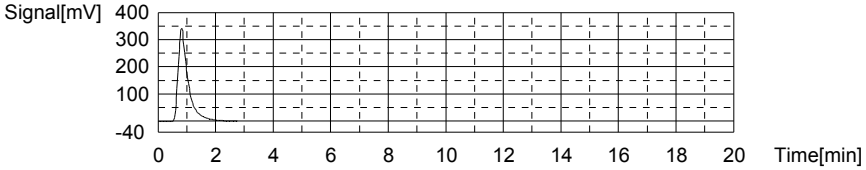

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	166.4	5.296mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/20/2014 1:40:56 AM

Mean Area 166.4
Mean Conc. 5.296mg/L

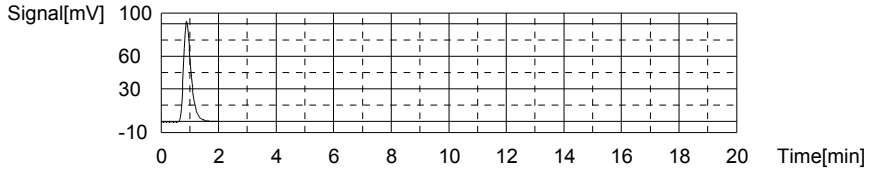

Sample

Sample Name: WG476570-01 BLK
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1143mg/L TC:0.06543mg/L IC:-0.04883mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.087	0.07611mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 1:45:56 AM
2	8.314	0.05475mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 1:49:26 AM

Mean Area 8.700
Mean Conc. 0.06543mg/L

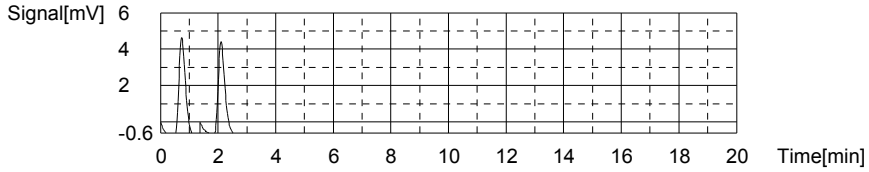

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.338	-0.04619mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/20/2014 1:53:25 AM
2	7.181	-0.05147mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/20/2014 1:57:24 AM

Mean Area 7.260
Mean Conc. -0.04883mg/L

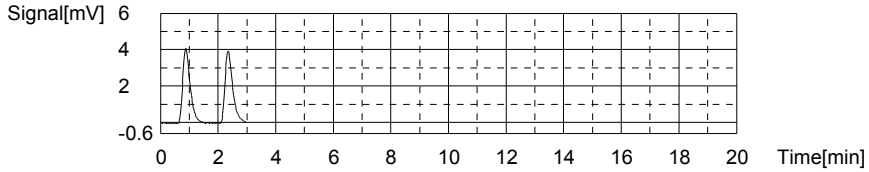

Sample

Sample Name: WG476570-02 LCS
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.00mg/L TC:24.94mg/L IC:-0.06142mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	912.8	25.04mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 2:05:17 AM
2	905.4	24.84mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 2:10:00 AM

Mean Area 909.1
Mean Conc. 24.94mg/L

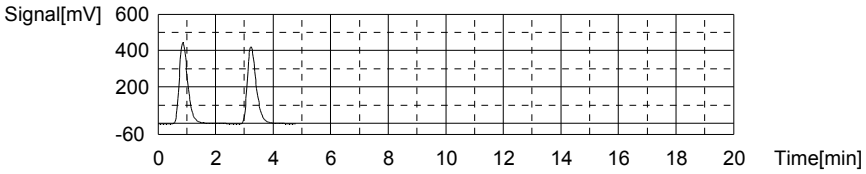

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.027	-0.05664mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/20/2014 2:14:29 AM
2	6.742	-0.06621mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/20/2014 2:18:41 AM

Mean Area 6.885
Mean Conc. -0.06142mg/L

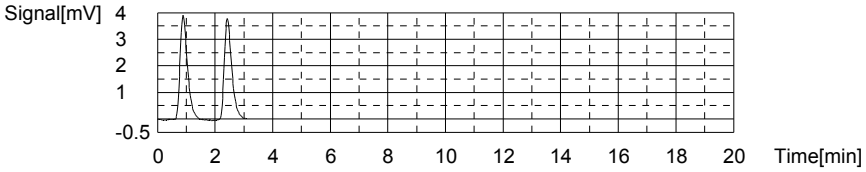

Sample

Sample Name: WG476570-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.87mg/L TC:24.80mg/L IC:-0.06428mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	911.7	25.01mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 2:26:35 AM
2	896.5	24.59mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 2:31:19 AM

Mean Area 904.1
Mean Conc. 24.80mg/L

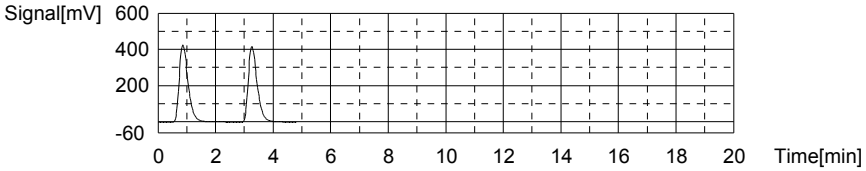

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.794	-0.06446mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 2:35:46 AM
2	6.805	-0.06409mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 2:39:56 AM

Mean Area 6.800
Mean Conc. -0.06428mg/L

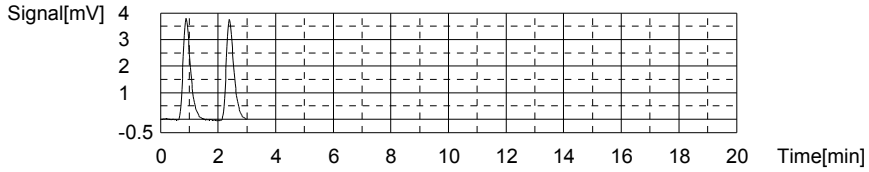

Sample

Sample Name: L14050996-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.143mg/L TC:7.085mg/L IC:1.942mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	262.0	7.063mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 2:47:56 AM
2	263.6	7.107mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 2:52:41 AM

Mean Area 262.8
Mean Conc. 7.085mg/L

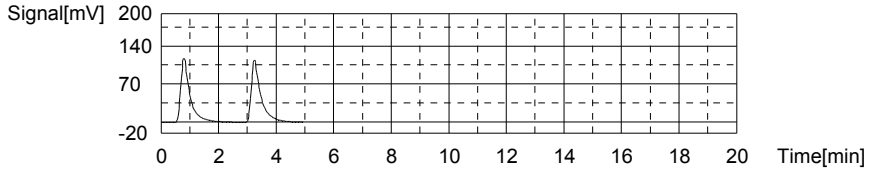

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	67.63	1.979mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 2:57:31 AM
2	65.43	1.905mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 3:02:01 AM

Mean Area 66.53
Mean Conc. 1.942mg/L

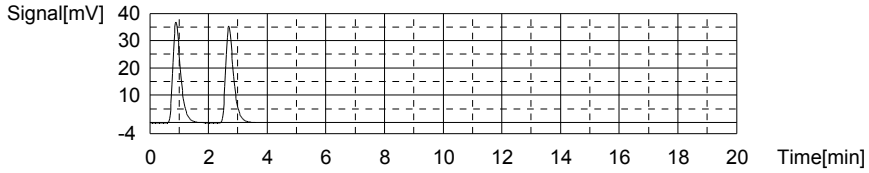

Sample

Sample Name: L14050996-02
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.547mg/L TC:7.263mg/L IC:1.716mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	256.9	6.922mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 3:09:55 AM
2	281.6	7.604mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 3:15:01 AM

Mean Area 269.3
Mean Conc. 7.263mg/L

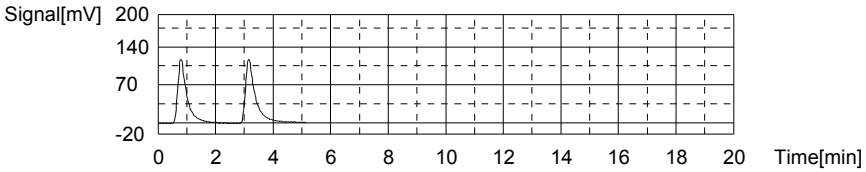

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	60.23	1.730mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/20/2014 3:19:45 AM
2	59.40	1.702mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/20/2014 3:24:16 AM

Mean Area 59.82
Mean Conc. 1.716mg/L

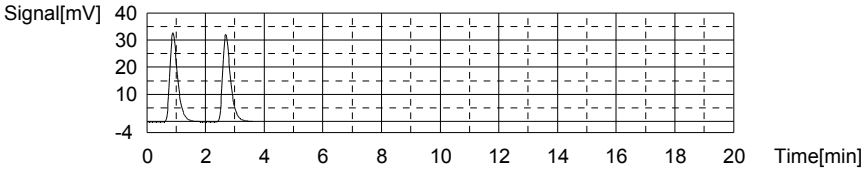

Sample

Sample Name: WG476570-05 DUP
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.855mg/L TC:7.966mg/L IC:2.111mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	280.2	7.566mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 3:32:09 AM
2	309.2	8.367mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 3:38:44 AM

Mean Area 294.7
Mean Conc. 7.966mg/L

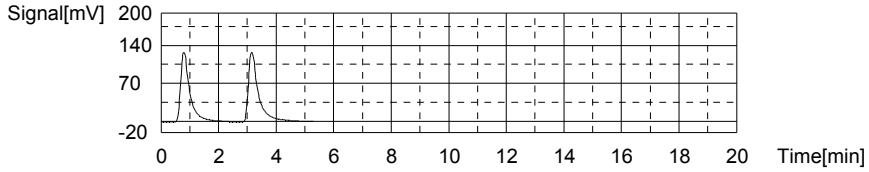

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	72.91	2.156mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 3:43:32 AM
2	70.26	2.067mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 3:48:07 AM

Mean Area 71.59
Mean Conc. 2.111mg/L

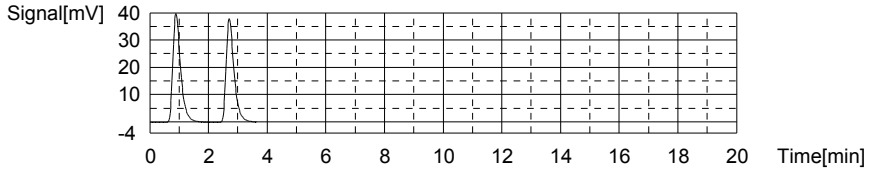

Sample

Sample Name: WG476570-06 MS
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:17.51mg/L TC:17.91mg/L IC:0.4051mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	617.0	16.87mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 3:56:04 AM
2	692.4	18.95mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 4:01:59 AM

Mean Area 654.7
Mean Conc. 17.91mg/L

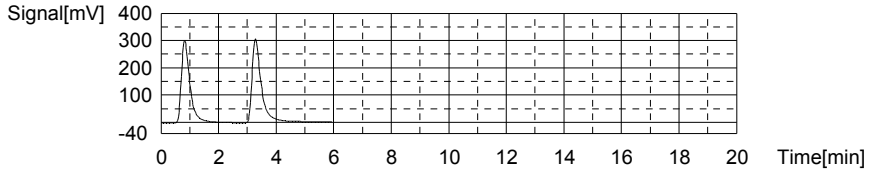

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	31.23	0.7562mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 4:06:41 AM
2	10.32	0.05395mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 4:10:51 AM

Mean Area 20.77
Mean Conc. 0.4051mg/L

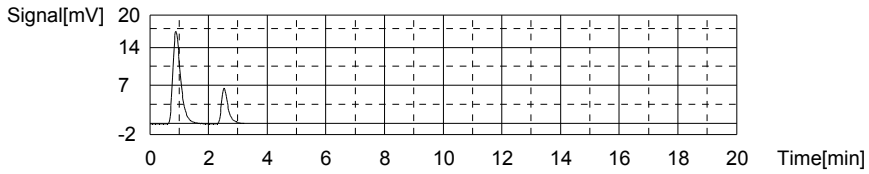

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.72mg/L TC:25.67mg/L IC:-0.04962mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	935.4	25.67mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 4:18:54 AM

Mean Area 935.4
Mean Conc. 25.67mg/L

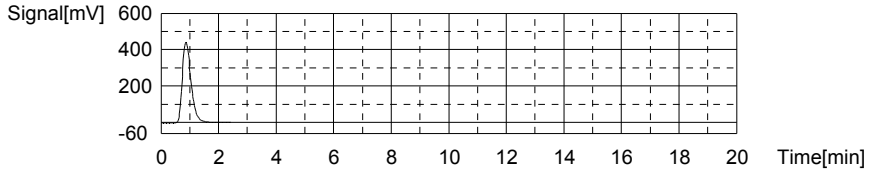

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.236	-0.04962mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 4:23:15 AM

Mean Area 7.236
Mean Conc. -0.04962mg/L

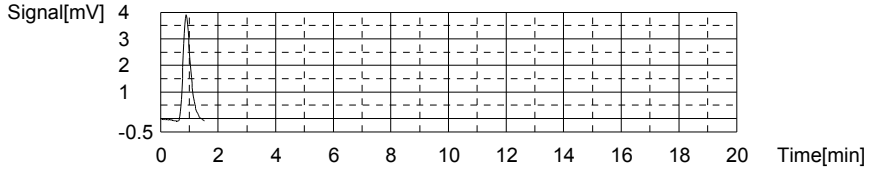

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1313mg/L TC:0.08158mg/L IC:-0.04969mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.285	0.08158mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 4:28:15 AM

Mean Area 9.285
Mean Conc. 0.08158mg/L

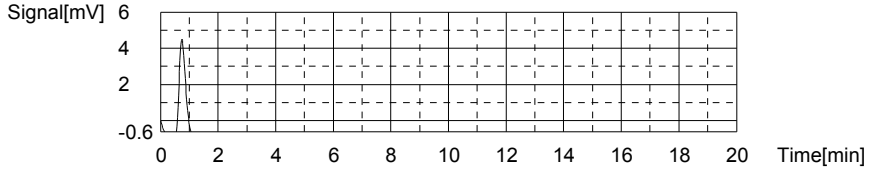

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.234	-0.04969mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/20/2014 4:32:22 AM

Mean Area 7.234
Mean Conc. -0.04969mg/L

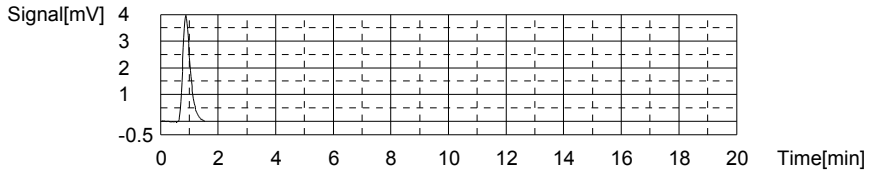

Sample

Sample Name: L14051090-01 (10)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.02mg/L TC:24.89mg/L IC:9.877mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	907.4	24.89mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 4:40:11 AM

Mean Area 907.4
Mean Conc. 24.89mg/L

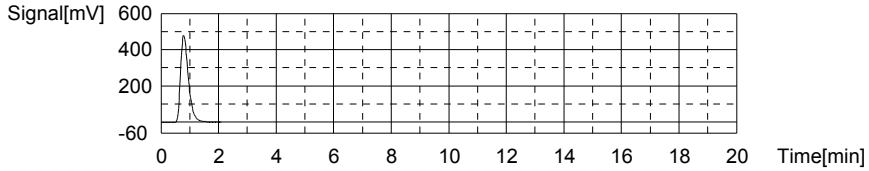

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	302.8	9.877mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_15	5/20/2014 4:45:16 AM

Mean Area 302.8
Mean Conc. 9.877mg/L

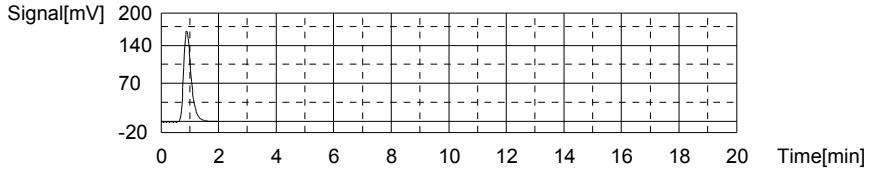

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.47mg/L TC:25.42mg/L IC:-0.04710mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	926.6	25.42mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 4:53:20 AM

Mean Area 926.6
Mean Conc. 25.42mg/L

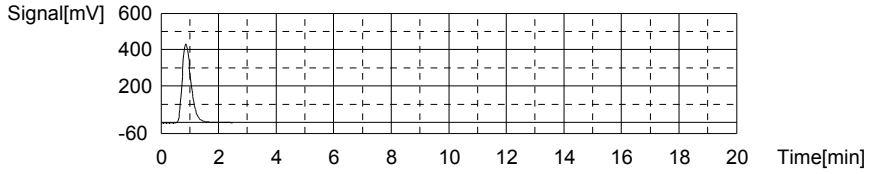

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.311	-0.04710mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 4:57:44 AM

Mean Area 7.311
Mean Conc. -0.04710mg/L

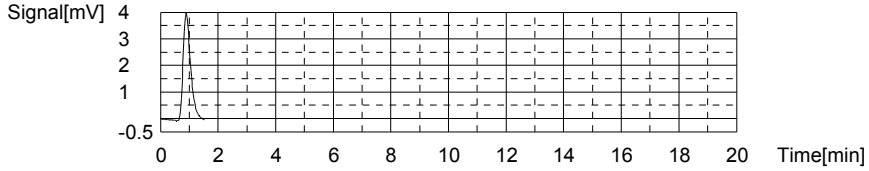

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1153mg/L TC:0.06768mg/L IC:-0.04760mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.782	0.06768mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_55	5/20/2014 5:02:44 AM

Mean Area 8.782
Mean Conc. 0.06768mg/L

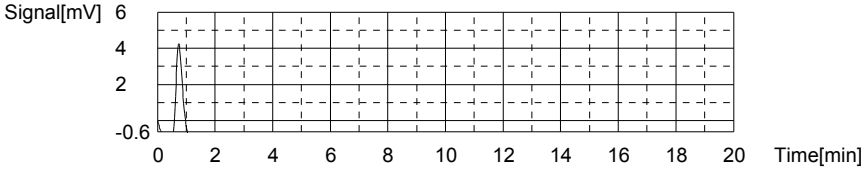

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.296	-0.04760mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	5/20/2014 5:06:48 AM

Mean Area 7.296
Mean Conc. -0.04760mg/L

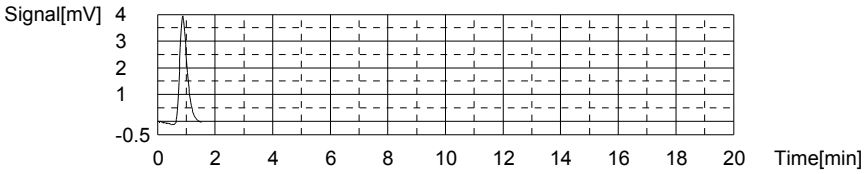

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
May 29, 2014

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BAF - BRICE A. FENTON
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. K
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JLL - JOHN L. LENT
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RS - ROSEMARY SCOTT
SAV - SARAH A. VANDENBERG
SDC - SHALYN D. CONLEY
SEP - SUZANNE J. PAUGH
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TLC - TYLER L. CORDELL
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
TPA - TYLER P. AMRINE
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
May 29, 2014

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL).
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, H1	Not detected; Sample analysis performed past holding time.
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
U	Analyte was not detected. The concentration is below the reported LOD.
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)

Microbac Laboratories Inc.
List of Valid Qualifiers
May 29, 2014

Qualkey: DOD

Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Kathy Albertson	Project Manager:	Dave Wacker
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002JA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp-	Grab	Matrix	Number of Containers	VOC	Dissolved Gases	Sulfide	Ferrous Iron	Nitrate / Nitrite Chloride / Sulfate	Inorganic Carbon	Total Organic Carbon	CHLORIDE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 67	67WW09A-050614			5/6/14	0910		✓	W	3	✓												
	67WW10-050614			5/6/14	1020		✓	W	3	✓												
	67WW02-050614			5/6/14	1050		✓	W	3	✓												
	67WW05-050614			5/6/14	1215		✓	W	4	✓							✓					
	67WW12-050614			5/6/14	1410		✓	W	3	✓												
	67WW12MS-050614			5/6/14	1410		✓	W	3	✓												
	67WW12MSD-050614			5/6/14	1410		✓	W	3	✓												
	67WW13-050614			5/6/14	1520		✓	W	3	✓												
	67WW13FD-050614			5/6/14	1520		✓	W	3	✓												
	67WW07-050614			5/6/14	1620		✓	W	3	✓												
	67WW14-050714			5/7/14	0815		✓	W	3	✓												
	67WW01-050714			5/7/14	0845		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	67WW08-050714			5/7/14	1005		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	TRIP BLANK			5/7/14			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 5/7/14	Time 11:00	Rece	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Rece (Sigr		Time	Remarks:

Microbac OVD
Received: 05/08/2014 11:00
By: BRIAN OGDEN 221000054013

•Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14050603
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 19-MAY-2014

Samplenum	Container ID	Products
L14050603-01	367401	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-MAY-2014 16:11	CLS		<2

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:50	AWE	CLS	
3	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:50	AWE	CLS	

Samplenum	Container ID	Products
L14050603-02	367402	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:50	AWE	CLS	
3	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:50	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-MAY-2014 16:11	CLS		<2

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14050603
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 19-MAY-2014

Samplenum	Container ID	Products
L14050603-03	367403	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	08-MAY-2014 16:11	CLS		<2
2	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:49	AWE	CLS	
3	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:50	AWE	CLS	
3	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

Samplenum	Container ID	Products
L14050603-04	367404	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:50	AWE	CLS	
3	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:50	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-MAY-2014 16:11	CLS		<2

Samplenum	Container ID	Products
L14050603-04	367405	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	08-MAY-2014 16:11	CLS		
2	STORE	SEM	A1	21-MAY-2014 08:33	CLS	JBK	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14050603
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 19-MAY-2014

Samplenum	Container ID	Products
L14050603-05	367406	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	08-MAY-2014 16:11	CLS		<2
2	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-MAY-2014 16:11	CLS		<2

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	08-MAY-2014 16:11	CLS		<2
2	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

Samplenum	Container ID	Products
L14050603-06	367407	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	08-MAY-2014 16:11	CLS		<2
2	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	08-MAY-2014 16:11	CLS		<2
2	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	08-MAY-2014 16:11	CLS		<2
2	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14050603
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 19-MAY-2014

Samplenum	Container ID	Products
L14050603-07	367408	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:49	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:49	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	08-MAY-2014 16:11	CLS		<2
2	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

Samplenum	Container ID	Products
L14050603-08	367409	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	08-MAY-2014 16:11	CLS		<2
2	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-MAY-2014 16:11	CLS		<2

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:49	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14050603
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 19-MAY-2014

Samplenum	Container ID	Products
L14050603-09	367410	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:49	AWE	CLS	
3	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:49	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:49	AWE	CLS	
3	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

Samplenum	Container ID	Products
L14050603-10	367411	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:49	AWE	CLS	
3	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	08-MAY-2014 16:11	CLS		<2
2	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:49	AWE	CLS	
3	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14050603
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 19-MAY-2014

Samplenum	Container ID	Products
L14050603-11	367412	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:49	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:49	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:49	AWE	CLS	

Samplenum	Container ID	Products
L14050603-12	367413	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	08-MAY-2014 16:11	CLS		<2
2	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:49	AWE	CLS	
3	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:49	AWE	CLS	
3	STORE	ORG4	A1	22-MAY-2014 08:00	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14050603
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 19-MAY-2014

Samplenum	Container ID	Products
L14050603-12	367414	RSK175

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG1	09-MAY-2014 08:45	AWE	CLS	
3	STORE	ORG1	A1	27-MAY-2014 08:34	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG1	09-MAY-2014 08:45	AWE	CLS	
3	STORE	ORG1	A1	27-MAY-2014 08:34	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG1	09-MAY-2014 08:45	AWE	CLS	
3	STORE	ORG1	A1	27-MAY-2014 08:34	CLS	AWE	

Samplenum	Container ID	Products
L14050603-12	367415	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-MAY-2014 16:11	CLS		
2	ANALYZ	W1	SEM	09-MAY-2014 07:41	JBK	CLS	

Samplenum	Container ID	Products
L14050603-12	367416	TIC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	08-MAY-2014 16:11	CLS		
2	STORE	WET	A1	23-MAY-2014 15:57	CLS	BLR	

Samplenum	Container ID	Products
L14050603-12	367417	FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-MAY-2014 16:11	CLS		
2	ANALYZ	W1	WET	13-MAY-2014 07:41	TMM	CLS	
3	STORE	WET	A2	14-MAY-2014 11:04	CLS	TMM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14050603
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 19-MAY-2014

Samplenum	Container ID	Products
L14050603-12	367418	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-MAY-2014 16:11	CLS		<2

Samplenum	Container ID	Products
L14050603-12	367419	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-MAY-2014 16:11	CLS		
2	ANALYZ	W1	WET	12-MAY-2014 16:21	DLP	CLS	
3	STORE	WET	A1	13-MAY-2014 08:16	CLS	DLP	

Samplenum	Container ID	Products
L14050603-13	367420	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:49	AWE	CLS	
3	STORE	ORG4	A1	22-MAY-2014 08:01	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG4	09-MAY-2014 08:49	AWE	CLS	
3	STORE	ORG4	A1	22-MAY-2014 08:01	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	08-MAY-2014 16:11	CLS		<2
2	STORE	ORG4	A1	22-MAY-2014 08:01	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14050603
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 19-MAY-2014

Samplenum	Container ID	Products
L14050603-13	367421	RSK175

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG1	09-MAY-2014 08:45	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG1	09-MAY-2014 08:45	AWE	CLS	
3	STORE	ORG1	A1	27-MAY-2014 08:34	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-MAY-2014 16:11	CLS		<2
2	ANALYZ	V1	ORG1	09-MAY-2014 08:45	AWE	CLS	
3	STORE	ORG1	A1	27-MAY-2014 08:34	CLS	AWE	

Samplenum	Container ID	Products
L14050603-13	367422	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-MAY-2014 16:11	CLS		
2	ANALYZ	W1	SEM	09-MAY-2014 07:41	JBK	CLS	
3	STORE	SEM	A1	13-MAY-2014 09:51	CLS	JBK	

Samplenum	Container ID	Products
L14050603-13	367423	TIC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	08-MAY-2014 16:11	CLS		
2	STORE	WET	A1	23-MAY-2014 15:58	CLS	BLR	

Samplenum	Container ID	Products
L14050603-13	367424	FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-MAY-2014 16:11	CLS		
2	ANALYZ	W1	WET	13-MAY-2014 07:41	TMM	CLS	
3	STORE	WET	A1	14-MAY-2014 11:05	CLS	TMM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14050603
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 19-MAY-2014

Samplenum	Container ID	Products
L14050603-13	367425	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	08-MAY-2014 16:11	CLS		<2
2	STORE	WET	A1	27-MAY-2014 07:41	CLS	DCM	

Samplenum	Container ID	Products
L14050603-13	367426	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-MAY-2014 16:11	CLS		
2	ANALYZ	W1	WET	12-MAY-2014 16:21	DLP	CLS	
3	STORE	WET	A1	13-MAY-2014 08:16	CLS	DLP	

Samplenum	Container ID	Products
L14050603-14	367427	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	08-MAY-2014 16:11	CLS		<2
2	STORE	ORG4	A1	22-MAY-2014 08:01	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-MAY-2014 16:11	CLS		<2

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-MAY-2014 16:11	CLS		<2

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - May 22, 2014

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)
Acetate (HPLC-UV)
Formate (HPLC-UV)
Acetaldehyde (HPLC-UV)
Propionaldehyde (HPLC-UV)
Fluoroborate (ISE)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam

Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

APPENDIX E: CORRELATION DOCUMENTATION

Correlation Coefficient Evaluation

Evaluation of correlation between groundwater elevations and COC concentrations.

67WW08

Contaminant	6/3/2013	10/2/2013	1/23/2014	5/7/2014	Correlation Coefficient *
1,1,2-trichloroethane	4.25	5.08	6.7	5.01	-18.0%
1,1-dichloroethene	940	1120	1340	1590	65.1%
1,2-dichloroethane	89.2	76.5	89.9	101	97.4%
Water Level (amsl)	175.39	174.47	175.14	176.39	
Top of Screen from TOC (ft)	173.39	173.39	173.39	173.39	
Bottom of Screen from TOC (ft)	148.89	148.89	148.89	148.89	

*Calculated using Microsoft Excel correlation function.

67WW09

Contaminant	6/3/2013	9/28/2013	1/24/2014	Correlation Coefficient *
1,1-dichloroethene	16.1	17.5	20.8	4.6%
Water Level (amsl)	175.43	174.55	175.26	
Top of Screen from TOC (ft)	180.38	180.38	180.38	
Bottom of Screen from TOC (ft)	160.88	160.88	160.88	

*Calculated using Microsoft Excel correlation function.

67WW11

Contaminant	6/1/2013	10/2/2013	1/23/2014	Correlation Coefficient *
1,1-dichloroethene	47.1	42.8	38.8	26.0%
Water Level (amsl)	175.43	174.47	175.19	
Top of Screen from TOC (ft)	173.34	173.34	173.34	
Bottom of Screen from TOC (ft)	153.84	153.84	153.84	

Calculated using Microsoft Excel correlation function

Correlation Coefficient Evaluation

67WW13

Contaminant	5/31/2013	10/1/2013	1/24/2014	5/6/2014	Correlation Coefficient *
1,1-dichloroethene	565	515	572	240	-75.3%
1,2-dichloroethane	23.1	23.8	22.9	13.7	-88.5%
Vinyl Chloride	2.55	2.1	2.37	0.644	-71.9%
Water Level (amsl)	175.37	174.5	175.24	176.26	
Top of Screen from TOC (ft)	184.5	184.5	184.5	184.5	
Bottom of Screen from TOC (ft)	170	170	170	170	

*Calculated using Microsoft Excel correlation function.

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

February 6, 2017

DAIM-ODB-LO

Ms. April Palmie
Texas Commission on Environmental Quality
Superfund Section, MC-136
12100 Park 35 Circle, Bldg D
Austin, TX 78753

Re: Cessation of Perimeter Well Sampling Requirement of the December 2, 1999 Dispute Resolution, Longhorn Army Ammunition Plant, Karnack, Texas

Dear Ms. Palmie,

A decision was made by the FFA representatives on January 31, 2017 regarding the perimeter well sampling that has been taking place as a requirement of the 1999 Unanimous Decision of the Dispute Resolution Committee. We agreed that it should be discontinued and you provided an email confirmation of that decision, attached here for the record.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

One Enclosure
Copies furnished:
R. Mayer, USEPA R6, Dallas, TX
P. Bruckwicki, USFWS, Karnack, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USAEC, San Antonio, TX
D. Richmann, AECOM – (for project files)

[Non-DoD Source] RE: December 2, 1999 LHAAP Dispute Resolution Requirement of Perimeter Well Sampling

April Palmie [april.palmie@tceq.texas.gov]
Sent: Tuesday, January 31, 2017 9:26 AM
To: Mayer, Richard [mayer.richard@epa.gov]; Zeiler, Rose M CIV USARMY HQDA ACSIM (US)
Cc: Williams, Aaron K SWT [Aaron.K.Williams@usace.army.mil]; Smith, Richard P SWT [Richard.P.Smith@usace.army.mil]; Smith, Nicholas B CIV USARMY IMCOM (US)

All active links contained in this email were disabled. Please verify the identity of the sender, and confirm the authenticity of all links contained within the message prior to copying and pasting the address to a Web browser.

I also agree. Thank you.

April

From: Mayer, Richard [Caution-mailto:mayer.richard@epa.gov]
Sent: Tuesday, January 31, 2017 9:24 AM
To: Zeiler, Rose M CIV USARMY HQDA ACSIM (US) <rose.m.zeiler.civ@mail.mil>; April Palmie <april.palmie@tceq.texas.gov>
Cc: Williams, Aaron K SWT <Aaron.K.Williams@usace.army.mil>; Smith, Richard P SWT <Richard.P.Smith@usace.army.mil>; Smith, Nicholas B CIV USARMY IMCOM (US) <nicholas.b.smith56.civ@mail.mil>
Subject: RE: December 2, 1999 LHAAP Dispute Resolution Requirement of Perimeter Well Sampling

I agree Rose. Thanks.

From: Zeiler, Rose M CIV USARMY HQDA ACSIM (US) [Caution-mailto:rose.m.zeiler.civ@mail.mil < Caution-mailto:rose.m.zeiler.civ@mail.mil >]
Sent: Tuesday, January 31, 2017 9:23 AM
To: April Palmie <april.palmie@tceq.texas.gov < Caution-mailto:april.palmie@tceq.texas.gov > >; Mayer, Richard <mayer.richard@epa.gov < Caution-mailto:mayer.richard@epa.gov > >
Cc: Williams, Aaron K SWT <Aaron.K.Williams@usace.army.mil < Caution-mailto:Aaron.K.Williams@usace.army.mil > >; Smith, Richard P SWT <Richard.P.Smith@usace.army.mil < Caution-mailto:Richard.P.Smith@usace.army.mil > >; Smith, Nicholas B CIV USARMY IMCOM (US) <nicholas.b.smith56.civ@mail.mil < Caution-mailto:nicholas.b.smith56.civ@mail.mil > >
Subject: December 2, 1999 LHAAP Dispute Resolution Requirement of Perimeter Well Sampling

April and Rich,

After discussion of the perimeter well sampling that has been taking place since the Unanimous Decision of the Dispute Resolution committee required it in 1999, it was agreed by the FFA parties that it should be discontinued. Please provide an email confirmation that you agree.

Thanks,
Rose

Rose M. Zeiler, Ph.D.
BRAC Field
479-635-0110
fax: 479-635-0112

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

February 6, 2017

DAIM-ODB-LO

Mr. Rich Mayer
US Environmental Protection Agency
Federal Facilities Section R6
1445 Ross Avenue
Dallas, TX 75202-2733

Re: Cessation of Perimeter Well Sampling Requirement of the December 2, 1999 Dispute Resolution, Longhorn Army Ammunition Plant, Karnack, Texas

Dear Mr. Mayer,

A decision was made by the FFA representatives on January 31, 2017 regarding the perimeter well sampling that has been taking place as a requirement of the 1999 Unanimous Decision of the Dispute Resolution Committee. We agreed that it should be discontinued and you provided an email confirmation of that decision, attached here for the record.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

One Enclosure
Copies furnished:
A. Palmie, TCEQ, Austin, TX
P. Bruckwicki, CLNWR, Karnack, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USAEC, San Antonio, TX
D. Richmann, AECOM – (for project files)

[Non-DoD Source] RE: December 2, 1999 LHAAP Dispute Resolution Requirement of Perimeter Well Sampling

Mayer, Richard [mayer.richard@epa.gov]

Sent: Tuesday, January 31, 2017 9:24 AM
To: Zeiler, Rose M CIV USARMY HQDA ACSIM (US); April Palmie [april.palmie@tceq.texas.gov]
Cc: Williams, Aaron K SWT [Aaron.K.Williams@usace.army.mil]; Smith, Richard P SWT [Richard.P.Smith@usace.army.mil]; Smith, Nicholas B CIV USARMY IMCOM (US)

I agree Rose. Thanks.

From: Zeiler, Rose M CIV USARMY HQDA ACSIM (US) [mailto:rose.m.zeiler.civ@mail.mil]
Sent: Tuesday, January 31, 2017 9:23 AM
To: April Palmie <april.palmie@tceq.texas.gov>; Mayer, Richard <mayer.richard@epa.gov>
Cc: Williams, Aaron K SWT <Aaron.K.Williams@usace.army.mil>; Smith, Richard P SWT <Richard.P.Smith@usace.army.mil>; Smith, Nicholas B CIV USARMY IMCOM (US) <nicholas.b.smith56.civ@mail.mil>
Subject: December 2, 1999 LHAAP Dispute Resolution Requirement of Perimeter Well Sampling

April and Rich,

After discussion of the perimeter well sampling that has been taking place since the Unanimous Decision of the Dispute Resolution committee required it in 1999, it was agreed by the FFA parties that it should be discontinued. Please provide an email confirmation that you agree.

Thanks,
Rose

Rose M. Zeiler, Ph.D.
BRAC Field
479-635-0110
fax: 479-635-0112

From: Mayer, Richard <mayer.richard@epa.gov>
Sent: Wednesday, February 22, 2017 1:47 PM
To: Snow, JoLynn; Zeiler, Rose M CIV USARMY HQDA ACSIM (US)
Cc: Aaron.K.Williams@usace.army.mil; Smith, Nicholas B CIV USARMY IMCOM (US; 'Becher, Kent'; Tzhone, Stephen; Richmann, Debra; Richard.P.Smith@usace.army.mil; April Palmie; Forsythe, Barry; Harrison, Dorelle; Sharp, Elspeth; paul_bruckwicki@fws.gov
Subject: RE: EPA Approval of the September 2016 Groundwater Sampling Results at Longhorn AAP Site 003-R (Ground Signal Test Area)

Good Afternoon JoLynn/Rose, I've reviewed the September 2016 Groundwater Sampling Results at Longhorn Site 003-R (Ground Signal Test Area) and have no comments and thereby approve the February 2017 Memo. Thanks.

From: April Palmie <april.palmie@tceq.texas.gov>
Sent: Wednesday, March 01, 2017 9:05 AM
To: Zeiler, Rose M CIV USARMY HQDA ACSIM (US); Mayer, Richard; Snow, JoLynn
Cc: Aaron.K.Williams@usace.army.mil; Smith, Nicholas B CIV USARMY IMCOM (US); 'Becher, Kent'; Tzhone, Stephen; Richmann, Debra; Richard.P.Smith@usace.army.mil; Forsythe, Barry; Harrison, Dorelle; Sharp, Elspeth; paul_bruckwicki@fws.gov; April Palmie
Subject: TCEQ Approval of the September 2016 Groundwater Sampling Results at Longhorn AAP Site 003-R (Ground Signal Test Area)

Rose,

I've reviewed the September 2016 Groundwater Sampling Results at Longhorn Site 003-R (Ground Signal Test Area) and have no comments. I accept the February 2017 Memo.

Thank you,

April Palmie
Project and Grant Manager
Superfund Section
Remediation Division
Texas Commission on Environmental Quality
Phone: (512) 239-4152
Email: April.Palmie@tceq.texas.gov

From: Zeiler, Rose M CIV USARMY HQDA ACSIM (US) [mailto:rose.m.zeiler.civ@mail.mil]
Sent: Wednesday, February 22, 2017 2:09 PM
To: Mayer, Richard <mayer.richard@epa.gov>; Snow, JoLynn <JoLynn.Snow@aecom.com>
Cc: Aaron.K.Williams@usace.army.mil; Smith, Nicholas B CIV USARMY IMCOM (US) <nicholas.b.smith56.civ@mail.mil>; 'Becher, Kent' <kdbecher@usgs.gov>; Tzhone, Stephen <tzhone.stephen@epa.gov>; debra.richmann@aecom.com; Richard.P.Smith@usace.army.mil; April Palmie <april.palmie@tceq.texas.gov>; Forsythe, Barry <Forsythe.Barry@epa.gov>; Harrison, Dorelle <harrison.dorelle@epa.gov>; Sharp, Elspeth <elspeth.sharp@aecom.com>; paul_bruckwicki@fws.gov
Subject: RE: EPA Approval of the September 2016 Groundwater Sampling Results at Longhorn AAP Site 003-R (Ground Signal Test Area)

Thanks, Rich.
Rose

Rose M. Zeiler, Ph.D.
BRAC Field
479-635-0110
fax: 479-635-0112

From: Mayer, Richard [mayer.richard@epa.gov]
Sent: Wednesday, February 22, 2017 1:46 PM
To: Snow, JoLynn; Zeiler, Rose M CIV USARMY HQDA ACSIM (US)
Cc: Aaron.K.Williams@usace.army.mil; Smith, Nicholas B CIV USARMY IMCOM (US); 'Becher, Kent'; Tzhone, Stephen; debra.richmann@aecom.com; Richard.P.Smith@usace.army.mil; April Palmie; Forsythe, Barry; Harrison, Dorelle; Sharp,

Elspeth; paul_bruckwicki@fws.gov
Subject: [Non-DoD Source] RE: EPA Approval of the September 2016 Groundwater Sampling Results at Longhorn AAP Site 003-R (Ground Signal Test Area)

Good Afternoon JoLynn/Rose, I've reviewed the September 2016 Groundwater Sampling Results at Longhorn Site 003-R (Ground Signal Test Area) and have no comments and thereby approve the February 2017 Memo. Thanks.

MEMORANDUM FOR RECORD

February 8, 2017

SUBJECT: Groundwater Sampling Methodology and Perchlorate Analytical Results for September 2016, LHAAP-003-R (Ground Signal Test Area), at Longhorn Army Ammunition Plant, Karnack, Texas

This memorandum presents the methodology and analytical results for the groundwater sampling event conducted at LHAAP-003-R on September 28 and 29, 2016. The purpose of the groundwater sampling and analysis is to confirm that the levels of perchlorate in groundwater are protective of human health at concentrations below the Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (PCL) which is the state remedial standard utilized in the absence of a federal drinking water standard. The PCL is 17 micrograms per liter (µg/L) for perchlorate. The three groundwater monitoring wells sampled at LHAAP-003-R (MW-127, MW-128, and 18WW16) are screened in the Shallow Zone. Refer to **Figure 1** for sampling locations. The sampling rationale and methodology followed the procedures documented in the Installation-Wide Work Plan (IWWP) (AECOM, 2014). Sampling for perchlorate was conducted based on the requirements of the Final Record of Decision (ROD) LHAAP-001-R (South Test Area/Bomb Test Area) and LHAAP-003-R (Ground Signal Test Area) (Shaw, 2016).

The LHAAP-003-R site served as a site of former aerial and on-ground testing and destruction of a variety of explosive devices as well as testing and burn-out of rocket motors. Perchlorate was identified as an emerging contaminant, and perchlorate data for environmental media were collected after the 1998 No Further Action (NFA) Record of Decision (ROD) was signed (Shaw, 2016). Between May 2000 and February 2001, during three consecutive quarterly sampling events, groundwater samples were collected from three existing shallow monitoring wells to determine whether perchlorate contamination had occurred as a result of past historical activities (STEP, 2005). Perchlorate only exceeded the TRRP Tier 1 Groundwater Residential PCL (17 µg/L) in the first quarter (April and May 2000) groundwater samples collected from MW-127, MW-128, and 18WW16. Perchlorate concentrations were below detection limits in the three monitoring wells during the second quarter (August through October 2000). During the third quarter, (January and February 2001), perchlorate was detected only in the groundwater sample collected from well 18WW16 at a concentration of 8 µg/L, below the TRRP Tier 1 Groundwater Residential PCL. No perchlorate was detected in the shallow groundwater samples from wells MW-127 and MW-128 (Shaw, 2016).

In October, 2009, the U.S. Environmental Protection Agency (USEPA) collected additional samples from four existing monitoring wells (MW-127, MW-128, 18WW16, and 18WW01) to confirm groundwater conditions at the site. Perchlorate was detected in only one well at a

concentration that was below the TRRP Tier 1 Groundwater Residential PCL. The Army collected split samples at the same time USEPA collected its samples from the four wells. Perchlorate was detected in the Army split sample from one of the wells (18WW16), but the concentration was below the TRRP Tier 1 Groundwater Residential PCL of 17 µg/L (Shaw, 2016).

On September 28 and 29, 2016 groundwater samples were collected from Shallow Zone monitoring wells MW-127, MW-128, and 18WW16 and analyzed for perchlorate, using EPA Method SW 6850. Prior to collecting the samples, monitoring wells MW-127 and MW-128 were re-developed (development forms are provided in **Appendix A)**. Monitoring well 18WW16 did not need to be re-developed, because it is sampled regularly with LHAAP-18/24.

Groundwater samples were collected utilizing low-flow sampling techniques for MW-127 and MW-128. Monitoring well 18WW16 was bailed dry and sampled the next day with a bailer. Prior to sampling, the depth to groundwater and total depth of each monitoring well were measured using a Solinst Model 101 water level meter. For MW-127 and MW-128, a bladder pump was lowered into the well and placed within the screened interval, then pumped at a rate of approximately 100 milliliters per minute (mL/min). The groundwater was pumped through a flow-through cell where field parameters including temperature, pH, conductivity, oxygen reduction potential (ORP), dissolved oxygen (DO), and turbidity were measured using a U-52 Horiba water quality meter. After the groundwater parameters stabilized within the ranges specified in the IWWP (AECOM, 2014), each groundwater sample was collected in a 250-mL clear plastic bottle. The bottles were labelled and placed in coolers containing ice for temporary storage and shipment to the Microbac laboratory located in Marietta, Ohio following Chain-of-Custody procedures. **Appendix A** provides the field sampling forms.

Quality control (QC) samples, including a field duplicate, matrix spike (MS), and matrix spike duplicate (MSD), were collected as prescribed in the IWWP (AECOM, 2014) to assess the precision, accuracy, and representativeness of the analytical results.

The groundwater samples were analyzed within the maximum holding time for Method SW 6850. Analytical data received from Microbac were validated in accordance with quality assurance/quality control (QA/QC) requirements for this project and were determined to be usable for their intended purpose. The data validation information is summarized in the Quality Control Summary Report (QCSR) presented in **Appendix B**. **Appendix C** provides the laboratory reports for the groundwater samples.

In September 2016, perchlorate was detected in 18WW16 (5.32 µg/L) and was not detected in the samples collected from MW-127 and MW-128. The detected perchlorate concentration is below the TRRP Tier 1 Groundwater Residential PCL of 17 µg/L. The groundwater analytical results for perchlorate for September 2016 are presented in **Table 1.**

Historical and recent (September 2016) analytical results for perchlorate in shallow groundwater at LHAAP-003-R indicate perchlorate does not pose an unacceptable risk to human health and the environment. Per the ROD, if, after one round of groundwater sampling at LHAAP-003-R, the results that are evaluated on or before the first five year review indicate detections at levels below the TRRP Tier 1 Groundwater Residential PCL value of 17 µg/L for perchlorate, groundwater monitoring will cease and the wells will be plugged and abandoned. The September 2016 groundwater samples meet this criterion, therefore, groundwater monitoring at LHAAP-003-R will cease and the wells will be plugged and abandoned (with the exception of 18WW16 which is sampled regularly with LHAAP-18/24).

REFERENCES

AECOM, 2014. *Final Installation-Wide Work Plan for Longhorn Army Ammunition Plant, Karnack, Texas*, July.

Shaw Environmental and Infrastructure, Inc. (Shaw), 2016. *Final Record of Decision LHAAP-001-R (South Test Area/Bomb Test Area) and LHAAP-003-R (Ground Signal Test Area) Longhorn Army Ammunition Plant, Karnack, Texas*, August.

STEP (Solutions to Environmental Problems), 2005. *Plant-wide Perchlorate Investigation, Longhorn Army Ammunition Plant, Karnack, Texas, Houston, Texas.* June.

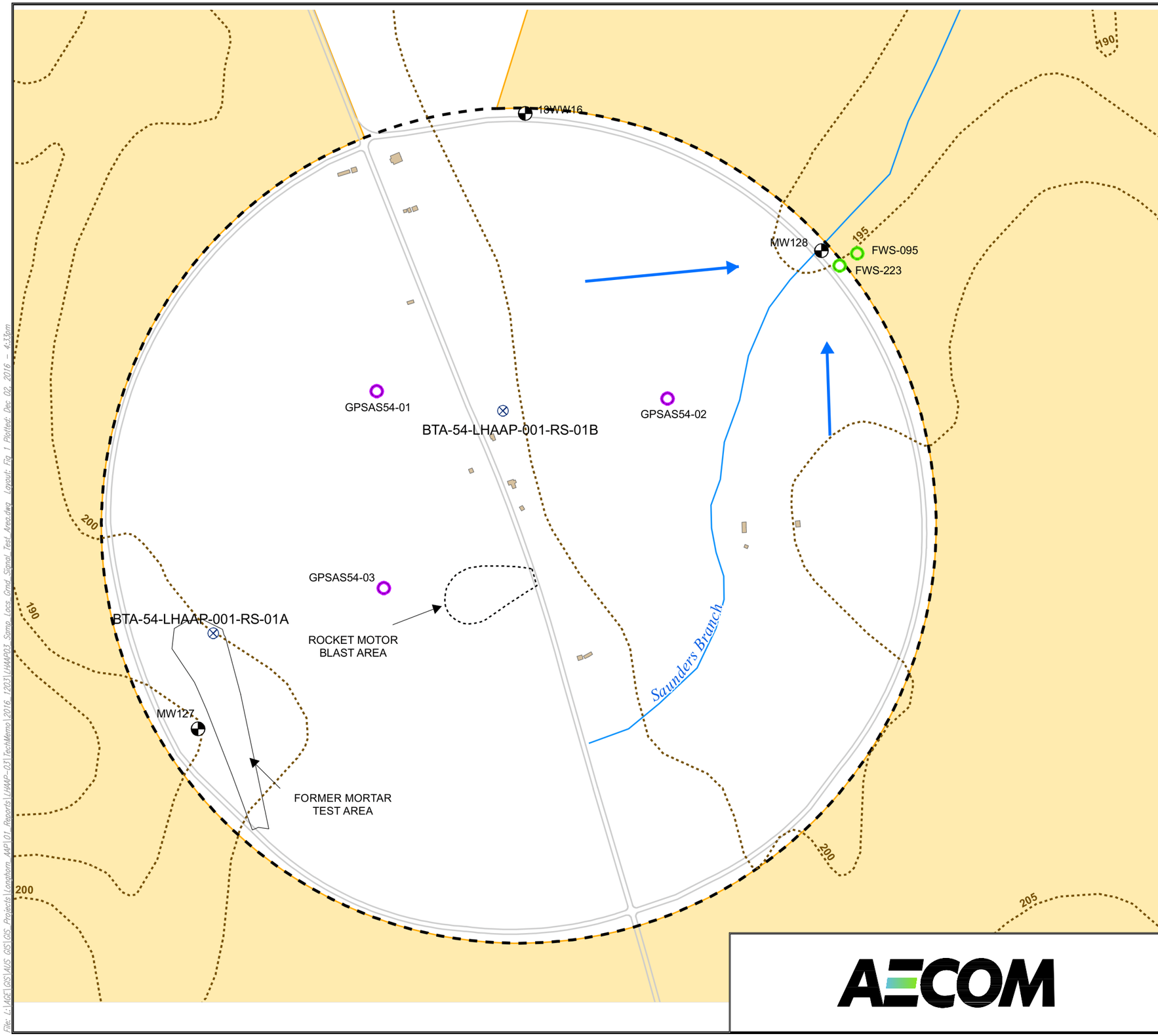

LEGEND

- MONITORING WELL, (STEP, 2005)
- SOIL SAMPLE, (CAPE, 2006)
- SOIL SAMPLE, (USFWS, 2003)
- GEOPROBE LOCATION, (USACE, 2001)
- Contours
- Road
- Stream
- Building
- Former Mortar Test Area
- Rocket Motor Blast Area
- Ground Signal Test Area
- Caddo Lake National Wildlife Refuge
- Surface Water Flow Direction

Source:
Final Record of Decision LHAAP-001-R (South Test Area/bomb test area) and LHAAP-003-R (Ground Signal Test Area) Longhorn Army Ammunition Plant Karnack, Texas, Figure 2-5, (Shaw Environmental, Inc, 2016 August).

N

125 0 250
Feet

AECOM

Figure 1
Sampling Locations
Ground Signal Test Area
LHAAP-003-R

Longhorn Army Ammunition Plant
Karnack, Texas

60256135

December 2016

File: L:\AGE\GIS\AUS\GIS\Projects\Longhorn_AAP\01_Reports\LHAAP-03\TechMemo\2016_1203\LHAAP03_Samp_Locs_Grnd_Signal_Test_Area.dwg Layout: Fig 1 Plotted: Dec 02, 2016 - 4:33pm

Table 1: LHAAP-003-R Groundwater Sampling Results - September 2016

Sample ID: Sample Date:	Units	TRRP PCL	MW-127-092916 9/29/2016	MW-128-092916 9/29/2016	MW-128FD-092916 9/29/2016	18WW16-092916 9/29/2016
Perchlorate (6850)						
PERCHLORATE	ug/L	17	<0.2 U	<0.2 U	<0.2 U	5.32

TRRP PCL - Texas Risk Reduction Program Tier 1 Groundwater Residential Protective Concentration Limit

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

Appendix A: LHAAP-003-R Groundwater Field Sampling Forms and Well Development Forms– September 2016

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 003 (Site 54)	LocID: 127	Date: 9/29/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0006EA 001 - 003 LUC5 FL	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21168	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 16.67	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 28.22	Screen Interval (ft) from TOC: 13.20 - 28.20	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: 20.70	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
9/29/16	0915	16.63	100	18.89	5.70	1.44	2.50	135	58	
	0920	16.70	100	18.87	5.54	1.38	1.79	112	66	
	0925	16.75	100	18.84	5.49	1.38	1.61	91.2	67	
	0930	16.80	100	18.83	5.46	1.39	1.35	72.2	70	
	0935	16.82	100	18.82	5.48	1.39	1.22	49.3	70	
	0940	16.83	100	18.81	5.46	1.40	1.23	48.7	69	
	0945	16.83	100	18.80	5.47	1.40	1.25	48.5	68	
	0950	16.83	100	18.79	5.45	1.41	1.23	48.3	68	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 127-092916 TIME: 0950

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO YES
MATRIX DUPLICATE (MD): YES/NO YES

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 003 (Site 54)	LocID: 128	Date: 9/29/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0006EA 001 - 003 LUC5 FL	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21168	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 27.01	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 35.09	Screen Interval (ft) from TOC: 20.00 - 35.00	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: 30.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
9/29/16	0805	26.98	100	18.96	6.08	4.21	3.54	5.5	124	
	0810	27.05	100	18.63	5.86	4.20	2.51	36.1	140	
	0815	27.11	100	18.46	5.81	4.21	2.12	47.1	146	
	0820	27.15	100	18.39	5.80	4.29	1.73	31.1	146	
	0825	27.18	100	18.31	5.79	4.30	1.70	31.5	144	
	0830	27.20	100	18.28	5.81	4.31	1.68	31.0	142	
	0835	27.22	100	18.25	5.82	4.31	1.67	30.6	140	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 128-092916 TIME: 0835

DUPLICATE (D): YES/NO yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
2 - 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 003 (Site 54)	LocID: 18 WW16	Date: 9/28/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0006EA 001 - 003 LUC5 FL	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 211168	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 31.64	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 33.71	Screen Intverval (ft) from TOC: 23.75 - 33.75	Condition of Well/Remarks: needs paint
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
9/28/16	1448	31.64	NA							Bailing well
9/28/16	1455	33.62	NA							Bailed 1 gallon RAN DRY
9/29/16	0740	31.69	NA	19.93	3.68	5.75	NA	47.1	NA	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18NW16-092916 TIME: 0740

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
1 - 250 ml plastic	NA	Y	Bailer	perchlorate

MONITORING WELL DEVELOPMENT FORM

LOCATION	Site: 003 (54)	LocID: 128	Date: 9/22/16
	Project Name: Longhorn Army Ammunition Plant	Project #: 60256135	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: U-52 21168		Water Level Indicator Type/ID #: Solinst 101
	Equipment Group: NA		Equpment Group: NA
	Development Equipment: HurricanePump		Equipment Decon.: Liquinox & DI WATER
WELL INFO	Casing I.D. (in) [a]: 2"	Unit Casing Volume (gal/lin ft) [b]: 0.16	Initial Depth to Water (ft) [c]: 22.94
	Total Well Depth (ft) [d]: 35.08	Water Column Thickness (ft) [d-c]: 12.14	Well Volume (gal) {[d-c] x b}: 1.95
	Ground Condition of Well:		Remarks:

CASING INFO											
Casing I.D. (in) [a]:	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Method (pump, surge, bail)	Water Level (FTOC)	Volume Removed (gal)	Pumping Rate (gpm)	Temp. (C)	pH	Conductivity (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Radiation ( )	Remarks (odor, clarity, etc.)
9/22/16	0930	Bailer	32.00	2	NA	19.80	6.42	3.85	9.21	43	79		
9/22/16	1011	Bailer	33.16	2	NA	21.63	6.87	3.72	8.99	10.3	7		
9/22/16	1050	Bailer	31.71	2	NA	21.32	6.91	3.66	8.84	6.7	3		
			Bailed 3 well volumes										

Development Criteria: **1)** sediment <0.75 mL/L, **2)** turbidity within 10 NTU range for 30 minutes, **3)** +/- 0.5 C, +/- 0.1 pH, +/- 3 % conductivity, +/- 10% DO for 3 consecutive readings, **AND** **4)** remove water added during drilling and construction

MONITORING WELL DEVELOPMENT FORM

LOCATION	Site: 003 (54)	LocID: 127	Date: 9/22/16
	Project Name: Longhorn Army Ammunition Plant	Project #: 60256135	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: U-52 HoriBA	Water Level Indicator Type/ID #: Solinst 101	
	Equipment Group: NA	Equpment Group: NA	
	Development Equipment: Bailer	Equipment Decon.: Liquinox & DI WATER	
WELL INFO	Casing I.D. (in) [a]: 2 11	Unit Casing Volume (gal/lin ft) [b]: 0.16	Initial Depth to Water (ft) [c]: 16.44
	Total Well Depth (ft) [d]: 28.21	Water Column Thickness (ft) [d-c]: 11.77	Well Volume (gal) {[d-c] x b}: 1.88
	Ground Condition of Well:	Remarks:	

CASING INFO											
Casing I.D. (in) [a]:	1.5	**2.0**	2.2	3.0	**4.0**	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.09	**0.16**	0.20	0.37	**0.65**	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Method (pump, surge, bail)	Water Level (FTOC)	Volume Removed (gal)	Pumping Rate (gpm)	Temp. (C)	pH	Conductivity (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Radiation ( )	Remarks (odor, clarity, etc.)
9/22/16	1245	Bail	20.00	2	NA	24.46	7.22	1.32	8.98	503	-60		
9/22/16	1305	Bail	22.21	2	NA	23.79	7.10	1.40	8.81	59.0	-70		
9/22/16	1325	Bail	23.17	2	NA	23.66	7.00	1.43	8.77	17.7	-76		

Bailed 3 well volumes

Development Criteria: **1)** sediment <0.75 mL/L, **2)** turbidity within 10 NTU range for 30 minutes, **3)** +/- 0.5 C, +/- 0.1 pH, +/- 3 % conductivity, +/- 10% DO for 3 consecutive readings, **AND** **4)** remove water added during drilling and construction

Appendix B: LHAAP-003-R Quality Control Summary Report – September 2016

QUALITY CONTROL SUMMARY REPORT
LHAAP-003-R (GROUND SIGNAL TEST AREA)
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers

Prepared By:

AECOM Technical Services

December 2016

Table of Contents

1 INTRODUCTION ***1***
1.1 Intended Use of Data **1**
1.2 Preservation and Holding Times **1**
1.3 Calibrations **1**
1.3.1 Continuing Calibration Verifications (CCV) **1**
1.3.2 Blanks **1**
1.3.3 Surrogates **2**
1.3.4 Laboratory Control Sample (LCS) **2**
1.3.5 Matrix Spike/ Matrix Spike Duplicate (MS/MSD) **2**
1.3.6 Field Duplicate Precision **2**
2 DATA USABILITY SUMMARY ***2***

List of Tables

Table 1: Completeness by Method
Table 2: Field Sample Identification and Laboratory Identification

1 INTRODUCTION

AECOM reviewed one data package from Microbac Laboratory Services, Marietta, OH. Groundwater samples were collected on September 28 and 29, 2016 at Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas. Data were reviewed for conformance to the requirements of the following guidance documents: Automated Data Review by Laboratory Data Consultants (ADR.net), United States Environmental Protection Agency (EPA) Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, (EPA, July 2002), and EPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review, (EPA, June 2001).

1.1 Intended Use of Data

The purpose of the groundwater sampling and analysis is to determine the presence or absence of perchlorate at concentrations above the Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (PCL). Analyses requested included:

- SW6850 – Perchlorates by LC/MS/MS

Table 2 lists the sample identifications and their associated laboratory identifications.

1.2 Preservation and Holding Times

Sample identification data were evaluated for agreement with the chain-of-custody (COC). All samples were received in appropriate containers, within the proper temperature range, in good condition, and with the required signatures.

1.3 Calibrations

Initial calibration criteria modification includes RSD< or = to 30%, two compounds allowed up to 40%. If the continuing calibration verification (CCV) compound exceeds 30% drift, the compound is checked in the LCS, if both are outside recovery limits, the compound is rejected, R. If only the CCV exceeds recovery criteria and is less than ± 40% drift, then the compound is qualified J or UJ.

1.3.1 Continuing Calibration Verifications (CCV)

All CCVs were within control limits.

1.3.2 Blanks

Where contamination by a target analyte of one of the various blanks was found, if the sample result for an associated sample was non-detect or less than 5X (10X for common laboratory contaminants) the analyte concentration in the blank, the corresponding sample result for the analyte was qualified B. Where the sample result for the affected analyte was greater than 5X the amount in the blank, no qualifier was applied.

No blank contamination was found.

1.3.3 Surrogates

All surrogates were within control limits.

1.3.4 Laboratory Control Sample (LCS)

All LCS were within control limits.

1.3.5 Matrix Spike/ Matrix Spike Duplicate (MS/MSD)

The MS/MSD was within control limits.

1.3.6 Field Duplicate Precision

The field duplicate was within control limits.

2 DATA USABILITY SUMMARY

The data are usable for the intended purposes of the project. The data quality objectives have been met for the project.

Table 1: Completeness by Method

Method	Total Analytes	No. of Rejected Results	% Completeness
SW6850	6	0	100

Table 2: Field Sample Identification and Laboratory Identification

Client Sample ID	Lab Sample ID	Collected	SW6850
18WW16-092916	L16091386-01	09/29/2016	X
128-092916	L16091386-02	09/29/2016	X
128FD-092916	L16091386-03	09/29/2016	X
127-092916	L16091386-04	09/29/2016	X
127MS-092916	L16091386-05	09/29/2016	X
127MSD-092916	L16091386-06	09/29/2016	X

Appendix C: LHAAP-003-R Analytical Reports – September 2016

Microbac

Laboratory Report Number: L16091386

Kayla Teague
AECOM Technical Services, Inc.
1950 N Stemmons FWY
Dallas, TX 75207

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Adriane Steed – Client Services Specialist
(740) 373-4071
Adriane.Steed@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on October 13 2016

Leslie Bucina – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16091386
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00114100	I	2.0		J4616883291	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16091386
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18WW16-092916	L16091386-01	09/29/2016 07:40	09/30/2016 10:06
128-092916	L16091386-02	09/29/2016 08:35	09/30/2016 10:06
128FD-092916	L16091386-03	09/29/2016 08:35	09/30/2016 10:06
127-092916	L16091386-04	09/29/2016 09:50	09/30/2016 10:06
127MS-092916	L16091386-05	09/29/2016 09:50	09/30/2016 10:06
127MSD-092916	L16091386-06	09/29/2016 09:50	09/30/2016 10:06

Microbac REPORT L16091386
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 13
2.0 Full Sample Data Package 20
2.1 General Chromatography Data 21
2.1.1 6850 LC/MS Data 22
2.1.1.1 Summary Data 23
2.1.1.2 QC Summary Data 30
2.1.1.3 Sample Data 84
2.1.1.4 Standards Data 97
2.1.1.5 Raw QC Data 140
3.0 Attachments 145

1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16091386
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG586928	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-10-13 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-10-13 12:38:19

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16091386
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG586928	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-10-13 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16091386
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG586928	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-10-13 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16091386
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG586928	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-10-13 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16091386
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG586928	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-10-13 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16091386
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG586928	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-10-13 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

1.2 Certificate of Analysis

Microbac

Lab Report #: L16091386
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L16091386-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW16-092916	**Prep Method:**	6850	**Prep Date:**	10/10/2016 14:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG586928	**Analyst:**	JWR	**Run Date:**	10/10/2016 17:00
Collect Date:	09/29/2016 07:40	**Dilution:**	2	**File ID:**	1LM.LM37307
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5.32		0.800	0.400	0.200

Certificate of Analysis

Sample #:	L16091386-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	128-092916	**Prep Method:**	6850	**Prep Date:**	10/10/2016 14:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG586928	**Analyst:**	JWR	**Run Date:**	10/10/2016 17:19
Collect Date:	09/29/2016 08:35	**Dilution:**	1	**File ID:**	1LM.LM37308
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16091386
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L16091386-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	128FD-092916	**Prep Method:**	6850	**Prep Date:**	10/10/2016 14:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG586928	**Analyst:**	JWR	**Run Date:**	10/10/2016 17:38
Collect Date:	09/29/2016 08:35	**Dilution:**	1	**File ID:**	1LM.LM37309
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16091386
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L16091386-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	127-092916	**Prep Method:**	6850	**Prep Date:**	10/10/2016 14:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG586928	**Analyst:**	JWR	**Run Date:**	10/10/2016 16:04
Collect Date:	09/29/2016 09:50	**Dilution:**	1	**File ID:**	1LM.LM37304
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16091386
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L16091386-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	127MS-092916	**Prep Method:**	6850	**Prep Date:**	10/10/2016 14:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG586928	**Analyst:**	JWR	**Run Date:**	10/10/2016 16:22
Collect Date:	09/29/2016 09:50	**Dilution:**	1	**File ID:**	1LM.LM37305
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.197	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16091386
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L16091386-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	127MSD-092916	**Prep Method:**	6850	**Prep Date:**	10/10/2016 14:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG586928	**Analyst:**	JWR	**Run Date:**	10/10/2016 16:41
Collect Date:	09/29/2016 09:50	**Dilution:**	1	**File ID:**	1LM.LM37306
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.189	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16091386
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

2.0 Full Sample Data Package

2.1 General Chromatography Data

2.1.1 6850 LC/MS Data

2.1.1.1 Summary Data

Microbac

Lab Report #: L16091386
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L16091386-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW16-092916	**Prep Method:**	6850	**Prep Date:**	10/10/2016 14:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG586928	**Analyst:**	JWR	**Run Date:**	10/10/2016 17:00
Collect Date:	09/29/2016 07:40	**Dilution:**	2	**File ID:**	1LM.LM37307
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5.32		0.800	0.400	0.200

Certificate of Analysis

Sample #:	L16091386-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	128-092916	**Prep Method:**	6850	**Prep Date:**	10/10/2016 14:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG586928	**Analyst:**	JWR	**Run Date:**	10/10/2016 17:19
Collect Date:	09/29/2016 08:35	**Dilution:**	1	**File ID:**	1LM.LM37308
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16091386
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L16091386-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	128FD-092916	**Prep Method:**	6850	**Prep Date:**	10/10/2016 14:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG586928	**Analyst:**	JWR	**Run Date:**	10/10/2016 17:38
Collect Date:	09/29/2016 08:35	**Dilution:**	1	**File ID:**	1LM.LM37309
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16091386
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L16091386-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	127-092916	**Prep Method:**	6850	**Prep Date:**	10/10/2016 14:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG586928	**Analyst:**	JWR	**Run Date:**	10/10/2016 16:04
Collect Date:	09/29/2016 09:50	**Dilution:**	1	**File ID:**	1LM.LM37304
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16091386
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L16091386-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	127MS-092916	**Prep Method:**	6850	**Prep Date:**	10/10/2016 14:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG586928	**Analyst:**	JWR	**Run Date:**	10/10/2016 16:22
Collect Date:	09/29/2016 09:50	**Dilution:**	1	**File ID:**	1LM.LM37305
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.197	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16091386
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L16091386-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	127MSD-092916	**Prep Method:**	6850	**Prep Date:**	10/10/2016 14:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG586928	**Analyst:**	JWR	**Run Date:**	10/10/2016 16:41
Collect Date:	09/29/2016 09:50	**Dilution:**	1	**File ID:**	1LM.LM37306
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.189	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16091386
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

2.1.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1331 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG586928-01 MCT	9,350.	
-02 Blank	0.41	
-03 LCS	0.50	
L16091386-01	6,450	
-02	4,630	
-03	4,690	
-04 RS	1,331	
-05 MS	1,361	
-06 MSD	1,356	
L16091387-01 RS	5,360	
-02 MS	5,430	
-03 MSD	5,430	
-04	4,320	
-05	8,470	
-06	8,580	
-07	8,570	
-08	8,760	
-09	9,170	
JWR ~~L1609~~ L16100095-01	2,990	
-02	2,910	

Analyst: John Richards

Date/Time: 10/11/16 / 12:50

DCN#121445

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 101016_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 160109254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG586928 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD78249 LCS STD: STD78251 MS/MSD STD: STD78251

Comments: Sample L16091386-01 was analyzed at a 2x dilution only due to its pre-run screen result for perchlorate.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM37298	WG586942-01 CCB	1	1		10/10/16 14:10
2	1LM.LM37299	WG586942-02 CCV (1.0ug/L)	1	1	STD78249	10/10/16 14:29
3	1LM.LM37300	WG586928-10 MRL (0.2ug/L)	1	1	STD78249	10/10/16 14:48
4	1LM.LM37301	WG586928-01 MCT (0.2ug/L)	1	1	STD78251	10/10/16 15:07
5	1LM.LM37302	WG586928-02 BLANK	1	1		10/10/16 15:26
6	1LM.LM37303	WG586928-03 LCS (0.2ug/L)	1	1	STD78251	10/10/16 15:45
7	1LM.LM37304	L16091386-04 RS	1	1		10/10/16 16:04
8	1LM.LM37305	L16091386-05 MS	1	1	STD78251	10/10/16 16:22
9	1LM.LM37306	L16091386-06 MSD	1	1	STD78251	10/10/16 16:41
10	1LM.LM37307	L16091386-01 (2x)	1	2		10/10/16 17:00
11	1LM.LM37308	L16091386-02	1	1		10/10/16 17:19
12	1LM.LM37309	L16091386-03	1	1		10/10/16 17:38
13	1LM.LM37310	L16100095-01	1	1		10/10/16 17:57
14	1LM.LM37311	WG586942-03 CCV (1.0ug/L)	1	1	STD78249	10/10/16 18:16
15	1LM.LM37312	WG586928-11 MRL (0.2ug/L)	1	1	STD78249	10/10/16 18:35
16	1LM.LM37313	WG586942-04 CCB	1	1		10/10/16 18:54
17	1LM.LM37314	L16091387-01 RS	1	1		10/10/16 19:13
18	1LM.LM37315	L16091387-02 MS	1	1	STD78251	10/10/16 19:32
19	1LM.LM37316	L16091387-03 MSD	1	1	STD78251	10/10/16 19:51
20	1LM.LM37317	L16091387-04	1	1		10/10/16 20:10
21	1LM.LM37318	L16091387-05	1	1		10/10/16 20:29
22	1LM.LM37319	L16091387-06	1	1		10/10/16 20:48
23	1LM.LM37320	L16091387-07	1	1		10/10/16 21:07
24	1LM.LM37321	L16091387-08	1	1		10/10/16 21:26
25	1LM.LM37322	L16091387-09	1	1		10/10/16 21:44
26	1LM.LM37323	L16100095-02	1	1		10/10/16 22:03
27	1LM.LM37324	WG586942-05 CCV (1.0ug/L)	1	1	STD78249	10/10/16 22:22
28	1LM.LM37325	WG586928-12 MRL (0.2ug/L)	1	1	STD78249	10/10/16 22:41
29	1LM.LM37326	WG586942-06 CCB	1	1		10/10/16 23:00

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 11-OCT-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 10-OCT-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 77980
Analytical Workgroups: L16091386, 1387 L16100095

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 11-OCT-2016 John Richards

Secondary Reviewer: 11-OCT-2016 Mary Schilling

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-11-2016 15:28:37

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG586928

Login Number: L16091386

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW16-092916	01	09/29/16					10/10/2016	11.3	28		10/10/16	.1	28	
128-092916	02	09/29/16					10/10/2016	11.2	28		10/10/16	.1	28	
128FD-092916	03	09/29/16					10/10/2016	11.2	28		10/10/16	.2	28	
127-092916	04	09/29/16					10/10/2016	11.2	28		10/10/16	.1	28	
127MS-092916	05	09/29/16					10/10/2016	11.2	28		10/10/16	.1	28	
127MSD-092916	06	09/29/16					10/10/2016	11.2	28		10/10/16	.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4970226
Report generated 10/11/2016 16:12

METHOD BLANK SUMMARY

Login Number: L16091386
Blank File ID: 1LM.LM37302
Prep Date: 10/10/16 14:00
Analyzed Date: 10/10/16 15:26
Analyst: JWR

Work Group: WG586928
Blank Sample ID: WG586928-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG586928-10	1LM.LM37300	10/10/16 14:48	01
MCT	WG586928-01	1LM.LM37301	10/10/16 15:07	01
LCS	WG586928-03	1LM.LM37303	10/10/16 15:45	01
127-092916	L16091386-04	1LM.LM37304	10/10/16 16:04	01
127MS-092916	L16091386-05	1LM.LM37305	10/10/16 16:22	01
127MSD-092916	L16091386-06	1LM.LM37306	10/10/16 16:41	01
18WW16-092916	L16091386-01	1LM.LM37307	10/10/16 17:00	DL01
128-092916	L16091386-02	1LM.LM37308	10/10/16 17:19	01
128FD-092916	L16091386-03	1LM.LM37309	10/10/16 17:38	01
QCMRL	WG586928-11	1LM.LM37312	10/10/16 18:35	01
QCMRL	WG586928-12	1LM.LM37325	10/10/16 22:41	01

Report Name: BLANK_SUMMARY
PDF File ID: 4970227
Report generated 10/11/2016 16:12

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16091386 Prep Date: 10/10/16 14:00 Sample ID: WG586928-02
Instrument ID: LCMS1 Run Date: 10/10/16 15:26 Prep Method: 6850
File ID: 1LM.LM37302 Analyst: JWR Method: 6850
Workgroup (AAB#): WG586928 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4970228
11-OCT-2016 16:12

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16091386 Run Date: 10/10/2016 Sample ID: WG586928-03
Instrument ID: LCMS1 Run Time: 15:45 Prep Method: 6850
File ID: 1LM.LM37303 Analyst: JWR Method: 6850
Workgroup (AAB#): WG586928 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD78251 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.183	91.5	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4970229
Report generated: 10/11/2016 16:12

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16091386 Cal ID: LCMS1- 03-MAY-16 Worknum: WG586928
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16091386-04 File ID: 1LM.LM37304 Dil: 1 Method: 6850
Sample ID: L16091386-05 MS File ID: 1LM.LM37305 Dil: 1 Matrix: Water
Sample ID: L16091386-06 MSD File ID: 1LM.LM37306 Dil: 1 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	U	0.200	0.197	98.5	0.200	0.189	94.5	4.15	80 - 120	15	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4970230
Report generated 10/11/2016 16:12

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16091386
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4970689
Report generated 10/11/2016 16:12

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16091386
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4970689
Report generated 10/11/2016 16:12

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16091386

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4970689
Report generated 10/11/2016 16:12

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16091386

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4970689
Report generated 10/11/2016 16:12

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16091386 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4970690
Report generated 10/11/2016 16:12

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16091386
Run Date: 10/10/2016
Sample ID: WG586942-01
Instrument ID: LCMS1
Run Time: 14:10
Method: 6850
File ID: 1LM.LM37298
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG586928
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4970233
Report generated 10/11/2016 16:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16091386
Run Date: 10/10/2016
Sample ID: WG586942-04
Instrument ID: LCMS1
Run Time: 18:54
Method: 6850
File ID: 1LM.LM37313
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG586928
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4970233
Report generated 10/11/2016 16:12

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16091386
Run Date: 10/10/2016
Sample ID: WG586942-06
Instrument ID: LCMS1
Run Time: 23:00
Method: 6850
File ID: 1LM.LM37326
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG586928
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4970233
Report generated 10/11/2016 16:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16091386 Run Date: 10/10/2016 Sample ID: WG586942-02
Instrument ID: LCMS1 Run Time: 14:29 Method: 6850
File ID: 1LM.LM37299 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG586928 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.972	ug/L	1.64	2.80	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4970232
Report generated 10/11/2016 16:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16091386 Run Date: 10/10/2016 Sample ID: WG586942-03
Instrument ID: LCMS1 Run Time: 18:16 Method: 6850
File ID: 1LM.LM37311 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG586928 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.970	ug/L	1.64	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4970232
Report generated 10/11/2016 16:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16091386
Run Date: 10/10/2016
Sample ID: WG586942-05
Instrument ID: LCMS1
Run Time: 22:22
Method: 6850
File ID: 1LM.LM37324
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG586928
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.969	ug/L	1.64	3.10	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4970232
Report generated 10/11/2016 16:12

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16091386 Run Date: 10/10/2016 Sample ID: WG586928-10

Instrument ID: LCMS1 Run Time: 14:48 Prep Method: 6850

File ID: 1LM.LM37300 Analyst: JWR Method: 6850

Workgroup (AAB#): WG586928 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.205	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4970231
Report generated 10/11/2016 16:12

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16091386 Run Date: 10/10/2016 Sample ID: WG586928-11

Instrument ID: LCMS1 Run Time: 18:35 Prep Method: 6850

File ID: 1LM.LM37312 Analyst: JWR Method: 6850

Workgroup (AAB#): WG586928 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4970231
Report generated 10/11/2016 16:12

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16091386 Run Date: 10/10/2016 Sample ID: WG586928-12
Instrument ID: LCMS1 Run Time: 22:41 Prep Method: 6850
File ID: 1LM.LM37325 Analyst: JWR Method: 6850
Workgroup (AAB#): WG586928 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4970231
Report generated 10/11/2016 16:12

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16091386
Instrument ID: LCMS1
Workgroup (AAB#): WG586928

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16091386-01	2.00	DL01	369000
L16091386-02	1.00	01	363000
L16091386-03	1.00	01	361000
L16091386-04	1.00	01	370000
L16091386-05	1.00	01	372000
L16091386-06	1.00	01	376000
WG586928-02	1.00	01	442000
WG586928-03	1.00	01	443000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4970234
Report generated 10/11/2016 16:13

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**	6850	**Samplenum:**	L16091386-01
Instrument:	LCMS1	**Prep Date:**	10/10/2016 14:00	**File ID:**	1LM.LM37307
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	10/10/2016 17:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	331000	116000	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**	6850	**Samplenum:**	L16091386-02
Instrument:	LCMS1	**Prep Date:**	10/10/2016 14:00	**File ID:**	1LM.LM37308
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	10/10/2016 17:19	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1300	805	1.61	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**	6850	**Samplenum:**	L16091386-03
Instrument:	LCMS1	**Prep Date:**	10/10/2016 14:00	**File ID:**	1LM.LM37309
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	10/10/2016 17:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1130	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**	6850	**Samplenum:**	L16091386-04
Instrument:	LCMS1	**Prep Date:**	10/10/2016 14:00	**File ID:**	1LM.LM37304
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	10/10/2016 16:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2670	385	6.94	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**	6850	**Samplenum:**	L16091386-05
Instrument:	LCMS1	**Prep Date:**	10/10/2016 14:00	**File ID:**	1LM.LM37305
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	10/10/2016 16:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	25100	9090	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**	6850	**Samplenum:**	L16091386-06
Instrument:	LCMS1	**Prep Date:**	10/10/2016 14:00	**File ID:**	1LM.LM37306
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	10/10/2016 16:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	24300	8630	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**	6850	**Samplenum:**	WG586928-01
Instrument:	LCMS1	**Prep Date:**	10/10/2016 14:00	**File ID:**	1LM.LM37301
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	10/10/2016 15:07	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28200	8880	3.18	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**	6850	**Samplenum:**	WG586928-02
Instrument:	LCMS1	**Prep Date:**	10/10/2016 14:00	**File ID:**	1LM.LM37302
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	10/10/2016 15:26	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**	6850	**Samplenum:**	WG586928-03
Instrument:	LCMS1	**Prep Date:**	10/10/2016 14:00	**File ID:**	1LM.LM37303
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	10/10/2016 15:45	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	27900	10400	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**	6850	**Samplenum:**	WG586928-10
Instrument:	LCMS1	**Prep Date:**	10/10/2016 14:00	**File ID:**	1LM.LM37300
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	10/10/2016 14:48	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30700	11100	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**	6850	**Samplenum:**	WG586928-11
Instrument:	LCMS1	**Prep Date:**	10/10/2016 14:00	**File ID:**	1LM.LM37312
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	10/10/2016 18:35	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36200	12300	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**	6850	**Samplenum:**	WG586928-12
Instrument:	LCMS1	**Prep Date:**	10/10/2016 14:00	**File ID:**	1LM.LM37325
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	10/10/2016 22:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41100	14100	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**		**Samplenum:**	WG586942-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37298
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	10/10/2016 14:10	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**		**Samplenum:**	WG586942-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37299
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	10/10/2016 14:29	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	140000	48700	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**		**Samplenum:**	WG586942-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37311
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	10/10/2016 18:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	156000	54600	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**		**Samplenum:**	WG586942-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37313
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	10/10/2016 18:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**		**Samplenum:**	WG586942-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37324
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	10/10/2016 22:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	177000	60300	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16091386	**Prep Method:**		**Samplenum:**	WG586942-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37326
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG586928	**Analysis Date:**	10/10/2016 23:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.1.1.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:41 AM

Data File	LM37307.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	10/10/2016 5:00:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16091386-01 (2x)	**Injection Vial**	10.00
Data File	LM37307.wiff	**Injection Volume**	10.00
Acquisition Date	10/10/2016 5:00:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	L16091386-01	**Dilution Factor**	1.00
Sample Comment	1,2 (screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.690e+05	9.26	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.310e+05	9.27	N/A	2.66
Perchlorate conf	1.160e+05	9.26	N/A	2.79

O18LP (Internal Standard)

RT (Exp. RT): 9.26(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

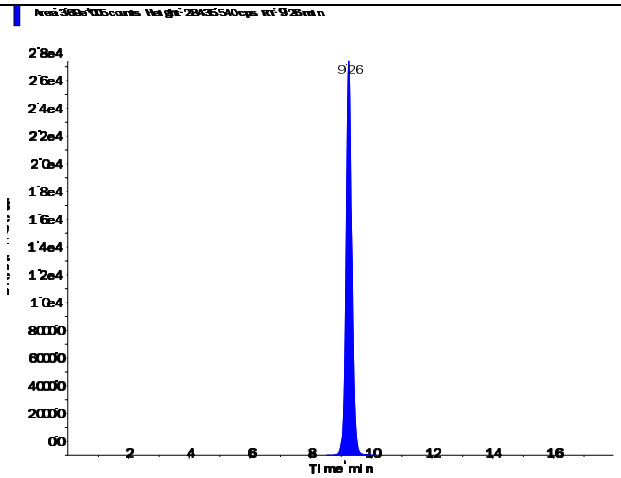

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:41 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	2.66 ng/ml
Area Ratio:	0.897
Sample Type:	(Unknown)

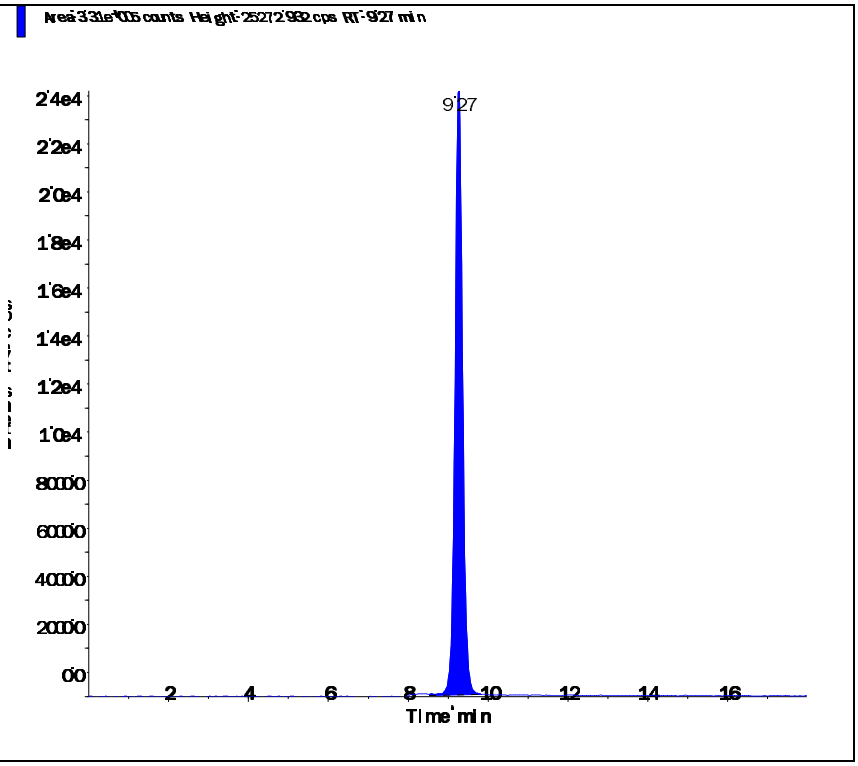

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.26 (9.84) min
Calculated conc:	2.79 ng/ml
Area Ratio:	0.314
Sample Type:	(Unknown)

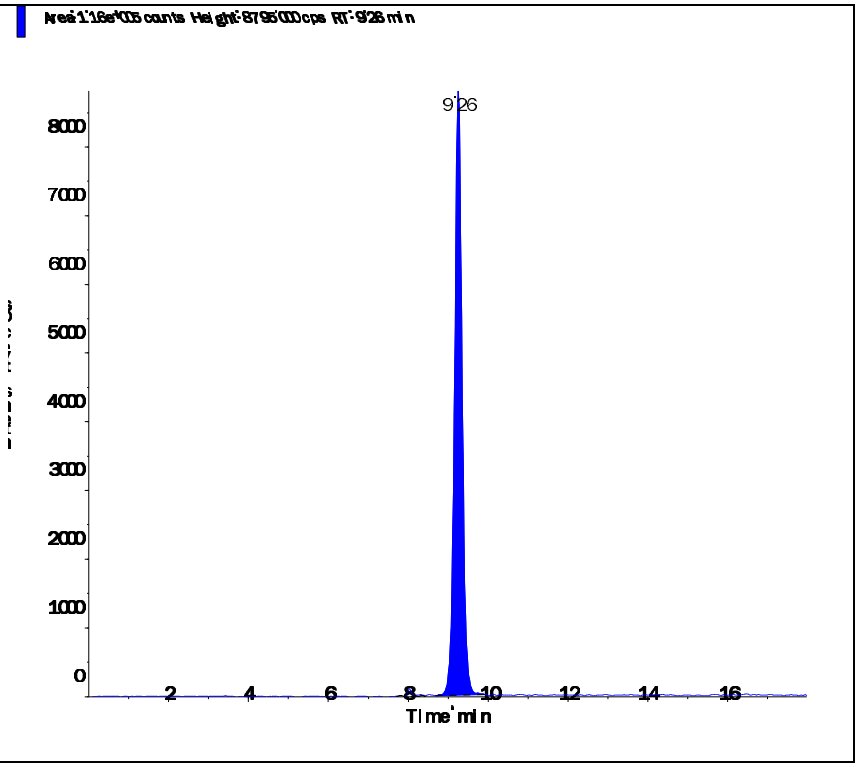

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:41 AM

Data File	LM37308.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	10/10/2016 5:19:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16091386-02	**Injection Vial**	11.00
Data File	LM37308.wiff	**Injection Volume**	10.00
Acquisition Date	10/10/2016 5:19:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	L16091386-02	**Dilution Factor**	1.00
Sample Comment	1,1 (screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.630e+05	9.11	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.300e+03	9.12	N/A	0.0069
Perchlorate conf	8.050e+02	9.13	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.11(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

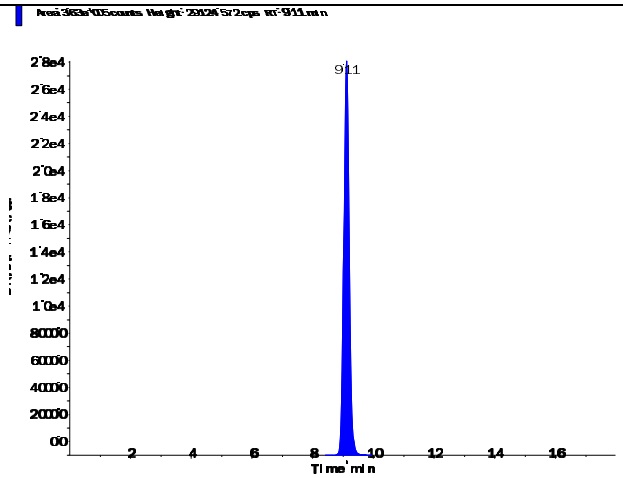

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:41 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.12 (9.84) min
Calculated conc:	0.0069 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

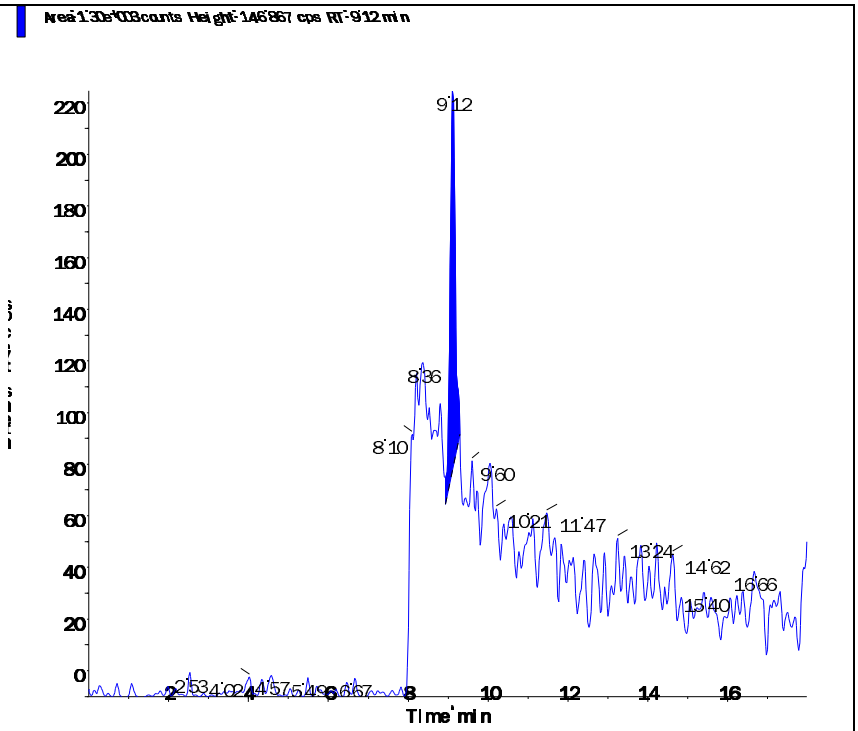

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.13 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

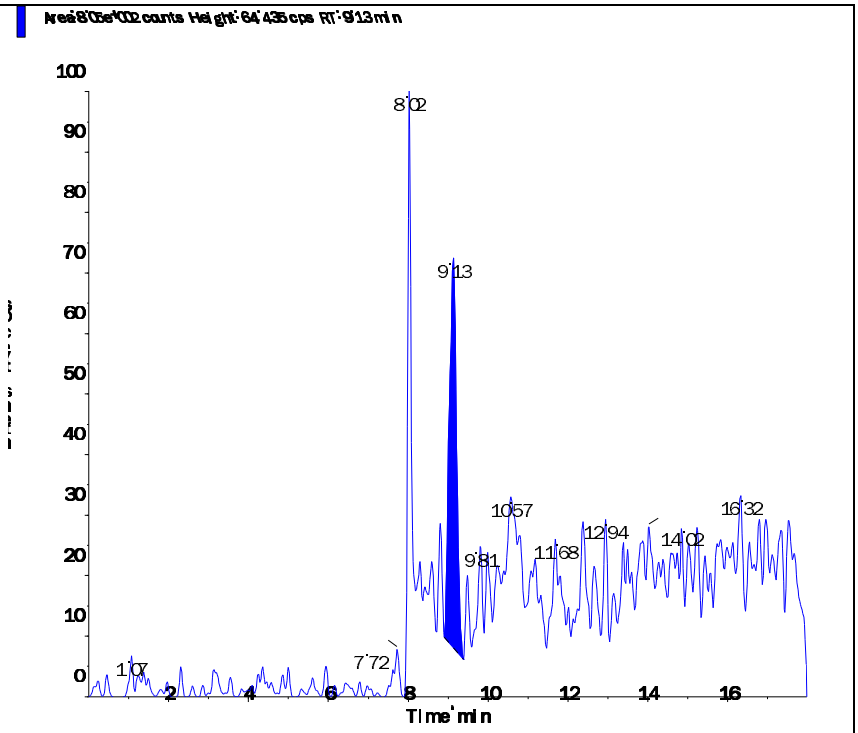

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:42 AM

Data File	LM37309.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	10/10/2016 5:38:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16091386-03	**Injection Vial**	12.00
Data File	LM37309.wiff	**Injection Volume**	10.00
Acquisition Date	10/10/2016 5:38:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	L16091386-03	**Dilution Factor**	1.00
Sample Comment	1,1 (screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.610e+05	9.11	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.130e+03	9.09	N/A	0.0055
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.11(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

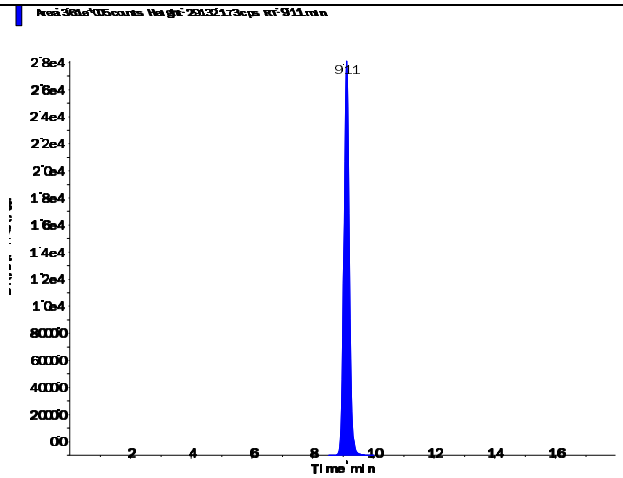

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:42 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.09 (9.84) min
Calculated conc:	0.0055 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

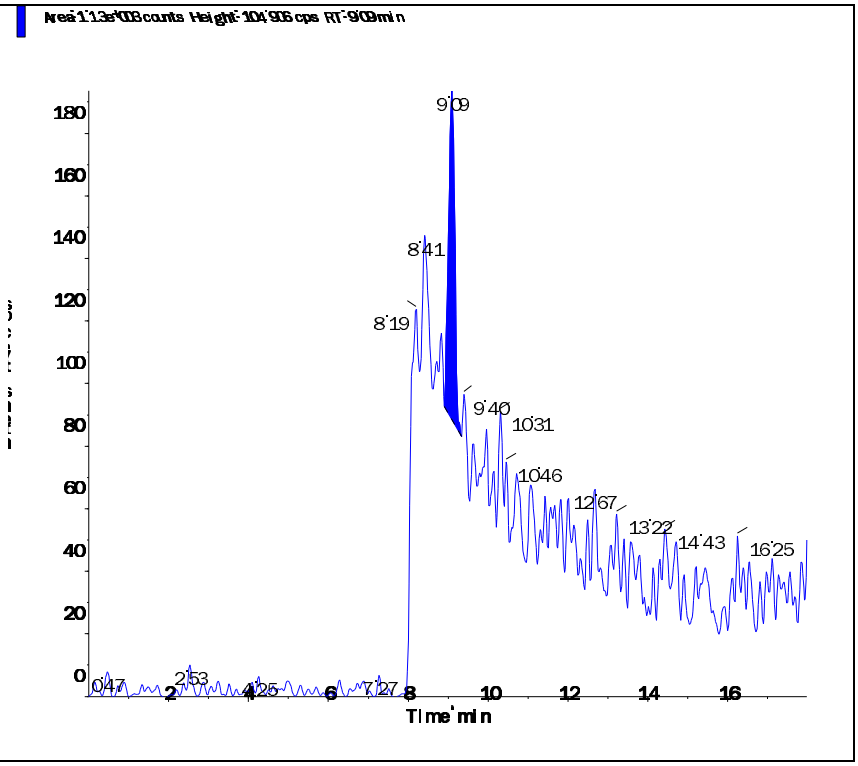

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

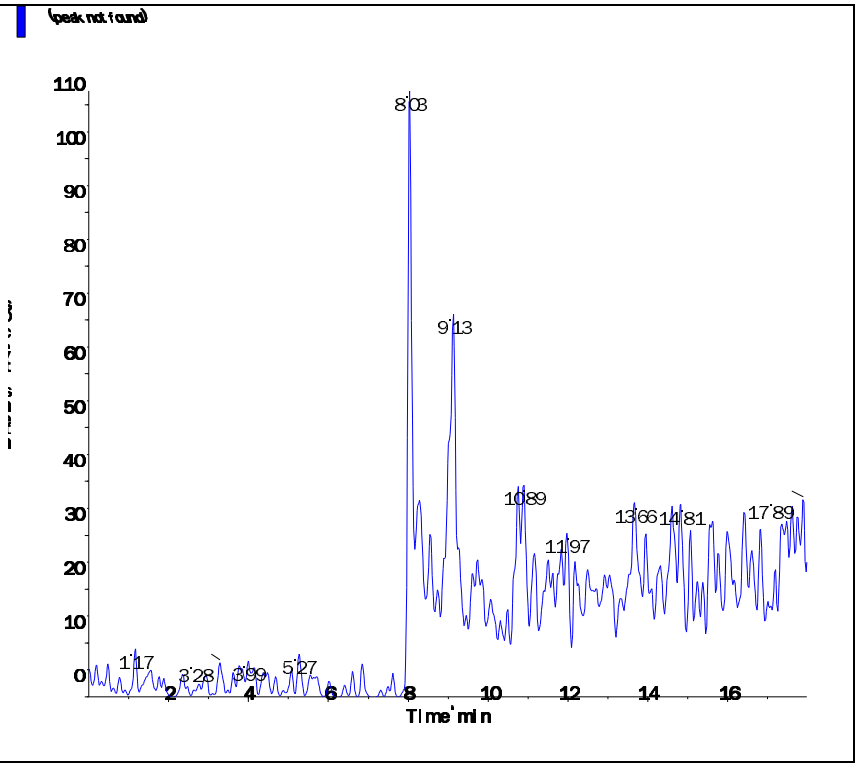

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:40 AM

Data File	LM37304.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	10/10/2016 4:04:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16091386-04 RS	**Injection Vial**	7.00
Data File	LM37304.wiff	**Injection Volume**	10.00
Acquisition Date	10/10/2016 4:04:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG586928-04	**Dilution Factor**	1.00
Sample Comment	1,1 (screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.700e+05	9.22	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.670e+03	9.23	N/A	0.0176
Perchlorate conf	3.850e+02	9.23	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.22(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

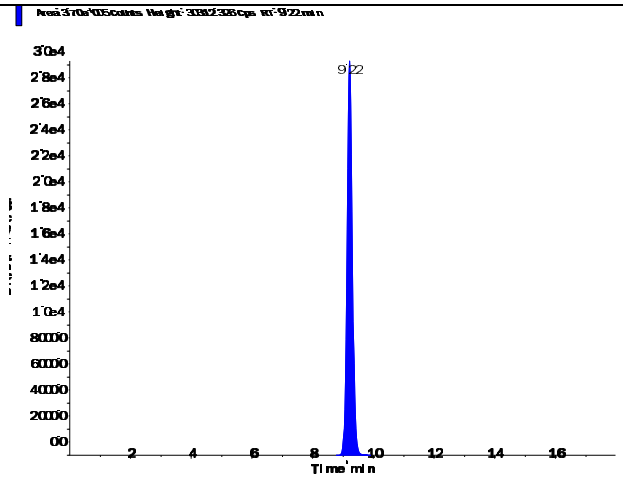

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:40 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.23 (9.84) min
Calculated conc:	0.0176 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)

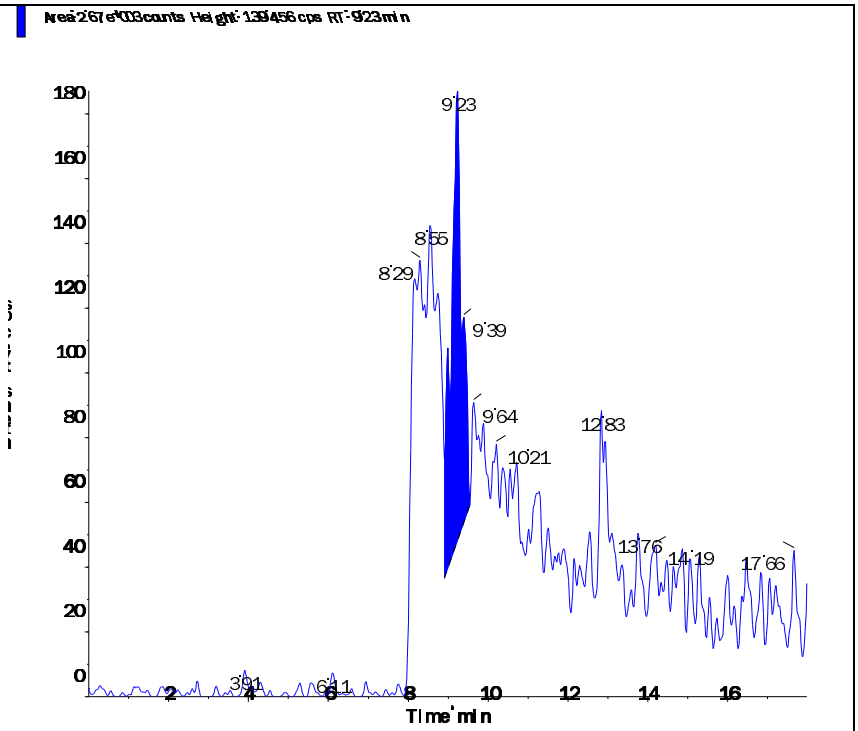

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.23 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

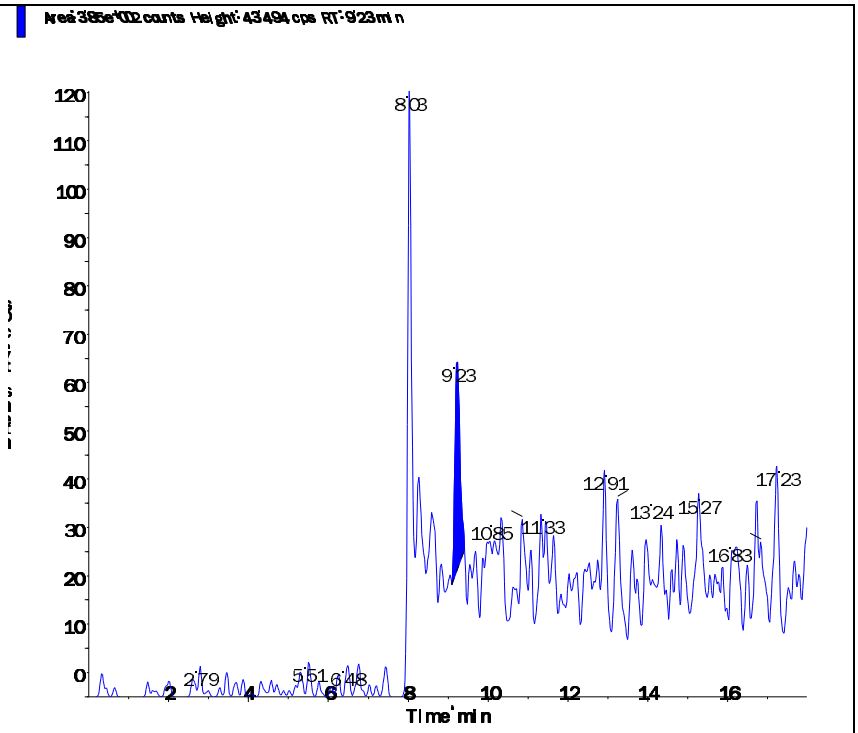

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:40 AM

Data File	LM37305.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	10/10/2016 4:22:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16091386-05 MS	**Injection Vial**	8.00
Data File	LM37305.wiff	**Injection Volume**	10.00
Acquisition Date	10/10/2016 4:22:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG586928-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD78251	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.720e+05	9.23	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.510e+04	9.24	N/A	0.197
Perchlorate conf	9.090e+03	9.22	N/A	0.198

O18LP (Internal Standard)

RT (Exp. RT): 9.23(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

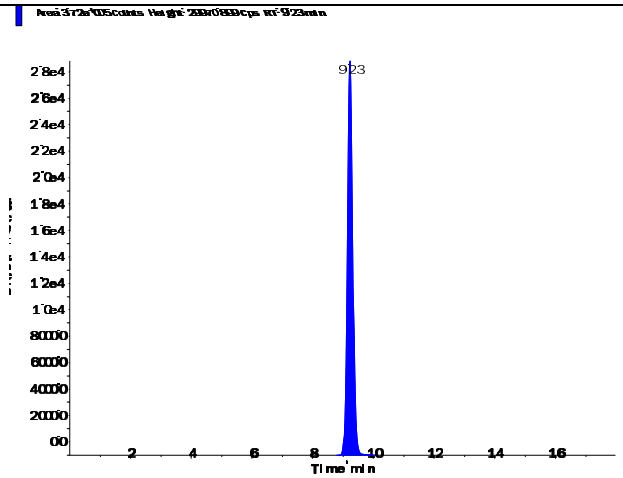

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:40 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.24 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

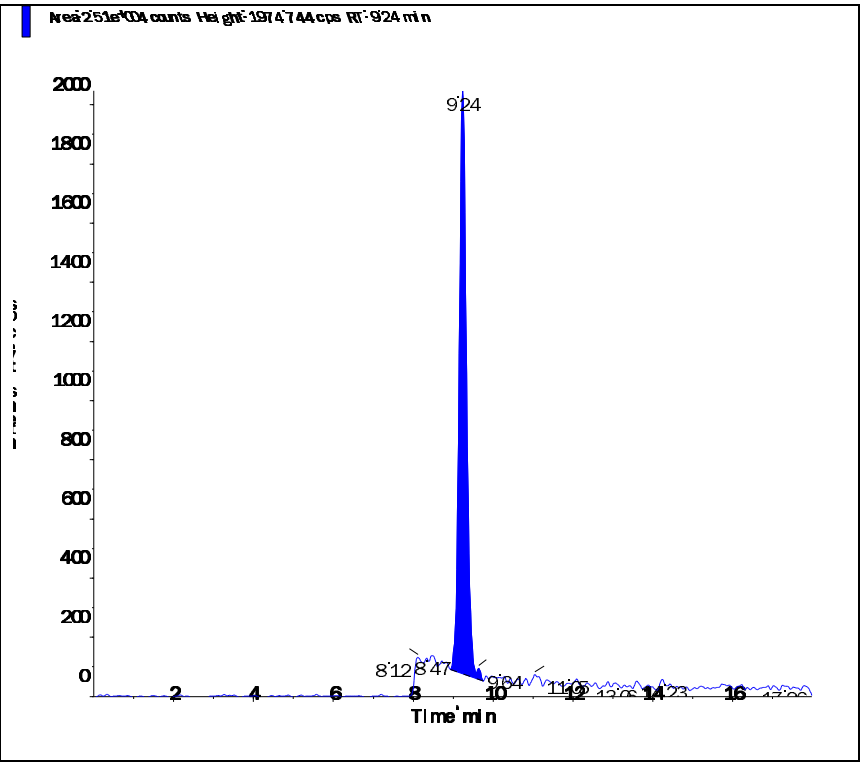

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

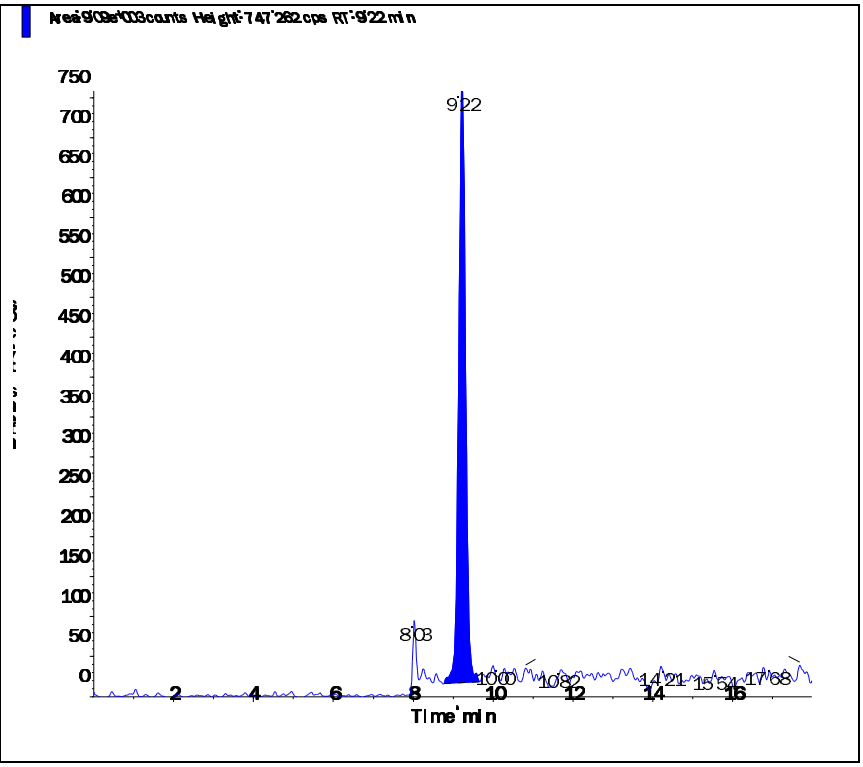

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:41 AM

Data File	LM37306.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	10/10/2016 4:41:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16091386-06 MSD	**Injection Vial**	9.00
Data File	LM37306.wiff	**Injection Volume**	10.00
Acquisition Date	10/10/2016 4:41:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG586928-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD78251	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.760e+05	9.24	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.430e+04	9.26	N/A	0.189
Perchlorate conf	8.630e+03	9.24	N/A	0.185

O18LP (Internal Standard)

RT (Exp. RT): 9.24(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

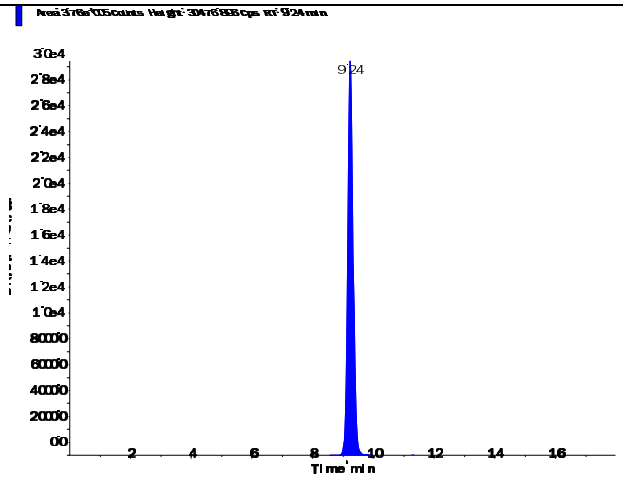

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:41 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.26 (9.84) min
Calculated conc:	0.189 ng/ml
Area Ratio:	0.065
Sample Type:	(Unknown)

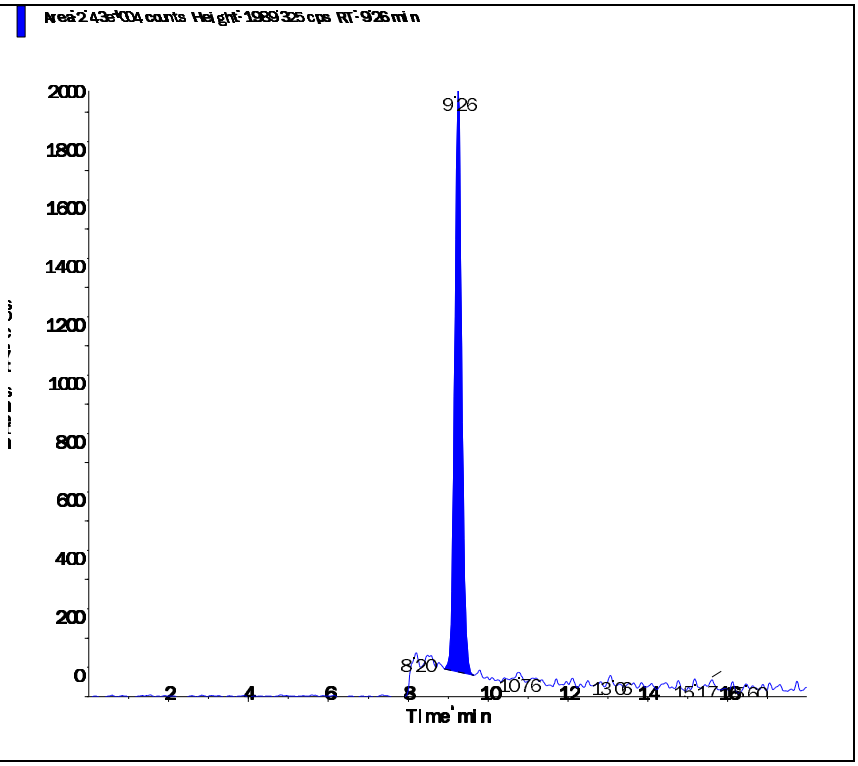

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.24 (9.84) min
Calculated conc:	0.185 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

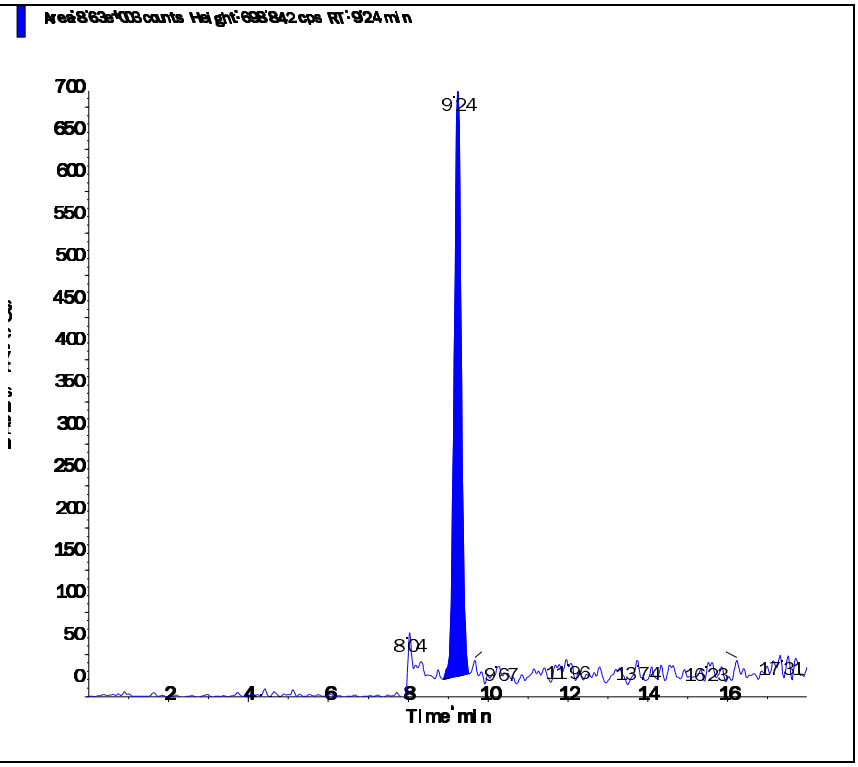

s.dataFile Page 2 of 2

2.1.1.4 Standards Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:36 AM

Data File	LM34686.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

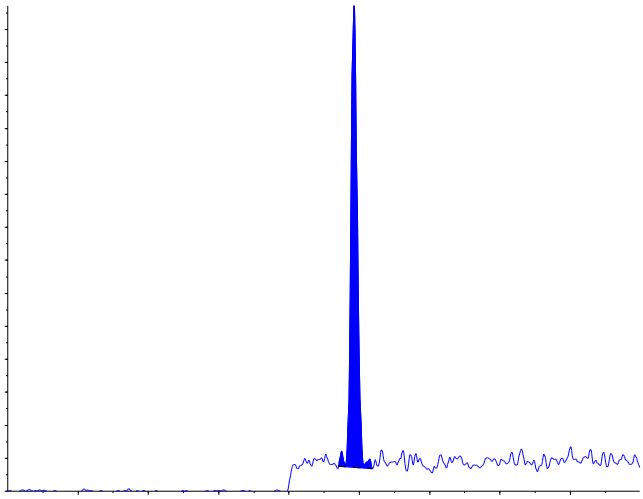

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:36 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	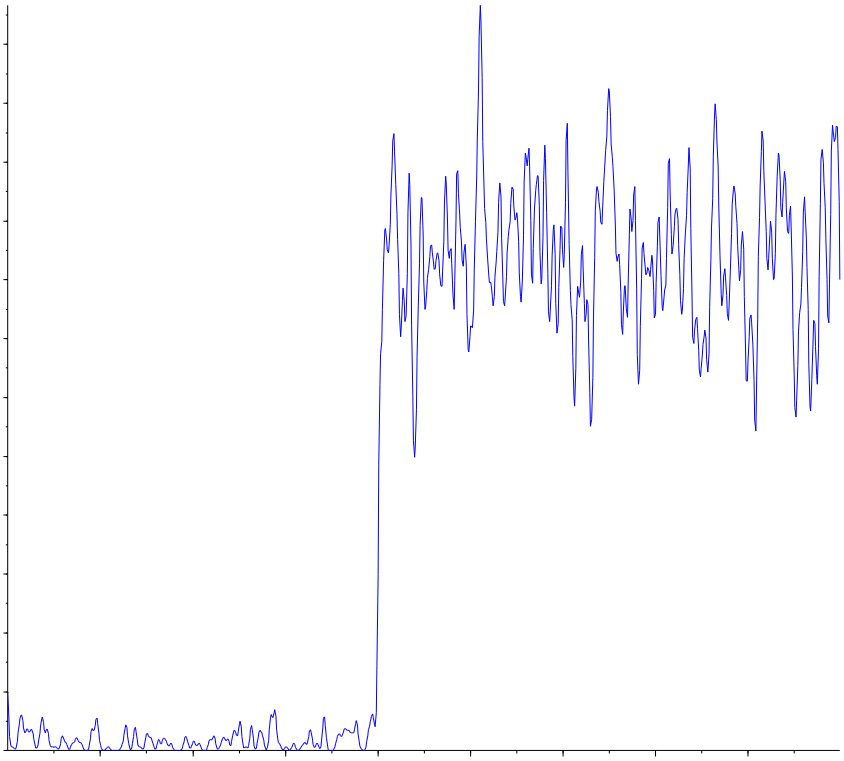
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	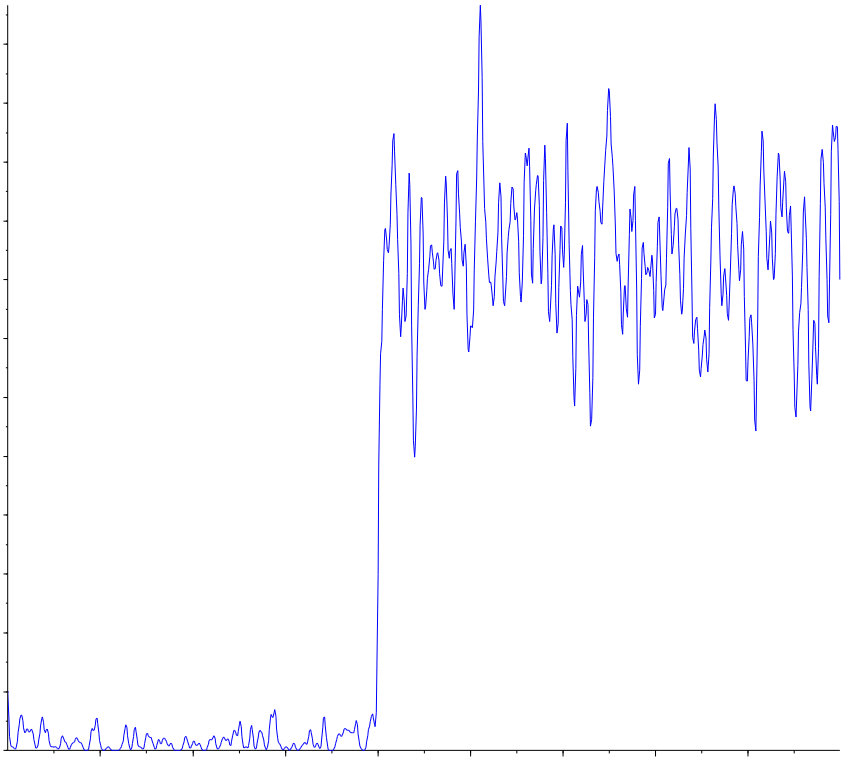

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

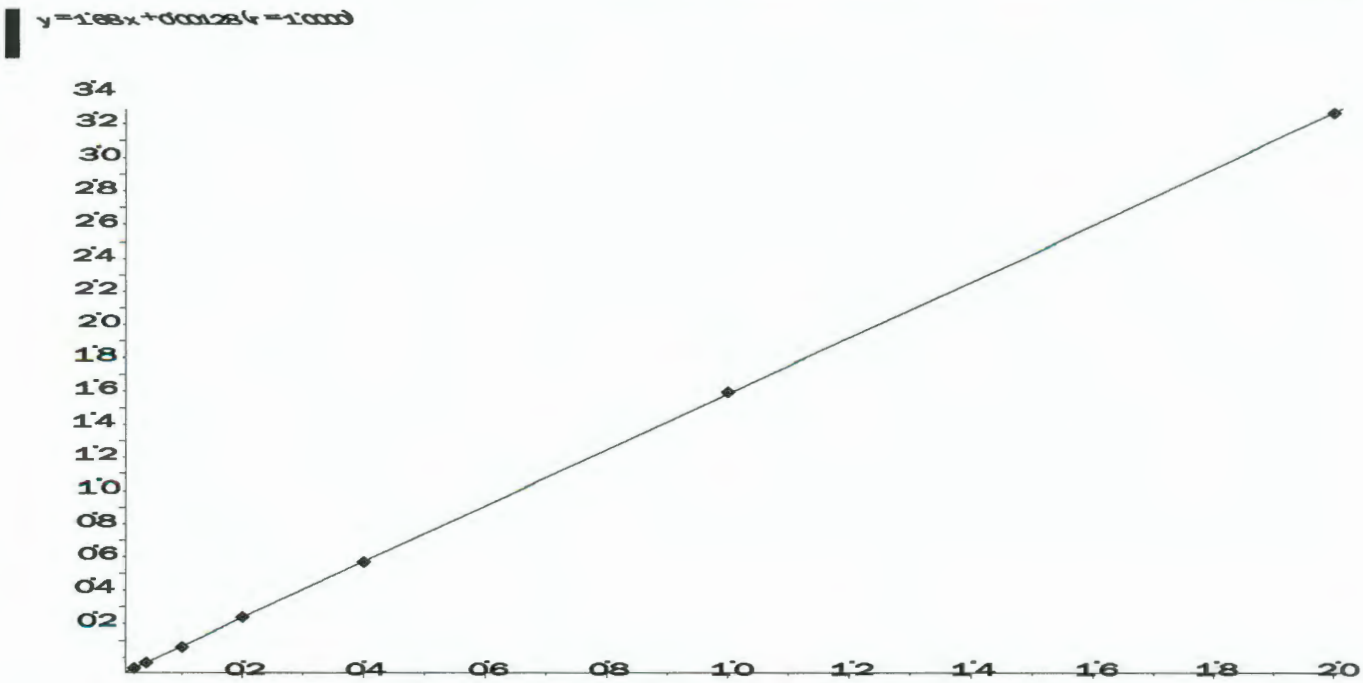

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

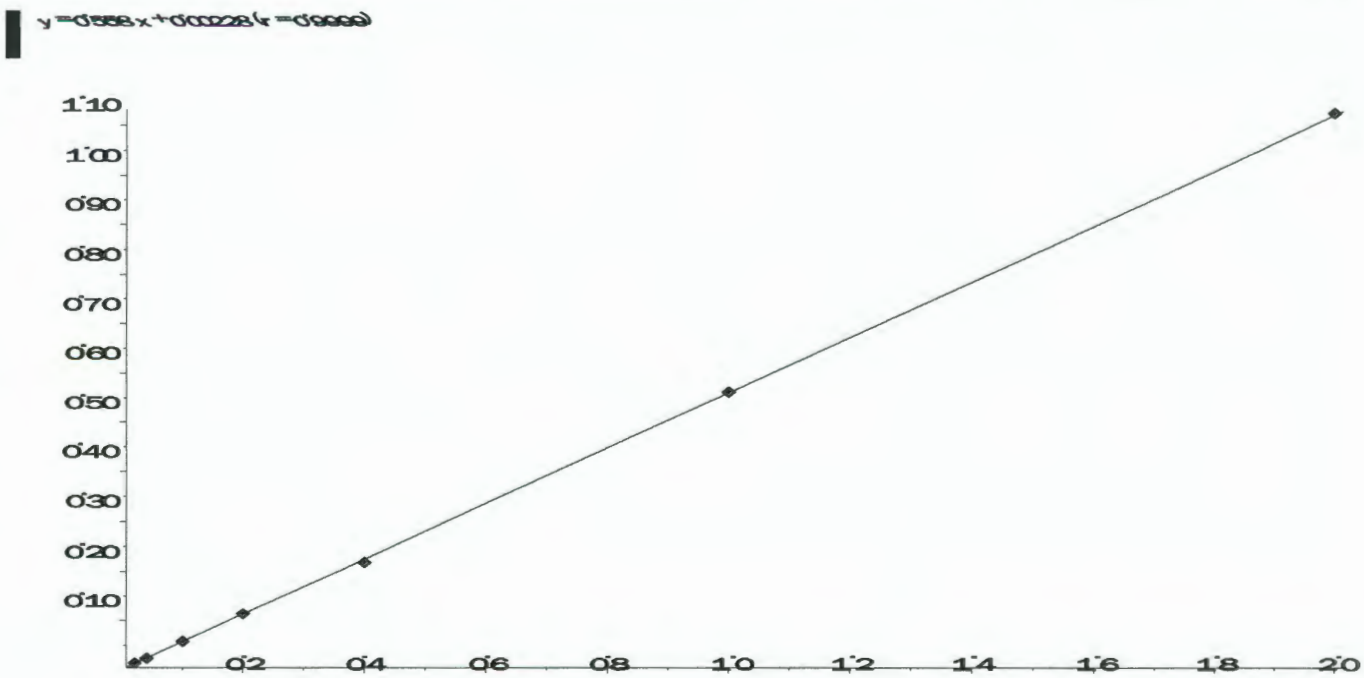

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:36 AM

Data File	LM34687.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

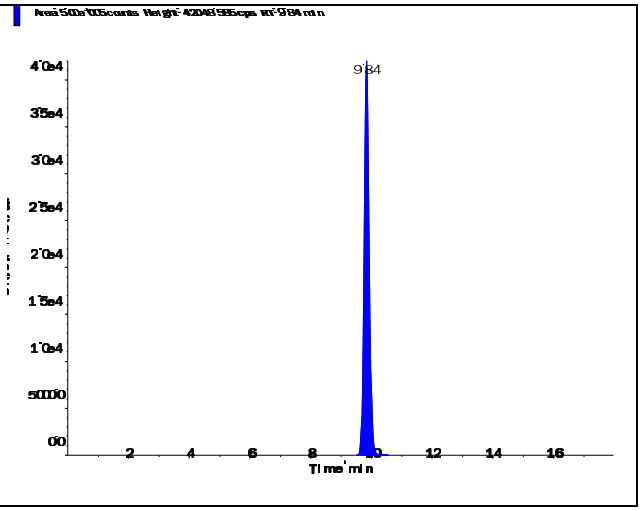

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:36 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

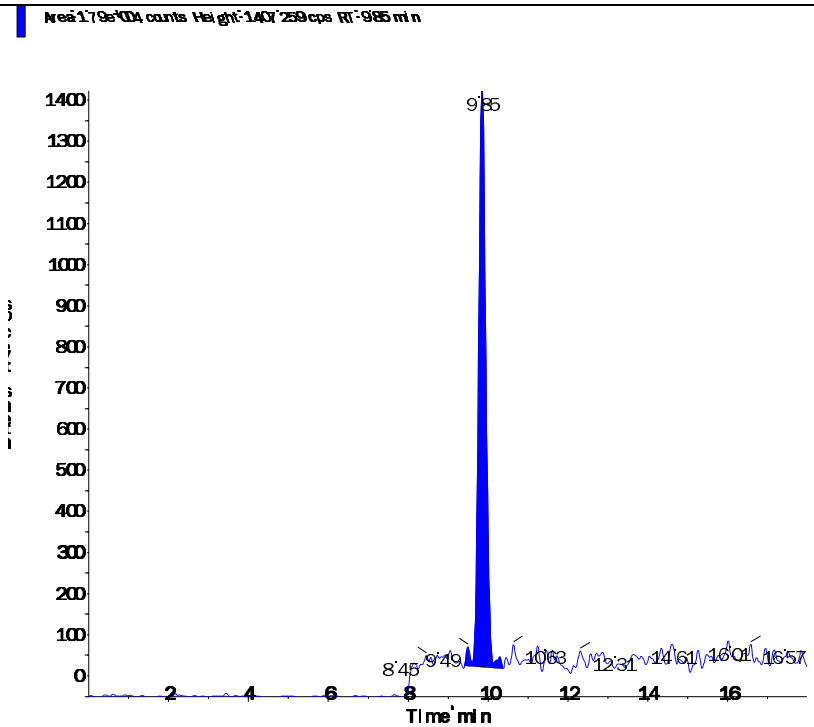

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

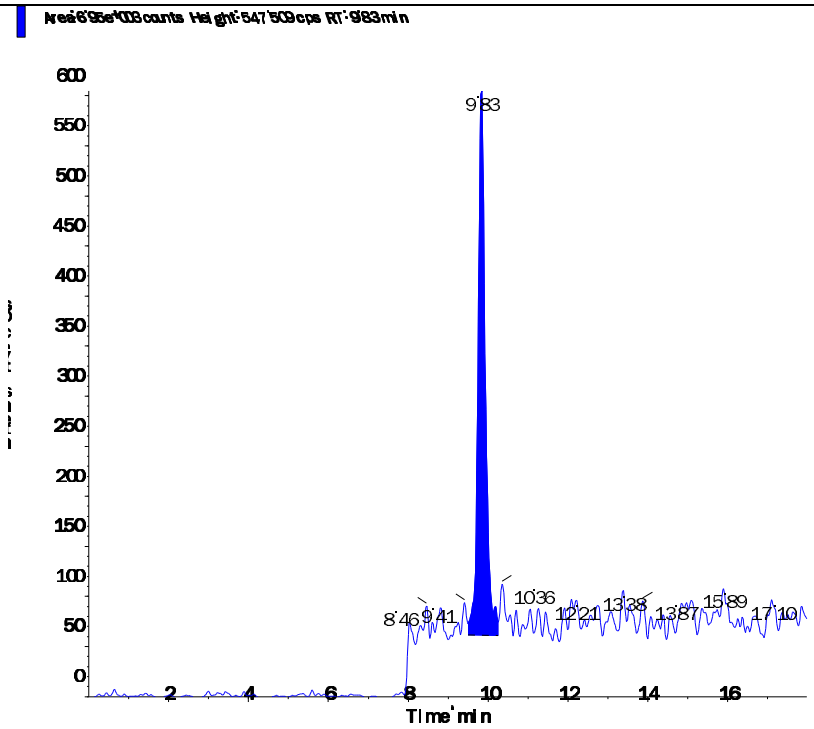

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:36 AM

Data File	LM34688.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

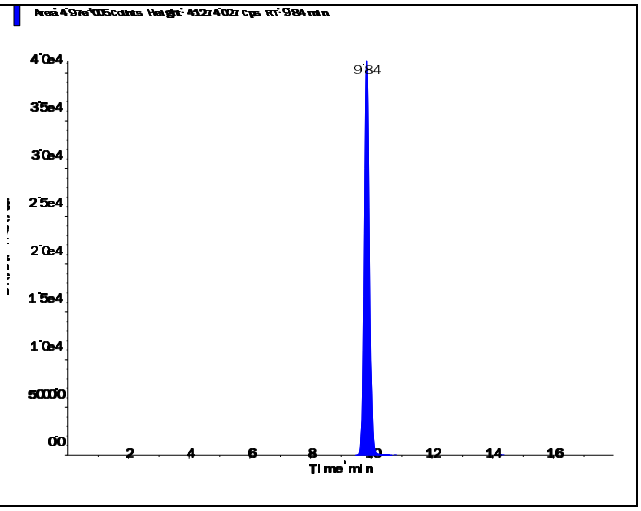

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:36 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

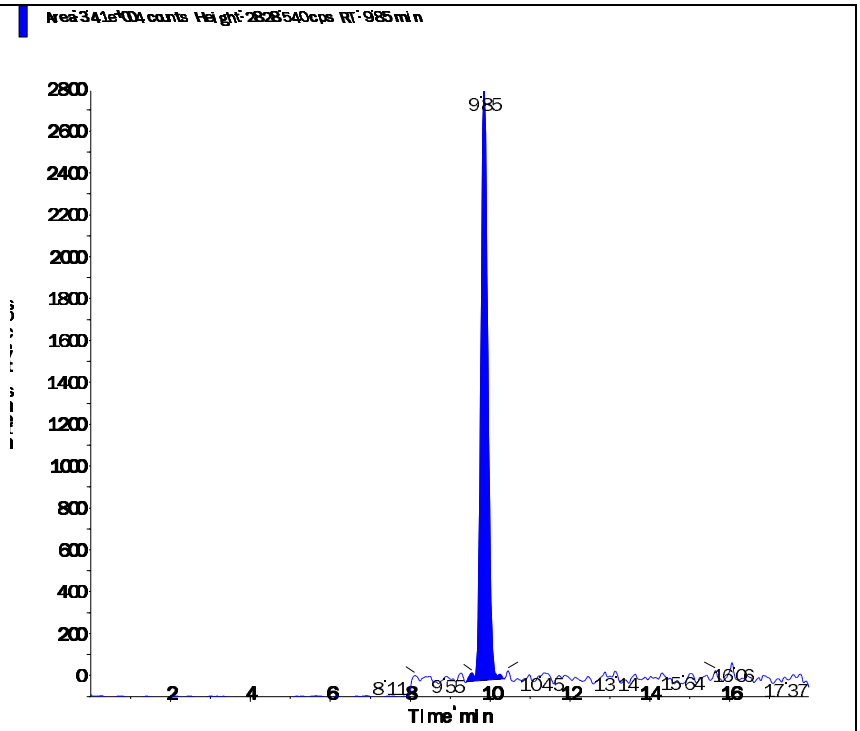

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

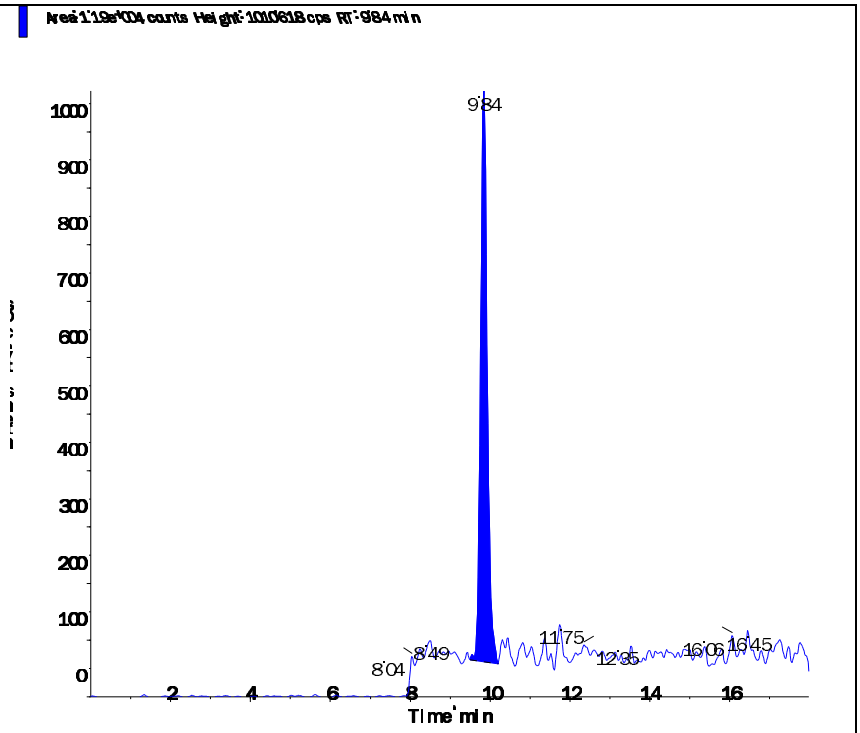

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:36 AM

Data File	LM34689.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

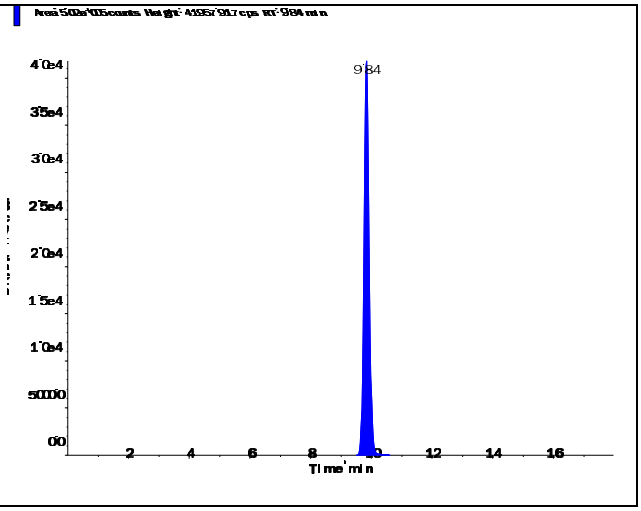

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:36 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

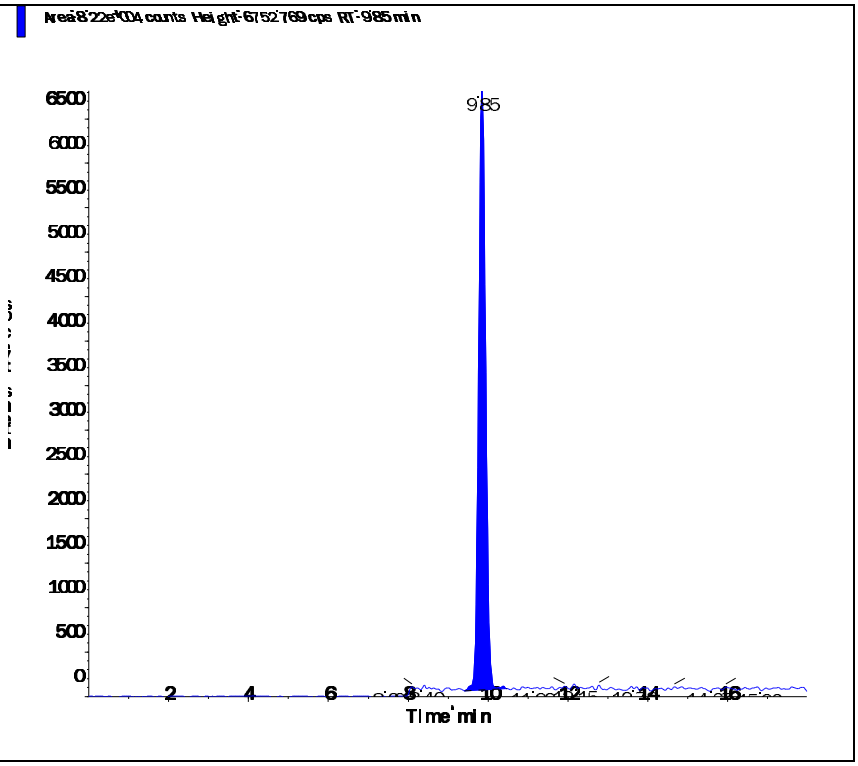

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

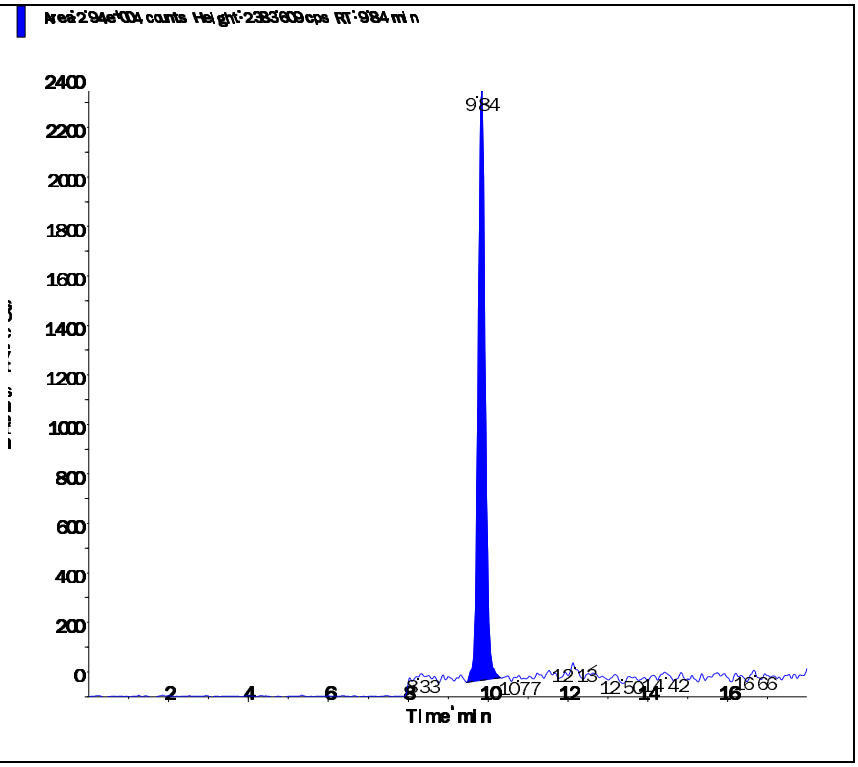

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:37 AM

Data File	LM34690.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

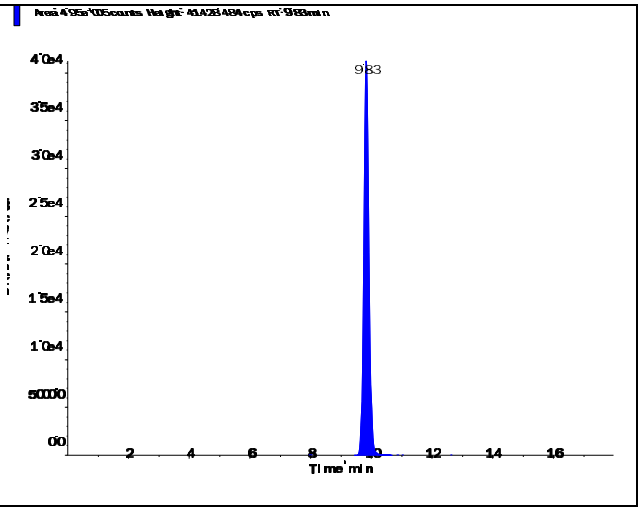

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:37 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

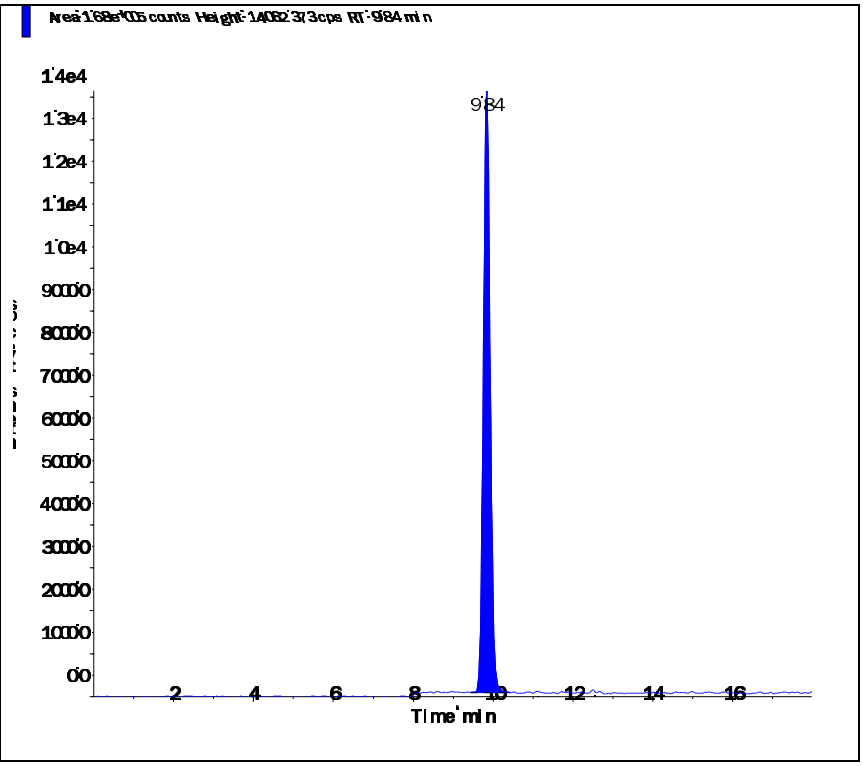

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

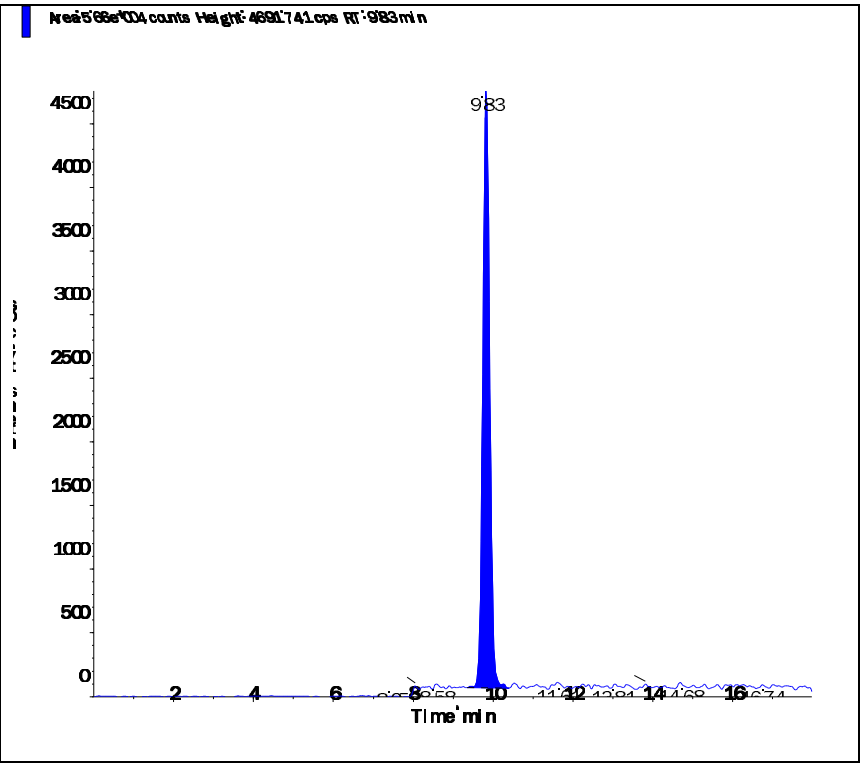

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:37 AM

Data File	LM34691.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

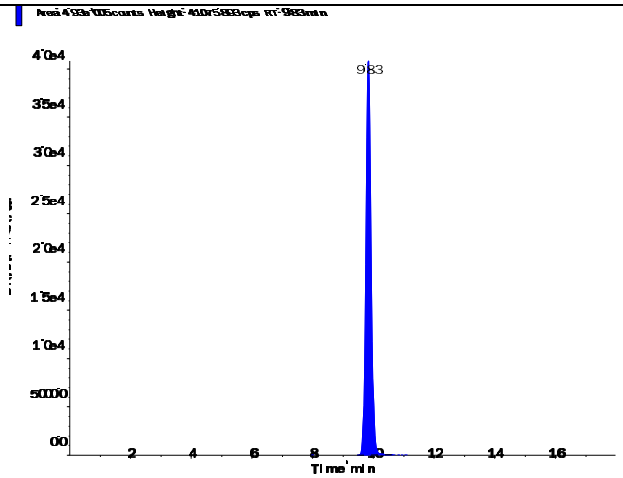

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:37 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

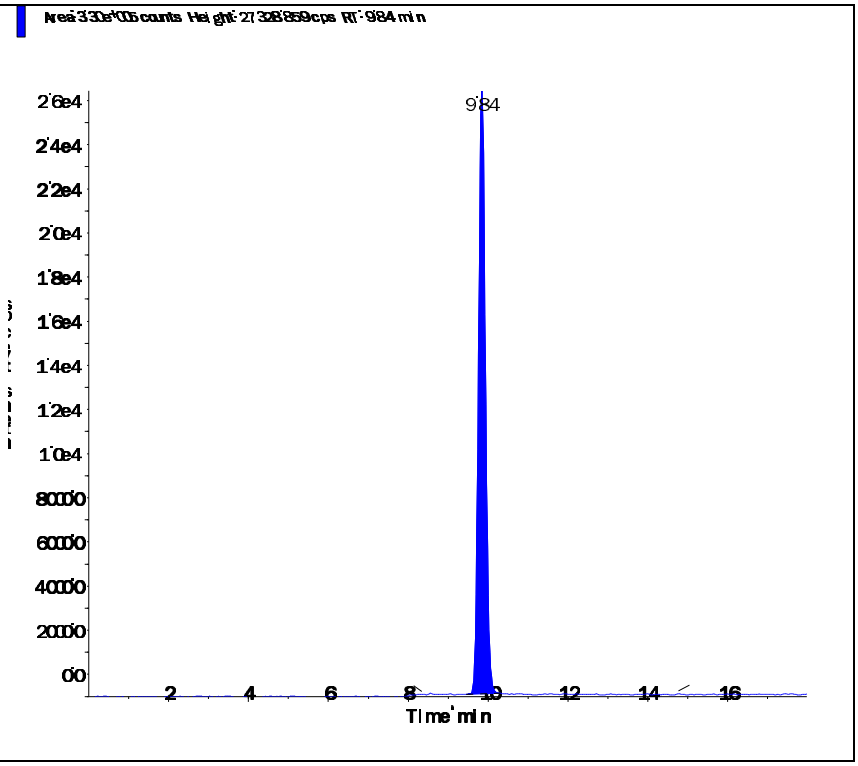

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

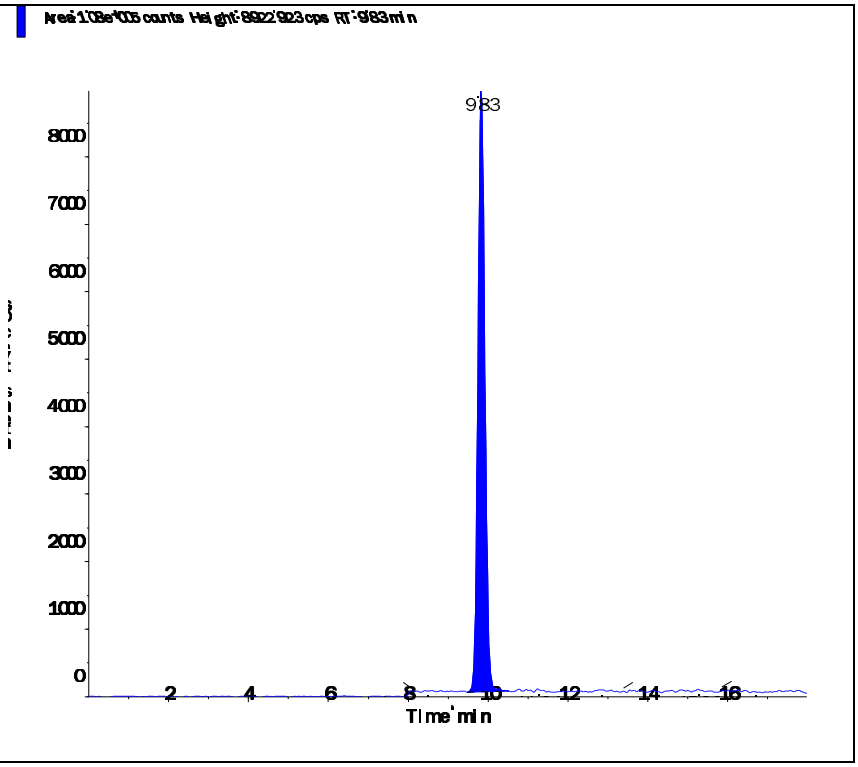

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:37 AM

Data File	LM34692.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

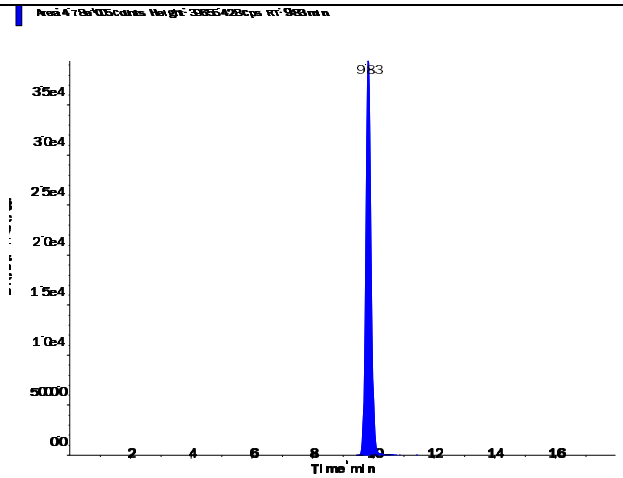

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:37 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

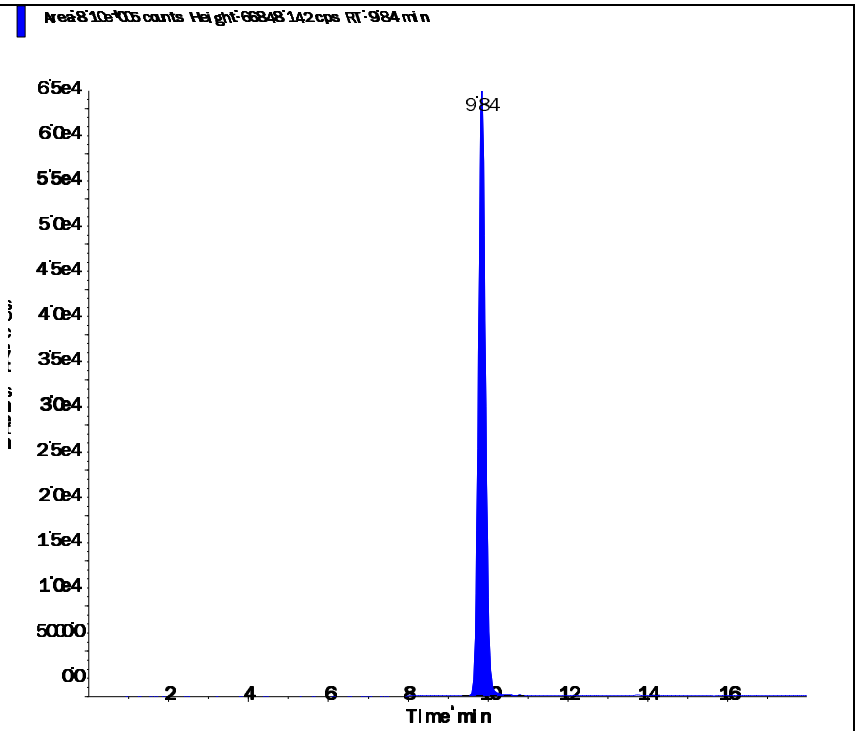

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

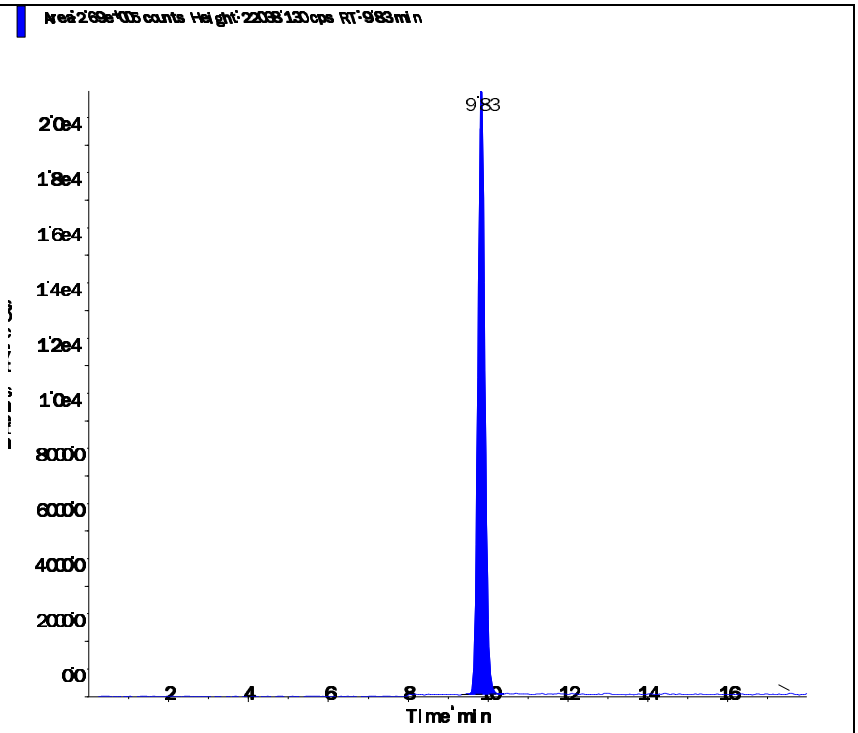

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:38 AM

Data File	LM34693.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

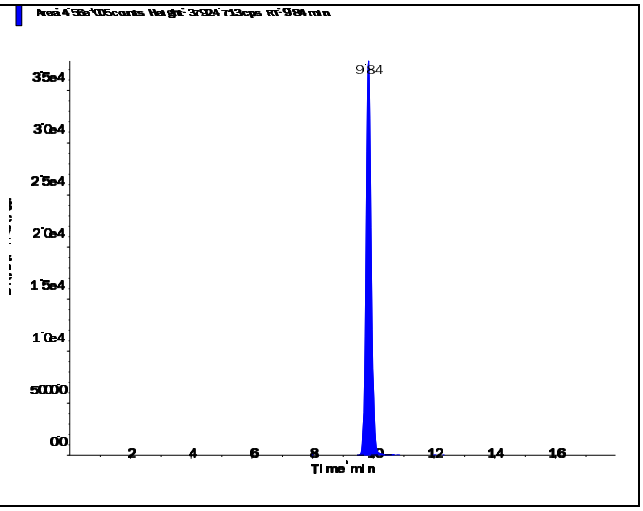

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

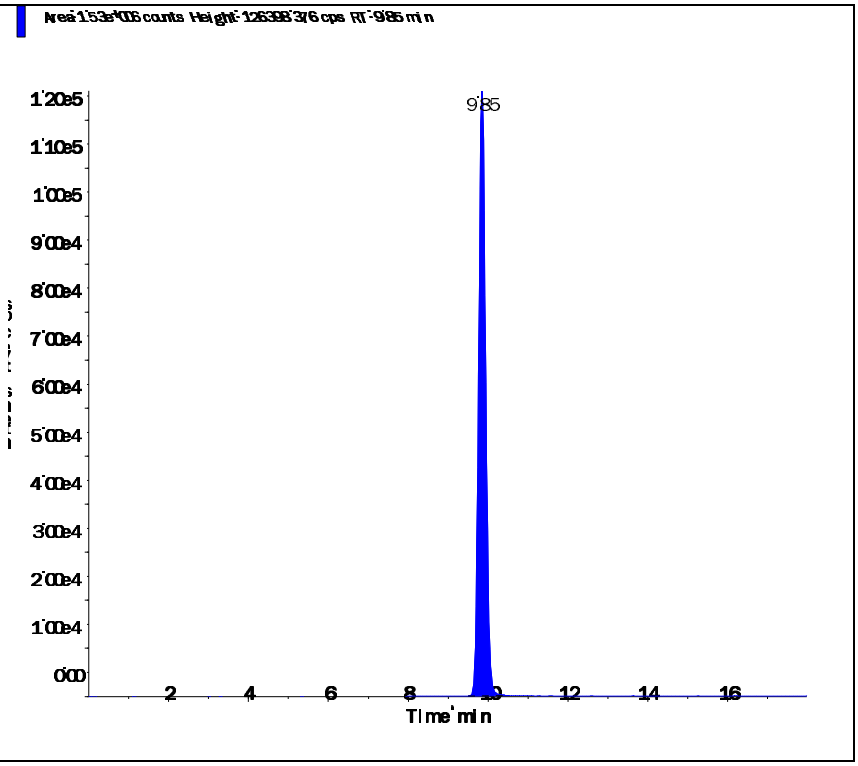

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

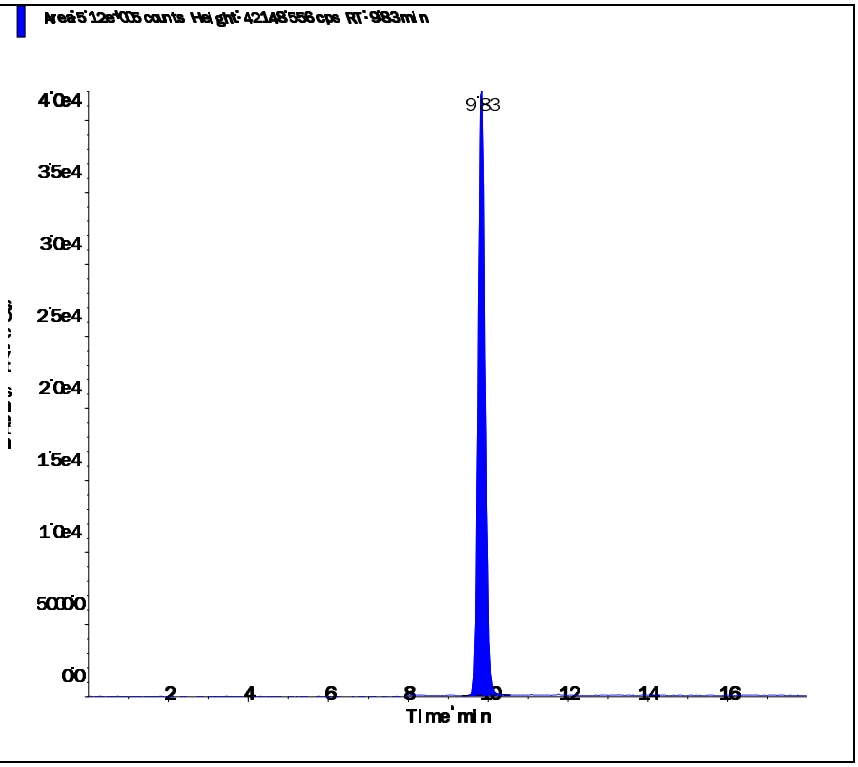

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

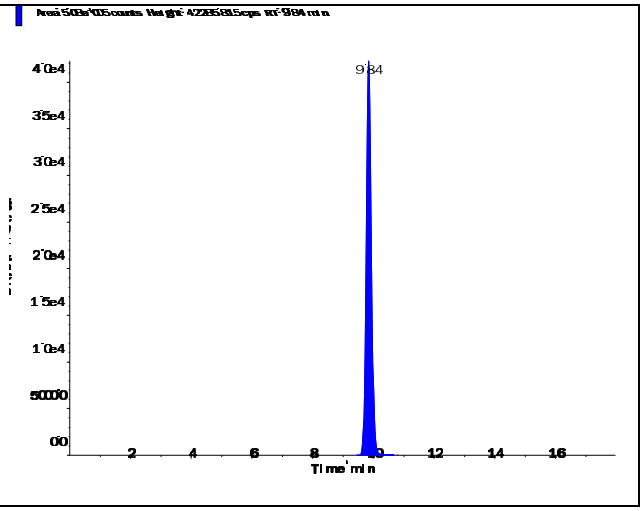

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

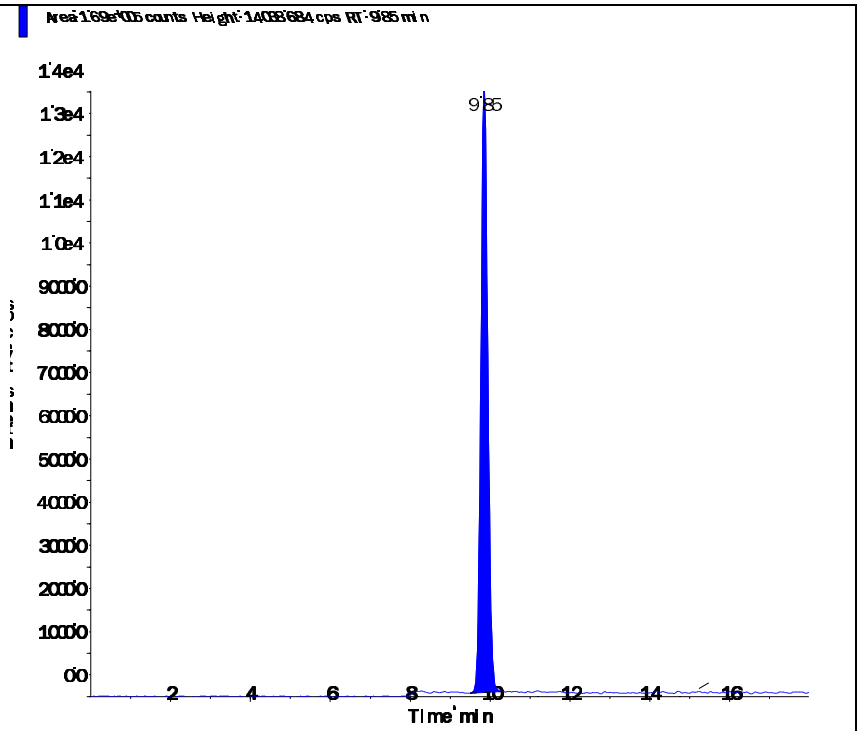

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

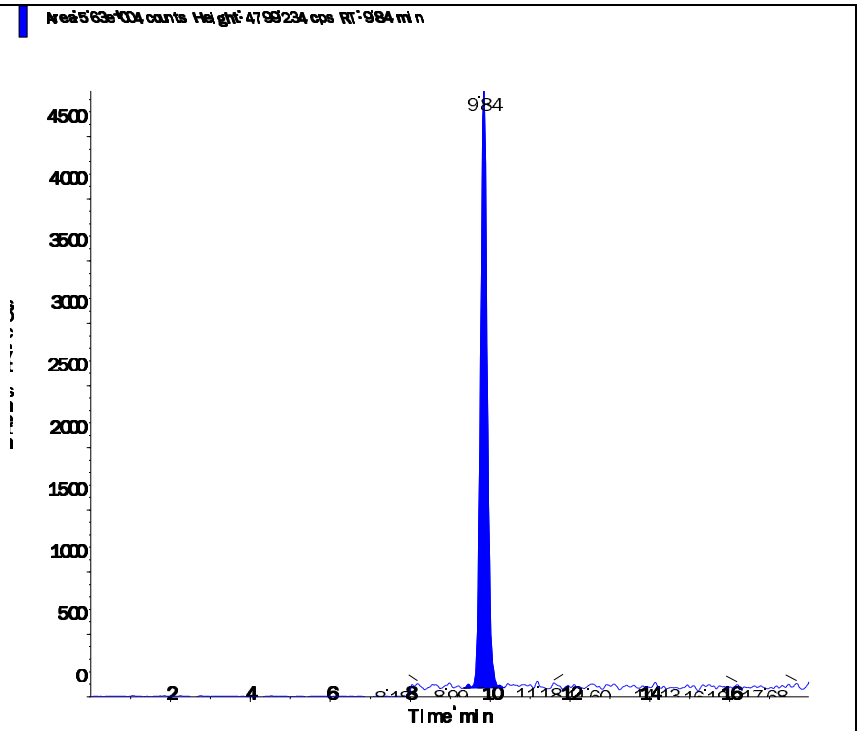

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:38 AM

Data File	LM37299.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	10/10/2016 2:29:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG586942-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM37299.wiff	**Injection Volume**	10.00
Acquisition Date	10/10/2016 2:29:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG586942-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD78249	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.280e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.400e+05	9.61	1.00	0.972
Perchlorate conf	4.870e+04	9.59	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

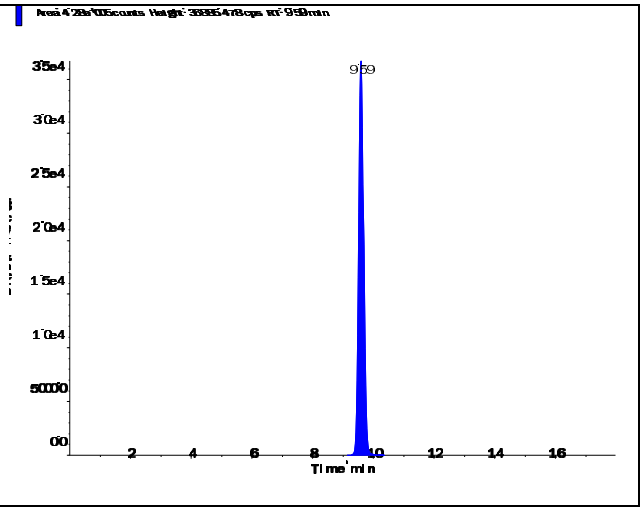

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:38 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.61 (9.84) min
Calculated conc:	0.972 ng/ml
Area Ratio:	0.328
Sample Type:	(Quality Control)

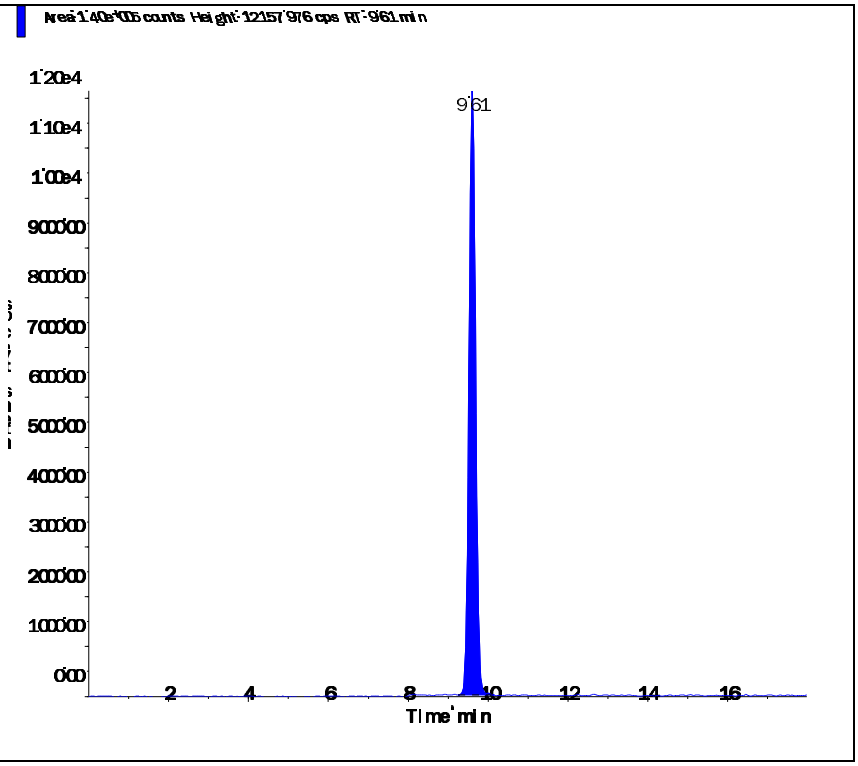

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

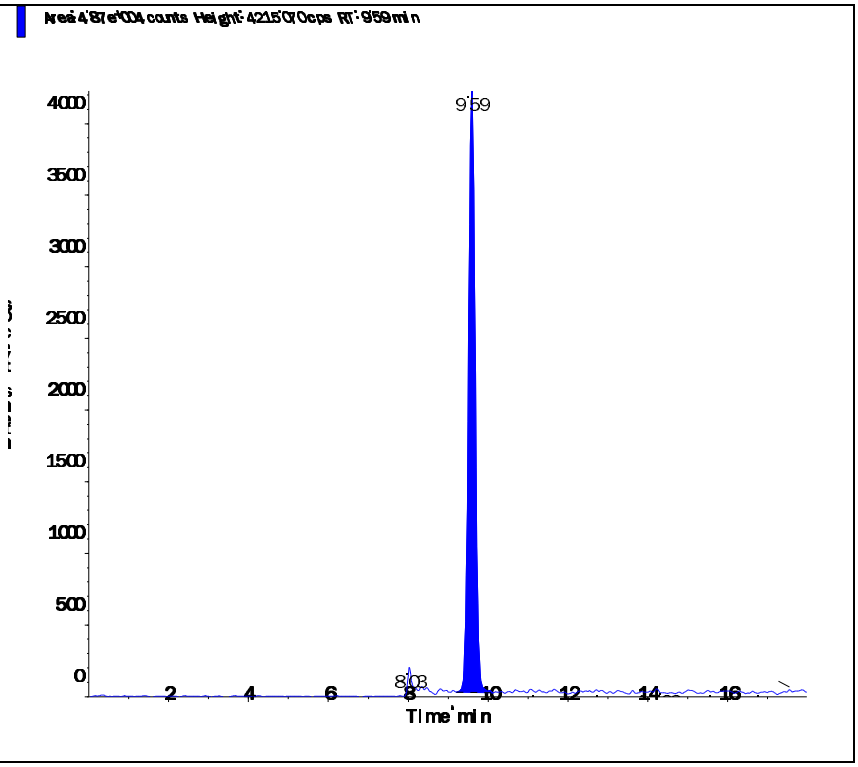

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:42 AM

Data File	LM37311.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	10/10/2016 6:16:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG586942-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM37311.wiff	**Injection Volume**	10.00
Acquisition Date	10/10/2016 6:16:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG586942-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD78249	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.770e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.560e+05	9.59	1.00	0.97
Perchlorate conf	5.460e+04	9.57	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

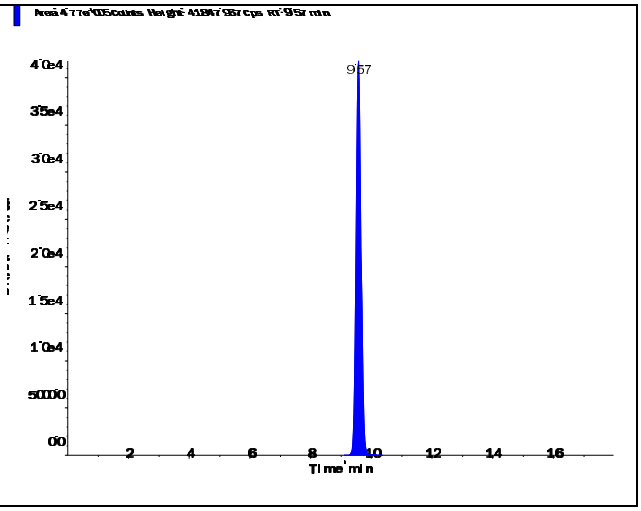

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:42 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	0.97 ng/ml
Area Ratio:	0.327
Sample Type:	(Quality Control)

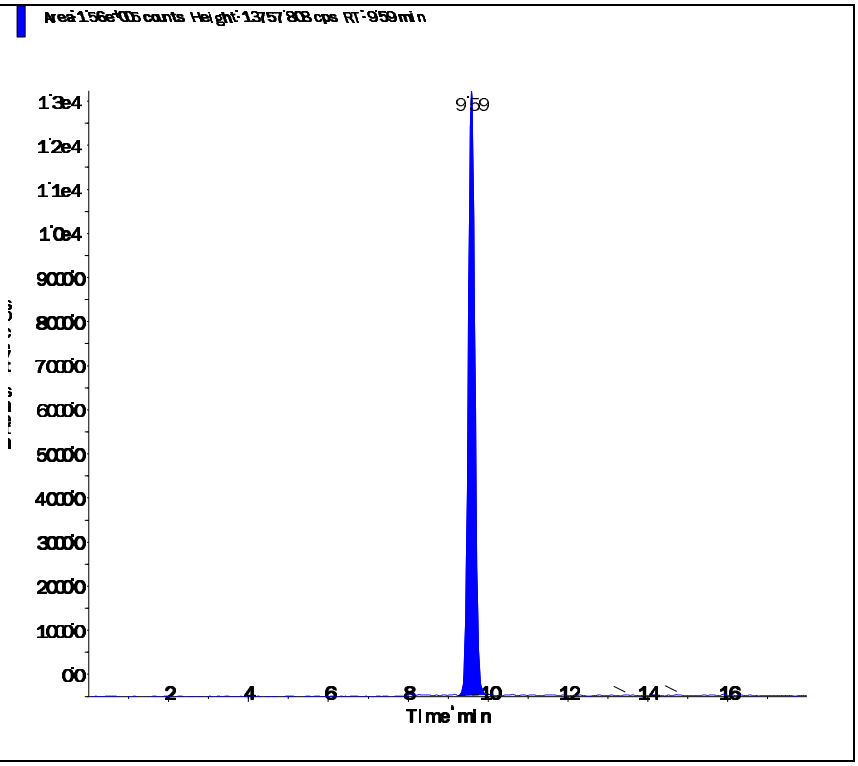

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

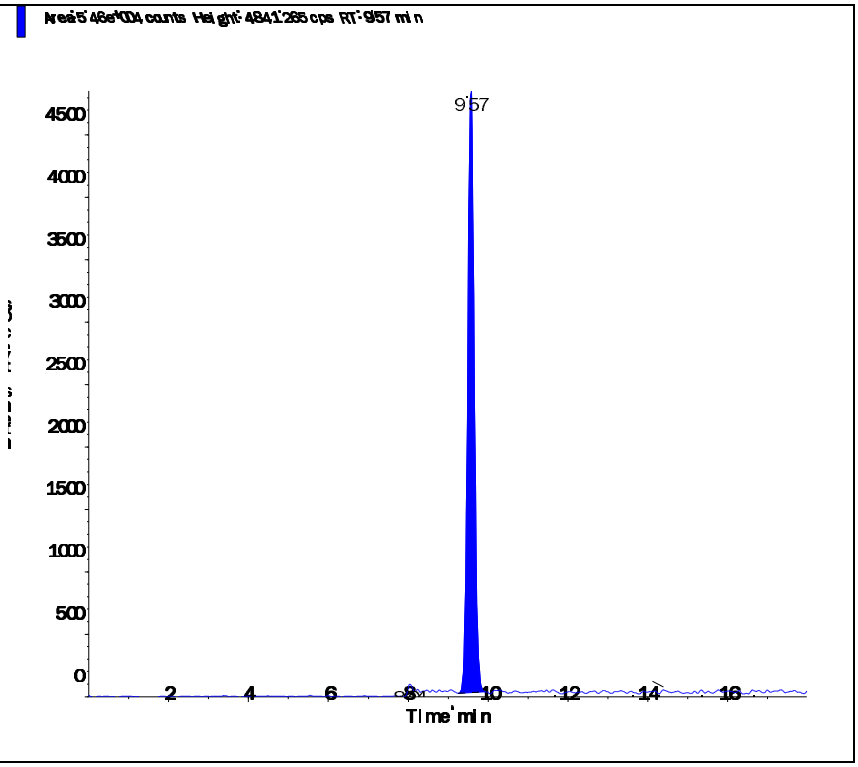

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:47 AM

Data File	LM37324.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	10/10/2016 10:22:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG586942-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM37324.wiff	**Injection Volume**	10.00
Acquisition Date	10/10/2016 10:22:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG586942-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD78249	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.400e+05	9.56	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.770e+05	9.57	1.00	0.969
Perchlorate conf	6.030e+04	9.55	1.00	0.979

O18LP (Internal Standard)

RT (Exp. RT): 9.56(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

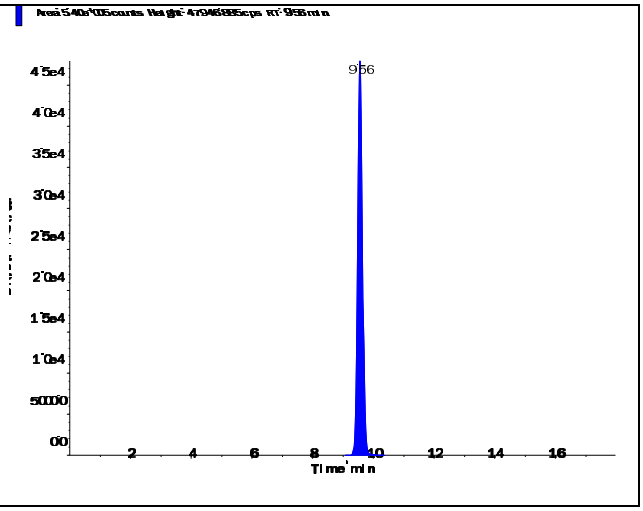

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	0.969 ng/ml
Area Ratio:	0.327
Sample Type:	(Quality Control)

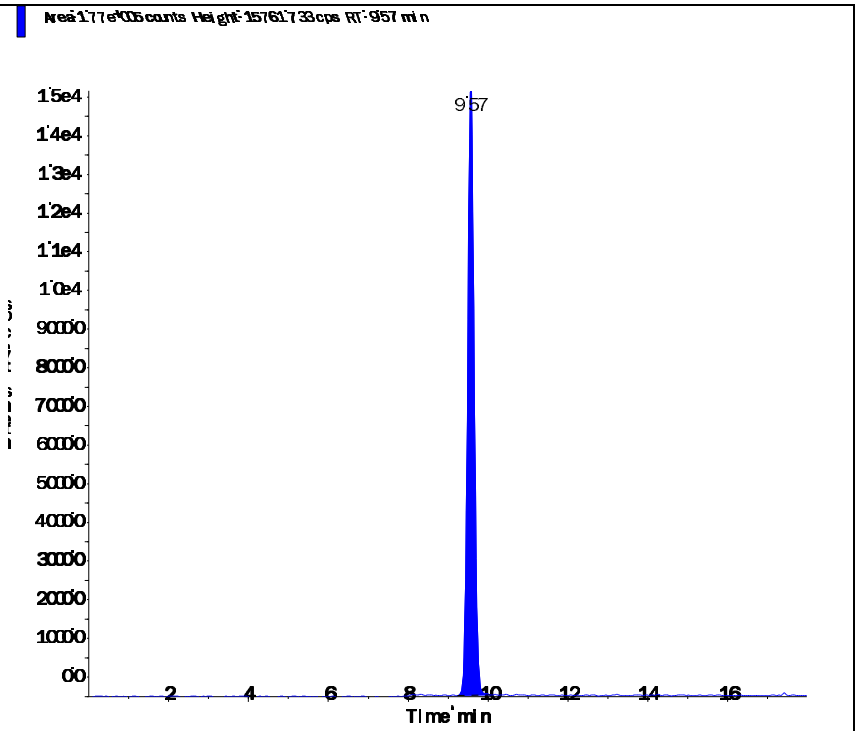

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.55 (9.84) min
Calculated conc:	0.979 ng/ml
Area Ratio:	0.112
Sample Type:	(Quality Control)

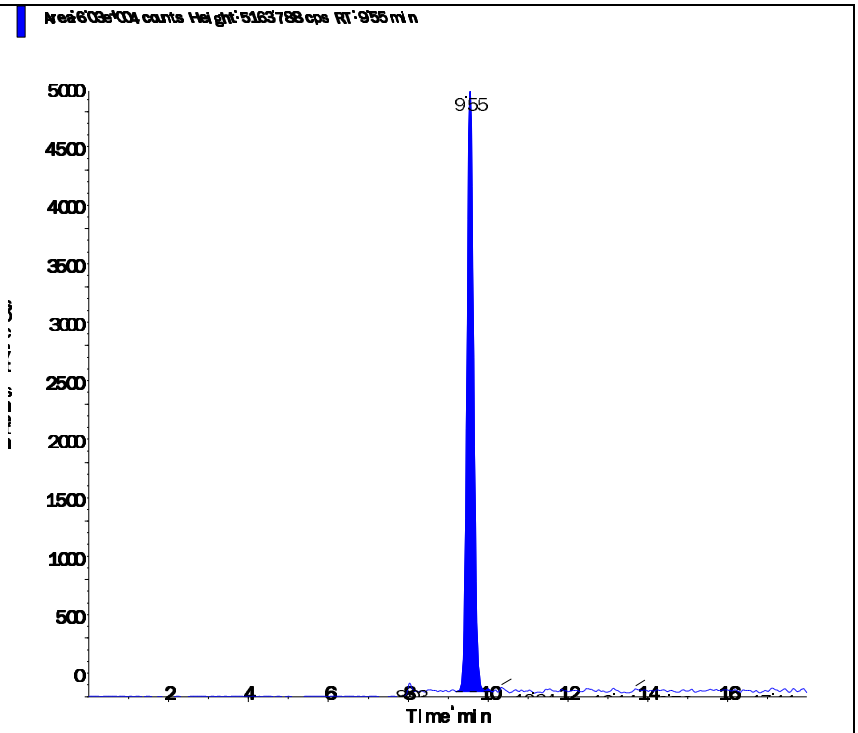

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:39 AM

Data File	LM37300.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	10/10/2016 2:48:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG586928-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM37300.wiff	**Injection Volume**	10.00
Acquisition Date	10/10/2016 2:48:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG586928-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD78249	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.380e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.070e+04	9.61	N/A	0.205
Perchlorate conf	1.110e+04	9.61	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

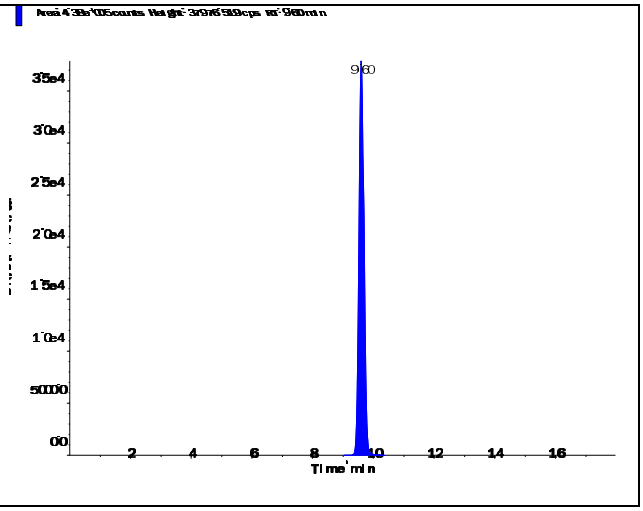

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:39 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.61 (9.84) min Calculated conc: 0.205 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	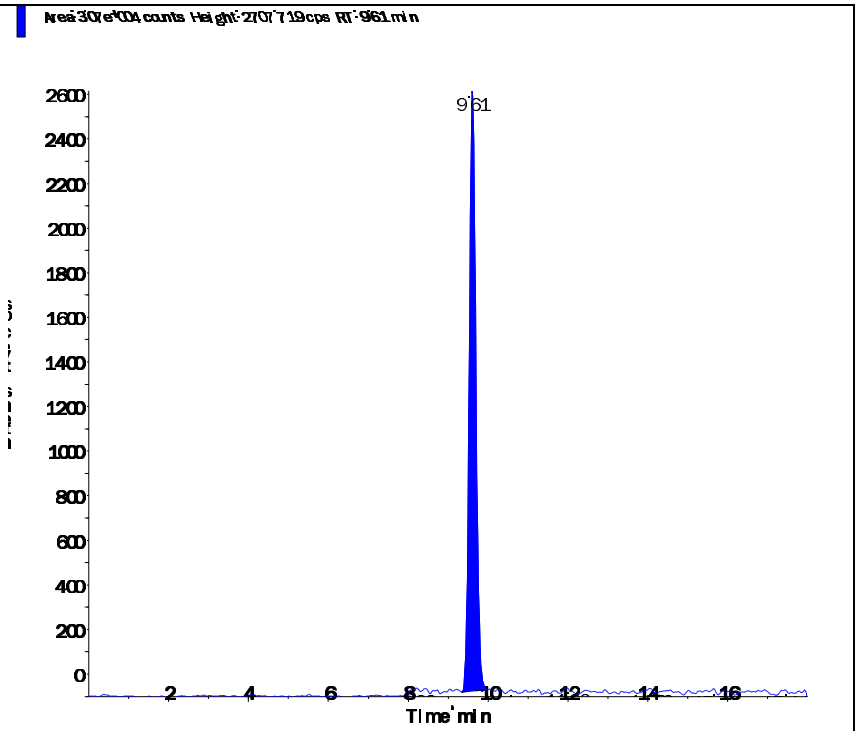
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.61 (9.84) min Calculated conc: 0.207 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	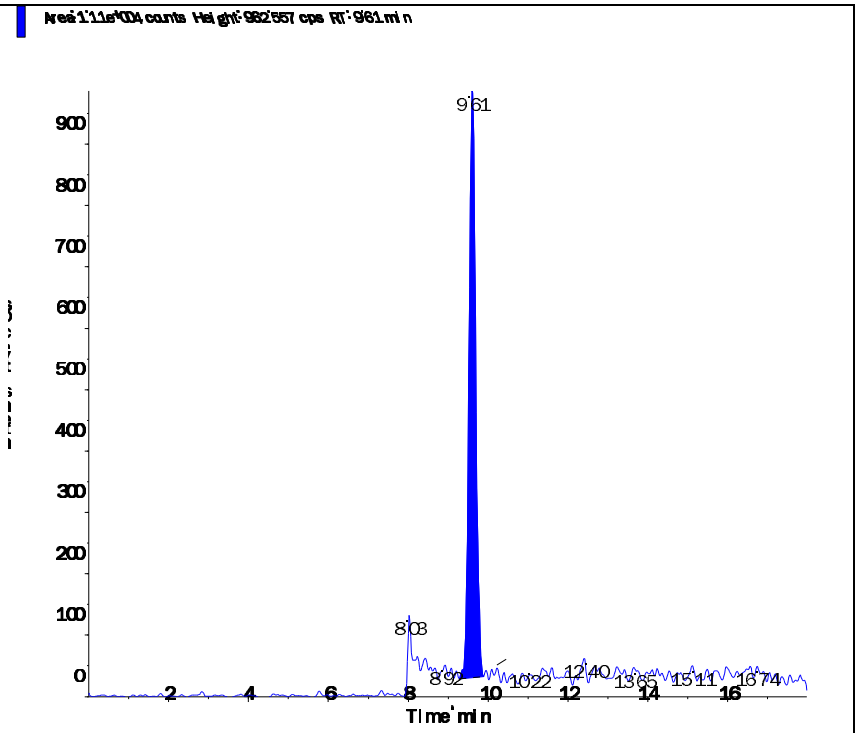

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:43 AM

Data File	LM37312.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	10/10/2016 6:35:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG586928-11 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM37312.wiff	**Injection Volume**	10.00
Acquisition Date	10/10/2016 6:35:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG586928-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD78249	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.100e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.620e+04	9.59	N/A	0.207
Perchlorate conf	1.230e+04	9.58	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

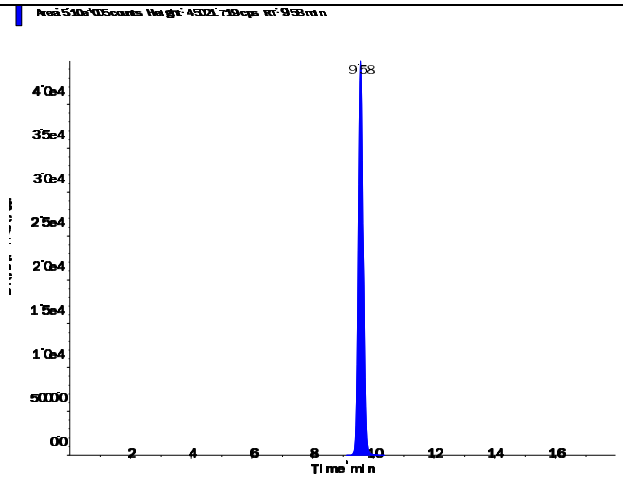

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:43 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

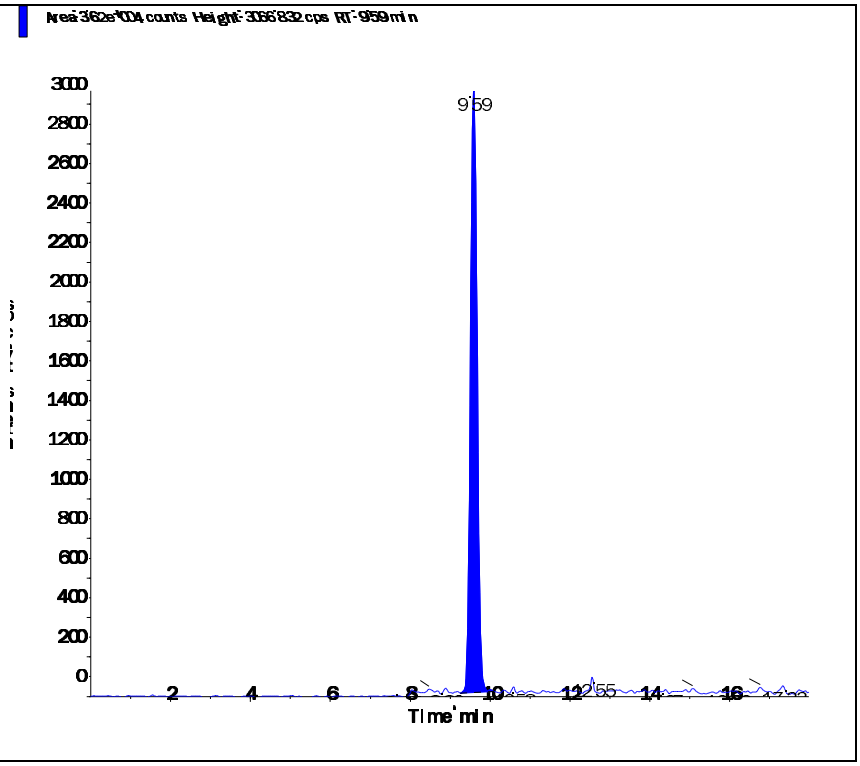

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.58 (9.84) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

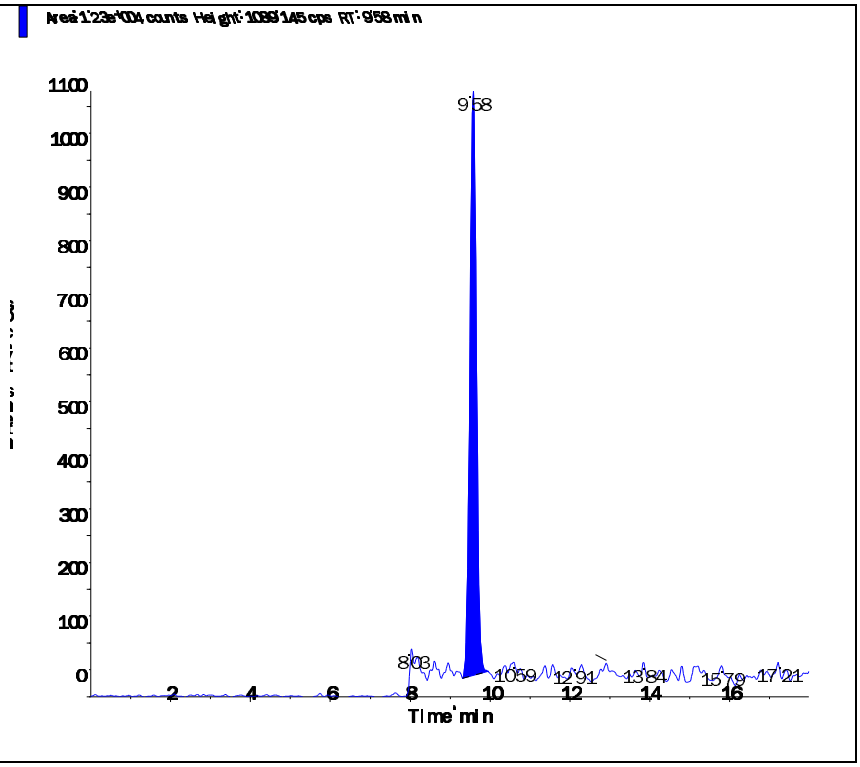

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:47 AM

Data File	LM37325.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	10/10/2016 10:41:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG586928-12 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM37325.wiff	**Injection Volume**	10.00
Acquisition Date	10/10/2016 10:41:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG586928-12	**Dilution Factor**	1.00
Sample Comment	1,1 STD78249	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.720e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.110e+04	9.58	N/A	0.21
Perchlorate conf	1.410e+04	9.56	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

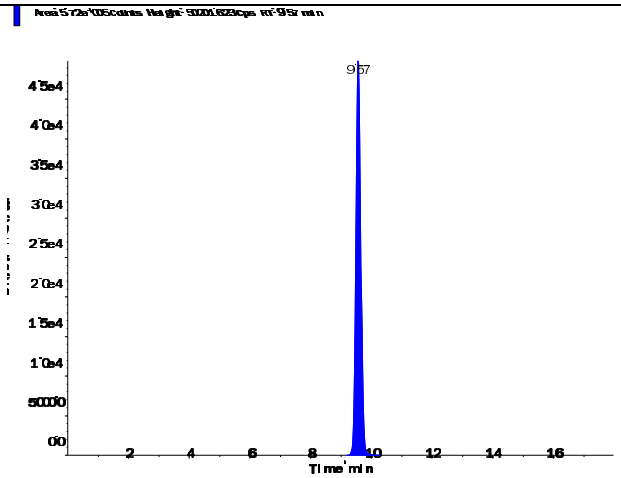

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.58 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

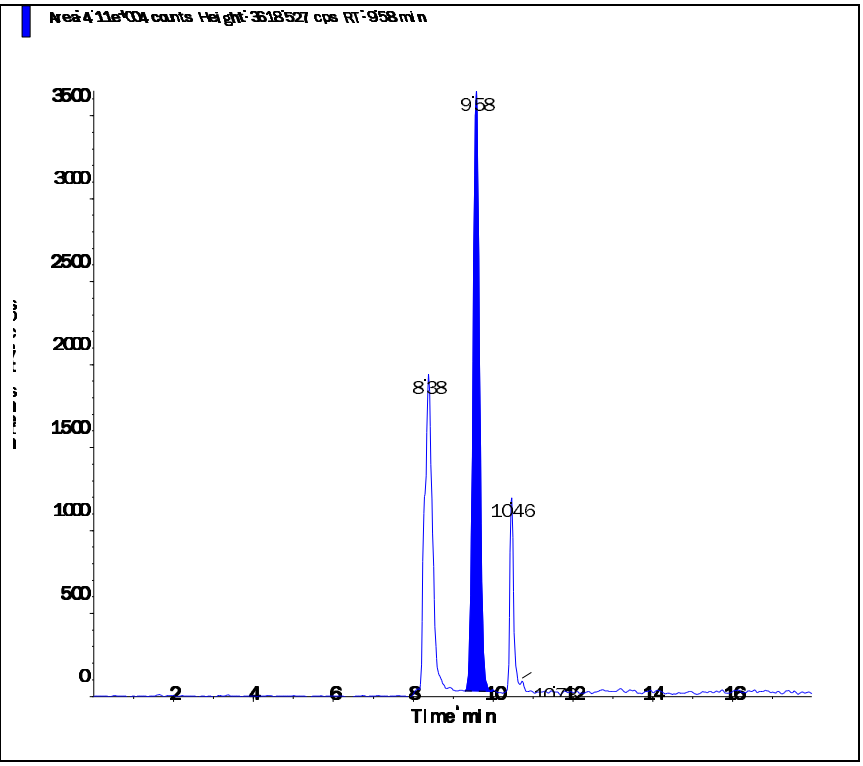

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.56 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

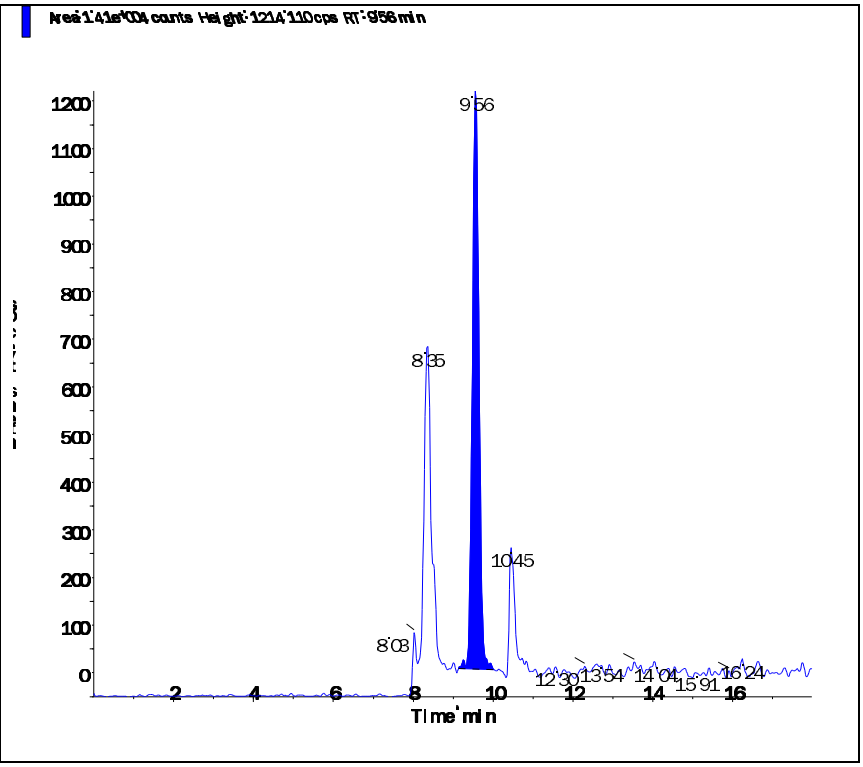

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:38 AM

Data File	LM37298.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	10/10/2016 2:10:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG586942-01 CCB	**Injection Vial**	1.00
Data File	LM37298.wiff	**Injection Volume**	10.00
Acquisition Date	10/10/2016 2:10:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG586942-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.610e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

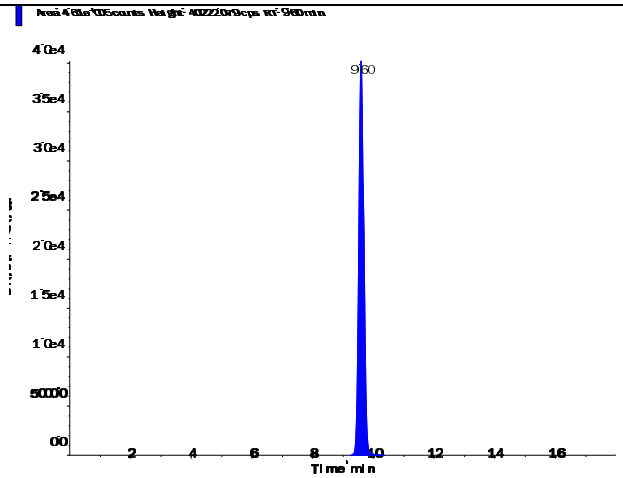

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:38 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	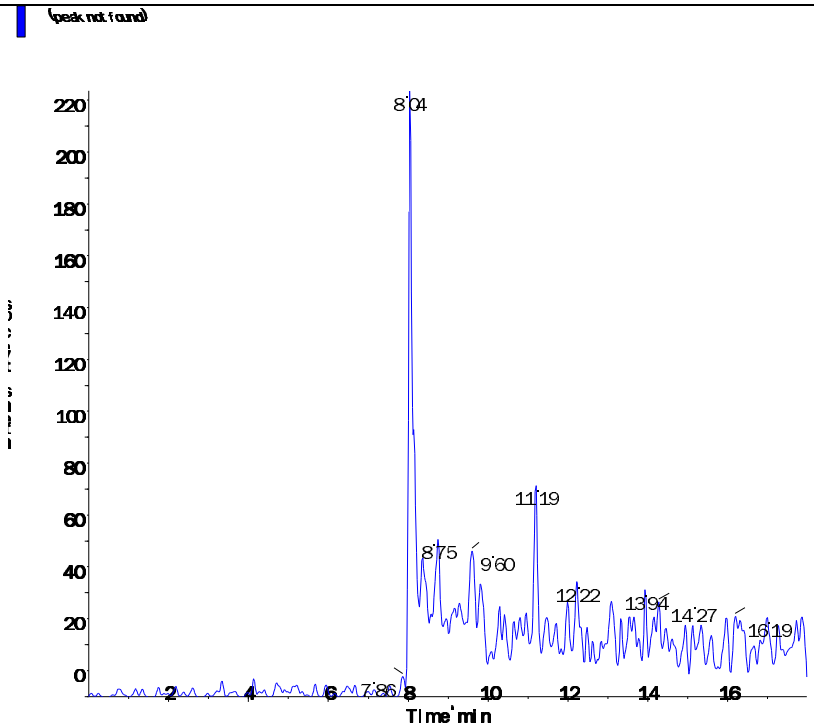
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	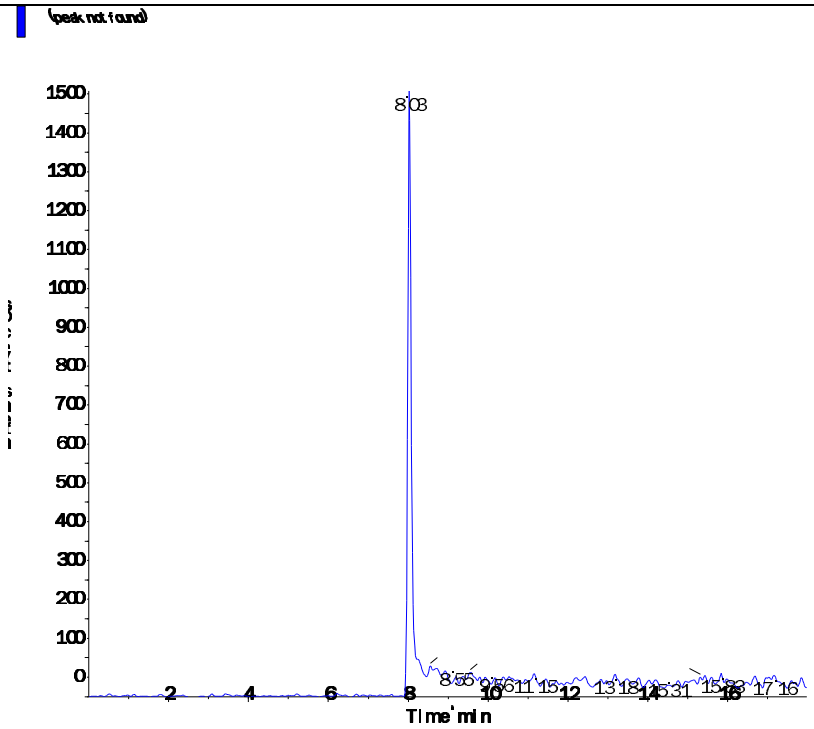

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:43 AM

Data File	LM37313.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	10/10/2016 6:54:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG586942-04 CCB	**Injection Vial**	1.00
Data File	LM37313.wiff	**Injection Volume**	10.00
Acquisition Date	10/10/2016 6:54:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG586942-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.190e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

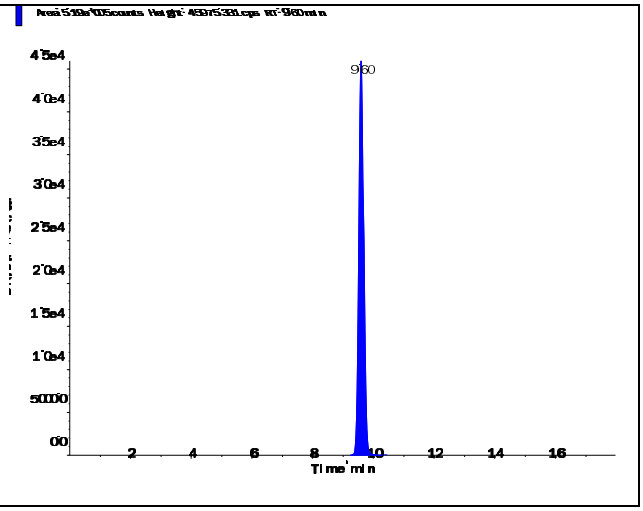

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:43 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

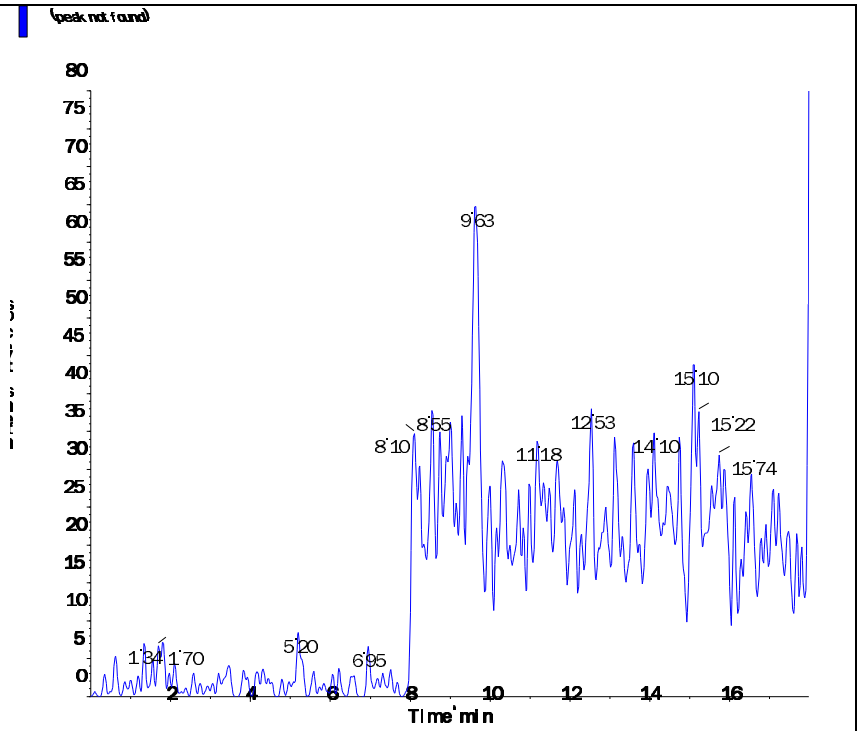

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

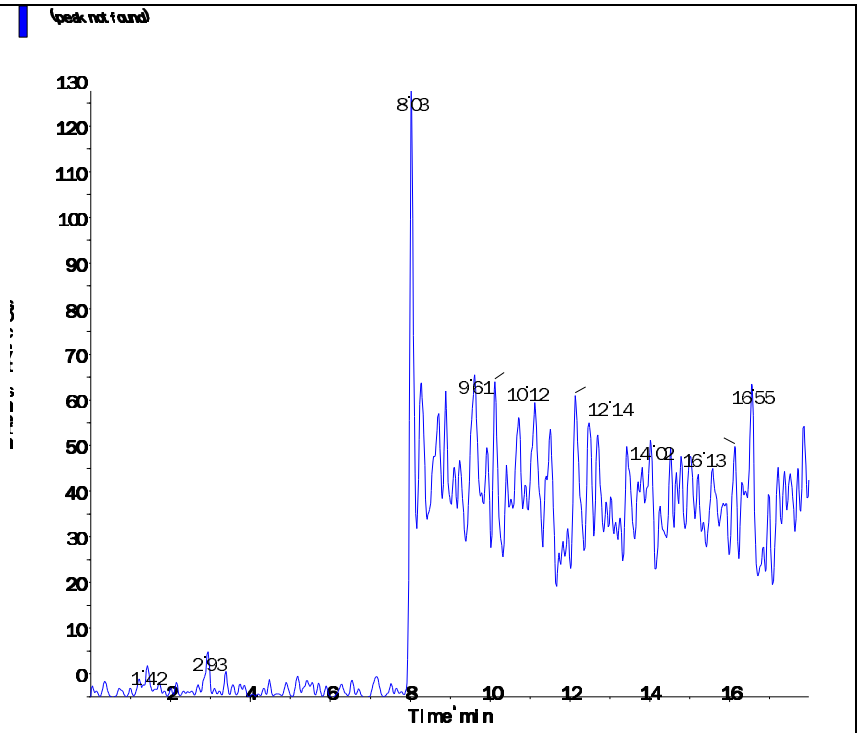

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:47 AM

Data File	LM37326.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	10/10/2016 11:00:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG586942-06 CCB	**Injection Vial**	1.00
Data File	LM37326.wiff	**Injection Volume**	10.00
Acquisition Date	10/10/2016 11:00:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG586942-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.570e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

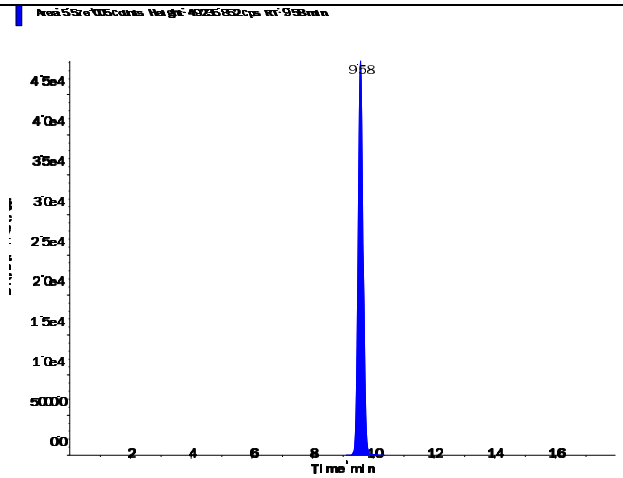

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

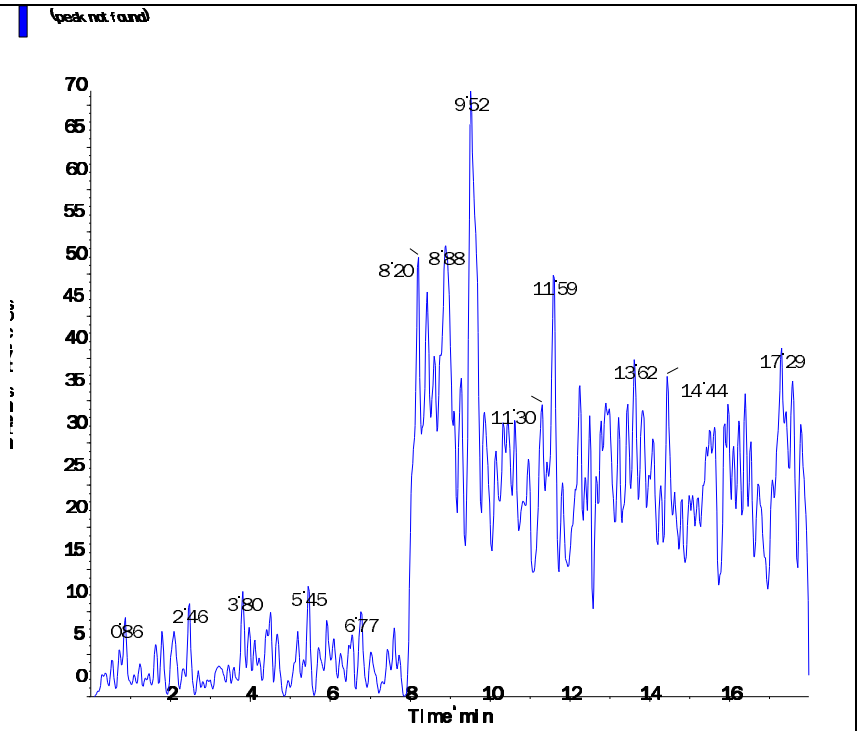

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

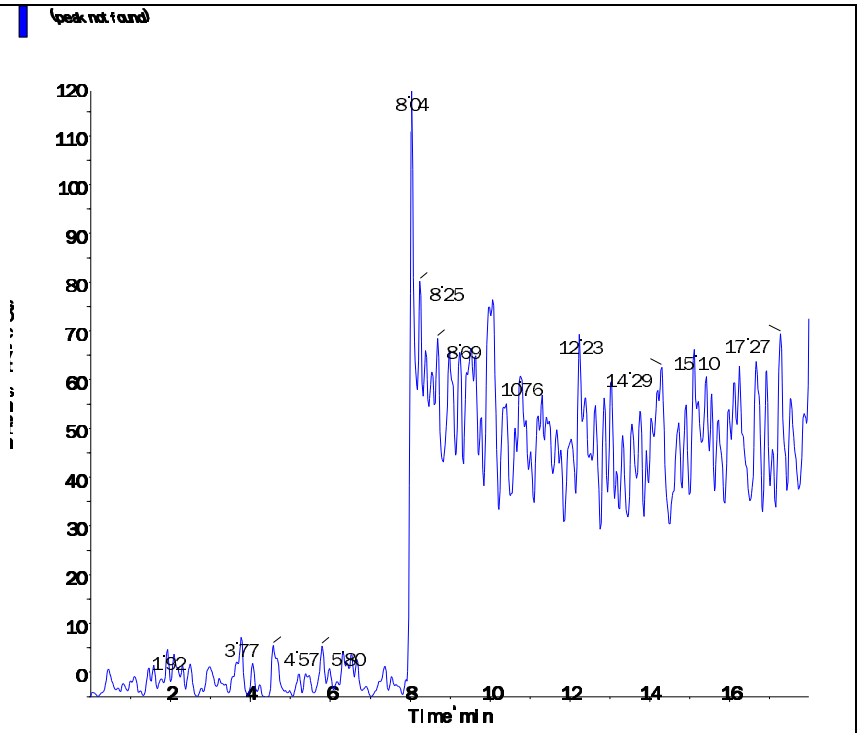

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:39 AM

Data File	LM37301.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	10/10/2016 3:07:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG586928-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM37301.wiff	**Injection Volume**	10.00
Acquisition Date	10/10/2016 3:07:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG586928-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD78251	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.340e+05	9.04	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.820e+04	9.04	N/A	0.189
Perchlorate conf	8.880e+03	9.04	N/A	0.163

O18LP (Internal Standard)

RT (Exp. RT): 9.04(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

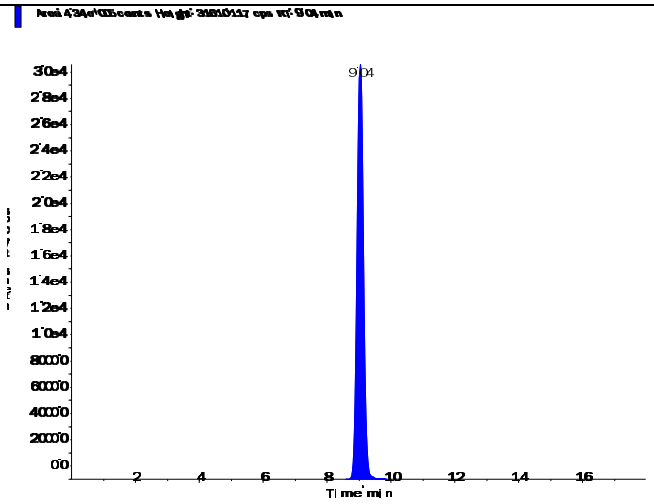

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:39 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.04 (9.84) min
Calculated conc:	0.189 ng/ml
Area Ratio:	0.065
Sample Type:	(Unknown)

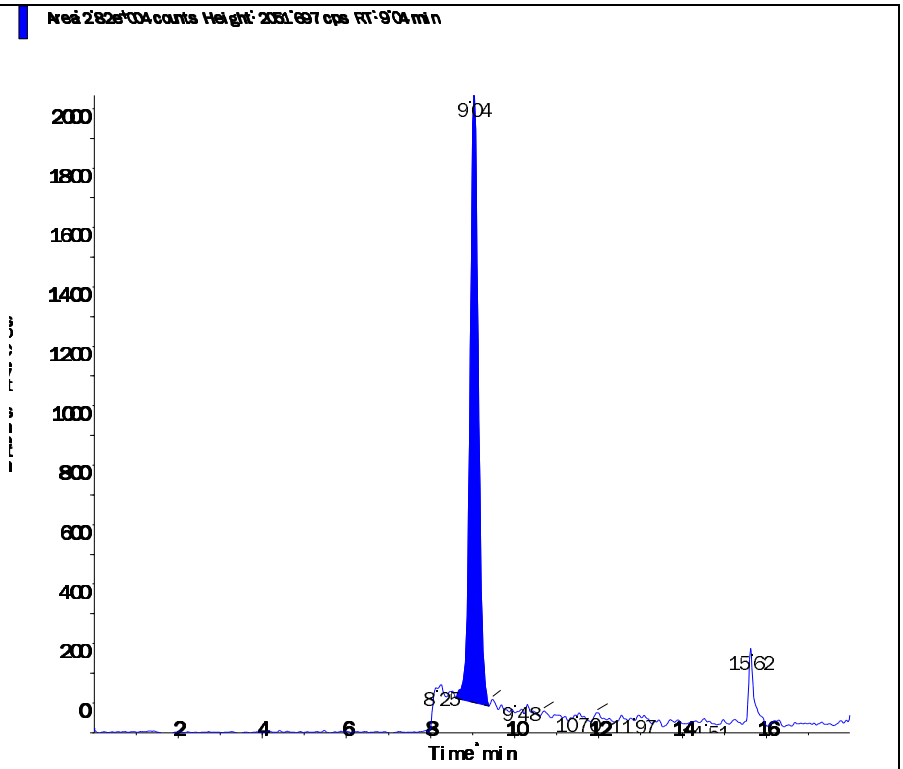

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.04 (9.84) min
Calculated conc:	0.163 ng/ml
Area Ratio:	0.02
Sample Type:	(Unknown)

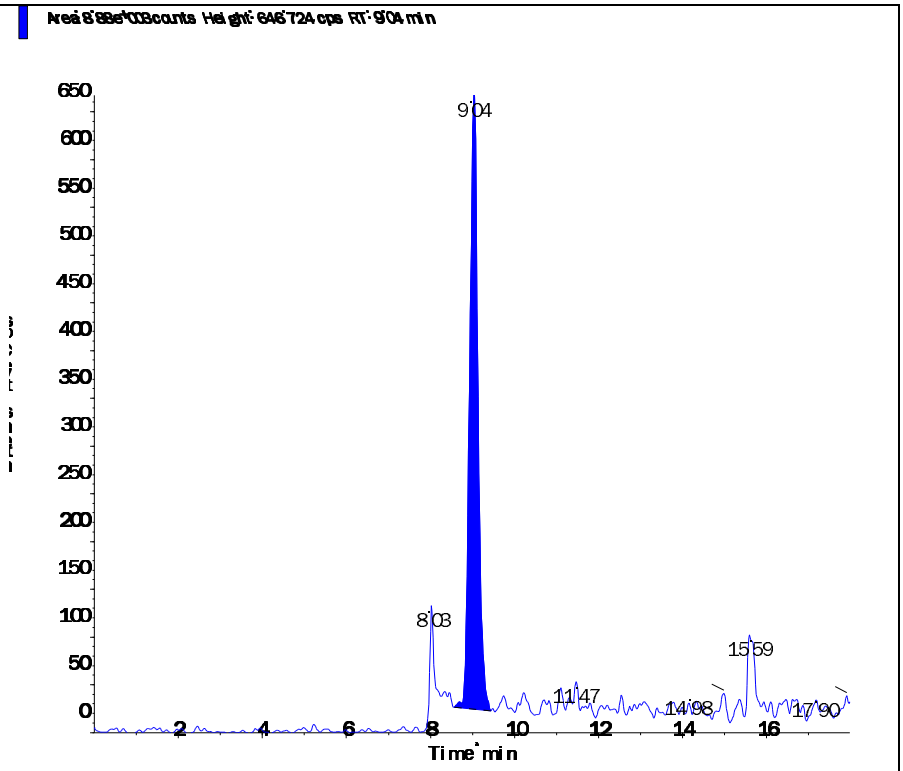

s.dataFile Page 2 of 2

Printing Time: 8:03:23 AM
Printing Date: Tuesday, October 11, 2016

Sample Name: "WG586928-01 MCT (0.2ug/L)" Sample ID: "WG586928-01" File: "LM37301.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD78251" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.206 ug/L
Acq. Date:	10/10/2016
Acq. Time:	3:07:12 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.04 min
Area:	3.06e+004 counts
Height:	2095.791 cps
Start Time:	8.607 min
End Time:	9.579 min

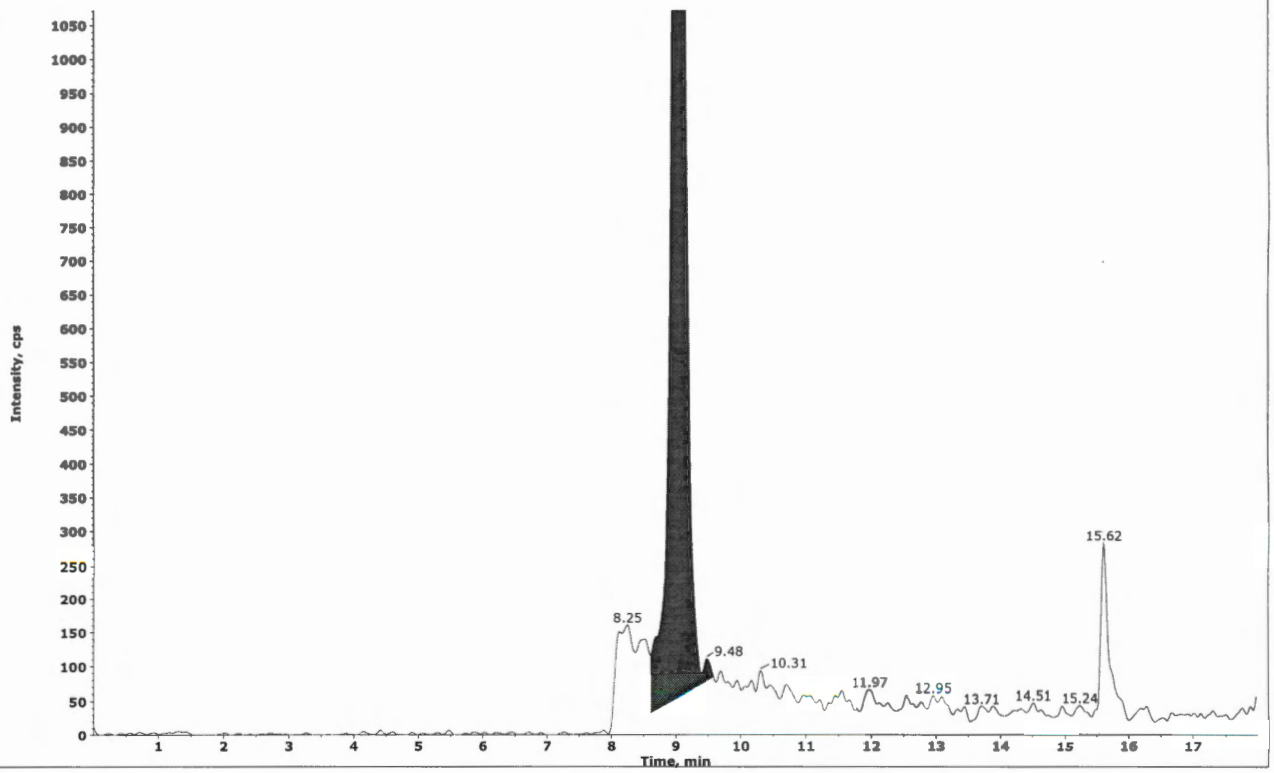

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 8:13:13 AM
Printing Date: Tuesday, October 11, 2016

Sample Name: "WG586928-01 MCT (0.2ug/L)" Sample ID: "WG586928-01" File: "LM37301.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD78251" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.189 ug/L
Acq. Date:	10/10/2016
Acq. Time:	3:07:12 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	9.04 min
Area:	2.82e+004 counts
Height:	2051.697 cps
Start Time:	8.607 min
End Time:	9.397 min

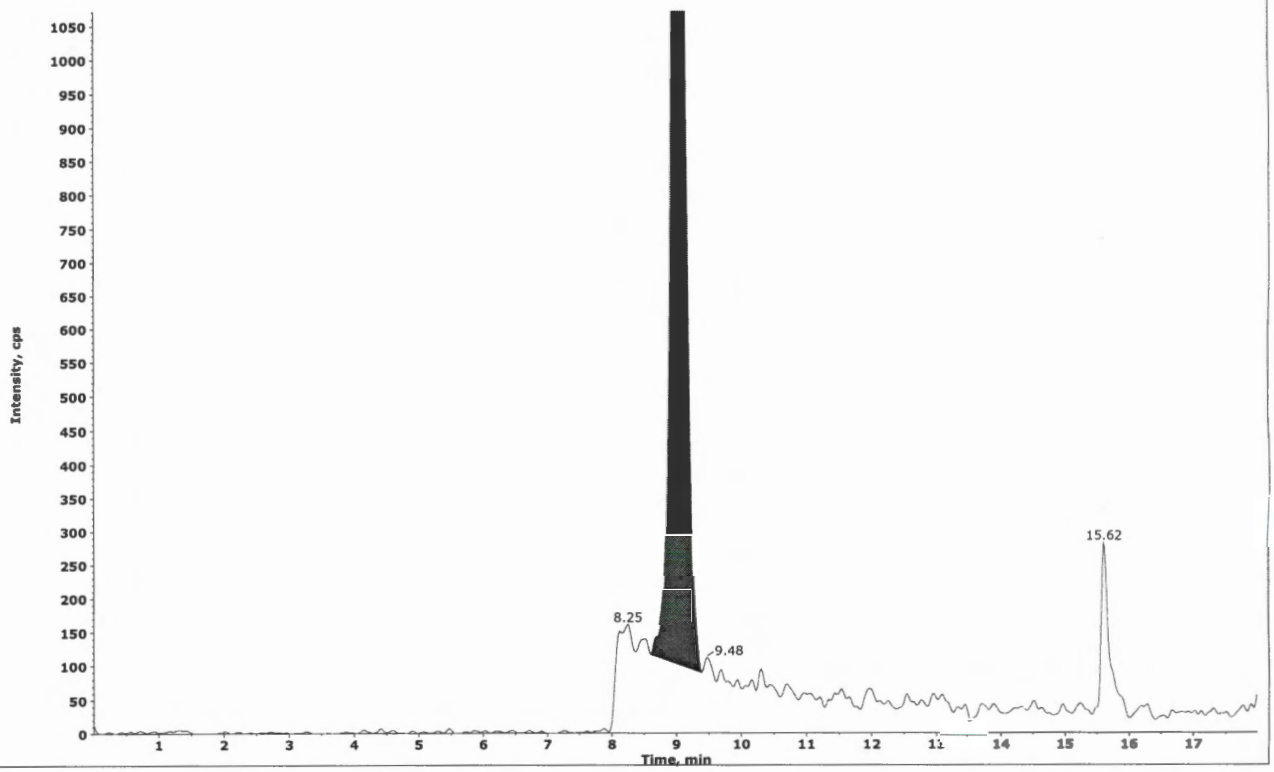

#4
JLR/10/11/16
mf 10/11/16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.1.1.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:39 AM

Data File	LM37302.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	10/10/2016 3:26:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG586928-02 BLANK	**Injection Vial**	5.00
Data File	LM37302.wiff	**Injection Volume**	10.00
Acquisition Date	10/10/2016 3:26:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG586928-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

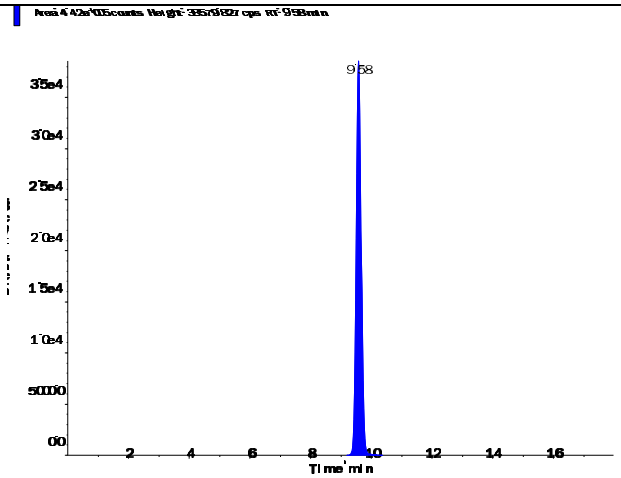

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:39 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	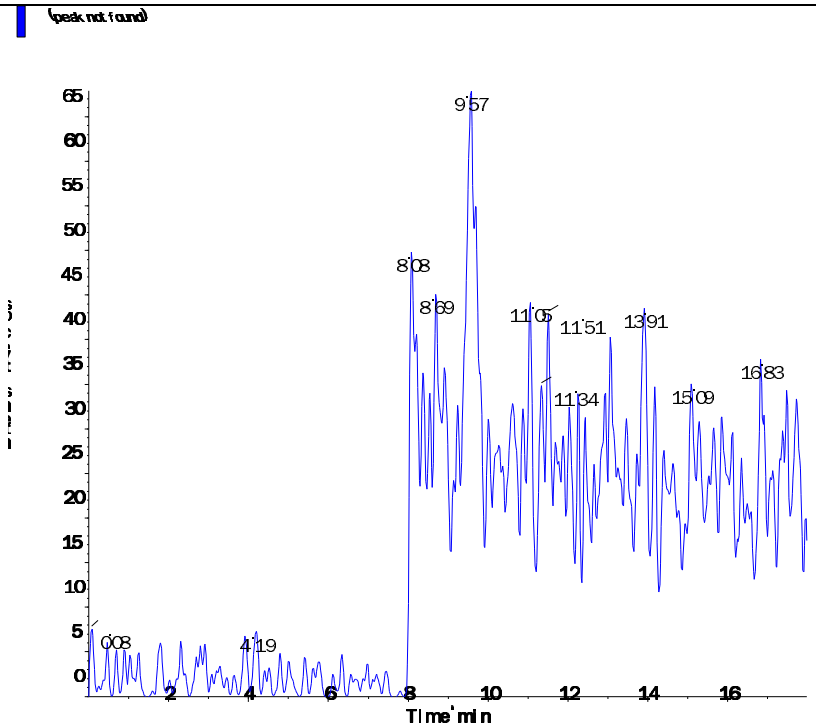
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	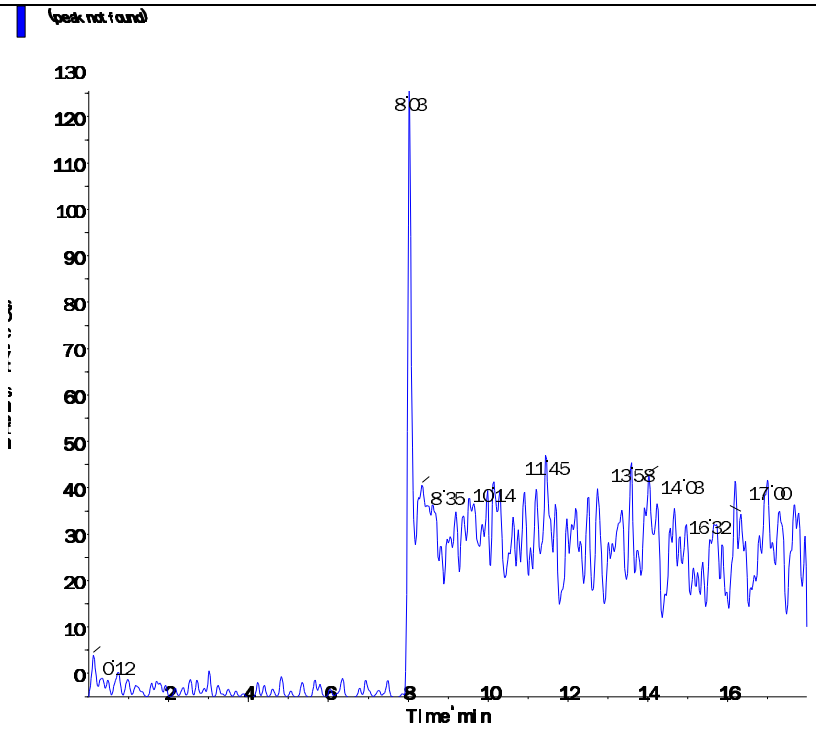

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:39 AM

Data File	LM37303.wiff	**Result Table**	101016_JWR.rdb
Acquisition Date	10/10/2016 3:45:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG586928-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM37303.wiff	**Injection Volume**	10.00
Acquisition Date	10/10/2016 3:45:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101016_JWR.rdb
Sample ID	WG586928-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD78251	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.790e+04	9.60	N/A	0.183
Perchlorate conf	1.040e+04	9.58	N/A	0.19

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

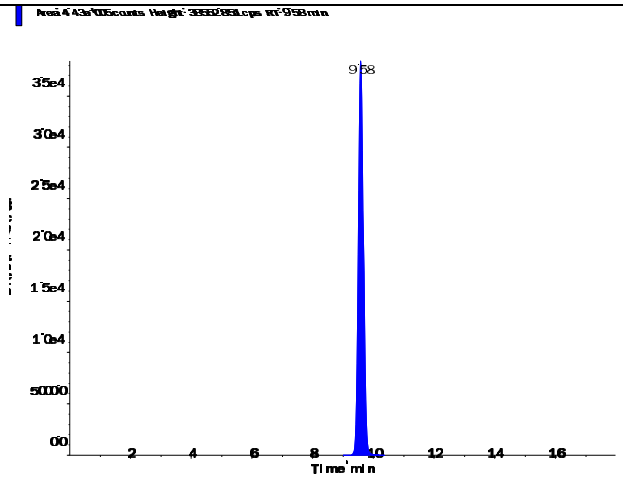

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 10/11/2016 11:39 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	0.183 ng/ml
Area Ratio:	0.063
Sample Type:	(Unknown)

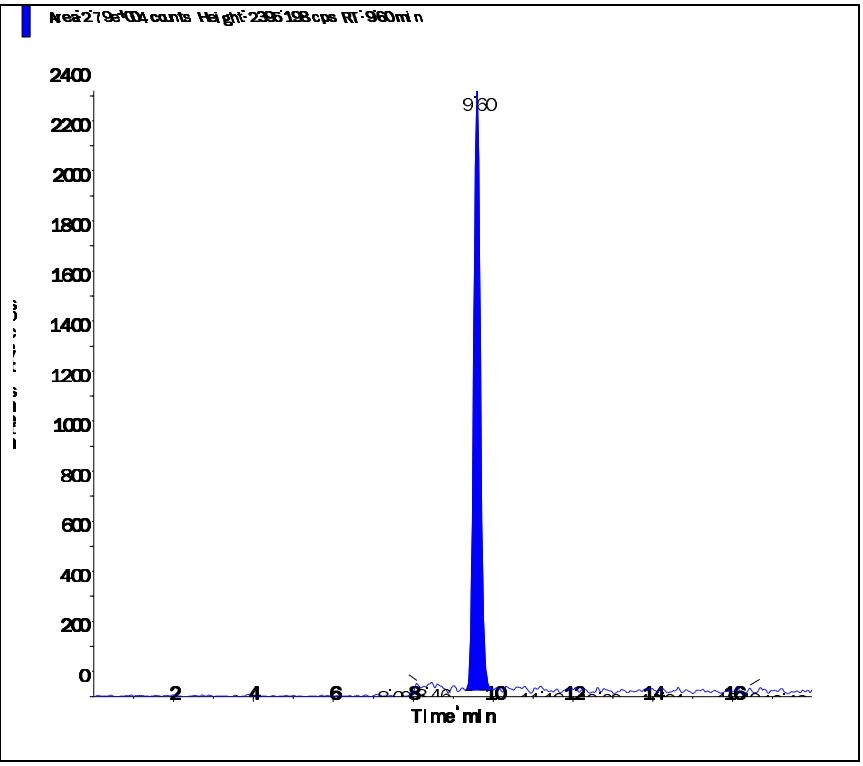

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.58 (9.84) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

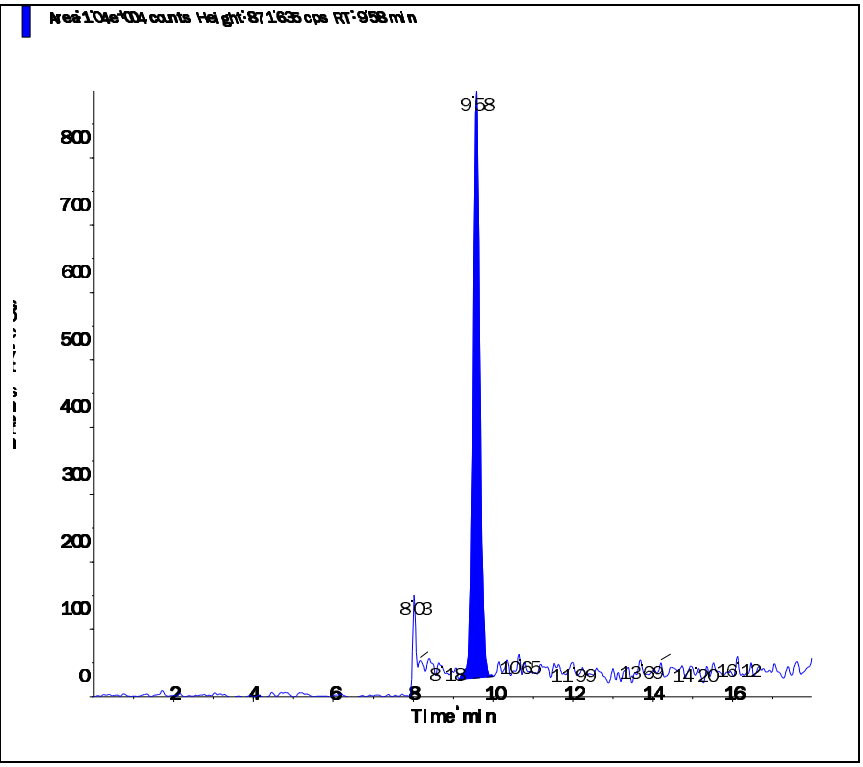

s.dataFile Page 2 of 2

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
October 13, 2016

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CAS - Craig A. Smith
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDD - HANAH D. DAWKINS
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAK - KATHY A. KIRBY
KAT - KATHY A. TUCKER
KDD - Katelyn D. Daley
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RNP - RICK N. PETTY
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
October 13, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
>,H1	Result is greater than the associated numerical value. Sample analysis performed past holding time.
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound

Microbac Laboratories Inc.
List of Valid Qualifiers
October 13, 2016

Qualkey: DOD

TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0006EA 001-003 LUC5 FL		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp-	Grab	Matrix	Number of Containers	Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 003	18WW16-092916			9/29/16	0740		X	W	1	X					
	128-092916			9/29/16	0835		X	W	1	X					
	128FD-092916			9/29/16	0835		X	W	1	X					
	127-092916			9/29/16	0950		X	W	1	X					
	127MS-092916			9/29/16	0950		X	W	1	X					
	127MSD-092916			9/29/16	0950		X	W	1	X					

Comments: **STANDARD TAT**

	Date	Time			Date	Time	
Relinquished by: (Signature) Scott Beesinger	9/29/16	1500	Received by: (Signature)				Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Re (Si			Time	Remarks:

Microbac OVD
Received: 09/30/2016 10:06
By: BRENDA GREGORY
221000091479
Brenda Gregory

•Homogenize all composite samples prior to analysis

nager, Pink QA/QC Manager

00737215

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16091386
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 11-OCT-2016

Samplenum	Container ID	Products
L16091386-01	808256	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-SEP-2016 14:17	CLS		
2	ANALYZ	W1	SEM	07-OCT-2016 08:40	JWR	BRG	
3	STORE	SEM	A1	12-OCT-2016 07:34	AZH	JWR	

Samplenum	Container ID	Products
L16091386-02	808257	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-SEP-2016 14:17	CLS		
2	ANALYZ	W1	SEM	07-OCT-2016 08:40	JWR	BRG	
3	STORE	SEM	A1	12-OCT-2016 07:34	AZH	JWR	

Samplenum	Container ID	Products
L16091386-03	808258	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-SEP-2016 14:17	CLS		
2	ANALYZ	W1	SEM	07-OCT-2016 08:40	JWR	BRG	
3	STORE	SEM	A1	12-OCT-2016 07:34	AZH	JWR	

Samplenum	Container ID	Products
L16091386-04	808259	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-SEP-2016 14:17	CLS		
2	ANALYZ	W1	SEM	07-OCT-2016 08:40	JWR	BRG	
3	STORE	SEM	A1	12-OCT-2016 07:34	AZH	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16091386
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 11-OCT-2016

Samplenum	Container ID	Products
L16091386-05	808260	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-SEP-2016 14:17	CLS		
2	ANALYZ	W1	SEM	07-OCT-2016 08:40	JWR	BRG	
3	STORE	SEM	A1	12-OCT-2016 07:34	AZH	JWR	

Samplenum	Container ID	Products
L16091386-06	808261	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-SEP-2016 14:17	CLS		
2	ANALYZ	W1	SEM	07-OCT-2016 08:40	JWR	BRG	
3	STORE	SEM	A1	12-OCT-2016 07:34	AZH	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

February 10, 2017

DAIM-ODB-LO

Mr. Rich Mayer
US Environmental Protection Agency
Federal Facilities Section R6
1445 Ross Avenue
Dallas, TX 75202-2733

Re: Draft Final 2nd Annual Remedial Action Operation Report for LHAAP-67, Above Ground Storage Tank Farm at Longhorn Army Ammunition Plant, Karnack, Texas

Dear Mr. Mayer,

The above-referenced document is being transmitted to you for your records and includes revisions based upon your comments on the Draft. In accordance with the FFA, the Draft Final will be considered Final after 30 days without further comment.

The document was prepared by AECOM on behalf of the Army as part of AECOM's Performance Based Remediation contract for the facility. I ask that Debra Richmann, AECOM's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
A. Palmie, TCEQ, Austin, TX
P. Bruckwicki, Caddo Lake NWR, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USAEC, San Antonio, TX
D. Richmann, AECOM – San Antonio, TX (for project files)

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

February 10, 2017

DAIM-ODB-LO

Ms. April Palmie
Texas Commission on Environmental Quality Superfund Section, MC-136
12100 Park 35 Circle, Bldg D
Austin, TX 78753

Re: Draft Final 2nd Annual Remedial Action Operation Report for LHAAP-67, Above Ground Storage Tank Farm at Longhorn Army Ammunition Plant, Karnack, Texas

Dear Ms. Palmie,

The above-referenced document is being transmitted to you for your records and includes revisions based upon your comments on the Draft. In accordance with the FFA, the Draft Final will be considered Final after 30 days without further comment.

The document was prepared by AECOM on behalf of the Army as part of AECOM's Performance Based Remediation contract for the facility. I ask that Debra Richmann, AECOM's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
R. Mayer, USEPA Region 6, Dallas, TX
P. Bruckwicki, Caddo Lake NWR, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USAEC, San Antonio, TX
D. Richmann, AECOM, San Antonio, TX (for project files)

Responses to Comments on
Draft 2nd Annual Remedial Action Operation Report for Site LHAAP-67 (Above Ground Storage Tank Farm)
Longhorn Army Ammunition Plant, Karnack, Texas

November 2016

Reviewer: Richard Mayer, EPA

Respondent: Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
1	iii	Minor Editorial Comment	Please move micrograms per liter at the top of the page to the location of "milligrams per liter", so that the abbreviations are in alphabetical order. Also, please remove RD, since it is not used in the text.	C	Concur. "µg/L -micrograms per liter" has been moved as requested. The acronym RD occurs on page 2-3. However, it does not occur anywhere else in the report, so it has been removed from the list of acronyms and abbreviations and deleted from the only place it occurred in the text (Section 2.2.2).	
2	1-2	End of Full Paragraph	Please add Shaw, 2011 reference to the reference list.	D	The Shaw, 2011 reference is included in the references list on page 5-1 of the draft report.	
3		Figure 2-2	The flow direction at this site is consistently changing over the various quarters due to several factors that include dry wells, anomalous data, weather events, and changes in the network of wells. Hopefully, over time and the inclusion of new wells (and additional data) a consistent flow direction will be determined.	C	Noted. Please see response to comment 5.	
4		Figure 2-7	The monitoring well groundwater elevations are not shown on the figure, please include them.	E	It is assumed this comment refers to Figure 2-6. Figure 2-6 was modified from Figure 2-4 in the Final Remedial Design (Shaw, 2011), which shows the groundwater surface elevation contours, based on December 2007 measurements. However, that source figure does not include the groundwater surface elevations for the individual wells. Please note that in response to a TCEQ comment, Figure 2-6 has been re-named "Historical Shallow Zone Groundwater Gradient".	

Responses to Comments on
Draft 2nd Annual Remedial Action Operation Report for Site LHAAP-67 (Above Ground Storage Tank Farm)
Longhorn Army Ammunition Plant, Karnack, Texas

November 2016

Reviewer: Richard Mayer, EPA

Respondent: Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
5		Table 2-3, Well 67WW02	What is perplexing is that this well had no detections for 1,1-DCE since December of 1998 (9 sampling events over 17 years) and then had a detection in February of 2015 (3.59 ug/l) and then in May of 2015 had a concentration above the MCL of 13.2 ug/l. What is even stranger is that the sampling event in May of 2016 had 1,1-DCE at 67.6 ug/l (this is not in the report, found in the June 2016 validated data). Is there an explanation for this?	--	The groundwater surface at the site is relatively flat, so even slight variations in measured groundwater levels can result in widely varying groundwater flow interpretations, based on contouring the elevations for each well. In 2007 the interpreted groundwater flow was to the north west (Figure 2-6). In the Year 1 RA-O (May 2013 – May 2014) report, the interpreted groundwater flow directions were predominantly to the north/northeast, away from 67WW02 in May 2013, September 2013, and January 2014. Then in May 2014, the flow direction shifted and became predominantly to the north/northwest, toward 67MW02. This remained the predominant direction of groundwater flow throughout Year 2. However, as noted in the comment, 1,1-DCE was not detected at 67MW02 until February 2015. Even so, the change in groundwater flow direction appears to be the main factor influencing the appearance and observed increasing concentrations of 1,1-DCE in monitoring well 67WW02.	
6		Table 2-3, Well 67WW14	Also interesting (although not as unique as well 67WW02), is that since October of 2013, 1,1-DCE was below the MCL for seven consecutive sampling events until May 2016 where the concentration was 10.8 ug/l (the result is from the June 2016 validated data).	--	Noted.	
7		Table 2-3, Well 67WW09	The good news is that the last two monitoring events (including the May 2016 sampling event) the concentrations of 1,1-DCE have been below the MCL.	--	Noted.	
8	3-5	Last Paragraph	Please include a table or appendix with the calculations discussed in this paragraph.	C	The supporting documentation for the correlation coefficients are provided in Appendix F.	

Responses to Comments on
Draft 2nd Annual Remedial Action Operation Report for Site LHAAP-67 (Above Ground Storage Tank Farm)
Longhorn Army Ammunition Plant, Karnack, Texas

November 2016

Reviewer: April Palmie, TCEQ

Respondent: Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
1	2-2	Section 2.2.1	Second bullet I compared Table 2-1 to the same table in Year 1 report. I don't see any difference in the screened intervals for 67WW01-03.	E	Table 2-1 in both the Year 1 and Year 2 reports is the same, because both tables include the results of a downhole camera survey performed in March 2015 to resolve some well construction uncertainties. Specifically, Table 2-1 reflects the top and bottom depths/elevations of the screens in wells 67WW01, -02, and -03 as confirmed by the downhole survey. . A new footnote "c" has been added to Table 2-1 to clarify the source of the information used to determine these screen intervals. The text in the second bullet on page 2-2 has been revised for clarification.	
2	2-3	Section 2.3	Second paragraph could also note that plume is delineated within the LUC boundary and not near surface water body.	C	The following text has been added before the last sentence in the second paragraph: "Further, the VOC plume is delineated within the LUC boundary and is not near any surface water body."	
3		Figures 2-2 through 2-6	The groundwater gradient is pretty flat at this site with generally less than 1 foot change across the site. There really are not enough data points to justify the o.1 and 0.2 foot contours and the extra lines really don't add information. Such small variations could be related to well development, screening, or smearing. I request again that we not contour more often than every 0.5 foot. The contours should be at XXX.0 and XXX.5. 2-6 – Has no elevations. Change title to add "Historic Groundwater Gradient" or similar.	C/D	Because of the very low relief and number of control points at the site, re-contouring the potentiometric surface figures at a 0.5 ft contour interval would not add any value (only one or possibly two contour lines would be shown per figure). The title on Figure 2-6 has been changed to, "Historical Shallow Zone Groundwater Gradient Map", because AECOM Figure 2-6 was modified from Figure 2-4 in the Final Remedial Design (Shaw, 2011), which did not include groundwater elevations for the individual wells.	

Responses to Comments on
Draft 2nd Annual Remedial Action Operation Report for Site LHAAP-67 (Above Ground Storage Tank Farm)
Longhorn Army Ammunition Plant, Karnack, Texas

November 2016

Reviewer: April Palmie, TCEQ

Respondent: Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
4	3-2	Section 3.1	Well 67WW02 – agree new boundary well will be necessary if trend continues. Well 67WW03 – the absence of COCs is not likely from natural attenuation. This well is screened higher than the wells that produce water and contain site COCs. Please revise assertion.	C	The text concerning the COCs reported in 67WW03 in 1998 has been changed to indicate the initially reported concentrations are suspect and/or not representative of the shallow zone groundwater. The second to last sentence has been modified as follows: "Because this well has been chronically dry, it was replaced by adjacent well 67WW12, which is screened over an interval that is approximately 10 feet deeper than well 67WW03."	
5	4-2	Section 4	Agree with conclusion that MNA biodegradation does not appear to be occurring. Also agree that with shift in groundwater gradient, plume appears less stable at northern boundary.	--	Noted.	

From: April Palmie <april.palmie@tceq.texas.gov>
Sent: Thursday, February 16, 2017 5:11 PM
To: Zeiler, Rose M CIV USARMY HQDA ACSIM (US); Mayer, Richard; Snow, JoLynn
Cc: Aaron.K.Williams@usace.army.mil; Smith, Nicholas B CIV USARMY IMCOM (US); 'Becher, Kent'; Tzhone, Stephen; Richmann, Debra; Richard.P.Smith@usace.army.mil; Forsythe, Barry; Harrison, Dorelle; Sharp, Elspeth; paul_bruckwicki@fws.gov; April Palmie
Subject: RE: EPA Approval of the Draft Final 2nd Annual RAO Report for Longhorn AAP Site 67 (Above Ground Storage Tank Farm)

I have also reviewed the Draft Final 2nd Annual RAO Report for Longhorn AAP Site 67and accept the document and RTCs.

April Palmie
Project and Grant Manager
Superfund Section
Remediation Division
Texas Commission on Environmental Quality
Phone: (512) 239-4152
Email: April.Palmie@tceq.texas.gov

From: Zeiler, Rose M CIV USARMY HQDA ACSIM (US) [mailto:rose.m.zeiler.civ@mail.mil]
Sent: Thursday, February 16, 2017 4:17 PM
To: Mayer, Richard <mayer.richard@epa.gov>; Snow, JoLynn <JoLynn.Snow@aecom.com>
Cc: Aaron.K.Williams@usace.army.mil; Smith, Nicholas B CIV USARMY IMCOM (US) <nicholas.b.smith56.civ@mail.mil>; 'Becher, Kent' <kdbecher@usgs.gov>; Tzhone, Stephen <tzhone.stephen@epa.gov>; debra.richmann@aecom.com; Richard.P.Smith@usace.army.mil; April Palmie <april.palmie@tceq.texas.gov>; Forsythe, Barry <Forsythe.Barry@epa.gov>; Harrison, Dorelle <harrison.dorelle@epa.gov>; Sharp, Elspeth <elspeth.sharp@aecom.com>; paul_bruckwicki@fws.gov
Subject: RE: EPA Approval of the Draft Final 2nd Annual RAO Report for Longhorn AAP Site 67 (Above Ground Storage Tank Farm)

Thanks, Rich.
Rose

Rose M. Zeiler, Ph.D.
BRAC Field
479-635-0110
fax: 479-635-0112

From: Mayer, Richard [mayer.richard@epa.gov]
Sent: Thursday, February 16, 2017 4:16 PM
To: Snow, JoLynn; Zeiler, Rose M CIV USARMY HQDA ACSIM (US)
Cc: Aaron.K.Williams@usace.army.mil; Smith, Nicholas B CIV USARMY IMCOM (US); 'Becher, Kent'; Tzhone, Stephen; debra.richmann@aecom.com; Richard.P.Smith@usace.army.mil; April Palmie; Forsythe, Barry; Harrison, Dorelle; Sharp, Elspeth; paul_bruckwicki@fws.gov
Subject: [Non-DoD Source] RE: EPA Approval of the Draft Final 2nd Annual RAO Report for Longhorn AAP Site 67 (Above Ground Storage Tank Farm)

Good Afternoon JoLynn/Rose, I've reviewed the Draft Final 2nd Annual RAO Report for Longhorn AAP Site 67 and accept all edits and comment responses. Thanks.

DRAFT FINAL
2ND ANNUAL REMEDIAL ACTION OPERATION REPORT
LHAAP-67 (ABOVE GROUND STORAGE TANK FARM)
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers
Tulsa District

Prepared By:

AECOM Technical Services, Inc.

February 2017

DRAFT FINAL
2ND ANNUAL REMEDIAL ACTION OPERATION REPORT
LHAAP-67 (ABOVE GROUND STORAGE TANK FARM)
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers

Tulsa District

Prepared By:

AECOM Technical Services, Inc.

Contract No. W912DY-09-D-0059

Task Order No. DS01

February 2017

Table of Contents

1 INTRODUCTION 1-1

1.1 Remedial Action Objectives 1-1

1.2 Performance Objectives 1-1

1.3 Site Description 1-2

1.4 Conceptual Site Model 1-2

2 SITE ACTIVITIES AT LHAAP-67 2-1

2.1 Annual LUC Compliance Inspection, Monitoring, and Repairs 2-1

2.2 Groundwater Monitoring 2-1

2.2.1 Approved Modifications to the Groundwater Monitoring Program 2-1

2.2.2 Groundwater Elevations and Flow Direction 2-2

2.2.3 Groundwater Analytical Results 2-4

2.3 Surface Water Sampling 2-4

3 NATURAL ATTENUTION EVALUTION 3-1

3.1 First Line of Evidence: Change in COC Concentrations over Time and with Distance 3-1

3.1.1 Plume Stability 3-4

3.2 Second Line of Evidence: Geochemical Indicators 3-6

3.3 Third Line of Evidence: Predictive Modeling and Microbial Analysis 3-8

4 SUMMARY AND CONCLUSIONS 4-1

5 REFERENCES 5-1

List of Figures

Figure 1-1: LHAAP-67 Site Area Map

Figure 1-2: LHAAP-67 Site Location Map

Figure 2-1: LHAAP-67 Groundwater Monitoring Well Locations

Figure 2-2: LHAAP-67 July 2014 Shallow Zone Potentiometric Map

Figure 2-3: LHAAP-67 December 2014 Shallow Zone Potentiometric Map

Figure 2-4: LHAAP-67 February 2015 Shallow Zone Potentiometric Map

Figure 2-5: LHAAP-67 May 2015 Shallow Zone Potentiometric Map

Figure 2-6: LHAAP-67 Historical Shallow Zone Groundwater Gradient Map

Figure 2-7: LHAAP-67 July 2014 VOCs in Shallow Zone Groundwater

Figure 2-8: LHAAP-67 December 2014 VOCs in Shallow Zone Groundwater

Figure 2-9: LHAAP-67 February 2015 VOCs in Shallow Zone Groundwater

Figure 2-10: LHAAP-67 May 2015 VOCs in Shallow Zone Groundwater

Figure 2-11: LHAAP-67 COC Concentration and Groundwater Elevation Evaluation

List of Tables

Table 2-1: Groundwater Elevation Data – LHAAP-67

Table 2-2: Groundwater Analytical Results, Year 1 and 2 – LHAAP-67

Table 2-3: Historic Groundwater COC Concentrations – LHAAP-67

List of Appendices

APPENDIX A: ANNUAL LUC COMPLIANCE CERTIFICATION DOCUMENTATION

APPENDIX B: PHOTO LOG

APPENDIX C: MONITORING WELL SAMPLING FORMS

APPENDIX D: LABORATORY ANALYTICAL RESULTS

APPENDIX E: MANN-KENDALL TREND TEST RESULTS

APPENDIX F: CORRELATION DOCUMENTATION

Acronyms and Abbreviations

AECOM	AECOM Technical Services, Inc.
AST	above ground storage tank
COC	contaminant of concern
DCA	dichloroethane
DCE	dichloroethene
DO	dissolved oxygen
LHAAP	Longhorn Army Ammunition Plant
LUC	Land Use Control
MCL	maximum contaminant level
µg/L	micrograms per liter
mg/L	milligram per liter
MNA	Monitored Natural Attenuation
mV	milli-volts
No.	number
ORP	oxidation-reduction potential
PCL	Texas Risk Reduction Program Tier 1 Groundwater Residential Protective Concentration Level
RACR	Remedial Action Completion Report
RA(O)	Remedial Action Operation
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
ROD	Record of Decision
TCA	trichloroethane
TCE	trichloroethene
TOC	total organic carbon
TRRP	Texas Risk Reduction Program
U.S.	United States
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VC	vinyl chloride
VOC	volatile organic compound

1 INTRODUCTION

The United States (U.S.) Army Corps of Engineers (USACE), Tulsa District, contracted AECOM Technical Services, Inc. (AECOM), to perform remedial activities at multiple sites at the former Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas, under the Huntsville District's Worldwide Environmental Restoration Services Contract Number (No.) W912DY-09-D-0059, Task Order No. DS01. As part of this contract, AECOM is performing groundwater and surface water monitoring as part of Remedial Action Operations (RA(O)) for the Monitored Natural Attenuation (MNA) groundwater remedy at site LHAAP-67. A Final Record of Decision (ROD) was executed for LHAAP-67 in June 2010 (USACE, 2010). Groundwater monitoring at LHAAP-67 is ongoing as described in the Draft Final Remedial Action Completion Report (RACR) (AECOM, 2015). This RA(O) report represents the second year of RA(O) implementation and summarizes the results of site inspections and sampling activities completed between July 2014 and May 2015. A draft first year RA(O) report which covers the period between May 2013 and May 2014 was prepared in March 2015. This report encompasses and provides analysis for two years of MNA data.

LHAAP is located in east-central Texas in the northeastern corner of Harrison County between State Highway 43 in Karnack, Texas, and the western shore of Caddo Lake (see **Figure 1-1**). The nearest cities are Marshall, Texas, approximately 14 miles to the southwest, and Shreveport, Louisiana, approximately 40 miles to the east. Caddo Lake is a large freshwater lake that bounds LHAAP to the north and east. The eastern fence of the LHAAP installation is 3.5 miles from the Texas-Louisiana state border.

1.1 Remedial Action Objectives

The Remedial Action Objectives (RAOs) at the LHAAP-67 site must protect human health and meet applicable or relevant and appropriate requirements. There are no ecological risks at the LHAAP-67 site (USACE, 2010).

The RAOs for the LHAAP-67 site, consistent with the reasonably anticipated future use as a national wildlife refuge, are:

- Protection of human health by preventing human exposure to the contaminated groundwater;
- Protection of human health and the environment by preventing contaminated groundwater from migrating into nearby surface water; and,
- Return of groundwater to its potential beneficial use as drinking water, wherever practicable.

1.2 Performance Objectives

The remedy selected for LHAAP-67 is Land Use Control (LUC) and MNA. The performance objectives at LHAAP-67 consist of two components: physical inspections and groundwater/surface water monitoring. As a component of the LUC implementation, the civil survey of the LUC boundary was conducted in November 2014 and recorded in the Harrison County Courthouse in December 2014. Physical inspections are conducted periodically to confirm compliance with the LUC objectives, which consist of preventing human exposure to

groundwater contamination presenting an unacceptable risk to a future maintenance worker and ensuring that there is no withdrawal or use of groundwater from the site for anything other than environmental monitoring and testing until the cleanup levels are attained. Groundwater monitoring has been in-progress at the site since May 2013, and LHAAP-67 will also have Five-Year Reviews completed as part of the site wide Longhorn Five-Year Review.

According to the Remedial Design (Shaw, 2011), groundwater monitoring is being performed to demonstrate that natural attenuation is an effective remedy that will attain the remediation objectives over time and that the groundwater plume will not migrate to nearby surface water bodies at levels that may present an unacceptable risk to human health and the environment. Groundwater monitoring is being performed in accordance with the Remedial Action Work Plan (RAWP) (AECOM, 2013) to:

- detect changes in environmental conditions that may reduce the efficacy of natural attenuation processes,
- identify potentially toxic and/or mobile transformation products,
- verify that the plume is not expanding and poses no unacceptable risk to downgradient receptors,
- detect new releases of contaminants to the environment that could impact effectiveness of the natural attenuation remedy, and
- verify attainment of the remediation objectives.

Work completed as part of the 2014/2015 RA(O) consisted of four quarterly groundwater sampling events at fifteen wells. This report summarizes the LUC compliance inspection, results of groundwater sampling, and an evaluation of MNA.

1.3 Site Description

LHAAP-67 is in the central portion of LHAAP, on the southeast corner of 48th Street and Ignatus Avenue (see **Figure 1-2**), and covers an area of approximately 1.9 acres. The site topography is relatively flat. The nearest significant surface water body is Central Creek located approximately 870 feet southeast of LHAAP-67. Central Creek eventually flows into Caddo Lake.

When operational, LHAAP-67 consisted of seven above ground storage tanks (ASTs) used for storing No. 2 fuel oil, kerosene, and solvents. The size of the tanks is unknown. The tanks were surrounded by earthen dikes designed to contain potential spills. The ASTs have been removed and the only structure remaining at the site is a railroad bed.

The LUC area associated with the groundwater use restriction at LHAAP-67 extends beyond the historical site boundaries along the western, eastern and southern sections of the site, and encompasses a total of 2.6 acres. LHAAP-67 has no known areas of archaeological or historical importance.

1.4 Conceptual Site Model

A detailed Conceptual Site Model of LHAAP-67 was previously presented in the ROD (USACE, 2010). Based upon additional data collected as part of final remedy implementation as presented

in the LHAAP-67 Draft Final RACR (AECOM, 2015), the lithologic units at the site have been reclassified.

Historically, two distinct water-bearing zones (shallow and intermediate) had been designated at LHAAP-67; however, during drilling performed for the 2013 investigation, no continuous clay layer (aquitard) or significant lithological differences between previously identified shallow and intermediate zones were encountered. Co-located monitoring wells 67WW06 (total depth 49.83 feet below ground surface) and 67WW07 (total depth 27.86 feet below ground surface), historically identified as intermediate and shallow zone wells, respectively, had similar static water levels during the four sampling events performed during 2013/2014, with a maximum difference of 1.04 ft noted during the January 2014 event (these small differences were confirmed in the four 2014/2015 sampling events with a maximum difference of 0.08 feet). Therefore, the previously designated shallow and intermediate zones are now considered to be hydraulically connected and constitute a single uppermost groundwater-bearing unit at LHAAP-67 to a depth of approximately 50 feet below ground surface. Monitoring well 67WW06, which was previously identified as an intermediate zone well, is now re-classified as a shallow zone monitoring well, screened in the uppermost groundwater-bearing unit.

A deeper "intermediate" water-bearing zone was; however, identified at a depth of approximately 68 feet below ground surface in boring 67DPT14 (drilled in June 2014) with a clear aquitard separating this unit from the shallow zone.

Based on this information, shallow and intermediate water-bearing zones are present in the LHAAP-67 investigation area, but the configuration has been modified from that presented in the remedial design as discussed above.

The contaminants of concern (COCs) identified in LHAAP-67 shallow zone groundwater are trichloroethene (TCE), 1,1-dichloroethene (1,1-DCE), 1,2-dichloroethane (1,2-DCA), 1,1,1-trichloroethane (1,1,1-TCA), and 1,1,2-trichloroethane (1,1,2-TCA). The presence of these COCs in the shallow groundwater zone represents the primary driver for remedial action as they are at concentrations above the human health standard for future maintenance worker under an industrial exposure scenario. There are no ecological risks at the LHAAP-67 site.

The nature and extent of groundwater contamination at LHAAP-67 was evaluated during field investigations conducted between 1998 and 2007. It is believed that historic releases from the ASTs at the site contaminated the soil, with contaminants then leaching from the soil into groundwater. A relatively small area of contamination is observed in the shallow groundwater which poses an unacceptable carcinogenic risk and non-carcinogenic hazard to a hypothetical future maintenance worker under an industrial exposure scenario. There is no groundwater contamination in the deeper "intermediate" groundwater zone. The only potentially complete exposure pathway is via use of shallow-zone groundwater as drinking water. However, shallow groundwater is not used as drinking water at the refuge and the pathway is eliminated from any hypothetical receptor because land use controls are in place that prohibits the use of groundwater other than for environmental monitoring and testing. The nearest significant surface water body to LHAAP-67 site is Central Creek, located upgradient and approximately 870 feet from the site. There is no other surface water body in close proximity to the LHAAP-67 site. Therefore, there is no demonstrated complete pathway from groundwater to surface water.

Based on groundwater level data collected in 2014/2015, the dominant shallow zone groundwater gradient appears to be to the north/northwest. The gradient is based on data collected from up to 15 monitoring wells. The previous RA(O), March 2015 report, revealed that the dominant shallow zone groundwater gradient appeared to be to the north/northeast although the flow direction began to shift direction by May 2014 towards the north/northwest and continued to show a north/northwesterly flow direction for the entire second year RA(O) reporting period. The apparent change of the shallow zone groundwater gradient may be due to the increase in precipitation the area received during the current monitoring period (2014/2015) and particularly in 2015. The historical gradient was assumed to be to the southeast (Final Remedial Design, August 2011) which was based on data collected primarily from three (3) monitoring wells because some of the wells such as 67WW03 and 67WW04 were dry most of the time. This reinterpretation of the gradient was a result of installation of additional monitoring wells which provided a better definition of the groundwater gradient. Therefore, potential discharge to surface water in Central Creek became an incomplete exposure pathway and surface water sampling as stated in the RAWP was no longer necessary.

A temporary well installed in soil boring 67DPT14 was completed in the deeper “intermediate” water-bearing zone to a depth of 78 feet below ground surface. Groundwater analyzed from 67DPT14 revealed that no COCs were identified. Therefore, the contaminants are confined to the shallow zone groundwater.

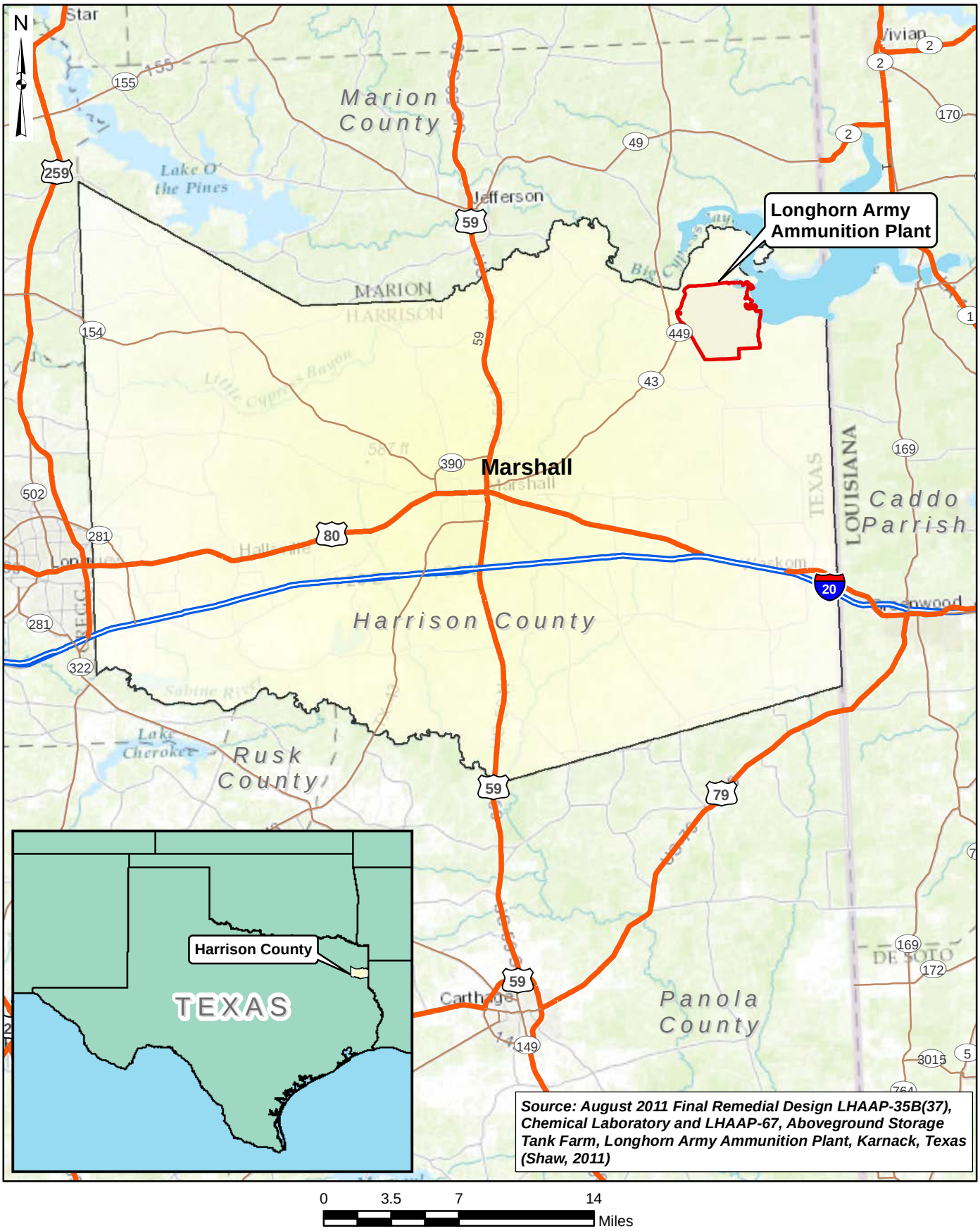

Source: August 2011 Final Remedial Design LHAAP-35B(37), Chemical Laboratory and LHAAP-67, Aboveground Storage Tank Farm, Longhorn Army Ammunition Plant, Karnack, Texas (Shaw, 2011)

AECOM

Figure 1-1
LHAAP-67 Site Area Map
Remedial Action Operation Report (Year 2)

Longhorn Army Ammunition Plant
Karnack, Texas

60256135

February 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR02\Fig 1-1 LHAAP67 Area Map.mxd

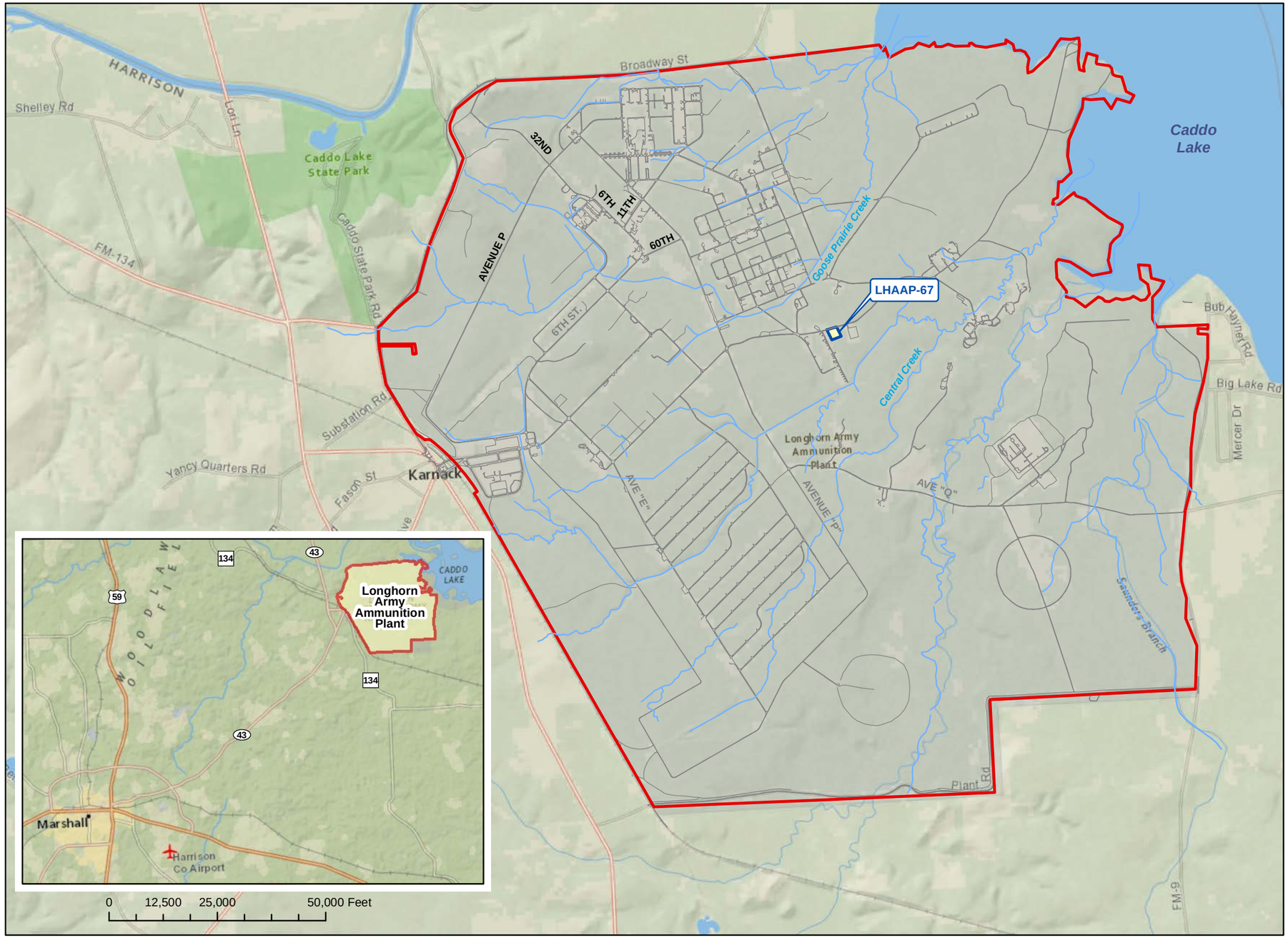

Legend

- Streams
- Roads
- LHAAP Boundary
- Site
- Lake/Pond

Source: August 2011 Final Remedial Design LHAAP-35B(37), Chemical Laboratory and LHAAP-67, Aboveground Storage Tank Farm, Longhorn Army Ammunition Plant, Karnack, Texas (Shaw, 2011)

AECOM

Figure 1-2
Site Location Map
Remedial Action Operation Report (Year 2)
LHAAP-67 Site
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 February 2017

L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR02\Figure 1-2 LHAAP67_Site Location Map.mxd

2 SITE ACTIVITIES AT LHAAP-67

2.1 Annual LUC Compliance Inspection, Monitoring, and Repairs

AECOM performed the annual LUC compliance inspection for LHAAP-67 site on July 10, 2014 and again on July 21, 2015. The Annual LUC Compliance Certification Documentation Form for the second year RA(O) period is included in **Appendix A**. No non-compliance issues or concerns were noted during the annual inspection.

No damage to bollards, pads, or protective casings was observed and minimal encroachment of weeds or brush on the well pads was observed. Monitoring well identification tag replacement, as well as painting/re-labeling as needed, for wells outside the current monitoring network was completed in Fall 2013. Monitoring well 67WW05 was observed to be needing paint. Therefore, the old paint was scraped and a new coat of paint was applied to the well casing and the bollards. A photo documenting the condition of the well after completing the work is shown on **Appendix B**. The work was completed on September 4, 2015. Area mowing and clearing around the wells is conducted on an as needed basis but typically done before sampling events.

2.2 Groundwater Monitoring

For the 2nd year RA(O), four quarterly groundwater sampling events of 15 monitoring wells were completed in July 2014, December 2014, February 2015, and May 2015. The monitoring wells are depicted in **Figure 2-1** and listed in **Table 2-1**. The groundwater in each of the 15 wells was gauged; if sufficient water existed in the well each well was sampled. Groundwater was not sampled from 67WW06 due to its proximity to 67WW07. Groundwater was not detected in 67WW04, and was detected and sampled only in May 2015 in 67WW03.

Before collecting groundwater samples, the wells were gauged using a water level probe and the depth to water recorded to the neared 0.01 foot from the top of casing. Water samples were collected using the low-flow sampling technique as described in the Groundwater Sampling Procedures found in the Installation-Wide Work Plan (AECOM, 2014). The objective of using this method was to collect representative samples of the groundwater in the formation adjacent to the well screen, eliminating the mixing of stagnant water above and below the well screen. After water quality parameters stabilized and were within acceptable ranges, samples were collected at the same low flow rate.

2.2.1 Approved Modifications to the Groundwater Monitoring Program

During the first year of RA(O), minor modifications were made to the groundwater monitoring program, in coordination with EPA and TCEQ.

- 67WW04: While 67WW04 was utilized historically to bound the plume to the south, new wells 67WW09A and 67WW10 now serve that purpose, providing better refinement of the plume boundary within the LUC boundary. 67WW04 will continue to be gauged for water level during each sampling event, but will no longer be sampled for volatile organic compounds (VOCs) or evaluated for field parameters.
- 67WW06: Based on changes in designation of groundwater bearing zones at LHAAP-67 described in the RACR (AECOM, 2015), co-located shallow zone monitoring wells 67WW06 and 67WW07 are now considered duplicative. Of the well pair, 67WW07 with a

shallower screened interval was retained for monitoring, while eliminating 67WW06 from further monitoring. Well 67WW06 will continue to be gauged for water level during each sampling event.

- Monitoring wells 67WW01 and 67WW08 were selected in the RAWP for collection of geochemical parameters. However, during the 1st year RA(O), 67WW01 was dry on two occasions and had insufficient water to collect MNA geochemical parameters on a third event. Therefore, MNA geochemical parameters were collected from 67WW11 in October 2013 instead. However, based on assessment of COC concentrations and location of monitoring wells with respect to the plume, it was determined in coordination with EPA and TCEQ that future sampling for MNA geochemical parameters will occur from monitoring well 67WW13 in addition to 67WW08. Because this decision to sample 67WW13 instead of 67WW11 was made in April 2015, well into the 2nd year RA(O) monitoring period, MNA samples were continued to be collected from 67WW11. During the 2nd year RA(O), MNA parameters were collected from 67WW11 during July and December 2014 and February 2015 sampling events and from 67WW13 in March and May 2015. 67WW01 was sampled for MNA parameters in May 2015 during the 2nd year RA(O). Therefore, MNA results became available for all four impacted wells 67WW01, 67WW08, 67WW11, and 67WW13.
- The previous top and bottom depths/elevations of the screened intervals for monitoring wells 67WW01, 67WW02, and 67WW03 were changed based on the results of a downhole camera survey performed in March 2015 to verify well construction. These screened intervals are presented in **Table 2-1** and are illustrated graphically in **Figure 2-11** (discussed later). The changes were minor and do not affect groundwater gauged elevation or gradient.

2.2.2 Groundwater Elevations and Flow Direction

During the July 2014 event, monitoring wells 67WW03 and 67WW04 were noted to be dry. The presence of dry wells did not diminish the ability to construct a complete potentiometric contour map. Based on the gauging data during this event, the groundwater flow direction is interpreted to be northwesterly (**Figure 2-2**).

The groundwater elevation data from 67WW01 and 67WW11 were not incorporated in the potentiometric contour map for July 2014, as it appears that their groundwater elevations do not correlate with the elevations of the surrounding wells. It is believed that the small amount of water measured in 67WW01 (0.8 to 1.4 feet) during these times may not be representative of the aquifer conditions. A review of the groundwater data for 67WW11 indicates that the well appears slow to respond to changing conditions that were observed during the sampling event (rain events).

During the December 2014 event, monitoring wells 67WW03 and 67WW04 were noted to be dry. The presence of dry wells did not diminish the ability to construct a complete potentiometric contour map. Based on the gauging data during this event, the groundwater flow direction is interpreted to be northerly (**Figure 2-3**). The groundwater elevation in 67WW02 in the central northern area of the site was high, disrupting the general pattern of groundwater flow to the north. During the February 2015 event, monitoring wells 67WW03 and 67WW04 were noted to be dry. The presence of dry wells did not diminish the ability to construct a complete potentiometric contour map. Based on the gauging data during this event, the groundwater flow direction is interpreted to be northwesterly (**Figure 2-4**).

The groundwater elevation data from 67WW01 and 67WW11 were not incorporated in the potentiometric contour map for February 2015, as it appears that their groundwater elevations do not correlate with the elevations of the surrounding wells for the same reasons presented for the July 2014 gauging event.

During the May 2015 event, monitoring well 67WW04 was noted to be dry. The presence of a dry well did not diminish the ability to construct a complete potentiometric contour map. Based on the gauging data during this event, the groundwater flow direction is interpreted to be northwesterly (**Figure 2-5**).

Groundwater elevations generally decreased by up to one foot across the site between July 2014 and December 2014 and subsequently (between December 2014 and May 2015) rose by up to one foot across the site. However, some wells did not behave in the same general pattern. For example, groundwater elevations in 67WW01 and 67WW11 increased between July 2014 and December 2014 and decreased between December 2014 and February 2015. These are the two wells that had groundwater elevations that did not fit with the general groundwater potentiometrics in July 2014 and February 2015. Groundwater elevation in May 2015 increased with respect to February 2015 by up to 2 feet as a result of heavy rainfall that occurred in April and May 2015.

Monitoring well 67WW03, located north of the VOC plume area, was dry in the first three of the four quarterly monitoring events. This is likely because this well is relatively shallow compared to other wells with the bottom of the screen interval at 175.54 feet above mean sea level and the static water level is below the screen bottom. As such, limited data is available from this well for use in the MNA evaluation or analysis of plume extent and stability. In lieu of this well, monitoring well 67WW12 provide the needed information to evaluate plume extent and stability in this area of the site. Monitoring well 67WW04 remained dry throughout the sampling period. Groundwater was present in 67WW03 in May 2015 as a result of a general increase in groundwater level at the site.

Based on data collected during the second year of RA(O), groundwater flow direction is generally noted to be in the north/northwesterly direction. The interpretation of groundwater flow direction has altered slightly from what was presented in the 1st year RA(O) report which is most likely due to the variation in precipitation and groundwater elevation. In the first three events of the 1st year RA(O), the groundwater flow direction was interpreted to be predominantly to the north/northeast. The interpretation of groundwater flow direction changed in May 2014 to a north/northwesterly direction and coincided with an increase in groundwater elevation across the site. The groundwater elevation across the site during the 2nd year RA(O) remained similar to or higher than the May 2014 groundwater elevation and the interpretation of the predominant groundwater flow direction also remained in a north/northwesterly direction.

The interpreted groundwater flow direction observed during the 2nd year RA(O) differs from what was presented in the Remedial Design document (Shaw, 2011) (see **Figure 2-6**). This is likely due to the installation of additional monitoring wells which provide a better definition of the actual groundwater gradient, as well as the variable effects of the recent drought on individual wells.

2.2.3 Groundwater Analytical Results

Analytical results for the quarterly samples are presented on **Table 2-2**. **Figures 2-7 through 2-10** depict the VOC data in wells sampled in July 2014, December 2014, February 2015, and May 2015, respectively.

Over the course of the 2nd year of RA(O), wells 67WW01, 67WW08, 67WW09, 67WW11, and 67WW13, contained VOCs above the respective cleanup levels. The highest concentrations of VOCs were detected in wells 67WW01, 67WW08 and 67WW13. The trends of COC concentrations in monitoring wells with COC concentrations greater than the maximum contaminant level (MCL)/Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (PCL) (EPA, 2014) are depicted in graphs presented on **Figure 2-11**. The trend analysis is discussed in **Section 3.0**.

Historically, since December 1998 and prior to May 2013, concentrations of COCs in 67WW01 were greater than their MCLs as shown on **Table 2-3**. Other monitoring wells such as 67WW02 and 67WW03 had COCs greater than their MCLs (December 1998) but subsequent sampling events revealed COC concentrations below the laboratory detection limits until the May 2015 monitoring event which revealed concentrations of 1,1-DCE above the MCL for 67WW02.

An expanded discussion on the VOCs and their distribution including trends is included **Section 3.1**.

Groundwater monitoring well sampling forms were completed for each monitoring well sampled and are included in **Appendix C**. Laboratory analytical results are included in **Appendix D**.

2.3 Surface Water Sampling

As discussed in the LHAAP-67 site RACR, semi-annual sampling of surface water from one location in Central Creek was planned (AECOM, 2015). The Central Creek surface water sampling location was dry during the baseline groundwater monitoring event and no surface water sample was collected.

As reported in the 1st year RA(O), the addition of multiple new shallow zone monitoring wells, has resulted in more clearly defining the groundwater potentiometric surface for the site. Consequently, the shallow zone groundwater flow direction (identified as north/northeast from the 1st year RA(O) Report, and north/northwest from this RA(O) Report) indicates that Central Creek located south of the LHAAP-67 site is upgradient and, therefore, is not an appropriate surface water body to monitor for potential impacts from LHAAP-67. Further, the VOC plume is delineated within the LUC boundary and is not near any surface water body. Therefore, concurrence was obtained not to sample surface water from Central Creek.

As shown in **Figure 1-2**, Goose Prairie Creek is located downstream to the north but at a distance of more than 1,500 feet from the LHAAP-67 site. There is no other surface water body downgradient or in close proximity of the LHAAP-67 site to collect an appropriate surface water sample. Therefore, based on this information and concurrence from the TCEQ and EPA, no further surface water monitoring is conducted at the LHAAP-67 site.

Legend

- MNA Parameter Analysis Well
- Shallow Monitoring Well
- Streams
- Roads
- Former Buildings or Concrete Slab
- LHAAP-67 Site Boundary

AECOM

Figure 2-1
Groundwater Monitoring Well Locations
Remedial Action Operation Report (Year 2)
LHAAP-67
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

February 2017

L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR02\Figure 2-1 LHAAP67_Groundwater Monitoring Well Locations.mxd

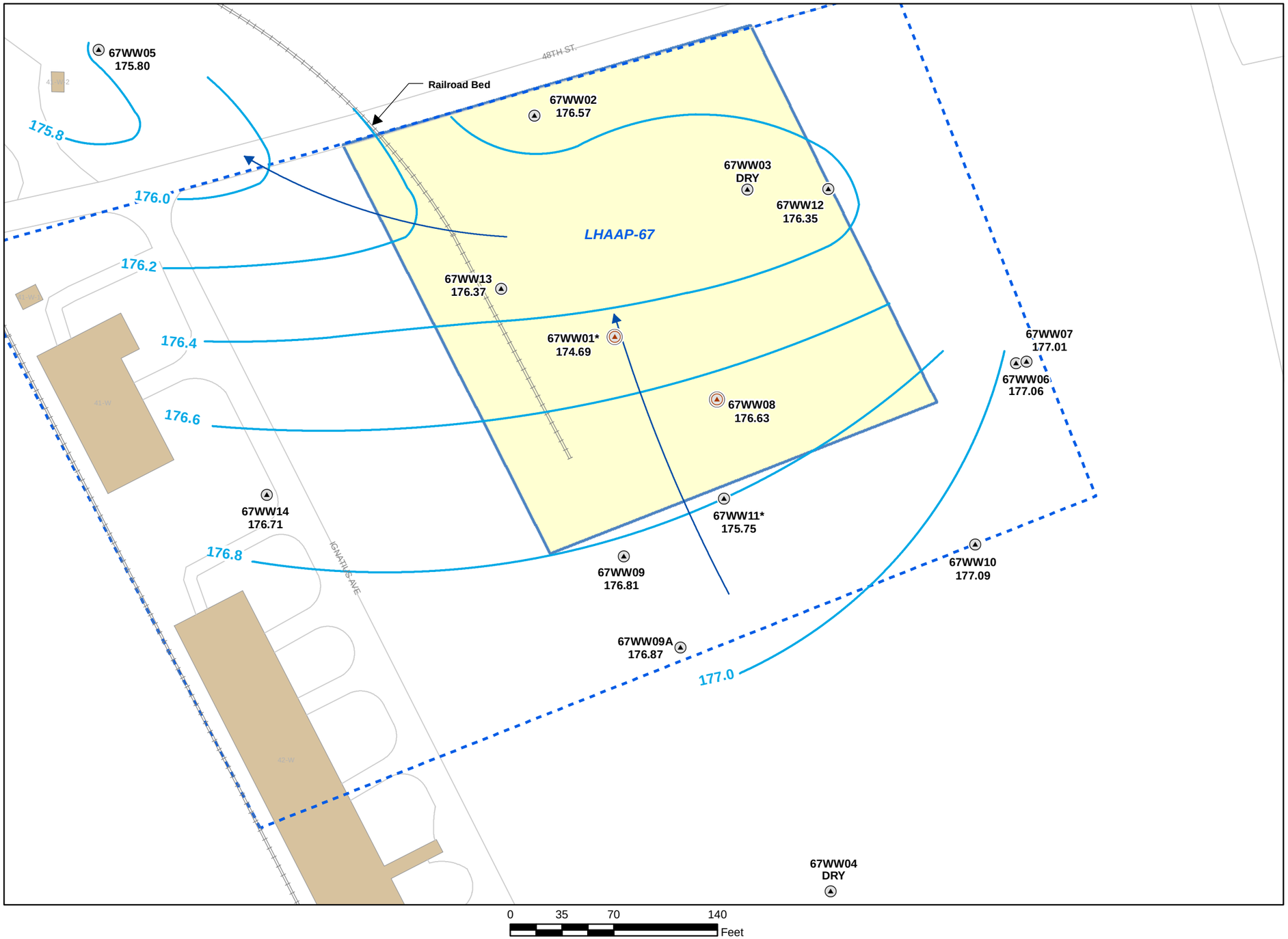

Legend

- MNA Parameter Analysis Well
- Shallow Monitoring Well Location
- Groundwater Flow Direction
- Groundwater Elevation Contour (Dashed Where Inferred) Contour Interval = 0.2 feet MSL
- Roads
- Land Use Control Boundary
- Buildings
- LHAAP-67 Site Boundary

Notes:
1. Groundwater elevations are presented in feet above mean sea level (MSL).
2. * Groundwater elevation data for wells 67WW01 and 67WW11 appear to be outliers and were not used in contouring.

AECOM

Figure 2-2
Shallow Zone Potentiometric Map - July 2014
Remedial Action Operation Report (Year 2)
LHAAP-67 Site
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

February 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR02\Figure 2-2 LHAAP67_Shallow Zone Potentiometric Map_July2014.mxd

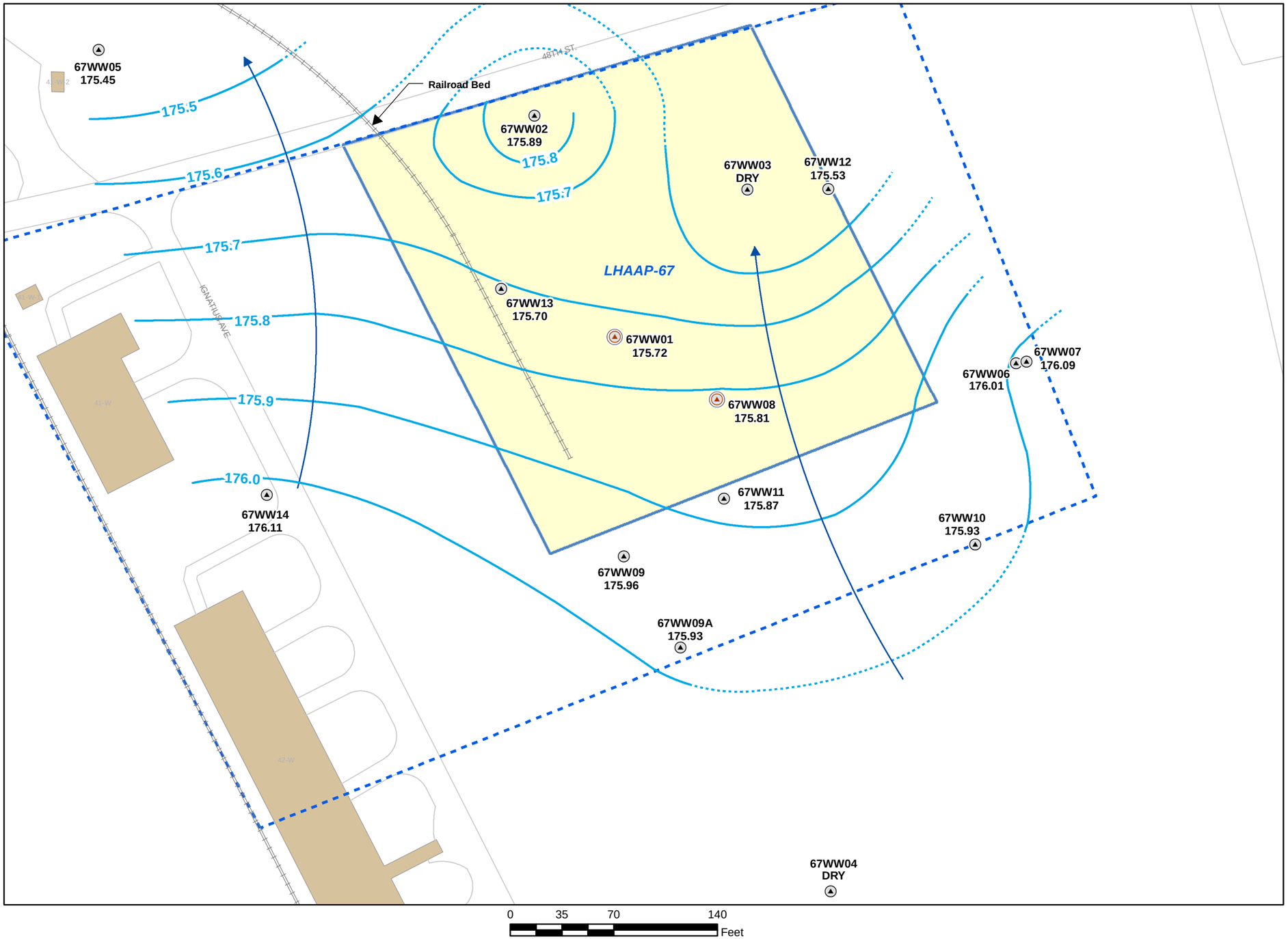

Legend

- MNA Parameter Analysis Well
- Shallow Monitoring Well Location
- Groundwater Flow Direction
- Groundwater Elevation Contour (Dashed Where Inferred) Contour Interval = 0.1 feet MSL
- Roads
- Land Use Control Boundary
- Buildings
- LHAAP-67 Site Boundary

Notes:
1. Groundwater elevations are presented in feet above mean sea level (MSL).

AECOM

Figure 2-3
Shallow Zone Potentiometric Map - December 2014
Remedial Action Operation Report (Year 2)
LHAAP-67 Site
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

February 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR02\Figure 2-3 LHAAP67_Shallow Zone Potentiometric Map_Dec2014.mxd

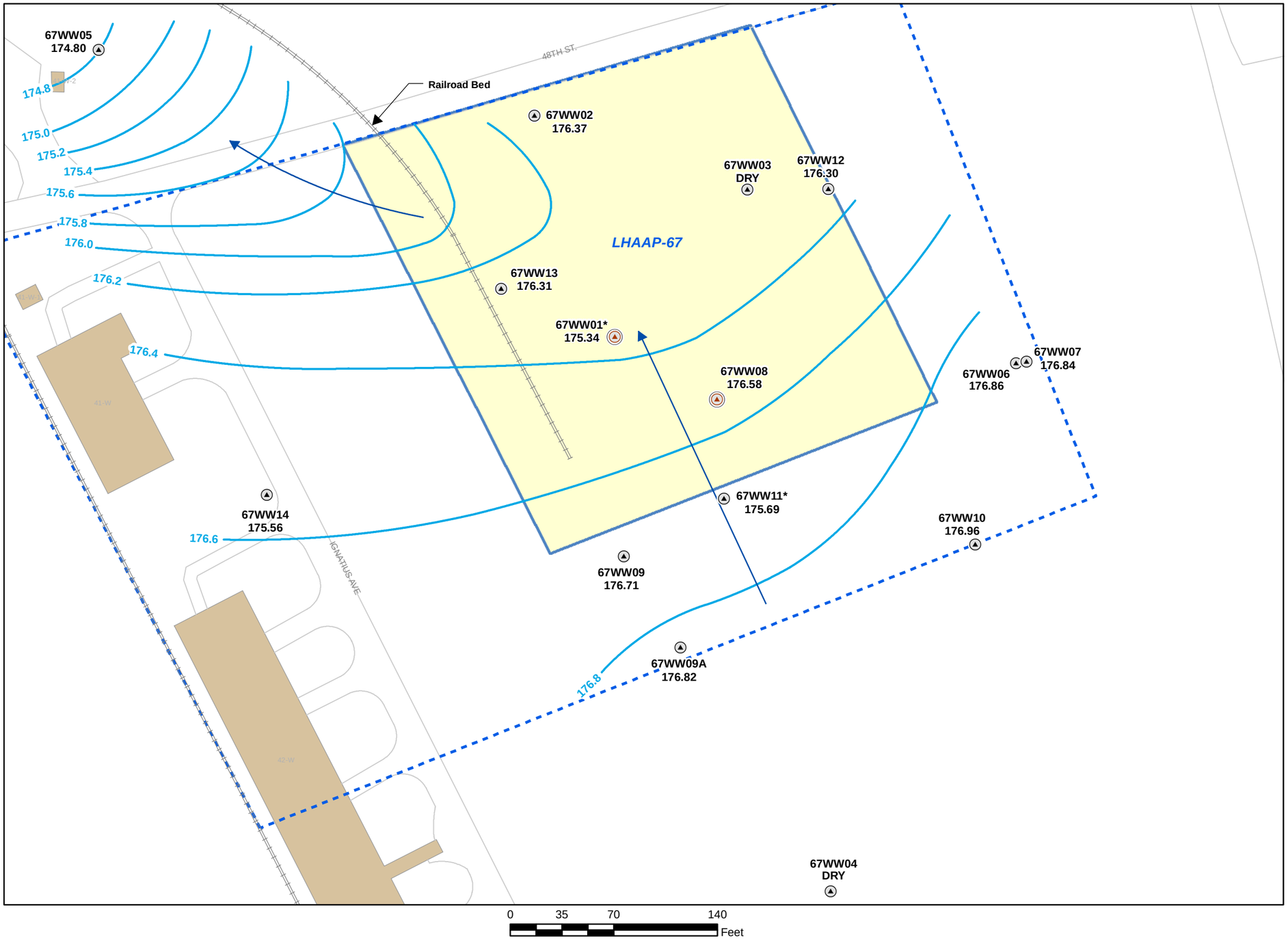

Legend

- MNA Parameter Analysis Well
- Shallow Monitoring Well Location
- Groundwater Flow Direction
- Groundwater Elevation Contour (Dashed Where Inferred) Contour Interval = 0.1 feet MSL
- Roads
- Land Use Control Boundary
- Buildings
- LHAAP-67 Site Boundary

Notes:
1. Groundwater elevations are presented in feet above mean sea level (MSL).
2. * Groundwater elevation data for wells 67WW01 and 67WW11 appear to be outliers and were not used in contouring.

AECOM

Figure 2-4
Shallow Zone Potentiometric Map - February 2015
Remedial Action Operation Report (Year 2)
LHAAP-67 Site
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

February 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR02\Figure 2-4 LHAAP67_Shallow Zone Potentiometric Map_Feb2015.mxd

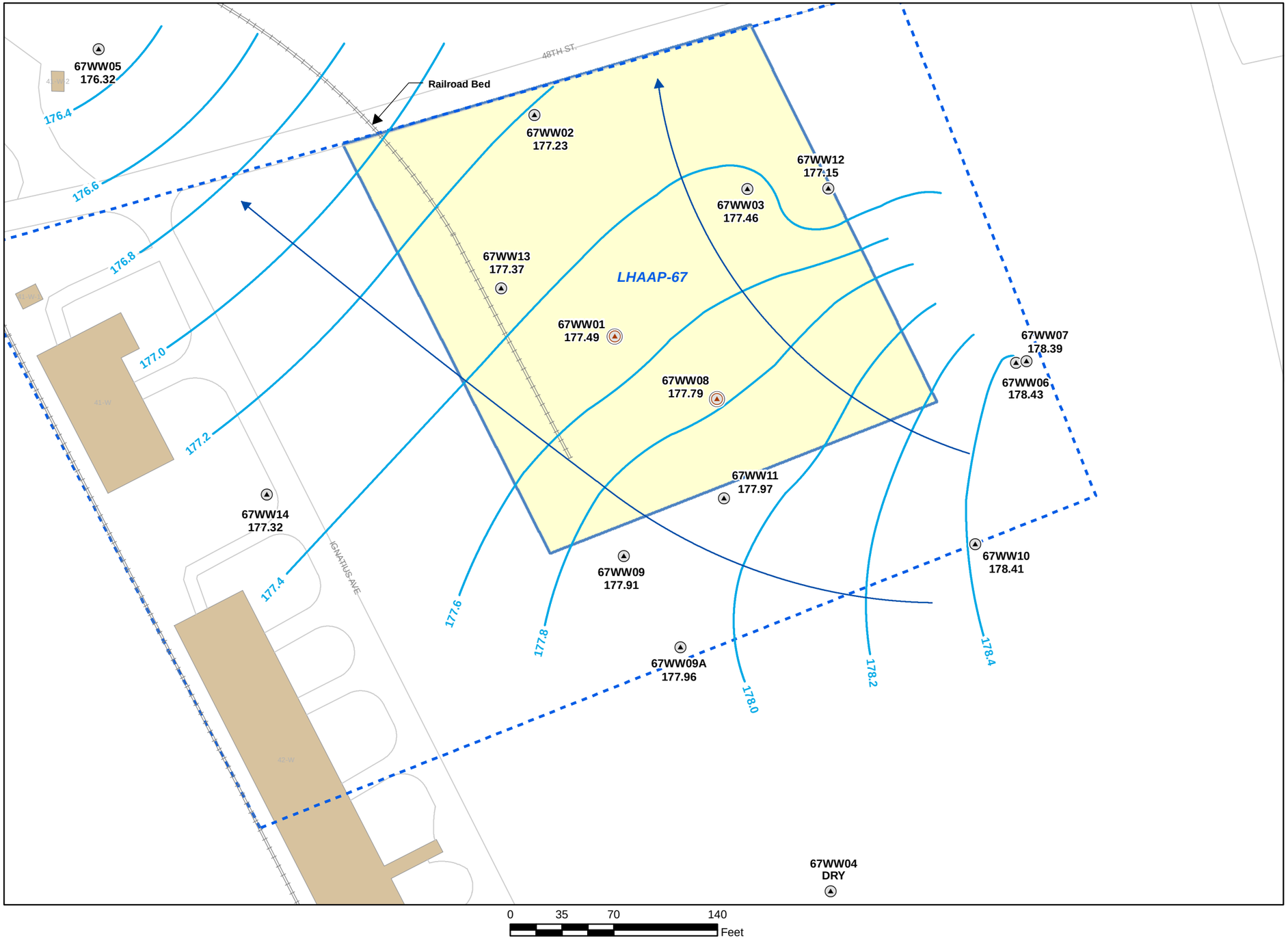

Legend

- MNA Parameter Analysis Well
- Shallow Monitoring Well Location
- Groundwater Flow Direction
- Groundwater Elevation Contour (Dashed Where Inferred) Contour Interval = 0.1 feet MSL
- Roads
- Land Use Control Boundary
- Buildings
- LHAAP-67 Site Boundary

Notes:
1. Groundwater elevations are presented in feet above mean sea level (MSL).

AECOM

Figure 2-5
Shallow Zone Potentiometric Map - May 2015
Remedial Action Operation Report (Year 2)
LHAAP-67 Site
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

February 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR02\Figure 2-5 LHAAP67_Shallow Zone Potentiometric Map_May2015.mxd

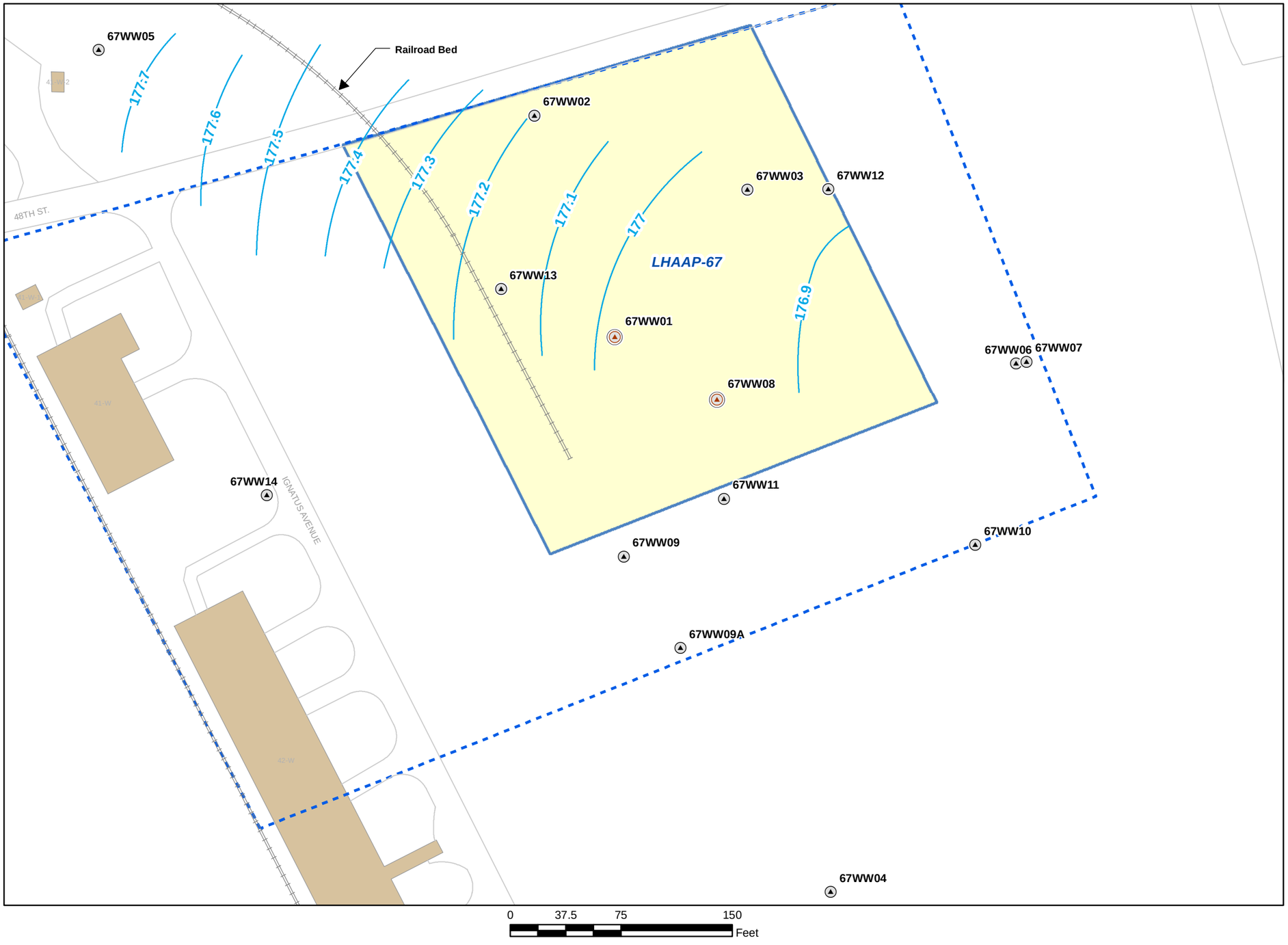

Legend

- MNA Parameter Analysis Well
- Shallow Monitoring Well
- 176.9 Groundwater Elevation Contour - December 2007 (ft msl)
- Roads
- Land Use Control Boundary
- Buildings
- LHAAP-67 Site Boundary

Source: August 2011 Final Remedial Design LHAAP-35B(37), Chemical Laboratory and LHAAP-67, Aboveground Storage Tank Farm, Longhorn Army Ammunition Plant, Karnack, Texas (Shaw, 2011)

AECOM

Figure 2-6
Historical Shallow Zone Groundwater Gradient
Remedial Action Operation Report (Year 2)
LHAAP-67 Site

60256135

Longhorn Army Ammunition Plant
Karnack, Texas

February 2017

L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR02\Figure 2-6 LHAAP67_Shallow Zone Potentiometric Map_2011.mxd

00737249

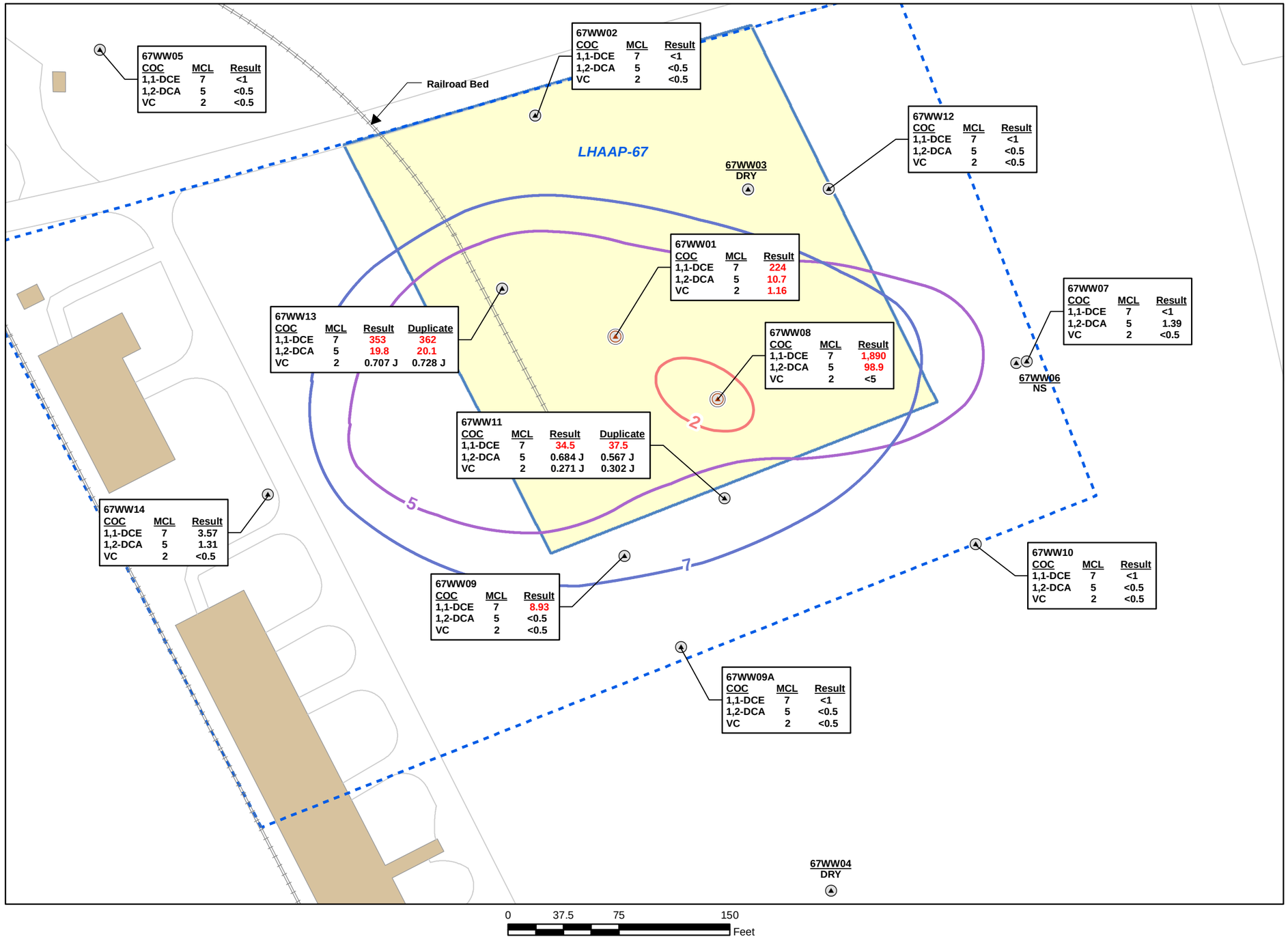

Legend

- 940 Concentration exceeds MCL
- MNA Parameter Analysis Well
- Shallow Monitoring Well Location
- 1,1-DCE Concentration Contour (7µg/L)
- 1,2-DCA Concentration Contour (5 µg/L)
- VC Concentration Contour (2 µg/L)
- Roads
- Land Use Control Boundary
- Buildings
- LHAAP-67 Site Boundary

Notes:
1. Sampling results reported in micrograms per liter (µg/L).
2. 1,2-DCA - 1,2-dichloroethane
3. VC - Vinyl Chloride
4. 1,1-DCE - 1,1-dichloroethene
5. J - Estimated value
6. COC - Constituent of Concern
7. MCL - Maximum Contaminant Level.
8. NS- Not Sampled
9. MNA - Monitored Well Attenuation

AECOM

Figure 2-7
July 2014
VOCs in Shallow Zone Groundwater
Remedial Action Operation Report (Year 2)
LHAAP-67 Site

60256135

Longhorn Army Ammunition Plant
Karnack, Texas

February 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR02\Figure 2-7 LHAAP67_VOCs in Shallow Groundwater_July2014.mxd

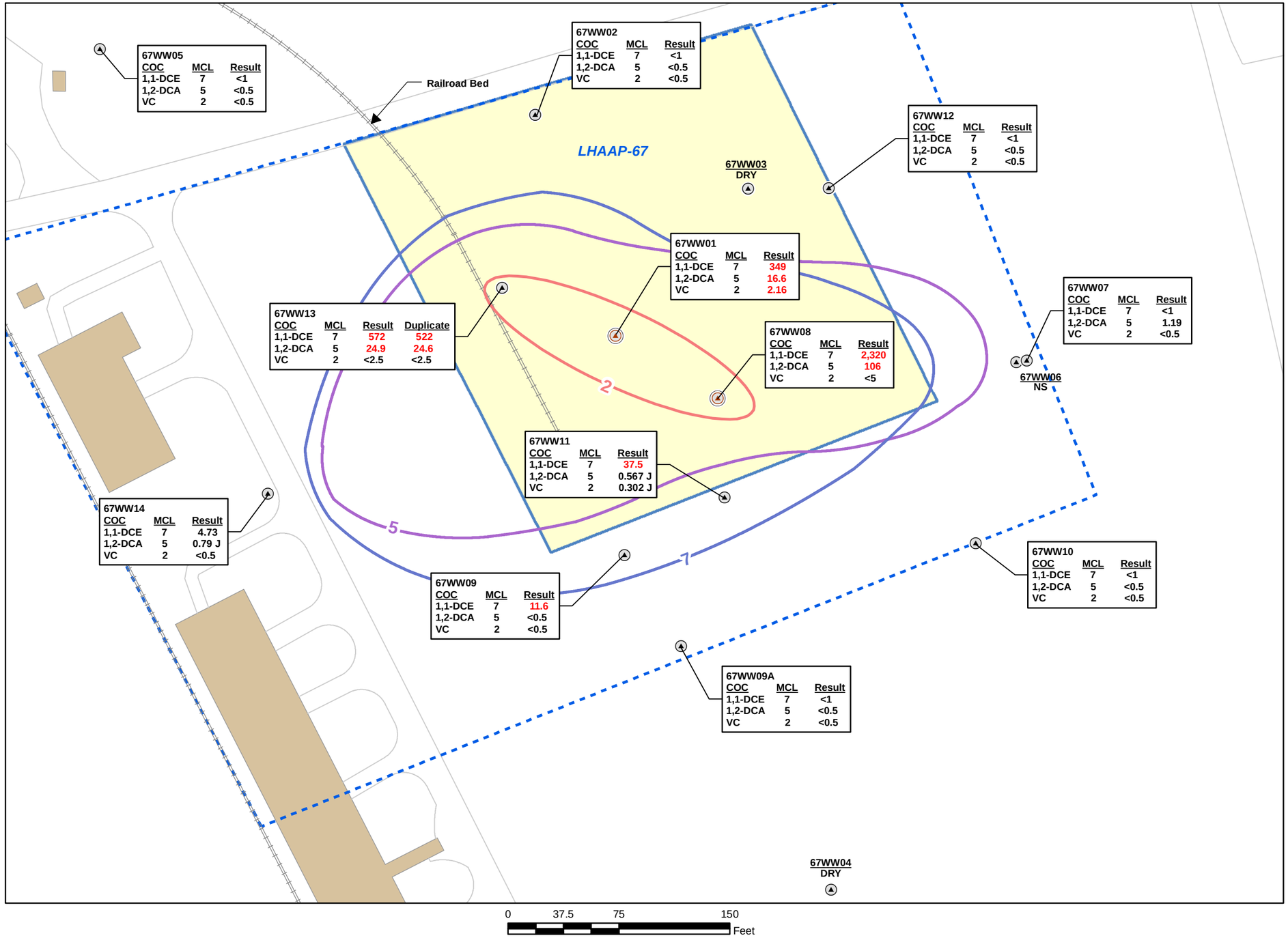

Legend

- 940 — Concentration exceeds MCL
- MNA Parameter Analysis Well
- Shallow Monitoring Well Location
- 1,1-DCE Concentration Contour (7µg/L)
- 1,2-DCA Concentration Contour (5 µg/L)
- VC Concentration Contour (2 µg/L)
- Roads
- Land Use Control Boundary
- Buildings
- LHAAP-67 Site Boundary

Notes:
1. Sampling results reported in micrograms per liter (µg/L).
2. 1,2-DCA - 1,2-dichloroethane
3. VC - Vinyl Chloride
4. 1,1-DCE - 1,1-dichloroethene
5. J - Estimated value
6. COC - Constituent of Concern
7. MCL - Maximum Contaminant Level.
8. NS- Not Sampled
9. MNA-Monitored Natural Annenuation

AECOM

Figure 2-8
December 2014
VOCs in Shallow Zone Groundwater
Remedial Action Operation Report (Year 2)
LHAAP-67 Site

60256135

Longhorn Army Ammunition Plant
Karnack, Texas

February 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR02\Figure 2-8 LHAAP67_VOCs in Shallow Groundwater_Dec2014.mxd

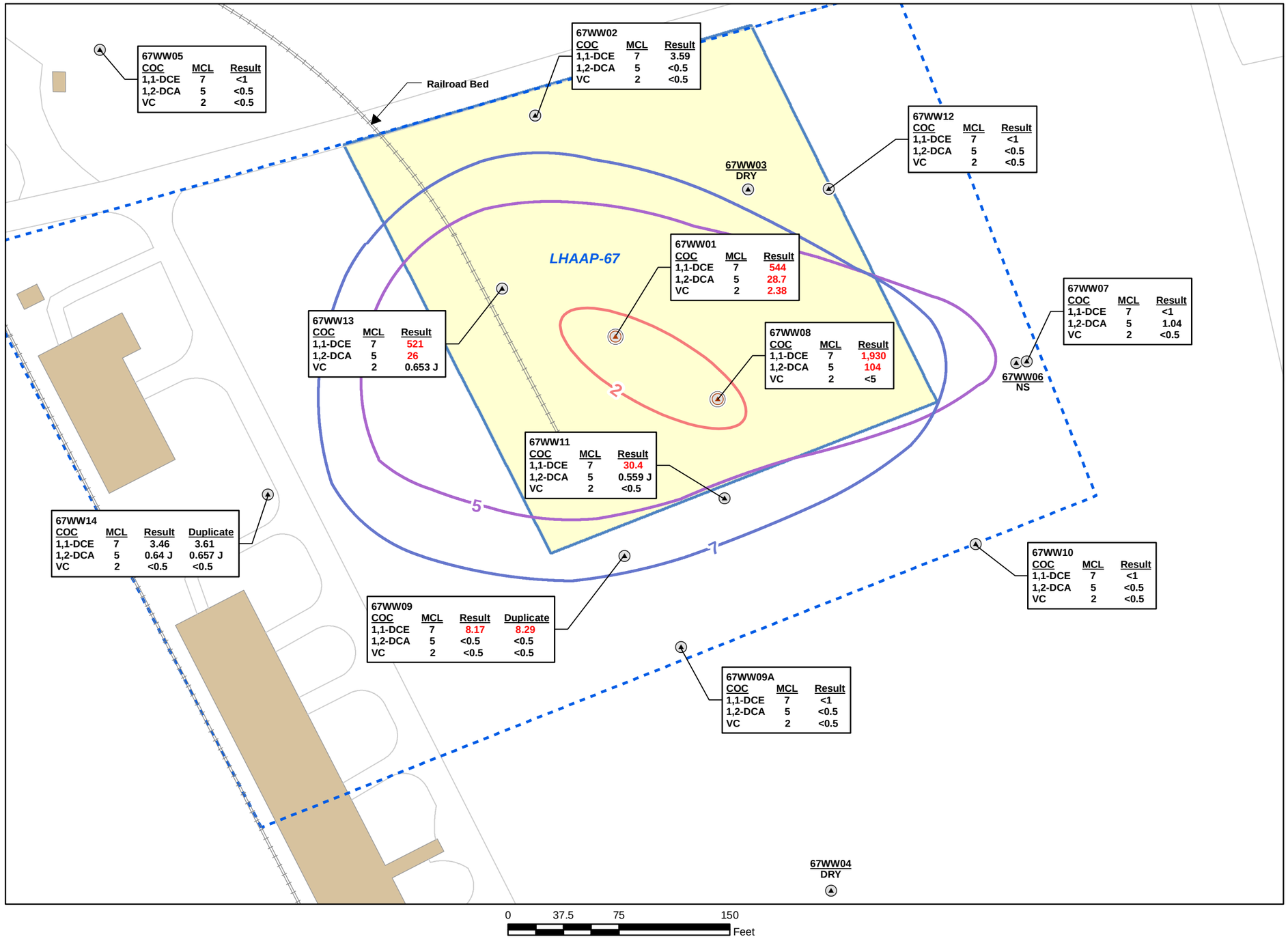

Legend

- 940 — Concentration exceeds MCL
- MNA Parameter Analysis Well
- Shallow Monitoring Well Location
- 1,1-DCE Concentration Contour (7µg/L)
- 1,2-DCA Concentration Contour (5 µg/L)
- VC Concentration Contour (2 µg/L)
- Roads
- Land Use Control Boundary
- Buildings
- LHAAP-67 Site Boundary

Notes:
1. Sampling results reported in micrograms per liter (µg/L).
2. 1,2-DCA - 1,2-dichloroethane
3. VC - Vinyl Chloride
4. 1,1-DCE - 1,1-dichloroethene
5. J - Estimated value
6. COC - Constituent of Concern
7. MCL - Maximum Contaminant Level.
8. NS- Not Sampled
9. MNA - Monitored Natural Attenuation

AECOM

Figure 2-9
February 2015
VOCs in Shallow Zone Groundwater
Remedial Action Operation Report (Year 2)
LHAAP-67 Site
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

February 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR02\Figure 2-9 LHAAP67_VOCs in Shallow Groundwater_Feb2015.mxd

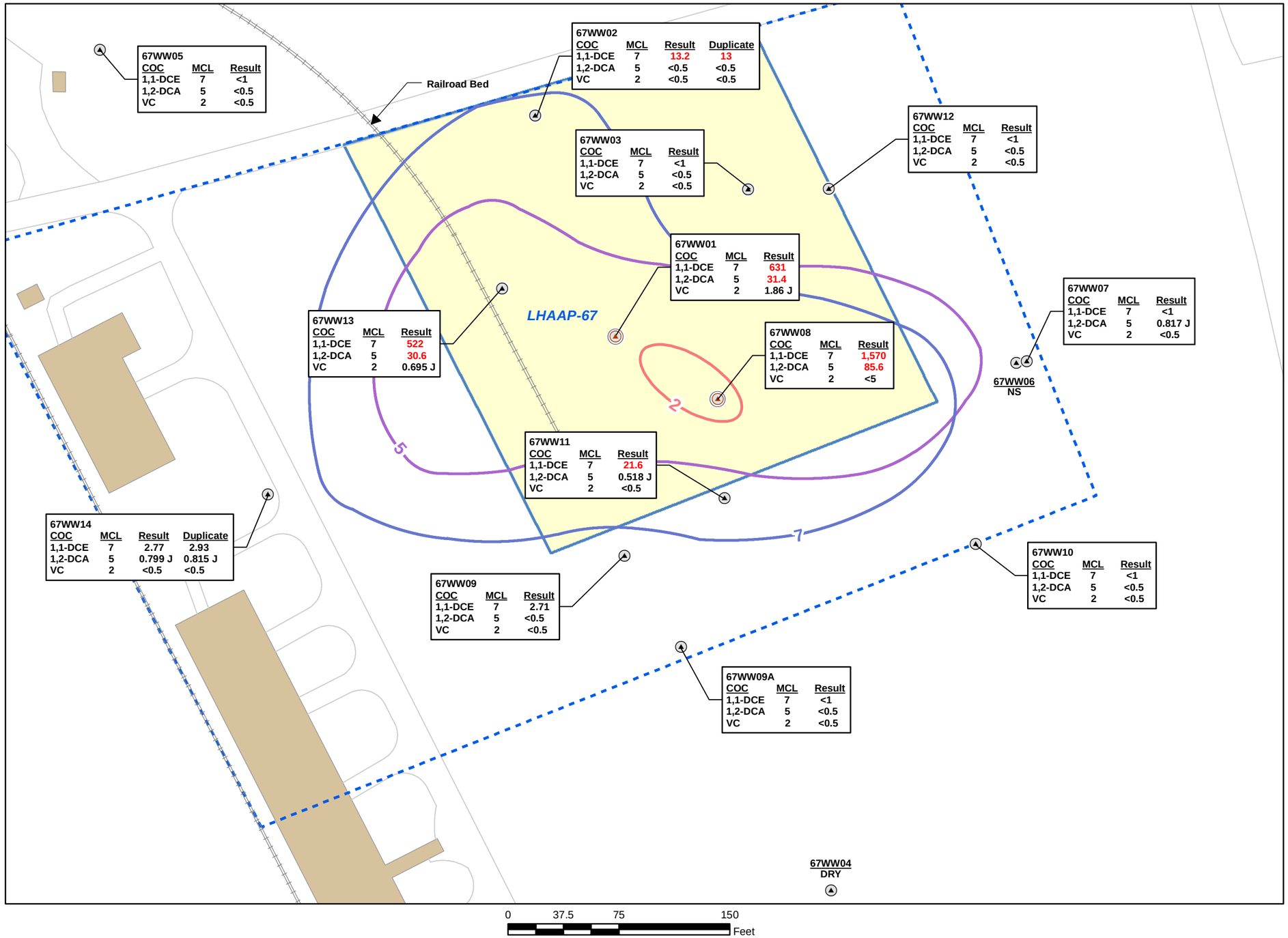

Legend

- 940 — Concentration exceeds MCL
- MNA Parameter Analysis Well
- Shallow Monitoring Well Location
- 1,1-DCE Concentration Contour (7µg/L)
- 1,2-DCA Concentration Contour (5 µg/L)
- VC Concentration Contour (2 µg/L)
- Roads
- Land Use Control Boundary
- Buildings
- LHAAP-67 Site Boundary

Notes:
1. Sampling results reported in micrograms per liter (µg/L).
2. 1,2-DCA - 1,2-dichloroethane
3. VC - Vinyl Chloride
4. 1,1-DCE - 1,1-dichloroethene
5. J - Estimated value
6. COC - Constituent of Concern
7. MCL - Maximum Contaminant Level.
8. NS- Not Sampled
9. MNA - Monitored Natural Attenuation

AECOM

Figure 2-10
May 2015
VOCs in Shallow Zone Groundwater
Remedial Action Operation Report (Year 2)
LHAAP-67 Site

60256135

Longhorn Army Ammunition Plant
Karnack, Texas

February 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-67\RAO\YR02\Figure 2-10 LHAAP67_VOCs in Shallow Groundwater_May2015.mxd

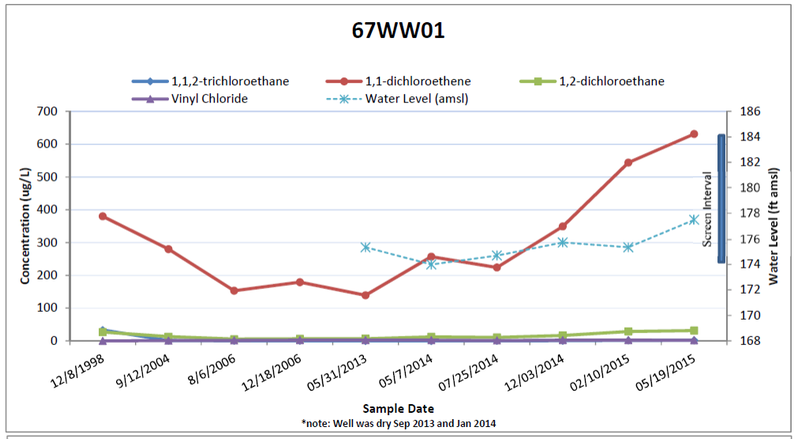

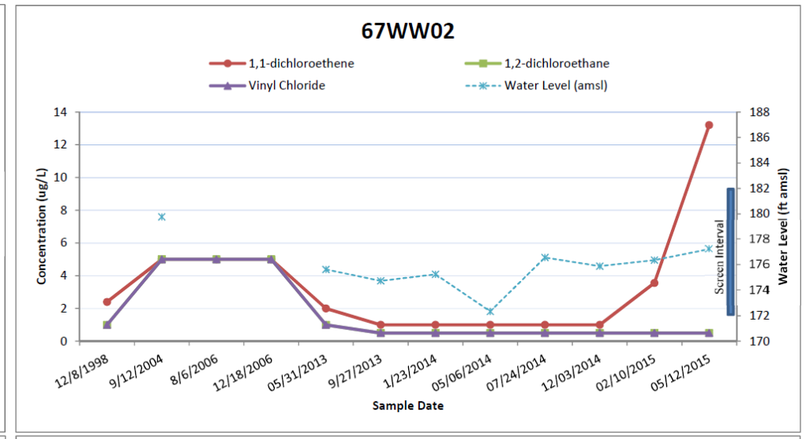

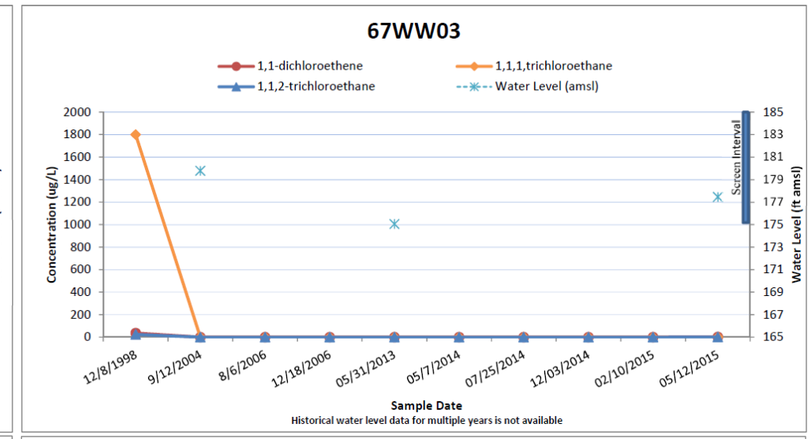

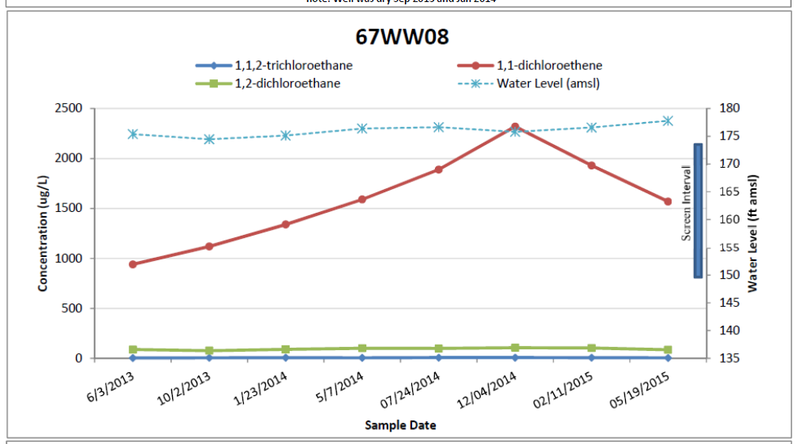

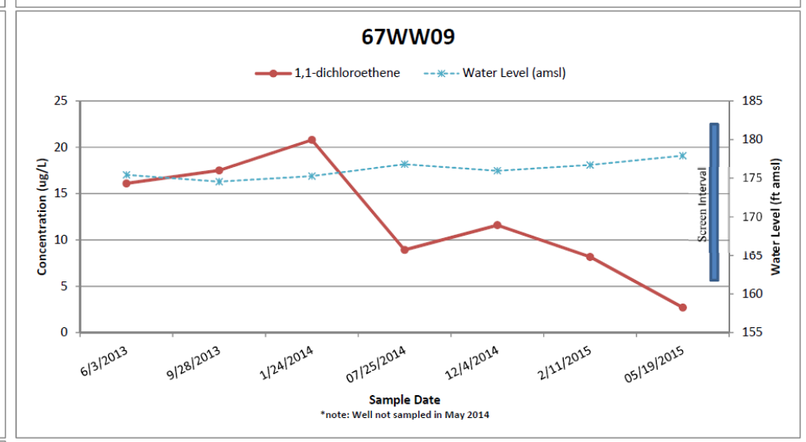

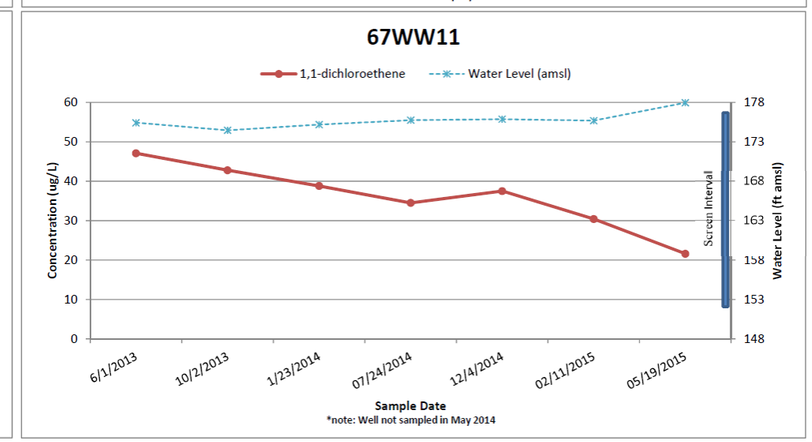

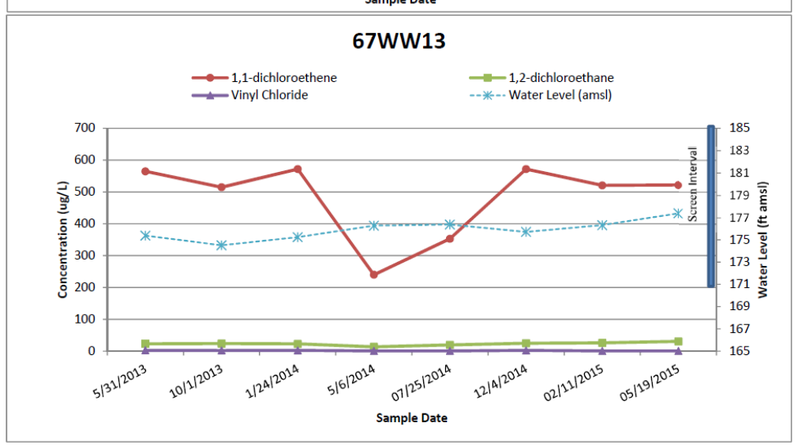

MCLs:

1,1,2-TCA = 5 ug/L

1,1,1-TCA = 200 ug/L

1,1-DCE = 7 ug/L

1,2-DCA = 5 ug/L

VC = 2 ug/L

AECOM

Figure 2-11

COC Concentration and Groundwater Elevation Evaluation

Remedial Action Operation Report (Year 2) – LHAAP-67

Longhorn Army Ammunition Plant

60256135 Karnack, Texas February 2017

Table 2-1: Groundwater Elevation Data - LHAAP-67

Well ID	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from TOC)		Screen Interval (ft MSL)		Ground Water Elevation (ft MSL)
					Top	Bottom	Top	Bottom	
67WW01[c]	05/31/13	200.89	198.21	25.55	17.25	26.98	183.64	173.91	175.34
	09/27/13	200.89	198.21	Dry	17.25	26.98	183.64	173.91	Dry
	01/23/14	200.89	198.21	Dry	17.25	26.98	183.64	173.91	Dry
	05/07/14	200.89	198.21	26.9	17.25	26.98	183.64	173.91	173.99
	07/24/14	200.89	198.21	26.20	17.25	26.98	183.64	173.91	174.69
	12/02/14	200.89	198.21	25.17	17.25	26.98	183.64	173.91	175.72
	02/10/15	200.89	198.21	25.55	17.25	26.98	183.64	173.91	175.34
	05/19/15	200.89	198.21	23.40	17.25	26.98	183.64	173.91	177.49
67WW02[c]	05/31/13	200.02	196.61	24.38	18.05	27.78	181.97	172.24	175.64
	09/27/13	200.02	196.61	25.28	18.05	27.78	181.97	172.24	174.74
	01/23/14	200.02	196.61	24.77	18.05	27.78	181.97	172.24	175.25
	05/06/14	200.02	196.61	27.68	18.05	27.78	181.97	172.24	172.34
	07/23/14	200.02	196.61	23.45	18.05	27.78	181.97	172.24	176.57
	12/02/14	200.02	196.61	24.13	18.05	27.78	181.97	172.24	175.89
	02/10/15	200.02	196.61	23.65	18.05	27.78	181.97	172.24	176.37
	05/11/15	200.02	196.61	22.79	18.05	27.78	181.97	172.24	177.23
67WW03[c]	05/31/13	200.44	198.12	25.39	15.27	24.9	185.17	175.54	175.05
	09/27/13	200.44	198.12	Dry	15.27	24.9	185.17	175.54	Dry
	01/23/14	200.44	198.12	Dry	15.27	24.9	185.17	175.54	Dry
	05/06/14	200.44	198.12	Dry	15.27	24.9	185.17	175.54	Dry
	07/23/14	200.44	198.12	Dry	15.27	24.9	185.17	175.54	Dry
	12/02/14	200.44	198.12	Dry	15.27	24.9	185.17	175.54	Dry
	02/10/15	200.44	198.12	Dry	15.27	24.9	185.17	175.54	Dry
	05/11/15	200.44	198.12	22.98	15.27	24.9	185.17	175.54	177.46
67WW04[a]	09/27/13	203.76	200.5	Dry	14.26	24.26	189.5	179.5	Dry
	01/23/14	203.76	200.5	Dry	14.26	24.26	189.5	179.5	Dry
	05/06/14	203.76	200.5	Dry	14.26	24.26	189.5	179.5	Dry
	07/25/14	203.76	200.5	Dry	14.26	24.26	189.5	179.5	Dry
	12/02/14	203.76	200.5	Dry	14.26	24.26	189.5	179.5	Dry
	02/10/15	203.76	200.5	Dry	14.26	24.26	189.5	179.5	Dry
	05/11/15	203.76	200.5	Dry	14.26	24.26	189.5	179.5	Dry

Table 2-1: Groundwater Elevation Data - LHAAP-67

Well ID	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from TOC)		Screen Interval (ft MSL)		Ground Water Elevation (ft MSL)
					Top	Bottom	Top	Bottom	
67WW05[a]	09/28/13	201	197.48	26.40	19.52	29.52	181.48	171.48	174.60
	01/23/14	201	197.48	26.00	19.52	29.52	181.48	171.48	175.00
	05/06/14	201	197.48	25.85	19.52	29.52	181.48	171.48	175.15
	07/23/14	201	197.48	25.20	19.52	29.52	181.48	171.48	175.80
	12/02/14	201	197.48	25.55	19.52	29.52	181.48	171.48	175.45
	02/10/15	201	197.48	26.20	19.52	29.52	181.48	171.48	174.80
	05/11/15	201	197.48	24.68	19.52	29.52	181.48	171.48	176.32
67WW06[a]	05/31/13	200.81	196.95	25.32	41.86	51.86	158.95	148.95	175.49
	09/28/13	200.81	196.95	26.32	41.86	51.86	158.95	148.95	174.49
	01/24/14	200.81	196.95	26.61	41.86	51.86	158.95	148.95	174.20
	05/06/14	200.81	196.95	23.75	41.86	51.86	158.95	148.95	177.06
	07/23/14	200.81	196.95	23.75	41.86	51.86	158.95	148.95	177.06
	12/02/14	200.81	196.95	24.80	41.86	51.86	158.95	148.95	176.01
	02/10/15	200.81	196.95	23.95	41.86	51.86	158.95	148.95	176.86
	05/11/15	200.81	196.95	22.38	41.86	51.86	158.95	148.95	178.43
67WW07[a]	05/31/13	200.84	197.04	25.35	17.8	27.8	183.04	173.04	175.49
	09/27/13	200.84	197.04	26.32	17.8	27.8	183.04	173.04	174.52
	01/23/14	200.84	197.04	25.6	17.8	27.8	183.04	173.04	175.24
	05/06/14	200.84	197.04	23.8	17.8	27.8	183.04	173.04	177.04
	07/24/14	200.84	197.04	23.83	17.8	27.8	183.04	173.04	177.01
	12/02/14	200.84	197.04	24.75	17.8	27.8	183.04	173.04	176.09
	02/10/15	200.84	197.04	24.00	17.8	27.8	183.04	173.04	176.84
	05/11/15	200.84	197.04	22.45	17.8	27.8	183.04	173.04	178.39
67WW08[b]	06/03/13	200.04	197.60	24.65	26.04	50.54	174	149.5	175.39
	10/02/13	200.04	197.60	25.57	26.04	50.54	174	149.5	174.47
	01/23/14	200.04	197.60	24.9	26.04	50.54	174	149.5	175.14
	05/07/14	200.04	197.60	23.65	26.04	50.54	174	149.5	176.39
	07/24/14	200.04	197.60	23.41	26.04	50.54	174	149.5	176.63
	12/04/14	200.04	197.60	24.23	26.04	50.54	174	149.5	175.81
	02/11/15	200.04	197.60	23.46	26.04	50.54	174	149.5	176.58
	05/19/15	200.04	197.60	22.25	26.04	50.54	174	149.5	177.79

Table 2-1: Groundwater Elevation Data - LHAAP-67

Well ID	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from TOC)		Screen Interval (ft MSL)		Ground Water Elevation (ft MSL)
					Top	Bottom	Top	Bottom	
67WW09[b]	06/01/13	198.21	195.72	22.78	16.99	36.49	181.22	161.72	175.43
	09/28/13	198.21	195.72	23.66	16.99	36.49	181.22	161.72	174.55
	01/24/14	198.21	195.72	22.95	16.99	36.49	181.22	161.72	175.26
	05/06/14	198.21	195.72	21.52	16.99	36.49	181.22	161.72	176.69
	07/25/14	198.21	195.72	21.40	16.99	36.49	181.22	161.72	176.81
	12/04/14	198.21	195.72	22.25	16.99	36.49	181.22	161.72	175.96
	02/11/15	198.21	195.72	21.50	16.99	36.49	181.22	161.72	176.71
	05/19/15	198.21	195.72	20.30	16.99	36.49	181.22	161.72	177.91
67WW09A[b]	09/27/13	202.93	200.4	28.4	23.33	38.03	179.6	164.9	174.53
	01/23/14	202.93	200.4	27.65	23.33	38.03	179.6	164.9	175.28
	05/06/14	202.93	200.4	26.1	23.33	38.03	179.6	164.9	176.83
	07/24/14	202.93	200.4	26.06	23.33	38.03	179.6	164.9	176.87
	12/03/14	202.93	200.4	27.00	23.33	38.03	179.6	164.9	175.93
	02/10/15	202.93	200.4	26.11	23.33	38.03	179.6	164.9	176.82
	05/12/15	202.93	200.4	24.97	23.33	38.03	179.6	164.9	177.96
67WW10[b]	06/01/13	201.51	198.8	26.1	22.71	52.21	178.8	149.3	175.41
	09/27/13	201.51	198.8	27.03	22.71	52.21	178.8	149.3	174.48
	01/24/14	201.51	198.8	26.22	22.71	52.21	178.8	149.3	175.29
	05/06/14	201.51	198.8	24.4	22.71	52.21	178.8	149.3	177.11
	07/24/14	201.51	198.8	24.42	22.71	52.21	178.8	149.3	177.09
	12/03/14	201.51	198.8	25.58	22.71	52.21	178.8	149.3	175.93
	02/10/15	201.51	198.8	24.55	22.71	52.21	178.8	149.3	176.96
	05/12/15	201.51	198.8	23.10	22.71	52.21	178.8	149.3	178.41
67WW11[b]	06/01/13	199.64	197.21	24.21	22.93	47.43	176.71	152.21	175.43
	10/02/13	199.64	197.21	25.17	22.93	47.43	176.71	152.21	174.47
	01/23/14	199.64	197.21	24.45	22.93	47.43	176.71	152.21	175.19
	05/06/14	199.64	197.21	22.86	22.93	47.43	176.71	152.21	176.78
	07/24/14	199.64	197.21	23.89	22.93	47.43	176.71	152.21	175.75
	12/04/14	199.64	197.21	23.77	22.93	47.43	176.71	152.21	175.87
	02/11/15	199.64	197.21	23.95	22.93	47.43	176.71	152.21	175.69
	05/19/15	199.64	197.21	21.67	22.93	47.43	176.71	152.21	177.97

Table 2-1: Groundwater Elevation Data - LHAAP-67

Well ID	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from TOC)		Screen Interval (ft MSL)		Ground Water Elevation (ft MSL)
					Top	Bottom	Top	Bottom	
67WW12[b]	06/01/13	201.65	199.07	26.46	26.58	36.08	175.07	165.57	175.19
	10/01/13	201.65	199.07	24.4	26.58	36.08	175.07	165.57	177.25
	01/24/14	201.65	199.07	26.8	26.58	36.08	175.07	165.57	174.85
	05/06/14	201.65	199.07	25.43	26.58	36.08	175.07	165.57	176.22
	07/25/14	201.65	199.07	25.30	26.58	36.08	175.07	165.57	176.35
	12/03/14	201.65	199.07	26.12	26.58	36.08	175.07	165.57	175.53
	02/10/15	201.65	199.07	25.35	26.58	36.08	175.07	165.57	176.30
	05/12/15	201.65	199.07	24.50	26.58	36.08	175.07	165.57	177.15
67WW13	05/31/13	197.92	195.85	22.55	12.57	27.07	185.35	170.85	175.37
	10/01/13	197.92	195.85	23.42	12.57	27.07	185.35	170.85	174.50
	01/24/14	197.92	195.85	22.68	12.57	27.07	185.35	170.85	175.24
	05/06/14	197.92	195.85	21.66	12.57	27.07	185.35	170.85	176.26
	07/25/14	197.92	195.85	21.55	12.57	27.07	185.35	170.85	176.37
	12/04/14	197.92	195.85	22.22	12.57	27.07	185.35	170.85	175.70
	02/11/15	197.92	195.85	21.61	12.57	27.07	185.35	170.85	176.31
	05/19/15	197.92	195.85	20.55	12.57	27.07	185.35	170.85	177.37
67WW14	10/01/13	196.96	194.52	21.8	14.44	29.44	182.52	167.52	175.16
	01/24/14	196.96	194.52	21.47	14.44	29.44	182.52	167.52	175.49
	05/07/14	196.96	194.52	20.58	14.44	29.44	182.52	167.52	176.38
	07/25/14	196.96	194.52	20.25	14.44	29.44	182.52	167.52	176.71
	12/03/14	196.96	194.52	20.85	14.44	29.44	182.52	167.52	176.11
	02/10/15	196.96	194.52	20.40	14.44	29.44	182.52	167.52	176.56
	05/12/15	196.96	194.52	19.64	14.44	29.44	182.52	167.52	177.32

Elevations are reported as feet above mean sea level (ft MSL)

[a] Screen information calculated from Data Gap Investigation Report (Shaw 2007).

[b] Screen information calculated from well construction detail forms

[c] Well screen top and bottom depths and elevations for monitoring wells 67WW01, 67WW02, and 67WW03 were revised/confirmed with a downhole camera survey performed in March 2015.

Dry=Insufficient or no water in well.

TOC=Top of Casing

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW01-053113 5/31/2013	67WW01-050714 5/7/2014	67WW01-072514 7/25/2014	67WW01-120314 12/3/2014	67WW01-021015 2/10/2015	67WW01-051915 5/19/2015	67WW02-053113 5/31/2013	67WW02-092713 9/27/2013	67WW02-012314 1/23/2014	67WW02-050614 5/6/2014	67WW02-072414 7/24/2014
Water Quality Field Parameters													
Temperature	°C		28	19.77	21.9	17.6	18.85	21.65	27.07	25.23	16.2	21.01	22.38
pH	pH Units		5.84	5.52	5.91	6.15	6.92	7.11	6.57	6.69	6.78	5.62	7.02
Conductivity	mS/cm		3.41	3.57	3.57	3.69	3.36	3.2	3.02	2.94	3.04	3	2.94
Dissolved Oxygen	mg/L		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Turbidity	NTU		69.6	36.6	33	23.3	194	161	51.4	21	49.7	106	11.6
Oxidation Reduction Potential	mV		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sulfide (376.1)													
SULFIDE	mg/L		NA	<1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
SM4500-S-(-2)-F-2000													
SULFIDE	mg/L		NA	NA	NA	NA	NA	<1 U	NA	NA	NA	NA	NA
Total Inorganic and Organic Carbon (415.1)													
TOTAL INORGANIC CARBON (TIC)	mg/L		NA	23.4	NA	NA	NA	42.6	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	5.25	NA	NA	NA	12.7	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 UJ	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<1 U	<0.5 U	0.29 J	0.483 J	1.44	1.72 J	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	6.37	11	9.2	14.9	23.7	23.5	0.507 J	0.508 J	0.406 J	0.44 J	0.335 J
1,1-DICHLOROETHENE	ug/L	7	139	257	224	349	544	631	<2 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<1 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.75 U	<1 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<2 U	<1 U	<1 U	<1 U	<1 U	<2.5 U	<2 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<5 U	<2 U	<2 U	<2 U	<2 U	<5 U	<5 U	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.626 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	6.68	12.2	10.7	16.6	28.7	31.4	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.626 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
2-BUTANONE	ug/L	15000	<10 U	<5 U	<5 U	<5 U	<5 U	<12.5 U	<10 U	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.626 UJ	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<10 U	<5 U	<5 U	<5 U	<5 U	<12.5 U	<10 U	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<10 U	<5 U	<5 U	<5 U	<5 U	<12.5 U	<10 U	<5 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	<10 U	<5 U	<5 U	<5 U	<5 U	<12.5 U	<10 U	<5 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.626 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.626 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<2 U	<1 U	<1 U	<1 U	<1 U	<2.5 U	<2 U	<1 U	<1 U	<1 U	<1 U

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW01-053113 5/31/2013	67WW01-050714 5/7/2014	67WW01-072514 7/25/2014	67WW01-120314 12/3/2014	67WW01-021015 2/10/2015	67WW01-051915 5/19/2015	67WW02-053113 5/31/2013	67WW02-092713 9/27/2013	67WW02-012314 1/23/2014	67WW02-050614 5/6/2014	67WW02-072414 7/24/2014
BROMOMETHANE	ug/L	34	<2 U	<1 U	<1 U	<1 U	<1 UJ	<2.5 U	<2 UJ	<1 U	<1 U	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	<2 U	<1 U	<1 U	<1 U	<1 U	<2.5 U	<2 U	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.626 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<2 U	<1 U	<1 U	<1 U	<1 U	<2.5 U	<2 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.626 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<2 U	<1 U	<1 U	<1 U	<1 U	<2.5 U	<2 UJ	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	1.12	1.29	1.02	1.26	1.82	1.54 J	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 UJ	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<2 U	<1 U	<1 U	<1 U	<1 U	<2.5 U	<2 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.626 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.626 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<1 U	<0.5 U	0.473 J	0.398 J	0.287 J	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<2 U	<1 U	<1 U	<1 U	<1 U	<2.5 U	<2 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	2.96	3	2.3	3.36	4.07	3.03	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	2.18	2.15	1.16	2.16	2.38	1.86 J	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Anions (9056)													
CHLORIDE	mg/L		NA	981	NA	NA	NA	988	NA	NA	NA	NA	NA
NITRATE	mg/L	10	NA	<1 U	NA	NA	NA	<1 U	NA	NA	NA	NA	NA
NITRITE	mg/L	1	NA	<1 U	NA	NA	NA	2.02	NA	NA	NA	NA	NA
SULFATE	mg/L		NA	167	NA	NA	NA	143	NA	NA	NA	NA	NA
Dechlorinating Bacteria (CENSUS)													
dehalococcoides ethenogenes	CEQ/mL		NA	4.7	NA	NA	NA	86.2	NA	NA	NA	NA	NA
tceA reductase	CEQ/mL		NA	<0.5 U	NA	NA	NA	2.5	NA	NA	NA	NA	NA
BAV1 vinyl chloride reductase	CEQ/mL		NA	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	NA	NA	NA
vinyl chloride reductase	CEQ/mL		NA	<0.5 U	NA	NA	NA	1	NA	NA	NA	NA	NA
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L				NA	NA	NA	NA					NA
ETHANE	ug/L		NA	<2 U	NA	NA	NA	<2 U	NA	NA	NA	NA	NA
ETHENE	ug/L		NA	<2 U	NA	NA	NA	<2 U	NA	NA	NA	NA	NA
METHANE	ug/L		NA	33.5	NA	NA	NA	20	NA	NA	NA	NA	NA

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW01-053113 5/31/2013	67WW01-050714 5/7/2014	67WW01-072514 7/25/2014	67WW01-120314 12/3/2014	67WW01-021015 2/10/2015	67WW01-051915 5/19/2015	67WW02-053113 5/31/2013	67WW02-092713 9/27/2013	67WW02-012314 1/23/2014	67WW02-050614 5/6/2014	67WW02-072414 7/24/2014
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		NA	5.69	NA	NA	NA	0.0539	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

"FD" in Sample ID indicates a field duplicate sample.

CEQ/mL - cells equivalent per milliliter

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

mg/L - milligram per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW02-120314 12/3/2014	67WW02-021015 2/10/2015	67WW02-051215 5/12/2015	67WW02FD-051215 5/12/2015	67WW03-051215 5/12/2015	67WW05-053113 5/31/2013	67WW05-092813 9/28/2013	67WW05-012314 1/23/2014	67WW05-050614 5/6/2014	67WW05-072414 7/24/2014	67WW05-120314 12/3/2014
Water Quality Field Parameters													
Temperature	°C		19	19.49	19.34	NA	18.52	26.87	21.75	15.83	22.15	22.72	18.55
pH	pH Units		6.27	7.25	6.57	NA	6.12	6.94	6.37	6.57	5.56	6.92	5.7
Conductivity	mS/cm		3.07	2.92	3.03	NA	4.56	2.66	2.67	2.75	2.62	2.49	2.61
Dissolved Oxygen	mg/L		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Turbidity	NTU		19.3	8.9	23	NA	200	2.5	16.2	9.7	8.1	28.5	24.8
Oxidation Reduction Potential	mV		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sulfide (376.1)													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SM4500-S-(-2)-F-2000													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Inorganic and Organic Carbon (415.1)													
TOTAL INORGANIC CARBON (TIC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	0.406 J	0.592 J	0.883 J	0.873 J	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	3.59	13.2	13	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<1 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	<2 U	<5 U	<2 U	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 UJ	<5 UJ	<5 UJ	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 UJ	<5 UJ	<5 UJ	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 UJ	<5 UJ	<5 UJ	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	<5 U	<5 U	<10 UJ	<5 U	<5 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW02-120314 12/3/2014	67WW02-021015 2/10/2015	67WW02-051215 5/12/2015	67WW02FD-051215 5/12/2015	67WW03-051215 5/12/2015	67WW05-053113 5/31/2013	67WW05-092813 9/28/2013	67WW05-012314 1/23/2014	67WW05-050614 5/6/2014	67WW05-072414 7/24/2014	67WW05-120314 12/3/2014
BROMOMETHANE	ug/L	34	<1 U	<1 UJ	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.411 J	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Anions (9056)													
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	697	NA	NA
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE	mg/L	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dechlorinating Bacteria (CENSUS)													
dehalococcoides ethenogenes	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tceA reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAV1 vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	NA	NA	NA	NA					NA	NA
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW02-120314 12/3/2014	67WW02-021015 2/10/2015	67WW02-051215 5/12/2015	67WW02FD-051215 5/12/2015	67WW03-051215 5/12/2015	67WW05-053113 5/31/2013	67WW05-092813 9/28/2013	67WW05-012314 1/23/2014	67WW05-050614 5/6/2014	67WW05-072414 7/24/2014	67WW05-120314 12/3/2014
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

"FD" in Sample ID indicates a field duplicate sample.

CEQ/mL - cells equivalent per milliliter

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

mg/L - milligram per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW05-021015 2/10/2015	67WW05-051215 5/12/2015	67WW06-053113 5/31/2013	67WW06-053113-FD 5/31/2013	67WW06-092813 9/28/2013	67WW06-012414 1/24/2014	67WW07-053113 5/31/2013	67WW07-092713 9/27/2013	67WW07-012314 1/23/2014	67WW07-050614 5/6/2014	67WW07-072514 7/25/2014
Water Quality Field Parameters													
Temperature	°C		19.82	19.69	24.28	NA	20.2	15.42	25.72	25.11	14.63	26.29	21.89
pH	pH Units		6.83	5.74	5.27	NA	5.45	5.58	5.52	5.78	5.79	5.45	5.58
Conductivity	mS/cm		2.36	2.43	6.37	NA	6.45	7.09	3.99	4.13	4.14	3.71	3.99
Dissolved Oxygen	mg/L		NR	NR	1.57	NR	0.82	0.8	NR	NR	NR	NR	NR
Turbidity	NTU		22.7	100	13.4	NA	5.5	42.9	13.9	9.6	54.4	30.2	8.8
Oxidation Reduction Potential	mV		NR	NR	22	NR	13	67	NR	NR	NR	NR	NR
Sulfide (376.1)													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SM4500-S-(-2)-F-2000													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Inorganic and Organic Carbon (415.1)													
TOTAL INORGANIC CARBON (TIC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<1 UJ	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	0.212 J	0.193 J	<0.25 U	0.234 J	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<2 U	<2 U	<1 U	0.752 J	<2 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<1 U	<1 U	<0.3 U	<0.3 U	<1 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<5 U	<5 U	<2 U	<2 UJ	<5 UJ	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	2.25	2.2	1.77	2.03	1.67	1.77	1.35	1.44	1.39
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 UJ	<10 U	<10 U	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 UJ	<10 U	<10 U	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 UJ	<10 U	<10 U	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	<5 U	<5 U	<10 UJ	<10 UJ	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW05-021015 2/10/2015	67WW05-051215 5/12/2015	67WW06-053113 5/31/2013	67WW06-053113-FD 5/31/2013	67WW06-092813 9/28/2013	67WW06-012414 1/24/2014	67WW07-053113 5/31/2013	67WW07-092713 9/27/2013	67WW07-012314 1/23/2014	67WW07-050614 5/6/2014	67WW07-072514 7/25/2014
BROMOMETHANE	ug/L	34	<1 UJ	<1 U	<2 U	<2 U	<1 UJ	<1 U	<2 UJ	<1 U	<1 U	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<2 UJ	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	NA	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 UJ	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	0.918 J	0.846 J	0.966 J	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Anions (9056)													
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE	mg/L	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dechlorinating Bacteria (CENSUS)													
dehalococcoides ethenogenes	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tceA reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAV1 vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	NA									NA
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW05-021015 2/10/2015	67WW05-051215 5/12/2015	67WW06-053113 5/31/2013	67WW06-053113-FD 5/31/2013	67WW06-092813 9/28/2013	67WW06-012414 1/24/2014	67WW07-053113 5/31/2013	67WW07-092713 9/27/2013	67WW07-012314 1/23/2014	67WW07-050614 5/6/2014	67WW07-072514 7/25/2014
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

"FD" in Sample ID indicates a field duplicate sample.

CEQ/mL - cells equivalent per milliliter

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

mg/L - milligram per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW07-120314 12/3/2014	67WW07-021015 2/10/2015	67WW07-051215 5/12/2015	67WW08-060313 6/3/2013	67WW08-100213 10/2/2013	67WW08-012314 1/23/2014	67WW08-050714 5/7/2014	67WW08-072414 7/24/2014	67WW08-120414 12/4/2014	67WW08-021115 2/11/2015	67WW08-051915 5/19/2015
Water Quality Field Parameters													
Temperature	°C		17.46	18.47	18.5	29.25	21.82	17.22	19.33	21.72	19.14	18.75	20.12
pH	pH Units		5.79	6.41	5.98	6.62	6.47	6.8	5.55	6.89	6.42	6.61	6.53
Conductivity	mS/cm		4.06	3.76	3.61	4.85	5.11	5.08	5.43	4.98	5.07	4.38	5.85
Dissolved Oxygen	mg/L		NR	NR	NR	0	0.74	0.38	0.45	0	0	0	0.66
Turbidity	NTU		10.7	6.7	35.3	7.6	1.5	0.6	9.7	6.1	2.7	3.7	67.1
Oxidation Reduction Potential	mV		NR	NR	NR	74	-165	-90	-32	-7	-1	45	-16
Sulfide (376.1)													
SULFIDE	mg/L		NA	NA	NA	NA	<1 U	<1 U	<1 U	NA	NA	NA	NA
SM4500-S-(-2)-F-2000													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	<1 U	<1 U	<1 U	<1 U
Total Inorganic and Organic Carbon (415.1)													
TOTAL INORGANIC CARBON (TIC)	mg/L		NA	NA	NA	10.3	28.9	NA	80.6	70.9	22.9	160	55.2
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	3.61	6.32	9.95	10.6	7.58	3.68	22.4	8.32
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<1 U	<4 U	<2 U	<4 U	<4 U	<4 U	<4 U	<4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	4.25	5.08 J	6.7	5.01 J	7.74 J	7.36 J	6.96 J	4.5 J
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	53.2	46.5	54.4	57.3	56.7	63.9	61.1	52.1
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	940	1120	1340	1590	1890	2320	1930	1570
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<1 U	<3 U	<1.5 U	<3 U	<3 U	<3 U	<3 U	<3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<2 U	<10 U	<5 U	<10 U	<10 U	<10 U	<10 U	<10 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<1 U	<4 U	<2 U	<4 U	<4 U	<4 U	<4 U	<4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<5 UJ	<20 U	<10 U	<20 U	<20 U	<20 U	<20 U	<20 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<1 U	<2.5 U	<1.25 U	<2.5 U	<2.5 U	<2.5 U	<2.5 U	<2.5 U
1,2-DICHLOROETHANE	ug/L	5	1.19	1.04	0.817 J	89.2	76.5	89.9	101	98.9	106	104	85.6
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<1 U	<4 U	<2 U	<4 U	<4 U	<4 U	<4 U	<4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<1 U	<4 U	<2 U	<4 U	<4 U	<4 U	<4 U	<4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<1 U	<2.5 U	<1.25 U	<2.5 U	<2.5 U	<2.5 U	<2.5 U	<2.5 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 UJ	<10 U	<50 U	<25 U	<50 U	<50 U	<50 U	<50 U	<50 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<1 U	<2.5 U	<1.25 U	<2.5 U	<2.5 U	<2.5 U	<2.5 U	<2.5 U
2-HEXANONE	ug/L	120	<5 U	<5 U	3.18 J	<10 U	<50 U	<25 U	<50 U	<50 U	<50 U	<50 U	<50 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 UJ	<10 U	<50 U	<25 U	<50 U	<50 U	<50 U	<50 U	<50 U
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	<10 U	<50 U	<25 U	<50 U	<50 U	<50 U	<50 U	<50 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	0.194 J	<2.5 U	<1.25 U	<2.5 U	<2.5 U	<2.5 U	<2.5 U	<2.5 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<1 U	<2.5 U	<1.25 U	<2.5 U	<2.5 U	<2.5 U	<2.5 U	<2.5 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<1 U	<4 U	<2 U	<4 U	<4 U	<4 U	<4 U	<4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<2 U	<10 U	<5 U	<10 U	<10 U	<10 U	<10 U	<10 U

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW07-120314 12/3/2014	67WW07-021015 2/10/2015	67WW07-051215 5/12/2015	67WW08-060313 6/3/2013	67WW08-100213 10/2/2013	67WW08-012314 1/23/2014	67WW08-050714 5/7/2014	67WW08-072414 7/24/2014	67WW08-120414 12/4/2014	67WW08-021115 2/11/2015	67WW08-051915 5/19/2015
BROMOMETHANE	ug/L	34	<1 U	<1 UJ	<1 U	<2 UJ	<10 U	<5 U	<10 U	<10 U	<10 U	<10 UJ	<10 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<2 U	<10 U	<5 U	<10 U	<10 U	<10 U	<10 U	<10 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<1 U	<2.5 U	<1.25 U	<2.5 U	<2.5 U	<2.5 U	<2.5 U	<2.5 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<2 U	<10 U	<5 U	<10 U	<10 U	<10 U	<10 U	<10 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	3.56	<2.5 UJ	4.11 J	4.88 J	5.13 J	2.53 J	2.57 J	3.04 J
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<2 UJ	<10 U	<5 U	<10 U	<10 U	<10 U	<10 U	<10 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	2.18	<5 U	2.73 J	<5 U	<5 U	2.69 J	2.71 J	<5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<1 UJ	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<2 U	<10 U	<5 U	<10 U	<10 U	<10 U	<10 U	<10 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	3.42 J	<5 U	<5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<1 U	<4 U	<2 U	<4 U	<4 U	<4 U	<4 U	<4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<1 U	<2.5 U	<1.25 U	<2.5 U	<2.5 U	<2.5 U	<2.5 U	<2.5 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<1 U	<2.5 U	<1.25 U	<2.5 U	<2.5 U	<2.5 U	<2.5 U	<2.5 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<2 U	<10 U	<5 U	<10 U	<10 U	<10 U	<10 U	<10 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	2.86	<5 U	3.12 J	4.41 J	3.14 J	3.55 J	3.15 J	<5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	0.951 J	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U	<5 U
Anions (9056)													
CHLORIDE	mg/L		NA	NA	NA	1440 J	1360	1490	1380	1340	1410 J	1250	1750
NITRATE	mg/L	10	NA	NA	NA	<20 U	<2 U	<2 U	<2 U	<1 U	2 J	<4 U	<2 U
NITRITE	mg/L	1	NA	NA	NA	<20 U	<2 U	<2 U	<2 U	<1 U	2.04 J	<4 U	3.95 J
SULFATE	mg/L		NA	NA	NA	300	297	303	365	317	302 J	258	524
Dechlorinating Bacteria (CENSUS)													
dehalococcoides ethenogenes	CEQ/mL		NA	NA	NA	<1 U	<0.5 U	<0.5 U	<0.5 U	89.1	78.7	96.5	<0.5 U
tceA reductase	CEQ/mL		NA	NA	NA	NA	<0.5 U	<0.5 U	0.6	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BAV1 vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	NA	NA					NA	89600	NA	NA
ETHANE	ug/L		NA	NA	NA	<5 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U
ETHENE	ug/L		NA	NA	NA	1.29 J	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U
METHANE	ug/L		NA	NA	NA	10.6	<2 U	7.79	6.97	6.47	14.4	9.4	5.16

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW07-120314 12/3/2014	67WW07-021015 2/10/2015	67WW07-051215 5/12/2015	67WW08-060313 6/3/2013	67WW08-100213 10/2/2013	67WW08-012314 1/23/2014	67WW08-050714 5/7/2014	67WW08-072414 7/24/2014	67WW08-120414 12/4/2014	67WW08-021115 2/11/2015	67WW08-051915 5/19/2015
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		NA	NA	NA	0.0795	0.161	0.344	0.282	0.227	0.374	0.0907	0.944

Blue Highlighting Indicates concentrations above the MCL/PCL

"FD" in Sample ID indicates a field duplicate sample.

CEQ/mL - cells equivalent per milliliter

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

mg/L - milligram per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW09-060113 6/3/2013	67WW09-092813 9/28/2013	67WW09-012414 1/24/2014	67WW09-072514 7/25/2014	67WW09-120414 12/4/2014	67WW09-021115 2/11/2015	67WW09FD-021115 2/11/2015	67WW09-051915 5/19/2015	67WW09A-092713 9/27/2013	67WW09A-092713-FD 9/27/2013	67WW09A-012314 1/23/2014
Water Quality Field Parameters													
Temperature	°C		27.95	22.22	16.27	26.09	20.48	18.13	NA	18.88	28.67	NA	15.63
pH	pH Units		6.64	6.31	6.24	5.41	5.95	6.45	NA	5.48	5.62	NA	6.73
Conductivity	mS/cm		3.31	3.47	3.39	3.42	3.55	3.29	NA	3.35	2.45	NA	2.49
Dissolved Oxygen	mg/L		0.52	0.83	0.86	0.61	0	1.02	NA	1.13	1.19	NA	0.59
Turbidity	NTU		4.5	1.7	0.9	4.4	1.8	3.4	NA	12.5	21.5	NA	32.1
Oxidation Reduction Potential	mV		189	157	136	310	166	164	NA	259	182	NA	18
Sulfide (376.1)													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SM4500-S-(-2)-F-2000													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Inorganic and Organic Carbon (415.1)													
TOTAL INORGANIC CARBON (TIC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<1 UJ	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	3.6	3.97	4.59	3.03	3.93	2.93	2.92	1.56	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	16.1	17.5	20.8	8.93	11.6	8.17	8.29	2.71	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<1 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<5 UJ	<2 U	<2 UJ	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 UJ
1,2-DIBROMOETHANE	ug/L	0.05	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<1 U	0.414 J	0.347 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW09-060113 6/3/2013	67WW09-092813 9/28/2013	67WW09-012414 1/24/2014	67WW09-072514 7/25/2014	67WW09-120414 12/4/2014	67WW09-021115 2/11/2015	67WW09FD-021115 2/11/2015	67WW09-051915 5/19/2015	67WW09A-092713 9/27/2013	67WW09A-092713-FD 9/27/2013	67WW09A-012314 1/23/2014
BROMOMETHANE	ug/L	34	<2 UJ	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	<1 U	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<2 UJ	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<1 UJ	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<1 U	<0.5 U	0.472 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Anions (9056)													
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE	mg/L	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dechlorinating Bacteria (CENSUS)													
dehalococcoides ethenogenes	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tceA reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAV1 vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L					NA	NA	NA	NA	NA			
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW09-060113 6/3/2013	67WW09-092813 9/28/2013	67WW09-012414 1/24/2014	67WW09-072514 7/25/2014	67WW09-120414 12/4/2014	67WW09-021115 2/11/2015	67WW09FD-021115 2/11/2015	67WW09-051915 5/19/2015	67WW09A-092713 9/27/2013	67WW09A-092713-FD 9/27/2013	67WW09A-012314 1/23/2014
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

"FD" in Sample ID indicates a field duplicate sample.

CEQ/mL - cells equivalent per milliliter

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

mg/L - milligram per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW09A-050614 5/6/2014	67WW09A-072414 7/24/2014	67WW09AFD-072414 7/24/2014	67WW09A-120314 12/3/2014	67WW09AFD-120314 12/3/2014	67WW09A-021015 2/10/2015	67WW09A-051215 5/12/2015	67WW10-060113 6/1/2013	67WW10-092713 9/27/2013	67WW10-012414 1/24/2014	67WW10-050614 5/6/2014
Water Quality Field Parameters													
Temperature	°C		19.01	24.26	NA	18.75	NA	17.83	18.84	24.32	25.2	15.1	20.2
pH	pH Units		5.55	6.89	NA	6.5	NA	7.13	5.67	6.27	6.02	6.07	5.29
Conductivity	mS/cm		2.53	2.36	NA	2.31	NA	2.25	2.02	5.08	6.23	6.45	6.02
Dissolved Oxygen	mg/L		0.46	0.12	NA	0	NA	0	0.47	0.11	0.6	0.54	0.44
Turbidity	NTU		20.7	5.8	NA	4.3	NA	20.8	31.3	4.9	1.6	0.4	2.6
Oxidation Reduction Potential	mV		20	26	NA	30	NA	-12	112	190	-9	29	55
Sulfide (376.1)													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SM4500-S-(-2)-F-2000													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Inorganic and Organic Carbon (415.1)													
TOTAL INORGANIC CARBON (TIC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 UJ	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	0.39 J	0.362 J	0.319 J	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<1 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<5 UJ	<2 U	<2 UJ	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 UJ	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 UJ
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW09A-050614 5/6/2014	67WW09A-072414 7/24/2014	67WW09AFD-072414 7/24/2014	67WW09A-120314 12/3/2014	67WW09AFD-120314 12/3/2014	67WW09A-021015 2/10/2015	67WW09A-051215 5/12/2015	67WW10-060113 6/1/2013	67WW10-092713 9/27/2013	67WW10-012414 1/24/2014	67WW10-050614 5/6/2014
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<2 UJ	<1 U	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<2 UJ	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 UJ	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U
Anions (9056)													
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE	mg/L	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dechlorinating Bacteria (CENSUS)													
dehalococcoides ethenogenes	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tceA reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAV1 vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L			NA	NA	NA	NA	NA	NA				
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW09A-050614 5/6/2014	67WW09A-072414 7/24/2014	67WW09AFD-072414 7/24/2014	67WW09A-120314 12/3/2014	67WW09AFD-120314 12/3/2014	67WW09A-021015 2/10/2015	67WW09A-051215 5/12/2015	67WW10-060113 6/1/2013	67WW10-092713 9/27/2013	67WW10-012414 1/24/2014	67WW10-050614 5/6/2014
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

"FD" in Sample ID indicates a field duplicate sample.

CEQ/mL - cells equivalent per milliliter

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

mg/L - milligram per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW10-072414 7/24/2014	67WW10-120314 12/3/2014	67WW10-021015 2/10/2015	67WW10-051215 5/12/2015	67WW11-060113 6/1/2013	67WW11-060113-FD 6/1/2013	67WW11-100213 10/2/2013	67WW11 FD-012314 1/23/2014	67WW11-012314 1/23/2014	67WW11-072414 7/24/2014	67WW11-120414 12/4/2014
Water Quality Field Parameters													
Temperature	°C		22.24	19.2	17.33	18.78	23.9	NA	22.65	NA	17.25	22	19.1
pH	pH Units		5.59	5.56	6.18	5.53	6.78	NA	6.23	NA	5.84	6.72	5.63
Conductivity	mS/cm		6.13	6.09	5.84	5.65	4.27	NA	4.74	NA	4.77	4.85	5.17
Dissolved Oxygen	mg/L		0.52	0	0	0.64	1.17	NA	0.63	NA	0.48	1.07	0
Turbidity	NTU		54.7	9.1	0	217	9.6	NA	4	NA	1.9	2.9	5.6
Oxidation Reduction Potential	mV		174	83	25	117	168	NA	64	NA	129	194	204
Sulfide (376.1)													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	<1 U	NA	NA	NA	NA
SM4500-S-(-2)-F-2000													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	<1 U	<1 U
Total Inorganic and Organic Carbon (415.1)													
TOTAL INORGANIC CARBON (TIC)	mg/L		NA	NA	NA	NA	NA	NA	17.6	NA	NA	49.4	140
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	5.7	NA	NA	8.7	9.1 J
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 UJ	<1 UJ	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	0.173 J	<0.25 U	<0.25 U	10.6	10.6	10.6	10.7	9.83	10.4	11.1
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	47.1	46.8	42.8	43	38.8	34.5	37.5
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<1 U	<1 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	<5 UJ	<5 UJ	<2 U	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.869 J	0.85 J	0.799 J	0.823 J	0.748 J	0.684 J	0.567 J
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 UJ	<10 U	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	<5 UJ	<10 U	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 UJ	<10 U	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	<5 UJ	<10 U	<10 U	33.6	<5 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW10-072414 7/24/2014	67WW10-120314 12/3/2014	67WW10-021015 2/10/2015	67WW10-051215 5/12/2015	67WW11-060113 6/1/2013	67WW11-060113-FD 6/1/2013	67WW11-100213 10/2/2013	67WW11 FD-012314 1/23/2014	67WW11-012314 1/23/2014	67WW11-072414 7/24/2014	67WW11-120414 12/4/2014
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 UJ	<1 U	<2 UJ	<2 UJ	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<2 UJ	<2 U	0.536 J	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 UJ	<1 UJ	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U	0.296 J	<0.5 U	0.271 J	0.302 J
Anions (9056)													
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	1200	NA	NA	NA	1330 J
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	<2 U	NA	NA	<1 U	<2 U
NITRITE	mg/L	1	NA	NA	NA	NA	NA	NA	<2 U	NA	NA	<1 U	1.97 J
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	375	NA	NA	414	402
Dechlorinating Bacteria (CENSUS)													
dehalococcoides ethenogenes	CEQ/mL		NA	NA	NA	NA	NA	NA	<0.5 U	NA	NA	22.2	16
tceA reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
BAV1 vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	NA	NA	NA						NA	364000
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	<2 U	NA	NA	<2 U	<2 U
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	<2 U	NA	NA	<2 U	<2 U
METHANE	ug/L		NA	NA	NA	NA	NA	NA	<2 U	NA	NA	<2 U	2.41 J

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW10-072414 7/24/2014	67WW10-120314 12/3/2014	67WW10-021015 2/10/2015	67WW10-051215 5/12/2015	67WW11-060113 6/1/2013	67WW11-060113-FD 6/1/2013	67WW11-100213 10/2/2013	67WW11 FD-012314 1/23/2014	67WW11-012314 1/23/2014	67WW11-072414 7/24/2014	67WW11-120414 12/4/2014
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA	<0.04 U	<0.04 U

Blue Highlighting Indicates concentrations above the MCL/PCL

"FD" in Sample ID indicates a field duplicate sample.

CEQ/mL - cells equivalent per milliliter

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

mg/L - milligram per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW11-021115 2/11/2015	67WW11-051915 5/19/2015	67WW12-060113 6/1/2013	67WW12-100113 10/1/2013	67WW12-012414 1/24/2014	67WW12-050614 5/6/2014	67WW12-072514 7/25/2014	67WW12-120314 12/3/2014	67WW12-021015 2/10/2015	67WW12-051215 5/12/2015	67WW13-053113 5/31/2013
Water Quality Field Parameters													
Temperature	°C		18.42	19.2	27.34	22.99	15.69	20.51	22.61	19.09	19.7	18.55	34.55
pH	pH Units		6.04	5.49	6.71	6.31	6.22	5.39	6.36	6.06	5.32	5.41	6.68
Conductivity	mS/cm		4.8	4.47	4.4	4.54	4.12	4.56	4.52	5.21	3.37	3.34	5.55
Dissolved Oxygen	mg/L		0	0.69	0.57	0.66	0.62	0.8	0.21	0	0.17	1.23	1.17
Turbidity	NTU		4.7	105	2.7	0.3	0	5.2	10.8	0.5	2.1	0	0.2
Oxidation Reduction Potential	mV		165	246	175	-119	91	43	12	20	139	54	106
Sulfide (376.1)													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SM4500-S-(-2)-F-2000													
SULFIDE	mg/L		<1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Total Inorganic and Organic Carbon (415.1)													
TOTAL INORGANIC CARBON (TIC)	mg/L		121	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON (TOC)	mg/L		12.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<1 UJ	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<10 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	3.58
1,1-DICHLOROETHANE	ug/L	4900	9.81	8.25	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	35.5
1,1-DICHLOROETHENE	ug/L	7	30.4	21.6	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	565 J
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<1 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<10 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<20 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<10 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<5 UJ	<2 UJ	<2 UJ	<2 U	<2 U	<2 U	<2 U	<2 U	<50 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<10 U
1,2-DICHLOROETHANE	ug/L	5	0.559 J	0.518 J	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	23.1
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<10 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<10 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<10 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<100 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 UJ	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<10 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<100 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<100 U
ACETONE	ug/L	22000	<5 U	<5 U	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<100 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<10 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<10 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<10 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
BROMOFORM	ug/L	120	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<20 U

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW11-021115 2/11/2015	67WW11-051915 5/19/2015	67WW12-060113 6/1/2013	67WW12-100113 10/1/2013	67WW12-012414 1/24/2014	67WW12-050614 5/6/2014	67WW12-072514 7/25/2014	67WW12-120314 12/3/2014	67WW12-021015 2/10/2015	67WW12-051215 5/12/2015	67WW13-053113 5/31/2013
BROMOMETHANE	ug/L	34	<1 UJ	<1 U	<2 UJ	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<20 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<20 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<10 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<20 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	0.462 J
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<2 UJ	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<20 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	1.68
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<1 UJ	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<20 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<10 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<10 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	0.299 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<10 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<20 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	3.11
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	2.55
Anions (9056)													
CHLORIDE	mg/L		1350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRATE	mg/L	10	<2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE	mg/L	1	<2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	mg/L		389	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dechlorinating Bacteria (CENSUS)													
dehalococcoides ethenogenes	CEQ/mL		15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tceA reductase	CEQ/mL		<0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAV1 vinyl chloride reductase	CEQ/mL		<0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
vinyl chloride reductase	CEQ/mL		<0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	NA					NA	NA	NA	NA	
ETHANE	ug/L		<2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	ug/L		<2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE	ug/L		1.78 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW11-021115 2/11/2015	67WW11-051915 5/19/2015	67WW12-060113 6/1/2013	67WW12-100113 10/1/2013	67WW12-012414 1/24/2014	67WW12-050614 5/6/2014	67WW12-072514 7/25/2014	67WW12-120314 12/3/2014	67WW12-021015 2/10/2015	67WW12-051215 5/12/2015	67WW13-053113 5/31/2013
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

"FD" in Sample ID indicates a field duplicate sample.

CEQ/mL - cells equivalent per milliliter

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

mg/L - milligram per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW13-100113 10/1/2013	67WW13-012414 1/24/2014	67WW13FD-012414 1/24/2014	67WW13-050614 5/6/2014	67WW13FD-050614 5/6/2014	67WW13-072514 7/25/2014	67WW13FD-072514 7/25/2014	67WW13-120414 12/4/2014	67WW13FD-120414 12/4/2014	67WW13-021115 2/11/2015	67WW13-032515 3/25/2015
Water Quality Field Parameters													
Temperature	°C		21.97	15.8	NA	25.17	NA	25.2	NA	19.85	NA	16.69	NA
pH	pH Units		7.09	6.76	NA	5.86	NA	6.24	NA	6.46	NA	7.16	NA
Conductivity	mS/cm		6.65	6.87	NA	6.16	NA	6.83	NA	6.81	NA	6.08	NA
Dissolved Oxygen	mg/L		0.98	0.16	NA	2.03	NA	1.19	NA	0.29	NA	1.73	NA
Turbidity	NTU		0.3	0	NA	1.2	NA	0.2	NA	0	NA	0.2	NA
Oxidation Reduction Potential	mV		37	125	NA	122	NA	178	NA	150	NA	145	NA
Sulfide (376.1)													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SM4500-S-(-2)-F-2000													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1 U
Total Inorganic and Organic Carbon (415.1)													
TOTAL INORGANIC CARBON (TIC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	144
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16.8 J
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<1 U	<1 U	<0.8 U	<0.8 U	<0.4 U	<0.4 U	<2 U	<2 U	<1 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	3.37	2.99	3.01	1.99 J	1.95 J	3.48	3.56	4.4 J	4.56 J	4.87	NA
1,1-DICHLOROETHANE	ug/L	4900	33.8	32.7	32.4	15.5	14.4	21.9	22.1	28.8	27.4	29.1	NA
1,1-DICHLOROETHENE	ug/L	7	515	572	569	240	228	353	362	572	522	521	NA
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.75 U	<0.75 U	<0.6 U	<0.6 U	<0.3 U	<0.3 U	<1.5 U	<1.5 U	<0.75 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<2.5 U	<2.5 U	<2 U	<2 U	<1 U	<1 U	<5 U	<5 U	<2.5 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<1 U	<1 U	<0.8 U	<0.8 U	<0.4 U	<0.4 U	<2 U	<2 U	<1 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 UJ	<5 UJ	<5 UJ	<4 U	<4 U	<2 U	<2 U	<10 U	<10 U	<5 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.626 U	<0.626 U	<0.5 U	<0.5 U	<0.25 U	<0.25 U	<1.25 U	<1.25 U	<0.626 U	NA
1,2-DICHLOROETHANE	ug/L	5	23.8	22.9	22.9	13.7	12.9	19.8	20.1	24.9	24.6	26	NA
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<1 U	<1 U	<0.8 U	<0.8 U	<0.4 U	<0.4 U	<2 U	<2 U	<1 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<1 U	<1 U	<0.8 U	<0.8 U	<0.4 U	<0.4 U	<2 U	<2 U	<1 U	NA
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.626 U	<0.626 U	<0.5 U	<0.5 U	<0.25 U	<0.25 U	<1.25 U	<1.25 U	<0.626 U	NA
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<1.25 U	<1.25 U	<1 UJ	<1 UJ	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
2-BUTANONE	ug/L	15000	<5 U	<12.5 U	<12.5 U	<10 U	<10 U	<5 U	<5 U	<25 U	<25 U	<12.5 U	NA
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.626 U	<0.626 U	<0.5 U	<0.5 U	<0.25 U	<0.25 U	<1.25 U	<1.25 U	<0.626 U	NA
2-HEXANONE	ug/L	120	<5 U	<12.5 U	<12.5 U	<10 U	<10 U	<5 U	<5 U	<25 U	<25 U	<12.5 U	NA
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<12.5 U	<12.5 U	<10 U	<10 U	<5 U	<5 U	<25 U	<25 U	<12.5 U	NA
ACETONE	ug/L	22000	<5 U	<12.5 U	<12.5 U	<10 U	<10 U	<5 U	<5 U	<25 U	<25 U	<12.5 U	NA
BENZENE	ug/L	5	<0.25 U	<0.626 U	<0.626 U	1.21 J	0.79 J	<0.25 U	<0.25 U	<1.25 U	<1.25 U	<0.626 U	NA
BROMOBENZENE	ug/L	200	<0.25 U	<0.626 U	<0.626 U	<0.5 U	<0.5 U	<0.25 U	<0.25 U	<1.25 U	<1.25 U	<0.626 U	NA
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<1 U	<1 U	<0.8 U	<0.8 U	<0.4 U	<0.4 U	<2 U	<2 U	<1 U	NA
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
BROMOFORM	ug/L	120	<1 U	<2.5 U	<2.5 U	<2 U	<2 U	<1 U	<1 U	<5 U	<5 U	<2.5 U	NA

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW13-100113 10/1/2013	67WW13-012414 1/24/2014	67WW13FD-012414 1/24/2014	67WW13-050614 5/6/2014	67WW13FD-050614 5/6/2014	67WW13-072514 7/25/2014	67WW13FD-072514 7/25/2014	67WW13-120414 12/4/2014	67WW13FD-120414 12/4/2014	67WW13-021115 2/11/2015	67WW13-032515 3/25/2015
BROMOMETHANE	ug/L	34	<1 U	<2.5 U	<2.5 U	<2 U	<2 U	<1 U	<1 U	<5 U	<5 U	<2.5 UJ	NA
CARBON DISULFIDE	ug/L	2400	<1 U	<2.5 U	<2.5 U	<2 U	<2 U	<1 U	<1 U	<5 U	<5 U	<2.5 U	NA
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
CHLOROBENZENE	ug/L	100	<0.25 U	<0.626 U	<0.626 U	<0.5 U	<0.5 U	<0.25 U	<0.25 U	<1.25 U	<1.25 U	<0.626 U	NA
CHLOROETHANE	ug/L	98000	<1 U	<2.5 U	<2.5 U	<2 U	<2 U	<1 U	<1 U	<5 U	<5 U	<2.5 U	NA
CHLOROFORM	ug/L	240	<0.25 UJ	<0.626 U	0.359 J	<0.5 U	<0.5 U	0.57 J	0.55 J	0.813 J	0.848 J	1.32 J	NA
CHLOROMETHANE	ug/L	70	<1 U	<2.5 U	<2.5 U	<2 U	<2 U	<1 U	<1 U	<5 U	<5 U	<2.5 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	1.66	1.67 J	1.77 J	0.755 J	0.684 J	1.19	1.15	1.31 J	1.49 J	1.6 J	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
DIBROMOMETHANE	ug/L	120	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
ETHYLBENZENE	ug/L	700	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
M,P-XYLENE	ug/L	10000	<1 U	<2.5 U	<2.5 U	<2 U	<2 U	<1 U	<1 U	<5 U	<5 U	<2.5 U	NA
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	2.88 J	2.9 J	<1.25 U	NA
NAPHTHALENE	ug/L	490	<0.4 U	<1 U	<1 U	<0.8 U	<0.8 U	<0.4 U	<0.4 U	<2 U	<2 U	<1 U	NA
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.626 U	<0.626 U	<0.5 U	<0.5 U	<0.25 U	<0.25 U	<1.25 U	<1.25 U	<0.626 U	NA
O-XYLENE	ug/L	10000	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
STYRENE	ug/L	100	<0.25 U	<0.626 U	<0.626 U	<0.5 U	<0.5 U	<0.25 U	<0.25 U	<1.25 U	<1.25 U	<0.626 U	NA
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
TETRACHLOROETHENE	ug/L	5	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
TOLUENE	ug/L	1000	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<2.5 U	<2.5 U	<2 U	<2 U	<1 U	<1 U	<5 U	<5 U	<2.5 U	NA
TRICHLOROETHENE	ug/L	5	2.81	2.86	2.99	1.25 J	1.27 J	1.72	1.71	1.65 J	1.94 J	2.63	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	NA
VINYL CHLORIDE	ug/L	2	2.1	2.37 J	2.37 J	0.644 J	0.619 J	0.707 J	0.728 J	<2.5 U	<2.5 U	0.653 J	NA
Anions (9056)													
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1820
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2 U
NITRITE	mg/L	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2 U
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	334
Dechlorinating Bacteria (CENSUS)													
dehalococcoides ethenogenes	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	122
tceA reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.8
BAV1 vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14.2
vinyl chloride reductase	CEQ/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.3
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L							NA	NA	NA	NA	NA	NA
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2 U
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2 U
METHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2 U

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW13-100113 10/1/2013	67WW13-012414 1/24/2014	67WW13FD-012414 1/24/2014	67WW13-050614 5/6/2014	67WW13FD-050614 5/6/2014	67WW13-072514 7/25/2014	67WW13FD-072514 7/25/2014	67WW13-120414 12/4/2014	67WW13FD-120414 12/4/2014	67WW13-021115 2/11/2015	67WW13-032515 3/25/2015
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.04 U

Blue Highlighting Indicates concentrations above the MCL/PCL

"FD" in Sample ID indicates a field duplicate sample.

CEQ/mL - cells equivalent per milliliter

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

mg/L - milligram per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW13-051915 5/19/2015	67WW14-100113 10/1/2013	67WW14-100113-FD 10/1/2013	67WW14-012414 1/24/2014	67WW14-050714 5/7/2014	67WW14-072514 7/25/2014	67WW14-120314 12/3/2014	67WW14-021015 2/10/2015	67WW14FD-021015 2/10/2015	67WW14-051215 5/12/2015	67WW14FD-051215 5/12/2015
Water Quality Field Parameters													
Temperature	°C		20.22	22.78	NA	18.42	19.86	25.56	20.74	15.24	NA	20.48	NA
pH	pH Units		5.95	6.47	NA	6.52	5.67	5.34	6.34	6.79	NA	5.57	NA
Conductivity	mS/cm		5.52	1.55	NA	1.53	1.68	1.66	1.52	1.51	NA	1.47	NA
Dissolved Oxygen	mg/L		1.25	1.34	NA	0.67	1.17	0.12	0	0.63	NA	0.68	NA
Turbidity	NTU		0	3.6	NA	15.5	24.8	17.3	8.1	7	NA	161	NA
Oxidation Reduction Potential	mV		219	-60	NA	-37	-5	210	-8	-13	NA	158	NA
Sulfide (376.1)													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SM4500-S-(-2)-F-2000													
SULFIDE	mg/L		<1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Inorganic and Organic Carbon (415.1)													
TOTAL INORGANIC CARBON (TIC)	mg/L		224	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON (TOC)	mg/L		62.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	5.96	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	30.2	0.197 J	0.304 J	0.275 J	0.538 J	0.58 J	0.451 J	0.434 J	0.369 J	0.418 J	0.427 J
1,1-DICHLOROETHENE	ug/L	7	522	1.82 J	2.22	2.58	4.27	3.57	4.73	3.46	3.61	2.77	2.93
1,1-DICHLOROPROPENE	ug/L	9.1	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.75 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<2.5 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<5 U	<2 UJ	<2 UJ	<2 UJ	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.626 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	30.6	0.692 J	0.849 J	0.666 J	0.897 J	1.31	0.79 J	0.64 J	0.657 J	0.799 J	0.815 J
1,2-DICHLOROPROPANE	ug/L	5	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.626 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<12.5 U	9.06 J	7.47 J	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 UJ
2-CHLOROTOLUENE	ug/L	490	<0.626 UJ	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<12.5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 UJ
4-CHLOROTOLUENE	ug/L	490	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<12.5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 UJ
ACETONE	ug/L	22000	<12.5 U	3.27 J	2.59 J	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	4 J	<5 U
BENZENE	ug/L	5	<0.626 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.626 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<2.5 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW13-051915 5/19/2015	67WW14-100113 10/1/2013	67WW14-100113-FD 10/1/2013	67WW14-012414 1/24/2014	67WW14-050714 5/7/2014	67WW14-072514 7/25/2014	67WW14-120314 12/3/2014	67WW14-021015 2/10/2015	67WW14FD-021015 2/10/2015	67WW14-051215 5/12/2015	67WW14FD-051215 5/12/2015
BROMOMETHANE	ug/L	34	<2.5 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	<2.5 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.626 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<2.5 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	1.7 J	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<2.5 U	0.64 J	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	2.08 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<2.5 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.626 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<1.25 U	0.431 J	0.353 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.626 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<2.5 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	2.91	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	0.695 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Anions (9056)													
CHLORIDE	mg/L		1680	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRATE	mg/L	10	<2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE	mg/L	1	3.4 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	mg/L		344	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dechlorinating Bacteria (CENSUS)													
dehalococcoides ethenogenes	CEQ/mL		22.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tceA reductase	CEQ/mL		2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAV1 vinyl chloride reductase	CEQ/mL		<0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
vinyl chloride reductase	CEQ/mL		0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA					NA	NA	NA	NA	NA	NA
ETHANE	ug/L		<2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	ug/L		<2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE	ug/L		<2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2-2: Groundwater Results for Year 1 and 2 - LHAAP-67

Location ID: / Sample Date:	Units	MCL/ PCL	67WW13-051915 5/19/2015	67WW14-100113 10/1/2013	67WW14-100113-FD 10/1/2013	67WW14-012414 1/24/2014	67WW14-050714 5/7/2014	67WW14-072514 7/25/2014	67WW14-120314 12/3/2014	67WW14-021015 2/10/2015	67WW14FD-021015 2/10/2015	67WW14-051215 5/12/2015	67WW14FD-051215 5/12/2015
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

"FD" in Sample ID indicates a field duplicate sample.

CEQ/mL - cells equivalent per milliliter

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

mg/L - milligram per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-3: Historical Groundwater COC Concentrations - LHAAP-67

Sample ID: / Sample Date:	Units	MCL/ PCL	67WW01-981208 12/8/1998	67WW01-040912 9/12/2004	67WW01-060806 8/6/2006	67WW01-061218 12/18/2006	67WW01-053113 5/31/2013	67WW01-050714 5/7/2014	67WW01-072514 7/25/2014	67WW01-120314 12/3/2014	67WW01-021015 2/10/2015	67WW01-051915 5/19/2015	67WW02-981208 12/8/1998	67WW02-981208FD 12/8/1998
1,1,1-TRICHLOROETHANE	ug/L	200	560	<5 U	<5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.25 U	100	100
1,1,2-TRICHLOROETHANE	ug/L	5	33	1 J	0.305 J	0.28 J	<1 U	<0.5 U	0.29 J	0.483 J	1.44	1.72 J	6.4	5.9
1,1-DICHLOROETHENE	ug/L	7	380	280 J	153	179	139	257	224	349	544	631	2.4	<10 U
1,2-DICHLOROETHANE	ug/L	5	27	13	5.57 J	6.37	6.68	12.2	10.7	16.6	28.7	31.4	<1 U	<10 U
TRICHLOROETHENE	ug/L	5	6.3	6	5.38	5.99	2.96	3	2.3	3.36	4.07	3.03	<1 U	<10 U
VINYL CHLORIDE	ug/L	2	<4 U	1 J	1.46 J	2.34 J	2.18	2.15	1.16	2.16	2.38	1.86 J	<1 U	<10 U

Blue Highlighting Indicates concentrations above the MCL/PCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical Groundwater COC Concentrations - LHAAP-67

Sample ID: / Sample Date:	Units	MCL/ PCL	67WW02-040912 9/12/2004	67WW02-060806 8/6/2006	67WW02-061218 12/18/2006	67WW02-053113 5/31/2013	67WW02-092713 9/27/2013	67WW02-012314 1/23/2014	67WW02-050614 5/6/2014	67WW02-072414 7/24/2014	67WW02-120314 12/3/2014	67WW02-021015 2/10/2015	67WW02-051215 5/12/2015	67WW02FD-051215 5/12/2015	67WW03-981208 12/8/1998	67WW03-040912 9/12/2004	67WW03-060809 8/9/2006
1,1,1-TRICHLOROETHANE	ug/L	200	<5 U	<5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	1800	<5 U	<5 U
1,1,2-TRICHLOROETHANE	ug/L	5	<5 U	<5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	24	<5 U	<5 U
1,1-DICHLOROETHENE	ug/L	7	<5 U	<5 U	<5 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	3.59	13.2	13	36	<5 U	<5 U
1,2-DICHLOROETHANE	ug/L	5	<5 U	<5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<20 U	<5 U	<5 U
TRICHLOROETHENE	ug/L	5	<5 U	<5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<20 U	<5 U	<5 U
VINYL CHLORIDE	ug/L	2	<5 U	<10 U	<10 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<20 U	<5 U	<10 U

Blue Highlighting Indicates concentrations above the MCL/PCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical Groundwater COC Concentrations - LHAAP-67

Sample ID: / Sample Date:	Units	MCL/ PCL	67WW03-061218 12/18/2006	67WW03-051215 5/12/2015	67WW04-001219 12/19/2000	67WW04-040912 9/12/2004	67WW05-001219 12/19/2000	67WW05-040912 9/12/2004	67WW05-060808 8/8/2006	67WW05-061217 12/17/2006	67WW05-053113 5/31/2013	67WW05-092813 9/28/2013	67WW05-012314 1/23/2014	67WW05-050614 5/6/2014	67WW05-072414 7/24/2014	67WW05-120314 12/3/2014	67WW05-021015 2/10/2015
1,1,1-TRICHLOROETHANE	ug/L	200	<5 U	<0.5 U	<0.1 U	<5 U	<0.1 U	<5 U	<5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2-TRICHLOROETHANE	ug/L	5	<5 U	<0.5 U	<0.1 U	<5 U	<0.1 U	<5 U	<5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHENE	ug/L	7	<5 U	<1 U	<0.2 U	<5 U	<0.2 U	<5 U	<5 U	<5 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2-DICHLOROETHANE	ug/L	5	<5 U	<0.5 U	<0.1 U	<5 U	<0.1 U	<5 U	<5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	<5 U	<0.5 U	<0.1 U	1 J	<0.1 U	<5 U	<5 U	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<10 U	<0.5 U	<0.2 U	<5 U	<0.2 U	<5 U	<10 U	<10 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates concentrations above the MCL/PCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical Groundwater COC Concentrations - LHAAP-67

Sample ID: / Sample Date:	Units	MCL/ PCL	67WW05-051215 5/12/2015	67WW06-001219 12/19/2000	67WW06-001219FD 12/19/2000	67WW06-040912 9/12/2004	67WW06-060808 8/8/2006	67WW06-061218 12/18/2006	67WW06-100806 8/6/2010	67WW06-053113 5/31/2013	67WW06-053113-FD 5/31/2013	67WW06-092813 9/28/2013	67WW06-012414 1/24/2014	67WW07-001219 12/19/2000	67WW07-040912 9/12/2004	67WW07-060808 8/8/2006	67WW07-061218 12/18/2006
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.1 U	<0.1 U	<5 U	<5 U	<5 U	<1 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.1 U	<5 U	<5 U	<5 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.1 U	<0.1 U	<5 U	<5 U	<5 U	<1 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.1 U	<5 U	<5 U	<5 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<0.2 U	<0.2 U	<5 U	<5 U	<5 U	<1 U	<2 U	<2 U	<1 U	0.752 J	<0.2 U	<5 U	<5 U	<5 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	3.51	3.5	<5 U	3.02 J	1.62 J	2.39	2.25	2.2	1.77	2.03	2.28	<5 U	<5 U	1.65 J
TRICHLOROETHENE	ug/L	5	<0.5 U	0.14	0.15	<5 U	<5 U	<5 U	<1 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.1 U	<5 U	<5 U	<5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.2 U	<0.2 U	<5 U	<10 U	<10 U	<1 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.2 U	<5 U	<10 U	<10 U

Blue Highlighting Indicates concentrations above the MCL/PCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical Groundwater COC Concentrations - LHAAP-67

Sample ID: / Sample Date:	Units	MCL/ PCL	67WW07-053113 5/31/2013	67WW07-092713 9/27/2013	67WW07-012314 1/23/2014	67WW07-050614 5/6/2014	67WW07-072514 7/25/2014	67WW07-120314 12/3/2014	67WW07-021015 2/10/2015	67WW07-051215 5/12/2015	67WW08-060313 6/3/2013	67WW08-100213 10/2/2013	67WW08-012314 1/23/2014	67WW08-050714 5/7/2014	67WW08-072414 7/24/2014	67WW08-120414 12/4/2014	67WW08-021115 2/11/2015
1,1,1-TRICHLOROETHANE	ug/L	200	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U
1,1,2-TRICHLOROETHANE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	4.25	5.08 J	6.7	5.01 J	7.74 J	7.36 J	6.96 J
1,1-DICHLOROETHENE	ug/L	7	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	940	1120	1340	1590	1890	2320	1930
1,2-DICHLOROETHANE	ug/L	5	1.67	1.77	1.35	1.44	1.39	1.19	1.04	0.817 J	89.2	76.5	89.9	101	98.9	106	104
TRICHLOROETHENE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	2.86	<5 U	3.12 J	4.41 J	3.14 J	3.55 J	3.15 J
VINYL CHLORIDE	ug/L	2	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.951 J	<5 U	<2.5 U	<5 U	<5 U	<5 U	<5 U

Blue Highlighting Indicates concentrations above the MCL/PCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical Groundwater COC Concentrations - LHAAP-67

Sample ID: / Sample Date:	Units	MCL/ PCL	67WW08-051915 5/19/2015	67WW09-060113 6/3/2013	67WW09-092813 9/28/2013	67WW09-012414 1/24/2014	67WW09-072514 7/25/2014	67WW09-120414 12/4/2014	67WW09-021115 2/11/2015	67WW09FD-021115 2/11/2015	67WW09-051915 5/19/2015	67WW09A-092713 9/27/2013	67WW09A-092713-FD 9/27/2013	67WW09A-012314 1/23/2014	67WW09A-050614 5/6/2014	67WW09A-072414 7/24/2014	67WW09AFD-072414 7/24/2014
1,1,1-TRICHLOROETHANE	ug/L	200	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2-TRICHLOROETHANE	ug/L	5	4.5 J	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHENE	ug/L	7	1570	16.1	17.5	20.8	8.93	11.6	8.17	8.29	2.71	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2-DICHLOROETHANE	ug/L	5	85.6	<1 U	0.414 J	0.347 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	<5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<5 U	<1 U	<0.5 U	0.472 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates concentrations above the MCL/PCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical Groundwater COC Concentrations - LHAAP-67

Sample ID: / Sample Date:	Units	MCL/ PCL	67WW09A-120314 12/3/2014	67WW09AFD-120314 12/3/2014	67WW09A-021015 2/10/2015	67WW09A-051215 5/12/2015	67WW10-060113 6/1/2013	67WW10-092713 9/27/2013	67WW10-012414 1/24/2014	67WW10-050614 5/6/2014	67WW10-072414 7/24/2014	67WW10-120314 12/3/2014	67WW10-021015 2/10/2015	67WW10-051215 5/12/2015	67WW11-060113 6/1/2013	67WW11-060113-FD 6/1/2013	67WW11-100213 10/2/2013
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	47.1	46.8	42.8
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.869 J	0.85 J	0.799 J
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<1 U	<0.5 U

Blue Highlighting Indicates concentrations above the MCL/PCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical Groundwater COC Concentrations - LHAAP-67

Sample ID: / Sample Date:	Units	MCL/ PCL	67WW11-012314 1/23/2014	67WW11 FD-012314 1/23/2014	67WW11-072414 7/24/2014	67WW11-120414 12/4/2014	67WW11-021115 2/11/2015	67WW11-051915 5/19/2015	67WW12-060113 6/1/2013	67WW12-100113 10/1/2013	67WW12-012414 1/24/2014	67WW12-050614 5/6/2014	67WW12-072514 7/25/2014	67WW12-120314 12/3/2014	67WW12-021015 2/10/2015	67WW12-051215 5/12/2015	67WW13-053113 5/31/2013
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	3.58
1,1-DICHLOROETHENE	ug/L	7	38.8	43	34.5	37.5	30.4	21.6	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	565 J
1,2-DICHLOROETHANE	ug/L	5	0.748 J	0.823 J	0.684 J	0.567 J	0.559 J	0.518 J	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	23.1
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	3.11
VINYL CHLORIDE	ug/L	2	0.296 J	<0.5 U	0.271 J	0.302 J	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	2.55

Blue Highlighting Indicates concentrations above the MCL/PCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical Groundwater COC Concentrations - LHAAP-67

Sample ID: / Sample Date:	Units	MCL/ PCL	67WW13-100113 10/1/2013	67WW13-012414 1/24/2014	67WW13FD-012414 1/24/2014	67WW13-050614 5/6/2014	67WW13FD-050614 5/6/2014	67WW13-072514 7/25/2014	67WW13FD-072514 7/25/2014	67WW13-120414 12/4/2014	67WW13FD-120414 12/4/2014	67WW13-021115 2/11/2015	67WW13-051915 5/19/2015	67WW14-100113 10/1/2013	67WW14-100113-FD 10/1/2013	67WW14-012414 1/24/2014	67WW14-050714 5/7/2014
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<1.25 U	<1.25 U	<1 U	<1 U	<0.5 U	<0.5 U	<2.5 U	<2.5 U	<1.25 U	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2-TRICHLOROETHANE	ug/L	5	3.37	2.99	3.01	1.99 J	1.95 J	3.48	3.56	4.4 J	4.56 J	4.87	5.96	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHENE	ug/L	7	515	572	569	240	228	353	362	572	522	521	522	1.82 J	2.22	2.58	4.27
1,2-DICHLOROETHANE	ug/L	5	23.8	22.9	22.9	13.7	12.9	19.8	20.1	24.9	24.6	26	30.6	0.692 J	0.849 J	0.666 J	0.897 J
TRICHLOROETHENE	ug/L	5	2.81	2.86	2.99	1.25 J	1.27 J	1.72	1.71	1.65 J	1.94 J	2.63	2.91	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	2.1	2.37 J	2.37 J	0.644 J	0.619 J	0.707 J	0.728 J	<2.5 U	<2.5 U	0.653 J	0.695 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates concentrations above the MCL/PCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical Groundwater COC Concentrations - LHAAP-67

Sample ID: Sample Date:	Units	MCL/ PCL	67WW14-072514 7/25/2014	67WW14-120314 12/3/2014	67WW14-021015 2/10/2015	67WW14FD-021015 2/10/2015	67WW14-051215 5/12/2015	67WW14FD-051215 5/12/2015
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHENE	ug/L	7	3.57	4.73	3.46	3.61	2.77	2.93
1,2-DICHLOROETHANE	ug/L	5	1.31	0.79 J	0.64 J	0.657 J	0.799 J	0.815 J
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates concentrations above the MCL/PCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Analyte was not detected.

µg/L - microgram per liter

3 NATURAL ATTENUTION EVALUTION

The following sections present the results of the natural attenuation evaluation in accordance with the three lines of evidence discussed in the Final Remedial Design (Shaw, 2011) for site COCs.

3.1 First Line of Evidence: Change in COC Concentrations over Time and with Distance

Natural attenuation is the combination of multiple mechanisms, including biodegradation, volatilization, dilution, advection, and absorption that reduce contaminant concentrations. The decrease of COC concentrations over time and distance is evidence of natural attenuation. The change in groundwater COC concentrations over time and with distance was evaluated at LHAAP-67. VOC concentrations for the 2014/15 period for the six wells with COC concentrations observed above the MCLs during the reporting period are identified on **Figure 2-11**.

Of all the wells included in the monitoring program, the wells that detected COCs above their respective cleanup levels are 67WW01, 67WW02, 67WW08, 67WW09, 67WW11, and 67WW13. The other wells in the monitoring program did not contain COCs above the cleanup levels in the four sampling events. Based on the general direction of groundwater flow, wells 67WW04, 67WW09A and 67WW10 can be considered background wells and monitoring wells 67WW12, 67WW02 and 67WW05 can be considered downgradient wells. In-plume wells include 67WW01, 67WW08, 67WW09, 67WW11, and 67WW13. Wells 67WW07 and 67WW14 are considered cross-gradient wells. The following discussion is focused on VOC trends noted in the six wells with COCs above the MCL: 67WW01, 67WW02, 67WW08, 67WW09, 67WW11, and 67WW13.

Well 67WW01

Data from this well is available beginning in 1998.

Groundwater data was collected during each of the four quarters of the 2014/15 sampling period. In the previous sampling period (2013/14) the well was dry in two of the four quarters of groundwater sampling. 67WW01 was included in the MNA well network. However, the well was not sampled for MNA when it was dry or when insufficient sample volume was available to collect MNA parameters from 67WW01. Under these circumstances, MNA parameters were collected from either 67WW11 or 67WW13. Discussion of MNA parameters and geochemical data is presented in **Section 3.2**.

Table 2-3 presents historical COC results for 67WW01. 1,1,1-TCA and 1,1,2-TCA were detected above the MCL in 1998 (**Table 2-3**); however, these constituents have remained below the MCL since that sampling event, presumably due to degradation to daughter products such as 1,1-DCE and 1,2-DCA. Since 1998 and throughout this sampling period, 1,1-DCE (degradation product of 1,1,1-TCA) and 1,2-DCA (degradation product of 1,1,2-TCA) were detected above the MCL. The concentrations of each of these COCs have increased over the 2014/15 sampling period. Vinyl chloride (VC) (a degradation product of TCE) has also been detected slightly above the MCL in December 2014 and February 2015 at 2.16 micrograms per liter (μg/L) and 2.38 μg/L, respectively but decreased to below the MCL in May 2015 to 1.86 μg/L J-flagged.

TCE levels in this well remained below the cleanup level during the 2-year RA(O) period, but were slightly above the MCL (concentrations ranged between 5.38 μg/L and 6.3 μg/L) between 1998 and 2006.

Mann-Kendall analysis for the data collected during the 2-year RA(O) period was completed for 1,1-DCE, 1,2-DCA, TCE, and VC. The results are presented in **Appendix E** in graphical format with statistical results presented on the right hand side. The U.S. EPA's ProUCL version 5.0 was used for this analysis. The dates are displayed in numerical format rather than in a date format as required by the program. The concentration of COCs are presented on the data points on the graph in μg/L. Half the detection limit was used for non-detects. The average concentration of the sample and its duplicate was used. The level of significance was 5%. A summary table of the Mann-Kendall results is presented below.

The trend analysis in 67WW01 during the past two years indicates a statistically significant increase in 1,1-DCE and 1,2-DCA concentrations over time and no identified significant trend for TCE and VC. The increase in 1,1-DCE and 1,2-DCA could be due to transport of high levels of these constituents from upgradient in the area of well 67WW08. However, it should be noted that only the last two sampling events (February 2015 and May 2015) have reported 1,1-DCE and 1,2-DCA at or above historical highs for 67WW01. VC could be a degradation component of 1,2-DCA.

Well 67WW02

Analytical data for 67WW02 was reported since 1998. 1,1,2-TCA was reported above the MCL at 6.4 μg/L and 5.9 μg/L in December 1998 but has not been reported above the MCL since that time. No other COC was reported above the MCL since 1998. However, an increase in 1,1-DCE was first observed above the reporting limit of 1 μg/L in February 2015 at 3.59 μg/L. 1,1-DCE concentration increased further in May 2015 to 13.1 μg/L above the MCL of 7 ug/L. 67WW02 is downgradient of the area represented by 67WW01 and 67WW08 and could be receiving 1,1-DCE from upgradient wells.

The trend analysis in 67WW02 during the past two years does not identify a significant change in concentration for any of the COCs even for 1,1-DCE. Because 67WW02 is a downgradient well, the concentration of 1,1-DCE in 67WW02 will be watched closely in future sampling events. Although 67WW02 is within the existing LUC boundary, should the concentration remain above the MCL, a new downgradient monitoring well outside the LUC boundary to provide a downgradient compliance well/sentry point may be required in the future.

Well 67WW03

A total of four historical data points between 1998 and 2006 are available for this well prior to the 2014-15 sampling period. No data were collected in 2013/2014 because the well was dry. In the December 1998 sample, 1,1,1-TCA, 1,1,2-TCA, and 1,1-DCE were reported at concentrations of 1,800 μg/L, 24 μg/L, and 36 μg/L, respectively. However, three subsequent samples collected between 2004 and 2006 did not have detectable concentrations of these compounds indicating that the initial detections in 1998 are suspect and/or not representative of shallow zone groundwater. During the first three-quarters of the 2014/15 sampling period the well was dry and not sampled. In May 2015, a water sample was obtained and analyzed, revealing non-detect levels for these COCs. Because this well has been chronically dry, it was

replaced by adjacent well 67WW12, which is screened over an interval that is approximately 10 feet deeper than well 67WW03. Concentrations of COCs in 67WW12 which was sampled in 2014/2015 and previously in 2013/214 RA(O) periods were non-detect, corroborating the May 2015 and 2004 to 2006 results from 67WW03.

Well 67WW08

This well was installed in 2013. TCE and VC have remained below the cleanup levels in this well and Mann-Kendall analysis indicates no significant change can be observed (**Appendix E**). Over the last two years, 1,1,2-TCA levels fluctuated close to its MCL of 5 µg/L and was at 4.5 µg/L J-flagged in May 2015. 1,1-DCE continued to increase from 1,890 ug/L in July 2014 to 2,320 µg/L in December 2014 before decreasing in concentration to 1,570 µg/L in May 2015. Mann-Kendall analysis for trend over eight (8) quarters of data for this well indicates a statistically significant increase. Since 1,1,1-TCA was not detected in this well (< 5 µg/L), the source of 1,1-DCE could be either degradation of sorbed 1,1,1-TCA or dissolution of sorbed 1,1-DCE. Upgradient wells 67WW10 and 67WW11 cannot provide an explanation for the increase in 1,1-DCE in 67WW08. 1,2-DCA levels reveal a trend similar to 1,1-DCE increasing from 98.9 ug/L in July 2014 to 106 µg/L in December 2014 before decreasing in concentration to 85.6 µg/L in May 2015, albeit those changes are much smaller than observed for 1,1-DCE. Mann-Kendall for 1,2-DCA indicates no significant trend for concentration changes. There are only two years of data for 67WW08, future sampling events will continue to evaluate trend analysis for COCs.

Well 67WW09

This well was installed in 2013. Only 1,1-DCE has been detected in this well above the MCL with the levels decreasing from 8.93 µg/L (July 2014) to 2.71 µg/L (May 2015). The highest concentration for 1,1-DCE was reported in January 2014 at 20.8 µg/L. A trend analysis for the concentrations of COCs in this well indicated a statistically significant evidence of a decreasing trend for 1,1-DCE. The decrease in 1,1-DCE concentration could be due to natural attenuation (e.g., dilution from clean upgradient groundwater observed in 67WW09A). 67WW09A was installed upgradient from 67WW09 to bound the plume in the south and upgradient direction. VOC data in well 67WW09A has remained below the cleanup levels. There are only two years of data for 67WW09, future sampling events will continue to evaluate trend analysis for COCs.

Well 67WW11

This well was installed in 2013. Similar to well 67WW09, only 1,1-DCE has been detected in this well above the MCL with the concentration levels increasing from 34.5 µg/L (July 2014) to 37.5 µg/L (December 2014) and then decreasing to 21.6 µg/L (May 2015). The highest concentration for 1,1-DCE was reported in June 2013 at 47.1 µg/L. The Mann-Kendall trend analysis indicated a statistically significant evidence of a decreasing trend for 1,1-DCE and no significant changes for other COCs (**Appendix E**). The decrease in 1,1-DCE concentration could be due to natural attenuation (e.g., dilution from clean upgradient groundwater observed in 67WW09A). Well 67WW09A was installed upgradient to bound the plume in the south direction and remains unimpacted. There are only two years of data for 67WW11, future sampling events will continue to evaluate trend analysis for COCs.

Well 67WW13

This well was installed in 2013. 1,1-DCE and 1,2-DCA have been detected above the MCLs in this well during the monitoring period. Both COCs slightly increased in concentrations during the 2014/2015 reporting period. 1,1-DCE levels increased from 362 µg/L (July 2014) to 522 µg/L (May 2015) and 1,2-DCA increased from 20.1 µg/L (July 2014) to 30.6 µg/L (May 2015). Only trace concentrations of VC were detected below the MCL during the monitoring period. During the two year RA(O) reporting periods, 1,1-DCE, 1,2-DCA, and TCE concentrations decreased between May 2013 reaching a low in May 2014, increasing thereafter to reach a new high in May 2015. This trend was also observed for VC between May 2013 and December 2014 but the trend was reversed during February and May 2015 sampling events. This could be related to degradation of VC under oxidative conditions in this well (discussed in **Section 3.2**). Mann-Kendall for the four parameters in this well over the two year RA(O) period indicated insufficient statistical evidence of a significant trend in concentrations. There are only two years of data for 67WW13, future sampling events will continue to evaluate trend analysis for COCs.

Mann-Kendall Trend Summary

Monitoring Well	1,1-DCE	1,2-DCE	TCE	VC
67WW01	**Significant Increase**	**Significant Increase**	No significant trend	No significant trend
67WW02	No significant trend	No significant trend	No significant trend	No significant trend
67WW08	**Significant Increase**	No significant trend	No significant trend	No significant trend
67WW09	**Significant Decrease**	No significant trend	No significant trend	No significant trend
67WW11	**Significant Decrease**	No significant trend	No significant trend	No significant trend
67WW13	No significant trend	No significant trend	No significant trend	No significant trend

3.1.1 Plume Stability

COC plume maps completed for each sampling event are presented in **Figures 2-7** through **2-10**. The COC data over the monitoring period indicate no plume migration except for the May 2015 data which indicates a potential shift in the plume to the north, compared to previous periods. This shift is in line with the groundwater flow direction to the north/northwest. Based on the general direction of groundwater flow (towards the north/northwest), the following wells can be considered to be along the groundwater flow path: 67WW10, 67WW11, 67WW08, 67WW01, 67WW13, and 67WW05. 67WW02 can be considered a downgradient well from the area to the east of 67WW08/67WW01 depending on groundwater flow pattern.

The COCs in upgradient well 67WW10 which was installed in 2013 have remained below the cleanup levels throughout the reporting period. The in-plume well 67WW11 which is the most upgradient well exhibited a significant decreasing trend of 1,1-DCE, which could be due to natural attenuation associated with dilution effect of clean groundwater from upgradient areas. The in-plume well 67WW08 exhibits the highest levels of COCs and has exhibited a statistically significant increase in 1,1-DCE concentration during the eight (8) RA(O) periods. Depending on groundwater flow direction, monitoring well 67WW01 could be considered a downgradient well

for 67WW08, which exhibits lower concentrations of 1,1,2-TCA, 1,1-DCE, and 1,2-DCA than in 67WW08, which is a typical decreasing concentration of COCs with distance from the source. Concentrations of 1,1-DCE and 1,2-DCA exhibited a statistically significant increase over the 8 quarter RA(O) period, which could be related to transport of COCs from upgradient area in the vicinity of 67WW08. Monitoring well 67WW13 located downgradient from 67WW01 exhibited decreases then increases in COC concentrations over 8 quarters with no observed significant trend. An attempt to correlate changes in concentration to groundwater elevation did not provide any relationship with a slightly positive correlation observed for 1,2-DCA (21%) and a negative correlation for 1,1-DCE (-34%). It appears that the plume is stable in this area of the site. 1,1-DCE concentration in the other downgradient well 67WW02 appears to be increasing slightly from below the MCL of 7 μg/L to above the MCL at 13.1 μg/L. 67WW02 is downgradient of the area represented by 67WW01 and 67WW08 and could be receiving 1,1-DCE from upgradient wells. Because 67WW02 is a downgradient well, the concentration of 1,1-DCE in 67WW02 will be watched closely in future sampling events. The most downgradient well at the site 67WW05 has not exhibited detections of any COC since well installation in 2000.

Monitoring wells 67WW03 and 67WW12 are considered downgradient from the area of wells 67WW06 and 67WW07. The downgradient well 67WW03 (located in close proximity to 67WW12) was dry in first three of the four sampling events during the 2nd year RA(O) period. In the fourth event (May 2015), this well had no detections of COCs. Prior to May 2015, the well also had no detections of COCs in 2004 and 2006. The high concentrations of 1,1,1-TCA, 1,1,2-TCA, and 1,1-DCE reported in this well in December 1998 appeared to have attenuated before September 2004 and remain below detection. Similarly, 67WW12 installed to replace then dry well 67WW03 did not have any detections of the COCs for the past 8 quarters.

Concentrations of COCs in perimeter wells (boundary area wells 67WW02, 67WW12, 67WW07, 67WW10, 67WW09A, 67WW14, and 67WW05) surrounding the most impacted wells 67WW01 and 67WW08 in all directions have identified no increase or new detections of COCs with the exception of 67WW02. Boundary well 67WW02, was located on a potentiometric surface high during the 1st half of the monitoring period and had no detections of COCs. During the 2nd half of the monitoring period 67WW02 became a downgradient well, and coincided with an increase in 1,1-DCE to above the detection level for the first time since it was detected in December 1998. 1,1-DCE was detected below the MCL in February 2015, and then above the MCL in May 2015 for 67WW02. Therefore, 1,1-DCE appears to be migrating northward, however this is based on data from one sampling event (May 2015) and future sampling events will continue to evaluate plume migration. Boundary well 67WW07, generally classified as a cross-gradient to upgradient well, had low and stable detections of 1,2-DCA consistently below the MCL. Boundary well 67WW09A, an upgradient well which was installed in 2013, had no detections of any COCs during the 8 quarter RA(O) period. Boundary well 67WW14, a cross gradient to an upgradient well installed in 2013, had low and stable detections of 1,1-DCE and 1,2-DCA consistently below the MCLs. Boundary well 67WW05, generally considered a down-gradient well, had no detections of any COCs since it was first sampled in 2000. **Table 2-3** presents the analytical results in these wells.

Although only a few data points exist, the relationship between groundwater level elevations and COC concentrations were graphed in individual wells over the course of the monitoring period, as depicted in Figure 2-11. A review of the data does not indicate any definite correlation

between groundwater elevations and COC concentrations. For example, 1,1,2-TCA in 67WW08 had a 2% correlation coefficient with groundwater elevation, 1,1-DCE in 67WW08 had a 47% correlation coefficient with groundwater elevation, and 1,2-DCA in 67WW08 had a 37% correlation coefficient with groundwater elevation. These disparate correlation coefficients between COCs and groundwater elevation change in the same well indicate the weak seasonal effects on well COC concentrations (the effect of degradation of 1,1,1-TCA to 1,1-DCE does not change this conclusion considering that the concentration of 1,1,1-TCA did not change much with a range of 4.25 μg/L and 7.74 μg/L during the 8 quarter RA(O) period and the concentration of 1,1-DCE in this well is approximately 2.5 orders of magnitude greater than 1,1,1-TCA). Another example for change in 1,1-DCE concentration versus groundwater elevation change across several wells reveal the following results: 47% correlation coefficient in 67WW08, -94% correlation coefficient in 67WW09, -84% correlation coefficient in 67WW11, -32% correlation coefficient in 67WW13, and 71% in 67WW01. These widely dispersed correlation coefficients for the same COC across several monitoring wells indicate the lack of a defined correlation between COC concentration and groundwater levels or lack of seasonality effects. The supporting data for the correlation coefficients are provided in Appendix F.

3.2 Second Line of Evidence: Geochemical Indicators

Table 2-2 presents geochemical indicators that are useful MNA evaluation parameters. Some geochemical indicators are collected in the field, and are recorded for all sampling events for all wells. The field parameters for LHAAP-67 wells include: dissolved oxygen (DO), oxidation-reduction potential (ORP), pH, conductivity, turbidity, ferrous iron, and temperature. DO measurements collected from bailed wells were considered inadequate and are not included in **Table 2-2**.

DO is the most thermodynamically favored electron acceptor used by microbes for biodegradation of organic carbon, whether natural or anthropogenic (USEPA, 1998). Anaerobic bacteria generally cannot function at DO concentrations greater than about 0.5 milligrams per liter (mg/L) and hence, reductive dechlorination will not occur. Wells 67WW01, 67WW02, 67WW03, 67WW05, and 67WW07 were sampled by bailing and the DO concentrations in these wells are not included in **Table 2-2** in accordance with the revised IWWP (AECOM, July 2014). In the two most contaminated wells, 67WW08 and 67WW13, the DO concentrations have ranged from 0 mg/L to 1.75 mg/L. The low DO level in 67WW08 with a maximum reported concentration of 0.66 mg/L in May, 2015 bodes well for reductive dechlorination. DO concentration in 67WW11 was also low with a maximum reported concentration of 1.07 mg/L.

The ORP levels indicate how oxidative or reductive the groundwater is in the aquifer matrix and provide real-time data if conditions are conducive for anaerobic biodegradation. ORP values less than 50 milli-volts (mV) are indicative that the aquifer is reaching anaerobic conditions and are favorable for the biological reductive dechlorination of chlorinated ethenes and ethanes. The ORP measurements at LHAAP-67 during the monitoring period have generally been negative in the highest contaminated well (67WW08) ranging between -16 mV (May 2015) to 45 mV (February 2015). In other wells within the plume (67WW09, 67WW11, and 67WW13), the ORP ranged between 164 and 310 mV in 67WW09, between 165 and 246 mV in 67WW11, and between 145 and 219 mV in 67WW13. These levels indicate a higher level of oxidative conditions, not supporting reductive dechlorination. The oxidative conditions in 67WW13 may be contributing to oxidation of formed VC, resulting in decrease in its concentration in this well

over time. Although, the decrease was not found to be statistically significant, the VC concentration had decreased from above the MCL during the first three sampling quarters to below the MCL thereafter. In 67WW01 the ORP ranged between -101 and 107 mV indicating oxidative to reducing conditions, noting that the ORP data from this well were collected from bailed samples. Given the presence of biodegradation products (1,2-DCA) in well 67WW08, the aquifer conditions (low DO and negative ORP) appear to be conducive for reductive dechlorination in the vicinity of 67WW08. However, over the entire extent of the plume, the conditions are generally aerobic and do not support reductive dechlorination.

After DO has been depleted in the microbiological treatment zone, nitrate may be used as an electron acceptor for anaerobic biodegradation of organic carbon via denitrification. In order for reductive dechlorination to occur, nitrate concentrations in the contaminated portion of the aquifer must be less than 1.0 mg/L (USEPA, 1998). **Table 2-2** indicates that nitrate concentrations were generally below the laboratory reporting limits at LHAAP-67 groundwater with one reported concentration of 2 mg/L J-flagged in 67WW08 in December 2014. This concentration is believed to be inconsequential to biodegradation and aquifer conditions. Nitrite was reported above detection in 67WW08 (2.04 mg/L J-flagged in December 2014 and 3.95 mg/L J-flagged in May 2015), 67WW11 (1.97 mg/L J-flagged in December 2014), and 67WW13 (3.4 mg/L J-flagged in May 2015). These reported nitrite concentrations are estimated and do not appear to be consequential to degradation of COCs at the site. Therefore, nitrate reduction is not likely a mode of microbial respiration at the site, and the lack of nitrate is favorable for achieving the highly reducing conditions ideal for anaerobic reductive dechlorination.

In some cases, iron (III) (ferric iron) is used as an electron acceptor during anaerobic biodegradation of organic carbon. During this process, iron (III) is reduced to iron (II) (ferrous iron), which may be soluble in water. Ferrous iron concentrations can thus be used as an indicator of anaerobic degradation of fuel compounds, and VC. Ferrous iron concentrations were measured in wells 67WW01 and 67WW08 and ranged from 0.0907 mg/L to 0.944 mg/L in 67WW08 and was reported at 0.0539 mg/L (a single measurement conducted in May 2015) in 67WW01. No ferrous iron was reported in 67WW11 and 67WW13 (< 0.04 mg/L). Ferrous iron concentrations reflect limited reductive dechlorination is occurring.

After DO and nitrate have been depleted in the microbiological treatment zone, sulfate may be used as an electron acceptor for anaerobic biodegradation. This process is termed “sulfate reduction” and results in the production of sulfide. Concentrations of sulfate greater than 20 mg/L may cause competitive exclusion of dechlorination. However, in many plumes with high concentrations of sulfate, reductive dechlorination still occurs (USEPA, 1998).

Table 2-2 indicates that the sulfate concentrations ranged from 143 mg/L in 67WW01 to 524 mg/L in 67WW08 during the May 2015 sampling event. Relatively high concentrations of sulfate and corresponding sulfide concentrations below laboratory reporting limit of 1 mg/L indicate that the conditions in the aquifer are not conducive for sulfate reduction.

Methanogenesis occurs in highly reducing conditions and generally occurs after oxygen, nitrate, and sulfate have been depleted. Methane levels above 500 µg/L is considered to indicate methanogenic conditions (USEPA, 1998). Methane was measured in wells 67WW01, 67WW08, 67WW11, and 67WW13 and was found to be lower than 20 µg/L.

Regardless of the electron acceptor being used, organic carbon is a required source of reduced carbon and energy to sustain microbial activity. Total organic carbon (TOC) is utilized as a carbon and energy source to support the reductive dechlorination of the chlorinated COCs. TOC concentrations greater than 20 mg/L are considered adequate to support microbial activity (USEPA, 1998). TOC concentration was measured in wells 67WW01 and 67WW08 and was found to generally be below 20 mg/L, with the exception of the February 2015 sample from 67WW08 which had a TOC concentration of 22.4 mg/L and in 67WW13 with a concentration of 62.4 mg/L in May 2015. Therefore, TOC does not seem to play a significant role in assisting reductive dechlorination.

The pH of ground water has an effect on the presence and activity of microbial populations in ground water. This is especially true for bacteria responsible for reductive dechlorination. Microbes capable of degrading chlorinated aliphatic hydrocarbons and petroleum hydrocarbon compounds generally prefer pH values varying from 6 to 8 standard units (USEPA, 1998). The shallow zone groundwater pH within the plume ranged between 5.32 and 7.25 standard units with pH geomean values of 6.5 standard units in wells 67WW01 and averaging 6.6 standard units in 67WW08. The conditions in these wells should be supportive for dechlorinating bacteria but do not provide an optimal environment.

Ethane and ethene, the two end products of the reductive dechlorination pathways for chlorinated ethanes and ethenes, were also below the laboratory reporting limits during the monitoring period in 67WW01, 67WW08, 67WW11, and 67WW13 indicating that complete dechlorination is not taking place.

The qualitative assessment of geochemical indicators in the shallow groundwater zone at LHAAP-67 indicates current geochemical conditions are not optimal for MNA. Nonetheless, certain parameters observed in a few locations may indicate that conditions could favor natural attenuation, such as the low DO and slightly negative ORP observed in 67WW08. The presence of methane and dissolved iron also provides evidence that reducing anaerobic conditions are present. Although, degradation products (1,2-DCA, 1,1-DCE, and VC) have been detected in the plume monitoring wells, adequate conditions within the impacted area currently do not exist to sustain complete reductive dechlorination.

3.3 Third Line of Evidence: Predictive Modeling and Microbial Analysis

If the first two lines of evidence for MNA are deemed inadequate or inconclusive, and/or if the need for a contingency remedy is evaluated, data from field or microcosm studies will be necessary to establish the third line of evidence for MNA.

Dechlorinating bacteria, dehalococcoides ethenogenes and associated functional genes were analyzed in wells 67WW01, 67WW08, 67WW11, and 67WW13 located within the VOC plume. Generally, the microbial population count and the functional gene counts were very low (less than 100 CEQ/mL) and in most cases below the laboratory reporting limits, indicating limited population count of the bacteria and absence of gene expression necessary for anaerobic biological degradation of the COCs.

Of the analyzed parameters and wells using Mann-Kendall, only two data sets showed a significant decrease in concentration over time (1,1-DCE in 67WW09 and 67WW11). Of those 1,1-DCE in 67WW09 decreased to below the MCL. For 1,1-DCE in 67WW11, the first order

rate constant was estimated at 0.033 yr^{-1} and the time to achieve the MCL of 7 μg/L is estimated at 35 years. Degradation of COCs in other wells is not occurring to allow a determination of time to achieve the MCL (i.e., predictive modeling by assuming some degree of degradation and degradation half-lives is not meaningful for this plume).

4 SUMMARY AND CONCLUSIONS

VOC data and geochemical indicators were collected over the course of the monitoring period at LHAAP-67 to evaluate effectiveness of MNA as a site remedy. A tiered approach assessing the first two of three lines of evidence was used to evaluate the occurrence of natural attenuation in site groundwater. The first line of evidence evaluated reductions in COC concentrations over time and with distance, the second line of evidence evaluated geochemical indicators, while the third line of evidence evaluated microbial conditions in the aquifer and assessed the time to achieve the MCL for wells that showed significant decrease in concentration using the Mann-Kendall test for trends. The results of the tiered evaluation and the conclusions are summarized below.

An assessment of the first line of evidence indicated that the plume appears to be migrating to the north in the predominant direction of groundwater flow gradient. This is evidenced by decreasing 1,1-DCE concentration in 67WW09 and increasing 1,1-DCE concentration in 67WW02. However this observation is based on data from one sampling event (May 2015) for 67WW02 and future sampling events will continue to evaluate plume migration. The in-plume well (67WW08) exhibits the highest levels of COCs which have generally remained stable, with 1,1,-DCE, exhibiting a statistically significant increasing trend during the 8 quarter RA(O) reporting period. Monitoring well 67WW01 which depending on groundwater flow direction could be considered a downgradient well for 67WW08 exhibits lower concentrations of 1,1,2-TCA, 1,1-DCE, and 1,2-DCA than in 67WW08, which is a typical decreasing concentration of COCs with distance from the source. 1,1-DCE concentration in 67WW01 also exhibited a statistically significant increase over the 8 quarter reporting period, which could be associated with migration of 1,1-DCE from 67WW08 towards 67WW01. However, only the last two sampling events (February and May 2015) for 67WW01 had 1,1-DCE above historical highs. A similar decreasing COC concentration trend is made between 67WW01 and downgradient well 67WW02. The downgradient well 67WW03 (located in close proximity to 67WW12) has been dry in three of the four events. In the fourth event (May 2015) this well had no detections of COCs. This corroborates the data obtained in 2004 and 2006. 1,1-DCE in downgradient well 67WW02 increased to above its MCL in one sampling event (May 2015). Therefore, based on the inferred flow path (using the groundwater flow direction), COC levels appear to be slightly increasing with distance from the source area to the north. There are only two years of data for four of the wells inside the plume (67WW08, 67WW09, 67WW11 and 67WW13), future sampling events will continue to evaluate trend analysis for COCs.

1,1-DCE in 67WW09 and 67WW11 has significantly decreased over time. This is likely due to dilution from clean upgradient groundwater. Otherwise, Mann-Kendall did not identify statistically significant changes in COC concentrations, although changes in concentrations can be observed in general.

Concentrations of COCs in boundary wells 67WW12, 67WW10, 67WW09A, 67WW14, and 67WW05 surrounding the most impacted wells 67WW01, 67WW08, and 67WW13 have remained non-detect or below the MCL, indicating no plume migration in those areas, with the exception of 67WW02 as discussed above.

The qualitative assessment of geochemical indicators and the absence of dechlorinating bacteria in the shallow groundwater zone at LHAAP-67 indicate current geochemical conditions are not

optimal for MNA. Although, degradation products (1,2-DCA, 1,1-DCE, and VC) have been detected in the plume monitoring wells, adequate conditions within the impacted area currently do not exist to sustain complete reductive dechlorination.

Statistical significant decrease of COCs that are above the MCL was observed only in well 67WW11 for 1,1-DCE and a first order rate constant was estimated at 0.33 yr^{-1}. From this information the time to achieve the MCL in this well was estimated at 35 years. The primary mechanism for the decrease in concentration in 67WW11 is determined to be dilution.

Based on the collected data thus far, MNA associated with biodegradation appears not to be occurring in the shallow groundwater at LHAAP-67. The concentration decrease observed in some COCs in some wells are likely associated with other MNA occurrences such as dilution and volatilization. The VOC plume has appeared stable with no observed migration, with the exception of the recent February and May 2015 data for 67WW01 indicating an increase above historical results and the May 2015 data for 67WW02 indicating a potential northern expansion. Future sampling events will continue to evaluate plume stability and migration.

After completion of the first 2-year RA(O) period, groundwater monitoring on a semi-annual basis will continue to be performed at LHAAP-67 in compliance with the Remedial Action Work Plan (AECOM, 2013). However, collection of additional MNA parameter data from the site will not be conducted in the future. No change in land or groundwater use has occurred at the site, and the use of the site is still consistent with that mandated by the ROD.

Inspection of monitoring wells 67WW01, 67WW02, and 67WW03 with a downhole camera was conducted in March 2015 to confirm the discrepancies identified between the well logs and the total depth measured in the field. The information indicated the presence of slight discrepancies but did not affect groundwater gauged elevation or gradient.

5 REFERENCES

AECOM, 2013, *Final Remedial Action Work Plan for LHAAP-67, Aboveground Storage Tank Farm*, Longhorn Army Ammunition Plant, Karnack, Texas, March.

AECOM, 2014, *Final Installation-Wide Work Plan* for Longhorn Army Ammunition Plant, Karnack, Texas, July.

AECOM, 2015, *Draft Final Remedial Action Completion Report, LHAAP-67, Aboveground Storage Tank Farm*, Longhorn Army Ammunition Plant, Karnack Texas, January.

EPA, 2014, *Transmittal of Final Dispute Decision*, Letter dated October 31, 2014 from Gina McCarthy, EPA Administrator, to John McHugh, Secretary of the Army and Bryan Shaw, Chairman of TCEQ. Longhorn Army Ammunition Plant, Karnack, Texas Administrative Record, Volume 4, 2014, 00192717-00192750.

Shaw, 2011, *Final Remedial Design, LHAAP-35B (37), Chemical Laboratory and LHAAP-67, Above Ground Storage Tank Farm*, Longhorn Army Ammunition Plant, Karnack, Texas, August.

USACE, 2010, *Final Record of Decision, LHAAP-35B (37), Chemical Laboratory and LHAAP-67, Above Ground Storage Tank Farm*, Longhorn Army Ammunition Plant, Karnack, Texas, June.

USEPA, 1998, *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water*, U.S. EPA/600/R-98/128, September.

APPENDIX A: ANNUAL LUC COMPLIANCE CERTIFICATION DOCUMENTATION

Annual Land Use Control Compliance Certification Documentation

In accordance with the Remedial Design dated August 2011, for LHAAP-67 a certification of site was conducted by AECOM Technical Services, Inc. on July 14, 2015.

A summary of land use control mechanism is as follows:

- Groundwater restriction – restriction of the use of groundwater to environmental monitoring and testing until cleanup levels are met.

A summary of compliance with land use and restriction covenants is as follows:

- No use of groundwater, installation of new groundwater wells, or tampering with existing wells at LHAAp-67.

I, the undersigned, do document that the certification was performed as indicated above, and that the above information is true and correct to the best of my knowledge, information, and belief

Date: July 14, 2015

Name/Title: MARWAN SALAMEH / Deputy Project Manager

Signature:

APPENDIX B: PHOTO LOG

Well ID: 67WW05 Prior to Conducting Maintenance Activities	
Well ID: 67WW05 After Completion of Maintenance Activities	

Well ID: **67WW01**	
Well ID: **67WW02**	

Well ID: 67WW07	
Well ID: 67WW08	

Well ID: 67WW09	
Well ID: 67WW10	

Well ID: 67WW11	
Well ID: 67WW12	

Well ID: **67WW14**	

APPENDIX C: MONITORING WELL SAMPLING FORMS

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW01	Date: 7/24/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 26.20	Weather Conditions: Cloudy 73°F
	Total Well Depth (ft) [d]: 27.00	Screened Interval/Pump placement: 12-22	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
7/24/14	0830	26.20	NA							Bailing well only .8 ft
7/24/14	0835	26.98	NA							Bailed .5 gallons
7/25/14	0750	26.20	NA	21.90	5.91	3.57	8.79	33.0	107	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW01-072514 TIME: 0750

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW02	Date: 7/23/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4 11	Static Water Level Reading (ft) [c]: 23.45	Weather Conditions: CLEAR 94°F
	Total Well Depth (ft) [d]: 27.78	Screened Interval/Pump placement: 15-25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
7/23/14	1532	23.45	NA							Bailing well
7/23/14	1541	27.67	NA							Bailed 3 gallons, Raw Dry
7/24/14	0815	23.45	NA	22.38	7.02	2.94	8.83	11.6	192	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW02-DR414 TIME: 0815

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW03	Date: 7/23/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4 11	Static Water Level Reading (ft) [c]: DRY	Weather Conditions: CLEAR 94°F
	Total Well Depth (ft) [d]: 24.93	Screened Interval/Pump placement: 14-24	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67 ~~HTE~~ WW04	Date: 7/25/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4 11	Static Water Level Reading (ft) [c]: DRY	Weather Conditions: CLEAR 88°F
	Total Well Depth (ft) [d]: 24.44	Screened Interval/Pump placement: 11-24	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

NOT REQUIRED TO SAMPLE THIS WELL
WATER LEVEL ONLY

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW05	Date: 7/23/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4 11	Static Water Level Reading (ft) [c]: 25.20	Weather Conditions: CLEAR 73°F
	Total Well Depth (ft) [d]: 30.00	Screened Interval/Pump placement: 16-26	Condition of Well/Remarks: NEEDS PAINT

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
7/23/14	0743	25.20	NA							Bailing well
7/23/14	0750	29.45	NA							Bailed 3.5 gallons, RAN DRY
7/24/14	0750	25.20	NA	22.72	6.92	2.49	8.31	28.5	221	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 67WW05-072414 TIME: 0750

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW06	Date: 7/23/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 23.75	Weather Conditions: CLEAR 94°F
	Total Well Depth (ft) [d]: 49.78	Screened Interval/Pump placement: 38-48	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

NO SAMPLE REQUIRED
ONLY WATER LEVEL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW07	Date: 7/24/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4 11	Static Water Level Reading (ft) [c]: 23.83	Weather Conditions: CLOUDY 88°F
	Total Well Depth (ft) [d]: 27.97	Screened Interval/Pump placement: 14-24	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
7/24/14	1445	23.83	NA							Bailing well
7/24/14	1455	27.90	NA							Bailed 3.5 gallons RANDRY
7/25/14	0810	23.83	NA	21.89	5.58	3.49	9.24	8.8	91	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW07-072514 TIME: 0810

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW08	Date: 7/24/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 23.41	Weather Conditions: Cloudy 77°F
	Total Well Depth (ft) [d]: 51.96	Screened Interval/Pump placement: 23.6-48.1/36.00	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
7/24/14	1025	23.42	100	22.04	6.95	4.89	0.95	6.9	51	
7/24/14	1030	23.44	100	21.82	6.92	4.96	0.26	6.3	24	
7/24/14	1035	23.46	100	21.76	6.90	4.97	0.03	6.4	12	
7/24/14	1040	23.48	100	21.68	6.90	4.99	0.00	6.9	4	
7/24/14	1045	23.49	100	21.67	6.90	4.99	0.00	6.1	-3	
7/24/14	1050	23.50	100	21.63	6.89	4.98	0.00	6.6	-5	
7/24/14	1055	23.51	100	21.70	6.89	4.98	0.00	7.1	-6	
7/24/14	1100	23.52	100	21.72	6.89	4.98	0.00	6.1	-7	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW08-072414 TIME: 1100

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	GASES
1-500 ml plastic	2NaOH	N	"	Sulfide
1-250 ml Amber	NA	N	"	Ferrous Iron
1-1 Liter plastic	NA	N	"	DHC
1-250 ml plastic	H2SO4	N	"	TOC
1-250 ml plastic	NA	N	"	TIC
1-250 ml plastic	NA	N	"	Anions

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00737328

LOCATION	Site: 67	LocID: 67WW09	Date: 7/25/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4 11	Static Water Level Reading (ft) [c]: 21.40	Weather Conditions: CLEAR 95°F
	Total Well Depth (ft) [d]: 37.85	Screened Interval/Pump placement: 14.5-34.5 / 27.50	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
7/25/14	1355	21.41	100	30.80	5.79	3.42	1.72	20.2	179	
7/25/14	1400	21.43	100	28.20	5.67	3.35	0.84	15.7	208	
7/25/14	1405	21.45	100	26.83	5.61	3.37	0.70	14.8	231	
7/25/14	1410	21.47	100	26.05	5.55	3.40	0.91	14.3	251	
7/25/14	1415	21.49	100	25.94	5.49	3.42	0.65	12.1	274	
7/25/14	1420	21.51	100	25.98	5.45	3.43	0.63	7.7	305	
7/25/14	1425	21.53	100	25.97	5.41	3.42	0.61	7.1	308	
7/25/14	1430	21.55	100	26.05	5.42	3.42	0.59	6.0	309	
7/25/14	1435	21.57	100	26.09	5.41	3.42	0.61	4.4	310	

Pump Rate: <=0.5 L/min **Drawdown:** <0.33 ft **Measurements:** 3-5 min **Stabilization:** +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW09-072514 TIME: 1435

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW09A	Date: 7/24/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 26.06	Weather Conditions: Cloudy 80°F
	Total Well Depth (ft) [d]: 38.66	Screened Interval/Pump placement: 20.8-35.5 / 29.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
7/24/14	1245	26.03	100	26.12	7.07	2.33	1.69	19.1	68	
7/24/14	1250	26.05	100	24.69	6.96	2.31	0.41	14.3	46	
7/24/14	1255	26.07	100	24.38	6.94	2.31	0.17	11.9	41	
7/24/14	1300	26.09	100	24.25	6.92	2.30	0.16	9.5	38	
7/24/14	1305	26.11	100	24.24	6.91	2.33	0.14	9.5	30	
7/24/14	1310	26.13	100	24.16	6.91	2.34	0.13	7.2	28	
7/24/14	1315	26.15	100	24.23	6.90	2.35	0.12	6.8	27	
7/24/14	1320	26.17	100	24.26	6.89	2.36	0.12	5.8	26	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW09A-072414 TIME: 1320

DUPLICATE (D): YES/NO Yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6- 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW10	Date: 7/24/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 24.42	Weather Conditions: CLOUDY 83°F
	Total Well Depth (ft) [d]: 50.53	Screened Interval/Pump placement: 18-49.5 / 33.75	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
7/24/14	1345	24.43	100	26.30	6.45	5.87	3.91	107	84	
7/24/14	1350	24.45	100	23.64	5.98	6.14	1.51	104	98	
7/24/14	1355	24.47	100	22.93	5.81	6.14	1.11	87.3	122	
7/24/14	1400	24.49	100	22.66	5.76	6.14	1.11	75.1	135	
7/24/14	1405	24.50	100	22.40	5.72	6.14	0.84	62.5	147	
7/24/14	1410	24.51	100	22.28	5.67	6.13	0.72	54.3	157	
7/24/14	1415	24.52	100	22.27	5.60	6.12	0.49	55.0	170	
7/24/14	1420	24.53	100	22.36	5.60	6.12	0.48	54.9	170	
7/24/14	1425	24.54	100	22.29	5.60	6.13	0.51	55.0	172	
7/24/14	1430	24.55	100	22.24	5.59	6.13	0.52	54.7	174	

Pump Rate: <=0.5 L/min **Drawdown:** <0.33 ft **Measurements:** 3-5 min **Stabilization:** +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW10-072414 TIME: 1430

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW11	Date: 7/24/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 23.89	Weather Conditions: CLOUDY 74°F
	Total Well Depth (ft) [d]: 46.53	Screened Interval/Pump placement: 20.5-40 / 32.75	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
7/24/14	0905	23.89	100	22.66	6.72	4.78	2.30	5.2	185	
7/24/14	0910	23.91	100	22.21	6.67	4.80	1.75	4.5	191	
7/24/14	0915	23.93	100	22.10	6.65	4.82	1.51	3.8	195	
7/24/14	0920	23.94	100	22.08	6.67	4.83	1.35	3.8	194	
7/24/14	0925	23.95	100	22.01	6.70	4.84	1.25	3.8	194	
7/24/14	0930	23.96	100	21.97	6.72	4.85	1.12	3.7	195	
7/24/14	0935	23.97	100	21.98	6.72	4.85	1.10	3.2	195	
7/24/14	0940	23.98	100	21.95	6.71	4.86	1.08	3.5	195	
7/24/14	0945	23.99	100	22.00	6.72	4.85	1.07	2.9	194	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW11-072414 TIME: 0945

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	~~HNO3~~	N	"	GASES
1-500 ml plastic	2N NaOH	N	"	Sulfide
1-250 ml Amber	NA	N	"	FERROUS IRON
1-1 Liter plastic	NA	N	"	DHC
1-250 ml plastic	H2SO4	N	"	TOC
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	TIC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW12	Date: 7/25/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 25.30	Weather Conditions: CLEAR 78°F
	Total Well Depth (ft) [d]: 36.91	Screened Interval/Pump placement: 24-33.5 / 28.75	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
7/25/14	0835	25.30	100	23.61	6.31	3.21	4.51	13.6	73	
7/25/14	0840	25.32	100	22.61	7.31	3.24	2.42	12.7	59	
7/25/14	0845	25.34	100	22.37	7.38	3.30	2.11	13.1	43	
7/25/14	0850	25.36	100	22.24	7.16	3.43	1.68	12.4	32	
7/25/14	0855	25.38	100	22.20	6.95	3.65	1.09	12.2	25	
7/25/14	0900	25.40	100	22.14	6.81	3.78	0.88	12.0	19	
7/25/14	0905	25.42	100	22.22	6.59	4.11	0.40	11.7	9	
7/25/14	0910	25.44	100	22.27	6.40	4.47	0.25	11.4	7	
7/25/14	0915	25.46	100	22.41	6.38	4.50	0.23	11.1	9	
7/25/14	0920	25.48	100	22.57	6.37	4.51	0.22	10.8	11	
7/25/14	0925	25.50	100	22.61	6.36	4.52	0.21	10.8	12	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW12-072514 TIME: 0925

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO Yes
MATRIX DUPLICATE (MD): YES/NO Yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9 - 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67 WW13	Date: 7/25/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 21.55	Weather Conditions: CLEAR 92°F
	Total Well Depth (ft) [d]: 28.55	Screened Interval/Pump placement: 10.5-25 / 23.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
7/25/14	1255	21.55	100	30.99	6.37	6.42	3.17	14.8	159	
7/25/14	1300	21.57	100	26.71	6.36	6.67	1.73	5.5	163	
7/25/14	1305	21.59	100	25.40	6.33	6.79	1.46	1.3	166	
7/25/14	1310	21.61	100	25.04	6.30	6.85	1.48	0.0	169	
7/25/14	1315	21.62	100	25.11	6.28	6.84	1.21	0.1	172	
7/25/14	1320	21.63	100	25.10	6.26	6.83	1.18	0.1	174	
7/25/14	1325	21.64	100	25.25	6.25	6.83	1.22	0.2	176	
7/25/14	1330	21.65	100	25.20	6.24	6.83	1.19	0.2	178	

Pump Rate: <=0.5 L/min **Drawdown:** <0.33 ft **Measurements:** 3-5 min **Stabilization:** +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW13-072514 TIME: 1330

DUPLICATE (D): YES/NO Yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6-40ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00737334

LOCATION	Site: 67	LocID: 67WW14	Date: 7/25/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 20.25	Weather Conditions: CLEAR 83°F
	Total Well Depth (ft) [d]: 30.63	Screened Interval/Pump placement: 12-27 / 23.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
7/25/14	1000	20.24	100	25.16	5.69	1.81	2.10	24.5	139	
7/25/14	1005	20.26	100	25.07	5.43	1.67	0.81	21.7	179	
7/25/14	1010	20.29	100	25.07	5.39	1.66	0.49	21.1	195	
7/25/14	1015	20.31	100	25.17	5.37	1.65	0.22	18.3	209	
7/25/14	1020	20.33	100	25.38	5.36	1.65	0.13	18.9	215	
7/25/14	1025	20.34	100	25.49	5.35	1.65	0.15	18.0	215	
7/25/14	1030	20.36	100	25.51	5.35	1.66	0.13	17.9	212	
7/25/14	1035	20.38	100	25.56	5.34	1.66	0.12	17.3	210	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW14-072514 TIME: 1035

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW01	Date: 12/2/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 25.17	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 26.98	Screened Interval/Pump placement: 12-22	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
12/2/14	1331	25.17	NA							Bailing well
12/2/14	1340	26.95	NA							Bailed 1 gallon RAN DRY
12/3/14	0815	25.17	NA	17.60	6.15	3.69	6.65	23.3	-13	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW01-120314 TIME:

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW03		Date: 12/2/14	
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA		Recorded By: Scott Beesinger	Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe:	Water Level Indicator:	ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment:	Peristaltic/Bladder/Bailer	ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: DRY		Weather Conditions: CLEAR	
	Total Well Depth (ft) [d]: 24.93	Screened Interval/Pump placement: 14-24		Condition of Well/Remarks: GOOD	

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW02	Date: 12/2/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.00025A	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 24.13	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 27.78	Screened Interval/Pump placement: 15-25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
12/2/14	1315	24.13	NA							Bailing well
12/2/14	1322	27.70	NA							Bailed 2 gallons Ran Dry
12/3/14	0755	24.13	NA	19.00	6.27	3.07	7.37	19.3	61	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW02-120314 TIME: 0755

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW04	Date: 12/8/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.00025A	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4.1	Static Water Level Reading (ft) [c]: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 27.44	Screened Interval/Pump placement: 11-21	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

WATER LEVEL ONLY
NO SAMPLES REQUIRED

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00737339

LOCATION	Site: 67	LocID: 67WW05	Date: 12/2/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4 11	Static Water Level Reading (ft) [c]: 25.55	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: ~~[illegible]~~ 30.03	Screened Interval/Pump placement: 16-26	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
12/2/14	1255	25.55	NA							Bailing well
12/2/14	1308	30.00	NA							Bailed 3.5 gallons RAN DRY
12/3/14	0740	25.55	NA	18.55	5.70	2.61	7.44	24.8	34	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW05-120314 TIME:

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67 WW 06	Date: 12/2/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.000 25A	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4 11	Static Water Level Reading (ft) [c]: 24.80	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 49.88	Screened Interval/Pump placement: 38-48	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

ONLY REQUIRED to GAUGE water level

NO SAMPLES REQUIRED

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW07	Date: 12/2/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 24.75	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 27.88	Screened Interval/Pump placement: 14.24	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
12/2/14	1355	~~NA~~ 24.75	NA							Bailing well
12/2/14	1400	~~NA~~ 27.80	NA							Bailed 2.5 gallons RAN DRY
12/3/14	0835	~~24.75~~	NA	17.46	5.79	4.06	6.54	10.7	51	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW07-120314 TIME: 0835

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW08	Date: 12/4/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 24.23	Weather Conditions: Cloudy
	Total Well Depth (ft) [d]: 52.00	Screened Interval/Pump placement: 23.6-48.1/36.00	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
12/4/14	0740	24.25	~~[illegible]~~ 100	~~[illegible]~~ 18.69	6.39	4.96	0.81	5.8	19	
12/4/14	0745	24.27	100	18.50	6.39	5.04	0.25	6.4	6	
12/4/14	0750	24.29	100	18.81	6.40	5.08	0.00	5.0	4	
12/4/14	0755	24.31	100	18.94	6.40	5.10	0.00	4.5	3	
12/4/14	0800	24.32	100	19.00	6.41	5.10	0.00	4.1	2	
12/4/14	0805	24.33	100	19.07	6.41	5.10	0.00	3.6	1	
12/4/14	0810	24.34	100	19.08	6.42	5.09	0.00	3.3	0	
12/4/14	0815	24.35	100	19.11	6.42	5.09	0.00	3.1	0	
12/4/14	0820	24.35	100	19.14	6.42	5.07	0.00	2.7	-1	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW08-120414 TIME: 0820

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
3-20ml glass	NA	N	"	Dissolved Gases/Carbon Dioxide
1-1 Liter plastic	NA	N	"	DHC
1-500ml plastic	ZnAcetate	N	"	Sulfide
1-250ml Amber	NA	N	"	Ferrous Iron
1-250ml plastic	H2SO4	N	"	TOC
1-250ml plastic	NA	N	"	Inorganic Carbon
1-250ml plastic	NA	N	"	Anions

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW09	Date: 12/4/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.5A	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 22.25	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 37.96	Screened Interval/Pump placement: 14.5-34.5 / 24.50	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
12/4/14	1320	22.29	100	20.40	6.33	3.61	0.91	3.1	144	
12/4/14	1325	22.33	100	20.40	6.13	3.57	0.38	2.5	156	
12/4/14	1330	22.36	100	20.45	6.08	3.56	0.25	2.3	157	
12/4/14	1335	22.39	100	20.48	6.05	3.55	0.16	2.2	158	
12/4/14	1340	22.41	100	20.43	6.01	3.55	0.13	2.0	160	
12/4/14	1345	22.43	100	20.42	5.98	3.55	0.00	2.3	162	
12/4/14	1350	22.45	100	20.47	5.96	3.55	0.00	2.1	164	
12/4/14	1355	22.46	100	20.51	5.95	3.55	0.00	1.8	165	
12/4/14	1400	22.47	100	20.48	5.95	3.55	0.00	1.8	166	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 67WW09-120414 TIME: 1400

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW09A	Date: 12/3/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 27.00	Weather Conditions: Cloudy
	Total Well Depth (ft) [d]: 37.78	Screened Interval/Pump placement: 20.8-35.5/30.00	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
12/3/14	0915	27.03	100	17.56	6.30	2.22	0.27	25.9	52	
12/3/14	0920	27.05	100	18.05	6.39	2.25	0.00	19.1	42	
12/3/14	0925	27.07	100	18.38	6.45	2.27	0.00	11.5	36	
12/3/14	0930	27.08	100	18.55	6.47	2.28	0.00	8.8	34	
12/3/14	0935	27.09	100	18.65	6.48	2.29	0.00	7.4	33	
12/3/14	0940	27.10	100	18.74	6.49	2.30	0.00	5.9	32	
12/3/14	0945	27.10	100	18.69	6.49	2.31	0.00	4.8	31	
12/3/14	0950	27.10	100	18.75	6.50	2.31	0.00	4.3	30	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW09A-120314 TIME: 0950

DUPLICATE (D): YES/NO Yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00737345

LOCATION	Site: 67	LocID: 67WW10	Date: 12/3/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4 11	Static Water Level Reading (ft) [c]: 25.58	Weather Conditions: Cloudy
	Total Well Depth (ft) [d]: 50.53	Screened Interval/Pump placement: 18-48.5 / 33.25	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
12/3/14	1025	25.60	100	18.23	5.81	6.10	0.33	14.6	42	
12/3/14	1030	25.63	100	18.61	5.74	6.10	0.04	13.5	52	
12/3/14	1035	25.65	100	18.74	5.68	6.07	0.00	12.8	63	
12/3/14	1040	25.67	100	18.88	5.64	6.06	0.00	12.1	68	
12/3/14	1045	25.69	100	19.01	5.62	6.07	0.00	11.2	72	
12/3/14	1050	25.70	100	19.05	5.60	6.07	0.00	11.1	75	
12/3/14	1055	25.70	100	19.09	5.58	6.07	0.00	10.9	77	
12/3/14	1100	25.70	100	19.06	5.58	6.08	0.00	9.8	78	
12/3/14	1105	25.70	100	19.10	5.57	6.09	0.00	9.9	80	
12/3/14	1110	25.70	100	19.15	5.56	6.09	0.00	9.6	82	
12/3/14	1115	25.70	100	19.20	5.56	6.09	0.00	9.1	83	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW10-120314 TIME: 1115

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO Yes

MATRIX DUPLICATE (MD): YES/NO Yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW11	Date: 12/4/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.00025A	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 23.77	Weather Conditions: Cloudy
	Total Well Depth (ft) [d]: 46.78	Screened Interval/Pump placement: 20.5-45/32.75	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
12/4/14	0900	23.79	100	18.15	6.33	5.15	0.51	6.2	91	
12/4/14	0905	23.83	100	18.48	6.00	5.16	0.14	8.9	125	
12/4/14	0910	23.86	100	18.69	5.87	5.16	0.02	8.7	147	
12/4/14	0915	23.87	100	18.79	5.82	5.16	0.00	7.5	160	
12/4/14	0920	23.87	100	18.92	5.77	5.16	0.00	6.7	171	
12/4/14	0925	23.87	100	18.92	5.75	5.17	0.00	6.7	176	
12/4/14	0930	23.87	100	18.98	5.72	5.16	0.00	6.0	183	
12/4/14	0935	23.88	100	18.99	5.71	5.17	0.00	6.0	185	
12/4/14	0940	23.88	100	19.04	5.67	5.17	0.00	5.8	192	
12/4/14	0945	23.88	100	19.01	5.66	5.17	0.00	5.7	200	
12/4/14	0950	23.88	100	19.01	5.65	5.17	0.00	5.6	202	
12/4/14	0955	23.89	100	19.06	5.64	5.17	0.00	5.2	203	
12/4/14	1000	23.89	100	19.10	5.63	5.17	0.00	5.6	204	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW11-120414 TIME: 1000

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	"	VOC
3-20 ml glass	NA	N	"	Gases/Carbon Dioxide
1-1 Liter plastic	NA	N	"	DHL/functional gene
1-500 ml plastic	ZnAcetAcH	N	"	Sulfide
1-250 ml Amber	NA	N	"	Ferrous Iron
1-250 ml plastic	H2SO4	N	"	TOC
1-250 ml plastic	NA	N	"	Inorganic Carbon
1-250 ml plastic	NA	N	"	Anions

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW12	Date: 12/3/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.00025A	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4 11	Static Water Level Reading (ft) [c]: 26.12	Weather Conditions: Cloudy
	Total Well Depth (ft) [d]: 36.98	Screened Interval/Pump placement: 24-33.5/28.75	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
12/3/14	1315	26.14	100	18.16	6.21	4.97	1.00	2.4	54	
12/3/14	1320	26.16	100	18.52	6.22	4.95	0.27	1.5	55	
12/3/14	1325	26.18	100	18.69	6.23	4.95	0.01	1.4	55	
12/3/14	1330	26.20	100	18.87	6.21	4.99	0.00	1.2	56	
12/3/14	1335	26.22	100	18.91	6.18	5.05	0.00	0.9	58	
12/3/14	1340	26.24	100	18.93	6.16	5.10	0.00	0.9	60	
12/3/14	1345	26.26	100	19.00	6.13	5.17	0.00	1.0	63	
12/3/14	1350	26.28	100	19.00	6.10	5.18	0.00	0.7	65	
12/3/14	1355	26.30	100	19.01	6.08	5.19	0.00	0.6	67	
12/3/14	1400	26.32	100	19.01	6.07	5.20	0.00	0.6	69	
12/3/14	1405	26.34	100	19.09	6.06	5.21	0.00	0.5	70	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW12-120314 TIME: 1405

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW13	Date: 12/4/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 22.22	Weather Conditions: CLOUDY
	Total Well Depth (ft) [d]: 28.64	Screened Interval/Pump placement: 10.5-25/23.50	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
12/4/14	1035	22.25	100	18.82	6.25	6.76	1.35	1.3	158	
12/4/14	1040	22.30	100	19.34	6.42	6.80	0.69	0.3	157	
12/4/14	1045	22.33	100	19.47	6.43	6.81	0.47	0.1	155	
12/4/14	1050	22.36	100	19.57	6.44	6.82	0.42	0.1	154	
12/4/14	1055	22.37	100	19.70	6.44	6.82	0.31	0.0	153	
12/4/14	1100	22.38	100	19.78	6.45	6.81	0.30	0.0	152	
12/4/14	1105	22.39	100	19.80	6.45	6.81	0.30	0.0	151	
12/4/14	1110	22.40	100	19.85	6.46	6.81	0.29	0.0	150	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW13-120414 TIME: 1110

DUPLICATE (D): YES/NO Yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW14	Date: 12/3/14
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.00025A	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 20.85	Weather Conditions: Cloudy
	Total Well Depth (ft) [d]: 30.66	Screened Interval/Pump placement: 12-27 / 22.50	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
12/3/14	1440	20.87	100	19.41	6.40	1.64	0.19	34.6	24	
12/3/14	1445	20.90	100	19.81	6.37	1.61	0.00	34.4	27	
12/3/14	1450	20.93	100	20.01	6.36	1.60	0.00	32.9	23	
12/3/14	1455	20.95	100	20.18	6.36	1.57	0.00	26.5	12	
12/3/14	1500	20.97	100	20.31	6.35	1.54	0.00	18.3	3	
12/3/14	1505	20.99	100	20.41	6.35	1.53	0.00	15.5	-2	
12/3/14	1510	21.00	100	20.49	6.35	1.53	0.00	12.3	-4	
12/3/14	1515	21.01	100	20.53	6.35	1.53	0.00	9.7	-6	
12/3/14	1520	21.02	100	20.61	6.34	1.52	0.00	9.0	-7	
12/3/14	1525	21.02	100	20.68	6.34	1.52	0.00	8.5	-8	
12/3/14	1530	21.02	100	20.74	6.34	1.52	0.00	8.1	-8	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW14-120314 TIME: 1530

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Pump	VOC

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW01	Date: 2/10/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 25.55	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 27.00	Screened Interval/Pump placement: 12-22	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
2/10/15	0835	25.55	NA							Bailing well
2/10/15	0842	26.95	NA							Bailed 1 gallon RAN DRY
2/10/15	1432	25.55	NA	18.85	6.92	3.36	NA	194	-101	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW01-021015 TIME: 1432

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Bailer	VOC

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW02	Date: 2/10/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 23.65	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 27.78	Screened Interval/Pump placement: 15-25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
2/10/15	0824	23.65	NA							Bailing well
2/10/15	0829	27.70	NA							Bailed 2.5 gallons Ran Dry
2/10/15	1415	23.65	NA	19.99	7.25	2.92	NA	8.9	-30	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW02-021015 TIME: 1415

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00737352

LOCATION	Site: 67	LocID: 67WW03		Date: 2/10/15	
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.JA		Recorded By: Scott Beesinger	Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe:	Water Level Indicator:	ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment:	Peristaltic/Bladder/Bailer	ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: DRY		Weather Conditions: CLEAR	
	Total Well Depth (ft) [d]: 27.78	Screened Interval/Pump placement: 14-24		Condition of Well/Remarks: GOOD	

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

Dry Well

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

00737353

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW04		Date: 2/10/15	
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA		Recorded By: Scott Beesinger	Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe:	Water Level Indicator:	ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment:	Peristaltic/Bladder/Bailer	ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: DRY		Weather Conditions: CLEAR	
	Total Well Depth (ft) [d]: 24.46	Screened Interval/Pump placement: 11-21		Condition of Well/Remarks: GOOD	

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

DRY WELL

NO SAMPLES REQUIRED
water level only

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW05	Date: 2/10/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 26.20	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 30.13	Screened Interval/Pump placement: 16-26	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
2/10/15	0813	26.20	NA							Bailing well
2/10/15	0817	30.05	NA							Bailed 3 gallons RAN DRY
2/10/15	1400	26.20	NA	19.82	6.83	2.30	NA	22.7	-10	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW05-021015 TIME: 1400

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40ml glass	HCL	N	Bailer	VOC

00737355

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW06	Date: 2/10/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 23.95	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]:	Screened Interval/Pump placement: 38-48	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

No sample Required
water level only

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10% Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00737356

LOCATION	Site: 67	LocID: 67WW07	Date: 2/10/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 24.00	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 27.88	Screened Interval/Pump placement: 14-24	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
2/10/15	0849	24.00	NA							Bailing well
2/10/15	0855	27.80	NA							Bailed 2 gallons RAN DRY
2/10/15	1500	24.00	NA	18.47	6.41	3.76	NA	6.7	-18	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW07-021015 TIME: 1500

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW08	Date: 2/11/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 44	Static Water Level Reading (ft) [c]: 23.46	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 51.90	Screened Interval/Pump placement: 23.6-48.1 / 35.75	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
2/11/15	1100	23.43	100	17.22	7.13	4.24	2.57	17.3	95	
2/11/15	1105	23.47	100	18.16	7.17	4.43	0.23	13.5	9	
2/11/15	1110	23.51	100	18.40	7.03	4.47	0.11	11.0	16	
2/11/15	1115	23.53	100	18.50	6.82	4.46	0.00	8.9	32	
2/11/15	1120	23.54	100	18.60	6.60	4.40	0.00	7.0	41	
2/11/15	1125	23.55	100	18.69	6.61	4.39	0.00	5.4	43	
2/11/15	1130	23.55	100	18.71	6.62	4.38	0.00	4.0	45	
2/11/15	1135	23.55	100	18.75	6.61	4.38	0.00	3.7	48	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW08-021115 TIME: 1135

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC
3 - 20 ml glass	NA	N	"	Gases / CO2
1 - 500 ml plastic	2 ACENAOH	N	"	Sulfide
1 - 250 ml Amber	NA	N	"	Ferrous Iron
1 - 250 ml plastic	NA	N	"	Anions
1 - 250 ml plastic	NA	N	"	Inorganic Carbon
1 - 250 ml plastic	H2SO4	N	"	Total Organic Carbon
2 - 500 ml plastic	NA	N	"	DHC/ functional gene

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW09	Date: 2/11/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 21.50	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 37.90	Screened Interval/Pump placement: 14.5-34.5 / 24.5	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
2/11/15	0845	21.47	100	16.76	6.86	3.28	1.48	8.0	140	
2/11/15	0850	21.53	100	17.56	6.68	3.27	1.11	6.6	145	
2/11/15	0855	21.58	100	17.76	6.61	3.29	1.04	5.1	150	
2/11/15	0900	21.61	100	17.79	6.54	3.29	1.02	4.3	154	
2/11/15	0905	21.63	100	17.99	6.50	3.29	1.08	3.8	158	
2/11/15	0910	21.65	100	18.05	6.45	3.29	1.06	3.5	160	
2/11/15	0915	21.67	100	18.10	6.46	3.29	1.04	3.1	162	
2/11/15	0920	21.69	100	18.13	6.45	3.29	1.02	3.4	164	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10% Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW09-021115 TIME: 0920

DUPLICATE (D): YES/NO yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC

00737359

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW09A		Date: 2/10/15	
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002SA		Recorded By: Scott Beesinger	Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe:	Water Level Indicator:	ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment:	Peristaltic/Bladder/Bailer	ID#:	
WELL INFO	Casing I.D. (in) [a]: 2.11	Static Water Level Reading (ft) [c]: 26.11		Weather Conditions: CLEAR	
	Total Well Depth (ft) [d]: 38.68	Screened Interval/Pump placement: 20.8-35.5 / 29.00		Condition of Well/Remarks: GOOD	

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
2/10/15	1020	26.08	100	16.49	7.18	2.65	1.11	83.6	-32	
2/10/15	1025	26.12	100	17.03	7.18	2.41	0.00	74.4	-24	
2/10/15	1030	26.17	100	17.26	7.17	2.34	0.00	46.7	-19	
2/10/15	1035	26.20	100	17.38	7.16	2.30	0.00	20.5	-17	
2/10/15	1040	26.23	100	17.67	7.16	2.29	0.00	21.1	-16	
2/10/15	1045	26.26	100	17.71	7.14	2.26	0.00	21.9	-14	
2/10/15	1050	26.29	100	17.79	7.13	2.25	0.00	21.0	-13	
2/10/15	1055	26.31	100	17.83	7.13	2.25	0.00	20.8	-12	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10% Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW09A-021015 TIME: 1055

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Pump	VOC

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW10	Date: 2/10/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 24.55	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 50.53	Screened Interval/Pump placement: 18-49.5/33.75	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
2/10/15	0920	24.50	100	14.30	6.61	6.03	2.21	10.1	-21	
2/10/15	0925	24.55	100	15.87	6.49	5.91	0.93	5.3	-3	
2/10/15	0930	24.60	100	16.66	6.37	5.84	0.46	1.9	10	
2/10/15	0935	24.63	100	17.27	6.15	5.85	0.00	0.3	28	
2/10/15	0940	24.66	100	17.32	6.16	5.86	0.00	0.0	28	
2/10/15	0945	24.68	100	17.24	6.17	5.86	0.00	0.0	27	
2/10/15	0950	24.69	100	17.23	6.17	5.85	0.00	0.0	26	
2/10/15	0955	24.70	100	17.33	6.18	5.84	0.00	0.0	25	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW10-021015 TIME: 0955

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC

A_COM

MONITORING WELL SAMPLE COLLECTION FORM

00787361

LOCATION	Site: 67	LocID: 67WW11		Date: 2/11/15	
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA		Recorded By: Scott Beesinger	Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe:	Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD	
	Unit #	Sampling Equipment:	Peristaltic/Bladder/Bailer ID#:		
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 23.95		Weather Conditions: CLEAR	
	Total Well Depth (ft) [d]: 46.51	Screened Interval/Pump placement: 20.5-45.0/32.75		Condition of Well/Remarks: GOOD	

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
2/11/15	0945	23.92	100	16.58	6.67	4.68	1.04	21.3	158	
2/11/15	0950	23.98	100	17.55	6.39	4.74	0.25	17.1	156	
2/11/15	0955	24.02	100	18.23	6.17	4.71	0.14	13.2	159	
2/11/15	1000	24.07	100	18.36	6.10	4.77	0.00	10.9	162	
2/11/15	1005	24.11	100	18.53	6.07	4.78	0.00	7.7	163	
2/11/15	1010	24.14	100	18.44	6.05	4.79	0.00	5.5	164	
2/11/15	1015	24.16	100	18.47	6.04	4.79	0.00	5.1	164	
2/11/15	1020	24.17	100	18.42	6.04	4.80	0.00	4.7	165	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW11-021115 TIME: 1020

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
3-20ml glass	NA	N	"	Gases/CO2
1-500ml plastic	ZnAcetate	N	"	Sulfide
1-250ml Amber	NA	N	"	Ferrous IRON
1-250ml plastic	NA	N	"	Anions
1-250ml plastic	NA	N	"	Inorganic CARBON
1-250ml plastic	H2SO4	N	"	TOTAL ORGANIC Carbon
2-500ml plastic	NA	N	"	DHC/Functional gene

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00737362

LOCATION	Site: 67	LocID: 67WW12	Date: 2/10/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.00025A	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 25.35	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 36.93	Screened Interval/Pump placement: 24-33.5 / 28.75	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
2/10/15	1300	25.32	100	18.87	5.77	3.30	1.52	13.1	102	
2/10/15	1305	25.38	100	19.06	5.44	3.30	1.27	10.5	124	
2/10/15	1310	25.43	100	19.22	5.30	3.30	1.21	7.9	136	
2/10/15	1315	25.47	100	19.33	5.30	3.32	0.77	4.8	137	
2/10/15	1320	25.50	100	19.48	5.29	3.34	0.52	3.0	137	
2/10/15	1325	25.53	100	19.57	5.29	3.35	0.20	2.9	138	
2/10/15	1330	25.56	100	19.64	5.30	3.36	0.19	2.5	139	
2/10/15	1335	25.59	100	19.65	5.31	3.37	0.18	2.0	138	
2/10/15	1340	25.61	100	19.70	5.32	3.37	0.17	2.1	139	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10% Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW12-021015 TIME: 1340

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO Yes

MATRIX DUPLICATE (MD): YES/NO Yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9- 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00737363

LOCATION	Site: 67	LocID: 67WW13	Date: 2/11/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit#	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 21.61	Weather Conditions: CLEAR/COLD
	Total Well Depth (ft) [d]: 28.63	Screened Interval/Pump placement: 10.57-25/23.00	Condition of Well/Remarks: GOOD

CASING INFO											
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
2/11/15	0740	21.59	100	13.43	5.98	5.95	3.60	7.3	191	
2/11/15	0745	21.64	100	14.93	6.95	6.00	2.55	4.7	173	
2/11/15	0750	21.68	100	15.78	7.06	6.04	2.18	3.5	162	
2/11/15	0755	21.71	100	16.32	7.12	6.07	1.93	2.9	155	
2/11/15	0800	21.74	100	16.52	7.14	6.07	1.75	2.0	150	
2/11/15	0805	21.77	100	16.58	7.16	6.08	1.74	1.5	148	
2/11/15	0810	21.80	100	16.64	7.16	6.08	1.73	0.6	146	
2/11/15	0815	21.82	100	16.69	7.16	6.08	1.73	0.2	145	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10% Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW13-021115 TIME: 0815

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW13	Date: 3/25/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 20.98	Weather Conditions: CLEAR / SUNNY
	Total Well Depth (ft) [d]: 28.60	Screened Interval/Pump placement: 10.5-25 / 23.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
3/25/15	1335	20.96	100	21.50	6.15	6.60	4.27	0.0	111	
3/25/15	1340	20.99	100	20.91	5.28	6.60	3.01	0.0	146	
3/25/15	1345	21.03	100	20.61	5.00	6.60	2.46	0.0	159	
3/25/15	1350	21.06	100	20.62	4.82	6.57	2.07	0.0	167	
3/25/15	1355	21.09	100	20.59	4.64	6.56	1.60	0.0	177	
3/25/15	1400	21.11	100	20.63	4.63	6.55	1.59	0.0	176	
3/25/15	1405	21.13	100	20.67	4.62	6.54	1.57	0.0	178	
3/25/15	1410	21.15	100	20.67	4.62	6.54	1.55	0.0	176	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW13-032515 TIME:

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 20 ml glass	NA	N	Pump	Dissolved Gases
1 - 1 Liter plastic	NA	N	"	DHC/functional gene
1 - 500 ml plastic	ZnAcNaOH	N	"	Sulfide
1 - 250 ml Amber	NA	N	"	Ferrous Iron
1 - 250 ml plastic	H2SO4	N	"	TOC
1 - 250 ml plastic	NA	N	"	TIC
1 - 250 ml plastic	NA	N	"	Anions

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

00737365

LOCATION	Site: 67	LocID: 67WW14	Date: 2/10/15
	Project: Longhorn Army Ammunition Plant	Project No.	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 20.40	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 30.61	Screened Interval/Pump placement: 12-27/23.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
2/10/15	0725	20.37	100	12.66	6.12	1.41	2.23	70.3	205	
2/10/15	0730	20.41	100	12.91	6.61	1.60	1.83	79.1	188	
2/10/15	0735	20.44	100	14.15	6.75	1.58	1.50	46.1	150	
2/10/15	0740	20.47	100	14.63	6.77	1.55	1.30	14.0	69	
2/10/15	0745	20.50	100	14.95	6.78	1.53	0.65	8.8	-12	
2/10/15	0750	20.52	100	15.16	6.79	1.52	0.64	8.3	-10	
2/10/15	0755	20.54	100	15.29	6.79	1.51	0.65	7.9	-11	
2/10/15	0800	20.56	100	15.24	6.79	1.51	0.63	7.0	-13	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW14-021015 TIME: 0800

DUPLICATE (D): YES/NO yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6- 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW01	Date: 5/19/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 23.40	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 27.00	Screened Interval/Pump placement: 12-22	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/19/15	0715	23.40	NA										Bailing well
5/19/15	0722	26.93	NA										Bailed 2.5 gallons Rapidly
5/19/15	1220	23.40	NA	21.65	7.11	3.20	NA	161	-52				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW01-051915 TIME: 1220

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Bailer	VOC
3-20ml glass	HCL	N	"	GASES
1-500 ml plastic	ZnAcNaOH	N	"	Sulfide
2-500 ml plastic	NA	N	"	DHC
1-250 ml Amber	NA	N	"	Ferrous IRON
1-250 ml plastic	H2SO4	N	"	TOC
1-250 ml plastic	NA	N	"	ANIONS
1-250 ml plastic	NA	N	"	TIC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW02	Date: 5/11/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 22.79	Weather Conditions: Cloudy
	Total Well Depth (ft) [d]: 27.73	Screened Interval/Pump placement: 15-25	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/11/15	1418	22.79	NA										Bailing well
5/11/15	1425	27.67	NA										Bailed 4 gal. Ran Dry
5/12/15	0830	22.79	NA	19.34	6.57	3.03	NA	23.0	52				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW02-051215 TIME: 0830

DUPLICATE (D): YES/NO Yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6-40 ml glass	HCL	N	Bailer	VOL

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW03	Date: 5/11/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 22.98	Weather Conditions: Cloudy
	Total Well Depth (ft) [d]: 24.93	Screened Interval/Pump placement: 14-24	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/11/15	1431	22.98	NA										Bailing well
5/11/15	1437	24.90	NA										Bailed 1.75 gal. RAN DRY
5/12/15	0830 ~~22.98~~	22.98	NA	18.52	6.12	4.56	NA	200	40				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW03-051215 TIME: 0845

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW04	Date: 5/11/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: DRY	Weather Conditions: Cloudy
	Total Well Depth (ft) [d]: 24.44	Screened Interval/Pump placement: 11-21	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Gauge well only
No Sample Required

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW05	Date: 5/11/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 24.68	Weather Conditions: Cloudy
	Total Well Depth (ft) [d]: 31.03	Screened Interval/Pump placement: 16-26	Condition of Well/Remarks: Need Spaint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/11/15	1405	24.68	NA										Bailing well
5/11/15	1412	30.98	NA										Bailed 3.5 gallons Ran Dry
5/12/15	0810	24.68	NA	19.69	5.74	2.43	NA	100	127				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW05-051215 TIME: 0810

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67MW06	Date: 5/11/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 22.38	Weather Conditions: Cloudy
	Total Well Depth (ft) [d]: 49.81	Screened Interval/Pump placement:	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

GAUGE well only
NO SAMPLE REQUIRED

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW07	Date: 5/11/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 22.45	Weather Conditions: CLOUDY
	Total Well Depth (ft) [d]: 27.86	Screened Interval/Pump placement: 14-24	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/11/15	1446	22.45	NA										Bailing well
5/11/15	1456	27.80	NA										Bailed 4 gal. Ran Dry
5/12/15	0855	22.45	NA	18.50	5.98	361	NA	35.3	31				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW07-051215 TIME: 0855

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW08	Date: 5/19/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 22.25	Weather Conditions: Cloudy
	Total Well Depth (ft) [d]: 51.95	Screened Interval/Pump placement: 23.6-48.1/35.75	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/19/15	0745	22.21	100	21.24	6.84	5.70	2.12	91.6	2				
"	0750	22.26	100	20.34	6.63	5.93	1.39	169	-3				
"	0755	22.31	100	20.24	6.62	5.99	0.89	135	-5				
"	0800	22.33	100	20.02	6.57	6.03	0.81	93.1	-9				
"	0805	22.35	100	19.99	6.57	5.90	0.75	82.0	-12				
"	0810	22.37	100	19.91	6.55	5.89	0.69	69.1	-15				
"	0815	22.38	100	20.04	6.55	5.87	0.68	68.2	-16				
"	0820	22.39	100	20.10	6.54	5.86	0.67	67.9	-15				
"	0825	22.40	100	20.12	6.53	5.85	0.66	67.1	-16				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW08-051915 TIME: 0825

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	HCL	N	"	GASES
1-500 ml plast. 6	ZnAc/NaOH	N	"	Sulfide
2-500 ml plast. 6	NA	N	"	DHC
1-250 ml Amber	NA	N	"	Ferrous IRON
1-250 ml plast. 6	H2SO4	N	"	TOC
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	TIC

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW09	Date: 5/19/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#: 611ces/cevr	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 20.30	Weather Conditions: Cloudy / Rain
	Total Well Depth (ft) [d]: 37.90	Screened Interval/Pump placement: 14.5-34.5 / 24.5	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
5/19/15	1005	20.25	100	19.36	6.64	3.38	2.72	20.3	207	
"	1010	20.31	100	19.07	6.10	3.38	1.86	12.6	220	
"	1015	20.36	100	18.99	5.85	3.33	1.57	11.9	230	
"	1020	20.40	100	18.91	5.71	3.32	1.41	11.8	238	
"	1025	20.43	100	18.91	5.61	3.35	1.33	12.9	245	
"	1030	20.46	100	18.88	5.52	3.34	1.18	13.1	254	
"	1035	20.49	100	18.81	5.50	3.34	1.17	13.2	256	
"	1040	20.51	100	18.91	5.49	3.35	1.15	12.9	258	
"	1045	20.53	100	18.88	5.48	3.35	1.13	12.5	259	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW09-051915 TIME: 1045

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW09A	Date: 5/12/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 24.97	Weather Conditions: Cloudy
	Total Well Depth (ft) [d]: 38.68	Screened Interval/Pump placement: 20.8-35.5/28.00	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/12/15	1235	24.92	100	18.99	5.92	2.01	1.06	140	84				
"	1240	24.98	100	18.81	5.81	1.98	0.77	131	94				
"	1245	25.02	100	18.74	5.80	1.99	0.67	101	96				
"	1250	25.04	100	18.72	5.74	1.98	0.49	71.6	102				
"	1255	25.06	100	18.74	5.72	2.00	0.47	58.5	103				
"	1300	25.08	100	18.80	5.70	1.99	0.46	34.6	106				
"	1305	25.10	100	18.82	5.69	2.00	0.46	33.4	108				
"	1310	25.12	100	18.82	5.68	2.01	0.46	32.5	110				
"	1315	25.14	100	18.84	5.67	2.02	0.47	31.3	112				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW09A-051215 TIME: 1315

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCl	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW10	Date: 5/12/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4 in	Static Water Level Reading (ft) [c]: 23.10	Weather Conditions: CLOUDY
	Total Well Depth (ft) [d]: 50.50	Screened Interval/Pump placement: 18-49.5/33.75	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/12/15	0925	23.08	100	18.86	5.78	5.63	1.15	269	73				
"	0930	23.12	100	18.73	5.72	5.64	0.86	259	72				
"	0935	23.16	100	18.69	5.67	5.65	0.77	245	92				
"	0940	23.19	100	18.66	5.63	5.65	0.73	236	101				
"	0945	23.21	100	18.65	5.56	5.65	0.64	220	112				
"	0950	23.23	100	18.70	5.55	5.66	0.64	219	113				
"	0955	23.24	100	18.72	5.54	5.65	0.64	218	115				
"	1000	23.25	100	18.78	5.53	5.65	0.64	217	117				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW10-051215 TIME: 1000

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO yes
MATRIX DUPLICATE (MD): YES/NO yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9 - 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW11	Date: 5/19/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 21.67	Weather Conditions: Cloudy
	Total Well Depth (ft) [d]: 46.53	Screened Interval/Pump placement: 20.5-45/32.75	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/19/15	0905	21.62	100	19.74	6.53	4.68	1.58	81.7	109				
"	0910	21.67	100	19.50	6.01	4.63	1.16	91.1	162				
"	0915	21.71	100	19.48	5.77	4.56	1.04	102	189				
"	0920	21.75	100	19.45	5.64	4.51	0.88	105	210				
"	0925	21.78	100	19.35	5.52	4.49	0.72	107	241				
"	0930	21.81	100	19.30	5.48	4.48	0.71	106	243				
"	0935	21.83	100	19.22	5.49	4.47	0.70	106	245				
"	0940	21.85	100	19.20	5.49	4.47	0.69	105	246				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW11-051915 TIME: 0940

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW12	Date: 5/12/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 24.50	Weather Conditions: CLOUDY
	Total Well Depth (ft) [d]: 36.96	Screened Interval/Pump placement: 24-33.5/28.75	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/12/15	1030	24.47	100	18.76	6.40	3.10	2.72	7.4	-4				
"	1035	24.53	100	18.59	5.74	2.86	2.42	2.1	43				
"	1040	24.58	100	18.61	5.56	2.94	2.05	0.0	51				
"	1045	24.62	100	18.60	5.49	3.21	1.74	0.0	52				
"	1050	24.65	100	18.58	5.41	3.31	1.29	0.0	51				
"	1055	24.67	100	18.52	5.41	3.32	1.27	0.0	53				
"	1100	24.68	100	18.54	5.41	3.33	1.25	0.0	54				
"	1105	24.69	100	18.55	5.41	3.34	1.23	0.0	54				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW12-051215 TIME: 1105

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCl	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: 67WW13	Date: 5/19/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 20.55	Weather Conditions: Cloudy
	Total Well Depth (ft) [d]: 28.60	Screened Interval/Pump placement: 10.5-25/23.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/19/15	1110	20.53	100	19.76	6.56	5.45	3.28	3.2	199				
"	1115	20.58	100	19.63	6.29	5.56	2.52	0.0	222				
"	1120	20.62	100	19.79	6.21	5.57	2.35	0.0	220				
"	1125	20.66	100	19.73	6.10	5.57	2.07	0.0	218				
"	1130	20.69	100	19.94	6.01	5.56	1.47	0.0	217				
"	1135	20.72	100	20.03	5.98	5.55	1.30	0.0	218				
"	1140	20.75	100	20.11	5.96	5.54	1.29	0.0	218				
"	1145	20.77	100	20.17	5.96	5.53	1.27	0.0	219				
"	1150	20.79	100	20.22	5.95	5.52	1.25	0.0	219				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW13-051915 TIME: 1150

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	HCL	N	"	GASES
1-500 ml plastic	ZnAcNAOH	N	"	Sulfide
2-500 ml plastic	NA	N	"	DHC
1-250 ml Amber	NA	N	"	Ferrous IRON
1-250 ml plastic	H2SO4	N	"	TOC
1-250 ml plastic	NA	N	"	ANIONS
1-250 ml plastic	NA	N	"	TIC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 67	LocID: ~~67WW14~~ 67WW14	Date: 5/12/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002JA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 19.64	Weather Conditions: CLOUDY
	Total Well Depth (ft) [d]: 30.63	Screened Interval/Pump placement: 12-27 / 22.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/12/15	1355	19.60	100	20.51	6.12	1.53	2.72	181	119				
"	1400	19.65	100	20.45	5.71	1.52	1.92	329	158				
"	1405	19.68	100	20.50	5.61	1.52	1.58	394	175				
"	1410	19.71	100	20.47	5.57	1.51	1.32	408	186				
"	1415	19.74	100	20.44	5.56	1.50	1.08	337	190				
"	1420	19.77	100	20.43	5.55	1.49	0.89	249	182				
"	1425	19.80	100	20.55	5.55	1.48	0.71	164	163				
"	1430	19.81	100	20.54	5.56	1.48	0.70	163	160				
"	1435	19.82	100	20.52	5.57	1.47	0.69	162	159				
"	1440	19.83	100	20.48	5.57	1.47	0.68	161	158				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 67WW14-051215 TIME: 1440

DUPLICATE (D): YES/NO Yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 6-40 ml glass	HCL	N	Pump	VOC

APPENDIX D: LABORATORY ANALYTICAL RESULTS

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Client: Linda Raabe
AECOM
112 East Pecan Street
Suite 499
San Antonio, TX 78205

Phone: 210-253-7518

Fax:

Identifier: 026MB **Date Rec:** 02/12/2015 **Report Date:** 02/18/2015

Client Project #: 60256135.0002JA **Client Project Name:** LHAAP Site 67

Purchase Order #:

Analysis Requested: CENSUS

Reviewed By:

NOTICE: This report is intended only for the addressee shown above and may contain confidential or privileged information. If the recipient of this material is not the intended recipient or if you have received this in error, please notify Microbial Insights, Inc. immediately. The data and other information in this report represent only the sample(s) analyzed and are rendered upon condition that it is not to be reproduced without approval from Microbial Insights, Inc. Thank you for your cooperation.

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **AECOM**
Project: LHAAP Site 67

MI Project Number: **026MB**
Date Received: 02/12/2015

Sample Information

Client Sample ID:	**67WW11-021115**	**67WW08-021115**
Sample Date:	02/11/2015	02/11/2015
Units:	cells/mL	cells/mL
Analyst:	RW	RW

Dechlorinating Bacteria

Dehalococcoides	*DHC*	**1.50E+01**	**9.65E+01**
tceA Reductase	TCE	<5.00E-01	<5.00E-01
BAV1 Vinyl Chloride Reductase	BVC	<5.00E-01	<5.00E-01
Vinyl Chloride Reductase	VCR	<5.00E-01	<5.00E-01

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Client: Linda Raabe
AECOM
112 East Pecan Street
Suite 499
San Antonio, TX 78205

Phone: 210-253-7518

Fax:

Identifier: 027LL **Date Rec:** 12/05/2014 **Report Date:** 12/10/2014

Client Project #: 60256135.0002JA **Client Project Name:** LHAAP Site 67

Purchase Order #:

Analysis Requested: CENSUS

Reviewed By:

NOTICE: This report is intended only for the addressee shown above and may contain confidential or privileged information. If the recipient of this material is not the intended recipient or if you have received this in error, please notify Microbial Insights, Inc. immediately. The data and other information in this report represent only the sample(s) analyzed and are rendered upon condition that it is not to be reproduced without approval from Microbial Insights, Inc. Thank you for your cooperation.

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **AECOM**
Project: LHAAP Site 67

MI Project Number: **027LL**
Date Received: 12/05/2014

Sample Information

Client Sample ID:	**67WW08-120414**	**67WW11-120414**
Sample Date:	12/04/2014	12/04/2014
Units:	cells/mL	cells/mL
Analyst:	RW	RW

Dechlorinating Bacteria

Dehalococcoides	*DHC*	**7.87E+01**	**1.60E+01**
tceA Reductase	TCE	<5.00E-01	<5.00E-01
BAV1 Vinyl Chloride Reductase	BVC	<5.00E-01	<5.00E-01
Vinyl Chloride Reductase	VCR	<5.00E-01	<5.00E-01

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Client: Linda Raabe
AECOM
112 East Pecan Street
Suite 499
San Antonio, TX 78205

Phone: 210-253-7518

Fax:

Identifier: 071ME **Date Rec:** 05/20/2015 **Report Date:** 05/21/2015

Client Project #: 60256135.0002JA **Client Project Name:** LHAAP

Purchase Order #:

Analysis Requested: CENSUS

Reviewed By:

NOTICE: This report is intended only for the addressee shown above and may contain confidential or privileged information. If the recipient of this material is not the intended recipient or if you have received this in error, please notify Microbial Insights, Inc. immediately. The data and other information in this report represent only the sample(s) analyzed and are rendered upon condition that it is not to be reproduced without approval from Microbial Insights, Inc. Thank you for your cooperation.

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **AECOM**
Project: LHAAP

MI Project Number: **071ME**
Date Received: 05/20/2015

Sample Information

Client Sample ID:	**67WW08-051915**	**67WW13-051915**	**67WW01-051915**
Sample Date:	05/19/2015	05/19/2015	05/19/2015
Units:	cells/mL	cells/mL	cells/mL
Analyst:	RW	RW	RW

Dechlorinating Bacteria

Dehalococcoides	*DHC*	<5.00E-01	**2.21E+01**	**8.62E+01**
tceA Reductase	TCE	<5.00E-01	**2.80E+00**	**2.50E+00**
BAV1 Vinyl Chloride Reductase	BVC	<5.00E-01	<5.00E-01	<5.00E-01
Vinyl Chloride Reductase	VCR	<5.00E-01	**6.00E-01**	**1.00E+00**

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Client: Linda Raabe
AECOM
112 East Pecan Street
Suite 499
San Antonio, TX 78205

Phone: 210-253-7518

Fax:

Identifier: 080LG **Date Rec:** 07/25/2014 **Report Date:** 07/29/2014

Client Project #: 60256135.0002JA **Client Project Name:** LHAAP Site 67

Purchase Order #:

Analysis Requested: CENSUS

Reviewed By:

NOTICE: This report is intended only for the addressee shown above and may contain confidential or privileged information. If the recipient of this material is not the intended recipient or if you have received this in error, please notify Microbial Insights, Inc. immediately. The data and other information in this report represent only the sample(s) analyzed and are rendered upon condition that it is not to be reproduced without approval from Microbial Insights, Inc. Thank you for your cooperation.

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **AECOM**
Project: LHAAP Site 67

MI Project Number: **080LG**
Date Received: 07/25/2014

Sample Information

Client Sample ID:	**67WW11-072414**	**67WW08-072414**
Sample Date:	07/24/2014	07/24/2014
Units:	cells/mL	cells/mL
Analyst:	CB	CB

Dechlorinating Bacteria

Dehalococcoides	*DHC*	**2.22E+01**	**8.91E+01**
tceA Reductase	TCE	<5.00E-01	<5.00E-01
BAV1 Vinyl Chloride Reductase	BVC	<5.00E-01	<5.00E-01
Vinyl Chloride Reductase	VCR	<5.00E-01	<5.00E-01

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Client: Linda Raabe
AECOM
112 East Pecan Street
Suite 499
San Antonio, TX 78205

Phone: 210-253-7518

Fax:

Identifier: 100MC **Date Rec:** 03/26/2015 **Report Date:** 03/30/2015

Client Project #: 60256135.0002JA **Client Project Name:** LHAAP

Purchase Order #:

Analysis Requested: CENSUS

Reviewed By:

NOTICE: This report is intended only for the addressee shown above and may contain confidential or privileged information. If the recipient of this material is not the intended recipient or if you have received this in error, please notify Microbial Insights, Inc. immediately. The data and other information in this report represent only the sample(s) analyzed and are rendered upon condition that it is not to be reproduced without approval from Microbial Insights, Inc. Thank you for your cooperation.

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **AECOM**
Project: LHAAP

MI Project Number: **100MC**
Date Received: 03/26/2015

Sample Information

Client Sample ID:	**67WW13-03251 5**
Sample Date:	03/25/2015
Units:	cells/mL
Analyst:	RW

Dechlorinating Bacteria

Dehalococcoides	*DHC*	**1.22E+02**
tceA Reductase	TCE	**1.80E+00**
BAV1 Vinyl Chloride Reductase	BVC	**1.42E+01**
Vinyl Chloride Reductase	VCR	**1.30E+00**

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

Microbac

Laboratory Report Number: L14071430

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Kathy Albertson – Team Chemist/Data Specialist
(740) 373-4071
Kathy.Albertson@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on August 04 2014

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0019498	I	1.399999976158142		J2317156199	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
67WW05-072414	L14071430-01	07/24/2014 07:50	07/25/2014 10:26
67WW02-072414	L14071430-02	07/24/2014 08:15	07/25/2014 10:26
67WW11-072414	L14071430-03	07/24/2014 09:45	07/25/2014 10:26
67WW08-072414	L14071430-04	07/24/2014 11:00	07/25/2014 10:26
67WW09A-072414	L14071430-05	07/24/2014 13:20	07/25/2014 10:26
67WW09AFD-072414	L14071430-06	07/24/2014 13:20	07/25/2014 10:26
67WW10-072414	L14071430-07	07/24/2014 14:30	07/25/2014 10:26
TRIP BLANK	L14071430-08	07/24/2014 00:01	07/25/2014 10:26

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L14071430
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 45
2.0 Full Sample Data Package 79
2.1 Volatiles Data 80
2.1.1 Volatiles GCMS Data (8260) 81
2.1.1.1 Summary Data 82
2.1.1.2 QC Summary Data 107
2.1.1.3 Sample Data 136
2.1.1.4 Standards Data 170
2.1.1.5 Raw QC Data 232
2.1.2 RSK 175 247
2.1.2.1 Summary Data 248
2.1.2.2 QC Summary Data 254
2.1.2.3 Sample Data 274
2.1.2.4 Standards Data 279
2.1.2.5 Raw QC Data 311
2.2 General Chemistry Data 318
2.2.1 Method 9056 319
2.2.1.1 Summary Data 320
2.2.1.2 QC Summary Data 326
2.2.1.3 Sample Data 347
2.2.1.4 Standards Data 352
2.2.1.5 Raw QC Data 373
2.2.2 Ferrous Iron Data 376
2.2.2.1 Summary Data 377
2.2.2.2 QC Summary Data 380
2.2.2.3 Raw Data 387
2.2.3 Sulfide Data 395
2.2.3.1 Summary Data 396
2.2.3.2 QC Summary Data 400
2.2.3.3 Raw Data 407
2.2.4 Total Organic Carbon Data 410
2.2.4.1 Summary Data 411
2.2.4.2 QC Summary Data 414
2.2.4.3 Raw Data 421
3.0 Attachments 470

1.0 Summary Data

1.1 Narratives

Microbac Laboratories
Case Narrative

Login Number: L14071430
Department: Volatiles - GC
Analyst: Jared Smith

Analysis RSK-175

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes/Sample Duplicates: The MS/MSD results were not associated with this sample delivery group (SDG), due to insufficient volume of sample. Microbac Laboratories recommends site specific MS/MSD samples to avoid possible data qualifications.

SAMPLES

Samples: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

Narrative ID: 86708
Approved By: Michael Albertson

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	8260
Prep Batch Number(s):	485785	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-07-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2014-07-29 12:38:03

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	8260
Prep Batch Number(s):	485785	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-07-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	8260
Prep Batch Number(s):	485785	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-07-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			1
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	8260
Prep Batch Number(s):	485785	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-07-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			3
Was the ICAL curve verified for each analyte?		X			2
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	8260
Prep Batch Number(s):	485785	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-07-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	8260
Prep Batch Number(s):	485785	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-07-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) 2-Hexanone exceeded the UCL.
2) n-Butylbenzene and dichlorodifluoromethane exceeded the UCL.
3) 2-Hexanone, bromoform and 1,2-dibromo-3-chloropropane exceeded the UCL.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	485900	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-08-04 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2014-08-04 12:25:22

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	485900	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-08-04 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	485900	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-08-04 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	485900	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-08-04 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	485900	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-08-04 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	485900	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-08-04 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There were no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG485778	**Reviewer Name:**	Adriane Steed
LRC Date:	2014-07-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Adriane Steed	Adriane Steed		2014-07-28 16:31:29

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG485778	**Reviewer Name:**	Adriane Steed
LRC Date:	2014-07-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG485778	**Reviewer Name:**	Adriane Steed
LRC Date:	2014-07-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				1
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG485778	**Reviewer Name:**	Adriane Steed
LRC Date:	2014-07-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG485778	**Reviewer Name:**	Adriane Steed
LRC Date:	2014-07-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG485778	**Reviewer Name:**	Adriane Steed
LRC Date:	2014-07-28 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -03 and -04 were analyzed at dilutions only due to their high target analyte concentrations which were greater than 200 ppm. Any single anion load greater than 200 ppm will be diluted to prevent oversaturation of the suppressor membranes.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG486133	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-07-31 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2014-07-31 15:30:27

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG486133	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-07-31 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG486133	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-07-31 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG486133	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-07-31 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG486133	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-07-31 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG486133	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-07-31 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	S
Prep Batch Number(s):	WG486169	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-07-31 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2014-07-31 15:31:18

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	S
Prep Batch Number(s):	WG486169	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-07-31 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	S
Prep Batch Number(s):	WG486169	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-07-31 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	S
Prep Batch Number(s):	WG486169	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-07-31 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	S
Prep Batch Number(s):	WG486169	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-07-31 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	S
Prep Batch Number(s):	WG486169	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-07-31 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG485904	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-07-31 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2014-07-31 15:31:54

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG485904	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-07-31 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG485904	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-07-31 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG485904	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-07-31 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG485904	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-07-31 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071430
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG485904	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-07-31 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW05-072414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG485785	**Analyst:**	FJB	**Run Date:**	07/25/2014 21:42
Collect Date:	07/24/2014 07:50	**Dilution:**	1	**File ID:**	11M02722
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.1	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	97.4	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW02-072414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG485785	**Analyst:**	FJB	**Run Date:**	07/25/2014 22:13
Collect Date:	07/24/2014 08:15	**Dilution:**	1	**File ID:**	11M02723
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.335	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.6	85	115	
1,2-Dichloroethane-d4	99.9	70	120	
Toluene-d8	96.2	85	120	
4-Bromofluorobenzene	97.9	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW11-072414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG485785	**Analyst:**	FJB	**Run Date:**	07/25/2014 22:45
Collect Date:	07/24/2014 09:45	**Dilution:**	1	**File ID:**	11M02724
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	10.4		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.684	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	34.5		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.271	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.3	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	98.7	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW11-072414	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/13/2014 10:58
Workgroup #:	WG485900	**Analyst:**	JDS	**Run Date:**	07/28/2014 13:25
Collect Date:	07/24/2014 09:45	**Dilution:**	1	**File ID:**	16G43870
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-03	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW11-072414	**Prep Method:**	9056	**Prep Date:**	07/25/2014 14:32
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG485778	**Analyst:**	ALS	**Run Date:**	07/25/2014 17:26
Collect Date:	07/24/2014 09:45	**Dilution:**	5	**File ID:**	I1_072514-13
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfate	14808-79-8	414		10.0	5.00	2.50
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-03	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW11-072414	**Prep Method:**	9056	**Prep Date:**	07/25/2014 14:32
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG485778	**Analyst:**	ALS	**Run Date:**	07/25/2014 17:44
Collect Date:	07/24/2014 09:45	**Dilution:**	100	**File ID:**	I1_072514-14
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1290		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-03	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW11-072414	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	07/10/2014 15:45
Workgroup #:	WG486133	**Analyst:**	TMM	**Run Date:**	07/29/2014 12:00
Collect Date:	07/24/2014 09:45	**Dilution:**	1	**File ID:**	1V.1407291200-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.0400	U	0.0400	0.0400	0.0200

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-03	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW11-072414	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG486169	**Analyst:**	EPT	**Run Date:**	07/29/2014 14:00
Collect Date:	07/24/2014 09:45	**Dilution:**	1	**File ID:**	ET.1407291400-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW11-072414	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG485904	**Analyst:**	DCM	**Run Date:**	07/28/2014 16:31
Collect Date:	07/24/2014 09:45	**Dilution:**	2	**File ID:**	TC07282014.020
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	8.70		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L14071430-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW11-072414	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG485904	**Analyst:**	DCM	**Run Date:**	07/28/2014 16:31
Collect Date:	07/24/2014 09:45	**Dilution:**	2	**File ID:**	TC07282014.020
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		49.4		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L14071430-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW08-072414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG485785	**Analyst:**	FJB	**Run Date:**	07/26/2014 00:53
Collect Date:	07/24/2014 11:00	**Dilution:**	10	**File ID:**	11M02728
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	Q	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	5.13	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	Q	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	56.7		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	98.9		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	1890		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	5.00	U	10.0	5.00	2.50
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	Q	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	7.74	J	10.0	5.00	2.50
Trichloroethene	79-01-6	3.14	J	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.3	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	97.1	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-04	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW08-072414	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/13/2014 10:58
Workgroup #:	WG485900	**Analyst:**	JDS	**Run Date:**	07/28/2014 13:34
Collect Date:	07/24/2014 11:00	**Dilution:**	1	**File ID:**	16G43871
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	6.47		5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-04	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-072414	**Prep Method:**	9056	**Prep Date:**	07/25/2014 14:32
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG485778	**Analyst:**	ALS	**Run Date:**	07/25/2014 18:37
Collect Date:	07/24/2014 11:00	**Dilution:**	5	**File ID:**	I1_072514-17
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfate	14808-79-8	317		10.0	5.00	2.50
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-04	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-072414	**Prep Method:**	9056	**Prep Date:**	07/25/2014 14:32
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG485778	**Analyst:**	ALS	**Run Date:**	07/25/2014 18:55
Collect Date:	07/24/2014 11:00	**Dilution:**	100	**File ID:**	I1_072514-18
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1340		40.0	20.0	10.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-04	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW08-072414	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	07/10/2014 15:45
Workgroup #:	WG486133	**Analyst:**	TMM	**Run Date:**	07/29/2014 12:00
Collect Date:	07/24/2014 11:00	**Dilution:**	1	**File ID:**	1V.1407291200-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.227		0.0400	0.0400	0.0200

Certificate of Analysis

Sample #:	L14071430-04	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW08-072414	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG486169	**Analyst:**	EPT	**Run Date:**	07/29/2014 14:00
Collect Date:	07/24/2014 11:00	**Dilution:**	1	**File ID:**	ET.1407291400-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-04	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-072414	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG485904	**Analyst:**	DCM	**Run Date:**	07/28/2014 16:46
Collect Date:	07/24/2014 11:00	**Dilution:**	2	**File ID:**	TC07282014.021
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	7.58		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L14071430-04	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-072414	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG485904	**Analyst:**	DCM	**Run Date:**	07/28/2014 16:46
Collect Date:	07/24/2014 11:00	**Dilution:**	2	**File ID:**	TC07282014.021
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		70.9		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L14071430-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW09A-072414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG485785	**Analyst:**	FJB	**Run Date:**	07/25/2014 23:17
Collect Date:	07/24/2014 13:20	**Dilution:**	1	**File ID:**	11M02725
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.1	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	97.6	85	120	
4-Bromofluorobenzene	99.8	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW09AFD-072414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG485785	**Analyst:**	FJB	**Run Date:**	07/25/2014 23:49
Collect Date:	07/24/2014 13:20	**Dilution:**	1	**File ID:**	11M02726
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.7	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	97.0	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW10-072414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG485785	**Analyst:**	FJB	**Run Date:**	07/26/2014 00:21
Collect Date:	07/24/2014 14:30	**Dilution:**	1	**File ID:**	11M02727
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.1	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	95.4	85	120	
4-Bromofluorobenzene	98.5	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG485785	**Analyst:**	FJB	**Run Date:**	07/25/2014 20:38
Collect Date:	07/24/2014 00:01	**Dilution:**	1	**File ID:**	11M02720
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	110	85	120	
4-Bromofluorobenzene	113	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW05-072414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG485785	**Analyst:**	FJB	**Run Date:**	07/25/2014 21:42
Collect Date:	07/24/2014 07:50	**Dilution:**	1	**File ID:**	11M02722
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.1	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	97.4	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW02-072414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG485785	**Analyst:**	FJB	**Run Date:**	07/25/2014 22:13
Collect Date:	07/24/2014 08:15	**Dilution:**	1	**File ID:**	11M02723
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.335	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.6	85	115	
1,2-Dichloroethane-d4	99.9	70	120	
Toluene-d8	96.2	85	120	
4-Bromofluorobenzene	97.9	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW11-072414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG485785	**Analyst:**	FJB	**Run Date:**	07/25/2014 22:45
Collect Date:	07/24/2014 09:45	**Dilution:**	1	**File ID:**	11M02724
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	10.4		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.684	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	34.5		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.271	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.3	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	98.7	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW08-072414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG485785	**Analyst:**	FJB	**Run Date:**	07/26/2014 00:53
Collect Date:	07/24/2014 11:00	**Dilution:**	10	**File ID:**	11M02728
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	Q	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	5.13	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	Q	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	56.7		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	98.9		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	1890		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	Q	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	7.74	J	10.0	5.00	2.50
Trichloroethene	79-01-6	3.14	J	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.3	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	97.1	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW09A-072414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG485785	**Analyst:**	FJB	**Run Date:**	07/25/2014 23:17
Collect Date:	07/24/2014 13:20	**Dilution:**	1	**File ID:**	11M02725
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.1	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	97.6	85	120	
4-Bromofluorobenzene	99.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW09AFD-072414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG485785	**Analyst:**	FJB	**Run Date:**	07/25/2014 23:49
Collect Date:	07/24/2014 13:20	**Dilution:**	1	**File ID:**	11M02726
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.7	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	97.0	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW10-072414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG485785	**Analyst:**	FJB	**Run Date:**	07/26/2014 00:21
Collect Date:	07/24/2014 14:30	**Dilution:**	1	**File ID:**	11M02727
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.1	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	95.4	85	120	
4-Bromofluorobenzene	98.5	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG485785	**Analyst:**	FJB	**Run Date:**	07/25/2014 20:38
Collect Date:	07/24/2014 00:01	**Dilution:**	1	**File ID:**	11M02720
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	110	85	120	
4-Bromofluorobenzene	113	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 120413
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV1 Rev: 19
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16

Maintenance Log ID: 48563

Internal Standard: STD61448 Surrogate Standard: STD61328
CCV: NA LCS: STD61663 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG455130

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M97408	WG455130-01 BFB 50ng A9FOO	NA	1	1	STD61161	12/04/13 15:09
11M97409	RINSE	NA	1	1		12/04/13 15:34
11M97410	WG455130-02 5ug/L STD A9FOO	NA	1	1	STD61356	12/04/13 16:06
11M97411	WG455130-03 20ug/L STD A9FOO	NA	1	1	STD61356	12/04/13 16:38
11M97412	WG455130-04 50ug/L STD A9FOO	NA	1	1	STD61356	12/04/13 17:10
11M97413	WG455130-05 100ug/L STD A9FOO	NA	1	1	STD61356	12/04/13 17:41
11M97414	WG455130-06 200ug/L STD A9FOO	NA	1	1	STD61356	12/04/13 18:13
11M97415	WG455130-07 300ug/L STD A9FOO	NA	1	1	STD61356	12/04/13 18:44
11M97416	WG455130-08 400ug/L STD A9FOO	NA	1	1	STD61356	12/04/13 19:15
11M97417	WG455130-09 500ug/L STD A9FOO	NA	1	1	STD61356	12/04/13 19:47
11M97418	RINSE	NA	1	1		12/04/13 20:18
11M97419	WG455130-10 100ug/L ALT SRC A9FOO	NA	1	1	STD61663	12/04/13 20:50

Approved: December 19, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 062714
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 19 / 0
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 16 / 0
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID: 50758

Internal Standard: STD65075 Surrogate Standard: STD64815
CCV: NA LCS: STD65074 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG482009

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M02142	BFB CHECK	NA	1	1	STD64936	06/27/14 11:23
11M02143	BFB FIL 2 RETUNED	NA	1	1	STD64936	06/27/14 12:01
11M02144	BFB CHECK	NA	1	1	STD64936	06/27/14 12:34
11M02145	BFB CHECK	NA	1	1	STD64936	06/27/14 12:53
11M02146	BFB CHECK	NA	1	1	STD64936	06/27/14 13:41
11M02147	BFB CHECK	NA	1	1	STD64936	06/27/14 13:54
11M02148	WG482009-01 BFB 50ng 8260	NA	1	1	STD64936	06/27/14 14:07
11M02149	WG482009-02 0.3ug/L STD 8260	NA	1	1	STD65120	06/27/14 14:53
11M02150	WG482009-03 0.4ug/L STD 8260	NA	1	1	STD65120	06/27/14 15:29
11M02151	WG482009-04 1ug/L STD 8260	NA	1	1	STD65120	06/27/14 16:07
11M02152	WG482009-02 0.3ug/L STD 8260	NA	1	1	STD65120	06/27/14 16:37
11M02153	WG482009-05 2ug/L STD 8260	NA	1	1	STD65120	06/27/14 17:08
11M02154	WG482009-06 5ug/L STD 8260	NA	1	1	STD65120	06/27/14 17:38
11M02155	WG482009-07 20ug/L STD 8260	NA	1	1	STD65120	06/27/14 18:08
11M02156	WG482009-08 50ug/L STD 8260	NA	1	1	STD65120	06/27/14 18:38
11M02157	WG482009-09 100ug/L STD 8260	NA	1	1	STD65120	06/27/14 19:08
11M02158	WG482009-10 200ug/L STD 8260	NA	1	1	STD65120	06/27/14 19:38
11M02159	WG482009-11 300ug/L STD 8260	NA	1	1	STD65120	06/27/14 20:09
11M02160	RINSE	NA	1	1		06/27/14 21:03
11M02161	WG482009-12 50ug/L ALT SRC 8260	NA	1	1	STD65074	06/27/14 21:34
11M02162	RINSE	NA	1	1		06/27/14 22:04

Comments

Seq.	Rerun	Dil.	Reason	Analytes
8	X			
File ID: 11M02149				
Came out higher than the 0.4ppb. Maybe the instrument needed a run to equilibrate.				

Approved: June 30, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 072514
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID: 51103

Internal Standard: STD65589 Surrogate Standard: STD65590
CCV: STD65656 LCS: STD65546 MS/MSD: STD65546

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG485785

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M02707	WG485784-01 BFB 50ng 8260	NA	1	1	STD65391	07/25/14 13:49
11M02708	WG485784-02 50ug/L CCV 8260	NA	1	1	STD65656	07/25/14 14:14
11M02709	WG485XXX-01 100ug/L CCV A9	NA	1	1	STD65294	07/25/14 14:46
11M02710	WG485785-01 VBLK0725 BLANK 8260	NA	1	1		07/25/14 15:18
11M02711	L14070539-01 A 826-REF-BLK	<2	1	1		07/25/14 15:50
11M02712	L14070539-02 A 826-REF-BLK	<2	1	1		07/25/14 16:22
11M02713	L14070539-03 A 826-REF-BLK	<2	1	1		07/25/14 16:54
11M02714	L14070539-04 A 826-REF-BLK	<2	1	1		07/25/14 17:26
11M02715	L14070539-05 A 826-REF-BLK	<2	1	1		07/25/14 17:58
11M02716	WG485785-02 20ug/L LCS 8260	NA	1	1	STD65546	07/25/14 18:30
11M02717	WG485785-03 20ug/L LCS DUP 8260	NA	1	1	STD65546	07/25/14 19:02
11M02718	L14070924-02 100X B 826-SPE A1	6	1	100		07/25/14 19:34
11M02719	L14071373-01 50000X B 826-LOW D1	6	1	50000		07/25/14 20:06
11M02720	L14071430-08 TB A 826-LOW	<2	1	1		07/25/14 20:38
11M02721	L14071368-01 B 826-LOW	<2	1	1		07/25/14 21:10
11M02722	L14071430-01 A 826-LOW	<2	1	1		07/25/14 21:42
11M02723	L14071430-02 A 826-LOW	<2	1	1		07/25/14 22:13
11M02724	L14071430-03 A 826-LOW	<2	1	1		07/25/14 22:45
11M02725	L14071430-05 A 826-LOW	<2	1	1		07/25/14 23:17
11M02726	L14071430-06 A 826-LOW	<2	1	1		07/25/14 23:49
11M02727	L14071430-07 A 826-LOW	<2	1	1		07/26/14 00:21
11M02728	L14071430-04 10X A 826-LOW	<2	1	10		07/26/14 00:53
11M02729	L14071380-02 A 826-SPE	<2	1	1		07/26/14 01:25
11M02730	RINSE	NA	1	1		07/26/14 01:57
11M02731	WG485785-04 624 BLANK	NA	2	1		07/26/14 02:28
11M02732	L14071422-01 A 624-SPE	<2	2	1		07/26/14 03:00
11M02733	L14071422-02 A 624-SPE	<2	2	1		07/26/14 03:32
11M02734	L14071422-03 A 624-SPE	<2	2	1		07/26/14 04:04
11M02735	L14071422-04 A 624-SPE	<2	2	1		07/26/14 04:36
11M02736	L14071429-01 A 624-SPE	<2	2	1		07/26/14 05:07
11M02737	L14071429-02 A 624-SPE	<2	2	1		07/26/14 05:39
11M02738	L14071429-03 A 624-SPE	<2	2	1		07/26/14 06:11
11M02739	L14071429-04 A 624-SPE	<2	2	1		07/26/14 06:43
11M02740	CCV	NA	1	1		07/26/14 07:15

Approved: July 28, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 072514
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID: 51103

Internal Standard: STD65589 Surrogate Standard: STD65590
CCV: STD65656 LCS: STD65546 MS/MSD: STD65546

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG485785

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M02741	RINSE	NA	1	1		07/26/14 07:47

Comments

Seq.	Rerun	Dil.	Reason	Analytes
23	X	10	Over Calibration Range	cb
File ID: 11M02729				
26				
File ID: 11M02732				
Samples composited per comments				
27				
File ID: 11M02733				
Samples composited per comments				
28				
File ID: 11M02734				
Samples composited per comments				
29				
File ID: 11M02735				
Samples composited per comments				

Approved: July 28, 2014

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 04-DEC-2013
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 57820
Analytical Workgroups: WG455130

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 18-DEC-2013

Secondary Reviewer: 19-DEC-2013

CHECKLIST1 - Modified 03/05/2008

Generated: DEC-19-2013 08:33:22

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2014
Analyst: FJB
Analyst: NA
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 61915
Analytical Workgroups: WG482009

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 30-JUN-2014

Secondary Reviewer: 30-JUN-2014

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-30-2014 15:52:09

Microbac Laboratories Inc.

Data Checklist

Date: 25-JUL-2014
Analyst: FJB
Analyst: NA
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 62457
Analytical Workgroups: WG485785

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 28-JUL-2014

Secondary Reviewer: 28-JUL-2014

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-28-2014 13:06:13

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG485785

Login Number: L14071430

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW05-072414	01	07/24/14					07/25/2014	1.6	14		07/25/14	1.6	14	
67WW02-072414	02	07/24/14					07/25/2014	1.6	14		07/25/14	1.6	14	
67WW11-072414	03	07/24/14					07/25/2014	1.5	14		07/25/14	1.5	14	
67WW08-072414	04	07/24/14					07/26/2014	1.6	14		07/26/14	1.6	14	
67WW09A-072414	05	07/24/14					07/25/2014	1.4	14		07/25/14	1.4	14	
67WW09AFD-072414	06	07/24/14					07/25/2014	1.4	14		07/25/14	1.4	14	
67WW10-072414	07	07/24/14					07/26/2014	1.4	14		07/26/14	1.4	14	
TRIP BLANK	08	07/24/14					07/25/2014	1.9	14		07/25/14	1.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3679707
Report generated 07/29/2014 08:37

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L14071430
Instrument Id: HPMS11
Workgroup (AAB#): WG485785

Method: 8260
CAL ID: HPMS11-27-JUN-14
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L14071430-01	1.00	01	100	95.1	102	97.4
L14071430-02	1.00	01	99.9	93.6	97.9	96.2
L14071430-03	1.00	01	101	95.3	102	98.7
L14071430-04	10.0	DL01	100	94.3	101	97.1
L14071430-05	1.00	01	100	94.1	99.8	97.6
L14071430-06	1.00	01	100	94.7	103	97.0
L14071430-07	1.00	01	100	94.1	98.5	95.4
L14071430-08	1.00	01	113	107	113	110
WG485785-01	1.00	01	99.1	92.5	99.6	95.3
WG485785-02	1.00	01	98.3	95.7	90.7	95.3
WG485785-03	1.00	01	99.9	97.3	92.3	96.4
WG485785-04	1.00	01	102	94.8	104	97.7

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3679779
Report generated: 07/29/2014 08:38

METHOD BLANK SUMMARY

Login Number: L14071430
Blank File ID: 11M02710
Prep Date: 07/25/14 15:18
Analyzed Date: 07/25/14 15:18
Analyst: FJB

Work Group: WG485785
Blank Sample ID: WG485785-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG485785-02	11M02716	07/25/14 18:30	01
LCS2	WG485785-03	11M02717	07/25/14 19:02	01
TRIP BLANK	L14071430-08	11M02720	07/25/14 20:38	01
67WW05-072414	L14071430-01	11M02722	07/25/14 21:42	01
67WW02-072414	L14071430-02	11M02723	07/25/14 22:13	01
67WW11-072414	L14071430-03	11M02724	07/25/14 22:45	01
67WW09A-072414	L14071430-05	11M02725	07/25/14 23:17	01
67WW09AFD-072414	L14071430-06	11M02726	07/25/14 23:49	01
67WW10-072414	L14071430-07	11M02727	07/26/14 00:21	01
67WW08-072414	L14071430-04	11M02728	07/26/14 00:53	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 3679708
Report generated 07/29/2014 08:37

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L14071430 Prep Date: 07/25/14 15:18 Sample ID: WG485785-01
Instrument ID: HPMS11 Run Date: 07/25/14 15:18 Prep Method: 5030B/5030C/503
File ID: 11M02710 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG485785 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-27-JUN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 3679709
29-JUL-2014 08:37

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14071430 Prep Date: 07/25/14 15:18 Sample ID: WG485785-01
Instrument ID: HPMS11 Run Date: 07/25/14 15:18 Prep Method: 5030B/5030C/503
File ID: 11M02710 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG485785 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-27-JUN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	92.5	85 - 115	PASS
1,2-Dichloroethane-d4	99.1	70 - 120	PASS
Toluene-d8	95.3	85 - 120	PASS
4-Bromofluorobenzene	99.6	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3679709
29-JUL-2014 08:37

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14071430 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG485785 Units: ug/L
QC Key: DOD4 Lot #: STD65546

Sample ID: WG485785-02 LCS File ID: 11M02716 Run Date: 07/25/2014 18:30
Sample ID: WG485785-03 LCS2 File ID: 11M02717 Run Date: 07/25/2014 19:02

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	19.2	96.0	20.0	19.2	95.8	0.191	80 - 130	30	
1,1,1-Trichloroethane	20.0	18.9	94.6	20.0	19.2	96.0	1.45	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	20.6	103	20.0	20.9	104	1.09	65 - 130	30	
1,1,2-Trichloroethane	20.0	21.2	106	20.0	21.3	106	0.294	75 - 125	30	
1,1-Dichloroethane	20.0	18.8	94.2	20.0	19.0	95.1	0.910	70 - 135	30	
1,1-Dichloroethene	20.0	18.6	93.2	20.0	18.6	92.9	0.392	70 - 130	30	
1,1-Dichloropropene	20.0	19.2	96.0	20.0	19.1	95.5	0.491	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	20.0	100	20.0	19.8	99.0	1.03	55 - 140	30	
1,2,3-Trichloropropane	20.0	23.0	115	20.0	22.3	111	3.04	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	18.4	92.2	20.0	18.5	92.3	0.0208	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	21.2	106	20.0	21.0	105	0.871	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	23.3	116	20.0	24.5	123	5.18	50 - 130	30	
1,2-Dibromoethane	20.0	21.2	106	20.0	21.5	107	1.61	80 - 120	30	
1,2-Dichlorobenzene	20.0	18.5	92.7	20.0	18.7	93.6	0.947	70 - 120	30	
1,2-Dichloroethane	20.0	20.3	101	20.0	20.4	102	0.385	70 - 130	30	
1,2-Dichloropropane	20.0	19.4	96.8	20.0	19.5	97.7	0.940	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.7	104	20.0	20.8	104	0.106	75 - 130	30	
1,3-Dichlorobenzene	20.0	18.0	89.9	20.0	17.6	88.0	2.21	75 - 125	30	
1,3-Dichloropropane	20.0	20.9	104	20.0	20.8	104	0.476	75 - 125	30	
1,4-Dichlorobenzene	20.0	19.3	96.3	20.0	19.1	95.6	0.789	75 - 125	30	
2,2-Dichloropropane	20.0	17.2	85.8	20.0	16.9	84.7	1.22	70 - 135	30	
2-Butanone	20.0	25.4	127	20.0	26.2	131	3.45	30 - 150	30	
2-Chlorotoluene	20.0	18.1	90.3	20.0	18.1	90.5	0.200	75 - 125	30	
2-Hexanone	20.0	26.7	134	20.0	26.9	135	0.747	55 - 130	30	*
4-Chlorotoluene	20.0	17.6	88.2	20.0	17.8	89.1	0.970	75 - 130	30	
4-Methyl-2-pentanone	20.0	25.1	125	20.0	25.6	128	2.16	60 - 135	30	
Acetone	20.0	25.0	125	20.0	26.5	132	5.89	40 - 140	30	
Benzene	20.0	19.8	98.9	20.0	19.8	99.0	0.172	80 - 120	30	
Bromobenzene	20.0	18.8	94.0	20.0	18.5	92.6	1.53	75 - 125	30	
Bromochloromethane	20.0	20.5	102	20.0	20.0	100	2.21	65 - 130	30	
Bromodichloromethane	20.0	19.8	99.2	20.0	19.6	97.9	1.33	75 - 120	30	
Bromoform	20.0	23.5	117	20.0	23.2	116	0.870	70 - 130	30	
Bromomethane	20.0	17.2	85.8	20.0	17.8	88.9	3.53	30 - 145	30	
Carbon disulfide	20.0	17.0	85.0	20.0	16.8	83.9	1.36	35 - 160	30	
Carbon tetrachloride	20.0	19.8	98.8	20.0	20.0	100	1.14	65 - 140	30	
Chlorobenzene	20.0	18.3	91.5	20.0	18.2	90.9	0.675	80 - 120	30	
Chloroethane	20.0	19.3	96.4	20.0	19.4	96.8	0.374	60 - 135	30	
Chloroform	20.0	19.3	96.4	20.0	19.3	96.7	0.358	65 - 135	30	
Chloromethane	20.0	19.6	97.9	20.0	20.1	100	2.49	40 - 125	30	
cis-1,2-Dichloroethene	20.0	18.9	94.4	20.0	19.1	95.6	1.29	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3679710
Report generated: 07/29/2014 08:38

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14071430 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG485785 Units: ug/L
QC Key: DOD4 Lot #: STD65546

Sample ID: WG485785-02 LCS File ID: 11M02716 Run Date: 07/25/2014 18:30
Sample ID: WG485785-03 LCS2 File ID: 11M02717 Run Date: 07/25/2014 19:02

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.2	106	20.0	20.9	104	1.41	70 - 130	30	
Chlorodibromomethane	20.0	21.7	108	20.0	21.7	109	0.237	60 - 135	30	
Dibromomethane	20.0	21.1	105	20.0	21.0	105	0.583	75 - 125	30	
Dichlorodifluoromethane	20.0	25.4	127	20.0	25.7	129	1.20	30 - 155	30	
Ethylbenzene	20.0	18.6	93.0	20.0	18.7	93.3	0.377	75 - 125	30	
Hexachlorobutadiene	20.0	19.1	95.6	20.0	19.0	95.1	0.491	50 - 140	30	
Isopropylbenzene	20.0	19.5	97.3	20.0	19.6	98.2	0.875	75 - 125	30	
m-,p-Xylene	40.0	38.9	97.2	40.0	39.0	97.5	0.304	75 - 130	30	
Methylene chloride	20.0	18.6	92.8	20.0	18.4	92.0	0.829	55 - 140	30	
n-Butylbenzene	20.0	21.6	108	20.0	21.6	108	0.0367	70 - 135	30	
n-Propylbenzene	20.0	18.3	91.5	20.0	18.2	90.9	0.683	70 - 130	30	
Naphthalene	20.0	19.7	98.6	20.0	19.8	98.8	0.198	55 - 140	30	
o-Xylene	20.0	17.9	89.3	20.0	17.8	89.2	0.0734	80 - 120	30	
p-Isopropyltoluene	20.0	19.8	99.1	20.0	19.7	98.5	0.640	75 - 130	30	
sec-Butylbenzene	20.0	19.6	98.1	20.0	19.7	98.6	0.537	70 - 125	30	
Styrene	20.0	20.6	103	20.0	20.9	104	1.11	65 - 135	30	
tert-Butylbenzene	20.0	17.7	88.7	20.0	17.9	89.4	0.846	70 - 130	30	
Tetrachloroethene	20.0	18.5	92.4	20.0	18.8	94.0	1.76	45 - 150	30	
Toluene	20.0	20.3	102	20.0	20.4	102	0.606	75 - 120	30	
trans-1,2-Dichloroethene	20.0	18.9	94.3	20.0	18.8	94.0	0.338	60 - 140	30	
trans-1,3-Dichloropropene	20.0	20.5	103	20.0	20.6	103	0.434	55 - 140	30	
Trichloroethene	20.0	19.2	96.1	20.0	19.3	96.7	0.603	70 - 125	30	
Trichlorofluoromethane	20.0	21.0	105	20.0	20.6	103	1.71	60 - 145	30	
Vinyl chloride	20.0	20.8	104	20.0	19.1	95.6	8.54	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	98.3	99.9	70 - 120	PASS
Dibromofluoromethane	95.7	97.3	85 - 115	PASS
4-Bromofluorobenzene	90.7	92.3	75 - 120	PASS
Toluene-d8	95.3	96.4	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3679710
Report generated: 07/29/2014 08:38

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14071430
Instrument: HPMS11
Analyst: FJB
Workgroup: WG455130

Tune ID: WG455130-01
Run Date: 12/04/2013
Run Time: 15:09
File ID: 11M97408
Cal ID: HPMS11 - 04-DEC-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	26.3	2601	PASS
75.0	95.0	30.0	60.0	52.3	5177	PASS
95.0	95.0	100	100	100	9902	PASS
96.0	95.0	5.00	9.00	6.82	675	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	65.0	6441	PASS
175	174	5.00	9.00	5.96	384	PASS
176	174	95.0	101	98.2	6328	PASS
177	176	5.00	9.00	8.12	514	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG455130-02	STD	01	12/04/2013 16:06	
WG455130-03	STD	01	12/04/2013 16:38	
WG455130-04	STD	01	12/04/2013 17:10	
WG455130-05	STD	01	12/04/2013 17:41	
WG455130-06	STD-CCV	01	12/04/2013 18:13	
WG455130-07	STD	01	12/04/2013 18:44	
WG455130-08	STD	01	12/04/2013 19:15	
WG455130-09	STD	01	12/04/2013 19:47	
WG455130-10	SSCV	01	12/04/2013 20:50	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3679713
Report generated 07/29/2014 08:38

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14071430
Instrument: HPMS11
Analyst: FJB
Workgroup: WG482009

Tune ID: WG482009-01
Run Date: 06/27/2014
Run Time: 14:07
File ID: 11M02148
Cal ID: HPMS11 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.0	7655	PASS
75.0	95.0	30.0	60.0	47.0	21128	PASS
95.0	95.0	100	100	100	44912	PASS
96.0	95.0	5.00	9.00	6.54	2936	PASS
173	174	0	2.00	0.521	194	PASS
174	95.0	50.0	100	82.9	37234	PASS
175	174	5.00	9.00	6.66	2479	PASS
176	174	95.0	101	95.5	35560	PASS
177	176	5.00	9.00	6.83	2430	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG482009-03	STD	01	06/27/2014 15:29	
WG482009-04	STD	01	06/27/2014 16:07	
WG482009-02	STD	01	06/27/2014 16:37	
WG482009-05	STD	01	06/27/2014 17:08	
WG482009-06	STD	01	06/27/2014 17:38	
WG482009-07	STD	01	06/27/2014 18:08	
WG482009-08	STD-CCV	01	06/27/2014 18:38	
WG482009-09	STD	01	06/27/2014 19:08	
WG482009-10	STD	01	06/27/2014 19:38	
WG482009-11	STD	01	06/27/2014 20:09	
WG482009-12	SSCV	01	06/27/2014 21:34	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3679713
Report generated 07/29/2014 08:38

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14071430
Instrument: HPMS11
Analyst: FJB
Workgroup: WG485784

Tune ID: WG485784-01
Run Date: 07/25/2014
Run Time: 13:49
File ID: 11M02707
Cal ID: HPMS11 - 27-JUN-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6430	PASS
75.0	95.0	30.0	60.0	47.9	18481	PASS
95.0	95.0	100	100	100	38594	PASS
96.0	95.0	5.00	9.00	6.13	2367	PASS
173	174	0	2.00	0.375	108	PASS
174	95.0	50.0	100	74.6	28795	PASS
175	174	5.00	9.00	8.25	2377	PASS
176	174	95.0	101	98.9	28470	PASS
177	176	5.00	9.00	7.56	2153	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG485784-02	CCV	01	07/25/2014 14:14	
WG485785-01	BLANK	01	07/25/2014 15:18	
WG485785-02	LCS	01	07/25/2014 18:30	
WG485785-03	LCS2	01	07/25/2014 19:02	
L14071430-08	TRIP BLANK	01	07/25/2014 20:38	
L14071430-01	67WW05-072414	01	07/25/2014 21:42	
L14071430-02	67WW02-072414	01	07/25/2014 22:13	
L14071430-03	67WW11-072414	01	07/25/2014 22:45	
L14071430-05	67WW09A-072414	01	07/25/2014 23:17	
L14071430-06	67WW09AFD-072414	01	07/25/2014 23:49	
L14071430-07	67WW10-072414	01	07/26/2014 00:21	
L14071430-04	67WW08-072414	DL01	07/26/2014 00:53	
WG485785-04	BLANK2	01	07/26/2014 02:28	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3679713
Report generated 07/29/2014 08:38

Calibration Table Report
Method: A9WTR.M
Title: Appendix IX (SOP:OVL MSV01) Water 12/04/13 HPMS11
Last Calibration: Wed Dec 18 14:24:41 2013
Curve: WG455130
Calibration Files

Compound	5 11M97410.D	20 11M97411.D	50 11M97412.D	100 11M97413.D	200 11M97414.D	300 11M97415.D	400 11M97416.D	500 11M97417.D	Avg	%RSD	Linear	Quadratic
Fluorobenzene	ISTD											
Acetonitrile	0.036	0.028	0.027	0.029	0.029	0.030	0.029	0.029	0.030	9.836		
3-Chloro-1-propene	0.478	0.497	0.515	0.502	0.505	0.493	0.454	0.439	0.485	5.450		
2-Chloro-1,3-butadiene	0.458	0.502	0.525	0.523	0.533	0.520	0.480	0.464	0.501	5.923		
Methacrylonitrile	0.196	0.178	0.168	0.176	0.183	0.184	0.174	0.174	0.179	4.838		
Isobutyl Alcohol		0.010	0.008	0.009	0.009	0.010	0.009	0.010	0.009	7.458		
1-Butanol		0.003	0.003	0.004	0.004	0.005	0.005	0.004	0.004	19.985	0.995	
Cyclohexanone		0.028	0.021	0.021	0.018	0.036	0.036	0.042	0.029	31.895		0.991
2-Nitropropane	0.073	0.071	0.074	0.082	0.087	0.091	0.088	0.088	0.082	9.852		
Ethyl Acetate	0.246	0.236	0.224	0.236	0.242	0.241	0.225	0.223	0.234	3.836		
Methyl methacrylate	0.235	0.219	0.223	0.243	0.251	0.251	0.237	0.236	0.237	4.857		
Chlorobenzene-d5	ISTD											
1,4-Dichlorobenzene-d4	ISTD											

Wed Dec 18 14:50:12 2013

Calibration Table Report
Method: 8260WTR.M
Title: 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Calibration: Mon Jun 30 10:39:17 2014
Curve: WG482009
Calibration Files

	Compound	0.3	0.4	1	2	5	20	50	100	200	300	Avg	%RSD	Linear	Quadratic
		11M02152.D	11M02150.D	11M02151.D	11M02153.D	11M02154.D	11M02155.D	11M02156.D	11M02157.D	11M02158.D	11M02159.D				
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.236	0.227	0.242	0.300	0.285	0.294	0.292	0.290	0.271	11.204		
P	Chloromethane			0.587	0.511	0.468	0.484	0.449	0.449	0.438	0.395	0.472	12.170		
C	Vinyl Chloride		0.369	0.393	0.420	0.451	0.476	0.449	0.449	0.427	0.397	0.426	8.069		
T	1,3-Butadiene		0.353	0.308	0.372	0.396	0.440	0.343	0.232			0.349	19.012		0.999
T	Bromomethane		0.296	0.265	0.264	0.239	0.209	0.200	0.214	0.233	0.236	0.239	12.866		
T	Chloroethane		0.182	0.210	0.201	0.209	0.227	0.216	0.226	0.227	0.226	0.214	7.180		
T	Trichlorofluoromethane		0.489	0.449	0.480	0.512	0.524	0.508	0.524	0.524	0.514	0.503	5.057		
T	Diethyl ether			0.196	0.205	0.209	0.205	0.202	0.210		0.208	0.205	2.311		
T	Isoprene				0.378	0.409	0.443	0.447	0.459	0.465	0.471	0.439	7.679		
T	Acrolein			0.022	0.025	0.027	0.027	0.026	0.028		0.029	0.026	8.884		
T	1,1,2-Trichloro-1,2,2-Trifluoroe		0.282	0.288	0.282	0.316	0.326	0.311	0.325	0.325	0.329	0.309	6.433		
T	Acetone			0.061	0.060	0.057	0.047	0.045	0.046	0.044	0.045	0.050	14.606		
C	1,1-Dichloroethene		0.448	0.391	0.435	0.469	0.477	0.468	0.481	0.480	0.472	0.458	6.376		
T	Tert-Butyl Alcohol				0.014	0.014	0.014	0.013	0.013		0.012	0.013	6.291		
T	Dimethyl Sulfide		0.345	0.300	0.292	0.300	0.332	0.321	0.332	0.329	0.331	0.320	5.773		
T	Iodomethane			0.086	0.109	0.173	0.360	0.394	0.395	0.395	0.382	0.287	48.334		1.000
T	Methyl acetate			0.154	0.168	0.170	0.161	0.154	0.159	0.152	0.158	0.160	4.196		
T	Methylene Chloride		0.381	0.341	0.333	0.337	0.335	0.322	0.336	0.331	0.333	0.339	4.936		
T	Carbon Disulfide		1.011	0.894	0.935	0.948	1.046	1.012	1.004	0.941	0.841	0.959	6.837		
T	Acrylonitrile			0.062	0.066	0.068	0.069	0.070	0.072		0.076	0.069	6.759		
T	Methyl Tert Butyl Ether		0.730	0.668	0.697	0.699	0.719	0.686	0.706	0.674	0.671	0.694	3.121		
T	trans-1,2-Dichloroethene		0.351	0.318	0.310	0.328	0.342	0.331	0.346	0.344	0.343	0.335	4.139		
T	n-Hexane			0.353	0.350	0.394	0.409	0.400	0.401	0.398	0.398	0.388	5.877		
T	Diisopropyl ether			0.890	0.908	0.938	0.922	0.909	0.917		0.854	0.905	2.985		
T	Vinyl Acetate				0.186	0.222	0.270	0.250	0.274	0.259	0.259	0.246	12.813		
P	1,1-Dichloroethane		0.515	0.519	0.532	0.557	0.573	0.557	0.578	0.558	0.547	0.549	4.054		
T	Ethyl-Tert-Butyl ether			0.810	0.840	0.867	0.854	0.834	0.844		0.795	0.835	2.987		
T	2-Butanone			0.076	0.067	0.082	0.074	0.070	0.072	0.068	0.070	0.072	6.751		
T	Propionitrile			0.023	0.023	0.024	0.024	0.024	0.024		0.023	0.024	2.499		
T	2,2-Dichloropropane		0.513	0.425	0.472	0.491	0.509	0.494	0.512	0.508	0.504	0.492	5.790		
T	cis-1,2-Dichloroethene		0.376	0.325	0.344	0.361	0.378	0.362	0.377	0.373	0.373	0.363	4.980		
C	Chloroform	0.517	0.559	0.552	0.568	0.575	0.586	0.564	0.588	0.566	0.548	0.562	3.678		
T	1-Bromopropane			0.047	0.053	0.065	0.063	0.065	0.064	0.065	0.065	0.061	11.499		
T	Bromochloromethane		0.168	0.189	0.207	0.219	0.223	0.214	0.223	0.219	0.223	0.209	9.076		
T	Tetrahydrofuran			0.044	0.048	0.048	0.049	0.046	0.048		0.046	0.047	3.828		
S	Dibromofluoromethane			0.266	0.283	0.302	0.330	0.326	0.330	0.329	0.331	0.312	8.159		
T	1,1,1-Trichloroethane		0.548	0.465	0.459	0.511	0.538	0.524	0.551	0.551	0.543	0.521	6.888		
T	Cyclohexane		0.465	0.417	0.450	0.485	0.515	0.510	0.516	0.519	0.518	0.488	7.533		
T	1,1-Dichloropropene		0.432	0.391	0.404	0.432	0.456	0.445	0.461	0.454	0.448	0.436	5.529		
T	Carbon Tetrachloride		0.437	0.381	0.443	0.468	0.495	0.485	0.510	0.500	0.497	0.468	8.860		
T	Tert-Amyl-Methyl ether			0.698	0.729	0.75	0.75	0.72	0.728		0.689	0.723	3.211		
S	1,2-Dichloroethane-d4			0.259	0.29	0.317	0.326	0.311	0.315	0.309	0.31	0.305	6.910		
T	1,2-Dichloroethane		0.454	0.373	0.396	0.393	0.405	0.386	0.396	0.379	0.374	0.395	6.226		
T	Benzene		1.39	1.192	1.213	1.274	1.292	1.238	1.242	1.106	0.97	1.213	9.845		
T	Trichloroethene		0.419	0.34	0.37	0.368	0.376	0.367	0.38	0.379	0.375	0.375	5.433		
T	Methylcyclohexane		0.473	0.43	0.46	0.496	0.526	0.519	0.521	0.515	0.512	0.495	6.736		
C	1,2-Dichloropropane		0.293	0.278	0.284	0.294	0.318	0.307	0.319	0.314	0.315	0.302	5.110		
T	1,4-Dioxane				0.002	0.002	0.002	0.002	0.002		0.002	0.002	6.415		
T	Bromodichloromethane		0.428	0.377	0.393	0.417	0.432	0.425	0.448	0.434	0.428	0.420	5.186		
T	Dibromomethane		0.162	0.166	0.175	0.17	0.179	0.172	0.178	0.174	0.175	0.172	3.142		
T	2-Chloroethyl Vinyl Ether		0.145	0.123	0.124	0.13	0.141	0.142	0.144	0.142	0.147	0.138	6.625		
T	4-Methyl-2-Pentanone			0.06	0.058	0.063	0.065	0.065	0.067	0.065	0.066	0.064	4.570		
T	cis-1,3-Dichloropropene		0.427	0.42	0.426	0.466	0.509	0.498	0.52	0.5	0.484	0.472	8.263		
T	Dimethyl Disulfide					0.201	0.254	0.265	0.285	0.29	0.297	0.265	13.438		

I	Chlorobenzene-d5	ISTD														
S	Toluene-d8			1.412	1.44	1.489	1.548	1.525	1.458	1.471	1.375	1.465	3.897			
C	Toluene		1.852	1.699	1.729	1.853	1.871	1.79	1.685	1.469	1.223	1.686	12.651			
T	Ethyl Methacrylate		0.359	0.293	0.299	0.327	0.367	0.374	0.37	0.373	0.367	0.348	9.324			
T	trans-1,3-Dichloropropene		0.499	0.459	0.506	0.553	0.588	0.582	0.578	0.572	0.547	0.543	8.247			
T	1,1,2-Trichloroethane		0.349	0.316	0.31	0.322	0.327	0.317	0.309	0.314	0.31	0.319	3.977			
T	2-Hexanone		0.12	0.127	0.127	0.134	0.138	0.137	0.135	0.135	0.133	0.132	4.497			
T	1,3-Dichloropropane		0.64	0.532	0.551	0.572	0.567	0.536	0.527	0.516	0.5	0.549	7.471			
T	Tetrachloroethene		0.389	0.348	0.374	0.39	0.39	0.378	0.377	0.39	0.385	0.380	3.593			
T	Dibromochloromethane		0.408	0.366	0.364	0.398	0.412	0.415	0.419	0.425	0.417	0.403	5.596			
T	1,2-Dibromoethane		0.318	0.32	0.312	0.311	0.331	0.317	0.312	0.314	0.311	0.316	1.984			
T	1-Chlorohexane		0.525	0.482	0.487	0.549	0.59	0.592	0.571	0.591	0.564	0.550	7.844			
P	Chlorobenzene		1.267	1.185	1.238	1.281	1.261	1.251	1.231	1.173	1.012	1.211	6.849			
T	1,1,1,2-Tetrachloroethane		0.462	0.378	0.413	0.436	0.453	0.46	0.473	0.505	0.495	0.453	8.750			
C	Ethylbenzene		0.649	0.558	0.638	0.665	0.697	0.7	0.727	0.768	0.728	0.681	9.134			
T	m-,p-Xylene		0.803	0.704	0.767	0.824	0.845	0.828	0.803	0.719	0.591	0.765	10.600			
T	o-Xylene		0.776	0.701	0.73	0.783	0.814	0.815	0.815	0.83	0.779	0.783	5.513			
T	Styrene		1.029	0.973	1.057	1.189	1.325	1.342	1.329	1.24	1.066	1.172	12.297			
P	Bromoform		0.219	0.213	0.212	0.217	0.245	0.247	0.25	0.25	0.25	0.234	7.591			
T	Isopropylbenzene		1.792	1.714	1.872	1.984	2.053	1.982	1.865	1.593	1.299	1.795	13.078			
I	1,4-Dichlorobenzene-d4	ISTD														
P	1,1,2,2-Tetrachloroethane		0.713	0.667	0.714	0.705	0.685	0.661	0.656	0.629	0.617	0.672	5.274			
S	p-Bromofluorobenzene			1.04	1.014	1.063	1.105	1.1	1.112	1.123	1.089	1.081	3.525			
T	1,2,3-Trichloropropane			0.198	0.203	0.219	0.212	0.204	0.202	0.197	0.197	0.204	3.933			
T	trans-1,4-Dichloro-2-Butene			0.122	0.128	0.135	0.172	0.181	0.187	0.188	0.19	0.163	18.102	0.999		
T	n-Propylbenzene		4.488	4.058	4.181	4.561	4.565	4.44	4.134	3.285		4.214	10.090			
T	Bromobenzene	1.042	1.115	0.963	0.959	0.991	1.001	0.994	1.017	1.009	0.968	1.006	4.594			
T	1,3,5-Trimethylbenzene		2.951	2.888	2.971	3.233	3.279	3.243	3.174	2.724	2.257	2.969	11.017			
T	2-Chlorotoluene		2.885	2.615	2.679	2.742	2.717	2.657	2.609	2.793	2.246	2.660	6.708			
T	4-Chlorotoluene		2.917	2.599	2.736	2.847	2.853	2.825	2.771	1.894		2.680	12.385			
T	a-Methylstyrene				1.307	1.474	1.746	1.813	1.85	1.755	1.598	1.649	12.080			
T	tert-Butylbenzene		0.646	0.624	0.615	0.679	0.679	0.682	0.702	0.705	0.702	0.670	5.069			
T	1,2,4-Trimethylbenzene		2.905	2.727	3.111	3.221	3.368	3.329	3.218	2.708	2.224	2.979	12.553			
T	sec-Butylbenzene		3.824	3.417	3.649	4.039	4.033	3.931	3.744	3.077	2.49	3.578	14.310			
T	p-Isopropyltoluene		2.907	2.792	3.028	3.336	3.452	3.381	3.248	2.744	2.248	3.015	12.878			
T	1,3-Dichlorobenzene		1.964	1.787	1.847	1.906	1.883	1.856	1.867	1.73	1.563	1.823	6.479			
T	1,4-Dichlorobenzene	1.991	2.09	1.666	1.852	1.816	1.885	1.858	1.847	1.711	1.54	1.825	8.633			
T	n-Butylbenzene		2.23	2.125	2.332	2.679	2.907	2.885	2.791	2.457	2.046	2.495	13.294			
T	1,2-Dichlorobenzene	1.679	1.724	1.669	1.682	1.754	1.754	1.713	1.705	1.583	1.471	1.673	5.161			
T	1,2-Dibromo-3-Chloropropane				0.087	0.087	0.098	0.098	0.101	0.105	0.107	0.098	8.182			
T	1,2,4-Trichlorobenzene		0.841	0.698	0.732	0.944	1.071	1.091	1.111	1.16	1.106	0.973	18.088			0.999
T	Hexachlorobutadiene		0.486	0.394	0.424	0.467	0.456	0.43	0.438	0.472	0.465	0.448	6.438			
T	Naphthalene		0.921	0.829	1.019	1.325	1.854	1.958	2.011	1.916	1.692	1.503	32.030	0.994		
T	1,2,3-Trichlorobenzene	0.408	0.632	0.606	0.694	0.84	0.981	0.967	0.988	1.009	0.974	0.810	26.069	1.000		

Mon Jun 30 11:41:24 2014

Thu Sep 19 10:28:54 2013

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14071430 Run Date: 06/27/2014 Sample ID: WG482009-12
Instrument ID: HPMS11 Run Time: 21:34 Method: 8260B
File ID: 11M02161 Analyst: FJB QC Key: DOD4
ICal Workgroup: WG482009 Cal ID: HPMS11 - 27-JUN-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.7	ug/L	0.581	3.30	20	
1,1-Dichloroethene	CCC	50.0	50.6	ug/L	0.464	1.30	20	
1,2-Dichloropropane	CCC	50.0	51.4	ug/L	0.311	2.80	20	
Ethylbenzene	CCC	50.0	51.9	ug/L	0.707	3.80	20	
Toluene	CCC	50.0	53.8	ug/L	1.81	7.60	20	
Vinyl Chloride	CCC	50.0	58.8	ug/L	0.501	17.6	20	
Bromoform	SPCC	50.0	52.3	ug/L	0.244	4.50	20	
Chlorobenzene	SPCC	50.0	49.2	ug/L	1.19	1.70	20	
Chloromethane	SPCC	50.0	57.4	ug/L	0.543	14.9	20	
1,1-Dichloroethane	SPCC	50.0	51.1	ug/L	0.560	2.10	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.2	ug/L	0.635	5.60	20	
Acetone		50.0	51.4	ug/L	0.0519	2.90	20	
Benzene		50.0	52.6	ug/L	1.28	5.30	20	
Bromobenzene		50.0	48.6	ug/L	0.978	2.80	20	
Bromochloromethane		50.0	52.4	ug/L	0.219	4.70	20	
Bromodichloromethane		50.0	50.5	ug/L	0.425	1.10	20	
Bromomethane		50.0	55.7	ug/L	0.267	11.4	20	
2-Butanone		50.0	51.6	ug/L	0.0748	3.30	20	
n-Butylbenzene		50.0	61.0	ug/L	3.04	22.0	20	*
sec-Butylbenzene		50.0	52.0	ug/L	3.72	3.90	20	
tert-Butylbenzene		50.0	47.9	ug/L	0.643	4.20	20	
Carbon Disulfide		50.0	47.3	ug/L	0.907	5.50	20	
Carbon Tetrachloride		50.0	53.5	ug/L	0.501	6.90	20	
Dibromochloromethane		50.0	52.1	ug/L	0.419	4.10	20	
Chloroethane		50.0	56.2	ug/L	0.240	12.4	20	
2-Chlorotoluene		50.0	47.4	ug/L	2.52	5.30	20	
4-Chlorotoluene		50.0	49.0	ug/L	2.63	1.90	20	
1,2-Dibromo-3-Chloropropane		50.0	53.9	ug/L	0.105	7.70	20	
1,2-Dibromoethane		50.0	49.3	ug/L	0.312	1.40	20	
Dibromomethane		50.0	49.8	ug/L	0.172	0.400	20	
1,2-Dichlorobenzene		50.0	48.8	ug/L	1.63	2.30	20	
1,3-Dichlorobenzene		50.0	48.6	ug/L	1.77	2.70	20	
1,4-Dichlorobenzene		50.0	52.1	ug/L	1.90	4.20	20	
Dichlorodifluoromethane		50.0	78.8	ug/L	0.427	57.7	20	*
1,2-Dichloroethane		50.0	49.1	ug/L	0.388	1.80	20	
cis-1,2-Dichloroethene		50.0	51.9	ug/L	0.377	3.80	20	
trans-1,2-Dichloroethene		50.0	52.2	ug/L	0.350	4.50	20	
1,3-Dichloropropane		50.0	48.8	ug/L	0.536	2.40	20	
2,2-Dichloropropane		50.0	48.6	ug/L	0.478	2.90	20	
cis-1,3-Dichloropropene		50.0	55.0	ug/L	0.519	10.0	20	
trans-1,3-Dichloropropene		50.0	50.5	ug/L	0.548	1.00	20	
1,1-Dichloropropene		50.0	52.3	ug/L	0.456	4.60	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3679711
Report generated 07/29/2014 08:38

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14071430 Run Date: 06/27/2014 Sample ID: WG482009-12
Instrument ID: HPMS11 Run Time: 21:34 Method: 8260B
File ID: 11M02161 Analyst: FJB QC Key: DOD4
ICal Workgroup: WG482009 Cal ID: HPMS11 - 27-JUN-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	57.0	ug/L	0.150	14.0	20	
Hexachlorobutadiene		50.0	53.8	ug/L	0.482	7.50	20	
Isopropylbenzene		50.0	52.5	ug/L	1.89	5.10	20	
p-Isopropyltoluene		50.0	53.8	ug/L	3.24	7.50	20	
4-Methyl-2-Pentanone		50.0	54.8	ug/L	0.0698	9.70	20	
Methylene Chloride		50.0	49.0	ug/L	0.332	2.00	20	
Naphthalene		50.0	58.0	ug/L	2.11	16.1	20	
n-Propylbenzene		50.0	48.1	ug/L	4.05	3.90	20	
Styrene		50.0	58.1	ug/L	1.36	16.2	20	
1,1,1,2-Tetrachloroethane		50.0	51.4	ug/L	0.466	2.80	20	
Tetrachloroethene		50.0	49.9	ug/L	0.380	0.100	20	
1,2,3-Trichlorobenzene		50.0	54.3	ug/L	1.07	8.60	20	
1,2,4-Trichlorobenzene		50.0	53.7	ug/L	1.19	7.40	20	
1,1,1-Trichloroethane		50.0	52.2	ug/L	0.545	4.50	20	
1,1,2-Trichloroethane		50.0	49.1	ug/L	0.314	1.80	20	
Trichloroethene		50.0	51.5	ug/L	0.386	3.00	20	
Trichlorofluoromethane		50.0	57.5	ug/L	0.578	14.9	20	
1,2,3-Trichloropropane		50.0	48.5	ug/L	0.198	3.10	20	
1,2,4-Trimethylbenzene		50.0	57.3	ug/L	3.41	14.6	20	
1,3,5-Trimethylbenzene		50.0	56.4	ug/L	3.35	12.7	20	
o-Xylene		50.0	49.0	ug/L	0.766	2.10	20	
m-,p-Xylene		100	106	ug/L	0.812	6.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3679711
Report generated 07/29/2014 08:38

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14071430 Run Date: 07/25/2014 Sample ID: WG485784-02
Instrument ID: HPMS11 Run Time: 14:14 Method: 8260B
File ID: 11M02708 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG485785 Cal ID: HPMS11 - 27-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.9	ug/L	0.573	1.89	20	
1,1-Dichloroethene	CCC	50.0	53.3	ug/L	0.489	6.68	20	
1,2-Dichloropropane	CCC	50.0	52.1	ug/L	0.315	4.29	20	
Ethylbenzene	CCC	50.0	50.4	ug/L	0.686	0.754	20	
Toluene	CCC	50.0	51.7	ug/L	1.74	3.47	20	
Vinyl Chloride	CCC	50.0	53.2	ug/L	0.453	6.36	20	
Bromoform	SPCC	50.0	61.2	ug/L	0.286	22.3	20	*
Chlorobenzene	SPCC	50.0	51.0	ug/L	1.24	2.07	20	
Chloromethane	SPCC	50.0	47.3	ug/L	0.447	5.36	20	
1,1-Dichloroethane	SPCC	50.0	51.8	ug/L	0.569	3.67	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	54.4	ug/L	0.732	8.89	20	
Xylenes		150	158	ug/L	0.808	5.19	20	
Acetone		50.0	54.4	ug/L	0.0549	8.72	20	
Benzene		50.0	50.7	ug/L	1.23	1.43	20	
Bromobenzene		50.0	48.2	ug/L	0.971	3.50	20	
Bromochloromethane		50.0	53.6	ug/L	0.224	7.15	20	
Bromodichloromethane		50.0	52.9	ug/L	0.445	5.89	20	
Bromomethane		50.0	44.9	ug/L	0.215	10.1	20	
2-Butanone		50.0	59.8	ug/L	0.0866	19.6	20	
n-Butylbenzene		50.0	58.0	ug/L	2.89	15.9	20	
sec-Butylbenzene		50.0	54.2	ug/L	3.88	8.49	20	
tert-Butylbenzene		50.0	49.6	ug/L	0.666	0.746	20	
Carbon Disulfide		50.0	54.0	ug/L	1.04	7.94	20	
Carbon Tetrachloride		50.0	53.9	ug/L	0.505	7.72	20	
Dibromochloromethane		50.0	55.9	ug/L	0.450	11.8	20	
Chloroethane		50.0	52.6	ug/L	0.225	5.15	20	
2-Chlorotoluene		50.0	49.3	ug/L	2.62	1.46	20	
4-Chlorotoluene		50.0	50.1	ug/L	2.69	0.190	20	
1,2-Dibromo-3-Chloropropane		50.0	60.3	ug/L	0.118	20.6	20	*
1,2-Dibromoethane		50.0	54.6	ug/L	0.345	9.22	20	
Dibromomethane		50.0	53.9	ug/L	0.186	7.79	20	
1,2-Dichlorobenzene		50.0	51.3	ug/L	1.72	2.50	20	
1,3-Dichlorobenzene		50.0	50.2	ug/L	1.83	0.474	20	
1,4-Dichlorobenzene		50.0	50.3	ug/L	1.84	0.639	20	
Dichlorodifluoromethane		50.0	56.5	ug/L	0.306	13.0	20	
1,2-Dichloroethane		50.0	52.2	ug/L	0.413	4.43	20	
cis-1,2-Dichloroethene		50.0	50.4	ug/L	0.366	0.770	20	
trans-1,2-Dichloroethene		50.0	49.6	ug/L	0.332	0.832	20	
1,3-Dichloropropane		50.0	52.6	ug/L	0.578	5.27	20	
2,2-Dichloropropane		50.0	54.2	ug/L	0.533	8.34	20	
cis-1,3-Dichloropropene		50.0	55.5	ug/L	0.524	11.0	20	
trans-1,3-Dichloropropene		50.0	57.4	ug/L	0.623	14.7	20	

CCV - Modified 03/05/2008
PDF File ID: 3679760
Report generated 07/29/2014 08:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14071430 Run Date: 07/25/2014 Sample ID: WG485784-02
Instrument ID: HPMS11 Run Time: 14:14 Method: 8260B
File ID: 11M02708 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG485785 Cal ID: HPMS11 - 27-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.0	ug/L	0.445	2.02	20	
2-Hexanone		50.0	62.0	ug/L	0.163	24.1	20	*
Hexachlorobutadiene		50.0	51.2	ug/L	0.459	2.34	20	
Isopropylbenzene		50.0	54.5	ug/L	1.95	8.90	20	
p-Isopropyltoluene		50.0	55.9	ug/L	3.37	11.7	20	
4-Methyl-2-Pentanone		50.0	59.3	ug/L	0.0754	18.5	20	
Methylene Chloride		50.0	50.5	ug/L	0.342	1.01	20	
Naphthalene		50.0	56.4	ug/L	2.05	12.8	20	
n-Propylbenzene		50.0	50.7	ug/L	4.27	1.41	20	
Styrene		50.0	57.3	ug/L	1.34	14.6	20	
1,1,1,2-Tetrachloroethane		50.0	52.1	ug/L	0.472	4.23	20	
Tetrachloroethene		50.0	48.8	ug/L	0.371	2.33	20	
1,2,3-Trichlorobenzene		50.0	52.6	ug/L	1.03	5.24	20	
1,2,4-Trichlorobenzene		50.0	51.1	ug/L	1.14	2.26	20	
1,1,1-Trichloroethane		50.0	51.4	ug/L	0.536	2.81	20	
1,1,2-Trichloroethane		50.0	52.8	ug/L	0.337	5.68	20	
Trichloroethene		50.0	48.5	ug/L	0.364	3.03	20	
Trichlorofluoromethane		50.0	52.1	ug/L	0.524	4.29	20	
1,2,3-Trichloropropane		50.0	53.4	ug/L	0.218	6.74	20	
1,2,4-Trimethylbenzene		50.0	54.7	ug/L	3.26	9.37	20	
1,3,5-Trimethylbenzene		50.0	53.0	ug/L	3.15	6.10	20	
o-Xylene		50.0	51.1	ug/L	0.800	2.17	20	
m-,p-Xylene		100	107	ug/L	0.816	6.70	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3679760
Report generated 07/29/2014 08:38

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14071430
Instrument ID: HPMS11
Workgroup (AAB#): WG485785

ICAL CCV Number: WG482009-08
CAL ID: HPMS11-27-JUN-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG482009-08	NA	NA	396828	765291	1022945
Upper Limit	NA	NA	793656	1530582	2045890
Lower Limit	NA	NA	198414	382646	511473
L14071430-01	1.00	01	240615	537596	735565
L14071430-02	1.00	01	251816	546032	745593
L14071430-03	1.00	01	239744	526810	729409
L14071430-04	10.0	DL01	230329	515255	708453
L14071430-05	1.00	01	245032	533226	735633
L14071430-06	1.00	01	232670	523291	720416
L14071430-07	1.00	01	239671	537813	727469
L14071430-08	1.00	01	222467	485416	669575
WG485785-01	1.00	01	266680	582026	799037
WG485785-02	1.00	01	313731	603484	805724
WG485785-03	1.00	01	320785	612926	819268

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3679777
Report generated 07/29/2014 08:38

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14071430
Instrument ID: HPMS11
Workgroup (AAB#): WG485785

ICAL CCV Number: WG482009-08
CAL ID: HPMS11-27-JUN-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG482009-08	NA	NA	17.1	14.28	10.65
Upper Limit	NA	NA	17.6	14.78	11.15
Lower Limit	NA	NA	16.6	13.78	10.15
L14071430-01	1.00	01	17.09	14.28	10.65
L14071430-02	1.00	01	17.09	14.28	10.65
L14071430-03	1.00	01	17.09	14.28	10.65
L14071430-04	10.0	DL01	17.09	14.28	10.65
L14071430-05	1.00	01	17.09	14.28	10.65
L14071430-06	1.00	01	17.09	14.28	10.65
L14071430-07	1.00	01	17.09	14.28	10.65
L14071430-08	1.00	01	17.09	14.28	10.65
WG485785-01	1.00	01	17.09	14.28	10.65
WG485785-02	1.00	01	17.09	14.28	10.65
WG485785-03	1.00	01	17.09	14.28	10.65

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3679787
Report generated: 07/29/2014 08:38

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02722.D Vial: 16
Acq On : 25 Jul 2014 21:42 Operator: FJB
Sample : L14071430-01 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 09:38:27 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	735565	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	537596	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	240615	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	218430	23.7783 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.12%		
43) 1,2-Dichloroethane-d4	10.27	65	225071	25.1076 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.44%		
57) Toluene-d8	12.51	98	766970	24.3514 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.40%		
78) p-Bromofluorobenzene	15.68	95	264153	25.3919 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.56%		

Target Compounds					Qvalue
3) Chloromethane	3.74	50	2053	0.1477 ug/L #	42
13) Acetone	6.38	43	936	0.6301 ug/L	84

(#) = qualifier out of range (m) = manual integration
11M02722.D 8260WTR.M Mon Jul 28 09:38:28 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02722.D Vial: 16
Acq On : 25 Jul 2014 21:42 Operator: FJB
Sample : L14071430-01 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 9:38 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

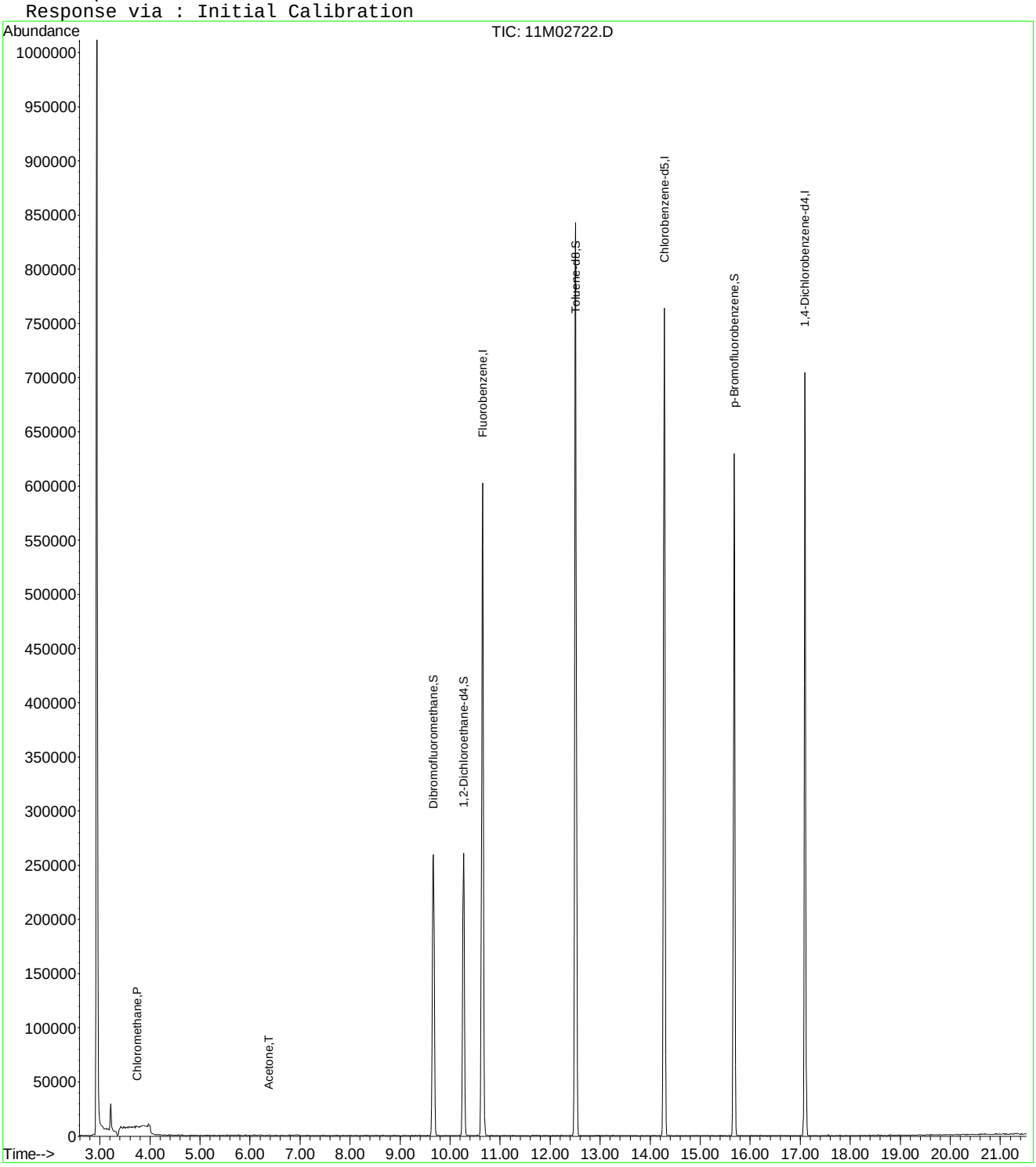

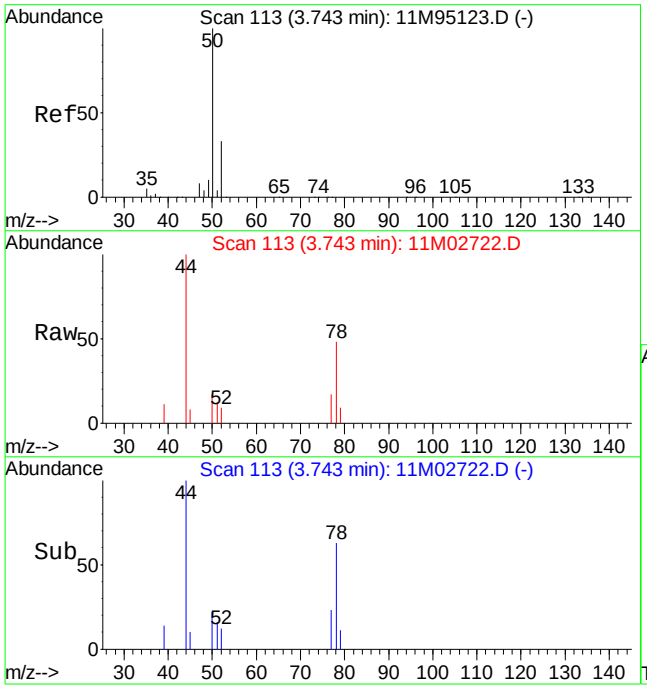

#3
Chloromethane
Concen: 0.15 ug/L
RT: 3.74 min Scan# 113
Delta R.T. 0.00 min
Lab File: 11M02722.D
Acq: 25 Jul 2014 21:42

Tgt Ion: 50 Resp: 2053

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.4	45.4#

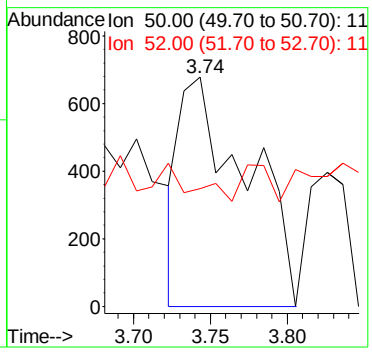

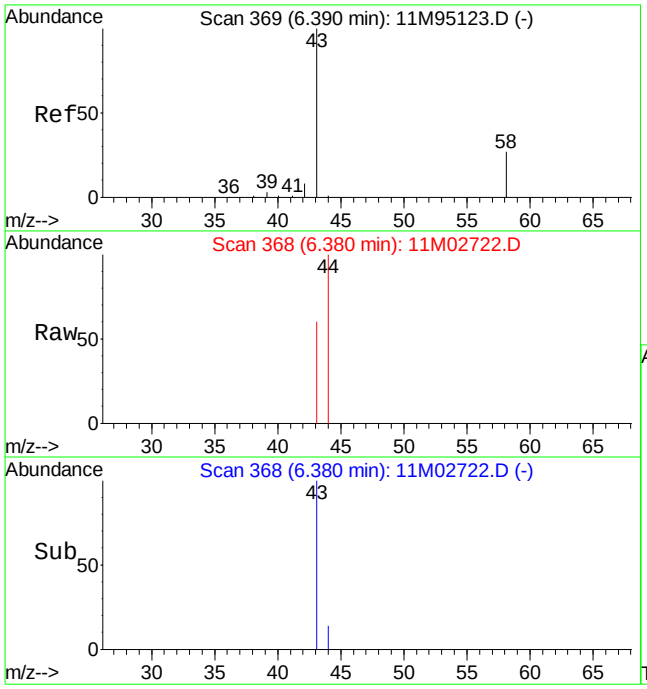

#13
Acetone
Concen: 0.63 ug/L
RT: 6.38 min Scan# 368
Delta R.T. 0.00 min
Lab File: 11M02722.D
Acq: 25 Jul 2014 21:42

Tgt Ion: 43 Resp: 936

Ion	Ratio	Lower	Upper
43	100		
58	19.9	17.2	40.0

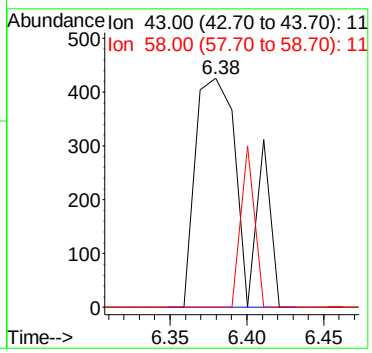

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02723.D Vial: 17
Acq On : 25 Jul 2014 22:13 Operator: FJB
Sample : L14071430-02 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 09:38:29 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	745593	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	546032	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	251816	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	217973	23.4094 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.64%		
43) 1,2-Dichloroethane-d4	10.27	65	226867	24.9676 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.88%		
57) Toluene-d8	12.51	98	769265	24.0470 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.20%		
78) p-Bromofluorobenzene	15.67	95	266498	24.4778 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.92%		

Target Compounds					Qvalue
3) Chloromethane	3.74	50	3393	0.2408 ug/L #	29
13) Acetone	6.38	43	617	0.4098 ug/L #	46
27) 1,1-Dichloroethane	8.40	63	5474	0.3346 ug/L #	91

(#) = qualifier out of range (m) = manual integration
11M02723.D 8260WTR.M Mon Jul 28 09:38:31 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02723.D Vial: 17
Acq On : 25 Jul 2014 22:13 Operator: FJB
Sample : L14071430-02 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 9:38 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

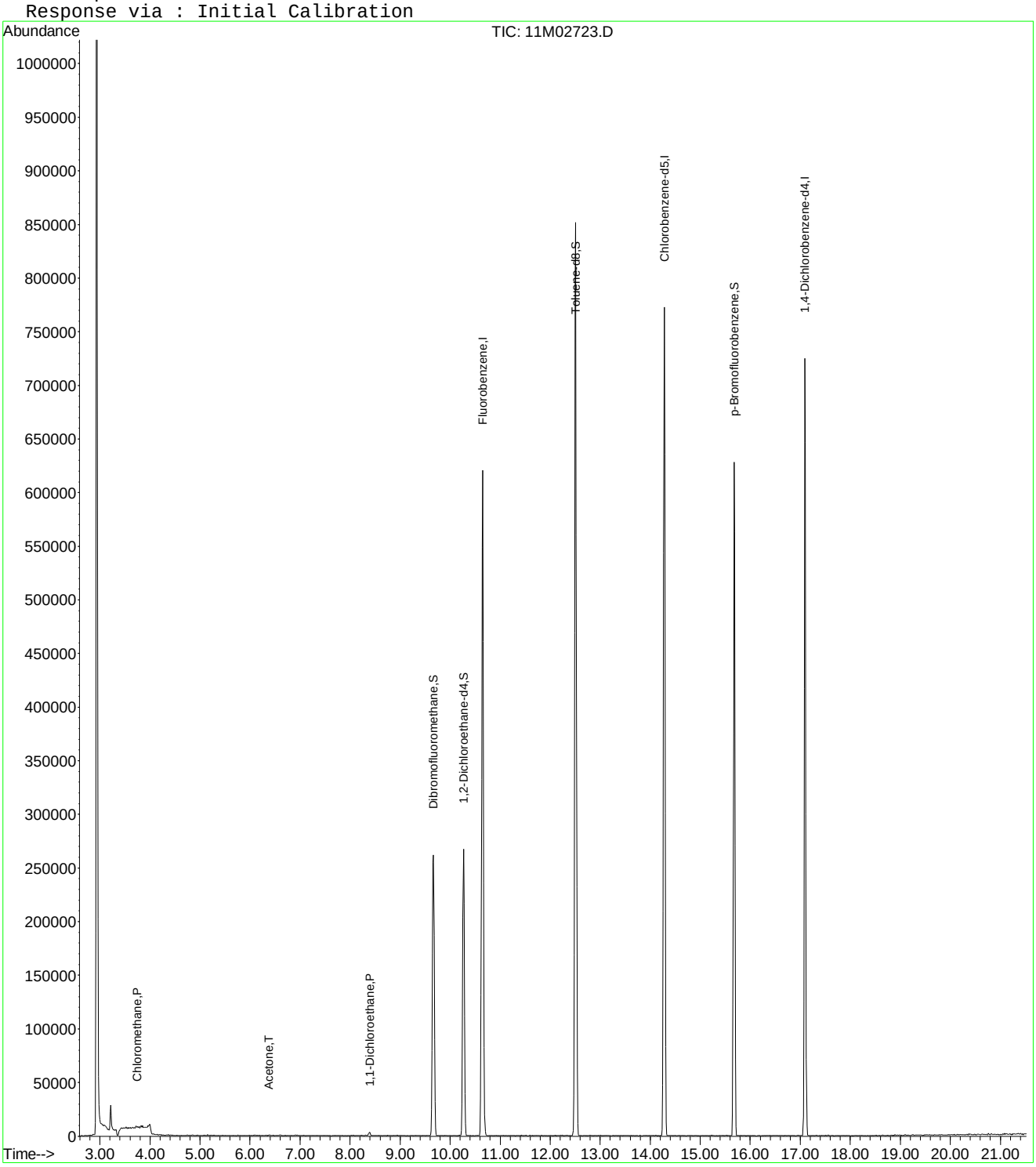

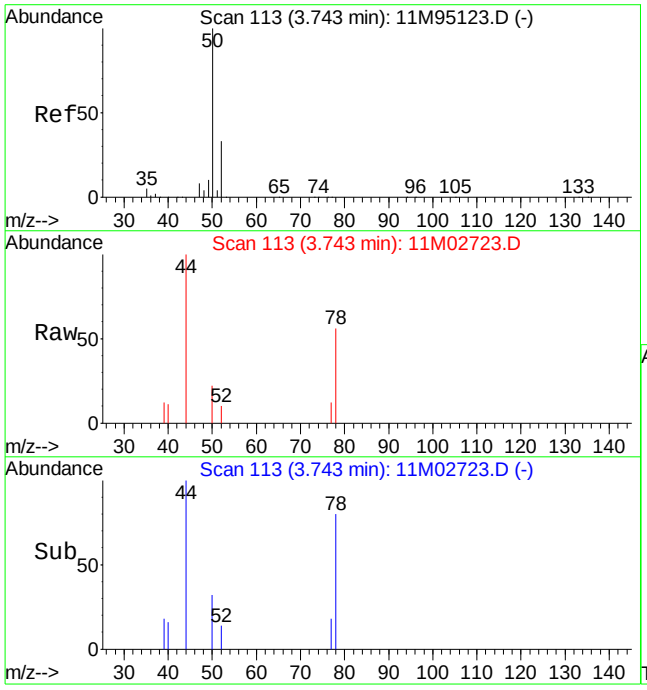

#3
Chloromethane
Concen: 0.24 ug/L
RT: 3.74 min Scan# 113
Delta R.T. 0.00 min
Lab File: 11M02723.D
Acq: 25 Jul 2014 22:13

Tgt Ion: 50 Resp: 3393

Ion	Ratio	Lower	Upper
50	100		
52	71.9	19.4	45.4#

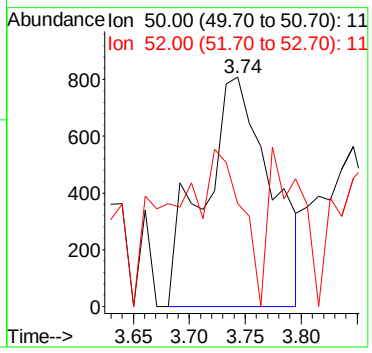

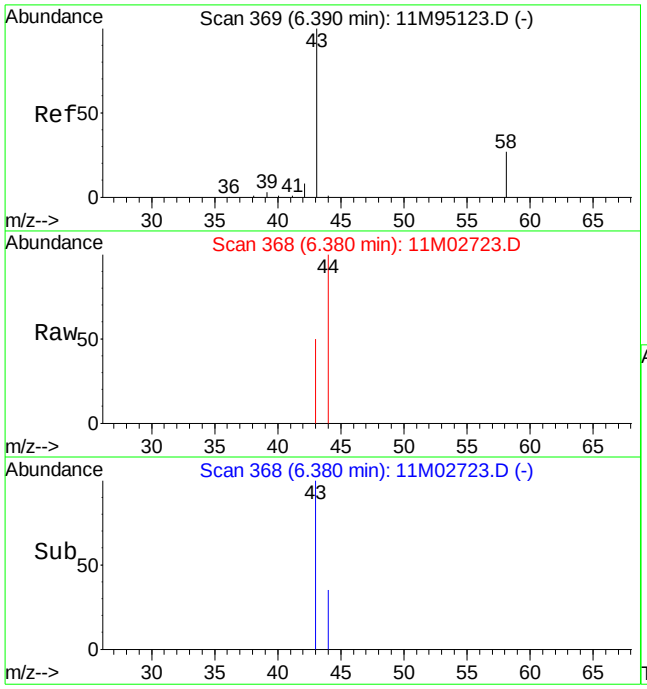

#13
Acetone
Concen: 0.41 ug/L
RT: 6.38 min Scan# 368
Delta R.T. 0.00 min
Lab File: 11M02723.D
Acq: 25 Jul 2014 22:13

Tgt Ion: 43 Resp: 617

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.2	40.0#

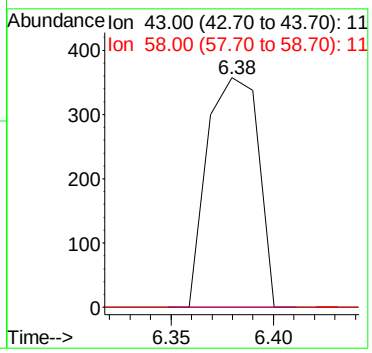

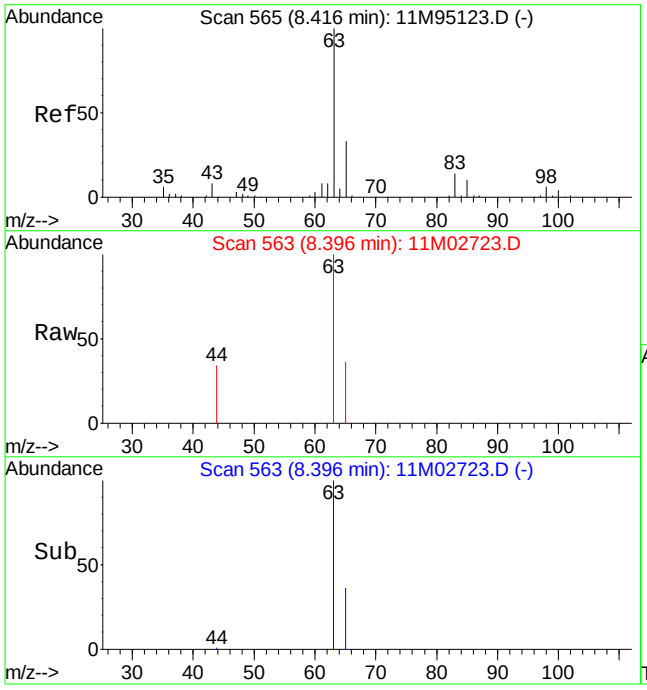

#27
1,1-Dichloroethane
Concen: 0.33 ug/L
RT: 8.40 min Scan# 563
Delta R.T. 0.01 min
Lab File: 11M02723.D
Acq: 25 Jul 2014 22:13

Tgt Ion: 63 Resp: 5474

Ion	Ratio	Lower	Upper
63	100		
65	29.4	19.3	45.1
83	5.0	7.9	18.5#

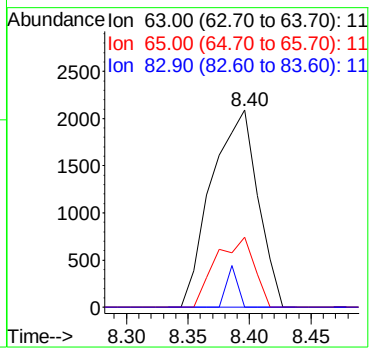

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02724.D Vial: 18
Acq On : 25 Jul 2014 22:45 Operator: FJB
Sample : L14071430-03 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 09:38:33 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	729409	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	526810	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	239744	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	217018	23.8240 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.28%		
43) 1,2-Dichloroethane-d4	10.27	65	223638	25.1583 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.64%		
57) Toluene-d8	12.51	98	761616	24.6765 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.72%		
78) p-Bromofluorobenzene	15.67	95	264088	25.4778 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.92%		

Target Compounds

					Qvalue
3) Chloromethane	3.73	50	2964	0.2150 ug/L #	37
4) Vinyl Chloride	3.98	62	3372	0.2715 ug/L #	72
13) Acetone	6.39	43	782	0.5309 ug/L #	46
14) 1,1-Dichloroethene	6.60	61	460975	34.5021 ug/L	90
27) 1,1-Dichloroethane	8.39	63	166903	10.4285 ug/L	99
44) 1,2-Dichloroethane	10.38	62	7887	0.6841 ug/L	88
49) 1,4-Dioxane	11.60	88	7796	145.4213 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M02724.D 8260WTR.M Mon Jul 28 09:38:34 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02724.D Vial: 18
Acq On : 25 Jul 2014 22:45 Operator: FJB
Sample : L14071430-03 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 9:38 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

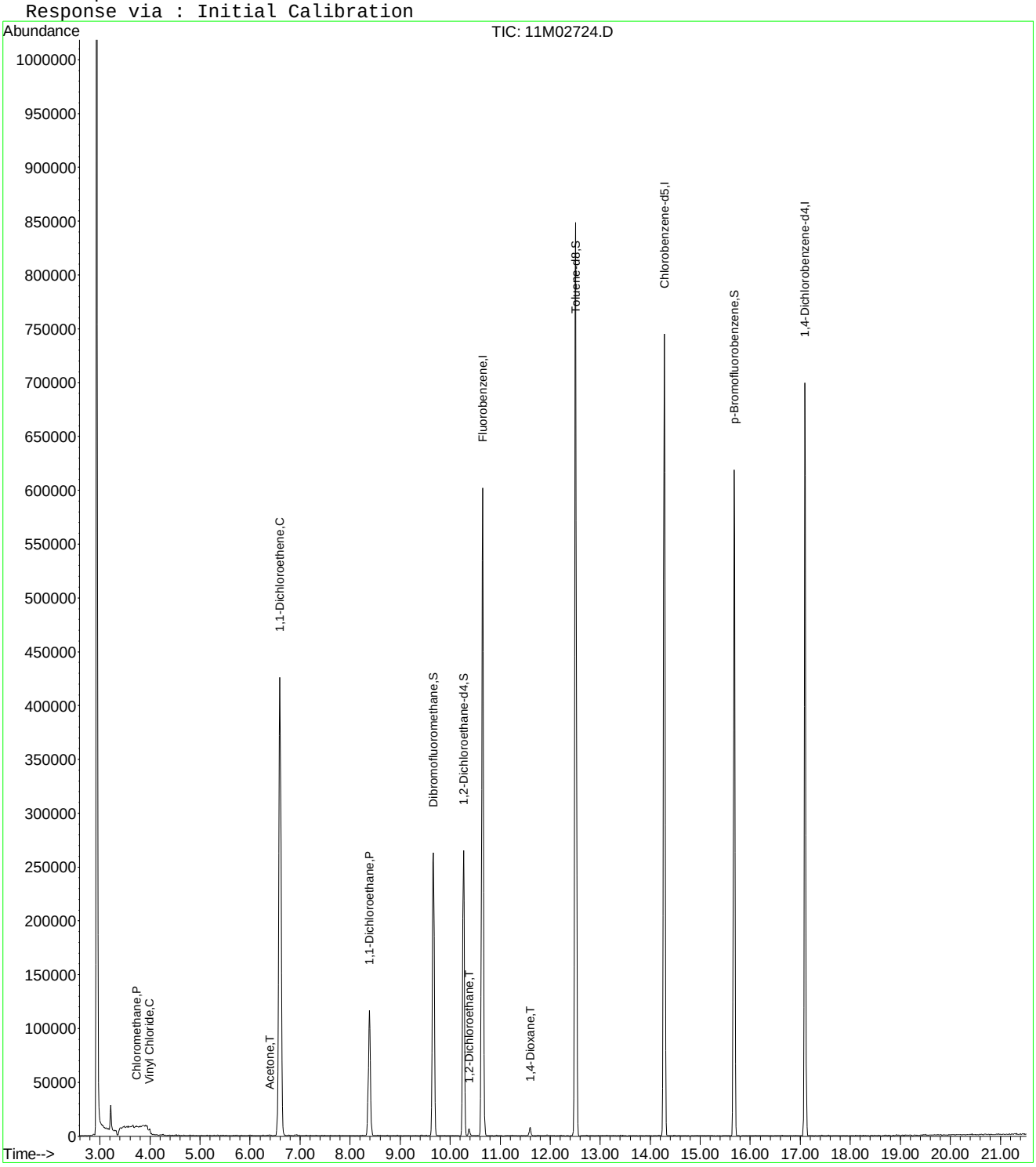

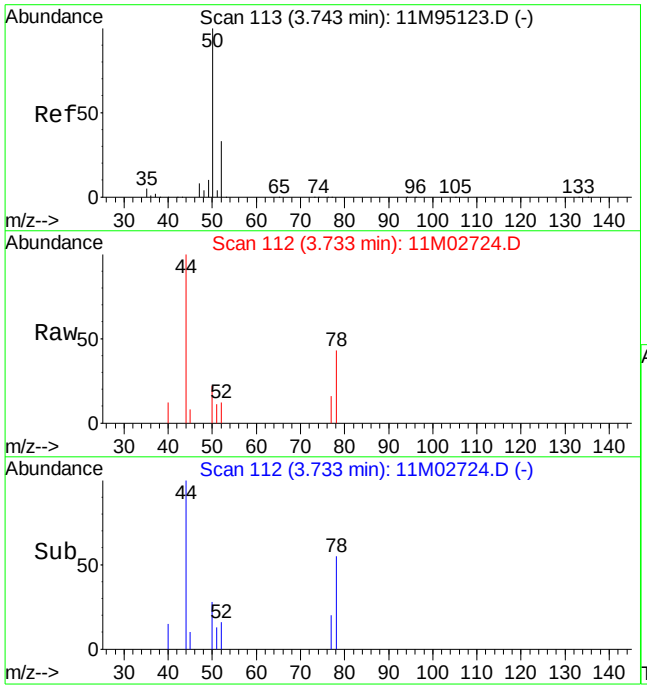

#3
Chloromethane
Concen: 0.22 ug/L
RT: 3.73 min Scan# 112
Delta R.T. -0.01 min
Lab File: 11M02724.D
Acq: 25 Jul 2014 22:45

Tgt Ion: 50 Resp: 2964

Ion	Ratio	Lower	Upper
50	100		
52	67.9	19.4	45.4#

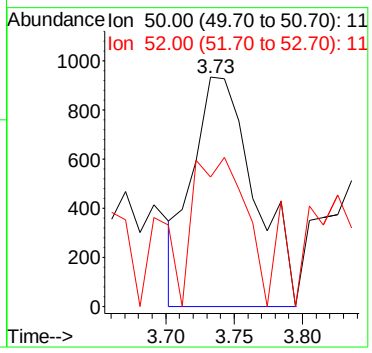

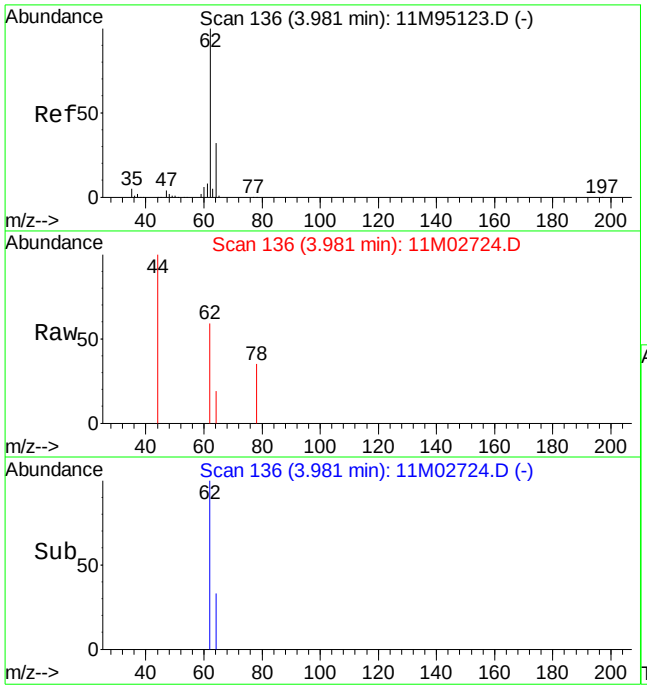

#4
Vinyl Chloride
Concen: 0.27 ug/L
RT: 3.98 min Scan# 136
Delta R.T. 0.00 min
Lab File: 11M02724.D
Acq: 25 Jul 2014 22:45

Tgt Ion: 62 Resp: 3372

Ion	Ratio	Lower	Upper
62	100		
64	16.8	19.3	45.1#

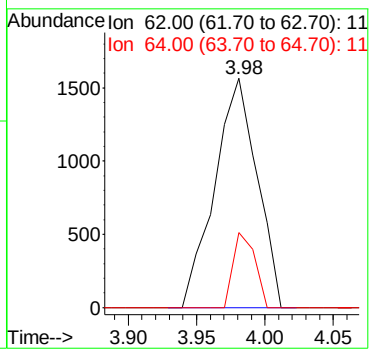

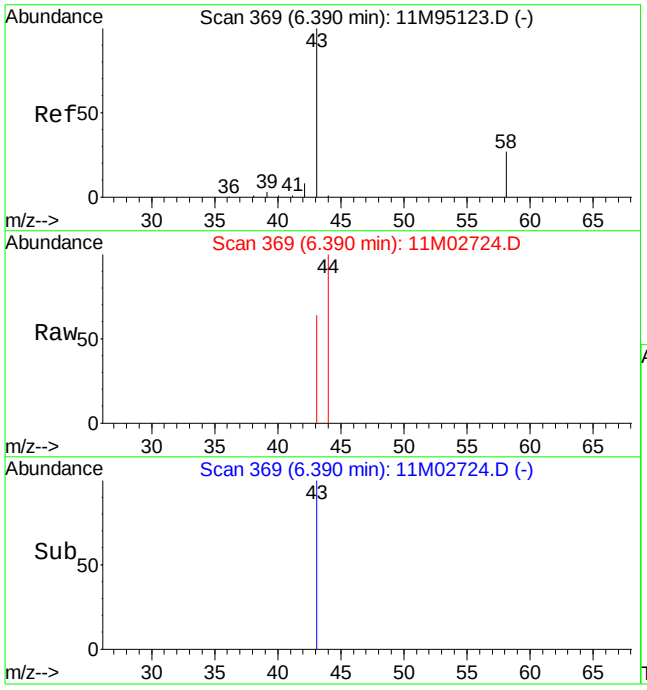

#13
Acetone
Concen: 0.53 ug/L
RT: 6.39 min Scan# 369
Delta R.T. 0.01 min
Lab File: 11M02724.D
Acq: 25 Jul 2014 22:45

Tgt Ion: 43 Resp: 782

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.2	40.0#

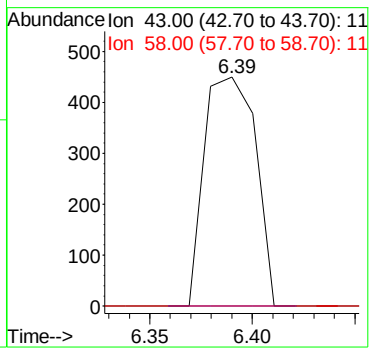

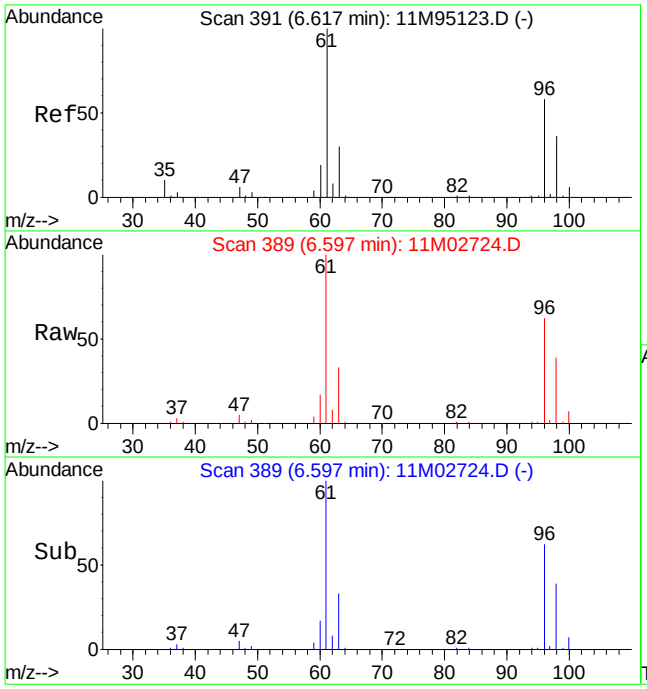

#14
1,1-Dichloroethene
Concen: 34.50 ug/L
RT: 6.60 min Scan# 389
Delta R.T. 0.00 min
Lab File: 11M02724.D
Acq: 25 Jul 2014 22:45

Tgt Ion: 61 Resp: 460975

Ion	Ratio	Lower	Upper
61	100		
96	63.4	33.5	78.1

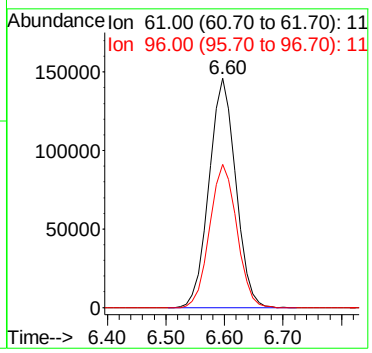

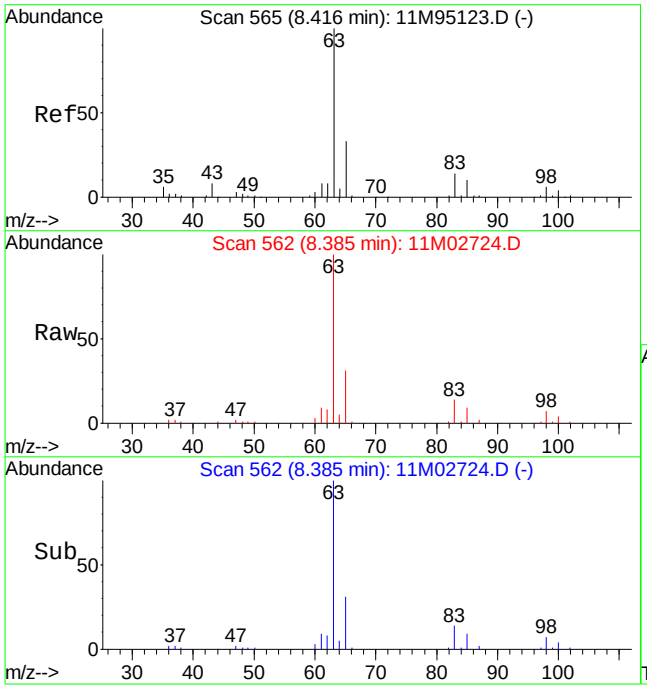

#27
1,1-Dichloroethane
Concen: 10.43 ug/L
RT: 8.39 min Scan# 562
Delta R.T. 0.00 min
Lab File: 11M02724.D
Acq: 25 Jul 2014 22:45

Tgt Ion: 63 Resp: 166903

Ion	Ratio	Lower	Upper
63	100		
65	32.1	19.3	45.1
83	13.7	7.9	18.5

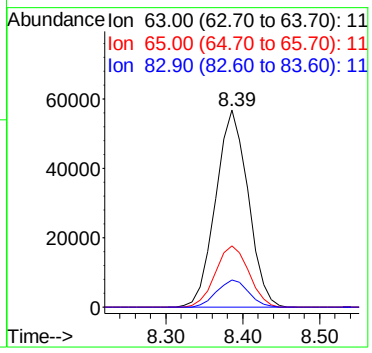

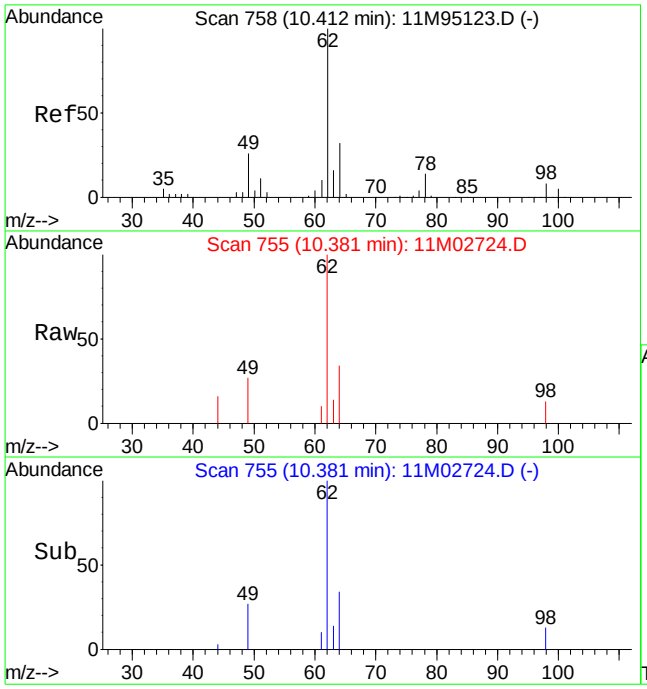

#44
1,2-Dichloroethane
Concen: 0.68 ug/L
RT: 10.38 min Scan# 755
Delta R.T. 0.00 min
Lab File: 11M02724.D
Acq: 25 Jul 2014 22:45

Tgt Ion: 62 Resp: 7887

Ion	Ratio	Lower	Upper
62	100		
64	30.3	19.7	45.9
49	25.2	21.8	51.0

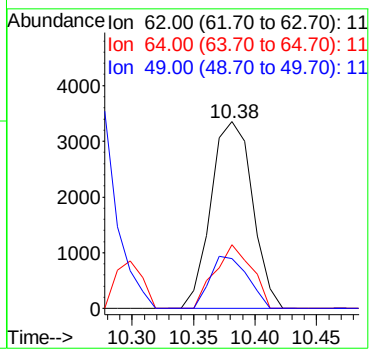

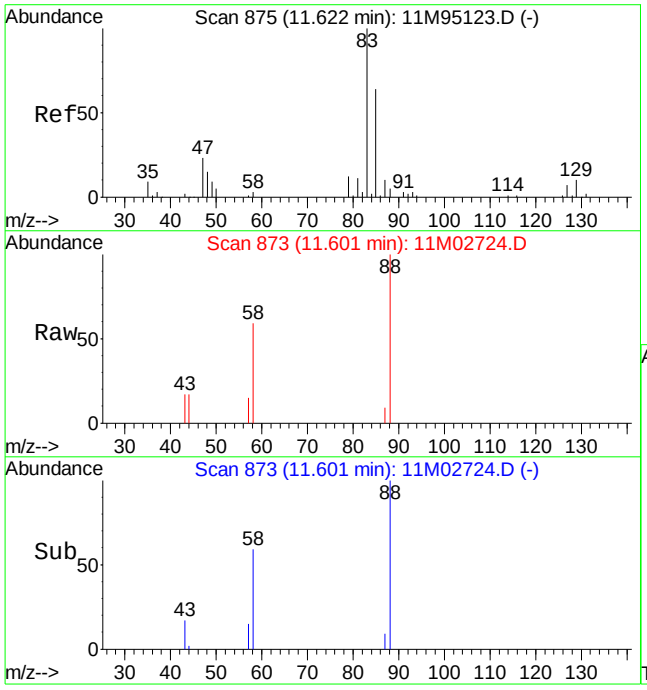

#49
1,4-Dioxane
Concen: 145.42 ug/L
RT: 11.60 min Scan# 873
Delta R.T. 0.00 min
Lab File: 11M02724.D
Acq: 25 Jul 2014 22:45

Tgt Ion: 88 Resp: 7796

Ion	Ratio	Lower	Upper
88	100		
58	64.2	40.1	93.5

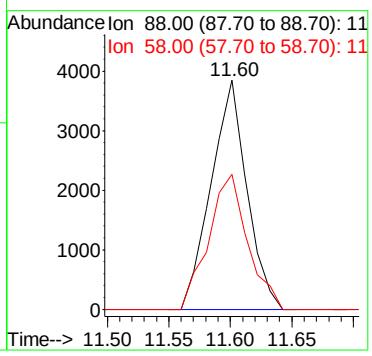

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02728.D Vial: 22
Acq On : 26 Jul 2014 00:53 Operator: FJB
Sample : L14071430-04 10X A 826-LOW Inst : hpms11
Misc : 1,10 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 09:38:47 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	708453	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	515255	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	230329	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	208604	23.5777 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.32%		
43) 1,2-Dichloroethane-d4	10.27	65	216290	25.0514 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.20%		
57) Toluene-d8	12.51	98	732470	24.2644 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.04%		
78) p-Bromofluorobenzene	15.67	95	250873	25.1923 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.76%		

Target Compounds

					Qvalue
13) Acetone	6.38	43	261	0.1824 ug/L #	46
14) 1,1-Dichloroethene	6.60	61	2457207	189.3522 ug/L	89
27) 1,1-Dichloroethane	8.39	63	88128	5.6693 ug/L	97
32) cis-1,2-Dichloroethene	9.19	96	2296	0.2230 ug/L	97
33) Chloroform	9.39	83	8180	0.5134 ug/L	94
44) 1,2-Dichloroethane	10.38	62	110790	9.8939 ug/L	93
46) Trichloroethene	11.13	130	3340	0.3144 ug/L	99
49) 1,4-Dioxane	11.60	88	285	5.4734 ug/L	99
61) 1,1,2-Trichloroethane	12.97	97	5093	0.7740 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M02728.D 8260WTR.M Mon Jul 28 09:38:48 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02728.D Vial: 22
Acq On : 26 Jul 2014 00:53 Operator: FJB
Sample : L14071430-04 10X A 826-LOW Inst : hpms11
Misc : 1,10 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 9:38 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

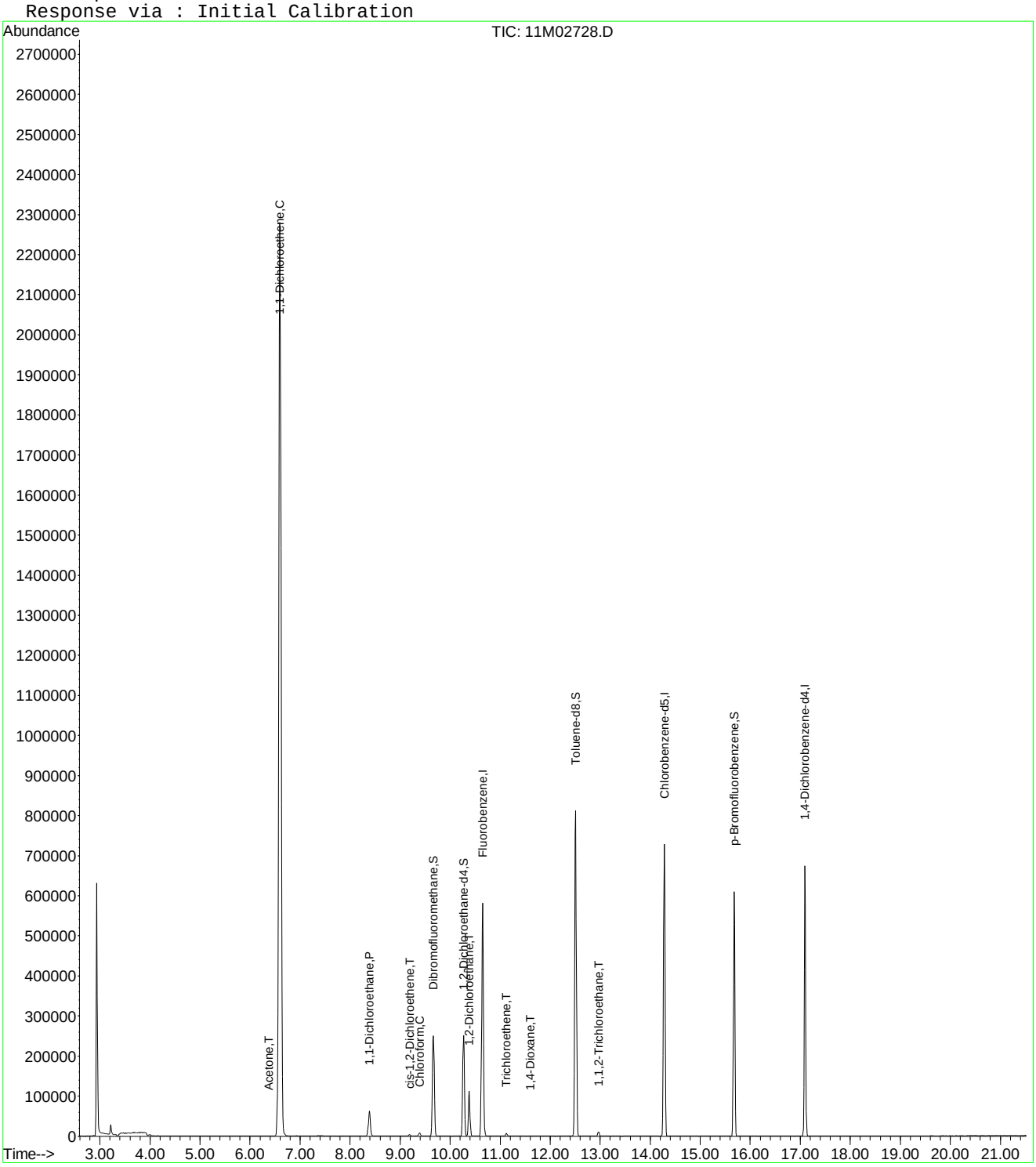

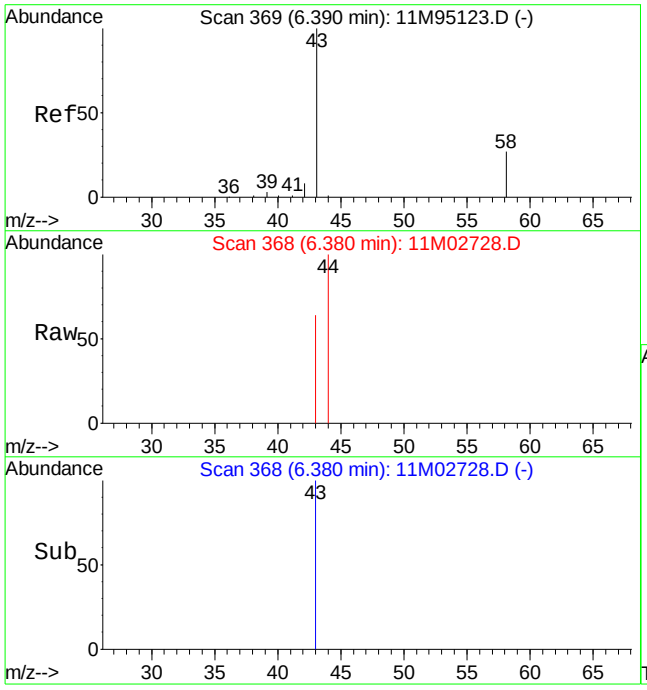

#13
Acetone
Concen: 0.18 ug/L
RT: 6.38 min Scan# 368
Delta R.T. 0.00 min
Lab File: 11M02728.D
Acq: 26 Jul 2014 00:53

Tgt Ion: 43 Resp: 261

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.2	40.0#

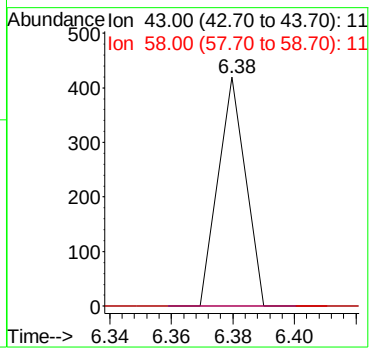

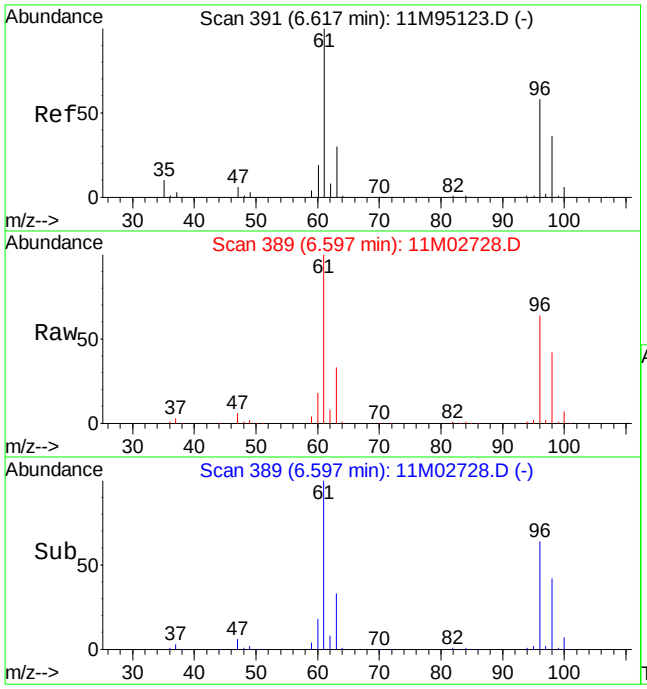

#14
1,1-Dichloroethene
Concen: 189.35 ug/L
RT: 6.60 min Scan# 389
Delta R.T. 0.00 min
Lab File: 11M02728.D
Acq: 26 Jul 2014 00:53

Tgt Ion: 61 Resp: 2457207

Ion	Ratio	Lower	Upper
61	100		
96	63.7	33.5	78.1

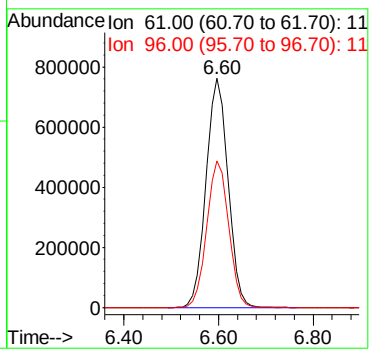

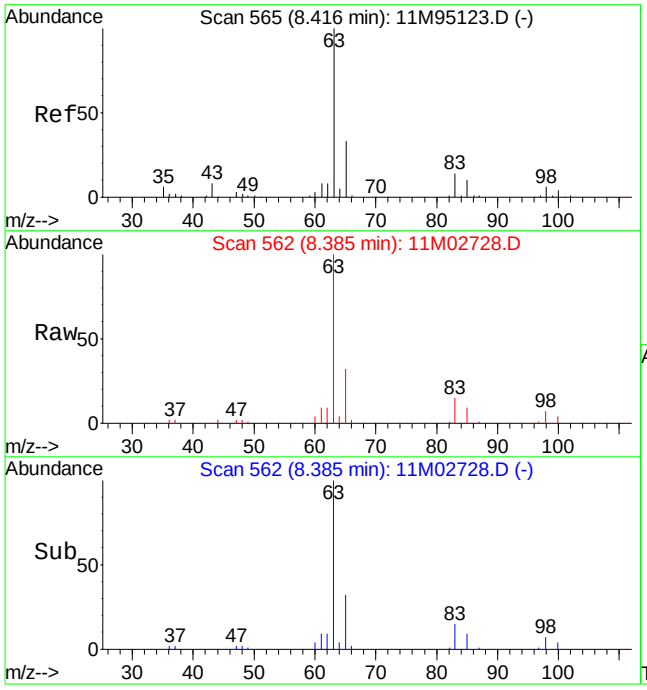

#27
1,1-Dichloroethane
Concen: 5.67 ug/L
RT: 8.39 min Scan# 562
Delta R.T. 0.00 min
Lab File: 11M02728.D
Acq: 26 Jul 2014 00:53

Tgt Ion: 63 Resp: 88128

Ion	Ratio	Lower	Upper
63	100		
65	33.4	19.3	45.1
83	14.9	7.9	18.5

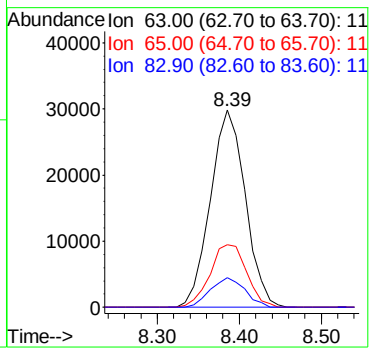

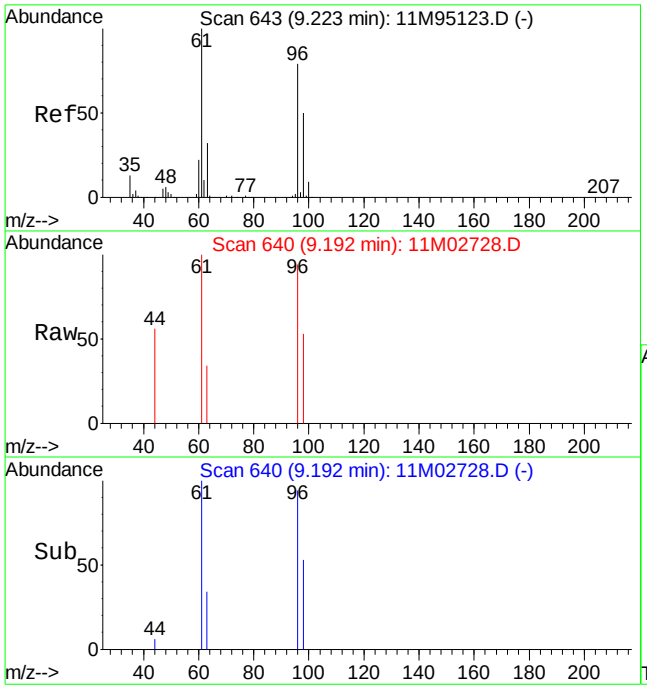

#32
cis-1,2-Dichloroethene
Concen: 0.22 ug/L
RT: 9.19 min Scan# 640
Delta R.T. 0.00 min
Lab File: 11M02728.D
Acq: 26 Jul 2014 00:53

Tgt Ion: 96 Resp: 2296

Ion	Ratio	Lower	Upper
96	100		
61	158.1	97.1	226.7

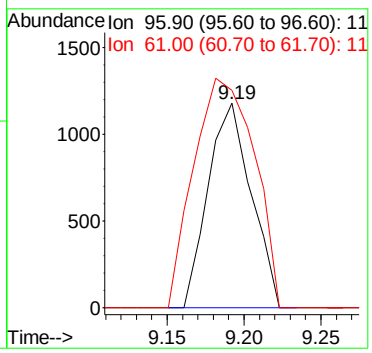

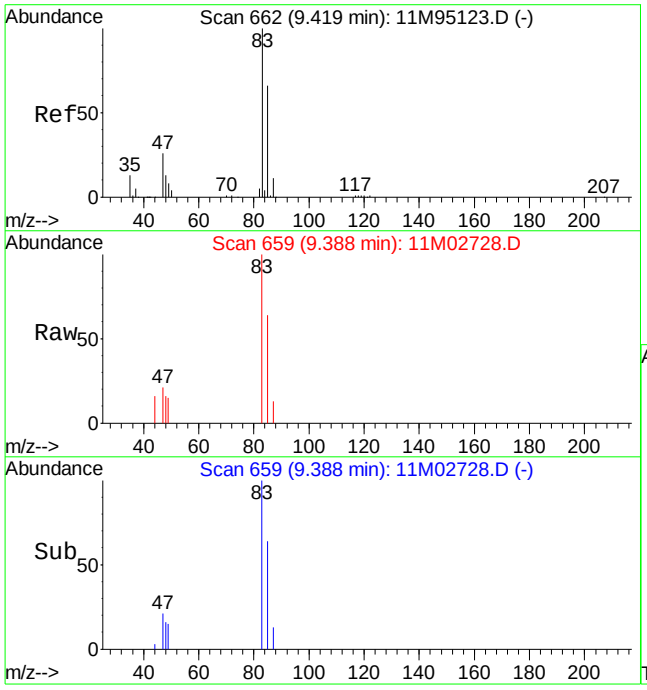

#33
Chloroform
Concen: 0.51 ug/L
RT: 9.39 min Scan# 659
Delta R.T. 0.00 min
Lab File: 11M02728.D
Acq: 26 Jul 2014 00:53

Tgt Ion: 83 Resp: 8180

Ion	Ratio	Lower	Upper
83	100		
85	69.9	39.2	91.6

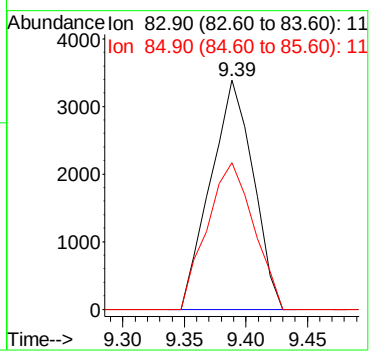

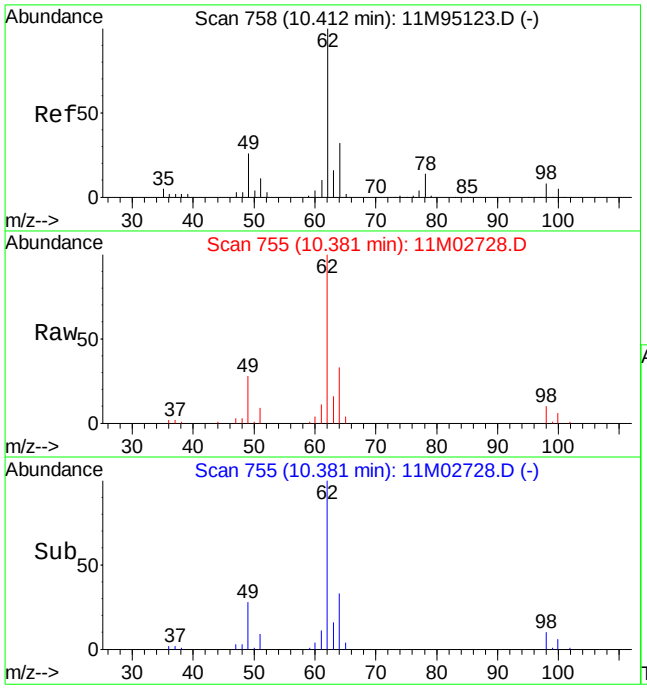

#44
1,2-Dichloroethane
Concen: 9.89 ug/L
RT: 10.38 min Scan# 755
Delta R.T. 0.00 min
Lab File: 11M02728.D
Acq: 26 Jul 2014 00:53

Tgt Ion: 62 Resp: 110790

Ion	Ratio	Lower	Upper
62	100		
64	33.0	19.7	45.9
49	28.5	21.8	51.0

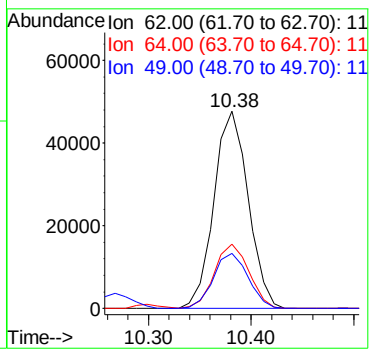

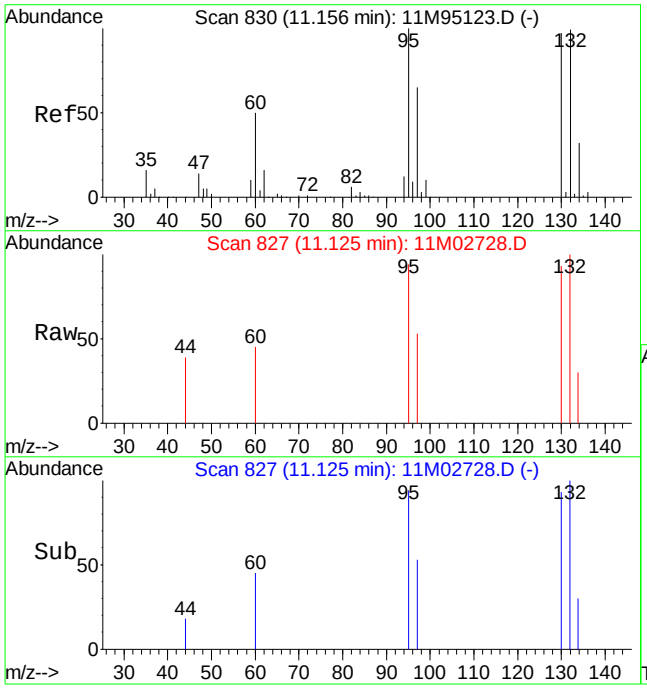

#46
Trichloroethene
Concen: 0.31 ug/L
RT: 11.13 min Scan# 827
Delta R.T. 0.00 min
Lab File: 11M02728.D
Acq: 26 Jul 2014 00:53

Tgt Ion:130 Resp: 3340

Ion	Ratio	Lower	Upper
130	100		
132	97.0	58.0	135.4
95	98.6	58.3	135.9

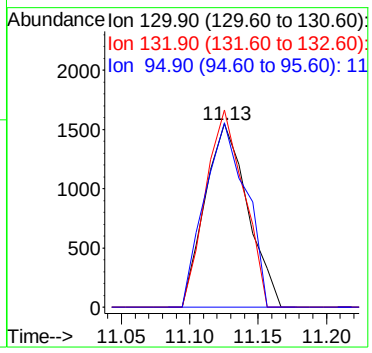

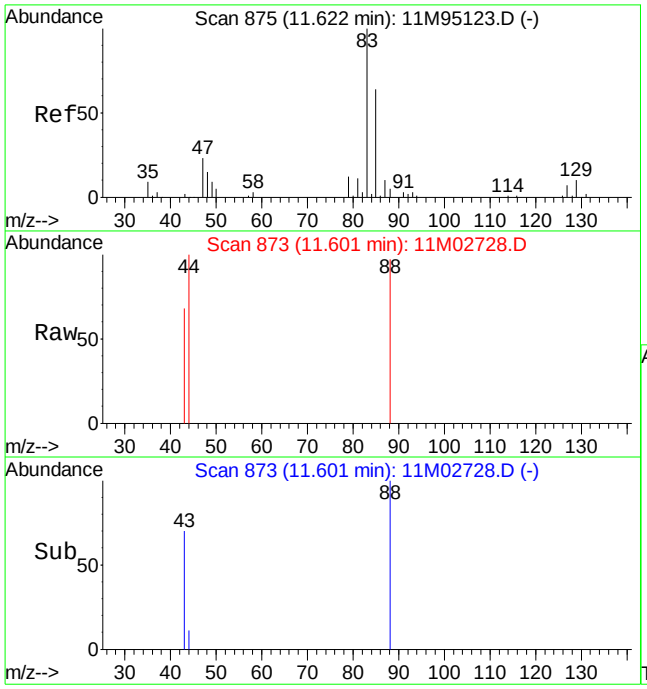

#49
1,4-Dioxane
Concen: 5.47 ug/L
RT: 11.60 min Scan# 873
Delta R.T. 0.00 min
Lab File: 11M02728.D
Acq: 26 Jul 2014 00:53

Tgt Ion: 88 Resp: 285

Ion	Ratio	Lower	Upper
88	100		
58	66.3	40.1	93.5

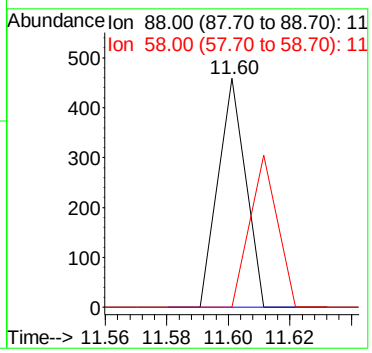

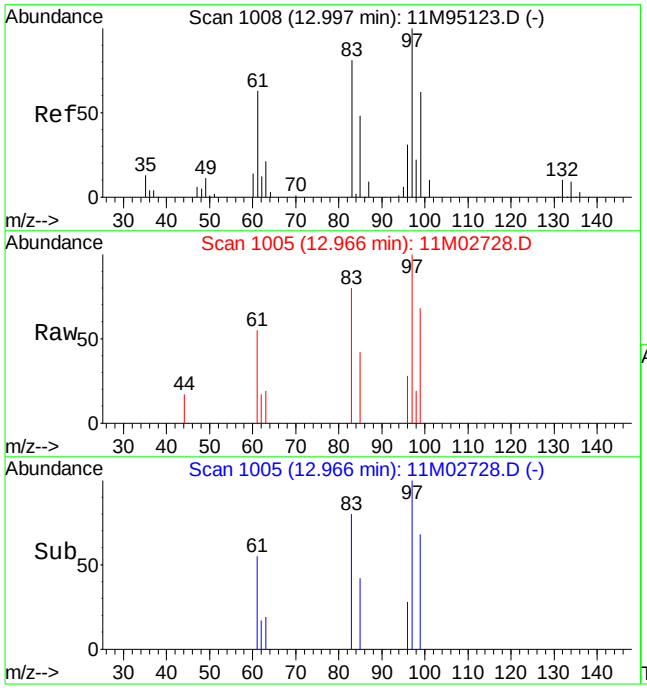

#61
1,1,2-Trichloroethane
Concen: 0.77 ug/L
RT: 12.97 min Scan# 1005
Delta R.T. 0.00 min
Lab File: 11M02728.D
Acq: 26 Jul 2014 00:53

Tgt Ion: 97 Resp: 5093

Ion	Ratio	Lower	Upper
97	100		
83	71.9	49.8	116.2

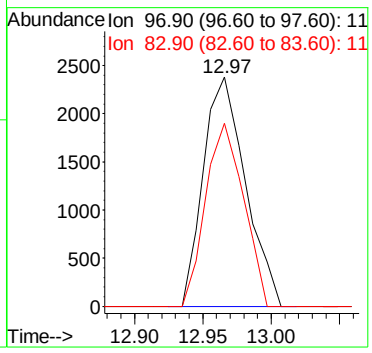

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02725.D Vial: 19
Acq On : 25 Jul 2014 23:17 Operator: FJB
Sample : L14071430-05 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 09:38:37 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	735633	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	533226	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	245032	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	216229	23.5366 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.16%		
43) 1,2-Dichloroethane-d4	10.27	65	224817	25.0770 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.32%		
57) Toluene-d8	12.51	98	762110	24.3954 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.60%		
78) p-Bromofluorobenzene	15.68	95	264360	24.9537 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.80%		

Target Compounds

					Qvalue
13) Acetone	6.38	43	565	0.3803 ug/L #	46
49) 1,4-Dioxane	11.61	88	227	4.1985 ug/L #	17

(#) = qualifier out of range (m) = manual integration
11M02725.D 8260WTR.M Mon Jul 28 09:38:38 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02725.D Vial: 19
Acq On : 25 Jul 2014 23:17 Operator: FJB
Sample : L14071430-05 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 9:38 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

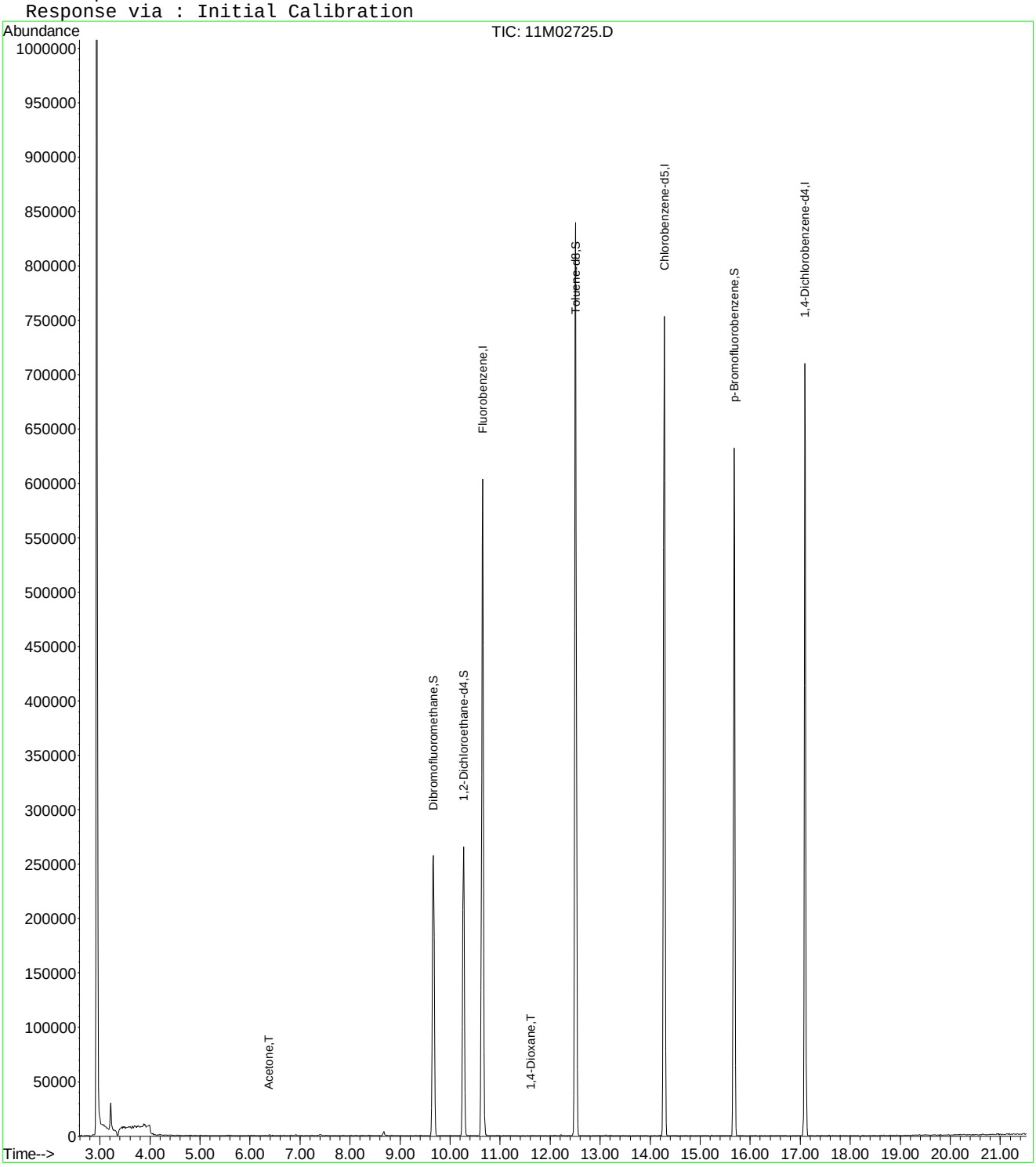

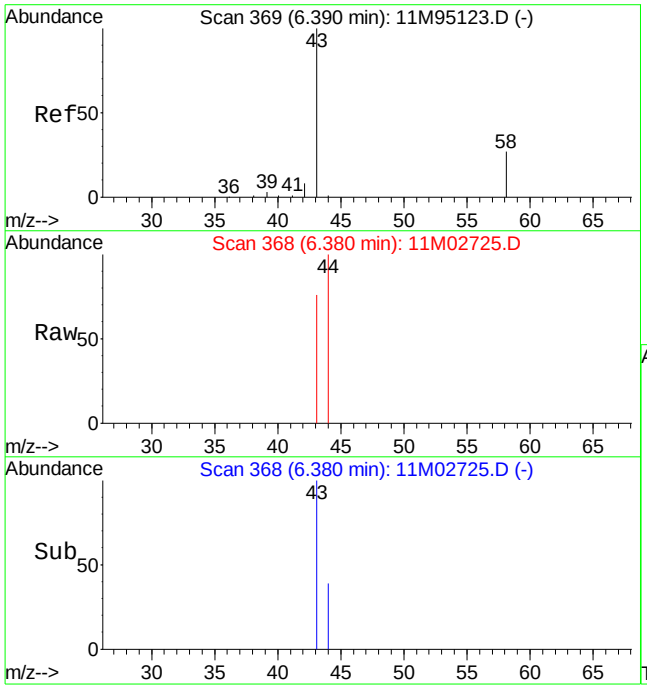

#13
Acetone
Concen: 0.38 ug/L
RT: 6.38 min Scan# 368
Delta R.T. 0.00 min
Lab File: 11M02725.D
Acq: 25 Jul 2014 23:17

Tgt Ion: 43 Resp: 565

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.2	40.0#

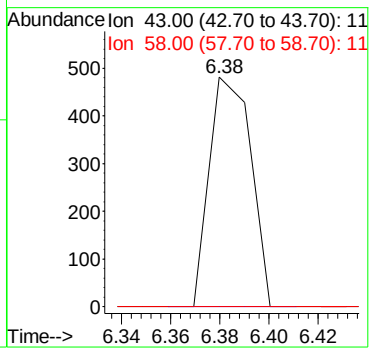

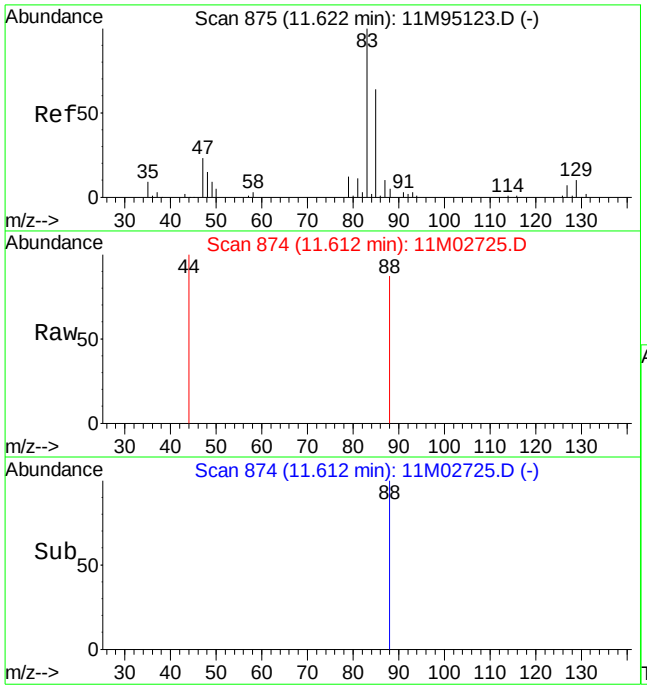

#49
1,4-Dioxane
Concen: 4.20 ug/L
RT: 11.61 min Scan# 874
Delta R.T. 0.01 min
Lab File: 11M02725.D
Acq: 25 Jul 2014 23:17

Tgt Ion: 88 Resp: 227

Ion	Ratio	Lower	Upper
88	100		
58	0.0	40.1	93.5#

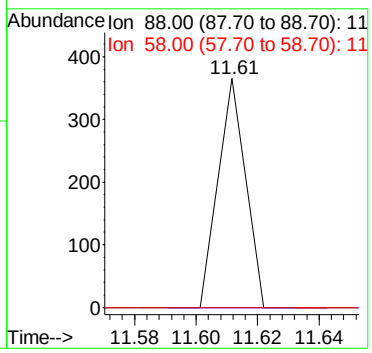

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02726.D Vial: 20
Acq On : 25 Jul 2014 23:49 Operator: FJB
Sample : L14071430-06 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 09:38:39 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	720416	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	523291	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	232670	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	213037	23.6789 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.72%		
43) 1,2-Dichloroethane-d4	10.27	65	219746	25.0291 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.12%		
57) Toluene-d8	12.51	98	743611	24.2552 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.04%		
78) p-Bromofluorobenzene	15.68	95	257878	25.6351 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.56%		

Target Compounds					Qvalue
3) Chloromethane	3.74	50	2922	0.2146 ug/L #	32
13) Acetone	6.39	43	714	0.4908 ug/L #	46

(#) = qualifier out of range (m) = manual integration
11M02726.D 8260WTR.M Mon Jul 28 09:38:41 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02726.D Vial: 20
Acq On : 25 Jul 2014 23:49 Operator: FJB
Sample : L14071430-06 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 9:38 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

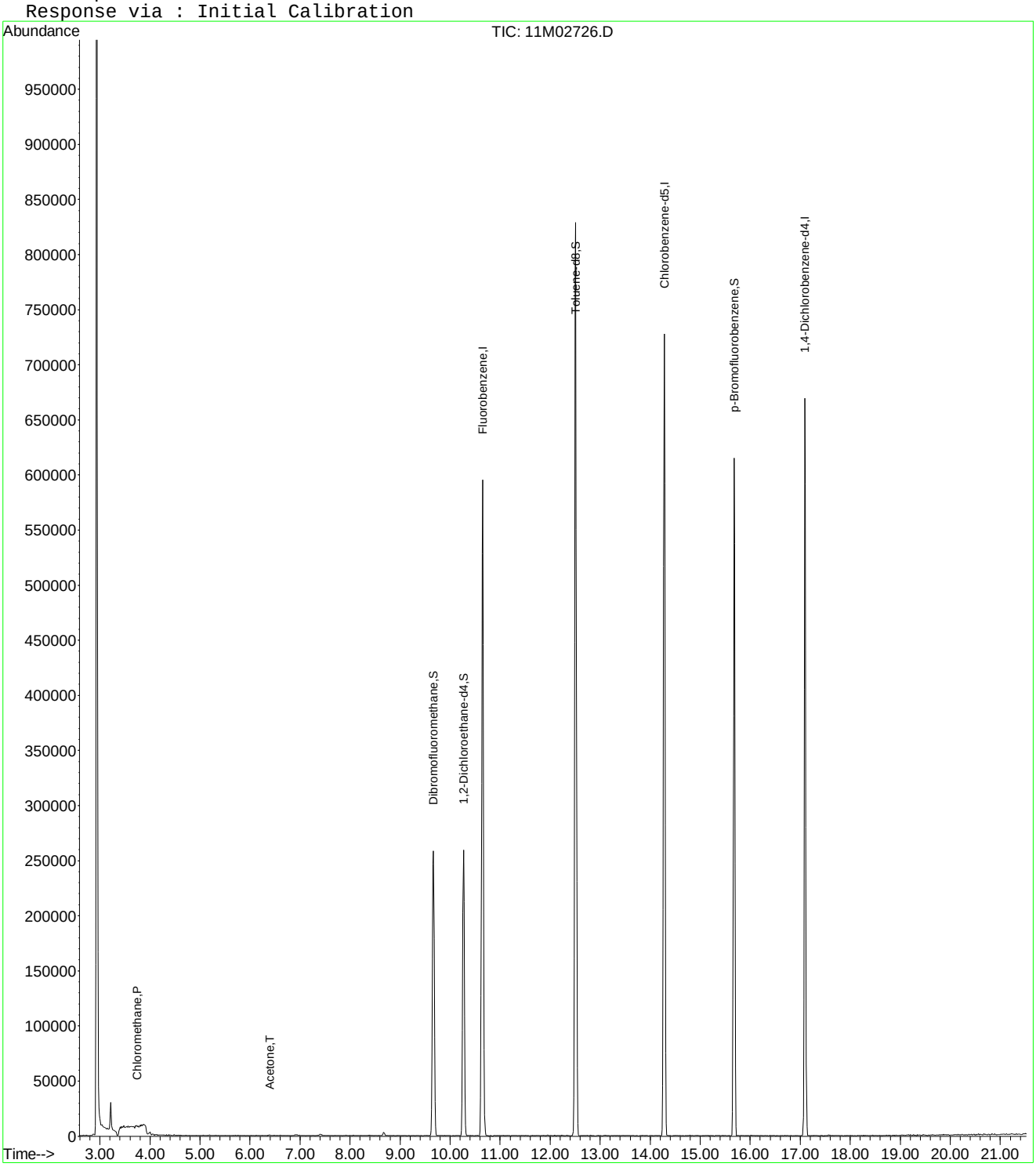

11M02726.D 8260WTR.M Mon Jul 28 09:38:41 2014 Page 2

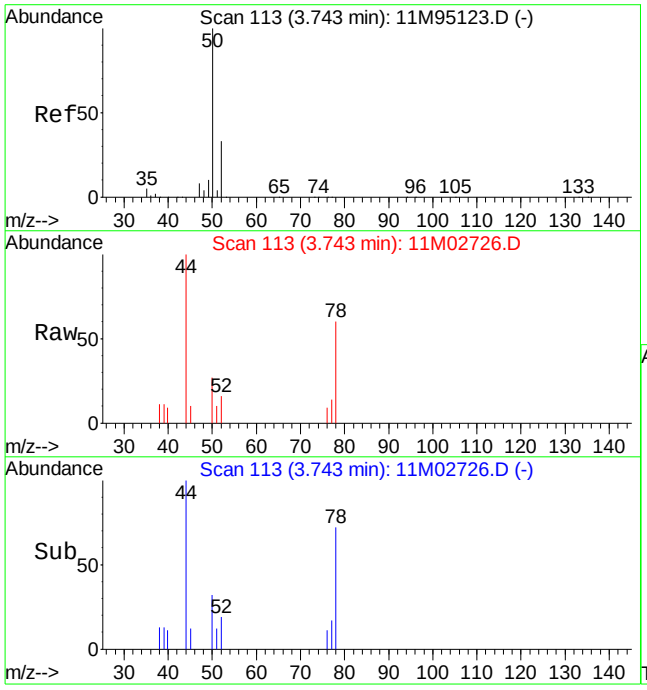

#3
Chloromethane
Concen: 0.21 ug/L
RT: 3.74 min Scan# 113
Delta R.T. 0.00 min
Lab File: 11M02726.D
Acq: 25 Jul 2014 23:49

Tgt Ion: 50 Resp: 2922

Ion	Ratio	Lower	Upper
50	100		
52	70.4	19.4	45.4#

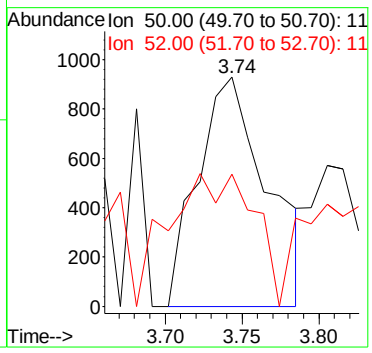

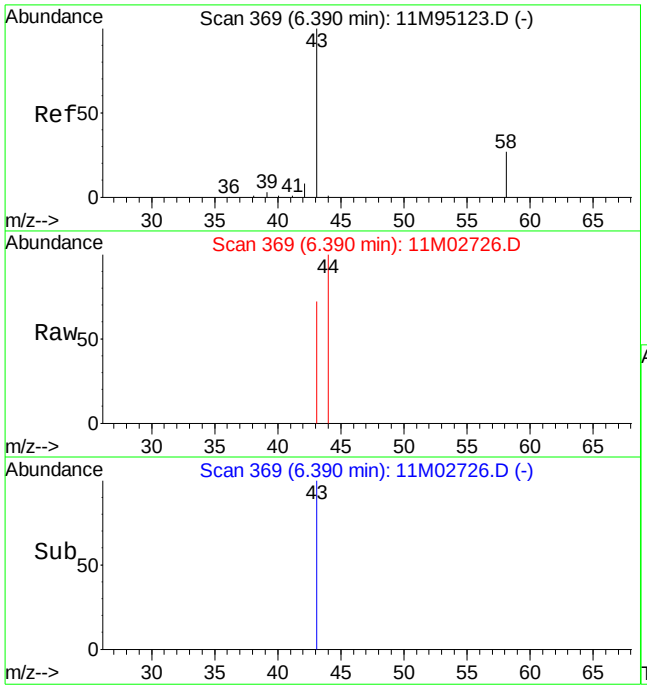

#13
Acetone
Concen: 0.49 ug/L
RT: 6.39 min Scan# 369
Delta R.T. 0.01 min
Lab File: 11M02726.D
Acq: 25 Jul 2014 23:49

Tgt Ion: 43 Resp: 714

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.2	40.0#

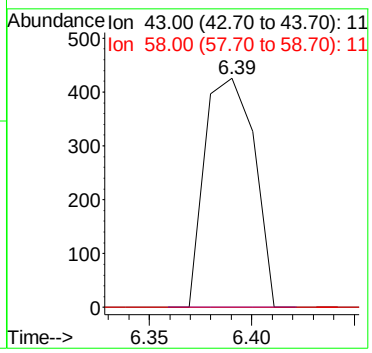

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02727.D Vial: 21
Acq On : 26 Jul 2014 00:21 Operator: FJB
Sample : L14071430-07 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 09:38:42 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	727469	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	537813	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	239671	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	213729	23.5255 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.12%		
43) 1,2-Dichloroethane-d4	10.27	65	221683	25.0049 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.00%		
57) Toluene-d8	12.51	98	751290	23.8440 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.36%		
78) p-Bromofluorobenzene	15.68	95	255186	24.6265 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.52%		

Target Compounds					Qvalue
3) Chloromethane	3.74	50	3888	0.2828 ug/L	89
20) Carbon Disulfide	7.40	76	3901	0.1398 ug/L #	89
27) 1,1-Dichloroethane	8.39	63	2237	0.1401 ug/L #	50

(#) = qualifier out of range (m) = manual integration
11M02727.D 8260WTR.M Mon Jul 28 09:38:44 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02727.D Vial: 21
Acq On : 26 Jul 2014 00:21 Operator: FJB
Sample : L14071430-07 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 9:38 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

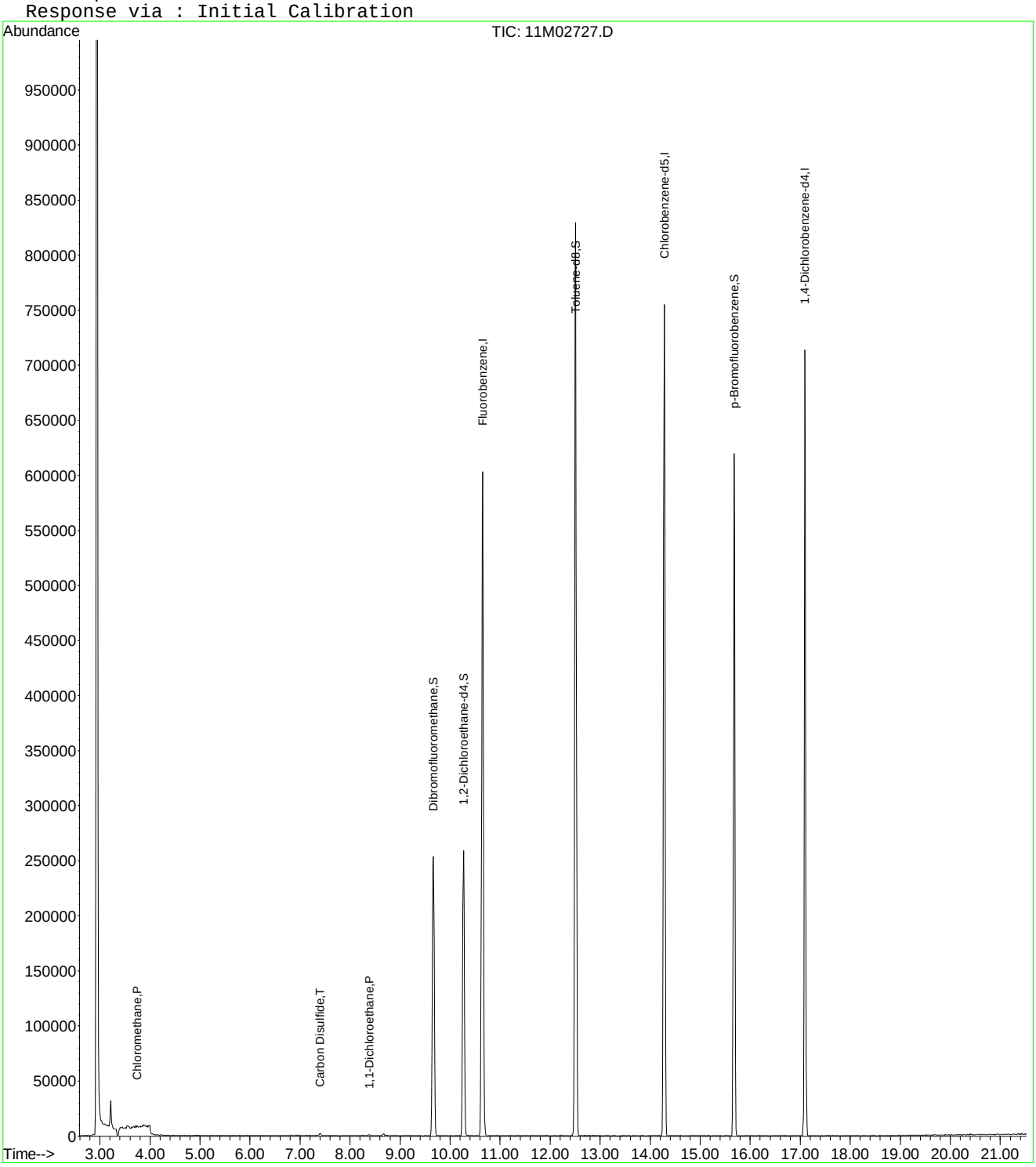

11M02727.D 8260WTR.M Mon Jul 28 09:38:45 2014 Page 2

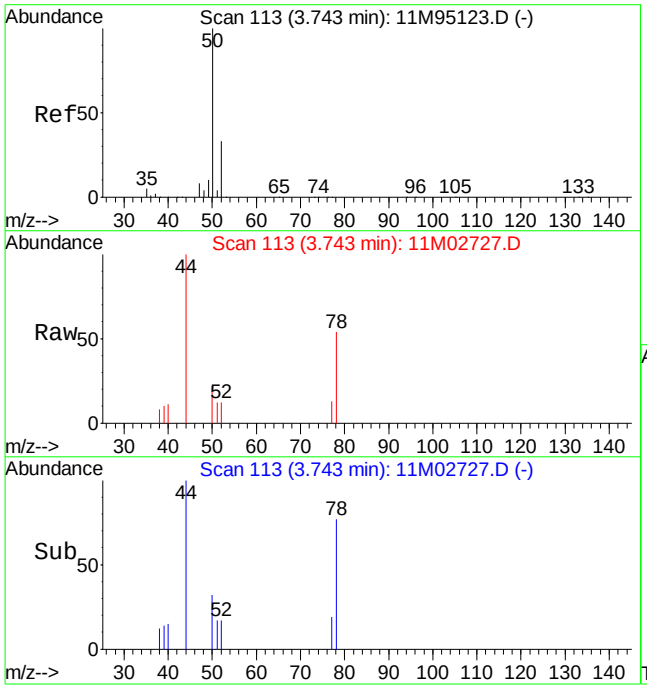

#3
Chloromethane
Concen: 0.28 ug/L
RT: 3.74 min Scan# 113
Delta R.T. 0.00 min
Lab File: 11M02727.D
Acq: 26 Jul 2014 00:21

Tgt Ion: 50 Resp: 3888

Ion	Ratio	Lower	Upper
50	100		
52	38.5	19.4	45.4

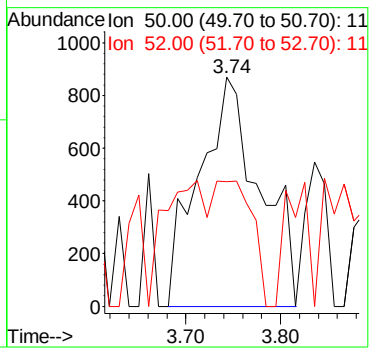

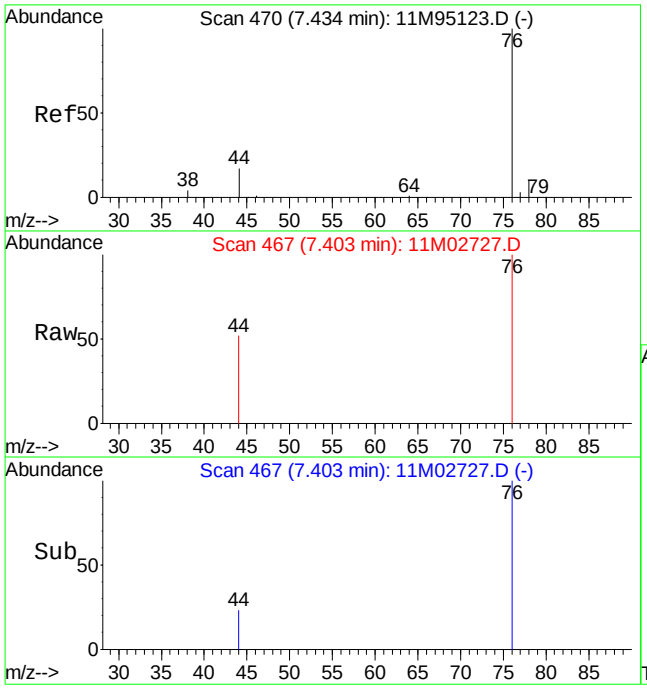

#20
Carbon Disulfide
Concen: 0.14 ug/L
RT: 7.40 min Scan# 467
Delta R.T. 0.00 min
Lab File: 11M02727.D
Acq: 26 Jul 2014 00:21

Tgt Ion: 76 Resp: 3901

Ion	Ratio	Lower	Upper
76	100		
78	5.5	5.7	13.3#

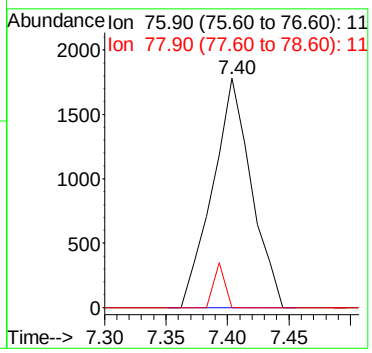

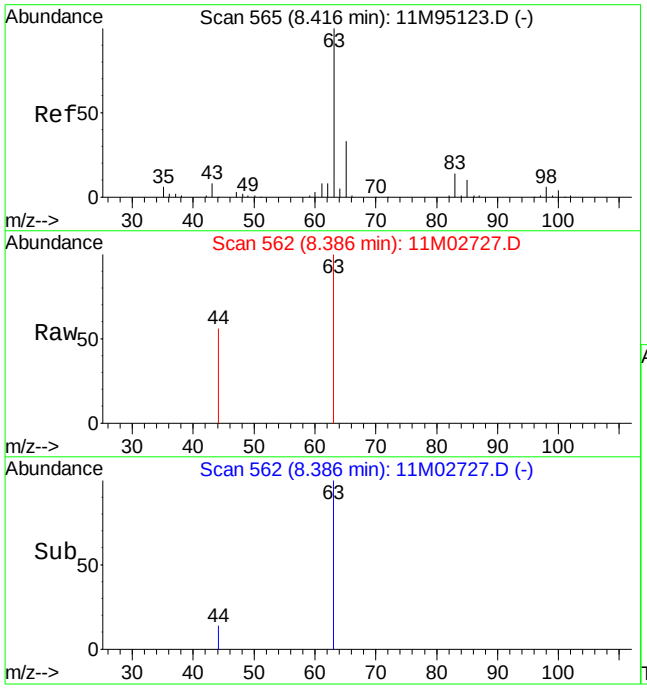

#27
1,1-Dichloroethane
Concen: 0.14 ug/L
RT: 8.39 min Scan# 562
Delta R.T. 0.00 min
Lab File: 11M02727.D
Acq: 26 Jul 2014 00:21

Tgt Ion: 63 Resp: 2237

Ion	Ratio	Lower	Upper
63	100		
65	0.0	19.3	45.1#
83	0.0	7.9	18.5#

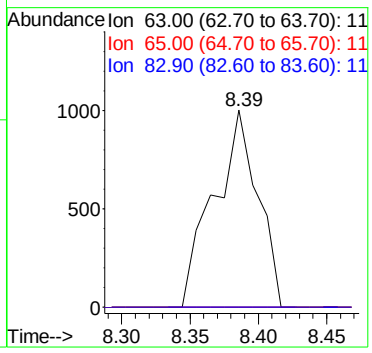

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02720.D Vial: 14
Acq On : 25 Jul 2014 20:38 Operator: FJB
Sample : L14071430-08 TB A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 09:38:21 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	669575	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	485416	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	222467	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	224520	26.8501 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.40%		
43) 1,2-Dichloroethane-d4	10.27	65	229623	28.1399 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.56%		
57) Toluene-d8	12.51	98	783232	27.5409 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 110.16%#		
78) p-Bromofluorobenzene	15.68	95	271455	28.2224 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.88%		
Target Compounds					Qvalue
13) Acetone	6.39	43	1316	0.9733 ug/L #	46

(#) = qualifier out of range (m) = manual integration
11M02720.D 8260WTR.M Mon Jul 28 09:38:22 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02720.D Vial: 14
Acq On : 25 Jul 2014 20:38 Operator: FJB
Sample : L14071430-08 TB A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 9:38 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

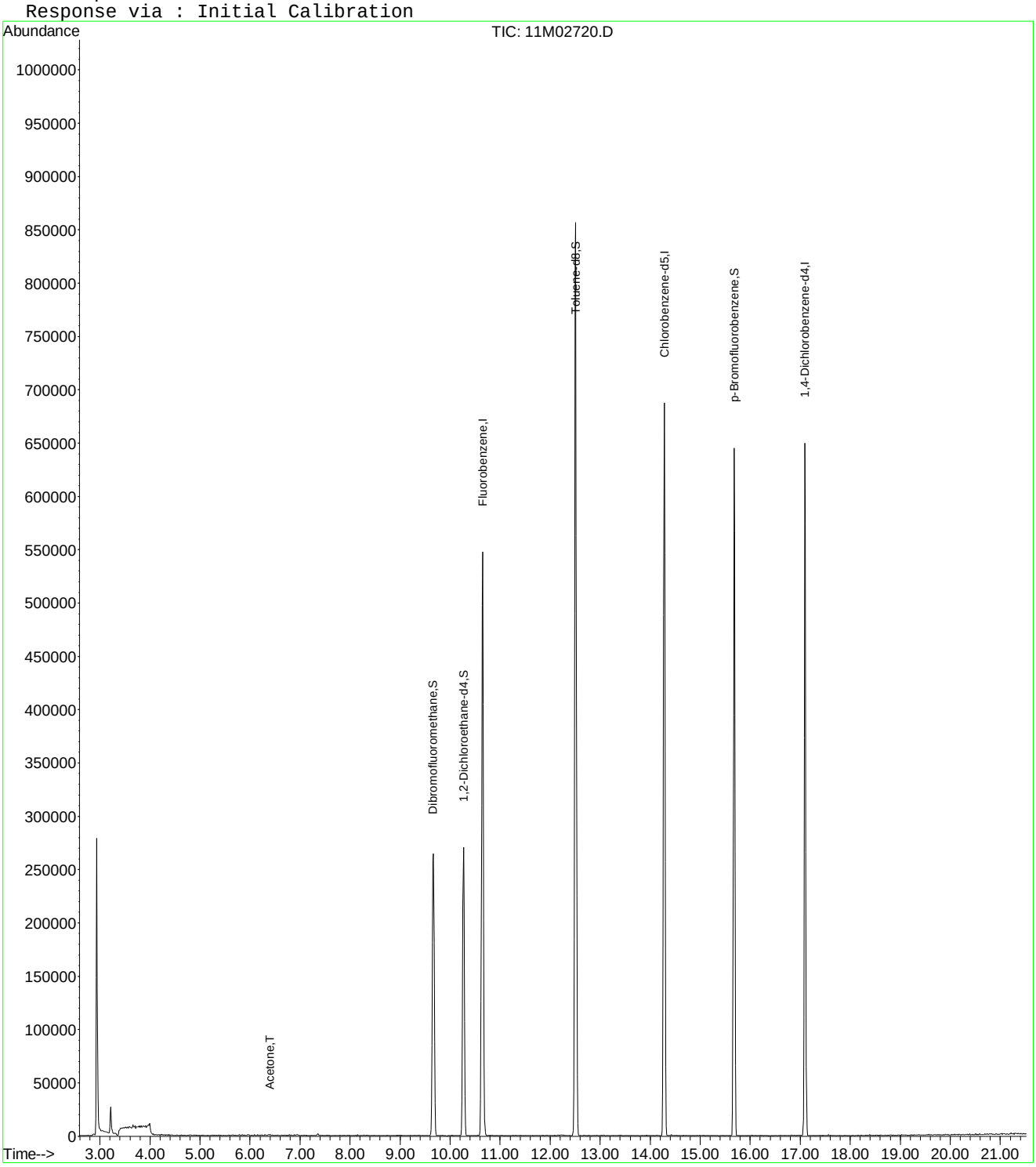

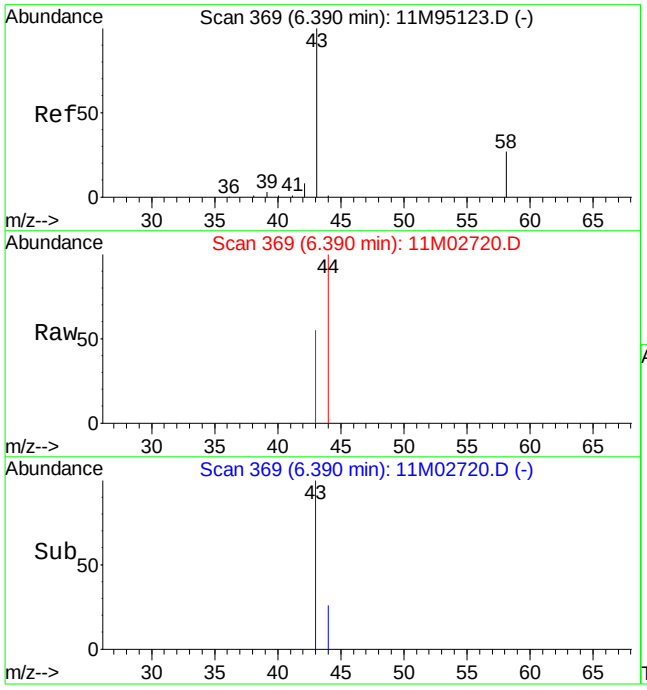

#13
Acetone
Concen: 0.97 ug/L
RT: 6.39 min Scan# 369
Delta R.T. 0.01 min
Lab File: 11M02720.D
Acq: 25 Jul 2014 20:38

Tgt Ion: 43 Resp: 1316

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.2	40.0#

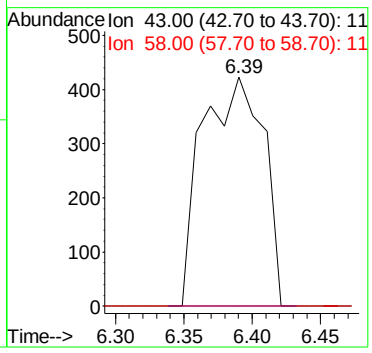

2.1.1.4 Standards Data

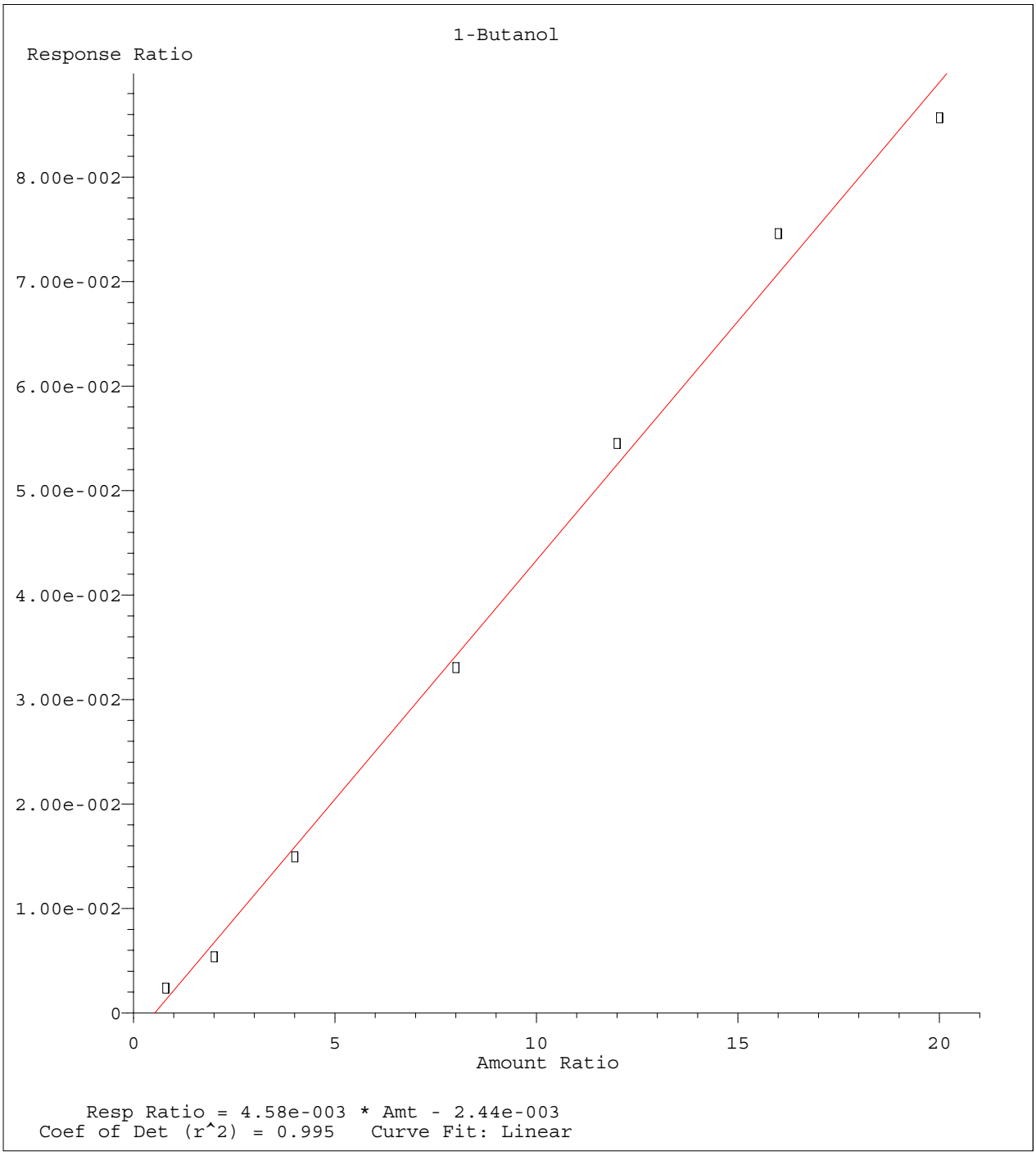

Method Name: C:\MSDCHEM\1\METHODS\A9WTR.M
Calibration Table Last Updated: Wed Dec 18 14:24:41 2013

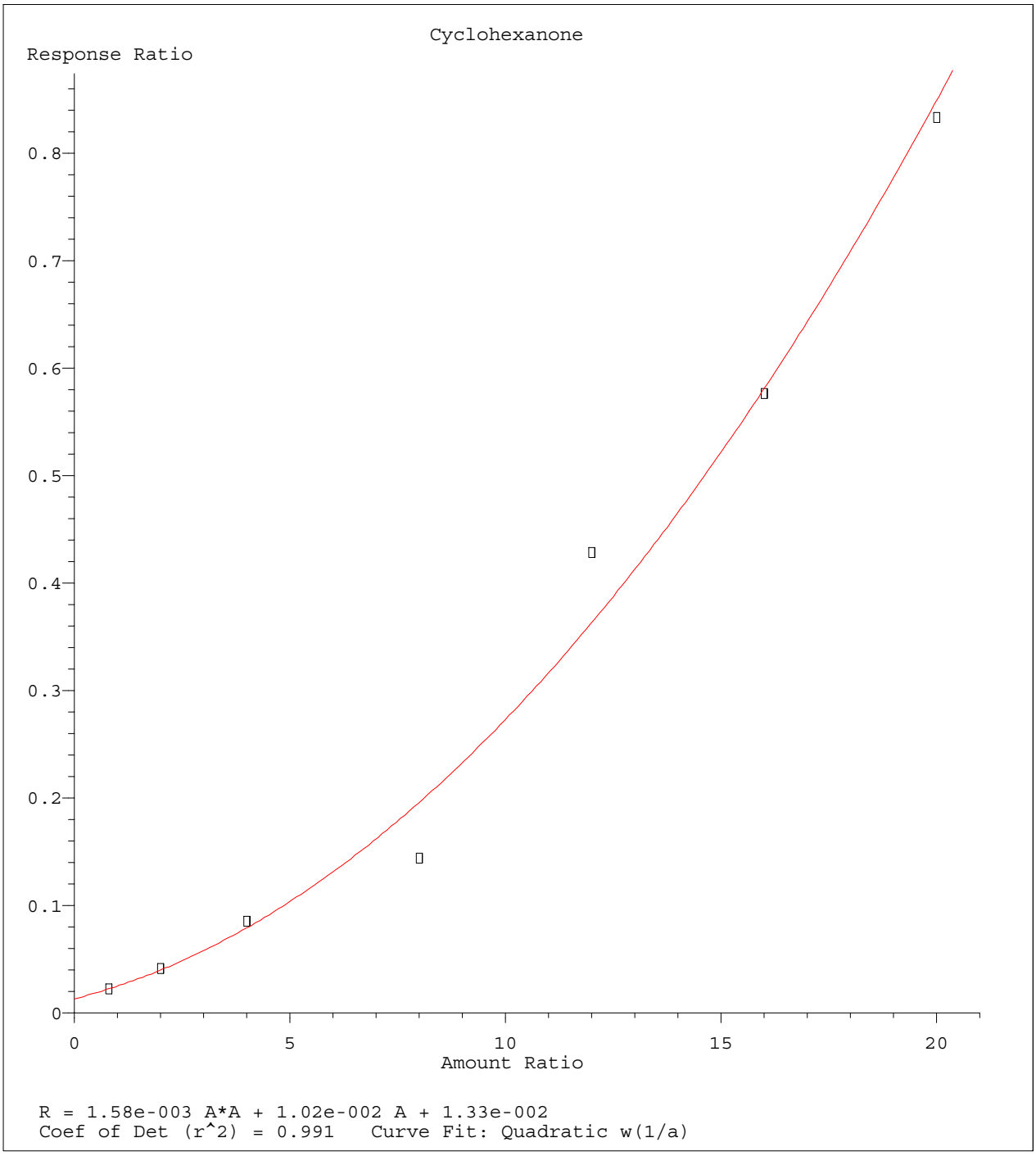

Method Name: C:\MSDCHEM\1\METHODS\A9WTR.M
Calibration Table Last Updated: Wed Dec 18 14:24:41 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02150.D Vial: 3
Acq On : 27 Jun 2014 15:29 Operator: FJB
Sample : WG482009-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:03 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	950869	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	703012	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	335996	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	12.50	98	217	0.0055 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#	
78) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	3517	0.3100 ug/L #	84
3) Chloromethane	3.73	50	9804	0.6164 ug/L #	1
4) Vinyl Chloride	3.98	62	5615	0.3068 ug/L	94
5) 1,3-Butadiene	4.03	54	5374	0.3441 ug/L	81
6) Bromomethane	4.88	94	4501	0.4871 ug/L	98
7) Chloroethane	5.06	64	2762	0.2947 ug/L	90
8) Trichlorofluoromethane	5.51	101	7436	0.3518 ug/L	94
10) Isoprene	6.07	67	5602	0.2975 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	4289	0.3427 ug/L	99
13) Acetone	6.38	43	1473	0.5065 ug/L #	46
14) 1,1-Dichloroethene	6.60	61	6814	0.3194 ug/L	81
16) Dimethyl Sulfide	6.84	62	5256	0.3613 ug/L	85
17) Iodomethane	7.10	142	1585	0.1698 ug/L #	53
18) Methyl acetate	7.10	43	2362	0.2893 ug/L #	62
19) Methylene Chloride	7.35	84	5797	0.4033 ug/L	90
20) Carbon Disulfide	7.40	76	15388	0.5514 ug/L #	76
22) Methyl Tert Butyl Ether	7.57	73	11106	0.4078 ug/L	92
23) trans-1,2-Dichloroethene	7.79	96	5335	0.3909 ug/L	69
24) n-Hexane	7.86	57	5539	0.4913 ug/L #	82
26) Vinyl Acetate	8.34	43	2249	0.1892 ug/L #	76
27) 1,1-Dichloroethane	8.39	63	7840	0.3118 ug/L	99
29) 2-Butanone	8.91	43	1342	0.3343 ug/L #	54
31) 2,2-Dichloropropane	9.13	77	7810	0.3988 ug/L	96
32) cis-1,2-Dichloroethene	9.19	96	5724	0.3828 ug/L	78
33) Chloroform	9.39	83	8500	0.3389 ug/L	94
34) 1-Bromopropane	9.51	122	430	0.1783 ug/L	99
35) Bromochloromethane	9.61	130	2562	0.2835 ug/L	89
38) 1,1,1-Trichloroethane	9.88	97	8330	0.3941 ug/L #	82
39) Cyclohexane	9.92	56	7082	0.2951 ug/L	89
40) 1,1-Dichloropropene	10.08	75	6576	0.4156 ug/L	92
41) Carbon Tetrachloride	10.22	117	6642	0.3547 ug/L	94
44) 1,2-Dichloroethane	10.38	62	6911	0.4116 ug/L	88
45) Benzene	10.42	78	21152	0.4495 ug/L	99
46) Trichloroethene	11.13	130	6372	0.4170 ug/L	93
47) Methylcyclohexane	11.21	83	7192	0.4148 ug/L	94
48) 1,2-Dichloropropane	11.32	63	4453	0.3321 ug/L	97
50) Bromodichloromethane	11.61	83	6516	0.3731 ug/L #	91
51) Dibromomethane	11.69	93	2470	0.3621 ug/L	89
52) 2-Chloroethyl Vinyl Ether	11.88	63	2199	0.4215 ug/L	89
53) 4-Methyl-2-Pentanone	11.91	58	571	0.2011 ug/L	92

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02150.D Vial: 3
Acq On : 27 Jun 2014 15:29 Operator: FJB
Sample : WG482009-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:03 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
54)	cis-1,3-Dichloropropene	12.20	75	6498	0.3771 ug/L		89
55)	Dimethyl Disulfide	12.46	79	2848	0.2766 ug/L		93
58)	Toluene	12.60	91	20827	0.4267 ug/L		95
59)	Ethyl Methacrylate	12.68	69	4034	0.4204 ug/L		92
60)	trans-1,3-Dichloropropene	12.76	75	5608	0.3717 ug/L		99
61)	1,1,2-Trichloroethane	12.97	97	3929	0.4370 ug/L		93
62)	2-Hexanone	12.90	43	1348	0.2763 ug/L	#	4
63)	1,3-Dichloropropane	13.25	76	7195	0.4433 ug/L		88
64)	Tetrachloroethene	13.37	164	4376	0.4152 ug/L		95
65)	Dibromochloromethane	13.62	129	4586	0.4467 ug/L		99
66)	1,2-Dibromoethane	13.87	107	3576	0.3989 ug/L		80
67)	1-Chlorohexane	13.93	91	5900	0.3987 ug/L		90
68)	Chlorobenzene	14.33	112	14249	0.5440 ug/L		98
69)	1,1,1,2-Tetrachloroethane	14.35	131	5193	0.3814 ug/L		87
70)	Ethylbenzene	14.35	106	7302	0.5149 ug/L		86
71)	m-,p-Xylene	14.43	106	18057	1.0932 ug/L		96
72)	o-Xylene	14.96	106	8733	0.3703 ug/L		96
73)	Styrene	14.99	104	11570	0.3740 ug/L		87
74)	Bromoform	15.47	173	2458	0.3963 ug/L		88
75)	Isopropylbenzene	15.34	105	20152	0.5019 ug/L		97
77)	1,1,2,2-Tetrachloroethane	15.55	83	3831	0.4266 ug/L		95
79)	1,2,3-Trichloropropane	15.74	110	1477	0.5253 ug/L		72
80)	trans-1,4-Dichloro-2-Buten	15.77	53	745	0.3290 ug/L	#	1
81)	n-Propylbenzene	15.82	91	24128	0.5960 ug/L		95
82)	Bromobenzene	15.95	156	5994	0.4579 ug/L		91
83)	1,3,5-Trimethylbenzene	16.00	105	15863	0.4260 ug/L		99
84)	2-Chlorotoluene	16.08	91	15510	0.5861 ug/L		93
85)	4-Chlorotoluene	16.12	91	15682	0.6974 ug/L	#	40
86)	a-Methylstyrene	16.37	118	6823	0.3998 ug/L		86
87)	tert-Butylbenzene	16.42	134	3474	0.3431 ug/L		93
88)	1,2,4-Trimethylbenzene	16.47	105	15619	0.4185 ug/L		100
89)	sec-Butylbenzene	16.68	105	20558	0.5819 ug/L		97
90)	p-Isopropyltoluene	16.82	119	15627	0.5361 ug/L		96
91)	1,3-Dichlorobenzene	17.02	146	10561	0.5655 ug/L		98
92)	1,4-Dichlorobenzene	17.13	146	11237	0.5430 ug/L		90
93)	n-Butylbenzene	17.31	91	11987	0.4882 ug/L		92
94)	1,2-Dichlorobenzene	17.60	146	9267	0.3938 ug/L		94
95)	1,2-Dibromo-3-Chloropropan	18.53	75	426	0.3083 ug/L	#	52
96)	1,2,4-Trichlorobenzene	19.59	180	4519	0.4452 ug/L		80
97)	Hexachlorobutadiene	19.72	225	2615	0.4794 ug/L		92
98)	Naphthalene	19.95	128	4952	0.2370 ug/L	#	92
99)	1,2,3-Trichlorobenzene	20.22	180	3396	0.2726 ug/L		81

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02150.D Vial: 3
Acq On : 27 Jun 2014 15:29 Operator: FJB
Sample : WG482009-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:55 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration

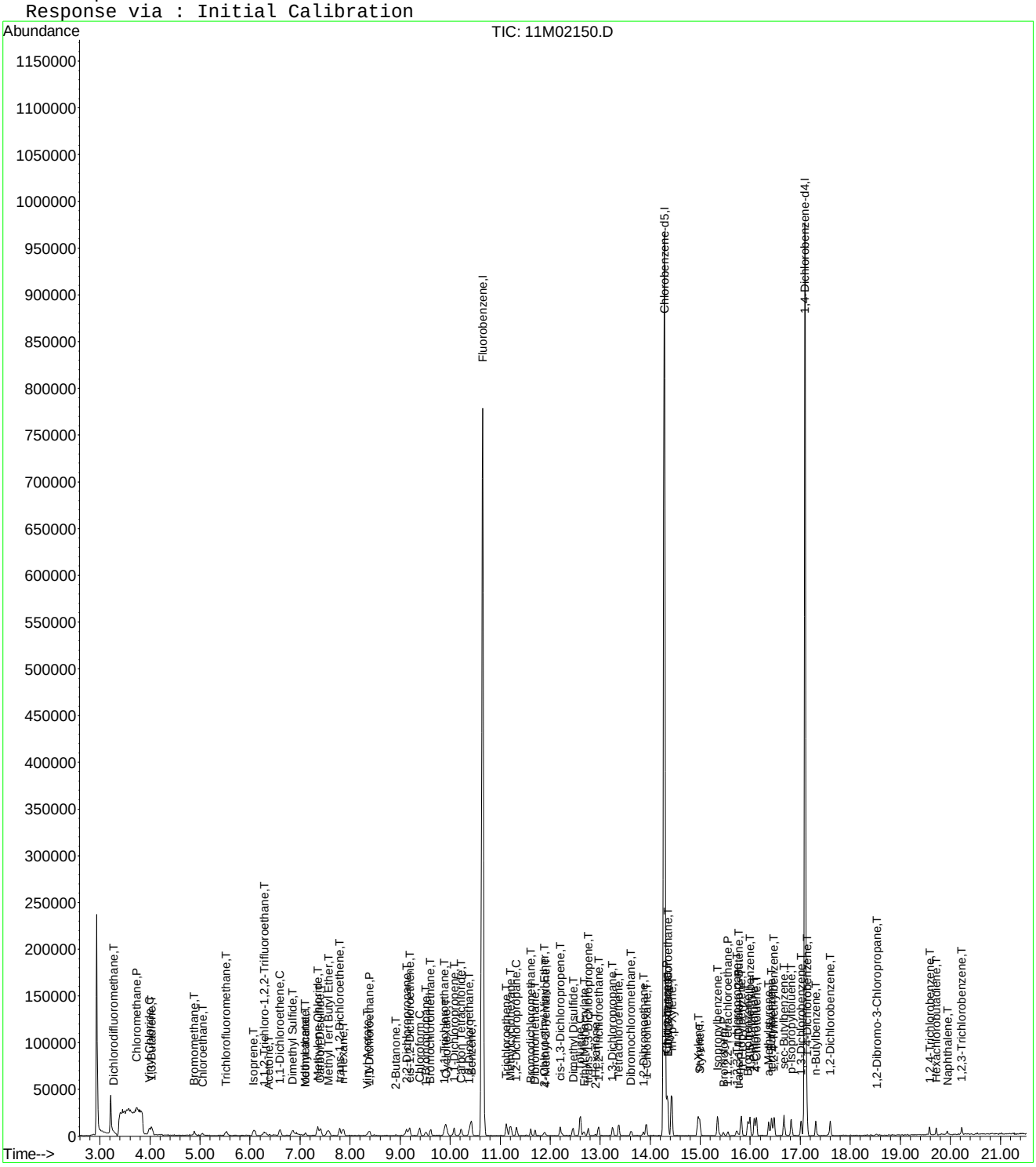

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02151.D Vial: 4
Acq On : 27 Jun 2014 16:07 Operator: FJB
Sample : WG482009-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:14 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	954872	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	701265	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	338783	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	5083	0.3877 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.56%#	
43) 1,2-Dichloroethane-d4	10.27	65	4944	0.3217 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.28%#	
57) Toluene-d8	12.50	98	19800	0.5070 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.04%#	
78) p-Bromofluorobenzene	15.67	95	7049	0.4531 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.80%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	8995	0.7896 ug/L	97
3) Chloromethane	3.74	50	22428	1.4042 ug/L #	71
4) Vinyl Chloride	3.98	62	15015	0.8169 ug/L	97
5) 1,3-Butadiene	4.03	54	11767	0.7502 ug/L	86
6) Bromomethane	4.88	94	10114	1.0900 ug/L	98
7) Chloroethane	5.04	64	8010	0.8512 ug/L	94
8) Trichlorofluoromethane	5.52	101	17162	0.8085 ug/L	100
9) Diethyl ether	6.04	59	37509	3.8836 ug/L	94
10) Isoprene	6.08	67	14050	0.7429 ug/L	81
11) Acrolein	6.28	56	2067	1.2674 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	10995	0.8749 ug/L	97
13) Acetone	6.38	43	2332	0.7985 ug/L #	77
14) 1,1-Dichloroethene	6.60	61	14953	0.6980 ug/L	80
16) Dimethyl Sulfide	6.86	62	11472	0.7854 ug/L	86
17) Iodomethane	7.10	142	3281	0.3500 ug/L	90
18) Methyl acetate	7.10	43	5866	0.7154 ug/L #	95
19) Methylene Chloride	7.35	84	13043	0.9036 ug/L	75
20) Carbon Disulfide	7.40	76	34135	1.2180 ug/L	91
21) Acrylonitrile	7.52	53	5898	1.6783 ug/L	97
22) Methyl Tert Butyl Ether	7.56	73	25525	0.9334 ug/L	94
23) trans-1,2-Dichloroethene	7.80	96	12141	0.8858 ug/L	81
24) n-Hexane	7.85	57	13481	1.1908 ug/L #	93
25) Diisopropyl ether	8.18	45	169938	3.8869 ug/L	96
26) Vinyl Acetate	8.34	43	6163	0.5162 ug/L #	81
27) 1,1-Dichloroethane	8.40	63	19827	0.7851 ug/L	95
28) Ethyl-Tert-Butyl ether	8.74	59	154605	4.0648 ug/L	95
29) 2-Butanone	8.92	43	2900	0.7193 ug/L	91
30) Propionitrile	9.03	54	4424	3.5201 ug/L	92
31) 2,2-Dichloropropane	9.13	77	16227	0.8251 ug/L	96
32) cis-1,2-Dichloroethene	9.19	96	12418	0.8269 ug/L	76
33) Chloroform	9.39	83	21073	0.8368 ug/L	99
34) 1-Bromopropane	9.50	122	1803	0.7443 ug/L	94
35) Bromochloromethane	9.61	130	7200	0.7935 ug/L	85
36) Tetrahydrofuran	9.65	42	8369	3.2085 ug/L	84
38) 1,1,1-Trichloroethane	9.89	97	17779	0.8376 ug/L	97
39) Cyclohexane	9.93	56	15920	0.6605 ug/L	84
40) 1,1-Dichloropropene	10.08	75	14926	0.9394 ug/L	95
41) Carbon Tetrachloride	10.23	117	14556	0.7742 ug/L	91
42) Tert-Amyl-Methyl ether	10.17	73	133358	4.4812 ug/L	96
44) 1,2-Dichloroethane	10.38	62	14265	0.8460 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02151.D Vial: 4
Acq On : 27 Jun 2014 16:07 Operator: FJB
Sample : WG482009-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:14 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	Benzene	10.41	78	45519	0.9633 ug/L		100
46)	Trichloroethene	11.13	130	12989	0.8464 ug/L		97
47)	Methylcyclohexane	11.20	83	16415	0.9429 ug/L		92
48)	1,2-Dichloropropane	11.33	63	10607	0.7876 ug/L		100
50)	Bromodichloromethane	11.61	83	14415	0.8219 ug/L		96
51)	Dibromomethane	11.69	93	6331	0.9243 ug/L		98
52)	2-Chloroethyl Vinyl Ether	11.87	63	4715	0.9000 ug/L		96
53)	4-Methyl-2-Pentanone	11.91	58	2303	0.8077 ug/L	#	71
54)	cis-1,3-Dichloropropene	12.20	75	16024	0.9259 ug/L		98
55)	Dimethyl Disulfide	12.45	79	6618	0.6401 ug/L		99
58)	Toluene	12.60	91	47660	0.9790 ug/L		96
59)	Ethyl Methacrylate	12.67	69	8227	0.8595 ug/L		84
60)	trans-1,3-Dichloropropene	12.76	75	12889	0.8565 ug/L		98
61)	1,1,2-Trichloroethane	12.97	97	8861	0.9879 ug/L		99
62)	2-Hexanone	12.89	43	3567	0.7330 ug/L	#	46
63)	1,3-Dichloropropane	13.24	76	14915	0.9212 ug/L		94
64)	Tetrachloroethene	13.37	164	9761	0.9285 ug/L		95
65)	Dibromochloromethane	13.62	129	10274	1.0032 ug/L		94
66)	1,2-Dibromoethane	13.87	107	8979	1.0041 ug/L		90
67)	1-Chlorohexane	13.93	91	13518	0.9157 ug/L		83
68)	Chlorobenzene	14.33	112	33240	1.2722 ug/L		98
69)	1,1,1,2-Tetrachloroethane	14.36	131	10591	0.7798 ug/L		100
70)	Ethylbenzene	14.35	106	15640	1.1056 ug/L		83
71)	m-,p-Xylene	14.43	106	39515	2.3983 ug/L		98
72)	o-Xylene	14.95	106	19651	0.8353 ug/L		95
73)	Styrene	14.99	104	27306	0.8850 ug/L		95
74)	Bromoform	15.47	173	5966	0.9642 ug/L		100
75)	Isopropylbenzene	15.34	105	48091	1.2007 ug/L		99
77)	1,1,2,2-Tetrachloroethane	15.55	83	9042	0.9986 ug/L		97
79)	1,2,3-Trichloropropane	15.73	110	2677	0.9443 ug/L		94
80)	trans-1,4-Dichloro-2-Buten	15.77	53	1647	0.7213 ug/L	#	8
81)	n-Propylbenzene	15.82	91	54985	1.3470 ug/L		99
82)	Bromobenzene	15.95	156	13046	0.9885 ug/L		83
83)	1,3,5-Trimethylbenzene	16.00	105	39133	1.0422 ug/L		99
84)	2-Chlorotoluene	16.08	91	35439	1.3282 ug/L		86
85)	4-Chlorotoluene	16.12	91	35217m	1.5532 ug/L		
86)	a-Methylstyrene	16.37	118	15889	0.9233 ug/L		99
87)	tert-Butylbenzene	16.43	134	8462	0.8288 ug/L		83
88)	1,2,4-Trimethylbenzene	16.48	105	36949	0.9818 ug/L		96
89)	sec-Butylbenzene	16.68	105	46306	1.2999 ug/L		99
90)	p-Isopropyltoluene	16.82	119	37842	1.2875 ug/L		99
91)	1,3-Dichlorobenzene	17.02	146	24210	1.2856 ug/L		91
92)	1,4-Dichlorobenzene	17.13	146	22571	1.0816 ug/L	#	72
93)	n-Butylbenzene	17.31	91	28801	1.1633 ug/L		98
94)	1,2-Dichlorobenzene	17.60	146	22612	0.9531 ug/L		92
95)	1,2-Dibromo-3-Chloropropan	18.52	75	1192	0.8557 ug/L		98
96)	1,2,4-Trichlorobenzene	19.58	180	9458	0.9241 ug/L		91
97)	Hexachlorobutadiene	19.72	225	5337	0.9703 ug/L		98
98)	Naphthalene	19.93	128	11235	0.5333 ug/L	#	92
99)	1,2,3-Trichlorobenzene	20.23	180	8210	0.6536 ug/L		87

(#) = qualifier out of range (m) = manual integration
11M02151.D 8260WTR.M Mon Jun 30 09:59:46 2014 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02151.D Vial: 4
Acq On : 27 Jun 2014 16:07 Operator: FJB
Sample : WG482009-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:59 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration

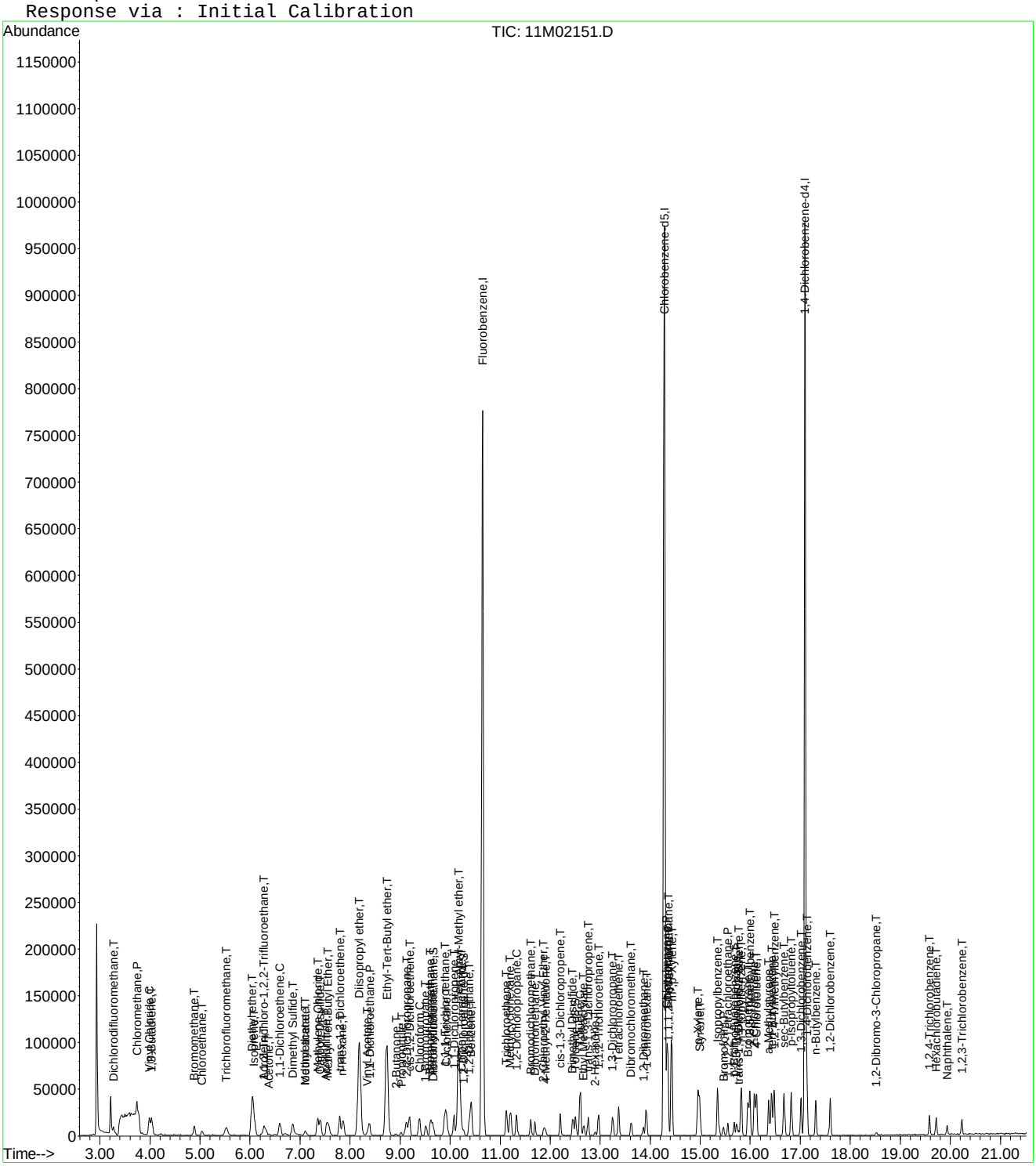

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02151.D Vial: 4
Acq On : 27 Jun 2014 16:07 Operator: FJB
Sample : WG482009-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:58 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Multiple Level Calibration

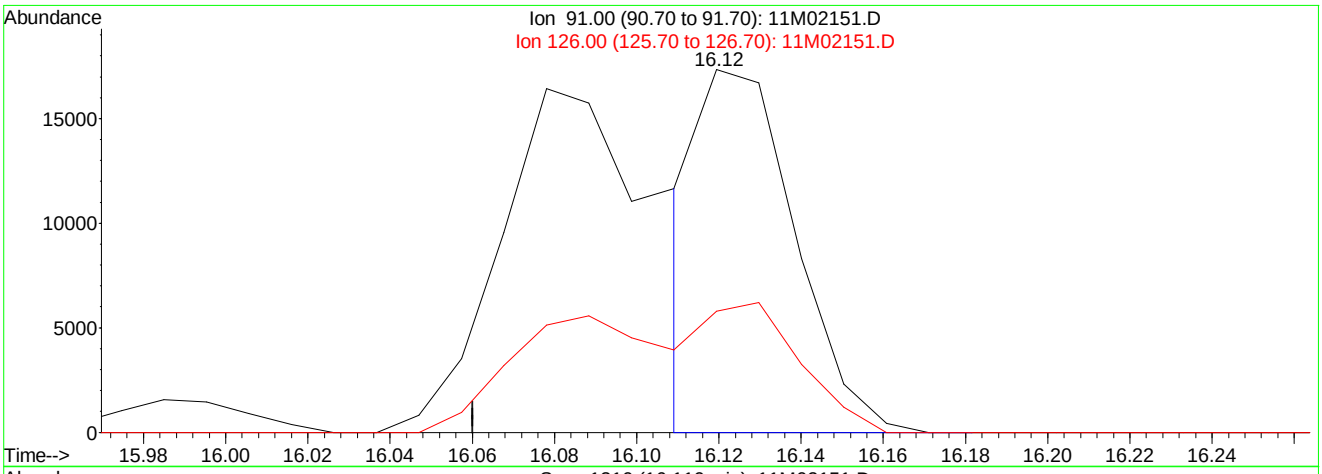

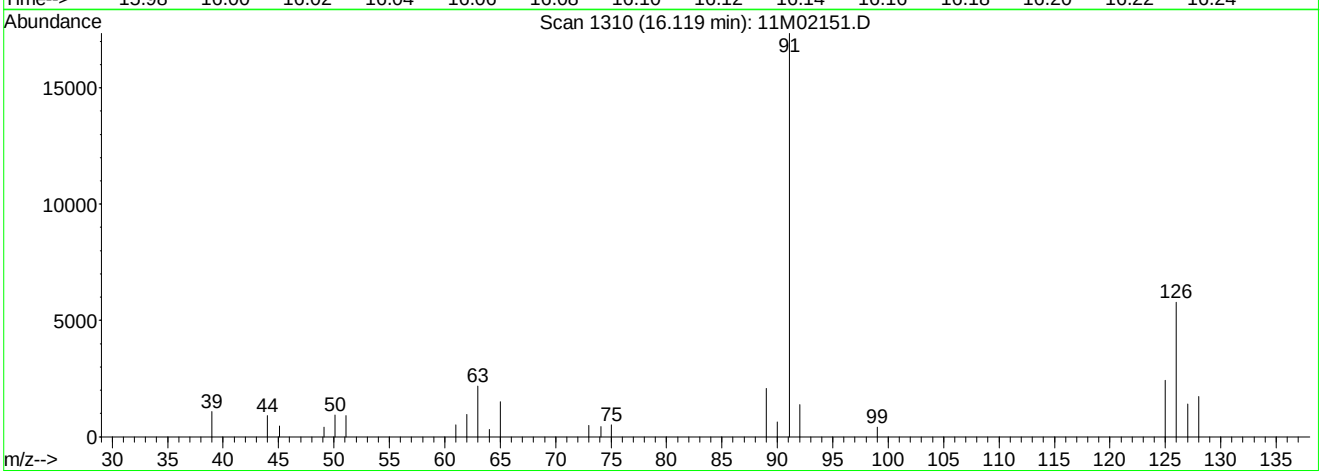

TIC: 11M02151.D

(85) 4-Chlorotoluene (T)

16.12min 1.23ug/L

response 27994

Ion	Exp%	Act%
91.00	100	100
126.00	34.70	36.44
0.00	0.00	0.00
0.00	0.00	0.00

11M02151.D 8260WTR.M Mon Jun 30 09:59:12 2014

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02151.D Vial: 4
Acq On : 27 Jun 2014 16:07 Operator: FJB
Sample : WG482009-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:59 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Multiple Level Calibration

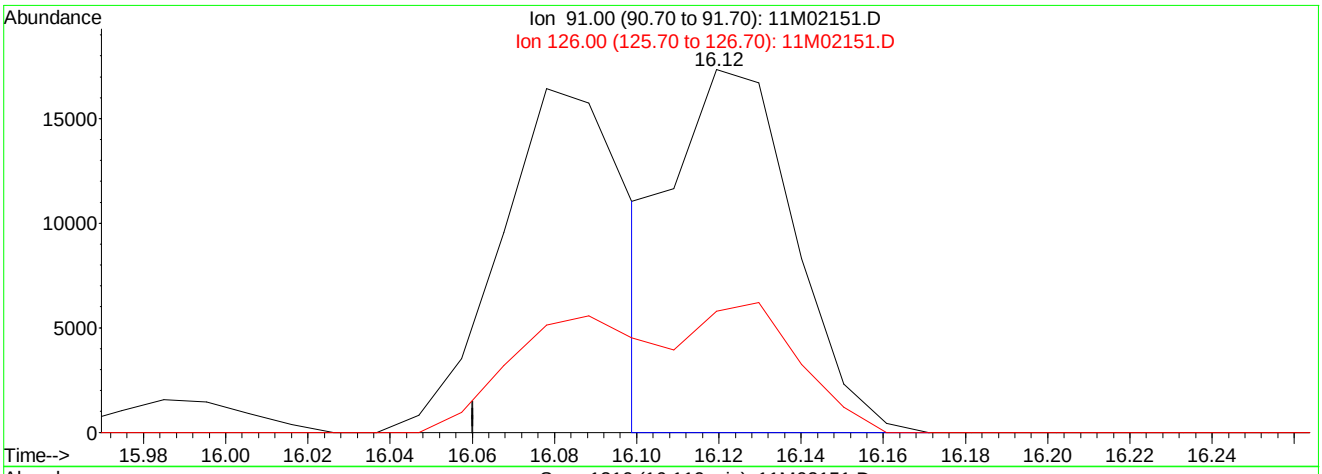

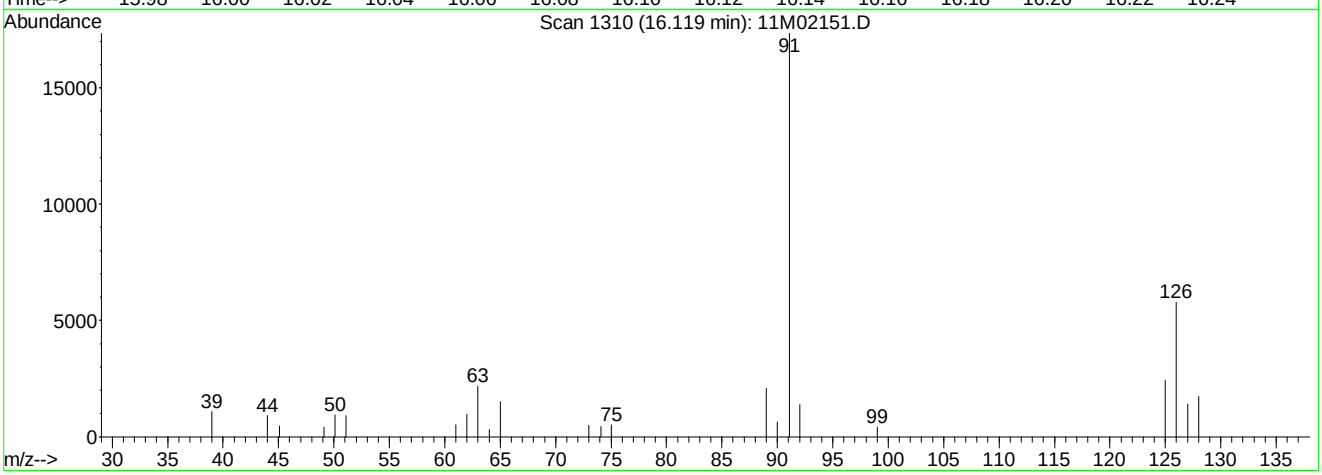

TIC: 11M02151.D

(85) 4-Chlorotoluene (T)

16.12min 1.55ug/L mint

response 35217

Ion	Exp%	Act%
91.00	100	100
126.00	34.70	28.96
0.00	0.00	0.00
0.00	0.00	0.00

11M02151.D 8260WTR.M Mon Jun 30 .4

Analyst: 06/30/2014 14:36 Supervisor: 06/30/2014 15:39

#2 - Data system splits the peak incorrectly or integrates a false peak as a rider peak

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\062714\11M02152.D Vial: 5
Acq On : 27 Jun 2014 16:37 Operator: FJB
Sample : WG482009-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 27 16:59:07 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Fri Jun 27 10:17:02 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	938815	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	693419	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	327100	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
78) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2261	0.2019 ug/L #	70
3) Chloromethane	3.73	50	11810	0.7520 ug/L #	50
4) Vinyl Chloride	3.98	62	3938	0.2179 ug/L	91
5) 1,3-Butadiene	4.03	54	3337	0.2164 ug/L #	66
6) Bromomethane	4.88	94	3123	0.3423 ug/L	83
7) Chloroethane	5.04	64	2089	0.2258 ug/L	79
8) Trichlorofluoromethane	5.52	101	4759	0.2280 ug/L	97
10) Isoprene	6.09	67	3399	0.1828 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	2946	0.2384 ug/L	77
14) 1,1-Dichloroethene	6.59	61	4422	0.2099 ug/L	86
16) Dimethyl Sulfide	6.84	62	3639	0.2534 ug/L	83
18) Methyl acetate	7.11	43	1262	0.1565 ug/L #	62
19) Methylene Chloride	7.35	84	4776	0.3365 ug/L	80
20) Carbon Disulfide	7.40	76	10277	0.3730 ug/L #	85
22) Methyl Tert Butyl Ether	7.56	73	8268	0.3075 ug/L #	72
23) trans-1,2-Dichloroethene	7.80	96	3138	0.2329 ug/L	95
24) n-Hexane	7.86	57	3576	0.3213 ug/L #	68
27) 1,1-Dichloroethane	8.40	63	5525	0.2225 ug/L #	91
29) 2-Butanone	8.91	43	820	0.2069 ug/L #	54
31) 2,2-Dichloropropane	9.12	77	5146	0.2661 ug/L	91
32) cis-1,2-Dichloroethene	9.18	96	4005	0.2712 ug/L	78
33) Chloroform	9.39	83	5819	0.2350 ug/L	91
35) Bromochloromethane	9.61	130	2202	0.2468 ug/L	83
38) 1,1,1-Trichloroethane	9.89	97	4948	0.2371 ug/L #	95
39) Cyclohexane	9.93	56	4861	0.2051 ug/L	89
40) 1,1-Dichloropropene	10.08	75	5129	0.3283 ug/L	76
41) Carbon Tetrachloride	10.23	117	4581	0.2478 ug/L #	93
44) 1,2-Dichloroethane	10.37	62	3957	0.2387 ug/L	90
45) Benzene	10.42	78	14635	0.3150 ug/L	94
46) Trichloroethene	11.13	130	4286	0.2841 ug/L	94
47) Methylcyclohexane	11.21	83	4596	0.2685 ug/L	89
48) 1,2-Dichloropropane	11.33	63	3363	0.2540 ug/L	99
50) Bromodichloromethane	11.61	83	4335	0.2514 ug/L #	94
51) Dibromomethane	11.70	93	1957	0.2906 ug/L	93
52) 2-Chloroethyl Vinyl Ether	11.87	63	1265	0.2456 ug/L #	47
53) 4-Methyl-2-Pentanone	11.92	58	388	0.1384 ug/L #	35
54) cis-1,3-Dichloropropene	12.20	75	4777	0.2808 ug/L	96
55) Dimethyl Disulfide	12.46	79	1983	0.1951 ug/L	94
58) Toluene	12.60	91	14560	0.3025 ug/L	94
59) Ethyl Methacrylate	12.68	69	2069	0.2186 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\062714\11M02152.D Vial: 5
Acq On : 27 Jun 2014 16:37 Operator: FJB
Sample : WG482009-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 27 16:59:07 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Fri Jun 27 10:17:02 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
60)	trans-1,3-Dichloropropene	12.75	75	3446	0.2316 ug/L	98
61)	1,1,2-Trichloroethane	12.98	97	2629	0.2964 ug/L	99
62)	2-Hexanone	12.90	43	1014	0.2107 ug/L #	1
63)	1,3-Dichloropropane	13.24	76	4671	0.2918 ug/L	99
64)	Tetrachloroethene	13.37	164	3071	0.2954 ug/L	95
65)	Dibromochloromethane	13.63	129	2900	0.2864 ug/L	84
66)	1,2-Dibromoethane	13.87	107	2419	0.2736 ug/L	82
67)	1-Chlorohexane	13.92	91	3692	0.2529 ug/L	98
68)	Chlorobenzene	14.33	112	10379	0.4017 ug/L	93
69)	1,1,1,2-Tetrachloroethane	14.35	131	3025	0.2252 ug/L	90
70)	Ethylbenzene	14.35	106	4874	0.3485 ug/L	97
71)	m-,p-Xylene	14.43	106	11869	0.7285 ug/L	93
72)	o-Xylene	14.95	106	5398	0.2321 ug/L	90
73)	Styrene	14.99	104	7876	0.2581 ug/L	87
74)	Bromoform	15.47	173	1335	0.2182 ug/L #	55
75)	Isopropylbenzene	15.34	105	14134	0.3569 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.55	83	2531	0.2895 ug/L	98
79)	1,2,3-Trichloropropane	15.73	110	559	0.2042 ug/L	84
81)	n-Propylbenzene	15.82	91	14912	0.3784 ug/L	97
82)	Bromobenzene	15.95	156	4091	0.3210 ug/L	92
83)	1,3,5-Trimethylbenzene	16.00	105	10362	0.2858 ug/L	96
84)	2-Chlorotoluene	16.08	91	12607	0.4894 ug/L	99
85)	4-Chlorotoluene	16.13	91	8112	0.3705 ug/L	85
86)	a-Methylstyrene	16.37	118	4069	0.2449 ug/L	91
87)	tert-Butylbenzene	16.44	134	2357	0.2391 ug/L	78
88)	1,2,4-Trimethylbenzene	16.48	105	11345	0.3122 ug/L	93
89)	sec-Butylbenzene	16.68	105	13938	0.4052 ug/L	93
90)	p-Isopropyltoluene	16.82	119	10585	0.3730 ug/L	90
91)	1,3-Dichlorobenzene	17.02	146	6486	0.3567 ug/L	99
92)	1,4-Dichlorobenzene	17.13	146	7815	0.3879 ug/L	78
93)	n-Butylbenzene	17.31	91	7488	0.3132 ug/L	99
94)	1,2-Dichlorobenzene	17.61	146	6590	0.2877 ug/L	98
96)	1,2,4-Trichlorobenzene	19.58	180	2041	0.2065 ug/L	83
97)	Hexachlorobutadiene	19.72	225	1510	0.2843 ug/L	91
99)	1,2,3-Trichlorobenzene	20.22	180	1602	0.1321 ug/L	84

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\062714\11M02152.D Vial: 5
Acq On : 27 Jun 2014 16:37 Operator: FJB
Sample : WG482009-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 27 16:59 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Fri Jun 27 10:17:02 2014
Response via : Initial Calibration

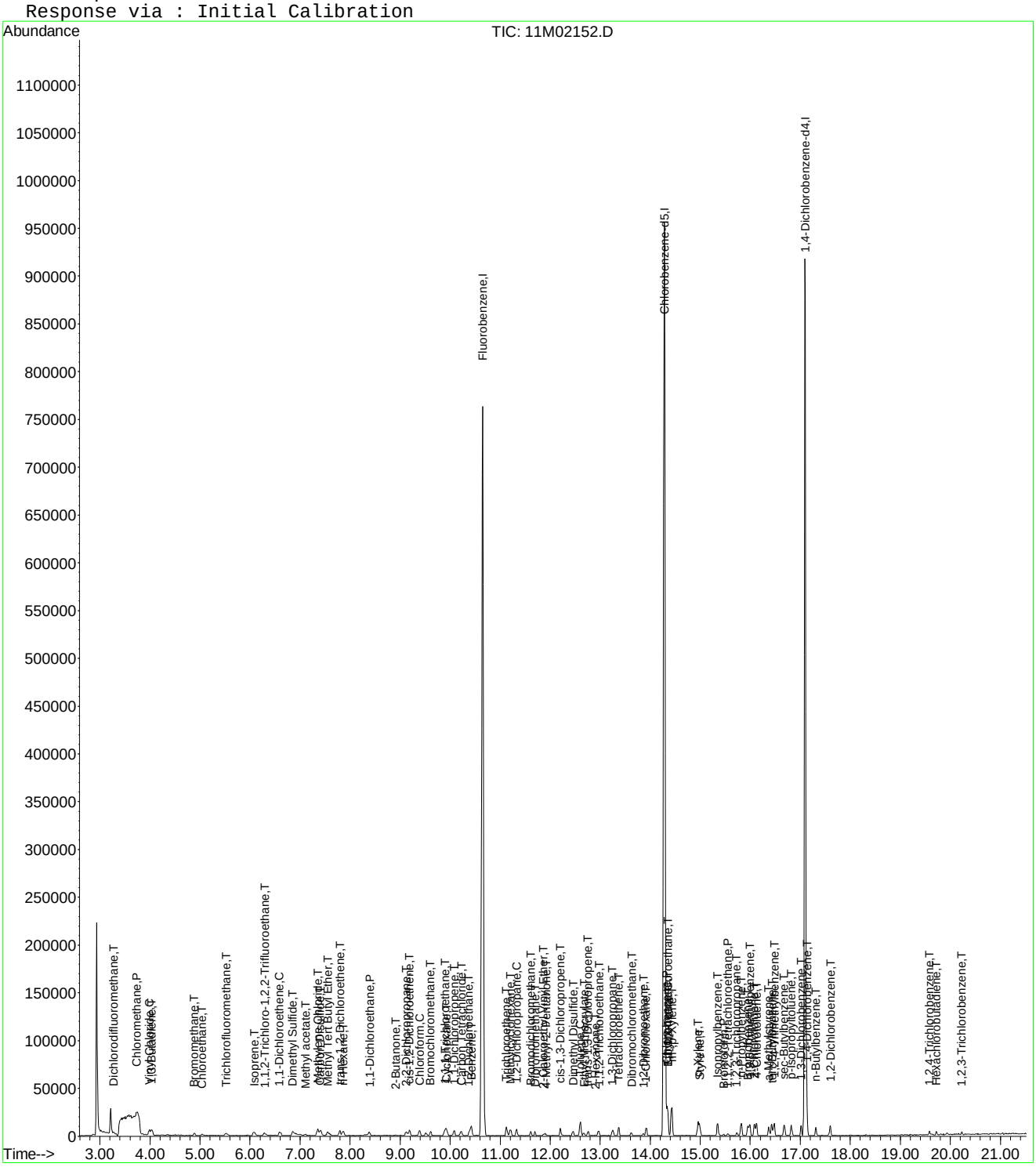

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02153.D Vial: 5
Acq On : 27 Jun 2014 17:08 Operator: FJB
Sample : WG482009-05 2ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:16 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	959698	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	703527	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	351674	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	10874	0.8253 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#	
43) 1,2-Dichloroethane-d4	10.27	65	11144	0.7215 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.88%#	
57) Toluene-d8	12.51	98	40511	1.0340 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.12%#	
78) p-Bromofluorobenzene	15.67	95	14267	0.8834 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	17421	1.5216 ug/L	96
3) Chloromethane	3.74	50	39201	2.4420 ug/L	89
4) Vinyl Chloride	3.98	62	32226	1.7445 ug/L	97
5) 1,3-Butadiene	4.02	54	28582	1.8131 ug/L	93
6) Bromomethane	4.88	94	20246	2.1710 ug/L	94
7) Chloroethane	5.04	64	15448	1.6333 ug/L	96
8) Trichlorofluoromethane	5.52	101	36817	1.7256 ug/L	98
9) Diethyl ether	6.04	59	196496	20.2424 ug/L	92
10) Isoprene	6.08	67	29005	1.5260 ug/L	83
11) Acrolein	6.28	56	11879	7.2470 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	21662	1.7150 ug/L	98
13) Acetone	6.38	43	4603	1.5681 ug/L #	78
14) 1,1-Dichloroethene	6.60	61	33426	1.5525 ug/L	89
15) Tert-Butyl Alcohol	6.70	59	26280	36.0647 ug/L #	81
16) Dimethyl Sulfide	6.86	62	22397	1.5256 ug/L	93
17) Iodomethane	7.10	142	8367	0.8881 ug/L	88
18) Methyl acetate	7.10	43	12932	1.5691 ug/L #	90
19) Methylene Chloride	7.35	84	25569	1.7625 ug/L	82
20) Carbon Disulfide	7.40	76	71810	2.5494 ug/L	98
21) Acrylonitrile	7.53	53	31572	8.9389 ug/L	95
22) Methyl Tert Butyl Ether	7.57	73	53520	1.9473 ug/L	92
23) trans-1,2-Dichloroethene	7.80	96	23821	1.7292 ug/L	83
24) n-Hexane	7.87	57	26906	2.3647 ug/L	95
25) Diisopropyl ether	8.18	45	871051	19.8231 ug/L	96
26) Vinyl Acetate	8.35	43	14270	1.1892 ug/L	99
27) 1,1-Dichloroethane	8.39	63	40838	1.6090 ug/L	97
28) Ethyl-Tert-Butyl ether	8.74	59	806365	21.0942 ug/L	95
29) 2-Butanone	8.92	43	5126	1.2651 ug/L	87
30) Propionitrile	9.02	54	22151	17.5363 ug/L	90
31) 2,2-Dichloropropane	9.13	77	36204	1.8316 ug/L	95
32) cis-1,2-Dichloroethene	9.19	96	26386	1.7482 ug/L	87
33) Chloroform	9.39	83	43593	1.7223 ug/L	95
34) 1-Bromopropane	9.51	122	4044	1.6610 ug/L	91
35) Bromochloromethane	9.61	130	15885	1.7419 ug/L	87
36) Tetrahydrofuran	9.64	42	45655	17.4152 ug/L	88
38) 1,1,1-Trichloroethane	9.89	97	35244	1.6520 ug/L	98
39) Cyclohexane	9.93	56	34523	1.4251 ug/L	87
40) 1,1-Dichloropropene	10.08	75	31053	1.9445 ug/L	97
41) Carbon Tetrachloride	10.22	117	34010	1.7997 ug/L	97
42) Tert-Amyl-Methyl ether	10.17	73	699997	23.4037 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02153.D Vial: 5
Acq On : 27 Jun 2014 17:08 Operator: FJB
Sample : WG482009-05 2ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:16 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.38	62	30384	1.7929 ug/L	94
45) Benzene	10.42	78	93138	1.9610 ug/L	100
46) Trichloroethene	11.13	130	28426	1.8430 ug/L	92
47) Methylcyclohexane	11.21	83	35315	2.0182 ug/L	89
48) 1,2-Dichloropropane	11.33	63	21819	1.6120 ug/L	96
49) 1,4-Dioxane	11.60	88	3173	30.2904 ug/L	95
50) Bromodichloromethane	11.61	83	30202	1.7133 ug/L	99
51) Dibromomethane	11.69	93	13406	1.9474 ug/L	98
52) 2-Chloroethyl Vinyl Ether	11.88	63	9546	1.8131 ug/L	97
53) 4-Methyl-2-Pentanone	11.91	58	4466	1.5584 ug/L	99
54) cis-1,3-Dichloropropene	12.20	75	32734	1.8820 ug/L	99
55) Dimethyl Disulfide	12.46	79	13699	1.3184 ug/L	91
58) Toluene	12.60	91	97292	1.9920 ug/L	99
59) Ethyl Methacrylate	12.68	69	16851	1.7548 ug/L	91
60) trans-1,3-Dichloropropene	12.76	75	28493	1.8873 ug/L	97
61) 1,1,2-Trichloroethane	12.97	97	17433	1.9374 ug/L	98
62) 2-Hexanone	12.89	43	7136	1.4617 ug/L #	92
63) 1,3-Dichloropropane	13.26	76	31012	1.9092 ug/L	93
64) Tetrachloroethene	13.37	164	21043	1.9954 ug/L	88
65) Dibromochloromethane	13.63	129	20490	1.9943 ug/L	98
66) 1,2-Dibromoethane	13.86	107	17557	1.9570 ug/L	99
67) 1-Chlorohexane	13.92	91	27427	1.8520 ug/L	92
68) Chlorobenzene	14.33	112	69696	2.6589 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.35	131	23255	1.7066 ug/L	93
70) Ethylbenzene	14.35	106	35892	2.5292 ug/L	99
71) m-,p-Xylene	14.42	106	86366	5.2250 ug/L	99
72) o-Xylene	14.96	106	41085	1.7409 ug/L	100
73) Styrene	14.99	104	59479	1.9215 ug/L	99
74) Bromoform	15.47	173	11915	1.9195 ug/L	99
75) Isopropylbenzene	15.34	105	105378	2.6224 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.55	83	20093	2.1377 ug/L	94
79) 1,2,3-Trichloropropane	15.73	110	5718	1.9430 ug/L	93
80) trans-1,4-Dichloro-2-Buten	15.77	53	3604	1.5206 ug/L #	42
81) n-Propylbenzene	15.82	91	117633	2.7761 ug/L	100
82) Bromobenzene	15.95	156	26984	1.9696 ug/L	94
83) 1,3,5-Trimethylbenzene	16.00	105	83593	2.1447 ug/L	99
84) 2-Chlorotoluene	16.08	91	75359	2.7209 ug/L	83
85) 4-Chlorotoluene	16.12	91	76984	3.2707 ug/L	89
86) a-Methylstyrene	16.37	118	36777	2.0587 ug/L	100
87) tert-Butylbenzene	16.43	134	17298	1.6321 ug/L	85
88) 1,2,4-Trimethylbenzene	16.48	105	87516	2.2403 ug/L	98
89) sec-Butylbenzene	16.68	105	102658	2.7761 ug/L	98
90) p-Isopropyltoluene	16.82	119	85196	2.7923 ug/L	99
91) 1,3-Dichlorobenzene	17.02	146	51972	2.6587 ug/L	95
92) 1,4-Dichlorobenzene	17.13	146	52102	2.4053 ug/L	91
93) n-Butylbenzene	17.31	91	65613	2.5530 ug/L	98
94) 1,2-Dichlorobenzene	17.60	146	47313	1.9211 ug/L	97
95) 1,2-Dibromo-3-Chloropropan	18.52	75	2455	1.6977 ug/L	98
96) 1,2,4-Trichlorobenzene	19.58	180	20585	1.9376 ug/L	95
97) Hexachlorobutadiene	19.72	225	11941	2.0914 ug/L	100
98) Naphthalene	19.93	128	28656	1.3103 ug/L	98
99) 1,2,3-Trichlorobenzene	20.22	180	19535	1.4982 ug/L	93

(#) = qualifier out of range (m) = manual integration
11M02153.D 8260WTR.M Mon Jun 30 09:55:18 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02153.D Vial: 5
Acq On : 27 Jun 2014 17:08 Operator: FJB
Sample : WG482009-05 2ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:55 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration

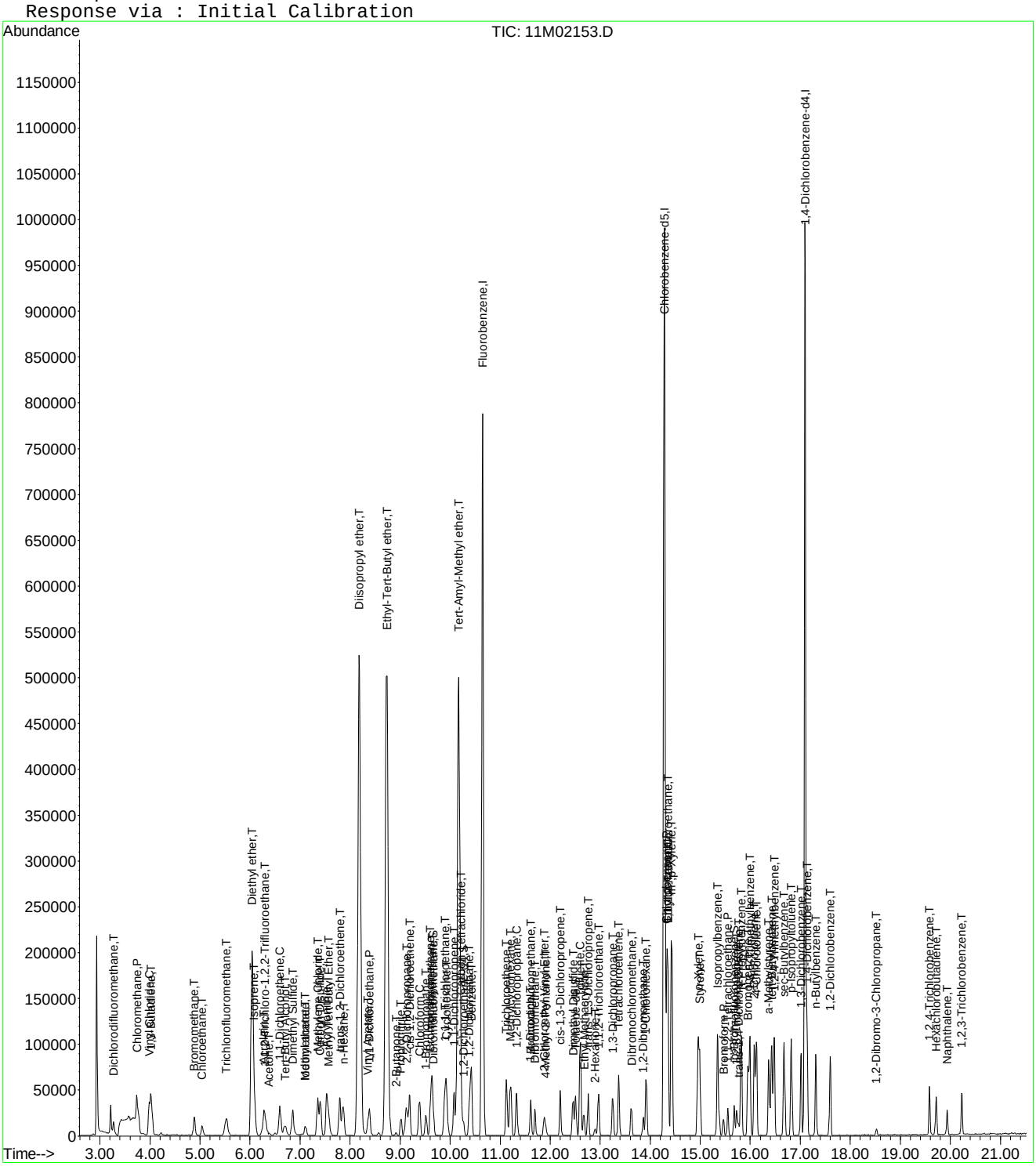

11M02153.D 8260WTR.M Mon Jun 30 09:55:18 2014 Page 3

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02154.D Vial: 7
Acq On : 27 Jun 2014 17:38 Operator: FJB
Sample : WG482009-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:19 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	973198	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	716320	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	360506	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	29372	2.1983 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.80%#	
43) 1,2-Dichloroethane-d4	10.27	65	30829	1.9682 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.88%#	
57) Toluene-d8	12.51	98	106640	2.6733 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	10.68%#	
78) p-Bromofluorobenzene	15.67	95	38329	2.3153 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	47060	4.0533 ug/L	98
3) Chloromethane	3.74	50	91038	5.5924 ug/L	94
4) Vinyl Chloride	3.98	62	87798	4.6869 ug/L	99
5) 1,3-Butadiene	4.02	54	77059	4.8204 ug/L	99
6) Bromomethane	4.88	94	46594	4.9270 ug/L	96
7) Chloroethane	5.05	64	40633	4.2364 ug/L	94
8) Trichlorofluoromethane	5.52	101	99736	4.6099 ug/L	98
9) Diethyl ether	6.04	59	407273	41.3739 ug/L	94
10) Isoprene	6.08	67	79665	4.1331 ug/L	87
11) Acrolein	6.28	56	26242	15.7872 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	61508	4.8021 ug/L	98
13) Acetone	6.39	43	11027	3.7045 ug/L	94
14) 1,1-Dichloroethene	6.60	61	91307	4.1819 ug/L	88
15) Tert-Butyl Alcohol	6.70	59	55118	74.5905 ug/L	87
16) Dimethyl Sulfide	6.86	62	58350	3.9195 ug/L	96
17) Iodomethane	7.10	142	33601	3.5172 ug/L	98
18) Methyl acetate	7.10	43	33092	3.9596 ug/L	98
19) Methylene Chloride	7.35	84	65645	4.4621 ug/L	77
20) Carbon Disulfide	7.40	76	184460	6.4578 ug/L	99
21) Acrylonitrile	7.53	53	65820	18.3769 ug/L	99
22) Methyl Tert Butyl Ether	7.56	73	136095	4.8830 ug/L	96
23) trans-1,2-Dichloroethene	7.80	96	63748	4.5634 ug/L	81
24) n-Hexane	7.86	57	76744	6.6512 ug/L	93
25) Diisopropyl ether	8.18	45	1825962	40.9782 ug/L	97
26) Vinyl Acetate	8.35	43	43129	3.5443 ug/L	96
27) 1,1-Dichloroethane	8.39	63	108400	4.2116 ug/L	99
28) Ethyl-Tert-Butyl ether	8.73	59	1687079	43.5211 ug/L	96
29) 2-Butanone	8.91	43	15952	3.8823 ug/L	99
30) Propionitrile	9.02	54	47562	37.1311 ug/L	96
31) 2,2-Dichloropropane	9.12	77	95603	4.7695 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	70273	4.5912 ug/L	84
33) Chloroform	9.39	83	111903	4.3597 ug/L	98
34) 1-Bromopropane	9.51	122	12637	5.1184 ug/L	98
35) Bromochloromethane	9.62	130	42544	4.6005 ug/L	83
36) Tetrahydrofuran	9.64	42	94318	35.4787 ug/L	90
38) 1,1,1-Trichloroethane	9.89	97	99544	4.6011 ug/L	96
39) Cyclohexane	9.93	56	94419	3.8436 ug/L	85
40) 1,1-Dichloropropene	10.08	75	84166	5.1972 ug/L	96
41) Carbon Tetrachloride	10.22	117	91016	4.7495 ug/L	98
42) Tert-Amyl-Methyl ether	10.16	73	1459096	48.1068 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M02154.D 8260WTR.M Mon Jun 30 10:27:56 2014 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02154.D Vial: 7
Acq On : 27 Jun 2014 17:38 Operator: FJB
Sample : WG482009-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:19 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.38	62	76437	4.4478 ug/L		98
45)	Benzene	10.42	78	248027	5.1498 ug/L		99
46)	Trichloroethene	11.13	130	71565	4.5756 ug/L		95
47)	Methylcyclohexane	11.21	83	96500	5.4384 ug/L		91
48)	1,2-Dichloropropane	11.33	63	57182	4.1661 ug/L		95
49)	1,4-Dioxane	11.60	88	7147	67.2808 ug/L		84
50)	Bromodichloromethane	11.61	83	81213	4.5432 ug/L		99
51)	Dibromomethane	11.69	93	33069	4.7372 ug/L		94
52)	2-Chloroethyl Vinyl Ether	11.88	63	25321	4.7425 ug/L		96
53)	4-Methyl-2-Pentanone	11.91	58	12338	4.2456 ug/L		99
54)	cis-1,3-Dichloropropene	12.20	75	90782	5.1469 ug/L		99
55)	Dimethyl Disulfide	12.46	79	39032	3.7044 ug/L		92
58)	Toluene	12.60	91	265449	5.3379 ug/L		98
59)	Ethyl Methacrylate	12.68	69	46776	4.7840 ug/L		91
60)	trans-1,3-Dichloropropene	12.76	75	79164	5.1499 ug/L		98
61)	1,1,2-Trichloroethane	12.97	97	46139	5.0361 ug/L		98
62)	2-Hexanone	12.90	43	19211	3.8648 ug/L		99
63)	1,3-Dichloropropane	13.26	76	81973	4.9564 ug/L		90
64)	Tetrachloroethene	13.37	164	55897	5.2056 ug/L		95
65)	Dibromochloromethane	13.62	129	57082	5.4567 ug/L		99
66)	1,2-Dibromoethane	13.87	107	44600	4.8825 ug/L		96
67)	1-Chlorohexane	13.93	91	78712	5.2200 ug/L		89
68)	Chlorobenzene	14.33	112	183573	6.8782 ug/L		99
69)	1,1,1,2-Tetrachloroethane	14.35	131	62475	4.5030 ug/L		96
70)	Ethylbenzene	14.35	106	95207	6.5891 ug/L		98
71)	m-,p-Xylene	14.42	106	236076	14.0272 ug/L		98
72)	o-Xylene	14.96	106	112115	4.6657 ug/L		98
73)	Styrene	14.99	104	170325	5.4041 ug/L		97
74)	Bromoform	15.47	173	31136	4.9264 ug/L		97
75)	Isopropylbenzene	15.34	105	284195	6.9462 ug/L		98
77)	1,1,2,2-Tetrachloroethane	15.55	83	50867	5.2792 ug/L		99
79)	1,2,3-Trichloropropane	15.74	110	15820	5.2441 ug/L		81
80)	trans-1,4-Dichloro-2-Buten	15.77	53	9737	4.0076 ug/L	#	26
81)	n-Propylbenzene	15.82	91	328868	7.5711 ug/L		99
82)	Bromobenzene	15.95	156	71454	5.0876 ug/L		92
83)	1,3,5-Trimethylbenzene	16.00	105	233086	5.8337 ug/L		98
84)	2-Chlorotoluene	16.08	91	197706	6.9634 ug/L		82
85)	4-Chlorotoluene	16.12	91	205308m	8.5090 ug/L		
86)	a-Methylstyrene	16.37	118	106257	5.8024 ug/L		97
87)	tert-Butylbenzene	16.43	134	48972	4.5075 ug/L		92
88)	1,2,4-Trimethylbenzene	16.48	105	232243	5.7995 ug/L		96
89)	sec-Butylbenzene	16.68	105	291225	7.6824 ug/L		99
90)	p-Isopropyltoluene	16.82	119	240543	7.6907 ug/L		99
91)	1,3-Dichlorobenzene	17.02	146	137458	6.8596 ug/L		94
92)	1,4-Dichlorobenzene	17.13	146	130925	5.8960 ug/L		97
93)	n-Butylbenzene	17.31	91	193140	7.3310 ug/L		98
94)	1,2-Dichlorobenzene	17.60	146	126483	5.0098 ug/L		97
95)	1,2-Dibromo-3-Chloropropan	18.53	75	6253	4.2183 ug/L		80
96)	1,2,4-Trichlorobenzene	19.58	180	68037	6.2471 ug/L		93
97)	Hexachlorobutadiene	19.72	225	33645	5.7485 ug/L		97
98)	Naphthalene	19.93	128	95547	4.2618 ug/L		100
99)	1,2,3-Trichlorobenzene	20.23	180	60592	4.5332 ug/L		94

(#) = qualifier out of range (m) = manual integration
11M02154.D 8260WTR.M Mon Jun 30 10:27:57 2014 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02154.D Vial: 7
Acq On : 27 Jun 2014 17:38 Operator: FJB
Sample : WG482009-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:02 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:26:20 2014
Response via : Initial Calibration

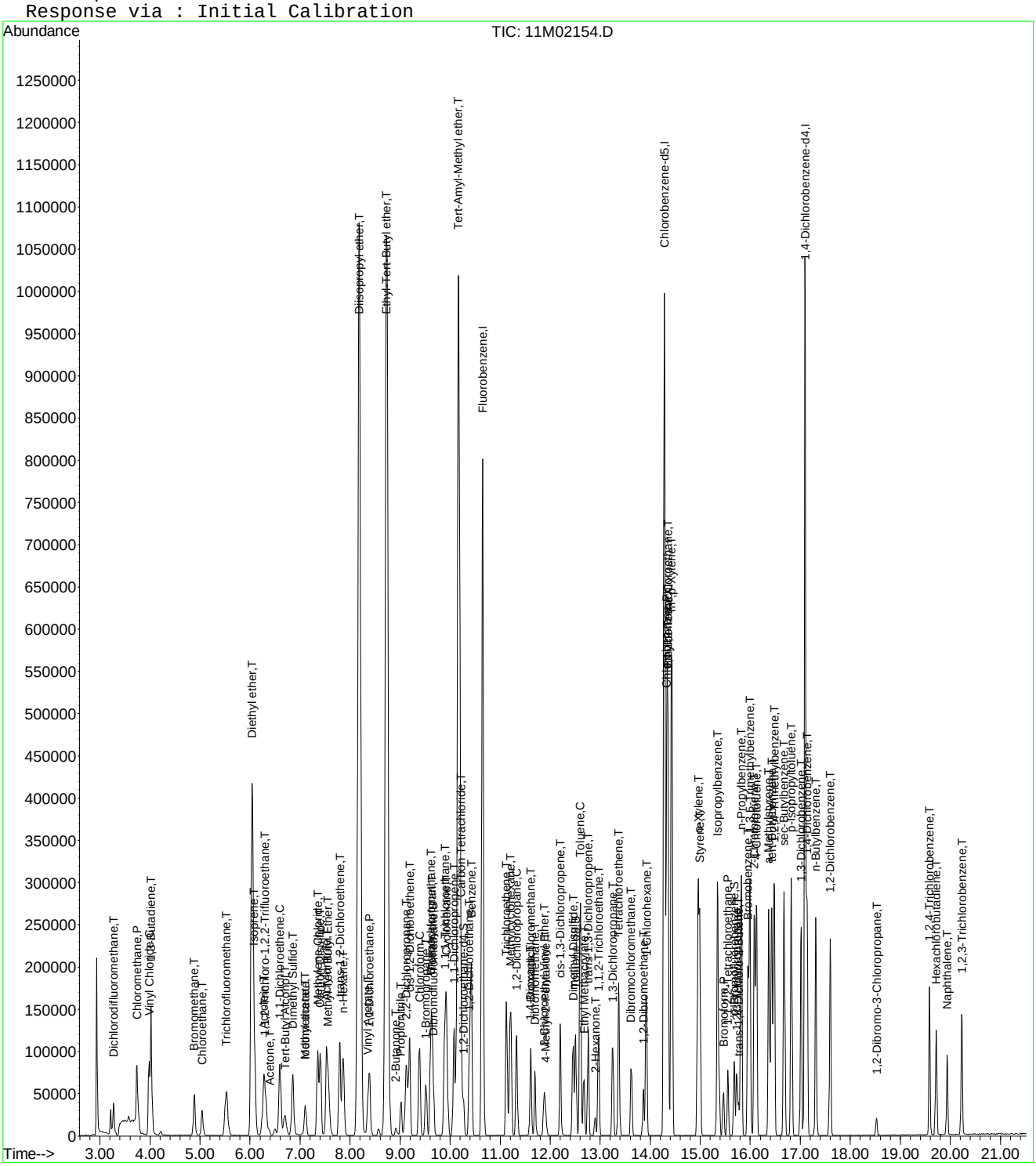

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02154.D Vial: 7
Acq On : 27 Jun 2014 17:38 Operator: FJB
Sample : WG482009-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:55 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Multiple Level Calibration

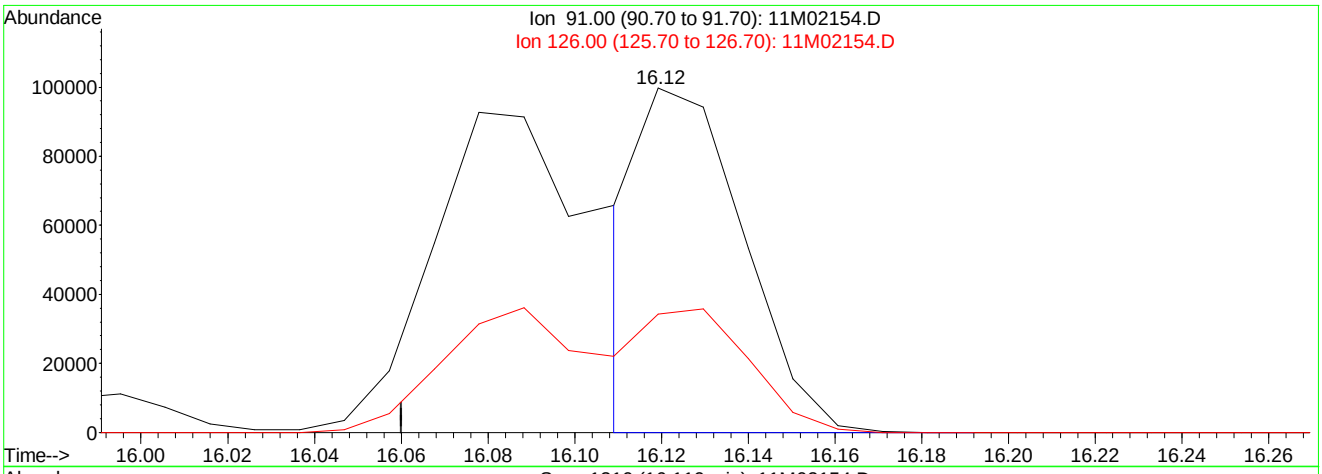

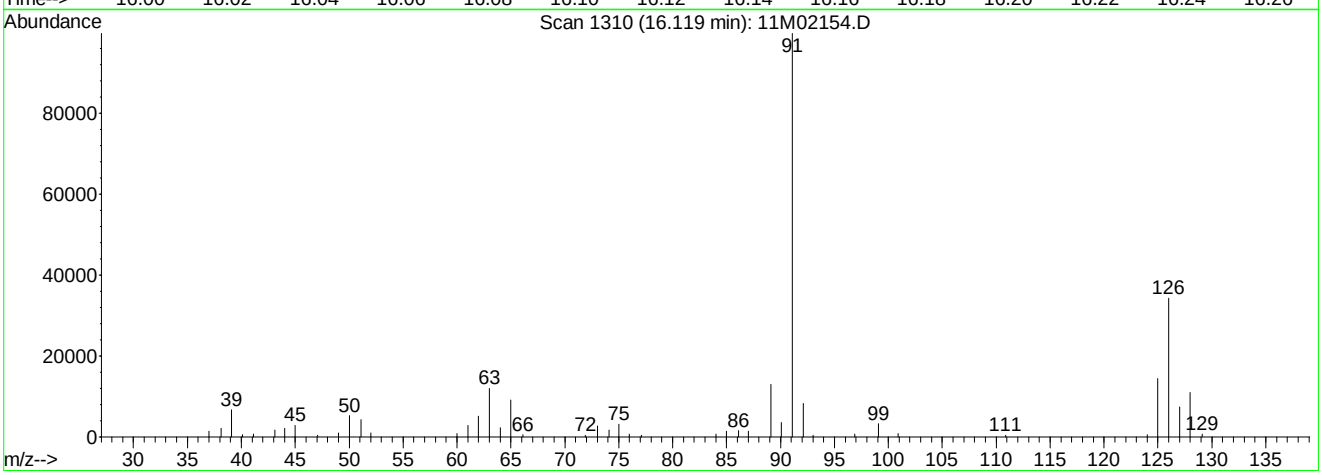

TIC: 11M02154.D

(85) 4-Chlorotoluene (T)

16.12min 6.82ug/L

response 164512

Ion	Exp%	Act%
91.00	100	100
126.00	34.70	37.09
0.00	0.00	0.00
0.00	0.00	0.00

11M02154.D 8260WTR.M Mon Jun 30 10:02:45 2014

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02154.D Vial: 7
Acq On : 27 Jun 2014 17:38 Operator: FJB
Sample : WG482009-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:02 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Multiple Level Calibration

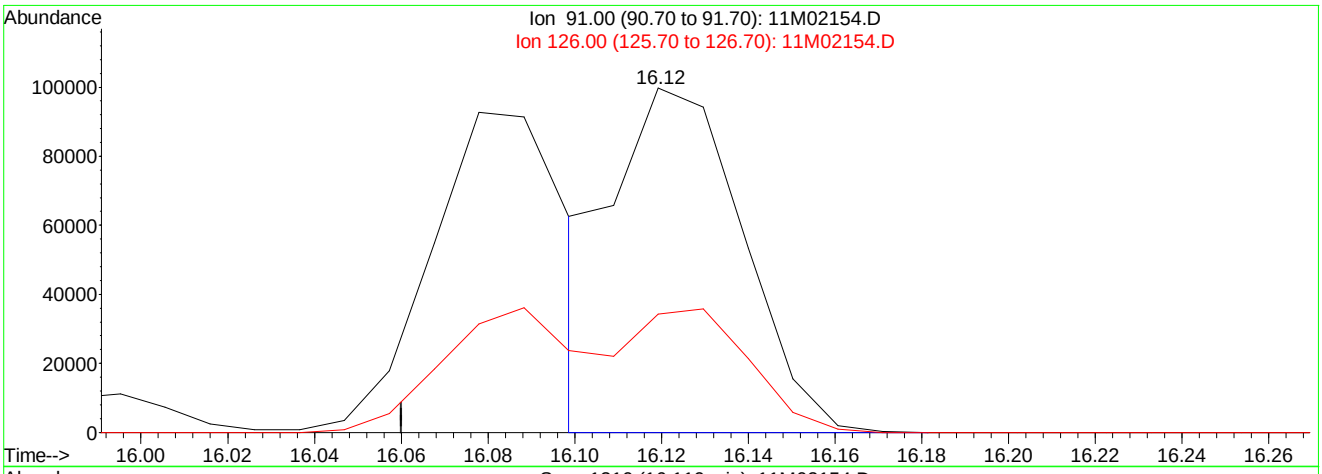

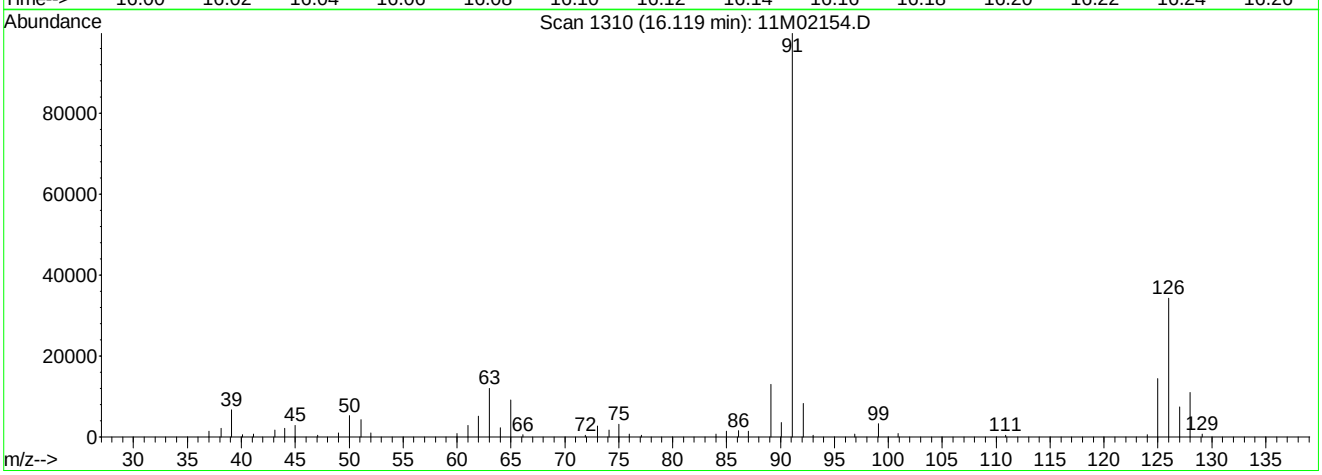

TIC: 11M02154.D

(85) 4-Chlorotoluene (T)

16.12min 8.51ug/L mint

response 205308

Ion	Exp%	Act%
91.00	100	100
126.00	34.70	29.72
0.00	0.00	0.00
0.00	0.00	0.00

11M02154.D 8260WTR.M Mon Jun 30 .4

Analyst: 06/30/2014 14:36 Supervisor: 06/30/2014 15:39

#2 - Data system splits the peak incorrectly or integrates a false peak as a rider peak

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02155.D Vial: 8
Acq On : 27 Jun 2014 18:08 Operator: FJB
Sample : WG482009-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:21 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	974985	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	733438	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	383442	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	128732	9.6173 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 38.48%#		
43) 1,2-Dichloroethane-d4	10.27	65	127119	8.1006 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 32.40%#		
57) Toluene-d8	12.51	98	454218	11.1206 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 44.48%#		
78) p-Bromofluorobenzene	15.67	95	169494	9.6259 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 38.52%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	234019	20.1190 ug/L	99
3) Chloromethane	3.74	50	377778	23.1640 ug/L	98
4) Vinyl Chloride	3.98	62	371364	19.7882 ug/L	99
5) 1,3-Butadiene	4.02	54	342837	21.4069 ug/L	95
6) Bromomethane	4.88	94	163158	17.2213 ug/L	100
7) Chloroethane	5.04	64	176823	18.4020 ug/L	94
8) Trichlorofluoromethane	5.53	101	408537	18.8482 ug/L	100
9) Diethyl ether	6.04	59	639056	64.8012 ug/L	94
10) Isoprene	6.08	67	345555	17.8949 ug/L	88
11) Acrolein	6.28	56	41818	25.1117 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	254413	19.8262 ug/L	100
13) Acetone	6.38	43	36282	12.1665 ug/L	91
14) 1,1-Dichloroethene	6.60	61	372084	17.0103 ug/L	88
15) Tert-Butyl Alcohol	6.70	59	85391	115.3468 ug/L	91
16) Dimethyl Sulfide	6.86	62	259122	17.3739 ug/L	90
17) Iodomethane	7.10	142	281036	29.3634 ug/L	98
18) Methyl acetate	7.10	43	125584	14.9992 ug/L	95
19) Methylene Chloride	7.35	84	261595	17.7488 ug/L	80
20) Carbon Disulfide	7.40	76	815875	28.5107 ug/L	100
21) Acrylonitrile	7.53	53	107996	30.0971 ug/L	100
22) Methyl Tert Butyl Ether	7.56	73	560719	20.0815 ug/L	95
23) trans-1,2-Dichloroethene	7.80	96	266954	19.0750 ug/L	83
24) n-Hexane	7.86	57	319195	27.6130 ug/L	93
25) Diisopropyl ether	8.18	45	2877669	64.4622 ug/L	96
26) Vinyl Acetate	8.34	43	210400	17.2589 ug/L	96
27) 1,1-Dichloroethane	8.39	63	447137	17.3406 ug/L	99
28) Ethyl-Tert-Butyl ether	8.73	59	2664256	68.6031 ug/L	96
29) 2-Butanone	8.91	43	57692	14.0151 ug/L	89
30) Propionitrile	9.02	54	75427	58.7771 ug/L	96
31) 2,2-Dichloropropane	9.13	77	397086	19.7738 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	294453	19.2025 ug/L	82
33) Chloroform	9.39	83	457225	17.7807 ug/L	99
34) 1-Bromopropane	9.51	122	49053	19.8317 ug/L	94
35) Bromochloromethane	9.62	130	174174	18.7999 ug/L	83
36) Tetrahydrofuran	9.64	42	153686	57.7047 ug/L	90
38) 1,1,1-Trichloroethane	9.89	97	419434	19.3517 ug/L	96
39) Cyclohexane	9.93	56	401475	16.3131 ug/L	87
40) 1,1-Dichloropropene	10.08	75	355609	21.9182 ug/L	98
41) Carbon Tetrachloride	10.22	117	385880	20.0997 ug/L	99
42) Tert-Amyl-Methyl ether	10.16	73	2338713	76.9666 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02155.D Vial: 8
Acq On : 27 Jun 2014 18:08 Operator: FJB
Sample : WG482009-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:21 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.38	62	315822	18.3438 ug/L	98
45) Benzene	10.42	78	1007955	20.8900 ug/L	100
46) Trichloroethene	11.13	130	293314	18.7189 ug/L	96
47) Methylcyclohexane	11.21	83	409973	23.0624 ug/L	91
48) 1,2-Dichloropropane	11.33	63	247924	18.0300 ug/L	98
49) 1,4-Dioxane	11.59	88	11148	104.7533 ug/L	94
50) Bromodichloromethane	11.61	83	337165	18.8271 ug/L	100
51) Dibromomethane	11.69	93	139242	19.9099 ug/L	94
52) 2-Chloroethyl Vinyl Ether	11.88	63	110288	20.6186 ug/L	96
53) 4-Methyl-2-Pentanone	11.91	58	50803	17.4498 ug/L	95
54) cis-1,3-Dichloropropene	12.20	75	396630	22.4457 ug/L	99
55) Dimethyl Disulfide	12.46	79	197859	18.7438 ug/L	100
58) Toluene	12.60	91	1097687	21.5580 ug/L	99
59) Ethyl Methacrylate	12.68	69	215144	21.4904 ug/L	91
60) trans-1,3-Dichloropropene	12.76	75	344904	21.9134 ug/L	96
61) 1,1,2-Trichloroethane	12.97	97	191691	20.4348 ug/L	99
62) 2-Hexanone	12.89	43	81155	15.9452 ug/L	99
63) 1,3-Dichloropropane	13.26	76	332404	19.6293 ug/L	91
64) Tetrachloroethene	13.37	164	228957	20.8249 ug/L	95
65) Dibromochloromethane	13.62	129	241724	22.5680 ug/L	97
66) 1,2-Dibromoethane	13.87	107	193951	20.7369 ug/L	100
67) 1-Chlorohexane	13.92	91	346444	22.4392 ug/L	87
68) Chlorobenzene	14.33	112	739694	27.0682 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.35	131	265726	18.7056 ug/L	98
70) Ethylbenzene	14.34	106	408724	27.6267 ug/L	99
71) m-,p-Xylene	14.42	106	991025	57.5104 ug/L	98
72) o-Xylene	14.96	106	477547	19.4096 ug/L	98
73) Styrene	14.99	104	777262	24.0855 ug/L	97
74) Bromoform	15.47	173	143832	22.2262 ug/L	99
75) Isopropylbenzene	15.34	105	1204488	28.7524 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.55	83	210186	20.5093 ug/L	98
79) 1,2,3-Trichloropropane	15.74	110	64969	20.2482 ug/L	88
80) trans-1,4-Dichloro-2-Buten	15.77	53	52676	20.3838 ug/L	69
81) n-Propylbenzene	15.82	91	1400204	30.3070 ug/L	99
82) Bromobenzene	15.95	156	306976	20.5498 ug/L	92
83) 1,3,5-Trimethylbenzene	16.00	105	1005879	23.6693 ug/L	98
84) 2-Chlorotoluene	16.08	91	833451	27.5990 ug/L	82
85) 4-Chlorotoluene	16.12	91	875251	34.1049 ug/L	91
86) a-Methylstyrene	16.37	118	535480	27.4920 ug/L	99
87) tert-Butylbenzene	16.43	134	208323	18.0276 ug/L	84
88) 1,2,4-Trimethylbenzene	16.47	105	1033135	24.2559 ug/L	98
89) sec-Butylbenzene	16.68	105	1237239	30.6857 ug/L	99
90) p-Isopropyltoluene	16.82	119	1058828	31.8283 ug/L	98
91) 1,3-Dichlorobenzene	17.02	146	577486	27.0947 ug/L	97
92) 1,4-Dichlorobenzene	17.13	146	578134	24.4781 ug/L	97
93) n-Butylbenzene	17.31	91	891751	31.8233 ug/L	99
94) 1,2-Dichlorobenzene	17.60	146	537958	20.0331 ug/L	96
95) 1,2-Dibromo-3-Chloropropan	18.53	75	30192	19.1493 ug/L	89
96) 1,2,4-Trichlorobenzene	19.58	180	328409	28.3506 ug/L	95
97) Hexachlorobutadiene	19.72	225	139992	22.4878 ug/L	98
98) Naphthalene	19.93	128	568824	23.8543 ug/L	100
99) 1,2,3-Trichlorobenzene	20.23	180	300893	21.1649 ug/L	96

(#) = qualifier out of range (m) = manual integration
11M02155.D 8260WTR.M Mon Jun 30 09:55:22 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02155.D Vial: 8
Acq On : 27 Jun 2014 18:08 Operator: FJB
Sample : WG482009-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:55 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration

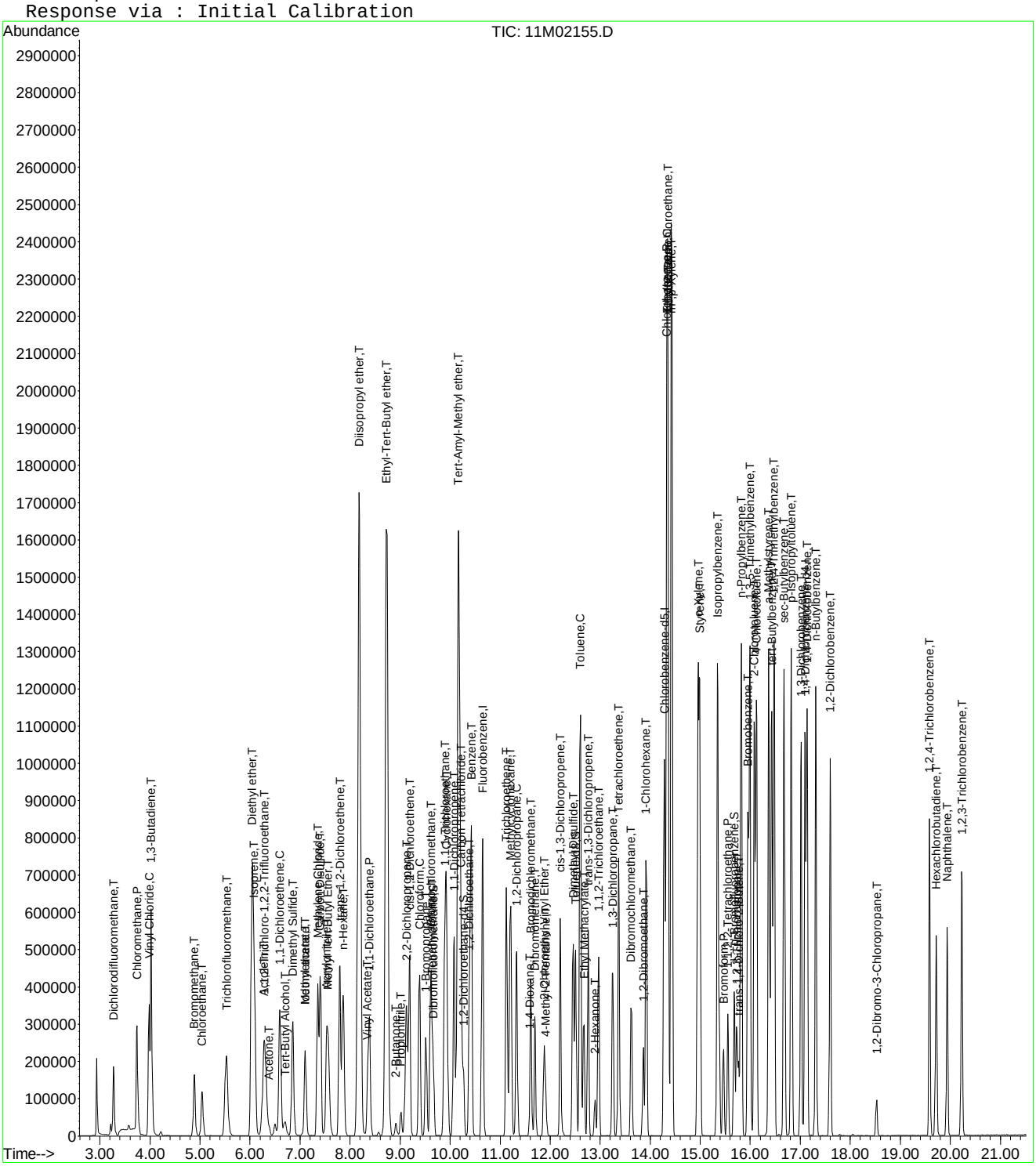

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02156.D Vial: 9
Acq On : 27 Jun 2014 18:38 Operator: FJB
Sample : WG482009-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:23 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	1022945	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	765291	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	396828	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	333188	23.7247 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.88%		
43) 1,2-Dichloroethane-d4	10.27	65	318247	19.3294 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 77.32%#		
57) Toluene-d8	12.51	98	1167170	27.3864 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 109.56%		
78) p-Bromofluorobenzene	15.67	95	436664	23.9624 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.84%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	583562	47.8176 ug/L	100
3) Chloromethane	3.74	50	917650	53.6290 ug/L	98
4) Vinyl Chloride	3.98	62	919547	46.7011 ug/L	99
5) 1,3-Butadiene	4.03	54	700979	41.7174 ug/L	92
6) Bromomethane	4.89	94	409424	41.1886 ug/L	99
7) Chloroethane	5.05	64	442462	43.8882 ug/L	95
8) Trichlorofluoromethane	5.52	101	1040167	45.7391 ug/L	99
9) Diethyl ether	6.04	59	824967	79.7308 ug/L	93
10) Isoprene	6.08	67	914518	45.1389 ug/L	86
11) Acrolein	6.28	56	53465	30.6005 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	635935	47.2345 ug/L	99
13) Acetone	6.38	43	91313	29.1845 ug/L	93
14) 1,1-Dichloroethene	6.60	61	957092	41.7032 ug/L	89
15) Tert-Butyl Alcohol	6.70	59	103610	133.3954 ug/L	92
16) Dimethyl Sulfide	6.86	62	655852	41.9125 ug/L	90
17) Iodomethane	7.10	142	806457	80.3103 ug/L	98
18) Methyl acetate	7.10	43	315831	35.9528 ug/L	95
19) Methylene Chloride	7.35	84	658130	42.5596 ug/L	79
20) Carbon Disulfide	7.40	76	2070313	68.9550 ug/L	100
21) Acrylonitrile	7.53	53	143291	38.0611 ug/L	100
22) Methyl Tert Butyl Ether	7.56	73	1403671	47.9140 ug/L	94
23) trans-1,2-Dichloroethene	7.80	96	677334	46.1292 ug/L	83
24) n-Hexane	7.86	57	817357	67.3929 ug/L	94
25) Diisopropyl ether	8.18	45	3720474	79.4343 ug/L	96
26) Vinyl Acetate	8.35	43	512323	40.0551 ug/L	95
27) 1,1-Dichloroethane	8.39	63	1140573	42.1592 ug/L	99
28) Ethyl-Tert-Butyl ether	8.73	59	3414136	83.7904 ug/L	96
29) 2-Butanone	8.91	43	143413	33.2059 ug/L	91
30) Propionitrile	9.02	54	97206	72.1972 ug/L	100
31) 2,2-Dichloropropane	9.13	77	1009967	47.9356 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	740663	46.0372 ug/L	83
33) Chloroform	9.39	83	1154634	42.7966 ug/L	100
34) 1-Bromopropane	9.52	122	133085	51.2825 ug/L	99
35) Bromochloromethane	9.62	130	436949	44.9520 ug/L	83
36) Tetrahydrofuran	9.64	42	189559	67.8370 ug/L	87
38) 1,1,1-Trichloroethane	9.89	97	1071776	47.1307 ug/L	96
39) Cyclohexane	9.93	56	1042564	40.3764 ug/L	87
40) 1,1-Dichloropropene	10.08	75	910700	53.4999 ug/L	98
41) Carbon Tetrachloride	10.22	117	992372	49.2672 ug/L	99
42) Tert-Amyl-Methyl ether	10.16	73	2944520	92.3604 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M02156.D 8260WTR.M Mon Jun 30 09:55:24 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02156.D Vial: 9
Acq On : 27 Jun 2014 18:38 Operator: FJB
Sample : WG482009-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:23 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.38	62	789473	43.7049 ug/L	98
45) Benzene	10.42	78	2533312	50.0416 ug/L	99
46) Trichloroethene	11.13	130	751284	45.6979 ug/L	96
47) Methylcyclohexane	11.21	83	1061534	56.9154 ug/L	90
48) 1,2-Dichloropropane	11.33	63	628104	43.5366 ug/L	98
49) 1,4-Dioxane	11.60	88	14950	133.8930 ug/L	85
50) Bromodichloromethane	11.61	83	870048	46.3053 ug/L	100
51) Dibromomethane	11.69	93	352533	48.0446 ug/L	97
52) 2-Chloroethyl Vinyl Ether	11.88	63	290528	51.7684 ug/L	95
53) 4-Methyl-2-Pentanone	11.91	58	132982	43.5351 ug/L	97
54) cis-1,3-Dichloropropene	12.20	75	1019389	54.9836 ug/L	100
55) Dimethyl Disulfide	12.46	79	542530	48.9858 ug/L	99
58) Toluene	12.60	91	2740293	51.5780 ug/L	100
59) Ethyl Methacrylate	12.68	69	572456	54.8017 ug/L	89
60) trans-1,3-Dichloropropene	12.76	75	890873	54.2456 ug/L	96
61) 1,1,2-Trichloroethane	12.97	97	484469	49.4962 ug/L	100
62) 2-Hexanone	12.89	43	209380	39.4265 ug/L	98
63) 1,3-Dichloropropane	13.26	76	821060	46.4675 ug/L	91
64) Tetrachloroethene	13.37	164	578857	50.4589 ug/L	97
65) Dibromochloromethane	13.62	129	634847	56.8041 ug/L	99
66) 1,2-Dibromoethane	13.87	107	485361	49.7339 ug/L	99
67) 1-Chlorohexane	13.93	91	905497	56.2080 ug/L	87
68) Chlorobenzene	14.33	112	1914887	67.1563 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.35	131	703902	47.4883 ug/L	98
70) Ethylbenzene	14.34	106	1072100	69.4497 ug/L	94
71) m-,p-Xylene	14.43	106	2534421	140.9540 ug/L	93
72) o-Xylene	14.96	106	1247702	48.6013 ug/L	95
73) Styrene	14.99	104	2054402	61.0114 ug/L	97
74) Bromoform	15.47	173	377841	55.9573 ug/L	100
75) Isopropylbenzene	15.34	105	3033206	69.3922 ug/L	97
77) 1,1,2,2-Tetrachloroethane	15.55	83	524295	49.4334 ug/L	100
79) 1,2,3-Trichloropropane	15.73	110	161861	48.7438 ug/L	91
80) trans-1,4-Dichloro-2-Buten	15.77	53	143808	53.7716 ug/L	78
81) n-Propylbenzene	15.82	91	3523603	73.6947 ug/L	98
82) Bromobenzene	15.95	156	789220	51.0502 ug/L	92
83) 1,3,5-Trimethylbenzene	16.00	105	2573512	58.5144 ug/L	97
84) 2-Chlorotoluene	16.08	91	2108543	67.4673 ug/L	82
85) 4-Chlorotoluene	16.12	91	2242319	84.4265 ug/L	92
86) a-Methylstyrene	16.37	118	1439285	71.4015 ug/L	98
87) tert-Butylbenzene	16.43	134	541123	45.2475 ug/L	82
88) 1,2,4-Trimethylbenzene	16.48	105	2641906	59.9342 ug/L	97
89) sec-Butylbenzene	16.68	105	3119465	74.7583 ug/L	99
90) p-Isopropyltoluene	16.82	119	2683073	77.9324 ug/L	100
91) 1,3-Dichlorobenzene	17.02	146	1473284	66.7923 ug/L	99
92) 1,4-Dichlorobenzene	17.13	146	1474789	60.3359 ug/L	97
93) n-Butylbenzene	17.31	91	2289580	78.9504 ug/L	100
94) 1,2-Dichlorobenzene	17.60	146	1359172	48.9071 ug/L	97
95) 1,2-Dibromo-3-Chloropropan	18.53	75	77910	47.7475 ug/L	88
96) 1,2,4-Trichlorobenzene	19.58	180	866126	72.2480 ug/L	96
97) Hexachlorobutadiene	19.72	225	341410	52.9929 ug/L	97
98) Naphthalene	19.93	128	1554282	62.9820 ug/L	100
99) 1,2,3-Trichlorobenzene	20.23	180	767794	52.1850 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M02156.D 8260WTR.M Mon Jun 30 09:55:24 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02156.D Vial: 9
Acq On : 27 Jun 2014 18:38 Operator: FJB
Sample : WG482009-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:55 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration

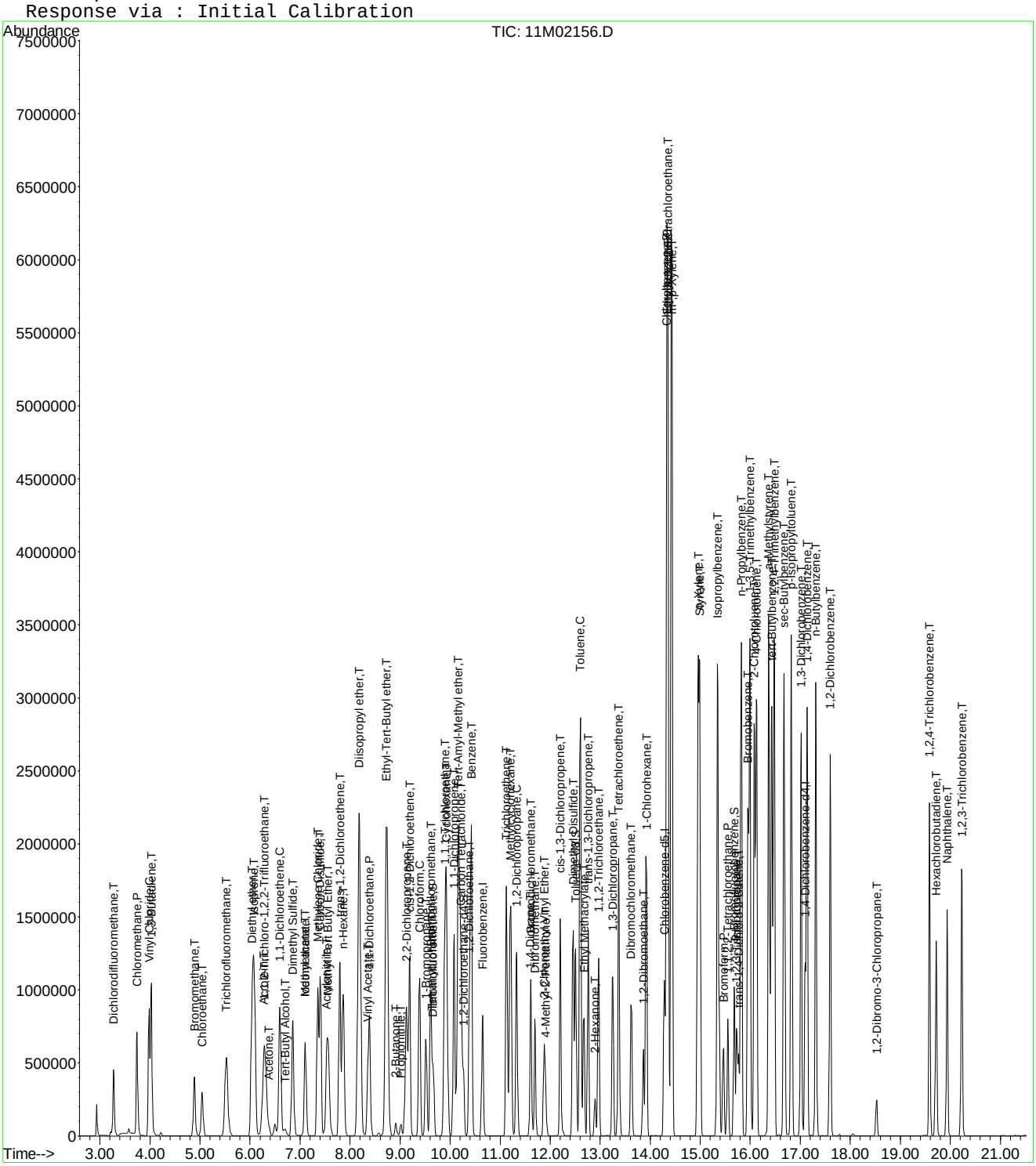

11M02156.D 8260WTR.M Mon Jun 30 09:55:25 2014 Page 3

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02157.D Vial: 10
Acq On : 27 Jun 2014 19:08 Operator: FJB
Sample : WG482009-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:25 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	1043781	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	821539	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	412390	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	689753	48.1335 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 192.52%#		
43) 1,2-Dichloroethane-d4	10.27	65	657868	39.1593 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 156.64%#		
57) Toluene-d8	12.51	98	2396363	52.3783 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 209.52%#		
78) p-Bromofluorobenzene	15.67	95	916809	48.4123 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 193.64%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	1228736	98.6739 ug/L	100
3) Chloromethane	3.74	50	1874435	107.3585 ug/L	98
4) Vinyl Chloride	3.98	62	1876504	93.3997 ug/L	98
5) 1,3-Butadiene	4.01	54	967510	56.4300 ug/L	90
6) Bromomethane	4.89	94	892682	88.0123 ug/L	99
7) Chloroethane	5.05	64	941601	91.5339 ug/L	94
8) Trichlorofluoromethane	5.52	101	2188492	94.3132 ug/L	100
9) Diethyl ether	6.04	59	1750721	165.8248 ug/L	93
10) Isoprene	6.08	67	1918248	92.7911 ug/L	87
11) Acrolein	6.28	56	116553	65.3770 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	1357031	98.7823 ug/L	99
13) Acetone	6.38	43	190867	59.7852 ug/L	96
14) 1,1-Dichloroethene	6.60	61	2008957	85.7886 ug/L	87
15) Tert-Butyl Alcohol	6.69	59	217070	273.8936 ug/L	93
16) Dimethyl Sulfide	6.86	62	1385840	86.7948 ug/L	89
17) Iodomethane	7.10	142	1649677	161.0023 ug/L	97
18) Methyl acetate	7.10	43	665052	74.1954 ug/L	94
19) Methylene Chloride	7.35	84	1404229	88.9952 ug/L	78
20) Carbon Disulfide	7.40	76	4193388	136.8792 ug/L	99
21) Acrylonitrile	7.53	53	300990	78.3533 ug/L	98
22) Methyl Tert Butyl Ether	7.55	73	2946704	98.5772 ug/L	95
23) trans-1,2-Dichloroethene	7.80	96	1444063	96.3833 ug/L	83
24) n-Hexane	7.86	57	1673911	135.2626 ug/L	94
25) Diisopropyl ether	8.18	45	7657389	160.2262 ug/L	95
26) Vinyl Acetate	8.34	43	1145050	87.7366 ug/L	96
27) 1,1-Dichloroethane	8.39	63	2412243	87.3842 ug/L	98
28) Ethyl-Tert-Butyl ether	8.73	59	7044233	169.4298 ug/L	95
29) 2-Butanone	8.91	43	300823	68.2623 ug/L	92
30) Propionitrile	9.02	54	198777	144.6892 ug/L	99
31) 2,2-Dichloropropane	9.12	77	2139098	99.5004 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	1575516	95.9741 ug/L	83
33) Chloroform	9.39	83	2453756	89.1332 ug/L	100
34) 1-Bromopropane	9.52	122	268306	101.3242 ug/L	97
35) Bromochloromethane	9.61	130	932491	94.0169 ug/L	83
36) Tetrahydrofuran	9.64	42	397548	139.4296 ug/L	88
38) 1,1,1-Trichloroethane	9.89	97	2300774	99.1555 ug/L	96
39) Cyclohexane	9.93	56	2153510	81.7362 ug/L	85
40) 1,1-Dichloropropene	10.08	75	1924945	110.8253 ug/L	97
41) Carbon Tetrachloride	10.22	117	2127541	103.5152 ug/L	99
42) Tert-Amyl-Methyl ether	10.16	73	6079957	186.9023 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02157.D Vial: 10
Acq On : 27 Jun 2014 19:08 Operator: FJB
Sample : WG482009-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:25 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.38	62	1653187	89.6929	ug/L	98
45)	Benzene	10.42	78	5187443	100.4244	ug/L	97
46)	Trichloroethene	11.13	130	1586733	94.5887	ug/L	96
47)	Methylcyclohexane	11.21	83	2177021	114.3934	ug/L	90
48)	1,2-Dichloropropane	11.33	63	1330214	90.3622	ug/L	98
49)	1,4-Dioxane	11.60	88	32194	282.5754	ug/L	87
50)	Bromodichloromethane	11.61	83	1868509	97.4598	ug/L	100
51)	Dibromomethane	11.69	93	742871	99.2205	ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.88	63	601498	105.0398	ug/L	94
53)	4-Methyl-2-Pentanone	11.90	58	277677	89.0902	ug/L	95
54)	cis-1,3-Dichloropropene	12.20	75	2172179	114.8238	ug/L	99
55)	Dimethyl Disulfide	12.46	79	1189360	105.2453	ug/L	98
58)	Toluene	12.60	91	5538475	97.1082	ug/L	97
59)	Ethyl Methacrylate	12.68	69	1216464	108.4801	ug/L	90
60)	trans-1,3-Dichloropropene	12.76	75	1898922	107.7095	ug/L	95
61)	1,1,2-Trichloroethane	12.97	97	1016118	96.7049	ug/L	99
62)	2-Hexanone	12.89	43	442416	77.6036	ug/L	97
63)	1,3-Dichloropropane	13.26	76	1731421	91.2800	ug/L	91
64)	Tetrachloroethene	13.37	164	1239038	100.6120	ug/L	96
65)	Dibromochloromethane	13.62	129	1377652	114.8282	ug/L	99
66)	1,2-Dibromoethane	13.87	107	1026876	98.0177	ug/L	98
67)	1-Chlorohexane	13.92	91	1878030	108.5956	ug/L	87
68)	Chlorobenzene	14.33	112	4045349	132.1593	ug/L	96
69)	1,1,1,2-Tetrachloroethane	14.35	131	1554369	97.6848	ug/L	98
70)	Ethylbenzene	14.35	106	2389226	144.1752	ug/L	82
71)	m-,p-Xylene	14.43	106	5278826	273.4857	ug/L	80
72)	o-Xylene	14.96	106	2678040	97.1746	ug/L	91
73)	Styrene	14.99	104	4366818	120.8062	ug/L	100
74)	Bromoform	15.47	173	820882	113.2469	ug/L	99
75)	Isopropylbenzene	15.34	105	6129320	130.6229	ug/L	93
77)	1,1,2,2-Tetrachloroethane	15.55	83	1082463	98.2093	ug/L	98
79)	1,2,3-Trichloropropane	15.74	110	333888	96.7547	ug/L	94
80)	trans-1,4-Dichloro-2-Buten	15.77	53	309239	111.2649	ug/L	79
81)	n-Propylbenzene	15.82	91	6819114	137.2370	ug/L	93
82)	Bromobenzene	15.95	156	1678391	104.4689	ug/L	94
83)	1,3,5-Trimethylbenzene	16.00	105	5235410	114.5464	ug/L	93
84)	2-Chlorotoluene	16.08	91	4303371	132.4993	ug/L	79
85)	4-Chlorotoluene	16.12	91	4570204m	165.5813	ug/L	
86)	a-Methylstyrene	16.37	118	3051485	145.6687	ug/L	98
87)	tert-Butylbenzene	16.43	134	1158227	93.1937	ug/L	79
88)	1,2,4-Trimethylbenzene	16.48	105	5307981	115.8727	ug/L	93
89)	sec-Butylbenzene	16.68	105	6176630	142.4377	ug/L	96
90)	p-Isopropyltoluene	16.82	119	5357928	149.7533	ug/L	97
91)	1,3-Dichlorobenzene	17.02	146	3079384	134.3377	ug/L	100
92)	1,4-Dichlorobenzene	17.13	146	3046139	119.9195	ug/L	99
93)	n-Butylbenzene	17.31	91	4604198	152.7731	ug/L	97
94)	1,2-Dichlorobenzene	17.60	146	2812870	97.3960	ug/L	99
95)	1,2-Dibromo-3-Chloropropan	18.52	75	167146	98.5707	ug/L	89
96)	1,2,4-Trichlorobenzene	19.58	180	1832074	147.0558	ug/L	97
97)	Hexachlorobutadiene	19.72	225	721708	107.7947	ug/L	97
98)	Naphthalene	19.93	128	3316529	129.3196	ug/L	98
99)	1,2,3-Trichlorobenzene	20.23	180	1628970	106.5389	ug/L	96

(#) = qualifier out of range (m) = manual integration
11M02157.D 8260WTR.M Mon Jun 30 10:05:05 2014 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02157.D Vial: 10
Acq On : 27 Jun 2014 19:08 Operator: FJB
Sample : WG482009-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:04 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration

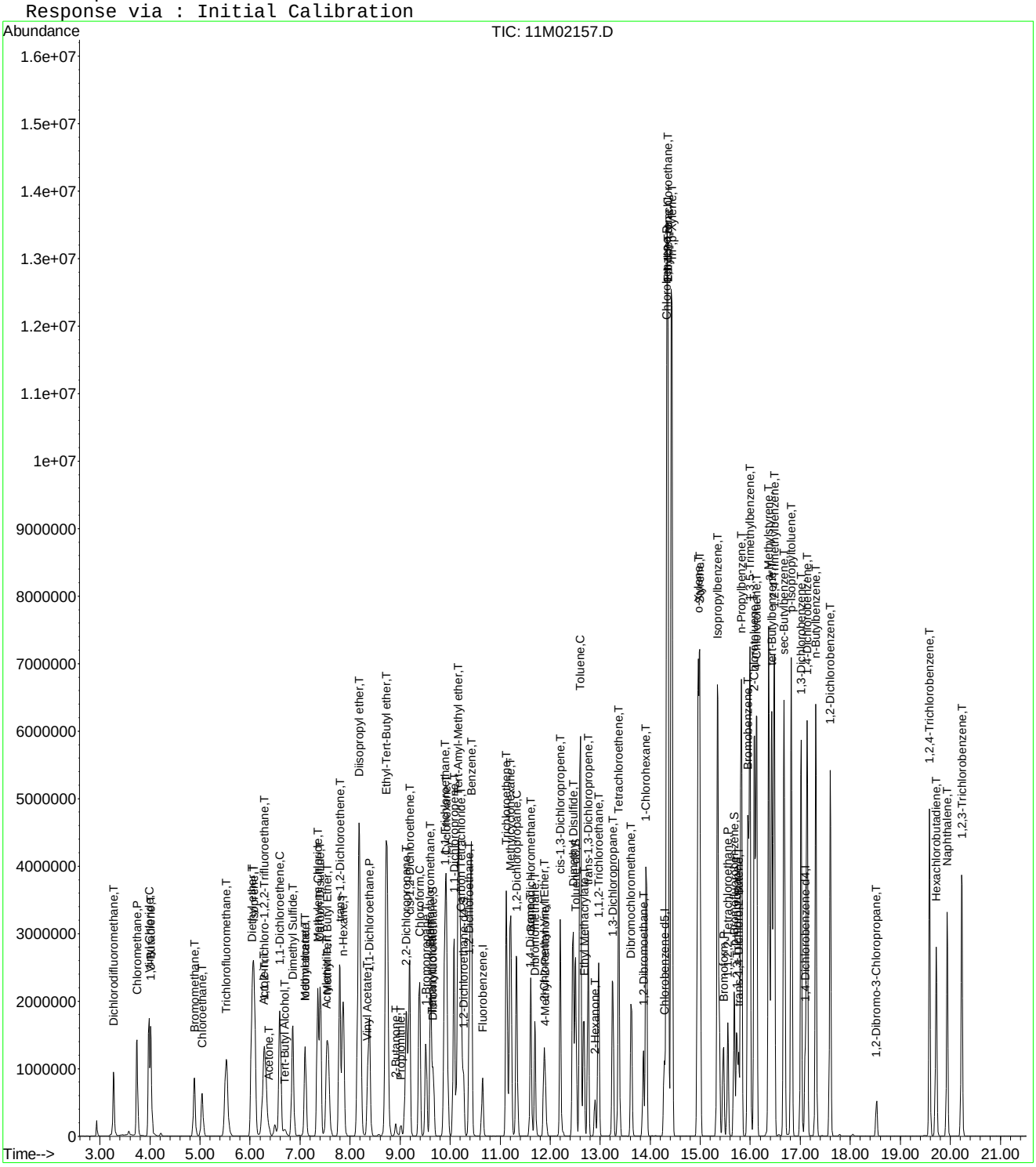

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02157.D Vial: 10
Acq On : 27 Jun 2014 19:08 Operator: FJB
Sample : WG482009-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:55 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Multiple Level Calibration

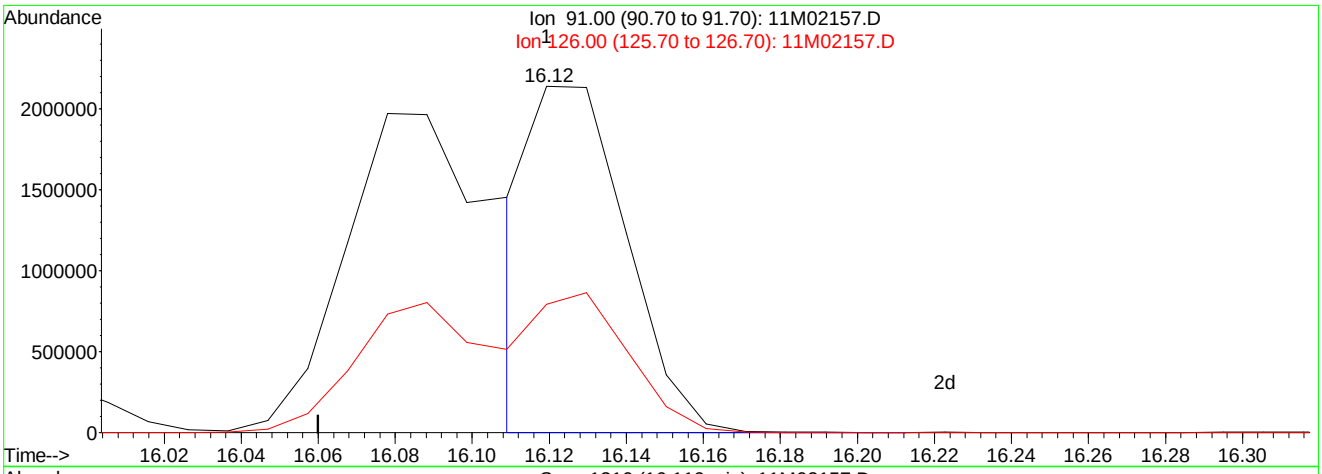

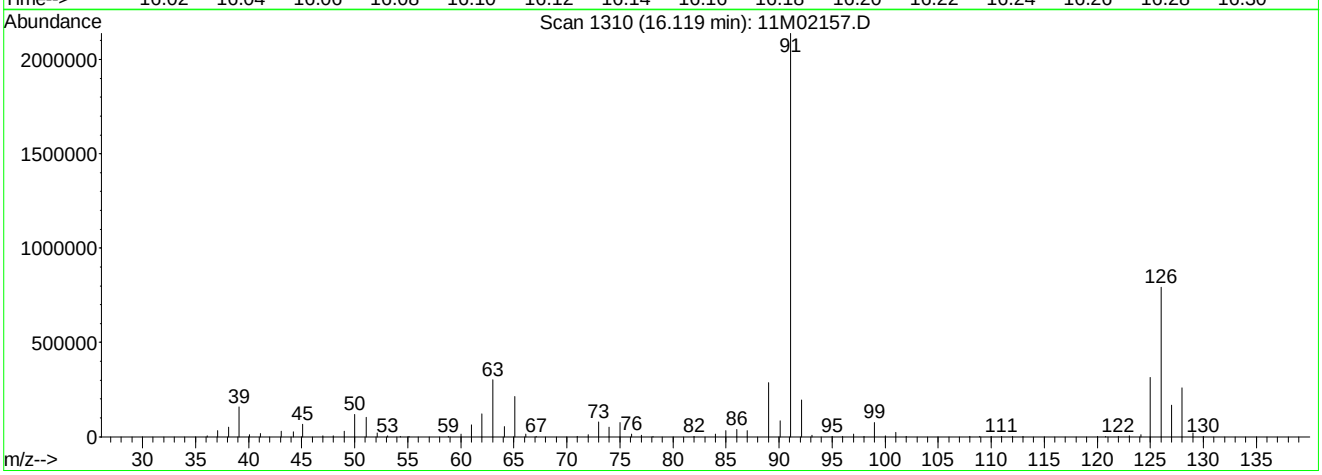

TIC: 11M02157.D

(85) 4-Chlorotoluene (T)

16.12min 132.99ug/L

response 3670717

Ion	Exp%	Act%
91.00	100	100
126.00	34.70	39.70
0.00	0.00	0.00
0.00	0.00	0.00

11M02157.D 8260WTR.M Mon Jun 30 10:04:50 2014

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02157.D Vial: 10
Acq On : 27 Jun 2014 19:08 Operator: FJB
Sample : WG482009-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:04 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Multiple Level Calibration

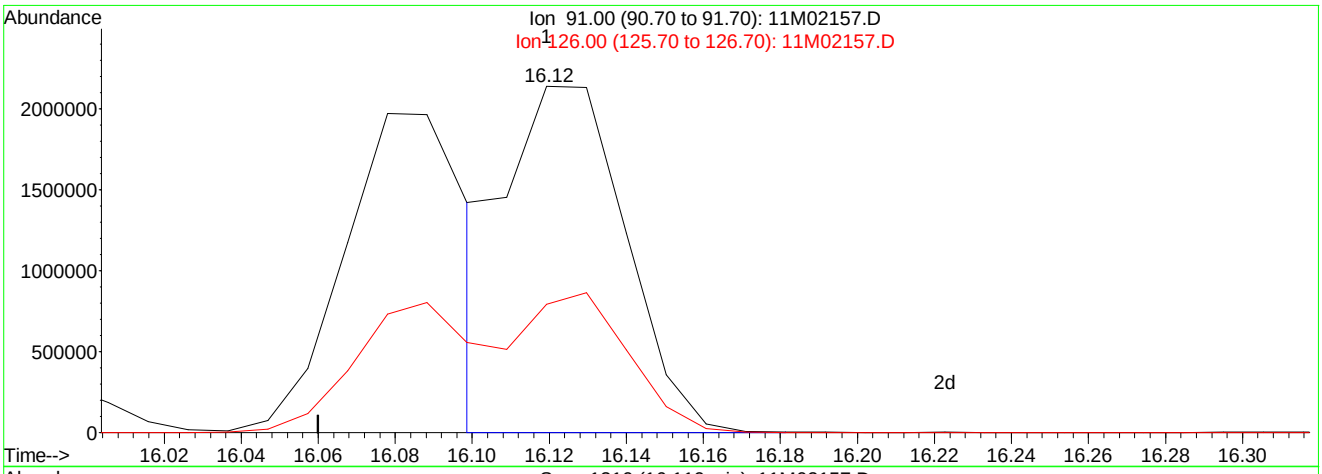

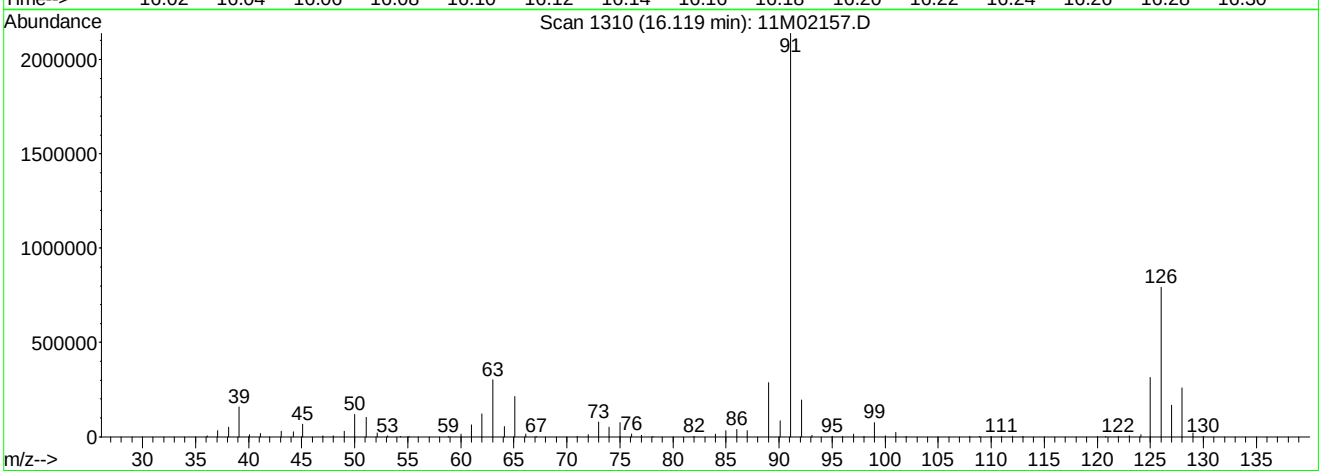

TIC: 11M02157.D

(85) 4-Chlorotoluene (T)

16.12min 165.58ug/L mint

response 4570204

Ion	Exp%	Act%
91.00	100	100
126.00	34.70	31.88
0.00	0.00	0.00
0.00	0.00	0.00

11M02157.D 8260WTR.M Mon Jun 30 .4

Analyst: 06/30/2014 14:36 Supervisor: 06/30/2014 15:39

#2 - Data system splits the peak incorrectly or integrates a false peak as a rider peak

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02158.D Vial: 11
Acq On : 27 Jun 2014 19:38 Operator: FJB
Sample : WG482009-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:28 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	1056118	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	808435	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	414345	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1391536	95.9721 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 383.88%#		
43) 1,2-Dichloroethane-d4	10.27	65	1306838	76.8802 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 307.52%#		
57) Toluene-d8	12.51	98	4755763	105.6336 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 422.52%#		
78) p-Bromofluorobenzene	15.67	95	1861403	97.8281 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 391.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2468775	195.9396 ug/L	100
3) Chloromethane	3.74	50	3696899	209.2668 ug/L	97
4) Vinyl Chloride	3.98	62	3604649	177.3193 ug/L	96
5) 1,3-Butadiene	4.01	54	1734703	99.9946 ug/L	90
6) Bromomethane	4.88	94	1964663	191.4394 ug/L	99
7) Chloroethane	5.04	64	1920558	184.5182 ug/L	93
8) Trichlorofluoromethane	5.52	101	4424632	188.4524 ug/L	100
9) Diethyl ether	6.05	59	9946	0.9311 ug/L	91
10) Isoprene	6.08	67	3925306	187.6601 ug/L	87
11) Acrolein	6.29	56	3618	2.0057 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	2744697	197.4607 ug/L	99
13) Acetone	6.37	43	372017	115.1655 ug/L	93
14) 1,1-Dichloroethene	6.60	61	4053588	171.0785 ug/L	86
15) Tert-Butyl Alcohol	6.72	59	12257	15.2849 ug/L #	82
16) Dimethyl Sulfide	6.86	62	2781170	172.1492 ug/L	89
17) Iodomethane	7.10	142	3341496	322.3080 ug/L	96
18) Methyl acetate	7.10	43	1282805	141.4422 ug/L	92
19) Methylene Chloride	7.35	84	2795620	175.1070 ug/L	77
20) Carbon Disulfide	7.40	76	7949575	256.4562 ug/L	97
21) Acrylonitrile	7.55	53	58648	15.0888 ug/L #	40
22) Methyl Tert Butyl Ether	7.55	73	5690630	188.1470 ug/L	96
23) trans-1,2-Dichloroethene	7.79	96	2907151	191.7699 ug/L	81
24) n-Hexane	7.86	57	3364885	268.7277 ug/L	93
25) Diisopropyl ether	8.19	45	19135	0.3957 ug/L	97
26) Vinyl Acetate	8.34	43	2192224	166.0116 ug/L	96
27) 1,1-Dichloroethane	8.39	63	4715347	168.8194 ug/L	97
28) Ethyl-Tert-Butyl ether	8.74	59	45264	1.0760 ug/L #	80
29) 2-Butanone	8.91	43	574108	128.7539 ug/L	88
30) Propionitrile	9.03	54	7583	5.4552 ug/L #	1
31) 2,2-Dichloropropane	9.13	77	4294393	197.4207 ug/L	98
32) cis-1,2-Dichloroethene	9.19	96	3154709	189.9274 ug/L	82
33) Chloroform	9.39	83	4782343	171.6903 ug/L	98
34) 1-Bromopropane	9.51	122	551706	205.9148 ug/L	96
35) Bromochloromethane	9.61	130	1852642	184.6076 ug/L	83
36) Tetrahydrofuran	9.65	42	10933	3.7897 ug/L	85
38) 1,1,1-Trichloroethane	9.89	97	4654979	198.2703 ug/L	97
39) Cyclohexane	9.93	56	4381967	164.3742 ug/L	85
40) 1,1-Dichloropropene	10.08	75	3839033	218.4436 ug/L	95
41) Carbon Tetrachloride	10.22	117	4222376	203.0393 ug/L	99
42) Tert-Amyl-Methyl ether	10.17	73	29626	0.9001 ug/L #	95

(#) = qualifier out of range (m) = manual integration
11M02158.D 8260WTR.M Mon Jun 30 10:06:48 2014 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02158.D Vial: 11
Acq On : 27 Jun 2014 19:38 Operator: FJB
Sample : WG482009-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:28 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.38	62	3202076	171.6977 ug/L		98
45)	Benzene	10.42	78	9340933	178.7199 ug/L		90
46)	Trichloroethene	11.13	130	3199861	188.5225 ug/L		97
47)	Methylcyclohexane	11.21	83	4355321	226.1807 ug/L		91
48)	1,2-Dichloropropane	11.33	63	2650654	177.9572 ug/L		98
49)	1,4-Dioxane	11.60	88	6749	58.5458 ug/L	#	50
50)	Bromodichloromethane	11.61	83	3669942	189.1848 ug/L		98
51)	Dibromomethane	11.69	93	1470934	194.1683 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.88	63	1203212	207.6629 ug/L		94
53)	4-Methyl-2-Pentanone	11.90	58	548900	174.0525 ug/L		95
54)	cis-1,3-Dichloropropene	12.20	75	4228588	220.9168 ug/L		97
55)	Dimethyl Disulfide	12.46	79	2450261	214.2884 ug/L		94
58)	Toluene	12.60	91	9499510	169.2584 ug/L		88
59)	Ethyl Methacrylate	12.68	69	2410402	218.4355 ug/L		89
60)	trans-1,3-Dichloropropene	12.76	75	3702513	213.4158 ug/L		93
61)	1,1,2-Trichloroethane	12.97	97	2029884	196.3174 ug/L		100
62)	2-Hexanone	12.89	43	872095	155.4525 ug/L		97
63)	1,3-Dichloropropane	13.26	76	3338460	178.8554 ug/L		92
64)	Tetrachloroethene	13.37	164	2523688	208.2494 ug/L		97
65)	Dibromochloromethane	13.62	129	2746231	232.6104 ug/L		98
66)	1,2-Dibromoethane	13.87	107	2032620	197.1631 ug/L		98
67)	1-Chlorohexane	13.92	91	3820660	224.5076 ug/L		89
68)	Chlorobenzene	14.33	112	7583749	251.7728 ug/L		88
69)	1,1,1,2-Tetrachloroethane	14.35	131	3266554	208.6152 ug/L		98
70)	Ethylbenzene	14.35	106	4969226	304.7230 ug/L		55
71)	m-,p-Xylene	14.43	106	9295611	489.3935 ug/L		61
72)	o-Xylene	14.96	106	5368414	197.9542 ug/L		76
73)	Styrene	14.99	104	8016559	225.3695 ug/L		92
74)	Bromoform	15.47	173	1616848	226.6721 ug/L		98
75)	Isopropylbenzene	15.34	105	10303748	223.1441 ug/L		80
77)	1,1,2,2-Tetrachloroethane	15.55	83	2084092	188.1925 ug/L		99
79)	1,2,3-Trichloropropane	15.74	110	652114	188.0792 ug/L		95
80)	trans-1,4-Dichloro-2-Buten	15.77	53	622772	223.0176 ug/L		91
81)	n-Propylbenzene	15.82	91	10887421	218.0792 ug/L	#	78
82)	Bromobenzene	15.95	156	3346094	207.2898 ug/L		92
83)	1,3,5-Trimethylbenzene	16.00	105	9029770	196.6316 ug/L		83
84)	2-Chlorotoluene	16.09	91	9258065m	283.7077 ug/L		
85)	4-Chlorotoluene	16.13	91	6277816	226.3759 ug/L		80
86)	a-Methylstyrene	16.37	118	5817444	276.3969 ug/L		93
87)	tert-Butylbenzene	16.43	134	2335585	187.0400 ug/L		69
88)	1,2,4-Trimethylbenzene	16.48	105	8976476	195.0310 ug/L		80
89)	sec-Butylbenzene	16.68	105	10201026	234.1333 ug/L		85
90)	p-Isopropyltoluene	16.82	119	9094275	252.9843 ug/L		87
91)	1,3-Dichlorobenzene	17.02	146	5735004	249.0083 ug/L		95
92)	1,4-Dichlorobenzene	17.13	146	5670796	222.1928 ug/L		96
93)	n-Butylbenzene	17.31	91	8145531	269.0037 ug/L		90
94)	1,2-Dichlorobenzene	17.60	146	5247726	180.8459 ug/L		97
95)	1,2-Dibromo-3-Chloropropan	18.52	75	347476	203.9496 ug/L		89
96)	1,2,4-Trichlorobenzene	19.58	180	3845851	307.2399 ug/L		100
97)	Hexachlorobutadiene	19.72	225	1563080	232.3610 ug/L		97
98)	Naphthalene	19.93	128	6349801	246.4262 ug/L	#	94
99)	1,2,3-Trichlorobenzene	20.23	180	3343244	217.6253 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02158.D Vial: 11
Acq On : 27 Jun 2014 19:38 Operator: FJB
Sample : WG482009-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:06 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration

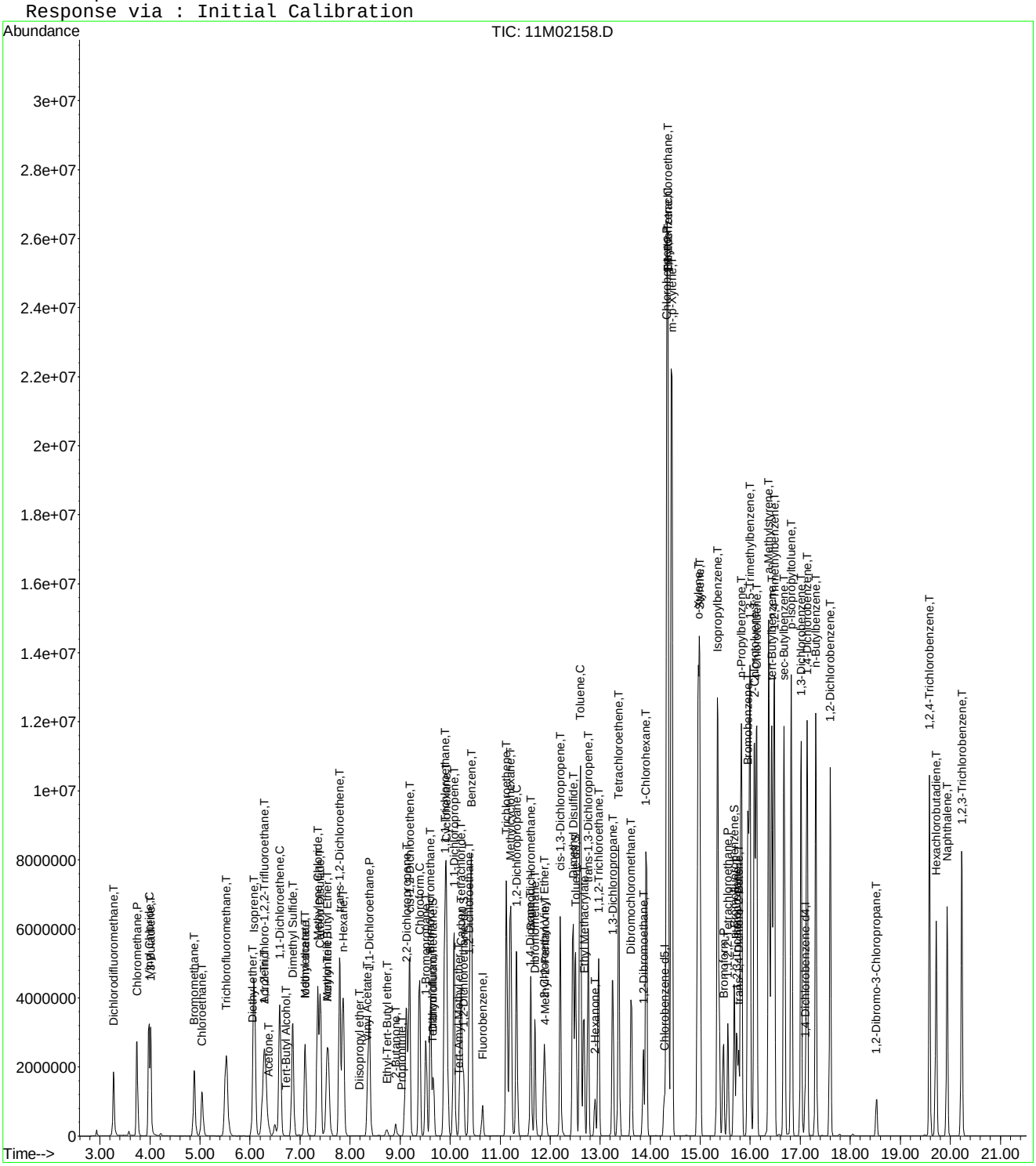

11M02158.D 8260WTR.M Mon Jun 30 10:06:49 2014 Page 3

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02158.D Vial: 11
Acq On : 27 Jun 2014 19:38 Operator: FJB
Sample : WG482009-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:55 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Multiple Level Calibration

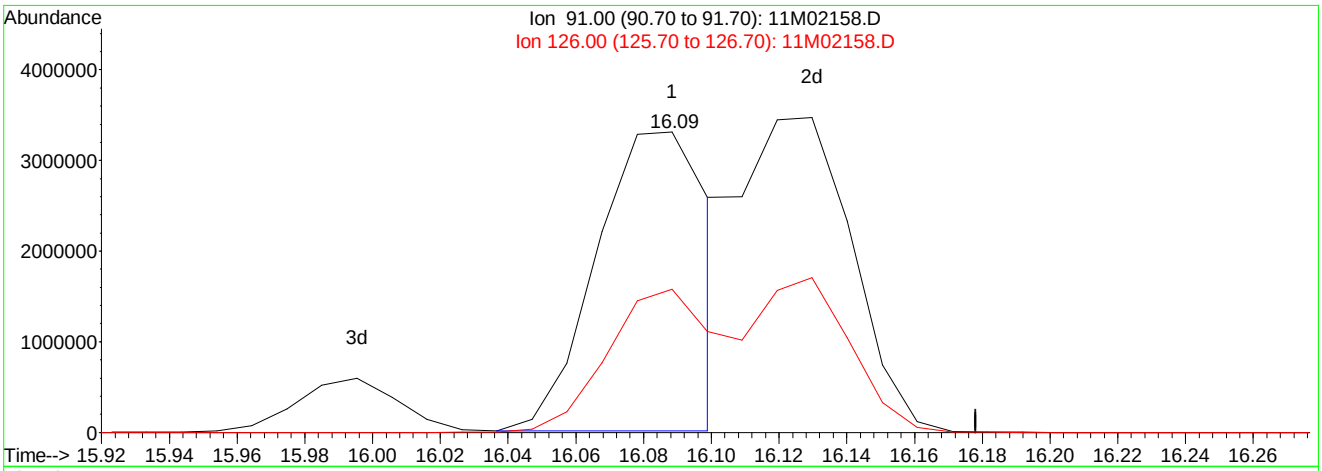

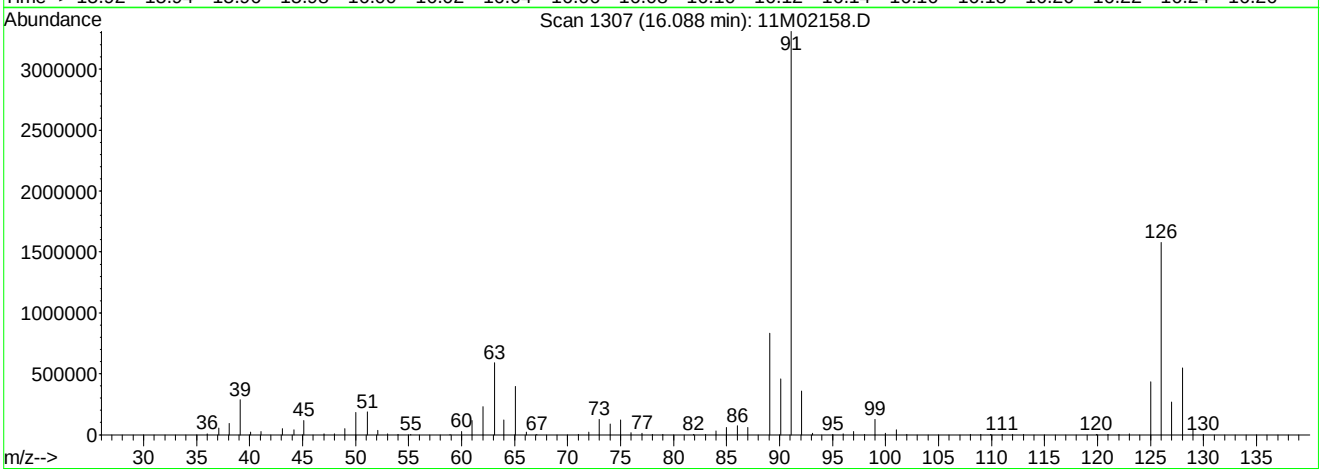

TIC: 11M02158.D

(84) 2-Chlorotoluene (T)

16.09min 232.16ug/L

response 7575908

Ion	Exp%	Act%
91.00	100	100
126.00	33.00	50.79#
0.00	0.00	0.00
0.00	0.00	0.00

11M02158.D 8260WTR.M Mon Jun 30 10:06:34 2014

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02158.D Vial: 11
Acq On : 27 Jun 2014 19:38 Operator: FJB
Sample : WG482009-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:06 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Multiple Level Calibration

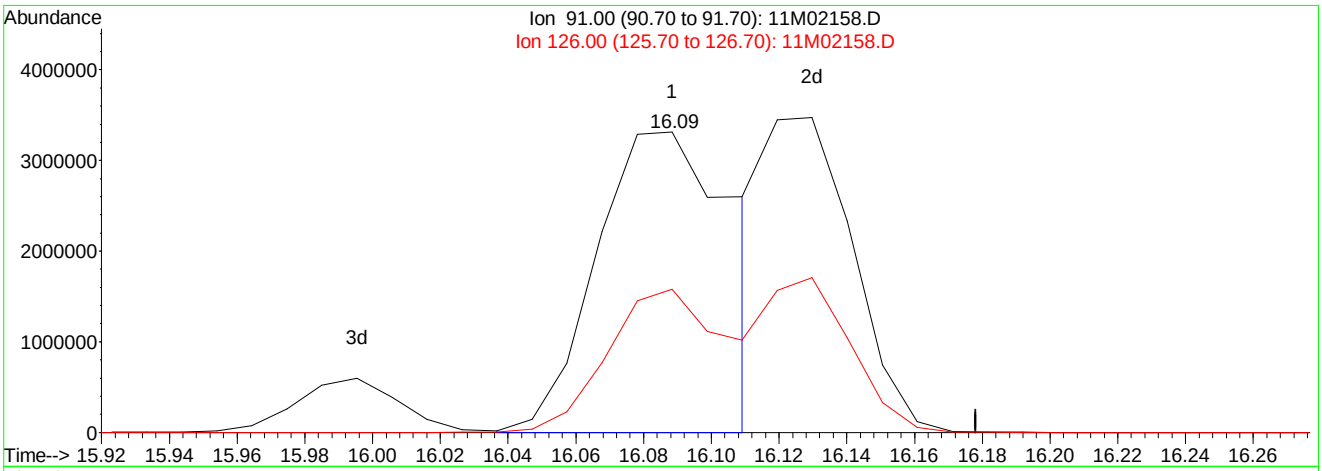

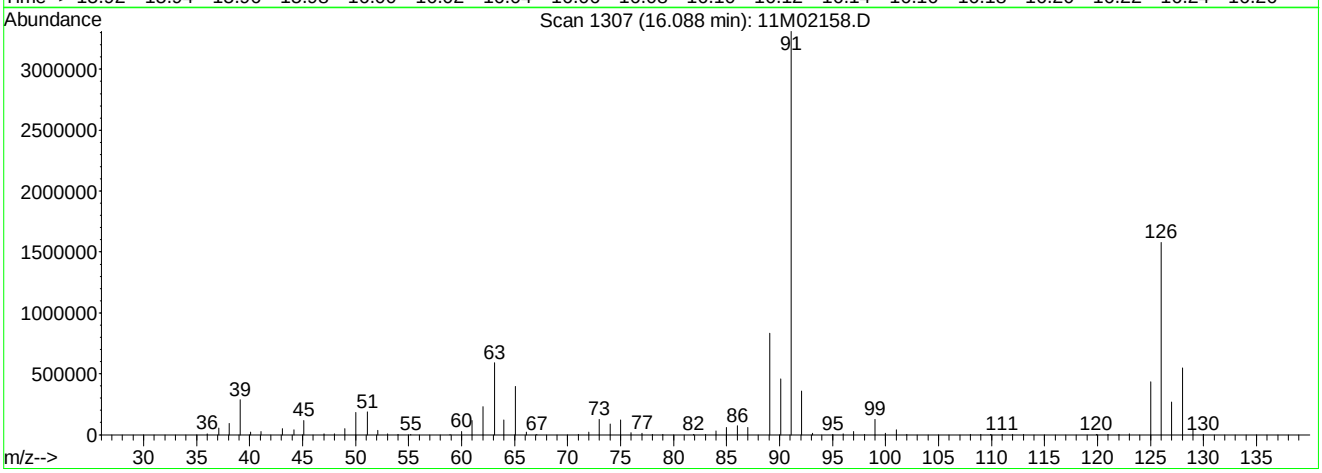

TIC: 11M02158.D

(84) 2-Chlorotoluene (T)

16.09min 283.71ug/L mint

response 9258065

Ion	Exp%	Act%
91.00	100	100
126.00	33.00	41.56
0.00	0.00	0.00
0.00	0.00	0.00

11M02158.D 8260WTR.M Mon Jun 30 .4

Analyst: 06/30/2014 14:36 Supervisor: 06/30/2014 15:40

#2 - Data system splits the peak incorrectly or integrates a false peak as a rider peak

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02159.D Vial: 12
Acq On : 27 Jun 2014 20:09 Operator: FJB
Sample : WG482009-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:09:00 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:08:56 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	1046690	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	814634	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	426086	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	2077785	144.5925 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 578.36%#		
43) 1,2-Dichloroethane-d4	10.27	65	1946024	115.5142 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 462.04%#		
57) Toluene-d8	12.51	98	6719616	148.1184 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 592.48%#		
78) p-Bromofluorobenzene	15.67	95	2784415	142.3056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 569.24%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	3636816	291.2436 ug/L	99
3) Chloromethane	3.73	50	4959822	283.2848 ug/L	95
4) Vinyl Chloride	3.97	62	4986776	247.5182 ug/L	93
5) 1,3-Butadiene	4.01	54	2446134	142.2742 ug/L	90
6) Bromomethane	4.88	94	2961043	291.1269 ug/L	99
7) Chloroethane	5.04	64	2838893	275.2043 ug/L	93
8) Trichlorofluoromethane	5.52	101	6449861	277.1847 ug/L	98
9) Diethyl ether	6.04	59	2613611	246.8680 ug/L	93
10) Isoprene	6.08	67	5917645	285.4576 ug/L	87
11) Acrolein	6.28	56	179430	100.3662 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	4135933	300.2300 ug/L	99
13) Acetone	6.37	43	569142	177.7767 ug/L	94
14) 1,1-Dichloroethene	6.60	61	5925108	252.3169 ug/L	85
15) Tert-Butyl Alcohol	6.70	59	298725	375.8764 ug/L	94
16) Dimethyl Sulfide	6.84	62	4154167	259.4513 ug/L	89
17) Iodomethane	7.10	142	4793860	466.5625 ug/L	95
18) Methyl acetate	7.10	43	1989710	221.3617 ug/L	92
19) Methylene Chloride	7.35	84	4177974	264.0496 ug/L	75
20) Carbon Disulfide	7.40	76	10562193	343.8095 ug/L	92
21) Acrylonitrile	7.53	53	480061	124.6215 ug/L	92
22) Methyl Tert Butyl Ether	7.55	73	8428839	281.1895 ug/L	97
23) trans-1,2-Dichloroethene	7.79	96	4305354	286.5603 ug/L	80
24) n-Hexane	7.86	57	5002842	403.1377 ug/L	92
25) Diisopropyl ether	8.18	45	10728016	223.8533 ug/L	92
26) Vinyl Acetate	8.34	43	3256534	248.8304 ug/L	95
27) 1,1-Dichloroethane	8.39	63	6870854	248.2069 ug/L	95
28) Ethyl-Tert-Butyl ether	8.73	59	9983138	239.4499 ug/L	94
29) 2-Butanone	8.91	43	884246	200.0941 ug/L	89
30) Propionitrile	9.02	54	287230	208.4928 ug/L	96
31) 2,2-Dichloropropane	9.12	77	6325056	293.3930 ug/L	97
32) cis-1,2-Dichloroethene	9.19	96	4689427	284.8672 ug/L	80
33) Chloroform	9.39	83	6883468	249.3485 ug/L	96
34) 1-Bromopropane	9.51	122	822230	309.6475 ug/L	97
35) Bromochloromethane	9.61	130	2798125	281.3322 ug/L	82
36) Tetrahydrofuran	9.64	42	578087	202.1854 ug/L	87
38) 1,1,1-Trichloroethane	9.89	97	6825668	293.3455 ug/L	97
39) Cyclohexane	9.93	56	6500664	246.0462 ug/L	84
40) 1,1-Dichloropropene	10.08	75	5623635	322.8710 ug/L	94
41) Carbon Tetrachloride	10.22	117	6247919	303.1469 ug/L	99
42) Tert-Amyl-Methyl ether	10.16	73	8658109	265.4168 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M02159.D 8260WTR.M Mon Jun 30 10:29:34 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02159.D Vial: 12
Acq On : 27 Jun 2014 20:09 Operator: FJB
Sample : WG482009-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:09:00 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:08:56 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.38	62	4702578	254.4270 ug/L		98
45)	Benzene	10.42	78	12181295	235.1638 ug/L		82
46)	Trichloroethene	11.13	130	4705132	279.7038 ug/L		97
47)	Methylcyclohexane	11.21	83	6426317	336.7379 ug/L		91
48)	1,2-Dichloropropane	11.32	63	3950939	267.6437 ug/L		96
49)	1,4-Dioxane	11.60	88	50101	438.5278 ug/L		83
50)	Bromodichloromethane	11.61	83	5373899	279.5188 ug/L		96
51)	Dibromomethane	11.69	93	2199404	292.9439 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.88	63	1844799	321.2626 ug/L		94
53)	4-Methyl-2-Pentanone	11.90	58	824323	263.7417 ug/L		94
54)	cis-1,3-Dichloropropene	12.20	75	6076914	320.3398 ug/L		93
55)	Dimethyl Disulfide	12.46	79	3735530	329.6346 ug/L		89
58)	Toluene	12.60	91	11956177	211.4092 ug/L		80
59)	Ethyl Methacrylate	12.68	69	3583696	322.2905 ug/L		89
60)	trans-1,3-Dichloropropene	12.76	75	5350880	306.0819 ug/L		90
61)	1,1,2-Trichloroethane	12.97	97	3030975	290.9059 ug/L		99
62)	2-Hexanone	12.89	43	1298933	229.7753 ug/L		96
63)	1,3-Dichloropropane	13.26	76	4891127	260.0444 ug/L		94
64)	Tetrachloroethene	13.37	164	3763381	308.1831 ug/L		97
65)	Dibromochloromethane	13.62	129	4079404	342.9031 ug/L		97
66)	1,2-Dibromoethane	13.87	107	3036831	292.3295 ug/L		98
67)	1-Chlorohexane	13.93	91	5513560	321.5196 ug/L		90
68)	Chlorobenzene	14.33	112	9892795	325.9316 ug/L		78
69)	1,1,1,2-Tetrachloroethane	14.35	131	4838101	306.6292 ug/L		99
70)	Ethylbenzene	14.35	106	7114624	432.9632 ug/L	#	38
71)	m-,p-Xylene	14.43	106	11563370	604.1535 ug/L		56
72)	o-Xylene	14.96	106	7616603	278.7164 ug/L		65
73)	Styrene	14.99	104	10421655	290.7544 ug/L		82
74)	Bromoform	15.47	173	2442805	339.8601 ug/L		97
75)	Isopropylbenzene	15.34	105	12701402	272.9759 ug/L	#	67
77)	1,1,2,2-Tetrachloroethane	15.55	83	3153860	276.9444 ug/L		98
79)	1,2,3-Trichloropropane	15.74	110	1005343	281.9658 ug/L		96
80)	trans-1,4-Dichloro-2-Buten	15.77	53	972866	338.7879 ug/L		92
81)	n-Propylbenzene	15.82	91	13171511	256.5604 ug/L	#	63
82)	Bromobenzene	15.95	156	4949763	298.1872 ug/L		89
83)	1,3,5-Trimethylbenzene	16.00	105	11542338	244.4192 ug/L		74
84)	2-Chlorotoluene	16.09	91	11483751	342.2154 ug/L	#	73
86)	a-Methylstyrene	16.37	118	8171965	377.5655 ug/L		87
87)	tert-Butylbenzene	16.43	134	3589288	279.5193 ug/L		56
88)	1,2,4-Trimethylbenzene	16.48	105	11372938	240.2898 ug/L	#	66
89)	sec-Butylbenzene	16.68	105	12731421	284.1588 ug/L	#	73
90)	p-Isopropyltoluene	16.82	119	11491541	310.8627 ug/L	#	73
91)	1,3-Dichlorobenzene	17.02	146	7993010	337.4856 ug/L		87
92)	1,4-Dichlorobenzene	17.13	146	7873920	300.0142 ug/L		88
93)	n-Butylbenzene	17.31	91	10460837	335.9466 ug/L	#	79
94)	1,2-Dichlorobenzene	17.60	146	7523569	252.1310 ug/L		90
95)	1,2-Dibromo-3-Chloropropan	18.52	75	547852	312.6987 ug/L		88
96)	1,2,4-Trichlorobenzene	19.58	180	5656622	439.4477 ug/L		96
97)	Hexachlorobutadiene	19.72	225	2377740	343.7251 ug/L		96
98)	Naphthalene	19.93	128	8650451	326.4602 ug/L	#	89
99)	1,2,3-Trichlorobenzene	20.23	180	4982002	315.3625 ug/L		98

(#) = qualifier out of range (m) = manual integration
11M02159.D 8260WTR.M Mon Jun 30 10:29:34 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02159.D Vial: 12
Acq On : 27 Jun 2014 20:09 Operator: FJB
Sample : WG482009-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:09 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:26:20 2014
Response via : Initial Calibration

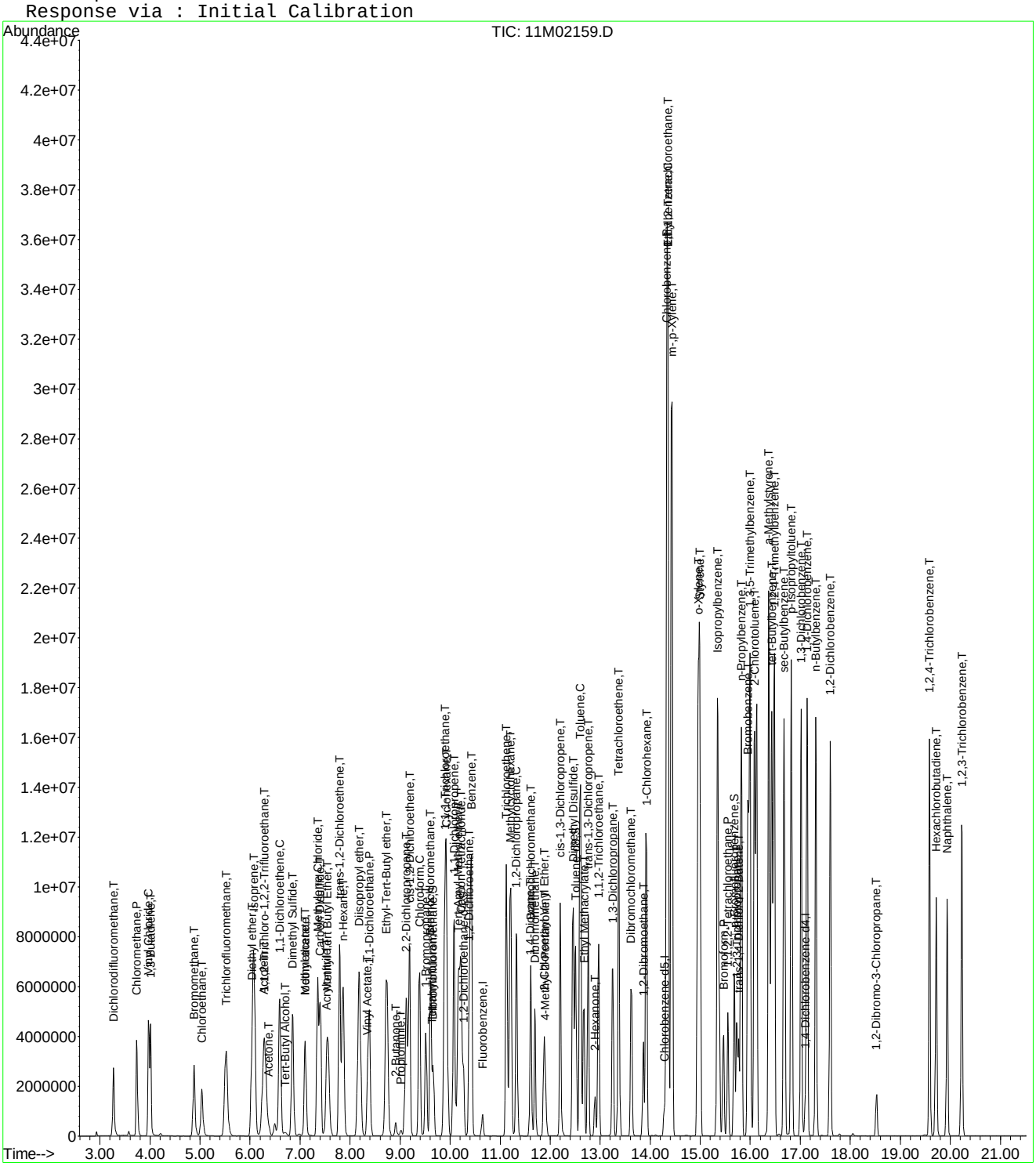
Abundance
TIC: 11M02159.D
Time-->
Dichlorodifluoromethane,T
Chloromethane,P
Vinyl Chloride,C
Bromomethane,T
Chloroethane,I
Trichlorofluoromethane,T
Diethyl ether,T
Isoprene,T
Acrolein,T
Acetone,T
Tert-Butyl Alcohol,T
1,1-Dichloroethene,C
Dimethyl Sulfide,T
Methylene Chloride,C
Carbon Disulfide,T
Acrylonitrile,T
Vinyl Acetate,T
Methyl Tert-Butyl Ether,T
n-Hexane,T
trans-1,2-Dichloroethene,T
Diisopropyl ether,T
1,1-Dichloroethane,P
Ethyl-Tert-Butyl ether,T
2,2-Dichloropropane,T
2-Butanone,T
Propionitrile,T
Methyl Acrylate,T
Chloroform,C
Methyl Acrylate,T
Methyl Methacrylate,T
Tetrahydrofuran,T
1,2-Dichloroethane,T
Methyl Acrylate,T
Methyl Methacrylate,T
1,1,1-Trichloroethane,T
Benzene,T
Fluorobenzene,I
Methyl Cyclohexane,T
1,2-Dichloropropane,C
Dibromomethane,T
4-Methyl-2-Pentanone,T
Trichloroethene,T
Dibromomethane,T
Methyl Methacrylate,T
Methyl Methacrylate,T
Methyl Methacrylate

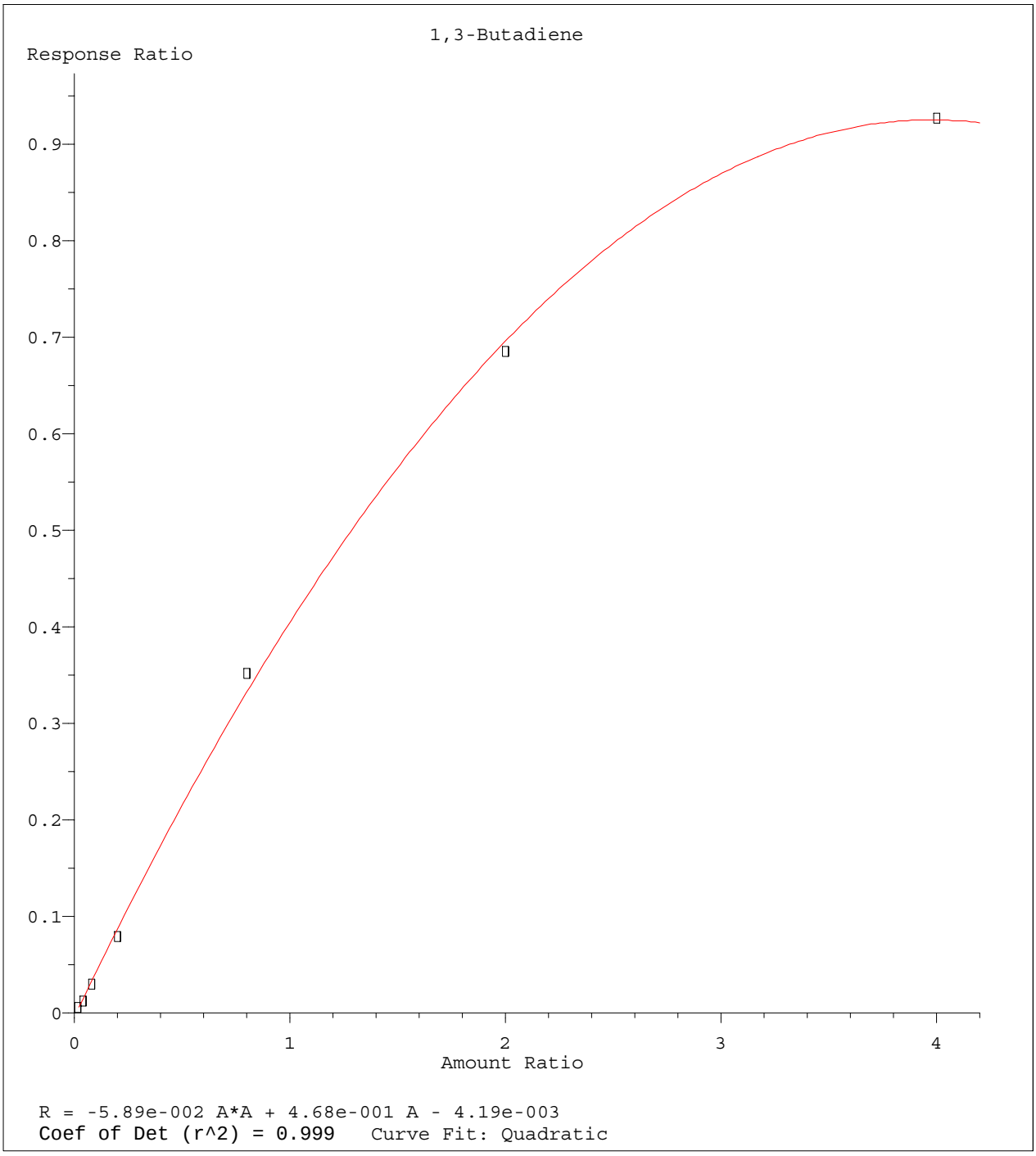

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jun 30 10:39:17 2014

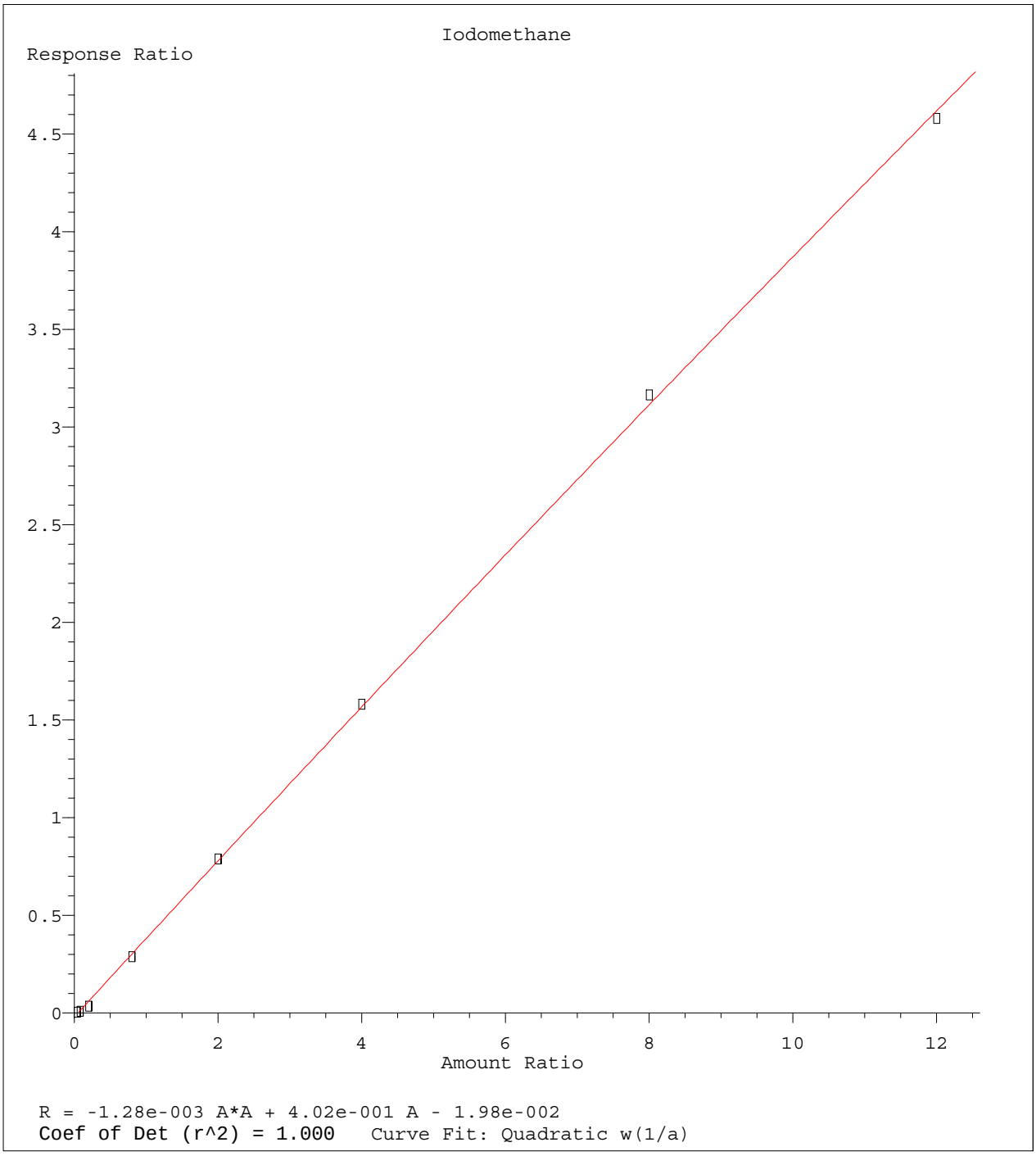

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jun 30 10:39:17 2014

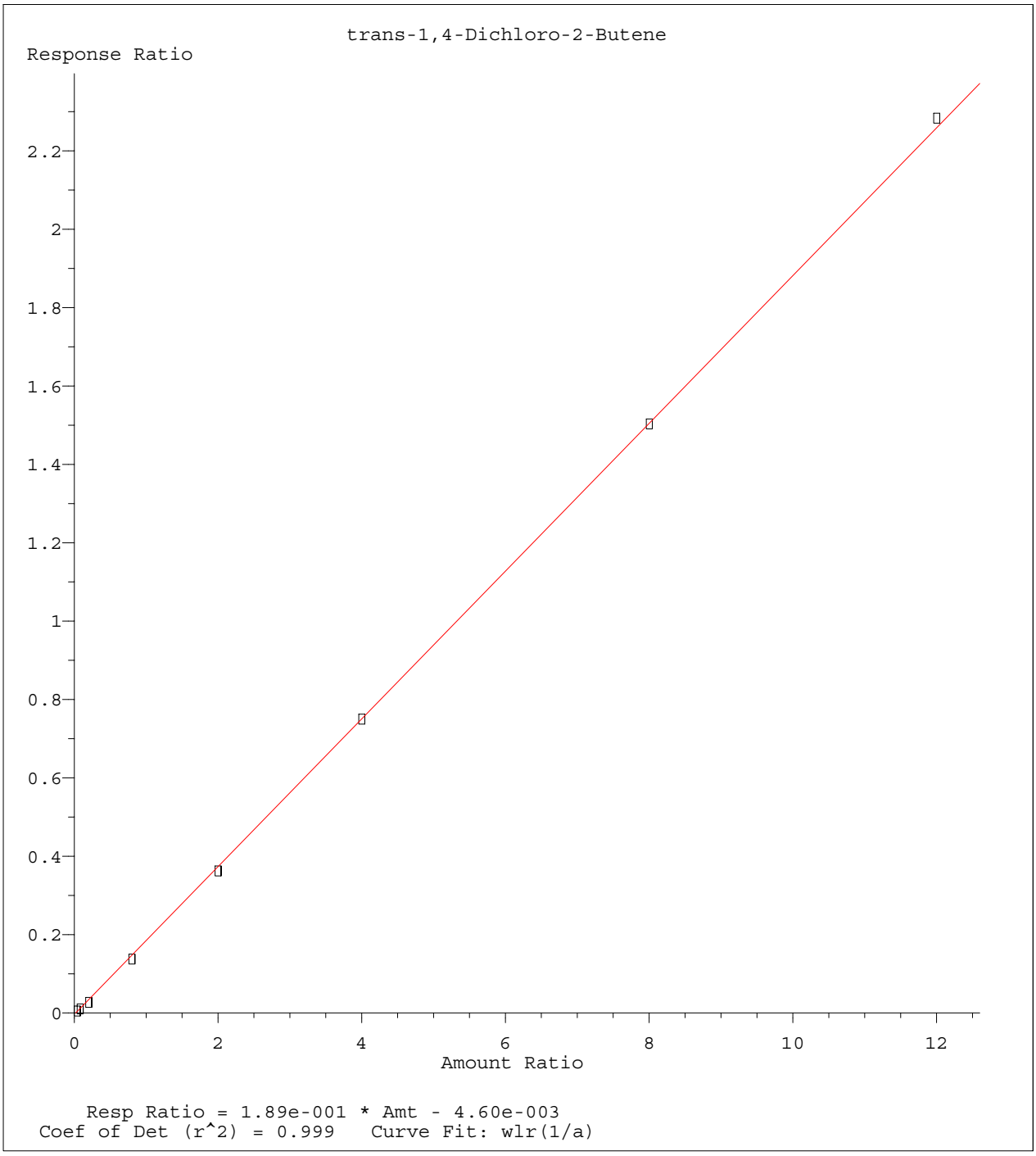

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jun 30 10:39:17 2014

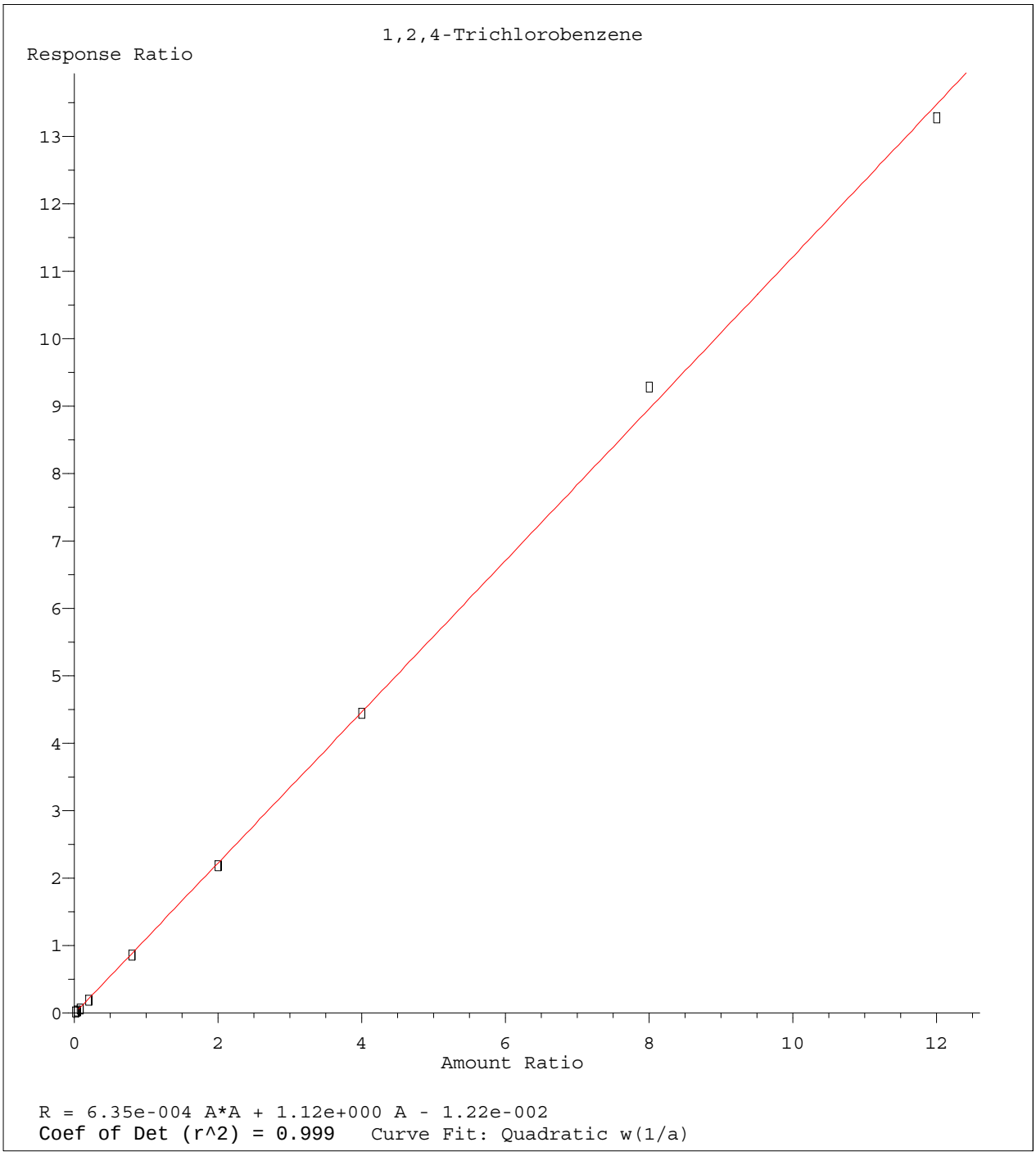

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jun 30 10:39:17 2014

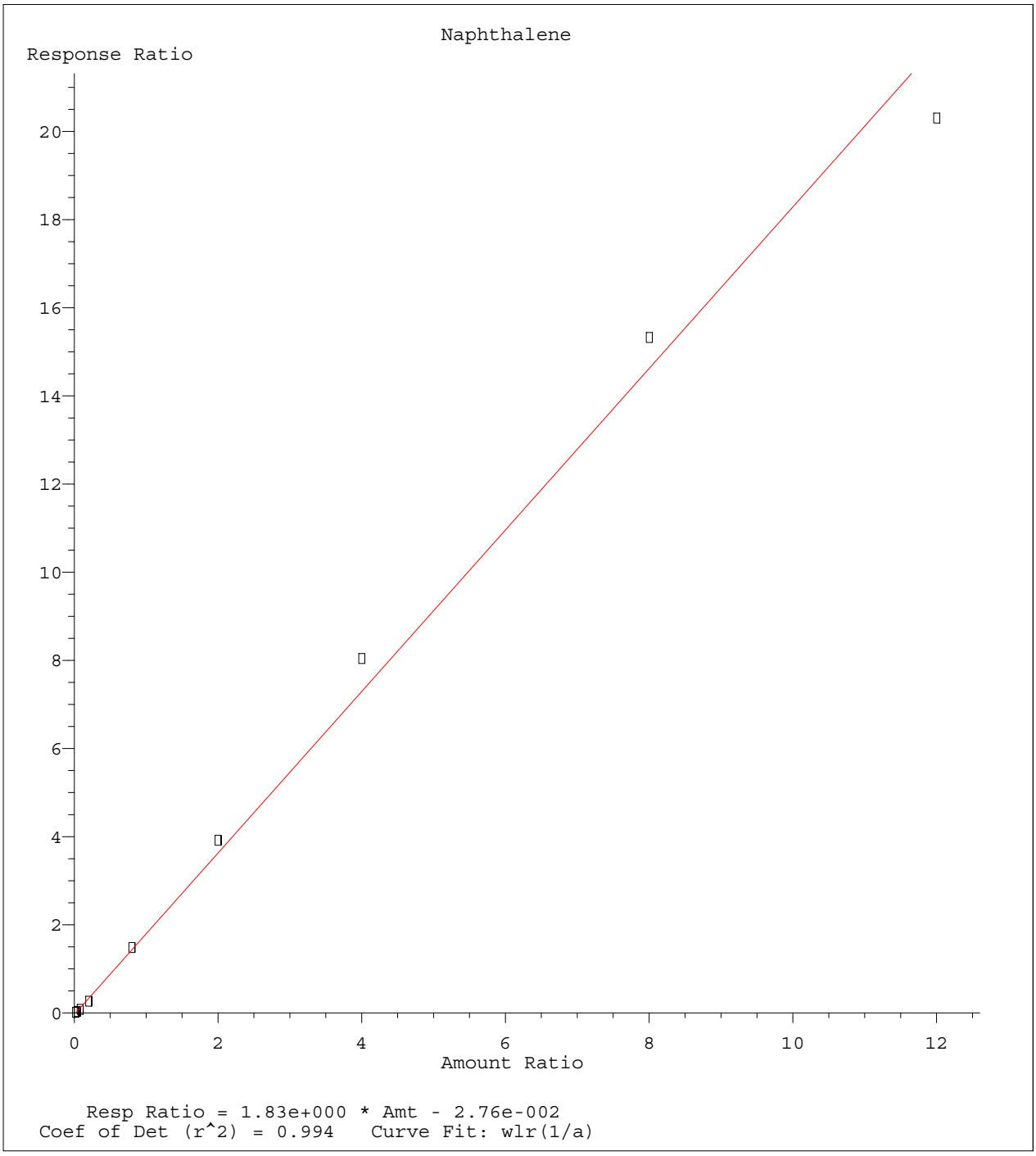

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jun 30 10:39:17 2014

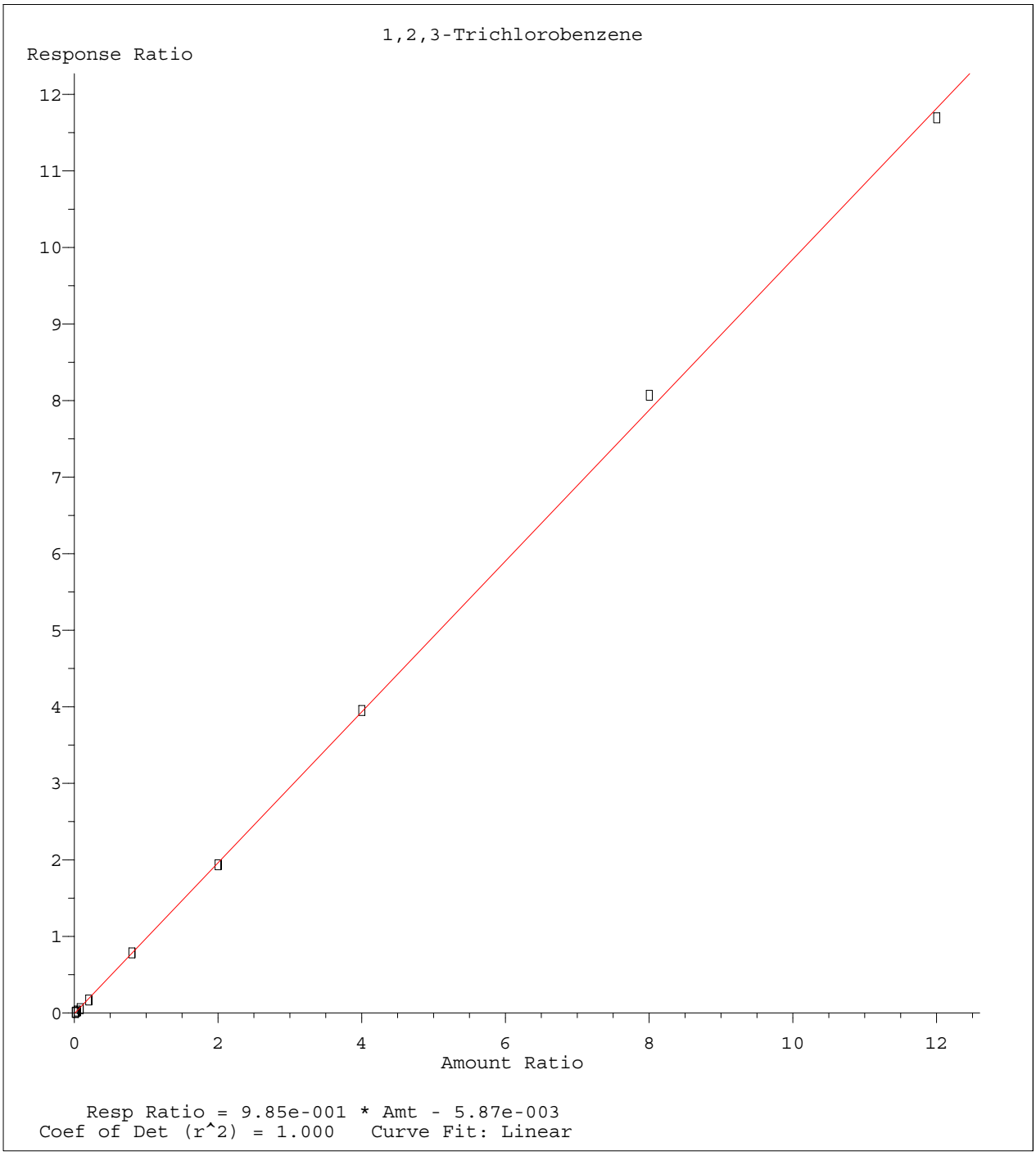

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jun 30 10:39:17 2014

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02161.D Vial: 14
Acq On : 27 Jun 2014 21:34 Operator: FJB
Sample : WG482009-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:43:32 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	1022853	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	772534	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	409801	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	302527	23.6832 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.72%		
43) 1,2-Dichloroethane-d4	10.27	65	276134	22.1520 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.60%		
57) Toluene-d8	12.51	98	1096195	24.2199 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.88%		
78) p-Bromofluorobenzene	15.67	95	433622	24.4737 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	873102	78.8357 ug/L	100
3) Chloromethane	3.73	50	1110279	57.4358 ug/L	97
4) Vinyl Chloride	3.97	62	1023927	58.7824 ug/L	98
5) 1,3-Butadiene	4.01	54	432430	26.3033 ug/L	89
6) Bromomethane	4.88	94	545510	55.6800 ug/L	99
7) Chloroethane	5.04	64	491264	56.1943 ug/L	95
8) Trichlorofluoromethane	5.52	101	1181610	57.4590 ug/L	99
9) Diethyl ether	6.04	59	888556	105.9696 ug/L	92
10) Isoprene	6.08	67	929597	51.7675 ug/L	86
11) Acrolein	6.28	56	76528	71.6280 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	680817	53.7913 ug/L	96
13) Acetone	6.38	43	106232	51.4316 ug/L	97
14) 1,1-Dichloroethene	6.60	61	948692	50.6351 ug/L	88
15) Tert-Butyl Alcohol	6.71	59	133917	248.3224 ug/L	92
16) Dimethyl Sulfide	6.86	62	706958	53.9605 ug/L	88
17) Iodomethane	7.10	142	479248	30.4995 ug/L	98
18) Methyl acetate	7.10	43	322629	49.4022 ug/L	93
19) Methylene Chloride	7.35	84	679308	48.9975 ug/L	78
20) Carbon Disulfide	7.40	76	1854765	47.2641 ug/L	100
21) Acrylonitrile	7.53	53	143232	50.7366 ug/L	98
22) Methyl Tert Butyl Ether	7.56	73	1497186	52.6950 ug/L	93
23) trans-1,2-Dichloroethene	7.79	96	715342	52.2364 ug/L	83
24) n-Hexane	7.86	57	741386	46.7036 ug/L	93
25) Diisopropyl ether	8.19	45	3988349	107.6569 ug/L	96
26) Vinyl Acetate	8.35	43	907342	90.2223 ug/L	96
27) 1,1-Dichloroethane	8.39	63	1145822	51.0542 ug/L	99
28) Ethyl-Tert-Butyl ether	8.74	59	3682032	107.8088 ug/L	95
29) 2-Butanone	8.91	43	152956	51.6439 ug/L	91
30) Propionitrile	9.02	54	103570	107.2058 ug/L	97
31) 2,2-Dichloropropane	9.13	77	977350	48.5539 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	771215	51.8843 ug/L	81
33) Chloroform	9.39	83	1188374	51.6642 ug/L	100
34) 1-Bromopropane	9.52	122	156622	62.7852 ug/L	97
35) Bromochloromethane	9.62	130	448610	52.3607 ug/L	81
36) Tetrahydrofuran	9.64	42	207550	107.9085 ug/L	87
38) 1,1,1-Trichloroethane	9.89	97	1113818	52.2348 ug/L	96
39) Cyclohexane	9.93	56	1018575	50.9994 ug/L	85
40) 1,1-Dichloropropene	10.08	75	933030	52.3025 ug/L	98
41) Carbon Tetrachloride	10.22	117	1024482	53.4682 ug/L	99
42) Tert-Amyl-Methyl ether	10.17	73	3229709	109.1176 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M02161.D 8260WTR.M Mon Jun 30 10:45:23 2014 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02161.D Vial: 14
Acq On : 27 Jun 2014 21:34 Operator: FJB
Sample : WG482009-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:43:32 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.38	62	794122	49.1195 ug/L	98
45) Benzene	10.42	78	2612942	52.6456 ug/L	99
46) Trichloroethene	11.13	130	789924	51.5084 ug/L	95
47) Methylcyclohexane	11.21	83	1061762	52.4700 ug/L	90
48) 1,2-Dichloropropane	11.32	63	635668	51.4056 ug/L	98
49) 1,4-Dioxane	11.60	88	18536	246.5642 ug/L	84
50) Bromodichloromethane	11.61	83	869423	50.5468 ug/L	99
51) Dibromomethane	11.69	93	351176	49.8195 ug/L	97
52) 2-Chloroethyl Vinyl Ether	11.88	63	295975	52.5405 ug/L	94
53) 4-Methyl-2-Pentanone	11.91	58	142808	54.8497 ug/L	95
54) cis-1,3-Dichloropropene	12.20	75	1062590	54.9881 ug/L	100
55) Dimethyl Disulfide	12.46	79	560204	51.6145 ug/L	100
58) Toluene	12.60	91	2803199	53.8166 ug/L	100
59) Ethyl Methacrylate	12.68	69	626408	58.3254 ug/L	87
60) trans-1,3-Dichloropropene	12.76	75	847242	50.5191 ug/L	96
61) 1,1,2-Trichloroethane	12.97	97	484369	49.0968 ug/L	99
62) 2-Hexanone	12.89	43	232001	57.0045 ug/L	99
63) 1,3-Dichloropropane	13.26	76	828110	48.8139 ug/L	91
64) Tetrachloroethene	13.37	164	586597	49.9300 ug/L	97
65) Dibromochloromethane	13.62	129	647781	52.0547 ug/L	100
66) 1,2-Dibromoethane	13.87	107	481613	49.2803 ug/L	98
67) 1-Chlorohexane	13.93	91	948437	55.7877 ug/L	86
68) Chlorobenzene	14.33	112	1840062	49.1719 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.35	131	719320	51.4206 ug/L	97
70) Ethylbenzene	14.35	106	1092369	51.9072 ug/L	94
71) m-,p-Xylene	14.43	106	2510322	106.2087 ug/L	93
72) o-Xylene	14.96	106	1183932	48.9611 ug/L	96
73) Styrene	14.99	104	2103705	58.0808 ug/L	96
74) Bromoform	15.47	173	377255	52.2737 ug/L	97
75) Isopropylbenzene	15.34	105	2913464	52.5276 ug/L	97
77) 1,1,2,2-Tetrachloroethane	15.55	83	520041	47.2170 ug/L	100
79) 1,2,3-Trichloropropane	15.74	110	162060	48.4720 ug/L	81
80) trans-1,4-Dichloro-2-Buten	15.77	53	82824	27.4000 ug/L #	13
81) n-Propylbenzene	15.82	91	3319990	48.0645 ug/L	98
82) Bromobenzene	15.95	156	801454	48.6003 ug/L	95
83) 1,3,5-Trimethylbenzene	16.00	105	2742838	56.3611 ug/L	96
84) 2-Chlorotoluene	16.08	91	2065839	47.3738 ug/L	82
85) 4-Chlorotoluene	16.13	91	2154891m	49.0458 ug/L	
86) a-Methylstyrene	16.37	118	1533251	56.7220 ug/L	100
87) tert-Butylbenzene	16.43	134	526714	47.9239 ug/L	86
88) 1,2,4-Trimethylbenzene	16.48	105	2798848	57.3168 ug/L	97
89) sec-Butylbenzene	16.68	105	3048098	51.9657 ug/L	99
90) p-Isopropyltoluene	16.82	119	2657635	53.7738 ug/L	100
91) 1,3-Dichlorobenzene	17.02	146	1452965	48.6315 ug/L	98
92) 1,4-Dichlorobenzene	17.13	146	1559125	52.1037 ug/L	98
93) n-Butylbenzene	17.31	91	2494328	60.9960 ug/L	99
94) 1,2-Dichlorobenzene	17.60	146	1339399	48.8309 ug/L	97
95) 1,2-Dibromo-3-Chloropropan	18.52	75	86249	53.8567 ug/L	88
96) 1,2,4-Trichlorobenzene	19.58	180	978527	53.6830 ug/L	96
97) Hexachlorobutadiene	19.72	225	394822	53.7642 ug/L	98
98) Naphthalene	19.93	128	1731523	58.0371 ug/L	99
99) 1,2,3-Trichlorobenzene	20.23	180	874822	54.3068 ug/L	96

(#) = qualifier out of range (m) = manual integration
11M02161.D 8260WTR.M Mon Jun 30 10:45:23 2014 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02161.D Vial: 14
Acq On : 27 Jun 2014 21:34 Operator: FJB
Sample : WG482009-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:45 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

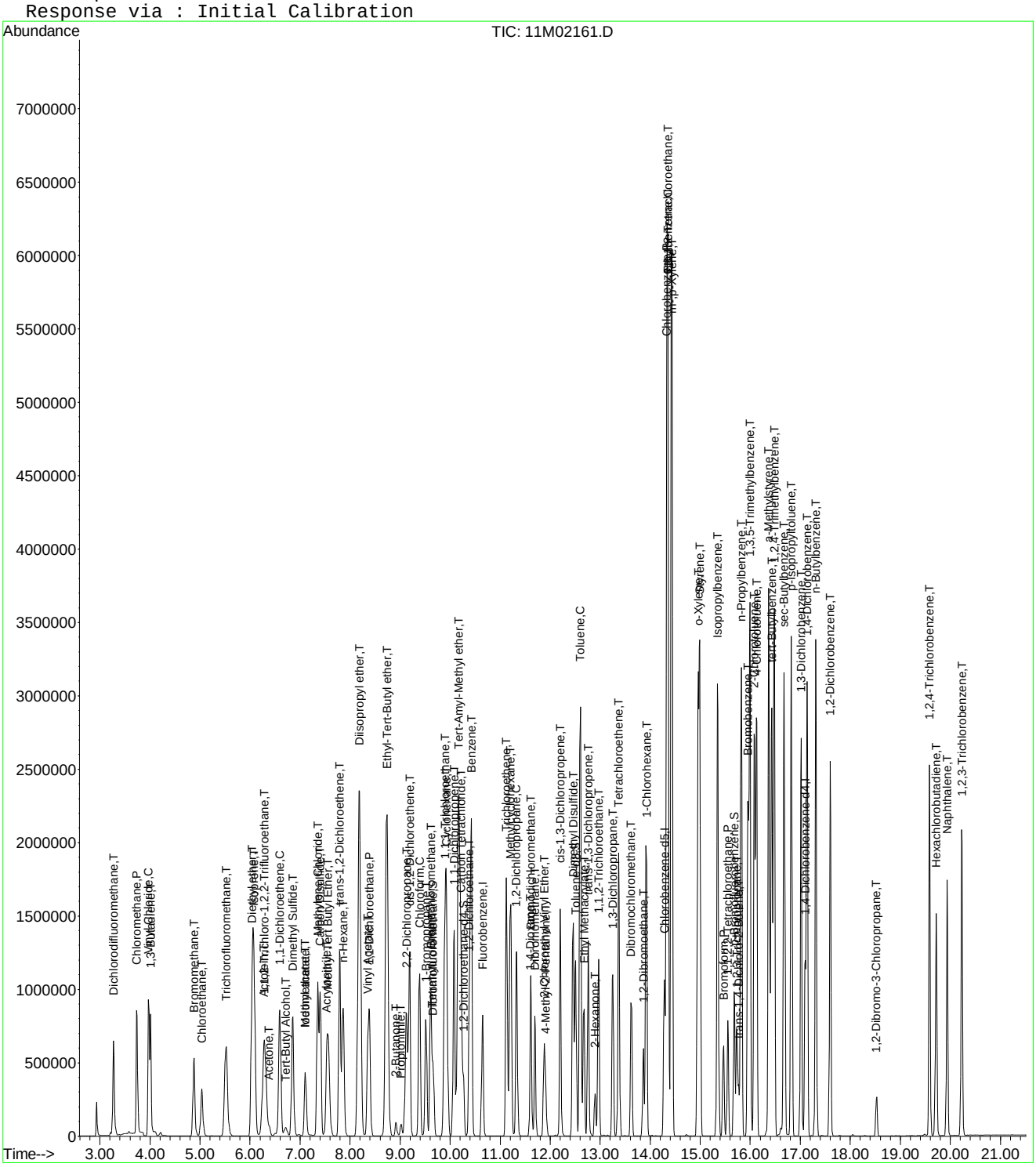

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062714\11M02161.D Vial: 14
Acq On : 27 Jun 2014 21:34 Operator: FJB
Sample : WG482009-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	50.0000	78.8357	-57.7#	150	0.00
3	P	Chloromethane	50.0000	57.4358	-14.9	121	-0.01
4	C	Vinyl Chloride	50.0000	58.7824	-17.6	111	-0.01
5	T	1,3-Butadiene	50.0000	26.3033	47.4#	62	-0.02
6	T	Bromomethane	50.0000	55.6800	-11.4	133	-0.01
7	T	Chloroethane	50.0000	56.1943	-12.4	111	-0.01
8	T	Trichlorofluoromethane	50.0000	57.4590	-14.9	114	0.00
9	T	Diethyl ether	100.0000	105.9696	-6.0	108	0.00
10	T	Isoprene	50.0000	51.7675	-3.5	102	0.00
11	T	Acrolein	50.0000	71.6280	-43.3#	143	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.7913	-7.6	107	0.00
13	T	Acetone	50.0000	51.4316	-2.9	116	0.00
14	C	1,1-Dichloroethene	50.0000	50.6351	-1.3	99	0.00
15	T	Tert-Butyl Alcohol	200.0000	248.3224	-24.2	129	0.01
16	T	Dimethyl Sulfide	50.0000	53.9605	-7.9	108	0.00
17	T	Iodomethane	50.0000	30.4995	39.0#	59	0.00
18	T	Methyl acetate	50.0000	49.4022	1.2	102	0.00
19	T	Methylene Chloride	50.0000	48.9975	2.0	103	0.00
20	T	Carbon Disulfide	50.0000	47.2641	5.5	90	0.00
21	T	Acrylonitrile	50.0000	50.7366	-1.5	100	0.00
22	T	Methyl Tert Butyl Ether	50.0000	52.6950	-5.4	107	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.2364	-4.5	106	-0.01
24	T	n-Hexane	50.0000	46.7036	6.6	91	0.00
25	T	Diisopropyl ether	100.0000	107.6569	-7.7	107	0.01
26	T	Vinyl Acetate	50.0000	90.2223	-80.4#	177	0.00
27	P	1,1-Dichloroethane	50.0000	51.0542	-2.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	107.8088	-7.8	108	0.01
29	T	2-Butanone	50.0000	51.6439	-3.3	107	0.00
30	T	Propionitrile	100.0000	107.2058	-7.2	107	0.00
31	T	2,2-Dichloropropane	50.0000	48.5539	2.9	97	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.8843	-3.8	104	0.00
33	C	Chloroform	50.0000	51.6642	-3.3	103	0.00
34	T	1-Bromopropane	50.0000	62.7852	-25.6#	118	0.00
35	T	Bromochloromethane	50.0000	52.3607	-4.7	103	0.00
36	T	Tetrahydrofuran	100.0000	107.9085	-7.9	109	0.00
37	S	Dibromofluoromethane	25.0000	23.6832	5.3	91	0.00
38	T	1,1,1-Trichloroethane	50.0000	52.2348	-4.5	104	0.00
39	T	Cyclohexane	50.0000	50.9994	-2.0	98	0.00
40	T	1,1-Dichloropropene	50.0000	52.3025	-4.6	102	0.00
41	T	Carbon Tetrachloride	50.0000	53.4682	-6.9	103	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	109.1176	-9.1	110	0.01
43	S	1,2-Dichloroethane-d4	25.0000	22.1520	11.4	87	0.00
44	T	1,2-Dichloroethane	50.0000	49.1195	1.8	101	0.00
45	T	Benzene	50.0000	52.6456	-5.3	103	0.00
46	T	Trichloroethene	50.0000	51.5084	-3.0	105	0.00
47	T	Methylcyclohexane	50.0000	52.4700	-4.9	100	0.00
48	C	1,2-Dichloropropane	50.0000	51.4056	-2.8	101	-0.01
49	T	1,4-Dioxane	200.0000	246.5642	-23.3	124	0.00
50	T	Bromodichloromethane	50.0000	50.5468	-1.1	100	0.00
51	T	Dibromomethane	50.0000	49.8195	0.4	100	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	52.5405	-5.1	102	0.00
53	T	4-Methyl-2-Pentanone	50.0000	54.8497	-9.7	107	0.00
54	T	cis-1,3-Dichloropropene	50.0000	54.9881	-10.0	104	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062714\11M02161.D Vial: 14
Acq On : 27 Jun 2014 21:34 Operator: FJB
Sample : WG482009-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	51.6145	-3.2	103	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
57	S	Toluene-d8	25.0000	24.2199	3.1	94	0.00
58	C	Toluene	50.0000	53.8166	-7.6	102	0.00
59	T	Ethyl Methacrylate	50.0000	58.3254	-16.7	109	0.00
60	T	trans-1,3-Dichloropropene	50.0000	50.5191	-1.0	95	0.00
61	T	1,1,2-Trichloroethane	50.0000	49.0968	1.8	100	0.00
62	T	2-Hexanone	50.0000	57.0045	-14.0	111	0.00
63	T	1,3-Dichloropropane	50.0000	48.8139	2.4	101	0.00
64	T	Tetrachloroethene	50.0000	49.9300	0.1	101	0.00
65	T	Dibromochloromethane	50.0000	52.0547	-4.1	102	0.00
66	T	1,2-Dibromoethane	50.0000	49.2803	1.4	99	0.00
67	T	1-Chlorohexane	50.0000	55.7877	-11.6	105	0.00
68	P	Chlorobenzene	50.0000	49.1719	1.7	96	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	51.4205	-2.8	102	0.00
70	C	Ethylbenzene	50.0000	51.9072	-3.8	102	0.01
71	T	m-,p-Xylene	100.0000	106.2087	-6.2	99	0.00
72	T	o-Xylene	50.0000	48.9611	2.1	95	0.00
73	T	Styrene	50.0000	58.0808	-16.2	102	0.00
74	P	Bromoform	50.0000	52.2737	-4.5	100	0.00
75	T	Isopropylbenzene	50.0000	52.5277	-5.1	96	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	103	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	47.2170	5.6	99	0.00
78	S	p-Bromofluorobenzene	25.0000	24.4737	2.1	99	0.00
79	T	1,2,3-Trichloropropane	50.0000	48.4720	3.1	100	0.01
80	T	trans-1,4-Dichloro-2-Butene	50.0000	27.4001	45.2#	58	0.00
81	T	n-Propylbenzene	50.0000	48.0645	3.9	94	0.00
82	T	Bromobenzene	50.0000	48.6003	2.8	102	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	56.3611	-12.7	107	0.00
84	T	2-Chlorotoluene	50.0000	47.3738	5.3	98	0.00
85	T	4-Chlorotoluene	50.0000	49.0458	1.9	96	-0.03
86	T	a-Methylstyrene	50.0000	56.7220	-13.4	107	0.00
87	T	tert-Butylbenzene	50.0000	47.9239	4.2	97	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	57.3168	-14.6	106	0.00
89	T	sec-Butylbenzene	50.0000	51.9657	-3.9	98	0.00
90	T	p-Isopropyltoluene	50.0000	53.7738	-7.5	99	0.00
91	T	1,3-Dichlorobenzene	50.0000	48.6315	2.7	99	0.00
92	T	1,4-Dichlorobenzene	50.0000	52.1037	-4.2	106	0.00
93	T	n-Butylbenzene	50.0000	60.9960	-22.0	109	0.00
94	T	1,2-Dichlorobenzene	50.0000	48.8309	2.3	99	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	53.8567	-7.7	111	-0.01
96	T	1,2,4-Trichlorobenzene	50.0000	53.6830	-7.4	113	0.00
97	T	Hexachlorobutadiene	50.0000	53.7642	-7.5	116	0.00
98	T	Naphthalene	50.0000	58.0371	-16.1	111	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	54.3068	-8.6	114	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M02161.D 8260WTR.M Mon Jun 30 10:45:29 2014 Page 2

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02161.D Vial: 14
Acq On : 27 Jun 2014 21:34 Operator: FJB
Sample : WG482009-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:43 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Multiple Level Calibration

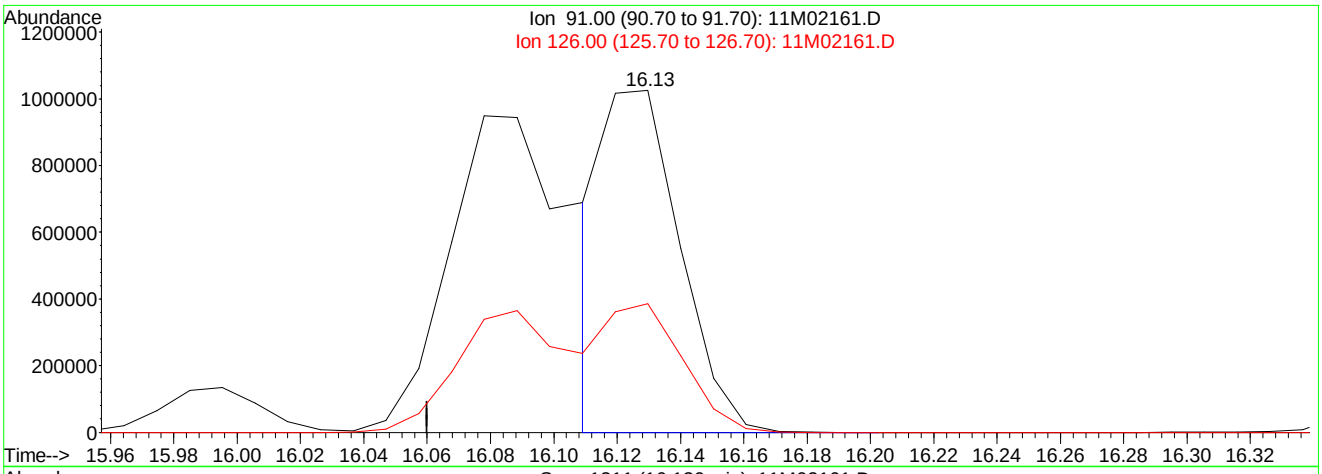

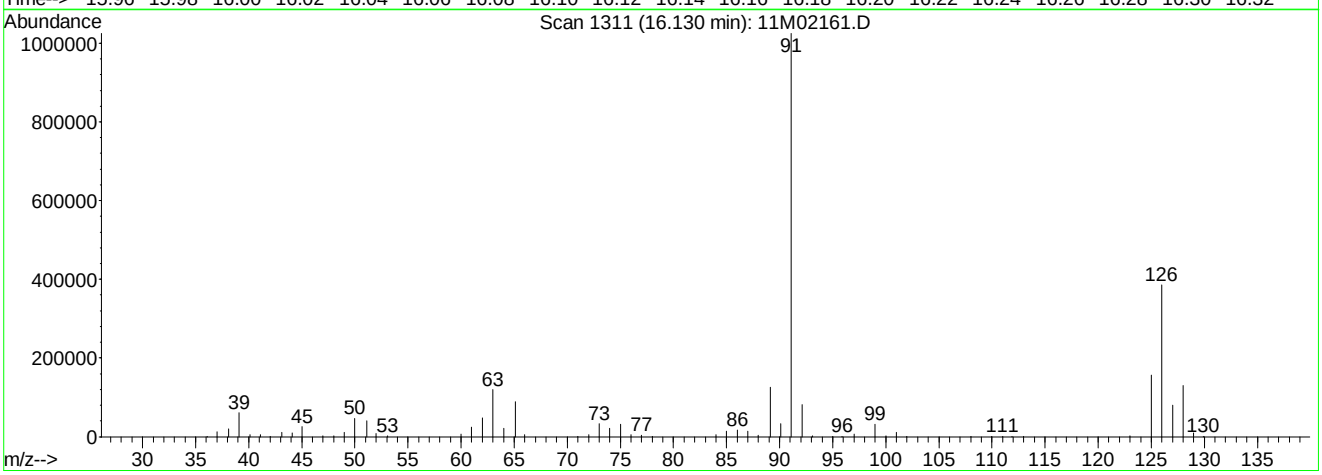

TIC: 11M02161.D

(85) 4-Chlorotoluene (T)

16.13min 39.32ug/L

response 1727639

Ion	Exp%	Act%
91.00	100	100
126.00	34.70	37.98
0.00	0.00	0.00
0.00	0.00	0.00

11M02161.D 8260WTR.M Mon Jun 30 10:45:11 2014

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02161.D Vial: 14
Acq On : 27 Jun 2014 21:34 Operator: FJB
Sample : WG482009-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:45 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Multiple Level Calibration

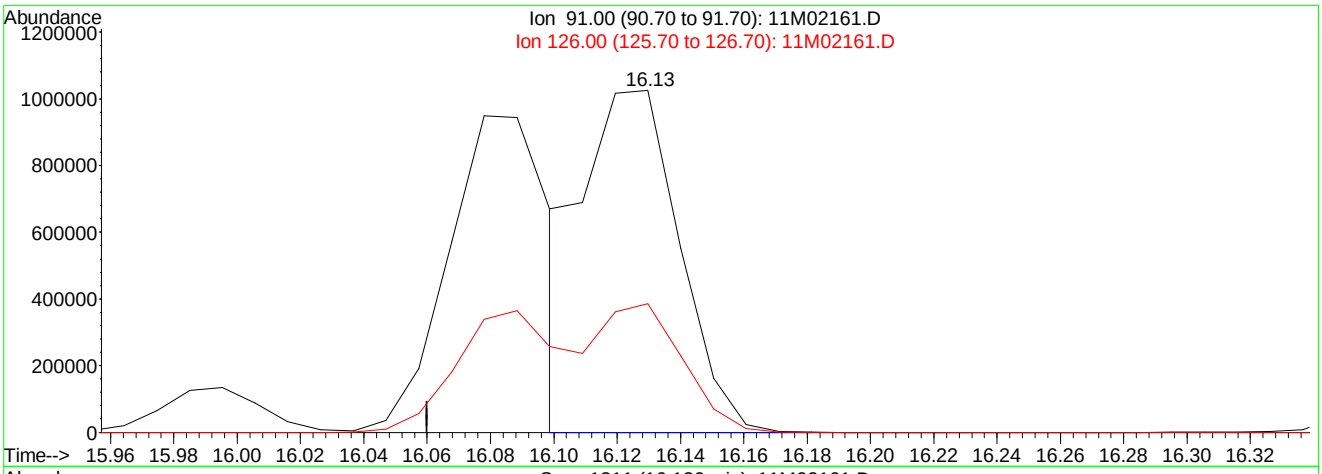

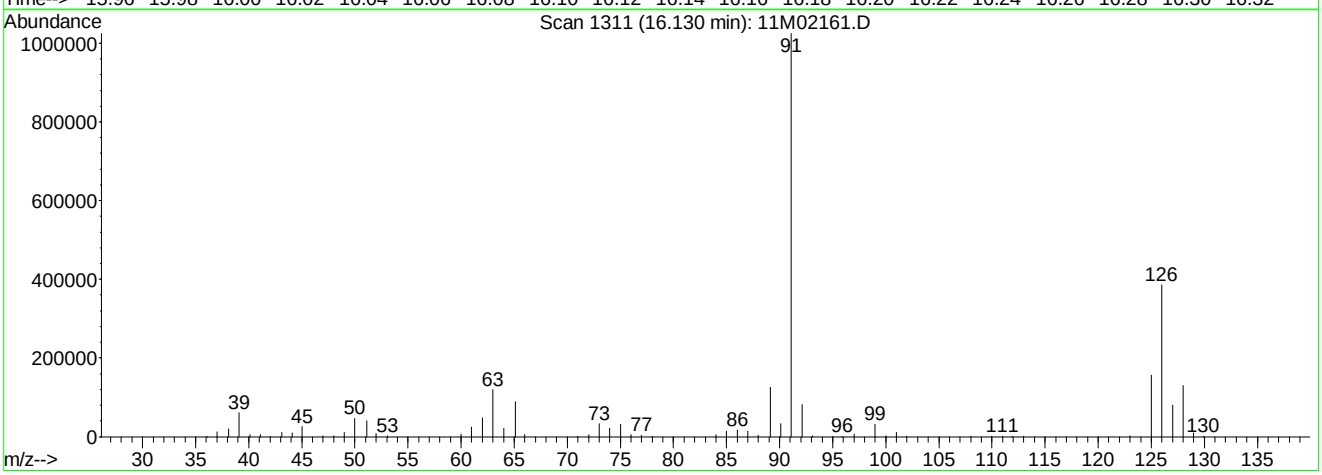

TIC: 11M02161.D

(85) 4-Chlorotoluene (T)

16.13min 49.05ug/L mint

response 2154891

Ion	Exp%	Act%
91.00	100	100
126.00	34.70	30.45
0.00	0.00	0.00
0.00	0.00	0.00

11M02161.D 8260WTR.M Mon Jun 30 10:45:14

Analyst: 06/30/2014 14:36 Supervisor: 06/30/2014 15:40

#2 - Data system splits the peak incorrectly or integrates a false peak as a rider peak

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072514\11M02708.D Vial: 2
Acq On : 25 Jul 2014 14:14 Operator: FJB
Sample : WG485784-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD65647 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 25 14:36:19 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	891712	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	672205	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	359174	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	275395	24.7299 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.92%		
43) 1,2-Dichloroethane-d4	10.27	65	265579	24.4386 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.76%		
57) Toluene-d8	12.51	98	954884	24.2466 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.00%		
78) p-Bromofluorobenzene	15.68	95	353944	22.7925 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.16%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	545572	56.5065 ug/L	98
3) Chloromethane	3.74	50	797454	47.3200 ug/L	100
4) Vinyl Chloride	3.98	62	807571	53.1799 ug/L	99
5) 1,3-Butadiene	4.02	54	582293	45.5874 ug/L	93
6) Bromomethane	4.89	94	383812	44.9370 ug/L	97
7) Chloroethane	5.05	64	400713	52.5774 ug/L	94
8) Trichlorofluoromethane	5.53	101	934822	52.1437 ug/L	99
9) Diethyl ether	6.04	59	814442	111.4154 ug/L	95
10) Isoprene	6.08	67	825003	52.6995 ug/L	87
11) Acrolein	6.28	56	68076	73.0879 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	580968	52.6529 ug/L	99
13) Acetone	6.38	43	97887	54.3611 ug/L	93
14) 1,1-Dichloroethene	6.60	61	871209	53.3381 ug/L	91
15) Tert-Butyl Alcohol	6.70	59	133660	284.2957 ug/L	97
16) Dimethyl Sulfide	6.86	62	603719	52.8574 ug/L	90
17) Iodomethane	7.10	142	595824	43.0365 ug/L	99
18) Methyl acetate	7.10	43	332712	58.4387 ug/L	95
19) Methylene Chloride	7.35	84	610403	50.5025 ug/L	82
20) Carbon Disulfide	7.40	76	1846383	53.9700 ug/L	100
21) Acrylonitrile	7.53	53	147504	59.9341 ug/L	99
22) Methyl Tert Butyl Ether	7.56	73	1417951	57.2458 ug/L	95
23) trans-1,2-Dichloroethene	7.80	96	591963	49.5842 ug/L	86
24) n-Hexane	7.86	57	777836	56.2060 ug/L	95
25) Diisopropyl ether	8.18	45	3495926	108.2429 ug/L	98
26) Vinyl Acetate	8.34	43	633778	72.2884 ug/L	97
27) 1,1-Dichloroethane	8.39	63	1014210	51.8359 ug/L	99
28) Ethyl-Tert-Butyl ether	8.74	59	3278858	110.1229 ug/L	96
29) 2-Butanone	8.91	43	154459	59.8211 ug/L	92
30) Propionitrile	9.02	54	98840	117.3561 ug/L	98
31) 2,2-Dichloropropane	9.13	77	950554	54.1676 ug/L	100
32) cis-1,2-Dichloroethene	9.19	96	652909	50.3851 ug/L	86
33) Chloroform	9.39	83	1021543	50.9426 ug/L	99
34) 1-Bromopropane	9.51	122	109887	50.5288 ug/L	97
35) Bromochloromethane	9.62	130	400172	53.5762 ug/L	85
36) Tetrahydrofuran	9.64	42	204316	121.8496 ug/L	90
38) 1,1,1-Trichloroethane	9.90	97	955557	51.4033 ug/L	96
39) Cyclohexane	9.93	56	925750	53.1685 ug/L	88
40) 1,1-Dichloropropene	10.08	75	793265	51.0075 ug/L	98
41) Carbon Tetrachloride	10.22	117	899650	53.8584 ug/L	99
42) Tert-Amyl-Methyl ether	10.17	73	2868190	111.1548 ug/L	96

(#) = qualifier out of range (m) = manual integration
11M02708.D 8260WTR.M Fri Jul 25 14:36:20 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072514\11M02708.D Vial: 2
Acq On : 25 Jul 2014 14:14 Operator: FJB
Sample : WG485784-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD65647 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 25 14:36:19 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.38	62	735953	52.2162 ug/L	98
45)	Benzene	10.42	78	2194463	50.7165 ug/L	99
46)	Trichloroethene	11.13	130	648251	48.4869 ug/L	95
47)	Methylcyclohexane	11.21	83	943083	53.4592 ug/L	91
48)	1,2-Dichloropropane	11.33	63	562161	52.1470 ug/L	98
49)	1,4-Dioxane	11.60	88	17622	268.8796 ug/L	90
50)	Bromodichloromethane	11.61	83	793938	52.9466 ug/L	100
51)	Dibromomethane	11.69	93	331182	53.8927 ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.88	63	229416	46.7145 ug/L	97
53)	4-Methyl-2-Pentanone	11.90	58	134524	59.2666 ug/L	97
54)	cis-1,3-Dichloropropene	12.20	75	934577	55.4762 ug/L	99
55)	Dimethyl Disulfide	12.46	79	528950	55.9022 ug/L	99
58)	Toluene	12.60	91	2344829	51.7356 ug/L	100
59)	Ethyl Methacrylate	12.68	69	567318	60.7076 ug/L	92
60)	trans-1,3-Dichloropropene	12.76	75	837167	57.3688 ug/L	97
61)	1,1,2-Trichloroethane	12.97	97	453611	52.8417 ug/L	99
62)	2-Hexanone	12.89	43	219698	62.0385 ug/L	98
63)	1,3-Dichloropropane	13.26	76	777002	52.6373 ug/L	93
64)	Tetrachloroethene	13.37	164	499222	48.8350 ug/L	97
65)	Dibromochloromethane	13.62	129	605264	55.8975 ug/L	98
66)	1,2-Dibromoethane	13.87	107	464402	54.6116 ug/L	99
67)	1-Chlorohexane	13.92	91	784033	53.0005 ug/L	88
68)	Chlorobenzene	14.33	112	1661691	51.0330 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.35	131	634348	52.1144 ug/L	99
70)	Ethylbenzene	14.34	106	922482	50.3770 ug/L	95
71)	m-,p-Xylene	14.42	106	2194402	106.6995 ug/L	93
72)	o-Xylene	14.95	106	1074841	51.0839 ug/L	96
73)	Styrene	14.99	104	1805687	57.2936 ug/L	97
74)	Bromoform	15.47	173	384034	61.1552 ug/L	99
75)	Isopropylbenzene	15.34	105	2627957	54.4518 ug/L	97
77)	1,1,2,2-Tetrachloroethane	15.55	83	525559	54.4441 ug/L	99
79)	1,2,3-Trichloropropane	15.73	110	156396	53.3715 ug/L	98
80)	trans-1,4-Dichloro-2-Buten	15.77	53	147508	55.0483 ug/L	81
81)	n-Propylbenzene	15.82	91	3069797	50.7068 ug/L	98
82)	Bromobenzene	15.95	156	697349	48.2479 ug/L	94
83)	1,3,5-Trimethylbenzene	16.00	105	2262699	53.0487 ug/L	96
84)	2-Chlorotoluene	16.08	91	1883151	49.2714 ug/L	94
85)	4-Chlorotoluene	16.12	91	1929067	50.0948 ug/L	95
86)	a-Methylstyrene	16.37	118	1258244	53.1094 ug/L	99
87)	tert-Butylbenzene	16.43	134	478050	49.6271 ug/L	82
88)	1,2,4-Trimethylbenzene	16.47	105	2340520	54.6869 ug/L	96
89)	sec-Butylbenzene	16.68	105	2788722	54.2452 ug/L	99
90)	p-Isopropyltoluene	16.82	119	2420277	55.8738 ug/L	100
91)	1,3-Dichlorobenzene	17.02	146	1315512	50.2372 ug/L	99
92)	1,4-Dichlorobenzene	17.13	146	1319716	50.3195 ug/L	97
93)	n-Butylbenzene	17.31	91	2077133	57.9536 ug/L	100
94)	1,2-Dichlorobenzene	17.60	146	1232137	51.2521 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.52	75	84621	60.2881 ug/L	89
96)	1,2,4-Trichlorobenzene	19.58	180	816609	51.1308 ug/L	95
97)	Hexachlorobutadiene	19.72	225	329350	51.1702 ug/L	99
98)	Naphthalene	19.93	128	1474829	56.4117 ug/L	100
99)	1,2,3-Trichlorobenzene	20.22	180	742830	52.6175 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M02708.D 8260WTR.M Fri Jul 25 14:36:20 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072514\11M02708.D Vial: 2
Acq On : 25 Jul 2014 14:14 Operator: FJB
Sample : WG485784-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD65647 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 25 14:36 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

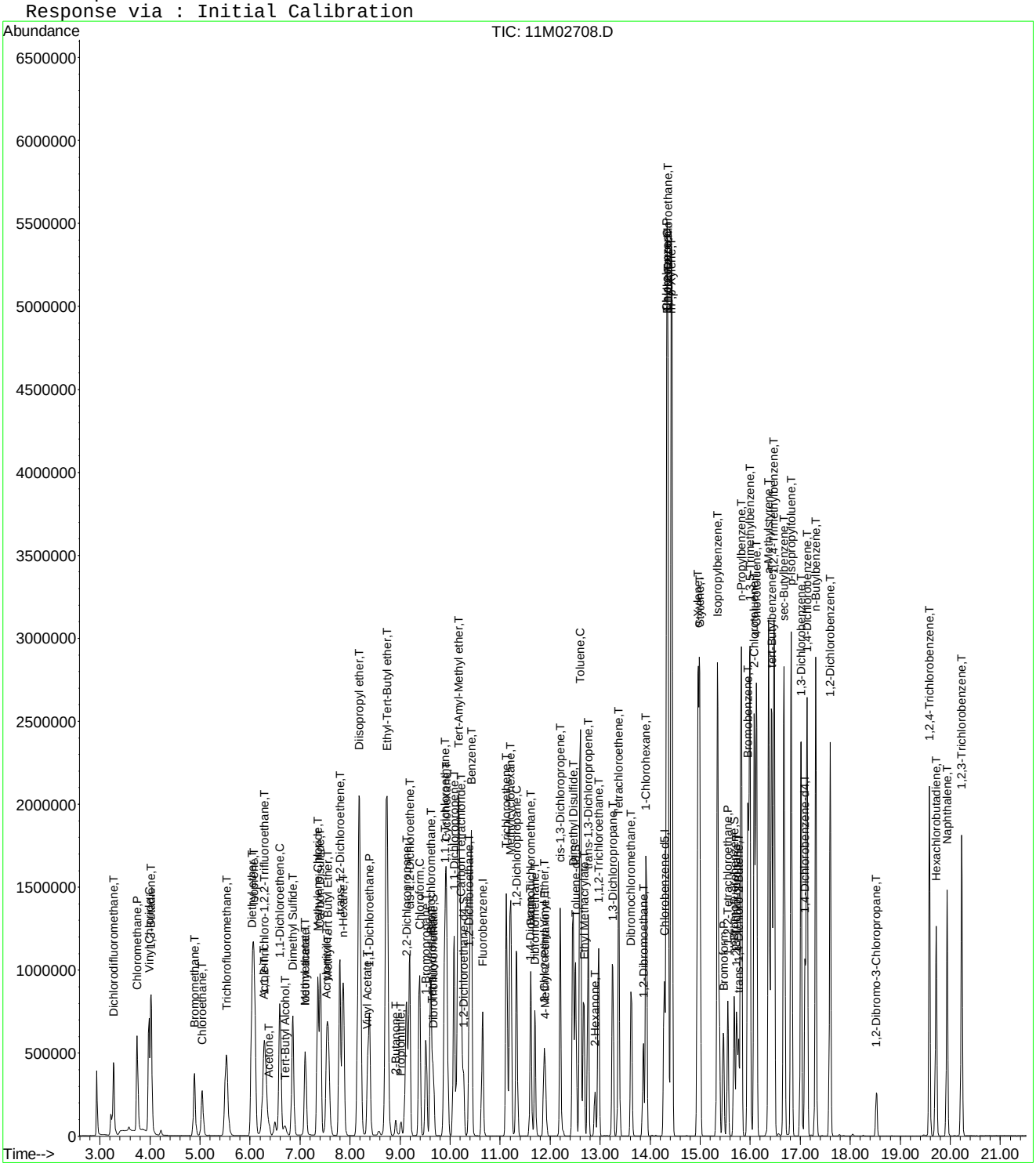

Continuing Calibration Area and RT check

Instrument: hpms11
Initial cal date: 27 Jun 2014 18:38
CCV date: 25 Jul 2014 14:14
CCV Filename: 11M02708.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	1022945	10.65	765291	14.28	396828	17.10
CCV	891712	10.65	672205	14.28	359174	17.09

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\072514\11M02708.D Vial: 2
Acq On : 25 Jul 2014 14:14 Operator: FJB
Sample : WG485784-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD65647 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	87	0.00
2	T	Dichlorodifluoromethane	0.2707	0.3059	-13.0	93	0.00
3	P	Chloromethane	0.4725	0.4471	5.4	87	0.00
4	C	Vinyl Chloride	0.4257	0.4528	-6.4	88	0.00
5	T	1,3-Butadiene	0.3491	0.3265	6.5	83	0.00
6	T	Bromomethane	0.2395	0.2152	10.1	94	0.00
7	T	Chloroethane	0.2137	0.2247	-5.2	91	0.00
8	T	Trichlorofluoromethane	0.5026	0.5242	-4.3	90	0.01
9	T	Diethyl ether	0.2049	0.2283	-11.4	99	0.00
10	T	Isoprene	0.4389	0.4626	-5.4	90	0.00
11	T	Acrolein	0.0261	0.0382	-46.2#	127	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.3094	0.3258	-5.3	91	0.00
13	T	Acetone	0.0505	0.0549	-8.7	107	0.00
14	C	1,1-Dichloroethene	0.4579	0.4885	-6.7	91	0.00
15	T	Tert-Butyl Alcohol	0.0132	0.0187	-42.2#	129	0.00
16	T	Dimethyl Sulfide	0.3202	0.3385	-5.7	92	0.00
17	T	Iodomethane	0.2868	0.3341	-16.5	74	0.00
18	T	Methyl acetate	0.1596	0.1866	-16.9	105	0.00
19	T	Methylene Chloride	0.3389	0.3423	-1.0	93	0.00
20	T	Carbon Disulfide	0.9591	1.0353	-7.9	89	0.00
21	T	Acrylonitrile	0.0690	0.0827	-19.9	103	0.00
22	T	Methyl Tert Butyl Ether	0.6944	0.7951	-14.5	101	0.00
23	T	trans-1,2-Dichloroethene	0.3347	0.3319	0.8	87	0.00
24	T	n-Hexane	0.3880	0.4361	-12.4	95	0.00
25	T	Diisopropyl ether	0.9055	0.9801	-8.2	94	0.00
26	T	Vinyl Acetate	0.2458	0.3554	-44.6#	124	0.00
27	P	1,1-Dichloroethane	0.5485	0.5687	-3.7	89	0.00
28	T	Ethyl-Tert-Butyl ether	0.8348	0.9193	-10.1	96	0.01
29	T	2-Butanone	0.0724	0.0866	-19.6	108	0.00
30	T	Propionitrile	0.0236	0.0277	-17.4	102	0.00
31	T	2,2-Dichloropropane	0.4920	0.5330	-8.3	94	0.00
32	T	cis-1,2-Dichloroethene	0.3633	0.3661	-0.8	88	0.00
33	C	Chloroform	0.5622	0.5728	-1.9	88	0.00
34	T	1-Bromopropane	0.0610	0.0616	-1.1	83	-0.01
35	T	Bromochloromethane	0.2094	0.2244	-7.1	92	0.00
36	T	Tetrahydrofuran	0.0470	0.0573	-21.8	108	0.00
37	S	Dibromofluoromethane	0.3122	0.3088	1.1	83	0.01
38	T	1,1,1-Trichloroethane	0.5212	0.5358	-2.8	89	0.00
39	T	Cyclohexane	0.4881	0.5191	-6.3	89	0.00
40	T	1,1-Dichloropropene	0.4360	0.4448	-2.0	87	0.00
41	T	Carbon Tetrachloride	0.4683	0.5044	-7.7	91	0.00
42	T	Tert-Amyl-Methyl ether	0.7234	0.8041	-11.2	97	0.01
43	S	1,2-Dichloroethane-d4	0.3047	0.2978	2.2	83	0.00
44	T	1,2-Dichloroethane	0.3952	0.4127	-4.4	93	0.00
45	T	Benzene	1.2131	1.2305	-1.4	87	0.00
46	T	Trichloroethene	0.3748	0.3635	3.0	86	0.00
47	T	Methylcyclohexane	0.4946	0.5288	-6.9	89	0.00
48	C	1,2-Dichloropropane	0.3022	0.3152	-4.3	90	0.00
49	T	1,4-Dioxane	0.0018	0.0025	-34.2#	118	0.00
50	T	Bromodichloromethane	0.4204	0.4452	-5.9	91	0.00
51	T	Dibromomethane	0.1723	0.1857	-7.8	94	0.00
52	T	2-Chloroethyl Vinyl Ether	0.1377	0.1286	6.6	79	0.00
53	T	4-Methyl-2-Pentanone	0.0636	0.0754	-18.5	101	-0.01
54	T	cis-1,3-Dichloropropene	0.4723	0.5240	-11.0	92	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\072514\11M02708.D Vial: 2
Acq On : 25 Jul 2014 14:14 Operator: FJB
Sample : WG485784-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD65647 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2653	0.2966	-11.8	97	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	88	0.00
57	S	Toluene-d8	1.4647	1.4205	3.0	82	0.00
58	C	Toluene	1.6856	1.7441	-3.5	86	0.00
59	T	Ethyl Methacrylate	0.3476	0.4220	-21.4	99	0.00
60	T	trans-1,3-Dichloropropene	0.5427	0.6227	-14.7	94	0.00
61	T	1,1,2-Trichloroethane	0.3193	0.3374	-5.7	94	0.00
62	T	2-Hexanone	0.1317	0.1634	-24.1	105	0.00
63	T	1,3-Dichloropropane	0.5490	0.5779	-5.3	95	0.00
64	T	Tetrachloroethene	0.3802	0.3713	2.3	86	0.00
65	T	Dibromochloromethane	0.4027	0.4502	-11.8	95	0.00
66	T	1,2-Dibromoethane	0.3163	0.3454	-9.2	96	0.00
67	T	1-Chlorohexane	0.5502	0.5832	-6.0	87	-0.01
68	P	Chlorobenzene	1.2110	1.2360	-2.1	87	0.00
69	T	1,1,1,2-Tetrachloroethane	0.4527	0.4718	-4.2	90	0.00
70	C	Ethylbenzene	0.6810	0.6862	-0.8	86	0.00
71	T	m-,p-Xylene	0.7649	0.8161	-6.7	87	-0.01
72	T	o-Xylene	0.7825	0.7995	-2.2	86	-0.01
73	T	Styrene	1.1721	1.3431	-14.6	88	0.00
74	P	Bromoform	0.2336	0.2857	-22.3	102	0.00
75	T	Isopropylbenzene	1.7949	1.9547	-8.9	87	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	91	-0.01
77	P	1,1,2,2-Tetrachloroethane	0.6719	0.7316	-8.9	100	0.00
78	S	p-Bromofluorobenzene	1.0809	0.9854	8.8	81	0.00
79	T	1,2,3-Trichloropropane	0.2040	0.2177	-6.7	97	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.1629	0.2053	-26.1#	103	0.00
81	T	n-Propylbenzene	4.2138	4.2734	-1.4	87	0.00
82	T	Bromobenzene	1.0060	0.9708	3.5	88	0.00
83	T	1,3,5-Trimethylbenzene	2.9688	3.1499	-6.1	88	0.00
84	T	2-Chlorotoluene	2.6603	2.6215	1.5	89	0.00
85	T	4-Chlorotoluene	2.6803	2.6854	-0.2	86	-0.04
86	T	a-Methylstyrene	1.6490	1.7516	-6.2	87	0.00
87	T	tert-Butylbenzene	0.6705	0.6655	0.7	88	0.00
88	T	1,2,4-Trimethylbenzene	2.9790	3.2582	-9.4	89	-0.01
89	T	sec-Butylbenzene	3.5783	3.8821	-8.5	89	0.00
90	T	p-Isopropyltoluene	3.0150	3.3692	-11.7	90	0.00
91	T	1,3-Dichlorobenzene	1.8227	1.8313	-0.5	89	0.00
92	T	1,4-Dichlorobenzene	1.8255	1.8372	-0.6	89	0.00
93	T	n-Butylbenzene	2.4947	2.8915	-15.9	91	0.00
94	T	1,2-Dichlorobenzene	1.6733	1.7152	-2.5	91	0.00
95	T	1,2-Dibromo-3-Chloropropane	0.0977	0.1178	-20.6	109	-0.01
96	T	1,2,4-Trichlorobenzene	0.9726	1.1368	-16.9	94	0.00
97	T	Hexachlorobutadiene	0.4480	0.4585	-2.3	96	0.00
98	T	Naphthalene	1.5027	2.0531	-36.6#	95	0.00
99	T	1,2,3-Trichlorobenzene	0.8099	1.0341	-27.7#	97	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M02708.D 8260WTR.M Fri Jul 25 15:07:43 2014 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\072514\11M02708.D Vial: 2
Acq On : 25 Jul 2014 14:14 Operator: FJB
Sample : WG485784-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD65647 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	87	0.00
2	T	Dichlorodifluoromethane	50.0000	56.5065	-13.0	93	0.00
3	P	Chloromethane	50.0000	47.3200	5.4	87	0.00
4	C	Vinyl Chloride	50.0000	53.1799	-6.4	88	0.00
5	T	1,3-Butadiene	50.0000	45.5874	8.8	83	0.00
6	T	Bromomethane	50.0000	44.9370	10.1	94	0.00
7	T	Chloroethane	50.0000	52.5774	-5.2	91	0.00
8	T	Trichlorofluoromethane	50.0000	52.1437	-4.3	90	0.01
9	T	Diethyl ether	100.0000	111.4154	-11.4	99	0.00
10	T	Isoprene	50.0000	52.6995	-5.4	90	0.00
11	T	Acrolein	50.0000	73.0879	-46.2#	127	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.6529	-5.3	91	0.00
13	T	Acetone	50.0000	54.3611	-8.7	107	0.00
14	C	1,1-Dichloroethene	50.0000	53.3381	-6.7	91	0.00
15	T	Tert-Butyl Alcohol	200.0000	284.2957	-42.1#	129	0.00
16	T	Dimethyl Sulfide	50.0000	52.8574	-5.7	92	0.00
17	T	Iodomethane	50.0000	43.0365	13.9	74	0.00
18	T	Methyl acetate	50.0000	58.4387	-16.9	105	0.00
19	T	Methylene Chloride	50.0000	50.5025	-1.0	93	0.00
20	T	Carbon Disulfide	50.0000	53.9701	-7.9	89	0.00
21	T	Acrylonitrile	50.0000	59.9341	-19.9	103	0.00
22	T	Methyl Tert Butyl Ether	50.0000	57.2458	-14.5	101	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.5842	0.8	87	0.00
24	T	n-Hexane	50.0000	56.2060	-12.4	95	0.00
25	T	Diisopropyl ether	100.0000	108.2429	-8.2	94	0.00
26	T	Vinyl Acetate	50.0000	72.2884	-44.6#	124	0.00
27	P	1,1-Dichloroethane	50.0000	51.8359	-3.7	89	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	110.1229	-10.1	96	0.01
29	T	2-Butanone	50.0000	59.8211	-19.6	108	0.00
30	T	Propionitrile	100.0000	117.3561	-17.4	102	0.00
31	T	2,2-Dichloropropane	50.0000	54.1676	-8.3	94	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.3851	-0.8	88	0.00
33	C	Chloroform	50.0000	50.9426	-1.9	88	0.00
34	T	1-Bromopropane	50.0000	50.5288	-1.1	83	-0.01
35	T	Bromochloromethane	50.0000	53.5762	-7.2	92	0.00
36	T	Tetrahydrofuran	100.0000	121.8496	-21.8	108	0.00
37	S	Dibromofluoromethane	25.0000	24.7298	1.1	83	0.01
38	T	1,1,1-Trichloroethane	50.0000	51.4033	-2.8	89	0.00
39	T	Cyclohexane	50.0000	53.1685	-6.3	89	0.00
40	T	1,1-Dichloropropene	50.0000	51.0075	-2.0	87	0.00
41	T	Carbon Tetrachloride	50.0000	53.8584	-7.7	91	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	111.1548	-11.2	97	0.01
43	S	1,2-Dichloroethane-d4	25.0000	24.4386	2.2	83	0.00
44	T	1,2-Dichloroethane	50.0000	52.2162	-4.4	93	0.00
45	T	Benzene	50.0000	50.7165	-1.4	87	0.00
46	T	Trichloroethene	50.0000	48.4869	3.0	86	0.00
47	T	Methylcyclohexane	50.0000	53.4592	-6.9	89	0.00
48	C	1,2-Dichloropropane	50.0000	52.1470	-4.3	90	0.00
49	T	1,4-Dioxane	200.0000	268.8796	-34.4#	118	0.00
50	T	Bromodichloromethane	50.0000	52.9466	-5.9	91	0.00
51	T	Dibromomethane	50.0000	53.8927	-7.8	94	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	46.7145	6.6	79	0.00
53	T	4-Methyl-2-Pentanone	50.0000	59.2666	-18.5	101	-0.01
54	T	cis-1,3-Dichloropropene	50.0000	55.4762	-11.0	92	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\072514\11M02708.D Vial: 2
Acq On : 25 Jul 2014 14:14 Operator: FJB
Sample : WG485784-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD65647 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	55.9022	-11.8	97	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	88	0.00
57	S	Toluene-d8	25.0000	24.2466	3.0	82	0.00
58	C	Toluene	50.0000	51.7356	-3.5	86	0.00
59	T	Ethyl Methacrylate	50.0000	60.7076	-21.4	99	0.00
60	T	trans-1,3-Dichloropropene	50.0000	57.3688	-14.7	94	0.00
61	T	1,1,2-Trichloroethane	50.0000	52.8417	-5.7	94	0.00
62	T	2-Hexanone	50.0000	62.0385	-24.1	105	0.00
63	T	1,3-Dichloropropane	50.0000	52.6373	-5.3	95	0.00
64	T	Tetrachloroethene	50.0000	48.8350	2.3	86	0.00
65	T	Dibromochloromethane	50.0000	55.8975	-11.8	95	0.00
66	T	1,2-Dibromoethane	50.0000	54.6116	-9.2	96	0.00
67	T	1-Chlorohexane	50.0000	53.0005	-6.0	87	-0.01
68	P	Chlorobenzene	50.0000	51.0330	-2.1	87	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	52.1144	-4.2	90	0.00
70	C	Ethylbenzene	50.0000	50.3770	-0.8	86	0.00
71	T	m-,p-Xylene	100.0000	106.6996	-6.7	87	-0.01
72	T	o-Xylene	50.0000	51.0839	-2.2	86	-0.01
73	T	Styrene	50.0000	57.2936	-14.6	88	0.00
74	P	Bromoform	50.0000	61.1552	-22.3	102	0.00
75	T	Isopropylbenzene	50.0000	54.4518	-8.9	87	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	91	-0.01
77	P	1,1,2,2-Tetrachloroethane	50.0000	54.4440	-8.9	100	0.00
78	S	p-Bromofluorobenzene	25.0000	22.7925	8.8	81	0.00
79	T	1,2,3-Trichloropropane	50.0000	53.3715	-6.7	97	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	55.0483	-10.1	103	0.00
81	T	n-Propylbenzene	50.0000	50.7068	-1.4	87	0.00
82	T	Bromobenzene	50.0000	48.2479	3.5	88	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	53.0487	-6.1	88	0.00
84	T	2-Chlorotoluene	50.0000	49.2714	1.5	89	0.00
85	T	4-Chlorotoluene	50.0000	50.0948	-0.2	86	-0.04
86	T	a-Methylstyrene	50.0000	53.1094	-6.2	87	0.00
87	T	tert-Butylbenzene	50.0000	49.6271	0.7	88	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	54.6869	-9.4	89	-0.01
89	T	sec-Butylbenzene	50.0000	54.2452	-8.5	89	0.00
90	T	p-Isopropyltoluene	50.0000	55.8738	-11.7	90	0.00
91	T	1,3-Dichlorobenzene	50.0000	50.2372	-0.5	89	0.00
92	T	1,4-Dichlorobenzene	50.0000	50.3195	-0.6	89	0.00
93	T	n-Butylbenzene	50.0000	57.9536	-15.9	91	0.00
94	T	1,2-Dichlorobenzene	50.0000	51.2521	-2.5	91	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	60.2881	-20.6	109	-0.01
96	T	1,2,4-Trichlorobenzene	50.0000	51.1308	-2.3	94	0.00
97	T	Hexachlorobutadiene	50.0000	51.1702	-2.3	96	0.00
98	T	Naphthalene	50.0000	56.4117	-12.8	95	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	52.6175	-5.2	97	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M02708.D 8260WTR.M Fri Jul 25 15:07:45 2014 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\062714\11M02148.D          Vial: 1
Acq On    : 27 Jun 2014  14:07                       Operator: FJB
Sample    : WG482009-01 BFB 50ng 8260                Inst    : hpms11
Misc      : 1,1 STD64936                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

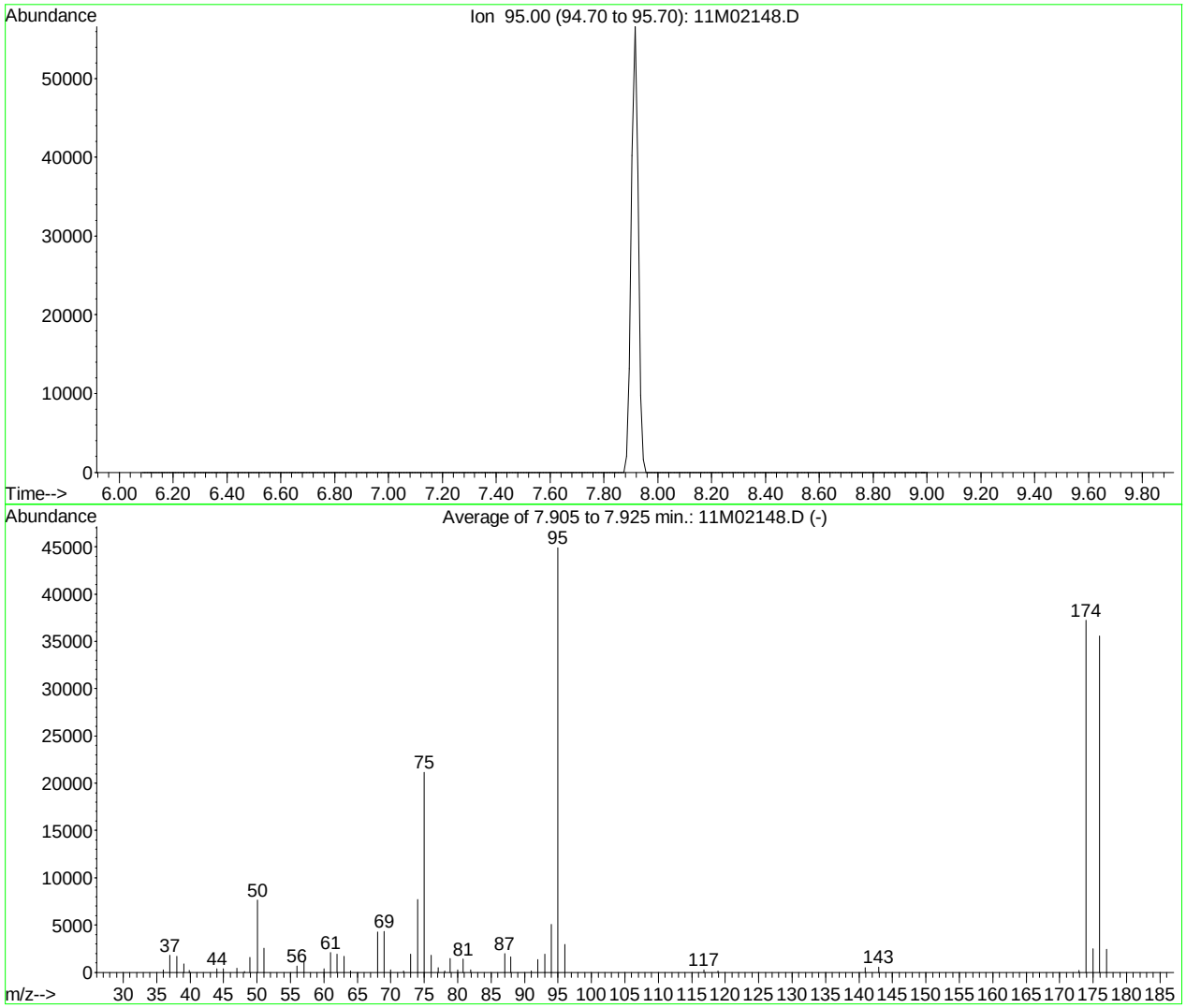

AutoFind: Scans 177, 178, 179; Background Corrected with Scan 172

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.0	7655	PASS
75	95	30	60	47.0	21128	PASS
95	95	100	100	100.0	44912	PASS
96	95	5	9	6.5	2936	PASS
173	174	0.00	2	0.5	194	PASS
174	95	50	100	82.9	37234	PASS
175	174	5	9	6.7	2479	PASS
176	174	95	101	95.5	35560	PASS
177	176	5	9	6.8	2430	PASS

11M02148.D BFB.M Mon Jun 30 12:09:38 2014

BFB

```
Data File : C:\MSDCHEM\1\DATA\072514\11M02707.D          Vial: 1
Acq On    : 25 Jul 2014  13:49                        Operator: FJB
Sample    : WG485784-01 BFB 50ng 8260                 Inst    : hpms11
Misc      : 1,1 STD65391                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
```

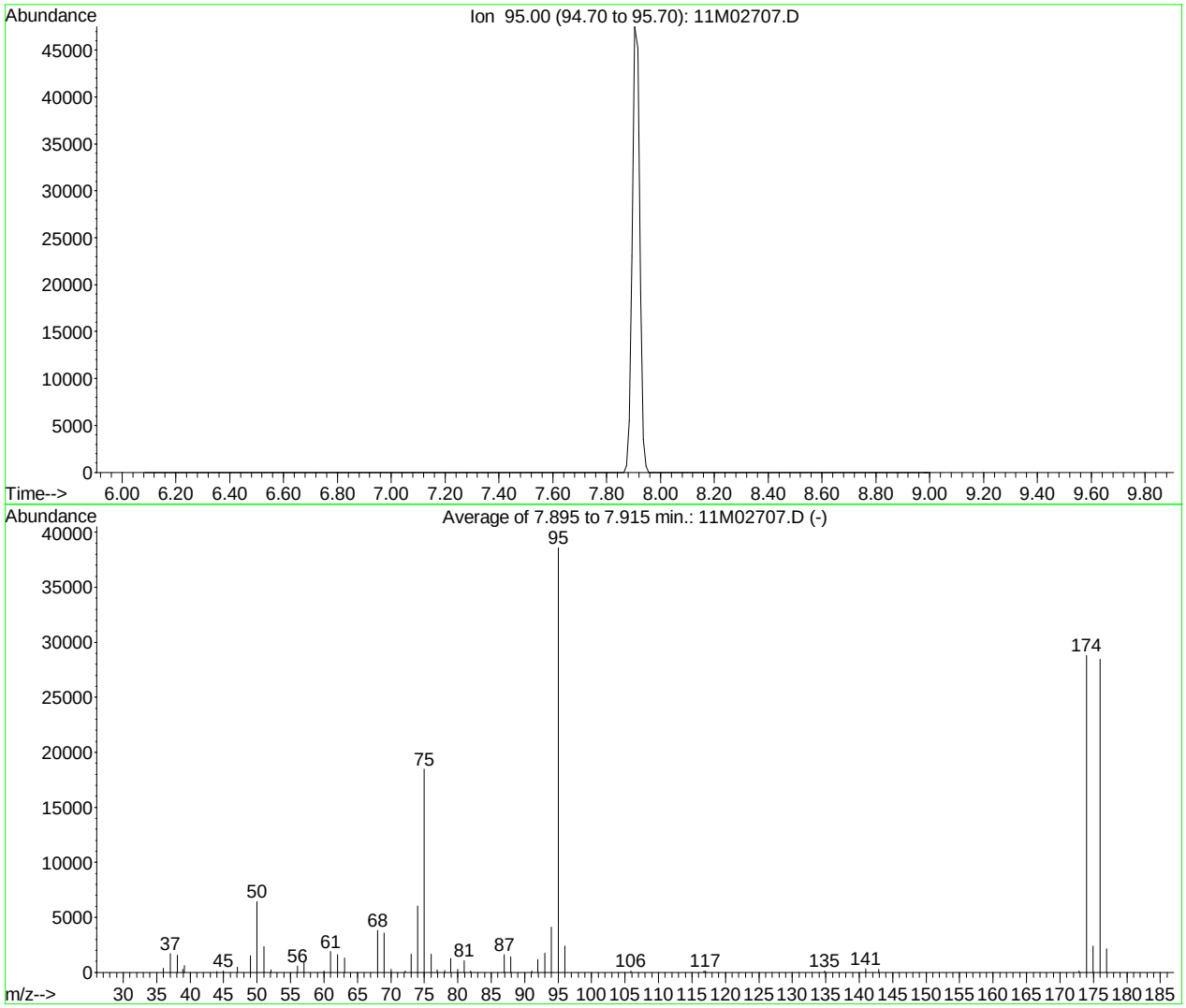

AutoFind: Scans 176, 177, 178; Background Corrected with Scan 171

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6430	PASS
75	95	30	60	47.9	18481	PASS
95	95	100	100	100.0	38594	PASS
96	95	5	9	6.1	2367	PASS
173	174	0.00	2	0.4	108	PASS
174	95	50	100	74.6	28795	PASS
175	174	5	9	8.3	2377	PASS
176	174	95	101	98.9	28470	PASS
177	176	5	9	7.6	2153	PASS

11M02707.D 8260WTR.M Fri Jul 25 15:07:36 2014

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02710.D Vial: 4
Acq On : 25 Jul 2014 15:18 Operator: FJB
Sample : WG485785-01 VBLK0725 BLANK 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 09:37:47 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	799037	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	582026	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	266680	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	230786	23.1277 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.52%		
43) 1,2-Dichloroethane-d4	10.27	65	241305	24.7803 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.12%		
57) Toluene-d8	12.51	98	812497	23.8277 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.32%		
78) p-Bromofluorobenzene	15.68	95	287235	24.9120 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.64%		

Target Compounds

					Qvalue
13) Acetone	6.37	43	426	0.2640 ug/L #	46
19) Methylene Chloride	7.35	84	2354	0.2174 ug/L	76
98) Naphthalene	19.95	128	219	0.3884 ug/L #	68

(#) = qualifier out of range (m) = manual integration
11M02710.D 8260WTR.M Mon Jul 28 09:37:51 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02710.D Vial: 4
Acq On : 25 Jul 2014 15:18 Operator: FJB
Sample : WG485785-01 VBLK0725 BLANK 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 9:37 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

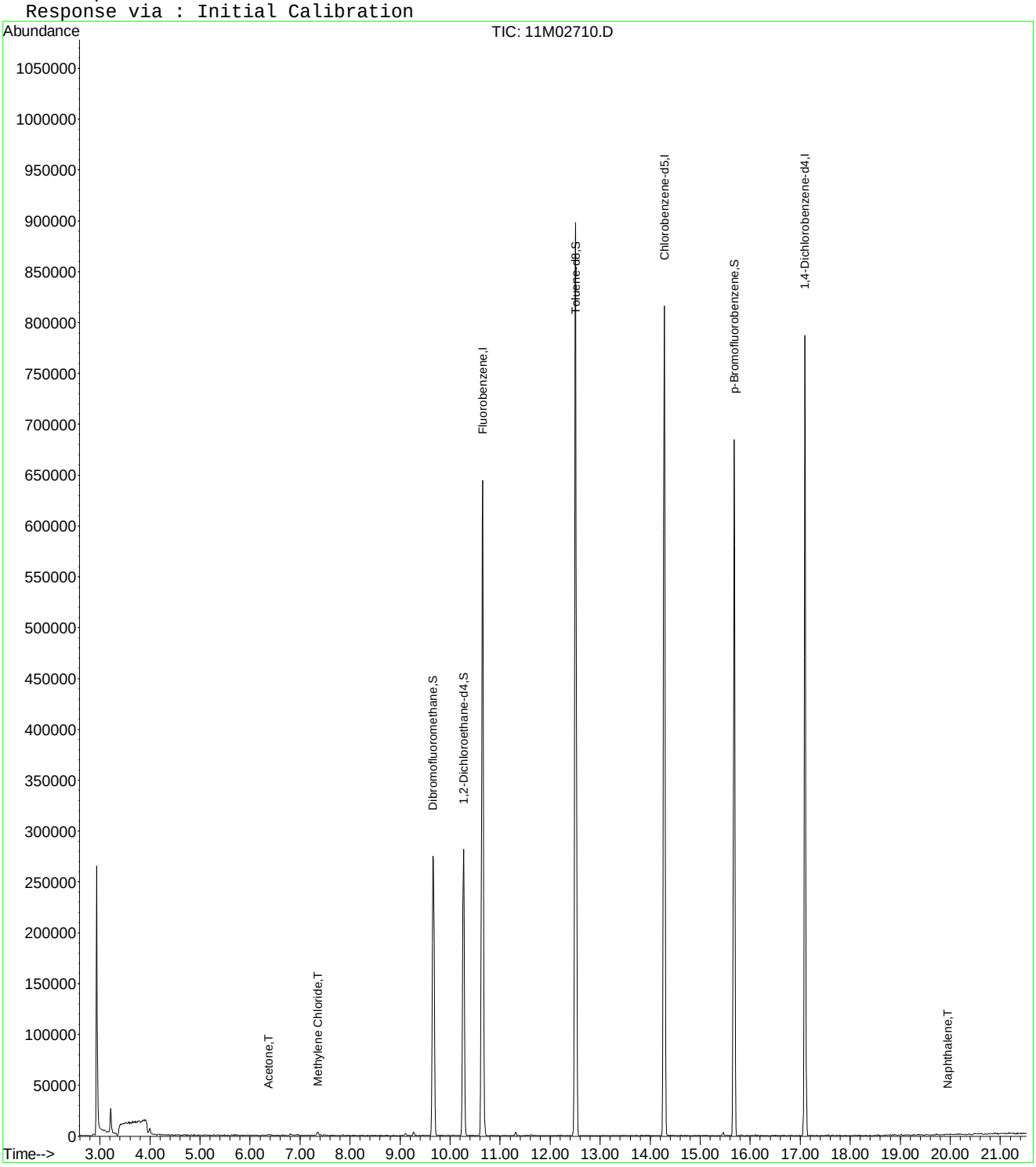

11M02710.D 8260WTR.M Mon Jul 28 09:37:51 2014 Page 2

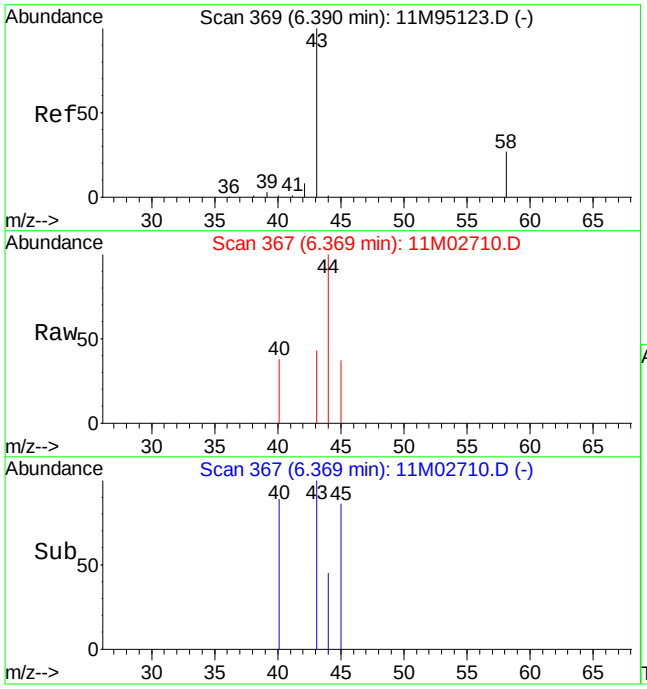

#13
Acetone
Concen: 0.26 ug/L
RT: 6.37 min Scan# 367
Delta R.T. -0.01 min
Lab File: 11M02710.D
Acq: 25 Jul 2014 15:18

Tgt Ion: 43 Resp: 426

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.2	40.0#

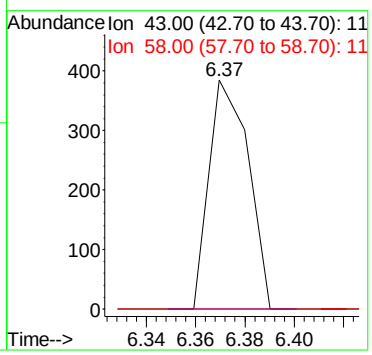

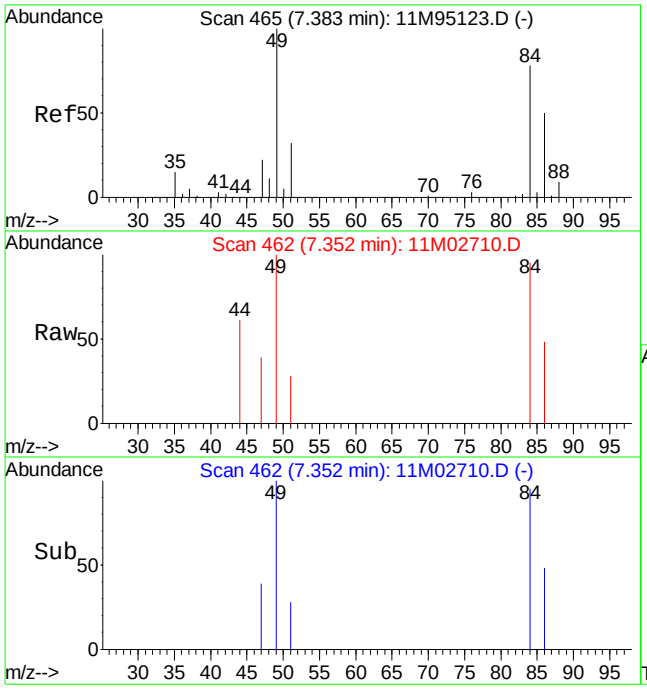

#19
Methylene Chloride
Concen: 0.22 ug/L
RT: 7.35 min Scan# 462
Delta R.T. 0.00 min
Lab File: 11M02710.D
Acq: 25 Jul 2014 15:18

Tgt Ion: 84 Resp: 2354

Ion	Ratio	Lower	Upper
84	100		
49	115.9	87.4	203.8

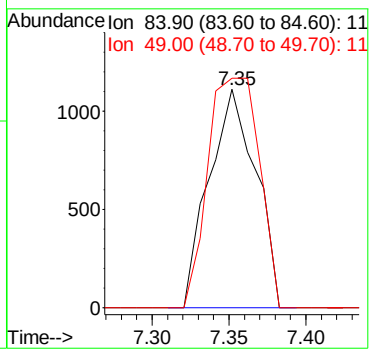

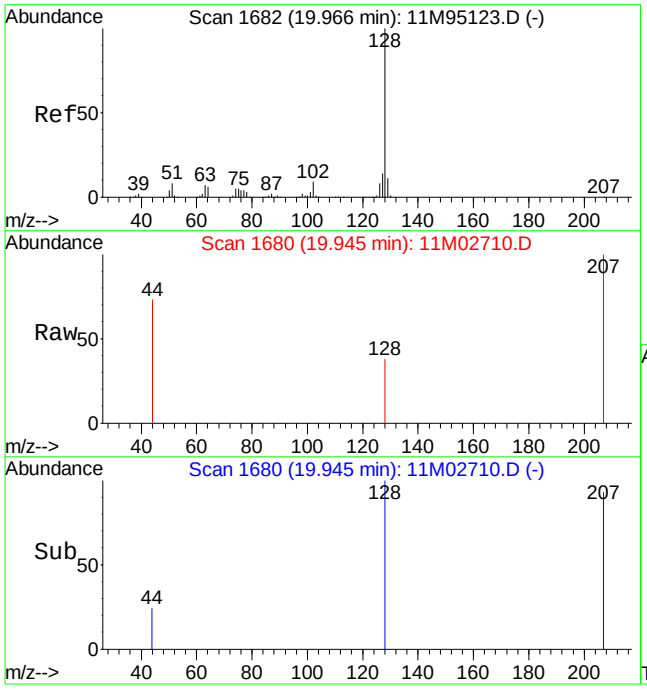

#98
Naphthalene
Concen: 0.39 ug/L
RT: 19.95 min Scan# 1680
Delta R.T. 0.01 min
Lab File: 11M02710.D
Acq: 25 Jul 2014 15:18

Tgt Ion:128 Resp: 219

Ion	Ratio	Lower	Upper
128	100		
127	0.0	11.5	14.1#

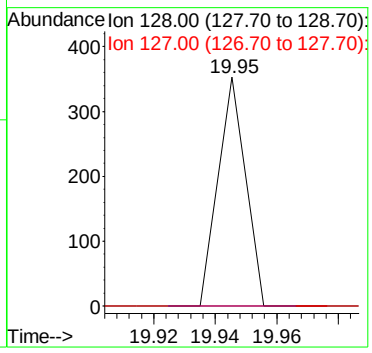

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02731.D Vial: 25
Acq On : 26 Jul 2014 2:28 Operator: FJB
Sample : WG485785-04 624 BLANK Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 09:38:54 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	696990	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	512197	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	224268	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	206263	23.6965 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.80%		
43) 1,2-Dichloroethane-d4	10.27	65	215779	25.4033 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.60%		
57) Toluene-d8	12.51	98	733227	24.4345 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.72%		
78) p-Bromofluorobenzene	15.68	95	252147	26.0045 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.00%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M02731.D 8260WTR.M Mon Jul 28 09:38:55 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072514\11M02731.D Vial: 25
Acq On : 26 Jul 2014 2:28 Operator: FJB
Sample : WG485785-04 624 BLANK Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 9:38 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

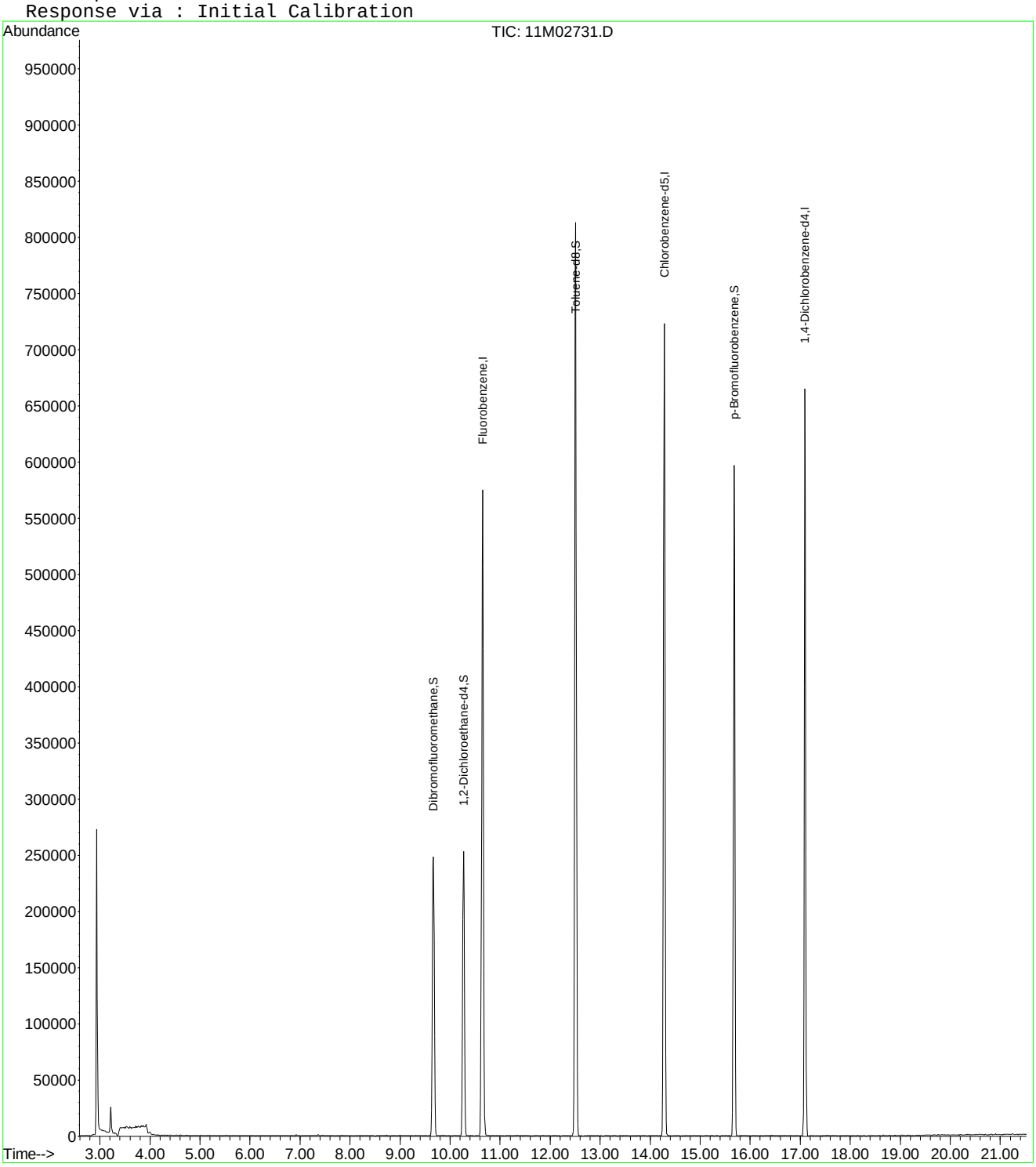

11M02731.D 8260WTR.M Mon Jul 28 09:38:56 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072514\11M02716.D Vial: 10
Acq On : 25 Jul 2014 18:30 Operator: FJB
Sample : WG485785-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 25 18:52:22 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	805724	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	603484	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	313731	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	240806	23.9316 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.72%		
43) 1,2-Dichloroethane-d4	10.27	65	241422	24.5865 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.36%		
57) Toluene-d8	12.51	98	842622	23.8325 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.32%		
78) p-Bromofluorobenzene	15.67	95	307489	22.6691 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.68%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.27	85	221937	25.4399 ug/L	100
3) Chloromethane	3.74	50	298112	19.5775 ug/L	99
4) Vinyl Chloride	3.97	62	285773	20.8270 ug/L	100
5) 1,3-Butadiene	4.01	54	138506	9.9061 ug/L	91
6) Bromomethane	4.88	94	132456	17.1631 ug/L	100
7) Chloroethane	5.04	64	132811	19.2858 ug/L	96
8) Trichlorofluoromethane	5.52	101	339632	20.9662 ug/L	98
9) Diethyl ether	6.04	59	730314	110.5689 ug/L	94
10) Isoprene	6.08	67	262103	18.5294 ug/L	88
11) Acrolein	6.28	56	84642	100.5716 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	195155	19.5744 ug/L	97
13) Acetone	6.38	43	40645	24.9809 ug/L	97
14) 1,1-Dichloroethene	6.60	61	275166	18.6444 ug/L	93
15) Tert-Butyl Alcohol	6.70	59	120946	284.7073 ug/L	96
16) Dimethyl Sulfide	6.86	62	202193	19.5918 ug/L	91
17) Iodomethane	7.10	142	108605	9.6301 ug/L	100
18) Methyl acetate	7.10	43	111180	21.6121 ug/L	94
19) Methylene Chloride	7.35	84	202694	18.5599 ug/L	80
20) Carbon Disulfide	7.40	76	525649	17.0046 ug/L	100
21) Acrylonitrile	7.53	53	51711	23.2537 ug/L	99
22) Methyl Tert Butyl Ether	7.56	73	499730	22.3283 ug/L	95
23) trans-1,2-Dichloroethene	7.79	96	203412	18.8566 ug/L	86
24) n-Hexane	7.86	57	217018	17.3551 ug/L	95
25) Diisopropyl ether	8.18	45	3060777	104.8835 ug/L	97
26) Vinyl Acetate	8.34	43	194111	24.5030 ug/L	97
27) 1,1-Dichloroethane	8.39	63	333159	18.8448 ug/L	99
28) Ethyl-Tert-Butyl ether	8.73	59	2956770	109.9034 ug/L	96
29) 2-Butanone	8.91	43	59143	25.3503 ug/L	88
30) Propionitrile	9.02	54	92128	121.0606 ug/L	95
31) 2,2-Dichloropropane	9.12	77	272020	17.1554 ug/L	100
32) cis-1,2-Dichloroethene	9.19	96	221112	18.8843 ug/L	85
33) Chloroform	9.39	83	349252	19.2753 ug/L	100
34) 1-Bromopropane	9.51	122	45585	23.1981 ug/L	98
35) Bromochloromethane	9.61	130	138160	20.4713 ug/L	84
36) Tetrahydrofuran	9.64	42	202350	133.5559 ug/L	91
38) 1,1,1-Trichloroethane	9.90	97	317740	18.9167 ug/L	97
39) Cyclohexane	9.93	56	297999	18.9415 ug/L	86
40) 1,1-Dichloropropene	10.08	75	269836	19.2023 ug/L	98
41) Carbon Tetrachloride	10.22	117	298320	19.7652 ug/L	99
42) Tert-Amyl-Methyl ether	10.17	73	2685377	115.1765 ug/L	96

(#) = qualifier out of range (m) = manual integration
11M02716.D 8260WTR.M Fri Jul 25 18:52:24 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072514\11M02716.D Vial: 10
Acq On : 25 Jul 2014 18:30 Operator: FJB
Sample : WG485785-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 25 18:52:22 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.38	62	258289	20.2815 ug/L	98
45)	Benzene	10.42	78	773149	19.7753 ug/L	100
46)	Trichloroethene	11.13	130	232210	19.2221 ug/L	95
47)	Methylcyclohexane	11.21	83	302950	19.0056 ug/L	91
48)	1,2-Dichloropropane	11.32	63	188524	19.3541 ug/L	97
49)	1,4-Dioxane	11.60	88	12490	210.9130 ug/L	94
50)	Bromodichloromethane	11.61	83	268733	19.8340 ug/L	99
51)	Dibromomethane	11.69	93	117071	21.0839 ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.88	63	83267	18.7646 ug/L	97
53)	4-Methyl-2-Pentanone	11.90	58	51376	25.0501 ug/L	97
54)	cis-1,3-Dichloropropene	12.20	75	322035	21.1560 ug/L	99
55)	Dimethyl Disulfide	12.46	79	168862	19.7508 ug/L	92
58)	Toluene	12.60	91	826315	20.3077 ug/L	99
59)	Ethyl Methacrylate	12.68	69	210659	25.1092 ug/L	91
60)	trans-1,3-Dichloropropene	12.76	75	268608	20.5031 ug/L	96
61)	1,1,2-Trichloroethane	12.97	97	163376	21.1991 ug/L	99
62)	2-Hexanone	12.89	43	84908	26.7067 ug/L	99
63)	1,3-Dichloropropane	13.25	76	276378	20.8550 ug/L	92
64)	Tetrachloroethene	13.37	164	169618	18.4818 ug/L	97
65)	Dibromochloromethane	13.62	129	210616	21.6658 ug/L	99
66)	1,2-Dibromoethane	13.87	107	161481	21.1519 ug/L	99
67)	1-Chlorohexane	13.92	91	263387	19.8324 ug/L	88
68)	Chlorobenzene	14.33	112	535037	18.3029 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.35	131	209808	19.1994 ug/L	98
70)	Ethylbenzene	14.34	106	305632	18.5913 ug/L	99
71)	m-,p-Xylene	14.42	106	718179	38.8969 ug/L	98
72)	o-Xylene	14.95	106	337301	17.8564 ug/L	97
73)	Styrene	14.99	104	584125	20.6446 ug/L	96
74)	Bromoform	15.47	173	132218	23.4526 ug/L	100
75)	Isopropylbenzene	15.34	105	843522	19.4682 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.55	83	174096	20.6474 ug/L	98
79)	1,2,3-Trichloropropane	15.73	110	58759	22.9565 ug/L	77
80)	trans-1,4-Dichloro-2-Buten	15.77	53	26996	12.0157 ug/L #	1
81)	n-Propylbenzene	15.82	91	967605	18.2979 ug/L	100
82)	Bromobenzene	15.95	156	237442	18.8076 ug/L	91
83)	1,3,5-Trimethylbenzene	16.00	105	772772	20.7418 ug/L	97
84)	2-Chlorotoluene	16.08	91	603119	18.0659 ug/L	82
85)	4-Chlorotoluene	16.12	91	593405	17.6418 ug/L	92
86)	a-Methylstyrene	16.37	118	405374	19.5889 ug/L	99
87)	tert-Butylbenzene	16.43	134	149199	17.7320 ug/L	85
88)	1,2,4-Trimethylbenzene	16.47	105	792024	21.1864 ug/L	99
89)	sec-Butylbenzene	16.68	105	881021	19.6196 ug/L	99
90)	p-Isopropyltoluene	16.82	119	750282	19.8297 ug/L	99
91)	1,3-Dichlorobenzene	17.02	146	411346	17.9840 ug/L	96
92)	1,4-Dichlorobenzene	17.13	146	441257	19.2617 ug/L	97
93)	n-Butylbenzene	17.31	91	675485	21.5764 ug/L	99
94)	1,2-Dichlorobenzene	17.60	146	389291	18.5385 ug/L	96
95)	1,2-Dibromo-3-Chloropropan	18.52	75	28558	23.2932 ug/L	85
96)	1,2,4-Trichlorobenzene	19.58	180	254706	18.4477 ug/L	94
97)	Hexachlorobutadiene	19.72	225	107490	19.1194 ug/L	99
98)	Naphthalene	19.93	128	444754	19.7227 ug/L	99
99)	1,2,3-Trichlorobenzene	20.23	180	245603	20.0095 ug/L	94

(#) = qualifier out of range (m) = manual integration
11M02716.D 8260WTR.M Fri Jul 25 18:52:24 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072514\11M02716.D Vial: 10
Acq On : 25 Jul 2014 18:30 Operator: FJB
Sample : WG485785-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 25 18:52 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

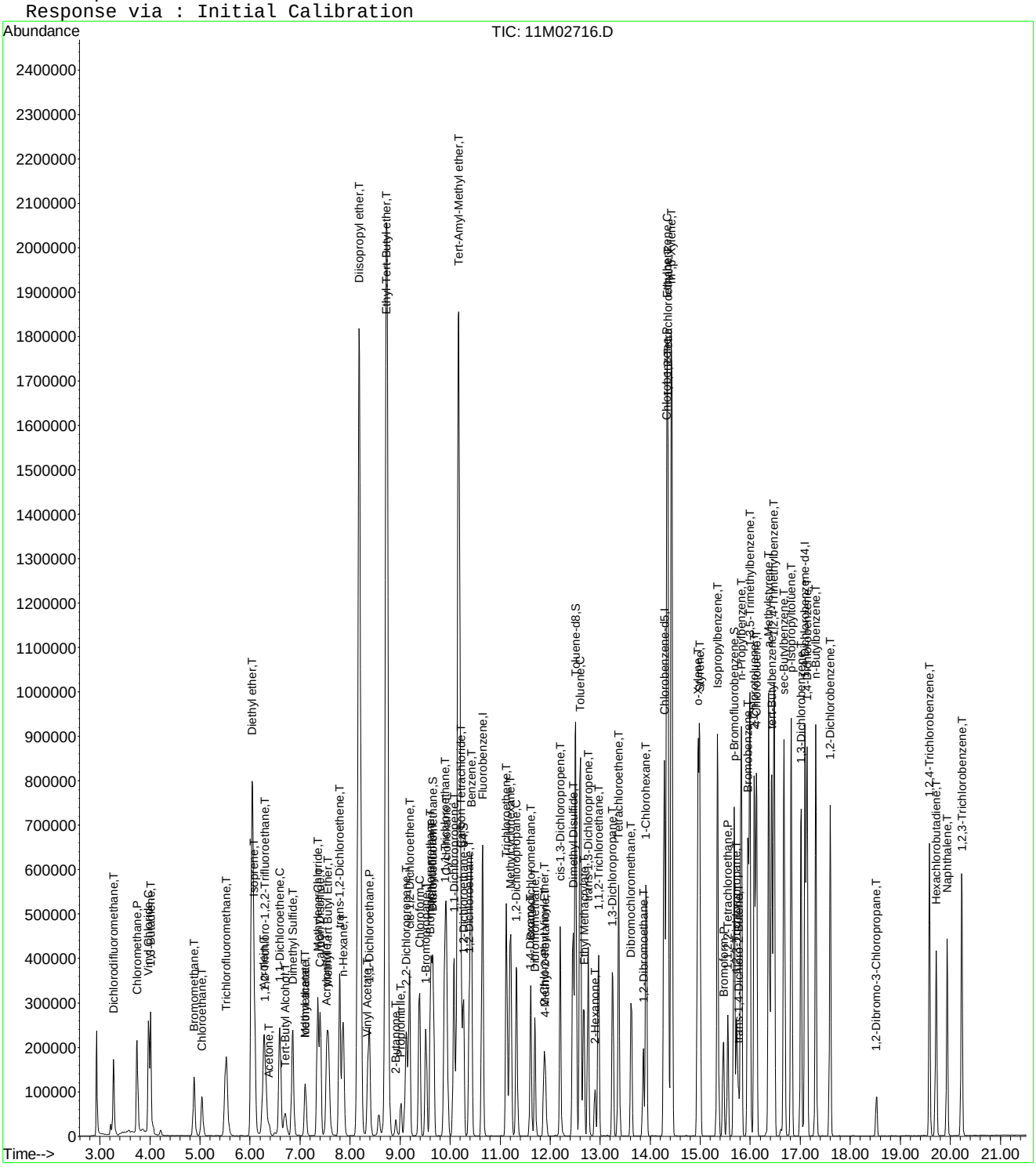

11M02716.D 8260WTR.M Fri Jul 25 18:52:25 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072514\11M02717.D Vial: 11
Acq On : 25 Jul 2014 19:02 Operator: FJB
Sample : WG485785-03 20ug/L LCS DUP 8260 Inst : hpms11
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 25 19:24:15 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	819268	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	612926	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	320785	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	248922	24.3292 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.32%		
43) 1,2-Dichloroethane-d4	10.27	65	249292	24.9683 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.88%		
57) Toluene-d8	12.51	98	864971	24.0877 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.36%		
78) p-Bromofluorobenzene	15.68	95	320040	23.0755 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.32%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	228392	25.7470 ug/L	100
3) Chloromethane	3.74	50	310764	20.0710 ug/L	98
4) Vinyl Chloride	3.97	62	266769	19.1206 ug/L	99
5) 1,3-Butadiene	4.01	54	130320	9.1473 ug/L	92
6) Bromomethane	4.88	94	139520	17.7795 ug/L	98
7) Chloroethane	5.04	64	135549	19.3580 ug/L	94
8) Trichlorofluoromethane	5.52	101	339490	20.6110 ug/L	100
9) Diethyl ether	6.04	59	750881	111.8034 ug/L	95
10) Isoprene	6.08	67	266356	18.5188 ug/L	87
11) Acrolein	6.28	56	87851	102.6589 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	197830	19.5147 ug/L	98
13) Acetone	6.38	43	43837	26.4974 ug/L	96
14) 1,1-Dichloroethene	6.60	61	278697	18.5715 ug/L	91
15) Tert-Butyl Alcohol	6.70	59	128197	296.7873 ug/L	94
16) Dimethyl Sulfide	6.84	62	208960	19.9128 ug/L	91
17) Iodomethane	7.10	142	116009	10.0548 ug/L	97
18) Methyl acetate	7.10	43	114597	21.9080 ug/L	93
19) Methylene Chloride	7.35	84	204400	18.4067 ug/L	82
20) Carbon Disulfide	7.40	76	527269	16.7750 ug/L	100
21) Acrylonitrile	7.53	53	54876	24.2690 ug/L	99
22) Methyl Tert Butyl Ether	7.56	73	515814	22.6660 ug/L	94
23) trans-1,2-Dichloroethene	7.79	96	206134	18.7930 ug/L	86
24) n-Hexane	7.86	57	216271	17.0095 ug/L	95
25) Diisopropyl ether	8.18	45	3129456	105.4641 ug/L	97
26) Vinyl Acetate	8.34	43	190252	23.6189 ug/L	97
27) 1,1-Dichloroethane	8.39	63	341856	19.0171 ug/L	99
28) Ethyl-Tert-Butyl ether	8.73	59	2997496	109.5752 ug/L	96
29) 2-Butanone	8.91	43	62247	26.2397 ug/L	92
30) Propionitrile	9.02	54	98363	127.1169 ug/L	96
31) 2,2-Dichloropropane	9.12	77	273226	16.9466 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	227745	19.1292 ug/L	83
33) Chloroform	9.39	83	356395	19.3444 ug/L	99
34) 1-Bromopropane	9.51	122	46003	23.0238 ug/L	94
35) Bromochloromethane	9.61	130	137407	20.0232 ug/L	85
36) Tetrahydrofuran	9.64	42	209552	136.0229 ug/L	89
38) 1,1,1-Trichloroethane	9.90	97	327810	19.1935 ug/L	96
39) Cyclohexane	9.93	56	302275	18.8956 ug/L	87
40) 1,1-Dichloropropene	10.08	75	273029	19.1083 ug/L	97
41) Carbon Tetrachloride	10.22	117	306810	19.9916 ug/L	99
42) Tert-Amyl-Methyl ether	10.16	73	2749244	115.9664 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072514\11M02717.D Vial: 11
Acq On : 25 Jul 2014 19:02 Operator: FJB
Sample : WG485785-03 20ug/L LCS DUP 8260 Inst : hpms11
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 25 19:24:15 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
44)	1,2-Dichloroethane	10.38	62	263643	20.3596	ug/L		97
45)	Benzene	10.42	78	787502	19.8094	ug/L		100
46)	Trichloroethene	11.13	130	237541	19.3383	ug/L		95
47)	Methylcyclohexane	11.21	83	306975	18.9397	ug/L		91
48)	1,2-Dichloropropane	11.32	63	193504	19.5370	ug/L		99
49)	1,4-Dioxane	11.60	88	14315	237.7347	ug/L		91
50)	Bromodichloromethane	11.61	83	269641	19.5720	ug/L		100
51)	Dibromomethane	11.69	93	118347	20.9614	ug/L		96
52)	2-Chloroethyl Vinyl Ether	11.88	63	88105	19.5266	ug/L		96
53)	4-Methyl-2-Pentanone	11.91	58	53381	25.5974	ug/L		96
54)	cis-1,3-Dichloropropene	12.20	75	322877	20.8606	ug/L		100
55)	Dimethyl Disulfide	12.46	79	172953	19.8949	ug/L		95
58)	Toluene	12.60	91	844348	20.4312	ug/L		98
59)	Ethyl Methacrylate	12.68	69	213761	25.0864	ug/L		89
60)	trans-1,3-Dichloropropene	12.76	75	273996	20.5922	ug/L		98
61)	1,1,2-Trichloroethane	12.97	97	166421	21.2615	ug/L		99
62)	2-Hexanone	12.89	43	86883	26.9069	ug/L		98
63)	1,3-Dichloropropane	13.25	76	279368	20.7559	ug/L		94
64)	Tetrachloroethene	13.37	164	175330	18.8099	ug/L		94
65)	Dibromochloromethane	13.62	129	214418	21.7171	ug/L		99
66)	1,2-Dibromoethane	13.87	107	166672	21.4955	ug/L		99
67)	1-Chlorohexane	13.92	91	268926	19.9376	ug/L		88
68)	Chlorobenzene	14.33	112	539751	18.1797	ug/L		100
69)	1,1,1,2-Tetrachloroethane	14.35	131	212684	19.1628	ug/L		99
70)	Ethylbenzene	14.34	106	311586	18.6615	ug/L		99
71)	m-,p-Xylene	14.42	106	731635	39.0153	ug/L		99
72)	o-Xylene	14.95	106	342327	17.8433	ug/L		98
73)	Styrene	14.99	104	599864	20.8742	ug/L		95
74)	Bromoform	15.47	173	133123	23.2493	ug/L		98
75)	Isopropylbenzene	15.34	105	864246	19.6393	ug/L		98
77)	1,1,2,2-Tetrachloroethane	15.55	83	179962	20.8738	ug/L		100
79)	1,2,3-Trichloropropane	15.73	110	58283	22.2698	ug/L		80
80)	trans-1,4-Dichloro-2-Buten	15.77	53	28093	12.2182	ug/L	#	18
81)	n-Propylbenzene	15.82	91	982626	18.1734	ug/L		100
82)	Bromobenzene	15.95	156	239089	18.5216	ug/L		95
83)	1,3,5-Trimethylbenzene	16.00	105	790989	20.7639	ug/L		98
84)	2-Chlorotoluene	16.08	91	617916	18.1022	ug/L		94
85)	4-Chlorotoluene	16.12	91	612660	17.8138	ug/L		91
86)	a-Methylstyrene	16.37	118	403536	19.0713	ug/L		100
87)	tert-Butylbenzene	16.43	134	153849	17.8826	ug/L		84
88)	1,2,4-Trimethylbenzene	16.47	105	802805	21.0025	ug/L		98
89)	sec-Butylbenzene	16.68	105	905678	19.7252	ug/L		100
90)	p-Isopropyltoluene	16.82	119	762255	19.7031	ug/L		99
91)	1,3-Dichlorobenzene	17.02	146	411418	17.5916	ug/L		97
92)	1,4-Dichlorobenzene	17.13	146	447631	19.1103	ug/L		97
93)	n-Butylbenzene	17.31	91	690419	21.5685	ug/L		99
94)	1,2-Dichlorobenzene	17.60	146	401831	18.7149	ug/L		96
95)	1,2-Dibromo-3-Chloropropan	18.52	75	30752	24.5311	ug/L		93
96)	1,2,4-Trichlorobenzene	19.58	180	260488	18.4515	ug/L		94
97)	Hexachlorobutadiene	19.72	225	109369	19.0259	ug/L		98
98)	Naphthalene	19.93	128	455672	19.7618	ug/L		100
99)	1,2,3-Trichlorobenzene	20.23	180	248540	19.8050	ug/L		95

(#) = qualifier out of range (m) = manual integration
11M02717.D 8260WTR.M Fri Jul 25 19:24:16 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072514\11M02717.D Vial: 11
Acq On : 25 Jul 2014 19:02 Operator: FJB
Sample : WG485785-03 20ug/L LCS DUP 8260 Inst : hpms11
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 25 19:24 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

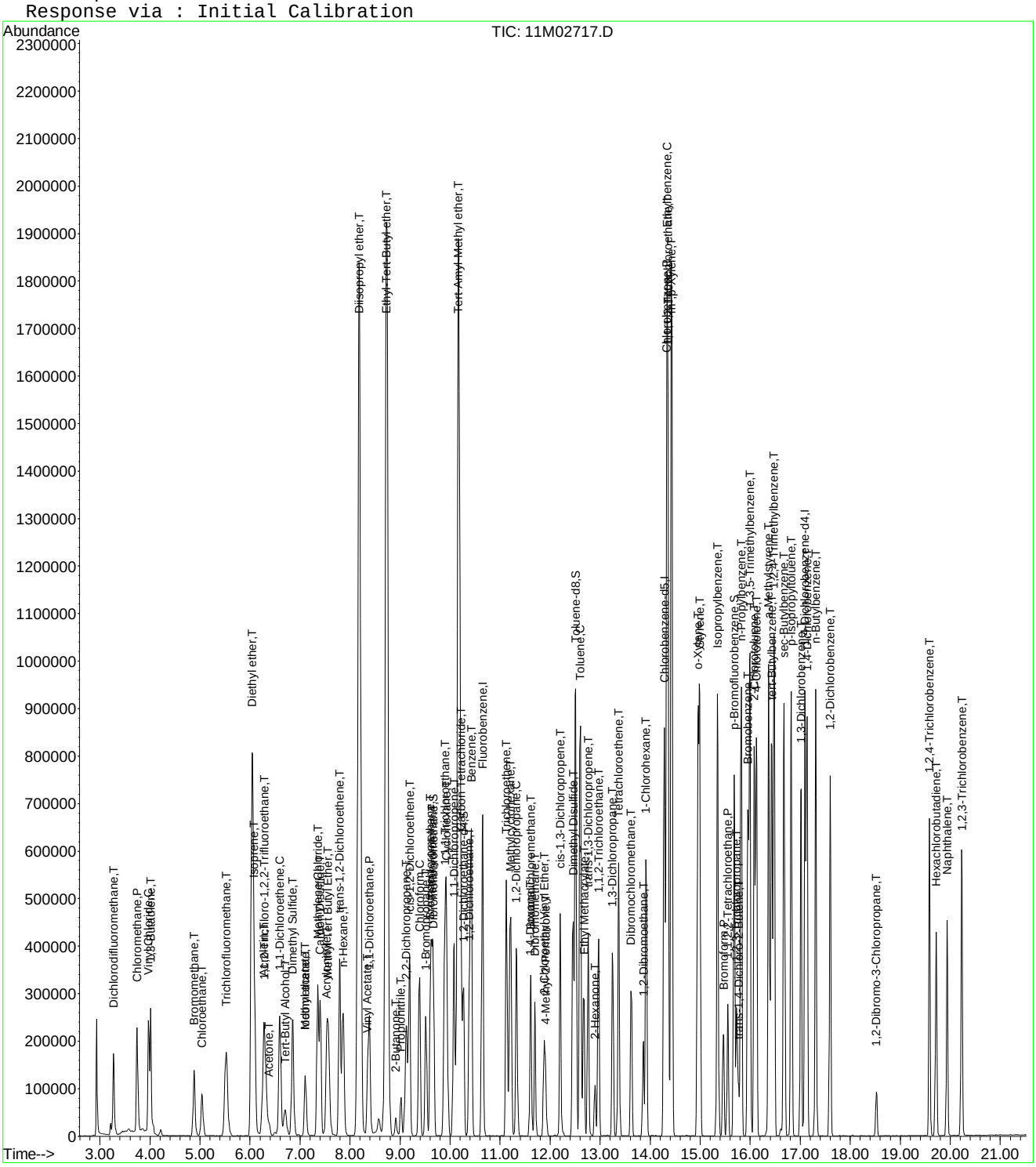

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac Laboratories
Case Narrative

Login Number: L14071430
Department: Volatiles - GC
Analyst: Jared Smith

Analysis RSK-175

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes/Sample Duplicates: The MS/MSD results were not associated with this sample delivery group (SDG), due to insufficient volume of sample. Microbac Laboratories recommends site specific MS/MSD samples to avoid possible data qualifications.

SAMPLES

Samples: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

Narrative ID: 86708
Approved By: Michael Albertson

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW11-072414	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/13/2014 10:58
Workgroup #:	WG485900	**Analyst:**	JDS	**Run Date:**	07/28/2014 13:25
Collect Date:	07/24/2014 09:45	**Dilution:**	1	**File ID:**	16G43870
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-04	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW08-072414	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/13/2014 10:58
Workgroup #:	WG485900	**Analyst:**	JDS	**Run Date:**	07/28/2014 13:34
Collect Date:	07/24/2014 11:00	**Dilution:**	1	**File ID:**	16G43871
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	6.47		5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:

y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 031314
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 49437

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD61380 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG466847,WG466875

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G41958	RINSE RSK175	NA	1	1		03/13/14 09:49
16G41959	WG466847-01 0.667umol/mol STD RSK17	NA	1	1	STD55748	03/13/14 10:01
16G41960	WG466847-02 1.67umol/mol STD RSK175	NA	1	1	STD55748	03/13/14 10:11
16G41961	WG466847-03 33.3umol/mol STD RSK175	NA	1	1	STD55748	03/13/14 10:20
16G41962	WG466847-04 66.67umol/mol STD RSK17	NA	1	1	STD55748	03/13/14 10:29
16G41963	WG466847-05 133umol/mol STD RSK175	NA	1	1	STD55748	03/13/14 10:40
16G41964	WG466847-06 333umol/mol STD RSK175	NA	1	1	STD55748	03/13/14 10:49
16G41965	WG466847-07 533umol/mol STD RSK175	NA	1	1	STD55748	03/13/14 10:58
16G41966	RINSE RSK175	NA	1	1		03/13/14 11:08
16G41967	WG466847-08 133umol/mol ICV RSK175	NA	1	1	STD61380	03/13/14 11:41
16G41968	WG466875-01 BLANK RSK175	NA	1	1		03/13/14 12:01
16G41969	WG466875-02 67umol/mol LCS RSK175	NA	1	1	STD61380	03/13/14 12:15
16G41970	WG466875-03 67umol/mol LCS2 RSK175	NA	1	1	STD61380	03/13/14 12:24
16G41971	L14030575-01 A RSK175	<2	1	1		03/13/14 12:34
16G41972	L14030576-01 A RSK175	<2	1	1		03/13/14 12:43
16G41973	WG466875-03 67umol/mol LCS2 RSK175	NA	1	1	STD61380	03/13/14 12:53
16G41974	L14030659-01 A RSK175	<2	1	1		03/13/14 13:04
16G41975	L14030660-01 A RSK175	<2	1	1		03/13/14 13:13
16G41976	L14030661-01 A RSK175	<2	1	1		03/13/14 13:24
16G41977	L14030662-01 A RSK175	<2	1	1		03/13/14 13:34
16G41978	WG466847-09 133umol/mol CCV RSK175	NA	1	1	STD55748	03/13/14 13:44
16G41979	L14030663-01 A RSK175	<2	1	1		03/13/14 13:53
16G41980	L14030672-01 A RSK175	<2	1	1		03/13/14 14:03
16G41981	L14030599-01 A RSK175	<2	1	1		03/13/14 14:12
16G41982	L14030599-03 A RSK175	<2	1	1		03/13/14 14:22
16G41983	L14030599-05 A RSK175	<2	1	1		03/13/14 14:31
16G41984	L14030689-01 A RSK175	<2	1	1		03/13/14 14:41
16G41985	L14030689-03 A RSK175	5	1	1		03/13/14 14:50
16G41986	L14030689-05 A RSK175	<2	1	1		03/13/14 15:00
16G41987	L14030576-01 B RSK175	<2	1	1		03/13/14 15:09
16G41988	L14030575-01 B 50X RSK175	<2	1	50		03/13/14 15:19
16G41989	WG466847-10 133umol/mol CCV STD RSK	NA	1	1	STD55748	03/13/14 15:28
16G41990	L14030575-01 B 20X RSK175	<2	1	20		03/13/14 15:38
16G41991	L14030599-01 B RSK175	<2	1	1		03/13/14 15:47

Approved: March 13, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 031314
Analyst1: QX Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 49437

Internal Standard: NA Surrogate Standard: NA
CCV: STD55748 LCS: STD61380 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG466847,WG466875

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G41992	WG466847-11 133umol/MOL CCV STD RSK	NA	1	1	STD55748	03/13/14 15:57

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13 File ID: 16G41970				
	DNR.			
14 File ID: 16G41971	X	50	Over Calibration Range	M,E,co2
15 File ID: 16G41972	X	1	Carry-over contamination	
24 File ID: 16G41981	X	1		
	Sample's cap leaking, need rerun.			
31 File ID: 16G41988	X	20	Analyzed too dilute	CO2

Approved: March 13, 2014

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 072814
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 51121

Internal Standard: NA Surrogate Standard: NA
CCV: STD63668 LCS: STD63476 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG485900

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G43857	WG485899-01 133umol/mol CCV STD RSK1	NA	1	1	STD63668	07/28/14 09:59
16G43858	WG485899-01 133umol/mol CCV STD RSK1	NA	1	1	STD63668	07/28/14 10:16
16G43859	WG485900-01 BLANK STD RSK175	NA	1	1		07/28/14 10:32
16G43860	WG485900-02 67umol/mol LCS STD RSK17	NA	1	1	STD63476	07/28/14 10:42
16G43861	WG485900-03 67umol/mol LCS2 STD RSK1	NA	1	1	STD63476	07/28/14 10:51
16G43862	L14071444-01 B RSK175	6	1	1		07/28/14 12:01
16G43863	L14071426-01 B RSK175	<2	1	1		07/28/14 12:11
16G43864	L14071426-02 B RSK175	<2	1	1		07/28/14 12:20
16G43865	L14071426-03 B RSK175	<2	1	1		07/28/14 12:30
16G43866	L14071426-04 B RSK175	<2	1	1		07/28/14 12:39
16G43867	L14071426-06 B RSK175	<2	1	1		07/28/14 12:48
16G43868	L14071426-07 B RSK175	<2	1	1		07/28/14 13:05
16G43869	WG485899-02 133umol/mol CCV STD RSK1	NA	1	1	STD63668	07/28/14 13:15
16G43870	L14071430-03 B RSK175	<2	1	1		07/28/14 13:25
16G43871	L14071430-04 B RSK175	<2	1	1		07/28/14 13:34
16G43872	L14071492-01 A RSK175	<2	1	1		07/28/14 13:44
16G43873	L14071542-01 A RSK175	<2	1	1		07/28/14 15:39
16G43874	L14071542-02 A RSK175	<2	1	1		07/28/14 15:48
16G43875	L14071542-03 A RSK175	<2	1	1		07/28/14 15:57
16G43876	L14071542-04 A RSK175	<2	1	1		07/28/14 16:07
16G43877	L14071543-01 A RSK175	<2	1	1		07/28/14 16:17
16G43878	L14071492-01 B D1 5X RSK175	<2	1	5		07/28/14 16:37
16G43879	L14071542-01 B D1 5X RSK175	<2	1	5		07/28/14 16:46
16G43880	WG485899-03 133umol/mol CCV STD RSK1	NA	1	1	STD63668	07/28/14 16:55
16G43881	L14071543-01 B D1 5X RSK175	<2	1	5		07/28/14 17:05
16G43882	WG485899-04 133umol/mol CCV STD RSK1	NA	1	1	STD63668	07/28/14 17:15

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X		Check Standard Failure	M
File ID: 16G43857				
16	X	5	Over Calibration Range	M

Approved: July 29, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 072814
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 16
Method: 5021 SOP: RSK01 Rev: 16

Maintenance Log ID: 51121

Internal Standard: NA Surrogate Standard: NA
CCV: STD63668 LCS: STD63476 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG485900

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 16G43872				
17	X	5	Over Calibration Range	M
File ID: 16G43873				
21	X	5	Over Calibration Range	M
File ID: 16G43877				

Approved: July 29, 2014

Page: 2

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B184959

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG466847-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG466847-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG466847-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG466847-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG466847-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG466847-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG466847-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG466847-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B192267

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG485899-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG485899-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG485899-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG485899-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L14071444-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L14071542-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG485900-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L14071426-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L14071426-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L14071492-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L14071542-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L14071426-06	15	mL	15	mL					5.47	mL	5.47	mL	40
L14071426-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG485900-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L14071426-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L14071426-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L14071430-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG485900-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L14071542-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L14071542-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L14071543-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L14071430-04	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAR-2014
Analyst: QX
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 59485
Analytical Workgroups: WG466847,WG466875

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	QX
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
13-MAR-2014

Secondary Reviewer:
13-MAR-2014

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-14-2014 14:08:08

Microbac Laboratories Inc.

Data Checklist

Date: 28-JUL-2014
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 62480
Analytical Workgroups: WG485900

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	QX
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
29-JUL-2014

Secondary Reviewer:
29-JUL-2014

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-29-2014 09:08:47

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG485900

Login Number: L14071430

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW11-072414	03	07/24/14					07/28/2014	4.2	14		07/28/14	4.2	14	
67WW08-072414	04	07/24/14					07/28/2014	4.1	14		07/28/14	4.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3679281
Report generated 08/04/2014 08:29

METHOD BLANK SUMMARY

Login Number: L14071430
Blank File ID: 16G43859
Prep Date: 07/28/14 10:32
Analyzed Date: 07/28/14 10:32
Analyst: JDS

Work Group: WG485900
Blank Sample ID: WG485900-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG485900-02	16G43860	07/28/14 10:42	01
LCS2	WG485900-03	16G43861	07/28/14 10:51	01
67WW11-072414	L14071430-03	16G43870	07/28/14 13:25	02
67WW08-072414	L14071430-04	16G43871	07/28/14 13:34	02

Report Name: BLANK_SUMMARY
PDF File ID: 3679282
Report generated 08/04/2014 08:29

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14071430 Prep Date: 07/28/14 10:32 Sample ID: WG485900-01
Instrument ID: HP16 Run Date: 07/28/14 10:32 Prep Method: 5021
File ID: 16G43859 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG485900 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16-13-MAR-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Methane	1.00	5.00	1.00	1	U
Ethene	1.00	5.00	1.00	1	U
Ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3680039
04-AUG-2014 08:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14071430 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG485900 Units: ug/L
QC Key: DOD4 Lot #: STD63476

Sample ID: WG485900-02 LCS File ID: 16G43860 Run Date: 07/28/2014 10:42
Sample ID: WG485900-03 LCS2 File ID: 16G43861 Run Date: 07/28/2014 10:51

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	106	92.5	114	98.0	85.8	7.47	85 - 115	20	
Ethene	200	198	99.3	200	182	90.9	8.86	85 - 115	20	
Ethane	214	216	101	214	198	92.6	8.44	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3679283
Report generated: 08/04/2014 08:29

Calibration Table Report
Method: RSK2EXT.M
Title: RSK175 HP16 (SOP: OVL RSK01) 031314
Last Calibration: Thu Mar 13 11:22:17 2014
Curve: WG466847
Calibration Files

	Compound	0.66 16G41959.D	1.67 16G41960.D	33.3 16G41961.D	66.6 16G41962.D	133 16G41963.D	333 16G41964.D	533 16G41965.D	Avg	%RSD
T	methane		152113	156358	148471	147571	160534	162326	154562	4.000
T	ethene		218893	264109	246356	248452	274862	280776	255575	8.856
T	acetylene		136921	226200	214096	219566	245127	247304	214869	18.841
T	ethane	215636	239717	274357	255218	257659	285198	292687	260067	10.315
T	propane	315871	358077	397923	363595	371800	416474	433753	379642	10.464
	Signal #2								0.000	0.000
T	carbon dioxide		5637	5700	5415	5391	5892	5813	5641	3.627

Thu Mar 13 11:29:59 2014

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14071430 Run Date: 03/13/2014 Sample ID: WG466847-08
Instrument ID: HP16 Run Time: 11:41 Method: RSK175
File ID: 16G41967 Analyst: QX QC Key: DOD4
ICal Workgroup: WG466847 Cal ID: HP16 - 13-MAR-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
methane		228	211	ug/L	143000	7.20	15	
ethene		398	389	ug/L	250000	2.30	15	
ethane		427	424	ug/L	258000	0.700	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3679284
Report generated 08/04/2014 08:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14071430
Run Date: 07/28/2014
Sample ID: WG485899-01
Instrument ID: HP16
Run Time: 10:16
Method: RSK175
File ID: 16G43858
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG485900
Cal ID: HP16 - 13-MAR-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	197	ug/L	134000	13.3	15	
ethene		398	364	ug/L	233000	8.68	15	
ethane		427	387	ug/L	236000	9.24	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3679285
Report generated 08/04/2014 08:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14071430
Run Date: 07/28/2014
Sample ID: WG485899-02
Instrument ID: HP16
Run Time: 13:15
Method: RSK175
File ID: 16G43869
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG485900
Cal ID: HP16 - 13-MAR-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	225	ug/L	152000	1.43	15	
ethene		398	435	ug/L	279000	9.29	15	
ethane		427	463	ug/L	282000	8.44	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3679285
Report generated 08/04/2014 08:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14071430
Run Date: 07/28/2014
Sample ID: WG485899-03
Instrument ID: HP16
Run Time: 16:55
Method: RSK175
File ID: 16G43880
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG485900
Cal ID: HP16 - 13-MAR-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	201	ug/L	136000	11.8	15	
ethene		398	371	ug/L	238000	6.88	15	
ethane		427	393	ug/L	240000	7.83	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3679285
Report generated 08/04/2014 08:29

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\072814\16G43870.D Vial: 14
Acq On : 28 Jul 2014 13:25 Operator: JDS
Sample : L14071430-03 B RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Jul 28 13:30:58 2014 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	65096	0.421	umol/
2) T	ethene	1.06	12253	0.048	umol/
3) T	acetylene	1.13	8692	0.040	umol/
4) T	ethane	1.38	5860	0.023	umol/
5) T	propane	3.82	11544	0.030	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G43870.D RSK2.M Mon Jul 28 13:30:58 2014 Page 1

Quantitation Report (Not Reviewed)

```
Data File : C:\MSDchem\1\DATA\072814\16G43870.D          Vial: 14
Acq On    : 28 Jul 2014  13:25                       Operator: JDS
Sample    : L14071430-03 B RSK175                    Inst    : HP16
Misc      : 1,1                                      Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Jul 28 13:30 2014  Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```

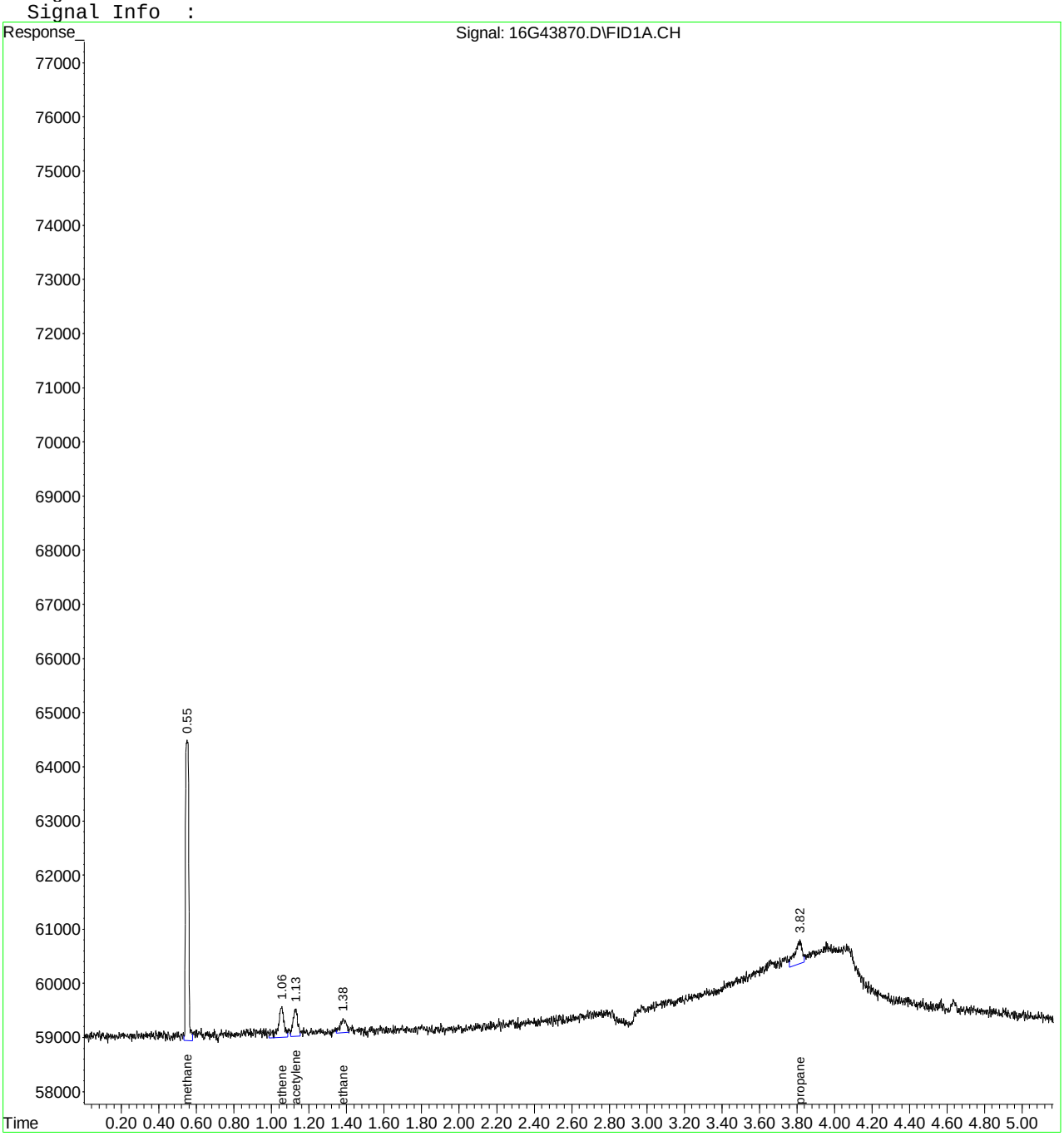

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\072814\16G43871.D Vial: 15
Acq On : 28 Jul 2014 13:34 Operator: JDS
Sample : L14071430-04 B RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Jul 28 13:39:53 2014 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	583499	3.775	umol/
2) T	ethene	1.05	38287	0.150	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.38	17793	0.068	umol/
5) T	propane	3.81	18869	0.050	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G43871.D RSK2.M Mon Jul 28 13:39:53 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\072814\16G43871.D Vial: 15
Acq On : 28 Jul 2014 13:34 Operator: JDS
Sample : L14071430-04 B RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Jul 28 13:39 2014 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

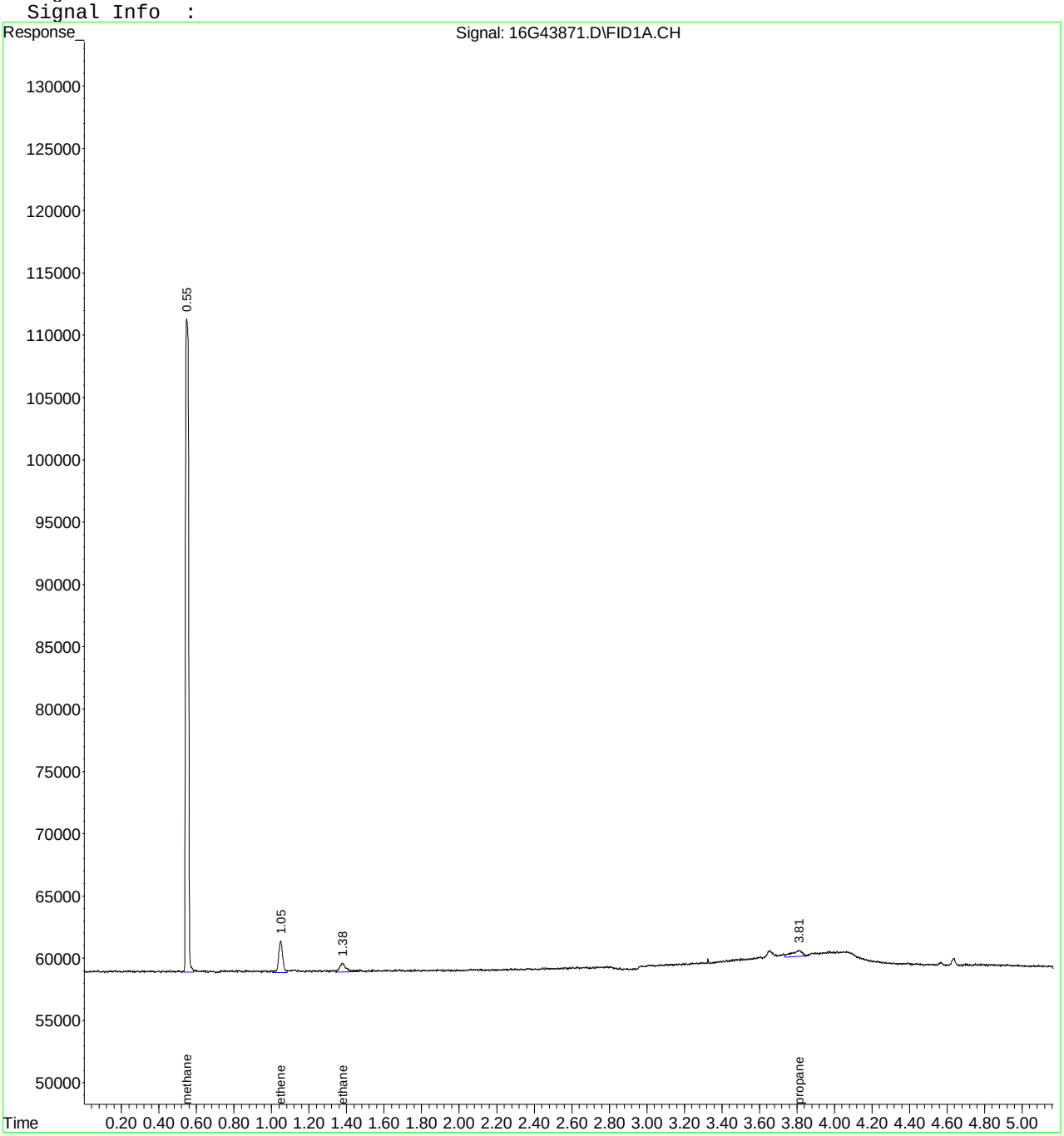

16G43871.D RSK2.M Mon Jul 28 13:39:53 2014 Page 2

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41959.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41959.D\TCD2B.CH
Acq On : 13 Mar 2014 10:01 Operator: QX
Sample : WG466847-01 0.667umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:42:36 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	108329	0.701	umol/
2) T	ethene	1.03	120201	0.470	umol/
3) T	acetylene	1.10	72933	0.339	umol/
4) T	ethane	1.35	143829	0.553	umol/
5) T	propane	3.81	210686	0.555	umol/
7) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41959.D RSK2EXT.M Thu Mar 13 11:42:50 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41959.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41959.D\TCD2B.CH
Acq On : 13 Mar 2014 10:01 Operator: QX
Sample : WG466847-01 0.667umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:42 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

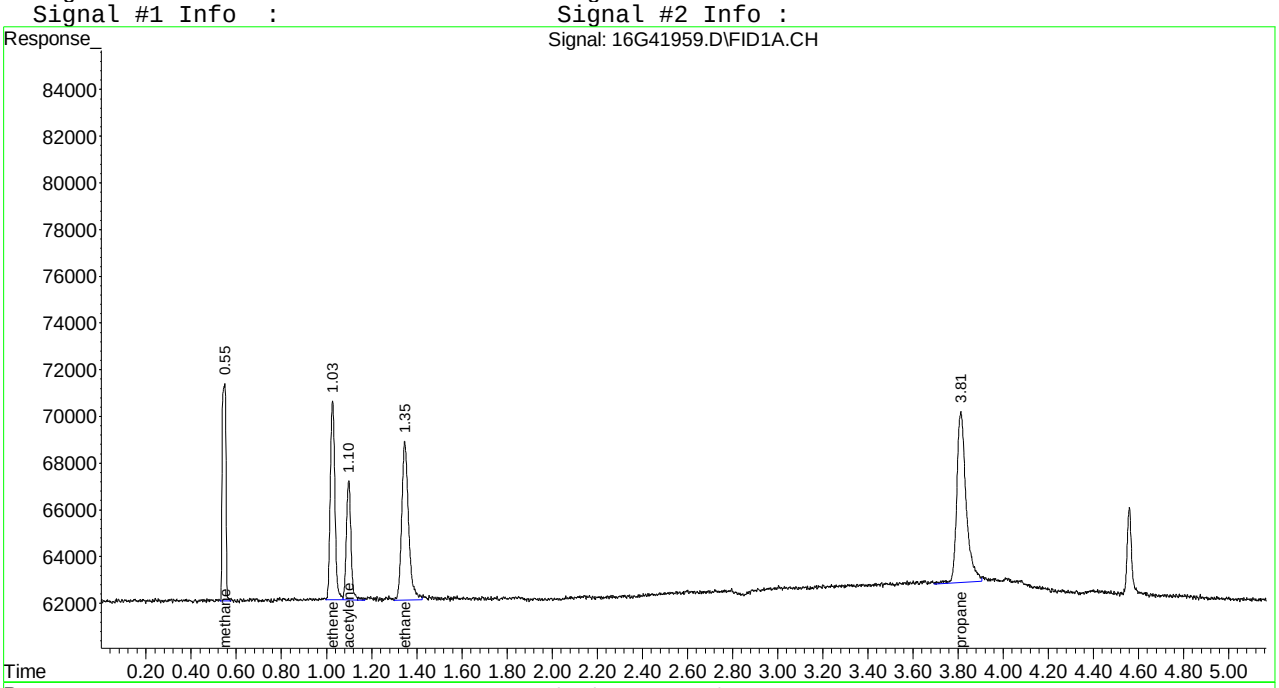

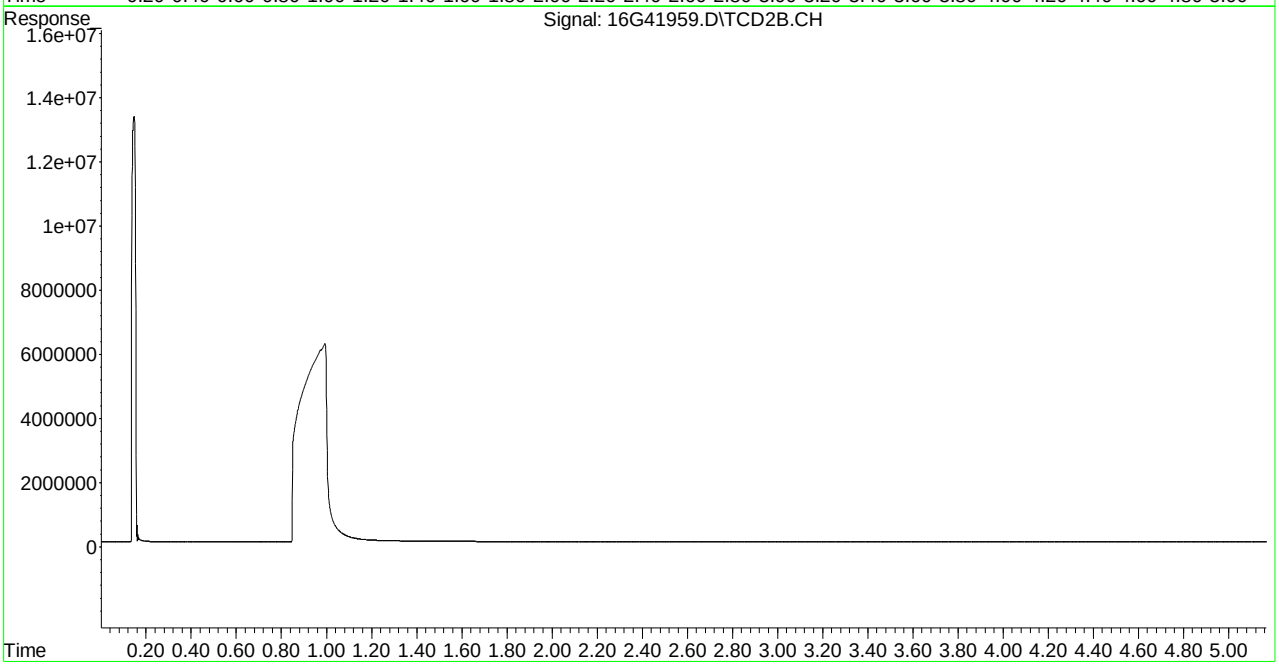

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41960.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41960.D\TCD2B.CH
Acq On : 13 Mar 2014 10:11 Operator: QX
Sample : WG466847-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:45:14 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	254028	1.644	umol/
2) T	ethene	1.05	365552	1.430	umol/
3) T	acetylene	1.12	228658	1.064	umol/
4) T	ethane	1.38	400328	1.539	umol/
5) T	propane	3.82	597989	1.575	umol/
7) T	carbon dioxide	0.20	11274112	1998.465	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41960.D RSK2EXT.M Thu Mar 13 11:45:19 2014 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41960.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41960.D\TCD2B.CH
Acq On : 13 Mar 2014 10:11 Operator: QX
Sample : WG466847-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:45 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

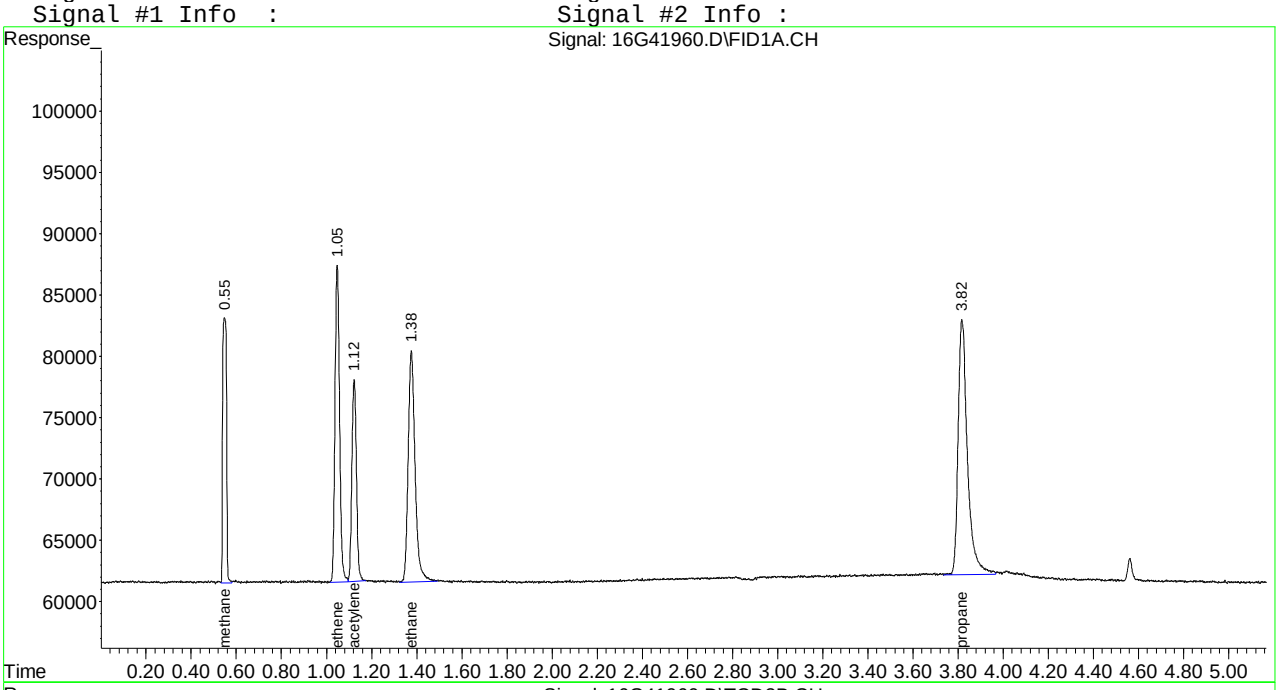

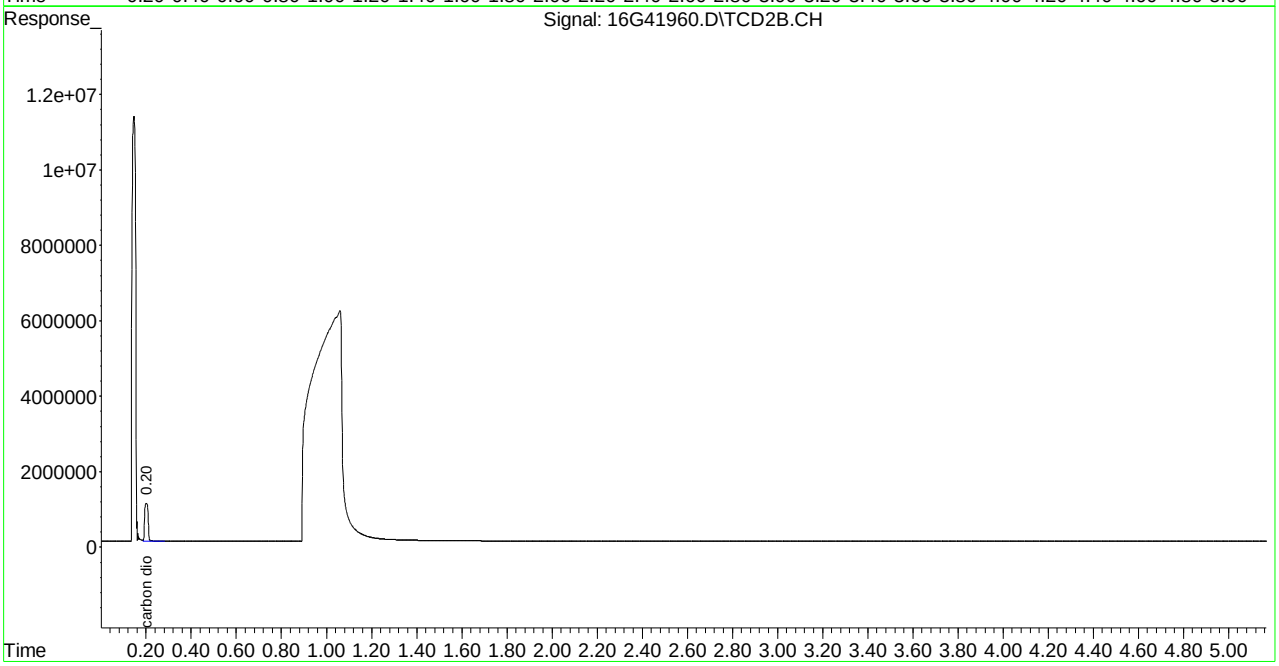

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41961.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41961.D\TCD2B.CH
Acq On : 13 Mar 2014 10:20 Operator: QX
Sample : WG466847-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:45:55 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	5212985	33.727	umol/
2) T	ethene	1.05	8805403	34.453	umol/
3) T	acetylene	1.12	7541524	35.098	umol/
4) T	ethane	1.38	9147062	35.172	umol/
5) T	propane	3.82	13266759	34.945	umol/
7) T	carbon dioxide	0.20	18998918	3367.775	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41961.D RSK2EXT.M Thu Mar 13 11:45:58 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41961.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41961.D\TCD2B.CH
Acq On : 13 Mar 2014 10:20 Operator: QX
Sample : WG466847-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:45 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

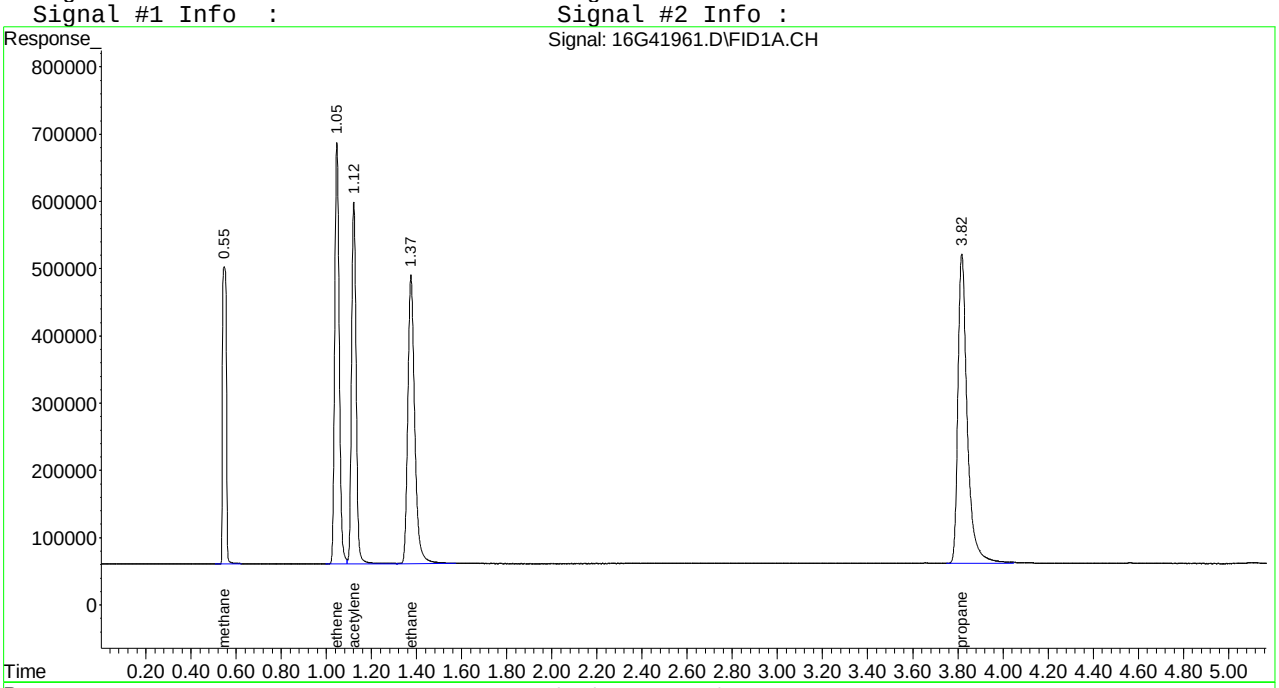

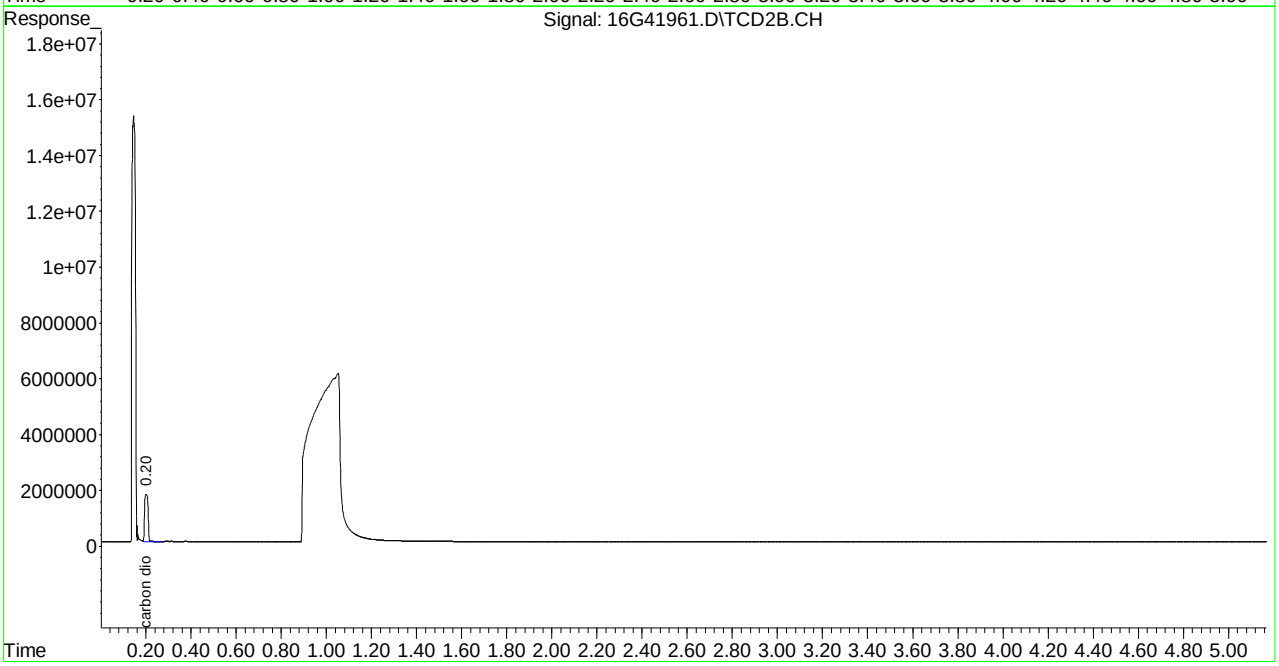

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41962.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41962.D\TCD2B.CH
Acq On : 13 Mar 2014 10:29 Operator: QX
Sample : WG466847-04 66.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:46:38 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	9898540	64.042	umol/
2) T	ethene	1.05	16424567	64.265	umol/
3) T	acetylene	1.12	14273762	66.430	umol/
4) T	ethane	1.37	17015384	65.427	umol/
5) T	propane	3.82	24240900	63.852	umol/
7) T	carbon dioxide	0.20	36105055	6400.032	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41962.D RSK2EXT.M Thu Mar 13 11:46:41 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41962.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41962.D\TCD2B.CH
Acq On : 13 Mar 2014 10:29 Operator: QX
Sample : WG466847-04 66.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:46 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

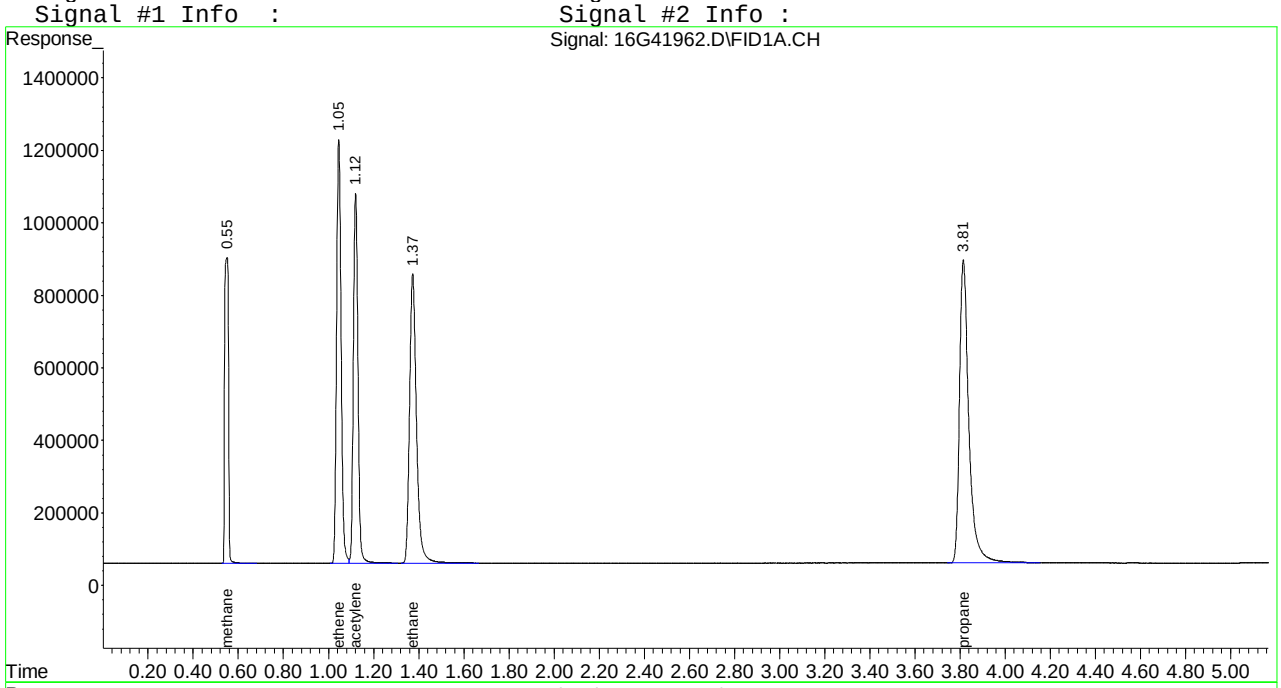

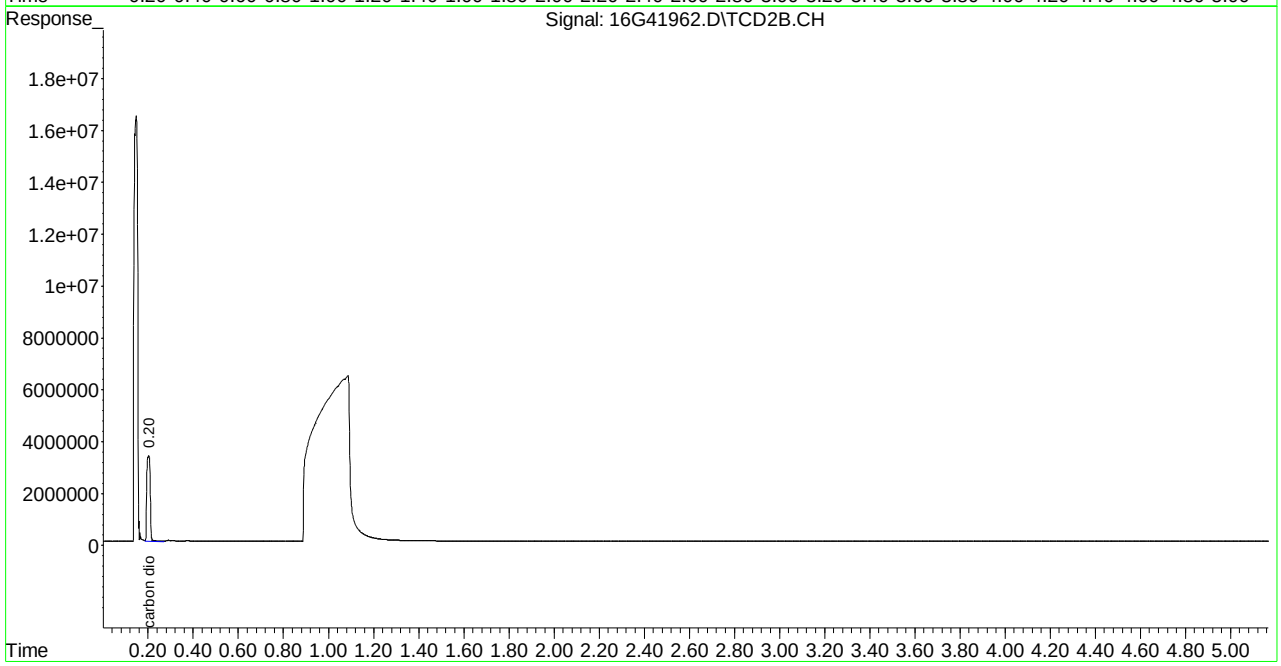

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41963.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41963.D\TCD2B.CH
Acq On : 13 Mar 2014 10:40 Operator: QX
Sample : WG466847-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:46:56 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	19626984	126.984 umol/
2) T	ethene	1.05	33044160	129.293 umol/
3) T	acetylene	1.12	29202213	135.907 umol/
4) T	ethane	1.38	34268625	131.768 umol/
5) T	propane	3.81	49449452	130.253 umol/
7) T	carbon dioxide	0.20	71877377	12741.083 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41963.D RSK2EXT.M Thu Mar 13 11:47:05 2014 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41963.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41963.D\TCD2B.CH
Acq On : 13 Mar 2014 10:40 Operator: QX
Sample : WG466847-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:46 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

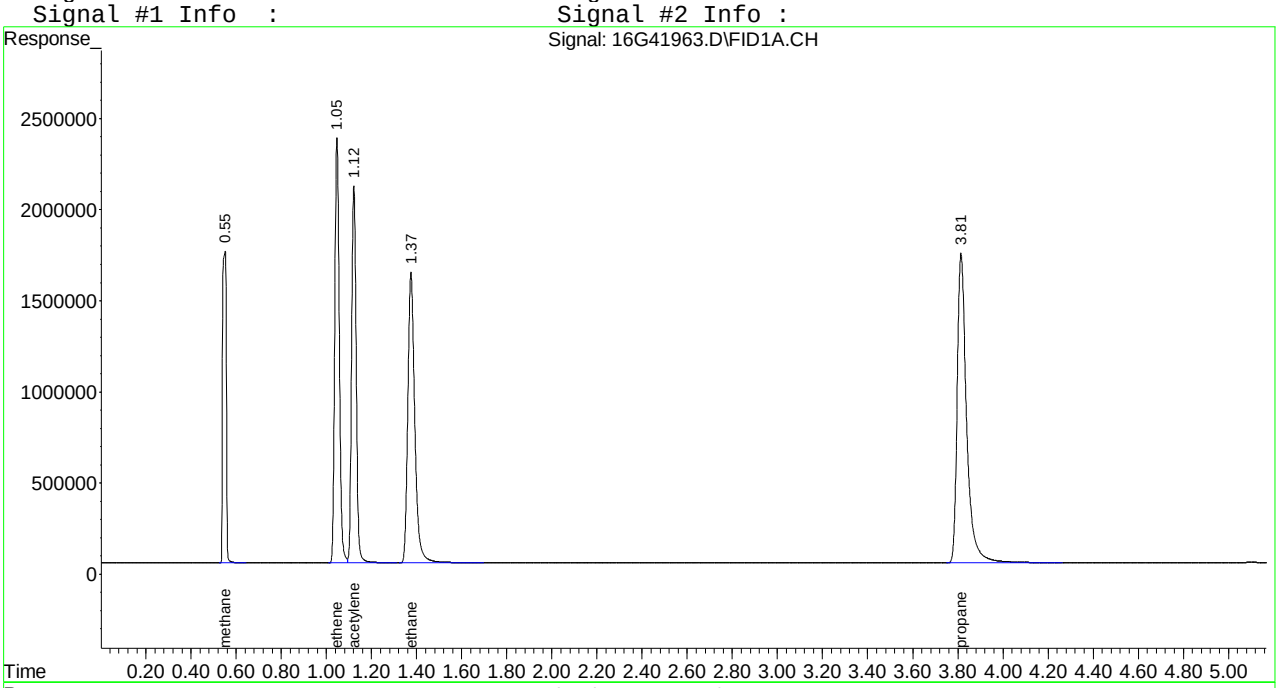

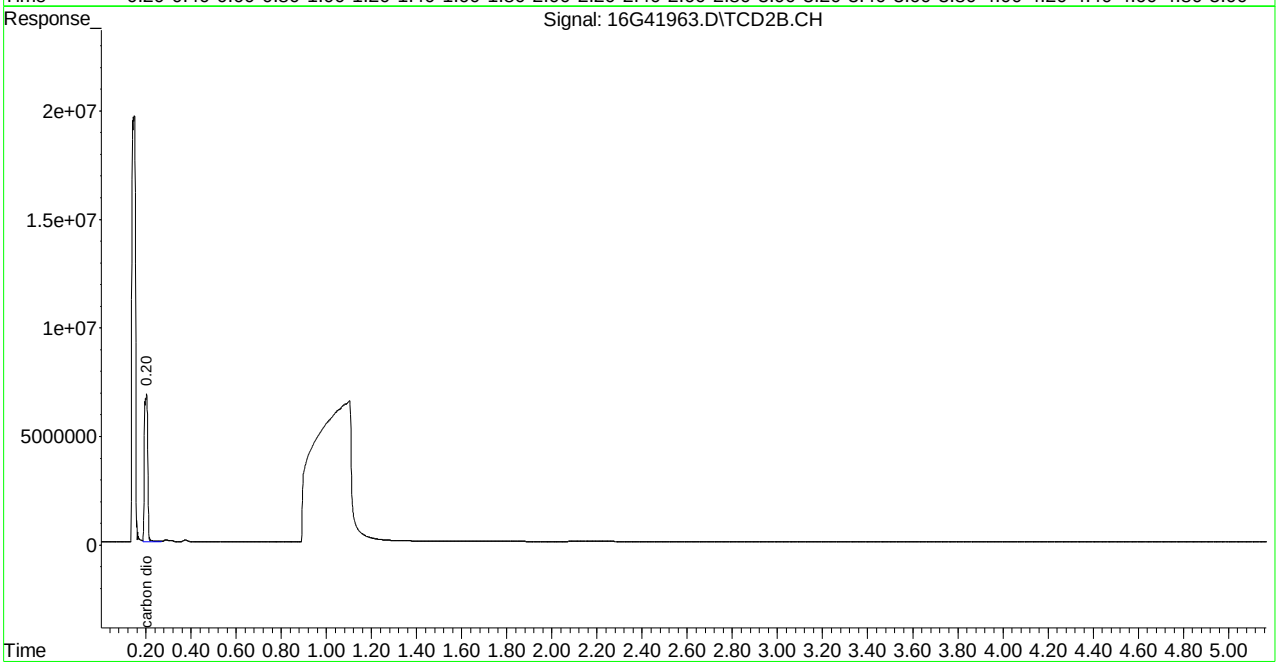

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41964.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41964.D\TCD2B.CH
Acq On : 13 Mar 2014 10:49 Operator: QX
Sample : WG466847-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:47:11 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	53457758	345.866	umol/
2) T	ethene	1.05	91529171	358.131	umol/
3) T	acetylene	1.12	81627444	379.894	umol/
4) T	ethane	1.37	94970902	365.178	umol/
5) T	propane	3.81	138685770	365.307	umol/
7) T	carbon dioxide	0.20	196381761	34810.903	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41964.D RSK2EXT.M Thu Mar 13 11:47:17 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41964.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41964.D\TCD2B.CH
Acq On : 13 Mar 2014 10:49 Operator: QX
Sample : WG466847-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:47 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

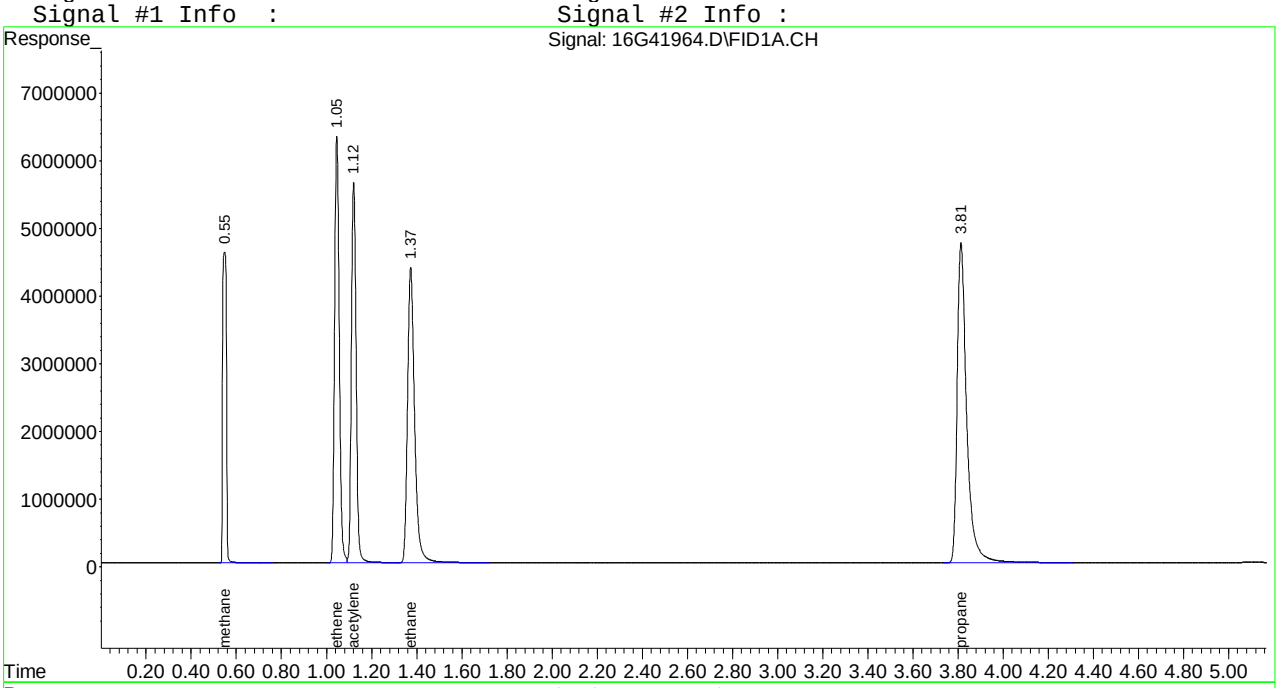

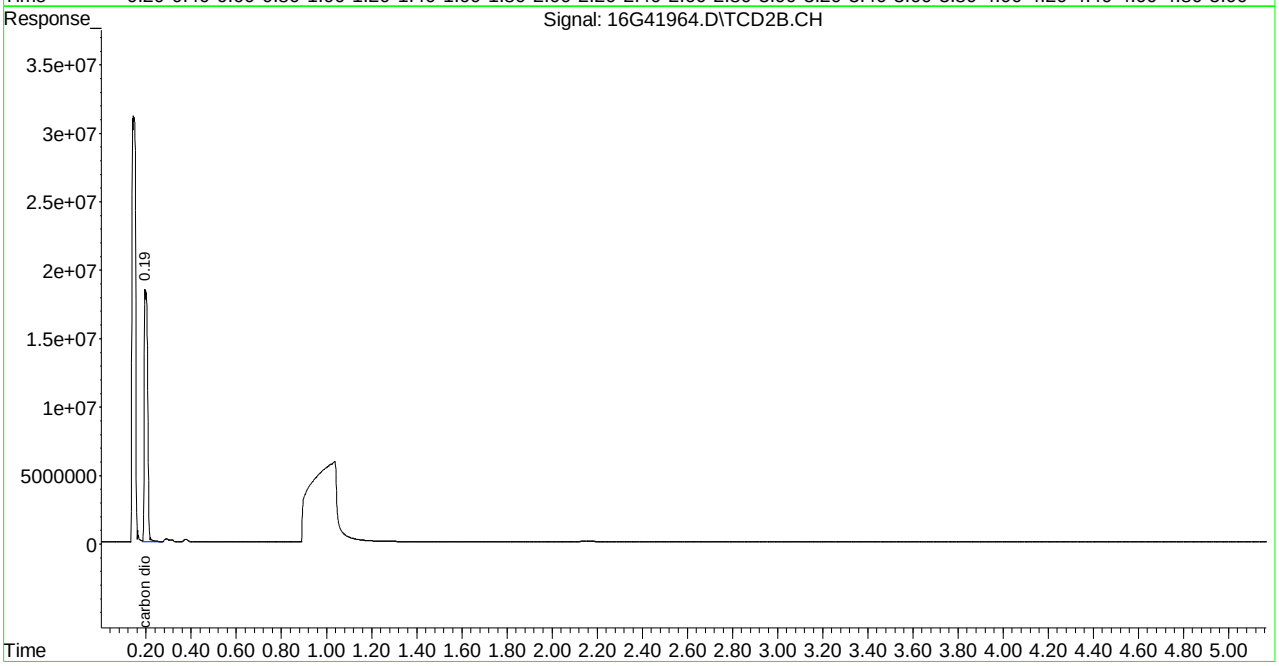

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41965.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41965.D\TCD2B.CH
Acq On    : 13 Mar 2014  10:58                        Operator: QX
Sample    : WG466847-07 533umol/mol STD RSK175        Inst    : HP16
Misc      : 1,1 STD55748                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e
Quant Time: Mar 13 11:47:57 2014  Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	86519546	559.772	umol/
2) T	ethene	1.04	149653536	585.557	umol/
3) T	acetylene	1.12	131813106	613.458	umol/
4) T	ethane	1.37	156002379	599.854	umol/
5) T	propane	3.81	231190381	608.970	umol/
7) T	carbon dioxide	0.20	310029022	54956.175	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G41965.D RSK2EXT.M Thu Mar 13 11:48:04 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41965.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41965.D\TCD2B.CH
Acq On : 13 Mar 2014 10:58 Operator: QX
Sample : WG466847-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD55748 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:47 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

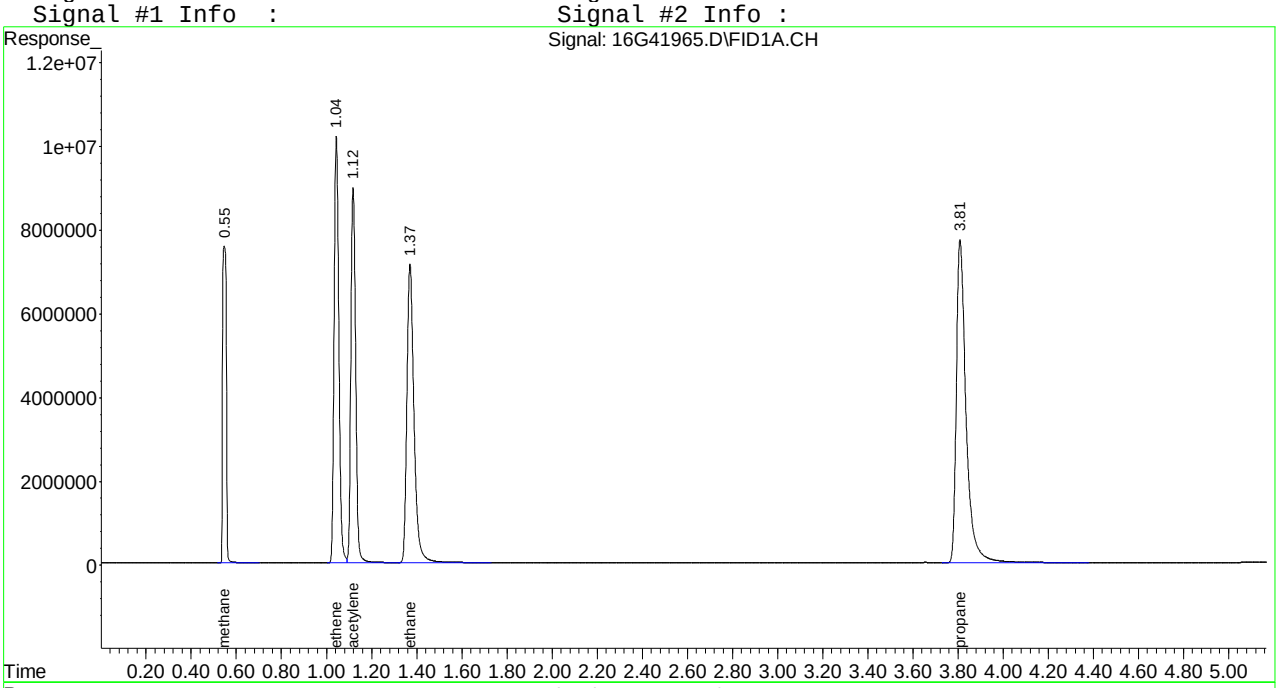

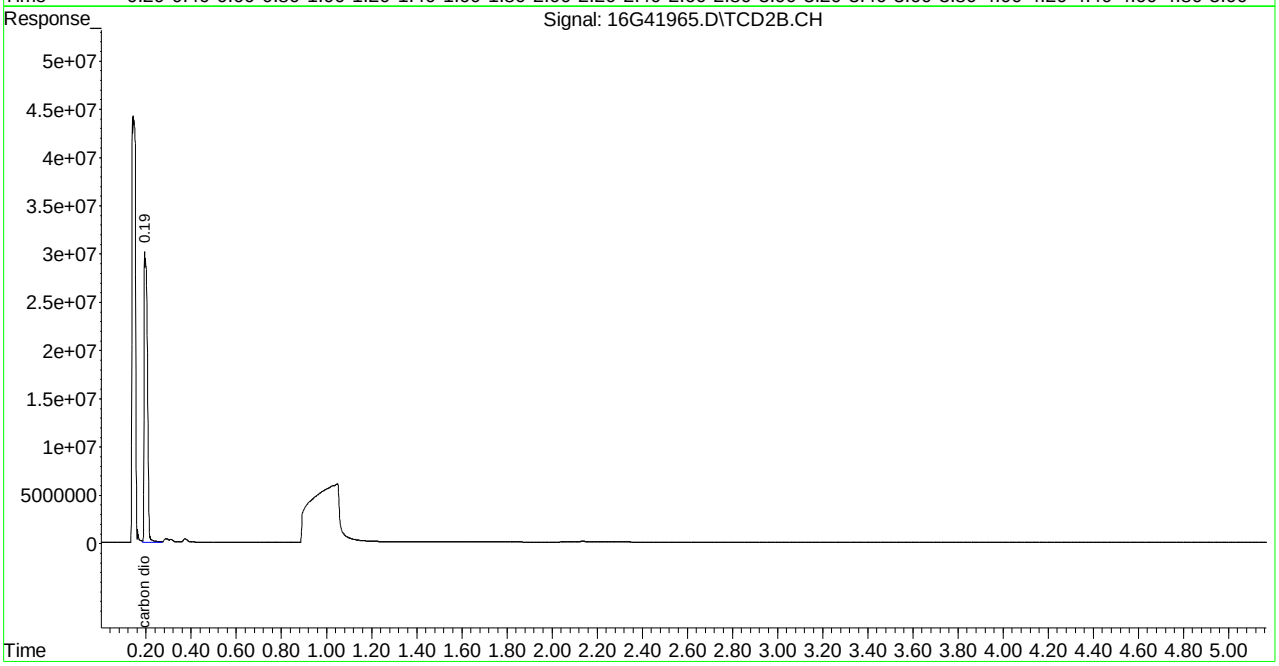

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41967.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41967.D\TCD2B.CH
Acq On : 13 Mar 2014 11:41 Operator: QX
Sample : WG466847-08 133umol/mol ICV RSK175 Inst : HP16
Misc : 1,1 STD61380 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:46:27 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	19083746	123.470	umol/
2) T	ethene	1.05	33210011	129.942	umol/
3) T	acetylene	1.12	32532725	151.407	umol/
4) T	ethane	1.38	34352966	132.093	umol/
5) T	propane	3.82	49603756	130.659	umol/
7) T	carbon dioxide	0.20	77078172	13662.984	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G41967.D RSK2EXT.M Thu Mar 13 11:48:29 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41967.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41967.D\TCD2B.CH
Acq On : 13 Mar 2014 11:41 Operator: QX
Sample : WG466847-08 133umol/mol ICV RSK175 Inst : HP16
Misc : 1,1 STD61380 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e
Quant Time: Mar 13 11:46 2014 Quant Results File: RSK2EXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2EXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

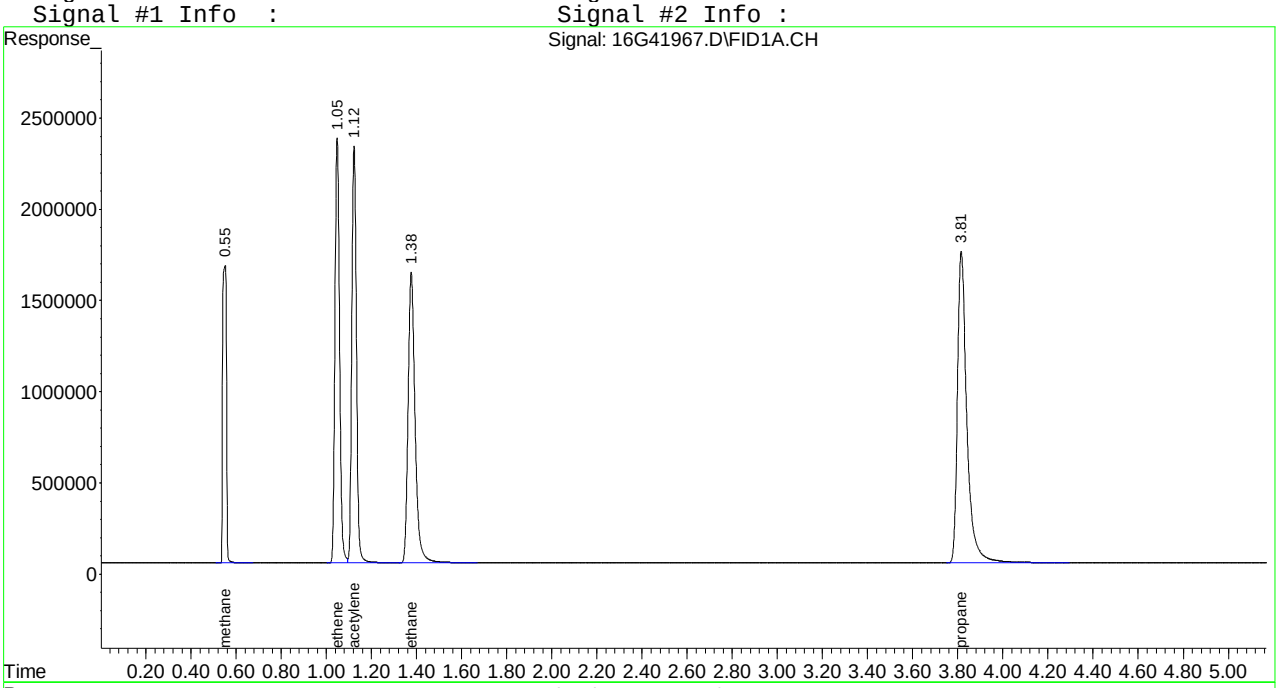

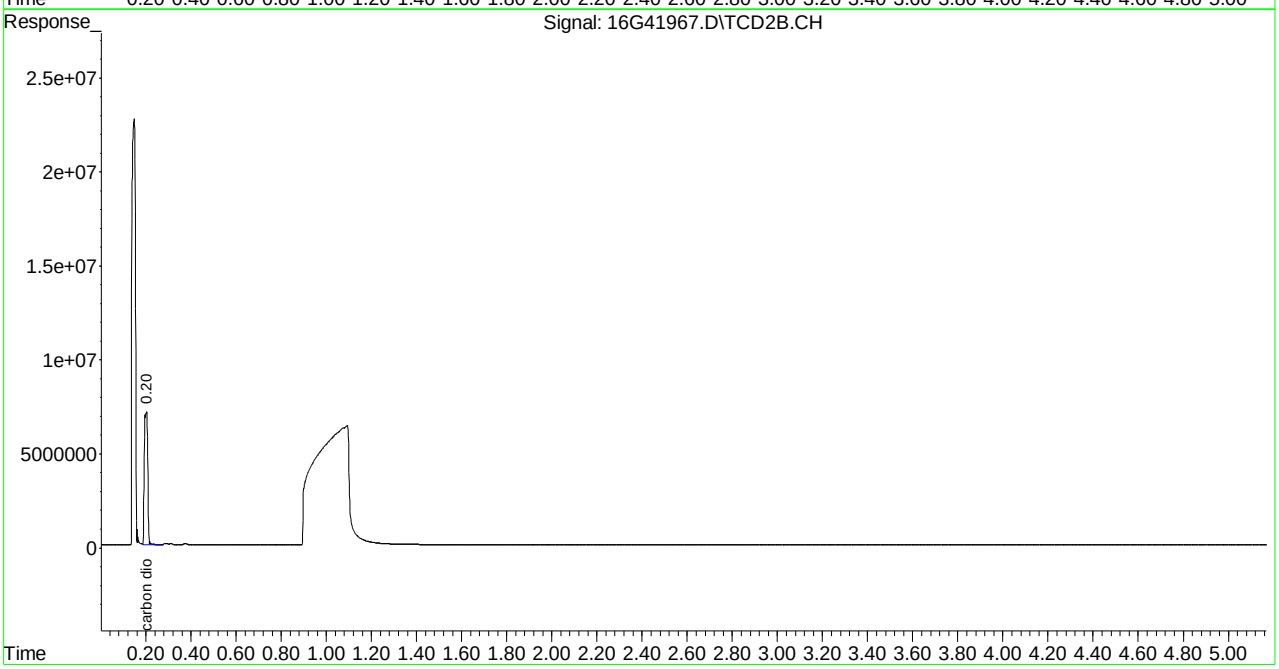

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41967.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41967.D\TCD2B.CH
Acq On : 13 Mar 2014 11:41 Operator: QX
Sample : WG466847-08 133umol/mol ICV RSK175 Inst : HP16
Misc : 1,1 STD61380 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e

Method : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	123.470	7.2	97	0.00
2	T	ethene	133.000	129.942	2.3	101	0.00
3	T	acetylene	133.000	151.407	-13.8	111	0.00
4	T	ethane	133.000	132.093	0.7	100	0.00
5	T	propane	133.000	130.659	1.8	100	0.00

Signal #2

7	T	carbon dioxide	13333.000	13662.984	-2.5	107	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G41967.D RSK2EXT.M Thu Mar 13 11:48:51 2014 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\031314\16G41967.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\031314\16G41967.D\TCD2B.CH
Acq On    : 13 Mar 2014  11:41                      Operator: QX
Sample    : WG466847-08 133umol/mol ICV RSK175      Inst    : HP16
Misc      : 1,1 STD61380                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: events2.e

Method       : C:\MSDCHEM\1\METHODS\RSK2EXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\072814\16G43858.D Vial: 2
Acq On : 28 Jul 2014 10:16 Operator: JDS
Sample : WG485899-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD63668 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Jul 28 10:21:38 2014 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	17815912	115.267	umol/
2) T	ethene	1.05	31040865	121.455	umol/
3) T	acetylene	1.12	29230087	136.037	umol/
4) T	ethane	1.37	31393375	120.712	umol/
5) T	propane	3.82	45398785	119.583	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G43858.D RSK2.M Mon Jul 28 10:21:38 2014 Page 1

Quantitation Report (Not Reviewed)

```
Data File : C:\MSDchem\1\DATA\072814\16G43858.D          Vial: 2
Acq On    : 28 Jul 2014  10:16                       Operator: JDS
Sample    : WG485899-01 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD63668                             Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Jul 28 10:21 2014  Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```

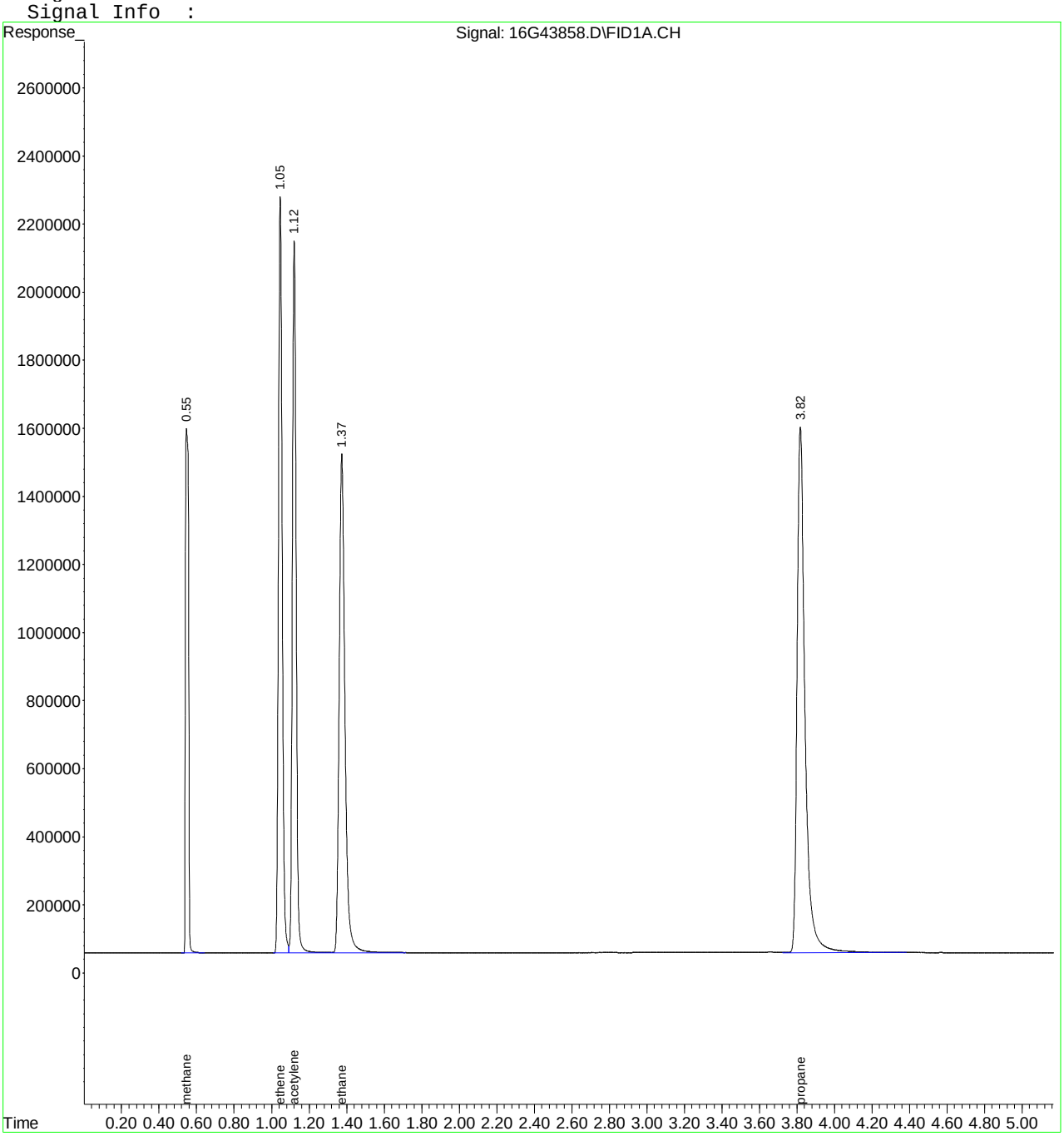

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\072814\16G43858.D Vial: 2
Acq On : 28 Jul 2014 10:16 Operator: JDS
Sample : WG485899-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD63668 Multiplr: 1.00
IntFile : EVENTS.E

Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	115.267	13.3	91	0.00
2	T	ethene	133.000	121.455	8.7	94	0.00
3	T	acetylene	133.000	136.037	-2.3	100	0.00
4	T	ethane	133.000	120.712	9.2	92	0.00
5	T	propane	133.000	119.583	10.1	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G43858.D RSK2.M Mon Jul 28 10:29:03 2014 Page 1

Evaluate Continuing Calibration Report - Not Founds

```
Data File : C:\MSDCHEM\1\DATA\072814\16G43858.D          Vial: 2
Acq On    : 28 Jul 2014  10:16                       Operator: JDS
Sample    : WG485899-01 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD63668                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------
```

```
---------------------------------------------------------------------------
 (#) = Out of Range             SPCC's out = 0  CCC's out = 0
 16G43858.D  RSK2.M      Mon Jul 28 10:29:03 2014                    Page 2
```

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\072814\16G43869.D Vial: 13
Acq On : 28 Jul 2014 13:15 Operator: JDS
Sample : WG485899-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD63668 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Jul 28 13:20:47 2014 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	20263598	131.103	umol/
2) T	ethene	1.05	37148516	145.353	umol/
3) T	acetylene	1.12	36039729	167.729	umol/
4) T	ethane	1.38	37509441	144.230	umol/
5) T	propane	3.82	56318853	148.347	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G43869.D RSK2.M Mon Jul 28 13:20:47 2014 Page 1

Quantitation Report (Not Reviewed)

```
Data File : C:\MSDchem\1\DATA\072814\16G43869.D          Vial: 13
Acq On    : 28 Jul 2014  13:15                        Operator: JDS
Sample    : WG485899-02 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD63668                              Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Jul 28 13:20 2014  Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```

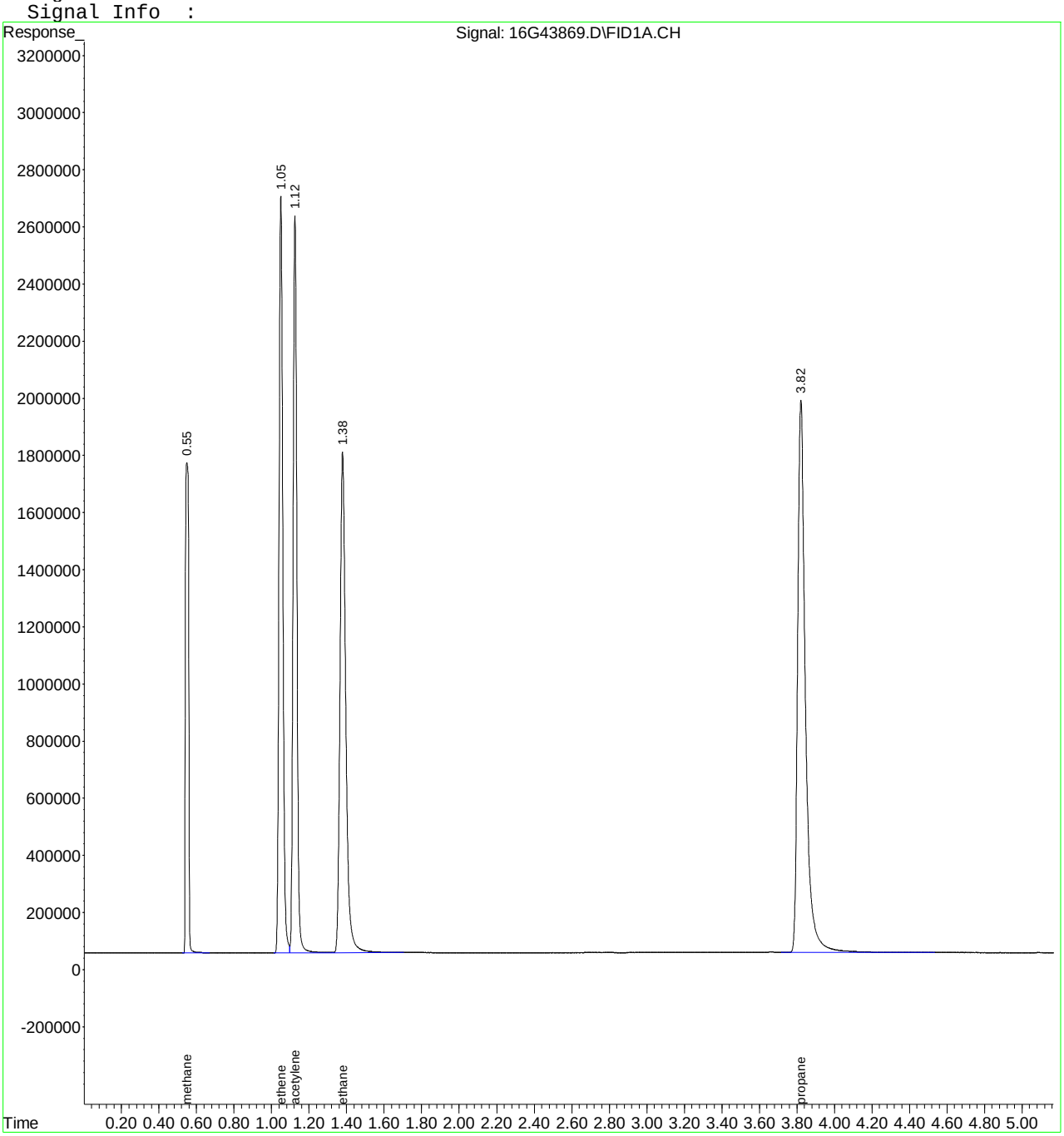

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\072814\16G43869.D Vial: 13
Acq On : 28 Jul 2014 13:15 Operator: JDS
Sample : WG485899-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD63668 Multiplr: 1.00
IntFile : EVENTS.E

Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	131.103	1.4	103	0.00
2	T	ethene	133.000	145.353	-9.3	112	0.00
3	T	acetylene	133.000	167.729	-26.1#	123	0.00
4	T	ethane	133.000	144.230	-8.4	109	0.00
5	T	propane	133.000	148.347	-11.5	114	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G43869.D RSK2.M Mon Jul 28 13:21:28 2014 Page 1

```
Data File : C:\MSDCHEM\1\DATA\072814\16G43869.D          Vial: 13
Acq On    : 28 Jul 2014  13:15                       Operator: JDS
Sample    : WG485899-02 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD63668                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------
```

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\072814\16G43880.D Vial: 24
Acq On : 28 Jul 2014 16:55 Operator: JDS
Sample : WG485899-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD63668 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Jul 28 17:01:07 2014 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	18131621	117.310	umol/
2) T	ethene	1.05	31651534	123.844	umol/
3) T	acetylene	1.12	29760364	138.505	umol/
4) T	ethane	1.38	31880143	122.584	umol/
5) T	propane	3.82	45888270	120.873	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G43880.D RSK2.M Mon Jul 28 17:01:07 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\072814\16G43880.D Vial: 24
Acq On : 28 Jul 2014 16:55 Operator: JDS
Sample : WG485899-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD63668 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Jul 28 17:01 2014 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

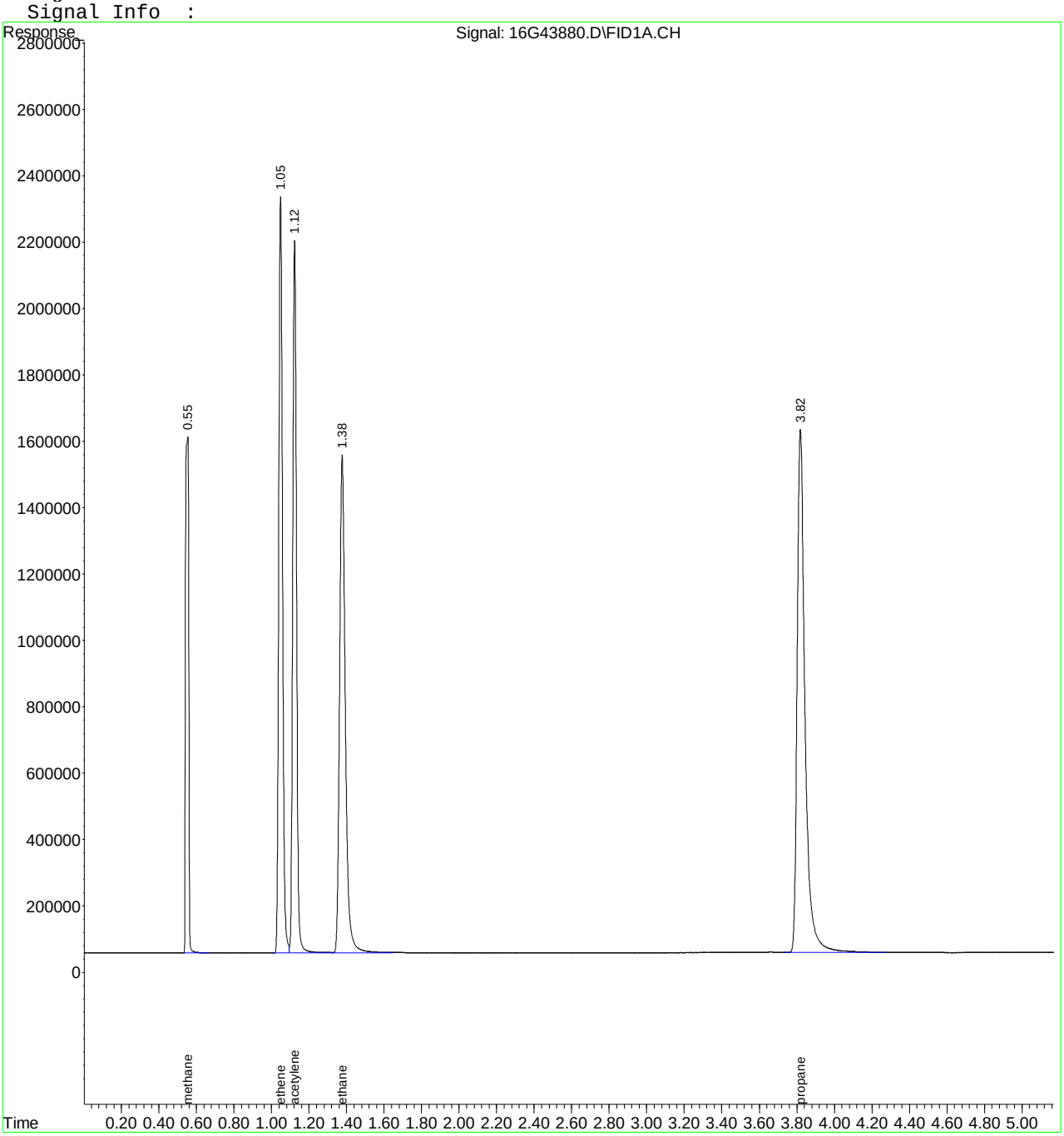

Evaluate Continuing Calibration Report

```
Data File : C:\MSDCHEM\1\DATA\072814\16G43880.D          Vial: 24
Acq On    : 28 Jul 2014  16:55                       Operator: JDS
Sample    : WG485899-03 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD63668                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	117.310	11.8	92	0.00
2	T	ethene	133.000	123.844	6.9	96	0.00
3	T	acetylene	133.000	138.505	-4.1	102	0.00
4	T	ethane	133.000	122.584	7.8	93	0.00
5	T	propane	133.000	120.873	9.1	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G43880.D RSK2.M Tue Jul 29 08:15:33 2014 Page 1

```
Data File : C:\MSDCHEM\1\DATA\072814\16G43880.D          Vial: 24
Acq On    : 28 Jul 2014  16:55                       Operator: JDS
Sample    : WG485899-03 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD63668                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------
```

```
---------------------------------------------------------------------------
 (#) = Out of Range             SPCC's out = 0  CCC's out = 0
 16G43880.D  RSK2.M      Tue Jul 29 08:15:33 2014                          Page 2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L14071430 **Run Date:** 07/28/2014 **Sample ID:** WG485899-01
Instrument: HP16 **Run Time:** 10:16 **Method:** RSK175
Workgroup (AAB#): WG485900 **File ID:** 16G43858

RT Standard	Analysis Date	File ID	Analyst
WG459566-01	01/16/2014	16G41288	QX
WG459109-09	01/13/2014	16G41276	FJB
WG458963-01	01/10/2014	16G41231	MDA

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.55	.55	.55	.55	0.520	0.580
ETHENE	1.04	1.05	1.05	1.05	1.020	1.080
ETHANE	1.37	1.37	1.38	1.37	1.340	1.400
PROPANE	3.82	3.82	3.82	3.82	3.790	3.850
CARBON DIOXIDE	.2	.2	.2			
ACETYLENE	1.12	1.12	1.12	1.12	1.090	1.150

RT_WIN - Modified 01/06/2010
PDF File ID: 3679286
Report generated 08/04/2014 08:29

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\072814\16G43859.D Vial: 3
Acq On : 28 Jul 2014 10:32 Operator: JDS
Sample : WG485900-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Jul 28 10:38:01 2014 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	38382	0.248	umol/
2) T	ethene	1.05	4983	0.019	umol/
3) T	acetylene	1.13	2444	0.011	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	3.80	7429	0.020	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G43859.D RSK2.M Mon Jul 28 10:38:01 2014 Page 1

Quantitation Report (Not Reviewed)

```
Data File : C:\MSDchem\1\DATA\072814\16G43859.D          Vial: 3
Acq On    : 28 Jul 2014  10:32                       Operator: JDS
Sample    : WG485900-01 BLANK STD RSK175             Inst    : HP16
Misc      : 1,1                                      Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Jul 28 10:38 2014  Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```

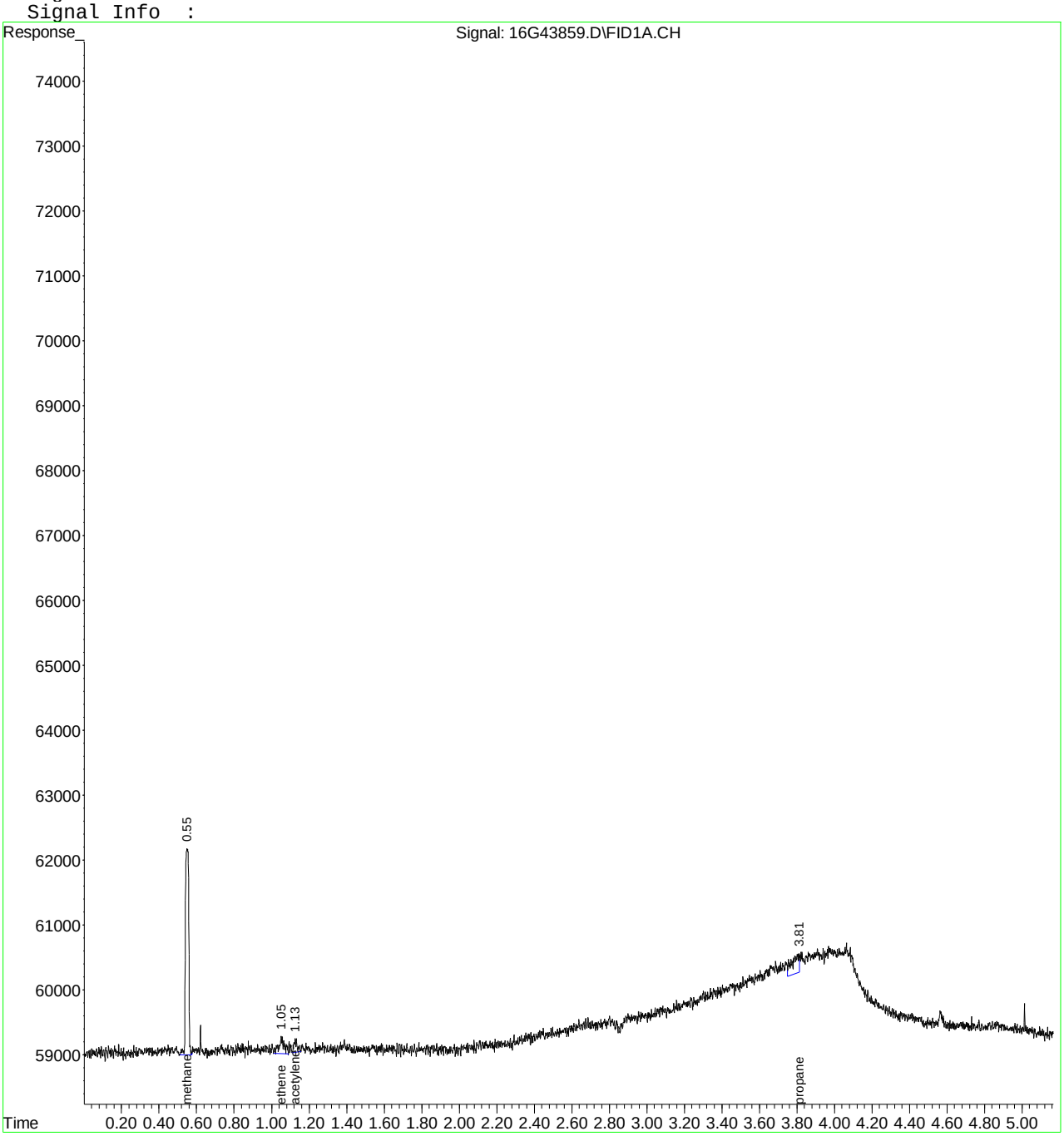

Quantitation Report (Not Reviewed)

```
Data File : C:\MSDchem\1\DATA\072814\16G43860.D          Vial: 4
Acq On    : 28 Jul 2014  10:42                       Operator: JDS
Sample    : WG485900-02 67umol/mol LCS STD RSK175    Inst    : HP16
Misc      : 1,1 STD63476                             Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Jul 28 10:47:33 2014  Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	9527851	61.644	umol/
2) T	ethene	1.05	16924601	66.222	umol/
3) T	acetylene	1.12	17057039	79.383	umol/
4) T	ethane	1.38	17468961	67.171	umol/
5) T	propane	3.82	25903031	68.230	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G43860.D RSK2.M Mon Jul 28 10:47:33 2014 Page 1

Quantitation Report (Not Reviewed)

```
Data File : C:\MSDchem\1\DATA\072814\16G43860.D          Vial: 4
Acq On    : 28 Jul 2014  10:42                       Operator: JDS
Sample    : WG485900-02 67umol/mol LCS STD RSK175    Inst    : HP16
Misc      : 1,1 STD63476                             Multiplr: 1.00
IntFile   : EVENTS.E
Quant Time: Jul 28 10:47 2014  Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update  : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2.M

Volume Inj.  :
Signal Phase :
Signal Info  :
```

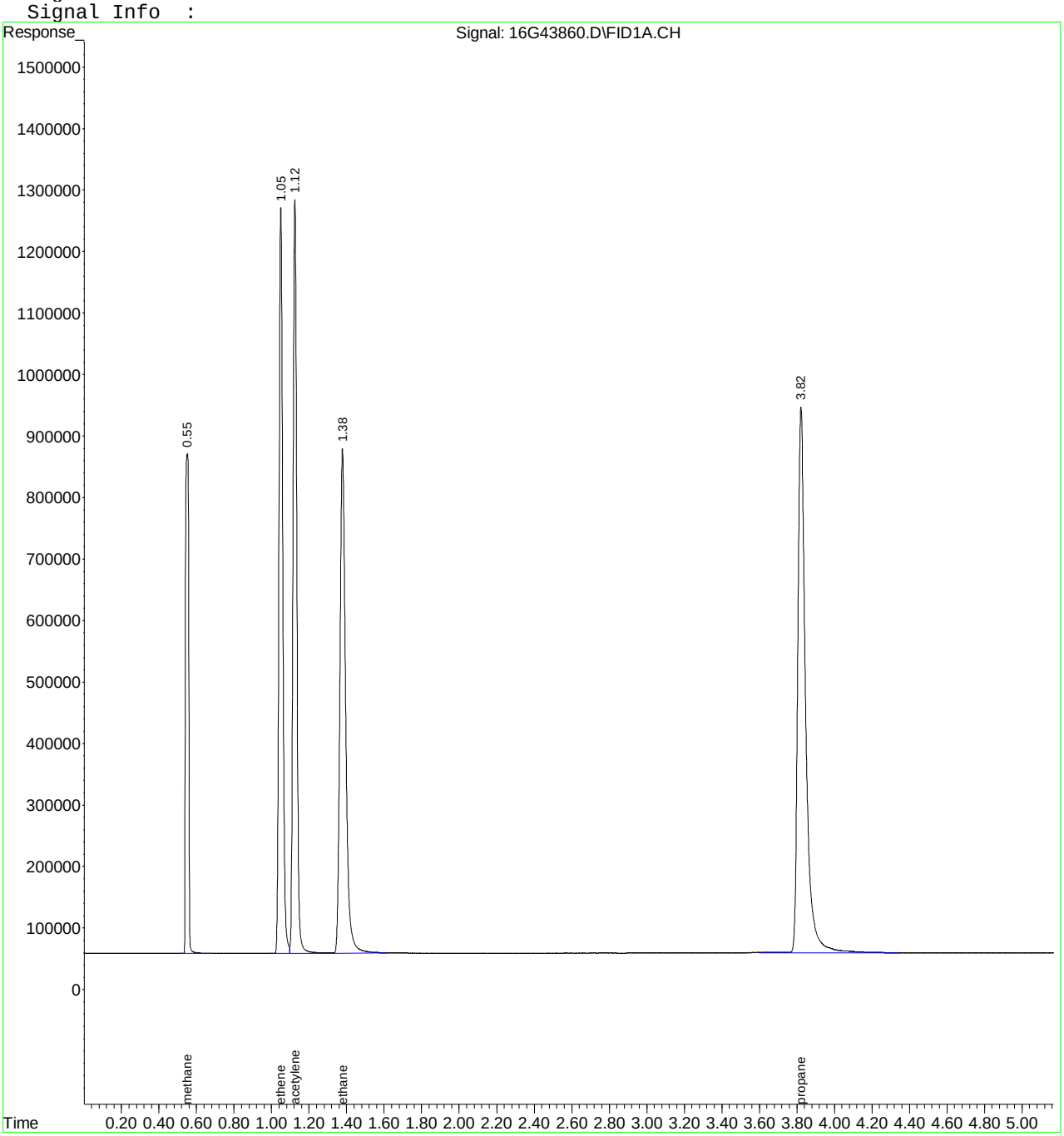

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\072814\16G43861.D Vial: 5
Acq On : 28 Jul 2014 10:51 Operator: JDS
Sample : WG485900-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD63476 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Jul 28 10:57:10 2014 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Initial Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	8841629	57.204	umol/
2) T	ethene	1.05	15486730	60.596	umol/
3) T	acetylene	1.13	14906058	69.373	umol/
4) T	ethane	1.38	16054103	61.731	umol/
5) T	propane	3.82	23635601	62.258	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G43861.D RSK2.M Mon Jul 28 10:57:10 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\072814\16G43861.D Vial: 5
Acq On : 28 Jul 2014 10:51 Operator: JDS
Sample : WG485900-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD63476 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Jul 28 10:57 2014 Quant Results File: RSK2.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK2.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 031314
Last Update : Thu Mar 13 11:22:17 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSK2.M

Volume Inj. :
Signal Phase :
Signal Info :

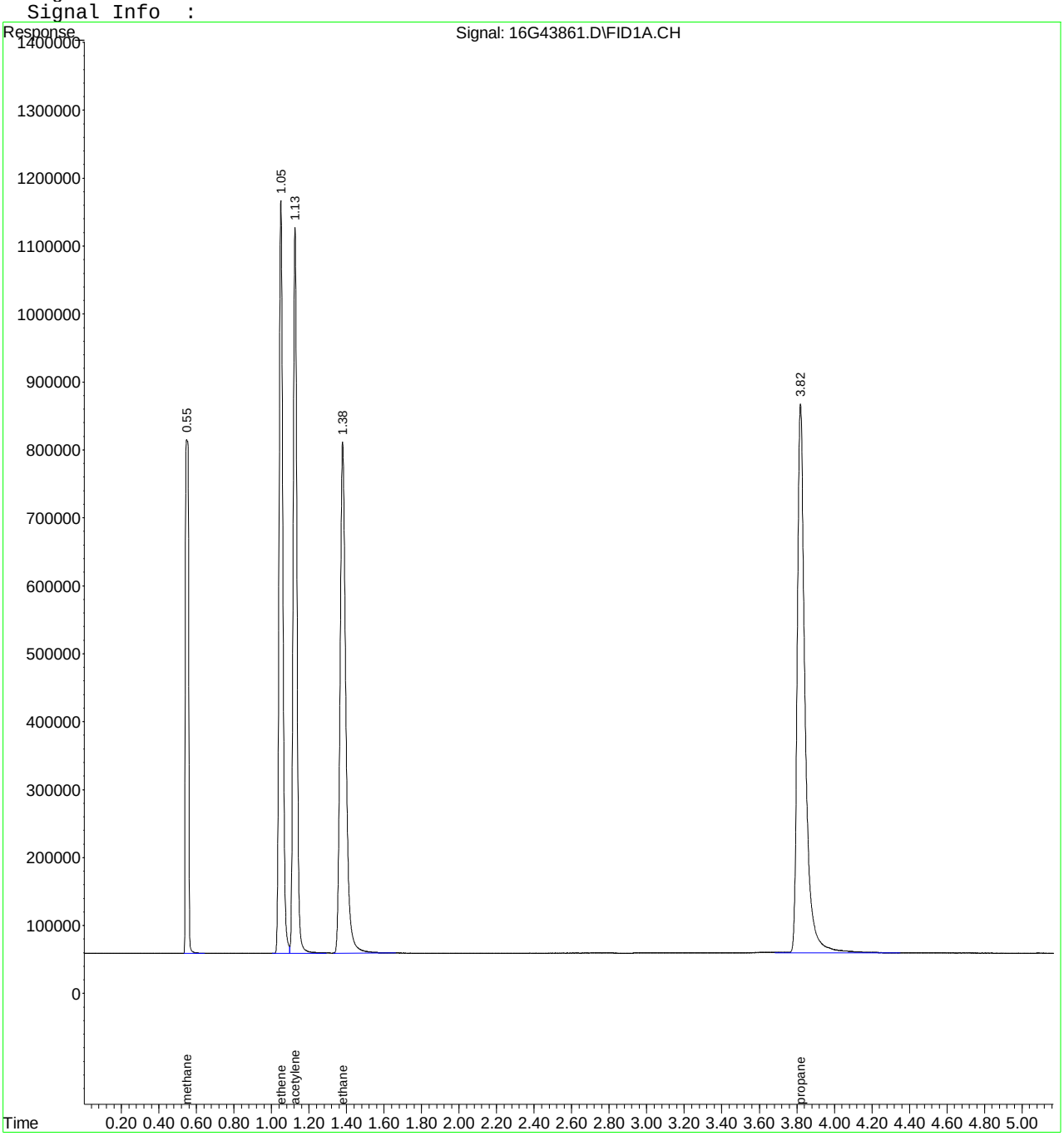

2.2 General Chemistry Data

2.2.1 Method 9056

2.2.1.1 Summary Data

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-03	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW11-072414	**Prep Method:**	9056	**Prep Date:**	07/25/2014 14:32
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG485778	**Analyst:**	ALS	**Run Date:**	07/25/2014 17:26
Collect Date:	07/24/2014 09:45	**Dilution:**	5	**File ID:**	I1_072514-13
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1840	J	2.00	1.00	0.500
Sulfate	14808-79-8	414		10.0	5.00	2.50
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-03	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW11-072414	**Prep Method:**	9056	**Prep Date:**	07/25/2014 14:32
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG485778	**Analyst:**	ALS	**Run Date:**	07/25/2014 17:44
Collect Date:	07/24/2014 09:45	**Dilution:**	100	**File ID:**	I1_072514-14
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1290		40.0	20.0	10.0
Sulfate	14808-79-8	313		200	100	50.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-04	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-072414	**Prep Method:**	9056	**Prep Date:**	07/25/2014 14:32
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG485778	**Analyst:**	ALS	**Run Date:**	07/25/2014 18:37
Collect Date:	07/24/2014 11:00	**Dilution:**	5	**File ID:**	I1_072514-17
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1820	J	2.00	1.00	0.500
Sulfate	14808-79-8	317		10.0	5.00	2.50
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-04	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-072414	**Prep Method:**	9056	**Prep Date:**	07/25/2014 14:32
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG485778	**Analyst:**	ALS	**Run Date:**	07/25/2014 18:55
Collect Date:	07/24/2014 11:00	**Dilution:**	100	**File ID:**	I1_072514-18
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1340		40.0	20.0	10.0
Sulfate	14808-79-8	190	J	200	100	50.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.2.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(-c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 061114 ICAL IC1.SEQ

Analyst1: JBK Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 50533 Syringe Filter Lot#: 00177388

Eluent ID#: RGT30625

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG479914

Internal STD: NA Surrogate STD: NA Calibration STD STD63859 (06/11/14)

CCV STD: STD63859 LCS STD: STD63859 MS/MSD STD: STD63859

Comments: ICAL only.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_061114-01	ELUENT	1	1		06/11/14 14:05
2	I1_061114-02	DI WATER	1	1		06/11/14 14:22
3	I1_061114-03	WG479914-01 STD \#6	1	1		06/11/14 14:40
4	I1_061114-04	WG479914-02 STD \#5	1	1		06/11/14 14:58
5	I1_061114-05	WG479914-03 STD \#4	1	1		06/11/14 15:15
6	I1_061114-06	WG479914-04 STD \#3	1	1		06/11/14 15:33
7	I1_061114-07	WG479914-05 STD \#2	1	1		06/11/14 15:51
8	I1_061114-08	WG479914-06 STD \#1	1	1		06/11/14 16:08
9	I1_061114-09	WG479914-07 ALT STD	1	1		06/11/14 16:26
10	I1_061114-10	LCR LEVEL 6	1	1		06/11/14 16:44
11	I1_061114-11	LCR LEVEL 2	1	1		06/11/14 17:02
12	I1_061114-12	LCR LEVEL 0	1	1		06/11/14 17:19
13	I1_061114-13	END	1	1		06/11/14 17:37

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 16-JUN-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 072514 IC1.SEQ
Analyst1: ALS Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 51099 Syringe Filter Lot#: 00180133
Eluent ID#: RGT31021
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG485778
Internal STD: NA Surrogate STD: NA Calibration STD STD60856 (11/6/13)
CCV STD: STD63859 LCS STD: STD63859 MS/MSD STD: STD63859

Comments: Fractions L14071403 (03,04) were ran at two seperate dilutions in order to bring both SO4 and CL into calibration range.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_072514-01	ELUENT	1	1		07/25/14 13:54
2	I1_072514-02	DI WATER	1	1		07/25/14 14:11
3	I1_072514-03	WG485779-01 ANION CCV	1	1		07/25/14 14:29
4	I1_072514-04	WG485779-02 ANION CCB	1	1		07/25/14 14:47
5	I1_072514-05	WG485778-01 ANION BLANK	1	1		07/25/14 15:04
6	I1_072514-06	WG485778-02 ANION LCS	1	1		07/25/14 15:22
7	I1_072514-07	L14071426-07 (NO3,SO4)	1	1		07/25/14 15:40
8	I1_072514-08	L14071426-06 (NO3,SO4)	1	1		07/25/14 15:58
9	I1_072514-09	L14071426-04 (NO3,SO4)	1	1		07/25/14 16:15
10	I1_072514-10	L14071426-02 (NO3,SO4)	1	1		07/25/14 16:33
11	I1_072514-11	L14071426-01 (NO3,SO4)	1	1		07/25/14 16:51
12	I1_072514-12	L14071426-03 (NO3,SO4)	1	1		07/25/14 17:08
13	I1_072514-13	L14071430-03 1/5 (CL,NO2,NO3,SO4)	1	5		07/25/14 17:26
14	I1_072514-14	L14071430-03 1/100 (CL,NO2,NO3,SO4)	1	100		07/25/14 17:44
15	I1_072514-15	WG485779-03 ANION CCV	1	1		07/25/14 18:02
16	I1_072514-16	WG485779-04 ANION CCB	1	1		07/25/14 18:19
17	I1_072514-17	L14071430-04 1/5 (CL,NO2,NO3,SO4)	1	5		07/25/14 18:37
18	I1_072514-18	L14071430-04 1/100 (CL,NO2,NO3,SO4)	1	100		07/25/14 18:55
19	I1_072514-19	L14071401-02 1/100 (CL,SO4)	2	100		07/25/14 19:12
20	I1_072514-20	L14071401-04 1/15 (CL,SO4)	2	15		07/25/14 19:30
21	I1_072514-21	L14071401-04 1/150 (CL,SO4)	2	150		07/25/14 19:48
22	I1_072514-22	L14071401-05 1/20 (CL,SO4)	2	20		07/25/14 20:05
23	I1_072514-23	L14071401-06 1/15 (CL,SO4) RR CL	2	15		07/25/14 20:23
24	I1_072514-24	L14071386-01 1/10 (SO4)	2	10		07/25/14 20:41
25	I1_072514-25	L14071388-01 1/3 (SO4) RS	1	3		07/25/14 20:59
26	I1_072514-26	WG485778-04 DUP 1388-01	2	3		07/25/14 21:16
27	I1_072514-27	WG485779-05 ANION CCV	1	1		07/25/14 21:34
28	I1_072514-28	WG485779-06 ANION CCB	1	1		07/25/14 21:52
29	I1_072514-29	WG485778-05 MS	2	3		07/25/14 22:09
30	I1_072514-30	WG485778-06 MSD	2	3		07/25/14 22:27
31	I1_072514-31	L14071388-02 1/10 (SO4)	2	10		07/25/14 22:45
32	I1_072514-32	L14071384-01 1/5 (SO4)	2	5		07/25/14 23:03
33	I1_072514-33	L14071384-02 1/5 (SO4)	2	5		07/25/14 23:20

Page: 1 Approved: 28-JUL-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 072514 IC1.SEQ

Analyst1: ALS Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 51099 Syringe Filter Lot#: 00180133

Eluent ID#: RGT31021

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG485778

Internal STD: NA Surrogate STD: NA STD60856 (11/6/13)

CCV STD: STD63859 LCS STD: STD63859 STD63859

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I1_072514-34	L14071367-01 NO2	1	1		07/25/14 23:38
35	I1_072514-35	WG485779-07 ANION CCV	1	1		07/25/14 23:56
36	I1_072514-36	WG485779-08 ANION CCB	1	1		07/26/14 00:13
37	I1_072514-37	END	1	1		07/26/14 00:31

Comments

Seq.	Rerun	Dil.	Reason	Analytes
20				
	L14071401-04 1/15 (CL,SO4) was not reported due to CL being over the ICAL and SO4 being nondetect.			
23	X	100	Over Calibration Range	CL
	L14071401-06 1/15 (CL,SO4)			

Page: 2 Approved: 28-JUL-14

Microbac Laboratories Inc.

Data Checklist

Date: 11-JUN-2014
Analyst: JBK
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 61523
Analytical Workgroups: ICAL ONLY

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	JBK
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MDC

Primary Reviewer:
12-JUN-2014

Secondary Reviewer:
16-JUN-2014

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-16-2014 14:37:55

Microbac Laboratories Inc.

Data Checklist

Date: 25-JUL-2014
Analyst: ALS
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 62448
Analytical Workgroups: 07-1426,1430,1401,1386,1388,1384,1367

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	ALS
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MDC

Primary Reviewer: 28-JUL-2014

Secondary Reviewer: 28-JUL-2014

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-28-2014 11:23:54

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG485778

Login Number: L14071430

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW11-072414	03	07/24/14					07/25/2014	1.2	2		07/25/14	1.3	2	
67WW11-072414	03	07/24/14					07/25/2014	1.2	2		07/25/14	1.3	2	
67WW08-072414	04	07/24/14					07/25/2014	1.1	2		07/25/14	1.3	2	
67WW08-072414	04	07/24/14					07/25/2014	1.1	2		07/25/14	1.3	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3678662
Report generated 07/28/2014 11:45

METHOD BLANK SUMMARY

Login Number: L14071430
Blank File ID: I1_072514-05
Prep Date: 07/25/14 14:32
Analyzed Date: 07/25/14 15:04
Analyst: ALS

Work Group: WG485778
Blank Sample ID: WG485778-01
Instrument ID: IC1
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG485778-02	I1_072514-06	07/25/14 15:22	01
67WW11-072414	L14071430-03	I1_072514-13	07/25/14 17:26	DL01
67WW11-072414	L14071430-03	I1_072514-14	07/25/14 17:44	DL02
67WW08-072414	L14071430-04	I1_072514-17	07/25/14 18:37	DL01
67WW08-072414	L14071430-04	I1_072514-18	07/25/14 18:55	DL02
DUP	WG485778-04	I1_072514-26	07/25/14 21:16	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 3678663
Report generated 07/28/2014 11:45

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14071430 Prep Date: 07/25/14 14:32 Sample ID: WG485778-01
Instrument ID: IC1 Run Date: 07/25/14 15:04 Prep Method: 9056
File ID: I1 072514-05 Analyst: ALS Method: 9056
Workgroup (AAB#): WG485778 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1-11-JUN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3678664
28-JUL-2014 11:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14071430 Run Date: 07/25/2014 Sample ID: WG485778-02
Instrument ID: IC1 Run Time: 15:22 Prep Method: 9056
File ID: I1 072514-06 Analyst: ALS Method: 9056
Workgroup (AAB#): WG485778 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD63859 Cal ID: IC1-11-JUN-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	7.30	91.3	90 - 110	
Sulfate	40.0	37.1	92.8	90 - 110	
Nitrate	5.42	4.88	90.2	90 - 110	
Nitrite	4.87	4.88	100	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 3678665
Report generated: 07/28/2014 11:45

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L14071430
Analytical Method: 9056
ICAL Workgroup: WG479914

Instrument ID: IC1
Initial Calibration Date: 11-JUN-14 16:08
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.497	5.65	0.99800	
Nitrate		2.292	8.25	0.99800	
Nitrite		3.198	12.0	1.00000	
Sulfate		7.818	13.6	0.99700	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 3678666
Report generated 07/28/2014 11:45

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L14071430

Analytical Method: 9056

Instrument ID: IC1

Initial Calibration Date: 11-JUN-14 16:08

Column ID: F

Analyte	WG479914-01			WG479914-02			WG479914-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.78500000	5.016	12.0	2.17700000	5.512	8.00	1.38500000	5.776
Nitrate	16.3	8.19500000	1.985	8.13	3.69800000	2.199	5.42	2.34000000	2.317
Nitrite	14.6	5.11100000	2.859	7.31	2.50900000	2.912	4.87	1.62300000	3.001
Sulfate	120	18.7160000	6.412	60.0	8.44000000	7.109	40.0	5.30500000	7.540

INT_CAL - Modified 03/06/2008
PDF File ID: 3678666
Report generated 07/28/2014 11:45

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L14071430

Analytical Method: 9056

Instrument ID: IC1

Initial Calibration Date: 11-JUN-14 16:08

Column ID: F

Analyte	WG479914-04			WG479914-05			WG479914-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.682000000	5.865	1.00	0.185000000	5.405	0.200	0.0370000000	5.405
Nitrate	2.71	1.14100000	2.376	0.678	0.282000000	2.402	0.134	0.0540000000	2.473
Nitrite	2.44	0.795000000	3.064	0.609	0.185000000	3.291	0.122	0.0300000000	4.060
Sulfate	20.0	2.53500000	7.890	5.00	0.593000000	8.432	1.00	0.105000000	9.524

INT_CAL - Modified 03/06/2008
PDF File ID: 3678666
Report generated 07/28/2014 11:45

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14071430 Run Date: 06/11/2014 Sample ID: WG479914-07
Instrument ID: IC1 Run Time: 16:26 Method: 9056
File ID: I1 061114-09 Analyst: JBK QC Key: DOD4
ICal Workgroup: WG479914 Cal ID: IC1 - 11-JUN-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.48	mg/L	5.71	6.50	10	
Sulfate		40.0	37.4	mg/L	7.43	6.60	10	
Nitrate		5.42	5.09	mg/L	2.27	6.20	10	
Nitrite		4.87	4.78	mg/L	2.98	1.90	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3678667
Report generated 07/28/2014 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14071430
Run Date: 07/25/2014
Sample ID: WG485779-02
Instrument ID: IC1
Run Time: 14:47
Method: 9056
File ID: I1 072514-04
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG485778
Cal ID: IC1 - 11-JUN-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.119	F
Sulfate	0.500	2.00	0.500	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3678669
Report generated 07/28/2014 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14071430
Run Date: 07/25/2014
Sample ID: WG485779-04
Instrument ID: IC1
Run Time: 18:19
Method: 9056
File ID: I1 072514-16
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG485778
Cal ID: IC1 - 11-JUN-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3678669
Report generated 07/28/2014 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14071430
Run Date: 07/25/2014
Sample ID: WG485779-06
Instrument ID: IC1
Run Time: 21:52
Method: 9056
File ID: I1 072514-28
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG485778
Cal ID: IC1 - 11-JUN-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3678669
Report generated 07/28/2014 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14071430
Run Date: 07/25/2014
Sample ID: WG485779-01
Instrument ID: IC1
Run Time: 14:29
Method: 9056
File ID: I1 072514-03
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG485778
Cal ID: IC1 - 11-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.31	mg/L	5.85	8.64	10	
Sulfate		40.0	36.9	mg/L	7.51	7.64	10	
Nitrate		5.42	4.91	mg/L	2.36	9.36	10	
Nitrite		4.87	4.81	mg/L	2.96	1.22	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3678668
Report generated 07/28/2014 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14071430
Run Date: 07/25/2014
Sample ID: WG485779-03
Instrument ID: IC1
Run Time: 18:02
Method: 9056
File ID: I1 072514-15
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG485778
Cal ID: IC1 - 11-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.40	mg/L	5.78	7.51	10	
Sulfate		40.0	37.7	mg/L	7.36	5.73	10	
Nitrate		5.42	4.97	mg/L	2.33	8.38	10	
Nitrite		4.87	4.94	mg/L	2.89	1.31	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3678668
Report generated 07/28/2014 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14071430
Run Date: 07/25/2014
Sample ID: WG485779-05
Instrument ID: IC1
Run Time: 21:34
Method: 9056
File ID: I1 072514-27
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG485778
Cal ID: IC1 - 11-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.44	mg/L	5.74	6.96	10	
Sulfate		40.0	37.9	mg/L	7.31	5.17	10	
Nitrate		5.42	5.00	mg/L	2.31	7.72	10	
Nitrite		4.87	5.00	mg/L	2.85	2.72	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3678668
Report generated 07/28/2014 11:45

2.2.1.3 Sample Data

13 L14071430-03 1/5 (CL,NO2,NO3,SO4)

1,5 ALS

Sample Name:	**L14071430-03 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/25/2014 17:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

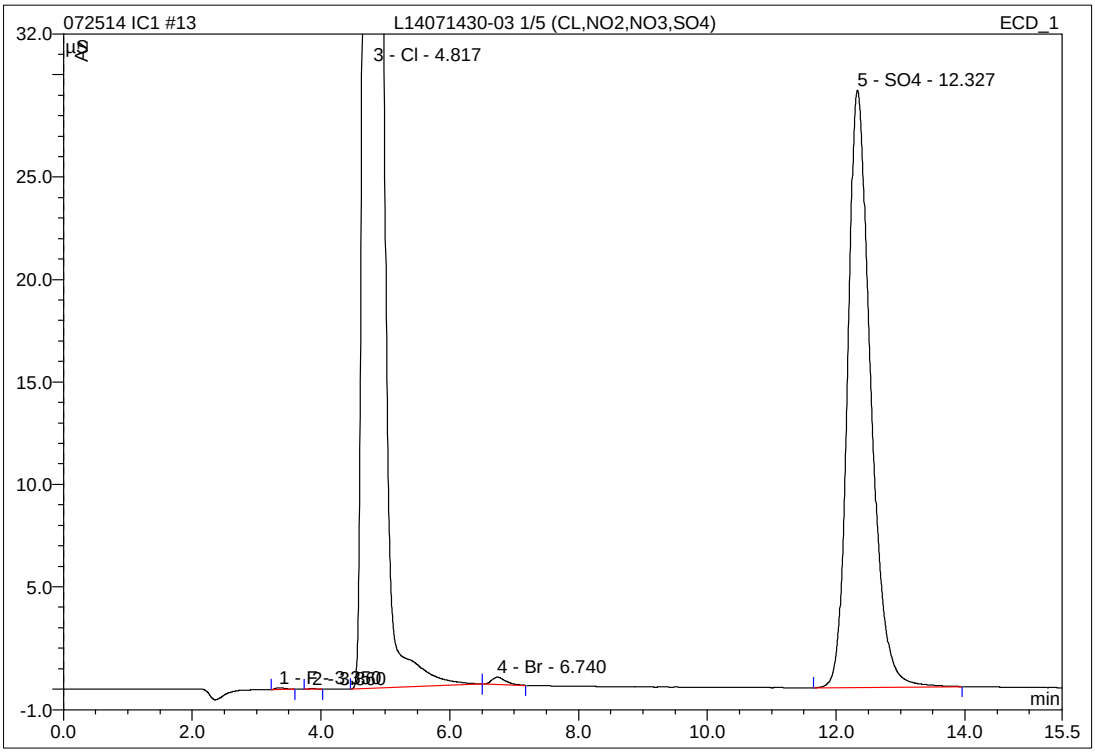

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	0.087	0.014	0.02	0.128	BMB
2	3.86	n.a.	0.027	0.004	0.00	n.a.	BMB
3	4.82	Cl	377.192	69.326	85.09	368.857	BMb
4	6.74	Br	0.365	0.090	0.11	1.245	bMB
5	12.33	SO4	29.162	12.035	14.77	82.884	BMB
Total:			406.832	81.469	100.00	453.114	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

14 L14071430-03 1/100 (CL,NO2,NO3,SO4)

1,100 ALS

Sample Name:	**L14071430-03 1/100 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/25/2014 17:44**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

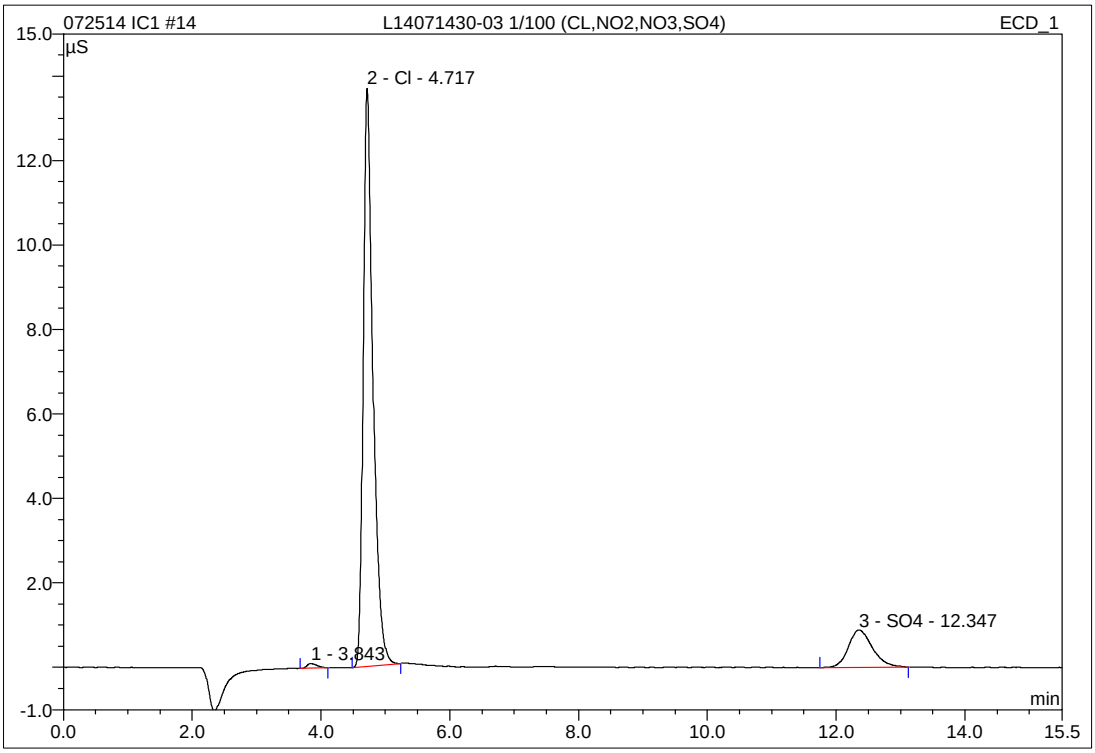

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.84	n.a.	0.113	0.020	0.72	n.a.	BMB
2	4.72	Cl	13.680	2.411	85.59	12.856	BMB
3	12.35	SO4	0.890	0.386	13.70	3.128	BMB
Total:			14.683	2.817	100.00	15.984	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

17 L14071430-04 1/5 (CL,NO2,NO3,SO4)

1,5 ALS

Sample Name:	**L14071430-04 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/25/2014 18:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

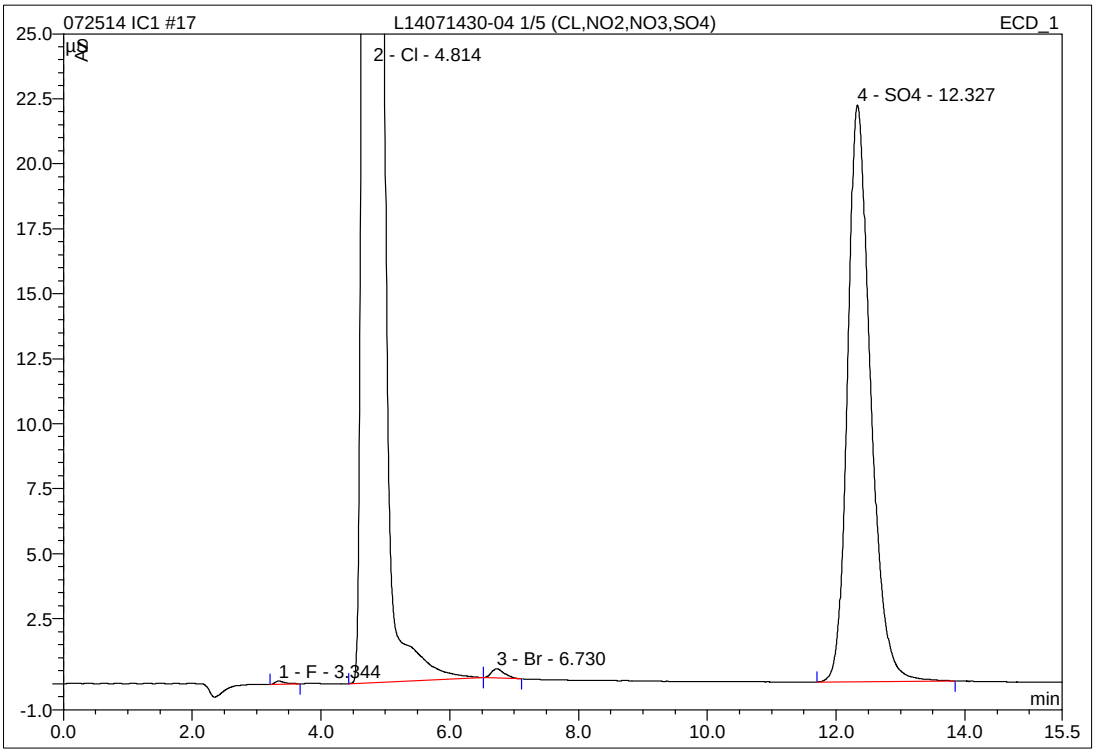

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.34	F	0.117	0.021	0.03	0.155	BMB
2	4.81	Cl	375.818	68.590	88.08	364.943	BMb
3	6.73	Br	0.356	0.082	0.11	1.138	bMB
4	12.33	SO4	22.168	9.175	11.78	63.304	BMB
Total:			398.459	77.869	100.00	429.539	

18 L14071430-04 1/100 (CL,NO2,NO3,SO4)

1,100 ALS

Sample Name:	**L14071430-04 1/100 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/25/2014 18:55**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

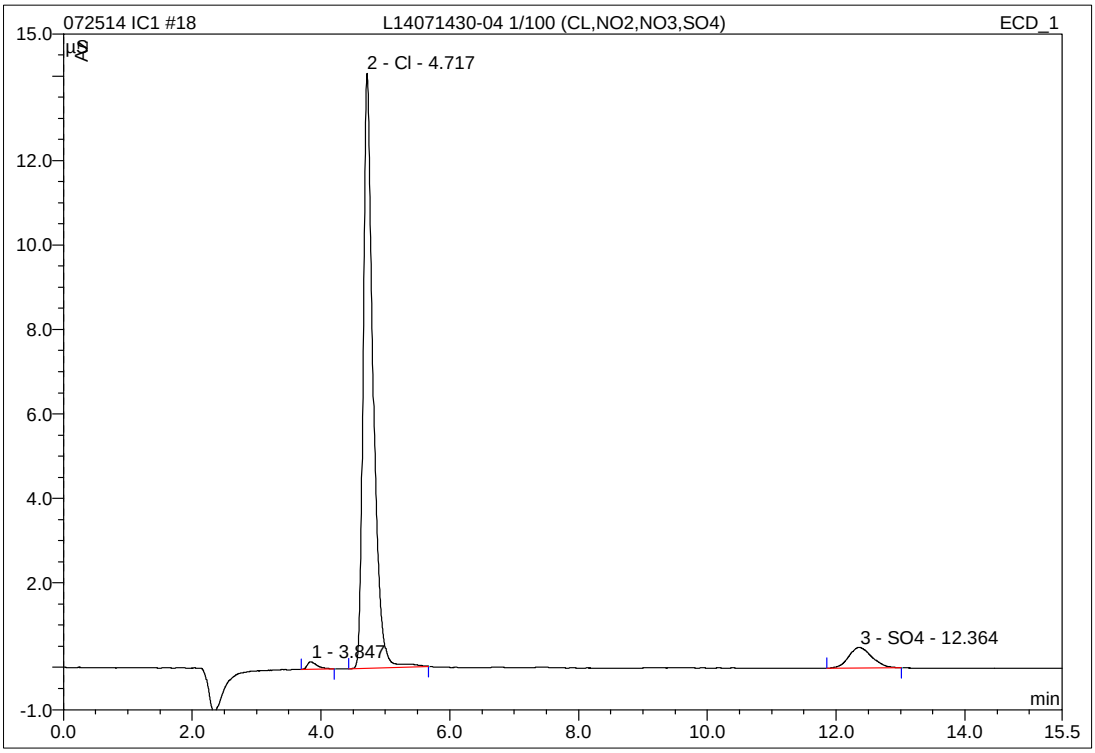

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.85	n.a.	0.174	0.031	1.14	n.a.	BMB
2	4.72	Cl	14.079	2.522	91.37	13.445	BMB
3	12.36	SO4	0.491	0.207	7.49	1.903	BMB
Total:			14.744	2.760	100.00	15.348	

2.2.1.4 Standards Data

3 WG479914-01 STD #6

1,1 JBK STD63859

Sample Name:	**WG479914-01 STD #6**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 14:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

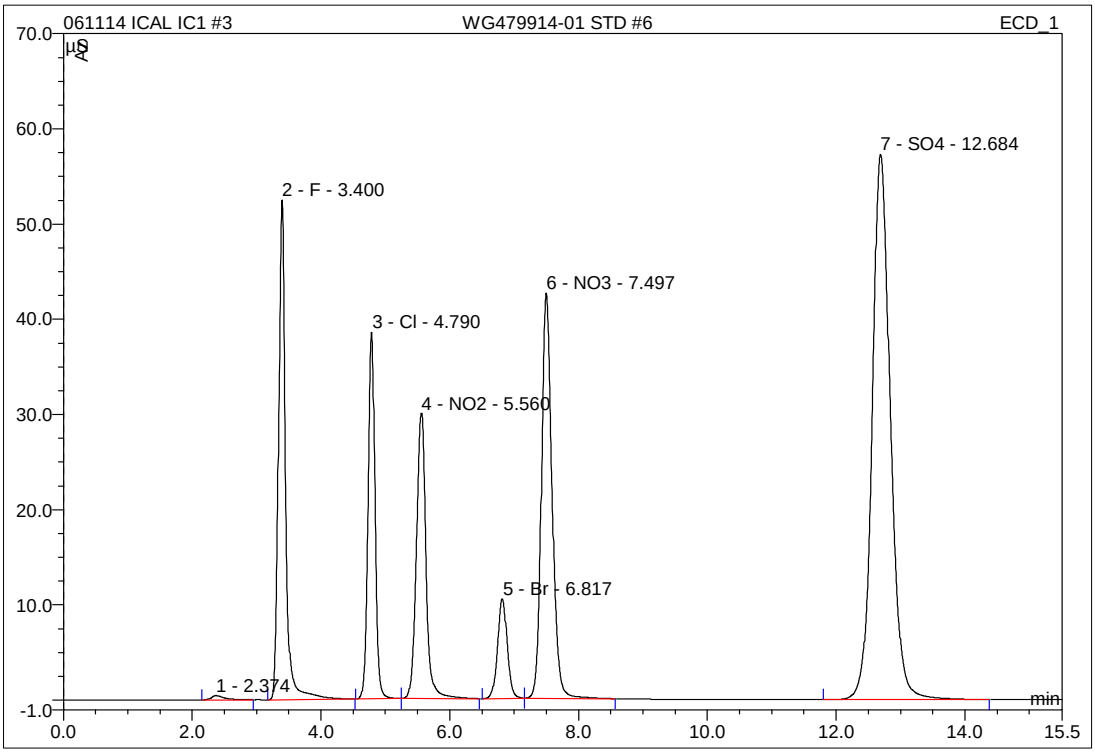

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.451	0.110	0.24	n.a.	BMB
2	3.40	F	52.495	6.678	14.70	24.720	BMB
3	4.79	Cl	38.513	4.785	10.54	25.485	BMb
4	5.56	NO2	29.937	5.111	11.25	14.854	bMB
5	6.82	Br	10.470	1.822	4.01	24.661	BMB
6	7.50	NO3	42.558	8.195	18.04	17.371	BMB
7	12.68	SO4	57.269	18.716	41.21	128.620	BMB
Total:			231.693	45.416	100.00	235.711	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG479914-02 STD #5

1,1 JBK STD63859

Sample Name:	**WG479914-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 14:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

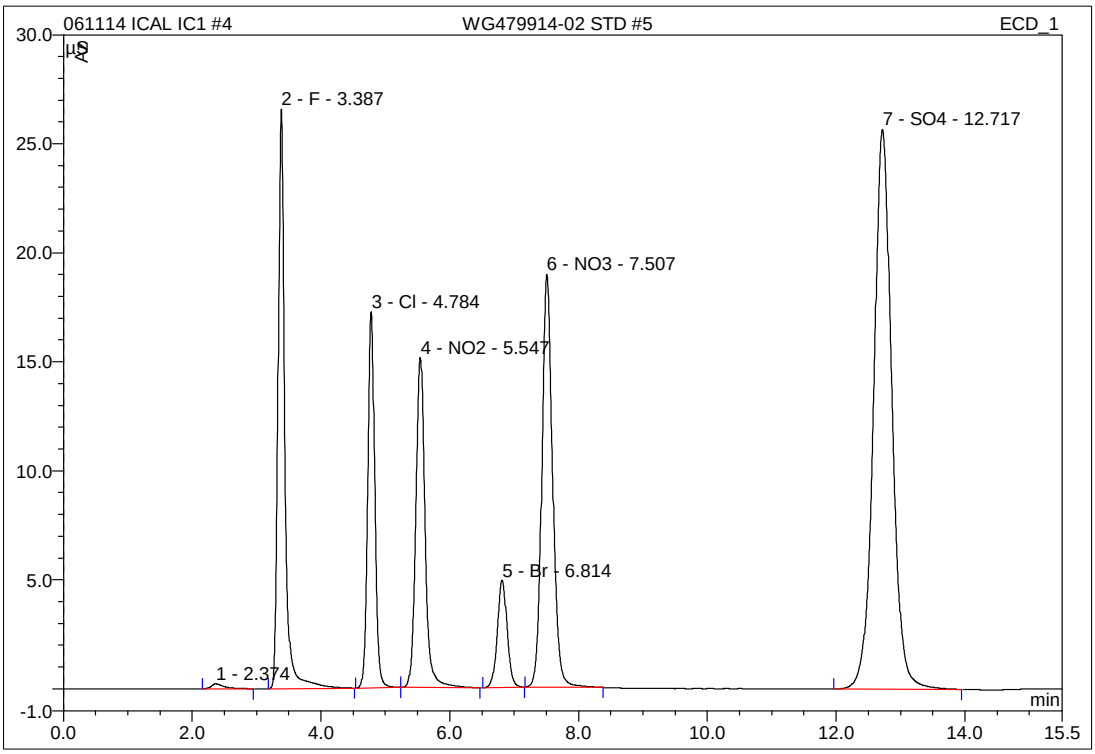

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.233	0.057	0.27	n.a.	BMB
2	3.39	F	26.585	3.244	15.45	12.048	BMB
3	4.78	Cl	17.242	2.177	10.37	11.609	BMb
4	5.55	NO2	15.121	2.509	11.95	7.315	bMB
5	6.81	Br	4.919	0.872	4.15	11.818	BMB
6	7.51	NO3	18.940	3.698	17.61	7.865	BMB
7	12.72	SO4	25.675	8.440	40.19	58.267	BMB
Total:			108.716	20.997	100.00	108.921	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

5 WG479914-03 STD #4

1,1 JBK STD63859

Sample Name:	**WG479914-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 15:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

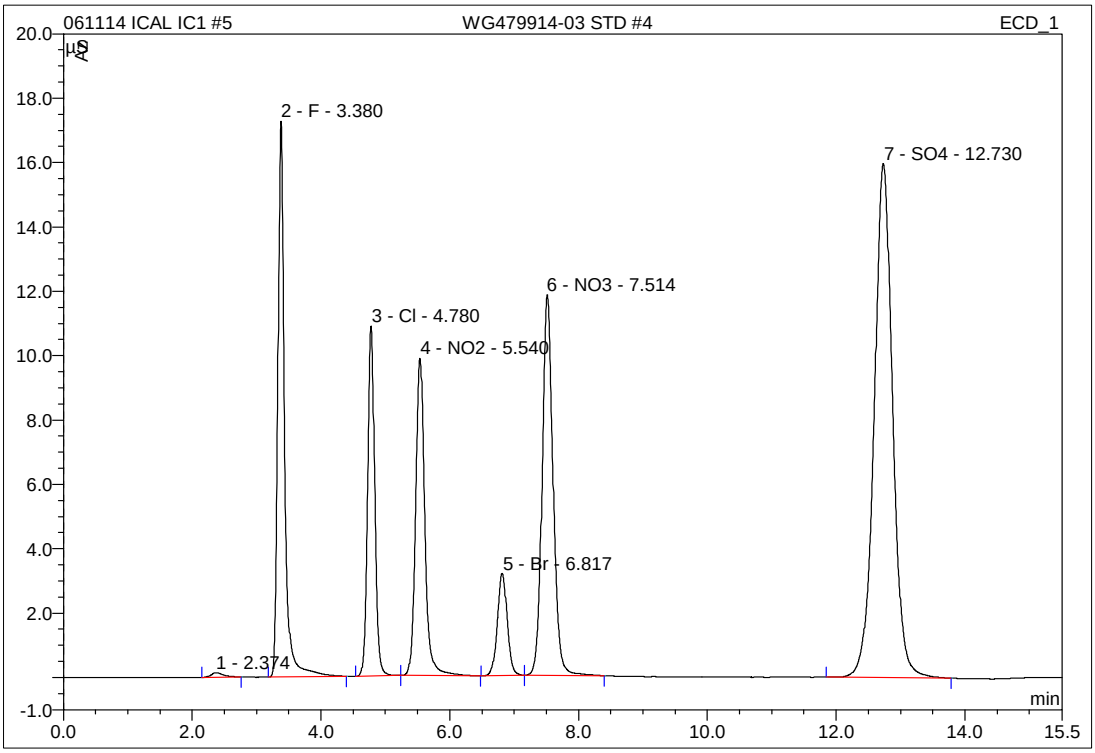

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.144	0.032	0.24	n.a.	BMB
2	3.38	F	17.270	2.084	15.62	7.767	BMB
3	4.78	Cl	10.873	1.385	10.38	7.396	BMB
4	5.54	NO2	9.854	1.623	12.17	4.747	bMB
5	6.82	Br	3.178	0.568	4.26	7.698	BMB
6	7.51	NO3	11.835	2.340	17.55	4.994	BMB
7	12.73	SO4	15.975	5.305	39.77	36.803	BMB
Total:			69.128	13.336	100.00	69.405	

5 WG479914-03 STD #4

1,1 JBK STD63859

Sample Name:	**WG479914-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 15:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

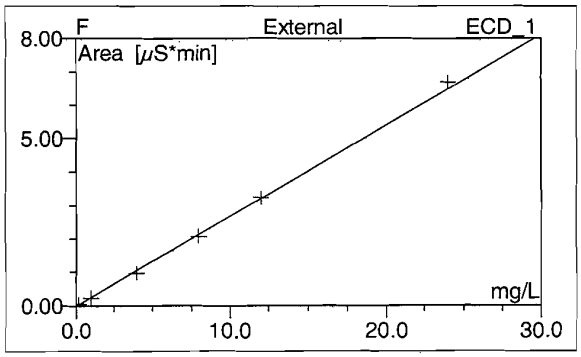

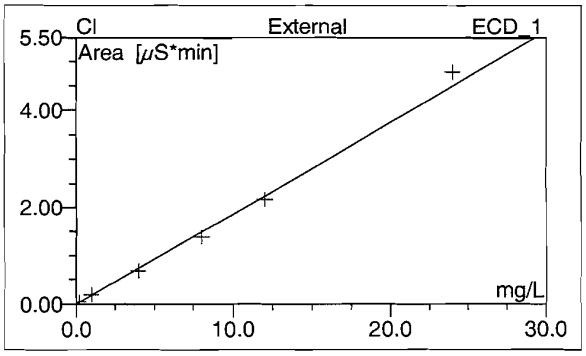

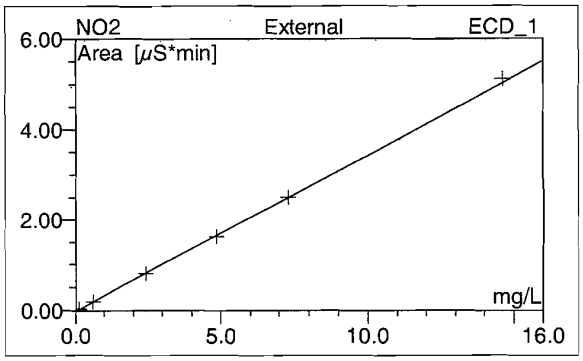

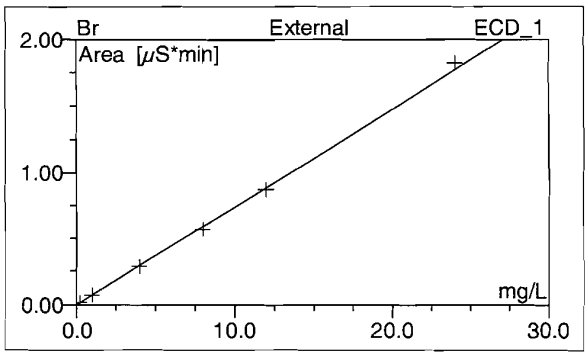

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.37	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.38	F	YLOff	6	99.8997	-0.0209	0.2710	0.0000
3	4.78	Cl	YLOff	6	99.7874	-0.0055	0.1880	0.0000
4	5.54	NO2	YLOff	6	99.9757	-0.0149	0.3451	0.0000
5	6.82	Br	YLOff	6	99.9557	-0.0018	0.0740	0.0000
6	7.51	NO3	YLOff	6	99.7488	-0.0221	0.4730	0.0000
7	12.73	SO4	YLOff	6	99.7115	-0.0712	0.1461	0.0000
Average:					99.8465	-0.0227	0.2495	0.0000

00737748

5 WG479914-03 STD #4

1,1 JBK STD63859

Sample Name:	**WG479914-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 15:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

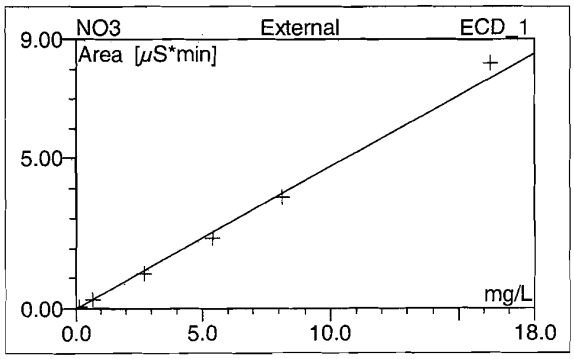

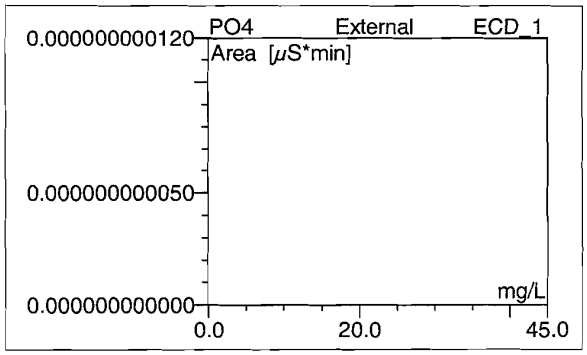

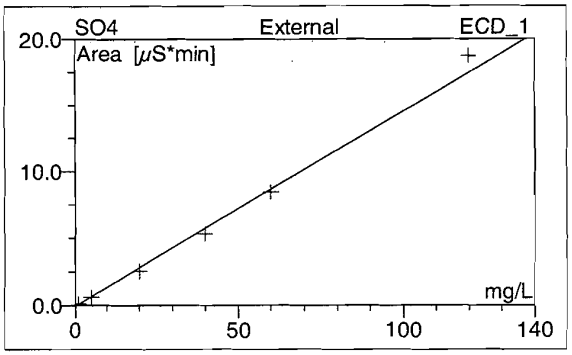

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.37	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.38	F	YLOff	6	99.8997	-0.0209	0.2710	0.0000
3	4.78	Cl	YLOff	6	99.7874	-0.0055	0.1880	0.0000
4	5.54	NO2	YLOff	6	99.9757	-0.0149	0.3451	0.0000
5	6.82	Br	YLOff	6	99.9557	-0.0018	0.0740	0.0000
6	7.51	NO3	YLOff	6	99.7488	-0.0221	0.4730	0.0000
7	12.73	SO4	YLOff	6	99.7115	-0.0712	0.1461	0.0000
Average:					99.8465	-0.0227	0.2495	0.0000

6 WG479914-04 STD #3

1,1 JBK STD63859

Sample Name:	**WG479914-04 STD #3**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 15:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

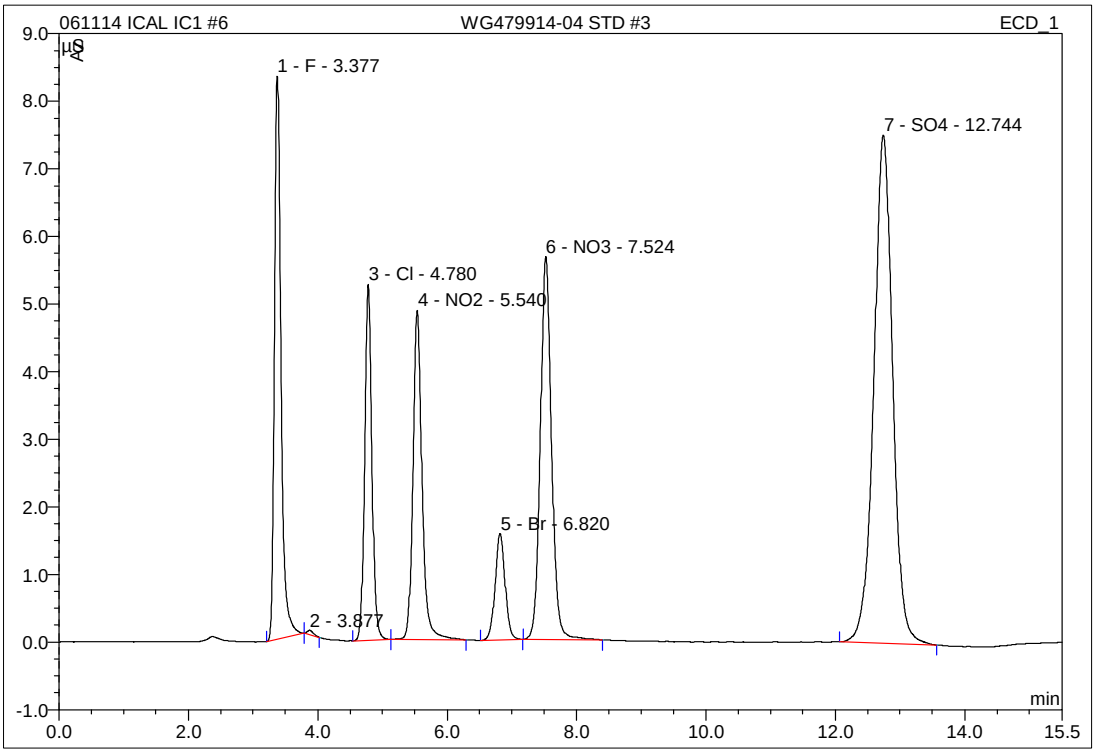

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.38	F	8.328	0.959	14.98	3.616	BMb
2	3.88	n.a.	0.065	0.007	0.11	n.a.	bMB
3	4.78	Cl	5.262	0.682	10.65	3.658	BMB
4	5.54	NO2	4.871	0.795	12.41	2.346	BMB
5	6.82	Br	1.579	0.284	4.43	3.863	BMB
6	7.52	NO3	5.662	1.141	17.82	2.458	BMB
7	12.74	SO4	7.520	2.535	39.60	17.845	BMB
Total:			33.287	6.403	100.00	33.786	

7 WG479914-05 STD #2

1,1 JBK STD63859

Sample Name:	**WG479914-05 STD #2**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 15:51**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

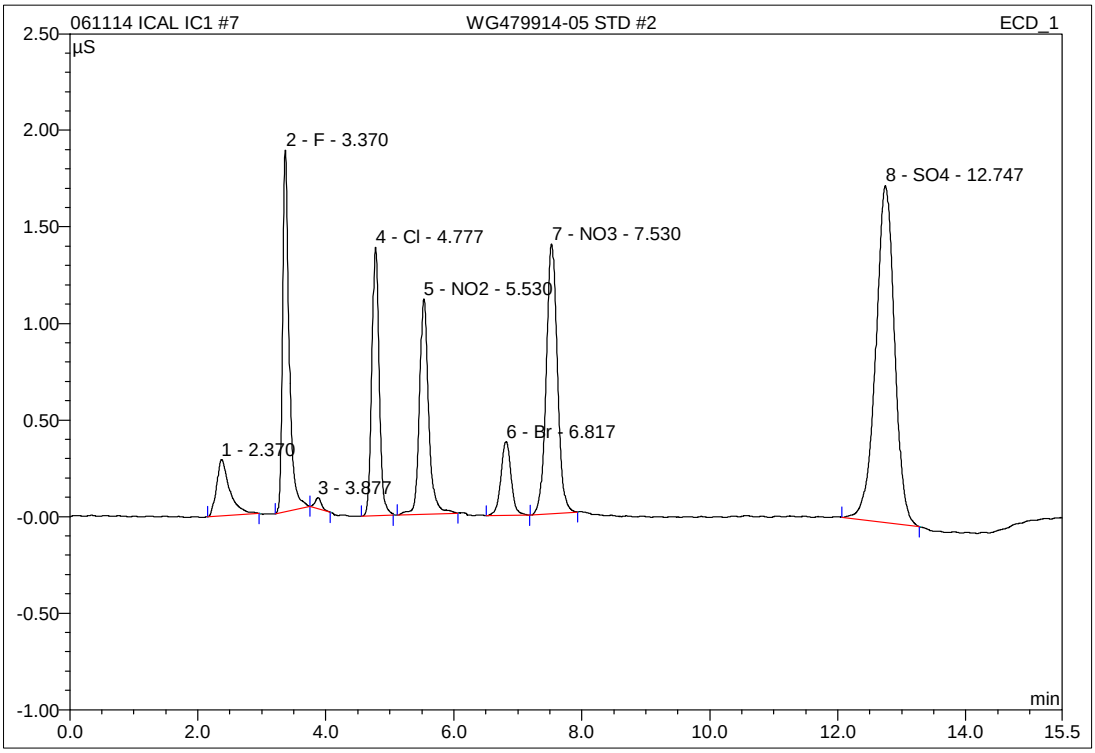

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.292	0.069	4.28	n.a.	BMB
2	3.37	F	1.872	0.224	13.86	0.904	BMb
3	3.88	n.a.	0.057	0.007	0.41	n.a.	bMB
4	4.78	Cl	1.389	0.185	11.42	1.011	BMB
5	5.53	NO2	1.116	0.185	11.45	0.579	BMB
6	6.82	Br	0.382	0.071	4.39	0.984	BMB
7	7.53	NO3	1.396	0.282	17.46	0.643	BMB
8	12.75	SO4	1.744	0.593	36.72	4.549	BMB
Total:			8.249	1.616	100.00	8.670	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

8 WG479914-06 STD #1

1,1 JBK STD63859

Sample Name:	**WG479914-06 STD #1**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 16:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

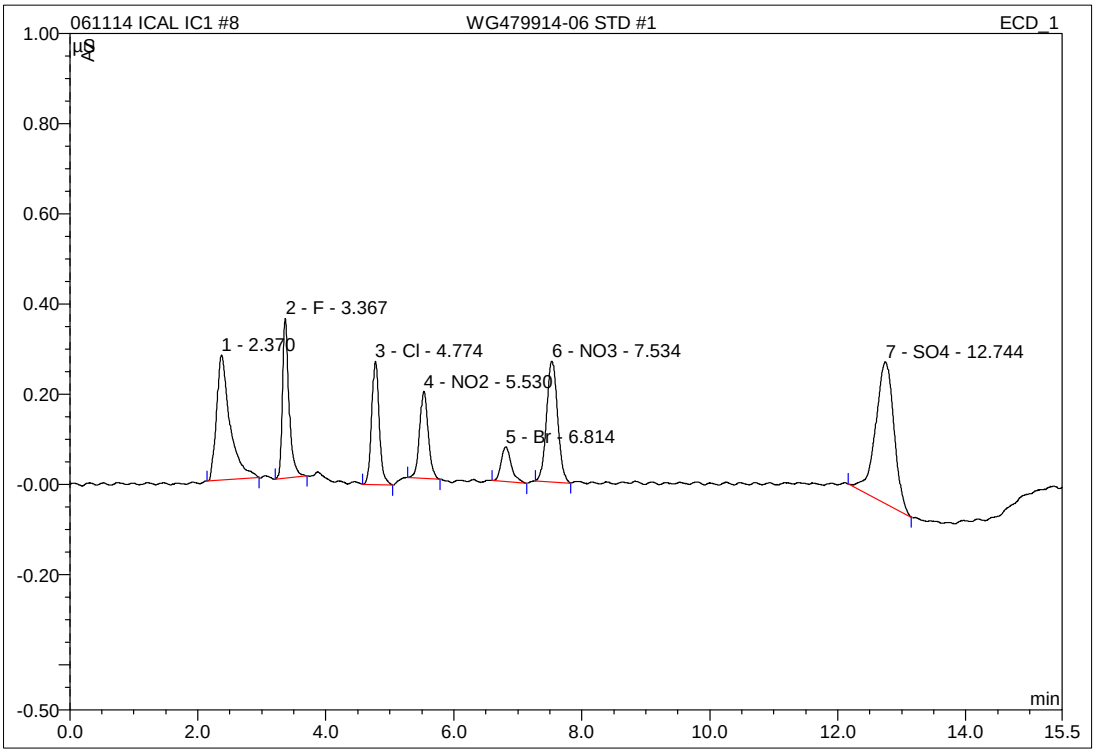

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.278	0.068	19.36	n.a.	BMB
2	3.37	F	0.354	0.043	12.18	0.235	BMB
3	4.77	Cl	0.273	0.037	10.65	0.228	BMB
4	5.53	NO2	0.193	0.030	8.62	0.131	BMB
5	6.81	Br	0.077	0.014	4.02	0.215	BMB
6	7.53	NO3	0.268	0.054	15.30	0.160	BMB
7	12.74	SO4	0.314	0.105	29.86	1.205	BMB
Total:			1.757	0.351	100.00	2.175	

9 WG479914-07 ALT STD

1,1 JBK STD63860

Sample Name:	**WG479914-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 16:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

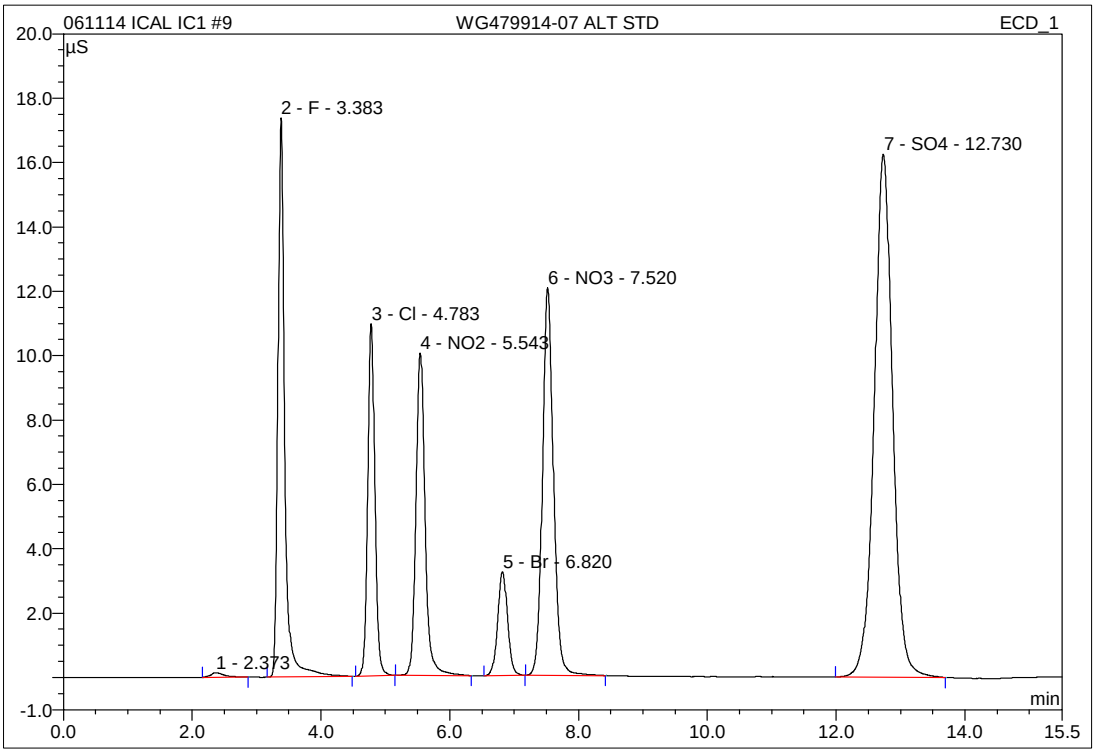

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.145	0.035	0.26	n.a.	BMB
2	3.38	F	17.370	2.120	15.66	7.900	BMB
3	4.78	Cl	10.942	1.400	10.34	7.479	BMB
4	5.54	NO2	10.010	1.635	12.08	4.781	BMB
5	6.82	Br	3.231	0.577	4.26	7.830	BMB
6	7.52	NO3	12.035	2.384	17.61	5.087	BMB
7	12.73	SO4	16.243	5.385	39.78	37.351	BMB
Total:			69.976	13.536	100.00	70.428	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

9 WG479914-07 ALT STD

1,1 JBK STD63860

Sample Name:	**WG479914-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 16:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG479914-07 ALT S	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.9004	-1.24	PASS
Cl	8.00	7.4789	-6.51	PASS
NO2-N	4.8714	4.7807	-1.86	PASS
Br	8.00	7.8299	-2.13	PASS
NO3-N	5.4216	5.0867	-6.18	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	37.3511	-6.62	PASS

3 WG485779-01 ANION CCV

1,1 ALS STD63859 _____ psi @ _____

Sample Name:	**WG485779-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/25/2014 14:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

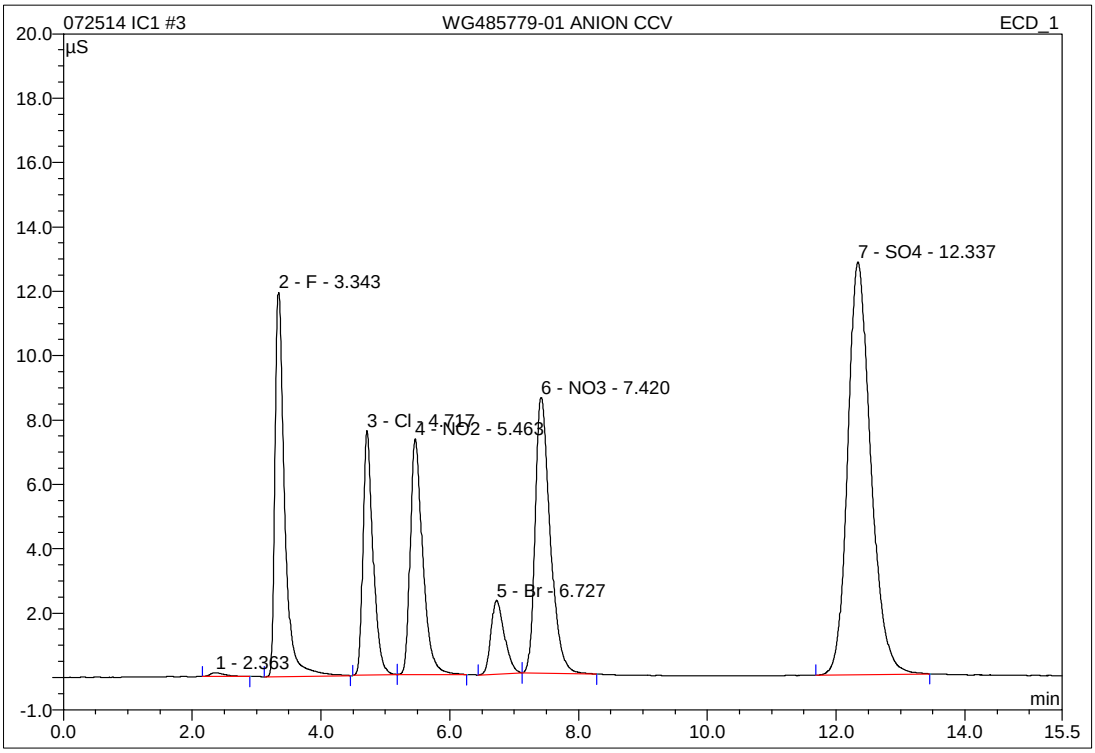

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.36	n.a.	0.121	0.033	0.25	n.a.	BMB
2	3.34	F	11.929	2.057	15.49	7.669	BMB
3	4.72	Cl	7.594	1.368	10.30	7.309	BMB
4	5.46	NO2	7.324	1.646	12.39	4.812	bMB
5	6.73	Br	2.293	0.552	4.15	7.486	BMB
6	7.42	NO3	8.560	2.302	17.33	4.914	BMB
7	12.34	SO4	12.821	5.325	40.09	36.946	BMB
Total:			50.641	13.284	100.00	69.136	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG485779-01 ANION CCV

1,1 ALS STD63859 _____ psi @ _____

Sample Name:	**WG485779-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/25/2014 14:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG485779-01 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.6686	-4.14	PASS
Cl	8.00	7.3092	-8.63	PASS
NO2-N	4.8714	4.8124	-1.21	PASS
Br	8.00	7.4862	-6.42	PASS
NO3-N	5.4216	4.9138	-9.37	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	36.9457	-7.64	PASS

15 WG485779-03 ANION CCV

1,1 ALS STD63859

Sample Name:	**WG485779-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/25/2014 18:02**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

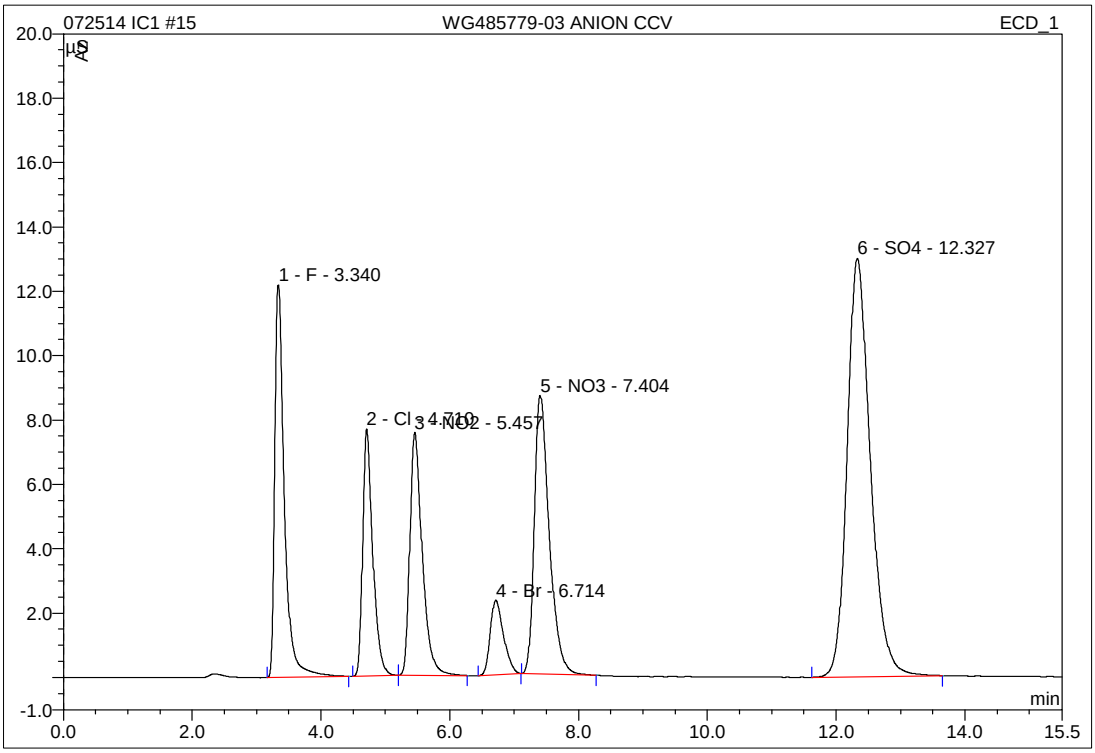

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.34	F	12.195	2.083	15.45	7.763	BMB
2	4.71	Cl	7.683	1.385	10.28	7.399	BMB
3	5.46	NO2	7.543	1.688	12.52	4.935	BMB
4	6.71	Br	2.322	0.557	4.13	7.556	BMB
5	7.40	NO3	8.650	2.327	17.27	4.967	BMB
6	12.33	SO4	12.995	5.437	40.34	37.710	BMB
Total:			51.388	13.478	100.00	70.330	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

15 WG485779-03 ANION CCV

1,1 ALS STD63859

Sample Name:	**WG485779-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/25/2014 18:02**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG485779-03 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.7634	-2.96	PASS
Cl	8.00	7.3991	-7.51	PASS
NO2-N	4.8714	4.9347	1.30	PASS
Br	8.00	7.5560	-5.55	PASS
NO3-N	5.4216	4.9667	-8.39	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	37.7101	-5.72	PASS

27 WG485779-05 ANION CCV

1,1 ALS STD63859

Sample Name:	**WG485779-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/25/2014 21:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

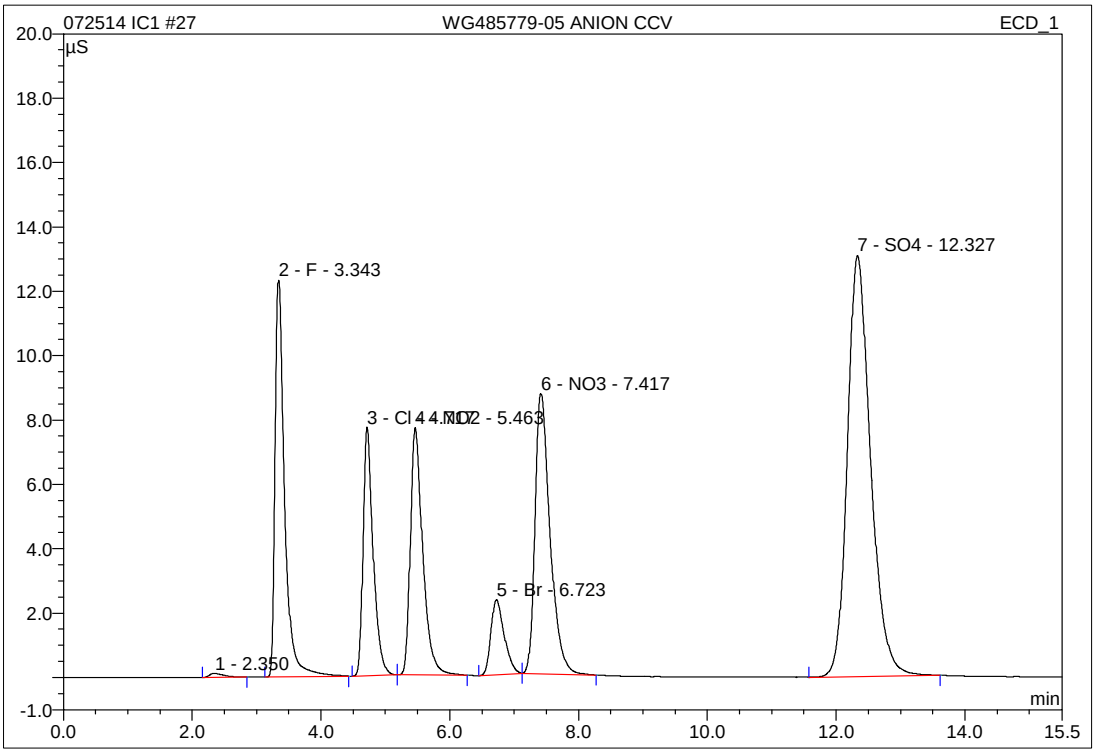

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.35	n.a.	0.131	0.035	0.26	n.a.	BMB
2	3.34	F	12.324	2.105	15.46	7.846	BMB
3	4.72	Cl	7.729	1.394	10.23	7.443	BMB
4	5.46	NO2	7.669	1.712	12.57	5.004	bMB
5	6.72	Br	2.332	0.559	4.11	7.585	BMB
6	7.42	NO3	8.696	2.345	17.22	5.003	BMB
7	12.33	SO4	13.076	5.469	40.16	37.932	BMB
Total:			51.957	13.619	100.00	70.813	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

27 WG485779-05 ANION CCV

1,1 ALS STD63859

Sample Name:	**WG485779-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/25/2014 21:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG485779-05 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.8460	-1.92	PASS
Cl	8.00	7.4432	-6.96	PASS
NO2-N	4.8714	5.0037	2.72	PASS
Br	8.00	7.5850	-5.19	PASS
NO3-N	5.4216	5.0032	-7.72	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	37.9319	-5.17	PASS

4 WG485779-02 ANION CCB

1,1 ALS

Sample Name:	**WG485779-02 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/25/2014 14:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

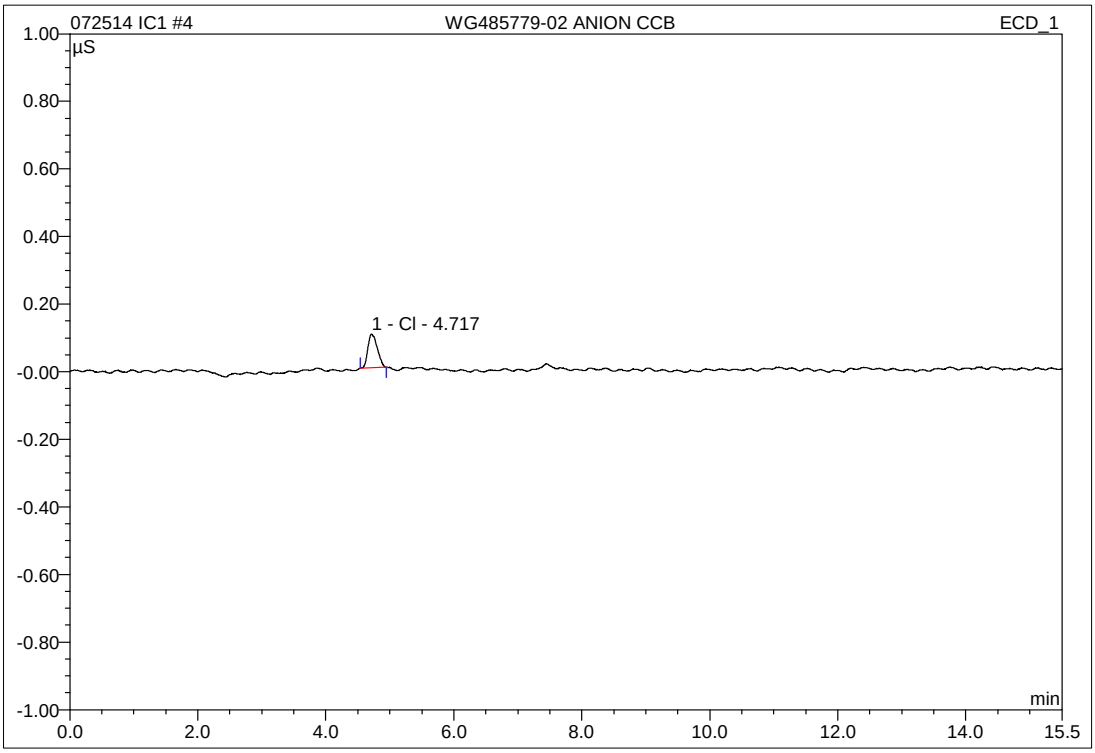

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.72	Cl	0.101	0.017	100.00	0.119	BMB
Total:			0.101	0.017	100.00	0.119	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

16 WG485779-04 ANION CCB

1,1 ALS

Sample Name:	**WG485779-04 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/25/2014 18:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

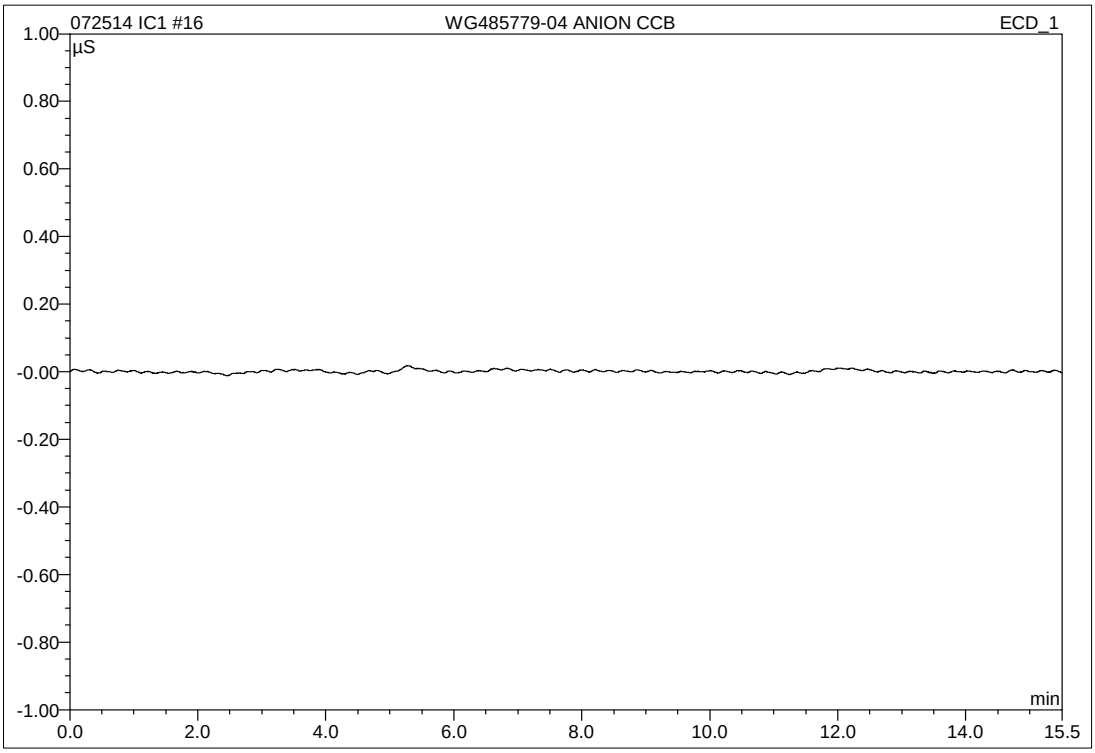

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

28 WG485779-06 ANION CCB

1,1 ALS

Sample Name:	**WG485779-06 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/25/2014 21:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

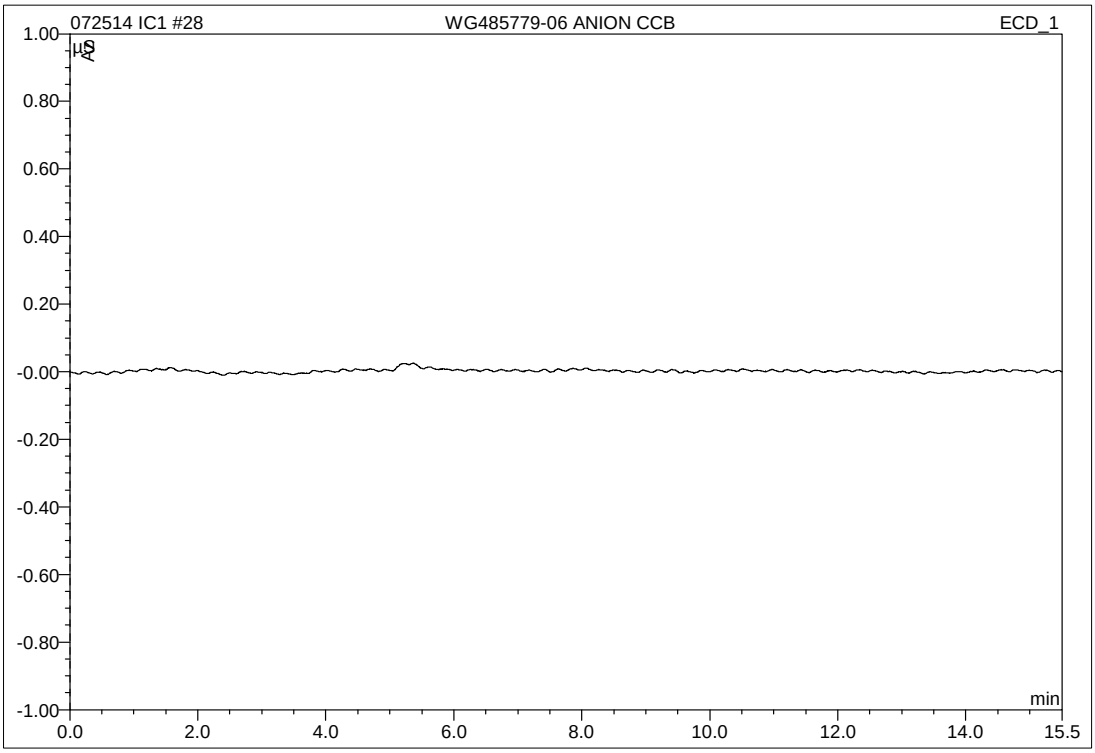

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/6/2013	6/6/2013	6/7/2013
File #	WG433163-01	WG433163-05	WG433448-01
Time	12:58	18:54	12:23

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.31	3.30	3.31	0.017
Cl	4.90	4.89	4.92	0.046
NO2-N	5.79	5.78	5.83	0.079
Br	7.34	7.31	7.43	0.187
NO3-N	8.21	8.18	8.32	0.221
SO4	13.74	13.74	13.67	0.121

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.2.1.5 Raw QC Data

5 WG485778-01 ANION BLANK

1,1 ALS

Sample Name:	**WG485778-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/25/2014 15:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

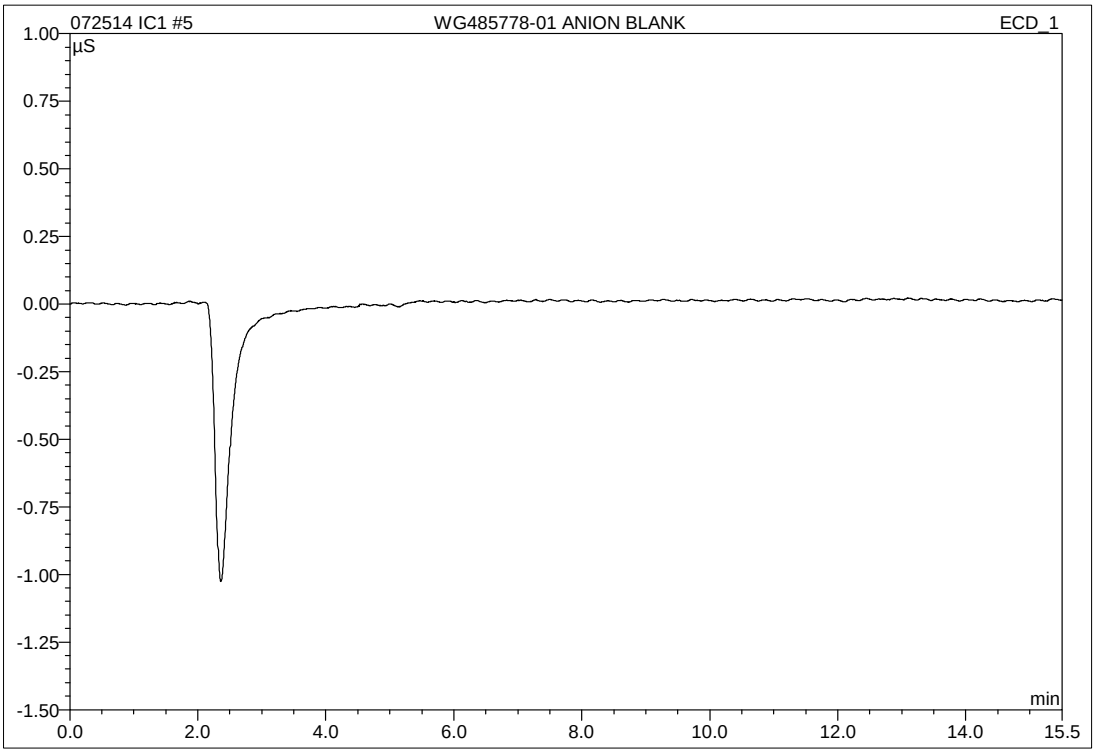

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

6 WG485778-02 ANION LCS

1,1 ALS

Sample Name:	**WG485778-02 ANION LCS**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/25/2014 15:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

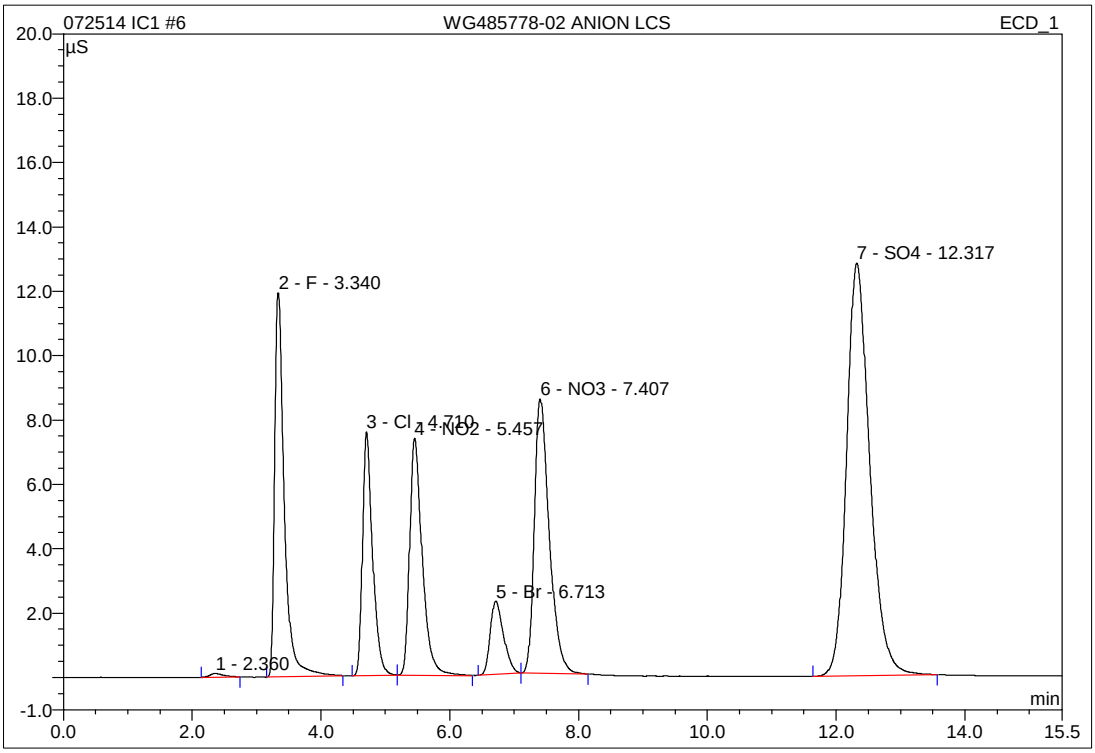

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.36	n.a.	0.115	0.029	0.22	n.a.	BMB
2	3.34	F	11.922	2.047	15.39	7.631	BMB
3	4.71	Cl	7.576	1.367	10.28	7.304	BMB
4	5.46	NO2	7.361	1.668	12.54	4.876	BMB
5	6.71	Br	2.283	0.547	4.11	7.421	BMb
6	7.41	NO3	8.522	2.288	17.21	4.883	bMB
7	12.32	SO4	12.823	5.351	40.24	37.122	BMB
Total:			50.602	13.297	100.00	69.236	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.2.2 Ferrous Iron Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-03	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW11-072414	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	07/10/2014 15:45
Workgroup #:	WG486133	**Analyst:**	TMM	**Run Date:**	07/29/2014 12:00
Collect Date:	07/24/2014 09:45	**Dilution:**	1	**File ID:**	1V.1407291200-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.0400	U	0.0400	0.0400	0.0200

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-04	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW08-072414	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	07/10/2014 15:45
Workgroup #:	WG486133	**Analyst:**	TMM	**Run Date:**	07/29/2014 12:00
Collect Date:	07/24/2014 11:00	**Dilution:**	1	**File ID:**	1V.1407291200-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.227		0.0400	0.0400	0.0200

2.2.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUL-2014
Analyst: TMM
Analyst: NA
Method: FERROUS
Instrument: UV-120-1V
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG486133

Calibration/Linearity	7/10/14
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TMM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
31-JUL-2014

Secondary Reviewer:
31-JUL-2014

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-31-2014 09:37:53

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM3500Fe-B-1997 AAB#: WG486133

Login Number: L14071430

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW11-072414	03	07/24/14					07/29/2014	5.1	7		07/29/14	5.1	7	
67WW08-072414	04	07/24/14					07/29/2014	5	7		07/29/14	5	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3687625
Report generated 07/31/2014 09:17

METHOD BLANK SUMMARY

Login Number: L14071430
Blank File ID: 1V.1407291200-02
Prep Date: 07/29/14 12:00
Analyzed Date: 07/29/14 12:00
Analyst: TMM

Work Group: WG486133
Blank Sample ID: WG486133-01
Instrument ID: UV-120-1V
Method: SM3500Fe-B-1997

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG486133-02	1V.1407291200-03	07/29/14 12:00	
LCS2	WG486133-03	1V.1407291200-04	07/29/14 12:00	
67WW11-072414	L14071430-03	1V.1407291200-05	07/29/14 12:00	
67WW08-072414	L14071430-04	1V.1407291200-06	07/29/14 12:00	
DUP	WG486133-05	1V.1407291200-07	07/29/14 12:00	

Report Name: BLANK_SUMMARY
PDF File ID: 3687626
Report generated 07/31/2014 09:17

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14071430 Prep Date: 07/29/14 12:00 Sample ID: WG486133-01
Instrument ID: UV-120-1V Run Date: 07/29/14 12:00 Prep Method: SM3500Fe-B-1997
File ID: 1V.1407291200-02 Analyst: TMM Method: SM3500Fe-B-1997
Workgroup (AAB#): WG486133 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-120-10-JUL-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Ferrous - Laboratory	0.0200	0.0400	0.0200	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3687627
31-JUL-2014 09:17

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14071430 Analyst: TMM Prep Method: SM3500Fe-B-1997
Instrument ID: UV-120-1V Matrix: Water Method: SM3500Fe-B-1997
Workgroup (AAB#): WG486133 Units: mg/L
QC Key: DOD4 Lot #: STD64714

Sample ID: WG486133-02 LCS File ID: 1V.1407291200-03 Run Date: 07/29/2014 12:00
Sample ID: WG486133-03 LCS2 File ID: 1V.1407291200-04 Run Date: 07/29/2014 12:00

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Iron, Ferrous - Laboratory	0.200	0.202	101	0.200	0.201	101	0.510	75 - 125	25	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3687628
Report generated: 07/31/2014 09:17

2.2.2.3 Raw Data

Curves

Parameter: Ferrous Curve

WG-483708

Spectrophotometer: UV-120-1V

Calibration (Curve) standard stock: Std 63720

Concentration: 100mg/L

Recipe for preparation of curve standards found in:
SOP: 3500 Revision: _____ Page: 8

Second Source Stock: Std 64714 (concentration: 100mg/L)

Daily Preparation: 2(100)/1000

concentration = = 0.2

Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance
0	50	10cm	510	0.003
0.04				0.037
0.08				0.076
0.2				0.192
0.4				0.389
0.6				0.583
2nd Source (2.0)				0.197

Analyst: Tammy Moore

Date/Time: 7/10/14 @ 1545

DCN#103809

Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG483708
Analytical Method: FERROUS
Instrument ID: UV-120-1V

Analyst: TMM
Initial Calibration Date: 07/10/2014

Analyte: FERROUS IRON
Number of Points: 6
Slope: 0.971758
Y-Intercept: -0.000453410
Coef. Of Correlation (R^2): 0.999924
Coef. Of Correlation (R): 0.999962

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00300	0.00	0.00	-0.000453410
0.0400	0.0370	0.00160	0.00148	0.0384169
0.0800	0.0760	0.00640	0.00608	0.0772872
0.200	0.192	0.0400	0.0384	0.193898
0.400	0.389	0.160	0.156	0.388250
0.600	0.583	0.360	0.350	0.582601

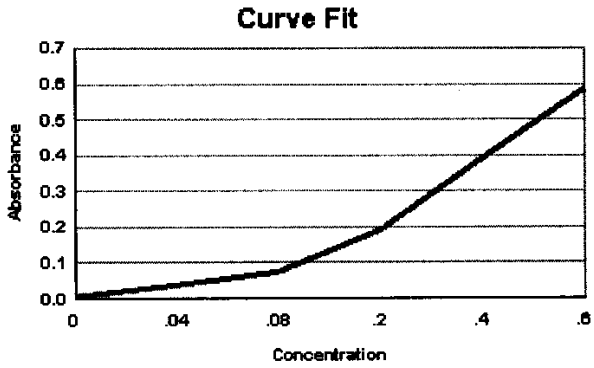

WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 07/10/2014 15:49

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG483708
File ID: 1V.1407101545-07
CCV ID: WG483708-07
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 07/10/2014
Run Time: 15:45
Analyst: TMM
Cal ID: UV-120 - 10-JUL-14 15:45:06

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.2	0.203	0.985	1.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 07/10/2014 15:50

[redacted]

WORKGROUP: WG486133

Ferrous Iron

SM 3500Fe-B

SOP K3500 Revision # 7

Instrument: UV-120-IV

Curve Reference: 7/10/14

CCV: Std 63720
Daily Dilution: 3(100)/1000
Daily Dilution: =0.3

RGTS: 30471
RGTS: 29998
RGTS: 28280

LCS: Std 64714
Daily Dilution: 2(100)/1000
Daily Dilution: =0.2

Spike: SA 64714
Daily Dilution: 0.1(100)/50
Daily Dilution: =0.2

Sample	Blank	Volume (mL)	Dilution	Cell Size (nm)	Absorbance
CCV: 0.3 mg/L	/	50		10cm	0.297
BLANK	/	50			0.002
LCS: 0.2 mg/L	/	50			0.196
LCS DUP: (0.2 mg/L)	/	50			0.195
07-1430 -03	/	50			0.000
04	/	50			0.220
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
DUP: 7-1430 - 03	/	50		10cm	0.001
MS: (0.2) 04	/	50			0.406
MSD: ( )		50			
CCV: (0.3)	/	50			0.292

Analyst: Jenny Morris Date/Time: 7/29/14 @12:00

*Samples were analyzed in the laboratory and not immediately in the field.

DCN#104213

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG486133
Analyte: FERROUS IRON

Analyst: TMM
Date: 07/29/2014

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG486133-01	50	50	0.00200	0.9718	-0.0004534	0.0025247	0.0025247	1	mg/L
WG486133-02	50	50	0.196	0.9718	-0.0004534	0.20216	0.20216	1	mg/L
WG486133-03	50	50	0.195	0.9718	-0.0004534	0.20113	0.20113	1	mg/L
L14071430-03	50	50	0	0.9718	-0.0004534	0.00046659	ND	1	mg/L
WG486133-04	50	50	0	0.9718	-0.0004534	0.00046659	0.00046659	1	mg/L
L14071430-04	50	50	0.220	0.9718	-0.0004534	0.22686	0.22686	1	mg/L
WG486133-06	50	50	0.220	0.9718	-0.0004534	0.22686	0.22686	1	mg/L
WG486133-05	50	50	0.00100	0.9718	-0.0004534	0.0014957	0.0014957	1	mg/L
WG486133-07	50	50	0.406	0.9718	-0.0004534	0.41827	0.41827	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 07/31/2014 07:59

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG486457
File ID: 1V.1407291200-01
CCV ID: WG486457-01
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 07/29/2014
Run Time: 12:00
Analyst: TMM
Cal ID: UV-120 - 24-JUL-14

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.306	0.990	2.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 07/31/2014 08:00

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG486457
File ID: 1V.1407291200-09
CCV ID: WG486457-02
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 07/29/2014
Run Time: 12:00
Analyst: TMM
Cal ID: UV-120 - 24-JUL-14

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.301	0.973	0.3	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 07/31/2014 08:00

[redacted]

2.2.3 Sulfide Data

2.2.3.1 Summary Data

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-03	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW11-072414	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG486169	**Analyst:**	EPT	**Run Date:**	07/29/2014 14:00
Collect Date:	07/24/2014 09:45	**Dilution:**	1	**File ID:**	ET.1407291400-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-04	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW08-072414	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG486169	**Analyst:**	EPT	**Run Date:**	07/29/2014 14:00
Collect Date:	07/24/2014 11:00	**Dilution:**	1	**File ID:**	ET.1407291400-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.2.3.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUL-2014
Analyst: EPT
Analyst: NA
Method: SULFIDE
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG486169

Calibration/Linearity	07/29/14
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
29-JUL-2014

Ethan Tido

Secondary Reviewer:
31-JUL-2014

Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-31-2014 08:31:35

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F-

AAB#: WG486169

Login Number: L14071430

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW11-072414	03	07/24/14					07/29/2014	5.2	7		07/29/14	5.2	7	
67WW08-072414	04	07/24/14					07/29/2014	5.1	7		07/29/14	5.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3686227
Report generated 07/30/2014 15:04

METHOD BLANK SUMMARY

Login Number: L14071430
Blank File ID: ET.1407291400-01
Prep Date: 07/29/14 14:00
Analyzed Date: 07/29/14 14:00
Analyst: EPT

Work Group: WG486169
Blank Sample ID: WG486169-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG486169-02	ET.1407291400-02	07/29/14 14:00	
LCS2	WG486169-03	ET.1407291400-03	07/29/14 14:00	
67WW11-072414	L14071430-03	ET.1407291400-04	07/29/14 14:00	
67WW08-072414	L14071430-04	ET.1407291400-05	07/29/14 14:00	

Report Name: BLANK_SUMMARY
PDF File ID: 3686228
Report generated 07/30/2014 15:04

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14071430 Prep Date: 07/29/14 14:00 Sample ID: WG486169-01
Instrument ID: BURET Run Date: 07/29/14 14:00 Prep Method: SM4500-S-(-2)-F
File ID: ET.1407291400-01 Analyst: EPT Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG486169 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3686230
30-JUL-2014 15:04

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14071430 Analyst: EPT Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG486169 Units: mg/L
QC Key: DOD4 Lot #: STD65694

Sample ID: WG486169-02 LCS File ID: ET.1407291400-02 Run Date: 07/29/2014 14:00
Sample ID: WG486169-03 LCS2 File ID: ET.1407291400-03 Run Date: 07/29/2014 14:00

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	20.6	19.2	93.2	20.6	19.2	93.2	0.00	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3686232
Report generated: 07/30/2014 15:04

2.2.3.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG486169

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: 16

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: Std 65694

Iodine standardization (0.025N) COA: M611
mL 0.025N titrant: ~~0.02495~~ 10.0
Volume I: 10.0 mL
Normality I: 0.02495

(0.1 N I) COA: 17321
mL 0.025 N titrant: ~~0.02495~~ 8.0
Volume I: 2.0 mL
Normality I: 0.0998

Stock standardization (in duplicate) 5.0 mL stock
mL I 1) 10.0 2) 10.0
N I 1) 0.0998 2) 0.0998
mL 0.025 titrant 1) 22.9 2) 22.9
LCS daily dilution: $\frac{(3)(1371.66)}{200}$ = 20.57 mg/L

1371.66 = stock conc (mg/L)

Titrant: T- 1484-04-01

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	~~0.02495~~ N Sodium Thiosulfate (mL)
BLANK	200	15.0	0.02495	15.0
LCS (mL)	200	15.0	0.02495	5.4
LCSDUP (mL)	200	15.0	0.02495	5.4
07-1430-03	490	15.0	0.02495	14.7
-04	480	15.0	0.02495	14.9

Analyst: Ethan Tidd Date/Time: 07/29/14 1400

DCN#104219

Microbac Laboratories Inc.
TITRAMETRIC REPORT

Workgroup (AAB#): WG486169
Product: EPA 376.1\9034
Analyte: Sulfide

Analyst: EPT
Run Date: 07/29/2014 14:00

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG486169-01	200.0	15	.02495	15	.02495	1	0	0	mg/L
WG486169-02	200.0	15	.02495	5.4	.02495	1	19.2	19.16	mg/L
WG486169-03	200.0	15	.02495	5.4	.02495	1	19.2	19.16	mg/L
L14071430-03	490.0	15	.02495	14.7	.02495	1	0.244	ND	mg/L
L14071430-04	480.0	15	.02495	14.9	.02495	1	0.0832	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 07/29/2014 14:29

[redacted]

2.2.4 Total Organic Carbon Data

2.2.4.1 Summary Data

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071430-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW11-072414	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG485904	**Analyst:**	DCM	**Run Date:**	07/28/2014 16:31
Collect Date:	07/24/2014 09:45	**Dilution:**	2	**File ID:**	TC07282014.020
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		49.4		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L14071430-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW11-072414	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG485904	**Analyst:**	DCM	**Run Date:**	07/28/2014 16:31
Collect Date:	07/24/2014 09:45	**Dilution:**	2	**File ID:**	TC07282014.020
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	8.70		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L14071430-04	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-072414	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG485904	**Analyst:**	DCM	**Run Date:**	07/28/2014 16:46
Collect Date:	07/24/2014 11:00	**Dilution:**	2	**File ID:**	TC07282014.021
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		70.9		4.00	2.00	1.00

Certificate of Analysis

Microbac

Lab Report #: L14071430
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Sample #:	L14071430-04	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-072414	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG485904	**Analyst:**	DCM	**Run Date:**	07/28/2014 16:46
Collect Date:	07/24/2014 11:00	**Dilution:**	2	**File ID:**	TC07282014.021
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	7.58		4.00	2.00	1.00

2.2.4.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 28-JUL-2014
Analyst: EPT
Analyst: DCM
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG485904 WG485907

Calibration/Linearity	07/16/14
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
29-JUL-2014

Secondary Reviewer:
29-JUL-2014

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-29-2014 14:40:10

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG485904

Login Number: L14071430

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW11-072414	03	07/24/14					07/28/2014	4.3	28		07/28/14	4.3	28	
67WW08-072414	04	07/24/14					07/28/2014	4.2	28		07/28/14	4.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3683463
Report generated 07/29/2014 14:37

METHOD BLANK SUMMARY

Login Number: L14071430
Blank File ID: TC07282014.003
Prep Date: 07/28/14 12:26
Analyzed Date: 07/28/14 12:26
Analyst: DCM

Work Group: WG485904
Blank Sample ID: WG485904-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG485904-02	TC07282014.004	07/28/14 12:38	01
LCS2	WG485904-03	TC07282014.005	07/28/14 12:50	01
67WW11-072414	L14071430-03	TC07282014.020	07/28/14 16:31	DL01
67WW11-072414	L14071430-03	TC07282014.020	07/28/14 16:31	DL01
67WW08-072414	L14071430-04	TC07282014.021	07/28/14 16:46	DL01
67WW08-072414	L14071430-04	TC07282014.021	07/28/14 16:46	DL01
DUP	WG485904-08	TC07282014.032	07/28/14 19:03	01

Report Name: BLANK_SUMMARY
PDF File ID: 3683464
Report generated 07/29/2014 14:37

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14071430 Prep Date: 07/28/14 12:26 Sample ID: WG485904-01
Instrument ID: TOC-VWP Run Date: 07/28/14 12:26 Prep Method: 415.1
File ID: TC07282014.003 Analyst: DCM Method: 415.1
Workgroup (AAB#): WG485904 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-16-JUL-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3683465
29-JUL-2014 14:37

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14071430 Analyst: DCM Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG485904 Units: mg/L
QC Key: DOD4 Lot #: STD63965

Sample ID: WG485904-02 LCS File ID: TC07282014.004 Run Date: 07/28/2014 12:38
Sample ID: WG485904-03 LCS2 File ID: TC07282014.005 Run Date: 07/28/2014 12:50

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	23.1	92.6	25.0	23.7	94.7	2.31	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3683466
Report generated: 07/29/2014 14:37

2.2.4.3 Raw Data

TC/TIC Curves wg484708

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): see below (5/200)(1000) = 25mg/L

MS (TOC): _____

Calibration Curve Date: _____

Reagent: 30583 / 30943

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 16

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full

☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate

☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC Curve		27	Std 65368		52		
3	TC ICV		28			53	see SOP	
4	TIC ICV		29	TIC Curve		54	for curve	
5			30	Std 65406		55	points	
6			31			56		
7			32			57		
8			33	TC ICV		58	ept 7/16/14	
9			34	Std 63965		59	~~5/200~~ 5/200	(1000)
10			35			60		=25mg/L
11			36	TIC ICV		61		
12			37	Std 65405		62		
13			38			63		
14	all points		39	analyzed	in	64	duplicate	
15			40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: Ethan Todd / Deanne Hesson

Date/Time: 07/16/14 0930 + 7/17

DCN#103908

C:\TOC3201\Data\07-16-2014-DIH-CURVE.t32

	Anal	Sample Name	Result	Status	Date / Time
1	TC	TCCURVE		Completed	7/16/2014 12:06:36 PM
2	TC	TC ICV	TC:24.54mg/L	Completed	7/16/2014 1:33:15 PM
3	IC	TICCURVE		Completed	7/17/2014 12:33:06 PM
4	IC	TIC ICV	IC:25.59mg/L	Completed	7/17/2014 12:47:00 PM

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-07-16-2014.2014_07_16_11_05_11.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	5.492	500uL	1	*******		7/16/2014 11:08:39 AM
2	4.691	500uL	1	*******		7/16/2014 11:12:03 AM

Acid Add. 0.000%
Mean Area 5.091

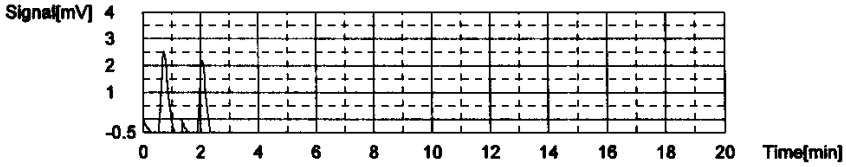

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	51.17	500uL	1	*******		7/16/2014 11:17:40 AM
2	51.30	500uL	1	*******		7/16/2014 11:21:41 AM

Acid Add. 0.000%
Mean Area 51.23

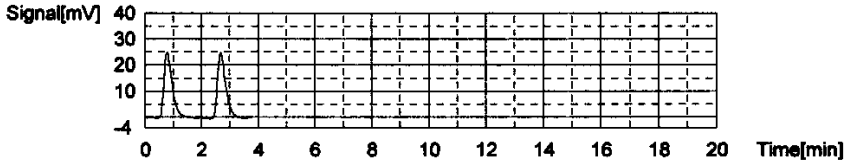

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	184.4	500uL	1	*******		7/16/2014 11:27:31 AM
2	188.1	500uL	1	*******		7/16/2014 11:31:40 AM

Acid Add. 0.000%
Mean Area 186.3

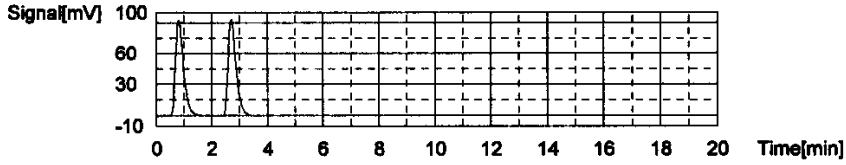

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	371.5	500uL	1	*******		7/16/2014 11:37:40 AM
2	397.8	500uL	1	*******		7/16/2014 11:42:09 AM

Acid Add. 0.000%
Mean Area 384.6

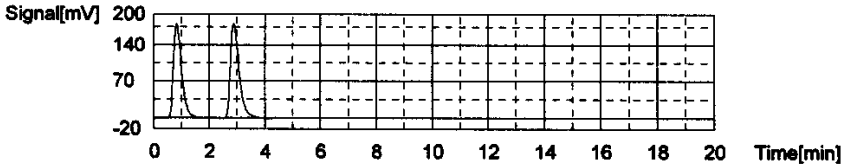

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	928.1	500uL	1	*******		7/16/2014 11:48:37 AM
2	992.4	500uL	1	*******		7/16/2014 11:53:28 AM

Acid Add. 0.000%
Mean Area 960.3

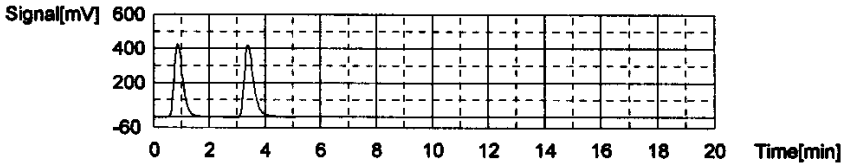

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1809	500uL	1	*******		7/16/2014 12:00:11 PM
2	2029	500uL	1	*******		7/16/2014 12:06:36 PM

Acid Add. 0.000%
Mean Area 1919

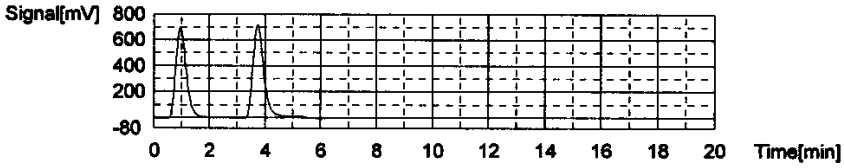

Slope: 38.27
Intercept 3.929
r^2 0.999938 ✓
Zero Shift No

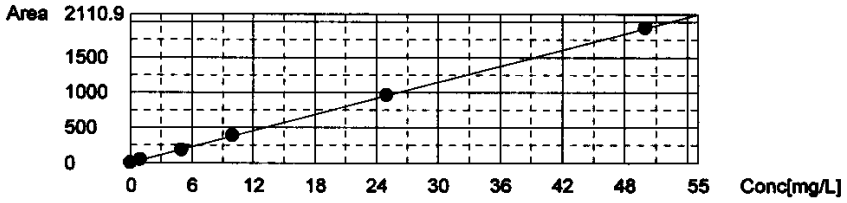

Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-07-16-2014.csl
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:24.54mg/L

= 98%

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	966.9	25.16mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/16/2014 1:28:24 PM
2	919.5	23.92mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/16/2014 1:33:15 PM

Mean Area 943.2
Mean Conc. 24.54mg/L

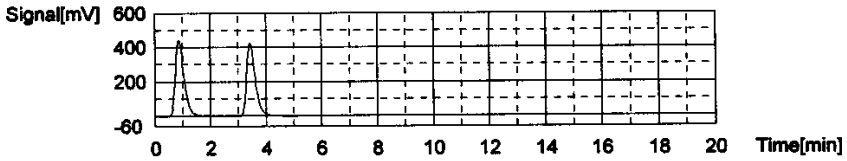

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-A-07-17-2014.2014_07_17_11_16_59.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	7.193	500uL	1	*******		7/17/2014 11:21:04 AM
2	6.644	500uL	1	*******		7/17/2014 11:25:12 AM

Acid Add. 10.00%
Mean Area 6.918

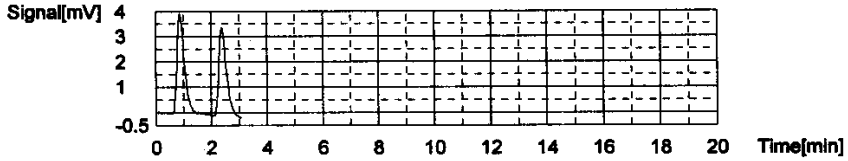

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	49.75	500uL	1	*******		7/17/2014 11:32:57 AM
2	50.58	500uL	1	*******		7/17/2014 11:37:28 AM

Acid Add. 10.00%
Mean Area 50.17

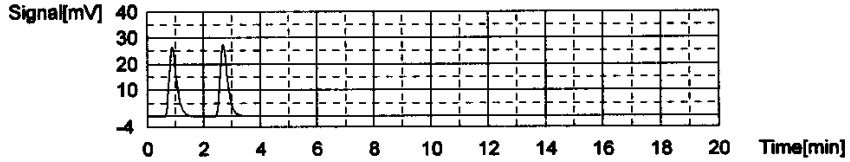

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	98.15	500uL	1	*******		7/17/2014 11:46:02 AM
2	158.0	500uL	1	*******		7/17/2014 11:50:52 AM

Acid Add. 10.00%
Mean Area 128.1

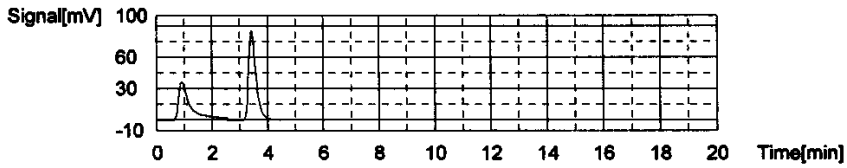

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	313.9	500uL	1	*******		7/17/2014 11:59:03 AM
2	314.5	500uL	1	*******		7/17/2014 12:04:02 PM

Acid Add. 10.00%
Mean Area 314.2

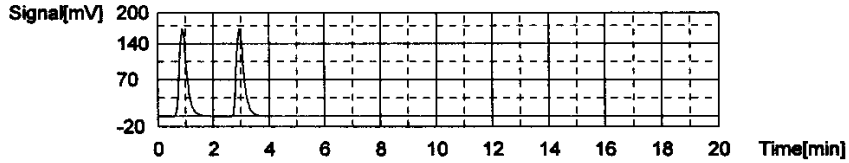

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	774.3	500uL	1	*******		7/17/2014 12:12:42 PM
2	781.8	500uL	1	*******		7/17/2014 12:17:58 PM

Acid Add. 10.00%
Mean Area 778.1

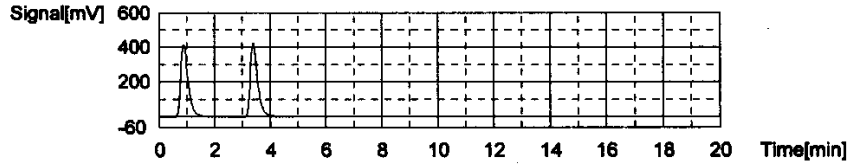

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1490	500uL	1	*******		7/17/2014 12:27:11 PM
2	1503	500uL	1	*******		7/17/2014 12:33:06 PM

Acid Add. 10.00%
Mean Area 1497

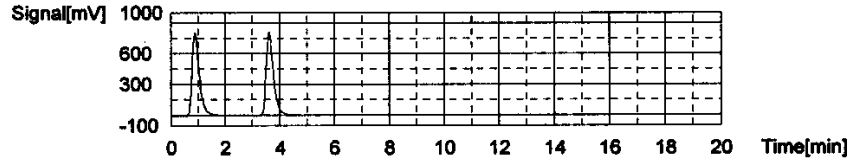

Slope: 29.95
Intercept 8.025
r^2 0.999041 ✓
Zero Shift No

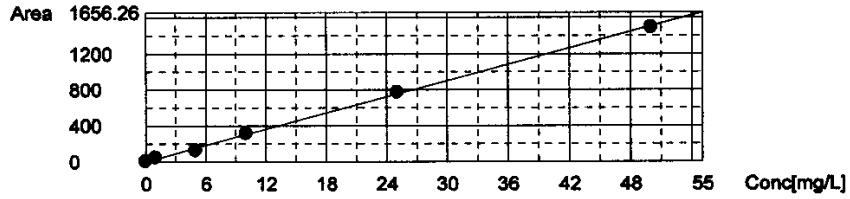

Sample

Sample Name: TIC ICV
Sample ID: Untitled
Origin: TICCURVE-A-07-17-2014.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:25.59mg/L

=102%

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	775.9	25.64mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/17/2014 12:41:44 PM
2	773.4	25.55mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/17/2014 12:47:00 PM

Mean Area 774.7
Mean Conc. 25.59mg/L

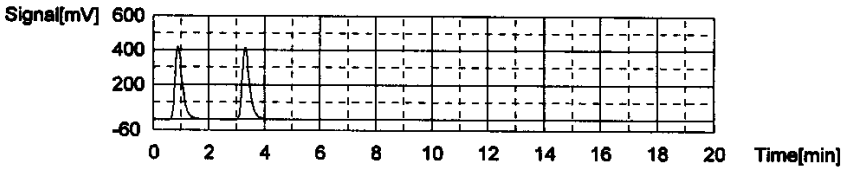

WORKGROUP: WG485904 (WG485907)

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 65368 (5/200)(1000) = 25mg/L

LCS (TOC): Std 63965 (5/200)(1000) = 25mg/L

CCV (TIC): Std 65405 (5/200)(1000) = 25mg/L

MS (TOC): Std 63965 (.4)(1000)/40 = 10

Calibration Curve Date: 7/16/14

Reagent: 30851, 30943

☒ SM5310-C : Matrix 2 WG 485907

☒ EPA 415.1/9060A(mod): Matrix 1 WG 485904 SOP: K 4151 Rev. 16

WG _____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☒ drain reservoir filled
☒ ASI water bottle full
☒ dilution water bottle full
☒ 3rd bottle full
☒ sufficient gas
☒ sufficient persulfate
☒ sufficient acid
☒ waste container

Position	Sample ID	Dilution
1	ICV	
2	CCV	
3	Blk	
4	LCS	
5	LCSDUP	
6	07-1203-01	1/3
7	07-1289-01	
8	07-1363-01	
9	-02	
10	-03	
11	-04	
12	07-1426-01	
13	-02	
14	CCV	
15	CCB	
16	-03	
17	-04	
18	-06	
19	-07	
20	07-1430-03	1/2
21	-04	1/2
22	07-1470-01	
23	ref -04	
24	ms -05	
25	msd -06	

Position	Sample ID	Dilution
26	CCV	
27	CCB	
28	07-1470-13	
29	-16	
30	-19	
31	-22	
32	DUP 1470-22	
33	~~MS~~ Blk	
34	LCS	
35	LCSDUP	
36	07-1449-01	
37	-02	
38	CCV	
39	CCB	
40	07-1470-25	
41	-28	
42	-31	
43	07-1480-03	
44	-08	
45	-13	
46	-18	
47	-23	
48	-28	
49	07-1508-01	
50	CCV	

Position	Sample ID	Dilution
51	CCB	
52	DUP 1449-01	
53	MS 1449-01	
54	~~CCV~~ 1289-01	1/2
55	~~CCB~~ 1426-06	1/2
56	CCV	
57	CCB	
58		
59		
60		
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		

Analyst: Ethan Tidd / David Merkle Date/Time: 07/28/14 1100

DCN#104179

C:\TOC3201\Data\07-28-2014-EPT-TOC.t32

	Anal	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	TOC:0.6110mg/L TC:25.22mg/L IC:24.60mg/L	Completed	7/28/2014 12:09:05 PM	1
2	TOC	CCV	!!Error!! TOC:23.23mg/L TC:23.18mg/L IC:-0.05030mg/L	Completed	7/28/2014 12:21:35 PM	2
3	TOC	WG485904-01 BLK	!!Error!! TOC:0.1748mg/L TC:0.1354mg/L IC:-0.03948mg/L	Completed	7/28/2014 12:30:33 PM	0
4	TOC	WG485904-02 LCS	!!Error!! TOC:23.14mg/L TC:23.04mg/L IC:-0.09383mg/L	Completed	7/28/2014 12:42:54 PM	4
5	TOC	WG485904-03 LCSDUP	!!Error!! TOC:23.68mg/L TC:23.59mg/L IC:-0.09477mg/L	Completed	7/28/2014 12:55:05 PM	5
6	TOC	L14071203-01 (3)	TOC:15.95mg/L TC:19.35mg/L IC:3.404mg/L	Completed	7/28/2014 1:08:30 PM	6
7	TOC		!!Error!! TOC:-4.823mg/L TC:63.65mg/L IC:68.47mg/L	Completed	7/28/2014 1:23:25 PM	7
8	TOC	L14071363-01	TOC:2.718mg/L TC:29.08mg/L IC:26.36mg/L	Completed	7/28/2014 1:36:45 PM	8
9	TOC	L14071363-02	TOC:5.379mg/L TC:22.76mg/L IC:17.38mg/L	Completed	7/28/2014 1:50:15 PM	9
10	TOC	L14071363-03	TOC:0.6196mg/L TC:2.560mg/L IC:1.940mg/L	Completed	7/28/2014 2:02:10 PM	10
11	TOC	L14071363-04	TOC:0.5498mg/L TC:1.974mg/L IC:1.424mg/L	Completed	7/28/2014 2:14:03 PM	11
12	TOC	L14071426-01	TOC:2.422mg/L TC:5.787mg/L IC:3.364mg/L	Completed	7/28/2014 2:26:19 PM	12
13	TOC	L14071426-02	TOC:1.160mg/L TC:19.66mg/L IC:18.50mg/L	Completed	7/28/2014 2:39:18 PM	13
14	TOC	CCV	TOC:25.12mg/L TC:25.15mg/L IC:0.03226mg/L	Completed	7/28/2014 2:51:33 PM	14
15	TOC	CCB	!!Error!! TOC:0.1381mg/L TC:0.09660mg/L IC:-0.04145mg/	Completed	7/28/2014 3:00:39 PM	0
16	TOC	L14071426-03	TOC:0.7051mg/L TC:1.868mg/L IC:1.163mg/L	Completed	7/28/2014 3:12:27 PM	16
17	TOC	L14071426-04	TOC:0.5767mg/L TC:1.915mg/L IC:1.338mg/L	Completed	7/28/2014 3:24:12 PM	17
18	TOC		TOC:1.317mg/L TC:57.17mg/L IC:55.85mg/L	Completed	7/28/2014 3:39:09 PM	18
19	TOC	L14071426-07	TOC:3.658mg/L TC:31.88mg/L IC:28.22mg/L	Completed	7/28/2014 3:52:49 PM	19
20	TOC	L14071430-03 (2)	TOC:4.348mg/L TC:29.06mg/L IC:24.71mg/L	Completed	7/28/2014 4:37:05 PM	20
21	TOC	L14071430-04 (2)	TOC:3.791mg/L TC:39.25mg/L IC:35.45mg/L	Completed	7/28/2014 4:51:58 PM	21
22	TOC	L14071470-01	TOC:1.221mg/L TC:14.54mg/L IC:13.32mg/L	Completed	7/28/2014 5:08:42 PM	22
23	TOC	L14071470-04	TOC:0.6793mg/L TC:7.926mg/L IC:7.247mg/L	Completed	7/28/2014 5:21:03 PM	23
24	TOC	WG485904-05 MS	TOC:10.29mg/L TC:14.50mg/L IC:4.209mg/L	Completed	7/28/2014 5:33:38 PM	24
25	TOC	WG485904-06 MSD	TOC:10.07mg/L TC:13.99mg/L IC:3.919mg/L	Completed	7/28/2014 5:46:03 PM	25
26	TOC	CCV	TOC:23.25mg/L TC:23.26mg/L IC:0.00475mg/L	Completed	7/28/2014 5:58:19 PM	26
27	TOC	CCB	!!Error!! TOC:0.1270mg/L TC:0.08900mg/L IC:-0.03805mg/	Completed	7/28/2014 6:07:17 PM	0
28	TOC	L14071470-13	TOC:0.9220mg/L TC:6.860mg/L IC:5.938mg/L	Completed	7/28/2014 6:19:36 PM	28
29	TOC	L14071470-16	TOC:0.8832mg/L TC:6.171mg/L IC:5.287mg/L	Completed	7/28/2014 6:32:05 PM	29
30	TOC	L14071470-19	TOC:0.9800mg/L TC:6.291mg/L IC:5.311mg/L	Completed	7/28/2014 6:44:32 PM	30
31	TOC	L14071470-22	TOC:0.9944mg/L TC:6.095mg/L IC:5.100mg/L	Completed	7/28/2014 6:56:42 PM	31
32	TOC	WG485904-08	TOC:0.8726mg/L TC:5.536mg/L IC:4.663mg/L	Completed	7/28/2014 7:09:01 PM	32
33	TOC	WG485907-01 BLK	!!Error!! TOC:0.1233mg/L TC:0.08863mg/L IC:-0.03466mg/	Completed	7/28/2014 7:25:31 PM	0
34	TOC	WG485907-02 LCS	!!Error!! TOC:23.79mg/L TC:23.75mg/L IC:-0.03579mg/L	Completed	7/28/2014 7:46:57 PM	34
35	TOC	WG485907-03 LCSDUP	!!Error!! TOC:23.90mg/L TC:23.86mg/L IC:-0.04149mg/L	Completed	7/28/2014 8:08:08 PM	35
36	TOC	L14071449-01	TOC:6.312mg/L TC:12.87mg/L IC:6.558mg/L	Completed	7/28/2014 8:31:10 PM	36
37	TOC	L14071449-02	TOC:6.571mg/L TC:11.76mg/L IC:5.191mg/L	Completed	7/28/2014 8:54:59 PM	37
38	TOC	CCV	TOC:25.62mg/L TC:25.63mg/L IC:0.00595mg/L	Completed	7/28/2014 9:07:19 PM	38
39	TOC	CCB	!!Error!! TOC:0.1388mg/L TC:0.1010mg/L IC:-0.03778mg/L	Completed	7/28/2014 9:16:17 PM	0
40	TOC	L14071470-25	TOC:1.242mg/L TC:6.074mg/L IC:4.832mg/L	Completed	7/28/2014 9:37:18 PM	40
41	TOC	L14071470-28	TOC:0.9960mg/L TC:5.212mg/L IC:4.216mg/L	Completed	7/28/2014 9:58:13 PM	41
42	TOC	L14071470-31	TOC:1.052mg/L TC:5.834mg/L IC:4.782mg/L	Completed	7/28/2014 10:20:03 PM	42
43	TOC	L14071480-03	TOC:0.8196mg/L TC:8.960mg/L IC:8.140mg/L	Completed	7/28/2014 10:42:25 PM	43
44	TOC	L14071480-08	TOC:1.030mg/L TC:5.515mg/L IC:4.484mg/L	Completed	7/28/2014 11:03:28 PM	44
45	TOC	L14071480-13	TOC:0.9842mg/L TC:4.569mg/L IC:3.585mg/L	Completed	7/28/2014 11:25:13 PM	45
46	TOC	L14071480-18	TOC:0.9905mg/L TC:4.829mg/L IC:3.838mg/L	Completed	7/28/2014 11:45:53 PM	46
47	TOC	L14071480-23	TOC:1.976mg/L TC:2.036mg/L IC:0.06036mg/L	Completed	7/29/2014 12:06:07 AM	47
48	TOC	L14071480-28	TOC:1.854mg/L TC:1.896mg/L IC:0.04179mg/L	Completed	7/29/2014 12:26:00 AM	48
49	TOC	L14071508-01	TOC:6.418mg/L TC:10.73mg/L IC:4.316mg/L	Completed	7/29/2014 12:48:32 AM	49
50	TOC	CCV	!!Error!! TOC:26.11mg/L TC:26.10mg/L IC:-0.00533mg/L	Completed	7/29/2014 1:01:05 AM	50
51	TOC	CCB	!!Error!! TOC:0.1493mg/L TC:0.1088mg/L IC:-0.04045mg/L	Completed	7/29/2014 1:10:06 AM	0
52	TOC	WG485907-05 DUP	TOC:6.382mg/L TC:9.110mg/L IC:2.728mg/L	Completed	7/29/2014 1:33:49 AM	52
53	TOC	WG485907-06 MS	TOC:17.66mg/L TC:23.39mg/L IC:5.735mg/L	Completed	7/29/2014 1:57:50 AM	53
54	TOC	L14071289-01 (2)	TOC:1.687mg/L TC:11.55mg/L IC:9.858mg/L	Completed	7/29/2014 2:10:29 AM	54
55	TOC	L14071426-06 (2)	TOC:1.909mg/L TC:10.01mg/L IC:8.105mg/L	Completed	7/29/2014 2:23:22 AM	55
56	TOC	CCV	TOC:24.55mg/L TC:24.55mg/L IC:0.00422mg/L	Completed	7/29/2014 2:35:54 AM	56
57	TOC	CCB	!!Error!! TOC:0.1387mg/L TC:0.1096mg/L IC:-0.02907mg/L	Completed	7/29/2014 2:44:52 AM	0

7/29/2014 8:18:20 AM 1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.6110mg/L TC:25.22mg/L IC:24.60mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	969.0	25.22mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 12:03:32 PM

Mean Area 969.0
Mean Conc. 25.22mg/L

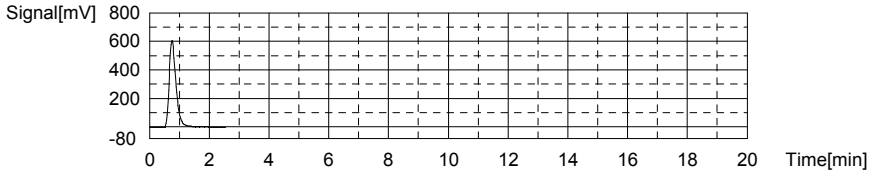

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	745.0	24.60mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 12:09:05 PM

Mean Area 745.0
Mean Conc. 24.60mg/L

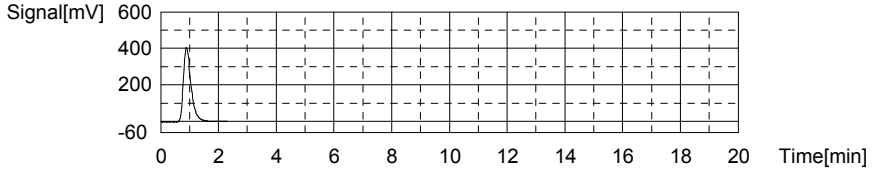

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.23mg/L TC:23.18mg/L IC:-0.05030mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	891.0	23.18mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 12:17:10 PM

Mean Area 891.0
Mean Conc. 23.18mg/L

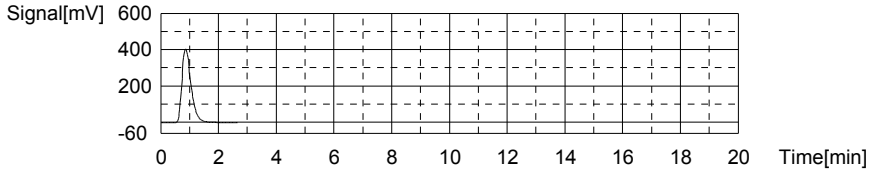

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.518	-0.05030mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 12:21:35 PM

Mean Area 6.518
Mean Conc. -0.05030mg/L

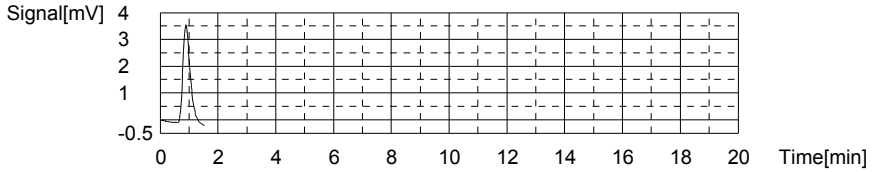

Sample

Sample Name: WG485904-01 BLK
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1748mg/L TC:0.1354mg/L IC:-0.03948mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.109	0.1354mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 12:26:36 PM

Mean Area 9.109
Mean Conc. 0.1354mg/L

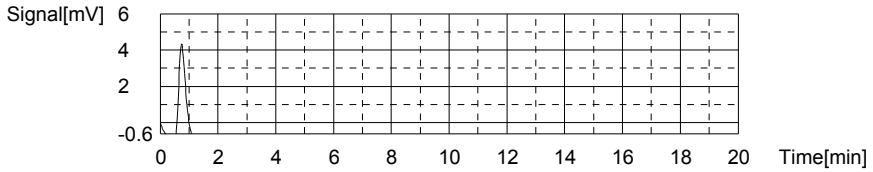

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.842	-0.03948mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 12:30:33 PM

Mean Area 6.842
Mean Conc. -0.03948mg/L

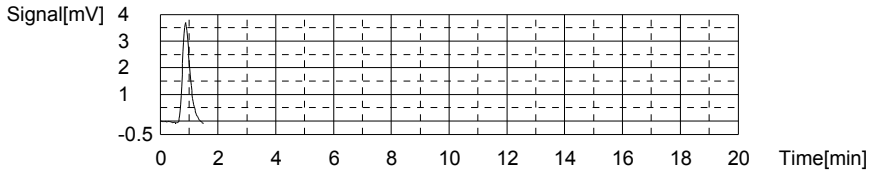

Sample

Sample Name: WG485904-02 LCS
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.14mg/L TC:23.04mg/L IC:-0.09383mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	885.9	23.04mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 12:38:30 PM

Mean Area 885.9
Mean Conc. 23.04mg/L

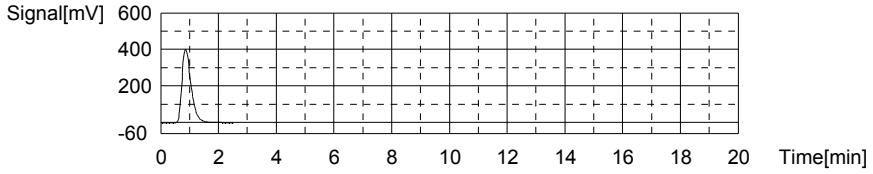

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.214	-0.09383mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 12:42:54 PM

Mean Area 5.214
Mean Conc. -0.09383mg/L

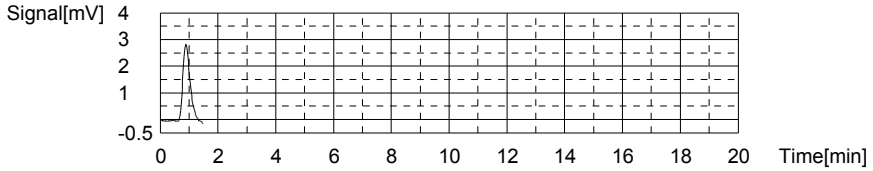

Sample

Sample Name: WG485904-03 LCSDUP
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.68mg/L TC:23.59mg/L IC:-0.09477mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	906.7	23.59mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 12:50:40 PM

Mean Area 906.7
Mean Conc. 23.59mg/L

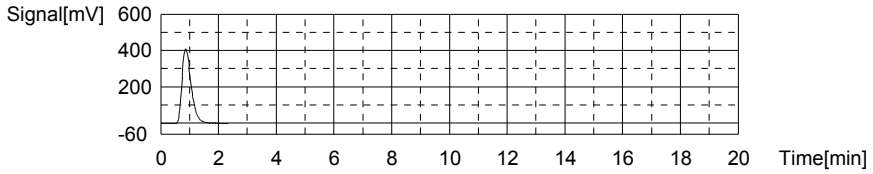

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.186	-0.09477mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 12:55:05 PM

Mean Area 5.186
Mean Conc. -0.09477mg/L

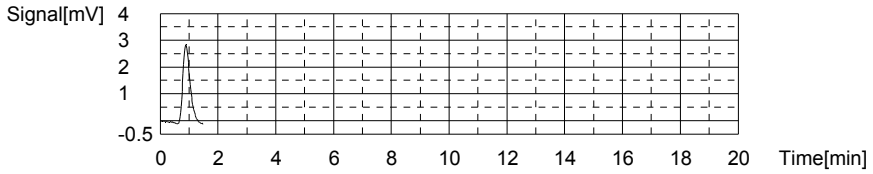

Sample

Sample Name: L14071203-01 (3)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.95mg/L TC:19.35mg/L IC:3.404mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	744.7	19.35mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 1:03:36 PM

Mean Area 744.7
Mean Conc. 19.35mg/L

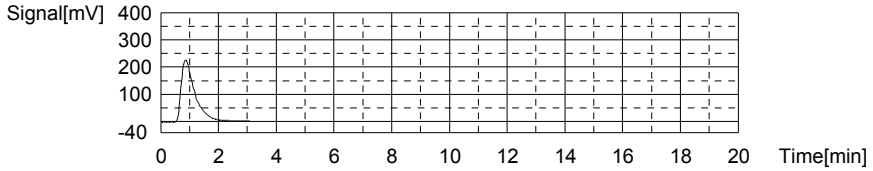

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	110.0	3.404mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 1:08:30 PM

Mean Area 110.0
Mean Conc. 3.404mg/L

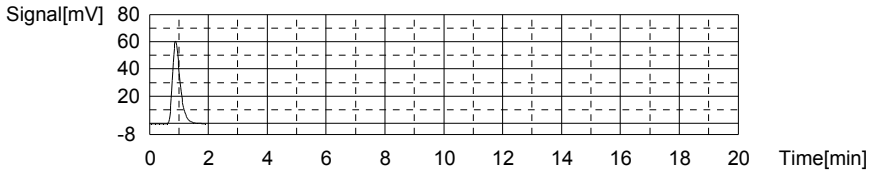

Sample

Sample Name:
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-4.823mg/L TC:63.65mg/L IC:68.47mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2440	63.65mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 1:16:55 PM

Mean Area 2440
Mean Conc. 63.65mg/L

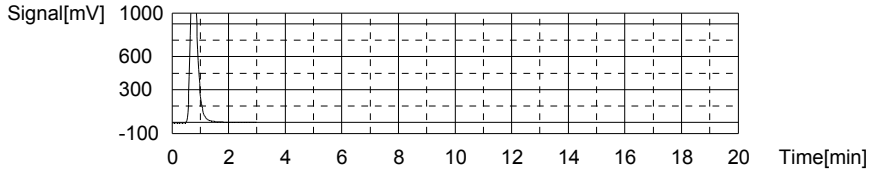

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2059	68.47mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 1:23:25 PM

Mean Area 2059
Mean Conc. 68.47mg/L

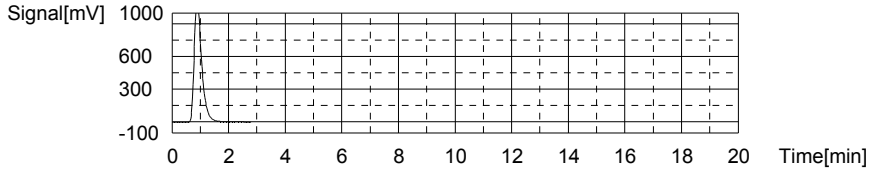

Sample

Sample Name: L14071363-01
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.718mg/L TC:29.08mg/L IC:26.36mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1117	29.08mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 1:31:07 PM

Mean Area 1117
Mean Conc. 29.08mg/L

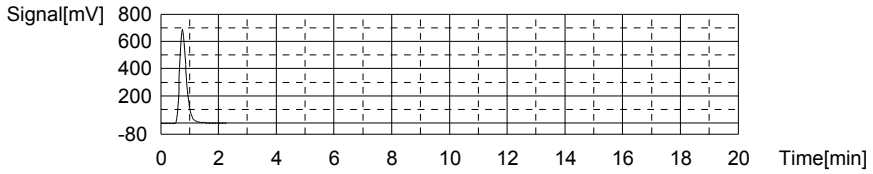

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	797.7	26.36mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 1:36:45 PM

Mean Area 797.7
Mean Conc. 26.36mg/L

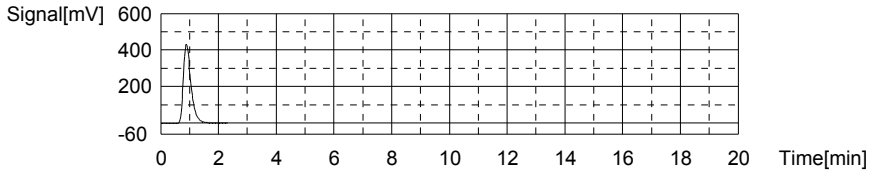

Sample

Sample Name: L14071363-02
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.379mg/L TC:22.76mg/L IC:17.38mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	875.1	22.76mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 1:44:56 PM

Mean Area 875.1
Mean Conc. 22.76mg/L

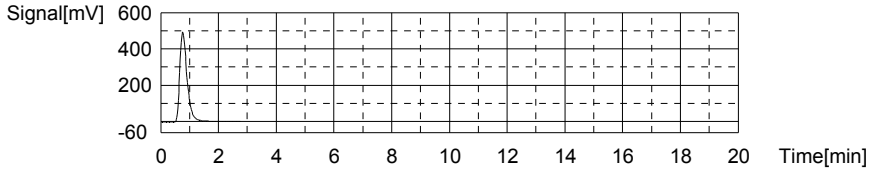

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	528.7	17.38mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 1:50:15 PM

Mean Area 528.7
Mean Conc. 17.38mg/L

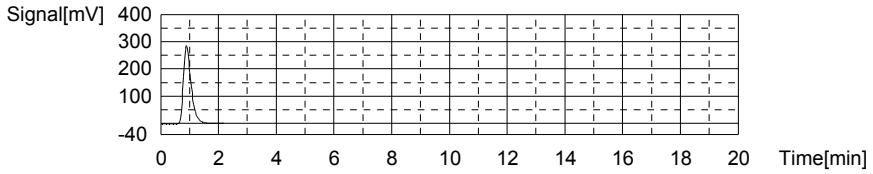

Sample

Sample Name: L14071363-03
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.6196mg/L TC:2.560mg/L IC:1.940mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	101.9	2.560mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 1:57:23 PM

Mean Area 101.9
Mean Conc. 2.560mg/L

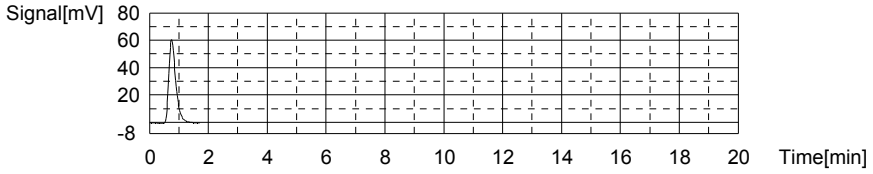

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	66.14	1.940mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 2:02:10 PM

Mean Area 66.14
Mean Conc. 1.940mg/L

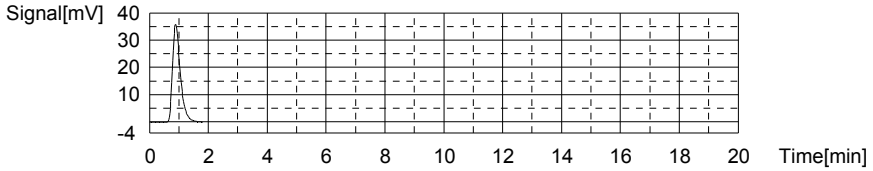

Sample

Sample Name: L14071363-04
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.5498mg/L TC:1.974mg/L IC:1.424mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	79.49	1.974mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 2:09:16 PM

Mean Area 79.49
Mean Conc. 1.974mg/L

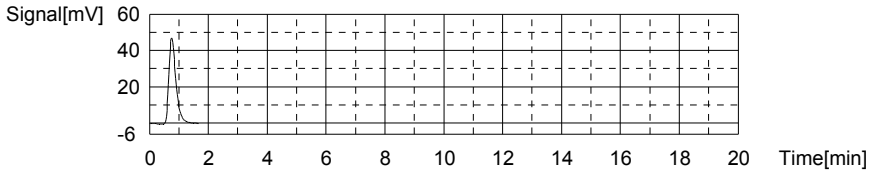

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	50.69	1.424mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 2:14:03 PM

Mean Area 50.69
Mean Conc. 1.424mg/L

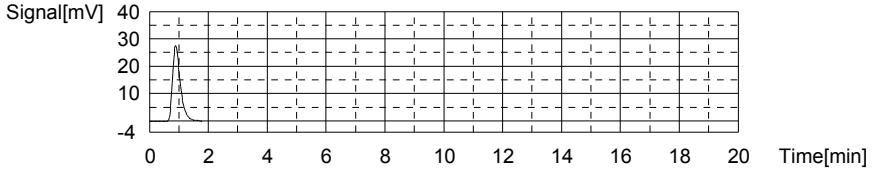

Sample

Sample Name: L14071426-01
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.422mg/L TC:5.787mg/L IC:3.364mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	225.4	5.787mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 2:21:28 PM

Mean Area 225.4
Mean Conc. 5.787mg/L

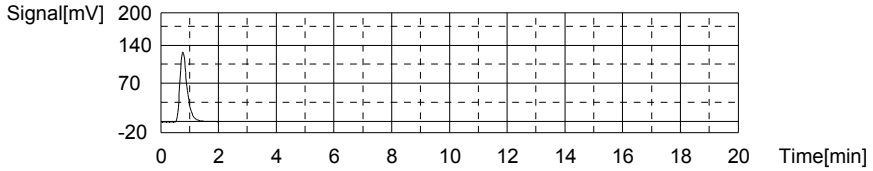

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	108.8	3.364mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 2:26:19 PM

Mean Area 108.8
Mean Conc. 3.364mg/L

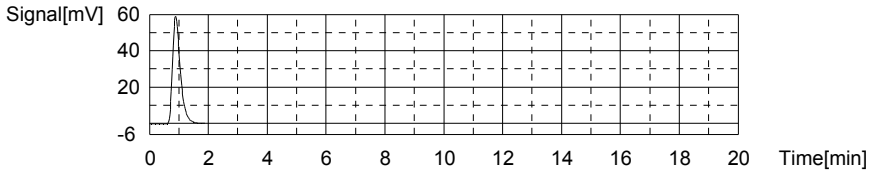

Sample

Sample Name: L14071426-02
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.160mg/L TC:19.66mg/L IC:18.50mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	756.3	19.66mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 2:33:57 PM

Mean Area 756.3
Mean Conc. 19.66mg/L

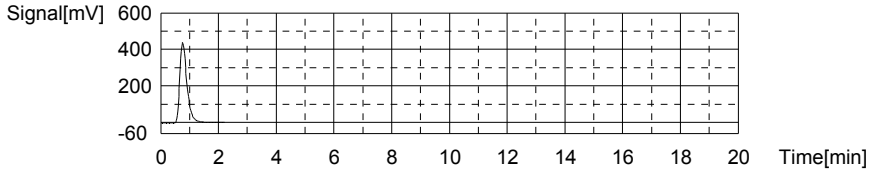

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	562.1	18.50mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 2:39:18 PM

Mean Area 562.1
Mean Conc. 18.50mg/L

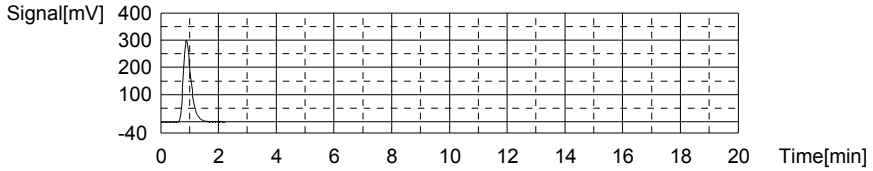

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.12mg/L TC:25.15mg/L IC:0.03226mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	966.6	25.15mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 2:47:08 PM

Mean Area 966.6
Mean Conc. 25.15mg/L

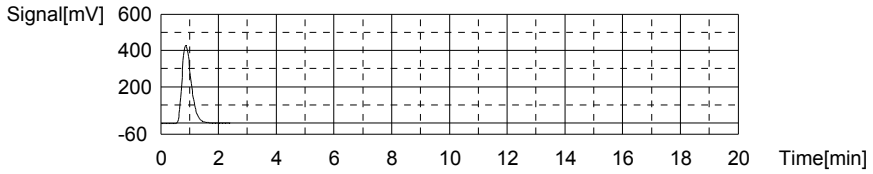

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.991	0.03226mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 2:51:33 PM

Mean Area 8.991
Mean Conc. 0.03226mg/L

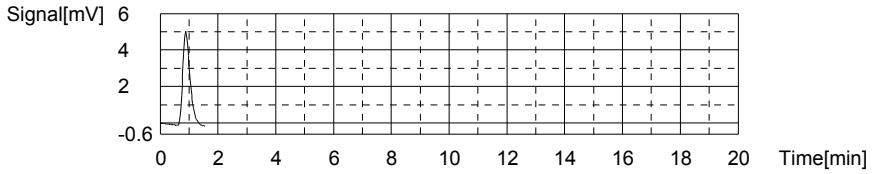

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1381mg/L TC:0.09660mg/L IC:-0.04145mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.626	0.09660mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 2:56:33 PM

Mean Area 7.626
Mean Conc. 0.09660mg/L

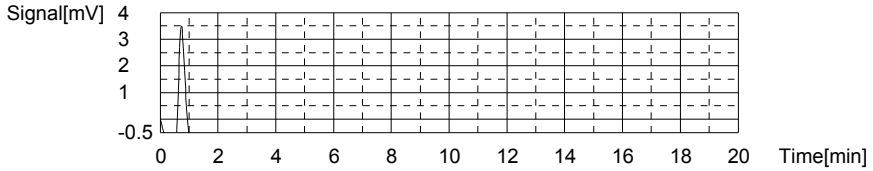

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.783	-0.04145mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 3:00:39 PM

Mean Area 6.783
Mean Conc. -0.04145mg/L

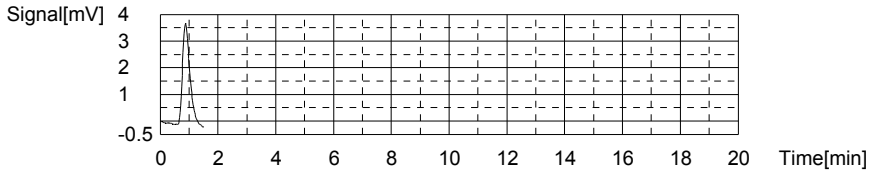

Sample

Sample Name: L14071426-03
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.7051mg/L TC:1.868mg/L IC:1.163mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	75.44	1.868mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 3:07:46 PM

Mean Area 75.44
Mean Conc. 1.868mg/L

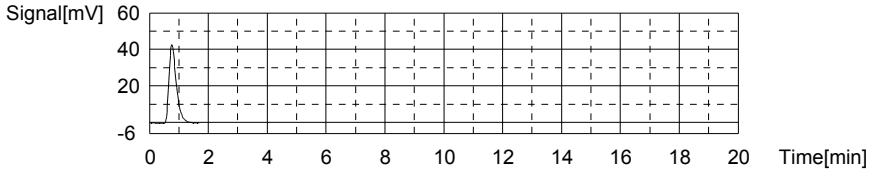

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	42.87	1.163mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 3:12:27 PM

Mean Area 42.87
Mean Conc. 1.163mg/L

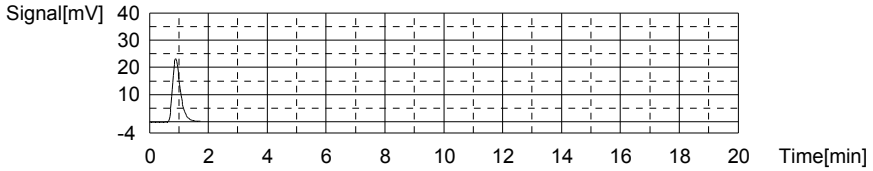

Sample

Sample Name: L14071426-04
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.5767mg/L TC:1.915mg/L IC:1.338mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	77.21	1.915mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 3:19:32 PM

Mean Area 77.21
Mean Conc. 1.915mg/L

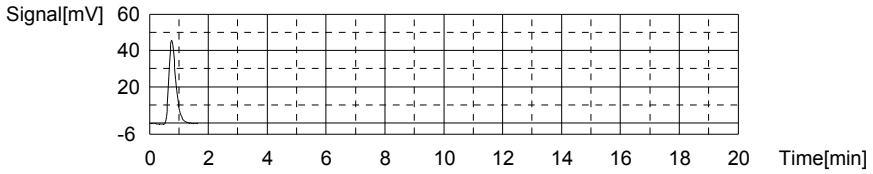

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	48.10	1.338mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 3:24:12 PM

Mean Area 48.10
Mean Conc. 1.338mg/L

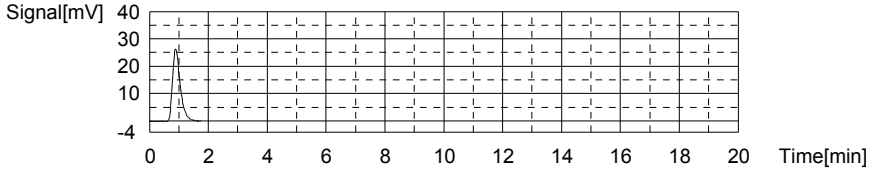

Sample

Sample Name:
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.317mg/L TC:57.17mg/L IC:55.85mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2192	57.17mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 3:32:49 PM

Mean Area 2192
Mean Conc. 57.17mg/L

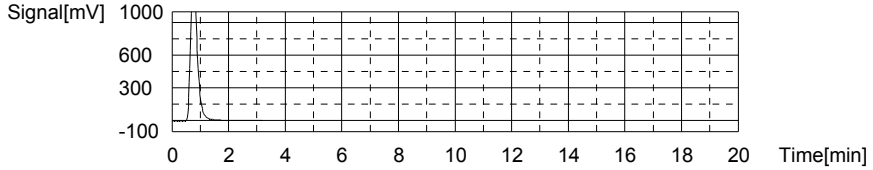

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1681	55.85mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 3:39:09 PM

Mean Area 1681
Mean Conc. 55.85mg/L

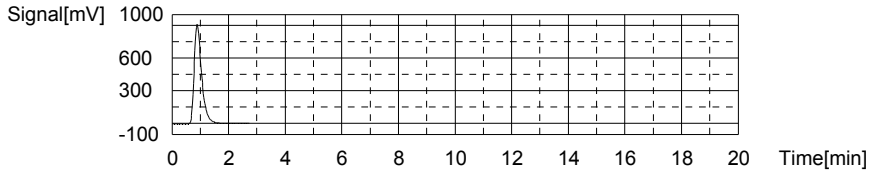

Sample

Sample Name: L14071426-07
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.658mg/L TC:31.88mg/L IC:28.22mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1224	31.88mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 3:47:03 PM

Mean Area 1224
Mean Conc. 31.88mg/L

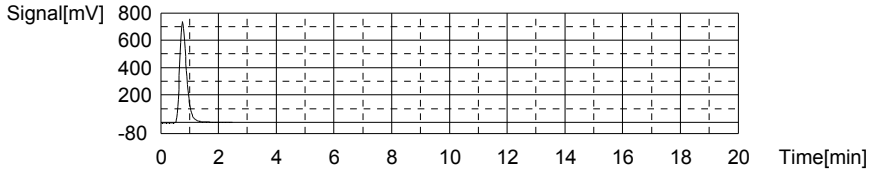

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	853.3	28.22mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 3:52:49 PM

Mean Area 853.3
Mean Conc. 28.22mg/L

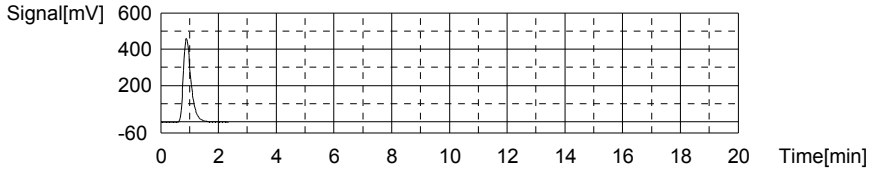

Sample

Sample Name: L14071430-03 (2)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.348mg/L TC:29.06mg/L IC:24.71mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1116	29.06mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 4:31:29 PM

Mean Area 1116
Mean Conc. 29.06mg/L

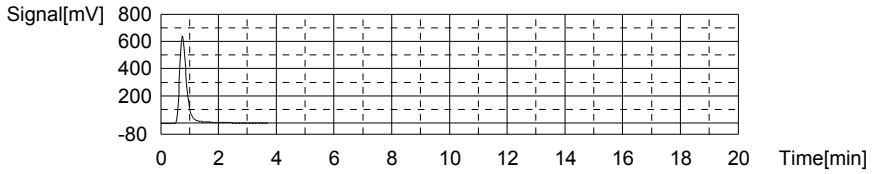

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	748.1	24.71mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 4:37:05 PM

Mean Area 748.1
Mean Conc. 24.71mg/L

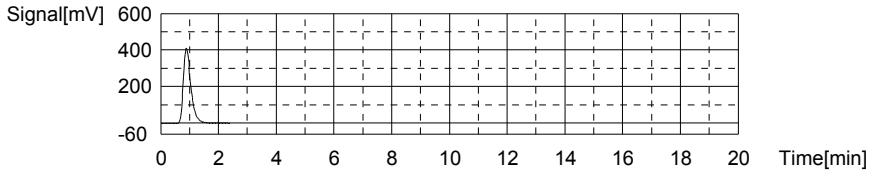

Sample

Sample Name: L14071430-04 (2)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.791mg/L TC:39.25mg/L IC:35.45mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1506	39.25mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 4:46:04 PM

Mean Area 1506
Mean Conc. 39.25mg/L

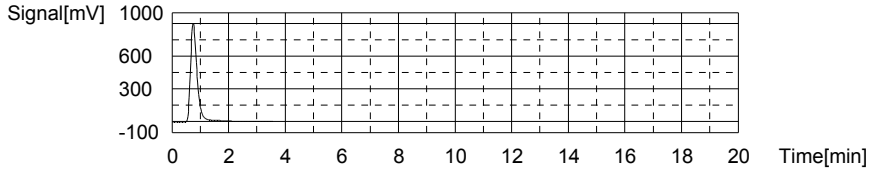

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1070	35.45mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 4:51:58 PM

Mean Area 1070
Mean Conc. 35.45mg/L

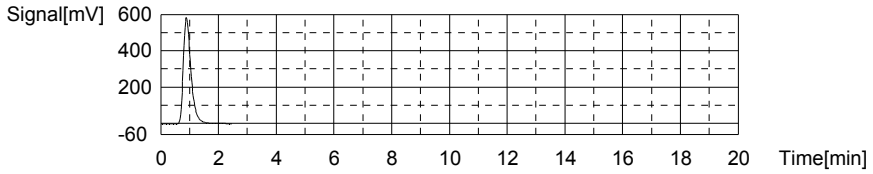

Sample

Sample Name: L14071470-01
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.221mg/L TC:14.54mg/L IC:13.32mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	560.6	14.54mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 5:03:20 PM

Mean Area 560.6
Mean Conc. 14.54mg/L

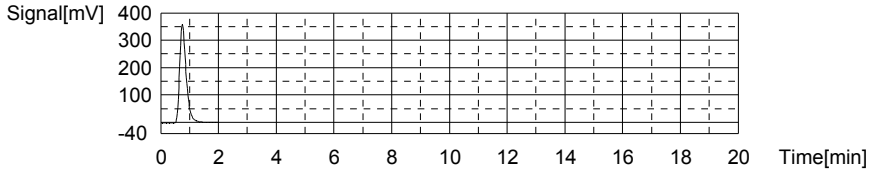

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	407.1	13.32mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 5:08:42 PM

Mean Area 407.1
Mean Conc. 13.32mg/L

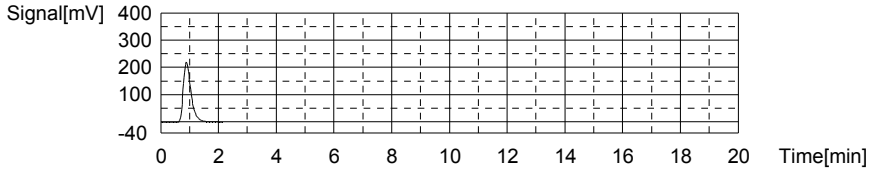

Sample

Sample Name: L14071470-04
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.6793mg/L TC:7.926mg/L IC:7.247mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	307.3	7.926mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 5:15:58 PM

Mean Area 307.3
Mean Conc. 7.926mg/L

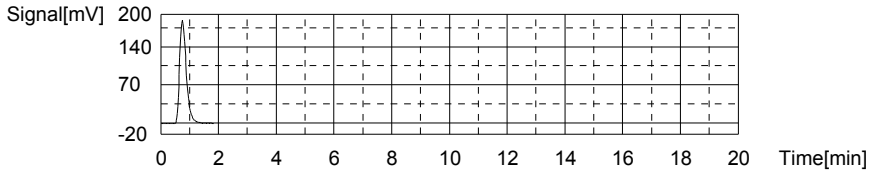

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	225.1	7.247mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 5:21:03 PM

Mean Area 225.1
Mean Conc. 7.247mg/L

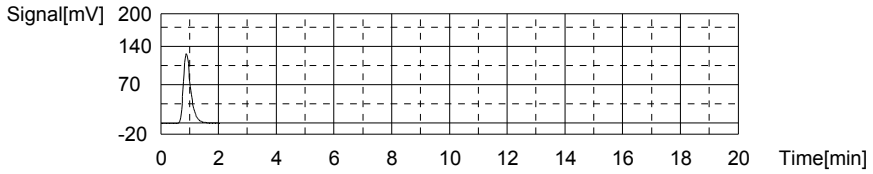

Sample

Sample Name: WG485904-05 MS
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.29mg/L TC:14.50mg/L IC:4.209mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	559.0	14.50mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 5:28:44 PM

Mean Area 559.0
Mean Conc. 14.50mg/L

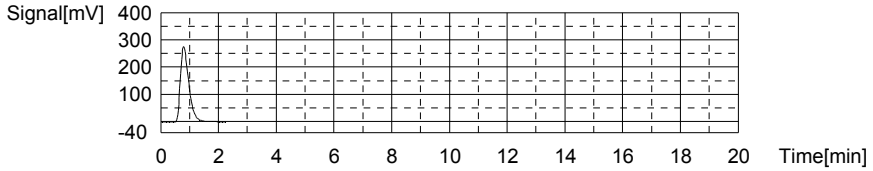

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	134.1	4.209mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 5:33:38 PM

Mean Area 134.1
Mean Conc. 4.209mg/L

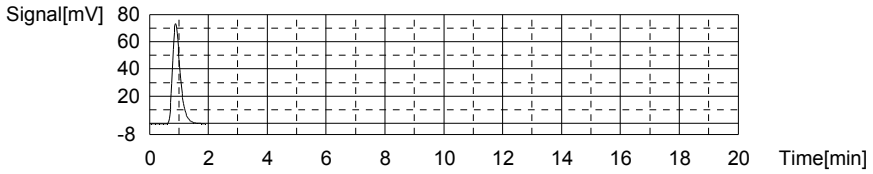

Sample

Sample Name: WG485904-06 MSD
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.07mg/L TC:13.99mg/L IC:3.919mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	539.3	13.99mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 5:41:09 PM

Mean Area 539.3
Mean Conc. 13.99mg/L

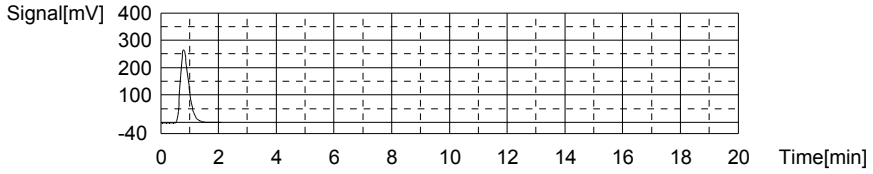

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	125.4	3.919mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 5:46:03 PM

Mean Area 125.4
Mean Conc. 3.919mg/L

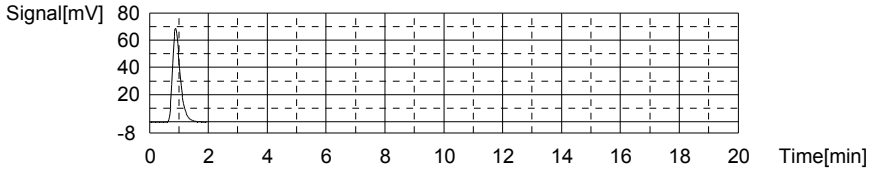

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.25mg/L TC:23.26mg/L IC:0.00475mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	894.0	23.26mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 5:53:54 PM

Mean Area 894.0
Mean Conc. 23.26mg/L

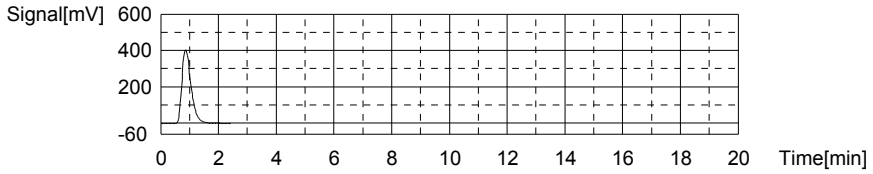

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.167	0.00475mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 5:58:19 PM

Mean Area 8.167
Mean Conc. 0.00475mg/L

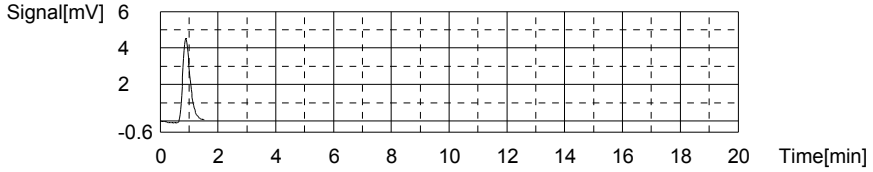

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1270mg/L TC:0.08900mg/L IC:-0.03805mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.335	0.08900mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 6:03:20 PM

Mean Area 7.335
Mean Conc. 0.08900mg/L

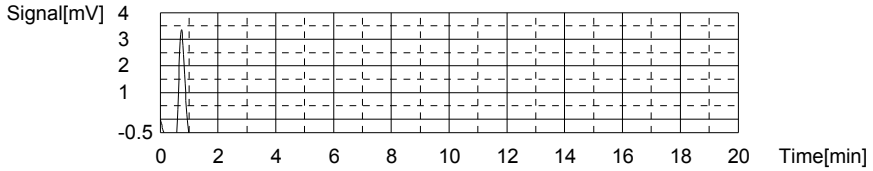

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.885	-0.03805mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 6:07:17 PM

Mean Area 6.885
Mean Conc. -0.03805mg/L

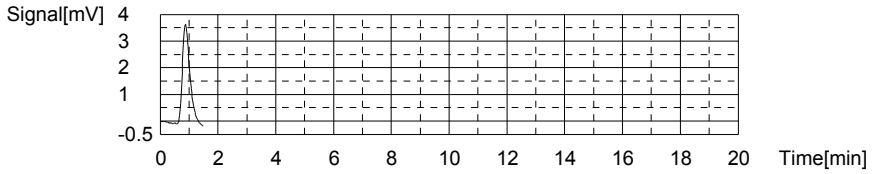

Sample

Sample Name: L14071470-13
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9220mg/L TC:6.860mg/L IC:5.938mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	266.5	6.860mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 6:14:28 PM

Mean Area 266.5
Mean Conc. 6.860mg/L

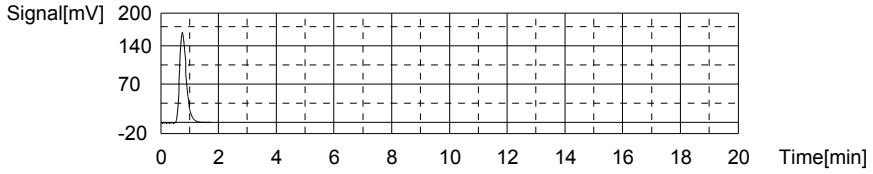

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	185.9	5.938mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 6:19:36 PM

Mean Area 185.9
Mean Conc. 5.938mg/L

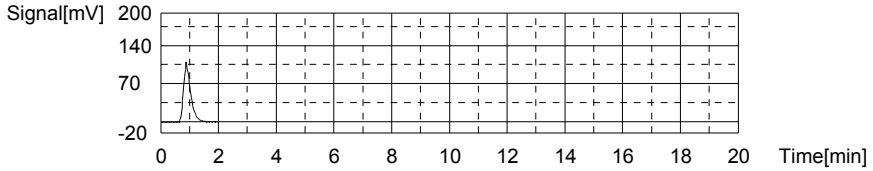

Sample

Sample Name: L14071470-16
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.8832mg/L TC:6.171mg/L IC:5.287mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	240.1	6.171mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 6:27:02 PM

Mean Area 240.1
Mean Conc. 6.171mg/L

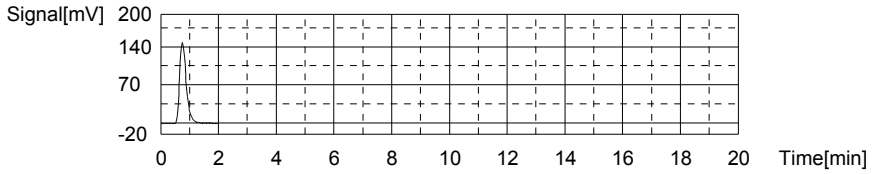

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	166.4	5.287mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 6:32:05 PM

Mean Area 166.4
Mean Conc. 5.287mg/L

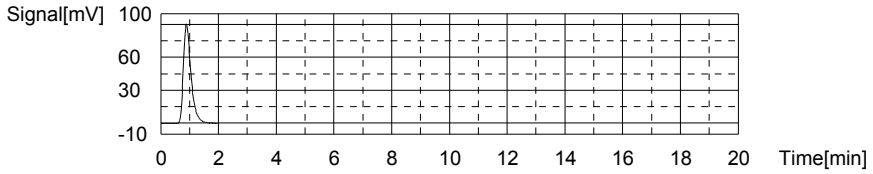

Sample

Sample Name: L14071470-19
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9800mg/L TC:6.291mg/L IC:5.311mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	244.7	6.291mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 6:39:32 PM

Mean Area 244.7
Mean Conc. 6.291mg/L

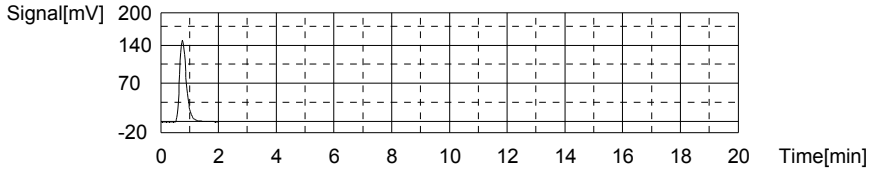

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	167.1	5.311mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 6:44:32 PM

Mean Area 167.1
Mean Conc. 5.311mg/L

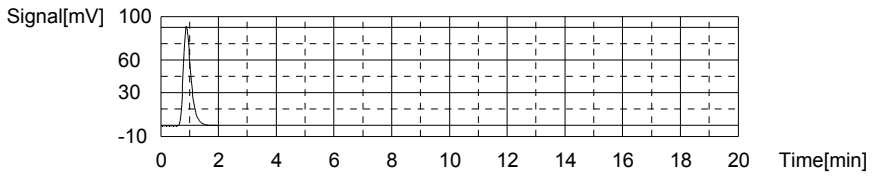

Sample

Sample Name: L14071470-22
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9944mg/L TC:6.095mg/L IC:5.100mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	237.2	6.095mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 6:51:46 PM

Mean Area 237.2
Mean Conc. 6.095mg/L

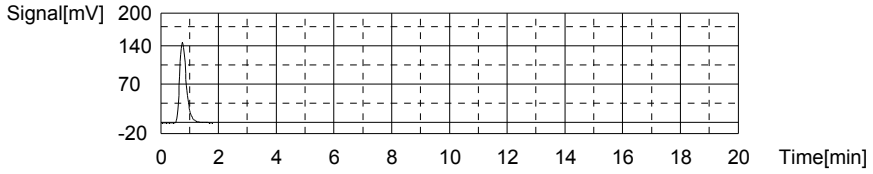

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	160.8	5.100mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 6:56:42 PM

Mean Area 160.8
Mean Conc. 5.100mg/L

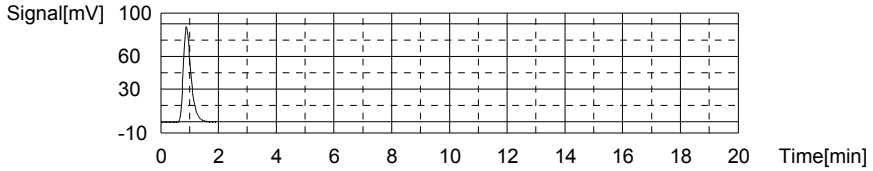

Sample

Sample Name: WG485904-08
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.8726mg/L TC:5.536mg/L IC:4.663mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	215.8	5.536mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 7:03:59 PM

Mean Area 215.8
Mean Conc. 5.536mg/L

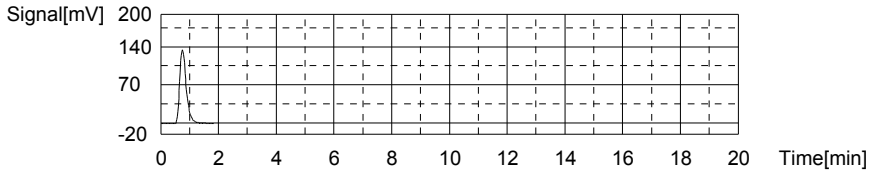

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	147.7	4.663mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 7:09:01 PM

Mean Area 147.7
Mean Conc. 4.663mg/L

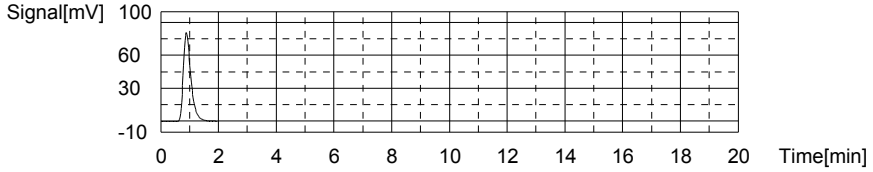

Sample

Sample Name: WG485907-01 BLK
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1233mg/L TC:0.08863mg/L IC:-0.03466mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.460	0.09227mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 7:14:01 PM
2	7.182	0.08500mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 7:17:30 PM

Mean Area 7.321
Mean Conc. 0.08863mg/L

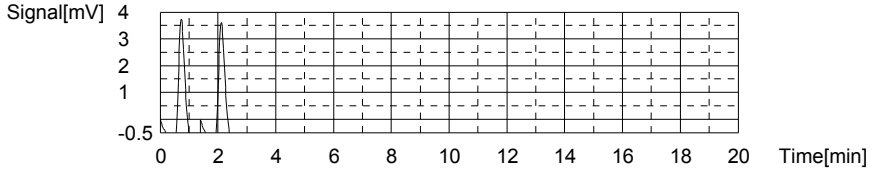

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.051	-0.03251mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 7:21:29 PM
2	6.922	-0.03681mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 7:25:31 PM

Mean Area 6.987
Mean Conc. -0.03466mg/L

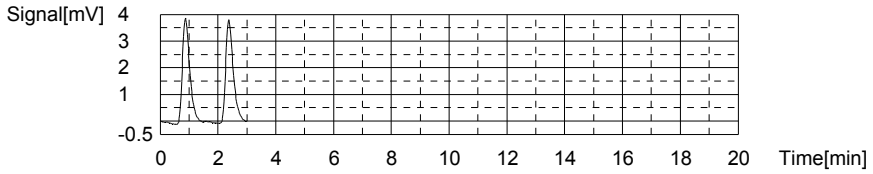

Sample

Sample Name: WG485907-02 LCS
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.79mg/L TC:23.75mg/L IC:-0.03579mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	906.4	23.58mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 7:33:26 PM
2	919.6	23.92mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 7:38:16 PM

Mean Area 913.0
Mean Conc. 23.75mg/L

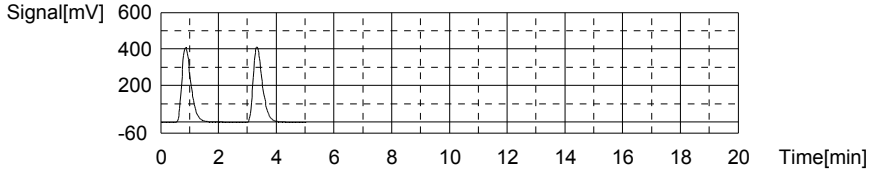

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.960	-0.03554mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 7:42:42 PM
2	6.945	-0.03604mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 7:46:57 PM

Mean Area 6.953
Mean Conc. -0.03579mg/L

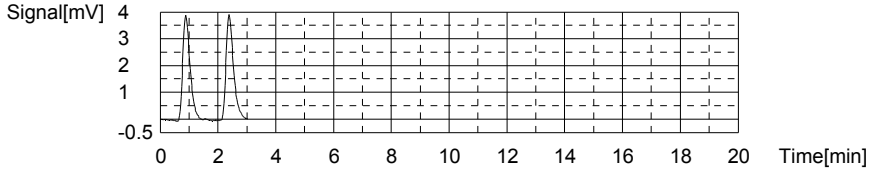

Sample

Sample Name: WG485907-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.90mg/L TC:23.86mg/L IC:-0.04149mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	945.1	24.59mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 7:54:57 PM
2	889.0	23.12mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 7:59:37 PM

Mean Area 917.0
Mean Conc. 23.86mg/L

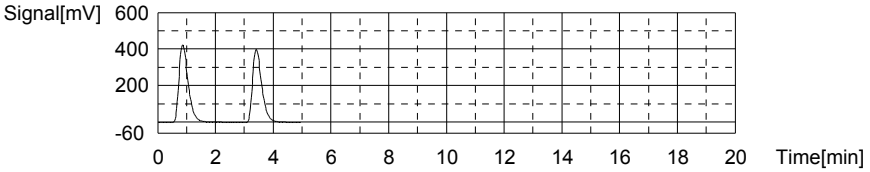

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.785	-0.04139mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 8:03:58 PM
2	6.779	-0.04159mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 8:08:08 PM

Mean Area 6.782
Mean Conc. -0.04149mg/L

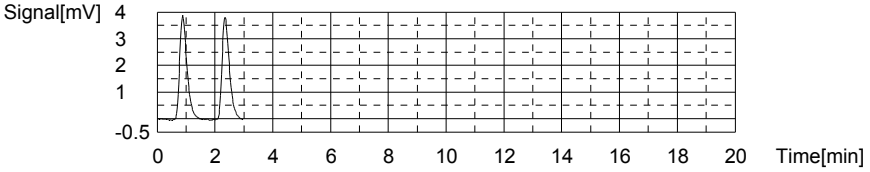

Sample

Sample Name: L14071449-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.312mg/L TC:12.87mg/L IC:6.558mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	507.6	13.16mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 8:16:09 PM
2	485.4	12.58mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 8:21:24 PM

Mean Area 496.5
Mean Conc. 12.87mg/L

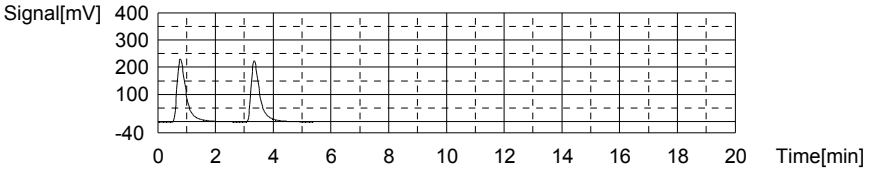

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	206.4	6.623mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 8:26:24 PM
2	202.5	6.493mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 8:31:10 PM

Mean Area 204.4
Mean Conc. 6.558mg/L

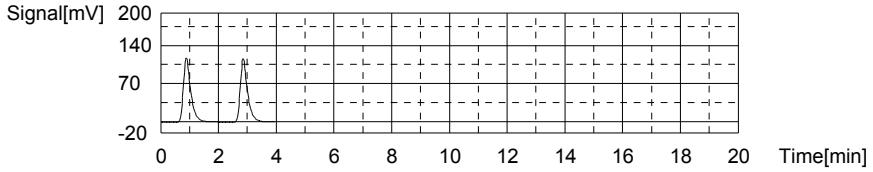

Sample

Sample Name: L14071449-02
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.571mg/L TC:11.76mg/L IC:5.191mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	450.0	11.65mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 8:39:16 PM
2	458.2	11.87mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 8:45:20 PM

Mean Area 454.1
Mean Conc. 11.76mg/L

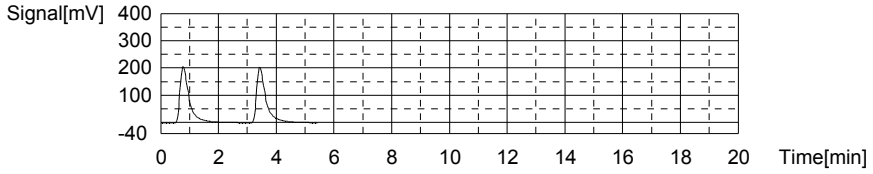

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	164.5	5.224mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 8:50:20 PM
2	162.5	5.157mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 8:54:59 PM

Mean Area 163.5
Mean Conc. 5.191mg/L

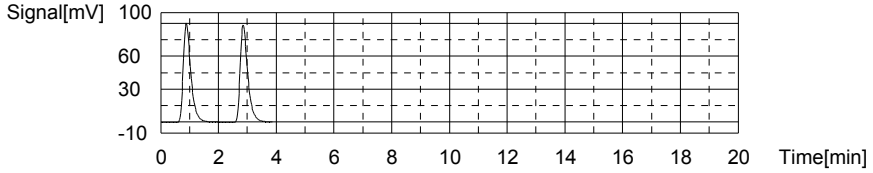

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.62mg/L TC:25.63mg/L IC:0.00595mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	984.7	25.63mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 9:02:55 PM

Mean Area 984.7
Mean Conc. 25.63mg/L

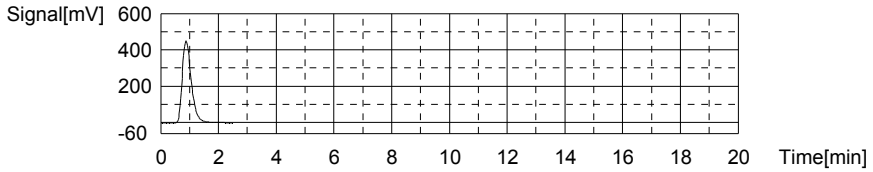

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.203	0.00595mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 9:07:19 PM

Mean Area 8.203
Mean Conc. 0.00595mg/L

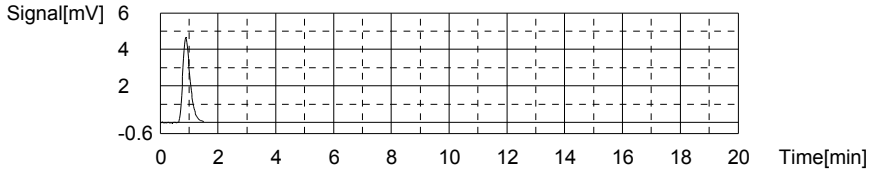

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1388mg/L TC:0.1010mg/L IC:-0.03778mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.795	0.1010mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 9:12:18 PM

Mean Area 7.795
Mean Conc. 0.1010mg/L

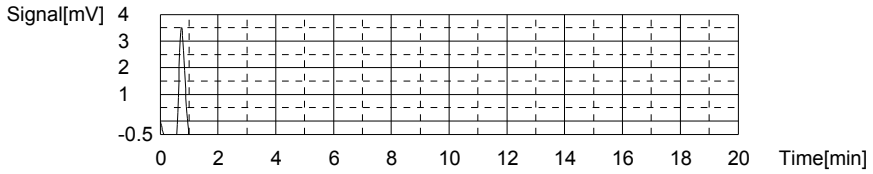

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.893	-0.03778mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 9:16:17 PM

Mean Area 6.893
Mean Conc. -0.03778mg/L

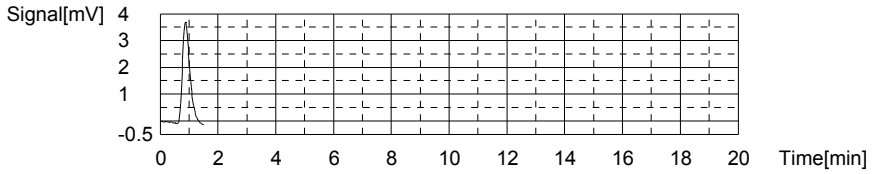

Sample

Sample Name: L14071470-25
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.242mg/L TC:6.074mg/L IC:4.832mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	231.6	5.949mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 9:23:34 PM
2	241.2	6.199mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 9:27:44 PM

Mean Area 236.4
Mean Conc. 6.074mg/L

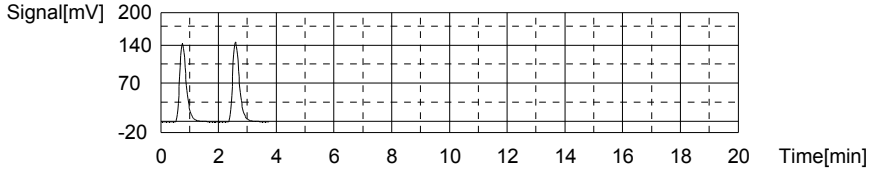

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	153.0	4.840mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 9:32:37 PM
2	152.5	4.823mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 9:37:18 PM

Mean Area 152.8
Mean Conc. 4.832mg/L

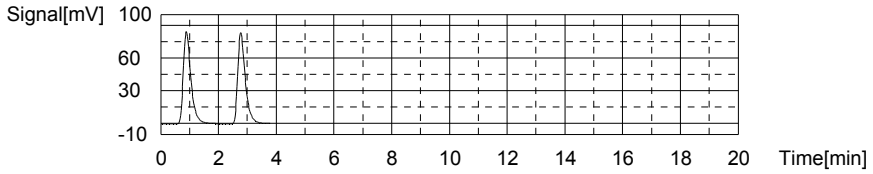

Sample

Sample Name: L14071470-28
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9960mg/L TC:5.212mg/L IC:4.216mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	203.7	5.220mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 9:44:32 PM
2	203.1	5.204mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 9:48:42 PM

Mean Area 203.4
Mean Conc. 5.212mg/L

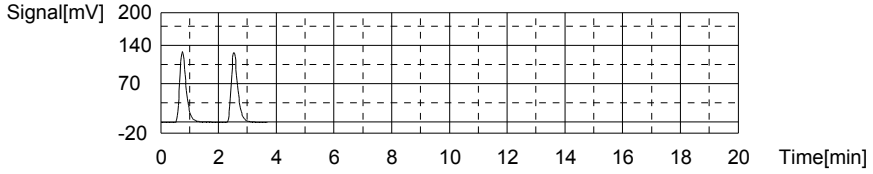

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	134.8	4.232mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 9:53:35 PM
2	133.8	4.199mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 9:58:13 PM

Mean Area 134.3
Mean Conc. 4.216mg/L

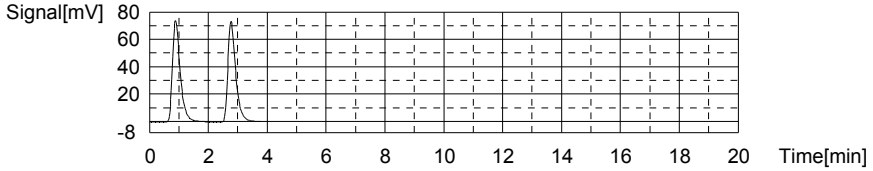

Sample

Sample Name: L14071470-31
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.052mg/L TC:5.834mg/L IC:4.782mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	226.6	5.818mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 10:05:22 PM
2	227.8	5.849mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 10:10:26 PM

Mean Area 227.2
Mean Conc. 5.834mg/L

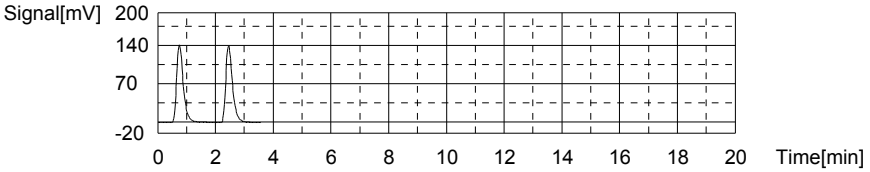

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	152.1	4.810mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 10:15:21 PM
2	150.4	4.753mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 10:20:03 PM

Mean Area 151.3
Mean Conc. 4.782mg/L

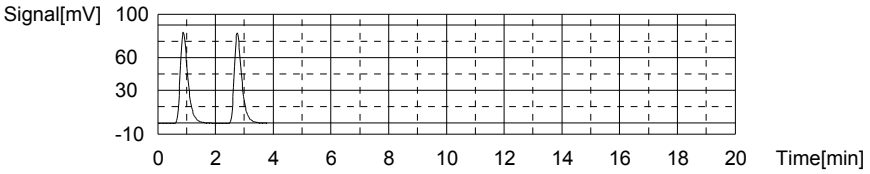

Sample

Sample Name: L14071480-03
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.8196mg/L TC:8.960mg/L IC:8.140mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	347.9	8.987mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 10:27:17 PM
2	345.8	8.932mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 10:32:21 PM

Mean Area 346.9
Mean Conc. 8.960mg/L

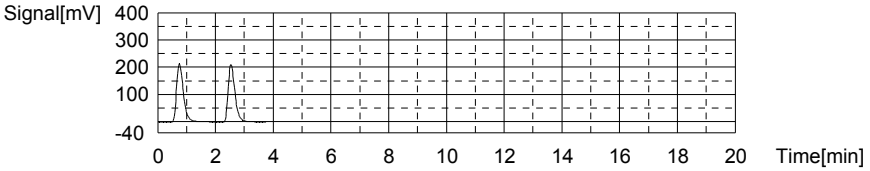

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	251.5	8.128mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 10:37:30 PM
2	252.2	8.152mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 10:42:25 PM

Mean Area 251.9
Mean Conc. 8.140mg/L

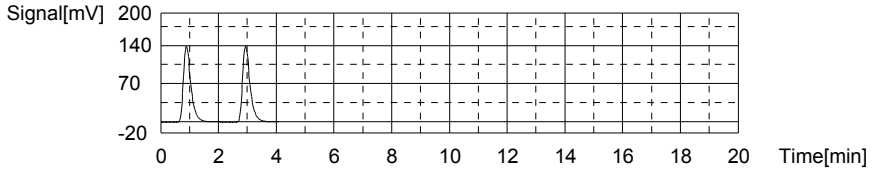

Sample

Sample Name: L14071480-08
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.030mg/L TC:5.515mg/L IC:4.484mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	212.7	5.455mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 10:49:37 PM
2	217.3	5.575mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 10:53:54 PM

Mean Area 215.0
Mean Conc. 5.515mg/L

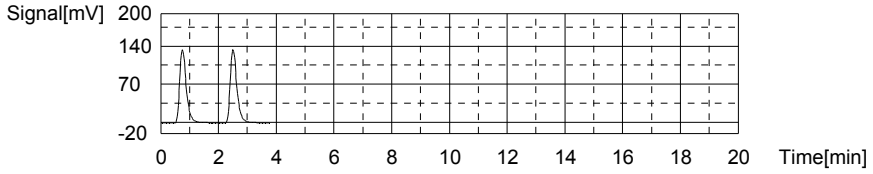

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	142.9	4.503mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 10:58:44 PM
2	141.8	4.466mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 11:03:28 PM

Mean Area 142.4
Mean Conc. 4.484mg/L

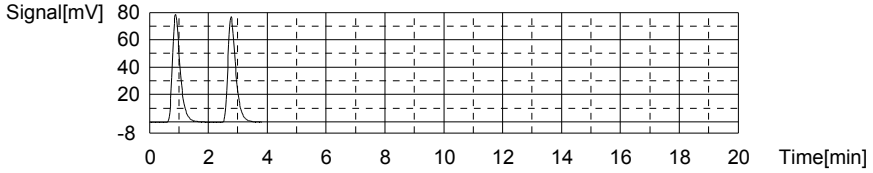

Sample

Sample Name: L14071480-13
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9842mg/L TC:4.569mg/L IC:3.585mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	180.2	4.606mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 11:10:40 PM
2	177.4	4.532mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 11:15:37 PM

Mean Area 178.8
Mean Conc. 4.569mg/L

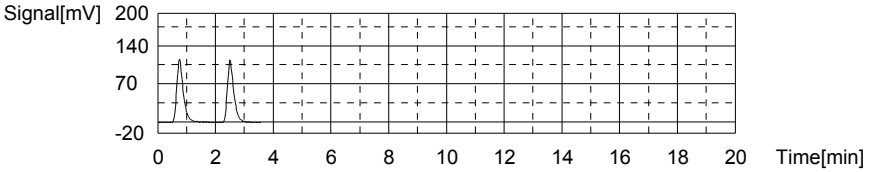

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	115.9	3.601mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 11:20:37 PM
2	114.9	3.568mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 11:25:13 PM

Mean Area 115.4
Mean Conc. 3.585mg/L

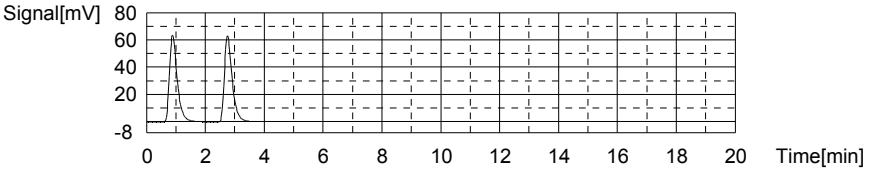

Sample

Sample Name: L14071480-18
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9905mg/L TC:4.829mg/L IC:3.838mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	190.3	4.869mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 11:32:26 PM
2	187.2	4.788mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 11:36:26 PM

Mean Area 188.8
Mean Conc. 4.829mg/L

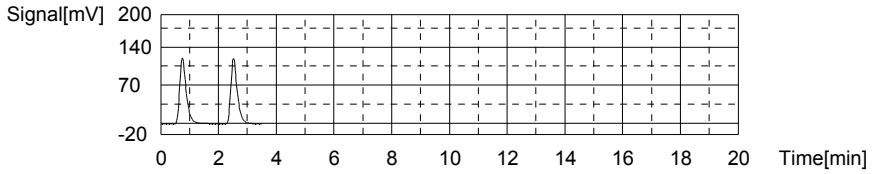

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	123.9	3.869mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 11:41:19 PM
2	122.1	3.808mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/28/2014 11:45:53 PM

Mean Area 123.0
Mean Conc. 3.838mg/L

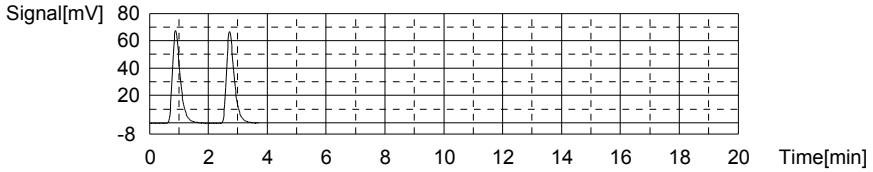

Sample

Sample Name: L14071480-23
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.976mg/L TC:2.036mg/L IC:0.06036mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	78.08	1.937mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 11:53:08 PM
2	85.64	2.135mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/28/2014 11:57:22 PM

Mean Area 81.86
Mean Conc. 2.036mg/L

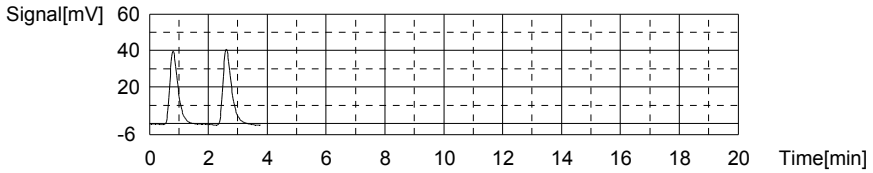

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.05	0.06762mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/29/2014 12:01:52 AM
2	9.615	0.05309mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/29/2014 12:06:07 AM

Mean Area 9.832
Mean Conc. 0.06036mg/L

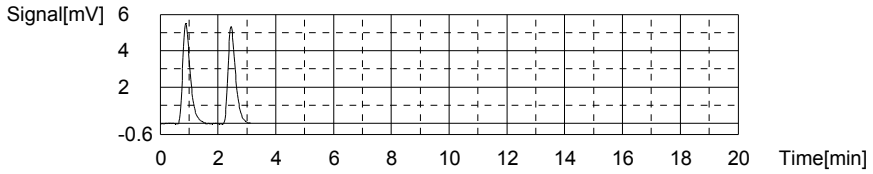

Sample

Sample Name: L14071480-28
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.854mg/L TC:1.896mg/L IC:0.04179mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	76.50	1.896mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/29/2014 12:13:21 AM
2	76.51	1.896mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/29/2014 12:17:23 AM

Mean Area 76.50
Mean Conc. 1.896mg/L

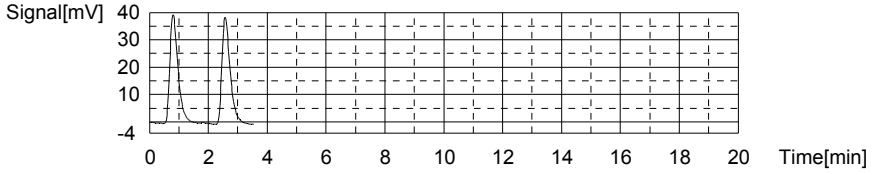

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.331	0.04361mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/29/2014 12:21:50 AM
2	9.222	0.03997mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/29/2014 12:26:00 AM

Mean Area 9.277
Mean Conc. 0.04179mg/L

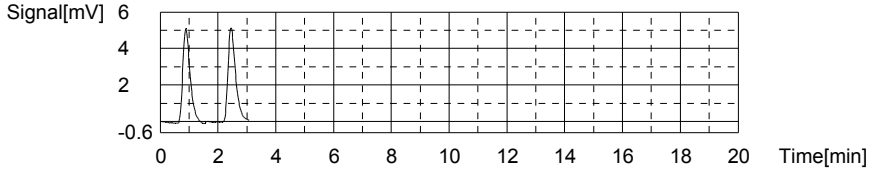

Sample

Sample Name: L14071508-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.418mg/L TC:10.73mg/L IC:4.316mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	410.4	10.62mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/29/2014 12:34:12 AM
2	419.1	10.85mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/29/2014 12:38:57 AM

Mean Area 414.8
Mean Conc. 10.73mg/L

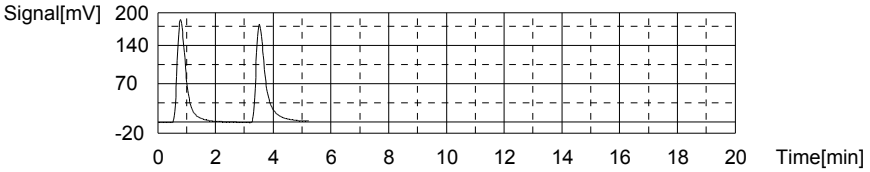

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	137.2	4.313mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/29/2014 12:43:52 AM
2	137.4	4.319mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/29/2014 12:48:32 AM

Mean Area 137.3
Mean Conc. 4.316mg/L

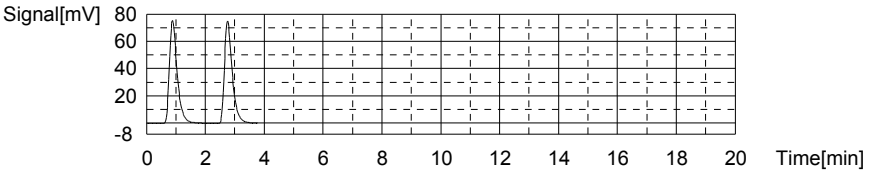

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:26.11mg/L TC:26.10mg/L IC:-0.00533mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1003	26.10mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/29/2014 12:56:40 AM

Mean Area 1003
Mean Conc. 26.10mg/L

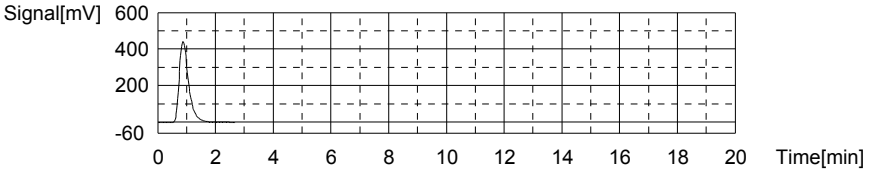

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.865	-0.00533mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/29/2014 1:01:05 AM

Mean Area 7.865
Mean Conc. -0.00533mg/L

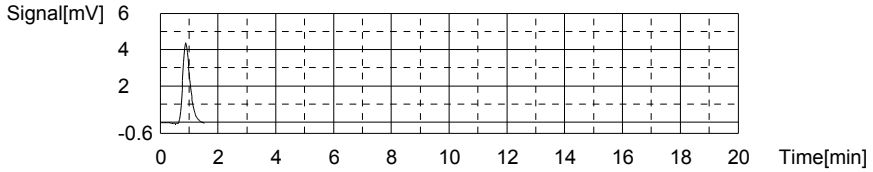

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1493mg/L TC:0.1088mg/L IC:-0.04045mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.094	0.1088mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/29/2014 1:06:07 AM

Mean Area 8.094
Mean Conc. 0.1088mg/L

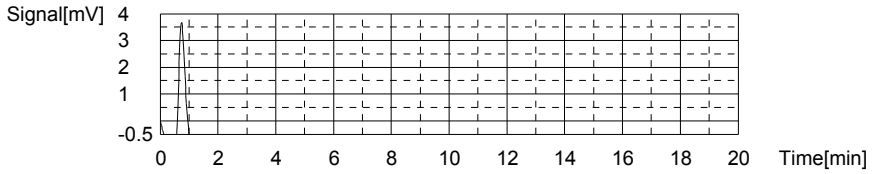

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.813	-0.04045mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/29/2014 1:10:06 AM

Mean Area 6.813
Mean Conc. -0.04045mg/L

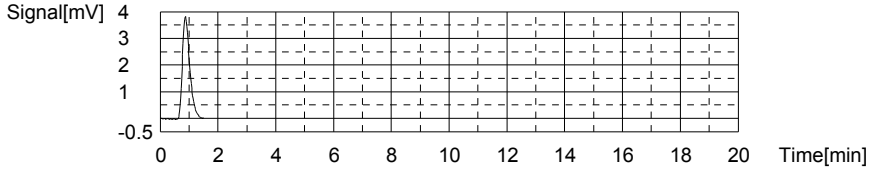

Sample

Sample Name: WG485907-05 DUP
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.382mg/L TC:9.110mg/L IC:2.728mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	336.1	8.679mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/29/2014 1:18:08 AM
2	369.1	9.541mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/29/2014 1:24:24 AM

Mean Area 352.6
Mean Conc. 9.110mg/L

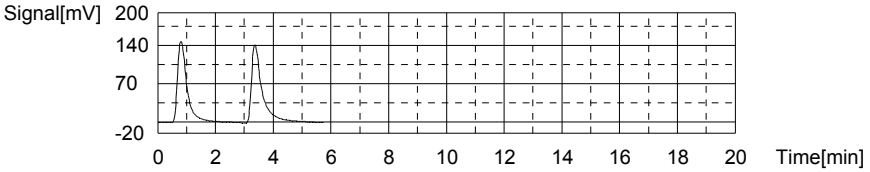

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	90.10	2.740mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/29/2014 1:29:11 AM
2	89.37	2.716mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/29/2014 1:33:49 AM

Mean Area 89.74
Mean Conc. 2.728mg/L

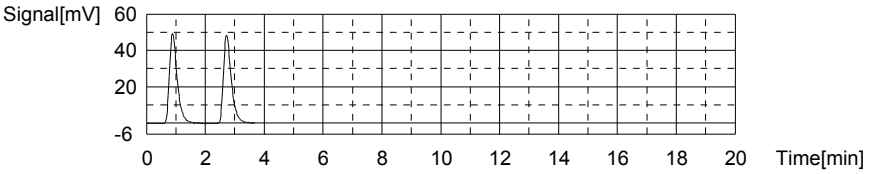

Sample

Sample Name: WG485907-06 MS
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:17.66mg/L TC:23.39mg/L IC:5.735mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	907.9	23.62mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/29/2014 1:42:18 AM
2	890.6	23.17mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/29/2014 1:48:12 AM

Mean Area 899.3
Mean Conc. 23.39mg/L

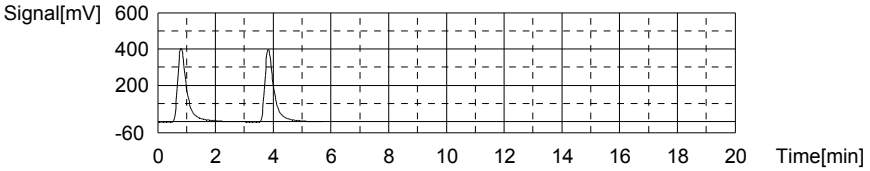

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	179.2	5.715mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/29/2014 1:53:08 AM
2	180.4	5.755mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/29/2014 1:57:50 AM

Mean Area 179.8
Mean Conc. 5.735mg/L

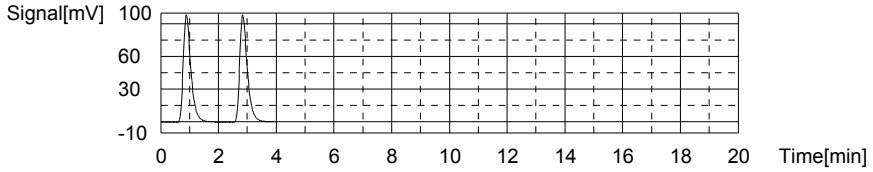

Sample

Sample Name: L14071289-01 (2)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.687mg/L TC:11.55mg/L IC:9.858mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	445.8	11.55mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/29/2014 2:05:20 AM

Mean Area 445.8
Mean Conc. 11.55mg/L

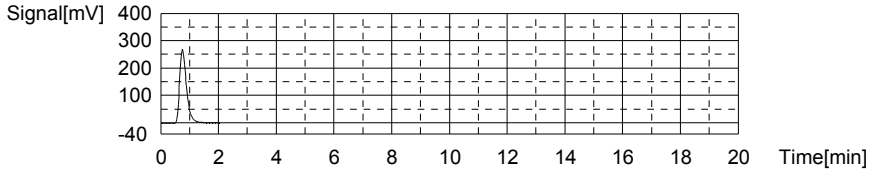

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	303.3	9.858mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/29/2014 2:10:29 AM

Mean Area 303.3
Mean Conc. 9.858mg/L

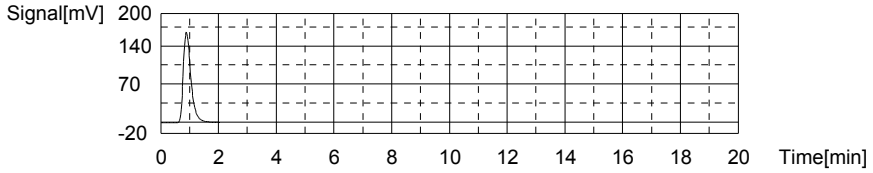

Sample

Sample Name: L14071426-06 (2)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.909mg/L TC:10.01mg/L IC:8.105mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	387.2	10.01mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/29/2014 2:18:15 AM

Mean Area 387.2
Mean Conc. 10.01mg/L

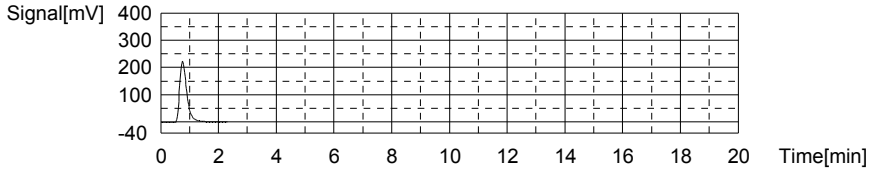

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	250.8	8.105mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/29/2014 2:23:22 AM

Mean Area 250.8
Mean Conc. 8.105mg/L

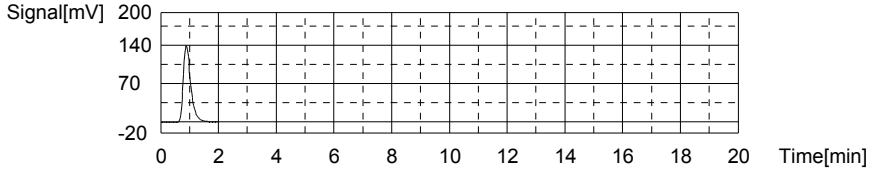

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:24.55mg/L TC:24.55mg/L IC:0.00422mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	943.7	24.55mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/29/2014 2:31:22 AM

Mean Area 943.7
Mean Conc. 24.55mg/L

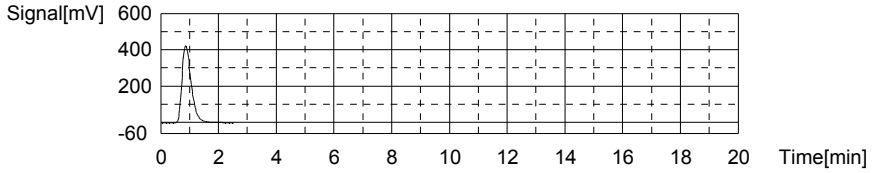

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.151	0.00422mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/29/2014 2:35:54 AM

Mean Area 8.151
Mean Conc. 0.00422mg/L

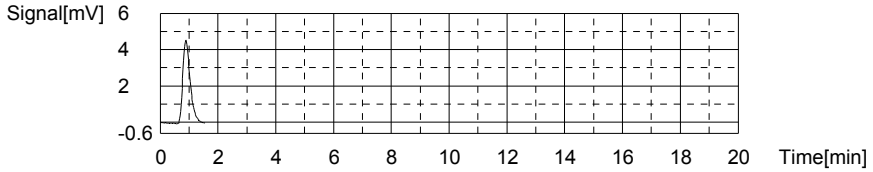

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1387mg/L TC:0.1096mg/L IC:-0.02907mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.123	0.1096mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/29/2014 2:40:57 AM

Mean Area 8.123
Mean Conc. 0.1096mg/L

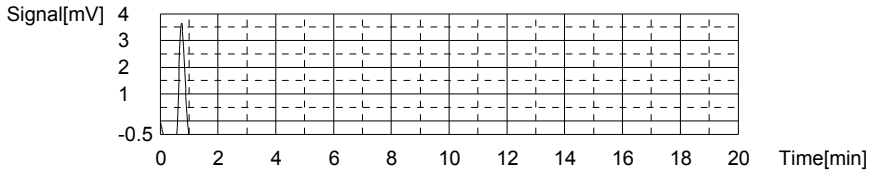

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.154	-0.02907mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/29/2014 2:44:52 AM

Mean Area 7.154
Mean Conc. -0.02907mg/L

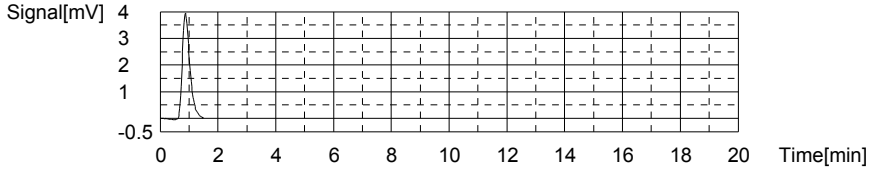

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
August 4, 2014

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
SAV - SARAH A. VANDENBERG
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
August 04, 2014

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL).
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, H1	Not detected; Sample analysis performed past holding time.
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
U	Analyte was not detected. The concentration is below the reported LOD.
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit

Microbac Laboratories Inc.
List of Valid Qualifiers
August 04, 2014

Qualkey: DOD

X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Kathy Albertson	Project Manager: Dave Wacker	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60256135.0002JA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Dissolved Gases	Ferrous Iron	Sulfide	Inorganic Carbon	Total Organic Carbon	Nitrate/Nitrite Chloride/Sulfate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 67	67WW05-072414			7/24/14	0750		✓	W	3	✓											
	67WW02-072414			7/24/14	0815		✓	W	3	✓											
	67WW11-072414			7/24/14	0945		✓	W	11	✓	✓	✓	✓	✓	✓	✓					
	67WW08-072414			7/24/14	1100		✓	W	11	✓	✓	✓	✓	✓	✓	✓					
	67WW09A-072414			7/24/14	1320		✓	W	3	✓											
	67WW09AFD-072414			7/24/14	1320		✓	W	3	✓											
	67WW10-072414			7/24/14	1430		✓	W	3	✓											
	TRIP BLANK			7/24/14			✓	W	2	✓											

Comments: **STANDARD TAT**

Microbac OVD
Received: 07/25/2014 10:26
By: JOSHUA PEMBERTON 221000057438

Relinquished by: (Signature) Scott Beesinger	Date 7/24/14	Time 1600	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:	

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14071430
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 05-AUG-2014

Samplenum	Container ID	Products
L14071430-01	409205	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Samplenum	Container ID	Products
L14071430-02	409206	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14071430
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 05-AUG-2014

Samplenum	Container ID	Products
L14071430-03	409207	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		25-JUL-2014 12:00	CLS		<2

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Samplenum	Container ID	Products
L14071430-03	409208	RSK175

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG1	25-JUL-2014 13:21	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG1	25-JUL-2014 13:21	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG1	25-JUL-2014 13:21	JDS	CLS	

Samplenum	Container ID	Products
L14071430-03	409209	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	25-JUL-2014 12:00	CLS		
2	STORE	SEM	A1	29-JUL-2014 10:49	CLS	ALS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14071430
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 05-AUG-2014

Samplenum	Container ID	Products
L14071430-03	409210	TIC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JUL-2014 12:00	CLS		
2	ANALYZ	W1	WET	30-JUL-2014 11:23	DCM	CLS	
3	STORE	WET	A1	30-JUL-2014 11:23	CLS	DCM	

Samplenum	Container ID	Products
L14071430-03	409211	FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JUL-2014 12:00	CLS		
2	ANALYZ	W1	WET	29-JUL-2014 08:16	TMM	CLS	
3	STORE	WET	A1	31-JUL-2014 14:36	CLS	BLR	

Samplenum	Container ID	Products
L14071430-03	409212	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	W1	WET	28-JUL-2014 11:20	EPT	CLS	

Samplenum	Container ID	Products
L14071430-03	409213	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JUL-2014 12:00	CLS		
2	ANALYZ	W1	WET	29-JUL-2014 08:22	EPT	CLS	
3	STORE	WET	A1	30-JUL-2014 09:24	CLS	BLR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14071430
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 05-AUG-2014

Samplenum	Container ID	Products
L14071430-04	409214	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Samplenum	Container ID	Products
L14071430-04	409215	RSK175

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG1	25-JUL-2014 13:21	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG1	25-JUL-2014 13:21	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG1	25-JUL-2014 13:21	JDS	CLS	

Samplenum	Container ID	Products
L14071430-04	409216	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	25-JUL-2014 12:00	CLS		
2	STORE	SEM	A1	29-JUL-2014 10:49	CLS	ALS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14071430
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 05-AUG-2014

Samplenum	Container ID	Products
L14071430-04	409217	TIC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JUL-2014 12:00	CLS		
2	ANALYZ	W1	WET	30-JUL-2014 11:23	DCM	CLS	
3	STORE	WET	A1	30-JUL-2014 11:23	CLS	DCM	

Samplenum	Container ID	Products
L14071430-04	409218	FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JUL-2014 12:00	CLS		
2	ANALYZ	W1	WET	29-JUL-2014 08:16	TMM	CLS	
3	STORE	WET	A1	31-JUL-2014 14:36	CLS	BLR	

Samplenum	Container ID	Products
L14071430-04	409219	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	W1	WET	28-JUL-2014 11:20	EPT	CLS	
3	STORE	WET	A1	30-JUL-2014 09:24	CLS	BLR	

Samplenum	Container ID	Products
L14071430-04	409220	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JUL-2014 12:00	CLS		
2	ANALYZ	W1	WET	29-JUL-2014 08:22	EPT	CLS	
3	STORE	WET	A1	30-JUL-2014 09:24	CLS	BLR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14071430
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 05-AUG-2014

Samplenum	Container ID	Products
L14071430-05	409221	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Samplenum	Container ID	Products
L14071430-06	409222	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14071430
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 05-AUG-2014

Samplenum	Container ID	Products
L14071430-07	409223	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Samplenum	Container ID	Products
L14071430-08	409224	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-JUL-2014 12:00	CLS		<2
2	ANALYZ	V1	ORG4	25-JUL-2014 15:52	MLB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - May 22, 2014

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)
Acetate (HPLC-UV)
Formate (HPLC-UV)
Acetaldehyde (HPLC-UV)
Propionaldehyde (HPLC-UV)
Fluoroborate (ISE)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam

Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L14071626

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Kathy Albertson – Team Chemist/Data Specialist
(740) 373-4071
Kathy.Albertson@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on August 05 2014

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0019643	I	2.0		J2317156215	X
0019426	I	3.0		J2317156224	X
0015779	I	4.0		J2317156206	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
67WW01-072514	L14071626-01	07/25/2014 07:50	07/29/2014 09:43
67WW07-072514	L14071626-02	07/25/2014 08:10	07/29/2014 09:43
67WW12-072514	L14071626-03	07/25/2014 09:25	07/29/2014 09:43
67WW12MS-072514	L14071626-04	07/25/2014 09:25	07/29/2014 09:43
67WW12MSD-072514	L14071626-05	07/25/2014 09:25	07/29/2014 09:43
67WW14-072514	L14071626-06	07/25/2014 10:35	07/29/2014 09:43
67WW13-072514	L14071626-07	07/25/2014 13:30	07/29/2014 09:43
67WW13FD-072514	L14071626-08	07/25/2014 13:30	07/29/2014 09:43
67WW09-072514	L14071626-09	07/25/2014 14:35	07/29/2014 09:43
TRIP BLANK	L14071626-10	07/25/2014 00:01	07/29/2014 09:43

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L14071626
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 13
2.0 Full Sample Data Package 46
2.1 Volatiles Data 47
2.1.1 Volatiles GCMS Data (8260) 48
2.1.1.1 Summary Data 49
2.1.1.2 QC Summary Data 85
2.1.1.3 Sample Data 155
2.1.1.4 Standards Data 225
2.1.1.5 Raw QC Data 363
3.0 Attachments 405

1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071626
Project Name:		**Method:**	8260
Prep Batch Number(s):	486191, 486305, 486696	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-08-05 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2014-08-05 17:29:27

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071626
Project Name:		**Method:**	8260
Prep Batch Number(s):	486191, 486305, 486696	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-08-05 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071626
Project Name:		**Method:**	8260
Prep Batch Number(s):	486191, 486305, 486696	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-08-05 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			2
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?		X			1
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			5
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071626
Project Name:		**Method:**	8260
Prep Batch Number(s):	486191, 486305, 486696	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-08-05 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			4
Was the ICAL curve verified for each analyte?		X			3
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071626
Project Name:		**Method:**	8260
Prep Batch Number(s):	486191, 486305, 486696	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-08-05 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14071626
Project Name:		**Method:**	8260
Prep Batch Number(s):	486191, 486305, 486696	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-08-05 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) The RPD for dichlorodifluoromethane, vinyl chloride, and chloromethane exceeded the UCL in the LCS/LCSD analyzed 08/01/14 on HPMS9.
2) Dichlorodifluoromethane and 2-hexanone exceeded the UCL in the LCS analyzed 07/29/14 on HPMS11. Chloromethane and dichlorodifluoromethane exceeded the UCL in the LCS analyzed 07/30/14 on HPMS9.
3) n-Butylbenzene and dichlorodifluoromethane exceeded the UCL in the ICV analyzed 06/27/14 on HPMS11. Dichlorodifluoromethane exceeded the UCL in the ICV analyzed 07/26/14 on HPMS9.
4) 2-Hexanone exceeded the UCL in the CCV analyzed 07/29/14 on HPMS11. Chloromethane was below the LCL in the CCV analyzed 07/30/14 on HPMS9.
5) 1,2-Dibromo-3-chloropropane, 2-hexanone, 4-methyl-2-pentanone, and dichlorodifluoromethane exceeded the UCL in the MS/MSD analyses of sample 03.

1.2 Certificate of Analysis

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW01-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/30/2014 00:56
Collect Date:	07/25/2014 07:50	**Dilution:**	1	**File ID:**	11M02791
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	9.20		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	10.7		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	224		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.02		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.473	J	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.290	J	1.00	0.500	0.250
Trichloroethene	79-01-6	2.30		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	1.16		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.2	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	97.1	85	120	
4-Bromofluorobenzene	97.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW07-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/29/2014 22:17
Collect Date:	07/25/2014 08:10	**Dilution:**	1	**File ID:**	11M02786
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.39		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.7	85	115	
1,2-Dichloroethane-d4	99.8	70	120	
Toluene-d8	93.9	85	120	
4-Bromofluorobenzene	96.7	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW12-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/29/2014 22:49
Collect Date:	07/25/2014 09:25	**Dilution:**	1	**File ID:**	11M02787
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	96.9	85	120	
4-Bromofluorobenzene	99.4	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW12MS-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/29/2014 18:02
Collect Date:	07/25/2014 09:25	**Dilution:**	1	**File ID:**	11M02778
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	27.3		10.0	5.00	2.50
Benzene	71-43-2	20.6		1.00	0.250	0.125
Bromobenzene	108-86-1	19.1		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.0		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.3		1.00	0.500	0.250
Bromoform	75-25-2	24.7		2.00	1.00	0.500
Bromomethane	74-83-9	19.5		2.00	1.00	0.500
2-Butanone	78-93-3	27.5		10.0	5.00	2.50
n-Butylbenzene	104-51-8	22.4		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.6		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.8		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.5		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.2		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.0		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	22.6		1.00	0.500	0.250
Chloroethane	75-00-3	21.1		2.00	1.00	0.500
Chloroform	67-66-3	20.3		1.00	0.250	0.125
Chloromethane	74-87-3	18.6		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.7		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	25.5		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	22.4		1.00	0.500	0.250
Dibromomethane	74-95-3	21.8		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.4		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.7		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.0		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	31.2		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.6		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.9		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.1		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.7		1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	19.8		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.5		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	21.8		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	18.8		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	22.5		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	21.8		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.8		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.5		1.00	0.500	0.250
2-Hexanone	591-78-6	29.4	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	19.0		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.5		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.1		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	26.2		10.0	5.00	2.50
Methylene chloride	75-09-2	19.6		1.00	0.500	0.250
Naphthalene	91-20-3	22.8		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.5		1.00	0.250	0.125
Styrene	100-42-5	22.2		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.3		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	23.3		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.2		1.00	0.500	0.250
Toluene	108-88-3	21.2		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.2		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.9		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.5		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	22.4		1.00	0.500	0.250
Trichloroethene	79-01-6	19.0		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	21.7		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	22.9		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.5		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.1		1.00	0.500	0.250
Vinyl chloride	75-01-4	21.6		1.00	0.500	0.250
o-Xylene	95-47-6	18.5		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.6		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.5	85	115	
1,2-Dichloroethane-d4	98.8	70	120	
Toluene-d8	96.6	85	120	
4-Bromofluorobenzene	92.6	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW12MSD-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/29/2014 18:34
Collect Date:	07/25/2014 09:25	**Dilution:**	1	**File ID:**	11M02779
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	27.2		10.0	5.00	2.50
Benzene	71-43-2	20.5		1.00	0.250	0.125
Bromobenzene	108-86-1	19.3		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.4		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.6		1.00	0.500	0.250
Bromoform	75-25-2	24.8		2.00	1.00	0.500
Bromomethane	74-83-9	19.9		2.00	1.00	0.500
2-Butanone	78-93-3	29.4		10.0	5.00	2.50
n-Butylbenzene	104-51-8	22.2		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.8		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	19.7		1.00	0.500	0.250
Chlorobenzene	108-90-7	18.9		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	23.2		1.00	0.500	0.250
Chloroethane	75-00-3	20.9		2.00	1.00	0.500
Chloroform	67-66-3	20.0		1.00	0.250	0.125
Chloromethane	74-87-3	18.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.5		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	27.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	22.9		1.00	0.500	0.250
Dibromomethane	74-95-3	22.9		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.5		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.5		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.1		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	30.2		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.2		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	18.9		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.9		1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	19.9		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.7		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	22.3		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	18.5		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	22.4		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	22.0		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.2		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.3		1.00	0.500	0.250
2-Hexanone	591-78-6	30.9	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.8		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.1		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.9		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	28.3		10.0	5.00	2.50
Methylene chloride	75-09-2	19.6		1.00	0.500	0.250
Naphthalene	91-20-3	23.5		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.3		1.00	0.250	0.125
Styrene	100-42-5	21.8		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	24.5		1.00	0.400	0.200
Tetrachloroethene	127-18-4	18.4		1.00	0.500	0.250
Toluene	108-88-3	21.0		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.7		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.9		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.2		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	22.5		1.00	0.500	0.250
Trichloroethene	79-01-6	18.8		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	21.1		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	24.1		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.8		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.3		1.00	0.500	0.250
Vinyl chloride	75-01-4	21.1		1.00	0.500	0.250
o-Xylene	95-47-6	18.4		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.5		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.6	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	96.7	85	120	
4-Bromofluorobenzene	93.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW14-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/29/2014 23:21
Collect Date:	07/25/2014 10:35	**Dilution:**	1	**File ID:**	11M02788
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.580	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.31		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	3.57		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.8	85	115	
1,2-Dichloroethane-d4	99.2	70	120	
Toluene-d8	97.2	85	120	
4-Bromofluorobenzene	98.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW13-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/30/2014 01:28
Collect Date:	07/25/2014 13:30	**Dilution:**	1	**File ID:**	11M02792
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.570	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.9		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.8		1.00	0.500	0.250
cis-1,2-Dichloroethene	156-59-2	1.19		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	3.48		1.00	0.500	0.250
Trichloroethene	79-01-6	1.72		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.707	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.1	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	97.2	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW13-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/26/2014 20:17
Workgroup #:	WG486305	**Analyst:**	ADC	**Run Date:**	07/30/2014 16:41
Collect Date:	07/25/2014 13:30	**Dilution:**	10	**File ID:**	9M965038
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1-Dichloroethene	75-35-4	353		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	87.1	85	115	
1,2-Dichloroethane-d4	85.3	70	120	
Toluene-d8	97.3	85	120	
4-Bromofluorobenzene	99.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW13FD-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/29/2014 23:52
Collect Date:	07/25/2014 13:30	**Dilution:**	1	**File ID:**	11M02789
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.550	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	22.1		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.1		1.00	0.500	0.250
cis-1,2-Dichloroethene	156-59-2	1.15		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	3.56		1.00	0.500	0.250
Trichloroethene	79-01-6	1.71		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.728	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.6	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	96.5	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW13FD-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/26/2014 20:17
Workgroup #:	WG486696	**Analyst:**	ADC	**Run Date:**	08/01/2014 21:56
Collect Date:	07/25/2014 13:30	**Dilution:**	10	**File ID:**	9M965087
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1-Dichloroethene	75-35-4	362		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.0	85	115	
1,2-Dichloroethane-d4	85.0	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW09-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/30/2014 00:24
Collect Date:	07/25/2014 14:35	**Dilution:**	1	**File ID:**	11M02790
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	3.03		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	8.93		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.5	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	98.1	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/29/2014 20:10
Collect Date:	07/25/2014 00:01	**Dilution:**	1	**File ID:**	11M02782
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	96.2	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW01-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/30/2014 00:56
Collect Date:	07/25/2014 07:50	**Dilution:**	1	**File ID:**	11M02791
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	9.20		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	10.7		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	224		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.02		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.473	J	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.290	J	1.00	0.500	0.250
Trichloroethene	79-01-6	2.30		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	1.16		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.2	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	97.1	85	120	
4-Bromofluorobenzene	97.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW07-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/29/2014 22:17
Collect Date:	07/25/2014 08:10	**Dilution:**	1	**File ID:**	11M02786
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.39		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.7	85	115	
1,2-Dichloroethane-d4	99.8	70	120	
Toluene-d8	93.9	85	120	
4-Bromofluorobenzene	96.7	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW12-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/29/2014 22:49
Collect Date:	07/25/2014 09:25	**Dilution:**	1	**File ID:**	11M02787
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	96.9	85	120	
4-Bromofluorobenzene	99.4	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW12MS-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/29/2014 18:02
Collect Date:	07/25/2014 09:25	**Dilution:**	1	**File ID:**	11M02778
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	27.3		10.0	5.00	2.50
Benzene	71-43-2	20.6		1.00	0.250	0.125
Bromobenzene	108-86-1	19.1		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.0		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.3		1.00	0.500	0.250
Bromoform	75-25-2	24.7		2.00	1.00	0.500
Bromomethane	74-83-9	19.5		2.00	1.00	0.500
2-Butanone	78-93-3	27.5		10.0	5.00	2.50
n-Butylbenzene	104-51-8	22.4		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.6		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.8		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.5		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.2		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.0		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	22.6		1.00	0.500	0.250
Chloroethane	75-00-3	21.1		2.00	1.00	0.500
Chloroform	67-66-3	20.3		1.00	0.250	0.125
Chloromethane	74-87-3	18.6		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.7		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	25.5		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	22.4		1.00	0.500	0.250
Dibromomethane	74-95-3	21.8		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.4		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.7		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.0		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	31.2		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.6		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.9		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.1		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.7		1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	19.8		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.5		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	21.8		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	18.8		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	22.5		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	21.8		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.8		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.5		1.00	0.500	0.250
2-Hexanone	591-78-6	29.4	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	19.0		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.5		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.1		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	26.2		10.0	5.00	2.50
Methylene chloride	75-09-2	19.6		1.00	0.500	0.250
Naphthalene	91-20-3	22.8		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.5		1.00	0.250	0.125
Styrene	100-42-5	22.2		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.3		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	23.3		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.2		1.00	0.500	0.250
Toluene	108-88-3	21.2		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.2		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.9		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.5		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	22.4		1.00	0.500	0.250
Trichloroethene	79-01-6	19.0		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	21.7		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	22.9		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.5		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.1		1.00	0.500	0.250
Vinyl chloride	75-01-4	21.6		1.00	0.500	0.250
o-Xylene	95-47-6	18.5		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.6		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.5	85	115	
1,2-Dichloroethane-d4	98.8	70	120	
Toluene-d8	96.6	85	120	
4-Bromofluorobenzene	92.6	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW12MSD-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/29/2014 18:34
Collect Date:	07/25/2014 09:25	**Dilution:**	1	**File ID:**	11M02779
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	27.2		10.0	5.00	2.50
Benzene	71-43-2	20.5		1.00	0.250	0.125
Bromobenzene	108-86-1	19.3		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.4		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.6		1.00	0.500	0.250
Bromoform	75-25-2	24.8		2.00	1.00	0.500
Bromomethane	74-83-9	19.9		2.00	1.00	0.500
2-Butanone	78-93-3	29.4		10.0	5.00	2.50
n-Butylbenzene	104-51-8	22.2		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.8		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	19.7		1.00	0.500	0.250
Chlorobenzene	108-90-7	18.9		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	23.2		1.00	0.500	0.250
Chloroethane	75-00-3	20.9		2.00	1.00	0.500
Chloroform	67-66-3	20.0		1.00	0.250	0.125
Chloromethane	74-87-3	18.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.5		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	27.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	22.9		1.00	0.500	0.250
Dibromomethane	74-95-3	22.9		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.5		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.5		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.1		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	30.2		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.2		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	18.9		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.9		1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	19.9		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.7		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	22.3		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	18.5		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	22.4		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	22.0		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.2		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.3		1.00	0.500	0.250
2-Hexanone	591-78-6	30.9	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.8		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.1		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.9		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	28.3		10.0	5.00	2.50
Methylene chloride	75-09-2	19.6		1.00	0.500	0.250
Naphthalene	91-20-3	23.5		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.3		1.00	0.250	0.125
Styrene	100-42-5	21.8		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	24.5		1.00	0.400	0.200
Tetrachloroethene	127-18-4	18.4		1.00	0.500	0.250
Toluene	108-88-3	21.0		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.7		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.9		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.2		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	22.5		1.00	0.500	0.250
Trichloroethene	79-01-6	18.8		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	21.1		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	24.1		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.8		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.3		1.00	0.500	0.250
Vinyl chloride	75-01-4	21.1		1.00	0.500	0.250
o-Xylene	95-47-6	18.4		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.5		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.6	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	96.7	85	120	
4-Bromofluorobenzene	93.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW14-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/29/2014 23:21
Collect Date:	07/25/2014 10:35	**Dilution:**	1	**File ID:**	11M02788
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.580	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.31		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	3.57		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.8	85	115	
1,2-Dichloroethane-d4	99.2	70	120	
Toluene-d8	97.2	85	120	
4-Bromofluorobenzene	98.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW13-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/30/2014 01:28
Collect Date:	07/25/2014 13:30	**Dilution:**	1	**File ID:**	11M02792
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.570	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.9		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.8		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	389	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.19		1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	3.48		1.00	0.500	0.250
Trichloroethene	79-01-6	1.72		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.707	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.1	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	97.2	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

J	Estimated value ; the analyte concentration was greater than the highest standard
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW13-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/26/2014 20:17
Workgroup #:	WG486305	**Analyst:**	ADC	**Run Date:**	07/30/2014 16:41
Collect Date:	07/25/2014 13:30	**Dilution:**	10	**File ID:**	9M965038
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	Q	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	Q	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	2.50	U	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	Q	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	Q	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	Q	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	20.4		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	17.8		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	353		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	Q	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	4.00	J	10.0	5.00	2.50
Naphthalene	91-20-3	5.31	J	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	2.86	J	10.0	5.00	2.50
Trichloroethene	79-01-6	3.01	J	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	87.1	85	115	
1,2-Dichloroethane-d4	85.3	70	120	
Toluene-d8	97.3	85	120	
4-Bromofluorobenzene	99.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW13FD-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/29/2014 23:52
Collect Date:	07/25/2014 13:30	**Dilution:**	1	**File ID:**	11M02789
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.550	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	22.1		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.1		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	394	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.15		1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	3.56		1.00	0.500	0.250
Trichloroethene	79-01-6	1.71		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.728	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.6	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	96.5	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

J	Estimated value ; the analyte concentration was greater than the highest standard
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	67WW13FD-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/26/2014 20:17
Workgroup #:	WG486696	**Analyst:**	ADC	**Run Date:**	08/01/2014 21:56
Collect Date:	07/25/2014 13:30	**Dilution:**	10	**File ID:**	9M965087
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	Q	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	Q	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	Q	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	Q	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	5.59	J	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	2.50	U	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	1.44	J	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	Q	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	21.2		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	18.7		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	362		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	Q	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	Q	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	3.43	J	10.0	5.00	2.50
Trichloroethene	79-01-6	5.00	U	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.0	85	115	
1,2-Dichloroethane-d4	85.0	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	67WW09-072514	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/30/2014 00:24
Collect Date:	07/25/2014 14:35	**Dilution:**	1	**File ID:**	11M02790
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	3.03		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	8.93		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.5	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	98.1	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14071626-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/27/2014 20:09
Workgroup #:	WG486191	**Analyst:**	ADC/FJB	**Run Date:**	07/29/2014 20:10
Collect Date:	07/25/2014 00:01	**Dilution:**	1	**File ID:**	11M02782
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	96.2	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14071626
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Analyst(s): CAZ
Date: 7-31-14
Filter Lot #: ~~9486~~ 9198629
CAZ 7-31-14
Agitator Speed 30 ± 2 rpm ☑

Analyst / Date		Analyst / Date	
CAZ/7-31-14		CAZ/8-01-14	
Time On	Temp On °C	Time Off	Temp Off °C
15:23	23.7	07:55	22.3

ZHE	Sample #	Pressure √	PSI ON	PSI OFF	Method	Fluid #	Matrix*	%Solid	Size Reduction Yes	Size Reduction No	Int. Wt. (g)	Fluid Vol. (mL)
A												
B												
C												
D												
E												
F												
G												
H												
I												
J												
K												
L												
M	07-171402	✓	10	10	1311	FI-980	S/S	100		✓	25.06	500
N	-01	✓	⊥	⊥	⊥	⊥	⊥	⊥		✓	25.00	⊥
O		CAZ 7-31-14										
P	07-170902	✓	10	10	1311	FI-979	S	100		✓	25.02	500
Q												
R												
S												

CAZ 7-31-14

CAZ 7-31-14

*Matrix Code = (S-solid) (SS-sand, soil or sludge) (P-paint) (O-organic) (W-water or waste)

omments:

Peer Review By: [illegible] 8/1/14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 081913
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 13
Maintenance Log ID: 47153

Internal Standard: STD59587 Surrogate Standard: STD59627
CCV: STD59677 LCS: STD59678 MS/MSD: STD59678

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG441888(ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M957893	WG441887-01 50ng BFB STD	NA	1	1		08/19/13 15:08
9M957894	WG441887-02 50.0ug/L STD 8260	NA	1	1	STD59582	08/19/13 15:33
9M957895	WG441888-01 5.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 16:23
9M957896	WG441888-02 20.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 16:53
9M957897	WG441888-03 50.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 17:22
9M957898	WG441888-04 100.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 17:51
9M957899	WG441888-05 200.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 18:20
9M957900	WG441888-06 300.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 18:48
9M957901	WG441888-07 400.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 19:17
9M957902	WG441888-08 500.0ug/L A9STD 8260	NA	1	1	STD59338	08/19/13 19:46
9M957903	RINSE	NA	1	1		08/19/13 20:16
9M957904	WG441888-09 100.0ug/L A9 ALT SRC 826	NA	1	1	STD59238	08/19/13 20:45

Approved: August 27, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 120413
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV1 Rev: 19
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16

Maintenance Log ID: 48563

Internal Standard: STD61448 Surrogate Standard: STD61328
CCV: NA LCS: STD61663 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG455130

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M97408	WG455130-01 BFB 50ng A9FOO	NA	1	1	STD61161	12/04/13 15:09
11M97409	RINSE	NA	1	1		12/04/13 15:34
11M97410	WG455130-02 5ug/L STD A9FOO	NA	1	1	STD61356	12/04/13 16:06
11M97411	WG455130-03 20ug/L STD A9FOO	NA	1	1	STD61356	12/04/13 16:38
11M97412	WG455130-04 50ug/L STD A9FOO	NA	1	1	STD61356	12/04/13 17:10
11M97413	WG455130-05 100ug/L STD A9FOO	NA	1	1	STD61356	12/04/13 17:41
11M97414	WG455130-06 200ug/L STD A9FOO	NA	1	1	STD61356	12/04/13 18:13
11M97415	WG455130-07 300ug/L STD A9FOO	NA	1	1	STD61356	12/04/13 18:44
11M97416	WG455130-08 400ug/L STD A9FOO	NA	1	1	STD61356	12/04/13 19:15
11M97417	WG455130-09 500ug/L STD A9FOO	NA	1	1	STD61356	12/04/13 19:47
11M97418	RINSE	NA	1	1		12/04/13 20:18
11M97419	WG455130-10 100ug/L ALT SRC A9FOO	NA	1	1	STD61663	12/04/13 20:50

Approved: December 19, 2013

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 062614
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV01 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 50760

Internal Standard: STD65027 Surrogate Standard: STD65028
CCV: STD65039 LCS: STD65074 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG482030 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M964345	WG482030-01 50ng BFB STD 8260	NA	1	1	STD64936	06/26/14 14:45
9M964346	WG482030-01 50ng BFB STD 8260	NA	1	1	STD64936	06/26/14 14:58
9M964347	RINSE	NA	1	1	STD65039	06/26/14 15:26
9M964348	WG482030-02 0.3ug/L STD 8260	NA	1	1	STD65039	06/26/14 15:55
9M964349	WG482030-03 0.4ug/L STD 8260	NA	1	1	STD65039	06/26/14 16:24
9M964350	WG482030-04 1.0ug/L STD 8260	NA	1	1	STD65039	06/26/14 16:53
9M964351	WG482030-05 2.0ug/L STD 8260	NA	1	1	STD65039	06/26/14 17:22
9M964352	WG482030-06 5.0ug/L STD 8260	NA	1	1	STD65039	06/26/14 17:51
9M964353	WG482030-07 20.0ug/L STD 8260	NA	1	1	STD65039	06/26/14 18:20
9M964354	WG482030-08 50.0ug/L STD 8260	NA	1	1	STD65039	06/26/14 18:50
9M964355	WG482030-09 100.0ug/L STD 8260	NA	1	1	STD65039	06/26/14 19:19
9M964356	WG482030-10 200.0ug/L STD 8260	NA	1	1	STD65039	06/26/14 19:48
9M964357	WG482030-11 300.0ug/L STD 8260	NA	1	1	STD65039	06/26/14 20:17
9M964358	RINSE	NA	1	1		06/26/14 20:47
9M964359	WG482030-12 50.0ug/L ALTSRC 8260	NA	1	1	STD65074	06/26/14 21:16
9M964360	RINSE	NA	1	1		06/26/14 21:45

Approved: July 01, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 062714
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 19 / 0
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 16 / 0
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID: 50758

Internal Standard: STD65075 Surrogate Standard: STD64815
CCV: NA LCS: STD65074 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG482009

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M02142	BFB CHECK	NA	1	1	STD64936	06/27/14 11:23
11M02143	BFB FIL 2 RETUNED	NA	1	1	STD64936	06/27/14 12:01
11M02144	BFB CHECK	NA	1	1	STD64936	06/27/14 12:34
11M02145	BFB CHECK	NA	1	1	STD64936	06/27/14 12:53
11M02146	BFB CHECK	NA	1	1	STD64936	06/27/14 13:41
11M02147	BFB CHECK	NA	1	1	STD64936	06/27/14 13:54
11M02148	WG482009-01 BFB 50ng 8260	NA	1	1	STD64936	06/27/14 14:07
11M02149	WG482009-02 0.3ug/L STD 8260	NA	1	1	STD65120	06/27/14 14:53
11M02150	WG482009-03 0.4ug/L STD 8260	NA	1	1	STD65120	06/27/14 15:29
11M02151	WG482009-04 1ug/L STD 8260	NA	1	1	STD65120	06/27/14 16:07
11M02152	WG482009-02 0.3ug/L STD 8260	NA	1	1	STD65120	06/27/14 16:37
11M02153	WG482009-05 2ug/L STD 8260	NA	1	1	STD65120	06/27/14 17:08
11M02154	WG482009-06 5ug/L STD 8260	NA	1	1	STD65120	06/27/14 17:38
11M02155	WG482009-07 20ug/L STD 8260	NA	1	1	STD65120	06/27/14 18:08
11M02156	WG482009-08 50ug/L STD 8260	NA	1	1	STD65120	06/27/14 18:38
11M02157	WG482009-09 100ug/L STD 8260	NA	1	1	STD65120	06/27/14 19:08
11M02158	WG482009-10 200ug/L STD 8260	NA	1	1	STD65120	06/27/14 19:38
11M02159	WG482009-11 300ug/L STD 8260	NA	1	1	STD65120	06/27/14 20:09
11M02160	RINSE	NA	1	1		06/27/14 21:03
11M02161	WG482009-12 50ug/L ALT SRC 8260	NA	1	1	STD65074	06/27/14 21:34
11M02162	RINSE	NA	1	1		06/27/14 22:04

Comments

Seq.	Rerun	Dil.	Reason	Analytes
8	X			
File ID: 11M02149				
Came out higher than the 0.4ppb. Maybe the instrument needed a run to equilibrate.				

Approved: June 30, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 072914
Analyst1: FJB Analyst2: ADC
Method: 8260B SOP: MSV01 Rev: 19
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID: 51125

Internal Standard: STD65589 Surrogate Standard: STD65590
CCV: STD65656 LCS: STD65546 MS/MSD: STD65546

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG486191

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M02773	WG486190-01 BFB 50ng 8260	NA	1	1	STD65391	07/29/14 14:51
11M02774	WG486190-02 50ug/L CCV 8260	NA	1	1	STD65656	07/29/14 15:16
11M02775	WG486XXX-01 100ug/L A9 CCV 8260	NA	1	1	STDXXXXX	07/29/14 16:24
11M02776	WG486191-01 VBLK 0726 8260	NA	1	1		07/29/14 16:58
11M02777	WG486191-02 20ug/L LCS 8260	NA	1	1	STD65546	07/29/14 17:30
11M02778	L14071626-04 A MS 826-LOW	<2	1	1	STD65546	07/29/14 18:02
11M02779	L14071626-05 A MSD 826-LOW	<2	1	1	STD65546	07/29/14 18:34
11M02780	RINSE	NA	1	1		07/29/14 19:06
11M02781	L14071614-03 A 826-LOW	<2	1	1		07/29/14 19:38
11M02782	L14071626-10 A 826-LOW	<2	1	1		07/29/14 20:10
11M02783	L14071610-02 B 826-LOW	5	1	1		07/29/14 20:41
11M02784	L14071611-01 A 826-LOW	6	1	1		07/29/14 21:13
11M02785	L14071614-01 A 826-LOW	<2	1	1		07/29/14 21:45
11M02786	L14071626-02 A 826-LOW	<2	1	1		07/29/14 22:17
11M02787	L14071626-03 A 826-LOW	<2	1	1		07/29/14 22:49
11M02788	L14071626-06 A 826-LOW	<2	1	1		07/29/14 23:21
11M02789	L14071626-08 A 826-LOW	<2	1	1		07/29/14 23:52
11M02790	L14071626-09 A 826-LOW	<2	1	1		07/30/14 00:24
11M02791	L14071626-01 A 826-LOW	<2	1	1		07/30/14 00:56
11M02792	L14071626-07 A 826-LOW	<2	1	1		07/30/14 01:28
11M02793	RINSE	NA	1	1		07/30/14 02:00
11M02794	RINSE	NA	1	1		07/30/14 02:32
11M02795	WG486191-09 624-BLK	NA	2	1		07/30/14 03:04
11M02796	L14071516-07 REF B 624-SPE1	6	2	1		07/30/14 03:36
11M02797	L14071516-09 MS B 624-SPE1	6	2	1	STD65546	07/30/14 04:07
11M02798	L14071516-11 MSD B 624-SPE1	6	2	1	STD65546	07/30/14 04:39
11M02799	RINSE	NA	2	1		07/30/14 05:11
11M02800	RINSE	NA	2	1		07/30/14 05:43
11M02801	RINSE	NA	2	1		07/30/14 06:15

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X	10	Over Calibration Range	11DCE

Approved: July 30, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS11	Dataset:	072914		
Analyst1:	FJB	Analyst2:	ADC		
Method:	8260B	SOP:	MSV01	Rev:	19
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	16
Method:	624	SOP:	MSV10	Rev:	12
Maintenance Log ID:	51125				

Internal Standard: STD65589 Surrogate Standard: STD65590

CCV: STD65656 LCS: STD65546 MS/MSD: STD65546

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG486191

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 11M02789				
	L14071626-08			
20	X	10	Over Calibration Range	11DCE
File ID: 11M02792				
	L14071626-07			

Approved: July 30, 2014

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 073014
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51166

Internal Standard: STD65509 Surrogate Standard: STD65343
CCV: STD65229 LCS: STD65546 MS/MSD: STD65546

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG486305

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M965026	WG486302-01 50ng BFB STD 8260	NA	1	1	STD65391	07/30/14 10:53
9M965027	WG486302-02 50ug/L CCV STD 8260	NA	1	1	STD65656	07/30/14 11:17
9M965028	WG486517-01 100ug/L A9 CCV STD 8260	NA	1	1	STD65294	07/30/14 11:48
9M965029	WG486305-01 VBLK0730 BLANK STD 826	NA	1	1		07/30/14 12:17
9M965030	L14070002-01 A LOD	NA	1	1	STD65300	07/30/14 12:46
9M965031	WG486305-01 VBLK0730 BLANK STD 826	NA	1	1		07/30/14 13:16
9M965032	L14070004-01 A LOQ	NA	1	1	STD65300	07/30/14 13:45
9M965033	L14071607-02 B 5X 826-LOW 00	6	1	5		07/30/14 14:15
9M965034	WG486305-02 20ug/L LCS STD 8260	NA	1	1	STD65546	07/30/14 14:44
9M965035	L14071658-02 A MS 826-A9	<2	1	1	STD65546	07/30/14 15:14
9M965036	L14071658-03 A MSD 826-A9	<2	1	1	STD65546	07/30/14 15:43
9M965037	L14071553-01 B 50X 826-SPE	4	1	50		07/30/14 16:12
9M965038	L14071626-07 B 10X 826-LOW	<2	1	10		07/30/14 16:41
9M965039	L14071488-01 B 10X 826-TC	NA	17	10		07/30/14 17:11
9M965040	L14071626-08 B 10X 826-LOW	<2	1	10		07/30/14 17:40
9M965041	L14071658-05 A 826-A9	<2	1	1		07/30/14 18:10
9M965042	L14071630-05 A 826-SPE	<2	1	1		07/30/14 18:39
9M965043	L14071630-03 A 826-SPE	<2	1	1		07/30/14 19:08
9M965044	L14071630-04 A 826-SPE	<2	1	1		07/30/14 19:38
9M965045	L14071658-01 A 826-SPE	<2	1	1		07/30/14 20:07
9M965046	L14071658-06 A 826-SPE	<2	1	1		07/30/14 20:36
9M965047	L14071658-04 A 826-A9	<2	1	1		07/30/14 21:06
9M965048	L14071630-01 A 826-SPE	<2	1	1		07/30/14 21:35
9M965049	L14071630-02 A 826-SPE	<2	1	1		07/30/14 22:04
9M965050	L14071630-06 A 826-SPE	<2	1	1		07/30/14 22:33
9M965051	RINSE	NA	1	1		07/30/14 23:03
9M965052	WG486305-06 624-BLK	NA	2	1		07/30/14 23:32
9M965053	L14071517-01 B 500X 624-SPE D1	<2	2	500		07/31/14 00:01
9M965054	L14071695-01 A 624-SPE	10	2	1		07/31/14 00:30
9M965055	RINSE	NA	2	500		07/31/14 00:59
9M965056	RINSE	NA	2	500		07/31/14 01:28
9M965057	RINSE	NA	2	500		07/31/14 01:57

Approved: August 01, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 073014
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51166

Internal Standard: STD65509 Surrogate Standard: STD65343
CCV: STD65229 LCS: STD65546 MS/MSD: STD65546

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG486305

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
4				
File ID: 9M965029				
	WG486305-01 DNR TCE CARRY OVER			
10	X			
File ID: 9M965030				
	L14070002-01 RR FOR DCDF, 1,3-BUT, 1-BP, 1-BUTANOL, AND CYLCYHEXANONE.			
11				
File ID: 9M965032				
	L14070004-01 RR FOR DCDF, 1,3-BUT, 1-BP, 1-BUTANOL, AND CYLCYHEXANONE.			

Approved: August 01, 2014

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 080114
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51204

Internal Standard: STD65509 Surrogate Standard: STD65343
CCV: STD65229 LCS: STD65546 MS/MSD: STD65546

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG486696

Comments: DNR MDLS.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M965074	WG486694-01 50ng BFB STD 8260	NA	1	1	STD65391	08/01/14 15:36
9M965075	WG486694-02 50ug/L CCV STD 8260	NA	1	1	STD65656	08/01/14 16:01
9M965076	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD65294	08/01/14 16:32
9M965077	WG486696-01 VBLK0801 BLANK STD 826	NA	1	1		08/01/14 17:02
9M965078	L14070007-01 MDL	NA	1	1	STD65300	08/01/14 17:31
9M965079	L14070007-02 MDL	NA	1	1	STD65300	08/01/14 18:01
9M965080	L14070007-03 MDL	NA	1	1	STD65300	08/01/14 18:30
9M965081	L14070007-04 MDL	NA	1	1	STD65300	08/01/14 18:59
9M965082	L14070007-05 MDL	NA	1	1	STD65300	08/01/14 19:28
9M965083	L14070007-06 MDL	NA	1	1	STD65300	08/01/14 19:58
9M965084	L14070007-07 MDL	NA	1	1	STD65300	08/01/14 20:27
9M965085	WG486696-02 20ug/L LCS 8260	NA	1	1	STD65546	08/01/14 20:57
9M965086	WG486696-03 20ug/L LCSDUP 8260	NA	1	1	STD65546	08/01/14 21:27
9M965087	L14071626-08 C 10X 826-LOW	<2	1	10		08/01/14 21:56
9M965088	L14071607-02 A 5X 826-LOW	5	1	5		08/01/14 22:25
9M965089	L14071656-01 A 10X 826-TC	NA	17	10		08/01/14 22:54
9M965090	L14071630-01 B 826-SPE	<2	1	1		08/01/14 23:23
9M965091	L14071630-02 B 826-SPE	<2	1	1		08/01/14 23:52
9M965092	L14071630-03 B 826-SPE	<2	1	1		08/02/14 00:22
9M965093	L14071630-04 B 826-SPE	<2	1	1		08/02/14 00:51
9M965094	L14071630-05 B 826-SPE	<2	1	1		08/02/14 01:20
9M965095	L14071630-06 B 826-SPE	<2	1	1		08/02/14 01:49
9M965096	L14071714-01 A 10X 826-TC-SPE	NA	17	10		08/02/14 02:18
9M965097	L14071714-02 A 10X 826-TC-SPE	NA	17	10		08/02/14 02:47
9M965098	L14071709-02 A 10X 826-TC	NA	17	10		08/02/14 03:16
9M965099	RINSE	NA	1	1		08/02/14 03:46
9M965100	WG486535-01 10 TC-BLK	NA	17	10		08/02/14 04:15
9M965101	RINSE	NA	1	1		08/02/14 04:44
9M965102	RINSE	NA	1	1		08/02/14 05:13

Approved: August 05, 2014

Page: 1

Microbac Laboratories Inc.

Data Checklist

Date: 19-AUG-2013
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: WG441888
Runlog ID: 55275
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	NA
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
26-AUG-2013

Secondary Reviewer:
27-AUG-2013

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-27-2013 08:13:37

Microbac Laboratories Inc.

Data Checklist

Date: 04-DEC-2013
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 57820
Analytical Workgroups: WG455130

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 18-DEC-2013

Secondary Reviewer: 19-DEC-2013

CHECKLIST1 - Modified 03/05/2008

Generated: DEC-19-2013 08:33:22

Microbac Laboratories Inc.

Data Checklist

Date: 26-JUN-2014
Analyst: ADC
Analyst: NA
Method: 8260/624
Instrument: HPMS9
Curve Workgroup: WG482030
Runlog ID: 61921
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	NA
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	NA
KOBRA Workgroup Data	NA
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
30-JUN-2014

Secondary Reviewer:
01-JUL-2014

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-01-2014 10:06:58

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2014
Analyst: FJB
Analyst: NA
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 61915
Analytical Workgroups: WG482009

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 30-JUN-2014

Secondary Reviewer: 30-JUN-2014

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-30-2014 15:52:09

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUL-2014
Analyst: ADC
Analyst: NA
Method: 8260/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 62519
Analytical Workgroups: WG486191

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	
Check for compliance with method and project specific requirements	
Check the completeness of reported information	
Check the information for the report narrative	
Check the reasonableness of the results	

Primary Reviewer: 30-JUL-2014

Secondary Reviewer:

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-30-2014 13:10:58

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUL-2014
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 62527
Analytical Workgroups: WG486305

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	X
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
31-JUL-2014

Secondary Reviewer:
01-AUG-2014

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-01-2014 08:40:58

Microbac Laboratories Inc.

Data Checklist

Date: 01-AUG-2014
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 62613
Analytical Workgroups: WG486696

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
05-AUG-2014

Secondary Reviewer:
05-AUG-2014

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-05-2014 12:31:54

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG486191

Login Number: L14071626

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW01-072514	01	07/25/14					07/30/2014	4.7	14		07/30/14	4.7	14	
67WW07-072514	02	07/25/14					07/29/2014	4.6	14		07/29/14	4.6	14	
67WW12-072514	03	07/25/14					07/29/2014	4.6	14		07/29/14	4.6	14	
67WW12MS-072514	04	07/25/14					07/29/2014	4.4	14		07/29/14	4.4	14	
67WW12MSD-072514	05	07/25/14					07/29/2014	4.4	14		07/29/14	4.4	14	
67WW14-072514	06	07/25/14					07/29/2014	4.5	14		07/29/14	4.5	14	
67WW13-072514	07	07/25/14					07/30/2014	4.5	14		07/30/14	4.5	14	
67WW13FD-072514	08	07/25/14					07/29/2014	4.4	14		07/29/14	4.4	14	
67WW09-072514	09	07/25/14					07/30/2014	4.4	14		07/30/14	4.4	14	
TRIP BLANK	10	07/25/14					07/29/2014	4.8	14		07/29/14	4.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3685007
Report generated 08/05/2014 12:49

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG486305

Login Number: L14071626

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW13-072514	07	07/25/14					07/30/2014	5.1	14		07/30/14	5.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3685007
Report generated 08/05/2014 12:49

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG486696

Login Number: L14071626

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW13FD-072514	08	07/25/14					08/01/2014	7.4	14		08/01/14	7.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3685007
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L14071626
Instrument Id: HPMS9
Workgroup (AAB#): WG486305

Method: 8260
CAL ID: HPMS9-26-JUN-14
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L14071626-07	10.0	DL01	85.3	87.1	99.5	97.3
WG486305-01	1.00	01	87.9	88.8	103	101
WG486305-02	1.00	01	89.1	93.0	98.3	103
WG486305-06	1.00	01	86.9	88.3	95.6	99.0

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3685014
Report generated: 08/05/2014 12:49

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L14071626
Instrument Id: HPMS11
Workgroup (AAB#): WG486191

Method: 8260
CAL ID: HPMS11-27-JUN-14
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L14071626-01	1.00	01	102	95.2	97.5	97.1
L14071626-02	1.00	01	99.8	93.7	96.7	93.9
L14071626-03	1.00	01	100	94.6	99.4	96.9
L14071626-04	1.00	01	98.8	96.5	92.6	96.6
L14071626-05	1.00	01	100	96.6	93.0	96.7
L14071626-06	1.00	01	99.2	93.8	98.3	97.2
L14071626-07	1.00	01	101	96.1	102	97.2
L14071626-08	1.00	01	101	96.6	101	96.5
L14071626-09	1.00	01	100	95.5	101	98.1
L14071626-10	1.00	01	101	94.6	102	96.2
WG486191-01	1.00	01	90.8	93.4	106	98.7
WG486191-02	1.00	01	96.7	94.8	92.3	96.5
WG486191-09	1.00	01	101	94.3	99.1	94.2

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3685014
Report generated: 08/05/2014 12:49

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L14071626
Instrument Id: HPMS9
Workgroup (AAB#): WG486696

Method: 8260
CAL ID: HPMS9-26-JUN-14
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L14071626-08	10.0	DL02	85.0	92.0	100	101
WG486696-01	1.00	01	82.7	89.4	99.7	101
WG486696-02	1.00	01	84.0	88.6	92.4	100
WG486696-03	1.00	01	83.0	88.0	92.5	98.6

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3685014
Report generated: 08/05/2014 12:49

METHOD BLANK SUMMARY

Login Number: L14071626
Blank File ID: 11M02776
Prep Date: 07/29/14 16:58
Analyzed Date: 07/29/14 16:58
Analyst: ADC/FJB

Work Group: WG486191
Blank Sample ID: WG486191-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG486191-02	11M02777	07/29/14 17:30	01
67WW12MS-072514	L14071626-04	11M02778	07/29/14 18:02	01
67WW12MSD-072514	L14071626-05	11M02779	07/29/14 18:34	01
TRIP BLANK	L14071626-10	11M02782	07/29/14 20:10	01
67WW07-072514	L14071626-02	11M02786	07/29/14 22:17	01
67WW12-072514	L14071626-03	11M02787	07/29/14 22:49	01
67WW14-072514	L14071626-06	11M02788	07/29/14 23:21	01
67WW13FD-072514	L14071626-08	11M02789	07/29/14 23:52	01
67WW09-072514	L14071626-09	11M02790	07/30/14 00:24	01
67WW01-072514	L14071626-01	11M02791	07/30/14 00:56	01
67WW13-072514	L14071626-07	11M02792	07/30/14 01:28	01

Report Name: BLANK_SUMMARY
PDF File ID: 3693638
Report generated 08/05/2014 12:49

METHOD BLANK SUMMARY

Login Number: L14071626
Blank File ID: 9M965031
Prep Date: 07/30/14 13:16
Analyzed Date: 07/30/14 13:16
Analyst: ADC

Work Group: WG486305
Blank Sample ID: WG486305-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG486305-02	9M965034	07/30/14 14:44	01
67WW13-072514	L14071626-07	9M965038	07/30/14 16:41	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 3693638
Report generated 08/05/2014 12:49

METHOD BLANK SUMMARY

Login Number: L14071626
Blank File ID: 9M965077
Prep Date: 08/01/14 17:02
Analyzed Date: 08/01/14 17:02
Analyst: ADC

Work Group: WG486696
Blank Sample ID: WG486696-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG486696-02	9M965085	08/01/14 20:57	01
LCS2	WG486696-03	9M965086	08/01/14 21:27	01
67WW13FD-072514	L14071626-08	9M965087	08/01/14 21:56	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 3693638
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L14071626 Prep Date: 07/29/14 16:58 Sample ID: WG486191-01
Instrument ID: HPMS11 Run Date: 07/29/14 16:58 Prep Method: 5030B/5030C/503
File ID: 11M02776 Analyst: ADC/FJB Method: 8260B
Workgroup (AAB#): WG486191 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-27-JUN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 3685008
05-AUG-2014 12:49

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L14071626 Prep Date: 07/29/14 16:58 Sample ID: WG486191-01
Instrument ID: HPMS11 Run Date: 07/29/14 16:58 Prep Method: 5030B/5030C/503
File ID: 11M02776 Analyst: ADC/FJB Method: 8260B
Workgroup (AAB#): WG486191 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-27-JUN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	93.4	85 - 115	PASS
1,2-Dichloroethane-d4	90.8	70 - 120	PASS
Toluene-d8	98.7	85 - 120	PASS
4-Bromofluorobenzene	106	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3685008
05-AUG-2014 12:49

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L14071626 Prep Date: 07/30/14 13:16 Sample ID: WG486305-01
Instrument ID: HPMS9 Run Date: 07/30/14 13:16 Prep Method: 5030B/5030C/503
File ID: 9M965031 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG486305 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS9-26-JUN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 3685008
05-AUG-2014 12:49

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14071626 Prep Date: 07/30/14 13:16 Sample ID: WG486305-01
Instrument ID: HPMS9 Run Date: 07/30/14 13:16 Prep Method: 5030B/5030C/503
File ID: 9M965031 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG486305 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS9-26-JUN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	88.8	85 - 115	PASS
1,2-Dichloroethane-d4	87.9	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	103	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3685008
05-AUG-2014 12:49

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L14071626 Prep Date: 08/01/14 17:02 Sample ID: WG486696-01
Instrument ID: HPMS9 Run Date: 08/01/14 17:02 Prep Method: 5030B/5030C/503
File ID: 9M965077 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG486696 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS9-26-JUN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 3685008
05-AUG-2014 12:49

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14071626 Prep Date: 08/01/14 17:02 Sample ID: WG486696-01
Instrument ID: HPMS9 Run Date: 08/01/14 17:02 Prep Method: 5030B/5030C/503
File ID: 9M965077 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG486696 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS9-26-JUN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	89.4	85 - 115	PASS
1,2-Dichloroethane-d4	82.7	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	99.7	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3685008
05-AUG-2014 12:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14071626 | Run Date: 07/29/2014 | Sample ID: WG486191-02
Instrument ID: HPMS11 | Run Time: 17:30 | Prep Method: 5030B/5030C/503
File ID: 11M02777 | Analyst: ADC/FJB | Method: 8260B
Workgroup (AAB#): WG486191 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD65546 | Cal ID: HPMS11-27-JUN-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	24.4	122	40 - 140	
Benzene	20.0	21.2	106	80 - 120	
Bromobenzene	20.0	19.3	96.5	75 - 125	
Bromochloromethane	20.0	21.1	105	65 - 130	
Bromodichloromethane	20.0	20.7	104	75 - 120	
Bromoform	20.0	24.0	120	70 - 130	
Bromomethane	20.0	19.9	99.3	30 - 145	
2-Butanone	20.0	26.1	131	30 - 150	
n-Butylbenzene	20.0	22.5	113	70 - 135	
sec-Butylbenzene	20.0	20.0	100	70 - 125	
tert-Butylbenzene	20.0	18.4	92.1	70 - 130	
Carbon disulfide	20.0	19.3	96.7	35 - 160	
Carbon tetrachloride	20.0	21.2	106	65 - 140	
Chlorobenzene	20.0	19.7	98.4	80 - 120	
Chlorodibromomethane	20.0	22.7	114	60 - 135	
Chloroethane	20.0	21.5	107	60 - 135	
Chloroform	20.0	20.7	103	65 - 135	
Chloromethane	20.0	19.7	98.4	40 - 125	
2-Chlorotoluene	20.0	19.2	95.8	75 - 125	
4-Chlorotoluene	20.0	18.5	92.3	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	23.6	118	50 - 130	
1,2-Dibromoethane	20.0	21.8	109	80 - 120	
Dibromomethane	20.0	22.0	110	75 - 125	
1,2-Dichlorobenzene	20.0	19.4	97.0	70 - 120	
1,3-Dichlorobenzene	20.0	18.9	94.3	75 - 125	
1,4-Dichlorobenzene	20.0	20.3	101	75 - 125	
Dichlorodifluoromethane	20.0	31.5	157	30 - 155	*
1,1-Dichloroethane	20.0	20.2	101	70 - 135	
1,2-Dichloroethane	20.0	21.2	106	70 - 130	
1,1-Dichloroethene	20.0	19.8	98.9	70 - 130	
cis-1,2-Dichloroethene	20.0	20.4	102	70 - 125	
trans-1,2-Dichloroethene	20.0	20.4	102	60 - 140	
1,2-Dichloropropane	20.0	20.8	104	75 - 125	
1,3-Dichloropropane	20.0	21.7	109	75 - 125	
2,2-Dichloropropane	20.0	19.6	97.8	70 - 135	
cis-1,3-Dichloropropene	20.0	22.5	112	70 - 130	
trans-1,3-Dichloropropene	20.0	21.9	110	55 - 140	
1,1-Dichloropropene	20.0	20.4	102	75 - 130	
Ethylbenzene	20.0	20.1	100	75 - 125	
2-Hexanone	20.0	27.6	138	55 - 130	*
Hexachlorobutadiene	20.0	19.0	95.2	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 3685009
Report generated: 08/05/2014 12:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14071626 Run Date: 07/29/2014 Sample ID: WG486191-02
Instrument ID: HPMS11 Run Time: 17:30 Prep Method: 5030B/5030C/503
File ID: 11M02777 Analyst: ADC/FJB Method: 8260B
Workgroup (AAB#): WG486191 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD65546 Cal ID: HPMS11-27-JUN-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.9	104	75 - 125	
p-Isopropyltoluene	20.0	20.5	103	75 - 130	
4-Methyl-2-pentanone	20.0	25.4	127	60 - 135	
Methylene chloride	20.0	19.7	98.5	55 - 140	
Naphthalene	20.0	20.6	103	55 - 140	
n-Propylbenzene	20.0	18.9	94.7	70 - 130	
Styrene	20.0	22.3	112	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.8	104	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	21.5	107	65 - 130	
Tetrachloroethene	20.0	19.6	97.9	45 - 150	
Toluene	20.0	21.8	109	75 - 120	
1,2,3-Trichlorobenzene	20.0	19.9	99.4	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.3	96.7	65 - 135	
1,1,1-Trichloroethane	20.0	20.0	100	65 - 130	
1,1,2-Trichloroethane	20.0	21.9	109	75 - 125	
Trichloroethene	20.0	20.0	100	70 - 125	
Trichlorofluoromethane	20.0	22.3	112	60 - 145	
1,2,3-Trichloropropane	20.0	22.4	112	75 - 125	
1,2,4-Trimethylbenzene	20.0	22.2	111	75 - 130	
1,3,5-Trimethylbenzene	20.0	21.6	108	75 - 130	
Vinyl chloride	20.0	22.2	111	50 - 145	
o-Xylene	20.0	19.0	95.0	80 - 120	
m-,p-Xylene	40.0	42.2	106	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.8	85 - 115	PASS
1,2-Dichloroethane-d4	96.7	70 - 120	PASS
Toluene-d8	96.5	85 - 120	PASS
4-Bromofluorobenzene	92.3	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 3685009
Report generated: 08/05/2014 12:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14071626 | Run Date: 07/30/2014 | Sample ID: WG486305-02
Instrument ID: HPMS9 | Run Time: 14:44 | Prep Method: 5030B/5030C/503
File ID: 9M965034 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG486305 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD65546 | Cal ID: HPMS9-26-JUN-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	23.0	115	40 - 140	
Benzene	20.0	22.2	111	80 - 120	
Bromobenzene	20.0	22.5	112	75 - 125	
Bromochloromethane	20.0	19.9	99.7	65 - 130	
Bromodichloromethane	20.0	20.9	105	75 - 120	
Bromoform	20.0	20.6	103	70 - 130	
Bromomethane	20.0	22.6	113	30 - 145	
2-Butanone	20.0	20.4	102	30 - 150	
n-Butylbenzene	20.0	25.0	125	70 - 135	
sec-Butylbenzene	20.0	23.7	118	70 - 125	
tert-Butylbenzene	20.0	23.5	117	70 - 130	
Carbon disulfide	20.0	20.4	102	35 - 160	
Carbon tetrachloride	20.0	21.9	109	65 - 140	
Chlorobenzene	20.0	21.0	105	80 - 120	
Chlorodibromomethane	20.0	22.0	110	60 - 135	
Chloroethane	20.0	24.8	124	60 - 135	
Chloroform	20.0	20.7	103	65 - 135	
Chloromethane	20.0	28.0	140	40 - 125	*
2-Chlorotoluene	20.0	22.9	114	75 - 125	
4-Chlorotoluene	20.0	22.6	113	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	22.5	113	50 - 130	
1,2-Dibromoethane	20.0	21.5	108	80 - 120	
Dibromomethane	20.0	20.4	102	75 - 125	
1,2-Dichlorobenzene	20.0	22.2	111	70 - 120	
1,3-Dichlorobenzene	20.0	21.8	109	75 - 125	
1,4-Dichlorobenzene	20.0	22.7	113	75 - 125	
Dichlorodifluoromethane	20.0	36.7	184	30 - 155	*
1,1-Dichloroethane	20.0	21.4	107	70 - 135	
1,2-Dichloroethane	20.0	21.5	107	70 - 130	
1,1-Dichloroethene	20.0	21.0	105	70 - 130	
cis-1,2-Dichloroethene	20.0	21.4	107	70 - 125	
trans-1,2-Dichloroethene	20.0	21.9	110	60 - 140	
1,2-Dichloropropane	20.0	21.1	105	75 - 125	
1,3-Dichloropropane	20.0	22.2	111	75 - 125	
2,2-Dichloropropane	20.0	19.0	94.8	70 - 135	
cis-1,3-Dichloropropene	20.0	21.5	108	70 - 130	
trans-1,3-Dichloropropene	20.0	21.0	105	55 - 140	
1,1-Dichloropropene	20.0	22.0	110	75 - 130	
Ethylbenzene	20.0	23.0	115	75 - 125	
2-Hexanone	20.0	21.5	108	55 - 130	
Hexachlorobutadiene	20.0	23.5	118	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 3685009
Report generated: 08/05/2014 12:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14071626 Run Date: 07/30/2014 Sample ID: WG486305-02
Instrument ID: HPMS9 Run Time: 14:44 Prep Method: 5030B/5030C/503
File ID: 9M965034 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG486305 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD65546 Cal ID: HPMS9-26-JUN-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.0	110	75 - 125	
p-Isopropyltoluene	20.0	23.6	118	75 - 130	
4-Methyl-2-pentanone	20.0	20.0	99.9	60 - 135	
Methylene chloride	20.0	22.5	112	55 - 140	
Naphthalene	20.0	25.1	125	55 - 140	
n-Propylbenzene	20.0	23.3	117	70 - 130	
Styrene	20.0	23.5	117	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	22.0	110	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	21.5	107	65 - 130	
Tetrachloroethene	20.0	21.7	108	45 - 150	
Toluene	20.0	23.7	119	75 - 120	
1,2,3-Trichlorobenzene	20.0	23.1	115	55 - 140	
1,2,4-Trichlorobenzene	20.0	21.8	109	65 - 135	
1,1,1-Trichloroethane	20.0	22.0	110	65 - 130	
1,1,2-Trichloroethane	20.0	22.2	111	75 - 125	
Trichloroethene	20.0	21.1	106	70 - 125	
Trichlorofluoromethane	20.0	24.2	121	60 - 145	
1,2,3-Trichloropropane	20.0	23.6	118	75 - 125	
1,2,4-Trimethylbenzene	20.0	25.0	125	75 - 130	
1,3,5-Trimethylbenzene	20.0	25.7	128	75 - 130	
Vinyl chloride	20.0	27.5	138	50 - 145	
o-Xylene	20.0	21.1	105	80 - 120	
m-,p-Xylene	40.0	44.8	112	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	93.0	85 - 115	PASS
1,2-Dichloroethane-d4	89.1	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	98.3	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 3685009
Report generated: 08/05/2014 12:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14071626 Analyst: ADC Prep Method: 5030B/5030C/503
Instrument ID: HPMS9 Matrix: Water Method: 8260B
Workgroup (AAB#): WG486696 Units: ug/L
QC Key: DOD4 Lot #: STD65546

Sample ID: WG486696-02 LCS File ID: 9M965085 Run Date: 08/01/2014 20:57
Sample ID: WG486696-03 LCS2 File ID: 9M965086 Run Date: 08/01/2014 21:27

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	19.9	99.6	20.0	19.8	99.2	0.416	80 - 130	30	
1,1,1-Trichloroethane	20.0	18.9	94.5	20.0	18.6	93.1	1.47	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	16.4	81.9	20.0	17.1	85.7	4.54	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.1	100	20.0	19.0	94.9	5.73	75 - 125	30	
1,1-Dichloroethane	20.0	18.4	91.9	20.0	17.8	89.0	3.23	70 - 135	30	
1,1-Dichloroethene	20.0	17.9	89.5	20.0	16.1	80.4	10.7	70 - 130	30	
1,1-Dichloropropene	20.0	18.6	93.2	20.0	18.3	91.5	1.90	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.6	98.1	20.0	20.1	101	2.41	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.9	99.6	20.0	18.9	94.5	5.23	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.4	97.1	20.0	19.7	98.4	1.36	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	21.6	108	20.0	22.1	111	2.40	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	18.6	93.0	20.0	19.4	97.1	4.26	50 - 130	30	
1,2-Dibromoethane	20.0	19.2	96.2	20.0	18.9	94.6	1.63	80 - 120	30	
1,2-Dichlorobenzene	20.0	19.7	98.3	20.0	19.9	99.6	1.29	70 - 120	30	
1,2-Dichloroethane	20.0	18.8	93.8	20.0	17.8	88.9	5.40	70 - 130	30	
1,2-Dichloropropane	20.0	19.3	96.3	20.0	18.4	91.8	4.80	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	22.4	112	20.0	22.8	114	1.77	75 - 130	30	
1,3-Dichlorobenzene	20.0	19.4	97.1	20.0	19.5	97.3	0.201	75 - 125	30	
1,3-Dichloropropane	20.0	19.4	97.2	20.0	19.0	94.8	2.51	75 - 125	30	
1,4-Dichlorobenzene	20.0	20.4	102	20.0	20.7	103	1.44	75 - 125	30	
2,2-Dichloropropane	20.0	15.5	77.3	20.0	15.9	79.7	3.10	70 - 135	30	
2-Butanone	20.0	18.4	91.9	20.0	17.9	89.3	2.83	30 - 150	30	
2-Chlorotoluene	20.0	19.2	96.0	20.0	19.1	95.3	0.701	75 - 125	30	
2-Hexanone	20.0	18.5	92.6	20.0	18.5	92.3	0.411	55 - 130	30	
4-Chlorotoluene	20.0	20.9	104	20.0	21.4	107	2.60	75 - 130	30	
4-Methyl-2-pentanone	20.0	18.5	92.5	20.0	17.6	88.1	4.90	60 - 135	30	
Acetone	20.0	18.9	94.4	20.0	19.0	94.9	0.572	40 - 140	30	
Benzene	20.0	19.5	97.5	20.0	18.8	94.2	3.43	80 - 120	30	
Bromobenzene	20.0	20.1	101	20.0	20.6	103	2.46	75 - 125	30	
Bromochloromethane	20.0	18.0	90.2	20.0	17.1	85.7	5.03	65 - 130	30	
Bromodichloromethane	20.0	18.9	94.6	20.0	18.5	92.4	2.43	75 - 120	30	
Bromoform	20.0	18.8	94.0	20.0	18.7	93.6	0.482	70 - 130	30	
Bromomethane	20.0	18.6	93.0	20.0	15.2	76.2	19.8	30 - 145	30	
Carbon disulfide	20.0	18.6	92.8	20.0	18.9	94.6	1.91	35 - 160	30	
Carbon tetrachloride	20.0	19.0	94.8	20.0	18.5	92.3	2.67	65 - 140	30	
Chlorobenzene	20.0	18.5	92.6	20.0	18.5	92.7	0.184	80 - 120	30	
Chloroethane	20.0	19.8	99.2	20.0	16.6	83.0	17.7	60 - 135	30	
Chloroform	20.0	18.4	91.9	20.0	17.9	89.7	2.36	65 - 135	30	
Chloromethane	20.0	17.9	89.3	20.0	12.2	60.8	37.9	40 - 125	30	#
cis-1,2-Dichloroethene	20.0	18.5	92.5	20.0	18.3	91.6	0.939	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3693639
Report generated: 08/05/2014 12:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14071626 Analyst: ADC Prep Method: 5030B/5030C/503
Instrument ID: HPMS9 Matrix: Water Method: 8260B
Workgroup (AAB#): WG486696 Units: ug/L
QC Key: DOD4 Lot #: STD65546

Sample ID: WG486696-02 LCS File ID: 9M965085 Run Date: 08/01/2014 20:57
Sample ID: WG486696-03 LCS2 File ID: 9M965086 Run Date: 08/01/2014 21:27

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	18.9	94.7	20.0	18.9	94.6	0.0215	70 - 130	30	
Chlorodibromomethane	20.0	19.7	98.3	20.0	19.3	96.6	1.70	60 - 135	30	
Dibromomethane	20.0	18.7	93.3	20.0	18.5	92.4	1.05	75 - 125	30	
Dichlorodifluoromethane	20.0	21.9	109	20.0	10.4	52.2	70.7	30 - 155	30	#
Ethylbenzene	20.0	20.4	102	20.0	19.8	99.2	2.85	75 - 125	30	
Hexachlorobutadiene	20.0	19.4	96.9	20.0	20.4	102	4.89	50 - 140	30	
Isopropylbenzene	20.0	19.2	96.2	20.0	19.5	97.3	1.15	75 - 125	30	
m-,p-Xylene	40.0	39.7	99.2	40.0	39.6	98.9	0.263	75 - 130	30	
Methylene chloride	20.0	19.0	95.0	20.0	17.8	89.0	6.51	55 - 140	30	
n-Butylbenzene	20.0	21.1	105	20.0	21.8	109	3.46	70 - 135	30	
n-Propylbenzene	20.0	20.1	101	20.0	20.5	103	2.01	70 - 130	30	
Naphthalene	20.0	21.2	106	20.0	21.3	107	0.635	55 - 140	30	
o-Xylene	20.0	18.8	94.0	20.0	19.0	94.8	0.822	80 - 120	30	
p-Isopropyltoluene	20.0	20.2	101	20.0	21.0	105	3.90	75 - 130	30	
sec-Butylbenzene	20.0	20.5	103	20.0	21.1	106	2.85	70 - 125	30	
Styrene	20.0	20.6	103	20.0	20.7	104	0.424	65 - 135	30	
tert-Butylbenzene	20.0	20.2	101	20.0	21.0	105	4.19	70 - 130	30	
Tetrachloroethene	20.0	19.3	96.3	20.0	19.4	96.9	0.625	45 - 150	30	
Toluene	20.0	20.4	102	20.0	20.5	102	0.0884	75 - 120	30	
trans-1,2-Dichloroethene	20.0	18.8	93.8	20.0	17.8	89.2	4.95	60 - 140	30	
trans-1,3-Dichloropropene	20.0	17.8	88.8	20.0	17.5	87.7	1.22	55 - 140	30	
Trichloroethene	20.0	20.0	99.8	20.0	19.5	97.7	2.05	70 - 125	30	
Trichlorofluoromethane	20.0	19.4	97.1	20.0	16.5	82.7	16.0	60 - 145	30	
Vinyl chloride	20.0	21.0	105	20.0	15.2	76.1	32.0	50 - 145	30	#

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	84.0	83.0	70 - 120	PASS
Dibromofluoromethane	88.6	88.0	85 - 115	PASS
4-Bromofluorobenzene	92.4	92.5	75 - 120	PASS
Toluene-d8	100	98.6	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3693639
Report generated: 08/05/2014 12:49

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L14071626 Cal ID: HPMS11- 27-JUN-14 Worknum: WG486191

Instrument ID: HPMS11 Contract #: Prep Method: 5030B/5030C/

Parent ID: L14071626-03 File ID: 11M02787 Dil: 1 Method: 5035A

Sample ID: L14071626-04 MS File ID: 11M02778 Dil: 1 Matrix: 8260B

Sample ID: L14071626-05 MSD File ID: 11M02779 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	20.3	101	20.0	20.1	100	0.945	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	19.5	97.6	20.0	19.2	96.1	1.48	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	23.3	116	20.0	24.5	122	4.95	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	22.4	112	20.0	22.5	112	0.414	75 - 125	30	
1,1-Dichloroethane	U	20.0	19.6	98.1	20.0	19.7	98.7	0.544	70 - 135	30	
1,1-Dichloroethene	U	20.0	19.1	95.7	20.0	18.9	94.3	1.51	70 - 130	30	
1,1-Dichloropropene	U	20.0	19.8	99	20.0	19.2	95.8	3.26	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	21.2	106	20.0	21.7	108	2.11	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	22.9	115	20.0	24.1	121	5.15	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	19.9	99.6	20.0	19.9	99.3	0.368	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	21.5	108	20.0	21.8	109	1.34	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	25.5	127	20.0	27.6	138	8.05	50 - 130	30	*
1,2-Dibromoethane	U	20.0	22.4	112	20.0	22.9	114	2.22	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	19.4	97.1	20.0	19.5	97.3	0.196	70 - 120	30	
1,2-Dichloroethane	U	20.0	20.9	105	20.0	21.2	106	1.64	70 - 130	30	
1,2-Dichloropropane	U	20.0	20.5	103	20.0	20.7	104	0.888	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	21.1	106	20.0	21.3	106	0.667	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	18.7	93.6	20.0	18.5	92.5	1.09	75 - 125	30	
1,3-Dichloropropane	U	20.0	21.8	109	20.0	22.3	111	2.29	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	20.0	100	20.0	20.1	100	0.444	75 - 125	30	
2,2-Dichloropropane	U	20.0	18.8	94.1	20.0	18.5	92.7	1.56	70 - 135	30	
2-Butanone	U	20.0	27.5	138	20.0	29.4	147	6.45	30 - 150	30	
2-Chlorotoluene	U	20.0	18.7	93.5	20.0	18.5	92.6	0.965	75 - 125	30	
2-Hexanone	U	20.0	29.4	147	20.0	30.9	154	4.97	55 - 130	30	*
4-Chlorotoluene	U	20.0	18.4	92	20.0	18.4	91.8	0.202	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	26.2	131	20.0	28.3	141	7.60	60 - 135	30	*
Acetone	U	20.0	27.3	136	20.0	27.2	136	0.111	40 - 140	30	
Benzene	U	20.0	20.6	103	20.0	20.5	103	0.282	80 - 120	30	
Bromobenzene	U	20.0	19.1	95.5	20.0	19.3	96.5	1.11	75 - 125	30	
Bromochloromethane	U	20.0	21.0	105	20.0	21.4	107	1.82	65 - 130	30	
Bromodichloromethane	U	20.0	20.3	102	20.0	20.6	103	1.63	75 - 120	30	
Bromoform	U	20.0	24.7	123	20.0	24.8	124	0.441	70 - 130	30	
Bromomethane	U	20.0	19.5	97.3	20.0	19.9	99.5	2.27	30 - 145	30	
Carbon disulfide	U	20.0	19.5	97.5	20.0	19.2	95.8	1.79	35 - 160	30	
Carbon tetrachloride	U	20.0	20.2	101	20.0	19.7	98.5	2.45	65 - 140	30	
Chlorobenzene	U	20.0	19.0	95.2	20.0	18.9	94.7	0.567	80 - 120	30	
Chloroethane	U	20.0	21.1	106	20.0	20.9	104	1.07	60 - 135	30	
Chloroform	U	20.0	20.3	102	20.0	20.0	100	1.38	65 - 135	30	
Chloromethane	U	20.0	18.6	93	20.0	18.9	94.4	1.42	40 - 125	30	
cis-1,2-Dichloroethene	U	20.0	19.7	98.7	20.0	19.9	99.4	0.701	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	22.5	112	20.0	22.4	112	0.267	70 - 130	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 3685010
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L14071626 Cal ID: HPMS11 27-JUN-14 Worknum: WG486191

Instrument ID: HPMS11 Contract #: Prep Method: 5030B/5030C/

Parent ID: L14071626-03 File ID: 11M02787 Dil: 1 Method: 5035A

Sample ID: L14071626-04 MS File ID: 11M02778 Dil: 1 Matrix: 8260B

Sample ID: L14071626-05 MSD File ID: 11M02779 Dil: 1 Units: Water

ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	22.6	113	20.0	23.2	116	2.54	60 - 135	30	
Dibromomethane	U	20.0	21.8	109	20.0	22.9	114	4.65	75 - 125	30	
Dichlorodifluoromethane	U	20.0	31.2	156	20.0	30.2	151	3.41	30 - 155	30	*
Ethylbenzene	U	20.0	19.5	97.4	20.0	19.3	96.3	1.20	75 - 125	30	
Hexachlorobutadiene	U	20.0	19.0	95.1	20.0	18.8	93.8	1.43	50 - 140	30	
Isopropylbenzene	U	20.0	20.5	103	20.0	20.1	101	1.96	75 - 125	30	
m-,p-Xylene	U	40.0	40.6	102	40.0	40.5	101	0.339	75 - 130	30	
Methylene chloride	U	20.0	19.6	98.1	20.0	19.6	97.9	0.179	55 - 140	30	
n-Butylbenzene	U	20.0	22.4	112	20.0	22.2	111	0.788	70 - 135	30	
n-Propylbenzene	U	20.0	18.5	92.6	20.0	18.3	91.4	1.20	70 - 130	30	
Naphthalene	U	20.0	22.8	114	20.0	23.5	117	2.86	55 - 140	30	
o-Xylene	U	20.0	18.5	92.7	20.0	18.4	92.2	0.543	80 - 120	30	
p-Isopropyltoluene	U	20.0	20.1	101	20.0	19.9	99.7	0.834	75 - 130	30	
sec-Butylbenzene	U	20.0	19.6	97.9	20.0	19.5	97.5	0.441	70 - 125	30	
Styrene	U	20.0	22.2	111	20.0	21.8	109	1.87	65 - 135	30	
tert-Butylbenzene	U	20.0	17.8	88.8	20.0	17.8	89.2	0.531	70 - 130	30	
Tetrachloroethene	U	20.0	19.2	96.1	20.0	18.4	92	4.36	45 - 150	30	
Toluene	U	20.0	21.2	106	20.0	21.0	105	1.01	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	19.8	99.1	20.0	19.9	99.3	0.187	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	21.8	109	20.0	22.0	110	0.888	55 - 140	30	
Trichloroethene	U	20.0	19.0	95.2	20.0	18.8	93.9	1.43	70 - 125	30	
Trichlorofluoromethane	U	20.0	21.7	108	20.0	21.1	105	2.82	60 - 145	30	
Vinyl chloride	U	20.0	21.6	108	20.0	21.1	106	2.29	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 3685010
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14071626
Instrument: HPMS11
Analyst: FJB
Workgroup: WG455130

Tune ID: WG455130-01
Run Date: 12/04/2013
Run Time: 15:09
File ID: 11M97408
Cal ID: HPMS11 - 04-DEC-13

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	26.3	2601	PASS
75.0	95.0	30.0	60.0	52.3	5177	PASS
95.0	95.0	100	100	100	9902	PASS
96.0	95.0	5.00	9.00	6.82	675	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	65.0	6441	PASS
175	174	5.00	9.00	5.96	384	PASS
176	174	95.0	101	98.2	6328	PASS
177	176	5.00	9.00	8.12	514	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG455130-02	STD	01	12/04/2013 16:06	
WG455130-03	STD	01	12/04/2013 16:38	
WG455130-04	STD	01	12/04/2013 17:10	
WG455130-05	STD	01	12/04/2013 17:41	
WG455130-06	STD-CCV	01	12/04/2013 18:13	
WG455130-07	STD	01	12/04/2013 18:44	
WG455130-08	STD	01	12/04/2013 19:15	
WG455130-09	STD	01	12/04/2013 19:47	
WG455130-10	SSCV	01	12/04/2013 20:50	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3693640
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14071626
Instrument: HPMS11
Analyst: FJB
Workgroup: WG482009

Tune ID: WG482009-01
Run Date: 06/27/2014
Run Time: 14:07
File ID: 11M02148
Cal ID: HPMS11 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.0	7655	PASS
75.0	95.0	30.0	60.0	47.0	21128	PASS
95.0	95.0	100	100	100	44912	PASS
96.0	95.0	5.00	9.00	6.54	2936	PASS
173	174	0	2.00	0.521	194	PASS
174	95.0	50.0	100	82.9	37234	PASS
175	174	5.00	9.00	6.66	2479	PASS
176	174	95.0	101	95.5	35560	PASS
177	176	5.00	9.00	6.83	2430	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG482009-03	STD	01	06/27/2014 15:29	
WG482009-04	STD	01	06/27/2014 16:07	
WG482009-02	STD	01	06/27/2014 16:37	
WG482009-05	STD	01	06/27/2014 17:08	
WG482009-06	STD	01	06/27/2014 17:38	
WG482009-07	STD	01	06/27/2014 18:08	
WG482009-08	STD-CCV	01	06/27/2014 18:38	
WG482009-09	STD	01	06/27/2014 19:08	
WG482009-10	STD	01	06/27/2014 19:38	
WG482009-11	STD	01	06/27/2014 20:09	
WG482009-12	SSCV	01	06/27/2014 21:34	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3693640
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14071626
Instrument: HPMS11
Analyst: ADC/FJB
Workgroup: WG486190

Tune ID: WG486190-01
Run Date: 07/29/2014
Run Time: 14:51
File ID: 11M02773
Cal ID: HPMS11 - 27-JUN-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	3797	PASS
75.0	95.0	30.0	60.0	46.4	8718	PASS
95.0	95.0	100	100	100	18793	PASS
96.0	95.0	5.00	9.00	6.31	1186	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	77.9	14632	PASS
175	174	5.00	9.00	7.68	1124	PASS
176	174	95.0	101	98.4	14396	PASS
177	176	5.00	9.00	7.01	1009	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG486190-02	CCV	01	07/29/2014 15:16	
WG486191-01	BLANK	01	07/29/2014 16:58	
WG486191-02	LCS	01	07/29/2014 17:30	
L14071626-04	67WW12MS-072514	01	07/29/2014 18:02	
L14071626-05	67WW12MSD-072514	01	07/29/2014 18:34	
L14071626-10	TRIP BLANK	01	07/29/2014 20:10	
L14071626-02	67WW07-072514	01	07/29/2014 22:17	
L14071626-03	67WW12-072514	01	07/29/2014 22:49	
L14071626-06	67WW14-072514	01	07/29/2014 23:21	
L14071626-08	67WW13FD-072514	01	07/29/2014 23:52	
L14071626-09	67WW09-072514	01	07/30/2014 00:24	
L14071626-01	67WW01-072514	01	07/30/2014 00:56	
L14071626-07	67WW13-072514	01	07/30/2014 01:28	
WG486191-09	BLANK2	01	07/30/2014 03:04	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3693640
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14071626
Instrument: HPMS9
Analyst: ADC
Workgroup: WG441887

Tune ID: WG441887-01
Run Date: 08/19/2013
Run Time: 15:08
File ID: 9M957893
Cal ID: HPMS9 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.7	8524	PASS
75.0	95.0	30.0	60.0	54.9	26372	PASS
95.0	95.0	100	100	100	48077	PASS
96.0	95.0	5.00	9.00	6.87	3304	PASS
173	174	0	2.00	0.270	117	PASS
174	95.0	50.0	100	90.1	43306	PASS
175	174	5.00	9.00	7.40	3205	PASS
176	174	95.0	101	98.9	42808	PASS
177	176	5.00	9.00	6.58	2817	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG441888-01	STD	01	08/19/2013 16:23	
WG441888-02	STD	01	08/19/2013 16:53	
WG441888-03	STD	01	08/19/2013 17:22	
WG441888-04	STD-CCV	01	08/19/2013 17:51	
WG441888-05	STD	01	08/19/2013 18:20	
WG441888-06	STD	01	08/19/2013 18:48	
WG441888-07	STD	01	08/19/2013 19:17	
WG441888-08	STD	01	08/19/2013 19:46	
WG441888-09	SSCV	01	08/19/2013 20:45	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3693640
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14071626
Instrument: HPMS9
Analyst: ADC
Workgroup: WG482030

Tune ID: WG482030-01
Run Date: 06/26/2014
Run Time: 14:58
File ID: 9M964346
Cal ID: HPMS9 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.3	10401	PASS
75.0	95.0	30.0	60.0	48.9	20913	PASS
95.0	95.0	100	100	100	42797	PASS
96.0	95.0	5.00	9.00	7.30	3124	PASS
173	174	0	2.00	0.645	245	PASS
174	95.0	50.0	100	88.7	37965	PASS
175	174	5.00	9.00	7.72	2930	PASS
176	174	95.0	101	100	38056	PASS
177	176	5.00	9.00	6.00	2283	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG482030-02	STD	01	06/26/2014 15:55	
WG482030-03	STD	01	06/26/2014 16:24	
WG482030-04	STD	01	06/26/2014 16:53	
WG482030-05	STD	01	06/26/2014 17:22	
WG482030-06	STD	01	06/26/2014 17:51	
WG482030-07	STD	01	06/26/2014 18:20	
WG482030-08	STD-CCV	01	06/26/2014 18:50	
WG482030-09	STD	01	06/26/2014 19:19	
WG482030-10	STD	01	06/26/2014 19:48	
WG482030-11	STD	01	06/26/2014 20:17	
WG482030-12	SSCV	01	06/26/2014 21:16	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3693640
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14071626
Instrument: HPMS9
Analyst: ADC
Workgroup: WG486302

Tune ID: WG486302-01
Run Date: 07/30/2014
Run Time: 10:53
File ID: 9M965026
Cal ID: HPMS9 - 26-JUN-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	26.1	11004	PASS
75.0	95.0	30.0	60.0	48.4	20396	PASS
95.0	95.0	100	100	100	42122	PASS
96.0	95.0	5.00	9.00	6.37	2683	PASS
173	174	0	2.00	0.455	153	PASS
174	95.0	50.0	100	79.8	33606	PASS
175	174	5.00	9.00	7.55	2536	PASS
176	174	95.0	101	96.3	32372	PASS
177	176	5.00	9.00	6.53	2114	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG486302-02	CCV	01	07/30/2014 11:17	
WG486517-01	CCV	01	07/30/2014 11:48	
WG486305-01	BLANK	01	07/30/2014 13:16	
WG486305-02	LCS	01	07/30/2014 14:44	
L14071626-07	67WW13-072514	DL01	07/30/2014 16:41	
WG486305-06	BLANK2	01	07/30/2014 23:32	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3693640
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14071626
Instrument: HPMS9
Analyst: ADC
Workgroup: WG486694

Tune ID: WG486694-01
Run Date: 08/01/2014
Run Time: 15:36
File ID: 9M965074
Cal ID: HPMS9 - 26-JUN-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.7	9564	PASS
75.0	95.0	30.0	60.0	47.5	17676	PASS
95.0	95.0	100	100	100	37240	PASS
96.0	95.0	5.00	9.00	8.40	3127	PASS
173	174	0	2.00	0.310	104	PASS
174	95.0	50.0	100	90.2	33600	PASS
175	174	5.00	9.00	7.58	2547	PASS
176	174	95.0	101	99.0	33248	PASS
177	176	5.00	9.00	6.74	2242	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG486694-02	CCV	01	08/01/2014 16:01	
WG486696-01	BLANK	01	08/01/2014 17:02	
WG486696-02	LCS	01	08/01/2014 20:57	
WG486696-03	LCS2	01	08/01/2014 21:27	
L14071626-08	67WW13FD-072514	DL02	08/01/2014 21:56	
WG486535-01	FBLK1	DL01	08/02/2014 04:15	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3693640
Report generated 08/05/2014 12:49

Calibration Table Report
Method: A9WTR.M
Title: Appendix IX (SOP:OVL MSV01) Water 12/04/13 HPMS11
Last Calibration: Wed Dec 18 14:24:41 2013
Curve: WG455130
Calibration Files

Compound	5 11M97410.D	20 11M97411.D	50 11M97412.D	100 11M97413.D	200 11M97414.D	300 11M97415.D	400 11M97416.D	500 11M97417.D	Avg	%RSD	Linear	Quadratic
Fluorobenzene	ISTD											
Acetonitrile	0.036	0.028	0.027	0.029	0.029	0.030	0.029	0.029	0.030	9.836		
3-Chloro-1-propene	0.478	0.497	0.515	0.502	0.505	0.493	0.454	0.439	0.485	5.450		
2-Chloro-1,3-butadiene	0.458	0.502	0.525	0.523	0.533	0.520	0.480	0.464	0.501	5.923		
Methacrylonitrile	0.196	0.178	0.168	0.176	0.183	0.184	0.174	0.174	0.179	4.838		
Isobutyl Alcohol		0.010	0.008	0.009	0.009	0.010	0.009	0.010	0.009	7.458		
1-Butanol		0.003	0.003	0.004	0.004	0.005	0.005	0.004	0.004	19.985	0.995	
Cyclohexanone		0.028	0.021	0.021	0.018	0.036	0.036	0.042	0.029	31.895		0.991
2-Nitropropane	0.073	0.071	0.074	0.082	0.087	0.091	0.088	0.088	0.082	9.852		
Ethyl Acetate	0.246	0.236	0.224	0.236	0.242	0.241	0.225	0.223	0.234	3.836		
Methyl methacrylate	0.235	0.219	0.223	0.243	0.251	0.251	0.237	0.236	0.237	4.857		
Chlorobenzene-d5	ISTD											
1,4-Dichlorobenzene-d4	ISTD											

Wed Dec 18 14:50:12 2013

Calibration Table Report
Method: 8260WTR.M
Title: 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Calibration: Mon Jun 30 10:39:17 2014
Curve: WG482009
Calibration Files

	Compound	0.3 11M02152.D	0.4 11M02150.D	1 11M02151.D	2 11M02153.D	5 11M02154.D	20 11M02155.D	50 11M02156.D	100 11M02157.D	200 11M02158.D	300 11M02159.D	Avg	%RSD	Linear	Quadratic
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.236	0.227	0.242	0.300	0.285	0.294	0.292	0.290	0.271	11.204		
P	Chloromethane			0.587	0.511	0.468	0.484	0.449	0.449	0.438	0.395	0.472	12.170		
C	Vinyl Chloride		0.369	0.393	0.420	0.451	0.476	0.449	0.449	0.427	0.397	0.426	8.069		
T	1,3-Butadiene		0.353	0.308	0.372	0.396	0.440	0.343	0.232			0.349	19.012		0.999
T	Bromomethane		0.296	0.265	0.264	0.239	0.209	0.200	0.214	0.233	0.236	0.239	12.866		
T	Chloroethane		0.182	0.210	0.201	0.209	0.227	0.216	0.226	0.227	0.226	0.214	7.180		
T	Trichlorofluoromethane		0.489	0.449	0.480	0.512	0.524	0.508	0.524	0.524	0.514	0.503	5.057		
T	Diethyl ether			0.196	0.205	0.209	0.205	0.202	0.210		0.208	0.205	2.311		
T	Isoprene				0.378	0.409	0.443	0.447	0.459	0.465	0.471	0.439	7.679		
T	Acrolein			0.022	0.025	0.027	0.027	0.026	0.028		0.029	0.026	8.884		
T	1,1,2-Trichloro-1,2,2-Trifluoroe		0.282	0.288	0.282	0.316	0.326	0.311	0.325	0.325	0.329	0.309	6.433		
T	Acetone			0.061	0.060	0.057	0.047	0.045	0.046	0.044	0.045	0.050	14.606		
C	1,1-Dichloroethene		0.448	0.391	0.435	0.469	0.477	0.468	0.481	0.480	0.472	0.458	6.376		
T	Tert-Butyl Alcohol				0.014	0.014	0.014	0.013	0.013		0.012	0.013	6.291		
T	Dimethyl Sulfide		0.345	0.300	0.292	0.300	0.332	0.321	0.332	0.329	0.331	0.320	5.773		
T	Iodomethane			0.086	0.109	0.173	0.360	0.394	0.395	0.395	0.382	0.287	48.334		1.000
T	Methyl acetate			0.154	0.168	0.170	0.161	0.154	0.159	0.152	0.158	0.160	4.196		
T	Methylene Chloride		0.381	0.341	0.333	0.337	0.335	0.322	0.336	0.331	0.333	0.339	4.936		
T	Carbon Disulfide		1.011	0.894	0.935	0.948	1.046	1.012	1.004	0.941	0.841	0.959	6.837		
T	Acrylonitrile			0.062	0.066	0.068	0.069	0.070	0.072		0.076	0.069	6.759		
T	Methyl Tert Butyl Ether		0.730	0.668	0.697	0.699	0.719	0.686	0.706	0.674	0.671	0.694	3.121		
T	trans-1,2-Dichloroethene		0.351	0.318	0.310	0.328	0.342	0.331	0.346	0.344	0.343	0.335	4.139		
T	n-Hexane			0.353	0.350	0.394	0.409	0.400	0.401	0.398	0.398	0.388	5.877		
T	Diisopropyl ether			0.890	0.908	0.938	0.922	0.909	0.917		0.854	0.905	2.985		
T	Vinyl Acetate				0.186	0.222	0.270	0.250	0.274	0.259	0.259	0.246	12.813		
P	1,1-Dichloroethane		0.515	0.519	0.532	0.557	0.573	0.557	0.578	0.558	0.547	0.549	4.054		
T	Ethyl-Tert-Butyl ether			0.810	0.840	0.867	0.854	0.834	0.844		0.795	0.835	2.987		
T	2-Butanone			0.076	0.067	0.082	0.074	0.070	0.072	0.068	0.070	0.072	6.751		
T	Propionitrile			0.023	0.023	0.024	0.024	0.024	0.024		0.023	0.024	2.499		
T	2,2-Dichloropropane		0.513	0.425	0.472	0.491	0.509	0.494	0.512	0.508	0.504	0.492	5.790		
T	cis-1,2-Dichloroethene		0.376	0.325	0.344	0.361	0.378	0.362	0.377	0.373	0.373	0.363	4.980		
C	Chloroform	0.517	0.559	0.552	0.568	0.575	0.586	0.564	0.588	0.566	0.548	0.562	3.678		
T	1-Bromopropane			0.047	0.053	0.065	0.063	0.065	0.064	0.065	0.065	0.061	11.499		
T	Bromochloromethane		0.168	0.189	0.207	0.219	0.223	0.214	0.223	0.219	0.223	0.209	9.076		
T	Tetrahydrofuran			0.044	0.048	0.048	0.049	0.046	0.048		0.046	0.047	3.828		
S	Dibromofluoromethane			0.266	0.283	0.302	0.330	0.326	0.330	0.329	0.331	0.312	8.159		
T	1,1,1-Trichloroethane		0.548	0.465	0.459	0.511	0.538	0.524	0.551	0.551	0.543	0.521	6.888		
T	Cyclohexane		0.465	0.417	0.450	0.485	0.515	0.510	0.516	0.519	0.518	0.488	7.533		
T	1,1-Dichloropropene		0.432	0.391	0.404	0.432	0.456	0.445	0.461	0.454	0.448	0.436	5.529		
T	Carbon Tetrachloride		0.437	0.381	0.443	0.468	0.495	0.485	0.510	0.500	0.497	0.468	8.860		
T	Tert-Amyl-Methyl ether			0.698	0.729	0.75	0.75	0.72	0.728		0.689	0.723	3.211		
S	1,2-Dichloroethane-d4			0.259	0.29	0.317	0.326	0.311	0.315	0.309	0.31	0.305	6.910		
T	1,2-Dichloroethane		0.454	0.373	0.396	0.393	0.405	0.386	0.396	0.379	0.374	0.395	6.226		
T	Benzene		1.39	1.192	1.213	1.274	1.292	1.238	1.242	1.106	0.97	1.213	9.845		
T	Trichloroethene		0.419	0.34	0.37	0.368	0.376	0.367	0.38	0.379	0.375	0.375	5.433		
T	Methylcyclohexane		0.473	0.43	0.46	0.496	0.526	0.519	0.521	0.515	0.512	0.495	6.736		
C	1,2-Dichloropropane		0.293	0.278	0.284	0.294	0.318	0.307	0.319	0.314	0.315	0.302	5.110		
T	1,4-Dioxane				0.002	0.002	0.002	0.002	0.002		0.002	0.002	6.415		
T	Bromodichloromethane		0.428	0.377	0.393	0.417	0.432	0.425	0.448	0.434	0.428	0.420	5.186		
T	Dibromomethane		0.162	0.166	0.175	0.17	0.179	0.172	0.178	0.174	0.175	0.172	3.142		
T	2-Chloroethyl Vinyl Ether		0.145	0.123	0.124	0.13	0.141	0.142	0.144	0.142	0.147	0.138	6.625		
T	4-Methyl-2-Pentanone			0.06	0.058	0.063	0.065	0.065	0.067	0.065	0.066	0.064	4.570		
T	cis-1,3-Dichloropropene		0.427	0.42	0.426	0.466	0.509	0.498	0.52	0.5	0.484	0.472	8.263		
T	Dimethyl Disulfide					0.201	0.254	0.265	0.285	0.29	0.297	0.265	13.438		

I	Chlorobenzene-d5	ISTD														
S	Toluene-d8			1.412	1.44	1.489	1.548	1.525	1.458	1.471	1.375	1.465	3.897			
C	Toluene		1.852	1.699	1.729	1.853	1.871	1.79	1.685	1.469	1.223	1.686	12.651			
T	Ethyl Methacrylate		0.359	0.293	0.299	0.327	0.367	0.374	0.37	0.373	0.367	0.348	9.324			
T	trans-1,3-Dichloropropene		0.499	0.459	0.506	0.553	0.588	0.582	0.578	0.572	0.547	0.543	8.247			
T	1,1,2-Trichloroethane		0.349	0.316	0.31	0.322	0.327	0.317	0.309	0.314	0.31	0.319	3.977			
T	2-Hexanone		0.12	0.127	0.127	0.134	0.138	0.137	0.135	0.135	0.133	0.132	4.497			
T	1,3-Dichloropropane		0.64	0.532	0.551	0.572	0.567	0.536	0.527	0.516	0.5	0.549	7.471			
T	Tetrachloroethene		0.389	0.348	0.374	0.39	0.39	0.378	0.377	0.39	0.385	0.380	3.593			
T	Dibromochloromethane		0.408	0.366	0.364	0.398	0.412	0.415	0.419	0.425	0.417	0.403	5.596			
T	1,2-Dibromoethane		0.318	0.32	0.312	0.311	0.331	0.317	0.312	0.314	0.311	0.316	1.984			
T	1-Chlorohexane		0.525	0.482	0.487	0.549	0.59	0.592	0.571	0.591	0.564	0.550	7.844			
P	Chlorobenzene		1.267	1.185	1.238	1.281	1.261	1.251	1.231	1.173	1.012	1.211	6.849			
T	1,1,1,2-Tetrachloroethane		0.462	0.378	0.413	0.436	0.453	0.46	0.473	0.505	0.495	0.453	8.750			
C	Ethylbenzene		0.649	0.558	0.638	0.665	0.697	0.7	0.727	0.768	0.728	0.681	9.134			
T	m-,p-Xylene		0.803	0.704	0.767	0.824	0.845	0.828	0.803	0.719	0.591	0.765	10.600			
T	o-Xylene		0.776	0.701	0.73	0.783	0.814	0.815	0.815	0.83	0.779	0.783	5.513			
T	Styrene		1.029	0.973	1.057	1.189	1.325	1.342	1.329	1.24	1.066	1.172	12.297			
P	Bromoform		0.219	0.213	0.212	0.217	0.245	0.247	0.25	0.25	0.25	0.234	7.591			
T	Isopropylbenzene		1.792	1.714	1.872	1.984	2.053	1.982	1.865	1.593	1.299	1.795	13.078			
I	1,4-Dichlorobenzene-d4	ISTD														
P	1,1,2,2-Tetrachloroethane		0.713	0.667	0.714	0.705	0.685	0.661	0.656	0.629	0.617	0.672	5.274			
S	p-Bromofluorobenzene			1.04	1.014	1.063	1.105	1.1	1.112	1.123	1.089	1.081	3.525			
T	1,2,3-Trichloropropane			0.198	0.203	0.219	0.212	0.204	0.202	0.197	0.197	0.204	3.933			
T	trans-1,4-Dichloro-2-Butene			0.122	0.128	0.135	0.172	0.181	0.187	0.188	0.19	0.163	18.102	0.999		
T	n-Propylbenzene		4.488	4.058	4.181	4.561	4.565	4.44	4.134	3.285		4.214	10.090			
T	Bromobenzene	1.042	1.115	0.963	0.959	0.991	1.001	0.994	1.017	1.009	0.968	1.006	4.594			
T	1,3,5-Trimethylbenzene		2.951	2.888	2.971	3.233	3.279	3.243	3.174	2.724	2.257	2.969	11.017			
T	2-Chlorotoluene		2.885	2.615	2.679	2.742	2.717	2.657	2.609	2.793	2.246	2.660	6.708			
T	4-Chlorotoluene		2.917	2.599	2.736	2.847	2.853	2.825	2.771	1.894		2.680	12.385			
T	a-Methylstyrene				1.307	1.474	1.746	1.813	1.85	1.755	1.598	1.649	12.080			
T	tert-Butylbenzene		0.646	0.624	0.615	0.679	0.679	0.682	0.702	0.705	0.702	0.670	5.069			
T	1,2,4-Trimethylbenzene		2.905	2.727	3.111	3.221	3.368	3.329	3.218	2.708	2.224	2.979	12.553			
T	sec-Butylbenzene		3.824	3.417	3.649	4.039	4.033	3.931	3.744	3.077	2.49	3.578	14.310			
T	p-Isopropyltoluene		2.907	2.792	3.028	3.336	3.452	3.381	3.248	2.744	2.248	3.015	12.878			
T	1,3-Dichlorobenzene		1.964	1.787	1.847	1.906	1.883	1.856	1.867	1.73	1.563	1.823	6.479			
T	1,4-Dichlorobenzene	1.991	2.09	1.666	1.852	1.816	1.885	1.858	1.847	1.711	1.54	1.825	8.633			
T	n-Butylbenzene		2.23	2.125	2.332	2.679	2.907	2.885	2.791	2.457	2.046	2.495	13.294			
T	1,2-Dichlorobenzene	1.679	1.724	1.669	1.682	1.754	1.754	1.713	1.705	1.583	1.471	1.673	5.161			
T	1,2-Dibromo-3-Chloropropane				0.087	0.087	0.098	0.098	0.101	0.105	0.107	0.098	8.182			
T	1,2,4-Trichlorobenzene		0.841	0.698	0.732	0.944	1.071	1.091	1.111	1.16	1.106	0.973	18.088			0.999
T	Hexachlorobutadiene		0.486	0.394	0.424	0.467	0.456	0.43	0.438	0.472	0.465	0.448	6.438			
T	Naphthalene		0.921	0.829	1.019	1.325	1.854	1.958	2.011	1.916	1.692	1.503	32.030	0.994		
T	1,2,3-Trichlorobenzene	0.408	0.632	0.606	0.694	0.84	0.981	0.967	0.988	1.009	0.974	0.810	26.069	1.000		

Mon Jun 30 11:41:24 2014

Thu Sep 19 10:28:54 2013

Calibration Table Report
Method: A9FOOWT.M
Title: FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Calibration: Tue Aug 20 15:10:19 2013
Curve: WG441888
Calibration Files

Compound	5 9M957895.D	20 9M957896.D	50 9M957897.D	100 9M957898.D	200 9M957899.D	300 9M957900.D	400 9M957901.D	500 9M957902.D	Avg	%RSD
Fluorobenzene	ISTD									
Acetonitrile	0.020	0.022	0.023	0.021	0.022	0.021	0.022	0.023	0.022	3.924
3-Chloro-1-propene	0.338	0.346	0.375	0.349	0.358	0.348	0.343	0.363	0.352	3.490
2-Chloro-1,3-butadiene	0.338	0.363	0.398	0.373	0.390	0.382	0.380	0.403	0.378	5.543
Ethyl Acetate	0.150	0.169	0.184	0.171	0.174	0.169	0.166	0.176	0.170	5.676
Methacrylonitrile	0.072	0.083	0.091	0.084	0.088	0.086	0.086	0.093	0.086	7.408
Isobutyl Alcohol	0.014	0.015	0.015	0.013	0.014	0.014	0.015	0.016	0.015	6.105
1-Butanol		0.003	0.003	0.003	0.004	0.004	0.004		0.004	12.474
Methyl methacrylate	0.164	0.173	0.191	0.178	0.183	0.180	0.177	0.189	0.179	4.819
2-Nitropropane	0.048	0.051	0.057	0.056	0.061	0.060	0.060	0.065	0.057	10.037
Chlorobenzene-d5	ISTD									
Cyclohexanone	0.044	0.032	0.036	0.034	0.035	0.034	0.035	0.037	0.036	10.211
1,4-Dichlorobenzene-d4	ISTD									

Tue Aug 20 15:10:40 2013

Calibration Table Report
Method: 8260WTR.M
Title: 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Calibration: Fri Jun 27 11:04:25 2014
Curve: WG482030
Calibration Files

Compound	0.3 9M964348.D	0.4 9M964349.D	1 9M964350.D	2 9M964351.D	5 9M964352.D	20 9M964353.D	50 9M964354.D	100 9M964355.D	200 9M964356.D	300 9M964357.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD													
Dichlorodifluoromethane		0.142	0.205	0.178	0.192	0.217	0.235	0.220	0.221	0.226	0.204	14.316		
Chloromethane			0.643	0.553	0.593	0.616	0.592	0.514	0.495	0.489	0.562	10.295		
Vinyl Chloride		0.346	0.434	0.364	0.357	0.399	0.390	0.365	0.369	0.317	0.371	8.963		
1,3-Butadiene				0.432	0.284	0.397	0.314	0.281	0.264	0.254	0.318	21.791	0.991	
Bromomethane		0.253	0.258	0.247	0.224	0.209	0.219	0.207	0.214	0.220	0.228	8.637		
Chloroethane		0.220	0.220	0.210	0.218	0.235	0.251	0.240	0.245	0.252	0.232	6.777		
Trichlorofluoromethane		0.379	0.398	0.365	0.372	0.392	0.403	0.378	0.383	0.382	0.384	3.177		
Diethyl ether			0.371	0.332		0.347	0.356	0.338		0.327	0.345	4.835		
Isoprene		0.344	0.338	0.353	0.357	0.392	0.397	0.385	0.372	0.368	0.367	5.720		
Acrolein			0.073	0.068		0.069	0.071	0.067		0.065	0.069	4.324		
1,1,2-Trichloro-1,2,2-Trifluoroe		0.190	0.226	0.228	0.222	0.223	0.231	0.217	0.221	0.222	0.220	5.517		
Acetone				0.124	0.109	0.103	0.106	0.100	0.097	0.096	0.105	9.106		
1,1-Dichloroethene		0.523	0.542	0.517	0.520	0.540	0.564	0.523	0.526	0.521	0.531	2.886		
Tert-Butyl Alcohol			0.042	0.035		0.035	0.036	0.038		0.044	0.038	9.242		
Dimethyl Sulfide		0.407	0.419	0.378	0.419	0.429	0.447	0.423	0.409	0.409	0.416	4.501		
Iodomethane			0.104	0.121	0.223	0.276	0.320	0.321	0.323	0.323	0.251	36.798	0.999	
Methyl acetate			0.368	0.359	0.360	0.344	0.350	0.338	0.317	0.318	0.344	5.555		
Methylene Chloride		0.267	0.298	0.275	0.279	0.285	0.294	0.274	0.275	0.278	0.281	3.532		
Carbon Disulfide		0.769	0.803	0.704	0.727	0.774	0.786	0.749	0.716	0.711	0.749	4.801		
Acrylonitrile			0.164	0.148		0.165	0.180	0.173		0.179	0.168	7.103		
Methyl Tert Butyl Ether		0.654	0.810	0.720	0.766	0.769	0.803	0.752	0.746	0.732	0.750	6.221		
trans-1,2-Dichloroethene		0.549	0.548	0.494	0.523	0.523	0.549	0.510	0.509	0.505	0.523	3.994		
n-Hexane		0.553	0.531	0.492	0.503	0.548	0.564	0.547	0.518	0.509	0.529	4.740		
Diisopropyl ether			1.490	1.411		1.464	1.493	1.362		1.249	1.412	6.694		
Vinyl Acetate				0.558	0.550	0.543	0.563	0.469	0.453	0.439	0.511	10.646		
1,1-Dichloroethane		0.668	0.679	0.657	0.650	0.654	0.674	0.627	0.619	0.607	0.649	3.912		
Ethyl-Tert-Butyl ether			1.336	1.264		1.302	1.332	1.241		1.179	1.276	4.727		
2-Butanone					0.179	0.169	0.176	0.164	0.161	0.163	0.169	4.278		
Propionitrile			0.057	0.056		0.059	0.062	0.061		0.063	0.060	4.587		
2,2-Dichloropropane		0.412	0.448	0.386	0.397	0.402	0.413	0.384	0.383	0.376	0.400	5.554		
cis-1,2-Dichloroethene		0.342	0.306	0.295	0.295	0.298	0.308	0.289	0.290	0.285	0.301	5.720		
Chloroform	0.477	0.563	0.521	0.485	0.482	0.487	0.502	0.463	0.465	0.455	0.490	6.526		
1-Bromopropane			0.032	0.039	0.047	0.046	0.050	0.047	0.047	0.047	0.044	12.980		
Bromochloromethane		0.208	0.195	0.172	0.180	0.181	0.186	0.177	0.179	0.176	0.184	6.089		
Tetrahydrofuran			0.119	0.108		0.114	0.120	0.114		0.109	0.114	4.083		
Dibromofluoromethane			0.336	0.227	0.261	0.257	0.267	0.259	0.257	0.258	0.265	11.680		
1,1,1-Trichloroethane		0.382	0.428	0.409	0.414	0.432	0.447	0.421	0.429	0.426	0.421	4.314		
Cyclohexane		0.663	0.727	0.669	0.691	0.730	0.745	0.726	0.700	0.680	0.703	4.214		
1,1-Dichloropropene		0.374	0.388	0.320	0.350	0.348	0.364	0.343	0.345	0.344	0.353	5.648		
Tert-Amyl-Methyl ether			0.790	0.740		0.781	0.788	0.739		0.719	0.759	4.005		
Carbon Tetrachloride		0.37954	0.37924	0.32652	0.35081	0.37789	0.39196	0.36999	0.37903	0.3771	0.37023	5.32634		
1,2-Dichloroethane-d4				0.35488	0.36684	0.35638	0.3661	0.351	0.34502	0.34197	0.3546	2.69952		
Heptane											0	0		
1,2-Dichloroethane		0.44176	0.48714	0.46134	0.48292	0.47229	0.49433	0.4626	0.45939	0.44834	0.46779	3.79605		
Benzene		1.19151	1.17089	1.07627	1.05519	1.0624	1.09676	1.00664	0.97291	0.9205	1.06145	8.23402		
Trichloroethene		0.36855	0.33551	0.30416	0.29243	0.29426	0.29919	0.28235	0.27969	0.2771	0.30369	9.8739		
Methylcyclohexane		0.38128	0.38969	0.37637	0.37959	0.41456	0.42094	0.41369	0.39428	0.39032	0.39564	4.21446		
1,2-Dichloropropane		0.38489	0.40276	0.35936	0.38423	0.38505	0.39799	0.37417	0.37304	0.36962	0.38124	3.60507		
1,4-Dioxane				0.00242		0.00236	0.00282	0.00292		0.00341	0.00279	15.2295	FAIL	
Bromodichloromethane		0.36207	0.37811	0.34546	0.37861	0.38151	0.40353	0.37789	0.38246	0.37856	0.37647	4.17495		
Dibromomethane		0.13467	0.17013	0.16738	0.17576	0.1785	0.19101	0.18289	0.18501	0.18431	0.17441	9.55861		
2-Chloroethyl Vinyl Ether			0.19575	0.18025	0.20576	0.2111	0.22676	0.21414	0.21331	0.21272	0.20747	6.74959		
4-Methyl-2-Pentanone				0.13152	0.15431	0.15342	0.16342	0.15759	0.16194	0.16997	0.15602	7.83574		
cis-1,3-Dichloropropene		0.41479	0.44714	0.42094	0.45057	0.44843	0.47199	0.44273	0.4421	0.43635	0.44167	3.80175		
Dimethyl Disulfide			0.37651	0.37224	0.44877	0.49419	0.54364	0.5244	0.51392	0.50718	0.47261	14.0747		
Chlorobenzene-d5	ISTD													
Toluene-d8				1.26119	1.31116	1.30709	1.31515	1.21226	1.13585	1.10325	1.23514	7.07478		
Toluene		1.68611	1.67888	1.4458	1.53938	1.54117	1.56183	1.40161	1.28751	1.17906	1.48015	11.4785		
Ethyl Methacrylate			0.3865	0.38674	0.43385	0.44715	0.46806	0.44243	0.42276	0.4168	0.42554	6.73116		
trans-1,3-Dichloropropene		0.54046	0.6368	0.56454	0.57669	0.58342	0.59974	0.55559	0.52896	0.50761	0.56598	6.87531		
1,1,2-Trichloroethane		0.31718	0.34248	0.30845	0.33583	0.33175	0.33475	0.30809	0.2966	0.28771	0.31809	6.0391		
2-Hexanone				0.32202	0.346	0.34685	0.36438	0.34108	0.33447	0.33844	0.34189	3.79481		
1,3-Dichloropropane		0.57732	0.6416	0.56251	0.57111	0.57086	0.58374	0.53435	0.50274	0.48719	0.55905	8.24572		
Tetrachloroethene		0.31506	0.35439	0.27752	0.29839	0.31839	0.32495	0.3027	0.29303	0.28542	0.30776	7.60292		
Dibromochloromethane		0.38995	0.38318	0.3853	0.3792	0.39057	0.4138	0.38744	0.38148	0.37728	0.38758	2.7971		
1,2-Dibromoethane		0.30925	0.34361	0.31173	0.32574	0.33162	0.34949	0.32472	0.31632	0.3077	0.32447	4.60616		
1-Chlorohexane		0.43769	0.45418	0.3973	0.43632	0.46193	0.47612	0.45668	0.42634	0.41473	0.44014	5.64076		
Chlorobenzene		1.09517	1.11964	1.01093	1.00649	1.00998	1.02506	0.93871	0.87753	0.82853	0.99023	9.55119		
1,1,1,2-Tetrachloroethane		0.37548	0.40485	0.35183	0.37544	0.38115	0.38849	0.36568	0.35212	0.34973	0.37164	5.02994		
Ethylbenzene		0.56073	0.60014	0.53547	0.56036	0.55871	0.58322	0.53026	0.50204	0.48027	0.54569	6.9516		
m-,p-Xylene		0.67206	0.70877	0.63726	0.66504	0.66803	0.6961	0.62276	0.57972	0.53261	0.64249	8.82748		
o-Xylene		0.72286	0.68163	0.66588	0.67086	0.66753	0.69443	0.64562	0.62387	0.60297	0.66396	5.44012		
Styrene		0.94625	1.01526	0.98407	1.08796	1.11664	1.16945	1.082	1.03352	0.98348	1.04652	6.93013		
Bromoform			0.2732	0.23864	0.27099	0.28433	0.30386	0.29508	0.29976	0.30789	0.28422	8.06663		
Isopropylbenzene		1.71495	1.68582	1.53226	1.63548	1.67974	1.7278	1.57855	1.46822	1.358	1.59787	7.83745		
1,4-Dichlorobenzene-d4	ISTD													
1,1,2,2-Tetrachloroethane		0.5002	0.66955	0.58901	0.67352	0.64784	0.69611	0.63433	0.66103	0.65571	0.63637	9.28886		
p-Bromofluorobenzene				1.04241	0.91777	0.88467	0.93839	0.85555	0.85183	0.82331	0.90199	8.15396		
1,2,3-Trichloropropane			0.20794	0.22081	0.23064	0.21818	0.23135	0.21948	0.21599	0.21426	0.21983	3.6089		

trans-1,4-Dichloro-2-Butene		0.32041	0.27829	0.35103	0.3461	0.37634	0.34373	0.3397	0.33024	0.33573	8.45107
n-Propylbenzene		3.78859	3.69971	3.52442	3.7111	3.66888	3.77978	3.31798	3.01951	2.53543	3.44949	12.3273
Bromobenzene	0.86994	0.88029	0.8656	0.83396	0.80815	0.7983	0.83529	0.76647	0.75412	0.70959	0.81217	6.87144
1,3,5-Trimethylbenzene		2.49577	2.59485	2.53479	2.56097	2.56191	2.66184	2.39958	2.28619	2.02318	2.45768	8.02256
2-Chlorotoluene		2.81096	2.67455	2.08991	2.47064	2.23456	2.26106	2.30974	2.10574	1.8847	2.31576	12.6681
4-Chlorotoluene		2.07195	2.34532	1.86221	2.07672	2.22162	2.31144	1.79349	1.78162	1.59442	2.00653	13.0657
a-Methylstyrene			1.15478	1.13091	1.31394	1.36336	1.44382	1.37259	1.28706	1.20822	1.28433	8.65379
tert-Butylbenzene		0.49577	0.62391	0.50528	0.57977	0.57131	0.58842	0.53022	0.5221	0.49111	0.54532	8.61606
1,2,4-Trimethylbenzene		2.70818	2.82966	2.5824	2.68593	2.6357	2.72186	2.4332	2.29246	2.03621	2.54729	9.8488
sec-Butylbenzene		3.35732	3.35826	3.0175	3.22407	3.25625	3.36855	3.0097	2.78094	2.41999	3.08806	10.3847
p-Isopropyltoluene		2.49657	2.77027	2.46781	2.63724	2.65636	2.77655	2.50732	2.33857	2.09174	2.52694	8.62619
1,3-Dichlorobenzene		1.66264	1.60805	1.45403	1.51008	1.51192	1.57743	1.44753	1.39532	1.30709	1.49712	7.36741
1,4-Dichlorobenzene	1.58697	1.74788	1.69665	1.51452	1.5632	1.53399	1.59012	1.4681	1.40606	1.32103	1.54285	8.21757
n-Butylbenzene		2.41395	2.6235	2.3297	2.46578	2.48625	2.6366	2.35708	2.21232	1.99407	2.39103	8.41615
1,2-Dichlorobenzene	1.51561	1.36558	1.63685	1.45576	1.52105	1.50698	1.58569	1.44952	1.38609	1.30944	1.47326	6.8447
1,2-Dibromo-3-Chloropropane				0.12203	0.1484	0.1582	0.17921	0.17232	0.17407	0.17406	0.16118	12.6297
1,2,4-Trichlorobenzene	1.30504	1.08283	1.08916	0.95888	1.11082	1.08625	1.17532	1.10893	1.10207	1.05207	1.10714	7.97814
Hexachlorobutadiene		0.52197	0.5354	0.51549	0.55054	0.55323	0.61869	0.58108	0.58363	0.56257	0.55807	5.87083
Naphthalene		2.24143	2.39144	2.33146	2.48904	2.55107	2.74681	2.51307	2.35633	2.06427	2.40944	8.13756
1,2,3-Trichlorobenzene		1.1316	1.15502	1.03169	1.05636	1.05086	1.16322	1.07018	1.07333	1.00259	1.08165	5.17502

Fri Jun 27 11:11:43 2014

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14071626 Run Date: 06/27/2014 Sample ID: WG482009-12
Instrument ID: HPMS11 Run Time: 21:34 Method: 8260B
File ID: 11M02161 Analyst: FJB QC Key: DOD4
ICal Workgroup: WG482009 Cal ID: HPMS11 - 27-JUN-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.7	ug/L	0.581	3.30	20	
1,1-Dichloroethene	CCC	50.0	50.6	ug/L	0.464	1.30	20	
1,2-Dichloropropane	CCC	50.0	51.4	ug/L	0.311	2.80	20	
Ethylbenzene	CCC	50.0	51.9	ug/L	0.707	3.80	20	
Toluene	CCC	50.0	53.8	ug/L	1.81	7.60	20	
Vinyl Chloride	CCC	50.0	58.8	ug/L	0.501	17.6	20	
Bromoform	SPCC	50.0	52.3	ug/L	0.244	4.50	20	
Chlorobenzene	SPCC	50.0	49.2	ug/L	1.19	1.70	20	
Chloromethane	SPCC	50.0	57.4	ug/L	0.543	14.9	20	
1,1-Dichloroethane	SPCC	50.0	51.1	ug/L	0.560	2.10	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.2	ug/L	0.635	5.60	20	
Acetone		50.0	51.4	ug/L	0.0519	2.90	20	
Benzene		50.0	52.6	ug/L	1.28	5.30	20	
Bromobenzene		50.0	48.6	ug/L	0.978	2.80	20	
Bromochloromethane		50.0	52.4	ug/L	0.219	4.70	20	
Bromodichloromethane		50.0	50.5	ug/L	0.425	1.10	20	
Bromomethane		50.0	55.7	ug/L	0.267	11.4	20	
2-Butanone		50.0	51.6	ug/L	0.0748	3.30	20	
n-Butylbenzene		50.0	61.0	ug/L	3.04	22.0	20	*
sec-Butylbenzene		50.0	52.0	ug/L	3.72	3.90	20	
tert-Butylbenzene		50.0	47.9	ug/L	0.643	4.20	20	
Carbon Disulfide		50.0	47.3	ug/L	0.907	5.50	20	
Carbon Tetrachloride		50.0	53.5	ug/L	0.501	6.90	20	
Dibromochloromethane		50.0	52.1	ug/L	0.419	4.10	20	
Chloroethane		50.0	56.2	ug/L	0.240	12.4	20	
2-Chlorotoluene		50.0	47.4	ug/L	2.52	5.30	20	
4-Chlorotoluene		50.0	49.0	ug/L	2.63	1.90	20	
1,2-Dibromo-3-Chloropropane		50.0	53.9	ug/L	0.105	7.70	20	
1,2-Dibromoethane		50.0	49.3	ug/L	0.312	1.40	20	
Dibromomethane		50.0	49.8	ug/L	0.172	0.400	20	
1,2-Dichlorobenzene		50.0	48.8	ug/L	1.63	2.30	20	
1,3-Dichlorobenzene		50.0	48.6	ug/L	1.77	2.70	20	
1,4-Dichlorobenzene		50.0	52.1	ug/L	1.90	4.20	20	
Dichlorodifluoromethane		50.0	78.8	ug/L	0.427	57.7	20	*
1,2-Dichloroethane		50.0	49.1	ug/L	0.388	1.80	20	
cis-1,2-Dichloroethene		50.0	51.9	ug/L	0.377	3.80	20	
trans-1,2-Dichloroethene		50.0	52.2	ug/L	0.350	4.50	20	
1,3-Dichloropropane		50.0	48.8	ug/L	0.536	2.40	20	
2,2-Dichloropropane		50.0	48.6	ug/L	0.478	2.90	20	
cis-1,3-Dichloropropene		50.0	55.0	ug/L	0.519	10.0	20	
trans-1,3-Dichloropropene		50.0	50.5	ug/L	0.548	1.00	20	
1,1-Dichloropropene		50.0	52.3	ug/L	0.456	4.60	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3685011
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14071626 Run Date: 06/27/2014 Sample ID: WG482009-12
Instrument ID: HPMS11 Run Time: 21:34 Method: 8260B
File ID: 11M02161 Analyst: FJB QC Key: DOD4
ICal Workgroup: WG482009 Cal ID: HPMS11 - 27-JUN-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	57.0	ug/L	0.150	14.0	20	
Hexachlorobutadiene		50.0	53.8	ug/L	0.482	7.50	20	
Isopropylbenzene		50.0	52.5	ug/L	1.89	5.10	20	
p-Isopropyltoluene		50.0	53.8	ug/L	3.24	7.50	20	
4-Methyl-2-Pentanone		50.0	54.8	ug/L	0.0698	9.70	20	
Methylene Chloride		50.0	49.0	ug/L	0.332	2.00	20	
Naphthalene		50.0	58.0	ug/L	2.11	16.1	20	
n-Propylbenzene		50.0	48.1	ug/L	4.05	3.90	20	
Styrene		50.0	58.1	ug/L	1.36	16.2	20	
1,1,1,2-Tetrachloroethane		50.0	51.4	ug/L	0.466	2.80	20	
Tetrachloroethene		50.0	49.9	ug/L	0.380	0.100	20	
1,2,3-Trichlorobenzene		50.0	54.3	ug/L	1.07	8.60	20	
1,2,4-Trichlorobenzene		50.0	53.7	ug/L	1.19	7.40	20	
1,1,1-Trichloroethane		50.0	52.2	ug/L	0.545	4.50	20	
1,1,2-Trichloroethane		50.0	49.1	ug/L	0.314	1.80	20	
Trichloroethene		50.0	51.5	ug/L	0.386	3.00	20	
Trichlorofluoromethane		50.0	57.5	ug/L	0.578	14.9	20	
1,2,3-Trichloropropane		50.0	48.5	ug/L	0.198	3.10	20	
1,2,4-Trimethylbenzene		50.0	57.3	ug/L	3.41	14.6	20	
1,3,5-Trimethylbenzene		50.0	56.4	ug/L	3.35	12.7	20	
o-Xylene		50.0	49.0	ug/L	0.766	2.10	20	
m-,p-Xylene		100	106	ug/L	0.812	6.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3685011
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14071626 Run Date: 06/26/2014 Sample ID: WG482030-12
Instrument ID: HPMS9 Run Time: 21:16 Method: 8260B
File ID: 9M964359 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG482030 Cal ID: HPMS9 - 26-JUN-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	46.6	ug/L	0.457	6.80	20	
1,1-Dichloroethene	CCC	50.0	46.6	ug/L	0.495	6.80	20	
1,2-Dichloropropane	CCC	50.0	47.7	ug/L	0.364	4.50	20	
Ethylbenzene	CCC	50.0	49.1	ug/L	0.535	1.90	20	
Toluene	CCC	50.0	48.9	ug/L	1.45	2.20	20	
Vinyl Chloride	CCC	50.0	50.5	ug/L	0.375	1.10	20	
Bromoform	SPCC	50.0	51.5	ug/L	0.293	3.00	20	
Chlorobenzene	SPCC	50.0	45.9	ug/L	0.909	8.20	20	
Chloromethane	SPCC	50.0	51.1	ug/L	0.574	2.20	20	
1,1-Dichloroethane	SPCC	50.0	46.4	ug/L	0.602	7.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	44.7	ug/L	0.569	10.6	20	
Acetone		50.0	44.2	ug/L	0.0931	11.5	20	
Benzene		50.0	48.6	ug/L	1.03	2.90	20	
Bromobenzene		50.0	45.8	ug/L	0.743	8.50	20	
Bromochloromethane		50.0	47.4	ug/L	0.174	5.20	20	
Bromodichloromethane		50.0	47.4	ug/L	0.357	5.10	20	
Bromomethane		50.0	51.2	ug/L	0.234	2.50	20	
2-Butanone		50.0	46.1	ug/L	0.156	7.70	20	
n-Butylbenzene		50.0	51.4	ug/L	2.46	2.80	20	
sec-Butylbenzene		50.0	45.2	ug/L	2.79	9.60	20	
tert-Butylbenzene		50.0	44.9	ug/L	0.490	10.1	20	
Carbon Disulfide		50.0	45.0	ug/L	0.674	10.0	20	
Carbon Tetrachloride		50.0	49.8	ug/L	0.369	0.300	20	
Dibromochloromethane		50.0	49.3	ug/L	0.382	1.40	20	
Chloroethane		50.0	56.2	ug/L	0.261	12.4	20	
2-Chlorotoluene		50.0	45.8	ug/L	2.12	8.40	20	
4-Chlorotoluene		50.0	40.9	ug/L	1.64	18.3	20	
1,2-Dibromo-3-Chloropropane		50.0	53.3	ug/L	0.172	6.70	20	
1,2-Dibromoethane		50.0	48.2	ug/L	0.313	3.60	20	
Dibromomethane		50.0	52.0	ug/L	0.181	4.00	20	
1,2-Dichlorobenzene		50.0	48.1	ug/L	1.42	3.80	20	
1,3-Dichlorobenzene		50.0	45.9	ug/L	1.37	8.20	20	
1,4-Dichlorobenzene		50.0	49.3	ug/L	1.52	1.40	20	
Dichlorodifluoromethane		50.0	78.7	ug/L	0.321	57.5	20	*
1,2-Dichloroethane		50.0	47.5	ug/L	0.445	4.90	20	
cis-1,2-Dichloroethene		50.0	47.8	ug/L	0.288	4.40	20	
trans-1,2-Dichloroethene		50.0	49.5	ug/L	0.519	0.900	20	
1,3-Dichloropropane		50.0	45.8	ug/L	0.512	8.40	20	
2,2-Dichloropropane		50.0	43.1	ug/L	0.344	13.9	20	
cis-1,3-Dichloropropene		50.0	49.6	ug/L	0.438	0.900	20	
trans-1,3-Dichloropropene		50.0	44.5	ug/L	0.504	10.9	20	
1,1-Dichloropropene		50.0	48.5	ug/L	0.342	3.00	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3685011
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14071626 Run Date: 06/26/2014 Sample ID: WG482030-12
Instrument ID: HPMS9 Run Time: 21:16 Method: 8260B
File ID: 9M964359 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG482030 Cal ID: HPMS9 - 26-JUN-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	49.1	ug/L	0.336	1.90	20	
Hexachlorobutadiene		50.0	57.5	ug/L	0.641	14.9	20	
Isopropylbenzene		50.0	47.5	ug/L	1.52	5.00	20	
p-Isopropyltoluene		50.0	46.9	ug/L	2.37	6.20	20	
4-Methyl-2-Pentanone		50.0	50.0	ug/L	0.156	0	20	
Methylene Chloride		50.0	50.3	ug/L	0.282	0.700	20	
Naphthalene		50.0	56.1	ug/L	2.70	12.1	20	
n-Propylbenzene		50.0	42.4	ug/L	2.93	15.2	20	
Styrene		50.0	52.7	ug/L	1.10	5.30	20	
1,1,1,2-Tetrachloroethane		50.0	49.3	ug/L	0.367	1.40	20	
Tetrachloroethene		50.0	50.1	ug/L	0.308	0.100	20	
1,2,3-Trichlorobenzene		50.0	54.3	ug/L	1.17	8.60	20	
1,2,4-Trichlorobenzene		50.0	55.6	ug/L	1.23	11.3	20	
1,1,1-Trichloroethane		50.0	50.3	ug/L	0.423	0.500	20	
1,1,2-Trichloroethane		50.0	47.6	ug/L	0.303	4.80	20	
Trichloroethene		50.0	49.1	ug/L	0.298	1.90	20	
Trichlorofluoromethane		50.0	54.3	ug/L	0.417	8.70	20	
1,2,3-Trichloropropane		50.0	46.5	ug/L	0.204	7.00	20	
1,2,4-Trimethylbenzene		50.0	48.0	ug/L	2.45	3.90	20	
1,3,5-Trimethylbenzene		50.0	48.4	ug/L	2.38	3.30	20	
o-Xylene		50.0	45.5	ug/L	0.605	9.00	20	
m-,p-Xylene		100	97.1	ug/L	0.624	2.90	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3685011
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14071626 Run Date: 07/29/2014 Sample ID: WG486190-02
Instrument ID: HPMS11 Run Time: 15:16 Method: 8260B
File ID: 11M02774 Analyst: ADC/FJB QC Key: DOD4
Workgroup (AAB#): WG486191 Cal ID: HPMS11 - 27-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.5	ug/L	0.556	1.08	20	
1,1-Dichloroethene	CCC	50.0	51.3	ug/L	0.470	2.67	20	
1,2-Dichloropropane	CCC	50.0	50.5	ug/L	0.306	1.08	20	
Ethylbenzene	CCC	50.0	48.9	ug/L	0.666	2.22	20	
Toluene	CCC	50.0	50.2	ug/L	1.69	0.361	20	
Vinyl Chloride	CCC	50.0	49.4	ug/L	0.421	1.22	20	
Bromoform	SPCC	50.0	57.4	ug/L	0.268	14.8	20	
Chlorobenzene	SPCC	50.0	49.2	ug/L	1.19	1.51	20	
Chloromethane	SPCC	50.0	42.8	ug/L	0.405	14.3	20	
1,1-Dichloroethane	SPCC	50.0	51.2	ug/L	0.561	2.32	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	50.5	ug/L	0.679	1.07	20	
Xylenes		150	152	ug/L	0.780	1.55	20	
Acetone		50.0	53.6	ug/L	0.0541	7.18	20	
Benzene		50.0	49.7	ug/L	1.21	0.573	20	
Bromobenzene		50.0	46.6	ug/L	0.937	6.86	20	
Bromochloromethane		50.0	51.8	ug/L	0.217	3.55	20	
Bromodichloromethane		50.0	50.5	ug/L	0.425	0.980	20	
Bromomethane		50.0	43.9	ug/L	0.210	12.2	20	
2-Butanone		50.0	57.9	ug/L	0.0838	15.7	20	
n-Butylbenzene		50.0	53.8	ug/L	2.68	7.51	20	
sec-Butylbenzene		50.0	50.5	ug/L	3.61	0.964	20	
tert-Butylbenzene		50.0	47.0	ug/L	0.631	5.91	20	
Carbon Disulfide		50.0	52.7	ug/L	1.01	5.35	20	
Carbon Tetrachloride		50.0	52.0	ug/L	0.487	4.07	20	
Dibromochloromethane		50.0	52.8	ug/L	0.426	5.65	20	
Chloroethane		50.0	50.5	ug/L	0.216	0.997	20	
2-Chlorotoluene		50.0	46.4	ug/L	2.47	7.16	20	
4-Chlorotoluene		50.0	48.0	ug/L	2.58	3.91	20	
1,2-Dibromo-3-Chloropropane		50.0	55.4	ug/L	0.108	10.8	20	
1,2-Dibromoethane		50.0	50.7	ug/L	0.321	1.38	20	
Dibromomethane		50.0	50.9	ug/L	0.175	1.78	20	
1,2-Dichlorobenzene		50.0	48.5	ug/L	1.62	2.94	20	
1,3-Dichlorobenzene		50.0	48.2	ug/L	1.76	3.60	20	
1,4-Dichlorobenzene		50.0	47.9	ug/L	1.75	4.29	20	
Dichlorodifluoromethane		50.0	53.7	ug/L	0.291	7.45	20	
1,2-Dichloroethane		50.0	49.1	ug/L	0.388	1.71	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.356	2.14	20	
trans-1,2-Dichloroethene		50.0	48.7	ug/L	0.326	2.65	20	
1,3-Dichloropropane		50.0	49.5	ug/L	0.543	1.01	20	
2,2-Dichloropropane		50.0	52.4	ug/L	0.516	4.85	20	
cis-1,3-Dichloropropene		50.0	53.7	ug/L	0.507	7.35	20	
trans-1,3-Dichloropropene		50.0	55.0	ug/L	0.597	10.0	20	

CCV - Modified 03/05/2008
PDF File ID: 3685012
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14071626 Run Date: 07/29/2014 Sample ID: WG486190-02
Instrument ID: HPMS11 Run Time: 15:16 Method: 8260B
File ID: 11M02774 Analyst: ADC/FJB QC Key: DOD4
Workgroup (AAB#): WG486191 Cal ID: HPMS11 - 27-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.4	ug/L	0.440	0.790	20	
2-Hexanone		50.0	63.1	ug/L	0.166	26.2	20	*
Hexachlorobutadiene		50.0	44.2	ug/L	0.396	11.5	20	
Isopropylbenzene		50.0	52.8	ug/L	1.89	5.51	20	
p-Isopropyltoluene		50.0	51.9	ug/L	3.13	3.83	20	
4-Methyl-2-Pentanone		50.0	59.1	ug/L	0.0752	18.2	20	
Methylene Chloride		50.0	48.2	ug/L	0.327	3.52	20	
Naphthalene		50.0	52.4	ug/L	1.91	4.84	20	
n-Propylbenzene		50.0	48.2	ug/L	4.06	3.64	20	
Styrene		50.0	55.1	ug/L	1.29	10.1	20	
1,1,1,2-Tetrachloroethane		50.0	49.8	ug/L	0.451	0.468	20	
Tetrachloroethene		50.0	47.5	ug/L	0.361	5.07	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.936	4.69	20	
1,2,4-Trichlorobenzene		50.0	47.2	ug/L	1.05	5.65	20	
1,1,1-Trichloroethane		50.0	49.3	ug/L	0.514	1.45	20	
1,1,2-Trichloroethane		50.0	50.1	ug/L	0.320	0.236	20	
Trichloroethene		50.0	47.1	ug/L	0.353	5.80	20	
Trichlorofluoromethane		50.0	50.1	ug/L	0.504	0.215	20	
1,2,3-Trichloropropane		50.0	50.4	ug/L	0.206	0.796	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/L	3.07	3.04	20	
1,3,5-Trimethylbenzene		50.0	50.1	ug/L	2.97	0.167	20	
o-Xylene		50.0	49.4	ug/L	0.773	1.23	20	
m-,p-Xylene		100	103	ug/L	0.787	2.94	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3685012
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14071626
Run Date: 07/30/2014
Sample ID: WG486302-02
Instrument ID: HPMS9
Run Time: 11:17
Method: 8260B
File ID: 9M965027
Analyst: ADC
QC Key: DOD4
Workgroup (AAB#): WG486305
Cal ID: HPMS9 - 26-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.3	ug/L	0.483	1.42	20	
1,1-Dichloroethene	CCC	50.0	50.5	ug/L	0.536	0.909	20	
1,2-Dichloropropane	CCC	50.0	49.6	ug/L	0.378	0.736	20	
Ethylbenzene	CCC	50.0	52.9	ug/L	0.577	5.74	20	
Toluene	CCC	50.0	52.9	ug/L	1.57	5.75	20	
Vinyl Chloride	CCC	50.0	44.2	ug/L	0.329	11.5	20	
Bromoform	SPCC	50.0	50.7	ug/L	0.288	1.41	20	
Chlorobenzene	SPCC	50.0	52.3	ug/L	1.04	4.60	20	
Chloromethane	SPCC	50.0	35.4	ug/L	0.398	29.3	20	*
1,1-Dichloroethane	SPCC	50.0	50.1	ug/L	0.650	0.232	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	57.1	ug/L	0.727	14.2	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3685012
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14071626
Run Date: 08/01/2014
Sample ID: WG486694-02
Instrument ID: HPMS9
Run Time: 16:01
Method: 8260B
File ID: 9M965075
Analyst: ADC
QC Key: DOD4
Workgroup (AAB#): WG486696
Cal ID: HPMS9 - 26-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.5	ug/L	0.486	0.942	20	
1,1-Dichloroethene	CCC	50.0	52.1	ug/L	0.553	4.26	20	
1,2-Dichloropropane	CCC	50.0	50.1	ug/L	0.382	0.104	20	
Ethylbenzene	CCC	50.0	53.9	ug/L	0.589	7.85	20	
Toluene	CCC	50.0	54.0	ug/L	1.60	8.10	20	
Vinyl Chloride	CCC	50.0	54.9	ug/L	0.407	9.71	20	
Bromoform	SPCC	50.0	49.2	ug/L	0.279	1.70	20	
Chlorobenzene	SPCC	50.0	52.9	ug/L	1.05	5.88	20	
Chloromethane	SPCC	50.0	47.9	ug/L	0.539	4.14	20	
1,1-Dichloroethane	SPCC	50.0	50.1	ug/L	0.650	0.143	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	53.0	ug/L	0.675	6.03	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3685012
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14071626
Instrument ID: HPMS11
Workgroup (AAB#): WG486191

ICAL CCV Number: WG482009-08
CAL ID: HPMS11-27-JUN-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG482009-08	NA	NA	396828	765291	1022945
Upper Limit	NA	NA	793656	1530582	2045890
Lower Limit	NA	NA	198414	382646	511473
L14071626-01	1.00	01	270382	573897	776726
L14071626-02	1.00	01	284824	605433	812344
L14071626-03	1.00	01	277072	589147	802454
L14071626-04	1.00	01	365849	677031	894295
L14071626-05	1.00	01	360445	678649	886271
L14071626-06	1.00	01	278556	581460	797630
L14071626-07	1.00	01	260314	569313	773843
L14071626-08	1.00	01	267608	580222	784272
L14071626-09	1.00	01	267714	572842	784207
L14071626-10	1.00	01	276612	610123	827474
WG486191-01	1.00	01	271024	624105	861268
WG486191-02	1.00	01	363849	677456	901872

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3685013
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14071626
Instrument ID: HPMS9
Workgroup (AAB#): WG486305

ICAL CCV Number: WG482030-08
CAL ID: HPMS9-26-JUN-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG482030-08	NA	NA	333316	597508	814768
Upper Limit	NA	NA	666632	1195016	1629536
Lower Limit	NA	NA	166658	298754	407384
L14071626-07	10.0	DL01	239369	505170	720917
WG486305-01	1.00	01	229482	483881	704725
WG486305-02	1.00	01	236392	452877	656795

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3685013
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14071626
Instrument ID: HPMS9
Workgroup (AAB#): WG486696

ICAL CCV Number: WG482030-08
CAL ID: HPMS9-26-JUN-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG482030-08	NA	NA	333316	597508	814768
Upper Limit	NA	NA	666632	1195016	1629536
Lower Limit	NA	NA	166658	298754	407384
L14071626-08	10.0	DL02	244731	500623	714142
WG486696-01	1.00	01	264848	542092	777861
WG486696-02	1.00	01	264181	509036	723769
WG486696-03	1.00	01	266395	517406	737819

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3685013
Report generated 08/05/2014 12:49

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14071626
Instrument ID: HPMS9
Workgroup (AAB#): WG486305

ICAL CCV Number: WG482030-08
CAL ID: HPMS9-26-JUN-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG482030-08	NA	NA	17.99	14.96	11.09
Upper Limit	NA	NA	18.49	15.46	11.59
Lower Limit	NA	NA	17.49	14.46	10.59
L14071626-07	10.0	DL01	17.99	14.96	11.08
WG486305-01	1.00	01	17.98	14.96	11.09
WG486305-02	1.00	01	17.98	14.96	11.08

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3693641
Report generated: 08/05/2014 12:49

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14071626
Instrument ID: HPMS9
Workgroup (AAB#): WG486696

ICAL CCV Number: WG482030-08
CAL ID: HPMS9-26-JUN-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG482030-08	NA	NA	17.99	14.96	11.09
Upper Limit	NA	NA	18.49	15.46	11.59
Lower Limit	NA	NA	17.49	14.46	10.59
L14071626-08	10.0	DL02	17.99	14.96	11.08
WG486696-01	1.00	01	17.99	14.96	11.08
WG486696-02	1.00	01	17.99	14.96	11.08
WG486696-03	1.00	01	17.99	14.96	11.08

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3693641
Report generated: 08/05/2014 12:49

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14071626
Instrument ID: HPMS11
Workgroup (AAB#): WG486191

ICAL CCV Number: WG482009-08
CAL ID: HPMS11-27-JUN-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG482009-08	NA	NA	17.1	14.28	10.65
Upper Limit	NA	NA	17.6	14.78	11.15
Lower Limit	NA	NA	16.6	13.78	10.15
L14071626-01	1.00	01	17.09	14.28	10.65
L14071626-02	1.00	01	17.09	14.28	10.65
L14071626-03	1.00	01	17.09	14.28	10.65
L14071626-04	1.00	01	17.09	14.28	10.65
L14071626-05	1.00	01	17.09	14.28	10.65
L14071626-06	1.00	01	17.09	14.28	10.65
L14071626-07	1.00	01	17.09	14.28	10.65
L14071626-08	1.00	01	17.09	14.28	10.65
L14071626-09	1.00	01	17.09	14.28	10.65
L14071626-10	1.00	01	17.09	14.28	10.65
WG486191-01	1.00	01	17.09	14.28	10.65
WG486191-02	1.00	01	17.09	14.28	10.65

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3693641
Report generated: 08/05/2014 12:49

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02791.D Vial: 19
Acq On : 30 Jul 2014 00:56 Operator: ADC/FJB
Sample : L14071626-01 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:10:30 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	776726	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	573897	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	270382	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	230820	23.7955 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.20%		
43) 1,2-Dichloroethane-d4	10.27	65	241214	25.4825 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.92%		
57) Toluene-d8	12.51	98	816346	24.2797 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.12%		
78) p-Bromofluorobenzene	15.68	95	285068	24.3855 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.56%		

Target Compounds

					Qvalue
3) Chloromethane	3.73	50	1902	0.1296 ug/L	85
4) Vinyl Chloride	3.98	62	15349	1.1604 ug/L	95
13) Acetone	6.38	43	1225	0.7810 ug/L #	46
14) 1,1-Dichloroethene	6.60	61	3179949	223.5074 ug/L	88
27) 1,1-Dichloroethane	8.39	63	156863	9.2041 ug/L	98
32) cis-1,2-Dichloroethene	9.19	96	11513	1.0200 ug/L	64
44) 1,2-Dichloroethane	10.38	62	131694	10.7270 ug/L	92
46) Trichloroethene	11.13	130	26810	2.3022 ug/L	97
49) 1,4-Dioxane	11.61	88	1103	19.3212 ug/L #	38
58) Toluene	12.60	91	18299	0.4729 ug/L	90
61) 1,1,2-Trichloroethane	12.96	97	2125	0.2899 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M02791.D 8260WTR.M Wed Jul 30 09:10:31 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02791.D Vial: 19
Acq On : 30 Jul 2014 00:56 Operator: ADC/FJB
Sample : L14071626-01 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:10 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

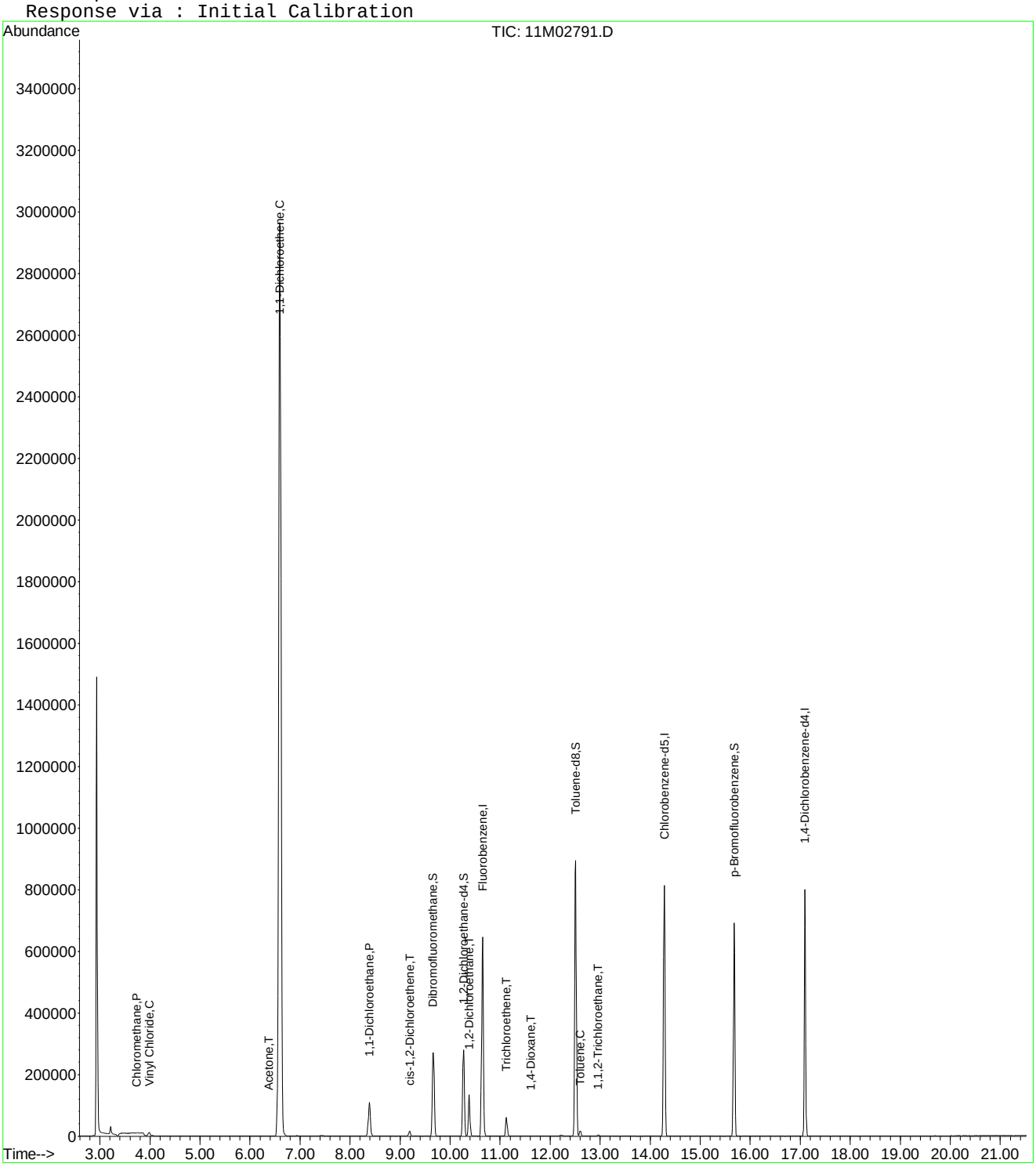

11M02791.D 8260WTR.M Wed Jul 30 09:10:32 2014 Page 2

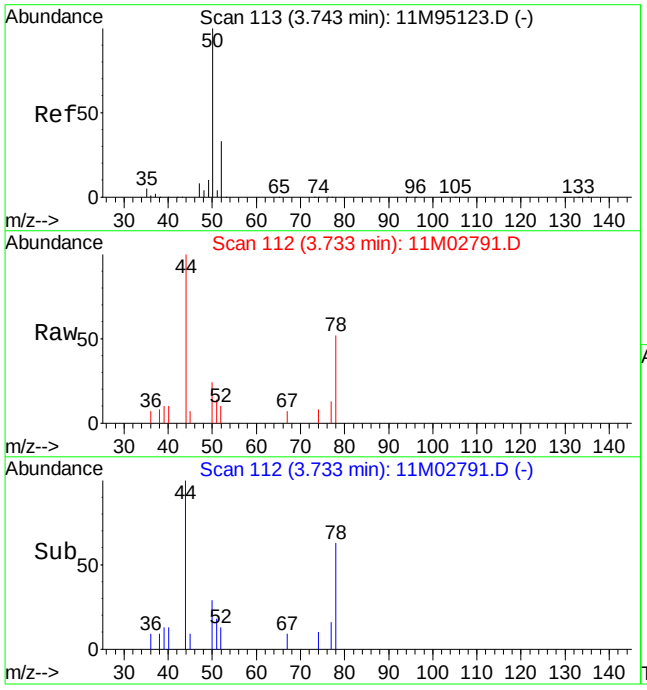

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.73 min Scan# 112
Delta R.T. -0.01 min
Lab File: 11M02791.D
Acq: 30 Jul 2014 00:56

Tgt Ion: 50 Resp: 1902

Ion	Ratio	Lower	Upper
50	100		
52	41.0	19.4	45.4

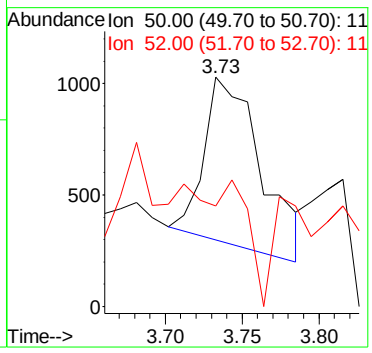

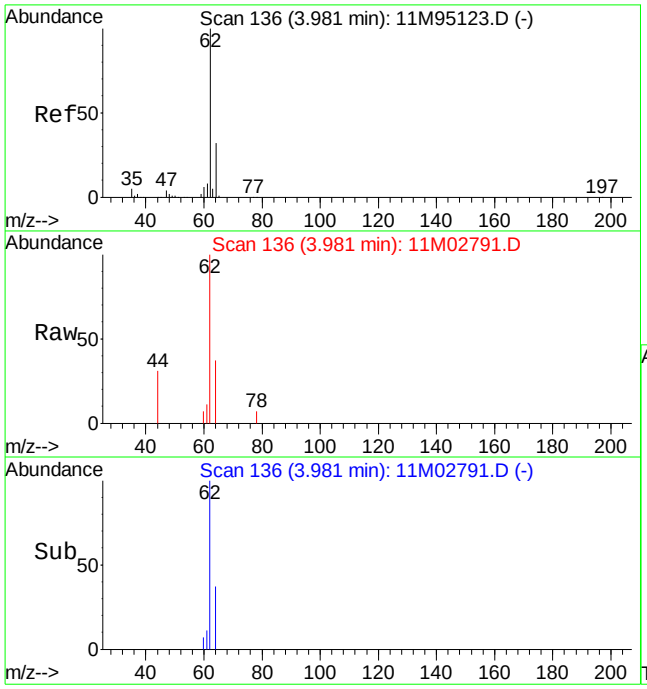

#4
Vinyl Chloride
Concen: 1.16 ug/L
RT: 3.98 min Scan# 136
Delta R.T. 0.00 min
Lab File: 11M02791.D
Acq: 30 Jul 2014 00:56

Tgt Ion: 62 Resp: 15349

Ion	Ratio	Lower	Upper
62	100		
64	35.1	19.3	45.1

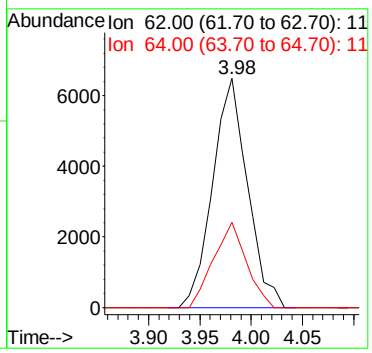

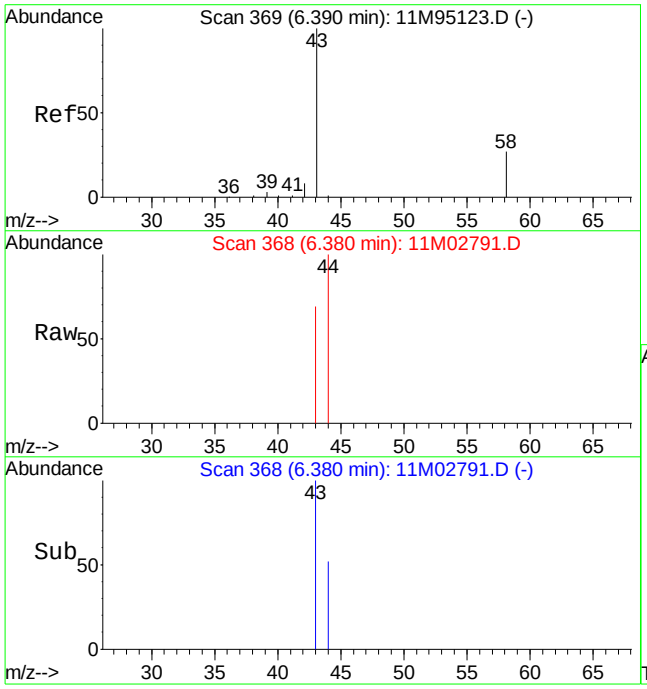

#13
Acetone
Concen: 0.78 ug/L
RT: 6.38 min Scan# 368
Delta R.T. 0.00 min
Lab File: 11M02791.D
Acq: 30 Jul 2014 00:56

Tgt Ion: 43 Resp: 1225

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.2	40.0#

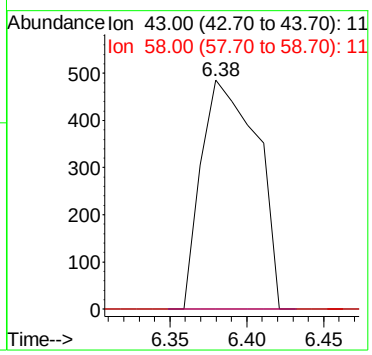

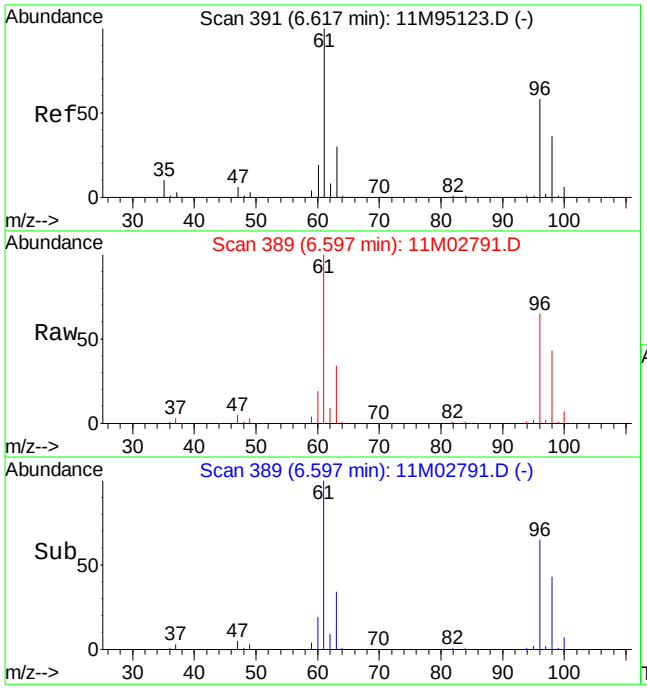

#14
1,1-Dichloroethene
Concen: 223.51 ug/L
RT: 6.60 min Scan# 389
Delta R.T. 0.00 min
Lab File: 11M02791.D
Acq: 30 Jul 2014 00:56

Tgt Ion: 61 Resp: 3179949

Ion	Ratio	Lower	Upper
61	100		
96	64.2	33.5	78.1

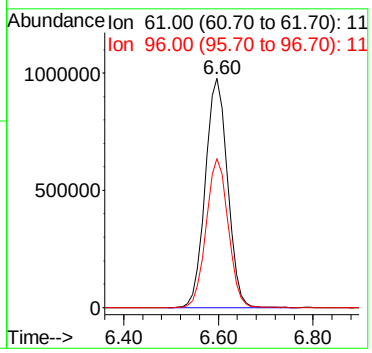

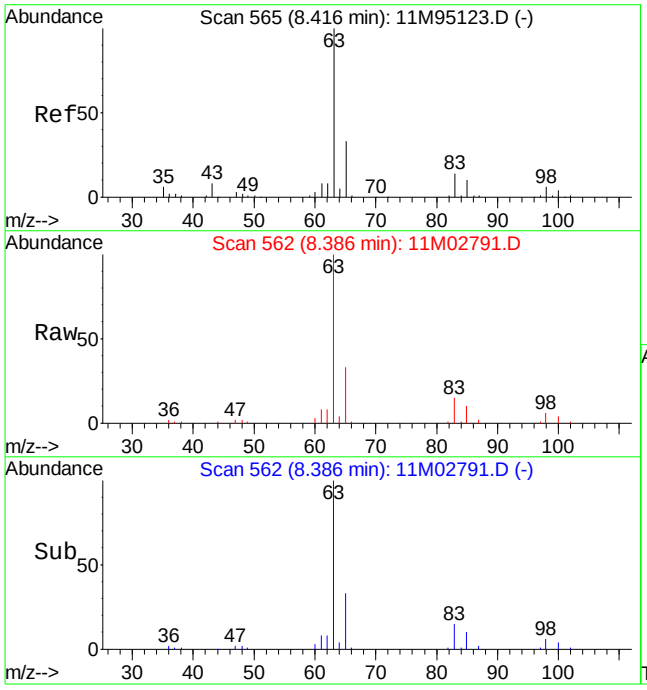

#27
1,1-Dichloroethane
Concen: 9.20 ug/L
RT: 8.39 min Scan# 562
Delta R.T. 0.00 min
Lab File: 11M02791.D
Acq: 30 Jul 2014 00:56

Tgt Ion: 63 Resp: 156863

Ion	Ratio	Lower	Upper
63	100		
65	32.7	19.3	45.1
83	14.7	7.9	18.5

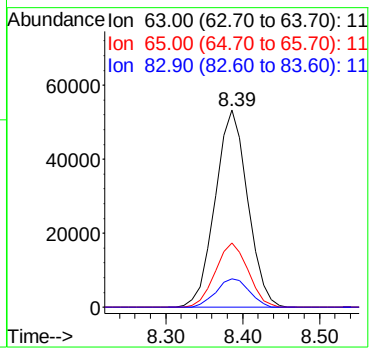

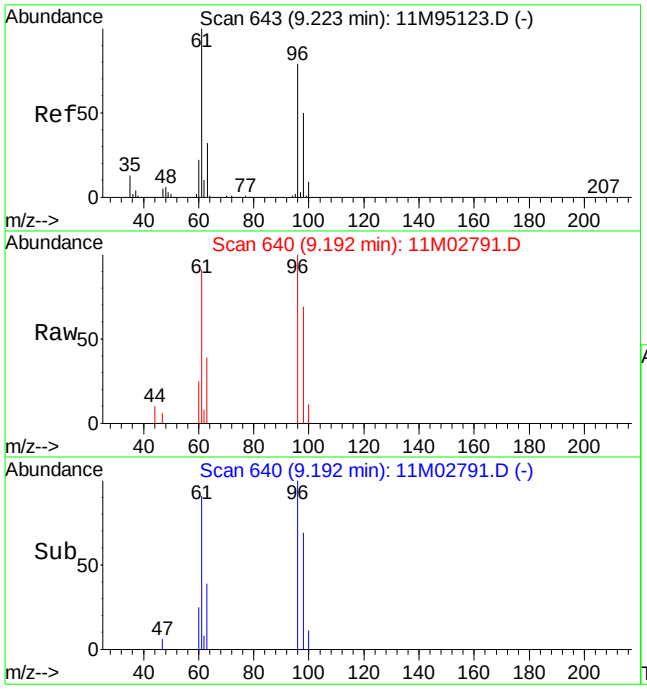

#32
cis-1,2-Dichloroethene
Concen: 1.02 ug/L
RT: 9.19 min Scan# 640
Delta R.T. 0.00 min
Lab File: 11M02791.D
Acq: 30 Jul 2014 00:56

Tgt Ion: 96 Resp: 11513

Ion	Ratio	Lower	Upper
96	100		
61	113.8	97.1	226.7

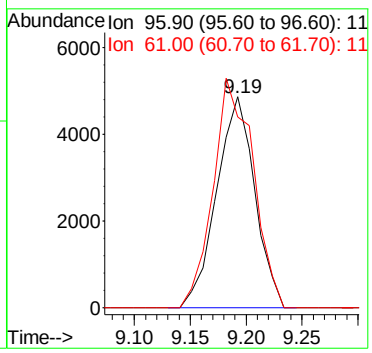

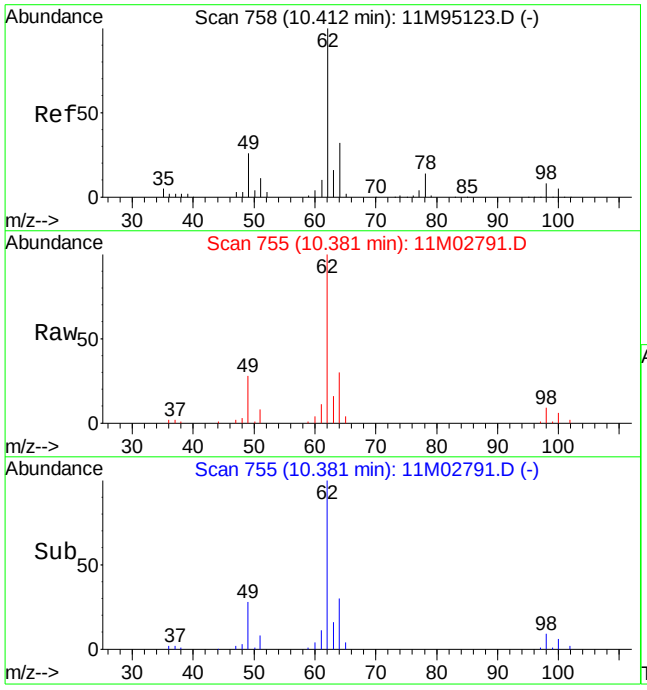

#44
1,2-Dichloroethane
Concen: 10.73 ug/L
RT: 10.38 min Scan# 755
Delta R.T. 0.00 min
Lab File: 11M02791.D
Acq: 30 Jul 2014 00:56

Tgt Ion: 62 Resp: 131694

Ion	Ratio	Lower	Upper
62	100		
64	32.2	19.7	45.9
49	28.0	21.8	51.0

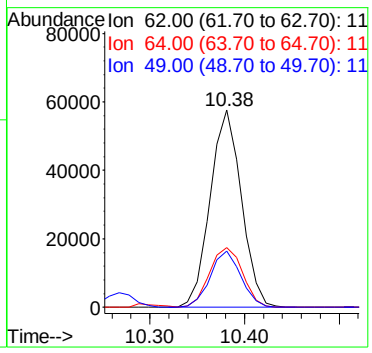

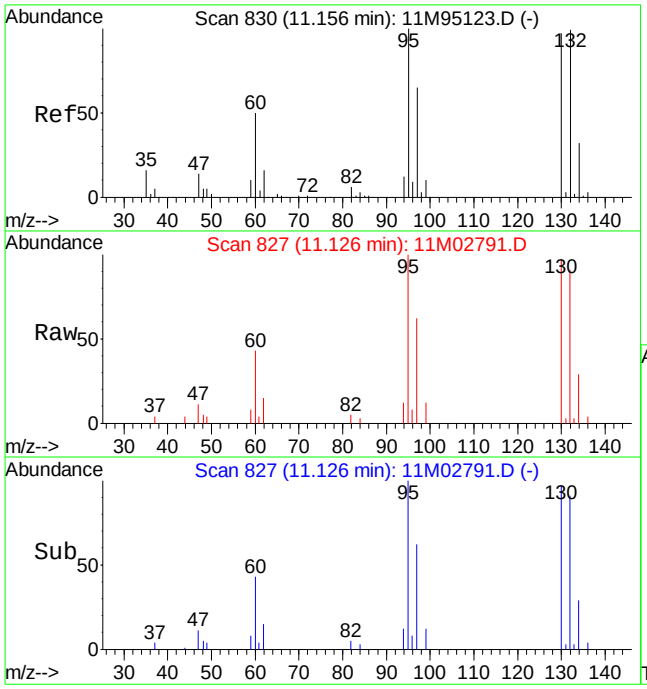

#46
Trichloroethene
Concen: 2.30 ug/L
RT: 11.13 min Scan# 827
Delta R.T. 0.00 min
Lab File: 11M02791.D
Acq: 30 Jul 2014 00:56

Tgt Ion:130 Resp: 26810

Ion	Ratio	Lower	Upper
130	100		
132	93.8	58.0	135.4
95	99.7	58.3	135.9

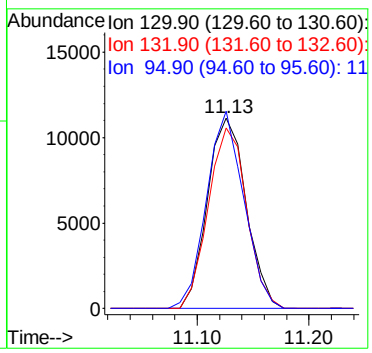

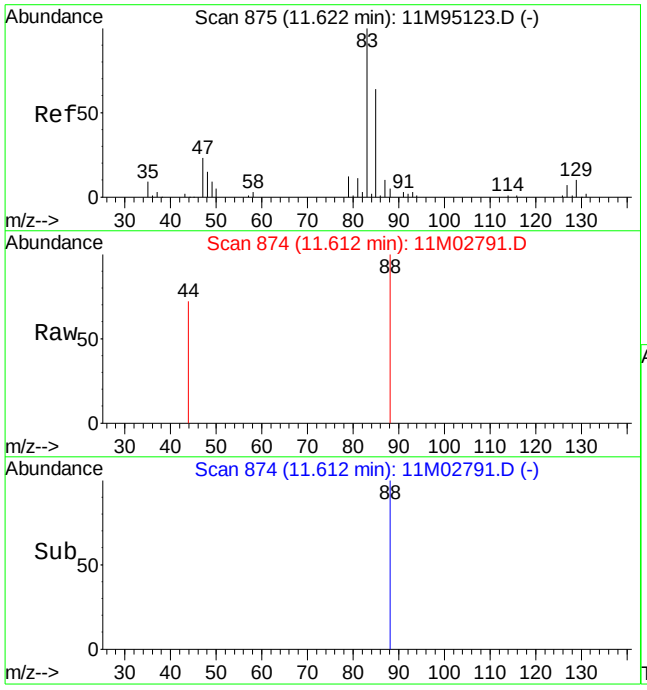

#49
1,4-Dioxane
Concen: 19.32 ug/L
RT: 11.61 min Scan# 874
Delta R.T. 0.01 min
Lab File: 11M02791.D
Acq: 30 Jul 2014 00:56

Tgt Ion: 88 Resp: 1103

Ion	Ratio	Lower	Upper
88	100		
58	17.2	40.1	93.5#

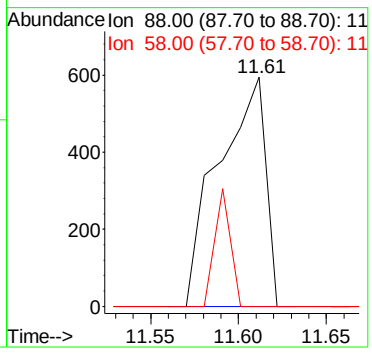

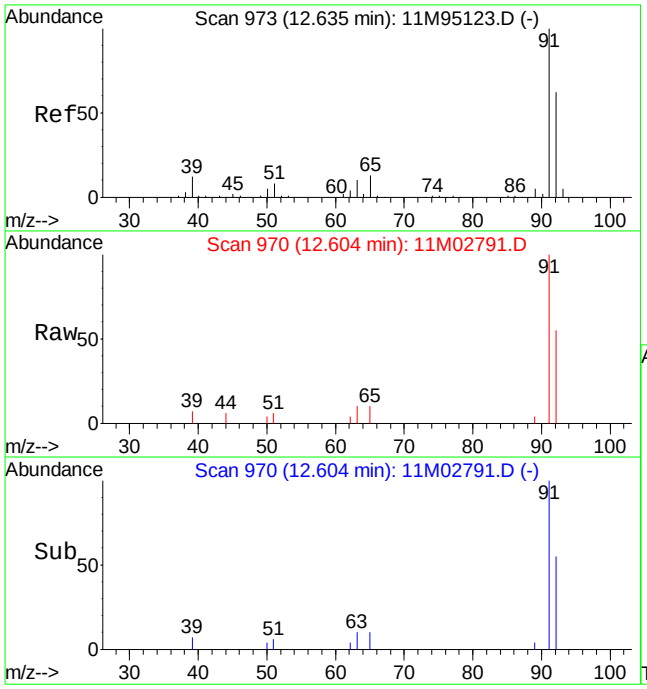

#58
Toluene
Concen: 0.47 ug/L
RT: 12.60 min Scan# 970
Delta R.T. 0.00 min
Lab File: 11M02791.D
Acq: 30 Jul 2014 00:56

Tgt Ion: 91 Resp: 18299

Ion	Ratio	Lower	Upper
91	100		
92	52.9	36.4	85.0

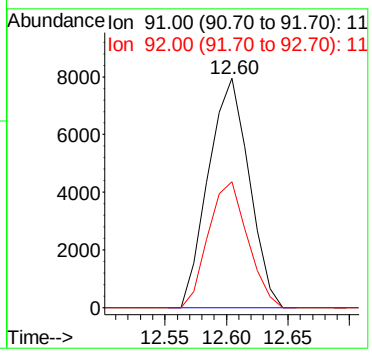

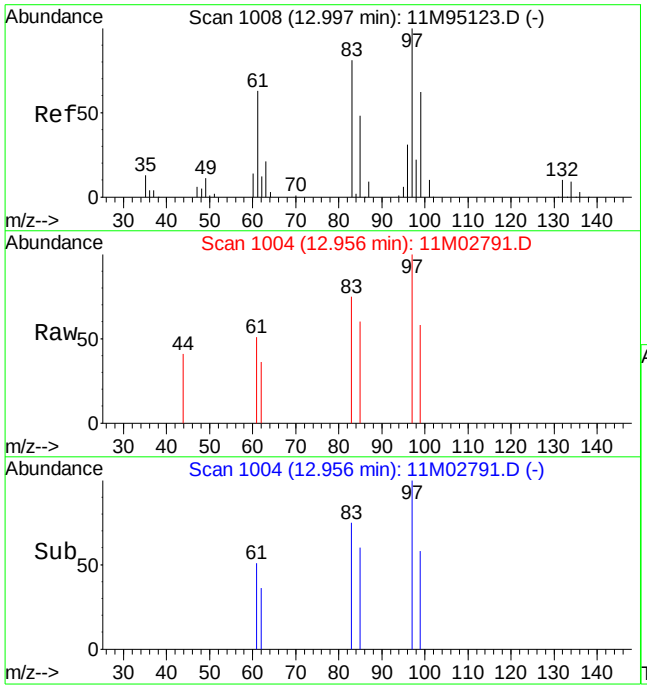

#61
1,1,2-Trichloroethane
Concen: 0.29 ug/L
RT: 12.96 min Scan# 1004
Delta R.T. -0.01 min
Lab File: 11M02791.D
Acq: 30 Jul 2014 00:56

Tgt Ion: 97 Resp: 2125

Ion	Ratio	Lower	Upper
97	100		
83	94.6	49.8	116.2

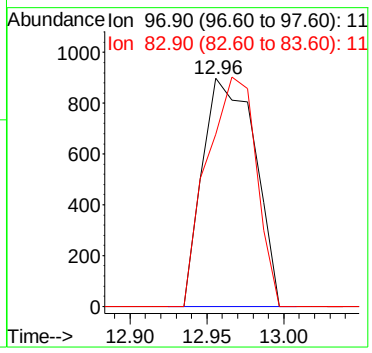

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02786.D Vial: 14
Acq On : 29 Jul 2014 22:17 Operator: ADC/FJB
Sample : L14071626-02 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:10:02 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	812344	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	605433	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	284824	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	237668	23.4272 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.72%		
43) 1,2-Dichloroethane-d4	10.27	65	247094	24.9591 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.84%		
57) Toluene-d8	12.51	98	832442	23.4688 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.88%		
78) p-Bromofluorobenzene	15.67	95	297661	24.1717 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.68%		

Target Compounds

					Qvalue
3) Chloromethane	3.75	50	2117	0.1379 ug/L #	64
13) Acetone	6.39	43	1423	0.8675 ug/L #	65
44) 1,2-Dichloroethane	10.37	62	17809	1.3870 ug/L	86

(#) = qualifier out of range (m) = manual integration
11M02786.D 8260WTR.M Wed Jul 30 09:10:03 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02786.D Vial: 14
Acq On : 29 Jul 2014 22:17 Operator: ADC/FJB
Sample : L14071626-02 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:10 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

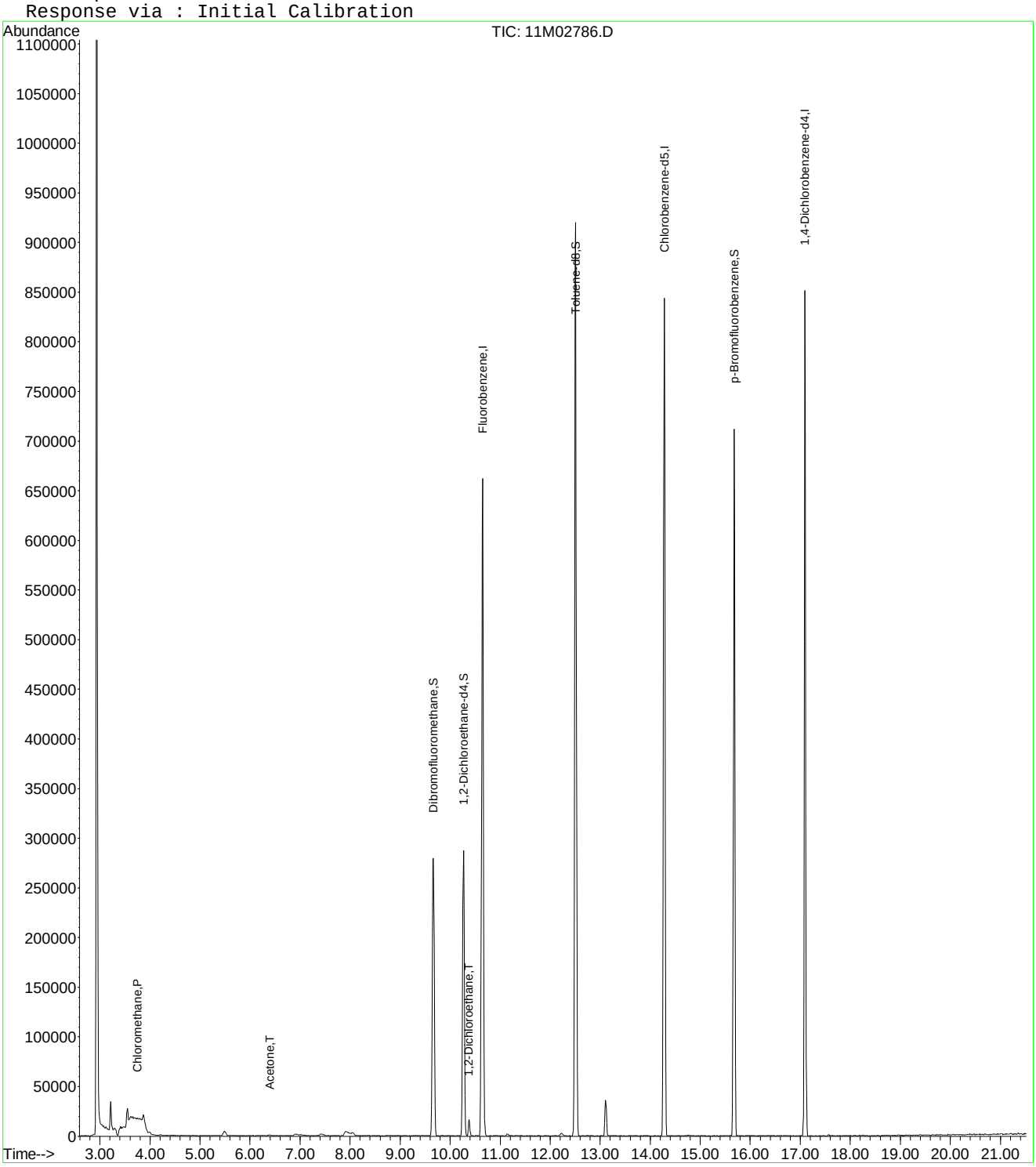

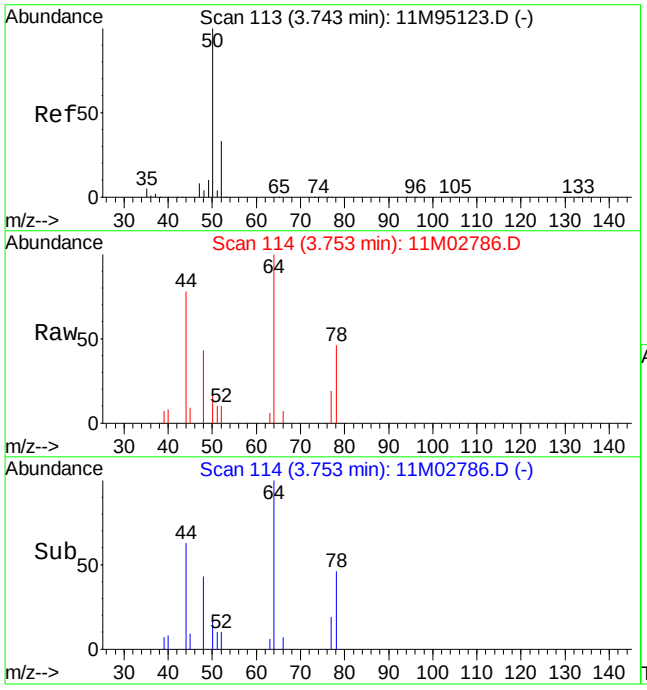

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.75 min Scan# 114
Delta R.T. 0.01 min
Lab File: 11M02786.D
Acq: 29 Jul 2014 22:17

Tgt Ion: 50 Resp: 2117

Ion	Ratio	Lower	Upper
50	100		
52	12.2	19.4	45.4#

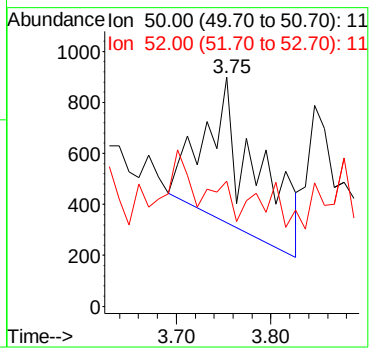

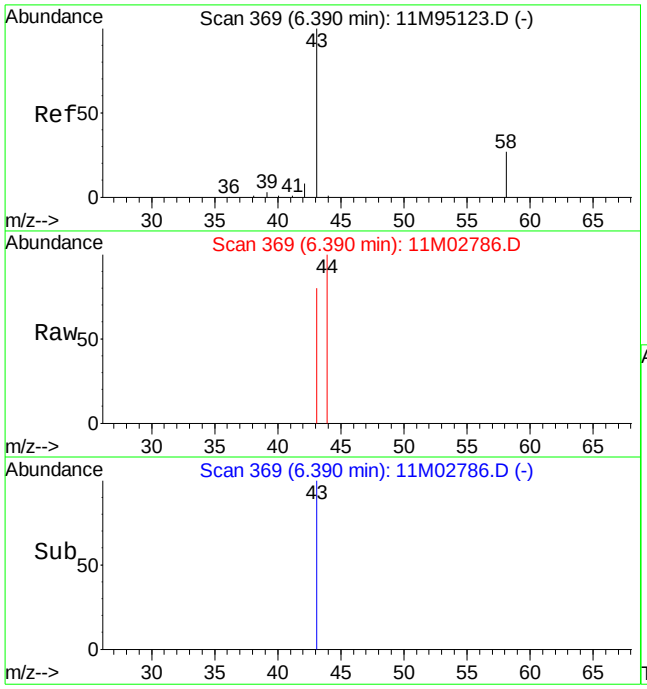

#13
Acetone
Concen: 0.87 ug/L
RT: 6.39 min Scan# 369
Delta R.T. 0.01 min
Lab File: 11M02786.D
Acq: 29 Jul 2014 22:17

Tgt Ion: 43 Resp: 1423

Ion	Ratio	Lower	Upper
43	100		
58	47.3	17.2	40.0#

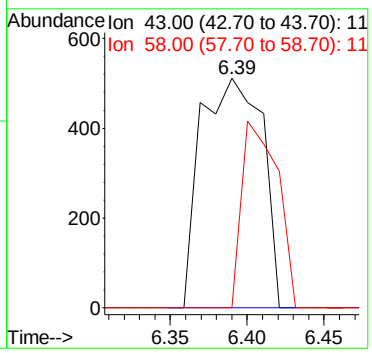

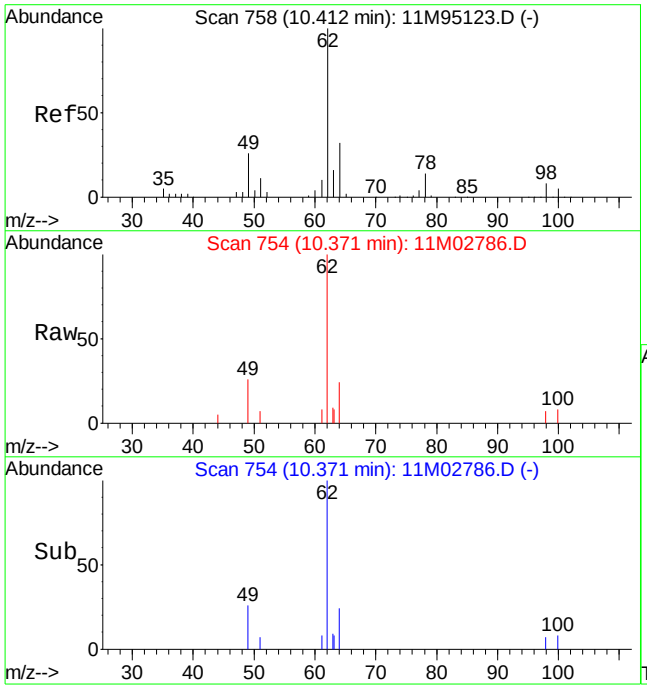

#44
1,2-Dichloroethane
Concen: 1.39 ug/L
RT: 10.37 min Scan# 754
Delta R.T. -0.01 min
Lab File: 11M02786.D
Acq: 29 Jul 2014 22:17

Tgt Ion: 62 Resp: 17809

Ion	Ratio	Lower	Upper
62	100		
64	27.4	19.7	45.9
49	25.3	21.8	51.0

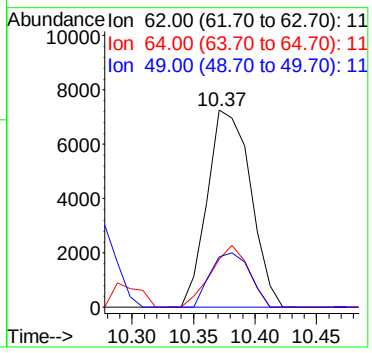

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02787.D Vial: 15
Acq On : 29 Jul 2014 22:49 Operator: ADC/FJB
Sample : L14071626-03 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:10:06 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	802454	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	589147	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	277072	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	236965	23.6458 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.60%		
43) 1,2-Dichloroethane-d4	10.27	65	244821	25.0343 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.12%		
57) Toluene-d8	12.51	98	835825	24.2155 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.88%		
78) p-Bromofluorobenzene	15.68	95	297565	24.8400 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.36%		

Target Compounds					Qvalue
13) Acetone	6.39	43	1605	0.9905 ug/L #	46

(#) = qualifier out of range (m) = manual integration
11M02787.D 8260WTR.M Wed Jul 30 09:10:07 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02787.D Vial: 15
Acq On : 29 Jul 2014 22:49 Operator: ADC/FJB
Sample : L14071626-03 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:10 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

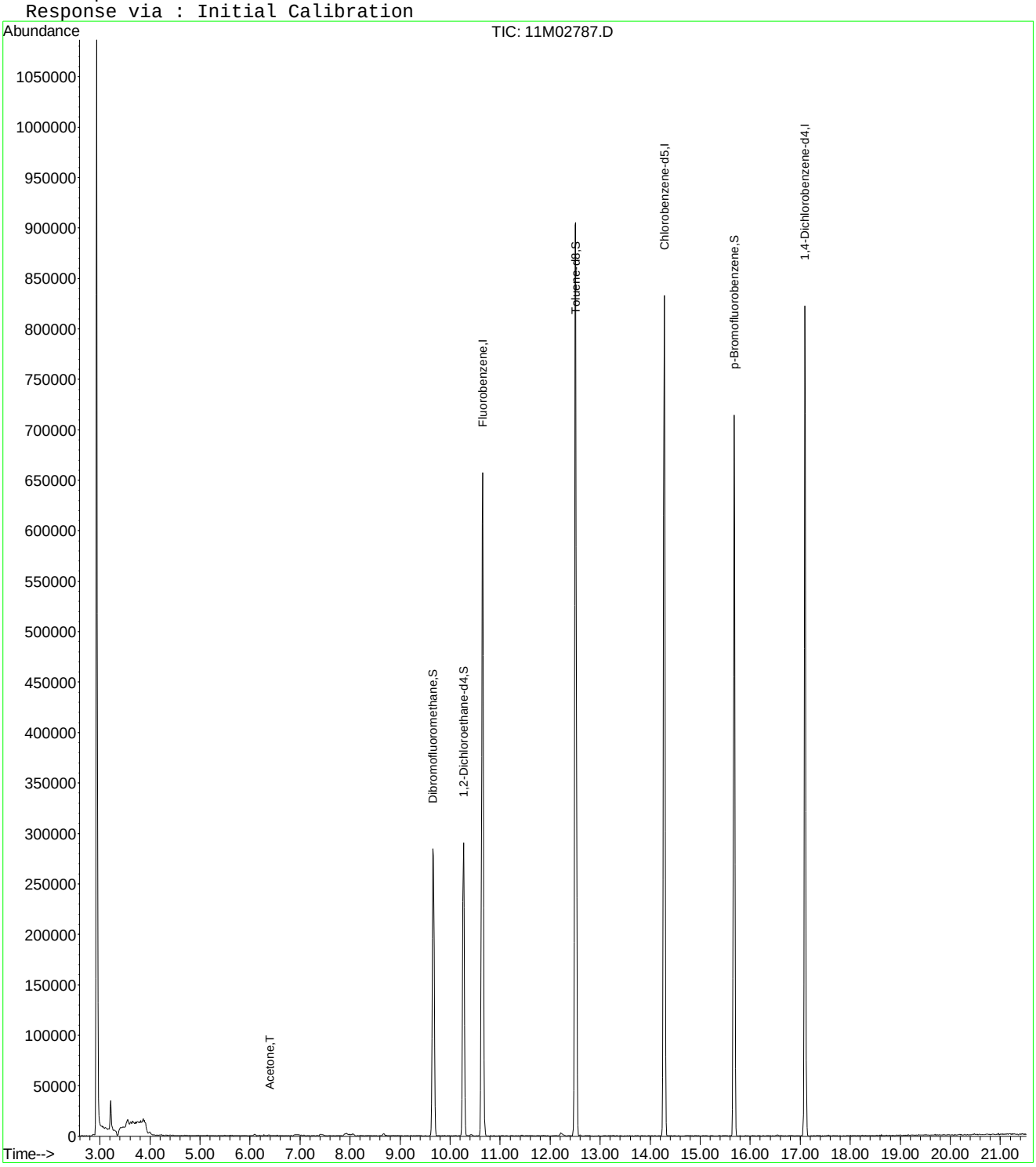

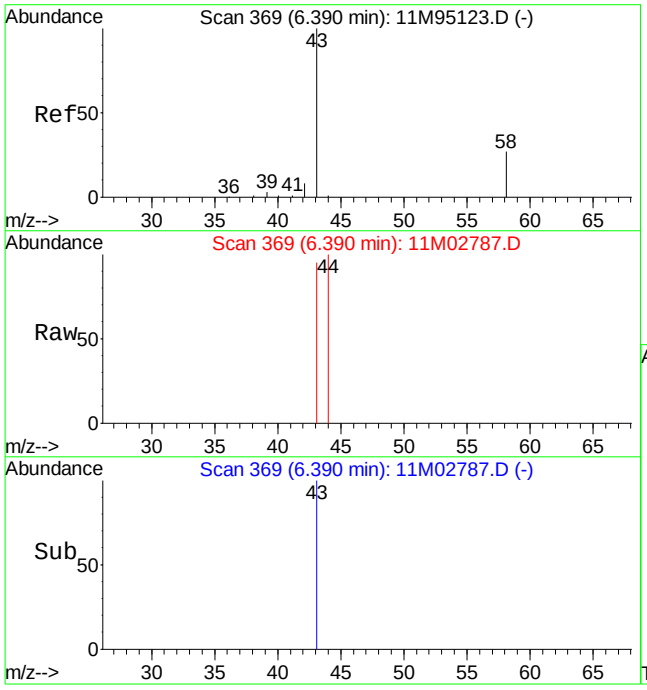

#13
Acetone
Concen: 0.99 ug/L
RT: 6.39 min Scan# 369
Delta R.T. 0.01 min
Lab File: 11M02787.D
Acq: 29 Jul 2014 22:49

Tgt Ion: 43 Resp: 1605

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.2	40.0#

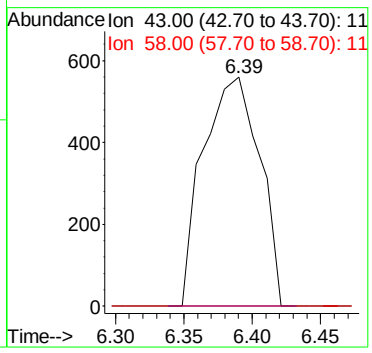

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072914\11M02778.D Vial: 6
Acq On : 29 Jul 2014 18:02 Operator: ADC/FJB
Sample : L14071626-04 A MS 826-LOW Inst : hpms11
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 29 18:24:13 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	894295	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	677031	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	365849	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	269498	24.1304 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.52%		
43) 1,2-Dichloroethane-d4	10.27	65	269298	24.7092 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.84%		
57) Toluene-d8	12.51	98	957979	24.1518 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.60%		
78) p-Bromofluorobenzene	15.67	95	365986	23.1379 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	302483	31.2386 ug/L	99
3) Chloromethane	3.74	50	314481	18.6070 ug/L	94
4) Vinyl Chloride	3.97	62	329309	21.6229 ug/L	100
5) 1,3-Butadiene	4.01	54	1648	0.3230 ug/L #	1
6) Bromomethane	4.88	94	166706	19.4617 ug/L	97
7) Chloroethane	5.04	64	161333	21.1073 ug/L	97
8) Trichlorofluoromethane	5.52	101	389638	21.6709 ug/L	100
9) Diethyl ether	6.06	59	1957	0.2669 ug/L #	1
10) Isoprene	6.08	67	308528	19.6512 ug/L	87
11) Acrolein	6.29	56	2520	2.6977 ug/L	74
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	222661	20.1214 ug/L	98
13) Acetone	6.38	43	49253	27.2734 ug/L	97
14) 1,1-Dichloroethene	6.60	61	313586	19.1432 ug/L	90
15) Tert-Butyl Alcohol	6.71	59	12904	27.3676 ug/L #	92
16) Dimethyl Sulfide	6.86	62	250606	21.8779 ug/L	91
17) Iodomethane	7.10	142	147228	11.4914 ug/L	99
18) Methyl acetate	7.10	43	123304	21.5950 ug/L	94
19) Methylene Chloride	7.35	84	237734	19.6124 ug/L	80
20) Carbon Disulfide	7.40	76	669093	19.5012 ug/L	100
21) Acrylonitrile	7.53	53	66427	26.9128 ug/L	99
22) Methyl Tert Butyl Ether	7.56	73	611943	24.6341 ug/L	95
23) trans-1,2-Dichloroethene	7.79	96	237269	19.8168 ug/L	86
24) n-Hexane	7.86	57	273417	19.6999 ug/L	95
26) Vinyl Acetate	8.34	43	1174	0.1335 ug/L #	77
27) 1,1-Dichloroethane	8.39	63	385162	19.6286 ug/L	99
29) 2-Butanone	8.91	43	71299	27.5340 ug/L	91
30) Propionitrile	9.03	54	3975	4.7060 ug/L #	80
31) 2,2-Dichloropropane	9.13	77	331335	18.8267 ug/L	100
32) cis-1,2-Dichloroethene	9.19	96	256595	19.7443 ug/L	85
33) Chloroform	9.39	83	408774	20.3260 ug/L	98
35) Bromochloromethane	9.61	130	157522	21.0286 ug/L	85
36) Tetrahydrofuran	9.65	42	7196	4.2791 ug/L	98
38) 1,1,1-Trichloroethane	9.90	97	363749	19.5110 ug/L	96
39) Cyclohexane	9.93	56	353151	20.2239 ug/L	87
40) 1,1-Dichloropropene	10.08	75	308734	19.7945 ug/L	98
41) Carbon Tetrachloride	10.22	117	338293	20.1938 ug/L	100
42) Tert-Amyl-Methyl ether	10.18	73	5218	0.2016 ug/L #	66
44) 1,2-Dichloroethane	10.38	62	295442	20.9012 ug/L	98
45) Benzene	10.42	78	892117	20.5583 ug/L	99
46) Trichloroethene	11.13	130	255380	19.0464 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M02778.D 8260WTR.M Tue Jul 29 18:24:14 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072914\11M02778.D Vial: 6
Acq On : 29 Jul 2014 18:02 Operator: ADC/FJB
Sample : L14071626-04 A MS 826-LOW Inst : hpms11
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 29 18:24:13 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
47)	Methylcyclohexane	11.21	83	353266	19.9672 ug/L		91
48)	1,2-Dichloropropane	11.32	63	222129	20.5455 ug/L		99
49)	1,4-Dioxane	11.60	88	3815	58.0418 ug/L		77
50)	Bromodichloromethane	11.61	83	305383	20.3067 ug/L		99
51)	Dibromomethane	11.69	93	134461	21.8174 ug/L		97
53)	4-Methyl-2-Pentanone	11.91	58	59639	26.1990 ug/L		93
54)	cis-1,3-Dichloropropene	12.20	75	379886	22.4848 ug/L		99
55)	Dimethyl Disulfide	12.46	79	208813	22.0047 ug/L		97
58)	Toluene	12.60	91	966551	21.1737 ug/L		99
59)	Ethyl Methacrylate	12.67	69	256959	27.3007 ug/L		90
60)	trans-1,3-Dichloropropene	12.76	75	320370	21.7976 ug/L		97
61)	1,1,2-Trichloroethane	12.97	97	193608	22.3929 ug/L		98
62)	2-Hexanone	12.89	43	104799	29.3823 ug/L		99
63)	1,3-Dichloropropane	13.25	76	323590	21.7651 ug/L		93
64)	Tetrachloroethene	13.37	164	197965	19.2273 ug/L		94
65)	Dibromochloromethane	13.62	129	246488	22.6015 ug/L		98
66)	1,2-Dibromoethane	13.87	107	191441	22.3521 ug/L		99
67)	1-Chlorohexane	13.92	91	314313	21.0960 ug/L		88
68)	Chlorobenzene	14.33	112	624712	19.0491 ug/L		100
69)	1,1,1,2-Tetrachloroethane	14.35	131	248730	20.2886 ug/L		97
70)	Ethylbenzene	14.34	106	359351	19.4844 ug/L		99
71)	m-,p-Xylene	14.42	106	841859	40.6424 ug/L		99
72)	o-Xylene	14.95	106	393087	18.5491 ug/L		98
73)	Styrene	14.99	104	705687	22.2315 ug/L		94
74)	Bromoform	15.47	173	156047	24.6725 ug/L		98
75)	Isopropylbenzene	15.34	105	996511	20.5007 ug/L		98
77)	1,1,2,2-Tetrachloroethane	15.55	83	229067	23.2967 ug/L		99
79)	1,2,3-Trichloropropane	15.73	110	68463	22.9373 ug/L		83
80)	trans-1,4-Dichloro-2-Buten	15.77	53	35831	13.5919 ug/L	#	17
81)	n-Propylbenzene	15.82	91	1141437	18.5102 ug/L		100
82)	Bromobenzene	15.95	156	281104	19.0941 ug/L		92
83)	1,3,5-Trimethylbenzene	16.00	105	917362	21.1150 ug/L		98
84)	2-Chlorotoluene	16.08	91	728358	18.7093 ug/L		94
85)	4-Chlorotoluene	16.12	91	721824	18.4026 ug/L		96
86)	a-Methylstyrene	16.37	118	488371	20.2376 ug/L		99
87)	tert-Butylbenzene	16.43	134	174200	17.7540 ug/L		86
88)	1,2,4-Trimethylbenzene	16.47	105	939038	21.5406 ug/L		98
89)	sec-Butylbenzene	16.68	105	1025285	19.5796 ug/L		100
90)	p-Isopropyltoluene	16.82	119	887456	20.1137 ug/L		98
91)	1,3-Dichlorobenzene	17.02	146	499095	18.7119 ug/L		96
92)	1,4-Dichlorobenzene	17.13	146	534242	19.9985 ug/L		97
93)	n-Butylbenzene	17.31	91	816371	22.3618 ug/L		99
94)	1,2-Dichlorobenzene	17.60	146	475592	19.4218 ug/L		96
95)	1,2-Dibromo-3-Chloropropan	18.52	75	36427	25.4789 ug/L		91
96)	1,2,4-Trichlorobenzene	19.58	180	321251	19.9297 ug/L		95
97)	Hexachlorobutadiene	19.72	225	124706	19.0217 ug/L		98
98)	Naphthalene	19.93	128	601844	22.8264 ug/L		99
99)	1,2,3-Trichlorobenzene	20.22	180	303669	21.2068 ug/L		95

(#) = qualifier out of range (m) = manual integration
11M02778.D 8260WTR.M Tue Jul 29 18:24:14 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072914\11M02778.D Vial: 6
Acq On : 29 Jul 2014 18:02 Operator: ADC/FJB
Sample : L14071626-04 A MS 826-LOW Inst : hpms11
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 29 18:24 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

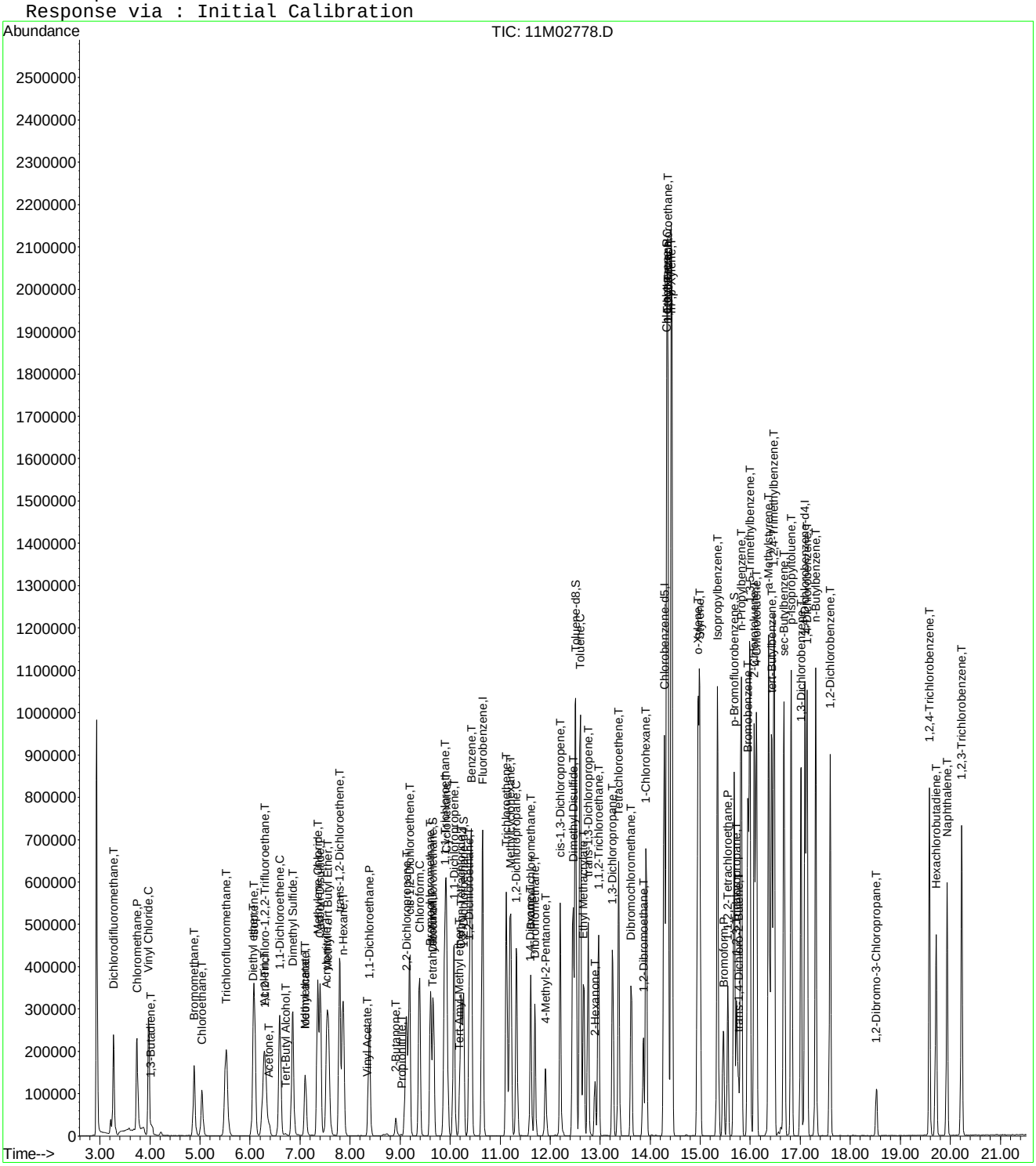

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072914\11M02779.D Vial: 7
Acq On : 29 Jul 2014 18:34 Operator: ADC/FJB
Sample : L14071626-05 A MSD 826-LOW Inst : hpms11
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 29 18:56:11 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	886271	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	678649	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	360445	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	267330	24.1530 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.60%		
43) 1,2-Dichloroethane-d4	10.27	65	270731	25.0656 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.28%		
57) Toluene-d8	12.51	98	961387	24.1799 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.72%		
78) p-Bromofluorobenzene	15.67	95	362299	23.2482 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	289709	30.1902 ug/L	100
3) Chloromethane	3.74	50	316113	18.8729 ug/L	99
4) Vinyl Chloride	3.97	62	318980	21.1343 ug/L	100
5) 1,3-Butadiene	4.01	54	1399	0.3088 ug/L #	1
6) Bromomethane	4.88	94	169007	19.9089 ug/L	99
7) Chloroethane	5.04	64	158191	20.8836 ug/L	94
8) Trichlorofluoromethane	5.52	101	375407	21.0685 ug/L	99
10) Isoprene	6.08	67	300955	19.3424 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	218710	19.9433 ug/L	96
13) Acetone	6.38	43	48757	27.2432 ug/L	94
14) 1,1-Dichloroethene	6.60	61	306105	18.8557 ug/L	89
15) Tert-Butyl Alcohol	6.70	59	188	0.4023 ug/L #	61
16) Dimethyl Sulfide	6.86	62	255280	22.4877 ug/L	91
17) Iodomethane	7.10	142	147925	11.6335 ug/L	99
18) Methyl acetate	7.10	43	127036	22.4500 ug/L	94
19) Methylene Chloride	7.35	84	235180	19.5774 ug/L	80
20) Carbon Disulfide	7.40	76	651342	19.1557 ug/L	99
21) Acrylonitrile	7.53	53	67424	27.5640 ug/L	99
22) Methyl Tert Butyl Ether	7.56	73	633658	25.7392 ug/L	94
23) trans-1,2-Dichloroethene	7.79	96	235581	19.8539 ug/L	85
24) n-Hexane	7.86	57	264412	19.2235 ug/L	95
27) 1,1-Dichloroethane	8.39	63	383787	19.7356 ug/L	99
29) 2-Butanone	8.91	43	75372	29.3704 ug/L	92
31) 2,2-Dichloropropane	9.12	77	323275	18.5350 ug/L	100
32) cis-1,2-Dichloroethene	9.19	96	256082	19.8832 ug/L	83
33) Chloroform	9.39	83	399544	20.0469 ug/L	99
35) Bromochloromethane	9.61	130	158974	21.4146 ug/L	84
38) 1,1,1-Trichloroethane	9.90	97	355176	19.2236 ug/L	97
39) Cyclohexane	9.93	56	344122	19.8853 ug/L	88
40) 1,1-Dichloropropene	10.08	75	296140	19.1589 ug/L	97
41) Carbon Tetrachloride	10.22	117	327154	19.7056 ug/L	99
42) Tert-Amyl-Methyl ether	10.07	73	41565	1.6207 ug/L #	55
44) 1,2-Dichloroethane	10.38	62	297635	21.2470 ug/L	98
45) Benzene	10.42	78	881624	20.5004 ug/L	100
46) Trichloroethene	11.13	130	249495	18.7759 ug/L	95
47) Methylcyclohexane	11.21	83	349775	19.9489 ug/L	91
48) 1,2-Dichloropropane	11.32	63	222100	20.7288 ug/L	99
49) 1,4-Dioxane	11.69	88	396	6.0793 ug/L #	17
50) Bromodichloromethane	11.61	83	307607	20.6398 ug/L	100
51) Dibromomethane	11.69	93	139599	22.8562 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M02779.D 8260WTR.M Tue Jul 29 18:56:12 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072914\11M02779.D Vial: 7
Acq On : 29 Jul 2014 18:34 Operator: ADC/FJB
Sample : L14071626-05 A MSD 826-LOW Inst : hpms11
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 29 18:56:11 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
53)	4-Methyl-2-Pentanone	11.91	58	63773	28.2687 ug/L		96
54)	cis-1,3-Dichloropropene	12.20	75	375475	22.4249 ug/L		99
55)	Dimethyl Disulfide	12.46	79	210983	22.4347 ug/L		94
58)	Toluene	12.60	91	959163	20.9617 ug/L		98
59)	Ethyl Methacrylate	12.67	69	271614	28.7889 ug/L		89
60)	trans-1,3-Dichloropropene	12.76	75	324001	21.9921 ug/L		98
61)	1,1,2-Trichloroethane	12.97	97	194876	22.4858 ug/L		100
62)	2-Hexanone	12.89	43	110404	30.8799 ug/L		98
63)	1,3-Dichloropropane	13.25	76	331862	22.2682 ug/L		92
64)	Tetrachloroethene	13.37	164	189966	18.4064 ug/L		96
65)	Dibromochloromethane	13.62	129	253436	23.1832 ug/L		100
66)	1,2-Dibromoethane	13.87	107	196216	22.8550 ug/L		100
67)	1-Chlorohexane	13.92	91	313760	21.0087 ug/L		87
68)	Chlorobenzene	14.33	112	622664	18.9414 ug/L		100
69)	1,1,1,2-Tetrachloroethane	14.35	131	246980	20.0978 ug/L		98
70)	Ethylbenzene	14.34	106	355923	19.2525 ug/L		98
71)	m-,p-Xylene	14.42	106	841013	40.5047 ug/L		97
72)	o-Xylene	14.95	106	391894	18.4487 ug/L		98
73)	Styrene	14.99	104	694250	21.8191 ug/L		96
74)	Bromoform	15.47	173	157111	24.7815 ug/L		98
75)	Isopropylbenzene	15.34	105	979459	20.1019 ug/L		99
77)	1,1,2,2-Tetrachloroethane	15.55	83	237148	24.4802 ug/L		99
79)	1,2,3-Trichloropropane	15.73	110	71017	24.1497 ug/L		83
80)	trans-1,4-Dichloro-2-Buten	15.77	53	37610	14.4408 ug/L	#	20
81)	n-Propylbenzene	15.82	91	1111174	18.2896 ug/L		99
82)	Bromobenzene	15.95	156	280031	19.3064 ug/L		93
83)	1,3,5-Trimethylbenzene	16.00	105	909861	21.2563 ug/L		97
84)	2-Chlorotoluene	16.08	91	710707	18.5296 ug/L		96
85)	4-Chlorotoluene	16.12	91	709726	18.3655 ug/L		91
86)	a-Methylstyrene	16.37	118	496537	20.8845 ug/L		98
87)	tert-Butylbenzene	16.43	134	172541	17.8486 ug/L		86
88)	1,2,4-Trimethylbenzene	16.47	105	937662	21.8315 ug/L		99
89)	sec-Butylbenzene	16.68	105	1005700	19.4935 ug/L		100
90)	p-Isopropyltoluene	16.82	119	867084	19.9467 ug/L		99
91)	1,3-Dichlorobenzene	17.02	146	486407	18.5096 ug/L		98
92)	1,4-Dichlorobenzene	17.13	146	528691	20.0874 ug/L		97
93)	n-Butylbenzene	17.31	91	797997	22.1862 ug/L		99
94)	1,2-Dichlorobenzene	17.60	146	469487	19.4600 ug/L		97
95)	1,2-Dibromo-3-Chloropropan	18.52	75	38899	27.6158 ug/L		91
96)	1,2,4-Trichlorobenzene	19.58	180	315327	19.8566 ug/L		95
97)	Hexachlorobutadiene	19.72	225	121124	18.7524 ug/L		98
98)	Naphthalene	19.93	128	610443	23.4885 ug/L		100
99)	1,2,3-Trichlorobenzene	20.22	180	305603	21.6586 ug/L		95

(#) = qualifier out of range (m) = manual integration
11M02779.D 8260WTR.M Tue Jul 29 18:56:12 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072914\11M02779.D Vial: 7
Acq On : 29 Jul 2014 18:34 Operator: ADC/FJB
Sample : L14071626-05 A MSD 826-LOW Inst : hpms11
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 29 18:56 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

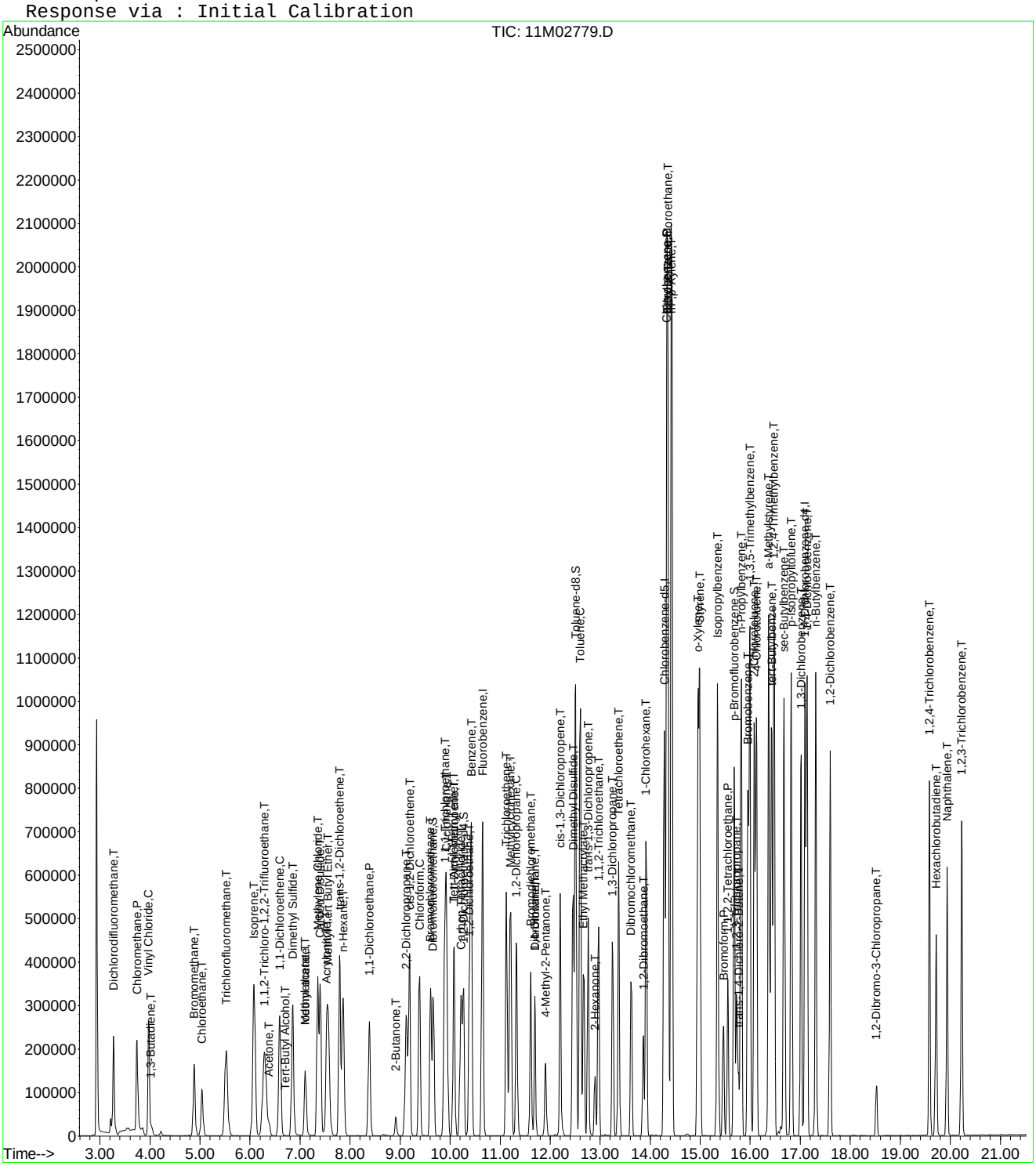

11M02779.D 8260WTR.M Tue Jul 29 18:56:13 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02788.D Vial: 16
Acq On : 29 Jul 2014 23:21 Operator: ADC/FJB
Sample : L14071626-06 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:10:08 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	797630	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	581460	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	278556	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	233491	23.4401 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.76%		
43) 1,2-Dichloroethane-d4	10.27	65	240969	24.7894 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.16%		
57) Toluene-d8	12.51	98	828179	24.3112 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.24%		
78) p-Bromofluorobenzene	15.67	95	295840	24.5644 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.24%		

Target Compounds					Qvalue
13) Acetone	6.38	43	1135	0.7047 ug/L #	78
14) 1,1-Dichloroethene	6.60	61	52101	3.5660 ug/L	90
15) Tert-Butyl Alcohol	6.61	59	1402	3.3338 ug/L #	61
27) 1,1-Dichloroethane	8.39	63	10149	0.5799 ug/L	94
44) 1,2-Dichloroethane	10.38	62	16522	1.3105 ug/L	87
49) 1,4-Dioxane	11.59	88	735	12.5376 ug/L #	49

(#) = qualifier out of range (m) = manual integration
11M02788.D 8260WTR.M Wed Jul 30 09:10:09 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02788.D Vial: 16
Acq On : 29 Jul 2014 23:21 Operator: ADC/FJB
Sample : L14071626-06 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:10 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

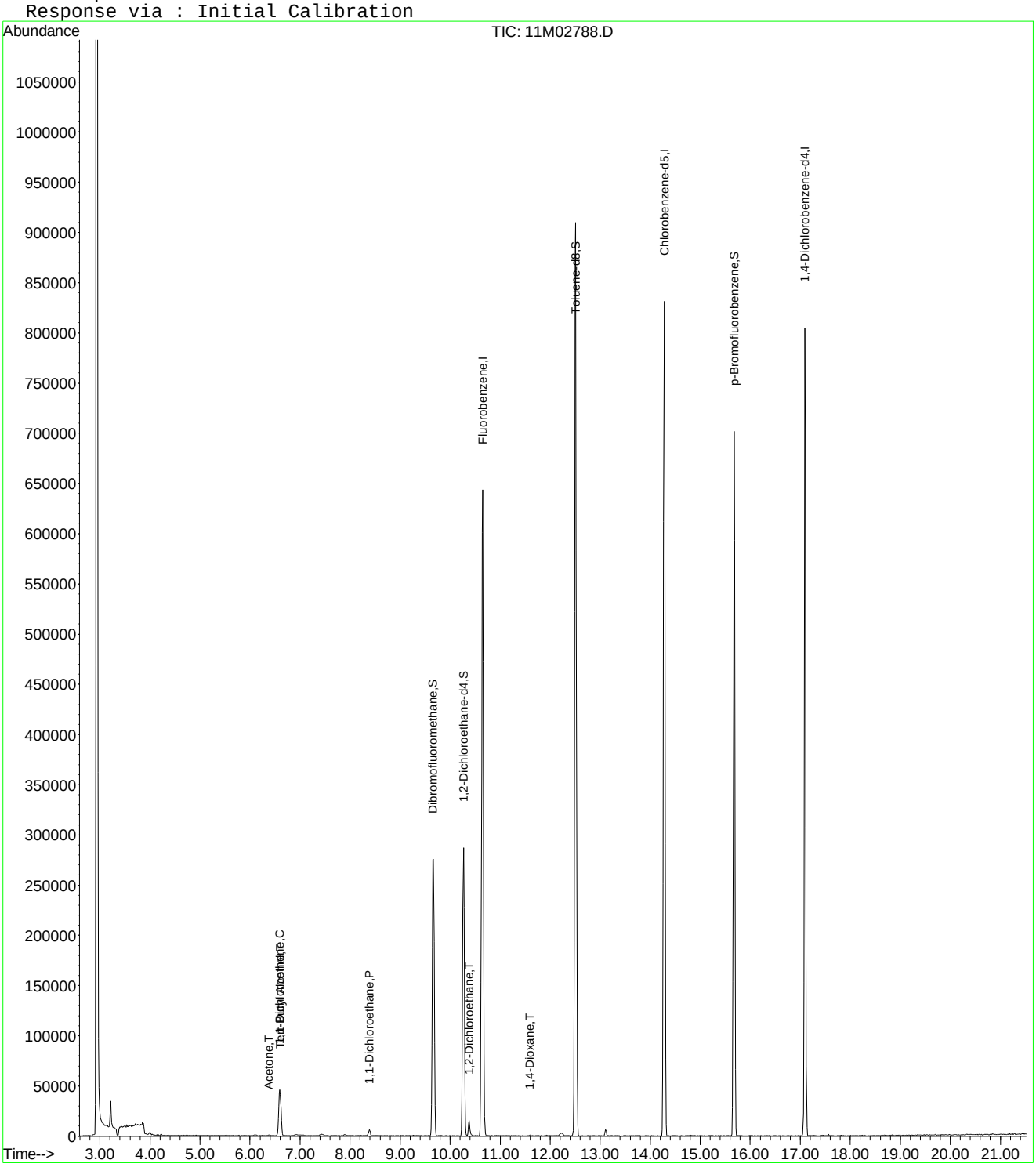

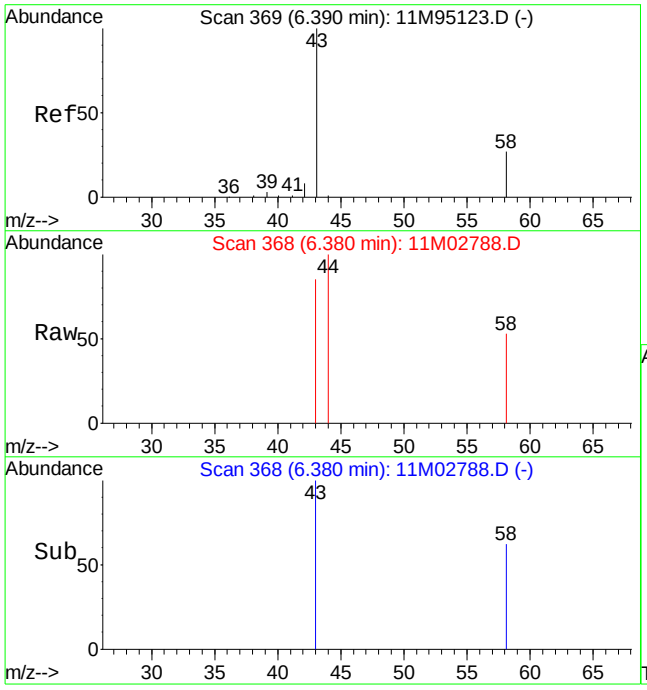

#13
Acetone
Concen: 0.70 ug/L
RT: 6.38 min Scan# 368
Delta R.T. 0.00 min
Lab File: 11M02788.D
Acq: 29 Jul 2014 23:21

Tgt Ion: 43 Resp: 1135

Ion	Ratio	Lower	Upper
43	100		
58	16.9	17.2	40.0#

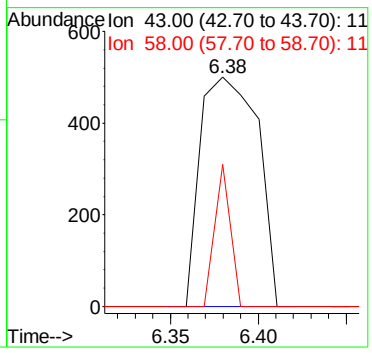

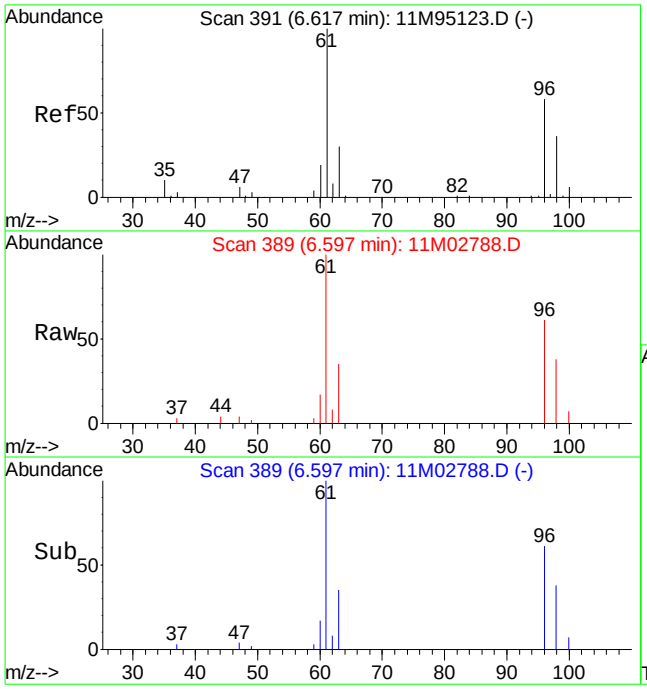

#14
1,1-Dichloroethene
Concen: 3.57 ug/L
RT: 6.60 min Scan# 389
Delta R.T. 0.00 min
Lab File: 11M02788.D
Acq: 29 Jul 2014 23:21

Tgt Ion: 61 Resp: 52101

Ion	Ratio	Lower	Upper
61	100		
96	62.8	33.5	78.1

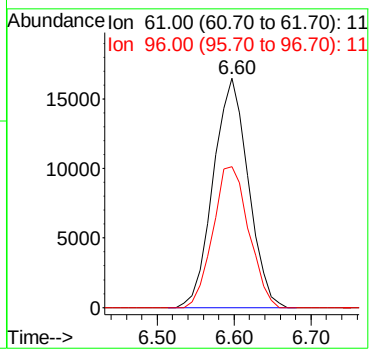

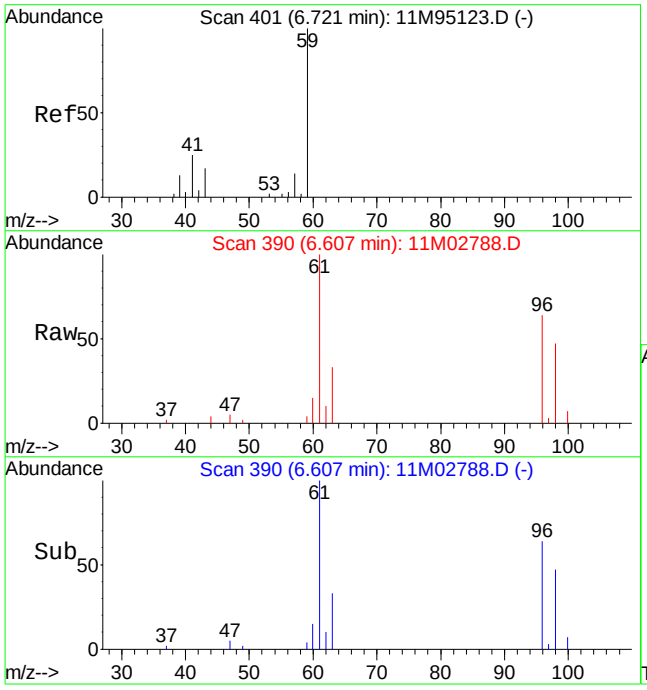

#15
Tert-Butyl Alcohol
Concen: 3.33 ug/L
RT: 6.61 min Scan# 390
Delta R.T. -0.09 min
Lab File: 11M02788.D
Acq: 29 Jul 2014 23:21

Tgt Ion: 59 Resp: 1402

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.0	28.0#
57	0.0	7.0	16.4#

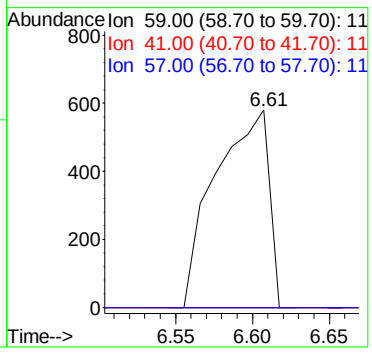

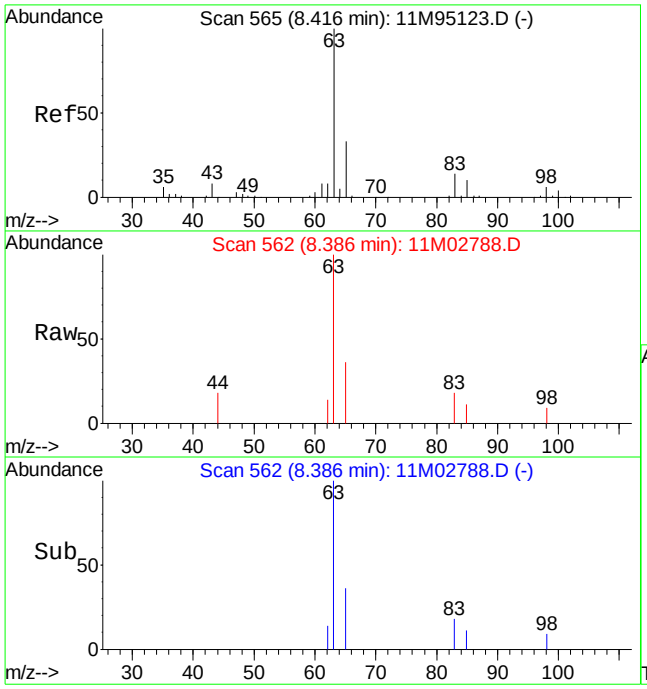

#27
1,1-Dichloroethane
Concen: 0.58 ug/L
RT: 8.39 min Scan# 562
Delta R.T. 0.00 min
Lab File: 11M02788.D
Acq: 29 Jul 2014 23:21

Tgt Ion: 63 Resp: 10149

Ion	Ratio	Lower	Upper
63	100		
65	28.6	19.3	45.1
83	11.5	7.9	18.5

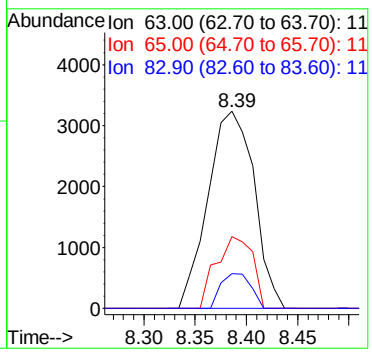

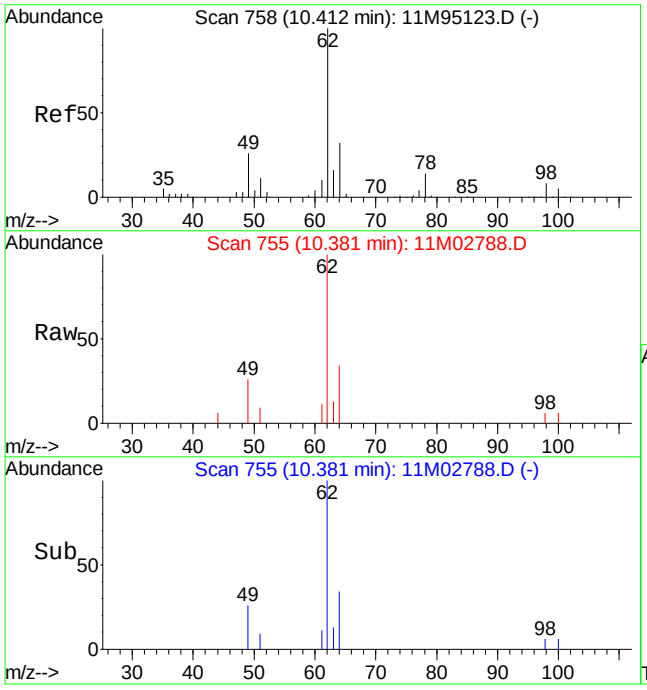

#44
1,2-Dichloroethane
Concen: 1.31 ug/L
RT: 10.38 min Scan# 755
Delta R.T. 0.00 min
Lab File: 11M02788.D
Acq: 29 Jul 2014 23:21

Tgt Ion: 62 Resp: 16522

Ion	Ratio	Lower	Upper
62	100		
64	30.6	19.7	45.9
49	23.9	21.8	51.0

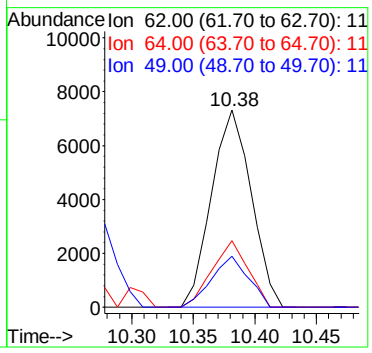

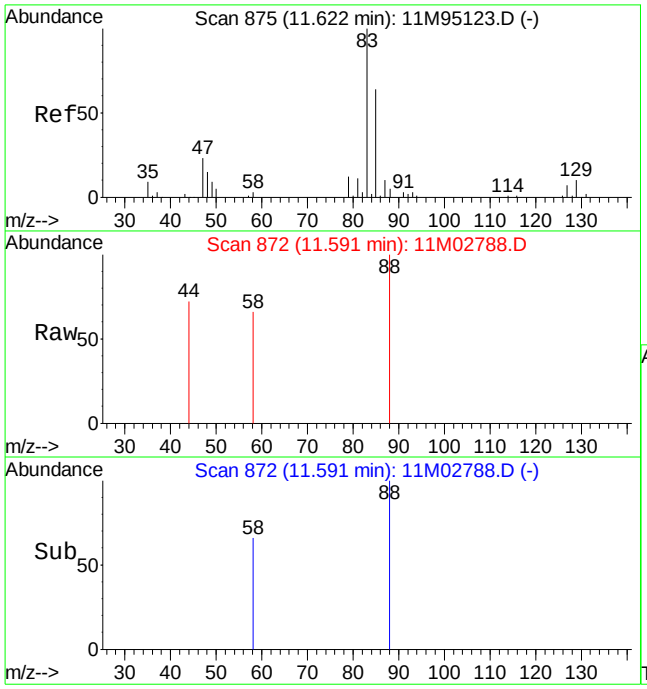

#49
1,4-Dioxane
Concen: 12.54 ug/L
RT: 11.59 min Scan# 872
Delta R.T. -0.01 min
Lab File: 11M02788.D
Acq: 29 Jul 2014 23:21

Tgt Ion: 88 Resp: 735

Ion	Ratio	Lower	Upper
88	100		
58	25.7	40.1	93.5#

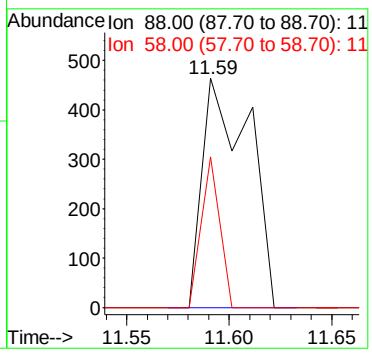

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02792.D Vial: 20
Acq On : 30 Jul 2014 1:28 Operator: ADC/FJB
Sample : L14071626-07 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:10:38 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	773843	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	569313	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	260314	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	232265	24.0337 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.12%		
43) 1,2-Dichloroethane-d4	10.27	65	239111	25.3544 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.40%		
57) Toluene-d8	12.51	98	810415	24.2973 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.20%		
78) p-Bromofluorobenzene	15.68	95	287110	25.5101 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.04%		

Target Compounds

					Qvalue
3) Chloromethane	3.74	50	2744	0.1876 ug/L	98
4) Vinyl Chloride	3.98	62	9319	0.7071 ug/L	98
13) Acetone	6.39	43	450	0.2880 ug/L #	46
14) 1,1-Dichloroethene	6.60	61	5511155	388.8027 ug/L	87
27) 1,1-Dichloroethane	8.39	63	371799	21.8969 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	13327	1.1851 ug/L	67
33) Chloroform	9.39	83	9913	0.5696 ug/L	96
44) 1,2-Dichloroethane	10.38	62	242289	19.8089 ug/L	92
46) Trichloroethene	11.13	130	19925	1.7173 ug/L	94
49) 1,4-Dioxane	11.60	88	4172	73.3531 ug/L	89
61) 1,1,2-Trichloroethane	12.97	97	25269	3.4756 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M02792.D 8260WTR.M Wed Jul 30 09:10:39 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02792.D Vial: 20
Acq On : 30 Jul 2014 1:28 Operator: ADC/FJB
Sample : L14071626-07 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:10 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

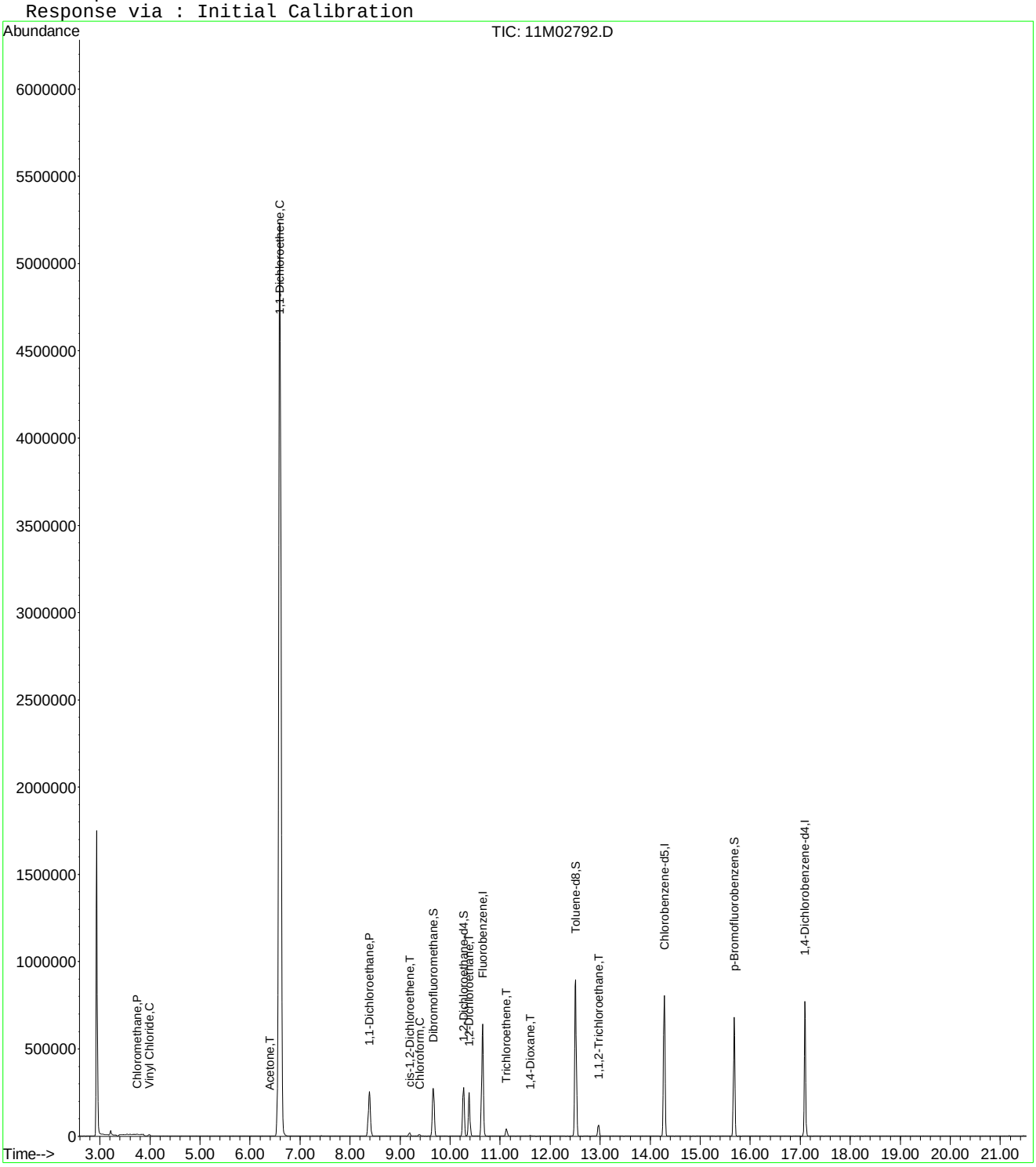

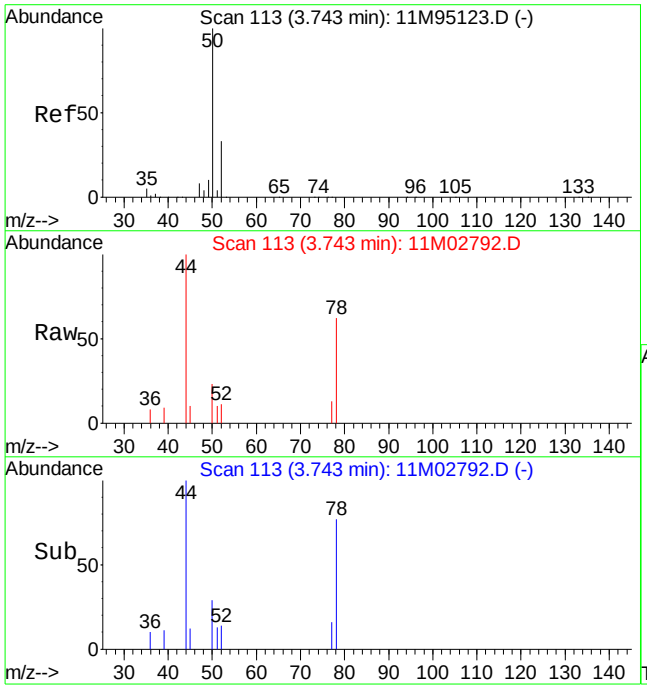

#3
Chloromethane
Concen: 0.19 ug/L
RT: 3.74 min Scan# 113
Delta R.T. 0.00 min
Lab File: 11M02792.D
Acq: 30 Jul 2014 1:28

Tgt Ion: 50 Resp: 2744

Ion	Ratio	Lower	Upper
50	100		
52	33.7	19.4	45.4

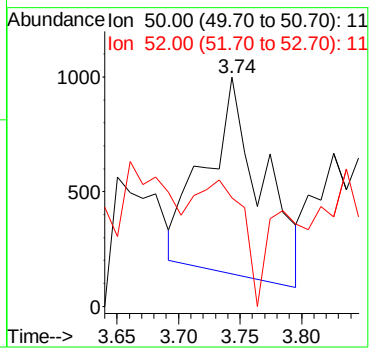

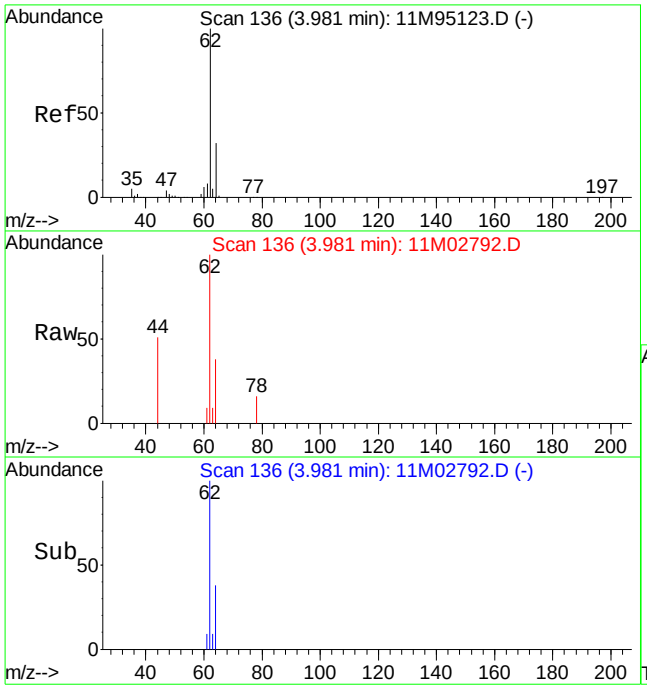

#4
Vinyl Chloride
Concen: 0.71 ug/L
RT: 3.98 min Scan# 136
Delta R.T. 0.00 min
Lab File: 11M02792.D
Acq: 30 Jul 2014 1:28

Tgt Ion: 62 Resp: 9319

Ion	Ratio	Lower	Upper
62	100		
64	31.0	19.3	45.1

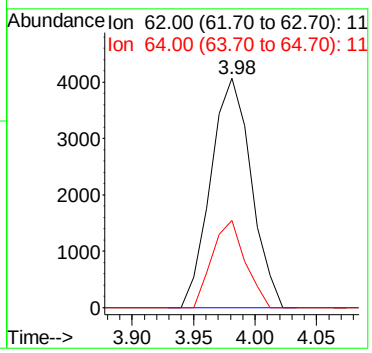

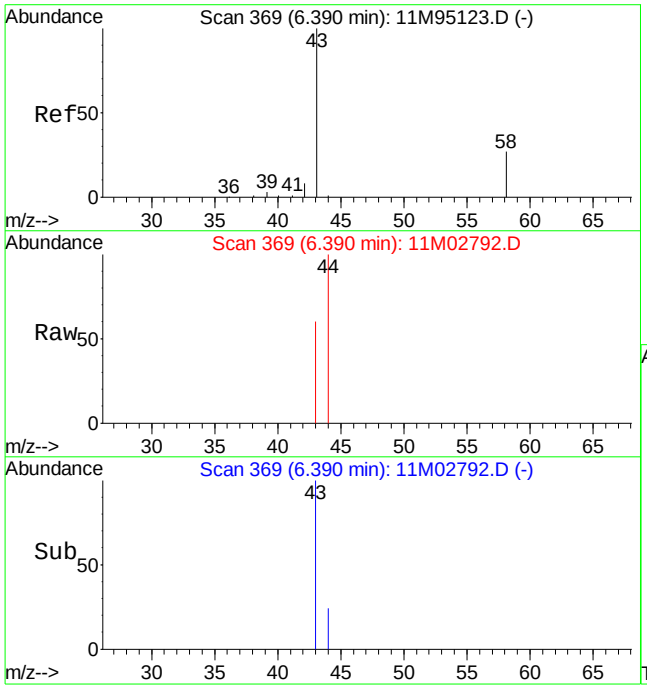

#13
Acetone
Concen: 0.29 ug/L
RT: 6.39 min Scan# 369
Delta R.T. 0.01 min
Lab File: 11M02792.D
Acq: 30 Jul 2014 1:28

Tgt Ion: 43 Resp: 450

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.2	40.0#

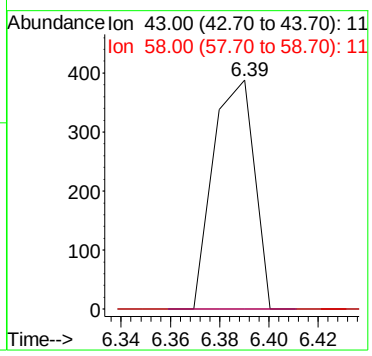

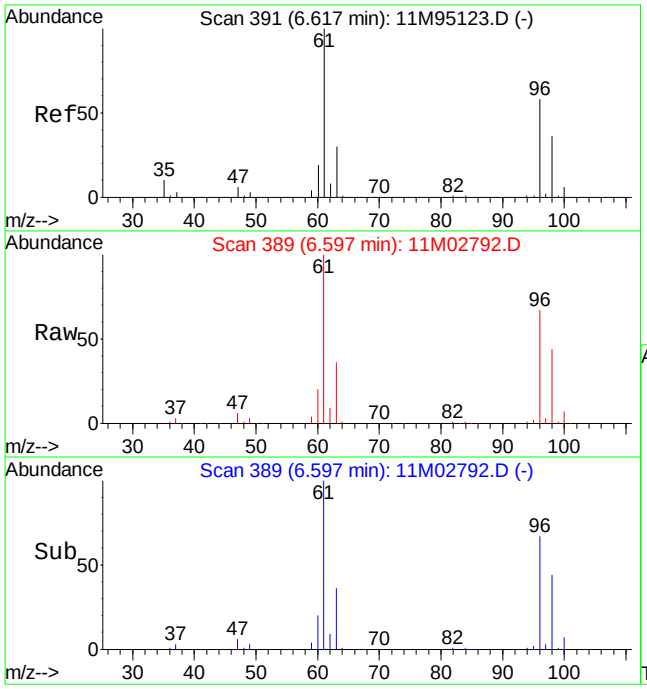

#14
1,1-Dichloroethene
Concen: 388.80 ug/L
RT: 6.60 min Scan# 389
Delta R.T. 0.00 min
Lab File: 11M02792.D
Acq: 30 Jul 2014 1:28

Tgt Ion: 61 Resp: 5511155

Ion	Ratio	Lower	Upper
61	100		
96	65.5	33.5	78.1

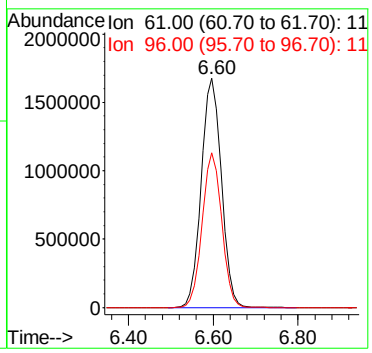

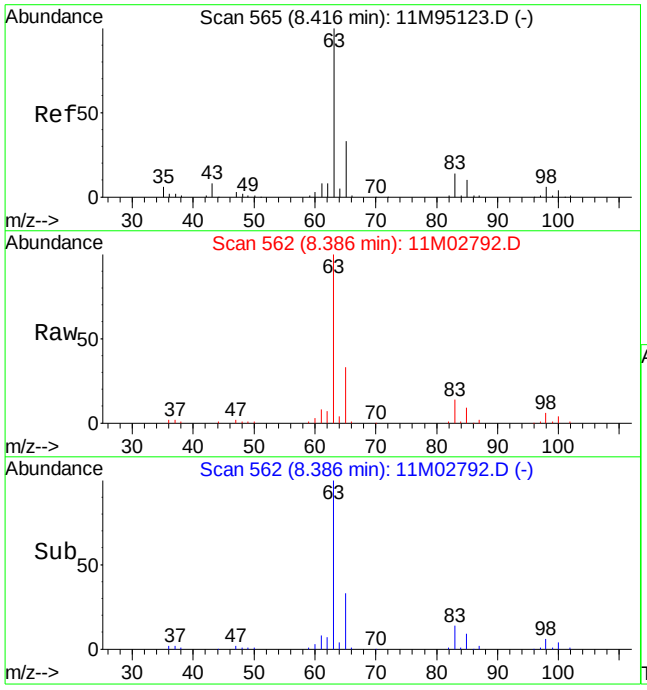

#27
1,1-Dichloroethane
Concen: 21.90 ug/L
RT: 8.39 min Scan# 562
Delta R.T. 0.00 min
Lab File: 11M02792.D
Acq: 30 Jul 2014 1:28

Tgt Ion: 63 Resp: 371799

Ion	Ratio	Lower	Upper
63	100		
65	32.3	19.3	45.1
83	14.4	7.9	18.5

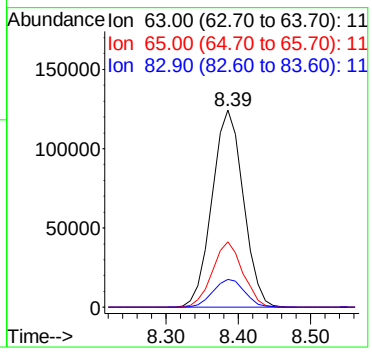

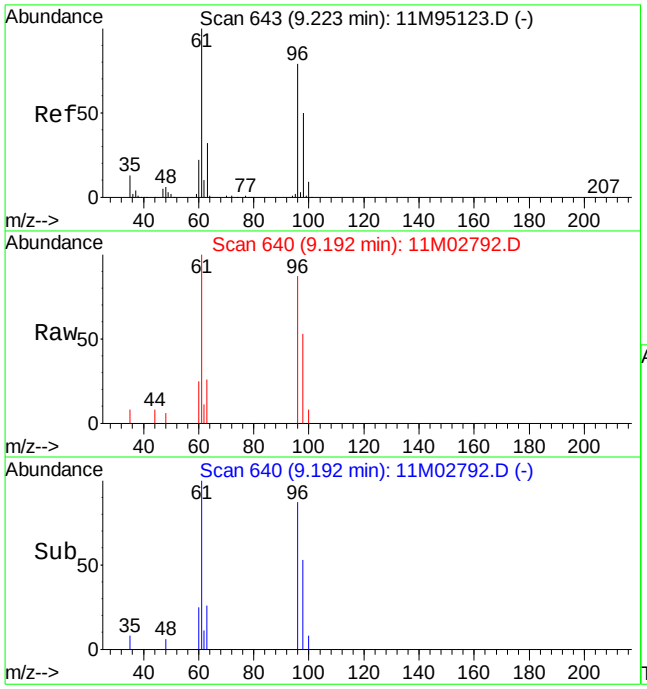

#32
cis-1,2-Dichloroethene
Concen: 1.19 ug/L
RT: 9.19 min Scan# 640
Delta R.T. 0.00 min
Lab File: 11M02792.D
Acq: 30 Jul 2014 1:28

Tgt Ion: 96 Resp: 13327

Ion	Ratio	Lower	Upper
96	100		
61	118.3	97.1	226.7

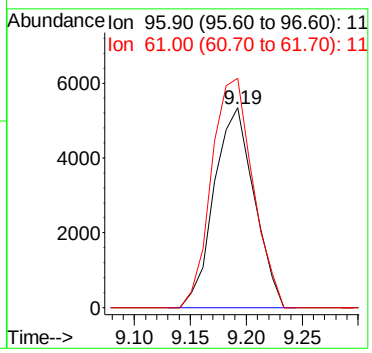

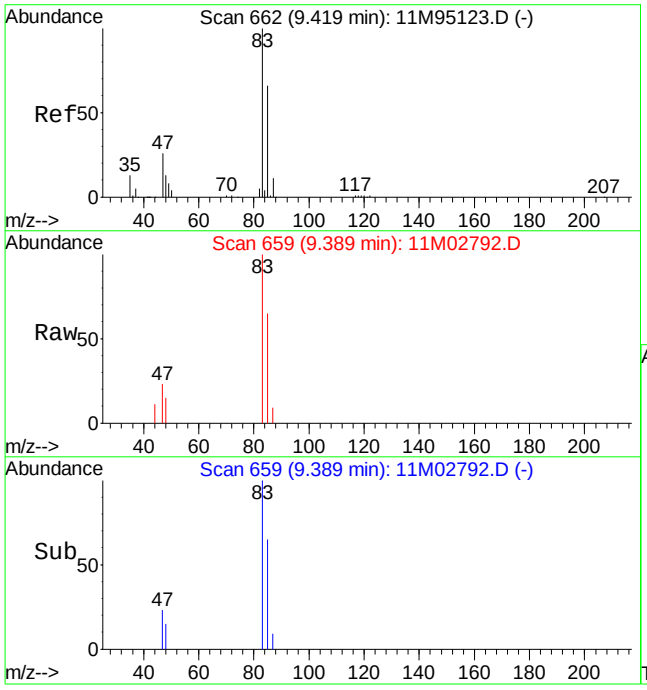

#33
Chloroform
Concen: 0.57 ug/L
RT: 9.39 min Scan# 659
Delta R.T. 0.00 min
Lab File: 11M02792.D
Acq: 30 Jul 2014 1:28

Tgt Ion: 83 Resp: 9913

Ion	Ratio	Lower	Upper
83	100		
85	62.0	39.2	91.6

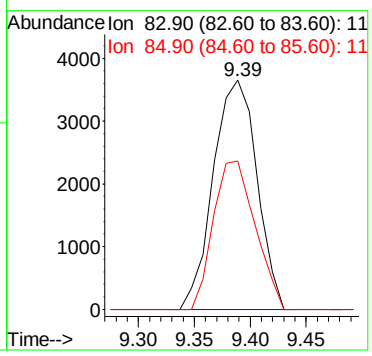

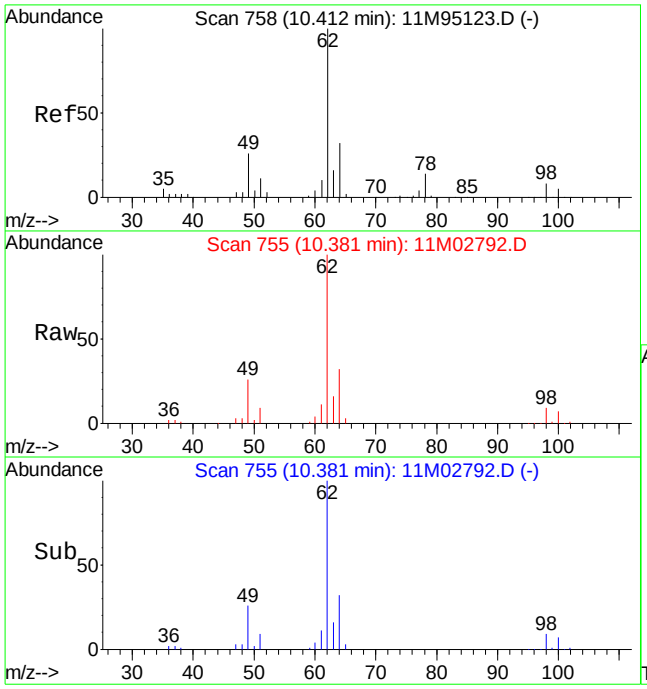

#44
1,2-Dichloroethane
Concen: 19.81 ug/L
RT: 10.38 min Scan# 755
Delta R.T. 0.00 min
Lab File: 11M02792.D
Acq: 30 Jul 2014 1:28

Tgt Ion: 62 Resp: 242289

Ion	Ratio	Lower	Upper
62	100		
64	32.5	19.7	45.9
49	27.7	21.8	51.0

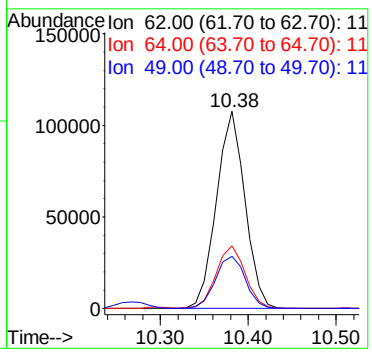

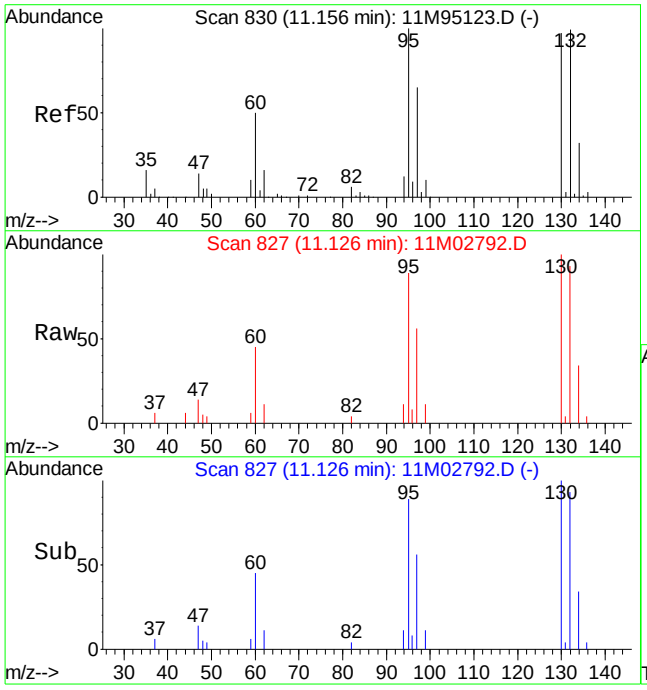

#46
Trichloroethene
Concen: 1.72 ug/L
RT: 11.13 min Scan# 827
Delta R.T. 0.00 min
Lab File: 11M02792.D
Acq: 30 Jul 2014 1:28

Tgt Ion:130 Resp: 19925

Ion	Ratio	Lower	Upper
130	100		
132	91.1	58.0	135.4
95	90.4	58.3	135.9

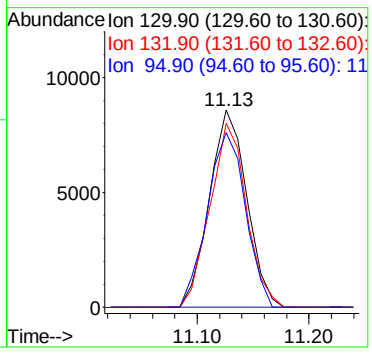

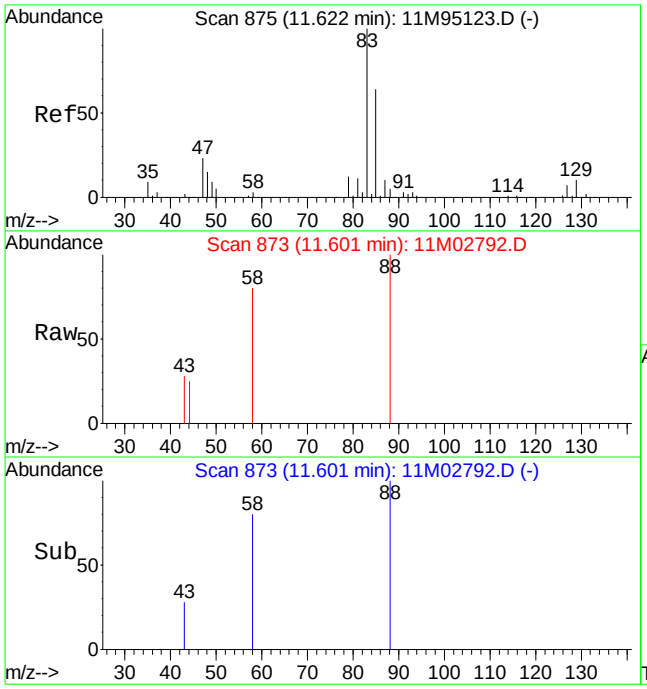

#49
1,4-Dioxane
Concen: 73.35 ug/L
RT: 11.60 min Scan# 873
Delta R.T. 0.00 min
Lab File: 11M02792.D
Acq: 30 Jul 2014 1:28

Tgt Ion: 88 Resp: 4172

Ion	Ratio	Lower	Upper
88	100		
58	57.8	40.1	93.5

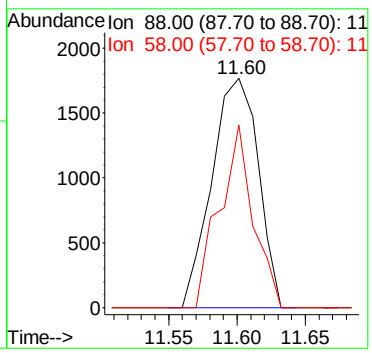

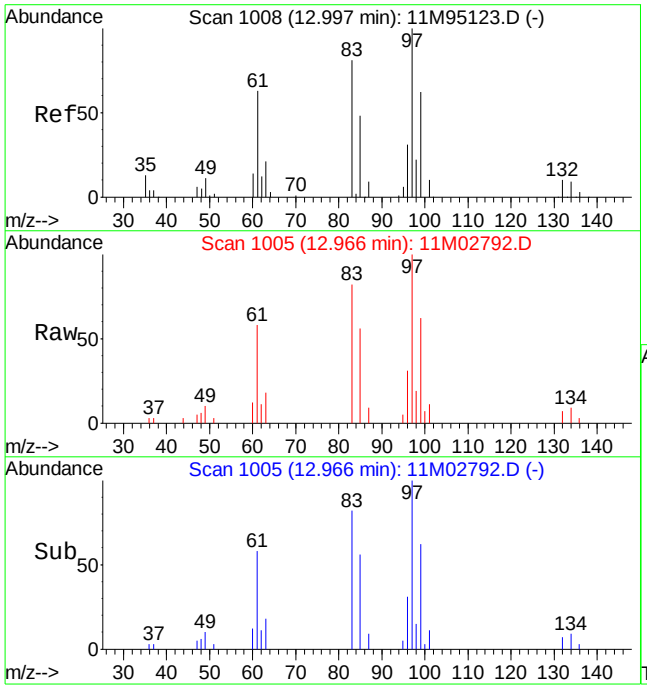

#61
1,1,2-Trichloroethane
Concen: 3.48 ug/L
RT: 12.97 min Scan# 1005
Delta R.T. 0.00 min
Lab File: 11M02792.D
Acq: 30 Jul 2014 1:28

Tgt Ion: 97 Resp: 25269

Ion	Ratio	Lower	Upper
97	100		
83	84.8	49.8	116.2

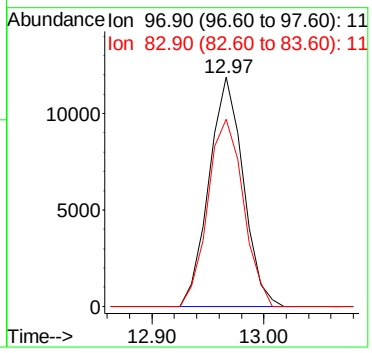

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965038.D Vial: 12
Acq On : 30 Jul 2014 16:41 Operator: ADC
Sample : L14071626-07 B 10X 826-LOW Inst : HPMS9
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 09:42:26 2014 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	720917	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	505170	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	239369	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.04	111	166470	21.7735 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 87.08%		
43) 1,2-Dichloroethane-d4	10.68	65	217977	21.3172 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.28%		
58) Toluene-d8	13.06	98	606896	24.3166 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.28%		
79) p-Bromofluorobenzene	16.46	95	214745	24.8653 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.48%		

Target Compounds					Qvalue
14) 1,1-Dichloroethene	6.83	61	539803	35.2731 ug/L	98
15) Tert-Butyl Alcohol	6.83	59	17751	16.0547 ug/L #	60
19) Methylene Chloride	7.62	84	3238	0.4003 ug/L	89
27) 1,1-Dichloroethane	8.70	63	38177	2.0413 ug/L	99
36) Tetrahydrofuran	10.02	42	751	0.2283 ug/L #	49
45) 1,2-Dichloroethane	10.79	62	24064	1.7839 ug/L	92
47) Trichloroethene	11.60	130	2639	0.3013 ug/L	97
50) 1,4-Dioxane	12.09	88	430	5.3515 ug/L #	1
56) Dimethyl Disulfide	13.06	94	16421	1.2049 ug/L #	28
62) 1,1,2-Trichloroethane	13.54	97	1836	0.2856 ug/L	97
99) Naphthalene	21.04	128	12245	0.5308 ug/L #	82

(#) = qualifier out of range (m) = manual integration
9M965038.D 8260WTR.M Thu Jul 31 09:42:29 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965038.D Vial: 12
Acq On : 30 Jul 2014 16:41 Operator: ADC
Sample : L14071626-07 B 10X 826-LOW Inst : HPMS9
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 9:42 2014 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

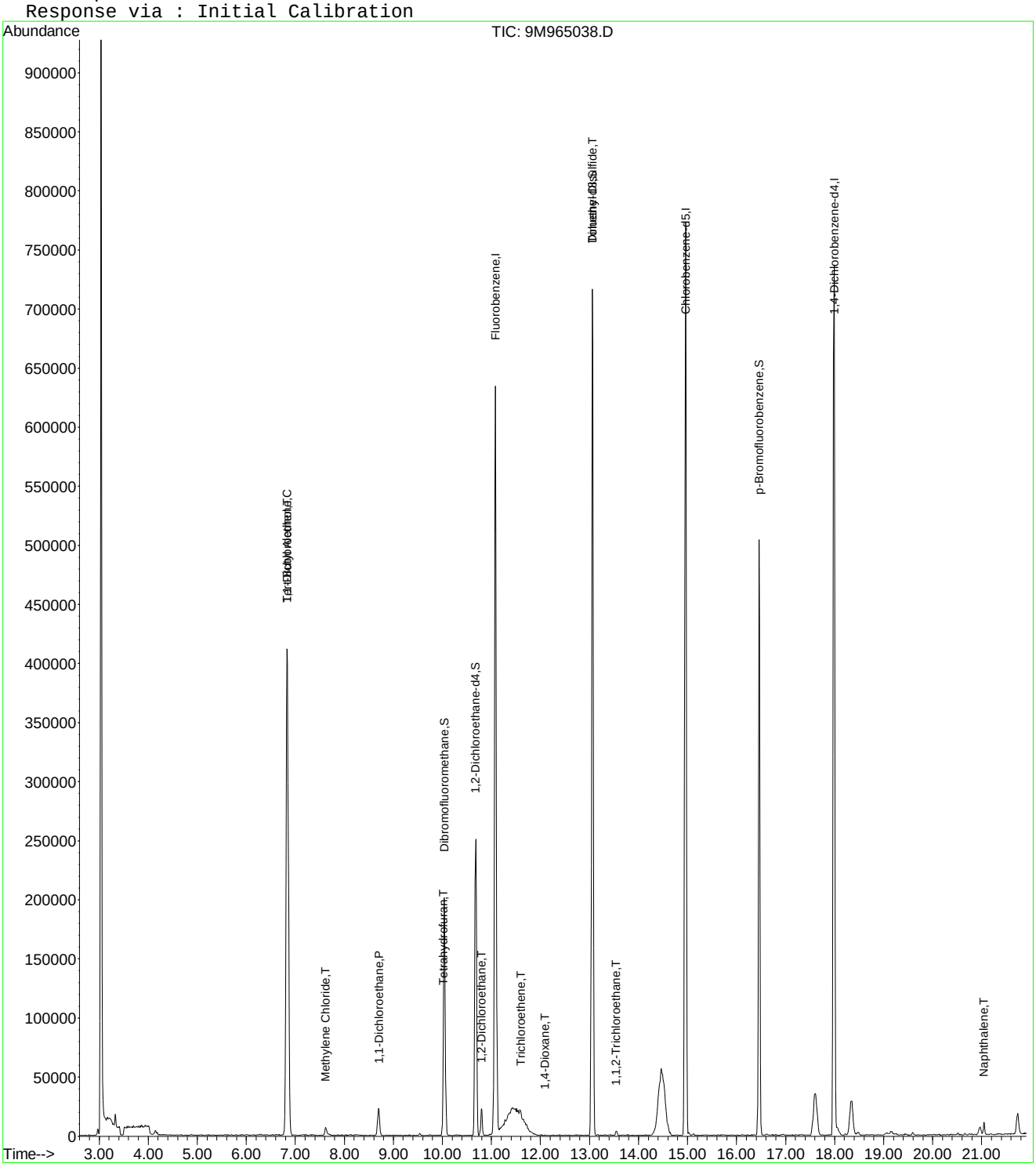

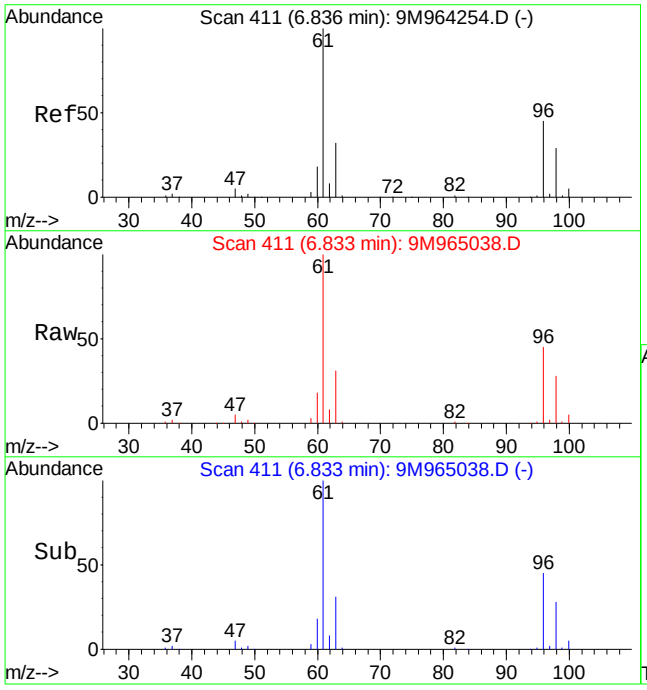

#14
1,1-Dichloroethene
Concen: 35.27 ug/L
RT: 6.83 min Scan# 411
Delta R.T. -0.00 min
Lab File: 9M965038.D
Acq: 30 Jul 2014 16:41

Tgt Ion: 61 Resp: 539803

Ion	Ratio	Lower	Upper
61	100		
96	44.6	26.2	61.0

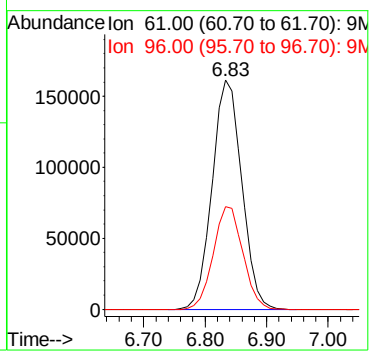

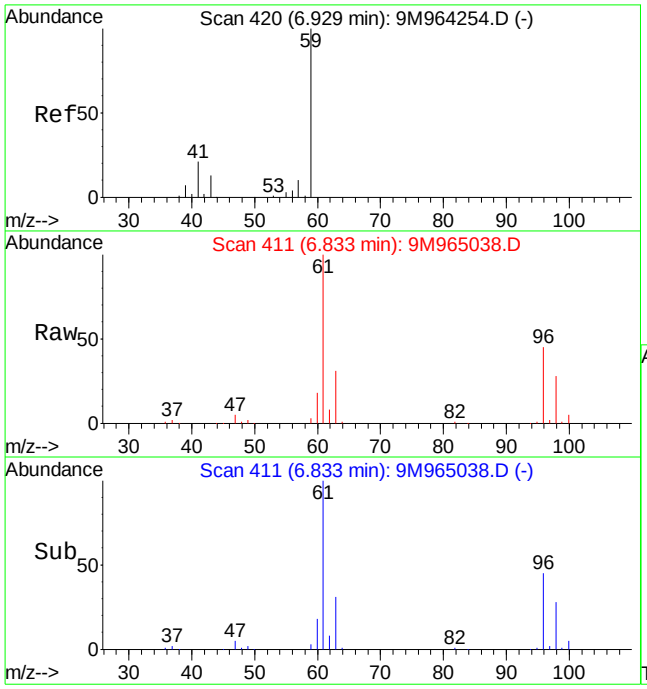

#15
Tert-Butyl Alcohol
Concen: 16.05 ug/L
RT: 6.83 min Scan# 411
Delta R.T. -0.10 min
Lab File: 9M965038.D
Acq: 30 Jul 2014 16:41

Tgt Ion: 59 Resp: 17751

Ion	Ratio	Lower	Upper
59	100		
41	0.0	13.0	30.2#
57	0.0	6.1	14.3#

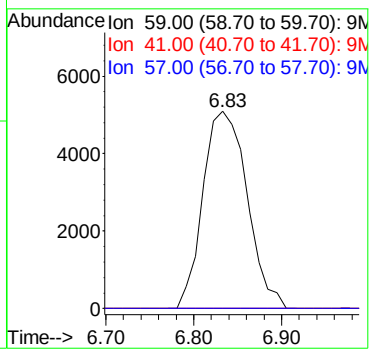

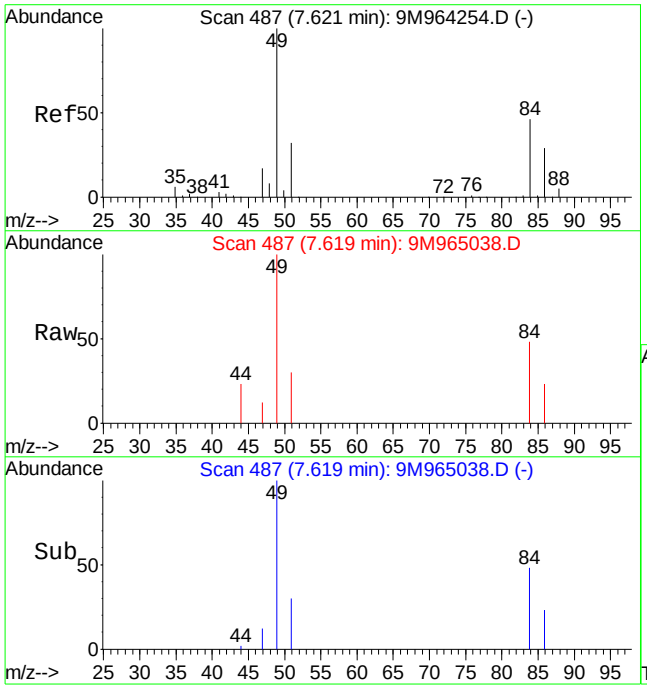

#19
Methylene Chloride
Concen: 0.40 ug/L
RT: 7.62 min Scan# 487
Delta R.T. -0.00 min
Lab File: 9M965038.D
Acq: 30 Jul 2014 16:41

Tgt Ion: 84 Resp: 3238

Ion	Ratio	Lower	Upper
84	100		
49	235.5	130.7	304.9

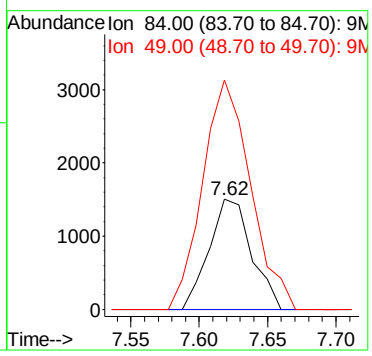

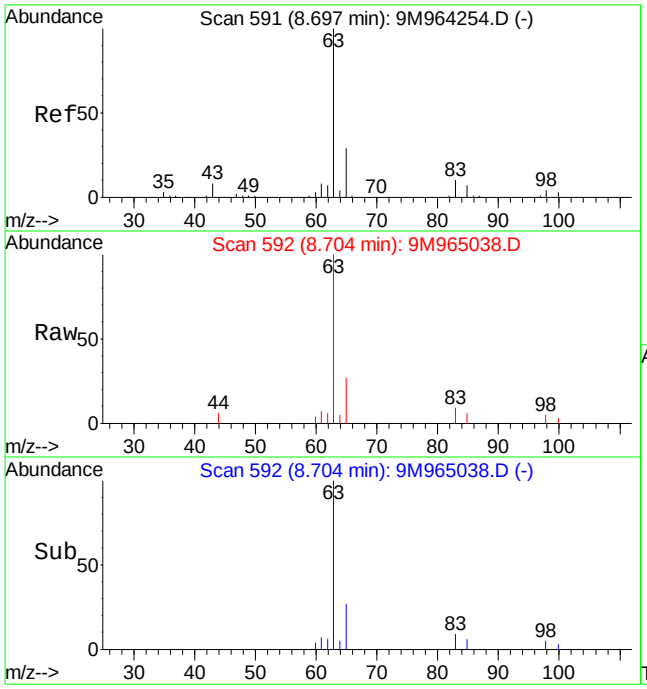

#27
1,1-Dichloroethane
Concen: 2.04 ug/L
RT: 8.70 min Scan# 592
Delta R.T. 0.01 min
Lab File: 9M965038.D
Acq: 30 Jul 2014 16:41

Tgt Ion: 63 Resp: 38177

Ion	Ratio	Lower	Upper
63	100		
65	29.3	17.3	40.3
83	9.4	6.0	14.0

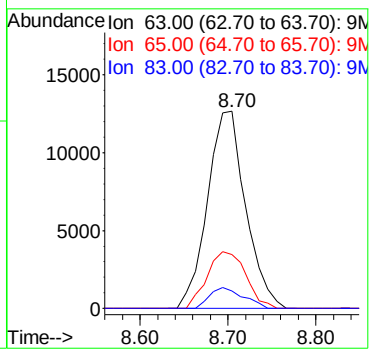

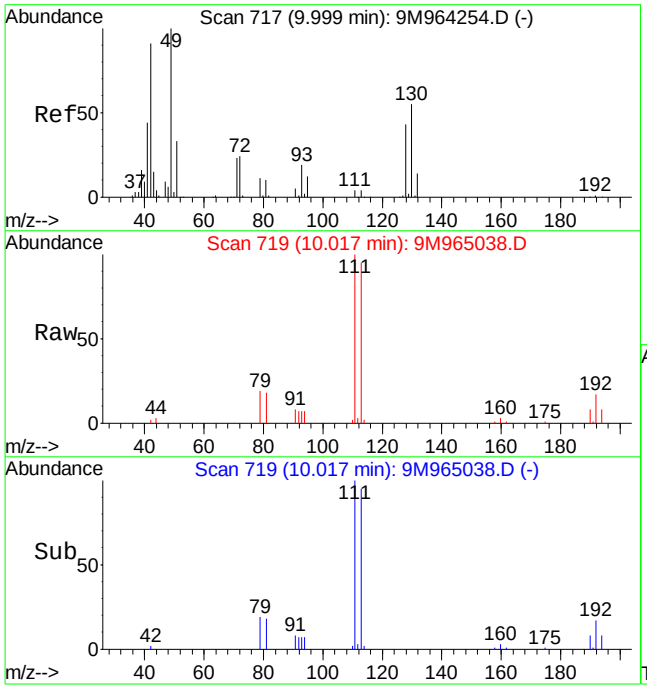

#36
Tetrahydrofuran
Concen: 0.23 ug/L
RT: 10.02 min Scan# 719
Delta R.T. 0.02 min
Lab File: 9M965038.D
Acq: 30 Jul 2014 16:41

Tgt Ion: 42 Resp: 751

Ion	Ratio	Lower	Upper
42	100		
72	0.0	16.1	37.7#
71	0.0	15.3	35.7#

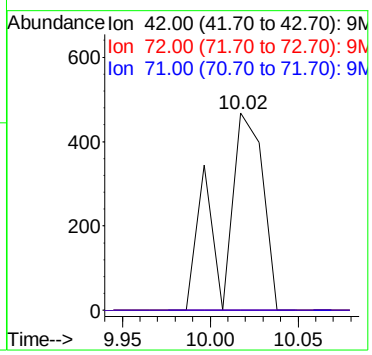

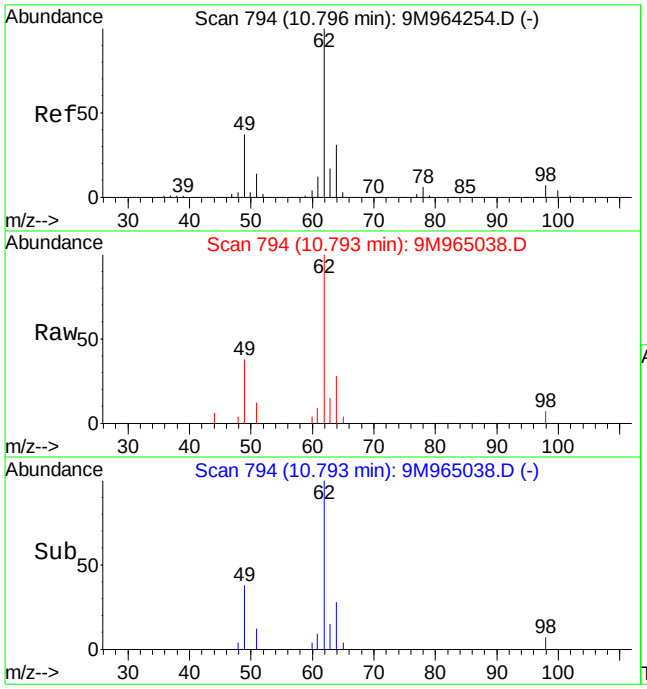

#45
1,2-Dichloroethane
Concen: 1.78 ug/L
RT: 10.79 min Scan# 794
Delta R.T. -0.00 min
Lab File: 9M965038.D
Acq: 30 Jul 2014 16:41

Tgt Ion: 62 Resp: 24064

Ion	Ratio	Lower	Upper
62	100		
64	31.3	18.4	43.0
49	34.5	25.9	60.5

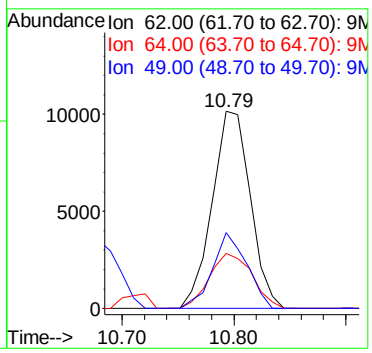

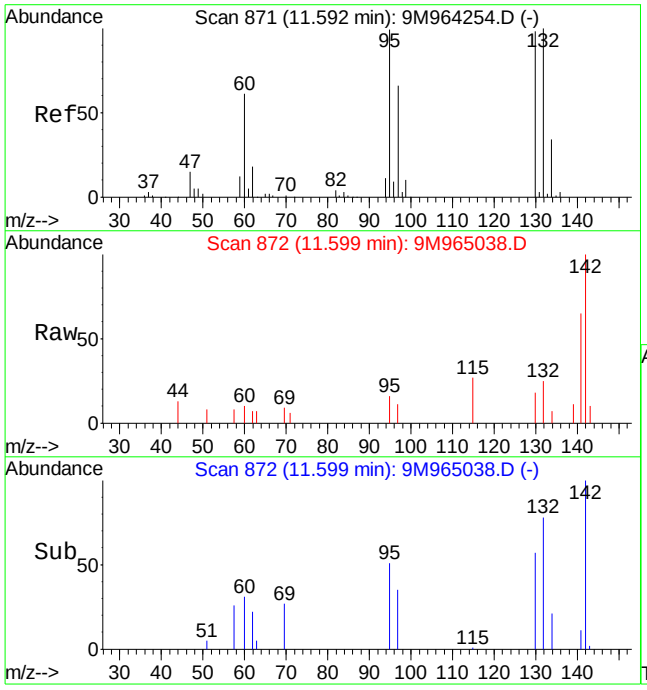

#47
Trichloroethene
Concen: 0.30 ug/L
RT: 11.60 min Scan# 872
Delta R.T. 0.01 min
Lab File: 9M965038.D
Acq: 30 Jul 2014 16:41

Tgt Ion:130 Resp: 2639

Ion	Ratio	Lower	Upper
130	100		
132	103.2	61.8	144.2
95	96.4	60.8	141.8

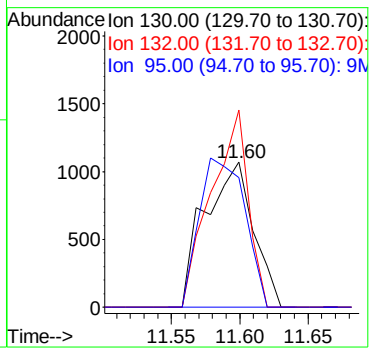

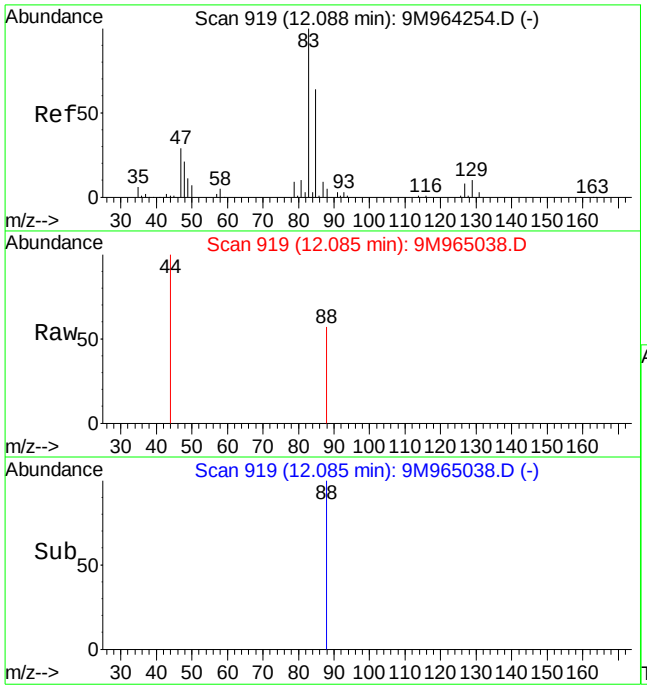

#50
1,4-Dioxane
Concen: 5.35 ug/L
RT: 12.09 min Scan# 919
Delta R.T. -0.00 min
Lab File: 9M965038.D
Acq: 30 Jul 2014 16:41

Tgt Ion: 88 Resp: 430

Ion	Ratio	Lower	Upper
88	100		
58	0.0	64.1	149.7#

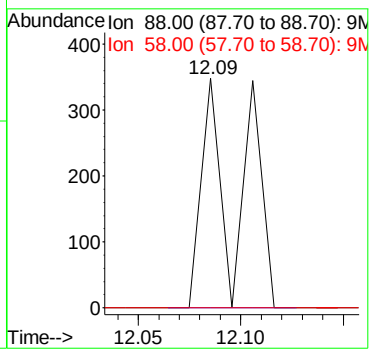

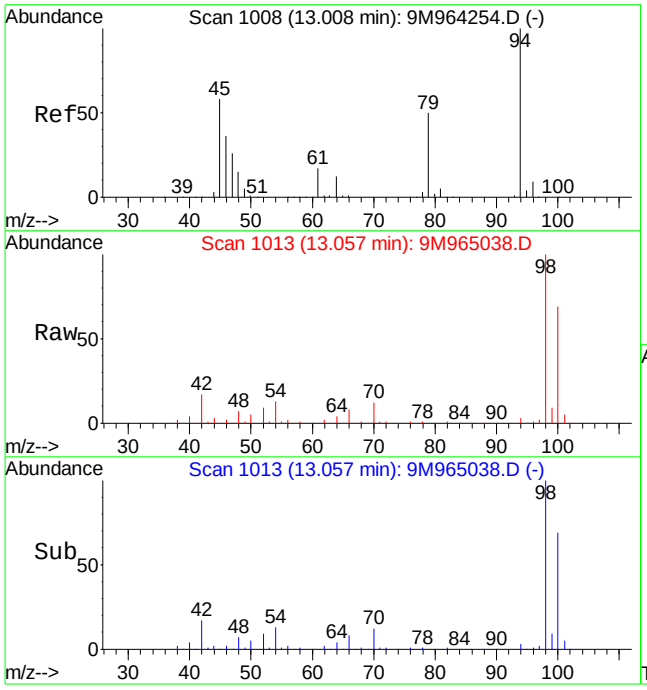

#56
Dimethyl Disulfide
Concen: 1.20 ug/L
RT: 13.06 min Scan# 1013
Delta R.T. 0.05 min
Lab File: 9M965038.D
Acq: 30 Jul 2014 16:41

Tgt Ion: 94 Resp: 16421

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.8	69.6#

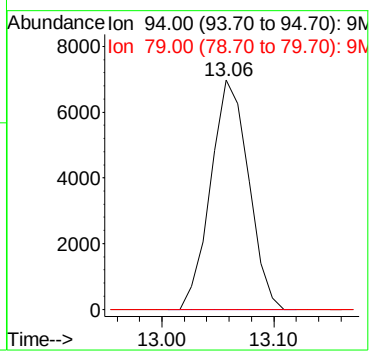

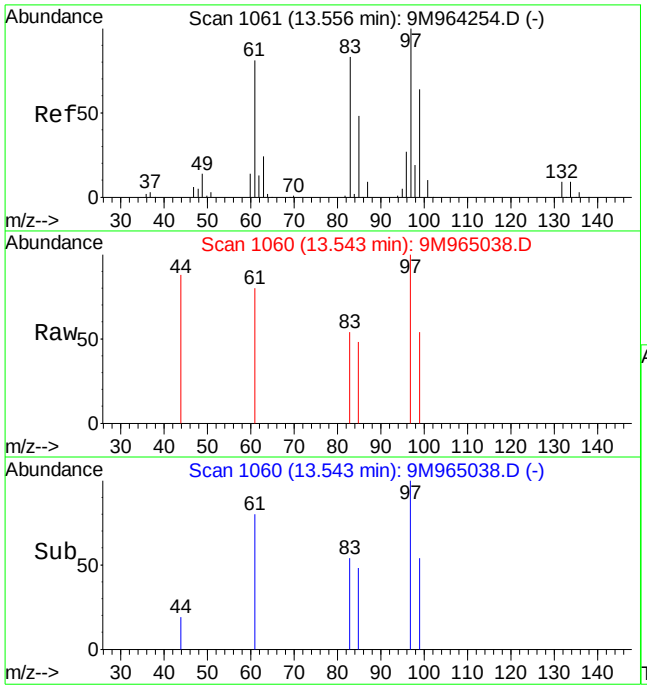

#62
1,1,2-Trichloroethane
Concen: 0.29 ug/L
RT: 13.54 min Scan# 1060
Delta R.T. -0.01 min
Lab File: 9M965038.D
Acq: 30 Jul 2014 16:41

Tgt Ion: 97 Resp: 1836

Ion	Ratio	Lower	Upper
97	100		
83	86.5	50.5	117.7

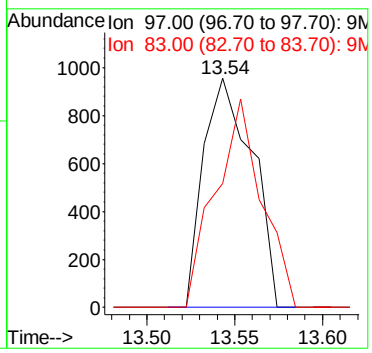

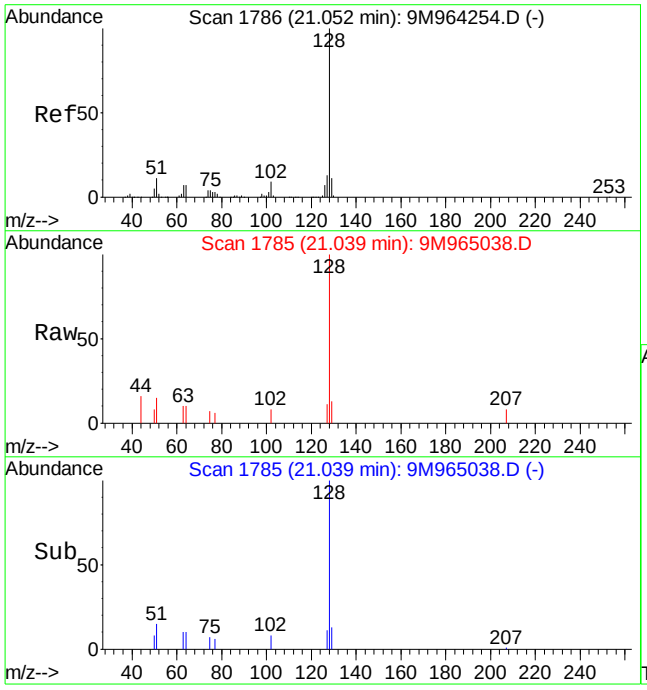

#99
Naphthalene
Concen: 0.53 ug/L
RT: 21.04 min Scan# 1785
Delta R.T. -0.01 min
Lab File: 9M965038.D
Acq: 30 Jul 2014 16:41

Tgt Ion:128 Resp: 12245

Ion	Ratio	Lower	Upper
128	100		
127	5.8	7.6	17.8#

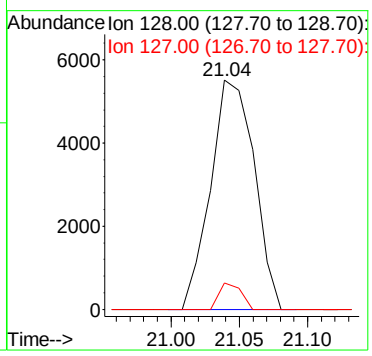

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02789.D Vial: 17
Acq On : 29 Jul 2014 23:52 Operator: ADC/FJB
Sample : L14071626-08 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:10:15 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	784272	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	580222	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	267608	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	236490	24.1455 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.60%		
43) 1,2-Dichloroethane-d4	10.27	65	242094	25.3294 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.32%		
57) Toluene-d8	12.51	98	820422	24.1349 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.52%		
78) p-Bromofluorobenzene	15.67	95	292100	25.2461 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.00%		

Target Compounds					Qvalue
3) Chloromethane	3.73	50	2371	0.1600 ug/L #	42
4) Vinyl Chloride	3.98	62	9727	0.7283 ug/L #	75
13) Acetone	6.38	43	655	0.4136 ug/L #	46
14) 1,1-Dichloroethene	6.60	61	5661296	394.0839 ug/L	86
27) 1,1-Dichloroethane	8.39	63	381142	22.1487 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	13146	1.1535 ug/L	67
33) Chloroform	9.39	83	9701	0.5500 ug/L	95
44) 1,2-Dichloroethane	10.38	62	249600	20.1353 ug/L	92
46) Trichloroethene	11.13	130	20112	1.7104 ug/L	97
49) 1,4-Dioxane	11.59	88	5123	88.8761 ug/L	92
61) 1,1,2-Trichloroethane	12.97	97	26411	3.5644 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M02789.D 8260WTR.M Wed Jul 30 09:10:16 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02789.D Vial: 17
Acq On : 29 Jul 2014 23:52 Operator: ADC/FJB
Sample : L14071626-08 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:10 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

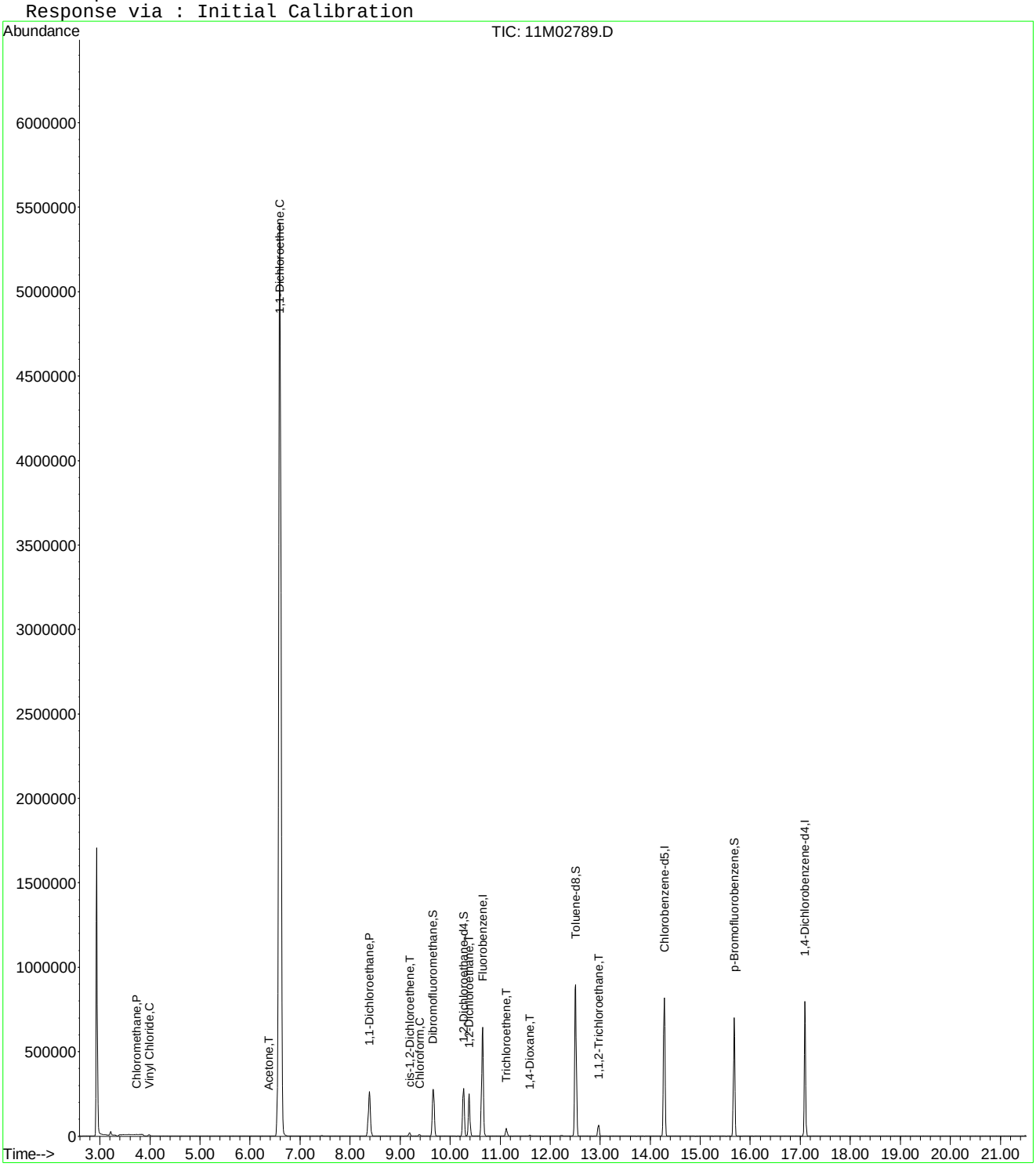

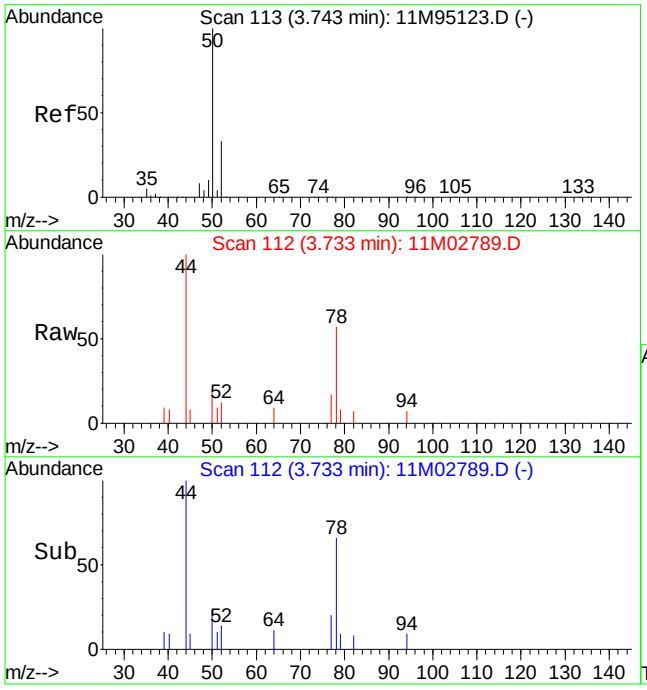

#3
Chloromethane
Concen: 0.16 ug/L
RT: 3.73 min Scan# 112
Delta R.T. -0.01 min
Lab File: 11M02789.D
Acq: 29 Jul 2014 23:52

Tgt Ion: 50 Resp: 2371

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.4	45.4#

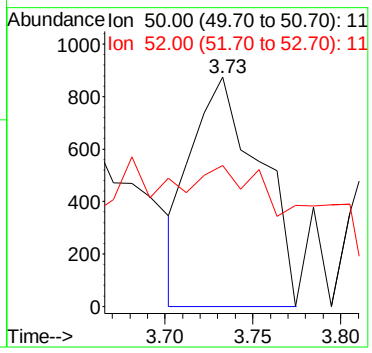

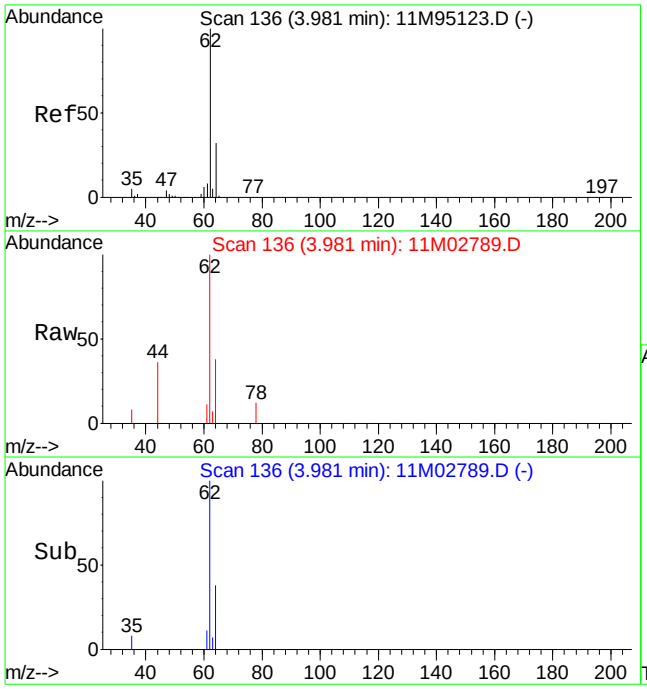

#4
Vinyl Chloride
Concen: 0.73 ug/L
RT: 3.98 min Scan# 136
Delta R.T. 0.00 min
Lab File: 11M02789.D
Acq: 29 Jul 2014 23:52

Tgt Ion: 62 Resp: 9727

Ion	Ratio	Lower	Upper
62	100		
64	46.2	19.3	45.1#

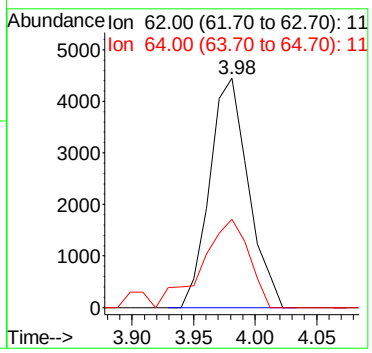

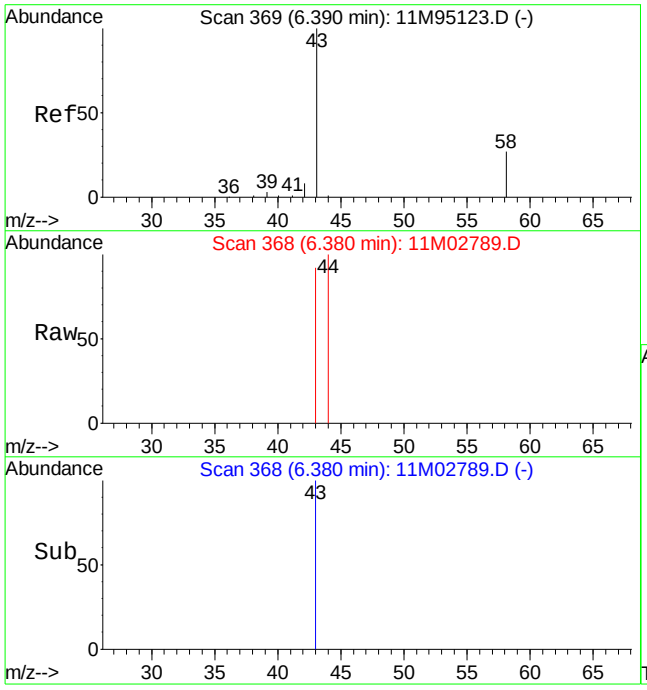

#13
Acetone
Concen: 0.41 ug/L
RT: 6.38 min Scan# 368
Delta R.T. 0.00 min
Lab File: 11M02789.D
Acq: 29 Jul 2014 23:52

Tgt Ion: 43 Resp: 655

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.2	40.0#

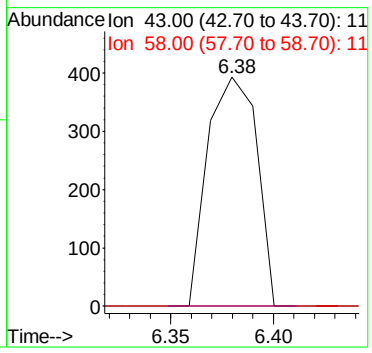

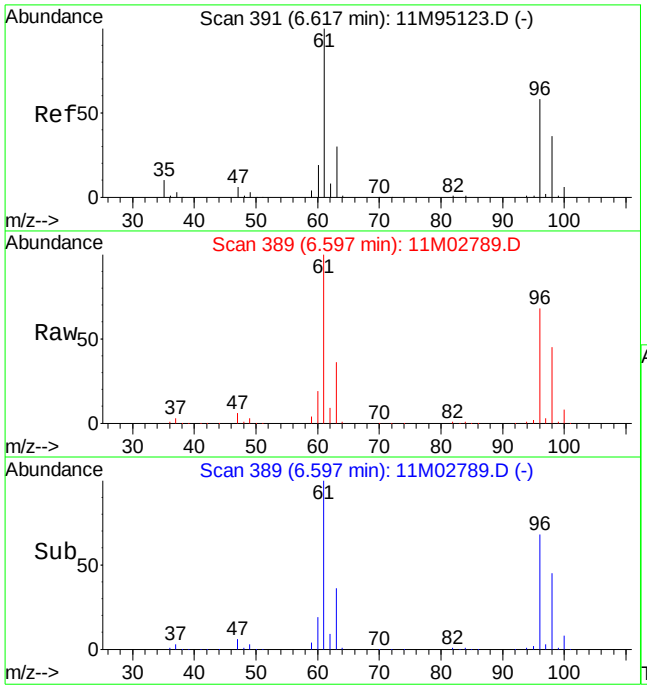

#14
1,1-Dichloroethene
Concen: 394.08 ug/L
RT: 6.60 min Scan# 389
Delta R.T. 0.00 min
Lab File: 11M02789.D
Acq: 29 Jul 2014 23:52

Tgt Ion: 61 Resp: 5661296

Ion	Ratio	Lower	Upper
61	100		
96	65.8	33.5	78.1

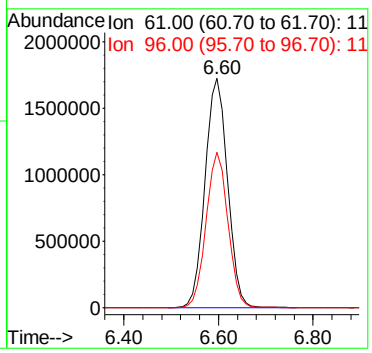

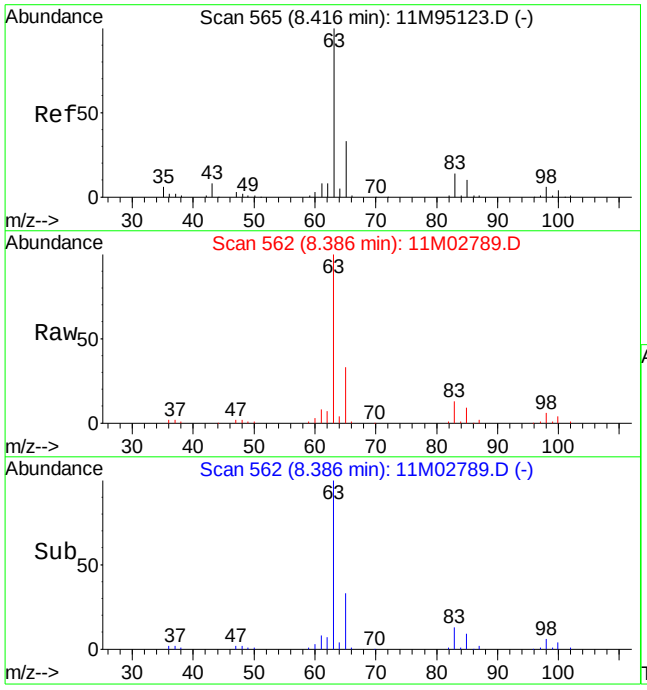

#27
1,1-Dichloroethane
Concen: 22.15 ug/L
RT: 8.39 min Scan# 562
Delta R.T. 0.00 min
Lab File: 11M02789.D
Acq: 29 Jul 2014 23:52

Tgt Ion: 63 Resp: 381142

Ion	Ratio	Lower	Upper
63	100		
65	32.6	19.3	45.1
83	13.8	7.9	18.5

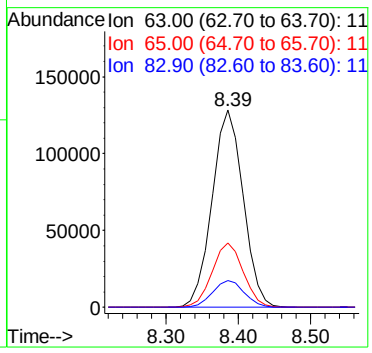

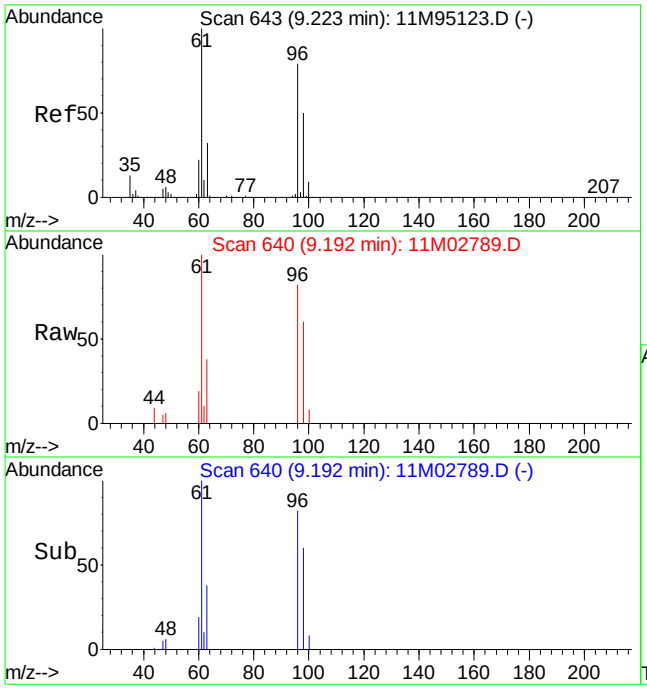

#32
cis-1,2-Dichloroethene
Concen: 1.15 ug/L
RT: 9.19 min Scan# 640
Delta R.T. 0.00 min
Lab File: 11M02789.D
Acq: 29 Jul 2014 23:52

Tgt Ion: 96 Resp: 13146

Ion	Ratio	Lower	Upper
96	100		
61	118.1	97.1	226.7

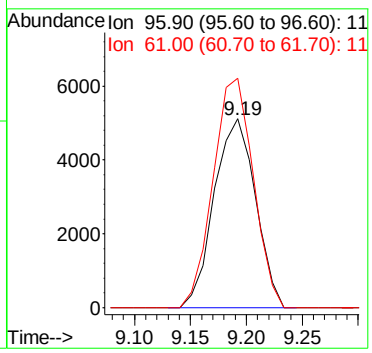

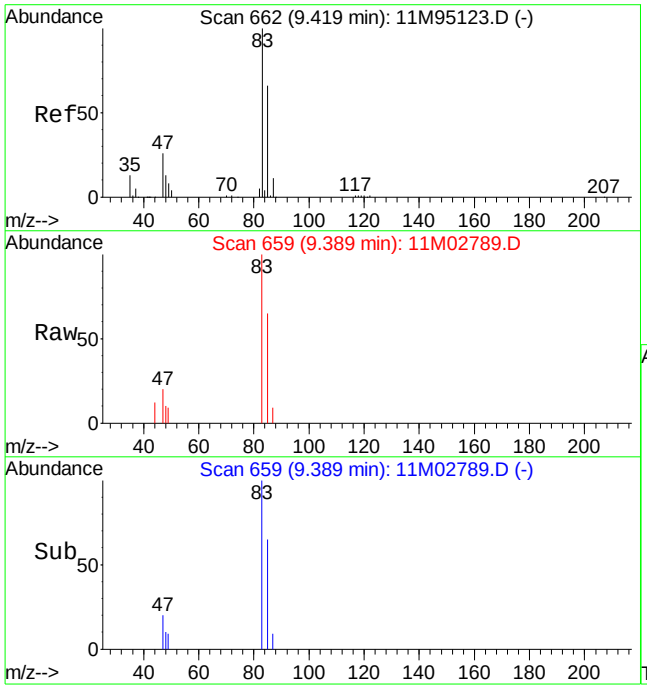

#33
Chloroform
Concen: 0.55 ug/L
RT: 9.39 min Scan# 659
Delta R.T. 0.00 min
Lab File: 11M02789.D
Acq: 29 Jul 2014 23:52

Tgt Ion: 83 Resp: 9701

Ion	Ratio	Lower	Upper
83	100		
85	69.7	39.2	91.6

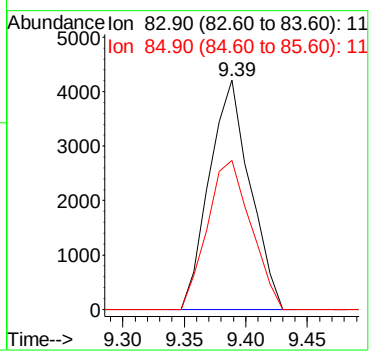

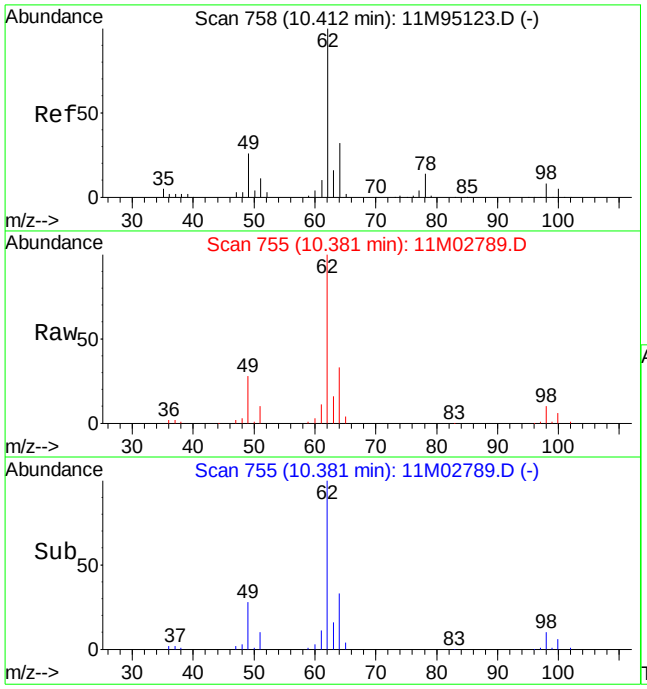

#44
1,2-Dichloroethane
Concen: 20.14 ug/L
RT: 10.38 min Scan# 755
Delta R.T. 0.00 min
Lab File: 11M02789.D
Acq: 29 Jul 2014 23:52

Tgt Ion: 62 Resp: 249600

Ion	Ratio	Lower	Upper
62	100		
64	32.8	19.7	45.9
49	28.0	21.8	51.0

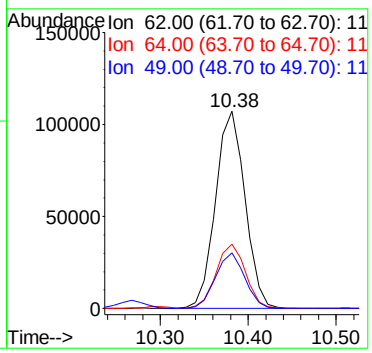

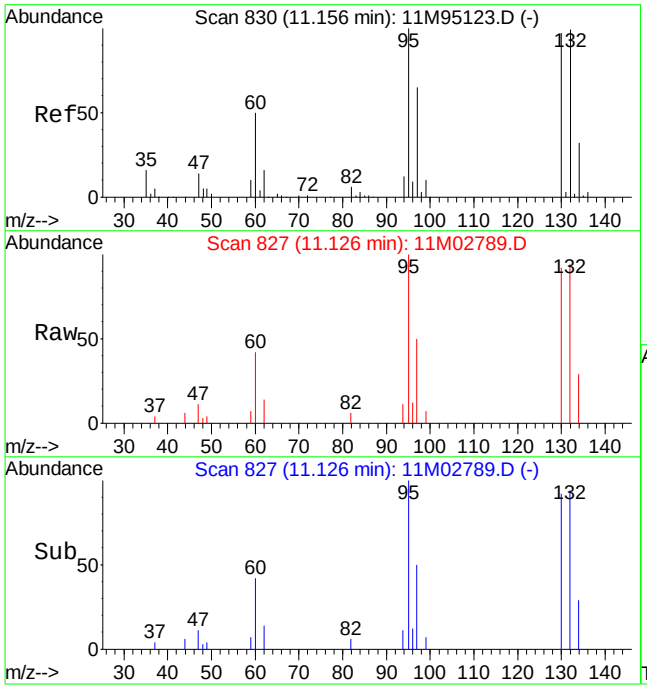

#46
Trichloroethene
Concen: 1.71 ug/L
RT: 11.13 min Scan# 827
Delta R.T. 0.00 min
Lab File: 11M02789.D
Acq: 29 Jul 2014 23:52

Tgt Ion:130 Resp: 20112

Ion	Ratio	Lower	Upper
130	100		
132	93.6	58.0	135.4
95	99.5	58.3	135.9

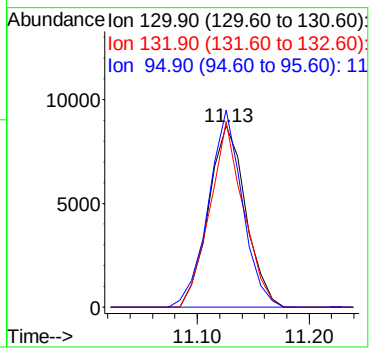

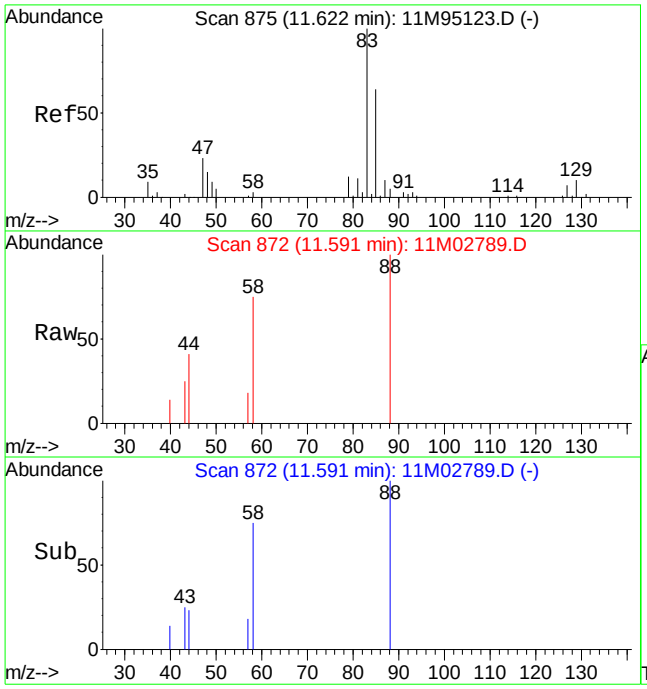

#49
1,4-Dioxane
Concen: 88.88 ug/L
RT: 11.59 min Scan# 872
Delta R.T. -0.01 min
Lab File: 11M02789.D
Acq: 29 Jul 2014 23:52

Tgt Ion: 88 Resp: 5123

Ion	Ratio	Lower	Upper
88	100		
58	60.7	40.1	93.5

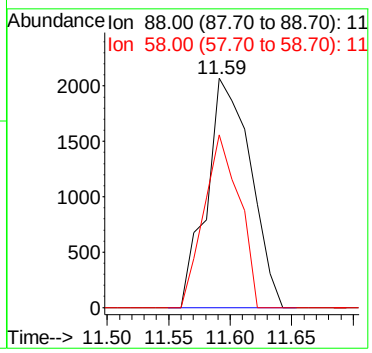

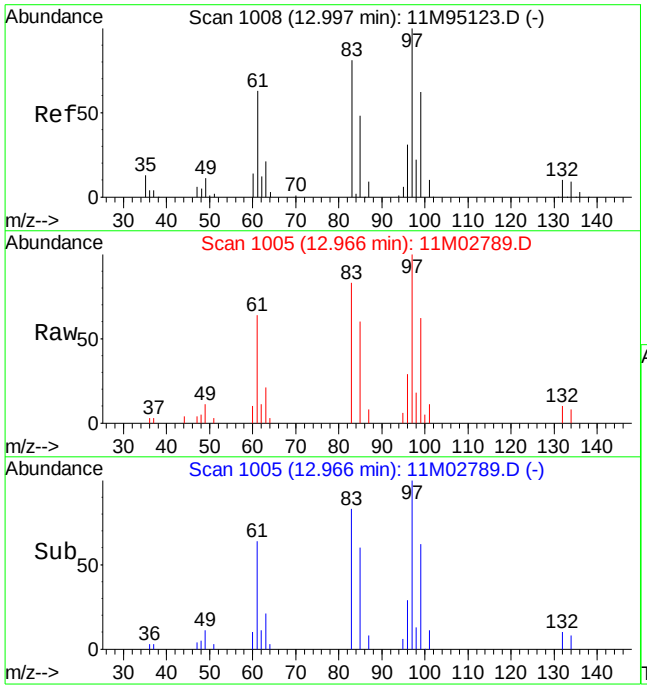

#61
1,1,2-Trichloroethane
Concen: 3.56 ug/L
RT: 12.97 min Scan# 1005
Delta R.T. 0.00 min
Lab File: 11M02789.D
Acq: 29 Jul 2014 23:52

Tgt Ion: 97 Resp: 26411

Ion	Ratio	Lower	Upper
97	100		
83	83.0	49.8	116.2

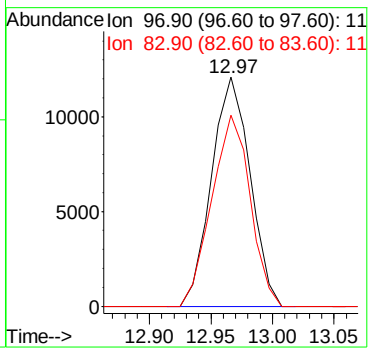

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\080114\9M965087.D Vial: 13
Acq On : 1 Aug 2014 21:56 Operator: ADC
Sample : L14071626-08 C 10X 826-LOW Inst : HPMS9
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 04 08:59:57 2014 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	714142	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	500623	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	244731	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.04	111	174212	23.0023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.00%		
43) 1,2-Dichloroethane-d4	10.68	65	215193	21.2445 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 84.96%		
58) Toluene-d8	13.06	98	627538	25.3720 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.48%		
79) p-Bromofluorobenzene	16.46	95	220838	25.0105 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.04%		

Target Compounds

					Qvalue
5) 1,3-Butadiene	4.20	54	692	Below Cal #	8
13) Acetone	6.62	43	423	0.1408 ug/L #	39
14) 1,1-Dichloroethene	6.83	61	549456	36.2445 ug/L	99
15) Tert-Butyl Alcohol	6.93	59	1032	0.9422 ug/L #	60
19) Methylene Chloride	7.61	84	1118	0.1395 ug/L	68
20) Carbon Disulfide	7.68	76	11953	0.5588 ug/L	97
27) 1,1-Dichloroethane	8.69	63	39259	2.1190 ug/L	94
36) Tetrahydrofuran	10.03	42	1007	0.3090 ug/L #	49
45) 1,2-Dichloroethane	10.79	62	24954	1.8674 ug/L	88
47) Trichloroethene	11.59	130	1808	0.2084 ug/L	87
56) Dimethyl Disulfide	13.06	94	16310	1.2081 ug/L #	28
62) 1,1,2-Trichloroethane	13.55	97	2184	0.3429 ug/L	71
85) 2-Chlorotoluene	16.93	91	3265	0.1440 ug/L #	67
86) 4-Chlorotoluene	16.93	91	3265	0.1662 ug/L #	74
93) 1,4-Dichlorobenzene	18.04	146	1880	0.1245 ug/L	79

(#) = qualifier out of range (m) = manual integration
9M965087.D 8260WTR.M Mon Aug 04 09:19:05 2014 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\080114\9M965087.D Vial: 13
Acq On : 1 Aug 2014 21:56 Operator: ADC
Sample : L14071626-08 C 10X 826-LOW Inst : HPMS9
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 4 9:00 2014 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

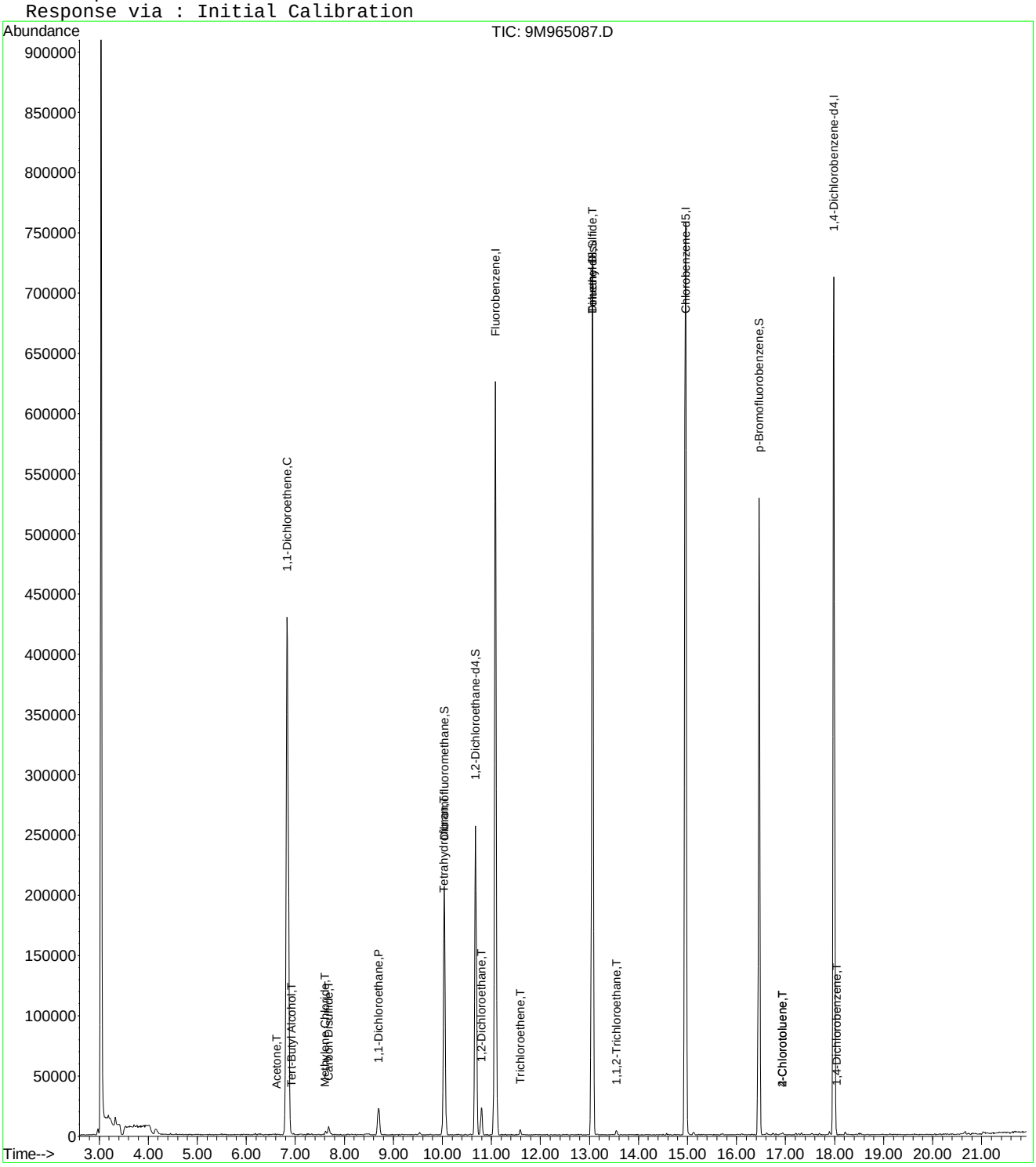

9M965087.D 8260WTR.M Mon Aug 04 09:19:06 2014 Page 2

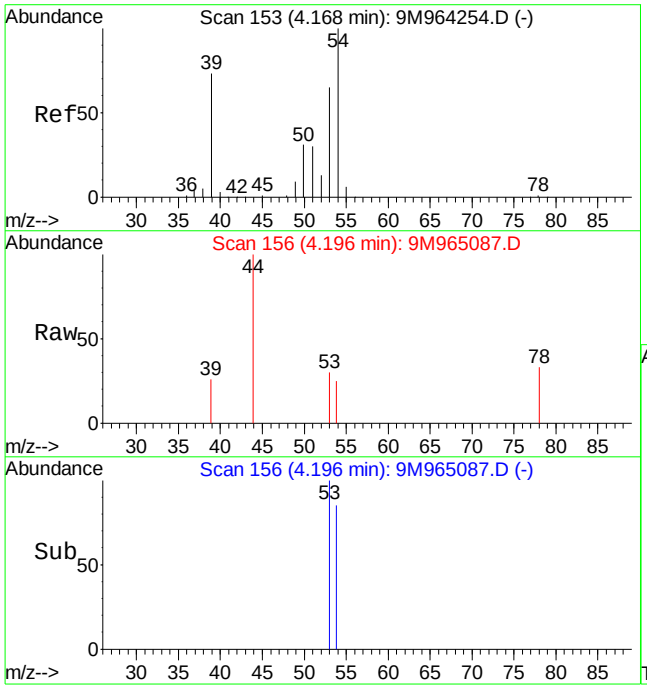

#5
1,3-Butadiene
Concen: Below Cal
RT: 4.20 min Scan# 156
Delta R.T. 0.03 min
Lab File: 9M965087.D
Acq: 1 Aug 2014 21:56

Tgt Ion: 54 Resp: 692

Ion	Ratio	Lower	Upper
54	100		
39	205.1	43.7	101.9#
53	81.4	39.6	92.4

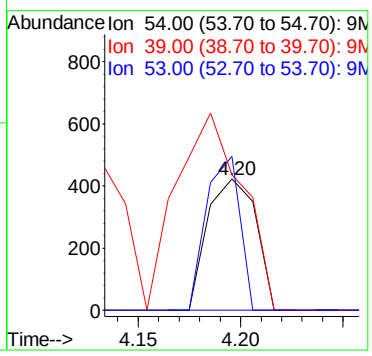

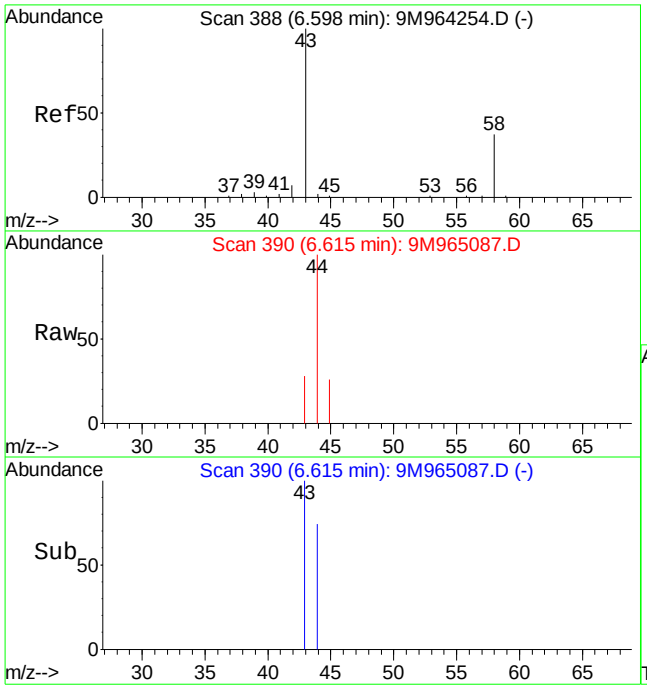

#13
Acetone
Concen: 0.14 ug/L
RT: 6.62 min Scan# 390
Delta R.T. 0.02 min
Lab File: 9M965087.D
Acq: 1 Aug 2014 21:56

Tgt Ion: 43 Resp: 423

Ion	Ratio	Lower	Upper
43	100		
58	0.0	21.4	49.8#

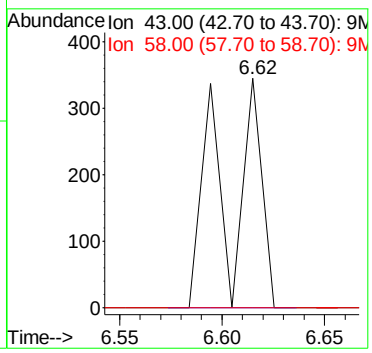

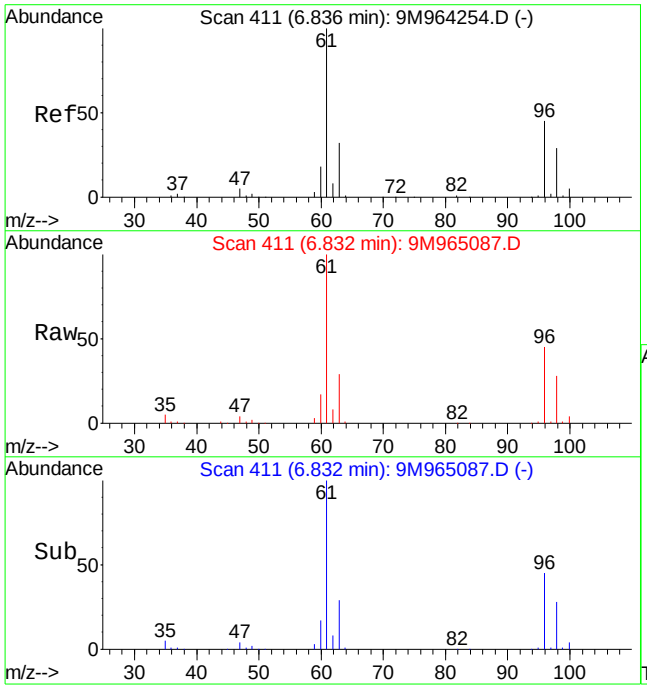

#14
1,1-Dichloroethene
Concen: 36.24 ug/L
RT: 6.83 min Scan# 411
Delta R.T. -0.00 min
Lab File: 9M965087.D
Acq: 1 Aug 2014 21:56

Tgt Ion: 61 Resp: 549456

Ion	Ratio	Lower	Upper
61	100		
96	44.3	26.2	61.0

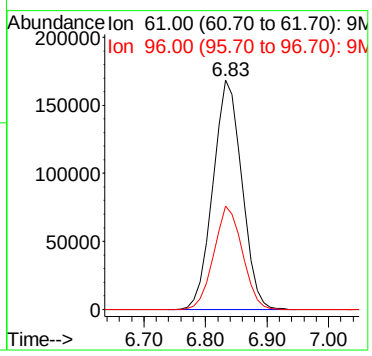

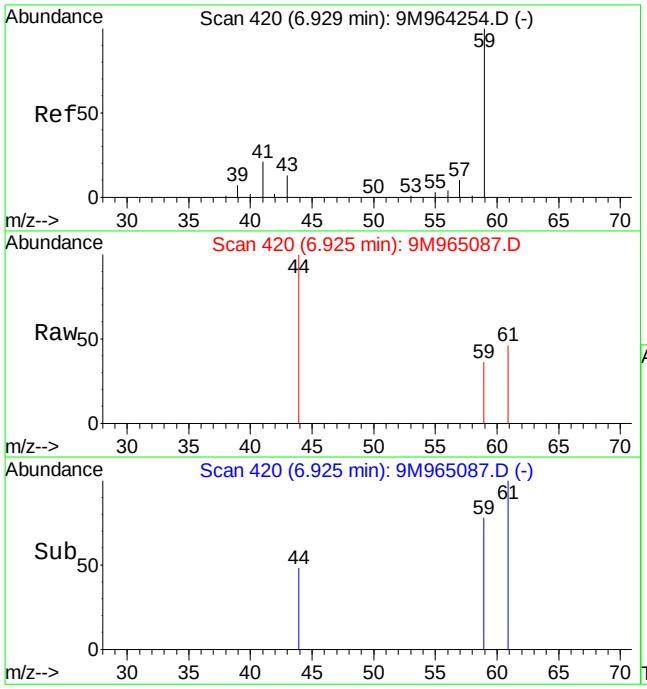

#15
Tert-Butyl Alcohol
Concen: 0.94 ug/L
RT: 6.93 min Scan# 420
Delta R.T. -0.00 min
Lab File: 9M965087.D
Acq: 1 Aug 2014 21:56

Tgt Ion: 59 Resp: 1032

Ion	Ratio	Lower	Upper
59	100		
41	0.0	13.0	30.2#
57	0.0	6.1	14.3#

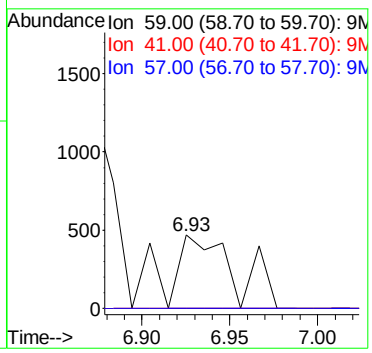

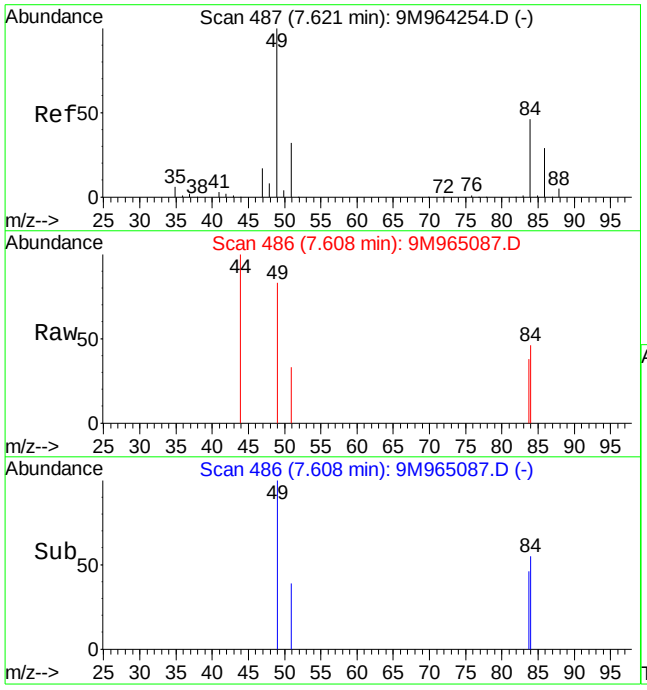

#19
Methylene Chloride
Concen: 0.14 ug/L
RT: 7.61 min Scan# 486
Delta R.T. -0.01 min
Lab File: 9M965087.D
Acq: 1 Aug 2014 21:56

Tgt Ion: 84 Resp: 1118

Ion	Ratio	Lower	Upper
84	100		
49	269.1	130.7	304.9

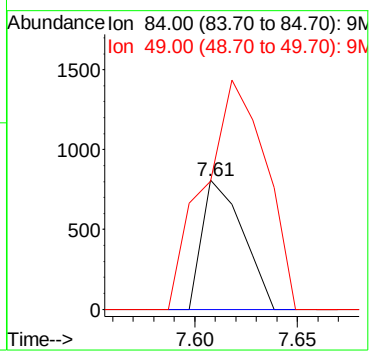

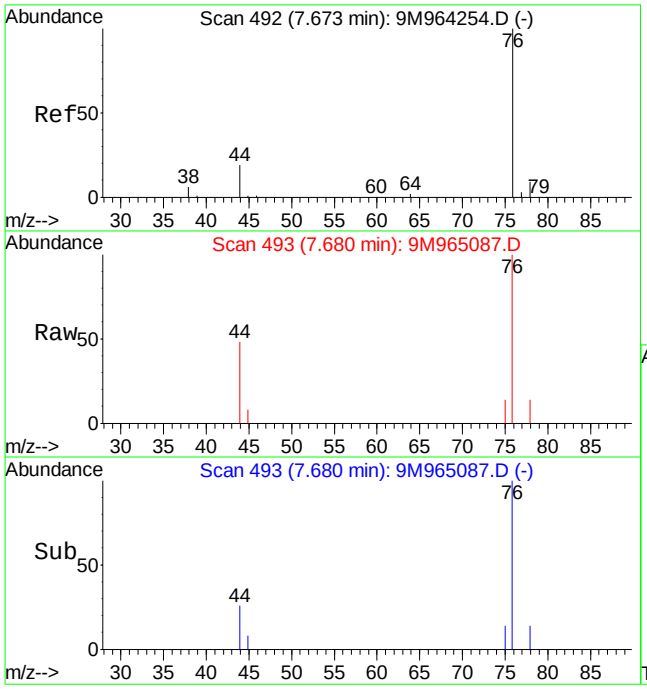

#20
Carbon Disulfide
Concen: 0.56 ug/L
RT: 7.68 min Scan# 493
Delta R.T. 0.01 min
Lab File: 9M965087.D
Acq: 1 Aug 2014 21:56

Tgt Ion: 76 Resp: 11953

Ion	Ratio	Lower	Upper
76	100		
78	7.9	5.5	12.9

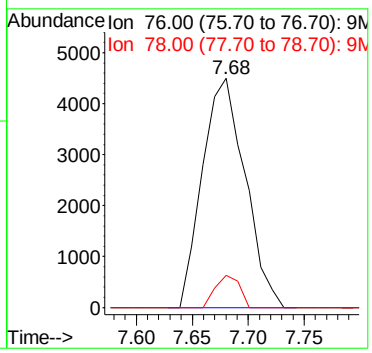

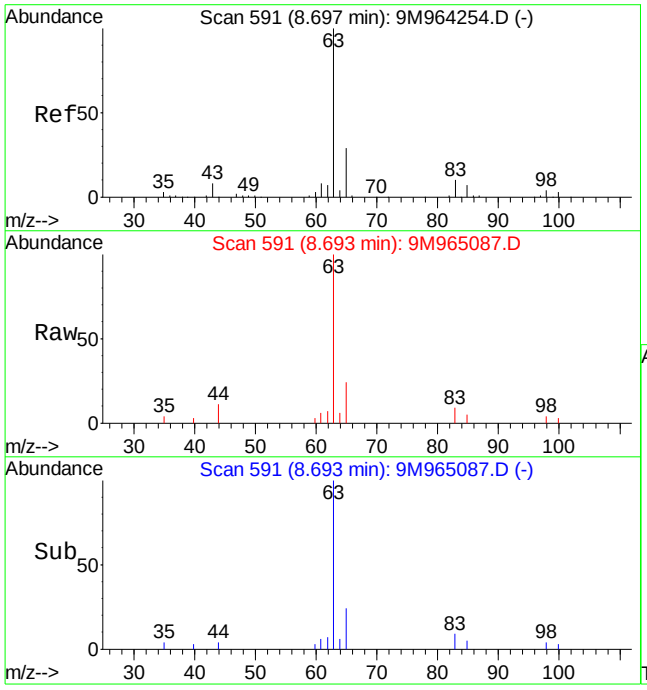

#27
1,1-Dichloroethane
Concen: 2.12 ug/L
RT: 8.69 min Scan# 591
Delta R.T. -0.00 min
Lab File: 9M965087.D
Acq: 1 Aug 2014 21:56

Tgt Ion: 63 Resp: 39259

Ion	Ratio	Lower	Upper
63	100		
65	25.4	17.3	40.3
83	8.2	6.0	14.0

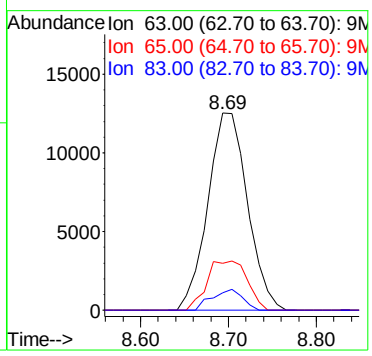

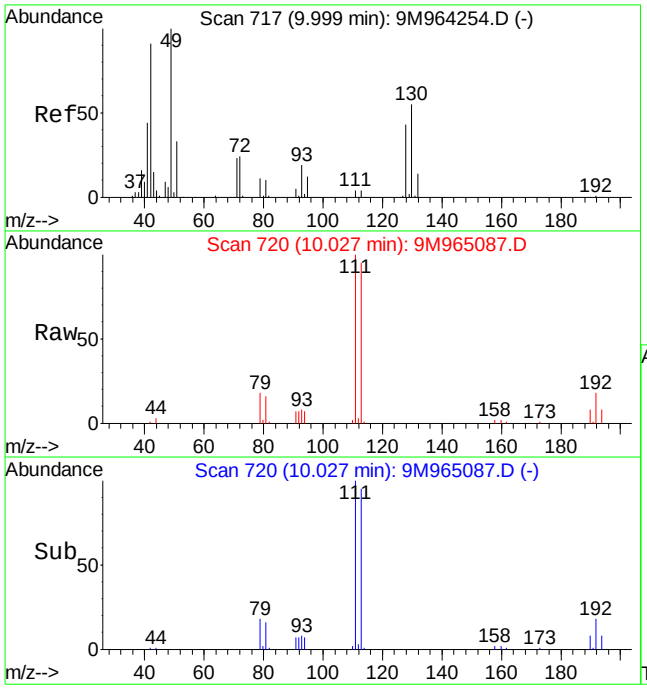

#36
Tetrahydrofuran
Concen: 0.31 ug/L
RT: 10.03 min Scan# 720
Delta R.T. 0.03 min
Lab File: 9M965087.D
Acq: 1 Aug 2014 21:56

Tgt Ion: 42 Resp: 1007

Ion	Ratio	Lower	Upper
42	100		
72	0.0	16.1	37.7#
71	0.0	15.3	35.7#

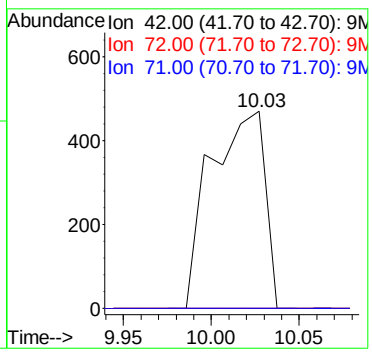

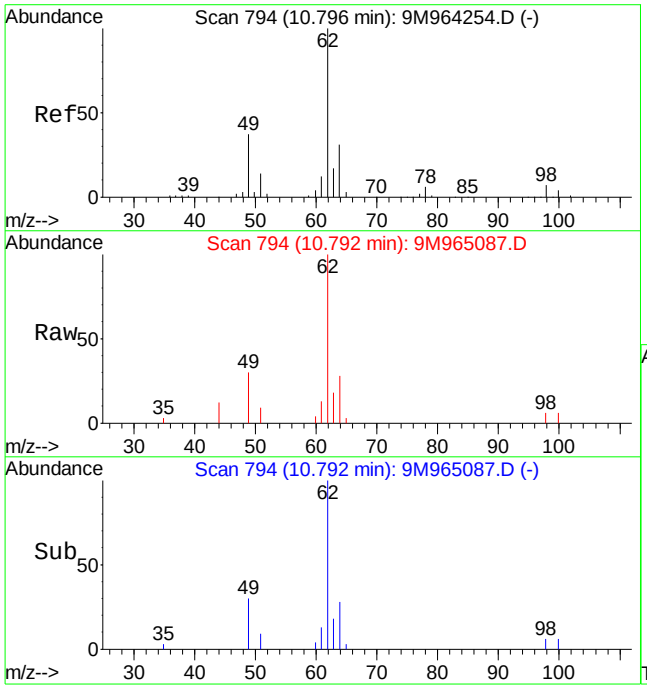

#45
1,2-Dichloroethane
Concen: 1.87 ug/L
RT: 10.79 min Scan# 794
Delta R.T. -0.00 min
Lab File: 9M965087.D
Acq: 1 Aug 2014 21:56

Tgt Ion: 62 Resp: 24954

Ion	Ratio	Lower	Upper
62	100		
64	27.9	18.4	43.0
49	32.1	25.9	60.5

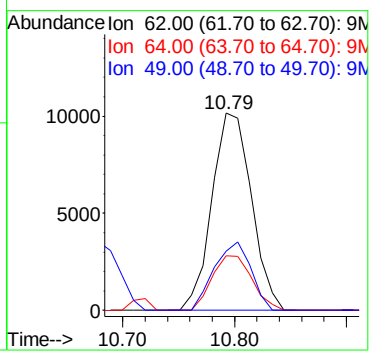

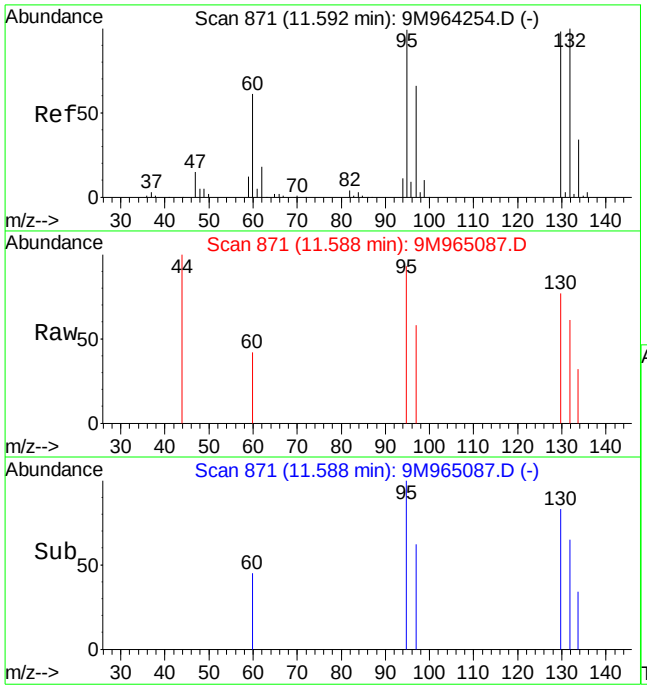

#47
Trichloroethene
Concen: 0.21 ug/L
RT: 11.59 min Scan# 871
Delta R.T. -0.00 min
Lab File: 9M965087.D
Acq: 1 Aug 2014 21:56

Tgt Ion:130 Resp: 1808

Ion	Ratio	Lower	Upper
130	100		
132	121.1	61.8	144.2
95	110.0	60.8	141.8

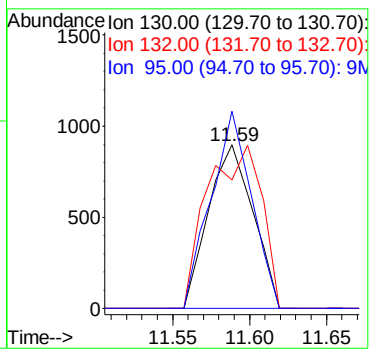

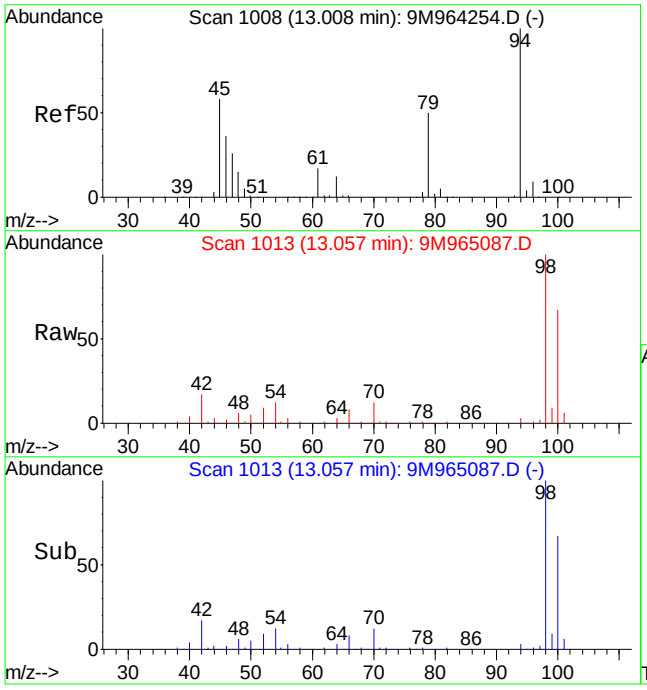

#56
Dimethyl Disulfide
Concen: 1.21 ug/L
RT: 13.06 min Scan# 1013
Delta R.T. 0.05 min
Lab File: 9M965087.D
Acq: 1 Aug 2014 21:56

Tgt Ion: 94 Resp: 16310

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.8	69.6#

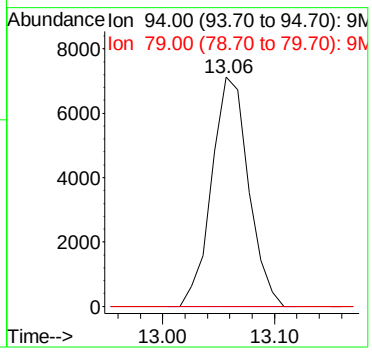

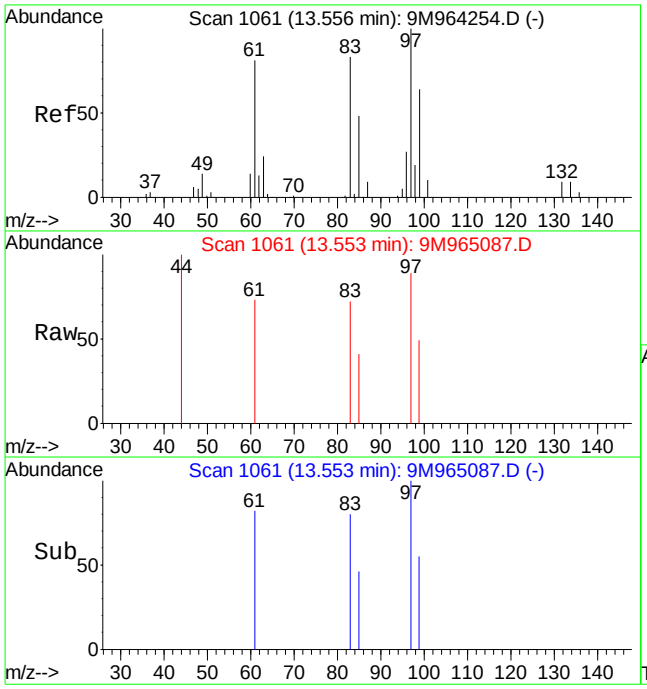

#62
1,1,2-Trichloroethane
Concen: 0.34 ug/L
RT: 13.55 min Scan# 1061
Delta R.T. -0.00 min
Lab File: 9M965087.D
Acq: 1 Aug 2014 21:56

Tgt Ion: 97 Resp: 2184

Ion	Ratio	Lower	Upper
97	100		
83	57.6	50.5	117.7

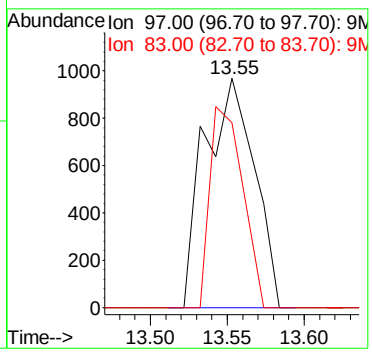

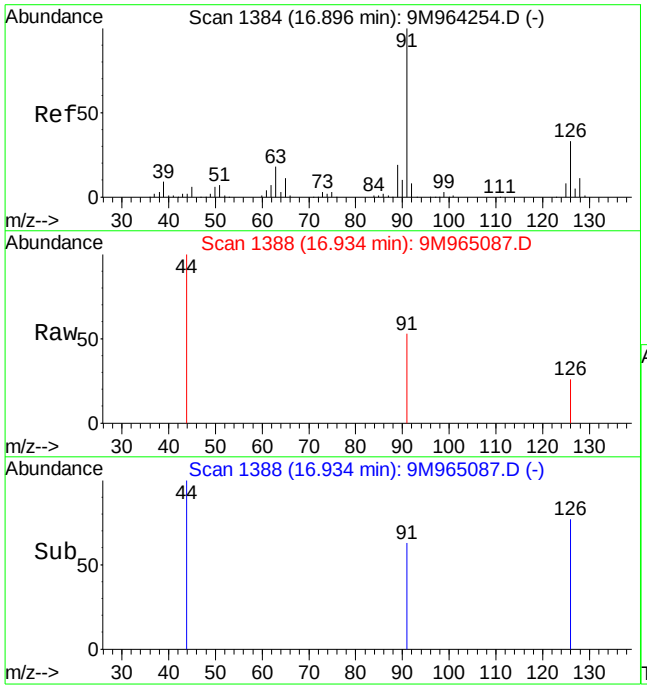

#85
2-Chlorotoluene
Concen: 0.14 ug/L
RT: 16.93 min Scan# 1388
Delta R.T. 0.04 min
Lab File: 9M965087.D
Acq: 1 Aug 2014 21:56

Tgt Ion: 91 Resp: 3265

Ion	Ratio	Lower	Upper
91	100		
126	14.5	19.7	46.1#

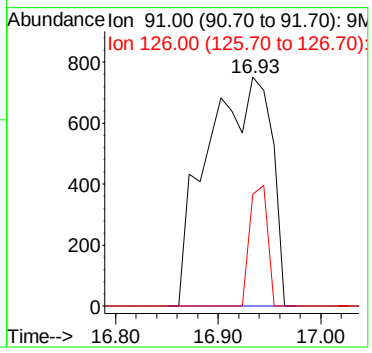

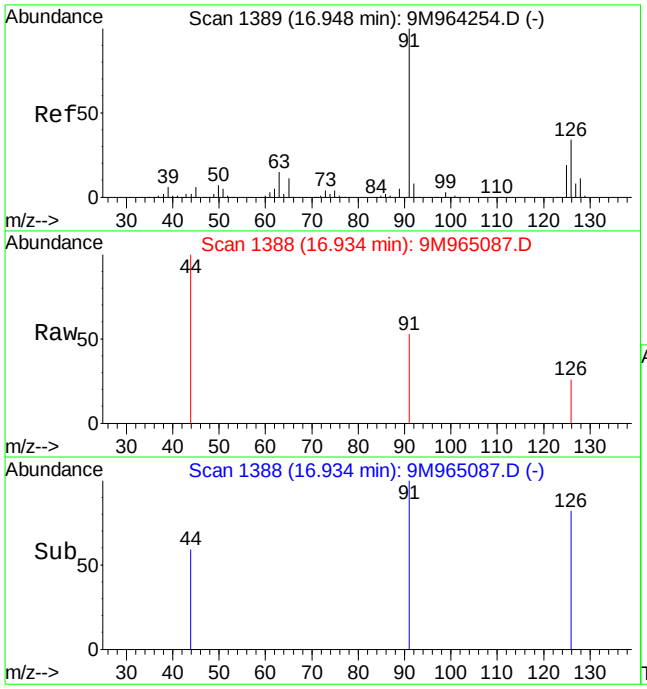

#86
4-Chlorotoluene
Concen: 0.17 ug/L
RT: 16.93 min Scan# 1388
Delta R.T. -0.01 min
Lab File: 9M965087.D
Acq: 1 Aug 2014 21:56

Tgt Ion: 91 Resp: 3265

Ion	Ratio	Lower	Upper
91	100		
126	14.5	17.1	39.9#

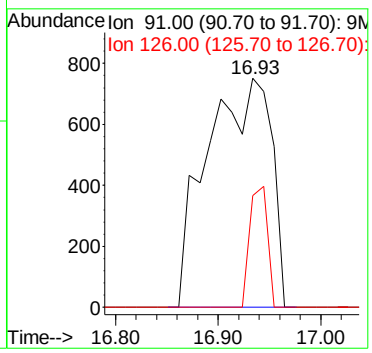

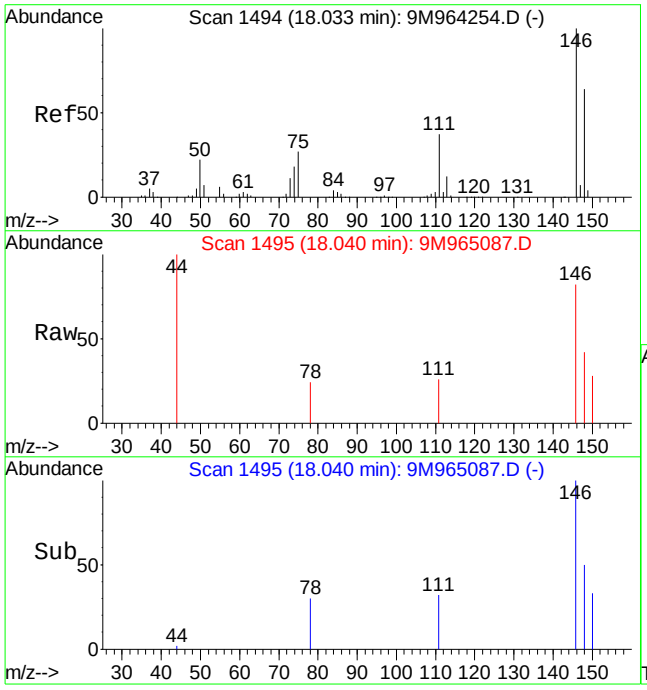

#93
1,4-Dichlorobenzene
Concen: 0.12 ug/L
RT: 18.04 min Scan# 1495
Delta R.T. 0.01 min
Lab File: 9M965087.D
Acq: 1 Aug 2014 21:56

Tgt Ion:146 Resp: 1880

Ion	Ratio	Lower	Upper
146	100		
111	25.2	22.8	53.2

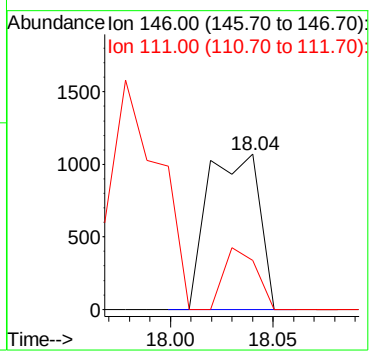

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02790.D Vial: 18
Acq On : 30 Jul 2014 00:24 Operator: ADC/FJB
Sample : L14071626-09 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:10:23 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	784207	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	572842	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	267714	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	233913	23.8844 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.52%		
43) 1,2-Dichloroethane-d4	10.27	65	239822	25.0937 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.36%		
57) Toluene-d8	12.51	98	822914	24.5201 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.08%		
78) p-Bromofluorobenzene	15.67	95	291041	25.1446 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.56%		

Target Compounds

					Qvalue
3) Chloromethane	3.75	50	3420	0.2308 ug/L #	59
13) Acetone	6.38	43	433	0.2734 ug/L #	46
14) 1,1-Dichloroethene	6.60	61	128289	8.9310 ug/L	88
15) Tert-Butyl Alcohol	6.61	59	4203	10.1653 ug/L #	61
27) 1,1-Dichloroethane	8.39	63	52143	3.0303 ug/L	99
44) 1,2-Dichloroethane	10.38	62	2631	0.2123 ug/L #	62
49) 1,4-Dioxane	11.59	88	3377	58.5906 ug/L	86

(#) = qualifier out of range (m) = manual integration
11M02790.D 8260WTR.M Wed Jul 30 09:10:24 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02790.D Vial: 18
Acq On : 30 Jul 2014 00:24 Operator: ADC/FJB
Sample : L14071626-09 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:10 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

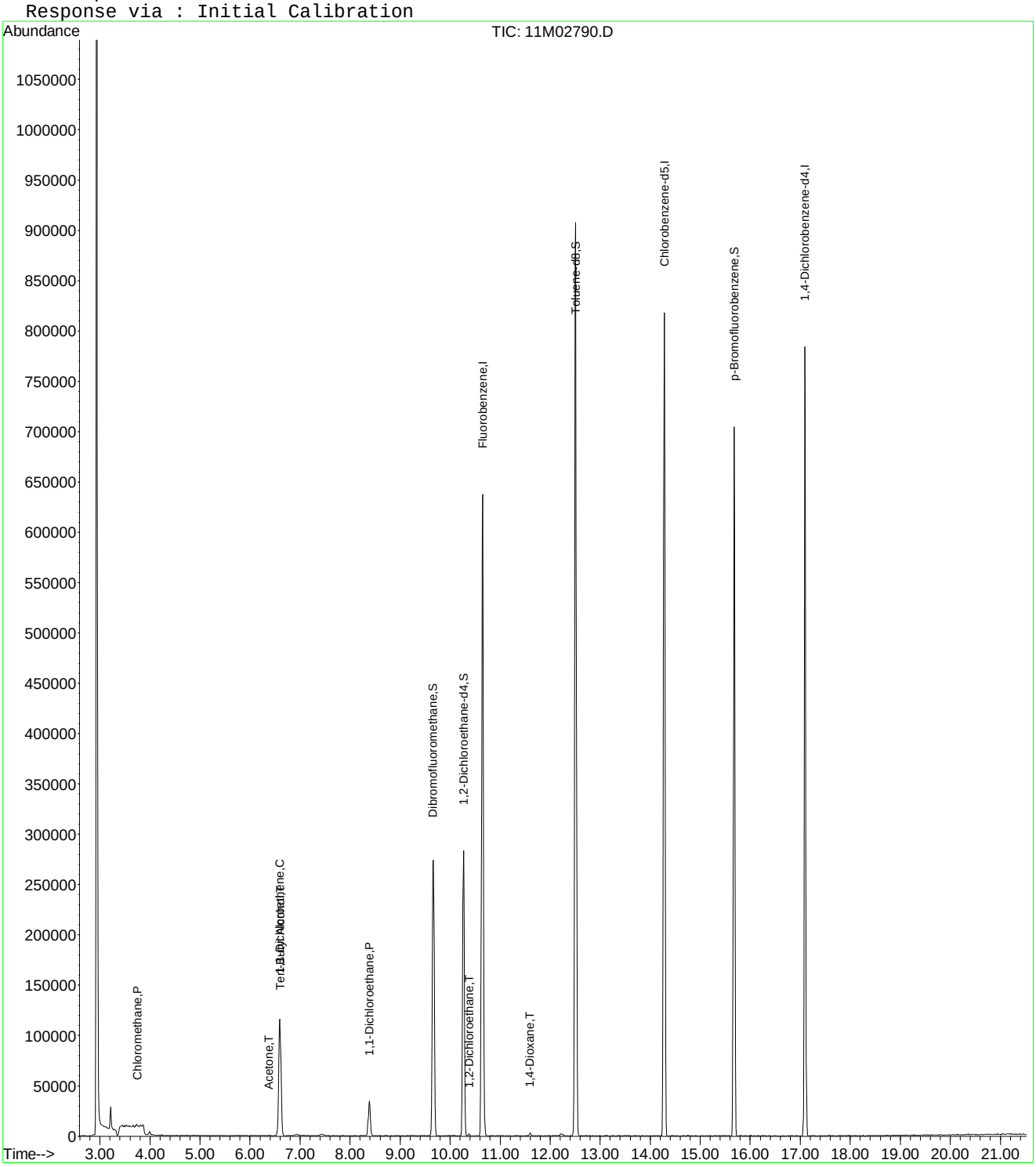

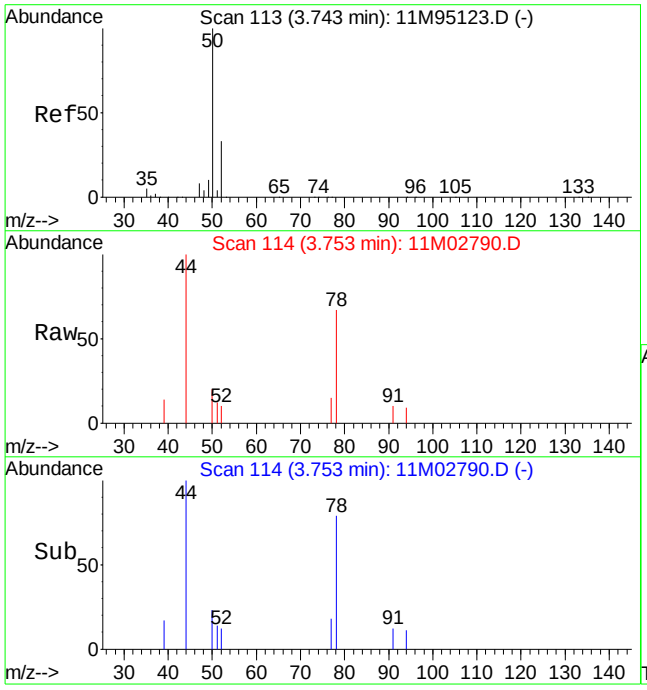

#3
Chloromethane
Concen: 0.23 ug/L
RT: 3.75 min Scan# 114
Delta R.T. 0.01 min
Lab File: 11M02790.D
Acq: 30 Jul 2014 00:24

Tgt Ion: 50 Resp: 3420

Ion	Ratio	Lower	Upper
50	100		
52	9.2	19.4	45.4#

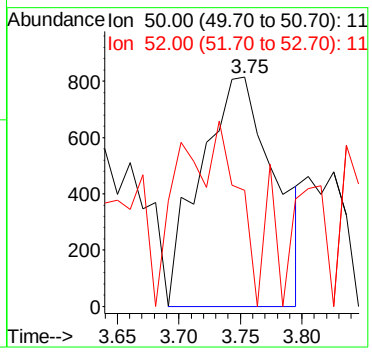

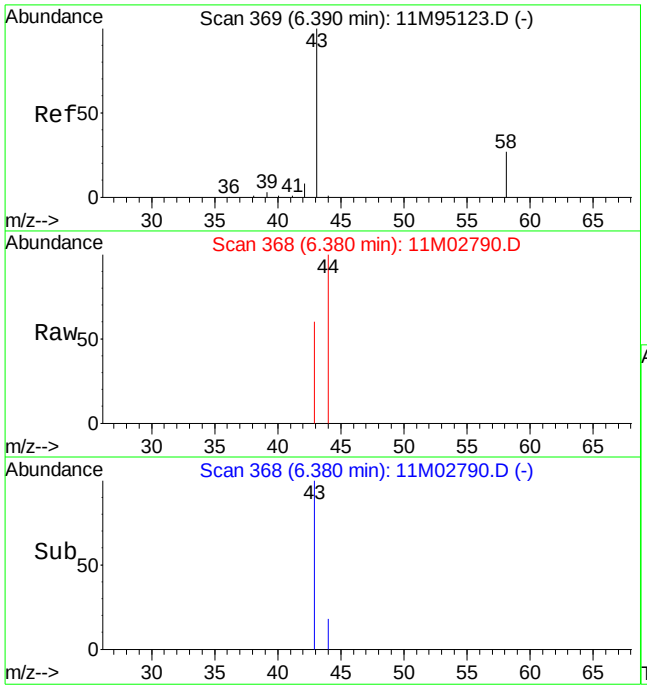

#13
Acetone
Concen: 0.27 ug/L
RT: 6.38 min Scan# 368
Delta R.T. 0.00 min
Lab File: 11M02790.D
Acq: 30 Jul 2014 00:24

Tgt Ion: 43 Resp: 433

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.2	40.0#

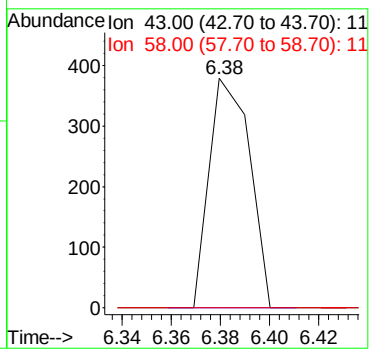

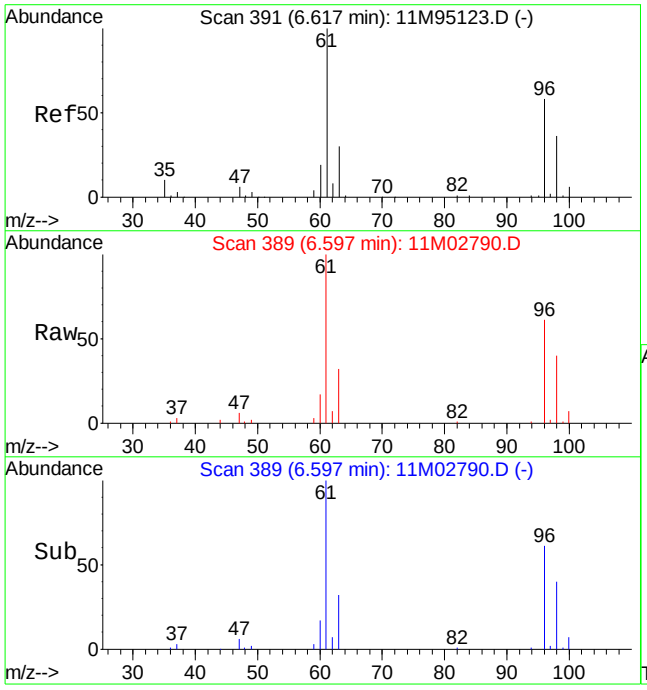

#14
1,1-Dichloroethene
Concen: 8.93 ug/L
RT: 6.60 min Scan# 389
Delta R.T. 0.00 min
Lab File: 11M02790.D
Acq: 30 Jul 2014 00:24

Tgt Ion: 61 Resp: 128289

Ion	Ratio	Lower	Upper
61	100		
96	64.8	33.5	78.1

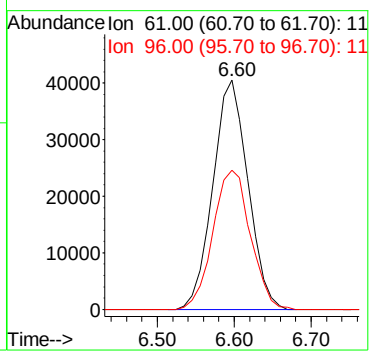

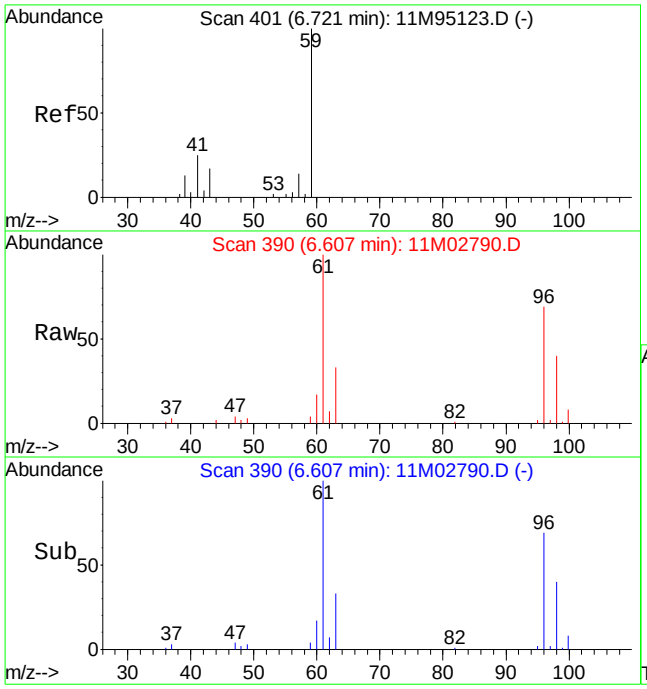

#15
Tert-Butyl Alcohol
Concen: 10.17 ug/L
RT: 6.61 min Scan# 390
Delta R.T. -0.09 min
Lab File: 11M02790.D
Acq: 30 Jul 2014 00:24

Tgt Ion: 59 Resp: 4203

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.0	28.0#
57	0.0	7.0	16.4#

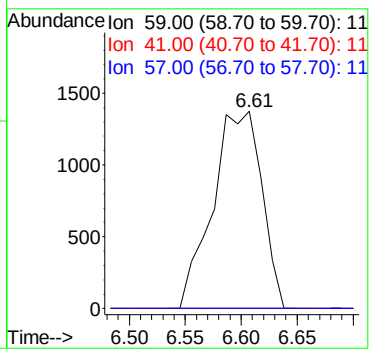

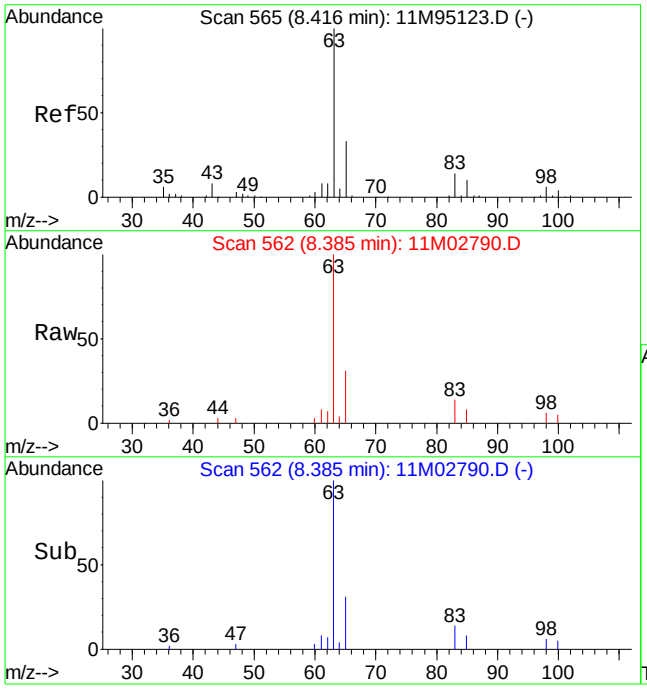

#27
1,1-Dichloroethane
Concen: 3.03 ug/L
RT: 8.39 min Scan# 562
Delta R.T. -0.00 min
Lab File: 11M02790.D
Acq: 30 Jul 2014 00:24

Tgt Ion: 63 Resp: 52143

Ion	Ratio	Lower	Upper
63	100		
65	32.1	19.3	45.1
83	14.1	7.9	18.5

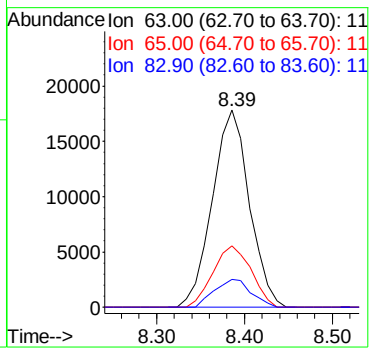

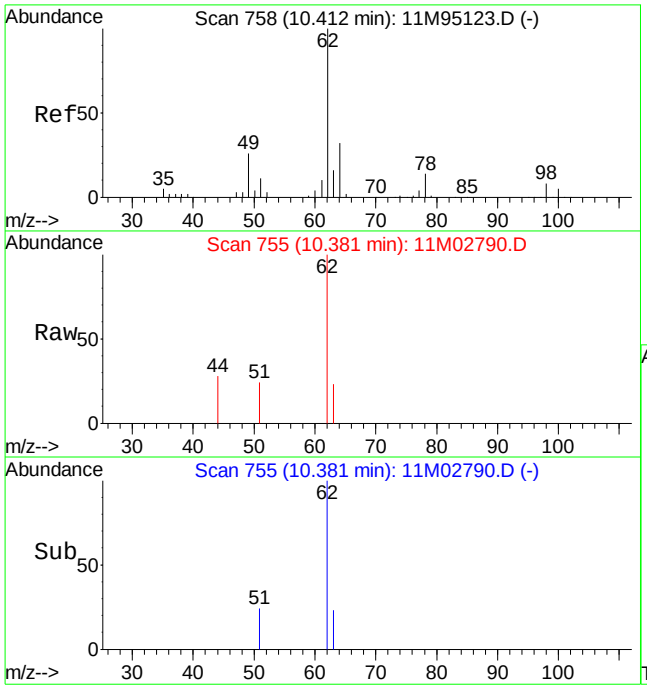

#44
1,2-Dichloroethane
Concen: 0.21 ug/L
RT: 10.38 min Scan# 755
Delta R.T. 0.00 min
Lab File: 11M02790.D
Acq: 30 Jul 2014 00:24

Tgt Ion: 62 Resp: 2631

Ion	Ratio	Lower	Upper
62	100		
64	16.5	19.7	45.9#
49	8.6	21.8	51.0#

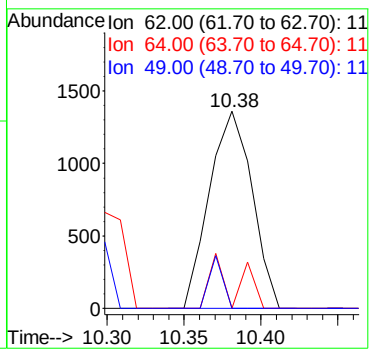

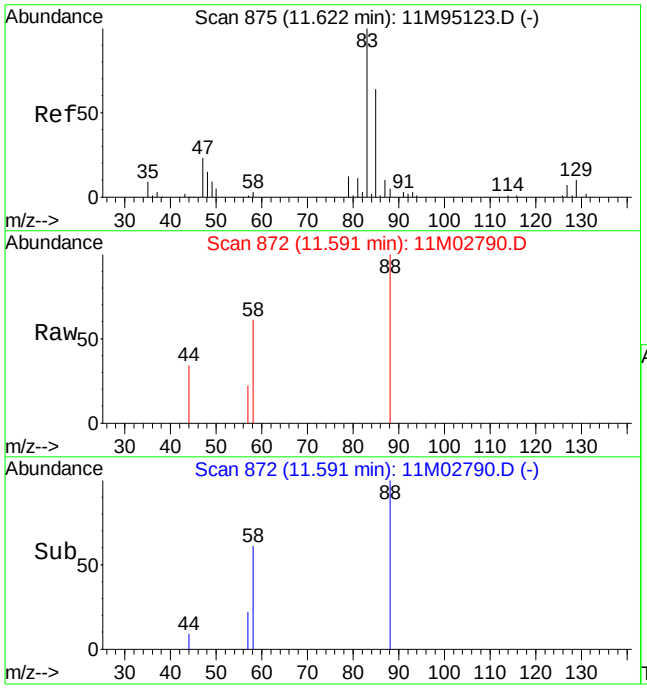

#49
1,4-Dioxane
Concen: 58.59 ug/L
RT: 11.59 min Scan# 872
Delta R.T. -0.01 min
Lab File: 11M02790.D
Acq: 30 Jul 2014 00:24

Tgt Ion: 88 Resp: 3377

Ion	Ratio	Lower	Upper
88	100		
58	55.8	40.1	93.5

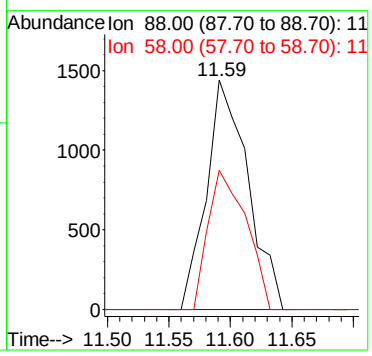

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02782.D Vial: 10
Acq On : 29 Jul 2014 20:10 Operator: ADC/FJB
Sample : L14071626-10 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:09:36 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	827474	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	610123	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	276612	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	244429	23.6531 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.60%		
43) 1,2-Dichloroethane-d4	10.27	65	255155	25.3021 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.20%		
57) Toluene-d8	12.51	98	859368	24.0416 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.16%		
78) p-Bromofluorobenzene	15.68	95	303850	25.4068 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.64%		
Target Compounds					Qvalue
13) Acetone	6.39	43	1227	0.7343 ug/L #	46

(#) = qualifier out of range (m) = manual integration
11M02782.D 8260WTR.M Wed Jul 30 09:09:37 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02782.D Vial: 10
Acq On : 29 Jul 2014 20:10 Operator: ADC/FJB
Sample : L14071626-10 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:09 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

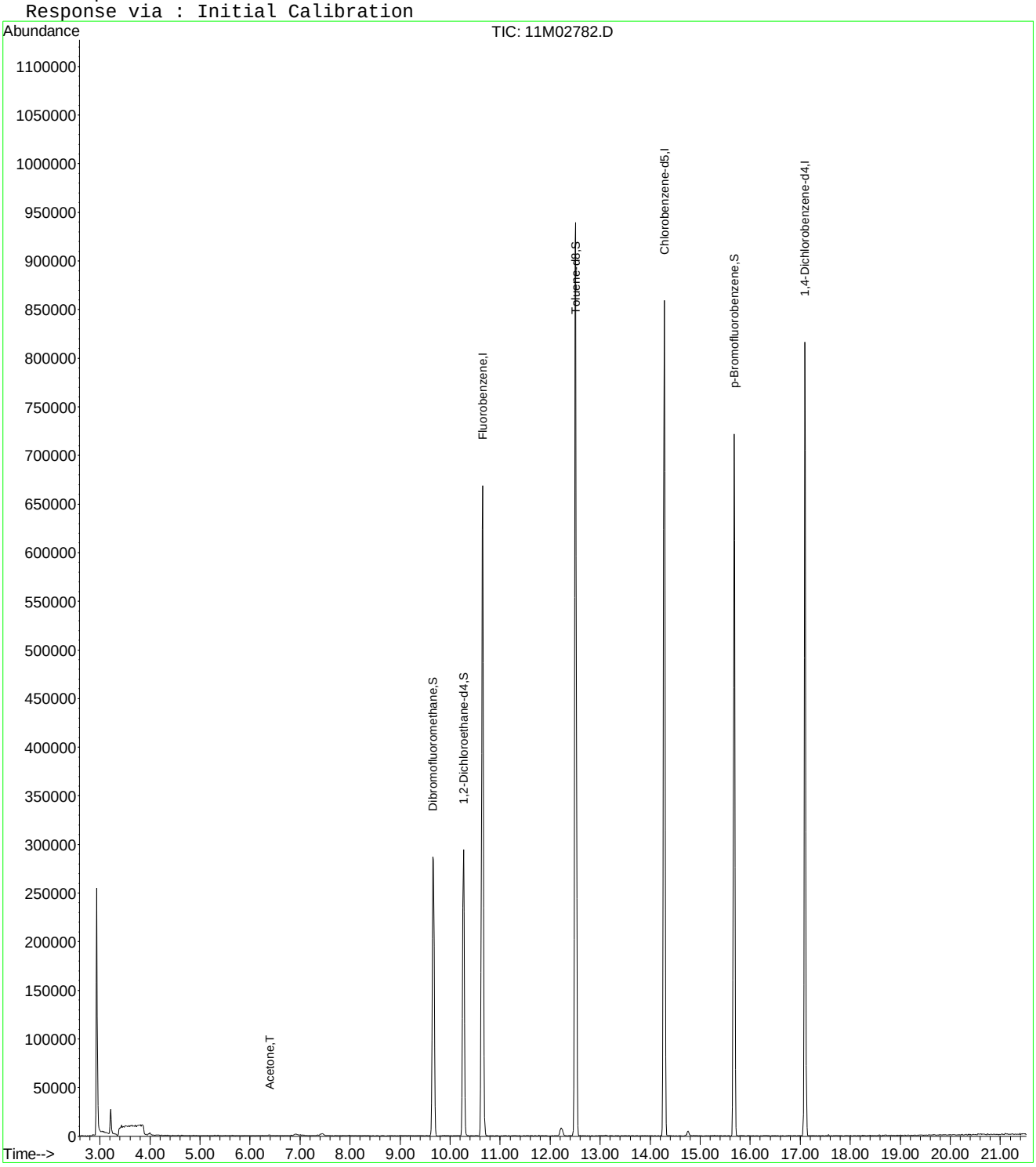

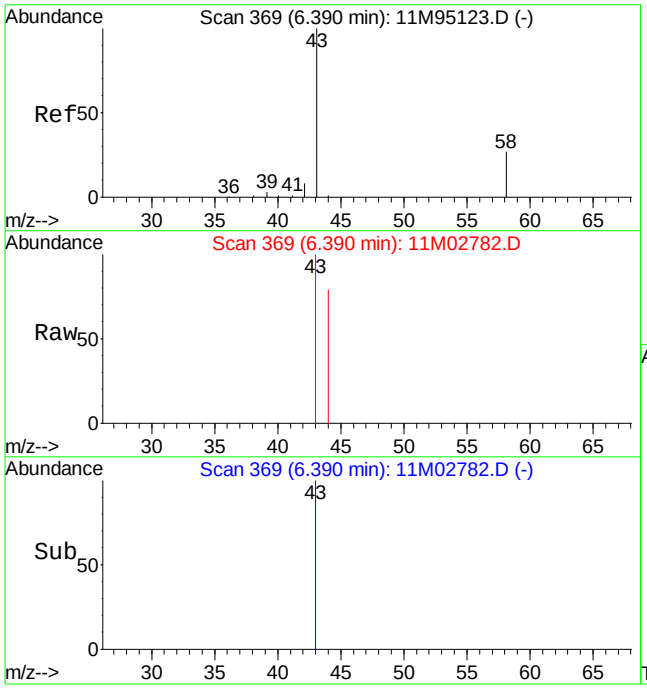

#13
Acetone
Concen: 0.73 ug/L
RT: 6.39 min Scan# 369
Delta R.T. 0.01 min
Lab File: 11M02782.D
Acq: 29 Jul 2014 20:10

Tgt Ion: 43 Resp: 1227

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.2	40.0#

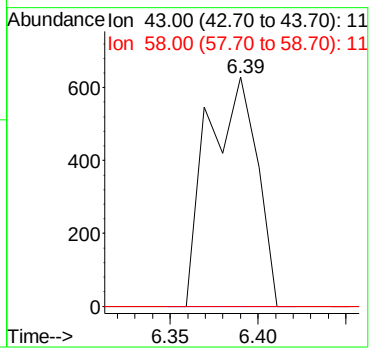

2.1.1.4 Standards Data

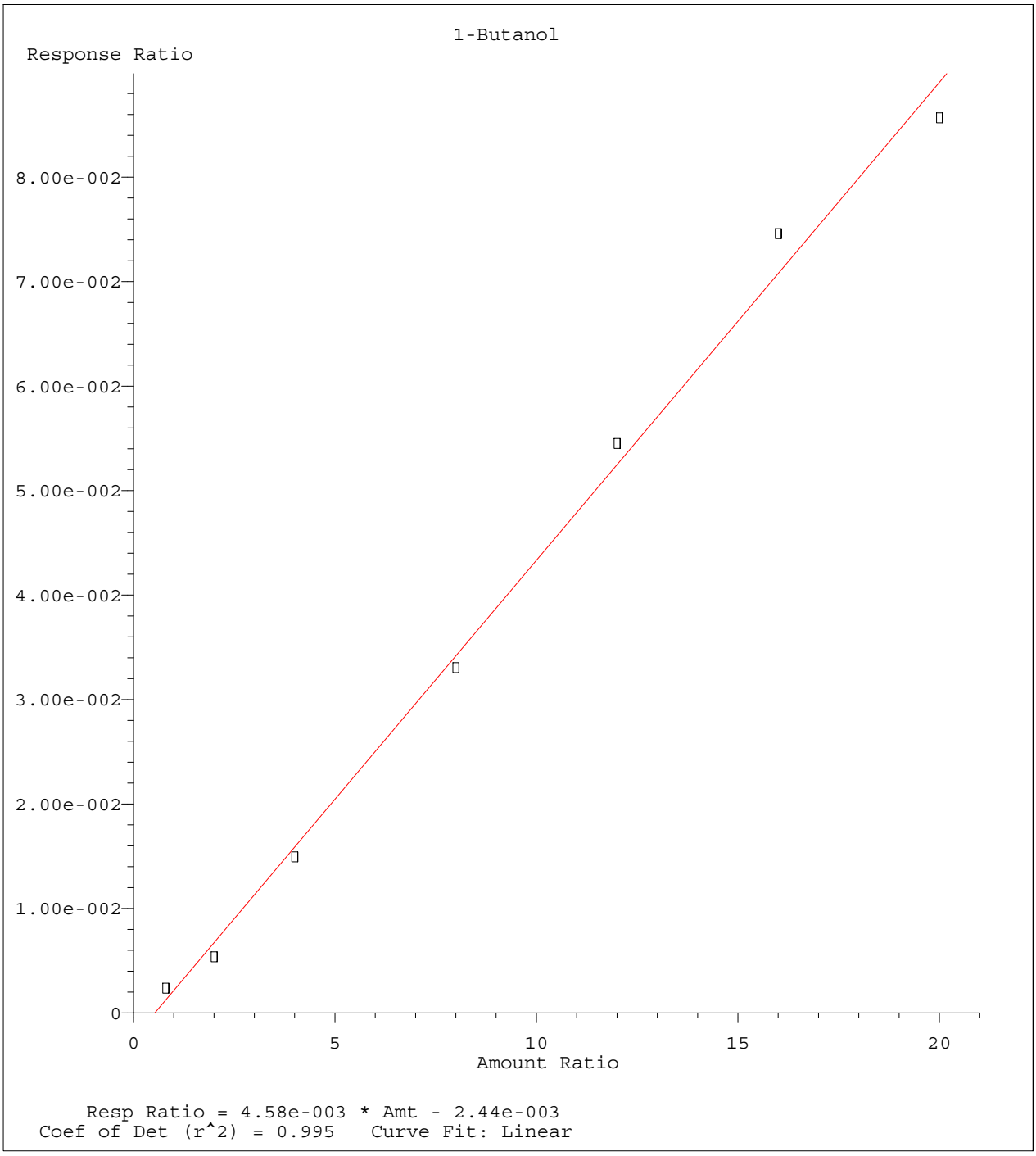

Method Name: C:\MSDCHEM\1\METHODS\A9WTR.M
Calibration Table Last Updated: Wed Dec 18 14:24:41 2013

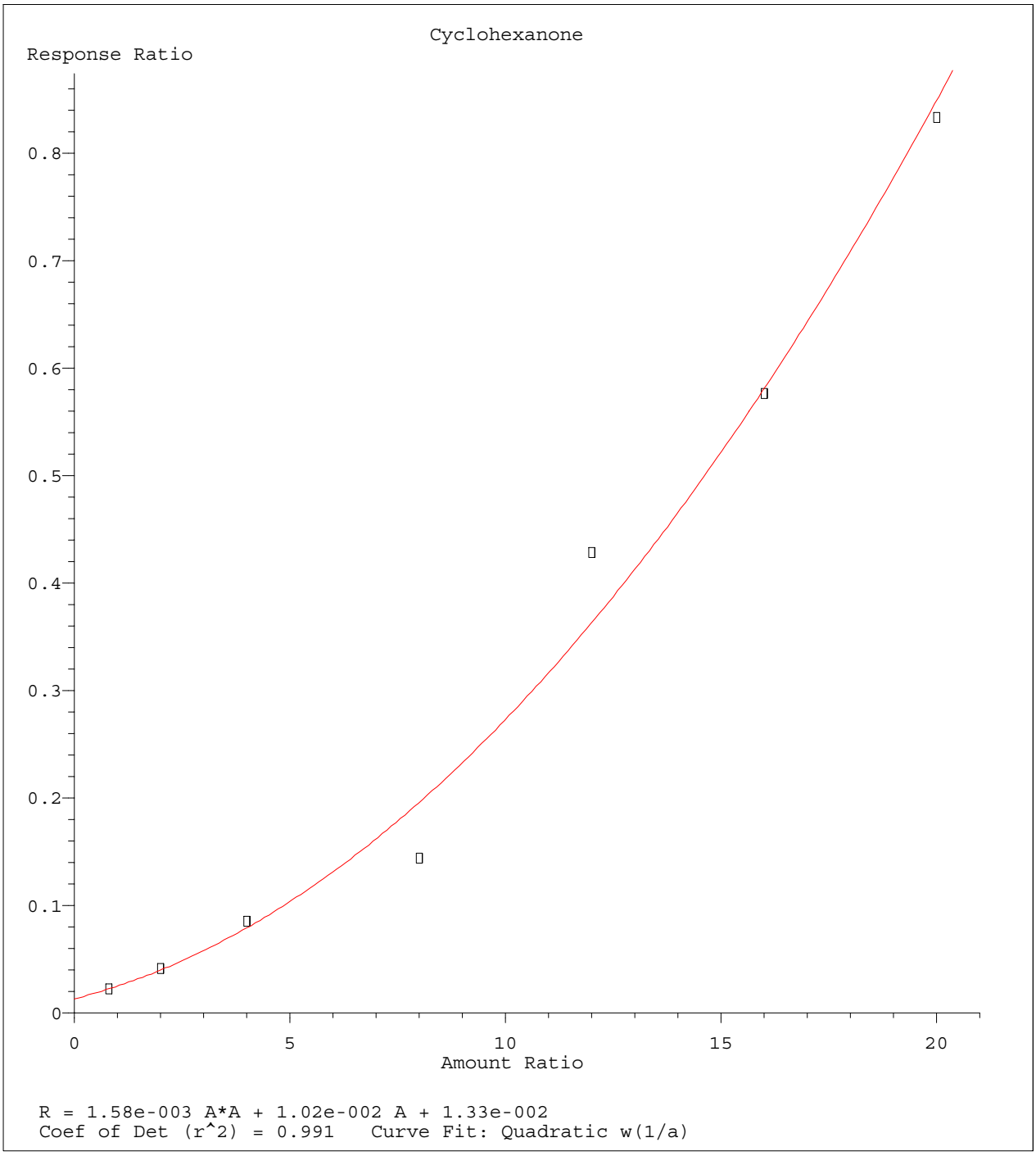

Method Name: C:\MSDCHEM\1\METHODS\A9WTR.M
Calibration Table Last Updated: Wed Dec 18 14:24:41 2013

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02150.D Vial: 3
Acq On : 27 Jun 2014 15:29 Operator: FJB
Sample : WG482009-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:03 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	950869	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	703012	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	335996	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	12.50	98	217	0.0055 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#	
78) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	3517	0.3100 ug/L #	84
3) Chloromethane	3.73	50	9804	0.6164 ug/L #	1
4) Vinyl Chloride	3.98	62	5615	0.3068 ug/L	94
5) 1,3-Butadiene	4.03	54	5374	0.3441 ug/L	81
6) Bromomethane	4.88	94	4501	0.4871 ug/L	98
7) Chloroethane	5.06	64	2762	0.2947 ug/L	90
8) Trichlorofluoromethane	5.51	101	7436	0.3518 ug/L	94
10) Isoprene	6.07	67	5602	0.2975 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	4289	0.3427 ug/L	99
13) Acetone	6.38	43	1473	0.5065 ug/L #	46
14) 1,1-Dichloroethene	6.60	61	6814	0.3194 ug/L	81
16) Dimethyl Sulfide	6.84	62	5256	0.3613 ug/L	85
17) Iodomethane	7.10	142	1585	0.1698 ug/L #	53
18) Methyl acetate	7.10	43	2362	0.2893 ug/L #	62
19) Methylene Chloride	7.35	84	5797	0.4033 ug/L	90
20) Carbon Disulfide	7.40	76	15388	0.5514 ug/L #	76
22) Methyl Tert Butyl Ether	7.57	73	11106	0.4078 ug/L	92
23) trans-1,2-Dichloroethene	7.79	96	5335	0.3909 ug/L	69
24) n-Hexane	7.86	57	5539	0.4913 ug/L #	82
26) Vinyl Acetate	8.34	43	2249	0.1892 ug/L #	76
27) 1,1-Dichloroethane	8.39	63	7840	0.3118 ug/L	99
29) 2-Butanone	8.91	43	1342	0.3343 ug/L #	54
31) 2,2-Dichloropropane	9.13	77	7810	0.3988 ug/L	96
32) cis-1,2-Dichloroethene	9.19	96	5724	0.3828 ug/L	78
33) Chloroform	9.39	83	8500	0.3389 ug/L	94
34) 1-Bromopropane	9.51	122	430	0.1783 ug/L	99
35) Bromochloromethane	9.61	130	2562	0.2835 ug/L	89
38) 1,1,1-Trichloroethane	9.88	97	8330	0.3941 ug/L #	82
39) Cyclohexane	9.92	56	7082	0.2951 ug/L	89
40) 1,1-Dichloropropene	10.08	75	6576	0.4156 ug/L	92
41) Carbon Tetrachloride	10.22	117	6642	0.3547 ug/L	94
44) 1,2-Dichloroethane	10.38	62	6911	0.4116 ug/L	88
45) Benzene	10.42	78	21152	0.4495 ug/L	99
46) Trichloroethene	11.13	130	6372	0.4170 ug/L	93
47) Methylcyclohexane	11.21	83	7192	0.4148 ug/L	94
48) 1,2-Dichloropropane	11.32	63	4453	0.3321 ug/L	97
50) Bromodichloromethane	11.61	83	6516	0.3731 ug/L #	91
51) Dibromomethane	11.69	93	2470	0.3621 ug/L	89
52) 2-Chloroethyl Vinyl Ether	11.88	63	2199	0.4215 ug/L	89
53) 4-Methyl-2-Pentanone	11.91	58	571	0.2011 ug/L	92

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02150.D Vial: 3
Acq On : 27 Jun 2014 15:29 Operator: FJB
Sample : WG482009-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:03 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
54)	cis-1,3-Dichloropropene	12.20	75	6498	0.3771 ug/L		89
55)	Dimethyl Disulfide	12.46	79	2848	0.2766 ug/L		93
58)	Toluene	12.60	91	20827	0.4267 ug/L		95
59)	Ethyl Methacrylate	12.68	69	4034	0.4204 ug/L		92
60)	trans-1,3-Dichloropropene	12.76	75	5608	0.3717 ug/L		99
61)	1,1,2-Trichloroethane	12.97	97	3929	0.4370 ug/L		93
62)	2-Hexanone	12.90	43	1348	0.2763 ug/L	#	4
63)	1,3-Dichloropropane	13.25	76	7195	0.4433 ug/L		88
64)	Tetrachloroethene	13.37	164	4376	0.4152 ug/L		95
65)	Dibromochloromethane	13.62	129	4586	0.4467 ug/L		99
66)	1,2-Dibromoethane	13.87	107	3576	0.3989 ug/L		80
67)	1-Chlorohexane	13.93	91	5900	0.3987 ug/L		90
68)	Chlorobenzene	14.33	112	14249	0.5440 ug/L		98
69)	1,1,1,2-Tetrachloroethane	14.35	131	5193	0.3814 ug/L		87
70)	Ethylbenzene	14.35	106	7302	0.5149 ug/L		86
71)	m-,p-Xylene	14.43	106	18057	1.0932 ug/L		96
72)	o-Xylene	14.96	106	8733	0.3703 ug/L		96
73)	Styrene	14.99	104	11570	0.3740 ug/L		87
74)	Bromoform	15.47	173	2458	0.3963 ug/L		88
75)	Isopropylbenzene	15.34	105	20152	0.5019 ug/L		97
77)	1,1,2,2-Tetrachloroethane	15.55	83	3831	0.4266 ug/L		95
79)	1,2,3-Trichloropropane	15.74	110	1477	0.5253 ug/L		72
80)	trans-1,4-Dichloro-2-Buten	15.77	53	745	0.3290 ug/L	#	1
81)	n-Propylbenzene	15.82	91	24128	0.5960 ug/L		95
82)	Bromobenzene	15.95	156	5994	0.4579 ug/L		91
83)	1,3,5-Trimethylbenzene	16.00	105	15863	0.4260 ug/L		99
84)	2-Chlorotoluene	16.08	91	15510	0.5861 ug/L		93
85)	4-Chlorotoluene	16.12	91	15682	0.6974 ug/L	#	40
86)	a-Methylstyrene	16.37	118	6823	0.3998 ug/L		86
87)	tert-Butylbenzene	16.42	134	3474	0.3431 ug/L		93
88)	1,2,4-Trimethylbenzene	16.47	105	15619	0.4185 ug/L		100
89)	sec-Butylbenzene	16.68	105	20558	0.5819 ug/L		97
90)	p-Isopropyltoluene	16.82	119	15627	0.5361 ug/L		96
91)	1,3-Dichlorobenzene	17.02	146	10561	0.5655 ug/L		98
92)	1,4-Dichlorobenzene	17.13	146	11237	0.5430 ug/L		90
93)	n-Butylbenzene	17.31	91	11987	0.4882 ug/L		92
94)	1,2-Dichlorobenzene	17.60	146	9267	0.3938 ug/L		94
95)	1,2-Dibromo-3-Chloropropan	18.53	75	426	0.3083 ug/L	#	52
96)	1,2,4-Trichlorobenzene	19.59	180	4519	0.4452 ug/L		80
97)	Hexachlorobutadiene	19.72	225	2615	0.4794 ug/L		92
98)	Naphthalene	19.95	128	4952	0.2370 ug/L	#	92
99)	1,2,3-Trichlorobenzene	20.22	180	3396	0.2726 ug/L		81

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02150.D Vial: 3
Acq On : 27 Jun 2014 15:29 Operator: FJB
Sample : WG482009-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:55 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration

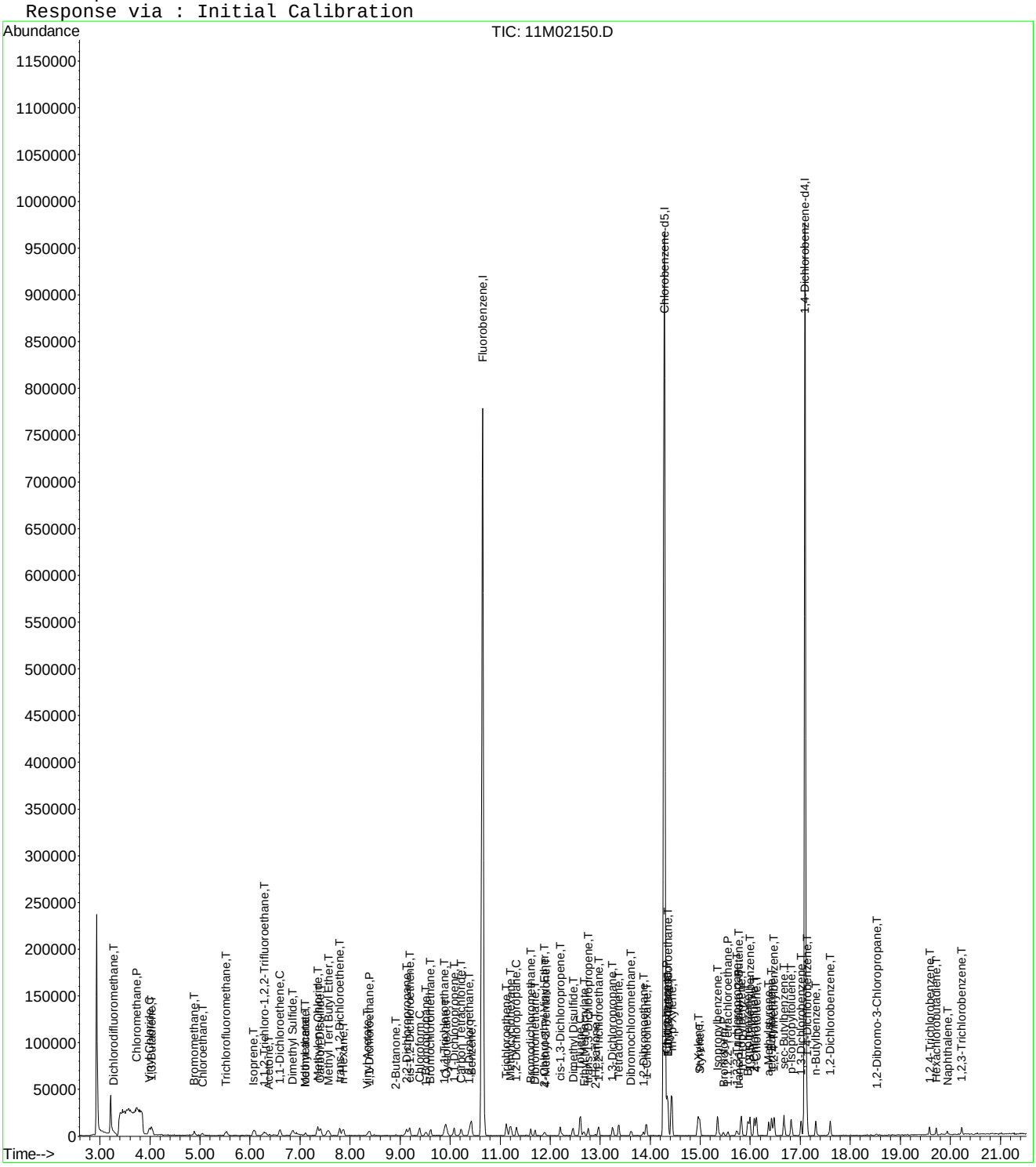

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02151.D Vial: 4
Acq On : 27 Jun 2014 16:07 Operator: FJB
Sample : WG482009-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:14 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	954872	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	701265	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	338783	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	5083	0.3877 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.56%#	
43) 1,2-Dichloroethane-d4	10.27	65	4944	0.3217 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.28%#	
57) Toluene-d8	12.50	98	19800	0.5070 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.04%#	
78) p-Bromofluorobenzene	15.67	95	7049	0.4531 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.80%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	8995	0.7896 ug/L	97
3) Chloromethane	3.74	50	22428	1.4042 ug/L #	71
4) Vinyl Chloride	3.98	62	15015	0.8169 ug/L	97
5) 1,3-Butadiene	4.03	54	11767	0.7502 ug/L	86
6) Bromomethane	4.88	94	10114	1.0900 ug/L	98
7) Chloroethane	5.04	64	8010	0.8512 ug/L	94
8) Trichlorofluoromethane	5.52	101	17162	0.8085 ug/L	100
9) Diethyl ether	6.04	59	37509	3.8836 ug/L	94
10) Isoprene	6.08	67	14050	0.7429 ug/L	81
11) Acrolein	6.28	56	2067	1.2674 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	10995	0.8749 ug/L	97
13) Acetone	6.38	43	2332	0.7985 ug/L #	77
14) 1,1-Dichloroethene	6.60	61	14953	0.6980 ug/L	80
16) Dimethyl Sulfide	6.86	62	11472	0.7854 ug/L	86
17) Iodomethane	7.10	142	3281	0.3500 ug/L	90
18) Methyl acetate	7.10	43	5866	0.7154 ug/L #	95
19) Methylene Chloride	7.35	84	13043	0.9036 ug/L	75
20) Carbon Disulfide	7.40	76	34135	1.2180 ug/L	91
21) Acrylonitrile	7.52	53	5898	1.6783 ug/L	97
22) Methyl Tert Butyl Ether	7.56	73	25525	0.9334 ug/L	94
23) trans-1,2-Dichloroethene	7.80	96	12141	0.8858 ug/L	81
24) n-Hexane	7.85	57	13481	1.1908 ug/L #	93
25) Diisopropyl ether	8.18	45	169938	3.8869 ug/L	96
26) Vinyl Acetate	8.34	43	6163	0.5162 ug/L #	81
27) 1,1-Dichloroethane	8.40	63	19827	0.7851 ug/L	95
28) Ethyl-Tert-Butyl ether	8.74	59	154605	4.0648 ug/L	95
29) 2-Butanone	8.92	43	2900	0.7193 ug/L	91
30) Propionitrile	9.03	54	4424	3.5201 ug/L	92
31) 2,2-Dichloropropane	9.13	77	16227	0.8251 ug/L	96
32) cis-1,2-Dichloroethene	9.19	96	12418	0.8269 ug/L	76
33) Chloroform	9.39	83	21073	0.8368 ug/L	99
34) 1-Bromopropane	9.50	122	1803	0.7443 ug/L	94
35) Bromochloromethane	9.61	130	7200	0.7935 ug/L	85
36) Tetrahydrofuran	9.65	42	8369	3.2085 ug/L	84
38) 1,1,1-Trichloroethane	9.89	97	17779	0.8376 ug/L	97
39) Cyclohexane	9.93	56	15920	0.6605 ug/L	84
40) 1,1-Dichloropropene	10.08	75	14926	0.9394 ug/L	95
41) Carbon Tetrachloride	10.23	117	14556	0.7742 ug/L	91
42) Tert-Amyl-Methyl ether	10.17	73	133358	4.4812 ug/L	96
44) 1,2-Dichloroethane	10.38	62	14265	0.8460 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02151.D Vial: 4
Acq On : 27 Jun 2014 16:07 Operator: FJB
Sample : WG482009-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:14 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	Benzene	10.41	78	45519	0.9633 ug/L		100
46)	Trichloroethene	11.13	130	12989	0.8464 ug/L		97
47)	Methylcyclohexane	11.20	83	16415	0.9429 ug/L		92
48)	1,2-Dichloropropane	11.33	63	10607	0.7876 ug/L		100
50)	Bromodichloromethane	11.61	83	14415	0.8219 ug/L		96
51)	Dibromomethane	11.69	93	6331	0.9243 ug/L		98
52)	2-Chloroethyl Vinyl Ether	11.87	63	4715	0.9000 ug/L		96
53)	4-Methyl-2-Pentanone	11.91	58	2303	0.8077 ug/L	#	71
54)	cis-1,3-Dichloropropene	12.20	75	16024	0.9259 ug/L		98
55)	Dimethyl Disulfide	12.45	79	6618	0.6401 ug/L		99
58)	Toluene	12.60	91	47660	0.9790 ug/L		96
59)	Ethyl Methacrylate	12.67	69	8227	0.8595 ug/L		84
60)	trans-1,3-Dichloropropene	12.76	75	12889	0.8565 ug/L		98
61)	1,1,2-Trichloroethane	12.97	97	8861	0.9879 ug/L		99
62)	2-Hexanone	12.89	43	3567	0.7330 ug/L	#	46
63)	1,3-Dichloropropane	13.24	76	14915	0.9212 ug/L		94
64)	Tetrachloroethene	13.37	164	9761	0.9285 ug/L		95
65)	Dibromochloromethane	13.62	129	10274	1.0032 ug/L		94
66)	1,2-Dibromoethane	13.87	107	8979	1.0041 ug/L		90
67)	1-Chlorohexane	13.93	91	13518	0.9157 ug/L		83
68)	Chlorobenzene	14.33	112	33240	1.2722 ug/L		98
69)	1,1,1,2-Tetrachloroethane	14.36	131	10591	0.7798 ug/L		100
70)	Ethylbenzene	14.35	106	15640	1.1056 ug/L		83
71)	m-,p-Xylene	14.43	106	39515	2.3983 ug/L		98
72)	o-Xylene	14.95	106	19651	0.8353 ug/L		95
73)	Styrene	14.99	104	27306	0.8850 ug/L		95
74)	Bromoform	15.47	173	5966	0.9642 ug/L		100
75)	Isopropylbenzene	15.34	105	48091	1.2007 ug/L		99
77)	1,1,2,2-Tetrachloroethane	15.55	83	9042	0.9986 ug/L		97
79)	1,2,3-Trichloropropane	15.73	110	2677	0.9443 ug/L		94
80)	trans-1,4-Dichloro-2-Buten	15.77	53	1647	0.7213 ug/L	#	8
81)	n-Propylbenzene	15.82	91	54985	1.3470 ug/L		99
82)	Bromobenzene	15.95	156	13046	0.9885 ug/L		83
83)	1,3,5-Trimethylbenzene	16.00	105	39133	1.0422 ug/L		99
84)	2-Chlorotoluene	16.08	91	35439	1.3282 ug/L		86
85)	4-Chlorotoluene	16.12	91	35217m	1.5532 ug/L		
86)	a-Methylstyrene	16.37	118	15889	0.9233 ug/L		99
87)	tert-Butylbenzene	16.43	134	8462	0.8288 ug/L		83
88)	1,2,4-Trimethylbenzene	16.48	105	36949	0.9818 ug/L		96
89)	sec-Butylbenzene	16.68	105	46306	1.2999 ug/L		99
90)	p-Isopropyltoluene	16.82	119	37842	1.2875 ug/L		99
91)	1,3-Dichlorobenzene	17.02	146	24210	1.2856 ug/L		91
92)	1,4-Dichlorobenzene	17.13	146	22571	1.0816 ug/L	#	72
93)	n-Butylbenzene	17.31	91	28801	1.1633 ug/L		98
94)	1,2-Dichlorobenzene	17.60	146	22612	0.9531 ug/L		92
95)	1,2-Dibromo-3-Chloropropan	18.52	75	1192	0.8557 ug/L		98
96)	1,2,4-Trichlorobenzene	19.58	180	9458	0.9241 ug/L		91
97)	Hexachlorobutadiene	19.72	225	5337	0.9703 ug/L		98
98)	Naphthalene	19.93	128	11235	0.5333 ug/L	#	92
99)	1,2,3-Trichlorobenzene	20.23	180	8210	0.6536 ug/L		87

(#) = qualifier out of range (m) = manual integration
11M02151.D 8260WTR.M Mon Jun 30 09:59:46 2014 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02151.D Vial: 4
Acq On : 27 Jun 2014 16:07 Operator: FJB
Sample : WG482009-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:59 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration

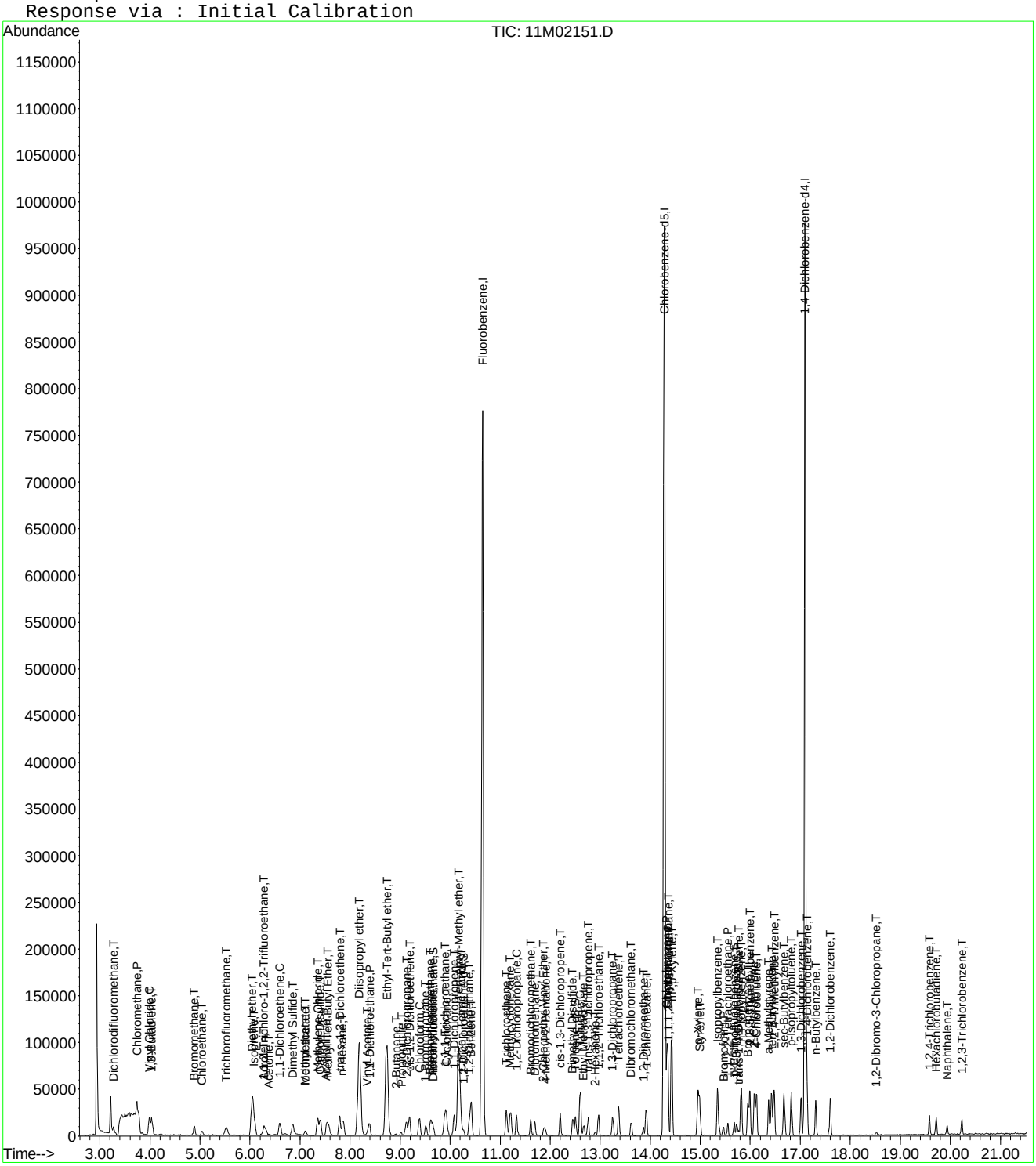

11M02151.D 8260WTR.M Mon Jun 30 09:59:47 2014 Page 3

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02151.D Vial: 4
Acq On : 27 Jun 2014 16:07 Operator: FJB
Sample : WG482009-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:58 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Multiple Level Calibration

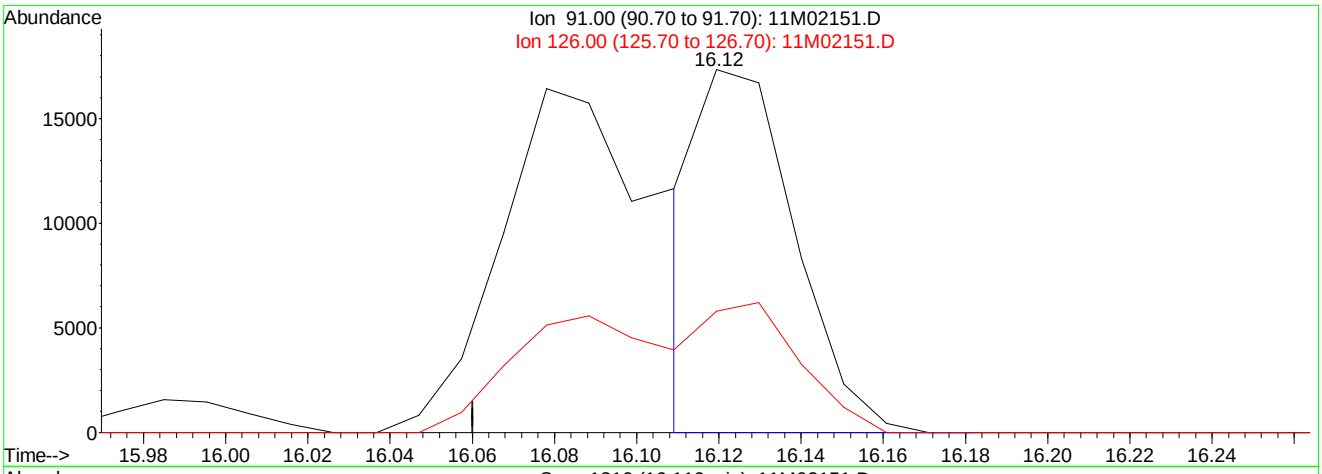

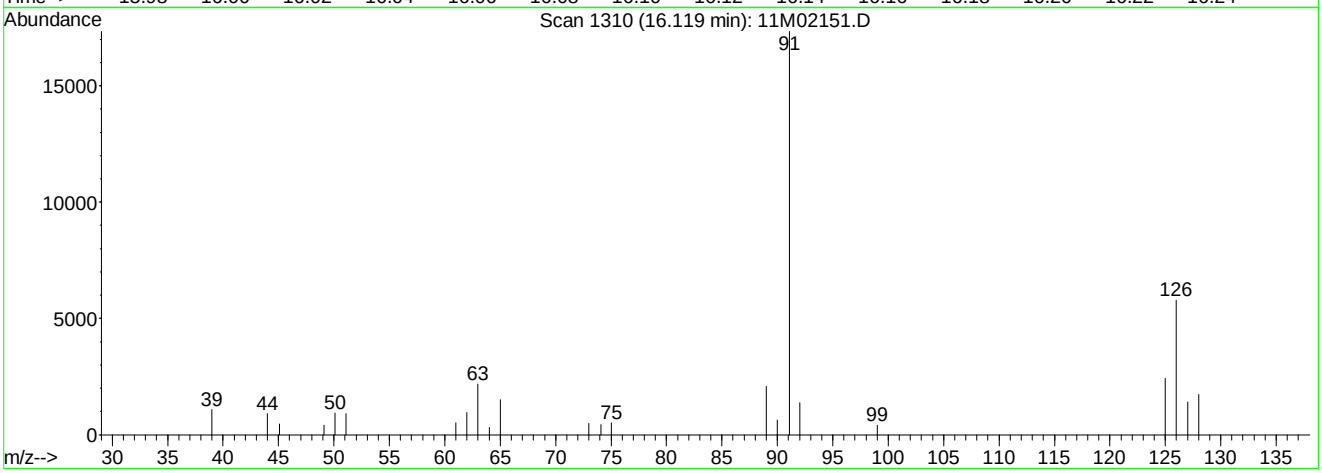

TIC: 11M02151.D

(85) 4-Chlorotoluene (T)

16.12min 1.23ug/L

response 27994

Ion	Exp%	Act%
91.00	100	100
126.00	34.70	36.44
0.00	0.00	0.00
0.00	0.00	0.00

11M02151.D 8260WTR.M Mon Jun 30 09:59:12 2014

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02151.D Vial: 4
Acq On : 27 Jun 2014 16:07 Operator: FJB
Sample : WG482009-04 1ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:59 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Multiple Level Calibration

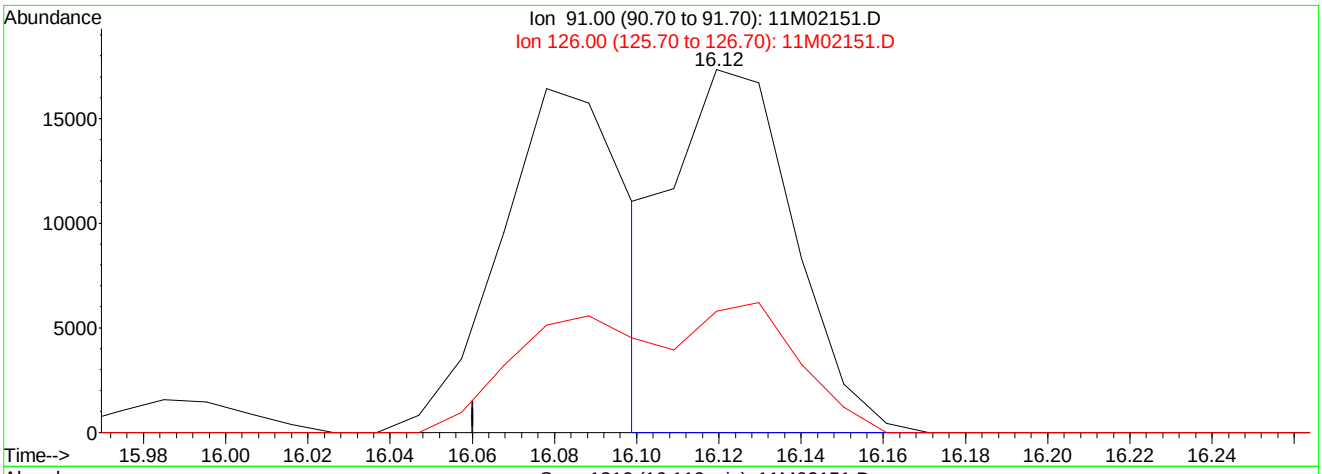

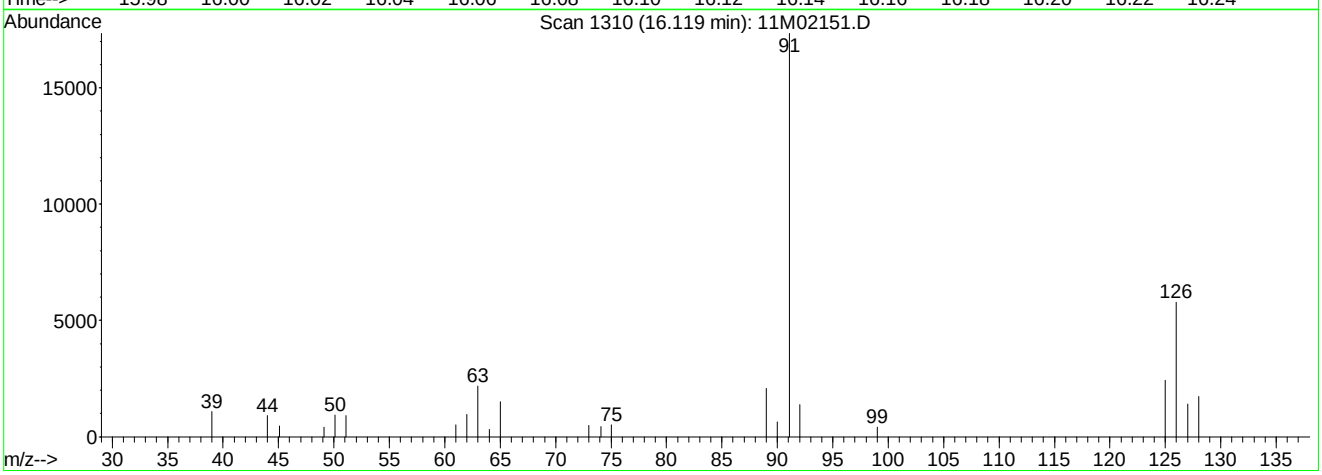

TIC: 11M02151.D

(85) 4-Chlorotoluene (T)

16.12min 1.55ug/L mint

response 35217

Ion	Exp%	Act%
91.00	100	100
126.00	34.70	28.96
0.00	0.00	0.00
0.00	0.00	0.00

11M02151.D 8260WTR.M Mon Jun 30 .4

Analyst: 06/30/2014 14:36 Supervisor: 06/30/2014 15:39

#2 - Data system splits the peak incorrectly or integrates a false peak as a rider peak

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\062714\11M02152.D Vial: 5
Acq On : 27 Jun 2014 16:37 Operator: FJB
Sample : WG482009-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 27 16:59:07 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Fri Jun 27 10:17:02 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	938815	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	693419	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	327100	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
78) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2261	0.2019 ug/L #	70
3) Chloromethane	3.73	50	11810	0.7520 ug/L #	50
4) Vinyl Chloride	3.98	62	3938	0.2179 ug/L	91
5) 1,3-Butadiene	4.03	54	3337	0.2164 ug/L #	66
6) Bromomethane	4.88	94	3123	0.3423 ug/L	83
7) Chloroethane	5.04	64	2089	0.2258 ug/L	79
8) Trichlorofluoromethane	5.52	101	4759	0.2280 ug/L	97
10) Isoprene	6.09	67	3399	0.1828 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	2946	0.2384 ug/L	77
14) 1,1-Dichloroethene	6.59	61	4422	0.2099 ug/L	86
16) Dimethyl Sulfide	6.84	62	3639	0.2534 ug/L	83
18) Methyl acetate	7.11	43	1262	0.1565 ug/L #	62
19) Methylene Chloride	7.35	84	4776	0.3365 ug/L	80
20) Carbon Disulfide	7.40	76	10277	0.3730 ug/L #	85
22) Methyl Tert Butyl Ether	7.56	73	8268	0.3075 ug/L #	72
23) trans-1,2-Dichloroethene	7.80	96	3138	0.2329 ug/L	95
24) n-Hexane	7.86	57	3576	0.3213 ug/L #	68
27) 1,1-Dichloroethane	8.40	63	5525	0.2225 ug/L #	91
29) 2-Butanone	8.91	43	820	0.2069 ug/L #	54
31) 2,2-Dichloropropane	9.12	77	5146	0.2661 ug/L	91
32) cis-1,2-Dichloroethene	9.18	96	4005	0.2712 ug/L	78
33) Chloroform	9.39	83	5819	0.2350 ug/L	91
35) Bromochloromethane	9.61	130	2202	0.2468 ug/L	83
38) 1,1,1-Trichloroethane	9.89	97	4948	0.2371 ug/L #	95
39) Cyclohexane	9.93	56	4861	0.2051 ug/L	89
40) 1,1-Dichloropropene	10.08	75	5129	0.3283 ug/L	76
41) Carbon Tetrachloride	10.23	117	4581	0.2478 ug/L #	93
44) 1,2-Dichloroethane	10.37	62	3957	0.2387 ug/L	90
45) Benzene	10.42	78	14635	0.3150 ug/L	94
46) Trichloroethene	11.13	130	4286	0.2841 ug/L	94
47) Methylcyclohexane	11.21	83	4596	0.2685 ug/L	89
48) 1,2-Dichloropropane	11.33	63	3363	0.2540 ug/L	99
50) Bromodichloromethane	11.61	83	4335	0.2514 ug/L #	94
51) Dibromomethane	11.70	93	1957	0.2906 ug/L	93
52) 2-Chloroethyl Vinyl Ether	11.87	63	1265	0.2456 ug/L #	47
53) 4-Methyl-2-Pentanone	11.92	58	388	0.1384 ug/L #	35
54) cis-1,3-Dichloropropene	12.20	75	4777	0.2808 ug/L	96
55) Dimethyl Disulfide	12.46	79	1983	0.1951 ug/L	94
58) Toluene	12.60	91	14560	0.3025 ug/L	94
59) Ethyl Methacrylate	12.68	69	2069	0.2186 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\062714\11M02152.D Vial: 5
Acq On : 27 Jun 2014 16:37 Operator: FJB
Sample : WG482009-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 27 16:59:07 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Fri Jun 27 10:17:02 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
60)	trans-1,3-Dichloropropene	12.75	75	3446	0.2316	ug/L		98
61)	1,1,2-Trichloroethane	12.98	97	2629	0.2964	ug/L		99
62)	2-Hexanone	12.90	43	1014	0.2107	ug/L	#	1
63)	1,3-Dichloropropane	13.24	76	4671	0.2918	ug/L		99
64)	Tetrachloroethene	13.37	164	3071	0.2954	ug/L		95
65)	Dibromochloromethane	13.63	129	2900	0.2864	ug/L		84
66)	1,2-Dibromoethane	13.87	107	2419	0.2736	ug/L		82
67)	1-Chlorohexane	13.92	91	3692	0.2529	ug/L		98
68)	Chlorobenzene	14.33	112	10379	0.4017	ug/L		93
69)	1,1,1,2-Tetrachloroethane	14.35	131	3025	0.2252	ug/L		90
70)	Ethylbenzene	14.35	106	4874	0.3485	ug/L		97
71)	m-,p-Xylene	14.43	106	11869	0.7285	ug/L		93
72)	o-Xylene	14.95	106	5398	0.2321	ug/L		90
73)	Styrene	14.99	104	7876	0.2581	ug/L		87
74)	Bromoform	15.47	173	1335	0.2182	ug/L	#	55
75)	Isopropylbenzene	15.34	105	14134	0.3569	ug/L		99
77)	1,1,2,2-Tetrachloroethane	15.55	83	2531	0.2895	ug/L		98
79)	1,2,3-Trichloropropane	15.73	110	559	0.2042	ug/L		84
81)	n-Propylbenzene	15.82	91	14912	0.3784	ug/L		97
82)	Bromobenzene	15.95	156	4091	0.3210	ug/L		92
83)	1,3,5-Trimethylbenzene	16.00	105	10362	0.2858	ug/L		96
84)	2-Chlorotoluene	16.08	91	12607	0.4894	ug/L		99
85)	4-Chlorotoluene	16.13	91	8112	0.3705	ug/L		85
86)	a-Methylstyrene	16.37	118	4069	0.2449	ug/L		91
87)	tert-Butylbenzene	16.44	134	2357	0.2391	ug/L		78
88)	1,2,4-Trimethylbenzene	16.48	105	11345	0.3122	ug/L		93
89)	sec-Butylbenzene	16.68	105	13938	0.4052	ug/L		93
90)	p-Isopropyltoluene	16.82	119	10585	0.3730	ug/L		90
91)	1,3-Dichlorobenzene	17.02	146	6486	0.3567	ug/L		99
92)	1,4-Dichlorobenzene	17.13	146	7815	0.3879	ug/L		78
93)	n-Butylbenzene	17.31	91	7488	0.3132	ug/L		99
94)	1,2-Dichlorobenzene	17.61	146	6590	0.2877	ug/L		98
96)	1,2,4-Trichlorobenzene	19.58	180	2041	0.2065	ug/L		83
97)	Hexachlorobutadiene	19.72	225	1510	0.2843	ug/L		91
99)	1,2,3-Trichlorobenzene	20.22	180	1602	0.1321	ug/L		84

(#) = qualifier out of range (m) = manual integration
11M02152.D 8260WTR.M Fri Jun 27 16:59:08 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\062714\11M02152.D Vial: 5
Acq On : 27 Jun 2014 16:37 Operator: FJB
Sample : WG482009-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 27 16:59 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Fri Jun 27 10:17:02 2014
Response via : Initial Calibration

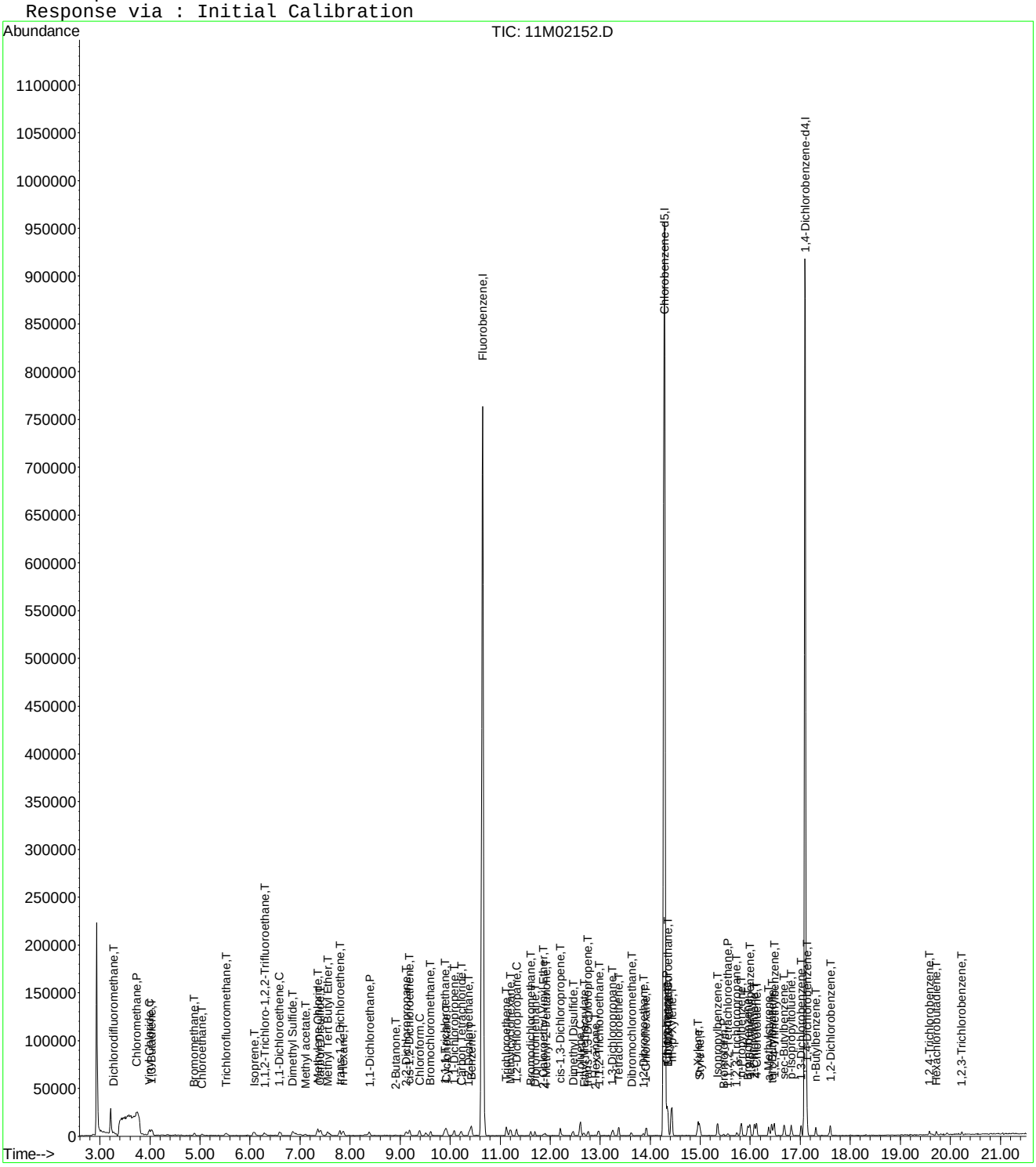

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02153.D Vial: 5
Acq On : 27 Jun 2014 17:08 Operator: FJB
Sample : WG482009-05 2ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:16 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	959698	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	703527	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	351674	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	10874	0.8253 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#	
43) 1,2-Dichloroethane-d4	10.27	65	11144	0.7215 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.88%#	
57) Toluene-d8	12.51	98	40511	1.0340 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.12%#	
78) p-Bromofluorobenzene	15.67	95	14267	0.8834 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	17421	1.5216 ug/L	96
3) Chloromethane	3.74	50	39201	2.4420 ug/L	89
4) Vinyl Chloride	3.98	62	32226	1.7445 ug/L	97
5) 1,3-Butadiene	4.02	54	28582	1.8131 ug/L	93
6) Bromomethane	4.88	94	20246	2.1710 ug/L	94
7) Chloroethane	5.04	64	15448	1.6333 ug/L	96
8) Trichlorofluoromethane	5.52	101	36817	1.7256 ug/L	98
9) Diethyl ether	6.04	59	196496	20.2424 ug/L	92
10) Isoprene	6.08	67	29005	1.5260 ug/L	83
11) Acrolein	6.28	56	11879	7.2470 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	21662	1.7150 ug/L	98
13) Acetone	6.38	43	4603	1.5681 ug/L #	78
14) 1,1-Dichloroethene	6.60	61	33426	1.5525 ug/L	89
15) Tert-Butyl Alcohol	6.70	59	26280	36.0647 ug/L #	81
16) Dimethyl Sulfide	6.86	62	22397	1.5256 ug/L	93
17) Iodomethane	7.10	142	8367	0.8881 ug/L	88
18) Methyl acetate	7.10	43	12932	1.5691 ug/L #	90
19) Methylene Chloride	7.35	84	25569	1.7625 ug/L	82
20) Carbon Disulfide	7.40	76	71810	2.5494 ug/L	98
21) Acrylonitrile	7.53	53	31572	8.9389 ug/L	95
22) Methyl Tert Butyl Ether	7.57	73	53520	1.9473 ug/L	92
23) trans-1,2-Dichloroethene	7.80	96	23821	1.7292 ug/L	83
24) n-Hexane	7.87	57	26906	2.3647 ug/L	95
25) Diisopropyl ether	8.18	45	871051	19.8231 ug/L	96
26) Vinyl Acetate	8.35	43	14270	1.1892 ug/L	99
27) 1,1-Dichloroethane	8.39	63	40838	1.6090 ug/L	97
28) Ethyl-Tert-Butyl ether	8.74	59	806365	21.0942 ug/L	95
29) 2-Butanone	8.92	43	5126	1.2651 ug/L	87
30) Propionitrile	9.02	54	22151	17.5363 ug/L	90
31) 2,2-Dichloropropane	9.13	77	36204	1.8316 ug/L	95
32) cis-1,2-Dichloroethene	9.19	96	26386	1.7482 ug/L	87
33) Chloroform	9.39	83	43593	1.7223 ug/L	95
34) 1-Bromopropane	9.51	122	4044	1.6610 ug/L	91
35) Bromochloromethane	9.61	130	15885	1.7419 ug/L	87
36) Tetrahydrofuran	9.64	42	45655	17.4152 ug/L	88
38) 1,1,1-Trichloroethane	9.89	97	35244	1.6520 ug/L	98
39) Cyclohexane	9.93	56	34523	1.4251 ug/L	87
40) 1,1-Dichloropropene	10.08	75	31053	1.9445 ug/L	97
41) Carbon Tetrachloride	10.22	117	34010	1.7997 ug/L	97
42) Tert-Amyl-Methyl ether	10.17	73	699997	23.4037 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02153.D Vial: 5
Acq On : 27 Jun 2014 17:08 Operator: FJB
Sample : WG482009-05 2ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:16 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.38	62	30384	1.7929 ug/L	94
45) Benzene	10.42	78	93138	1.9610 ug/L	100
46) Trichloroethene	11.13	130	28426	1.8430 ug/L	92
47) Methylcyclohexane	11.21	83	35315	2.0182 ug/L	89
48) 1,2-Dichloropropane	11.33	63	21819	1.6120 ug/L	96
49) 1,4-Dioxane	11.60	88	3173	30.2904 ug/L	95
50) Bromodichloromethane	11.61	83	30202	1.7133 ug/L	99
51) Dibromomethane	11.69	93	13406	1.9474 ug/L	98
52) 2-Chloroethyl Vinyl Ether	11.88	63	9546	1.8131 ug/L	97
53) 4-Methyl-2-Pentanone	11.91	58	4466	1.5584 ug/L	99
54) cis-1,3-Dichloropropene	12.20	75	32734	1.8820 ug/L	99
55) Dimethyl Disulfide	12.46	79	13699	1.3184 ug/L	91
58) Toluene	12.60	91	97292	1.9920 ug/L	99
59) Ethyl Methacrylate	12.68	69	16851	1.7548 ug/L	91
60) trans-1,3-Dichloropropene	12.76	75	28493	1.8873 ug/L	97
61) 1,1,2-Trichloroethane	12.97	97	17433	1.9374 ug/L	98
62) 2-Hexanone	12.89	43	7136	1.4617 ug/L #	92
63) 1,3-Dichloropropane	13.26	76	31012	1.9092 ug/L	93
64) Tetrachloroethene	13.37	164	21043	1.9954 ug/L	88
65) Dibromochloromethane	13.63	129	20490	1.9943 ug/L	98
66) 1,2-Dibromoethane	13.86	107	17557	1.9570 ug/L	99
67) 1-Chlorohexane	13.92	91	27427	1.8520 ug/L	92
68) Chlorobenzene	14.33	112	69696	2.6589 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.35	131	23255	1.7066 ug/L	93
70) Ethylbenzene	14.35	106	35892	2.5292 ug/L	99
71) m-,p-Xylene	14.42	106	86366	5.2250 ug/L	99
72) o-Xylene	14.96	106	41085	1.7409 ug/L	100
73) Styrene	14.99	104	59479	1.9215 ug/L	99
74) Bromoform	15.47	173	11915	1.9195 ug/L	99
75) Isopropylbenzene	15.34	105	105378	2.6224 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.55	83	20093	2.1377 ug/L	94
79) 1,2,3-Trichloropropane	15.73	110	5718	1.9430 ug/L	93
80) trans-1,4-Dichloro-2-Buten	15.77	53	3604	1.5206 ug/L #	42
81) n-Propylbenzene	15.82	91	117633	2.7761 ug/L	100
82) Bromobenzene	15.95	156	26984	1.9696 ug/L	94
83) 1,3,5-Trimethylbenzene	16.00	105	83593	2.1447 ug/L	99
84) 2-Chlorotoluene	16.08	91	75359	2.7209 ug/L	83
85) 4-Chlorotoluene	16.12	91	76984	3.2707 ug/L	89
86) a-Methylstyrene	16.37	118	36777	2.0587 ug/L	100
87) tert-Butylbenzene	16.43	134	17298	1.6321 ug/L	85
88) 1,2,4-Trimethylbenzene	16.48	105	87516	2.2403 ug/L	98
89) sec-Butylbenzene	16.68	105	102658	2.7761 ug/L	98
90) p-Isopropyltoluene	16.82	119	85196	2.7923 ug/L	99
91) 1,3-Dichlorobenzene	17.02	146	51972	2.6587 ug/L	95
92) 1,4-Dichlorobenzene	17.13	146	52102	2.4053 ug/L	91
93) n-Butylbenzene	17.31	91	65613	2.5530 ug/L	98
94) 1,2-Dichlorobenzene	17.60	146	47313	1.9211 ug/L	97
95) 1,2-Dibromo-3-Chloropropan	18.52	75	2455	1.6977 ug/L	98
96) 1,2,4-Trichlorobenzene	19.58	180	20585	1.9376 ug/L	95
97) Hexachlorobutadiene	19.72	225	11941	2.0914 ug/L	100
98) Naphthalene	19.93	128	28656	1.3103 ug/L	98
99) 1,2,3-Trichlorobenzene	20.22	180	19535	1.4982 ug/L	93

(#) = qualifier out of range (m) = manual integration
11M02153.D 8260WTR.M Mon Jun 30 09:55:18 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02153.D Vial: 5
Acq On : 27 Jun 2014 17:08 Operator: FJB
Sample : WG482009-05 2ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:55 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration

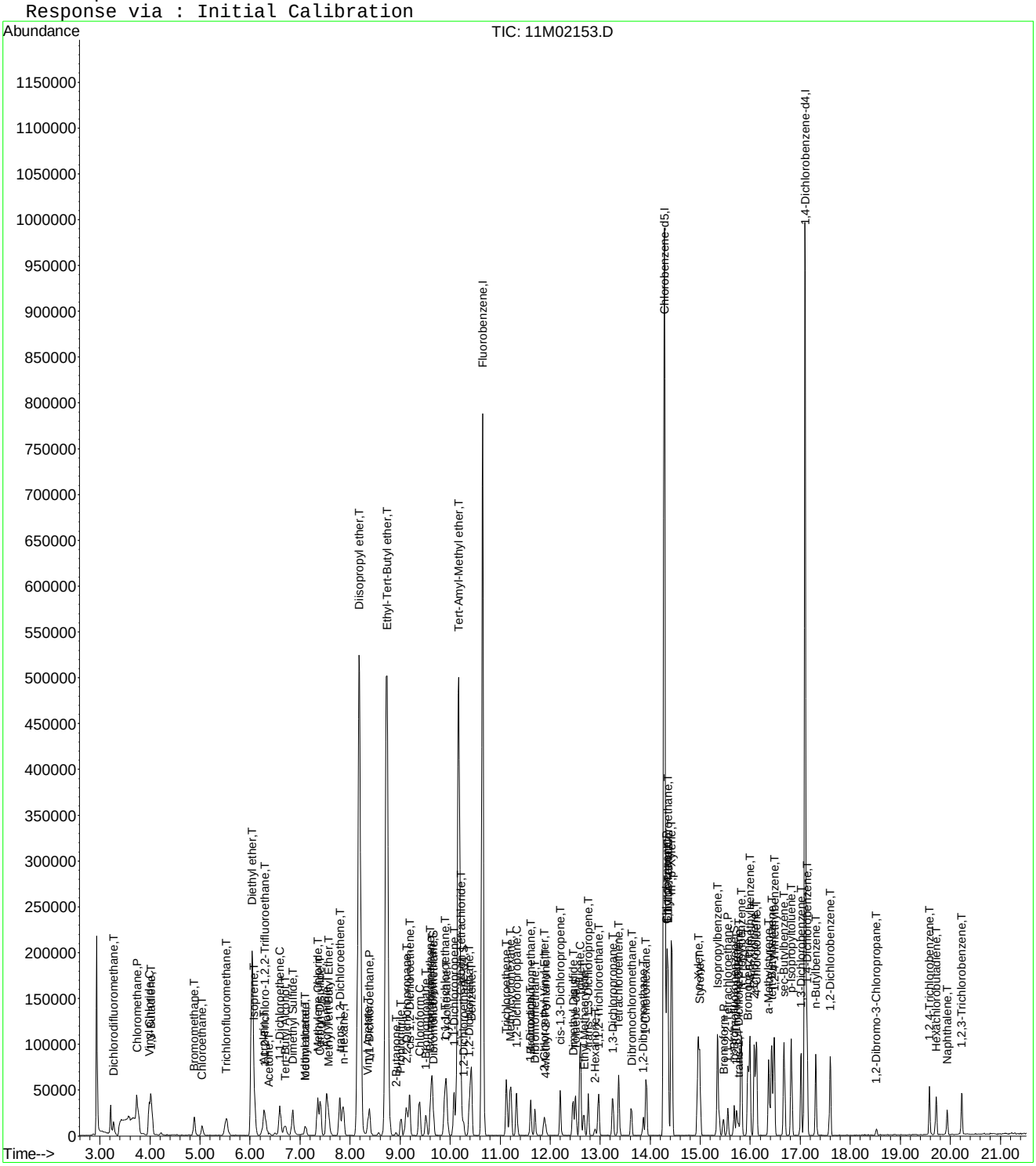

11M02153.D 8260WTR.M Mon Jun 30 09:55:18 2014 Page 3

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02154.D Vial: 7
Acq On : 27 Jun 2014 17:38 Operator: FJB
Sample : WG482009-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:19 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	973198	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	716320	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	360506	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	29372	2.1983 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.80%#	
43) 1,2-Dichloroethane-d4	10.27	65	30829	1.9682 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.88%#	
57) Toluene-d8	12.51	98	106640	2.6733 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	10.68%#	
78) p-Bromofluorobenzene	15.67	95	38329	2.3153 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	47060	4.0533 ug/L	98
3) Chloromethane	3.74	50	91038	5.5924 ug/L	94
4) Vinyl Chloride	3.98	62	87798	4.6869 ug/L	99
5) 1,3-Butadiene	4.02	54	77059	4.8204 ug/L	99
6) Bromomethane	4.88	94	46594	4.9270 ug/L	96
7) Chloroethane	5.05	64	40633	4.2364 ug/L	94
8) Trichlorofluoromethane	5.52	101	99736	4.6099 ug/L	98
9) Diethyl ether	6.04	59	407273	41.3739 ug/L	94
10) Isoprene	6.08	67	79665	4.1331 ug/L	87
11) Acrolein	6.28	56	26242	15.7872 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	61508	4.8021 ug/L	98
13) Acetone	6.39	43	11027	3.7045 ug/L	94
14) 1,1-Dichloroethene	6.60	61	91307	4.1819 ug/L	88
15) Tert-Butyl Alcohol	6.70	59	55118	74.5905 ug/L	87
16) Dimethyl Sulfide	6.86	62	58350	3.9195 ug/L	96
17) Iodomethane	7.10	142	33601	3.5172 ug/L	98
18) Methyl acetate	7.10	43	33092	3.9596 ug/L	98
19) Methylene Chloride	7.35	84	65645	4.4621 ug/L	77
20) Carbon Disulfide	7.40	76	184460	6.4578 ug/L	99
21) Acrylonitrile	7.53	53	65820	18.3769 ug/L	99
22) Methyl Tert Butyl Ether	7.56	73	136095	4.8830 ug/L	96
23) trans-1,2-Dichloroethene	7.80	96	63748	4.5634 ug/L	81
24) n-Hexane	7.86	57	76744	6.6512 ug/L	93
25) Diisopropyl ether	8.18	45	1825962	40.9782 ug/L	97
26) Vinyl Acetate	8.35	43	43129	3.5443 ug/L	96
27) 1,1-Dichloroethane	8.39	63	108400	4.2116 ug/L	99
28) Ethyl-Tert-Butyl ether	8.73	59	1687079	43.5211 ug/L	96
29) 2-Butanone	8.91	43	15952	3.8823 ug/L	99
30) Propionitrile	9.02	54	47562	37.1311 ug/L	96
31) 2,2-Dichloropropane	9.12	77	95603	4.7695 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	70273	4.5912 ug/L	84
33) Chloroform	9.39	83	111903	4.3597 ug/L	98
34) 1-Bromopropane	9.51	122	12637	5.1184 ug/L	98
35) Bromochloromethane	9.62	130	42544	4.6005 ug/L	83
36) Tetrahydrofuran	9.64	42	94318	35.4787 ug/L	90
38) 1,1,1-Trichloroethane	9.89	97	99544	4.6011 ug/L	96
39) Cyclohexane	9.93	56	94419	3.8436 ug/L	85
40) 1,1-Dichloropropene	10.08	75	84166	5.1972 ug/L	96
41) Carbon Tetrachloride	10.22	117	91016	4.7495 ug/L	98
42) Tert-Amyl-Methyl ether	10.16	73	1459096	48.1068 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M02154.D 8260WTR.M Mon Jun 30 10:27:56 2014 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02154.D Vial: 7
Acq On : 27 Jun 2014 17:38 Operator: FJB
Sample : WG482009-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:19 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.38	62	76437	4.4478 ug/L		98
45)	Benzene	10.42	78	248027	5.1498 ug/L		99
46)	Trichloroethene	11.13	130	71565	4.5756 ug/L		95
47)	Methylcyclohexane	11.21	83	96500	5.4384 ug/L		91
48)	1,2-Dichloropropane	11.33	63	57182	4.1661 ug/L		95
49)	1,4-Dioxane	11.60	88	7147	67.2808 ug/L		84
50)	Bromodichloromethane	11.61	83	81213	4.5432 ug/L		99
51)	Dibromomethane	11.69	93	33069	4.7372 ug/L		94
52)	2-Chloroethyl Vinyl Ether	11.88	63	25321	4.7425 ug/L		96
53)	4-Methyl-2-Pentanone	11.91	58	12338	4.2456 ug/L		99
54)	cis-1,3-Dichloropropene	12.20	75	90782	5.1469 ug/L		99
55)	Dimethyl Disulfide	12.46	79	39032	3.7044 ug/L		92
58)	Toluene	12.60	91	265449	5.3379 ug/L		98
59)	Ethyl Methacrylate	12.68	69	46776	4.7840 ug/L		91
60)	trans-1,3-Dichloropropene	12.76	75	79164	5.1499 ug/L		98
61)	1,1,2-Trichloroethane	12.97	97	46139	5.0361 ug/L		98
62)	2-Hexanone	12.90	43	19211	3.8648 ug/L		99
63)	1,3-Dichloropropane	13.26	76	81973	4.9564 ug/L		90
64)	Tetrachloroethene	13.37	164	55897	5.2056 ug/L		95
65)	Dibromochloromethane	13.62	129	57082	5.4567 ug/L		99
66)	1,2-Dibromoethane	13.87	107	44600	4.8825 ug/L		96
67)	1-Chlorohexane	13.93	91	78712	5.2200 ug/L		89
68)	Chlorobenzene	14.33	112	183573	6.8782 ug/L		99
69)	1,1,1,2-Tetrachloroethane	14.35	131	62475	4.5030 ug/L		96
70)	Ethylbenzene	14.35	106	95207	6.5891 ug/L		98
71)	m-,p-Xylene	14.42	106	236076	14.0272 ug/L		98
72)	o-Xylene	14.96	106	112115	4.6657 ug/L		98
73)	Styrene	14.99	104	170325	5.4041 ug/L		97
74)	Bromoform	15.47	173	31136	4.9264 ug/L		97
75)	Isopropylbenzene	15.34	105	284195	6.9462 ug/L		98
77)	1,1,2,2-Tetrachloroethane	15.55	83	50867	5.2792 ug/L		99
79)	1,2,3-Trichloropropane	15.74	110	15820	5.2441 ug/L		81
80)	trans-1,4-Dichloro-2-Buten	15.77	53	9737	4.0076 ug/L	#	26
81)	n-Propylbenzene	15.82	91	328868	7.5711 ug/L		99
82)	Bromobenzene	15.95	156	71454	5.0876 ug/L		92
83)	1,3,5-Trimethylbenzene	16.00	105	233086	5.8337 ug/L		98
84)	2-Chlorotoluene	16.08	91	197706	6.9634 ug/L		82
85)	4-Chlorotoluene	16.12	91	205308m	8.5090 ug/L		
86)	a-Methylstyrene	16.37	118	106257	5.8024 ug/L		97
87)	tert-Butylbenzene	16.43	134	48972	4.5075 ug/L		92
88)	1,2,4-Trimethylbenzene	16.48	105	232243	5.7995 ug/L		96
89)	sec-Butylbenzene	16.68	105	291225	7.6824 ug/L		99
90)	p-Isopropyltoluene	16.82	119	240543	7.6907 ug/L		99
91)	1,3-Dichlorobenzene	17.02	146	137458	6.8596 ug/L		94
92)	1,4-Dichlorobenzene	17.13	146	130925	5.8960 ug/L		97
93)	n-Butylbenzene	17.31	91	193140	7.3310 ug/L		98
94)	1,2-Dichlorobenzene	17.60	146	126483	5.0098 ug/L		97
95)	1,2-Dibromo-3-Chloropropan	18.53	75	6253	4.2183 ug/L		80
96)	1,2,4-Trichlorobenzene	19.58	180	68037	6.2471 ug/L		93
97)	Hexachlorobutadiene	19.72	225	33645	5.7485 ug/L		97
98)	Naphthalene	19.93	128	95547	4.2618 ug/L		100
99)	1,2,3-Trichlorobenzene	20.23	180	60592	4.5332 ug/L		94

(#) = qualifier out of range (m) = manual integration
11M02154.D 8260WTR.M Mon Jun 30 10:27:57 2014 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02154.D Vial: 7
Acq On : 27 Jun 2014 17:38 Operator: FJB
Sample : WG482009-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:02 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:26:20 2014
Response via : Initial Calibration

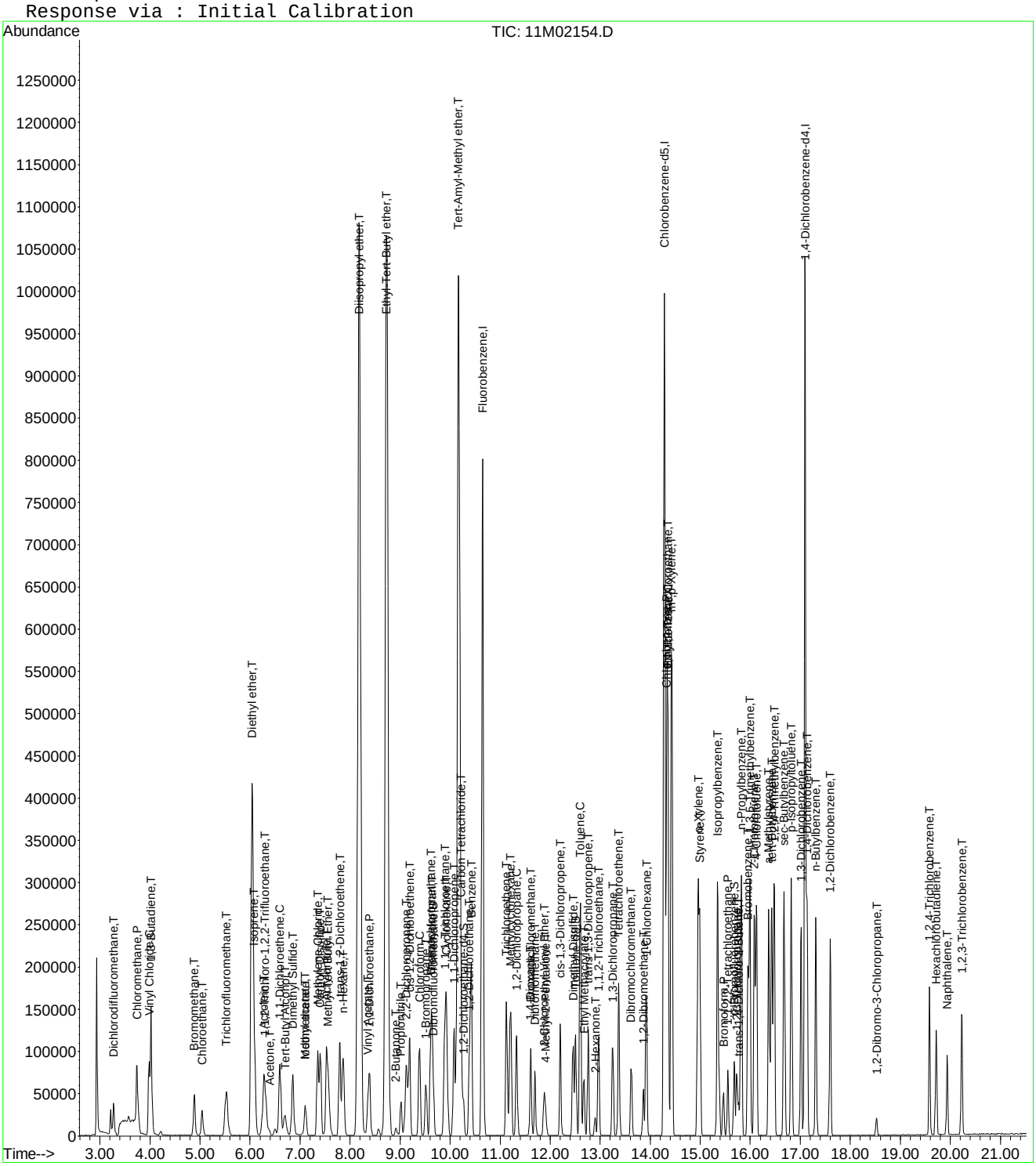

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02154.D Vial: 7
Acq On : 27 Jun 2014 17:38 Operator: FJB
Sample : WG482009-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:55 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Multiple Level Calibration

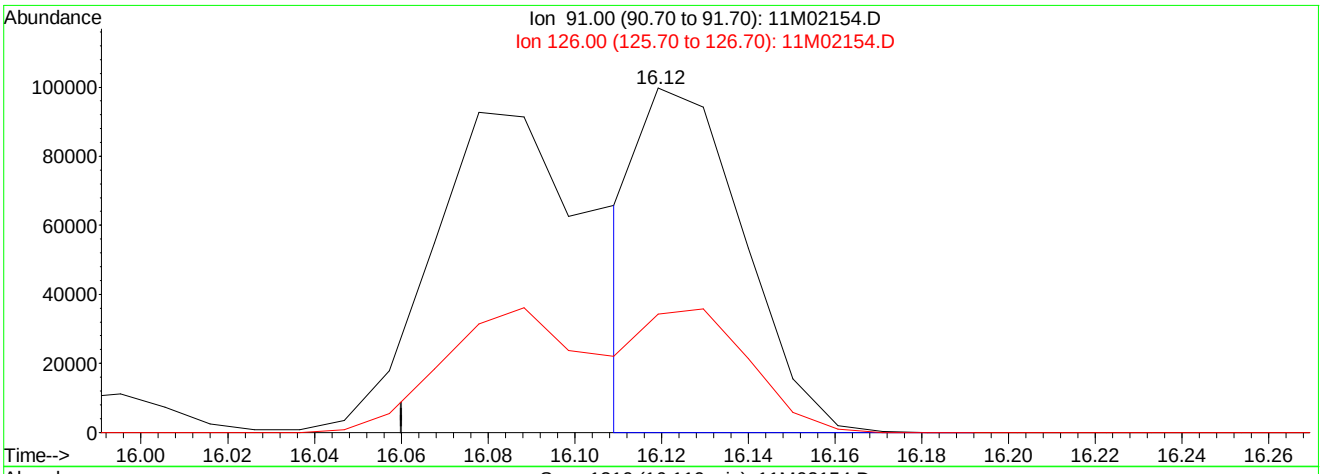

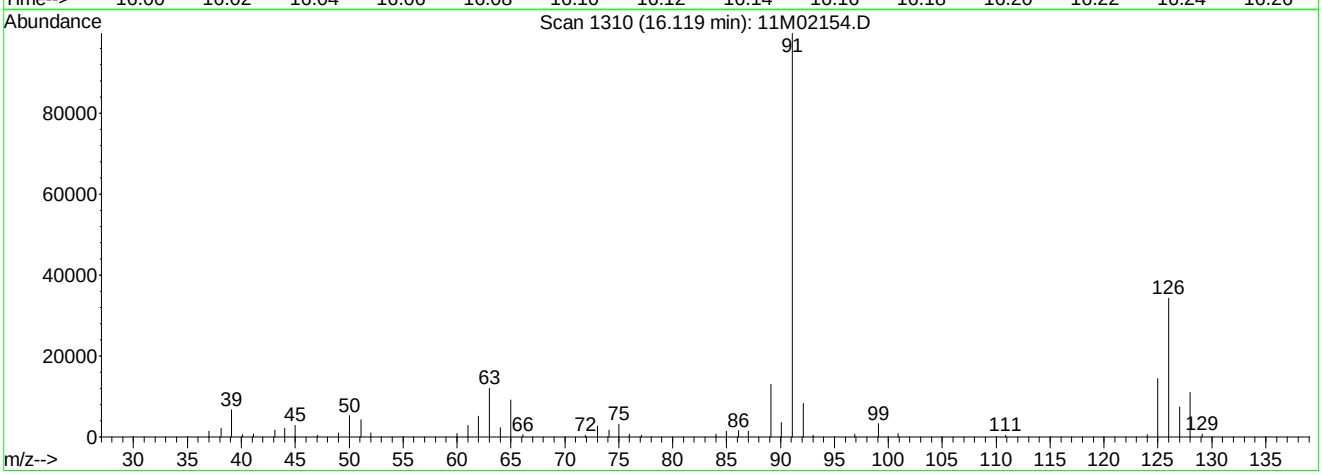

TIC: 11M02154.D

(85) 4-Chlorotoluene (T)

16.12min 6.82ug/L

response 164512

Ion	Exp%	Act%
91.00	100	100
126.00	34.70	37.09
0.00	0.00	0.00
0.00	0.00	0.00

11M02154.D 8260WTR.M Mon Jun 30 10:02:45 2014

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02154.D Vial: 7
Acq On : 27 Jun 2014 17:38 Operator: FJB
Sample : WG482009-06 5ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:02 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Multiple Level Calibration

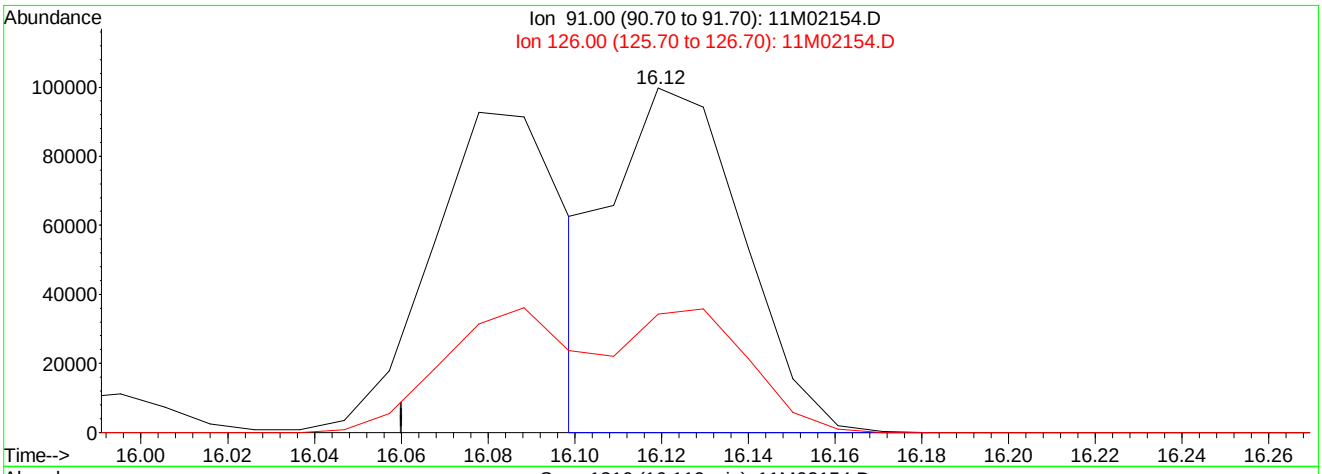

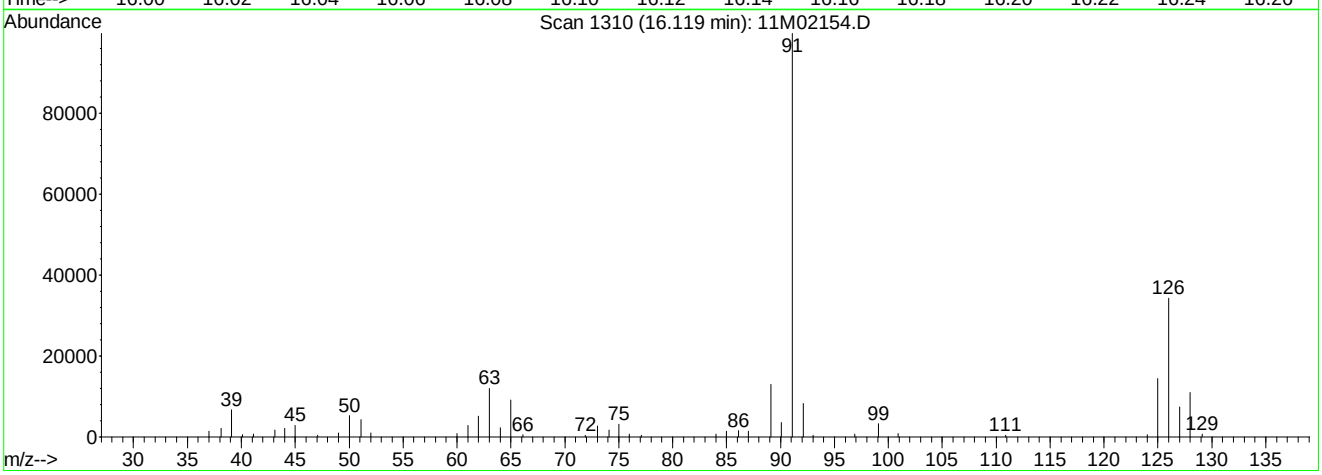

TIC: 11M02154.D

(85) 4-Chlorotoluene (T)

16.12min 8.51ug/L mint

response 205308

Ion	Exp%	Act%
91.00	100	100
126.00	34.70	29.72
0.00	0.00	0.00
0.00	0.00	0.00

11M02154.D 8260WTR.M Mon Jun 30 .4

Analyst: 06/30/2014 14:36 Supervisor: 06/30/2014 15:39

#2 - Data system splits the peak incorrectly or integrates a false peak as a rider peak

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02155.D Vial: 8
Acq On : 27 Jun 2014 18:08 Operator: FJB
Sample : WG482009-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:21 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	974985	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	733438	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	383442	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	128732	9.6173 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 38.48%#		
43) 1,2-Dichloroethane-d4	10.27	65	127119	8.1006 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 32.40%#		
57) Toluene-d8	12.51	98	454218	11.1206 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 44.48%#		
78) p-Bromofluorobenzene	15.67	95	169494	9.6259 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 38.52%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	234019	20.1190 ug/L	99
3) Chloromethane	3.74	50	377778	23.1640 ug/L	98
4) Vinyl Chloride	3.98	62	371364	19.7882 ug/L	99
5) 1,3-Butadiene	4.02	54	342837	21.4069 ug/L	95
6) Bromomethane	4.88	94	163158	17.2213 ug/L	100
7) Chloroethane	5.04	64	176823	18.4020 ug/L	94
8) Trichlorofluoromethane	5.53	101	408537	18.8482 ug/L	100
9) Diethyl ether	6.04	59	639056	64.8012 ug/L	94
10) Isoprene	6.08	67	345555	17.8949 ug/L	88
11) Acrolein	6.28	56	41818	25.1117 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	254413	19.8262 ug/L	100
13) Acetone	6.38	43	36282	12.1665 ug/L	91
14) 1,1-Dichloroethene	6.60	61	372084	17.0103 ug/L	88
15) Tert-Butyl Alcohol	6.70	59	85391	115.3468 ug/L	91
16) Dimethyl Sulfide	6.86	62	259122	17.3739 ug/L	90
17) Iodomethane	7.10	142	281036	29.3634 ug/L	98
18) Methyl acetate	7.10	43	125584	14.9992 ug/L	95
19) Methylene Chloride	7.35	84	261595	17.7488 ug/L	80
20) Carbon Disulfide	7.40	76	815875	28.5107 ug/L	100
21) Acrylonitrile	7.53	53	107996	30.0971 ug/L	100
22) Methyl Tert Butyl Ether	7.56	73	560719	20.0815 ug/L	95
23) trans-1,2-Dichloroethene	7.80	96	266954	19.0750 ug/L	83
24) n-Hexane	7.86	57	319195	27.6130 ug/L	93
25) Diisopropyl ether	8.18	45	2877669	64.4622 ug/L	96
26) Vinyl Acetate	8.34	43	210400	17.2589 ug/L	96
27) 1,1-Dichloroethane	8.39	63	447137	17.3406 ug/L	99
28) Ethyl-Tert-Butyl ether	8.73	59	2664256	68.6031 ug/L	96
29) 2-Butanone	8.91	43	57692	14.0151 ug/L	89
30) Propionitrile	9.02	54	75427	58.7771 ug/L	96
31) 2,2-Dichloropropane	9.13	77	397086	19.7738 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	294453	19.2025 ug/L	82
33) Chloroform	9.39	83	457225	17.7807 ug/L	99
34) 1-Bromopropane	9.51	122	49053	19.8317 ug/L	94
35) Bromochloromethane	9.62	130	174174	18.7999 ug/L	83
36) Tetrahydrofuran	9.64	42	153686	57.7047 ug/L	90
38) 1,1,1-Trichloroethane	9.89	97	419434	19.3517 ug/L	96
39) Cyclohexane	9.93	56	401475	16.3131 ug/L	87
40) 1,1-Dichloropropene	10.08	75	355609	21.9182 ug/L	98
41) Carbon Tetrachloride	10.22	117	385880	20.0997 ug/L	99
42) Tert-Amyl-Methyl ether	10.16	73	2338713	76.9666 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M02155.D 8260WTR.M Mon Jun 30 09:55:22 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02155.D Vial: 8
Acq On : 27 Jun 2014 18:08 Operator: FJB
Sample : WG482009-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:21 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.38	62	315822	18.3438 ug/L	98
45) Benzene	10.42	78	1007955	20.8900 ug/L	100
46) Trichloroethene	11.13	130	293314	18.7189 ug/L	96
47) Methylcyclohexane	11.21	83	409973	23.0624 ug/L	91
48) 1,2-Dichloropropane	11.33	63	247924	18.0300 ug/L	98
49) 1,4-Dioxane	11.59	88	11148	104.7533 ug/L	94
50) Bromodichloromethane	11.61	83	337165	18.8271 ug/L	100
51) Dibromomethane	11.69	93	139242	19.9099 ug/L	94
52) 2-Chloroethyl Vinyl Ether	11.88	63	110288	20.6186 ug/L	96
53) 4-Methyl-2-Pentanone	11.91	58	50803	17.4498 ug/L	95
54) cis-1,3-Dichloropropene	12.20	75	396630	22.4457 ug/L	99
55) Dimethyl Disulfide	12.46	79	197859	18.7438 ug/L	100
58) Toluene	12.60	91	1097687	21.5580 ug/L	99
59) Ethyl Methacrylate	12.68	69	215144	21.4904 ug/L	91
60) trans-1,3-Dichloropropene	12.76	75	344904	21.9134 ug/L	96
61) 1,1,2-Trichloroethane	12.97	97	191691	20.4348 ug/L	99
62) 2-Hexanone	12.89	43	81155	15.9452 ug/L	99
63) 1,3-Dichloropropane	13.26	76	332404	19.6293 ug/L	91
64) Tetrachloroethene	13.37	164	228957	20.8249 ug/L	95
65) Dibromochloromethane	13.62	129	241724	22.5680 ug/L	97
66) 1,2-Dibromoethane	13.87	107	193951	20.7369 ug/L	100
67) 1-Chlorohexane	13.92	91	346444	22.4392 ug/L	87
68) Chlorobenzene	14.33	112	739694	27.0682 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.35	131	265726	18.7056 ug/L	98
70) Ethylbenzene	14.34	106	408724	27.6267 ug/L	99
71) m-,p-Xylene	14.42	106	991025	57.5104 ug/L	98
72) o-Xylene	14.96	106	477547	19.4096 ug/L	98
73) Styrene	14.99	104	777262	24.0855 ug/L	97
74) Bromoform	15.47	173	143832	22.2262 ug/L	99
75) Isopropylbenzene	15.34	105	1204488	28.7524 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.55	83	210186	20.5093 ug/L	98
79) 1,2,3-Trichloropropane	15.74	110	64969	20.2482 ug/L	88
80) trans-1,4-Dichloro-2-Buten	15.77	53	52676	20.3838 ug/L	69
81) n-Propylbenzene	15.82	91	1400204	30.3070 ug/L	99
82) Bromobenzene	15.95	156	306976	20.5498 ug/L	92
83) 1,3,5-Trimethylbenzene	16.00	105	1005879	23.6693 ug/L	98
84) 2-Chlorotoluene	16.08	91	833451	27.5990 ug/L	82
85) 4-Chlorotoluene	16.12	91	875251	34.1049 ug/L	91
86) a-Methylstyrene	16.37	118	535480	27.4920 ug/L	99
87) tert-Butylbenzene	16.43	134	208323	18.0276 ug/L	84
88) 1,2,4-Trimethylbenzene	16.47	105	1033135	24.2559 ug/L	98
89) sec-Butylbenzene	16.68	105	1237239	30.6857 ug/L	99
90) p-Isopropyltoluene	16.82	119	1058828	31.8283 ug/L	98
91) 1,3-Dichlorobenzene	17.02	146	577486	27.0947 ug/L	97
92) 1,4-Dichlorobenzene	17.13	146	578134	24.4781 ug/L	97
93) n-Butylbenzene	17.31	91	891751	31.8233 ug/L	99
94) 1,2-Dichlorobenzene	17.60	146	537958	20.0331 ug/L	96
95) 1,2-Dibromo-3-Chloropropan	18.53	75	30192	19.1493 ug/L	89
96) 1,2,4-Trichlorobenzene	19.58	180	328409	28.3506 ug/L	95
97) Hexachlorobutadiene	19.72	225	139992	22.4878 ug/L	98
98) Naphthalene	19.93	128	568824	23.8543 ug/L	100
99) 1,2,3-Trichlorobenzene	20.23	180	300893	21.1649 ug/L	96

(#) = qualifier out of range (m) = manual integration
11M02155.D 8260WTR.M Mon Jun 30 09:55:22 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02155.D Vial: 8
Acq On : 27 Jun 2014 18:08 Operator: FJB
Sample : WG482009-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:55 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration

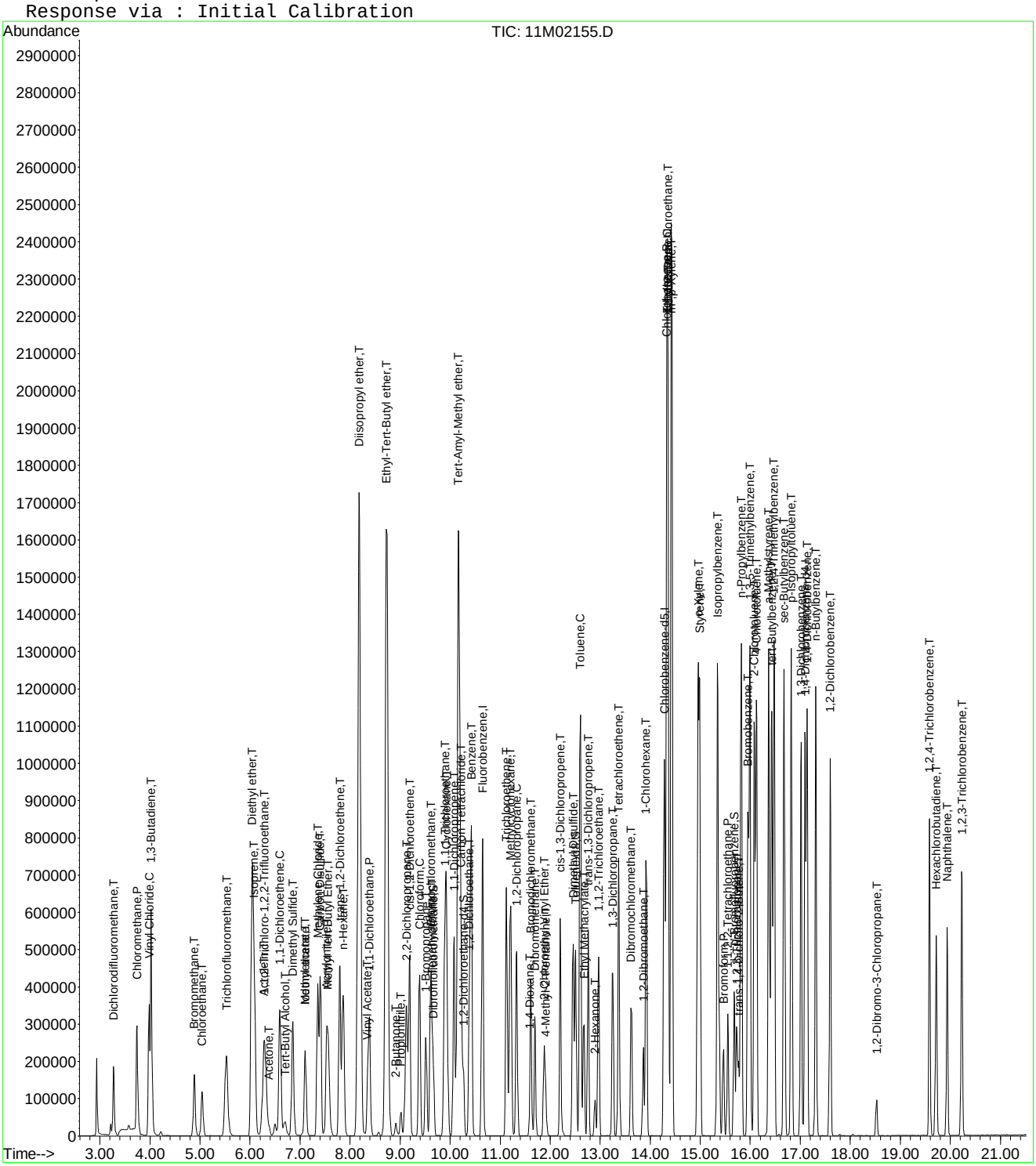

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02156.D Vial: 9
Acq On : 27 Jun 2014 18:38 Operator: FJB
Sample : WG482009-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:23 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	1022945	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	765291	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	396828	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	333188	23.7247 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.88%		
43) 1,2-Dichloroethane-d4	10.27	65	318247	19.3294 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 77.32%#		
57) Toluene-d8	12.51	98	1167170	27.3864 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 109.56%		
78) p-Bromofluorobenzene	15.67	95	436664	23.9624 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.84%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	583562	47.8176 ug/L	100
3) Chloromethane	3.74	50	917650	53.6290 ug/L	98
4) Vinyl Chloride	3.98	62	919547	46.7011 ug/L	99
5) 1,3-Butadiene	4.03	54	700979	41.7174 ug/L	92
6) Bromomethane	4.89	94	409424	41.1886 ug/L	99
7) Chloroethane	5.05	64	442462	43.8882 ug/L	95
8) Trichlorofluoromethane	5.52	101	1040167	45.7391 ug/L	99
9) Diethyl ether	6.04	59	824967	79.7308 ug/L	93
10) Isoprene	6.08	67	914518	45.1389 ug/L	86
11) Acrolein	6.28	56	53465	30.6005 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	635935	47.2345 ug/L	99
13) Acetone	6.38	43	91313	29.1845 ug/L	93
14) 1,1-Dichloroethene	6.60	61	957092	41.7032 ug/L	89
15) Tert-Butyl Alcohol	6.70	59	103610	133.3954 ug/L	92
16) Dimethyl Sulfide	6.86	62	655852	41.9125 ug/L	90
17) Iodomethane	7.10	142	806457	80.3103 ug/L	98
18) Methyl acetate	7.10	43	315831	35.9528 ug/L	95
19) Methylene Chloride	7.35	84	658130	42.5596 ug/L	79
20) Carbon Disulfide	7.40	76	2070313	68.9550 ug/L	100
21) Acrylonitrile	7.53	53	143291	38.0611 ug/L	100
22) Methyl Tert Butyl Ether	7.56	73	1403671	47.9140 ug/L	94
23) trans-1,2-Dichloroethene	7.80	96	677334	46.1292 ug/L	83
24) n-Hexane	7.86	57	817357	67.3929 ug/L	94
25) Diisopropyl ether	8.18	45	3720474	79.4343 ug/L	96
26) Vinyl Acetate	8.35	43	512323	40.0551 ug/L	95
27) 1,1-Dichloroethane	8.39	63	1140573	42.1592 ug/L	99
28) Ethyl-Tert-Butyl ether	8.73	59	3414136	83.7904 ug/L	96
29) 2-Butanone	8.91	43	143413	33.2059 ug/L	91
30) Propionitrile	9.02	54	97206	72.1972 ug/L	100
31) 2,2-Dichloropropane	9.13	77	1009967	47.9356 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	740663	46.0372 ug/L	83
33) Chloroform	9.39	83	1154634	42.7966 ug/L	100
34) 1-Bromopropane	9.52	122	133085	51.2825 ug/L	99
35) Bromochloromethane	9.62	130	436949	44.9520 ug/L	83
36) Tetrahydrofuran	9.64	42	189559	67.8370 ug/L	87
38) 1,1,1-Trichloroethane	9.89	97	1071776	47.1307 ug/L	96
39) Cyclohexane	9.93	56	1042564	40.3764 ug/L	87
40) 1,1-Dichloropropene	10.08	75	910700	53.4999 ug/L	98
41) Carbon Tetrachloride	10.22	117	992372	49.2672 ug/L	99
42) Tert-Amyl-Methyl ether	10.16	73	2944520	92.3604 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M02156.D 8260WTR.M Mon Jun 30 09:55:24 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02156.D Vial: 9
Acq On : 27 Jun 2014 18:38 Operator: FJB
Sample : WG482009-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:23 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.38	62	789473	43.7049 ug/L	98
45) Benzene	10.42	78	2533312	50.0416 ug/L	99
46) Trichloroethene	11.13	130	751284	45.6979 ug/L	96
47) Methylcyclohexane	11.21	83	1061534	56.9154 ug/L	90
48) 1,2-Dichloropropane	11.33	63	628104	43.5366 ug/L	98
49) 1,4-Dioxane	11.60	88	14950	133.8930 ug/L	85
50) Bromodichloromethane	11.61	83	870048	46.3053 ug/L	100
51) Dibromomethane	11.69	93	352533	48.0446 ug/L	97
52) 2-Chloroethyl Vinyl Ether	11.88	63	290528	51.7684 ug/L	95
53) 4-Methyl-2-Pentanone	11.91	58	132982	43.5351 ug/L	97
54) cis-1,3-Dichloropropene	12.20	75	1019389	54.9836 ug/L	100
55) Dimethyl Disulfide	12.46	79	542530	48.9858 ug/L	99
58) Toluene	12.60	91	2740293	51.5780 ug/L	100
59) Ethyl Methacrylate	12.68	69	572456	54.8017 ug/L	89
60) trans-1,3-Dichloropropene	12.76	75	890873	54.2456 ug/L	96
61) 1,1,2-Trichloroethane	12.97	97	484469	49.4962 ug/L	100
62) 2-Hexanone	12.89	43	209380	39.4265 ug/L	98
63) 1,3-Dichloropropane	13.26	76	821060	46.4675 ug/L	91
64) Tetrachloroethene	13.37	164	578857	50.4589 ug/L	97
65) Dibromochloromethane	13.62	129	634847	56.8041 ug/L	99
66) 1,2-Dibromoethane	13.87	107	485361	49.7339 ug/L	99
67) 1-Chlorohexane	13.93	91	905497	56.2080 ug/L	87
68) Chlorobenzene	14.33	112	1914887	67.1563 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.35	131	703902	47.4883 ug/L	98
70) Ethylbenzene	14.34	106	1072100	69.4497 ug/L	94
71) m-,p-Xylene	14.43	106	2534421	140.9540 ug/L	93
72) o-Xylene	14.96	106	1247702	48.6013 ug/L	95
73) Styrene	14.99	104	2054402	61.0114 ug/L	97
74) Bromoform	15.47	173	377841	55.9573 ug/L	100
75) Isopropylbenzene	15.34	105	3033206	69.3922 ug/L	97
77) 1,1,2,2-Tetrachloroethane	15.55	83	524295	49.4334 ug/L	100
79) 1,2,3-Trichloropropane	15.73	110	161861	48.7438 ug/L	91
80) trans-1,4-Dichloro-2-Buten	15.77	53	143808	53.7716 ug/L	78
81) n-Propylbenzene	15.82	91	3523603	73.6947 ug/L	98
82) Bromobenzene	15.95	156	789220	51.0502 ug/L	92
83) 1,3,5-Trimethylbenzene	16.00	105	2573512	58.5144 ug/L	97
84) 2-Chlorotoluene	16.08	91	2108543	67.4673 ug/L	82
85) 4-Chlorotoluene	16.12	91	2242319	84.4265 ug/L	92
86) a-Methylstyrene	16.37	118	1439285	71.4015 ug/L	98
87) tert-Butylbenzene	16.43	134	541123	45.2475 ug/L	82
88) 1,2,4-Trimethylbenzene	16.48	105	2641906	59.9342 ug/L	97
89) sec-Butylbenzene	16.68	105	3119465	74.7583 ug/L	99
90) p-Isopropyltoluene	16.82	119	2683073	77.9324 ug/L	100
91) 1,3-Dichlorobenzene	17.02	146	1473284	66.7923 ug/L	99
92) 1,4-Dichlorobenzene	17.13	146	1474789	60.3359 ug/L	97
93) n-Butylbenzene	17.31	91	2289580	78.9504 ug/L	100
94) 1,2-Dichlorobenzene	17.60	146	1359172	48.9071 ug/L	97
95) 1,2-Dibromo-3-Chloropropan	18.53	75	77910	47.7475 ug/L	88
96) 1,2,4-Trichlorobenzene	19.58	180	866126	72.2480 ug/L	96
97) Hexachlorobutadiene	19.72	225	341410	52.9929 ug/L	97
98) Naphthalene	19.93	128	1554282	62.9820 ug/L	100
99) 1,2,3-Trichlorobenzene	20.23	180	767794	52.1850 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M02156.D 8260WTR.M Mon Jun 30 09:55:24 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02156.D Vial: 9
Acq On : 27 Jun 2014 18:38 Operator: FJB
Sample : WG482009-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:55 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration

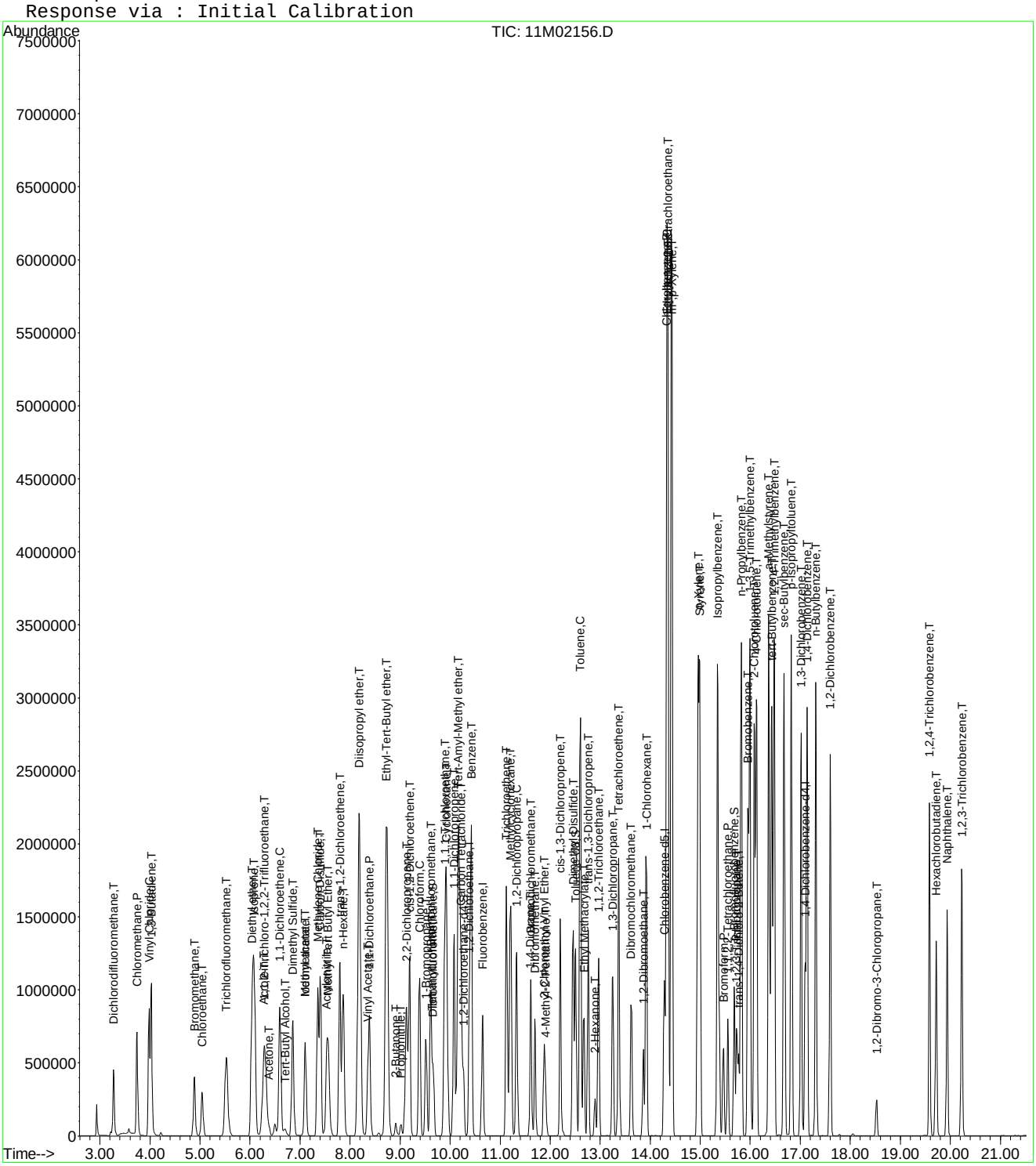

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02157.D Vial: 10
Acq On : 27 Jun 2014 19:08 Operator: FJB
Sample : WG482009-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:25 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	1043781	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	821539	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	412390	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	689753	48.1335 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 192.52%#		
43) 1,2-Dichloroethane-d4	10.27	65	657868	39.1593 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 156.64%#		
57) Toluene-d8	12.51	98	2396363	52.3783 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 209.52%#		
78) p-Bromofluorobenzene	15.67	95	916809	48.4123 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 193.64%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	1228736	98.6739 ug/L	100
3) Chloromethane	3.74	50	1874435	107.3585 ug/L	98
4) Vinyl Chloride	3.98	62	1876504	93.3997 ug/L	98
5) 1,3-Butadiene	4.01	54	967510	56.4300 ug/L	90
6) Bromomethane	4.89	94	892682	88.0123 ug/L	99
7) Chloroethane	5.05	64	941601	91.5339 ug/L	94
8) Trichlorofluoromethane	5.52	101	2188492	94.3132 ug/L	100
9) Diethyl ether	6.04	59	1750721	165.8248 ug/L	93
10) Isoprene	6.08	67	1918248	92.7911 ug/L	87
11) Acrolein	6.28	56	116553	65.3770 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	1357031	98.7823 ug/L	99
13) Acetone	6.38	43	190867	59.7852 ug/L	96
14) 1,1-Dichloroethene	6.60	61	2008957	85.7886 ug/L	87
15) Tert-Butyl Alcohol	6.69	59	217070	273.8936 ug/L	93
16) Dimethyl Sulfide	6.86	62	1385840	86.7948 ug/L	89
17) Iodomethane	7.10	142	1649677	161.0023 ug/L	97
18) Methyl acetate	7.10	43	665052	74.1954 ug/L	94
19) Methylene Chloride	7.35	84	1404229	88.9952 ug/L	78
20) Carbon Disulfide	7.40	76	4193388	136.8792 ug/L	99
21) Acrylonitrile	7.53	53	300990	78.3533 ug/L	98
22) Methyl Tert Butyl Ether	7.55	73	2946704	98.5772 ug/L	95
23) trans-1,2-Dichloroethene	7.80	96	1444063	96.3833 ug/L	83
24) n-Hexane	7.86	57	1673911	135.2626 ug/L	94
25) Diisopropyl ether	8.18	45	7657389	160.2262 ug/L	95
26) Vinyl Acetate	8.34	43	1145050	87.7366 ug/L	96
27) 1,1-Dichloroethane	8.39	63	2412243	87.3842 ug/L	98
28) Ethyl-Tert-Butyl ether	8.73	59	7044233	169.4298 ug/L	95
29) 2-Butanone	8.91	43	300823	68.2623 ug/L	92
30) Propionitrile	9.02	54	198777	144.6892 ug/L	99
31) 2,2-Dichloropropane	9.12	77	2139098	99.5004 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	1575516	95.9741 ug/L	83
33) Chloroform	9.39	83	2453756	89.1332 ug/L	100
34) 1-Bromopropane	9.52	122	268306	101.3242 ug/L	97
35) Bromochloromethane	9.61	130	932491	94.0169 ug/L	83
36) Tetrahydrofuran	9.64	42	397548	139.4296 ug/L	88
38) 1,1,1-Trichloroethane	9.89	97	2300774	99.1555 ug/L	96
39) Cyclohexane	9.93	56	2153510	81.7362 ug/L	85
40) 1,1-Dichloropropene	10.08	75	1924945	110.8253 ug/L	97
41) Carbon Tetrachloride	10.22	117	2127541	103.5152 ug/L	99
42) Tert-Amyl-Methyl ether	10.16	73	6079957	186.9023 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M02157.D 8260WTR.M Mon Jun 30 10:05:05 2014 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02157.D Vial: 10
Acq On : 27 Jun 2014 19:08 Operator: FJB
Sample : WG482009-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:25 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.38	62	1653187	89.6929	ug/L	98
45)	Benzene	10.42	78	5187443	100.4244	ug/L	97
46)	Trichloroethene	11.13	130	1586733	94.5887	ug/L	96
47)	Methylcyclohexane	11.21	83	2177021	114.3934	ug/L	90
48)	1,2-Dichloropropane	11.33	63	1330214	90.3622	ug/L	98
49)	1,4-Dioxane	11.60	88	32194	282.5754	ug/L	87
50)	Bromodichloromethane	11.61	83	1868509	97.4598	ug/L	100
51)	Dibromomethane	11.69	93	742871	99.2205	ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.88	63	601498	105.0398	ug/L	94
53)	4-Methyl-2-Pentanone	11.90	58	277677	89.0902	ug/L	95
54)	cis-1,3-Dichloropropene	12.20	75	2172179	114.8238	ug/L	99
55)	Dimethyl Disulfide	12.46	79	1189360	105.2453	ug/L	98
58)	Toluene	12.60	91	5538475	97.1082	ug/L	97
59)	Ethyl Methacrylate	12.68	69	1216464	108.4801	ug/L	90
60)	trans-1,3-Dichloropropene	12.76	75	1898922	107.7095	ug/L	95
61)	1,1,2-Trichloroethane	12.97	97	1016118	96.7049	ug/L	99
62)	2-Hexanone	12.89	43	442416	77.6036	ug/L	97
63)	1,3-Dichloropropane	13.26	76	1731421	91.2800	ug/L	91
64)	Tetrachloroethene	13.37	164	1239038	100.6120	ug/L	96
65)	Dibromochloromethane	13.62	129	1377652	114.8282	ug/L	99
66)	1,2-Dibromoethane	13.87	107	1026876	98.0177	ug/L	98
67)	1-Chlorohexane	13.92	91	1878030	108.5956	ug/L	87
68)	Chlorobenzene	14.33	112	4045349	132.1593	ug/L	96
69)	1,1,1,2-Tetrachloroethane	14.35	131	1554369	97.6848	ug/L	98
70)	Ethylbenzene	14.35	106	2389226	144.1752	ug/L	82
71)	m-,p-Xylene	14.43	106	5278826	273.4857	ug/L	80
72)	o-Xylene	14.96	106	2678040	97.1746	ug/L	91
73)	Styrene	14.99	104	4366818	120.8062	ug/L	100
74)	Bromoform	15.47	173	820882	113.2469	ug/L	99
75)	Isopropylbenzene	15.34	105	6129320	130.6229	ug/L	93
77)	1,1,2,2-Tetrachloroethane	15.55	83	1082463	98.2093	ug/L	98
79)	1,2,3-Trichloropropane	15.74	110	333888	96.7547	ug/L	94
80)	trans-1,4-Dichloro-2-Buten	15.77	53	309239	111.2649	ug/L	79
81)	n-Propylbenzene	15.82	91	6819114	137.2370	ug/L	93
82)	Bromobenzene	15.95	156	1678391	104.4689	ug/L	94
83)	1,3,5-Trimethylbenzene	16.00	105	5235410	114.5464	ug/L	93
84)	2-Chlorotoluene	16.08	91	4303371	132.4993	ug/L	79
85)	4-Chlorotoluene	16.12	91	4570204m	165.5813	ug/L	
86)	a-Methylstyrene	16.37	118	3051485	145.6687	ug/L	98
87)	tert-Butylbenzene	16.43	134	1158227	93.1937	ug/L	79
88)	1,2,4-Trimethylbenzene	16.48	105	5307981	115.8727	ug/L	93
89)	sec-Butylbenzene	16.68	105	6176630	142.4377	ug/L	96
90)	p-Isopropyltoluene	16.82	119	5357928	149.7533	ug/L	97
91)	1,3-Dichlorobenzene	17.02	146	3079384	134.3377	ug/L	100
92)	1,4-Dichlorobenzene	17.13	146	3046139	119.9195	ug/L	99
93)	n-Butylbenzene	17.31	91	4604198	152.7731	ug/L	97
94)	1,2-Dichlorobenzene	17.60	146	2812870	97.3960	ug/L	99
95)	1,2-Dibromo-3-Chloropropan	18.52	75	167146	98.5707	ug/L	89
96)	1,2,4-Trichlorobenzene	19.58	180	1832074	147.0558	ug/L	97
97)	Hexachlorobutadiene	19.72	225	721708	107.7947	ug/L	97
98)	Naphthalene	19.93	128	3316529	129.3196	ug/L	98
99)	1,2,3-Trichlorobenzene	20.23	180	1628970	106.5389	ug/L	96

(#) = qualifier out of range (m) = manual integration
11M02157.D 8260WTR.M Mon Jun 30 10:05:05 2014 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02157.D Vial: 10
Acq On : 27 Jun 2014 19:08 Operator: FJB
Sample : WG482009-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:04 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration

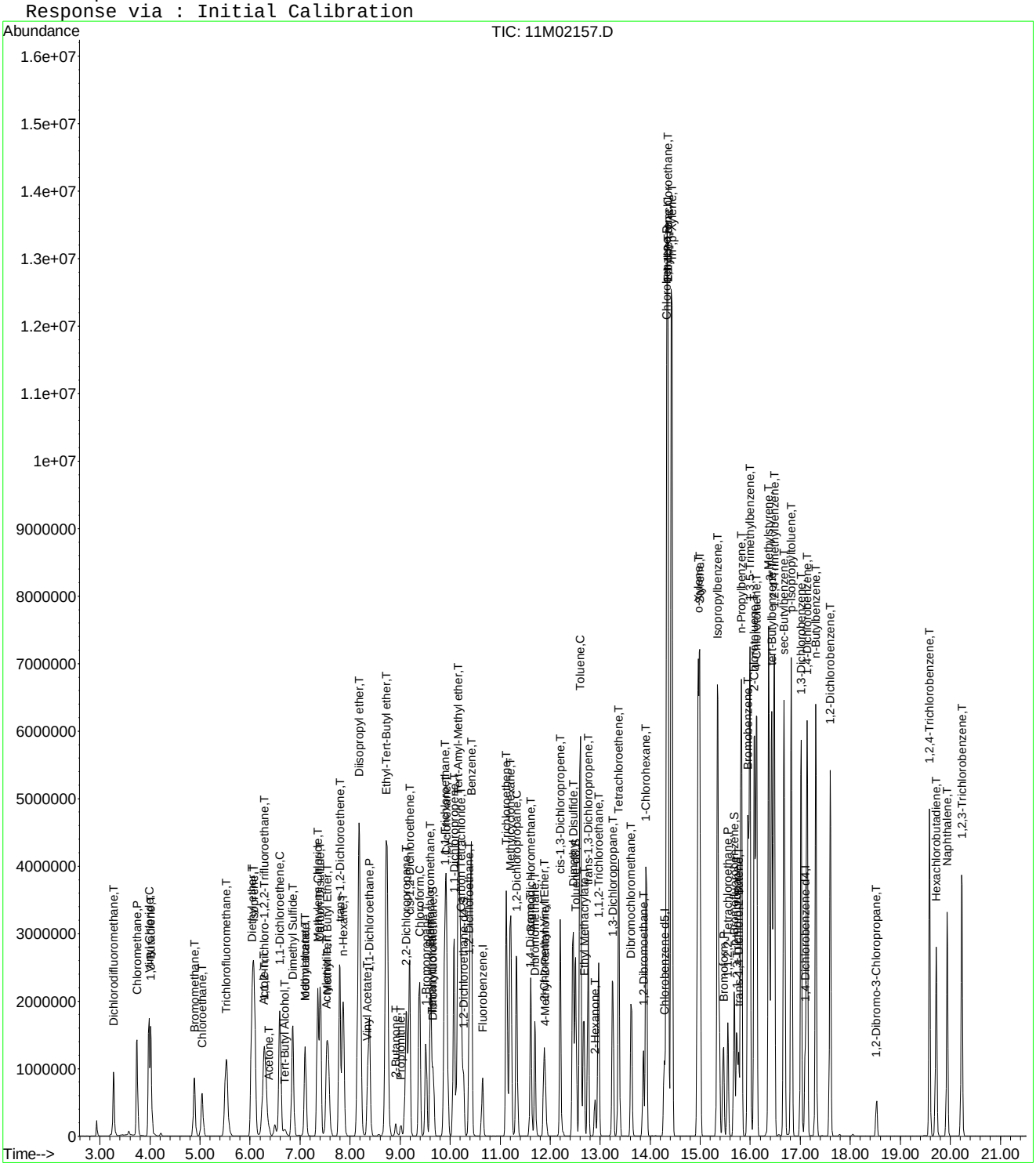

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02157.D Vial: 10
Acq On : 27 Jun 2014 19:08 Operator: FJB
Sample : WG482009-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:55 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Multiple Level Calibration

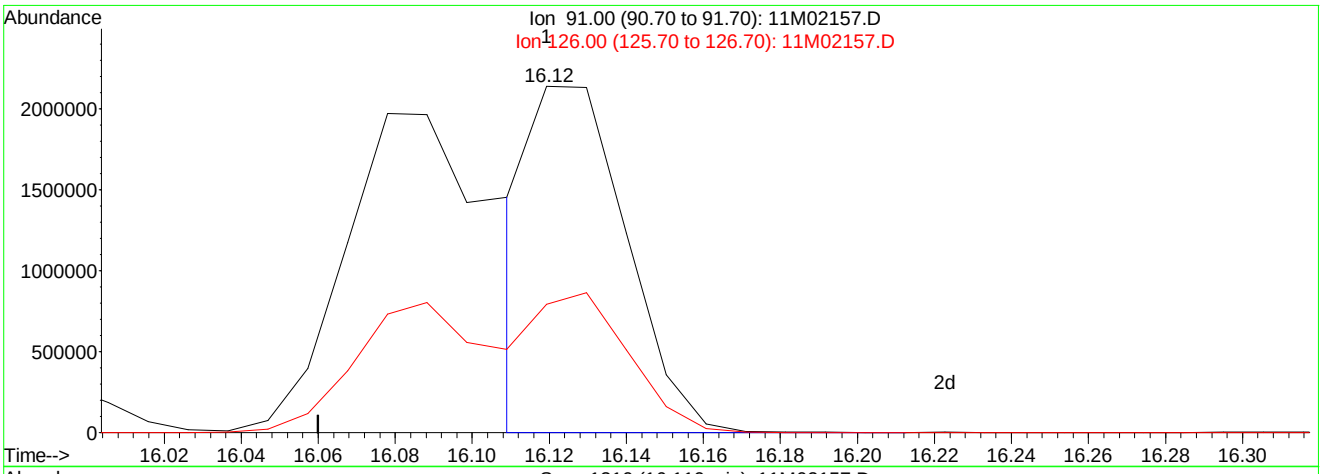

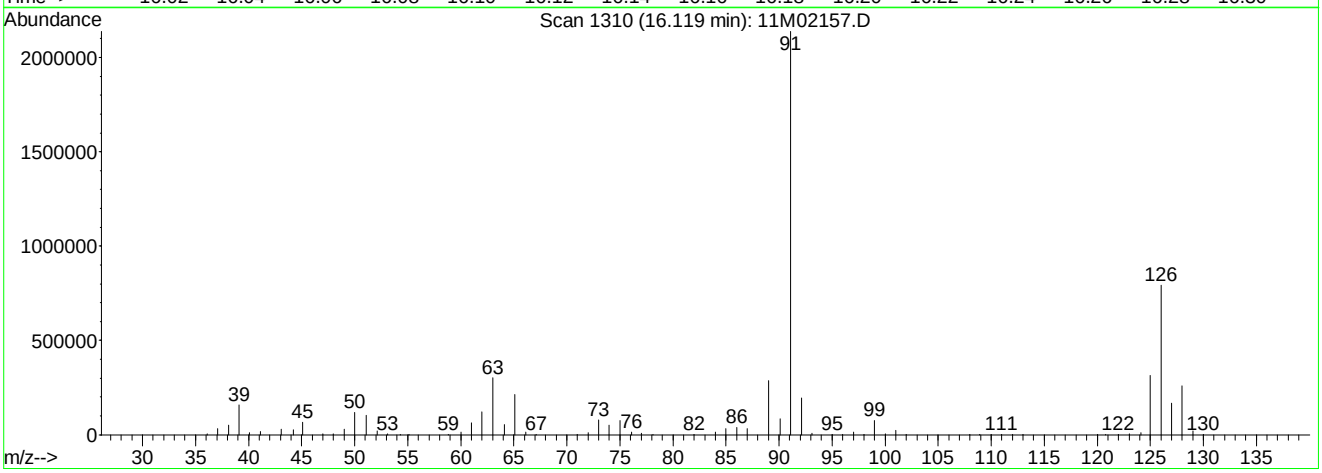

TIC: 11M02157.D

(85) 4-Chlorotoluene (T)

16.12min 132.99ug/L

response 3670717

Ion	Exp%	Act%
91.00	100	100
126.00	34.70	39.70
0.00	0.00	0.00
0.00	0.00	0.00

11M02157.D 8260WTR.M Mon Jun 30 10:04:50 2014

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02157.D Vial: 10
Acq On : 27 Jun 2014 19:08 Operator: FJB
Sample : WG482009-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:04 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Multiple Level Calibration

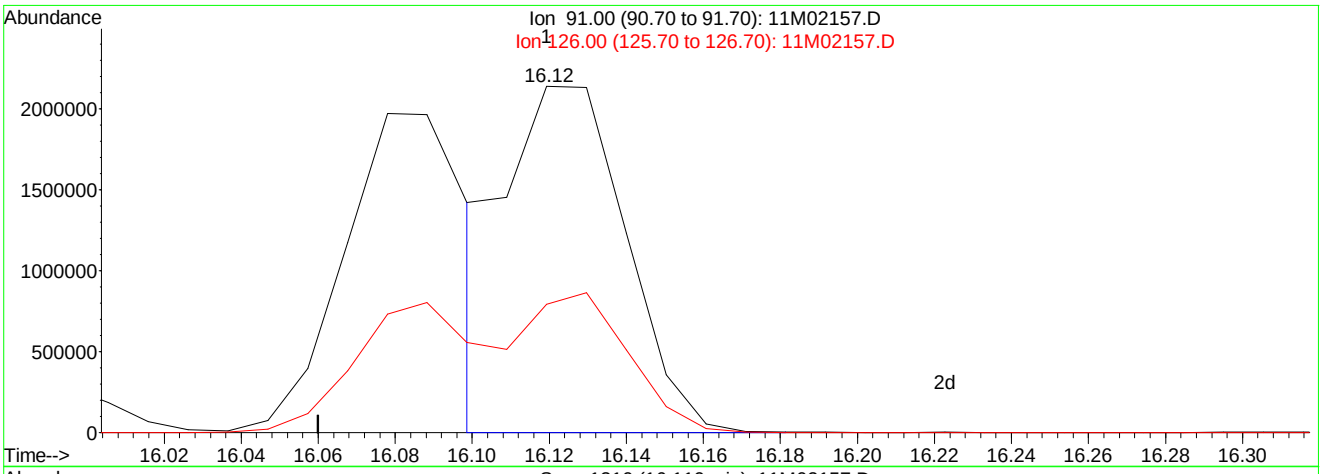

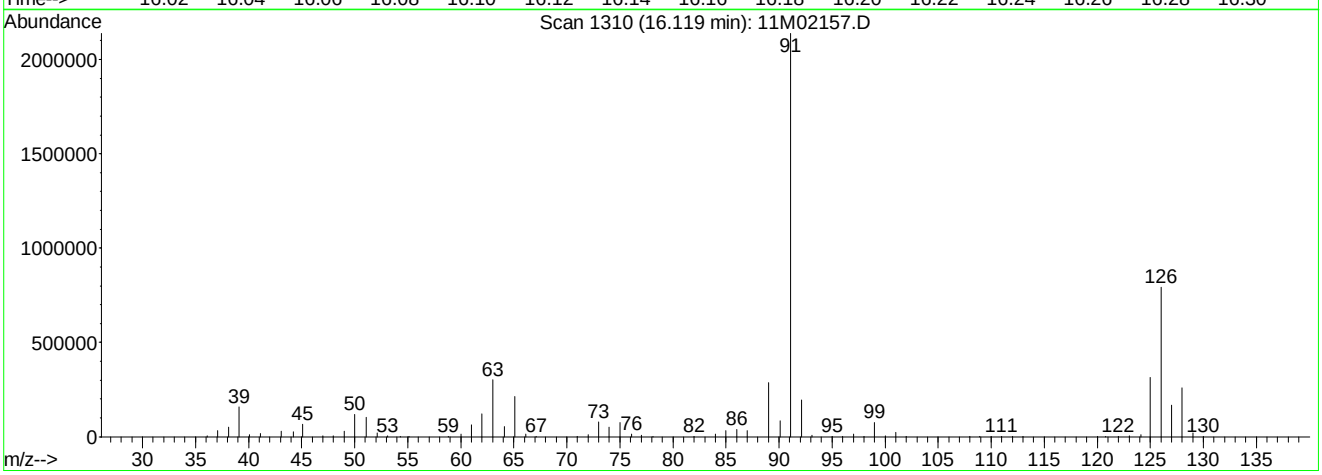

TIC: 11M02157.D

(85) 4-Chlorotoluene (T)

16.12min 165.58ug/L mint

response 4570204

Ion	Exp%	Act%
91.00	100	100
126.00	34.70	31.88
0.00	0.00	0.00
0.00	0.00	0.00

11M02157.D 8260WTR.M Mon Jun 30 .4

Analyst: 06/30/2014 14:36 Supervisor: 06/30/2014 15:39

#2 - Data system splits the peak incorrectly or integrates a false peak as a rider peak

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02158.D Vial: 11
Acq On : 27 Jun 2014 19:38 Operator: FJB
Sample : WG482009-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:28 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	1056118	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	808435	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	414345	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	1391536	95.9721 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 383.88%#		
43) 1,2-Dichloroethane-d4	10.27	65	1306838	76.8802 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 307.52%#		
57) Toluene-d8	12.51	98	4755763	105.6336 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 422.52%#		
78) p-Bromofluorobenzene	15.67	95	1861403	97.8281 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 391.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2468775	195.9396 ug/L	100
3) Chloromethane	3.74	50	3696899	209.2668 ug/L	97
4) Vinyl Chloride	3.98	62	3604649	177.3193 ug/L	96
5) 1,3-Butadiene	4.01	54	1734703	99.9946 ug/L	90
6) Bromomethane	4.88	94	1964663	191.4394 ug/L	99
7) Chloroethane	5.04	64	1920558	184.5182 ug/L	93
8) Trichlorofluoromethane	5.52	101	4424632	188.4524 ug/L	100
9) Diethyl ether	6.05	59	9946	0.9311 ug/L	91
10) Isoprene	6.08	67	3925306	187.6601 ug/L	87
11) Acrolein	6.29	56	3618	2.0057 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	2744697	197.4607 ug/L	99
13) Acetone	6.37	43	372017	115.1655 ug/L	93
14) 1,1-Dichloroethene	6.60	61	4053588	171.0785 ug/L	86
15) Tert-Butyl Alcohol	6.72	59	12257	15.2849 ug/L #	82
16) Dimethyl Sulfide	6.86	62	2781170	172.1492 ug/L	89
17) Iodomethane	7.10	142	3341496	322.3080 ug/L	96
18) Methyl acetate	7.10	43	1282805	141.4422 ug/L	92
19) Methylene Chloride	7.35	84	2795620	175.1070 ug/L	77
20) Carbon Disulfide	7.40	76	7949575	256.4562 ug/L	97
21) Acrylonitrile	7.55	53	58648	15.0888 ug/L #	40
22) Methyl Tert Butyl Ether	7.55	73	5690630	188.1470 ug/L	96
23) trans-1,2-Dichloroethene	7.79	96	2907151	191.7699 ug/L	81
24) n-Hexane	7.86	57	3364885	268.7277 ug/L	93
25) Diisopropyl ether	8.19	45	19135	0.3957 ug/L	97
26) Vinyl Acetate	8.34	43	2192224	166.0116 ug/L	96
27) 1,1-Dichloroethane	8.39	63	4715347	168.8194 ug/L	97
28) Ethyl-Tert-Butyl ether	8.74	59	45264	1.0760 ug/L #	80
29) 2-Butanone	8.91	43	574108	128.7539 ug/L	88
30) Propionitrile	9.03	54	7583	5.4552 ug/L #	1
31) 2,2-Dichloropropane	9.13	77	4294393	197.4207 ug/L	98
32) cis-1,2-Dichloroethene	9.19	96	3154709	189.9274 ug/L	82
33) Chloroform	9.39	83	4782343	171.6903 ug/L	98
34) 1-Bromopropane	9.51	122	551706	205.9148 ug/L	96
35) Bromochloromethane	9.61	130	1852642	184.6076 ug/L	83
36) Tetrahydrofuran	9.65	42	10933	3.7897 ug/L	85
38) 1,1,1-Trichloroethane	9.89	97	4654979	198.2703 ug/L	97
39) Cyclohexane	9.93	56	4381967	164.3742 ug/L	85
40) 1,1-Dichloropropene	10.08	75	3839033	218.4436 ug/L	95
41) Carbon Tetrachloride	10.22	117	4222376	203.0393 ug/L	99
42) Tert-Amyl-Methyl ether	10.17	73	29626	0.9001 ug/L #	95

(#) = qualifier out of range (m) = manual integration
11M02158.D 8260WTR.M Mon Jun 30 10:06:48 2014 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02158.D Vial: 11
Acq On : 27 Jun 2014 19:38 Operator: FJB
Sample : WG482009-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 09:55:28 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44) 1,2-Dichloroethane	10.38	62	3202076	171.6977 ug/L		98
45) Benzene	10.42	78	9340933	178.7199 ug/L		90
46) Trichloroethene	11.13	130	3199861	188.5225 ug/L		97
47) Methylcyclohexane	11.21	83	4355321	226.1807 ug/L		91
48) 1,2-Dichloropropane	11.33	63	2650654	177.9572 ug/L		98
49) 1,4-Dioxane	11.60	88	6749	58.5458 ug/L	#	50
50) Bromodichloromethane	11.61	83	3669942	189.1848 ug/L		98
51) Dibromomethane	11.69	93	1470934	194.1683 ug/L		97
52) 2-Chloroethyl Vinyl Ether	11.88	63	1203212	207.6629 ug/L		94
53) 4-Methyl-2-Pentanone	11.90	58	548900	174.0525 ug/L		95
54) cis-1,3-Dichloropropene	12.20	75	4228588	220.9168 ug/L		97
55) Dimethyl Disulfide	12.46	79	2450261	214.2884 ug/L		94
58) Toluene	12.60	91	9499510	169.2584 ug/L		88
59) Ethyl Methacrylate	12.68	69	2410402	218.4355 ug/L		89
60) trans-1,3-Dichloropropene	12.76	75	3702513	213.4158 ug/L		93
61) 1,1,2-Trichloroethane	12.97	97	2029884	196.3174 ug/L		100
62) 2-Hexanone	12.89	43	872095	155.4525 ug/L		97
63) 1,3-Dichloropropane	13.26	76	3338460	178.8554 ug/L		92
64) Tetrachloroethene	13.37	164	2523688	208.2494 ug/L		97
65) Dibromochloromethane	13.62	129	2746231	232.6104 ug/L		98
66) 1,2-Dibromoethane	13.87	107	2032620	197.1631 ug/L		98
67) 1-Chlorohexane	13.92	91	3820660	224.5076 ug/L		89
68) Chlorobenzene	14.33	112	7583749	251.7728 ug/L		88
69) 1,1,1,2-Tetrachloroethane	14.35	131	3266554	208.6152 ug/L		98
70) Ethylbenzene	14.35	106	4969226	304.7230 ug/L		55
71) m-,p-Xylene	14.43	106	9295611	489.3935 ug/L		61
72) o-Xylene	14.96	106	5368414	197.9542 ug/L		76
73) Styrene	14.99	104	8016559	225.3695 ug/L		92
74) Bromoform	15.47	173	1616848	226.6721 ug/L		98
75) Isopropylbenzene	15.34	105	10303748	223.1441 ug/L		80
77) 1,1,2,2-Tetrachloroethane	15.55	83	2084092	188.1925 ug/L		99
79) 1,2,3-Trichloropropane	15.74	110	652114	188.0792 ug/L		95
80) trans-1,4-Dichloro-2-Buten	15.77	53	622772	223.0176 ug/L		91
81) n-Propylbenzene	15.82	91	10887421	218.0792 ug/L	#	78
82) Bromobenzene	15.95	156	3346094	207.2898 ug/L		92
83) 1,3,5-Trimethylbenzene	16.00	105	9029770	196.6316 ug/L		83
84) 2-Chlorotoluene	16.09	91	9258065m	283.7077 ug/L		
85) 4-Chlorotoluene	16.13	91	6277816	226.3759 ug/L		80
86) a-Methylstyrene	16.37	118	5817444	276.3969 ug/L		93
87) tert-Butylbenzene	16.43	134	2335585	187.0400 ug/L		69
88) 1,2,4-Trimethylbenzene	16.48	105	8976476	195.0310 ug/L		80
89) sec-Butylbenzene	16.68	105	10201026	234.1333 ug/L		85
90) p-Isopropyltoluene	16.82	119	9094275	252.9843 ug/L		87
91) 1,3-Dichlorobenzene	17.02	146	5735004	249.0083 ug/L		95
92) 1,4-Dichlorobenzene	17.13	146	5670796	222.1928 ug/L		96
93) n-Butylbenzene	17.31	91	8145531	269.0037 ug/L		90
94) 1,2-Dichlorobenzene	17.60	146	5247726	180.8459 ug/L		97
95) 1,2-Dibromo-3-Chloropropan	18.52	75	347476	203.9496 ug/L		89
96) 1,2,4-Trichlorobenzene	19.58	180	3845851	307.2399 ug/L		100
97) Hexachlorobutadiene	19.72	225	1563080	232.3610 ug/L		97
98) Naphthalene	19.93	128	6349801	246.4262 ug/L	#	94
99) 1,2,3-Trichlorobenzene	20.23	180	3343244	217.6253 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M02158.D 8260WTR.M Mon Jun 30 10:06:49 2014 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02158.D Vial: 11
Acq On : 27 Jun 2014 19:38 Operator: FJB
Sample : WG482009-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:06 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Initial Calibration

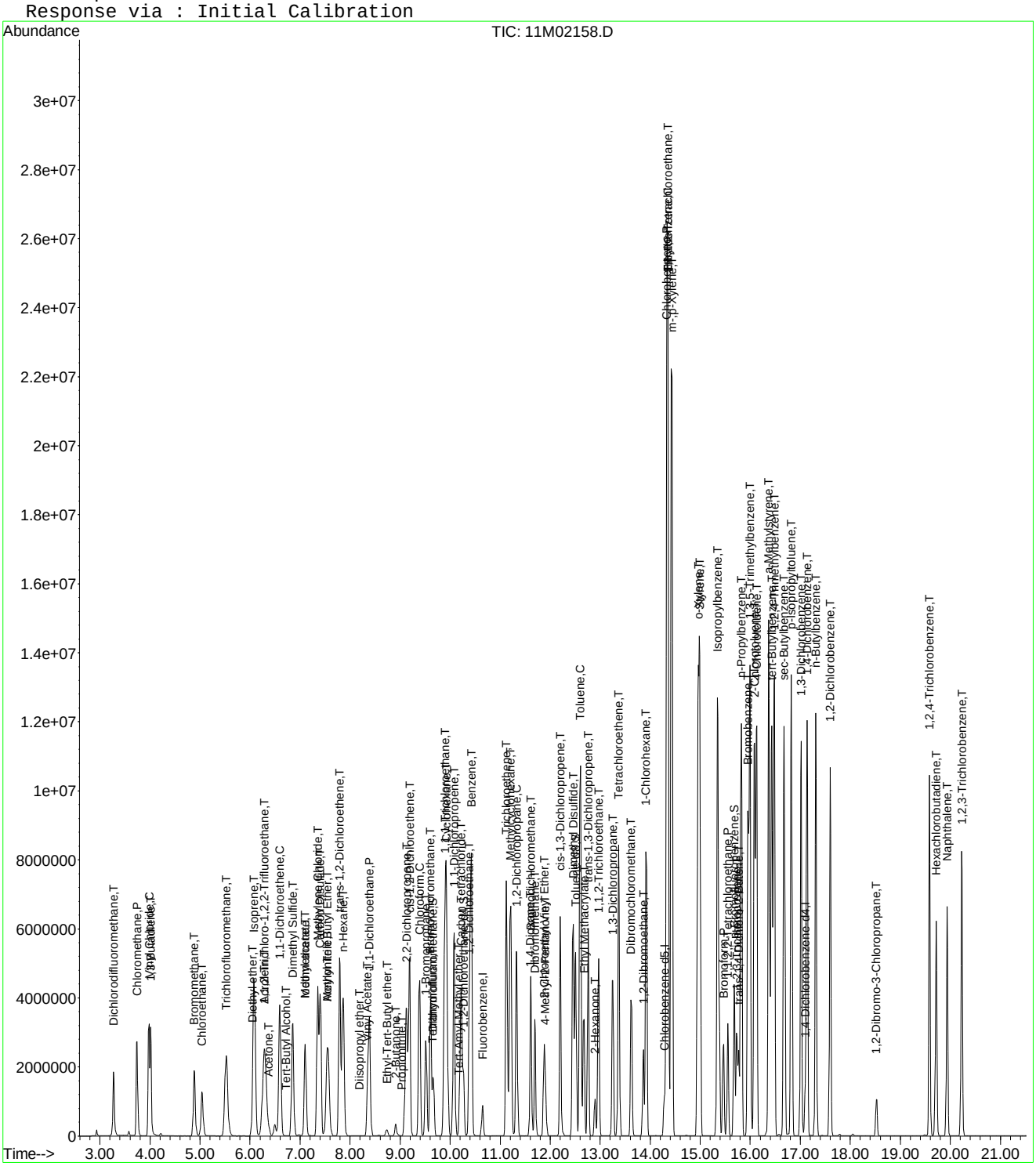

11M02158.D 8260WTR.M Mon Jun 30 10:06:49 2014 Page 3

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02158.D Vial: 11
Acq On : 27 Jun 2014 19:38 Operator: FJB
Sample : WG482009-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 9:55 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Multiple Level Calibration

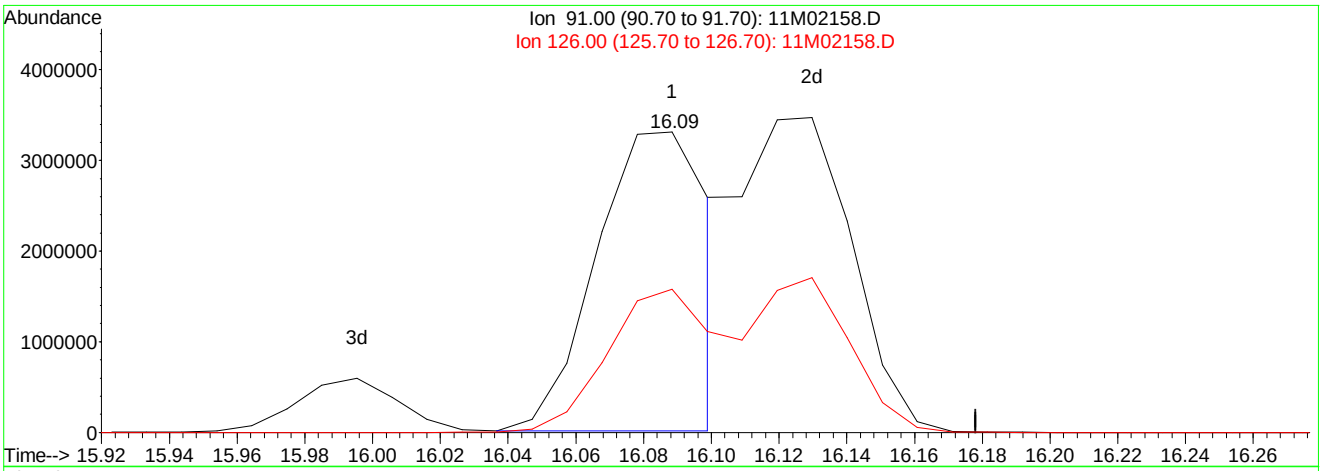

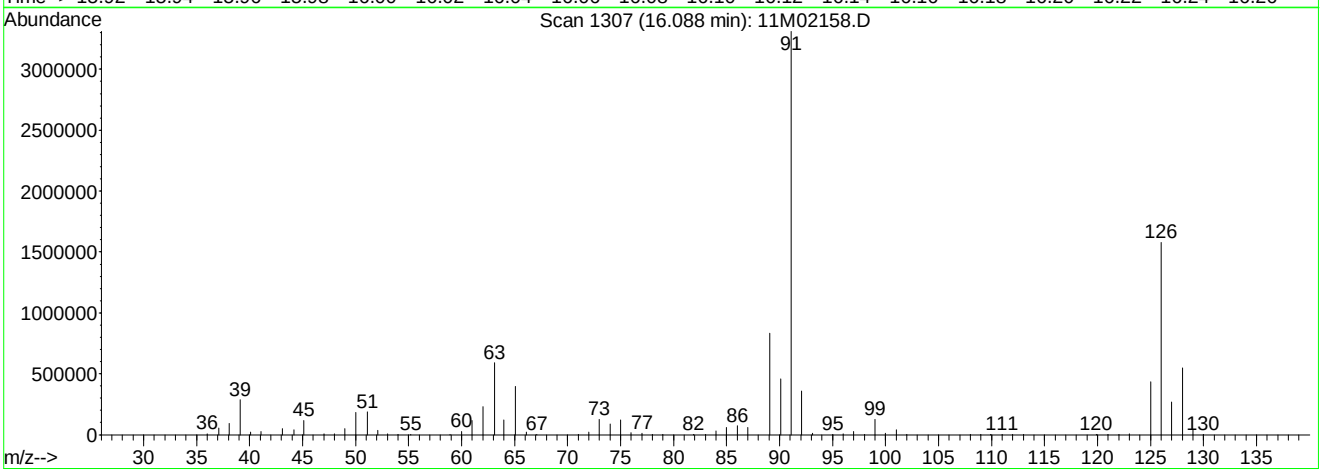

TIC: 11M02158.D

(84) 2-Chlorotoluene (T)

16.09min 232.16ug/L

response 7575908

Ion	Exp%	Act%
91.00	100	100
126.00	33.00	50.79#
0.00	0.00	0.00
0.00	0.00	0.00

11M02158.D 8260WTR.M Mon Jun 30 10:06:34 2014

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02158.D Vial: 11
Acq On : 27 Jun 2014 19:38 Operator: FJB
Sample : WG482009-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:06 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 09:53:52 2014
Response via : Multiple Level Calibration

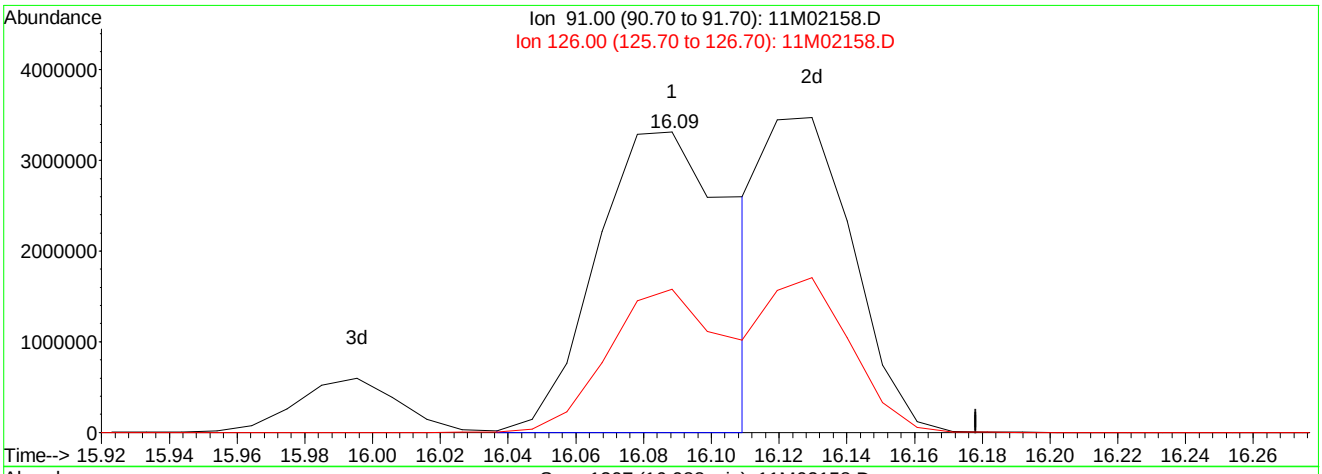

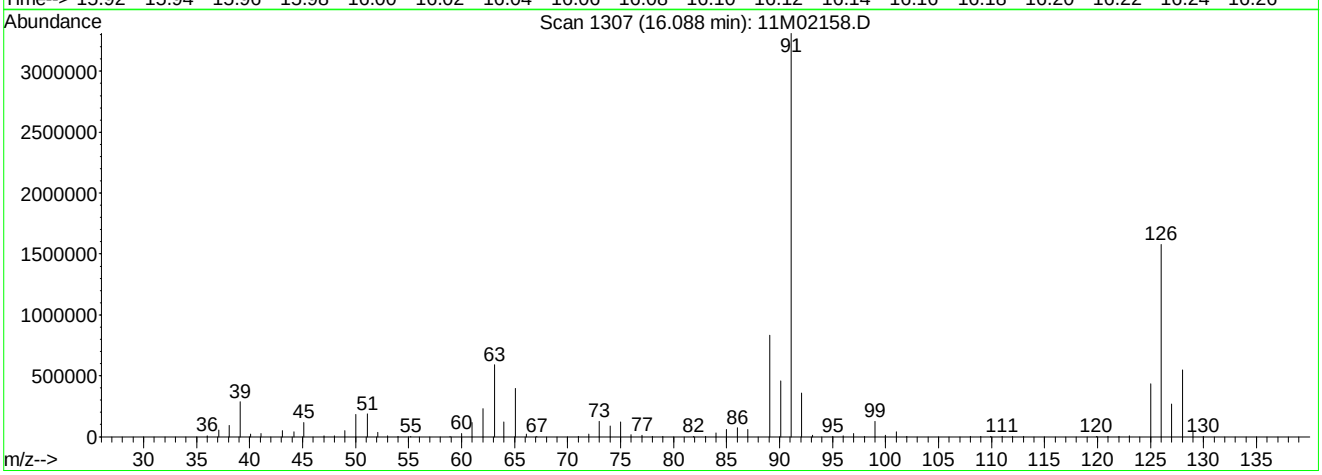

TIC: 11M02158.D

(84) 2-Chlorotoluene (T)

16.09min 283.71ug/L mint

response 9258065

Ion	Exp%	Act%
91.00	100	100
126.00	33.00	41.56
0.00	0.00	0.00
0.00	0.00	0.00

11M02158.D 8260WTR.M Mon Jun 30 .4

Analyst: 06/30/2014 14:36 Supervisor: 06/30/2014 15:40

#2 - Data system splits the peak incorrectly or integrates a false peak as a rider peak

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02159.D Vial: 12
Acq On : 27 Jun 2014 20:09 Operator: FJB
Sample : WG482009-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:09:00 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:08:56 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	1046690	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	814634	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	426086	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	2077785	144.5925 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 578.36%#		
43) 1,2-Dichloroethane-d4	10.27	65	1946024	115.5142 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 462.04%#		
57) Toluene-d8	12.51	98	6719616	148.1184 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 592.48%#		
78) p-Bromofluorobenzene	15.67	95	2784415	142.3056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 569.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	3636816	291.2436 ug/L	99
3) Chloromethane	3.73	50	4959822	283.2848 ug/L	95
4) Vinyl Chloride	3.97	62	4986776	247.5182 ug/L	93
5) 1,3-Butadiene	4.01	54	2446134	142.2742 ug/L	90
6) Bromomethane	4.88	94	2961043	291.1269 ug/L	99
7) Chloroethane	5.04	64	2838893	275.2043 ug/L	93
8) Trichlorofluoromethane	5.52	101	6449861	277.1847 ug/L	98
9) Diethyl ether	6.04	59	2613611	246.8680 ug/L	93
10) Isoprene	6.08	67	5917645	285.4576 ug/L	87
11) Acrolein	6.28	56	179430	100.3662 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	4135933	300.2300 ug/L	99
13) Acetone	6.37	43	569142	177.7767 ug/L	94
14) 1,1-Dichloroethene	6.60	61	5925108	252.3169 ug/L	85
15) Tert-Butyl Alcohol	6.70	59	298725	375.8764 ug/L	94
16) Dimethyl Sulfide	6.84	62	4154167	259.4513 ug/L	89
17) Iodomethane	7.10	142	4793860	466.5625 ug/L	95
18) Methyl acetate	7.10	43	1989710	221.3617 ug/L	92
19) Methylene Chloride	7.35	84	4177974	264.0496 ug/L	75
20) Carbon Disulfide	7.40	76	10562193	343.8095 ug/L	92
21) Acrylonitrile	7.53	53	480061	124.6215 ug/L	92
22) Methyl Tert Butyl Ether	7.55	73	8428839	281.1895 ug/L	97
23) trans-1,2-Dichloroethene	7.79	96	4305354	286.5603 ug/L	80
24) n-Hexane	7.86	57	5002842	403.1377 ug/L	92
25) Diisopropyl ether	8.18	45	10728016	223.8533 ug/L	92
26) Vinyl Acetate	8.34	43	3256534	248.8304 ug/L	95
27) 1,1-Dichloroethane	8.39	63	6870854	248.2069 ug/L	95
28) Ethyl-Tert-Butyl ether	8.73	59	9983138	239.4499 ug/L	94
29) 2-Butanone	8.91	43	884246	200.0941 ug/L	89
30) Propionitrile	9.02	54	287230	208.4928 ug/L	96
31) 2,2-Dichloropropane	9.12	77	6325056	293.3930 ug/L	97
32) cis-1,2-Dichloroethene	9.19	96	4689427	284.8672 ug/L	80
33) Chloroform	9.39	83	6883468	249.3485 ug/L	96
34) 1-Bromopropane	9.51	122	822230	309.6475 ug/L	97
35) Bromochloromethane	9.61	130	2798125	281.3322 ug/L	82
36) Tetrahydrofuran	9.64	42	578087	202.1854 ug/L	87
38) 1,1,1-Trichloroethane	9.89	97	6825668	293.3455 ug/L	97
39) Cyclohexane	9.93	56	6500664	246.0462 ug/L	84
40) 1,1-Dichloropropene	10.08	75	5623635	322.8710 ug/L	94
41) Carbon Tetrachloride	10.22	117	6247919	303.1469 ug/L	99
42) Tert-Amyl-Methyl ether	10.16	73	8658109	265.4168 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02159.D Vial: 12
Acq On : 27 Jun 2014 20:09 Operator: FJB
Sample : WG482009-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:09:00 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:08:56 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44) 1,2-Dichloroethane	10.38	62	4702578	254.4270 ug/L		98
45) Benzene	10.42	78	12181295	235.1638 ug/L		82
46) Trichloroethene	11.13	130	4705132	279.7038 ug/L		97
47) Methylcyclohexane	11.21	83	6426317	336.7379 ug/L		91
48) 1,2-Dichloropropane	11.32	63	3950939	267.6437 ug/L		96
49) 1,4-Dioxane	11.60	88	50101	438.5278 ug/L		83
50) Bromodichloromethane	11.61	83	5373899	279.5188 ug/L		96
51) Dibromomethane	11.69	93	2199404	292.9439 ug/L		97
52) 2-Chloroethyl Vinyl Ether	11.88	63	1844799	321.2626 ug/L		94
53) 4-Methyl-2-Pentanone	11.90	58	824323	263.7417 ug/L		94
54) cis-1,3-Dichloropropene	12.20	75	6076914	320.3398 ug/L		93
55) Dimethyl Disulfide	12.46	79	3735530	329.6346 ug/L		89
58) Toluene	12.60	91	11956177	211.4092 ug/L		80
59) Ethyl Methacrylate	12.68	69	3583696	322.2905 ug/L		89
60) trans-1,3-Dichloropropene	12.76	75	5350880	306.0819 ug/L		90
61) 1,1,2-Trichloroethane	12.97	97	3030975	290.9059 ug/L		99
62) 2-Hexanone	12.89	43	1298933	229.7753 ug/L		96
63) 1,3-Dichloropropane	13.26	76	4891127	260.0444 ug/L		94
64) Tetrachloroethene	13.37	164	3763381	308.1831 ug/L		97
65) Dibromochloromethane	13.62	129	4079404	342.9031 ug/L		97
66) 1,2-Dibromoethane	13.87	107	3036831	292.3295 ug/L		98
67) 1-Chlorohexane	13.93	91	5513560	321.5196 ug/L		90
68) Chlorobenzene	14.33	112	9892795	325.9316 ug/L		78
69) 1,1,1,2-Tetrachloroethane	14.35	131	4838101	306.6292 ug/L		99
70) Ethylbenzene	14.35	106	7114624	432.9632 ug/L	#	38
71) m-,p-Xylene	14.43	106	11563370	604.1535 ug/L		56
72) o-Xylene	14.96	106	7616603	278.7164 ug/L		65
73) Styrene	14.99	104	10421655	290.7544 ug/L		82
74) Bromoform	15.47	173	2442805	339.8601 ug/L		97
75) Isopropylbenzene	15.34	105	12701402	272.9759 ug/L	#	67
77) 1,1,2,2-Tetrachloroethane	15.55	83	3153860	276.9444 ug/L		98
79) 1,2,3-Trichloropropane	15.74	110	1005343	281.9658 ug/L		96
80) trans-1,4-Dichloro-2-Buten	15.77	53	972866	338.7879 ug/L		92
81) n-Propylbenzene	15.82	91	13171511	256.5604 ug/L	#	63
82) Bromobenzene	15.95	156	4949763	298.1872 ug/L		89
83) 1,3,5-Trimethylbenzene	16.00	105	11542338	244.4192 ug/L		74
84) 2-Chlorotoluene	16.09	91	11483751	342.2154 ug/L	#	73
86) a-Methylstyrene	16.37	118	8171965	377.5655 ug/L		87
87) tert-Butylbenzene	16.43	134	3589288	279.5193 ug/L		56
88) 1,2,4-Trimethylbenzene	16.48	105	11372938	240.2898 ug/L	#	66
89) sec-Butylbenzene	16.68	105	12731421	284.1588 ug/L	#	73
90) p-Isopropyltoluene	16.82	119	11491541	310.8627 ug/L	#	73
91) 1,3-Dichlorobenzene	17.02	146	7993010	337.4856 ug/L		87
92) 1,4-Dichlorobenzene	17.13	146	7873920	300.0142 ug/L		88
93) n-Butylbenzene	17.31	91	10460837	335.9466 ug/L	#	79
94) 1,2-Dichlorobenzene	17.60	146	7523569	252.1310 ug/L		90
95) 1,2-Dibromo-3-Chloropropan	18.52	75	547852	312.6987 ug/L		88
96) 1,2,4-Trichlorobenzene	19.58	180	5656622	439.4477 ug/L		96
97) Hexachlorobutadiene	19.72	225	2377740	343.7251 ug/L		96
98) Naphthalene	19.93	128	8650451	326.4602 ug/L	#	89
99) 1,2,3-Trichlorobenzene	20.23	180	4982002	315.3625 ug/L		98

(#) = qualifier out of range (m) = manual integration
11M02159.D 8260WTR.M Mon Jun 30 10:29:34 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02159.D Vial: 12
Acq On : 27 Jun 2014 20:09 Operator: FJB
Sample : WG482009-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD65120 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:09 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:26:20 2014
Response via : Initial Calibration

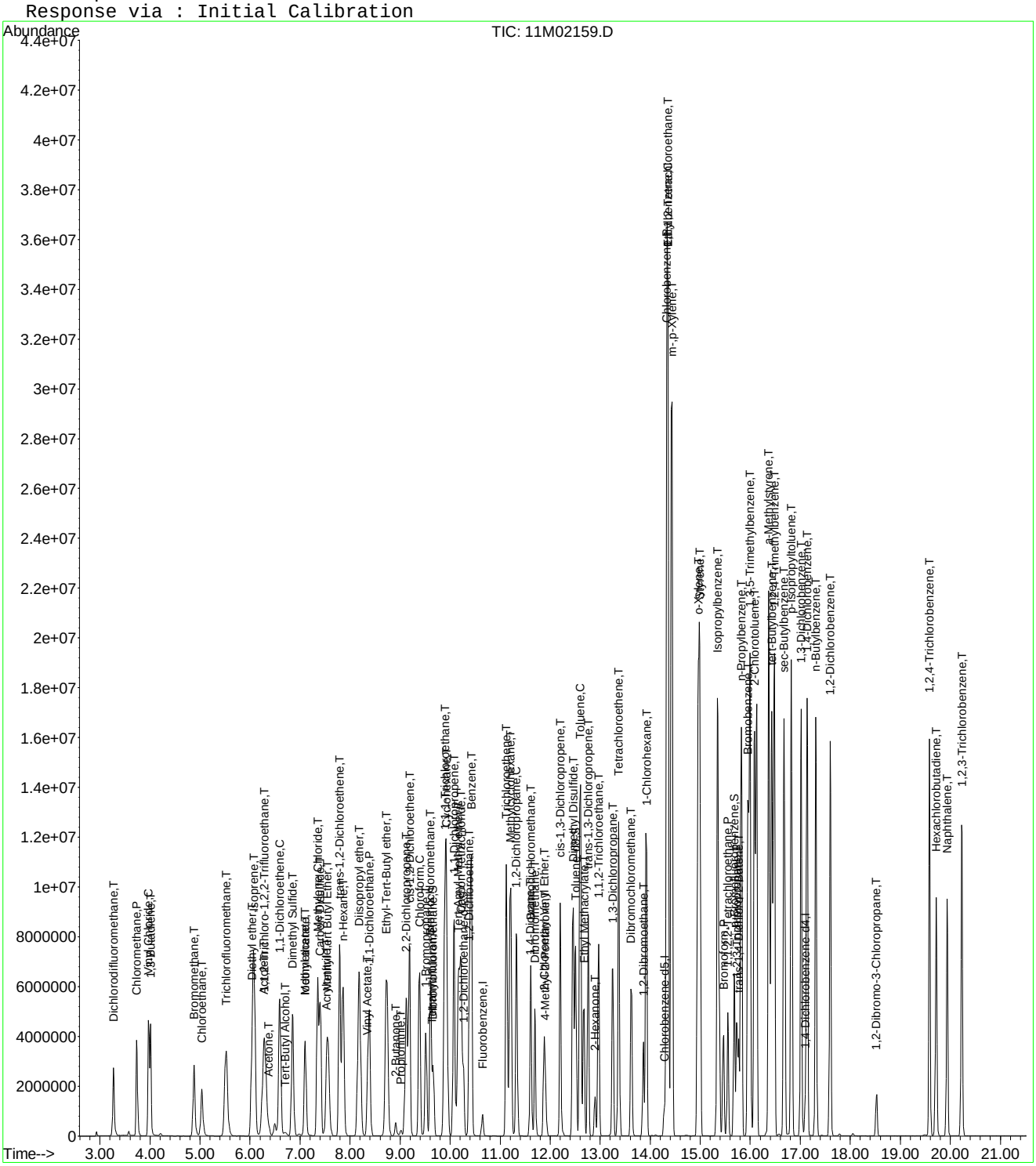

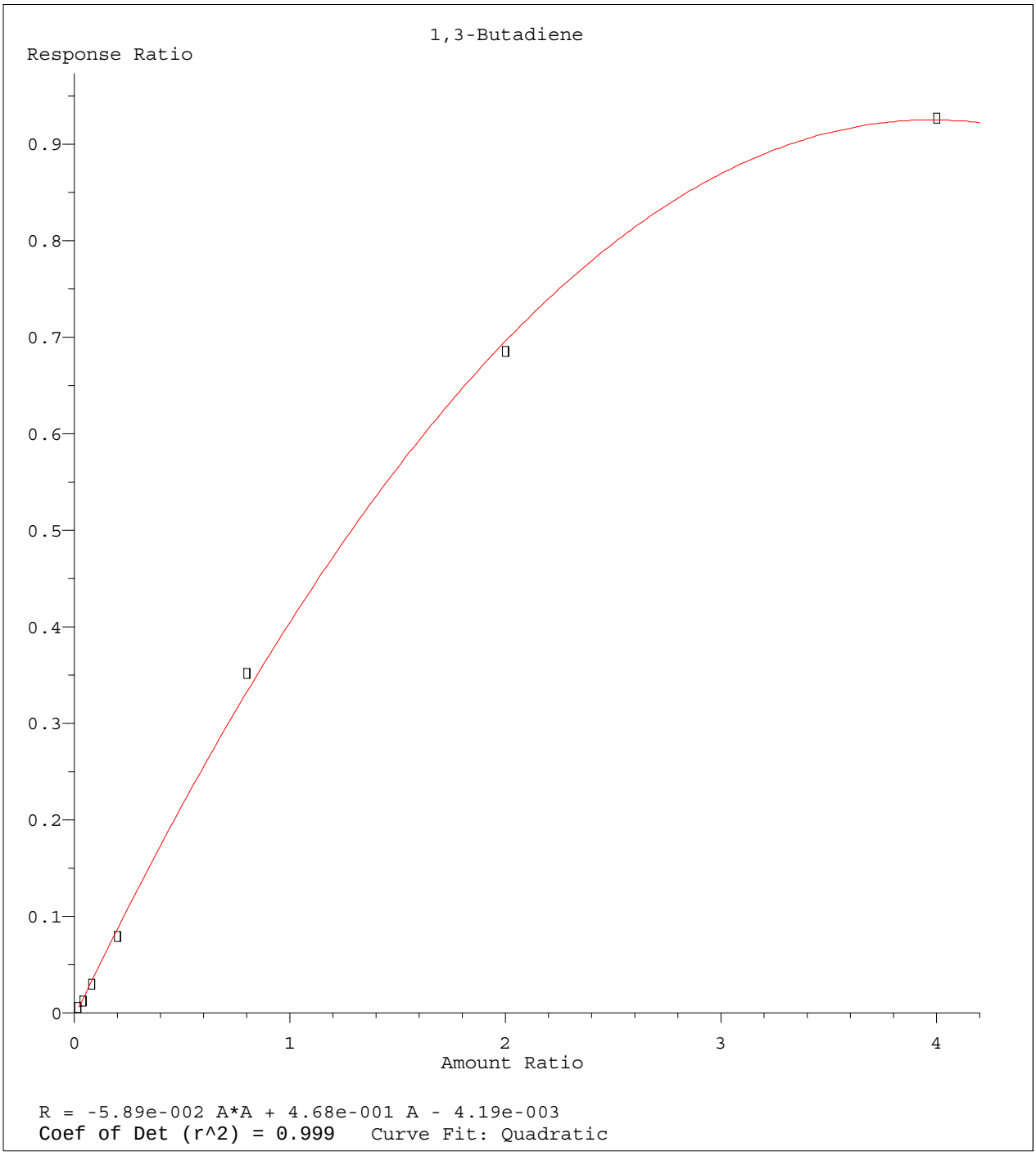

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jun 30 10:39:17 2014

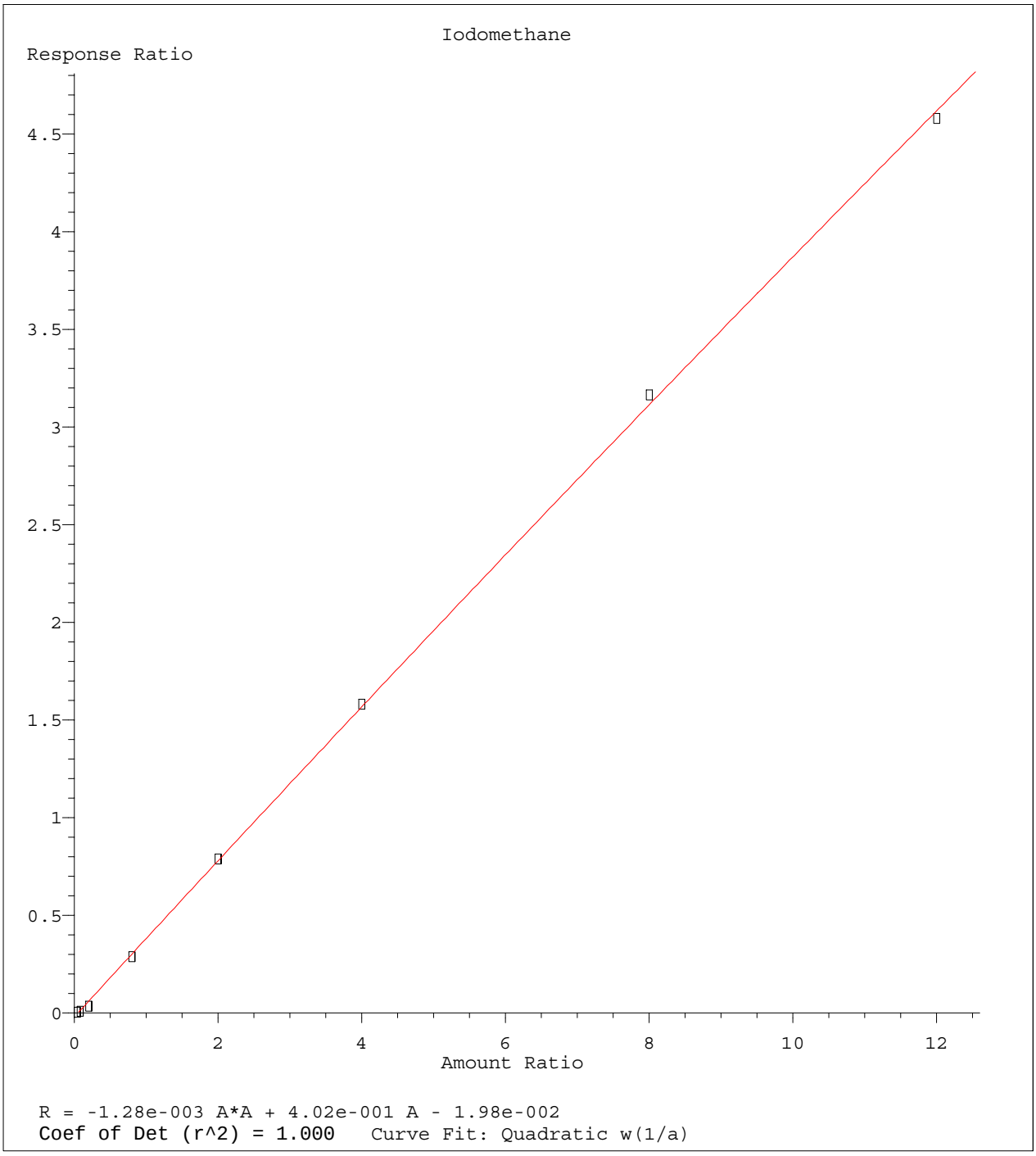

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jun 30 10:39:17 2014

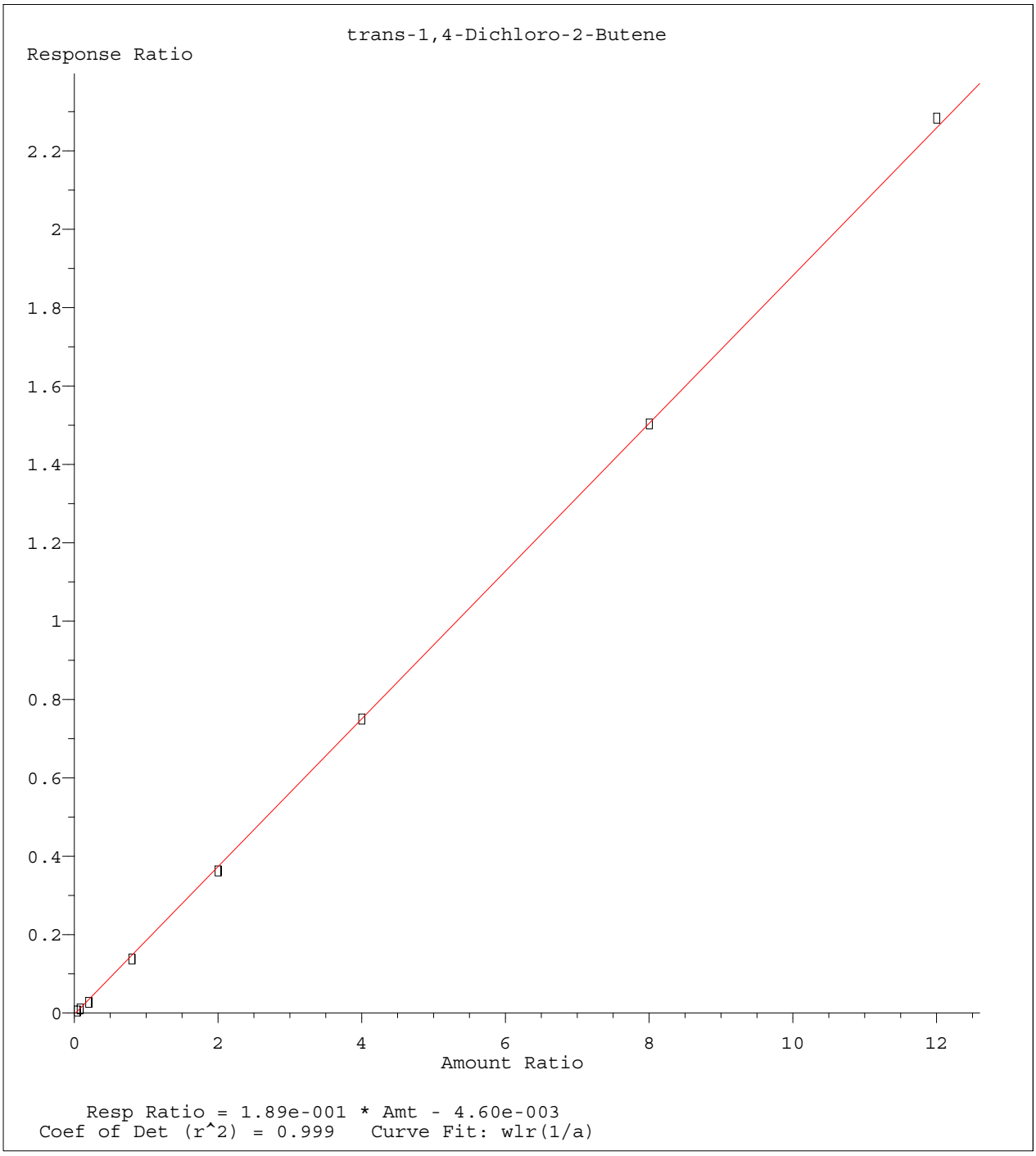

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jun 30 10:39:17 2014

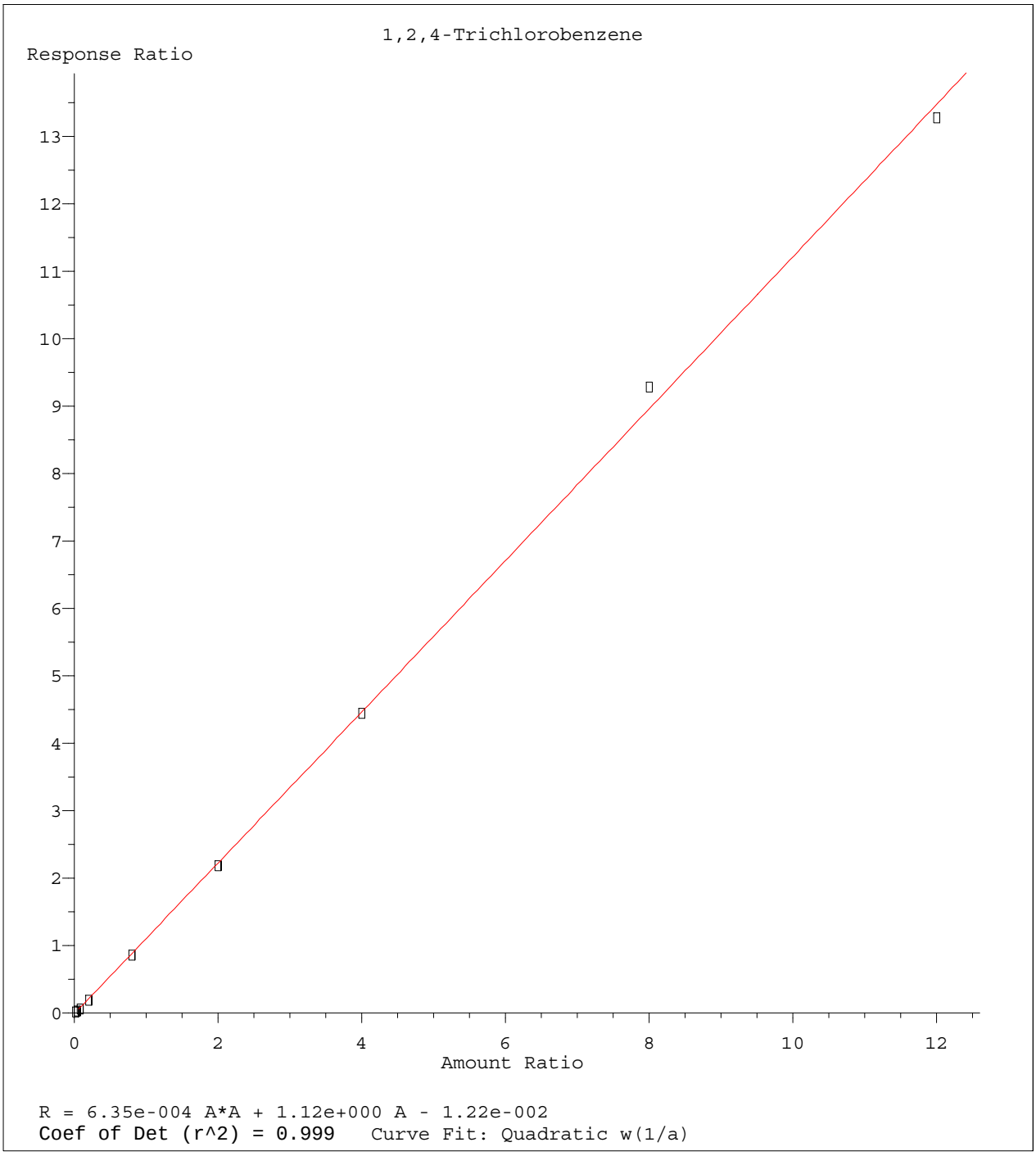

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jun 30 10:39:17 2014

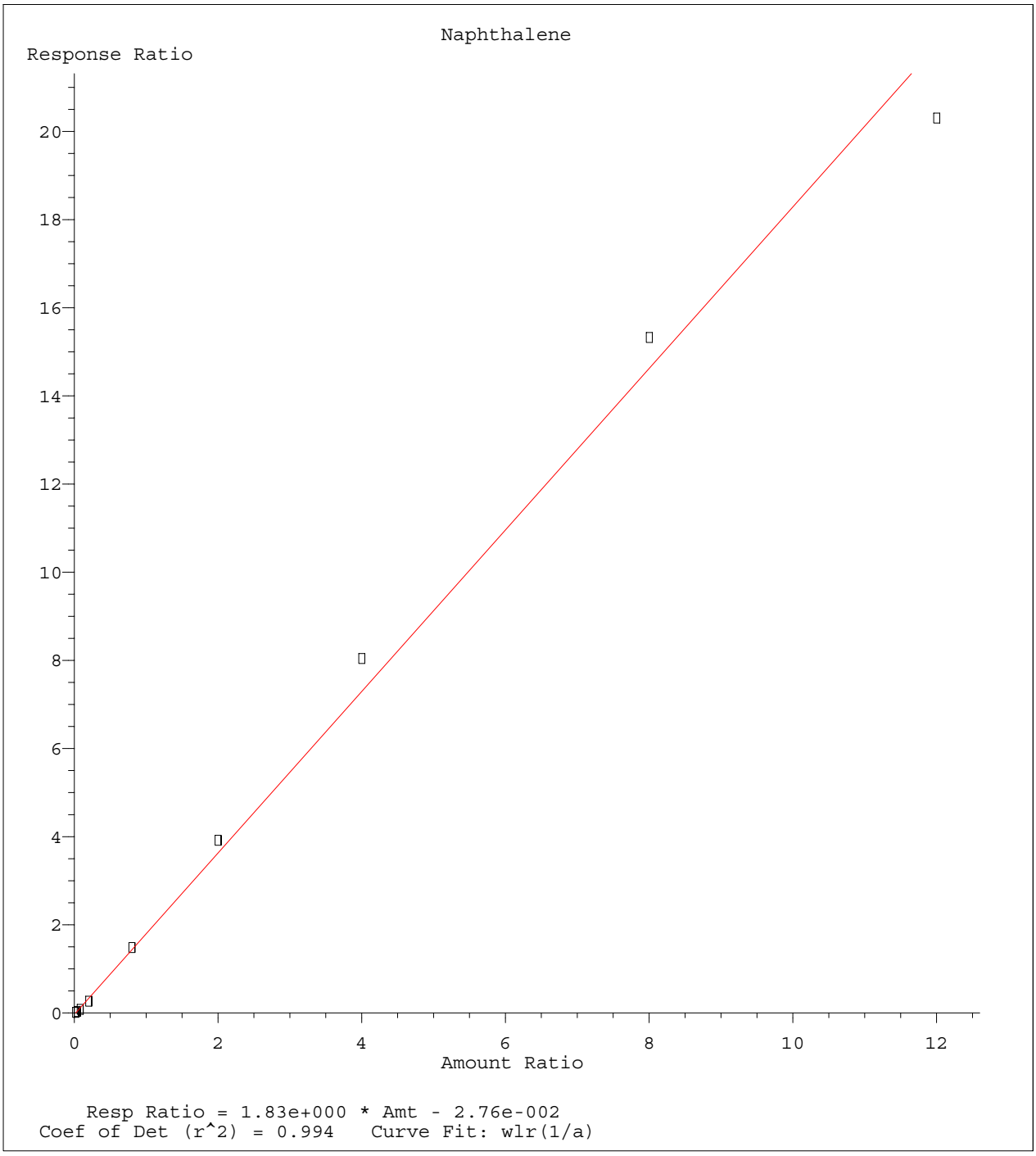

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jun 30 10:39:17 2014

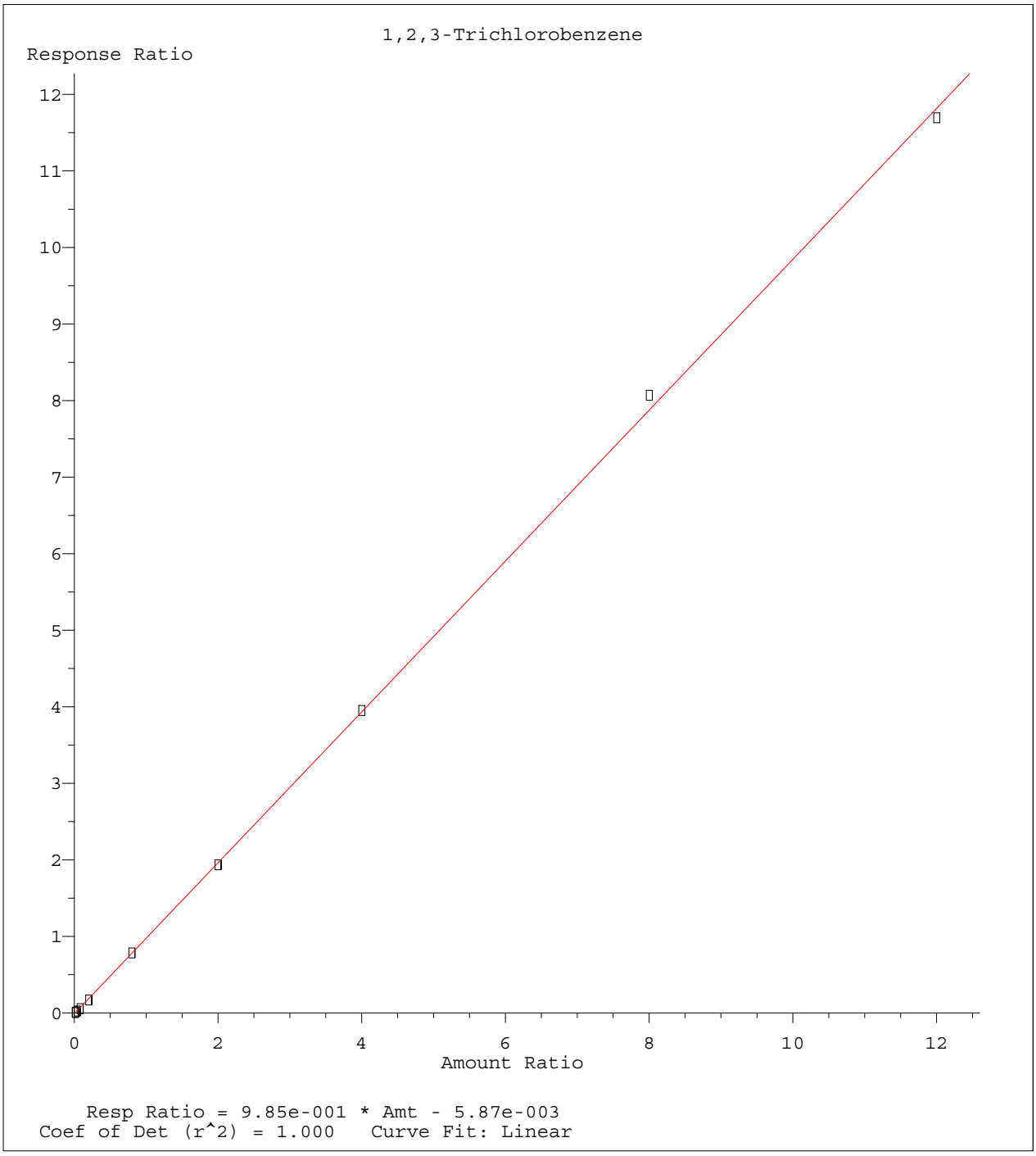

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Jun 30 10:39:17 2014

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02161.D Vial: 14
Acq On : 27 Jun 2014 21:34 Operator: FJB
Sample : WG482009-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:43:32 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	1022853	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	772534	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	409801	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	302527	23.6832 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.72%		
43) 1,2-Dichloroethane-d4	10.27	65	276134	22.1520 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.60%		
57) Toluene-d8	12.51	98	1096195	24.2199 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.88%		
78) p-Bromofluorobenzene	15.67	95	433622	24.4737 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	873102	78.8357 ug/L	100
3) Chloromethane	3.73	50	1110279	57.4358 ug/L	97
4) Vinyl Chloride	3.97	62	1023927	58.7824 ug/L	98
5) 1,3-Butadiene	4.01	54	432430	26.3033 ug/L	89
6) Bromomethane	4.88	94	545510	55.6800 ug/L	99
7) Chloroethane	5.04	64	491264	56.1943 ug/L	95
8) Trichlorofluoromethane	5.52	101	1181610	57.4590 ug/L	99
9) Diethyl ether	6.04	59	888556	105.9696 ug/L	92
10) Isoprene	6.08	67	929597	51.7675 ug/L	86
11) Acrolein	6.28	56	76528	71.6280 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	680817	53.7913 ug/L	96
13) Acetone	6.38	43	106232	51.4316 ug/L	97
14) 1,1-Dichloroethene	6.60	61	948692	50.6351 ug/L	88
15) Tert-Butyl Alcohol	6.71	59	133917	248.3224 ug/L	92
16) Dimethyl Sulfide	6.86	62	706958	53.9605 ug/L	88
17) Iodomethane	7.10	142	479248	30.4995 ug/L	98
18) Methyl acetate	7.10	43	322629	49.4022 ug/L	93
19) Methylene Chloride	7.35	84	679308	48.9975 ug/L	78
20) Carbon Disulfide	7.40	76	1854765	47.2641 ug/L	100
21) Acrylonitrile	7.53	53	143232	50.7366 ug/L	98
22) Methyl Tert Butyl Ether	7.56	73	1497186	52.6950 ug/L	93
23) trans-1,2-Dichloroethene	7.79	96	715342	52.2364 ug/L	83
24) n-Hexane	7.86	57	741386	46.7036 ug/L	93
25) Diisopropyl ether	8.19	45	3988349	107.6569 ug/L	96
26) Vinyl Acetate	8.35	43	907342	90.2223 ug/L	96
27) 1,1-Dichloroethane	8.39	63	1145822	51.0542 ug/L	99
28) Ethyl-Tert-Butyl ether	8.74	59	3682032	107.8088 ug/L	95
29) 2-Butanone	8.91	43	152956	51.6439 ug/L	91
30) Propionitrile	9.02	54	103570	107.2058 ug/L	97
31) 2,2-Dichloropropane	9.13	77	977350	48.5539 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	771215	51.8843 ug/L	81
33) Chloroform	9.39	83	1188374	51.6642 ug/L	100
34) 1-Bromopropane	9.52	122	156622	62.7852 ug/L	97
35) Bromochloromethane	9.62	130	448610	52.3607 ug/L	81
36) Tetrahydrofuran	9.64	42	207550	107.9085 ug/L	87
38) 1,1,1-Trichloroethane	9.89	97	1113818	52.2348 ug/L	96
39) Cyclohexane	9.93	56	1018575	50.9994 ug/L	85
40) 1,1-Dichloropropene	10.08	75	933030	52.3025 ug/L	98
41) Carbon Tetrachloride	10.22	117	1024482	53.4682 ug/L	99
42) Tert-Amyl-Methyl ether	10.17	73	3229709	109.1176 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M02161.D 8260WTR.M Mon Jun 30 10:45:23 2014 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02161.D Vial: 14
Acq On : 27 Jun 2014 21:34 Operator: FJB
Sample : WG482009-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:43:32 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.38	62	794122	49.1195 ug/L	98
45) Benzene	10.42	78	2612942	52.6456 ug/L	99
46) Trichloroethene	11.13	130	789924	51.5084 ug/L	95
47) Methylcyclohexane	11.21	83	1061762	52.4700 ug/L	90
48) 1,2-Dichloropropane	11.32	63	635668	51.4056 ug/L	98
49) 1,4-Dioxane	11.60	88	18536	246.5642 ug/L	84
50) Bromodichloromethane	11.61	83	869423	50.5468 ug/L	99
51) Dibromomethane	11.69	93	351176	49.8195 ug/L	97
52) 2-Chloroethyl Vinyl Ether	11.88	63	295975	52.5405 ug/L	94
53) 4-Methyl-2-Pentanone	11.91	58	142808	54.8497 ug/L	95
54) cis-1,3-Dichloropropene	12.20	75	1062590	54.9881 ug/L	100
55) Dimethyl Disulfide	12.46	79	560204	51.6145 ug/L	100
58) Toluene	12.60	91	2803199	53.8166 ug/L	100
59) Ethyl Methacrylate	12.68	69	626408	58.3254 ug/L	87
60) trans-1,3-Dichloropropene	12.76	75	847242	50.5191 ug/L	96
61) 1,1,2-Trichloroethane	12.97	97	484369	49.0968 ug/L	99
62) 2-Hexanone	12.89	43	232001	57.0045 ug/L	99
63) 1,3-Dichloropropane	13.26	76	828110	48.8139 ug/L	91
64) Tetrachloroethene	13.37	164	586597	49.9300 ug/L	97
65) Dibromochloromethane	13.62	129	647781	52.0547 ug/L	100
66) 1,2-Dibromoethane	13.87	107	481613	49.2803 ug/L	98
67) 1-Chlorohexane	13.93	91	948437	55.7877 ug/L	86
68) Chlorobenzene	14.33	112	1840062	49.1719 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.35	131	719320	51.4206 ug/L	97
70) Ethylbenzene	14.35	106	1092369	51.9072 ug/L	94
71) m-,p-Xylene	14.43	106	2510322	106.2087 ug/L	93
72) o-Xylene	14.96	106	1183932	48.9611 ug/L	96
73) Styrene	14.99	104	2103705	58.0808 ug/L	96
74) Bromoform	15.47	173	377255	52.2737 ug/L	97
75) Isopropylbenzene	15.34	105	2913464	52.5276 ug/L	97
77) 1,1,2,2-Tetrachloroethane	15.55	83	520041	47.2170 ug/L	100
79) 1,2,3-Trichloropropane	15.74	110	162060	48.4720 ug/L	81
80) trans-1,4-Dichloro-2-Buten	15.77	53	82824	27.4000 ug/L #	13
81) n-Propylbenzene	15.82	91	3319990	48.0645 ug/L	98
82) Bromobenzene	15.95	156	801454	48.6003 ug/L	95
83) 1,3,5-Trimethylbenzene	16.00	105	2742838	56.3611 ug/L	96
84) 2-Chlorotoluene	16.08	91	2065839	47.3738 ug/L	82
85) 4-Chlorotoluene	16.13	91	2154891m	49.0458 ug/L	
86) a-Methylstyrene	16.37	118	1533251	56.7220 ug/L	100
87) tert-Butylbenzene	16.43	134	526714	47.9239 ug/L	86
88) 1,2,4-Trimethylbenzene	16.48	105	2798848	57.3168 ug/L	97
89) sec-Butylbenzene	16.68	105	3048098	51.9657 ug/L	99
90) p-Isopropyltoluene	16.82	119	2657635	53.7738 ug/L	100
91) 1,3-Dichlorobenzene	17.02	146	1452965	48.6315 ug/L	98
92) 1,4-Dichlorobenzene	17.13	146	1559125	52.1037 ug/L	98
93) n-Butylbenzene	17.31	91	2494328	60.9960 ug/L	99
94) 1,2-Dichlorobenzene	17.60	146	1339399	48.8309 ug/L	97
95) 1,2-Dibromo-3-Chloropropan	18.52	75	86249	53.8567 ug/L	88
96) 1,2,4-Trichlorobenzene	19.58	180	978527	53.6830 ug/L	96
97) Hexachlorobutadiene	19.72	225	394822	53.7642 ug/L	98
98) Naphthalene	19.93	128	1731523	58.0371 ug/L	99
99) 1,2,3-Trichlorobenzene	20.23	180	874822	54.3068 ug/L	96

(#) = qualifier out of range (m) = manual integration
11M02161.D 8260WTR.M Mon Jun 30 10:45:23 2014 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\062714\11M02161.D Vial: 14
Acq On : 27 Jun 2014 21:34 Operator: FJB
Sample : WG482009-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:45 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

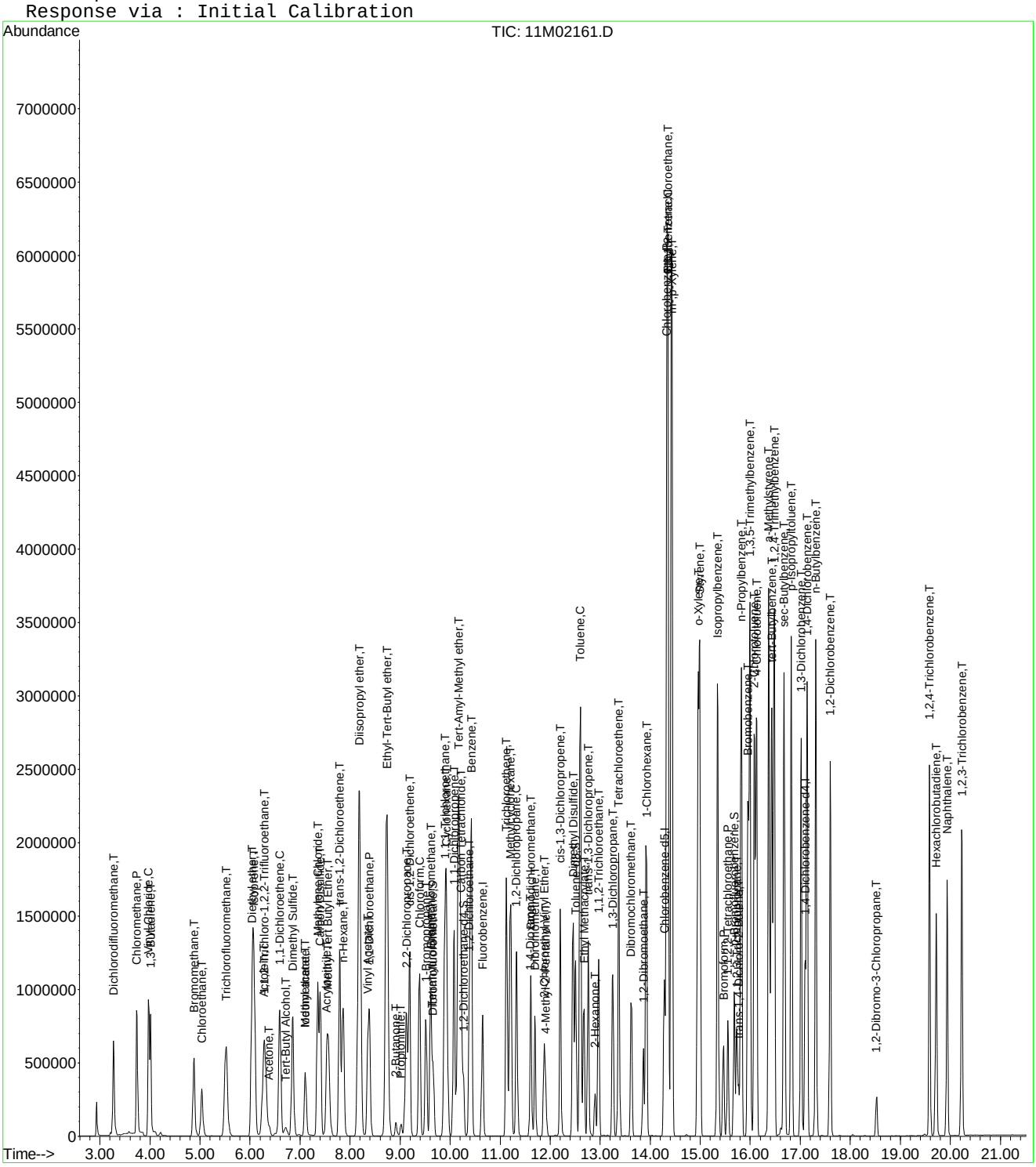

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062714\11M02161.D Vial: 14
Acq On : 27 Jun 2014 21:34 Operator: FJB
Sample : WG482009-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	50.0000	78.8357	-57.7#	150	0.00
3	P	Chloromethane	50.0000	57.4358	-14.9	121	-0.01
4	C	Vinyl Chloride	50.0000	58.7824	-17.6	111	-0.01
5	T	1,3-Butadiene	50.0000	26.3033	47.4#	62	-0.02
6	T	Bromomethane	50.0000	55.6800	-11.4	133	-0.01
7	T	Chloroethane	50.0000	56.1943	-12.4	111	-0.01
8	T	Trichlorofluoromethane	50.0000	57.4590	-14.9	114	0.00
9	T	Diethyl ether	100.0000	105.9696	-6.0	108	0.00
10	T	Isoprene	50.0000	51.7675	-3.5	102	0.00
11	T	Acrolein	50.0000	71.6280	-43.3#	143	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.7913	-7.6	107	0.00
13	T	Acetone	50.0000	51.4316	-2.9	116	0.00
14	C	1,1-Dichloroethene	50.0000	50.6351	-1.3	99	0.00
15	T	Tert-Butyl Alcohol	200.0000	248.3224	-24.2	129	0.01
16	T	Dimethyl Sulfide	50.0000	53.9605	-7.9	108	0.00
17	T	Iodomethane	50.0000	30.4995	39.0#	59	0.00
18	T	Methyl acetate	50.0000	49.4022	1.2	102	0.00
19	T	Methylene Chloride	50.0000	48.9975	2.0	103	0.00
20	T	Carbon Disulfide	50.0000	47.2641	5.5	90	0.00
21	T	Acrylonitrile	50.0000	50.7366	-1.5	100	0.00
22	T	Methyl Tert Butyl Ether	50.0000	52.6950	-5.4	107	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.2364	-4.5	106	-0.01
24	T	n-Hexane	50.0000	46.7036	6.6	91	0.00
25	T	Diisopropyl ether	100.0000	107.6569	-7.7	107	0.01
26	T	Vinyl Acetate	50.0000	90.2223	-80.4#	177	0.00
27	P	1,1-Dichloroethane	50.0000	51.0542	-2.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	107.8088	-7.8	108	0.01
29	T	2-Butanone	50.0000	51.6439	-3.3	107	0.00
30	T	Propionitrile	100.0000	107.2058	-7.2	107	0.00
31	T	2,2-Dichloropropane	50.0000	48.5539	2.9	97	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.8843	-3.8	104	0.00
33	C	Chloroform	50.0000	51.6642	-3.3	103	0.00
34	T	1-Bromopropane	50.0000	62.7852	-25.6#	118	0.00
35	T	Bromochloromethane	50.0000	52.3607	-4.7	103	0.00
36	T	Tetrahydrofuran	100.0000	107.9085	-7.9	109	0.00
37	S	Dibromofluoromethane	25.0000	23.6832	5.3	91	0.00
38	T	1,1,1-Trichloroethane	50.0000	52.2348	-4.5	104	0.00
39	T	Cyclohexane	50.0000	50.9994	-2.0	98	0.00
40	T	1,1-Dichloropropene	50.0000	52.3025	-4.6	102	0.00
41	T	Carbon Tetrachloride	50.0000	53.4682	-6.9	103	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	109.1176	-9.1	110	0.01
43	S	1,2-Dichloroethane-d4	25.0000	22.1520	11.4	87	0.00
44	T	1,2-Dichloroethane	50.0000	49.1195	1.8	101	0.00
45	T	Benzene	50.0000	52.6456	-5.3	103	0.00
46	T	Trichloroethene	50.0000	51.5084	-3.0	105	0.00
47	T	Methylcyclohexane	50.0000	52.4700	-4.9	100	0.00
48	C	1,2-Dichloropropane	50.0000	51.4056	-2.8	101	-0.01
49	T	1,4-Dioxane	200.0000	246.5642	-23.3	124	0.00
50	T	Bromodichloromethane	50.0000	50.5468	-1.1	100	0.00
51	T	Dibromomethane	50.0000	49.8195	0.4	100	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	52.5405	-5.1	102	0.00
53	T	4-Methyl-2-Pentanone	50.0000	54.8497	-9.7	107	0.00
54	T	cis-1,3-Dichloropropene	50.0000	54.9881	-10.0	104	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062714\11M02161.D Vial: 14
Acq On : 27 Jun 2014 21:34 Operator: FJB
Sample : WG482009-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	51.6145	-3.2	103	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
57	S	Toluene-d8	25.0000	24.2199	3.1	94	0.00
58	C	Toluene	50.0000	53.8166	-7.6	102	0.00
59	T	Ethyl Methacrylate	50.0000	58.3254	-16.7	109	0.00
60	T	trans-1,3-Dichloropropene	50.0000	50.5191	-1.0	95	0.00
61	T	1,1,2-Trichloroethane	50.0000	49.0968	1.8	100	0.00
62	T	2-Hexanone	50.0000	57.0045	-14.0	111	0.00
63	T	1,3-Dichloropropane	50.0000	48.8139	2.4	101	0.00
64	T	Tetrachloroethene	50.0000	49.9300	0.1	101	0.00
65	T	Dibromochloromethane	50.0000	52.0547	-4.1	102	0.00
66	T	1,2-Dibromoethane	50.0000	49.2803	1.4	99	0.00
67	T	1-Chlorohexane	50.0000	55.7877	-11.6	105	0.00
68	P	Chlorobenzene	50.0000	49.1719	1.7	96	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	51.4205	-2.8	102	0.00
70	C	Ethylbenzene	50.0000	51.9072	-3.8	102	0.01
71	T	m-,p-Xylene	100.0000	106.2087	-6.2	99	0.00
72	T	o-Xylene	50.0000	48.9611	2.1	95	0.00
73	T	Styrene	50.0000	58.0808	-16.2	102	0.00
74	P	Bromoform	50.0000	52.2737	-4.5	100	0.00
75	T	Isopropylbenzene	50.0000	52.5277	-5.1	96	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	103	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	47.2170	5.6	99	0.00
78	S	p-Bromofluorobenzene	25.0000	24.4737	2.1	99	0.00
79	T	1,2,3-Trichloropropane	50.0000	48.4720	3.1	100	0.01
80	T	trans-1,4-Dichloro-2-Butene	50.0000	27.4001	45.2#	58	0.00
81	T	n-Propylbenzene	50.0000	48.0645	3.9	94	0.00
82	T	Bromobenzene	50.0000	48.6003	2.8	102	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	56.3611	-12.7	107	0.00
84	T	2-Chlorotoluene	50.0000	47.3738	5.3	98	0.00
85	T	4-Chlorotoluene	50.0000	49.0458	1.9	96	-0.03
86	T	a-Methylstyrene	50.0000	56.7220	-13.4	107	0.00
87	T	tert-Butylbenzene	50.0000	47.9239	4.2	97	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	57.3168	-14.6	106	0.00
89	T	sec-Butylbenzene	50.0000	51.9657	-3.9	98	0.00
90	T	p-Isopropyltoluene	50.0000	53.7738	-7.5	99	0.00
91	T	1,3-Dichlorobenzene	50.0000	48.6315	2.7	99	0.00
92	T	1,4-Dichlorobenzene	50.0000	52.1037	-4.2	106	0.00
93	T	n-Butylbenzene	50.0000	60.9960	-22.0	109	0.00
94	T	1,2-Dichlorobenzene	50.0000	48.8309	2.3	99	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	53.8567	-7.7	111	-0.01
96	T	1,2,4-Trichlorobenzene	50.0000	53.6830	-7.4	113	0.00
97	T	Hexachlorobutadiene	50.0000	53.7642	-7.5	116	0.00
98	T	Naphthalene	50.0000	58.0371	-16.1	111	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	54.3068	-8.6	114	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M02161.D 8260WTR.M Mon Jun 30 10:45:29 2014 Page 2

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02161.D Vial: 14
Acq On : 27 Jun 2014 21:34 Operator: FJB
Sample : WG482009-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:43 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Multiple Level Calibration

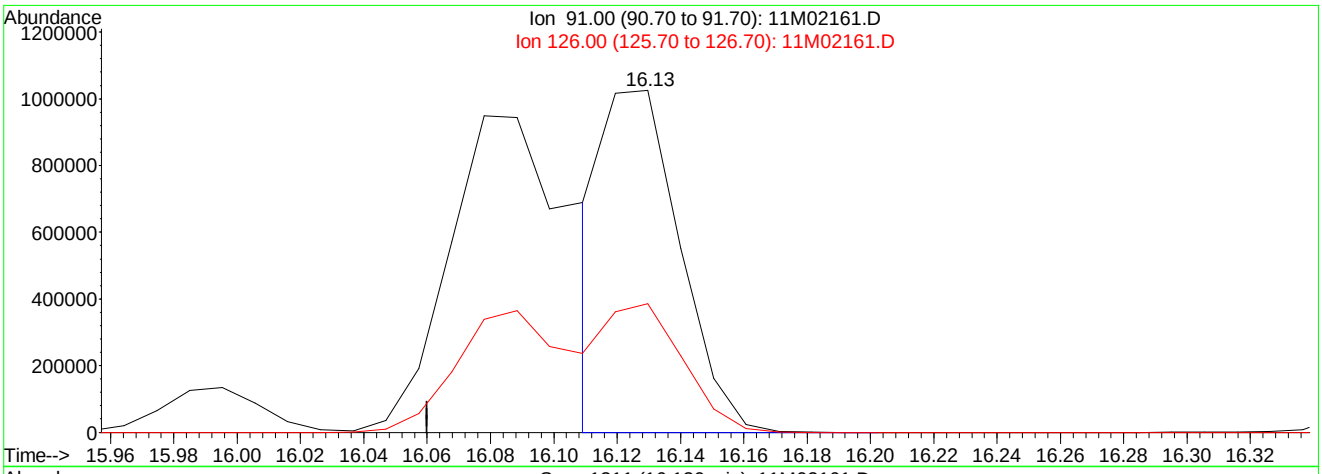

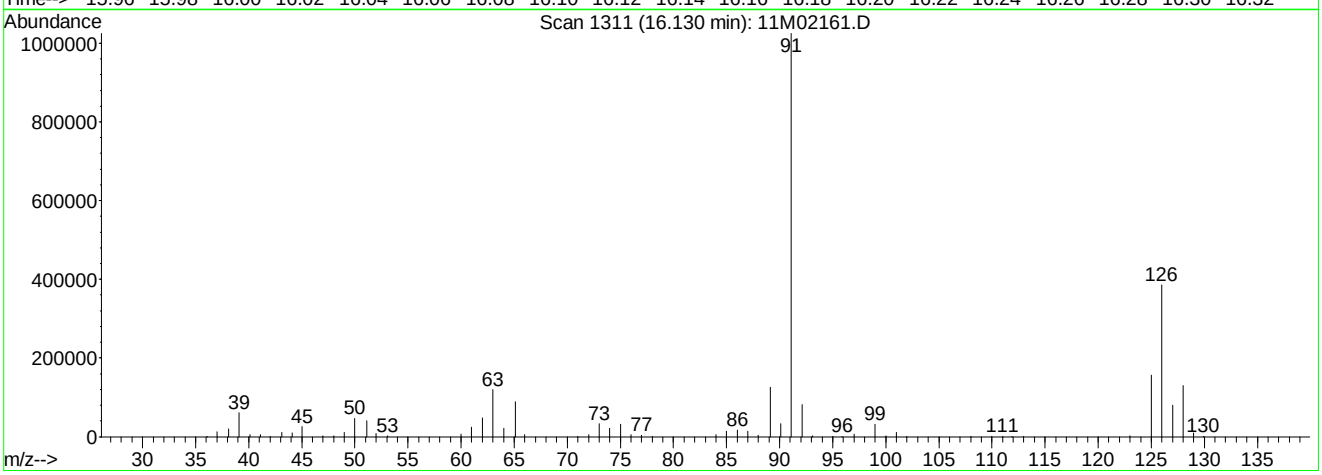

TIC: 11M02161.D

(85) 4-Chlorotoluene (T)

16.13min 39.32ug/L

response 1727639

Ion	Exp%	Act%
91.00	100	100
126.00	34.70	37.98
0.00	0.00	0.00
0.00	0.00	0.00

11M02161.D 8260WTR.M Mon Jun 30 10:45:11 2014

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\062714\11M02161.D Vial: 14
Acq On : 27 Jun 2014 21:34 Operator: FJB
Sample : WG482009-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 30 10:45 2014 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Multiple Level Calibration

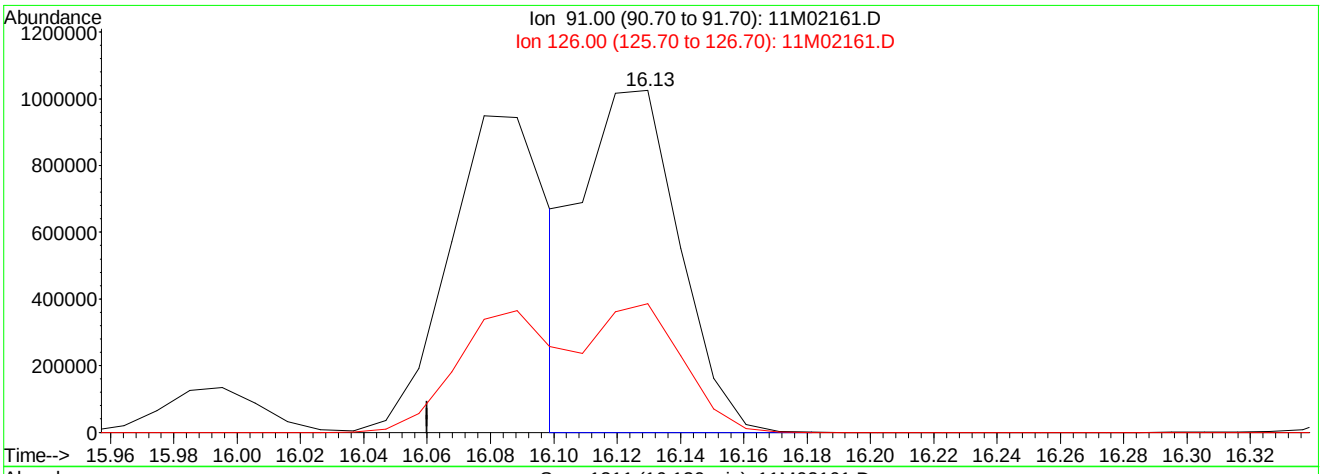

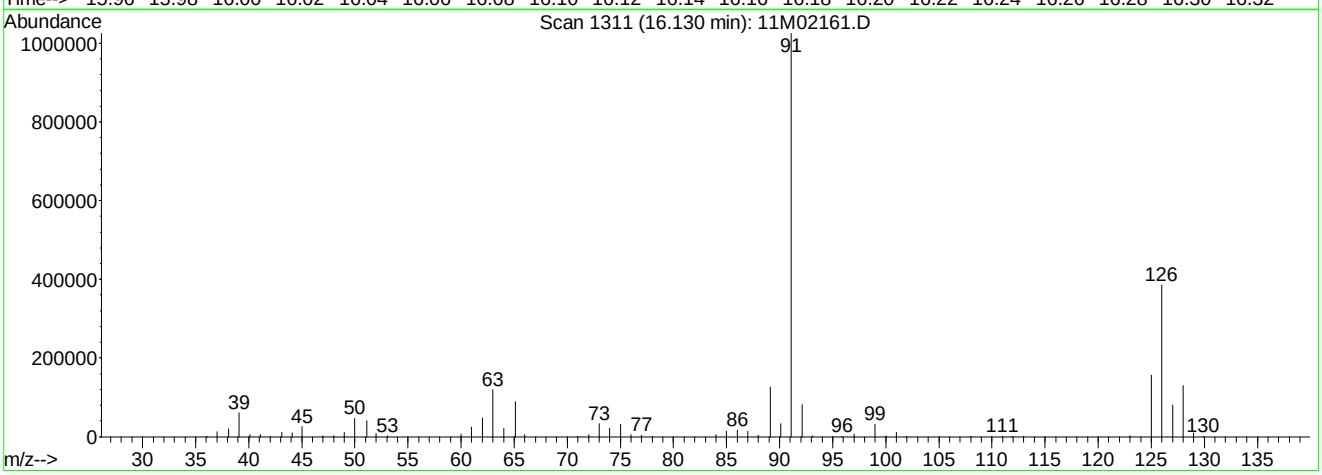

TIC: 11M02161.D

(85) 4-Chlorotoluene (T)

16.13min 49.05ug/L mint

response 2154891

Ion	Exp%	Act%
91.00	100	100
126.00	34.70	30.45
0.00	0.00	0.00
0.00	0.00	0.00

11M02161.D 8260WTR.M Mon Jun 30 .4

Analyst: 06/30/2014 14:36 Supervisor: 06/30/2014 15:40

#2 - Data system splits the peak incorrectly or integrates a false peak as a rider peak

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957895.D Vial: 3
Acq On : 19 Aug 2013 16:23 Operator: adc
Sample : WG441888-01 5.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:37 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	643130	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	439679	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	231000	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.94	41	2569	4.6165 ug/L #	16
3) 3-Chloro-1-propene	7.32	41	43441	4.7909 ug/L	90
4) 2-Chloro-1,3-butadiene	8.71	53	43442	4.4636 ug/L	98
5) Ethyl Acetate	9.34	43	19334	4.4239 ug/L	96
6) Methacrylonitrile	9.50	67	9285	4.2205 ug/L	88
7) Isobutyl Alcohol	9.51	43	1864	4.9961 ug/L #	84
9) Methyl methacrylate	11.67	41	21094	4.5700 ug/L	95
10) 2-Nitropropane	12.01	43	6118	4.1497 ug/L	83
12) Cyclohexanone	16.11	55	3867	6.1515 ug/L	83

(#) = qualifier out of range (m) = manual integration
9M957895.D A9FOOWT.M Tue Aug 20 15:11:38 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957895.D Vial: 3
Acq On : 19 Aug 2013 16:23 Operator: adc
Sample : WG441888-01 5.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

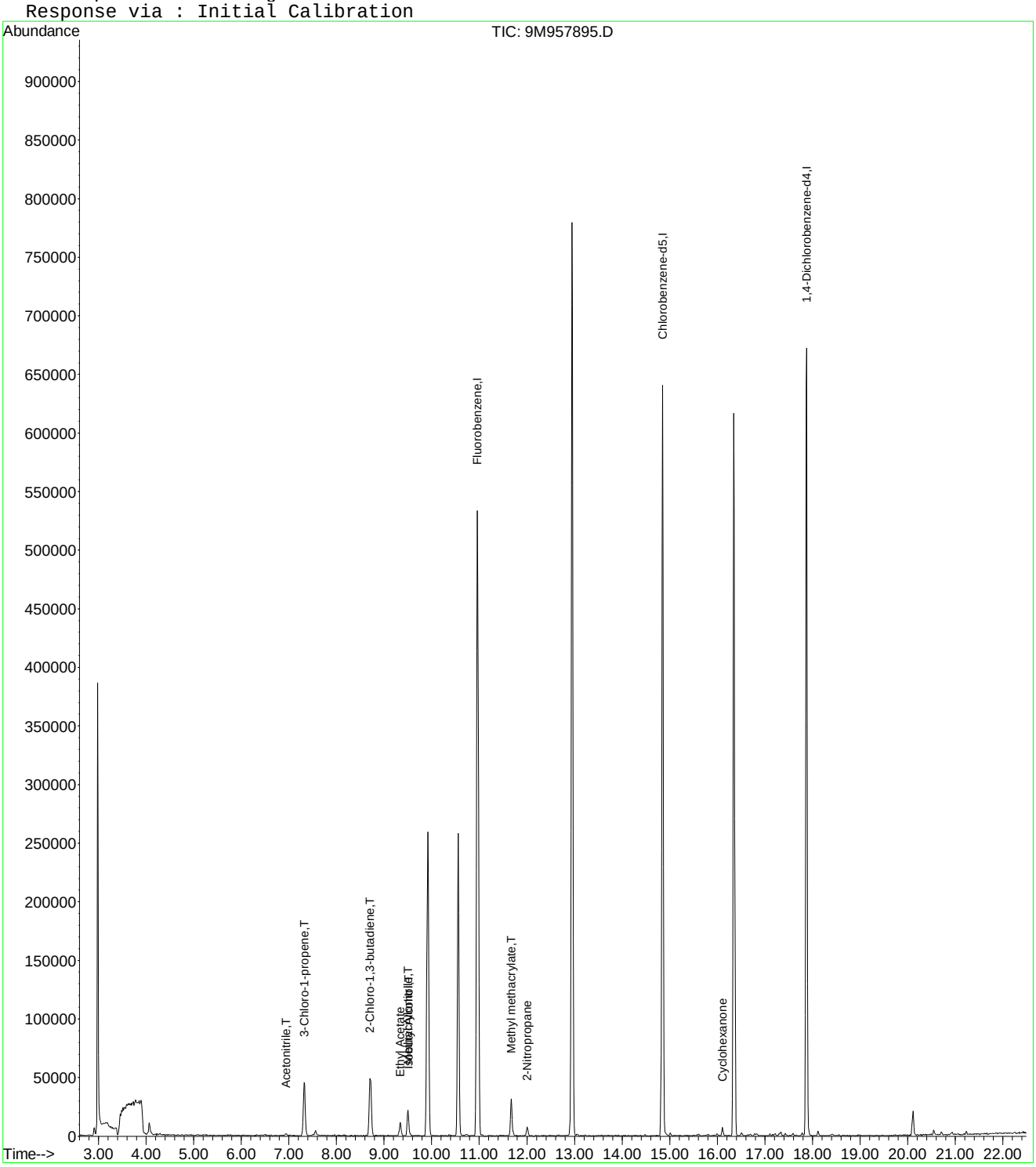

9M957895.D A9FOOWT.M Tue Aug 20 15:11:38 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957896.D Vial: 4
Acq On : 19 Aug 2013 16:53 Operator: adc
Sample : WG441888-02 20.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:39 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	597162	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	410709	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	204391	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.94	41	10346	20.0230 ug/L #	94
3) 3-Chloro-1-propene	7.32	41	165346	19.6389 ug/L	99
4) 2-Chloro-1,3-butadiene	8.71	53	173321	19.1794 ug/L	98
5) Ethyl Acetate	9.33	43	80571	19.8547 ug/L	98
6) Methacrylonitrile	9.49	67	39572	19.3720 ug/L	100
7) Isobutyl Alcohol	9.50	43	7225	20.8558 ug/L #	84
8) 1-Butanol	10.43	56	1470	17.5760 ug/L #	28
9) Methyl methacrylate	11.67	41	82730	19.3029 ug/L	99
10) 2-Nitropropane	12.01	43	24248	17.7129 ug/L	96
12) Cyclohexanone	16.11	55	10457	17.8080 ug/L	93

(#) = qualifier out of range (m) = manual integration
9M957896.D A9FOOWT.M Tue Aug 20 15:11:40 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957896.D Vial: 4
Acq On : 19 Aug 2013 16:53 Operator: adc
Sample : WG441888-02 20.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

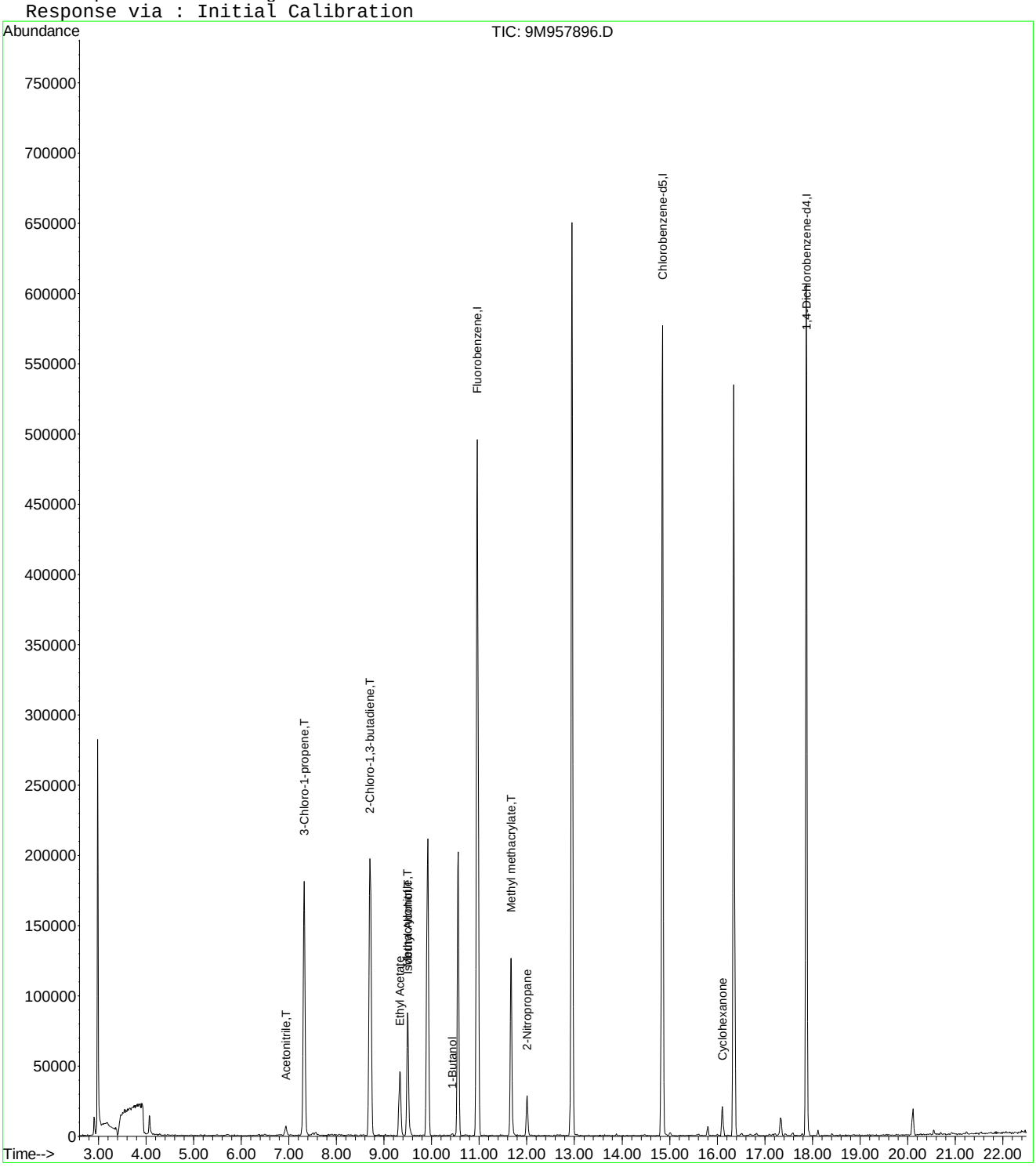

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957897.D Vial: 5
Acq On : 19 Aug 2013 17:22 Operator: adc
Sample : WG441888-03 50.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:40 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	543956	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	378286	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.87	152	186935	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	24663	52.3999 ug/L #	95
3) 3-Chloro-1-propene	7.32	41	408290	53.2380 ug/L	99
4) 2-Chloro-1,3-butadiene	8.70	53	433367	52.6464 ug/L	100
5) Ethyl Acetate	9.33	43	199641	54.0087 ug/L	99
6) Methacrylonitrile	9.50	67	98625	53.0031 ug/L	97
7) Isobutyl Alcohol	9.50	43	15873	50.3010 ug/L	98
8) 1-Butanol	10.42	56	3593	47.1615 ug/L	91
9) Methyl methacrylate	11.67	41	207430	53.1325 ug/L	99
10) 2-Nitropropane	12.00	43	62334	49.9883 ug/L	97
12) Cyclohexanone	16.11	55	27156	50.2096 ug/L	97

(#) = qualifier out of range (m) = manual integration
9M957897.D A9FOOWT.M Tue Aug 20 15:11:41 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957897.D Vial: 5
Acq On : 19 Aug 2013 17:22 Operator: adc
Sample : WG441888-03 50.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

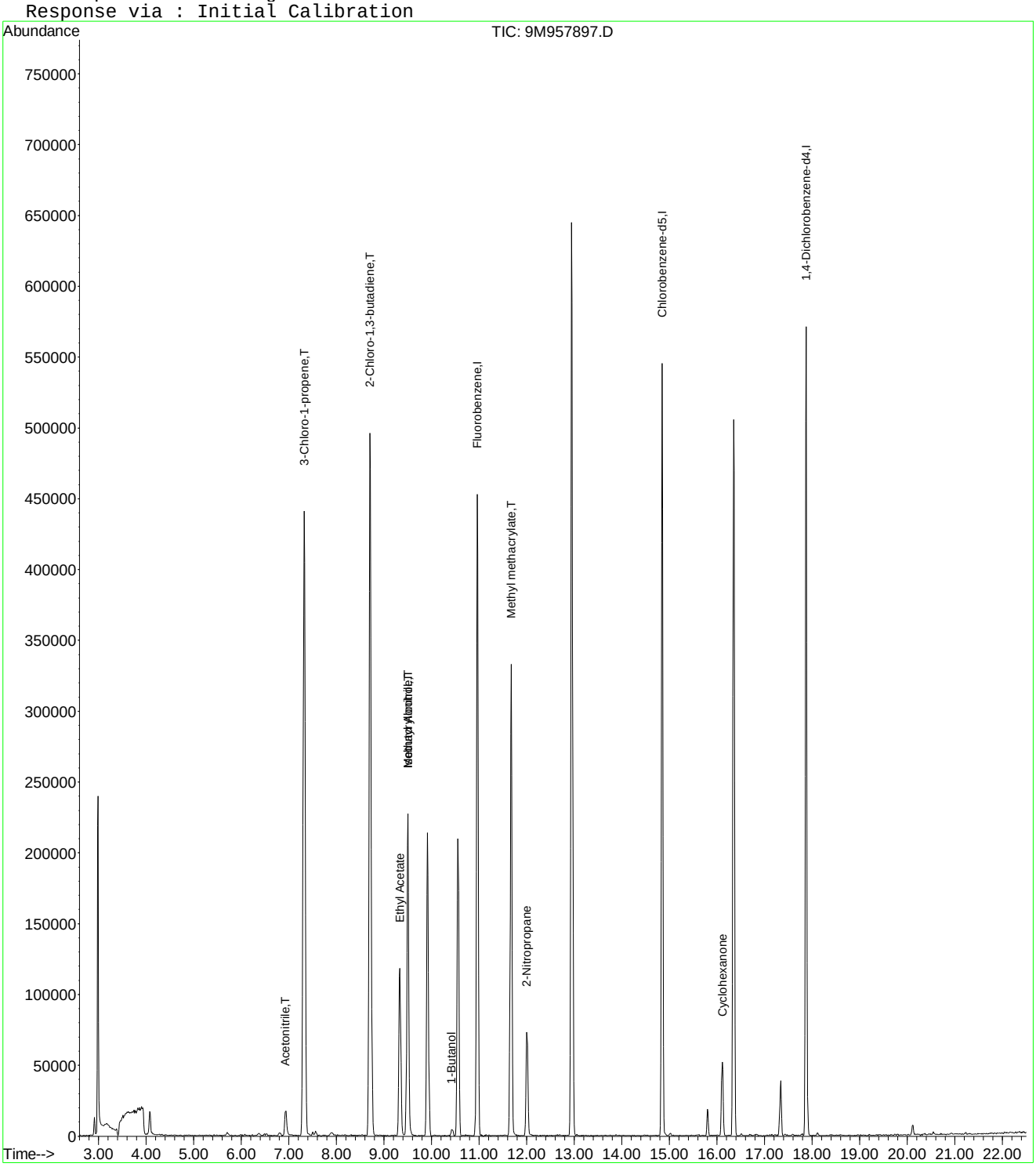

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957898.D Vial: 6
Acq On : 19 Aug 2013 17:51 Operator: adc
Sample : WG441888-04 100.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:42 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	576048	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	389894	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	192883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	49019	98.3454 ug/L #	100
3) 3-Chloro-1-propene	7.32	41	803367	98.9172 ug/L	100
4) 2-Chloro-1,3-butadiene	8.70	53	860009	98.6554 ug/L	100
5) Ethyl Acetate	9.34	43	394422	100.7581 ug/L	100
6) Methacrylonitrile	9.50	67	193914	98.4076 ug/L	100
7) Isobutyl Alcohol	9.50	43	30821	92.2294 ug/L	100
8) 1-Butanol	10.42	56	6864	85.0771 ug/L	100
9) Methyl methacrylate	11.67	41	411094	99.4339 ug/L	100
10) 2-Nitropropane	12.00	43	129933	98.3938 ug/L	100
12) Cyclohexanone	16.11	55	53010	95.0938 ug/L	100

(#) = qualifier out of range (m) = manual integration
9M957898.D A9FOOWT.M Tue Aug 20 15:11:43 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957898.D Vial: 6
Acq On : 19 Aug 2013 17:51 Operator: adc
Sample : WG441888-04 100.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

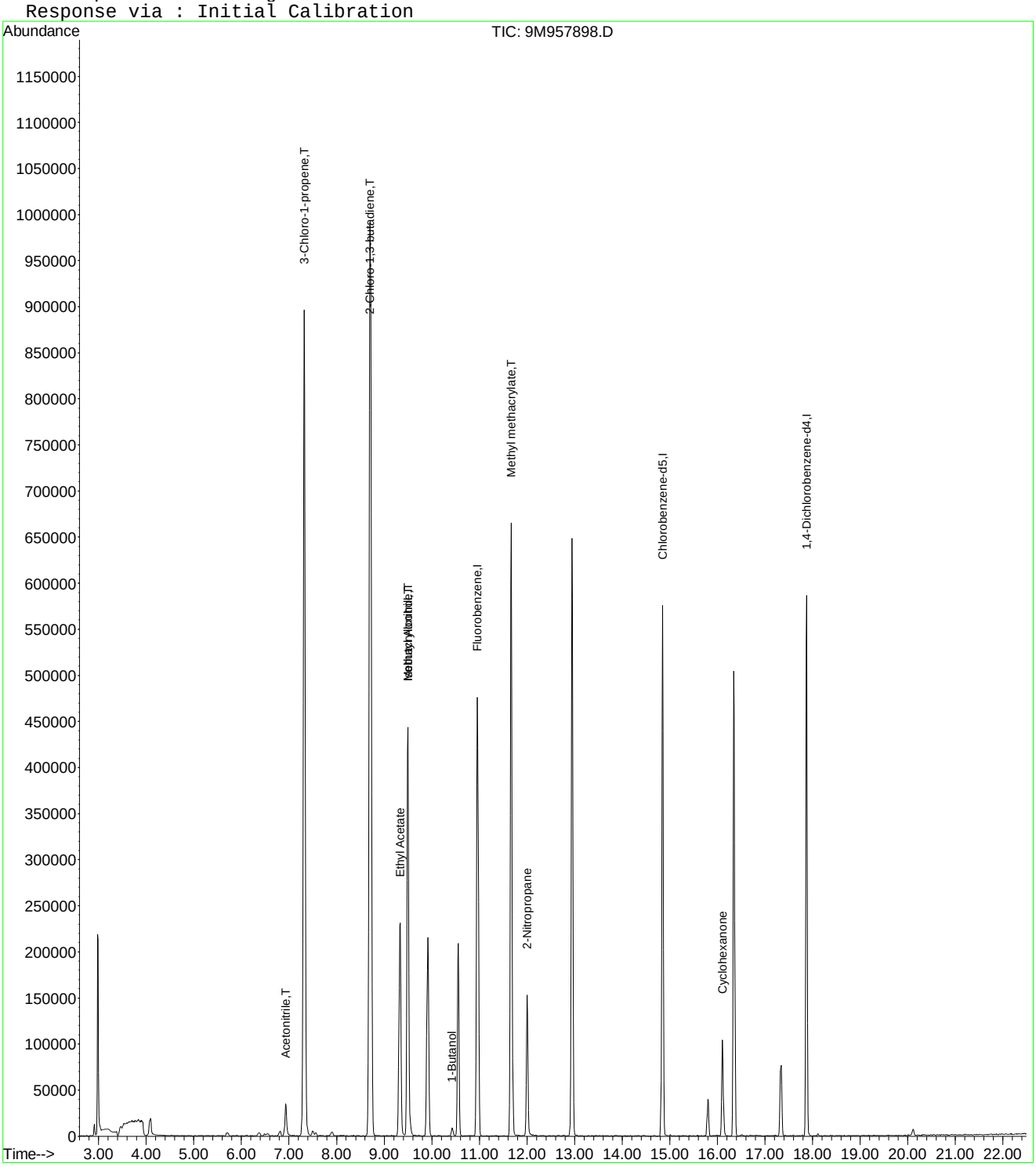

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957899.D Vial: 7
Acq On : 19 Aug 2013 18:20 Operator: adc
Sample : WG441888-05 200.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:44 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	570456	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	385619	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	194966	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	99623	201.8300 ug/L #	97
3) 3-Chloro-1-propene	7.32	41	1635978	203.4097 ug/L	100
4) 2-Chloro-1,3-butadiene	8.70	53	1777598	205.9150 ug/L	99
5) Ethyl Acetate	9.33	43	796090	205.3608 ug/L	100
6) Methacrylonitrile	9.50	67	402877	206.4564 ug/L	96
7) Isobutyl Alcohol	9.50	43	61854	186.9075 ug/L	94
8) 1-Butanol	10.43	56	17315	216.7176 ug/L	91
9) Methyl methacrylate	11.67	41	835832	204.1498 ug/L	98
10) 2-Nitropropane	12.00	43	277669	212.3304 ug/L	98
12) Cyclohexanone	16.11	55	106553	193.2629 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M957899.D A9FOOWT.M Tue Aug 20 15:11:44 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957899.D Vial: 7
Acq On : 19 Aug 2013 18:20 Operator: adc
Sample : WG441888-05 200.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

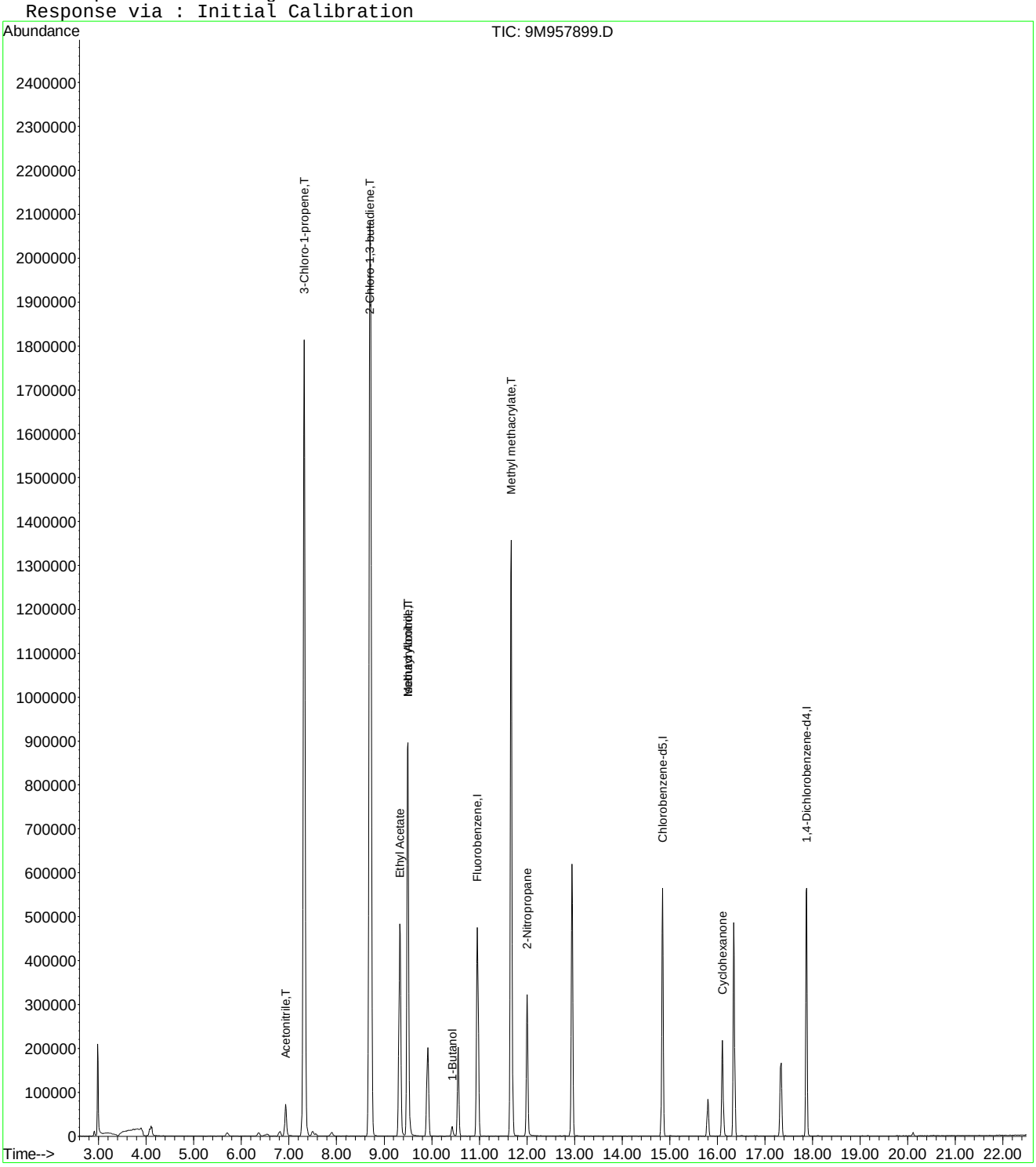

9M957899.D A9FOOWT.M Tue Aug 20 15:11:45 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957900.D Vial: 8
Acq On : 19 Aug 2013 18:48 Operator: adc
Sample : WG441888-06 300.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:45 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	592665	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	402629	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	202256	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	152817	297.9962 ug/L #	98
3) 3-Chloro-1-propene	7.32	41	2473810	296.0557 ug/L	99
4) 2-Chloro-1,3-butadiene	8.70	53	2716896	302.9287 ug/L	96
5) Ethyl Acetate	9.32	43	1204380	299.0417 ug/L	100
6) Methacrylonitrile	9.50	67	614447	303.0771 ug/L	97
7) Isobutyl Alcohol	9.50	43	100051	291.0002 ug/L	95
8) 1-Butanol	10.42	56	27392	329.9958 ug/L	92
9) Methyl methacrylate	11.67	41	1277690	300.3782 ug/L	98
10) 2-Nitropropane	12.00	43	426305	313.7748 ug/L	98
12) Cyclohexanone	16.11	55	164262	285.3469 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M957900.D A9FOOWT.M Tue Aug 20 15:11:46 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957900.D Vial: 8
Acq On : 19 Aug 2013 18:48 Operator: adc
Sample : WG441888-06 300.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

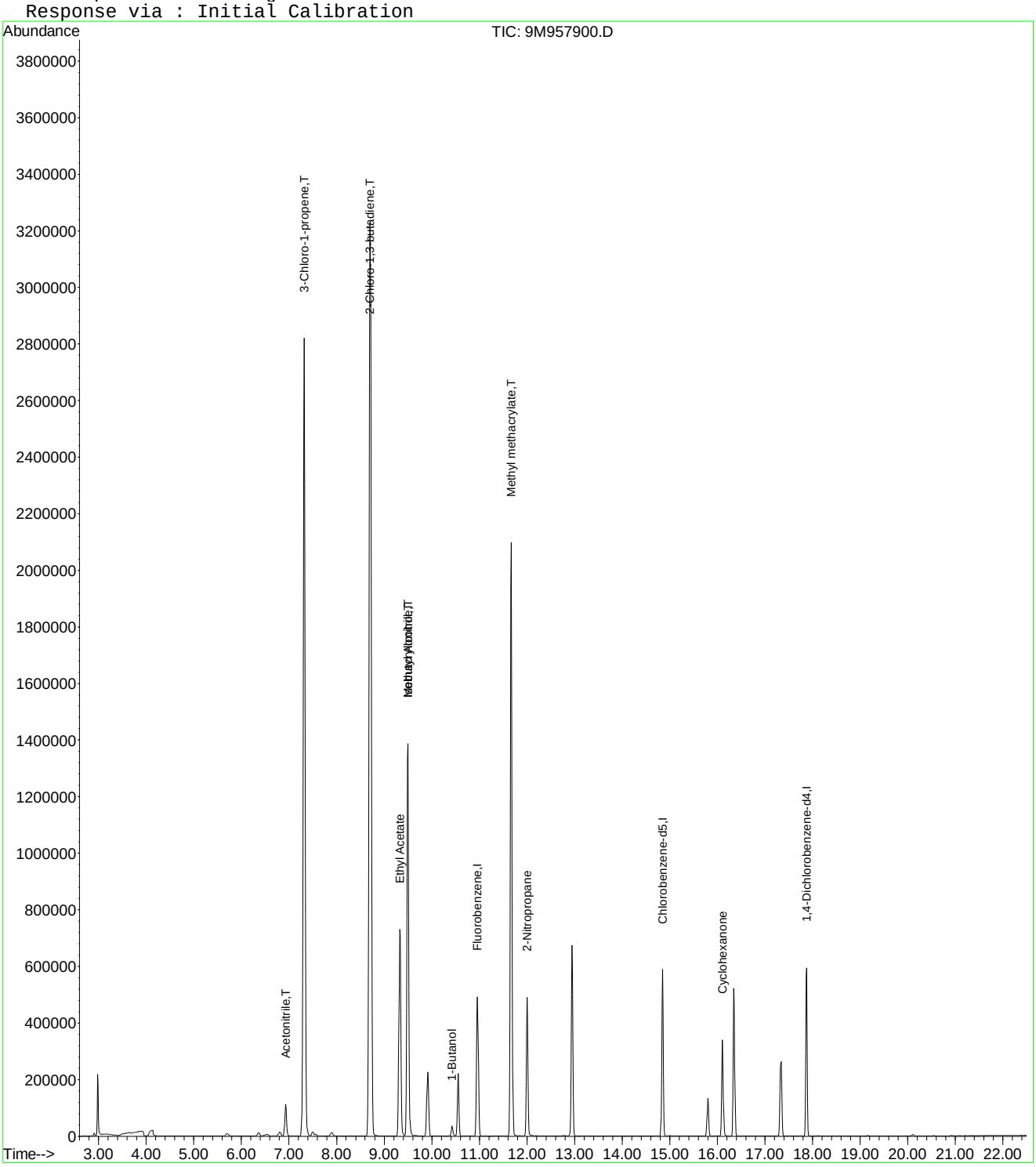

9M957900.D A9FOOWT.M Tue Aug 20 15:11:46 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957901.D Vial: 9
Acq On : 19 Aug 2013 19:17 Operator: adc
Sample : WG441888-07 400.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:47 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	594215	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	396612	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	201290	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	204659	398.0481 ug/L #	97
3) 3-Chloro-1-propene	7.32	41	3257505	388.8283 ug/L	98
4) 2-Chloro-1,3-butadiene	8.70	53	3609438	401.3956 ug/L	95
5) Ethyl Acetate	9.33	43	1573860	389.7624 ug/L	99
6) Methacrylonitrile	9.50	67	822198	404.4928 ug/L	95
7) Isobutyl Alcohol	9.50	43	139506	404.6974 ug/L	95
8) 1-Butanol	10.43	56	38071	457.4510 ug/L	87
9) Methyl methacrylate	11.67	41	1682799	394.5852 ug/L	97
10) 2-Nitropropane	12.00	43	574030	421.4033 ug/L	98
12) Cyclohexanone	16.11	55	220458	388.7775 ug/L	97

(#) = qualifier out of range (m) = manual integration
9M957901.D A9FOOWT.M Tue Aug 20 15:11:48 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957901.D Vial: 9
Acq On : 19 Aug 2013 19:17 Operator: adc
Sample : WG441888-07 400.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

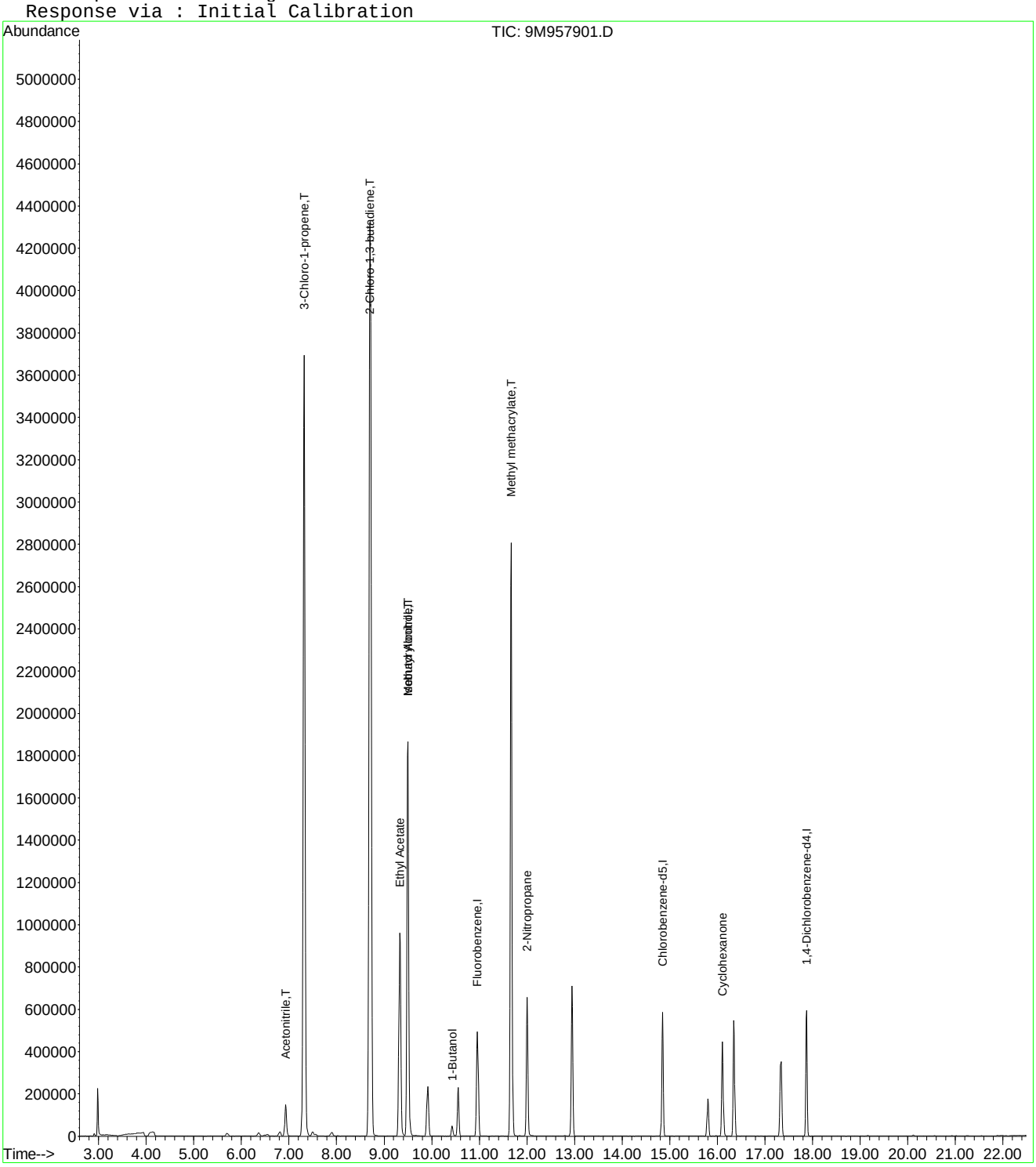

9M957901.D A9FOOWT.M Tue Aug 20 15:11:48 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957902.D Vial: 10
Acq On : 19 Aug 2013 19:46 Operator: adc
Sample : WG441888-08 500.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:48 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	558878	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	375431	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	195195	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	253035	523.2532 ug/L #	96
3) 3-Chloro-1-propene	7.32	41	4057841	514.9848 ug/L	97
4) 2-Chloro-1,3-butadiene	8.71	53	4507808	532.9974 ug/L	93
5) Ethyl Acetate	9.33	43	1968668	518.3617 ug/L	99
6) Methacrylonitrile	9.50	67	1041348	544.6993 ug/L	94
7) Isobutyl Alcohol	9.50	43	180492	556.7011 ug/L	98
8) 1-Butanol	10.42	56	50726	648.0485 ug/L	87
9) Methyl methacrylate	11.67	41	2116667	527.7007 ug/L	96
10) 2-Nitropropane	12.00	43	730036	569.8155 ug/L	96
12) Cyclohexanone	16.11	55	277715	517.3808 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M957902.D A9FOOWT.M Tue Aug 20 15:11:49 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957902.D Vial: 10
Acq On : 19 Aug 2013 19:46 Operator: adc
Sample : WG441888-08 500.0ug/L A9STD 8260 Inst : HPMS9
Misc : 1,1 STD59338 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

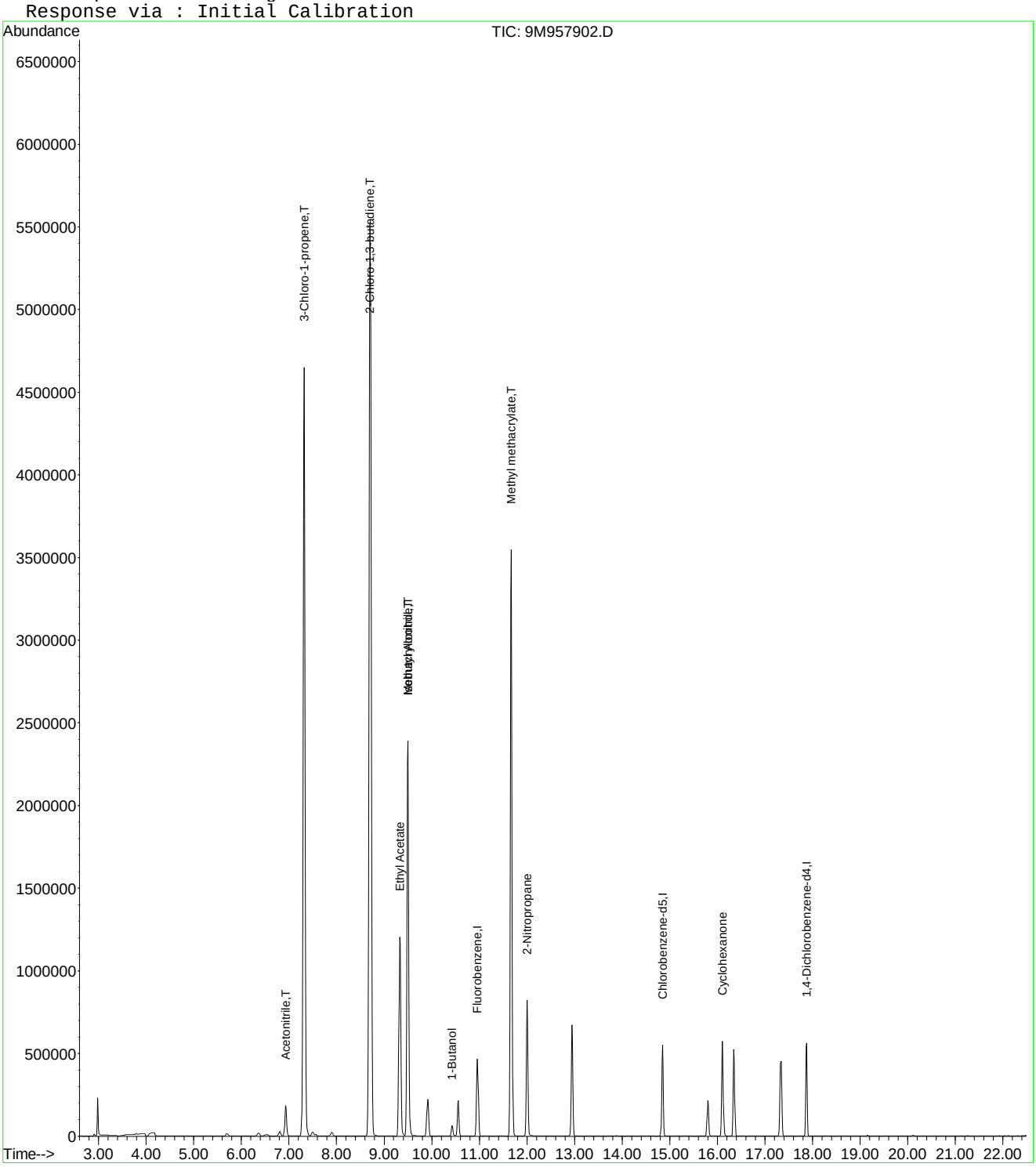

9M957902.D A9FOOWT.M Tue Aug 20 15:11:50 2013 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957904.D Vial: 12
Acq On : 19 Aug 2013 20:45 Operator: adc
Sample : WG441888-09 100.0ug/L A9 ALT SRC 8260 Inst : HPMS9
Misc : 1,1 STD59238 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11:51 2013 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.96	96	586208	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.85	117	409219	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.88	152	211008	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.93	41	50132	98.8352 ug/L #	98
3) 3-Chloro-1-propene	7.32	41	816431	98.7834 ug/L	100
4) 2-Chloro-1,3-butadiene	8.70	53	671697	75.7179 ug/L	99
5) Ethyl Acetate	9.33	43	396368	99.5003 ug/L	99
6) Methacrylonitrile	9.50	67	193448	96.4696 ug/L	98
7) Isobutyl Alcohol	9.50	43	31033	91.2543 ug/L	97
8) 1-Butanol	10.42	56	7261	88.4379 ug/L	91
9) Methyl methacrylate	11.67	41	399116	94.8636 ug/L	100
10) 2-Nitropropane	12.00	43	115876	86.2281 ug/L	100
12) Cyclohexanone	16.11	55	11072	18.9239 ug/L	96

(#) = qualifier out of range (m) = manual integration
9M957904.D A9FOOWT.M Tue Aug 20 15:11:52 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\081913\9M957904.D Vial: 12
Acq On : 19 Aug 2013 20:45 Operator: adc
Sample : WG441888-09 100.0ug/L A9 ALT SRC 8260 Inst : HPMS9
Misc : 1,1 STD59238 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 15:11 2013 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Initial Calibration

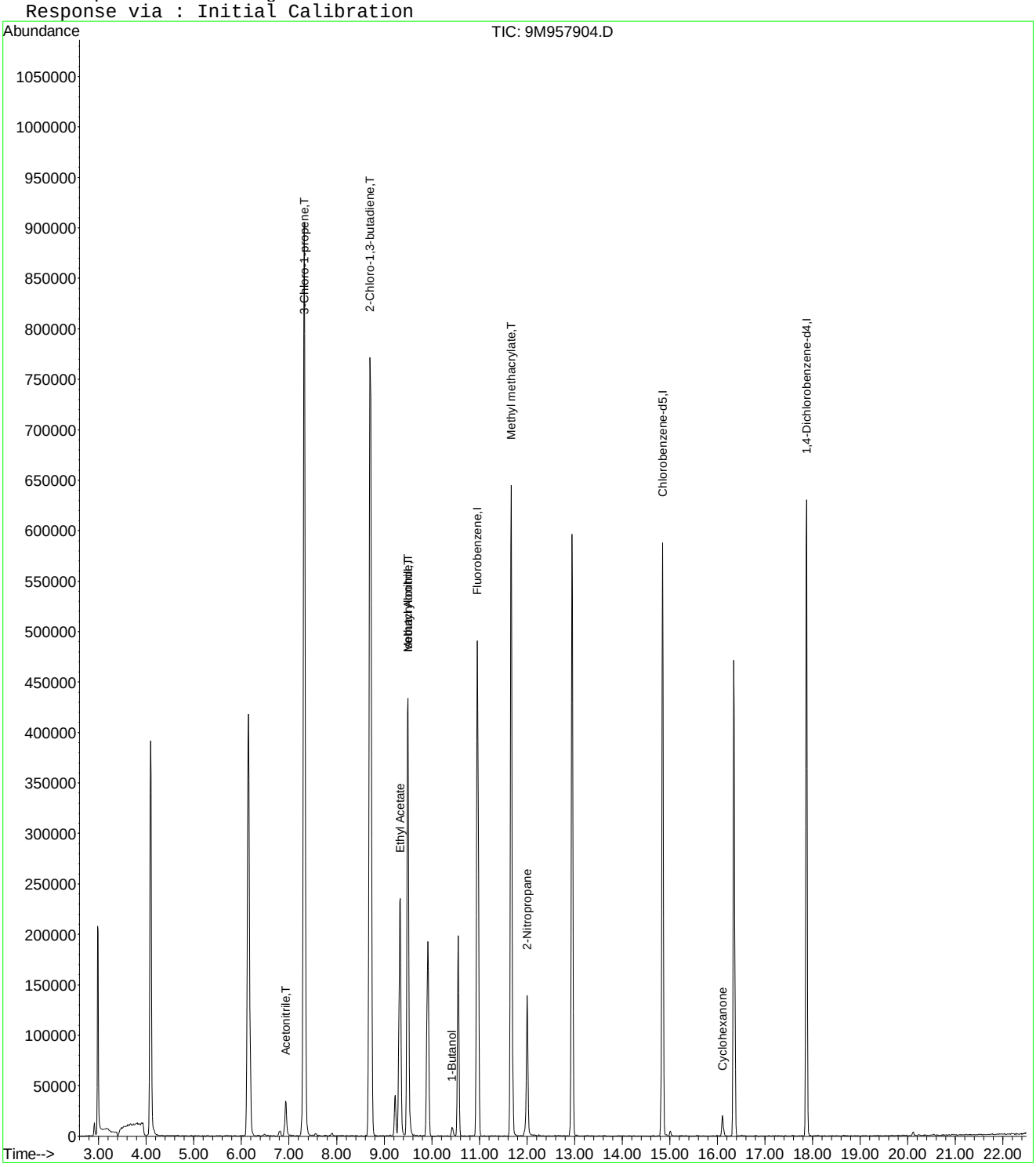

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\081913\9M957904.D Vial: 12
Acq On : 19 Aug 2013 20:45 Operator: adc
Sample : WG441888-09 100.0ug/L A9 ALT SRC 8260 Inst : HPMS9
Misc : 1,1 STD59238 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Tue Aug 20 15:10:19 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	102	0.00
2	T	Acetonitrile	100.0000	98.8352	1.2	102	0.00
3	T	3-Chloro-1-propene	100.0000	98.7834	1.2	102	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	75.7179	24.3	78	0.00
5		Ethyl Acetate	100.0000	99.5003	0.5	100	0.00
6	T	Methacrylonitrile	100.0000	96.4696	3.5	100	0.00
7	T	Isobutyl Alcohol	100.0000	91.2543	8.7	101	0.00
8		1-Butanol	100.0000	88.4379	11.6	106	0.00
9	T	Methyl methacrylate	100.0000	94.8636	5.1	97	0.00
10		2-Nitropropane	100.0000	86.2281	13.8	89	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
12		Cyclohexanone	100.0000	18.9239	81.1#	21	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M957904.D A9FOOWT.M Tue Aug 20 15:12:04 2013 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964348.D Vial: 2
Acq On : 26 Jun 2014 15:55 Operator: ADC
Sample : WG482030-02 0.3ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:06 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	850104	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	610098	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	310655	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.04	111	1032	0.1145 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.44%#	
43) 1,2-Dichloroethane-d4	10.68	65	3255	0.2699 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.08%#	
58) Toluene-d8	13.07	98	8360	0.2774 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.12%#	
79) p-Bromofluorobenzene	16.47	95	6759	0.6030 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.40%#	

Target Compounds					Qvalue
3) Chloromethane	3.89	50	5726	0.2997 ug/L #	41
4) Vinyl Chloride	4.13	62	2853	0.2260 ug/L #	59
5) 1,3-Butadiene	4.19	54	3686	Below Cal #	41
6) Bromomethane	5.06	94	2237	0.2887 ug/L	100
7) Chloroethane	5.23	64	1346	0.1703 ug/L #	43
10) Isoprene	6.32	67	1523	0.1219 ug/L	67
13) Acetone	6.62	43	1807	0.5051 ug/L #	59
14) 1,1-Dichloroethene	6.82	61	3381	0.1874 ug/L	100
16) Dimethyl Sulfide	7.08	62	3626	0.2566 ug/L	71
18) Methyl acetate	7.36	43	3372	0.2882 ug/L #	70
19) Methylene Chloride	7.62	84	3165	0.3318 ug/L	92
20) Carbon Disulfide	7.68	76	5944	0.2335 ug/L #	64
22) Methyl Tert Butyl Ether	7.84	73	7865	0.3083 ug/L #	68
23) trans-1,2-Dichloroethene	8.07	61	5016	0.2819 ug/L	92
24) n-Hexane	8.16	57	2522	0.1401 ug/L	81
26) Vinyl Acetate	8.66	43	6623	0.3814 ug/L #	81
27) 1,1-Dichloroethane	8.70	63	5598	0.2538 ug/L #	86
29) 2-Butanone	9.23	43	1738	0.3030 ug/L #	63
31) 2,2-Dichloropropane	9.48	77	3743	0.2753 ug/L #	52
32) cis-1,2-Dichloroethene	9.55	96	3130	0.3060 ug/L	78
33) Chloroform	9.75	83	4868	0.2921 ug/L	93
35) Bromochloromethane	10.00	130	1426	0.2282 ug/L	61
38) 1,1,1-Trichloroethane	10.29	97	3006	0.2100 ug/L	78
39) Cyclohexane	10.32	56	4124	0.1724 ug/L	82
40) 1,1-Dichloropropene	10.47	75	2591	0.2159 ug/L #	63
42) Carbon Tetrachloride	10.63	117	2292	0.1821 ug/L #	74
45) 1,2-Dichloroethane	10.79	62	4998	0.3142 ug/L	90
46) Benzene	10.85	78	13413	0.3716 ug/L	93
47) Trichloroethene	11.60	130	3143	0.3044 ug/L	99
48) Methylcyclohexane	11.68	83	1995	0.1483 ug/L	87
49) 1,2-Dichloropropane	11.81	63	4313	0.3327 ug/L	91
51) Bromodichloromethane	12.11	83	3996	0.3122 ug/L #	81
52) Dibromomethane	12.20	174	1749	0.2949 ug/L	96
53) 2-Chloroethyl Vinyl Ether	12.38	63	1876	0.2659 ug/L #	56
54) 4-Methyl-2-Pentanone	12.43	58	810	0.1527 ug/L #	50
55) cis-1,3-Dichloropropene	12.74	75	4439	0.2956 ug/L #	77
56) Dimethyl Disulfide	13.00	94	3978	0.2475 ug/L	92
59) Toluene	13.17	91	10965	0.3036 ug/L	89
60) Ethyl Methacrylate	13.24	69	2967	0.2857 ug/L #	56
61) trans-1,3-Dichloropropene	13.33	75	4359	0.3156 ug/L	91

(#) = qualifier out of range (m) = manual integration
9M964348.D 8260WTR.M Mon Jun 30 15:44:08 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964348.D Vial: 2
Acq On : 26 Jun 2014 15:55 Operator: ADC
Sample : WG482030-02 0.3ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:06 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
62)	1,1,2-Trichloroethane	13.55	97	2418	0.3115 ug/L	100
63)	2-Hexanone	13.48	43	2247	0.2693 ug/L #	82
64)	1,3-Dichloropropane	13.86	76	3701	0.2713 ug/L	77
65)	Tetrachloroethene	13.98	164	1529	0.2036 ug/L	98
66)	Dibromochloromethane	14.25	129	2721	0.2877 ug/L	85
67)	1,2-Dibromoethane	14.51	107	2139	0.2701 ug/L	76
68)	1-Chlorohexane	14.58	91	2151	0.2003 ug/L	91
69)	Chlorobenzene	15.01	112	7434	0.3076 ug/L	93
70)	1,1,1,2-Tetrachloroethane	15.04	131	2566	0.2829 ug/L	85
71)	Ethylbenzene	15.03	106	3173	0.2383 ug/L	69
72)	m-,p-Xylene	15.12	106	8456	0.5393 ug/L	96
73)	o-Xylene	15.68	106	4471	0.2759 ug/L	91
74)	Styrene	15.72	104	6831	0.2675 ug/L	82
76)	Isopropylbenzene	16.11	105	9389	0.2408 ug/L	92
78)	1,1,2,2-Tetrachloroethane	16.32	83	2106	0.2663 ug/L #	91
80)	1,2,3-Trichloropropane	16.51	110	883	0.3232 ug/L #	77
81)	trans-1,4-Dichloro-2-Buten	16.57	53	870	0.2085 ug/L #	1
82)	n-Propylbenzene	16.61	91	11342	0.2646 ug/L	87
83)	Bromobenzene	16.76	156	3243	0.3213 ug/L	76
84)	1,3,5-Trimethylbenzene	16.81	105	7462	0.2443 ug/L	100
85)	2-Chlorotoluene	16.89	91	8665	0.3011 ug/L	97
86)	4-Chlorotoluene	16.94	91	7615	0.3054 ug/L	94
87)	a-Methylstyrene	17.21	118	3816	0.2391 ug/L	98
88)	tert-Butylbenzene	17.28	134	1118	0.1650 ug/L #	17
89)	1,2,4-Trimethylbenzene	17.33	105	9687	0.3060 ug/L	88
90)	sec-Butylbenzene	17.54	105	8689	0.2264 ug/L	98
91)	p-Isopropyltoluene	17.70	119	7820	0.2490 ug/L	82
92)	1,3-Dichlorobenzene	17.91	146	5314	0.2856 ug/L	94
93)	1,4-Dichlorobenzene	18.03	146	5916	0.3086 ug/L #	4
94)	n-Butylbenzene	18.23	91	7778	0.2618 ug/L	90
95)	1,2-Dichlorobenzene	18.53	146	5650	0.3086 ug/L	98
97)	1,2,4-Trichlorobenzene	20.67	180	4865	0.3536 ug/L #	82
98)	Hexachlorobutadiene	20.83	225	1240	0.1788 ug/L #	75
99)	Naphthalene	21.05	128	9528	0.3182 ug/L	100
100)	1,2,3-Trichlorobenzene	21.36	180	3960	0.2946 ug/L	92

(#) = qualifier out of range (m) = manual integration
9M964348.D 8260WTR.M Mon Jun 30 15:44:09 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964348.D Vial: 2
Acq On : 26 Jun 2014 15:55 Operator: ADC
Sample : WG482030-02 0.3ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

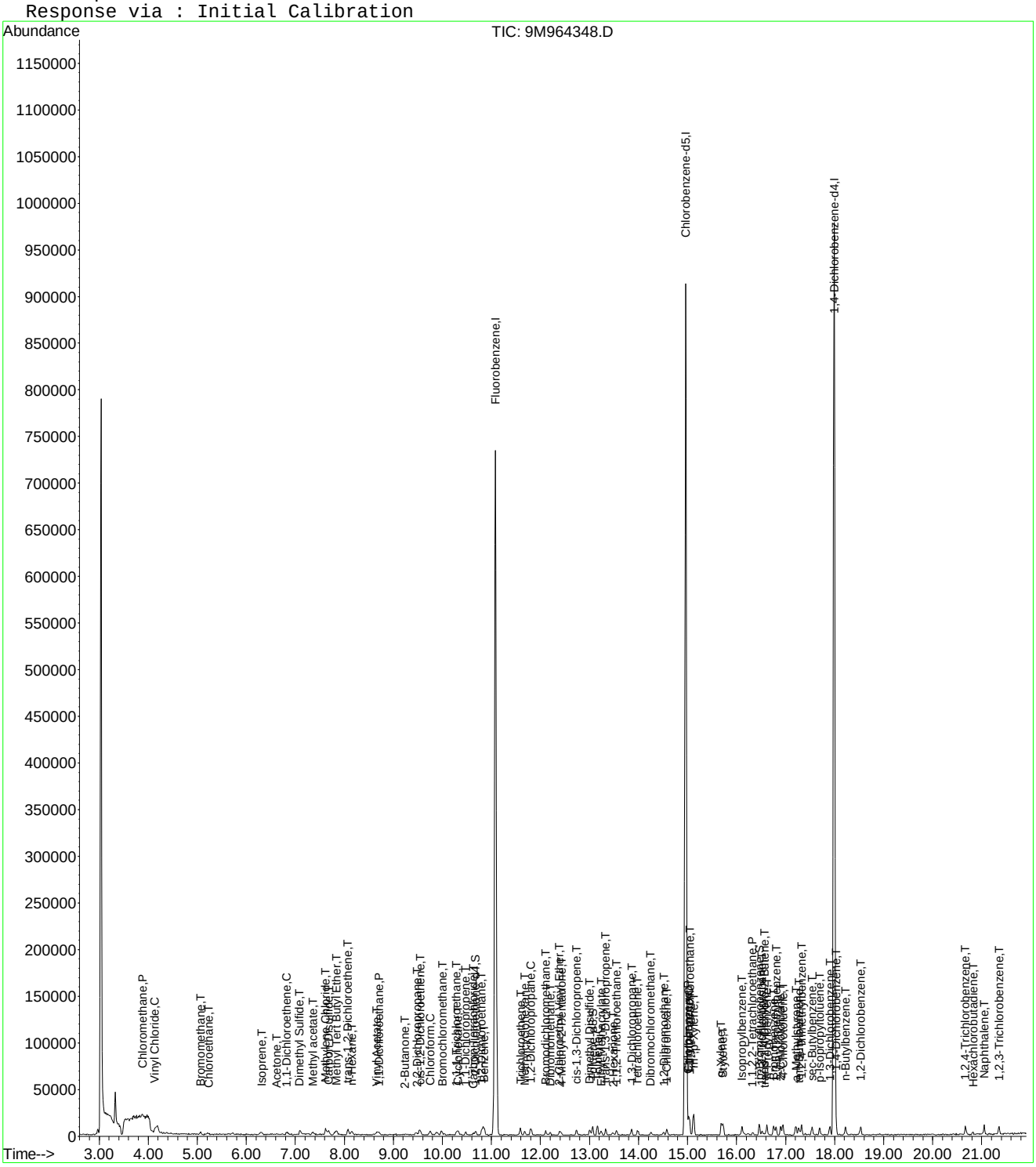

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964349.D Vial: 3
Acq On : 26 Jun 2014 16:24 Operator: ADC
Sample : WG482030-03 0.4ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:11 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	829778	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	591746	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	310125	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.03	111	1238	0.1407 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.56%#	
43) 1,2-Dichloroethane-d4	10.68	65	2323	0.1974 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.80%#	
58) Toluene-d8	13.07	98	5946	0.2034 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.80%#	
79) p-Bromofluorobenzene	16.47	95	4709	0.4209 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.68%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	1886	0.2786 ug/L #	63
3) Chloromethane	3.88	50	11210	0.6011 ug/L #	76
4) Vinyl Chloride	4.12	62	4592	0.3727 ug/L	79
5) 1,3-Butadiene	4.18	54	8060	Below Cal #	66
6) Bromomethane	5.07	94	3365	0.4449 ug/L	80
7) Chloroethane	5.22	64	2919	0.3784 ug/L #	63
8) Trichlorofluoromethane	5.73	101	5032	0.3951 ug/L #	80
10) Isoprene	6.31	67	4571	0.3748 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	2516	0.3448 ug/L	93
13) Acetone	6.61	43	1422	0.4072 ug/L #	39
14) 1,1-Dichloroethene	6.82	61	6950	0.3946 ug/L	100
16) Dimethyl Sulfide	7.10	62	5409	0.3922 ug/L	96
17) Iodomethane	7.36	142	445	1.0891 ug/L #	34
18) Methyl acetate	7.35	43	4961	0.4344 ug/L #	70
19) Methylene Chloride	7.62	84	3548	0.3810 ug/L	88
20) Carbon Disulfide	7.68	76	10215	0.4110 ug/L #	78
22) Methyl Tert Butyl Ether	7.84	73	8689	0.3490 ug/L	87
23) trans-1,2-Dichloroethene	8.07	61	7289	0.4197 ug/L	100
24) n-Hexane	8.15	57	7337	0.4176 ug/L	98
26) Vinyl Acetate	8.65	43	7085	0.4180 ug/L #	81
27) 1,1-Dichloroethane	8.70	63	8872	0.4121 ug/L #	92
29) 2-Butanone	9.23	43	2539	0.4534 ug/L #	63
31) 2,2-Dichloropropane	9.48	77	5464	0.4117 ug/L	95
32) cis-1,2-Dichloroethene	9.54	96	4538	0.4544 ug/L	67
33) Chloroform	9.75	83	7475	0.4595 ug/L	93
35) Bromochloromethane	9.99	130	2758	0.4521 ug/L	81
38) 1,1,1-Trichloroethane	10.29	97	5075	0.3632 ug/L	99
39) Cyclohexane	10.32	56	8802	0.3771 ug/L	96
40) 1,1-Dichloropropene	10.47	75	4960	0.4235 ug/L	86
42) Carbon Tetrachloride	10.63	117	5039	0.4101 ug/L #	87
45) 1,2-Dichloroethane	10.80	62	5865	0.3777 ug/L	95
46) Benzene	10.83	78	15819	0.4490 ug/L	94
47) Trichloroethene	11.59	130	4893	0.4854 ug/L	98
48) Methylcyclohexane	11.67	83	5062	0.3855 ug/L	97
49) 1,2-Dichloropropane	11.81	63	5110	0.4038 ug/L	86
51) Bromodichloromethane	12.11	83	4807	0.3847 ug/L #	94
52) Dibromomethane	12.21	174	1788	0.3089 ug/L	85
53) 2-Chloroethyl Vinyl Ether	12.40	63	2098	0.3047 ug/L #	56
54) 4-Methyl-2-Pentanone	12.43	58	1483	0.2864 ug/L #	66
55) cis-1,3-Dichloropropene	12.74	75	5507	0.3757 ug/L	84

(#) = qualifier out of range (m) = manual integration
9M964349.D 8260WTR.M Mon Jun 30 15:44:13 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964349.D Vial: 3
Acq On : 26 Jun 2014 16:24 Operator: ADC
Sample : WG482030-03 0.4ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:11 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
56)	Dimethyl Disulfide	13.01	94	4892	0.3119 ug/L		99
59)	Toluene	13.16	91	15964	0.4557 ug/L		93
60)	Ethyl Methacrylate	13.23	69	3773	0.3746 ug/L	#	69
61)	trans-1,3-Dichloropropene	13.33	75	5117	0.3820 ug/L		96
62)	1,1,2-Trichloroethane	13.55	97	3003	0.3988 ug/L		94
63)	2-Hexanone	13.47	43	3214	0.3972 ug/L	#	72
64)	1,3-Dichloropropane	13.85	76	5466	0.4131 ug/L		97
65)	Tetrachloroethene	13.98	164	2983	0.4095 ug/L		90
66)	Dibromochloromethane	14.26	129	3692	0.4024 ug/L		93
67)	1,2-Dibromoethane	14.52	107	2928	0.3812 ug/L		98
68)	1-Chlorohexane	14.59	91	4144	0.3978 ug/L		92
69)	Chlorobenzene	15.01	112	10369	0.4424 ug/L		96
70)	1,1,1,2-Tetrachloroethane	15.04	131	3555	0.4041 ug/L		95
71)	Ethylbenzene	15.03	106	5309	0.4110 ug/L		95
72)	m-,p-Xylene	15.13	106	12726	0.8368 ug/L		100
73)	o-Xylene	15.68	106	6844	0.4355 ug/L		90
74)	Styrene	15.73	104	8959	0.3617 ug/L		81
75)	Bromoform	16.23	173	1800	0.2676 ug/L		88
76)	Isopropylbenzene	16.12	105	16237	0.4293 ug/L		92
78)	1,1,2,2-Tetrachloroethane	16.34	83	2482	0.3144 ug/L	#	72
80)	1,2,3-Trichloropropane	16.52	110	866	0.3176 ug/L		71
81)	trans-1,4-Dichloro-2-Buten	16.56	53	1167	0.2802 ug/L	#	45
82)	n-Propylbenzene	16.61	91	18799	0.4393 ug/L		91
83)	Bromobenzene	16.76	156	4368	0.4335 ug/L		95
84)	1,3,5-Trimethylbenzene	16.81	105	12384	0.4062 ug/L		95
85)	2-Chlorotoluene	16.89	91	13948	0.4855 ug/L		98
86)	4-Chlorotoluene	16.95	91	10281	0.4130 ug/L		89
87)	a-Methylstyrene	17.20	118	5520	0.3465 ug/L		93
88)	tert-Butylbenzene	17.27	134	2460	0.3637 ug/L		67
89)	1,2,4-Trimethylbenzene	17.32	105	13438	0.4253 ug/L		76
90)	sec-Butylbenzene	17.55	105	16659	0.4349 ug/L		93
91)	p-Isopropyltoluene	17.70	119	12388	0.3952 ug/L		97
92)	1,3-Dichlorobenzene	17.91	146	8250	0.4442 ug/L		91
93)	1,4-Dichlorobenzene	18.03	146	8673	0.4532 ug/L	#	31
94)	n-Butylbenzene	18.23	91	11978	0.4038 ug/L		95
95)	1,2-Dichlorobenzene	18.53	146	6776	0.3708 ug/L		91
96)	1,2-Dibromo-3-Chloropropan	19.53	157	622	0.3111 ug/L	#	5
97)	1,2,4-Trichlorobenzene	20.68	180	5373	0.3912 ug/L		99
98)	Hexachlorobutadiene	20.81	225	2590	0.3741 ug/L		80
99)	Naphthalene	21.05	128	11122	0.3721 ug/L		98
100)	1,2,3-Trichlorobenzene	21.35	180	5615	0.4185 ug/L		92

(#) = qualifier out of range (m) = manual integration
9M964349.D 8260WTR.M Mon Jun 30 15:44:13 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964349.D Vial: 3
Acq On : 26 Jun 2014 16:24 Operator: ADC
Sample : WG482030-03 0.4ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

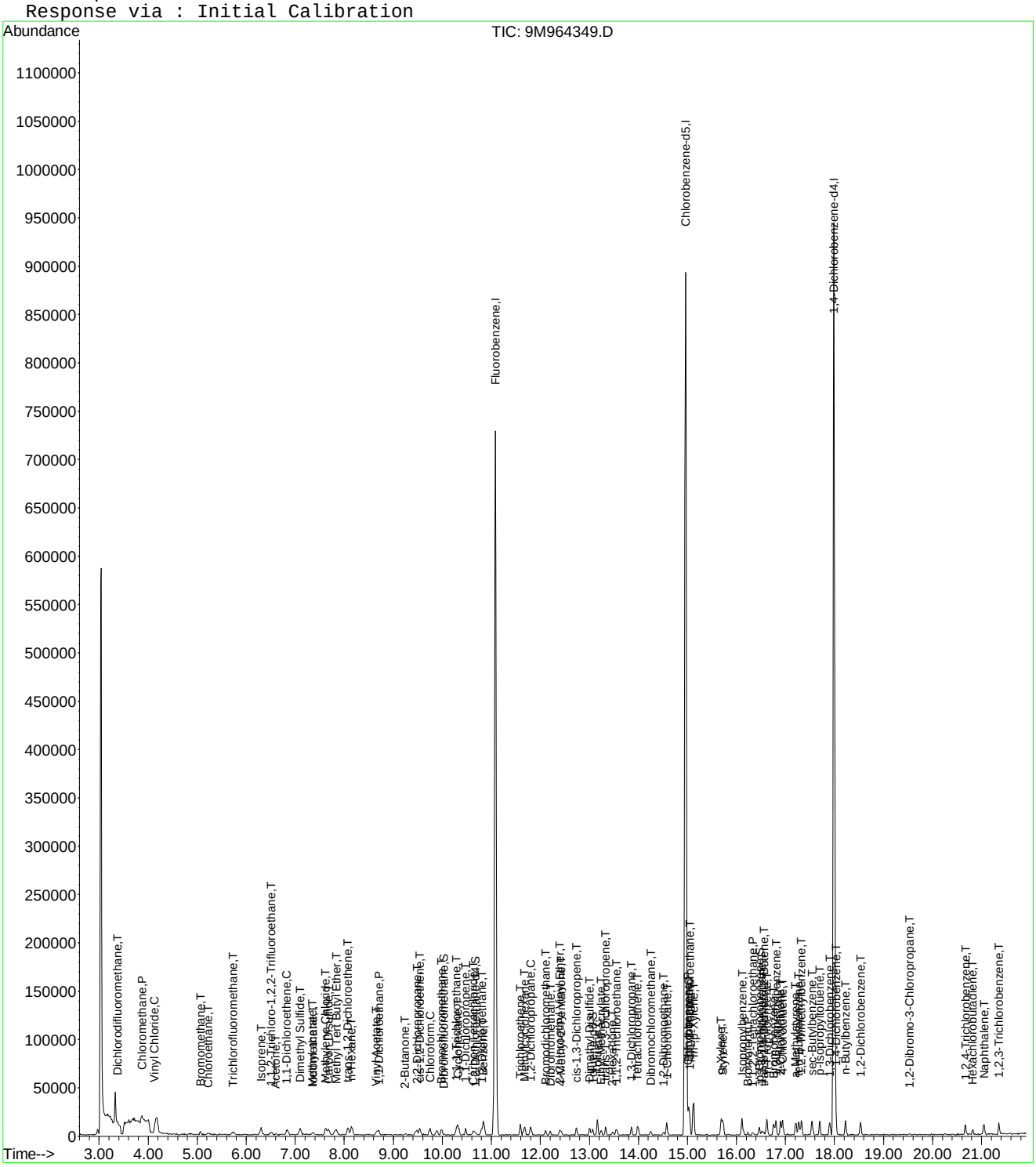

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964350.D Vial: 4
Acq On : 26 Jun 2014 16:53 Operator: ADC
Sample : WG482030-04 1.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:15 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	842009	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	593983	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	308977	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.04	111	5656	0.6334 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.52%#	
43) 1,2-Dichloroethane-d4	10.68	65	8338	0.6982 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.80%#	
58) Toluene-d8	13.07	98	19613	0.6683 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.68%#	
79) p-Bromofluorobenzene	16.47	95	9698	0.8700 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.48%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	6899	1.0043 ug/L	94
3) Chloromethane	3.88	50	21649	1.1441 ug/L #	69
4) Vinyl Chloride	4.12	62	14606	1.1681 ug/L	94
5) 1,3-Butadiene	4.19	54	17926	Below Cal	85
6) Bromomethane	5.08	94	8704	1.1342 ug/L	99
7) Chloroethane	5.23	64	7411	0.9468 ug/L #	87
8) Trichlorofluoromethane	5.74	101	13406	1.0374 ug/L	97
9) Diethyl ether	6.25	59	62520	5.3816 ug/L	97
10) Isoprene	6.30	67	11377	0.9193 ug/L	88
11) Acrolein	6.50	56	6186	2.6671 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.52	101	7599	1.0262 ug/L	94
13) Acetone	6.60	43	4619	1.3036 ug/L #	64
14) 1,1-Dichloroethene	6.84	61	18257	1.0214 ug/L	98
15) Tert-Butyl Alcohol	6.94	59	13987	10.8311 ug/L #	92
16) Dimethyl Sulfide	7.10	62	14118	1.0088 ug/L	98
17) Iodomethane	7.36	142	3500	1.3696 ug/L #	69
18) Methyl acetate	7.35	43	12383	1.0685 ug/L	95
19) Methylene Chloride	7.62	84	10032	1.0617 ug/L	90
20) Carbon Disulfide	7.67	76	27039	1.0722 ug/L #	89
21) Acrylonitrile	7.79	53	13833	2.4387 ug/L	100
22) Methyl Tert Butyl Ether	7.83	73	27288	1.0801 ug/L	93
23) trans-1,2-Dichloroethene	8.07	61	18468	1.0479 ug/L	97
24) n-Hexane	8.16	57	17877	1.0028 ug/L	100
25) Diisopropyl ether	8.49	45	250964	5.2788 ug/L	99
26) Vinyl Acetate	8.66	43	20549	1.1948 ug/L	96
27) 1,1-Dichloroethane	8.70	63	22880	1.0474 ug/L	97
28) Ethyl-Tert-Butyl ether	9.07	59	225052	5.2377 ug/L	99
29) 2-Butanone	9.25	43	5564	0.9792 ug/L	94
30) Propionitrile	9.36	54	9573	4.7626 ug/L	95
31) 2,2-Dichloropropane	9.48	77	15080	1.1197 ug/L	93
32) cis-1,2-Dichloroethene	9.54	96	10311	1.0176 ug/L	98
33) Chloroform	9.74	83	17538	1.0624 ug/L	94
34) 1-Bromopropane	9.89	122	1091	0.7295 ug/L	38
35) Bromochloromethane	9.99	130	6574	1.0619 ug/L	96
36) Tetrahydrofuran	10.01	42	19999	5.2049 ug/L	99
38) 1,1,1-Trichloroethane	10.29	97	14408	1.0162 ug/L	99
39) Cyclohexane	10.31	56	24474	1.0332 ug/L	95
40) 1,1-Dichloropropene	10.47	75	13084	1.1009 ug/L	96
41) Tert-Amyl-Methyl ether	10.58	73	133055	5.2022 ug/L	96
42) Carbon Tetrachloride	10.63	117	12773	1.0243 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M964350.D 8260WTR.M Mon Jun 30 15:44:18 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964350.D Vial: 4
Acq On : 26 Jun 2014 16:53 Operator: ADC
Sample : WG482030-04 1.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:15 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.79	62	16407	1.0414 ug/L		95
46)	Benzene	10.84	78	39436	1.1031 ug/L		98
47)	Trichloroethene	11.59	130	11300	1.1048 ug/L		95
48)	Methylcyclohexane	11.67	83	13125	0.9850 ug/L		98
49)	1,2-Dichloropropane	11.81	63	13565	1.0565 ug/L		99
50)	1,4-Dioxane	12.10	88	692	7.3736 ug/L	#	25
51)	Bromodichloromethane	12.11	83	12735	1.0044 ug/L		98
52)	Dibromomethane	12.20	174	5730	0.9755 ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.39	63	6593	0.9435 ug/L		88
54)	4-Methyl-2-Pentanone	12.42	58	4192	0.7977 ug/L	#	80
55)	cis-1,3-Dichloropropene	12.74	75	15060	1.0124 ug/L		98
56)	Dimethyl Disulfide	13.01	94	12681	0.7967 ug/L		97
59)	Toluene	13.16	91	39889	1.1343 ug/L		94
60)	Ethyl Methacrylate	13.23	69	9183	0.9083 ug/L		98
61)	trans-1,3-Dichloropropene	13.34	75	15130	1.1251 ug/L		97
62)	1,1,2-Trichloroethane	13.55	97	8137	1.0767 ug/L		99
63)	2-Hexanone	13.48	43	7340	0.9036 ug/L	#	87
64)	1,3-Dichloropropane	13.85	76	15244	1.1477 ug/L		96
65)	Tetrachloroethene	14.00	164	8420	1.1515 ug/L		90
66)	Dibromochloromethane	14.25	129	9104	0.9886 ug/L		94
67)	1,2-Dibromoethane	14.52	107	8164	1.0590 ug/L		96
68)	1-Chlorohexane	14.58	91	10791	1.0319 ug/L		92
69)	Chlorobenzene	15.01	112	26602	1.1307 ug/L		95
70)	1,1,1,2-Tetrachloroethane	15.04	131	9619	1.0894 ug/L		91
71)	Ethylbenzene	15.03	106	14259	1.0998 ug/L		96
72)	m-,p-Xylene	15.13	106	33680	2.2064 ug/L		98
73)	o-Xylene	15.69	106	16195	1.0266 ug/L		95
74)	Styrene	15.73	104	24122	0.9701 ug/L		93
75)	Bromoform	16.23	173	6491	0.9612 ug/L		88
76)	Isopropylbenzene	16.11	105	40054	1.0550 ug/L		98
78)	1,1,2,2-Tetrachloroethane	16.32	83	8275	1.0521 ug/L	#	95
80)	1,2,3-Trichloropropane	16.53	110	2570	0.9459 ug/L		88
81)	trans-1,4-Dichloro-2-Buten	16.56	53	3960	0.9544 ug/L		85
82)	n-Propylbenzene	16.62	91	45725	1.0725 ug/L		98
83)	Bromobenzene	16.76	156	10698	1.0658 ug/L		83
84)	1,3,5-Trimethylbenzene	16.81	105	32070	1.0558 ug/L		99
85)	2-Chlorotoluene	16.90	91	33055	1.1549 ug/L		99
86)	4-Chlorotoluene	16.95	91	28986	1.1688 ug/L		96
87)	a-Methylstyrene	17.21	118	14272	0.8991 ug/L		97
88)	tert-Butylbenzene	17.27	134	7711	1.1441 ug/L		89
89)	1,2,4-Trimethylbenzene	17.33	105	34972	1.1109 ug/L		97
90)	sec-Butylbenzene	17.54	105	41505	1.0875 ug/L		99
91)	p-Isopropyltoluene	17.70	119	34238	1.0963 ug/L		94
92)	1,3-Dichlorobenzene	17.91	146	19874	1.0741 ug/L		97
93)	1,4-Dichlorobenzene	18.03	146	20969	1.0997 ug/L	#	73
94)	n-Butylbenzene	18.23	91	32424	1.0972 ug/L		94
95)	1,2-Dichlorobenzene	18.53	146	20230	1.1110 ug/L		97
96)	1,2-Dibromo-3-Chloropropan	19.52	157	1348	0.6767 ug/L	#	43
97)	1,2,4-Trichlorobenzene	20.68	180	13461	0.9838 ug/L		93
98)	Hexachlorobutadiene	20.82	225	6617	0.9594 ug/L		92
99)	Naphthalene	21.05	128	29556	0.9925 ug/L		96
100)	1,2,3-Trichlorobenzene	21.35	180	14275	1.0678 ug/L		97

(#) = qualifier out of range (m) = manual integration
9M964350.D 8260WTR.M Mon Jun 30 15:44:18 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964350.D Vial: 4
Acq On : 26 Jun 2014 16:53 Operator: ADC
Sample : WG482030-04 1.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

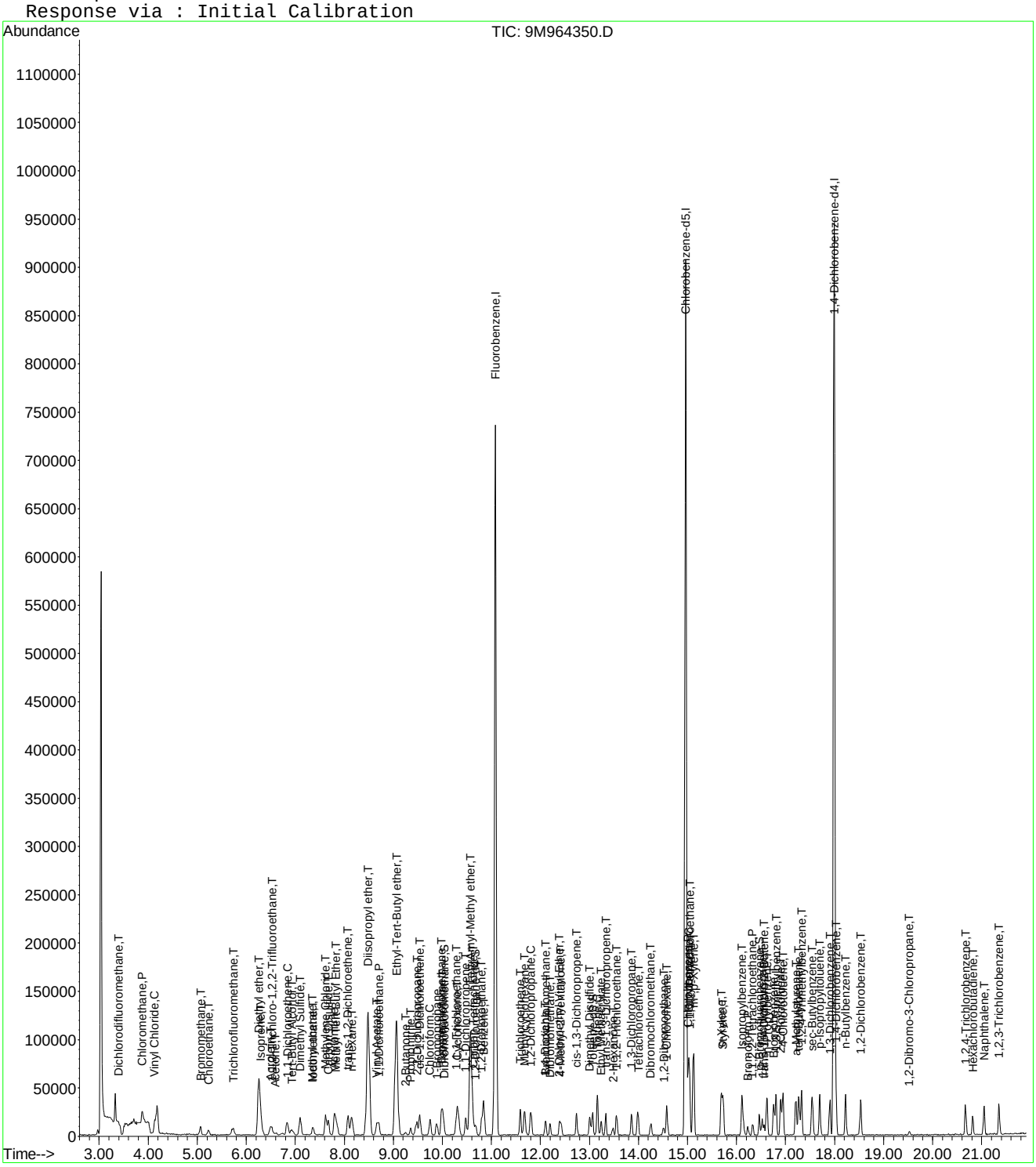

9M964350.D 8260WTR.M Mon Jun 30 15:44:19 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964351.D Vial: 5
Acq On : 26 Jun 2014 17:22 Operator: ADC
Sample : WG482030-05 2.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:20 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	836278	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	591585	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	319499	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.04	111	7587	0.8555 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.44%#	
43) 1,2-Dichloroethane-d4	10.68	65	11871	1.0008 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.00%#	
58) Toluene-d8	13.06	98	29844	1.0211 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.08%#	
79) p-Bromofluorobenzene	16.46	95	13322	1.1557 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.64%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	11901	1.7442 ug/L	96
3) Chloromethane	3.88	50	36967	1.9670 ug/L	96
4) Vinyl Chloride	4.12	62	24324	1.9587 ug/L	97
5) 1,3-Butadiene	4.18	54	28919	1.2268 ug/L	87
6) Bromomethane	5.07	94	16500	2.1647 ug/L	98
7) Chloroethane	5.23	64	14065	1.8092 ug/L	96
8) Trichlorofluoromethane	5.73	101	24442	1.9044 ug/L	96
9) Diethyl ether	6.25	59	277269	24.0302 ug/L	99
10) Isoprene	6.30	67	23622	1.9218 ug/L	96
11) Acrolein	6.50	56	28449	12.3500 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	15238	2.0720 ug/L #	49
13) Acetone	6.60	43	8299	2.3582 ug/L	93
14) 1,1-Dichloroethene	6.83	61	34577	1.9477 ug/L	96
15) Tert-Butyl Alcohol	6.94	59	58271	45.4325 ug/L	99
16) Dimethyl Sulfide	7.10	62	25273	1.8182 ug/L	96
17) Iodomethane	7.36	142	8111	1.7990 ug/L	100
18) Methyl acetate	7.36	43	24021	2.0869 ug/L	93
19) Methylene Chloride	7.63	84	18410	1.9618 ug/L	98
20) Carbon Disulfide	7.68	76	47093	1.8802 ug/L	98
21) Acrylonitrile	7.80	53	61921	10.9914 ug/L	93
22) Methyl Tert Butyl Ether	7.84	73	48156	1.9191 ug/L	98
23) trans-1,2-Dichloroethene	8.07	61	33068	1.8891 ug/L	98
24) n-Hexane	8.16	57	32908	1.8585 ug/L	96
25) Diisopropyl ether	8.49	45	1179724	24.9846 ug/L	99
26) Vinyl Acetate	8.66	43	37306	2.1840 ug/L	100
27) 1,1-Dichloroethane	8.71	63	43987	2.0275 ug/L	99
28) Ethyl-Tert-Butyl ether	9.07	59	1057204	24.7734 ug/L	99
29) 2-Butanone	9.24	43	11381	2.0167 ug/L	98
30) Propionitrile	9.36	54	47075	23.5802 ug/L	96
31) 2,2-Dichloropropane	9.47	77	25794	1.9283 ug/L	100
32) cis-1,2-Dichloroethene	9.54	96	19742	1.9617 ug/L	97
33) Chloroform	9.75	83	32443	1.9787 ug/L	99
34) 1-Bromopropane	9.88	122	2617	1.7618 ug/L	93
35) Bromochloromethane	9.99	130	11522	1.8739 ug/L	99
36) Tetrahydrofuran	10.01	42	90661	23.7571 ug/L	100
38) 1,1,1-Trichloroethane	10.29	97	27359	1.9428 ug/L	100
39) Cyclohexane	10.33	56	44748	1.9020 ug/L	100
40) 1,1-Dichloropropene	10.47	75	21411	1.8139 ug/L	92
41) Tert-Amyl-Methyl ether	10.58	73	618739	24.3575 ug/L	99
42) Carbon Tetrachloride	10.63	117	21845	1.7639 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M964351.D 8260WTR.M Mon Jun 30 15:44:22 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964351.D Vial: 5
Acq On : 26 Jun 2014 17:22 Operator: ADC
Sample : WG482030-05 2.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:20 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.80	62	30865	1.9724 ug/L	97
46)	Benzene	10.85	78	72005	2.0279 ug/L	95
47)	Trichloroethene	11.59	130	20349	2.0031 ug/L	97
48)	Methylcyclohexane	11.68	83	25180	1.9026 ug/L	97
49)	1,2-Dichloropropane	11.81	63	24042	1.8852 ug/L	94
50)	1,4-Dioxane	12.09	88	4049	43.4398 ug/L	95
51)	Bromodichloromethane	12.11	83	23112	1.8353 ug/L	96
52)	Dibromomethane	12.20	174	11198	1.9194 ug/L	93
53)	2-Chloroethyl Vinyl Ether	12.40	63	12059	1.7375 ug/L	98
54)	4-Methyl-2-Pentanone	12.42	58	8799	1.6859 ug/L	97
55)	cis-1,3-Dichloropropene	12.74	75	28162	1.9061 ug/L	95
56)	Dimethyl Disulfide	13.01	94	24904	1.5753 ug/L	99
59)	Toluene	13.16	91	68425	1.9536 ug/L	99
60)	Ethyl Methacrylate	13.24	69	18303	1.8176 ug/L	97
61)	trans-1,3-Dichloropropene	13.34	75	26718	1.9949 ug/L	98
62)	1,1,2-Trichloroethane	13.55	97	14598	1.9394 ug/L	91
63)	2-Hexanone	13.48	43	15240	1.8837 ug/L	93
64)	1,3-Dichloropropane	13.85	76	26622	2.0124 ug/L	98
65)	Tetrachloroethene	13.99	164	13134	1.8035 ug/L	91
66)	Dibromochloromethane	14.26	129	18235	1.9882 ug/L	91
67)	1,2-Dibromoethane	14.52	107	14753	1.9215 ug/L	93
68)	1-Chlorohexane	14.58	91	18803	1.8053 ug/L	96
69)	Chlorobenzene	15.01	112	47844	2.0418 ug/L	86
70)	1,1,1,2-Tetrachloroethane	15.04	131	16651	1.8934 ug/L	97
71)	Ethylbenzene	15.03	106	25342	1.9625 ug/L	95
72)	m-,p-Xylene	15.13	106	60319	3.9675 ug/L	97
73)	o-Xylene	15.68	106	31514	2.0058 ug/L	97
74)	Styrene	15.73	104	46573	1.8807 ug/L	99
75)	Bromoform	16.23	173	11294	1.6793 ug/L	97
76)	Isopropylbenzene	16.11	105	72517	1.9179 ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.33	83	15055	1.8512 ug/L	99
80)	1,2,3-Trichloropropane	16.52	110	5644	2.0089 ug/L	82
81)	trans-1,4-Dichloro-2-Buten	16.57	53	7113	1.6578 ug/L	80
82)	n-Propylbenzene	16.61	91	90084	2.0434 ug/L	99
83)	Bromobenzene	16.76	156	21316	2.0537 ug/L	96
84)	1,3,5-Trimethylbenzene	16.80	105	64789	2.0628 ug/L	93
85)	2-Chlorotoluene	16.89	91	53418	1.8049 ug/L	93
86)	4-Chlorotoluene	16.95	91	47598	1.8561 ug/L	86
87)	a-Methylstyrene	17.21	118	28906	1.7611 ug/L	99
88)	tert-Butylbenzene	17.27	134	12915	1.8532 ug/L	85
89)	1,2,4-Trimethylbenzene	17.33	105	66006	2.0276 ug/L	87
90)	sec-Butylbenzene	17.55	105	77127	1.9543 ug/L	100
91)	p-Isopropyltoluene	17.70	119	63077	1.9532 ug/L	100
92)	1,3-Dichlorobenzene	17.91	146	37165	1.9424 ug/L	95
93)	1,4-Dichlorobenzene	18.03	146	38711	1.9633 ug/L	84
94)	n-Butylbenzene	18.23	91	59547	1.9487 ug/L	97
95)	1,2-Dichlorobenzene	18.53	146	37209	1.9762 ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.53	157	3119	1.5141 ug/L	75
97)	1,2,4-Trichlorobenzene	20.67	180	24509	1.7322 ug/L	95
98)	Hexachlorobutadiene	20.82	225	13176	1.8474 ug/L	97
99)	Naphthalene	21.05	128	59592	1.9353 ug/L	97
100)	1,2,3-Trichlorobenzene	21.36	180	26370	1.9076 ug/L	94

(#) = qualifier out of range (m) = manual integration
9M964351.D 8260WTR.M Mon Jun 30 15:44:23 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964351.D Vial: 5
Acq On : 26 Jun 2014 17:22 Operator: ADC
Sample : WG482030-05 2.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

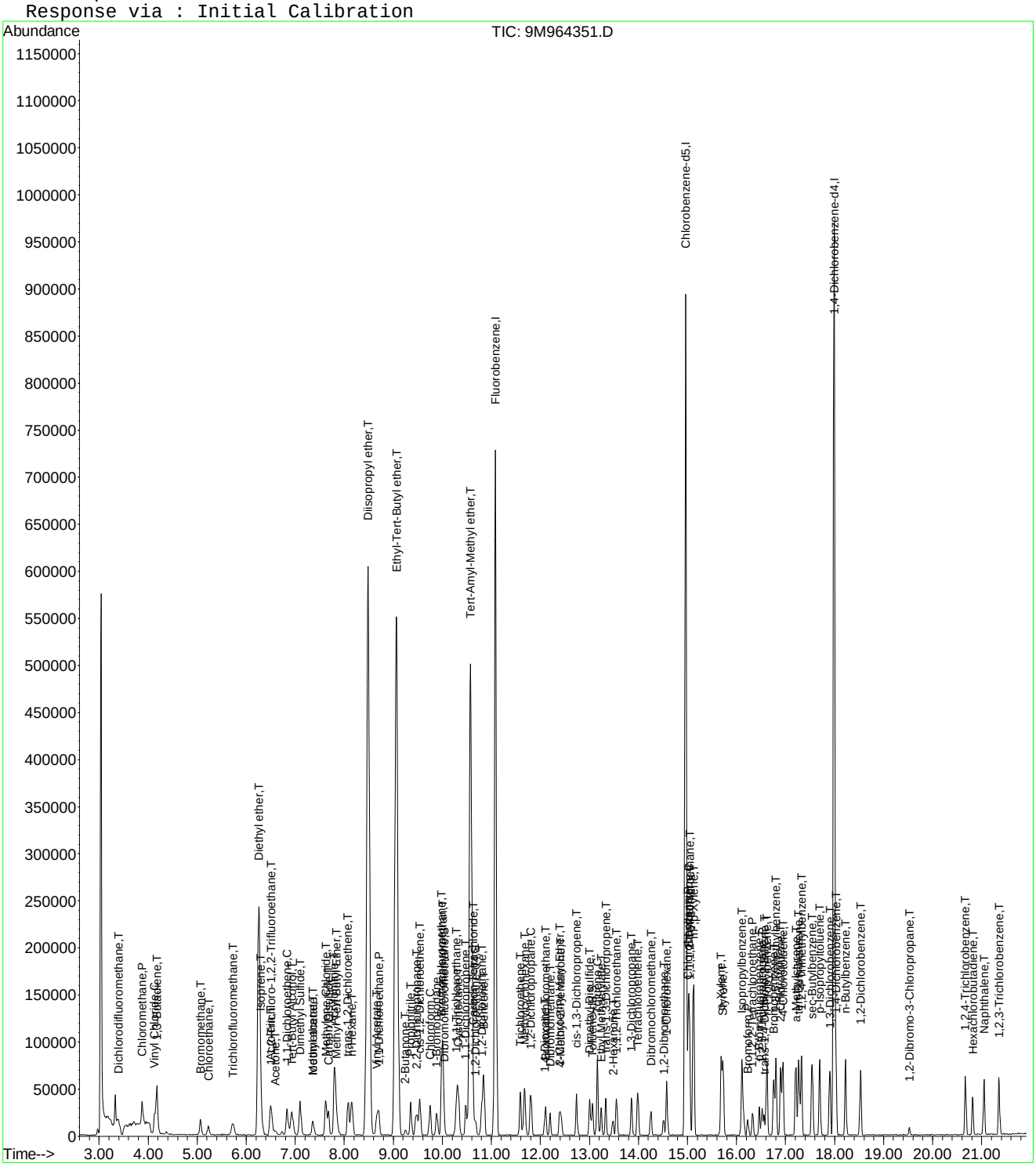

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964352.D Vial: 6
Acq On : 26 Jun 2014 17:51 Operator: ADC
Sample : WG482030-06 5.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:25 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	821066	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	594731	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	318932	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.04	111	42788	4.9138 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 19.64%#		
43) 1,2-Dichloroethane-d4	10.68	65	60240	5.1726 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 20.68%#		
58) Toluene-d8	13.06	98	155958	5.3078 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 21.24%#		
79) p-Bromofluorobenzene	16.47	95	58541	5.0875 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 20.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	62970	9.4000 ug/L	99
3) Chloromethane	3.88	50	194676	10.5503 ug/L	93
4) Vinyl Chloride	4.12	62	117290	9.6196 ug/L	97
5) 1,3-Butadiene	4.18	54	93242	8.6751 ug/L	96
6) Bromomethane	5.06	94	73542	9.8271 ug/L	96
7) Chloroethane	5.23	64	71472	9.3639 ug/L	100
8) Trichlorofluoromethane	5.73	101	122141	9.6928 ug/L	98
9) Diethyl ether	6.25	59	1151137	101.6145 ug/L	100
10) Isoprene	6.31	67	117361	9.7248 ug/L	98
11) Acrolein	6.50	56	115134	50.9069 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.52	101	72958	10.1043 ug/L	97
13) Acetone	6.60	43	35902	10.3905 ug/L	99
14) 1,1-Dichloroethene	6.83	61	170808	9.8000 ug/L	100
15) Tert-Butyl Alcohol	6.93	59	244955	194.5238 ug/L	98
16) Dimethyl Sulfide	7.10	62	137557	10.0798 ug/L	98
17) Iodomethane	7.36	142	73134	7.9487 ug/L	96
18) Methyl acetate	7.36	43	118207	10.4599 ug/L	98
19) Methylene Chloride	7.62	84	91635	9.9456 ug/L	96
20) Carbon Disulfide	7.68	76	238759	9.7090 ug/L	98
21) Acrylonitrile	7.79	53	268644	48.5697 ug/L	95
22) Methyl Tert Butyl Ether	7.83	73	251465	10.2071 ug/L	98
23) trans-1,2-Dichloroethene	8.07	61	171605	9.9851 ug/L	98
24) n-Hexane	8.15	57	165051	9.4942 ug/L	94
25) Diisopropyl ether	8.49	45	4830517	104.1978 ug/L	100
26) Vinyl Acetate	8.65	43	180654	10.7720 ug/L	100
27) 1,1-Dichloroethane	8.69	63	213419	10.0194 ug/L	99
28) Ethyl-Tert-Butyl ether	9.06	59	4310115	102.8701 ug/L	100
29) 2-Butanone	9.24	43	58686	10.5915 ug/L	99
30) Propionitrile	9.36	54	197014	100.5142 ug/L	99
31) 2,2-Dichloropropane	9.48	77	130335	9.9242 ug/L	100
32) cis-1,2-Dichloroethene	9.54	96	96867	9.8035 ug/L	100
33) Chloroform	9.75	83	158388	9.8391 ug/L	99
34) 1-Bromopropane	9.89	122	15411	10.5670 ug/L	95
35) Bromochloromethane	9.99	130	59022	9.7772 ug/L	97
36) Tetrahydrofuran	10.01	42	378788	101.0977 ug/L	99
38) 1,1,1-Trichloroethane	10.29	97	136064	9.8413 ug/L	98
39) Cyclohexane	10.32	56	226939	9.8246 ug/L	99
40) 1,1-Dichloropropene	10.48	75	114789	9.9048 ug/L	97
41) Tert-Amyl-Methyl ether	10.58	73	2551325	102.2973 ug/L	100
42) Carbon Tetrachloride	10.63	117	115215	9.4754 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M964352.D 8260WTR.M Mon Jun 30 15:44:27 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964352.D Vial: 6
Acq On : 26 Jun 2014 17:51 Operator: ADC
Sample : WG482030-06 5.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:25 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.80	62	158604	10.3235 ug/L	99
46)	Benzene	10.84	78	346553	9.9410 ug/L	99
47)	Trichloroethene	11.59	130	96041	9.6291 ug/L	98
48)	Methylcyclohexane	11.67	83	124669	9.5946 ug/L	97
49)	1,2-Dichloropropane	11.81	63	126192	10.0786 ug/L	99
50)	1,4-Dioxane	12.08	88	18033	197.0520 ug/L	88
51)	Bromodichloromethane	12.11	83	124347	10.0570 ug/L	99
52)	Dibromomethane	12.20	174	57723	10.0773 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.40	63	67578	9.9175 ug/L	99
54)	4-Methyl-2-Pentanone	12.42	58	50680	9.8902 ug/L	98
55)	cis-1,3-Dichloropropene	12.74	75	147978	10.2014 ug/L	98
56)	Dimethyl Disulfide	13.01	94	147387	9.4956 ug/L	98
59)	Toluene	13.16	91	366206	10.4001 ug/L	99
60)	Ethyl Methacrylate	13.24	69	103210	10.1954 ug/L	99
61)	trans-1,3-Dichloropropene	13.34	75	137189	10.1892 ug/L	98
62)	1,1,2-Trichloroethane	13.55	97	79891	10.5576 ug/L	96
63)	2-Hexanone	13.48	43	82310	10.1201 ug/L	99
64)	1,3-Dichloropropane	13.85	76	135862	10.2157 ug/L	99
65)	Tetrachloroethene	13.99	164	70985	9.6956 ug/L	98
66)	Dibromochloromethane	14.26	129	90209	9.7839 ug/L	98
67)	1,2-Dibromoethane	14.51	107	77492	10.0394 ug/L	97
68)	1-Chlorohexane	14.58	91	103798	9.9132 ug/L	97
69)	Chlorobenzene	15.01	112	239436	10.1642 ug/L	98
70)	1,1,1,2-Tetrachloroethane	15.04	131	89314	10.1022 ug/L	99
71)	Ethylbenzene	15.03	106	133305	10.2688 ug/L	99
72)	m-,p-Xylene	15.12	106	316418	20.7022 ug/L	97
73)	o-Xylene	15.68	106	159593	10.1039 ug/L	99
74)	Styrene	15.72	104	258817	10.3960 ug/L	99
75)	Bromoform	16.23	173	64467	9.5346 ug/L	98
76)	Isopropylbenzene	16.11	105	389069	10.2354 ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.32	83	85923	10.5838 ug/L	100
80)	1,2,3-Trichloropropane	16.52	110	29424	10.4918 ug/L	93
81)	trans-1,4-Dichloro-2-Buten	16.56	53	44782	10.4557 ug/L	97
82)	n-Propylbenzene	16.61	91	473436	10.7584 ug/L	98
83)	Bromobenzene	16.76	156	103098	9.9505 ug/L	95
84)	1,3,5-Trimethylbenzene	16.80	105	326710	10.4203 ug/L	99
85)	2-Chlorotoluene	16.90	91	315186	10.6688 ug/L	99
86)	4-Chlorotoluene	16.94	91	264933	10.3498 ug/L	89
87)	a-Methylstyrene	17.21	118	167623	10.2305 ug/L	100
88)	tert-Butylbenzene	17.28	134	73963	10.6317 ug/L	97
89)	1,2,4-Trimethylbenzene	17.33	105	342651	10.5443 ug/L	97
90)	sec-Butylbenzene	17.54	105	411304	10.4404 ug/L	100
91)	p-Isopropyltoluene	17.70	119	336440	10.4365 ug/L	99
92)	1,3-Dichlorobenzene	17.91	146	192645	10.0866 ug/L	99
93)	1,4-Dichlorobenzene	18.03	146	199422	10.1319 ug/L	99
94)	n-Butylbenzene	18.23	91	314567	10.3127 ug/L	99
95)	1,2-Dichlorobenzene	18.53	146	194045	10.3244 ug/L	100
96)	1,2-Dibromo-3-Chloropropan	19.53	157	18932	9.2069 ug/L	95
97)	1,2,4-Trichlorobenzene	20.67	180	141711	10.0333 ug/L	96
98)	Hexachlorobutadiene	20.82	225	70234	9.8652 ug/L	98
99)	Naphthalene	21.05	128	317534	10.3304 ug/L	99
100)	1,2,3-Trichlorobenzene	21.36	180	134763	9.7662 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M964352.D 8260WTR.M Mon Jun 30 15:44:28 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964352.D Vial: 6
Acq On : 26 Jun 2014 17:51 Operator: ADC
Sample : WG482030-06 5.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

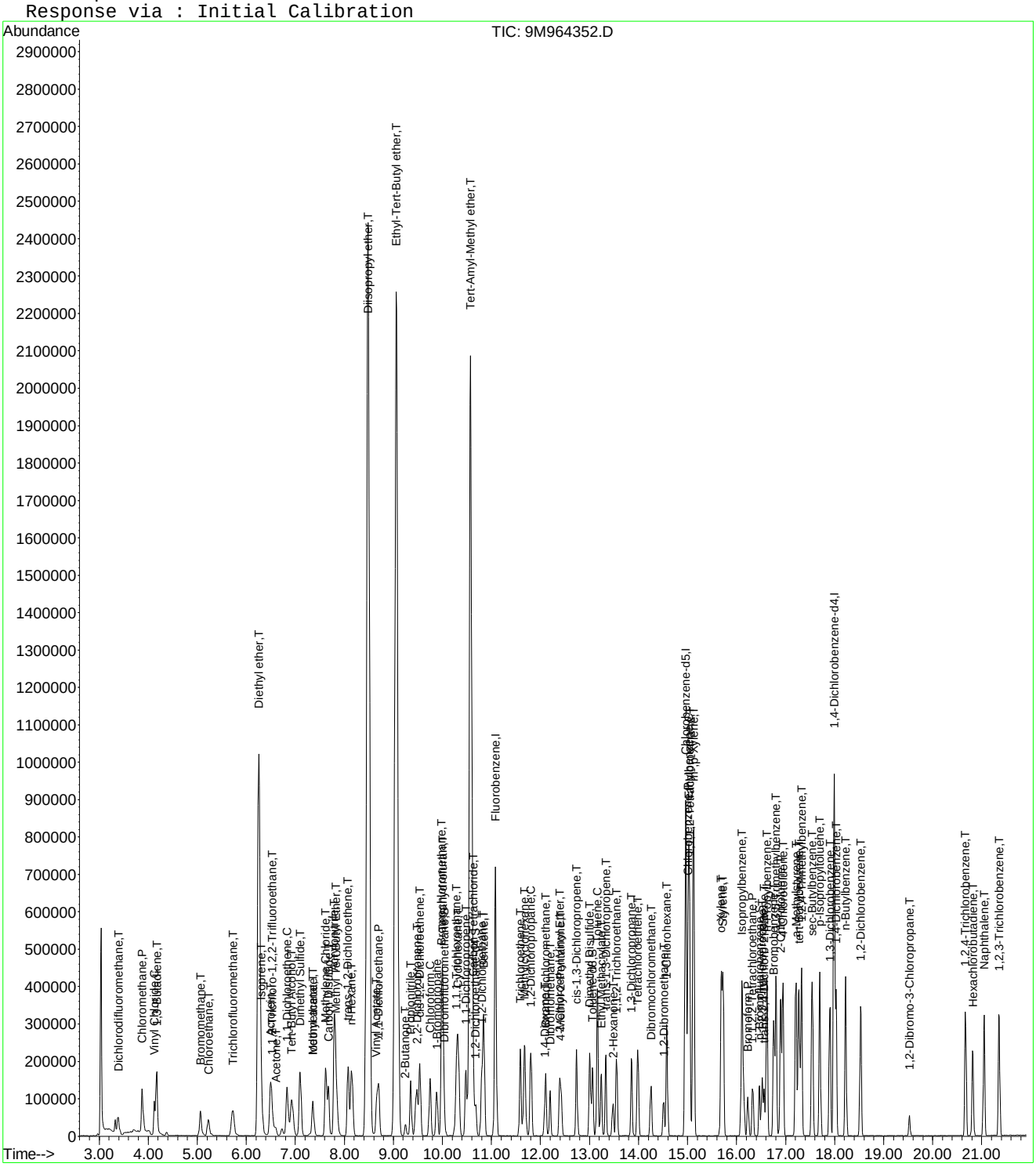

9M964352.D 8260WTR.M Mon Jun 30 15:44:29 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964353.D Vial: 7
Acq On : 26 Jun 2014 18:20 Operator: ADC
Sample : WG482030-07 20.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:30 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.09	96	838998	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	607752	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	333865	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.04	111	86321	9.7014 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 38.80%#		
43) 1,2-Dichloroethane-d4	10.68	65	119602	10.0504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.20%#		
58) Toluene-d8	13.06	98	317754	10.5825 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 42.32%#		
79) p-Bromofluorobenzene	16.46	95	118144	9.8080 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 39.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	145904	21.3147 ug/L	98
3) Chloromethane	3.88	50	413277	21.9185 ug/L	99
4) Vinyl Chloride	4.13	62	268067	21.5158 ug/L	94
5) 1,3-Butadiene	4.17	54	266682	27.9410 ug/L	96
6) Bromomethane	5.07	94	140429	18.3639 ug/L	99
7) Chloroethane	5.22	64	158033	20.2621 ug/L	99
8) Trichlorofluoromethane	5.72	101	263074	20.4306 ug/L	99
9) Diethyl ether	6.26	59	930597	80.3910 ug/L	99
10) Isoprene	6.30	67	263169	21.3407 ug/L	98
11) Acrolein	6.50	56	92262	39.9221 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.52	101	149729	20.2935 ug/L	99
13) Acetone	6.60	43	69428	19.6639 ug/L	98
14) 1,1-Dichloroethene	6.84	61	362492	20.3531 ug/L	99
15) Tert-Butyl Alcohol	6.92	59	189816	147.5151 ug/L	97
16) Dimethyl Sulfide	7.11	62	287872	20.6436 ug/L	98
17) Iodomethane	7.36	142	185484	18.1764 ug/L	100
18) Methyl acetate	7.35	43	230776	19.9844 ug/L	99
19) Methylene Chloride	7.62	84	191132	20.3012 ug/L	99
20) Carbon Disulfide	7.67	76	519401	20.6697 ug/L	100
21) Acrylonitrile	7.80	53	222058	39.2891 ug/L	97
22) Methyl Tert Butyl Ether	7.83	73	515867	20.4917 ug/L	99
23) trans-1,2-Dichloroethene	8.08	61	350751	19.9728 ug/L	99
24) n-Hexane	8.15	57	367774	20.7033 ug/L	99
25) Diisopropyl ether	8.48	45	3931456	82.9918 ug/L	100
26) Vinyl Acetate	8.66	43	364454	21.2671 ug/L	100
27) 1,1-Dichloroethane	8.70	63	439147	20.1760 ug/L	100
28) Ethyl-Tert-Butyl ether	9.06	59	3494855	81.6294 ug/L	100
29) 2-Butanone	9.25	43	113282	20.0079 ug/L	99
30) Propionitrile	9.36	54	158487	79.1300 ug/L	98
31) 2,2-Dichloropropane	9.48	77	269551	20.0860 ug/L	99
32) cis-1,2-Dichloroethene	9.55	96	200196	19.8279 ug/L	99
33) Chloroform	9.75	83	326778	19.8658 ug/L	100
34) 1-Bromopropane	9.89	122	30686	20.5910 ug/L	92
35) Bromochloromethane	9.99	130	121641	19.7196 ug/L	99
36) Tetrahydrofuran	10.00	42	307184	80.2345 ug/L	99
38) 1,1,1-Trichloroethane	10.29	97	289862	20.5171 ug/L	99
39) Cyclohexane	10.32	56	489706	20.7471 ug/L	100
40) 1,1-Dichloropropene	10.48	75	233628	19.7281 ug/L	98
41) Tert-Amyl-Methyl ether	10.57	73	2095489	82.2245 ug/L	99
42) Carbon Tetrachloride	10.63	117	253639	20.4137 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M964353.D 8260WTR.M Mon Jun 30 15:44:33 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964353.D Vial: 7
Acq On : 26 Jun 2014 18:20 Operator: ADC
Sample : WG482030-07 20.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:30 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.80	62	316998	20.1923 ug/L	100
46)	Benzene	10.84	78	713078	20.0178 ug/L	99
47)	Trichloroethene	11.59	130	197506	19.3787 ug/L	98
48)	Methylcyclohexane	11.68	83	278249	20.9564 ug/L	100
49)	1,2-Dichloropropane	11.80	63	258446	20.2002 ug/L	100
50)	1,4-Dioxane	12.09	88	12699	135.8000 ug/L	98
51)	Bromodichloromethane	12.11	83	256066	20.2677 ug/L	99
52)	Dibromomethane	12.20	174	119811	20.4696 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.39	63	141687	20.3491 ug/L	99
54)	4-Methyl-2-Pentanone	12.42	58	102976	19.6663 ug/L	99
55)	cis-1,3-Dichloropropene	12.74	75	300983	20.3059 ug/L	100
56)	Dimethyl Disulfide	13.01	94	331700	20.9134 ug/L	100
59)	Toluene	13.16	91	749317	20.8245 ug/L	99
60)	Ethyl Methacrylate	13.24	69	217404	21.0158 ug/L	99
61)	trans-1,3-Dichloropropene	13.33	75	283661	20.6164 ug/L	100
62)	1,1,2-Trichloroethane	13.56	97	161299	20.8589 ug/L	98
63)	2-Hexanone	13.47	43	168637	20.2898 ug/L	99
64)	1,3-Dichloropropane	13.86	76	277552	20.4226 ug/L	99
65)	Tetrachloroethene	13.98	164	154800	20.6905 ug/L	98
66)	Dibromochloromethane	14.25	129	189895	20.1543 ug/L	100
67)	1,2-Dibromoethane	14.51	107	161235	20.4411 ug/L	99
68)	1-Chlorohexane	14.58	91	224591	20.9899 ug/L	100
69)	Chlorobenzene	15.01	112	491054	20.3990 ug/L	99
70)	1,1,1,2-Tetrachloroethane	15.04	131	185314	20.5116 ug/L	97
71)	Ethylbenzene	15.04	106	271644	20.4771 ug/L	96
72)	m-,p-Xylene	15.12	106	649598	41.5906 ug/L	98
73)	o-Xylene	15.69	106	324553	20.1074 ug/L	100
74)	Styrene	15.73	104	542912	21.3401 ug/L	99
75)	Bromoform	16.23	173	138244	20.0082 ug/L	99
76)	Isopropylbenzene	16.11	105	816691	21.0247 ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.33	83	173034	20.3607 ug/L	98
80)	1,2,3-Trichloropropane	16.52	110	58273	19.8492 ug/L	97
81)	trans-1,4-Dichloro-2-Buten	16.57	53	92440	20.6176 ug/L	94
82)	n-Propylbenzene	16.62	91	979929	21.2720 ug/L	99
83)	Bromobenzene	16.76	156	213220	19.6585 ug/L	98
84)	1,3,5-Trimethylbenzene	16.80	105	684267	20.8483 ug/L	99
85)	2-Chlorotoluene	16.90	91	596832	19.2987 ug/L	100
86)	4-Chlorotoluene	16.95	91	593378	22.1439 ug/L	89
87)	a-Methylstyrene	17.21	118	364142	21.2306 ug/L	100
88)	tert-Butylbenzene	17.27	134	152593	20.9532 ug/L	99
89)	1,2,4-Trimethylbenzene	17.32	105	703974	20.6942 ug/L	99
90)	sec-Butylbenzene	17.54	105	869717	21.0892 ug/L	99
91)	p-Isopropyltoluene	17.70	119	709493	21.0244 ug/L	100
92)	1,3-Dichlorobenzene	17.90	146	403823	20.1978 ug/L	99
93)	1,4-Dichlorobenzene	18.03	146	409717	19.8851 ug/L	100
94)	n-Butylbenzene	18.22	91	664057	20.7965 ug/L	99
95)	1,2-Dichlorobenzene	18.53	146	402501	20.4577 ug/L	100
96)	1,2-Dibromo-3-Chloropropan	19.53	157	42254	19.6297 ug/L	97
97)	1,2,4-Trichlorobenzene	20.67	180	290129	19.6227 ug/L	100
98)	Hexachlorobutadiene	20.82	225	147764	19.8268 ug/L	98
99)	Naphthalene	21.04	128	681370	21.1757 ug/L	99
100)	1,2,3-Trichlorobenzene	21.35	180	280677	19.4307 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M964353.D 8260WTR.M Mon Jun 30 15:44:33 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964353.D Vial: 7
Acq On : 26 Jun 2014 18:20 Operator: ADC
Sample : WG482030-07 20.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

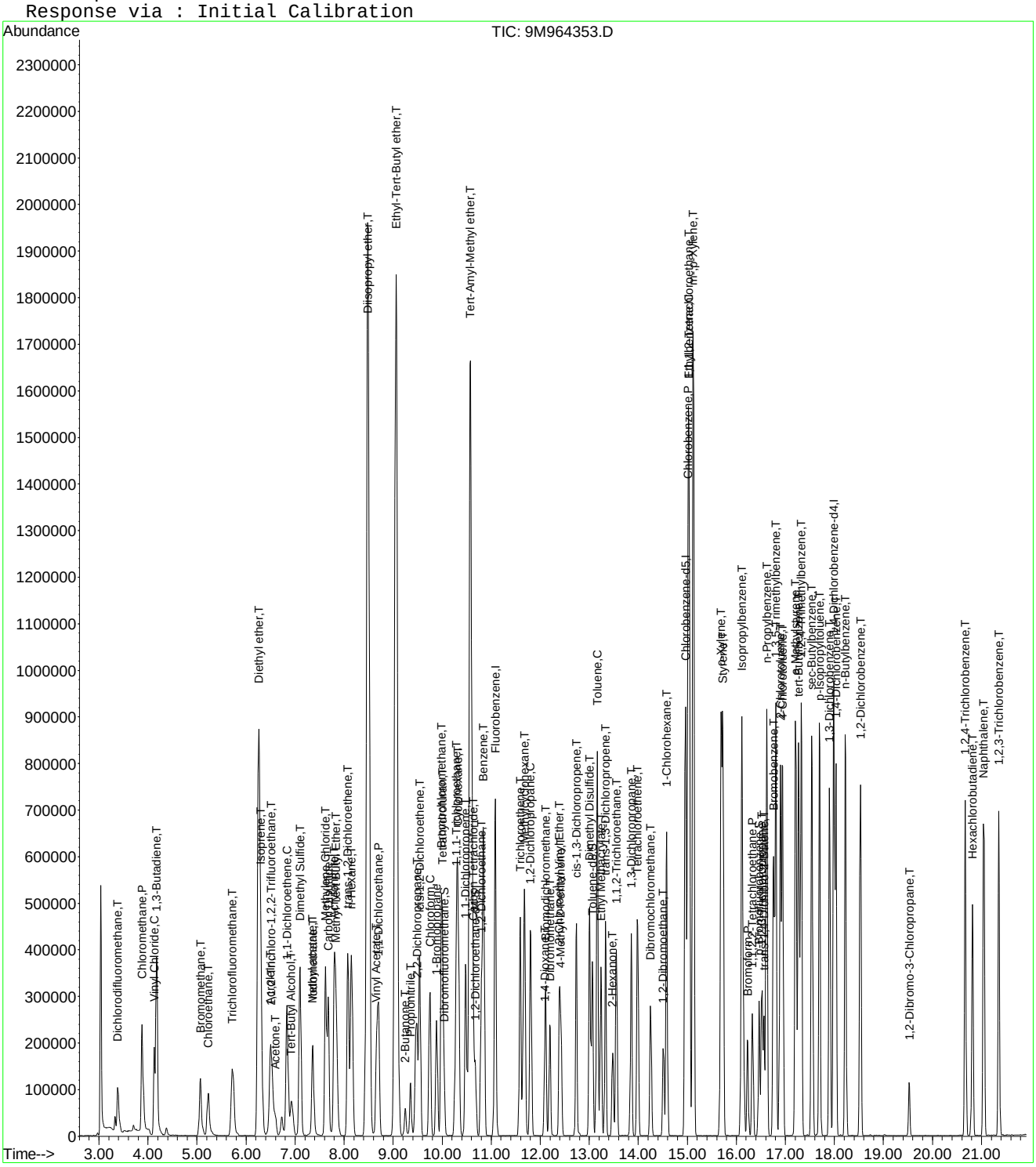

9M964353.D 8260WTR.M Mon Jun 30 15:44:34 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964354.D Vial: 8
Acq On : 26 Jun 2014 18:50 Operator: ADC
Sample : WG482030-08 50.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:36 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.09	96	814768	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	597508	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	333316	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.04	111	217171	25.1330 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.52%		
43) 1,2-Dichloroethane-d4	10.68	65	298288	25.8110 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.24%		
58) Toluene-d8	13.06	98	785815	26.6196 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.48%		
79) p-Bromofluorobenzene	16.46	95	312780	26.0089 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	382131	57.4847 ug/L	100
3) Chloromethane	3.88	50	965236	52.7144 ug/L	100
4) Vinyl Chloride	4.13	62	634731	52.4603 ug/L	100
5) 1,3-Butadiene	4.17	54	511074	57.1192 ug/L	100
6) Bromomethane	5.07	94	356490	48.0045 ug/L	100
7) Chloroethane	5.22	64	408477	53.9302 ug/L	100
8) Trichlorofluoromethane	5.72	101	657280	52.5630 ug/L	100
9) Diethyl ether	6.26	59	1160465	103.2297 ug/L	100
10) Isoprene	6.30	67	647238	54.0460 ug/L	100
11) Acrolein	6.49	56	115511	51.4684 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.52	101	376772	52.5844 ug/L	100
13) Acetone	6.60	43	173168	50.5045 ug/L	100
14) 1,1-Dichloroethene	6.84	61	919380	53.1563 ug/L	100
15) Tert-Butyl Alcohol	6.93	59	237690	190.2135 ug/L	100
16) Dimethyl Sulfide	7.09	62	727870	53.7485 ug/L	100
17) Iodomethane	7.36	142	521037	50.5945 ug/L	100
18) Methyl acetate	7.35	43	570639	50.8850 ug/L	100
19) Methylene Chloride	7.62	84	478893	52.3786 ug/L	100
20) Carbon Disulfide	7.67	76	1280814	52.4860 ug/L	100
21) Acrylonitrile	7.80	53	293215	53.4218 ug/L	100
22) Methyl Tert Butyl Ether	7.83	73	1308522	53.5239 ug/L	100
23) trans-1,2-Dichloroethene	8.08	61	894306	52.4388 ug/L	100
24) n-Hexane	8.15	57	918535	53.2454 ug/L	100
25) Diisopropyl ether	8.48	45	4866373	105.7826 ug/L	100
26) Vinyl Acetate	8.66	43	917043	55.1040 ug/L	100
27) 1,1-Dichloroethane	8.70	63	1099080	51.9974 ug/L	100
28) Ethyl-Tert-Butyl ether	9.06	59	4340365	104.3928 ug/L	100
29) 2-Butanone	9.24	43	287020	52.2011 ug/L	100
30) Propionitrile	9.36	54	203305	104.5256 ug/L	100
31) 2,2-Dichloropropane	9.47	77	673243	51.6596 ug/L	100
32) cis-1,2-Dichloroethene	9.54	96	502389	51.2377 ug/L	100
33) Chloroform	9.75	83	818760	51.2550 ug/L	100
34) 1-Bromopropane	9.89	122	81528	56.3342 ug/L	100
35) Bromochloromethane	9.98	130	303735	50.7037 ug/L	100
36) Tetrahydrofuran	10.00	42	389991	104.8924 ug/L	100
38) 1,1,1-Trichloroethane	10.29	97	728848	53.1237 ug/L	100
39) Cyclohexane	10.32	56	1213841	52.9555 ug/L	100
40) 1,1-Dichloropropene	10.48	75	593560	51.6122 ug/L	100
41) Tert-Amyl-Methyl ether	10.58	73	2567131	103.7267 ug/L	100
42) Carbon Tetrachloride	10.63	117	638706	52.9339 ug/L	100

(#) = qualifier out of range (m) = manual integration
9M964354.D 8260WTR.M Mon Jun 30 15:44:38 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964354.D Vial: 8
Acq On : 26 Jun 2014 18:50 Operator: ADC
Sample : WG482030-08 50.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:36 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.80	62	805521	52.8364	ug/L	100
46)	Benzene	10.85	78	1787209	51.6632	ug/L	100
47)	Trichloroethene	11.59	130	487546	49.2592	ug/L	100
48)	Methylcyclohexane	11.67	83	685932	53.1975	ug/L	100
49)	1,2-Dichloropropane	11.81	63	648534	52.1970	ug/L	100
50)	1,4-Dioxane	12.09	88	18363	202.2091	ug/L	100
51)	Bromodichloromethane	12.11	83	657568	53.5944	ug/L	100
52)	Dibromomethane	12.20	174	311262	54.7602	ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.39	63	369515	54.6480	ug/L	100
54)	4-Methyl-2-Pentanone	12.42	58	266292	52.3687	ug/L	100
55)	cis-1,3-Dichloropropene	12.74	75	769123	53.4322	ug/L	100
56)	Dimethyl Disulfide	13.01	94	885888	57.5154	ug/L	100
59)	Toluene	13.16	91	1866411	52.7592	ug/L	100
60)	Ethyl Methacrylate	13.24	69	559341	54.9967	ug/L	100
61)	trans-1,3-Dichloropropene	13.33	75	716702	52.9828	ug/L	100
62)	1,1,2-Trichloroethane	13.56	97	400034	52.6186	ug/L	100
63)	2-Hexanone	13.47	43	435445	53.2895	ug/L	100
64)	1,3-Dichloropropane	13.86	76	697575	52.2083	ug/L	100
65)	Tetrachloroethene	13.99	164	388321	52.7928	ug/L	100
66)	Dibromochloromethane	14.25	129	494502	53.3832	ug/L	100
67)	1,2-Dibromoethane	14.51	107	417646	53.8563	ug/L	100
68)	1-Chlorohexane	14.58	91	568966	54.0864	ug/L	100
69)	Chlorobenzene	15.01	112	1224958	51.7587	ug/L	100
70)	1,1,1,2-Tetrachloroethane	15.03	131	464249	52.2667	ug/L	100
71)	Ethylbenzene	15.03	106	696952	53.4385	ug/L	100
72)	m-,p-Xylene	15.12	106	1663710	108.3454	ug/L	100
73)	o-Xylene	15.69	106	829857	52.2946	ug/L	100
74)	Styrene	15.73	104	1397512	55.8735	ug/L	100
75)	Bromoform	16.23	173	363113	53.4546	ug/L	100
76)	Isopropylbenzene	16.11	105	2064754	54.0659	ug/L	100
78)	1,1,2,2-Tetrachloroethane	16.33	83	464049	54.6940	ug/L	100
80)	1,2,3-Trichloropropane	16.52	110	154228	52.6203	ug/L	100
81)	trans-1,4-Dichloro-2-Buten	16.57	53	250881	56.0481	ug/L	100
82)	n-Propylbenzene	16.62	91	2519719	54.7874	ug/L	100
83)	Bromobenzene	16.76	156	556829	51.4231	ug/L	100
84)	1,3,5-Trimethylbenzene	16.80	105	1774469	54.1536	ug/L	100
85)	2-Chlorotoluene	16.90	91	1507292	48.8188	ug/L	100
86)	4-Chlorotoluene	16.95	91	1540882	57.5979	ug/L	100
87)	a-Methylstyrene	17.21	118	962498	56.2090	ug/L	100
88)	tert-Butylbenzene	17.27	134	392261	53.9517	ug/L	100
89)	1,2,4-Trimethylbenzene	17.32	105	1814476	53.4265	ug/L	100
90)	sec-Butylbenzene	17.54	105	2245581	54.5414	ug/L	100
91)	p-Isopropyltoluene	17.70	119	1850939	54.9391	ug/L	100
92)	1,3-Dichlorobenzene	17.90	146	1051565	52.6821	ug/L	100
93)	1,4-Dichlorobenzene	18.03	146	1060028	51.5319	ug/L	100
94)	n-Butylbenzene	18.22	91	1757640	55.1353	ug/L	100
95)	1,2-Dichlorobenzene	18.53	146	1057073	53.8158	ug/L	100
96)	1,2-Dibromo-3-Chloropropan	19.53	157	119470	55.5929	ug/L	100
97)	1,2,4-Trichlorobenzene	20.67	180	783505	53.0792	ug/L	100
98)	Hexachlorobutadiene	20.81	225	412436	55.4313	ug/L	100
99)	Naphthalene	21.05	128	1831109	57.0010	ug/L	100
100)	1,2,3-Trichlorobenzene	21.35	180	775440	53.7706	ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964354.D Vial: 8
Acq On : 26 Jun 2014 18:50 Operator: ADC
Sample : WG482030-08 50.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

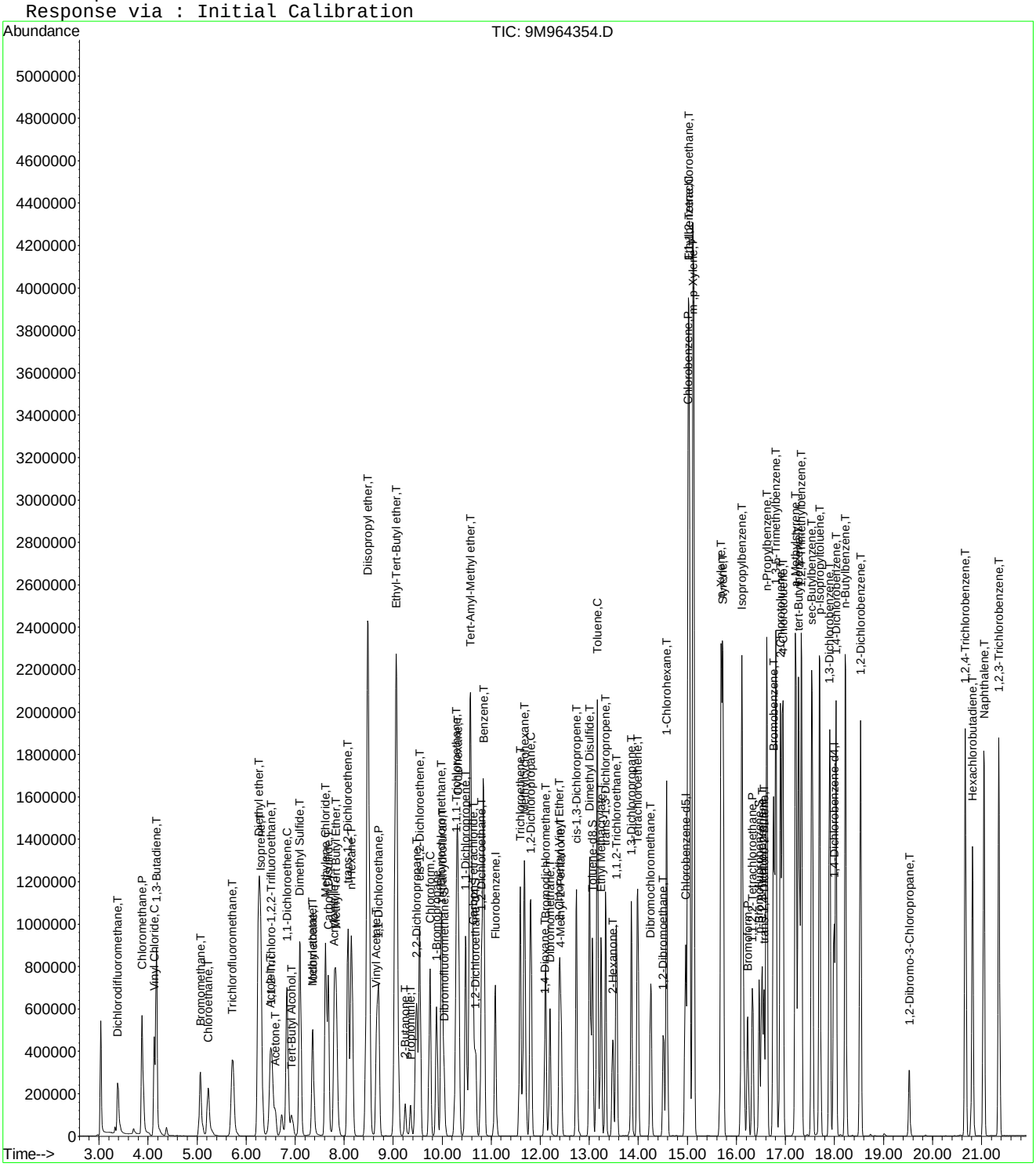

9M964354.D 8260WTR.M Mon Jun 30 15:44:40 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964355.D Vial: 9
Acq On : 26 Jun 2014 19:19 Operator: ADC
Sample : WG482030-09 100.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:41 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	847510	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	633556	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	364077	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.04	111	439603	48.9095 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 195.64%#		
43) 1,2-Dichloroethane-d4	10.68	65	594956	49.4930 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 197.96%#		
58) Toluene-d8	13.06	98	1536068	49.0739 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 196.28%#		
79) p-Bromofluorobenzene	16.46	95	622974	47.4258 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 189.72%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	745134	107.7615 ug/L	99
3) Chloromethane	3.88	50	1742885	91.5069 ug/L	100
4) Vinyl Chloride	4.13	62	1238321	98.3928 ug/L	100
5) 1,3-Butadiene	4.17	54	954269	104.1491 ug/L	99
6) Bromomethane	5.06	94	700476	90.6811 ug/L	99
7) Chloroethane	5.22	64	814701	103.4075 ug/L	99
8) Trichlorofluoromethane	5.72	101	1282829	98.6252 ug/L	100
9) Diethyl ether	6.26	59	2288320	195.6945 ug/L	99
10) Isoprene	6.30	67	1303765	104.6618 ug/L	99
11) Acrolein	6.49	56	227484	97.4445 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	734252	98.5172 ug/L	99
13) Acetone	6.60	43	339971	95.3221 ug/L	99
14) 1,1-Dichloroethene	6.83	61	1772813	98.5398 ug/L	98
15) Tert-Butyl Alcohol	6.93	59	518622	398.9978 ug/L	97
16) Dimethyl Sulfide	7.10	62	1432854	101.7194 ug/L	99
17) Iodomethane	7.36	142	1087818	100.4950 ug/L	100
18) Methyl acetate	7.35	43	1145139	98.1693 ug/L	99
19) Methylene Chloride	7.62	84	928628	97.6442 ug/L	99
20) Carbon Disulfide	7.67	76	2538576	100.0085 ug/L	99
21) Acrylonitrile	7.80	53	588073	103.0036 ug/L	99
22) Methyl Tert Butyl Ether	7.83	73	2548300	100.2090 ug/L	99
23) trans-1,2-Dichloroethene	8.08	61	1728710	97.4490 ug/L	99
24) n-Hexane	8.15	57	1854433	103.3443 ug/L	100
25) Diisopropyl ether	8.48	45	9236538	193.0222 ug/L	99
26) Vinyl Acetate	8.65	43	1590922	91.9033 ug/L	99
27) 1,1-Dichloroethane	8.70	63	2125547	96.6745 ug/L	100
28) Ethyl-Tert-Butyl ether	9.06	59	8417106	194.6240 ug/L	99
29) 2-Butanone	9.24	43	556135	97.2383 ug/L	98
30) Propionitrile	9.36	54	412858	204.0630 ug/L	99
31) 2,2-Dichloropropane	9.47	77	1301022	95.9739 ug/L	99
32) cis-1,2-Dichloroethene	9.54	96	978503	95.9402 ug/L	99
33) Chloroform	9.75	83	1570479	94.5150 ug/L	99
34) 1-Bromopropane	9.88	122	159304	105.8232 ug/L	94
35) Bromochloromethane	9.99	130	598653	96.0747 ug/L	98
36) Tetrahydrofuran	10.01	42	772769	199.8150 ug/L	100
38) 1,1,1-Trichloroethane	10.29	97	1427275	100.0112 ug/L	99
39) Cyclohexane	10.32	56	2462401	103.2755 ug/L	100
40) 1,1-Dichloropropene	10.47	75	1164334	97.3317 ug/L	99
41) Tert-Amyl-Methyl ether	10.58	73	5013581	194.7511 ug/L	99
42) Carbon Tetrachloride	10.63	117	1254276	99.9345 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M964355.D 8260WTR.M Mon Jun 30 15:44:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964355.D Vial: 9
Acq On : 26 Jun 2014 19:19 Operator: ADC
Sample : WG482030-09 100.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:41 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.79	62	1568220	98.8900	ug/L	100
46)	Benzene	10.85	78	3412539	94.8359	ug/L	99
47)	Trichloroethene	11.59	130	957167	92.9712	ug/L	99
48)	Methylcyclohexane	11.67	83	1402431	104.5637	ug/L	99
49)	1,2-Dichloropropane	11.81	63	1268465	98.1478	ug/L	99
50)	1,4-Dioxane	12.09	88	39561	418.8065	ug/L	98
51)	Bromodichloromethane	12.11	83	1281076	100.3789	ug/L	100
52)	Dibromomethane	12.20	174	620015	104.8649	ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.39	63	725940	103.2125	ug/L	99
54)	4-Methyl-2-Pentanone	12.42	58	534242	101.0045	ug/L	100
55)	cis-1,3-Dichloropropene	12.74	75	1500863	100.2392	ug/L	100
56)	Dimethyl Disulfide	13.01	94	1777750	110.9597	ug/L	98
59)	Toluene	13.16	91	3552001	94.6940	ug/L	99
60)	Ethyl Methacrylate	13.23	69	1121215	103.9699	ug/L	99
61)	trans-1,3-Dichloropropene	13.33	75	1407984	98.1640	ug/L	98
62)	1,1,2-Trichloroethane	13.56	97	780775	96.8561	ug/L	100
63)	2-Hexanone	13.47	43	864384	99.7639	ug/L	100
64)	1,3-Dichloropropane	13.86	76	1354173	95.5832	ug/L	100
65)	Tetrachloroethene	13.99	164	767104	98.3551	ug/L	99
66)	Dibromochloromethane	14.26	129	981858	99.9642	ug/L	99
67)	1,2-Dibromoethane	14.51	107	822912	100.0784	ug/L	99
68)	1-Chlorohexane	14.58	91	1157328	103.7568	ug/L	100
69)	Chlorobenzene	15.01	112	2378905	94.7977	ug/L	99
70)	1,1,1,2-Tetrachloroethane	15.04	131	926703	98.3951	ug/L	98
71)	Ethylbenzene	15.03	106	1343806	97.1732	ug/L	99
72)	m-,p-Xylene	15.13	106	3156451	193.8610	ug/L	99
73)	o-Xylene	15.69	106	1636153	97.2380	ug/L	98
74)	Styrene	15.73	104	2742032	103.3908	ug/L	99
75)	Bromoform	16.23	173	747789	103.8201	ug/L	99
76)	Isopropylbenzene	16.11	105	4000396	98.7908	ug/L	100
78)	1,1,2,2-Tetrachloroethane	16.33	83	923773	99.6791	ug/L	98
80)	1,2,3-Trichloropropane	16.52	110	319628	99.8385	ug/L	92
81)	trans-1,4-Dichloro-2-Buten	16.56	53	500575	102.3824	ug/L	98
82)	n-Propylbenzene	16.62	91	4832002	96.1876	ug/L	98
83)	Bromobenzene	16.76	156	1116210	94.3725	ug/L	99
84)	1,3,5-Trimethylbenzene	16.80	105	3494523	97.6360	ug/L	100
85)	2-Chlorotoluene	16.89	91	3363693	99.7400	ug/L	100
86)	4-Chlorotoluene	16.95	91	2611869	89.3824	ug/L	88
87)	a-Methylstyrene	17.22	118	1998911	106.8715	ug/L	99
88)	tert-Butylbenzene	17.28	134	772170	97.2312	ug/L	98
89)	1,2,4-Trimethylbenzene	17.33	105	3543483	95.5210	ug/L	100
90)	sec-Butylbenzene	17.55	105	4383049	97.4623	ug/L	99
91)	p-Isopropyltoluene	17.70	119	3651423	99.2235	ug/L	100
92)	1,3-Dichlorobenzene	17.91	146	2108047	96.6874	ug/L	98
93)	1,4-Dichlorobenzene	18.03	146	2138006	95.1549	ug/L	100
94)	n-Butylbenzene	18.23	91	3432634	98.5802	ug/L	99
95)	1,2-Dichlorobenzene	18.53	146	2110946	98.3887	ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.53	157	250947	106.9069	ug/L	100
97)	1,2,4-Trichlorobenzene	20.67	180	1614942	100.1619	ug/L	100
98)	Hexachlorobutadiene	20.82	225	846227	104.1234	ug/L	100
99)	Naphthalene	21.05	128	3659805	104.3012	ug/L	99
100)	1,2,3-Trichlorobenzene	21.35	180	1558513	98.9395	ug/L	99

(#) = qualifier out of range (m) = manual integration
9M964355.D 8260WTR.M Mon Jun 30 15:44:44 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964355.D Vial: 9
Acq On : 26 Jun 2014 19:19 Operator: ADC
Sample : WG482030-09 100.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

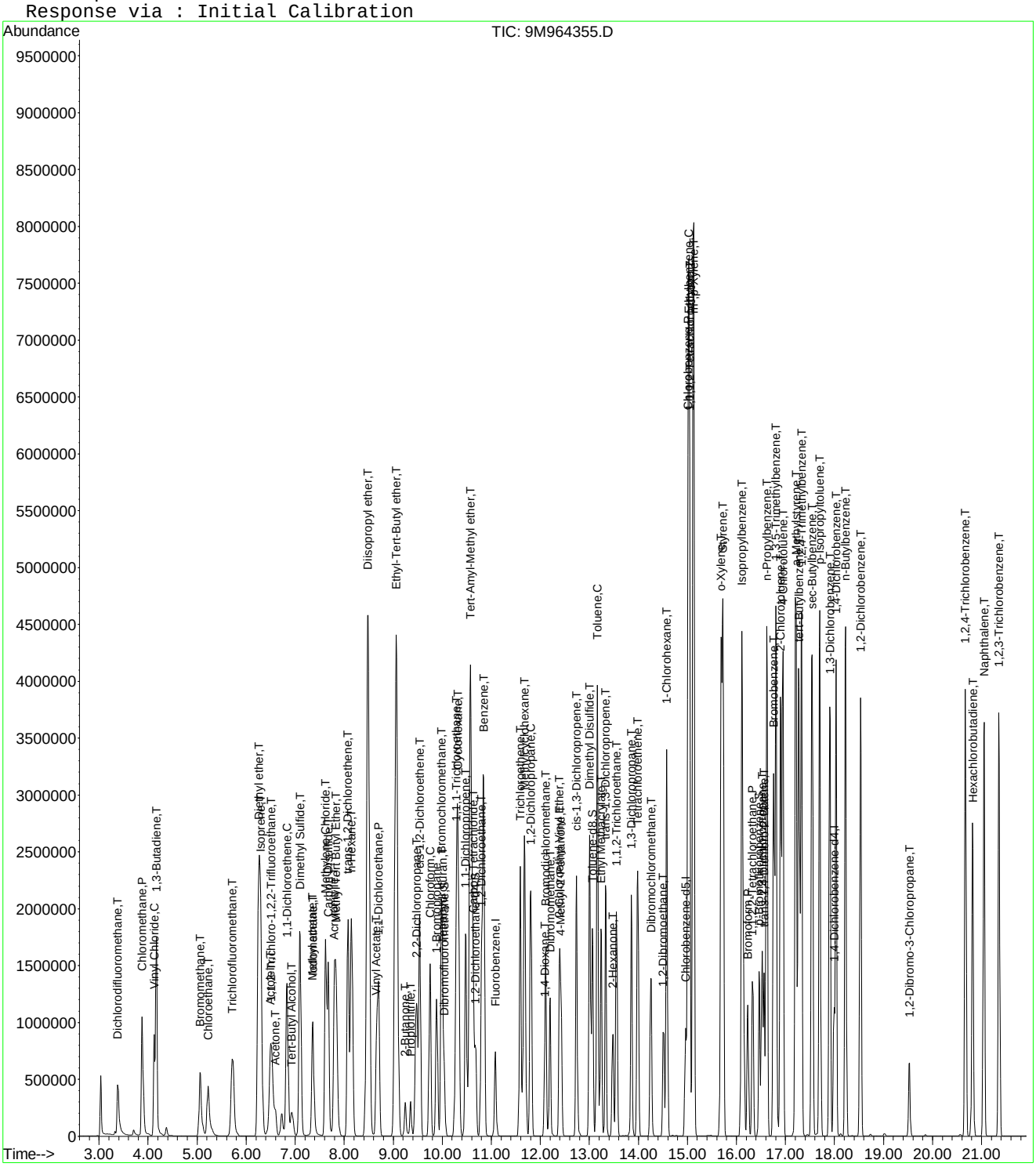

9M964355.D 8260WTR.M Mon Jun 30 15:44:45 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964356.D Vial: 10
Acq On : 26 Jun 2014 19:48 Operator: ADC
Sample : WG482030-10 200.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:47 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	870252	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	682783	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	391599	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.04	111	893683	96.8313 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 387.32%#		
43) 1,2-Dichloroethane-d4	10.68	65	1201005	97.2979 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 389.20%#		
58) Toluene-d8	13.07	98	3102160	91.9617 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 367.84%#		
79) p-Bromofluorobenzene	16.46	95	1334307	94.4393 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 377.76%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	1541587	217.1186 ug/L	98
3) Chloromethane	3.88	50	3448228	176.3116 ug/L	99
4) Vinyl Chloride	4.12	62	2571538	198.9861 ug/L	100
5) 1,3-Butadiene	4.16	54	1837754	197.1122 ug/L	99
6) Bromomethane	5.05	94	1488976	187.7202 ug/L	100
7) Chloroethane	5.22	64	1706354	210.9224 ug/L	99
8) Trichlorofluoromethane	5.72	101	2664584	199.5025 ug/L	100
10) Isoprene	6.29	67	2592326	202.6649 ug/L	100
11) Acrolein	6.51	56	2082	0.8685 ug/L	79
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	1539577	201.1724 ug/L	98
13) Acetone	6.59	43	675279	184.3889 ug/L	97
14) 1,1-Dichloroethene	6.83	61	3658980	198.0655 ug/L	99
15) Tert-Butyl Alcohol	6.83	59	122034	91.4324 ug/L #	60
16) Dimethyl Sulfide	7.10	62	2845949	196.7564 ug/L	100
17) Iodomethane	7.36	142	2245797	200.9912 ug/L	100
18) Methyl acetate	7.36	43	2205602	184.1384 ug/L	99
19) Methylene Chloride	7.62	84	1913965	195.9920 ug/L	97
20) Carbon Disulfide	7.67	76	4986184	191.2999 ug/L	99
21) Acrylonitrile	7.83	53	71003	12.1115 ug/L #	32
22) Methyl Tert Butyl Ether	7.83	73	5195062	198.9513 ug/L	98
23) trans-1,2-Dichloroethene	8.07	61	3542979	194.5019 ug/L	99
24) n-Hexane	8.15	57	3609374	195.8877 ug/L	99
25) Diisopropyl ether	8.50	45	6669	0.1357 ug/L #	83
26) Vinyl Acetate	8.65	43	3154810	177.4824 ug/L	99
27) 1,1-Dichloroethane	8.69	63	4310095	190.9096 ug/L	99
29) 2-Butanone	9.24	43	1123130	191.2436 ug/L	98
30) Propionitrile	9.33	54	660	0.3177 ug/L #	59
31) 2,2-Dichloropropane	9.47	77	2664058	191.3867 ug/L	98
32) cis-1,2-Dichloroethene	9.54	96	2018371	192.7255 ug/L	98
33) Chloroform	9.75	83	3239912	189.8898 ug/L	99
34) 1-Bromopropane	9.89	122	326859	211.4533 ug/L	95
35) Bromochloromethane	9.99	130	1248687	195.1583 ug/L	95
36) Tetrahydrofuran	10.01	42	1088	0.2740 ug/L #	49
38) 1,1,1-Trichloroethane	10.29	97	2987653	203.8782 ug/L	99
39) Cyclohexane	10.32	56	4871724	198.9854 ug/L	99
40) 1,1-Dichloropropene	10.48	75	2399641	195.3543 ug/L	100
42) Carbon Tetrachloride	10.63	117	2638784	204.7509 ug/L	100
45) 1,2-Dichloroethane	10.80	62	3198261	196.4079 ug/L	99
46) Benzene	10.84	78	6773387	183.3162 ug/L	97
47) Trichloroethene	11.59	130	1947213	184.1934 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M964356.D 8260WTR.M Mon Jun 30 15:44:49 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964356.D Vial: 10
Acq On : 26 Jun 2014 19:48 Operator: ADC
Sample : WG482030-10 200.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:47 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methylcyclohexane	11.67	83	2744983	199.3146 ug/L	99
49)	1,2-Dichloropropane	11.81	63	2597118	195.7013 ug/L	99
50)	1,4-Dioxane	12.11	88	2799	28.8568 ug/L #	1
51)	Bromodichloromethane	12.11	83	2662710	203.1848 ug/L	100
52)	Dibromomethane	12.20	174	1288071	212.1620 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.38	63	1485082	205.6279 ug/L	100
54)	4-Methyl-2-Pentanone	12.42	58	1127398	207.5773 ug/L	100
55)	cis-1,3-Dichloropropene	12.74	75	3077890	200.1933 ug/L	99
56)	Dimethyl Disulfide	13.01	94	3577894	217.4813 ug/L	98
59)	Toluene	13.16	91	7032720	173.9703 ug/L	97
60)	Ethyl Methacrylate	13.24	69	2309200	198.6931 ug/L	99
61)	trans-1,3-Dichloropropene	13.34	75	2889339	186.9199 ug/L	99
62)	1,1,2-Trichloroethane	13.55	97	1620084	186.4837 ug/L	100
63)	2-Hexanone	13.48	43	1826962	195.6584 ug/L	98
64)	1,3-Dichloropropane	13.86	76	2746100	179.8565 ug/L	99
65)	Tetrachloroethene	13.99	164	1600611	190.4279 ug/L	99
66)	Dibromochloromethane	14.26	129	2083770	196.8556 ug/L	99
67)	1,2-Dibromoethane	14.51	107	1727827	194.9798 ug/L	100
68)	1-Chlorohexane	14.58	91	2328801	193.7292 ug/L	100
69)	Chlorobenzene	15.01	112	4793292	177.2380 ug/L	97
70)	1,1,1,2-Tetrachloroethane	15.04	131	1923384	189.4965 ug/L	99
71)	Ethylbenzene	15.03	106	2742278	184.0025 ug/L	93
72)	m-,p-Xylene	15.12	106	6333192	360.9245 ug/L	88
73)	o-Xylene	15.69	106	3407729	187.9229 ug/L	95
74)	Styrene	15.72	104	5645386	197.5174 ug/L	96
75)	Bromoform	16.23	173	1637377	210.9373 ug/L	100
76)	Isopropylbenzene	16.11	105	8019798	183.7720 ug/L	97
78)	1,1,2,2-Tetrachloroethane	16.32	83	2070884	207.7526 ug/L	98
80)	1,2,3-Trichloropropane	16.52	110	676655	196.5044 ug/L	94
81)	trans-1,4-Dichloro-2-Buten	16.56	53	1064223	202.3674 ug/L	99
82)	n-Propylbenzene	16.62	91	9459494	175.0699 ug/L	94
83)	Bromobenzene	16.76	156	2362512	185.7057 ug/L	100
84)	1,3,5-Trimethylbenzene	16.81	105	7162167	186.0451 ug/L	98
85)	2-Chlorotoluene	16.90	91	6596849	181.8616 ug/L	98
86)	4-Chlorotoluene	16.94	91	5581454	177.5822 ug/L	86
87)	a-Methylstyrene	17.21	118	4032084	200.4241 ug/L	96
88)	tert-Butylbenzene	17.28	134	1635635	191.4833 ug/L	97
89)	1,2,4-Trimethylbenzene	17.33	105	7181797	179.9921 ug/L	97
90)	sec-Butylbenzene	17.54	105	8712118	180.1092 ug/L	96
91)	p-Isopropyltoluene	17.70	119	7326256	185.0913 ug/L	97
92)	1,3-Dichlorobenzene	17.91	146	4371248	186.4004 ug/L	97
93)	1,4-Dichlorobenzene	18.03	146	4404906	182.2680 ug/L	97
94)	n-Butylbenzene	18.23	91	6930732	185.0517 ug/L	97
95)	1,2-Dichlorobenzene	18.54	146	4342343	188.1672 ug/L	97
96)	1,2-Dibromo-3-Chloropropan	19.53	157	545321	215.9870 ug/L	98
97)	1,2,4-Trichlorobenzene	20.67	180	3452550	199.0843 ug/L	99
98)	Hexachlorobutadiene	20.82	225	1828382	209.1606 ug/L	100
99)	Naphthalene	21.05	128	7381882	195.5916 ug/L	97
100)	1,2,3-Trichlorobenzene	21.36	180	3362519	198.4613 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M964356.D 8260WTR.M Mon Jun 30 15:44:49 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964356.D Vial: 10
Acq On : 26 Jun 2014 19:48 Operator: ADC
Sample : WG482030-10 200.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

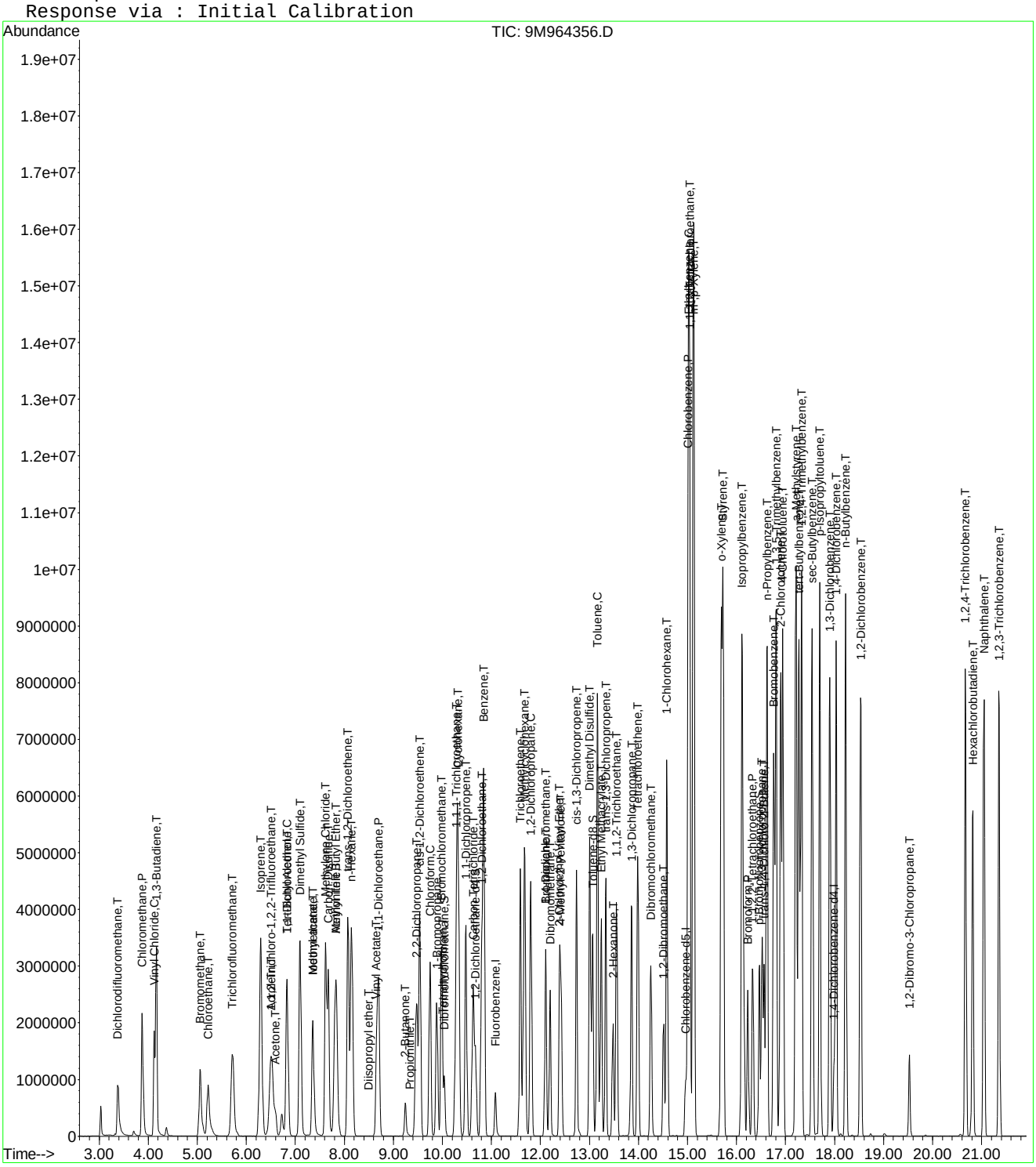

9M964356.D 8260WTR.M Mon Jun 30 15:44:50 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964357.D Vial: 11
Acq On : 26 Jun 2014 20:17 Operator: ADC
Sample : WG482030-11 300.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:52 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	839235	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	682450	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	417147	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.04	111	1299059	145.9562 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 583.84%#		
43) 1,2-Dichloroethane-d4	10.68	65	1721936	144.6563 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 578.64%#		
58) Toluene-d8	13.07	98	4517458	133.9827 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 535.92%#		
79) p-Bromofluorobenzene	16.46	95	2060640	136.9151 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 547.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	2277073	332.5579 ug/L	97
3) Chloromethane	3.88	50	4925942	261.1774 ug/L	98
4) Vinyl Chloride	4.12	62	3196936	256.5224 ug/L	99
5) 1,3-Butadiene	4.17	54	2561300	285.7766 ug/L	100
6) Bromomethane	5.05	94	2213885	289.4276 ug/L	99
7) Chloroethane	5.21	64	2541219	325.7295 ug/L	99
8) Trichlorofluoromethane	5.72	101	3851505	299.0272 ug/L	99
9) Diethyl ether	6.25	59	3289015	284.0462 ug/L	97
10) Isoprene	6.29	67	3709863	300.7518 ug/L	99
11) Acrolein	6.49	56	327087	141.4918 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	2231659	302.3822 ug/L	97
13) Acetone	6.60	43	967786	274.0263 ug/L	96
14) 1,1-Dichloroethene	6.82	61	5247246	294.5382 ug/L	98
15) Tert-Butyl Alcohol	6.95	59	878622	682.6262 ug/L	95
16) Dimethyl Sulfide	7.09	62	4123904	295.6459 ug/L	97
17) Iodomethane	7.36	142	3255809	301.6257 ug/L	100
18) Methyl acetate	7.36	43	3197647	276.8275 ug/L	99
19) Methylene Chloride	7.62	84	2800264	297.3479 ug/L	93
20) Carbon Disulfide	7.67	76	7159894	284.8488 ug/L	98
21) Acrylonitrile	7.79	53	902716	159.6738 ug/L	98
22) Methyl Tert Butyl Ether	7.83	73	7367727	292.5843 ug/L	99
23) trans-1,2-Dichloroethene	8.07	61	5088065	289.6472 ug/L	98
24) n-Hexane	8.15	57	5125726	288.4643 ug/L	98
25) Diisopropyl ether	8.49	45	12573826	265.3546 ug/L	97
26) Vinyl Acetate	8.65	43	4416991	257.6737 ug/L	98
27) 1,1-Dichloroethane	8.69	63	6116787	280.9478 ug/L	98
28) Ethyl-Tert-Butyl ether	9.06	59	11872558	277.2292 ug/L	97
29) 2-Butanone	9.24	43	1644378	290.3487 ug/L	96
30) Propionitrile	9.36	54	630832	314.8753 ug/L	99
31) 2,2-Dichloropropane	9.47	77	3786900	282.1067 ug/L	98
32) cis-1,2-Dichloroethene	9.54	96	2866063	283.7823 ug/L	97
33) Chloroform	9.75	83	4586215	278.7303 ug/L	98
34) 1-Bromopropane	9.88	122	474576	318.3620 ug/L	94
35) Bromochloromethane	9.99	130	1770770	286.9836 ug/L	92
36) Tetrahydrofuran	10.01	42	1100417	287.3406 ug/L	97
38) 1,1,1-Trichloroethane	10.29	97	4292163	303.7234 ug/L	98
39) Cyclohexane	10.32	56	6846462	289.9787 ug/L	99
40) 1,1-Dichloropropene	10.48	75	3462142	292.2692 ug/L	100
41) Tert-Amyl-Methyl ether	10.58	73	7237891	283.9260 ug/L	99
42) Carbon Tetrachloride	10.63	117	3797748	305.5692 ug/L	100

(#) = qualifier out of range (m) = manual integration
9M964357.D 8260WTR.M Mon Jun 30 15:44:54 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964357.D Vial: 11
Acq On : 26 Jun 2014 20:17 Operator: ADC
Sample : WG482030-11 300.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44:52 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.79	62	4515157	287.5275 ug/L	99
46)	Benzene	10.84	78	9270193	260.1628 ug/L	95
47)	Trichloroethene	11.59	130	2790647	273.7329 ug/L	99
48)	Methylcyclohexane	11.67	83	3930877	295.9718 ug/L	100
49)	1,2-Dichloropropane	11.81	63	3722389	290.8608 ug/L	98
50)	1,4-Dioxane	12.09	88	68717	734.6350 ug/L	92
51)	Bromodichloromethane	12.11	83	3812386	301.6656 ug/L	99
52)	Dibromomethane	12.20	174	1856189	317.0381 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.39	63	2142270	307.5864 ug/L	98
54)	4-Methyl-2-Pentanone	12.42	58	1711783	326.8231 ug/L	99
55)	cis-1,3-Dichloropropene	12.74	75	4394375	296.3841 ug/L	98
56)	Dimethyl Disulfide	13.01	94	5107745	321.9475 ug/L	97
59)	Toluene	13.16	91	9655825	238.9753 ug/L	95
60)	Ethyl Methacrylate	13.24	69	3413371	293.8438 ug/L	98
61)	trans-1,3-Dichloropropene	13.34	75	4157006	269.0602 ug/L	98
62)	1,1,2-Trichloroethane	13.55	97	2356187	271.3469 ug/L	100
63)	2-Hexanone	13.48	43	2771647	296.9743 ug/L	96
64)	1,3-Dichloropropane	13.85	76	3989758	261.4377 ug/L	97
65)	Tetrachloroethene	13.99	164	2337402	278.2211 ug/L	98
66)	Dibromochloromethane	14.26	129	3089726	292.0316 ug/L	100
67)	1,2-Dibromoethane	14.52	107	2519858	284.4967 ug/L	99
68)	1-Chlorohexane	14.58	91	3396427	282.6811 ug/L	99
69)	Chlorobenzene	15.01	112	6785124	251.0110 ug/L	95
70)	1,1,1,2-Tetrachloroethane	15.04	131	2864058	282.3117 ug/L	98
71)	Ethylbenzene	15.03	106	3933112	264.0343 ug/L	84
72)	m-,p-Xylene	15.13	106	8723536	497.3913 ug/L	79
73)	o-Xylene	15.69	106	4937967	272.4424 ug/L	90
74)	Styrene	15.73	104	8054120	281.9302 ug/L	92
75)	Bromoform	16.23	173	2521453	324.9880 ug/L	99
76)	Isopropylbenzene	16.11	105	11121246	254.9654 ug/L	93
78)	1,1,2,2-Tetrachloroethane	16.32	83	3282339	309.1196 ug/L	97
80)	1,2,3-Trichloropropane	16.52	110	1072551	292.3987 ug/L	91
81)	trans-1,4-Dichloro-2-Buten	16.56	53	1653099	295.0933 ug/L	98
82)	n-Propylbenzene	16.62	91	12691778	220.5050 ug/L	89
83)	Bromobenzene	16.76	156	3552040	262.1088 ug/L	100
84)	1,3,5-Trimethylbenzene	16.81	105	10127558	246.9625 ug/L	95
85)	2-Chlorotoluene	16.90	91	9434361	244.1572 ug/L	96
86)	4-Chlorotoluene	16.95	91	7981287	238.3842 ug/L	83
87)	a-Methylstyrene	17.21	118	6048066	282.2210 ug/L	94
88)	tert-Butylbenzene	17.28	134	2458394	270.1770 ug/L	96
89)	1,2,4-Trimethylbenzene	17.33	105	10192810	239.8097 ug/L	93
90)	sec-Butylbenzene	17.54	105	12113908	235.0980 ug/L	92
91)	p-Isopropyltoluene	17.70	119	10470764	248.3332 ug/L	93
92)	1,3-Dichlorobenzene	17.91	146	6542992	261.9210 ug/L	94
93)	1,4-Dichlorobenzene	18.03	146	6612778	256.8681 ug/L	95
94)	n-Butylbenzene	18.23	91	9981826	250.1938 ug/L	94
95)	1,2-Dichlorobenzene	18.54	146	6554752	266.6419 ug/L	95
96)	1,2-Dibromo-3-Chloropropan	19.53	157	871314	323.9683 ug/L	98
97)	1,2,4-Trichlorobenzene	20.67	180	5266402	285.0779 ug/L	99
98)	Hexachlorobutadiene	20.82	225	2816102	302.4223 ug/L	99
99)	Naphthalene	21.05	128	10333240	257.0231 ug/L	93
100)	1,2,3-Trichlorobenzene	21.36	180	5018736	278.0725 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M964357.D 8260WTR.M Mon Jun 30 15:44:54 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964357.D Vial: 11
Acq On : 26 Jun 2014 20:17 Operator: ADC
Sample : WG482030-11 300.0ug/L STD 8260 Inst : HPMS9
Misc : 1,1 STD65039 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:44 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

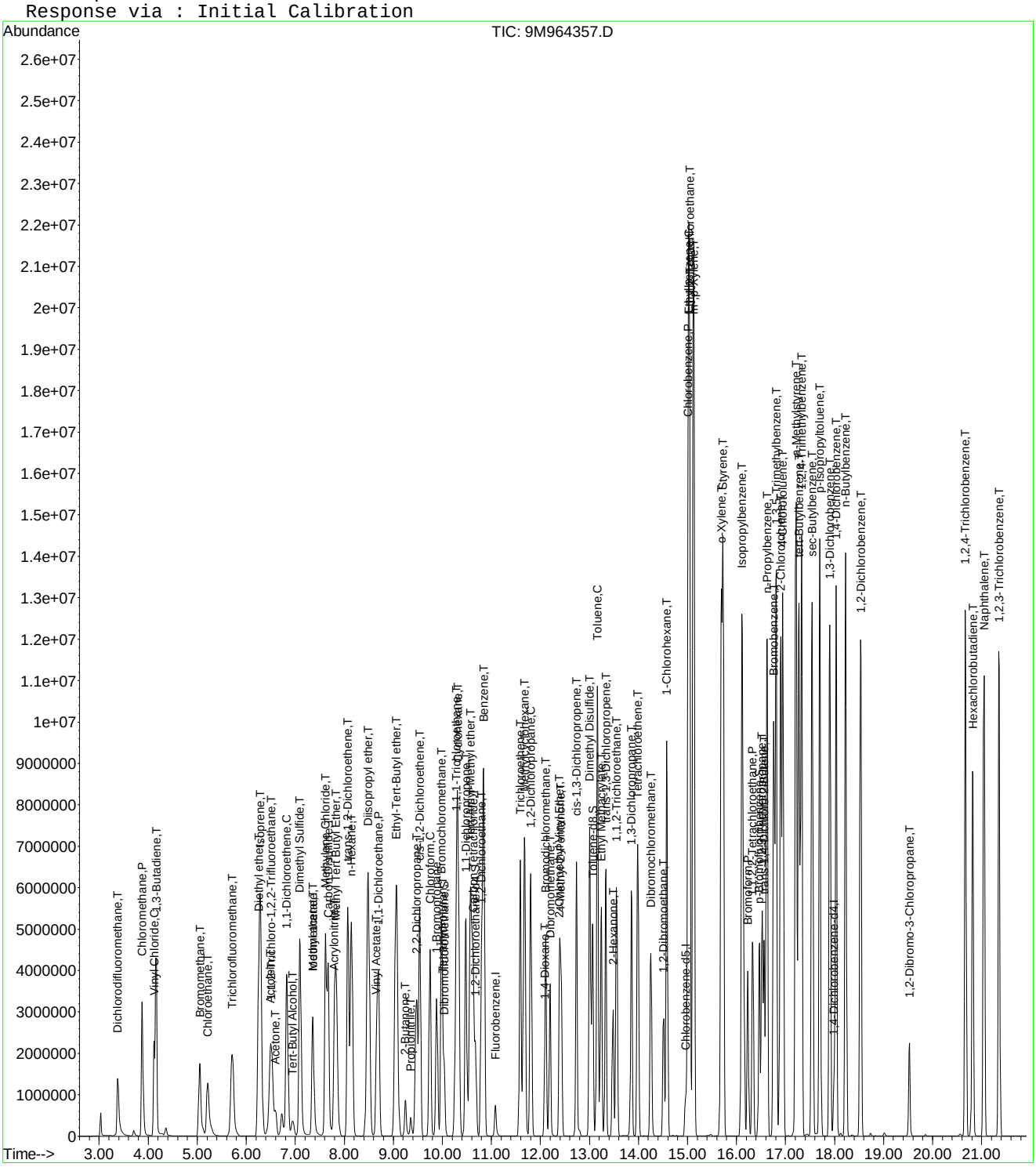

9M964357.D 8260WTR.M Mon Jun 30 15:44:56 2014 Page 3

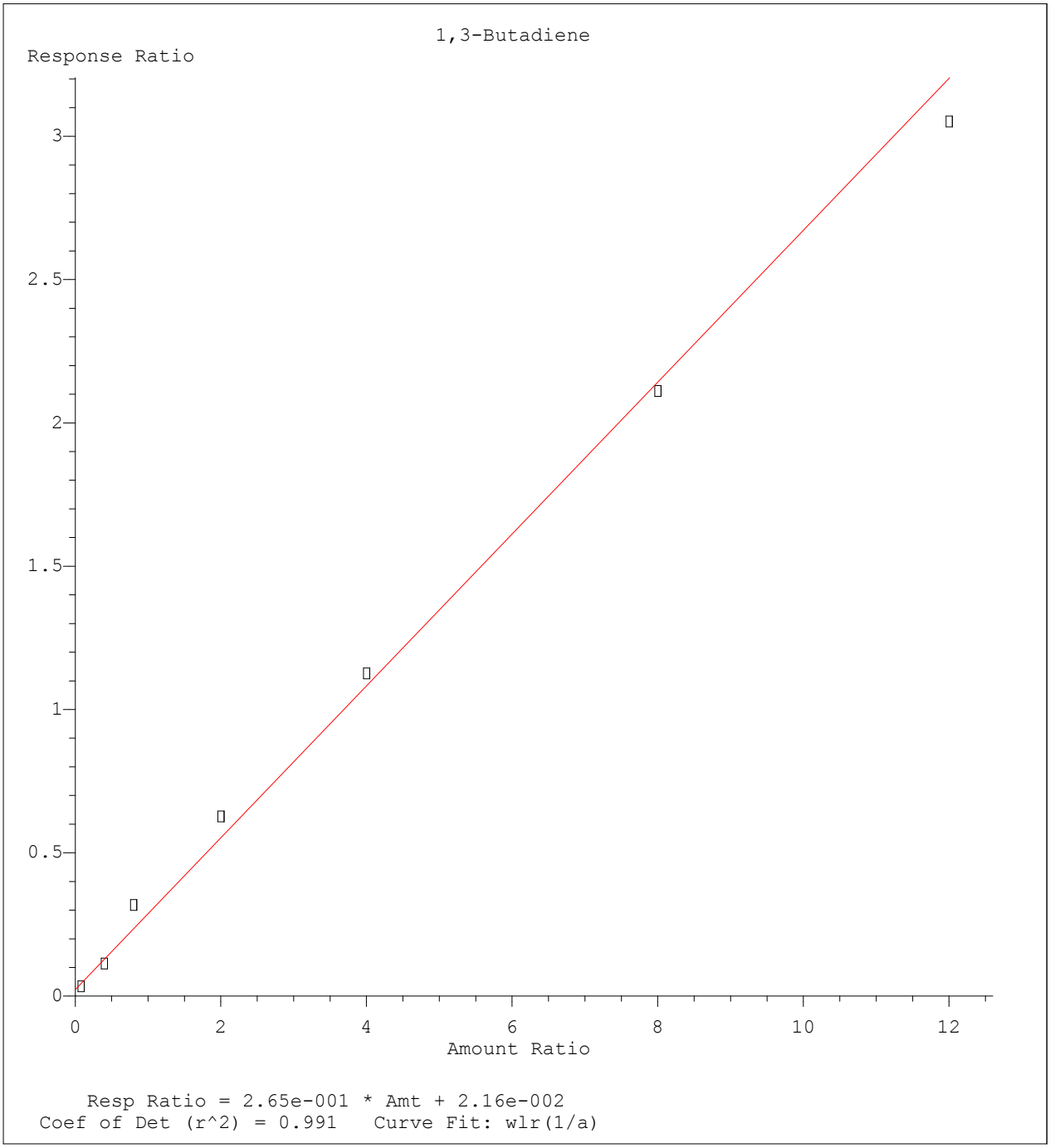

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jun 27 11:04:25 2014

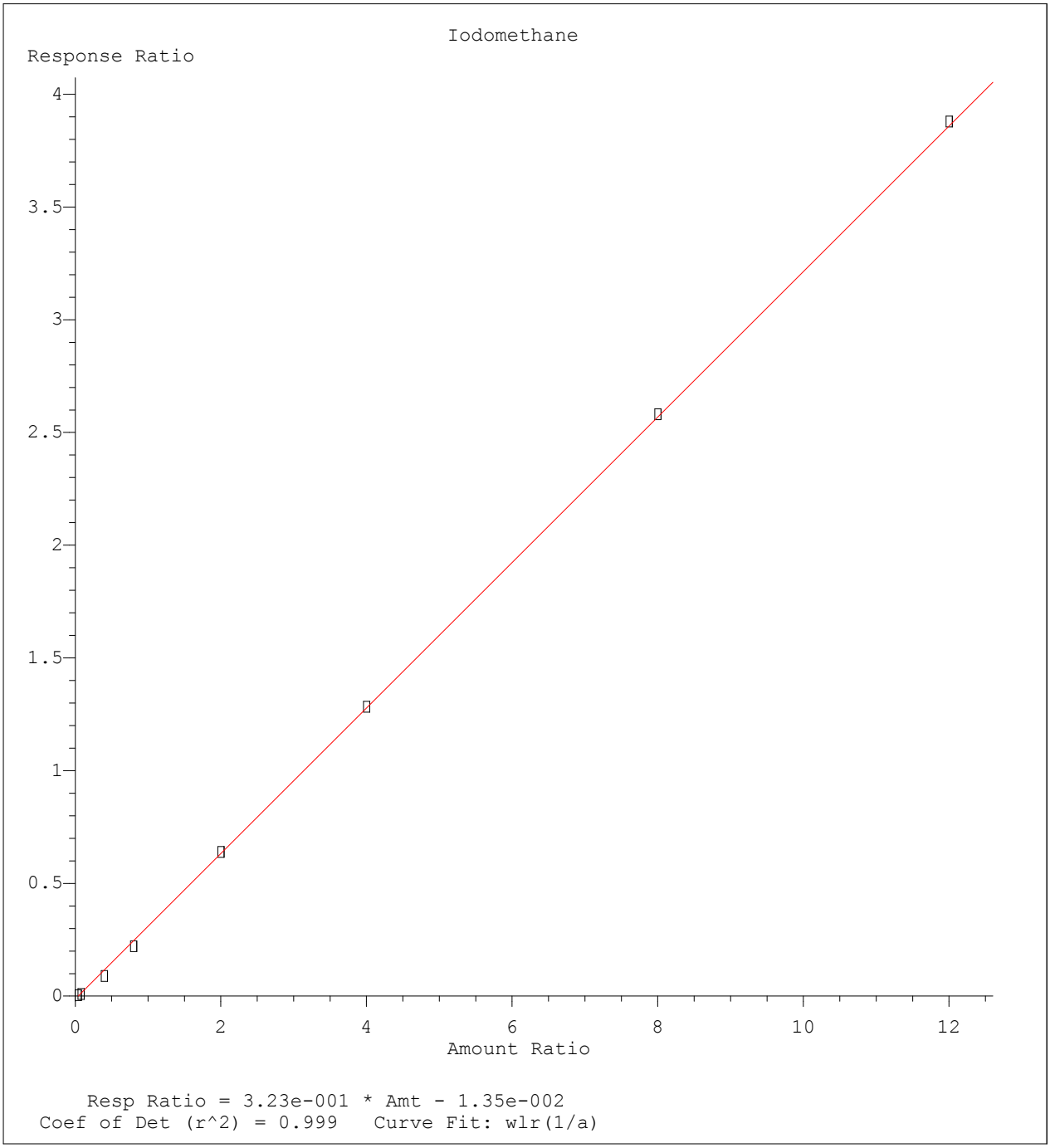

Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jun 27 11:04:25 2014

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964359.D Vial: 13
Acq On : 26 Jun 2014 21:16 Operator: ADC
Sample : WG482030-12 50.0ug/L ALTSRC 8260 Inst : HPMS9
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:45:04 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	836427	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	626128	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	384253	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.04	111	231781	26.1293 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.52%		
43) 1,2-Dichloroethane-d4	10.68	65	294619	24.8334 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.32%		
58) Toluene-d8	13.06	98	847415	27.3942 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 109.56%		
79) p-Bromofluorobenzene	16.46	95	336791	24.2930 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.16%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	537319	78.7369 ug/L	96
3) Chloromethane	3.88	50	960769	51.1118 ug/L	100
4) Vinyl Chloride	4.12	62	627844	50.5474 ug/L	100
5) 1,3-Butadiene	4.17	54	409614	44.1482 ug/L	99
6) Bromomethane	5.04	94	390533	51.2269 ug/L	100
7) Chloroethane	5.21	64	436892	56.1881 ug/L	97
8) Trichlorofluoromethane	5.72	101	697639	54.3459 ug/L	99
9) Diethyl ether	6.25	59	1087032	94.1935 ug/L	96
10) Isoprene	6.29	67	647010	52.6280 ug/L	97
11) Acrolein	6.50	56	135537	58.8276 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	381111	51.8126 ug/L	99
13) Acetone	6.61	43	155742	44.2460 ug/L	92
14) 1,1-Dichloroethene	6.82	61	827612	46.6114 ug/L	98
15) Tert-Butyl Alcohol	6.95	59	265393	206.8835 ug/L	97
16) Dimethyl Sulfide	7.09	62	720106	51.7983 ug/L	95
17) Iodomethane	7.36	142	429298	40.8136 ug/L	97
18) Methyl acetate	7.36	43	529644	46.0064 ug/L	98
19) Methylene Chloride	7.62	84	472426	50.3333 ug/L	89
20) Carbon Disulfide	7.67	76	1127786	45.0184 ug/L	100
21) Acrylonitrile	7.79	53	271805	48.2387 ug/L	100
22) Methyl Tert Butyl Ether	7.83	73	1254457	49.9837 ug/L	98
23) trans-1,2-Dichloroethene	8.07	61	867443	49.5465 ug/L	99
24) n-Hexane	8.15	57	816248	46.0908 ug/L	94
25) Diisopropyl ether	8.49	45	4282940	90.6894 ug/L	98
26) Vinyl Acetate	8.65	43	1030906	60.3418 ug/L	98
27) 1,1-Dichloroethane	8.69	63	1006908	46.4032 ug/L	100
28) Ethyl-Tert-Butyl ether	9.06	59	4070249	95.3611 ug/L	99
29) 2-Butanone	9.24	43	260364	46.1269 ug/L	96
30) Propionitrile	9.36	54	197182	98.7524 ug/L	99
31) 2,2-Dichloropropane	9.47	77	575991	43.0527 ug/L	99
32) cis-1,2-Dichloroethene	9.54	96	481130	47.7989 ug/L	96
33) Chloroform	9.75	83	764107	46.5950 ug/L	100
34) 1-Bromopropane	9.88	122	93532	62.9551 ug/L	94
35) Bromochloromethane	9.99	130	291347	47.3763 ug/L	89
36) Tetrahydrofuran	10.01	42	340919	89.3195 ug/L	96
38) 1,1,1-Trichloroethane	10.29	97	707879	50.2593 ug/L	95
39) Cyclohexane	10.32	56	1163878	49.4610 ug/L	98
40) 1,1-Dichloropropene	10.47	75	572860	48.5224 ug/L	100
41) Tert-Amyl-Methyl ether	10.58	73	2468072	97.1419 ug/L	98
42) Carbon Tetrachloride	10.63	117	617328	49.8374 ug/L	97

(#) = qualifier out of range (m) = manual integration
9M964359.D 8260WTR.M Mon Jun 30 15:45:06 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964359.D Vial: 13
Acq On : 26 Jun 2014 21:16 Operator: ADC
Sample : WG482030-12 50.0ug/L ALTSRC 8260 Inst : HPMS9
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:45:04 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.79	62	744137	47.5461 ug/L		97
46)	Benzene	10.85	78	1724502	48.5597 ug/L		99
47)	Trichloroethene	11.59	130	498400	49.0519 ug/L		98
48)	Methylcyclohexane	11.67	83	689744	52.1080 ug/L		97
49)	1,2-Dichloropropane	11.81	63	608997	47.7457 ug/L		100
50)	1,4-Dioxane	12.09	88	21151	226.8788 ug/L		95
51)	Bromodichloromethane	12.11	83	597442	47.4330 ug/L		100
52)	Dibromomethane	12.20	174	303350	51.9863 ug/L		94
53)	2-Chloroethyl Vinyl Ether	12.39	63	343416	49.4731 ug/L		99
54)	4-Methyl-2-Pentanone	12.42	58	261069	50.0121 ug/L		98
55)	cis-1,3-Dichloropropene	12.74	75	732317	49.5579 ug/L		99
56)	Dimethyl Disulfide	13.01	94	877675	55.5067 ug/L		100
59)	Toluene	13.16	91	1813269	48.9140 ug/L		100
60)	Ethyl Methacrylate	13.24	69	567803	53.2768 ug/L		100
61)	trans-1,3-Dichloropropene	13.34	75	631148	44.5254 ug/L		99
62)	1,1,2-Trichloroethane	13.55	97	379283	47.6087 ug/L		99
63)	2-Hexanone	13.48	43	420175	49.0703 ug/L		95
64)	1,3-Dichloropropane	13.85	76	641329	45.8047 ug/L		93
65)	Tetrachloroethene	13.99	164	385899	50.0654 ug/L		98
66)	Dibromochloromethane	14.26	129	478368	49.2810 ug/L		98
67)	1,2-Dibromoethane	14.51	107	391834	48.2182 ug/L		98
68)	1-Chlorohexane	14.58	91	601077	54.5271 ug/L		94
69)	Chlorobenzene	15.01	112	1138311	45.8990 ug/L		100
70)	1,1,1,2-Tetrachloroethane	15.04	131	459022	49.3160 ug/L		97
71)	Ethylbenzene	15.03	106	670390	49.0523 ug/L		98
72)	m-,p-Xylene	15.13	106	1563111	97.1411 ug/L		97
73)	o-Xylene	15.68	106	757027	45.5245 ug/L		99
74)	Styrene	15.73	104	1380085	52.6547 ug/L		99
75)	Bromoform	16.23	173	366753	51.5226 ug/L		100
76)	Isopropylbenzene	16.11	105	1900984	47.5022 ug/L		100
78)	1,1,2,2-Tetrachloroethane	16.32	83	437409	44.7201 ug/L		97
80)	1,2,3-Trichloropropane	16.52	110	157081	46.4893 ug/L		72
81)	trans-1,4-Dichloro-2-Buten	16.56	53	144001	27.9060 ug/L	#	45
82)	n-Propylbenzene	16.61	91	2248430	42.4079 ug/L		99
83)	Bromobenzene	16.76	156	571108	45.7503 ug/L		97
84)	1,3,5-Trimethylbenzene	16.80	105	1826677	48.3571 ug/L		100
85)	2-Chlorotoluene	16.89	91	1629448	45.7793 ug/L		100
86)	4-Chlorotoluene	16.95	91	1260606	40.8748 ug/L		89
87)	a-Methylstyrene	17.21	118	1053085	53.3468 ug/L		97
88)	tert-Butylbenzene	17.28	134	376678	44.9406 ug/L		96
89)	1,2,4-Trimethylbenzene	17.33	105	1880858	48.0397 ug/L		99
90)	sec-Butylbenzene	17.55	105	2144233	45.1761 ug/L		100
91)	p-Isopropyltoluene	17.70	119	1821316	46.8936 ug/L		99
92)	1,3-Dichlorobenzene	17.91	146	1056334	45.9057 ug/L		100
93)	1,4-Dichlorobenzene	18.03	146	1169478	49.3163 ug/L		100
94)	n-Butylbenzene	18.23	91	1889580	51.4166 ug/L		99
95)	1,2-Dichlorobenzene	18.53	146	1089245	48.1027 ug/L		99
96)	1,2-Dibromo-3-Chloropropan	19.53	157	132154	53.3433 ug/L		93
97)	1,2,4-Trichlorobenzene	20.67	180	946862	55.6427 ug/L		98
98)	Hexachlorobutadiene	20.82	225	492914	57.4657 ug/L		99
99)	Naphthalene	21.05	128	2076327	56.0665 ug/L		100
100)	1,2,3-Trichlorobenzene	21.35	180	902702	54.2975 ug/L		99

(#) = qualifier out of range (m) = manual integration
9M964359.D 8260WTR.M Mon Jun 30 15:45:07 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062614\9M964359.D Vial: 13
Acq On : 26 Jun 2014 21:16 Operator: ADC
Sample : WG482030-12 50.0ug/L ALTSRC 8260 Inst : HPMS9
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:45 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

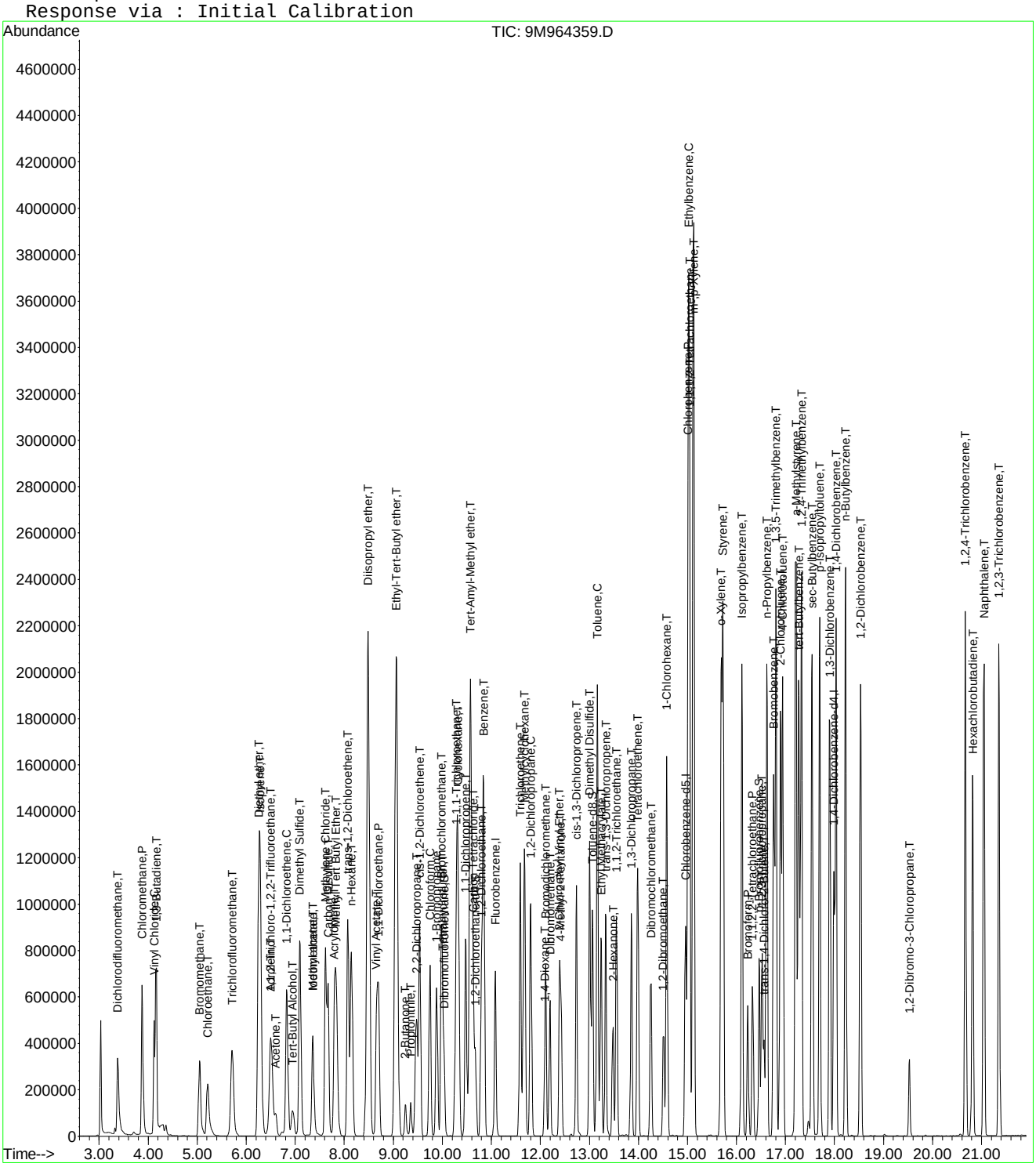

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062614\9M964359.D Vial: 13
Acq On : 26 Jun 2014 21:16 Operator: ADC
Sample : WG482030-12 50.0ug/L ALTSRC 8260 Inst : HPMS9
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Mon Jun 30 15:47:09 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	103	0.00
2	T	Dichlorodifluoromethane	50.0000	78.7369	-57.5#	141	0.00
3	P	Chloromethane	50.0000	51.1118	-2.2	100	0.00
4	C	Vinyl Chloride	50.0000	50.5474	-1.1	99	0.00
5	T	1,3-Butadiene	50.0000	44.1482	11.7	80	0.00
6	T	Bromomethane	50.0000	51.2269	-2.5	110	-0.02
7	T	Chloroethane	50.0000	56.1881	-12.4	107	-0.01
8	T	Trichlorofluoromethane	50.0000	54.3459	-8.7	106	0.00
9	T	Diethyl ether	100.0000	94.1935	5.8	94	0.00
10	T	Isoprene	50.0000	52.6280	-5.3	100	-0.01
11	T	Acrolein	50.0000	58.8276	-17.7	117	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.8126	-3.6	101	-0.01
13	T	Acetone	50.0000	44.2460	11.5	90	0.00
14	C	1,1-Dichloroethene	50.0000	46.6114	6.8	90	-0.01
15	T	Tert-Butyl Alcohol	200.0000	206.8835	-3.4	112	0.02
16	T	Dimethyl Sulfide	50.0000	51.7983	-3.6	99	0.00
17	T	Iodomethane	50.0000	40.8136	18.4	82	0.00
18	T	Methyl acetate	50.0000	46.0064	8.0	93	0.00
19	T	Methylene Chloride	50.0000	50.3333	-0.7	99	0.00
20	T	Carbon Disulfide	50.0000	45.0184	10.0	88	0.00
21	T	Acrylonitrile	50.0000	48.2387	3.5	93	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.9837	0.0	96	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.5465	0.9	97	0.00
24	T	n-Hexane	50.0000	46.0908	7.8	89	0.00
25	T	Diisopropyl ether	100.0000	90.6894	9.3	88	0.00
26	T	Vinyl Acetate	50.0000	60.3418	-20.7	112	0.00
27	P	1,1-Dichloroethane	50.0000	46.4032	7.2	92	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	95.3611	4.6	94	0.00
29	T	2-Butanone	50.0000	46.1270	7.7	91	0.00
30	T	Propionitrile	100.0000	98.7524	1.2	97	0.00
31	T	2,2-Dichloropropane	50.0000	43.0527	13.9	86	0.00
32	T	cis-1,2-Dichloroethene	50.0000	47.7989	4.4	96	0.00
33	C	Chloroform	50.0000	46.5950	6.8	93	0.00
34		1-Bromopropane	50.0000	62.9551	-25.9#	115	0.00
35	T	Bromochloromethane	50.0000	47.3763	5.2	96	0.00
36	T	Tetrahydrofuran	100.0000	89.3195	10.7	87	0.00
37	S	Dibromofluoromethane	25.0000	26.1292	-4.5	107	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.2593	-0.5	97	0.00
39	T	Cyclohexane	50.0000	49.4610	1.1	96	0.00
40	T	1,1-Dichloropropene	50.0000	48.5224	3.0	97	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	97.1419	2.9	96	0.00
42	T	Carbon Tetrachloride	50.0000	49.8374	0.3	97	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.8334	0.7	99	0.00
44		Heptane	-1.0000	0.0000	0.0	99	0.00
45	T	1,2-Dichloroethane	50.0000	47.5461	4.9	92	0.00
46	T	Benzene	50.0000	48.5597	2.9	96	0.00
47	T	Trichloroethene	50.0000	49.0519	1.9	102	0.00
48	T	Methylcyclohexane	50.0000	52.1080	-4.2	101	0.00
49	C	1,2-Dichloropropane	50.0000	47.7457	4.5	94	0.00
50	T	1,4-Dioxane	200.0000	226.8788	-13.4	115	0.00
51	T	Bromodichloromethane	50.0000	47.4330	5.1	91	0.00
52	T	Dibromomethane	50.0000	51.9863	-4.0	97	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	49.4731	1.1	93	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.0121	-0.0	98	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062614\9M964359.D Vial: 13
Acq On : 26 Jun 2014 21:16 Operator: ADC
Sample : WG482030-12 50.0ug/L ALTSRC 8260 Inst : HPMS9
Misc : 1,1 STD65074 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Mon Jun 30 15:47:09 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	49.5579	0.9	95	0.00
56	T	Dimethyl Disulfide	50.0000	55.5067	-11.0	99	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
58	S	Toluene-d8	25.0000	27.3942	-9.6	108	0.00
59	C	Toluene	50.0000	48.9140	2.2	97	0.00
60	T	Ethyl Methacrylate	50.0000	53.2768	-6.6	102	0.00
61	T	trans-1,3-Dichloropropene	50.0000	44.5254	10.9	88	0.00
62	T	1,1,2-Trichloroethane	50.0000	47.6087	4.8	95	0.00
63	T	2-Hexanone	50.0000	49.0703	1.9	96	0.00
64	T	1,3-Dichloropropane	50.0000	45.8047	8.4	92	0.00
65	T	Tetrachloroethene	50.0000	50.0654	-0.1	99	0.00
66	T	Dibromochloromethane	50.0000	49.2810	1.4	97	0.00
67	T	1,2-Dibromoethane	50.0000	48.2182	3.6	94	0.00
68	T	1-Chlorohexane	50.0000	54.5271	-9.1	106	0.00
69	P	Chlorobenzene	50.0000	45.8990	8.2	93	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	49.3160	1.4	99	0.00
71	C	Ethylbenzene	50.0000	49.0523	1.9	96	0.00
72	T	m-,p-Xylene	100.0000	97.1411	2.9	94	0.00
73	T	o-Xylene	50.0000	45.5245	9.0	91	0.00
74	T	Styrene	50.0000	52.6547	-5.3	99	0.00
75	P	Bromoform	50.0000	51.5226	-3.0	101	0.00
76	T	Isopropylbenzene	50.0000	47.5022	5.0	92	0.00
77	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	115	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	44.7201	10.6	94	0.00
79	S	p-Bromofluorobenzene	25.0000	24.2930	2.8	108	0.00
80	T	1,2,3-Trichloropropane	50.0000	46.4893	7.0	102	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	27.9060	44.2#	57	0.00
82	T	n-Propylbenzene	50.0000	42.4079	15.2	89	0.00
83	T	Bromobenzene	50.0000	45.7503	8.5	103	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	48.3571	3.3	103	0.00
85	T	2-Chlorotoluene	50.0000	45.7793	8.4	108	0.00
86	T	4-Chlorotoluene	50.0000	40.8748	18.3	82	0.00
87	T	a-Methylstyrene	50.0000	53.3468	-6.7	109	0.00
88	T	tert-Butylbenzene	50.0000	44.9406	10.1	96	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	48.0397	3.9	104	0.00
90	T	sec-Butylbenzene	50.0000	45.1761	9.6	95	0.00
91	T	p-Isopropyltoluene	50.0000	46.8936	6.2	98	0.00
92	T	1,3-Dichlorobenzene	50.0000	45.9057	8.2	100	0.00
93	T	1,4-Dichlorobenzene	50.0000	49.3163	1.4	110	0.00
94	T	n-Butylbenzene	50.0000	51.4166	-2.8	108	0.00
95	T	1,2-Dichlorobenzene	50.0000	48.1027	3.8	103	0.00
96	T	1,2-Dibromo-3-Chloropropane	50.0000	53.3433	-6.7	111	0.00
97	T	1,2,4-Trichlorobenzene	50.0000	55.6427	-11.3	121	0.00
98	T	Hexachlorobutadiene	50.0000	57.4657	-14.9	120	0.00
99	T	Naphthalene	50.0000	56.0665	-12.1	113	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	54.2975	-8.6	116	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M964359.D 8260WTR.M Mon Jun 30 15:50:12 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072914\11M02774.D Vial: 2
Acq On : 29 Jul 2014 15:16 Operator: ADC/FJB
Sample : WG486190-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 29 15:37:52 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	977117	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	742624	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.10	152	401133	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	294044	24.0966 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.40%		
43) 1,2-Dichloroethane-d4	10.27	65	283445	23.8029 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.20%		
57) Toluene-d8	12.51	98	1022534	23.5023 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.00%		
78) p-Bromofluorobenzene	15.68	95	395291	22.7924 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.16%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	568384	53.7238 ug/L	100
3) Chloromethane	3.74	50	791254	42.8482 ug/L	97
4) Vinyl Chloride	3.98	62	821881	49.3917 ug/L	100
5) 1,3-Butadiene	4.02	54	635288	45.3076 ug/L	94
6) Bromomethane	4.89	94	410765	43.8891 ug/L	99
7) Chloroethane	5.05	64	421731	50.4986 ug/L	94
8) Trichlorofluoromethane	5.52	101	984355	50.1075 ug/L	100
9) Diethyl ether	6.04	59	862295	107.6512 ug/L	95
10) Isoprene	6.08	67	876413	51.0903 ug/L	87
11) Acrolein	6.28	56	66207	64.8684 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	605464	50.0768 ug/L	97
13) Acetone	6.38	43	105741	53.5901 ug/L	98
14) 1,1-Dichloroethene	6.60	61	918841	51.3373 ug/L	90
15) Tert-Butyl Alcohol	6.70	59	138275	268.4049 ug/L	96
16) Dimethyl Sulfide	6.86	62	644521	51.4975 ug/L	91
17) Iodomethane	7.10	142	616179	40.6741 ug/L	99
18) Methyl acetate	7.10	43	350805	56.2310 ug/L	95
19) Methylene Chloride	7.35	84	638926	48.2419 ug/L	84
20) Carbon Disulfide	7.40	76	1974626	52.6737 ug/L	100
21) Acrylonitrile	7.53	53	157121	58.2616 ug/L	100
22) Methyl Tert Butyl Ether	7.56	73	1465374	53.9894 ug/L	95
23) trans-1,2-Dichloroethene	7.80	96	636777	48.6759 ug/L	86
24) n-Hexane	7.86	57	812003	53.5464 ug/L	94
25) Diisopropyl ether	8.18	45	3804099	107.4898 ug/L	98
26) Vinyl Acetate	8.34	43	679992	70.7805 ug/L	97
27) 1,1-Dichloroethane	8.39	63	1096803	51.1575 ug/L	99
28) Ethyl-Tert-Butyl ether	8.73	59	3519697	107.8794 ug/L	96
29) 2-Butanone	8.91	43	163713	57.8632 ug/L	94
30) Propionitrile	9.02	54	106711	115.6272 ug/L	100
31) 2,2-Dichloropropane	9.13	77	1008046	52.4229 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	694797	48.9311 ug/L	86
33) Chloroform	9.39	83	1086806	49.4601 ug/L	99
34) 1-Bromopropane	9.51	122	120839	50.7082 ug/L	99
35) Bromochloromethane	9.62	130	423752	51.7744 ug/L	85
36) Tetrahydrofuran	9.64	42	216292	117.7173 ug/L	92
38) 1,1,1-Trichloroethane	9.90	97	1003736	49.2756 ug/L	97
39) Cyclohexane	9.93	56	994969	52.1493 ug/L	88
40) 1,1-Dichloropropene	10.08	75	858800	50.3948 ug/L	99
41) Carbon Tetrachloride	10.22	117	952482	52.0373 ug/L	99
42) Tert-Amyl-Methyl ether	10.16	73	3098081	109.5698 ug/L	96

(#) = qualifier out of range (m) = manual integration
11M02774.D 8260WTR.M Tue Jul 29 15:37:53 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072914\11M02774.D Vial: 2
Acq On : 29 Jul 2014 15:16 Operator: ADC/FJB
Sample : WG486190-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 29 15:37:52 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.38	62	759005	49.1448 ug/L	98
45)	Benzene	10.42	78	2357084	49.7135 ug/L	99
46)	Trichloroethene	11.13	130	690026	47.1004 ug/L	95
47)	Methylcyclohexane	11.21	83	986027	51.0081 ug/L	92
48)	1,2-Dichloropropane	11.32	63	597008	50.5390 ug/L	99
49)	1,4-Dioxane	11.60	88	17544	244.2920 ug/L	94
50)	Bromodichloromethane	11.61	83	829613	50.4900 ug/L	100
51)	Dibromomethane	11.69	93	342671	50.8884 ug/L	98
52)	2-Chloroethyl Vinyl Ether	11.88	63	272071	50.5578 ug/L	95
53)	4-Methyl-2-Pentanone	11.90	58	147017	59.1093 ug/L	96
54)	cis-1,3-Dichloropropene	12.20	75	990790	53.6725 ug/L	99
55)	Dimethyl Disulfide	12.46	79	567914	54.7740 ug/L	99
58)	Toluene	12.60	91	2512601	50.1804 ug/L	100
59)	Ethyl Methacrylate	12.68	69	630279	61.0495 ug/L	90
60)	trans-1,3-Dichloropropene	12.76	75	886791	55.0070 ug/L	96
61)	1,1,2-Trichloroethane	12.97	97	475302	50.1182 ug/L	100
62)	2-Hexanone	12.89	43	246792	63.0810 ug/L	99
63)	1,3-Dichloropropane	13.26	76	807120	49.4929 ug/L	93
64)	Tetrachloroethene	13.37	164	536060	47.4661 ug/L	96
65)	Dibromochloromethane	13.62	129	631908	52.8244 ug/L	99
66)	1,2-Dibromoethane	13.87	107	476188	50.6877 ug/L	98
67)	1-Chlorohexane	13.92	91	846730	51.8111 ug/L	88
68)	Chlorobenzene	14.33	112	1771442	49.2448 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.35	131	669224	49.7662 ug/L	98
70)	Ethylbenzene	14.34	106	989059	48.8910 ug/L	93
71)	m-,p-Xylene	14.42	106	2338873	102.9404 ug/L	93
72)	o-Xylene	14.95	106	1148002	49.3873 ug/L	95
73)	Styrene	14.99	104	1917425	55.0700 ug/L	97
74)	Bromoform	15.47	173	398202	57.3984 ug/L	98
75)	Isopropylbenzene	15.34	105	2812827	52.7558 ug/L	98
77)	1,1,2,2-Tetrachloroethane	15.55	83	544814	50.5352 ug/L	100
79)	1,2,3-Trichloropropane	15.73	110	164935	50.3980 ug/L	97
80)	trans-1,4-Dichloro-2-Buten	15.77	53	157784	52.7497 ug/L	82
81)	n-Propylbenzene	15.82	91	3257443	48.1781 ug/L	98
82)	Bromobenzene	15.95	156	751706	46.5686 ug/L	92
83)	1,3,5-Trimethylbenzene	16.00	105	2385777	50.0834 ug/L	96
84)	2-Chlorotoluene	16.08	91	1981443	46.4203 ug/L	93
85)	4-Chlorotoluene	16.12	91	2066236	48.0443 ug/L	95
86)	a-Methylstyrene	16.37	118	1378737	52.1080 ug/L	99
87)	tert-Butylbenzene	16.43	134	506123	47.0455 ug/L	81
88)	1,2,4-Trimethylbenzene	16.47	105	2462593	51.5205 ug/L	96
89)	sec-Butylbenzene	16.68	105	2898442	50.4821 ug/L	98
90)	p-Isopropyltoluene	16.82	119	2511605	51.9172 ug/L	100
91)	1,3-Dichlorobenzene	17.02	146	1409660	48.2016 ug/L	98
92)	1,4-Dichlorobenzene	17.13	146	1401665	47.8538 ug/L	97
93)	n-Butylbenzene	17.31	91	2151638	53.7529 ug/L	99
94)	1,2-Dichlorobenzene	17.60	146	1302928	48.5277 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.52	75	86842	55.3987 ug/L	93
96)	1,2,4-Trichlorobenzene	19.58	180	840966	47.1735 ug/L	95
97)	Hexachlorobutadiene	19.72	225	318044	44.2449 ug/L	99
98)	Naphthalene	19.93	128	1529827	52.4214 ug/L	100
99)	1,2,3-Trichlorobenzene	20.22	180	751119	47.6535 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M02774.D 8260WTR.M Tue Jul 29 15:37:54 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072914\11M02774.D Vial: 2
Acq On : 29 Jul 2014 15:16 Operator: ADC/FJB
Sample : WG486190-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 29 15:37 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

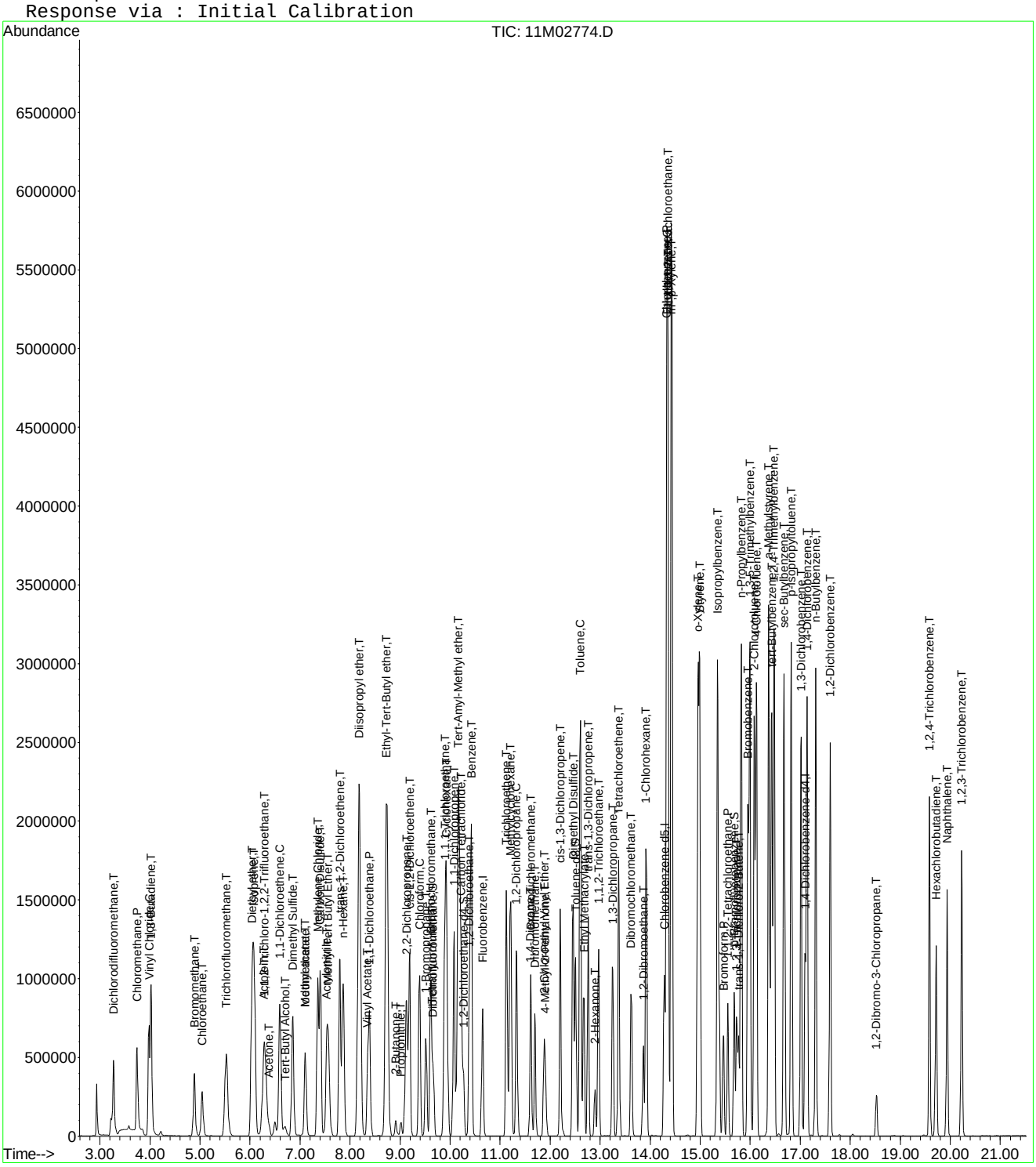

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\072914\11M02774.D Vial: 2
Acq On : 29 Jul 2014 15:16 Operator: ADC/FJB
Sample : WG486190-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	96	0.00
2	T	Dichlorodifluoromethane	0.2707	0.2909	-7.4	97	0.00
3	P	Chloromethane	0.4725	0.4049	14.3	86	0.00
4	C	Vinyl Chloride	0.4257	0.4206	1.2	89	0.00
5	T	1,3-Butadiene	0.3491	0.3251	6.9	91	0.00
6	T	Bromomethane	0.2395	0.2102	12.2	100	0.00
7	T	Chloroethane	0.2137	0.2158	-1.0	95	0.00
8	T	Trichlorofluoromethane	0.5026	0.5037	-0.2	95	0.00
9	T	Diethyl ether	0.2049	0.2206	-7.7	105	0.00
10	T	Isoprene	0.4389	0.4485	-2.2	96	0.00
11	T	Acrolein	0.0261	0.0339	-29.8#	124	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.3094	0.3098	-0.2	95	0.00
13	T	Acetone	0.0505	0.0541	-7.2	116	0.00
14	C	1,1-Dichloroethene	0.4579	0.4702	-2.7	96	0.00
15	T	Tert-Butyl Alcohol	0.0132	0.0177	-34.2#	133	0.00
16	T	Dimethyl Sulfide	0.3202	0.3298	-3.0	98	0.00
17	T	Iodomethane	0.2868	0.3153	-9.9	76	0.00
18	T	Methyl acetate	0.1596	0.1795	-12.5	111	0.00
19	T	Methylene Chloride	0.3389	0.3269	3.5	97	0.00
20	T	Carbon Disulfide	0.9591	1.0104	-5.3	95	0.00
21	T	Acrylonitrile	0.0690	0.0804	-16.5	110	0.00
22	T	Methyl Tert Butyl Ether	0.6944	0.7499	-8.0	104	0.00
23	T	trans-1,2-Dichloroethene	0.3347	0.3258	2.7	94	0.00
24	T	n-Hexane	0.3880	0.4155	-7.1	99	0.00
25	T	Diisopropyl ether	0.9055	0.9733	-7.5	102	0.00
26	T	Vinyl Acetate	0.2458	0.3480	-41.6#	133	0.00
27	P	1,1-Dichloroethane	0.5485	0.5612	-2.3	96	0.00
28	T	Ethyl-Tert-Butyl ether	0.8348	0.9005	-7.9	103	0.00
29	T	2-Butanone	0.0724	0.0838	-15.7	114	0.00
30	T	Propionitrile	0.0236	0.0273	-15.6	110	0.00
31	T	2,2-Dichloropropane	0.4920	0.5158	-4.8	100	0.00
32	T	cis-1,2-Dichloroethene	0.3633	0.3555	2.1	94	0.00
33	C	Chloroform	0.5622	0.5561	1.1	94	0.00
34	T	1-Bromopropane	0.0610	0.0618	-1.4	91	-0.01
35	T	Bromochloromethane	0.2094	0.2168	-3.5	97	0.00
36	T	Tetrahydrofuran	0.0470	0.0553	-17.7	114	0.00
37	S	Dibromofluoromethane	0.3122	0.3009	3.6	88	0.00
38	T	1,1,1-Trichloroethane	0.5212	0.5136	1.4	94	0.00
39	T	Cyclohexane	0.4881	0.5091	-4.3	95	0.00
40	T	1,1-Dichloropropene	0.4360	0.4395	-0.8	94	0.00
41	T	Carbon Tetrachloride	0.4683	0.4874	-4.1	96	0.00
42	T	Tert-Amyl-Methyl ether	0.7234	0.7927	-9.6	105	0.00
43	S	1,2-Dichloroethane-d4	0.3047	0.2901	4.8	89	0.00
44	T	1,2-Dichloroethane	0.3952	0.3884	1.7	96	0.00
45	T	Benzene	1.2131	1.2061	0.6	93	0.00
46	T	Trichloroethene	0.3748	0.3531	5.8	92	0.00
47	T	Methylcyclohexane	0.4946	0.5046	-2.0	93	0.00
48	C	1,2-Dichloropropane	0.3022	0.3055	-1.1	95	-0.01
49	T	1,4-Dioxane	0.0018	0.0022	-21.7	117	0.00
50	T	Bromodichloromethane	0.4204	0.4245	-1.0	95	0.00
51	T	Dibromomethane	0.1723	0.1754	-1.8	97	0.00
52	T	2-Chloroethyl Vinyl Ether	0.1377	0.1392	-1.1	94	0.00
53	T	4-Methyl-2-Pentanone	0.0636	0.0752	-18.2	111	-0.01
54	T	cis-1,3-Dichloropropene	0.4723	0.5070	-7.3	97	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\072914\11M02774.D Vial: 2
Acq On : 29 Jul 2014 15:16 Operator: ADC/FJB
Sample : WG486190-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2653	0.2906	-9.5	105	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	97	0.00
57	S	Toluene-d8	1.4647	1.3769	6.0	88	0.00
58	C	Toluene	1.6856	1.6917	-0.4	92	0.00
59	T	Ethyl Methacrylate	0.3476	0.4244	-22.1	110	0.00
60	T	trans-1,3-Dichloropropene	0.5427	0.5971	-10.0	100	0.00
61	T	1,1,2-Trichloroethane	0.3193	0.3200	-0.2	98	0.00
62	T	2-Hexanone	0.1317	0.1662	-26.2#	118	0.00
63	T	1,3-Dichloropropane	0.5490	0.5434	1.0	98	0.00
64	T	Tetrachloroethene	0.3802	0.3609	5.1	93	0.00
65	T	Dibromochloromethane	0.4027	0.4255	-5.6	100	0.00
66	T	1,2-Dibromoethane	0.3163	0.3206	-1.4	98	0.00
67	T	1-Chlorohexane	0.5502	0.5701	-3.6	94	-0.01
68	P	Chlorobenzene	1.2110	1.1927	1.5	93	0.00
69	T	1,1,1,2-Tetrachloroethane	0.4527	0.4506	0.5	95	0.00
70	C	Ethylbenzene	0.6810	0.6659	2.2	92	0.00
71	T	m-,p-Xylene	0.7649	0.7874	-2.9	92	-0.01
72	T	o-Xylene	0.7825	0.7729	1.2	92	-0.01
73	T	Styrene	1.1721	1.2910	-10.1	93	0.00
74	P	Bromoform	0.2336	0.2681	-14.8	105	0.00
75	T	Isopropylbenzene	1.7949	1.8938	-5.5	93	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	101	0.00
77	P	1,1,2,2-Tetrachloroethane	0.6719	0.6791	-1.1	104	0.00
78	S	p-Bromofluorobenzene	1.0809	0.9854	8.8	91	0.00
79	T	1,2,3-Trichloropropane	0.2040	0.2056	-0.8	102	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.1629	0.1967	-20.7	110	0.00
81	T	n-Propylbenzene	4.2138	4.0603	3.6	92	0.00
82	T	Bromobenzene	1.0060	0.9370	6.9	95	0.00
83	T	1,3,5-Trimethylbenzene	2.9688	2.9738	-0.2	93	0.00
84	T	2-Chlorotoluene	2.6603	2.4698	7.2	94	0.00
85	T	4-Chlorotoluene	2.6803	2.5755	3.9	92	-0.04
86	T	a-Methylstyrene	1.6490	1.7186	-4.2	96	0.00
87	T	tert-Butylbenzene	0.6705	0.6309	5.9	94	0.00
88	T	1,2,4-Trimethylbenzene	2.9790	3.0696	-3.0	93	-0.01
89	T	sec-Butylbenzene	3.5783	3.6128	-1.0	93	0.00
90	T	p-Isopropyltoluene	3.0150	3.1306	-3.8	94	0.00
91	T	1,3-Dichlorobenzene	1.8227	1.7571	3.6	96	0.00
92	T	1,4-Dichlorobenzene	1.8255	1.7471	4.3	95	0.00
93	T	n-Butylbenzene	2.4947	2.6820	-7.5	94	0.00
94	T	1,2-Dichlorobenzene	1.6733	1.6241	2.9	96	0.00
95	T	1,2-Dibromo-3-Chloropropane	0.0977	0.1083	-10.8	111	-0.01
96	T	1,2,4-Trichlorobenzene	0.9726	1.0482	-7.8	97	0.00
97	T	Hexachlorobutadiene	0.4480	0.3964	11.5	93	0.00
98	T	Naphthalene	1.5027	1.9069	-26.9#	98	0.00
99	T	1,2,3-Trichlorobenzene	0.8099	0.9363	-15.6	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M02774.D 8260WTR.M Tue Jul 29 15:42:41 2014 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\072914\11M02774.D Vial: 2
Acq On : 29 Jul 2014 15:16 Operator: ADC/FJB
Sample : WG486190-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	96	0.00
2	T	Dichlorodifluoromethane	50.0000	53.7238	-7.4	97	0.00
3	P	Chloromethane	50.0000	42.8482	14.3	86	0.00
4	C	Vinyl Chloride	50.0000	49.3917	1.2	89	0.00
5	T	1,3-Butadiene	50.0000	45.3076	9.4	91	0.00
6	T	Bromomethane	50.0000	43.8891	12.2	100	0.00
7	T	Chloroethane	50.0000	50.4986	-1.0	95	0.00
8	T	Trichlorofluoromethane	50.0000	50.1075	-0.2	95	0.00
9	T	Diethyl ether	100.0000	107.6512	-7.7	105	0.00
10	T	Isoprene	50.0000	51.0903	-2.2	96	0.00
11	T	Acrolein	50.0000	64.8684	-29.7#	124	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.0768	-0.2	95	0.00
13	T	Acetone	50.0000	53.5901	-7.2	116	0.00
14	C	1,1-Dichloroethene	50.0000	51.3373	-2.7	96	0.00
15	T	Tert-Butyl Alcohol	200.0000	268.4049	-34.2#	133	0.00
16	T	Dimethyl Sulfide	50.0000	51.4975	-3.0	98	0.00
17	T	Iodomethane	50.0000	40.6741	18.7	76	0.00
18	T	Methyl acetate	50.0000	56.2310	-12.5	111	0.00
19	T	Methylene Chloride	50.0000	48.2419	3.5	97	0.00
20	T	Carbon Disulfide	50.0000	52.6737	-5.3	95	0.00
21	T	Acrylonitrile	50.0000	58.2616	-16.5	110	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.9894	-8.0	104	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.6759	2.6	94	0.00
24	T	n-Hexane	50.0000	53.5464	-7.1	99	0.00
25	T	Diisopropyl ether	100.0000	107.4898	-7.5	102	0.00
26	T	Vinyl Acetate	50.0000	70.7805	-41.6#	133	0.00
27	P	1,1-Dichloroethane	50.0000	51.1575	-2.3	96	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	107.8794	-7.9	103	0.00
29	T	2-Butanone	50.0000	57.8632	-15.7	114	0.00
30	T	Propionitrile	100.0000	115.6272	-15.6	110	0.00
31	T	2,2-Dichloropropane	50.0000	52.4229	-4.8	100	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9311	2.1	94	0.00
33	C	Chloroform	50.0000	49.4601	1.1	94	0.00
34	T	1-Bromopropane	50.0000	50.7082	-1.4	91	-0.01
35	T	Bromochloromethane	50.0000	51.7744	-3.5	97	0.00
36	T	Tetrahydrofuran	100.0000	117.7173	-17.7	114	0.00
37	S	Dibromofluoromethane	25.0000	24.0966	3.6	88	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.2756	1.4	94	0.00
39	T	Cyclohexane	50.0000	52.1493	-4.3	95	0.00
40	T	1,1-Dichloropropene	50.0000	50.3948	-0.8	94	0.00
41	T	Carbon Tetrachloride	50.0000	52.0373	-4.1	96	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	109.5698	-9.6	105	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.8029	4.8	89	0.00
44	T	1,2-Dichloroethane	50.0000	49.1448	1.7	96	0.00
45	T	Benzene	50.0000	49.7135	0.6	93	0.00
46	T	Trichloroethene	50.0000	47.1004	5.8	92	0.00
47	T	Methylcyclohexane	50.0000	51.0081	-2.0	93	0.00
48	C	1,2-Dichloropropane	50.0000	50.5390	-1.1	95	-0.01
49	T	1,4-Dioxane	200.0000	244.2920	-22.1	117	0.00
50	T	Bromodichloromethane	50.0000	50.4900	-1.0	95	0.00
51	T	Dibromomethane	50.0000	50.8884	-1.8	97	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	50.5578	-1.1	94	0.00
53	T	4-Methyl-2-Pentanone	50.0000	59.1093	-18.2	111	-0.01
54	T	cis-1,3-Dichloropropene	50.0000	53.6725	-7.3	97	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\072914\11M02774.D Vial: 2
Acq On : 29 Jul 2014 15:16 Operator: ADC/FJB
Sample : WG486190-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	54.7740	-9.5	105	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	97	0.00
57	S	Toluene-d8	25.0000	23.5023	6.0	88	0.00
58	C	Toluene	50.0000	50.1805	-0.4	92	0.00
59	T	Ethyl Methacrylate	50.0000	61.0495	-22.1	110	0.00
60	T	trans-1,3-Dichloropropene	50.0000	55.0070	-10.0	100	0.00
61	T	1,1,2-Trichloroethane	50.0000	50.1182	-0.2	98	0.00
62	T	2-Hexanone	50.0000	63.0810	-26.2#	118	0.00
63	T	1,3-Dichloropropane	50.0000	49.4928	1.0	98	0.00
64	T	Tetrachloroethene	50.0000	47.4661	5.1	93	0.00
65	T	Dibromochloromethane	50.0000	52.8244	-5.6	100	0.00
66	T	1,2-Dibromoethane	50.0000	50.6876	-1.4	98	0.00
67	T	1-Chlorohexane	50.0000	51.8111	-3.6	94	-0.01
68	P	Chlorobenzene	50.0000	49.2448	1.5	93	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	49.7662	0.5	95	0.00
70	C	Ethylbenzene	50.0000	48.8910	2.2	92	0.00
71	T	m-,p-Xylene	100.0000	102.9404	-2.9	92	-0.01
72	T	o-Xylene	50.0000	49.3873	1.2	92	-0.01
73	T	Styrene	50.0000	55.0700	-10.1	93	0.00
74	P	Bromoform	50.0000	57.3984	-14.8	105	0.00
75	T	Isopropylbenzene	50.0000	52.7558	-5.5	93	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	50.5352	-1.1	104	0.00
78	S	p-Bromofluorobenzene	25.0000	22.7924	8.8	91	0.00
79	T	1,2,3-Trichloropropane	50.0000	50.3980	-0.8	102	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	52.7497	-5.5	110	0.00
81	T	n-Propylbenzene	50.0000	48.1781	3.6	92	0.00
82	T	Bromobenzene	50.0000	46.5686	6.9	95	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	50.0834	-0.2	93	0.00
84	T	2-Chlorotoluene	50.0000	46.4203	7.2	94	0.00
85	T	4-Chlorotoluene	50.0000	48.0442	3.9	92	-0.04
86	T	a-Methylstyrene	50.0000	52.1080	-4.2	96	0.00
87	T	tert-Butylbenzene	50.0000	47.0455	5.9	94	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	51.5205	-3.0	93	-0.01
89	T	sec-Butylbenzene	50.0000	50.4821	-1.0	93	0.00
90	T	p-Isopropyltoluene	50.0000	51.9172	-3.8	94	0.00
91	T	1,3-Dichlorobenzene	50.0000	48.2016	3.6	96	0.00
92	T	1,4-Dichlorobenzene	50.0000	47.8538	4.3	95	0.00
93	T	n-Butylbenzene	50.0000	53.7529	-7.5	94	0.00
94	T	1,2-Dichlorobenzene	50.0000	48.5277	2.9	96	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	55.3987	-10.8	111	-0.01
96	T	1,2,4-Trichlorobenzene	50.0000	47.1735	5.7	97	0.00
97	T	Hexachlorobutadiene	50.0000	44.2449	11.5	93	0.00
98	T	Naphthalene	50.0000	52.4214	-4.8	98	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	47.6535	4.7	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M02774.D 8260WTR.M Tue Jul 29 15:42:38 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965027.D Vial: 1
Acq On : 30 Jul 2014 11:17 Operator: ADC
Sample : WG486302-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 14:47:10 2014 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	746385	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	531696	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	283280	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.04	111	187515	23.6892 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.76%		
43) 1,2-Dichloroethane-d4	10.68	65	231267	21.8451 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.40%		
58) Toluene-d8	13.06	98	680337	25.8992 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.60%		
79) p-Bromofluorobenzene	16.46	95	248149	24.2792 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.12%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	151035	24.8021 ug/L	97
3) Chloromethane	3.88	50	593335	35.3726 ug/L	97
4) Vinyl Chloride	4.12	62	490418	44.2464 ug/L	100
5) 1,3-Butadiene	4.17	54	541011	66.3212 ug/L	96
6) Bromomethane	5.07	94	294876	43.3456 ug/L	98
7) Chloroethane	5.22	64	335601	48.3681 ug/L	98
8) Trichlorofluoromethane	5.73	101	574705	50.1702 ug/L	100
9) Diethyl ether	6.25	59	1001903	97.2903 ug/L	98
10) Isoprene	6.30	67	644944	58.7886 ug/L	95
11) Acrolein	6.49	56	96321	46.8500 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	362115	55.1691 ug/L	98
13) Acetone	6.60	43	137030	43.6264 ug/L	97
14) 1,1-Dichloroethene	6.83	61	799406	50.4543 ug/L	99
15) Tert-Butyl Alcohol	6.93	59	193263	168.8302 ug/L	98
16) Dimethyl Sulfide	7.10	62	646565	52.1190 ug/L	100
17) Iodomethane	7.36	142	442850	47.0177 ug/L	99
18) Methyl acetate	7.35	43	465446	45.3074 ug/L	99
19) Methylene Chloride	7.62	84	423970	50.6199 ug/L	95
20) Carbon Disulfide	7.67	76	1255440	56.1597 ug/L	100
21) Acrylonitrile	7.79	53	230788	45.9004 ug/L	97
22) Methyl Tert Butyl Ether	7.83	73	1081900	48.3087 ug/L	97
23) trans-1,2-Dichloroethene	8.07	61	777050	49.7378 ug/L	99
24) n-Hexane	8.15	57	931990	58.9751 ug/L	99
25) Diisopropyl ether	8.49	45	4407271	104.5802 ug/L	98
26) Vinyl Acetate	8.65	43	752183	49.3387 ug/L	99
27) 1,1-Dichloroethane	8.69	63	970401	50.1158 ug/L	99
28) Ethyl-Tert-Butyl ether	9.06	59	3899678	102.3868 ug/L	99
29) 2-Butanone	9.24	43	212990	42.2861 ug/L	98
30) Propionitrile	9.36	54	155641	87.3513 ug/L	97
31) 2,2-Dichloropropane	9.48	77	641326	53.7191 ug/L	99
32) cis-1,2-Dichloroethene	9.54	96	446517	49.7117 ug/L	100
33) Chloroform	9.75	83	721314	49.2918 ug/L	99
34) 1-Bromopropane	9.88	122	73385	55.3533 ug/L	92
35) Bromochloromethane	9.99	130	263046	47.9344 ug/L	95
36) Tetrahydrofuran	10.01	42	296704	87.1132 ug/L	97
38) 1,1,1-Trichloroethane	10.29	97	647383	51.5091 ug/L	100
39) Cyclohexane	10.32	56	1175480	55.9804 ug/L	96
40) 1,1-Dichloropropene	10.48	75	553084	52.4989 ug/L	96
41) Tert-Amyl-Methyl ether	10.58	73	2318182	102.2495 ug/L	98
42) Carbon Tetrachloride	10.63	117	576521	52.1578 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M965027.D 8260WTR.M Wed Jul 30 14:47:13 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965027.D Vial: 1
Acq On : 30 Jul 2014 11:17 Operator: ADC
Sample : WG486302-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 14:47:10 2014 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.79	62	676987	48.4739	ug/L	100
46)	Benzene	10.84	78	1594798	50.3249	ug/L	99
47)	Trichloroethene	11.59	130	434372	47.9076	ug/L	99
48)	Methylcyclohexane	11.67	83	724155	61.3074	ug/L	95
49)	1,2-Dichloropropane	11.81	63	564908	49.6320	ug/L	99
50)	1,4-Dioxane	12.09	88	15647	188.0872	ug/L	93
51)	Bromodichloromethane	12.11	83	573461	51.0215	ug/L	99
52)	Dibromomethane	12.20	174	251755	48.3491	ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.39	63	303087	48.9306	ug/L	98
54)	4-Methyl-2-Pentanone	12.42	58	196815	42.2516	ug/L	100
55)	cis-1,3-Dichloropropene	12.74	75	688262	52.1954	ug/L	99
56)	Dimethyl Disulfide	13.01	94	805427	57.0825	ug/L	99
59)	Toluene	13.16	91	1664483	52.8750	ug/L	99
60)	Ethyl Methacrylate	13.23	69	483987	53.4779	ug/L	98
61)	trans-1,3-Dichloropropene	13.33	75	625292	51.9468	ug/L	100
62)	1,1,2-Trichloroethane	13.55	97	340635	50.3514	ug/L	99
63)	2-Hexanone	13.47	43	322967	44.4167	ug/L	99
64)	1,3-Dichloropropane	13.85	76	601493	50.5894	ug/L	98
65)	Tetrachloroethene	13.99	164	349635	53.4169	ug/L	99
66)	Dibromochloromethane	14.26	129	420800	51.0497	ug/L	100
67)	1,2-Dibromoethane	14.50	107	338146	49.0019	ug/L	98
68)	1-Chlorohexane	14.58	91	567314	60.6046	ug/L	95
69)	Chlorobenzene	15.01	112	1101399	52.2982	ug/L	99
70)	1,1,1,2-Tetrachloroethane	15.04	131	415483	52.5663	ug/L	98
71)	Ethylbenzene	15.03	106	613608	52.8716	ug/L	97
72)	m-,p-Xylene	15.13	106	1486241	108.7683	ug/L	99
73)	o-Xylene	15.68	106	750205	53.1268	ug/L	100
74)	Styrene	15.73	104	1243049	55.8495	ug/L	99
75)	Bromoform	16.23	173	306498	50.7051	ug/L	99
76)	Isopropylbenzene	16.11	105	1884235	55.4460	ug/L	100
78)	1,1,2,2-Tetrachloroethane	16.32	83	411763	57.1036	ug/L	99
80)	1,2,3-Trichloropropane	16.52	110	127085	51.0182	ug/L	97
81)	trans-1,4-Dichloro-2-Buten	16.56	53	195880	51.4901	ug/L	91
82)	n-Propylbenzene	16.61	91	2327716	59.5524	ug/L	100
83)	Bromobenzene	16.76	156	488621	53.0944	ug/L	93
84)	1,3,5-Trimethylbenzene	16.80	105	1631169	58.5731	ug/L	99
85)	2-Chlorotoluene	16.89	91	1359901	51.8248	ug/L	89
86)	4-Chlorotoluene	16.95	91	1445985	63.5977	ug/L	100
87)	a-Methylstyrene	17.20	118	908600	62.4336	ug/L	97
88)	tert-Butylbenzene	17.28	134	359551	58.1876	ug/L	97
89)	1,2,4-Trimethylbenzene	17.33	105	1678501	58.1524	ug/L	99
90)	sec-Butylbenzene	17.54	105	2123501	60.6863	ug/L	100
91)	p-Isopropyltoluene	17.70	119	1758030	61.3982	ug/L	99
92)	1,3-Dichlorobenzene	17.90	146	968768	57.1067	ug/L	98
93)	1,4-Dichlorobenzene	18.03	146	971198	55.5530	ug/L	99
94)	n-Butylbenzene	18.23	91	1675040	61.8251	ug/L	99
95)	1,2-Dichlorobenzene	18.53	146	954813	57.1957	ug/L	99
96)	1,2-Dibromo-3-Chloropropan	19.53	157	96212	52.6781	ug/L	97
97)	1,2,4-Trichlorobenzene	20.67	180	707637	56.4070	ug/L	99
98)	Hexachlorobutadiene	20.81	225	378051	59.7846	ug/L	99
99)	Naphthalene	21.05	128	1520270	55.6839	ug/L	100
100)	1,2,3-Trichlorobenzene	21.35	180	674768	55.0543	ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965027.D Vial: 1
Acq On : 30 Jul 2014 11:17 Operator: ADC
Sample : WG486302-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 14:47 2014 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

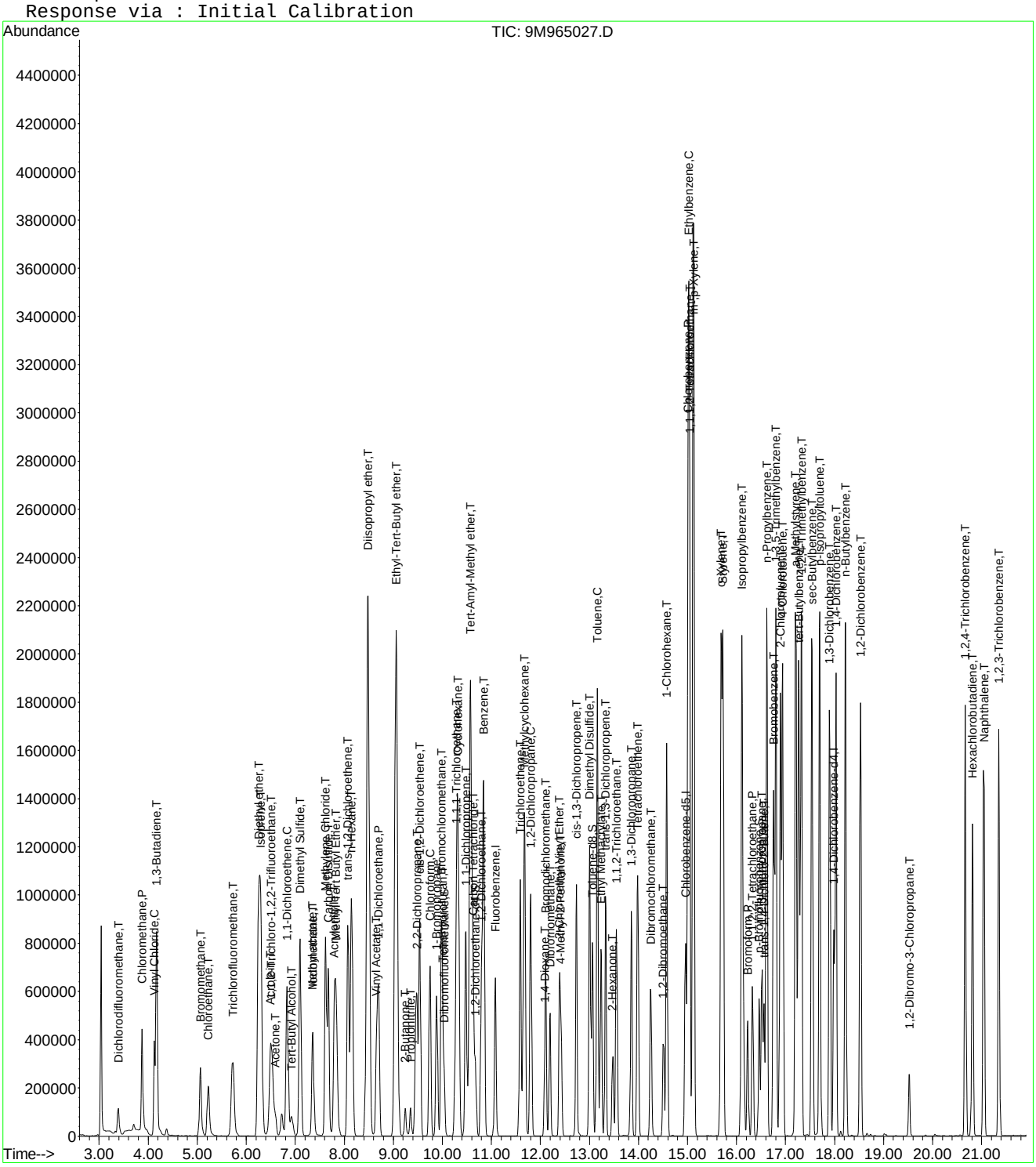

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965027.D Vial: 1
Acq On : 30 Jul 2014 11:17 Operator: ADC
Sample : WG486302-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	92	0.00
2	T	Dichlorodifluoromethane	0.2040	0.1012	50.4#	40#	0.00
3	P	Chloromethane	0.5618	0.3975	29.3#	61	0.00
4	C	Vinyl Chloride	0.3713	0.3285	11.5	77	0.00
5	T	1,3-Butadiene	0.3181	0.3624	-13.9	106	0.00
6	T	Bromomethane	0.2279	0.1975	13.3	83	0.00
7	T	Chloroethane	0.2324	0.2248	3.3	82	0.00
8	T	Trichlorofluoromethane	0.3837	0.3850	-0.3	87	0.00
9	T	Diethyl ether	0.3449	0.3356	2.7	86	0.00
10	T	Isoprene	0.3675	0.4320	-17.6	100	0.00
11	T	Acrolein	0.0689	0.0645	6.3	83	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2198	0.2426	-10.3	96	0.00
13	T	Acetone	0.1052	0.0918	12.7	79	0.00
14	C	1,1-Dichloroethene	0.5307	0.5355	-0.9	87	0.00
15	T	Tert-Butyl Alcohol	0.0383	0.0324	15.6	81	0.00
16	T	Dimethyl Sulfide	0.4155	0.4331	-4.2	89	0.00
17	T	Iodomethane	0.2513	0.2967	-18.0	85	0.00
18	T	Methyl acetate	0.3441	0.3118	9.4	82	0.00
19	T	Methylene Chloride	0.2805	0.2840	-1.2	89	0.00
20	T	Carbon Disulfide	0.7488	0.8410	-12.3	98	0.00
21	T	Acrylonitrile	0.1684	0.1546	8.2	79	0.00
22	T	Methyl Tert Butyl Ether	0.7501	0.7248	3.4	83	0.00
23	T	trans-1,2-Dichloroethene	0.5233	0.5205	0.5	87	0.00
24	T	n-Hexane	0.5293	0.6243	-18.0	101	0.00
25	T	Diisopropyl ether	1.4116	1.4762	-4.6	91	0.00
26	T	Vinyl Acetate	0.5106	0.5039	1.3	82	0.00
27	P	1,1-Dichloroethane	0.6486	0.6501	-0.2	88	0.00
28	T	Ethyl-Tert-Butyl ether	1.2757	1.3062	-2.4	90	0.00
29	T	2-Butanone	0.1687	0.1427	15.4	74	0.00
30	T	Propionitrile	0.0597	0.0521	12.7	77	0.00
31	T	2,2-Dichloropropane	0.3999	0.4296	-7.4	95	0.00
32	T	cis-1,2-Dichloroethene	0.3009	0.2991	0.6	89	0.00
33	C	Chloroform	0.4901	0.4832	1.4	88	0.00
34		1-Bromopropane	0.0444	0.0492	-10.7	90	0.00
35	T	Bromochloromethane	0.1838	0.1762	4.1	87	0.00
36	T	Tetrahydrofuran	0.1141	0.0994	12.9	76	0.00
37	S	Dibromofluoromethane	0.2651	0.2512	5.2	86	0.00
38	T	1,1,1-Trichloroethane	0.4210	0.4337	-3.0	89	0.00
39	T	Cyclohexane	0.7033	0.7874	-12.0	97	0.00
40	T	1,1-Dichloropropene	0.3529	0.3705	-5.0	93	0.00
41	T	Tert-Amyl-Methyl ether	0.7594	0.7765	-2.2	90	0.00
42	T	Carbon Tetrachloride	0.3702	0.3862	-4.3	90	0.00
43	S	1,2-Dichloroethane-d4	0.3546	0.3099	12.6	78	0.00
44		Heptane	0.0000	0.0000	0.0	93	0.00
45	T	1,2-Dichloroethane	0.4678	0.4535	3.1	84	0.00
46	T	Benzene	1.0615	1.0683	-0.7	89	0.00
47	T	Trichloroethene	0.3037	0.2910	4.2	89	0.00
48	T	Methylcyclohexane	0.3956	0.4851	-22.6	106	0.00
49	C	1,2-Dichloropropane	0.3812	0.3784	0.7	87	0.00
50	T	1,4-Dioxane	0.0028	0.0026	6.1	85	0.00
51	T	Bromodichloromethane	0.3765	0.3842	-2.0	87	0.00
52	T	Dibromomethane	0.1744	0.1686	3.3	81	0.00
53	T	2-Chloroethyl Vinyl Ether	0.2075	0.2030	2.1	82	0.00
54	T	4-Methyl-2-Pentanone	0.1560	0.1318	15.5	74	0.00

(#) = Out of Range
9M965027.D 8260WTR.M Wed Jul 30 14:48:22 2014 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965027.D Vial: 1
Acq On : 30 Jul 2014 11:17 Operator: ADC
Sample : WG486302-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4417	0.4611	-4.4	89	0.00
56	T	Dimethyl Disulfide	0.4726	0.5395	-14.2	91	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	89	0.00
58	S	Toluene-d8	1.2351	1.2796	-3.6	87	0.00
59	C	Toluene	1.4802	1.5653	-5.8	89	0.00
60	T	Ethyl Methacrylate	0.4255	0.4551	-7.0	87	0.00
61	T	trans-1,3-Dichloropropene	0.5660	0.5880	-3.9	87	0.00
62	T	1,1,2-Trichloroethane	0.3181	0.3203	-0.7	85	0.00
63	T	2-Hexanone	0.3419	0.3037	11.2	74	0.00
64	T	1,3-Dichloropropane	0.5591	0.5656	-1.2	86	0.00
65	T	Tetrachloroethene	0.3078	0.3288	-6.8	90	0.00
66	T	Dibromochloromethane	0.3876	0.3957	-2.1	85	0.00
67	T	1,2-Dibromoethane	0.3245	0.3180	2.0	81	0.00
68	T	1-Chlorohexane	0.4401	0.5335	-21.2	100	0.00
69	P	Chlorobenzene	0.9902	1.0357	-4.6	90	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3716	0.3907	-5.1	89	0.00
71	C	Ethylbenzene	0.5457	0.5770	-5.7	88	0.00
72	T	m-,p-Xylene	0.6425	0.6988	-8.8	89	0.00
73	T	o-Xylene	0.6640	0.7055	-6.3	90	0.00
74	T	Styrene	1.0465	1.1689	-11.7	89	0.00
75	P	Bromoform	0.2842	0.2882	-1.4	84	0.00
76	T	Isopropylbenzene	1.5979	1.7719	-10.9	91	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	85	0.00
78	P	1,1,2,2-Tetrachloroethane	0.6364	0.7268	-14.2	89	0.00
79	S	p-Bromofluorobenzene	0.9020	0.8760	2.9	79	0.00
80	T	1,2,3-Trichloropropane	0.2198	0.2243	-2.0	82	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.3357	0.3457	-3.0	78	0.00
82	T	n-Propylbenzene	3.4495	4.1085	-19.1	92	0.00
83	T	Bromobenzene	0.8122	0.8624	-6.2	88	0.00
84	T	1,3,5-Trimethylbenzene	2.4577	2.8791	-17.1	92	0.00
85	T	2-Chlorotoluene	2.3158	2.4003	-3.6	90	0.00
86	T	4-Chlorotoluene	2.0065	2.5522	-27.2#	94	0.00
87	T	a-Methylstyrene	1.2843	1.6037	-24.9	94	0.00
88	T	tert-Butylbenzene	0.5453	0.6346	-16.4	92	0.00
89	T	1,2,4-Trimethylbenzene	2.5473	2.9626	-16.3	93	0.00
90	T	sec-Butylbenzene	3.0881	3.7481	-21.4	95	0.00
91	T	p-Isopropyltoluene	2.5269	3.1030	-22.8	95	0.00
92	T	1,3-Dichlorobenzene	1.4971	1.7099	-14.2	92	0.00
93	T	1,4-Dichlorobenzene	1.5429	1.7142	-11.1	92	0.00
94	T	n-Butylbenzene	2.3910	2.9565	-23.7	95	0.00
95	T	1,2-Dichlorobenzene	1.4733	1.6853	-14.4	90	0.00
96	T	1,2-Dibromo-3-Chloropropane	0.1612	0.1698	-5.4	81	0.00
97	T	1,2,4-Trichlorobenzene	1.1071	1.2490	-12.8	90	0.00
98	T	Hexachlorobutadiene	0.5581	0.6673	-19.6	92	0.00
99	T	Naphthalene	2.4094	2.6833	-11.4	83	0.00
100	T	1,2,3-Trichlorobenzene	1.0817	1.1910	-10.1	87	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M965027.D 8260WTR.M Wed Jul 30 14:48:22 2014 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965027.D Vial: 1
Acq On : 30 Jul 2014 11:17 Operator: ADC
Sample : WG486302-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	0.00
2	T	Dichlorodifluoromethane	50.0000	24.8021	50.4#	40	0.00
3	P	Chloromethane	50.0000	35.3726	29.3#	61	0.00
4	C	Vinyl Chloride	50.0000	44.2464	11.5	77	0.00
5	T	1,3-Butadiene	50.0000	66.3212	-32.6#	106	0.00
6	T	Bromomethane	50.0000	43.3456	13.3	83	0.00
7	T	Chloroethane	50.0000	48.3681	3.3	82	0.00
8	T	Trichlorofluoromethane	50.0000	50.1702	-0.3	87	0.00
9	T	Diethyl ether	100.0000	97.2903	2.7	86	0.00
10	T	Isoprene	50.0000	58.7886	-17.6	100	0.00
11	T	Acrolein	50.0000	46.8500	6.3	83	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.1690	-10.3	96	0.00
13	T	Acetone	50.0000	43.6264	12.7	79	0.00
14	C	1,1-Dichloroethene	50.0000	50.4543	-0.9	87	0.00
15	T	Tert-Butyl Alcohol	200.0000	168.8303	15.6	81	0.00
16	T	Dimethyl Sulfide	50.0000	52.1190	-4.2	89	0.00
17	T	Iodomethane	50.0000	47.0177	6.0	85	0.00
18	T	Methyl acetate	50.0000	45.3074	9.4	82	0.00
19	T	Methylene Chloride	50.0000	50.6200	-1.2	89	0.00
20	T	Carbon Disulfide	50.0000	56.1597	-12.3	98	0.00
21	T	Acrylonitrile	50.0000	45.9004	8.2	79	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.3087	3.4	83	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.7378	0.5	87	0.00
24	T	n-Hexane	50.0000	58.9751	-18.0	101	0.00
25	T	Diisopropyl ether	100.0000	104.5803	-4.6	91	0.00
26	T	Vinyl Acetate	50.0000	49.3387	1.3	82	0.00
27	P	1,1-Dichloroethane	50.0000	50.1157	-0.2	88	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.3869	-2.4	90	0.00
29	T	2-Butanone	50.0000	42.2861	15.4	74	0.00
30	T	Propionitrile	100.0000	87.3513	12.6	77	0.00
31	T	2,2-Dichloropropane	50.0000	53.7191	-7.4	95	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.7117	0.6	89	0.00
33	C	Chloroform	50.0000	49.2918	1.4	88	0.00
34		1-Bromopropane	50.0000	55.3533	-10.7	90	0.00
35	T	Bromochloromethane	50.0000	47.9344	4.1	87	0.00
36	T	Tetrahydrofuran	100.0000	87.1132	12.9	76	0.00
37	S	Dibromofluoromethane	25.0000	23.6892	5.2	86	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.5091	-3.0	89	0.00
39	T	Cyclohexane	50.0000	55.9804	-12.0	97	0.00
40	T	1,1-Dichloropropene	50.0000	52.4989	-5.0	93	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.2495	-2.2	90	0.00
42	T	Carbon Tetrachloride	50.0000	52.1578	-4.3	90	0.00
43	S	1,2-Dichloroethane-d4	25.0000	21.8451	12.6	78	0.00
44		Heptane	-1.0000	0.0000	0.0	93	0.00
45	T	1,2-Dichloroethane	50.0000	48.4738	3.1	84	0.00
46	T	Benzene	50.0000	50.3249	-0.6	89	0.00
47	T	Trichloroethene	50.0000	47.9076	4.2	89	0.00
48	T	Methylcyclohexane	50.0000	61.3074	-22.6	106	0.00
49	C	1,2-Dichloropropane	50.0000	49.6320	0.7	87	0.00
50	T	1,4-Dioxane	200.0000	188.0872	6.0	85	0.00
51	T	Bromodichloromethane	50.0000	51.0215	-2.0	87	0.00
52	T	Dibromomethane	50.0000	48.3491	3.3	81	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	48.9307	2.1	82	0.00
54	T	4-Methyl-2-Pentanone	50.0000	42.2516	15.5	74	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965027.D Vial: 1
Acq On : 30 Jul 2014 11:17 Operator: ADC
Sample : WG486302-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.1954	-4.4	89	0.00
56	T	Dimethyl Disulfide	50.0000	57.0825	-14.2	91	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	89	0.00
58	S	Toluene-d8	25.0000	25.8992	-3.6	87	0.00
59	C	Toluene	50.0000	52.8750	-5.8	89	0.00
60	T	Ethyl Methacrylate	50.0000	53.4779	-7.0	87	0.00
61	T	trans-1,3-Dichloropropene	50.0000	51.9468	-3.9	87	0.00
62	T	1,1,2-Trichloroethane	50.0000	50.3514	-0.7	85	0.00
63	T	2-Hexanone	50.0000	44.4167	11.2	74	0.00
64	T	1,3-Dichloropropane	50.0000	50.5894	-1.2	86	0.00
65	T	Tetrachloroethene	50.0000	53.4169	-6.8	90	0.00
66	T	Dibromochloromethane	50.0000	51.0497	-2.1	85	0.00
67	T	1,2-Dibromoethane	50.0000	49.0019	2.0	81	0.00
68	T	1-Chlorohexane	50.0000	60.6046	-21.2	100	0.00
69	P	Chlorobenzene	50.0000	52.2982	-4.6	90	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	52.5663	-5.1	89	0.00
71	C	Ethylbenzene	50.0000	52.8716	-5.7	88	0.00
72	T	m-,p-Xylene	100.0000	108.7683	-8.8	89	0.00
73	T	o-Xylene	50.0000	53.1268	-6.3	90	0.00
74	T	Styrene	50.0000	55.8495	-11.7	89	0.00
75	P	Bromoform	50.0000	50.7051	-1.4	84	0.00
76	T	Isopropylbenzene	50.0000	55.4460	-10.9	91	0.00
77	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	85	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	57.1036	-14.2	89	0.00
79	S	p-Bromofluorobenzene	25.0000	24.2792	2.9	79	0.00
80	T	1,2,3-Trichloropropane	50.0000	51.0182	-2.0	82	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	51.4901	-3.0	78	0.00
82	T	n-Propylbenzene	50.0000	59.5524	-19.1	92	0.00
83	T	Bromobenzene	50.0000	53.0944	-6.2	88	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	58.5731	-17.1	92	0.00
85	T	2-Chlorotoluene	50.0000	51.8248	-3.6	90	0.00
86	T	4-Chlorotoluene	50.0000	63.5977	-27.2#	94	0.00
87	T	a-Methylstyrene	50.0000	62.4336	-24.9	94	0.00
88	T	tert-Butylbenzene	50.0000	58.1876	-16.4	92	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	58.1524	-16.3	93	0.00
90	T	sec-Butylbenzene	50.0000	60.6863	-21.4	95	0.00
91	T	p-Isopropyltoluene	50.0000	61.3982	-22.8	95	0.00
92	T	1,3-Dichlorobenzene	50.0000	57.1067	-14.2	92	0.00
93	T	1,4-Dichlorobenzene	50.0000	55.5530	-11.1	92	0.00
94	T	n-Butylbenzene	50.0000	61.8251	-23.7	95	0.00
95	T	1,2-Dichlorobenzene	50.0000	57.1957	-14.4	90	0.00
96	T	1,2-Dibromo-3-Chloropropane	50.0000	52.6781	-5.4	81	0.00
97	T	1,2,4-Trichlorobenzene	50.0000	56.4070	-12.8	90	0.00
98	T	Hexachlorobutadiene	50.0000	59.7846	-19.6	92	0.00
99	T	Naphthalene	50.0000	55.6839	-11.4	83	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	55.0543	-10.1	87	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M965027.D 8260WTR.M Wed Jul 30 14:48:24 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965028.D Vial: 2
Acq On : 30 Jul 2014 11:48 Operator: ADC
Sample : WG000000-01 100ug/L A9 CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65294 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 14:47:16 2014 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	807100	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	558782	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	276634	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.04	111	190384	22.2423 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 88.96%		
43) 1,2-Dichloroethane-d4	10.68	65	237022	20.7045 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 82.80%		
58) Toluene-d8	13.06	98	689908	24.9905 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.96%		
79) p-Bromofluorobenzene	16.46	95	234240	23.4690 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.88%		

Target Compounds

					Qvalue
5) 1,3-Butadiene	4.17	54	216	Below Cal #	1
13) Acetone	6.60	43	9068	2.6698 ug/L	93
15) Tert-Butyl Alcohol	6.93	59	496	0.4007 ug/L #	41
19) Methylene Chloride	7.63	84	3112	0.3436 ug/L	90
20) Carbon Disulfide	7.68	76	5572	0.2305 ug/L #	55
22) Methyl Tert Butyl Ether	7.85	73	3090	0.1276 ug/L #	38
47) Trichloroethene	11.59	130	2703	0.2757 ug/L	90
56) Dimethyl Disulfide	13.06	94	18770	1.2302 ug/L #	28
72) m-,p-Xylene	15.11	106	1849	0.1288 ug/L	97
78) 1,1,2,2-Tetrachloroethane	16.23	83	12144	1.7246 ug/L #	26
85) 2-Chlorotoluene	16.93	91	5376	0.2098 ug/L #	61
86) 4-Chlorotoluene	16.93	91	5376	0.2421 ug/L #	67
92) 1,3-Dichlorobenzene	17.91	146	2492	0.1504 ug/L	79
93) 1,4-Dichlorobenzene	18.03	146	2576	0.1509 ug/L #	1
94) n-Butylbenzene	18.23	91	3524	0.1332 ug/L #	86
95) 1,2-Dichlorobenzene	18.54	146	2071	0.1270 ug/L	79
97) 1,2,4-Trichlorobenzene	20.67	180	2294	0.1873 ug/L	89
99) Naphthalene	21.04	128	5222	0.1959 ug/L	93
100) 1,2,3-Trichlorobenzene	21.35	180	1873	0.1565 ug/L	94

(#) = qualifier out of range (m) = manual integration
9M965028.D 8260WTR.M Wed Jul 30 14:47:20 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965028.D Vial: 2
Acq On : 30 Jul 2014 11:48 Operator: ADC
Sample : WG000000-01 100ug/L A9 CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65294 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 14:47 2014 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

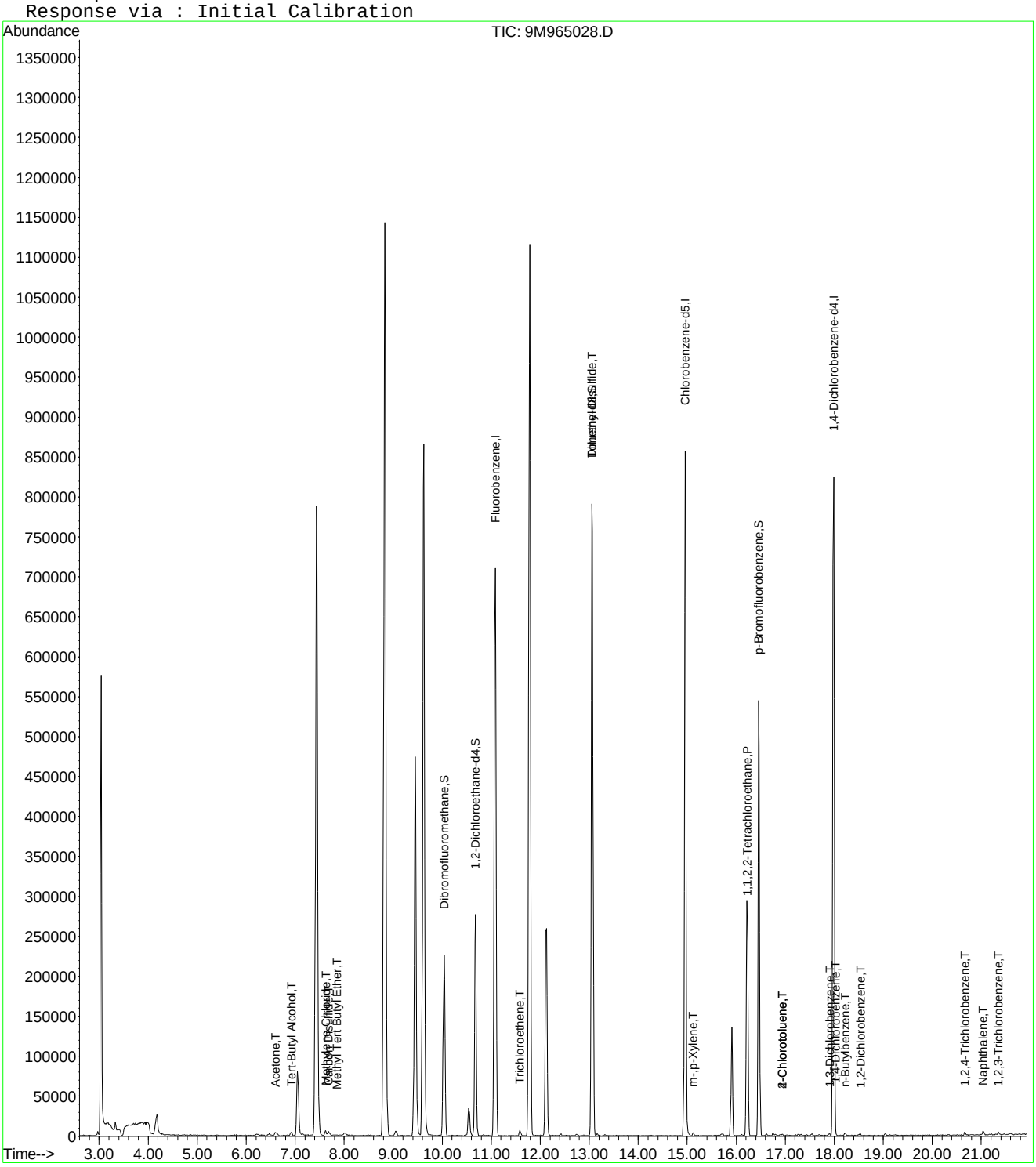

9M965028.D 8260WTR.M Wed Jul 30 14:47:20 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965028.D Vial: 2
Acq On : 30 Jul 2014 11:48 Operator: ADC
Sample : WG000000-01 100ug/L A9 CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65294 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 31 15:40:41 2014 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Wed Mar 26 09:30:59 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	807100	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.96	117	558782	25.00 ug/L	-0.04
13) 1,4-Dichlorobenzene-d4	17.99	152	276634	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	7.05	41	118187	169.2352 ug/L #	90
3) 3-Chloro-1-propene	7.43	41	958968	84.2739 ug/L	87
4) 2-Chloro-1,3-butadiene	8.83	53	1265263	103.5929 ug/L	69
5) Ethyl Acetate	9.45	43	822662	149.9932 ug/L	100
6) Methacrylonitrile	9.62	67	311854	112.9541 ug/L	57
7) Isobutyl Alcohol	9.62	43	90942	194.2309 ug/L	96
8) 1-Butanol	10.54	56	28138	248.9200 ug/L	76
9) Methyl methacrylate	11.78	41	861206	148.6729 ug/L	72
10) 2-Nitropropane	12.12	43	273103	147.6067 ug/L	87
12) Cyclohexanone	15.91	55	11226	14.0515 ug/L #	79

(#) = qualifier out of range (m) = manual integration
9M965028.D A9FOOWT.M Thu Jul 31 15:40:42 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965028.D Vial: 2
Acq On : 30 Jul 2014 11:48 Operator: ADC
Sample : WG000000-01 100ug/L A9 CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65294 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 31 15:40 2014 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Wed Mar 26 09:30:59 2014
Response via : Initial Calibration

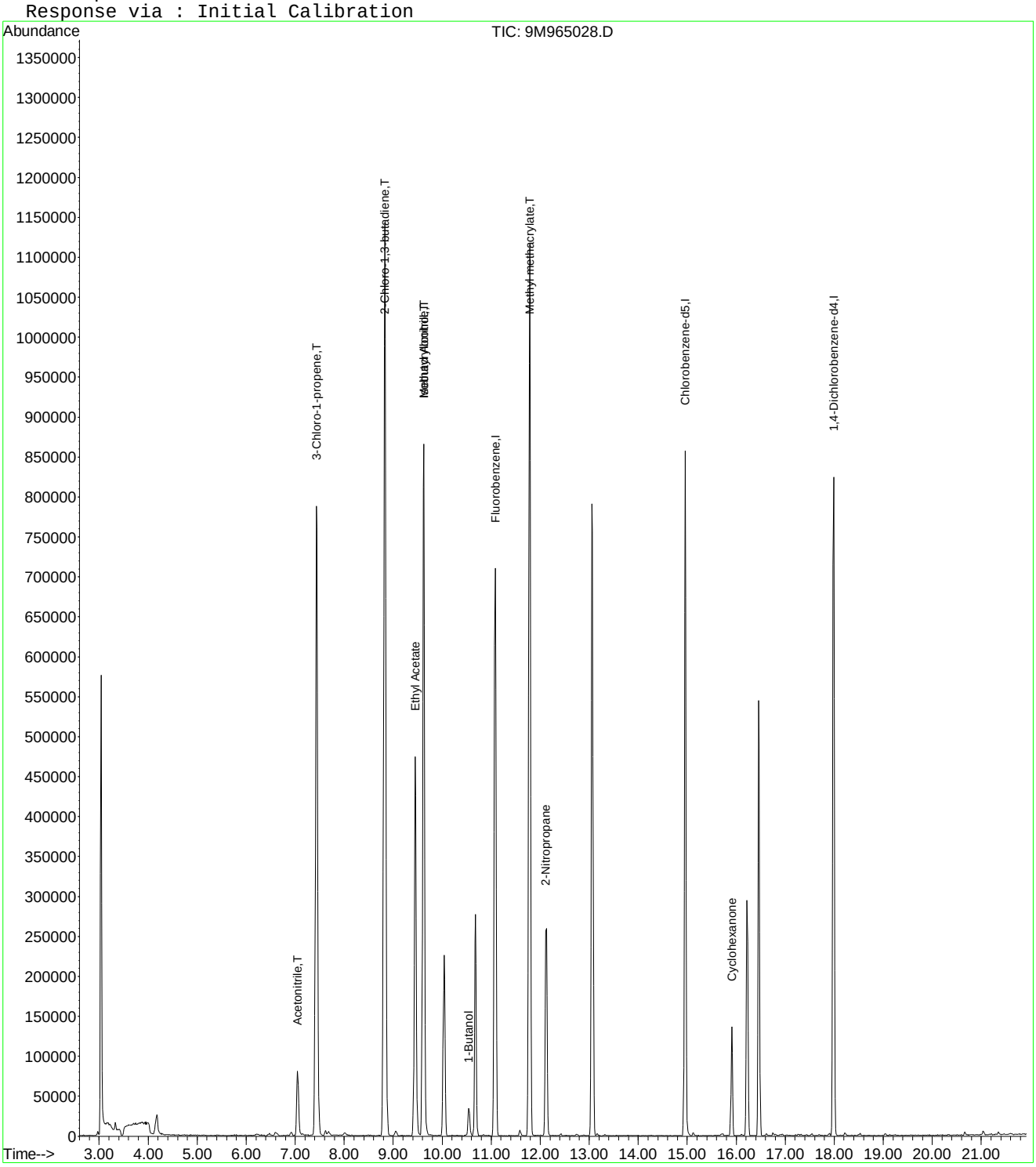

9M965028.D A9FOOWT.M Thu Jul 31 15:40:43 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965028.D Vial: 2
Acq On : 30 Jul 2014 11:48 Operator: ADC
Sample : WG486517-01 100ug/L A9 CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65294 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 31 15:40:41 2014 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Wed Mar 26 09:30:59 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	807100	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.96	117	558782	25.00 ug/L	-0.04
13) 1,4-Dichlorobenzene-d4	17.99	152	276634	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	7.05	41	118187	169.2352 ug/L #	90
3) 3-Chloro-1-propene	7.43	41	958968	84.2739 ug/L	87
4) 2-Chloro-1,3-butadiene	8.83	53	1265263	103.5929 ug/L	69
5) Ethyl Acetate	9.45	43	822662	149.9932 ug/L	100
6) Methacrylonitrile	9.62	67	311854	112.9541 ug/L	57
7) Isobutyl Alcohol	9.62	43	90942	194.2309 ug/L	96
8) 1-Butanol	10.54	56	28138	248.9200 ug/L	76
9) Methyl methacrylate	11.78	41	861206	148.6729 ug/L	72
10) 2-Nitropropane	12.12	43	273103	147.6067 ug/L	87
12) Cyclohexanone	15.91	55	11226	14.0515 ug/L #	79

(#) = qualifier out of range (m) = manual integration
9M965028.D A9FOOWT.M Thu Jul 31 15:44:08 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965028.D Vial: 2
Acq On : 30 Jul 2014 11:48 Operator: ADC
Sample : WG486517-01 100ug/L A9 CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65294 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 31 15:40 2014 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Wed Mar 26 09:30:59 2014
Response via : Initial Calibration

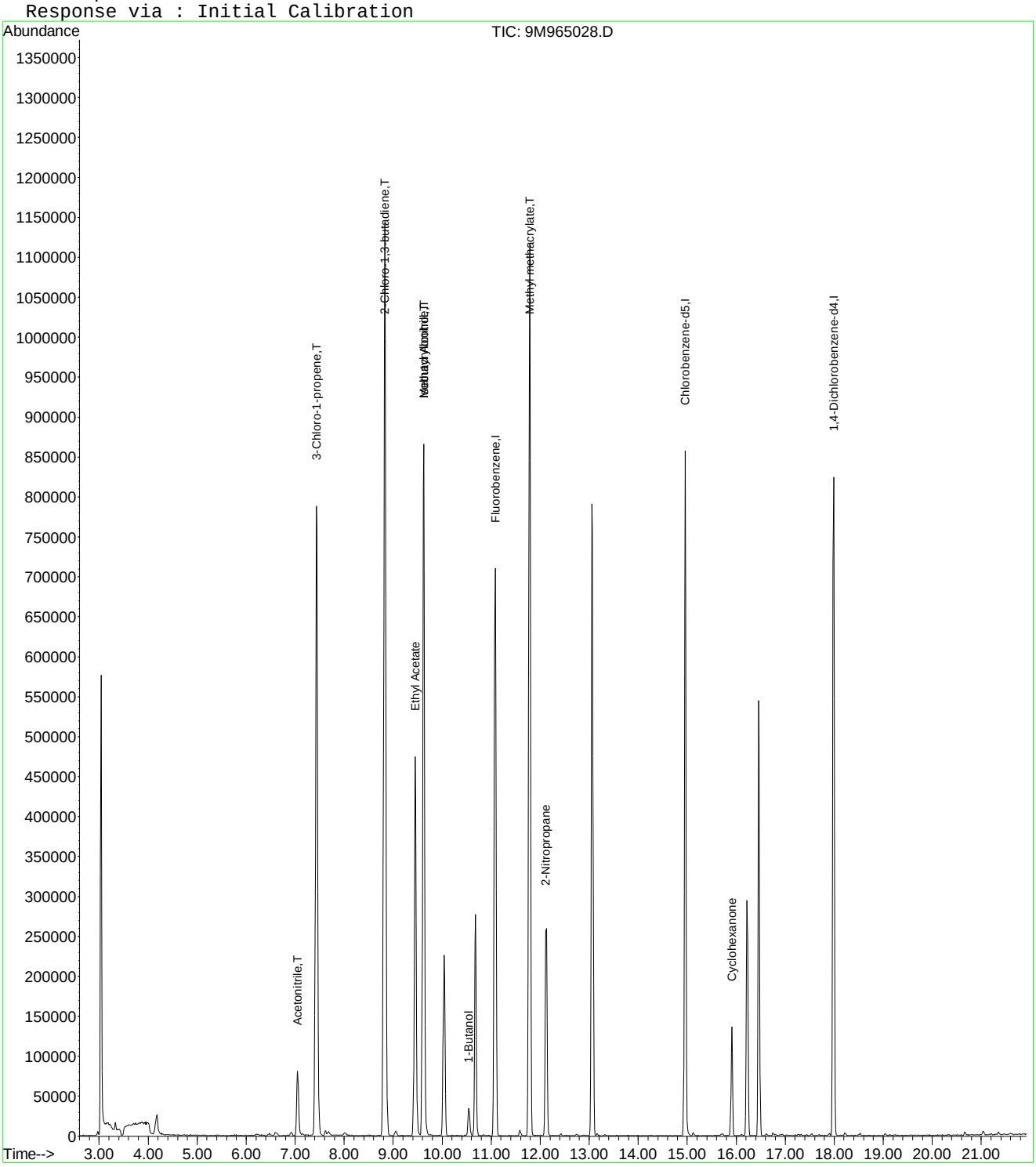

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965028.D Vial: 2
Acq On : 30 Jul 2014 11:48 Operator: ADC
Sample : WG486517-01 100ug/L A9 CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65294 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Wed Mar 26 09:30:59 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	140	-0.03
2	T	Acetonitrile	100.0000	169.2352	-69.2	241	0.02
3	T	3-Chloro-1-propene	100.0000	84.2739	15.7	119	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	103.5929	-3.6	147	0.00
5		Ethyl Acetate	100.0000	149.9932	-50.0	209	-0.02
6	T	Methacrylonitrile	100.0000	112.9541	-13.0	161	-0.01
7	T	Isobutyl Alcohol	100.0000	194.2309	-94.2#	295	-0.01
8		1-Butanol	100.0000	248.9200	-148.9#	410	-0.02
9	T	Methyl methacrylate	100.0000	148.6729	-48.7	209	-0.05
10		2-Nitropropane	100.0000	147.6067	-47.6	210	-0.06
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	143	-0.04
12		Cyclohexanone	100.0000	14.0515	85.9#	21	-0.03
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	143	-0.04

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M965028.D A9FOOWT.M Thu Jul 31 15:44:14 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\080114\9M965075.D Vial: 1
Acq On : 1 Aug 2014 16:01 Operator: ADC
Sample : WG486694-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 04 08:44:42 2014 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	778372	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	549036	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	283900	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.04	111	192063	23.2666 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.08%		
43) 1,2-Dichloroethane-d4	10.68	65	233491	21.1488 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 84.60%		
58) Toluene-d8	13.06	98	710220	26.1829 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.72%		
79) p-Bromofluorobenzene	16.46	95	251422	24.5457 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	360292	56.7337 ug/L	100
3) Chloromethane	3.88	50	838437	47.9306 ug/L	99
4) Vinyl Chloride	4.12	62	634047	54.8541 ug/L	100
5) 1,3-Butadiene	4.18	54	501540	58.7301 ug/L	96
6) Bromomethane	5.07	94	352218	49.6470 ug/L	100
7) Chloroethane	5.22	64	390265	53.9350 ug/L	98
8) Trichlorofluoromethane	5.73	101	629654	52.7083 ug/L	100
9) Diethyl ether	6.25	59	1021609	95.1271 ug/L	99
10) Isoprene	6.30	67	621390	54.3139 ug/L	97
11) Acrolein	6.49	56	98034	45.7237 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	387057	56.5457 ug/L	100
13) Acetone	6.60	43	130345	39.7927 ug/L	98
14) 1,1-Dichloroethene	6.83	61	861385	52.1319 ug/L	98
15) Tert-Butyl Alcohol	6.93	59	199340	166.9828 ug/L	97
16) Dimethyl Sulfide	7.09	62	645519	49.8963 ug/L	99
17) Iodomethane	7.36	142	474998	48.3285 ug/L	99
18) Methyl acetate	7.35	43	464411	43.3489 ug/L	99
19) Methylene Chloride	7.62	84	445410	50.9944 ug/L	94
20) Carbon Disulfide	7.67	76	1238763	53.1364 ug/L	100
21) Acrylonitrile	7.80	53	235072	44.8311 ug/L	97
22) Methyl Tert Butyl Ether	7.83	73	1124232	48.1360 ug/L	99
23) trans-1,2-Dichloroethene	8.07	61	813508	49.9315 ug/L	98
24) n-Hexane	8.15	57	914173	55.4704 ug/L	98
25) Diisopropyl ether	8.48	45	4522074	102.8948 ug/L	99
26) Vinyl Acetate	8.65	43	686672	43.1906 ug/L	99
27) 1,1-Dichloroethane	8.69	63	1011099	50.0717 ug/L	99
28) Ethyl-Tert-Butyl ether	9.06	59	3971128	99.9781 ug/L	99
29) 2-Butanone	9.24	43	203787	38.7964 ug/L	99
30) Propionitrile	9.35	54	159016	85.5780 ug/L	98
31) 2,2-Dichloropropane	9.47	77	673464	54.0929 ug/L	98
32) cis-1,2-Dichloroethene	9.54	96	473099	50.5066 ug/L	97
33) Chloroform	9.75	83	755843	49.5288 ug/L	99
34) 1-Bromopropane	9.88	122	75502	54.6098 ug/L	97
35) Bromochloromethane	9.99	130	276810	48.3697 ug/L	96
36) Tetrahydrofuran	10.00	42	305772	86.0862 ug/L	98
38) 1,1,1-Trichloroethane	10.29	97	668625	51.0130 ug/L	99
39) Cyclohexane	10.32	56	1163132	53.1160 ug/L	97
40) 1,1-Dichloropropene	10.47	75	564099	51.3440 ug/L	99
41) Tert-Amyl-Methyl ether	10.58	73	2347878	99.3036 ug/L	98
42) Carbon Tetrachloride	10.63	117	602342	52.2544 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M965075.D 8260WTR.M Mon Aug 04 08:44:45 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\080114\9M965075.D Vial: 1
Acq On : 1 Aug 2014 16:01 Operator: ADC
Sample : WG486694-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 04 08:44:42 2014 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.79	62	698814	47.9805 ug/L	100
46)	Benzene	10.83	78	1680167	50.8400 ug/L	99
47)	Trichloroethene	11.59	130	457908	48.4280 ug/L	99
48)	Methylcyclohexane	11.67	83	712591	57.8492 ug/L	95
49)	1,2-Dichloropropane	11.80	63	594102	50.0519 ug/L	100
50)	1,4-Dioxane	12.08	88	16147	186.1211 ug/L	93
51)	Bromodichloromethane	12.11	83	593754	50.6561 ug/L	99
52)	Dibromomethane	12.20	174	270438	49.8028 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.39	63	305369	47.2731 ug/L	99
54)	4-Methyl-2-Pentanone	12.42	58	189092	38.9254 ug/L	98
55)	cis-1,3-Dichloropropene	12.74	75	715940	52.0632 ug/L	99
56)	Dimethyl Disulfide	13.01	94	815582	55.4268 ug/L	100
59)	Toluene	13.16	91	1756947	54.0496 ug/L	99
60)	Ethyl Methacrylate	13.23	69	473685	50.6865 ug/L	100
61)	trans-1,3-Dichloropropene	13.33	75	644550	51.8556 ug/L	100
62)	1,1,2-Trichloroethane	13.55	97	346430	49.5907 ug/L	98
63)	2-Hexanone	13.47	43	307295	40.9267 ug/L	98
64)	1,3-Dichloropropane	13.85	76	618224	50.3544 ug/L	98
65)	Tetrachloroethene	13.99	164	377157	55.8019 ug/L	98
66)	Dibromochloromethane	14.25	129	437611	51.4124 ug/L	97
67)	1,2-Dibromoethane	14.51	107	353941	49.6709 ug/L	100
68)	1-Chlorohexane	14.58	91	576118	59.6013 ug/L	93
69)	Chlorobenzene	15.01	112	1151253	52.9390 ug/L	100
70)	1,1,1,2-Tetrachloroethane	15.04	131	431761	52.9006 ug/L	98
71)	Ethylbenzene	15.03	106	646221	53.9231 ug/L	99
72)	m-,p-Xylene	15.12	106	1552410	110.0226 ug/L	100
73)	o-Xylene	15.68	106	774170	53.0925 ug/L	99
74)	Styrene	15.73	104	1292979	56.2581 ug/L	100
75)	Bromoform	16.23	173	306801	49.1522 ug/L	99
76)	Isopropylbenzene	16.11	105	1934542	55.1285 ug/L	100
78)	1,1,2,2-Tetrachloroethane	16.33	83	383110	53.0140 ug/L	98
80)	1,2,3-Trichloropropane	16.52	110	126124	50.5218 ug/L	100
81)	trans-1,4-Dichloro-2-Buten	16.56	53	190565	49.9836 ug/L	90
82)	n-Propylbenzene	16.61	91	2336298	59.6414 ug/L	99
83)	Bromobenzene	16.76	156	508354	55.1180 ug/L	99
84)	1,3,5-Trimethylbenzene	16.80	105	1663133	59.5905 ug/L	100
85)	2-Chlorotoluene	16.89	91	1405752	53.4551 ug/L	89
86)	4-Chlorotoluene	16.95	91	1430817	62.7932 ug/L	100
87)	a-Methylstyrene	17.20	118	906873	62.1789 ug/L	97
88)	tert-Butylbenzene	17.27	134	364681	58.8889 ug/L	98
89)	1,2,4-Trimethylbenzene	17.32	105	1682951	58.1792 ug/L	100
90)	sec-Butylbenzene	17.53	105	2131685	60.7871 ug/L	100
91)	p-Isopropyltoluene	17.70	119	1773955	61.8191 ug/L	100
92)	1,3-Dichlorobenzene	17.90	146	984364	57.8993 ug/L	99
93)	1,4-Dichlorobenzene	18.03	146	990190	56.5156 ug/L	100
94)	n-Butylbenzene	18.22	91	1666709	61.3833 ug/L	100
95)	1,2-Dichlorobenzene	18.53	146	958143	57.2699 ug/L	100
96)	1,2-Dibromo-3-Chloropropan	19.53	157	92918	50.7635 ug/L	99
97)	1,2,4-Trichlorobenzene	20.67	180	715438	56.9043 ug/L	99
98)	Hexachlorobutadiene	20.81	225	375948	59.3222 ug/L	100
99)	Naphthalene	21.04	128	1506365	55.0541 ug/L	99
100)	1,2,3-Trichlorobenzene	21.35	180	677735	55.1756 ug/L	100

(#) = qualifier out of range (m) = manual integration
9M965075.D 8260WTR.M Mon Aug 04 08:44:45 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\080114\9M965075.D Vial: 1
Acq On : 1 Aug 2014 16:01 Operator: ADC
Sample : WG486694-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 4 8:44 2014 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

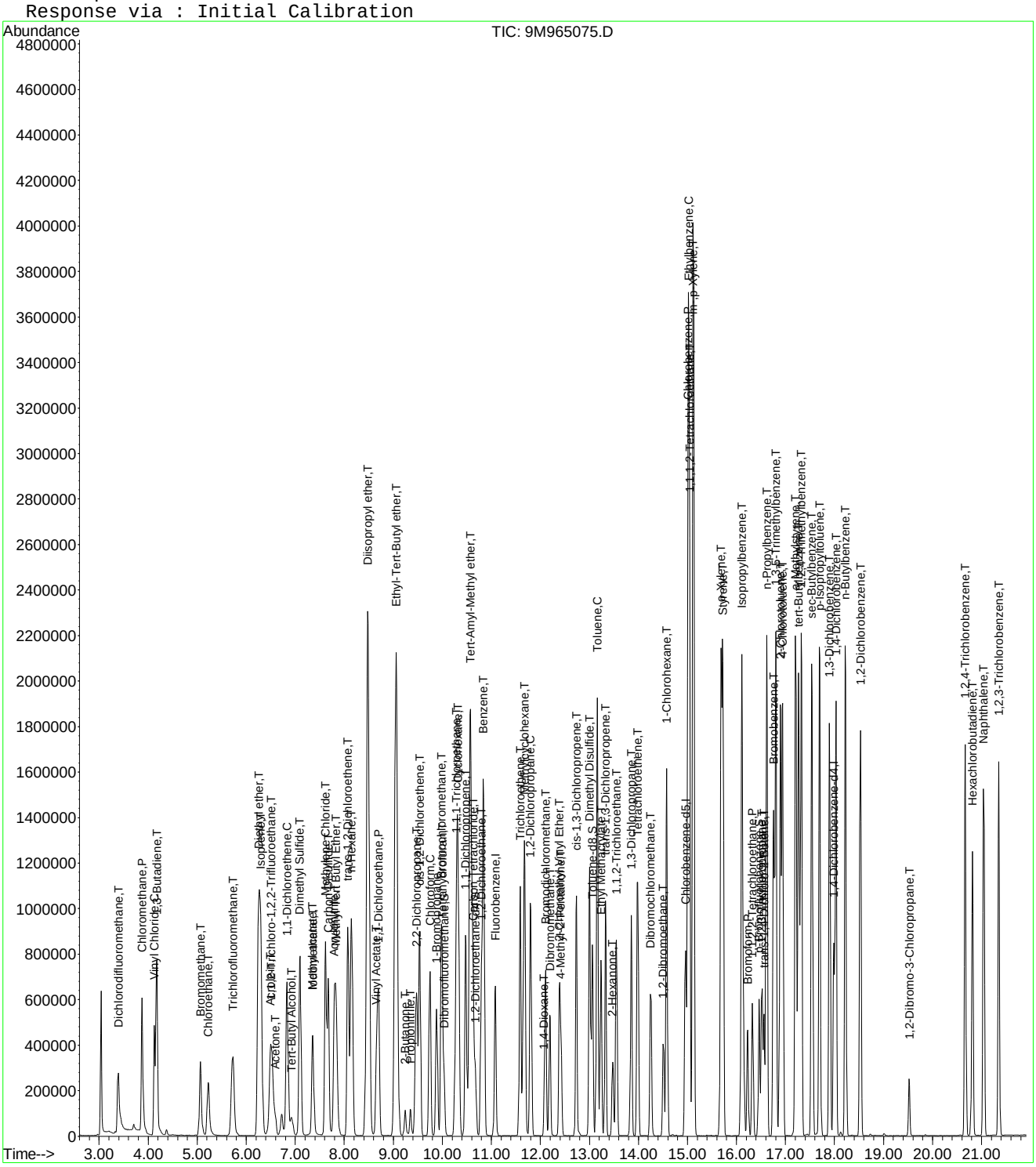

9M965075.D 8260WTR.M Mon Aug 04 08:44:46 2014 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\080114\9M965075.D Vial: 1
Acq On : 1 Aug 2014 16:01 Operator: ADC
Sample : WG486694-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	96	0.00
2	T	Dichlorodifluoromethane	0.2040	0.2314	-13.5	94	0.00
3	P	Chloromethane	0.5618	0.5386	4.1	87	0.00
4	C	Vinyl Chloride	0.3713	0.4073	-9.7	100	0.00
5	T	1,3-Butadiene	0.3181	0.3222	-1.3	98	0.00
6	T	Bromomethane	0.2279	0.2263	0.7	99	0.00
7	T	Chloroethane	0.2324	0.2507	-7.9	96	0.00
8	T	Trichlorofluoromethane	0.3837	0.4045	-5.4	96	0.00
9	T	Diethyl ether	0.3449	0.3281	4.9	88	0.00
10	T	Isoprene	0.3675	0.3992	-8.6	96	0.00
11	T	Acrolein	0.0689	0.0630	8.6	85	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2198	0.2486	-13.1	103	0.00
13	T	Acetone	0.1052	0.0837	20.4	75	0.00
14	C	1,1-Dichloroethene	0.5307	0.5533	-4.3	94	0.00
15	T	Tert-Butyl Alcohol	0.0383	0.0320	16.5	84	0.00
16	T	Dimethyl Sulfide	0.4155	0.4147	0.2	89	0.00
17	T	Iodomethane	0.2513	0.3051	-21.4	91	0.00
18	T	Methyl acetate	0.3441	0.2983	13.3	81	0.00
19	T	Methylene Chloride	0.2805	0.2861	-2.0	93	0.00
20	T	Carbon Disulfide	0.7488	0.7957	-6.3	97	0.00
21	T	Acrylonitrile	0.1684	0.1510	10.3	80	0.00
22	T	Methyl Tert Butyl Ether	0.7501	0.7222	3.7	86	0.00
23	T	trans-1,2-Dichloroethene	0.5233	0.5226	0.1	91	0.00
24	T	n-Hexane	0.5293	0.5872	-10.9	100	0.00
25	T	Diisopropyl ether	1.4116	1.4524	-2.9	93	0.00
26	T	Vinyl Acetate	0.5106	0.4411	13.6	75	0.00
27	P	1,1-Dichloroethane	0.6486	0.6495	-0.1	92	0.00
28	T	Ethyl-Tert-Butyl ether	1.2757	1.2755	0.0	91	0.00
29	T	2-Butanone	0.1687	0.1309	22.4	71	0.00
30	T	Propionitrile	0.0597	0.0511	14.4	78	-0.01
31	T	2,2-Dichloropropane	0.3999	0.4326	-8.2	100	0.00
32	T	cis-1,2-Dichloroethene	0.3009	0.3039	-1.0	94	0.00
33	C	Chloroform	0.4901	0.4855	0.9	92	0.00
34		1-Bromopropane	0.0444	0.0485	-9.2	93	0.00
35	T	Bromochloromethane	0.1838	0.1778	3.3	91	0.00
36	T	Tetrahydrofuran	0.1141	0.0982	13.9	78	0.00
37	S	Dibromofluoromethane	0.2651	0.2468	6.9	88	0.00
38	T	1,1,1-Trichloroethane	0.4210	0.4295	-2.0	92	0.00
39	T	Cyclohexane	0.7033	0.7472	-6.2	96	0.00
40	T	1,1-Dichloropropene	0.3529	0.3624	-2.7	95	0.00
41	T	Tert-Amyl-Methyl ether	0.7594	0.7541	0.7	91	0.00
42	T	Carbon Tetrachloride	0.3702	0.3869	-4.5	94	0.00
43	S	1,2-Dichloroethane-d4	0.3546	0.3000	15.4	78	0.00
44		Heptane	0.0000	0.0000	0.0	91	0.00
45	T	1,2-Dichloroethane	0.4678	0.4489	4.0	87	0.00
46	T	Benzene	1.0615	1.0793	-1.7	94	-0.01
47	T	Trichloroethene	0.3037	0.2941	3.1	94	0.00
48	T	Methylcyclohexane	0.3956	0.4577	-15.7	104	0.00
49	C	1,2-Dichloropropane	0.3812	0.3816	-0.1	92	-0.01
50	T	1,4-Dioxane	0.0028	0.0026	7.2	88	-0.01
51	T	Bromodichloromethane	0.3765	0.3814	-1.3	90	0.00
52	T	Dibromomethane	0.1744	0.1737	0.4	87	0.00
53	T	2-Chloroethyl Vinyl Ether	0.2075	0.1962	5.5	83	0.00
54	T	4-Methyl-2-Pentanone	0.1560	0.1215	22.1	71	0.00

(#) = Out of Range
9M965075.D 8260WTR.M Mon Aug 04 08:52:42 2014 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\080114\9M965075.D Vial: 1
Acq On : 1 Aug 2014 16:01 Operator: ADC
Sample : WG486694-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4417	0.4599	-4.1	93	0.00
56	T	Dimethyl Disulfide	0.4726	0.5239	-10.9	92	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	92	0.00
58	S	Toluene-d8	1.2351	1.2936	-4.7	90	0.00
59	C	Toluene	1.4802	1.6000	-8.1	94	0.00
60	T	Ethyl Methacrylate	0.4255	0.4314	-1.4	85	0.00
61	T	trans-1,3-Dichloropropene	0.5660	0.5870	-3.7	90	0.00
62	T	1,1,2-Trichloroethane	0.3181	0.3155	0.8	87	0.00
63	T	2-Hexanone	0.3419	0.2798	18.1	71	0.00
64	T	1,3-Dichloropropane	0.5591	0.5630	-0.7	89	0.00
65	T	Tetrachloroethene	0.3078	0.3435	-11.6	97	0.00
66	T	Dibromochloromethane	0.3876	0.3985	-2.8	88	0.00
67	T	1,2-Dibromoethane	0.3245	0.3223	0.7	85	0.00
68	T	1-Chlorohexane	0.4401	0.5247	-19.2	101	0.00
69	P	Chlorobenzene	0.9902	1.0484	-5.9	94	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3716	0.3932	-5.8	93	0.00
71	C	Ethylbenzene	0.5457	0.5885	-7.8	93	0.00
72	T	m-,p-Xylene	0.6425	0.7069	-10.0	93	0.00
73	T	o-Xylene	0.6640	0.7050	-6.2	93	0.00
74	T	Styrene	1.0465	1.1775	-12.5	93	0.00
75	P	Bromoform	0.2842	0.2794	1.7	84	0.00
76	T	Isopropylbenzene	1.5979	1.7618	-10.3	94	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	85	0.00
78	P	1,1,2,2-Tetrachloroethane	0.6364	0.6747	-6.0	83	0.00
79	S	p-Bromofluorobenzene	0.9020	0.8856	1.8	80	0.00
80	T	1,2,3-Trichloropropane	0.2198	0.2221	-1.0	82	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.3357	0.3356	0.0	76	0.00
82	T	n-Propylbenzene	3.4495	4.1147	-19.3	93	0.00
83	T	Bromobenzene	0.8122	0.8953	-10.2	91	0.00
84	T	1,3,5-Trimethylbenzene	2.4577	2.9291	-19.2	94	0.00
85	T	2-Chlorotoluene	2.3158	2.4758	-6.9	93	0.00
86	T	4-Chlorotoluene	2.0065	2.5199	-25.6#	93	0.00
87	T	a-Methylstyrene	1.2843	1.5972	-24.4	94	0.00
88	T	tert-Butylbenzene	0.5453	0.6423	-17.8	93	0.00
89	T	1,2,4-Trimethylbenzene	2.5473	2.9640	-16.4	93	0.00
90	T	sec-Butylbenzene	3.0881	3.7543	-21.6	95	0.00
91	T	p-Isopropyltoluene	2.5269	3.1243	-23.6	96	0.00
92	T	1,3-Dichlorobenzene	1.4971	1.7336	-15.8	94	0.00
93	T	1,4-Dichlorobenzene	1.5429	1.7439	-13.0	93	0.00
94	T	n-Butylbenzene	2.3910	2.9354	-22.8	95	0.00
95	T	1,2-Dichlorobenzene	1.4733	1.6875	-14.5	91	0.00
96	T	1,2-Dibromo-3-Chloropropane	0.1612	0.1636	-1.5	78	0.00
97	T	1,2,4-Trichlorobenzene	1.1071	1.2600	-13.8	91	0.00
98	T	Hexachlorobutadiene	0.5581	0.6621	-18.6	91	0.00
99	T	Naphthalene	2.4094	2.6530	-10.1	82	-0.01
100	T	1,2,3-Trichlorobenzene	1.0817	1.1936	-10.4	87	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M965075.D 8260WTR.M Mon Aug 04 08:52:43 2014 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\080114\9M965075.D Vial: 1
Acq On : 1 Aug 2014 16:01 Operator: ADC
Sample : WG486694-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	96	0.00
2	T	Dichlorodifluoromethane	50.0000	56.7337	-13.5	94	0.00
3	P	Chloromethane	50.0000	47.9306	4.1	87	0.00
4	C	Vinyl Chloride	50.0000	54.8541	-9.7	100	0.00
5	T	1,3-Butadiene	50.0000	58.7301	-17.5	98	0.00
6	T	Bromomethane	50.0000	49.6470	0.7	99	0.00
7	T	Chloroethane	50.0000	53.9350	-7.9	96	0.00
8	T	Trichlorofluoromethane	50.0000	52.7083	-5.4	96	0.00
9	T	Diethyl ether	100.0000	95.1271	4.9	88	0.00
10	T	Isoprene	50.0000	54.3139	-8.6	96	0.00
11	T	Acrolein	50.0000	45.7237	8.6	85	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	56.5457	-13.1	103	0.00
13	T	Acetone	50.0000	39.7927	20.4	75	0.00
14	C	1,1-Dichloroethene	50.0000	52.1319	-4.3	94	0.00
15	T	Tert-Butyl Alcohol	200.0000	166.9828	16.5	84	0.00
16	T	Dimethyl Sulfide	50.0000	49.8963	0.2	89	0.00
17	T	Iodomethane	50.0000	48.3285	3.3	91	0.00
18	T	Methyl acetate	50.0000	43.3488	13.3	81	0.00
19	T	Methylene Chloride	50.0000	50.9944	-2.0	93	0.00
20	T	Carbon Disulfide	50.0000	53.1364	-6.3	97	0.00
21	T	Acrylonitrile	50.0000	44.8312	10.3	80	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.1360	3.7	86	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.9315	0.1	91	0.00
24	T	n-Hexane	50.0000	55.4704	-10.9	100	0.00
25	T	Diisopropyl ether	100.0000	102.8948	-2.9	93	0.00
26	T	Vinyl Acetate	50.0000	43.1906	13.6	75	0.00
27	P	1,1-Dichloroethane	50.0000	50.0717	-0.1	92	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.9781	0.0	91	0.00
29	T	2-Butanone	50.0000	38.7964	22.4	71	0.00
30	T	Propionitrile	100.0000	85.5780	14.4	78	-0.01
31	T	2,2-Dichloropropane	50.0000	54.0929	-8.2	100	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.5066	-1.0	94	0.00
33	C	Chloroform	50.0000	49.5288	0.9	92	0.00
34		1-Bromopropane	50.0000	54.6098	-9.2	93	0.00
35	T	Bromochloromethane	50.0000	48.3697	3.3	91	0.00
36	T	Tetrahydrofuran	100.0000	86.0862	13.9	78	0.00
37	S	Dibromofluoromethane	25.0000	23.2666	6.9	88	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.0130	-2.0	92	0.00
39	T	Cyclohexane	50.0000	53.1160	-6.2	96	0.00
40	T	1,1-Dichloropropene	50.0000	51.3440	-2.7	95	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.3036	0.7	91	0.00
42	T	Carbon Tetrachloride	50.0000	52.2544	-4.5	94	0.00
43	S	1,2-Dichloroethane-d4	25.0000	21.1488	15.4	78	0.00
44		Heptane	-1.0000	0.0000	0.0	91	0.00
45	T	1,2-Dichloroethane	50.0000	47.9805	4.0	87	0.00
46	T	Benzene	50.0000	50.8400	-1.7	94	-0.01
47	T	Trichloroethene	50.0000	48.4280	3.1	94	0.00
48	T	Methylcyclohexane	50.0000	57.8492	-15.7	104	0.00
49	C	1,2-Dichloropropane	50.0000	50.0519	-0.1	92	-0.01
50	T	1,4-Dioxane	200.0000	186.1211	6.9	88	-0.01
51	T	Bromodichloromethane	50.0000	50.6561	-1.3	90	0.00
52	T	Dibromomethane	50.0000	49.8028	0.4	87	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	47.2731	5.5	83	0.00
54	T	4-Methyl-2-Pentanone	50.0000	38.9254	22.1	71	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\080114\9M965075.D Vial: 1
Acq On : 1 Aug 2014 16:01 Operator: ADC
Sample : WG486694-02 50ug/L CCV STD 8260 Inst : HPMS9
Misc : 1,1 STD65656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.0632	-4.1	93	0.00
56	T	Dimethyl Disulfide	50.0000	55.4268	-10.9	92	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	92	0.00
58	S	Toluene-d8	25.0000	26.1829	-4.7	90	0.00
59	C	Toluene	50.0000	54.0496	-8.1	94	0.00
60	T	Ethyl Methacrylate	50.0000	50.6865	-1.4	85	0.00
61	T	trans-1,3-Dichloropropene	50.0000	51.8556	-3.7	90	0.00
62	T	1,1,2-Trichloroethane	50.0000	49.5908	0.8	87	0.00
63	T	2-Hexanone	50.0000	40.9267	18.1	71	0.00
64	T	1,3-Dichloropropane	50.0000	50.3544	-0.7	89	0.00
65	T	Tetrachloroethene	50.0000	55.8019	-11.6	97	0.00
66	T	Dibromochloromethane	50.0000	51.4124	-2.8	88	0.00
67	T	1,2-Dibromoethane	50.0000	49.6709	0.7	85	0.00
68	T	1-Chlorohexane	50.0000	59.6013	-19.2	101	0.00
69	P	Chlorobenzene	50.0000	52.9390	-5.9	94	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	52.9006	-5.8	93	0.00
71	C	Ethylbenzene	50.0000	53.9231	-7.8	93	0.00
72	T	m-,p-Xylene	100.0000	110.0226	-10.0	93	0.00
73	T	o-Xylene	50.0000	53.0924	-6.2	93	0.00
74	T	Styrene	50.0000	56.2581	-12.5	93	0.00
75	P	Bromoform	50.0000	49.1522	1.7	84	0.00
76	T	Isopropylbenzene	50.0000	55.1285	-10.3	94	0.00
77	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	85	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	53.0140	-6.0	83	0.00
79	S	p-Bromofluorobenzene	25.0000	24.5458	1.8	80	0.00
80	T	1,2,3-Trichloropropane	50.0000	50.5218	-1.0	82	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	49.9836	0.0	76	0.00
82	T	n-Propylbenzene	50.0000	59.6414	-19.3	93	0.00
83	T	Bromobenzene	50.0000	55.1180	-10.2	91	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	59.5905	-19.2	94	0.00
85	T	2-Chlorotoluene	50.0000	53.4551	-6.9	93	0.00
86	T	4-Chlorotoluene	50.0000	62.7932	-25.6#	93	0.00
87	T	a-Methylstyrene	50.0000	62.1789	-24.4	94	0.00
88	T	tert-Butylbenzene	50.0000	58.8890	-17.8	93	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	58.1792	-16.4	93	0.00
90	T	sec-Butylbenzene	50.0000	60.7871	-21.6	95	0.00
91	T	p-Isopropyltoluene	50.0000	61.8191	-23.6	96	0.00
92	T	1,3-Dichlorobenzene	50.0000	57.8993	-15.8	94	0.00
93	T	1,4-Dichlorobenzene	50.0000	56.5156	-13.0	93	0.00
94	T	n-Butylbenzene	50.0000	61.3833	-22.8	95	0.00
95	T	1,2-Dichlorobenzene	50.0000	57.2699	-14.5	91	0.00
96	T	1,2-Dibromo-3-Chloropropane	50.0000	50.7635	-1.5	78	0.00
97	T	1,2,4-Trichlorobenzene	50.0000	56.9043	-13.8	91	0.00
98	T	Hexachlorobutadiene	50.0000	59.3222	-18.6	91	0.00
99	T	Naphthalene	50.0000	55.0541	-10.1	82	-0.01
100	T	1,2,3-Trichlorobenzene	50.0000	55.1756	-10.4	87	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M965075.D 8260WTR.M Mon Aug 04 08:52:45 2014 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\062614\9M964346.D          Vial: 2
Acq On    : 26 Jun 2014  14:58                       Operator: ADC
Sample    : WG482030-01 50ng BFB STD 8260            Inst    : HPMS9
Misc      : 1,1 STD64936                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624 SOP: OVL MSV01 WATER 06/26/14  HPMS9
```

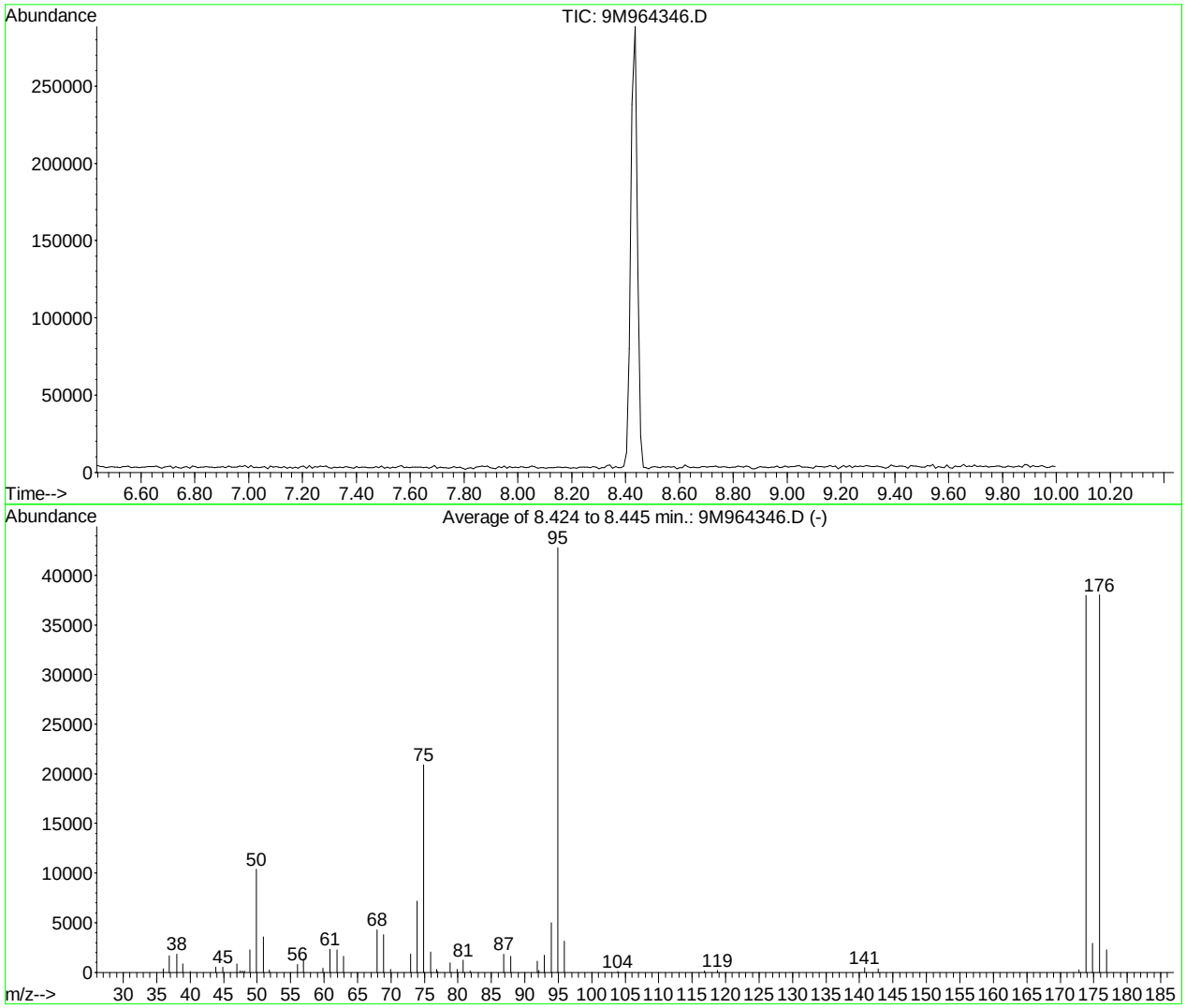

AutoFind: Scans 323, 324, 325; Background Corrected with Scan 318

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.3	10401	PASS
75	95	30	60	48.9	20913	PASS
95	95	100	100	100.0	42797	PASS
96	95	5	9	7.3	3124	PASS
173	174	0.00	2	0.6	245	PASS
174	95	50	100	88.7	37965	PASS
175	174	5	9	7.7	2930	PASS
176	174	95	101	100.2	38056	PASS
177	176	5	9	6.0	2283	PASS

9M964346.D 8260WTR.M Mon Jun 30 15:43:43 2014

BFB

```
Data File : C:\MSDCHEM\1\DATA\062714\11M02148.D          Vial: 1
Acq On    : 27 Jun 2014  14:07                       Operator: FJB
Sample    : WG482009-01 BFB 50ng 8260                Inst    : hpms11
Misc      : 1,1 STD64936                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

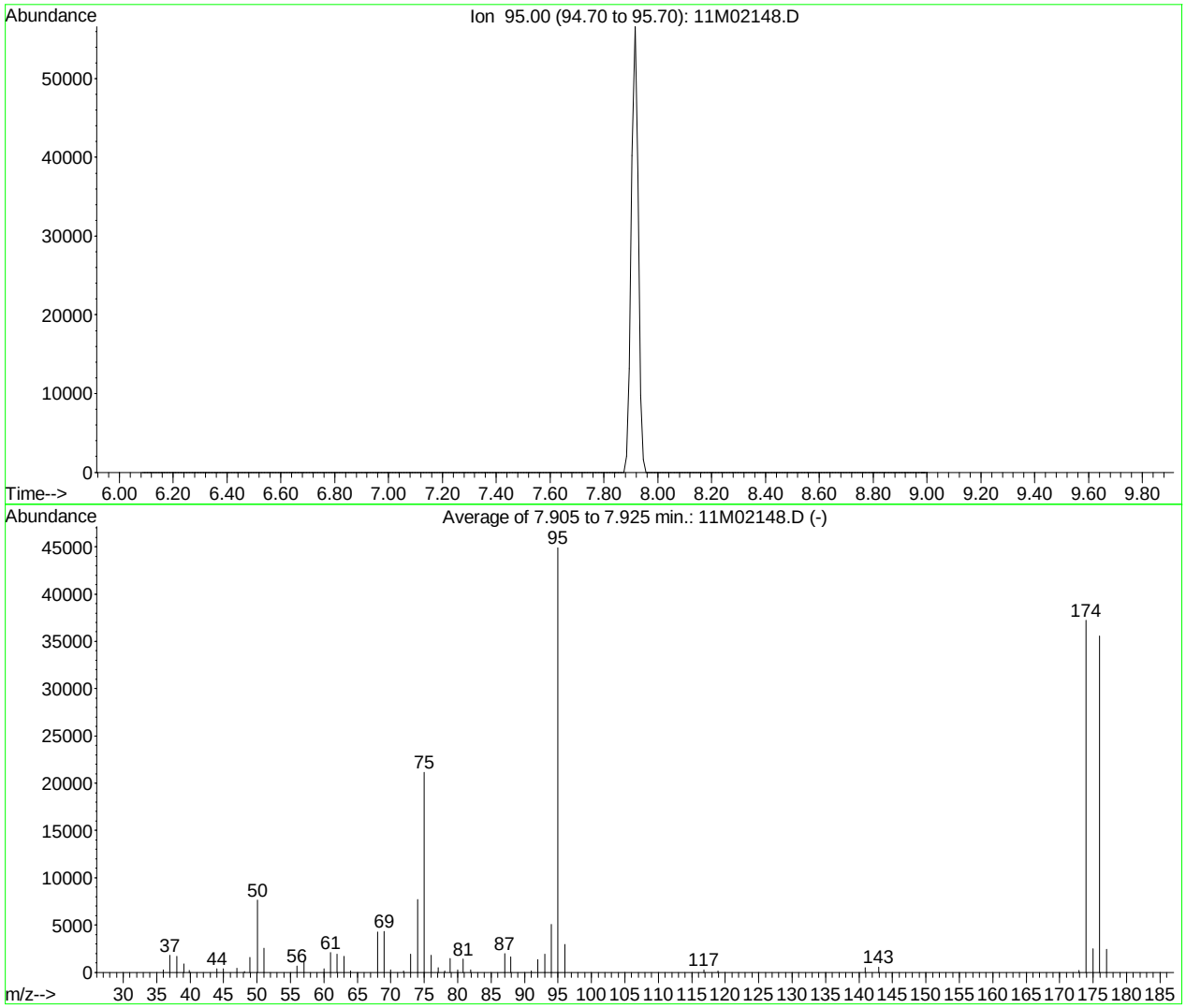

AutoFind: Scans 177, 178, 179; Background Corrected with Scan 172

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.0	7655	PASS
75	95	30	60	47.0	21128	PASS
95	95	100	100	100.0	44912	PASS
96	95	5	9	6.5	2936	PASS
173	174	0.00	2	0.5	194	PASS
174	95	50	100	82.9	37234	PASS
175	174	5	9	6.7	2479	PASS
176	174	95	101	95.5	35560	PASS
177	176	5	9	6.8	2430	PASS

11M02148.D BFB.M Mon Jun 30 12:09:38 2014

BFB

```
Data File : C:\MSDCHEM\1\DATA\072914\11M02773.D          Vial: 1
Acq On    : 29 Jul 2014  14:51                        Operator: ADC/FJB
Sample    : WG486190-01 BFB 50ng 8260                 Inst    : hpms11
Misc      : 1,1 STD65391                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
```

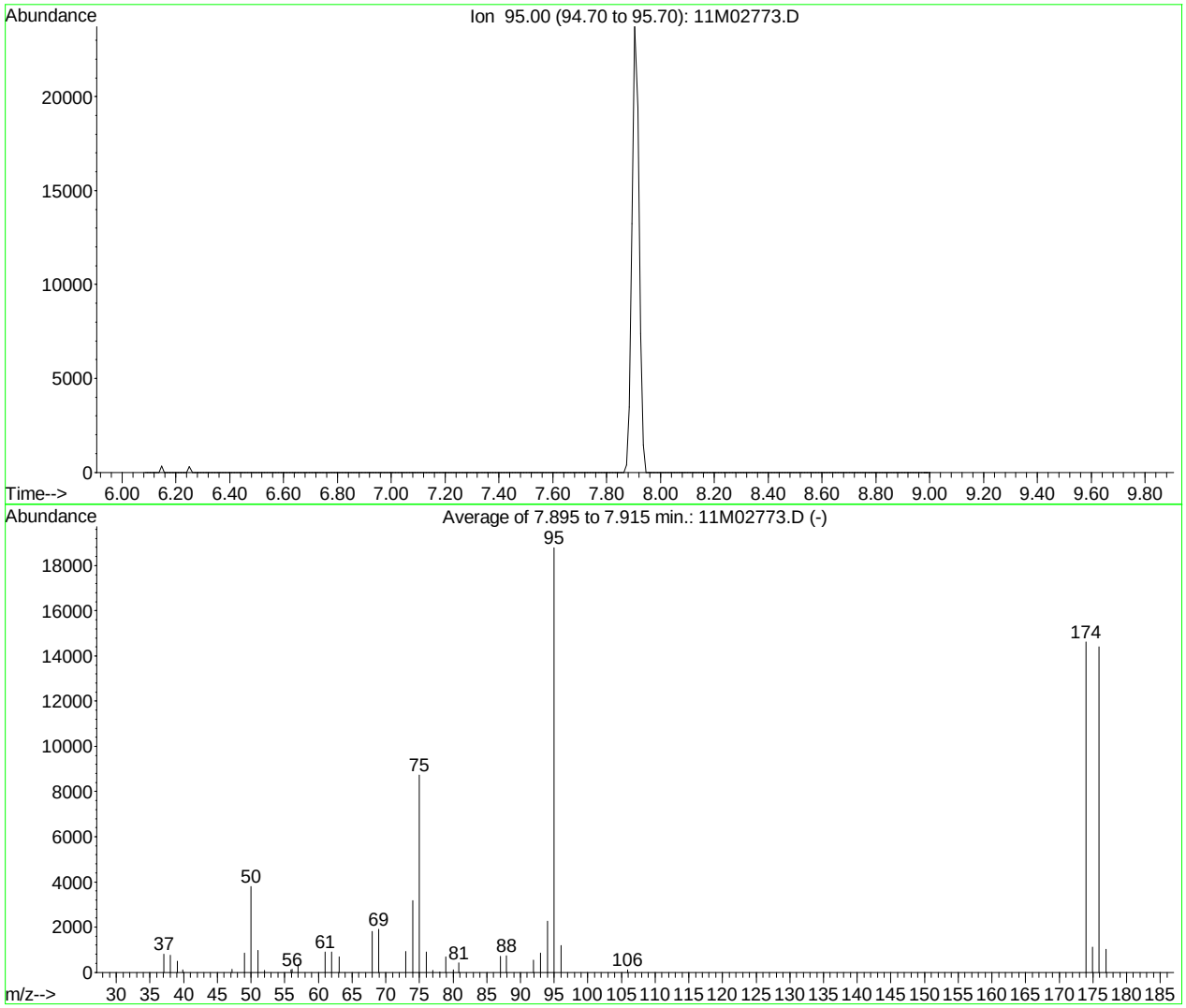

AutoFind: Scans 176, 177, 178; Background Corrected with Scan 171

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	3797	PASS
75	95	30	60	46.4	8718	PASS
95	95	100	100	100.0	18793	PASS
96	95	5	9	6.3	1186	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	77.9	14632	PASS
175	174	5	9	7.7	1124	PASS
176	174	95	101	98.4	14396	PASS
177	176	5	9	7.0	1009	PASS

11M02773.D 8260WTR.M Tue Jul 29 15:43:34 2014

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965026.D Vial: 3
Acq On    : 30 Jul 2014  10:53                        Operator: ADC
Sample    : WG486302-01 50ng BFB STD 8260             Inst    : HPMS9
Misc      : 1,1 STD65391                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624 SOP: OVL MSV01 WATER 06/26/14  HPMS9
```

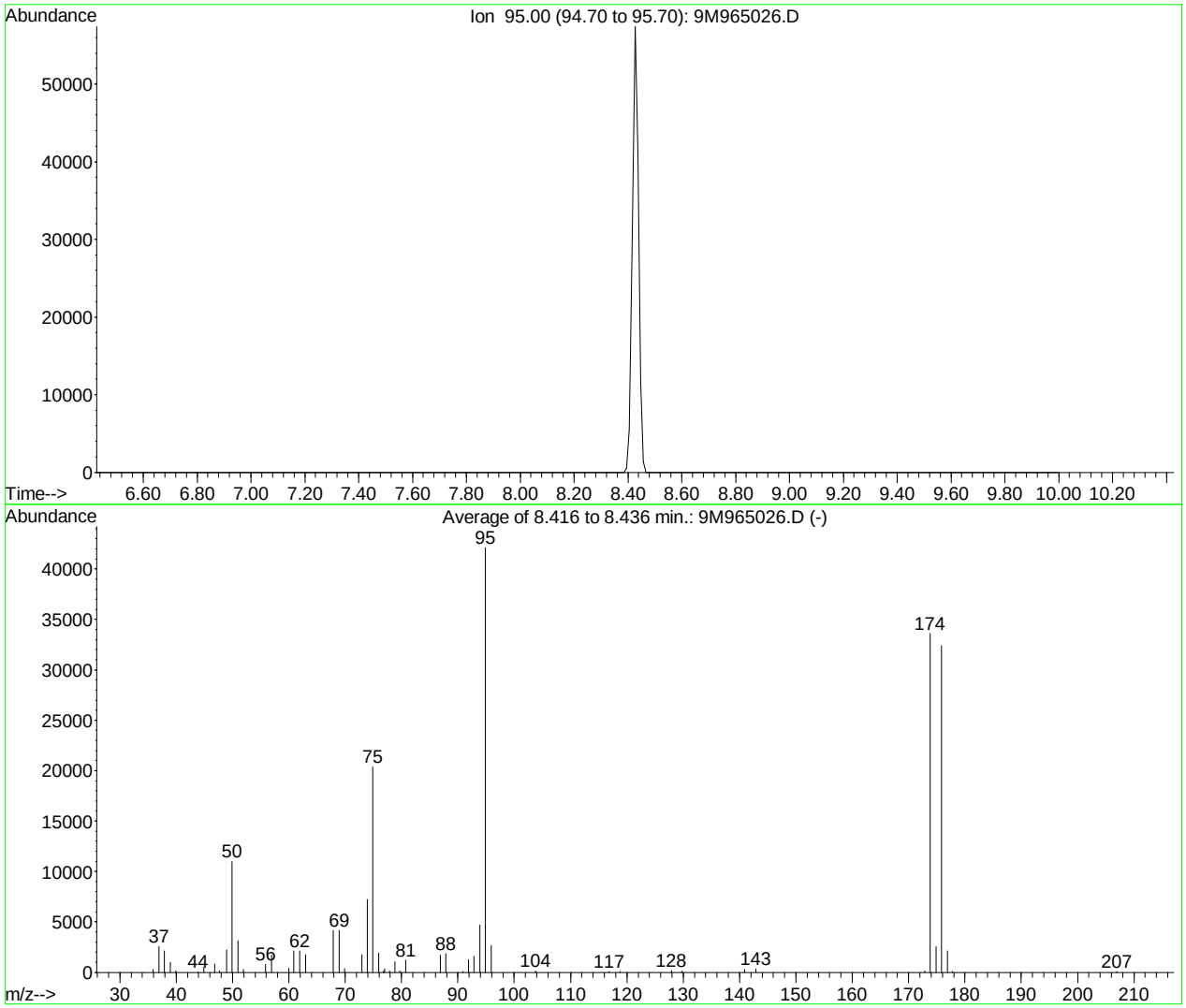

AutoFind: Scans 322, 323, 324; Background Corrected with Scan 317

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	26.1	11004	PASS
75	95	30	60	48.4	20396	PASS
95	95	100	100	100.0	42122	PASS
96	95	5	9	6.4	2683	PASS
173	174	0.00	2	0.5	153	PASS
174	95	50	100	79.8	33606	PASS
175	174	5	9	7.5	2536	PASS
176	174	95	101	96.3	32372	PASS
177	176	5	9	6.5	2114	PASS

9M965026.D 8260WTR.M Wed Jul 30 14:44:46 2014

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\080114\9M965074.D Vial: 2
Acq On    :  1 Aug 2014  15:36                        Operator: ADC
Sample    : WG486694-01 50ng BFB STD 8260             Inst    : HPMS9
Misc      : 1,1 STD65391                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624 SOP: OVL MSV01 WATER 06/26/14  HPMS9
```

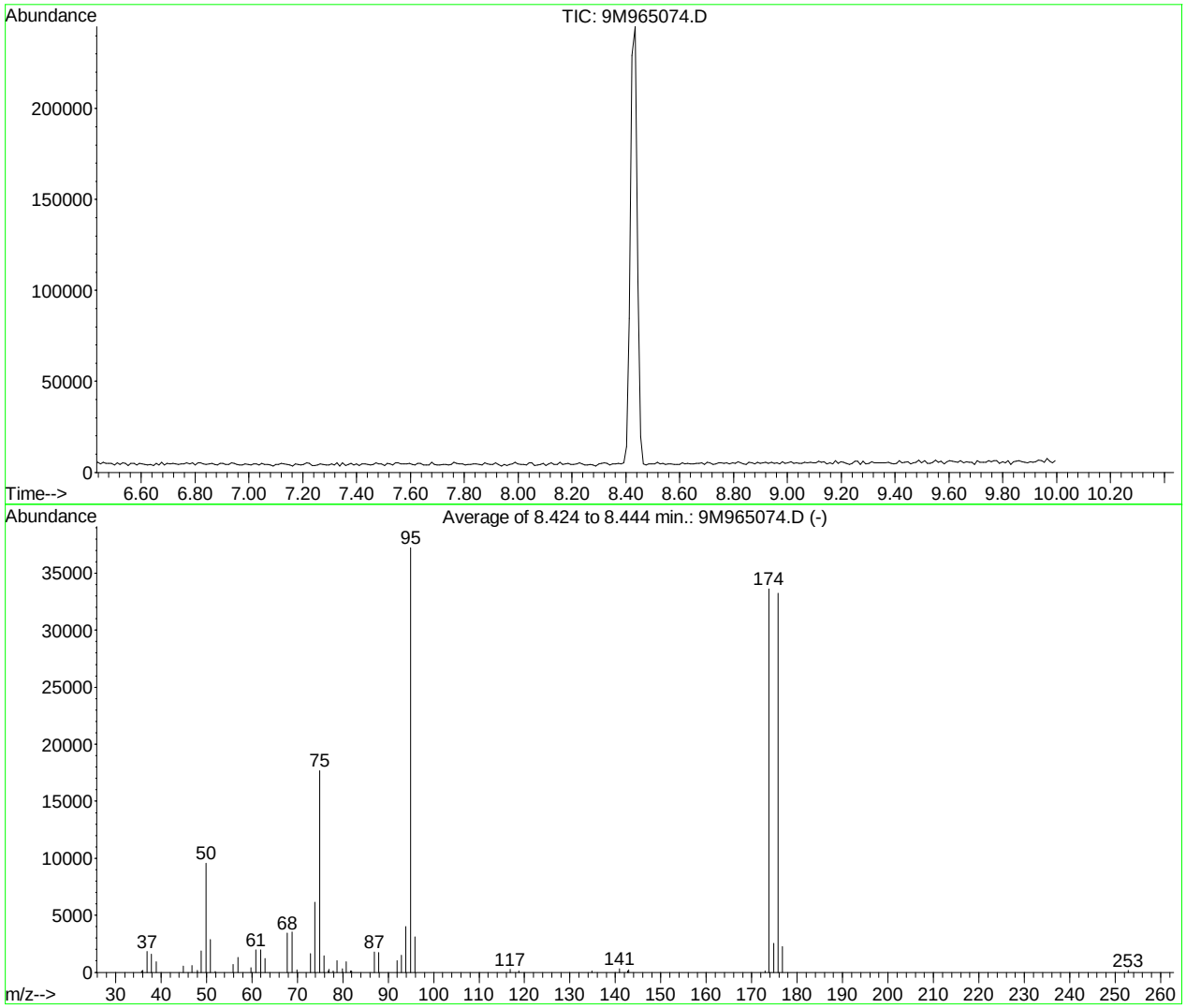

AutoFind: Scans 323, 324, 325; Background Corrected with Scan 318

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.7	9564	PASS
75	95	30	60	47.5	17676	PASS
95	95	100	100	100.0	37240	PASS
96	95	5	9	8.4	3127	PASS
173	174	0.00	2	0.3	104	PASS
174	95	50	100	90.2	33600	PASS
175	174	5	9	7.6	2547	PASS
176	174	95	101	99.0	33248	PASS
177	176	5	9	6.7	2242	PASS

9M965074.D 8260WTR.M Mon Aug 04 08:44:16 2014

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02776.D Vial: 4
Acq On : 29 Jul 2014 16:58 Operator: ADC/FJB
Sample : WG486191-01 VBLK 0726 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:09:32 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	861268	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	624105	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	271024	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	251282	23.3622 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.44%		
43) 1,2-Dichloroethane-d4	10.27	65	238389	22.7120 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.84%		
57) Toluene-d8	12.51	98	902632	24.6863 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.76%		
78) p-Bromofluorobenzene	15.68	95	309926	26.4492 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.80%		
Target Compounds					Qvalue
13) Acetone	6.39	43	1001	0.5756 ug/L #	46

(#) = qualifier out of range (m) = manual integration
11M02776.D 8260WTR.M Wed Jul 30 09:09:33 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02776.D Vial: 4
Acq On : 29 Jul 2014 16:58 Operator: ADC/FJB
Sample : WG486191-01 VBLK 0726 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:09 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

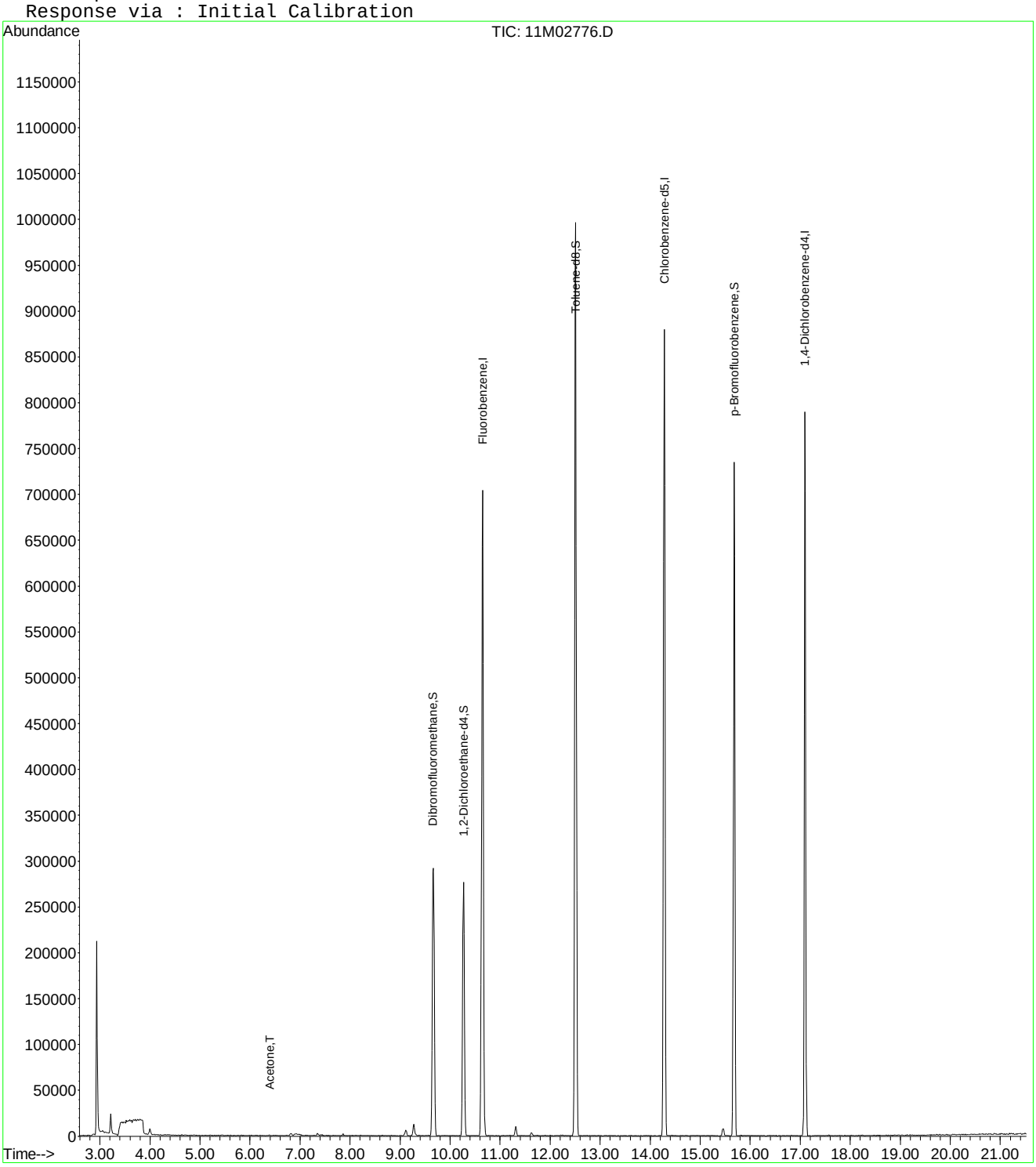

11M02776.D 8260WTR.M Wed Jul 30 09:09:33 2014 Page 2

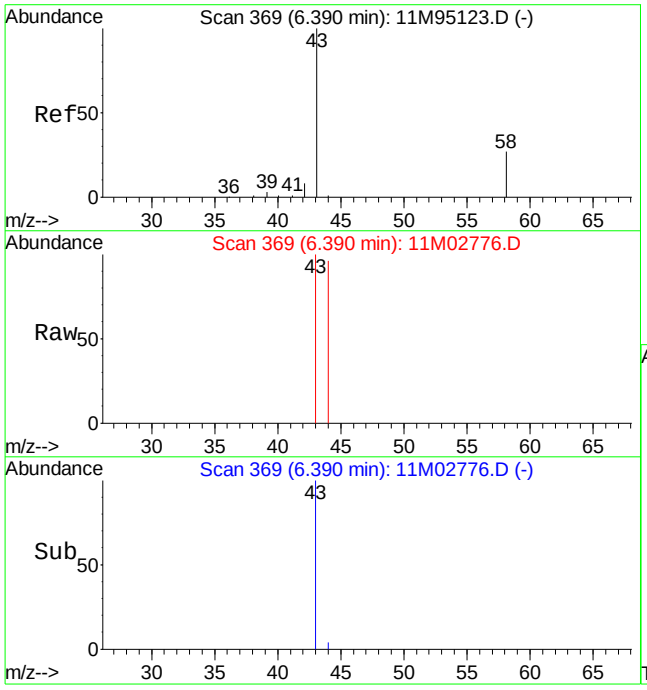

#13
Acetone
Concen: 0.58 ug/L
RT: 6.39 min Scan# 369
Delta R.T. 0.01 min
Lab File: 11M02776.D
Acq: 29 Jul 2014 16:58

Tgt Ion: 43 Resp: 1001

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.2	40.0#

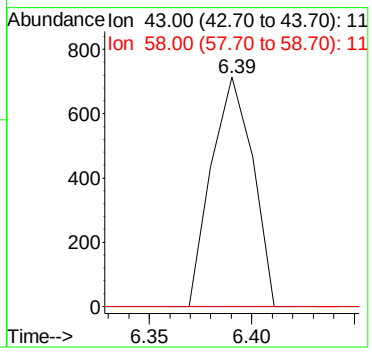

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965031.D Vial: 5
Acq On : 30 Jul 2014 13:16 Operator: ADC
Sample : WG486305-01 VBLK0730 BLANK STD 8260 Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 09:41:43 2014 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.09	96	704725	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	483881	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.98	152	229482	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.04	111	165879	22.1947 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 88.76%		
43) 1,2-Dichloroethane-d4	10.68	65	219634	21.9727 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.88%		
58) Toluene-d8	13.06	98	605629	25.3334 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.32%		
79) p-Bromofluorobenzene	16.46	95	212764	25.6973 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.80%		

Target Compounds					Qvalue
47) Trichloroethene	11.59	130	1463	0.1709 ug/L	74
56) Dimethyl Disulfide	13.06	94	16220	1.2175 ug/L #	28

(#) = qualifier out of range (m) = manual integration
9M965031.D 8260WTR.M Thu Jul 31 09:41:46 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965031.D Vial: 5
Acq On : 30 Jul 2014 13:16 Operator: ADC
Sample : WG486305-01 VBLK0730 BLANK STD 8260 Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 9:41 2014 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

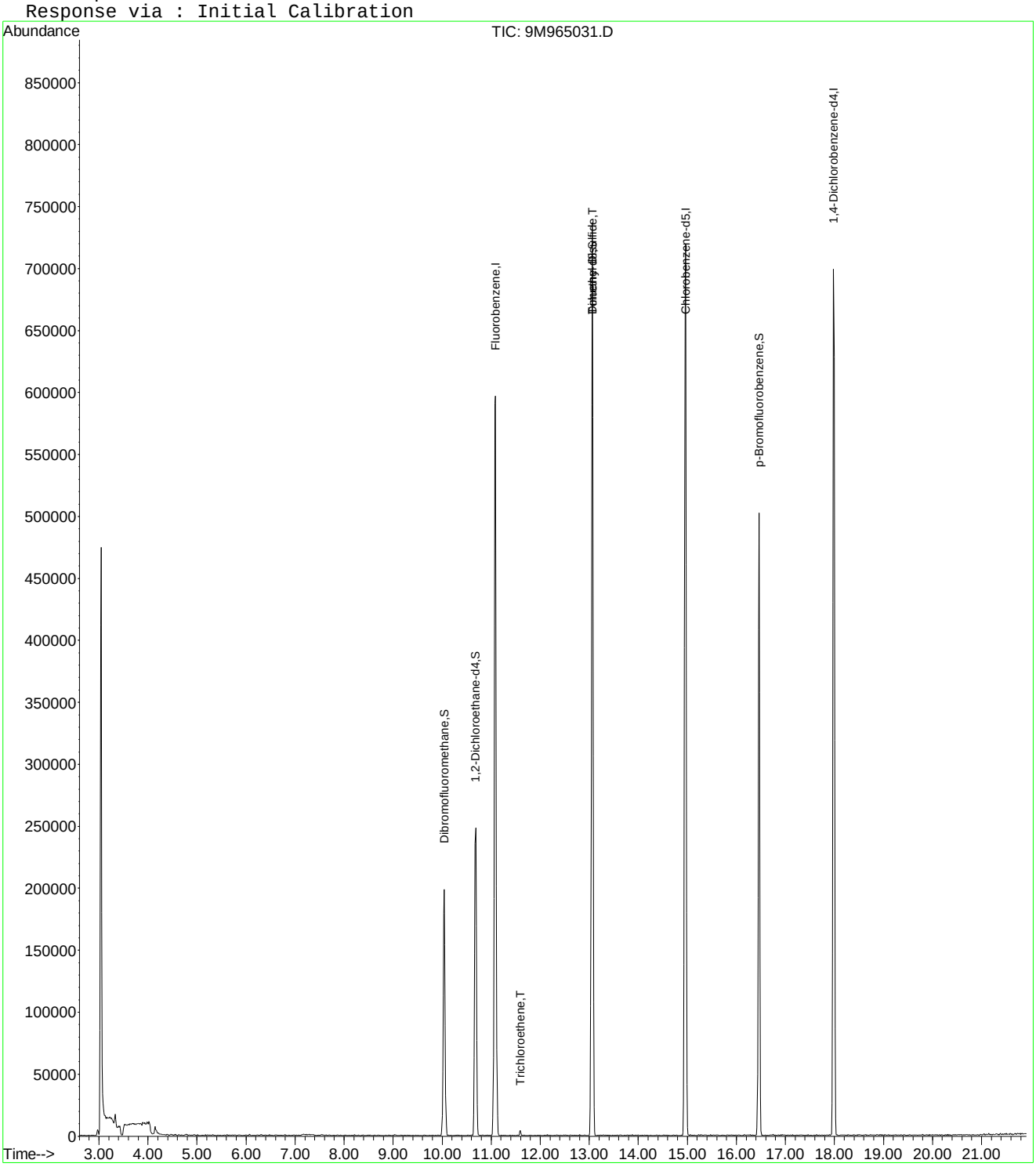

9M965031.D 8260WTR.M Thu Jul 31 09:41:47 2014 Page 2

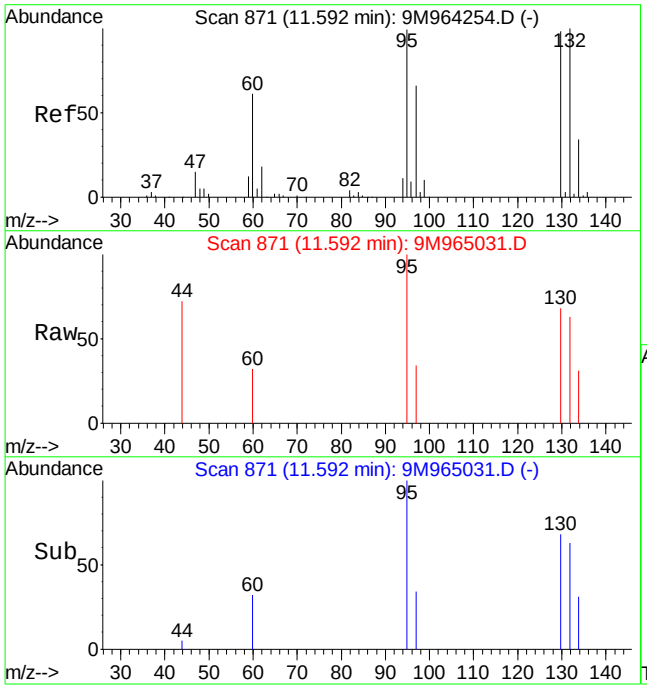

#47
Trichloroethene
Concen: 0.17 ug/L
RT: 11.59 min Scan# 871
Delta R.T. 0.00 min
Lab File: 9M965031.D
Acq: 30 Jul 2014 13:16

Tgt Ion:130 Resp: 1463

Ion	Ratio	Lower	Upper
130	100		
132	122.4	61.8	144.2
95	134.0	60.8	141.8

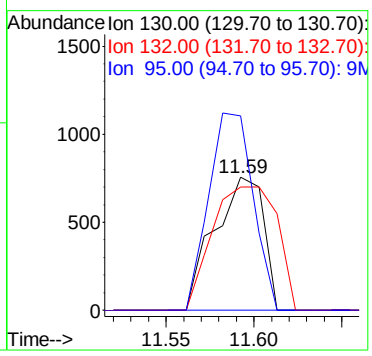

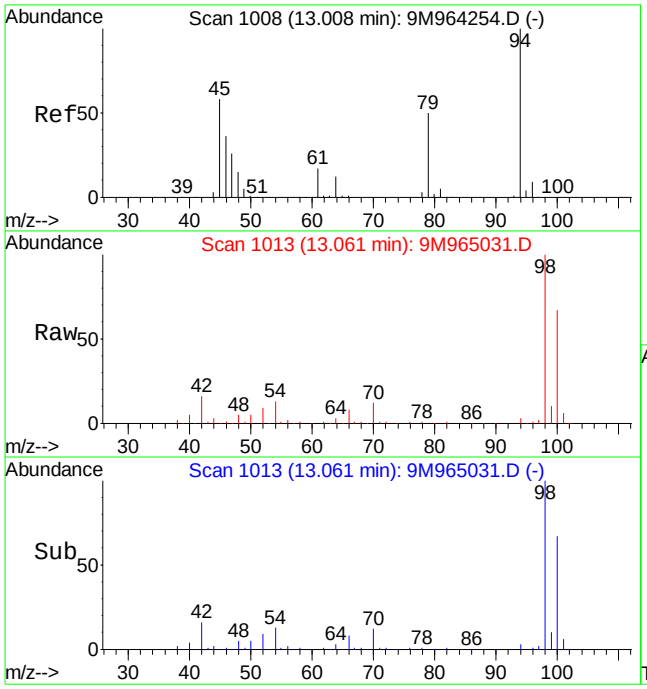

#56
Dimethyl Disulfide
Concen: 1.22 ug/L
RT: 13.06 min Scan# 1013
Delta R.T. 0.05 min
Lab File: 9M965031.D
Acq: 30 Jul 2014 13:16

Tgt Ion: 94 Resp: 16220

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.8	69.6#

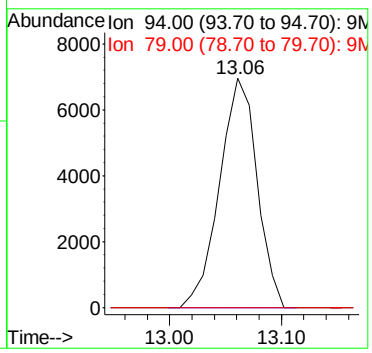

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965031.D Vial: 5
Acq On : 30 Jul 2014 13:16 Operator: ADC
Sample : WG486305-01 VBLK0730 BLANK STD 8260 Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 31 15:45:33 2014 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Wed Mar 26 09:30:59 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.09	96	704725	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.96	117	483881	25.00 ug/L	-0.04
13) 1,4-Dichlorobenzene-d4	17.98	152	229482	25.00 ug/L	-0.05

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
9M965031.D A9FOOWT.M Thu Jul 31 15:45:35 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965031.D Vial: 5
Acq On : 30 Jul 2014 13:16 Operator: ADC
Sample : WG486305-01 VBLK0730 BLANK STD 8260 Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 31 15:45 2014 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\A9FOOWT.M (RTE Integrator)
Title : FOO/APPIX WATER 08/19/2013 SOP: OVL MSV01
Last Update : Wed Mar 26 09:30:59 2014
Response via : Initial Calibration

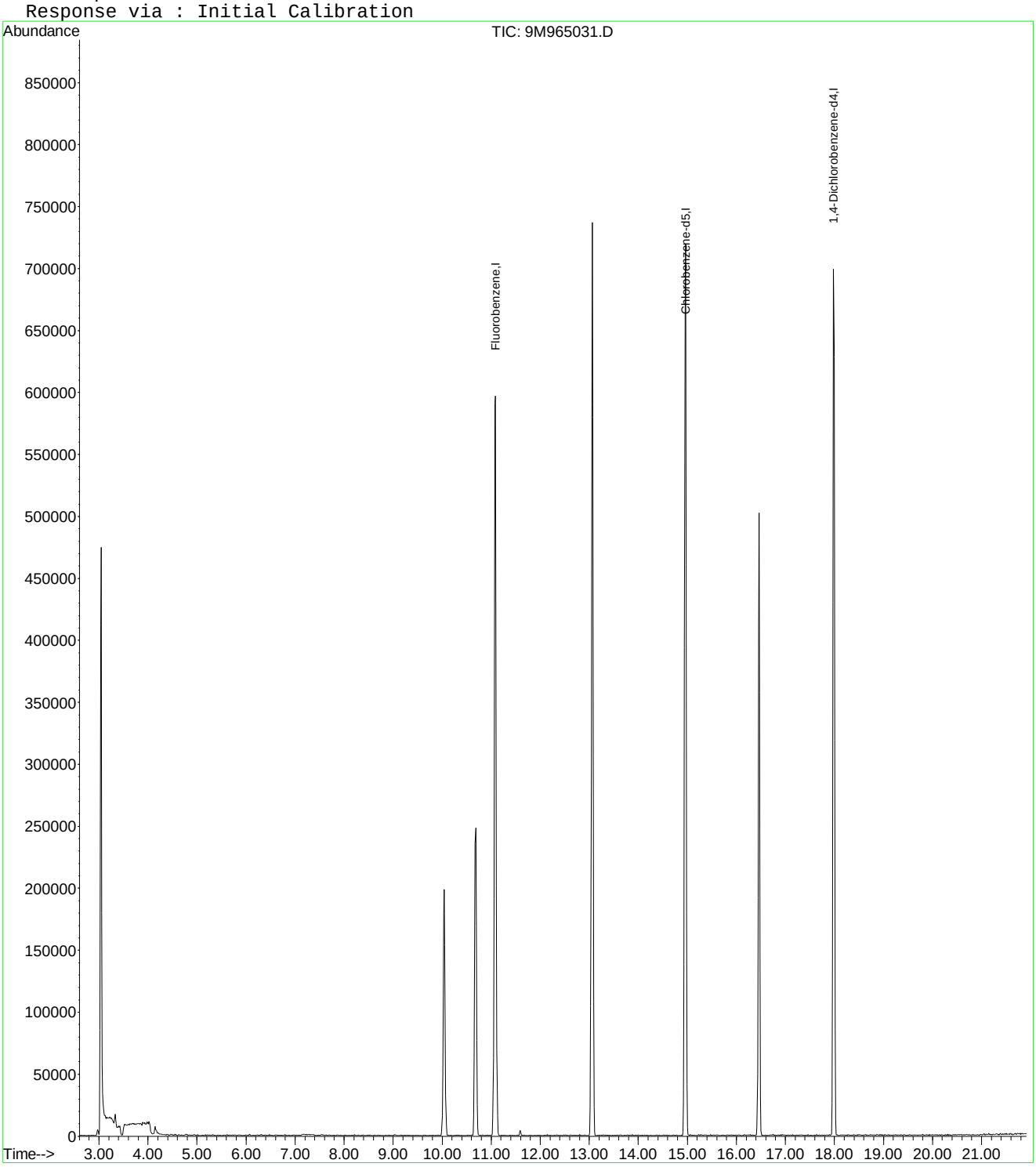

9M965031.D A9FOOWT.M Thu Jul 31 15:45:37 2014 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965031.D Vial: 5
Acq On : 30 Jul 2014 13:16 Operator: ADC
Sample : WG486305-01 VBLK0730 BLANK STD 8260 Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 100 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.331	69	72	77	rVB3	10967	22178	1.28%	0.251%
2	3.528	85	91	95	rBV3	8718	39756	2.30%	0.450%
3	3.890	125	126	129	rBV3	2616	5018	0.29%	0.057%
4	4.148	147	151	156	rBV2	5871	11673	0.68%	0.132%
5	4.386	171	174	178	rVB	806	1782	0.10%	0.020%
6	4.469	180	182	187	rVV	898	1768	0.10%	0.020%
7	4.624	194	197	201	rVB	615	1001	0.06%	0.011%
8	4.779	207	212	216	rBV	800	1825	0.11%	0.021%
9	4.944	224	228	231	rVB	671	1832	0.11%	0.021%
10	5.017	231	235	238	rBV	672	1686	0.10%	0.019%
11	5.099	238	243	248	rBV	542	1236	0.07%	0.014%
12	5.316	262	264	270	rVB	696	1477	0.09%	0.017%
13	5.420	270	274	278	rBV	526	1129	0.07%	0.013%
14	5.616	290	293	296	rVB	629	872	0.05%	0.010%
15	5.782	305	309	313	rVB	456	1271	0.07%	0.014%
16	5.844	313	315	320	rBV	319	1033	0.06%	0.012%
17	5.988	325	329	335	rBV	585	1806	0.10%	0.020%
18	6.071	335	337	342	rVB	1328	1634	0.09%	0.018%
19	6.319	355	361	364	rBV	482	1233	0.07%	0.014%
20	6.402	366	369	373	rVB	398	883	0.05%	0.010%
21	6.795	404	407	412	rBV	644	1151	0.07%	0.013%
22	6.981	422	425	428	rBV	613	1283	0.07%	0.015%
23	7.178	438	444	448	rBV2	1197	5132	0.30%	0.058%
24	7.457	470	471	476	rBV	519	997	0.06%	0.011%
25	7.539	476	479	482	rVV	722	1622	0.09%	0.018%
26	7.643	486	489	492	rVV	423	981	0.06%	0.011%
27	7.684	492	493	500	rVB	432	1053	0.06%	0.012%
28	7.870	508	511	514	rVV	511	928	0.05%	0.011%
29	8.211	540	544	549	rVB	614	1323	0.08%	0.015%
30	8.294	549	552	556	rVB	536	1298	0.08%	0.015%
31	8.501	566	572	573	rBV	535	984	0.06%	0.011%
32	8.615	581	583	587	rVB	561	1197	0.07%	0.014%
33	8.687	587	590	592	rBV	440	908	0.05%	0.010%
34	9.028	621	623	631	rVB	575	1320	0.08%	0.015%
35	9.183	637	638	643	rVB	365	855	0.05%	0.010%
36	9.287	643	648	651	rBV	438	1328	0.08%	0.015%
37	9.504	668	669	674	rBV	698	1369	0.08%	0.015%
38	9.659	679	684	686	rBV	518	1076	0.06%	0.012%
39	9.814	694	699	702	rBV	413	1391	0.08%	0.016%
40	9.917	705	709	712	rBV	464	1026	0.06%	0.012%
41	10.042	712	721	728	rVB	198570	525010	30.41%	5.944%
42	10.683	774	783	791	rVV	248401	616007	35.68%	6.974%

43	10.838	795	798	801	rVB	438	962	0.06%	0.011%
44	10.889	801	803	809	rBV	319	1293	0.07%	0.015%
45	11.086	812	822	832	rBV	596841	1602037	92.80%	18.137%
46	11.437	854	856	863	rVB	506	1058	0.06%	0.012%
47	11.592	863	871	877	rBV4	3988	9622	0.56%	0.109%
48	11.675	877	879	882	rBV	592	924	0.05%	0.010%
49	12.471	953	956	962	rVB	506	1894	0.11%	0.021%
50	12.616	968	970	973	rBV	500	898	0.05%	0.010%
51	12.709	976	979	984	rVB	641	1595	0.09%	0.018%
52	12.802	984	988	995	rBV	959	2362	0.14%	0.027%
53	13.061	1006	1013	1021	rVB	736815	1726282	100.00%	19.544%
54	13.640	1065	1069	1072	rBV	512	985	0.06%	0.011%
55	13.877	1089	1092	1095	rBV	652	967	0.06%	0.011%
56	14.250	1126	1128	1133	rVB	507	914	0.05%	0.010%
57	14.363	1133	1139	1144	rBV	382	1564	0.09%	0.018%
58	14.715	1167	1173	1175	rBV	409	1049	0.06%	0.012%
59	14.963	1187	1197	1205	rBV	719658	1650126	95.59%	18.682%
60	15.056	1205	1206	1211	rVB	695	1008	0.06%	0.011%
61	15.232	1218	1223	1226	rVB	603	905	0.05%	0.010%
62	15.273	1226	1227	1231	rBV	786	1012	0.06%	0.011%
63	15.356	1231	1235	1241	rBV	316	1283	0.07%	0.015%
64	15.532	1250	1252	1256	rBV	405	1063	0.06%	0.012%
65	15.811	1276	1279	1282	rBV	458	870	0.05%	0.010%
66	15.894	1285	1287	1290	rBV	493	1021	0.06%	0.012%
67	16.049	1299	1302	1307	rVB	457	1054	0.06%	0.012%
68	16.462	1333	1342	1351	rBV	502469	1052603	60.98%	11.917%
69	16.597	1351	1355	1358	rBV	366	859	0.05%	0.010%
70	16.752	1367	1370	1372	rVB	888	912	0.05%	0.010%
71	17.021	1395	1396	1401	rBV	451	1264	0.07%	0.014%
72	17.641	1452	1456	1459	rBV	721	1387	0.08%	0.016%
73	17.734	1463	1465	1468	rBV	456	929	0.05%	0.011%
74	17.982	1482	1489	1499	rVB	698838	1458538	84.49%	16.513%
75	18.272	1516	1517	1522	rBV	500	930	0.05%	0.011%
76	18.510	1536	1540	1542	rBV	408	901	0.05%	0.010%
77	18.592	1547	1548	1551	rBV	472	904	0.05%	0.010%
78	18.737	1558	1562	1566	rBV	368	978	0.06%	0.011%
79	18.871	1572	1575	1578	rBV	425	845	0.05%	0.010%
80	19.357	1620	1622	1625	rBV	519	1026	0.06%	0.012%
81	19.419	1627	1628	1633	rVB	605	1149	0.07%	0.013%
82	19.533	1636	1639	1641	rBV	772	1158	0.07%	0.013%
83	19.802	1662	1665	1668	rVB	845	1122	0.06%	0.013%
84	19.885	1668	1673	1674	rBV	409	994	0.06%	0.011%
85	19.947	1676	1679	1681	rBV	676	893	0.05%	0.010%
86	20.319	1711	1715	1716	rBV	951	1186	0.07%	0.013%
87	20.422	1722	1725	1727	rBV	635	972	0.06%	0.011%
88	20.702	1748	1752	1755	rBV	507	1336	0.08%	0.015%
89	20.815	1761	1763	1767	rBV	551	1032	0.06%	0.012%
90	20.919	1771	1773	1776	rVB	695	1104	0.06%	0.012%
91	20.970	1776	1778	1783	rBV	846	1837	0.11%	0.021%
92	21.053	1783	1786	1789	rBV	1000	1712	0.10%	0.019%
93	21.105	1789	1791	1793	rBV	674	1358	0.08%	0.015%
94	21.229	1802	1803	1807	rBV	660	1375	0.08%	0.016%
95	21.301	1807	1810	1814	rVB2	1157	2791	0.16%	0.032%
96	21.384	1816	1818	1820	rBV	1317	1396	0.08%	0.016%
97	21.436	1820	1823	1824	rBV2	991	1168	0.07%	0.013%
98	21.580	1836	1837	1840	rBV	773	905	0.05%	0.010%
99	21.684	1843	1847	1850	rBV2	1311	3536	0.20%	0.040%
100	21.735	1850	1852	1854	rBV2	980	1639	0.09%	0.019%

Sum of corrected areas: 8832819

9M965031.D 8260WTR.M Thu Jul 31 15:52:36 2014 Page 2

LSC Report - Integrated Chromatogram

File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965031.D
Operator : ADC
Acquired : 30 Jul 2014 13:16 using AcqMethod 8260WTR
Instrument : HPMS9
Sample Name: WG486305-01 VBLK0730 BLANK STD 8260
Misc Info : 1,1
Vial Number: 5
Quant File :8260WTR.RES (RTE Integrator)

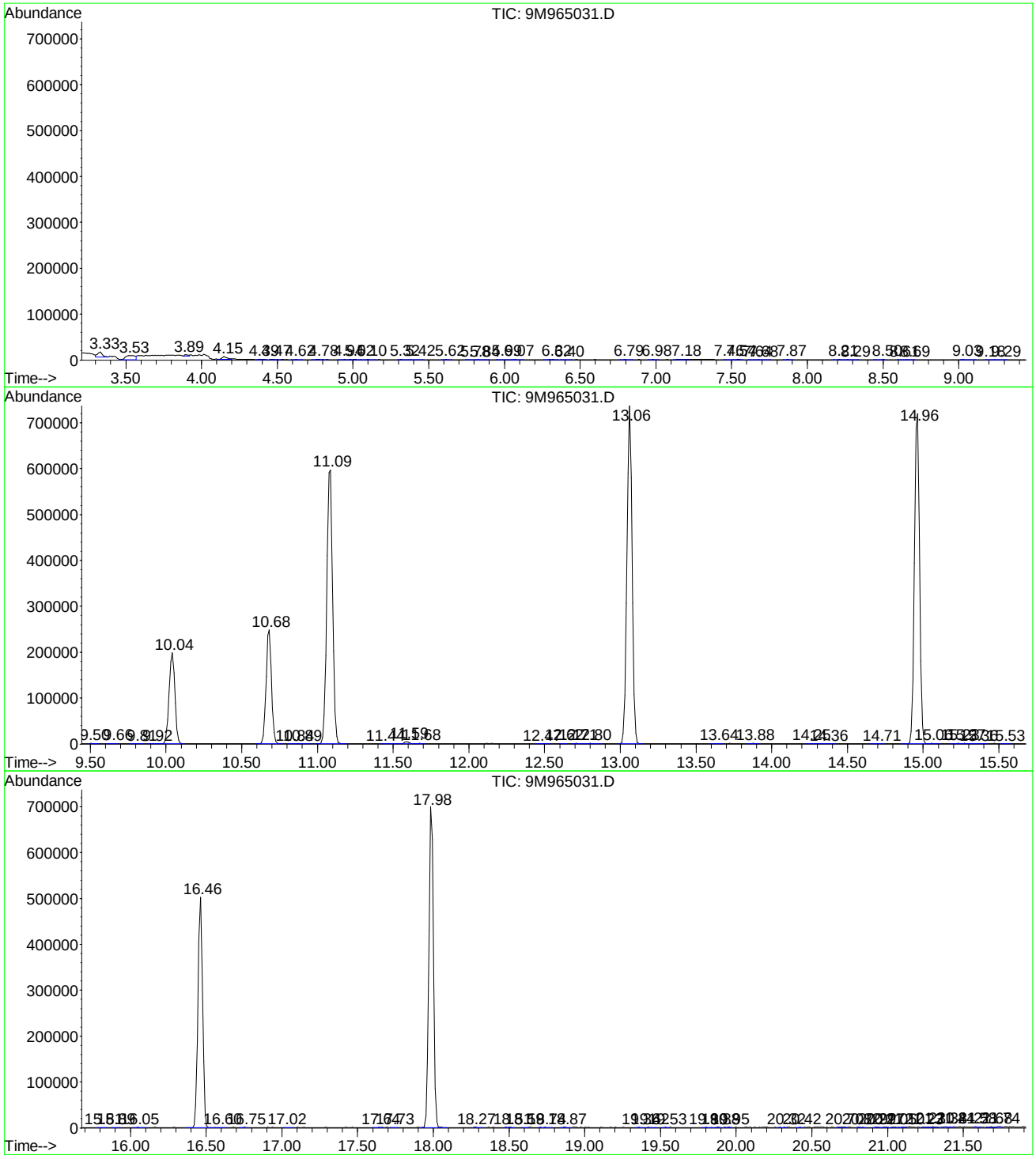

Tentatively Identified Compound (LSC) summary

Operator ID: ADC Date Acquired: 30 Jul 2014 13:16
Data File: K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965031.D
Name: WG486305-01 VBLK0730 BLANK STD 8260
Misc: 1,1
Method: C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title: 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Library Searched: C:\DATABASE\NIST02.L

						Internal Standard			
TIC	Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\080114\9M965077.D Vial: 3
Acq On : 1 Aug 2014 17:02 Operator: ADC
Sample : WG486696-01 VBLK0801 BLANK STD 8260 Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 04 08:44:51 2014 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	777861	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	542092	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	264848	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.04	111	184285	22.3391 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.36%		
43) 1,2-Dichloroethane-d4	10.68	65	228108	20.6748 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 82.68%		
58) Toluene-d8	13.06	98	675965	25.2393 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.96%		
79) p-Bromofluorobenzene	16.46	95	238291	24.9373 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.76%		

Target Compounds					Qvalue
5) 1,3-Butadiene	4.19	54	1244	Below Cal	# 43
13) Acetone	6.61	43	1967	0.6009 ug/L	# 39
56) Dimethyl Disulfide	13.06	94	17899	1.2172 ug/L	# 28

(#) = qualifier out of range (m) = manual integration
9M965077.D 8260WTR.M Mon Aug 04 09:18:15 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\080114\9M965077.D Vial: 3
Acq On : 1 Aug 2014 17:02 Operator: ADC
Sample : WG486696-01 VBLK0801 BLANK STD 8260 Inst : HPMS9
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 4 8:44 2014 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

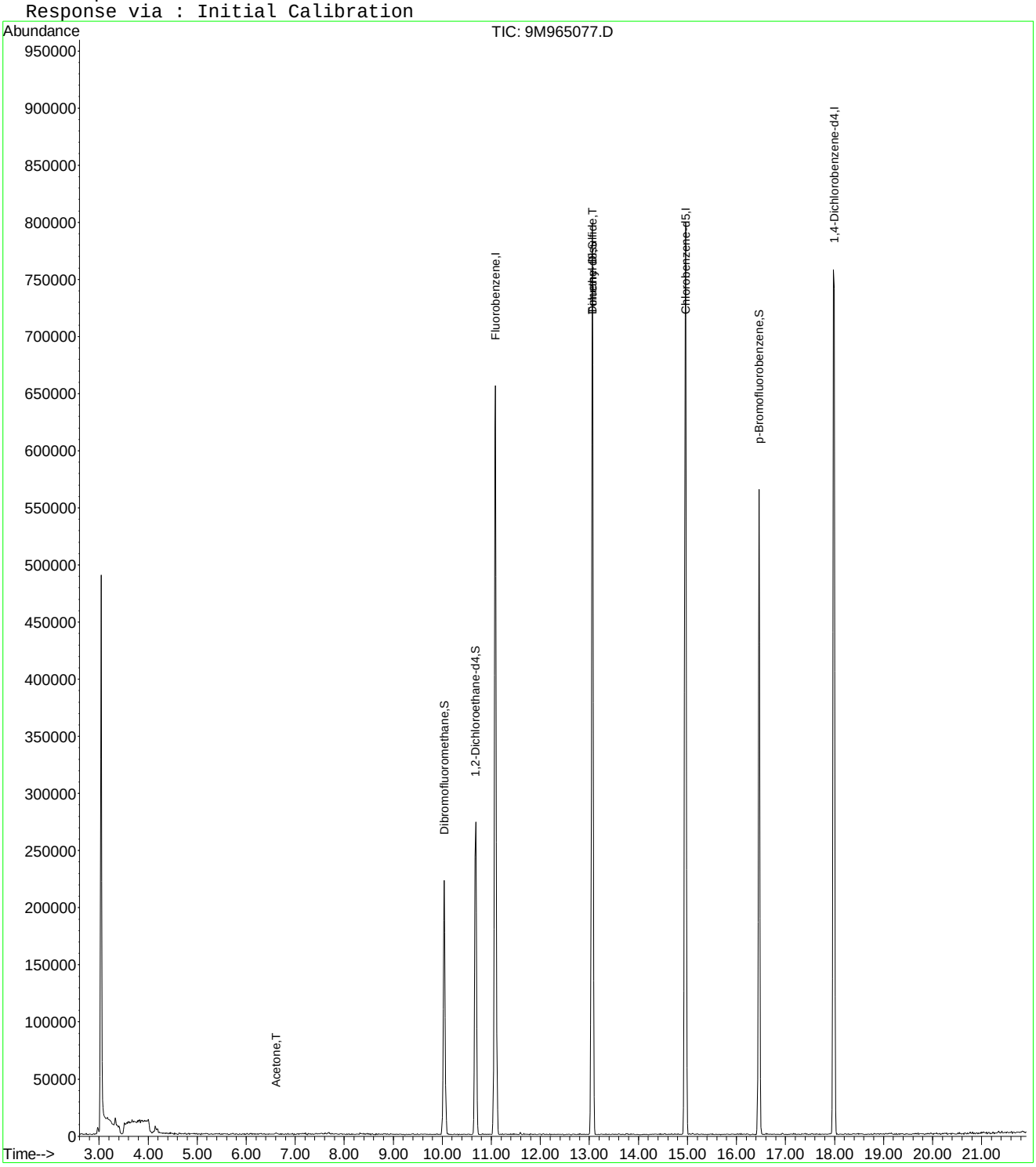

9M965077.D 8260WTR.M Mon Aug 04 09:18:16 2014 Page 2

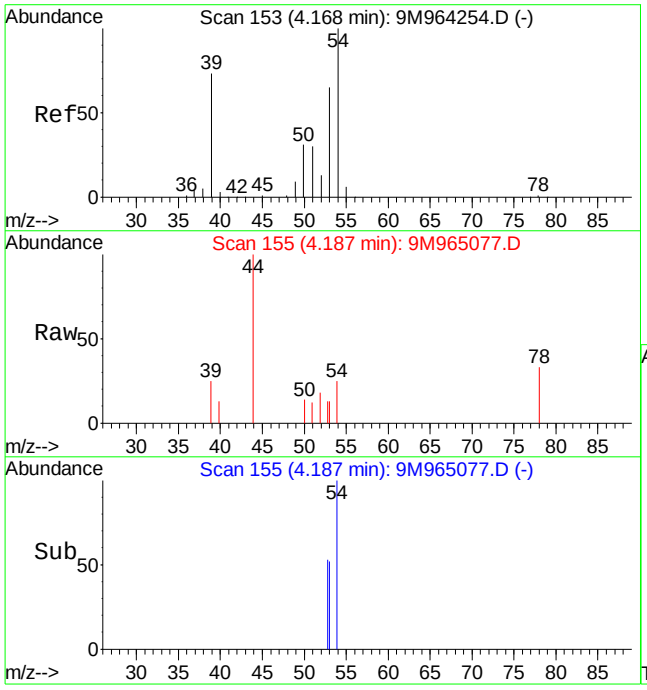

#5
1,3-Butadiene
Concen: Below Cal
RT: 4.19 min Scan# 155
Delta R.T. 0.02 min
Lab File: 9M965077.D
Acq: 1 Aug 2014 17:02

Tgt Ion: 54 Resp: 1244

Ion	Ratio	Lower	Upper
54	100		
39	160.6	43.7	101.9#
53	69.5	39.6	92.4

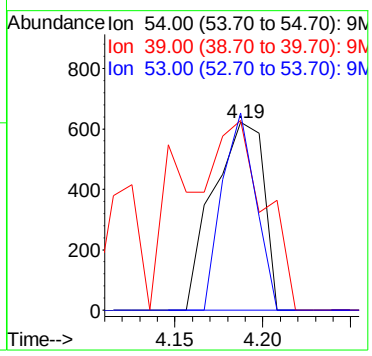

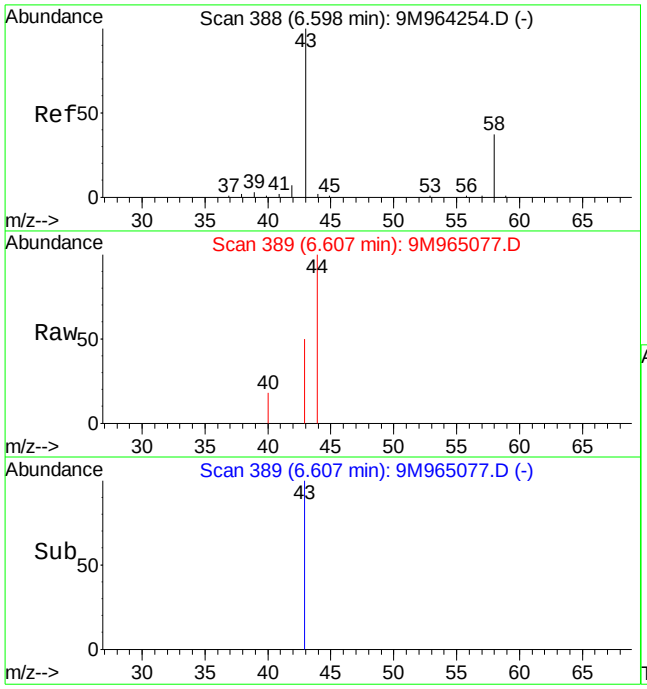

#13
Acetone
Concen: 0.60 ug/L
RT: 6.61 min Scan# 389
Delta R.T. 0.01 min
Lab File: 9M965077.D
Acq: 1 Aug 2014 17:02

Tgt Ion: 43 Resp: 1967

Ion	Ratio	Lower	Upper
43	100		
58	0.0	21.4	49.8#

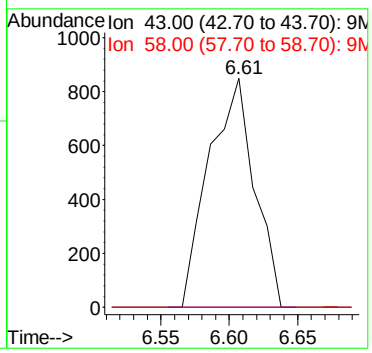

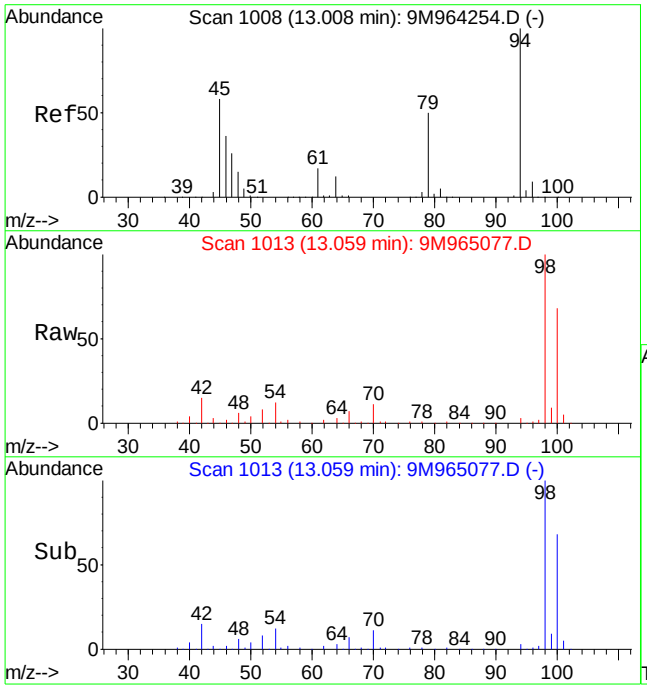

#56
Dimethyl Disulfide
Concen: 1.22 ug/L
RT: 13.06 min Scan# 1013
Delta R.T. 0.05 min
Lab File: 9M965077.D
Acq: 1 Aug 2014 17:02

Tgt Ion: 94 Resp: 17899

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.8	69.6#

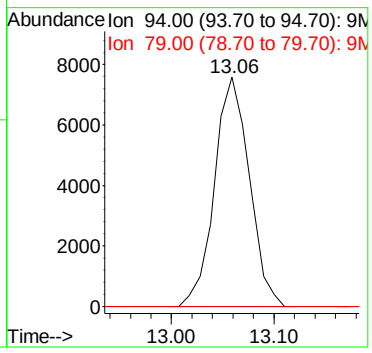

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02795.D Vial: 23
Acq On : 30 Jul 2014 3:04 Operator: ADC/FJB
Sample : WG486191-09 624-BLK Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 09:10:47 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	771943	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	575374	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	261375	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	227200	23.5675 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.28%		
43) 1,2-Dichloroethane-d4	10.27	65	237723	25.2693 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.08%		
57) Toluene-d8	12.51	98	793821	23.5491 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.20%		
78) p-Bromofluorobenzene	15.67	95	280056	24.7824 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.12%		
Target Compounds					Qvalue
3) Chloromethane	3.73	50	1897	0.1300 ug/L #	72

(#) = qualifier out of range (m) = manual integration
11M02795.D 8260WTR.M Wed Jul 30 09:10:48 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\072914\11M02795.D Vial: 23
Acq On : 30 Jul 2014 3:04 Operator: ADC/FJB
Sample : WG486191-09 624-BLK Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 9:10 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

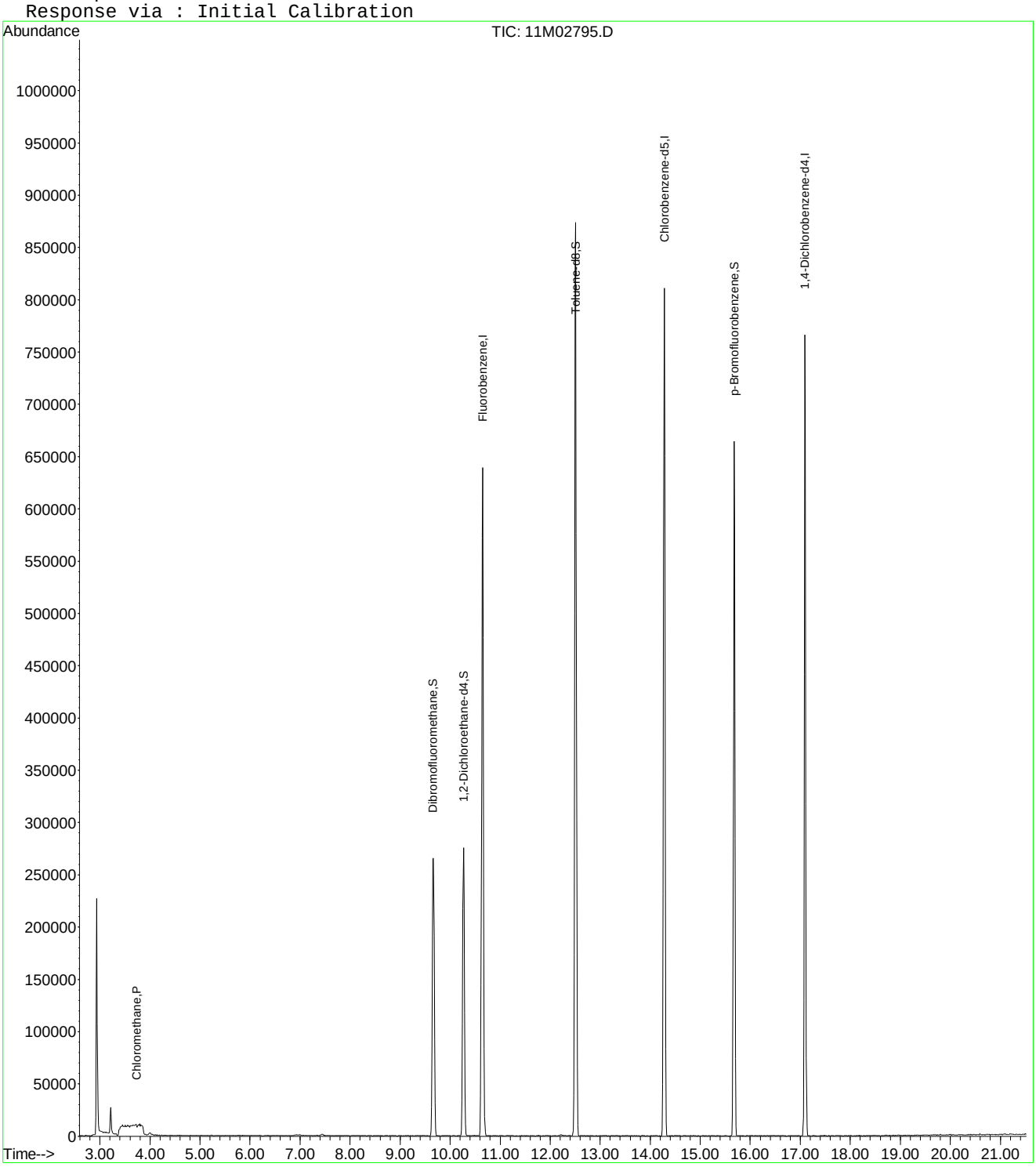

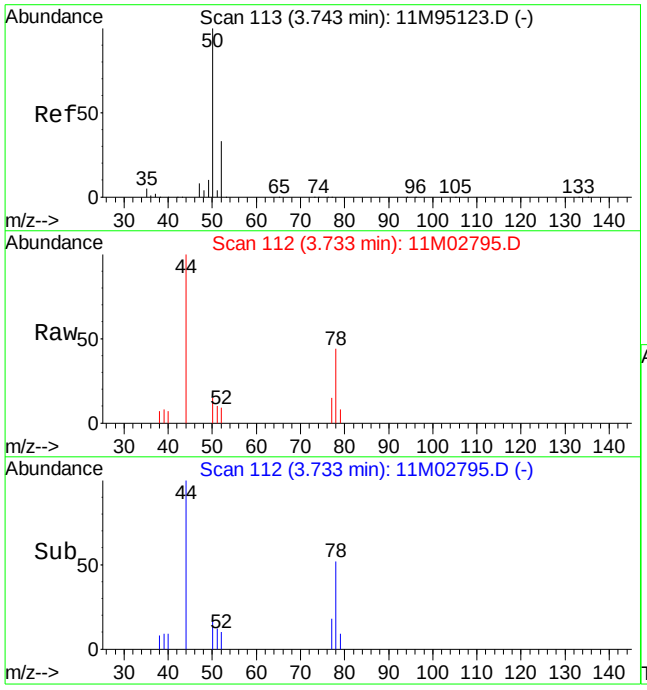

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.73 min Scan# 112
Delta R.T. -0.01 min
Lab File: 11M02795.D
Acq: 30 Jul 2014 3:04

Tgt Ion: 50 Resp: 1897

Ion	Ratio	Lower	Upper
50	100		
52	16.4	19.4	45.4#

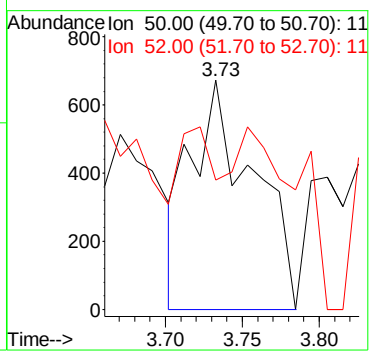

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965052.D Vial: 26
Acq On : 30 Jul 2014 23:32 Operator: ADC
Sample : WG486305-06 624-BLK Inst : HPMS9
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 09:43:48 2014 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.09	96	662007	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	457897	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	222148	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.04	111	154943	22.0692 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 88.28%		
43) 1,2-Dichloroethane-d4	10.68	65	204110	21.7373 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.96%		
58) Toluene-d8	13.06	98	559947	24.7517 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.00%		
79) p-Bromofluorobenzene	16.46	95	191600	23.9051 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.64%		
Target Compounds					Qvalue
13) Acetone	6.62	43	476	0.1709 ug/L #	39
47) Trichloroethene	11.59	130	2144	0.2666 ug/L	86
56) Dimethyl Disulfide	13.06	94	16052	1.2826 ug/L #	28

(#) = qualifier out of range (m) = manual integration
9M965052.D 8260WTR.M Thu Jul 31 09:43:50 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965052.D Vial: 26
Acq On : 30 Jul 2014 23:32 Operator: ADC
Sample : WG486305-06 624-BLK Inst : HPMS9
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 9:43 2014 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

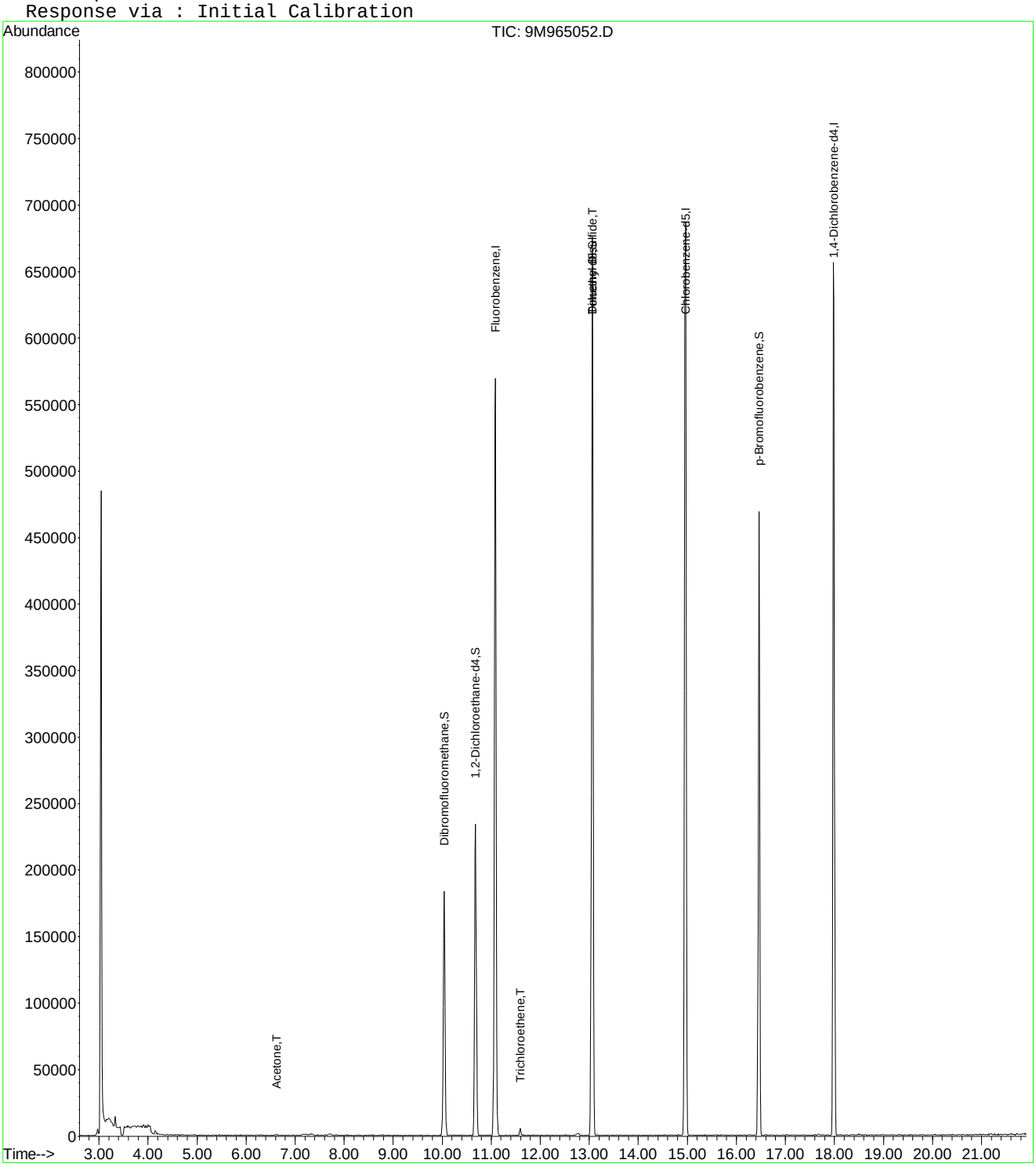

9M965052.D 8260WTR.M Thu Jul 31 09:43:51 2014 Page 2

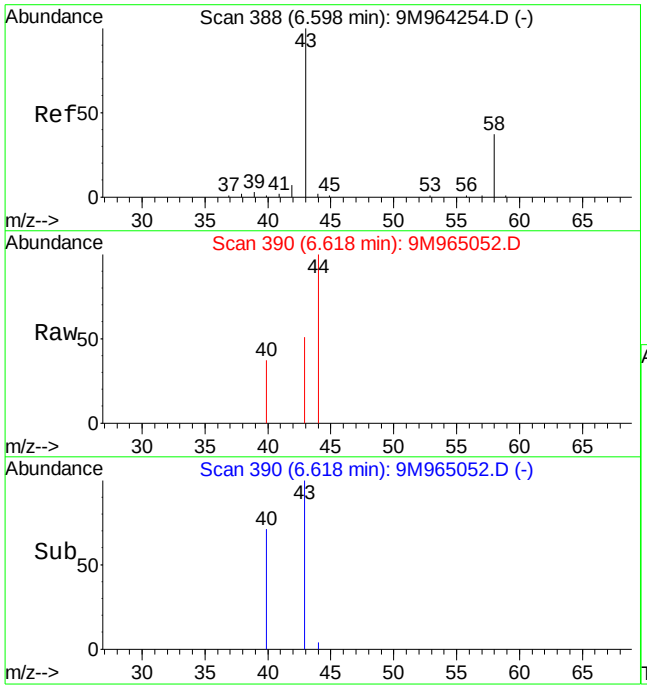

#13
Acetone
Concen: 0.17 ug/L
RT: 6.62 min Scan# 390
Delta R.T. 0.02 min
Lab File: 9M965052.D
Acq: 30 Jul 2014 23:32

Tgt Ion: 43 Resp: 476

Ion	Ratio	Lower	Upper
43	100		
58	0.0	21.4	49.8#

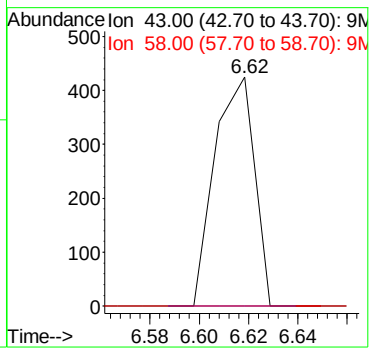

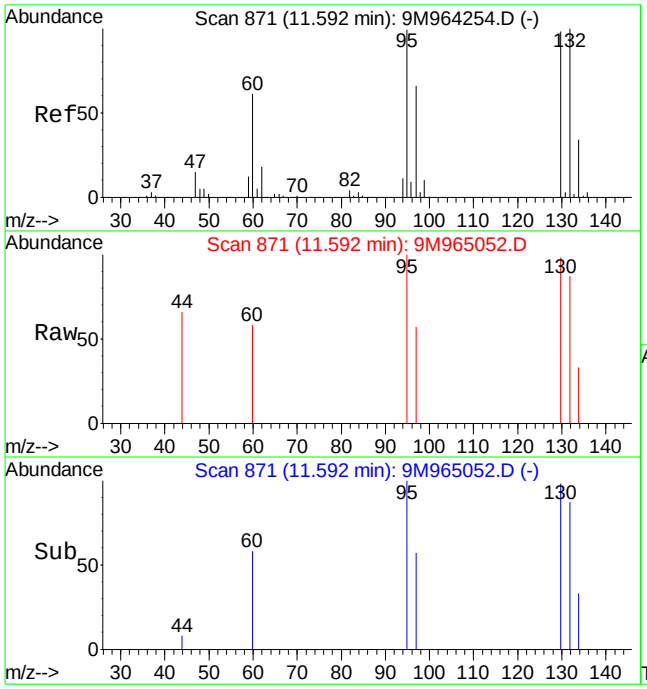

#47
Trichloroethene
Concen: 0.27 ug/L
RT: 11.59 min Scan# 871
Delta R.T. -0.00 min
Lab File: 9M965052.D
Acq: 30 Jul 2014 23:32

Tgt Ion:130 Resp: 2144

Ion	Ratio	Lower	Upper
130	100		
132	125.0	61.8	144.2
95	107.2	60.8	141.8

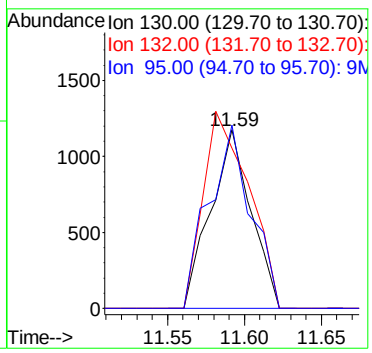

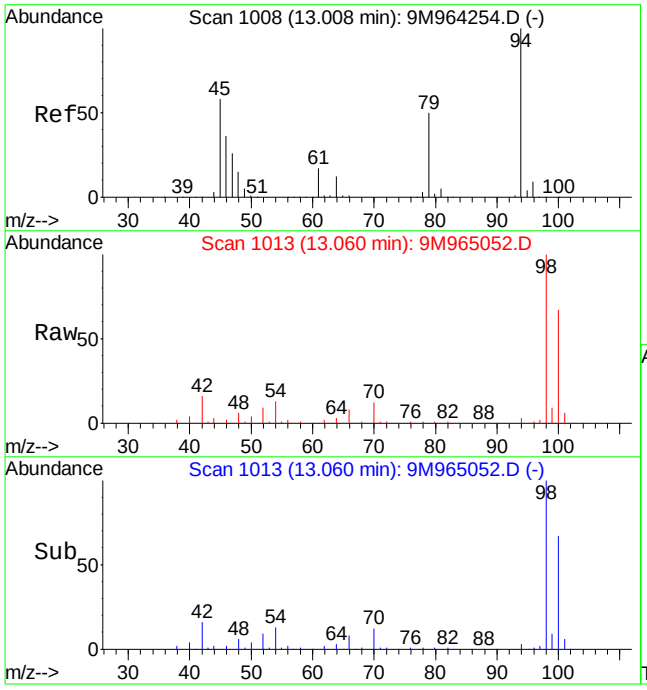

#56
Dimethyl Disulfide
Concen: 1.28 ug/L
RT: 13.06 min Scan# 1013
Delta R.T. 0.05 min
Lab File: 9M965052.D
Acq: 30 Jul 2014 23:32

Tgt Ion: 94 Resp: 16052

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.8	69.6#

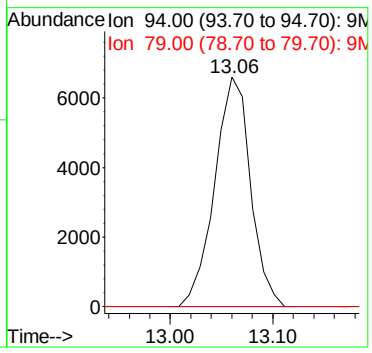

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072914\11M02777.D Vial: 5
Acq On : 29 Jul 2014 17:30 Operator: ADC/FJB
Sample : WG486191-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 29 17:52:13 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	901872	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.28	117	677456	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.09	152	363849	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	266980	23.7041 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.80%		
43) 1,2-Dichloroethane-d4	10.27	65	265605	24.1656 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.68%		
57) Toluene-d8	12.51	98	957208	24.1172 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.48%		
78) p-Bromofluorobenzene	15.68	95	363036	23.0776 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.32%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	307551	31.4951 ug/L	99
3) Chloromethane	3.73	50	335424	19.6794 ug/L	96
4) Vinyl Chloride	3.97	62	340719	22.1841 ug/L	100
5) 1,3-Butadiene	4.01	54	171048	10.9666 ug/L	90
6) Bromomethane	4.88	94	171573	19.8616 ug/L	99
7) Chloroethane	5.04	64	165692	21.4955 ug/L	95
8) Trichlorofluoromethane	5.52	101	404699	22.3195 ug/L	99
9) Diethyl ether	6.04	59	816372	110.4213 ug/L	94
10) Isoprene	6.08	67	328816	20.7675 ug/L	87
11) Acrolein	6.28	56	93181	98.9141 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	232475	20.8318 ug/L	97
13) Acetone	6.38	43	44348	24.3510 ug/L	93
14) 1,1-Dichloroethene	6.60	61	326818	19.7834 ug/L	89
15) Tert-Butyl Alcohol	6.70	59	120825	254.1004 ug/L	96
16) Dimethyl Sulfide	6.85	62	250875	21.7174 ug/L	89
17) Iodomethane	7.10	142	138399	10.7944 ug/L	97
18) Methyl acetate	7.10	43	120302	20.8922 ug/L	94
19) Methylene Chloride	7.35	84	240837	19.7015 ug/L	80
20) Carbon Disulfide	7.40	76	669064	19.3365 ug/L	100
21) Acrylonitrile	7.53	53	59979	24.0962 ug/L	100
22) Methyl Tert Butyl Ether	7.56	73	592951	23.6690 ug/L	95
23) trans-1,2-Dichloroethene	7.79	96	246829	20.4420 ug/L	84
24) n-Hexane	7.86	57	273305	19.5264 ug/L	95
25) Diisopropyl ether	8.18	45	3475178	106.3883 ug/L	98
26) Vinyl Acetate	8.34	43	280621	31.6469 ug/L	97
27) 1,1-Dichloroethane	8.39	63	400172	20.2222 ug/L	99
28) Ethyl-Tert-Butyl ether	8.73	59	3275758	108.7794 ug/L	96
29) 2-Butanone	8.91	43	68164	26.1021 ug/L	91
30) Propionitrile	9.02	54	96915	113.7741 ug/L	97
31) 2,2-Dichloropropane	9.13	77	347138	19.5589 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	267082	20.3786 ug/L	84
33) Chloroform	9.39	83	419262	20.6724 ug/L	99
34) 1-Bromopropane	9.52	122	55768	25.3547 ug/L	100
35) Bromochloromethane	9.61	130	159200	21.0741 ug/L	86
36) Tetrahydrofuran	9.64	42	212272	125.1682 ug/L	90
38) 1,1,1-Trichloroethane	9.90	97	376518	20.0262 ug/L	97
39) Cyclohexane	9.93	56	360297	20.4598 ug/L	86
40) 1,1-Dichloropropene	10.08	75	320314	20.3644 ug/L	99
41) Carbon Tetrachloride	10.22	117	358901	21.2439 ug/L	99
42) Tert-Amyl-Methyl ether	10.16	73	3025069	115.9138 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M02777.D 8260WTR.M Tue Jul 29 17:52:14 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072914\11M02777.D Vial: 5
Acq On : 29 Jul 2014 17:30 Operator: ADC/FJB
Sample : WG486191-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 29 17:52:13 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.38	62	301677	21.1630 ug/L		97
45)	Benzene	10.42	78	927029	21.1833 ug/L		100
46)	Trichloroethene	11.13	130	270894	20.0337 ug/L		95
47)	Methylcyclohexane	11.21	83	361011	20.2336 ug/L		91
48)	1,2-Dichloropropane	11.32	63	226262	20.7520 ug/L		98
49)	1,4-Dioxane	11.60	88	11241	169.5849 ug/L		91
50)	Bromodichloromethane	11.61	83	314268	20.7220 ug/L		100
51)	Dibromomethane	11.69	93	136991	22.0412 ug/L		96
52)	2-Chloroethyl Vinyl Ether	11.88	63	107055	21.5533 ug/L		98
53)	4-Methyl-2-Pentanone	11.90	58	58382	25.4313 ug/L		95
54)	cis-1,3-Dichloropropene	12.20	75	382672	22.4594 ug/L		100
55)	Dimethyl Disulfide	12.46	79	207792	21.7131 ug/L		94
58)	Toluene	12.60	91	996251	21.8106 ug/L		99
59)	Ethyl Methacrylate	12.68	69	247744	26.3051 ug/L		88
60)	trans-1,3-Dichloropropene	12.76	75	322192	21.9078 ug/L		97
61)	1,1,2-Trichloroethane	12.97	97	189401	21.8925 ug/L		100
62)	2-Hexanone	12.89	43	98665	27.6451 ug/L		98
63)	1,3-Dichloropropane	13.25	76	323353	21.7355 ug/L		91
64)	Tetrachloroethene	13.37	164	201799	19.5874 ug/L		96
65)	Dibromochloromethane	13.62	129	248084	22.7335 ug/L		99
66)	1,2-Dibromoethane	13.87	107	187031	21.8235 ug/L		98
67)	1-Chlorohexane	13.92	91	317400	21.2899 ug/L		89
68)	Chlorobenzene	14.33	112	646013	19.6862 ug/L		100
69)	1,1,1,2-Tetrachloroethane	14.35	131	254953	20.7831 ug/L		97
70)	Ethylbenzene	14.34	106	370509	20.0768 ug/L		98
71)	m-,p-Xylene	14.42	106	875231	42.2270 ug/L		97
72)	o-Xylene	14.95	106	402783	18.9947 ug/L		98
73)	Styrene	14.99	104	708791	22.3153 ug/L		96
74)	Bromoform	15.46	173	151652	23.9625 ug/L		98
75)	Isopropylbenzene	15.34	105	1015187	20.8718 ug/L		99
77)	1,1,2,2-Tetrachloroethane	15.55	83	210147	21.4900 ug/L		100
79)	1,2,3-Trichloropropane	15.73	110	66543	22.4166 ug/L		82
80)	trans-1,4-Dichloro-2-Buten	15.77	53	32973	12.6221 ug/L	#	8
81)	n-Propylbenzene	15.82	91	1161559	18.9400 ug/L		99
82)	Bromobenzene	15.95	156	282597	19.3010 ug/L		95
83)	1,3,5-Trimethylbenzene	16.00	105	934419	21.6258 ug/L		96
84)	2-Chlorotoluene	16.08	91	741791	19.1591 ug/L		94
85)	4-Chlorotoluene	16.12	91	720384	18.4668 ug/L		90
86)	a-Methylstyrene	16.37	118	501794	20.9082 ug/L		99
87)	tert-Butylbenzene	16.43	134	179676	18.4128 ug/L		85
88)	1,2,4-Trimethylbenzene	16.47	105	961137	22.1687 ug/L		98
89)	sec-Butylbenzene	16.68	105	1042485	20.0175 ug/L		100
90)	p-Isopropyltoluene	16.82	119	901742	20.5499 ug/L		99
91)	1,3-Dichlorobenzene	17.02	146	500075	18.8517 ug/L		98
92)	1,4-Dichlorobenzene	17.13	146	538602	20.2725 ug/L		97
93)	n-Butylbenzene	17.31	91	817628	22.5193 ug/L		100
94)	1,2-Dichlorobenzene	17.60	146	472635	19.4072 ug/L		96
95)	1,2-Dibromo-3-Chloropropan	18.52	75	33503	23.5625 ug/L		89
96)	1,2,4-Trichlorobenzene	19.58	180	309796	19.3333 ug/L		95
97)	Hexachlorobutadiene	19.72	225	124135	19.0387 ug/L		98
98)	Naphthalene	19.94	128	538619	20.5785 ug/L		100
99)	1,2,3-Trichlorobenzene	20.22	180	282941	19.8772 ug/L		97

(#) = qualifier out of range (m) = manual integration
11M02777.D 8260WTR.M Tue Jul 29 17:52:14 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\072914\11M02777.D Vial: 5
Acq On : 29 Jul 2014 17:30 Operator: ADC/FJB
Sample : WG486191-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 29 17:52 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/27/14 HPMS11
Last Update : Mon Jun 30 10:39:17 2014
Response via : Initial Calibration

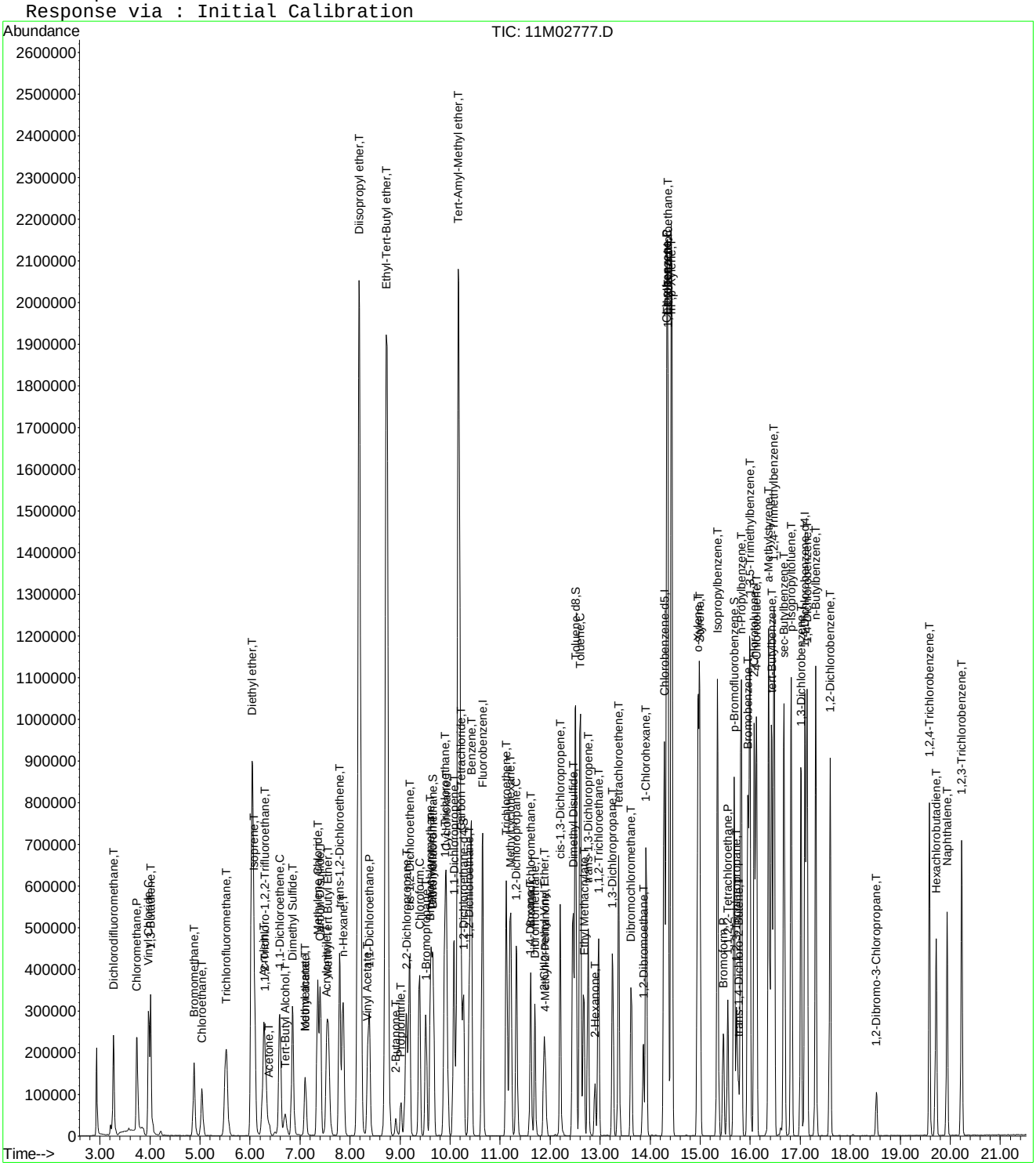

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965034.D Vial: 8
Acq On : 30 Jul 2014 14:44 Operator: ADC
Sample : WG486305-02 20ug/L LCS STD 8260 Inst : HPMS9
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 09:09:55 2014 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	656795	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	452877	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.98	152	236392	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.04	111	162021	23.2605 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.04%		
43) 1,2-Dichloroethane-d4	10.67	65	207588	22.2831 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.12%		
58) Toluene-d8	13.06	98	578889	25.8726 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.48%		
79) p-Bromofluorobenzene	16.46	95	209697	24.5866 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.36%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.38	85	196735	36.7135 ug/L	99
3) Chloromethane	3.88	50	413947	28.0443 ug/L	98
4) Vinyl Chloride	4.13	62	268415	27.5202 ug/L	100
5) 1,3-Butadiene	4.17	54	166685	21.8987 ug/L	98
6) Bromomethane	5.06	94	135066	22.5624 ug/L	100
7) Chloroethane	5.22	64	151225	24.7681 ug/L	98
8) Trichlorofluoromethane	5.72	101	243797	24.1859 ug/L	99
9) Diethyl ether	6.26	59	904981	99.8657 ug/L	97
10) Isoprene	6.30	67	238603	24.7161 ug/L	94
11) Acrolein	6.50	56	118675	65.5965 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.52	101	134386	23.2668 ug/L	93
13) Acetone	6.60	43	63440	22.9525 ug/L	97
14) 1,1-Dichloroethene	6.83	61	292525	20.9810 ug/L	99
15) Tert-Butyl Alcohol	6.94	59	186447	185.0930 ug/L	98
16) Dimethyl Sulfide	7.10	62	245381	22.4780 ug/L	98
17) Iodomethane	7.36	142	113716	14.4620 ug/L	99
18) Methyl acetate	7.35	43	158790	17.5653 ug/L	98
19) Methylene Chloride	7.62	84	165767	22.4915 ug/L	93
20) Carbon Disulfide	7.67	76	400999	20.3847 ug/L	100
21) Acrylonitrile	7.80	53	87784	19.8405 ug/L	99
22) Methyl Tert Butyl Ether	7.83	73	423625	21.4958 ug/L	97
23) trans-1,2-Dichloroethene	8.08	61	301423	21.9254 ug/L	100
24) n-Hexane	8.15	57	260823	18.7558 ug/L	100
25) Diisopropyl ether	8.48	45	3799697	102.4618 ug/L	99
26) Vinyl Acetate	8.66	43	197464	14.7192 ug/L	99
27) 1,1-Dichloroethane	8.70	63	364907	21.4160 ug/L	100
28) Ethyl-Tert-Butyl ether	9.06	59	3407669	101.6731 ug/L	99
29) 2-Butanone	9.25	43	90382	20.3917 ug/L	97
30) Propionitrile	9.35	54	147752	94.2349 ug/L	99
31) 2,2-Dichloropropane	9.47	77	199213	18.9627 ug/L	99
32) cis-1,2-Dichloroethene	9.54	96	169146	21.4001 ug/L	96
33) Chloroform	9.75	83	266173	20.6703 ug/L	99
34) 1-Bromopropane	9.89	122	31641	27.1219 ug/L	93
35) Bromochloromethane	9.98	130	96336	19.9497 ug/L	96
36) Tetrahydrofuran	10.00	42	289692	96.6562 ug/L	97
38) 1,1,1-Trichloroethane	10.28	97	242898	21.9624 ug/L	97
39) Cyclohexane	10.32	56	409318	22.1521 ug/L	97
40) 1,1-Dichloropropene	10.48	75	203644	21.9666 ug/L	94
41) Tert-Amyl-Methyl ether	10.57	73	2104080	105.4652 ug/L	97
42) Carbon Tetrachloride	10.63	117	212847	21.8829 ug/L	98

(#) = qualifier out of range (m) = manual integration
9M965034.D 8260WTR.M Thu Jul 31 09:11:20 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965034.D Vial: 8
Acq On : 30 Jul 2014 14:44 Operator: ADC
Sample : WG486305-02 20ug/L LCS STD 8260 Inst : HPMS9
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 09:09:55 2014 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.80	62	263774	21.4631 ug/L	98
46)	Benzene	10.84	78	619445	22.2133 ug/L	98
47)	Trichloroethene	11.59	130	168514	21.1209 ug/L	98
48)	Methylcyclohexane	11.68	83	241491	23.2335 ug/L	96
49)	1,2-Dichloropropane	11.80	63	211240	21.0908 ug/L	99
50)	1,4-Dioxane	12.08	88	13100	178.9503 ug/L	95
51)	Bromodichloromethane	12.10	83	206863	20.9154 ug/L	99
52)	Dibromomethane	12.19	174	93663	20.4414 ug/L	96
53)	2-Chloroethyl Vinyl Ether	12.39	63	118942	21.8214 ug/L	99
54)	4-Methyl-2-Pentanone	12.42	58	81920	19.9852 ug/L	99
55)	cis-1,3-Dichloropropene	12.73	75	249937	21.5398 ug/L	99
56)	Dimethyl Disulfide	13.01	94	286535	23.0774 ug/L	100
59)	Toluene	13.16	91	635500	23.7012 ug/L	99
60)	Ethyl Methacrylate	13.24	69	190554	24.7196 ug/L	94
61)	trans-1,3-Dichloropropene	13.33	75	215806	21.0486 ug/L	99
62)	1,1,2-Trichloroethane	13.55	97	128072	22.2259 ug/L	97
63)	2-Hexanone	13.47	43	133398	21.5388 ug/L	100
64)	1,3-Dichloropropane	13.86	76	224946	22.2121 ug/L	99
65)	Tetrachloroethene	13.98	164	120719	21.6532 ug/L	98
66)	Dibromochloromethane	14.25	129	154308	21.9780 ug/L	98
67)	1,2-Dibromoethane	14.51	107	126469	21.5167 ug/L	97
68)	1-Chlorohexane	14.58	91	193581	24.2788 ug/L	97
69)	Chlorobenzene	15.00	112	377565	21.0483 ug/L	97
70)	1,1,1,2-Tetrachloroethane	15.04	131	148209	22.0147 ug/L	100
71)	Ethylbenzene	15.03	106	227250	22.9889 ug/L	95
72)	m-,p-Xylene	15.12	106	520984	44.7631 ug/L	96
73)	o-Xylene	15.69	106	253479	21.0746 ug/L	100
74)	Styrene	15.72	104	444827	23.4642 ug/L	99
75)	Bromoform	16.22	173	105839	20.5567 ug/L	99
76)	Isopropylbenzene	16.11	105	636037	21.9736 ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.33	83	129260	21.4814 ug/L	98
80)	1,2,3-Trichloropropane	16.51	110	48955	23.5511 ug/L	73
81)	trans-1,4-Dichloro-2-Buten	16.56	53	36837	11.6038 ug/L #	6
82)	n-Propylbenzene	16.62	91	760593	23.3187 ug/L	99
83)	Bromobenzene	16.76	156	172481	22.4596 ug/L	92
84)	1,3,5-Trimethylbenzene	16.80	105	596468	25.6667 ug/L	98
85)	2-Chlorotoluene	16.90	91	500517	22.8577 ug/L	98
86)	4-Chlorotoluene	16.94	91	429358	22.6298 ug/L	89
87)	a-Methylstyrene	17.21	118	310842	25.5958 ug/L	100
88)	tert-Butylbenzene	17.27	134	120943	23.4549 ug/L	97
89)	1,2,4-Trimethylbenzene	17.32	105	601248	24.9622 ug/L	97
90)	sec-Butylbenzene	17.54	105	692000	23.6988 ug/L	99
91)	p-Isopropyltoluene	17.69	119	563041	23.5642 ug/L	98
92)	1,3-Dichlorobenzene	17.90	146	308690	21.8058 ug/L	100
93)	1,4-Dichlorobenzene	18.02	146	330571	22.6593 ug/L	99
94)	n-Butylbenzene	18.22	91	565394	25.0077 ug/L	98
95)	1,2-Dichlorobenzene	18.53	146	309778	22.2371 ug/L	100
96)	1,2-Dibromo-3-Chloropropan	19.52	157	34348	22.5365 ug/L	90
97)	1,2,4-Trichlorobenzene	20.67	180	227994	21.7786 ug/L	100
98)	Hexachlorobutadiene	20.82	225	124162	23.5294 ug/L	98
99)	Naphthalene	21.04	128	571763	25.0962 ug/L	100
100)	1,2,3-Trichlorobenzene	21.35	180	236182	23.0923 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M965034.D 8260WTR.M Thu Jul 31 09:11:48 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\073014\9M965034.D Vial: 8
Acq On : 30 Jul 2014 14:44 Operator: ADC
Sample : WG486305-02 20ug/L LCS STD 8260 Inst : HPMS9
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 9:09 2014 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

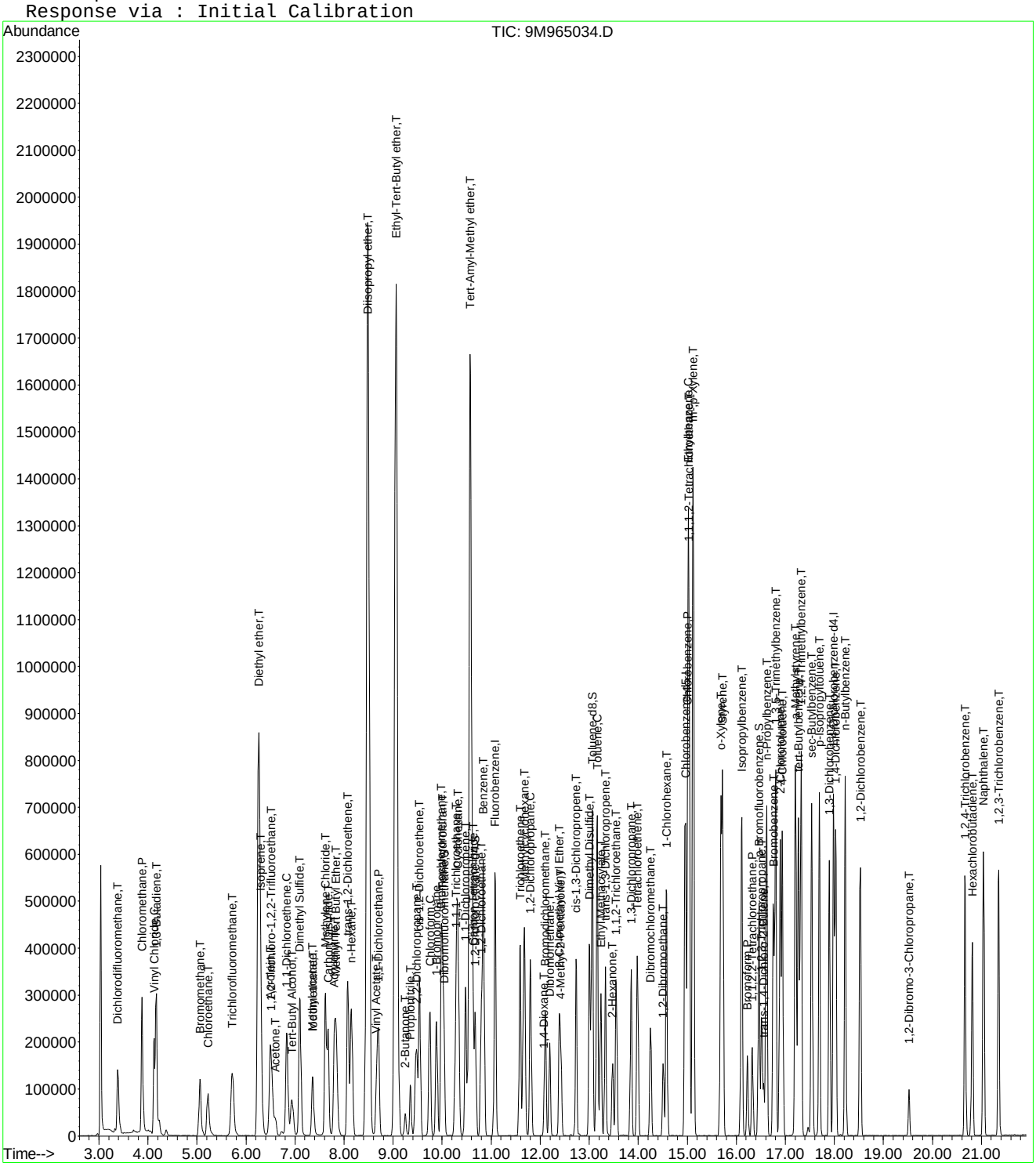

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\080114\9M965085.D Vial: 11
Acq On : 1 Aug 2014 20:57 Operator: ADC
Sample : WG486696-02 20ug/L LCS 8260 Inst : HPMS9
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 04 08:45:27 2014 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	723769	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	509036	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	264181	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.04	111	170092	22.1596 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 88.64%		
43) 1,2-Dichloroethane-d4	10.68	65	215528	20.9946 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.96%		
58) Toluene-d8	13.06	98	628478	24.9900 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.96%		
79) p-Bromofluorobenzene	16.46	95	220176	23.0997 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.40%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	129059	21.8556 ug/L	98
3) Chloromethane	3.88	50	290452	17.8568 ug/L	100
4) Vinyl Chloride	4.13	62	225912	21.0191 ug/L	99
5) 1,3-Butadiene	4.17	54	161372	18.9918 ug/L	99
6) Bromomethane	5.07	94	122732	18.6049 ug/L	98
7) Chloroethane	5.23	64	133457	19.8354 ug/L	99
8) Trichlorofluoromethane	5.73	101	215611	19.4104 ug/L	98
9) Diethyl ether	6.26	59	945432	94.6754 ug/L	97
10) Isoprene	6.30	67	236940	22.2727 ug/L	96
11) Acrolein	6.49	56	110214	55.2826 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.52	101	122494	19.2454 ug/L	95
13) Acetone	6.60	43	57491	18.8754 ug/L	93
14) 1,1-Dichloroethene	6.83	61	274965	17.8966 ug/L	99
15) Tert-Butyl Alcohol	6.94	59	132832	119.6650 ug/L	98
16) Dimethyl Sulfide	7.10	62	253442	21.0681 ug/L	99
17) Iodomethane	7.36	142	120001	13.8935 ug/L	99
18) Methyl acetate	7.36	43	162344	16.2967 ug/L	99
19) Methylene Chloride	7.62	84	154357	19.0053 ug/L	95
20) Carbon Disulfide	7.67	76	402231	18.5553 ug/L	99
21) Acrylonitrile	7.80	53	87732	17.9939 ug/L	94
22) Methyl Tert Butyl Ether	7.84	73	447742	20.6172 ug/L	96
23) trans-1,2-Dichloroethene	8.08	61	284094	18.7526 ug/L	100
24) n-Hexane	8.15	57	268120	17.4964 ug/L	100
25) Diisopropyl ether	8.49	45	3993787	97.7300 ug/L	99
26) Vinyl Acetate	8.65	43	172526	11.6703 ug/L	100
27) 1,1-Dichloroethane	8.70	63	345231	18.3864 ug/L	100
28) Ethyl-Tert-Butyl ether	9.06	59	3565103	96.5274 ug/L	100
29) 2-Butanone	9.24	43	89787	18.3830 ug/L	96
30) Propionitrile	9.36	54	142638	82.5551 ug/L	100
31) 2,2-Dichloropropane	9.47	77	178883	15.4519 ug/L	97
32) cis-1,2-Dichloroethene	9.54	96	161058	18.4912 ug/L	97
33) Chloroform	9.75	83	260734	18.3743 ug/L	100
34) 1-Bromopropane	9.88	122	33913	26.3794 ug/L	98
35) Bromochloromethane	9.99	130	95958	18.0327 ug/L	97
36) Tetrahydrofuran	10.01	42	293168	88.7646 ug/L	97
38) 1,1,1-Trichloroethane	10.29	97	230290	18.8956 ug/L	99
39) Cyclohexane	10.32	56	417740	20.5159 ug/L	99
40) 1,1-Dichloropropene	10.47	75	190493	18.6466 ug/L	97
41) Tert-Amyl-Methyl ether	10.58	73	2168340	98.6289 ug/L	98
42) Carbon Tetrachloride	10.63	117	203300	18.9673 ug/L	97

(#) = qualifier out of range (m) = manual integration
9M965085.D 8260WTR.M Mon Aug 04 08:45:29 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\080114\9M965085.D Vial: 11
Acq On : 1 Aug 2014 20:57 Operator: ADC
Sample : WG486696-02 20ug/L LCS 8260 Inst : HPMS9
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 04 08:45:27 2014 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.79	62	254081	18.7613 ug/L	98
46)	Benzene	10.85	78	599294	19.5020 ug/L	98
47)	Trichloroethene	11.59	130	175422	19.9522 ug/L	100
48)	Methylcyclohexane	11.67	83	243317	21.2431 ug/L	97
49)	1,2-Dichloropropane	11.80	63	212547	19.2576 ug/L	99
50)	1,4-Dioxane	12.09	88	7096	87.9639 ug/L	90
51)	Bromodichloromethane	12.11	83	206304	18.9287 ug/L	99
52)	Dibromomethane	12.20	174	94256	18.6673 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.39	63	124505	20.7283 ug/L	97
54)	4-Methyl-2-Pentanone	12.42	58	83592	18.5060 ug/L	99
55)	cis-1,3-Dichloropropene	12.74	75	242067	18.9312 ug/L	99
56)	Dimethyl Disulfide	13.01	94	299996	21.9258 ug/L	99
59)	Toluene	13.16	91	616190	20.4456 ug/L	99
60)	Ethyl Methacrylate	13.23	69	187657	21.6581 ug/L	97
61)	trans-1,3-Dichloropropene	13.33	75	204713	17.7638 ug/L	100
62)	1,1,2-Trichloroethane	13.55	97	130183	20.0998 ug/L	100
63)	2-Hexanone	13.47	43	128981	18.5280 ug/L	97
64)	1,3-Dichloropropane	13.85	76	221394	19.4496 ug/L	96
65)	Tetrachloroethene	13.99	164	120673	19.2570 ug/L	99
66)	Dibromochloromethane	14.25	129	155138	19.6585 ug/L	98
67)	1,2-Dibromoethane	14.51	107	127110	19.2399 ug/L	99
68)	1-Chlorohexane	14.58	91	197989	22.0921 ug/L	96
69)	Chlorobenzene	15.01	112	373305	18.5149 ug/L	98
70)	1,1,1,2-Tetrachloroethane	15.03	131	150694	19.9143 ug/L	98
71)	Ethylbenzene	15.03	106	226789	20.4112 ug/L	100
72)	m-,p-Xylene	15.12	106	518906	39.6658 ug/L	99
73)	o-Xylene	15.68	106	254109	18.7961 ug/L	99
74)	Styrene	15.73	104	439832	20.6411 ug/L	100
75)	Bromoform	16.22	173	108812	18.8025 ug/L	99
76)	Isopropylbenzene	16.11	105	625655	19.2303 ug/L	99
78)	1,1,2,2-Tetrachloroethane	16.33	83	110187	16.3855 ug/L	99
80)	1,2,3-Trichloropropane	16.51	110	46256	19.9119 ug/L	66
81)	trans-1,4-Dichloro-2-Buten	16.56	53	35021	9.8714 ug/L #	15
82)	n-Propylbenzene	16.62	91	734106	20.1392 ug/L	100
83)	Bromobenzene	16.76	156	172892	20.1449 ug/L	95
84)	1,3,5-Trimethylbenzene	16.80	105	582005	22.4099 ug/L	99
85)	2-Chlorotoluene	16.89	91	469805	19.1983 ug/L	100
86)	4-Chlorotoluene	16.94	91	442730	20.8800 ug/L	90
87)	a-Methylstyrene	17.20	118	319567	23.5463 ug/L	99
88)	tert-Butylbenzene	17.27	134	116157	20.1572 ug/L	94
89)	1,2,4-Trimethylbenzene	17.32	105	581665	21.6089 ug/L	99
90)	sec-Butylbenzene	17.54	105	670578	20.5495 ug/L	100
91)	p-Isopropyltoluene	17.69	119	538627	20.1712 ug/L	99
92)	1,3-Dichlorobenzene	17.90	146	307198	19.4178 ug/L	100
93)	1,4-Dichlorobenzene	18.03	146	332157	20.3731 ug/L	99
94)	n-Butylbenzene	18.22	91	532732	21.0845 ug/L	99
95)	1,2-Dichlorobenzene	18.53	146	306109	19.6624 ug/L	98
96)	1,2-Dibromo-3-Chloropropan	19.53	157	31691	18.6059 ug/L	96
97)	1,2,4-Trichlorobenzene	20.67	180	227192	19.4191 ug/L	99
98)	Hexachlorobutadiene	20.81	225	114321	19.3856 ug/L	99
99)	Naphthalene	21.04	128	539034	21.1709 ug/L	99
100)	1,2,3-Trichlorobenzene	21.35	180	224321	19.6255 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M965085.D 8260WTR.M Mon Aug 04 08:45:30 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\080114\9M965085.D Vial: 11
Acq On : 1 Aug 2014 20:57 Operator: ADC
Sample : WG486696-02 20ug/L LCS 8260 Inst : HPMS9
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 4 8:45 2014 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

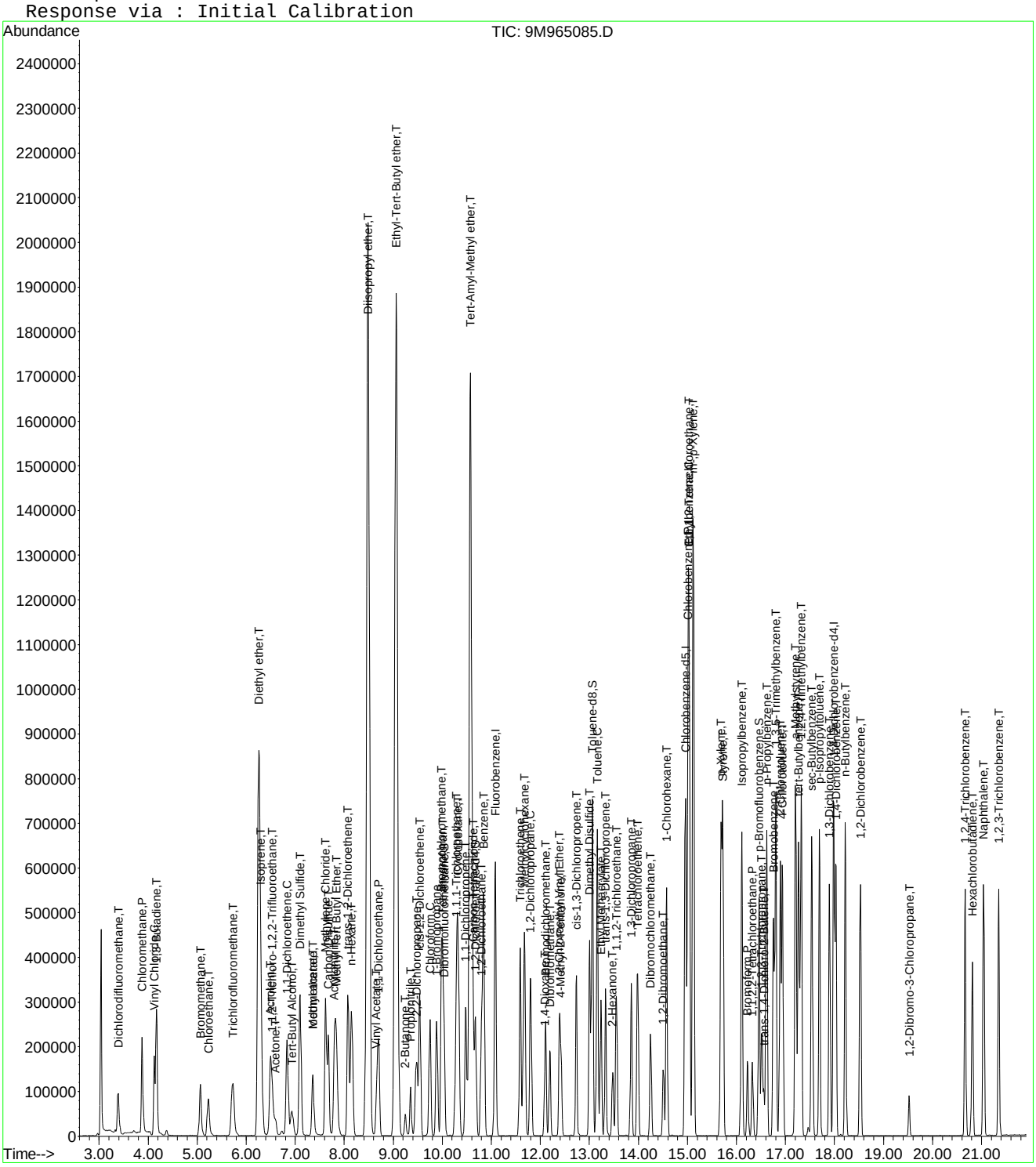

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\080114\9M965086.D Vial: 12
Acq On : 1 Aug 2014 21:27 Operator: ADC
Sample : WG486696-03 20ug/L LCSDUP 8260 Inst : HPMS9
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 04 08:45:31 2014 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.08	96	737819	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.96	117	517406	25.00 ug/L	0.00
77) 1,4-Dichlorobenzene-d4	17.99	152	266395	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.04	111	172127	21.9977 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 88.00%		
43) 1,2-Dichloroethane-d4	10.68	65	217247	20.7591 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.04%		
58) Toluene-d8	13.06	98	629821	24.6383 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.56%		
79) p-Bromofluorobenzene	16.46	95	222241	23.1226 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.48%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.39	85	62860	10.4424 ug/L	98
3) Chloromethane	3.88	50	201653	12.1614 ug/L	100
4) Vinyl Chloride	4.12	62	166759	15.2200 ug/L	99
5) 1,3-Butadiene	4.17	54	165779	19.1547 ug/L	98
6) Bromomethane	5.06	94	102522	15.2453 ug/L	97
7) Chloroethane	5.23	64	113900	16.6063 ug/L	97
8) Trichlorofluoromethane	5.72	101	187258	16.5369 ug/L	98
9) Diethyl ether	6.25	59	936880	92.0324 ug/L	98
10) Isoprene	6.30	67	248531	22.9174 ug/L	96
11) Acrolein	6.49	56	111646	54.9345 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	117874	18.1669 ug/L	93
13) Acetone	6.60	43	58943	18.9836 ug/L	97
14) 1,1-Dichloroethene	6.83	61	251822	16.0782 ug/L	98
15) Tert-Butyl Alcohol	6.94	59	150871	133.3277 ug/L	97
16) Dimethyl Sulfide	7.10	62	255796	20.8589 ug/L	97
17) Iodomethane	7.36	142	121163	13.7709 ug/L	98
18) Methyl acetate	7.36	43	167177	16.4622 ug/L	99
19) Methylene Chloride	7.62	84	147433	17.8071 ug/L	96
20) Carbon Disulfide	7.67	76	417952	18.9133 ug/L	99
21) Acrylonitrile	7.79	53	90046	18.1168 ug/L	96
22) Methyl Tert Butyl Ether	7.83	73	434015	19.6045 ug/L	100
23) trans-1,2-Dichloroethene	8.07	61	275606	17.8459 ug/L	99
24) n-Hexane	8.15	57	287439	18.3999 ug/L	100
25) Diisopropyl ether	8.49	45	4007422	96.1962 ug/L	99
26) Vinyl Acetate	8.65	43	204211	13.5505 ug/L	100
27) 1,1-Dichloroethane	8.69	63	340738	17.8015 ug/L	100
28) Ethyl-Tert-Butyl ether	9.06	59	3578459	95.0440 ug/L	100
29) 2-Butanone	9.24	43	88974	17.8696 ug/L	99
30) Propionitrile	9.36	54	147701	83.8575 ug/L	100
31) 2,2-Dichloropropane	9.47	77	188105	15.9391 ug/L	98
32) cis-1,2-Dichloroethene	9.54	96	162650	18.3184 ug/L	95
33) Chloroform	9.75	83	259605	17.9464 ug/L	99
34) 1-Bromopropane	9.88	122	35419	27.0262 ug/L	95
35) Bromochloromethane	9.99	130	93023	17.1482 ug/L	97
36) Tetrahydrofuran	10.01	42	294572	87.4913 ug/L	97
38) 1,1,1-Trichloroethane	10.29	97	231325	18.6191 ug/L	99
39) Cyclohexane	10.32	56	439042	21.1514 ug/L	98
40) 1,1-Dichloropropene	10.47	75	190530	18.2951 ug/L	97
41) Tert-Amyl-Methyl ether	10.58	73	2175813	97.0842 ug/L	98
42) Carbon Tetrachloride	10.63	117	201779	18.4669 ug/L	99

(#) = qualifier out of range (m) = manual integration
9M965086.D 8260WTR.M Mon Aug 04 08:45:34 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\080114\9M965086.D Vial: 12
Acq On : 1 Aug 2014 21:27 Operator: ADC
Sample : WG486696-03 20ug/L LCSDUP 8260 Inst : HPMS9
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 04 08:45:31 2014 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.79	62	245389	17.7744	ug/L		99
46)	Benzene	10.84	78	590338	18.8448	ug/L		98
47)	Trichloroethene	11.59	130	175193	19.5467	ug/L		99
48)	Methylcyclohexane	11.67	83	256931	22.0045	ug/L		98
49)	1,2-Dichloropropane	11.81	63	206519	18.3551	ug/L		99
50)	1,4-Dioxane	12.09	88	8911	108.3597	ug/L		93
51)	Bromodichloromethane	12.11	83	205263	18.4745	ug/L		99
52)	Dibromomethane	12.20	174	95082	18.4723	ug/L		100
53)	2-Chloroethyl Vinyl Ether	12.39	63	125179	20.4436	ug/L		99
54)	4-Methyl-2-Pentanone	12.42	58	81139	17.6209	ug/L		97
55)	cis-1,3-Dichloropropene	12.74	75	246713	18.9271	ug/L		99
56)	Dimethyl Disulfide	13.01	94	306739	21.9917	ug/L		99
59)	Toluene	13.16	91	626876	20.4637	ug/L		99
60)	Ethyl Methacrylate	13.23	69	190954	21.6821	ug/L		99
61)	trans-1,3-Dichloropropene	13.33	75	205554	17.5483	ug/L		100
62)	1,1,2-Trichloroethane	13.55	97	124958	18.9810	ug/L		95
63)	2-Hexanone	13.47	43	130564	18.4520	ug/L		98
64)	1,3-Dichloropropane	13.85	76	219464	18.9681	ug/L		98
65)	Tetrachloroethene	13.99	164	123426	19.3777	ug/L		98
66)	Dibromochloromethane	14.25	129	155035	19.3276	ug/L		100
67)	1,2-Dibromoethane	14.50	107	127111	18.9288	ug/L		99
68)	1-Chlorohexane	14.58	91	206485	22.6674	ug/L		96
69)	Chlorobenzene	15.01	112	380143	18.5490	ug/L		97
70)	1,1,1,2-Tetrachloroethane	15.04	131	152536	19.8316	ug/L		96
71)	Ethylbenzene	15.03	106	224046	19.8381	ug/L		94
72)	m-,p-Xylene	15.11	106	526053	39.5617	ug/L		97
73)	o-Xylene	15.68	106	260419	18.9513	ug/L		98
74)	Styrene	15.72	104	448963	20.7288	ug/L		99
75)	Bromoform	16.23	173	110069	18.7120	ug/L		98
76)	Isopropylbenzene	16.11	105	643320	19.4533	ug/L		99
78)	1,1,2,2-Tetrachloroethane	16.32	83	116273	17.1469	ug/L		98
80)	1,2,3-Trichloropropane	16.52	110	44266	18.8969	ug/L		70
81)	trans-1,4-Dichloro-2-Buten	16.56	53	40426	11.3002	ug/L	#	47
82)	n-Propylbenzene	16.61	91	755280	20.5479	ug/L		99
83)	Bromobenzene	16.76	156	178692	20.6477	ug/L		97
84)	1,3,5-Trimethylbenzene	16.80	105	597380	22.8108	ug/L		99
85)	2-Chlorotoluene	16.89	91	470434	19.0642	ug/L		98
86)	4-Chlorotoluene	16.94	91	458190	21.4296	ug/L		90
87)	a-Methylstyrene	17.20	118	336313	24.5742	ug/L		97
88)	tert-Butylbenzene	17.27	134	122145	21.0201	ug/L		97
89)	1,2,4-Trimethylbenzene	17.32	105	600774	22.1333	ug/L		98
90)	sec-Butylbenzene	17.53	105	695769	21.1443	ug/L		99
91)	p-Isopropyltoluene	17.69	119	564743	20.9735	ug/L		99
92)	1,3-Dichlorobenzene	17.90	146	310397	19.4569	ug/L		99
93)	1,4-Dichlorobenzene	18.03	146	339795	20.6684	ug/L		100
94)	n-Butylbenzene	18.22	91	556134	21.8278	ug/L		100
95)	1,2-Dichlorobenzene	18.53	146	312671	19.9170	ug/L		99
96)	1,2-Dibromo-3-Chloropropan	19.52	157	33348	19.4160	ug/L		100
97)	1,2,4-Trichlorobenzene	20.67	180	232243	19.6859	ug/L		99
98)	Hexachlorobutadiene	20.81	225	121054	20.3567	ug/L		99
99)	Naphthalene	21.04	128	547016	21.3058	ug/L		99
100)	1,2,3-Trichlorobenzene	21.35	180	231714	20.1038	ug/L		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS9\DATA\080114\9M965086.D Vial: 12
Acq On : 1 Aug 2014 21:27 Operator: ADC
Sample : WG486696-03 20ug/L LCSDUP 8260 Inst : HPMS9
Misc : 1,1 STD65546 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 4 8:45 2014 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS9\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 SOP: OVL MSV01 WATER 06/26/14 HPMS9
Last Update : Fri Jun 27 11:04:25 2014
Response via : Initial Calibration

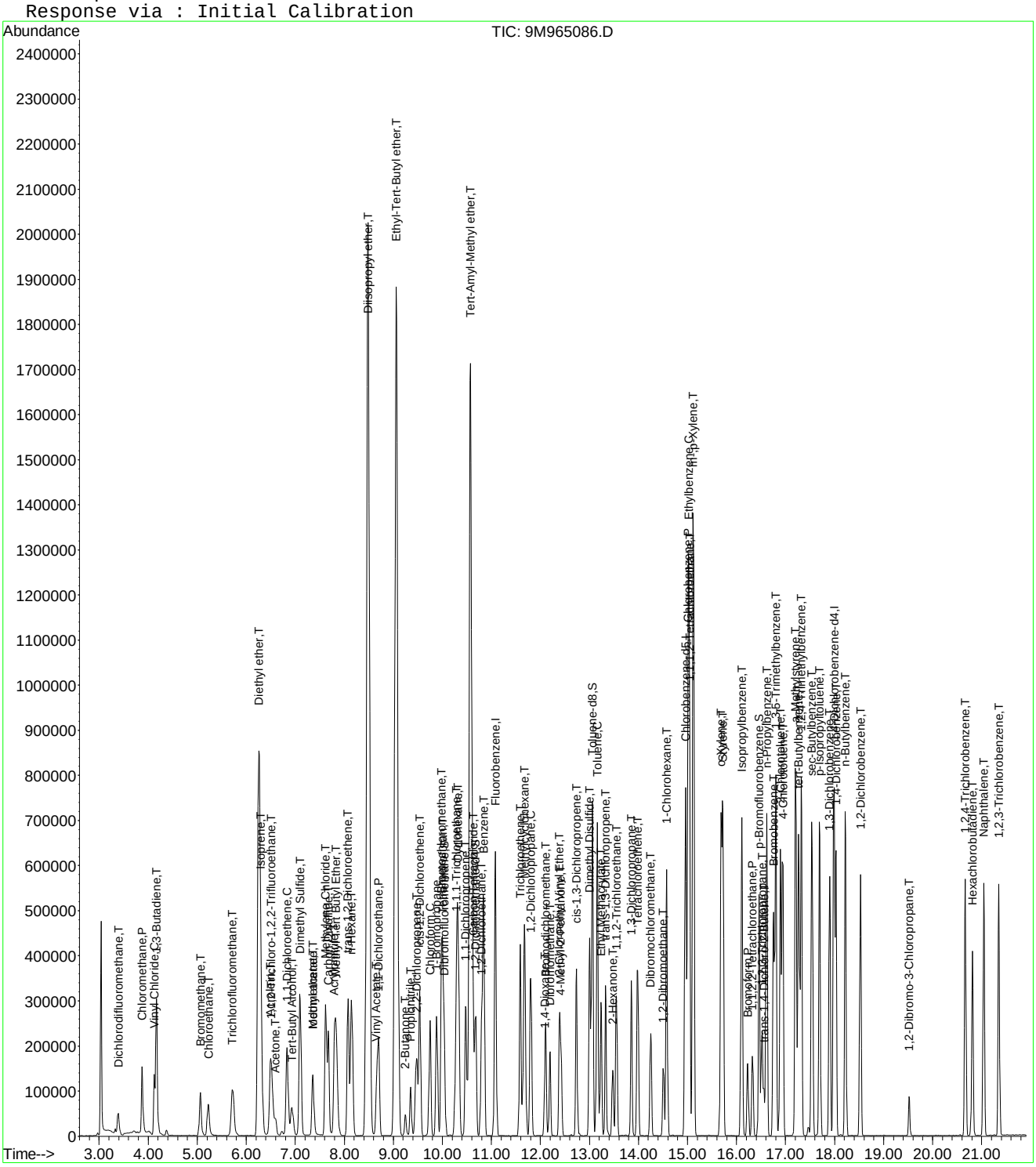

9M965086.D 8260WTR.M Mon Aug 04 08:45:35 2014 Page 3

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
August 5, 2014

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
SAV - SARAH A. VANDENBERG
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
August 05, 2014

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL).
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, H1	Not detected; Sample analysis performed past holding time.
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
U	Analyte was not detected. The concentration is below the reported LOD.
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit

Microbac Laboratories Inc.
List of Valid Qualifiers
August 05, 2014

Qualkey: DOD

X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Kathy Albertson	Project Manager:	Dave Wacker
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002JA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 67	67WW01-072514			7/25/14	0750		✓	W	3	✓					
	67WW07-072514			7/25/14	0810		✓	W	3	✓					
	67WW12-072514			7/25/14	0925		✓	W	3	✓					
	67WW12MS-072514			7/25/14	0925		✓	W	3	✓					
	67WW12MSD-072514			7/25/14	0925		✓	W	3	✓					
	67WW14-072514			7/25/14	1035		✓	W	3	✓					
	67WW13-072514			7/25/14	1330		✓	W	3	✓					
	67WW13FD-072514			7/25/14	1330		✓	W	3	✓					
	67WW09-072514			7/25/14	1435		✓	W	3	✓					
	TRIP BLANK			7/25/14			✓	W	2	✓					

Comments: **STANDARD TAT**

	Date	Time		
Relinquished by (Signature): Scott Beesinger	7/28/14	0900	Received by: (Signature)	
Relinquished by: (Signature)			Received for Laboratory by: (Signature)	

Microbac OVD
Received: 07/29/2014 09:43
By: COURTNEY REXROAD
221000057516
Courtney Rexroad

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14071626
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 08-AUG-2014

Samplenum	Container ID	Products
L14071626-01	411289	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		29-JUL-2014 14:07	CLS		<2

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Samplenum	Container ID	Products
L14071626-02	411290	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:06	MLB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:06	MLB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:06	MLB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14071626
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 08-AUG-2014

Samplenum	Container ID	Products
L14071626-03	411291	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		29-JUL-2014 14:07	CLS		<2

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Samplenum	Container ID	Products
L14071626-04	411292	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14071626
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 08-AUG-2014

Samplenum	Container ID	Products
L14071626-05	411293	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Samplenum	Container ID	Products
L14071626-06	411294	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14071626
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 08-AUG-2014

Samplenum	Container ID	Products
L14071626-07	411295	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Samplenum	Container ID	Products
L14071626-08	411296	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14071626
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 08-AUG-2014

Samplenum	Container ID	Products
L14071626-09	411297	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Samplenum	Container ID	Products
L14071626-10	411298	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-JUL-2014 14:07	CLS		<2
2	ANALYZ	V1	ORG4	29-JUL-2014 15:05	MLB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - May 22, 2014

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)
Acetate (HPLC-UV)
Formate (HPLC-UV)
Acetaldehyde (HPLC-UV)
Propionaldehyde (HPLC-UV)
Fluoroborate (ISE)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam

Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L14120292

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Kathy Albertson – Team Chemist/Data Specialist
(740) 373-4071
Kathy.Albertson@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on December 17 2014

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0018759	I	2.0		J2317160540	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
67WW05-120314	L14120292-01	12/03/2014 07:40	12/05/2014 09:54
67WW02-120314	L14120292-02	12/03/2014 07:55	12/05/2014 09:54
67WW01-120314	L14120292-03	12/03/2014 08:15	12/05/2014 09:54
67WW07-120314	L14120292-04	12/03/2014 08:35	12/05/2014 09:54
67WW09A-120314	L14120292-05	12/03/2014 09:50	12/05/2014 09:54
67WW09AFD-120314	L14120292-06	12/03/2014 09:50	12/05/2014 09:54
67WW10-120314	L14120292-07	12/03/2014 11:15	12/05/2014 09:54
67WW10MS-120314	L14120292-08	12/03/2014 11:15	12/05/2014 09:54
67WW10MSD-120314	L14120292-09	12/03/2014 11:15	12/05/2014 09:54
67WW12-120314	L14120292-10	12/03/2014 14:05	12/05/2014 09:54
67WW14-120314	L14120292-11	12/03/2014 15:30	12/05/2014 09:54
67WW08-120414	L14120292-12	12/04/2014 08:20	12/05/2014 09:54
67WW11-120414	L14120292-13	12/04/2014 10:00	12/05/2014 09:54
67WW13-120414	L14120292-14	12/04/2014 11:10	12/05/2014 09:54
67WW13FD-120414	L14120292-15	12/04/2014 11:10	12/05/2014 09:54
67WW09-120414	L14120292-16	12/04/2014 14:00	12/05/2014 09:54
TRIP BLANK	L14120292-17	12/04/2014 00:01	12/05/2014 09:54

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L14120292
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 43
2.0 Full Sample Data Package 102
2.1 Volatiles Data 103
2.1.1 Volatiles GCMS Data (8260) 104
2.1.1.1 Summary Data 105
2.1.1.2 QC Summary Data 152
2.1.1.3 Sample Data 198
2.1.1.4 Standards Data 278
2.1.1.5 Raw QC Data 359
2.1.2 RSK 175 380
2.1.2.1 Summary Data 381
2.1.2.2 QC Summary Data 386
2.1.2.3 Sample Data 416
2.1.2.4 Standards Data 423
2.1.2.5 Raw QC Data 456
2.2 General Chemistry Data 467
2.2.1 Method 9056 468
2.2.1.1 Summary Data 469
2.2.1.2 QC Summary Data 478
2.2.1.3 Sample Data 526
2.2.1.4 Standards Data 534
2.2.1.5 Raw QC Data 579
2.2.2 Ferrous Iron Data 586
2.2.2.1 Summary Data 587
2.2.2.2 QC Summary Data 590
2.2.2.3 Raw Data 597
2.2.3 Sulfide Data 605
2.2.3.1 Summary Data 606
2.2.3.2 QC Summary Data 610
2.2.3.3 Raw Data 617
2.2.4 Total Organic Carbon Data 621
2.2.4.1 Summary Data 622
2.2.4.2 QC Summary Data 625
2.2.4.3 Raw Data 632
3.0 Attachments 679

1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	8260
Prep Batch Number(s):	503808, 503948	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-12-15 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2014-12-15 20:13:21

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	8260
Prep Batch Number(s):	503808, 503948	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-12-15 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	8260
Prep Batch Number(s):	503808, 503948	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-12-15 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	8260
Prep Batch Number(s):	503808, 503948	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-12-15 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	8260
Prep Batch Number(s):	503808, 503948	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-12-15 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	8260
Prep Batch Number(s):	503808, 503948	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-12-15 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Bromomethane and dichlorodifluoromethane were below the LCL.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	503991, 504167	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-12-16 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2014-12-16 15:40:05

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	503991, 504167	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-12-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	503991, 504167	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-12-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	503991, 504167	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-12-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	503991, 504167	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-12-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	503991, 504167	**Reviewer Name:**	Michael Albertson
LRC Date:	2014-12-16 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Carbon dioxide, methane, ethene, and ethane were below the LCL in CCV WG503990-01 analyzed 12/09/14. An un-diluted reanalysis of sample 13 was not performed due to the amount of methane present.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG503691 WG503892	**Reviewer Name:**	Adriane Steed
LRC Date:	2014-12-05 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Adriane Steed	Adriane Steed		2014-12-09 18:17:15

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG503691 WG503892	**Reviewer Name:**	Adriane Steed
LRC Date:	2014-12-05 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG503691 WG503892	**Reviewer Name:**	Adriane Steed
LRC Date:	2014-12-05 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG503691 WG503892	**Reviewer Name:**	Adriane Steed
LRC Date:	2014-12-05 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG503691 WG503892	**Reviewer Name:**	Adriane Steed
LRC Date:	2014-12-05 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG503691 WG503892	**Reviewer Name:**	Adriane Steed
LRC Date:	2014-12-05 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -12 and -13 were analyzed at dilutions only due to their high analyte concentrations (Cl and/or SO4) which were over 200 ppm. Any sample that has a single anion load greater than 200 ppm (or a total anion load greater than 400 ppm) will be diluted in order to prevent damage to the IC from repeated overloading of the analytical column and oversaturation of the suppressor membranes.
2. Both fractions were initially analyzed within their 48 hour hold time. Due to too many injections between CCV's samples were rerun out of hold.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG504251	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-12-17 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2014-12-17 14:33:00

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG504251	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-12-17 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG504251	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-12-17 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG504251	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-12-17 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG504251	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-12-17 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG504251	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-12-17 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	S
Prep Batch Number(s):	WG503820	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-12-17 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2014-12-17 14:33:37

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	S
Prep Batch Number(s):	WG503820	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-12-17 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	S
Prep Batch Number(s):	WG503820	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-12-17 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	S
Prep Batch Number(s):	WG503820	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-12-17 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	S
Prep Batch Number(s):	WG503820	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-12-17 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	S
Prep Batch Number(s):	WG503820	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-12-17 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG503780	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-12-17 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2014-12-17 14:34:07

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG503780	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-12-17 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG503780	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-12-17 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG503780	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-12-17 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG503780	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-12-17 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L14120292
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG503780	**Reviewer Name:**	Deanna Hesson
LRC Date:	2014-12-17 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW05-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 17:31
Collect Date:	12/03/2014 07:40	**Dilution:**	1	**File ID:**	8M401589
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.8	85	115	
1,2-Dichloroethane-d4	94.9	70	120	
Toluene-d8	89.7	85	120	
4-Bromofluorobenzene	94.2	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW02-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 18:00
Collect Date:	12/03/2014 07:55	**Dilution:**	1	**File ID:**	8M401590
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.406	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.0	85	115	
1,2-Dichloroethane-d4	94.0	70	120	
Toluene-d8	89.7	85	120	
4-Bromofluorobenzene	94.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW01-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 21:51
Collect Date:	12/03/2014 08:15	**Dilution:**	1	**File ID:**	8M401598
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	14.9		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	16.6		1.00	0.500	0.250
cis-1,2-Dichloroethene	156-59-2	1.26		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.398	J	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.483	J	1.00	0.500	0.250
Trichloroethene	79-01-6	3.36		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	2.16		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.2	85	115	
1,2-Dichloroethane-d4	92.9	70	120	
Toluene-d8	89.5	85	120	
4-Bromofluorobenzene	96.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW01-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503948	**Analyst:**	TMB	**Run Date:**	12/09/2014 12:35
Collect Date:	12/03/2014 08:15	**Dilution:**	10	**File ID:**	8M401616
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1-Dichloroethene	75-35-4	349		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.2	85	115	
1,2-Dichloroethane-d4	92.4	70	120	
Toluene-d8	90.0	85	120	
4-Bromofluorobenzene	94.6	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW07-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 18:29
Collect Date:	12/03/2014 08:35	**Dilution:**	1	**File ID:**	8M401591
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.19		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.4	85	115	
1,2-Dichloroethane-d4	96.1	70	120	
Toluene-d8	90.7	85	120	
4-Bromofluorobenzene	94.0	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09A-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 18:58
Collect Date:	12/03/2014 09:50	**Dilution:**	1	**File ID:**	8M401592
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.4	85	115	
1,2-Dichloroethane-d4	93.4	70	120	
Toluene-d8	91.2	85	120	
4-Bromofluorobenzene	96.2	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09AFD-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 19:27
Collect Date:	12/03/2014 09:50	**Dilution:**	1	**File ID:**	8M401593
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.3	85	115	
1,2-Dichloroethane-d4	94.1	70	120	
Toluene-d8	90.4	85	120	
4-Bromofluorobenzene	97.1	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW10-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 17:01
Collect Date:	12/03/2014 11:15	**Dilution:**	1	**File ID:**	8M401588
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.173	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.5	85	115	
1,2-Dichloroethane-d4	93.8	70	120	
Toluene-d8	90.7	85	120	
4-Bromofluorobenzene	95.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW10MS-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 14:33
Collect Date:	12/03/2014 11:15	**Dilution:**	1	**File ID:**	8M401583
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.7		10.0	5.00	2.50
Benzene	71-43-2	21.4		1.00	0.250	0.125
Bromobenzene	108-86-1	19.1		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.8		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.1		1.00	0.500	0.250
Bromoform	75-25-2	18.4		2.00	1.00	0.500
Bromomethane	74-83-9	14.5		2.00	1.00	0.500
2-Butanone	78-93-3	19.5		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.8		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	21.0		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.3		1.00	0.500	0.250
Carbon disulfide	75-15-0	20.0		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	21.2		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.4		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.3		1.00	0.500	0.250
Chloroethane	75-00-3	19.8		2.00	1.00	0.500
Chloroform	67-66-3	21.1		1.00	0.250	0.125
Chloromethane	74-87-3	15.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.1		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.6		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	19.0		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.1		1.00	0.500	0.250
Dibromomethane	74-95-3	21.5		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.4		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.5		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.2		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	15.6		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.3		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.4		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	20.5		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	20.1		1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	20.0		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.9		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	21.4		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	22.6		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.2		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.0		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.8		1.00	0.500	0.250
2-Hexanone	591-78-6	19.5		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	19.5		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.6		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.6		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.6		10.0	5.00	2.50
Methylene chloride	75-09-2	19.8		1.00	0.500	0.250
Naphthalene	91-20-3	20.4		1.00	0.400	0.200
n-Propylbenzene	103-65-1	19.1		1.00	0.250	0.125
Styrene	100-42-5	20.8		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	18.9		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.0		1.00	0.400	0.200
Tetrachloroethene	127-18-4	18.9		1.00	0.500	0.250
Toluene	108-88-3	19.5		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.6		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.6		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	21.1		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.9		1.00	0.500	0.250
Trichloroethene	79-01-6	21.0		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	21.2		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.0		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.3		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.4		1.00	0.500	0.250
Vinyl chloride	75-01-4	16.5		1.00	0.500	0.250
o-Xylene	95-47-6	20.0		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.5		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.5	85	115	
1,2-Dichloroethane-d4	92.1	70	120	
Toluene-d8	89.8	85	120	
4-Bromofluorobenzene	88.5	75	120	

Certificate of Analysis

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Sample #:	L14120292-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW10MSD-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 15:03
Collect Date:	12/03/2014 11:15	**Dilution:**	1	**File ID:**	8M401584
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.8		10.0	5.00	2.50
Benzene	71-43-2	21.4		1.00	0.250	0.125
Bromobenzene	108-86-1	19.7		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.2		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.4		1.00	0.500	0.250
Bromoform	75-25-2	19.1		2.00	1.00	0.500
Bromomethane	74-83-9	14.3		2.00	1.00	0.500
2-Butanone	78-93-3	20.2		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.8		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	20.9		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.3		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	21.4		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.5		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.8		1.00	0.500	0.250
Chloroethane	75-00-3	19.7		2.00	1.00	0.500
Chloroform	67-66-3	21.3		1.00	0.250	0.125
Chloromethane	74-87-3	15.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.1		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.9		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	19.3		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.4		1.00	0.500	0.250
Dibromomethane	74-95-3	22.0		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	21.0		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.6		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.1		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	15.8		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.4		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.8		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	20.3		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	20.5		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	20.1		1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	21.0		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	21.3		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	22.9		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.5		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.0		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.3		1.00	0.500	0.250
2-Hexanone	591-78-6	18.9		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	19.3		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.7		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.7		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.1		10.0	5.00	2.50
Methylene chloride	75-09-2	20.2		1.00	0.500	0.250
Naphthalene	91-20-3	21.1		1.00	0.400	0.200
n-Propylbenzene	103-65-1	19.2		1.00	0.250	0.125
Styrene	100-42-5	21.3		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.9		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.6		1.00	0.500	0.250
Toluene	108-88-3	19.7		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	20.5		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.5		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	21.1		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.6		1.00	0.500	0.250
Trichloroethene	79-01-6	20.9		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	20.8		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.6		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.1		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.4		1.00	0.500	0.250
Vinyl chloride	75-01-4	16.4		1.00	0.500	0.250
o-Xylene	95-47-6	20.1		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.8		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.8	85	115	
1,2-Dichloroethane-d4	93.7	70	120	
Toluene-d8	88.8	85	120	
4-Bromofluorobenzene	90.7	75	120	

Certificate of Analysis

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Sample #:	L14120292-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW12-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 19:56
Collect Date:	12/03/2014 14:05	**Dilution:**	1	**File ID:**	8M401594
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.8	85	115	
1,2-Dichloroethane-d4	94.5	70	120	
Toluene-d8	91.1	85	120	
4-Bromofluorobenzene	95.9	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW14-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 20:24
Collect Date:	12/03/2014 15:30	**Dilution:**	1	**File ID:**	8M401595
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.451	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.790	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	4.73		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.3	85	115	
1,2-Dichloroethane-d4	92.9	70	120	
Toluene-d8	90.9	85	120	
4-Bromofluorobenzene	95.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW08-120414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 22:20
Collect Date:	12/04/2014 08:20	**Dilution:**	10	**File ID:**	8M401599
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	2.53	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	63.9		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	106		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	2320		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	2.69	J	10.0	5.00	2.50

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	3.42	J	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	7.36	J	10.0	5.00	2.50
Trichloroethene	79-01-6	3.55	J	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.5	85	115	
1,2-Dichloroethane-d4	91.5	70	120	
Toluene-d8	90.4	85	120	
4-Bromofluorobenzene	95.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-12	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW08-120414	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	12/09/2014 10:17
Workgroup #:	WG504167	**Analyst:**	JDS	**Run Date:**	12/10/2014 12:44
Collect Date:	12/04/2014 08:20	**Dilution:**	1	**File ID:**	16G45912
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	89600		10000	5000	2500
Methane	74-82-8	14.4		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-12	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-120414	**Prep Method:**	9056	**Prep Date:**	12/05/2014 12:28
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG503655	**Analyst:**	AED	**Run Date:**	12/05/2014 22:59
Collect Date:	12/04/2014 08:20	**Dilution:**	10	**File ID:**	I1_120514-38
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U	6.00	2.00	1.00
Nitrite	14797-65-0	2.04	J	4.00	2.00	1.00
Sulfate	14808-79-8	302		10.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-12	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	67WW08-120414	**Prep Method:**	9056	**Prep Date:**	12/08/2014 18:10
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG503892	**Analyst:**	ALS	**Run Date:**	12/08/2014 20:09
Collect Date:	12/04/2014 08:20	**Dilution:**	100	**File ID:**	I3_120814-09
Sample Tag:	DL03	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1410	H1	20.0	20.0	10.0

H1	Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-12	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-120414	**Prep Method:**	9056	**Prep Date:**	12/05/2014 12:28
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG503655	**Analyst:**	AED	**Run Date:**	12/06/2014 00:27
Collect Date:	12/04/2014 08:20	**Dilution:**	100	**File ID:**	I1_120514-43
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1310		20.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-12	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW08-120414	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	10/23/2014 08:01
Workgroup #:	WG504251	**Analyst:**	TMM	**Run Date:**	12/10/2014 13:15
Collect Date:	12/04/2014 08:20	**Dilution:**	1	**File ID:**	1V.1412101315-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.374		0.0400	0.0400	0.0200

Certificate of Analysis

Sample #:	L14120292-12	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW08-120414	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG503820	**Analyst:**	DLP	**Run Date:**	12/08/2014 13:30
Collect Date:	12/04/2014 08:20	**Dilution:**	1	**File ID:**	ET.1412081330-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-12	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-120414	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG503780	**Analyst:**	EPT	**Run Date:**	12/08/2014 18:23
Collect Date:	12/04/2014 08:20	**Dilution:**	1	**File ID:**	TC12082014.011
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	3.68		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L14120292-12	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-120414	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG503780	**Analyst:**	EPT	**Run Date:**	12/08/2014 18:23
Collect Date:	12/04/2014 08:20	**Dilution:**	1	**File ID:**	TC12082014.011
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		22.9		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW11-120414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 21:22
Collect Date:	12/04/2014 10:00	**Dilution:**	1	**File ID:**	8M401597
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	11.1		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.567	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	37.5		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.302	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.8	85	115	
1,2-Dichloroethane-d4	92.9	70	120	
Toluene-d8	90.0	85	120	
4-Bromofluorobenzene	95.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW11-120414	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	12/09/2014 10:17
Workgroup #:	WG503991	**Analyst:**	JDS	**Run Date:**	12/09/2014 12:24
Collect Date:	12/04/2014 10:00	**Dilution:**	1	**File ID:**	16G45864
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	285000	J	10000	5000	2500
Methane	74-82-8	2.41	J	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW11-120414	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	12/09/2014 10:17
Workgroup #:	WG504167	**Analyst:**	JDS	**Run Date:**	12/10/2014 12:22
Collect Date:	12/04/2014 10:00	**Dilution:**	5	**File ID:**	16G45910
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	364000		50000	25000	12500
Methane	74-82-8	7.19	J	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	67WW11-120414	**Prep Method:**	9056	**Prep Date:**	12/08/2014 18:10
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG503892	**Analyst:**	ALS	**Run Date:**	12/08/2014 20:30
Collect Date:	12/04/2014 10:00	**Dilution:**	10	**File ID:**	I3_120814-10
Sample Tag:	DL03	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U,H1	6.00	2.00	1.00
Nitrite	14797-65-0	2.00	U,H1	4.00	2.00	1.00
Sulfate	14808-79-8	424	H1	10.0	10.0	5.00

H1	Sample analysis performed past holding time.
J	Estimated value ; the analyte concentration was greater than the highest standard
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW11-120414	**Prep Method:**	9056	**Prep Date:**	12/05/2014 23:54
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG503691	**Analyst:**	AED	**Run Date:**	12/06/2014 00:45
Collect Date:	12/04/2014 10:00	**Dilution:**	10	**File ID:**	I1_120514-44
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U	6.00	2.00	1.00
Nitrite	14797-65-0	1.97	J	4.00	2.00	1.00
Sulfate	14808-79-8	402		10.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW11-120414	**Prep Method:**	9056	**Prep Date:**	12/05/2014 23:54
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG503691	**Analyst:**	AED	**Run Date:**	12/06/2014 01:03
Collect Date:	12/04/2014 10:00	**Dilution:**	100	**File ID:**	I1_120514-45
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1330		20.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	67WW11-120414	**Prep Method:**	9056	**Prep Date:**	12/08/2014 18:10
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG503892	**Analyst:**	ALS	**Run Date:**	12/08/2014 20:50
Collect Date:	12/04/2014 10:00	**Dilution:**	100	**File ID:**	I3_120814-11
Sample Tag:	DL04	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1470	H1	20.0	20.0	10.0

H1	Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW11-120414	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	10/23/2014 08:01
Workgroup #:	WG504251	**Analyst:**	TMM	**Run Date:**	12/10/2014 13:15
Collect Date:	12/04/2014 10:00	**Dilution:**	1	**File ID:**	1V.1412101315-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.0400	U	0.0400	0.0400	0.0200

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW11-120414	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG503820	**Analyst:**	DLP	**Run Date:**	12/08/2014 13:30
Collect Date:	12/04/2014 10:00	**Dilution:**	1	**File ID:**	ET.1412081330-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW11-120414	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG503780	**Analyst:**	EPT	**Run Date:**	12/09/2014 09:32
Collect Date:	12/04/2014 10:00	**Dilution:**	5	**File ID:**	TC12082014.037
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		140		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW11-120414	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG503780	**Analyst:**	EPT	**Run Date:**	12/09/2014 09:32
Collect Date:	12/04/2014 10:00	**Dilution:**	5	**File ID:**	TC12082014.037
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	9.10	J	10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW13-120414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 22:49
Collect Date:	12/04/2014 11:10	**Dilution:**	5	**File ID:**	8M401600
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	25.0	U	50.0	25.0	12.5
Benzene	71-43-2	1.25	U	5.00	1.25	0.625
Bromobenzene	108-86-1	1.25	U	5.00	1.25	0.625
Bromochloromethane	74-97-5	2.00	U	5.00	2.00	1.00
Bromodichloromethane	75-27-4	2.50	U	5.00	2.50	1.25
Bromoform	75-25-2	5.00	U	10.0	5.00	2.50
Bromomethane	74-83-9	5.00	U	10.0	5.00	2.50
2-Butanone	78-93-3	25.0	U	50.0	25.0	12.5
n-Butylbenzene	104-51-8	2.50	U	5.00	2.50	1.25
sec-Butylbenzene	135-98-8	2.50	U	5.00	2.50	1.25
tert-Butylbenzene	98-06-6	2.50	U	5.00	2.50	1.25
Carbon disulfide	75-15-0	5.00	U	10.0	5.00	2.50
Carbon tetrachloride	56-23-5	2.50	U	5.00	2.50	1.25
Chlorobenzene	108-90-7	1.25	U	5.00	1.25	0.625
Chlorodibromomethane	124-48-1	2.50	U	5.00	2.50	1.25
Chloroethane	75-00-3	5.00	U	10.0	5.00	2.50
Chloroform	67-66-3	0.813	J	5.00	1.25	0.625
Chloromethane	74-87-3	5.00	U	10.0	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	5.00	1.25	0.625
4-Chlorotoluene	106-43-4	2.50	U	5.00	2.50	1.25
1,2-Dibromo-3-chloropropane	96-12-8	10.0	U	25.0	10.0	5.00
1,2-Dibromoethane	106-93-4	2.50	U	5.00	2.50	1.25
Dibromomethane	74-95-3	2.50	U	5.00	2.50	1.25
1,2-Dichlorobenzene	95-50-1	1.25	U	5.00	1.25	0.625
1,3-Dichlorobenzene	541-73-1	2.50	U	5.00	2.50	1.25
1,4-Dichlorobenzene	106-46-7	1.25	U	5.00	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	5.00	2.50	1.25
1,1-Dichloroethane	75-34-3	28.8		5.00	1.25	0.625
1,2-Dichloroethane	107-06-2	24.9		5.00	2.50	1.25
1,1-Dichloroethene	75-35-4	572		10.0	5.00	2.50
cis-1,2-Dichloroethene	156-59-2	1.31	J	5.00	2.50	1.25

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	2.50	U	5.00	2.50	1.25
1,2-Dichloropropane	78-87-5	2.00	U	5.00	2.00	1.00
1,3-Dichloropropane	142-28-9	2.00	U	5.00	2.00	1.00
2,2-Dichloropropane	594-20-7	2.50	U	5.00	2.50	1.25
cis-1,3-Dichloropropene	10061-01-5	2.50	U	5.00	2.50	1.25
trans-1,3-Dichloropropene	10061-02-6	5.00	U	10.0	5.00	2.50
1,1-Dichloropropene	563-58-6	2.50	U	5.00	2.50	1.25
Ethylbenzene	100-41-4	2.50	U	5.00	2.50	1.25
2-Hexanone	591-78-6	25.0	U	50.0	25.0	12.5
Hexachlorobutadiene	87-68-3	2.50	U	5.00	2.50	1.25
Isopropylbenzene	98-82-8	2.50	U	5.00	2.50	1.25
p-Isopropyltoluene	99-87-6	2.50	U	5.00	2.50	1.25
4-Methyl-2-pentanone	108-10-1	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	2.88	J	5.00	2.50	1.25
Naphthalene	91-20-3	2.00	U	5.00	2.00	1.00
n-Propylbenzene	103-65-1	1.25	U	5.00	1.25	0.625
Styrene	100-42-5	1.25	U	5.00	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	2.50	U	5.00	2.50	1.25
1,1,2,2-Tetrachloroethane	79-34-5	2.00	U	5.00	2.00	1.00
Tetrachloroethene	127-18-4	2.50	U	5.00	2.50	1.25
Toluene	108-88-3	2.50	U	5.00	2.50	1.25
1,2,3-Trichlorobenzene	87-61-6	1.50	U	5.00	1.50	0.750
1,2,4-Trichlorobenzene	120-82-1	2.00	U	5.00	2.00	1.00
1,1,1-Trichloroethane	71-55-6	2.50	U	5.00	2.50	1.25
1,1,2-Trichloroethane	79-00-5	4.40	J	5.00	2.50	1.25
Trichloroethene	79-01-6	1.65	J	5.00	2.50	1.25
Trichlorofluoromethane	75-69-4	2.50	U	5.00	2.50	1.25
1,2,3-Trichloropropane	96-18-4	5.00	U	10.0	5.00	2.50
1,2,4-Trimethylbenzene	95-63-6	2.50	U	5.00	2.50	1.25
1,3,5-Trimethylbenzene	108-67-8	2.50	U	5.00	2.50	1.25
Vinyl chloride	75-01-4	2.50	U	5.00	2.50	1.25
o-Xylene	95-47-6	2.50	U	5.00	2.50	1.25
m-,p-Xylene	179601-23-1	5.00	U	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.0	85	115	
1,2-Dichloroethane-d4	91.2	70	120	
Toluene-d8	90.8	85	120	
4-Bromofluorobenzene	96.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-15	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW13FD-120414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 23:17
Collect Date:	12/04/2014 11:10	**Dilution:**	5	**File ID:**	8M401601
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	25.0	U	50.0	25.0	12.5
Benzene	71-43-2	1.25	U	5.00	1.25	0.625
Bromobenzene	108-86-1	1.25	U	5.00	1.25	0.625
Bromochloromethane	74-97-5	2.00	U	5.00	2.00	1.00
Bromodichloromethane	75-27-4	2.50	U	5.00	2.50	1.25
Bromoform	75-25-2	5.00	U	10.0	5.00	2.50
Bromomethane	74-83-9	5.00	U	10.0	5.00	2.50
2-Butanone	78-93-3	25.0	U	50.0	25.0	12.5
n-Butylbenzene	104-51-8	2.50	U	5.00	2.50	1.25
sec-Butylbenzene	135-98-8	2.50	U	5.00	2.50	1.25
tert-Butylbenzene	98-06-6	2.50	U	5.00	2.50	1.25
Carbon disulfide	75-15-0	5.00	U	10.0	5.00	2.50
Carbon tetrachloride	56-23-5	2.50	U	5.00	2.50	1.25
Chlorobenzene	108-90-7	1.25	U	5.00	1.25	0.625
Chlorodibromomethane	124-48-1	2.50	U	5.00	2.50	1.25
Chloroethane	75-00-3	5.00	U	10.0	5.00	2.50
Chloroform	67-66-3	0.848	J	5.00	1.25	0.625
Chloromethane	74-87-3	5.00	U	10.0	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	5.00	1.25	0.625
4-Chlorotoluene	106-43-4	2.50	U	5.00	2.50	1.25
1,2-Dibromo-3-chloropropane	96-12-8	10.0	U	25.0	10.0	5.00
1,2-Dibromoethane	106-93-4	2.50	U	5.00	2.50	1.25
Dibromomethane	74-95-3	2.50	U	5.00	2.50	1.25
1,2-Dichlorobenzene	95-50-1	1.25	U	5.00	1.25	0.625
1,3-Dichlorobenzene	541-73-1	2.50	U	5.00	2.50	1.25
1,4-Dichlorobenzene	106-46-7	1.25	U	5.00	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	5.00	2.50	1.25
1,1-Dichloroethane	75-34-3	27.4		5.00	1.25	0.625
1,2-Dichloroethane	107-06-2	24.6		5.00	2.50	1.25
1,1-Dichloroethene	75-35-4	522		10.0	5.00	2.50
cis-1,2-Dichloroethene	156-59-2	1.49	J	5.00	2.50	1.25

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	2.50	U	5.00	2.50	1.25
1,2-Dichloropropane	78-87-5	2.00	U	5.00	2.00	1.00
1,3-Dichloropropane	142-28-9	2.00	U	5.00	2.00	1.00
2,2-Dichloropropane	594-20-7	2.50	U	5.00	2.50	1.25
cis-1,3-Dichloropropene	10061-01-5	2.50	U	5.00	2.50	1.25
trans-1,3-Dichloropropene	10061-02-6	5.00	U	10.0	5.00	2.50
1,1-Dichloropropene	563-58-6	2.50	U	5.00	2.50	1.25
Ethylbenzene	100-41-4	2.50	U	5.00	2.50	1.25
2-Hexanone	591-78-6	25.0	U	50.0	25.0	12.5
Hexachlorobutadiene	87-68-3	2.50	U	5.00	2.50	1.25
Isopropylbenzene	98-82-8	2.50	U	5.00	2.50	1.25
p-Isopropyltoluene	99-87-6	2.50	U	5.00	2.50	1.25
4-Methyl-2-pentanone	108-10-1	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	2.90	J	5.00	2.50	1.25
Naphthalene	91-20-3	2.00	U	5.00	2.00	1.00
n-Propylbenzene	103-65-1	1.25	U	5.00	1.25	0.625
Styrene	100-42-5	1.25	U	5.00	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	2.50	U	5.00	2.50	1.25
1,1,2,2-Tetrachloroethane	79-34-5	2.00	U	5.00	2.00	1.00
Tetrachloroethene	127-18-4	2.50	U	5.00	2.50	1.25
Toluene	108-88-3	2.50	U	5.00	2.50	1.25
1,2,3-Trichlorobenzene	87-61-6	1.50	U	5.00	1.50	0.750
1,2,4-Trichlorobenzene	120-82-1	2.00	U	5.00	2.00	1.00
1,1,1-Trichloroethane	71-55-6	2.50	U	5.00	2.50	1.25
1,1,2-Trichloroethane	79-00-5	4.56	J	5.00	2.50	1.25
Trichloroethene	79-01-6	1.94	J	5.00	2.50	1.25
Trichlorofluoromethane	75-69-4	2.50	U	5.00	2.50	1.25
1,2,3-Trichloropropane	96-18-4	5.00	U	10.0	5.00	2.50
1,2,4-Trimethylbenzene	95-63-6	2.50	U	5.00	2.50	1.25
1,3,5-Trimethylbenzene	108-67-8	2.50	U	5.00	2.50	1.25
Vinyl chloride	75-01-4	2.50	U	5.00	2.50	1.25
o-Xylene	95-47-6	2.50	U	5.00	2.50	1.25
m-,p-Xylene	179601-23-1	5.00	U	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.4	85	115	
1,2-Dichloroethane-d4	90.7	70	120	
Toluene-d8	89.3	85	120	
4-Bromofluorobenzene	96.6	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09-120414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 20:53
Collect Date:	12/04/2014 14:00	**Dilution:**	1	**File ID:**	8M401596
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	3.93		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	11.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.9	85	115	
1,2-Dichloroethane-d4	92.2	70	120	
Toluene-d8	89.5	85	120	
4-Bromofluorobenzene	95.2	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-17	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 16:02
Collect Date:	12/04/2014 00:01	**Dilution:**	1	**File ID:**	8M401586
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.1	85	115	
1,2-Dichloroethane-d4	94.1	70	120	
Toluene-d8	90.7	85	120	
4-Bromofluorobenzene	94.0	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW05-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 17:31
Collect Date:	12/03/2014 07:40	**Dilution:**	1	**File ID:**	8M401589
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.8	85	115	
1,2-Dichloroethane-d4	94.9	70	120	
Toluene-d8	89.7	85	120	
4-Bromofluorobenzene	94.2	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW02-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 18:00
Collect Date:	12/03/2014 07:55	**Dilution:**	1	**File ID:**	8M401590
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.406	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.0	85	115	
1,2-Dichloroethane-d4	94.0	70	120	
Toluene-d8	89.7	85	120	
4-Bromofluorobenzene	94.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW01-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 21:51
Collect Date:	12/03/2014 08:15	**Dilution:**	1	**File ID:**	8M401598
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	14.9		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	16.6		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	417	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.26		1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.398	J	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.483	J	1.00	0.500	0.250
Trichloroethene	79-01-6	3.36		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	2.16		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.2	85	115	
1,2-Dichloroethane-d4	92.9	70	120	
Toluene-d8	89.5	85	120	
4-Bromofluorobenzene	96.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW01-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503948	**Analyst:**	TMB	**Run Date:**	12/09/2014 12:35
Collect Date:	12/03/2014 08:15	**Dilution:**	10	**File ID:**	8M401616
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	2.50	U	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	13.5		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	16.7		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	349		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	2.79	J	10.0	5.00	2.50

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
Trichloroethene	79-01-6	2.98	J	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.2	85	115	
1,2-Dichloroethane-d4	92.4	70	120	
Toluene-d8	90.0	85	120	
4-Bromofluorobenzene	94.6	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW07-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 18:29
Collect Date:	12/03/2014 08:35	**Dilution:**	1	**File ID:**	8M401591
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.19		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.4	85	115	
1,2-Dichloroethane-d4	96.1	70	120	
Toluene-d8	90.7	85	120	
4-Bromofluorobenzene	94.0	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09A-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 18:58
Collect Date:	12/03/2014 09:50	**Dilution:**	1	**File ID:**	8M401592
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.4	85	115	
1,2-Dichloroethane-d4	93.4	70	120	
Toluene-d8	91.2	85	120	
4-Bromofluorobenzene	96.2	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09AFD-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 19:27
Collect Date:	12/03/2014 09:50	**Dilution:**	1	**File ID:**	8M401593
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.3	85	115	
1,2-Dichloroethane-d4	94.1	70	120	
Toluene-d8	90.4	85	120	
4-Bromofluorobenzene	97.1	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW10-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 17:01
Collect Date:	12/03/2014 11:15	**Dilution:**	1	**File ID:**	8M401588
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.173	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.5	85	115	
1,2-Dichloroethane-d4	93.8	70	120	
Toluene-d8	90.7	85	120	
4-Bromofluorobenzene	95.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW10MS-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 14:33
Collect Date:	12/03/2014 11:15	**Dilution:**	1	**File ID:**	8M401583
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.7		10.0	5.00	2.50
Benzene	71-43-2	21.4		1.00	0.250	0.125
Bromobenzene	108-86-1	19.1		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.8		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.1		1.00	0.500	0.250
Bromoform	75-25-2	18.4		2.00	1.00	0.500
Bromomethane	74-83-9	14.5		2.00	1.00	0.500
2-Butanone	78-93-3	19.5		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.8		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	21.0		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.3		1.00	0.500	0.250
Carbon disulfide	75-15-0	20.0		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	21.2		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.4		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.3		1.00	0.500	0.250
Chloroethane	75-00-3	19.8		2.00	1.00	0.500
Chloroform	67-66-3	21.1		1.00	0.250	0.125
Chloromethane	74-87-3	15.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.1		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.6		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	19.0		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.1		1.00	0.500	0.250
Dibromomethane	74-95-3	21.5		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.4		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.5		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.2		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	15.6		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.3		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.4		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	20.5		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	20.1		1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	20.0		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.9		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	21.4		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	22.6		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.2		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.0		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.8		1.00	0.500	0.250
2-Hexanone	591-78-6	19.5		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	19.5		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.6		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.6		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.6		10.0	5.00	2.50
Methylene chloride	75-09-2	19.8		1.00	0.500	0.250
Naphthalene	91-20-3	20.4		1.00	0.400	0.200
n-Propylbenzene	103-65-1	19.1		1.00	0.250	0.125
Styrene	100-42-5	20.8		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	18.9		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.0		1.00	0.400	0.200
Tetrachloroethene	127-18-4	18.9		1.00	0.500	0.250
Toluene	108-88-3	19.5		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.6		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.6		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	21.1		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.9		1.00	0.500	0.250
Trichloroethene	79-01-6	21.0		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	21.2		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.0		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.3		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.4		1.00	0.500	0.250
Vinyl chloride	75-01-4	16.5		1.00	0.500	0.250
o-Xylene	95-47-6	20.0		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.5		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.5	85	115	
1,2-Dichloroethane-d4	92.1	70	120	
Toluene-d8	89.8	85	120	
4-Bromofluorobenzene	88.5	75	120	

Certificate of Analysis

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Sample #:	L14120292-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW10MSD-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 15:03
Collect Date:	12/03/2014 11:15	**Dilution:**	1	**File ID:**	8M401584
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.8		10.0	5.00	2.50
Benzene	71-43-2	21.4		1.00	0.250	0.125
Bromobenzene	108-86-1	19.7		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.2		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.4		1.00	0.500	0.250
Bromoform	75-25-2	19.1		2.00	1.00	0.500
Bromomethane	74-83-9	14.3		2.00	1.00	0.500
2-Butanone	78-93-3	20.2		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.8		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	20.9		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.3		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	21.4		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.5		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.8		1.00	0.500	0.250
Chloroethane	75-00-3	19.7		2.00	1.00	0.500
Chloroform	67-66-3	21.3		1.00	0.250	0.125
Chloromethane	74-87-3	15.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.1		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.9		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	19.3		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.4		1.00	0.500	0.250
Dibromomethane	74-95-3	22.0		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	21.0		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.6		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.1		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	15.8		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.4		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.8		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	20.3		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	20.5		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	20.1		1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	21.0		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	21.3		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	22.9		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.5		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.0		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.3		1.00	0.500	0.250
2-Hexanone	591-78-6	18.9		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	19.3		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.7		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.7		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.1		10.0	5.00	2.50
Methylene chloride	75-09-2	20.2		1.00	0.500	0.250
Naphthalene	91-20-3	21.1		1.00	0.400	0.200
n-Propylbenzene	103-65-1	19.2		1.00	0.250	0.125
Styrene	100-42-5	21.3		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.9		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.6		1.00	0.500	0.250
Toluene	108-88-3	19.7		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	20.5		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.5		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	21.1		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.6		1.00	0.500	0.250
Trichloroethene	79-01-6	20.9		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	20.8		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.6		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.1		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.4		1.00	0.500	0.250
Vinyl chloride	75-01-4	16.4		1.00	0.500	0.250
o-Xylene	95-47-6	20.1		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.8		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.8	85	115	
1,2-Dichloroethane-d4	93.7	70	120	
Toluene-d8	88.8	85	120	
4-Bromofluorobenzene	90.7	75	120	

Certificate of Analysis

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Sample #:	L14120292-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW12-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 19:56
Collect Date:	12/03/2014 14:05	**Dilution:**	1	**File ID:**	8M401594
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.8	85	115	
1,2-Dichloroethane-d4	94.5	70	120	
Toluene-d8	91.1	85	120	
4-Bromofluorobenzene	95.9	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW14-120314	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 20:24
Collect Date:	12/03/2014 15:30	**Dilution:**	1	**File ID:**	8M401595
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.451	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.790	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	4.73		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.3	85	115	
1,2-Dichloroethane-d4	92.9	70	120	
Toluene-d8	90.9	85	120	
4-Bromofluorobenzene	95.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW08-120414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 22:20
Collect Date:	12/04/2014 08:20	**Dilution:**	10	**File ID:**	8M401599
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	2.53	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	63.9		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	106		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	2320		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	2.69	J	10.0	5.00	2.50

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	3.42	J	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	7.36	J	10.0	5.00	2.50
Trichloroethene	79-01-6	3.55	J	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.5	85	115	
1,2-Dichloroethane-d4	91.5	70	120	
Toluene-d8	90.4	85	120	
4-Bromofluorobenzene	95.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW11-120414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 21:22
Collect Date:	12/04/2014 10:00	**Dilution:**	1	**File ID:**	8M401597
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	11.1		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.567	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	37.5		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.302	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.8	85	115	
1,2-Dichloroethane-d4	92.9	70	120	
Toluene-d8	90.0	85	120	
4-Bromofluorobenzene	95.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW13-120414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 22:49
Collect Date:	12/04/2014 11:10	**Dilution:**	5	**File ID:**	8M401600
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	25.0	U	50.0	25.0	12.5
Benzene	71-43-2	1.25	U	5.00	1.25	0.625
Bromobenzene	108-86-1	1.25	U	5.00	1.25	0.625
Bromochloromethane	74-97-5	2.00	U	5.00	2.00	1.00
Bromodichloromethane	75-27-4	2.50	U	5.00	2.50	1.25
Bromoform	75-25-2	5.00	U	10.0	5.00	2.50
Bromomethane	74-83-9	5.00	U	10.0	5.00	2.50
2-Butanone	78-93-3	25.0	U	50.0	25.0	12.5
n-Butylbenzene	104-51-8	2.50	U	5.00	2.50	1.25
sec-Butylbenzene	135-98-8	2.50	U	5.00	2.50	1.25
tert-Butylbenzene	98-06-6	2.50	U	5.00	2.50	1.25
Carbon disulfide	75-15-0	5.00	U	10.0	5.00	2.50
Carbon tetrachloride	56-23-5	2.50	U	5.00	2.50	1.25
Chlorobenzene	108-90-7	1.25	U	5.00	1.25	0.625
Chlorodibromomethane	124-48-1	2.50	U	5.00	2.50	1.25
Chloroethane	75-00-3	5.00	U	10.0	5.00	2.50
Chloroform	67-66-3	0.813	J	5.00	1.25	0.625
Chloromethane	74-87-3	5.00	U	10.0	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	5.00	1.25	0.625
4-Chlorotoluene	106-43-4	2.50	U	5.00	2.50	1.25
1,2-Dibromo-3-chloropropane	96-12-8	10.0	U	25.0	10.0	5.00
1,2-Dibromoethane	106-93-4	2.50	U	5.00	2.50	1.25
Dibromomethane	74-95-3	2.50	U	5.00	2.50	1.25
1,2-Dichlorobenzene	95-50-1	1.25	U	5.00	1.25	0.625
1,3-Dichlorobenzene	541-73-1	2.50	U	5.00	2.50	1.25
1,4-Dichlorobenzene	106-46-7	1.25	U	5.00	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	5.00	2.50	1.25
1,1-Dichloroethane	75-34-3	28.8		5.00	1.25	0.625
1,2-Dichloroethane	107-06-2	24.9		5.00	2.50	1.25
1,1-Dichloroethene	75-35-4	572		10.0	5.00	2.50
cis-1,2-Dichloroethene	156-59-2	1.31	J	5.00	2.50	1.25

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	2.50	U	5.00	2.50	1.25
1,2-Dichloropropane	78-87-5	2.00	U	5.00	2.00	1.00
1,3-Dichloropropane	142-28-9	2.00	U	5.00	2.00	1.00
2,2-Dichloropropane	594-20-7	2.50	U	5.00	2.50	1.25
cis-1,3-Dichloropropene	10061-01-5	2.50	U	5.00	2.50	1.25
trans-1,3-Dichloropropene	10061-02-6	5.00	U	10.0	5.00	2.50
1,1-Dichloropropene	563-58-6	2.50	U	5.00	2.50	1.25
Ethylbenzene	100-41-4	2.50	U	5.00	2.50	1.25
2-Hexanone	591-78-6	25.0	U	50.0	25.0	12.5
Hexachlorobutadiene	87-68-3	2.50	U	5.00	2.50	1.25
Isopropylbenzene	98-82-8	2.50	U	5.00	2.50	1.25
p-Isopropyltoluene	99-87-6	2.50	U	5.00	2.50	1.25
4-Methyl-2-pentanone	108-10-1	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	2.88	J	5.00	2.50	1.25
Naphthalene	91-20-3	2.00	U	5.00	2.00	1.00
n-Propylbenzene	103-65-1	1.25	U	5.00	1.25	0.625
Styrene	100-42-5	1.25	U	5.00	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	2.50	U	5.00	2.50	1.25
1,1,2,2-Tetrachloroethane	79-34-5	2.00	U	5.00	2.00	1.00
Tetrachloroethene	127-18-4	2.50	U	5.00	2.50	1.25
Toluene	108-88-3	2.50	U	5.00	2.50	1.25
1,2,3-Trichlorobenzene	87-61-6	1.50	U	5.00	1.50	0.750
1,2,4-Trichlorobenzene	120-82-1	2.00	U	5.00	2.00	1.00
1,1,1-Trichloroethane	71-55-6	2.50	U	5.00	2.50	1.25
1,1,2-Trichloroethane	79-00-5	4.40	J	5.00	2.50	1.25
Trichloroethene	79-01-6	1.65	J	5.00	2.50	1.25
Trichlorofluoromethane	75-69-4	2.50	U	5.00	2.50	1.25
1,2,3-Trichloropropane	96-18-4	5.00	U	10.0	5.00	2.50
1,2,4-Trimethylbenzene	95-63-6	2.50	U	5.00	2.50	1.25
1,3,5-Trimethylbenzene	108-67-8	2.50	U	5.00	2.50	1.25
Vinyl chloride	75-01-4	2.50	U	5.00	2.50	1.25
o-Xylene	95-47-6	2.50	U	5.00	2.50	1.25
m-,p-Xylene	179601-23-1	5.00	U	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.0	85	115	
1,2-Dichloroethane-d4	91.2	70	120	
Toluene-d8	90.8	85	120	
4-Bromofluorobenzene	96.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-15	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW13FD-120414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 23:17
Collect Date:	12/04/2014 11:10	**Dilution:**	5	**File ID:**	8M401601
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	25.0	U	50.0	25.0	12.5
Benzene	71-43-2	1.25	U	5.00	1.25	0.625
Bromobenzene	108-86-1	1.25	U	5.00	1.25	0.625
Bromochloromethane	74-97-5	2.00	U	5.00	2.00	1.00
Bromodichloromethane	75-27-4	2.50	U	5.00	2.50	1.25
Bromoform	75-25-2	5.00	U	10.0	5.00	2.50
Bromomethane	74-83-9	5.00	U	10.0	5.00	2.50
2-Butanone	78-93-3	25.0	U	50.0	25.0	12.5
n-Butylbenzene	104-51-8	2.50	U	5.00	2.50	1.25
sec-Butylbenzene	135-98-8	2.50	U	5.00	2.50	1.25
tert-Butylbenzene	98-06-6	2.50	U	5.00	2.50	1.25
Carbon disulfide	75-15-0	5.00	U	10.0	5.00	2.50
Carbon tetrachloride	56-23-5	2.50	U	5.00	2.50	1.25
Chlorobenzene	108-90-7	1.25	U	5.00	1.25	0.625
Chlorodibromomethane	124-48-1	2.50	U	5.00	2.50	1.25
Chloroethane	75-00-3	5.00	U	10.0	5.00	2.50
Chloroform	67-66-3	0.848	J	5.00	1.25	0.625
Chloromethane	74-87-3	5.00	U	10.0	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	5.00	1.25	0.625
4-Chlorotoluene	106-43-4	2.50	U	5.00	2.50	1.25
1,2-Dibromo-3-chloropropane	96-12-8	10.0	U	25.0	10.0	5.00
1,2-Dibromoethane	106-93-4	2.50	U	5.00	2.50	1.25
Dibromomethane	74-95-3	2.50	U	5.00	2.50	1.25
1,2-Dichlorobenzene	95-50-1	1.25	U	5.00	1.25	0.625
1,3-Dichlorobenzene	541-73-1	2.50	U	5.00	2.50	1.25
1,4-Dichlorobenzene	106-46-7	1.25	U	5.00	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	5.00	2.50	1.25
1,1-Dichloroethane	75-34-3	27.4		5.00	1.25	0.625
1,2-Dichloroethane	107-06-2	24.6		5.00	2.50	1.25
1,1-Dichloroethene	75-35-4	522		10.0	5.00	2.50
cis-1,2-Dichloroethene	156-59-2	1.49	J	5.00	2.50	1.25

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	2.50	U	5.00	2.50	1.25
1,2-Dichloropropane	78-87-5	2.00	U	5.00	2.00	1.00
1,3-Dichloropropane	142-28-9	2.00	U	5.00	2.00	1.00
2,2-Dichloropropane	594-20-7	2.50	U	5.00	2.50	1.25
cis-1,3-Dichloropropene	10061-01-5	2.50	U	5.00	2.50	1.25
trans-1,3-Dichloropropene	10061-02-6	5.00	U	10.0	5.00	2.50
1,1-Dichloropropene	563-58-6	2.50	U	5.00	2.50	1.25
Ethylbenzene	100-41-4	2.50	U	5.00	2.50	1.25
2-Hexanone	591-78-6	25.0	U	50.0	25.0	12.5
Hexachlorobutadiene	87-68-3	2.50	U	5.00	2.50	1.25
Isopropylbenzene	98-82-8	2.50	U	5.00	2.50	1.25
p-Isopropyltoluene	99-87-6	2.50	U	5.00	2.50	1.25
4-Methyl-2-pentanone	108-10-1	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	2.90	J	5.00	2.50	1.25
Naphthalene	91-20-3	2.00	U	5.00	2.00	1.00
n-Propylbenzene	103-65-1	1.25	U	5.00	1.25	0.625
Styrene	100-42-5	1.25	U	5.00	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	2.50	U	5.00	2.50	1.25
1,1,2,2-Tetrachloroethane	79-34-5	2.00	U	5.00	2.00	1.00
Tetrachloroethene	127-18-4	2.50	U	5.00	2.50	1.25
Toluene	108-88-3	2.50	U	5.00	2.50	1.25
1,2,3-Trichlorobenzene	87-61-6	1.50	U	5.00	1.50	0.750
1,2,4-Trichlorobenzene	120-82-1	2.00	U	5.00	2.00	1.00
1,1,1-Trichloroethane	71-55-6	2.50	U	5.00	2.50	1.25
1,1,2-Trichloroethane	79-00-5	4.56	J	5.00	2.50	1.25
Trichloroethene	79-01-6	1.94	J	5.00	2.50	1.25
Trichlorofluoromethane	75-69-4	2.50	U	5.00	2.50	1.25
1,2,3-Trichloropropane	96-18-4	5.00	U	10.0	5.00	2.50
1,2,4-Trimethylbenzene	95-63-6	2.50	U	5.00	2.50	1.25
1,3,5-Trimethylbenzene	108-67-8	2.50	U	5.00	2.50	1.25
Vinyl chloride	75-01-4	2.50	U	5.00	2.50	1.25
o-Xylene	95-47-6	2.50	U	5.00	2.50	1.25
m-,p-Xylene	179601-23-1	5.00	U	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.4	85	115	
1,2-Dichloroethane-d4	90.7	70	120	
Toluene-d8	89.3	85	120	
4-Bromofluorobenzene	96.6	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09-120414	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 20:53
Collect Date:	12/04/2014 14:00	**Dilution:**	1	**File ID:**	8M401596
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	3.93		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	11.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.9	85	115	
1,2-Dichloroethane-d4	92.2	70	120	
Toluene-d8	89.5	85	120	
4-Bromofluorobenzene	95.2	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-17	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	12/04/2014 17:13
Workgroup #:	WG503808	**Analyst:**	TMB	**Run Date:**	12/08/2014 16:02
Collect Date:	12/04/2014 00:01	**Dilution:**	1	**File ID:**	8M401586
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.1	85	115	
1,2-Dichloroethane-d4	94.1	70	120	
Toluene-d8	90.7	85	120	
4-Bromofluorobenzene	94.0	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400354	RINSE	NA	1	1		10/02/14 10:24
8M400355	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:16
8M400356	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:33
8M400357	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:58
8M400358	WG494714-02 5ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:24
8M400359	WG494714-03 20ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:53
8M400360	WG494714-04 50ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:22
8M400361	WG494714-05 100ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:51
8M400362	WG494714-06 200ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:19
8M400363	WG494714-07 300ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:48
8M400364	WG494714-08 400ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:16
8M400365	WG494714-09 500ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:45
8M400366	RINSE	NA	1	1		10/02/14 16:14
8M400367	WG494714-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD66677	10/02/14 16:47
8M400368	WG494979-01 50ug/L CCV STD 8260	NA	1	1	STD66687	10/02/14 17:22
8M400371	WG494980-02 20ug/L LCS STD 624	NA	2	1	STD66693	10/02/14 17:51
8M400372	WG494980-03 20ug/L LCSDUP STD 624	NA	2	1	STD66693	10/02/14 18:20
8M400373	RINSE	NA	2	1		10/02/14 18:49
8M400374	WG494980-01 VBLK1002 BLANK STD 624	NA	2	1		10/02/14 19:18
8M400375	L14100004-01 LOD 826-SPE A9/FOO	NA	1	1		10/02/14 19:47
8M400376	L14100006-01 LOQ 826-SPE A9/FOO	NA	1	1		10/02/14 20:16
8M400377	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 20:45
8M400378	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 21:14
8M400379	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 21:42
8M400380	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 22:12
8M400381	L14100098-10 A 624-SPE	5	2	1		10/02/14 22:40
8M400382	L14100089-02 A 624-SPE	5	2	1		10/02/14 23:09
8M400383	L14100098-04 A 624-SPE	<2	2	1		10/02/14 23:38
8M400384	L14100098-05 A 624-SPE	<2	2	1		10/03/14 00:06
8M400385	L14100098-06 A 624-SPE	<2	2	1		10/03/14 00:36
8M400386	L14100098-07 A 624-SPE	<2	2	1		10/03/14 01:06
8M400387	L14100098-08 A 624-SPE	<2	2	1		10/03/14 01:34
8M400388	L14100098-09 A 624-SPE	<2	2	1		10/03/14 02:04
8M400389	L14100110-01 A 624-SPE2	<2	2	1		10/03/14 02:32

Approved: October 03, 2014

Microbac

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400390	L14100110-02 A 624-SPE1	<2	2	1		10/03/14 03:02
8M400391	RINSE	NA	1	1		10/03/14 03:30
8M400392	RINSE	NA	1	1		10/03/14 03:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M400355				
	Tune failed, DNR.			
3	X			
File ID: 8M400356				
	Tune failed, DNR.			
4				
File ID: 8M400357				
	Purged BFB.			
30	X	100	Over Calibration Range	TCE
File ID: 8M400385				
31	X	1	Carry-over contamination	
File ID: 8M400386				
	DNR.			
32	X	1	Carry-over contamination	
File ID: 8M400387				
	DNR.			
33	X	50	Over Calibration Range	TCE
File ID: 8M400388				
34	X	1	Carry-over contamination	
File ID: 8M400389				
	DNR.			

Approved: October 03, 2014

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 120414
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 20
Method: 5030C/5035A SOP: PAT01 Rev: 17
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID: 52504

Internal Standard: STD67689 Surrogate Standard: STD67689
CCV: NA LCS: STD67765 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG503415, WG503633

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M401527	WG503415-01 50ng BFB STD 8260	NA	1	1	STD67572	12/04/14 11:58
8M401528	RINSE	NA	1	1	STD67814	12/04/14 12:23
8M401529	WG503415-02 0.3ug/L STD 8260	NA	1	1	STD67814	12/04/14 12:51
8M401530	WG503415-03 0.4ug/L STD 8260	NA	1	1	STD67814	12/04/14 13:20
8M401531	WG503415-04 1ug/L STD 8260	NA	1	1	STD67814	12/04/14 13:49
8M401532	WG503415-05 2ug/L STD 8260	NA	1	1	STD67814	12/04/14 14:19
8M401533	WG503415-06 5ug/L STD 8260	NA	1	1	STD67814	12/04/14 14:48
8M401534	WG503415-07 20ug/L STD 8260	NA	1	1	STD67814	12/04/14 15:17
8M401535	WG503415-08 50ug/L STD 8260	NA	1	1	STD67814	12/04/14 15:46
8M401536	WG503415-09 100ug/L STD 8260	NA	1	1	STD67814	12/04/14 16:15
8M401537	WG503415-10 200ug/L STD 8260	NA	1	1	STD67814	12/04/14 16:44
8M401538	WG503415-11 300ug/L STD 8260	NA	1	1	STD67814	12/04/14 17:13
8M401539	RINSE	NA	1	1		12/04/14 17:42
8M401540	RINSE	NA	1	1		12/04/14 18:11
8M401541	WG503415-12 50ug/L ALT SRC STD 8260	NA	1	1	STD67765	12/04/14 18:40
8M401542	RINSE	NA	1	1		12/04/14 19:09
8M401543	L14100006-01 LOQ 826-SPE	NA	1	1	STD67836	12/04/14 19:38
8M401544	L14100006-01 LOQ 826-SPE	NA	1	1	STD67836	12/04/14 20:07
8M401545	L14100006-01 LOQ 826-SPE	NA	1	1	STD67836	12/04/14 20:36

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
File ID: 8M401543				
	rr - iodomethane ND at 1ug/L			
18				
File ID: 8M401544				
	dnr rr iodomethane at 5ug/L			

Approved: December 05, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 120814
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 20
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5060C/5035A SOP: PAT01 Rev: 17
Maintenance Log ID:

Internal Standard: STD67689 Surrogate Standard: STD67689
CCV: STD67814 LCS: STD67765 MS/MSD: STD67765

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG503808

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M401578	WG503806-01 50ng BFB STD 8260	NA	1	1	STD67572	12/08/14 12:12
8M401579	WG503806-02 50ug/L CCV STD 8260	NA	1	1	STD67814	12/08/14 12:36
8M401580	WG000000-01 100ug/L a9 CCV STD 8260	NA	1	1	STD67794	12/08/14 13:05
8M401581	WG503808-01 VBLK1208 BLANK STD 826	NA	1	1		12/08/14 13:34
8M401582	WG503808-02 20ug/L LCS STD 8260	NA	1	1	STD67765	12/08/14 14:03
8M401583	L14120292-08 A MS 826-SPE	<2	1	1	STD67765	12/08/14 14:33
8M401584	L14120292-09 A MSD 826-SPE	<2	1	1	STD67765	12/08/14 15:03
8M401585	L14120380-02 A TB 8260	<2	1	1		12/08/14 15:32
8M401586	L14120292-17 A TB 826-LOW	<2	1	1		12/08/14 16:02
8M401587	L14120251-19 B 826-SPE	<2	1	1		12/08/14 16:31
8M401588	L14120292-07 A REF 826-LOW	<2	1	1		12/08/14 17:01
8M401589	L14120292-01 A 826-LOW	<2	1	1		12/08/14 17:31
8M401590	L14120292-02 A 826-LOW	<2	1	1		12/08/14 18:00
8M401591	L14120292-04 A 826-LOW	<2	1	1		12/08/14 18:29
8M401592	L14120292-05 A 826-LOW	<2	1	1		12/08/14 18:58
8M401593	L14120292-06 A 826-LOW	<2	1	1		12/08/14 19:27
8M401594	L14120292-10 A 826-LOW	<2	1	1		12/08/14 19:56
8M401595	L14120292-11 A 826-LOW	<2	1	1		12/08/14 20:24
8M401596	L14120292-16 A 826-LOW	<2	1	1		12/08/14 20:53
8M401597	L14120292-13 A 826-LOW	<2	1	1		12/08/14 21:22
8M401598	L14120292-03 A 826-LOW	<2	1	1		12/08/14 21:51
8M401599	L14120292-12 A 10X 826-LOW	<2	1	10		12/08/14 22:20
8M401600	L14120292-14 A 5X 826-LOW	<2	1	5		12/08/14 22:49
8M401601	L14120292-15 A 5X 826-LOW	<2	1	5		12/08/14 23:17
8M401602	RINSE	NA	1	1		12/08/14 23:46
8M401603	WG503808-06 VBLK1208 BLANK STD 624	NA	2	1		12/09/14 00:15
8M401604	L14120444-01 A 624-SPE	7	2	1		12/09/14 00:45
8M401605	CCV	NA	1	1		12/09/14 01:14
8M401606	RINSE	NA	1	1		12/09/14 01:43
8M401607	RINSE	NA	1	1		12/09/14 02:11

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: December 10, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 120814
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 20
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5060C/5035A SOP: PAT01 Rev: 17
Maintenance Log ID:

Internal Standard: STD67689 Surrogate Standard: STD67689
CCV: STD67814 LCS: STD67765 MS/MSD: STD67765

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG503808

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 8M401580				
	Not needed, DNR.			
21	X	10	Over Calibration Range	11-DCE
File ID: 8M401598				

Approved: December 10, 2014

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 120914
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 20
Method: 5030B/5030C/5035A SOP: PA01 Rev: 17

Maintenance Log ID:

Internal Standard: STD67689 Surrogate Standard: STD67689
CCV: STD67814 LCS: STD67765 MS/MSD: STD67765

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG503948

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M401608	WG503946-01 50ng BFB STD 8260	NA	1	1	STD67572	12/09/14 08:47
8M401609	WG503946-02 50ug/L CCV STD 8260	NA	1	1	STD67814	12/09/14 09:11
8M401610	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD67794	12/09/14 09:40
8M401611	WG503948-01 VBLK1209 BLANK STD 826	NA	1	1		12/09/14 10:09
8M401612	WG503948-02 20ug/L LCS STD 8260	NA	1	1	STD67765	12/09/14 10:38
8M401613	L14120385-04 A REF 826-SPE2	<2	1	1		12/09/14 11:07
8M401614	L14120385-05 A MS 826-SPE2	<2	1	1	STD67765	12/09/14 11:36
8M401615	L14120385-06 A MSD 826-SPE2	<2	1	1	STD67765	12/09/14 12:05
8M401616	L14120292-03 B 10X 826-LOW D1	<2	1	10		12/09/14 12:35
8M401617	L14120251-04 B 826-SPE	<2	1	1		12/09/14 13:04
8M401618	L14120251-05 B 826-SPE	<2	1	1		12/09/14 13:33
8M401619	L14120251-08 B 826-SPE	<2	1	1		12/09/14 14:02
8M401620	L14120251-11 B 826-SPE	<2	1	1		12/09/14 14:32
8M401621	L14120251-12 B 826-SPE	<2	1	1		12/09/14 15:01
8M401622	L14120251-14 B 826-SPE	<2	1	1		12/09/14 15:31
8M401623	L14120251-15 B 826-SPE	<2	1	1		12/09/14 16:00
8M401624	L14120251-16 B 826-SPE	<2	1	1		12/09/14 16:30
8M401625	L14120251-17 B 826-SPE	<2	1	1		12/09/14 17:00
8M401626	L14120251-18 B 826-SPE	<2	1	1		12/09/14 17:29
8M401627	L14120470-01 A 826-SPE	<2	1	1		12/09/14 17:59
8M401628	L14120385-12 A TB 826-SPE2	<2	1	1		12/09/14 18:28
8M401629	L14120385-10 B 826-SPE2	<2	1	1		12/09/14 18:57
8M401630	L14120385-09 A 826-SPE2	<2	1	1		12/09/14 19:27
8M401631	L14120385-08 A 826-SPE2	<2	1	1		12/09/14 19:56
8M401632	L14120385-07 A 826-SPE2	<2	1	1		12/09/14 20:25
8M401633	CCV	NA	1	1		12/09/14 20:54
8M401634	RINSE	NA	1	1		12/09/14 21:23
8M401635	RINSE	NA	1	1		12/09/14 21:52

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 8M401610				

Approved: December 10, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 120914

Analyst1: TMB Analyst2: NA

Method: 8260B SOP: MSV01 Rev: 20

Method: 5030B/5030C/5035A SOP: PA01 Rev: 17

Maintenance Log ID:

Internal Standard: STD67689 Surrogate Standard: STD67689

CCV: STD67814 LCS: STD67765 MS/MSD: STD67765

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG503948

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Not needed, DNR.	

Approved: December 10, 2014

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 02-OCT-2014
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 63840
Analytical Workgroups: WG494714; WG494980

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
03-OCT-2014
Tiffany Bailey

Secondary Reviewer:
03-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-03-2014 13:21:54

Microbac Laboratories Inc.

Data Checklist

Date: 04-DEC-2014
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 65093
Analytical Workgroups: WG503415; WG503633

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
05-DEC-2014
Tiffany Bailey

Secondary Reviewer:
05-DEC-2014

CHECKLIST1 - Modified 03/05/2008
Generated: DEC-05-2014 15:03:40

Microbac Laboratories Inc.

Data Checklist

Date: 08-DEC-2014
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 65150
Analytical Workgroups: WG503808

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
09-DEC-2014
Tiffany Bailey

Secondary Reviewer:
10-DEC-2014

CHECKLIST1 - Modified 03/05/2008
Generated: DEC-10-2014 09:39:32

Microbac Laboratories Inc.

Data Checklist

Date: 09-DEC-2014
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 65163
Analytical Workgroups: WG503948

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
10-DEC-2014
Tiffany Bailey

Secondary Reviewer:
10-DEC-2014

CHECKLIST1 - Modified 03/05/2008
Generated: DEC-10-2014 11:02:04

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG503808

Login Number: L14120292

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW05-120314	01	12/03/14					12/08/2014	5.4	14		12/08/14	5.4	14	
67WW02-120314	02	12/03/14					12/08/2014	5.4	14		12/08/14	5.4	14	
67WW01-120314	03	12/03/14					12/08/2014	5.6	14		12/08/14	5.6	14	
67WW07-120314	04	12/03/14					12/08/2014	5.4	14		12/08/14	5.4	14	
67WW09A-120314	05	12/03/14					12/08/2014	5.4	14		12/08/14	5.4	14	
67WW09AFD-120314	06	12/03/14					12/08/2014	5.4	14		12/08/14	5.4	14	
67WW10-120314	07	12/03/14					12/08/2014	5.2	14		12/08/14	5.2	14	
67WW10MS-120314	08	12/03/14					12/08/2014	5.1	14		12/08/14	5.1	14	
67WW10MSD-120314	09	12/03/14					12/08/2014	5.2	14		12/08/14	5.2	14	
67WW12-120314	10	12/03/14					12/08/2014	5.2	14		12/08/14	5.2	14	
67WW14-120314	11	12/03/14					12/08/2014	5.2	14		12/08/14	5.2	14	
67WW08-120414	12	12/04/14					12/08/2014	4.6	14		12/08/14	4.6	14	
67WW11-120414	13	12/04/14					12/08/2014	4.5	14		12/08/14	4.5	14	
67WW13-120414	14	12/04/14					12/08/2014	4.5	14		12/08/14	4.5	14	
67WW13FD-120414	15	12/04/14					12/08/2014	4.5	14		12/08/14	4.5	14	
67WW09-120414	16	12/04/14					12/08/2014	4.3	14		12/08/14	4.3	14	
TRIP BLANK	17	12/04/14					12/08/2014	4.7	14		12/08/14	4.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3909596
Report generated 12/15/2014 15:09

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG503948

Login Number: L14120292

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW01-120314	03	12/03/14					12/09/2014	6.2	14		12/09/14	6.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3909596
Report generated 12/15/2014 15:09

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L14120292
Instrument Id: HPMS8
Workgroup (AAB#): WG503808

Method: 8260
CAL ID: HPMS8-04-DEC-14
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L14120292-01	1.00	01	94.9	91.8	94.2	89.7
L14120292-02	1.00	01	94.0	89.0	94.7	89.7
L14120292-03	1.00	01	92.9	91.2	96.3	89.5
L14120292-04	1.00	01	96.1	91.4	94.0	90.7
L14120292-05	1.00	01	93.4	89.4	96.2	91.2
L14120292-06	1.00	01	94.1	90.3	97.1	90.4
L14120292-07	1.00	01	93.8	90.5	95.0	90.7
L14120292-08	1.00	01	92.1	89.5	88.5	89.8
L14120292-09	1.00	01	93.7	89.8	90.7	88.8
L14120292-10	1.00	01	94.5	92.8	95.9	91.1
L14120292-11	1.00	01	92.9	90.3	95.4	90.9
L14120292-12	10.0	DL01	91.5	89.5	95.4	90.4
L14120292-13	1.00	01	92.9	90.8	95.8	90.0
L14120292-14	5.00	DL01	91.2	90.0	96.8	90.8
L14120292-15	5.00	DL01	90.7	90.4	96.6	89.3
L14120292-16	1.00	01	92.2	89.9	95.2	89.5
L14120292-17	1.00	01	94.1	89.1	94.0	90.7
WG503808-01	1.00	01	92.6	89.1	95.6	91.5
WG503808-02	1.00	01	92.3	89.9	90.2	90.4
WG503808-06	1.00	01	90.3	88.9	93.7	90.6

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3909601
Report generated: 12/15/2014 15:09

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L14120292
Instrument Id: HPMS8
Workgroup (AAB#): WG503948

Method: 8260
CAL ID: HPMS8 - 04-DEC-14
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L14120292-03	10.0	DL01	92.4	89.2	94.6	90.0
WG503948-01	1.00	01	91.7	89.6	97.7	90.7
WG503948-02	1.00	01	90.4	89.5	89.1	90.2

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3909601
Report generated: 12/15/2014 15:09

METHOD BLANK SUMMARY

Login Number: L14120292
Blank File ID: 8M401581
Prep Date: 12/08/14 13:34
Analyzed Date: 12/08/14 13:34
Analyst: TMB

Work Group: WG503808
Blank Sample ID: WG503808-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG503808-02	8M401582	12/08/14 14:03	01
67WW10MS-120314	L14120292-08	8M401583	12/08/14 14:33	01
67WW10MSD-120314	L14120292-09	8M401584	12/08/14 15:03	01
TRIP BLANK	L14120292-17	8M401586	12/08/14 16:02	01
67WW10-120314	L14120292-07	8M401588	12/08/14 17:01	01
67WW05-120314	L14120292-01	8M401589	12/08/14 17:31	01
67WW02-120314	L14120292-02	8M401590	12/08/14 18:00	01
67WW07-120314	L14120292-04	8M401591	12/08/14 18:29	01
67WW09A-120314	L14120292-05	8M401592	12/08/14 18:58	01
67WW09AFD-120314	L14120292-06	8M401593	12/08/14 19:27	01
67WW12-120314	L14120292-10	8M401594	12/08/14 19:56	01
67WW14-120314	L14120292-11	8M401595	12/08/14 20:24	01
67WW09-120414	L14120292-16	8M401596	12/08/14 20:53	01
67WW11-120414	L14120292-13	8M401597	12/08/14 21:22	01
67WW01-120314	L14120292-03	8M401598	12/08/14 21:51	01
67WW08-120414	L14120292-12	8M401599	12/08/14 22:20	DL01
67WW13-120414	L14120292-14	8M401600	12/08/14 22:49	DL01
67WW13FD-120414	L14120292-15	8M401601	12/08/14 23:17	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 3920981
Report generated 12/15/2014 15:09

METHOD BLANK SUMMARY

Login Number: L14120292
Blank File ID: 8M401611
Prep Date: 12/09/14 10:09
Analyzed Date: 12/09/14 10:09
Analyst: TMB

Work Group: WG503948
Blank Sample ID: WG503948-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG503948-02	8M401612	12/09/14 10:38	01
67WW01-120314	L14120292-03	8M401616	12/09/14 12:35	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 3920981
Report generated 12/15/2014 15:09

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14120292 Prep Date: 12/08/14 13:34 Sample ID: WG503808-01
Instrument ID: HPMS8 Run Date: 12/08/14 13:34 Prep Method: 5030B/5030C/503
File ID: 8M401581 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG503808 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-04-DEC-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 3920982
15-DEC-2014 15:09

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14120292 Prep Date: 12/08/14 13:34 Sample ID: WG503808-01
Instrument ID: HPMS8 Run Date: 12/08/14 13:34 Prep Method: 5030B/5030C/503
File ID: 8M401581 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG503808 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-04-DEC-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	89.1	85 - 115	PASS
1,2-Dichloroethane-d4	92.6	70 - 120	PASS
Toluene-d8	91.5	85 - 120	PASS
4-Bromofluorobenzene	95.6	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3920982
15-DEC-2014 15:09

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14120292 Prep Date: 12/09/14 10:09 Sample ID: WG503948-01
Instrument ID: HPMS8 Run Date: 12/09/14 10:09 Prep Method: 5030B/5030C/503
File ID: 8M401611 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG503948 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-04-DEC-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 3920982
15-DEC-2014 15:09

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14120292 Prep Date: 12/09/14 10:09 Sample ID: WG503948-01
Instrument ID: HPMS8 Run Date: 12/09/14 10:09 Prep Method: 5030B/5030C/503
File ID: 8M401611 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG503948 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-04-DEC-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	89.6	85 - 115	PASS
1,2-Dichloroethane-d4	91.7	70 - 120	PASS
Toluene-d8	90.7	85 - 120	PASS
4-Bromofluorobenzene	97.7	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3920982
15-DEC-2014 15:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14120292 Run Date: 12/08/2014 Sample ID: WG503808-02
Instrument ID: HPMS8 Run Time: 14:03 Prep Method: 5030B/5030C/503
File ID: 8M401582 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG503808 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD67765 Cal ID: HPMS8-04-DEC-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.1	100	40 - 140	
Benzene	20.0	21.3	107	80 - 120	
Bromobenzene	20.0	19.2	96.0	75 - 125	
Bromochloromethane	20.0	20.9	105	65 - 130	
Bromodichloromethane	20.0	21.0	105	75 - 120	
Bromoform	20.0	18.5	92.6	70 - 130	
Bromomethane	20.0	13.5	67.3	30 - 145	
2-Butanone	20.0	20.1	100	30 - 150	
n-Butylbenzene	20.0	19.7	98.4	70 - 135	
sec-Butylbenzene	20.0	21.0	105	70 - 125	
tert-Butylbenzene	20.0	19.5	97.5	70 - 130	
Carbon disulfide	20.0	19.6	98.2	35 - 160	
Carbon tetrachloride	20.0	21.3	106	65 - 140	
Chlorobenzene	20.0	20.6	103	80 - 120	
Chlorodibromomethane	20.0	20.7	104	60 - 135	
Chloroethane	20.0	19.6	97.8	60 - 135	
Chloroform	20.0	21.2	106	65 - 135	
Chloromethane	20.0	16.5	82.5	40 - 125	
2-Chlorotoluene	20.0	20.4	102	75 - 125	
4-Chlorotoluene	20.0	18.7	93.4	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	18.8	94.2	50 - 130	
1,2-Dibromoethane	20.0	19.9	99.4	80 - 120	
Dibromomethane	20.0	21.3	107	75 - 125	
1,2-Dichlorobenzene	20.0	20.6	103	70 - 120	
1,3-Dichlorobenzene	20.0	19.8	99.0	75 - 125	
1,4-Dichlorobenzene	20.0	19.0	95.1	75 - 125	
Dichlorodifluoromethane	20.0	15.0	74.8	30 - 155	
1,1-Dichloroethane	20.0	21.3	107	70 - 135	
1,2-Dichloroethane	20.0	20.5	103	70 - 130	
1,1-Dichloroethene	20.0	20.4	102	70 - 130	
cis-1,2-Dichloroethene	20.0	20.3	101	70 - 125	
trans-1,2-Dichloroethene	20.0	20.3	101	60 - 140	
1,2-Dichloropropane	20.0	20.7	104	75 - 125	
1,3-Dichloropropane	20.0	19.9	99.5	75 - 125	
2,2-Dichloropropane	20.0	21.0	105	70 - 135	
cis-1,3-Dichloropropene	20.0	22.4	112	70 - 130	
trans-1,3-Dichloropropene	20.0	19.2	95.8	55 - 140	
1,1-Dichloropropene	20.0	19.7	98.5	75 - 130	
Ethylbenzene	20.0	18.9	94.6	75 - 125	
2-Hexanone	20.0	18.7	93.4	55 - 130	
Hexachlorobutadiene	20.0	19.1	95.3	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 3909597
Report generated: 12/15/2014 15:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14120292 Run Date: 12/08/2014 Sample ID: WG503808-02
Instrument ID: HPMS8 Run Time: 14:03 Prep Method: 5030B/5030C/503
File ID: 8M401582 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG503808 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD67765 Cal ID: HPMS8-04-DEC-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.8	104	75 - 125	
p-Isopropyltoluene	20.0	20.7	104	75 - 130	
4-Methyl-2-pentanone	20.0	20.0	99.9	60 - 135	
Methylene chloride	20.0	19.7	98.6	55 - 140	
Naphthalene	20.0	19.9	99.4	55 - 140	
n-Propylbenzene	20.0	19.4	96.8	70 - 130	
Styrene	20.0	21.0	105	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.0	95.1	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	19.3	96.4	65 - 130	
Tetrachloroethene	20.0	19.5	97.3	45 - 150	
Toluene	20.0	19.9	99.5	75 - 120	
1,2,3-Trichlorobenzene	20.0	19.2	95.9	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.1	95.7	65 - 135	
1,1,1-Trichloroethane	20.0	21.1	106	65 - 130	
1,1,2-Trichloroethane	20.0	20.0	100	75 - 125	
Trichloroethene	20.0	20.6	103	70 - 125	
Trichlorofluoromethane	20.0	20.7	104	60 - 145	
1,2,3-Trichloropropane	20.0	19.7	98.6	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.5	102	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.6	103	75 - 130	
Vinyl chloride	20.0	16.7	83.6	50 - 145	
o-Xylene	20.0	20.0	100	80 - 120	
m-,p-Xylene	40.0	41.6	104	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	89.9	85 - 115	PASS
1,2-Dichloroethane-d4	92.3	70 - 120	PASS
Toluene-d8	90.4	85 - 120	PASS
4-Bromofluorobenzene	90.2	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 3909597
Report generated: 12/15/2014 15:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14120292 Run Date: 12/09/2014 Sample ID: WG503948-02
Instrument ID: HPMS8 Run Time: 10:38 Prep Method: 5030B/5030C/503
File ID: 8M401612 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG503948 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD67765 Cal ID: HPMS8-04-DEC-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.2	101	40 - 140	
Benzene	20.0	22.3	111	80 - 120	
Bromobenzene	20.0	19.4	96.8	75 - 125	
Bromochloromethane	20.0	21.1	105	65 - 130	
Bromodichloromethane	20.0	21.1	106	75 - 120	
Bromoform	20.0	18.0	89.8	70 - 130	
Bromomethane	20.0	12.8	64.2	30 - 145	
2-Butanone	20.0	20.1	100	30 - 150	
n-Butylbenzene	20.0	19.9	99.5	70 - 135	
sec-Butylbenzene	20.0	21.3	107	70 - 125	
tert-Butylbenzene	20.0	19.6	98.1	70 - 130	
Carbon disulfide	20.0	19.6	98.2	35 - 160	
Carbon tetrachloride	20.0	22.0	110	65 - 140	
Chlorobenzene	20.0	20.7	104	80 - 120	
Chlorodibromomethane	20.0	20.4	102	60 - 135	
Chloroethane	20.0	20.0	99.9	60 - 135	
Chloroform	20.0	21.5	108	65 - 135	
Chloromethane	20.0	17.6	87.9	40 - 125	
2-Chlorotoluene	20.0	20.4	102	75 - 125	
4-Chlorotoluene	20.0	19.1	95.4	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	18.0	89.8	50 - 130	
1,2-Dibromoethane	20.0	19.8	99.1	80 - 120	
Dibromomethane	20.0	21.2	106	75 - 125	
1,2-Dichlorobenzene	20.0	20.5	102	70 - 120	
1,3-Dichlorobenzene	20.0	19.6	97.9	75 - 125	
1,4-Dichlorobenzene	20.0	19.0	95.1	75 - 125	
Dichlorodifluoromethane	20.0	15.7	78.7	30 - 155	
1,1-Dichloroethane	20.0	21.6	108	70 - 135	
1,2-Dichloroethane	20.0	20.6	103	70 - 130	
1,1-Dichloroethene	20.0	20.2	101	70 - 130	
cis-1,2-Dichloroethene	20.0	20.7	104	70 - 125	
trans-1,2-Dichloroethene	20.0	20.3	101	60 - 140	
1,2-Dichloropropane	20.0	21.4	107	75 - 125	
1,3-Dichloropropane	20.0	19.4	97.1	75 - 125	
2,2-Dichloropropane	20.0	21.2	106	70 - 135	
cis-1,3-Dichloropropene	20.0	22.6	113	70 - 130	
trans-1,3-Dichloropropene	20.0	18.6	93.1	55 - 140	
1,1-Dichloropropene	20.0	20.6	103	75 - 130	
Ethylbenzene	20.0	19.6	98.0	75 - 125	
2-Hexanone	20.0	17.7	88.4	55 - 130	
Hexachlorobutadiene	20.0	18.7	93.6	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 3909597
Report generated: 12/15/2014 15:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14120292 Run Date: 12/09/2014 Sample ID: WG503948-02
Instrument ID: HPMS8 Run Time: 10:38 Prep Method: 5030B/5030C/503
File ID: 8M401612 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG503948 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD67765 Cal ID: HPMS8-04-DEC-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.1	106	75 - 125	
p-Isopropyltoluene	20.0	20.9	105	75 - 130	
4-Methyl-2-pentanone	20.0	19.7	98.6	60 - 135	
Methylene chloride	20.0	19.9	99.6	55 - 140	
Naphthalene	20.0	19.4	97.1	55 - 140	
n-Propylbenzene	20.0	19.5	97.4	70 - 130	
Styrene	20.0	21.2	106	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.0	95.0	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.3	91.4	65 - 130	
Tetrachloroethene	20.0	19.5	97.7	45 - 150	
Toluene	20.0	20.1	100	75 - 120	
1,2,3-Trichlorobenzene	20.0	18.4	92.0	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.0	95.2	65 - 135	
1,1,1-Trichloroethane	20.0	21.8	109	65 - 130	
1,1,2-Trichloroethane	20.0	19.8	98.9	75 - 125	
Trichloroethene	20.0	21.4	107	70 - 125	
Trichlorofluoromethane	20.0	20.1	100	60 - 145	
1,2,3-Trichloropropane	20.0	18.3	91.4	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.8	104	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.7	104	75 - 130	
Vinyl chloride	20.0	17.8	88.9	50 - 145	
o-Xylene	20.0	20.4	102	80 - 120	
m-,p-Xylene	40.0	42.9	107	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	89.5	85 - 115	PASS
1,2-Dichloroethane-d4	90.4	70 - 120	PASS
Toluene-d8	90.2	85 - 120	PASS
4-Bromofluorobenzene	89.1	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 3909597
Report generated: 12/15/2014 15:09

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L14120292 Cal ID: HPMS8- 04-DEC-14 Worknum: WG503808
Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/
Parent ID: L14120292-07 File ID: 8M401588 Dil: 1 Method: 5035A
Sample ID: L14120292-08 MS File ID: 8M401583 Dil: 1 Matrix: 8260B
Sample ID: L14120292-09 MSD File ID: 8M401584 Dil: 1 Units: Water
ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	18.9	94.7	20.0	19.1	95.6	0.893	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	21.1	106	20.0	21.1	105	0.202	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	19.0	95.2	20.0	19.9	99.5	4.36	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	19.9	99.6	20.0	20.6	103	3.46	75 - 125	30	
1,1-Dichloroethane	0.173	20.0	21.3	105	20.0	21.4	106	0.564	70 - 135	30	
1,1-Dichloroethene	U	20.0	20.5	102	20.0	20.3	101	1.02	70 - 130	30	
1,1-Dichloropropene	U	20.0	20.0	99.9	20.0	20.0	99.9	0.0252	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	19.6	97.8	20.0	20.5	102	4.65	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	19.0	94.8	20.0	19.6	97.9	3.22	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	19.6	97.9	20.0	19.5	97.5	0.464	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	20.3	101	20.0	20.1	101	0.824	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	19.0	95.2	20.0	19.3	96.4	1.33	50 - 130	30	
1,2-Dibromoethane	U	20.0	20.1	100	20.0	20.4	102	1.40	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	20.4	102	20.0	21.0	105	2.81	70 - 120	30	
1,2-Dichloroethane	U	20.0	20.4	102	20.0	20.8	104	1.59	70 - 130	30	
1,2-Dichloropropane	U	20.0	20.8	104	20.0	21.0	105	0.747	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	20.4	102	20.0	20.4	102	0.216	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	19.5	97.5	20.0	19.6	98	0.547	75 - 125	30	
1,3-Dichloropropane	U	20.0	19.9	99.4	20.0	20.2	101	1.32	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	19.2	96	20.0	19.1	95.6	0.345	75 - 125	30	
2,2-Dichloropropane	U	20.0	21.4	107	20.0	21.3	106	0.759	70 - 135	30	
2-Butanone	U	20.0	19.5	97.7	20.0	20.2	101	3.28	30 - 150	30	
2-Chlorotoluene	U	20.0	20.1	101	20.0	20.1	100	0.135	75 - 125	30	
2-Hexanone	U	20.0	19.5	97.3	20.0	18.9	94.6	2.85	55 - 130	30	
4-Chlorotoluene	U	20.0	18.6	93	20.0	18.9	94.6	1.73	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	20.6	103	20.0	20.1	100	2.69	60 - 135	30	
Acetone	U	20.0	20.7	104	20.0	20.8	104	0.680	40 - 140	30	
Benzene	U	20.0	21.4	107	20.0	21.4	107	0.183	80 - 120	30	
Bromobenzene	U	20.0	19.1	95.6	20.0	19.7	98.7	3.27	75 - 125	30	
Bromochloromethane	U	20.0	20.8	104	20.0	21.2	106	1.87	65 - 130	30	
Bromodichloromethane	U	20.0	21.1	106	20.0	21.4	107	1.56	75 - 120	30	
Bromoform	U	20.0	18.4	92.2	20.0	19.1	95.7	3.69	70 - 130	30	
Bromomethane	U	20.0	14.5	72.7	20.0	14.3	71.6	1.55	30 - 145	30	
Carbon disulfide	U	20.0	20.0	100	20.0	19.2	96.2	4.02	35 - 160	30	
Carbon tetrachloride	U	20.0	21.2	106	20.0	21.4	107	0.799	65 - 140	30	
Chlorobenzene	U	20.0	20.4	102	20.0	20.5	102	0.695	80 - 120	30	
Chloroethane	U	20.0	19.8	99.2	20.0	19.7	98.3	0.843	60 - 135	30	
Chloroform	U	20.0	21.1	105	20.0	21.3	107	1.13	65 - 135	30	
Chloromethane	U	20.0	15.9	79.4	20.0	15.9	79.7	0.361	40 - 125	30	
cis-1,2-Dichloroethene	U	20.0	20.1	101	20.0	20.5	102	1.64	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	22.6	113	20.0	22.9	114	1.12	70 - 130	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 3909598
Report generated 12/15/2014 15:09

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L14120292 Cal ID: HPMS8 04-DEC-14 Worknum: WG503808

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L14120292-07 File ID: 8M401588 Dil: 1 Method: 5035A

Sample ID: L14120292-08 MS File ID: 8M401583 Dil: 1 Matrix: 8260B

Sample ID: L14120292-09 MSD File ID: 8M401584 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	20.3	102	20.0	20.8	104	2.43	60 - 135	30	
Dibromomethane	U	20.0	21.5	107	20.0	22.0	110	2.34	75 - 125	30	
Dichlorodifluoromethane	U	20.0	15.6	77.9	20.0	15.8	79	1.35	30 - 155	30	
Ethylbenzene	U	20.0	18.8	94.2	20.0	19.3	96.3	2.21	75 - 125	30	
Hexachlorobutadiene	U	20.0	19.5	97.4	20.0	19.3	96.5	0.966	50 - 140	30	
Isopropylbenzene	U	20.0	20.6	103	20.0	20.7	104	0.741	75 - 125	30	
m-,p-Xylene	U	40.0	41.5	104	40.0	41.8	105	0.775	75 - 130	30	
Methylene chloride	U	20.0	19.8	99.1	20.0	20.2	101	1.80	55 - 140	30	
n-Butylbenzene	U	20.0	19.8	99	20.0	19.8	98.9	0.0473	70 - 135	30	
n-Propylbenzene	U	20.0	19.1	95.5	20.0	19.2	95.9	0.454	70 - 130	30	
Naphthalene	U	20.0	20.4	102	20.0	21.1	105	3.28	55 - 140	30	
o-Xylene	U	20.0	20.0	99.9	20.0	20.1	100	0.420	80 - 120	30	
p-Isopropyltoluene	U	20.0	20.6	103	20.0	20.7	103	0.456	75 - 130	30	
sec-Butylbenzene	U	20.0	21.0	105	20.0	20.9	105	0.571	70 - 125	30	
Styrene	U	20.0	20.8	104	20.0	21.3	106	2.46	65 - 135	30	
tert-Butylbenzene	U	20.0	19.3	96.6	20.0	19.3	96.5	0.126	70 - 130	30	
Tetrachloroethene	U	20.0	18.9	94.4	20.0	19.6	97.8	3.57	45 - 150	30	
Toluene	U	20.0	19.5	97.5	20.0	19.7	98.3	0.856	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	20.0	99.9	20.0	20.1	101	0.813	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	19.2	95.8	20.0	19.5	97.5	1.78	55 - 140	30	
Trichloroethene	U	20.0	21.0	105	20.0	20.9	105	0.387	70 - 125	30	
Trichlorofluoromethane	U	20.0	21.2	106	20.0	20.8	104	1.75	60 - 145	30	
Vinyl chloride	U	20.0	16.5	82.6	20.0	16.4	82	0.762	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 3909598
Report generated 12/15/2014 15:09

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14120292
Instrument: HPMS8
Analyst: TMB
Workgroup: WG494714

Tune ID: WG494714-01
Run Date: 10/02/2014
Run Time: 11:58
File ID: 8M400357
Cal ID: HPMS8 - 02-OCT-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	5158	PASS
75.0	95.0	30.0	60.0	51.7	12312	PASS
95.0	95.0	100	100	100	23818	PASS
96.0	95.0	5.00	9.00	7.56	1800	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	69.7	16590	PASS
175	174	5.00	9.00	7.78	1290	PASS
176	174	95.0	101	97.3	16145	PASS
177	176	5.00	9.00	6.34	1023	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG494714-02	STD	01	10/02/2014 12:24	
WG494714-03	STD	01	10/02/2014 12:53	
WG494714-04	STD	01	10/02/2014 13:22	
WG494714-05	STD	01	10/02/2014 13:51	
WG494714-06	STD	01	10/02/2014 14:19	
WG494714-07	STD	01	10/02/2014 14:48	
WG494714-08	STD	01	10/02/2014 15:16	
WG494714-09	STD	01	10/02/2014 15:45	
WG494714-10	SSCV	01	10/02/2014 16:47	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3920983
Report generated 12/15/2014 15:09

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14120292
Instrument: HPMS8
Analyst: TMB
Workgroup: WG503415

Tune ID: WG503415-01
Run Date: 12/04/2014
Run Time: 11:58
File ID: 8M401527
Cal ID: HPMS8 - 04-DEC-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.8	8089	PASS
75.0	95.0	30.0	60.0	52.7	18719	PASS
95.0	95.0	100	100	100	35506	PASS
96.0	95.0	5.00	9.00	6.54	2321	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.3	27107	PASS
175	174	5.00	9.00	6.77	1836	PASS
176	174	95.0	101	99.8	27055	PASS
177	176	5.00	9.00	6.31	1708	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG503415-02	STD	01	12/04/2014 12:51	
WG503415-03	STD	01	12/04/2014 13:20	
WG503415-04	STD	01	12/04/2014 13:49	
WG503415-05	STD	01	12/04/2014 14:19	
WG503415-06	STD	01	12/04/2014 14:48	
WG503415-07	STD	01	12/04/2014 15:17	
WG503415-08	STD-CCV	01	12/04/2014 15:46	
WG503415-09	STD	01	12/04/2014 16:15	
WG503415-10	STD	01	12/04/2014 16:44	
WG503415-11	STD	01	12/04/2014 17:13	
WG503415-12	SSCV	01	12/04/2014 18:40	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3920983
Report generated 12/15/2014 15:09

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14120292
Instrument: HPMS8
Analyst: TMB
Workgroup: WG503806

Tune ID: WG503806-01
Run Date: 12/08/2014
Run Time: 12:12
File ID: 8M401578
Cal ID: HPMS8 - 04-DEC-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	8720	PASS
75.0	95.0	30.0	60.0	52.4	21089	PASS
95.0	95.0	100	100	100	40274	PASS
96.0	95.0	5.00	9.00	6.72	2708	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	75.2	30269	PASS
175	174	5.00	9.00	6.85	2072	PASS
176	174	95.0	101	97.3	29437	PASS
177	176	5.00	9.00	6.63	1952	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG503806-02	CCV	01	12/08/2014 12:36	
WG503808-01	BLANK	01	12/08/2014 13:34	
WG503808-02	LCS	01	12/08/2014 14:03	
L14120292-08	67WW10MS-120314	01	12/08/2014 14:33	
L14120292-09	67WW10MSD-120314	01	12/08/2014 15:03	
L14120292-17	TRIP BLANK	01	12/08/2014 16:02	
L14120292-07	67WW10-120314	01	12/08/2014 17:01	
L14120292-01	67WW05-120314	01	12/08/2014 17:31	
L14120292-02	67WW02-120314	01	12/08/2014 18:00	
L14120292-04	67WW07-120314	01	12/08/2014 18:29	
L14120292-05	67WW09A-120314	01	12/08/2014 18:58	
L14120292-06	67WW09AFD-120314	01	12/08/2014 19:27	
L14120292-10	67WW12-120314	01	12/08/2014 19:56	
L14120292-11	67WW14-120314	01	12/08/2014 20:24	
L14120292-16	67WW09-120414	01	12/08/2014 20:53	
L14120292-13	67WW11-120414	01	12/08/2014 21:22	
L14120292-03	67WW01-120314	01	12/08/2014 21:51	
L14120292-12	67WW08-120414	DL01	12/08/2014 22:20	
L14120292-14	67WW13-120414	DL01	12/08/2014 22:49	
L14120292-15	67WW13FD-120414	DL01	12/08/2014 23:17	
WG503808-06	BLANK2	01	12/09/2014 00:15	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3920983
Report generated 12/15/2014 15:09

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L14120292
Instrument: HPMS8
Analyst: TMB
Workgroup: WG503946

Tune ID: WG503946-01
Run Date: 12/09/2014
Run Time: 08:47
File ID: 8M401608
Cal ID: HPMS8 - 04-DEC-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.4	6722	PASS
75.0	95.0	30.0	60.0	54.1	16262	PASS
95.0	95.0	100	100	100	30066	PASS
96.0	95.0	5.00	9.00	6.62	1990	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.8	21894	PASS
175	174	5.00	9.00	7.66	1678	PASS
176	174	95.0	101	96.3	21073	PASS
177	176	5.00	9.00	5.77	1215	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG503946-02	CCV	01	12/09/2014 09:11	
WG503948-01	BLANK	01	12/09/2014 10:09	
WG503948-02	LCS	01	12/09/2014 10:38	
L14120292-03	67WW01-120314	DL01	12/09/2014 12:35	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 3920983
Report generated 12/15/2014 15:09

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Calibration: Fri Oct 03 12:32:07 2014
Curve: WG494714
Calibration Files

	Compound	5 8M400358.D	20 8M400359.D	50 8M400360.D	100 8M400361.D	200 8M400362.D	300 8M400363.D	400 8M400364.D	500 8M400365.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.015	0.015	0.015	0.016	0.017	0.016	0.015	0.016	0.016	4.015		
T	3-Chloro-1-propene	0.416	0.403	0.416	0.438	0.434	0.423	0.407	0.394	0.416	3.619		
T	2-Chloro-1,3-butadiene	0.467	0.479	0.496	0.520	0.522	0.508	0.485	0.462	0.493	4.640		
T	Ethyl Acetate	0.104	0.115	0.123	0.133	0.135	0.133	0.126	0.130	0.125	8.569		
T	Methacrylonitrile	0.062	0.065	0.072	0.077	0.080	0.080	0.077	0.081	0.074	9.397		
T	Isobutyl Alcohol			0.004	0.005	0.005	0.005	0.005	0.005	0.005	9.693		
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.003	21.690	0.995	
T	Methyl methacrylate	0.115	0.123	0.137	0.147	0.154	0.151	0.145	0.150	0.140	10.193		
T	2-Nitropropane	0.032	0.035	0.039	0.043	0.047	0.046	0.046	0.048	0.042	14.057		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											
T	Cyclohexanone			0.039	0.043	0.037	0.043	0.036	0.038	0.039	7.787		

Fri Oct 03 12:35:36 2014

Calibration Table Report
Method: 8260WTR.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Calibration: Fri Dec 05 08:59:23 2014
Curve: WG503415
Calibration Files

	Compound	0.3 8M401529.D	0.4 8M401530.D	1 8M401531.D	2 8M401532.D	5 8M401533.D	20 8M401534.D	50 8M401535.D	100 8M401536.D	200 8M401537.D	300 8M401538.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.296	0.287	0.282	0.364	0.337	0.339	0.330	0.287	0.315	9.848		
P	Chloromethane			0.414	0.395	0.360	0.418	0.364	0.356	0.339	0.294	0.368	11.225		
C	Vinyl Chloride		0.327	0.351	0.333	0.302	0.363	0.315	0.295	0.278	0.235	0.311	12.560		
T	1,3-Butadiene				0.221	0.206	0.242	0.190	0.144	0.145	0.132	0.183	23.478		0.999
T	Bromomethane			0.074	0.090	0.087	0.126	0.139	0.158	0.176	0.173	0.128	31.523		0.999
T	Chloroethane			0.178	0.168	0.165	0.195	0.181	0.183	0.186	0.175	0.179	5.466		
T	Trichlorofluoromethane		0.353	0.362	0.340	0.343	0.394	0.377	0.377	0.380	0.381	0.367	5.125		
T	Diethyl ether			0.134	0.133	0.133	0.149	0.138	0.150		0.152	0.141	6.178		
T	Isoprene					0.254	0.295	0.291	0.328	0.348	0.328	0.307	11.042		
T	Acrolein				0.010	0.012	0.014	0.012	0.015		0.016	0.013	16.266	0.997	
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.203	0.210	0.203	0.226	0.230	0.253	0.261	0.244	0.229	9.862		
T	Acetone					0.042	0.033	0.036	0.036	0.038	0.036	0.037	8.527		
C	1,1-Dichloroethene		0.331	0.337	0.323	0.323	0.374	0.354	0.362	0.362	0.343	0.345	5.317		
T	Tert-Butyl Alcohol				0.009	0.010	0.010	0.009	0.009		0.009	0.009	3.845		
T	Dimethyl Sulfide				0.148	0.153	0.181	0.180	0.191	0.201	0.194	0.178	11.314		
T	Iodomethane					0.018	0.073	0.110	0.127	0.141	0.126	0.099	46.579	0.995	
T	Methyl acetate				0.105	0.114	0.123	0.116	0.119	0.119	0.122	0.117	5.292		
T	Methylene Chloride			0.249	0.238	0.224	0.255	0.239	0.244	0.244	0.228	0.240	4.326		
T	Carbon Disulfide			0.646	0.667	0.616	0.734	0.709	0.737	0.705	0.608	0.678	7.509		
T	Acrylonitrile			0.039	0.042	0.044	0.052	0.050	0.053		0.058	0.048	14.604		
T	Methyl Tert Butyl Ether			0.445	0.444	0.427	0.501	0.466	0.494	0.494	0.462	0.467	5.856		
T	trans-1,2-Dichloroethene		0.336	0.369	0.343	0.337	0.391	0.381	0.394	0.393	0.357	0.367	6.613		
T	n-Hexane					0.339	0.380	0.365	0.364	0.383	0.357	0.365	4.441		
T	Diisopropyl ether			0.822	0.860	0.841	0.936	0.837	0.803		0.721	0.831	7.755		
T	Vinyl Acetate					0.222	0.233	0.244	0.240	0.235	0.219	0.232	4.199		
P	1,1-Dichloroethane		0.458	0.452	0.459	0.424	0.509	0.490	0.492	0.485	0.440	0.468	5.961		
T	Ethyl-Tert-Butyl ether			0.707	0.712	0.711	0.797	0.717	0.700		0.636	0.711	6.615		
T	2-Butanone					0.064	0.059	0.058	0.058	0.060	0.060	0.060	3.533		
T	Propionitrile				0.015	0.016	0.019	0.018	0.017		0.018	0.017	7.722		
T	2,2-Dichloropropane		0.372	0.366	0.400	0.381	0.424	0.405	0.431	0.426	0.387	0.399	6.067		
T	cis-1,2-Dichloroethene		0.267	0.264	0.261	0.249	0.293	0.275	0.282	0.280	0.260	0.270	5.032		
C	Chloroform	0.438	0.480	0.448	0.473	0.449	0.519	0.484	0.478	0.460	0.409	0.464	6.461		
T	1-Bromopropane			0.026	0.033	0.035	0.042	0.040	0.040	0.043	0.041	0.038	15.738	0.999	
T	Bromochloromethane		0.085	0.123	0.131	0.129	0.153	0.142	0.143	0.143	0.135	0.132	15.051	0.999	
T	Tetrahydrofuran			0.036	0.033	0.035	0.040	0.037	0.037		0.038	0.037	6.272		
S	Dibromofluoromethane			0.215	0.219	0.231	0.265	0.249	0.245	0.246	0.245	0.239	6.955		
T	1,1,1-Trichloroethane		0.347	0.393	0.408	0.375	0.449	0.423	0.436	0.439	0.392	0.407	8.231		
T	Cyclohexane			0.430	0.430	0.414	0.468	0.447	0.463	0.484	0.444	0.448	5.162		
T	1,1-Dichloropropene			0.349	0.360	0.360	0.409	0.382	0.387	0.387	0.350	0.373	5.767		
T	Tert-Amyl-Methyl ether			0.549	0.554	0.554	0.619	0.557	0.544		0.509	0.555	5.874		
T	Carbon Tetrachloride		0.276	0.329	0.331	0.316	0.383	0.369	0.383	0.38	0.351	0.3466	10.5873		
S	1,2-Dichloroethane-d4			0.205	0.23	0.256	0.286	0.268	0.26	0.256	0.253	0.2517	9.72773		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.306	0.311	0.343	0.313	0.373	0.344	0.34	0.333	0.3	0.3292	7.22432		
T	Benzene	1.019	1.009	1.03	1.032	1.005	1.135	1.03	0.983	0.845	0.682	0.9772	12.8359		
T	Trichloroethene		0.232	0.265	0.251	0.227	0.271	0.253	0.256	0.26	0.246	0.2513	5.69249		
T	Methylcyclohexane					0.389	0.442	0.424	0.421	0.432	0.398	0.4177	4.85714		
C	1,2-Dichloropropane		0.254	0.256	0.261	0.257	0.3	0.28	0.281	0.283	0.264	0.2707	5.80178		
T	Bromodichloromethane		0.284	0.315	0.326	0.311	0.377	0.354	0.359	0.35	0.319	0.3328	8.74347		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.001	10.7139		
T	Dibromomethane		0.097	0.12	0.117	0.118	0.136	0.128	0.13	0.13	0.123	0.1221	9.21611		
T	2-Chloroethyl Vinyl Ether				0.083	0.085	0.106	0.1	0.085	0.084	0.084	0.0896	10.6202		
T	4-Methyl-2-Pentanone					0.041	0.055	0.053	0.052	0.054	0.053	0.0514	9.90659		
T	cis-1,3-Dichloropropene		0.285	0.336	0.372	0.356	0.427	0.399	0.404	0.391	0.348	0.3686	11.6494		

T	Dimethyl Disulfide					0.28	0.369	0.368	0.376	0.384	0.354	0.3554	10.7453		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.145	1.132	1.264	1.322	1.281	1.211	1.159	1.07	1.198	7.19136		
C	Toluene	1.451	1.492	1.538	1.565	1.504	1.651	1.541	1.423	1.157		1.4802	9.33982		
T	Ethyl Methacrylate			0.246	0.257	0.27	0.331	0.331	0.327	0.33	0.307	0.2999	12.1008		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.4	0.435	0.439	0.515	0.498	0.494	0.474	0.42	0.4594	9.01518		
T	1,1,2-Trichloroethane		0.168	0.214	0.22	0.216	0.251	0.234	0.233	0.232	0.217	0.2206	10.3797		
T	2-Hexanone					0.069	0.069	0.069	0.067	0.069	0.067	0.0682	1.84107		
T	1,3-Dichloropropane		0.395	0.405	0.409	0.4	0.463	0.435	0.425	0.409	0.372	0.4124	6.27352		
T	Tetrachloroethene		0.283	0.289	0.312	0.307	0.329	0.315	0.314	0.32	0.298	0.3074	4.79657		
T	Dibromochloromethane		0.229	0.249	0.248	0.261	0.309	0.301	0.303	0.301	0.281	0.2758	10.7016		
T	1,2-Dibromoethane		0.176	0.201	0.202	0.213	0.246	0.234	0.232	0.23	0.215	0.2168	9.92914		
T	1-Chlorohexane		0.467	0.45	0.46	0.468	0.526	0.507	0.496	0.491	0.442	0.4784	5.86101		
P	Chlorobenzene		1.027	1.003	0.994	0.956	1.076	1.014	0.982	0.881	0.704	0.9595	11.4409		
T	1,1,1,2-Tetrachloroethane		0.298	0.304	0.309	0.322	0.375	0.366	0.376	0.381	0.344	0.3415	9.93691		
C	Ethylbenzene		0.467	0.543	0.555	0.531	0.604	0.587	0.595	0.59	0.511	0.5536	8.24394		
T	m-,p-Xylene		0.629	0.613	0.639	0.625	0.725	0.68	0.646	0.538	0.416	0.6123	14.5606		
T	o-Xylene			0.601	0.602	0.595	0.705	0.672	0.664	0.645	0.559	0.6305	7.7572		
T	Styrene		0.857	0.895	0.961	0.961	1.183	1.135	1.08	0.939	0.746	0.9732	14.2789		
P	Bromoform			0.121	0.119	0.141	0.186	0.184	0.187	0.187	0.177	0.1626	18.5916	0.99	
T	Isopropylbenzene		1.508	1.62	1.635	1.602	1.821	1.683	1.521	1.207		1.5746	11.2782		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.5	0.473	0.506	0.511	0.578	0.514	0.504	0.486	0.462	0.5039	6.56275		
S	p-Bromofluorobenzene			0.984	0.939	0.976	1.041	1.002	0.949	0.944	0.954	0.9737	3.5883		
T	1,2,3-Trichloropropane			0.103	0.14	0.134	0.165	0.144	0.142	0.14	0.135	0.1378	12.2313		
T	trans-1,4-Dichloro-2-Butene			0.066	0.108	0.122	0.146	0.143	0.143	0.15	0.147	0.1281	22.5599	1.000	
T	n-Propylbenzene		3.856	4.096	4.196	4.004	4.517	3.98	3.432	2.558	1.973	3.6235	23.0305		1.006
T	Bromobenzene	0.641	0.717	0.865	0.762	0.762	0.872	0.79	0.779	0.761	0.709	0.7657	9.01876		
T	1,3,5-Trimethylbenzene	2.544	2.509	2.555	2.65	2.674	3.133	2.841	2.616	2.152		2.6306	10.0224		
T	2-Chlorotoluene		2.727	2.536	2.716	2.523	2.773	2.514	2.232	1.824		2.4806	12.7579		
T	4-Chlorotoluene		2.244	2.275	2.612	2.588	2.968	2.584	2.386	1.554	1.262	2.2749	23.8074		1.004
T	a-Methylstyrene					1.153	1.437	1.374	1.341	1.31	1.161	1.296	8.92951		
T	tert-Butylbenzene			0.516	0.531	0.529	0.619	0.578	0.586	0.598	0.567	0.5654	6.53261		
T	1,2,4-Trimethylbenzene	2.195	2.214	2.283	2.512	2.534	3.011	2.805	2.601	2.134		2.4765	12.0849		
T	sec-Butylbenzene	3.152	2.977	3.126	3.38	3.272	3.762	3.429	3.112	2.442		3.1835	11.3408		
T	p-Isopropyltoluene	1.963	2.156	2.279	2.444	2.422	2.938	2.764	2.605	2.141		2.4126	13.0916		
T	1,3-Dichlorobenzene		1.639	1.571	1.641	1.508	1.737	1.566	1.522	1.381	1.18	1.5273	10.7475		
T	1,4-Dichlorobenzene	1.411	1.56	1.63	1.569	1.475	1.693	1.528	1.482	1.353	1.153	1.4853	10.3324		
T	n-Butylbenzene		2.066	1.96	2.179	2.187	2.728	2.583	2.468	2.036		2.2757	12.3713		
T	1,2-Dichlorobenzene	1.072	1.192	1.295	1.376	1.287	1.489	1.346	1.308	1.218	1.064	1.2648	10.4511		
T	1,2-Dibromo-3-Chloropropane				0.068	0.073	0.093	0.087	0.087	0.087	0.084	0.0827	10.8156		
T	1,2,4-Trichlorobenzene		0.708	0.822	0.788	0.757	0.888	0.816	0.812	0.819	0.734	0.7937	6.80841		
T	Hexachlorobutadiene		0.417	0.472	0.517	0.485	0.55	0.52	0.521	0.532	0.495	0.5009	7.945		
T	Naphthalene		1.052	1.088	1.181	1.112	1.236	1.056	1.009	0.965	0.842	1.0602	10.9873		
T	1,2,3-Trichlorobenzene	0.691	0.589	0.605	0.571	0.608	0.678	0.605	0.592	0.586	0.526	0.6049	7.97839		

Fri Dec 05 12:49:33 2014

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14120292 Run Date: 12/04/2014 Sample ID: WG503415-12
Instrument ID: HPMS8 Run Time: 18:40 Method: 8260B
File ID: 8M401541 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG503415 Cal ID: HPMS8 - 04-DEC-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.5	ug/L	0.469	1.10	20	
1,1-Dichloroethene	CCC	50.0	47.7	ug/L	0.330	4.50	20	
1,2-Dichloropropane	CCC	50.0	49.1	ug/L	0.266	1.70	20	
Ethylbenzene	CCC	50.0	48.5	ug/L	0.537	3.10	20	
Toluene	CCC	50.0	48.7	ug/L	1.44	2.60	20	
Vinyl Chloride	CCC	50.0	40.6	ug/L	0.253	18.7	20	
Bromoform	SPCC	50.0	46.6	ug/L	0.168	6.70	20	
Chlorobenzene	SPCC	50.0	51.0	ug/L	0.978	1.90	20	
Chloromethane	SPCC	50.0	41.9	ug/L	0.308	16.1	20	
1,1-Dichloroethane	SPCC	50.0	51.6	ug/L	0.483	3.30	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.4	ug/L	0.478	5.10	20	
Acetone		50.0	49.6	ug/L	0.0364	0.900	20	
Benzene		50.0	50.1	ug/L	0.980	0.300	20	
Bromobenzene		50.0	49.2	ug/L	0.753	1.70	20	
Bromochloromethane		50.0	49.8	ug/L	0.139	0.400	20	
Bromodichloromethane		50.0	50.4	ug/L	0.335	0.800	20	
Bromomethane		50.0	38.3	ug/L	0.113	23.4	20	*
2-Butanone		50.0	48.6	ug/L	0.0583	2.80	20	
n-Butylbenzene		50.0	52.6	ug/L	2.39	5.20	20	
sec-Butylbenzene		50.0	53.2	ug/L	3.39	6.40	20	
tert-Butylbenzene		50.0	51.0	ug/L	0.577	2.00	20	
Carbon Disulfide		50.0	48.7	ug/L	0.661	2.50	20	
Carbon Tetrachloride		50.0	52.2	ug/L	0.362	4.40	20	
Dibromochloromethane		50.0	51.7	ug/L	0.285	3.40	20	
Chloroethane		50.0	46.3	ug/L	0.166	7.40	20	
2-Chlorotoluene		50.0	52.9	ug/L	2.63	5.80	20	
4-Chlorotoluene		50.0	46.8	ug/L	2.41	6.30	20	
1,2-Dibromo-3-Chloropropane		50.0	48.2	ug/L	0.0798	3.60	20	
1,2-Dibromoethane		50.0	49.6	ug/L	0.215	0.700	20	
Dibromomethane		50.0	51.1	ug/L	0.125	2.20	20	
1,2-Dichlorobenzene		50.0	51.8	ug/L	1.31	3.60	20	
1,3-Dichlorobenzene		50.0	49.4	ug/L	1.51	1.20	20	
1,4-Dichlorobenzene		50.0	47.9	ug/L	1.42	4.20	20	
Dichlorodifluoromethane		50.0	39.9	ug/L	0.252	20.1	20	*
1,2-Dichloroethane		50.0	48.6	ug/L	0.320	2.90	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.264	2.20	20	
trans-1,2-Dichloroethene		50.0	49.1	ug/L	0.361	1.80	20	
1,3-Dichloropropane		50.0	48.7	ug/L	0.402	2.60	20	
2,2-Dichloropropane		50.0	50.8	ug/L	0.405	1.50	20	
cis-1,3-Dichloropropene		50.0	54.0	ug/L	0.398	8.00	20	
trans-1,3-Dichloropropene		50.0	48.0	ug/L	0.441	3.90	20	
1,1-Dichloropropene		50.0	48.0	ug/L	0.358	3.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3909599
Report generated 12/15/2014 15:09

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14120292 Run Date: 12/04/2014 Sample ID: WG503415-12
Instrument ID: HPMS8 Run Time: 18:40 Method: 8260B
File ID: 8M401541 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG503415 Cal ID: HPMS8 - 04-DEC-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	47.5	ug/L	0.0648	5.10	20	
Hexachlorobutadiene		50.0	49.0	ug/L	0.491	2.10	20	
Isopropylbenzene		50.0	51.1	ug/L	1.61	2.20	20	
p-Isopropyltoluene		50.0	54.6	ug/L	2.63	9.10	20	
4-Methyl-2-Pentanone		50.0	48.7	ug/L	0.0501	2.60	20	
Methylene Chloride		50.0	46.4	ug/L	0.223	7.20	20	
Naphthalene		50.0	45.4	ug/L	0.964	9.10	20	
n-Propylbenzene		50.0	50.1	ug/L	3.87	0.100	20	
Styrene		50.0	53.5	ug/L	1.04	7.10	20	
1,1,1,2-Tetrachloroethane		50.0	48.9	ug/L	0.334	2.30	20	
Tetrachloroethene		50.0	48.7	ug/L	0.300	2.60	20	
1,2,3-Trichlorobenzene		50.0	46.6	ug/L	0.563	6.90	20	
1,2,4-Trichlorobenzene		50.0	47.9	ug/L	0.760	4.20	20	
1,1,1-Trichloroethane		50.0	51.1	ug/L	0.416	2.20	20	
1,1,2-Trichloroethane		50.0	49.9	ug/L	0.220	0.200	20	
Trichloroethene		50.0	50.1	ug/L	0.252	0.100	20	
Trichlorofluoromethane		50.0	48.2	ug/L	0.355	3.50	20	
1,2,3-Trichloropropane		50.0	48.9	ug/L	0.135	2.20	20	
1,2,4-Trimethylbenzene		50.0	53.1	ug/L	2.63	6.20	20	
1,3,5-Trimethylbenzene		50.0	52.2	ug/L	2.75	4.50	20	
o-Xylene		50.0	50.7	ug/L	0.640	1.40	20	
m-,p-Xylene		100	105	ug/L	0.646	5.40	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3909599
Report generated 12/15/2014 15:09

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14120292 Run Date: 12/08/2014 Sample ID: WG503806-02
Instrument ID: HPMS8 Run Time: 12:36 Method: 8260B
File ID: 8M401579 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG503808 Cal ID: HPMS8 - 04-DEC-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.9	ug/L	0.463	0.106	20	
1,1-Dichloroethene	CCC	50.0	51.0	ug/L	0.352	1.93	20	
1,2-Dichloropropane	CCC	50.0	49.3	ug/L	0.267	1.33	20	
Ethylbenzene	CCC	50.0	51.0	ug/L	0.565	1.97	20	
Toluene	CCC	50.0	50.5	ug/L	1.50	1.04	20	
Vinyl Chloride	CCC	50.0	44.5	ug/L	0.277	11.1	20	
Bromoform	SPCC	50.0	45.6	ug/L	0.165	8.72	20	
Chlorobenzene	SPCC	50.0	50.6	ug/L	0.971	1.16	20	
Chloromethane	SPCC	50.0	43.8	ug/L	0.322	12.4	20	
1,1-Dichloroethane	SPCC	50.0	51.2	ug/L	0.479	2.41	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.5	ug/L	0.479	5.01	20	
Xylenes		150	158	ug/L	0.650	5.45	20	
Acetone		50.0	46.8	ug/L	0.0344	6.35	20	
Benzene		50.0	51.3	ug/L	1.00	2.61	20	
Bromobenzene		50.0	49.9	ug/L	0.764	0.221	20	
Bromochloromethane		50.0	47.1	ug/L	0.131	5.82	20	
Bromodichloromethane		50.0	50.2	ug/L	0.334	0.489	20	
Bromomethane		50.0	40.8	ug/L	0.120	18.4	20	
2-Butanone		50.0	45.6	ug/L	0.0547	8.78	20	
n-Butylbenzene		50.0	59.2	ug/L	2.69	18.4	20	
sec-Butylbenzene		50.0	54.0	ug/L	3.44	7.93	20	
tert-Butylbenzene		50.0	51.6	ug/L	0.584	3.20	20	
Carbon Disulfide		50.0	53.4	ug/L	0.723	6.72	20	
Carbon Tetrachloride		50.0	51.8	ug/L	0.359	3.58	20	
Dibromochloromethane		50.0	49.6	ug/L	0.274	0.736	20	
Chloroethane		50.0	50.8	ug/L	0.182	1.65	20	
2-Chlorotoluene		50.0	50.2	ug/L	2.49	0.384	20	
4-Chlorotoluene		50.0	51.0	ug/L	2.60	1.98	20	
1,2-Dibromo-3-Chloropropane		50.0	47.7	ug/L	0.0789	4.64	20	
1,2-Dibromoethane		50.0	48.6	ug/L	0.211	2.71	20	
Dibromomethane		50.0	46.8	ug/L	0.114	6.40	20	
1,2-Dichlorobenzene		50.0	51.5	ug/L	1.30	2.94	20	
1,3-Dichlorobenzene		50.0	50.5	ug/L	1.54	1.08	20	
1,4-Dichlorobenzene		50.0	50.8	ug/L	1.51	1.64	20	
Dichlorodifluoromethane		50.0	50.1	ug/L	0.316	0.160	20	
1,2-Dichloroethane		50.0	47.3	ug/L	0.312	5.36	20	
cis-1,2-Dichloroethene		50.0	50.0	ug/L	0.270	0.0388	20	
trans-1,2-Dichloroethene		50.0	51.9	ug/L	0.381	3.88	20	
1,3-Dichloropropane		50.0	47.8	ug/L	0.395	4.32	20	
2,2-Dichloropropane		50.0	52.3	ug/L	0.417	4.58	20	
cis-1,3-Dichloropropene		50.0	51.5	ug/L	0.380	3.06	20	
trans-1,3-Dichloropropene		50.0	49.7	ug/L	0.456	0.667	20	

CCV - Modified 03/05/2008
PDF File ID: 3909600
Report generated 12/15/2014 15:09

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14120292 Run Date: 12/08/2014 Sample ID: WG503806-02
Instrument ID: HPMS8 Run Time: 12:36 Method: 8260B
File ID: 8M401579 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG503808 Cal ID: HPMS8 - 04-DEC-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.0	ug/L	0.373	0.0904	20	
2-Hexanone		50.0	46.3	ug/L	0.0632	7.40	20	
Hexachlorobutadiene		50.0	53.8	ug/L	0.539	7.58	20	
Isopropylbenzene		50.0	51.5	ug/L	1.62	2.98	20	
p-Isopropyltoluene		50.0	58.3	ug/L	2.82	16.7	20	
4-Methyl-2-Pentanone		50.0	46.4	ug/L	0.0477	7.17	20	
Methylene Chloride		50.0	47.6	ug/L	0.229	4.71	20	
Naphthalene		50.0	44.6	ug/L	0.946	10.8	20	
n-Propylbenzene		50.0	51.9	ug/L	3.99	3.73	20	
Styrene		50.0	55.3	ug/L	1.08	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	50.1	ug/L	0.342	0.259	20	
Tetrachloroethene		50.0	49.8	ug/L	0.306	0.356	20	
1,2,3-Trichlorobenzene		50.0	46.3	ug/L	0.560	7.46	20	
1,2,4-Trichlorobenzene		50.0	50.4	ug/L	0.800	0.731	20	
1,1,1-Trichloroethane		50.0	50.5	ug/L	0.410	0.925	20	
1,1,2-Trichloroethane		50.0	48.7	ug/L	0.215	2.69	20	
Trichloroethene		50.0	47.5	ug/L	0.239	5.02	20	
Trichlorofluoromethane		50.0	50.7	ug/L	0.373	1.45	20	
1,2,3-Trichloropropane		50.0	47.8	ug/L	0.132	4.46	20	
1,2,4-Trimethylbenzene		50.0	56.4	ug/L	2.79	12.7	20	
1,3,5-Trimethylbenzene		50.0	54.1	ug/L	2.85	8.28	20	
o-Xylene		50.0	51.1	ug/L	0.644	2.12	20	
m-,p-Xylene		100	107	ug/L	0.656	7.11	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3909600
Report generated 12/15/2014 15:09

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14120292
Run Date: 12/09/2014
Sample ID: WG503946-02
Instrument ID: HPMS8
Run Time: 09:11
Method: 8260B
File ID: 8M401609
Analyst: TMB
QC Key: DOD4
Workgroup (AAB#): WG503948
Cal ID: HPMS8 - 04-DEC-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	53.1	ug/L	0.492	6.11	20	
1,1-Dichloroethene	CCC	50.0	56.3	ug/L	0.389	12.6	20	
1,2-Dichloropropane	CCC	50.0	52.3	ug/L	0.283	4.53	20	
Ethylbenzene	CCC	50.0	52.5	ug/L	0.581	5.01	20	
Toluene	CCC	50.0	51.9	ug/L	1.54	3.82	20	
Vinyl Chloride	CCC	50.0	51.2	ug/L	0.318	2.38	20	
Bromoform	SPCC	50.0	44.7	ug/L	0.161	10.5	20	
Chlorobenzene	SPCC	50.0	51.7	ug/L	0.992	3.35	20	
Chloromethane	SPCC	50.0	50.5	ug/L	0.372	1.10	20	
1,1-Dichloroethane	SPCC	50.0	55.6	ug/L	0.520	11.2	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.0	ug/L	0.454	10.0	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 3909600
Report generated 12/15/2014 15:09

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14120292
Instrument ID: HPMS8
Workgroup (AAB#): WG503808

ICAL CCV Number: WG503415-08
CAL ID: HPMS8-04-DEC-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG503415-08	NA	NA	283707	558450	794624
Upper Limit	NA	NA	567414	1116900	1589248
Lower Limit	NA	NA	141854	279225	397312
L14120292-01	1.00	01	252123	538259	725407
L14120292-02	1.00	01	244587	530565	715387
L14120292-03	1.00	01	228053	502523	675010
L14120292-04	1.00	01	247121	520389	700994
L14120292-05	1.00	01	239741	519538	702413
L14120292-06	1.00	01	230456	505156	690334
L14120292-07	1.00	01	258792	547329	743338
L14120292-08	1.00	01	297047	597756	792886
L14120292-09	1.00	01	296378	596901	792680
L14120292-10	1.00	01	229258	496243	671064
L14120292-11	1.00	01	227612	495077	667192
L14120292-12	10.0	DL01	224709	489287	663470
L14120292-13	1.00	01	227074	500571	666182
L14120292-14	5.00	DL01	222667	486505	657621
L14120292-15	5.00	DL01	225510	495630	654805
L14120292-16	1.00	01	227102	500582	669342
L14120292-17	1.00	01	260192	552830	750350
WG503808-01	1.00	01	257278	559884	781951
WG503808-02	1.00	01	292964	592162	801833

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3920984
Report generated 12/15/2014 15:09

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14120292
Instrument ID: HPMS8
Workgroup (AAB#): WG503948

ICAL CCV Number: WG503415-08
CAL ID: HPMS8 - 04-DEC-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG503415-08	NA	NA	283707	558450	794624
Upper Limit	NA	NA	567414	1116900	1589248
Lower Limit	NA	NA	141854	279225	397312
L14120292-03	10.0	DL01	241086	519795	696745
WG503948-01	1.00	01	229614	504763	685753
WG503948-02	1.00	01	270954	543236	719325

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 3920984
Report generated 12/15/2014 15:09

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14120292
Instrument ID: HPMS8
Workgroup (AAB#): WG503808

ICAL CCV Number: WG503415-08
CAL ID: HPMS8-04-DEC-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG503415-08	NA	NA	17.72	14.7	10.83
Upper Limit	NA	NA	18.22	15.2	11.33
Lower Limit	NA	NA	17.22	14.2	10.33
L14120292-01	1.00	01	17.72	14.7	10.84
L14120292-02	1.00	01	17.73	14.7	10.83
L14120292-03	1.00	01	17.73	14.7	10.83
L14120292-04	1.00	01	17.72	14.7	10.84
L14120292-05	1.00	01	17.72	14.7	10.84
L14120292-06	1.00	01	17.73	14.7	10.84
L14120292-07	1.00	01	17.72	14.71	10.84
L14120292-08	1.00	01	17.73	14.7	10.83
L14120292-09	1.00	01	17.73	14.7	10.83
L14120292-10	1.00	01	17.73	14.7	10.83
L14120292-11	1.00	01	17.73	14.7	10.83
L14120292-12	10.0	DL01	17.72	14.71	10.83
L14120292-13	1.00	01	17.73	14.7	10.84
L14120292-14	5.00	DL01	17.73	14.7	10.83
L14120292-15	5.00	DL01	17.73	14.7	10.83
L14120292-16	1.00	01	17.73	14.7	10.83
L14120292-17	1.00	01	17.73	14.7	10.84
WG503808-01	1.00	01	17.73	14.7	10.84
WG503808-02	1.00	01	17.73	14.7	10.83

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3920985
Report generated: 12/15/2014 15:09

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L14120292
Instrument ID: HPMS8
Workgroup (AAB#): WG503948

ICAL CCV Number: WG503415-08
CAL ID: HPMS8-04-DEC-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG503415-08	NA	NA	17.72	14.7	10.83
Upper Limit	NA	NA	18.22	15.2	11.33
Lower Limit	NA	NA	17.22	14.2	10.33
L14120292-03	10.0	DL01	17.73	14.7	10.83
WG503948-01	1.00	01	17.73	14.7	10.84
WG503948-02	1.00	01	17.73	14.7	10.84

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 3920985
Report generated: 12/15/2014 15:09

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401589.D Vial: 12
Acq On : 8 Dec 2014 17:31 Operator: TMB
Sample : L14120292-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 13:49:31 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	725407	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	538259	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.72	152	252123	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	159398	22.9518 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.80%		
43) 1,2-Dichloroethane-d4	10.43	65	173300	23.7328 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.92%		
58) Toluene-d8	12.81	98	578456	22.4273 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 89.72%		
80) p-Bromofluorobenzene	16.20	95	231355	23.5605 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.24%		

Target Compounds					Qvalue
56) Dimethyl Disulfide	12.81	94	16262	1.5771 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M401589.D 8260WTR.M Tue Dec 09 13:49:32 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401589.D Vial: 12
Acq On : 8 Dec 2014 17:31 Operator: TMB
Sample : L14120292-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 13:49 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

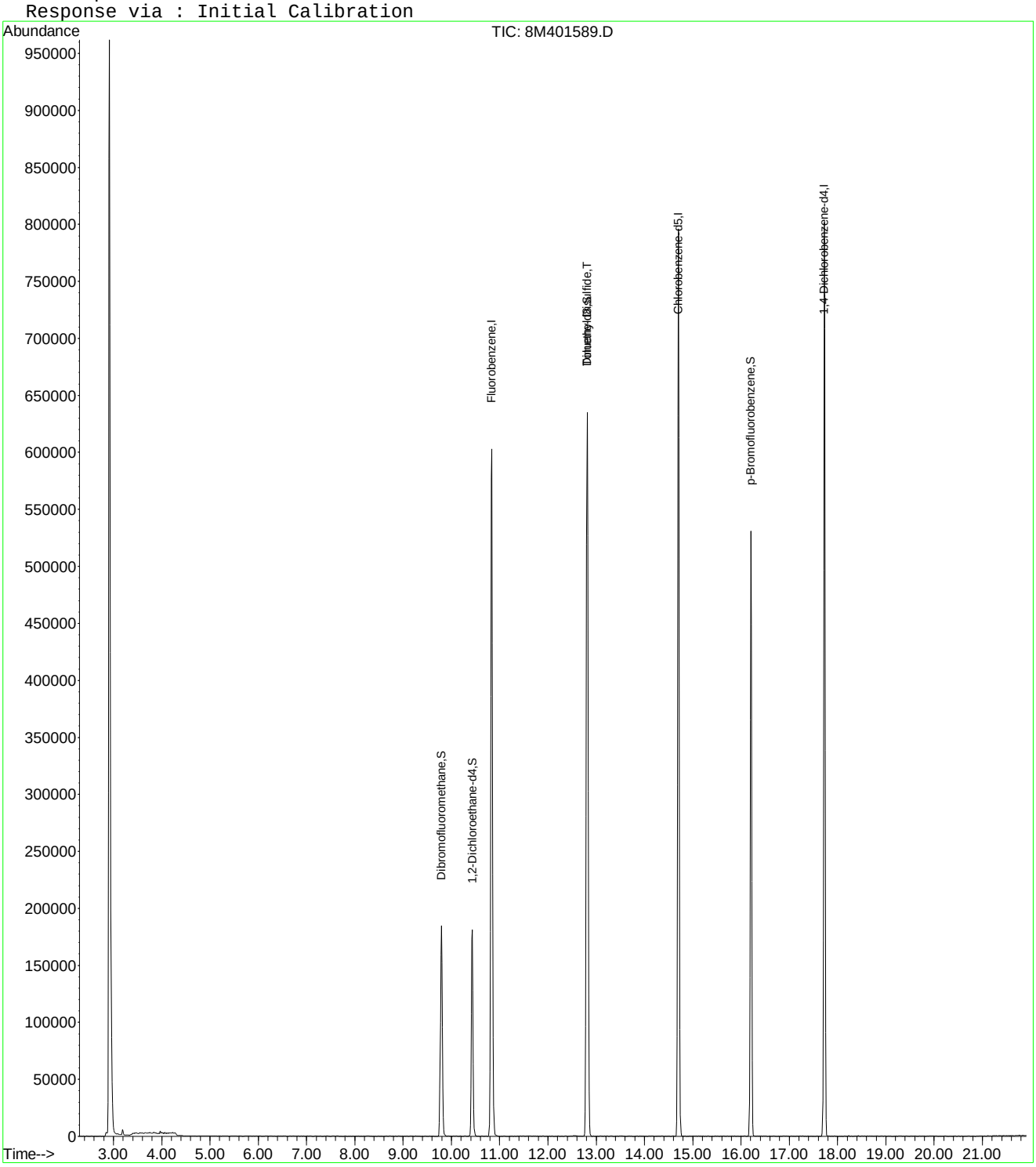

8M401589.D 8260WTR.M Tue Dec 09 13:49:32 2014 Page 2

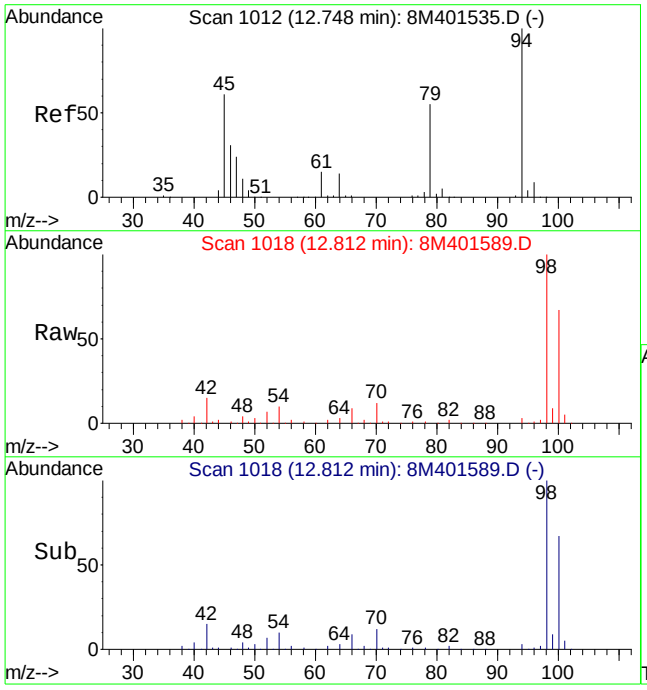

#56
Dimethyl Disulfide
Concen: 1.58 ug/L
RT: 12.81 min Scan# 1018
Delta R.T. 0.06 min
Lab File: 8M401589.D
Acq: 8 Dec 2014 17:31

Tgt Ion: 94 Resp: 16262

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.3	72.9#

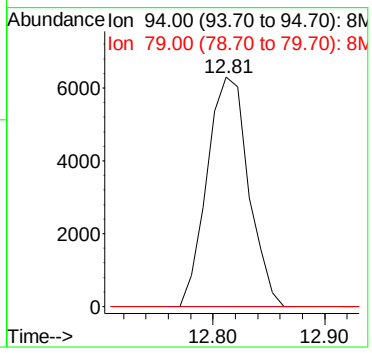

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401590.D Vial: 13
Acq On : 8 Dec 2014 18:00 Operator: TMB
Sample : L14120292-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 13:49:32 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	715387	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	530565	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	244587	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	152428	22.2556 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.04%		
43) 1,2-Dichloroethane-d4	10.43	65	169225	23.4993 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.00%		
58) Toluene-d8	12.81	98	569912	22.4165 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 89.68%		
80) p-Bromofluorobenzene	16.20	95	225594	23.6817 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.72%		

Target Compounds					Qvalue
27) 1,1-Dichloroethane	8.46	63	5431	0.4059 ug/L #	82
56) Dimethyl Disulfide	12.81	94	15851	1.5588 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M401590.D 8260WTR.M Tue Dec 09 13:49:33 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401590.D Vial: 13
Acq On : 8 Dec 2014 18:00 Operator: TMB
Sample : L14120292-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 13:49 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

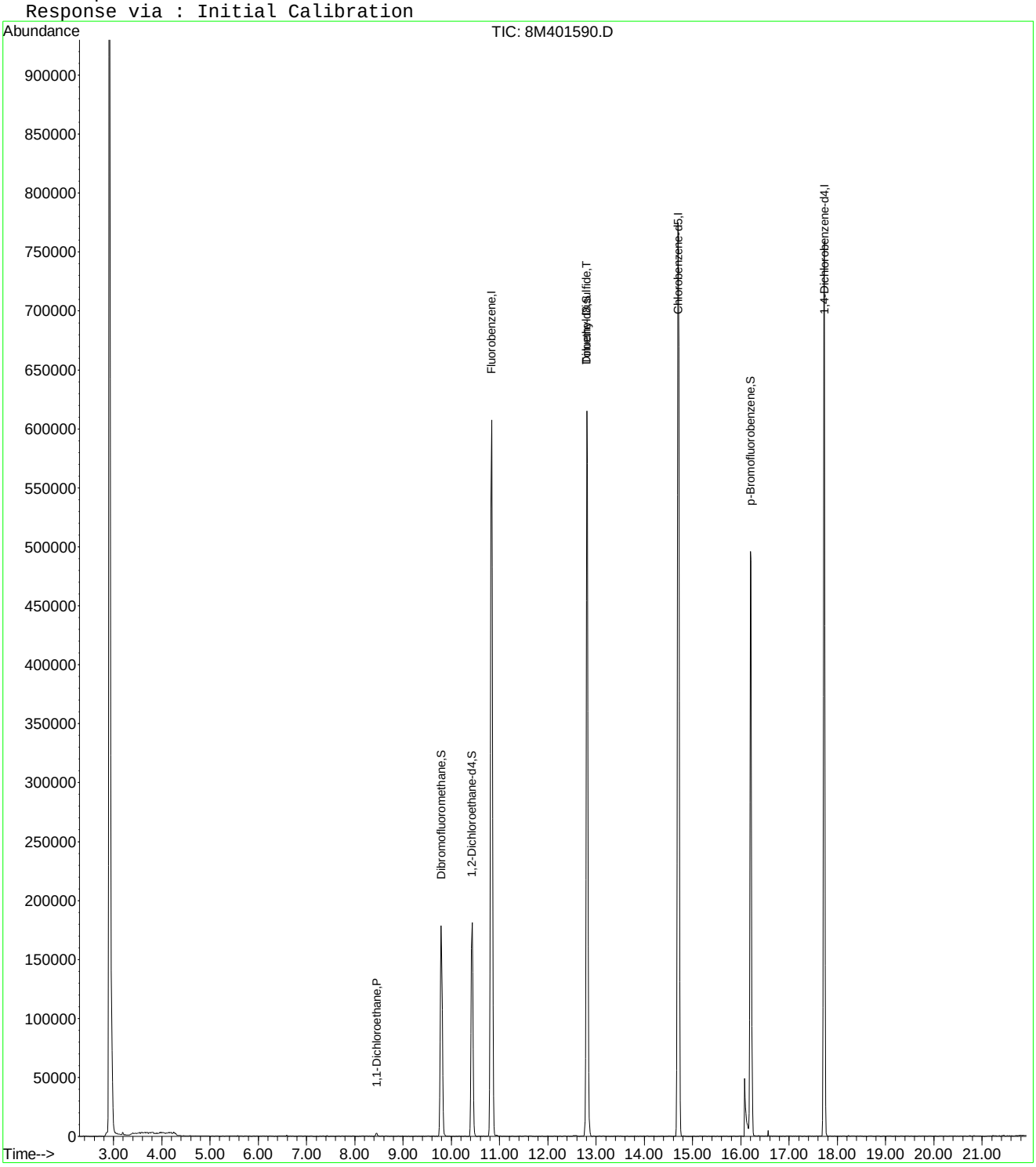

8M401590.D 8260WTR.M Tue Dec 09 13:49:33 2014 Page 2

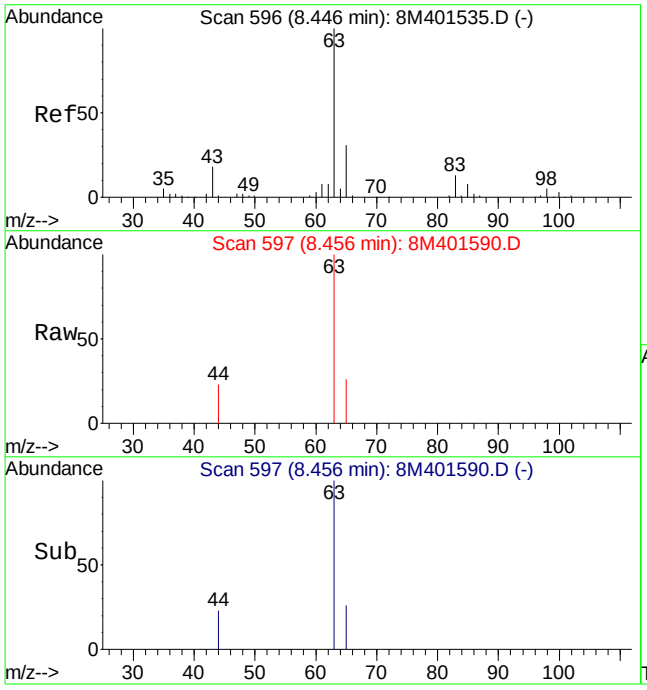

#27
1,1-Dichloroethane
Concen: 0.41 ug/L
RT: 8.46 min Scan# 597
Delta R.T. 0.01 min
Lab File: 8M401590.D
Acq: 8 Dec 2014 18:00

Tgt Ion: 63 Resp: 5431

Ion	Ratio	Lower	Upper
63	100		
65	23.1	18.3	42.7
83	0.0	7.0	16.4#

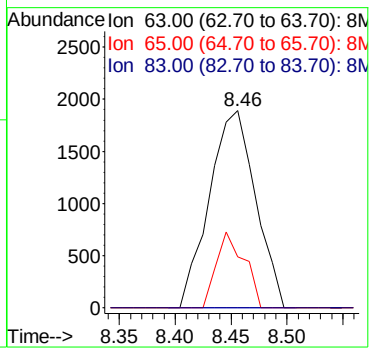

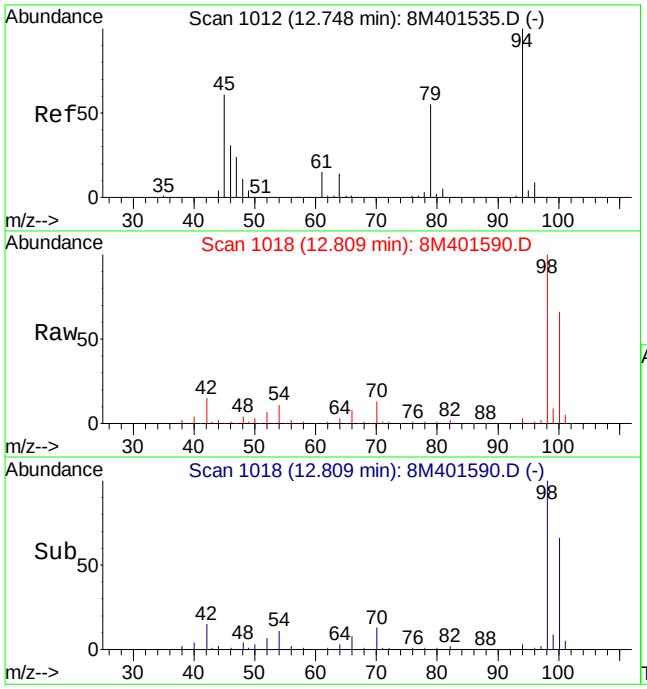

#56
Dimethyl Disulfide
Concen: 1.56 ug/L
RT: 12.81 min Scan# 1018
Delta R.T. 0.06 min
Lab File: 8M401590.D
Acq: 8 Dec 2014 18:00

Tgt Ion: 94 Resp: 15851

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.3	72.9#

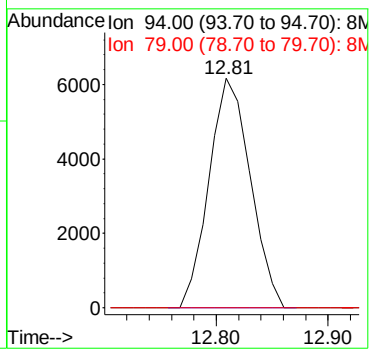

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401598.D Vial: 21
Acq On : 8 Dec 2014 21:51 Operator: TMB
Sample : L14120292-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 13:49:42 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	675010	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	502523	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	228053	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	147283	22.7907 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.16%		
43) 1,2-Dichloroethane-d4	10.43	65	157787	23.2217 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.88%		
58) Toluene-d8	12.81	98	539022	22.3846 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 89.52%		
80) p-Bromofluorobenzene	16.20	95	213783	24.0689 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.28%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.95	62	18176	2.1645 ug/L	98
14) 1,1-Dichloroethene	6.60	61	3888130	417.0504 ug/L	95
16) Dimethyl Sulfide	6.85	62	1322	0.2746 ug/L	85
27) 1,1-Dichloroethane	8.46	63	188053	14.8947 ug/L	98
32) cis-1,2-Dichloroethene	9.29	96	9160	1.2564 ug/L	85
45) 1,2-Dichloroethane	10.55	62	147330	16.5758 ug/L	92
47) Trichloroethene	11.34	130	22819	3.3633 ug/L	98
56) Dimethyl Disulfide	12.76	94	11774	1.2271 ug/L	97
59) Toluene	12.91	91	11849	0.3982 ug/L	96
63) 1,1,2-Trichloroethane	13.30	97	2142	0.4830 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M401598.D 8260WTR.M Tue Dec 09 13:49:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401598.D Vial: 21
Acq On : 8 Dec 2014 21:51 Operator: TMB
Sample : L14120292-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 13:49 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

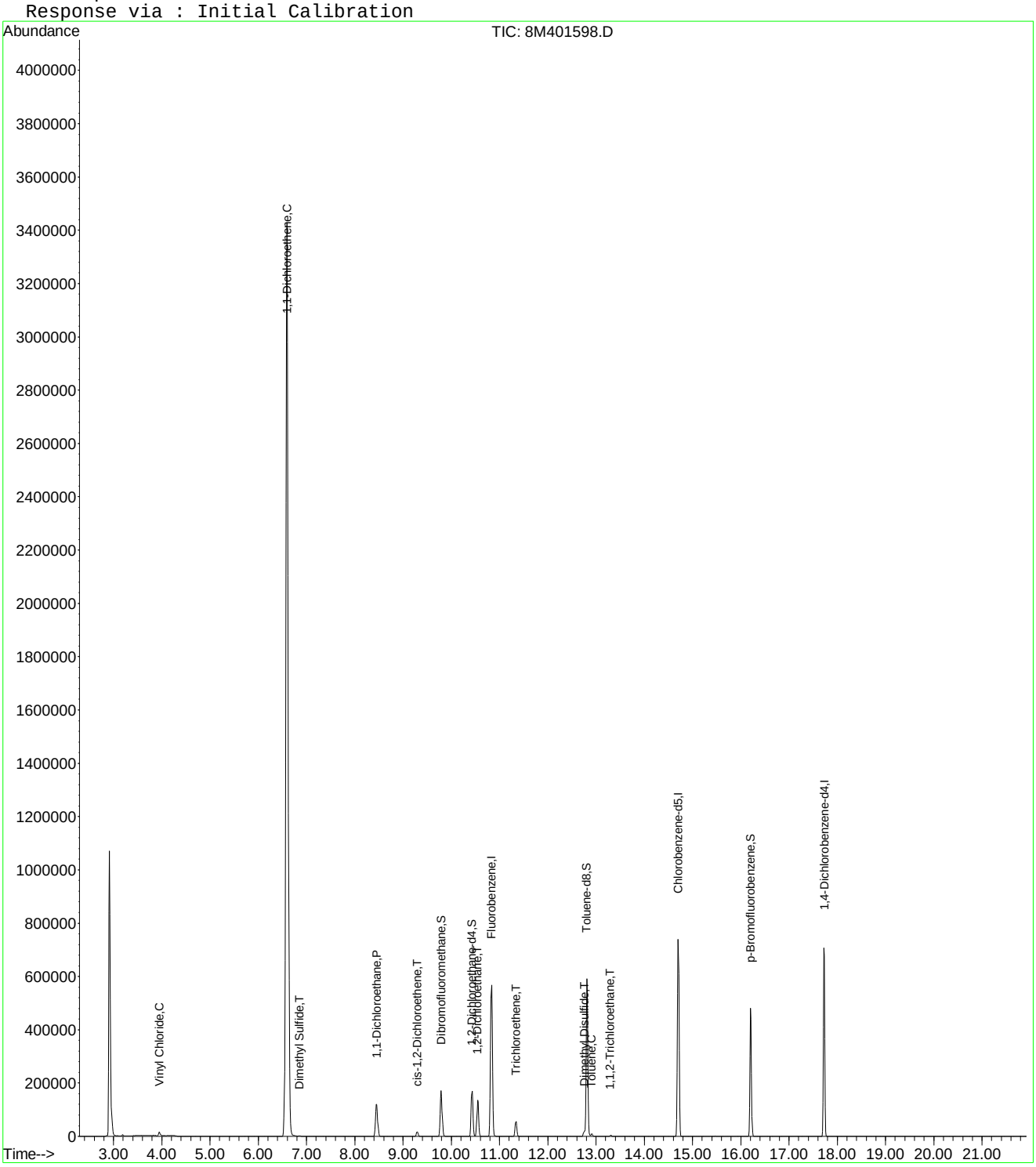

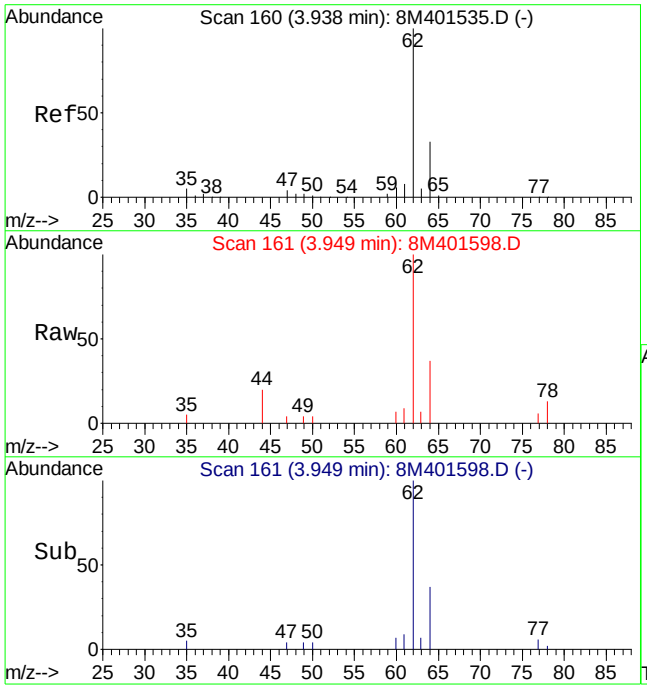

#4
Vinyl Chloride
Concen: 2.16 ug/L
RT: 3.95 min Scan# 161
Delta R.T. 0.01 min
Lab File: 8M401598.D
Acq: 8 Dec 2014 21:51

Tgt Ion: 62 Resp: 18176

Ion	Ratio	Lower	Upper
62	100		
64	31.6	18.2	42.6

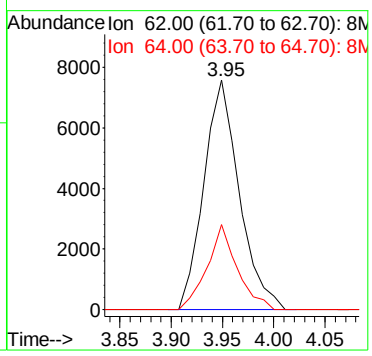

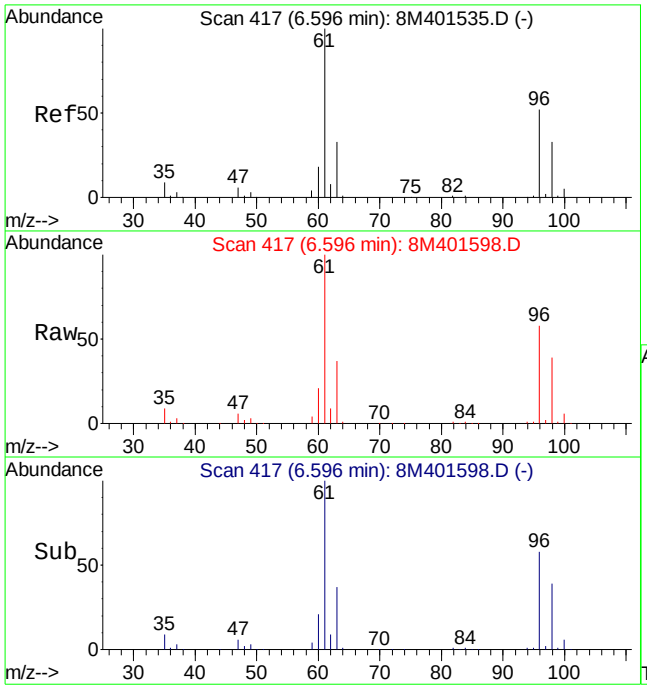

#14
1,1-Dichloroethene
Concen: 417.05 ug/L
RT: 6.60 min Scan# 417
Delta R.T. 0.01 min
Lab File: 8M401598.D
Acq: 8 Dec 2014 21:51

Tgt Ion: 61 Resp: 3888130

Ion	Ratio	Lower	Upper
61	100		
96	55.2	30.8	72.0

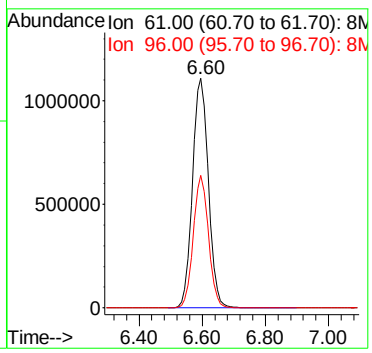

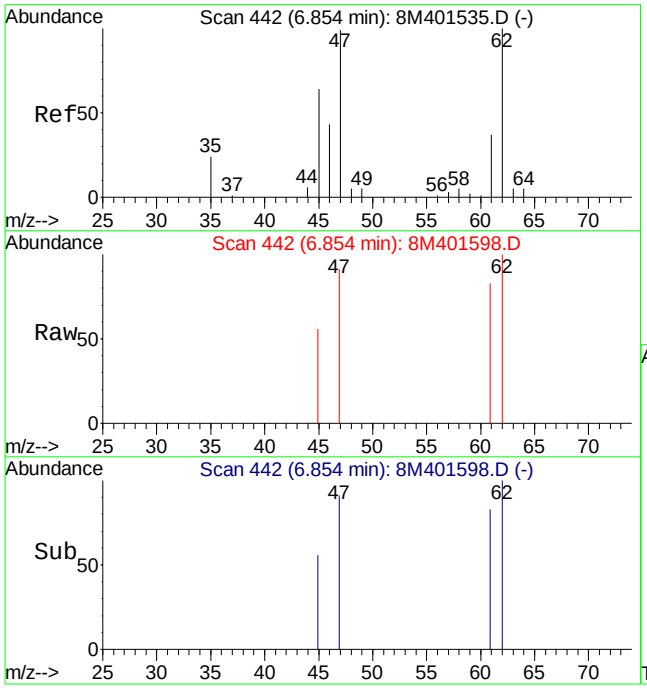

#16
Dimethyl Sulfide
Concen: 0.27 ug/L
RT: 6.85 min Scan# 442
Delta R.T. -0.00 min
Lab File: 8M401598.D
Acq: 8 Dec 2014 21:51

Tgt Ion: 62 Resp: 1322

Ion	Ratio	Lower	Upper
62	100		
47	108.2	56.0	130.6

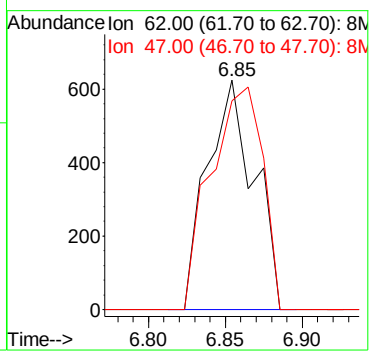

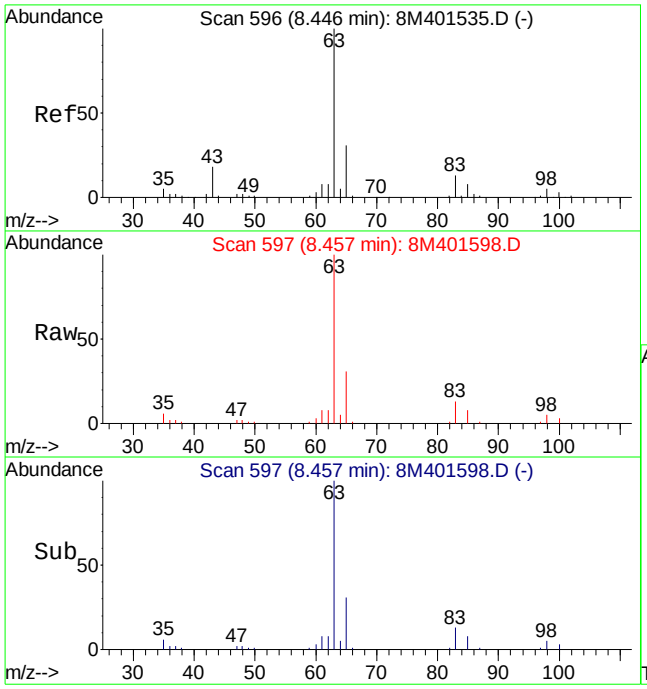

#27
1,1-Dichloroethane
Concen: 14.89 ug/L
RT: 8.46 min Scan# 597
Delta R.T. 0.01 min
Lab File: 8M401598.D
Acq: 8 Dec 2014 21:51

Tgt Ion: 63 Resp: 188053

Ion	Ratio	Lower	Upper
63	100		
65	31.7	18.3	42.7
83	12.9	7.0	16.4

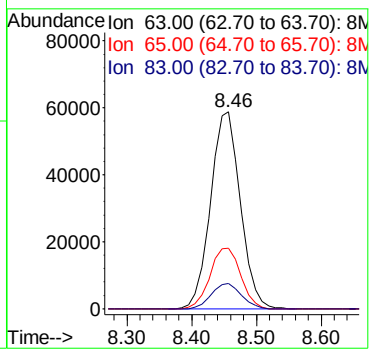

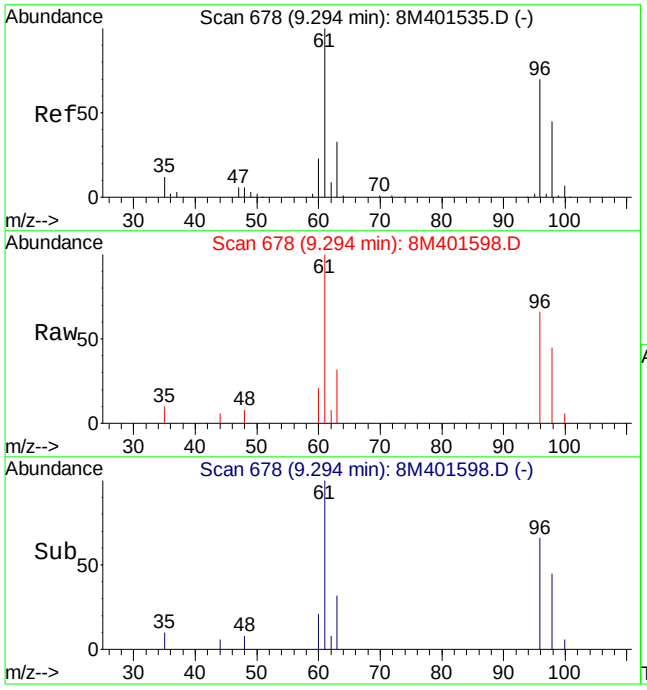

#32
cis-1,2-Dichloroethene
Concen: 1.26 ug/L
RT: 9.29 min Scan# 678
Delta R.T. -0.00 min
Lab File: 8M401598.D
Acq: 8 Dec 2014 21:51

Tgt Ion: 96 Resp: 9160

Ion	Ratio	Lower	Upper
96	100		
61	153.8	104.6	244.0

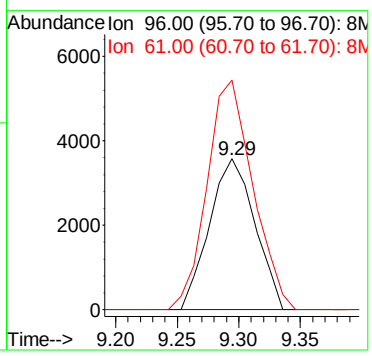

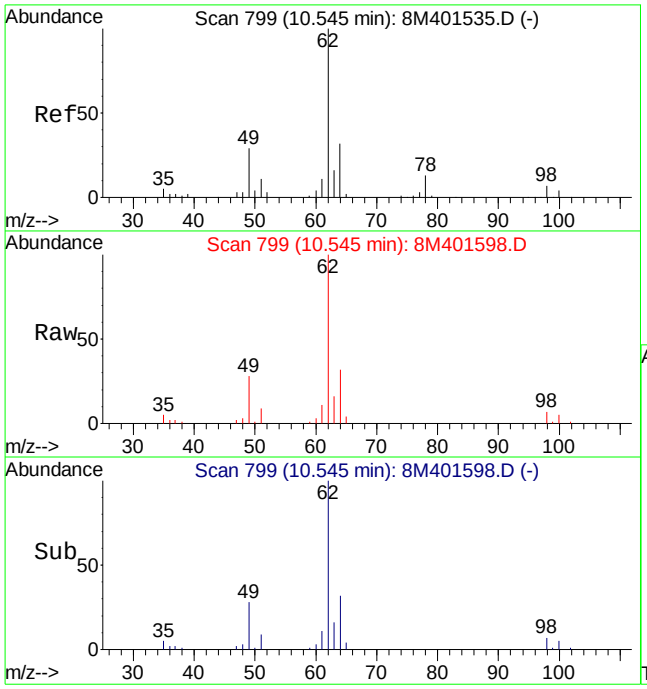

#45
1,2-Dichloroethane
Concen: 16.58 ug/L
RT: 10.55 min Scan# 799
Delta R.T. -0.00 min
Lab File: 8M401598.D
Acq: 8 Dec 2014 21:51

Tgt Ion: 62 Resp: 147330

Ion	Ratio	Lower	Upper
62	100		
64	31.9	18.7	43.7
49	27.5	21.7	50.7

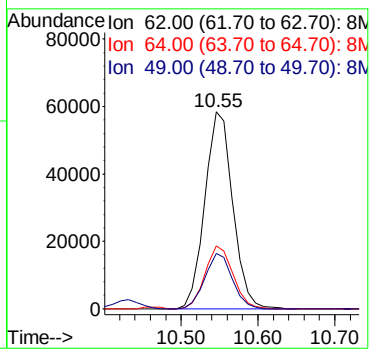

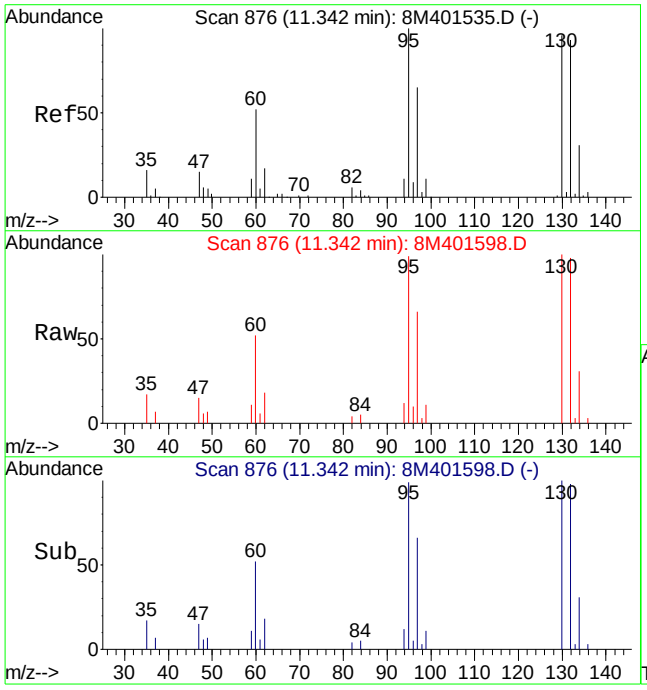

#47
Trichloroethene
Concen: 3.36 ug/L
RT: 11.34 min Scan# 876
Delta R.T. -0.00 min
Lab File: 8M401598.D
Acq: 8 Dec 2014 21:51

Tgt Ion:130 Resp: 22819

Ion	Ratio	Lower	Upper
130	100		
132	97.2	57.7	134.5
95	105.7	61.8	144.2

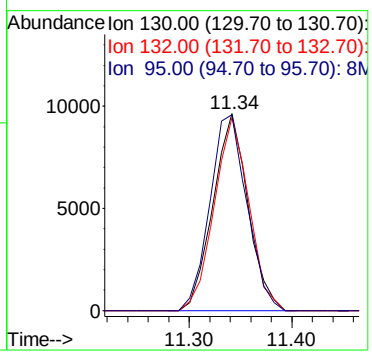

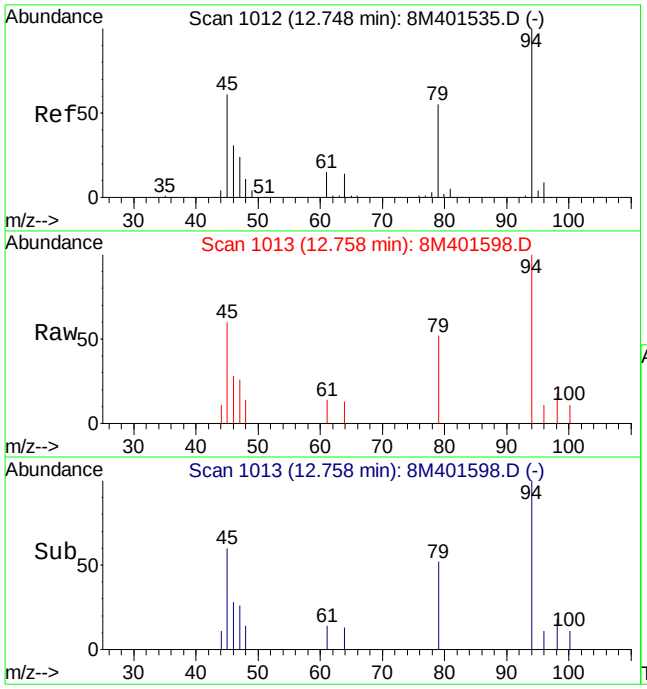

#56
Dimethyl Disulfide
Concen: 1.23 ug/L
RT: 12.76 min Scan# 1013
Delta R.T. 0.01 min
Lab File: 8M401598.D
Acq: 8 Dec 2014 21:51

Tgt Ion: 94 Resp: 11774

Ion	Ratio	Lower	Upper
94	100		
79	54.5	31.3	72.9

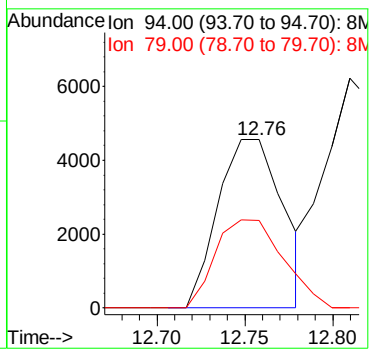

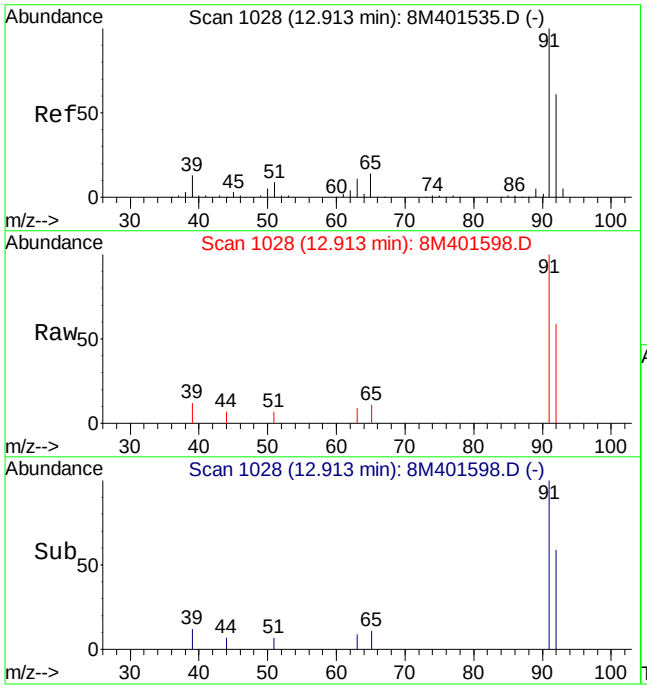

#59
Toluene
Concen: 0.40 ug/L
RT: 12.91 min Scan# 1028
Delta R.T. 0.00 min
Lab File: 8M401598.D
Acq: 8 Dec 2014 21:51

Tgt Ion: 91 Resp: 11849

Ion	Ratio	Lower	Upper
91	100		
92	55.9	35.5	82.9

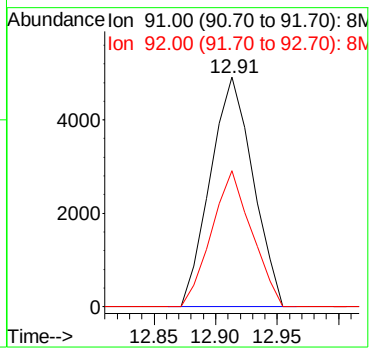

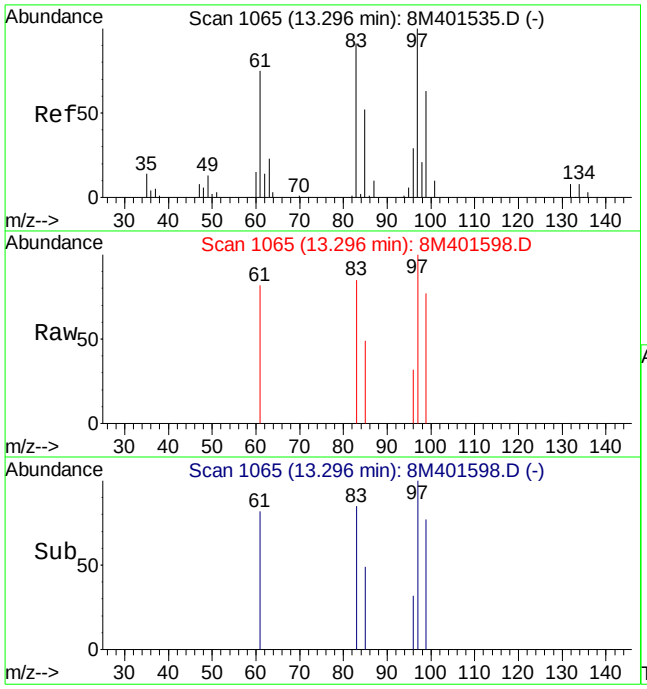

#63
1,1,2-Trichloroethane
Concen: 0.48 ug/L
RT: 13.30 min Scan# 1065
Delta R.T. -0.01 min
Lab File: 8M401598.D
Acq: 8 Dec 2014 21:51

Tgt Ion: 97 Resp: 2142

Ion	Ratio	Lower	Upper
97	100		
83	97.5	52.0	121.2

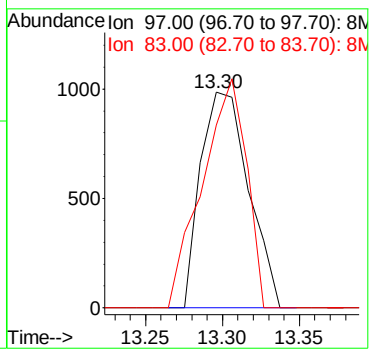

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120914\8M401616.D Vial: 9
Acq On : 9 Dec 2014 12:35 Operator: TMB
Sample : L14120292-03 B 10X 826-LOW D1 Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 10 08:18:09 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	696745	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	519795	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	241086	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.79	111	148772	22.3030 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.20%		
43) 1,2-Dichloroethane-d4	10.43	65	161946	23.0903 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.36%		
58) Toluene-d8	12.81	98	560329	22.4962 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 90.00%		
80) p-Bromofluorobenzene	16.20	95	222129	23.6566 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.64%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.95	62	1764	0.2035 ug/L #	44
14) 1,1-Dichloroethene	6.59	61	336202	34.9369 ug/L	98
27) 1,1-Dichloroethane	8.45	63	17590	1.3497 ug/L	96
32) cis-1,2-Dichloroethene	9.29	96	2102	0.2793 ug/L	75
36) Tetrahydrofuran	9.76	42	5108	4.9810 ug/L	97
45) 1,2-Dichloroethane	10.55	62	15306	1.6683 ug/L	90
47) Trichloroethene	11.34	130	2090	0.2984 ug/L	90
56) Dimethyl Disulfide	12.81	94	16575	1.6736 ug/L #	29
87) 4-Chlorotoluene	16.69	91	561	0.1269 ug/L #	46
100) Naphthalene	20.78	128	2238	0.2189 ug/L #	68

(#) = qualifier out of range (m) = manual integration
8M401616.D 8260WTR.M Wed Dec 10 08:18:10 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120914\8M401616.D Vial: 9
Acq On : 9 Dec 2014 12:35 Operator: TMB
Sample : L14120292-03 B 10X 826-LOW D1 Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 10 8:18 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

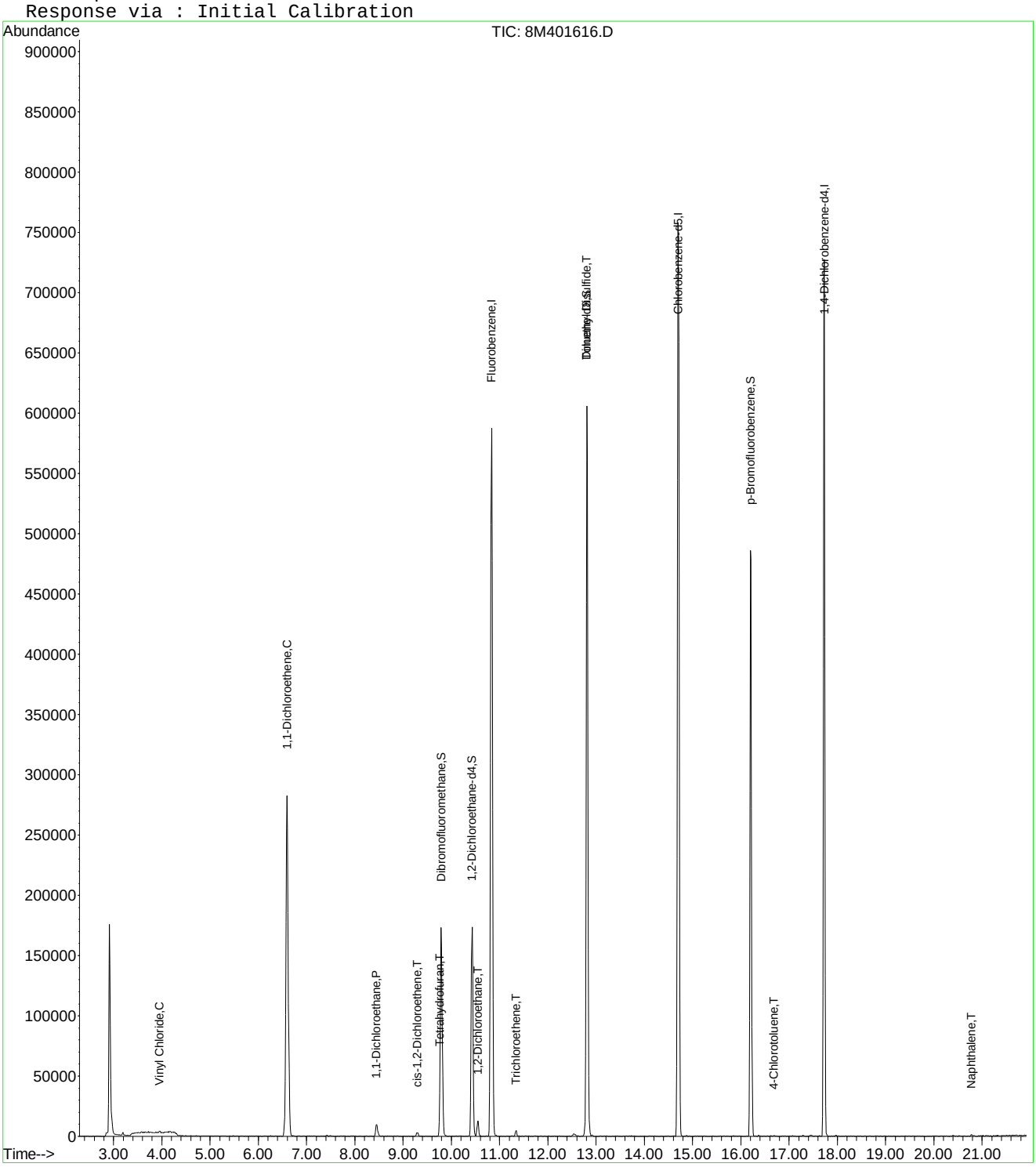

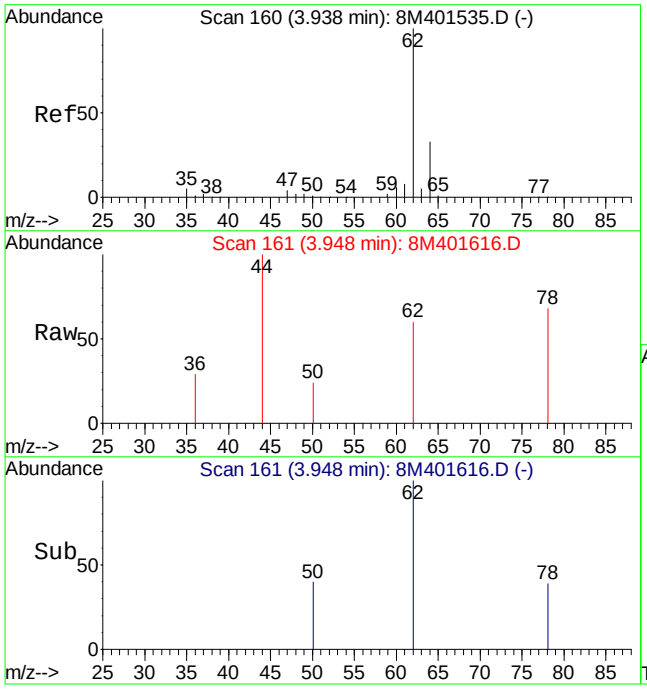

#4
Vinyl Chloride
Concen: 0.20 ug/L
RT: 3.95 min Scan# 161
Delta R.T. 0.01 min
Lab File: 8M401616.D
Acq: 9 Dec 2014 12:35

Tgt Ion: 62 Resp: 1764

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.2	42.6#

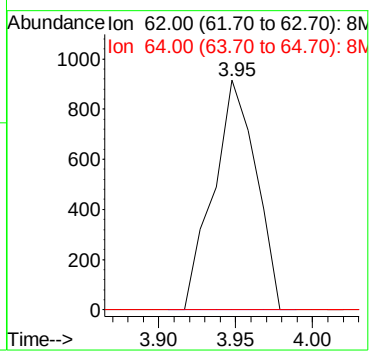

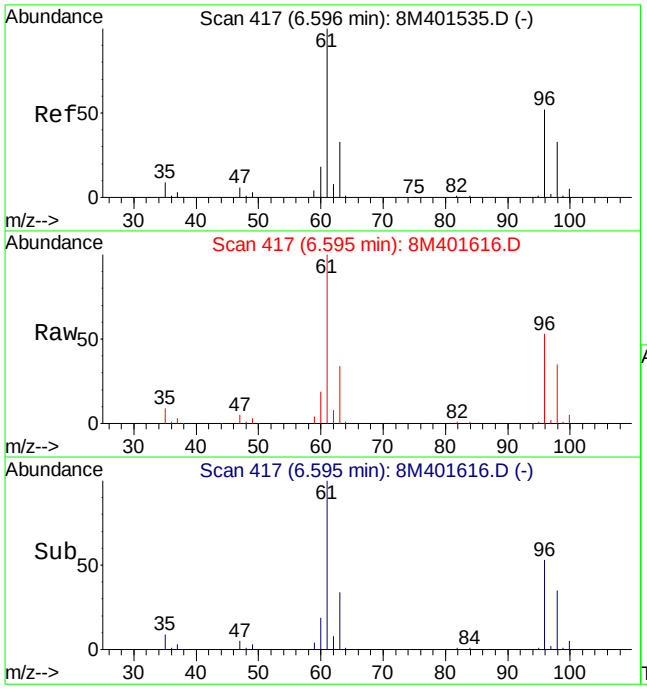

#14
1,1-Dichloroethene
Concen: 34.94 ug/L
RT: 6.59 min Scan# 417
Delta R.T. 0.01 min
Lab File: 8M401616.D
Acq: 9 Dec 2014 12:35

Tgt Ion: 61 Resp: 336202

Ion	Ratio	Lower	Upper
61	100		
96	52.6	30.8	72.0

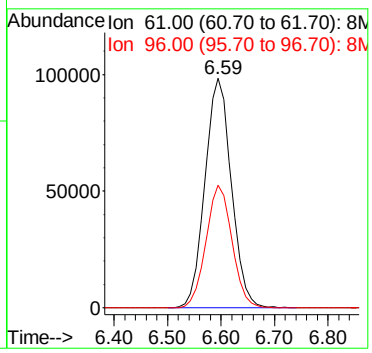

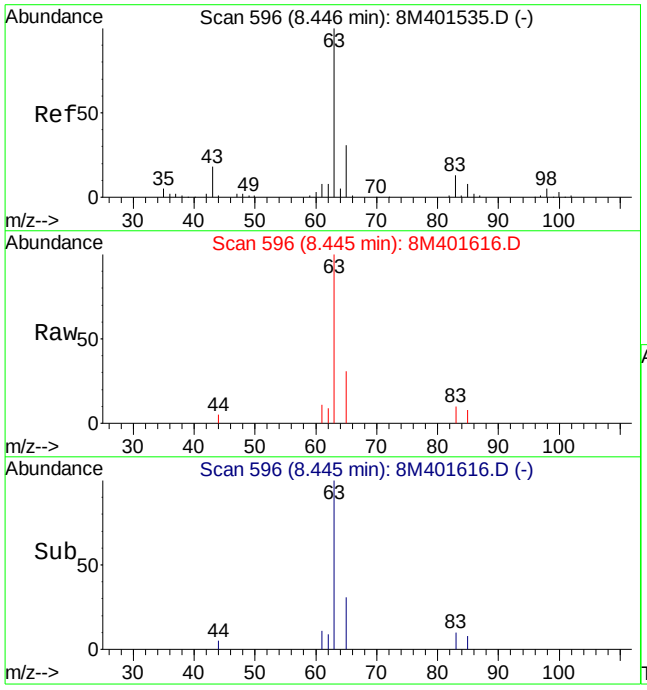

#27
1,1-Dichloroethane
Concen: 1.35 ug/L
RT: 8.45 min Scan# 596
Delta R.T. -0.00 min
Lab File: 8M401616.D
Acq: 9 Dec 2014 12:35

Tgt Ion: 63 Resp: 17590

Ion	Ratio	Lower	Upper
63	100		
65	32.6	18.3	42.7
83	10.5	7.0	16.4

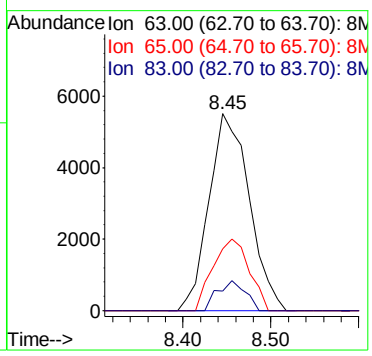

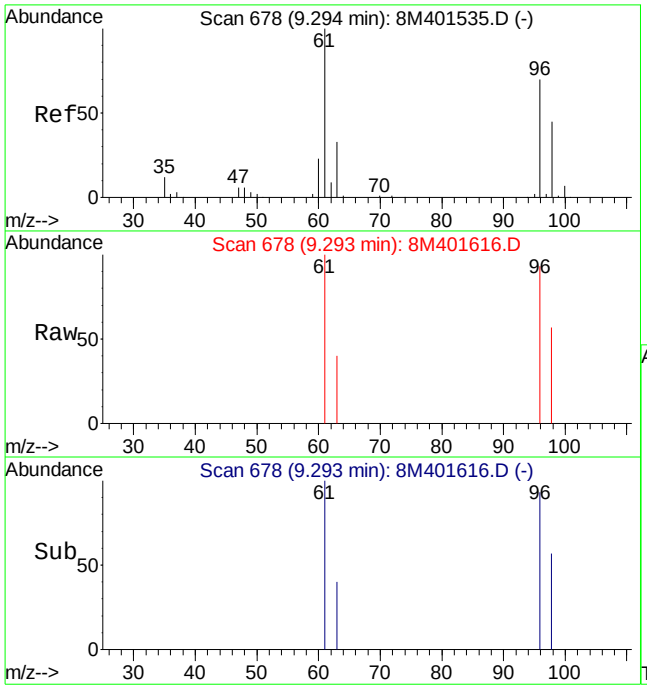

#32
cis-1,2-Dichloroethene
Concen: 0.28 ug/L
RT: 9.29 min Scan# 678
Delta R.T. -0.00 min
Lab File: 8M401616.D
Acq: 9 Dec 2014 12:35

Tgt Ion: 96 Resp: 2102

Ion	Ratio	Lower	Upper
96	100		
61	139.7	104.6	244.0

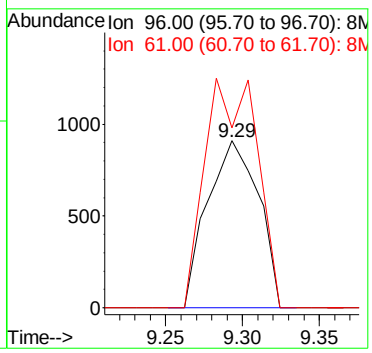

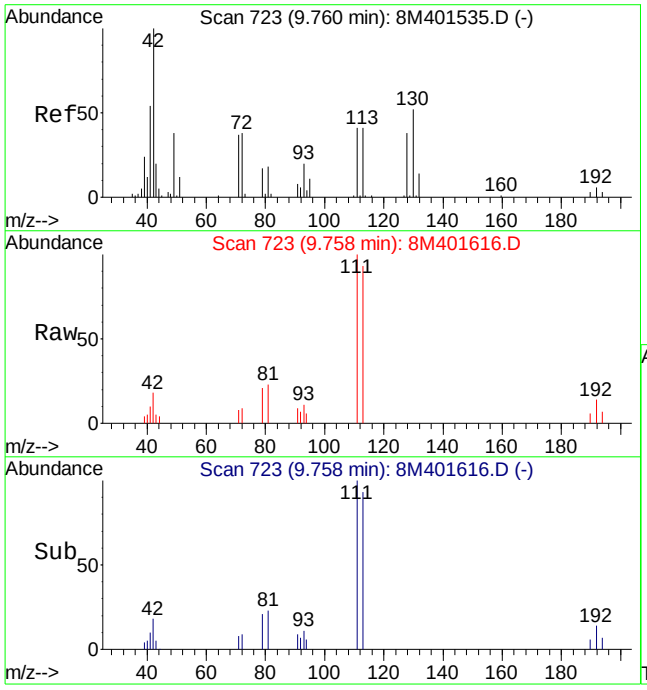

#36
Tetrahydrofuran
Concen: 4.98 ug/L
RT: 9.76 min Scan# 723
Delta R.T. 0.01 min
Lab File: 8M401616.D
Acq: 9 Dec 2014 12:35

Tgt Ion: 42 Resp: 5108

Ion	Ratio	Lower	Upper
42	100		
72	40.7	23.2	54.0
71	37.5	21.4	50.0

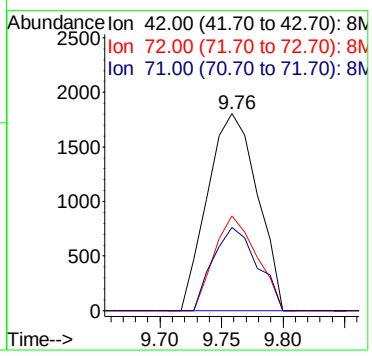

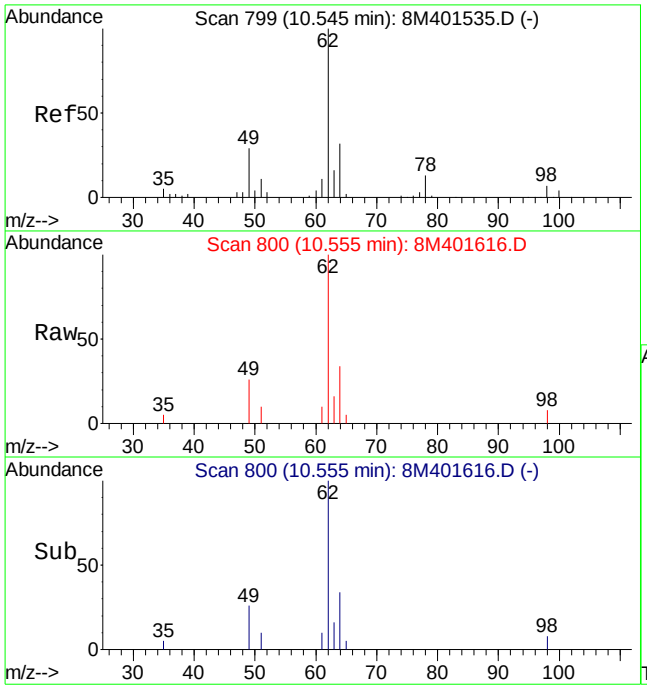

#45
1,2-Dichloroethane
Concen: 1.67 ug/L
RT: 10.55 min Scan# 800
Delta R.T. 0.01 min
Lab File: 8M401616.D
Acq: 9 Dec 2014 12:35

Tgt Ion: 62 Resp: 15306

Ion	Ratio	Lower	Upper
62	100		
64	29.4	18.7	43.7
49	26.5	21.7	50.7

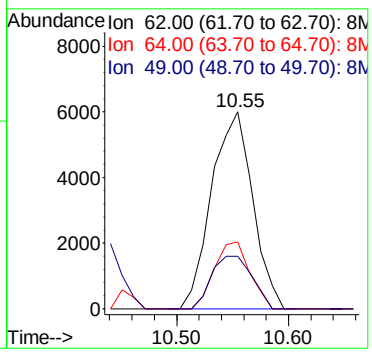

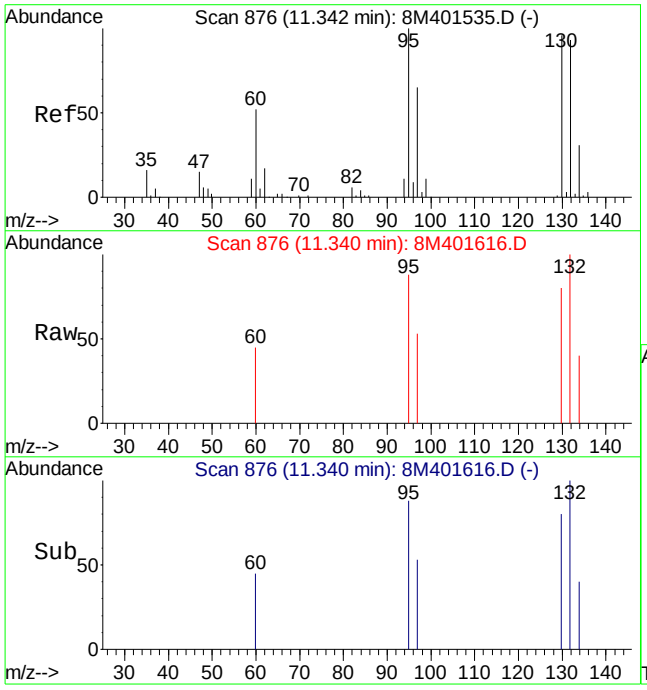

#47
Trichloroethene
Concen: 0.30 ug/L
RT: 11.34 min Scan# 876
Delta R.T. -0.00 min
Lab File: 8M401616.D
Acq: 9 Dec 2014 12:35

Tgt Ion:130 Resp: 2090

Ion	Ratio	Lower	Upper
130	100		
132	95.8	57.7	134.5
95	121.6	61.8	144.2

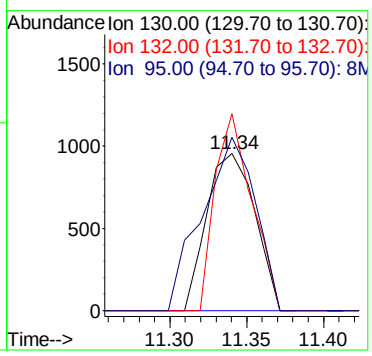

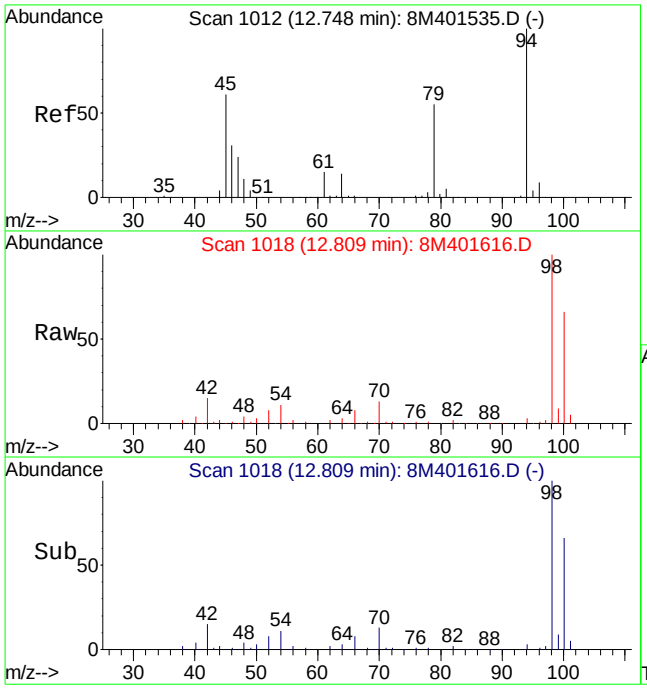

#56
Dimethyl Disulfide
Concen: 1.67 ug/L
RT: 12.81 min Scan# 1018
Delta R.T. 0.06 min
Lab File: 8M401616.D
Acq: 9 Dec 2014 12:35

Tgt Ion: 94 Resp: 16575

Ion	Ratio	Lower	Upper
94	100		
79	2.5	31.3	72.9#

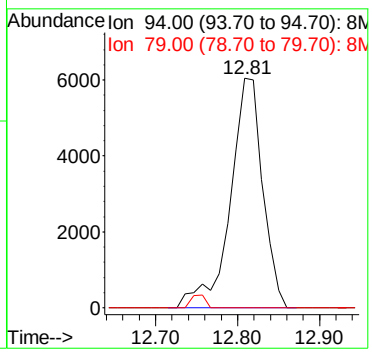

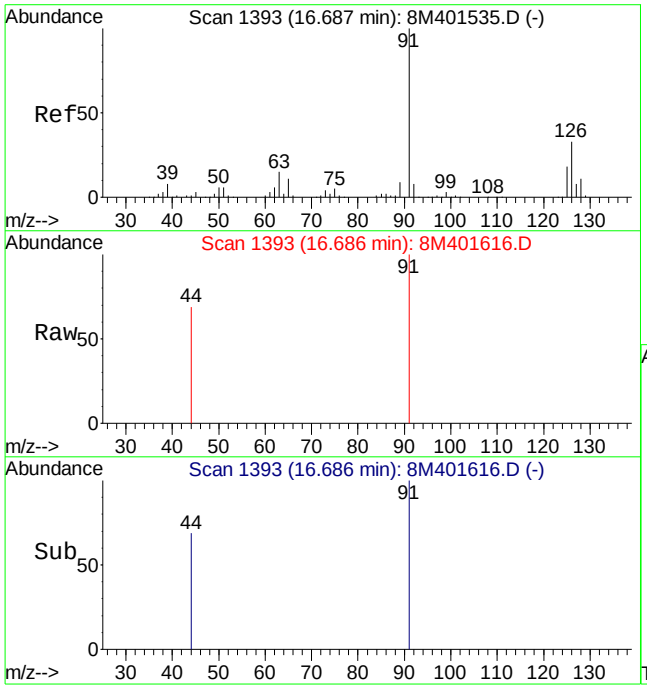

#87
4-Chlorotoluene
Concen: 0.13 ug/L
RT: 16.69 min Scan# 1393
Delta R.T. -0.00 min
Lab File: 8M401616.D
Acq: 9 Dec 2014 12:35

Tgt Ion: 91 Resp: 561

Ion	Ratio	Lower	Upper
91	100		
126	0.0	17.2	40.0#

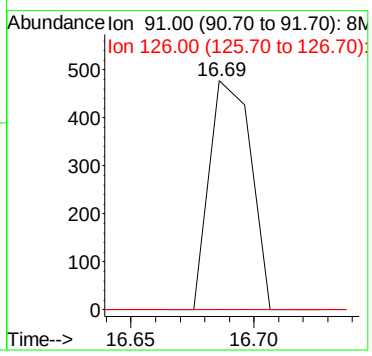

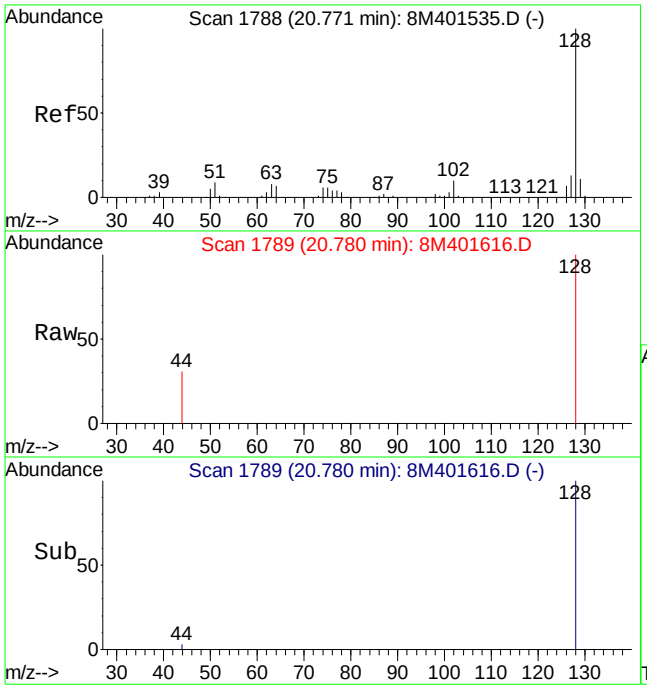

#100
Naphthalene
Concen: 0.22 ug/L
RT: 20.78 min Scan# 1789
Delta R.T. -0.00 min
Lab File: 8M401616.D
Acq: 9 Dec 2014 12:35

Tgt Ion:128 Resp: 2238

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.6	17.6#

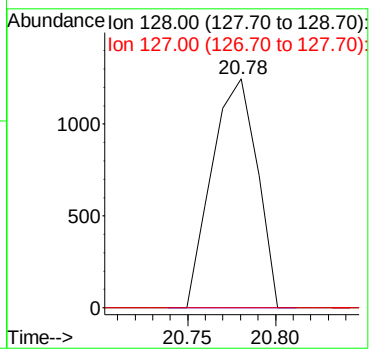

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401591.D Vial: 14
Acq On : 8 Dec 2014 18:29 Operator: TMB
Sample : L14120292-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 13:49:34 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	700994	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	520389	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.72	152	247121	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	153389	22.8557 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.44%		
43) 1,2-Dichloroethane-d4	10.43	65	169504	24.0214 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.08%		
58) Toluene-d8	12.81	98	565696	22.6858 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 90.76%		
80) p-Bromofluorobenzene	16.20	95	226290	23.5112 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.04%		

Target Compounds					Qvalue
45) 1,2-Dichloroethane	10.55	62	10959	1.1873 ug/L	90
56) Dimethyl Disulfide	12.81	94	16036	1.6093 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M401591.D 8260WTR.M Tue Dec 09 13:49:34 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401591.D Vial: 14
Acq On : 8 Dec 2014 18:29 Operator: TMB
Sample : L14120292-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 13:49 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

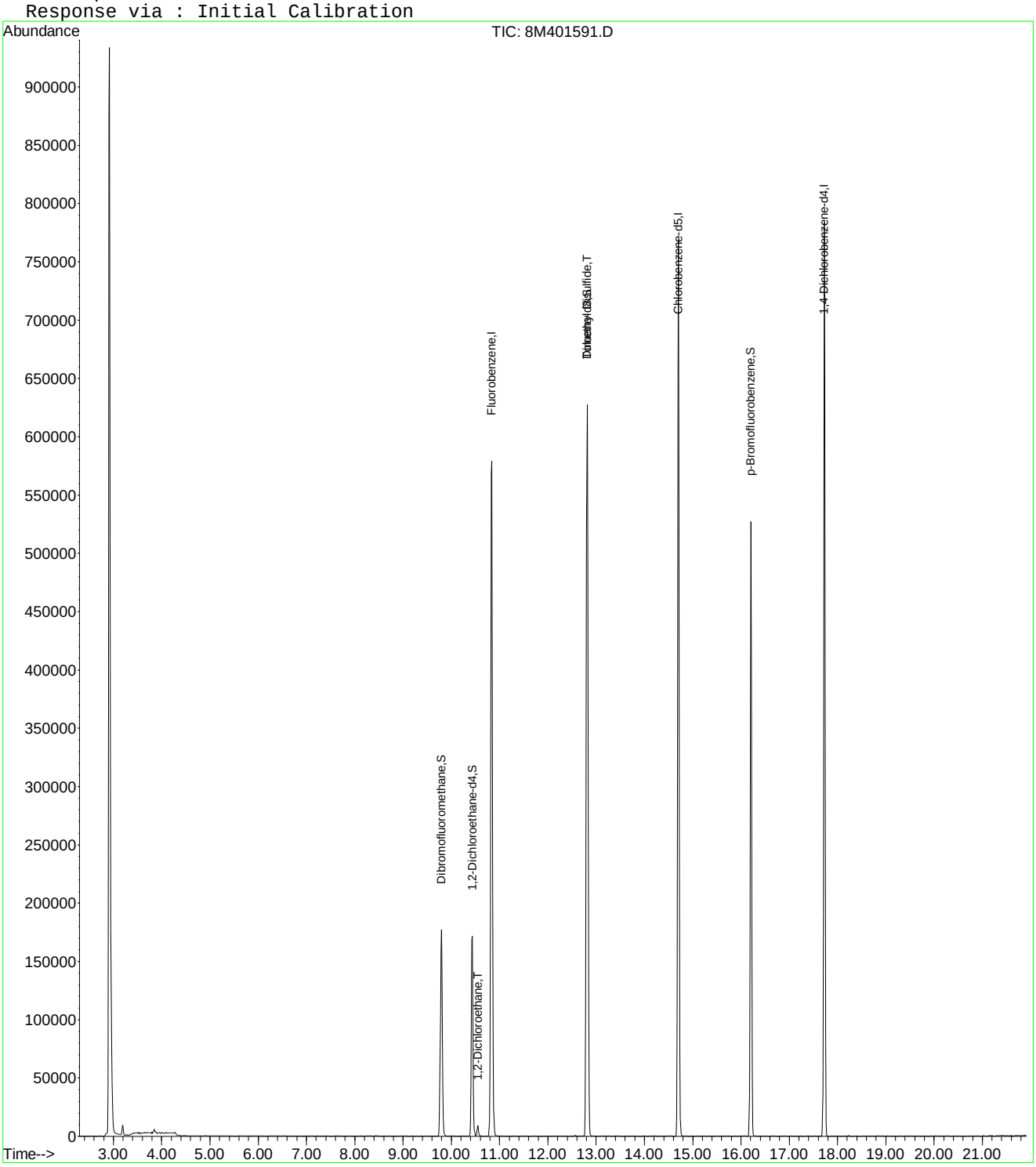

8M401591.D 8260WTR.M Tue Dec 09 13:49:34 2014 Page 2

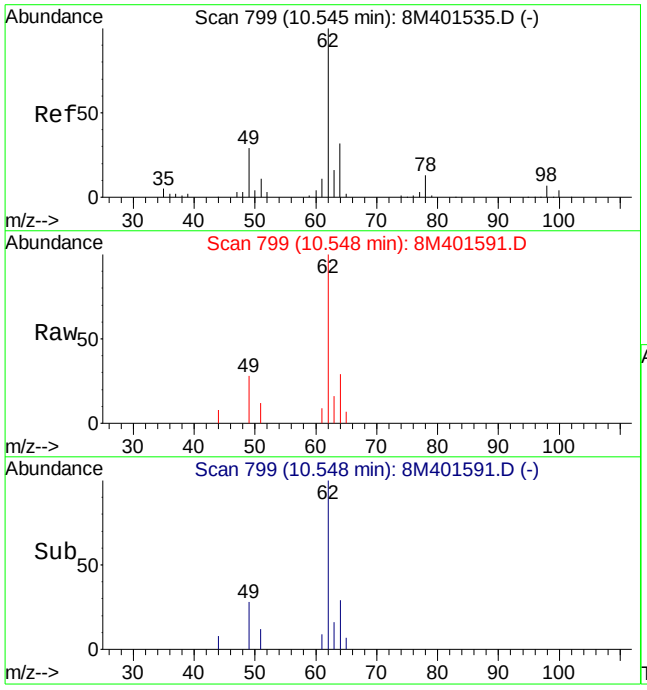

#45
1,2-Dichloroethane
Concen: 1.19 ug/L
RT: 10.55 min Scan# 799
Delta R.T. 0.00 min
Lab File: 8M401591.D
Acq: 8 Dec 2014 18:29

Tgt Ion: 62 Resp: 10959

Ion	Ratio	Lower	Upper
62	100		
64	31.4	18.7	43.7
49	25.6	21.7	50.7

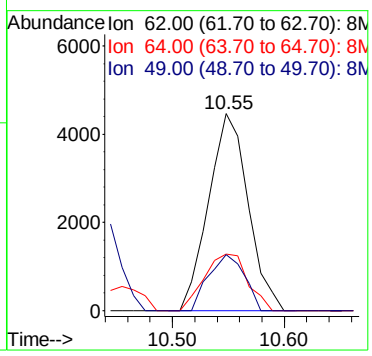

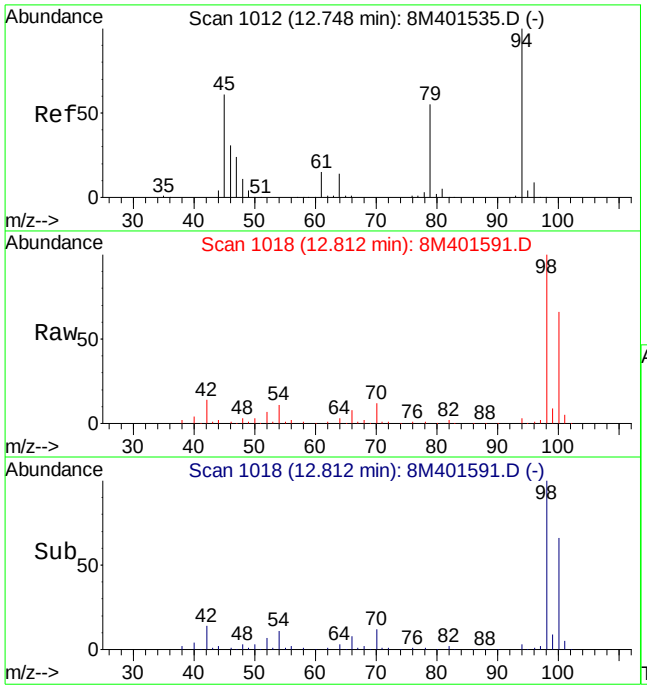

#56
Dimethyl Disulfide
Concen: 1.61 ug/L
RT: 12.81 min Scan# 1018
Delta R.T. 0.07 min
Lab File: 8M401591.D
Acq: 8 Dec 2014 18:29

Tgt Ion: 94 Resp: 16036

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.3	72.9#

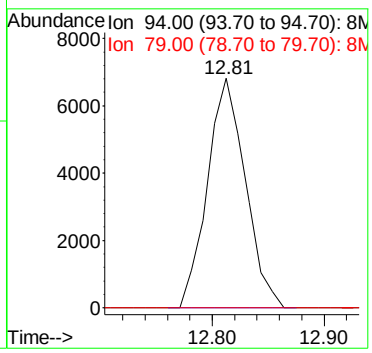

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401592.D Vial: 15
Acq On : 8 Dec 2014 18:58 Operator: TMB
Sample : L14120292-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 13:49:35 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	702413	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	519538	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.72	152	239741	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	150244	22.3419 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.36%		
43) 1,2-Dichloroethane-d4	10.43	65	165143	23.3561 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.44%		
58) Toluene-d8	12.81	98	567400	22.7914 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 91.16%		
80) p-Bromofluorobenzene	16.20	95	224611	24.0551 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.24%		

Target Compounds					Qvalue
56) Dimethyl Disulfide	12.81	94	15735	1.5759 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M401592.D 8260WTR.M Tue Dec 09 13:49:35 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401592.D Vial: 15
Acq On : 8 Dec 2014 18:58 Operator: TMB
Sample : L14120292-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 13:49 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

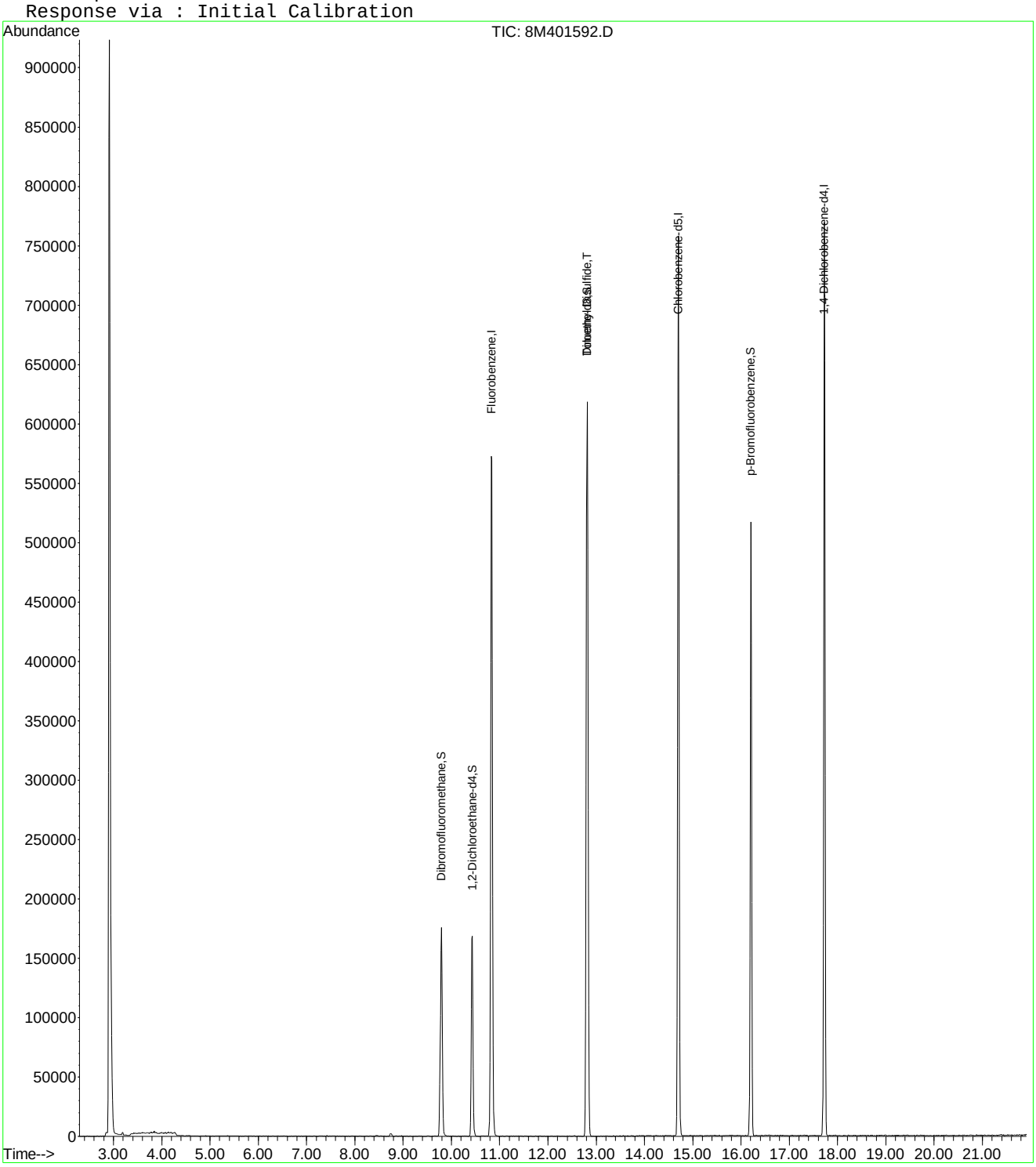

8M401592.D 8260WTR.M Tue Dec 09 13:49:35 2014 Page 2

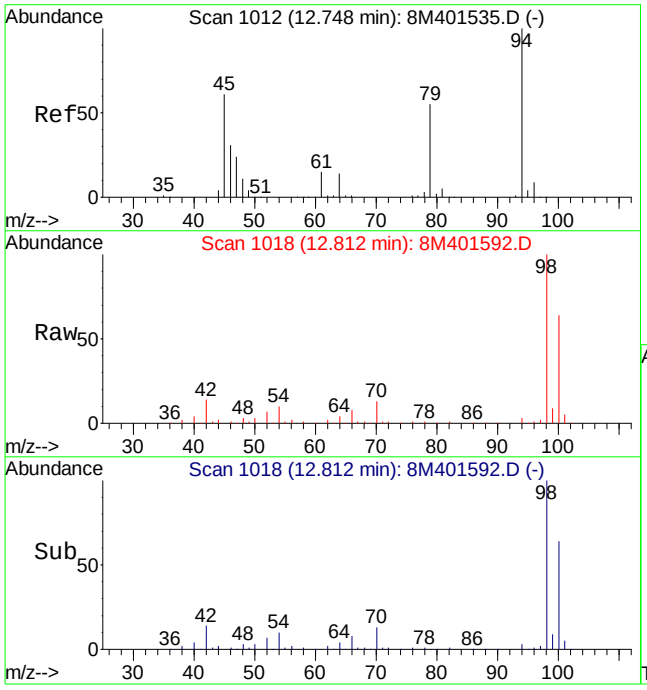

#56
Dimethyl Disulfide
Concen: 1.58 ug/L
RT: 12.81 min Scan# 1018
Delta R.T. 0.06 min
Lab File: 8M401592.D
Acq: 8 Dec 2014 18:58

Tgt Ion: 94 Resp: 15735

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.3	72.9#

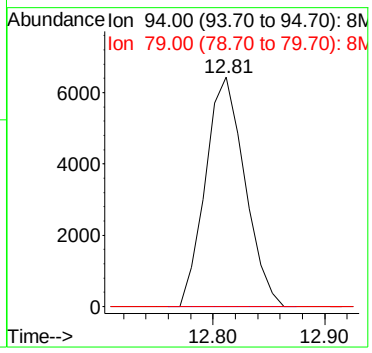

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401593.D Vial: 16
Acq On : 8 Dec 2014 19:27 Operator: TMB
Sample : L14120292-06 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 13:49:36 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	690334	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	505156	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	230456	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	149248	22.5821 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.32%		
43) 1,2-Dichloroethane-d4	10.43	65	163532	23.5329 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.12%		
58) Toluene-d8	12.81	98	547159	22.6041 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 90.40%		
80) p-Bromofluorobenzene	16.20	95	217877	24.2740 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.08%		

Target Compounds					Qvalue
56) Dimethyl Disulfide	12.81	94	15381	1.5674 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M401593.D 8260WTR.M Tue Dec 09 13:49:36 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401593.D Vial: 16
Acq On : 8 Dec 2014 19:27 Operator: TMB
Sample : L14120292-06 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 13:49 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

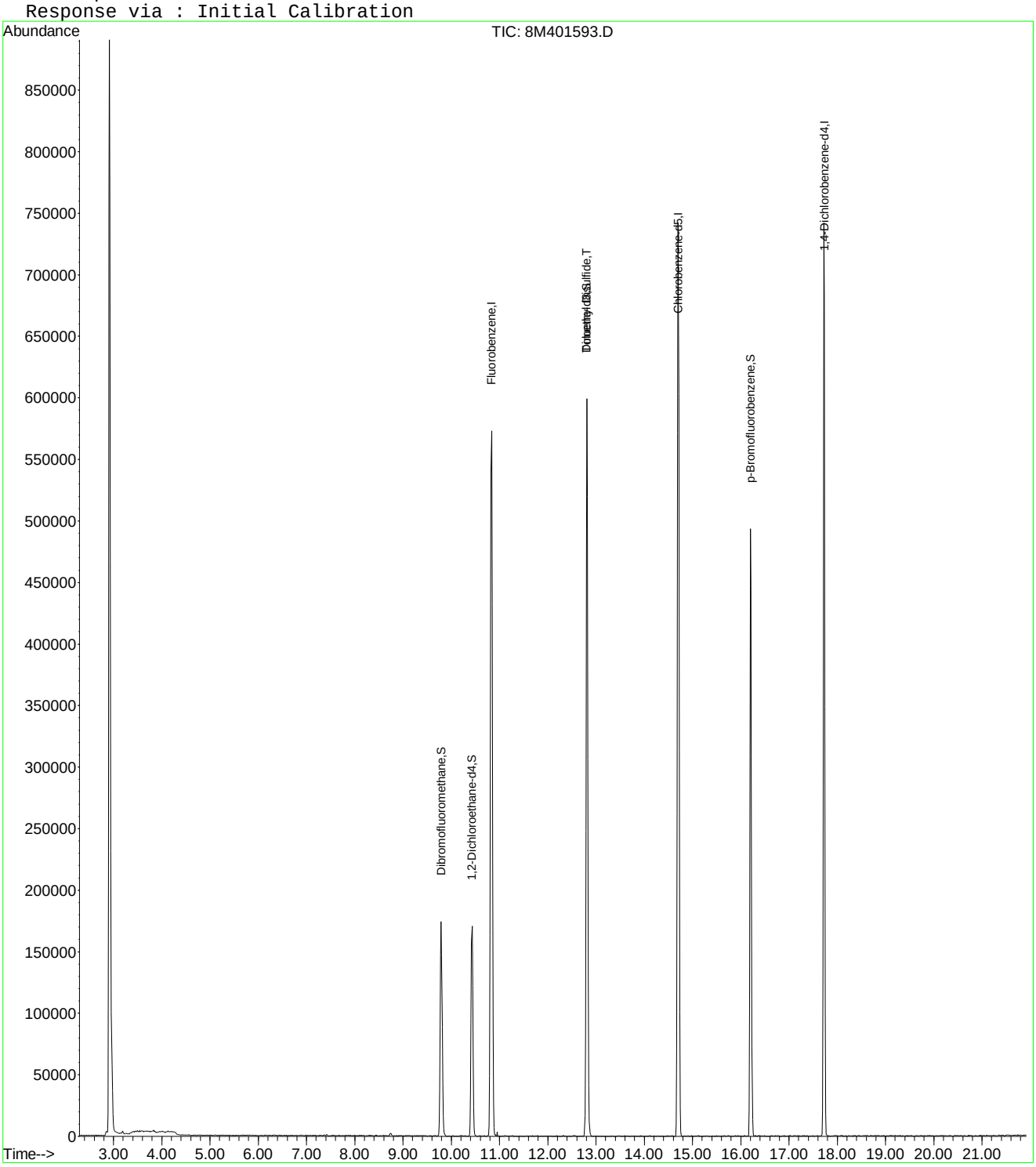

8M401593.D 8260WTR.M Tue Dec 09 13:49:36 2014 Page 2

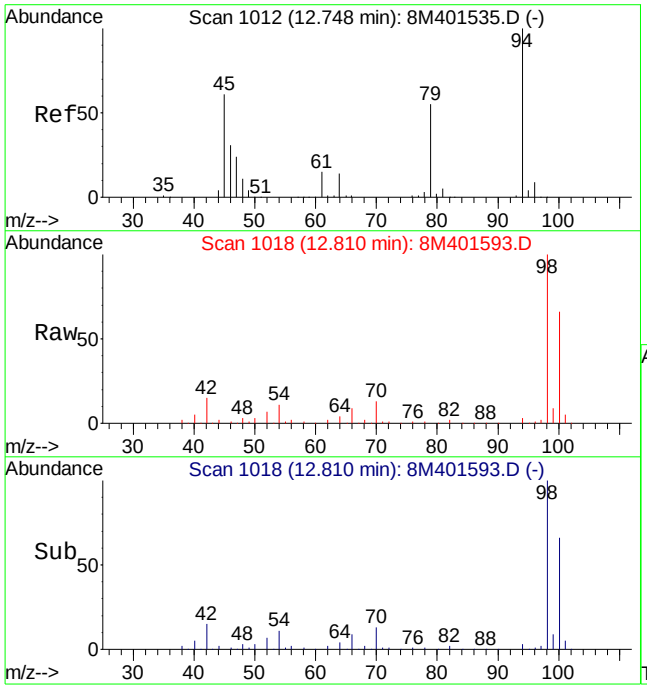

#56
Dimethyl Disulfide
Concen: 1.57 ug/L
RT: 12.81 min Scan# 1018
Delta R.T. 0.06 min
Lab File: 8M401593.D
Acq: 8 Dec 2014 19:27

Tgt Ion: 94 Resp: 15381

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.3	72.9#

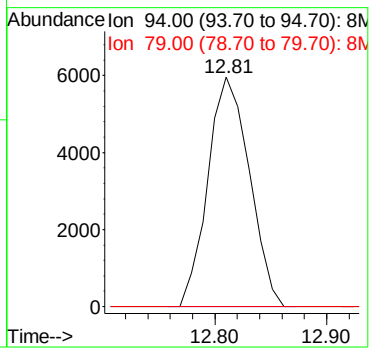

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401588.D Vial: 11
Acq On : 8 Dec 2014 17:01 Operator: TMB
Sample : L14120292-07 A REF 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 13:49:30 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	743338	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.71	117	547329	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.72	152	258792	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	160934	22.6140 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.44%		
43) 1,2-Dichloroethane-d4	10.42	65	175553	23.4614 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.84%		
58) Toluene-d8	12.81	98	594753	22.6770 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 90.72%		
80) p-Bromofluorobenzene	16.20	95	239470	23.7585 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.04%		

Target Compounds					Qvalue
27) 1,1-Dichloroethane	8.46	63	2400	0.1726 ug/L #	63
56) Dimethyl Disulfide	12.81	94	16885	1.5980 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M401588.D 8260WTR.M Tue Dec 09 13:49:31 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401588.D Vial: 11
Acq On : 8 Dec 2014 17:01 Operator: TMB
Sample : L14120292-07 A REF 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 13:49 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

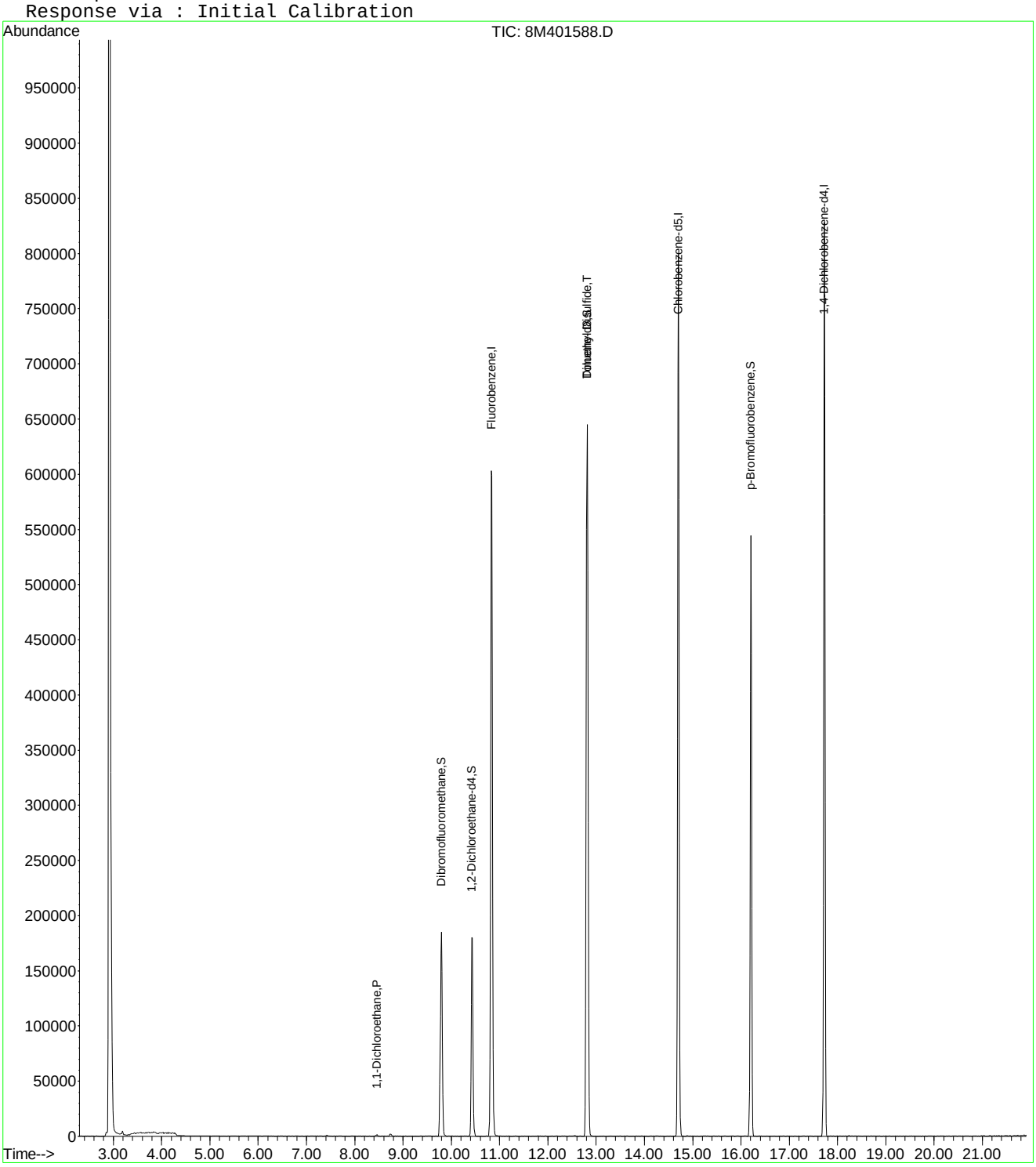

8M401588.D 8260WTR.M Tue Dec 09 13:49:31 2014 Page 2

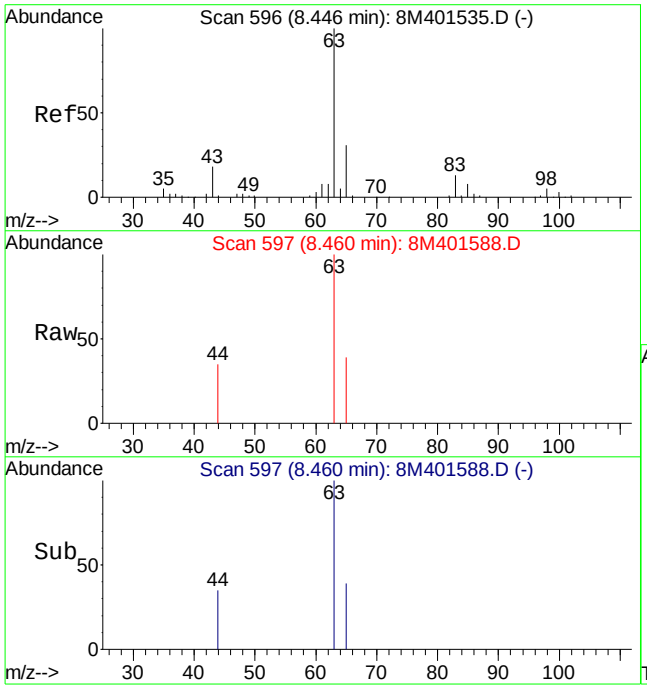

#27
1,1-Dichloroethane
Concen: 0.17 ug/L
RT: 8.46 min Scan# 597
Delta R.T. 0.01 min
Lab File: 8M401588.D
Acq: 8 Dec 2014 17:01

Tgt Ion: 63 Resp: 2400

Ion	Ratio	Lower	Upper
63	100		
65	8.8	18.3	42.7#
83	0.0	7.0	16.4#

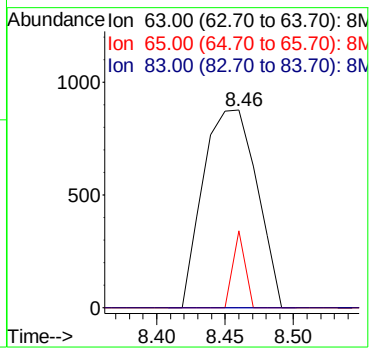

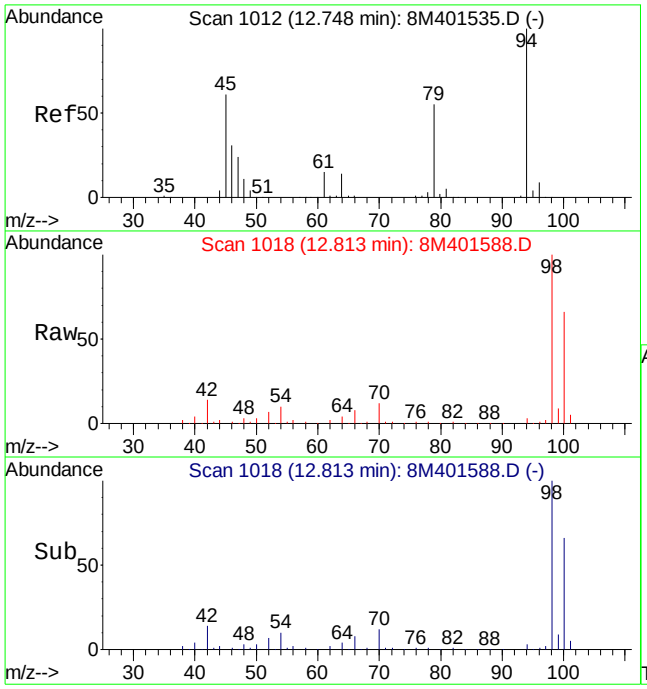

#56
Dimethyl Disulfide
Concen: 1.60 ug/L
RT: 12.81 min Scan# 1018
Delta R.T. 0.07 min
Lab File: 8M401588.D
Acq: 8 Dec 2014 17:01

Tgt Ion: 94 Resp: 16885

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.3	72.9#

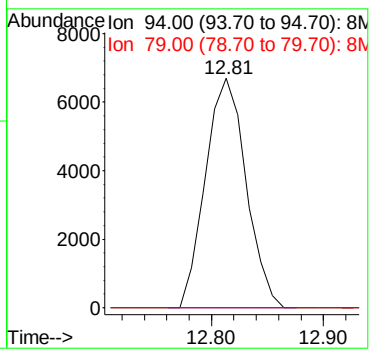

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\120814\8M401583.D Vial: 6
Acq On : 8 Dec 2014 14:33 Operator: TMB
Sample : L14120292-08 A MS 826-SPE Inst : HPMS8
Misc : 1,1 STD67765 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 08 14:55:18 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	792886	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	597756	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	297047	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.79	111	169832	22.3730 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.48%		
43) 1,2-Dichloroethane-d4	10.43	65	183761	23.0237 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.08%		
58) Toluene-d8	12.81	98	643089	22.4515 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 89.80%		
80) p-Bromofluorobenzene	16.20	95	256107	22.1368 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 88.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	155789	15.5876 ug/L	99
3) Chloromethane	3.71	50	185161	15.8860 ug/L	98
4) Vinyl Chloride	3.94	62	163020	16.5274 ug/L	97
5) 1,3-Butadiene	3.98	54	87614	14.5671 ug/L	94
6) Bromomethane	4.85	94	64285	14.5362 ug/L	100
7) Chloroethane	5.01	64	112494	19.8303 ug/L	99
8) Trichlorofluoromethane	5.50	101	246681	21.1681 ug/L	98
10) Isoprene	6.07	67	218308	22.3982 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	145848	20.1070 ug/L	93
13) Acetone	6.36	43	24096	20.7042 ug/L #	24
14) 1,1-Dichloroethene	6.60	61	224363	20.4879 ug/L	97
16) Dimethyl Sulfide	6.85	62	118179	20.9008 ug/L	98
17) Iodomethane	7.11	142	37641	14.2411 ug/L	98
18) Methyl acetate	7.12	43	62142	16.7739 ug/L	98
19) Methylene Chloride	7.38	84	150943	19.8132 ug/L	93
20) Carbon Disulfide	7.42	76	430401	20.0262 ug/L	99
21) Acrylonitrile	7.56	53	33911	22.1848 ug/L	98
22) Methyl Tert Butyl Ether	7.59	73	335566	22.6741 ug/L	92
23) trans-1,2-Dichloroethene	7.83	61	232620	19.9844 ug/L	96
24) n-Hexane	7.91	57	236023	20.4117 ug/L	92
26) Vinyl Acetate	8.42	43	251622	34.1515 ug/L	100
27) 1,1-Dichloroethane	8.45	63	315246	21.2569 ug/L	99
29) 2-Butanone	9.00	43	37137	19.5380 ug/L	100
31) 2,2-Dichloropropane	9.23	77	271425	21.4446 ug/L	100
32) cis-1,2-Dichloroethene	9.29	96	172367	20.1273 ug/L	97
33) Chloroform	9.50	83	309850	21.0680 ug/L	100
34) 1-Bromopropane	9.64	122	34654	26.7318 ug/L	100
35) Bromochloromethane	9.74	130	91824	20.8226 ug/L	97
38) 1,1,1-Trichloroethane	10.04	97	272229	21.1072 ug/L	100
39) Cyclohexane	10.07	56	289151	20.3694 ug/L	87
40) 1,1-Dichloropropene	10.22	75	236242	19.9775 ug/L	97
42) Carbon Tetrachloride	10.38	117	232833	21.1833 ug/L	99
45) 1,2-Dichloroethane	10.55	62	213290	20.4293 ug/L	98
46) Benzene	10.59	78	661813	21.3552 ug/L	96
47) Trichloroethene	11.34	130	167211	20.9811 ug/L	99
48) Methylcyclohexane	11.42	83	279767	21.1164 ug/L	90
49) 1,2-Dichloropropane	11.55	63	178599	20.8064 ug/L	93
50) Bromodichloromethane	11.86	83	222766	21.1067 ug/L	100
51) 1,4-Dioxane	11.84	88	241	7.4183 ug/L	79
52) Dibromomethane	11.94	93	83052	21.4500 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\120814\8M401583.D Vial: 6
Acq On : 8 Dec 2014 14:33 Operator: TMB
Sample : L14120292-08 A MS 826-SPE Inst : HPMS8
Misc : 1,1 STD67765 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 08 14:55:18 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
53)	2-Chloroethyl Vinyl Ether	12.15	63	17625	6.2028	ug/L		99
54)	4-Methyl-2-Pentanone	12.18	58	33646	20.6332	ug/L		96
55)	cis-1,3-Dichloropropene	12.49	75	264519	22.6248	ug/L		100
56)	Dimethyl Disulfide	12.75	94	265187	23.5291	ug/L		98
59)	Toluene	12.91	91	690054	19.4972	ug/L		100
60)	Ethyl Methacrylate	13.00	69	161203	22.4813	ug/L		93
62)	trans-1,3-Dichloropropene	13.08	75	210440	19.1583	ug/L		100
63)	1,1,2-Trichloroethane	13.30	97	105048	19.9128	ug/L		100
64)	2-Hexanone	13.23	58	31754	19.4619	ug/L		88
65)	1,3-Dichloropropane	13.61	76	196123	19.8895	ug/L		98
66)	Tetrachloroethene	13.73	164	138730	18.8752	ug/L		98
67)	Dibromochloromethane	13.99	129	133902	20.3020	ug/L		99
68)	1,2-Dibromoethane	14.25	107	104126	20.0910	ug/L		99
69)	1-Chlorohexane	14.33	91	238633	20.8619	ug/L		92
70)	Chlorobenzene	14.75	112	466945	20.3524	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.78	131	154729	18.9473	ug/L		99
72)	Ethylbenzene	14.78	106	249435	18.8426	ug/L		94
73)	m-,p-Xylene	14.87	106	607385	41.4875	ug/L		97
74)	o-Xylene	15.44	106	301188	19.9792	ug/L		96
75)	Styrene	15.47	104	483043	20.7597	ug/L		96
76)	Bromoform	15.96	173	78299	18.4454	ug/L		99
77)	Isopropylbenzene	15.86	105	773842	20.5539	ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.07	83	114016	19.0446	ug/L		99
81)	1,2,3-Trichloropropane	16.26	110	31047	18.9612	ug/L	#	39
82)	trans-1,4-Dichloro-2-Buten	16.30	53	32516	19.1299	ug/L	#	34
83)	n-Propylbenzene	16.37	91	930628	19.1025	ug/L		99
84)	Bromobenzene	16.50	156	173873	19.1102	ug/L		97
85)	1,3,5-Trimethylbenzene	16.55	105	636143	20.3525	ug/L		99
86)	2-Chlorotoluene	16.64	91	592828	20.1133	ug/L		98
87)	4-Chlorotoluene	16.69	91	599004	18.5936	ug/L		98
88)	a-Methylstyrene	16.96	118	346603	22.5083	ug/L		98
89)	tert-Butylbenzene	17.02	134	129817	19.3235	ug/L		96
90)	1,2,4-Trimethylbenzene	17.07	105	596938	20.2868	ug/L		99
91)	sec-Butylbenzene	17.29	105	795847	21.0395	ug/L		98
92)	p-Isopropyltoluene	17.44	119	590394	20.5958	ug/L		99
93)	1,3-Dichlorobenzene	17.64	146	353911	19.5024	ug/L		99
94)	1,4-Dichlorobenzene	17.77	146	338695	19.1921	ug/L		98
95)	n-Butylbenzene	17.97	91	535293	19.7967	ug/L		98
96)	1,2-Dichlorobenzene	18.27	146	306786	20.4148	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.26	75	18707	19.0312	ug/L		93
98)	1,2,4-Trichlorobenzene	20.40	180	184707	19.5863	ug/L		99
99)	Hexachlorobutadiene	20.55	225	115963	19.4845	ug/L		96
100)	Naphthalene	20.77	128	256839	20.3897	ug/L		100
101)	1,2,3-Trichlorobenzene	21.08	180	140618	19.5631	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M401583.D 8260WTR.M Mon Dec 08 14:55:18 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\120814\8M401583.D Vial: 6
Acq On : 8 Dec 2014 14:33 Operator: TMB
Sample : L14120292-08 A MS 826-SPE Inst : HPMS8
Misc : 1,1 STD67765 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 8 14:55 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

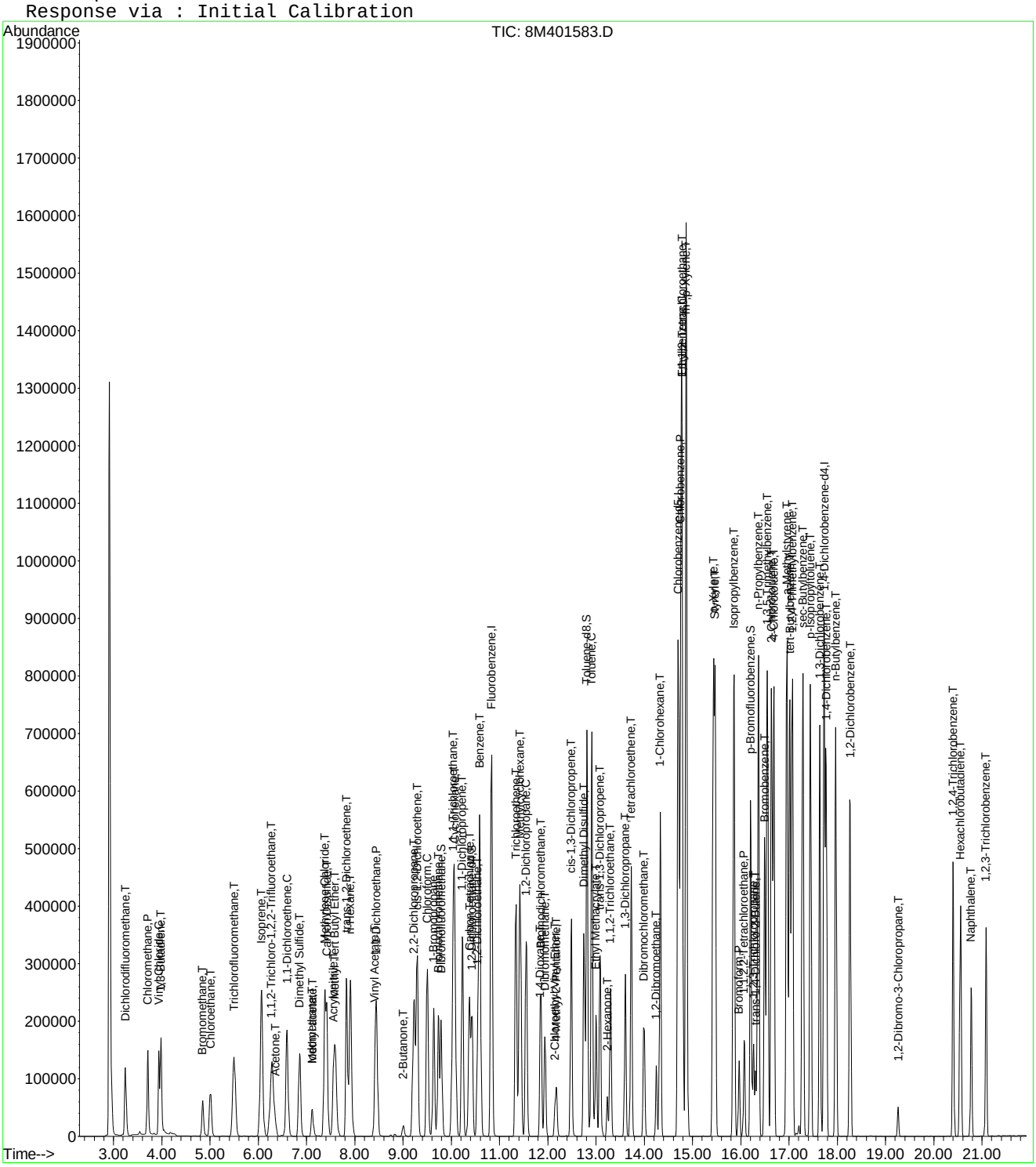

8M401583.D 8260WTR.M Mon Dec 08 14:55:19 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\120814\8M401584.D Vial: 7
Acq On : 8 Dec 2014 15:03 Operator: TMB
Sample : L14120292-09 A MSD 826-SPE Inst : HPMS8
Misc : 1,1 STD67765 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 08 15:25:01 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	792680	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	596901	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	296378	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	170353	22.4475 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.80%		
43) 1,2-Dichloroethane-d4	10.43	65	186941	23.4282 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.72%		
58) Toluene-d8	12.81	98	634761	22.1925 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 88.76%		
80) p-Bromofluorobenzene	16.20	95	261643	22.6664 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.68%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	157873	15.8002 ug/L	99
3) Chloromethane	3.71	50	185782	15.9435 ug/L	100
4) Vinyl Chloride	3.94	62	161741	16.4020 ug/L	97
5) 1,3-Butadiene	3.98	54	84923	14.0882 ug/L	91
6) Bromomethane	4.85	94	63213	14.3132 ug/L	99
7) Chloroethane	5.00	64	111521	19.6639 ug/L	99
8) Trichlorofluoromethane	5.50	101	242340	20.8010 ug/L	99
10) Isoprene	6.07	67	213495	21.9101 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	143382	19.7722 ug/L	91
13) Acetone	6.37	43	24254	20.8454 ug/L #	26
14) 1,1-Dichloroethene	6.60	61	222039	20.2810 ug/L	97
16) Dimethyl Sulfide	6.86	62	113885	20.1466 ug/L	95
17) Iodomethane	7.11	142	37806	14.2825 ug/L	100
18) Methyl acetate	7.12	43	62386	16.8441 ug/L	100
19) Methylene Chloride	7.38	84	153645	20.1732 ug/L	92
20) Carbon Disulfide	7.42	76	413329	19.2368 ug/L	100
21) Acrylonitrile	7.56	53	33658	22.0251 ug/L	98
22) Methyl Tert Butyl Ether	7.60	73	333745	22.5569 ug/L	93
23) trans-1,2-Dichloroethene	7.83	61	234458	20.1475 ug/L	96
24) n-Hexane	7.91	57	231436	20.0202 ug/L	93
26) Vinyl Acetate	8.42	43	256784	34.8611 ug/L	100
27) 1,1-Dichloroethane	8.46	63	316946	21.3771 ug/L	99
29) 2-Butanone	9.00	43	38365	20.1893 ug/L	100
31) 2,2-Dichloropropane	9.23	77	269303	21.2824 ug/L	99
32) cis-1,2-Dichloroethene	9.29	96	175168	20.4597 ug/L	95
33) Chloroform	9.50	83	313293	21.3077 ug/L	100
34) 1-Bromopropane	9.64	122	35108	27.0832 ug/L	97
35) Bromochloromethane	9.74	130	93548	21.2167 ug/L	96
38) 1,1,1-Trichloroethane	10.04	97	271610	21.0647 ug/L	100
39) Cyclohexane	10.07	56	279867	19.7205 ug/L	86
40) 1,1-Dichloropropene	10.23	75	236121	19.9725 ug/L	96
41) Tert-Amyl-Methyl ether	10.23	73	36767	2.0889 ug/L #	49
42) Carbon Tetrachloride	10.38	117	234639	21.3532 ug/L	97
45) 1,2-Dichloroethane	10.54	62	216663	20.7577 ug/L	98
46) Benzene	10.59	78	662853	21.3943 ug/L	96
47) Trichloroethene	11.34	130	166522	20.9001 ug/L	99
48) Methylcyclohexane	11.42	83	265540	20.0478 ug/L	91
49) 1,2-Dichloropropane	11.56	63	179892	20.9624 ug/L	93
50) Bromodichloromethane	11.86	83	226205	21.4381 ug/L	99
52) Dibromomethane	11.94	93	84993	21.9570 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M401584.D 8260WTR.M Mon Dec 08 15:25:01 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\120814\8M401584.D Vial: 7
Acq On : 8 Dec 2014 15:03 Operator: TMB
Sample : L14120292-09 A MSD 826-SPE Inst : HPMS8
Misc : 1,1 STD67765 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 08 15:25:01 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
54)	4-Methyl-2-Pentanone	12.18	58	32745	20.0858 ug/L		91
55)	cis-1,3-Dichloropropene	12.49	75	267431	22.8798 ug/L		100
56)	Dimethyl Disulfide	12.75	94	266191	23.6243 ug/L		99
59)	Toluene	12.91	91	694993	19.6649 ug/L		100
60)	Ethyl Methacrylate	13.00	69	161966	22.6201 ug/L		93
62)	trans-1,3-Dichloropropene	13.08	75	213914	19.5025 ug/L		100
63)	1,1,2-Trichloroethane	13.30	97	108592	20.6141 ug/L		100
64)	2-Hexanone	13.23	58	30818	18.9152 ug/L		80
65)	1,3-Dichloropropane	13.61	76	198448	20.1541 ug/L		99
66)	Tetrachloroethene	13.73	164	143574	19.5622 ug/L		97
67)	Dibromochloromethane	14.00	129	136995	20.8007 ug/L		99
68)	1,2-Dibromoethane	14.25	107	105440	20.3737 ug/L		99
69)	1-Chlorohexane	14.33	91	233813	20.4698 ug/L		91
70)	Chlorobenzene	14.75	112	469527	20.4943 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.78	131	155893	19.1172 ug/L		100
72)	Ethylbenzene	14.78	106	254634	19.2628 ug/L		97
73)	m-,p-Xylene	14.87	106	611233	41.8101 ug/L		97
74)	o-Xylene	15.44	106	302023	20.0633 ug/L		96
75)	Styrene	15.47	104	494359	21.2764 ug/L		96
76)	Bromoform	15.96	173	81208	19.1394 ug/L		99
77)	Isopropylbenzene	15.86	105	778481	20.7067 ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.07	83	118829	19.8934 ug/L		97
81)	1,2,3-Trichloropropane	16.26	110	31990	19.5812 ug/L	#	40
82)	trans-1,4-Dichloro-2-Buten	16.30	53	32043	18.9015 ug/L	#	38
83)	n-Propylbenzene	16.37	91	932609	19.1895 ug/L		98
84)	Bromobenzene	16.50	156	179253	19.7460 ug/L		98
85)	1,3,5-Trimethylbenzene	16.55	105	636084	20.3966 ug/L		99
86)	2-Chlorotoluene	16.63	91	590694	20.0861 ug/L		97
87)	4-Chlorotoluene	16.69	91	607754	18.9182 ug/L		99
88)	a-Methylstyrene	16.96	118	340263	22.1464 ug/L		98
89)	tert-Butylbenzene	17.02	134	129361	19.2991 ug/L		98
90)	1,2,4-Trimethylbenzene	17.07	105	590708	20.1204 ug/L		100
91)	sec-Butylbenzene	17.29	105	789530	20.9196 ug/L		98
92)	p-Isopropyltoluene	17.44	119	591754	20.6898 ug/L		98
93)	1,3-Dichlorobenzene	17.64	146	355051	19.6094 ug/L		98
94)	1,4-Dichlorobenzene	17.77	146	336767	19.1259 ug/L		97
95)	n-Butylbenzene	17.97	91	533835	19.7873 ug/L		98
96)	1,2-Dichlorobenzene	18.27	146	314818	20.9965 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.26	75	18915	19.2863 ug/L		92
98)	1,2,4-Trichlorobenzene	20.40	180	183438	19.4957 ug/L		98
99)	Hexachlorobutadiene	20.55	225	114590	19.2973 ug/L		97
100)	Naphthalene	20.77	128	264813	21.0701 ug/L		99
101)	1,2,3-Trichlorobenzene	21.08	180	146976	20.4937 ug/L		96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\120814\8M401584.D Vial: 7
Acq On : 8 Dec 2014 15:03 Operator: TMB
Sample : L14120292-09 A MSD 826-SPE Inst : HPMS8
Misc : 1,1 STD67765 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 8 15:25 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

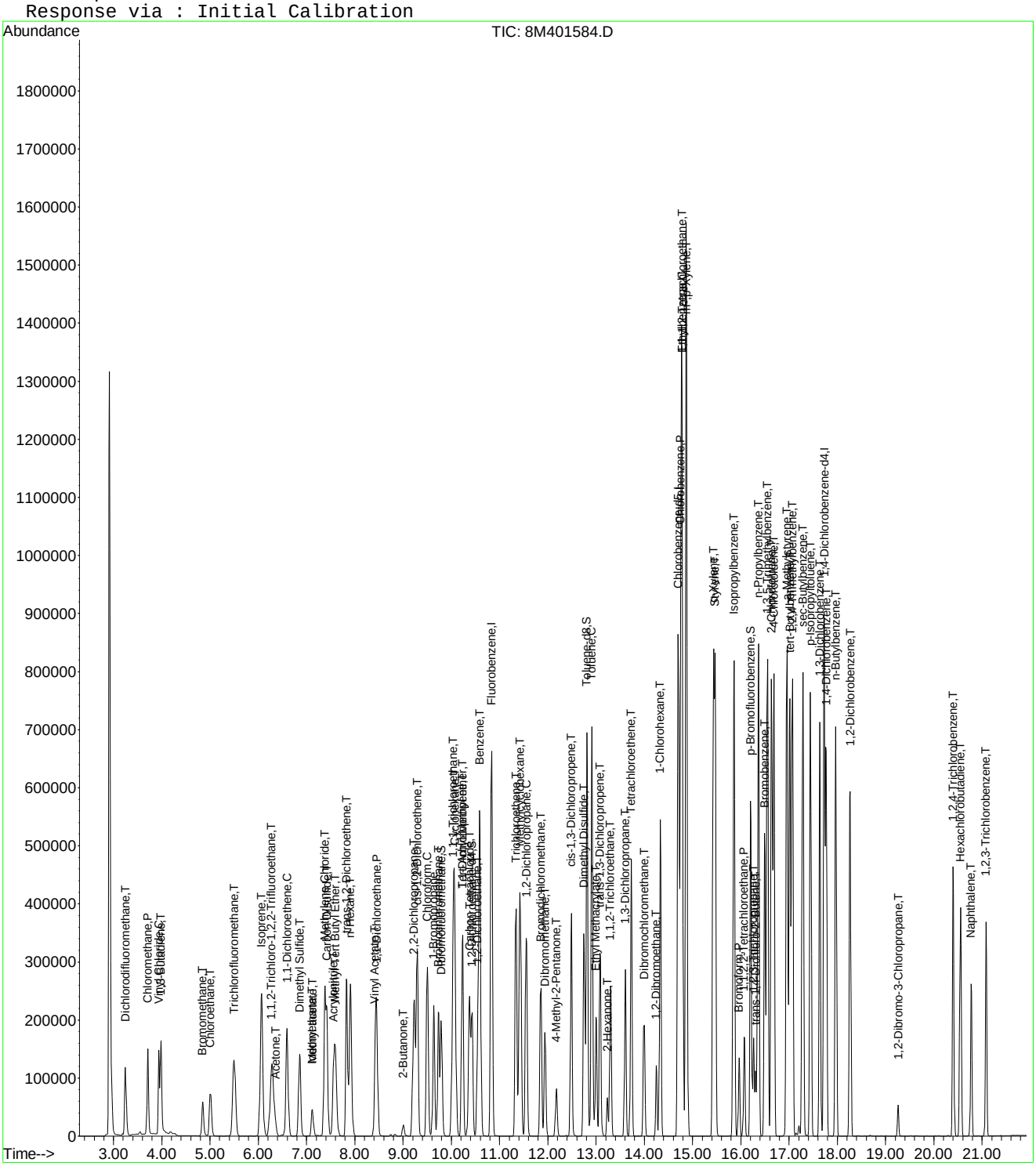

8M401584.D 8260WTR.M Mon Dec 08 15:25:01 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401594.D Vial: 17
Acq On : 8 Dec 2014 19:56 Operator: TMB
Sample : L14120292-10 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 13:49:37 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	671064	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	496243	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	229258	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	149062	23.2016 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.80%		
43) 1,2-Dichloroethane-d4	10.43	65	159655	23.6347 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.52%		
58) Toluene-d8	12.81	98	541425	22.7689 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 91.08%		
80) p-Bromofluorobenzene	16.20	95	214182	23.9871 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.96%		

Target Compounds					Qvalue
56) Dimethyl Disulfide	12.81	94	15366	1.6109 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M401594.D 8260WTR.M Tue Dec 09 13:49:37 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401594.D Vial: 17
Acq On : 8 Dec 2014 19:56 Operator: TMB
Sample : L14120292-10 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 13:49 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

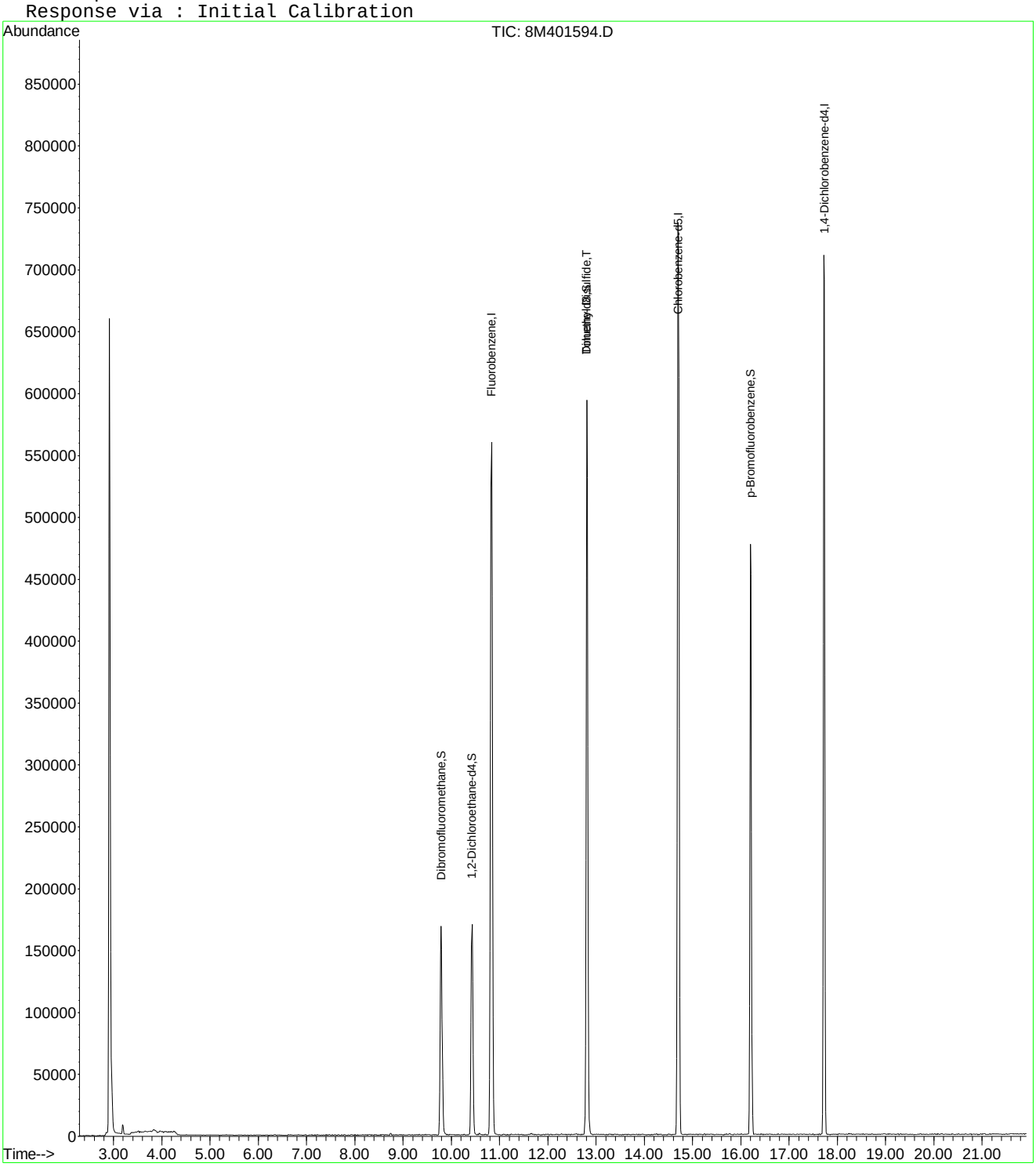

8M401594.D 8260WTR.M Tue Dec 09 13:49:38 2014 Page 2

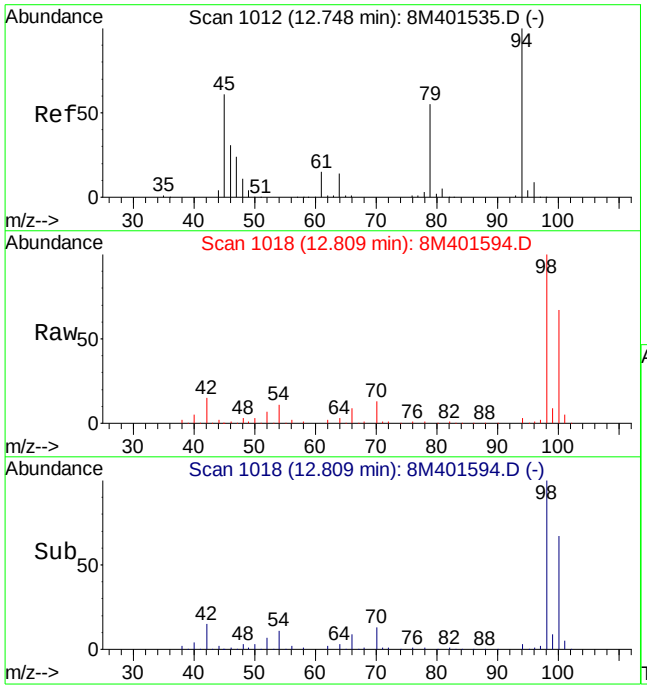

#56
Dimethyl Disulfide
Concen: 1.61 ug/L
RT: 12.81 min Scan# 1018
Delta R.T. 0.06 min
Lab File: 8M401594.D
Acq: 8 Dec 2014 19:56

Tgt Ion: 94 Resp: 15366

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.3	72.9#

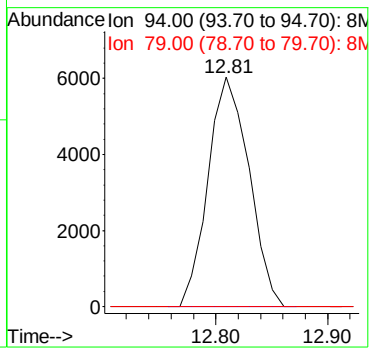

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401595.D Vial: 18
Acq On : 8 Dec 2014 20:24 Operator: TMB
Sample : L14120292-11 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 13:49:38 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	667192	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	495077	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	227612	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	144193	22.5740 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.28%		
43) 1,2-Dichloroethane-d4	10.43	65	155956	23.2211 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.88%		
58) Toluene-d8	12.81	98	539087	22.7240 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 90.88%		
80) p-Bromofluorobenzene	16.20	95	211527	23.8610 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.44%		

Target Compounds					Qvalue
14) 1,1-Dichloroethene	6.59	61	43573	4.7285 ug/L	100
27) 1,1-Dichloroethane	8.46	63	5628	0.4510 ug/L #	81
45) 1,2-Dichloroethane	10.54	62	6940	0.7900 ug/L	89
56) Dimethyl Disulfide	12.82	94	14786	1.5591 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M401595.D 8260WTR.M Tue Dec 09 13:49:39 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401595.D Vial: 18
Acq On : 8 Dec 2014 20:24 Operator: TMB
Sample : L14120292-11 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 13:49 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

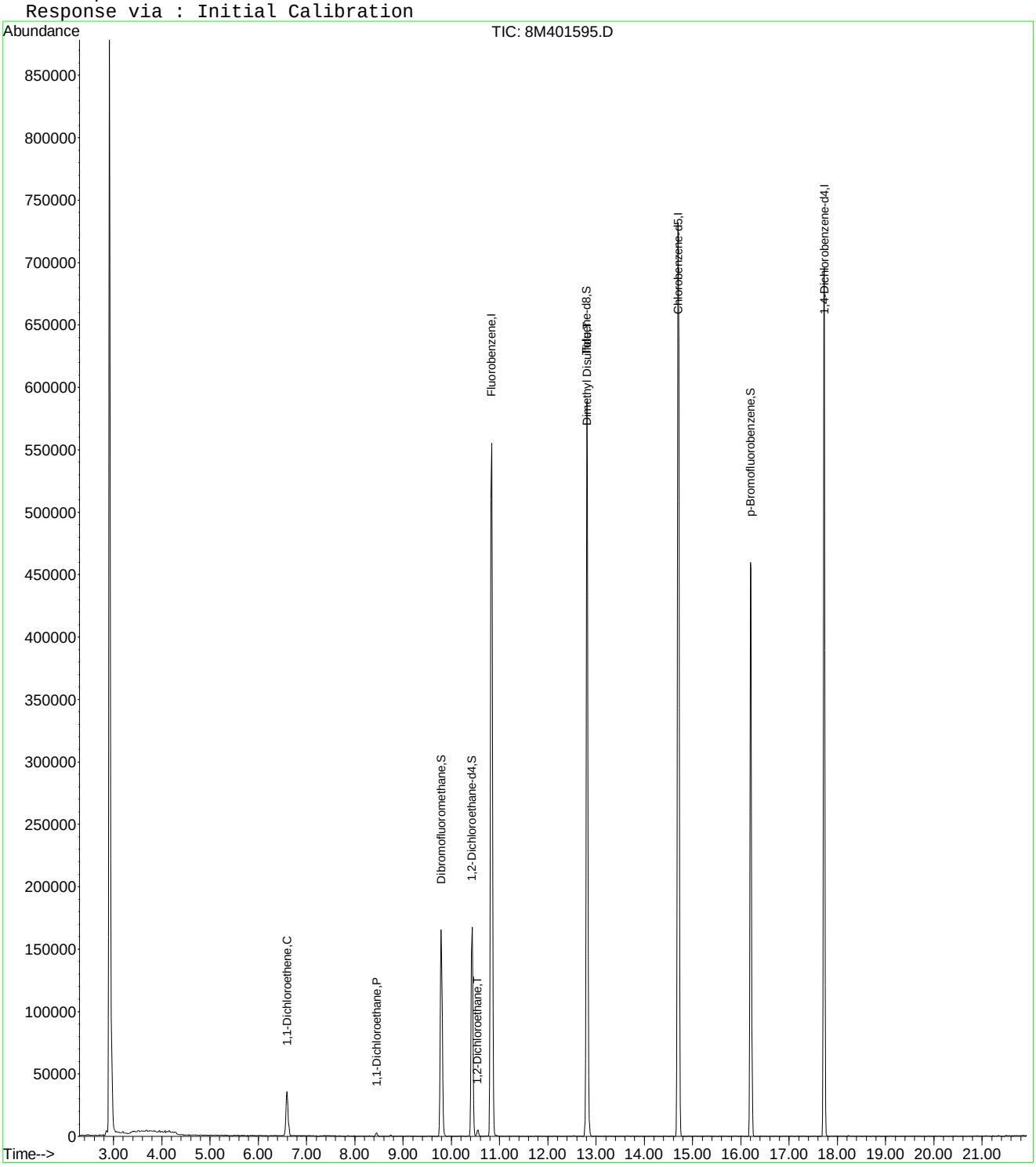

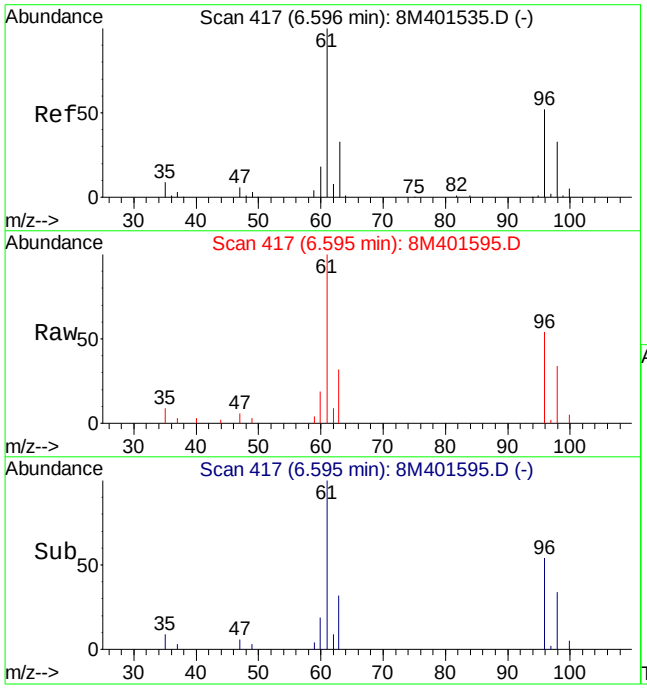

#14
1,1-Dichloroethene
Concen: 4.73 ug/L
RT: 6.59 min Scan# 417
Delta R.T. 0.01 min
Lab File: 8M401595.D
Acq: 8 Dec 2014 20:24

Tgt Ion: 61 Resp: 43573

Ion	Ratio	Lower	Upper
61	100		
96	51.7	30.8	72.0

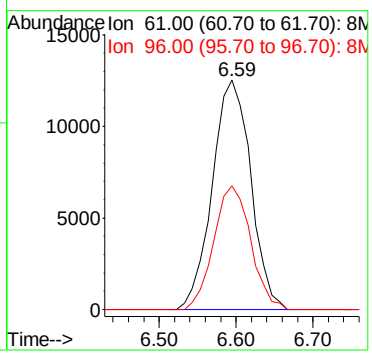

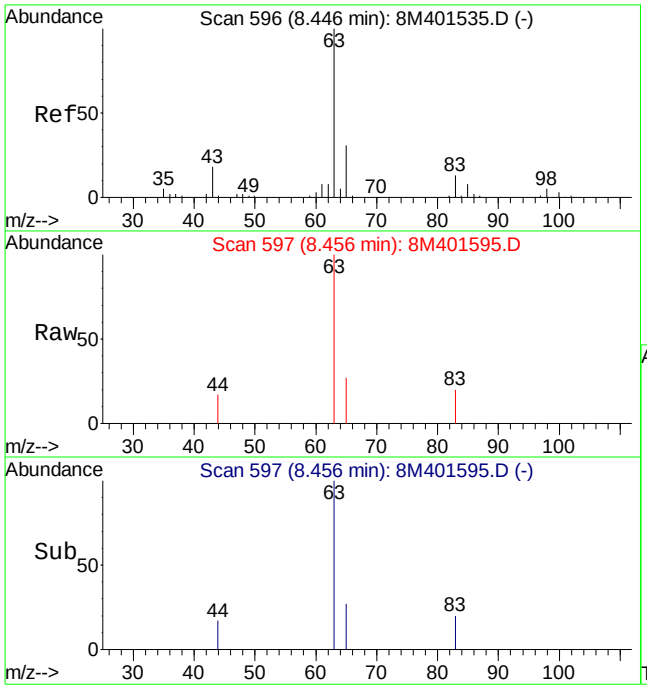

#27
1,1-Dichloroethane
Concen: 0.45 ug/L
RT: 8.46 min Scan# 597
Delta R.T. 0.01 min
Lab File: 8M401595.D
Acq: 8 Dec 2014 20:24

Tgt Ion: 63 Resp: 5628

Ion	Ratio	Lower	Upper
63	100		
65	20.6	18.3	42.7
83	4.1	7.0	16.4#

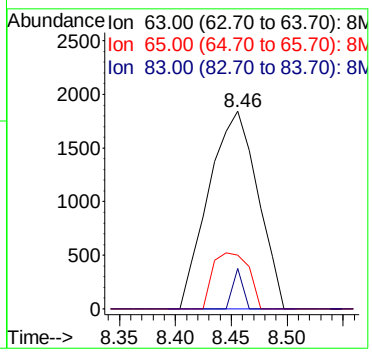

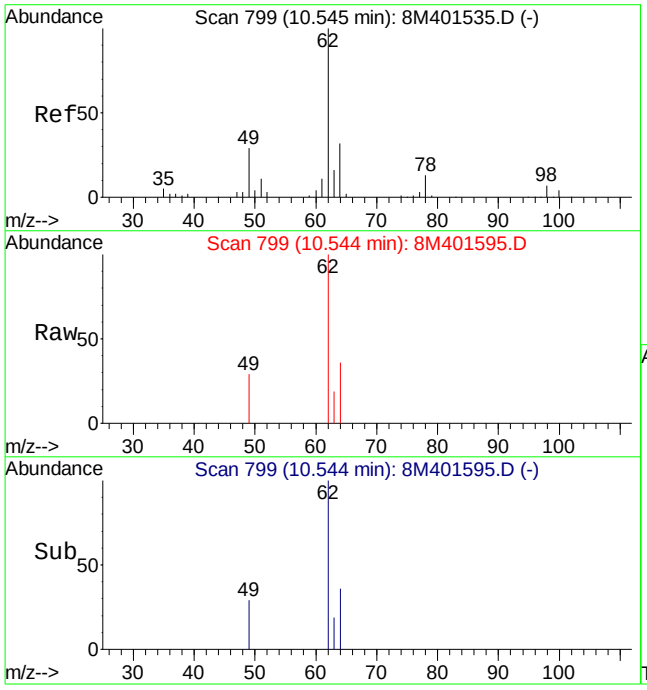

#45
1,2-Dichloroethane
Concen: 0.79 ug/L
RT: 10.54 min Scan# 799
Delta R.T. -0.00 min
Lab File: 8M401595.D
Acq: 8 Dec 2014 20:24

Tgt Ion: 62 Resp: 6940

Ion	Ratio	Lower	Upper
62	100		
64	31.1	18.7	43.7
49	24.6	21.7	50.7

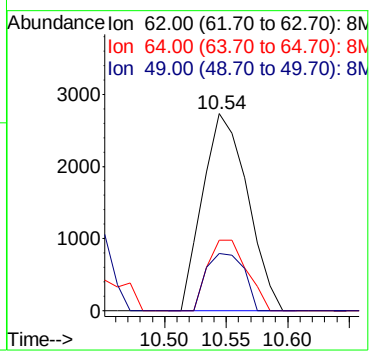

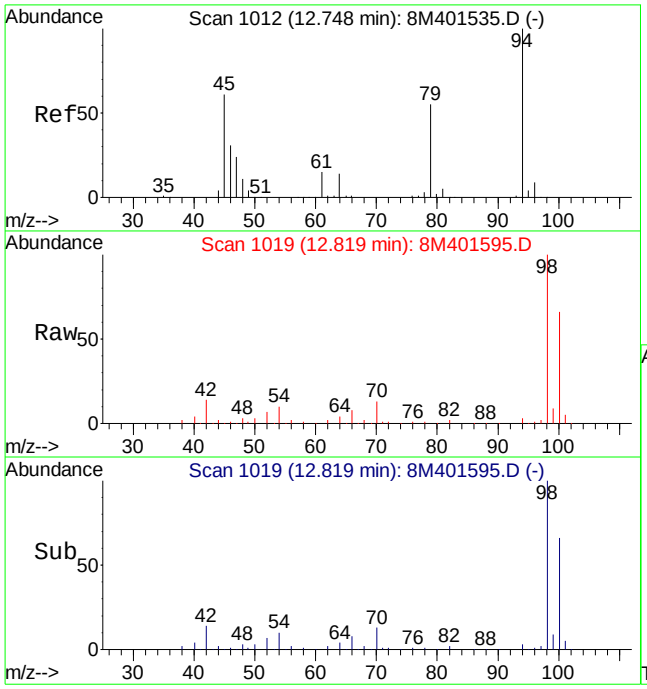

#56
Dimethyl Disulfide
Concen: 1.56 ug/L
RT: 12.82 min Scan# 1019
Delta R.T. 0.07 min
Lab File: 8M401595.D
Acq: 8 Dec 2014 20:24

Tgt Ion: 94 Resp: 14786

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.3	72.9#

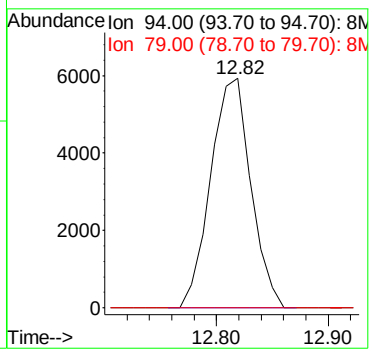

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401599.D Vial: 22
Acq On : 8 Dec 2014 22:20 Operator: TMB
Sample : L14120292-12 A 10X 826-LOW Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 13:49:44 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	663470	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.71	117	489287	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.72	152	224709	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	142073	22.3669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.48%		
43) 1,2-Dichloroethane-d4	10.42	65	152735	22.8691 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.48%		
58) Toluene-d8	12.81	98	529944	22.6029 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 90.40%		
80) p-Bromofluorobenzene	16.20	95	208686	23.8447 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.36%		

Target Compounds					Qvalue
14) 1,1-Dichloroethene	6.59	61	2122207	231.5925 ug/L	97
19) Methylene Chloride	7.37	84	2178	0.3417 ug/L	89
27) 1,1-Dichloroethane	8.45	63	79332	6.3928 ug/L	97
32) cis-1,2-Dichloroethene	9.30	96	1926	0.2688 ug/L	94
33) Chloroform	9.49	83	3119	0.2534 ug/L	96
36) Tetrahydrofuran	9.76	42	202	0.2069 ug/L #	38
45) 1,2-Dichloroethane	10.55	62	92995	10.6447 ug/L	90
47) Trichloroethene	11.34	130	2368	0.3551 ug/L	96
56) Dimethyl Disulfide	12.81	94	15556	1.6495 ug/L #	26
63) 1,1,2-Trichloroethane	13.30	97	3179	0.7362 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M401599.D 8260WTR.M Tue Dec 09 13:49:44 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401599.D Vial: 22
Acq On : 8 Dec 2014 22:20 Operator: TMB
Sample : L14120292-12 A 10X 826-LOW Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 13:49 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

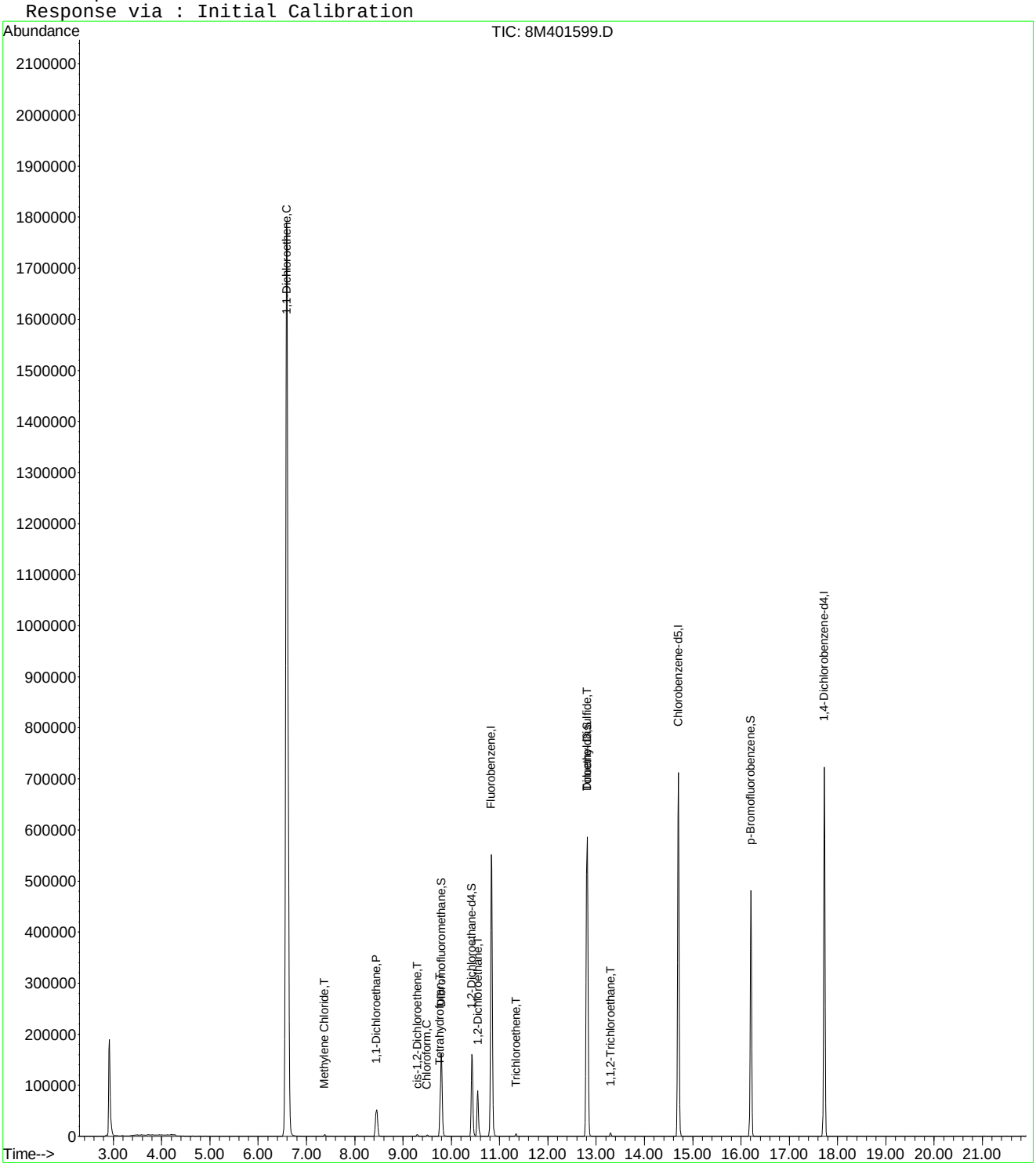

8M401599.D 8260WTR.M Tue Dec 09 13:49:45 2014 Page 2

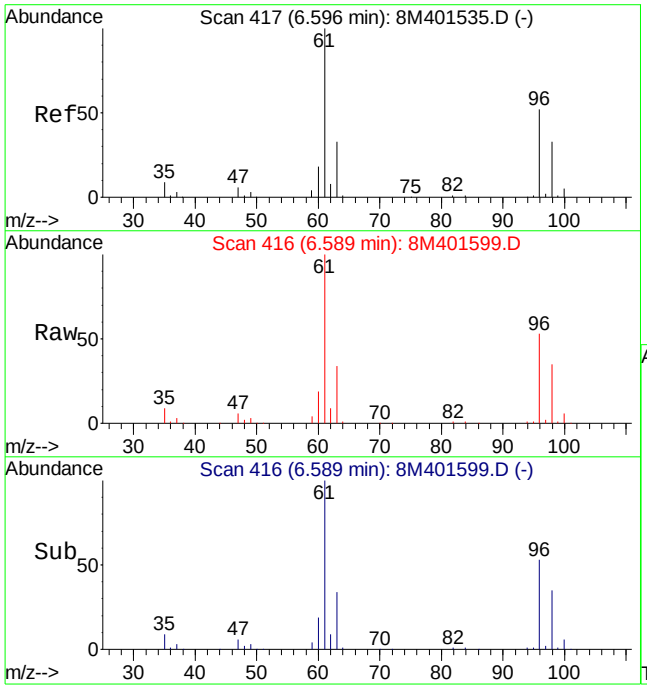

#14
1,1-Dichloroethene
Concen: 231.59 ug/L
RT: 6.59 min Scan# 416
Delta R.T. 0.00 min
Lab File: 8M401599.D
Acq: 8 Dec 2014 22:20

Tgt Ion: 61 Resp: 2122207

Ion	Ratio	Lower	Upper
61	100		
96	53.6	30.8	72.0

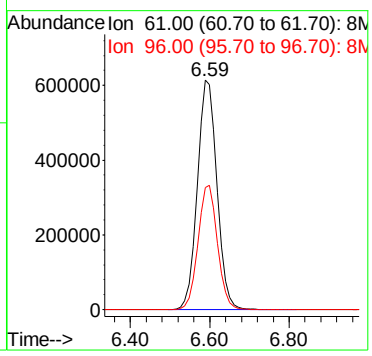

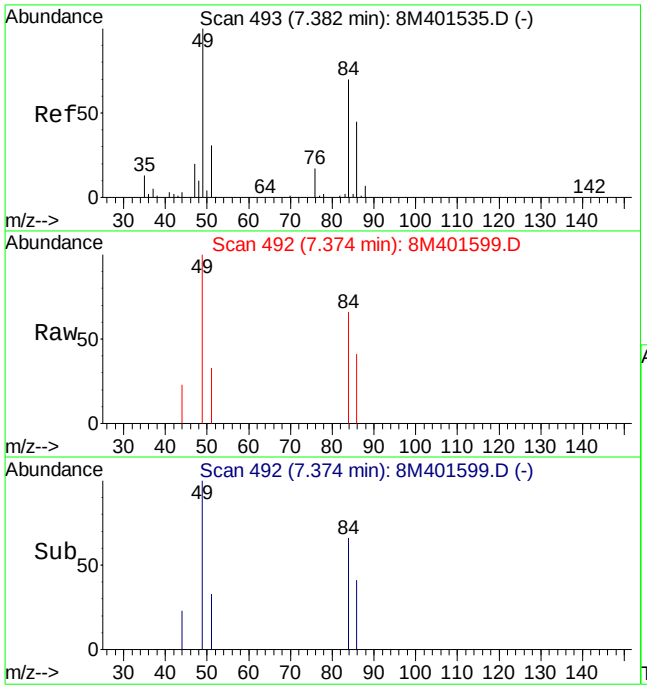

#19
Methylene Chloride
Concen: 0.34 ug/L
RT: 7.37 min Scan# 492
Delta R.T. 0.00 min
Lab File: 8M401599.D
Acq: 8 Dec 2014 22:20

Tgt Ion: 84 Resp: 2178

Ion	Ratio	Lower	Upper
84	100		
49	166.8	91.9	214.3

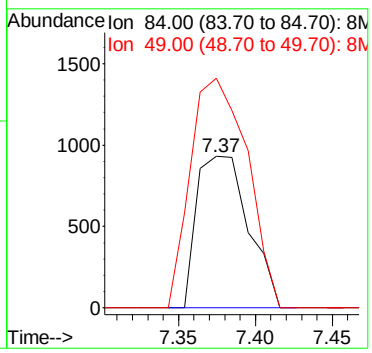

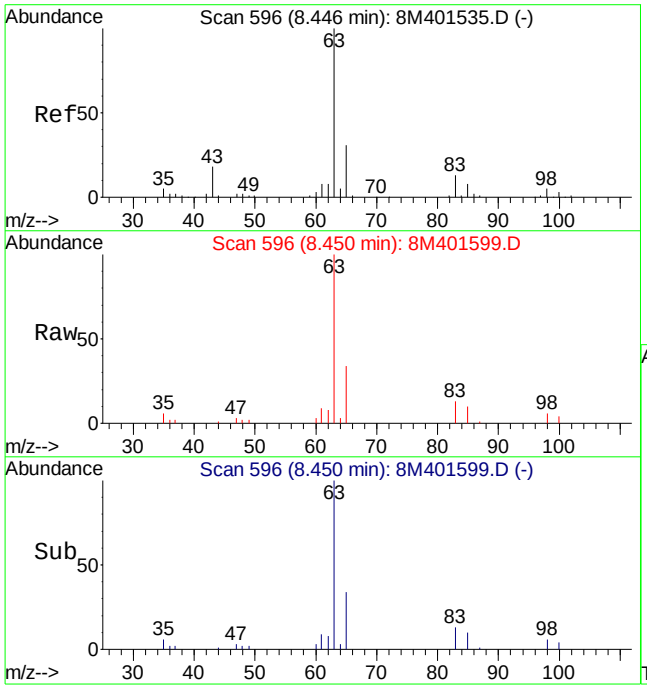

#27
1,1-Dichloroethane
Concen: 6.39 ug/L
RT: 8.45 min Scan# 596
Delta R.T. 0.00 min
Lab File: 8M401599.D
Acq: 8 Dec 2014 22:20

Tgt Ion: 63 Resp: 79332

Ion	Ratio	Lower	Upper
63	100		
65	32.3	18.3	42.7
83	12.9	7.0	16.4

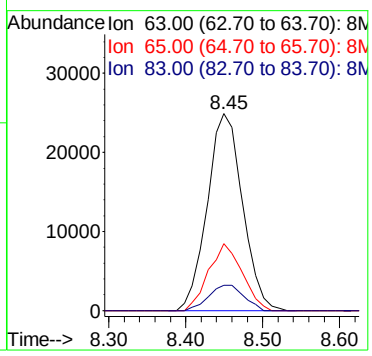

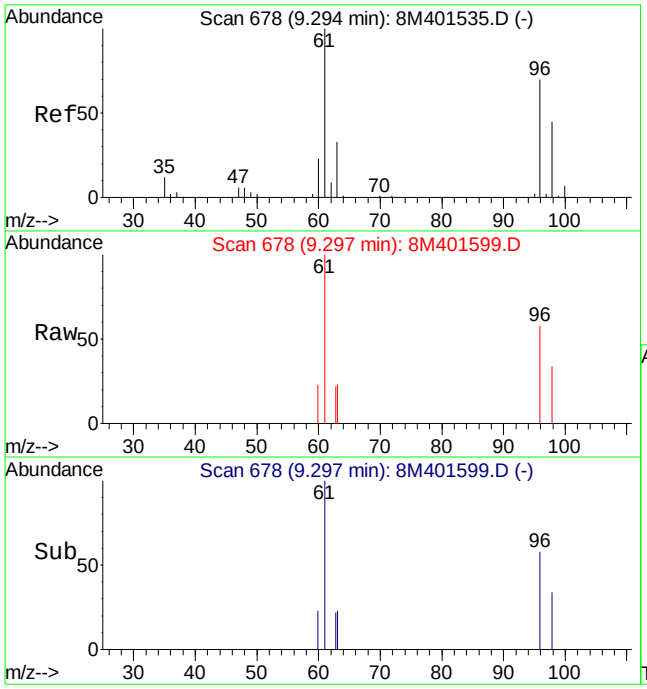

#32
cis-1,2-Dichloroethene
Concen: 0.27 ug/L
RT: 9.30 min Scan# 678
Delta R.T. 0.00 min
Lab File: 8M401599.D
Acq: 8 Dec 2014 22:20

Tgt Ion: 96 Resp: 1926

Ion	Ratio	Lower	Upper
96	100		
61	182.6	104.6	244.0

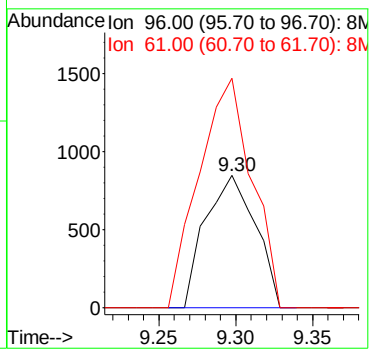

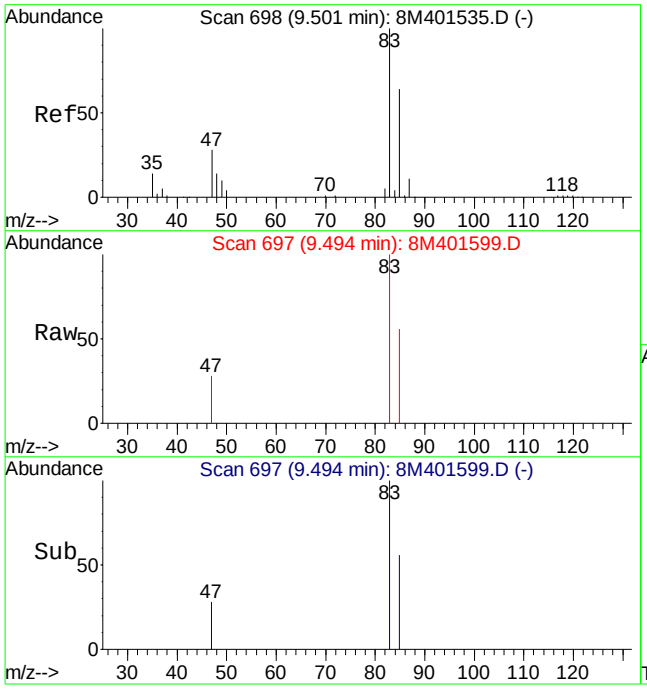

#33
Chloroform
Concen: 0.25 ug/L
RT: 9.49 min Scan# 697
Delta R.T. -0.01 min
Lab File: 8M401599.D
Acq: 8 Dec 2014 22:20

Tgt Ion: 83 Resp: 3119

Ion	Ratio	Lower	Upper
83	100		
85	61.3	38.8	90.4

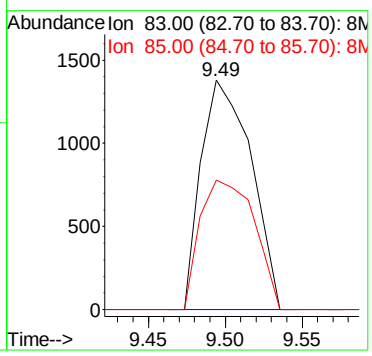

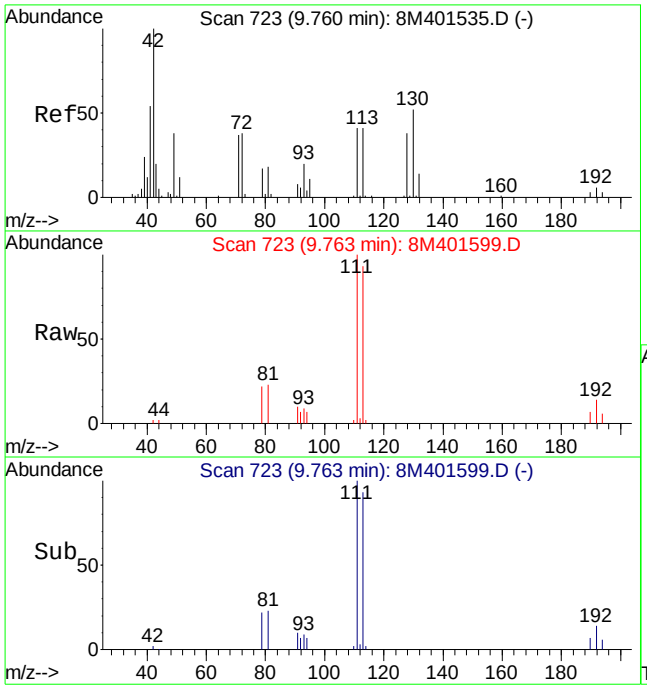

#36
Tetrahydrofuran
Concen: 0.21 ug/L
RT: 9.76 min Scan# 723
Delta R.T. 0.01 min
Lab File: 8M401599.D
Acq: 8 Dec 2014 22:20

Tgt Ion: 42 Resp: 202

Ion	Ratio	Lower	Upper
42	100		
72	0.0	23.2	54.0#
71	0.0	21.4	50.0#

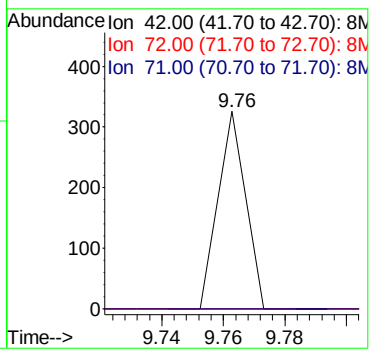

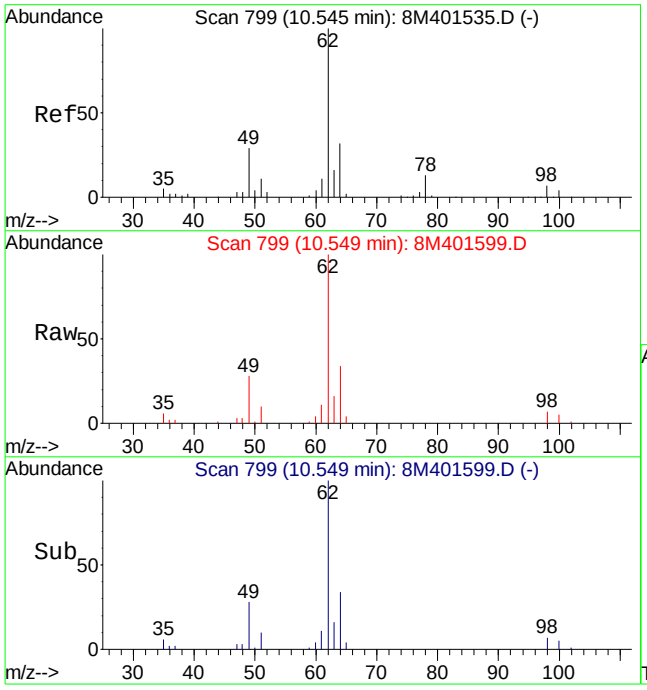

#45
1,2-Dichloroethane
Concen: 10.64 ug/L
RT: 10.55 min Scan# 799
Delta R.T. 0.00 min
Lab File: 8M401599.D
Acq: 8 Dec 2014 22:20

Tgt Ion: 62 Resp: 92995

Ion	Ratio	Lower	Upper
62	100		
64	33.7	18.7	43.7
49	28.0	21.7	50.7

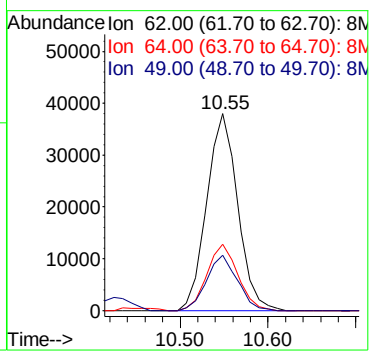

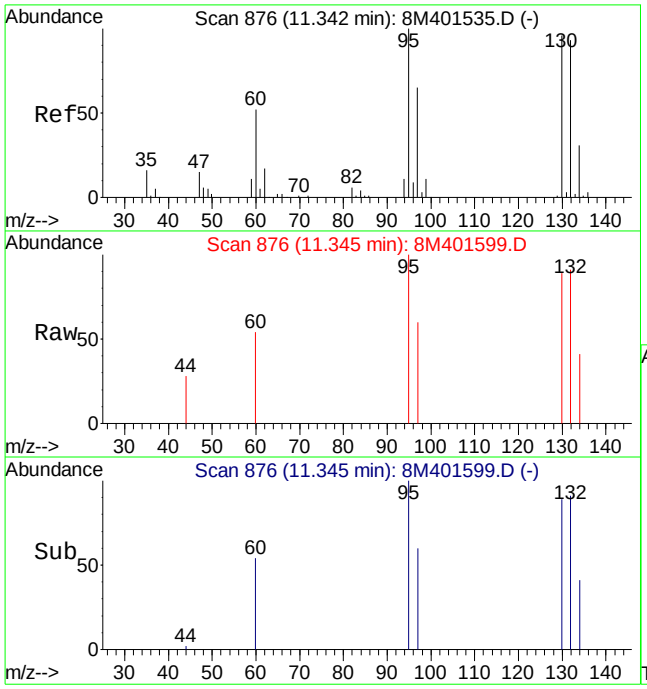

#47
Trichloroethene
Concen: 0.36 ug/L
RT: 11.34 min Scan# 876
Delta R.T. 0.00 min
Lab File: 8M401599.D
Acq: 8 Dec 2014 22:20

Tgt Ion:130 Resp: 2368

Ion	Ratio	Lower	Upper
130	100		
132	89.7	57.7	134.5
95	101.6	61.8	144.2

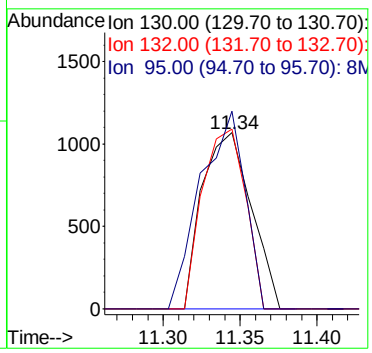

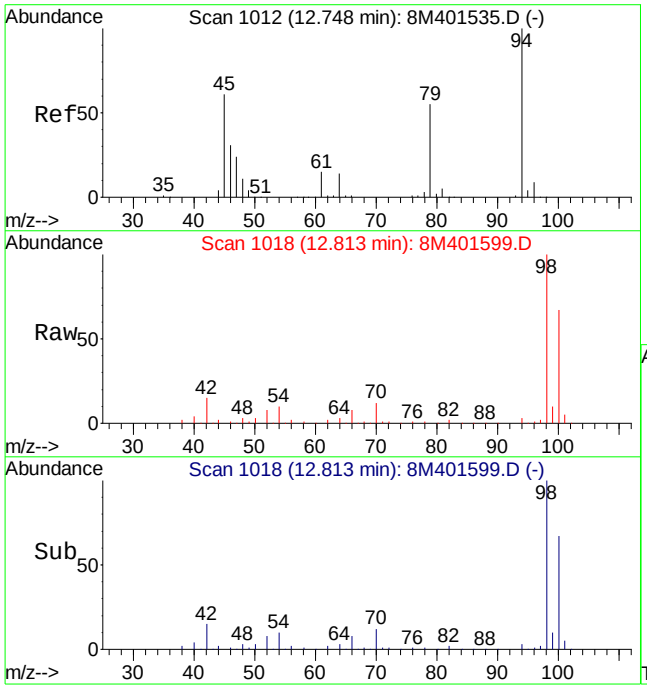

#56
Dimethyl Disulfide
Concen: 1.65 ug/L
RT: 12.81 min Scan# 1018
Delta R.T. 0.07 min
Lab File: 8M401599.D
Acq: 8 Dec 2014 22:20

Tgt Ion: 94 Resp: 15556

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.3	72.9#

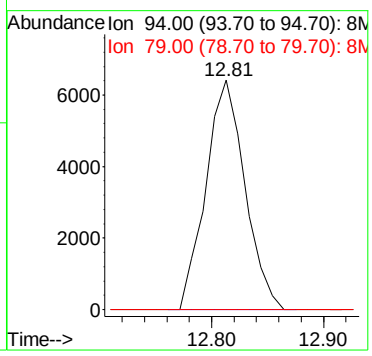

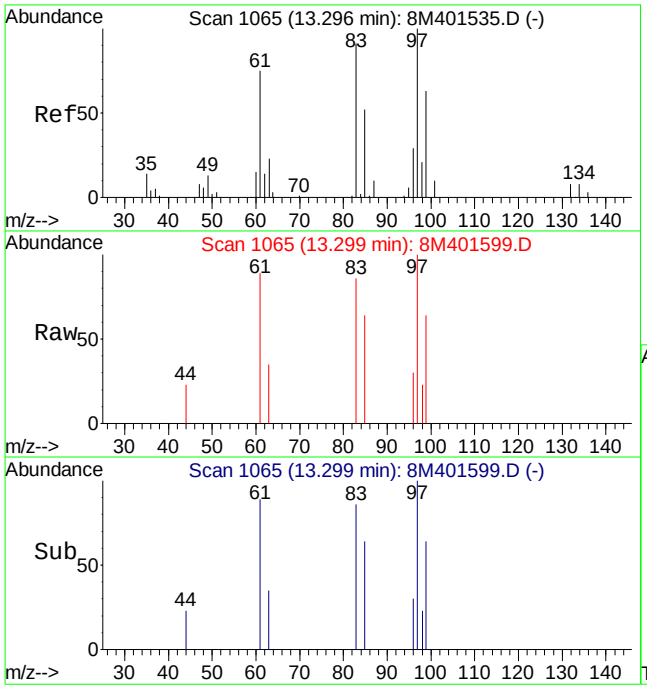

#63
1,1,2-Trichloroethane
Concen: 0.74 ug/L
RT: 13.30 min Scan# 1065
Delta R.T. -0.01 min
Lab File: 8M401599.D
Acq: 8 Dec 2014 22:20

Tgt Ion: 97 Resp: 3179

Ion	Ratio	Lower	Upper
97	100		
83	84.0	52.0	121.2

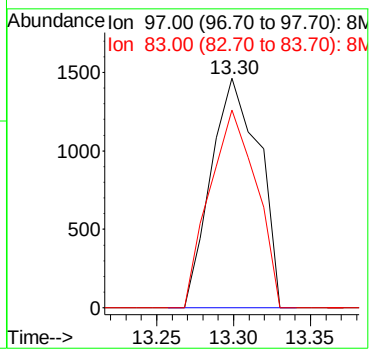

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401597.D Vial: 20
Acq On : 8 Dec 2014 21:22 Operator: TMB
Sample : L14120292-13 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 13:49:41 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	666182	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	500571	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	227074	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.79	111	144821	22.7067 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.84%		
43) 1,2-Dichloroethane-d4	10.43	65	155709	23.2195 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.88%		
58) Toluene-d8	12.81	98	539864	22.5070 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 90.04%		
80) p-Bromofluorobenzene	16.20	95	211704	23.9376 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.76%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.95	62	2500	0.3017 ug/L	95
14) 1,1-Dichloroethene	6.60	61	345080	37.5046 ug/L	97
27) 1,1-Dichloroethane	8.45	63	138204	11.0915 ug/L	99
45) 1,2-Dichloroethane	10.55	62	4978	0.5675 ug/L #	84
51) 1,4-Dioxane	11.84	88	2553	93.5314 ug/L	79
56) Dimethyl Disulfide	12.81	94	15385	1.6247 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M401597.D 8260WTR.M Tue Dec 09 13:49:41 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401597.D Vial: 20
Acq On : 8 Dec 2014 21:22 Operator: TMB
Sample : L14120292-13 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 13:49 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

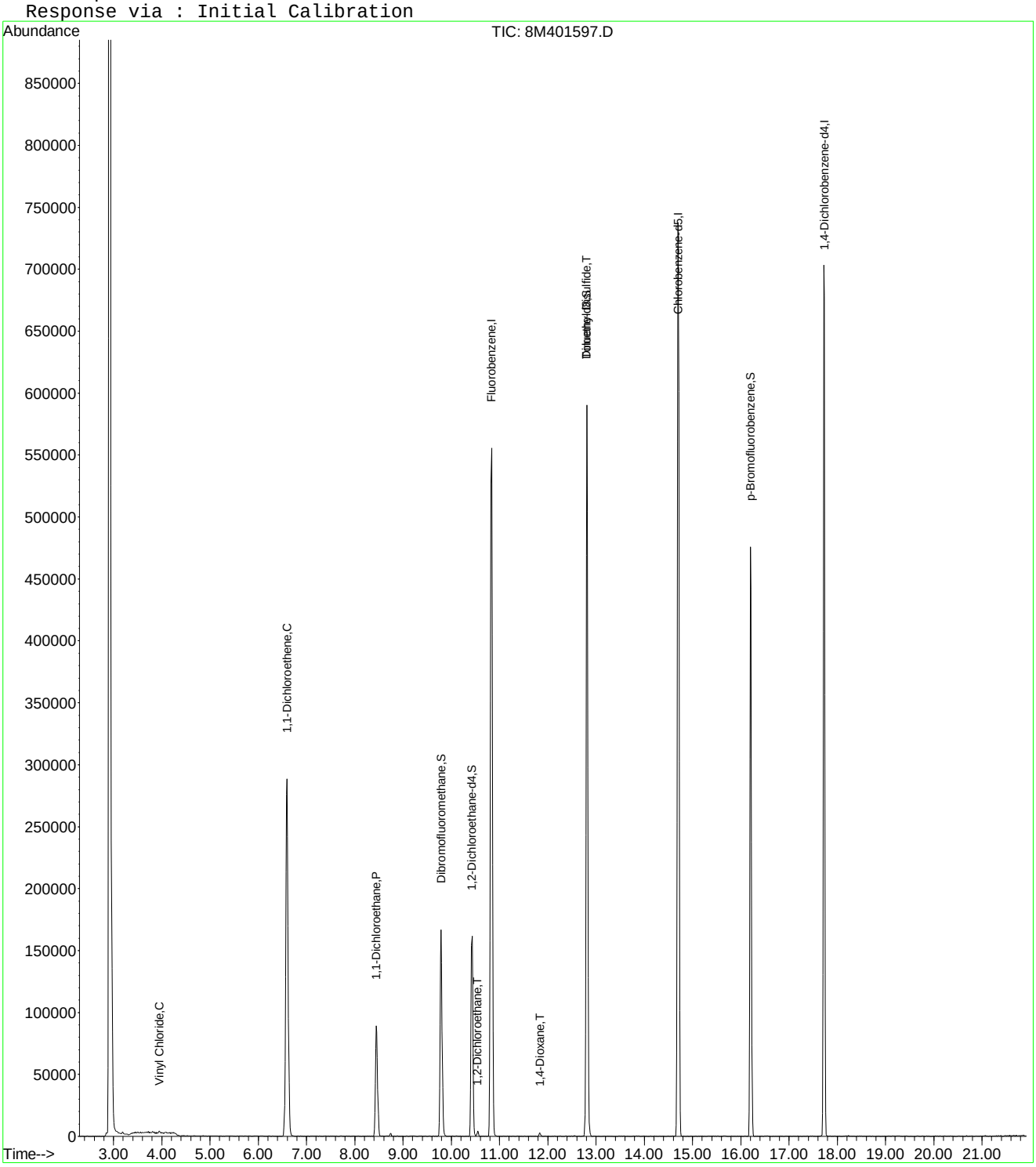

8M401597.D 8260WTR.M Tue Dec 09 13:49:41 2014 Page 2

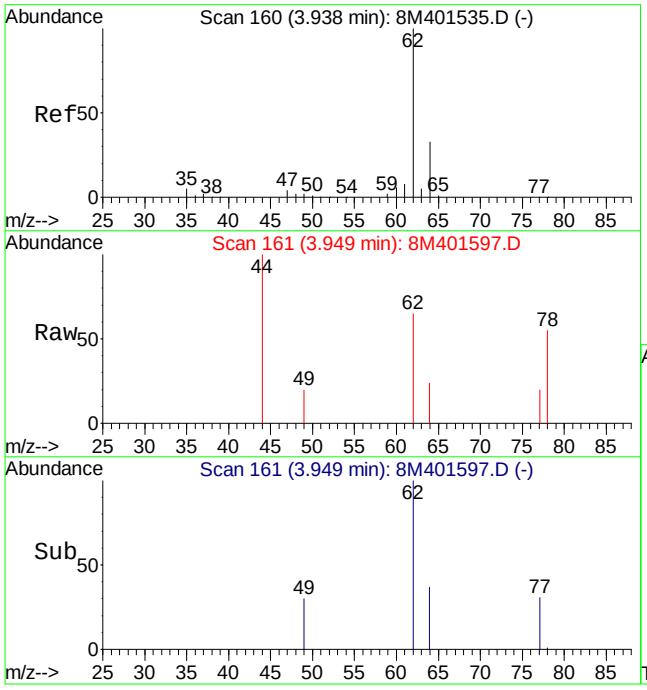

#4
Vinyl Chloride
Concen: 0.30 ug/L
RT: 3.95 min Scan# 161
Delta R.T. 0.01 min
Lab File: 8M401597.D
Acq: 8 Dec 2014 21:22

Tgt Ion: 62 Resp: 2500

Ion	Ratio	Lower	Upper
62	100		
64	27.6	18.2	42.6

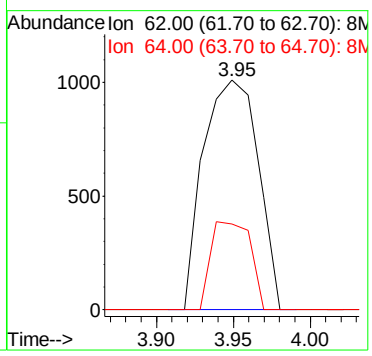

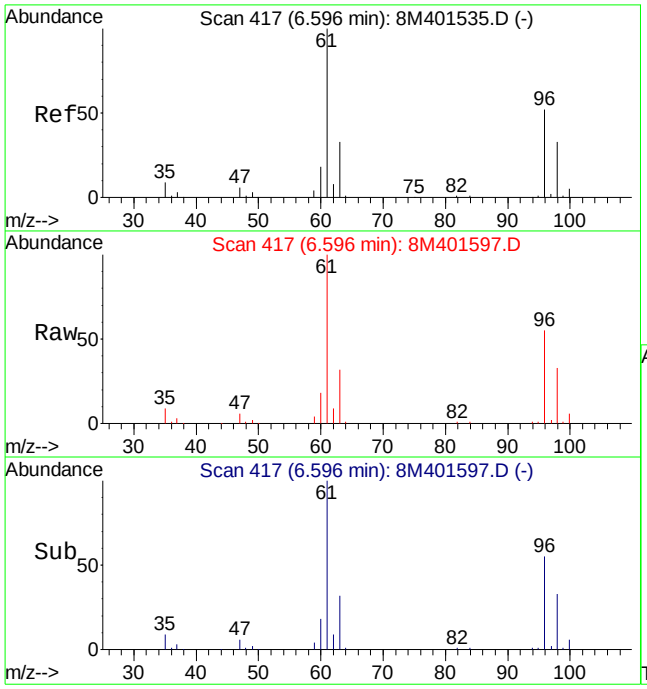

#14
1,1-Dichloroethene
Concen: 37.50 ug/L
RT: 6.60 min Scan# 417
Delta R.T. 0.01 min
Lab File: 8M401597.D
Acq: 8 Dec 2014 21:22

Tgt Ion: 61 Resp: 345080

Ion	Ratio	Lower	Upper
61	100		
96	53.6	30.8	72.0

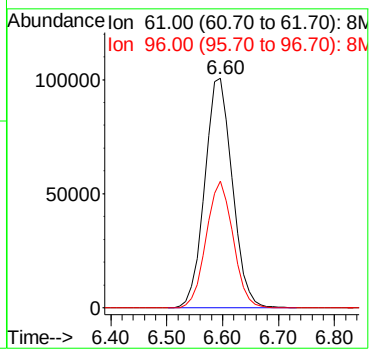

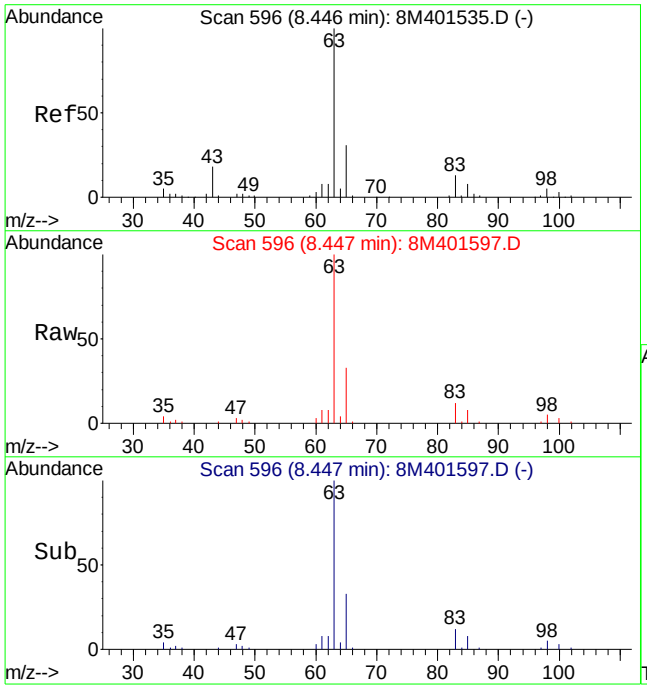

#27
1,1-Dichloroethane
Concen: 11.09 ug/L
RT: 8.45 min Scan# 596
Delta R.T. 0.00 min
Lab File: 8M401597.D
Acq: 8 Dec 2014 21:22

Tgt Ion: 63 Resp: 138204

Ion	Ratio	Lower	Upper
63	100		
65	31.1	18.3	42.7
83	12.3	7.0	16.4

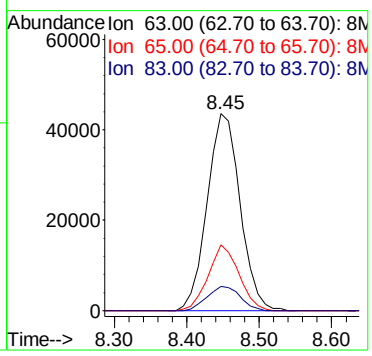

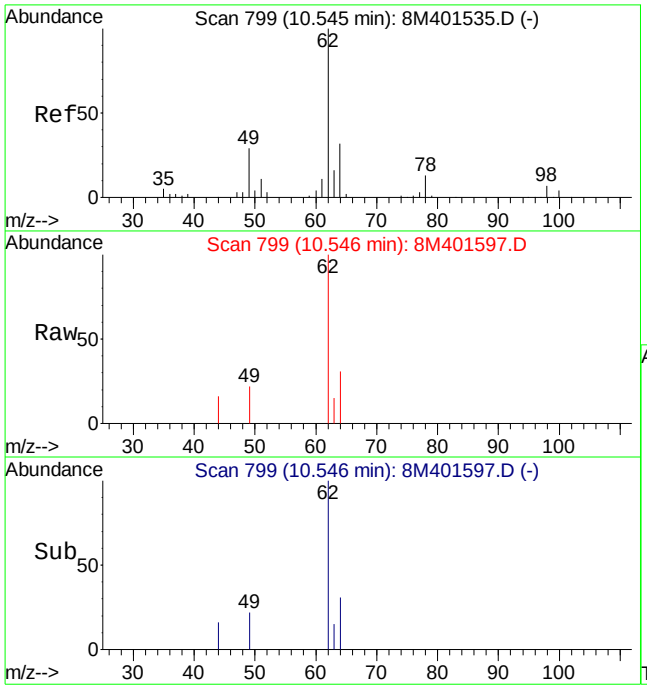

#45
1,2-Dichloroethane
Concen: 0.57 ug/L
RT: 10.55 min Scan# 799
Delta R.T. 0.00 min
Lab File: 8M401597.D
Acq: 8 Dec 2014 21:22

Tgt Ion: 62 Resp: 4978

Ion	Ratio	Lower	Upper
62	100		
64	32.3	18.7	43.7
49	19.2	21.7	50.7#

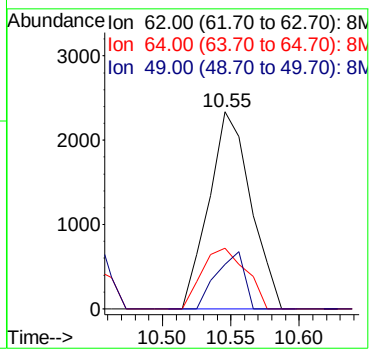

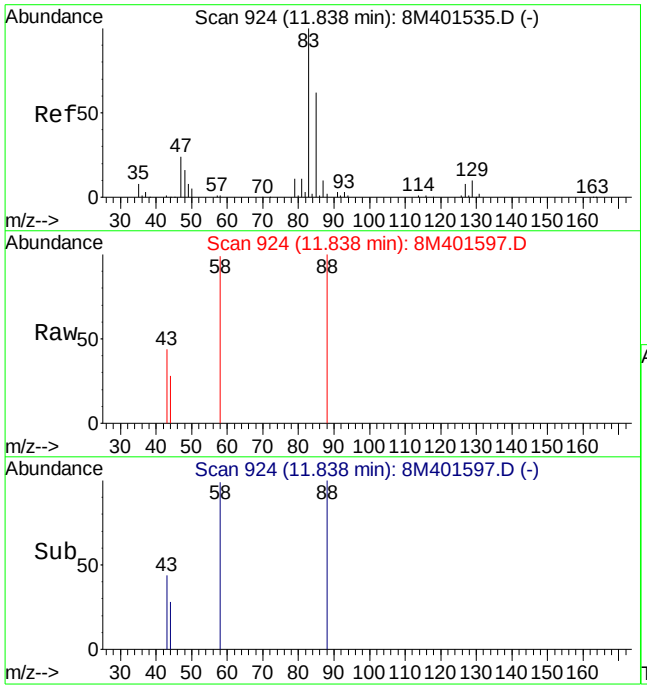

#51
1,4-Dioxane
Concen: 93.53 ug/L
RT: 11.84 min Scan# 924
Delta R.T. 0.00 min
Lab File: 8M401597.D
Acq: 8 Dec 2014 21:22

Tgt Ion: 88 Resp: 2553

Ion	Ratio	Lower	Upper
88	100		
58	94.2	45.8	107.0

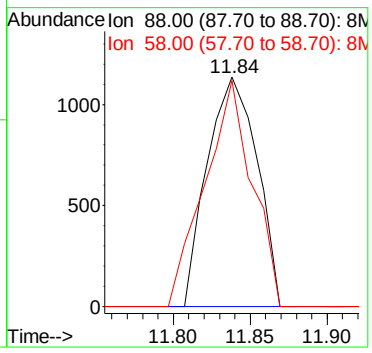

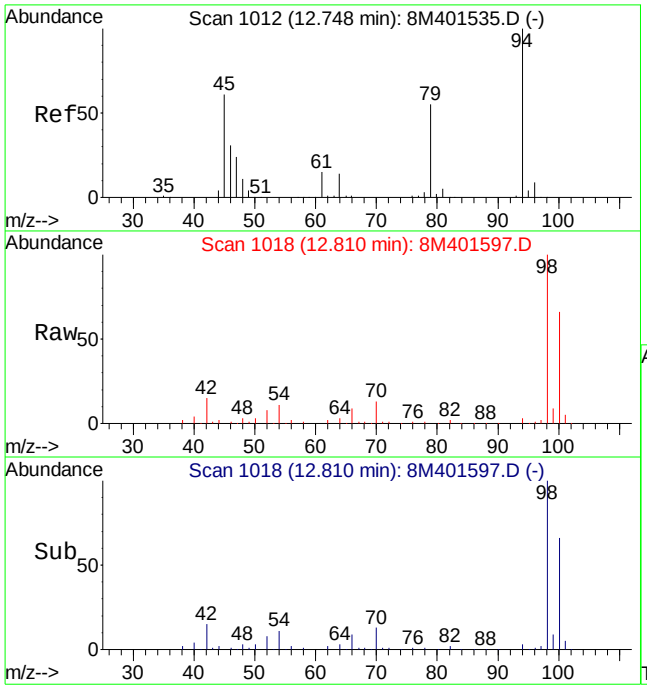

#56
Dimethyl Disulfide
Concen: 1.62 ug/L
RT: 12.81 min Scan# 1018
Delta R.T. 0.06 min
Lab File: 8M401597.D
Acq: 8 Dec 2014 21:22

Tgt Ion: 94 Resp: 15385

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.3	72.9#

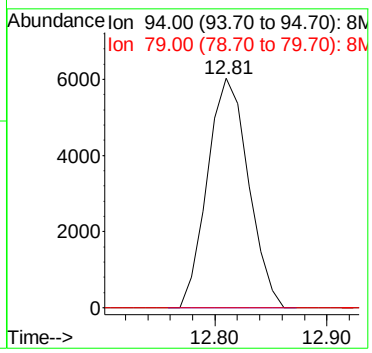

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401600.D Vial: 23
Acq On : 8 Dec 2014 22:49 Operator: TMB
Sample : L14120292-14 A 5X 826-LOW Inst : HPMS8
Misc : 1,5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 13:49:46 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	657621	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	486505	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	222667	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	141599	22.4905 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.96%		
43) 1,2-Dichloroethane-d4	10.43	65	150969	22.8058 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.24%		
58) Toluene-d8	12.81	98	529293	22.7042 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 90.80%		
80) p-Bromofluorobenzene	16.20	95	209842	24.1966 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.80%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.95	62	1294	0.1582 ug/L #	44
14) 1,1-Dichloroethene	6.60	61	1038710	114.3607 ug/L	99
19) Methylene Chloride	7.37	84	3642	0.5764 ug/L	98
27) 1,1-Dichloroethane	8.46	63	70950	5.7682 ug/L	99
32) cis-1,2-Dichloroethene	9.29	96	1859	0.2617 ug/L	97
33) Chloroform	9.50	83	1983	0.1626 ug/L	82
45) 1,2-Dichloroethane	10.55	62	43109	4.9784 ug/L	92
47) Trichloroethene	11.33	130	2181	0.3300 ug/L	77
56) Dimethyl Disulfide	12.81	94	14466	1.5475 ug/L #	26
63) 1,1,2-Trichloroethane	13.30	97	3780	0.8804 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M401600.D 8260WTR.M Tue Dec 09 13:49:46 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401600.D Vial: 23
Acq On : 8 Dec 2014 22:49 Operator: TMB
Sample : L14120292-14 A 5X 826-LOW Inst : HPMS8
Misc : 1,5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 13:49 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

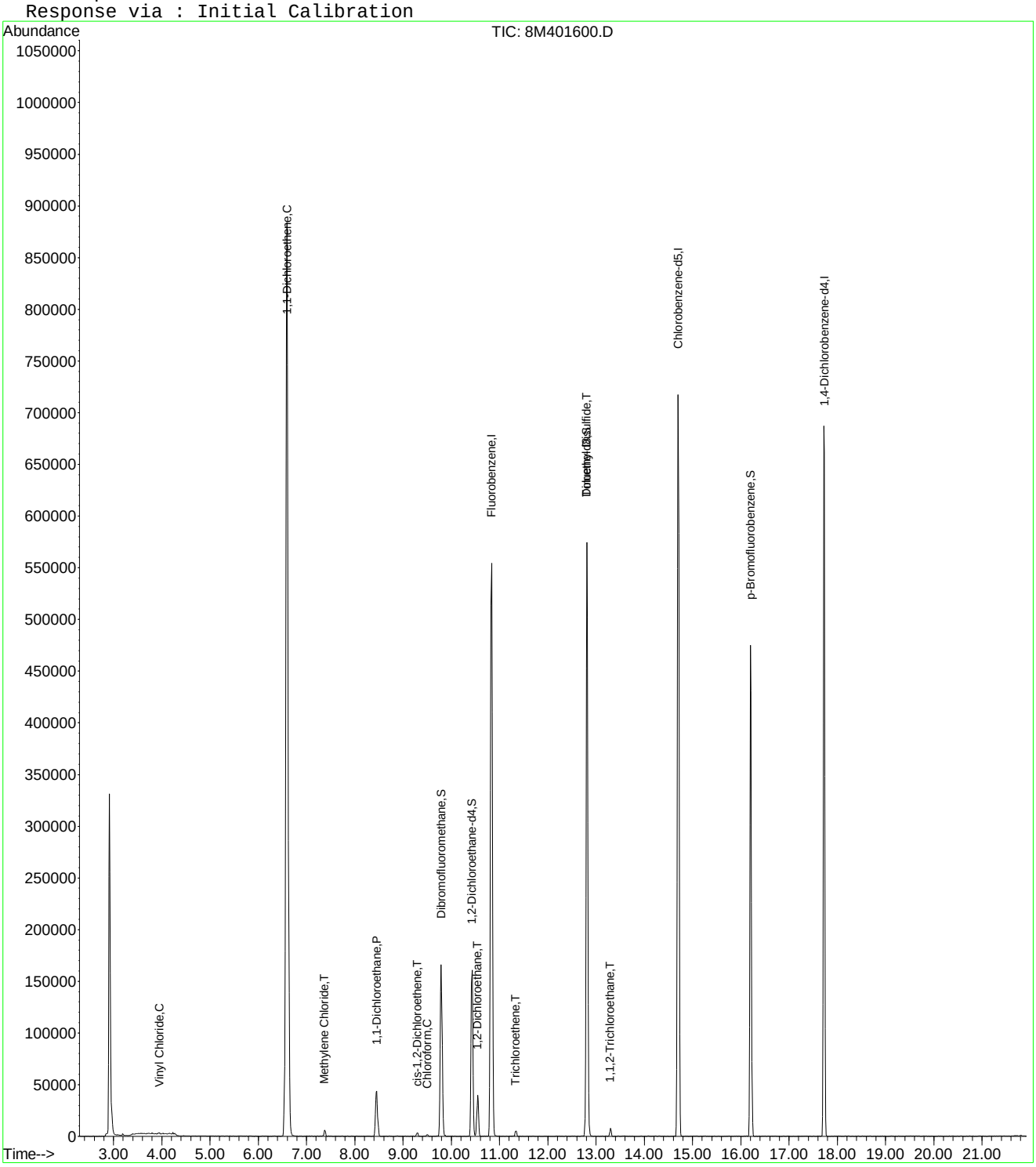

8M401600.D 8260WTR.M Tue Dec 09 13:49:46 2014 Page 2

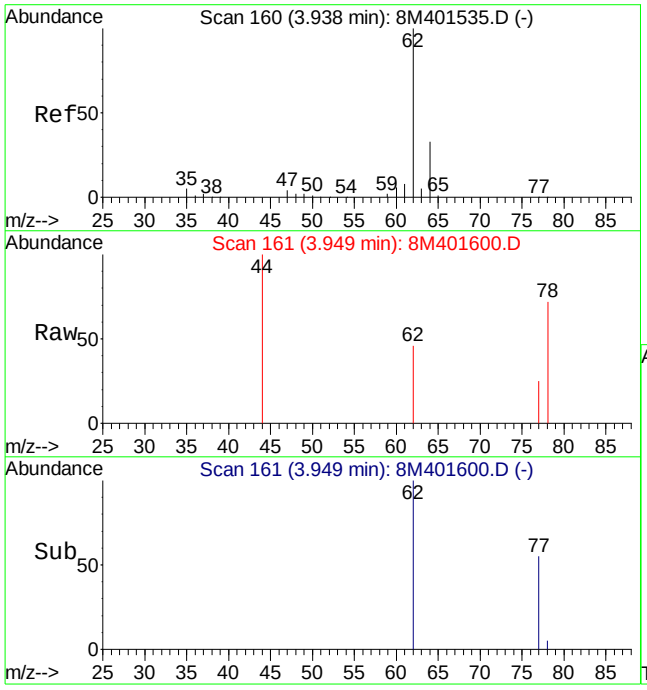

#4
Vinyl Chloride
Concen: 0.16 ug/L
RT: 3.95 min Scan# 161
Delta R.T. 0.01 min
Lab File: 8M401600.D
Acq: 8 Dec 2014 22:49

Tgt Ion: 62 Resp: 1294

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.2	42.6#

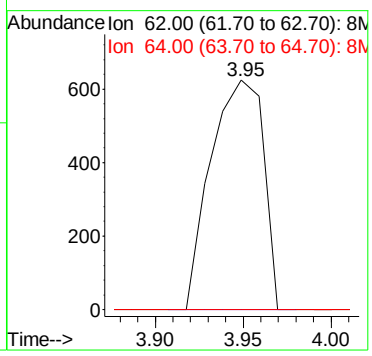

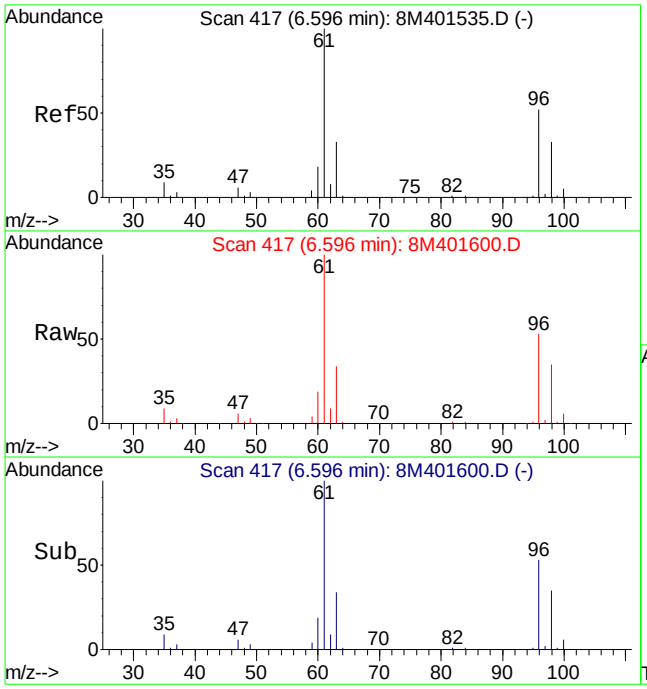

#14
1,1-Dichloroethene
Concen: 114.36 ug/L
RT: 6.60 min Scan# 417
Delta R.T. 0.01 min
Lab File: 8M401600.D
Acq: 8 Dec 2014 22:49

Tgt Ion: 61 Resp: 1038710

Ion	Ratio	Lower	Upper
61	100		
96	52.4	30.8	72.0

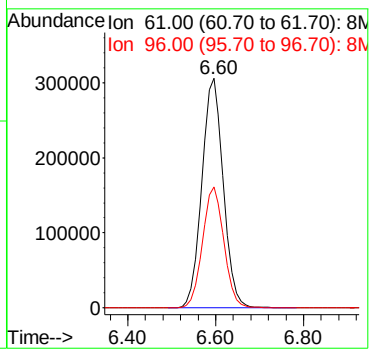

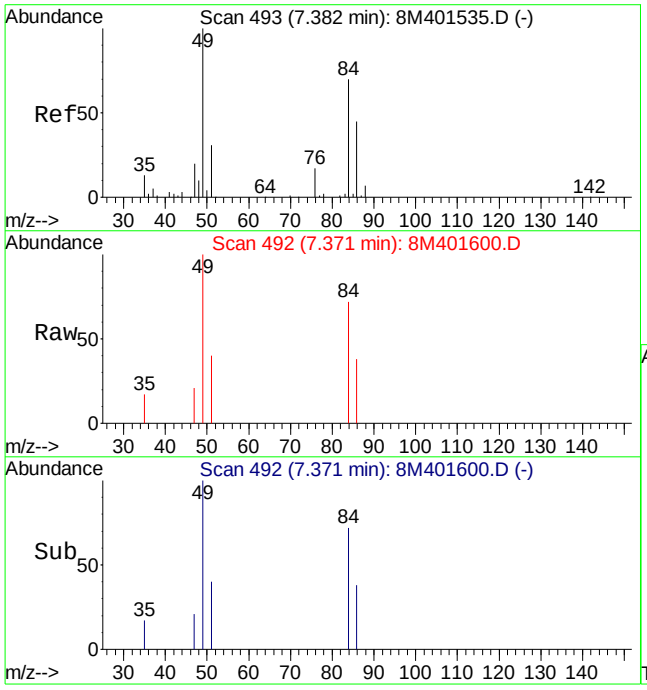

#19
Methylene Chloride
Concen: 0.58 ug/L
RT: 7.37 min Scan# 492
Delta R.T. -0.00 min
Lab File: 8M401600.D
Acq: 8 Dec 2014 22:49

Tgt Ion: 84 Resp: 3642

Ion	Ratio	Lower	Upper
84	100		
49	155.8	91.9	214.3

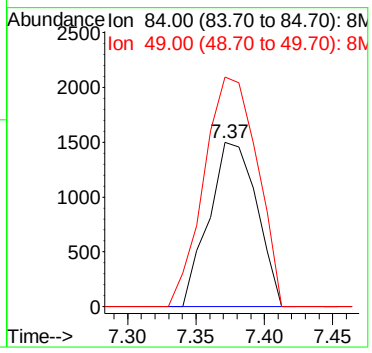

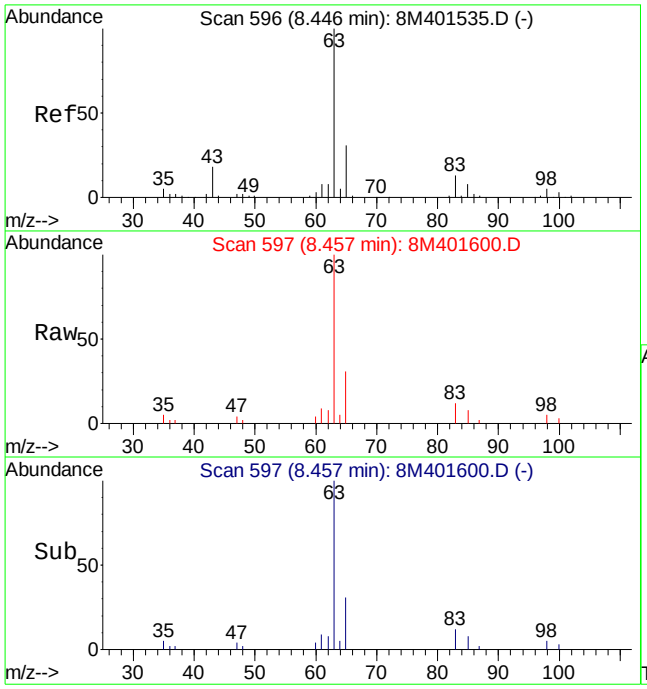

#27
1,1-Dichloroethane
Concen: 5.77 ug/L
RT: 8.46 min Scan# 597
Delta R.T. 0.01 min
Lab File: 8M401600.D
Acq: 8 Dec 2014 22:49

Tgt Ion: 63 Resp: 70950

Ion	Ratio	Lower	Upper
63	100		
65	30.4	18.3	42.7
83	12.2	7.0	16.4

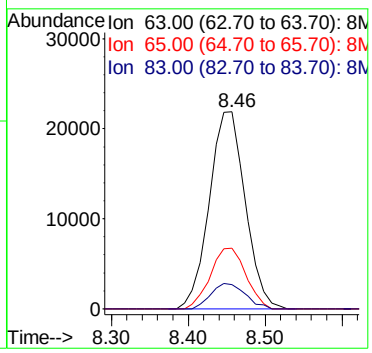

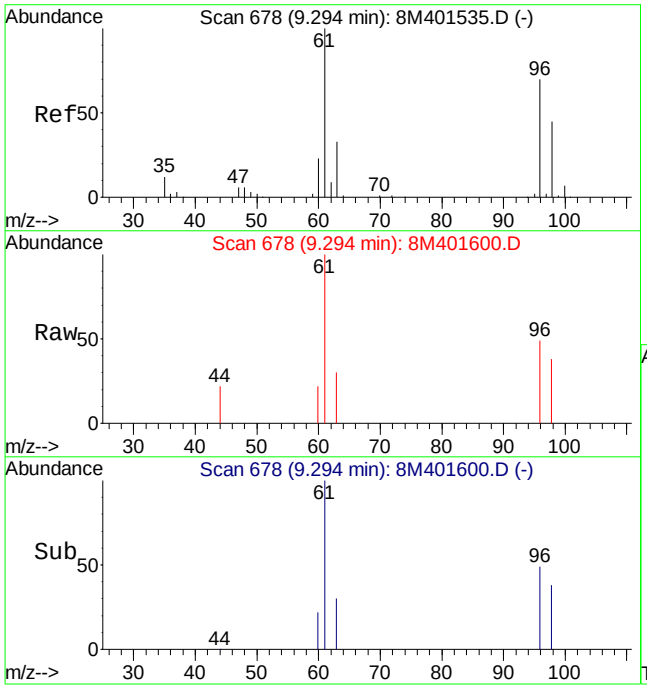

#32
cis-1,2-Dichloroethene
Concen: 0.26 ug/L
RT: 9.29 min Scan# 678
Delta R.T. -0.00 min
Lab File: 8M401600.D
Acq: 8 Dec 2014 22:49

Tgt Ion: 96 Resp: 1859

Ion	Ratio	Lower	Upper
96	100		
61	169.9	104.6	244.0

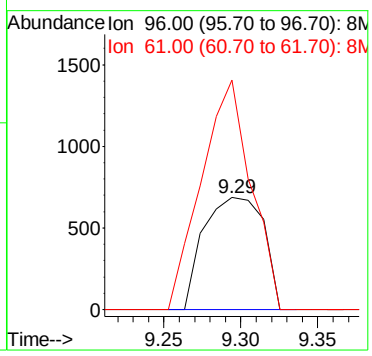

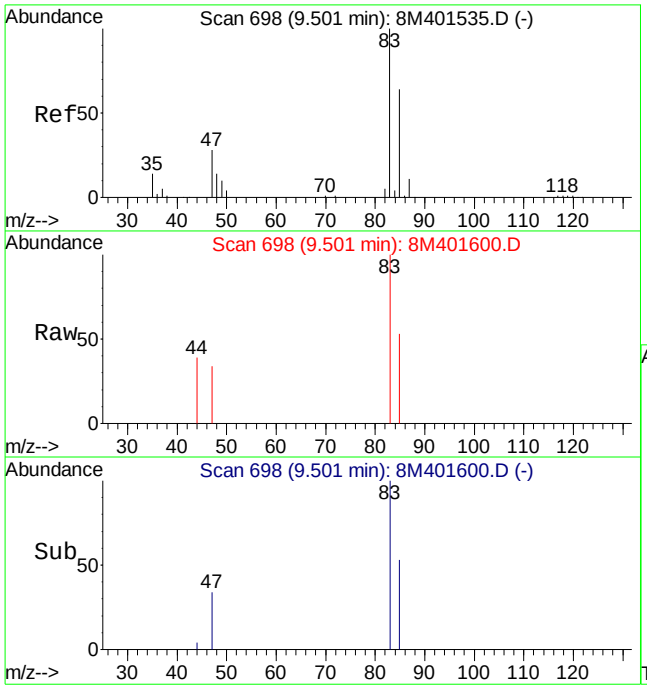

#33
Chloroform
Concen: 0.16 ug/L
RT: 9.50 min Scan# 698
Delta R.T. -0.00 min
Lab File: 8M401600.D
Acq: 8 Dec 2014 22:49

Tgt Ion: 83 Resp: 1983

Ion	Ratio	Lower	Upper
83	100		
85	50.8	38.8	90.4

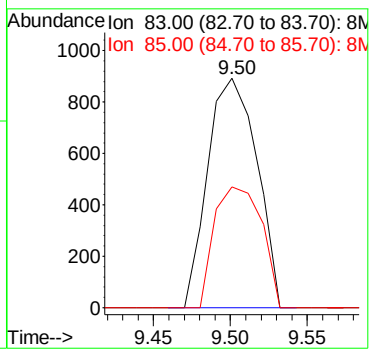

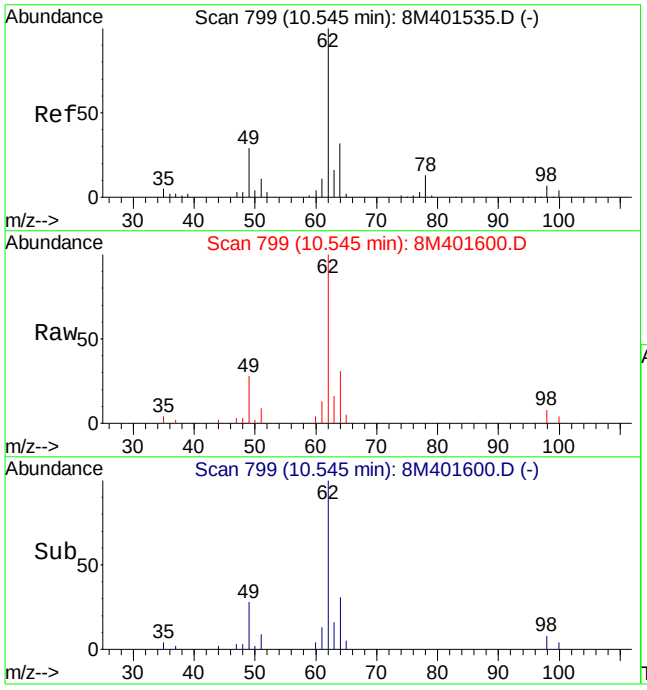

#45
1,2-Dichloroethane
Concen: 4.98 ug/L
RT: 10.55 min Scan# 799
Delta R.T. -0.00 min
Lab File: 8M401600.D
Acq: 8 Dec 2014 22:49

Tgt Ion: 62 Resp: 43109

Ion	Ratio	Lower	Upper
62	100		
64	32.4	18.7	43.7
49	28.0	21.7	50.7

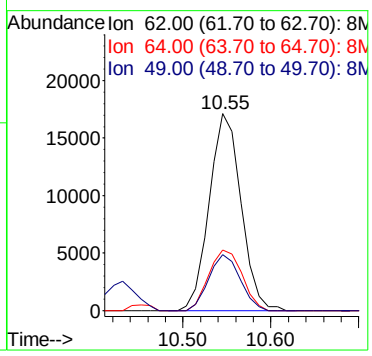

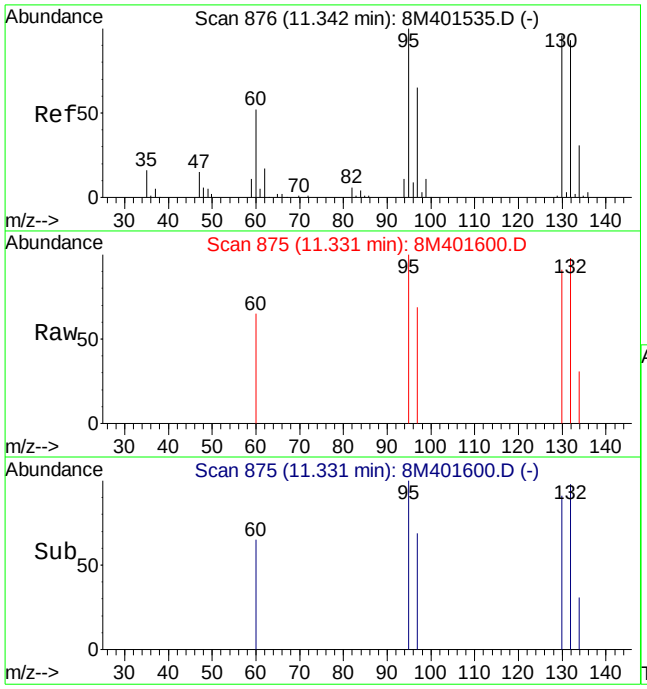

#47
Trichloroethene
Concen: 0.33 ug/L
RT: 11.33 min Scan# 875
Delta R.T. -0.01 min
Lab File: 8M401600.D
Acq: 8 Dec 2014 22:49

Tgt Ion:130 Resp: 2181

Ion	Ratio	Lower	Upper
130	100		
132	122.8	57.7	134.5
95	121.7	61.8	144.2

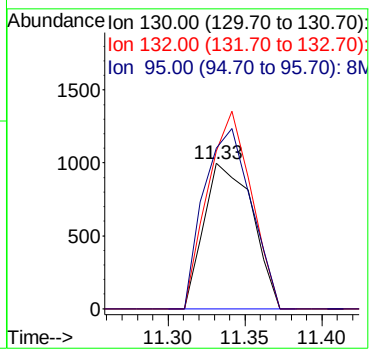

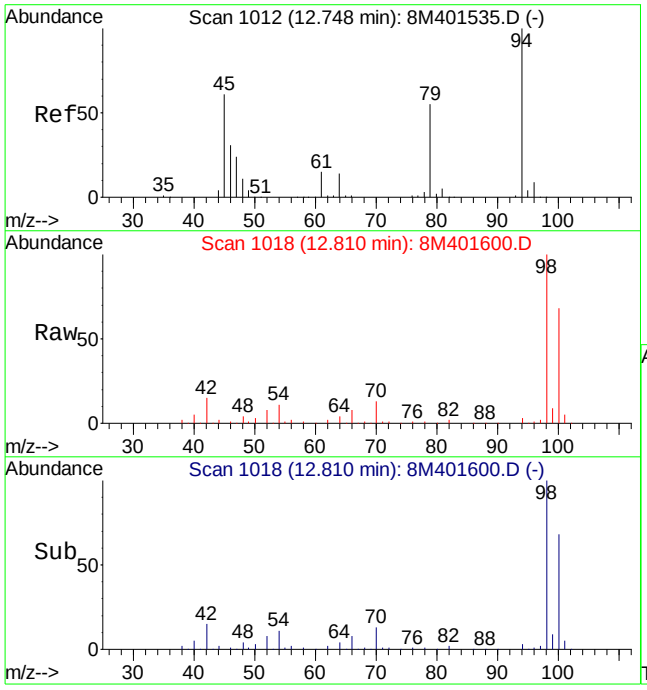

#56
Dimethyl Disulfide
Concen: 1.55 ug/L
RT: 12.81 min Scan# 1018
Delta R.T. 0.06 min
Lab File: 8M401600.D
Acq: 8 Dec 2014 22:49

Tgt Ion: 94 Resp: 14466

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.3	72.9#

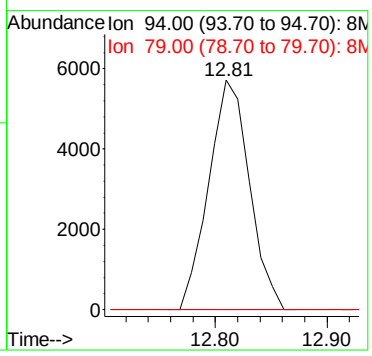

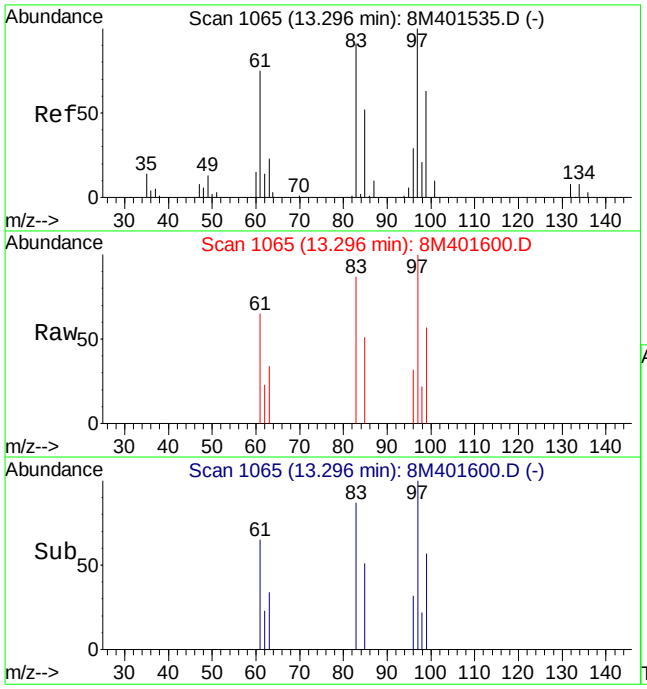

#63
1,1,2-Trichloroethane
Concen: 0.88 ug/L
RT: 13.30 min Scan# 1065
Delta R.T. -0.01 min
Lab File: 8M401600.D
Acq: 8 Dec 2014 22:49

Tgt Ion: 97 Resp: 3780

Ion	Ratio	Lower	Upper
97	100		
83	87.8	52.0	121.2

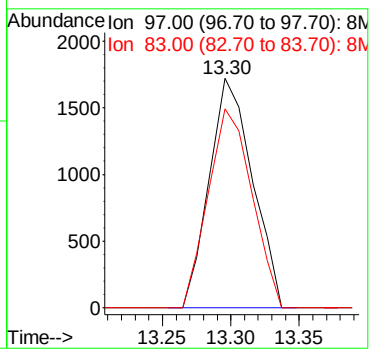

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401601.D Vial: 24
Acq On : 8 Dec 2014 23:17 Operator: TMB
Sample : L14120292-15 A 5X 826-LOW Inst : HPMS8
Misc : 1,5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 13:49:47 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	654805	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	495630	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	225510	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	141740	22.6098 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.44%		
43) 1,2-Dichloroethane-d4	10.43	65	149539	22.6869 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.76%		
58) Toluene-d8	12.81	98	530290	22.3282 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 89.32%		
80) p-Bromofluorobenzene	16.20	95	212146	24.1539 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.60%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.95	62	1455	0.1786 ug/L #	44
14) 1,1-Dichloroethene	6.60	61	944284	104.4116 ug/L	98
19) Methylene Chloride	7.37	84	3653	0.5806 ug/L	85
27) 1,1-Dichloroethane	8.45	63	67086	5.4775 ug/L	97
32) cis-1,2-Dichloroethene	9.28	96	2101	0.2971 ug/L	71
33) Chloroform	9.50	83	2061	0.1697 ug/L	83
45) 1,2-Dichloroethane	10.54	62	42501	4.9292 ug/L	92
47) Trichloroethene	11.34	130	2548	0.3871 ug/L	91
56) Dimethyl Disulfide	12.81	94	15657	1.6821 ug/L #	26
63) 1,1,2-Trichloroethane	13.31	97	3988	0.9117 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M401601.D 8260WTR.M Tue Dec 09 13:49:48 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401601.D Vial: 24
Acq On : 8 Dec 2014 23:17 Operator: TMB
Sample : L14120292-15 A 5X 826-LOW Inst : HPMS8
Misc : 1,5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 13:49 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

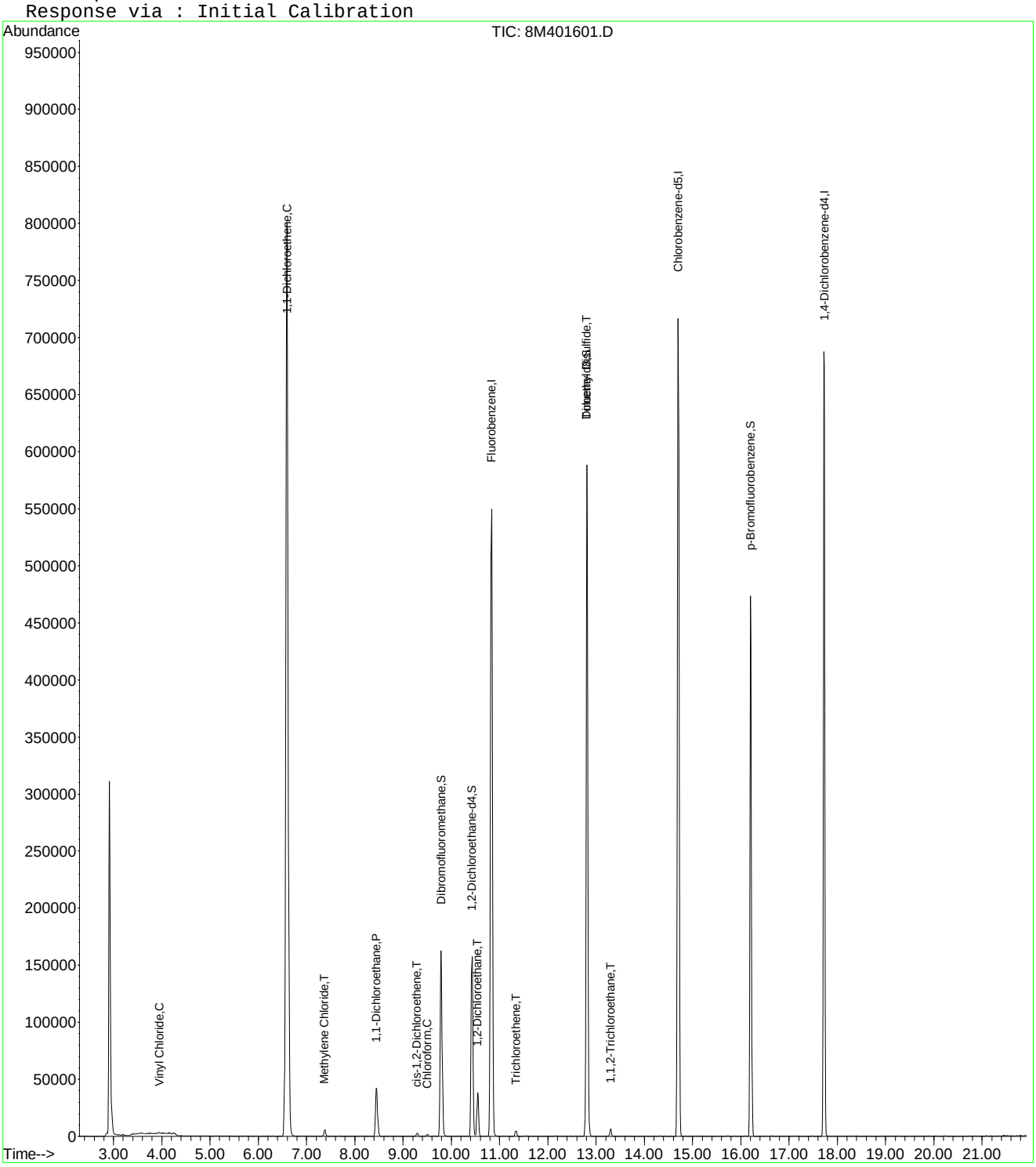

8M401601.D 8260WTR.M Tue Dec 09 13:49:48 2014 Page 2

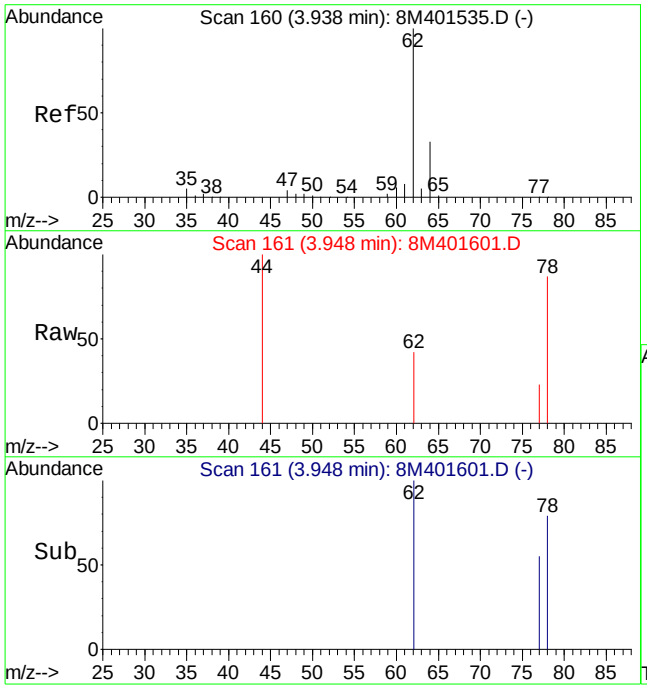

#4
Vinyl Chloride
Concen: 0.18 ug/L
RT: 3.95 min Scan# 161
Delta R.T. 0.01 min
Lab File: 8M401601.D
Acq: 8 Dec 2014 23:17

Tgt Ion: 62 Resp: 1455

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.2	42.6#

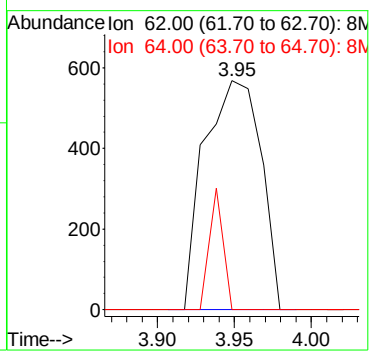

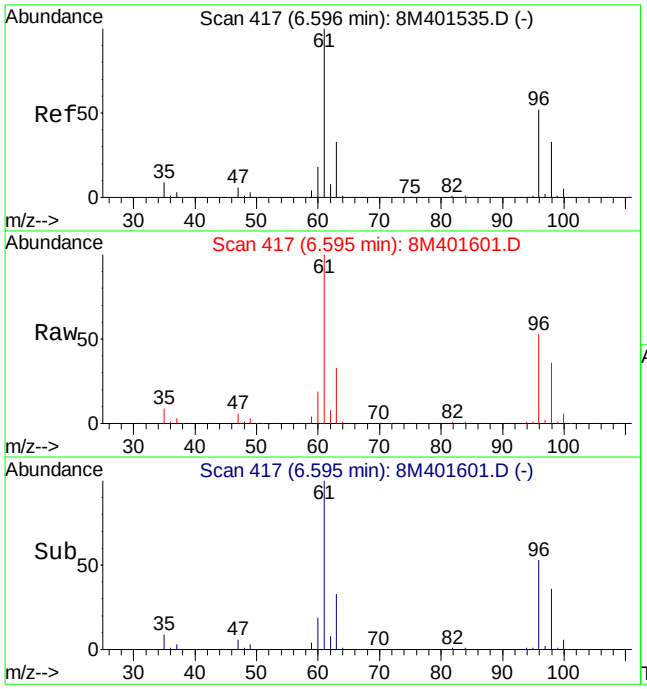

#14
1,1-Dichloroethene
Concen: 104.41 ug/L
RT: 6.60 min Scan# 417
Delta R.T. 0.01 min
Lab File: 8M401601.D
Acq: 8 Dec 2014 23:17

Tgt Ion: 61 Resp: 944284

Ion	Ratio	Lower	Upper
61	100		
96	52.6	30.8	72.0

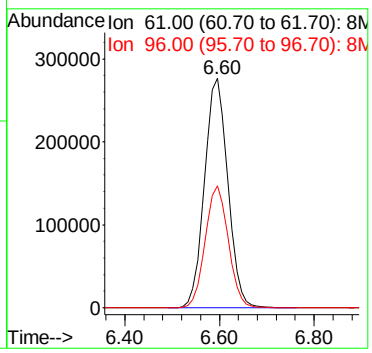

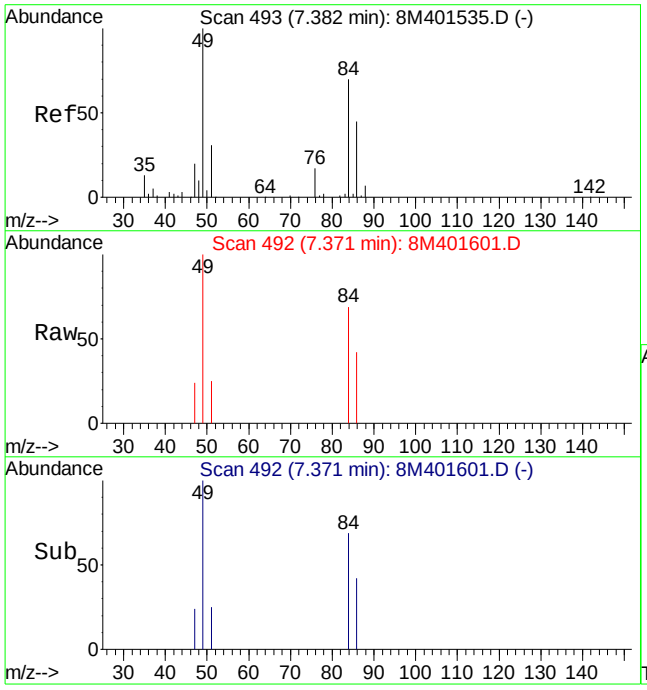

#19
Methylene Chloride
Concen: 0.58 ug/L
RT: 7.37 min Scan# 492
Delta R.T. -0.00 min
Lab File: 8M401601.D
Acq: 8 Dec 2014 23:17

Tgt Ion: 84 Resp: 3653

Ion	Ratio	Lower	Upper
84	100		
49	172.4	91.9	214.3

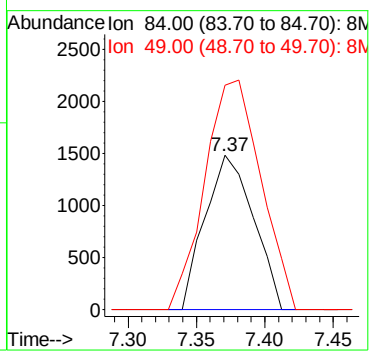

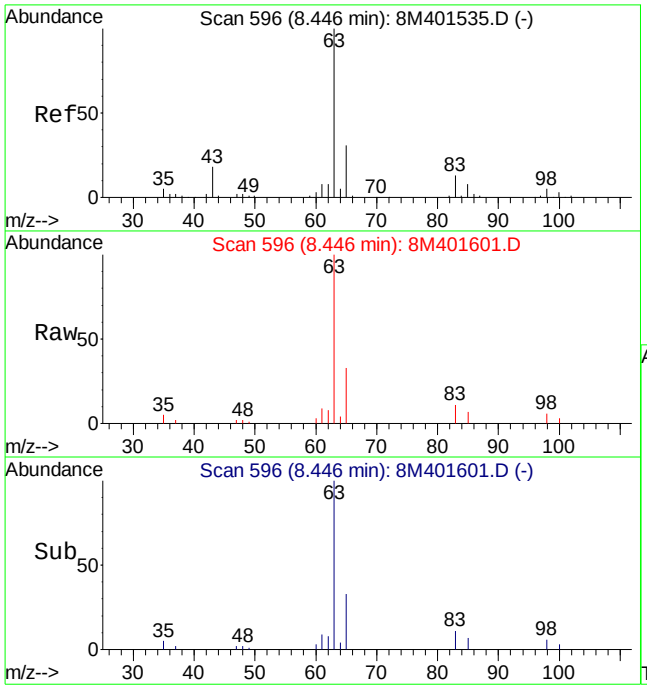

#27
1,1-Dichloroethane
Concen: 5.48 ug/L
RT: 8.45 min Scan# 596
Delta R.T. -0.00 min
Lab File: 8M401601.D
Acq: 8 Dec 2014 23:17

Tgt Ion: 63 Resp: 67086

Ion	Ratio	Lower	Upper
63	100		
65	32.6	18.3	42.7
83	12.4	7.0	16.4

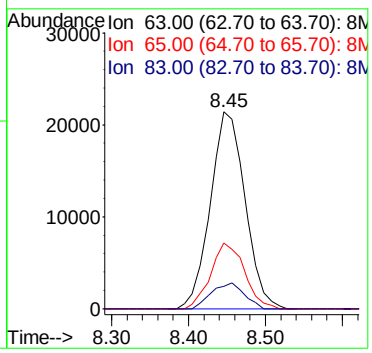

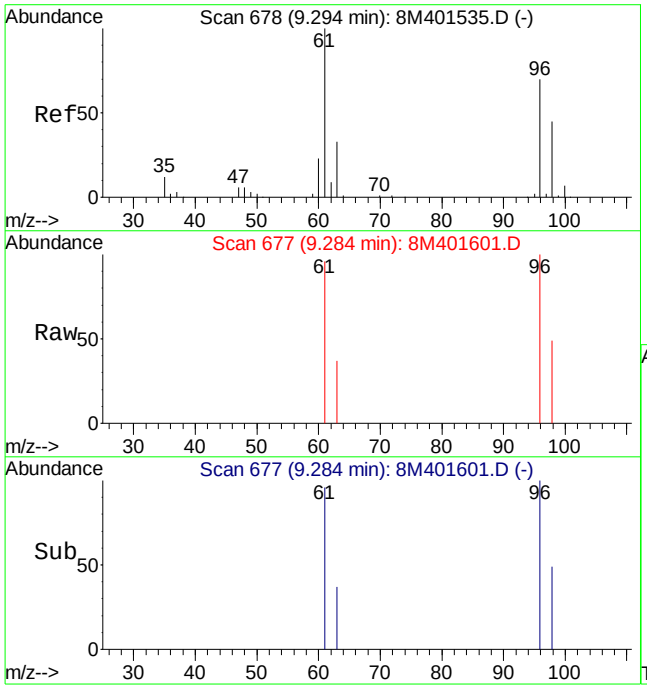

#32
cis-1,2-Dichloroethene
Concen: 0.30 ug/L
RT: 9.28 min Scan# 677
Delta R.T. -0.01 min
Lab File: 8M401601.D
Acq: 8 Dec 2014 23:17

Tgt Ion: 96 Resp: 2101

Ion	Ratio	Lower	Upper
96	100		
61	134.7	104.6	244.0

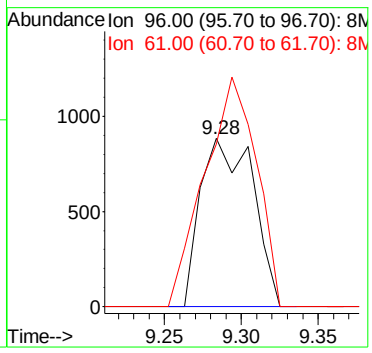

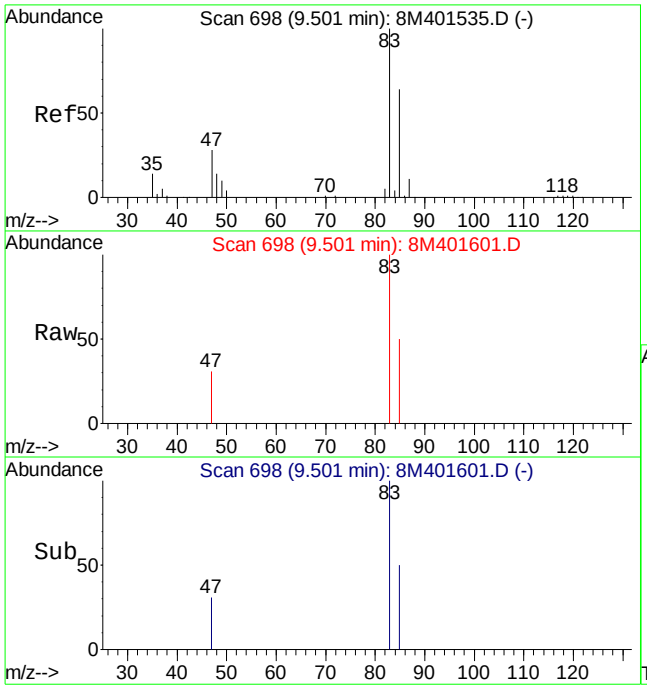

#33
Chloroform
Concen: 0.17 ug/L
RT: 9.50 min Scan# 698
Delta R.T. -0.00 min
Lab File: 8M401601.D
Acq: 8 Dec 2014 23:17

Tgt Ion: 83 Resp: 2061

Ion	Ratio	Lower	Upper
83	100		
85	51.6	38.8	90.4

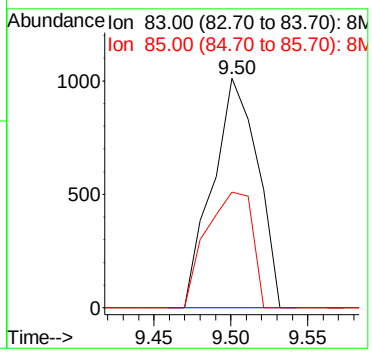

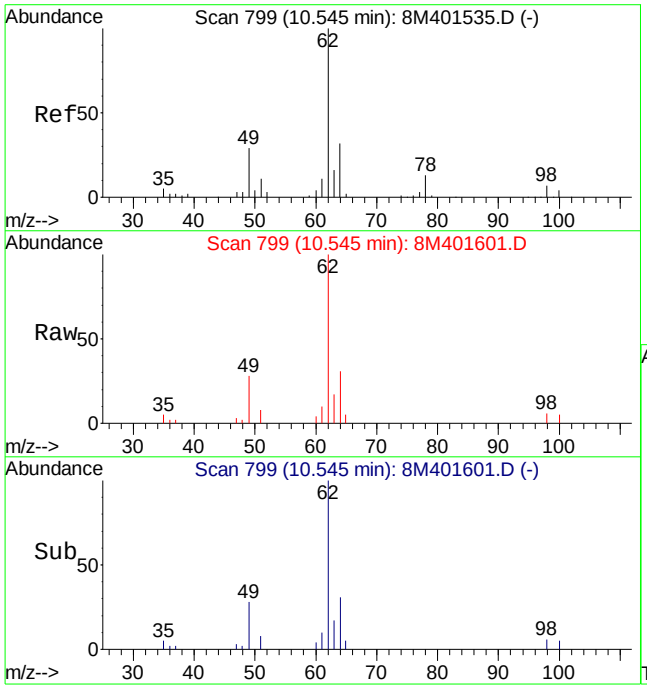

#45
1,2-Dichloroethane
Concen: 4.93 ug/L
RT: 10.54 min Scan# 799
Delta R.T. -0.00 min
Lab File: 8M401601.D
Acq: 8 Dec 2014 23:17

Tgt Ion: 62 Resp: 42501

Ion	Ratio	Lower	Upper
62	100		
64	31.8	18.7	43.7
49	27.5	21.7	50.7

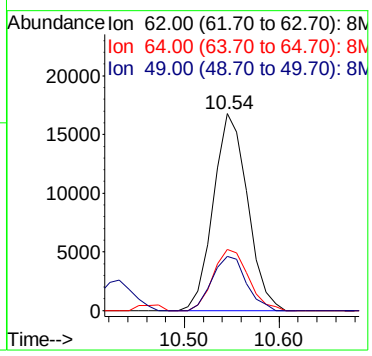

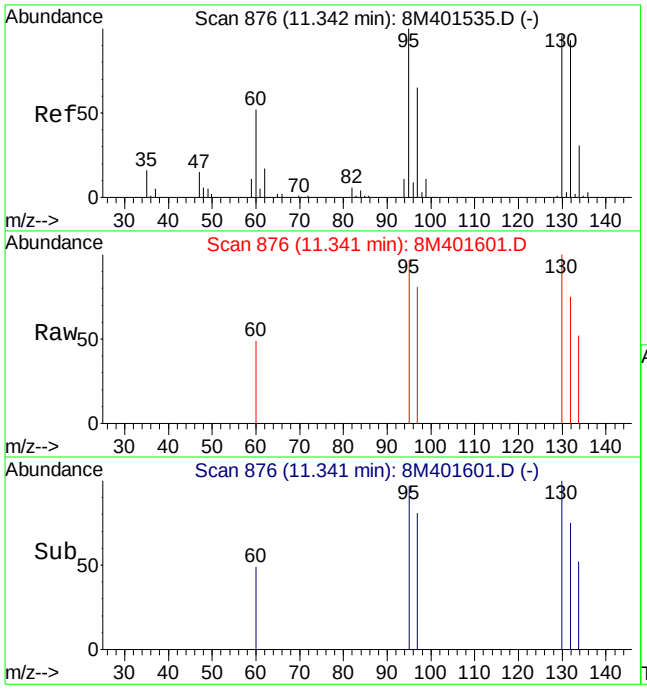

#47
Trichloroethene
Concen: 0.39 ug/L
RT: 11.34 min Scan# 876
Delta R.T. -0.00 min
Lab File: 8M401601.D
Acq: 8 Dec 2014 23:17

Tgt Ion:130 Resp: 2548

Ion	Ratio	Lower	Upper
130	100		
132	85.6	57.7	134.5
95	110.0	61.8	144.2

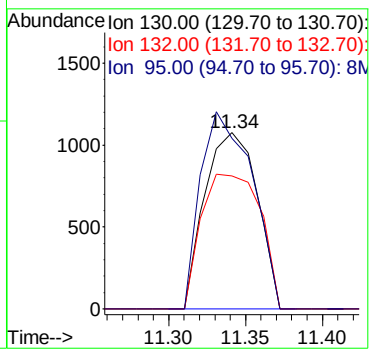

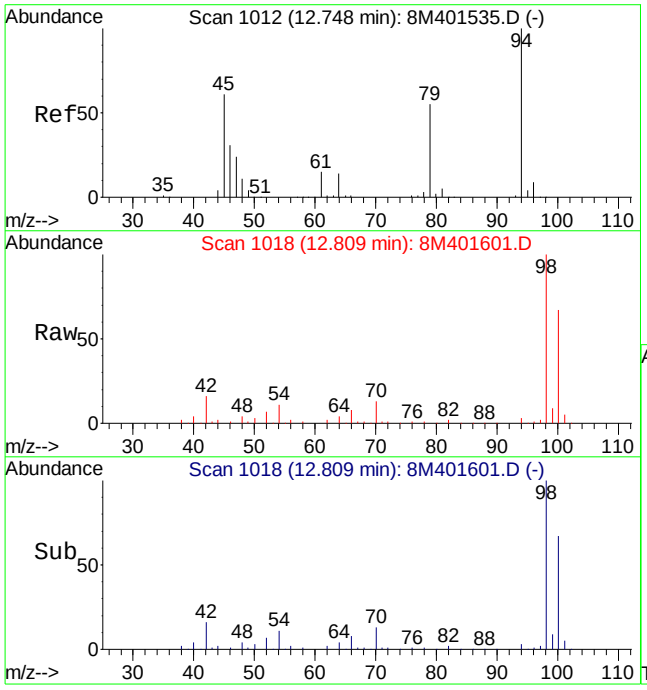

#56
Dimethyl Disulfide
Concen: 1.68 ug/L
RT: 12.81 min Scan# 1018
Delta R.T. 0.06 min
Lab File: 8M401601.D
Acq: 8 Dec 2014 23:17

Tgt Ion: 94 Resp: 15657

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.3	72.9#

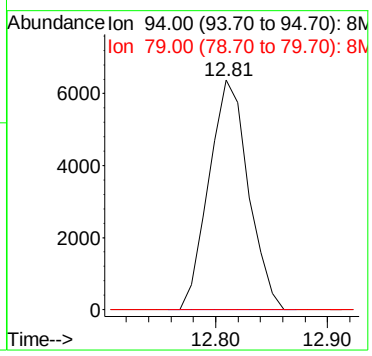

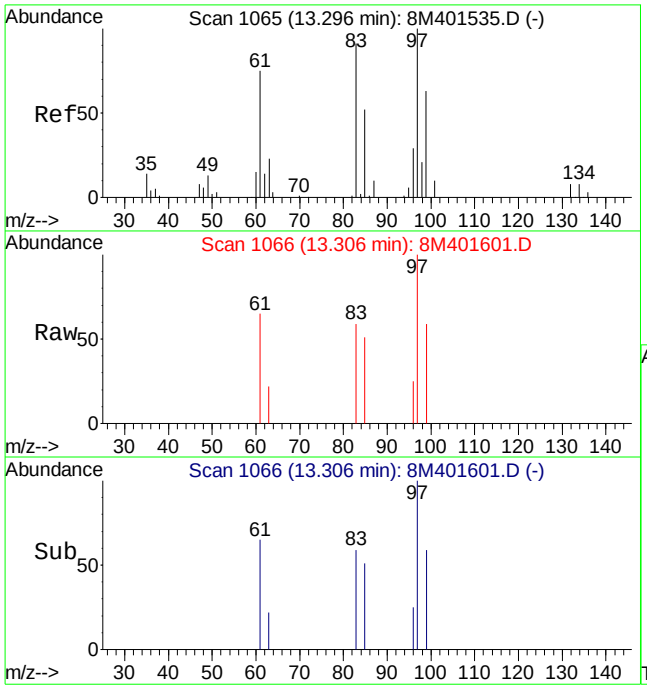

#63
1,1,2-Trichloroethane
Concen: 0.91 ug/L
RT: 13.31 min Scan# 1066
Delta R.T. -0.00 min
Lab File: 8M401601.D
Acq: 8 Dec 2014 23:17

Tgt Ion: 97 Resp: 3988

Ion	Ratio	Lower	Upper
97	100		
83	76.4	52.0	121.2

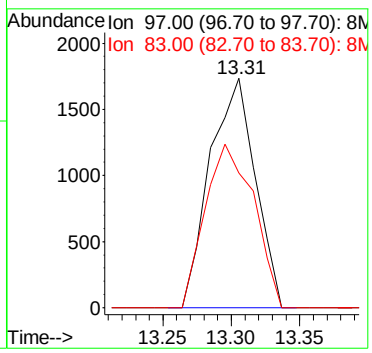

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401596.D Vial: 19
Acq On : 8 Dec 2014 20:53 Operator: TMB
Sample : L14120292-16 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 13:49:39 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	669342	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	500582	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	227102	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.79	111	144085	22.4847 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.92%		
43) 1,2-Dichloroethane-d4	10.43	65	155268	23.0444 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.16%		
58) Toluene-d8	12.81	98	536940	22.3846 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 89.52%		
80) p-Bromofluorobenzene	16.20	95	210503	23.7989 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.20%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.95	62	1251	0.1502 ug/L #	44
14) 1,1-Dichloroethene	6.59	61	106906	11.5641 ug/L	100
27) 1,1-Dichloroethane	8.45	63	49148	3.9257 ug/L	99
45) 1,2-Dichloroethane	10.54	62	1796	0.2038 ug/L #	51
51) 1,4-Dioxane	11.83	88	796	29.0245 ug/L	94
56) Dimethyl Disulfide	12.81	94	14767	1.5521 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M401596.D 8260WTR.M Tue Dec 09 13:49:40 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401596.D Vial: 19
Acq On : 8 Dec 2014 20:53 Operator: TMB
Sample : L14120292-16 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 13:49 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

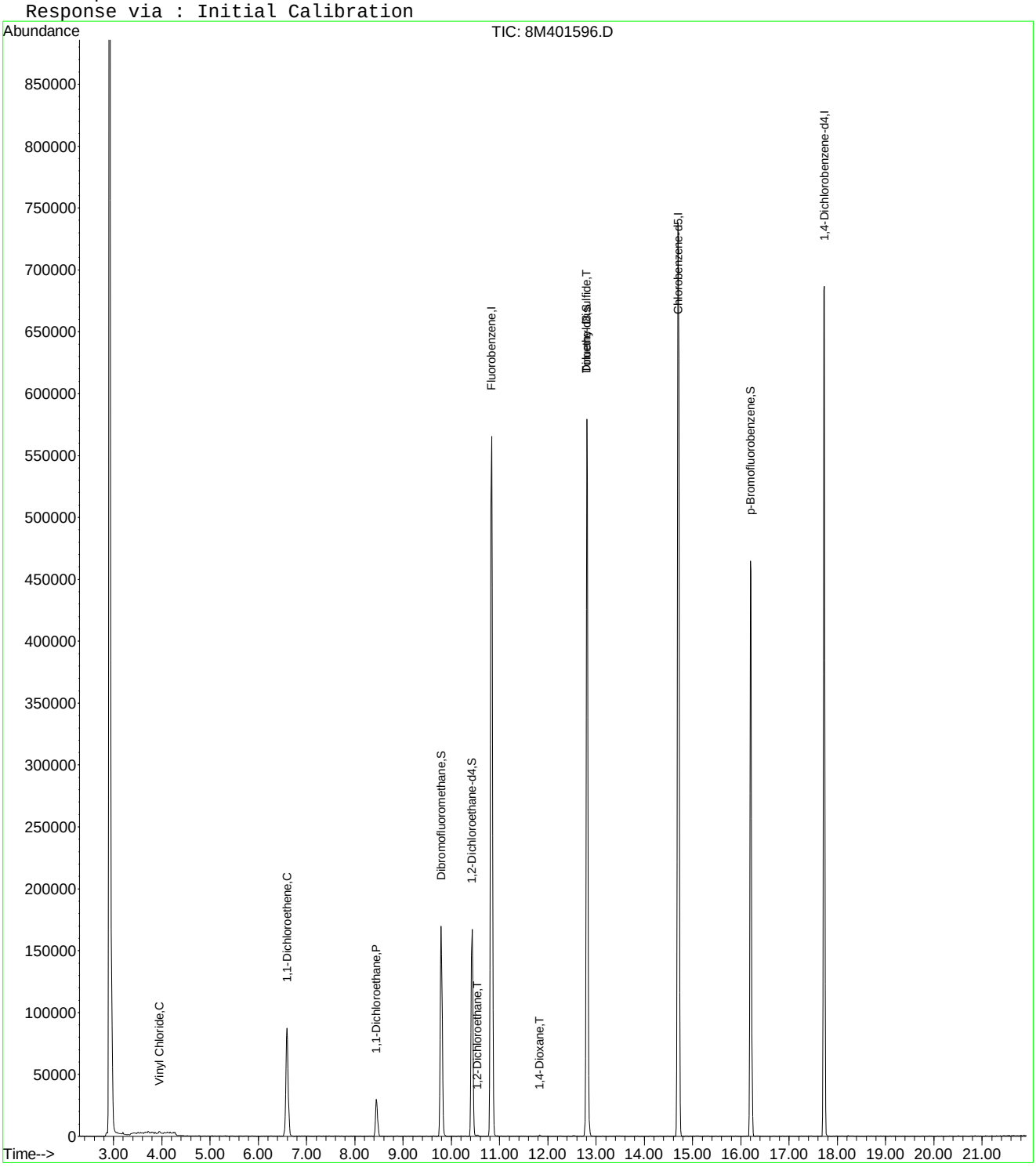

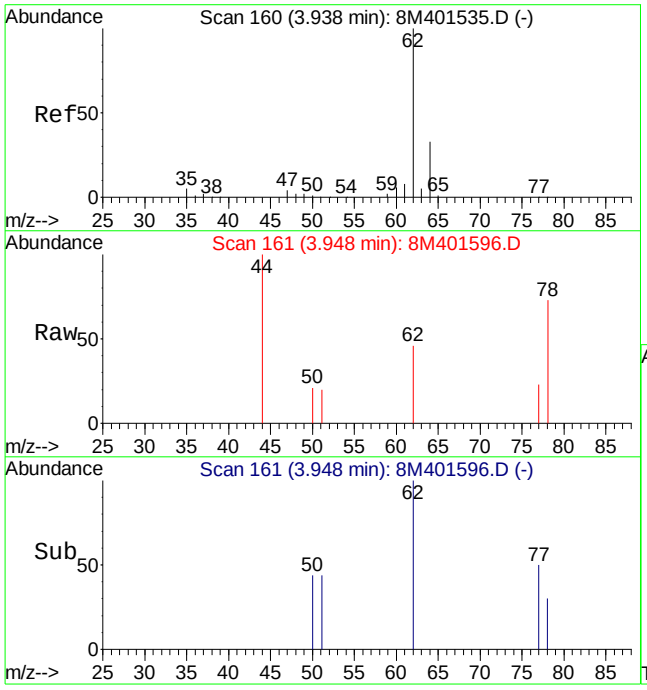

#4
Vinyl Chloride
Concen: 0.15 ug/L
RT: 3.95 min Scan# 161
Delta R.T. 0.01 min
Lab File: 8M401596.D
Acq: 8 Dec 2014 20:53

Tgt Ion: 62 Resp: 1251

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.2	42.6#

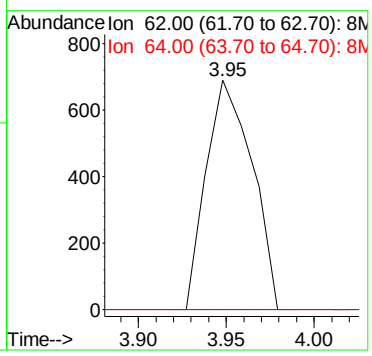

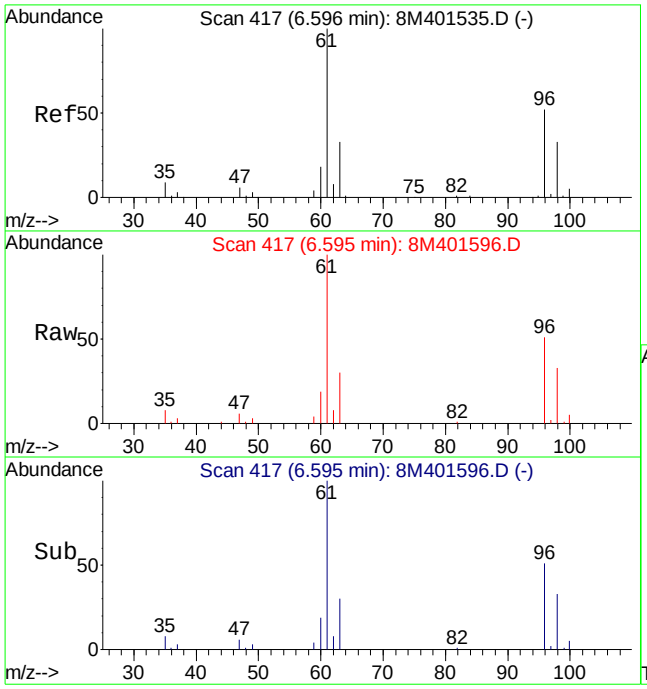

#14
1,1-Dichloroethene
Concen: 11.56 ug/L
RT: 6.59 min Scan# 417
Delta R.T. 0.01 min
Lab File: 8M401596.D
Acq: 8 Dec 2014 20:53

Tgt Ion: 61 Resp: 106906

Ion	Ratio	Lower	Upper
61	100		
96	51.7	30.8	72.0

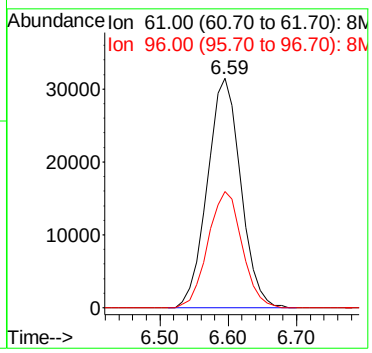

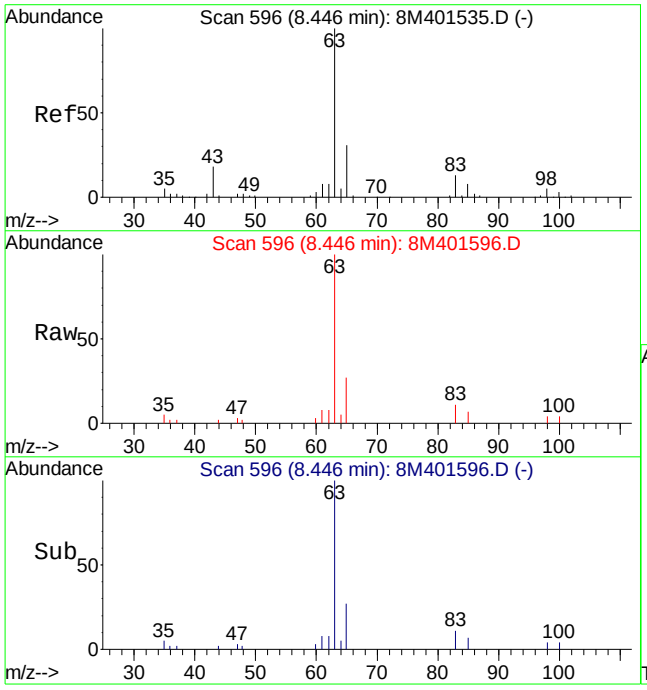

#27
1,1-Dichloroethane
Concen: 3.93 ug/L
RT: 8.45 min Scan# 596
Delta R.T. -0.00 min
Lab File: 8M401596.D
Acq: 8 Dec 2014 20:53

Tgt Ion: 63 Resp: 49148

Ion	Ratio	Lower	Upper
63	100		
65	30.0	18.3	42.7
83	10.8	7.0	16.4

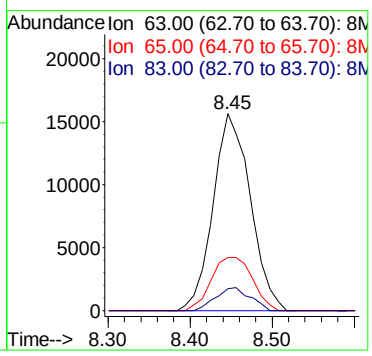

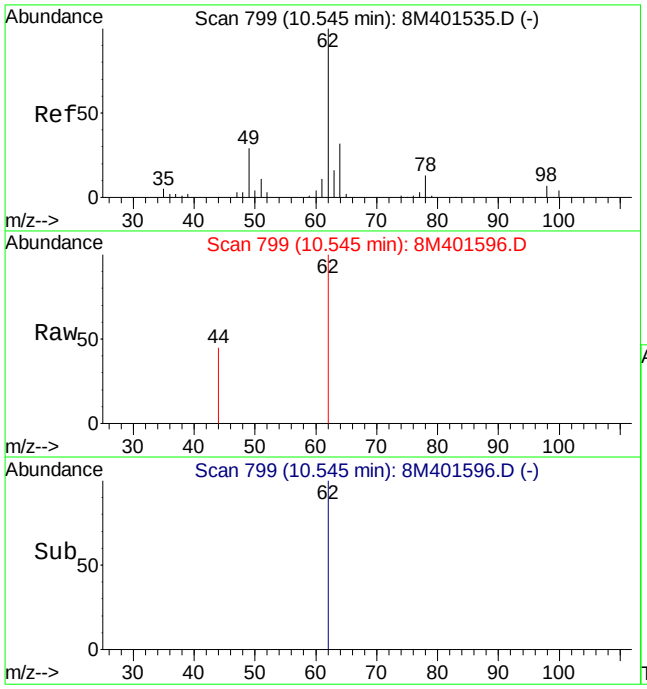

#45
1,2-Dichloroethane
Concen: 0.20 ug/L
RT: 10.54 min Scan# 799
Delta R.T. -0.00 min
Lab File: 8M401596.D
Acq: 8 Dec 2014 20:53

Tgt Ion: 62 Resp: 1796

Ion	Ratio	Lower	Upper
62	100		
64	11.6	18.7	43.7#
49	0.0	21.7	50.7#

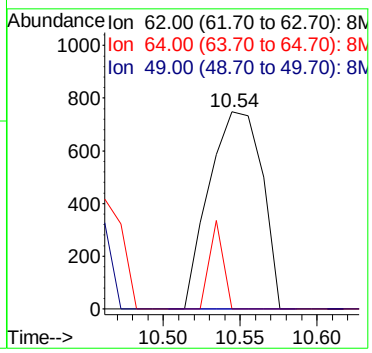

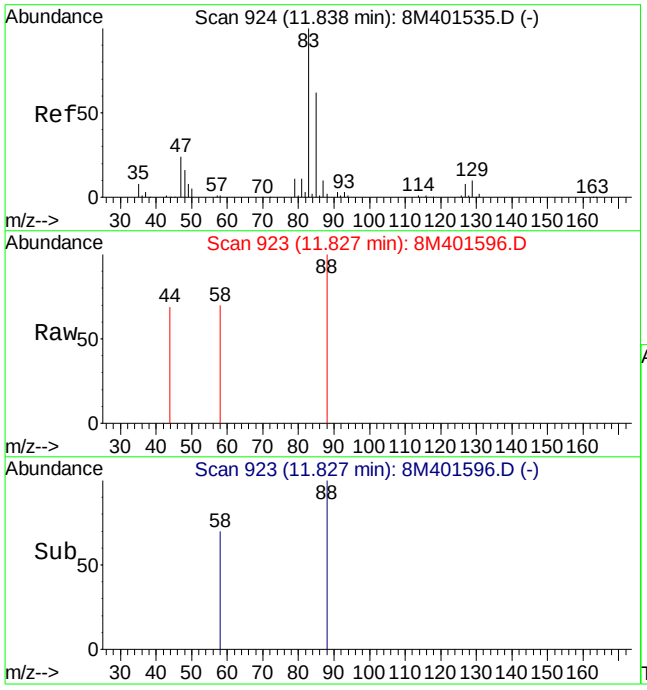

#51
1,4-Dioxane
Concen: 29.02 ug/L
RT: 11.83 min Scan# 923
Delta R.T. -0.01 min
Lab File: 8M401596.D
Acq: 8 Dec 2014 20:53

Tgt Ion: 88 Resp: 796

Ion	Ratio	Lower	Upper
88	100		
58	81.8	45.8	107.0

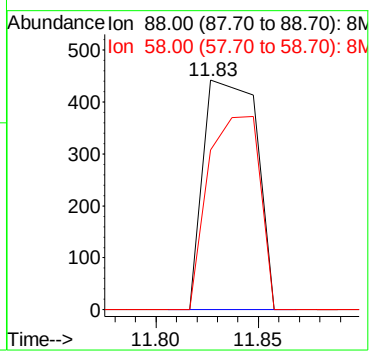

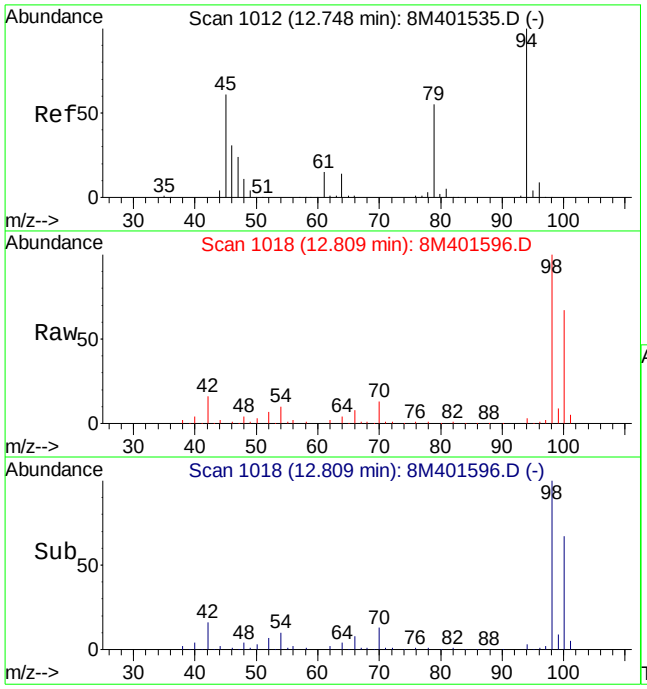

#56
Dimethyl Disulfide
Concen: 1.55 ug/L
RT: 12.81 min Scan# 1018
Delta R.T. 0.06 min
Lab File: 8M401596.D
Acq: 8 Dec 2014 20:53

Tgt Ion: 94 Resp: 14767

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.3	72.9#

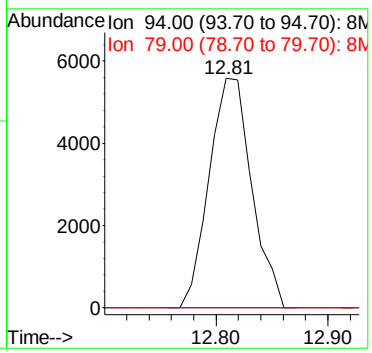

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401586.D Vial: 9
Acq On : 8 Dec 2014 16:02 Operator: TMB
Sample : L14120292-17 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 13:49:27 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	750350	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	552830	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	260192	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	160043	22.2786 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.12%		
43) 1,2-Dichloroethane-d4	10.43	65	177665	23.5218 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.08%		
58) Toluene-d8	12.81	98	600587	22.6716 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 90.68%		
80) p-Bromofluorobenzene	16.20	95	238187	23.5041 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.00%		

Target Compounds					Qvalue
56) Dimethyl Disulfide	12.81	94	16584	1.5549 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M401586.D 8260WTR.M Tue Dec 09 13:49:27 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401586.D Vial: 9
Acq On : 8 Dec 2014 16:02 Operator: TMB
Sample : L14120292-17 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 13:49 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

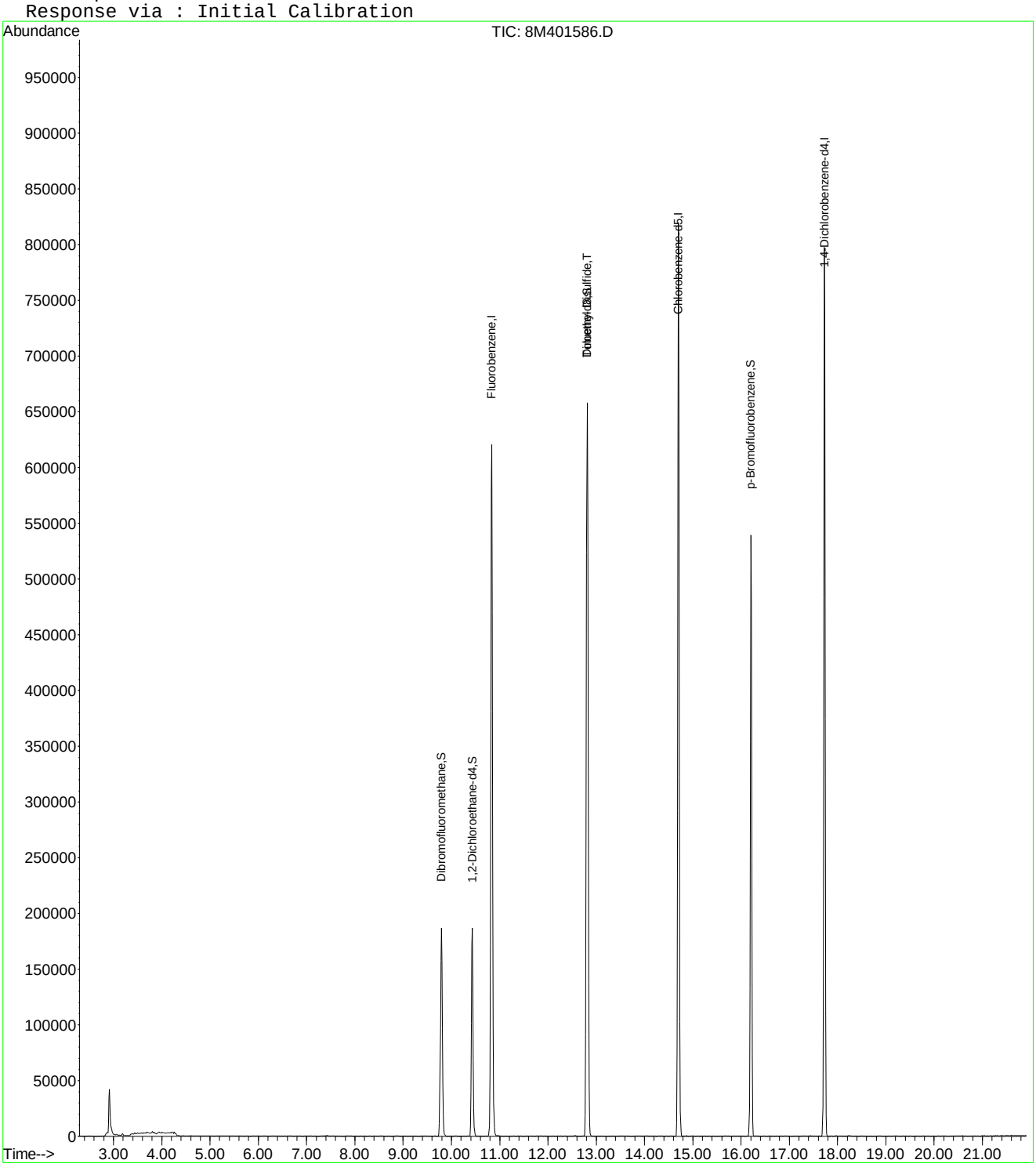

8M401586.D 8260WTR.M Tue Dec 09 13:49:27 2014 Page 2

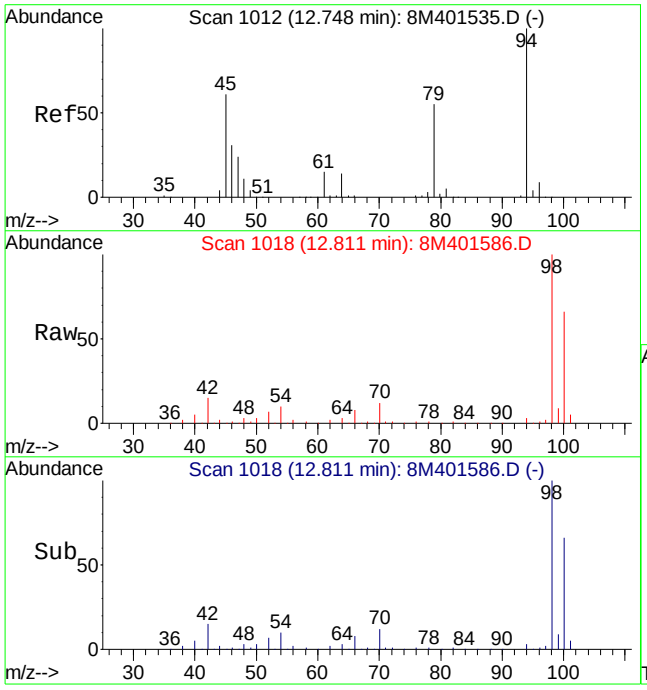

#56
Dimethyl Disulfide
Concen: 1.55 ug/L
RT: 12.81 min Scan# 1018
Delta R.T. 0.06 min
Lab File: 8M401586.D
Acq: 8 Dec 2014 16:02

Tgt Ion: 94 Resp: 16584

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.3	72.9#

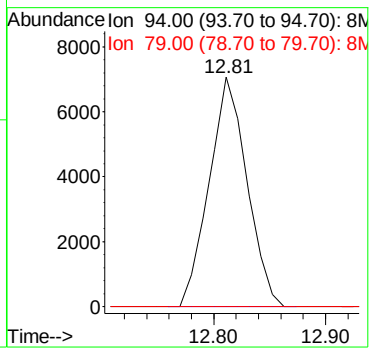

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:40 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	619208	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	544510	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	254129	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1884	4.8234 ug/L #	23
3) 3-Chloro-1-propene	7.26	41	51461	4.9911 ug/L	88
4) 2-Chloro-1,3-butadiene	8.64	53	57885	4.7445 ug/L	89
5) Ethyl Acetate	9.28	43	12831	4.1474 ug/L	98
6) Methacrylonitrile	9.44	67	7738	4.2085 ug/L #	61
7) Isobutyl Alcohol	9.28	43	12831	104.0280 ug/L #	12
9) Methyl methacrylate	11.60	41	14247	4.0960 ug/L	83
10) 2-Nitropropane	11.94	43	3986	3.8294 ug/L	98
13) Cyclohexanone	16.03	55	1559	3.8882 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M400358.D A9FOOWTR.M Fri Oct 03 12:32:40 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

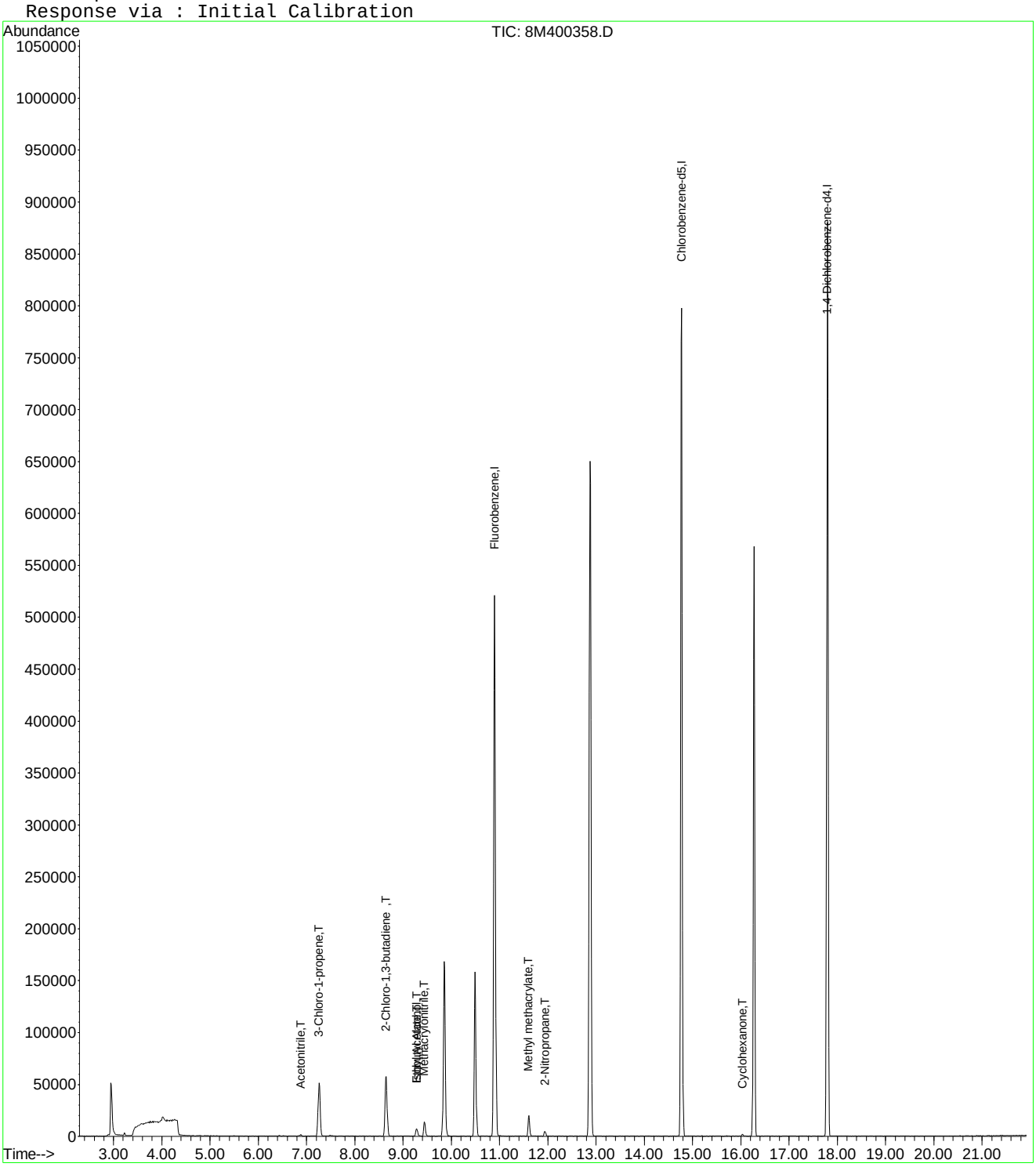

8M400358.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:41 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590707	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	530005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	246254	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	7263	19.4920 ug/L	97
3) 3-Chloro-1-propene	7.26	41	190581	19.3757 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	226534	19.4636 ug/L	90
5) Ethyl Acetate	9.28	43	54503	18.4670 ug/L	94
6) Methacrylonitrile	9.44	67	30898	17.6155 ug/L #	65
7) Isobutyl Alcohol	9.45	43	3143	26.7115 ug/L #	95
9) Methyl methacrylate	11.61	41	58234	17.5500 ug/L	72
10) 2-Nitropropane	11.94	43	16687	16.8050 ug/L	98
13) Cyclohexanone	16.03	55	7124	18.3357 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400359.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

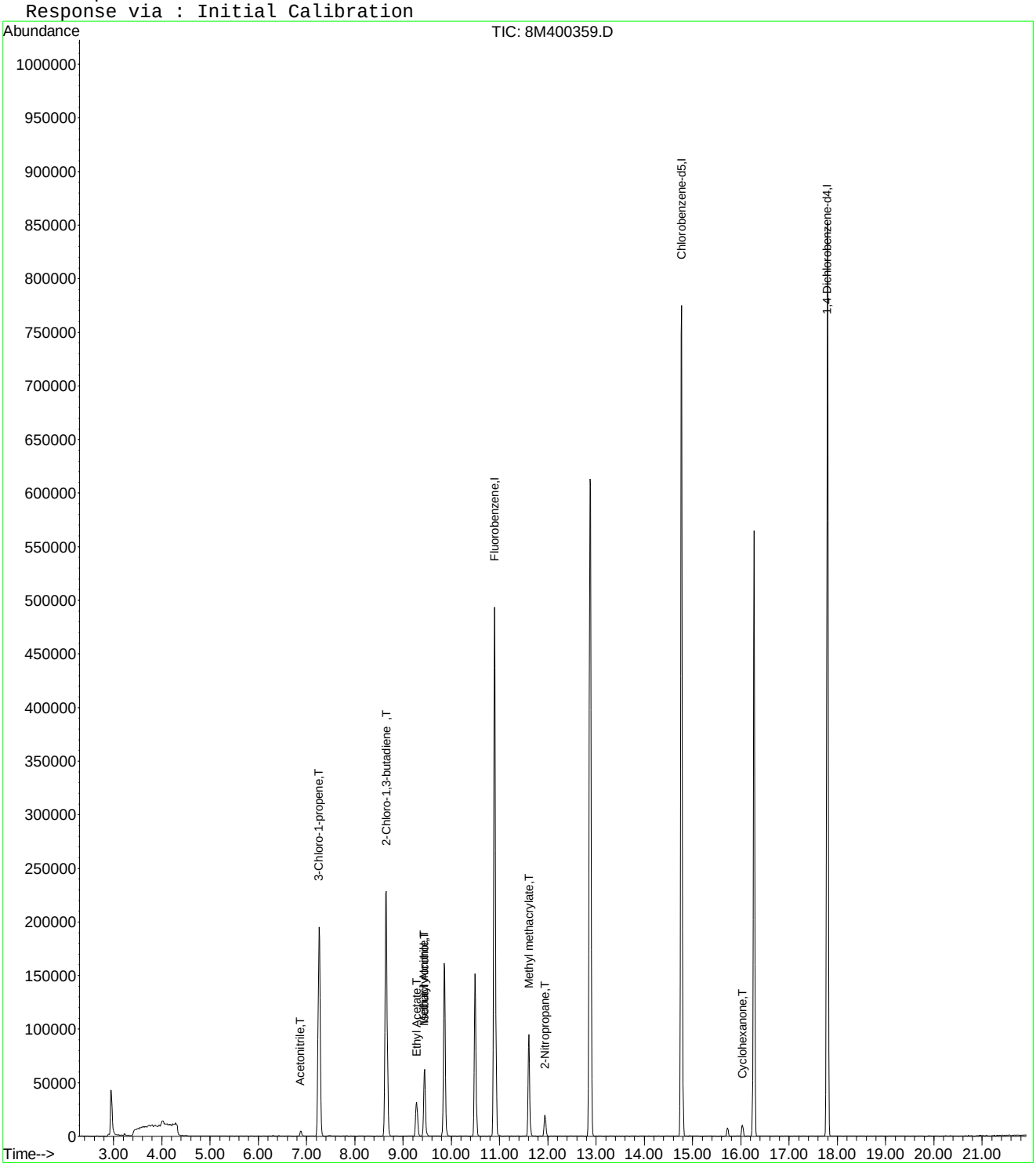

8M400359.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:42 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590667	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	524443	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	249595	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	17698	47.5001 ug/L	100
3) 3-Chloro-1-propene	7.26	41	491365	49.9588 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	586258	50.3743 ug/L	90
5) Ethyl Acetate	9.27	43	145862	49.4250 ug/L	93
6) Methacrylonitrile	9.44	67	84924	48.4200 ug/L #	62
7) Isobutyl Alcohol	9.46	43	9563	81.2789 ug/L #	95
8) 1-Butanol	10.38	56	1895	48.4971 ug/L	87
9) Methyl methacrylate	11.61	41	161451	48.6599 ug/L	75
10) 2-Nitropropane	11.94	43	45766	46.0929 ug/L	98
13) Cyclohexanone	16.04	55	19698	50.0200 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

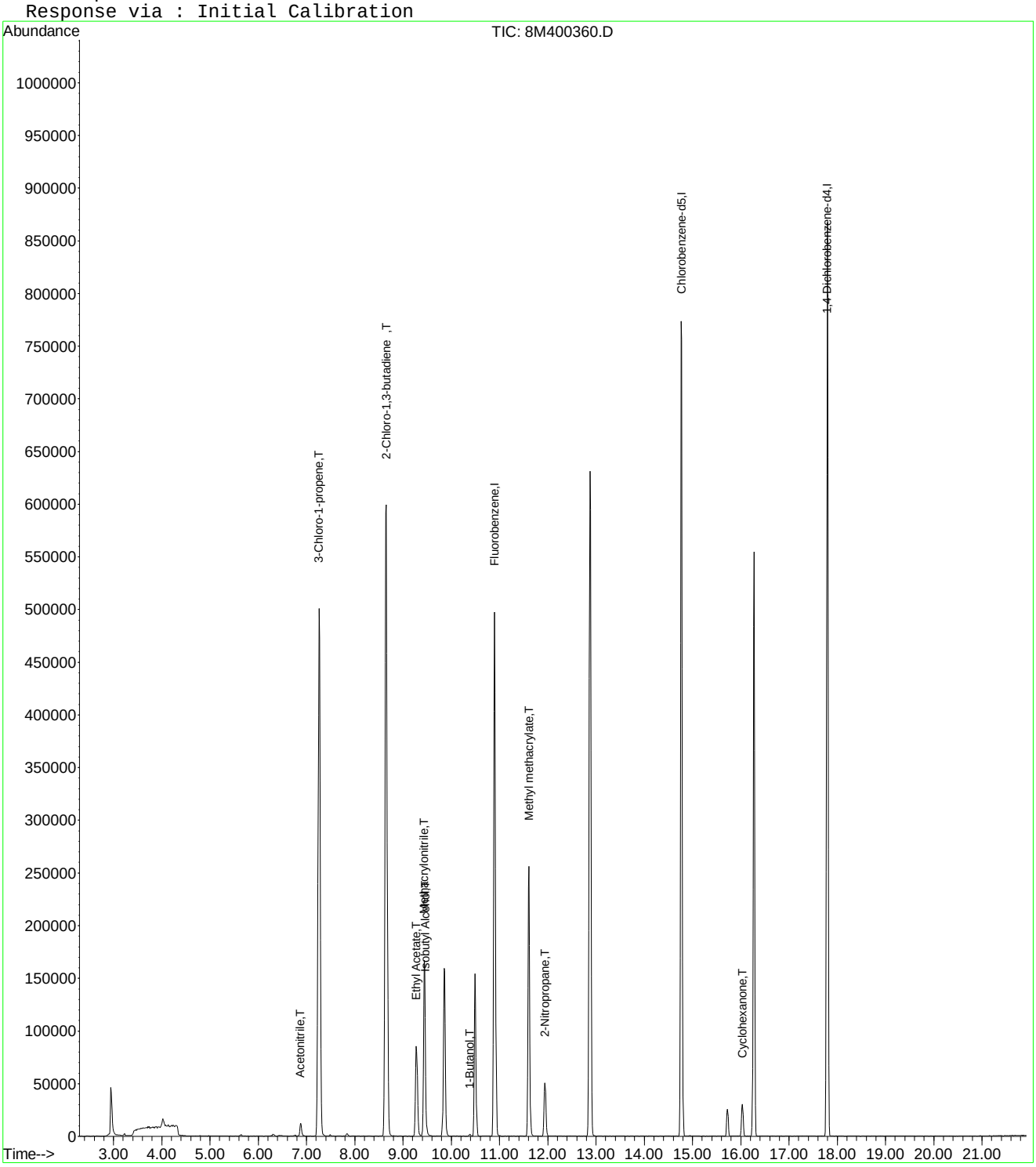

8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	595542	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	525736	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	251203	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	38265	101.8596 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1042545	105.1315 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	1239135	105.6013 ug/L	88
5) Ethyl Acetate	9.27	43	315872	106.1564 ug/L	93
6) Methacrylonitrile	9.44	67	182857	103.4038 ug/L #	63
7) Isobutyl Alcohol	9.45	43	23247	195.9661 ug/L #	92
8) 1-Butanol	10.38	56	5482	96.3312 ug/L	88
9) Methyl methacrylate	11.61	41	351287	105.0082 ug/L	73
10) 2-Nitropropane	11.94	43	103249	103.1352 ug/L	99
13) Cyclohexanone	16.04	55	43523	109.8125 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

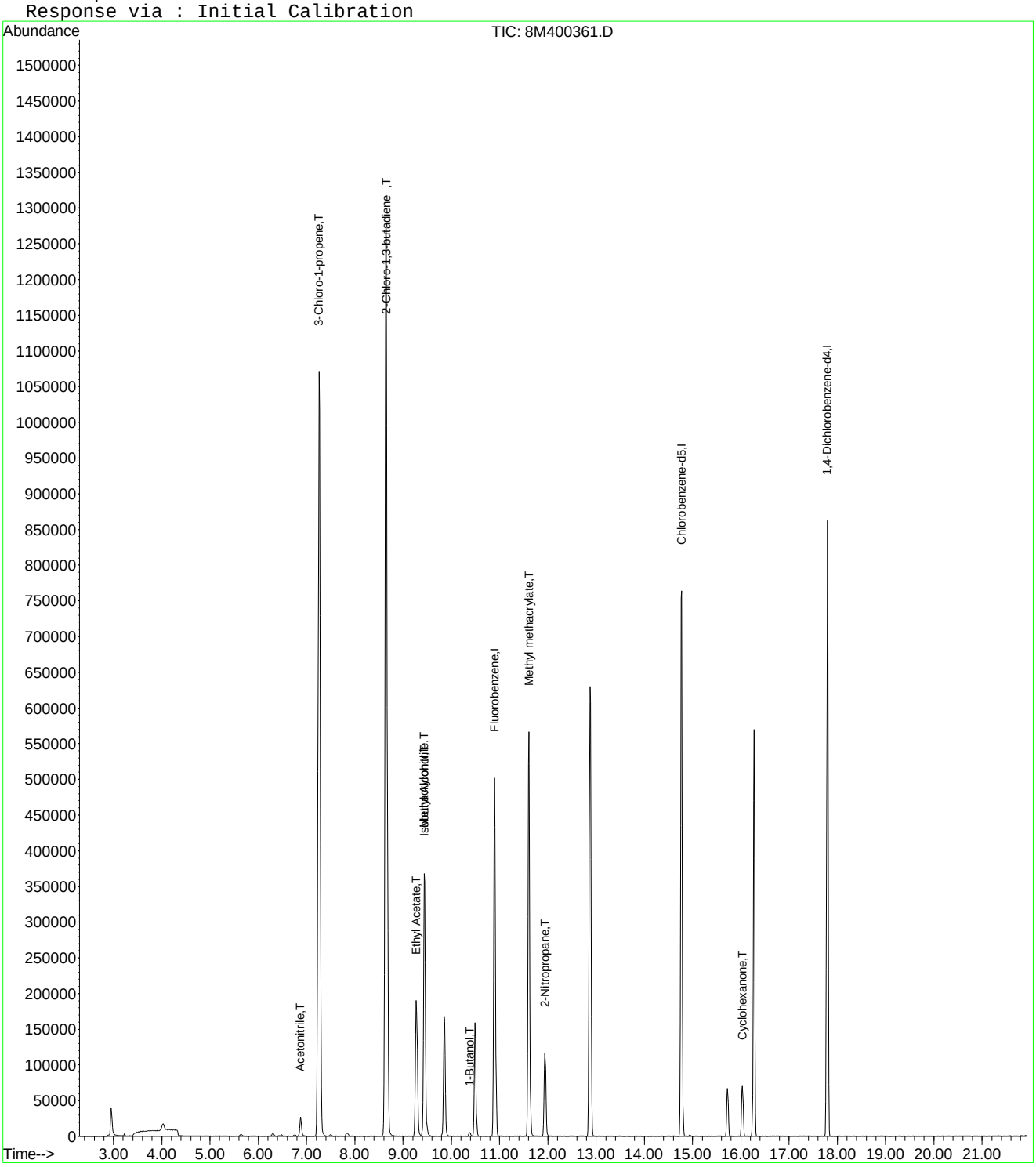

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	605985	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	543073	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	256990	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	81322	212.7447 ug/L	93
3) 3-Chloro-1-propene	7.26	41	2105378	208.6501 ug/L	89
4) 2-Chloro-1,3-butadiene	8.65	53	2530154	211.9083 ug/L	84
5) Ethyl Acetate	9.28	43	654842	216.2828 ug/L	92
6) Methacrylonitrile	9.44	67	386897	215.0159 ug/L #	62
7) Isobutyl Alcohol	9.44	43	51188	424.0654 ug/L	97
8) 1-Butanol	10.37	56	13189	196.5131 ug/L	88
9) Methyl methacrylate	11.60	41	747593	219.6225 ug/L	71
10) 2-Nitropropane	11.94	43	227212	223.0503 ug/L	99
13) Cyclohexanone	16.03	55	76140	187.7821 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400362.D A9FOOWTR.M Fri Oct 03 12:32:44 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

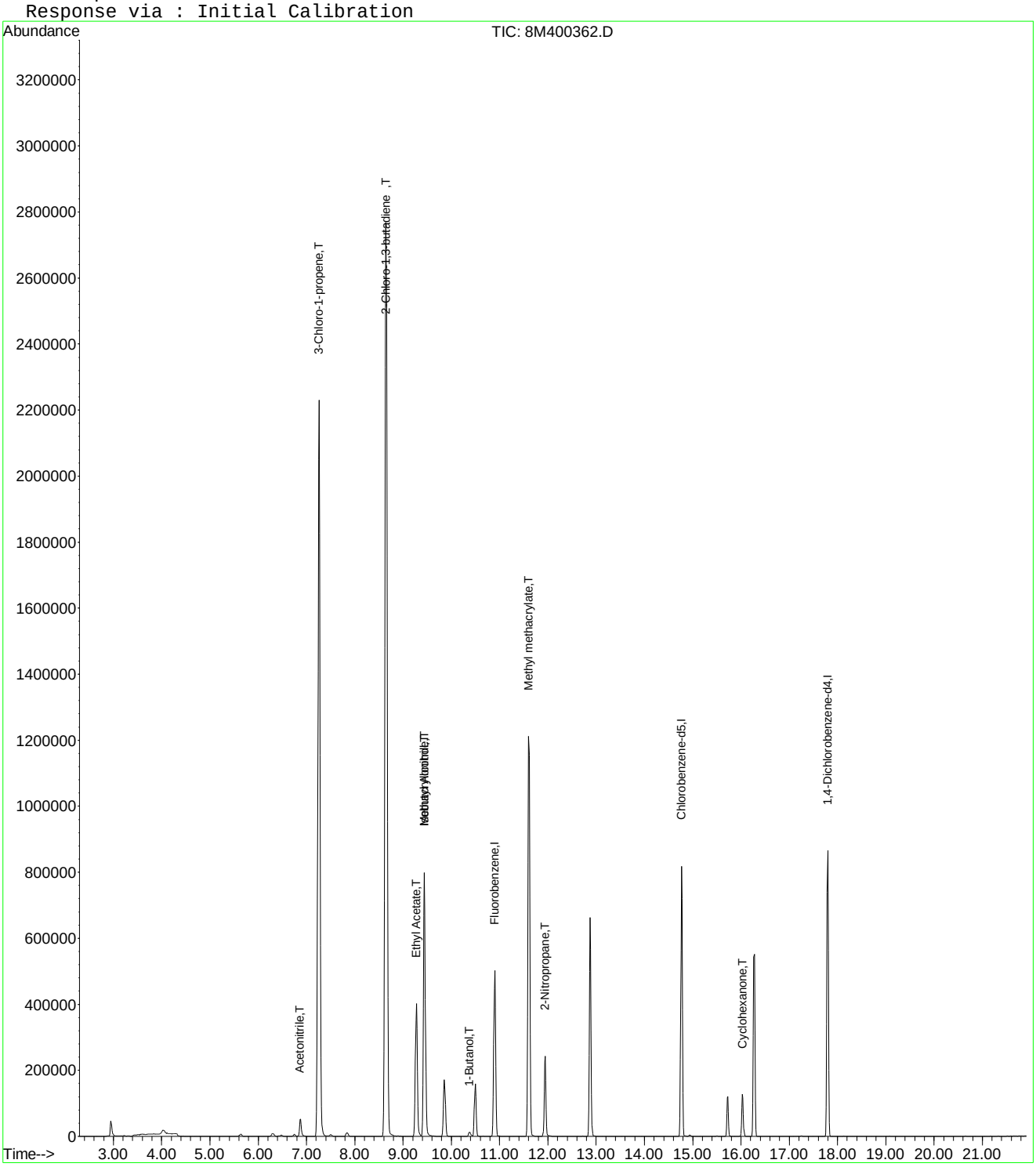

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:45 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	617316	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	555877	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	259867	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	120718	310.0110 ug/L	94
3) 3-Chloro-1-propene	7.26	41	3133181	304.8093 ug/L	86
4) 2-Chloro-1,3-butadiene	8.64	53	3764580	309.5080 ug/L	79
5) Ethyl Acetate	9.27	43	984728	319.2685 ug/L	92
6) Methacrylonitrile	9.44	67	589378	321.5315 ug/L #	62
7) Isobutyl Alcohol	9.45	43	76604	622.9747 ug/L	98
8) 1-Butanol	10.37	56	23186	322.5015 ug/L	89
9) Methyl methacrylate	11.61	41	1120843	323.2293 ug/L	70
10) 2-Nitropropane	11.94	43	340074	327.7172 ug/L	99
13) Cyclohexanone	16.03	55	133635	325.9318 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400363.D A9FOOWTR.M Fri Oct 03 12:32:45 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

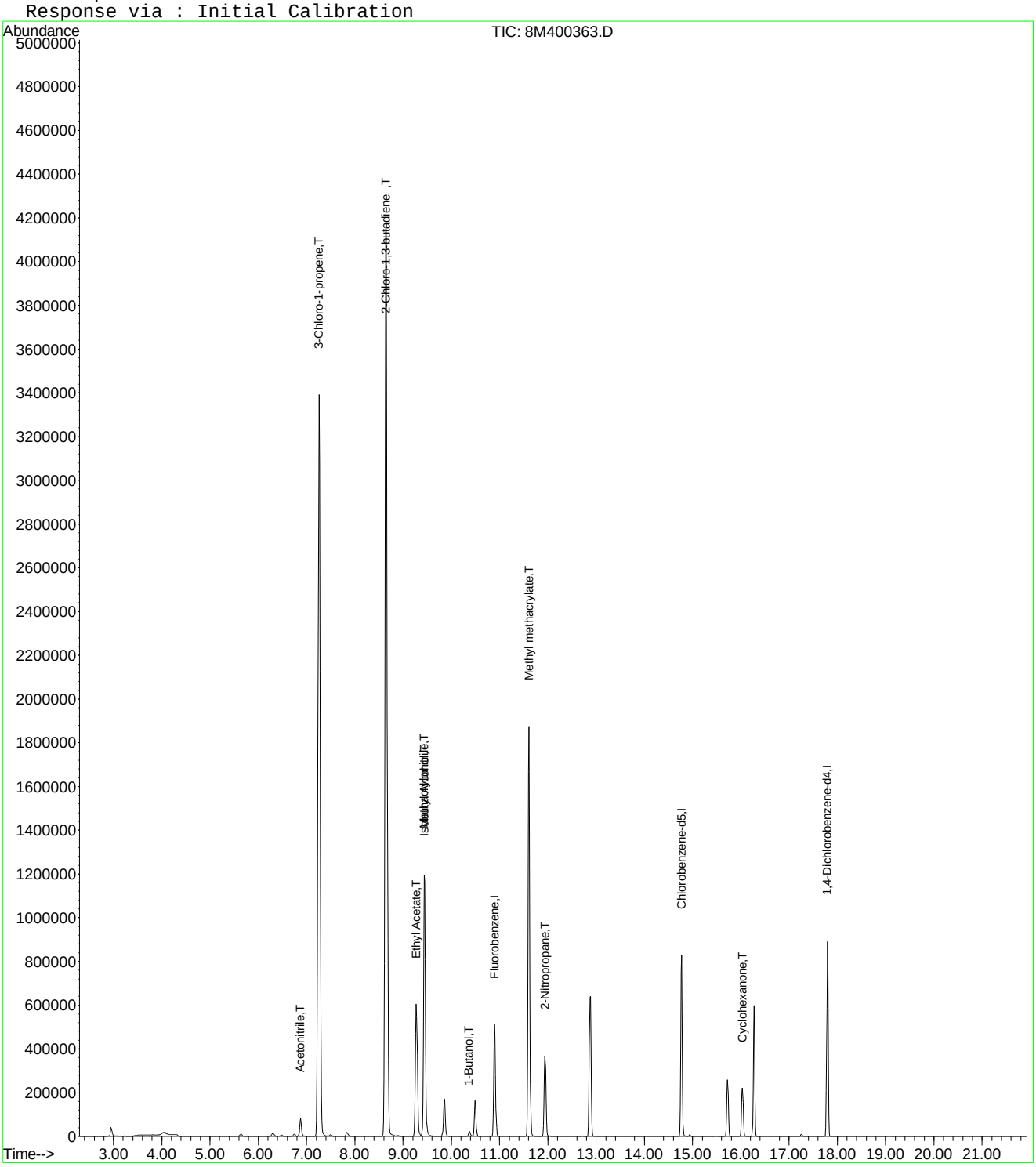

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:46 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	618926	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	559909	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	262346	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	151708	388.5818 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4028272	390.8682 ug/L	83
4) 2-Chloro-1,3-butadiene	8.65	53	4802050	393.7774 ug/L	74
5) Ethyl Acetate	9.28	43	1250397	404.3491 ug/L	91
6) Methacrylonitrile	9.44	67	762998	415.1660 ug/L #	61
7) Isobutyl Alcohol	9.45	43	102436	830.8840 ug/L #	97
8) 1-Butanol	10.37	56	28243	386.8957 ug/L	89
9) Methyl methacrylate	11.60	41	1436773	413.2595 ug/L	68
10) 2-Nitropropane	11.94	43	451706	434.1607 ug/L	98
13) Cyclohexanone	16.03	55	150327	363.1785 ug/L	84

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

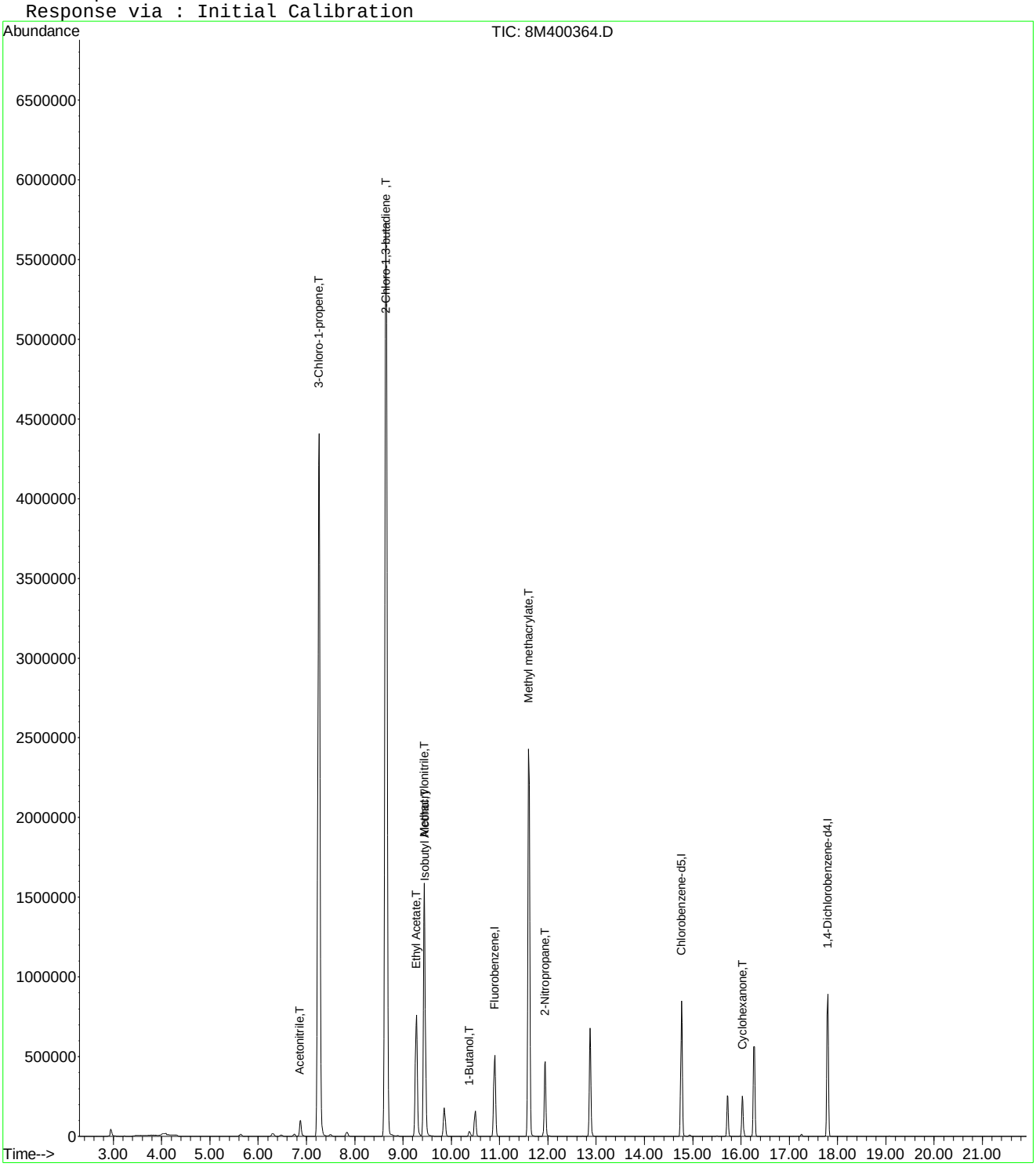

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:47 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	611679	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	574048	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	266141	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	197468	511.7830 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4817953	473.0307 ug/L	79
4) 2-Chloro-1,3-butadiene	8.64	53	5656851	469.3686 ug/L	68
5) Ethyl Acetate	9.27	43	1590123	520.3008 ug/L	90
6) Methacrylonitrile	9.44	67	990168	545.1581 ug/L #	61
7) Isobutyl Alcohol	9.45	43	130410	1070.3205 ug/L	98
8) 1-Butanol	10.38	56	36529	499.2614 ug/L	87
9) Methyl methacrylate	11.61	41	1840524	535.6626 ug/L	68
10) 2-Nitropropane	11.94	43	590003	573.8046 ug/L	98
13) Cyclohexanone	16.04	55	203273	484.0894 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M400365.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

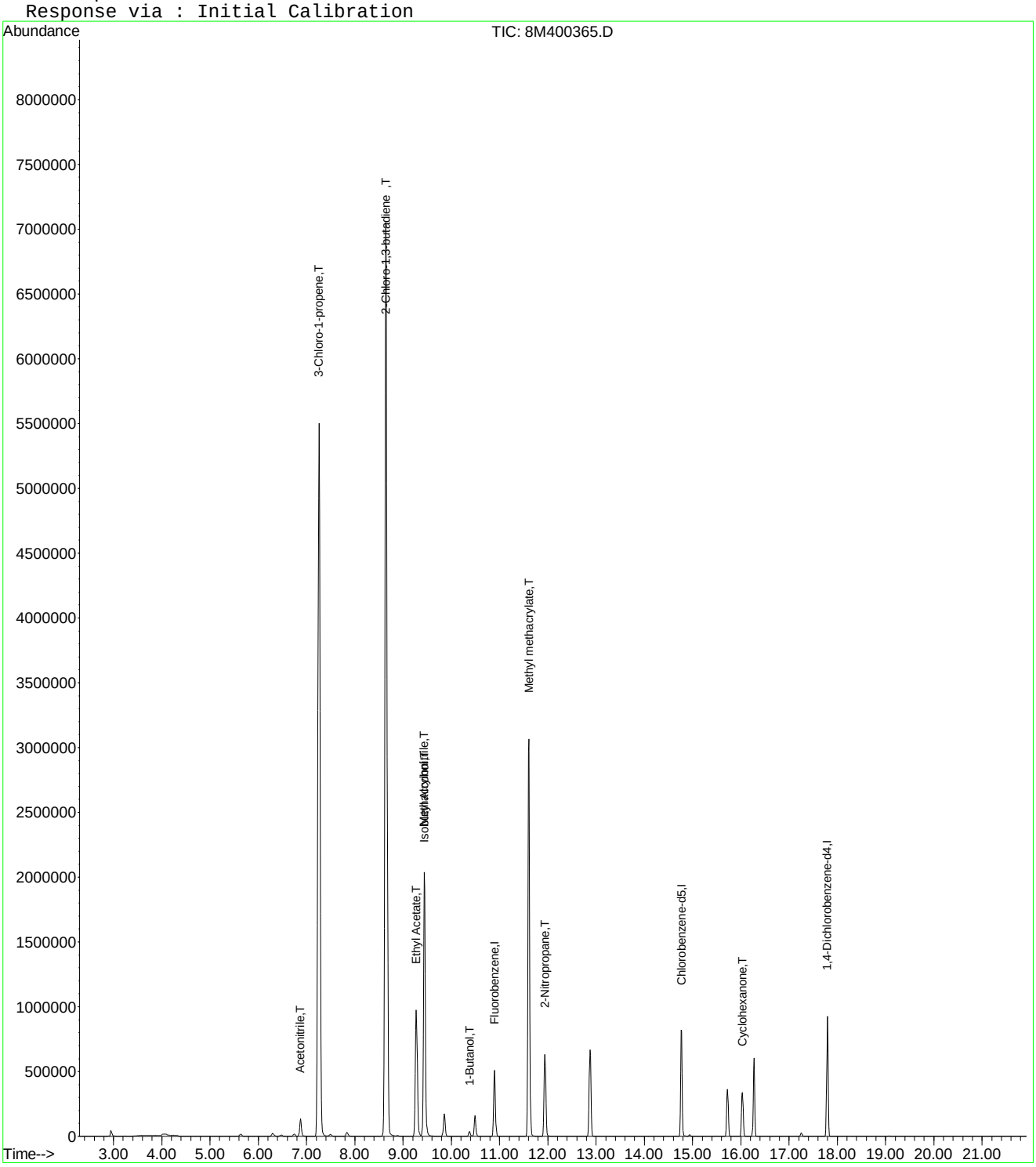

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:48 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	548066	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	508831	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	240116	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	36847	106.5815 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1001386	109.7284 ug/L	90
4) 2-Chloro-1,3-butadiene	8.64	53	982184	90.9542 ug/L	89
5) Ethyl Acetate	9.27	43	328991	120.1430 ug/L	94
6) Methacrylonitrile	9.44	67	174278	107.0895 ug/L #	64
7) Isobutyl Alcohol	9.45	43	21185	194.0538 ug/L	99
8) 1-Butanol	10.39	56	5303	100.0865 ug/L	77
9) Methyl methacrylate	11.61	41	317777	103.2198 ug/L	73
10) 2-Nitropropane	11.94	43	95761	103.9416 ug/L	99
13) Cyclohexanone	16.03	55	11614	30.6562 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

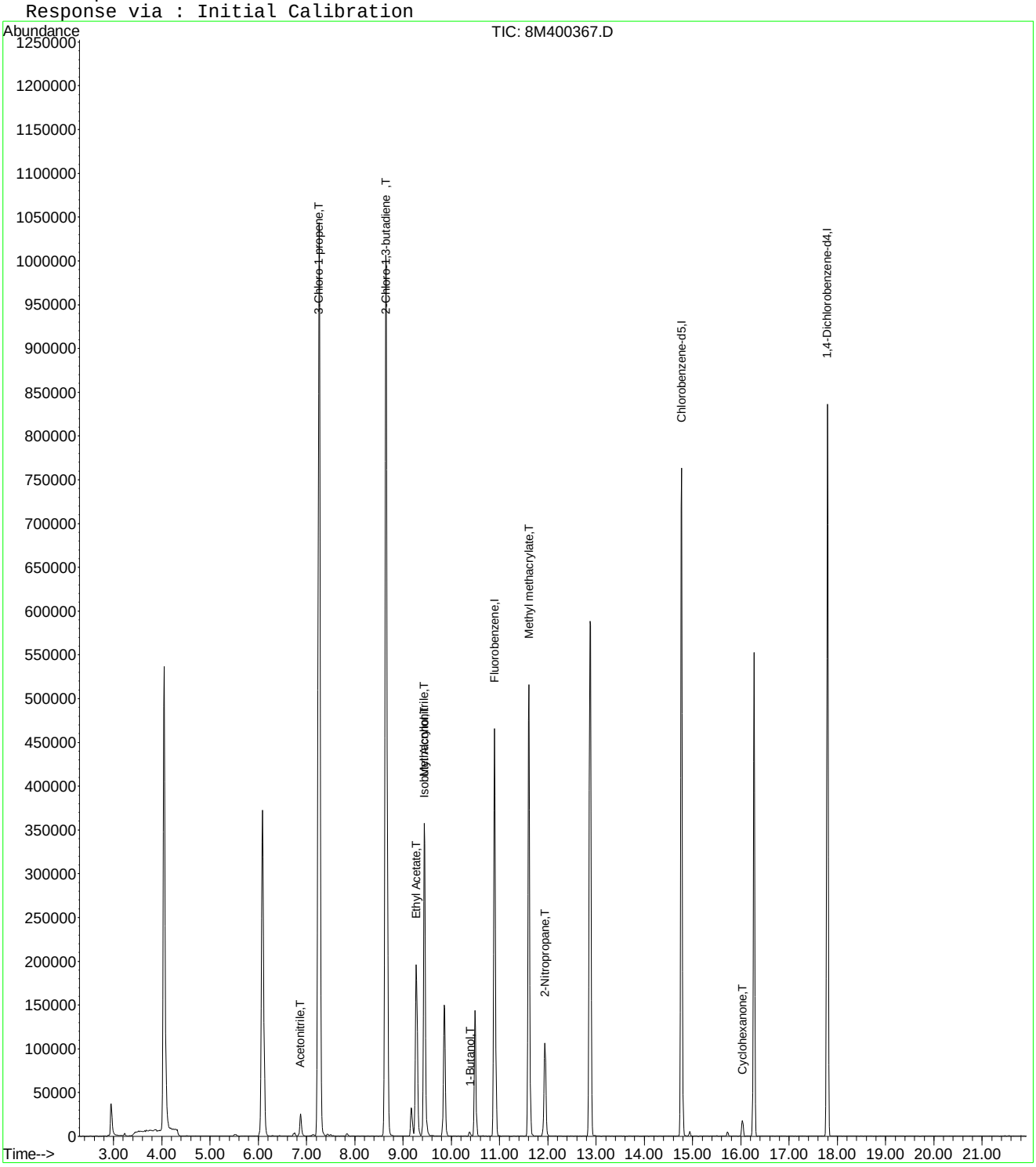

8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	-0.03
2	T	Acetonitrile	100.0000	106.5815	-6.6	96	-0.02
3	T	3-Chloro-1-propene	100.0000	109.7284	-9.7	96	-0.03
4	T	2-Chloro-1,3-butadiene	100.0000	90.9542	9.0	79	-0.03
5	T	Ethyl Acetate	100.0000	120.1430	-20.1	104	-0.02
6	T	Methacrylonitrile	100.0000	107.0895	-7.1	95	-0.03
7	T	Isobutyl Alcohol	200.0000	194.0538	3.0	91	-0.02
8	T	1-Butanol	100.0000	100.0865	-0.1	97	0.00
9	T	Methyl methacrylate	100.0000	103.2198	-3.2	90	-0.02
10	T	2-Nitropropane	100.0000	103.9416	-3.9	93	-0.03
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	97	-0.03
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	-0.04
13	T	Cyclohexanone	100.0000	30.6562	69.3	27	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M400367.D A9FOOWTR.M Fri Oct 03 12:33:23 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401529.D Vial: 3
Acq On : 4 Dec 2014 12:51 Operator: TMB
Sample : WG503415-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:39 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	717804	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	501070	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	224508	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.26	85	2100	0.2321 ug/L #	62
3) Chloromethane	3.72	50	3877	0.3674 ug/L	99
4) Vinyl Chloride	3.95	62	3076	0.3445 ug/L	86
5) 1,3-Butadiene	4.00	54	2123	Below Cal #	1
7) Chloroethane	5.02	64	1130	0.2200 ug/L #	45
8) Trichlorofluoromethane	5.50	101	2594	0.2459 ug/L #	89
10) Isoprene	6.07	67	1689	0.1914 ug/L	85
14) 1,1-Dichloroethene	6.58	61	2713	0.2737 ug/L	91
16) Dimethyl Sulfide	6.87	62	1142	0.2231 ug/L	98
18) Methyl acetate	7.12	43	475	0.1416 ug/L #	64
19) Methylene Chloride	7.38	84	1637	0.2374 ug/L	75
20) Carbon Disulfide	7.42	76	5649	0.2903 ug/L #	74
22) Methyl Tert Butyl Ether	7.60	73	3444	0.2571 ug/L #	48
23) trans-1,2-Dichloroethene	7.84	61	2939	0.2789 ug/L	88
24) n-Hexane	7.90	57	2501	0.2389 ug/L	96
26) Vinyl Acetate	8.44	43	973	0.1459 ug/L #	76
27) 1,1-Dichloroethane	8.46	63	3677	0.2739 ug/L #	86
31) 2,2-Dichloropropane	9.23	77	2866	0.2501 ug/L #	72
32) cis-1,2-Dichloroethene	9.29	96	2201	0.2839 ug/L	85
33) Chloroform	9.51	83	3772	0.2833 ug/L	86
35) Bromochloromethane	9.74	130	681	0.2929 ug/L #	45
38) 1,1,1-Trichloroethane	10.05	97	2967	0.2541 ug/L	94
39) Cyclohexane	10.06	56	3415	0.2657 ug/L #	91
40) 1,1-Dichloropropene	10.23	75	3117	0.2912 ug/L #	65
42) Carbon Tetrachloride	10.37	117	1995	0.2005 ug/L #	85
45) 1,2-Dichloroethane	10.54	62	2524	0.2670 ug/L #	65
46) Benzene	10.60	78	8776	0.3128 ug/L	85
47) Trichloroethene	11.34	130	1874	0.2597 ug/L	92
48) Methylcyclohexane	11.42	83	3130	0.2610 ug/L	88
49) 1,2-Dichloropropane	11.56	63	2248	0.2893 ug/L #	67
50) Bromodichloromethane	11.86	83	2699	0.2825 ug/L #	81
52) Dibromomethane	11.95	93	693	0.1977 ug/L #	70
55) cis-1,3-Dichloropropene	12.49	75	2953	0.2790 ug/L	97
56) Dimethyl Disulfide	12.75	94	1681	0.1647 ug/L #	49
59) Toluene	12.91	91	8724	0.2941 ug/L	93
60) Ethyl Methacrylate	13.01	69	743	0.1236 ug/L	95
62) trans-1,3-Dichloropropene	13.09	75	2067	0.2245 ug/L #	43
63) 1,1,2-Trichloroethane	13.29	97	1014	0.2293 ug/L #	55
65) 1,3-Dichloropropane	13.60	76	2204	0.2666 ug/L	95
66) Tetrachloroethene	13.73	164	1372	0.2227 ug/L	86

(#) = qualifier out of range (m) = manual integration
8M401529.D 8260WTR.M Fri Dec 05 12:32:40 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401529.D Vial: 3
Acq On : 4 Dec 2014 12:51 Operator: TMB
Sample : WG503415-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:39 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
67)	Dibromochloromethane	13.99	129	985	0.1782 ug/L	97
68)	1,2-Dibromoethane	14.26	107	1144	0.2633 ug/L	70
69)	1-Chlorohexane	14.34	91	2441	0.2546 ug/L	80
70)	Chlorobenzene	14.75	112	5654	0.2940 ug/L	93
71)	1,1,1,2-Tetrachloroethane	14.78	131	1442	0.2107 ug/L	83
72)	Ethylbenzene	14.77	106	2826	0.2547 ug/L	83
73)	m-,p-Xylene	14.87	106	7363	0.6000 ug/L	99
74)	o-Xylene	15.44	106	3214	0.2543 ug/L	75
75)	Styrene	15.48	104	4961	0.2543 ug/L	99
77)	Isopropylbenzene	15.86	105	8847	0.2803 ug/L	93
79)	1,1,2,2-Tetrachloroethane	16.08	83	1137	0.2513 ug/L #	45
83)	n-Propylbenzene	16.37	91	10411	0.2936 ug/L	92
84)	Bromobenzene	16.50	156	1728	0.2513 ug/L	69
85)	1,3,5-Trimethylbenzene	16.55	105	6855	0.2902 ug/L	96
86)	2-Chlorotoluene	16.63	91	7874	0.3535 ug/L	85
87)	4-Chlorotoluene	16.69	91	5903	0.3389 ug/L	93
88)	a-Methylstyrene	16.95	118	2310	0.1985 ug/L	78
89)	tert-Butylbenzene	17.02	134	944	0.1859 ug/L #	18
90)	1,2,4-Trimethylbenzene	17.07	105	5913	0.2659 ug/L	84
91)	sec-Butylbenzene	17.29	105	8492	0.2970 ug/L	90
92)	p-Isopropyltoluene	17.44	119	5288	0.2441 ug/L	98
93)	1,3-Dichlorobenzene	17.65	146	4231	0.3085 ug/L	84
94)	1,4-Dichlorobenzene	17.77	146	3802	0.2850 ug/L #	1
95)	n-Butylbenzene	17.97	91	5176	0.2533 ug/L #	89
96)	1,2-Dichlorobenzene	18.27	146	2888	0.2543 ug/L	87
98)	1,2,4-Trichlorobenzene	20.41	180	1837	0.2577 ug/L #	88
99)	Hexachlorobutadiene	20.55	225	1120	0.2490 ug/L #	51
100)	Naphthalene	20.77	128	2942	0.3090 ug/L #	68
101)	1,2,3-Trichlorobenzene	21.08	180	1861	0.3426 ug/L #	82

(#) = qualifier out of range (m) = manual integration
8M401529.D 8260WTR.M Fri Dec 05 12:32:40 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401529.D Vial: 3
Acq On : 4 Dec 2014 12:51 Operator: TMB
Sample : WG503415-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 5 12:32 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

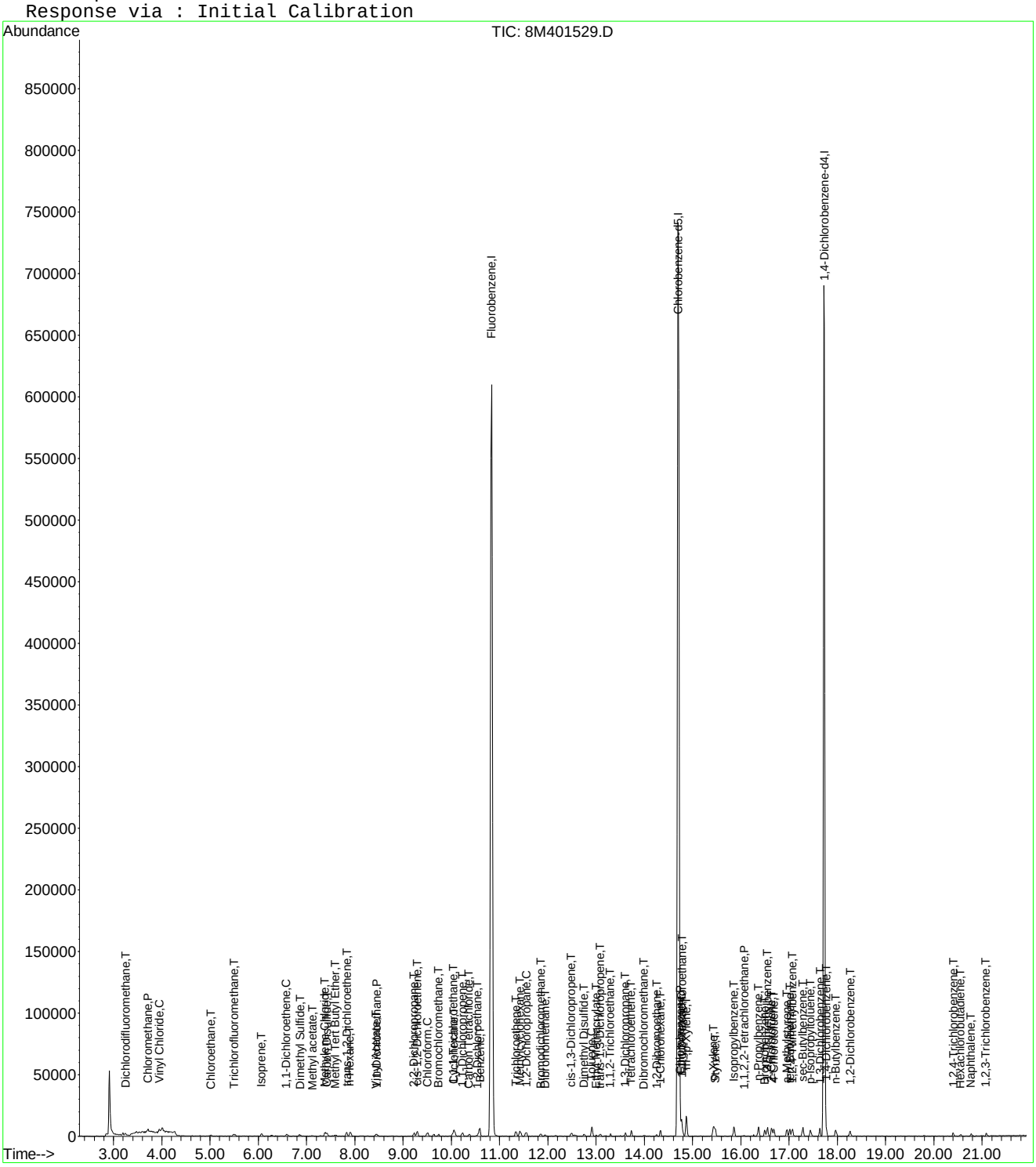

8M401529.D 8260WTR.M Fri Dec 05 12:32:40 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401530.D Vial: 4
Acq On : 4 Dec 2014 13:20 Operator: TMB
Sample : WG503415-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:40 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	710782	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	497992	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	225673	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	3402	0.3797 ug/L #	63
3) Chloromethane	3.71	50	6132	0.5869 ug/L	82
4) Vinyl Chloride	3.95	62	3719	0.4206 ug/L	98
5) 1,3-Butadiene	4.01	54	2804	Below Cal #	31
6) Bromomethane	4.84	94	602	0.9743 ug/L #	3
7) Chloroethane	5.01	64	1731	0.3404 ug/L #	45
8) Trichlorofluoromethane	5.50	101	4013	0.3841 ug/L #	92
10) Isoprene	6.08	67	2700	0.3090 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1865	0.2868 ug/L	59
13) Acetone	6.37	43	498	0.4773 ug/L #	1
14) 1,1-Dichloroethene	6.59	61	3761	0.3831 ug/L	85
16) Dimethyl Sulfide	6.86	62	1356	0.2675 ug/L	98
19) Methylene Chloride	7.37	84	2738	0.4009 ug/L	99
20) Carbon Disulfide	7.42	76	7359	0.3820 ug/L #	74
22) Methyl Tert Butyl Ether	7.59	73	4498	0.3390 ug/L #	57
23) trans-1,2-Dichloroethene	7.84	61	3826	0.3667 ug/L	94
24) n-Hexane	7.92	57	4316	0.4164 ug/L	96
26) Vinyl Acetate	8.42	43	2156	0.3264 ug/L #	76
27) 1,1-Dichloroethane	8.45	63	5213	0.3921 ug/L #	82
31) 2,2-Dichloropropane	9.23	77	4227	0.3725 ug/L #	71
32) cis-1,2-Dichloroethene	9.30	96	3035	0.3953 ug/L	82
33) Chloroform	9.51	83	5455	0.4138 ug/L	96
35) Bromochloromethane	9.74	130	963	0.3655 ug/L #	47
36) Tetrahydrofuran	9.78	42	208	0.1988 ug/L #	38
38) 1,1,1-Trichloroethane	10.03	97	3941	0.3409 ug/L	99
39) Cyclohexane	10.06	56	4940	0.3882 ug/L	94
40) 1,1-Dichloropropene	10.22	75	3824	0.3607 ug/L	88
42) Carbon Tetrachloride	10.39	117	3142	0.3189 ug/L #	78
45) 1,2-Dichloroethane	10.54	62	3475	0.3713 ug/L #	85
46) Benzene	10.59	78	11480	0.4132 ug/L	93
47) Trichloroethene	11.34	130	2641	0.3697 ug/L	96
48) Methylcyclohexane	11.42	83	4300	0.3620 ug/L	93
49) 1,2-Dichloropropane	11.55	63	2887	0.3752 ug/L	82
50) Bromodichloromethane	11.85	83	3235	0.3419 ug/L #	86
52) Dibromomethane	11.94	93	1107	0.3189 ug/L	90
53) 2-Chloroethyl Vinyl Ether	12.15	63	388	0.1523 ug/L #	52
55) cis-1,3-Dichloropropene	12.48	75	3237	0.3088 ug/L	90
56) Dimethyl Disulfide	12.75	94	1939	0.1919 ug/L	80
59) Toluene	12.91	91	11891	0.4033 ug/L	95
60) Ethyl Methacrylate	13.00	69	1594	0.2668 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M401530.D 8260WTR.M Fri Dec 05 12:32:41 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401530.D Vial: 4
Acq On : 4 Dec 2014 13:20 Operator: TMB
Sample : WG503415-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:40 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	13.09	75	3119	0.3408 ug/L		87
63)	1,1,2-Trichloroethane	13.29	97	1340	0.3049 ug/L		99
65)	1,3-Dichloropropane	13.61	76	3145	0.3828 ug/L		95
66)	Tetrachloroethene	13.73	164	2256	0.3684 ug/L		97
67)	Dibromochloromethane	14.00	129	1826	0.3323 ug/L		100
68)	1,2-Dibromoethane	14.25	107	1402	0.3247 ug/L		96
69)	1-Chlorohexane	14.34	91	3723	0.3907 ug/L		87
70)	Chlorobenzene	14.75	112	8182	0.4281 ug/L		85
71)	1,1,1,2-Tetrachloroethane	14.77	131	2373	0.3488 ug/L		97
72)	Ethylbenzene	14.77	106	3721	0.3374 ug/L		71
73)	m-,p-Xylene	14.88	106	10019	0.8214 ug/L		95
74)	o-Xylene	15.43	106	4158	0.3311 ug/L		74
75)	Styrene	15.47	104	6832	0.3524 ug/L		92
76)	Bromoform	15.96	173	766	0.6936 ug/L	#	27
77)	Isopropylbenzene	15.86	105	12015	0.3831 ug/L		94
79)	1,1,2,2-Tetrachloroethane	16.08	83	1806	0.3971 ug/L	#	75
83)	n-Propylbenzene	16.37	91	13922	0.3837 ug/L		92
84)	Bromobenzene	16.50	156	2589	0.3746 ug/L		94
85)	1,3,5-Trimethylbenzene	16.55	105	9059	0.3815 ug/L		92
86)	2-Chlorotoluene	16.63	91	9846	0.4397 ug/L		79
87)	4-Chlorotoluene	16.69	91	8104	0.4241 ug/L		95
88)	a-Methylstyrene	16.95	118	3385	0.2893 ug/L		96
89)	tert-Butylbenzene	17.02	134	1766	0.3460 ug/L		94
90)	1,2,4-Trimethylbenzene	17.07	105	7996	0.3577 ug/L		78
91)	sec-Butylbenzene	17.29	105	10750	0.3741 ug/L		94
92)	p-Isopropyltoluene	17.44	119	7785	0.3575 ug/L		89
93)	1,3-Dichlorobenzene	17.64	146	5918	0.4293 ug/L		91
94)	1,4-Dichlorobenzene	17.76	146	5633	0.4201 ug/L	#	10
95)	n-Butylbenzene	17.97	91	7459	0.3631 ug/L	#	85
96)	1,2-Dichlorobenzene	18.27	146	4303	0.3769 ug/L		94
98)	1,2,4-Trichlorobenzene	20.40	180	2556	0.3568 ug/L		87
99)	Hexachlorobutadiene	20.55	225	1504	0.3326 ug/L	#	81
100)	Naphthalene	20.77	128	3797	0.3968 ug/L	#	68
101)	1,2,3-Trichlorobenzene	21.09	180	2126	0.3893 ug/L		85

(#) = qualifier out of range (m) = manual integration
8M401530.D 8260WTR.M Fri Dec 05 12:32:41 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401530.D Vial: 4
Acq On : 4 Dec 2014 13:20 Operator: TMB
Sample : WG503415-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 5 12:32 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

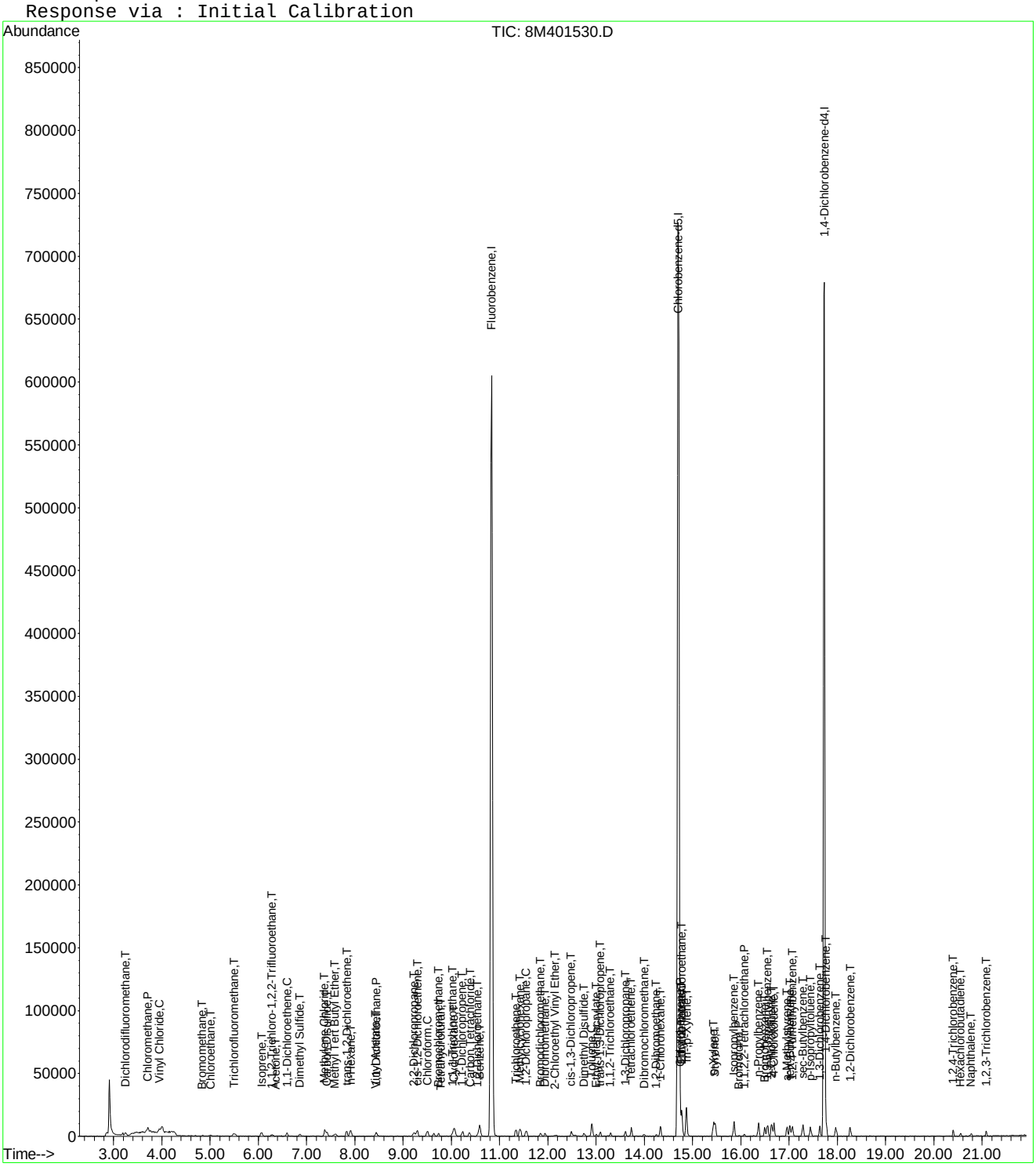

8M401530.D 8260WTR.M Fri Dec 05 12:32:41 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401531.D Vial: 5
Acq On : 4 Dec 2014 13:49 Operator: TMB
Sample : WG503415-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:41 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	713682	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	498803	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	225606	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.79	111	3068	0.4490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.80%#	
43) 1,2-Dichloroethane-d4	10.43	65	2925	0.4071 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.64%#	
58) Toluene-d8	12.81	98	11418	0.4777 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.92%#	
80) p-Bromofluorobenzene	16.20	95	4442	0.5055 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.04%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	8443	0.9385 ug/L	95
3) Chloromethane	3.71	50	11815	1.1262 ug/L	85
4) Vinyl Chloride	3.95	62	10012	1.1277 ug/L	97
5) 1,3-Butadiene	4.00	54	6528	0.3397 ug/L #	61
6) Bromomethane	4.84	94	2105	1.3330 ug/L	95
7) Chloroethane	5.01	64	5095	0.9978 ug/L	87
8) Trichlorofluoromethane	5.49	101	10329	0.9847 ug/L #	95
9) Diethyl ether	6.03	59	19197	4.7570 ug/L	90
10) Isoprene	6.07	67	7681	0.8755 ug/L	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	5799	0.8882 ug/L	88
13) Acetone	6.37	43	1425	1.3603 ug/L #	1
14) 1,1-Dichloroethene	6.59	61	9632	0.9772 ug/L	96
15) Tert-Butyl Alcohol	6.70	59	2588	9.7103 ug/L #	59
16) Dimethyl Sulfide	6.85	62	4403	0.8651 ug/L	97
18) Methyl acetate	7.12	43	2899	0.8694 ug/L #	64
19) Methylene Chloride	7.37	84	7103	1.0358 ug/L	93
20) Carbon Disulfide	7.42	76	18434	0.9529 ug/L	99
21) Acrylonitrile	7.56	53	2755	2.0024 ug/L	92
22) Methyl Tert Butyl Ether	7.60	73	12713	0.9543 ug/L	87
23) trans-1,2-Dichloroethene	7.83	61	10548	1.0067 ug/L	98
24) n-Hexane	7.91	57	10326	0.9921 ug/L	85
25) Diisopropyl ether	8.26	45	117375	4.9452 ug/L	95
26) Vinyl Acetate	8.42	43	5261	0.7933 ug/L #	76
27) 1,1-Dichloroethane	8.46	63	12892	0.9658 ug/L	97
28) Ethyl-Tert-Butyl ether	8.83	59	100875	4.9675 ug/L	97
29) 2-Butanone	9.00	43	1443	0.8434 ug/L #	55
30) Propionitrile	9.12	54	1561	3.2144 ug/L #	56
31) 2,2-Dichloropropane	9.22	77	10452	0.9174 ug/L	94
32) cis-1,2-Dichloroethene	9.29	96	7530	0.9769 ug/L	94
33) Chloroform	9.50	83	12796	0.9666 ug/L	99
34) 1-Bromopropane	9.63	122	729	1.0504 ug/L	59
35) Bromochloromethane	9.74	130	3514	1.0034 ug/L	97
36) Tetrahydrofuran	9.77	42	5131	4.8847 ug/L	93
38) 1,1,1-Trichloroethane	10.03	97	11223	0.9667 ug/L	98
39) Cyclohexane	10.08	56	12265	0.9599 ug/L	93
40) 1,1-Dichloropropene	10.23	75	9959	0.9356 ug/L	90
41) Tert-Amyl-Methyl ether	10.33	73	78347	4.9441 ug/L	96
42) Carbon Tetrachloride	10.38	117	9390	0.9491 ug/L	99
45) 1,2-Dichloroethane	10.55	62	8874	0.9443 ug/L	95
46) Benzene	10.60	78	29414	1.0545 ug/L	94

(#) = qualifier out of range (m) = manual integration
8M401531.D 8260WTR.M Fri Dec 05 12:32:42 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401531.D Vial: 5
Acq On : 4 Dec 2014 13:49 Operator: TMB
Sample : WG503415-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:41 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
47)	Trichloroethene	11.34	130	7572	1.0556 ug/L		91
48)	Methylcyclohexane	11.42	83	11574	0.9705 ug/L		92
49)	1,2-Dichloropropane	11.55	63	7311	0.9462 ug/L		99
50)	Bromodichloromethane	11.86	83	8994	0.9467 ug/L		95
52)	Dibromomethane	11.94	93	3421	0.9816 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.15	63	2025	0.7918 ug/L	#	73
54)	4-Methyl-2-Pentanone	12.19	58	864	0.5886 ug/L	#	42
55)	cis-1,3-Dichloropropene	12.49	75	9605	0.9127 ug/L		99
56)	Dimethyl Disulfide	12.75	94	7261	0.7157 ug/L		97
59)	Toluene	12.91	91	30686	1.0390 ug/L		95
60)	Ethyl Methacrylate	13.01	69	4908	0.8203 ug/L		100
62)	trans-1,3-Dichloropropene	13.09	75	7986	0.8713 ug/L		94
63)	1,1,2-Trichloroethane	13.29	97	4275	0.9711 ug/L		100
64)	2-Hexanone	13.23	58	1089	0.7999 ug/L	#	50
65)	1,3-Dichloropropane	13.60	76	8089	0.9831 ug/L		99
66)	Tetrachloroethene	13.73	164	5773	0.9413 ug/L		95
67)	Dibromochloromethane	14.00	129	4974	0.9038 ug/L		98
68)	1,2-Dibromoethane	14.26	107	4020	0.9295 ug/L		99
69)	1-Chlorohexane	14.33	91	8973	0.9401 ug/L		92
70)	Chlorobenzene	14.75	112	20005	1.0449 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.78	131	6056	0.8887 ug/L		98
72)	Ethylbenzene	14.78	106	10827	0.9801 ug/L		96
73)	m-,p-Xylene	14.87	106	24473	2.0032 ug/L		91
74)	o-Xylene	15.43	106	11983	0.9526 ug/L		97
75)	Styrene	15.48	104	17861	0.9199 ug/L		97
76)	Bromoform	15.96	173	2416	1.1469 ug/L		92
77)	Isopropylbenzene	15.86	105	32331	1.0291 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.08	83	4270	0.9391 ug/L	#	93
81)	1,2,3-Trichloropropane	16.26	110	932	0.7494 ug/L		45
82)	trans-1,4-Dichloro-2-Buten	16.31	53	600	1.0412 ug/L	#	1
83)	n-Propylbenzene	16.37	91	36961	0.9855 ug/L		95
84)	Bromobenzene	16.50	156	7805	1.1295 ug/L		87
85)	1,3,5-Trimethylbenzene	16.55	105	23060	0.9714 ug/L		98
86)	2-Chlorotoluene	16.63	91	22885	1.0223 ug/L		95
87)	4-Chlorotoluene	16.69	91	20533	0.9123 ug/L		93
88)	a-Methylstyrene	16.95	118	9096	0.7777 ug/L		88
89)	tert-Butylbenzene	17.02	134	4654	0.9121 ug/L		91
90)	1,2,4-Trimethylbenzene	17.07	105	20598	0.9217 ug/L		96
91)	sec-Butylbenzene	17.29	105	28209	0.9819 ug/L		98
92)	p-Isopropyltoluene	17.44	119	20569	0.9448 ug/L		93
93)	1,3-Dichlorobenzene	17.64	146	14176	1.0285 ug/L		97
94)	1,4-Dichlorobenzene	17.77	146	14712	1.0976 ug/L	#	65
95)	n-Butylbenzene	17.97	91	17685	0.8612 ug/L	#	90
96)	1,2-Dichlorobenzene	18.27	146	11689	1.0241 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.26	75	216	0.2893 ug/L		93
98)	1,2,4-Trichlorobenzene	20.40	180	7414	1.0351 ug/L		96
99)	Hexachlorobutadiene	20.55	225	4260	0.9424 ug/L		98
100)	Naphthalene	20.77	128	9820	1.0264 ug/L		92
101)	1,2,3-Trichlorobenzene	21.09	180	5456	0.9994 ug/L		92

(#) = qualifier out of range (m) = manual integration
8M401531.D 8260WTR.M Fri Dec 05 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401531.D Vial: 5
Acq On : 4 Dec 2014 13:49 Operator: TMB
Sample : WG503415-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 5 12:32 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

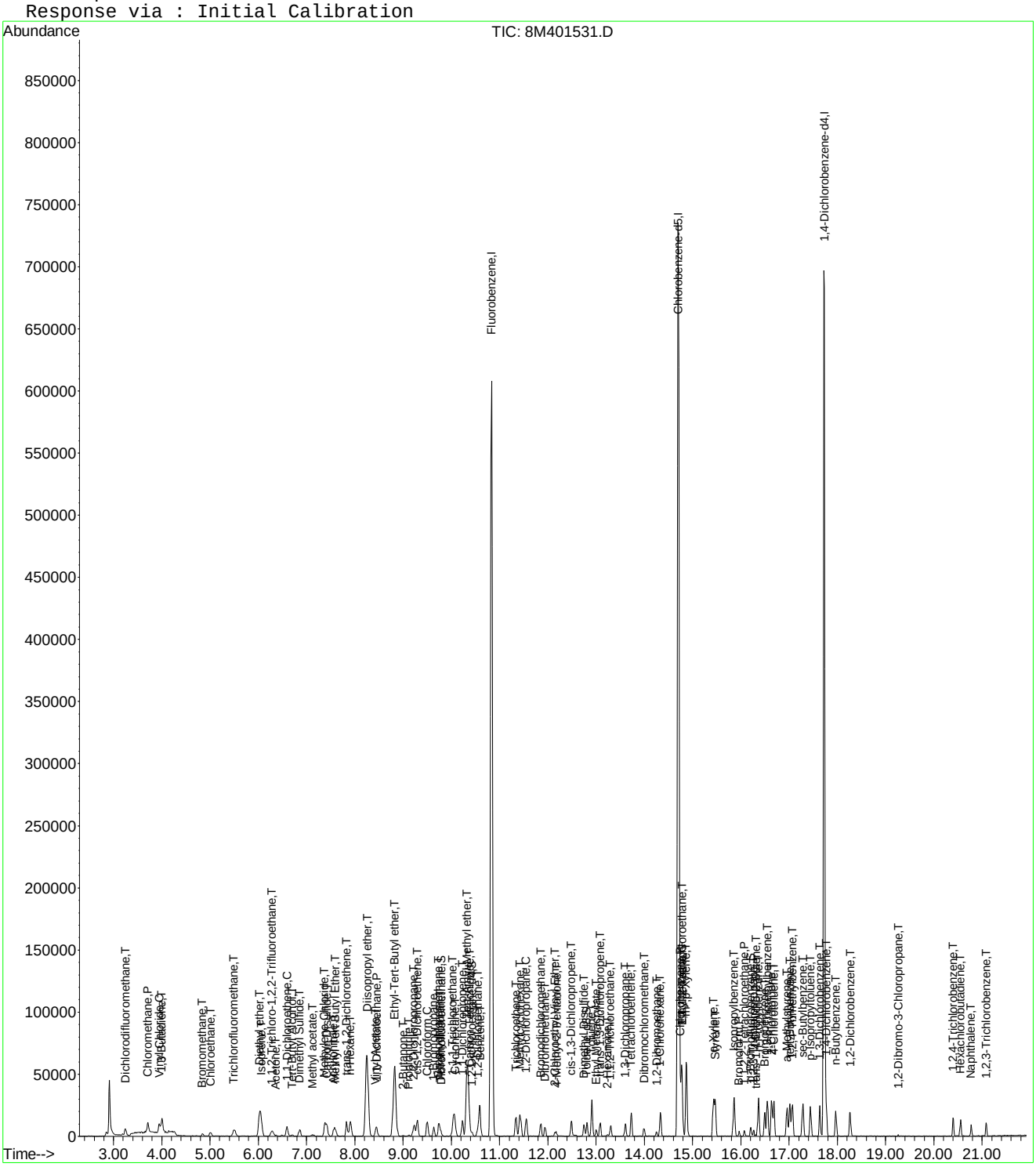

8M401531.D 8260WTR.M Fri Dec 05 12:32:42 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401532.D Vial: 6
Acq On : 4 Dec 2014 14:19 Operator: TMB
Sample : WG503415-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:43 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	728501	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	508094	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.72	152	232362	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.79	111	6386	0.9156 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.68%#	
43) 1,2-Dichloroethane-d4	10.43	65	6712	0.9153 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.68%#	
58) Toluene-d8	12.81	98	23009	0.9450 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.80%#	
80) p-Bromofluorobenzene	16.20	95	8728	0.9644 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	16735	1.8224 ug/L	100
3) Chloromethane	3.71	50	23038	2.1513 ug/L	93
4) Vinyl Chloride	3.95	62	19436	2.1446 ug/L	97
5) 1,3-Butadiene	4.00	54	12879	1.5225 ug/L #	61
6) Bromomethane	4.85	94	5242	2.0569 ug/L	97
7) Chloroethane	5.01	64	9769	1.8743 ug/L	98
8) Trichlorofluoromethane	5.50	101	19822	1.8513 ug/L	98
9) Diethyl ether	6.03	59	96618	23.4546 ug/L	90
10) Isoprene	6.06	67	15590	1.7409 ug/L	91
11) Acrolein	6.27	56	3718	15.4713 ug/L	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	12236	1.8360 ug/L	88
13) Acetone	6.37	43	2483	2.3220 ug/L #	1
14) 1,1-Dichloroethene	6.59	61	18839	1.8723 ug/L	95
15) Tert-Butyl Alcohol	6.69	59	12782	46.9831 ug/L #	89
16) Dimethyl Sulfide	6.87	62	8642	1.6635 ug/L	93
18) Methyl acetate	7.12	43	6101	1.7924 ug/L #	85
19) Methylene Chloride	7.38	84	13880	1.9830 ug/L	96
20) Carbon Disulfide	7.42	76	38844	1.9671 ug/L	97
21) Acrylonitrile	7.56	53	15128	10.7715 ug/L	93
22) Methyl Tert Butyl Ether	7.59	73	25885	1.9036 ug/L	92
23) trans-1,2-Dichloroethene	7.83	61	20016	1.8716 ug/L	94
24) n-Hexane	7.92	57	20688	1.9473 ug/L	92
25) Diisopropyl ether	8.25	45	626810	25.8712 ug/L	97
26) Vinyl Acetate	8.42	43	12462	1.8409 ug/L #	81
27) 1,1-Dichloroethane	8.45	63	26741	1.9625 ug/L	99
28) Ethyl-Tert-Butyl ether	8.82	59	518504	25.0140 ug/L	96
29) 2-Butanone	9.01	43	3431	1.9646 ug/L #	55
30) Propionitrile	9.11	54	11113	22.4187 ug/L	100
31) 2,2-Dichloropropane	9.23	77	23300	2.0036 ug/L	97
32) cis-1,2-Dichloroethene	9.30	96	15226	1.9351 ug/L	96
33) Chloroform	9.50	83	27569	2.0402 ug/L	100
34) 1-Bromopropane	9.64	122	1942	2.0397 ug/L	92
35) Bromochloromethane	9.74	130	7626	1.9943 ug/L	97
36) Tetrahydrofuran	9.76	42	24263	22.6283 ug/L	98
38) 1,1,1-Trichloroethane	10.04	97	23751	2.0043 ug/L	98
39) Cyclohexane	10.07	56	25083	1.9232 ug/L	89
40) 1,1-Dichloropropene	10.23	75	20971	1.9301 ug/L	98
41) Tert-Amyl-Methyl ether	10.33	73	403934	24.9716 ug/L	96
42) Carbon Tetrachloride	10.38	117	19265	1.9077 ug/L	98
45) 1,2-Dichloroethane	10.55	62	20006	2.0856 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M401532.D 8260WTR.M Fri Dec 05 12:32:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401532.D Vial: 6
Acq On : 4 Dec 2014 14:19 Operator: TMB
Sample : WG503415-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:43 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.59	78	60155	2.1126 ug/L		95
47)	Trichloroethene	11.34	130	14633	1.9984 ug/L		95
48)	Methylcyclohexane	11.43	83	23132	1.9003 ug/L		92
49)	1,2-Dichloropropane	11.55	63	15216	1.9293 ug/L		87
50)	Bromodichloromethane	11.85	83	18972	1.9564 ug/L	#	98
51)	1,4-Dioxane	11.84	88	968	32.4298 ug/L		71
52)	Dibromomethane	11.94	93	6801	1.9117 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.15	63	4860	1.8616 ug/L	#	80
54)	4-Methyl-2-Pentanone	12.18	58	2107	1.4063 ug/L		83
55)	cis-1,3-Dichloropropene	12.49	75	21676	2.0178 ug/L		99
56)	Dimethyl Disulfide	12.75	94	14933	1.4420 ug/L		98
59)	Toluene	12.91	91	63632	2.1152 ug/L		97
60)	Ethyl Methacrylate	13.00	69	10453	1.7150 ug/L		99
62)	trans-1,3-Dichloropropene	13.08	75	17680	1.8936 ug/L		96
63)	1,1,2-Trichloroethane	13.30	97	8962	1.9986 ug/L		98
64)	2-Hexanone	13.25	58	2827	2.0384 ug/L	#	68
65)	1,3-Dichloropropane	13.61	76	16609	1.9816 ug/L		99
66)	Tetrachloroethene	13.73	164	12676	2.0290 ug/L		95
67)	Dibromochloromethane	13.99	129	10095	1.8007 ug/L		98
68)	1,2-Dibromoethane	14.25	107	8213	1.8643 ug/L		92
69)	1-Chlorohexane	14.33	91	18688	1.9221 ug/L		88
70)	Chlorobenzene	14.76	112	40386	2.0709 ug/L		80
71)	1,1,1,2-Tetrachloroethane	14.78	131	12576	1.8117 ug/L		98
72)	Ethylbenzene	14.78	106	22548	2.0039 ug/L		93
73)	m-,p-Xylene	14.87	106	51913	4.1717 ug/L		91
74)	o-Xylene	15.44	106	24485	1.9108 ug/L		88
75)	Styrene	15.47	104	39074	1.9756 ug/L		93
76)	Bromoform	15.96	173	4849	1.7914 ug/L		95
77)	Isopropylbenzene	15.86	105	66467	2.0770 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.07	83	9408	2.0089 ug/L	#	98
81)	1,2,3-Trichloropropane	16.26	110	2610	2.0377 ug/L		85
82)	trans-1,4-Dichloro-2-Buten	16.31	53	1999	2.0478 ug/L		47
83)	n-Propylbenzene	16.37	91	78000	2.0011 ug/L		99
84)	Bromobenzene	16.49	156	14165	1.9903 ug/L		93
85)	1,3,5-Trimethylbenzene	16.55	105	49264	2.0149 ug/L		99
86)	2-Chlorotoluene	16.64	91	50490	2.1899 ug/L		90
87)	4-Chlorotoluene	16.69	91	48563	1.9608 ug/L		93
88)	a-Methylstyrene	16.96	118	21210	1.7608 ug/L		98
89)	tert-Butylbenzene	17.02	134	9862	1.8766 ug/L		75
90)	1,2,4-Trimethylbenzene	17.07	105	46704	2.0291 ug/L		99
91)	sec-Butylbenzene	17.29	105	62836	2.1236 ug/L		97
92)	p-Isopropyltoluene	17.44	119	45427	2.0259 ug/L		98
93)	1,3-Dichlorobenzene	17.64	146	30505	2.1489 ug/L		97
94)	1,4-Dichlorobenzene	17.76	146	29161	2.1124 ug/L		81
95)	n-Butylbenzene	17.97	91	40498	1.9147 ug/L		96
96)	1,2-Dichlorobenzene	18.26	146	25570	2.1752 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.26	75	1257	1.6348 ug/L		75
98)	1,2,4-Trichlorobenzene	20.40	180	14653	1.9864 ug/L		96
99)	Hexachlorobutadiene	20.56	225	9609	2.0640 ug/L		93
100)	Naphthalene	20.77	128	21957	2.2283 ug/L		94
101)	1,2,3-Trichlorobenzene	21.08	180	10620	1.8888 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M401532.D 8260WTR.M Fri Dec 05 12:32:43 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401532.D Vial: 6
Acq On : 4 Dec 2014 14:19 Operator: TMB
Sample : WG503415-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 5 12:32 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

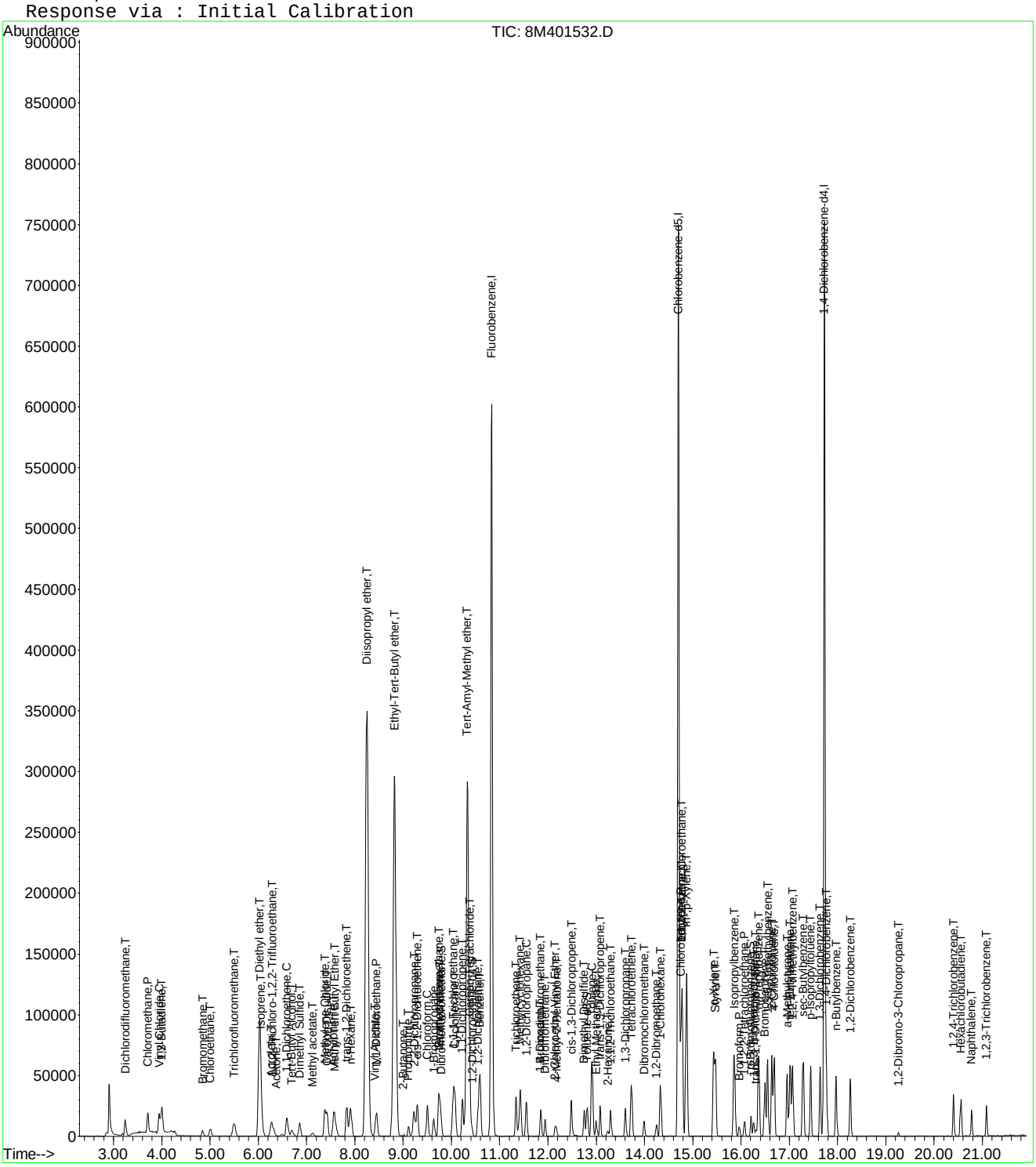

8M401532.D 8260WTR.M Fri Dec 05 12:32:44 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401533.D Vial: 7
Acq On : 4 Dec 2014 14:48 Operator: TMB
Sample : WG503415-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:44 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	746416	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	517527	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	243695	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.79	111	17245	2.4132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 9.64%#		
43) 1,2-Dichloroethane-d4	10.42	65	19072	2.5383 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.16%#		
58) Toluene-d8	12.81	98	65441	2.6389 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.56%#		
80) p-Bromofluorobenzene	16.20	95	23782	2.5057 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.04%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	42027	4.4668 ug/L	99
3) Chloromethane	3.71	50	53691	4.8933 ug/L	97
4) Vinyl Chloride	3.94	62	45099	4.8569 ug/L	95
5) 1,3-Butadiene	3.99	54	30701	4.7875 ug/L #	75
6) Bromomethane	4.85	94	13061	3.8103 ug/L	93
7) Chloroethane	5.01	64	24633	4.6126 ug/L	98
8) Trichlorofluoromethane	5.50	101	51183	4.6655 ug/L	98
9) Diethyl ether	6.03	59	198926	47.1315 ug/L	91
10) Isoprene	6.07	67	37877	4.1281 ug/L	93
11) Acrolein	6.26	56	8704	25.3857 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	30254	4.4306 ug/L	89
13) Acetone	6.36	43	6319	5.7676 ug/L #	30
14) 1,1-Dichloroethene	6.60	61	48150	4.6706 ug/L	99
15) Tert-Butyl Alcohol	6.70	59	29234	104.8769 ug/L #	92
16) Dimethyl Sulfide	6.85	62	22873	4.2971 ug/L	97
17) Iodomethane	7.11	142	2621	5.9824 ug/L #	62
18) Methyl acetate	7.12	43	17057	4.8908 ug/L	89
19) Methylene Chloride	7.38	84	33394	4.6563 ug/L	95
20) Carbon Disulfide	7.42	76	91943	4.5444 ug/L	100
21) Acrylonitrile	7.56	53	32643	22.6848 ug/L	94
22) Methyl Tert Butyl Ether	7.59	73	63762	4.5766 ug/L	96
23) trans-1,2-Dichloroethene	7.83	61	50284	4.5888 ug/L	98
24) n-Hexane	7.91	57	50588	4.6473 ug/L	90
25) Diisopropyl ether	8.25	45	1255694	50.5842 ug/L	96
26) Vinyl Acetate	8.42	43	33148	4.7791 ug/L	95
27) 1,1-Dichloroethane	8.45	63	63276	4.5323 ug/L	96
28) Ethyl-Tert-Butyl ether	8.82	59	1060733	49.9443 ug/L	96
29) 2-Butanone	9.00	43	9549	5.3366 ug/L	92
30) Propionitrile	9.11	54	23176	45.6316 ug/L	99
31) 2,2-Dichloropropane	9.23	77	56919	4.7770 ug/L	98
32) cis-1,2-Dichloroethene	9.29	96	37112	4.6034 ug/L	98
33) Chloroform	9.50	83	67051	4.8429 ug/L	100
34) 1-Bromopropane	9.65	122	5217	4.6410 ug/L	99
35) Bromochloromethane	9.74	130	19293	4.7432 ug/L	98
36) Tetrahydrofuran	9.75	42	51900	47.2415 ug/L	99
38) 1,1,1-Trichloroethane	10.03	97	55936	4.6070 ug/L	97
39) Cyclohexane	10.07	56	61769	4.6223 ug/L	87
40) 1,1-Dichloropropene	10.23	75	53683	4.8223 ug/L	98
41) Tert-Amyl-Methyl ether	10.33	73	826909	49.8934 ug/L	96
42) Carbon Tetrachloride	10.38	117	47231	4.5646 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401533.D Vial: 7
Acq On : 4 Dec 2014 14:48 Operator: TMB
Sample : WG503415-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:44 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	46736	4.7551 ug/L	100
46)	Benzene	10.59	78	149998	5.1414 ug/L	95
47)	Trichloroethene	11.34	130	33951	4.5253 ug/L	96
48)	Methylcyclohexane	11.42	83	58112	4.6593 ug/L	92
49)	1,2-Dichloropropane	11.56	63	38415	4.7539 ug/L	92
50)	Bromodichloromethane	11.86	83	46431	4.6732 ug/L	99
51)	1,4-Dioxane	11.84	88	2553	83.4774 ug/L	99
52)	Dibromomethane	11.94	93	17594	4.8269 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.15	63	12677	4.7392 ug/L	99
54)	4-Methyl-2-Pentanone	12.18	58	6147	4.0043 ug/L	95
55)	cis-1,3-Dichloropropene	12.49	75	53203	4.8339 ug/L	99
56)	Dimethyl Disulfide	12.75	94	41815	3.9411 ug/L	99
59)	Toluene	12.91	91	155703	5.0813 ug/L	98
60)	Ethyl Methacrylate	13.01	69	27991	4.5088 ug/L	95
62)	trans-1,3-Dichloropropene	13.08	75	45459	4.7801 ug/L	98
63)	1,1,2-Trichloroethane	13.30	97	22399	4.9042 ug/L	100
64)	2-Hexanone	13.24	58	7093	5.0212 ug/L #	42
65)	1,3-Dichloropropane	13.61	76	41394	4.8487 ug/L	99
66)	Tetrachloroethene	13.73	164	31785	4.9950 ug/L	94
67)	Dibromochloromethane	14.00	129	27030	4.7336 ug/L	97
68)	1,2-Dibromoethane	14.25	107	22098	4.9248 ug/L	98
69)	1-Chlorohexane	14.33	91	48473	4.8946 ug/L	93
70)	Chlorobenzene	14.75	112	98975	4.9827 ug/L	90
71)	1,1,1,2-Tetrachloroethane	14.78	131	33319	4.7126 ug/L	96
72)	Ethylbenzene	14.78	106	55013	4.8000 ug/L	94
73)	m-,p-Xylene	14.87	106	129377	10.2071 ug/L	95
74)	o-Xylene	15.44	106	61601	4.7198 ug/L	96
75)	Styrene	15.47	104	99454	4.9368 ug/L	95
76)	Bromoform	15.96	173	14614	4.3551 ug/L	99
77)	Isopropylbenzene	15.86	105	165764	5.0854 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.07	83	24902	5.0701 ug/L	95
81)	1,2,3-Trichloropropane	16.26	110	6537	4.8663 ug/L	89
82)	trans-1,4-Dichloro-2-Buten	16.30	53	5954	4.7287 ug/L	78
83)	n-Propylbenzene	16.37	91	195142	4.7687 ug/L	97
84)	Bromobenzene	16.50	156	37127	4.9739 ug/L	96
85)	1,3,5-Trimethylbenzene	16.55	105	130346	5.0832 ug/L	97
86)	2-Chlorotoluene	16.63	91	122953	5.0848 ug/L	96
87)	4-Chlorotoluene	16.69	91	126137	4.7238 ug/L	96
88)	a-Methylstyrene	16.96	118	56203	4.4488 ug/L	97
89)	tert-Butylbenzene	17.02	134	25762	4.6743 ug/L	92
90)	1,2,4-Trimethylbenzene	17.07	105	123503	5.1161 ug/L	97
91)	sec-Butylbenzene	17.29	105	159466	5.1387 ug/L	99
92)	p-Isopropyltoluene	17.44	119	118025	5.0187 ug/L	98
93)	1,3-Dichlorobenzene	17.64	146	73485	4.9360 ug/L	99
94)	1,4-Dichlorobenzene	17.77	146	71869	4.9640 ug/L	93
95)	n-Butylbenzene	17.97	91	106586	4.8048 ug/L	96
96)	1,2-Dichlorobenzene	18.27	146	62749	5.0897 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	19.26	75	3571	4.4282 ug/L	87
98)	1,2,4-Trichlorobenzene	20.40	180	36904	4.7700 ug/L	97
99)	Hexachlorobutadiene	20.55	225	23633	4.8402 ug/L	98
100)	Naphthalene	20.77	128	54208	5.2455 ug/L	100
101)	1,2,3-Trichlorobenzene	21.08	180	29624	5.0236 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M401533.D 8260WTR.M Fri Dec 05 12:32:44 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401533.D Vial: 7
Acq On : 4 Dec 2014 14:48 Operator: TMB
Sample : WG503415-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 5 12:32 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

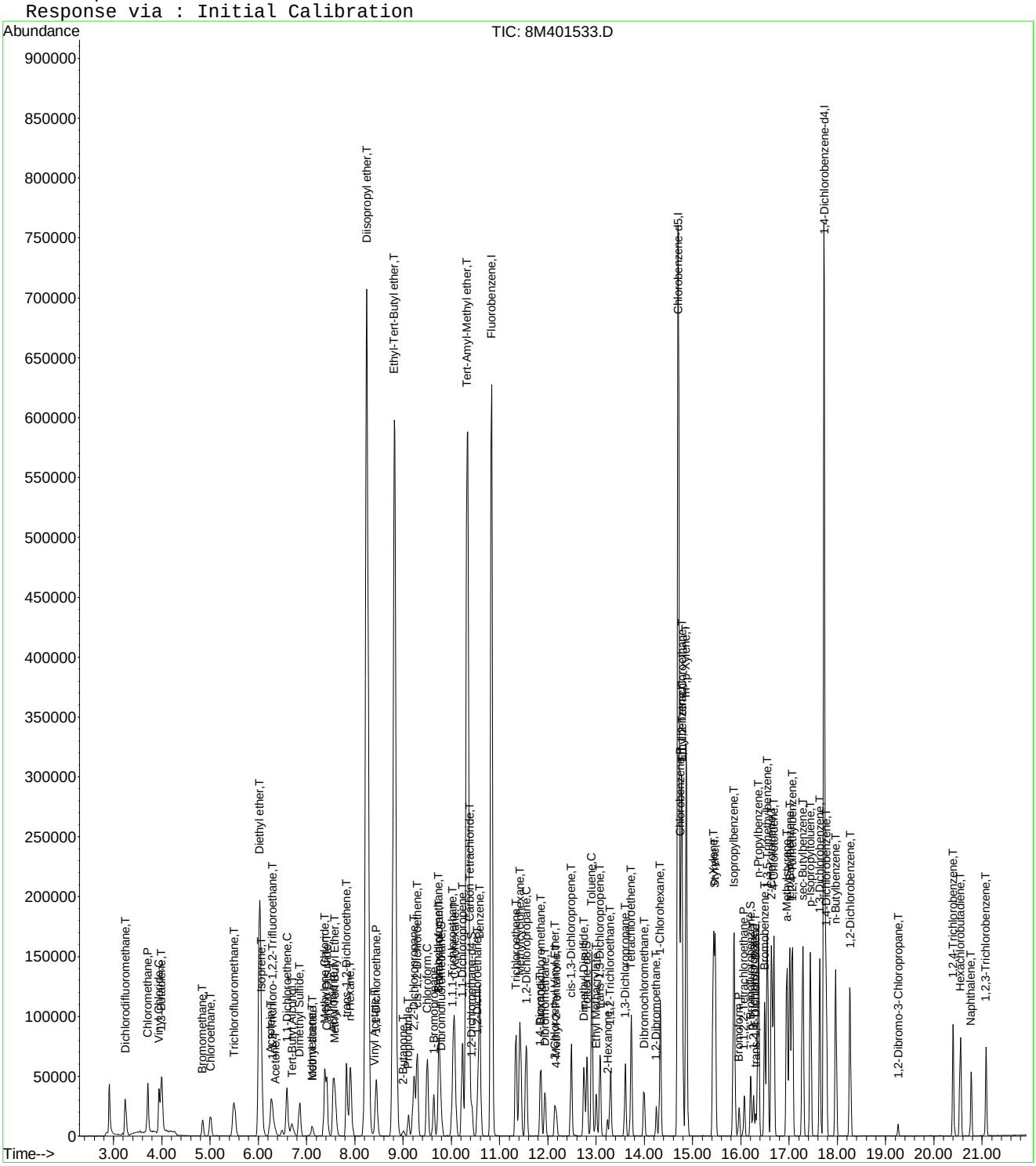

8M401533.D 8260WTR.M Fri Dec 05 12:32:45 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401534.D Vial: 8
Acq On : 4 Dec 2014 15:17 Operator: TMB
Sample : WG503415-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:45 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	706512	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	504070	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	247204	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	74970	11.0837 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 44.32%#		
43) 1,2-Dichloroethane-d4	10.43	65	80899	11.3751 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.52%#		
58) Toluene-d8	12.81	98	266484	11.0326 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 44.12%#		
80) p-Bromofluorobenzene	16.20	95	102942	10.6919 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.76%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	205553	23.0812 ug/L	100
3) Chloromethane	3.71	50	236409	22.7626 ug/L	99
4) Vinyl Chloride	3.95	62	205171	23.3438 ug/L	99
5) 1,3-Butadiene	4.00	54	136923	26.5642 ug/L	81
6) Bromomethane	4.85	94	71344	17.8613 ug/L	98
7) Chloroethane	5.01	64	110169	21.7947 ug/L	99
8) Trichlorofluoromethane	5.50	101	222862	21.4621 ug/L	99
9) Diethyl ether	6.03	59	337463	84.4708 ug/L	91
10) Isoprene	6.07	67	166907	19.2180 ug/L	94
11) Acrolein	6.26	56	15528	40.9849 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	127519	19.7294 ug/L	91
13) Acetone	6.36	43	18700	18.0321 ug/L #	23
14) 1,1-Dichloroethene	6.59	61	211179	21.6416 ug/L	97
15) Tert-Butyl Alcohol	6.70	59	43363	164.3510 ug/L	94
16) Dimethyl Sulfide	6.85	62	102117	20.2680 ug/L	93
17) Iodomethane	7.11	142	41533	16.3662 ug/L	94
18) Methyl acetate	7.11	43	69291	20.9902 ug/L	99
19) Methylene Chloride	7.38	84	144359	21.2656 ug/L	95
20) Carbon Disulfide	7.42	76	414594	21.6490 ug/L	100
21) Acrylonitrile	7.56	53	58982	43.3039 ug/L	98
22) Methyl Tert Butyl Ether	7.59	73	283420	21.4918 ug/L	93
23) trans-1,2-Dichloroethene	7.82	61	221240	21.3304 ug/L	95
24) n-Hexane	7.91	57	214711	20.8387 ug/L	91
25) Diisopropyl ether	8.25	45	2115374	90.0283 ug/L	95
26) Vinyl Acetate	8.42	43	131845	20.0824 ug/L	99
27) 1,1-Dichloroethane	8.46	63	287610	21.7644 ug/L	97
28) Ethyl-Tert-Butyl ether	8.83	59	1802378	89.6577 ug/L	97
29) 2-Butanone	9.00	43	33419	19.7314 ug/L	99
30) Propionitrile	9.11	54	41870	87.0947 ug/L	98
31) 2,2-Dichloropropane	9.23	77	239873	21.2687 ug/L	99
32) cis-1,2-Dichloroethene	9.29	96	165531	21.6922 ug/L	96
33) Chloroform	9.50	83	293214	22.3742 ug/L	99
34) 1-Bromopropane	9.64	122	23685	20.6056 ug/L	95
35) Bromochloromethane	9.74	130	86487	22.0030 ug/L	99
36) Tetrahydrofuran	9.76	42	90753	87.2728 ug/L	98
38) 1,1,1-Trichloroethane	10.04	97	253601	22.0668 ug/L	100
39) Cyclohexane	10.07	56	264761	20.9314 ug/L	87
40) 1,1-Dichloropropene	10.23	75	230963	21.9189 ug/L	98
41) Tert-Amyl-Methyl ether	10.34	73	1399066	89.1837 ug/L	96
42) Carbon Tetrachloride	10.38	117	216610	22.1166 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401534.D Vial: 8
Acq On : 4 Dec 2014 15:17 Operator: TMB
Sample : WG503415-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:45 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.54	62	211103	22.6918	ug/L		99
46)	Benzene	10.60	78	641602	23.2340	ug/L		96
47)	Trichloroethene	11.34	130	153157	21.5671	ug/L		99
48)	Methylcyclohexane	11.42	83	249963	21.1734	ug/L		91
49)	1,2-Dichloropropane	11.56	63	169331	22.1383	ug/L		93
50)	Bromodichloromethane	11.86	83	213238	22.6740	ug/L		99
51)	1,4-Dioxane	11.84	88	4565	157.6959	ug/L		94
52)	Dibromomethane	11.94	93	76750	22.2457	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.15	63	60023	23.7065	ug/L		99
54)	4-Methyl-2-Pentanone	12.18	58	30992	21.3291	ug/L		97
55)	cis-1,3-Dichloropropene	12.49	75	241425	23.1740	ug/L		98
56)	Dimethyl Disulfide	12.75	94	208761	20.7871	ug/L		99
59)	Toluene	12.91	91	665620	22.3022	ug/L		100
60)	Ethyl Methacrylate	13.00	69	133550	22.0864	ug/L		98
62)	trans-1,3-Dichloropropene	13.09	75	207602	22.4127	ug/L		100
63)	1,1,2-Trichloroethane	13.30	97	101272	22.7650	ug/L		99
64)	2-Hexanone	13.23	58	27825	20.2234	ug/L	#	49
65)	1,3-Dichloropropane	13.60	76	186547	22.4345	ug/L		99
66)	Tetrachloroethene	13.73	164	132485	21.3757	ug/L		96
67)	Dibromochloromethane	14.00	129	124578	22.3988	ug/L		100
68)	1,2-Dibromoethane	14.25	107	99172	22.6916	ug/L		99
69)	1-Chlorohexane	14.33	91	212241	22.0032	ug/L		92
70)	Chlorobenzene	14.75	112	434090	22.4369	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.78	131	151188	21.9546	ug/L		99
72)	Ethylbenzene	14.78	106	243663	21.8276	ug/L		95
73)	m-,p-Xylene	14.87	106	584368	47.3339	ug/L		96
74)	o-Xylene	15.43	106	284426	22.3740	ug/L		97
75)	Styrene	15.47	104	477117	24.3160	ug/L		96
76)	Bromoform	15.96	173	75027	20.8938	ug/L		98
77)	Isopropylbenzene	15.86	105	734133	23.1233	ug/L		98
79)	1,1,2,2-Tetrachloroethane	16.08	83	114390	22.9596	ug/L		99
81)	1,2,3-Trichloropropane	16.26	110	32535	23.8763	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.31	53	28831	20.3433	ug/L		83
83)	n-Propylbenzene	16.37	91	893370	22.1606	ug/L		98
84)	Bromobenzene	16.50	156	172383	22.7665	ug/L		99
85)	1,3,5-Trimethylbenzene	16.55	105	619601	23.8202	ug/L		98
86)	2-Chlorotoluene	16.63	91	548470	22.3602	ug/L		97
87)	4-Chlorotoluene	16.69	91	586880	22.0215	ug/L		99
88)	a-Methylstyrene	16.95	118	284207	22.1776	ug/L		98
89)	tert-Butylbenzene	17.02	134	122380	21.8895	ug/L		96
90)	1,2,4-Trimethylbenzene	17.07	105	595457	24.3166	ug/L		99
91)	sec-Butylbenzene	17.29	105	743922	23.6321	ug/L		99
92)	p-Isopropyltoluene	17.44	119	581125	24.3599	ug/L		99
93)	1,3-Dichlorobenzene	17.64	146	343605	22.7522	ug/L		98
94)	1,4-Dichlorobenzene	17.77	146	334732	22.7919	ug/L		97
95)	n-Butylbenzene	17.97	91	539487	23.9746	ug/L		98
96)	1,2-Dichlorobenzene	18.27	146	294421	23.5422	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.26	75	18328	22.4051	ug/L		87
98)	1,2,4-Trichlorobenzene	20.40	180	175547	22.3683	ug/L		99
99)	Hexachlorobutadiene	20.55	225	108866	21.9802	ug/L		96
100)	Naphthalene	20.77	128	244518	23.3254	ug/L		100
101)	1,2,3-Trichlorobenzene	21.08	180	134127	22.4224	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M401534.D 8260WTR.M Fri Dec 05 12:32:46 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401534.D Vial: 8
Acq On : 4 Dec 2014 15:17 Operator: TMB
Sample : WG503415-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 5 12:32 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

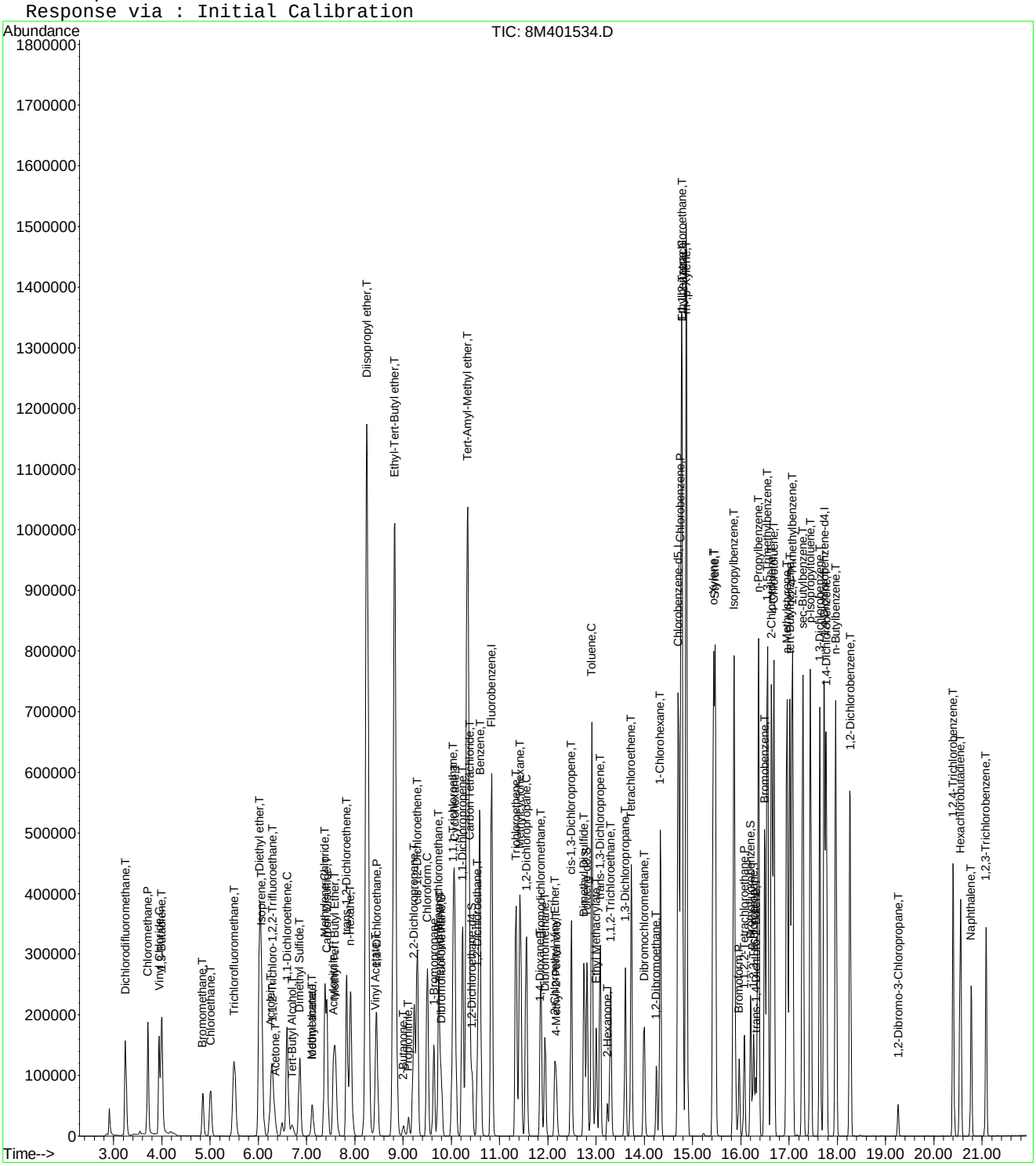

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401535.D Vial: 9
Acq On : 4 Dec 2014 15:46 Operator: TMB
Sample : WG503415-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:46 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	794624	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	558450	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.72	152	283707	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.79	111	197938	26.0185 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.08%		
43) 1,2-Dichloroethane-d4	10.43	65	212636	26.5832 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.32%		
58) Toluene-d8	12.81	98	715409	26.7343 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.92%		
80) p-Bromofluorobenzene	16.20	95	284320	25.7310 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.92%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	536187	53.5314 ug/L	99
3) Chloromethane	3.71	50	579132	49.5784 ug/L	99
4) Vinyl Chloride	3.94	62	499929	50.5733 ug/L	97
5) 1,3-Butadiene	3.99	54	301929	54.4790 ug/L	87
6) Bromomethane	4.85	94	220468	46.7014 ug/L	99
7) Chloroethane	5.01	64	287320	50.5376 ug/L	98
8) Trichlorofluoromethane	5.50	101	599494	51.3310 ug/L	99
9) Diethyl ether	6.03	59	437660	97.4037 ug/L	91
10) Isoprene	6.07	67	462734	47.3723 ug/L	92
11) Acrolein	6.26	56	19647	45.1374 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	365903	50.3341 ug/L	91
13) Acetone	6.36	43	56795	48.6937 ug/L #	24
14) 1,1-Dichloroethene	6.60	61	562084	51.2150 ug/L	98
15) Tert-Butyl Alcohol	6.70	59	58003	195.4616 ug/L	93
16) Dimethyl Sulfide	6.85	62	286510	50.5605 ug/L	96
17) Iodomethane	7.11	142	174145	46.4928 ug/L	95
18) Methyl acetate	7.12	43	183962	49.5479 ug/L	99
19) Methylene Chloride	7.38	84	379955	49.7650 ug/L	94
20) Carbon Disulfide	7.42	76	1127040	52.3254 ug/L	100
21) Acrylonitrile	7.56	53	80081	52.2750 ug/L	97
22) Methyl Tert Butyl Ether	7.59	73	739807	49.8792 ug/L	94
23) trans-1,2-Dichloroethene	7.83	61	605235	51.8820 ug/L	96
24) n-Hexane	7.91	57	579509	50.0075 ug/L	92
25) Diisopropyl ether	8.25	45	2659766	100.6453 ug/L	95
26) Vinyl Acetate	8.42	43	388214	52.5752 ug/L	100
27) 1,1-Dichloroethane	8.45	63	778934	52.4083 ug/L	98
28) Ethyl-Tert-Butyl ether	8.82	59	2280428	100.8592 ug/L	96
29) 2-Butanone	9.00	43	92333	48.4708 ug/L	100
30) Propionitrile	9.11	54	55980	103.5332 ug/L	98
31) 2,2-Dichloropropane	9.22	77	643331	50.7167 ug/L	100
32) cis-1,2-Dichloroethene	9.29	96	437494	50.9745 ug/L	96
33) Chloroform	9.50	83	768684	52.1518 ug/L	100
34) 1-Bromopropane	9.64	122	63486	48.5046 ug/L	99
35) Bromochloromethane	9.74	130	226441	51.0568 ug/L	97
36) Tetrahydrofuran	9.76	42	119153	101.8781 ug/L	98
38) 1,1,1-Trichloroethane	10.03	97	671672	51.9641 ug/L	99
39) Cyclohexane	10.07	56	710994	49.9768 ug/L	87
40) 1,1-Dichloropropene	10.22	75	607385	51.2505 ug/L	97
41) Tert-Amyl-Methyl ether	10.33	73	1769236	100.2746 ug/L	96
42) Carbon Tetrachloride	10.38	117	586503	53.2438 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M401535.D 8260WTR.M Fri Dec 05 12:32:47 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401535.D Vial: 9
Acq On : 4 Dec 2014 15:46 Operator: TMB
Sample : WG503415-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:46 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	546509	52.2311 ug/L	99
46)	Benzene	10.59	78	1637160	52.7118 ug/L	98
47)	Trichloroethene	11.34	130	402525	50.3972 ug/L	99
48)	Methylcyclohexane	11.42	83	674071	50.7666 ug/L	90
49)	1,2-Dichloropropane	11.55	63	444516	51.6718 ug/L	94
50)	Bromodichloromethane	11.85	83	562074	53.1391 ug/L	99
51)	1,4-Dioxane	11.84	88	6565	201.6380 ug/L	94
52)	Dibromomethane	11.94	93	203493	52.4416 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.15	63	159491	56.0072 ug/L	99
54)	4-Methyl-2-Pentanone	12.18	58	84959	51.9865 ug/L	94
55)	cis-1,3-Dichloropropene	12.49	75	633596	54.0740 ug/L	100
56)	Dimethyl Disulfide	12.75	94	585458	51.8319 ug/L	99
59)	Toluene	12.91	91	1720957	52.0474 ug/L	99
60)	Ethyl Methacrylate	13.00	69	370098	55.2465 ug/L	97
62)	trans-1,3-Dichloropropene	13.08	75	556239	54.2038 ug/L	100
63)	1,1,2-Trichloroethane	13.30	97	260896	52.9362 ug/L	97
64)	2-Hexanone	13.23	58	77375	50.7605 ug/L	83
65)	1,3-Dichloropropane	13.61	76	485400	52.6907 ug/L	98
66)	Tetrachloroethene	13.73	164	351646	51.2113 ug/L	96
67)	Dibromochloromethane	14.00	129	335836	54.5027 ug/L	100
68)	1,2-Dibromoethane	14.25	107	261640	54.0364 ug/L	100
69)	1-Chlorohexane	14.33	91	565789	52.9440 ug/L	93
70)	Chlorobenzene	14.75	112	1132515	52.8365 ug/L	95
71)	1,1,1,2-Tetrachloroethane	14.78	131	408766	53.5784 ug/L	99
72)	Ethylbenzene	14.77	106	655566	53.0076 ug/L	99
73)	m-,p-Xylene	14.87	106	1519375	111.0855 ug/L	95
74)	o-Xylene	15.44	106	750825	53.3112 ug/L	100
75)	Styrene	15.47	104	1268074	58.3336 ug/L	95
76)	Bromoform	15.96	173	205176	50.8653 ug/L	99
77)	Isopropylbenzene	15.86	105	1879490	53.4344 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.07	83	291712	51.0171 ug/L	98
81)	1,2,3-Trichloropropane	16.26	110	81435	52.0730 ug/L	47
82)	trans-1,4-Dichloro-2-Buten	16.30	53	81247	49.0923 ug/L #	45
83)	n-Propylbenzene	16.37	91	2258547	51.7107 ug/L	100
84)	Bromobenzene	16.49	156	448327	51.5920 ug/L	99
85)	1,3,5-Trimethylbenzene	16.55	105	1611846	53.9935 ug/L	100
86)	2-Chlorotoluene	16.64	91	1426757	50.6826 ug/L	91
87)	4-Chlorotoluene	16.69	91	1466386	50.7429 ug/L	91
88)	a-Methylstyrene	16.96	118	779488	52.9998 ug/L	97
89)	tert-Butylbenzene	17.02	134	328197	51.1499 ug/L	95
90)	1,2,4-Trimethylbenzene	17.07	105	1591399	56.6263 ug/L	99
91)	sec-Butylbenzene	17.29	105	1945662	53.8553 ug/L	99
92)	p-Isopropyltoluene	17.44	119	1568576	57.2924 ug/L	100
93)	1,3-Dichlorobenzene	17.64	146	888851	51.2837 ug/L	98
94)	1,4-Dichlorobenzene	17.77	146	866838	51.4288 ug/L	97
95)	n-Butylbenzene	17.97	91	1465576	56.7497 ug/L	99
96)	1,2-Dichlorobenzene	18.27	146	763919	53.2245 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.26	75	49630	52.8642 ug/L	89
98)	1,2,4-Trichlorobenzene	20.40	180	463036	51.4090 ug/L	98
99)	Hexachlorobutadiene	20.55	225	294841	51.8696 ug/L	97
100)	Naphthalene	20.77	128	599201	49.8054 ug/L	99
101)	1,2,3-Trichlorobenzene	21.08	180	343202	49.9920 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M401535.D 8260WTR.M Fri Dec 05 12:32:47 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401535.D Vial: 9
Acq On : 4 Dec 2014 15:46 Operator: TMB
Sample : WG503415-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 5 12:32 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

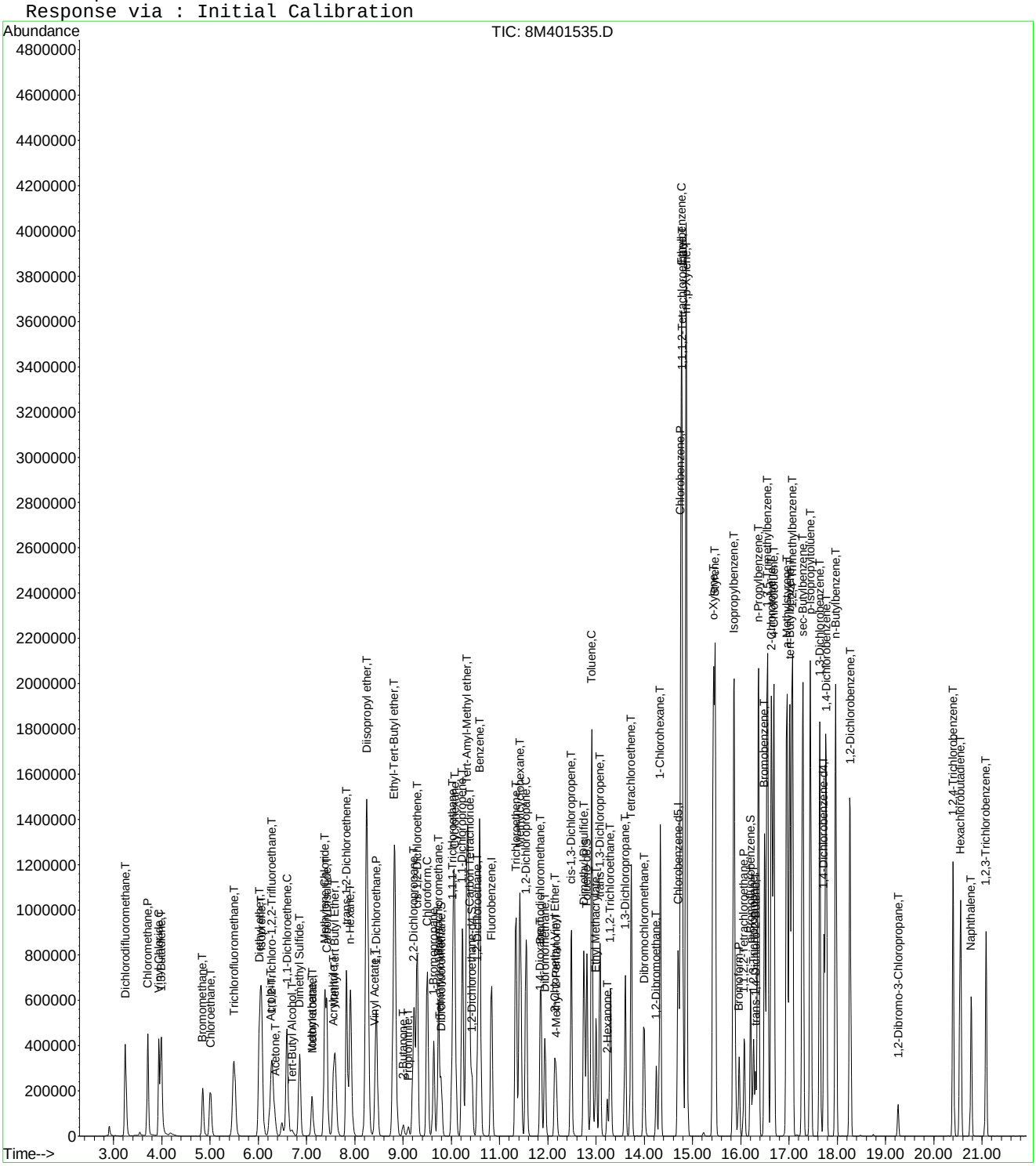
Abundance
TIC: 8M401535.D
Time-->
Chlorobenzene-d5,I
Chlorobenzene,P
Toluene,C
Benzene,T
Fluorobenzene,I
Naphthalene,T
1,2,3-Trichlorobenzene,T
1,2-Dibromo-3-Chloropropane,T
1,2-Dichlorobenzene,T
Hexachlorobutadiene,T
1-Chlorohexane,T
Tetrachloroethene,T
Isopropylbenzene,T
o-Xylene,T
Bromobenzene,T
Dichlorodifluoromethane,T
Chloromethane,P
Trichlorofluoromethane,T
Acetone,T
Diisopropyl ether,T
Ethyl-Tert-Butyl ether,T
Vinyl Acetate,T
Tert-Amyl-Methyl ether,T
Dibromomethane,T
1,2-Dibromoethane,T
1,3-Dichlorobenzene,T
1,4-Dichlorobenzene,T
n-Butylbenzene,T
sec-Butylbenzene,T
n-Propylbenzene,T
1,2,4-Trichlorobenzene,T
1,3-Dichloropropane,T
1,1,2-Trichloroethane,T
2-Hexanone,T
cis-1,3-Dichloropropene,T
Dibromochloromethane,T
1,2-Dibromoethane,T
Bromoform,T
Chloroform,C
Carbon Tetrachloride,T
1,1-Dichloroethane,T
1,2-Dichloroethane,T
1,1-Dichloroethene,C
1,2-Dichloroethane,P
Methylene Chloride,T
Methyl Tert-Butyl Ether,T
Acrylonitrile,T
Methyl Acetate,T
Methyl Iodide,T
Carbon Disulfide,T
Dimethyl Sulfide,T
Tert-Butyl Alcohol,T
Acrylonitrile,T
Ethyl Methacrylate,T
Methyl Methacrylate,T
Propionitrile,T
Methyl Methacrylate,T
Propionitrile,T
Methacrylonitrile,T
Iodomethane,T
Methyl Iodide,T
Methyl Methacrylate,T
Propionitrile,T
Methacrylonitrile,T
Iodomethane

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401536.D Vial: 10
Acq On : 4 Dec 2014 16:15 Operator: TMB
Sample : WG503415-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:47 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	831324	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	593780	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	301205	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	406664	51.0953 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 204.40%#		
43) 1,2-Dichloroethane-d4	10.43	65	432380	51.6687 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 206.68%#		
58) Toluene-d8	12.81	98	1438356	50.5521 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 202.20%#		
80) p-Bromofluorobenzene	16.20	95	571672	48.7308 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 194.92%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	1127851	107.6304 ug/L	100
3) Chloromethane	3.71	50	1182643	96.7744 ug/L	100
4) Vinyl Chloride	3.94	62	980528	94.8122 ug/L	96
5) 1,3-Butadiene	3.98	54	477933	85.6052 ug/L	95
6) Bromomethane	4.85	94	527016	101.8321 ug/L	99
7) Chloroethane	5.00	64	610004	102.5588 ug/L	100
8) Trichlorofluoromethane	5.50	101	1254410	102.6657 ug/L	99
9) Diethyl ether	6.03	59	997515	212.2019 ug/L	91
10) Isoprene	6.07	67	1089936	106.6559 ug/L	93
11) Acrolein	6.26	56	49853	98.4230 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	841838	110.6921 ug/L	92
13) Acetone	6.36	43	118406	97.0348 ug/L #	25
14) 1,1-Dichloroethene	6.59	61	1203182	104.7898 ug/L	97
15) Tert-Butyl Alcohol	6.70	59	123777	398.6964 ug/L	98
16) Dimethyl Sulfide	6.85	62	635499	107.1958 ug/L	97
17) Iodomethane	7.11	142	423751	101.0801 ug/L	94
18) Methyl acetate	7.12	43	394665	101.6056 ug/L	99
19) Methylene Chloride	7.38	84	812289	101.6936 ug/L	93
20) Carbon Disulfide	7.42	76	2451131	108.7755 ug/L	99
21) Acrylonitrile	7.56	53	175527	109.5217 ug/L	98
22) Methyl Tert Butyl Ether	7.59	73	1641695	105.7998 ug/L	95
23) trans-1,2-Dichloroethene	7.83	61	1310214	107.3560 ug/L	96
24) n-Hexane	7.91	57	1209471	99.7612 ug/L	90
25) Diisopropyl ether	8.25	45	5339163	193.1143 ug/L	91
26) Vinyl Acetate	8.41	43	796541	103.1120 ug/L	100
27) 1,1-Dichloroethane	8.45	63	1635851	105.2046 ug/L	96
28) Ethyl-Tert-Butyl ether	8.82	59	4655588	196.8182 ug/L	93
29) 2-Butanone	9.00	43	194458	97.5753 ug/L	99
30) Propionitrile	9.11	54	115811	204.7330 ug/L	99
31) 2,2-Dichloropropane	9.23	77	1432579	107.9510 ug/L	100
32) cis-1,2-Dichloroethene	9.29	96	936467	104.2954 ug/L	95
33) Chloroform	9.50	83	1589174	103.0586 ug/L	99
34) 1-Bromopropane	9.63	122	134222	97.5763 ug/L	100
35) Bromochloromethane	9.74	130	475981	102.4594 ug/L	97
36) Tetrahydrofuran	9.76	42	249027	203.5231 ug/L	98
38) 1,1,1-Trichloroethane	10.04	97	1449416	107.1842 ug/L	98
39) Cyclohexane	10.07	56	1539845	103.4595 ug/L	87
40) 1,1-Dichloropropene	10.23	75	1288050	103.8863 ug/L	98
41) Tert-Amyl-Methyl ether	10.33	73	3620309	196.1291 ug/L	98
42) Carbon Tetrachloride	10.38	117	1274790	110.6187 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M401536.D 8260WTR.M Fri Dec 05 12:32:48 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401536.D Vial: 10
Acq On : 4 Dec 2014 16:15 Operator: TMB
Sample : WG503415-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:47 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.54	62	1130193	103.2465	ug/L		98
46)	Benzene	10.59	78	3270123	100.6403	ug/L		99
47)	Trichloroethene	11.34	130	849684	101.6863	ug/L		98
48)	Methylcyclohexane	11.42	83	1401438	100.8876	ug/L		91
49)	1,2-Dichloropropane	11.55	63	934914	103.8794	ug/L		92
50)	Bromodichloromethane	11.86	83	1193704	107.8721	ug/L		99
51)	1,4-Dioxane	11.85	88	14211	417.2089	ug/L		89
52)	Dibromomethane	11.94	93	431820	106.3703	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.15	63	281871	94.6126	ug/L		99
54)	4-Methyl-2-Pentanone	12.18	58	173268	101.3424	ug/L		93
55)	cis-1,3-Dichloropropene	12.49	75	1341985	109.4751	ug/L		99
56)	Dimethyl Disulfide	12.75	94	1251837	105.9353	ug/L		99
59)	Toluene	12.91	91	3379668	96.1306	ug/L		95
60)	Ethyl Methacrylate	12.99	69	775996	108.9447	ug/L		97
62)	trans-1,3-Dichloropropene	13.08	75	1172712	107.4778	ug/L		99
63)	1,1,2-Trichloroethane	13.31	97	553265	105.5789	ug/L		99
64)	2-Hexanone	13.23	58	158612	97.8634	ug/L		84
65)	1,3-Dichloropropane	13.60	76	1009075	103.0189	ug/L		99
66)	Tetrachloroethene	13.73	164	746269	102.2149	ug/L		97
67)	Dibromochloromethane	14.00	129	719365	109.7991	ug/L		99
68)	1,2-Dibromoethane	14.25	107	551063	107.0391	ug/L		99
69)	1-Chlorohexane	14.33	91	1177049	103.5894	ug/L		92
70)	Chlorobenzene	14.75	112	2332131	102.3298	ug/L		93
71)	1,1,1,2-Tetrachloroethane	14.78	131	891943	109.9539	ug/L		99
72)	Ethylbenzene	14.78	106	1412237	107.3961	ug/L		81
73)	m-,p-Xylene	14.87	106	3070156	211.1114	ug/L		76
74)	o-Xylene	15.43	106	1577085	105.3159	ug/L		91
75)	Styrene	15.47	104	2566252	111.0280	ug/L		92
76)	Bromoform	15.96	173	443485	102.9044	ug/L		99
77)	Isopropylbenzene	15.86	105	3612825	96.6021	ug/L		93
79)	1,1,2,2-Tetrachloroethane	16.07	83	607198	100.0230	ug/L		100
81)	1,2,3-Trichloropropane	16.26	110	171258	103.1478	ug/L		48
82)	trans-1,4-Dichloro-2-Buten	16.30	53	171865	97.2277	ug/L	#	45
83)	n-Propylbenzene	16.37	91	4134417	98.4716	ug/L		92
84)	Bromobenzene	16.50	156	938423	101.7171	ug/L		99
85)	1,3,5-Trimethylbenzene	16.55	105	3152182	99.4575	ug/L		95
86)	2-Chlorotoluene	16.63	91	2688789	89.9650	ug/L		94
87)	4-Chlorotoluene	16.69	91	2875244	106.1715	ug/L		95
88)	a-Methylstyrene	16.95	118	1615722	103.4759	ug/L		96
89)	tert-Butylbenzene	17.02	134	706424	103.7011	ug/L		93
90)	1,2,4-Trimethylbenzene	17.07	105	3133336	105.0155	ug/L		93
91)	sec-Butylbenzene	17.29	105	3749008	97.7429	ug/L		95
92)	p-Isopropyltoluene	17.44	119	3138995	107.9915	ug/L		95
93)	1,3-Dichlorobenzene	17.64	146	1834006	99.6687	ug/L		95
94)	1,4-Dichlorobenzene	17.77	146	1784980	99.7493	ug/L		95
95)	n-Butylbenzene	17.97	91	2973698	108.4577	ug/L		97
96)	1,2-Dichlorobenzene	18.27	146	1575737	103.4083	ug/L		96
97)	1,2-Dibromo-3-Chloropropan	19.26	75	104881	105.2258	ug/L		92
98)	1,2,4-Trichlorobenzene	20.40	180	978123	102.2883	ug/L		98
99)	Hexachlorobutadiene	20.55	225	627676	104.0085	ug/L		97
100)	Naphthalene	20.77	128	1215230	95.1416	ug/L		99
101)	1,2,3-Trichlorobenzene	21.08	180	712946	97.8172	ug/L		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401536.D Vial: 10
Acq On : 4 Dec 2014 16:15 Operator: TMB
Sample : WG503415-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 5 12:32 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

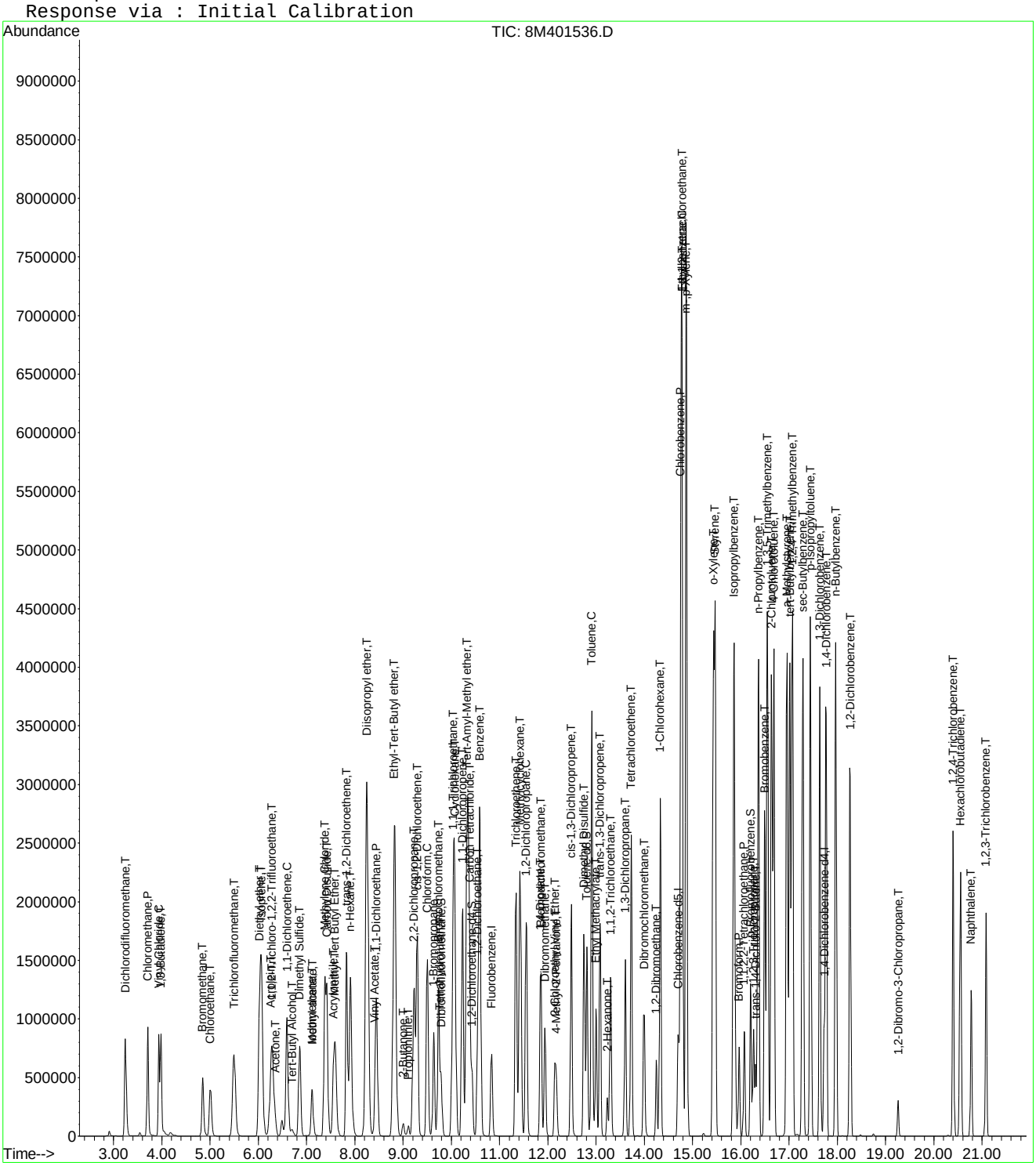

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401537.D Vial: 11
Acq On : 4 Dec 2014 16:44 Operator: TMB
Sample : WG503415-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:48 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	844866	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	609707	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	309868	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	830319	102.6533 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 410.60%#		
43) 1,2-Dichloroethane-d4	10.43	65	865069	101.7174 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 406.88%#		
58) Toluene-d8	12.81	98	2826056	96.7293 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 386.92%#		
80) p-Bromofluorobenzene	16.20	95	1170586	96.9941 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 387.96%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	2228494	209.2557 ug/L	98
3) Chloromethane	3.71	50	2288897	184.2958 ug/L	97
4) Vinyl Chloride	3.94	62	1877950	178.6778 ug/L	94
5) 1,3-Butadiene	3.98	54	982663	196.9372 ug/L	98
6) Bromomethane	4.85	94	1189483	210.1820 ug/L	100
7) Chloroethane	5.00	64	1257117	207.9689 ug/L	99
8) Trichlorofluoromethane	5.50	101	2566519	206.6869 ug/L	99
10) Isoprene	6.07	67	2348967	226.1744 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1762730	228.0638 ug/L	92
13) Acetone	6.36	43	254999	205.6245 ug/L #	26
14) 1,1-Dichloroethene	6.60	61	2443959	209.4421 ug/L	96
16) Dimethyl Sulfide	6.85	62	1355602	224.9973 ug/L	97
17) Iodomethane	7.11	142	950049	216.5693 ug/L	97
18) Methyl acetate	7.11	43	806024	204.1829 ug/L	97
19) Methylene Chloride	7.38	84	1648742	203.1039 ug/L	91
20) Carbon Disulfide	7.42	76	4763435	208.0020 ug/L	95
21) Acrylonitrile	7.58	53	35944	22.0681 ug/L #	32
22) Methyl Tert Butyl Ether	7.59	73	3337724	211.6533 ug/L	96
23) trans-1,2-Dichloroethene	7.83	61	2658757	214.3607 ug/L	94
24) n-Hexane	7.91	57	2591885	210.3606 ug/L	89
26) Vinyl Acetate	8.42	43	1590245	202.5572 ug/L	99
27) 1,1-Dichloroethane	8.45	63	3278807	207.4862 ug/L	94
28) Ethyl-Tert-Butyl ether	8.83	59	3429	0.1426 ug/L #	48
29) 2-Butanone	9.00	43	404525	199.7294 ug/L	98
30) Propionitrile	9.10	54	838	1.4577 ug/L #	56
31) 2,2-Dichloropropane	9.23	77	2877599	213.3638 ug/L	98
32) cis-1,2-Dichloroethene	9.29	96	1893572	207.5089 ug/L	95
33) Chloroform	9.50	83	3106836	198.2502 ug/L	96
34) 1-Bromopropane	9.64	122	291589	208.0849 ug/L	97
35) Bromochloromethane	9.73	130	969181	205.1576 ug/L	97
36) Tetrahydrofuran	9.76	42	921	0.7406 ug/L #	38
38) 1,1,1-Trichloroethane	10.04	97	2967317	215.9156 ug/L	97
39) Cyclohexane	10.07	56	3268094	216.0581 ug/L	86
40) 1,1-Dichloropropene	10.22	75	2614664	207.5027 ug/L	100
42) Carbon Tetrachloride	10.38	117	2569315	219.3764 ug/L	98
45) 1,2-Dichloroethane	10.55	62	2250200	202.2677 ug/L	97
46) Benzene	10.59	78	5709145	172.8866 ug/L	91
47) Trichloroethene	11.34	130	1755868	206.7660 ug/L	99
48) Methylcyclohexane	11.42	83	2917151	206.6357 ug/L	92
49) 1,2-Dichloropropane	11.55	63	1909904	208.8102 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M401537.D 8260WTR.M Fri Dec 05 12:32:49 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401537.D Vial: 11
Acq On : 4 Dec 2014 16:44 Operator: TMB
Sample : WG503415-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:48 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.85	83	2366698	210.4446 ug/L		97
51)	1,4-Dioxane	11.85	88	4370	126.2388 ug/L	#	45
52)	Dibromomethane	11.94	93	878897	213.0287 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.15	63	565568	186.7953 ug/L		97
54)	4-Methyl-2-Pentanone	12.18	58	363461	209.1766 ug/L		93
55)	cis-1,3-Dichloropropene	12.49	75	2644888	212.3037 ug/L		96
56)	Dimethyl Disulfide	12.75	94	2594780	216.0608 ug/L		96
59)	Toluene	12.91	91	5641519	156.2744 ug/L		83
60)	Ethyl Methacrylate	13.00	69	1607798	219.8278 ug/L		97
62)	trans-1,3-Dichloropropene	13.08	75	2312422	206.3948 ug/L		96
63)	1,1,2-Trichloroethane	13.30	97	1130144	210.0304 ug/L		99
64)	2-Hexanone	13.23	58	338050	203.1279 ug/L		87
65)	1,3-Dichloropropane	13.61	76	1995236	198.3773 ug/L		100
66)	Tetrachloroethene	13.73	164	1560873	208.2049 ug/L		98
67)	Dibromochloromethane	13.99	129	1469754	218.4734 ug/L		99
68)	1,2-Dibromoethane	14.25	107	1124193	212.6604 ug/L		99
69)	1-Chlorohexane	14.33	91	2392952	205.0970 ug/L		94
70)	Chlorobenzene	14.75	112	4295282	183.5461 ug/L		87
71)	1,1,1,2-Tetrachloroethane	14.78	131	1859029	223.1845 ug/L		99
72)	Ethylbenzene	14.78	106	2880112	213.3018 ug/L		51
73)	m-,p-Xylene	14.87	106	5251327	351.6614 ug/L		58
74)	o-Xylene	15.44	106	3147599	204.7022 ug/L		72
75)	Styrene	15.47	104	4578117	192.8965 ug/L		82
76)	Bromoform	15.96	173	909799	205.1097 ug/L		99
77)	Isopropylbenzene	15.86	105	5889615	153.3666 ug/L	#	78
79)	1,1,2,2-Tetrachloroethane	16.07	83	1204196	192.8200 ug/L		99
81)	1,2,3-Trichloropropane	16.26	110	345927	202.5252 ug/L		49
82)	trans-1,4-Dichloro-2-Buten	16.30	53	371609	203.6990 ug/L	#	41
83)	n-Propylbenzene	16.37	91	6341503	179.1404 ug/L	#	74
84)	Bromobenzene	16.50	156	1885568	198.6658 ug/L		96
85)	1,3,5-Trimethylbenzene	16.55	105	5334619	163.6119 ug/L		82
86)	2-Chlorotoluene	16.64	91	4521192	147.0467 ug/L		79
87)	4-Chlorotoluene	16.69	91	3851461	158.0374 ug/L	#	66
88)	a-Methylstyrene	16.96	118	3248525	202.2294 ug/L		92
89)	tert-Butylbenzene	17.02	134	1481745	211.4350 ug/L		78
90)	1,2,4-Trimethylbenzene	17.07	105	5289135	172.3125 ug/L		77
91)	sec-Butylbenzene	17.29	105	6053827	153.4208 ug/L	#	80
92)	p-Isopropyltoluene	17.44	119	5308139	177.5116 ug/L		81
93)	1,3-Dichlorobenzene	17.64	146	3423060	180.8248 ug/L		88
94)	1,4-Dichlorobenzene	17.77	146	3354011	182.1908 ug/L		89
95)	n-Butylbenzene	17.97	91	5046116	178.8983 ug/L	#	85
96)	1,2-Dichlorobenzene	18.27	146	3020169	192.6586 ug/L		90
97)	1,2-Dibromo-3-Chloropropan	19.26	75	216626	211.2621 ug/L		92
98)	1,2,4-Trichlorobenzene	20.40	180	2029602	206.3141 ug/L		99
99)	Hexachlorobutadiene	20.55	225	1318380	212.3534 ug/L		97
100)	Naphthalene	20.77	128	2391970	182.0343 ug/L		97
101)	1,2,3-Trichlorobenzene	21.08	180	1452042	193.6526 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M401537.D 8260WTR.M Fri Dec 05 12:32:49 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401537.D Vial: 11
Acq On : 4 Dec 2014 16:44 Operator: TMB
Sample : WG503415-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 5 12:32 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

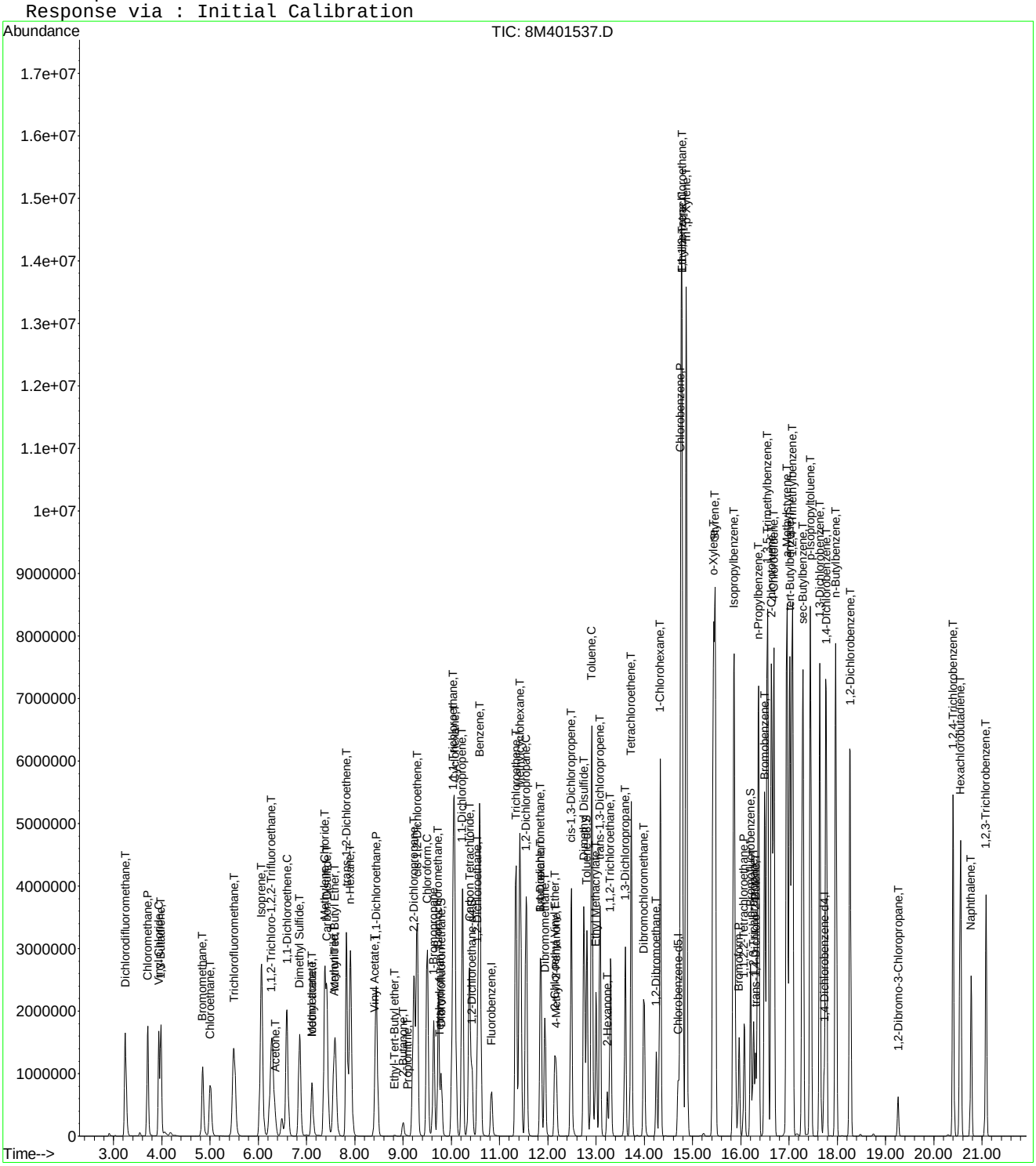

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401538.D Vial: 12
Acq On : 4 Dec 2014 17:13 Operator: TMB
Sample : WG503415-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:50 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	895141	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	649839	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	319962	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.79	111	1315699	153.5255 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 614.12%#		
43) 1,2-Dichloroethane-d4	10.43	65	1356611	150.5554 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 602.24%#		
58) Toluene-d8	12.81	98	4171281	133.9559 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 535.84%#		
80) p-Bromofluorobenzene	16.20	95	1830514	146.8904 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 587.56%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	3079086	272.8877 ug/L	95
3) Chloromethane	3.71	50	3160577	240.1883 ug/L	94
4) Vinyl Chloride	3.94	62	2528792	227.0889 ug/L	91
5) 1,3-Butadiene	3.98	54	1419287	309.8602 ug/L	97
6) Bromomethane	4.85	94	1854920	293.8713 ug/L	99
7) Chloroethane	5.00	64	1876397	292.9839 ug/L	98
8) Trichlorofluoromethane	5.50	101	4090460	310.9116 ug/L	98
9) Diethyl ether	6.03	59	1635209	323.0592 ug/L	91
10) Isoprene	6.07	67	3527566	320.5812 ug/L	94
11) Acrolein	6.26	56	85458	152.0976 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	2622077	320.1934 ug/L	93
13) Acetone	6.37	43	383350	291.7617 ug/L #	28
14) 1,1-Dichloroethene	6.58	61	3684022	297.9811 ug/L	94
15) Tert-Butyl Alcohol	6.71	59	202643	606.1957 ug/L	98
16) Dimethyl Sulfide	6.85	62	2082205	326.1858 ug/L	98
17) Iodomethane	7.11	142	1349374	288.5091 ug/L	95
18) Methyl acetate	7.12	43	1315230	314.4629 ug/L	97
19) Methylene Chloride	7.38	84	2452237	285.1178 ug/L	89
20) Carbon Disulfide	7.42	76	6536207	269.3825 ug/L	91
21) Acrylonitrile	7.56	53	312340	180.9934 ug/L	95
22) Methyl Tert Butyl Ether	7.59	73	4962741	297.0248 ug/L	98
23) trans-1,2-Dichloroethene	7.83	61	3838067	292.0622 ug/L	91
24) n-Hexane	7.91	57	3834196	293.7104 ug/L	88
25) Diisopropyl ether	8.25	45	7743658	260.1155 ug/L	87
26) Vinyl Acetate	8.41	43	2357276	283.3939 ug/L	98
27) 1,1-Dichloroethane	8.45	63	4723334	282.1100 ug/L	91
28) Ethyl-Tert-Butyl ether	8.83	59	6828365	268.0935 ug/L	88
29) 2-Butanone	9.00	43	645248	300.6905 ug/L	97
30) Propionitrile	9.12	54	190574	312.8820 ug/L	98
31) 2,2-Dichloropropane	9.23	77	4157951	290.9820 ug/L	95
32) cis-1,2-Dichloroethene	9.29	96	2790236	288.5973 ug/L	92
33) Chloroform	9.50	83	4395343	264.7185 ug/L	93
34) 1-Bromopropane	9.63	122	438993	295.4975 ug/L	99
35) Bromochloromethane	9.74	130	1449842	289.6168 ug/L	95
36) Tetrahydrofuran	9.76	42	413355	313.7395 ug/L	98
38) 1,1,1-Trichloroethane	10.04	97	4208856	289.0550 ug/L	94
39) Cyclohexane	10.07	56	4774566	297.9246 ug/L	84
40) 1,1-Dichloropropene	10.23	75	3754883	281.2553 ug/L	96
41) Tert-Amyl-Methyl ether	10.34	73	5463452	274.8795 ug/L	99
42) Carbon Tetrachloride	10.38	117	3771579	303.9430 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M401538.D 8260WTR.M Fri Dec 05 12:32:50 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401538.D Vial: 12
Acq On : 4 Dec 2014 17:13 Operator: TMB
Sample : WG503415-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:50 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.54	62	3220147	273.1980 ug/L	93
46)	Benzene	10.60	78	7331190	209.5372 ug/L #	82
47)	Trichloroethene	11.34	130	2642644	293.7125 ug/L	99
48)	Methylcyclohexane	11.42	83	4272237	285.6262 ug/L	91
49)	1,2-Dichloropropane	11.56	63	2840968	293.1588 ug/L	91
50)	Bromodichloromethane	11.86	83	3425178	287.4580 ug/L	95
51)	1,4-Dioxane	11.85	88	24832	677.0481 ug/L	80
52)	Dibromomethane	11.94	93	1324267	302.9508 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.15	63	900603	280.7443 ug/L	98
54)	4-Methyl-2-Pentanone	12.18	58	570877	310.0946 ug/L	94
55)	cis-1,3-Dichloropropene	12.49	75	3734235	282.9100 ug/L	91
56)	Dimethyl Disulfide	12.75	94	3802491	298.8409 ug/L	93
59)	Toluene	12.91	91	6969550	181.1390 ug/L	76
60)	Ethyl Methacrylate	12.99	69	2391553	306.7938 ug/L	97
62)	trans-1,3-Dichloropropene	13.08	75	3275870	274.3303 ug/L	92
63)	1,1,2-Trichloroethane	13.30	97	1692246	295.0715 ug/L	98
64)	2-Hexanone	13.23	58	518884	292.5326 ug/L	88
65)	1,3-Dichloropropane	13.60	76	2899731	270.5022 ug/L	99
66)	Tetrachloroethene	13.73	164	2320263	290.3862 ug/L	98
67)	Dibromochloromethane	14.00	129	2189864	305.4122 ug/L	98
68)	1,2-Dibromoethane	14.25	107	1677731	297.7717 ug/L	100
69)	1-Chlorohexane	14.33	91	3442972	276.8689 ug/L	96
70)	Chlorobenzene	14.75	112	5487001	219.9905 ug/L	82
71)	1,1,1,2-Tetrachloroethane	14.78	131	2679742	301.8466 ug/L	100
72)	Ethylbenzene	14.78	106	3982512	276.7309 ug/L #	36
73)	m-,p-Xylene	14.87	106	6484412	407.4194 ug/L	53
74)	o-Xylene	15.43	106	4358380	265.9400 ug/L	60
75)	Styrene	15.47	104	5817550	229.9815 ug/L	73
76)	Bromoform	15.96	173	1376384	290.9334 ug/L	98
77)	Isopropylbenzene	15.86	105	7174840	175.2958 ug/L #	65
79)	1,1,2,2-Tetrachloroethane	16.08	83	1774176	275.1250 ug/L	99
81)	1,2,3-Trichloropropane	16.26	110	518026	293.7140 ug/L	48
82)	trans-1,4-Dichloro-2-Buten	16.30	53	565307	299.8200 ug/L #	39
83)	n-Propylbenzene	16.37	91	7575832	Below Cal #	59
84)	Bromobenzene	16.50	156	2722342	277.7806 ug/L	91
85)	1,3,5-Trimethylbenzene	16.55	105	6559489	194.8318 ug/L	72
86)	2-Chlorotoluene	16.63	91	6612207	208.2702 ug/L	83
87)	4-Chlorotoluene	16.69	91	4846248	Below Cal #	50
88)	a-Methylstyrene	16.95	118	4455802	268.6348 ug/L	88
89)	tert-Butylbenzene	17.02	134	2177508	300.9134 ug/L	64
90)	1,2,4-Trimethylbenzene	17.07	105	6470605	204.1528 ug/L #	64
91)	sec-Butylbenzene	17.29	105	7305924	179.3113 ug/L #	67
92)	p-Isopropyltoluene	17.44	119	6518515	211.1113 ug/L #	69
93)	1,3-Dichlorobenzene	17.64	146	4530298	231.7654 ug/L	81
94)	1,4-Dichlorobenzene	17.77	146	4426522	232.8643 ug/L	81
95)	n-Butylbenzene	17.97	91	6144564	210.9688 ug/L #	74
96)	1,2-Dichlorobenzene	18.27	146	4086441	252.4532 ug/L	85
97)	1,2-Dibromo-3-Chloropropan	19.26	75	321086	303.2569 ug/L	94
98)	1,2,4-Trichlorobenzene	20.41	180	2818002	277.4200 ug/L	97
99)	Hexachlorobutadiene	20.55	225	1899499	296.3030 ug/L	97
100)	Naphthalene	20.77	128	3233556	238.3176 ug/L	95
101)	1,2,3-Trichlorobenzene	21.08	180	2018267	260.6760 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M401538.D 8260WTR.M Fri Dec 05 12:32:50 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401538.D Vial: 12
Acq On : 4 Dec 2014 17:13 Operator: TMB
Sample : WG503415-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 5 12:32 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

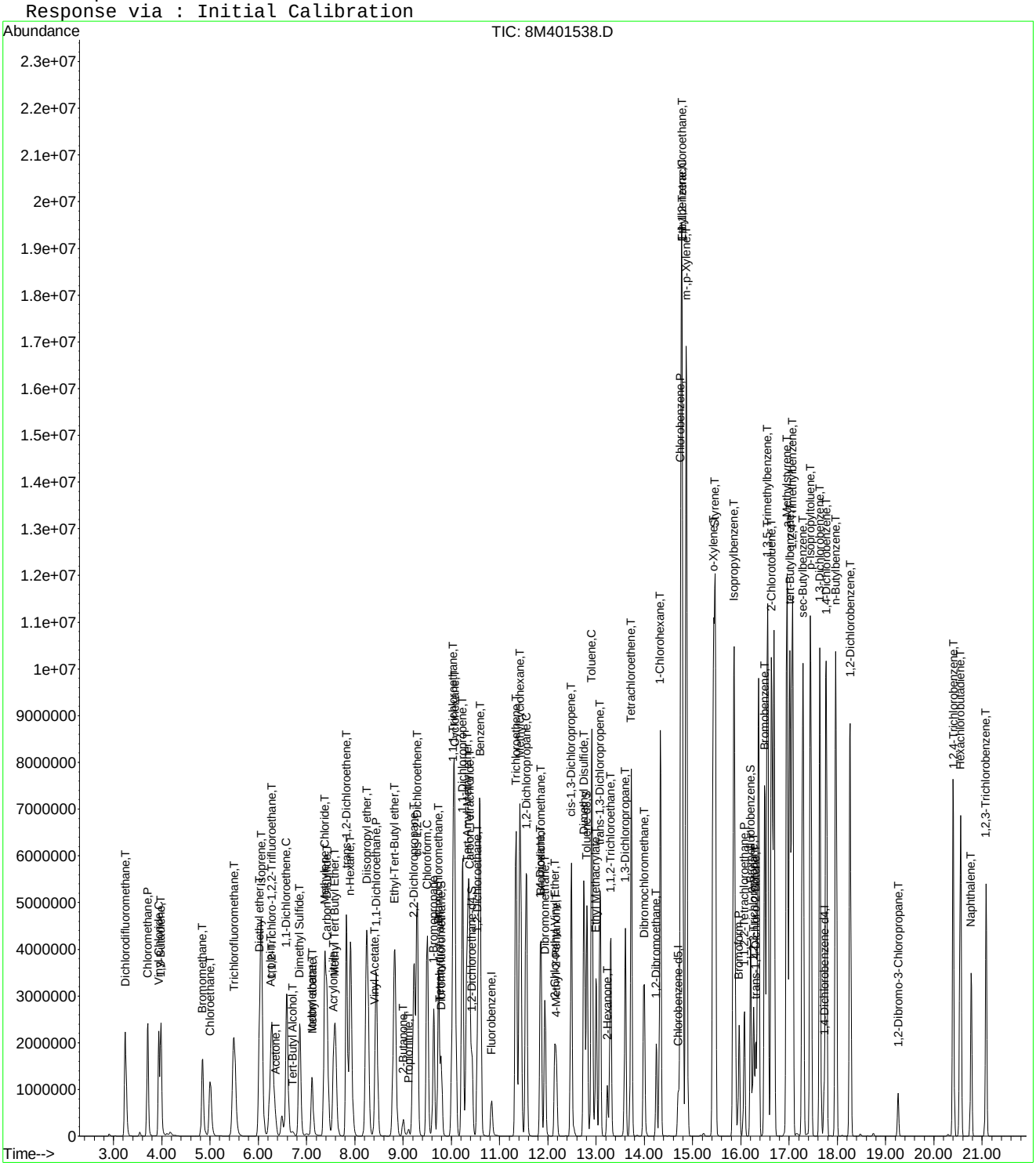

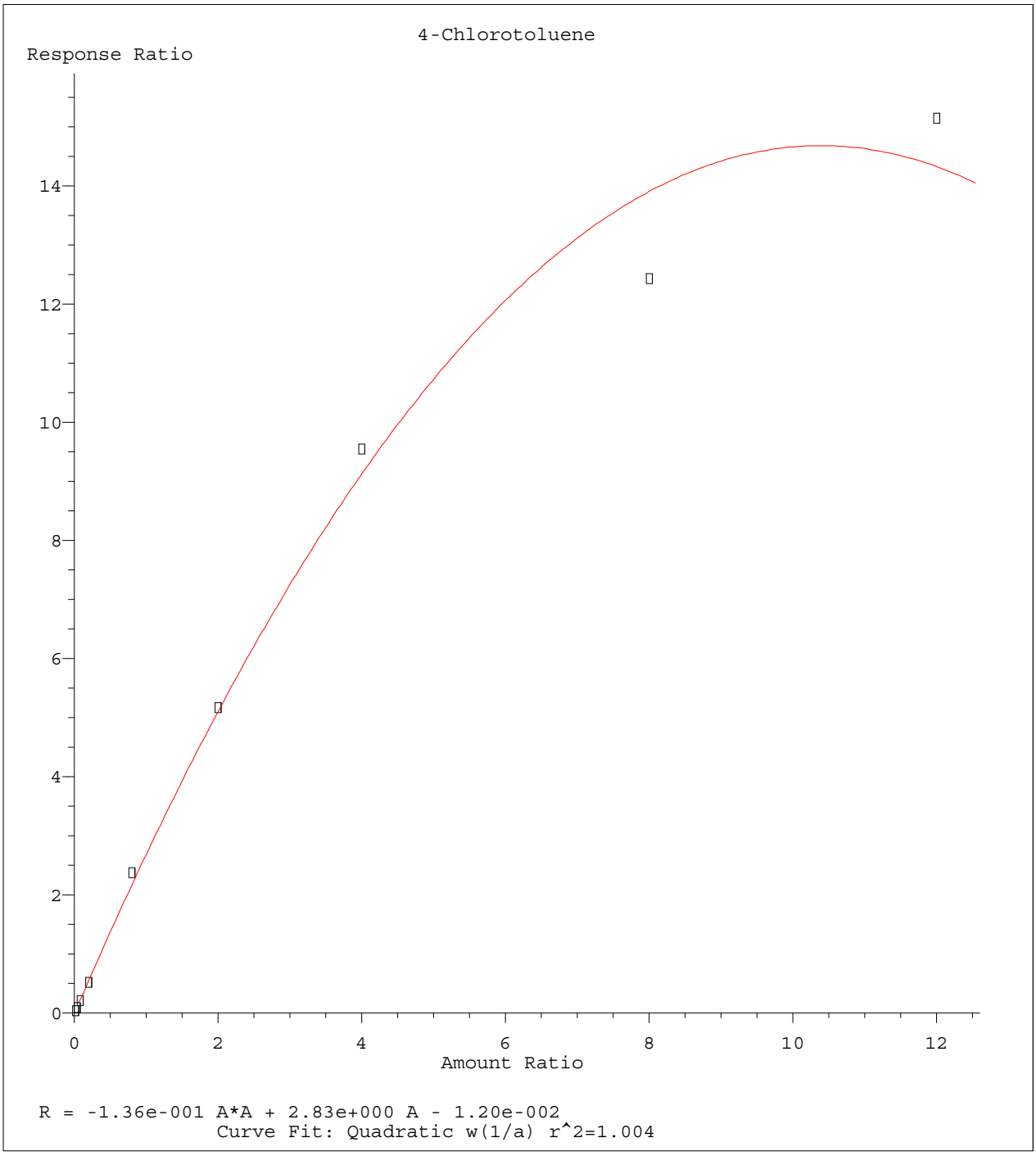

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Dec 05 08:59:23 2014

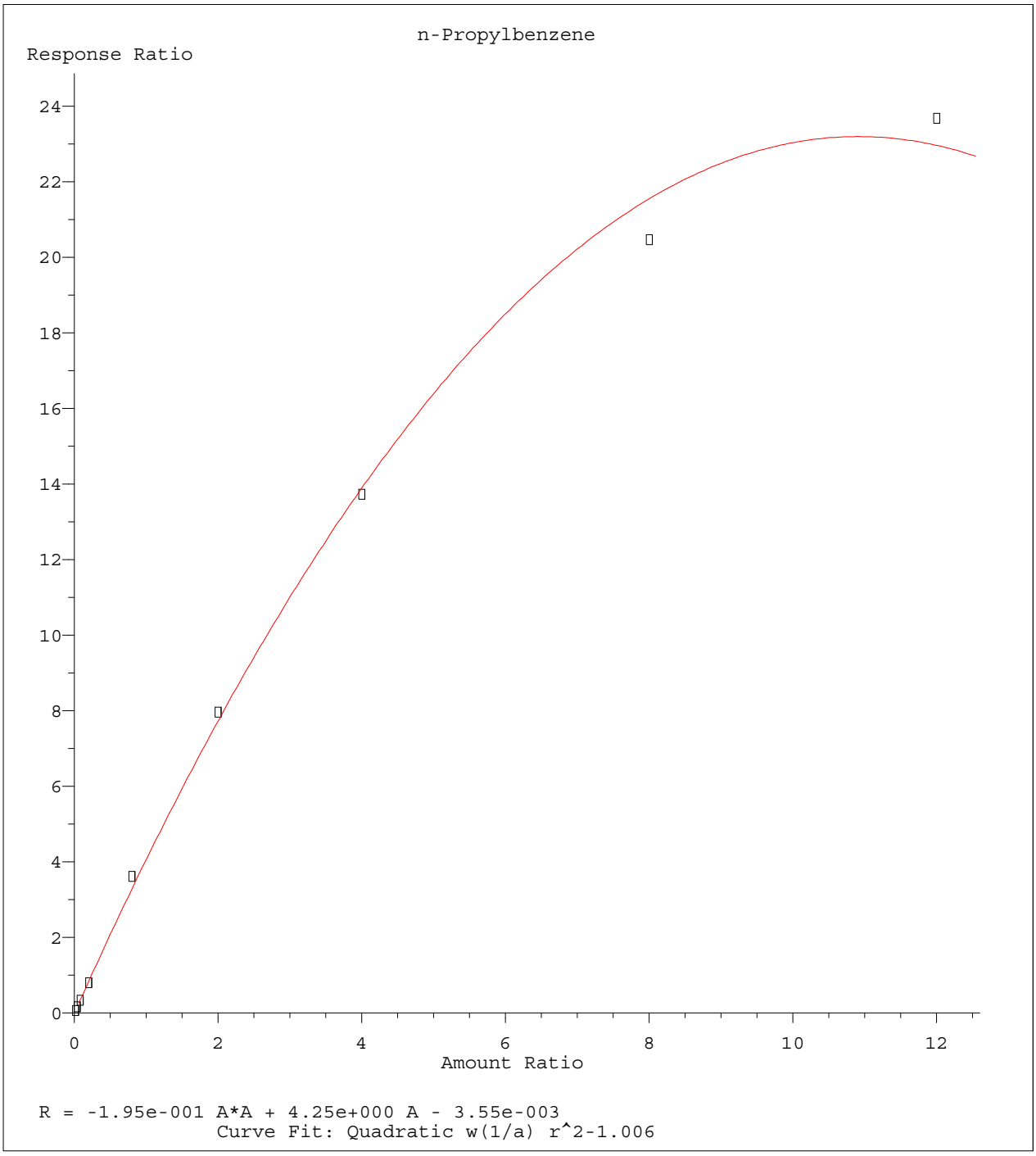

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Dec 05 08:59:23 2014

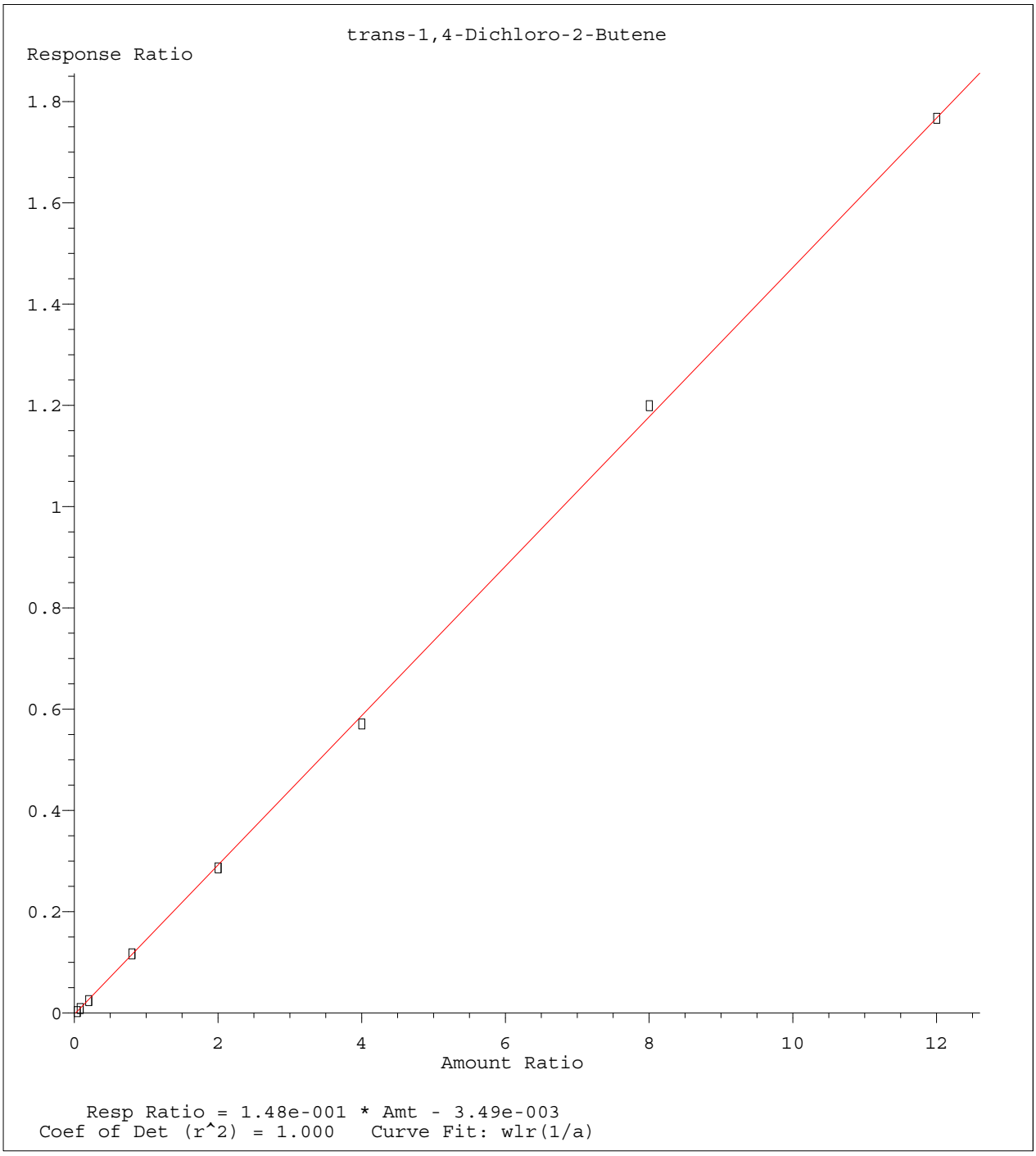

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Dec 05 08:59:23 2014

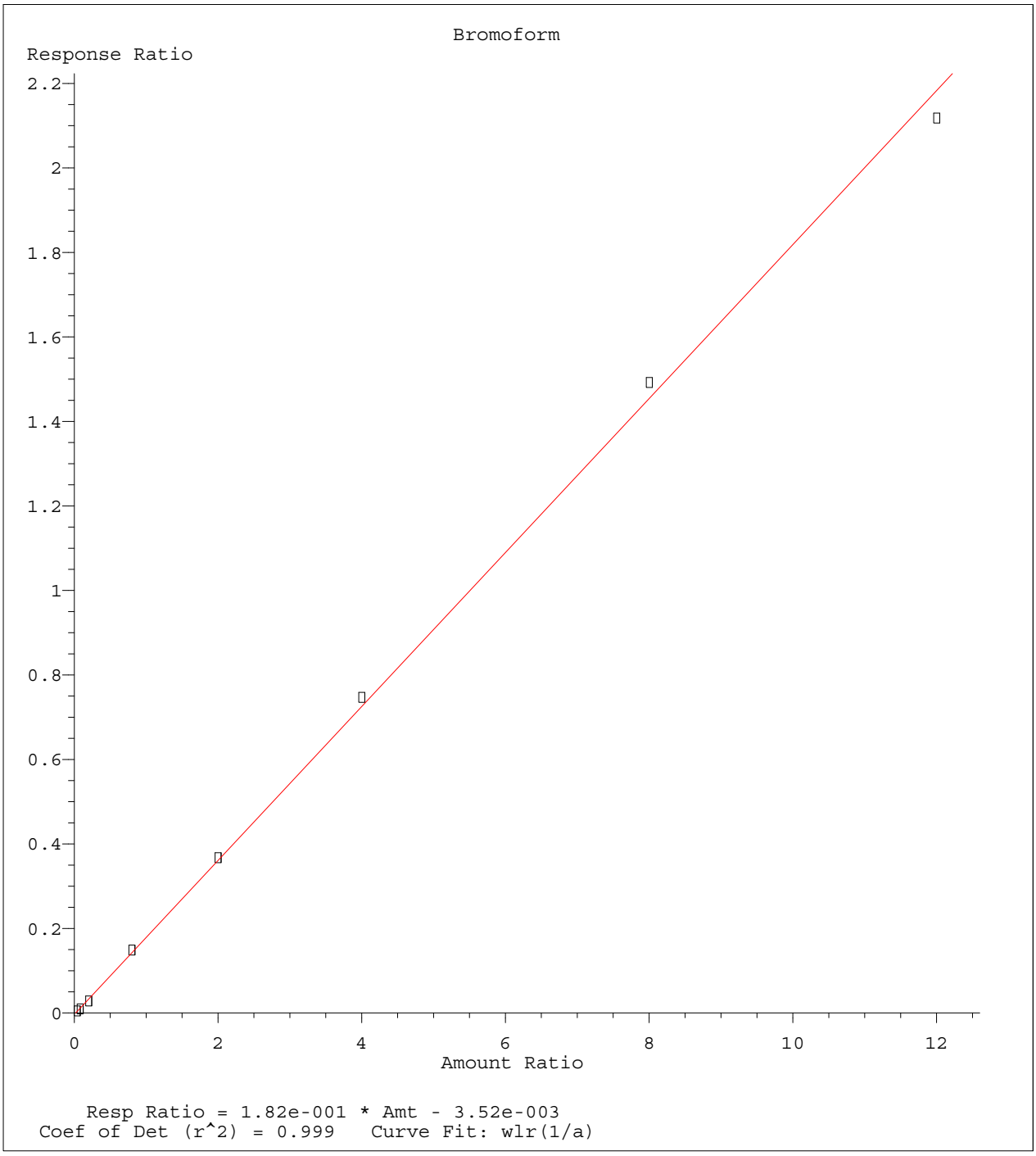

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Dec 05 08:59:23 2014

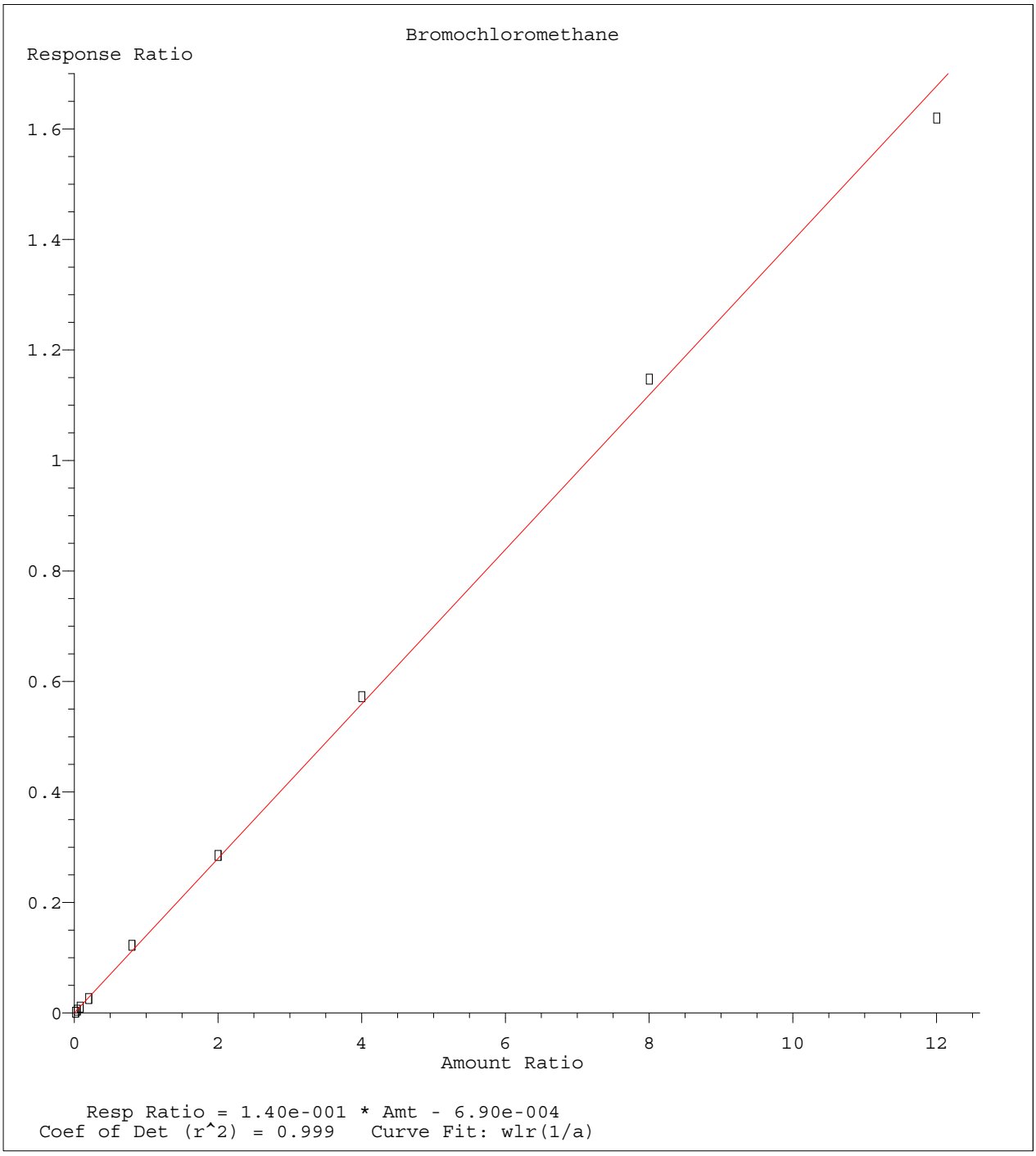

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Dec 05 08:59:23 2014

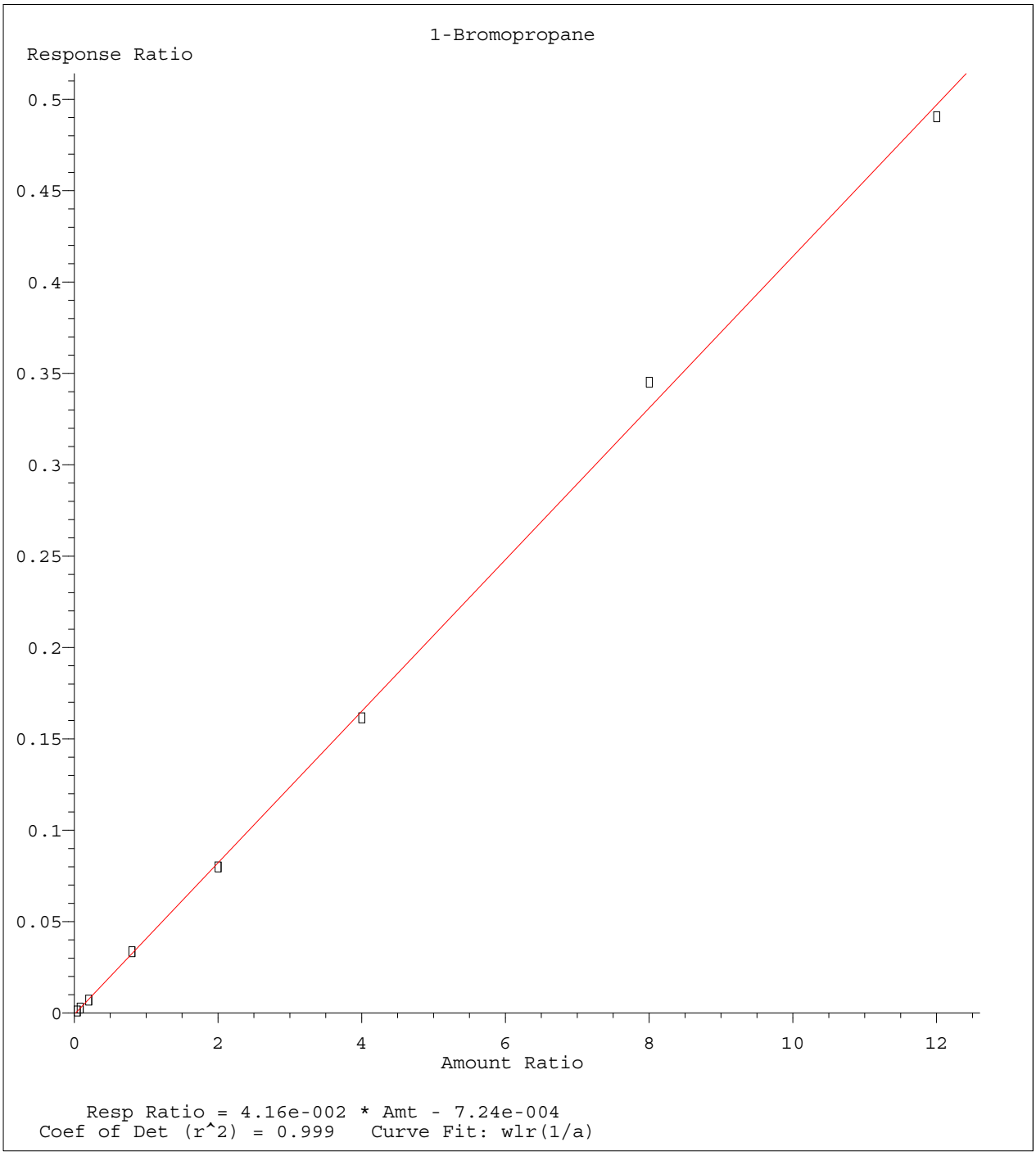

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Dec 05 08:59:23 2014

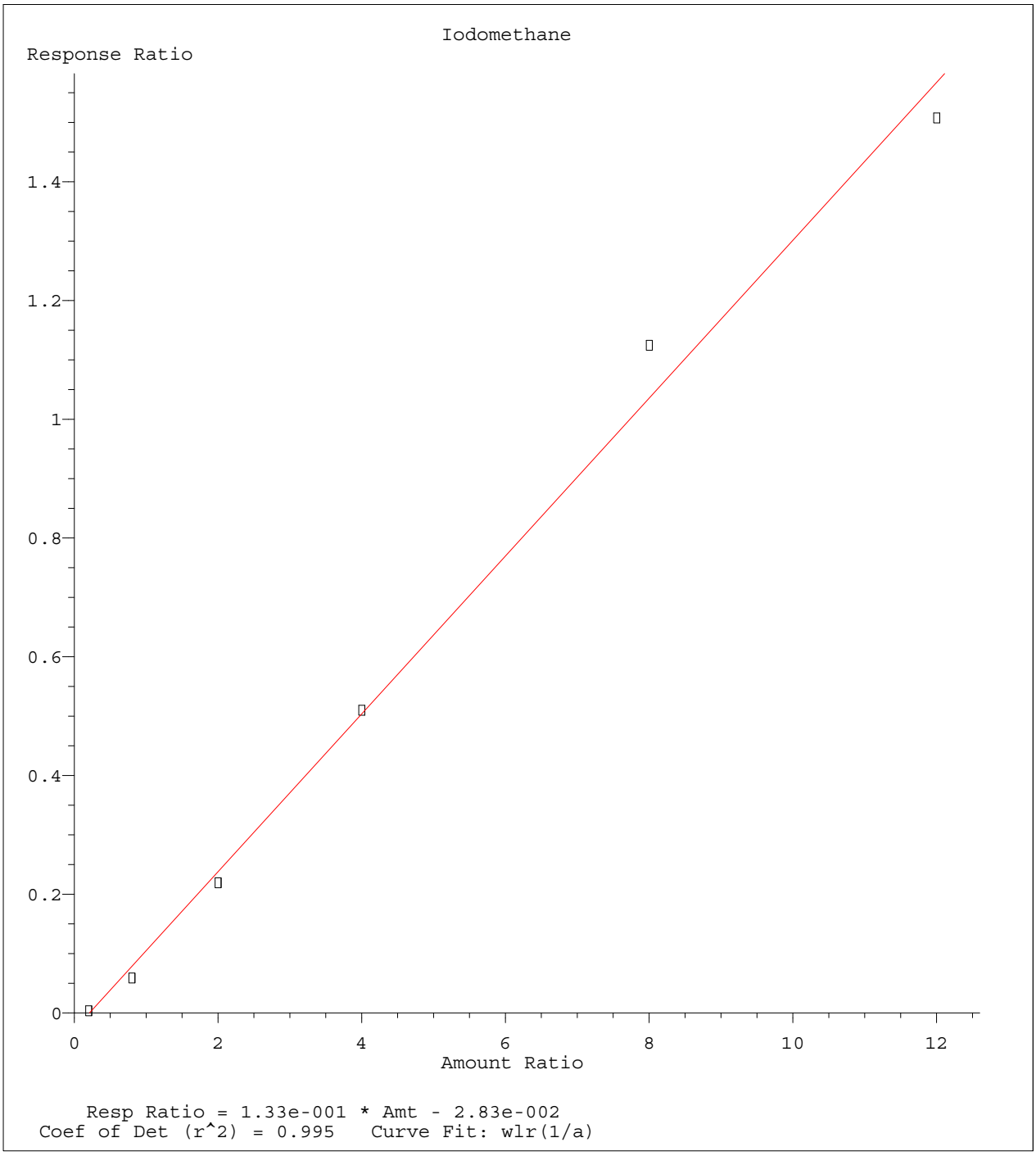

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Dec 05 08:59:23 2014

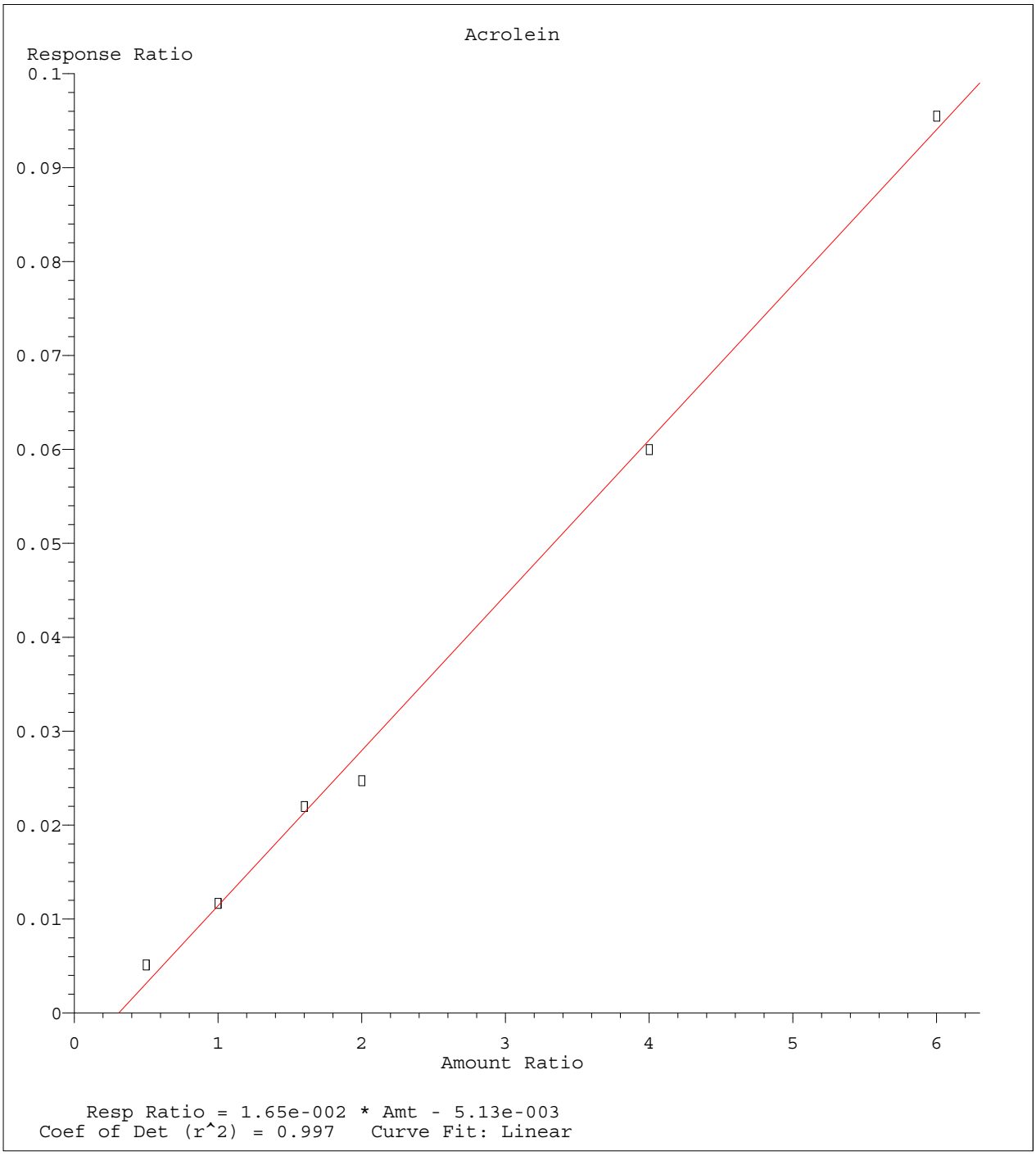

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Dec 05 08:59:23 2014

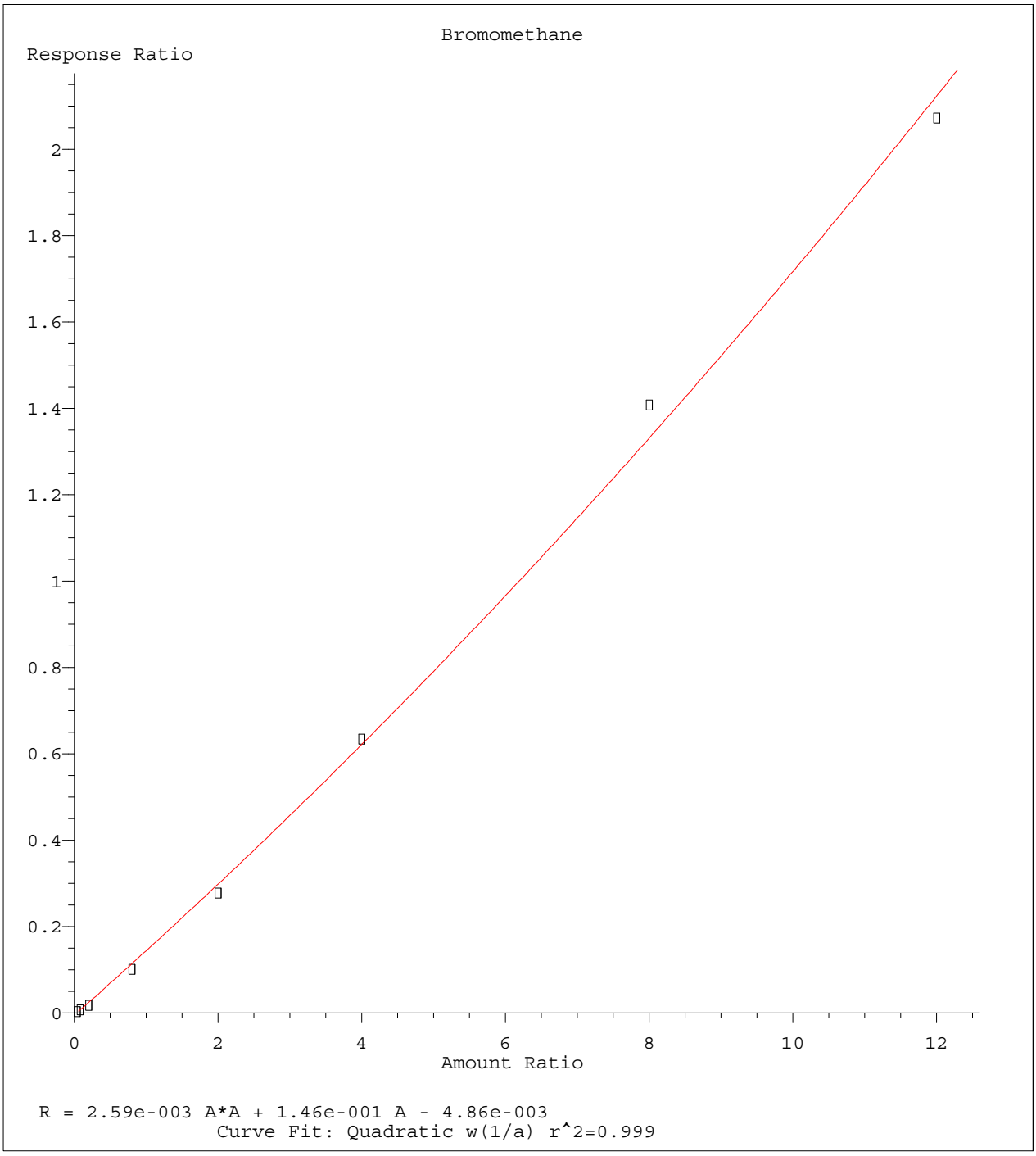

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Dec 05 08:59:23 2014

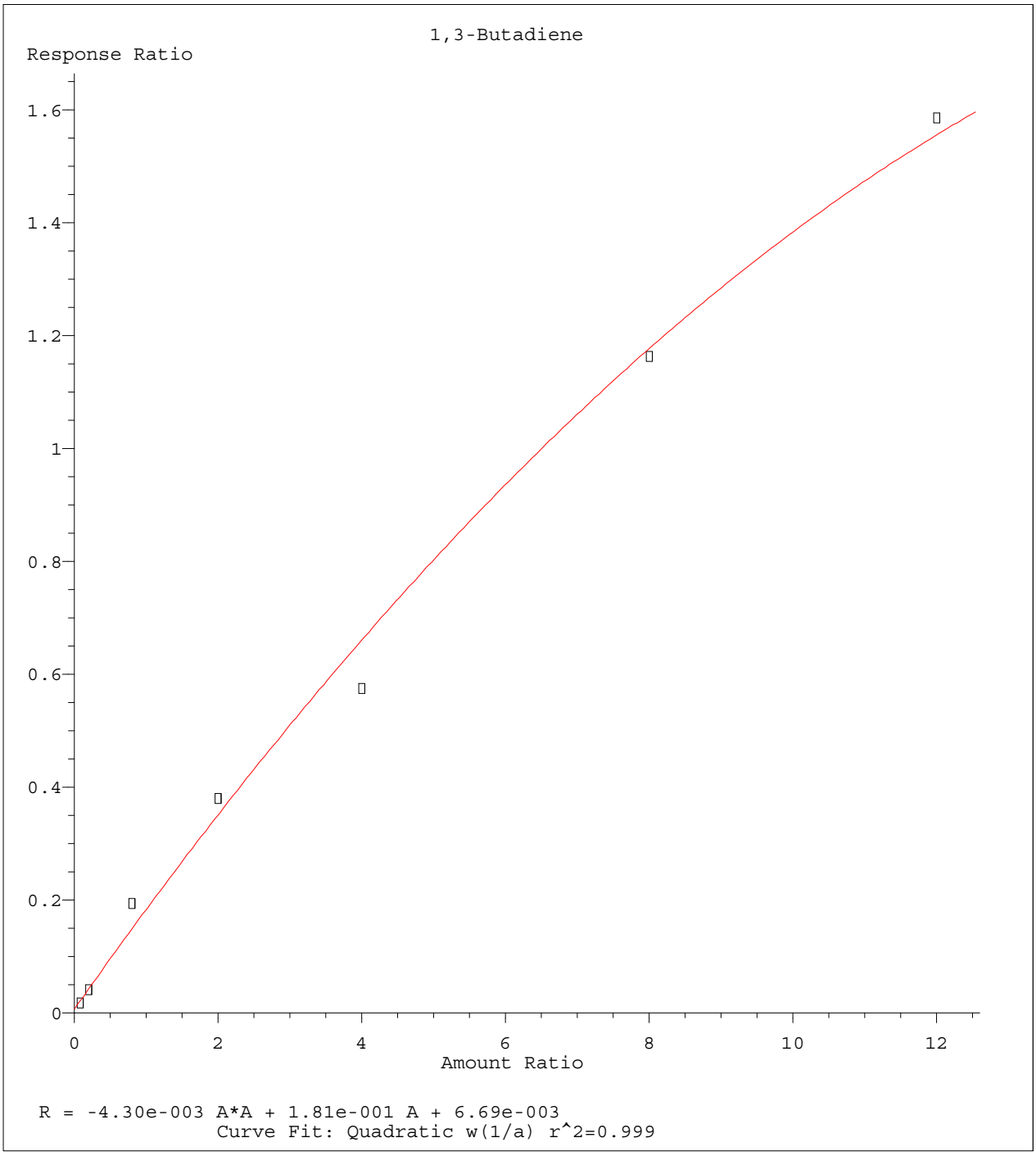

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Dec 05 08:59:23 2014

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401541.D Vial: 15
Acq On : 4 Dec 2014 18:40 Operator: TMB
Sample : WG503415-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD67765 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:51 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	829225	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	596579	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.72	152	293059	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.79	111	202880	25.5554 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.24%		
43) 1,2-Dichloroethane-d4	10.42	65	214823	25.7360 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.96%		
58) Toluene-d8	12.81	98	723245	25.2997 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.20%		
80) p-Bromofluorobenzene	16.20	95	288049	25.2365 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	417454	39.9383 ug/L	99
3) Chloromethane	3.70	50	511186	41.9357 ug/L	99
4) Vinyl Chloride	3.94	62	419140	40.6313 ug/L	98
5) 1,3-Butadiene	3.97	54	198834	33.3118 ug/L	97
6) Bromomethane	4.84	94	186919	38.3134 ug/L	99
7) Chloroethane	5.01	64	274726	46.3061 ug/L	100
8) Trichlorofluoromethane	5.49	101	587946	48.2416 ug/L	99
9) Diethyl ether	6.02	59	469010	100.0253 ug/L	92
10) Isoprene	6.06	67	558566	54.7970 ug/L	91
11) Acrolein	6.26	56	22001	47.8696 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	374776	49.4035 ug/L	91
13) Acetone	6.36	43	60339	49.5735 ug/L #	26
14) 1,1-Dichloroethene	6.59	61	546606	47.7265 ug/L	97
15) Tert-Butyl Alcohol	6.70	59	55704	179.8816 ug/L	99
16) Dimethyl Sulfide	6.86	62	300371	50.7947 ug/L	96
17) Iodomethane	7.12	142	88898	25.4624 ug/L	97
18) Methyl acetate	7.12	43	163349	42.1603 ug/L	99
19) Methylene Chloride	7.37	84	369524	46.3792 ug/L	94
20) Carbon Disulfide	7.42	76	1095659	48.7459 ug/L	100
21) Acrylonitrile	7.56	53	85275	53.3428 ug/L	100
22) Methyl Tert Butyl Ether	7.59	73	809426	52.2959 ug/L	94
23) trans-1,2-Dichloroethene	7.83	61	597955	49.1191 ug/L	96
24) n-Hexane	7.91	57	584897	48.3664 ug/L	91
25) Diisopropyl ether	8.25	45	2787229	101.0676 ug/L	95
26) Vinyl Acetate	8.42	43	608383	78.9544 ug/L	100
27) 1,1-Dichloroethane	8.45	63	800829	51.6332 ug/L	98
28) Ethyl-Tert-Butyl ether	8.82	59	2389334	101.2664 ug/L	96
29) 2-Butanone	9.00	43	96642	48.6159 ug/L	96
30) Propionitrile	9.11	54	57482	101.8751 ug/L	97
31) 2,2-Dichloropropane	9.22	77	671877	50.7570 ug/L	100
32) cis-1,2-Dichloroethene	9.29	96	437805	48.8822 ug/L	97
33) Chloroform	9.50	83	777416	50.5434 ug/L	99
34) 1-Bromopropane	9.64	122	90929	66.4104 ug/L	98
35) Bromochloromethane	9.73	130	230407	49.7863 ug/L	97
36) Tetrahydrofuran	9.75	42	123906	101.5214 ug/L	99
38) 1,1,1-Trichloroethane	10.03	97	689136	51.0905 ug/L	99
39) Cyclohexane	10.06	56	722522	48.6679 ug/L	86
40) 1,1-Dichloropropene	10.23	75	594017	48.0311 ug/L	97
41) Tert-Amyl-Methyl ether	10.33	73	1821648	98.9370 ug/L	95
42) Carbon Tetrachloride	10.37	117	600134	52.2079 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401541.D Vial: 15
Acq On : 4 Dec 2014 18:40 Operator: TMB
Sample : WG503415-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD67765 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 05 12:32:51 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	530154	48.5538	ug/L	98
46)	Benzene	10.59	78	1625041	50.1384	ug/L	97
47)	Trichloroethene	11.33	130	417308	50.0679	ug/L	98
48)	Methylcyclohexane	11.43	83	683077	49.2982	ug/L	92
49)	1,2-Dichloropropane	11.55	63	441148	49.1405	ug/L	92
50)	Bromodichloromethane	11.85	83	556299	50.3986	ug/L	99
51)	1,4-Dioxane	11.83	88	5801	170.7378	ug/L	87
52)	Dibromomethane	11.93	93	206919	51.0994	ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.14	63	171185	57.6053	ug/L	98
54)	4-Methyl-2-Pentanone	12.17	58	83014	48.6768	ug/L	94
55)	cis-1,3-Dichloropropene	12.48	75	660090	53.9845	ug/L	100
56)	Dimethyl Disulfide	12.75	94	662773	56.2284	ug/L	98
59)	Toluene	12.92	91	1719683	48.6848	ug/L	99
60)	Ethyl Methacrylate	13.00	69	400950	56.0266	ug/L	93
62)	trans-1,3-Dichloropropene	13.08	75	526702	48.0452	ug/L	100
63)	1,1,2-Trichloroethane	13.30	97	262703	49.8961	ug/L	100
64)	2-Hexanone	13.24	58	77270	47.4518	ug/L	84
65)	1,3-Dichloropropane	13.60	76	479079	48.6808	ug/L	98
66)	Tetrachloroethene	13.73	164	357338	48.7142	ug/L	97
67)	Dibromochloromethane	13.99	129	340322	51.7008	ug/L	100
68)	1,2-Dibromoethane	14.25	107	256694	49.6266	ug/L	99
69)	1-Chlorohexane	14.33	91	605910	53.0746	ug/L	91
70)	Chlorobenzene	14.76	112	1166761	50.9552	ug/L	96
71)	1,1,1,2-Tetrachloroethane	14.78	131	398150	48.8515	ug/L	99
72)	Ethylbenzene	14.78	106	640144	48.4525	ug/L	98
73)	m-,p-Xylene	14.87	106	1540249	105.4144	ug/L	95
74)	o-Xylene	15.43	106	763013	50.7141	ug/L	100
75)	Styrene	15.47	104	1243136	53.5315	ug/L	95
76)	Bromoform	15.97	173	200771	46.6327	ug/L	99
77)	Isopropylbenzene	15.85	105	1920391	51.1078	ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.07	83	280177	47.4361	ug/L	99
81)	1,2,3-Trichloropropane	16.27	110	78990	48.8977	ug/L	85
82)	trans-1,4-Dichloro-2-Buten	16.31	53	82706	48.3877	ug/L	96
83)	n-Propylbenzene	16.36	91	2266649	50.0748	ug/L	99
84)	Bromobenzene	16.49	156	441394	49.1733	ug/L	98
85)	1,3,5-Trimethylbenzene	16.55	105	1611091	52.2460	ug/L	100
86)	2-Chlorotoluene	16.64	91	1538941	52.9232	ug/L	91
87)	4-Chlorotoluene	16.68	91	1409609	46.8397	ug/L	90
88)	a-Methylstyrene	16.95	118	904754	59.5539	ug/L	99
89)	tert-Butylbenzene	17.01	134	338005	50.9974	ug/L	95
90)	1,2,4-Trimethylbenzene	17.07	105	1541246	53.0916	ug/L	98
91)	sec-Butylbenzene	17.28	105	1985456	53.2030	ug/L	99
92)	p-Isopropyltoluene	17.44	119	1542783	54.5520	ug/L	100
93)	1,3-Dichlorobenzene	17.64	146	884484	49.4032	ug/L	97
94)	1,4-Dichlorobenzene	17.77	146	833888	47.8951	ug/L	97
95)	n-Butylbenzene	17.97	91	1403218	52.6012	ug/L	99
96)	1,2-Dichlorobenzene	18.26	146	767836	51.7902	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.25	75	46753	48.2106	ug/L	89
98)	1,2,4-Trichlorobenzene	20.40	180	445688	47.9039	ug/L	99
99)	Hexachlorobutadiene	20.56	225	287500	48.9641	ug/L	97
100)	Naphthalene	20.77	128	564773	45.4457	ug/L	99
101)	1,2,3-Trichlorobenzene	21.08	180	330242	46.5691	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M401541.D 8260WTR.M Fri Dec 05 12:32:52 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120414\8M401541.D Vial: 15
Acq On : 4 Dec 2014 18:40 Operator: TMB
Sample : WG503415-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD67765 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 5 12:32 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

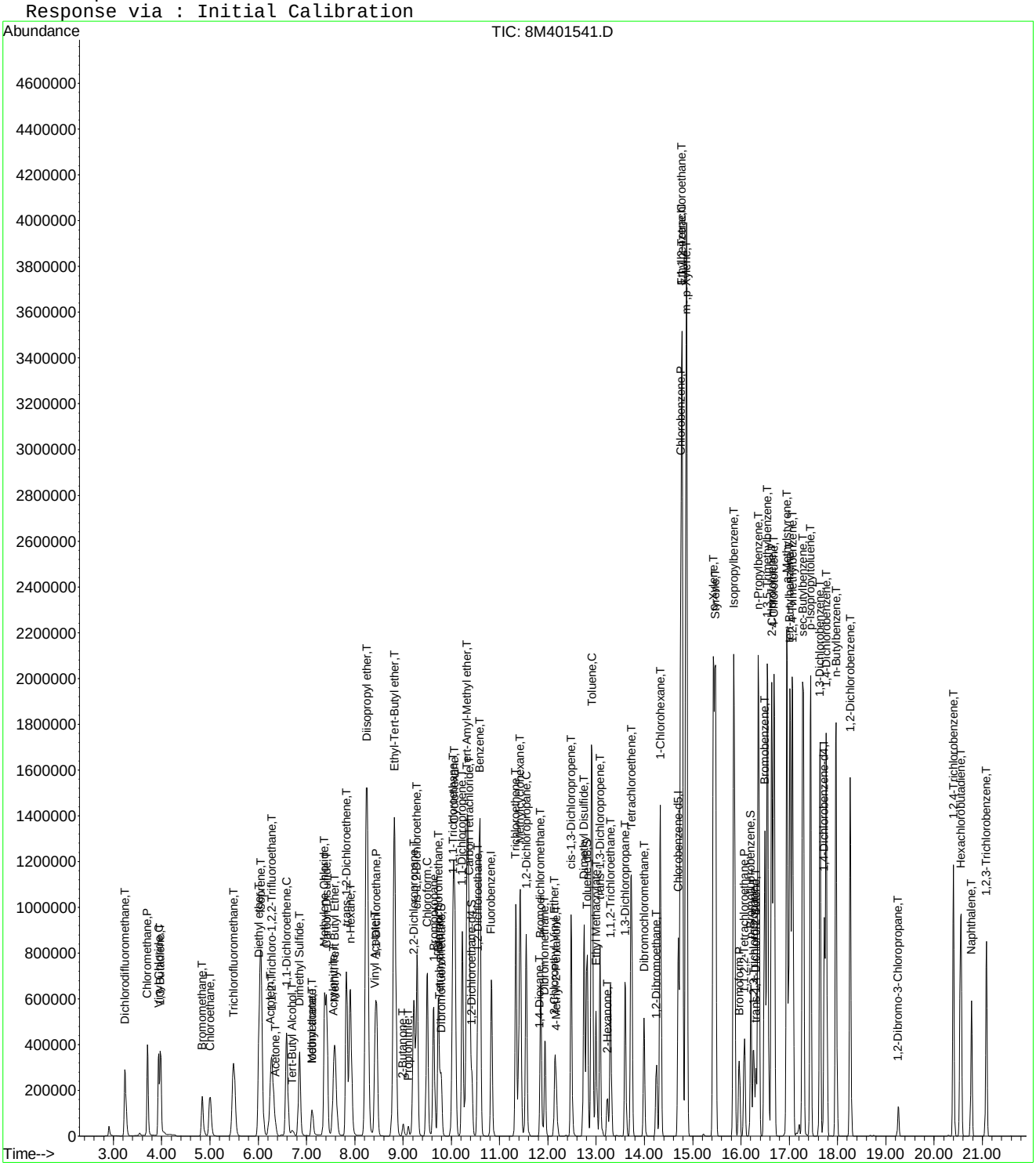

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\120414\8M401541.D Vial: 15
Acq On : 4 Dec 2014 18:40 Operator: TMB
Sample : WG503415-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD67765 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	104	0.00
2	T	Dichlorodifluoromethane	50.0000	39.9383	20.1	78	0.00
3	P	Chloromethane	50.0000	41.9357	16.1	88	0.00
4	C	Vinyl Chloride	50.0000	40.6313	18.7	84	0.00
5	T	1,3-Butadiene	50.0000	33.3118	33.4#	66	0.00
6	T	Bromomethane	50.0000	38.3134	23.4	85	0.00
7	T	Chloroethane	50.0000	46.3061	7.4	96	0.00
8	T	Trichlorofluoromethane	50.0000	48.2415	3.5	98	0.00
9	T	Diethyl ether	100.0000	100.0253	-0.0	107	0.00
10	T	Isoprene	50.0000	54.7970	-9.6	121	0.00
11	T	Acrolein	50.0000	47.8696	4.3	112	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.4035	1.2	102	0.00
13	T	Acetone	50.0000	49.5735	0.9	106	0.00
14	C	1,1-Dichloroethene	50.0000	47.7265	4.5	97	0.00
15	T	Tert-Butyl Alcohol	200.0000	179.8816	10.1	96	0.00
16	T	Dimethyl Sulfide	50.0000	50.7947	-1.6	105	0.00
17	T	Iodomethane	50.0000	25.4624	49.1#	51	0.00
18	T	Methyl acetate	50.0000	42.1603	15.7	89	0.00
19	T	Methylene Chloride	50.0000	46.3792	7.2	97	0.00
20	T	Carbon Disulfide	50.0000	48.7459	2.5	97	0.00
21	T	Acrylonitrile	50.0000	53.3428	-6.7	106	0.00
22	T	Methyl Tert Butyl Ether	50.0000	52.2959	-4.6	109	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.1191	1.8	99	0.00
24	T	n-Hexane	50.0000	48.3664	3.3	101	0.00
25	T	Diisopropyl ether	100.0000	101.0676	-1.1	105	0.00
26	T	Vinyl Acetate	50.0000	78.9544	-57.9#	157	0.00
27	P	1,1-Dichloroethane	50.0000	51.6332	-3.3	103	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	101.2664	-1.3	105	0.00
29	T	2-Butanone	50.0000	48.6159	2.8	105	0.00
30	T	Propionitrile	100.0000	101.8751	-1.9	103	0.00
31	T	2,2-Dichloropropane	50.0000	50.7570	-1.5	104	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.8822	2.2	100	0.00
33	C	Chloroform	50.0000	50.5434	-1.1	101	0.00
34		1-Bromopropane	50.0000	66.4104	-32.8#	143	0.00
35	T	Bromochloromethane	50.0000	49.7863	0.4	102	0.00
36	T	Tetrahydrofuran	100.0000	101.5214	-1.5	104	0.00
37	S	Dibromofluoromethane	25.0000	25.5554	-2.2	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.0905	-2.2	103	0.00
39	T	Cyclohexane	50.0000	48.6679	2.7	102	0.00
40	T	1,1-Dichloropropene	50.0000	48.0311	3.9	98	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	98.9370	1.1	103	0.00
42	T	Carbon Tetrachloride	50.0000	52.2079	-4.4	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	25.7360	-2.9	101	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.67#
45	T	1,2-Dichloroethane	50.0000	48.5538	2.9	97	0.00
46	T	Benzene	50.0000	50.1384	-0.3	99	0.00
47	T	Trichloroethene	50.0000	50.0679	-0.1	104	0.00
48	T	Methylcyclohexane	50.0000	49.2983	1.4	101	0.00
49	C	1,2-Dichloropropane	50.0000	49.1405	1.7	99	0.00
50	T	Bromodichloromethane	50.0000	50.3986	-0.8	99	0.00
51	T	1,4-Dioxane	200.0000	170.7378	14.6	88	0.00
52	T	Dibromomethane	50.0000	51.0994	-2.2	102	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	57.6053	-15.2	107	0.00
54	T	4-Methyl-2-Pentanone	50.0000	48.6768	2.6	98	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\120414\8M401541.D Vial: 15
Acq On : 4 Dec 2014 18:40 Operator: TMB
Sample : WG503415-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD67765 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.9845	-8.0	104	0.00
56	T	Dimethyl Disulfide	50.0000	56.2284	-12.5	113	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.2997	-1.2	101	0.00
59	C	Toluene	50.0000	48.6848	2.6	100	0.00
60	T	Ethyl Methacrylate	50.0000	56.0266	-12.1	108	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.27#
62	T	trans-1,3-Dichloropropene	50.0000	48.0452	3.9	95	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.8961	0.2	101	0.00
64	T	2-Hexanone	50.0000	47.4518	5.1	100	0.00
65	T	1,3-Dichloropropane	50.0000	48.6808	2.6	99	0.00
66	T	Tetrachloroethene	50.0000	48.7142	2.6	102	0.00
67	T	Dibromochloromethane	50.0000	51.7008	-3.4	101	0.00
68	T	1,2-Dibromoethane	50.0000	49.6266	0.7	98	0.00
69	T	1-Chlorohexane	50.0000	53.0746	-6.1	107	0.00
70	P	Chlorobenzene	50.0000	50.9552	-1.9	103	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	48.8515	2.3	97	0.00
72	C	Ethylbenzene	50.0000	48.4525	3.1	98	0.00
73	T	m-,p-Xylene	100.0000	105.4144	-5.4	101	0.00
74	T	o-Xylene	50.0000	50.7141	-1.4	102	0.00
75	T	Styrene	50.0000	53.5315	-7.1	98	0.00
76	P	Bromoform	50.0000	46.6327	6.7	98	0.00
77	T	Isopropylbenzene	50.0000	51.1078	-2.2	102	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	103	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.4361	5.1	96	0.00
80	S	p-Bromofluorobenzene	25.0000	25.2366	-0.9	101	0.00
81	T	1,2,3-Trichloropropane	50.0000	48.8977	2.2	97	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	48.3877	3.2	102	0.00
83	T	n-Propylbenzene	50.0000	50.0748	-0.1	100	0.00
84	T	Bromobenzene	50.0000	49.1733	1.7	98	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.2460	-4.5	100	0.00
86	T	2-Chlorotoluene	50.0000	52.9232	-5.8	108	0.00
87	T	4-Chlorotoluene	50.0000	46.8397	6.3	96	0.00
88	T	a-Methylstyrene	50.0000	59.5539	-19.1	116	0.00
89	T	tert-Butylbenzene	50.0000	50.9974	-2.0	103	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	53.0916	-6.2	97	0.00
91	T	sec-Butylbenzene	50.0000	53.2030	-6.4	102	0.00
92	T	p-Isopropyltoluene	50.0000	54.5520	-9.1	98	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.4032	1.2	100	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.8951	4.2	96	0.00
95	T	n-Butylbenzene	50.0000	52.6012	-5.2	96	0.00
96	T	1,2-Dichlorobenzene	50.0000	51.7902	-3.6	101	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.2105	3.6	94	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.9039	4.2	96	0.00
99	T	Hexachlorobutadiene	50.0000	48.9641	2.1	98	0.00
100	T	Naphthalene	50.0000	45.4457	9.1	94	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	46.5691	6.9	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M401541.D 8260WTR.M Fri Dec 05 12:56:38 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\120814\8M401579.D Vial: 2
Acq On : 8 Dec 2014 12:36 Operator: TMB
Sample : WG503806-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 08 12:58:10 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	879212	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	612756	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	300625	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.79	111	183693	21.8230 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 87.28%		
43) 1,2-Dichloroethane-d4	10.43	65	192105	21.7059 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.84%		
58) Toluene-d8	12.81	98	683937	23.2931 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.16%		
80) p-Bromofluorobenzene	16.20	95	264495	22.5897 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.36%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	555012	50.0798 ug/L	100
3) Chloromethane	3.71	50	566337	43.8186 ug/L	100
4) Vinyl Chloride	3.94	62	486417	44.4723 ug/L	97
5) 1,3-Butadiene	3.99	54	310398	50.3405 ug/L	87
6) Bromomethane	4.85	94	211772	40.8140 ug/L	98
7) Chloroethane	5.00	64	319722	50.8264 ug/L	100
8) Trichlorofluoromethane	5.50	101	655493	50.7260 ug/L	100
9) Diethyl ether	6.03	59	476877	95.9208 ug/L	92
10) Isoprene	6.07	67	521466	48.2488 ug/L	92
11) Acrolein	6.26	56	22944	47.2106 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	394731	49.0756 ug/L	91
13) Acetone	6.36	43	60430	46.8256 ug/L #	24
14) 1,1-Dichloroethene	6.60	61	618886	50.9654 ug/L	97
15) Tert-Butyl Alcohol	6.70	59	65533	199.5902 ug/L	96
16) Dimethyl Sulfide	6.85	62	304435	48.5550 ug/L	96
17) Iodomethane	7.11	142	145560	36.4242 ug/L	100
18) Methyl acetate	7.11	43	193067	46.9974 ug/L	99
19) Methylene Chloride	7.37	84	402490	47.6447 ug/L	93
20) Carbon Disulfide	7.42	76	1271723	53.3622 ug/L	100
21) Acrylonitrile	7.56	53	81366	48.0038 ug/L	98
22) Methyl Tert Butyl Ether	7.59	73	761939	46.4290 ug/L	94
23) trans-1,2-Dichloroethene	7.83	61	670390	51.9384 ug/L	97
24) n-Hexane	7.91	57	661644	51.6021 ug/L	89
25) Diisopropyl ether	8.25	45	2870239	98.1603 ug/L	96
26) Vinyl Acetate	8.42	43	420671	51.4897 ug/L	99
27) 1,1-Dichloroethane	8.45	63	842062	51.2049 ug/L	96
28) Ethyl-Tert-Butyl ether	8.82	59	2375310	94.9484 ug/L	96
29) 2-Butanone	9.00	43	96135	45.6113 ug/L	99
30) Propionitrile	9.11	54	55685	93.0793 ug/L	97
31) 2,2-Dichloropropane	9.22	77	733928	52.2923 ug/L	100
32) cis-1,2-Dichloroethene	9.29	96	474995	50.0194 ug/L	95
33) Chloroform	9.50	83	814557	49.9472 ug/L	100
34) 1-Bromopropane	9.64	122	70032	48.3595 ug/L	99
35) Bromochloromethane	9.73	130	231045	47.0925 ug/L	98
36) Tetrahydrofuran	9.75	42	264545	204.4294 ug/L	99
38) 1,1,1-Trichloroethane	10.03	97	721693	50.4623 ug/L	99
39) Cyclohexane	10.07	56	781131	49.6243 ug/L	88
40) 1,1-Dichloropropene	10.22	75	655051	49.9548 ug/L	98
41) Tert-Amyl-Methyl ether	10.33	73	1803261	92.3702 ug/L	95
42) Carbon Tetrachloride	10.38	117	631190	51.7877 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\120814\8M401579.D Vial: 2
Acq On : 8 Dec 2014 12:36 Operator: TMB
Sample : WG503806-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 08 12:58:10 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.55	62	547834	47.3204	ug/L		98
46)	Benzene	10.59	78	1763065	51.3042	ug/L		98
47)	Trichloroethene	11.34	130	419702	47.4922	ug/L		97
48)	Methylcyclohexane	11.42	83	735391	50.0563	ug/L		91
49)	1,2-Dichloropropane	11.55	63	469585	49.3343	ug/L		94
50)	Bromodichloromethane	11.85	83	588032	50.2447	ug/L		99
51)	1,4-Dioxane	11.84	88	8333	231.3167	ug/L		91
52)	Dibromomethane	11.94	93	200931	46.7995	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.15	63	176678	56.0735	ug/L		99
54)	4-Methyl-2-Pentanone	12.18	58	83928	46.4148	ug/L		94
55)	cis-1,3-Dichloropropene	12.49	75	668065	51.5304	ug/L		99
56)	Dimethyl Disulfide	12.75	94	613674	49.1029	ug/L		98
59)	Toluene	12.91	91	1832902	50.5202	ug/L		99
60)	Ethyl Methacrylate	13.00	69	380104	51.7115	ug/L		96
62)	trans-1,3-Dichloropropene	13.08	75	559238	49.6663	ug/L		99
63)	1,1,2-Trichloroethane	13.30	97	263127	48.6572	ug/L		99
64)	2-Hexanone	13.23	58	77438	46.2995	ug/L		84
65)	1,3-Dichloropropane	13.61	76	483555	47.8385	ug/L		99
66)	Tetrachloroethene	13.73	164	375373	49.8219	ug/L		97
67)	Dibromochloromethane	14.00	129	335564	49.6321	ug/L		100
68)	1,2-Dibromoethane	14.25	107	258428	48.6428	ug/L		100
69)	1-Chlorohexane	14.33	91	627846	53.5441	ug/L		93
70)	Chlorobenzene	14.75	112	1189586	50.5805	ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.78	131	419645	50.1295	ug/L		100
72)	Ethylbenzene	14.78	106	691874	50.9854	ug/L		98
73)	m-,p-Xylene	14.87	106	1607525	107.1142	ug/L		94
74)	o-Xylene	15.44	106	789068	51.0612	ug/L		100
75)	Styrene	15.47	104	1319328	55.3126	ug/L		94
76)	Bromoform	15.96	173	201779	45.6399	ug/L		100
77)	Isopropylbenzene	15.86	105	1987164	51.4886	ug/L		98
79)	1,1,2,2-Tetrachloroethane	16.07	83	287782	47.4974	ug/L		99
81)	1,2,3-Trichloropropane	16.26	110	79158	47.7684	ug/L		49
82)	trans-1,4-Dichloro-2-Buten	16.30	53	89272	50.8838	ug/L	#	38
83)	n-Propylbenzene	16.37	91	2399551	51.8633	ug/L		99
84)	Bromobenzene	16.50	156	459387	49.8897	ug/L		98
85)	1,3,5-Trimethylbenzene	16.55	105	1712535	54.1380	ug/L		100
86)	2-Chlorotoluene	16.64	91	1497198	50.1919	ug/L		99
87)	4-Chlorotoluene	16.69	91	1560621	50.9912	ug/L		100
88)	a-Methylstyrene	16.96	118	871279	55.9071	ug/L		97
89)	tert-Butylbenzene	17.02	134	350817	51.5983	ug/L		95
90)	1,2,4-Trimethylbenzene	17.07	105	1678257	56.3563	ug/L		99
91)	sec-Butylbenzene	17.29	105	2065870	53.9646	ug/L		99
92)	p-Isopropyltoluene	17.44	119	1692604	58.3434	ug/L		99
93)	1,3-Dichlorobenzene	17.64	146	928216	50.5410	ug/L		98
94)	1,4-Dichlorobenzene	17.77	146	907661	50.8203	ug/L		98
95)	n-Butylbenzene	17.97	91	1620311	59.2105	ug/L		99
96)	1,2-Dichlorobenzene	18.27	146	782769	51.4686	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.26	75	47434	47.6818	ug/L		91
98)	1,2,4-Trichlorobenzene	20.40	180	480688	50.3655	ug/L		99
99)	Hexachlorobutadiene	20.55	225	324002	53.7920	ug/L		97
100)	Naphthalene	20.77	128	568728	44.6122	ug/L		99
101)	1,2,3-Trichlorobenzene	21.08	180	336575	46.2677	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M401579.D 8260WTR.M Mon Dec 08 12:58:11 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\120814\8M401579.D Vial: 2
Acq On : 8 Dec 2014 12:36 Operator: TMB
Sample : WG503806-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 8 12:58 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

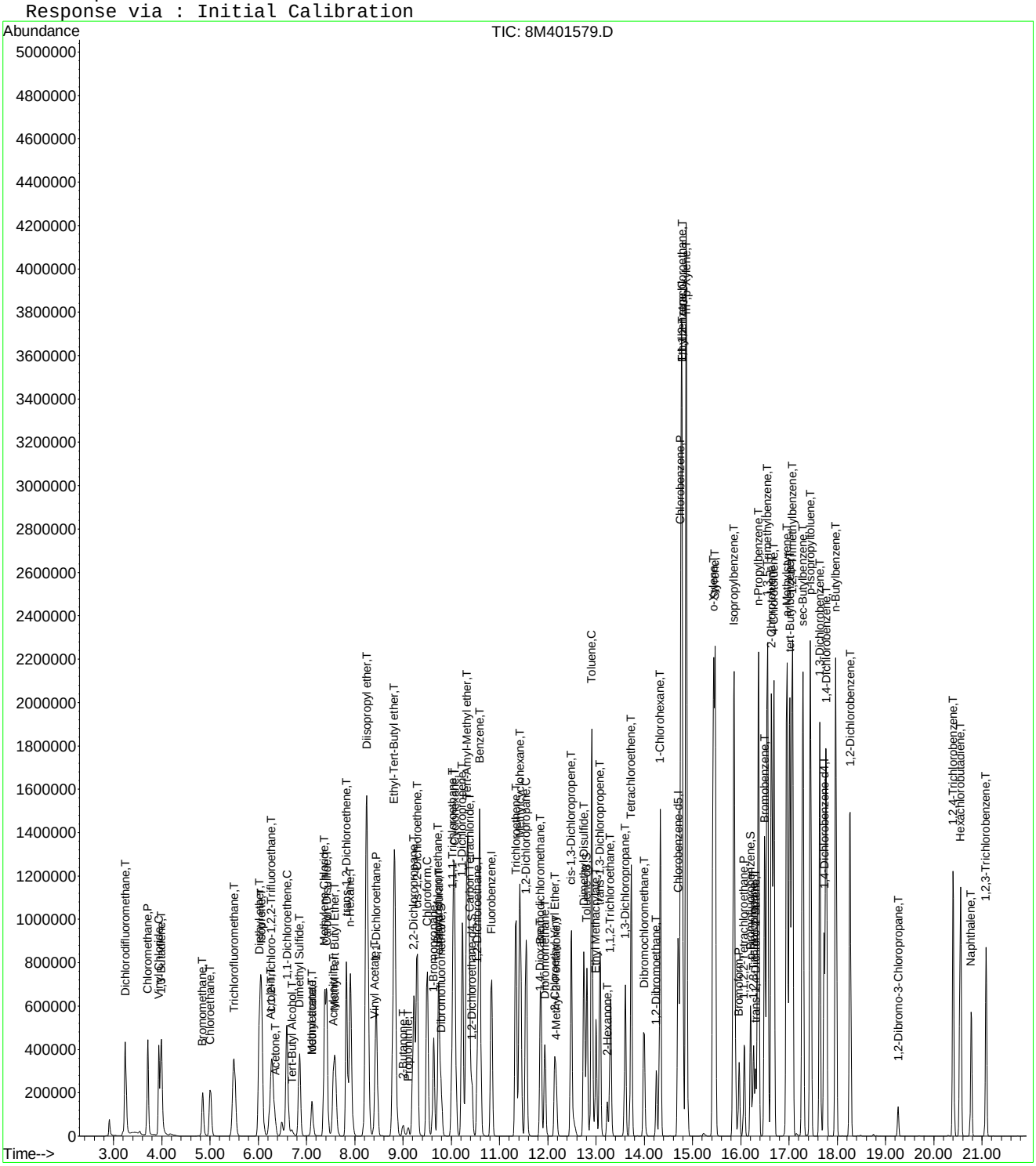

8M401579.D 8260WTR.M Mon Dec 08 12:58:11 2014 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 4 Dec 2014 15:46
CCV date: 8 Dec 2014 12:36
CCV Filename: 8M401579.D

	Fluorobenzene		**Chlorobenzene-d5**		**1,4-Dichlorobenzene-d4**	
	Amount	RT	Amount	RT	Amount	RT
InitCal	794624	10.83	558450	14.70	283707	17.72
CCV	879212	10.83	612756	14.70	300625	17.73

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\120814\8M401579.D Vial: 2
Acq On : 8 Dec 2014 12:36 Operator: TMB
Sample : WG503806-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	111	0.00
2	T	Dichlorodifluoromethane	0.3151	0.3156	-0.2	104	0.00
3	P	Chloromethane	0.3675	0.3221	12.4	98	0.01
4	C	Vinyl Chloride	0.3110	0.2766	11.1	97	0.00
5	T	1,3-Butadiene	0.1829	0.1765	3.5	103	0.01
6	T	Bromomethane	0.1279	0.1204	5.8	96	0.01
7	T	Chloroethane	0.1789	0.1818	-1.6	111	0.00
8	T	Trichlorofluoromethane	0.3674	0.3728	-1.5	109	0.01
9	T	Diethyl ether	0.1414	0.1356	4.1	109	0.00
10	T	Isoprene	0.3073	0.2965	3.5	113	0.01
11	T	Acrolein	0.0132	0.0131	0.8	117	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2287	0.2245	1.8	108	0.00
13	T	Acetone	0.0367	0.0344	6.3	106	0.00
14	C	1,1-Dichloroethene	0.3453	0.3519	-1.9	110	0.01
15	T	Tert-Butyl Alcohol	0.0093	0.0093	0.2	113	0.00
16	T	Dimethyl Sulfide	0.1783	0.1731	2.9	106	0.00
17	T	Iodomethane	0.0990	0.0828	16.4	84	0.00
18	T	Methyl acetate	0.1168	0.1098	6.0	105	0.00
19	T	Methylene Chloride	0.2402	0.2289	4.7	106	0.00
20	T	Carbon Disulfide	0.6776	0.7232	-6.7	113	0.00
21	T	Acrylonitrile	0.0482	0.0463	4.0	102	0.00
22	T	Methyl Tert Butyl Ether	0.4666	0.4333	7.1	103	0.00
23	T	trans-1,2-Dichloroethene	0.3670	0.3812	-3.9	111	0.00
24	T	n-Hexane	0.3646	0.3763	-3.2	114	0.00
25	T	Diisopropyl ether	0.8314	0.8161	1.8	108	0.00
26	T	Vinyl Acetate	0.2323	0.2392	-3.0	108	0.00
27	P	1,1-Dichloroethane	0.4676	0.4789	-2.4	108	0.00
28	T	Ethyl-Tert-Butyl ether	0.7113	0.6754	5.1	104	0.00
29	T	2-Butanone	0.0599	0.0547	8.8	104	0.00
30	T	Propionitrile	0.0170	0.0158	6.9	99	0.00
31	T	2,2-Dichloropropane	0.3991	0.4174	-4.6	114	0.00
32	T	cis-1,2-Dichloroethene	0.2700	0.2701	-0.0	109	0.00
33	C	Chloroform	0.4637	0.4632	0.1	106	0.00
34		1-Bromopropane	0.0375	0.0398	-6.2	110	0.00
35	T	Bromochloromethane	0.1316	0.1314	0.2	102	-0.01
36	T	Tetrahydrofuran	0.0368	0.0752	-104.4#	222#	0.00
37	S	Dibromofluoromethane	0.2394	0.2089	12.7	93	0.00
38	T	1,1,1-Trichloroethane	0.4067	0.4104	-0.9	107	-0.01
39	T	Cyclohexane	0.4476	0.4442	0.8	110	0.00
40	T	1,1-Dichloropropene	0.3729	0.3725	0.1	108	0.00
41	T	Tert-Amyl-Methyl ether	0.5551	0.5128	7.6	102	0.00
42	T	Carbon Tetrachloride	0.3466	0.3589	-3.6	108	0.00
43	S	1,2-Dichloroethane-d4	0.2517	0.2185	13.2	90	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.67#
45	T	1,2-Dichloroethane	0.3292	0.3115	5.4	100	0.00
46	T	Benzene	0.9771	1.0026	-2.6	108	0.00
47	T	Trichloroethene	0.2513	0.2387	5.0	104	0.00
48	T	Methylcyclohexane	0.4177	0.4182	-0.1	109	0.00
49	C	1,2-Dichloropropane	0.2707	0.2671	1.3	106	0.00
50	T	Bromodichloromethane	0.3328	0.3344	-0.5	105	0.00
51	T	1,4-Dioxane	0.0010	0.0012	-15.7	127	0.00
52	T	Dibromomethane	0.1221	0.1143	6.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0896	0.1005	-12.2	111	0.00
54	T	4-Methyl-2-Pentanone	0.0514	0.0477	7.2	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\120814\8M401579.D Vial: 2
Acq On : 8 Dec 2014 12:36 Operator: TMB
Sample : WG503806-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3686	0.3799	-3.1	105	0.00
56	T	Dimethyl Disulfide	0.3554	0.3490	1.8	105	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	110	0.00
58	S	Toluene-d8	1.1980	1.1162	6.8	96	0.00
59	C	Toluene	1.4802	1.4956	-1.0	107	0.00
60	T	Ethyl Methacrylate	0.2999	0.3102	-3.4	103	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.27#
62	T	trans-1,3-Dichloropropene	0.4594	0.4563	0.7	101	0.00
63	T	1,1,2-Trichloroethane	0.2206	0.2147	2.7	101	-0.01
64	T	2-Hexanone	0.0682	0.0632	7.4	100	0.00
65	T	1,3-Dichloropropane	0.4124	0.3946	4.3	100	0.00
66	T	Tetrachloroethene	0.3074	0.3063	0.4	107	0.00
67	T	Dibromochloromethane	0.2758	0.2738	0.7	100	0.00
68	T	1,2-Dibromoethane	0.2168	0.2109	2.7	99	0.00
69	T	1-Chlorohexane	0.4784	0.5123	-7.1	111	0.00
70	P	Chlorobenzene	0.9595	0.9707	-1.2	105	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3415	0.3424	-0.3	103	0.00
72	C	Ethylbenzene	0.5536	0.5646	-2.0	106	0.00
73	T	m-,p-Xylene	0.6123	0.6559	-7.1	106	-0.01
74	T	o-Xylene	0.6305	0.6439	-2.1	105	0.00
75	T	Styrene	0.9731	1.0765	-10.6	104	0.00
76	P	Bromoform	0.1626	0.1646	-1.2	98	0.00
77	T	Isopropylbenzene	1.5746	1.6215	-3.0	106	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5039	0.4786	5.0	99	-0.01
80	S	p-Bromofluorobenzene	0.9737	0.8798	9.6	93	0.00
81	T	1,2,3-Trichloropropane	0.1378	0.1317	4.5	97	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1281	0.1485	-15.9	110	0.00
83	T	n-Propylbenzene	3.6235	3.9909	-10.1	106	0.00
84	T	Bromobenzene	0.7657	0.7641	0.2	102	0.00
85	T	1,3,5-Trimethylbenzene	2.6306	2.8483	-8.3	106	0.00
86	T	2-Chlorotoluene	2.4806	2.4901	-0.4	105	0.00
87	T	4-Chlorotoluene	2.2749	2.5956	-14.1	106	0.00
88	T	a-Methylstyrene	1.2960	1.4491	-11.8	112	0.00
89	T	tert-Butylbenzene	0.5654	0.5835	-3.2	107	0.00
90	T	1,2,4-Trimethylbenzene	2.4765	2.7913	-12.7	105	0.00
91	T	sec-Butylbenzene	3.1835	3.4360	-7.9	106	0.00
92	T	p-Isopropyltoluene	2.4126	2.8151	-16.7	108	0.00
93	T	1,3-Dichlorobenzene	1.5273	1.5438	-1.1	104	0.00
94	T	1,4-Dichlorobenzene	1.4853	1.5096	-1.6	105	0.00
95	T	n-Butylbenzene	2.2757	2.6949	-18.4	111	0.00
96	T	1,2-Dichlorobenzene	1.2648	1.3019	-2.9	102	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0827	0.0789	4.6	96	0.00
98	T	1,2,4-Trichlorobenzene	0.7937	0.7995	-0.7	104	-0.01
99	T	Hexachlorobutadiene	0.5009	0.5389	-7.6	110	0.00
100	T	Naphthalene	1.0601	0.9459	10.8	95	0.00
101	T	1,2,3-Trichlorobenzene	0.6049	0.5598	7.5	98	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M401579.D 8260WTR.M Mon Dec 08 12:59:57 2014 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\120814\8M401579.D Vial: 2
Acq On : 8 Dec 2014 12:36 Operator: TMB
Sample : WG503806-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	111	0.00
2	T	Dichlorodifluoromethane	50.0000	50.0798	-0.2	104	0.00
3	P	Chloromethane	50.0000	43.8186	12.4	98	0.01
4	C	Vinyl Chloride	50.0000	44.4723	11.1	97	0.00
5	T	1,3-Butadiene	50.0000	50.3404	-0.7	103	0.01
6	T	Bromomethane	50.0000	40.8140	18.4	96	0.01
7	T	Chloroethane	50.0000	50.8264	-1.7	111	0.00
8	T	Trichlorofluoromethane	50.0000	50.7260	-1.5	109	0.01
9	T	Diethyl ether	100.0000	95.9209	4.1	109	0.00
10	T	Isoprene	50.0000	48.2488	3.5	113	0.01
11	T	Acrolein	50.0000	47.2106	5.6	117	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.0756	1.8	108	0.00
13	T	Acetone	50.0000	46.8256	6.3	106	0.00
14	C	1,1-Dichloroethene	50.0000	50.9654	-1.9	110	0.01
15	T	Tert-Butyl Alcohol	200.0000	199.5902	0.2	113	0.00
16	T	Dimethyl Sulfide	50.0000	48.5550	2.9	106	0.00
17	T	Iodomethane	50.0000	36.4242	27.2#	84	0.00
18	T	Methyl acetate	50.0000	46.9974	6.0	105	0.00
19	T	Methylene Chloride	50.0000	47.6447	4.7	106	0.00
20	T	Carbon Disulfide	50.0000	53.3622	-6.7	113	0.00
21	T	Acrylonitrile	50.0000	48.0038	4.0	102	0.00
22	T	Methyl Tert Butyl Ether	50.0000	46.4290	7.1	103	0.00
23	T	trans-1,2-Dichloroethene	50.0000	51.9384	-3.9	111	0.00
24	T	n-Hexane	50.0000	51.6021	-3.2	114	0.00
25	T	Diisopropyl ether	100.0000	98.1603	1.8	108	0.00
26	T	Vinyl Acetate	50.0000	51.4897	-3.0	108	0.00
27	P	1,1-Dichloroethane	50.0000	51.2049	-2.4	108	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	94.9484	5.1	104	0.00
29	T	2-Butanone	50.0000	45.6113	8.8	104	0.00
30	T	Propionitrile	100.0000	93.0793	6.9	99	0.00
31	T	2,2-Dichloropropane	50.0000	52.2923	-4.6	114	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.0194	-0.0	109	0.00
33	C	Chloroform	50.0000	49.9472	0.1	106	0.00
34		1-Bromopropane	50.0000	48.3595	3.3	110	0.00
35	T	Bromochloromethane	50.0000	47.0925	5.8	102	-0.01
36	T	Tetrahydrofuran	100.0000	204.4294	-104.4#	222	0.00
37	S	Dibromofluoromethane	25.0000	21.8230	12.7	93	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.4623	-0.9	107	-0.01
39	T	Cyclohexane	50.0000	49.6243	0.8	110	0.00
40	T	1,1-Dichloropropene	50.0000	49.9548	0.1	108	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	92.3702	7.6	102	0.00
42	T	Carbon Tetrachloride	50.0000	51.7877	-3.6	108	0.00
43	S	1,2-Dichloroethane-d4	25.0000	21.7059	13.2	90	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.67#
45	T	1,2-Dichloroethane	50.0000	47.3204	5.4	100	0.00
46	T	Benzene	50.0000	51.3042	-2.6	108	0.00
47	T	Trichloroethene	50.0000	47.4922	5.0	104	0.00
48	T	Methylcyclohexane	50.0000	50.0563	-0.1	109	0.00
49	C	1,2-Dichloropropane	50.0000	49.3343	1.3	106	0.00
50	T	Bromodichloromethane	50.0000	50.2447	-0.5	105	0.00
51	T	1,4-Dioxane	200.0000	231.3167	-15.7	127	0.00
52	T	Dibromomethane	50.0000	46.7995	6.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	56.0735	-12.1	111	0.00
54	T	4-Methyl-2-Pentanone	50.0000	46.4148	7.2	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\120814\8M401579.D Vial: 2
Acq On : 8 Dec 2014 12:36 Operator: TMB
Sample : WG503806-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.5304	-3.1	105	0.00
56	T	Dimethyl Disulfide	50.0000	49.1029	1.8	105	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	110	0.00
58	S	Toluene-d8	25.0000	23.2931	6.8	96	0.00
59	C	Toluene	50.0000	50.5202	-1.0	107	0.00
60	T	Ethyl Methacrylate	50.0000	51.7115	-3.4	103	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.27#
62	T	trans-1,3-Dichloropropene	50.0000	49.6663	0.7	101	0.00
63	T	1,1,2-Trichloroethane	50.0000	48.6572	2.7	101	-0.01
64	T	2-Hexanone	50.0000	46.2995	7.4	100	0.00
65	T	1,3-Dichloropropane	50.0000	47.8385	4.3	100	0.00
66	T	Tetrachloroethene	50.0000	49.8219	0.4	107	0.00
67	T	Dibromochloromethane	50.0000	49.6321	0.7	100	0.00
68	T	1,2-Dibromoethane	50.0000	48.6428	2.7	99	0.00
69	T	1-Chlorohexane	50.0000	53.5442	-7.1	111	0.00
70	P	Chlorobenzene	50.0000	50.5805	-1.2	105	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.1295	-0.3	103	0.00
72	C	Ethylbenzene	50.0000	50.9854	-2.0	106	0.00
73	T	m-,p-Xylene	100.0000	107.1142	-7.1	106	-0.01
74	T	o-Xylene	50.0000	51.0612	-2.1	105	0.00
75	T	Styrene	50.0000	55.3126	-10.6	104	0.00
76	P	Bromoform	50.0000	45.6399	8.7	98	0.00
77	T	Isopropylbenzene	50.0000	51.4886	-3.0	106	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.4974	5.0	99	-0.01
80	S	p-Bromofluorobenzene	25.0000	22.5897	9.6	93	0.00
81	T	1,2,3-Trichloropropane	50.0000	47.7685	4.5	97	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	50.8839	-1.8	110	0.00
83	T	n-Propylbenzene	50.0000	51.8633	-3.7	106	0.00
84	T	Bromobenzene	50.0000	49.8897	0.2	102	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	54.1381	-8.3	106	0.00
86	T	2-Chlorotoluene	50.0000	50.1919	-0.4	105	0.00
87	T	4-Chlorotoluene	50.0000	50.9912	-2.0	106	0.00
88	T	a-Methylstyrene	50.0000	55.9071	-11.8	112	0.00
89	T	tert-Butylbenzene	50.0000	51.5983	-3.2	107	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	56.3563	-12.7	105	0.00
91	T	sec-Butylbenzene	50.0000	53.9646	-7.9	106	0.00
92	T	p-Isopropyltoluene	50.0000	58.3434	-16.7	108	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.5410	-1.1	104	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.8203	-1.6	105	0.00
95	T	n-Butylbenzene	50.0000	59.2105	-18.4	111	0.00
96	T	1,2-Dichlorobenzene	50.0000	51.4686	-2.9	102	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	47.6818	4.6	96	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.3655	-0.7	104	-0.01
99	T	Hexachlorobutadiene	50.0000	53.7920	-7.6	110	0.00
100	T	Naphthalene	50.0000	44.6122	10.8	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	46.2677	7.5	98	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M401579.D 8260WTR.M Mon Dec 08 12:59:58 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\120914\8M401609.D Vial: 2
Acq On : 9 Dec 2014 9:11 Operator: TMB
Sample : WG503946-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 09:33:32 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	720715	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	528303	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	265642	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.79	111	150743	21.8469 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 87.40%		
43) 1,2-Dichloroethane-d4	10.43	65	154160	21.2491 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.00%		
58) Toluene-d8	12.81	98	580047	22.9128 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 91.64%		
80) p-Bromofluorobenzene	16.20	95	232987	22.5192 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	493749	54.3496 ug/L	99
3) Chloromethane	3.71	50	535552	50.5493 ug/L	99
4) Vinyl Chloride	3.94	62	458977	51.1920 ug/L	97
5) 1,3-Butadiene	3.99	54	306617	61.5524 ug/L	87
6) Bromomethane	4.85	94	205905	48.0221 ug/L	100
7) Chloroethane	5.01	64	279957	54.2923 ug/L	99
8) Trichlorofluoromethane	5.50	101	592521	55.9366 ug/L	99
9) Diethyl ether	6.03	59	398147	97.6968 ug/L	92
10) Isoprene	6.07	67	461814	52.1264 ug/L	93
11) Acrolein	6.26	56	18140	45.8095 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	352332	53.4376 ug/L	91
13) Acetone	6.36	43	49058	46.3736 ug/L #	24
14) 1,1-Dichloroethene	6.59	61	560301	56.2880 ug/L	97
15) Tert-Butyl Alcohol	6.70	59	48797	181.3019 ug/L	98
16) Dimethyl Sulfide	6.85	62	265181	51.5955 ug/L	95
17) Iodomethane	7.11	142	127144	38.4636 ug/L	94
18) Methyl acetate	7.12	43	163901	48.6718 ug/L	99
19) Methylene Chloride	7.38	84	351976	50.8280 ug/L	93
20) Carbon Disulfide	7.42	76	1130282	57.8573 ug/L	100
21) Acrylonitrile	7.56	53	68034	48.9654 ug/L	100
22) Methyl Tert Butyl Ether	7.59	73	640531	47.6145 ug/L	94
23) trans-1,2-Dichloroethene	7.83	61	591229	55.8787 ug/L	96
24) n-Hexane	7.91	57	578973	55.0847 ug/L	90
25) Diisopropyl ether	8.25	45	2427937	101.2944 ug/L	96
26) Vinyl Acetate	8.41	43	347474	51.8836 ug/L	100
27) 1,1-Dichloroethane	8.45	63	749228	55.5791 ug/L	97
28) Ethyl-Tert-Butyl ether	8.82	59	1978945	96.5009 ug/L	97
29) 2-Butanone	9.00	43	77977	45.1323 ug/L	99
30) Propionitrile	9.11	54	46196	94.1996 ug/L	98
31) 2,2-Dichloropropane	9.23	77	643147	55.9017 ug/L	98
32) cis-1,2-Dichloroethene	9.29	96	413001	53.0555 ug/L	97
33) Chloroform	9.50	83	709232	53.0527 ug/L	99
34) 1-Bromopropane	9.63	122	62114	52.2887 ug/L	95
35) Bromochloromethane	9.73	130	201290	50.0426 ug/L	97
36) Tetrahydrofuran	9.76	42	109500	103.2258 ug/L	99
38) 1,1,1-Trichloroethane	10.04	97	642371	54.7936 ug/L	99
39) Cyclohexane	10.07	56	706410	54.7466 ug/L	88
40) 1,1-Dichloropropene	10.22	75	574716	53.4670 ug/L	97
41) Tert-Amyl-Methyl ether	10.33	73	1474378	92.1323 ug/L	97
42) Carbon Tetrachloride	10.38	117	554952	55.5459 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M401609.D 8260WTR.M Tue Dec 09 09:33:32 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\120914\8M401609.D Vial: 2
Acq On : 9 Dec 2014 9:11 Operator: TMB
Sample : WG503946-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 09:33:32 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.54	62	475173	50.0704 ug/L		99
46)	Benzene	10.59	78	1553551	55.1493 ug/L		97
47)	Trichloroethene	11.34	130	370887	51.1980 ug/L		98
48)	Methylcyclohexane	11.42	83	640534	53.1879 ug/L		91
49)	1,2-Dichloropropane	11.55	63	407813	52.2667 ug/L		93
50)	Bromodichloromethane	11.86	83	512288	53.3990 ug/L		99
51)	1,4-Dioxane	11.84	88	7067	239.3155 ug/L		88
52)	Dibromomethane	11.94	93	172029	48.8794 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.15	63	137396	53.1961 ug/L		100
54)	4-Methyl-2-Pentanone	12.18	58	67523	45.5545 ug/L		95
55)	cis-1,3-Dichloropropene	12.49	75	572254	53.8472 ug/L		100
56)	Dimethyl Disulfide	12.75	94	522505	51.0024 ug/L		98
59)	Toluene	12.91	91	1623694	51.9080 ug/L		98
60)	Ethyl Methacrylate	12.99	69	307875	48.5807 ug/L		98
62)	trans-1,3-Dichloropropene	13.08	75	481091	49.5561 ug/L		100
63)	1,1,2-Trichloroethane	13.31	97	223090	47.8483 ug/L		98
64)	2-Hexanone	13.23	58	59609	41.3370 ug/L		81
65)	1,3-Dichloropropane	13.60	76	412752	47.3615 ug/L		99
66)	Tetrachloroethene	13.73	164	327393	50.4000 ug/L		97
67)	Dibromochloromethane	14.00	129	288885	49.5584 ug/L		99
68)	1,2-Dibromoethane	14.25	107	221642	48.3878 ug/L		100
69)	1-Chlorohexane	14.33	91	545772	53.9852 ug/L		93
70)	Chlorobenzene	14.75	112	1047864	51.6769 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.78	131	368011	50.9890 ug/L		100
72)	Ethylbenzene	14.78	106	614288	52.5044 ug/L		100
73)	m-,p-Xylene	14.87	106	1432640	110.7212 ug/L		97
74)	o-Xylene	15.43	106	704962	52.9111 ug/L		100
75)	Styrene	15.47	104	1171710	56.9765 ug/L		96
76)	Bromoform	15.96	173	170528	44.7468 ug/L		99
77)	Isopropylbenzene	15.86	105	1778248	53.4410 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.08	83	240934	45.0021 ug/L		99
81)	1,2,3-Trichloropropane	16.26	110	66436	45.3710 ug/L		47
82)	trans-1,4-Dichloro-2-Buten	16.30	53	72644	46.9057 ug/L	#	39
83)	n-Propylbenzene	16.37	91	2155570	52.8284 ug/L		100
84)	Bromobenzene	16.50	156	398088	48.9260 ug/L		98
85)	1,3,5-Trimethylbenzene	16.55	105	1515711	54.2260 ug/L		100
86)	2-Chlorotoluene	16.63	91	1534146	58.2035 ug/L		90
87)	4-Chlorotoluene	16.69	91	1190851	43.3419 ug/L		91
88)	a-Methylstyrene	16.95	118	737698	53.5694 ug/L		96
89)	tert-Butylbenzene	17.02	134	306737	51.0563 ug/L		95
90)	1,2,4-Trimethylbenzene	17.07	105	1474804	56.0462 ug/L		99
91)	sec-Butylbenzene	17.29	105	1835915	54.2734 ug/L		100
92)	p-Isopropyltoluene	17.44	119	1473784	57.4908 ug/L		100
93)	1,3-Dichlorobenzene	17.64	146	806742	49.7117 ug/L		98
94)	1,4-Dichlorobenzene	17.77	146	780173	49.4348 ug/L		97
95)	n-Butylbenzene	17.97	91	1372977	56.7796 ug/L		99
96)	1,2-Dichlorobenzene	18.27	146	667206	49.6475 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.26	75	38682	44.0048 ug/L		88
98)	1,2,4-Trichlorobenzene	20.41	180	385361	45.6947 ug/L		98
99)	Hexachlorobutadiene	20.55	225	269044	50.5501 ug/L		96
100)	Naphthalene	20.78	128	457487	40.6122 ug/L		100
101)	1,2,3-Trichlorobenzene	21.08	180	272528	42.3970 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M401609.D 8260WTR.M Tue Dec 09 09:33:32 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\120914\8M401609.D Vial: 2
Acq On : 9 Dec 2014 9:11 Operator: TMB
Sample : WG503946-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 9:33 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

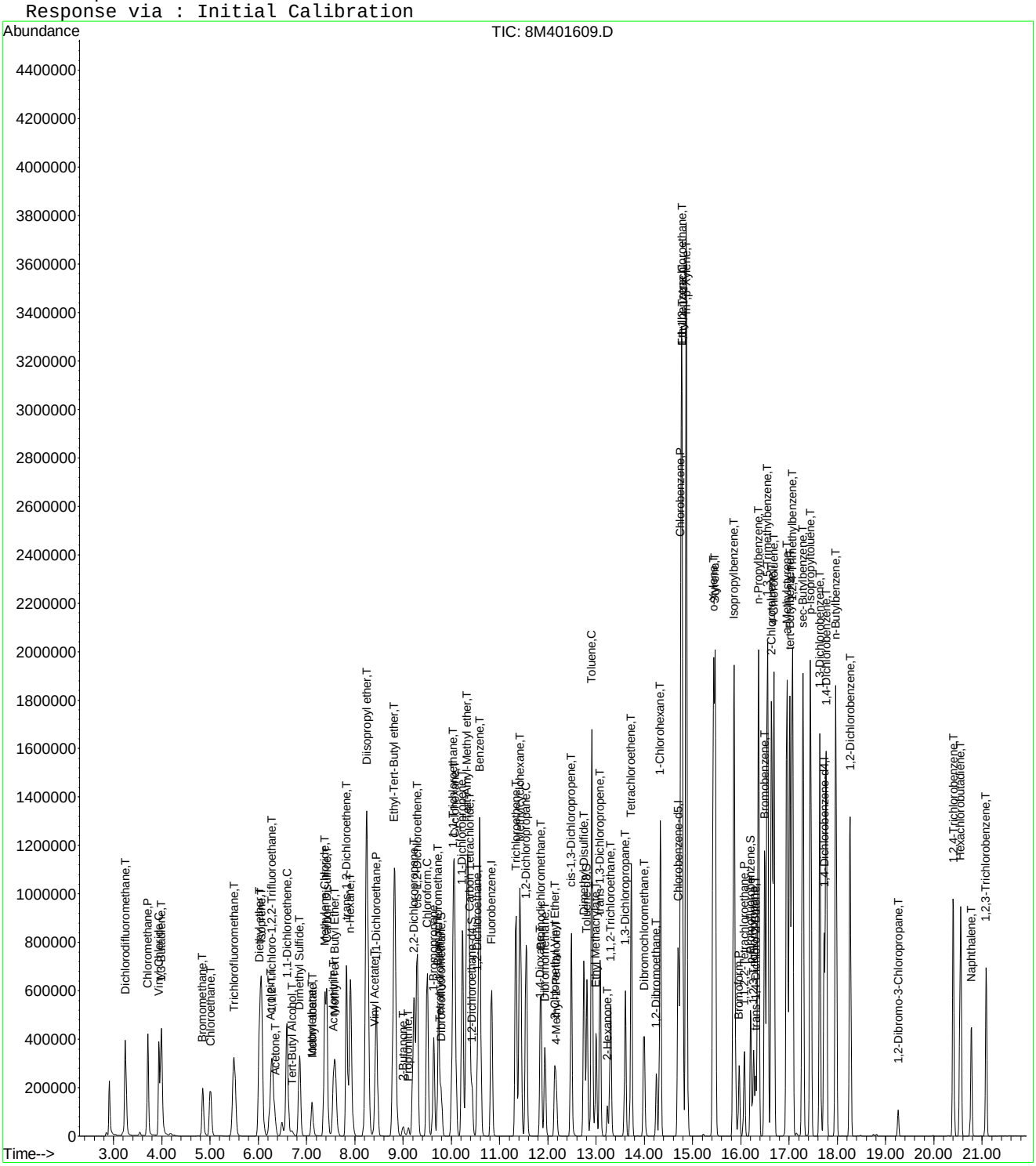

8M401609.D 8260WTR.M Tue Dec 09 09:33:33 2014 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 4 Dec 2014 15:46
CCV date: 9 Dec 2014 9:11
CCV Filename: 8M401609.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	794624	10.83	558450	14.70	283707	17.72
CCV	720715	10.83	528303	14.70	265642	17.73

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\120914\8M401609.D Vial: 2
Acq On : 9 Dec 2014 9:11 Operator: TMB
Sample : WG503946-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	91	0.00
2	T	Dichlorodifluoromethane	0.3151	0.3425	-8.7	92	0.00
3	P	Chloromethane	0.3675	0.3715	-1.1	92	0.00
4	C	Vinyl Chloride	0.3110	0.3184	-2.4	92	0.00
5	T	1,3-Butadiene	0.1829	0.2127	-16.3	102	0.01
6	T	Bromomethane	0.1279	0.1429	-11.7	93	0.00
7	T	Chloroethane	0.1789	0.1942	-8.6	97	0.00
8	T	Trichlorofluoromethane	0.3674	0.4111	-11.9	99	0.00
9	T	Diethyl ether	0.1414	0.1381	2.3	91	0.00
10	T	Isoprene	0.3073	0.3204	-4.3	100	0.00
11	T	Acrolein	0.0132	0.0126	4.3	92	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2287	0.2444	-6.9	96	0.00
13	T	Acetone	0.0367	0.0340	7.3	86	0.00
14	C	1,1-Dichloroethene	0.3453	0.3887	-12.6	100	0.00
15	T	Tert-Butyl Alcohol	0.0093	0.0085	9.4	84	-0.01
16	T	Dimethyl Sulfide	0.1783	0.1840	-3.2	93	0.00
17	T	Iodomethane	0.0990	0.0882	10.9	73	0.00
18	T	Methyl acetate	0.1168	0.1137	2.7	89	0.00
19	T	Methylene Chloride	0.2402	0.2442	-1.7	93	0.00
20	T	Carbon Disulfide	0.6776	0.7841	-15.7	100	0.00
21	T	Acrylonitrile	0.0482	0.0472	2.1	85	0.00
22	T	Methyl Tert Butyl Ether	0.4666	0.4444	4.8	87	0.00
23	T	trans-1,2-Dichloroethene	0.3670	0.4102	-11.8	98	0.00
24	T	n-Hexane	0.3646	0.4017	-10.2	100	0.00
25	T	Diisopropyl ether	0.8314	0.8422	-1.3	91	0.00
26	T	Vinyl Acetate	0.2323	0.2411	-3.8	90	0.00
27	P	1,1-Dichloroethane	0.4676	0.5198	-11.2	96	0.00
28	T	Ethyl-Tert-Butyl ether	0.7113	0.6865	3.5	87	0.00
29	T	2-Butanone	0.0599	0.0541	9.7	84	0.00
30	T	Propionitrile	0.0170	0.0160	5.8	83	0.00
31	T	2,2-Dichloropropane	0.3991	0.4462	-11.8	100	0.00
32	T	cis-1,2-Dichloroethene	0.2700	0.2865	-6.1	94	0.00
33	C	Chloroform	0.4637	0.4920	-6.1	92	0.00
34		1-Bromopropane	0.0375	0.0431	-14.9	98	0.00
35	T	Bromochloromethane	0.1316	0.1397	-6.1	89	-0.01
36	T	Tetrahydrofuran	0.0368	0.0380	-3.2	92	0.00
37	S	Dibromofluoromethane	0.2394	0.2092	12.6	76	0.00
38	T	1,1,1-Trichloroethane	0.4067	0.4456	-9.6	96	0.00
39	T	Cyclohexane	0.4476	0.4901	-9.5	99	0.00
40	T	1,1-Dichloropropene	0.3729	0.3987	-6.9	95	0.00
41	T	Tert-Amyl-Methyl ether	0.5551	0.5114	7.9	83	0.00
42	T	Carbon Tetrachloride	0.3466	0.3850	-11.1	95	0.00
43	S	1,2-Dichloroethane-d4	0.2517	0.2139	15.0	72	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.67#
45	T	1,2-Dichloroethane	0.3292	0.3297	-0.1	87	0.00
46	T	Benzene	0.9771	1.0778	-10.3	95	0.00
47	T	Trichloroethene	0.2513	0.2573	-2.4	92	0.00
48	T	Methylcyclohexane	0.4177	0.4444	-6.4	95	0.00
49	C	1,2-Dichloropropane	0.2707	0.2829	-4.5	92	0.00
50	T	Bromodichloromethane	0.3328	0.3554	-6.8	91	0.00
51	T	1,4-Dioxane	0.0010	0.0012	-20.6	108	0.00
52	T	Dibromomethane	0.1221	0.1194	2.2	85	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0896	0.0953	-6.4	86	0.00
54	T	4-Methyl-2-Pentanone	0.0514	0.0468	8.9	79	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\120914\8M401609.D Vial: 2
Acq On : 9 Dec 2014 9:11 Operator: TMB
Sample : WG503946-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3686	0.3970	-7.7	90	0.00
56	T	Dimethyl Disulfide	0.3554	0.3625	-2.0	89	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	95	0.00
58	S	Toluene-d8	1.1980	1.0979	8.3	81	0.00
59	C	Toluene	1.4802	1.5367	-3.8	94	0.00
60	T	Ethyl Methacrylate	0.2999	0.2914	2.8	83	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.27#
62	T	trans-1,3-Dichloropropene	0.4594	0.4553	0.9	86	0.00
63	T	1,1,2-Trichloroethane	0.2206	0.2111	4.3	86	0.00
64	T	2-Hexanone	0.0682	0.0564	17.3	77	0.00
65	T	1,3-Dichloropropane	0.4124	0.3906	5.3	85	0.00
66	T	Tetrachloroethene	0.3074	0.3099	-0.8	93	0.00
67	T	Dibromochloromethane	0.2758	0.2734	0.9	86	0.00
68	T	1,2-Dibromoethane	0.2168	0.2098	3.2	85	0.00
69	T	1-Chlorohexane	0.4784	0.5165	-8.0	96	0.00
70	P	Chlorobenzene	0.9595	0.9917	-3.4	93	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3415	0.3483	-2.0	90	0.00
72	C	Ethylbenzene	0.5536	0.5814	-5.0	94	0.00
73	T	m-,p-Xylene	0.6123	0.6779	-10.7	94	-0.01
74	T	o-Xylene	0.6305	0.6672	-5.8	94	0.00
75	T	Styrene	0.9731	1.1089	-14.0	92	0.00
76	P	Bromoform	0.1626	0.1614	0.8	83	0.00
77	T	Isopropylbenzene	1.5746	1.6830	-6.9	95	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	94	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5039	0.4535	10.0	83	0.00
80	S	p-Bromofluorobenzene	0.9737	0.8771	9.9	82	0.00
81	T	1,2,3-Trichloropropane	0.1378	0.1250	9.3	82	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1281	0.1367	-6.7	89	-0.01
83	T	n-Propylbenzene	3.6235	4.0573	-12.0	95	0.00
84	T	Bromobenzene	0.7657	0.7493	2.1	89	0.00
85	T	1,3,5-Trimethylbenzene	2.6306	2.8529	-8.5	94	0.00
86	T	2-Chlorotoluene	2.4806	2.8876	-16.4	108	0.00
87	T	4-Chlorotoluene	2.2749	2.2415	1.5	81	0.00
88	T	a-Methylstyrene	1.2960	1.3885	-7.1	95	0.00
89	T	tert-Butylbenzene	0.5654	0.5774	-2.1	93	0.00
90	T	1,2,4-Trimethylbenzene	2.4765	2.7759	-12.1	93	0.00
91	T	sec-Butylbenzene	3.1835	3.4556	-8.5	94	0.00
92	T	p-Isopropyltoluene	2.4126	2.7740	-15.0	94	0.00
93	T	1,3-Dichlorobenzene	1.5273	1.5185	0.6	91	0.00
94	T	1,4-Dichlorobenzene	1.4853	1.4685	1.1	90	0.00
95	T	n-Butylbenzene	2.2757	2.5843	-13.6	94	0.00
96	T	1,2-Dichlorobenzene	1.2648	1.2558	0.7	87	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0827	0.0728	12.0	78	0.00
98	T	1,2,4-Trichlorobenzene	0.7937	0.7253	8.6	83	0.00
99	T	Hexachlorobutadiene	0.5009	0.5064	-1.1	91	0.00
100	T	Naphthalene	1.0601	0.8611	18.8	76	0.00
101	T	1,2,3-Trichlorobenzene	0.6049	0.5130	15.2	79	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M401609.D 8260WTR.M Tue Dec 09 09:37:13 2014 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\120914\8M401609.D Vial: 2
Acq On : 9 Dec 2014 9:11 Operator: TMB
Sample : WG503946-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	91	0.00
2	T	Dichlorodifluoromethane	50.0000	54.3496	-8.7	92	0.00
3	P	Chloromethane	50.0000	50.5493	-1.1	92	0.00
4	C	Vinyl Chloride	50.0000	51.1919	-2.4	92	0.00
5	T	1,3-Butadiene	50.0000	61.5524	-23.1	102	0.01
6	T	Bromomethane	50.0000	48.0221	4.0	93	0.00
7	T	Chloroethane	50.0000	54.2923	-8.6	97	0.00
8	T	Trichlorofluoromethane	50.0000	55.9367	-11.9	99	0.00
9	T	Diethyl ether	100.0000	97.6967	2.3	91	0.00
10	T	Isoprene	50.0000	52.1264	-4.3	100	0.00
11	T	Acrolein	50.0000	45.8096	8.4	92	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.4376	-6.9	96	0.00
13	T	Acetone	50.0000	46.3736	7.3	86	0.00
14	C	1,1-Dichloroethene	50.0000	56.2880	-12.6	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	181.3019	9.3	84	-0.01
16	T	Dimethyl Sulfide	50.0000	51.5955	-3.2	93	0.00
17	T	Iodomethane	50.0000	38.4636	23.1	73	0.00
18	T	Methyl acetate	50.0000	48.6718	2.7	89	0.00
19	T	Methylene Chloride	50.0000	50.8280	-1.7	93	0.00
20	T	Carbon Disulfide	50.0000	57.8573	-15.7	100	0.00
21	T	Acrylonitrile	50.0000	48.9654	2.1	85	0.00
22	T	Methyl Tert Butyl Ether	50.0000	47.6145	4.8	87	0.00
23	T	trans-1,2-Dichloroethene	50.0000	55.8787	-11.8	98	0.00
24	T	n-Hexane	50.0000	55.0847	-10.2	100	0.00
25	T	Diisopropyl ether	100.0000	101.2944	-1.3	91	0.00
26	T	Vinyl Acetate	50.0000	51.8836	-3.8	90	0.00
27	P	1,1-Dichloroethane	50.0000	55.5791	-11.2	96	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	96.5009	3.5	87	0.00
29	T	2-Butanone	50.0000	45.1323	9.7	84	0.00
30	T	Propionitrile	100.0000	94.1996	5.8	83	0.00
31	T	2,2-Dichloropropane	50.0000	55.9017	-11.8	100	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.0555	-6.1	94	0.00
33	C	Chloroform	50.0000	53.0527	-6.1	92	0.00
34		1-Bromopropane	50.0000	52.2887	-4.6	98	0.00
35	T	Bromochloromethane	50.0000	50.0426	-0.1	89	-0.01
36	T	Tetrahydrofuran	100.0000	103.2258	-3.2	92	0.00
37	S	Dibromofluoromethane	25.0000	21.8469	12.6	76	0.00
38	T	1,1,1-Trichloroethane	50.0000	54.7937	-9.6	96	0.00
39	T	Cyclohexane	50.0000	54.7466	-9.5	99	0.00
40	T	1,1-Dichloropropene	50.0000	53.4670	-6.9	95	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	92.1323	7.9	83	0.00
42	T	Carbon Tetrachloride	50.0000	55.5459	-11.1	95	0.00
43	S	1,2-Dichloroethane-d4	25.0000	21.2491	15.0	72	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.67#
45	T	1,2-Dichloroethane	50.0000	50.0704	-0.1	87	0.00
46	T	Benzene	50.0000	55.1493	-10.3	95	0.00
47	T	Trichloroethene	50.0000	51.1980	-2.4	92	0.00
48	T	Methylcyclohexane	50.0000	53.1879	-6.4	95	0.00
49	C	1,2-Dichloropropane	50.0000	52.2668	-4.5	92	0.00
50	T	Bromodichloromethane	50.0000	53.3990	-6.8	91	0.00
51	T	1,4-Dioxane	200.0000	239.3155	-19.7	108	0.00
52	T	Dibromomethane	50.0000	48.8794	2.2	85	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	53.1961	-6.4	86	0.00
54	T	4-Methyl-2-Pentanone	50.0000	45.5545	8.9	79	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\120914\8M401609.D Vial: 2
Acq On : 9 Dec 2014 9:11 Operator: TMB
Sample : WG503946-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD67814 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8472	-7.7	90	0.00
56	T	Dimethyl Disulfide	50.0000	51.0024	-2.0	89	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	95	0.00
58	S	Toluene-d8	25.0000	22.9128	8.3	81	0.00
59	C	Toluene	50.0000	51.9080	-3.8	94	0.00
60	T	Ethyl Methacrylate	50.0000	48.5807	2.8	83	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.27#
62	T	trans-1,3-Dichloropropene	50.0000	49.5561	0.9	86	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.8483	4.3	86	0.00
64	T	2-Hexanone	50.0000	41.3370	17.3	77	0.00
65	T	1,3-Dichloropropane	50.0000	47.3614	5.3	85	0.00
66	T	Tetrachloroethene	50.0000	50.4000	-0.8	93	0.00
67	T	Dibromochloromethane	50.0000	49.5584	0.9	86	0.00
68	T	1,2-Dibromoethane	50.0000	48.3878	3.2	85	0.00
69	T	1-Chlorohexane	50.0000	53.9852	-8.0	96	0.00
70	P	Chlorobenzene	50.0000	51.6769	-3.4	93	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.9890	-2.0	90	0.00
72	C	Ethylbenzene	50.0000	52.5044	-5.0	94	0.00
73	T	m-,p-Xylene	100.0000	110.7212	-10.7	94	-0.01
74	T	o-Xylene	50.0000	52.9111	-5.8	94	0.00
75	T	Styrene	50.0000	56.9765	-14.0	92	0.00
76	P	Bromoform	50.0000	44.7468	10.5	83	0.00
77	T	Isopropylbenzene	50.0000	53.4410	-6.9	95	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	94	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	45.0021	10.0	83	0.00
80	S	p-Bromofluorobenzene	25.0000	22.5192	9.9	82	0.00
81	T	1,2,3-Trichloropropane	50.0000	45.3710	9.3	82	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	46.9057	6.2	89	-0.01
83	T	n-Propylbenzene	50.0000	52.8284	-5.7	95	0.00
84	T	Bromobenzene	50.0000	48.9260	2.1	89	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	54.2260	-8.5	94	0.00
86	T	2-Chlorotoluene	50.0000	58.2035	-16.4	108	0.00
87	T	4-Chlorotoluene	50.0000	43.3419	13.3	81	0.00
88	T	a-Methylstyrene	50.0000	53.5694	-7.1	95	0.00
89	T	tert-Butylbenzene	50.0000	51.0563	-2.1	93	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	56.0462	-12.1	93	0.00
91	T	sec-Butylbenzene	50.0000	54.2734	-8.5	94	0.00
92	T	p-Isopropyltoluene	50.0000	57.4908	-15.0	94	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.7116	0.6	91	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.4348	1.1	90	0.00
95	T	n-Butylbenzene	50.0000	56.7796	-13.6	94	0.00
96	T	1,2-Dichlorobenzene	50.0000	49.6475	0.7	87	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	44.0048	12.0	78	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	45.6947	8.6	83	0.00
99	T	Hexachlorobutadiene	50.0000	50.5501	-1.1	91	0.00
100	T	Naphthalene	50.0000	40.6122	18.8	76	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	42.3970	15.2	79	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M401609.D 8260WTR.M Tue Dec 09 09:37:15 2014 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\2\DATA\100214\8M400357.D Vial: 3
Acq On : 2 Oct 2014 11:58 Operator: TMB
Sample : WG494714-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD66476 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

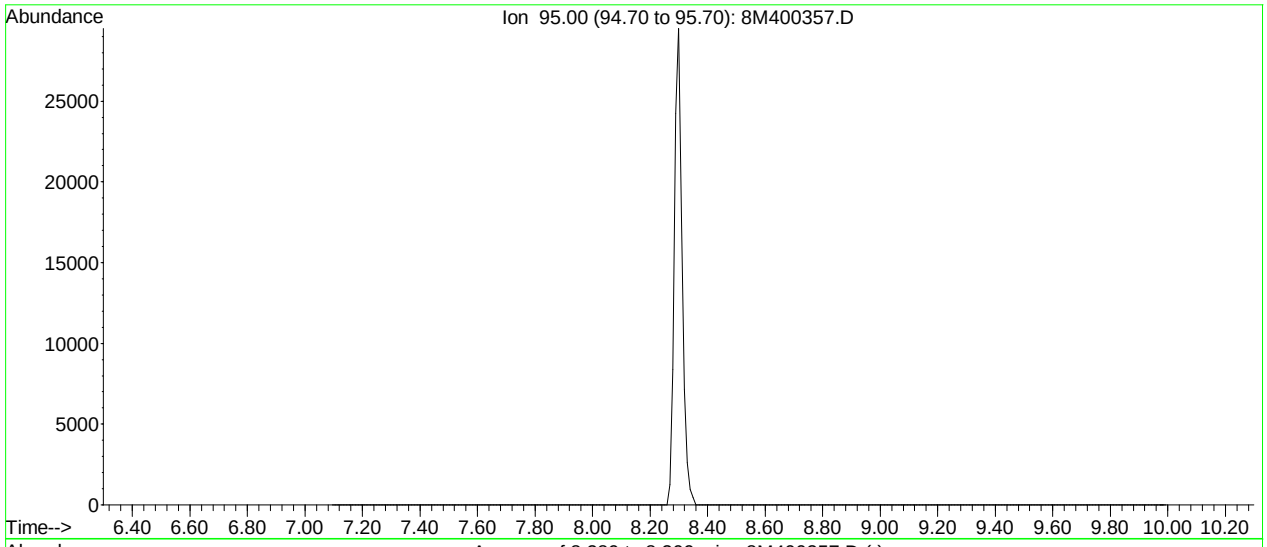

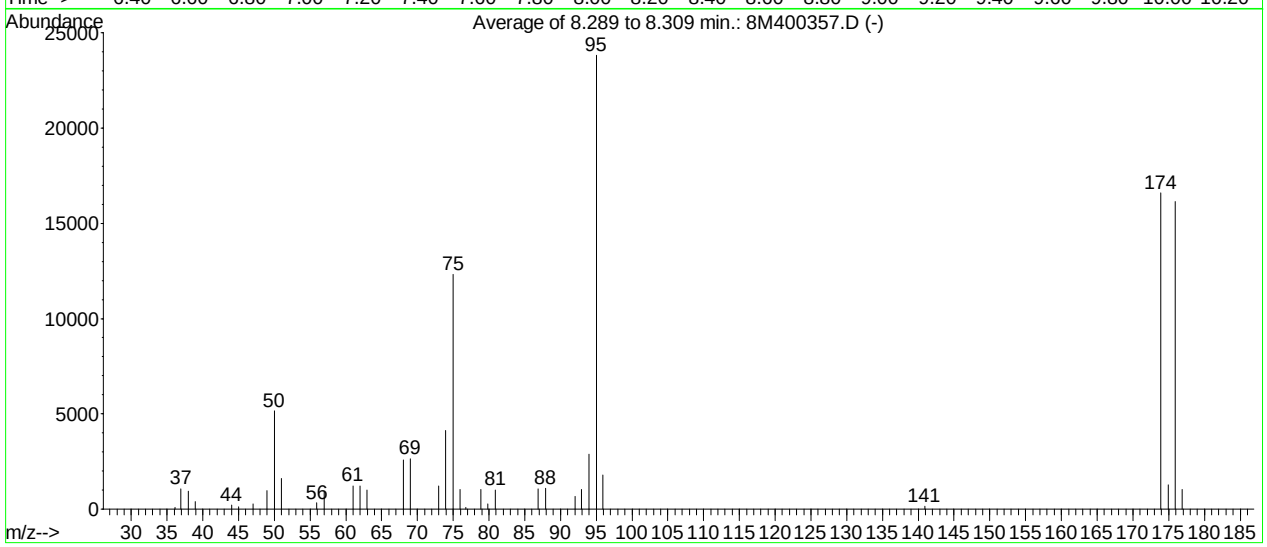

AutoFind: Scans 118, 119, 120; Background Corrected with Scan 113

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	5158	PASS
75	95	30	60	51.7	12312	PASS
95	95	100	100	100.0	23818	PASS
96	95	5	9	7.6	1800	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	69.7	16590	PASS
175	174	5	9	7.8	1290	PASS
176	174	95	101	97.3	16145	PASS
177	176	5	9	6.3	1023	PASS

8M400357.D BFB.M Thu Oct 02 12:09:27 2014

BFB

```
Data File : C:\MSDCHEM\2\DATA\120414\8M401527.D          Vial: 1
Acq On    :  4 Dec 2014  11:58                       Operator: TMB
Sample    : WG503415-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD67572                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

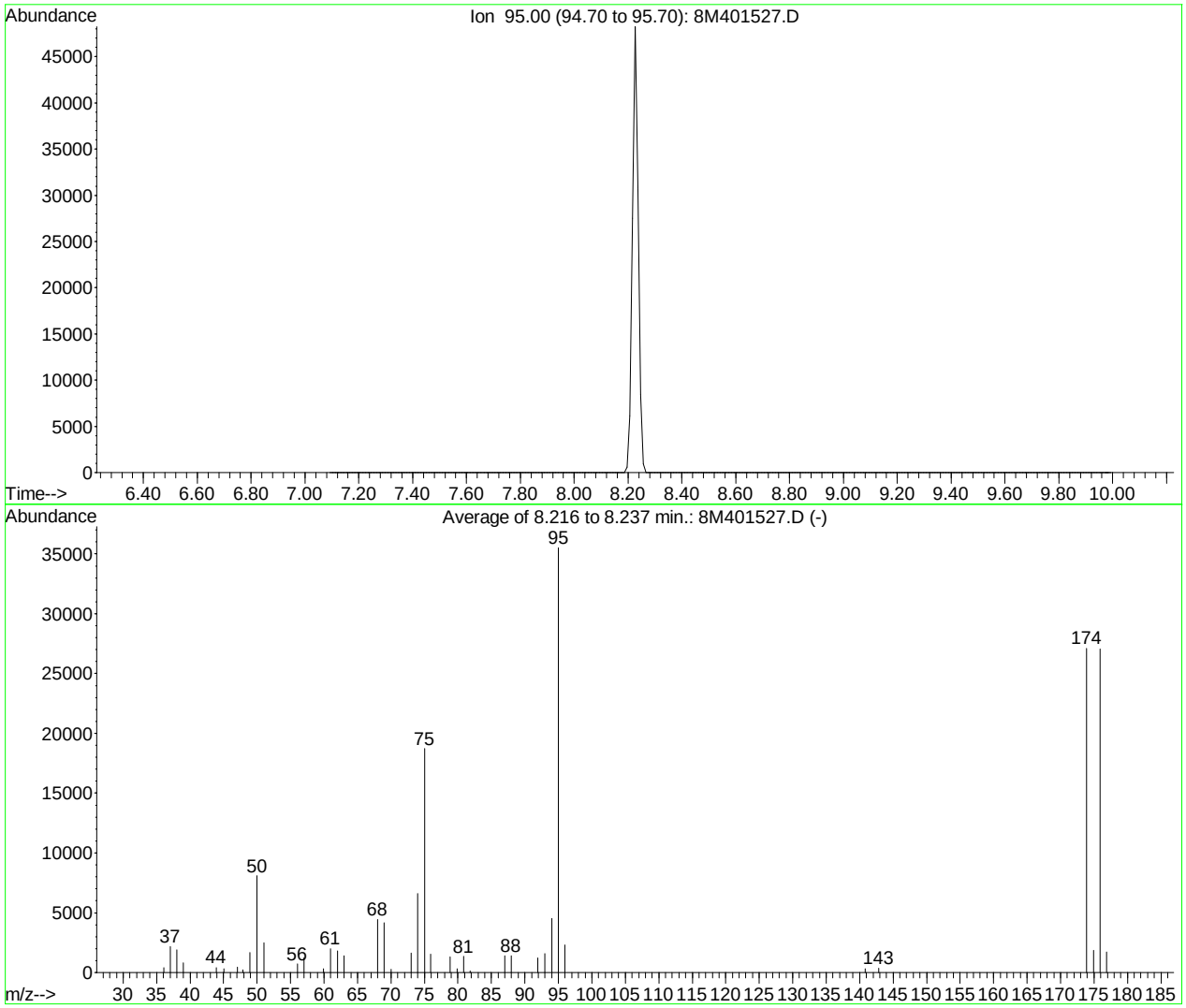

AutoFind: Scans 111, 112, 113; Background Corrected with Scan 106

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.8	8089	PASS
75	95	30	60	52.7	18719	PASS
95	95	100	100	100.0	35506	PASS
96	95	5	9	6.5	2321	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.3	27107	PASS
175	174	5	9	6.8	1836	PASS
176	174	95	101	99.8	27055	PASS
177	176	5	9	6.3	1708	PASS

8M401527.D BFB.M Thu Dec 04 12:09:05 2014

BFB

```
Data File : C:\MSDCHEM\2\DATA\120814\8M401578.D          Vial: 1
Acq On    :  8 Dec 2014  12:12                       Operator: TMB
Sample    : WG503806-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD67572                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

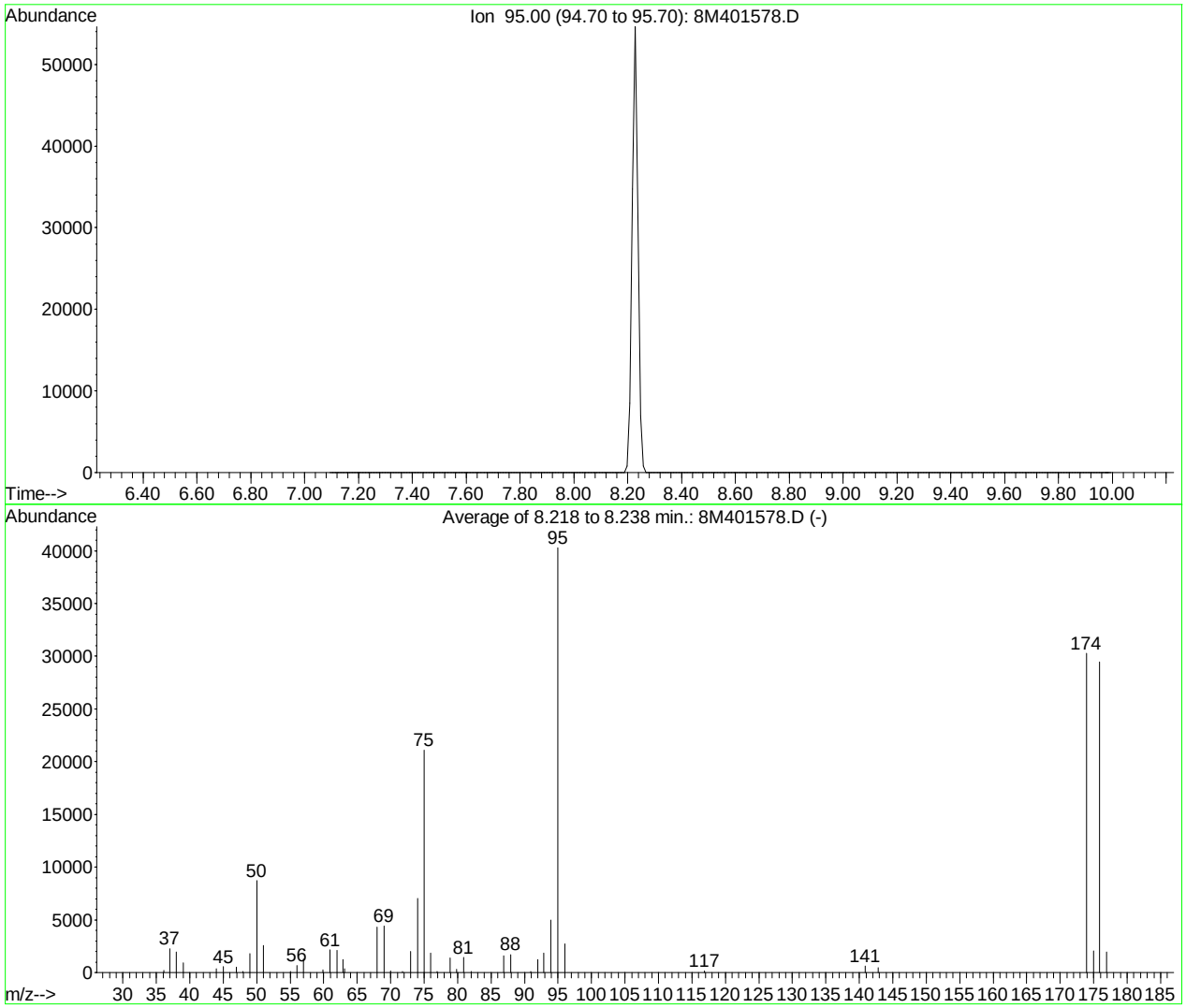

AutoFind: Scans 111, 112, 113; Background Corrected with Scan 106

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	8720	PASS
75	95	30	60	52.4	21089	PASS
95	95	100	100	100.0	40274	PASS
96	95	5	9	6.7	2708	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	75.2	30269	PASS
175	174	5	9	6.8	2072	PASS
176	174	95	101	97.3	29437	PASS
177	176	5	9	6.6	1952	PASS

8M401578.D BFB.M Mon Dec 08 12:31:52 2014

BFB

```
Data File : C:\MSDCHEM\2\DATA\120914\8M401608.D          Vial: 1
Acq On    :  9 Dec 2014   8:47                       Operator: TMB
Sample    : WG503946-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD67572                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

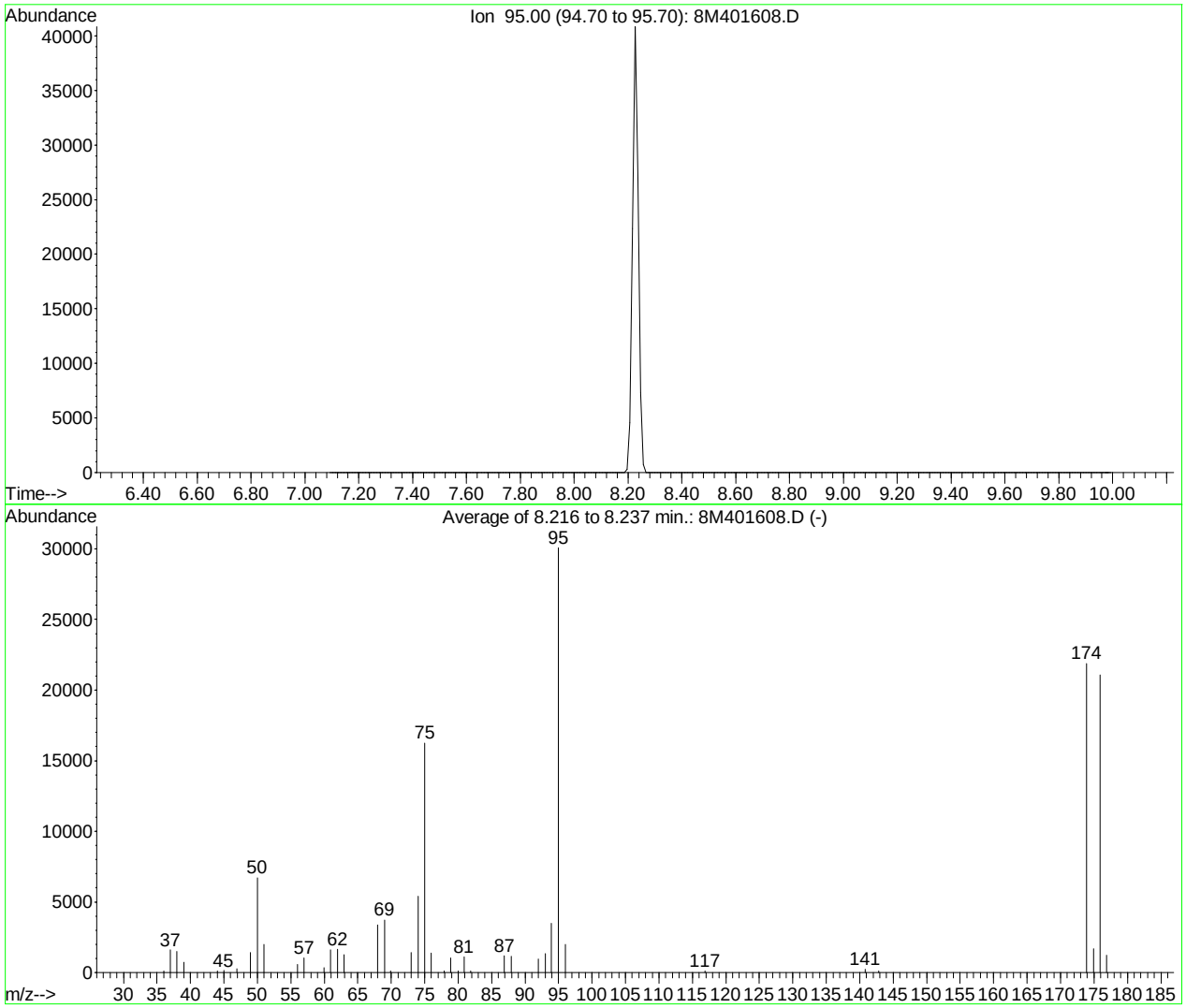

AutoFind: Scans 111, 112, 113; Background Corrected with Scan 106

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.4	6722	PASS
75	95	30	60	54.1	16262	PASS
95	95	100	100	100.0	30066	PASS
96	95	5	9	6.6	1990	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	72.8	21894	PASS
175	174	5	9	7.7	1678	PASS
176	174	95	101	96.3	21073	PASS
177	176	5	9	5.8	1215	PASS

8M401608.D BFB.M Tue Dec 09 09:11:48 2014

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401581.D Vial: 4
Acq On : 8 Dec 2014 13:34 Operator: TMB
Sample : WG503808-01 VBLK1208 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 13:49:21 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	781951	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	559884	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	257278	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	166793	22.2799 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.12%		
43) 1,2-Dichloroethane-d4	10.43	65	182168	23.1433 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.56%		
58) Toluene-d8	12.81	98	613962	22.8845 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 91.52%		
80) p-Bromofluorobenzene	16.20	95	239444	23.8957 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.60%		

Target Compounds

					Qvalue
19) Methylene Chloride	7.37	84	1411	0.1878 ug/L	87
36) Tetrahydrofuran	9.76	42	206	0.1790 ug/L #	38
56) Dimethyl Disulfide	12.81	94	17657	1.5885 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M401581.D 8260WTR.M Tue Dec 09 13:49:22 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401581.D Vial: 4
Acq On : 8 Dec 2014 13:34 Operator: TMB
Sample : WG503808-01 VBLK1208 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 13:49 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

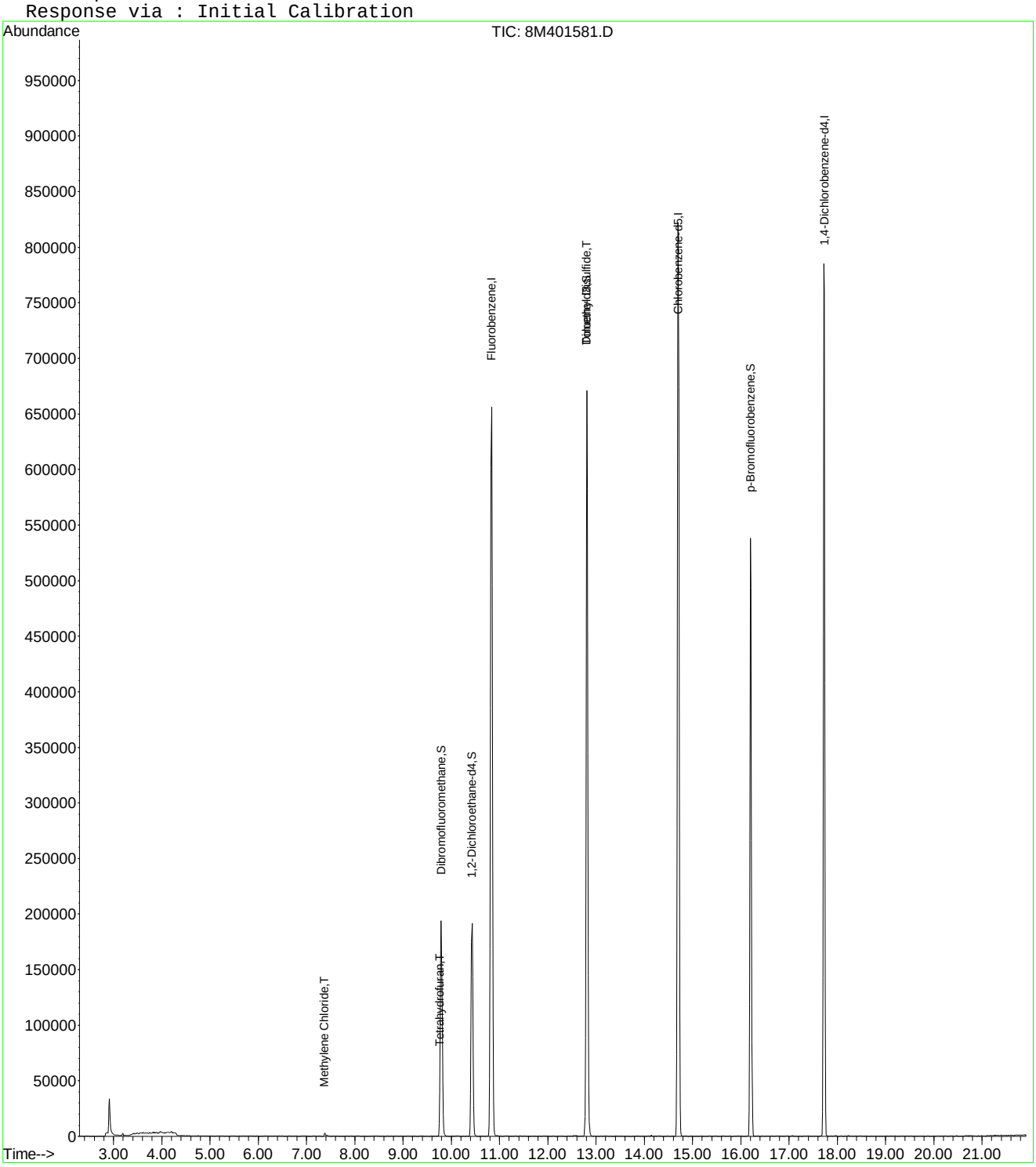

8M401581.D 8260WTR.M Tue Dec 09 13:49:22 2014 Page 2

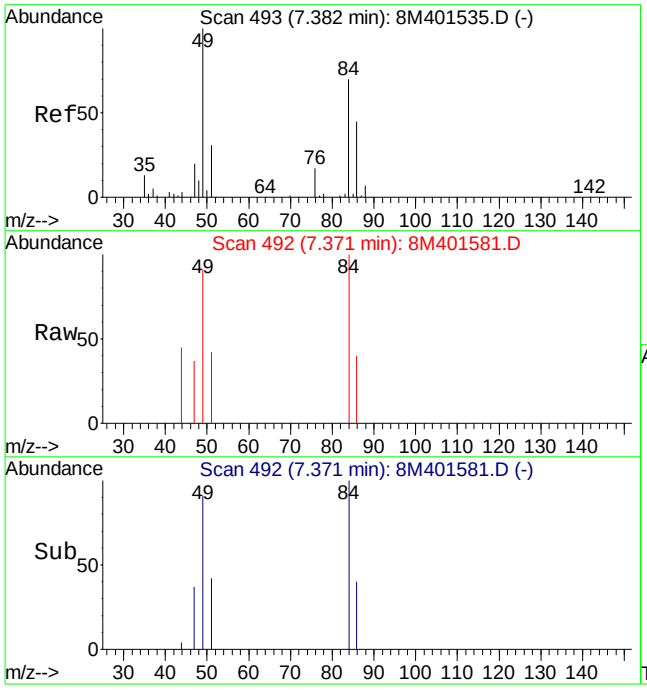

#19
Methylene Chloride
Concen: 0.19 ug/L
RT: 7.37 min Scan# 492
Delta R.T. 0.00 min
Lab File: 8M401581.D
Acq: 8 Dec 2014 13:34

Tgt Ion: 84 Resp: 1411

Ion	Ratio	Lower	Upper
84	100		
49	169.5	91.9	214.3

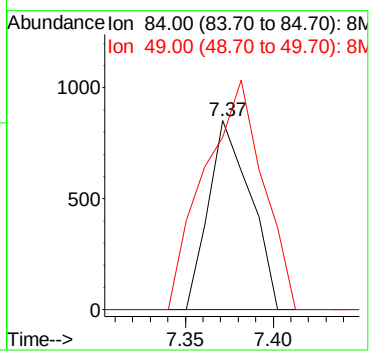

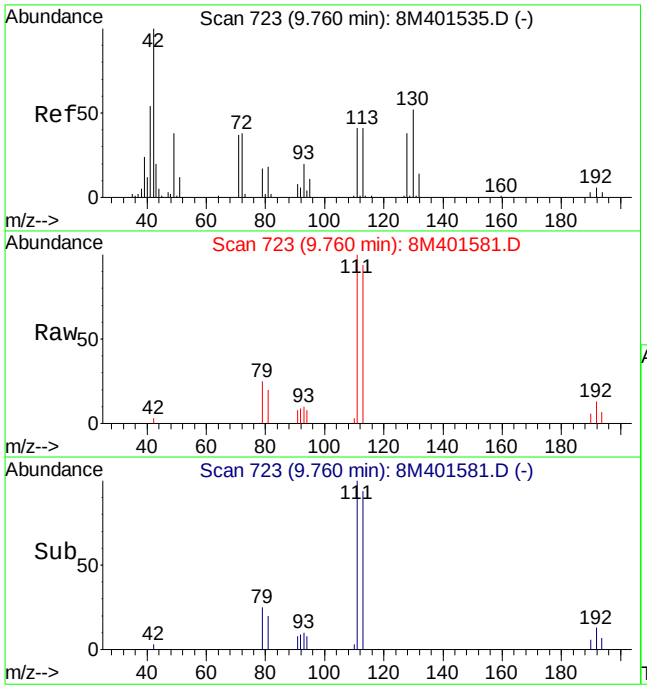

#36
Tetrahydrofuran
Concen: 0.18 ug/L
RT: 9.76 min Scan# 723
Delta R.T. 0.01 min
Lab File: 8M401581.D
Acq: 8 Dec 2014 13:34

Tgt Ion: 42 Resp: 206

Ion	Ratio	Lower	Upper
42	100		
72	0.0	23.2	54.0#
71	0.0	21.4	50.0#

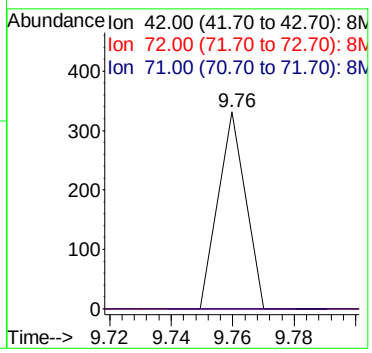

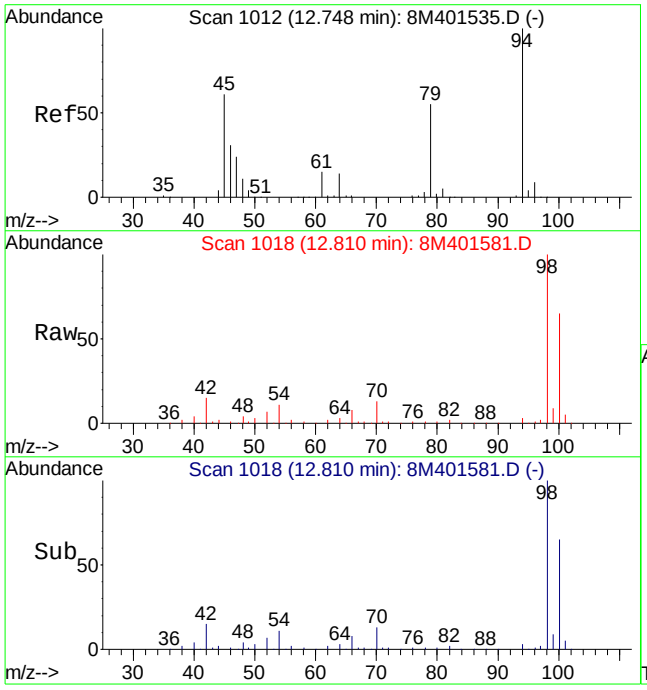

#56
Dimethyl Disulfide
Concen: 1.59 ug/L
RT: 12.81 min Scan# 1018
Delta R.T. 0.06 min
Lab File: 8M401581.D
Acq: 8 Dec 2014 13:34

Tgt Ion: 94 Resp: 17657

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.3	72.9#

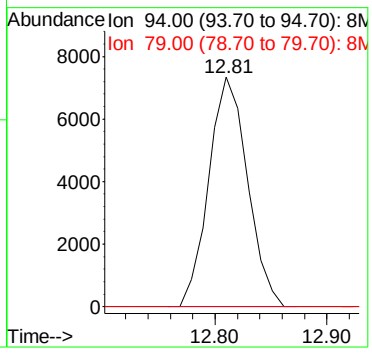

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120914\8M401611.D Vial: 4
Acq On : 9 Dec 2014 10:09 Operator: TMB
Sample : WG503948-01 VBLK1209 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 10 08:18:06 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	685753	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	504763	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	229614	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	147012	22.3924 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.56%		
43) 1,2-Dichloroethane-d4	10.43	65	158213	22.9196 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.68%		
58) Toluene-d8	12.81	98	548336	22.6703 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 90.68%		
80) p-Bromofluorobenzene	16.20	95	218439	24.4259 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.72%		

Target Compounds					Qvalue
56) Dimethyl Disulfide	12.81	94	15136	1.5528 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M401611.D 8260WTR.M Wed Dec 10 08:18:07 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120914\8M401611.D Vial: 4
Acq On : 9 Dec 2014 10:09 Operator: TMB
Sample : WG503948-01 VBLK1209 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 10 8:18 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

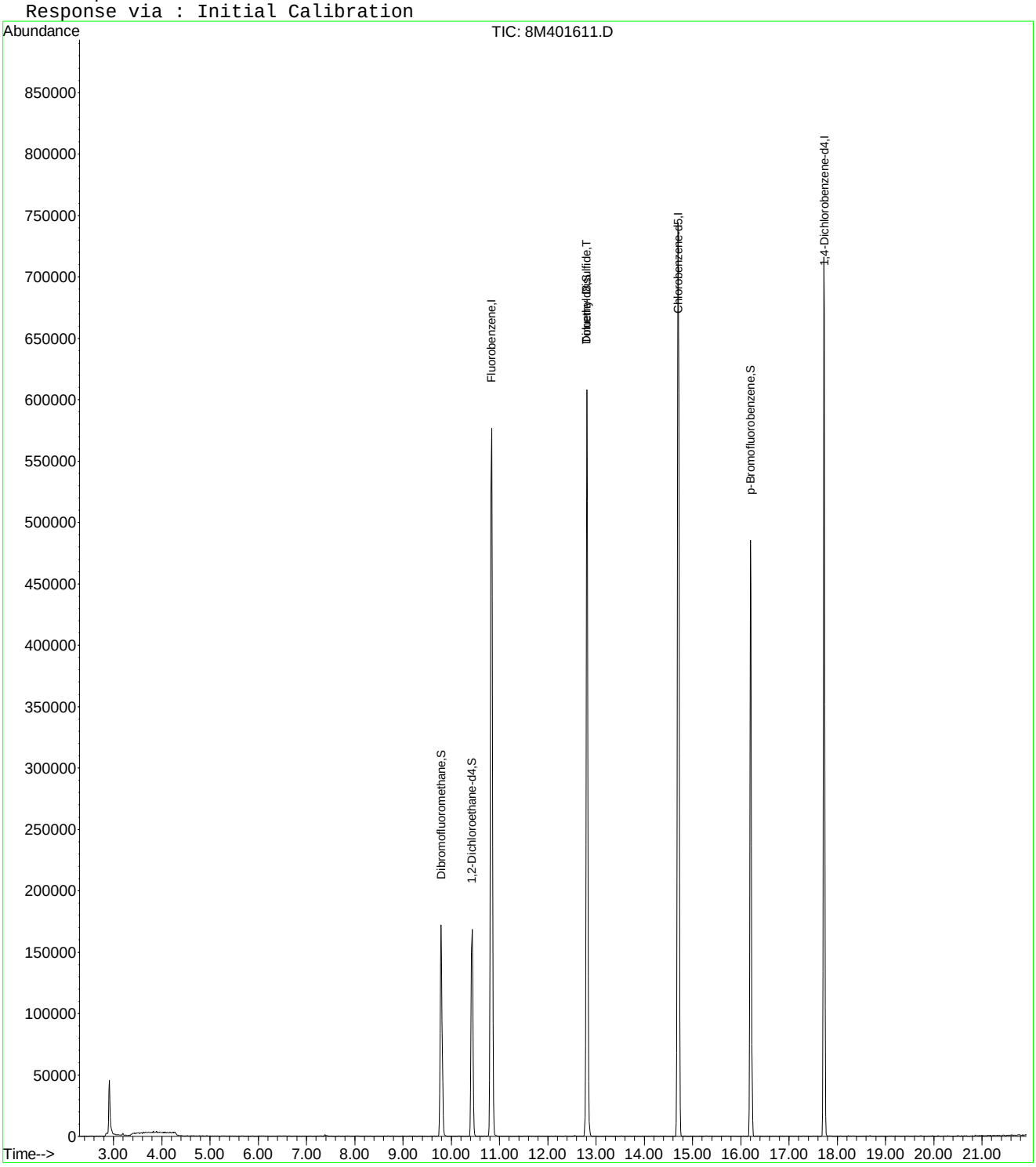

8M401611.D 8260WTR.M Wed Dec 10 08:18:07 2014 Page 2

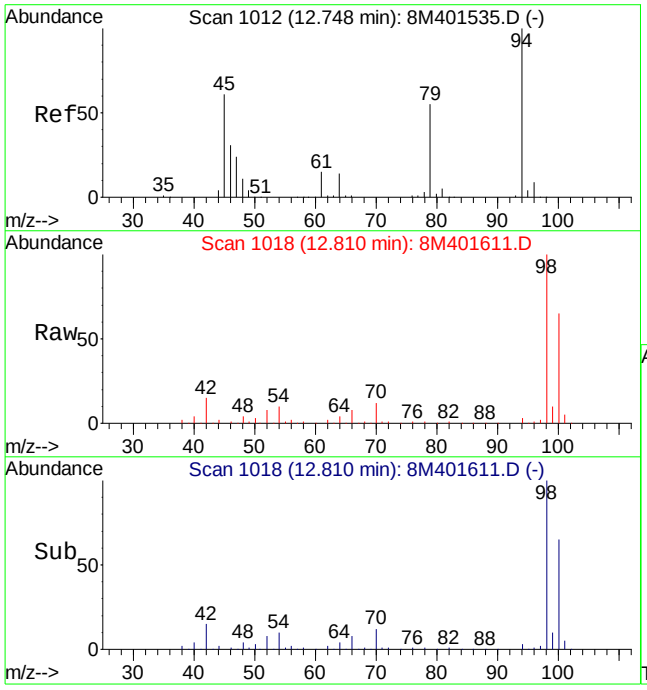

#56
Dimethyl Disulfide
Concen: 1.55 ug/L
RT: 12.81 min Scan# 1018
Delta R.T. 0.06 min
Lab File: 8M401611.D
Acq: 9 Dec 2014 10:09

Tgt Ion: 94 Resp: 15136

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.3	72.9#

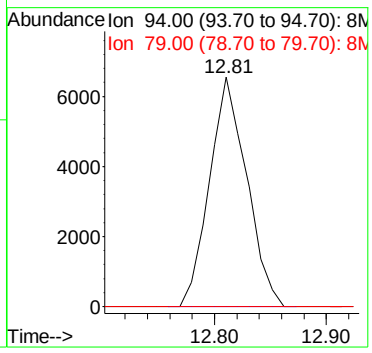

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401603.D Vial: 26
Acq On : 9 Dec 2014 00:15 Operator: TMB
Sample : WG503808-06 VBLK1208 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 13:49:49 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	648782	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	482969	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.72	152	222731	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	138016	22.2201 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 88.88%		
43) 1,2-Dichloroethane-d4	10.43	65	147507	22.5864 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.36%		
58) Toluene-d8	12.81	98	524334	22.6562 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 90.64%		
80) p-Bromofluorobenzene	16.20	95	203305	23.4361 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.76%		

Target Compounds					Qvalue
56) Dimethyl Disulfide	12.81	94	13636	1.4786 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M401603.D 8260WTR.M Tue Dec 09 13:49:50 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\120814\8M401603.D Vial: 26
Acq On : 9 Dec 2014 00:15 Operator: TMB
Sample : WG503808-06 VBLK1208 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 13:49 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

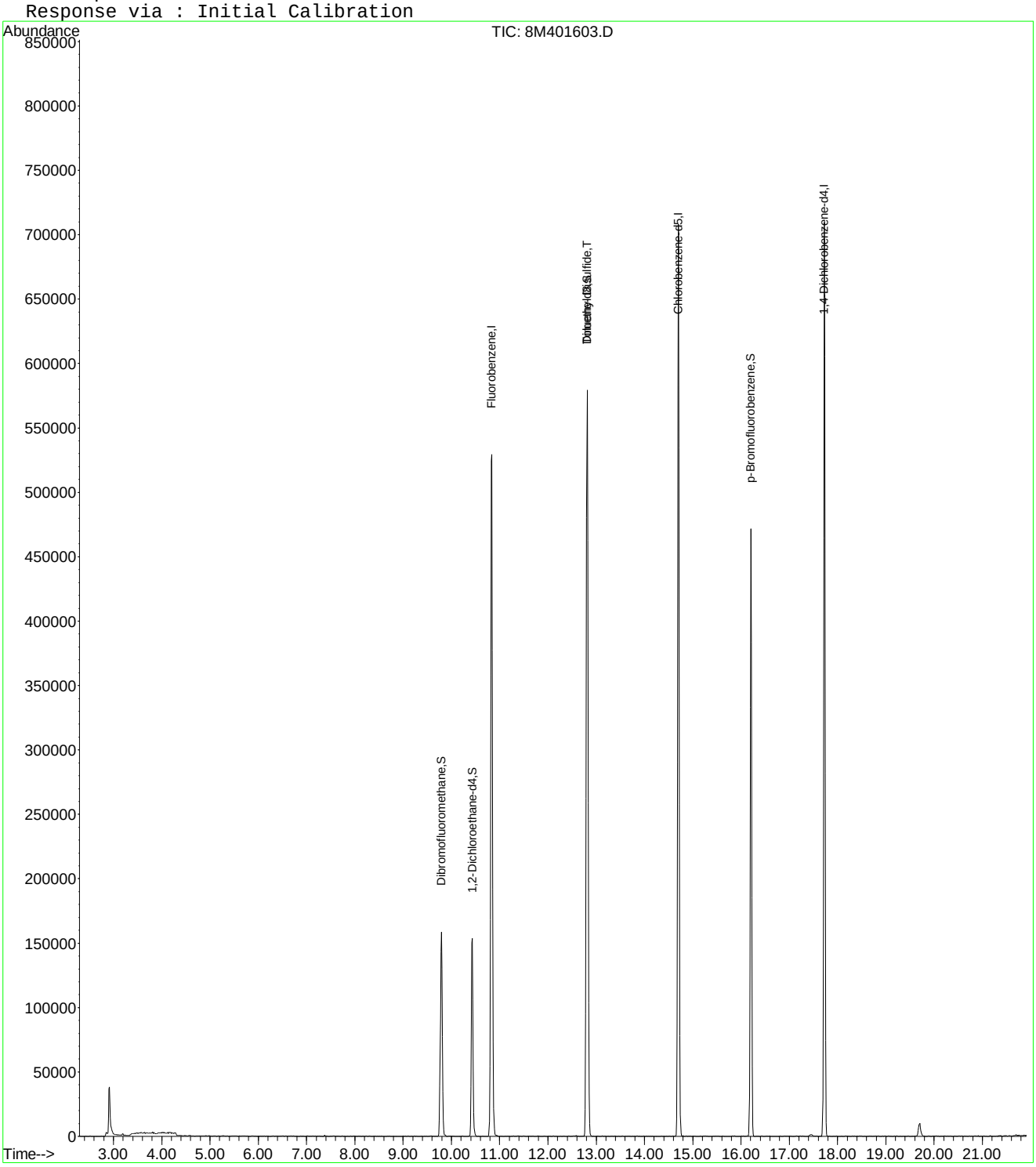

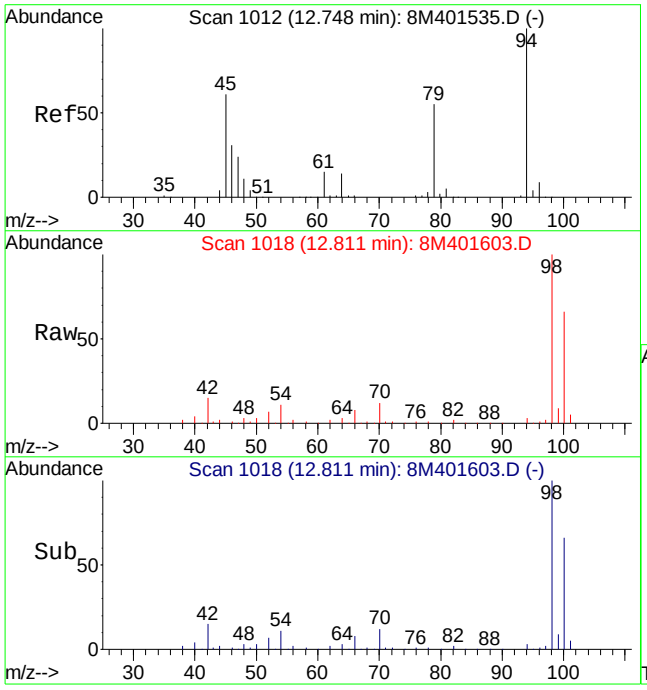

#56
Dimethyl Disulfide
Concen: 1.48 ug/L
RT: 12.81 min Scan# 1018
Delta R.T. 0.06 min
Lab File: 8M401603.D
Acq: 9 Dec 2014 00:15

Tgt Ion: 94 Resp: 13636

Ion	Ratio	Lower	Upper
94	100		
79	0.0	31.3	72.9#

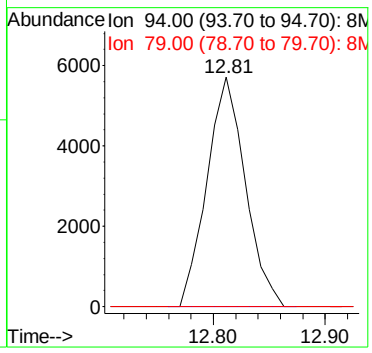

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\120814\8M401582.D Vial: 5
Acq On : 8 Dec 2014 14:03 Operator: TMB
Sample : WG503808-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD67765 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 08 14:25:57 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	801833	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	592162	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	292964	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	172616	22.4860 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.96%		
43) 1,2-Dichloroethane-d4	10.43	65	186169	23.0651 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.28%		
58) Toluene-d8	12.81	98	641380	22.6034 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 90.40%		
80) p-Bromofluorobenzene	16.20	95	257248	22.5453 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.20%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	151282	14.9678 ug/L	100
3) Chloromethane	3.71	50	194488	16.5001 ug/L	100
4) Vinyl Chloride	3.94	62	166797	16.7216 ug/L	98
5) 1,3-Butadiene	3.98	54	86742	14.2369 ug/L	97
6) Bromomethane	4.85	94	59878	13.4636 ug/L	96
7) Chloroethane	5.00	64	112230	19.5630 ug/L	99
8) Trichlorofluoromethane	5.50	101	244463	20.7437 ug/L	99
9) Diethyl ether	6.03	59	466046	102.7886 ug/L	91
10) Isoprene	6.07	67	222765	22.6005 ug/L	92
11) Acrolein	6.26	56	22980	51.0860 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	145404	19.8222 ug/L	93
13) Acetone	6.36	43	23650	20.0942 ug/L #	25
14) 1,1-Dichloroethene	6.60	61	226445	20.4473 ug/L	98
15) Tert-Butyl Alcohol	6.70	59	54136	180.7902 ug/L	98
16) Dimethyl Sulfide	6.85	62	115530	20.2043 ug/L	95
17) Iodomethane	7.11	142	30823	12.5442 ug/L	100
18) Methyl acetate	7.12	43	63140	16.8531 ug/L	98
19) Methylene Chloride	7.38	84	151958	19.7239 ug/L	92
20) Carbon Disulfide	7.42	76	426913	19.6422 ug/L	99
21) Acrylonitrile	7.56	53	34118	22.0712 ug/L	96
22) Methyl Tert Butyl Ether	7.59	73	326365	21.8063 ug/L	93
23) trans-1,2-Dichloroethene	7.83	61	238746	20.2818 ug/L	95
24) n-Hexane	7.91	57	221460	18.9386 ug/L	91
25) Diisopropyl ether	8.25	45	2754162	103.2802 ug/L	96
26) Vinyl Acetate	8.42	43	251836	33.7991 ug/L	100
27) 1,1-Dichloroethane	8.45	63	319471	21.3014 ug/L	98
28) Ethyl-Tert-Butyl ether	8.82	59	2355210	103.2302 ug/L	96
29) 2-Butanone	9.00	43	38618	20.0905 ug/L	99
30) Propionitrile	9.11	54	53940	98.8634 ug/L	97
31) 2,2-Dichloropropane	9.23	77	268205	20.9537 ug/L	100
32) cis-1,2-Dichloroethene	9.29	96	175422	20.2555 ug/L	96
33) Chloroform	9.50	83	315016	21.1803 ug/L	99
34) 1-Bromopropane	9.64	122	35584	27.1362 ug/L	95
35) Bromochloromethane	9.73	130	93376	20.9376 ug/L	96
36) Tetrahydrofuran	9.75	42	121827	103.2279 ug/L	99
38) 1,1,1-Trichloroethane	10.04	97	275244	21.1029 ug/L	100
39) Cyclohexane	10.07	56	284705	19.8324 ug/L	87
40) 1,1-Dichloropropene	10.24	75	235677	19.7074 ug/L	97
41) Tert-Amyl-Methyl ether	10.33	73	1827256	102.6319 ug/L	96
42) Carbon Tetrachloride	10.38	117	236631	21.2886 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M401582.D 8260WTR.M Mon Dec 08 14:25:58 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\120814\8M401582.D Vial: 5
Acq On : 8 Dec 2014 14:03 Operator: TMB
Sample : WG503808-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD67765 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 08 14:25:57 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	216762	20.5302	ug/L	99
46)	Benzene	10.59	78	668376	21.3263	ug/L	96
47)	Trichloroethene	11.34	130	166127	20.6125	ug/L	100
48)	Methylcyclohexane	11.42	83	266086	19.8597	ug/L	91
49)	1,2-Dichloropropane	11.55	63	179988	20.7342	ug/L	94
50)	Bromodichloromethane	11.86	83	224235	21.0088	ug/L	99
51)	1,4-Dioxane	11.84	88	4443	135.2358	ug/L	80
52)	Dibromomethane	11.94	93	83525	21.3315	ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.15	63	73420	25.5505	ug/L	100
54)	4-Methyl-2-Pentanone	12.18	58	32933	19.9706	ug/L	93
55)	cis-1,3-Dichloropropene	12.49	75	264629	22.3816	ug/L	98
56)	Dimethyl Disulfide	12.75	94	264453	23.2021	ug/L	98
59)	Toluene	12.91	91	697834	19.9033	ug/L	100
60)	Ethyl Methacrylate	13.00	69	153066	21.5482	ug/L	96
62)	trans-1,3-Dichloropropene	13.08	75	208420	19.1537	ug/L	99
63)	1,1,2-Trichloroethane	13.30	97	104635	20.0219	ug/L	98
64)	2-Hexanone	13.23	58	30185	18.6750	ug/L	82
65)	1,3-Dichloropropane	13.61	76	194354	19.8963	ug/L	98
66)	Tetrachloroethene	13.73	164	141680	19.4586	ug/L	98
67)	Dibromochloromethane	13.99	129	135323	20.7112	ug/L	97
68)	1,2-Dibromoethane	14.25	107	102092	19.8847	ug/L	99
69)	1-Chlorohexane	14.33	91	235549	20.7868	ug/L	90
70)	Chlorobenzene	14.75	112	468788	20.6258	ug/L	97
71)	1,1,1,2-Tetrachloroethane	14.78	131	153790	19.0102	ug/L	99
72)	Ethylbenzene	14.78	106	248171	18.9242	ug/L	95
73)	m-,p-Xylene	14.87	106	603824	41.6339	ug/L	96
74)	o-Xylene	15.44	106	299286	20.0406	ug/L	97
75)	Styrene	15.47	104	483167	20.9612	ug/L	95
76)	Bromoform	15.96	173	77913	18.5257	ug/L	99
77)	Isopropylbenzene	15.86	105	775180	20.7839	ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.07	83	113842	19.2806	ug/L	99
81)	1,2,3-Trichloropropane	16.26	110	31857	19.7270	ug/L	88
82)	trans-1,4-Dichloro-2-Buten	16.30	53	31503	18.8027	ug/L	91
83)	n-Propylbenzene	16.37	91	929838	19.3616	ug/L	98
84)	Bromobenzene	16.50	156	172361	19.2080	ug/L	96
85)	1,3,5-Trimethylbenzene	16.55	105	633704	20.5570	ug/L	98
86)	2-Chlorotoluene	16.64	91	591660	20.3534	ug/L	98
87)	4-Chlorotoluene	16.69	91	593681	18.6882	ug/L	98
88)	a-Methylstyrene	16.96	118	332432	21.8889	ug/L	95
89)	tert-Butylbenzene	17.02	134	129261	19.5089	ug/L	97
90)	1,2,4-Trimethylbenzene	17.07	105	594274	20.4777	ug/L	100
91)	sec-Butylbenzene	17.29	105	782053	20.9630	ug/L	99
92)	p-Isopropyltoluene	17.44	119	586563	20.7473	ug/L	99
93)	1,3-Dichlorobenzene	17.64	146	354266	19.7941	ug/L	99
94)	1,4-Dichlorobenzene	17.77	146	331083	19.0222	ug/L	96
95)	n-Butylbenzene	17.97	91	524612	19.6720	ug/L	97
96)	1,2-Dichlorobenzene	18.27	146	305979	20.6448	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.26	75	18268	18.8436	ug/L	88
98)	1,2,4-Trichlorobenzene	20.40	180	177971	19.1351	ug/L	99
99)	Hexachlorobutadiene	20.55	225	111919	19.0671	ug/L	96
100)	Naphthalene	20.77	128	246964	19.8790	ug/L	100
101)	1,2,3-Trichlorobenzene	21.08	180	135917	19.1726	ug/L	98

(#) = qualifier out of range (m) = manual integration
8M401582.D 8260WTR.M Mon Dec 08 14:25:58 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\120814\8M401582.D Vial: 5
Acq On : 8 Dec 2014 14:03 Operator: TMB
Sample : WG503808-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD67765 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 8 14:25 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

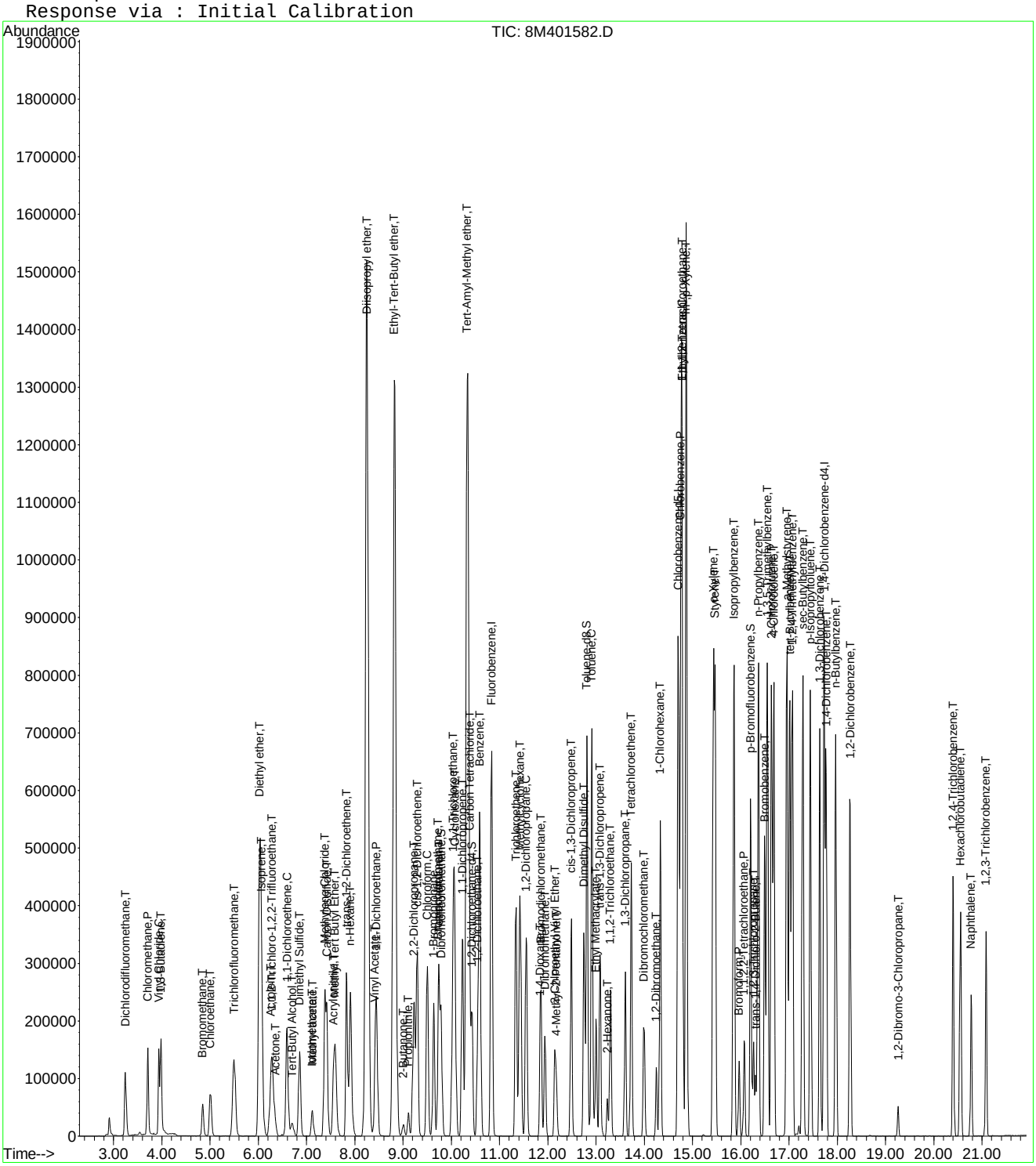

8M401582.D 8260WTR.M Mon Dec 08 14:25:58 2014 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\120914\8M401612.D Vial: 5
Acq On : 9 Dec 2014 10:38 Operator: TMB
Sample : WG503948-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD67765 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 11:00:41 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	719325	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.70	117	543236	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.73	152	270954	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.79	111	154175	22.3874 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.56%		
43) 1,2-Dichloroethane-d4	10.43	65	163598	22.5936 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.36%		
58) Toluene-d8	12.81	98	587026	22.5511 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 90.20%		
80) p-Bromofluorobenzene	16.20	95	235176	22.2852 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 89.16%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	142797	15.7488 ug/L	99
3) Chloromethane	3.71	50	185825	17.5734 ug/L	99
4) Vinyl Chloride	3.94	62	159032	17.7719 ug/L	98
5) 1,3-Butadiene	3.98	54	78717	14.4151 ug/L	96
6) Bromomethane	4.85	94	51019	12.8344 ug/L	100
7) Chloroethane	5.00	64	102867	19.9876 ug/L	100
8) Trichlorofluoromethane	5.50	101	212014	20.0538 ug/L	98
9) Diethyl ether	6.03	59	398721	98.0267 ug/L	90
10) Isoprene	6.07	67	199664	22.5803 ug/L	92
11) Acrolein	6.27	56	20078	49.9565 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	129192	19.6322 ug/L	91
13) Acetone	6.37	43	21335	20.2065 ug/L #	24
14) 1,1-Dichloroethene	6.60	61	200828	20.2142 ug/L	98
15) Tert-Butyl Alcohol	6.70	59	56019	208.5369 ug/L	96
16) Dimethyl Sulfide	6.85	62	100993	19.6879 ug/L	95
17) Iodomethane	7.11	142	35397	14.5671 ug/L	98
18) Methyl acetate	7.12	43	55943	16.6448 ug/L	99
19) Methylene Chloride	7.38	84	137637	19.9142 ug/L	94
20) Carbon Disulfide	7.42	76	382762	19.6308 ug/L	100
21) Acrylonitrile	7.56	53	29226	21.0752 ug/L	96
22) Methyl Tert Butyl Ether	7.59	73	288193	21.4645 ug/L	93
23) trans-1,2-Dichloroethene	7.83	61	213966	20.2616 ug/L	97
24) n-Hexane	7.91	57	213582	20.3599 ug/L	92
25) Diisopropyl ether	8.25	45	2522438	105.4404 ug/L	95
26) Vinyl Acetate	8.42	43	212558	31.7998 ug/L	99
27) 1,1-Dichloroethane	8.46	63	290826	21.6157 ug/L	98
28) Ethyl-Tert-Butyl ether	8.82	59	2121072	103.6314 ug/L	96
29) 2-Butanone	9.00	43	34622	20.0776 ug/L	99
30) Propionitrile	9.11	54	52174	106.5951 ug/L	98
31) 2,2-Dichloropropane	9.23	77	243097	21.1706 ug/L	100
32) cis-1,2-Dichloroethene	9.29	96	160888	20.7082 ug/L	97
33) Chloroform	9.50	83	287462	21.5446 ug/L	100
34) 1-Bromopropane	9.64	122	31348	26.6558 ug/L	99
35) Bromochloromethane	9.74	130	84327	21.0766 ug/L	99
36) Tetrahydrofuran	9.76	42	111821	105.6175 ug/L	100
38) 1,1,1-Trichloroethane	10.04	97	254784	21.7748 ug/L	100
39) Cyclohexane	10.07	56	262693	20.3980 ug/L	87
40) 1,1-Dichloropropene	10.23	75	220545	20.5574 ug/L	96
41) Tert-Amyl-Methyl ether	10.33	73	1619129	101.3732 ug/L	97
42) Carbon Tetrachloride	10.38	117	219367	21.9992 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\120914\8M401612.D Vial: 5
Acq On : 9 Dec 2014 10:38 Operator: TMB
Sample : WG503948-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD67765 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 09 11:00:41 2014 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.55	62	195409	20.6306	ug/L		98
46)	Benzene	10.59	78	625988	22.2648	ug/L		96
47)	Trichloroethene	11.34	130	154772	21.4063	ug/L		98
48)	Methylcyclohexane	11.42	83	250082	20.8061	ug/L		91
49)	1,2-Dichloropropane	11.55	63	166516	21.3825	ug/L		95
50)	Bromodichloromethane	11.86	83	202343	21.1323	ug/L		100
51)	1,4-Dioxane	11.84	88	5965	202.3879	ug/L		84
52)	Dibromomethane	11.94	93	74610	21.2403	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.15	63	66959	25.9748	ug/L		99
54)	4-Methyl-2-Pentanone	12.18	58	29179	19.7237	ug/L		97
55)	cis-1,3-Dichloropropene	12.49	75	239670	22.5957	ug/L		99
56)	Dimethyl Disulfide	12.75	94	239641	23.4369	ug/L		98
59)	Toluene	12.91	91	646393	20.0965	ug/L		99
60)	Ethyl Methacrylate	13.00	69	139221	21.3643	ug/L		94
62)	trans-1,3-Dichloropropene	13.08	75	185773	18.6100	ug/L		99
63)	1,1,2-Trichloroethane	13.30	97	94858	19.7859	ug/L		99
64)	2-Hexanone	13.23	58	26218	17.6816	ug/L		79
65)	1,3-Dichloropropane	13.61	76	173981	19.4148	ug/L		99
66)	Tetrachloroethene	13.73	164	130559	19.5462	ug/L		97
67)	Dibromochloromethane	14.00	129	122079	20.3670	ug/L		99
68)	1,2-Dibromoethane	14.25	107	93367	19.8231	ug/L		99
69)	1-Chlorohexane	14.33	91	218362	21.0056	ug/L		92
70)	Chlorobenzene	14.75	112	431648	20.7022	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.78	131	140959	18.9934	ug/L		100
72)	Ethylbenzene	14.78	106	235813	19.6013	ug/L		97
73)	m-,p-Xylene	14.87	106	570848	42.9051	ug/L		98
74)	o-Xylene	15.44	106	279833	20.4256	ug/L		97
75)	Styrene	15.47	104	447554	21.1649	ug/L		95
76)	Bromoform	15.96	173	69222	17.9568	ug/L		99
77)	Isopropylbenzene	15.86	105	723058	21.1324	ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.08	83	99860	18.2864	ug/L		99
81)	1,2,3-Trichloropropane	16.26	110	27314	18.2878	ug/L	#	39
82)	trans-1,4-Dichloro-2-Buten	16.30	53	32403	20.8446	ug/L	#	25
83)	n-Propylbenzene	16.37	91	865225	19.4841	ug/L		97
84)	Bromobenzene	16.50	156	160726	19.3664	ug/L		98
85)	1,3,5-Trimethylbenzene	16.55	105	590809	20.7224	ug/L		98
86)	2-Chlorotoluene	16.64	91	549387	20.4344	ug/L		98
87)	4-Chlorotoluene	16.69	91	560118	19.0765	ug/L		98
88)	a-Methylstyrene	16.96	118	307128	21.8655	ug/L		95
89)	tert-Butylbenzene	17.02	134	120247	19.6227	ug/L		97
90)	1,2,4-Trimethylbenzene	17.07	105	558954	20.8252	ug/L		100
91)	sec-Butylbenzene	17.29	105	735133	21.3060	ug/L		98
92)	p-Isopropyltoluene	17.44	119	546546	20.9022	ug/L		99
93)	1,3-Dichlorobenzene	17.64	146	324218	19.5867	ug/L		98
94)	1,4-Dichlorobenzene	17.77	146	306226	19.0233	ug/L		97
95)	n-Butylbenzene	17.97	91	490774	19.8981	ug/L		97
96)	1,2-Dichlorobenzene	18.27	146	280923	20.4940	ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.26	75	16098	17.9541	ug/L		95
98)	1,2,4-Trichlorobenzene	20.40	180	163865	19.0496	ug/L		99
99)	Hexachlorobutadiene	20.55	225	101595	18.7142	ug/L		97
100)	Naphthalene	20.78	128	223198	19.4254	ug/L		99
101)	1,2,3-Trichlorobenzene	21.08	180	120610	18.3954	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M401612.D 8260WTR.M Tue Dec 09 11:00:41 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\120914\8M401612.D Vial: 5
Acq On : 9 Dec 2014 10:38 Operator: TMB
Sample : WG503948-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD67765 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 9 11:00 2014 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 12-4-14 HPMS 8
Last Update : Fri Dec 05 08:59:23 2014
Response via : Initial Calibration

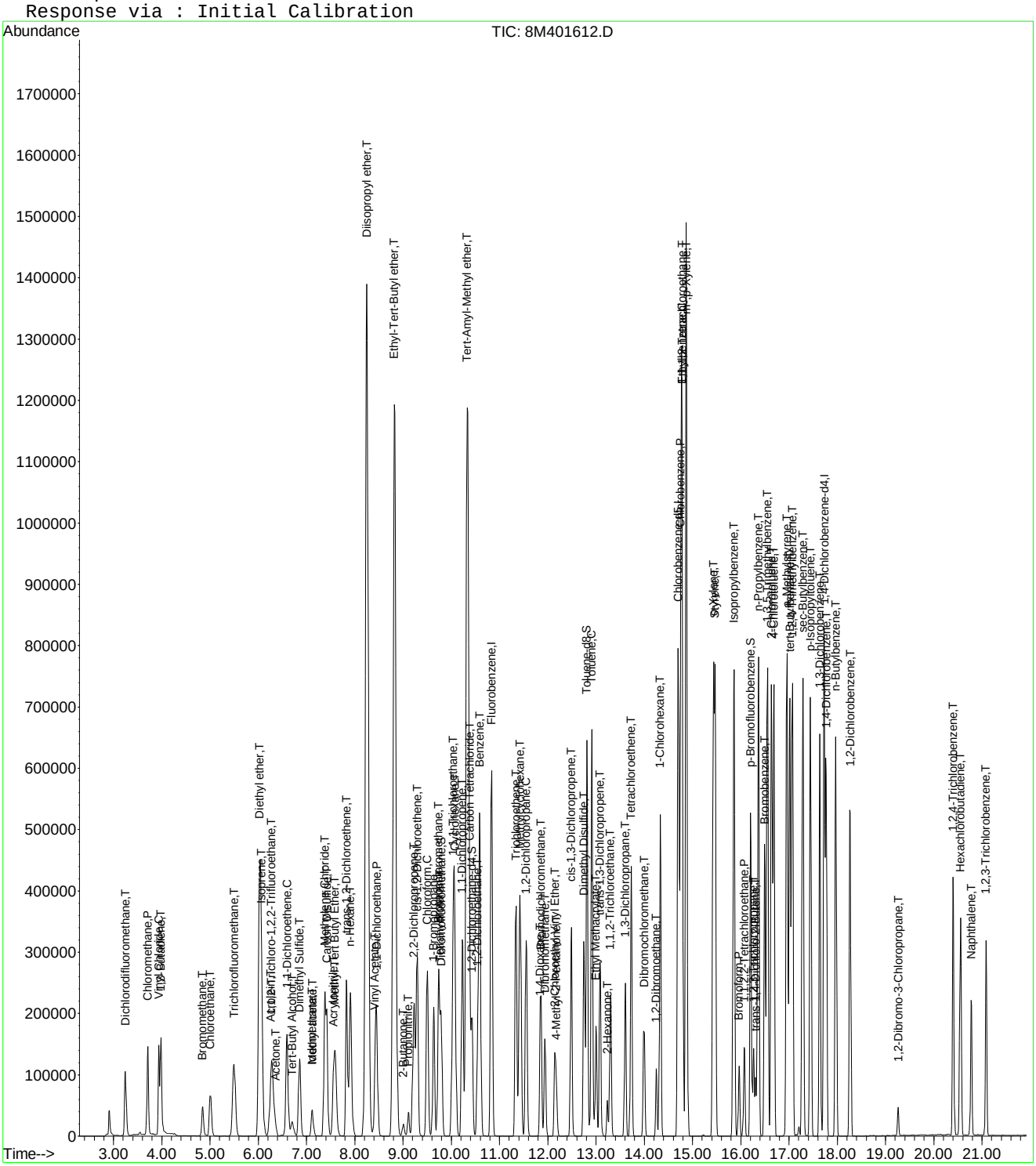

8M401612.D 8260WTR.M Tue Dec 09 11:00:42 2014 Page 3

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-12	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW08-120414	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	12/09/2014 10:17
Workgroup #:	WG504167	**Analyst:**	JDS	**Run Date:**	12/10/2014 12:44
Collect Date:	12/04/2014 08:20	**Dilution:**	1	**File ID:**	16G45912
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	89600		10000	5000	2500
Methane	74-82-8	14.4		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW11-120414	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	12/09/2014 10:17
Workgroup #:	WG503991	**Analyst:**	JDS	**Run Date:**	12/09/2014 12:24
Collect Date:	12/04/2014 10:00	**Dilution:**	1	**File ID:**	16G45864
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	285000	J	10000	5000	2500
Methane	74-82-8	2.41	J	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW11-120414	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	12/09/2014 10:17
Workgroup #:	WG504167	**Analyst:**	JDS	**Run Date:**	12/10/2014 12:22
Collect Date:	12/04/2014 10:00	**Dilution:**	5	**File ID:**	16G45910
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	364000		50000	25000	12500
Methane	74-82-8	7.19	J	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:	
y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:		
Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 120914
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD67275 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG503795, WG503991, WG504065

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G45851	WG503795-01 0.67umol/mol STD RSK175	NA	1	1	STD67276	12/09/14 09:09
16G45852	WG503795-02 1.67umol/mol STD RSK175	NA	1	1	STD67276	12/09/14 09:20
16G45853	WG503795-03 33.3umol/mol STD RSK175	NA	1	1	STD67276	12/09/14 09:31
16G45854	WG503795-04 66.7umol/mol STD RSK175	NA	1	1	STD67274	12/09/14 09:43
16G45855	WG503795-05 133umol/mol STD RSK175	NA	1	1	STD67274	12/09/14 09:54
16G45856	WG503795-06 333umol/mol STD RSK175	NA	1	1	STD67274	12/09/14 10:05
16G45857	WG503795-07 533umol/mol STD RSK175	NA	1	1	STD67274	12/09/14 10:17
16G45859	WG503795-08 133umol/mol ALT SRC STD	NA	1	1	STD67275	12/09/14 10:40
16G45860	WG503991-01 BLANK STD RSK175	NA	1	1		12/09/14 11:39
16G45861	WG503991-02 67umol/mol LCS STD RSK17	NA	1	1	STD67275	12/09/14 11:50
16G45862	WG503991-03 67umol/mol LCS2 STD RSK1	NA	1	1	STD67275	12/09/14 12:01
16G45863	L14120292-12 A RSK175	7	1	1		12/09/14 12:13
16G45864	L14120292-13 A RSK175	7	1	1		12/09/14 12:24
16G45865	L14120377-11 A RSK175	<2	1	1		12/09/14 12:36
16G45866	L14120377-12 A RSK175	<2	1	1		12/09/14 12:48
16G45867	L14120377-13 A RSK175	<2	1	1		12/09/14 12:59
16G45868	L14120377-15 A RSK175	<2	1	1		12/09/14 13:11
16G45869	L14120377-17 A RSK175	<2	1	1		12/09/14 13:22
16G45870	WG503990-01 133umol/mol CCV STD RSK	NA	1	1	STD7274	12/09/14 13:34
16G45871	L14120377-18 A RSK175	3	1	1		12/09/14 13:46
16G45872	L14120377-19 A RSK175	<2	1	1		12/09/14 13:57
16G45873	L14120377-20 A RSK175	<2	1	1		12/09/14 14:09
16G45874	WG503990-02 133umol/mol CCV STD RSK	NA	1	1		12/09/14 14:26
16G45875	L14120377-21 A RSK175	<2	1	1		12/09/14 14:38
16G45876	L14120377-22 A RSK175	<2	1	1		12/09/14 14:49
16G45877	L14120377-23 A RSK175	<2	1	1		12/09/14 15:02
16G45878	L14120377-24 A RSK175	<2	1	1		12/09/14 15:14
16G45879	L14120377-25 A RSK175	<2	1	1		12/09/14 15:26
16G45880	L14120377-26 A RSK175	<2	1	1		12/09/14 15:38
16G45881	L14120377-27 A RSK175	<2	1	1		12/09/14 15:50
16G45882	L14120377-05 A RSK175	<2	1	1		12/09/14 16:02
16G45883	L14120377-14 A D1 5X RSK175	4	1	5		12/09/14 16:14
16G45884	L14120377-16 A D1 5X RSK175	4	1	5		12/09/14 16:26
16G45885	WG503990-03 133umol/mol CCV STD RSK	NA	1	1	STD67274	12/09/14 16:38

Approved: December 10, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 120914
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD67275 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG503795, WG503991, WG504065

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G45886	WG504065-01 BLANK STD RSK175	NA	1	1		12/09/14 16:59
16G45887	WG504065-02 67umol/mol LCS STD RSK17	NA	1	1	STD67275	12/09/14 17:11
16G45888	WG504065-03 67umol/mol LCS2 STD RSK1	NA	1	1	STD67275	12/09/14 17:23
16G45889	L14120377-11 B D1 200X RSK175	<2	1	200		12/09/14 17:35
16G45890	L14120377-12 B D1 200X RSK175	<2	1	200		12/09/14 17:47
16G45891	L14120377-13 B D1 200X RSK175	<2	1	200		12/09/14 17:59
16G45892	L14120377-15 B D1 200X RSK175	<2	1	200		12/09/14 18:11
16G45893	L14120377-17 B D1 100X RSK175	4	1	100		12/09/14 18:23
16G45894	L14120377-18 B D1 200X RSK175	4	1	200		12/09/14 18:35
16G45895	L14120377-20 B D1 20X RSK175	<2	1	20		12/09/14 18:47
16G45896	WG503990-04 133umol/mol CCV STD RSK1	NA	1	1	STD67274	12/09/14 18:59
16G45897	L14120377-21 B D1 20X RSK175	<2	1	20		12/09/14 19:10
16G45898	L14120377-22 B D1 100X RSK175	<2	1	100		12/09/14 19:22
16G45899	L14120377-23 B D1 100X RSK175	<2	1	100		12/09/14 19:34
16G45900	L14120377-24 B D1 20X RSK175	<2	1	20		12/09/14 19:46
16G45901	WG503990-05 133umol/mol CCV STD RSK1	NA	1	1	STD67274	12/09/14 19:57

Comments

Seq.	Rerun	Dil.	Reason	Analytes
12	X	1		
File ID: 16G45863				
	CCV failed low for all cmpds.			
13	X	5	Over Calibration Range	CO2
File ID: 16G45864				
	also had CCV failing low for all cmpds.			
14	X	200	Over Calibration Range	m
File ID: 16G45865				
	also had CCV failing low for all cmpds.			
15	X	200	Over Calibration Range	m
File ID: 16G45866				
	also had CCV failing low for all cmpds. received with headspace			
16	X	200	Over Calibration Range	m
File ID: 16G45867				
	also had CCV failing low for all cmpds.			
17	X	200	Over Calibration Range	m

Approved: December 10, 2014

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 120914
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD67275 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG503795, WG503991, WG504065

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 16G45868				
	also had CCV failing low for all cmpds. received with headspace			
18	X	100	Over Calibration Range	m
File ID: 16G45869				
	also had CCV failing low for all cmpds. received with headspace			
19			Check Standard Failure	
File ID: 16G45870				
	failed low for all			
20	X	200	Over Calibration Range	m
File ID: 16G45871				
	also had CCV failing low for all cmpds.			
21	X	1	Carry-over contamination	m
File ID: 16G45872				
	also had CCV failing low for all cmpds.			
22	X	20	Over Calibration Range	m
File ID: 16G45873				
	also had CCV failing low for all cmpds.			
24	X	20	Over Calibration Range	m
File ID: 16G45875				
25	X	100	Over Calibration Range	m
File ID: 16G45876				
26	X	100	Over Calibration Range	m
File ID: 16G45877				
27	X	20	Over Calibration Range	m
File ID: 16G45878				
28	X	20	Over Calibration Range	m
File ID: 16G45879				
29	X	50	Over Calibration Range	m
File ID: 16G45880				

Approved: December 10, 2014

Page: 3

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 120914
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD67275 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG503795, WG503991, WG504065

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
30	X	20	Over Calibration Range	m
File ID: 16G45881				
31	X	50	Over Calibration Range	m
File ID: 16G45882				
32	X	100	Over Calibration Range	m
File ID: 16G45883				
ran at 5x due to there being too much sediment in vial and not enough liquid to transfer to new vial				
33	X	100	Over Calibration Range	m
File ID: 16G45884				
ran at 5x due to there being too much sediment in vial and not enough liquid to transfer to new vial				
38				
File ID: 16G45889				
received with headspace				
39				
File ID: 16G45890				
received with headspace				
40				
File ID: 16G45891				
received with headspace				
41				
File ID: 16G45892				
received with headspace				
42				
File ID: 16G45893				
received with headspace				
43				
File ID: 16G45894				
received with headspace				
46	X	50	Check Standard Failure	
File ID: 16G45897				
CCV failed low for all. unused 50x dil. from GC/MS side will be used for RR.				
47			Check Standard Failure	
File ID: 16G45898				
CCV failed low for all. no vials left for RR				

Approved: December 10, 2014

Page: 4

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 120914
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD67275 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG503795, WG503991, WG504065

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
48	X	100	Check Standard Failure	
File ID: 16G45899				
	CCV failed low for all. GC/MS vial will be used for RR			
49	X	20	Check Standard Failure	
File ID: 16G45900				
	CCV failed low for all. GC/MS vial will be used for RR			
50			Check Standard Failure	
File ID: 16G45901				
	failed low for all			

Approved: December 10, 2014

Page: 5

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 121014
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD67275 MS/MSD: STD67275

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG504167, WG504235

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G45902	WG504165-01 133umol/mol CCV STD RSK	NA	1	1	STD67274	12/10/14 09:36
16G45903	WG504167-01 BLANK STD RSK175	NA	1	1		12/10/14 11:00
16G45904	WG504167-02 67umol/mol LCS STD RSK17	NA	1	1	STD67275	12/10/14 11:12
16G45905	L14120377-25 B D1 20X RSK175	<2	1	20		12/10/14 11:24
16G45906	L14120377-26 B D1 50X RSK175	<2	1	50		12/10/14 11:35
16G45907	L14120377-27 B D1 20X RSK175	<2	1	20		12/10/14 11:47
16G45908	L14120377-14 B D2 100X RSK175	4	1	100		12/10/14 11:59
16G45909	L14120377-16 B D2 100X RSK175	4	1	100		12/10/14 12:10
16G45910	L14120292-13 B D1 5X RSK175	7	1	5		12/10/14 12:22
16G45911	L14120377-05 B D1 50X RSK175	<2	1	50		12/10/14 12:33
16G45912	L14120292-12 B A1 RSK175	7	1	1		12/10/14 12:44
16G45913	WG504165-02 133umol/mol CCV STD RSK	NA	1	1	STD67274	12/10/14 12:56
16G45914	L14120377-19 B A1 RSK175	<2	1	1		12/10/14 13:07
16G45915	L14120377-09 A D1 20X RSK175	4	1	20		12/10/14 13:18
16G45916	L14120377-10 A D1 10X RSK175	4	1	10		12/10/14 13:29
16G45917	L14120377-03 A MS RSK175	<2	1	1	STD67275	12/10/14 13:41
16G45918	L14120377-04 A MSD RSK175	<2	1	1	STD67275	12/10/14 13:54
16G45919	L14120377-02 A REF D1 50X RSK175	<2	1	50		12/10/14 14:05
16G45920	L14120377-06 A D1 50X RSK175	<2	1	50		12/10/14 14:17
16G45921	L14120377-07 A D1 50X RSK175	<2	1	50		12/10/14 14:28
16G45922	L14120377-08 A D1 50X RSK175	4	1	50		12/10/14 14:40
16G45923	L14120377-21 B A1 50X RSK175	7	1	50		12/10/14 14:51
16G45924	WG504165-03 133umol/mol CCV STD RSK	NA	1	1	STD67274	12/10/14 15:03
16G45925	L14120377-23 B A1 100X RSK175	7	1	100		12/10/14 15:14
16G45926	L14120377-24 B A1 20X RSK175	7	1	20		12/10/14 15:28
16G45927	WG504165-04 133umol/mol CCV STD RSK	NA	1	1	STD67274	12/10/14 15:40
16G45928	WG504235-01 BLANK STD RSK175	NA	1	1		12/10/14 15:57
16G45929	WG504235-02 67umol/mol LCS STD RSK17	NA	1	1	STD67274	12/10/14 16:08
16G45930	L14120385-01 A RSK175	<2	1	1		12/10/14 16:20
16G45931	L14120385-02 A RSK175	<2	1	1		12/10/14 16:31
16G45932	L14120385-03 A RSK175	<2	1	1		12/10/14 16:42
16G45933	L14120385-04 A REF RSK175	<2	1	1		12/10/14 16:58
16G45934	L14120385-05 A MS RSK175	<2	1	1	STD67275	12/10/14 17:10
16G45935	L14120385-06 A MSD RSK175	<2	1	1	STD67275	12/10/14 17:21

Approved: December 15, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 121014
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD67275 MS/MSD: STD67275

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG504167, WG504235

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G45936	L14120385-07 A RSK175	<2	1	1		12/10/14 17:33
16G45937	L14120385-08 A RSK175	<2	1	1		12/10/14 17:44
16G45938	WG504165-05 133umol/mol CCV STD RSK	NA	1	1	STD67274	12/10/14 17:55
16G45939	L14120385-09 A RSK175	<2	1	1		12/10/14 18:09
16G45940	L14120385-10 A RSK175	<2	1	1		12/10/14 18:21
16G45941	L14120385-11 A RSK175	<2	1	1		12/10/14 18:32
16G45942	L14120377-10 B D1 50X RSK175	4	1	50		12/10/14 18:44
16G45943	L14120491-02 A REF RSK175	<2	1	1		12/10/14 18:55
16G45944	L14120491-03 A MS RSK175	<2	1	1	STD67275	12/10/14 19:06
16G45945	L14120491-04 A MSD RSK175	<2	1	1	STD67275	12/10/14 19:18
16G45946	L14120491-05 A RSK175	<2	1	1		12/10/14 19:30
16G45947	L14120491-06 A RSK175	<2	1	1		12/10/14 19:41
16G45948	L14120491-07 A RSK175	<2	1	1		12/10/14 19:53
16G45949	WG504165-06 133umol/mol CCV STD RSK	NA	1	1	STD67275	12/10/14 20:04

Comments

Seq.	Rerun	Dil.	Reason	Analytes
15	X	50	Over Calibration Range	m
File ID: 16G45916				
16			Over Calibration Range	m
File ID: 16G45917				
17			Over Calibration Range	m
File ID: 16G45918				
22				
File ID: 16G45923				
GC/MS vial used				
24				
File ID: 16G45925				
GC/MS vial used				
25				
File ID: 16G45926				
GC/MS vial used				

Approved: December 15, 2014

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 121014
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD67275 MS/MSD: STD67275

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG504167, WG504235

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
29	X		Check Standard Failure	
File ID: 16G45930				
	CCV failed low for all			
30	X		Check Standard Failure	
File ID: 16G45931				
	CCV failed low for all			
31	X		Check Standard Failure	
File ID: 16G45932				
	CCV failed low for all			
32	X		Check Standard Failure	
File ID: 16G45933				
	CCV failed low for all			
33	X		Check Standard Failure	
File ID: 16G45934				
	CCV failed low for all			
34	X		Check Standard Failure	
File ID: 16G45935				
	CCV failed low for all			
35	X		Check Standard Failure	
File ID: 16G45936				
	CCV failed low for all			
36	X		Check Standard Failure	
File ID: 16G45937				
	CCV failed low for all			
37			Check Standard Failure	
File ID: 16G45938				
	failed low for all			
38	X		Check Standard Failure	
File ID: 16G45939				
	CCV failed low for all			
39	X		Check Standard Failure	
File ID: 16G45940				
	CCV failed low for all			
40	X		Check Standard Failure	
File ID: 16G45941				
	CCV failed low for all			

Approved: December 15, 2014

Page: 3

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 121014
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD67275 MS/MSD: STD67275

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG504167, WG504235

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
41			Check Standard Failure	
File ID: 16G45942				
	CCV failed low for all. cannot RR. all vialos used.			
42	X		Check Standard Failure	
File ID: 16G45943				
	CCV failed low for all			
43	X		Check Standard Failure	
File ID: 16G45944				
	CCV failed low for all			
44	X		Check Standard Failure	
File ID: 16G45945				
	CCV failed low for all			
45	X		Check Standard Failure	
File ID: 16G45946				
	CCV failed low for all			
46	X		Check Standard Failure	
File ID: 16G45947				
	CCV failed low for all			
47	X		Check Standard Failure	
File ID: 16G45948				
	CCV failed low for all			
48			Check Standard Failure	
File ID: 16G45949				
	failed low for all			

Approved: December 15, 2014

Page: 4

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B198866

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG503795-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG503795-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG503795-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG503795-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG503795-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG503795-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG503795-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG503795-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B198896

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG503990-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG503990-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-26	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-19	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-23	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-20	15	mL	15	mL					5.47	mL	5.47	mL	40
WG503991-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-13	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-11	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-18	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-25	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-27	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-14	15	mL	15	mL					5.47	mL	5.47	mL	40
WG503991-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L14120377-22	15	mL	15	mL					5.47	mL	5.47	mL	40
WG503991-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L14120377-15	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120292-13	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-12	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-17	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-24	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-16	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120292-12	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-21	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B198961

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG504165-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG504165-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG504165-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG504165-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-27	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-24	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120292-12	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG504167-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-26	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L14120377-04	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L14120377-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG504167-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L14120377-10	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-23	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-16	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-19	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-09	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-21	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-08	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-14	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120377-25	15	mL	15	mL					5.47	mL	5.47	mL	40
L14120292-13	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 09-DEC-2014
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 65149
Analytical Workgroups: WG503795, WG503991, WG504065

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
10-DEC-2014

Secondary Reviewer:
10-DEC-2014

CHECKLIST1 - Modified 03/05/2008
Generated: DEC-10-2014 14:26:22

Microbac Laboratories Inc.

Data Checklist

Date: 10-DEC-2014
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 65187
Analytical Workgroups: WG504167, WG504235

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	X
Samples	X
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
11-DEC-2014

Secondary Reviewer:
15-DEC-2014

CHECKLIST1 - Modified 03/05/2008
Generated: DEC-15-2014 15:41:09

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG503991

Login Number: L14120292

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW11-120414	13	12/04/14					12/09/2014	5.1	7		12/09/14	5.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3911368
Report generated 12/16/2014 10:39

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG504167

Login Number: L14120292

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-120414	12	12/04/14					12/10/2014	6.2	7		12/10/14	6.2	7	
67WW11-120414	13	12/04/14					12/10/2014	6.1	7		12/10/14	6.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3911368
Report generated 12/16/2014 10:39

METHOD BLANK SUMMARY

Login Number: L14120292
Blank File ID: 16G45860
Prep Date: 12/09/14 11:39
Analyzed Date: 12/09/14 11:39
Analyst: JDS

Work Group: WG503991
Blank Sample ID: WG503991-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG503991-02	16G45861	12/09/14 11:50	01
LCS2	WG503991-03	16G45862	12/09/14 12:01	01
67WW11-120414	L14120292-13	16G45864	12/09/14 12:24	01

Report Name: BLANK_SUMMARY
PDF File ID: 3911369
Report generated 12/16/2014 10:39

METHOD BLANK SUMMARY

Login Number: L14120292
Blank File ID: 16G45903
Prep Date: 12/10/14 11:00
Analyzed Date: 12/10/14 11:00
Analyst: JDS

Work Group: WG504167
Blank Sample ID: WG504167-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG504167-02	16G45904	12/10/14 11:12	01
67WW11-120414	L14120292-13	16G45910	12/10/14 12:22	DL01
67WW08-120414	L14120292-12	16G45912	12/10/14 12:44	02

Report Name: BLANK_SUMMARY
PDF File ID: 3911369
Report generated 12/16/2014 10:39

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14120292 Prep Date: 12/09/14 11:39 Sample ID: WG503991-01
Instrument ID: HP16 Run Date: 12/09/14 11:39 Prep Method: 5021
File ID: 16G45860 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG503991 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 09-DEC-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.46	1	J
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3911370
16-DEC-2014 10:39

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14120292 Prep Date: 12/10/14 11:00 Sample ID: WG504167-01
Instrument ID: HP16 Run Date: 12/10/14 11:00 Prep Method: 5021
File ID: 16G45903 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG504167 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 09-DEC-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.73	1	J
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3911370
16-DEC-2014 10:39

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14120292 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG503991 Units: ug/L
QC Key: DOD4 Lot #: STD67275

Sample ID: WG503991-02 LCS File ID: 16G45861 Run Date: 12/09/2014 11:50
Sample ID: WG503991-03 LCS2 File ID: 16G45862 Run Date: 12/09/2014 12:01

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	105	91.8	114	107	93.4	1.77	85 - 115	20	
ethene	200	194	97.0	200	196	98.2	1.21	85 - 115	20	
ethane	214	203	94.8	214	206	96.3	1.51	85 - 115	20	
Carbon Dioxide	31300	30900	98.6	31300	31000	98.9	0.379	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3911371
Report generated: 12/16/2014 10:39

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14120292 Run Date: 12/10/2014 Sample ID: WG504167-02
Instrument ID: HP16 Run Time: 11:12 Prep Method: 5021
File ID: 16G45904 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG504167 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD67275 Cal ID: HP16-09-DEC-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Carbon Dioxide	31300	34500	110	10 - 200	
Methane	114	117	103	85 - 115	
ethene	200	221	111	85 - 115	
ethane	214	232	108	85 - 115	

LCS - Modified 03/06/2008
PDF File ID: 3922477
Report generated: 12/16/2014 10:45

Calibration Table Report
Method: RSKEXT.M
Title: RSK175 HP16 (SOP: OVL RSK01) 120914
Last Calibration: Tue Dec 09 10:30:13 2014
Curve: WG503795
Calibration Files

	Compound	0.67 16G45851.D	1.67 16G45852.D	33.3 16G45853.D	66.7 16G45854.D	133 16G45855.D	333 16G45856.D	533 16G45857.D	Avg	%RSD
T	methane		260986	192618	188547	195620	196100	185316	203198	14.082
T	ethene		307566	327067	326908	336284	336788	312723	324556	3.717
T	acetylene		314163	336254	363506	369467	361693	343122	348034	6.021
T	ethane	374766	317718	336069	341490	351866	352621	327262	343113	5.475
T	propane	543315	431872	495397	507417	521526	520099	476000	499375	7.328
T	n-butane	711856	549995	640682	660572	687435	678580	617343	649495	8.270
	Signal #2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
T	carbon dioxide		4908	5687	6313	6481	6140	5638	5861	9.814

Tue Dec 09 10:34:56 2014

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14120292 Run Date: 12/09/2014 Sample ID: WG503795-08
Instrument ID: HP16 Run Time: 10:40 Method: RSK175
File ID: 16G45859 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG503795 Cal ID: HP16 - 09-DEC-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
carbon dioxide		62700	68200	ug/L	6380	8.90	15	
methane		228	227	ug/L	202000	0.500	15	
ethene		398	426	ug/L	347000	6.90	15	
ethane		427	448	ug/L	360000	4.90	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3911372
Report generated 12/16/2014 10:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14120292
Run Date: 12/09/2014
Sample ID: WG503990-01
Instrument ID: HP16
Run Time: 13:34
Method: RSK175
File ID: 16G45870
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG503991
Cal ID: HP16 - 09-DEC-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62700	49300	ug/L	4620	21.3	15	*
methane		228	192	ug/L	171000	15.9	15	*
ethene		398	338	ug/L	276000	15.1	15	*
ethane		427	360	ug/L	289000	15.7	15	*

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3911373
Report generated 12/16/2014 10:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14120292
Run Date: 12/10/2014
Sample ID: WG504165-01
Instrument ID: HP16
Run Time: 09:36
Method: RSK175
File ID: 16G45902
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG504167
Cal ID: HP16 - 09-DEC-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62700	59000	ug/L	5520	5.83	15	
methane		228	196	ug/L	175000	13.9	15	
ethene		398	360	ug/L	293000	9.65	15	
ethane		427	382	ug/L	307000	10.5	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3911373
Report generated 12/16/2014 10:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14120292 Run Date: 12/10/2014 Sample ID: WG504165-02
Instrument ID: HP16 Run Time: 12:56 Method: RSK175
File ID: 16G45913 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG504167 Cal ID: HP16 - 09-DEC-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62700	54000	ug/L	5050	13.8	15	
methane		228	199	ug/L	178000	12.6	15	
ethene		398	359	ug/L	292000	9.92	15	
ethane		427	381	ug/L	307000	10.7	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3911373
Report generated 12/16/2014 10:39

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\121014\16G45912.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDchem\1\DATA\121014\16G45912.D\TCD2B.CH
Acq On : 10 Dec 2014 12:44 Operator: JDS
Sample : L14120292-12 B A1 RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 10 12:50:52 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	1702903	8.381	umol/
2) T	ethene	1.06	70678	0.218	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	5.34	8073	0.012	umol/
8) T	carbon dioxide	0.21	111755107	19066.993	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G45912.D RSKEXT.M Wed Dec 10 12:50:53 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\121014\16G45912.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDchem\1\DATA\121014\16G45912.D\TCD2B.CH
Acq On : 10 Dec 2014 12:44 Operator: JDS
Sample : L14120292-12 B A1 RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 10 12:50 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

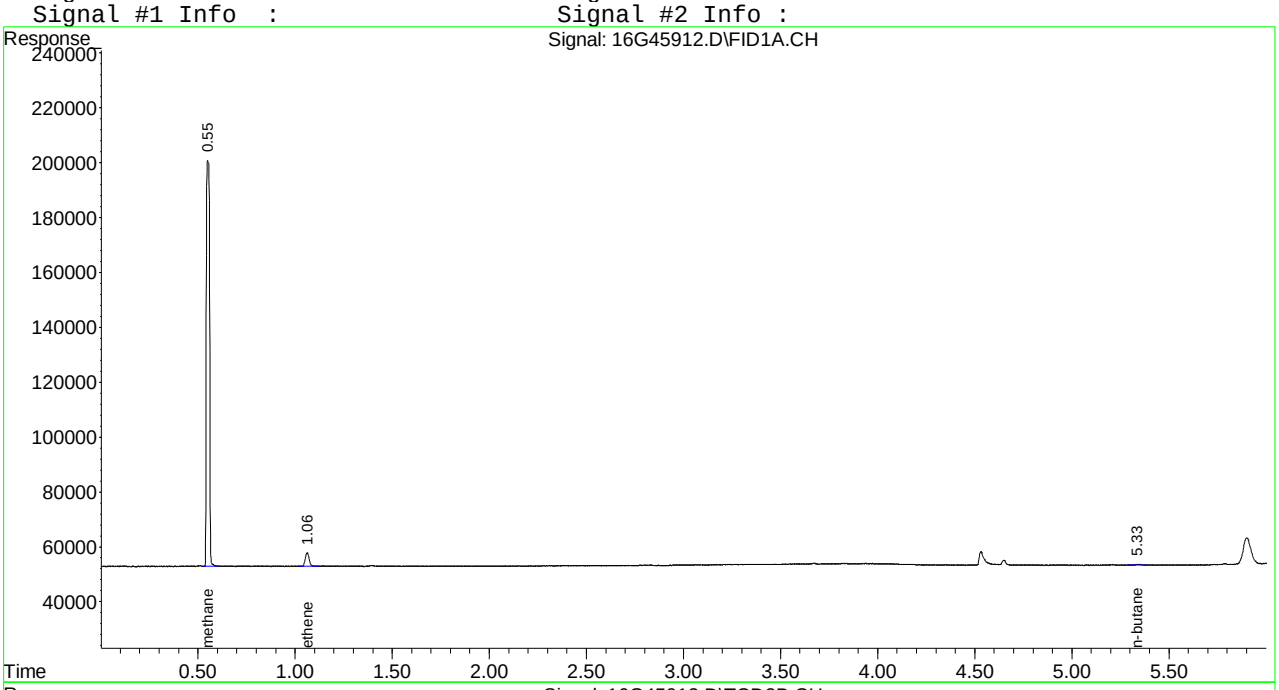

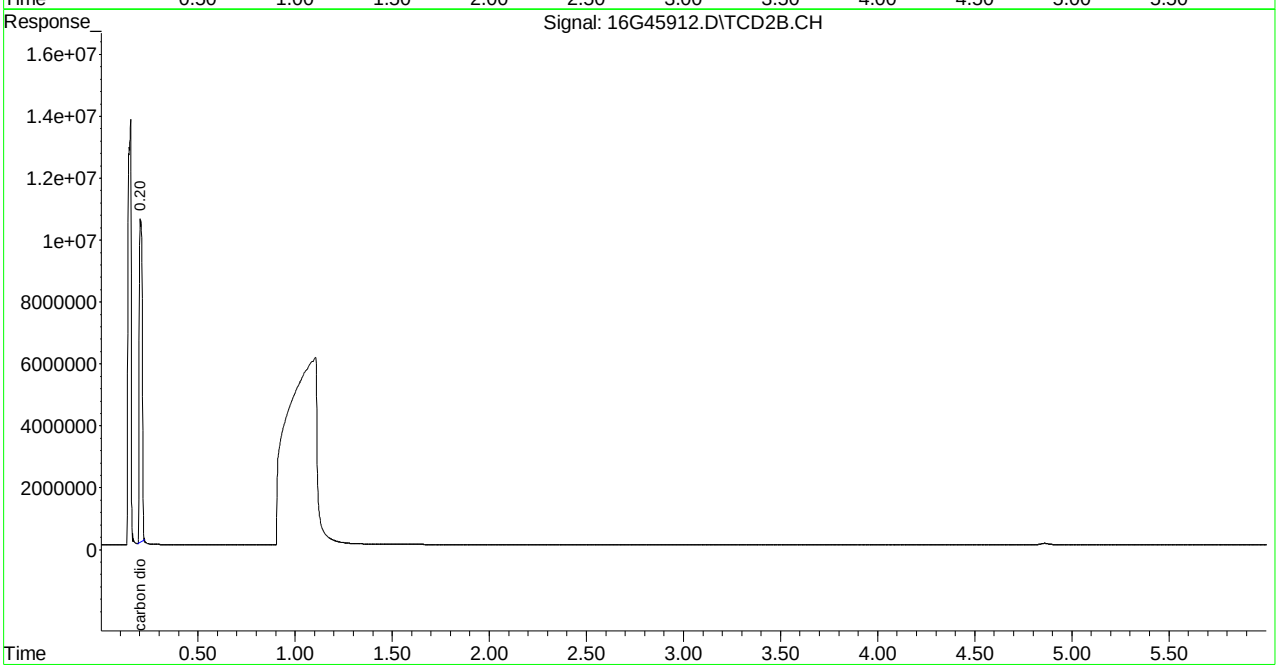

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\120914\16G45864.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDchem\1\DATA\120914\16G45864.D\TCD2B.CH
Acq On : 09 Dec 2014 12:24 Operator: JDS
Sample : L14120292-13 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 09 12:30:58 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	286656	1.411	umol/
2) T	ethene	1.06	22042	0.068	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	355827198	60709.124	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G45864.D RSKEXT.M Tue Dec 09 12:30:58 2014 Page 1

Signal #1 : C:\MSDchem\1\DATA\120914\16G45864.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDchem\1\DATA\120914\16G45864.D\TCD2B.CH
Acq On : 09 Dec 2014 12:24 Operator: JDS
Sample : L14120292-13 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 9 12:30 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

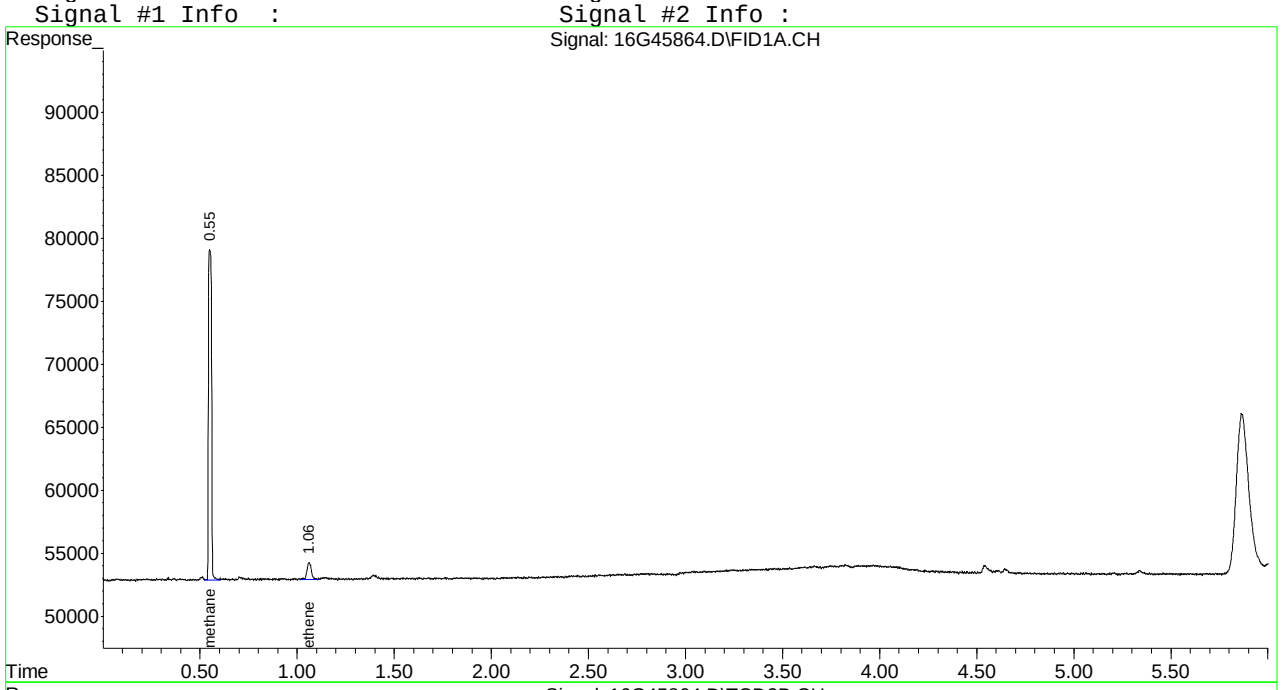

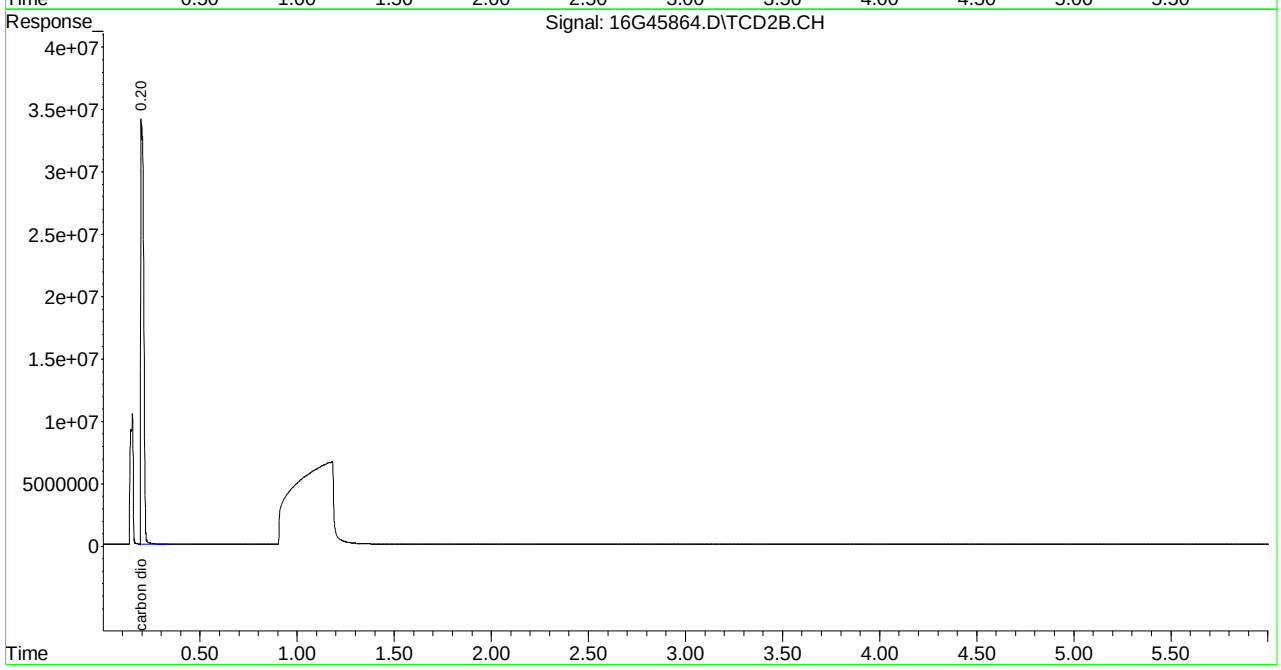

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\121014\16G45910.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDchem\1\DATA\121014\16G45910.D\TCD2B.CH
Acq On : 10 Dec 2014 12:22 Operator: JDS
Sample : L14120292-13 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 10 12:28:12 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	171136	0.842	umol/
2) T	ethene	1.06	5936	0.018	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	90749679	15483.171	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G45910.D RSKEXT.M Wed Dec 10 12:28:12 2014 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\121014\16G45910.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDchem\1\DATA\121014\16G45910.D\TCD2B.CH
Acq On    : 10 Dec 2014  12:22                        Operator: JDS
Sample    : L14120292-13 B D1 5X RSK175               Inst    : HP16
Misc      : 1,5                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Dec 10 12:28 2014  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update  : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

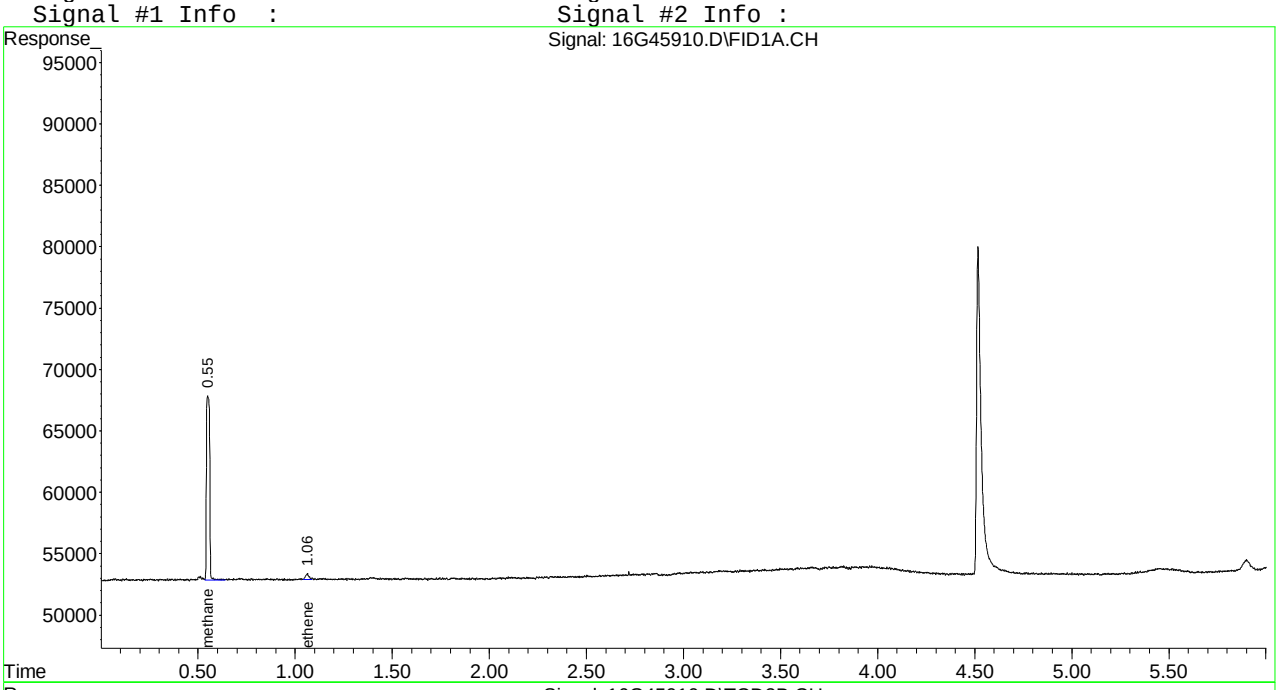

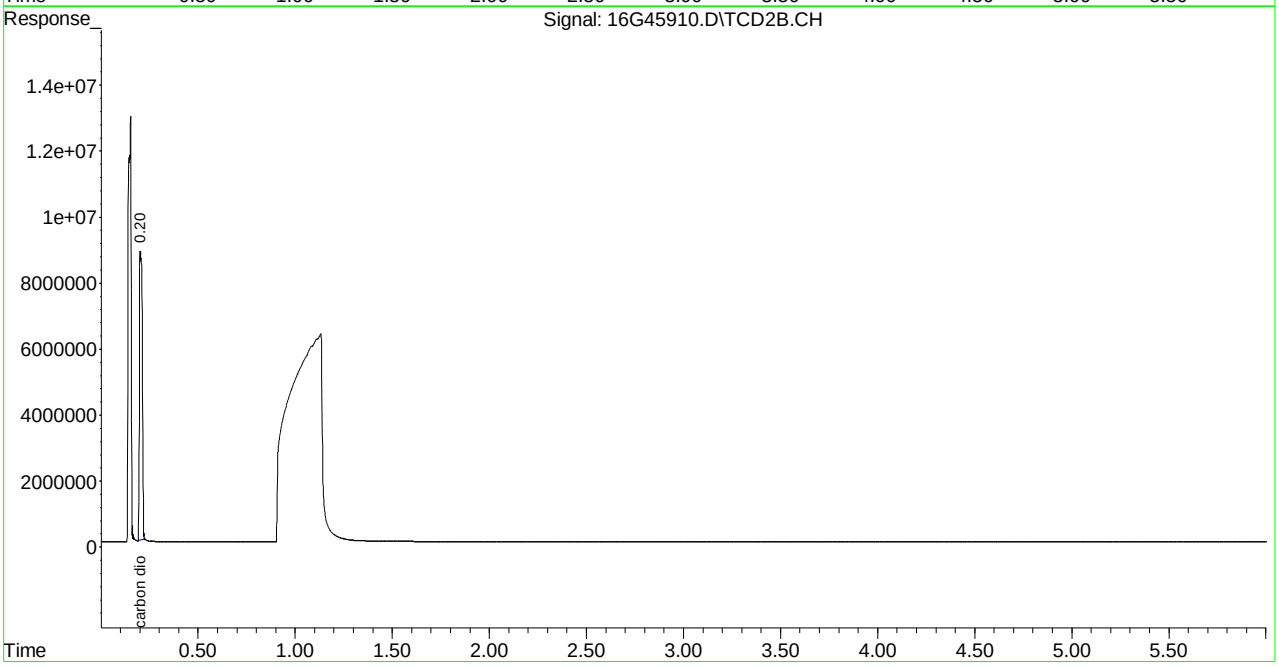

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45851.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45851.D\TCD2B.CH
Acq On : 09 Dec 2014 9:09 Operator: JDS
Sample : WG503795-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 09 10:50:36 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	208351	1.025	umol/
2) T	ethene	1.06	243565	0.750	umol/
3) T	acetylene	1.14	235010	0.675	umol/
4) T	ethane	1.40	249969	0.729	umol/
5) T	propane	3.84	362391	0.726	umol/
6) T	n-butane	5.34	474808	0.731	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G45851.D RSKEXT.M Tue Dec 09 10:50:47 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45851.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45851.D\TCD2B.CH
Acq On : 09 Dec 2014 9:09 Operator: JDS
Sample : WG503795-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 9 10:50 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

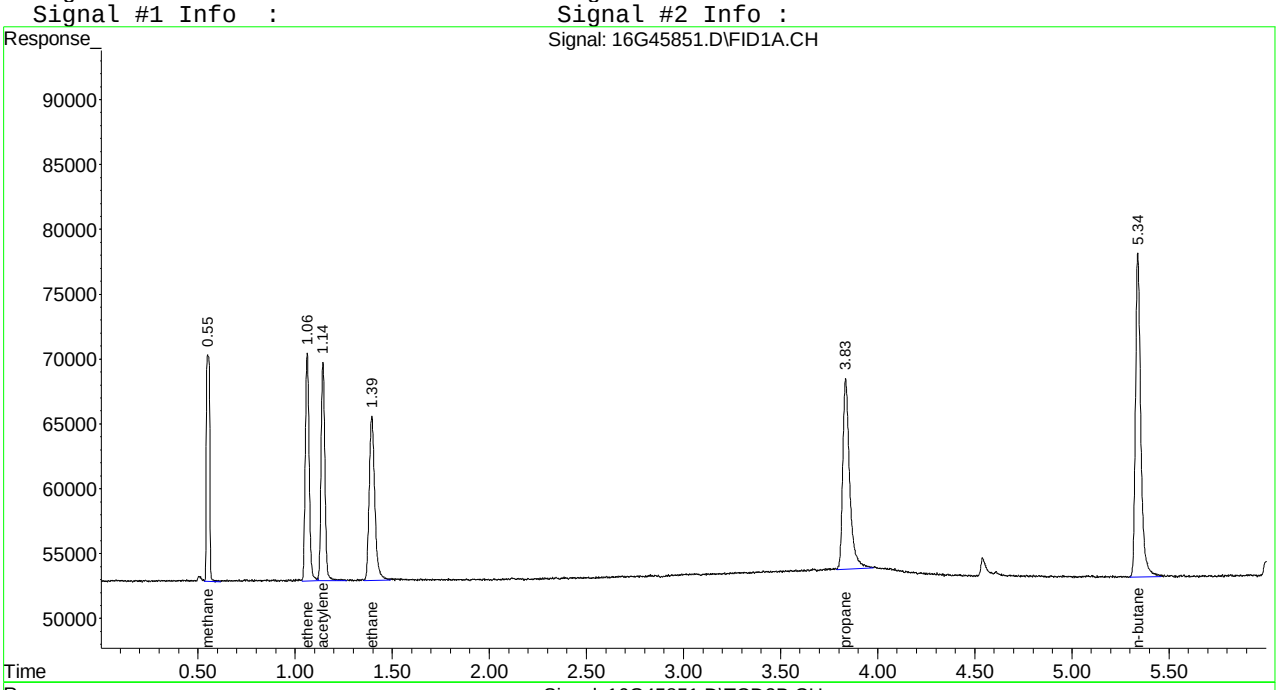

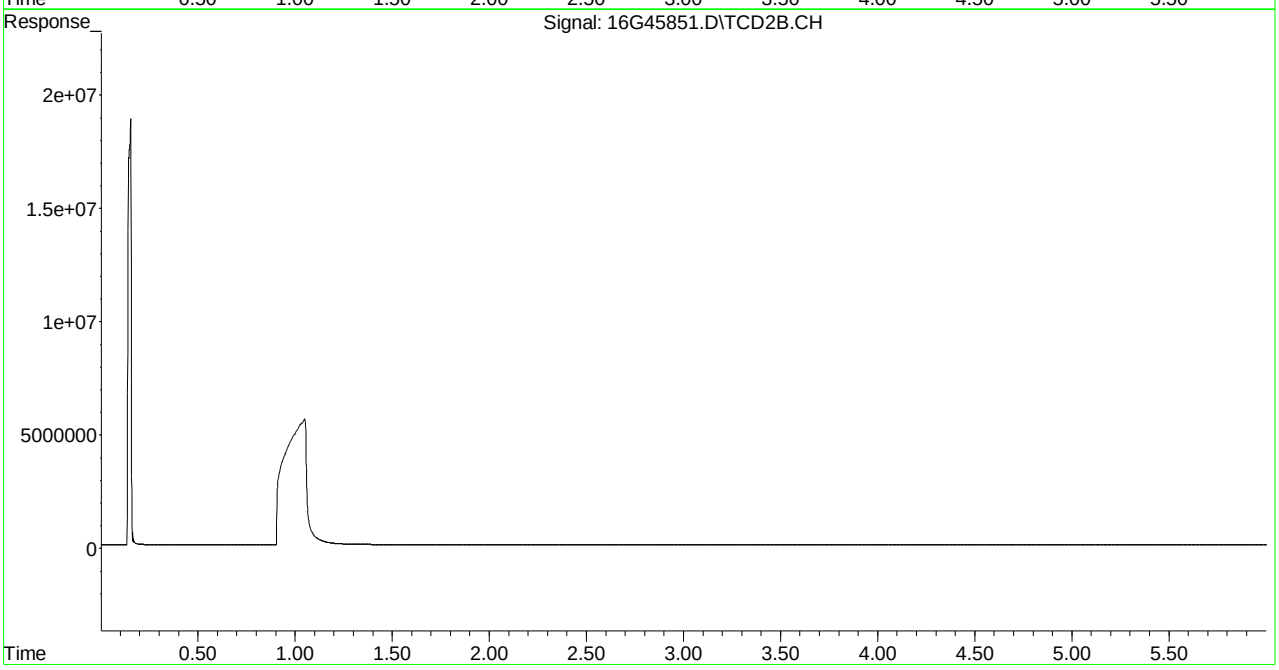

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45852.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45852.D\TCD2B.CH
Acq On : 09 Dec 2014 9:20 Operator: JDS
Sample : WG503795-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 09 10:51:02 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.56	435846	2.145	umol/
2) T	ethene	1.06	513635	1.583	umol/
3) T	acetylene	1.14	524652	1.507	umol/
4) T	ethane	1.40	530589	1.546	umol/
5) T	propane	3.83	721226	1.444	umol/
6) T	n-butane	5.34	918491	1.414	umol/
8) T	carbon dioxide	0.21	9816309	1674.800	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G45852.D RSKEXT.M Tue Dec 09 10:51:03 2014 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45852.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45852.D\TCD2B.CH
Acq On : 09 Dec 2014 9:20 Operator: JDS
Sample : WG503795-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 9 10:51 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

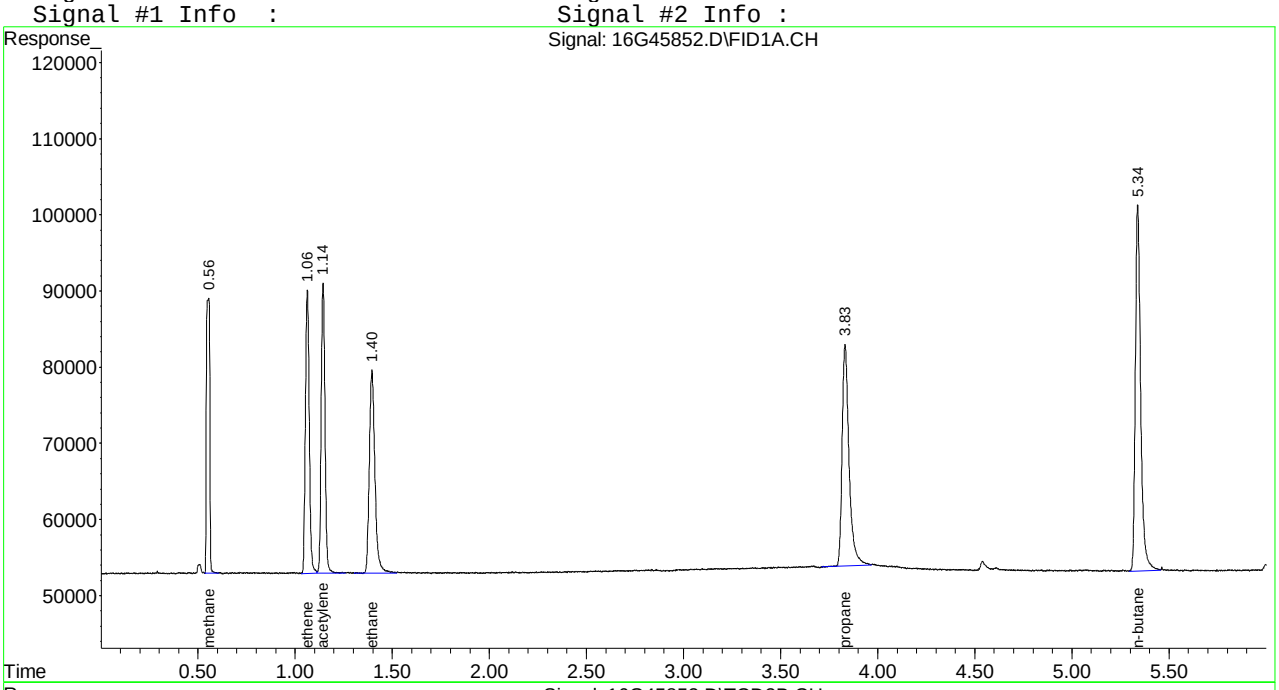

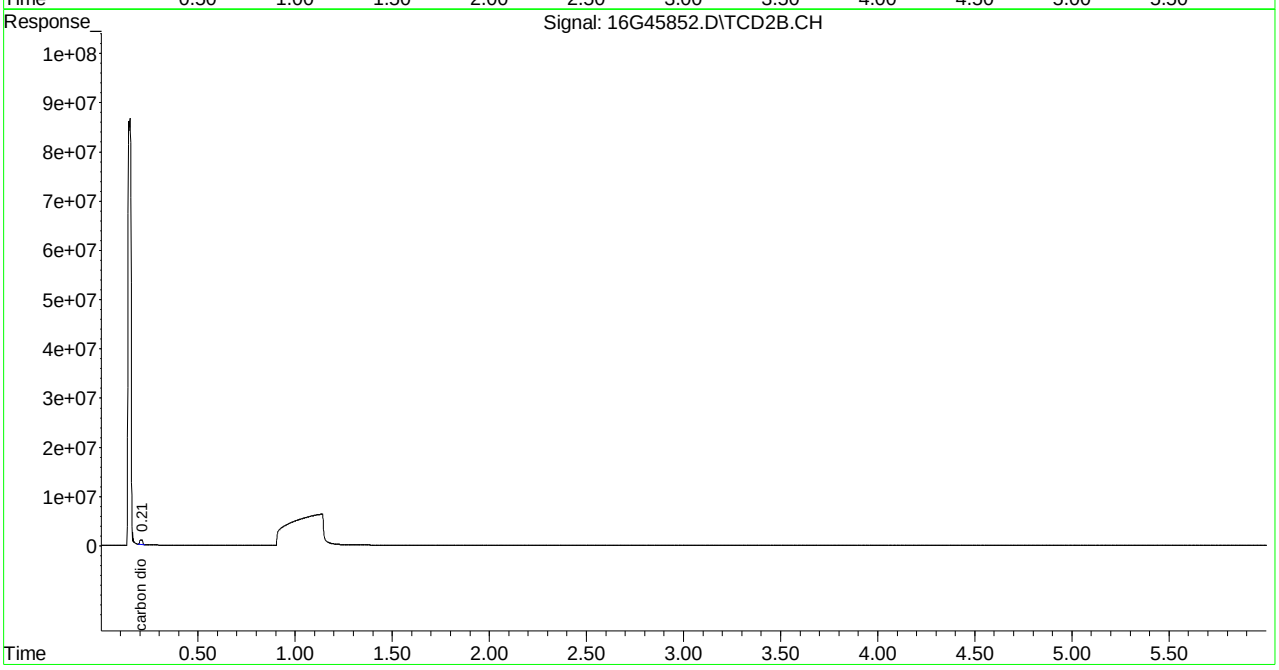

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45853.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45853.D\TCD2B.CH
Acq On : 09 Dec 2014 9:31 Operator: JDS
Sample : WG503795-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 09 10:51:05 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	6414170	31.566	umol/
2) T	ethene	1.06	10891325	33.558	umol/
3) T	acetylene	1.14	11197270	32.173	umol/
4) T	ethane	1.39	11191085	32.616	umol/
5) T	propane	3.83	16496728	33.035	umol/
6) T	n-butane	5.34	21334715	32.848	umol/
8) T	carbon dioxide	0.21	18955287	3234.038	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G45853.D RSKEXT.M Tue Dec 09 10:51:05 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45853.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45853.D\TCD2B.CH
Acq On : 09 Dec 2014 9:31 Operator: JDS
Sample : WG503795-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 9 10:51 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

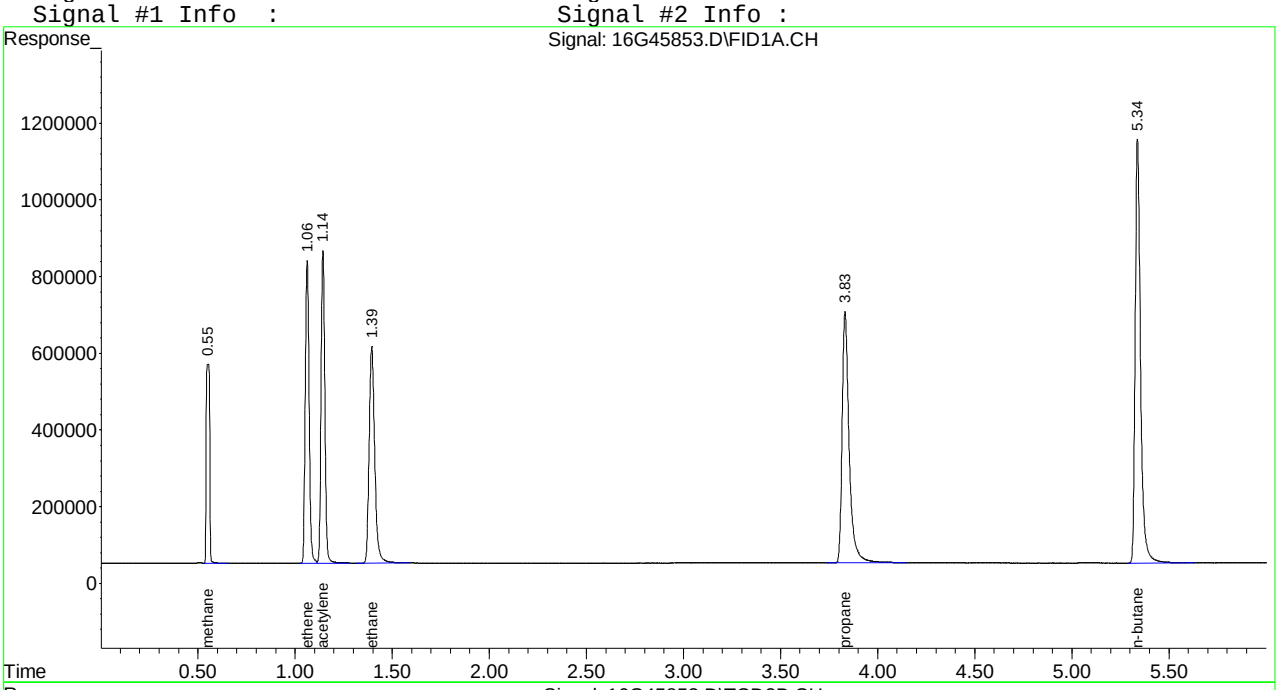

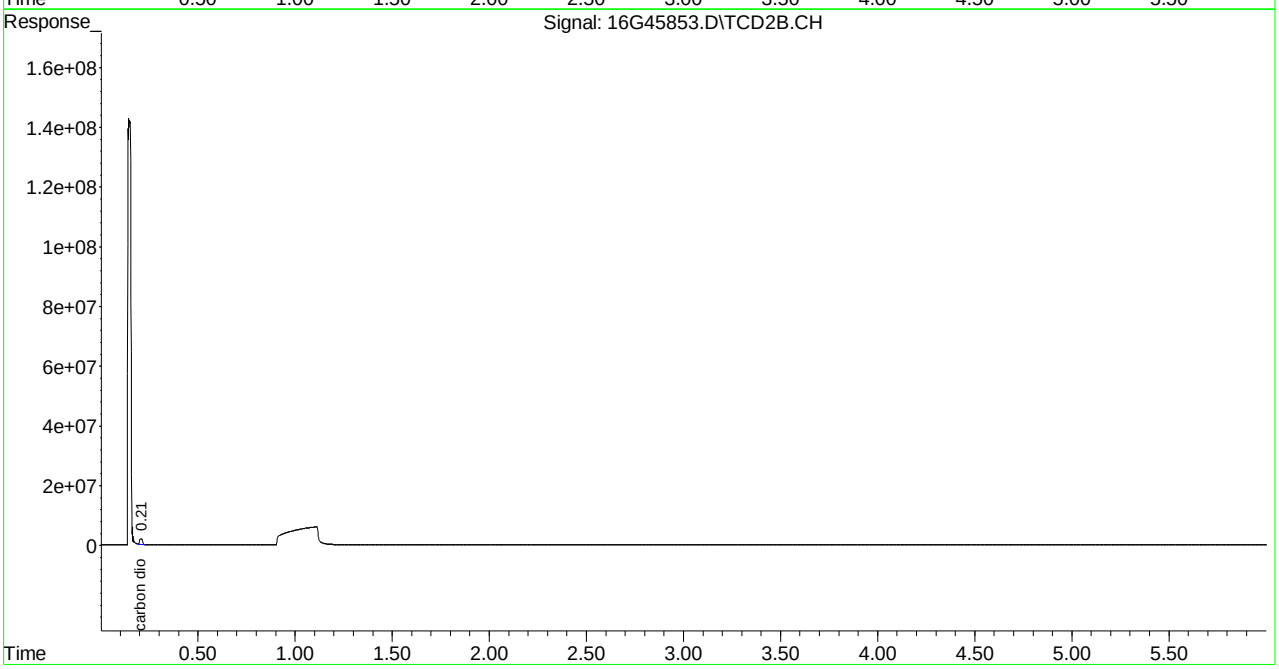

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45854.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45854.D\TCD2B.CH
Acq On : 09 Dec 2014 9:43 Operator: JDS
Sample : WG503795-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 09 10:51:05 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12576103	61.891	umol/
2) T	ethene	1.06	21804768	67.183	umol/
3) T	acetylene	1.14	24245822	69.665	umol/
4) T	ethane	1.39	22777350	66.384	umol/
5) T	propane	3.83	33844705	67.774	umol/
6) T	n-butane	5.34	44060123	67.838	umol/
8) T	carbon dioxide	0.21	42087806	7180.772	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G45854.D RSKEXT.M Tue Dec 09 10:51:05 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45854.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45854.D\TCD2B.CH
Acq On : 09 Dec 2014 9:43 Operator: JDS
Sample : WG503795-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 9 10:51 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

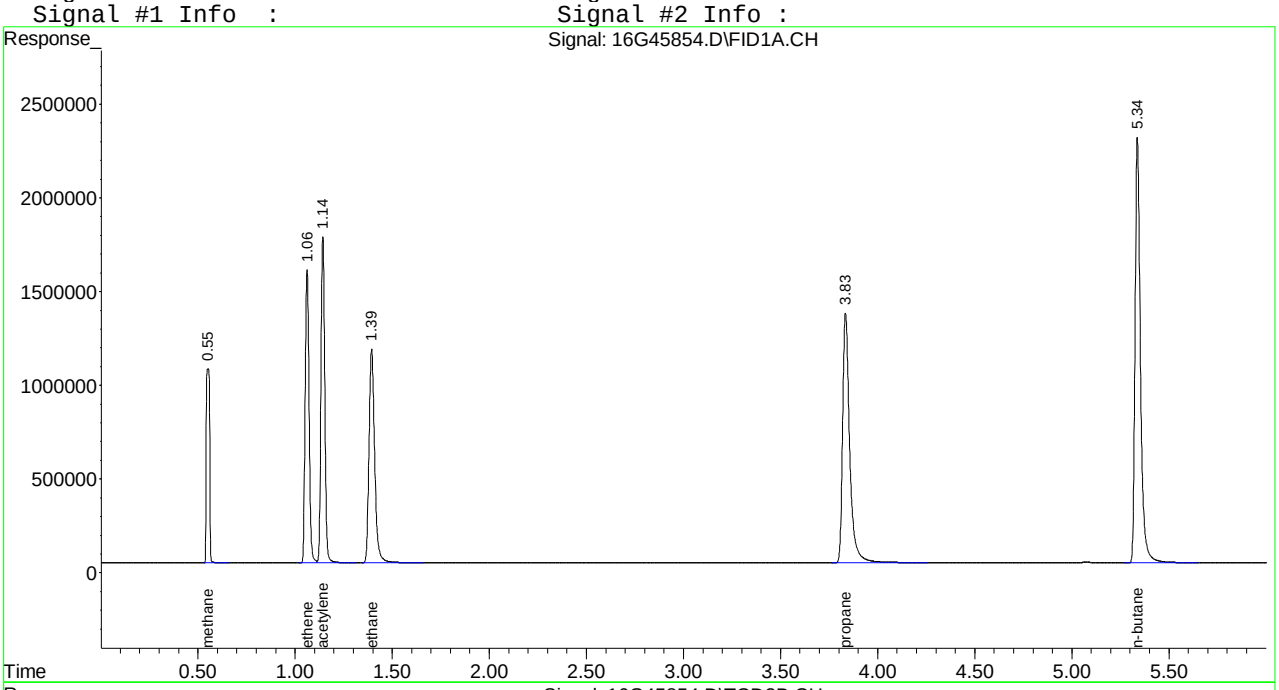

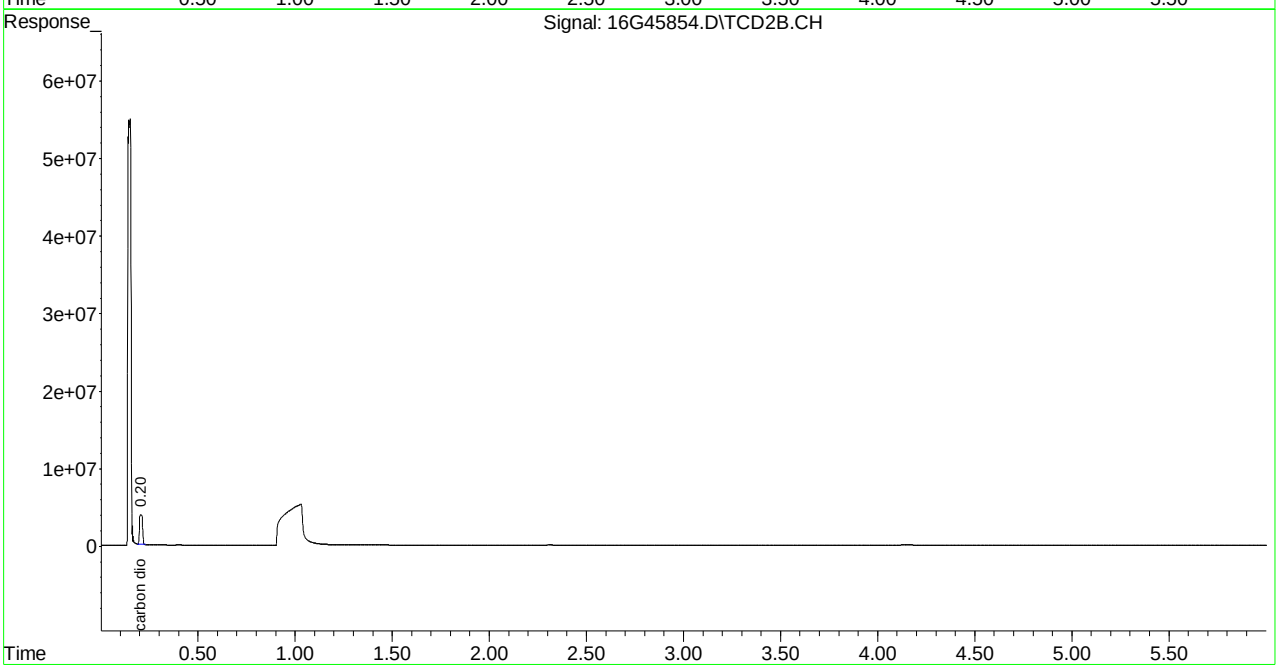

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45855.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45855.D\TCD2B.CH
Acq On : 09 Dec 2014 9:54 Operator: JDS
Sample : WG503795-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 09 10:51:06 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	26017472	128.040	umol/
2) T	ethene	1.06	44725829	137.806	umol/
3) T	acetylene	1.14	49139048	141.190	umol/
4) T	ethane	1.39	46798187	136.393	umol/
5) T	propane	3.83	69362981	138.900	umol/
6) T	n-butane	5.34	91428822	140.769	umol/
8) T	carbon dioxide	0.21	86410343	14742.820	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G45855.D RSKEXT.M Tue Dec 09 10:51:06 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45855.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45855.D\TCD2B.CH
Acq On : 09 Dec 2014 9:54 Operator: JDS
Sample : WG503795-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 9 10:51 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

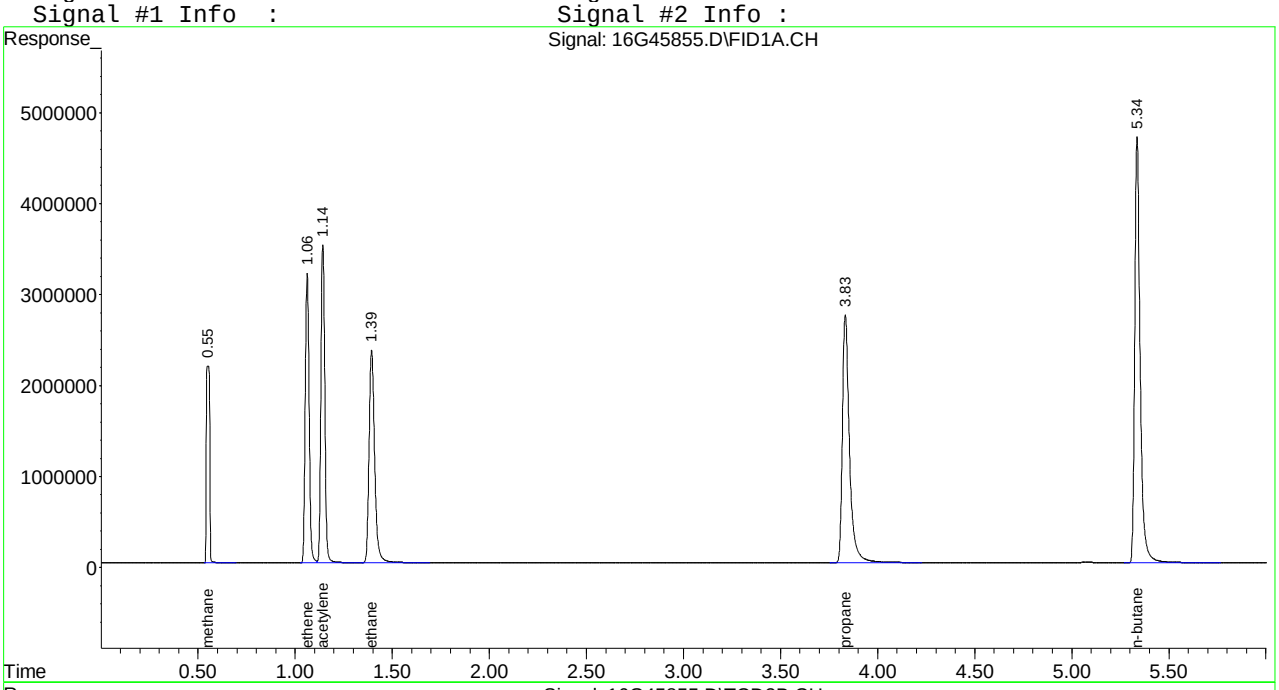

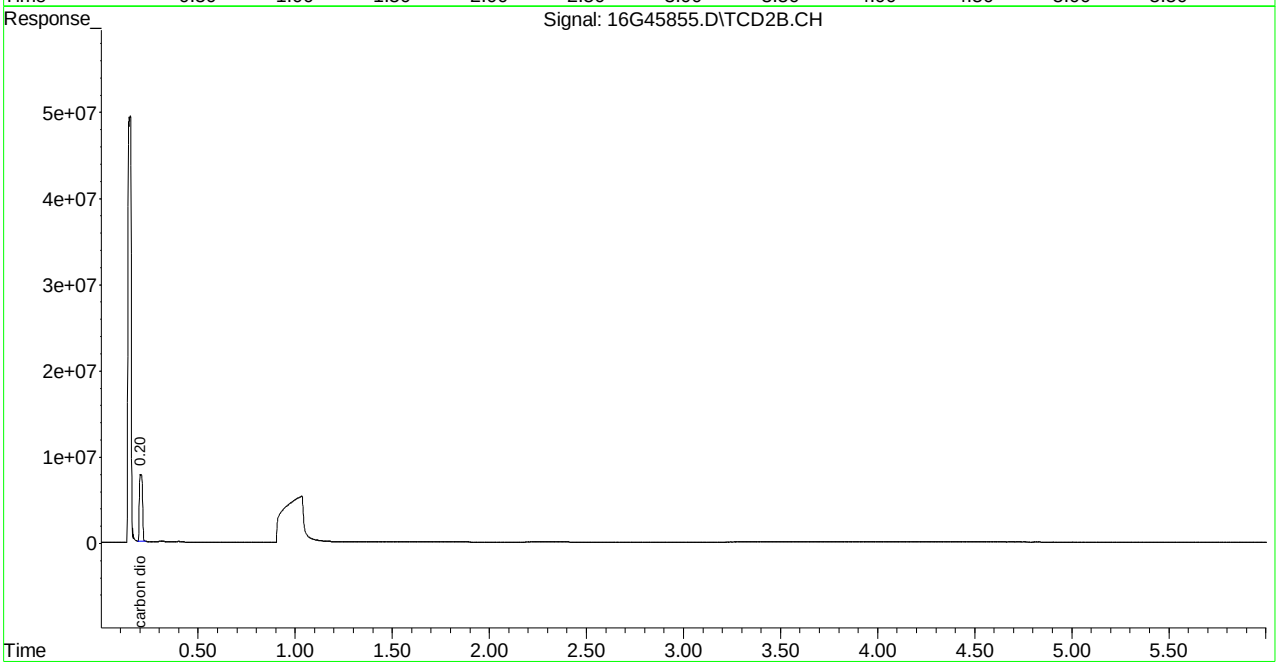

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45856.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45856.D\TCD2B.CH
Acq On : 09 Dec 2014 10:05 Operator: JDS
Sample : WG503795-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 09 10:51:06 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	65301147	321.367	umol/
2) T	ethene	1.06	112150533	345.550	umol/
3) T	acetylene	1.14	120443903	346.069	umol/
4) T	ethane	1.39	117422837	342.228	umol/
5) T	propane	3.83	173192880	346.819	umol/
6) T	n-butane	5.33	225967028	347.912	umol/
8) T	carbon dioxide	0.20	204672920	34920.078	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G45856.D RSKEXT.M Tue Dec 09 10:51:07 2014 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45856.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45856.D\TCD2B.CH
Acq On    : 09 Dec 2014  10:05                        Operator: JDS
Sample    : WG503795-06 333umol/mol STD RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Dec  9 10:51 2014  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update  : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

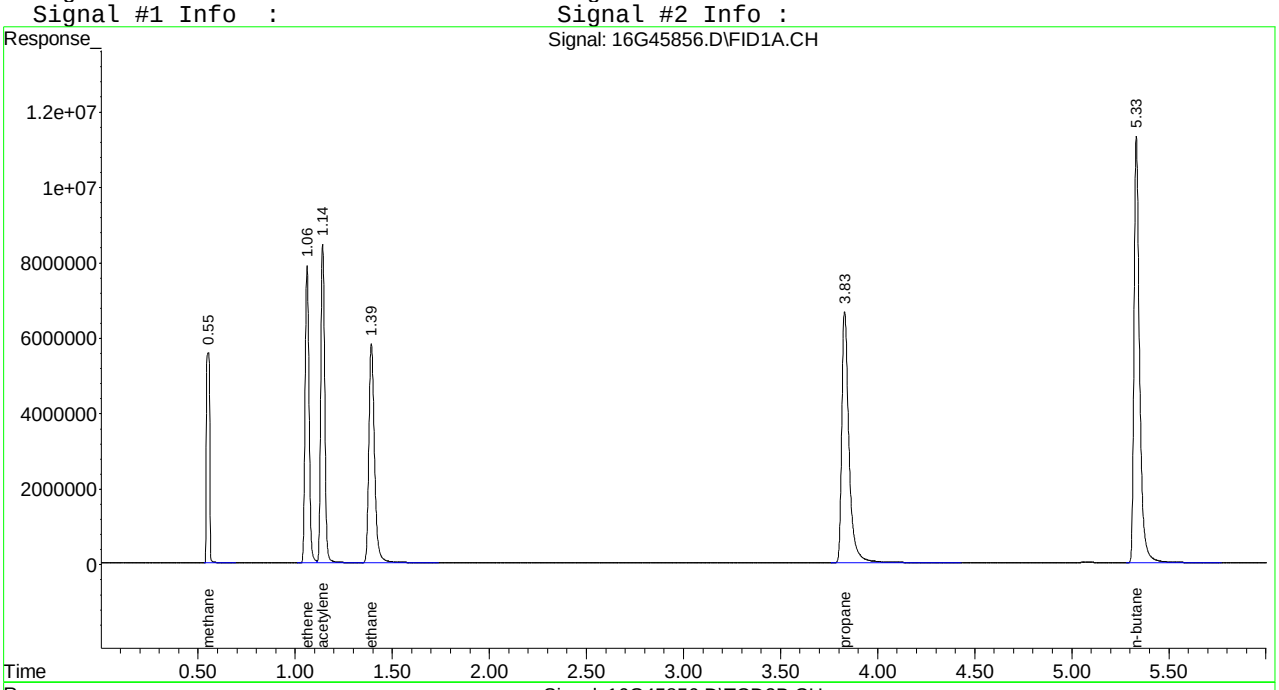

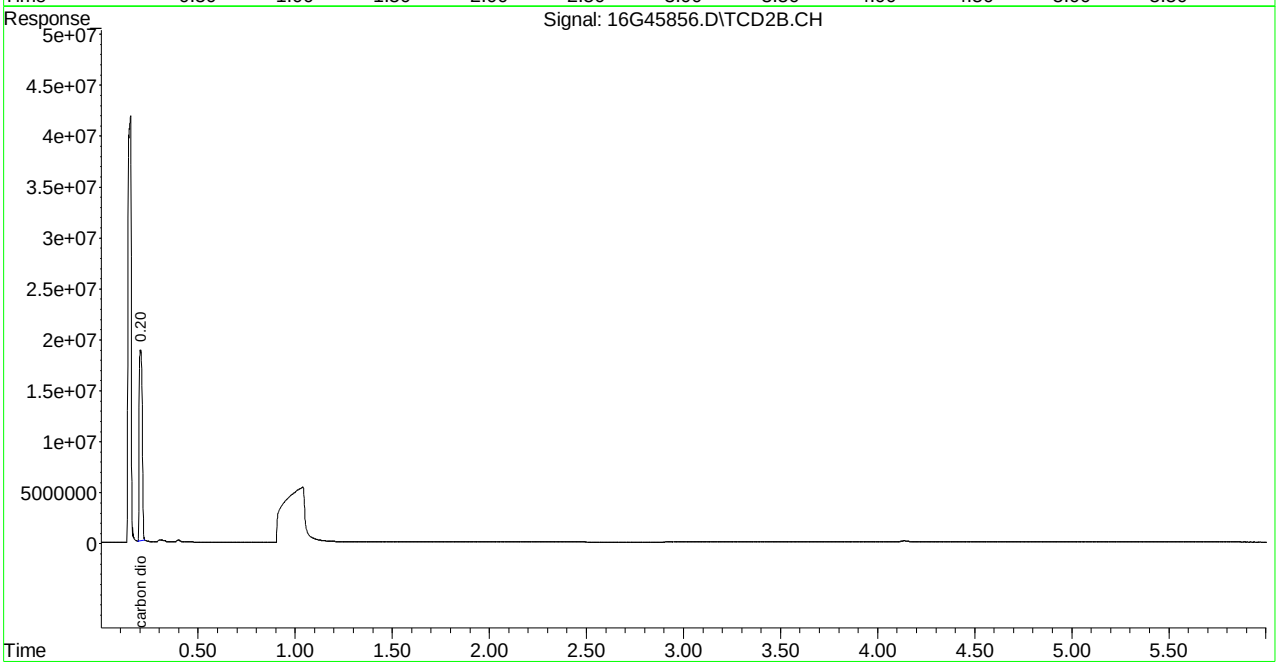

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45857.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45857.D\TCD2B.CH
Acq On : 09 Dec 2014 10:17 Operator: JDS
Sample : WG503795-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 09 10:51:07 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	98773546	486.096	umol/
2) T	ethene	1.06	166681510	513.568	umol/
3) T	acetylene	1.14	182883764	525.477	umol/
4) T	ethane	1.39	174430610	508.377	umol/
5) T	propane	3.83	253707912	508.051	umol/
6) T	n-butane	5.33	329044037	506.615	umol/
8) T	carbon dioxide	0.20	300677498	51299.809	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G45857.D RSKEXT.M Tue Dec 09 10:51:07 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45857.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45857.D\TCD2B.CH
Acq On : 09 Dec 2014 10:17 Operator: JDS
Sample : WG503795-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 9 10:51 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

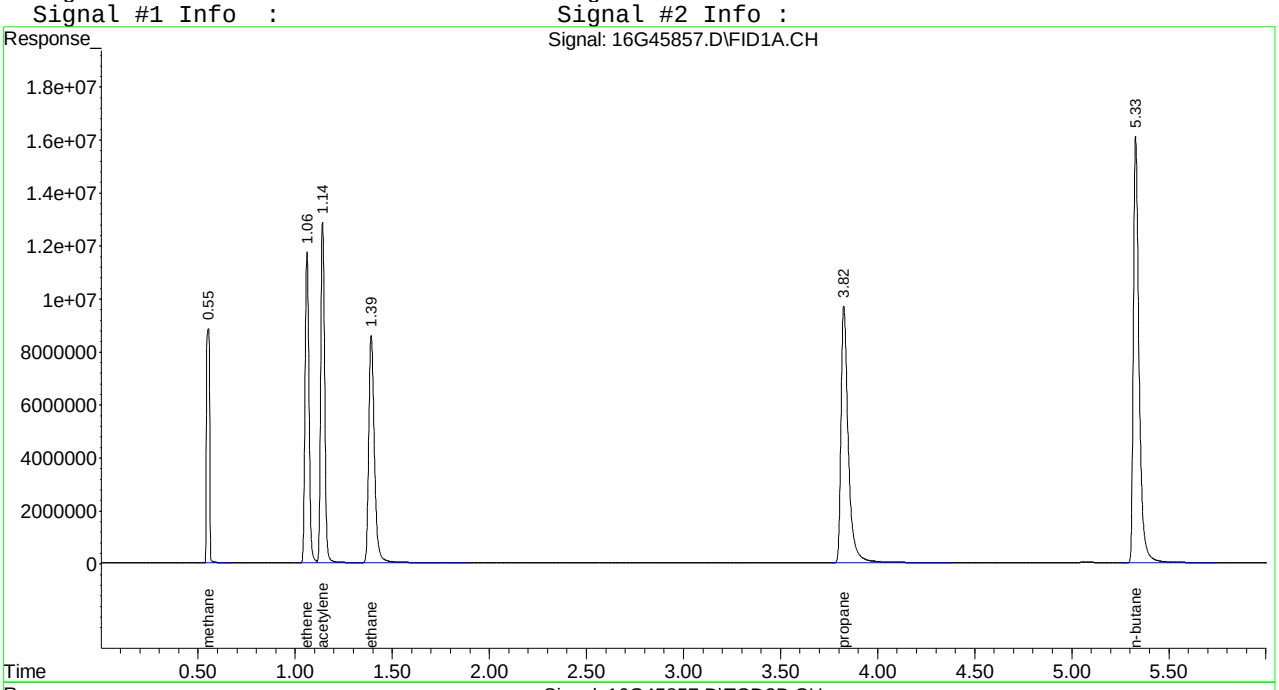

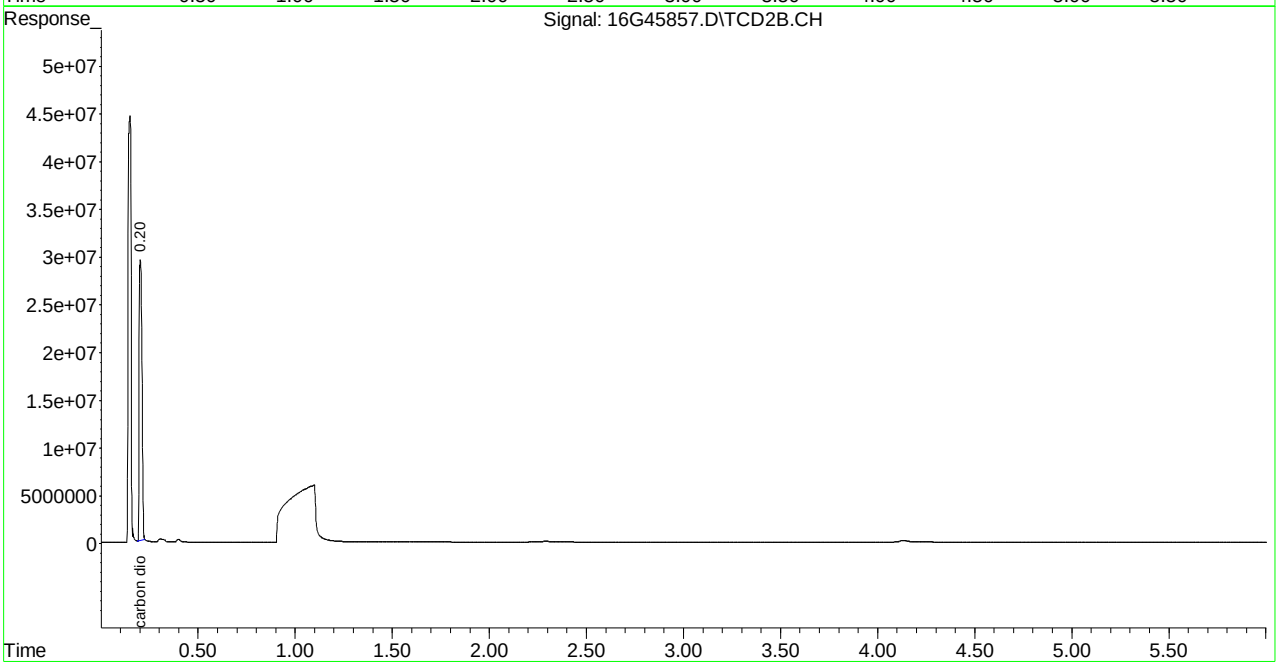

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45859.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45859.D\TCD2B.CH
Acq On : 09 Dec 2014 10:40 Operator: JDS
Sample : WG503795-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD67275 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 09 10:51:08 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	26901390	132.390	umol/
2) T	ethene	1.06	46130169	142.133	umol/
3) T	acetylene	1.14	49488138	142.193	umol/
4) T	ethane	1.39	47867634	139.510	umol/
5) T	propane	3.83	70599802	141.376	umol/
6) T	n-butane	5.34	92644025	142.640	umol/
8) T	carbon dioxide	0.20	85079418	14515.745	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G45859.D RSKEXT.M Tue Dec 09 10:51:08 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45859.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45859.D\TCD2B.CH
Acq On : 09 Dec 2014 10:40 Operator: JDS
Sample : WG503795-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD67275 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 9 10:51 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

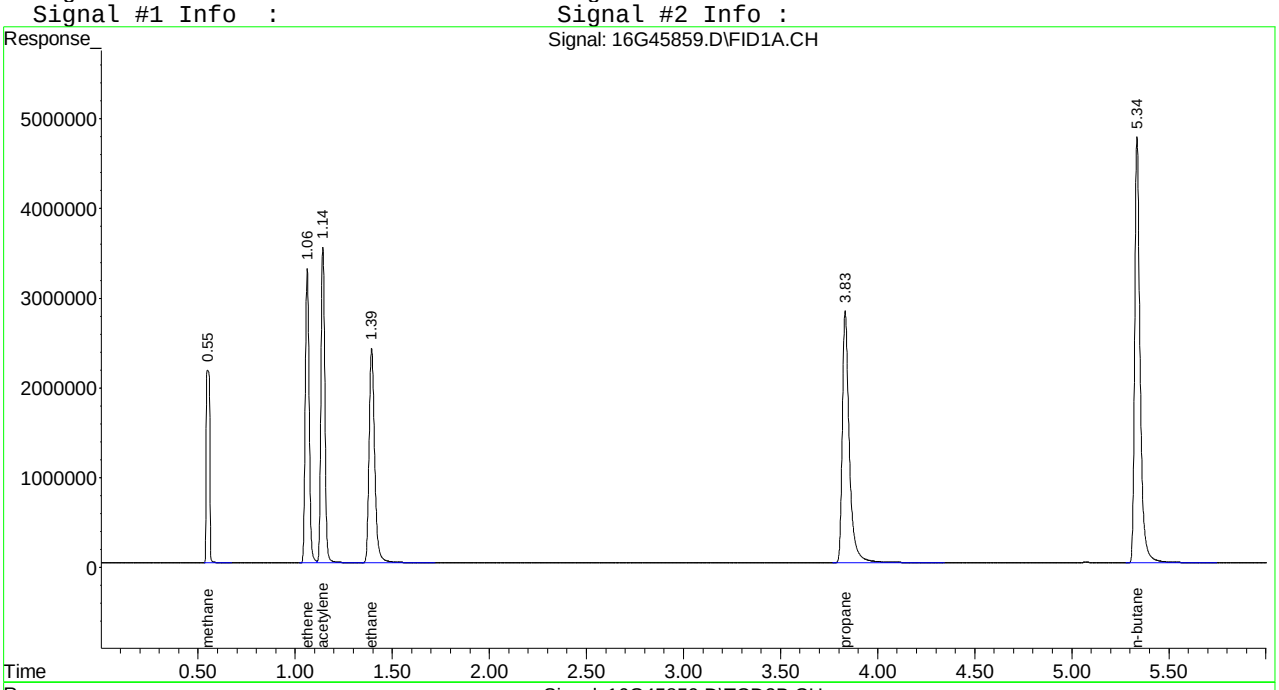

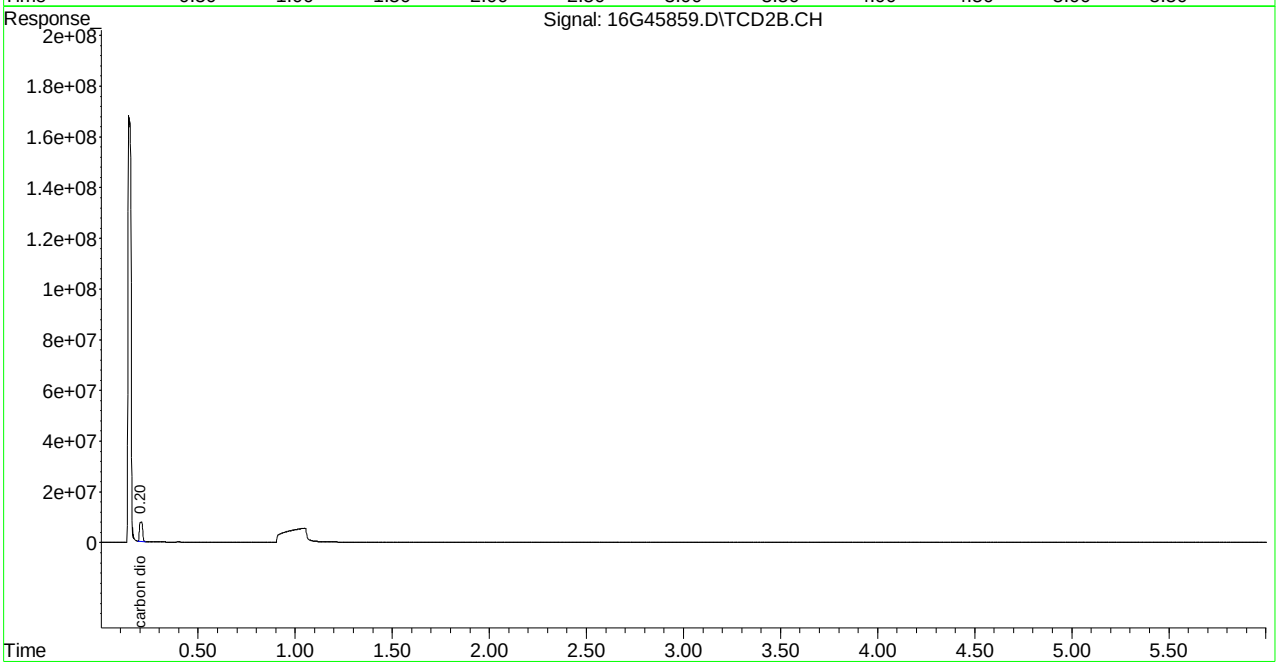

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45859.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45859.D\TCD2B.CH
Acq On : 09 Dec 2014 10:40 Operator: JDS
Sample : WG503795-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD67275 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	132.390	0.5	103	0.00
2	T	ethene	133.000	142.133	-6.9	103	0.00
3	T	acetylene	133.000	142.193	-6.9	101	0.00
4	T	ethane	133.000	139.510	-4.9	102	0.00
5	T	propane	133.000	141.376	-6.3	102	0.00
6	T	n-butane	133.000	142.640	-7.2	101	0.00

Signal #2

8	T	carbon dioxide	13333.000	14515.745	-8.9	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G45859.D RSKEXT.M Tue Dec 09 10:52:49 2014 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45859.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45859.D\TCD2B.CH
Acq On    : 09 Dec 2014  10:40                        Operator: JDS
Sample    : WG503795-08 133umol/mol ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD67275                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update  : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

```
---------------------------------------------------------------------------
 (#) = Out of Range            SPCC's out = 0  CCC's out = 0
 16G45859.D  RSKEXT.M      Tue Dec 09 10:52:49 2014                    Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\120914\16G45870.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDchem\1\DATA\120914\16G45870.D\TCD2B.CH
Acq On : 09 Dec 2014 13:34 Operator: JDS
Sample : WG503990-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD7274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 09 13:40:34 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	22736824	111.895	umol/
2) T	ethene	1.06	36658266	112.949	umol/
3) T	acetylene	1.14	36441354	104.706	umol/
4) T	ethane	1.39	38475474	112.136	umol/
5) T	propane	3.83	54508705	109.154	umol/
6) T	n-butane	5.34	68626330	105.661	umol/
8) T	carbon dioxide	0.21	61533478	10498.477	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G45870.D RSKEXT.M Tue Dec 09 13:40:35 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\120914\16G45870.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDchem\1\DATA\120914\16G45870.D\TCD2B.CH
Acq On : 09 Dec 2014 13:34 Operator: JDS
Sample : WG503990-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD7274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 9 13:40 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

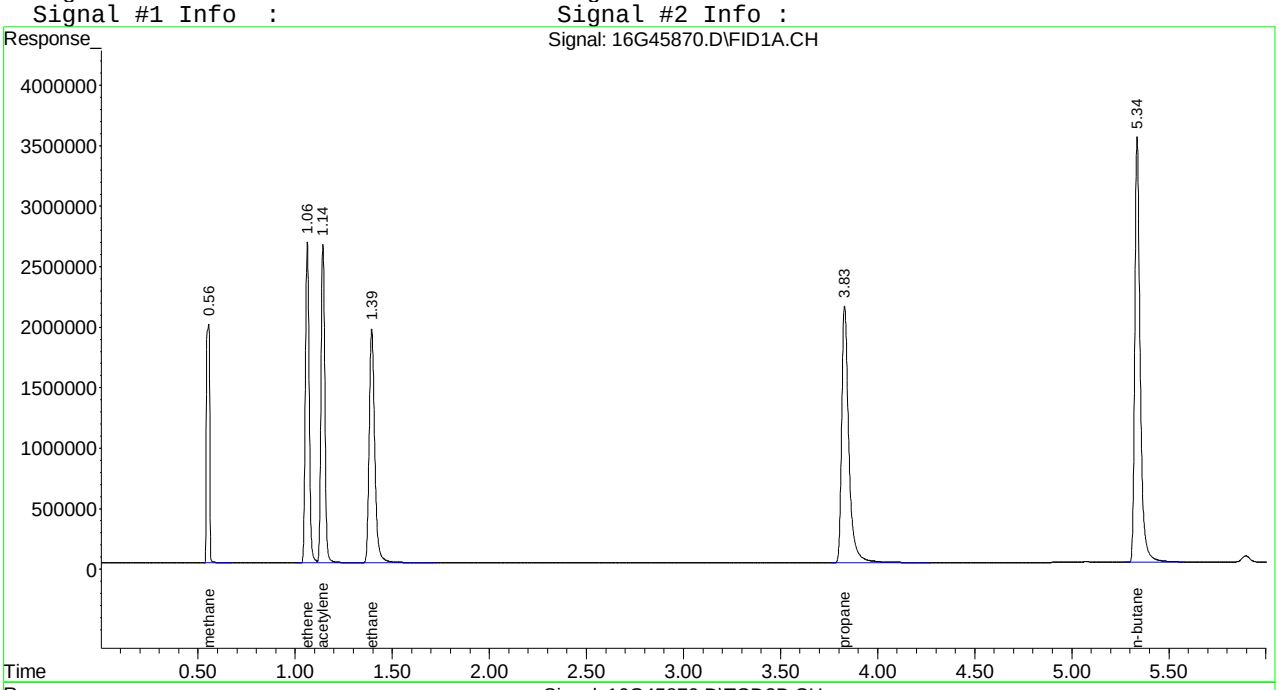

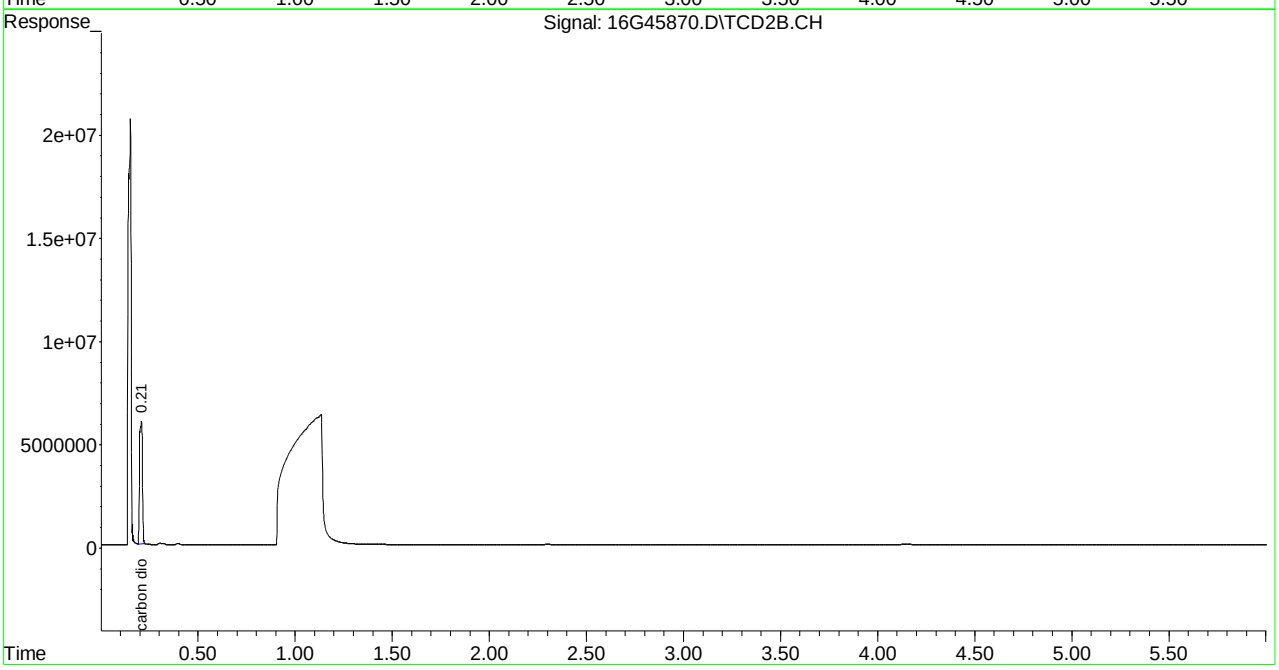

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45870.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45870.D\TCD2B.CH
Acq On : 09 Dec 2014 13:34 Operator: JDS
Sample : WG503990-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD7274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	111.895	15.9#	87	0.00
2	T	ethene	133.000	112.949	15.1#	82	0.00
3	T	acetylene	133.000	104.706	21.3#	74	0.00
4	T	ethane	133.000	112.136	15.7#	82	0.00
5	T	propane	133.000	109.154	17.9#	79	0.00
6	T	n-butane	133.000	105.661	20.6#	75	0.00

Signal #2

8	T	carbon dioxide	13333.000	10498.477	21.3#	71	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G45870.D RSKEXT.M Wed Dec 10 08:25:16 2014 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45870.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45870.D\TCD2B.CH
Acq On    : 09 Dec 2014  13:34                        Operator: JDS
Sample    : WG503990-01 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD7274                               Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update  : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

```
---------------------------------------------------------------------------
 (#) = Out of Range            SPCC's out = 0  CCC's out = 0
 16G45870.D  RSKEXT.M      Wed Dec 10 08:25:16 2014                          Page 2
```

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\121014\16G45902.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\121014\16G45902.D\TCD2B.CH
Acq On    : 10 Dec 2014   9:36                        Operator: JDS
Sample    : WG504165-01 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Dec 10 09:43:00 2014  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update  : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	23257363	114.457 umol/
2) T	ethene	1.06	38998668	120.160 umol/
3) T	acetylene	1.14	42612622	122.438 umol/
4) T	ethane	1.39	40860845	119.089 umol/
5) T	propane	3.83	59916735	119.983 umol/
6) T	n-butane	5.34	78505883	120.872 umol/
8) T	carbon dioxide	0.20	73591379	12555.724 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G45902.D RSKEXT.M Wed Dec 10 09:43:00 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\121014\16G45902.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\121014\16G45902.D\TCD2B.CH
Acq On : 10 Dec 2014 9:36 Operator: JDS
Sample : WG504165-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 10 9:43 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

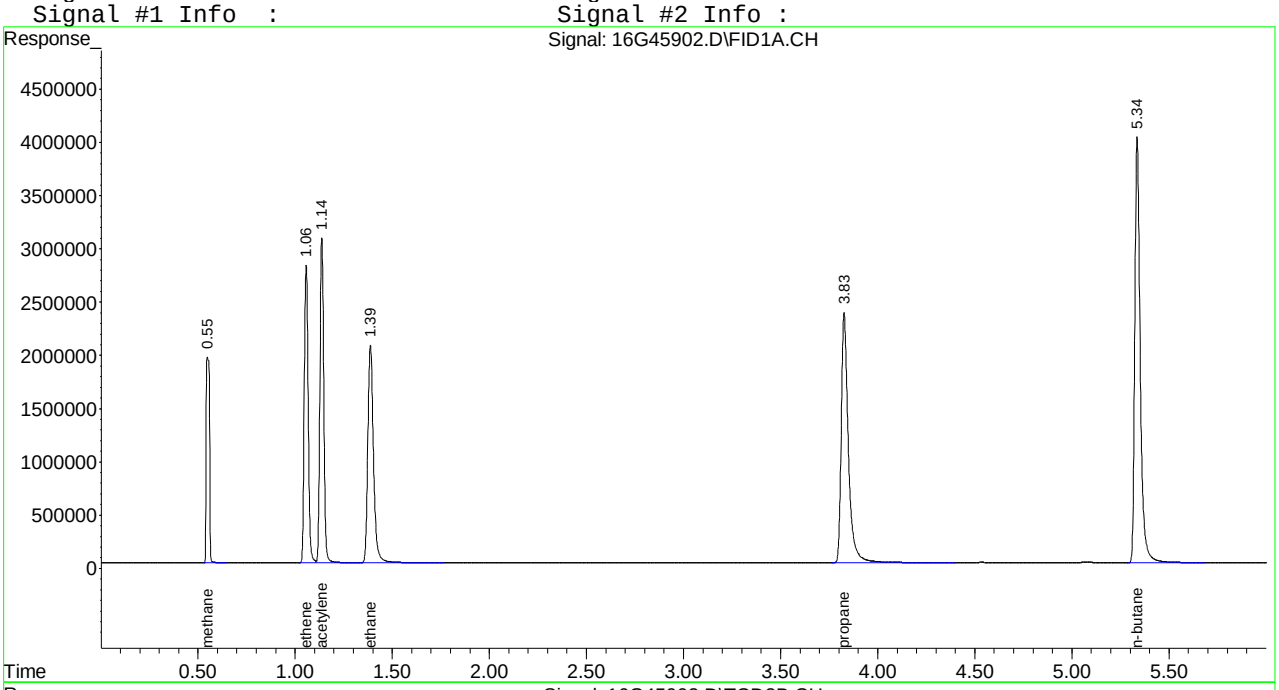

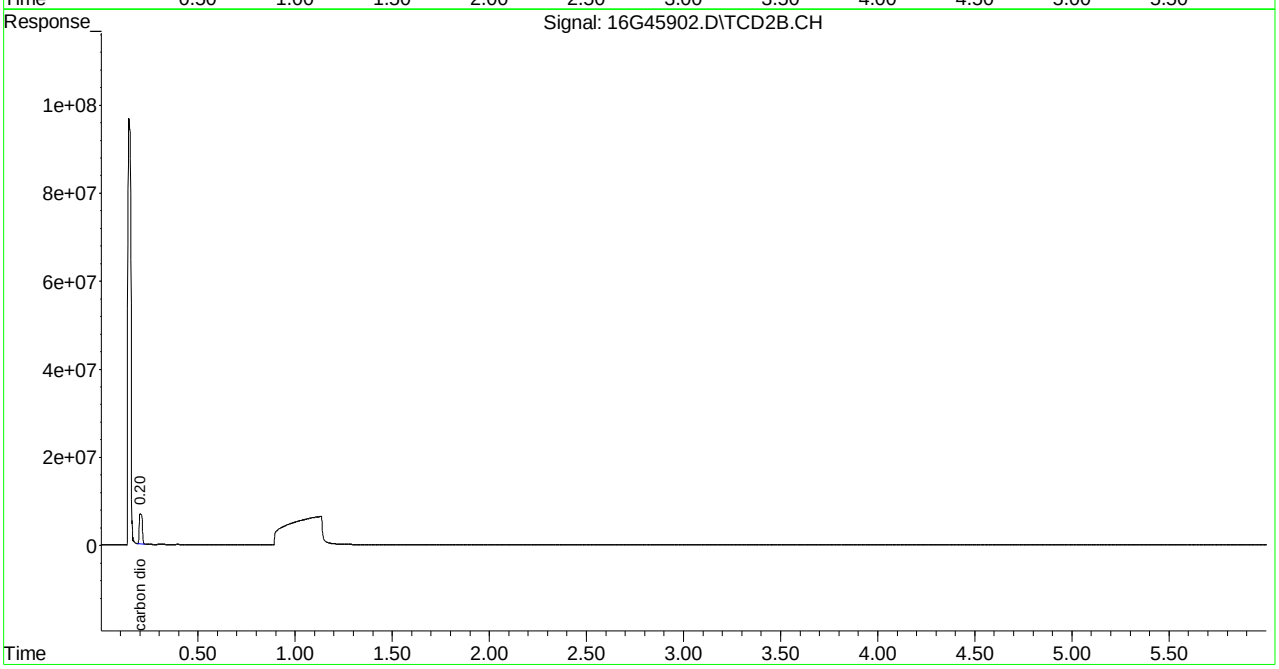

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\121014\16G45902.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\121014\16G45902.D\TCD2B.CH
Acq On : 10 Dec 2014 9:36 Operator: JDS
Sample : WG504165-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	114.457	13.9	89	0.00
2	T	ethene	133.000	120.160	9.7	87	0.00
3	T	acetylene	133.000	122.438	7.9	87	0.00
4	T	ethane	133.000	119.089	10.5	87	0.00
5	T	propane	133.000	119.983	9.8	86	0.00
6	T	n-butane	133.000	120.872	9.1	86	0.00

Signal #2

8	T	carbon dioxide	13333.000	12555.724	5.8	85	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G45902.D RSKEXT.M Wed Dec 10 15:58:47 2014 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\121014\16G45902.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\121014\16G45902.D\TCD2B.CH
Acq On    : 10 Dec 2014   9:36                        Operator: JDS
Sample    : WG504165-01 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update  : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

```
---------------------------------------------------------------------------
 (#) = Out of Range            SPCC's out = 0  CCC's out = 0
 16G45902.D  RSKEXT.M      Wed Dec 10 15:58:47 2014                                Page 2
```

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\121014\16G45913.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\121014\16G45913.D\TCD2B.CH
Acq On    : 10 Dec 2014  12:56                        Operator: JDS
Sample    : WG504165-02 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Dec 10 13:02:07 2014  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update  : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23619863	116.241	umol/
2) T	ethene	1.06	38882235	119.801	umol/
3) T	acetylene	1.14	40193146	115.486	umol/
4) T	ethane	1.39	40765930	118.812	umol/
5) T	propane	3.83	58753550	117.654	umol/
6) T	n-butane	5.34	75774057	116.666	umol/
8) T	carbon dioxide	0.21	67335640	11488.407	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G45913.D RSKEXT.M Wed Dec 10 13:02:07 2014 Page 1

Signal #1 : C:\MSDchem\1\DATA\121014\16G45913.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\121014\16G45913.D\TCD2B.CH
Acq On : 10 Dec 2014 12:56 Operator: JDS
Sample : WG504165-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 10 13:02 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

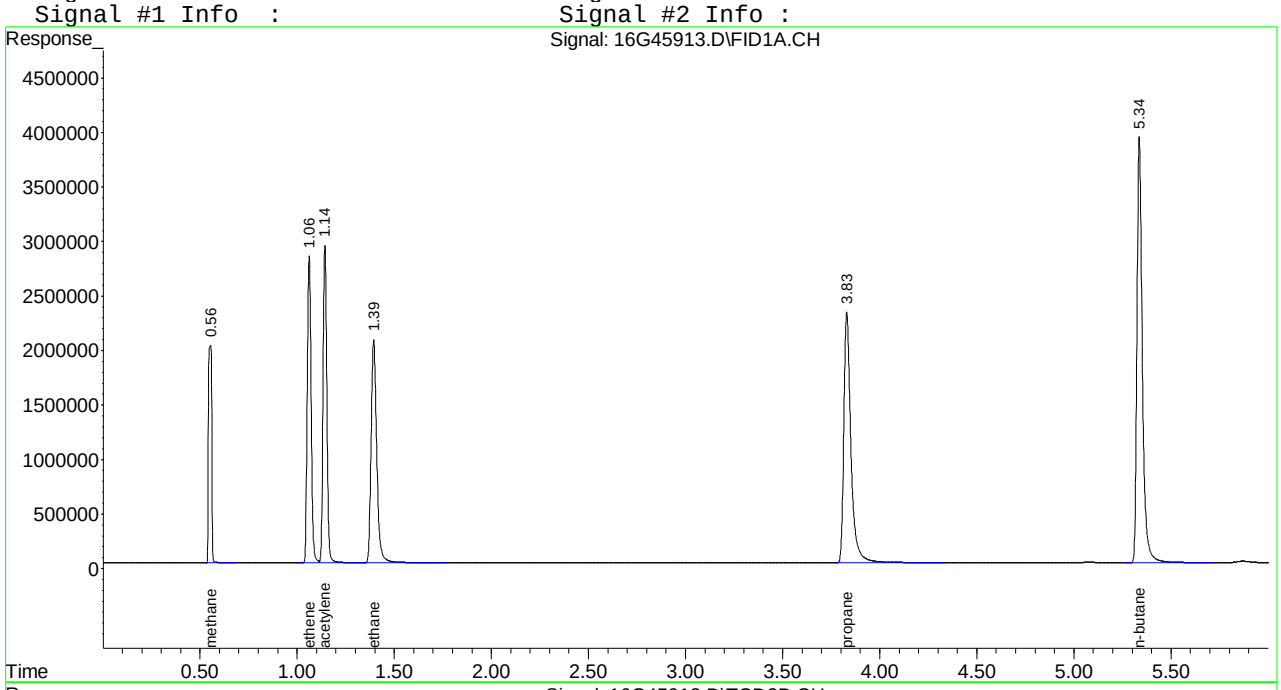

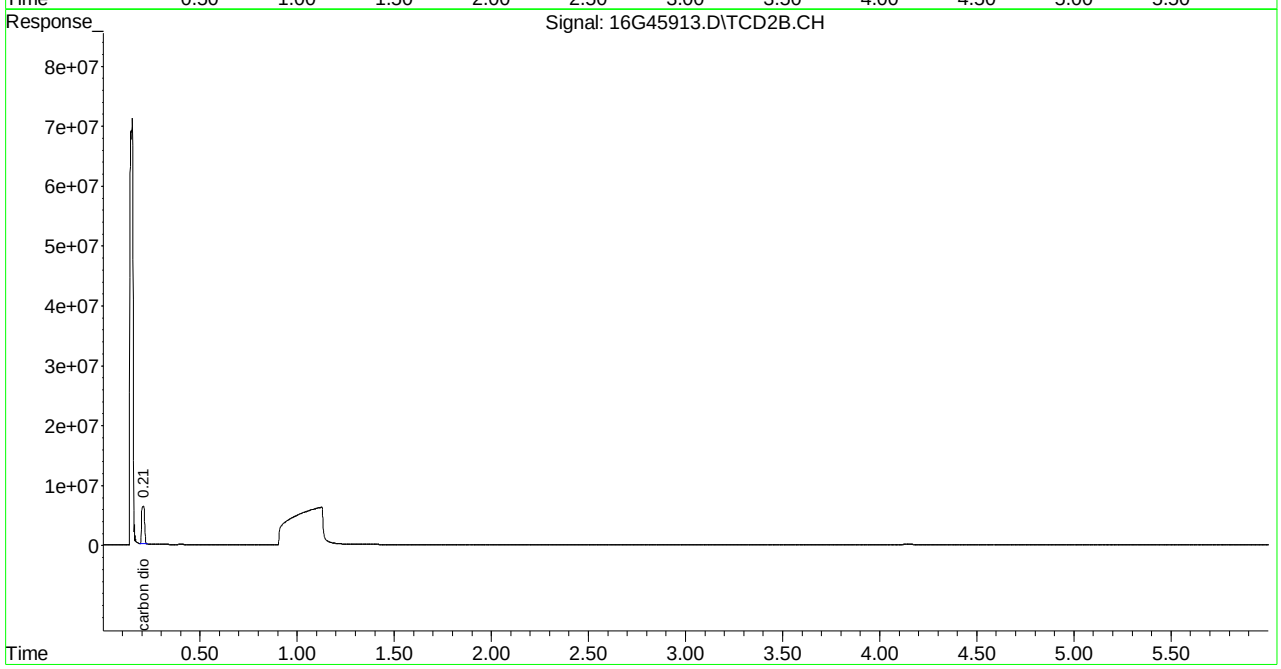

Evaluate Continuing Calibration Report

```
Signal #1 : C:\MSDCHEM\1\DATA\121014\16G45913.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\121014\16G45913.D\TCD2B.CH
Acq On    : 10 Dec 2014  12:56                        Operator: JDS
Sample    : WG504165-02 133umol/mol CCV STD RSK175    Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update  : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	116.241	12.6	91	0.00
2	T	ethene	133.000	119.801	9.9	87	0.00
3	T	acetylene	133.000	115.486	13.2	82	0.00
4	T	ethane	133.000	118.812	10.7	87	0.00
5	T	propane	133.000	117.654	11.5	85	0.00
6	T	n-butane	133.000	116.666	12.3	83	0.00
		Signal #2					
8	T	carbon dioxide	13333.000	11488.407	13.8	78	0.00

```
(#) = Out of Range            SPCC's out = 0  CCC's out = 0
16G45913.D  RSKEXT.M      Wed Dec 10 15:58:53 2014                    Page 1
```

```
Signal #1 : C:\MSDCHEM\1\DATA\121014\16G45913.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\121014\16G45913.D\TCD2B.CH
Acq On    : 10 Dec 2014  12:56                        Operator: JDS
Sample    : WG504165-02 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update  : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

```
---------------------------------------------------------------------------
 (#) = Out of Range            SPCC's out = 0  CCC's out = 0
 16G45913.D  RSKEXT.M      Wed Dec 10 15:58:53 2014                                Page 2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L14120292 **Run Date:** 12/09/2014 **Sample ID:** WG503990-01
Instrument: HP16 **Run Time:** 13:34 **Method:** RSK175
Workgroup (AAB#): WG503991 **File ID:** 16G45870

RT Standard	Analysis Date	File ID	Analyst
WG459566-01	01/16/2014	16G41288	QX
WG459109-09	01/13/2014	16G41276	FJB
WG458963-01	01/10/2014	16G41231	MDA

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.55	.55	.55	.55	0.520	0.580
ETHENE	1.04	1.05	1.05	1.06	1.030	1.090
ETHANE	1.37	1.37	1.38	1.39	1.360	1.420
PROPANE	3.82	3.82	3.82	3.83	3.800	3.860
CARBON DIOXIDE	.2	.2	.2	.21	0.180	0.240
ACETYLENE	1.12	1.12	1.12	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 3911374
Report generated 12/16/2014 10:39

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L14120292 **Run Date:** 12/10/2014 **Sample ID:** WG504165-01
Instrument: HP16 **Run Time:** 09:36 **Method:** RSK175
Workgroup (AAB#): WG504167 **File ID:** 16G45902

RT Standard	Analysis Date	File ID	Analyst
WG459566-01	01/16/2014	16G41288	QX
WG459109-09	01/13/2014	16G41276	FJB
WG458963-01	01/10/2014	16G41231	MDA

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.55	.55	.55	.55	0.520	0.580
ETHENE	1.04	1.05	1.05	1.06	1.030	1.090
ETHANE	1.37	1.37	1.38	1.39	1.360	1.420
PROPANE	3.82	3.82	3.82	3.83	3.800	3.860
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.12	1.12	1.12	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 3911374
Report generated 12/16/2014 10:39

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45860.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45860.D\TCD2B.CH
Acq On : 09 Dec 2014 11:39 Operator: JDS
Sample : WG503991-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 09 11:45:04 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	172791	0.850	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	1.14	7037	0.020	umol/
4) T	ethane	1.39	13762	0.040	umol/
5) T	propane	3.83	8990	0.018	umol/
6) T	n-butane	5.34	21208	0.033	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G45860.D RSKEXT.M Tue Dec 09 11:51:23 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120914\16G45860.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\120914\16G45860.D\TCD2B.CH
Acq On : 09 Dec 2014 11:39 Operator: JDS
Sample : WG503991-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 9 11:45 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

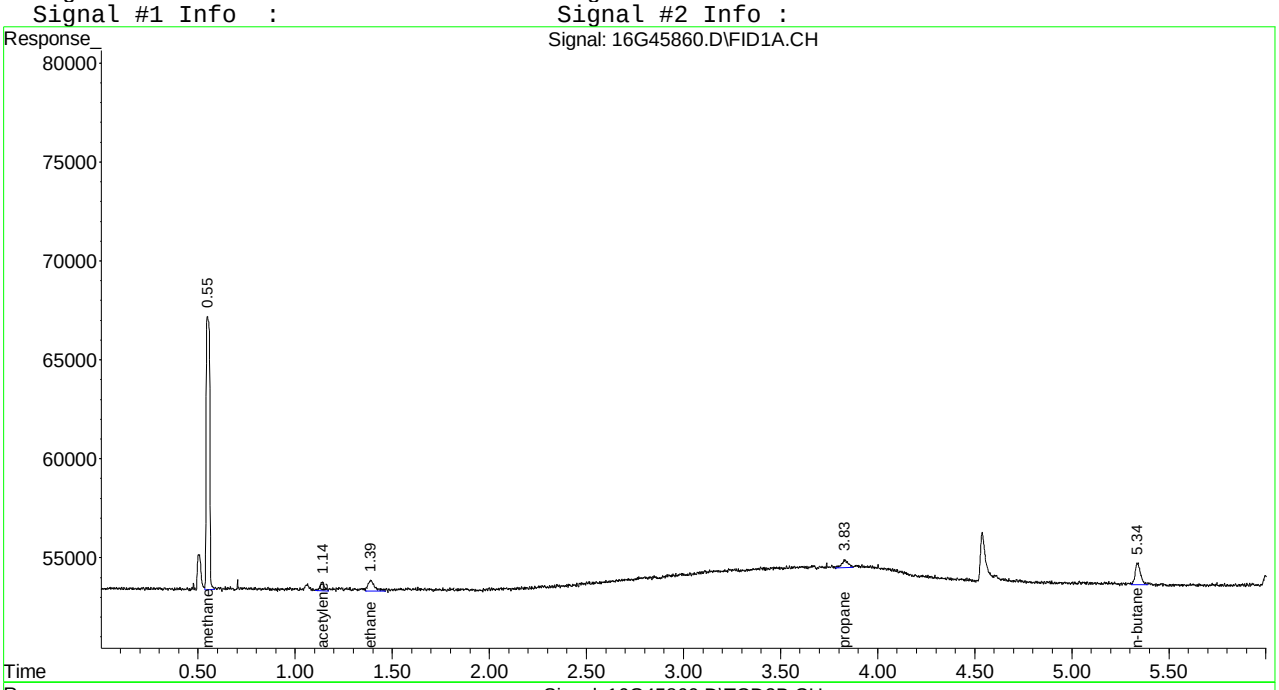

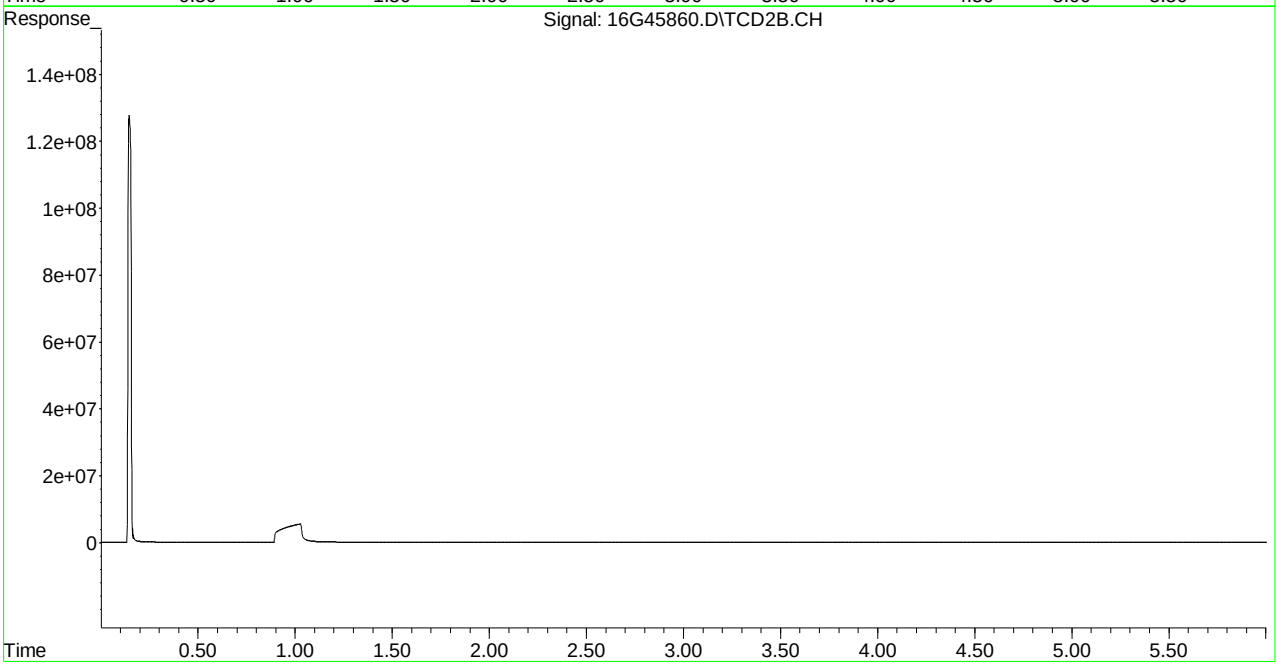

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\121014\16G45903.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\121014\16G45903.D\TCD2B.CH
Acq On : 10 Dec 2014 11:00 Operator: JDS
Sample : WG504167-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 10 11:06:25 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	205564	1.012	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	5.34	13787	0.021	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G45903.D RSKEXT.M Wed Dec 10 11:08:07 2014 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\121014\16G45903.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\121014\16G45903.D\TCD2B.CH
Acq On : 10 Dec 2014 11:00 Operator: JDS
Sample : WG504167-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 10 11:06 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

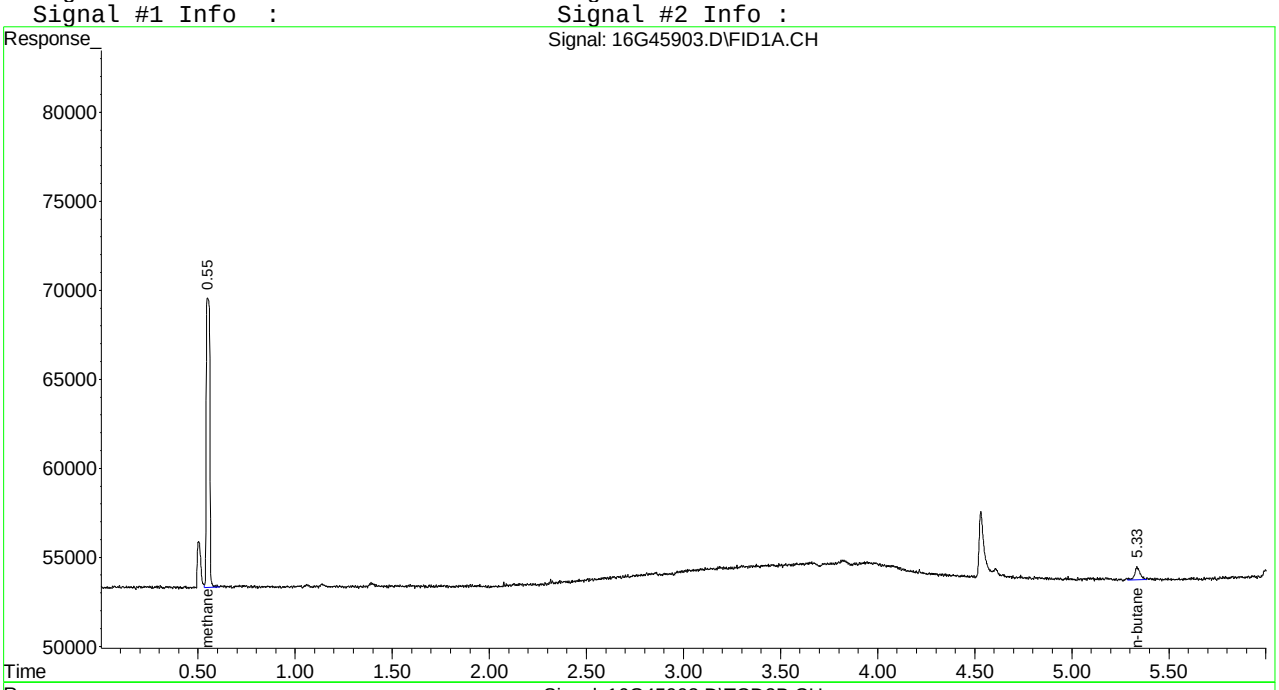

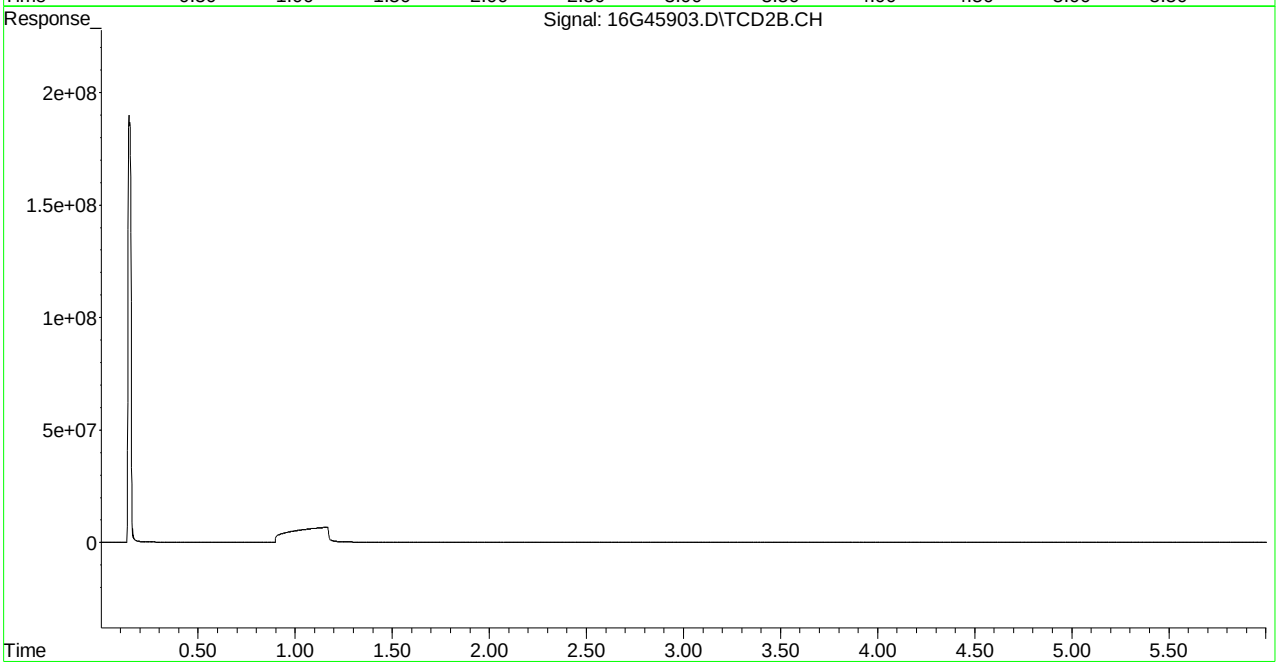

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\120914\16G45861.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDchem\1\DATA\120914\16G45861.D\TCD2B.CH
Acq On : 09 Dec 2014 11:50 Operator: JDS
Sample : WG503991-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD67275 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 09 11:56:30 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12428657	61.165	umol/
2) T	ethene	1.06	20985421	64.659	umol/
3) T	acetylene	1.14	22449475	64.504	umol/
4) T	ethane	1.39	21694641	63.229	umol/
5) T	propane	3.83	31540475	63.160	umol/
6) T	n-butane	5.34	40620097	62.541	umol/
8) T	carbon dioxide	0.21	38517459	6571.620	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G45861.D RSKEXT.M Tue Dec 09 11:56:31 2014 Page 1

Signal #1 : C:\MSDchem\1\DATA\120914\16G45861.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDchem\1\DATA\120914\16G45861.D\TCD2B.CH
Acq On : 09 Dec 2014 11:50 Operator: JDS
Sample : WG503991-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD67275 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 9 11:56 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

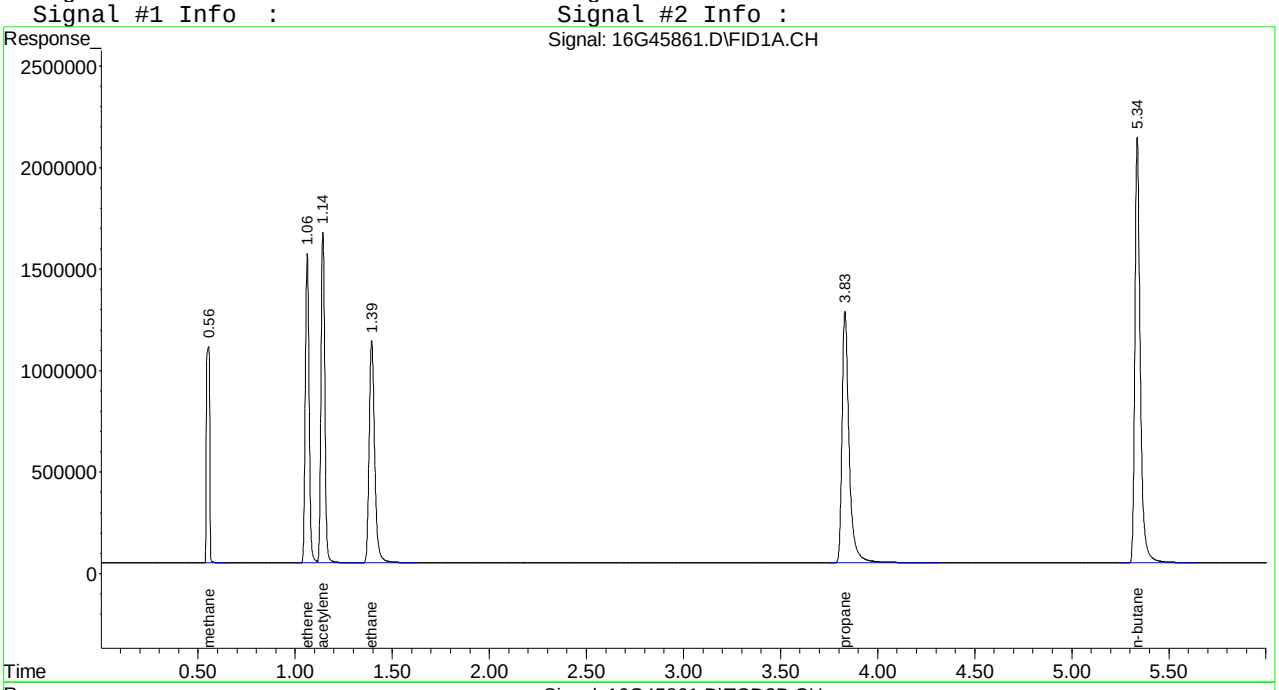

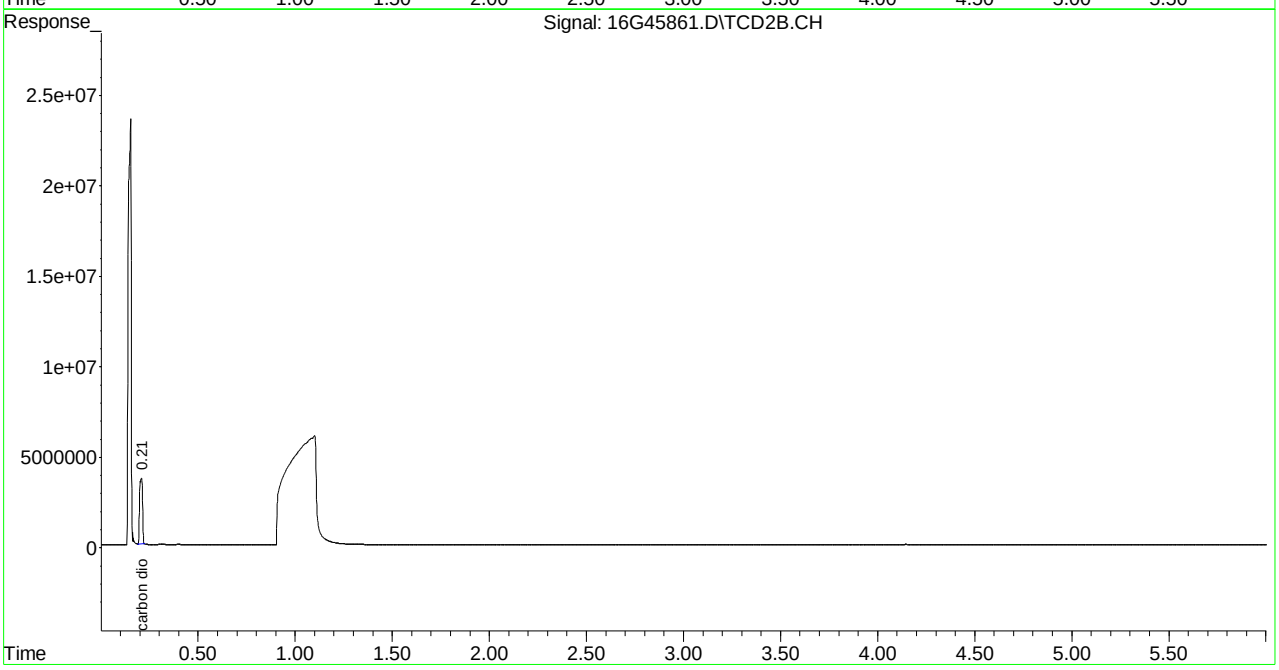

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\121014\16G45904.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\121014\16G45904.D\TCD2B.CH
Acq On : 10 Dec 2014 11:12 Operator: JDS
Sample : WG504167-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD67275 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 10 11:18:24 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	13897121	68.392	umol/
2) T	ethene	1.06	23913045	73.679	umol/
3) T	acetylene	1.14	25551578	73.417	umol/
4) T	ethane	1.39	24747691	72.127	umol/
5) T	propane	3.83	35897264	71.884	umol/
6) T	n-butane	5.34	45170842	69.548	umol/
8) T	carbon dioxide	0.21	43039808	7343.197	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G45904.D RSKEXT.M Wed Dec 10 11:18:24 2014 Page 1

```
Signal #1 : C:\MSDchem\1\DATA\121014\16G45904.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\121014\16G45904.D\TCD2B.CH
Acq On    : 10 Dec 2014  11:12                        Operator: JDS
Sample    : WG504167-02 67umol/mol LCS STD RSK175     Inst    : HP16
Misc      : 1,1 STD67275                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Dec 10 11:18 2014  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update  : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

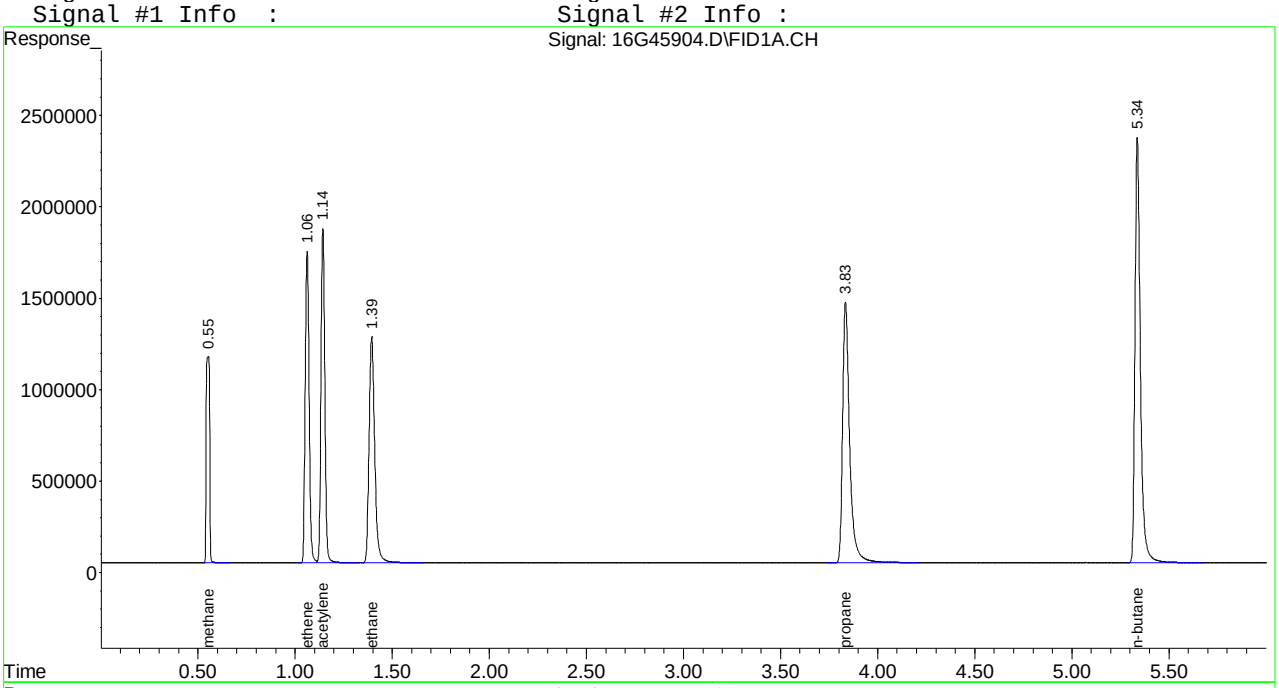

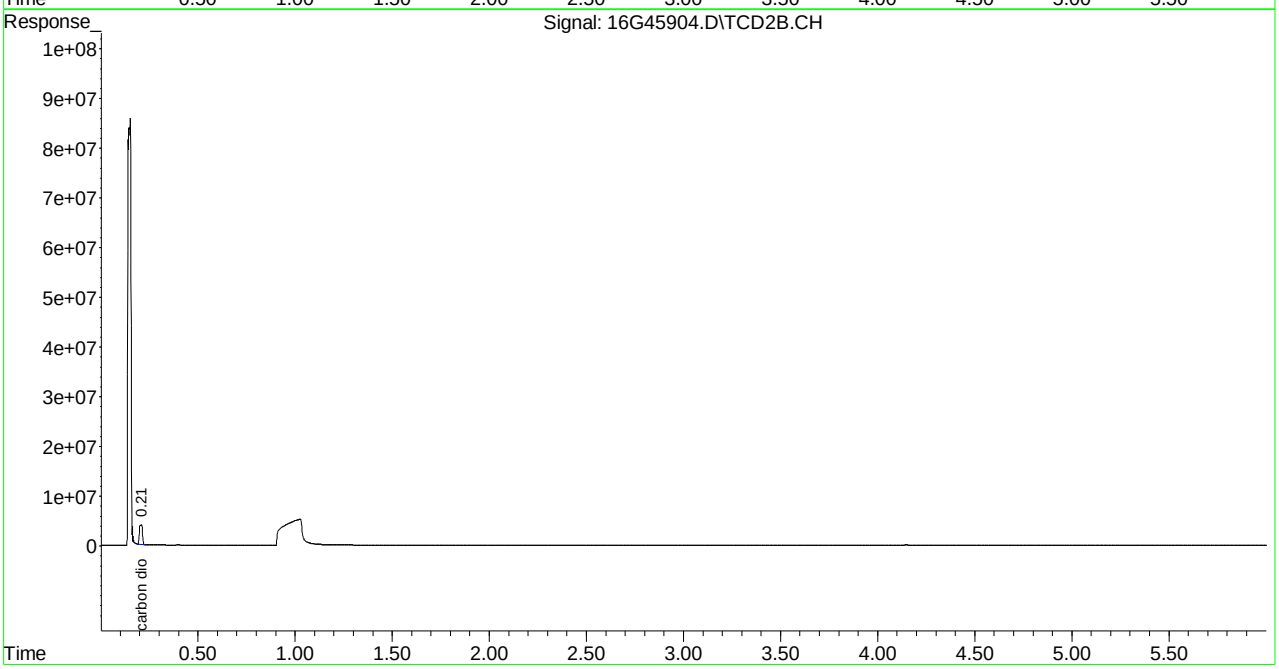

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\120914\16G45862.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\120914\16G45862.D\TCD2B.CH
Acq On : 09 Dec 2014 12:01 Operator: JDS
Sample : WG503991-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD67275 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 09 12:08:01 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12650156	62.255	umol/
2) T	ethene	1.06	21242264	65.450	umol/
3) T	acetylene	1.14	22060424	63.386	umol/
4) T	ethane	1.39	22025151	64.192	umol/
5) T	propane	3.83	31763137	63.606	umol/
6) T	n-butane	5.34	40608215	62.523	umol/
8) T	carbon dioxide	0.21	38663607	6596.555	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G45862.D RSKEXT.M Tue Dec 09 12:08:01 2014 Page 1

Signal #1 : C:\MSDchem\1\DATA\120914\16G45862.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\120914\16G45862.D\TCD2B.CH
Acq On : 09 Dec 2014 12:01 Operator: JDS
Sample : WG503991-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD67275 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 9 12:08 2014 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 120914
Last Update : Tue Dec 09 10:30:13 2014
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

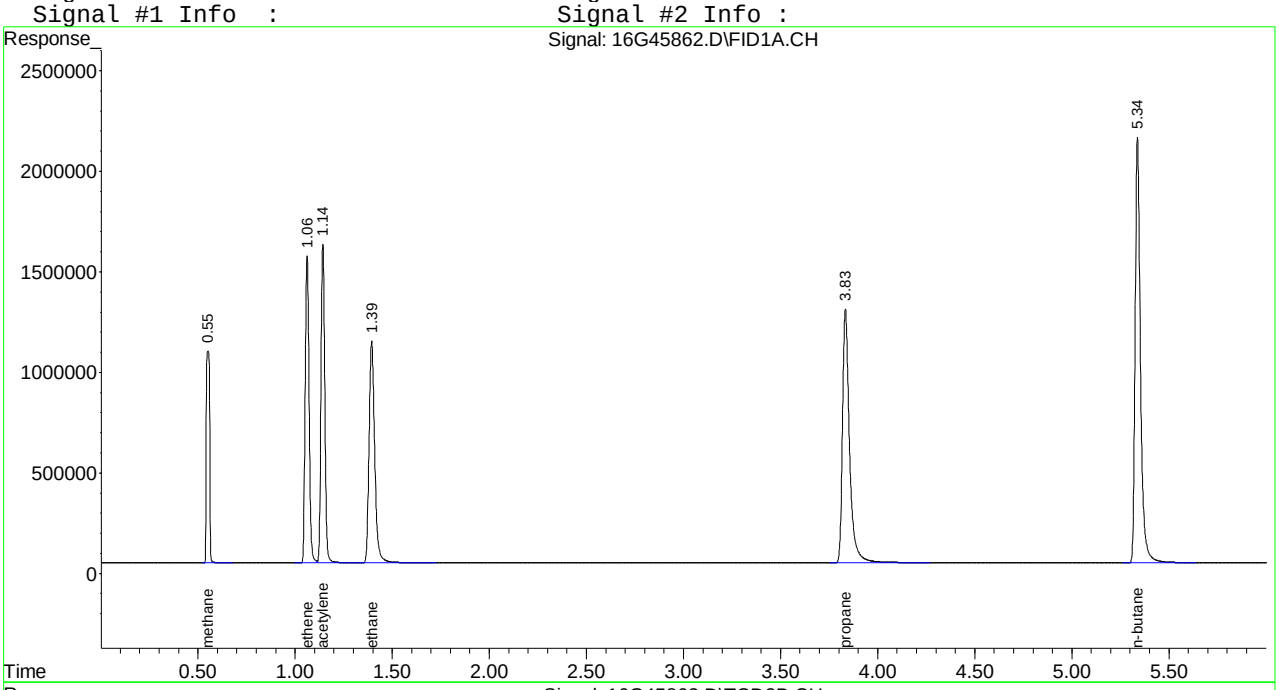

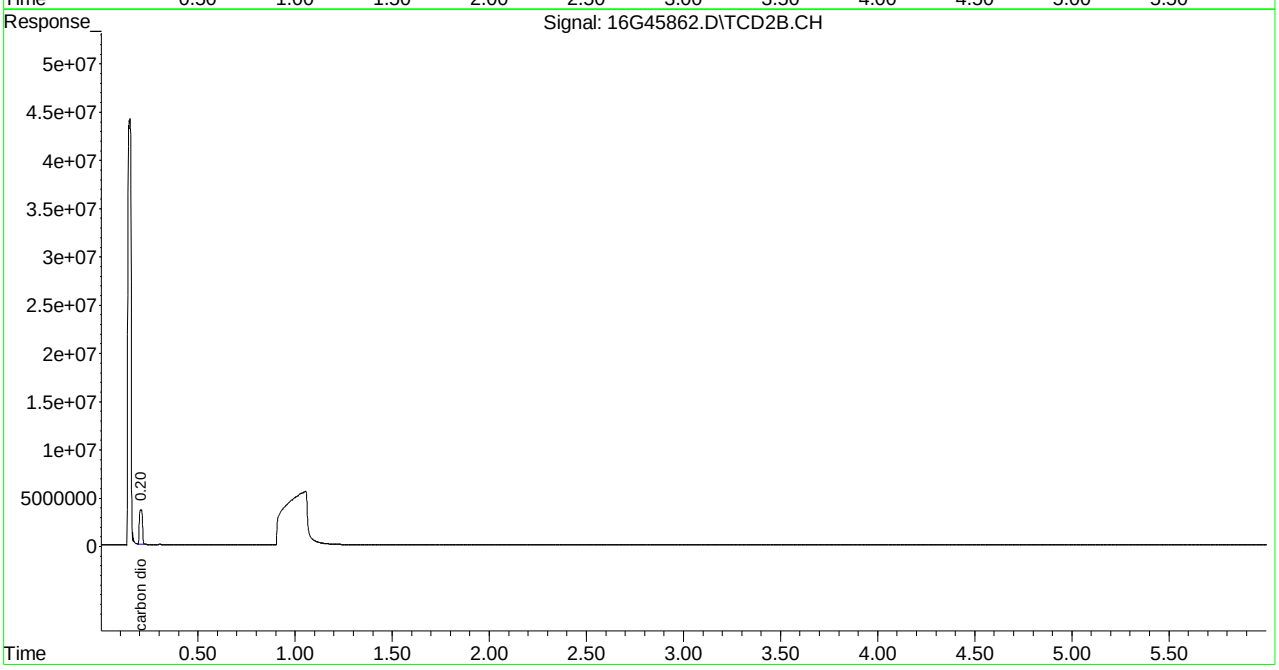

2.2 General Chemistry Data

2.2.1 Method 9056

2.2.1.1 Summary Data

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-12	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-120414	**Prep Method:**	9056	**Prep Date:**	12/05/2014 12:28
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG503655	**Analyst:**	AED	**Run Date:**	12/05/2014 22:59
Collect Date:	12/04/2014 08:20	**Dilution:**	10	**File ID:**	I1_120514-38
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1750	J	2.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	6.00	2.00	1.00
Nitrite	14797-65-0	2.04	J	4.00	2.00	1.00
Sulfate	14808-79-8	302		10.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-12	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-120414	**Prep Method:**	9056	**Prep Date:**	12/05/2014 12:28
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG503655	**Analyst:**	AED	**Run Date:**	12/06/2014 00:27
Collect Date:	12/04/2014 08:20	**Dilution:**	100	**File ID:**	I1_120514-43
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1310		20.0	20.0	10.0
Nitrate	14797-55-8	20.0	U	60.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0
Sulfate	14808-79-8	339		100	100	50.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-12	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	67WW08-120414	**Prep Method:**	9056	**Prep Date:**	12/08/2014 18:10
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG503892	**Analyst:**	ALS	**Run Date:**	12/08/2014 20:09
Collect Date:	12/04/2014 08:20	**Dilution:**	100	**File ID:**	I3_120814-09
Sample Tag:	DL03	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1410	H1	20.0	20.0	10.0
Nitrate	14797-55-8	20.0	U	60.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0
Sulfate	14808-79-8	307		100	100	50.0

H1	Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW11-120414	**Prep Method:**	9056	**Prep Date:**	12/05/2014 23:54
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG503691	**Analyst:**	AED	**Run Date:**	12/06/2014 00:45
Collect Date:	12/04/2014 10:00	**Dilution:**	10	**File ID:**	I1_120514-44
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1800	J	2.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	6.00	2.00	1.00
Nitrite	14797-65-0	1.97	J	4.00	2.00	1.00
Sulfate	14808-79-8	402		10.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	67WW11-120414	**Prep Method:**	9056	**Prep Date:**	12/08/2014 18:10
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG503892	**Analyst:**	ALS	**Run Date:**	12/08/2014 20:30
Collect Date:	12/04/2014 10:00	**Dilution:**	10	**File ID:**	I3_120814-10
Sample Tag:	DL03	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	2000	J	2.00	2.00	1.00
Nitrate	14797-55-8	2.00	U,H1	6.00	2.00	1.00
Nitrite	14797-65-0	2.00	U,H1	4.00	2.00	1.00
Sulfate	14808-79-8	424	H1	10.0	10.0	5.00

H1	Sample analysis performed past holding time.
J	Estimated value ; the analyte concentration was greater than the highest standard
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	67WW11-120414	**Prep Method:**	9056	**Prep Date:**	12/08/2014 18:10
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG503892	**Analyst:**	ALS	**Run Date:**	12/08/2014 20:50
Collect Date:	12/04/2014 10:00	**Dilution:**	100	**File ID:**	I3_120814-11
Sample Tag:	DL04	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1470	H1	20.0	20.0	10.0
Nitrate	14797-55-8	20.0	U	60.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0
Sulfate	14808-79-8	382		100	100	50.0

H1	Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW11-120414	**Prep Method:**	9056	**Prep Date:**	12/05/2014 23:54
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG503691	**Analyst:**	AED	**Run Date:**	12/06/2014 01:03
Collect Date:	12/04/2014 10:00	**Dilution:**	100	**File ID:**	I1_120514-45
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1330		20.0	20.0	10.0
Nitrate	14797-55-8	20.0	U	60.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0
Sulfate	14808-79-8	301		100	100	50.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.2.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(-c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 061114 ICAL IC1.SEQ

Analyst1: JBK Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 50533 Syringe Filter Lot#: 00177388

Eluent ID#: RGT30625

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG479914

Internal STD: NA Surrogate STD: NA Calibration STD STD63859 (06/11/14)

CCV STD: STD63859 LCS STD: STD63859 MS/MSD STD: STD63859

Comments: ICAL only.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_061114-01	ELUENT	1	1		06/11/14 14:05
2	I1_061114-02	DI WATER	1	1		06/11/14 14:22
3	I1_061114-03	WG479914-01 STD \#6	1	1		06/11/14 14:40
4	I1_061114-04	WG479914-02 STD \#5	1	1		06/11/14 14:58
5	I1_061114-05	WG479914-03 STD \#4	1	1		06/11/14 15:15
6	I1_061114-06	WG479914-04 STD \#3	1	1		06/11/14 15:33
7	I1_061114-07	WG479914-05 STD \#2	1	1		06/11/14 15:51
8	I1_061114-08	WG479914-06 STD \#1	1	1		06/11/14 16:08
9	I1_061114-09	WG479914-07 ALT STD	1	1		06/11/14 16:26
10	I1_061114-10	LCR LEVEL 6	1	1		06/11/14 16:44
11	I1_061114-11	LCR LEVEL 2	1	1		06/11/14 17:02
12	I1_061114-12	LCR LEVEL 0	1	1		06/11/14 17:19
13	I1_061114-13	END	1	1		06/11/14 17:37

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 16-JUN-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 100114 IC3.SEQ
Analyst1: Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 51930 Syringe Filter Lot#: 00180133
Eluent ID#:

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG494944 WG494945

Internal STD: NA Surrogate STD: NA Calibration STD STD66516 (10/01/14)

CCV STD: STD66516 LCS STD: STD66517 MS/MSD STD: STD66516

Comments: ICAL and 7 rep MDL verification (waters and soils).
All MDL's need rerun.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I3_100114-01	ELUENT	1	1		10/01/14 11:48
2	I3_100114-02	DI WATER	1	1		10/01/14 12:08
3	I3_100114-03	WG494943-01 STD \#6	1	1		10/01/14 12:28
4	I3_100114-04	WG494943-02 STD \#5	1	1		10/01/14 12:48
5	I3_100114-05	WG494943-03 STD \#4	1	1		10/01/14 13:09
6	I3_100114-06	WG494943-04 STD \#3	1	1		10/01/14 13:29
7	I3_100114-07	WG494943-05 STD \#2	1	1		10/01/14 13:49
8	I3_100114-08	WG494943-06 STD \#1	1	1		10/01/14 14:10
9	I3_100114-09	WG494943-07 ALT STD	1	1		10/01/14 14:30
10	I3_100114-10	L14100001-01 (F,CL,BR,SO4)	1	1		10/01/14 14:50
11	I3_100114-11	L14100001-02	1	1		10/01/14 15:11
12	I3_100114-12	L14100001-03	1	1		10/01/14 15:31
13	I3_100114-13	L14100001-04	1	1		10/01/14 15:52
14	I3_100114-14	L14100001-05	1	1		10/01/14 16:12
15	I3_100114-15	L14100001-06	1	1		10/01/14 16:32
16	I3_100114-16	L14100001-07	1	1		10/01/14 16:53
17	I3_100114-17	WG494946-03 ANION CCV	1	1		10/01/14 17:13
18	I3_100114-18	WG494946-04 ANION CCB	1	1		10/01/14 17:33
19	I3_100114-19	L14100001-01 (NO2,NO3)	1	1		10/01/14 17:54
20	I3_100114-20	L14100001-02	1	1		10/01/14 18:14
21	I3_100114-21	L14100001-03	1	1		10/01/14 18:34
22	I3_100114-22	L14100001-04	1	1		10/01/14 18:55
23	I3_100114-23	L14100001-05	1	1		10/01/14 19:15
24	I3_100114-24	L14100001-06	1	1		10/01/14 19:35
25	I3_100114-25	L14100001-07	1	1		10/01/14 19:56
26	I3_100114-26	WG494944-01 ANION BLANK	1	1		10/01/14 20:16
27	I3_100114-27	L-1/2 CHECK	1	1		10/01/14 20:37
28	I3_100114-28	WG494946-05 ANION CCV	1	1		10/01/14 20:57
29	I3_100114-29	WG494946-06 ANION CCB	1	1		10/01/14 21:17
30	I3_100114-30	L14100003-01 (F,CL,BR,SO4)	7	1		10/01/14 21:38
31	I3_100114-31	L14100003-02	7	1		10/01/14 21:58
32	I3_100114-32	L14100003-03	7	1		10/01/14 22:18
33	I3_100114-33	L14100003-04	7	1		10/01/14 22:39

Page: 1 Approved: 15-OCT-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 100114 IC3.SEQ

Analyst1: Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 51930 Syringe Filter Lot#: 00180133

Eluent ID#:

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG494944 WG494945

Internal STD: NA Surrogate STD: NA STD66516 (10/01/14)

CCV STD: STD66516 LCS STD: STD66517 STD66516

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I3_100114-34	L14100003-05	7	1		10/01/14 22:59
35	I3_100114-35	L14100003-06	7	1		10/01/14 23:19
36	I3_100114-36	L14100003-07	7	1		10/01/14 23:40
37	I3_100114-37	WG494946-07 ANION CCV	1	1		10/02/14 00:00
38	I3_100114-38	WG494946-08 ANION CCB	1	1		10/02/14 00:20
39	I3_100114-39	L14100003-01 (NO2,NO3)	7	1		10/02/14 00:41
40	I3_100114-40	L14100003-02	7	1		10/02/14 01:01
41	I3_100114-41	L14100003-03	7	1		10/02/14 01:22
42	I3_100114-42	L14100003-04	7	1		10/02/14 01:42
43	I3_100114-43	L14100003-05	7	1		10/02/14 02:02
44	I3_100114-44	L14100003-06	7	1		10/02/14 02:23
45	I3_100114-45	L14100003-07	7	1		10/02/14 02:43
46	I3_100114-46	WG494945-01 SOIL BLANK	7	1		10/02/14 03:03
47	I3_100114-47	WG494946-09 ANION CCV	1	1		10/02/14 03:24
48	I3_100114-48	WG494946-10 ANION CCB	1	1		10/02/14 03:44
49	I3_100114-49	END	1	1		10/02/14 04:04

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 15-OCT-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 120514 IC1.SEQ
Analyst1: AED Analyst2: ALS
Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 52509 Syringe Filter Lot#: 00186206
Eluent ID#: RGT32236

Workgroups: Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
WG503655 WG503691

Internal STD: NA Surrogate STD: NA Calibration STD STD63859 (06/11/14)
CCV STD: STD66516 LCS STD: STD66517 MS/MSD STD: STD66516

Comments: L14120073 (-01,-02) were diluted due to CL and SO4 being over the ICAL limit.
L14120292 (-12,-13) were diluted due to CL being over the ICAL limit.

WG503691 is currently not being reported due to 12 injections between the CCV/CCB except for samples L14120292-12,13 results were requested by the client
Fractions L14120283 (all) and L14120284 (all) were rerun due to MS/MSD's not being spiked

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_120514-01	ELUENT	1	1		12/05/14 11:50
2	I1_120514-02	DI WATER	1	1		12/05/14 12:08
3	I1_120514-03	WG503653-01 ANION CCV	1	1		12/05/14 12:26
4	I1_120514-04	WG503653-02 ANION CCB	1	1		12/05/14 12:43
5	I1_120514-05	WG503655-01 ANION BLANK	1	1		12/05/14 13:01
6	I1_120514-06	WG503655-02 ANION LCS	1	1		12/05/14 13:19
7	I1_120514-07	L14120198-01 (CL,BR,SO4)	1	1		12/05/14 13:36
8	I1_120514-08	L14120198-01 1/2 (CL,BR,SO4)	1	2		12/05/14 13:54
65	I1_120514-09	L14120219-01 (SO4) REF	2	1		12/05/14 14:12
10	I1_120514-10	WG503655-04 DUP 0219-01	2	1		12/05/14 14:30
11	I1_120514-11	WG503655-05 MS	2	1		12/05/14 14:47
12	I1_120514-12	WG503655-06 MSD	2	1		12/05/14 15:05
66	I1_120514-13	L14120220-01 (SO4) REF	2	1		12/05/14 15:23
14	I1_120514-14	WG503655-08 DUP 0220-01	2	1		12/05/14 15:49
15	I1_120514-15	WG503653-03 ANION CCV	1	1		12/05/14 16:07
16	I1_120514-16	WG503653-04 ANION CCB	1	1		12/05/14 16:29
17	I1_120514-17	WG503655-09 MS	2	1		12/05/14 16:47
18	I1_120514-18	WG503655-10 MSD	2	1		12/05/14 17:05
19	I1_120514-19	L14120135-01 1/10 (SO4)	2	10		12/05/14 17:22
20	I1_120514-20	L14120135-02 1/10 (SO4)	2	10		12/05/14 17:40
21	I1_120514-21	L14120011-01 1/3 (SO4)	2	3		12/05/14 17:58
22	I1_120514-22	L14120016-01 1/5 (SO4)	2	5		12/05/14 18:15
23	I1_120514-23	L14120123-01 1/2 (SO4)	2	2		12/05/14 18:33
24	I1_120514-24	L14120014-01 1/20 (SO4)	2	20		12/05/14 18:51
25	I1_120514-25	L14120073-01 1/5 (CL,SO4)	1	5		12/05/14 19:08
26	I1_120514-26	L14120073-01 1/50 (CL,SO4)	1	50		12/05/14 19:26
27	I1_120514-27	WG503653-05 ANION CCV	1	1		12/05/14 19:44
28	I1_120514-28	WG503653-06 ANION CCB	1	1		12/05/14 20:02
29	I1_120514-29	L14120073-02 1/5 (CL,SO4)	1	5		12/05/14 20:19
30	I1_120514-30	L14120073-02 1/50 (CL,SO4)	1	50		12/05/14 20:37
67	I1_120514-31	L14120284-01 (NO3) RS	1	1		12/05/14 20:55

Page: 1 Approved: 09-DEC-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 120514 IC1.SEQ
Analyst1: AED Analyst2: ALS
Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 52509 Syringe Filter Lot#: 00186206
Eluent ID#: RGT32236
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG503655 WG503691
Internal STD: NA Surrogate STD: NA STD63859 (06/11/14)
CCV STD: STD66516 LCS STD: STD66517 STD66516

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
59	I1_120514-32	L14120284-02 (NO3) MS NR	1	1		12/05/14 21:12
60	I1_120514-33	L14120284-03 (NO3) MSD NR	1	1		12/05/14 21:30
68	I1_120514-34	L14120283-01 (NO3) RS	1	1		12/05/14 21:48
62	I1_120514-35	L14120283-02 (NO3) MS NR	1	1		12/05/14 22:06
63	I1_120514-36	L14120283-03 (NO3) MSD NR	1	1		12/05/14 22:23
37	I1_120514-37	L14120282-01 (NO3)	1	1		12/05/14 22:41
38	I1_120514-38	L14120292-12 1/10 (NO3,NO2,CL,SO4)	1	10		12/05/14 22:59
39	I1_120514-39	WG503653-07 ANION CCV	1	1		12/05/14 23:16
40	I1_120514-40	WG503653-08 ANION CCB	1	1		12/05/14 23:34
41	I1_120514-41	WG503691-01 ANION BLANK NR	1	1		12/05/14 23:52
42	I1_120514-42	WG503691-02 ANION LCS NR	1	1		12/06/14 00:09
43	I1_120514-43	L14120292-12 1/100 (NO3,NO2,CL,SO4) NR	1	100		12/06/14 00:27
44	I1_120514-44	L14120292-13 1/10 (NO3,NO2,CL,SO4) NR	1	10		12/06/14 00:45
45	I1_120514-45	L14120292-13 1/100 (NO3,NO2,CL,SO4) NR	1	100		12/06/14 01:03
64	I1_120514-46	WG503691-03 (SO4) RS	2	1		12/06/14 01:20
47	I1_120514-47	WG503691-04 DUP 0272-02 NR	2	1		12/06/14 01:38
48	I1_120514-48	WG503691-05 MS NR	2	1		12/06/14 01:56
49	I1_120514-49	WG503691-06 MSD NR	2	1		12/06/14 02:13
50	I1_120514-50	L14120272-03 1/2 (SO4) NR	2	2		12/06/14 02:31
51	I1_120514-51	L14120272-04 (SO4) NR	2	1		12/06/14 02:49
52	I1_120514-52	L14120272-05 1/50 (SO4) NR	2	50		12/06/14 03:07
53	I1_120514-53	WG503653-09 ANION CCV	1	1		12/06/14 03:24
54	I1_120514-54	WG503653-10 ANION CCB	1	1		12/06/14 03:42
55	I1_120514-55	END	1	1		12/06/14 04:00

Comments

Seq.	Rerun	Dil.	Reason	Analytes
8				
	L14120198-01 1/2 (CL,BR,SO4) was not reported due to an unnecessary dilution.			
67	X			
	L14120284-01 (NO3) RS NR : Analyzed within 48 hour analytical hold time. MS/MSD associated with this Ref were not spiked = Results not being reported. Reanalyzed on 12/08/2014.			
59	X			
	L14120284-02 (NO3) MS NR : Analyzed within 48 hour analytical hold time, however, this MS was not spiked = Results not being reported. Reanalyzed on 12/08/2014.			
60	X			
	L14120284-03 (NO3) MSD NR : Analyzed within 48 hour analytical hold time, however, this MSD was not spiked = Results not being			

Page: 2 Approved: 09-DEC-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 120514 IC1.SEQ

Analyst1: AED Analyst2: ALS

Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 52509 Syringe Filter Lot#: 00186206

Eluent ID#: RGT32236

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG503655 WG503691

Internal STD: NA Surrogate STD: NA STD63859 (06/11/14)

CCV STD: STD66516 LCS STD: STD66517 STD66516

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	reported. Reanalyzed on 12/08/2014.			
68	X			
	L14120283-01 (NO3) RS NR : Analyzed within 48 hour analytical hold time. MS/MSD associated with this Ref were not spiked = Results not being reported. Reanalyzed on 12/08/2014.			
62	X			
	L14120283-02 (NO3) MS NR : Analyzed within 48 hour analytical hold time, however, this MS was not spiked = Results not being reported. Reanalyzed on 12/08/2014.			
63	X			
	L14120283-03 (NO3) MSD NR : Analyzed within 48 hour analytical hold time, however, this MSD was not spiked = Results not being reported. Reanalyzed on 12/08/2014.			
64	X			
	L14120272-02 needs to be rerun due to SO4 being over the ICAL limit.			
51	X	2	Over Calibration Range	

Page: 3 Approved: 09-DEC-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 120814 IC3.SEQ
Analyst1: AED Analyst2: ALS
Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 52525 Syringe Filter Lot#: 00186206
Eluent ID#: RGT32212
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG503892
Internal STD: NA Surrogate STD: NA Calibration STD STD66516
CCV STD: STD66516 LCS STD: STD66517 MS/MSD STD: STD66516

Comments: Fractions L14120292 (12,13) were analyzed at dilutions due to individual analyte concentrations being greater than 200ppm. These samples are reruns that were analyzed out of hold. Originial run was 08/05/14 IC1 and client has requested both results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I3_120814-01	ELUENT	1	1		12/08/14 17:27
2	I3_120814-02	DI WATER	1	1		12/08/14 17:47
3	I3_120814-03	WG503893-01 ANION CCV	1	1		12/08/14 18:07
4	I3_120814-04	WG503893-02 ANION CCB	1	1		12/08/14 18:27
5	I3_120814-05	WG503892-01 ANION BLANK	1	1		12/08/14 18:48
6	I3_120814-06	WG503892-02 ANION LCS	1	1		12/08/14 19:08
7	I3_120814-07	L14120272-02 (SO4) NR	2	1		12/08/14 19:29
8	I3_120814-08	L14120272-04 1/2 (SO4)	2	2		12/08/14 19:49
9	I3_120814-09	L14120292-12 1/100 (CL,NO2,NO3,SO4)	1	100		12/08/14 20:09
10	I3_120814-10	L14120292-13 1/10 (CL,NO2,NO3,SO4)	1	10		12/08/14 20:30
11	I3_120814-11	L14120292-13 1/100 (CL,NO2,NO3,SO4)	1	100		12/08/14 20:50
12	I3_120814-12	L14120272-03 1/2 (SO4)	2	2		12/08/14 21:10
13	I3_120814-13	L14120272-05 1/50 (SO4)	2	50		12/08/14 21:31
14	I3_120814-14	L14120272-06 1/20 (SO4)	2	20		12/08/14 21:51
15	I3_120814-15	WG503893-03 ANION CCV	1	1		12/08/14 22:11
16	I3_120814-16	WG503893-04 ANION CCB	1	1		12/08/14 22:32
17	I3_120814-17	L14120272-07 1/20 (SO4)	2	20		12/08/14 22:52
18	I3_120814-18	L14120272-08 1/20 (SO4)	2	20		12/08/14 23:12
19	I3_120814-19	L14120272-09 (SO4)	2	1		12/08/14 23:33
20	I3_120814-20	L14120272-10 (SO4)	2	1		12/08/14 23:53
21	I3_120814-21	L14120272-11 1/20 (SO4)	2	20		12/09/14 00:14
22	I3_120814-22	L14120272-12 (SO4)	2	1		12/09/14 00:34
23	I3_120814-23	L14120377-02 (SO4) RS	1	1		12/09/14 00:54
24	I3_120814-24	WG503892-04 DUP 0377-02	1	1		12/09/14 01:15
25	I3_120814-25	L14120377-03 (SO4) MS	1	1		12/09/14 01:35
26	I3_120814-26	L14120377-04 (SO4) MSD	1	1		12/09/14 01:55
27	I3_120814-27	WG503893-05 ANION CCV	1	1		12/09/14 02:16
28	I3_120814-28	WG503893-06 ANION CCB	1	1		12/09/14 02:36
29	I3_120814-29	L14120377-05 (SO4)	1	1		12/09/14 02:56
30	I3_120814-30	L14120377-09 (SO4)	1	1		12/09/14 03:17
31	I3_120814-31	L14120274-01 1/5 (CL) NR	2	5		12/09/14 03:37
32	I3_120814-32	WG503893-07 ANION CCV	1	1		12/09/14 03:58

Page: 1 Approved: 10-DEC-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 120814 IC3.SEQ

Analyst1: AED Analyst2: ALS

Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 52525 Syringe Filter Lot#: 00186206

Eluent ID#: RGT32212

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG503892

Internal STD: NA Surrogate STD: NA STD66516

CCV STD: STD66516 LCS STD: STD66517 STD66516

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
33	I3_120814-33	WG503893-08 ANION CCB	1	1		12/09/14 04:18
34	I3_120814-41	END	1	1		12/09/14 04:38

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7	X	2	Over Calibration Range	SO4
	L14120272-02 (SO4) NR			
31	X	10	Over Calibration Range	CL
	L14120274-01 1/5 (CL) NR			

Page: 2 Approved: 10-DEC-14

Microbac Laboratories Inc.

Data Checklist

Date: 11-JUN-2014
Analyst: JBK
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 61523
Analytical Workgroups: ICAL ONLY

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	JBK
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MDC

Primary Reviewer:
12-JUN-2014

Secondary Reviewer:
16-JUN-2014

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-16-2014 14:37:55

Microbac Laboratories Inc.

Data Checklist

Date: 01-OCT-2014
Analyst: JBK
Analyst: ALS
Method: 300/9056
Instrument: IC3
Curve Workgroup: NA
Runlog ID: 63927
Analytical Workgroups: ICAL, 10-001 MDL, 10-003 MDL

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	WG494943
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	
Primary Reviewer	JBK
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
08-OCT-2014

Secondary Reviewer:
15-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-15-2014 16:18:07

Microbac Laboratories Inc.

Data Checklist

Date: 05-DEC-2014
Analyst: AED
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 65107
Analytical Workgroups: 12-0292

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	X
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ADC

Primary Reviewer:
09-DEC-2014

Secondary Reviewer:
10-DEC-2014

CHECKLIST1 - Modified 03/05/2008
Generated: DEC-10-2014 18:11:21

Microbac Laboratories Inc.

Data Checklist

Date: 08-DEC-2014
Analyst: AED
Analyst: ALS
Method: 300/9056
Instrument: IC3
Curve Workgroup: NA
Runlog ID: 65145
Analytical Workgroups: 12-0272,0292,0377

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	ALS
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ADC

Primary Reviewer: 09-DEC-2014

Secondary Reviewer: 10-DEC-2014

CHECKLIST1 - Modified 03/05/2008

Generated: DEC-11-2014 08:20:45

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG503655

Login Number: L14120292

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-120414	12	12/04/14					12/05/2014	1.2	2		12/05/14	1.6	2	
67WW08-120414	12	12/04/14					12/05/2014	1.2	2		12/06/14	1.7	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3906638
Report generated 12/11/2014 08:23

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG503691

Login Number: L14120292

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW11-120414	13	12/04/14					12/05/2014	1.6	2		12/06/14	1.6	2	
67WW11-120414	13	12/04/14					12/05/2014	1.6	2		12/06/14	1.6	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3906638
Report generated 12/11/2014 08:23

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG503892

Login Number: L14120292

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-120414	12	12/04/14					12/08/2014	4.4	2	*	12/08/14	4.5	2	*
67WW11-120414	13	12/04/14					12/08/2014	4.3	2	*	12/08/14	4.5	2	*
67WW11-120414	13	12/04/14					12/08/2014	4.3	2	*	12/08/14	4.4	2	*

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3906638
Report generated 12/11/2014 08:23

METHOD BLANK SUMMARY

Login Number: L14120292
Blank File ID: I1_120514-05
Prep Date: 12/05/14 12:28
Analyzed Date: 12/05/14 13:01
Analyst: AED

Work Group: WG503655
Blank Sample ID: WG503655-01
Instrument ID: IC1
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG503655-02	I1_120514-06	12/05/14 13:19	01
DUP	WG503655-04	I1_120514-10	12/05/14 14:30	01
DUP	WG503655-08	I1_120514-14	12/05/14 15:49	01
67WW08-120414	L14120292-12	I1_120514-38	12/05/14 22:59	DL01
67WW08-120414	L14120292-12	I1_120514-43	12/06/14 00:27	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 3906639
Report generated 12/11/2014 08:23

METHOD BLANK SUMMARY

Login Number: L14120292
Blank File ID: I1_120514-41
Prep Date: 12/05/14 23:54
Analyzed Date: 12/05/14 23:52
Analyst: AED

Work Group: WG503691
Blank Sample ID: WG503691-01
Instrument ID: IC1
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG503691-02	I1_120514-42	12/06/14 00:09	01
67WW11-120414	L14120292-13	I1_120514-44	12/06/14 00:45	DL01
67WW11-120414	L14120292-13	I1_120514-45	12/06/14 01:03	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 3906639
Report generated 12/11/2014 08:23

METHOD BLANK SUMMARY

Login Number: L14120292
Blank File ID: I3_120814-05
Prep Date: 12/08/14 18:10
Analyzed Date: 12/08/14 18:48
Analyst: ALS

Work Group: WG503892
Blank Sample ID: WG503892-01
Instrument ID: IC3
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG503892-02	I3_120814-06	12/08/14 19:08	01
67WW08-120414	L14120292-12	I3_120814-09	12/08/14 20:09	DL03
67WW11-120414	L14120292-13	I3_120814-10	12/08/14 20:30	DL03
67WW11-120414	L14120292-13	I3_120814-11	12/08/14 20:50	DL04
DUP	WG503892-04	I3_120814-24	12/09/14 01:15	01

Report Name: BLANK_SUMMARY
PDF File ID: 3906639
Report generated 12/11/2014 08:23

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14120292 Prep Date: 12/05/14 12:28 Sample ID: WG503655-01
Instrument ID: IC1 Run Date: 12/05/14 13:01 Prep Method: 9056
File ID: I1 120514-05 Analyst: AED Method: 9056
Workgroup (AAB#): WG503655 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1-11-JUN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.200	0.100	1	U
Nitrate	0.100	0.600	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	1.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3906640
11-DEC-2014 08:23

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14120292 Prep Date: 12/05/14 23:54 Sample ID: WG503691-01
Instrument ID: IC1 Run Date: 12/05/14 23:52 Prep Method: 9056
File ID: I1 120514-41 Analyst: AED Method: 9056
Workgroup (AAB#): WG503691 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1-11-JUN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.200	0.100	1	U
Nitrate	0.100	0.600	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	1.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3906640
11-DEC-2014 08:23

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14120292 Prep Date: 12/08/14 18:10 Sample ID: WG503892-01
Instrument ID: IC3 Run Date: 12/08/14 18:48 Prep Method: 9056
File ID: I3 120814-05 Analyst: ALS Method: 9056
Workgroup (AAB#): WG503892 Matrix: Water Units: mg/L
Contract #: Cal ID: IC3 - 01-OCT-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.200	0.100	1	U
Nitrate	0.100	0.600	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	1.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3906640
11-DEC-2014 08:23

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14120292 Run Date: 12/05/2014 Sample ID: WG503655-02
Instrument ID: IC1 Run Time: 13:19 Prep Method: 9056
File ID: I1 120514-06 Analyst: AED Method: 9056
Workgroup (AAB#): WG503655 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD66516 Cal ID: IC1 - 11-JUN-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	7.42	92.7	90 - 110	
Nitrate	5.42	5.06	93.4	90 - 110	
Nitrite	4.87	4.98	102	90 - 110	
Sulfate	40.0	37.8	94.5	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 3906641
Report generated: 12/11/2014 08:23

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14120292 Run Date: 12/06/2014 Sample ID: WG503691-02
Instrument ID: IC1 Run Time: 00:09 Prep Method: 9056
File ID: I1 120514-42 Analyst: AED Method: 9056
Workgroup (AAB#): WG503691 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD66516 Cal ID: IC1 - 11-JUN-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	7.47	93.3	90 - 110	
Nitrate	5.42	5.03	92.9	90 - 110	
Nitrite	4.87	5.08	104	90 - 110	
Sulfate	40.0	38.1	95.1	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 3906641
Report generated: 12/11/2014 08:23

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14120292 Run Date: 12/08/2014 Sample ID: WG503892-02
Instrument ID: IC3 Run Time: 19:08 Prep Method: 9056
File ID: I3 120814-06 Analyst: ALS Method: 9056
Workgroup (AAB#): WG503892 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD66516 Cal ID: IC3 - 01-OCT-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	8.18	102	90 - 110	
Nitrate	5.42	5.55	103	90 - 110	
Nitrite	4.87	4.72	96.9	90 - 110	
Sulfate	40.0	40.1	100	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 3906641
Report generated: 12/11/2014 08:23

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L14120292
Analytical Method: 9056
ICAL Workgroup: WG479914

Instrument ID: IC1
Initial Calibration Date: 11-JUN-14 16:08
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.497	5.65	0.99800	
Nitrate		2.292	8.25	0.99800	
Nitrite		3.198	12.0	1.00000	
Sulfate		7.818	13.6	0.99700	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 3906642
Report generated 12/11/2014 08:23

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L14120292
Analytical Method: 9056
ICAL Workgroup: WG494943

Instrument ID: IC3
Initial Calibration Date: 01-OCT-14 14:10
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.731	9.16	0.99700	
Nitrate		2.313	8.88	0.99800	
Nitrite		3.164	6.19	0.99900	
Sulfate		7.485	6.67	0.99700	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 3906642
Report generated 12/11/2014 08:23

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L14120292
Analytical Method: 9056

Instrument ID: IC1
Initial Calibration Date: 11-JUN-14 16:08
Column ID: F

Analyte	WG479914-01			WG479914-02			WG479914-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.78500000	5.016	12.0	2.17700000	5.512	8.00	1.38500000	5.776
Nitrate	16.3	8.19500000	1.985	8.13	3.69800000	2.199	5.42	2.34000000	2.317
Nitrite	14.6	5.11100000	2.859	7.31	2.50900000	2.912	4.87	1.62300000	3.001
Sulfate	120	18.7160000	6.412	60.0	8.44000000	7.109	40.0	5.30500000	7.540

INT_CAL - Modified 03/06/2008
PDF File ID: 3906642
Report generated 12/11/2014 08:23

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L14120292
Analytical Method: 9056

Instrument ID: IC1
Initial Calibration Date: 11-JUN-14 16:08
Column ID: F

Analyte	WG479914-04			WG479914-05			WG479914-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.682000000	5.865	1.00	0.185000000	5.405	0.200	0.0370000000	5.405
Nitrate	2.71	1.14100000	2.376	0.678	0.282000000	2.402	0.134	0.0540000000	2.473
Nitrite	2.44	0.795000000	3.064	0.609	0.185000000	3.291	0.122	0.0300000000	4.060
Sulfate	20.0	2.53500000	7.890	5.00	0.593000000	8.432	1.00	0.105000000	9.524

INT_CAL - Modified 03/06/2008
PDF File ID: 3906642
Report generated 12/11/2014 08:23

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L14120292

Analytical Method: 9056

Instrument ID: IC3

Initial Calibration Date: 01-OCT-14 14:10

Column ID: F

Analyte	WG494943-01			WG494943-02			WG494943-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.39330000	5.463	12.0	2.05670000	5.835	8.00	1.32150000	6.054
Nitrate	16.3	7.34240000	2.215	8.13	3.44850000	2.358	5.42	2.20020000	2.464
Nitrite	14.6	4.94760000	2.954	7.31	2.42710000	3.011	4.87	1.54570000	3.152
Sulfate	120	17.9456000	6.687	60.0	8.31390000	7.217	40.0	5.27040000	7.590

INT_CAL - Modified 03/06/2008
PDF File ID: 3906642
Report generated 12/11/2014 08:23

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L14120292

Analytical Method: 9056

Instrument ID: IC3

Initial Calibration Date: 01-OCT-14 14:10

Column ID: F

Analyte	WG494943-04			WG494943-05			WG494943-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.665000000	6.015	1.00	0.162900000	6.139	0.200	0.0410000000	4.878
Nitrate	2.71	1.11940000	2.422	0.678	0.277200000	2.444	0.134	0.0676000000	1.976
Nitrite	2.44	0.784800000	3.103	0.609	0.188200000	3.235	0.122	0.0345000000	3.530
Sulfate	20.0	2.64930000	7.549	5.00	0.637800000	7.839	1.00	0.124600000	8.026

INT_CAL - Modified 03/06/2008
PDF File ID: 3906642
Report generated 12/11/2014 08:23

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14120292 Run Date: 06/11/2014 Sample ID: WG479914-07
Instrument ID: IC1 Run Time: 16:26 Method: 9056
File ID: I1 061114-09 Analyst: JBK QC Key: DOD4
ICal Workgroup: WG479914 Cal ID: IC1 - 11-JUN-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.48	mg/L	5.71	6.50	10	
Nitrate		5.42	5.09	mg/L	2.27	6.20	10	
Nitrite		4.87	4.78	mg/L	2.98	1.90	10	
Sulfate		40.0	37.4	mg/L	7.43	6.60	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3906643
Report generated 12/11/2014 08:23

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14120292 Run Date: 10/01/2014 Sample ID: WG494943-07
Instrument ID: IC3 Run Time: 14:30 Method: 9056
File ID: I3 100114-09 Analyst: ALS QC Key: DOD4
ICal Workgroup: WG494943 Cal ID: IC3 - 01-OCT-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.92	mg/L	6.00	1.10	10	
Nitrate		5.42	5.34	mg/L	2.42	1.50	10	
Nitrite		4.87	4.79	mg/L	3.13	1.80	10	
Sulfate		40.0	39.2	mg/L	7.49	1.90	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3906643
Report generated 12/11/2014 08:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14120292
Run Date: 12/05/2014
Sample ID: WG503653-02
Instrument ID: IC1
Run Time: 12:43
Method: 9056
File ID: I1 120514-04
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG503655
Cal ID: IC1 - 11-JUN-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Nitrate	0.100	0.600	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3906645
Report generated 12/11/2014 08:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14120292
Run Date: 12/05/2014
Sample ID: WG503653-04
Instrument ID: IC1
Run Time: 16:29
Method: 9056
File ID: I1 120514-16
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG503655
Cal ID: IC1 - 11-JUN-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Nitrate	0.100	0.600	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3906645
Report generated 12/11/2014 08:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14120292
Run Date: 12/05/2014
Sample ID: WG503653-06
Instrument ID: IC1
Run Time: 20:02
Method: 9056
File ID: I1 120514-28
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG503655
Cal ID: IC1 - 11-JUN-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Nitrate	0.100	0.600	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3906645
Report generated 12/11/2014 08:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14120292
Run Date: 12/05/2014
Sample ID: WG503653-08
Instrument ID: IC1
Run Time: 23:34
Method: 9056
File ID: I1 120514-40
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG503655
Cal ID: IC1 - 11-JUN-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Nitrate	0.100	0.600	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3906645
Report generated 12/11/2014 08:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14120292
Run Date: 12/06/2014
Sample ID: WG503653-10
Instrument ID: IC1
Run Time: 03:42
Method: 9056
File ID: I1 120514-54
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG503655
Cal ID: IC1 - 11-JUN-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Nitrate	0.100	0.600	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3906645
Report generated 12/11/2014 08:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14120292
Run Date: 12/08/2014
Sample ID: WG503893-02
Instrument ID: IC3
Run Time: 18:27
Method: 9056
File ID: I3 120814-04
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG503892
Cal ID: IC3 - 01-OCT-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Nitrate	0.100	0.600	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3906645
Report generated 12/11/2014 08:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14120292
Run Date: 12/08/2014
Sample ID: WG503893-04
Instrument ID: IC3
Run Time: 22:32
Method: 9056
File ID: I3 120814-16
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG503892
Cal ID: IC3 - 01-OCT-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Nitrate	0.100	0.600	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3906645
Report generated 12/11/2014 08:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14120292 Run Date: 12/05/2014 Sample ID: WG503653-01
Instrument ID: IC1 Run Time: 12:26 Method: 9056
File ID: I1 120514-03 Analyst: AED QC Key: DOD4
Workgroup (AAB#): WG503655 Cal ID: IC1 - 11-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.53	mg/L	5.68	5.94	10	
Nitrate		5.42	5.15	mg/L	2.24	4.95	10	
Nitrite		4.87	5.01	mg/L	2.85	2.76	10	
Sulfate		40.0	38.4	mg/L	7.23	4.04	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3906644
Report generated 12/11/2014 08:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14120292
Run Date: 12/05/2014
Sample ID: WG503653-03
Instrument ID: IC1
Run Time: 16:07
Method: 9056
File ID: I1 120514-15
Analyst: AED
QC Key: DOD4
Workgroup (AAB#): WG503655
Cal ID: IC1 - 11-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.60	mg/L	5.62	5.00	10	
Nitrate		5.42	5.21	mg/L	2.22	3.87	10	
Nitrite		4.87	5.12	mg/L	2.78	5.08	10	
Sulfate		40.0	38.7	mg/L	7.16	3.14	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3906644
Report generated 12/11/2014 08:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14120292 Run Date: 12/05/2014 Sample ID: WG503653-05
Instrument ID: IC1 Run Time: 19:44 Method: 9056
File ID: I1 120514-27 Analyst: AED QC Key: DOD4
Workgroup (AAB#): WG503655 Cal ID: IC1 - 11-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.63	mg/L	5.60	4.61	10	
Nitrate		5.42	5.24	mg/L	2.21	3.31	10	
Nitrite		4.87	5.11	mg/L	2.79	4.80	10	
Sulfate		40.0	38.8	mg/L	7.14	2.95	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3906644
Report generated 12/11/2014 08:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14120292 Run Date: 12/05/2014 Sample ID: WG503653-07
Instrument ID: IC1 Run Time: 23:16 Method: 9056
File ID: I1 120514-39 Analyst: AED QC Key: DOD4
Workgroup (AAB#): WG503655 Cal ID: IC1 - 11-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.57	mg/L	5.65	5.41	10	
Nitrate		5.42	5.22	mg/L	2.22	3.76	10	
Nitrite		4.87	5.12	mg/L	2.78	5.12	10	
Sulfate		40.0	38.7	mg/L	7.17	3.33	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3906644
Report generated 12/11/2014 08:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14120292
Run Date: 12/06/2014
Sample ID: WG503653-09
Instrument ID: IC1
Run Time: 03:24
Method: 9056
File ID: I1 120514-53
Analyst: AED
QC Key: DOD4
Workgroup (AAB#): WG503655
Cal ID: IC1 - 11-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.59	mg/L	5.63	5.15	10	
Nitrate		5.42	5.21	mg/L	2.22	3.96	10	
Nitrite		4.87	5.18	mg/L	2.75	6.27	10	
Sulfate		40.0	38.9	mg/L	7.14	2.86	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3906644
Report generated 12/11/2014 08:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14120292
Run Date: 12/08/2014
Sample ID: WG503893-01
Instrument ID: IC3
Run Time: 18:07
Method: 9056
File ID: I3 120814-03
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG503892
Cal ID: IC3 - 01-OCT-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.37	mg/L	5.67	4.68	10	
Nitrate		5.42	5.69	mg/L	2.28	4.99	10	
Nitrite		4.87	4.72	mg/L	3.18	3.21	10	
Sulfate		40.0	41.2	mg/L	7.14	2.95	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3906644
Report generated 12/11/2014 08:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14120292
Run Date: 12/08/2014
Sample ID: WG503893-03
Instrument ID: IC3
Run Time: 22:11
Method: 9056
File ID: I3 120814-15
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG503892
Cal ID: IC3 - 01-OCT-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.47	mg/L	5.61	5.88	10	
Nitrate		5.42	5.74	mg/L	2.26	5.82	10	
Nitrite		4.87	4.88	mg/L	3.07	0.156	10	
Sulfate		40.0	41.4	mg/L	7.11	3.38	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3906644
Report generated 12/11/2014 08:24

2.2.1.3 Sample Data

38 L14120292-12 1/10 (NO3,NO2,CL,SO4)

1,10 AED

Sample Name:	**L14120292-12 1/10 (NO3,NO2,CL,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/5/2014 22:59**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

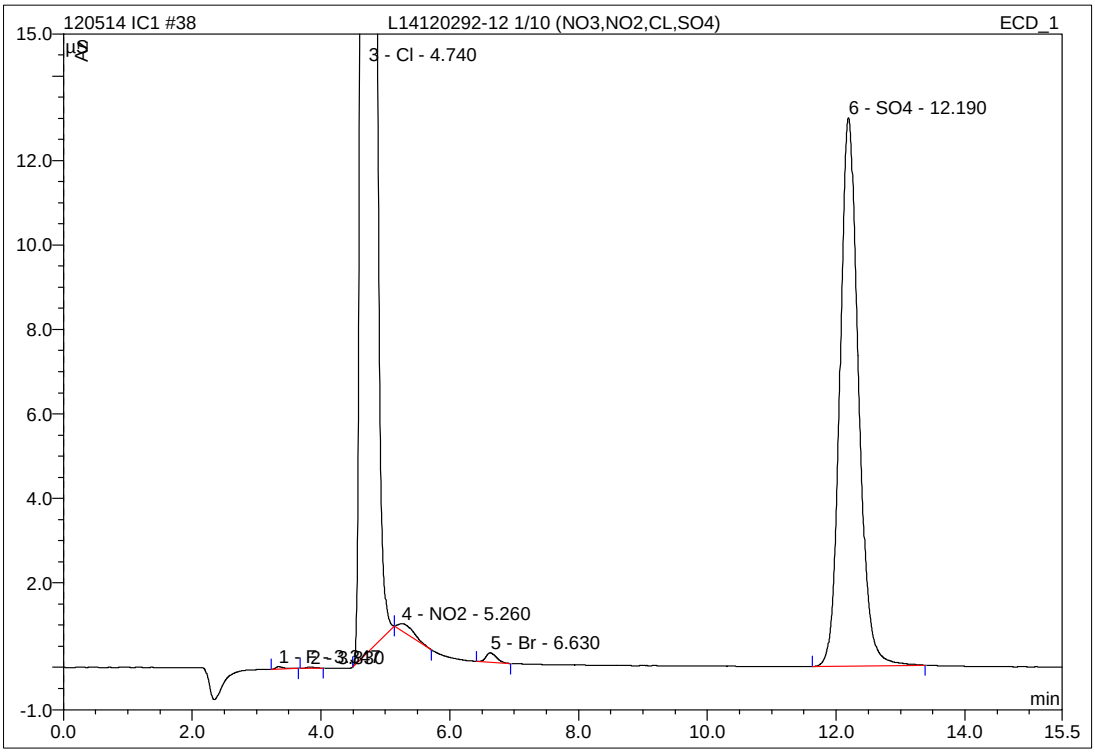

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	0.056	0.008	0.02	0.106	BMB
2	3.83	n.a.	0.032	0.005	0.01	n.a.	BMB
3	4.74	Cl	238.245	32.943	88.10	175.290	BMb
4	5.26	NO2	0.172	0.055	0.15	0.204	bMB
5	6.63	Br	0.225	0.043	0.11	0.606	BMB
6	12.19	SO4	12.986	4.341	11.61	30.206	BMB
Total:			251.715	37.394	100.00	206.412	

43 L14120292-12 1/100 (NO3,NO2,CL,SO4)

1,100 AED

Sample Name:	**L14120292-12 1/100 (NO3,NO2,CL,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/6/2014 0:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

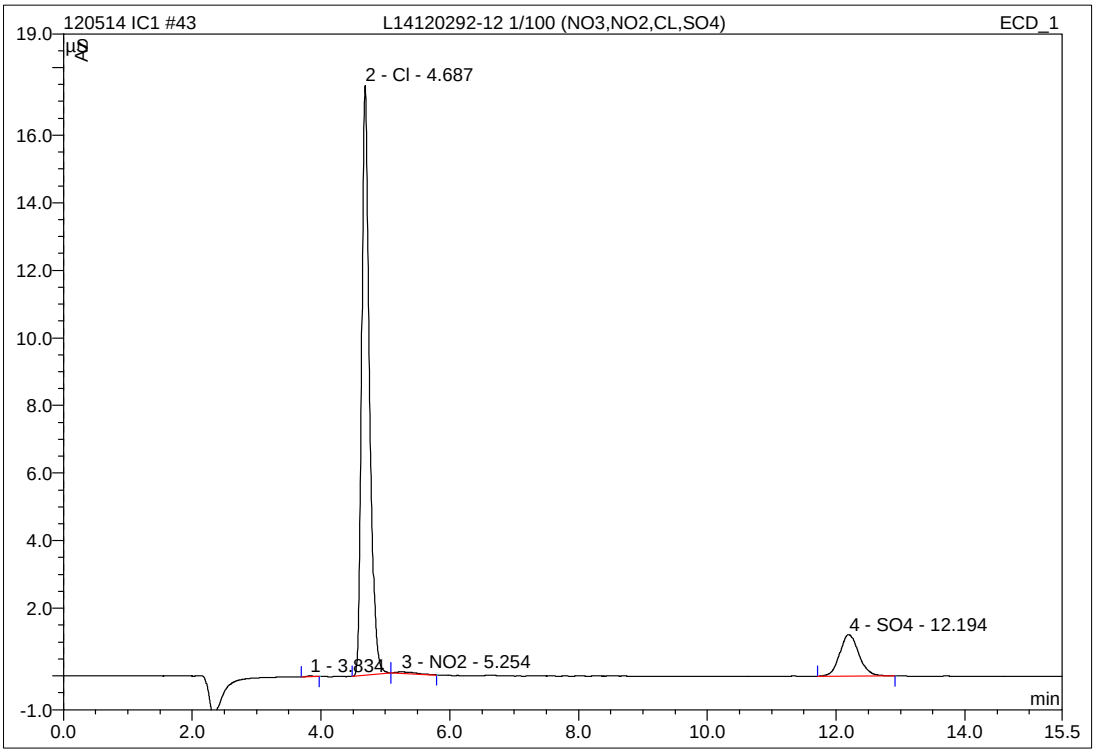

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.83	n.a.	0.025	0.003	0.11	n.a.	BMB
2	4.69	Cl	17.448	2.452	84.67	13.072	BMb
3	5.25	NO2	0.043	0.016	0.56	0.090	bMB
4	12.19	SO4	1.232	0.424	14.66	3.393	BMB
Total:			18.748	2.895	100.00	16.555	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

9 L14120292-12 1/100 (CL,NO2,NO3,SO4) 1,100 ALS

Sample Name:	**L14120292-12 1/100 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**5000.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/08/2014 20:09**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

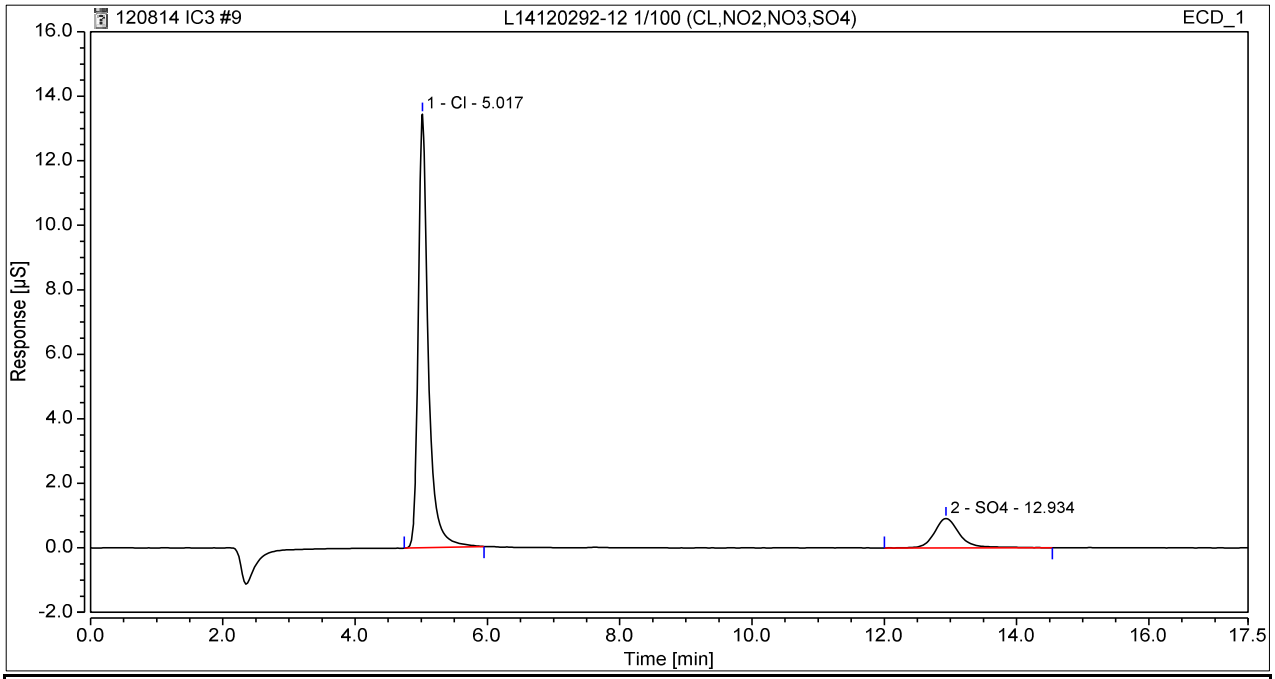

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	5.02	Cl	13.4478	2.3772	85.4	14.149	M
2	12.93	SO4	0.9138	0.4054	14.6	3.069	M
Total:			**14.36**	**2.78**	**100**	**17.22**	

44 L14120292-13 1/10 (NO3,NO2,CL,SO4)

1,10 AED

Sample Name:	**L14120292-13 1/10 (NO3,NO2,CL,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/6/2014 0:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

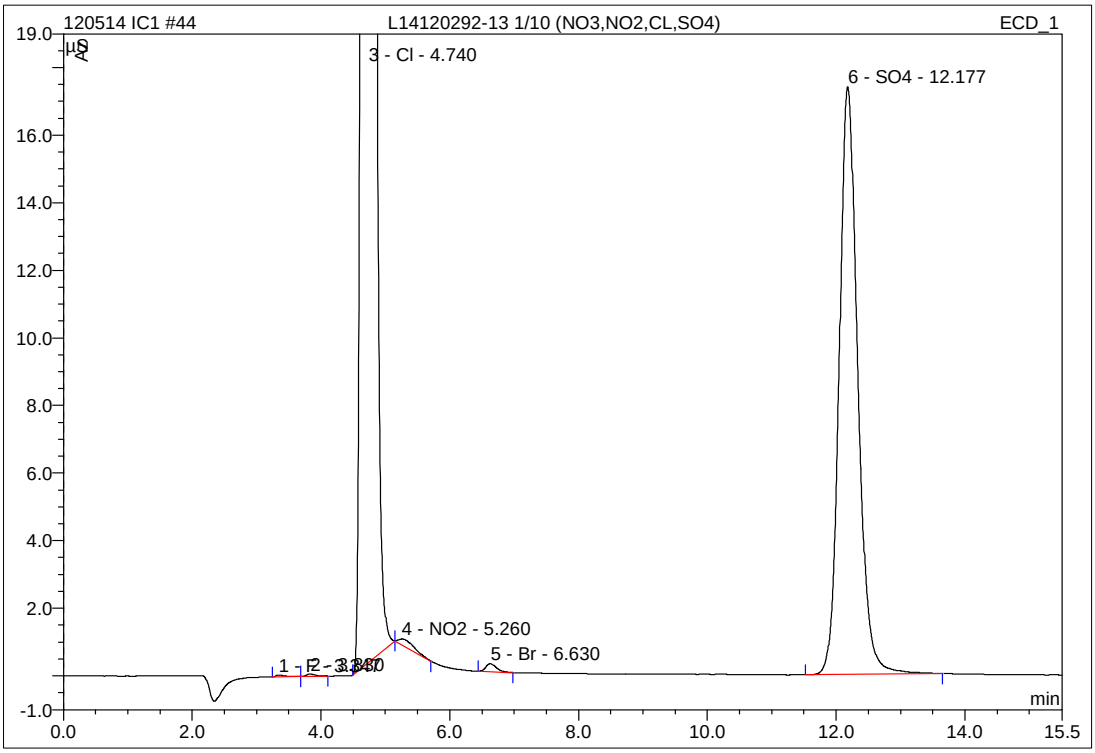

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	0.059	0.009	0.02	0.112	BMB
2	3.83	n.a.	0.073	0.010	0.03	n.a.	BMB
3	4.74	Cl	241.356	33.882	85.14	180.288	BMb
4	5.26	NO2	0.170	0.053	0.13	0.197	bMB
5	6.63	Br	0.236	0.045	0.11	0.638	BMB
6	12.18	SO4	17.403	5.797	14.57	40.178	BMB
Total:			259.297	39.798	100.00	221.413	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

10 L14120292-13 1/10 (CL,NO2,NO3,SO4) 1,10 ALS

Sample Name:	**L14120292-13 1/10 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**5000.0**
Vial Number:	**10**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/08/2014 20:30**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

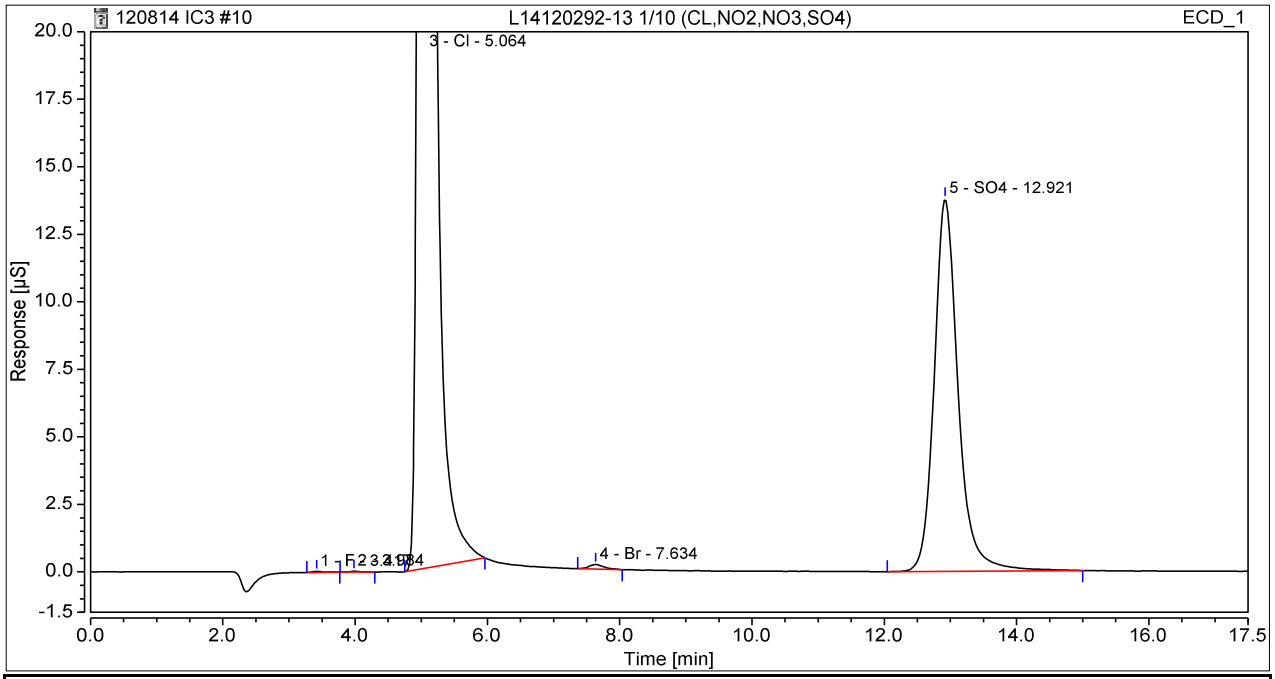

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.42	F	0.0365	0.0064	0.0	0.095	M
3	5.06	Cl	182.8895	33.4336	85.2	199.507	M
4	7.63	Br	0.1730	0.0434	0.1	0.666	M
5	12.92	SO4	13.7950	5.7731	14.7	42.441	M
Total:			**196.89**	**39.26**	**100**	**242.71**	

45 L14120292-13 1/100 (NO3,NO2,CL,SO4)

1,100 AED

Sample Name:	**L14120292-13 1/100 (NO3,NO2,CL,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/6/2014 1:03**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

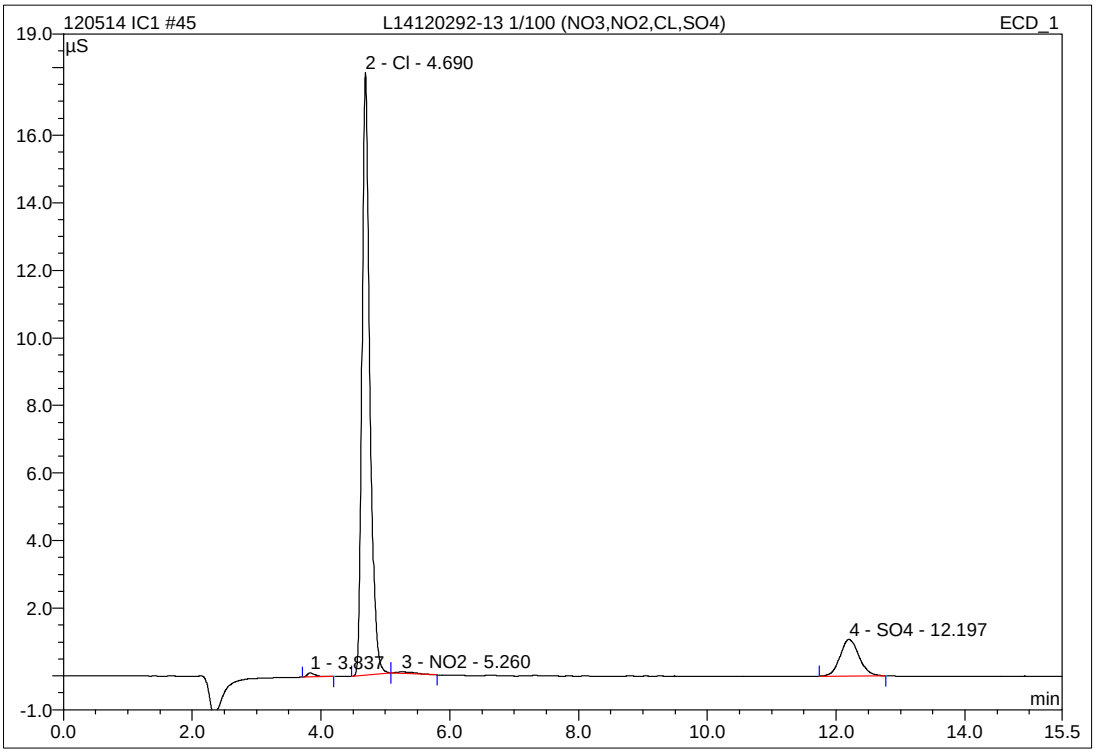

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.84	n.a.	0.121	0.018	0.61	n.a.	BMB
2	4.69	Cl	17.826	2.503	86.18	13.347	BMb
3	5.26	NO2	0.043	0.016	0.53	0.088	bMB
4	12.20	SO4	1.083	0.368	12.67	3.008	BMB
Total:			19.072	2.905	100.00	16.443	

11 L14120292-13 1/100 (CL,NO2,NO3,SO4) 1,100 ALS

Sample Name:	**L14120292-13 1/100 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**5000.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/08/2014 20:50**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

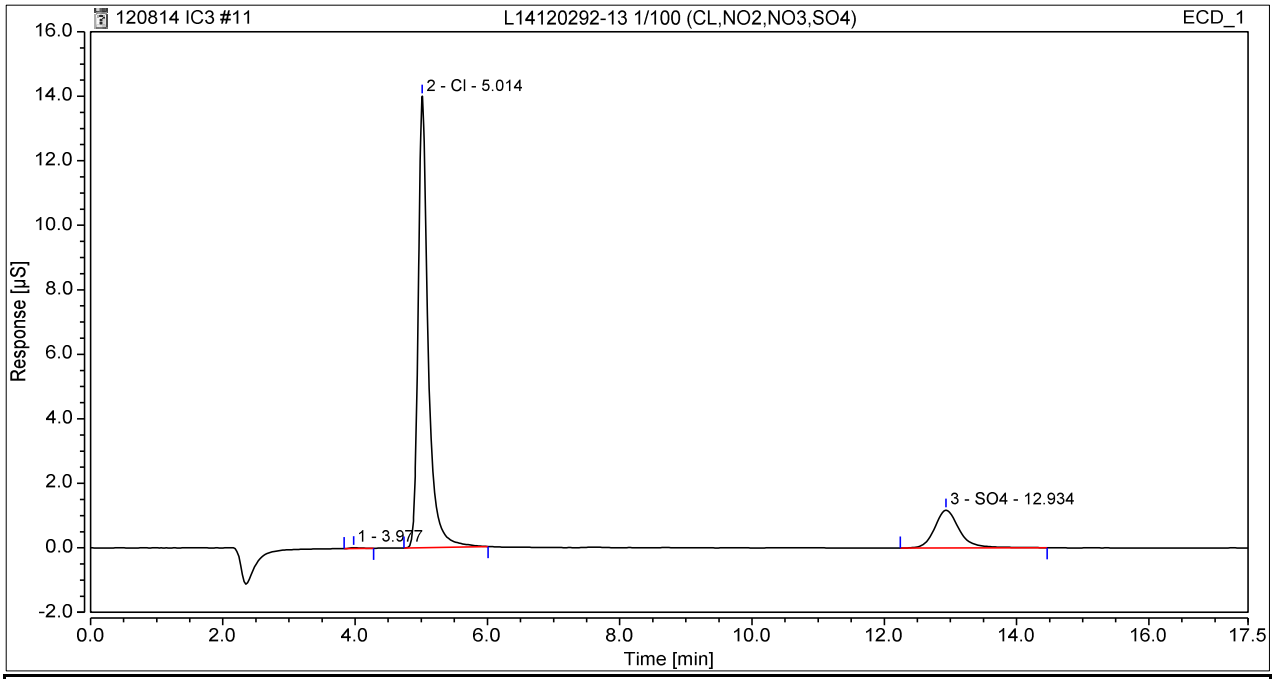

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
2	5.01	Cl	13.9950	2.4751	82.8	14.732	M
3	12.93	SO4	1.1720	0.5078	17.0	3.821	M
Total:			**15.17**	**2.98**	**100**	**18.55**	

2.2.1.4 Standards Data

3 WG479914-01 STD #6

1,1 JBK STD63859

Sample Name:	**WG479914-01 STD #6**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 14:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

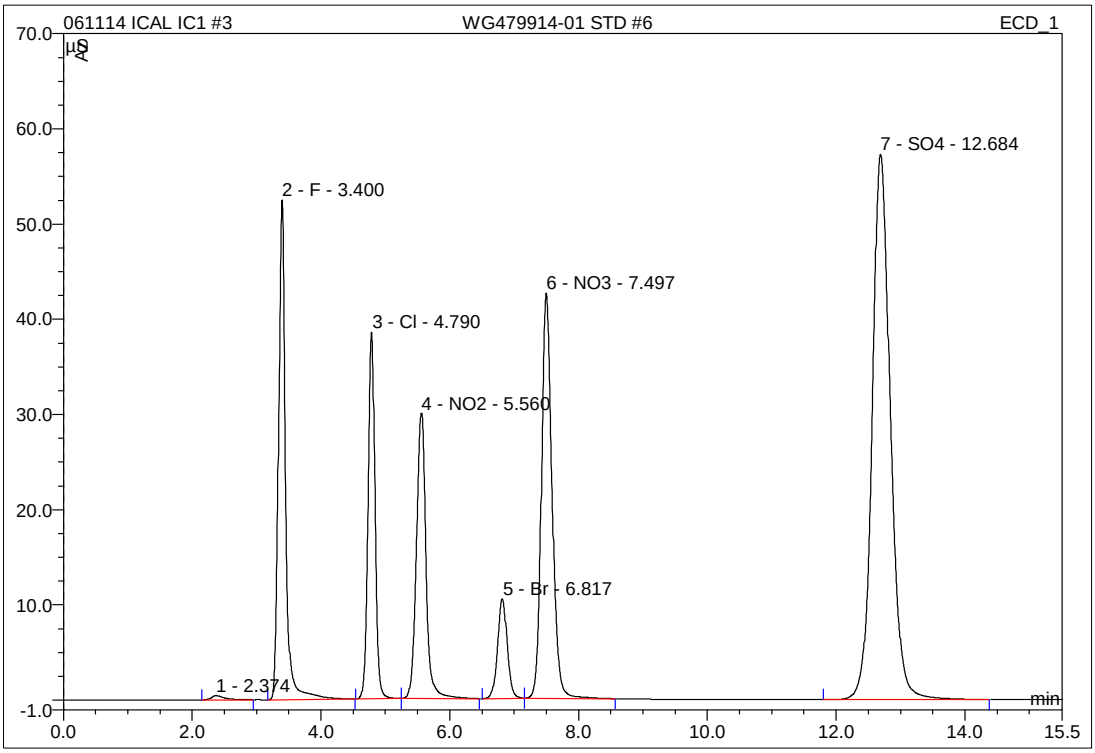

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.451	0.110	0.24	n.a.	BMB
2	3.40	F	52.495	6.678	14.70	24.720	BMB
3	4.79	Cl	38.513	4.785	10.54	25.485	BMb
4	5.56	NO2	29.937	5.111	11.25	14.854	bMB
5	6.82	Br	10.470	1.822	4.01	24.661	BMB
6	7.50	NO3	42.558	8.195	18.04	17.371	BMB
7	12.68	SO4	57.269	18.716	41.21	128.620	BMB
Total:			231.693	45.416	100.00	235.711	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG479914-02 STD #5

1,1 JBK STD63859

Sample Name:	**WG479914-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 14:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

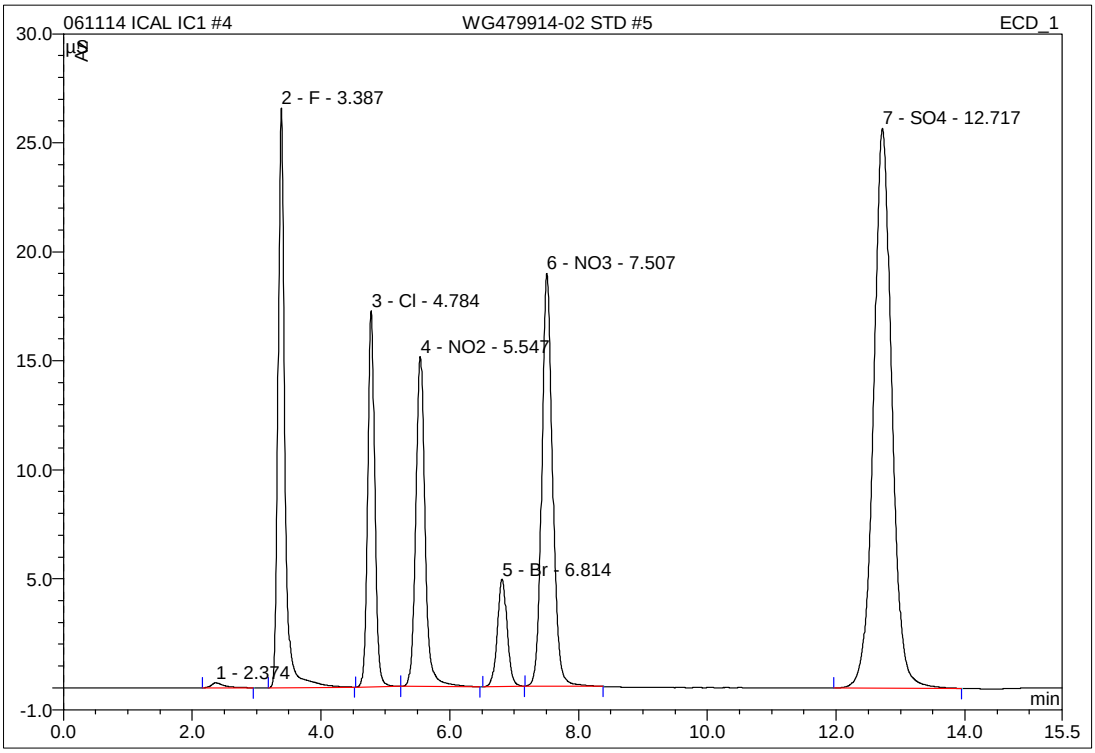

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.233	0.057	0.27	n.a.	BMB
2	3.39	F	26.585	3.244	15.45	12.048	BMB
3	4.78	Cl	17.242	2.177	10.37	11.609	BMb
4	5.55	NO2	15.121	2.509	11.95	7.315	bMB
5	6.81	Br	4.919	0.872	4.15	11.818	BMB
6	7.51	NO3	18.940	3.698	17.61	7.865	BMB
7	12.72	SO4	25.675	8.440	40.19	58.267	BMB
Total:			108.716	20.997	100.00	108.921	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

5 WG479914-03 STD #4

1,1 JBK STD63859

Sample Name:	**WG479914-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 15:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

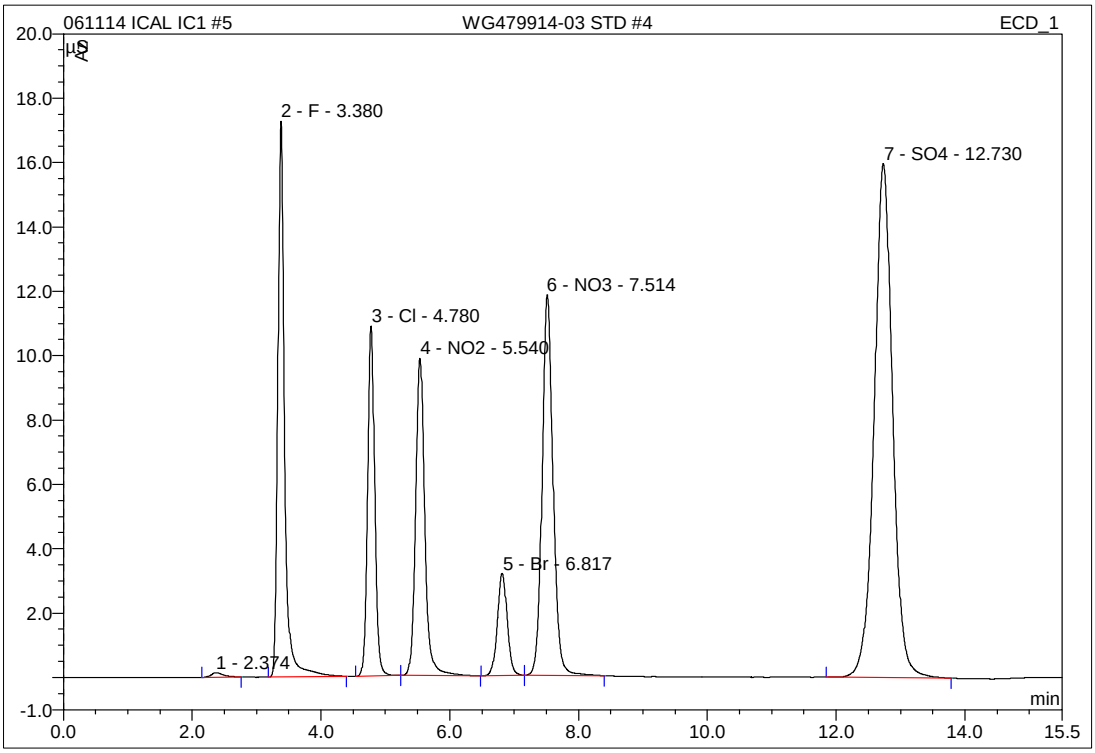

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.144	0.032	0.24	n.a.	BMB
2	3.38	F	17.270	2.084	15.62	7.767	BMB
3	4.78	Cl	10.873	1.385	10.38	7.396	BMB
4	5.54	NO2	9.854	1.623	12.17	4.747	bMB
5	6.82	Br	3.178	0.568	4.26	7.698	BMB
6	7.51	NO3	11.835	2.340	17.55	4.994	BMB
7	12.73	SO4	15.975	5.305	39.77	36.803	BMB
Total:			69.128	13.336	100.00	69.405	

5 WG479914-03 STD #4

1,1 JBK STD63859

Sample Name:	**WG479914-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 15:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

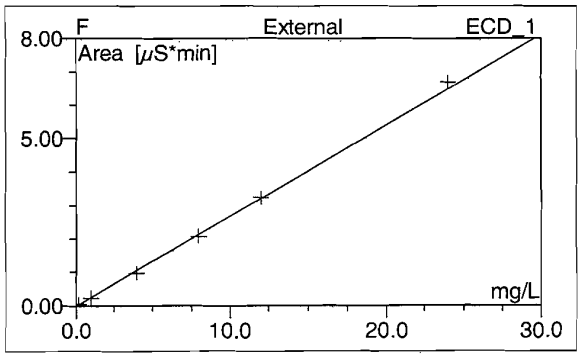

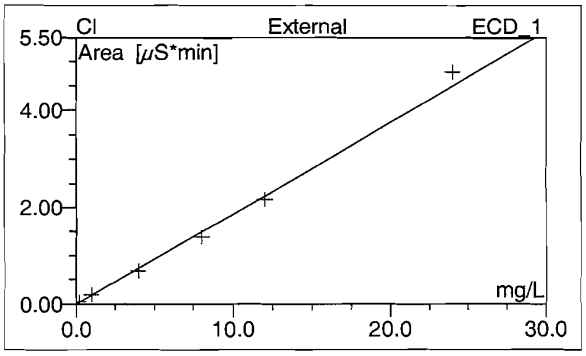

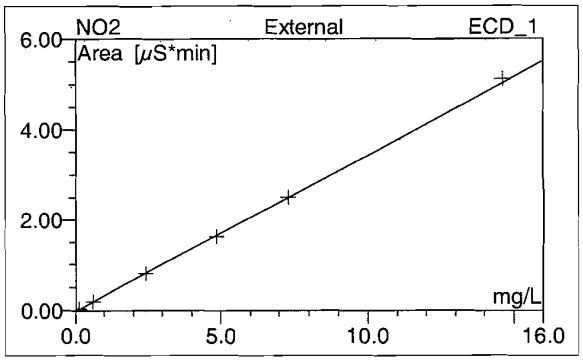

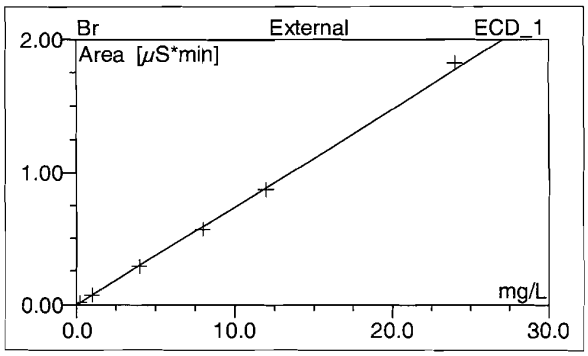

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.37	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.38	F	YLOff	6	99.8997	-0.0209	0.2710	0.0000
3	4.78	Cl	YLOff	6	99.7874	-0.0055	0.1880	0.0000
4	5.54	NO2	YLOff	6	99.9757	-0.0149	0.3451	0.0000
5	6.82	Br	YLOff	6	99.9557	-0.0018	0.0740	0.0000
6	7.51	NO3	YLOff	6	99.7488	-0.0221	0.4730	0.0000
7	12.73	SO4	YLOff	6	99.7115	-0.0712	0.1461	0.0000
Average:					99.8465	-0.0227	0.2495	0.0000

IC/Calibration(Batch)

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

00738831

5 WG479914-03 STD #4

1,1 JBK STD63859

Sample Name:	**WG479914-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 15:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

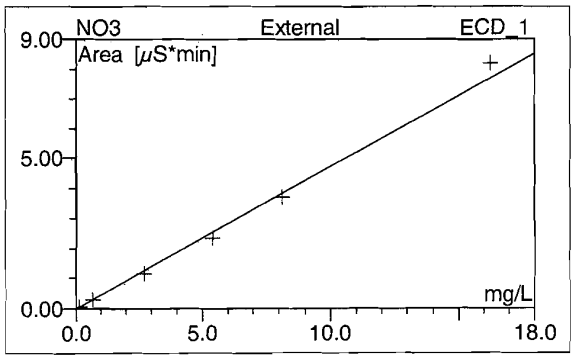

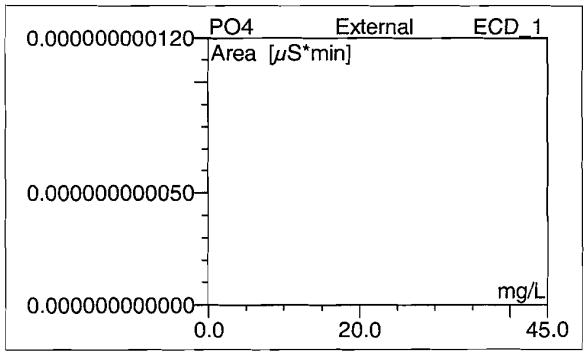

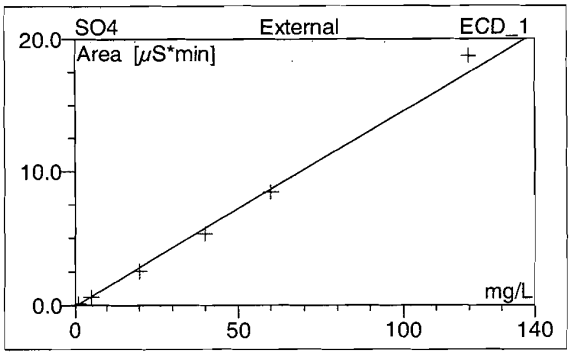

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.37	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.38	F	YLOff	6	99.8997	-0.0209	0.2710	0.0000
3	4.78	Cl	YLOff	6	99.7874	-0.0055	0.1880	0.0000
4	5.54	NO2	YLOff	6	99.9757	-0.0149	0.3451	0.0000
5	6.82	Br	YLOff	6	99.9557	-0.0018	0.0740	0.0000
6	7.51	NO3	YLOff	6	99.7488	-0.0221	0.4730	0.0000
7	12.73	SO4	YLOff	6	99.7115	-0.0712	0.1461	0.0000
Average:					99.8465	-0.0227	0.2495	0.0000

6 WG479914-04 STD #3

1,1 JBK STD63859

Sample Name:	**WG479914-04 STD #3**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 15:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

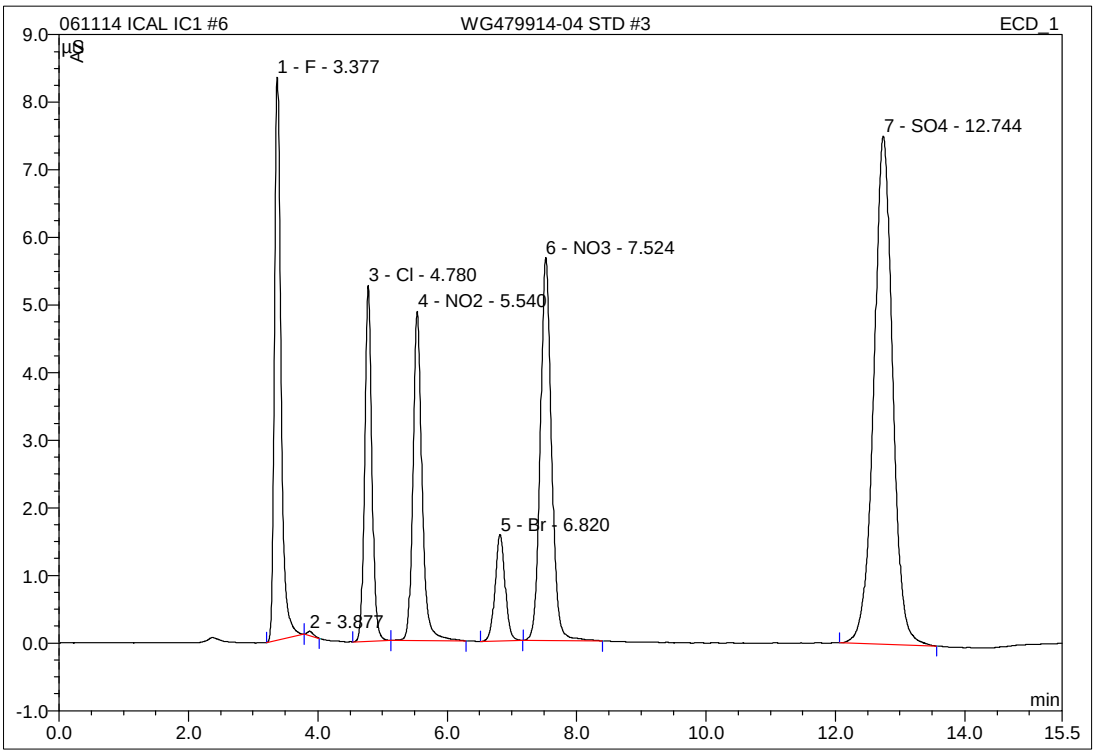

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.38	F	8.328	0.959	14.98	3.616	BMb
2	3.88	n.a.	0.065	0.007	0.11	n.a.	bMB
3	4.78	Cl	5.262	0.682	10.65	3.658	BMB
4	5.54	NO2	4.871	0.795	12.41	2.346	BMB
5	6.82	Br	1.579	0.284	4.43	3.863	BMB
6	7.52	NO3	5.662	1.141	17.82	2.458	BMB
7	12.74	SO4	7.520	2.535	39.60	17.845	BMB
Total:			33.287	6.403	100.00	33.786	

7 WG479914-05 STD #2

1,1 JBK STD63859

Sample Name:	**WG479914-05 STD #2**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 15:51**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

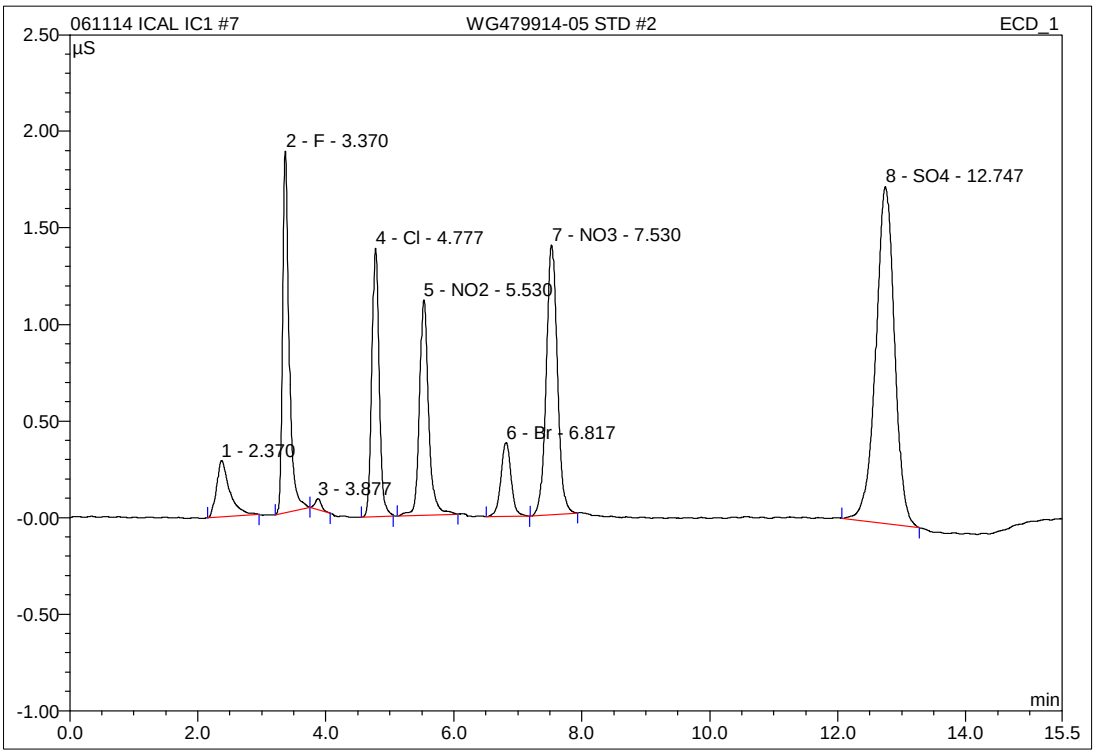

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.292	0.069	4.28	n.a.	BMB
2	3.37	F	1.872	0.224	13.86	0.904	BMb
3	3.88	n.a.	0.057	0.007	0.41	n.a.	bMB
4	4.78	Cl	1.389	0.185	11.42	1.011	BMB
5	5.53	NO2	1.116	0.185	11.45	0.579	BMB
6	6.82	Br	0.382	0.071	4.39	0.984	BMB
7	7.53	NO3	1.396	0.282	17.46	0.643	BMB
8	12.75	SO4	1.744	0.593	36.72	4.549	BMB
Total:			8.249	1.616	100.00	8.670	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

8 WG479914-06 STD #1

1,1 JBK STD63859

Sample Name:	**WG479914-06 STD #1**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 16:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

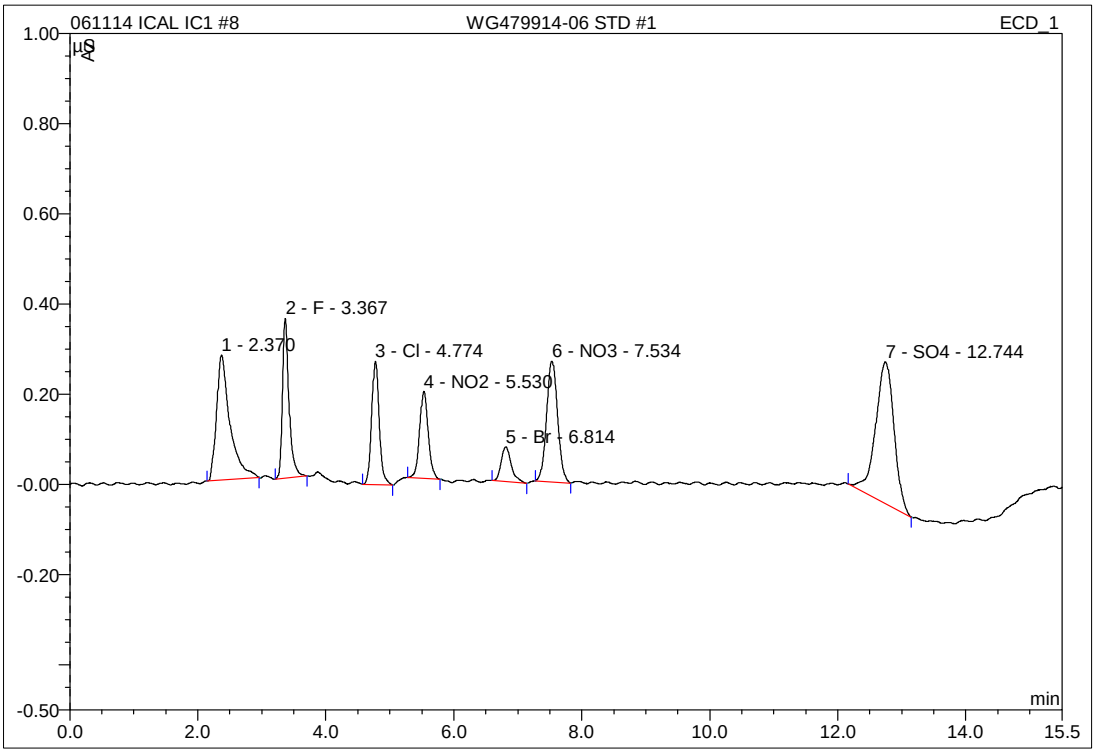

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.278	0.068	19.36	n.a.	BMB
2	3.37	F	0.354	0.043	12.18	0.235	BMB
3	4.77	Cl	0.273	0.037	10.65	0.228	BMB
4	5.53	NO2	0.193	0.030	8.62	0.131	BMB
5	6.81	Br	0.077	0.014	4.02	0.215	BMB
6	7.53	NO3	0.268	0.054	15.30	0.160	BMB
7	12.74	SO4	0.314	0.105	29.86	1.205	BMB
Total:			1.757	0.351	100.00	2.175	

9 WG479914-07 ALT STD

1,1 JBK STD63860

Sample Name:	**WG479914-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 16:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

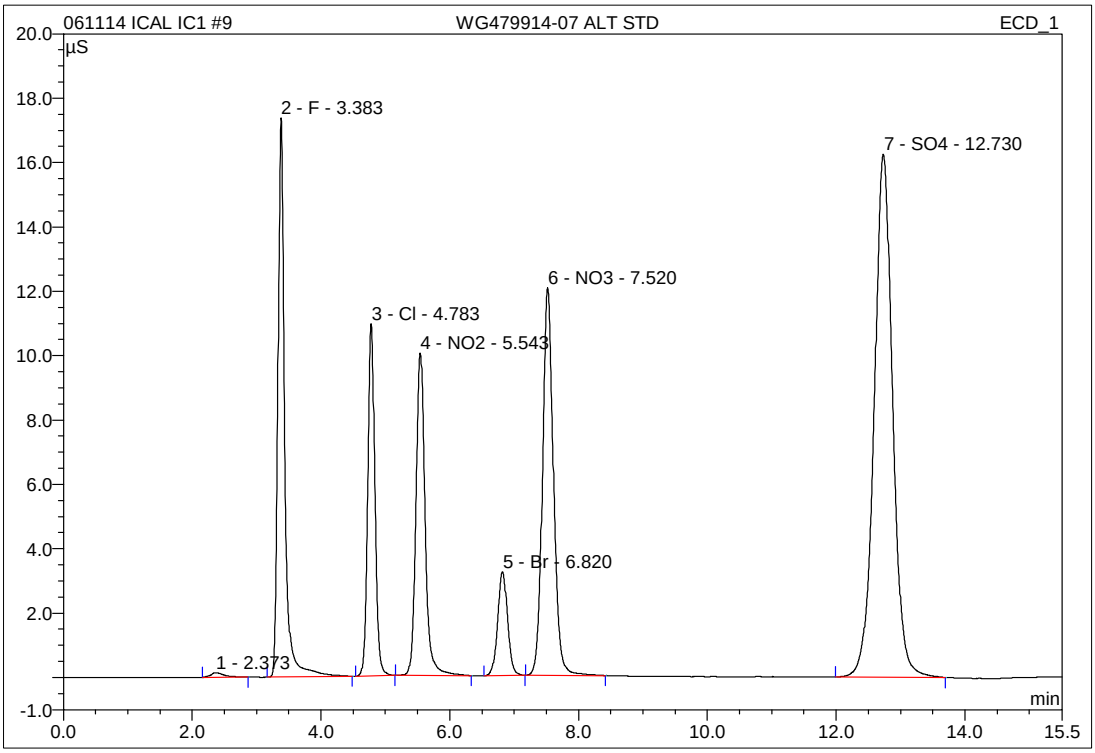

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.145	0.035	0.26	n.a.	BMB
2	3.38	F	17.370	2.120	15.66	7.900	BMB
3	4.78	Cl	10.942	1.400	10.34	7.479	BMB
4	5.54	NO2	10.010	1.635	12.08	4.781	BMB
5	6.82	Br	3.231	0.577	4.26	7.830	BMB
6	7.52	NO3	12.035	2.384	17.61	5.087	BMB
7	12.73	SO4	16.243	5.385	39.78	37.351	BMB
Total:			69.976	13.536	100.00	70.428	

9 WG479914-07 ALT STD

1,1 JBK STD63860

Sample Name:	**WG479914-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 16:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG479914-07 ALT S	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.9004	-1.24	PASS
Cl	8.00	7.4789	-6.51	PASS
NO2-N	4.8714	4.7807	-1.86	PASS
Br	8.00	7.8299	-2.13	PASS
NO3-N	5.4216	5.0867	-6.18	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	37.3511	-6.62	PASS

3 WG494943-01 STD #6
1,1 ALS STD66516

Sample Name:	**WG494943-01 STD #6**	*Injection Volume:*	**5000.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 12:28**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

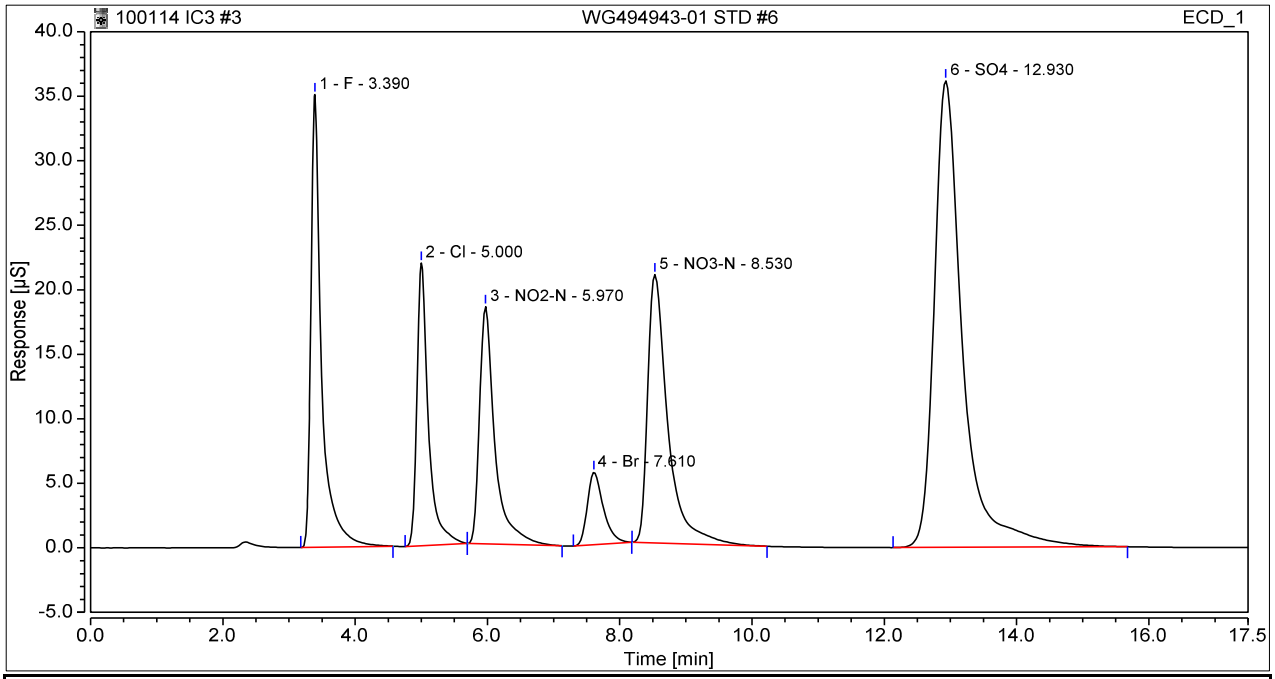

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.39	F	35.1083	6.5671	15.4	24.728	M
2	5.00	Cl	21.9002	4.3933	10.3	26.181	M
3	5.97	NO2-N	18.4030	4.9476	11.6	15.173	M
4	7.61	Br	5.6107	1.5784	3.7	24.304	M
5	8.53	NO3-N	20.7983	7.3424	17.2	17.592	M
6	12.93	SO4	36.1788	17.9456	42.0	131.725	M
Total:			**138.00**	**42.77**	**100**	**239.70**	

4 WG494943-02 STD #5
1,1 ALS STD66516

Sample Name:	**WG494943-02 STD #5**	*Injection Volume:*	**5000.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 12:48**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

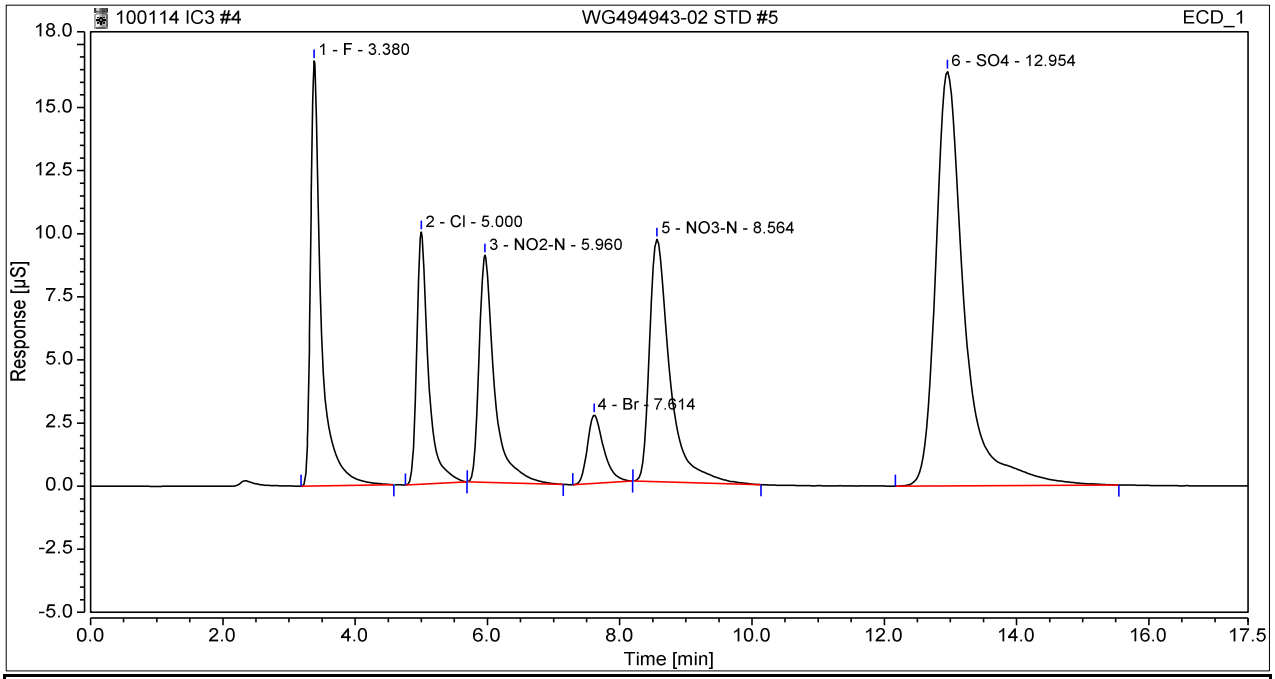

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	16.8357	3.1587	15.7	11.931	M
2	5.00	Cl	9.9819	2.0567	10.2	12.235	M
3	5.96	NO2-N	8.9912	2.4271	12.0	7.452	M
4	7.61	Br	2.7127	0.7768	3.8	11.960	M
5	8.56	NO3-N	9.6047	3.4485	17.1	8.249	M
6	12.95	SO4	16.4233	8.3139	41.2	61.077	M
Total:			**64.55**	**20.18**	**100**	**112.90**	

5 WG494943-03 STD #4
1,1 ALS STD66516

Sample Name:	**WG494943-03 STD #4**	*Injection Volume:*	**5000.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 13:09**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

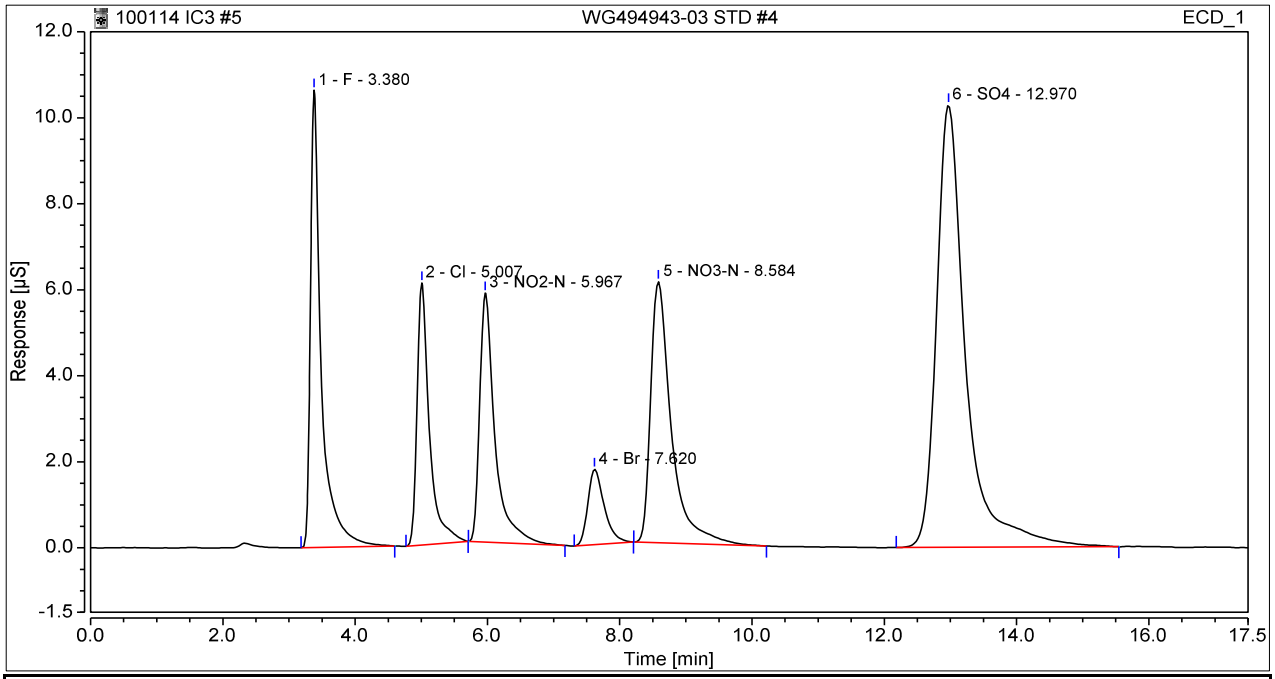

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	10.6292	2.0133	15.7	7.630	M
2	5.01	Cl	6.0951	1.3215	10.3	7.847	M
3	5.97	NO2-N	5.7939	1.5457	12.0	4.752	M
4	7.62	Br	1.7494	0.5039	3.9	7.758	M
5	8.58	NO3-N	6.0729	2.2002	17.1	5.254	M
6	12.97	SO4	10.2871	5.2704	41.0	38.753	M
Total:			**40.63**	**12.85**	**100**	**71.99**	

Sequence: 100114 IC3
Injection #5: WG494943-03 STD #4

Calibration Plot

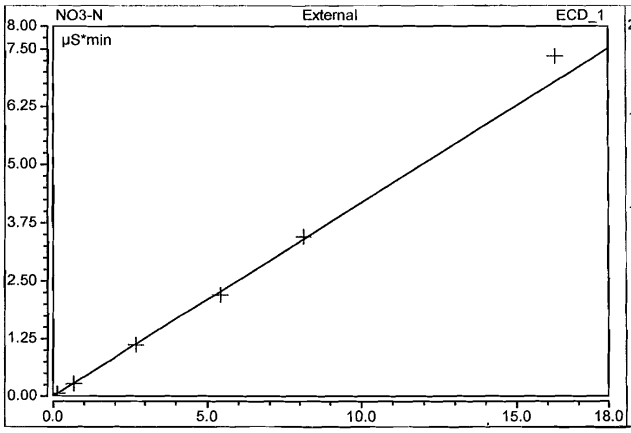

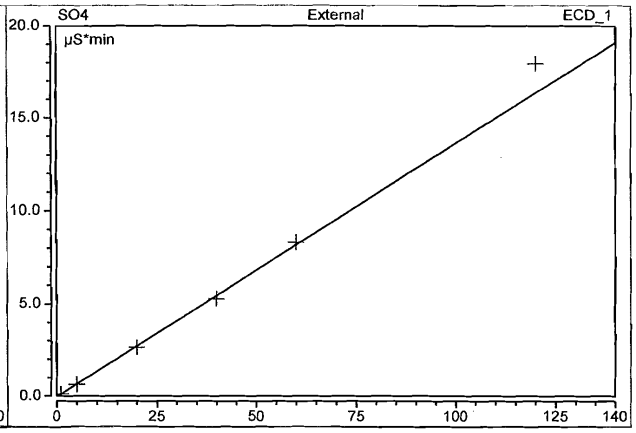

Sequence: 100114 IC3
Injection #5: WG494943-03 STD #4

Calibration

Peak No.	Peak Name	Ret.Time min	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	*F*	*3.380*	*Lin, WithOffset, 1/R*	*Area*	*6*	*15.1320*	*0.99843*	*-0.0189*	*0.2663*	*0.0000*
2	Cl	5.007	Lin, WithOffset, 1/R²	Area	6	10.5957	0.99688	0.0067	0.1675	0.0000
3	NO2-N	5.967	Lin, WithOffset, 1/R²	Area	6	5.5275	0.99929	-0.0054	0.3264	0.0000
4	Br	7.620	Lin, WithOffset, 1/R	Area	6	5.7102	0.99972	0.0001	0.0649	0.0000
5	NO3-N	8.584	Lin, WithOffset, 1/R²	Area	6	8.8163	0.99787	0.0104	0.4168	0.0000
6	SO4	12.970	Lin, WithOffset, 1/R²	Area	6	10.7714	0.99720	-0.0130	0.1363	0.0000
Maximum						15.1320	0.99972			
Minimum						5.5275	0.99688			

Sequence: 100114 IC3
Injection #5: WG494943-03 STD #4

Calibration Plot

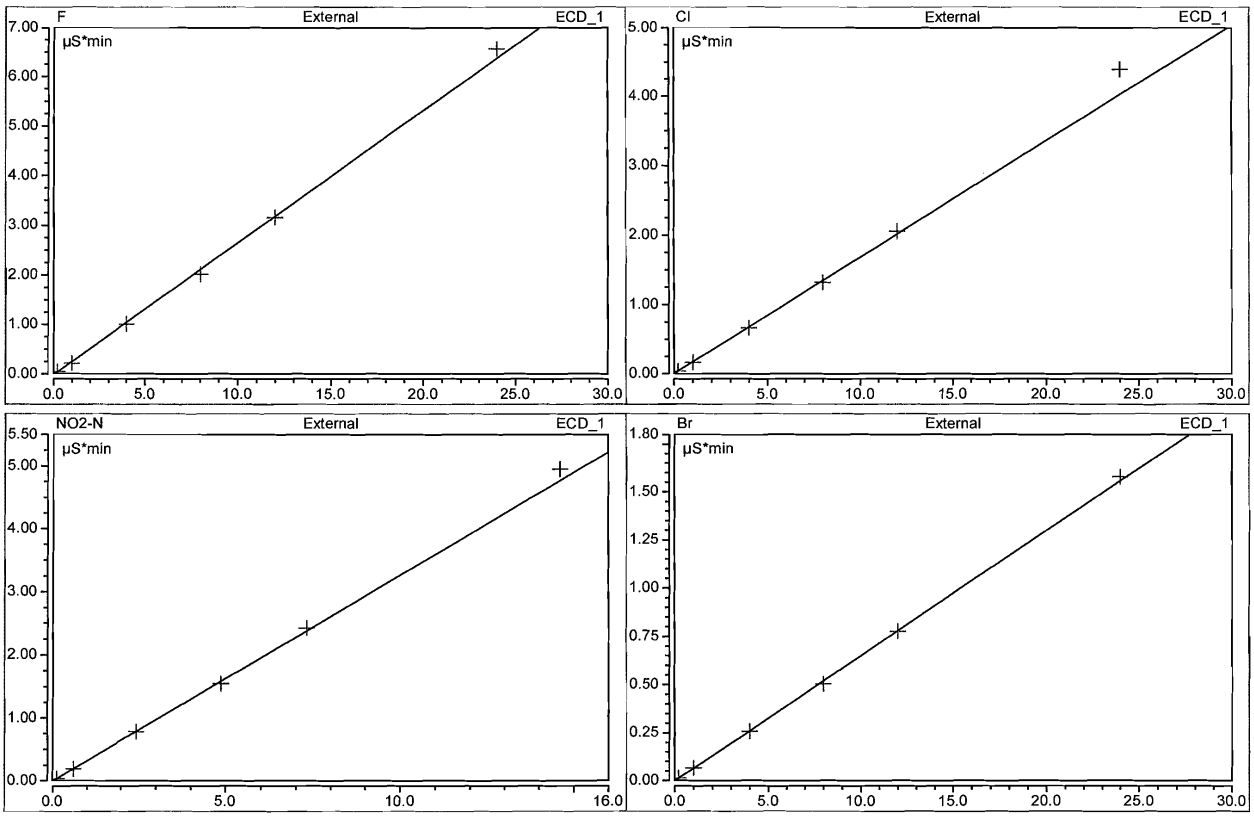

Chromeleon 7,
Version 7.2.0.3765, Thermo Fisher Scientific

Page 1 of 2

Printed by ICS1100
08/10/14 14:10

6 WG494943-04 STD #3
1,1 ALS STD66516

Sample Name:	**WG494943-04 STD #3**	*Injection Volume:*	**5000.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 13:29**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

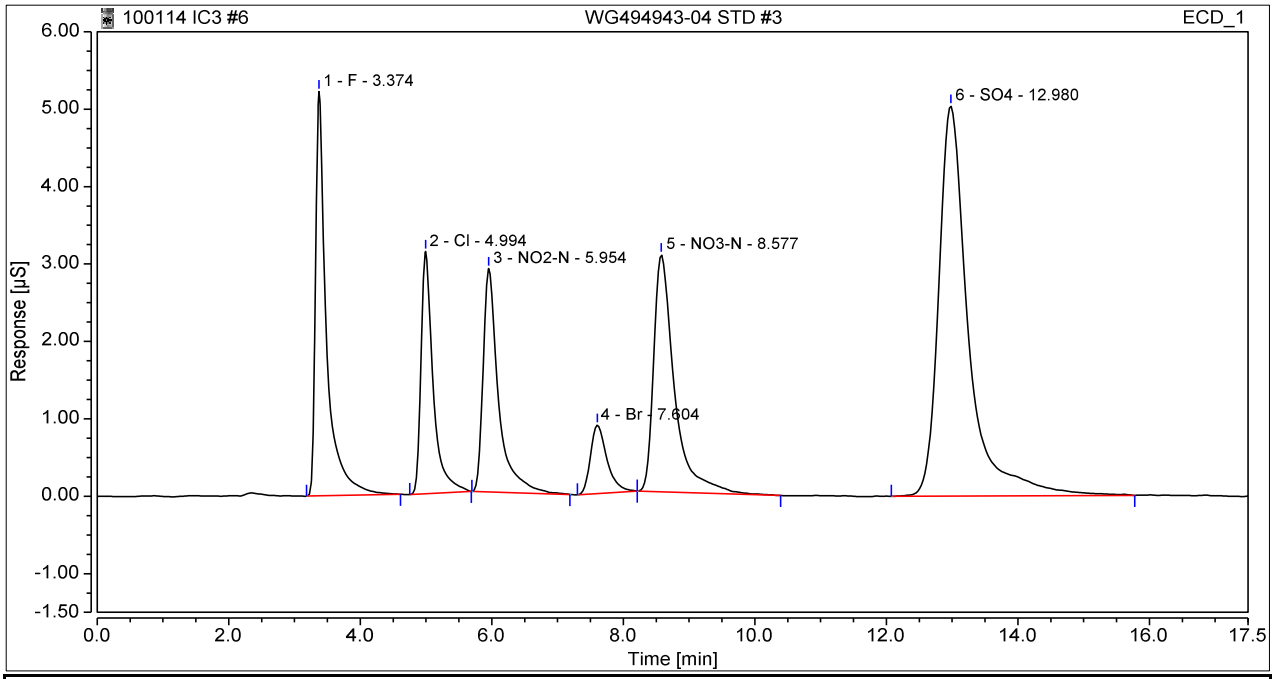

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	5.2217	1.0111	15.6	3.867	M
2	4.99	Cl	3.1310	0.6650	10.3	3.929	M
3	5.95	NO2-N	2.8877	0.7848	12.1	2.421	M
4	7.60	Br	0.8846	0.2578	4.0	3.968	M
5	8.58	NO3-N	3.0631	1.1194	17.3	2.661	M
6	12.98	SO4	5.0398	2.6493	40.8	19.528	M
Total:			**20.23**	**6.49**	**100**	**36.37**	

7 WG494943-05 STD #2
1,1 ALS STD66516

Sample Name:	**WG494943-05 STD #2**	*Injection Volume:*	**5000.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 13:49**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

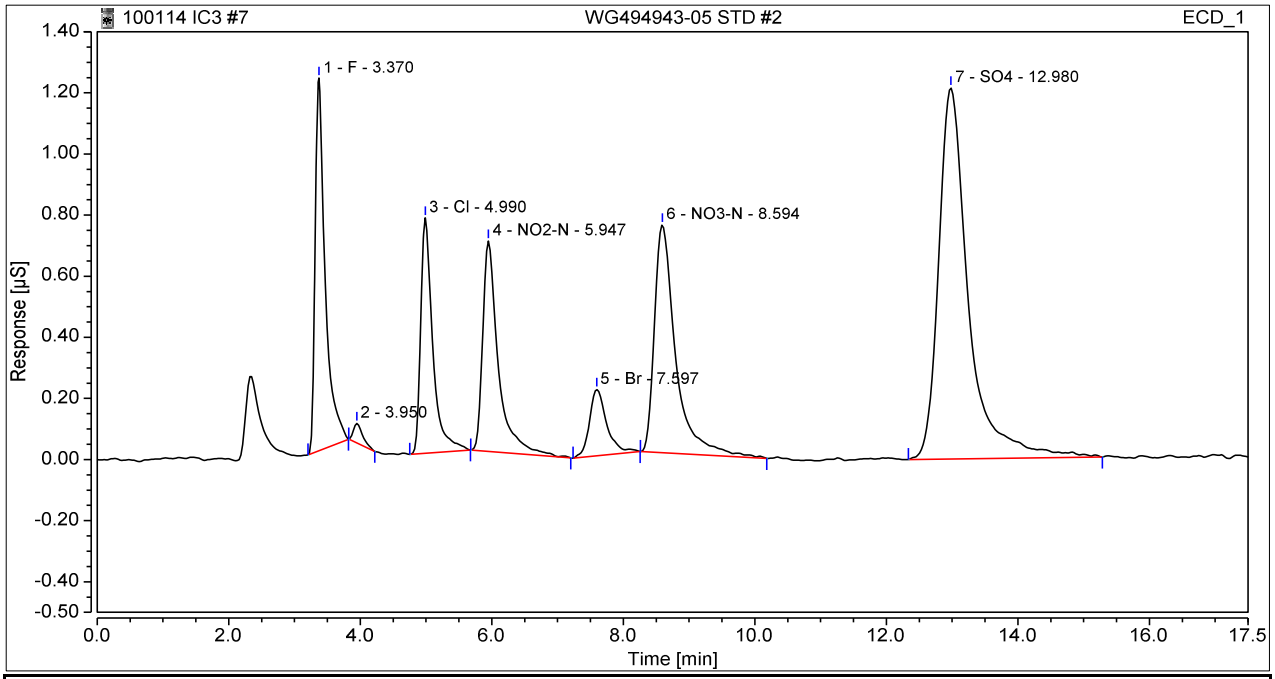

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	1.2192	0.2154	13.8	0.880	M
3	4.99	Cl	0.7701	0.1629	10.4	0.932	M
4	5.95	NO2-N	0.6881	0.1882	12.1	0.593	M
5	7.60	Br	0.2170	0.0664	4.3	1.021	M
6	8.59	NO3-N	0.7456	0.2772	17.8	0.640	M
7	12.98	SO4	1.2144	0.6378	40.9	4.774	M
Total:			**4.85**	**1.55**	**99**	**8.84**	

8 WG494943-06 STD #1
1,1 ALS STD66516

Sample Name:	**WG494943-06 STD #1**	*Injection Volume:*	**5000.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 14:10**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

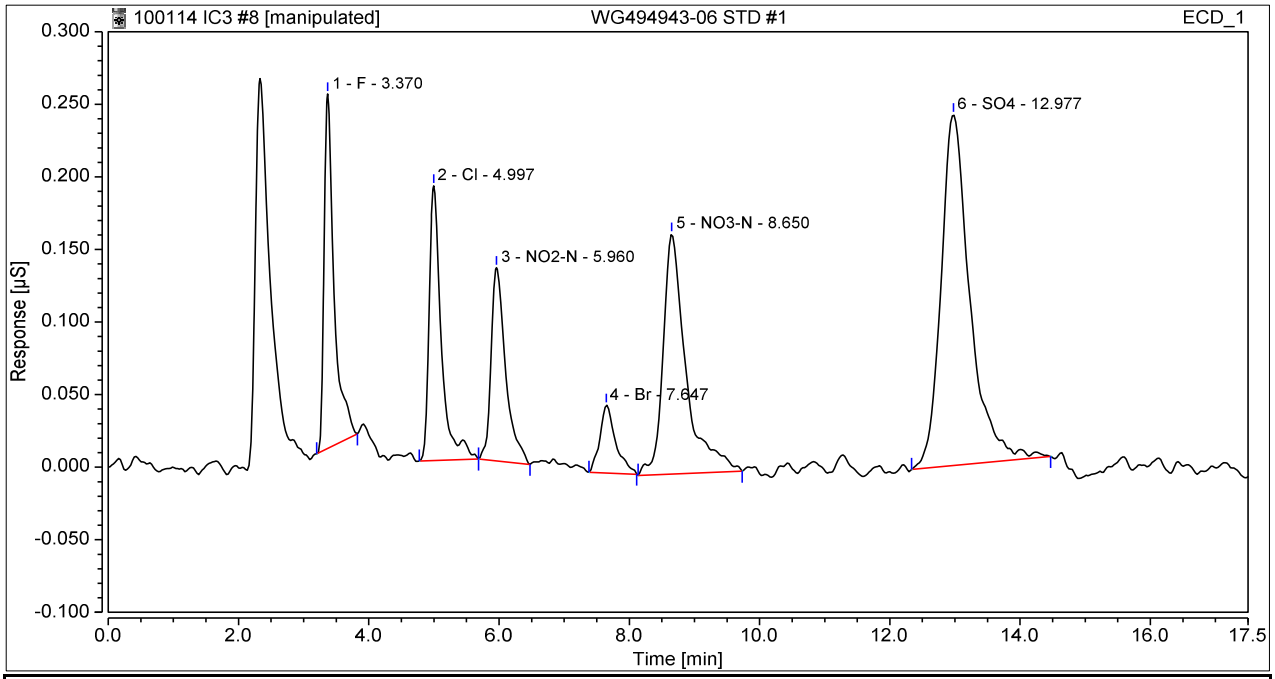

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	0.2441	0.0435	13.4	0.234	MB*
2	5.00	Cl	0.1892	0.0410	12.6	0.204	M
3	5.96	NO2-N	0.1332	0.0345	10.6	0.122	M
4	7.65	Br	0.0467	0.0132	4.1	0.202	M
5	8.65	NO3-N	0.1653	0.0676	20.9	0.137	M
6	12.98	SO4	0.2418	0.1246	38.4	1.010	M
Total:			**1.02**	**0.32**	**100**	**1.91**	

8 WG494943-06 STD #1
1,1 ALS STD66516

Sample Name:	**WG494943-06 STD #1**	*Injection Volume:*	**5000.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 14:10**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

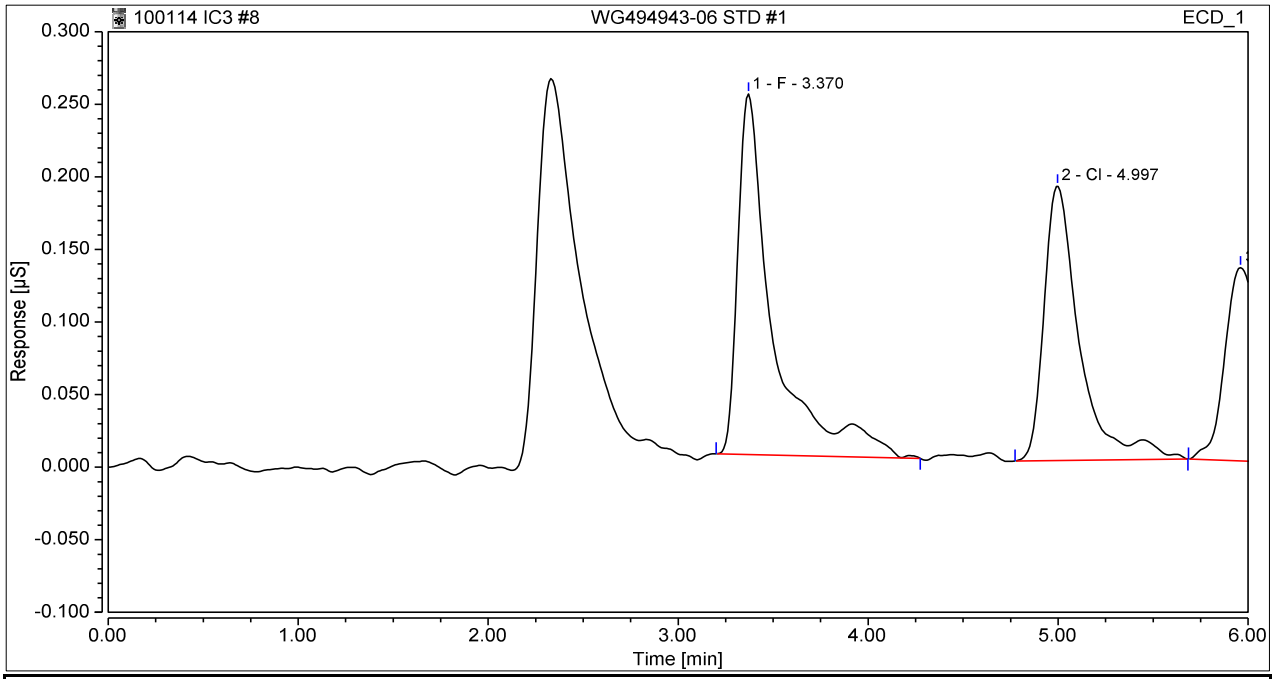

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	0.2484	0.0533	16.0	0.271	M
2	5.00	Cl	0.1892	0.0410	12.3	0.204	M
3	5.96	NO2-N	0.1332	0.0345	10.3	0.122	M
4	7.65	Br	0.0467	0.0132	4.0	0.202	M
5	8.65	NO3-N	0.1653	0.0676	20.2	0.137	M
6	12.98	SO4	0.2418	0.1246	37.3	1.010	M
Total:			**1.02**	**0.33**	**100**	**1.95**	

8 WG494943-06 STD #1
1,1 ALS STD66516

Sample Name:	**WG494943-06 STD #1**	*Injection Volume:*	**5000.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 14:10**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

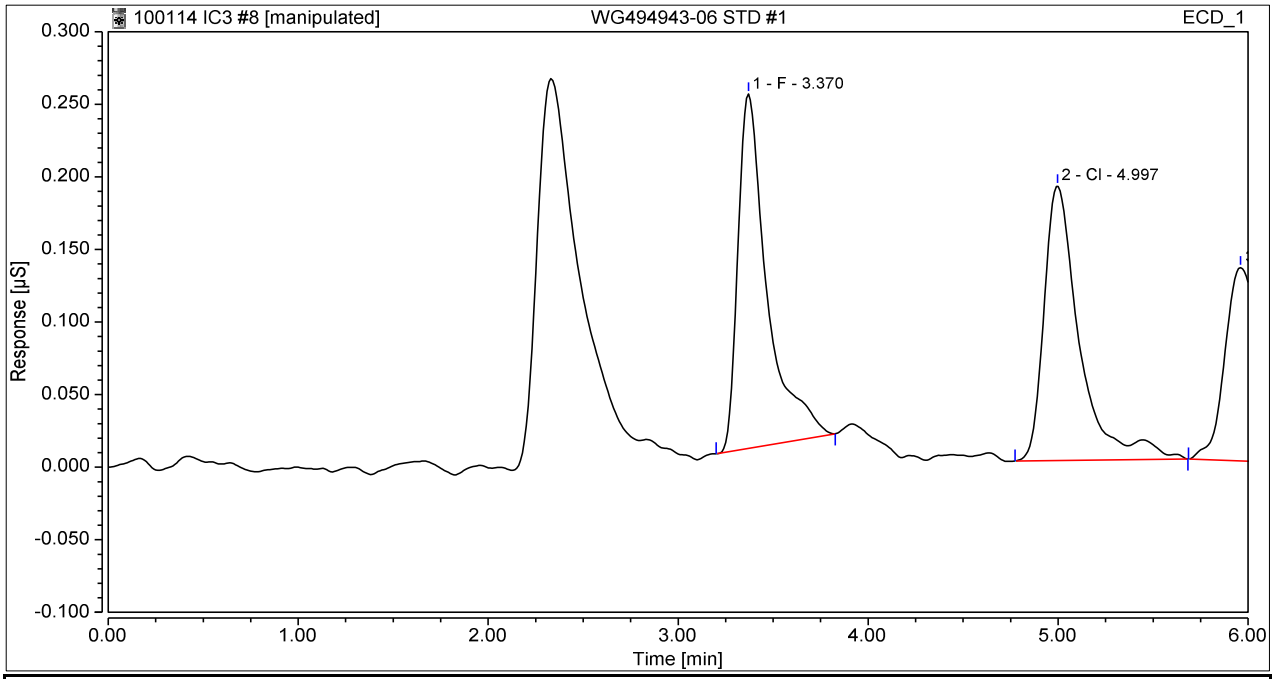

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	0.2441	0.0435	13.4	0.234	MB*
2	5.00	Cl	0.1892	0.0410	12.6	0.204	M
3	5.96	NO2-N	0.1332	0.0345	10.6	0.122	M
4	7.65	Br	0.0467	0.0132	4.1	0.202	M
5	8.65	NO3-N	0.1653	0.0676	20.9	0.137	M
6	12.98	SO4	0.2418	0.1246	38.4	1.010	M
Total:			**1.02**	**0.32**	**100**	**1.91**	

9056Rept/Integration

Analyst: 10/08/2014 14:14 Supervisor: 10/15/2014 16:15

#4 - System establishes incorrect baseline

Chromeleon (c) Dionex
Version 7.2.0.3765

9 WG494943-07 ALT STD
1,1 ALS STD 66517

Sample Name:	**WG494943-07 ALT STD**	*Injection Volume:*	**5000.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 14:30**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

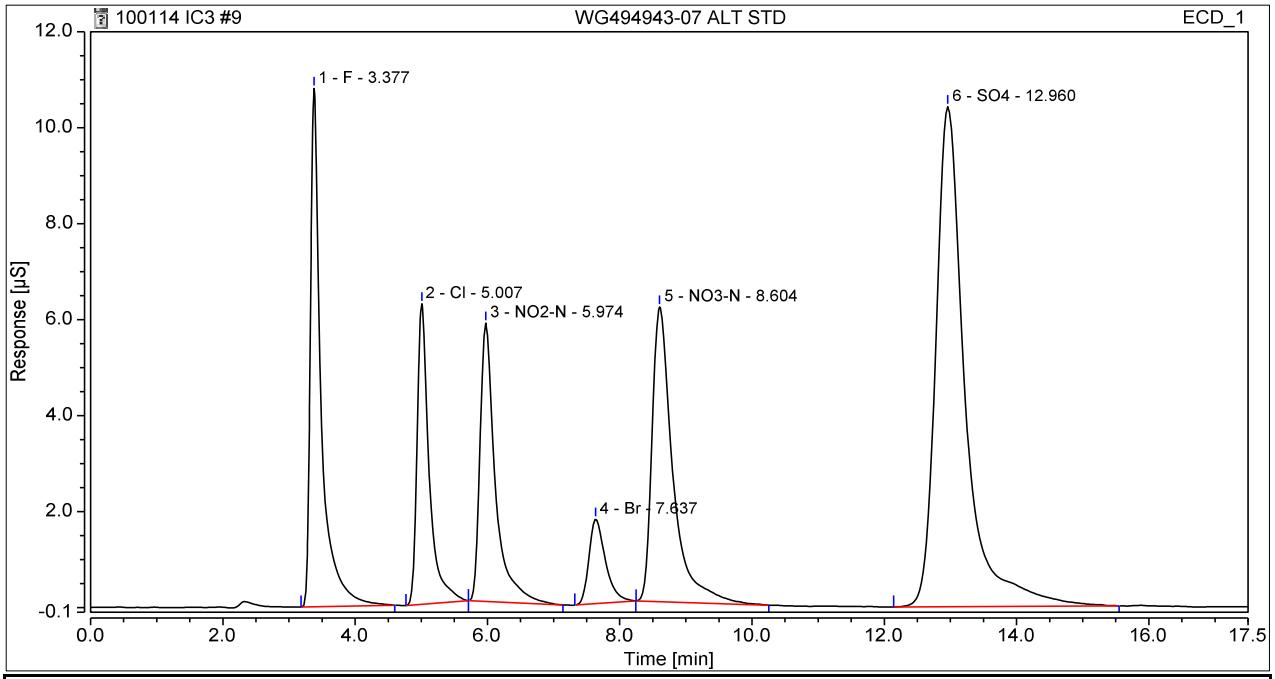

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	10.8042	2.0421	15.7	7.738	M
2	5.01	Cl	6.2662	1.3330	10.2	7.916	M
3	5.97	NO2-N	5.8008	1.5570	12.0	4.786	M
4	7.64	Br	1.7629	0.5109	3.9	7.866	M
5	8.60	NO3-N	6.1389	2.2364	17.2	5.341	M
6	12.96	SO4	10.4217	5.3378	41.0	39.248	M
Total:			**41.19**	**13.02**	**100**	**72.89**	

9 WG494943-07 ALT STD
1,1 ALS STD 66517

Sequence Details

Name:	**WG494943-07 ALT STD**	*Run Time:*	**17.50**
Vial Number:	**9**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/1/2014 14:30**	*Sample Weight:*	**1.0000**

WG494943-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.738152714**	**-3.273091078**	**PASS**
CL	8.00	**7.916005505**	**-1.049931189**	**PASS**
NO2	4.87	**4.786413978**	**-1.716345427**	**PASS**
BR	8.00	**7.865666303**	**-1.679171217**	**PASS**
NO3	5.42	**5.340888585**	**-1.478070384**	**PASS**
SO4	40.00	**39.24765366**	**-1.880865855**	**PASS**

3 WG503653-01 ANION CCV

1,1 AED STD66516 _____ psi @ _____

Sample Name:	**WG503653-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/5/2014 12:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

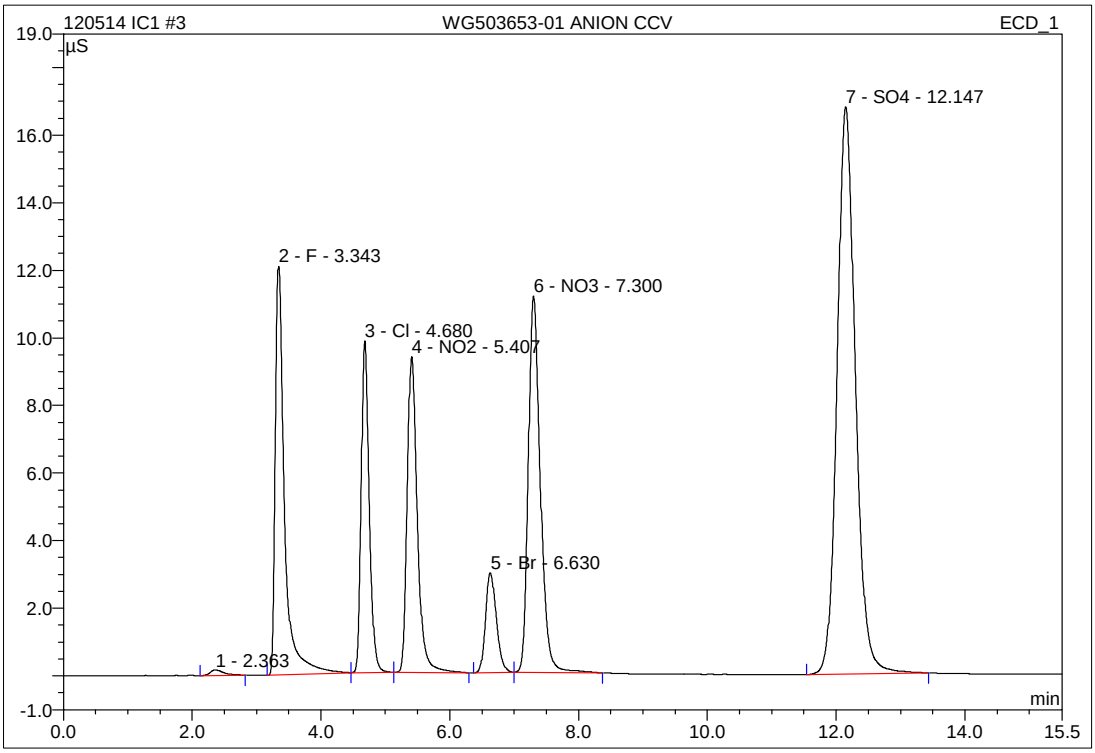

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.36	n.a.	0.163	0.041	0.30	n.a.	BMB
2	3.34	F	12.084	1.989	14.54	7.419	BMB
3	4.68	Cl	9.802	1.409	10.30	7.525	bMB
4	5.41	NO2	9.345	1.712	12.52	5.006	bMB
5	6.63	Br	2.956	0.575	4.21	7.803	BMB
6	7.30	NO3	11.136	2.416	17.66	5.153	BMB
7	12.15	SO4	16.781	5.535	40.47	38.384	BMB
Total:			62.267	13.678	100.00	71.290	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG503653-01 ANION CCV

1,1 AED STD66516 _____ psi @ _____

Sample Name:	**WG503653-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/5/2014 12:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG503653-01 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.4189	-7.26	PASS
Cl	8.00	7.5250	-5.94	PASS
NO2-N	4.8714	5.0056	2.75	PASS
Br	8.00	7.8027	-2.47	PASS
NO3-N	5.4216	5.1535	-4.95	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.3843	-4.04	PASS

15 WG503653-03 ANION CCV

1,1 AED STD66516

Sample Name:	**WG503653-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/5/2014 16:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

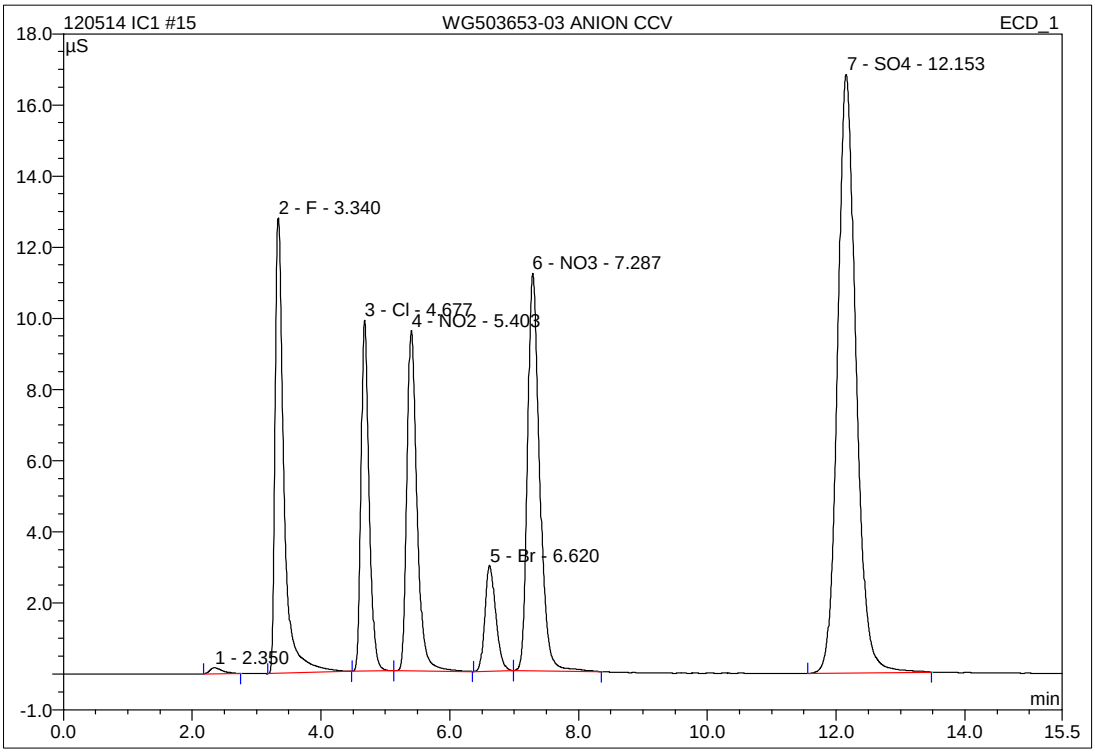

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.35	n.a.	0.171	0.039	0.28	n.a.	BMB
2	3.34	F	12.800	2.027	14.64	7.559	BMB
3	4.68	Cl	9.860	1.423	10.27	7.600	BMB
4	5.40	NO2	9.575	1.752	12.65	5.119	BMB
5	6.62	Br	2.967	0.579	4.18	7.853	BMB
6	7.29	NO3	11.171	2.443	17.64	5.212	BMB
7	12.15	SO4	16.818	5.588	40.34	38.743	BMB
Total:			63.363	13.851	100.00	72.085	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

15 WG503653-03 ANION CCV

1,1 AED STD66516

Sample Name:	**WG503653-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/5/2014 16:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG503653-03 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.5587	-5.52	PASS
Cl	8.00	7.5996	-5.00	PASS
NO2-N	4.8714	5.1192	5.09	PASS
Br	8.00	7.8532	-1.83	PASS
NO3-N	5.4216	5.2116	-3.87	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.7426	-3.14	PASS

27 WG503653-05 ANION CCV

1,1 AED STD66516

Sample Name:	**WG503653-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/5/2014 19:44**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

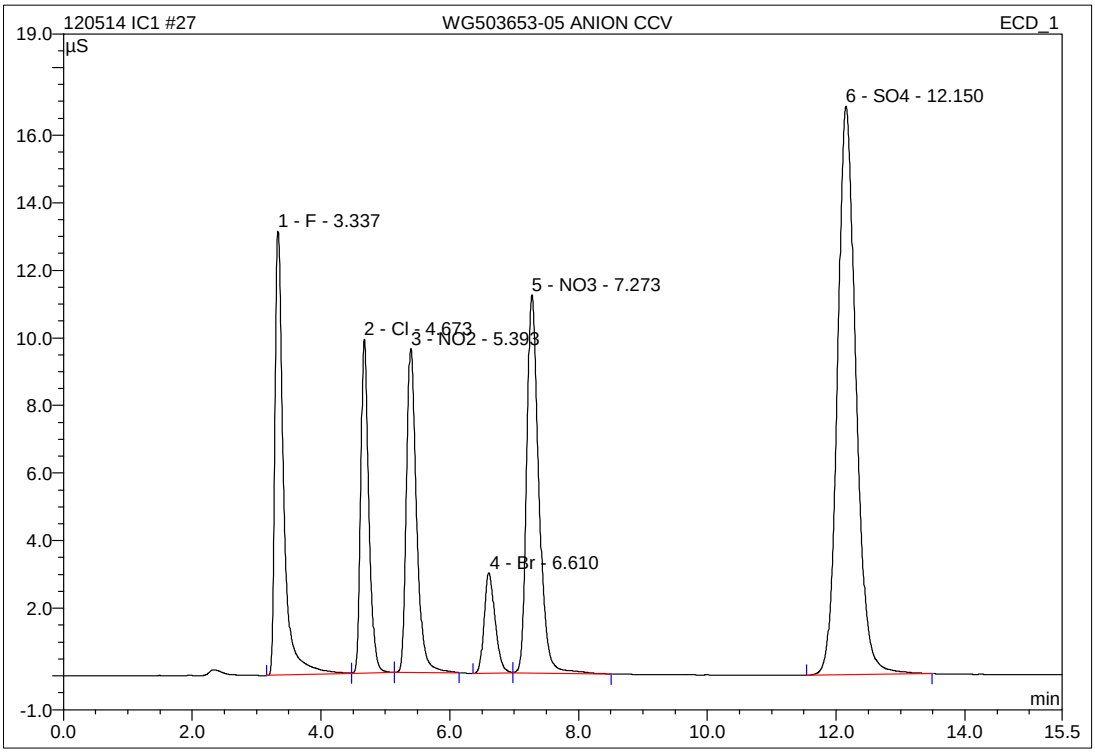

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.34	F	13.135	2.049	14.78	7.638	BMB
2	4.67	Cl	9.880	1.429	10.31	7.631	BMB
3	5.39	NO2	9.587	1.747	12.60	5.105	bMB
4	6.61	Br	2.975	0.584	4.21	7.923	BMb
5	7.27	NO3	11.197	2.457	17.72	5.242	bMB
6	12.15	SO4	16.821	5.599	40.38	38.819	BMB
Total:			63.595	13.865	100.00	72.357	

27 WG503653-05 ANION CCV

1,1 AED STD66516

Sample Name:	**WG503653-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/5/2014 19:44**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG503653-05 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.6384	-4.52	PASS
Cl	8.00	7.6309	-4.61	PASS
NO2-N	4.8714	5.1051	4.80	PASS
Br	8.00	7.9227	-0.97	PASS
NO3-N	5.4216	5.2416	-3.32	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.8188	-2.95	PASS

39 WG503653-07 ANION CCV

1,1 AED STD66516

Sample Name:	**WG503653-07 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/5/2014 23:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

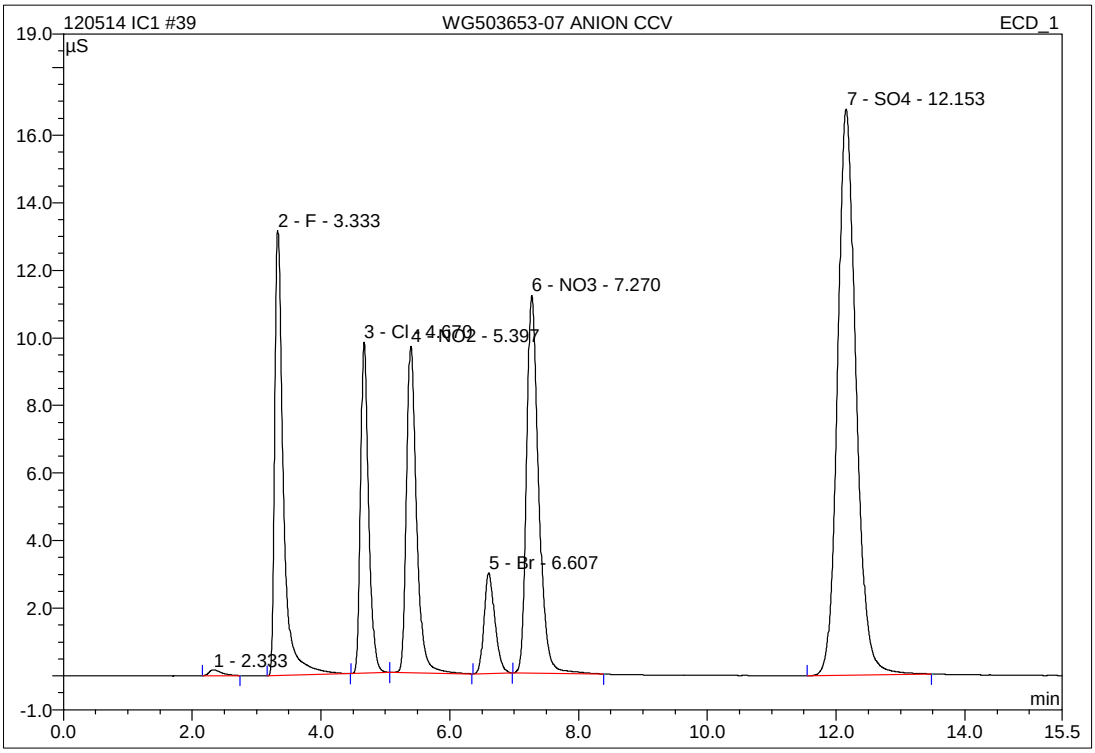

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.33	n.a.	0.177	0.040	0.29	n.a.	BMB
2	3.33	F	13.179	2.048	14.78	7.636	BMB
3	4.67	Cl	9.790	1.417	10.22	7.567	BMb
4	5.40	NO2	9.673	1.752	12.64	5.121	bMB
5	6.61	Br	2.974	0.580	4.18	7.861	BMB
6	7.27	NO3	11.179	2.446	17.65	5.218	BMB
7	12.15	SO4	16.753	5.577	40.24	38.670	BMB
Total:			63.724	13.860	100.00	72.073	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

39 WG503653-07 ANION CCV

1,1 AED STD66516

Sample Name:	**WG503653-07 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/5/2014 23:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG503653-07 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.6356	-4.55	PASS
Cl	8.00	7.5674	-5.41	PASS
NO2-N	4.8714	5.1211	5.13	PASS
Br	8.00	7.8607	-1.74	PASS
NO3-N	5.4216	5.2179	-3.76	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.6705	-3.32	PASS

53 WG503653-09 ANION CCV

1,1 AED STD66516

Sample Name:	**WG503653-09 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**23**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/6/2014 3:24**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

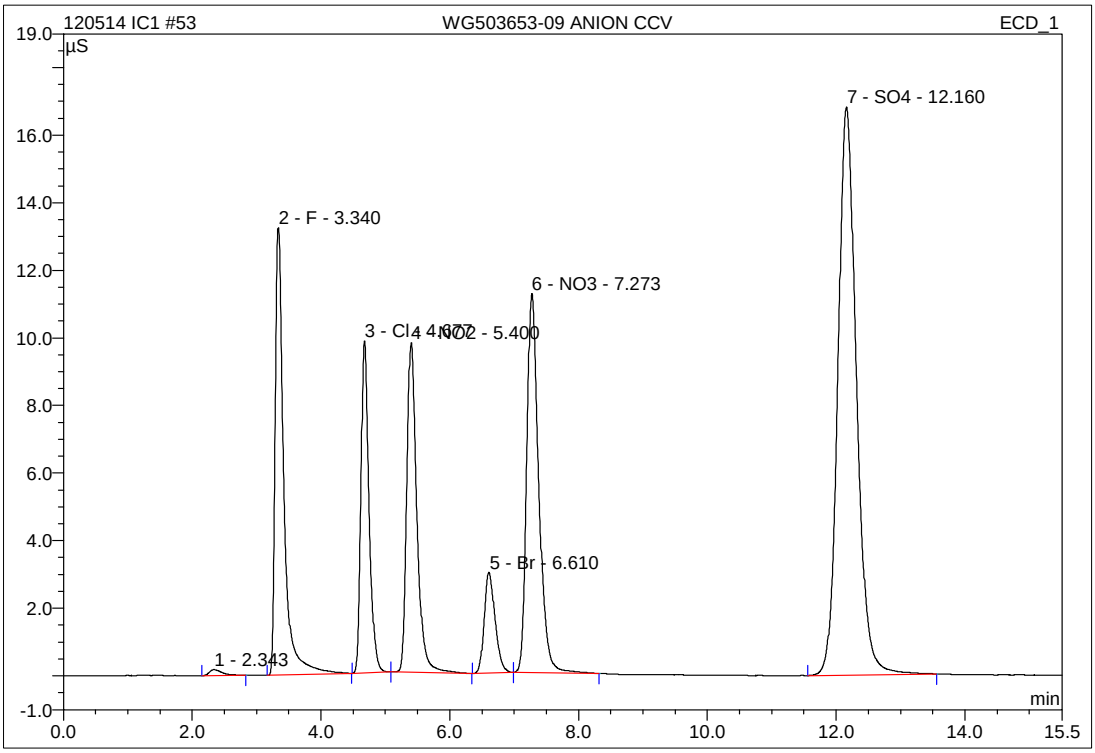

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.34	n.a.	0.177	0.041	0.30	n.a.	BMB
2	3.34	F	13.239	2.056	14.77	7.665	BMB
3	4.68	Cl	9.824	1.421	10.21	7.588	BMb
4	5.40	NO2	9.761	1.772	12.73	5.177	bMB
5	6.61	Br	2.983	0.582	4.18	7.899	BMB
6	7.27	NO3	11.218	2.441	17.54	5.207	BMB
7	12.16	SO4	16.806	5.604	40.27	38.855	BMB
Total:			64.008	13.918	100.00	72.392	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

53 WG503653-09 ANION CCV

1,1 AED STD66516

Sample Name:	**WG503653-09 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**23**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/6/2014 3:24**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG503653-09 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.6654	-4.18	PASS
Cl	8.00	7.5875	-5.16	PASS
NO2-N	4.8714	5.1772	6.28	PASS
Br	8.00	7.8995	-1.26	PASS
NO3-N	5.4216	5.2071	-3.96	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.8552	-2.86	PASS

3 WG503893-01 ANION CCV
1,1 ALS STD66516

Sample Name:	**WG503893-01 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/08/2014 18:07**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

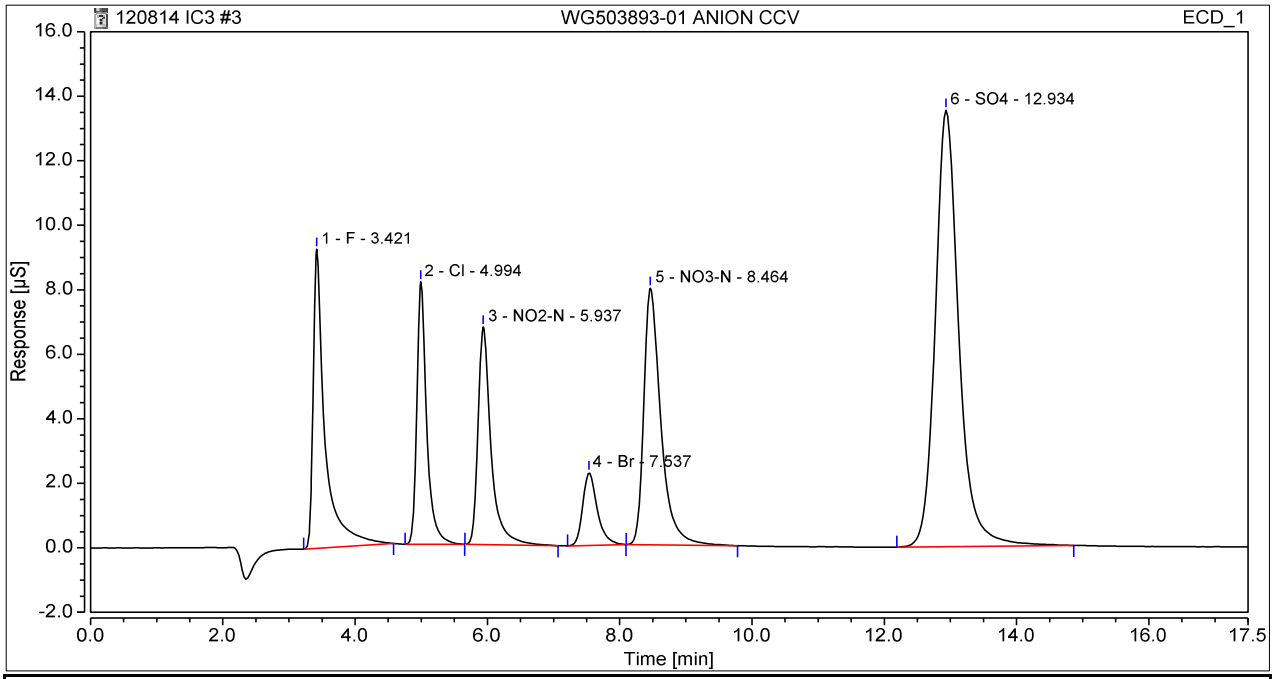

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.42	F	9.2728	1.9126	14.3	7.252	M
2	4.99	Cl	8.1358	1.4097	10.5	8.374	M
3	5.94	NO2-N	6.7444	1.5337	11.4	4.715	M
4	7.54	Br	2.2582	0.5751	4.3	8.855	M
5	8.46	NO3-N	7.9606	2.3828	17.8	5.692	M
6	12.93	SO4	13.5378	5.6014	41.8	41.181	M
Total:			**47.91**	**13.42**	**100**	**76.07**	

3 WG503893-01 ANION CCV
1,1 ALS STD66516

Sequence Details

Name:	**WG503893-01 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**3**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/8/2014 18:07**	*Sample Weight:*	**1.0000**

WG503893-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.252051159**	**-9.349360519**	**PASS**
CL	8.00	**8.373871381**	**4.673392264**	**PASS**
NO2	4.87	**4.715099517**	**-3.180708069**	**PASS**
BR	8.00	**8.854786145**	**10.68482681**	**FAIL**
NO3	5.42	**5.692007007**	**5.000129288**	**PASS**
SO4	40.00	**41.18146678**	**2.953666955**	**PASS**

15 WG503893-03 ANION CCV
1,1 ALS STD66516

Sample Name:	**WG503893-03 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/08/2014 22:11**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

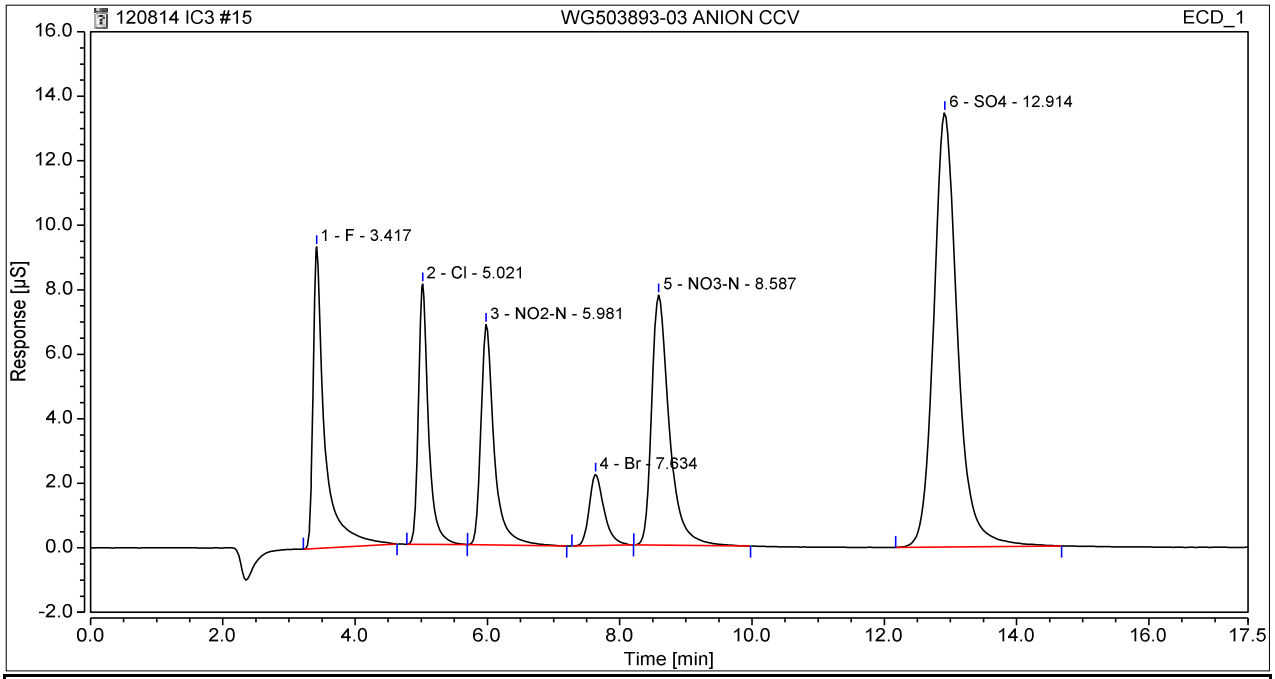

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.42	F	9.3506	1.9200	14.2	7.280	M
2	5.02	Cl	8.0713	1.4258	10.5	8.470	M
3	5.98	NO2-N	6.8300	1.5872	11.7	4.879	M
4	7.63	Br	2.2073	0.5774	4.3	8.889	M
5	8.59	NO3-N	7.7555	2.4014	17.7	5.737	M
6	12.91	SO4	13.4650	5.6244	41.6	41.350	M
Total:			**47.68**	**13.54**	**100**	**76.60**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

15 WG503893-03 ANION CCV
1,1 ALS STD66516

Sequence Details

Name:	**WG503893-03 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**15**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/8/2014 22:11**	*Sample Weight:*	**1.0000**

WG503893-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.279897112**	**-9.001286105**	**PASS**
CL	8.00	**8.469533621**	**5.869170262**	**PASS**
NO2	4.87	**4.879063511**	**0.1861090578**	**PASS**
BR	8.00	**8.889155714**	**11.11444642**	**FAIL**
NO3	5.42	**5.736804192**	**5.826645612**	**PASS**
SO4	40.00	**41.34996043**	**3.374901081**	**PASS**

4 WG503653-02 ANION CCB

1,1 AED

Sample Name:	**WG503653-02 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/5/2014 12:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

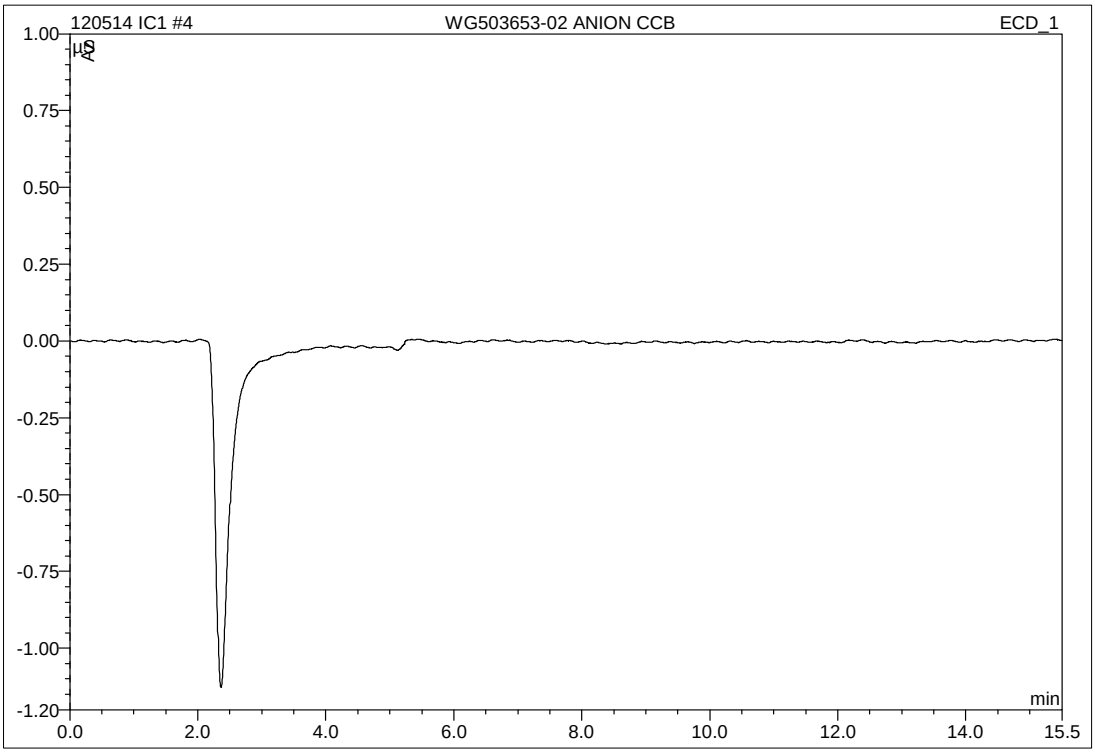

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

16 WG503653-04 ANION CCB

1,1 AED

Sample Name:	**WG503653-04 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/5/2014 16:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

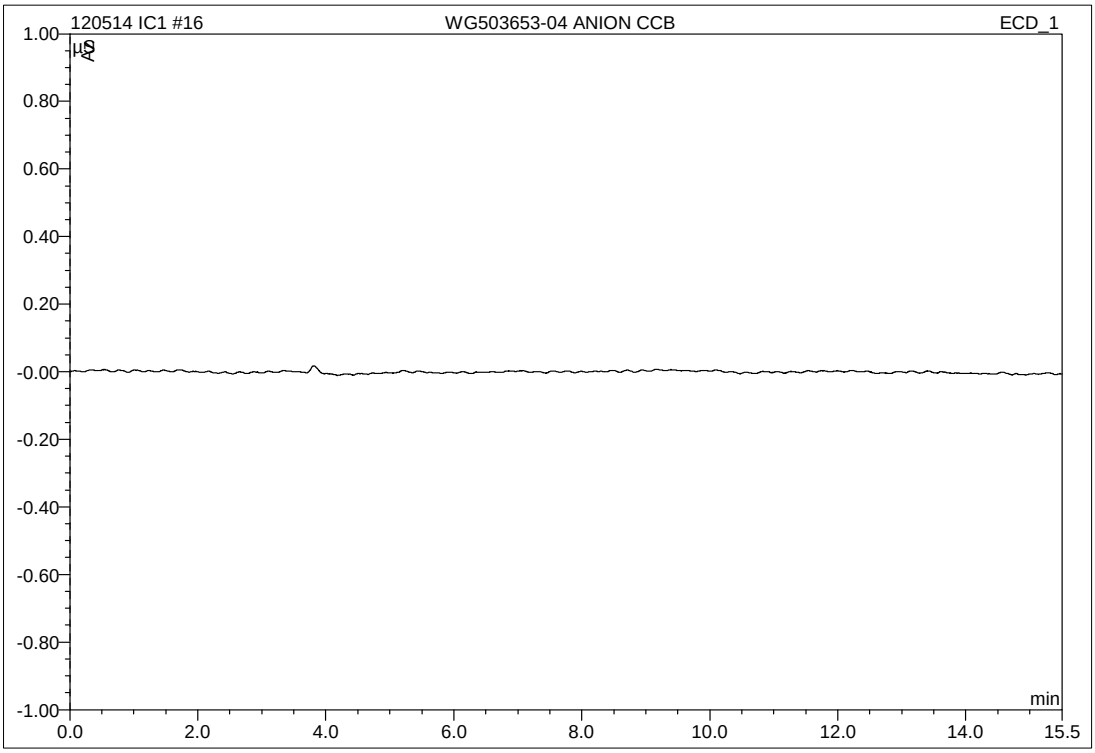

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

28 WG503653-06 ANION CCB

1,1 AED

Sample Name:	**WG503653-06 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/5/2014 20:02**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

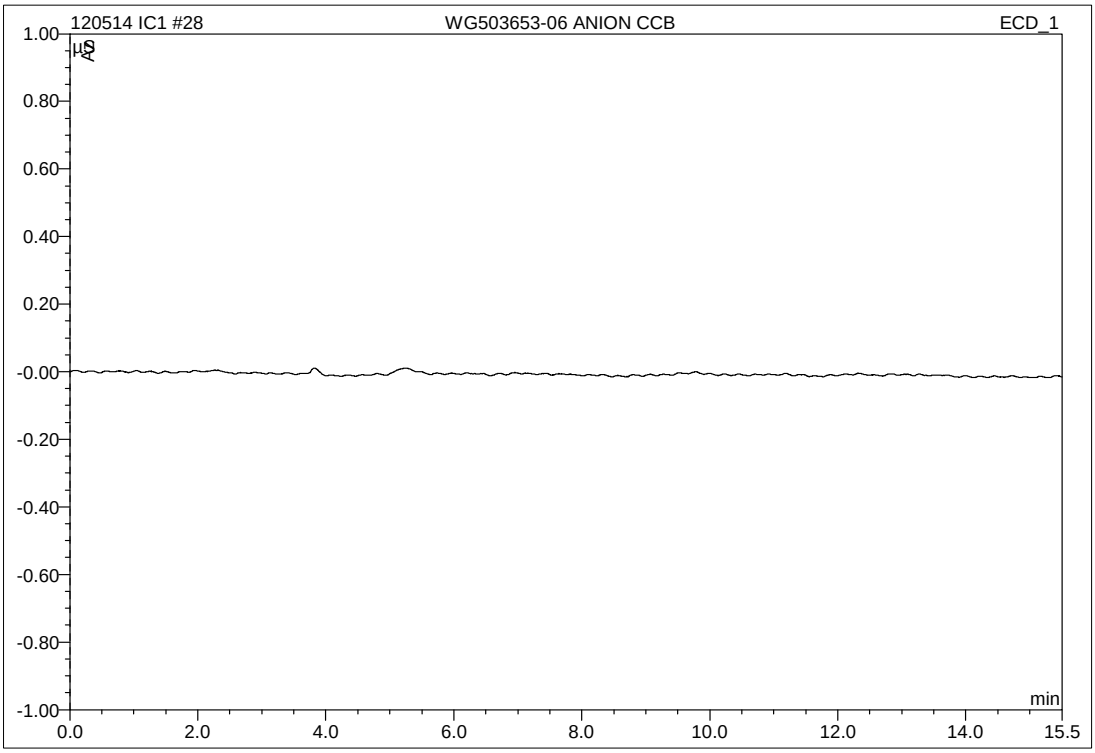

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

40 WG503653-08 ANION CCB

1,1 AED

Sample Name:	**WG503653-08 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/5/2014 23:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

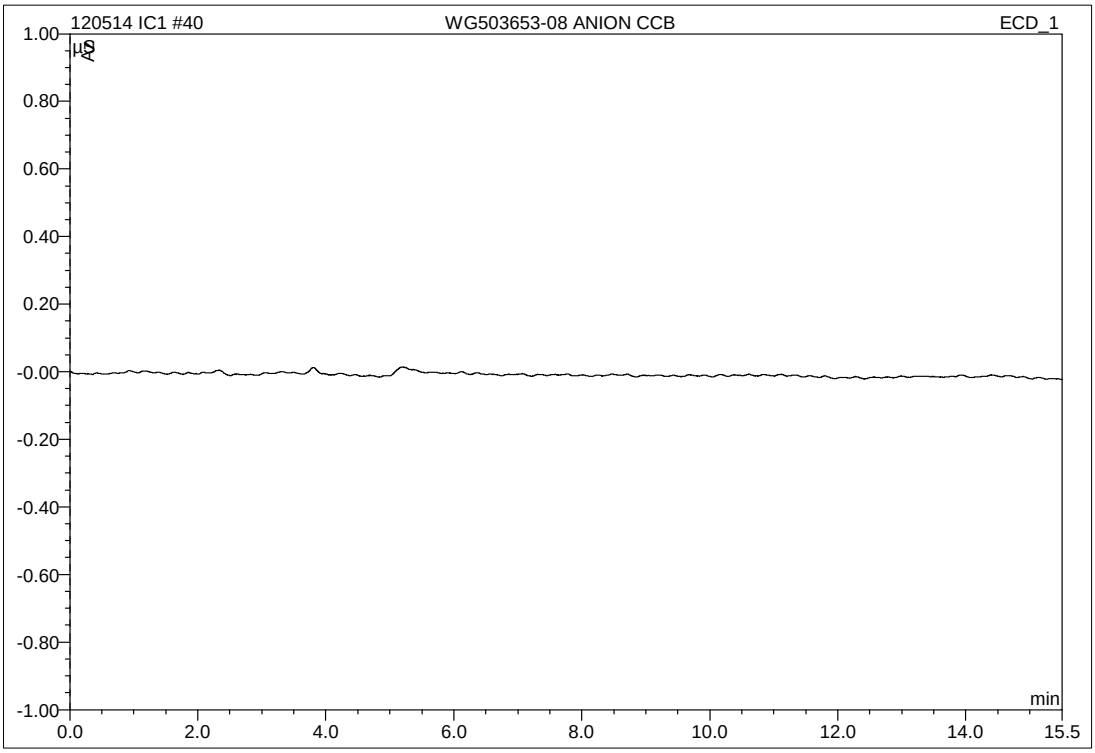

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

54 WG503653-10 ANION CCB

1,1 AED

Sample Name:	**WG503653-10 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**24**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/6/2014 3:42**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

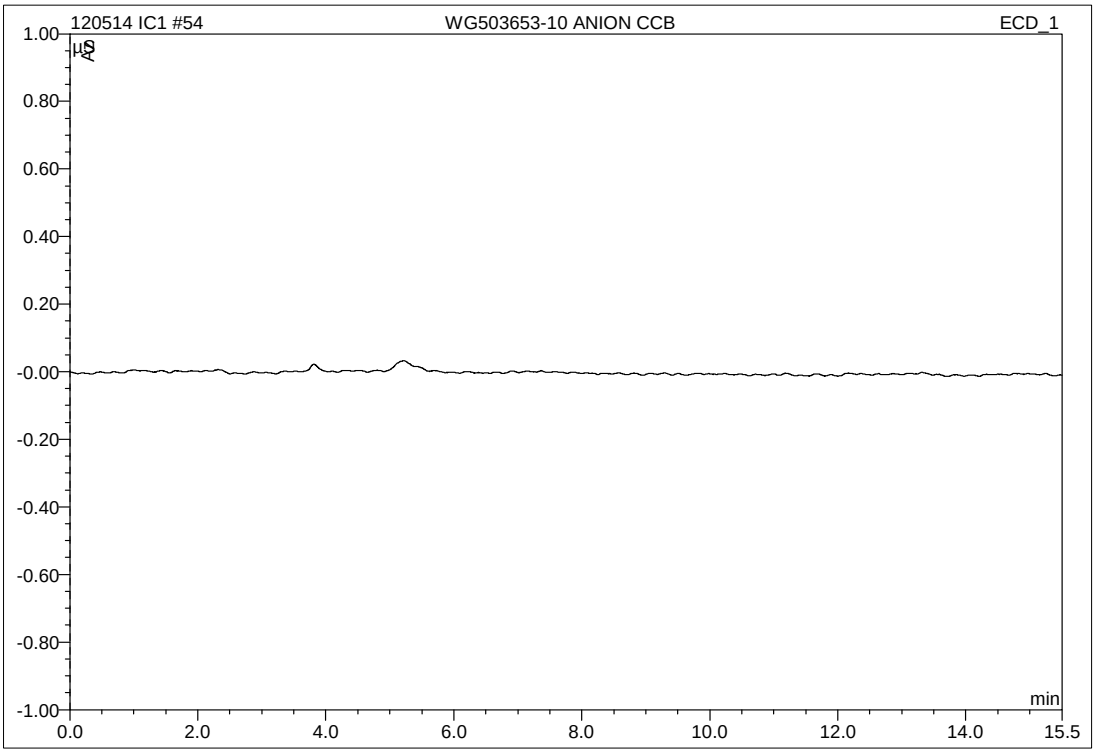

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG503893-02 ANION CCB
1,1 ALS

Sample Name:	**WG503893-02 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/08/2014 18:27**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

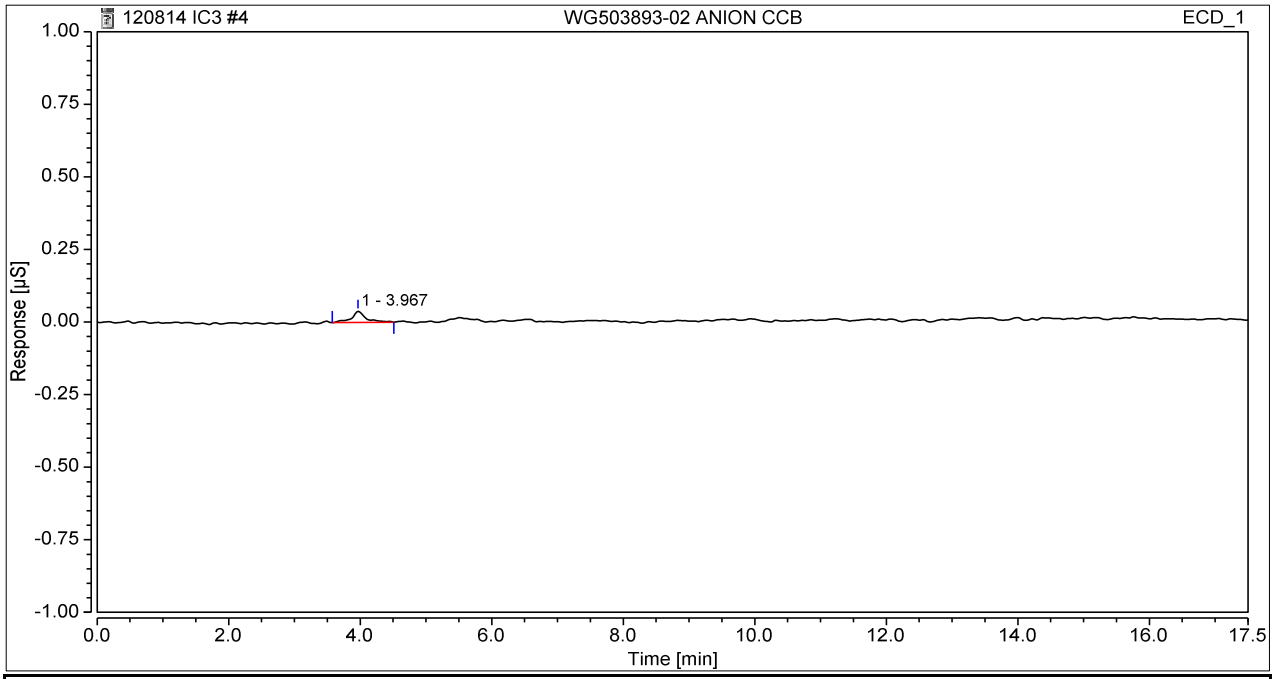

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

16 WG503893-04 ANION CCB
1,1 ALS

Sample Name:	**WG503893-04 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/08/2014 22:32**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

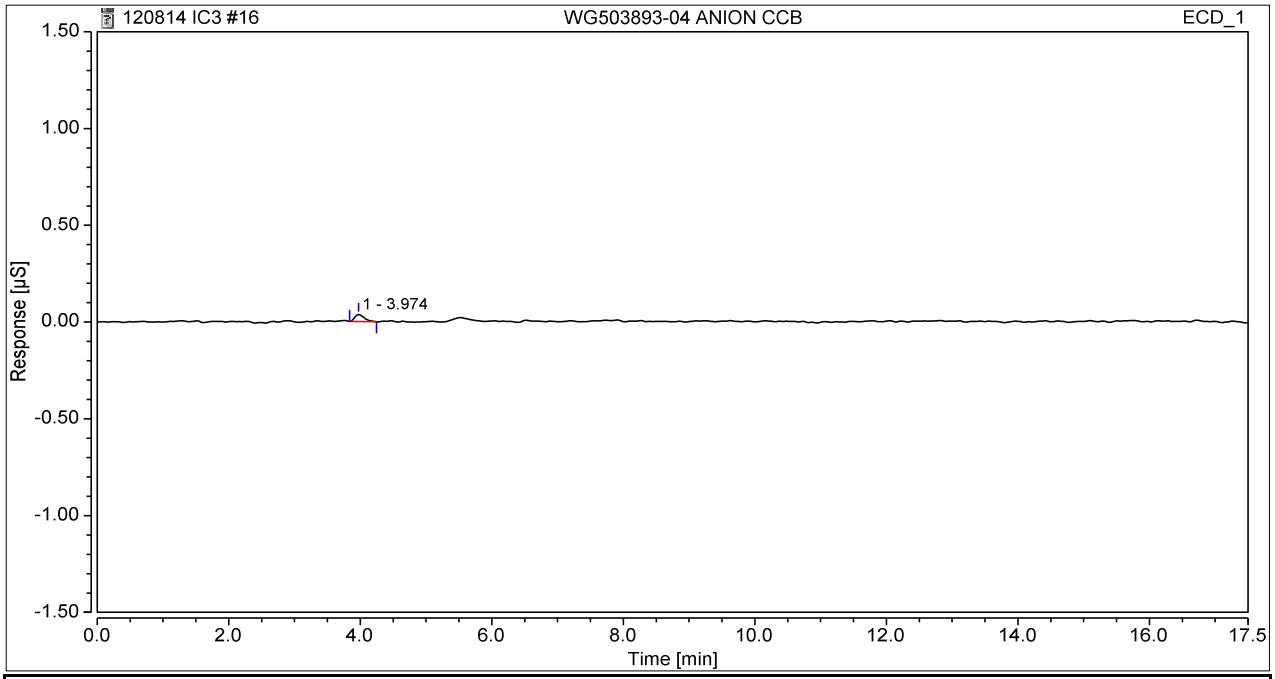

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/6/2013	6/6/2013	6/7/2013
File #	WG433163-01	WG433163-05	WG433448-01
Time	12:58	18:54	12:23

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.31	3.30	3.31	0.017
Cl	4.90	4.89	4.92	0.046
NO2-N	5.79	5.78	5.83	0.079
Br	7.34	7.31	7.43	0.187
NO3-N	8.21	8.18	8.32	0.221
SO4	13.74	13.74	13.67	0.121

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.2.1.5 Raw QC Data

5 WG503655-01 ANION BLANK

1,1 AED

Sample Name:	**WG503655-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/5/2014 13:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

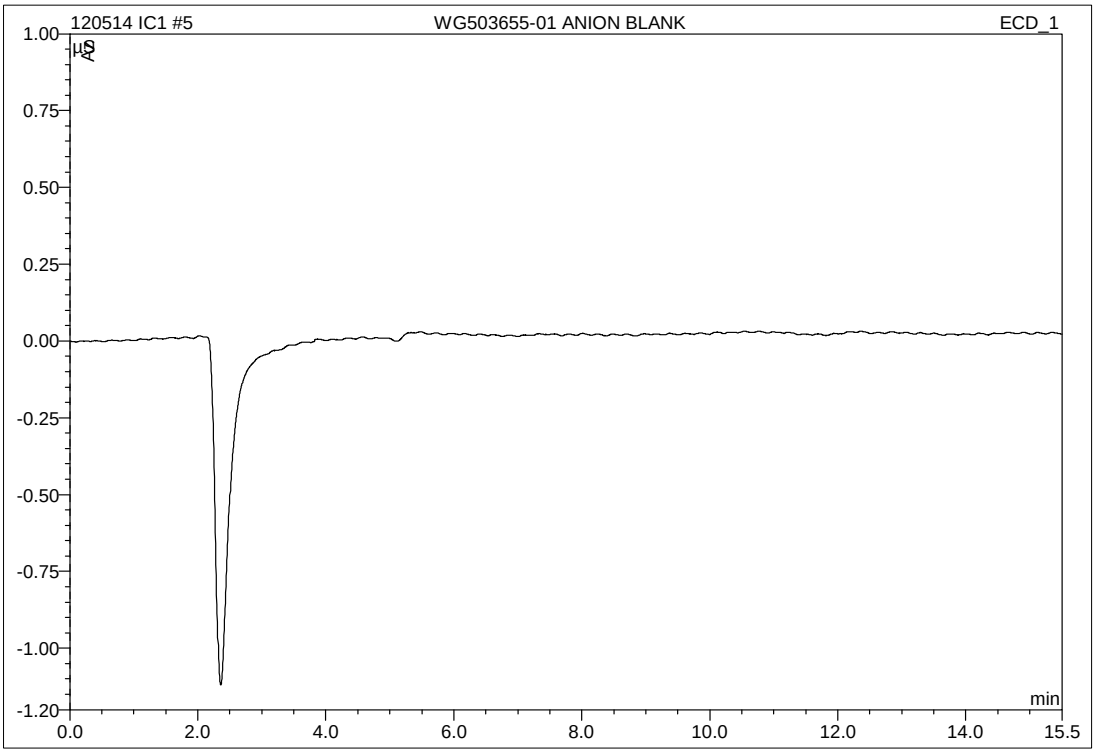

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

41 WG503691-01 ANION BLANK

1,1 AED

Sample Name:	**WG503691-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/5/2014 23:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

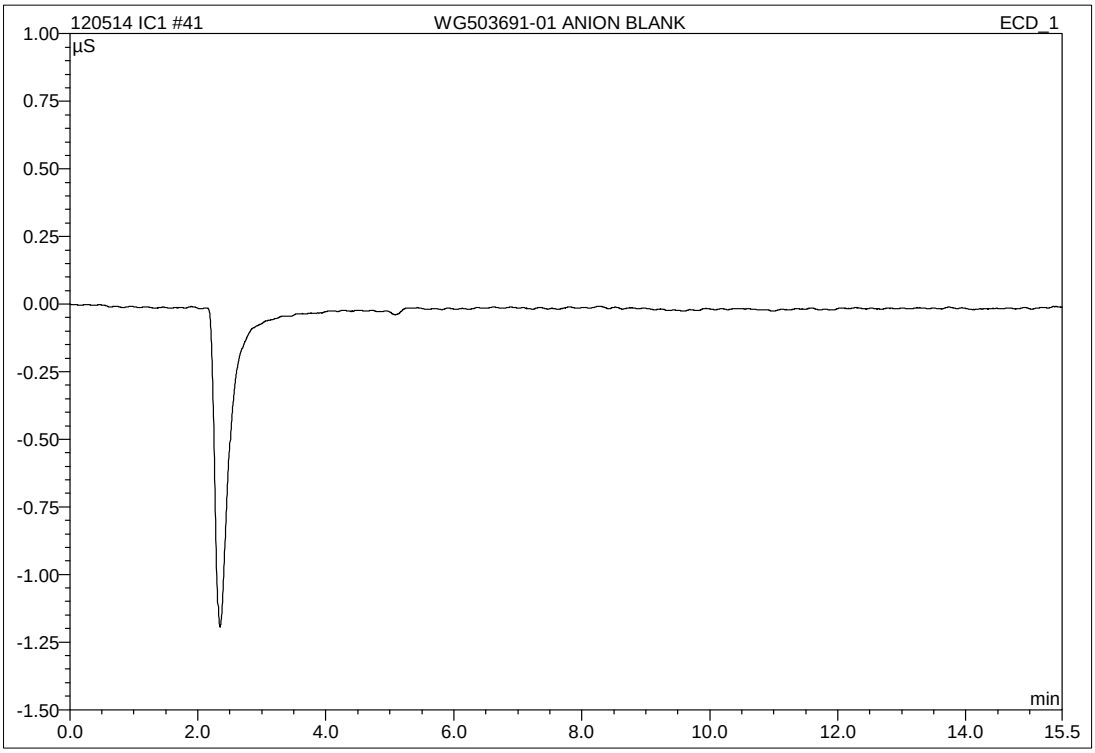

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

5 WG503892-01 ANION BLANK
1,1 ALS

Sample Name:	**WG503892-01 ANION BLANK**	*Injection Volume:*	**5000.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/08/2014 18:48**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

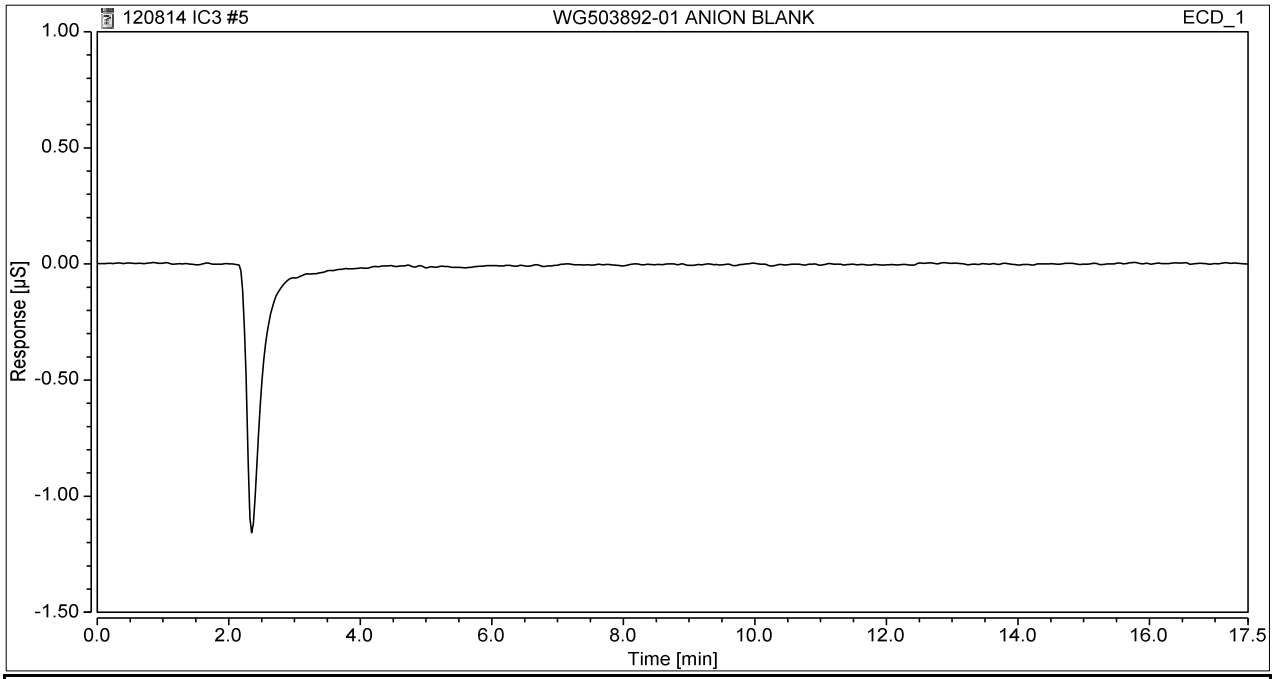

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

6 WG503655-02 ANION LCS

1,1 AED

Sample Name:	**WG503655-02 ANION LCS**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/5/2014 13:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

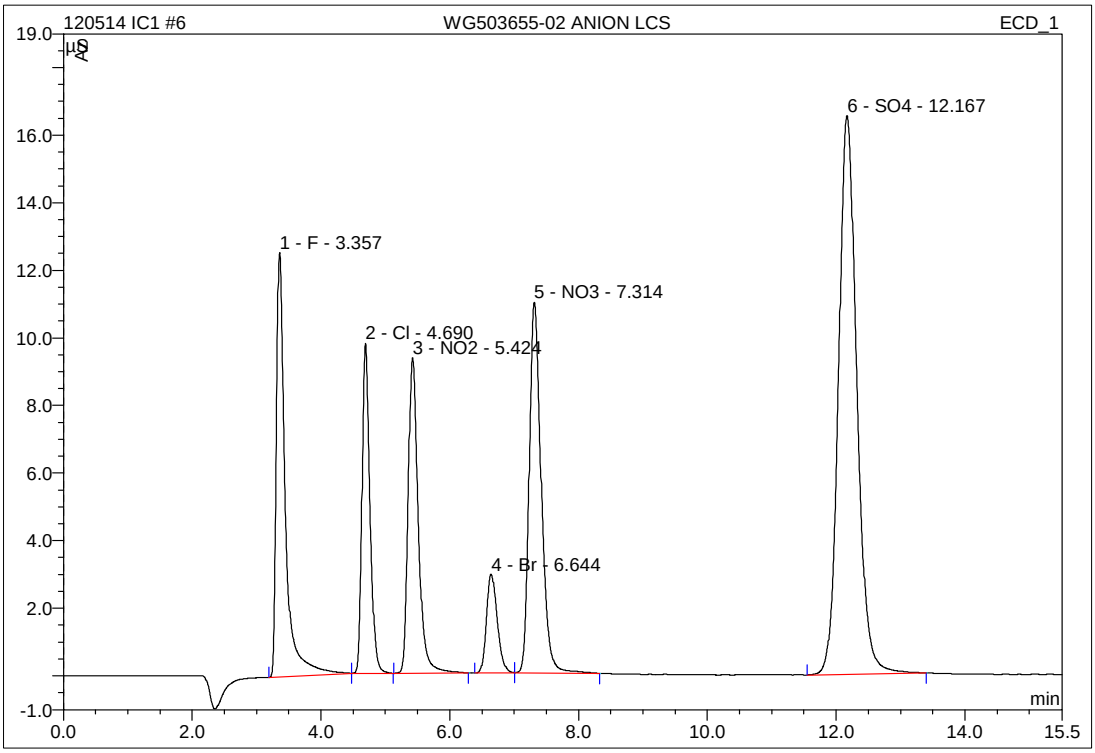

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	12.555	2.020	14.97	7.531	BMB
2	4.69	Cl	9.766	1.389	10.29	7.416	bMB
3	5.42	NO2	9.330	1.704	12.62	4.980	BMB
4	6.64	Br	2.921	0.565	4.19	7.667	BMB
5	7.31	NO3	10.967	2.371	17.57	5.058	bMB
6	12.17	SO4	16.534	5.448	40.37	37.787	BMB
Total:			62.073	13.496	100.00	70.440	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

42 WG503691-02 ANION LCS

1,1 AED

Sample Name:	**WG503691-02 ANION LCS**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/6/2014 0:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

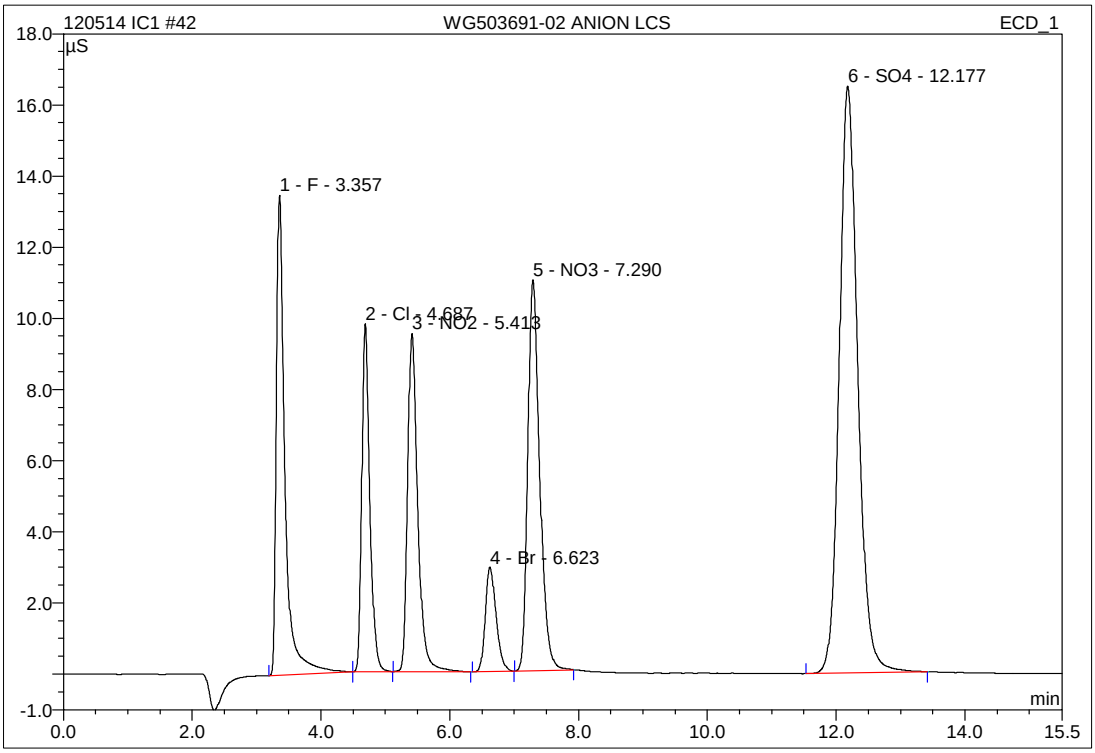

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	13.484	2.069	15.19	7.713	BMB
2	4.69	Cl	9.788	1.398	10.26	7.465	bMB
3	5.41	NO2	9.503	1.740	12.77	5.084	BMB
4	6.62	Br	2.940	0.572	4.20	7.763	BMB
5	7.29	NO3	10.987	2.358	17.31	5.031	BMB
6	12.18	SO4	16.503	5.487	40.28	38.054	BMB
Total:			63.204	13.624	100.00	71.111	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

6 WG503892-02 ANION LCS
1,1 ALS

Sample Name:	**WG503892-02 ANION LCS**	*Injection Volume:*	**5000.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/08/2014 19:08**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

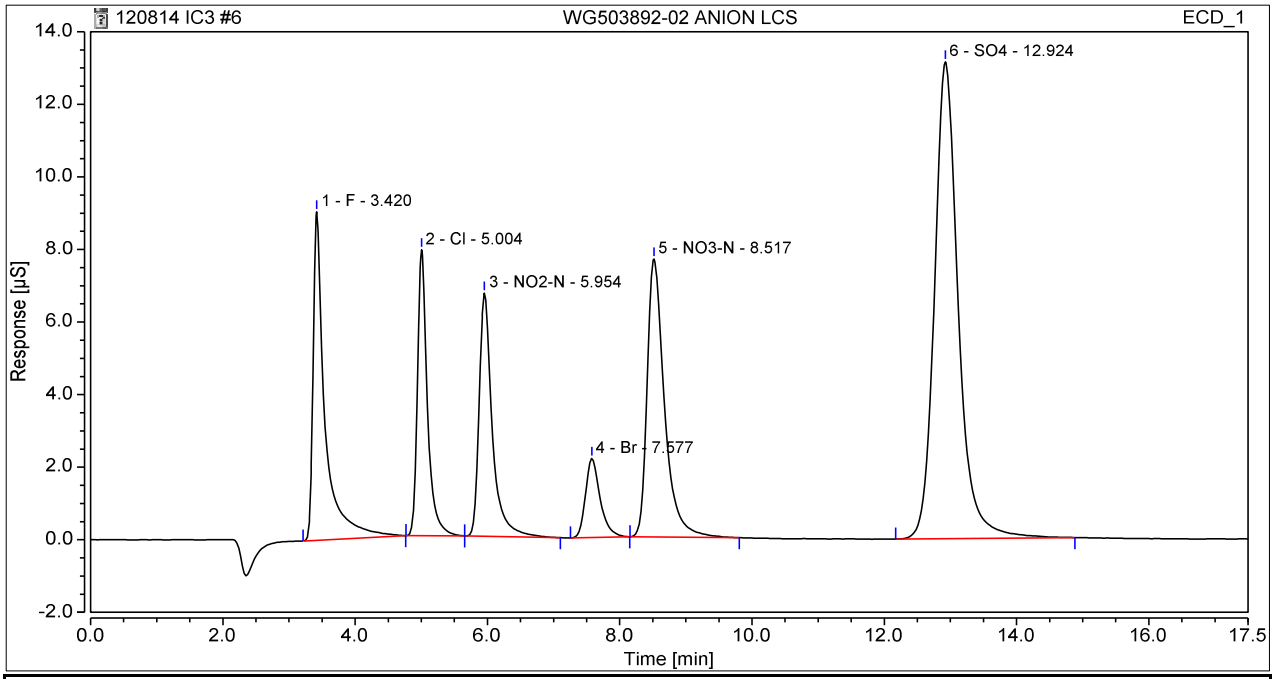

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.42	F	9.0516	1.8918	14.4	7.174	M
2	5.00	Cl	7.8779	1.3770	10.5	8.179	M
3	5.95	NO2-N	6.7000	1.5358	11.7	4.721	M
4	7.58	Br	2.1768	0.5580	4.2	8.590	M
5	8.52	NO3-N	7.6617	2.3249	17.7	5.553	M
6	12.92	SO4	13.1403	5.4602	41.5	40.146	M
Total:			**46.61**	**13.15**	**100**	**74.36**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

2.2.2 Ferrous Iron Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-12	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW08-120414	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	10/23/2014 08:01
Workgroup #:	WG504251	**Analyst:**	TMM	**Run Date:**	12/10/2014 13:15
Collect Date:	12/04/2014 08:20	**Dilution:**	1	**File ID:**	1V.1412101315-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.374		0.0400	0.0400	0.0200

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	67WW11-120414	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	10/23/2014 08:01
Workgroup #:	WG504251	**Analyst:**	TMM	**Run Date:**	12/10/2014 13:15
Collect Date:	12/04/2014 10:00	**Dilution:**	1	**File ID:**	1V.1412101315-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.0400	U	0.0400	0.0400	0.0200

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.2.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 10-DEC-2014
Analyst: TMM
Analyst: NA
Method: FERROUS IRON
Instrument: UV-120-1V
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG504251

Calibration/Linearity	10/23/14
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TMM
Secondary Reviewer	DIH
Comments	

Primary Reviewer: 16-DEC-2014

Secondary Reviewer: 16-DEC-2014

CHECKLIST1 - Modified 03/05/2008
Generated: DEC-16-2014 16:45:38

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM3500Fe-B-1997 AAB#: WG504251

Login Number: L14120292

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-120414	12	12/04/14					12/10/2014	6.2	7		12/10/14	6.2	7	
67WW11-120414	13	12/04/14					12/10/2014	6.1	7		12/10/14	6.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3923274
Report generated 12/16/2014 13:58

METHOD BLANK SUMMARY

Login Number: L14120292
Blank File ID: 1V.1412101315-02
Prep Date: 12/10/14 13:15
Analyzed Date: 12/10/14 13:15
Analyst: TMM

Work Group: WG504251
Blank Sample ID: WG504251-01
Instrument ID: UV-120-1V
Method: SM3500Fe-B-1997

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG504251-02	1V.1412101315-03	12/10/14 13:15	
LCS2	WG504251-03	1V.1412101315-04	12/10/14 13:15	
67WW08-120414	L14120292-12	1V.1412101315-05	12/10/14 13:15	
67WW11-120414	L14120292-13	1V.1412101315-06	12/10/14 13:15	
DUP	WG504251-05	1V.1412101315-07	12/10/14 13:15	

Report Name: BLANK_SUMMARY
PDF File ID: 3923275
Report generated 12/16/2014 13:58

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14120292 Prep Date: 12/10/14 13:15 Sample ID: WG504251-01
Instrument ID: UV-120-1V Run Date: 12/10/14 13:15 Prep Method: SM3500Fe-B-1997
File ID: 1V.1412101315-02 Analyst: TMM Method: SM3500Fe-B-1997
Workgroup (AAB#): WG504251 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-120 - 23-OCT-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Ferrous - Laboratory	0.0200	0.0400	0.0200	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3923276
16-DEC-2014 13:58

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14120292 Analyst: TMM Prep Method: SM3500Fe-B-1997
Instrument ID: UV-120-1V Matrix: Water Method: SM3500Fe-B-1997
Workgroup (AAB#): WG504251 Units: mg/L
QC Key: DOD4 Lot #: STD67894

Sample ID: WG504251-02 LCS File ID: 1V.1412101315-03 Run Date: 12/10/2014 13:15
Sample ID: WG504251-03 LCS2 File ID: 1V.1412101315-04 Run Date: 12/10/2014 13:15

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Iron, Ferrous - Laboratory	0.200	0.204	102	0.200	0.206	103	1.02	75 - 125	25	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3923277
Report generated: 12/16/2014 13:58

2.2.2.3 Raw Data

Wq 497764

Curves

Parameter: Ferrous Iron

Spectrophotometer: UV-120-1V

Calibration (Curve) standard stock: Std 67109

Concentration: 100mg/L

Recipe for preparation of curve standards found in:
SOP: 3500 Revision: 7 Page: 8

Second Source Stock: Std 64714 (concentration: 100mg/L)

Daily Preparation: 2(100)/1000

concentration = = 0.2

Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance
0	50	10cm	510	0.004
0.04				0.035
0.08				0.078
0.2				0.187
0.4				0.390
0.6				0.574
2nd Source	—	—	—	—
(0.20)	50	10cm	510	0.191

Analyst: Tammy Moore

Date/Time: 10/23/14 @ 8:01

DCN#106159

Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG497764
Analytical Method: FERROUS
Instrument ID: UV-120-1V

Analyst: TMM
Initial Calibration Date: 10/23/2014

Analyte: FERROUS IRON
Number of Points: 6
Slope: 0.959942
Y-Intercept: 0.000146013
Coef. Of Correlation (R^2): 0.999633
Coef. Of Correlation (R): 0.999817

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00400	0.00	0.00	0.000146013
0.0400	0.0350	0.00160	0.00140	0.0385437
0.0800	0.0780	0.00640	0.00624	0.0769414
0.200	0.187	0.0400	0.0374	0.192134
0.400	0.390	0.160	0.156	0.384123
0.600	0.574	0.360	0.344	0.576111

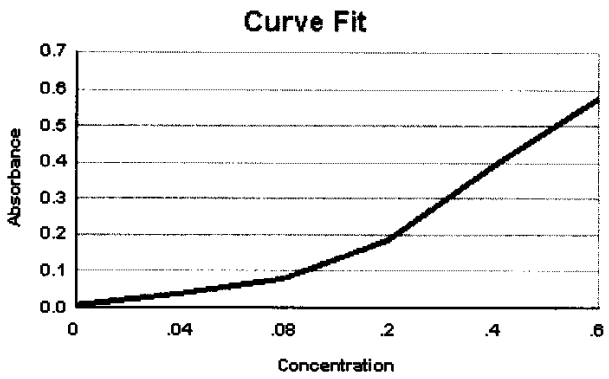

WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 10/23/2014 09:18

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG497764
File ID: 1V.1410230801-07
CCV ID: WG497764-07
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 10/23/2014
Run Time: 08:01
Analyst: TMM
Cal ID: UV-120 - 23-OCT-14 08:01:06

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.2	0.199	0.955	0.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 10/24/2014 08:46

[redacted]

WORKGROUP: WG504251

Ferrous Iron

SM 3500Fe-B

SOP K3500 Revision # 7

Instrument: UV-120-IV

Curve Reference: 10/23/14 29-497764

CCV: Std 67894
Daily Dilution: 3(100)/1000
Daily Dilution: = 0.3

RGTS: 32270
RGTS: 31292
RGTS: 31812

LCS: Std 67894
Daily Dilution: 2(100)/1000
Daily Dilution: = 0.2

Spike: Std 67894 ~~67471~~ 12/10/14
Daily Dilution: 0.1(100)/50
Daily Dilution: = 0.2

Sample	Blank	Volume (mL)	Dilution	Cell Size (nm)	Absorbance
CCV: 0.3 mg/L	/	50		10cm	0.270
BLANK	/	50			0.003
LCS: 0.2 mg/L	/	50			0.196
LCS DUP: (0.2 mg/L)	/	50			0.198
12-292-12	/	50			0.359
B	/	50			0.018
		50			
		50			
		50		

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG504251
Analyte: FERROUS IRON

Analyst: TMM
Date: 12/10/2014

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG504251-01	50	50	0.00300	0.9599	0.0001460	0.0029731	0.0029731	1	mg/L
WG504251-02	50	50	0.196	0.9599	0.0001460	0.20403	0.20403	1	mg/L
WG504251-03	50	50	0.198	0.9599	0.0001460	0.20611	0.20611	1	mg/L
WG504251-04	50	50	0.359	0.9599	0.0001460	0.37383	0.37383	1	mg/L
L14120292-12	50	50	0.359	0.9599	0.0001460	0.37383	0.37383	1	mg/L
L14120292-13	50	50	0.0180	0.9599	0.0001460	0.018599	ND	1	mg/L
WG504251-05	50	50	0.353	0.9599	0.0001460	0.36758	0.36758	1	mg/L
WG504251-06	50	50	0.539	0.9599	0.0001460	0.56134	0.56134	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 12/16/2014 13:13

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG505037
File ID: 1V.1412101315-01
CCV ID: WG505037-01
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 12/10/2014
Run Time: 13:15
Analyst: TMM
Cal ID: UV-120 - 05-NOV-14

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.281	0.900	6.3	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 12/16/2014 13:15

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG505037
File ID: 1V.1412101315-09
CCV ID: WG505037-02
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-120-1V
Run Date: 12/10/2014
Run Time: 13:15
Analyst: TMM
Cal ID: UV-120 - 05-NOV-14

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.284	0.910	5.3	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 12/16/2014 13:15

[redacted]

2.2.3 Sulfide Data

2.2.3.1 Summary Data

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-12	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW08-120414	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG503820	**Analyst:**	DLP	**Run Date:**	12/08/2014 13:30
Collect Date:	12/04/2014 08:20	**Dilution:**	1	**File ID:**	ET.1412081330-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW11-120414	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG503820	**Analyst:**	DLP	**Run Date:**	12/08/2014 13:30
Collect Date:	12/04/2014 10:00	**Dilution:**	1	**File ID:**	ET.1412081330-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

2.2.3.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 08-DEC-2014
Analyst: DLP
Analyst: NA
Method: SULFIDE
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG503820

Calibration/Linearity	12-08-14
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	DLP
Secondary Reviewer	DIH
Comments	

Primary Reviewer: 08-DEC-2014

Secondary Reviewer: 10-DEC-2014

CHECKLIST1 - Modified 03/05/2008
Generated: DEC-10-2014 15:42:47

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F- AAB#: WG503820

Login Number: L14120292

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-120414	12	12/04/14					12/08/2014	4.2	7		12/08/14	4.2	7	
67WW11-120414	13	12/04/14					12/08/2014	4.1	7		12/08/14	4.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3912007
Report generated 12/10/2014 15:14

METHOD BLANK SUMMARY

Login Number: L14120292
Blank File ID: ET.1412081330-01
Prep Date: 12/08/14 13:30
Analyzed Date: 12/08/14 13:30
Analyst: DLP

Work Group: WG503820
Blank Sample ID: WG503820-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG503820-02	ET.1412081330-02	12/08/14 13:30	
LCS2	WG503820-03	ET.1412081330-03	12/08/14 13:30	
67WW08-120414	L14120292-12	ET.1412081330-05	12/08/14 13:30	
67WW11-120414	L14120292-13	ET.1412081330-06	12/08/14 13:30	

Report Name: BLANK_SUMMARY
PDF File ID: 3912008
Report generated 12/10/2014 15:14

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14120292 Prep Date: 12/08/14 13:30 Sample ID: WG503820-01
Instrument ID: BURET Run Date: 12/08/14 13:30 Prep Method: SM4500-S-(-2)-F
File ID: ET.1412081330-01 Analyst: DLP Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG503820 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3912009
10-DEC-2014 15:14

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14120292 Analyst: DLP Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG503820 Units: mg/L
QC Key: DOD4 Lot #: STD67867

Sample ID: WG503820-02 LCS File ID: ET.1412081330-02 Run Date: 12/08/2014 13:30
Sample ID: WG503820-03 LCS2 File ID: ET.1412081330-03 Run Date: 12/08/2014 13:30

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	16.4	15.2	92.7	16.4	15.6	95.1	2.60	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3912010
Report generated: 12/10/2014 15:14

2.2.3.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG503820

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: 16

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: STD67867

Iodine standardization (0.025N) COA: 17611
mL 0.025N titrant: 10
Volume I: 10 mL
Normality I: 0.0250

(0.1 N I) COA: 17765
mL 0.025 N titrant: 8
Volume I: 2 mL
Normality I: 0.10

Stock standardization (in duplicate) 5 mL stock
mL I 1) 10 2) 10
N I 1) 0.10 2) 0.10
mL 0.025 titrant 1) 19.5 2) 19.5
LCS daily dilution 2(1640)/200 = 16.40 mg/L

1640 = stock conc (mg/L)

Titrant: T- 1484-04-05

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	0.0250 N Sodium Thiosulfate (mL)
BLANK	200	15	0.0250	15.0
LCS (mL)	200	15		7.4
LCSDUP (mL)	200	15		7.2
12-250.02	300	15		15.0
12-292-12	540	15		15.0
13	490	15		15.0

Analyst: Cheatty Payne Date/Time: 12-08-14/1330

DCN#107181

Microbac Laboratories Inc.

TITRAMETRIC REPORT

Workgroup (AAB#): WG503820

Product: EPA 376.1\9034

Analyte: Sulfide

Analyst: DLP

Run Date: 12/08/2014 13:30

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG503820-01	200.0	15	.025	15	.025	1	0	0	mg/L
WG503820-02	200.0	15	.025	7.4	.025	1	15.2	15.20	mg/L
WG503820-03	200.0	15	.025	7.2	.025	1	15.6	15.60	mg/L
L14120292-12	540.0	15	.025	15	.025	1	0	ND	mg/L
L14120292-13	490.0	15	.025	15	.025	1	0	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 12/08/2014 15:49

[redacted]

Microbac Laboratories Inc.

TITRAMETRIC REPORT

Workgroup (AAB#): WG503820

Product: 9030

Analyte: Sulfide, Dissolved

Analyst: DLP

Run Date: 12/08/2014 13:30

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
L14120250-02	300.0	15	.025	15	.025	1	0	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 12/08/2014 15:49

[redacted]

2.2.4 Total Organic Carbon Data

2.2.4.1 Summary Data

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-12	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-120414	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG503780	**Analyst:**	EPT	**Run Date:**	12/08/2014 18:23
Collect Date:	12/04/2014 08:20	**Dilution:**	1	**File ID:**	TC12082014.011
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	3.68		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L14120292-12	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-120414	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG503780	**Analyst:**	EPT	**Run Date:**	12/08/2014 18:23
Collect Date:	12/04/2014 08:20	**Dilution:**	1	**File ID:**	TC12082014.011
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		22.9		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW11-120414	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG503780	**Analyst:**	EPT	**Run Date:**	12/09/2014 09:32
Collect Date:	12/04/2014 10:00	**Dilution:**	5	**File ID:**	TC12082014.037
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	9.10	J	10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L14120292
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Kathy Albertson

Certificate of Analysis

Sample #:	L14120292-13	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW11-120414	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG503780	**Analyst:**	EPT	**Run Date:**	12/09/2014 09:32
Collect Date:	12/04/2014 10:00	**Dilution:**	5	**File ID:**	TC12082014.037
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		140		10.0	5.00	2.50

2.2.4.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 08-DEC-2014
Analyst: EPT
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG503780

Calibration/Linearity	7/16/14
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
09-DEC-2014

Ethan Tido

Secondary Reviewer:
11-DEC-2014

Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: DEC-11-2014 14:56:57

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG503780

Login Number: L14120292

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-120414	12	12/04/14					12/08/2014	4.4	28		12/08/14	4.4	28	
67WW11-120414	13	12/04/14					12/09/2014	5	28		12/09/14	5	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3913655
Report generated 12/11/2014 10:53

METHOD BLANK SUMMARY

Login Number: L14120292
Blank File ID: TC12082014.003
Prep Date: 12/08/14 15:14
Analyzed Date: 12/08/14 15:14
Analyst: EPT

Work Group: WG503780
Blank Sample ID: WG503780-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG503780-02	TC12082014.004	12/08/14 15:34	01
LCS2	WG503780-03	TC12082014.005	12/08/14 15:57	01
67WW08-120414	L14120292-12	TC12082014.011	12/08/14 18:23	01
67WW08-120414	L14120292-12	TC12082014.011	12/08/14 18:23	01
DUP	WG503780-08	TC12082014.032	12/09/14 01:27	01
67WW11-120414	L14120292-13	TC12082014.037	12/09/14 09:32	DL01
67WW11-120414	L14120292-13	TC12082014.037	12/09/14 09:32	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 3913656
Report generated 12/11/2014 10:53

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L14120292 Prep Date: 12/08/14 15:14 Sample ID: WG503780-01
Instrument ID: TOC-VWP Run Date: 12/08/14 15:14 Prep Method: 415.1
File ID: TC12082014.003 Analyst: EPT Method: 415.1
Workgroup (AAB#): WG503780 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-16-JUL-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3913657
11-DEC-2014 10:53

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14120292 Analyst: EPT Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG503780 Units: mg/L
QC Key: DOD4 Lot #: STD67086

Sample ID: WG503780-02 LCS File ID: TC12082014.004 Run Date: 12/08/2014 15:34
Sample ID: WG503780-03 LCS2 File ID: TC12082014.005 Run Date: 12/08/2014 15:57

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	24.9	99.6	25.0	25.7	103	3.36	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3913658
Report generated: 12/11/2014 10:53

2.2.4.3 Raw Data

TC/TIC Curves wg484708

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): see below (5/200)(1000) = 25mg/L

MS (TOC): _____

Calibration Curve Date: _____

Reagent: 30583 / 30943

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 16

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full

☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate

☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC Curve		27	Std 65368		52		
3	TC ICV		28			53	see SOP	
4	TIC ICV		29	TIC Curve		54	for curve	
5			30	Std 65406		55	points	
6			31			56		
7			32			57		
8			33	TC ICV		58	ept 7/16/14	
9			34	Std 63965		59	~~5/200~~ 5/200	(1000)
10			35			60		=25mg/L
11			36	TIC ICV		61		
12			37	Std 65405		62		
13			38			63		
14	all points		39	analyzed	in	64	duplicate	
15			40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: Ethan Todd / Deanne Hesson

Date/Time: 07/16/14 0930 + 7/17

DCN#103908

C:\TOC3201\Data\07-16-2014-DIH-CURVE.t32

	Anal	Sample Name	Result	Status	Date / Time
1	TC	TCCURVE		Completed	7/16/2014 12:06:36 PM
2	TC	TC ICV	TC:24.54mg/L	Completed	7/16/2014 1:33:15 PM
3	IC	TICCURVE		Completed	7/17/2014 12:33:06 PM
4	IC	TIC ICV	IC:25.59mg/L	Completed	7/17/2014 12:47:00 PM

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-07-16-2014.2014_07_16_11_05_11.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	5.492	500uL	1	*******		7/16/2014 11:08:39 AM
2	4.691	500uL	1	*******		7/16/2014 11:12:03 AM

Acid Add. 0.000%
Mean Area 5.091

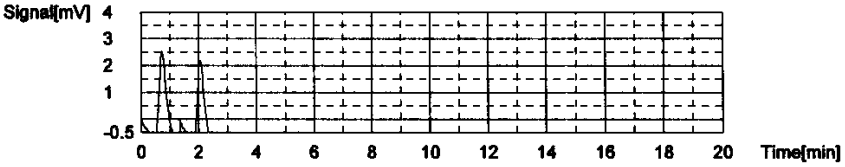

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	51.17	500uL	1	*******		7/16/2014 11:17:40 AM
2	51.30	500uL	1	*******		7/16/2014 11:21:41 AM

Acid Add. 0.000%
Mean Area 51.23

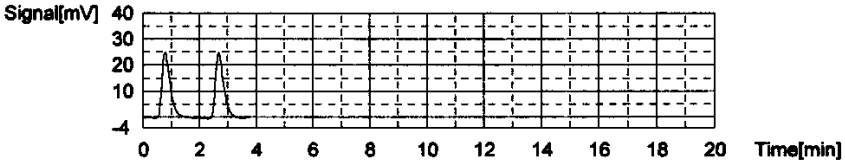

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	184.4	500uL	1	*******		7/16/2014 11:27:31 AM
2	188.1	500uL	1	*******		7/16/2014 11:31:40 AM

Acid Add. 0.000%
Mean Area 186.3

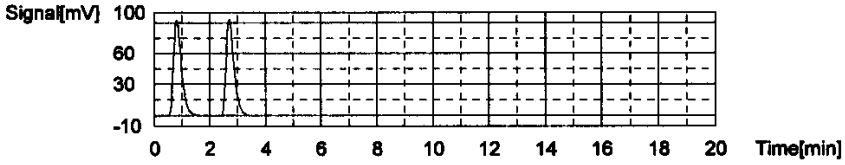

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	371.5	500uL	1	*******		7/16/2014 11:37:40 AM
2	397.8	500uL	1	*******		7/16/2014 11:42:09 AM

Acid Add. 0.000%
Mean Area 384.6

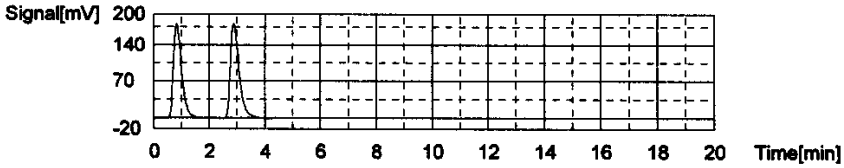

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	928.1	500uL	1	*******		7/16/2014 11:48:37 AM
2	992.4	500uL	1	*******		7/16/2014 11:53:28 AM

Acid Add. 0.000%
Mean Area 960.3

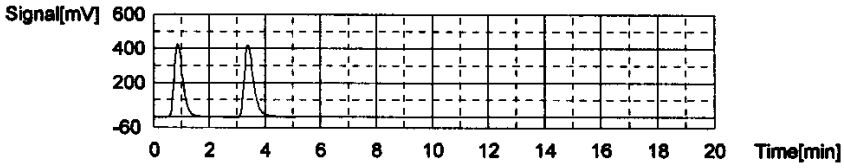

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1809	500uL	1	*******		7/16/2014 12:00:11 PM
2	2029	500uL	1	*******		7/16/2014 12:06:36 PM

Acid Add. 0.000%
Mean Area 1919

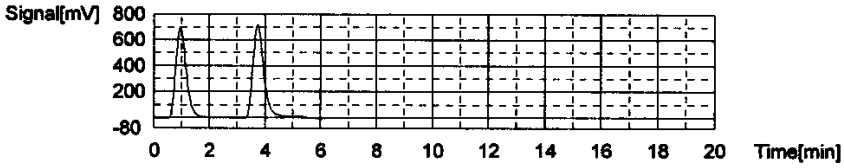

Slope: 38.27
Intercept 3.929
r^2 0.999938 ✓
Zero Shift No

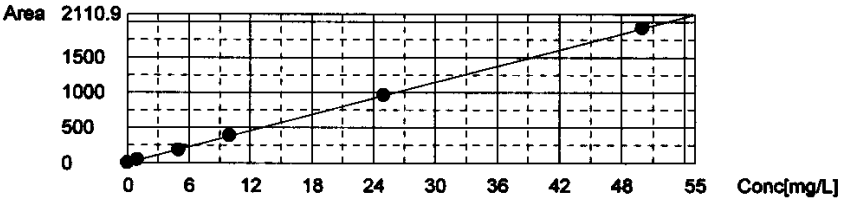

Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-07-16-2014.csl
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:24.54mg/L

= 98%

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	966.9	25.16mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/16/2014 1:28:24 PM
2	919.5	23.92mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/16/2014 1:33:15 PM

Mean Area 943.2
Mean Conc. 24.54mg/L

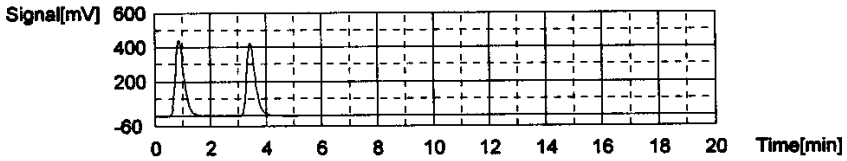

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-A-07-17-2014.2014_07_17_11_16_59.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	7.193	500uL	1	*******		7/17/2014 11:21:04 AM
2	6.644	500uL	1	*******		7/17/2014 11:25:12 AM

Acid Add. 10.00%
Mean Area 6.918

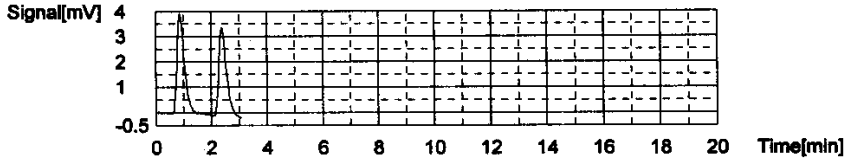

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	49.75	500uL	1	*******		7/17/2014 11:32:57 AM
2	50.58	500uL	1	*******		7/17/2014 11:37:28 AM

Acid Add. 10.00%
Mean Area 50.17

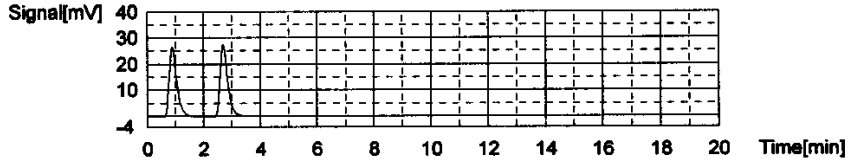

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	98.15	500uL	1	*******		7/17/2014 11:46:02 AM
2	158.0	500uL	1	*******		7/17/2014 11:50:52 AM

Acid Add. 10.00%
Mean Area 128.1

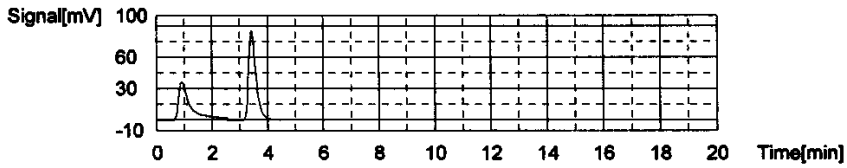

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	313.9	500uL	1	*******		7/17/2014 11:59:03 AM
2	314.5	500uL	1	*******		7/17/2014 12:04:02 PM

Acid Add. 10.00%
Mean Area 314.2

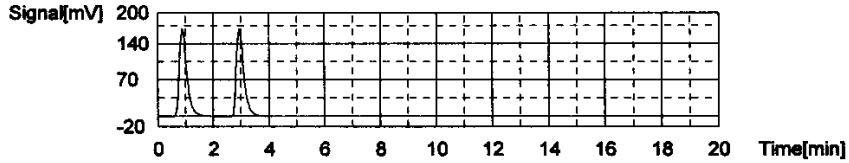

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	774.3	500uL	1	*******		7/17/2014 12:12:42 PM
2	781.8	500uL	1	*******		7/17/2014 12:17:58 PM

Acid Add. 10.00%
Mean Area 778.1

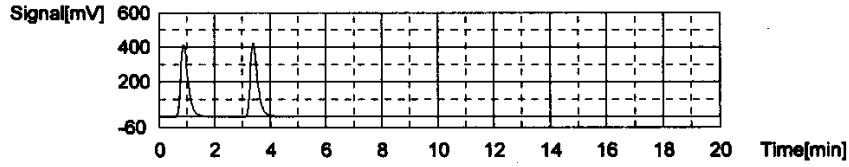

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1490	500uL	1	*******		7/17/2014 12:27:11 PM
2	1503	500uL	1	*******		7/17/2014 12:33:06 PM

Acid Add. 10.00%
Mean Area 1497

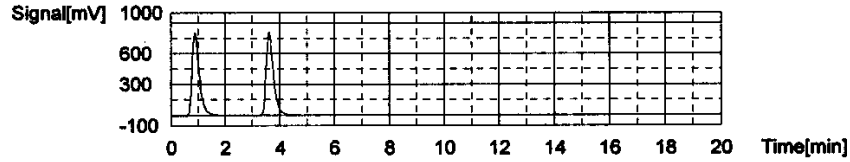

Slope: 29.95
Intercept 8.025
r^2 0.999041 ✓
Zero Shift No

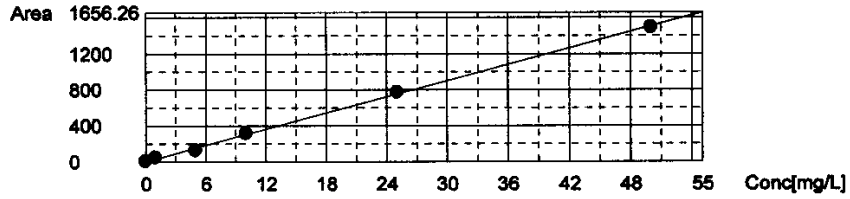

Sample

Sample Name: TIC ICV
Sample ID: Untitled
Origin: TICCURVE-A-07-17-2014.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:25.59mg/L

=102%

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	775.9	25.64mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/17/2014 12:41:44 PM
2	773.4	25.55mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/17/2014 12:47:00 PM

Mean Area 774.7
Mean Conc. 25.59mg/L

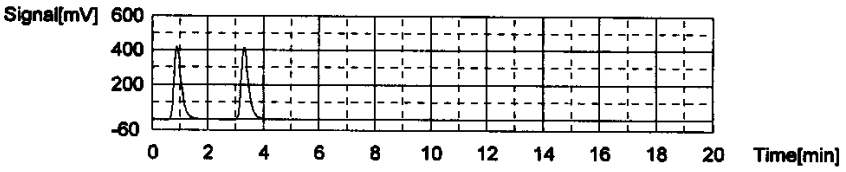

WORKGROUP: WG503780

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 65368 (5/200)(1000) = 25mg/L

LCS (TOC): Std 67086 Std 65405 (5/200)(1000) = 25mg/L

CCV (TIC): Std 65405 (5/200)(1000) = 25mg/L

MS (TOC): Std 67086 (.4)(1000)/40 = 10

Calibration Curve Date: 7/16/14

Reagent: 32214 30943

☒ SM5310-C : Matrix 2 WG 503780

☐ EPA 415.1/9060A(mod): Matrix 1 WG _____ SOP: K 4151 Rev. 17

WG _____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☒ drain reservoir filled
☒ ASI water bottle full
☒ dilution water bottle full

☒ 3rd bottle full
☒ sufficient gas
☒ sufficient persulfate

☒ sufficient acid
☒ waste container

Position	Sample ID	Dilution
1	TIC	
2	CCV	
3	BLK	
4	LCS	
5	LCSDUP	
6	12-0224-01	
7	12-0240-01	
8	-02	
9	-03	
10	12-0274-01	
11	12-0292-12	1/2
12	-13	1/2
13	12-0304-01	
14	CCV	
15	CCB	
16	12-0347-01	1/50
17 Ref	12-0377-02	1/50
18	MS -03	1/50
19	MSD -04	1/50
20	-05	1/25
21	-06	1/50
22	-07	1/50
23	-08	1/50
24	-09	1/50
25	-10	1/50

Position	Sample ID	Dilution
26	CCV	
27	CCB	
28	12-0377-11	1/25
29	-12	1/25
30	-13	1/25
31	-14	1/50
32	DUP 0224-01	
33	CCV	
34	CCB	
35	CCV	
36	CCB	
37	12-0292-13	1/5
38	12-0304-01	1/3
39 Ref	12-0377-02	1/25
40	MS -03	1/25
41	MSD -04	1/25
42	-06	1/10
43	-07	1/10
44	-08	1/10
45	-09	1/25
46	-11	1/5
47	CCV	
48	CCB	
49	-13	1/5
50	-14	1/25

Position	Sample ID	Dilution
51	~~DUP~~ CCV	
52	12/8/14 CCB	
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		

Analyst: Esther Tidd

Date/Time: 12/08/14 1445

DCN#107177

C:\TOC3201\Data\12-08-2014-EPT-TOC.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	TOC:0.06635mg/L TC:25.32mg/L IC:25.26mg/L	Complete	12/8/2014 2:56:42 PM	1
2	TOC	CCV	!!Error!! TOC:23.73mg/L TC:23.70mg/L IC:-0.03077mg	Complete	12/8/2014 3:09:04 PM	2
3	TOC	WG503780-01 BLK	TOC:0.1473mg/L TC:0.1681mg/L IC:0.02081mg/L	Complete	12/8/2014 3:25:48 PM	0
4	TOC	WG503780-02 LCS	TOC:24.89mg/L TC:43.45mg/L IC:18.57mg/L	Complete	12/8/2014 3:49:32 PM	4
5	TOC	WG503780-03 LCSDUP	TOC:25.74mg/L TC:42.71mg/L IC:16.97mg/L	Complete	12/8/2014 4:13:19 PM	5
6	TOC	L14120224-01	TOC:0.5962mg/L TC:0.7076mg/L IC:0.1114mg/L	Complete	12/8/2014 4:33:09 PM	6
7	TOC	L14120240-01	TOC:3.263mg/L TC:30.87mg/L IC:27.61mg/L	Complete	12/8/2014 5:06:36 PM	7
8	TOC	L14120240-02	TOC:1.982mg/L TC:14.75mg/L IC:12.77mg/L	Complete	12/8/2014 5:29:06 PM	8
9	TOC	L14120240-03	TOC:0.7171mg/L TC:7.952mg/L IC:7.235mg/L	Complete	12/8/2014 5:50:55 PM	9
10	TOC	L14120274-01	TOC:6.702mg/L TC:15.85mg/L IC:9.150mg/L	Complete	12/8/2014 6:14:25 PM	10
11	TOC	L14120292-12	TOC:3.675mg/L TC:26.61mg/L IC:22.94mg/L	Complete	12/8/2014 6:40:55 PM	11
12	TOC		TOC:2.081mg/L TC:65.90mg/L IC:63.81mg/L	Complete	12/8/2014 7:09:36 PM	12
13	TOC		TOC:30.98mg/L TC:64.03mg/L IC:33.05mg/L	Complete	12/8/2014 7:38:24 PM	13
14	TOC	CCV	TOC:26.38mg/L TC:26.55mg/L IC:0.1678mg/L	Complete	12/8/2014 7:50:52 PM	14
15	TOC	CCB	TOC:0.1415mg/L TC:0.1882mg/L IC:0.04665mg/L	Complete	12/8/2014 8:00:03 PM	0
16	TOC	L14120347-01 (50)	TOC:10.52mg/L TC:10.73mg/L IC:0.2077mg/L	Complete	12/8/2014 8:26:13 PM	16
17	TOC		TOC:8.157mg/L TC:9.384mg/L IC:1.227mg/L	Complete	12/8/2014 8:47:22 PM	17
18	TOC		TOC:8.433mg/L TC:9.260mg/L IC:0.8268mg/L	Complete	12/8/2014 9:08:23 PM	18
19	TOC		TOC:8.283mg/L TC:9.122mg/L IC:0.8388mg/L	Complete	12/8/2014 9:29:41 PM	19
20	TOC	L14120377-05 (25)	TOC:10.91mg/L TC:13.17mg/L IC:2.262mg/L	Complete	12/8/2014 9:51:15 PM	20
21	TOC		TOC:5.359mg/L TC:6.129mg/L IC:0.7700mg/L	Complete	12/8/2014 10:12:08 PM	21
22	TOC		TOC:5.320mg/L TC:6.256mg/L IC:0.9355mg/L	Complete	12/8/2014 10:32:53 PM	22
23	TOC		TOC:3.402mg/L TC:4.131mg/L IC:0.7296mg/L	Complete	12/8/2014 10:53:33 PM	23
24	TOC		TOC:7.910mg/L TC:9.003mg/L IC:1.092mg/L	Complete	12/8/2014 11:14:34 PM	24
25	TOC	L14120377-10 (50)	TOC:9.101mg/L TC:10.26mg/L IC:1.161mg/L	Complete	12/8/2014 11:35:46 PM	25
26	TOC	CCV	!!Error!! TOC:24.48mg/L TC:24.48mg/L IC:-0.00052mg	Complete	12/8/2014 11:48:02 PM	26
27	TOC	CCB	TOC:0.1310mg/L TC:0.1482mg/L IC:0.01717mg/L	Complete	12/8/2014 11:57:08 PM	0
28	TOC		TOC:5.364mg/L TC:5.610mg/L IC:0.2464mg/L	Complete	12/9/2014 12:17:40 AM	28
29	TOC	L14120377-12 (25)	TOC:11.10mg/L TC:11.65mg/L IC:0.5502mg/L	Complete	12/9/2014 12:38:50 AM	29
30	TOC		TOC:3.962mg/L TC:4.182mg/L IC:0.2207mg/L	Complete	12/9/2014 12:59:23 AM	30
31	TOC		TOC:7.565mg/L TC:8.019mg/L IC:0.4546mg/L	Complete	12/9/2014 1:20:20 AM	31
32	TOC	WG503780-08 DUP	TOC:0.6036mg/L TC:0.6121mg/L IC:0.00847mg/L	Complete	12/9/2014 1:39:55 AM	32
33	TOC	CCV	!!Error!! TOC:24.07mg/L TC:24.05mg/L IC:-0.01077mg	Complete	12/9/2014 1:52:12 AM	33
34	TOC	CCB	TOC:0.1339mg/L TC:0.1464mg/L IC:0.01243mg/L	Complete	12/9/2014 2:01:18 AM	0
35	TOC	CCV	!!Error!! TOC:24.18mg/L TC:24.11mg/L IC:-0.07140mg	Complete	12/9/2014 9:14:49 AM	35
36	TOC	CCB	TOC:0.1522mg/L TC:0.1767mg/L IC:0.02442mg/L	Complete	12/9/2014 9:23:58 AM	0
37	TOC	L14120292-13 (5)	TOC:1.819mg/L TC:29.84mg/L IC:28.02mg/L	Complete	12/9/2014 9:48:26 AM	37
38	TOC	L14120304-01 (3)	TOC:9.251mg/L TC:21.54mg/L IC:12.28mg/L	Complete	12/9/2014 10:13:30 AM	38
39	TOC	L14120377-02 (25)	TOC:15.96mg/L TC:19.53mg/L IC:3.573mg/L	Complete	12/9/2014 10:35:56 AM	39
40	TOC	L14120377-03 (25) MS	TOC:19.67mg/L TC:22.16mg/L IC:2.487mg/L	Complete	12/9/2014 10:57:54 AM	40
41	TOC	L14120377-04 (25) MSD	TOC:16.71mg/L TC:18.95mg/L IC:2.241mg/L	Complete	12/9/2014 11:19:46 AM	41
42	TOC	L14120377-06 (10)	TOC:26.28mg/L TC:33.89mg/L IC:7.606mg/L	Complete	12/9/2014 11:42:24 AM	42
43	TOC	L14120377-07 (10)	TOC:26.01mg/L TC:36.27mg/L IC:10.26mg/L	Complete	12/9/2014 12:05:21 PM	43
44	TOC	L14120377-08 (10)	TOC:29.62mg/L TC:45.20mg/L IC:15.59mg/L	Complete	12/9/2014 12:29:03 PM	44
45	TOC	L14120377-09 (25)	TOC:22.56mg/L TC:25.76mg/L IC:3.200mg/L	Complete	12/9/2014 12:51:19 PM	45
46	TOC		TOC:49.70mg/L TC:56.16mg/L IC:6.461mg/L	Complete	12/9/2014 1:14:49 PM	46
47	TOC	CCV	TOC:22.87mg/L TC:22.89mg/L IC:0.02595mg/L	Complete	12/9/2014 1:27:10 PM	47
48	TOC	CCB	TOC:0.1281mg/L TC:0.1545mg/L IC:0.02645mg/L	Complete	12/9/2014 1:36:14 PM	0
49	TOC	L14120377-13 (5)	TOC:40.28mg/L TC:45.53mg/L IC:5.252mg/L	Complete	12/9/2014 1:59:24 PM	49
50	TOC	L14120377-14 (25)	TOC:16.99mg/L TC:18.46mg/L IC:1.472mg/L	Complete	12/9/2014 2:21:07 PM	50
51	TOC	CCV	TOC:23.09mg/L TC:23.11mg/L IC:0.01897mg/L	Complete	12/9/2014 2:33:16 PM	51
52	TOC	CCB	TOC:0.1232mg/L TC:0.1538mg/L IC:0.03066mg/L	Complete	12/9/2014 2:42:18 PM	0

12/9/2014 2:44:23 PM 1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.06635mg/L TC:25.32mg/L IC:25.26mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	973.2	25.32mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 2:51:00 PM

Mean Area 973.2
Mean Conc. 25.32mg/L

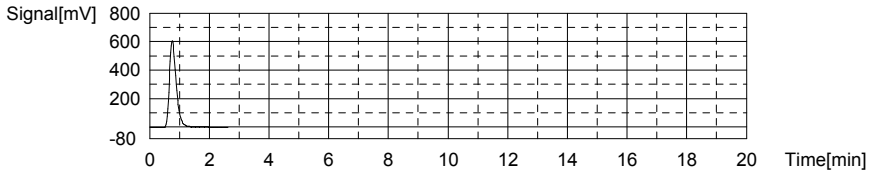

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	764.6	25.26mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 2:56:42 PM

Mean Area 764.6
Mean Conc. 25.26mg/L

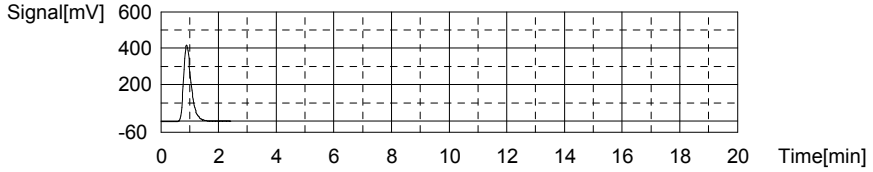

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.73mg/L TC:23.70mg/L IC:-0.03077mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	910.9	23.70mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 3:04:39 PM

Mean Area 910.9
Mean Conc. 23.70mg/L

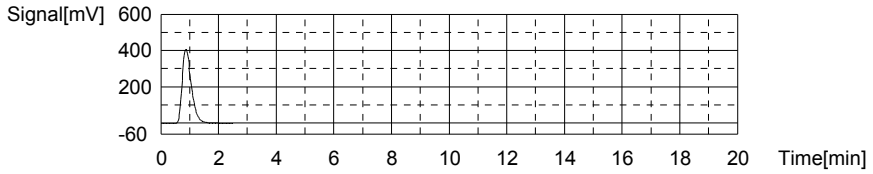

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.103	-0.03077mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 3:09:04 PM

Mean Area 7.103
Mean Conc. -0.03077mg/L

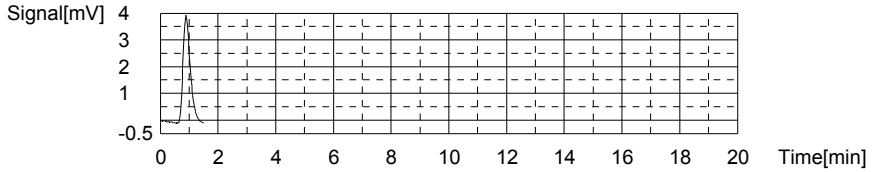

Sample

Sample Name: WG503780-01 BLK
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1473mg/L TC:0.1681mg/L IC:0.02081mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.80	0.1795mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 3:14:10 PM
2	9.923	0.1566mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 3:17:47 PM

Mean Area 10.36
Mean Conc. 0.1681mg/L

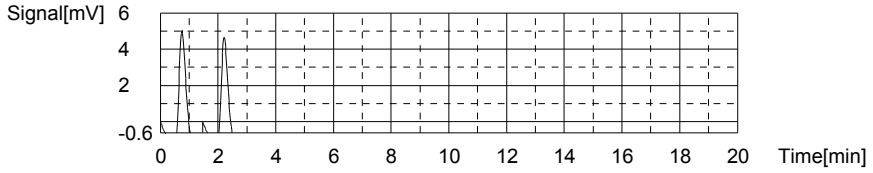

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.595	0.01904mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 3:21:47 PM
2	8.701	0.02258mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 3:25:48 PM

Mean Area 8.648
Mean Conc. 0.02081mg/L

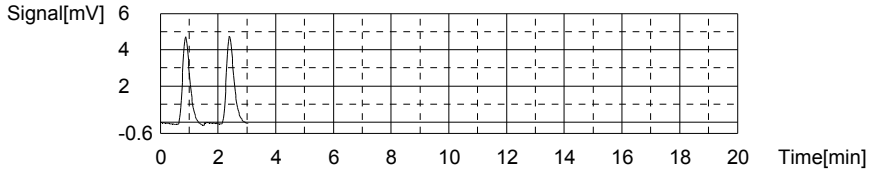

Sample

Sample Name: WG503780-02 LCS
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:24.89mg/L TC:43.45mg/L IC:18.57mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1686	43.95mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 3:34:01 PM
2	1648	42.96mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 3:39:05 PM

Mean Area 1667
Mean Conc. 43.45mg/L

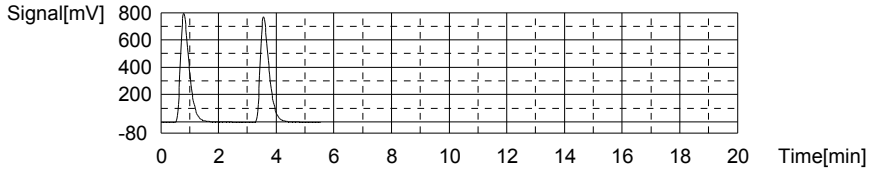

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	574.4	18.91mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 3:44:27 PM
2	553.9	18.22mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 3:49:32 PM

Mean Area 564.1
Mean Conc. 18.57mg/L

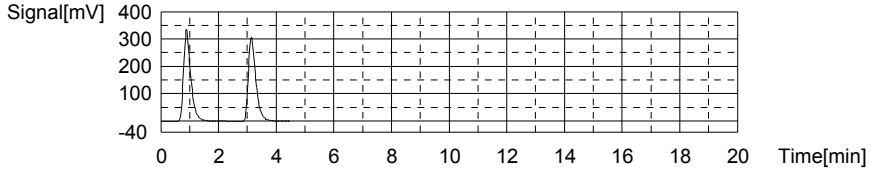

Sample

Sample Name: WG503780-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.74mg/L TC:42.71mg/L IC:16.97mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1646	42.90mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 3:57:38 PM
2	1631	42.51mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 4:02:42 PM

Mean Area 1639
Mean Conc. 42.71mg/L

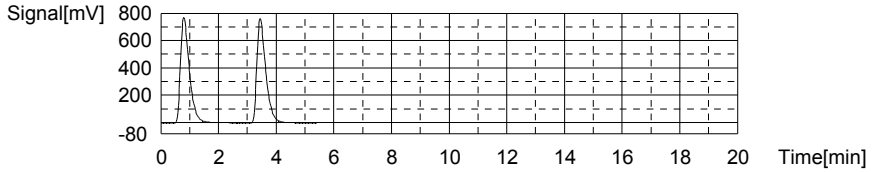

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	525.5	17.28mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 4:08:14 PM
2	507.0	16.66mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 4:13:19 PM

Mean Area 516.3
Mean Conc. 16.97mg/L

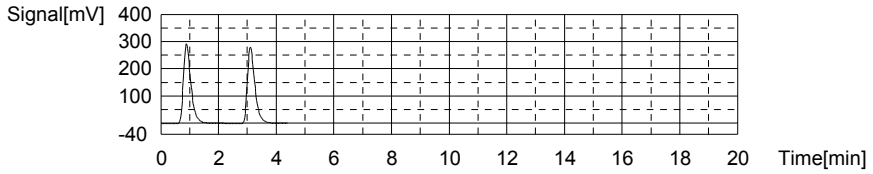

Sample

Sample Name: L14120224-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.5962mg/L TC:0.7076mg/L IC:0.1114mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	33.23	0.7656mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 4:20:20 PM
2	28.79	0.6496mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 4:24:14 PM

Mean Area 31.01
Mean Conc. 0.7076mg/L

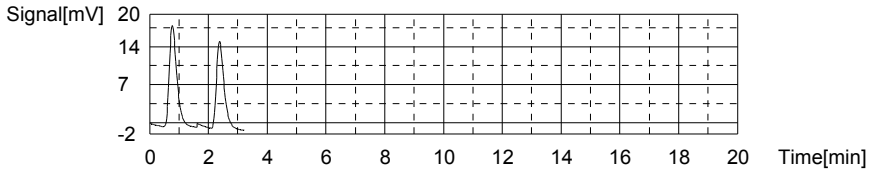

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.89	0.1290mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 4:28:47 PM
2	10.83	0.09366mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 4:33:09 PM

Mean Area 11.36
Mean Conc. 0.1114mg/L

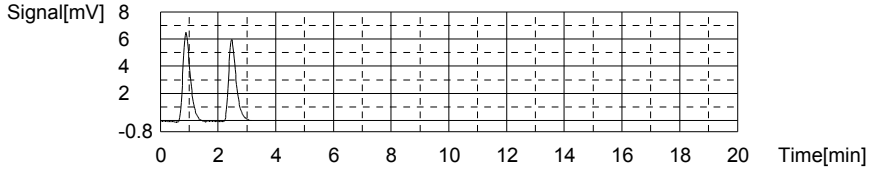

Sample

Sample Name: L14120240-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.263mg/L TC:30.87mg/L IC:27.61mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1183	30.81mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 4:50:38 PM
2	1188	30.94mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 4:55:38 PM

Mean Area 1186
Mean Conc. 30.87mg/L

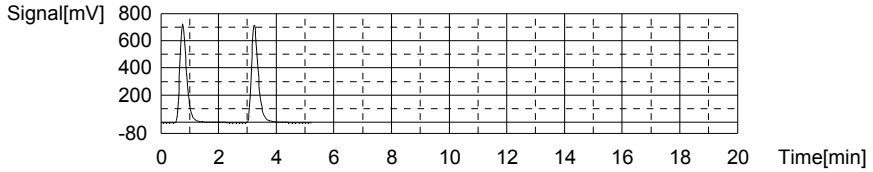

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	840.3	27.79mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 5:01:13 PM
2	829.7	27.43mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 5:06:36 PM

Mean Area 835.0
Mean Conc. 27.61mg/L

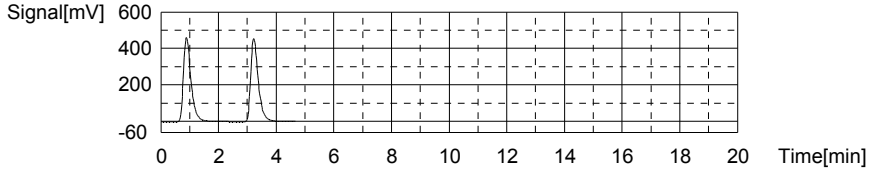

Sample

Sample Name: L14120240-02
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.982mg/L TC:14.75mg/L IC:12.77mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	565.5	14.67mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 5:14:19 PM
2	571.6	14.83mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 5:18:45 PM

Mean Area 568.5
Mean Conc. 14.75mg/L

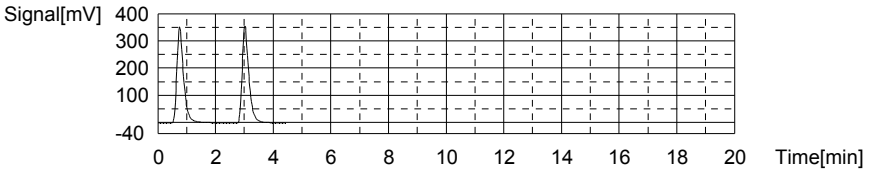

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	397.7	13.01mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 5:24:03 PM
2	383.4	12.53mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 5:29:06 PM

Mean Area 390.6
Mean Conc. 12.77mg/L

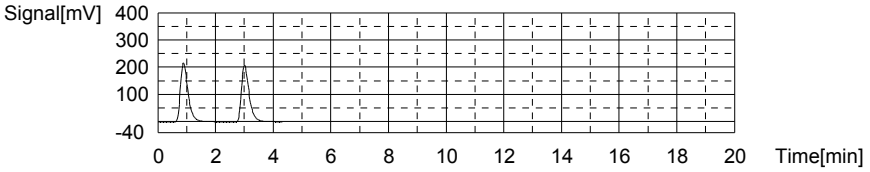

Sample

Sample Name: L14120240-03
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.7171mg/L TC:7.952mg/L IC:7.235mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	305.2	7.872mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 5:36:37 PM
2	311.4	8.033mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 5:40:59 PM

Mean Area 308.3
Mean Conc. 7.952mg/L

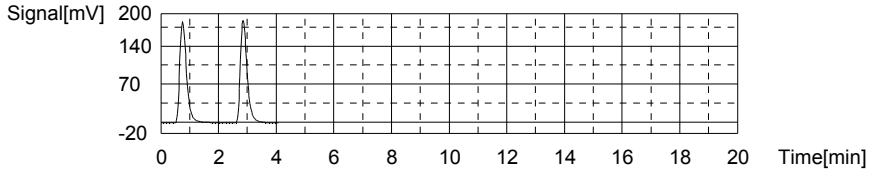

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	226.6	7.297mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 5:46:04 PM
2	222.9	7.174mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 5:50:55 PM

Mean Area 224.8
Mean Conc. 7.235mg/L

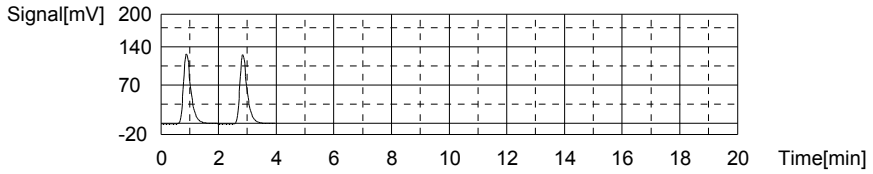

Sample

Sample Name: L14120274-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.702mg/L TC:15.85mg/L IC:9.150mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	637.0	16.54mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 5:59:23 PM
2	584.3	15.16mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 6:04:26 PM

Mean Area 610.7
Mean Conc. 15.85mg/L

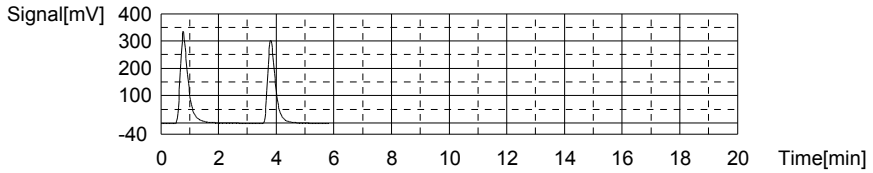

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	287.1	9.317mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 6:09:33 PM
2	277.1	8.983mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 6:14:25 PM

Mean Area 282.1
Mean Conc. 9.150mg/L

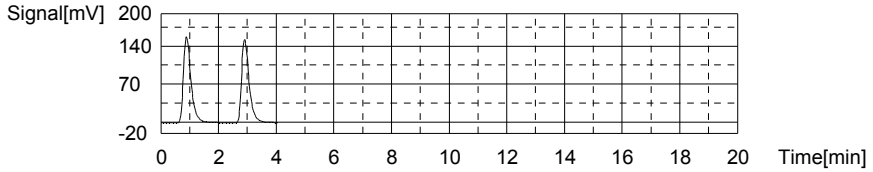

Sample

Sample Name: L14120292-12
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.675mg/L TC:26.61mg/L IC:22.94mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1035	26.94mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 6:23:26 PM
2	1010	26.29mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 6:29:58 PM

Mean Area 1023
Mean Conc. 26.61mg/L

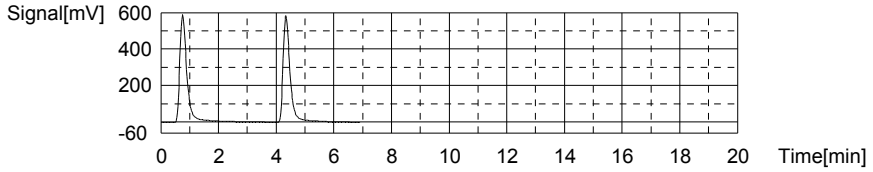

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	704.0	23.24mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 6:35:34 PM
2	686.2	22.64mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 6:40:55 PM

Mean Area 695.1
Mean Conc. 22.94mg/L

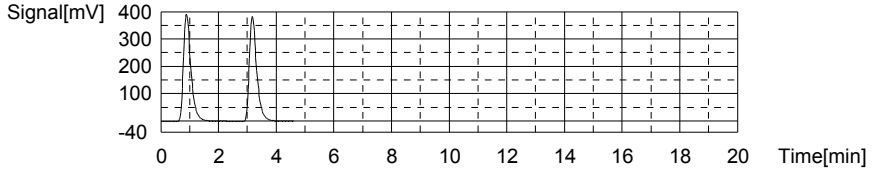

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.081mg/L TC:65.90mg/L IC:63.81mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2527	65.92mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 6:50:52 PM
2	2525	65.87mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 6:57:25 PM

Mean Area 2526
Mean Conc. 65.90mg/L

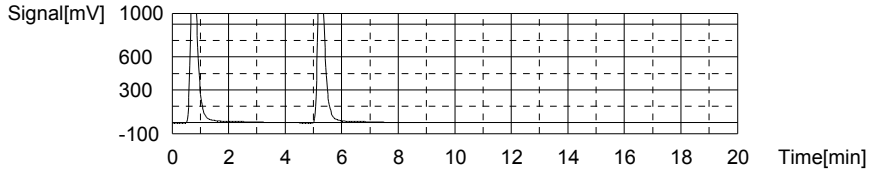

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1953	64.93mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 7:03:47 PM
2	1886	62.70mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 7:09:36 PM

Mean Area 1920
Mean Conc. 63.81mg/L

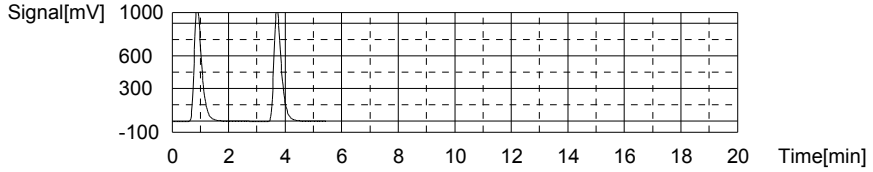

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:30.98mg/L TC:64.03mg/L IC:33.05mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2420	63.13mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 7:19:49 PM
2	2489	64.93mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 7:26:58 PM

Mean Area 2455
Mean Conc. 64.03mg/L

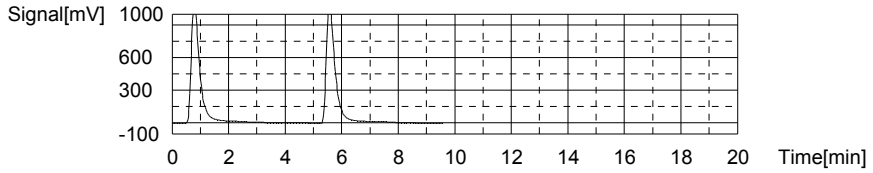

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1005	33.28mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 7:32:46 PM
2	990.9	32.81mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 7:38:24 PM

Mean Area 998.0
Mean Conc. 33.05mg/L

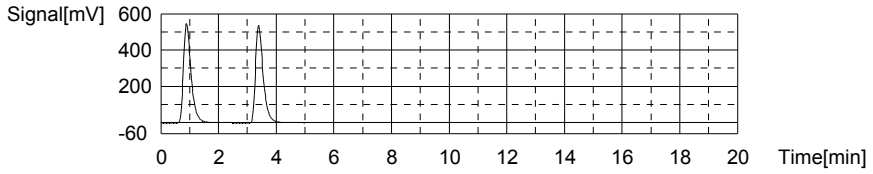

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.38mg/L TC:26.55mg/L IC:0.1678mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1020	26.55mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 7:46:19 PM

Mean Area 1020
Mean Conc. 26.55mg/L

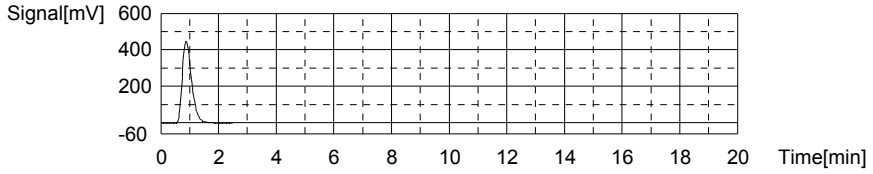

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.05	0.1678mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 7:50:52 PM

Mean Area 13.05
Mean Conc. 0.1678mg/L

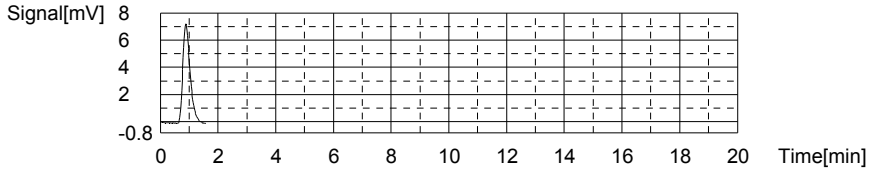

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1415mg/L TC:0.1882mg/L IC:0.04665mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.13	0.1882mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 7:56:00 PM

Mean Area 11.13
Mean Conc. 0.1882mg/L

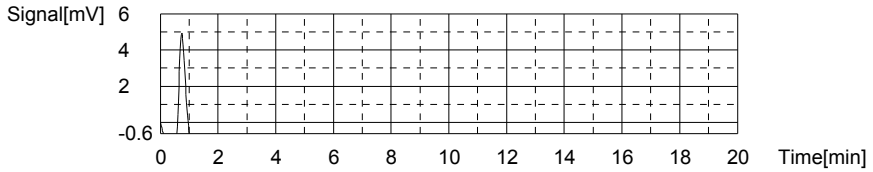

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.422	0.04665mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 8:00:03 PM

Mean Area 9.422
Mean Conc. 0.04665mg/L

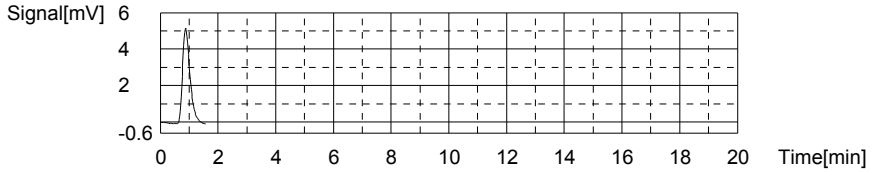

Sample

Sample Name: L14120347-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.52mg/L TC:10.73mg/L IC:0.2077mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	410.5	10.62mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 8:10:06 PM
2	418.4	10.83mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 8:17:24 PM

Mean Area 414.5
Mean Conc. 10.73mg/L

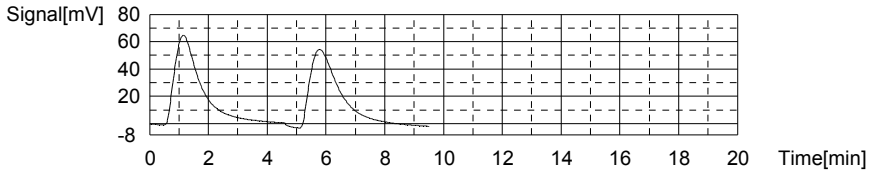

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.45	0.2145mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 8:21:54 PM
2	14.04	0.2008mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 8:26:13 PM

Mean Area 14.25
Mean Conc. 0.2077mg/L

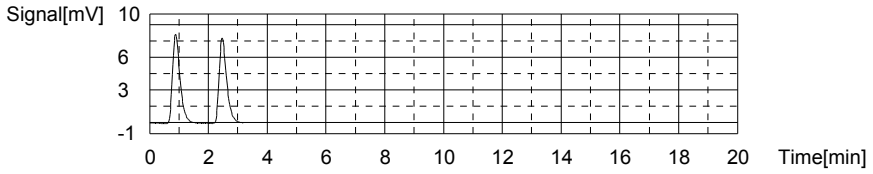

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.157mg/L TC:9.384mg/L IC:1.227mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	353.9	9.144mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 8:33:44 PM
2	372.3	9.625mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 8:38:09 PM

Mean Area 363.1
Mean Conc. 9.384mg/L

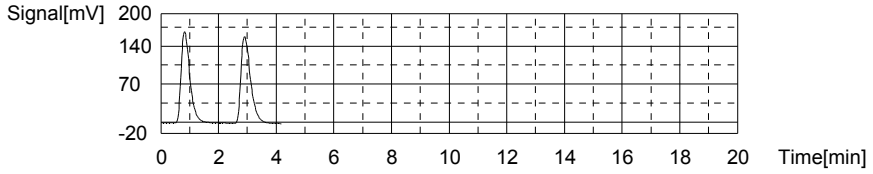

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	45.00	1.234mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 8:42:53 PM
2	44.57	1.220mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 8:47:22 PM

Mean Area 44.78
Mean Conc. 1.227mg/L

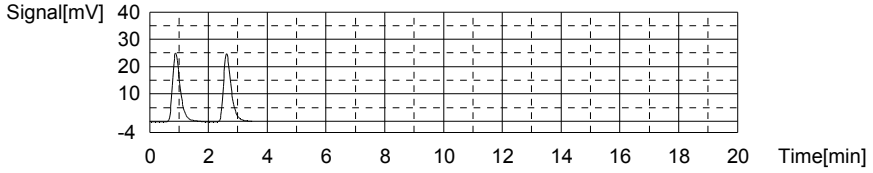

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.433mg/L TC:9.260mg/L IC:0.8268mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	361.5	9.342mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 8:54:58 PM
2	355.2	9.178mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 8:59:24 PM

Mean Area 358.4
Mean Conc. 9.260mg/L

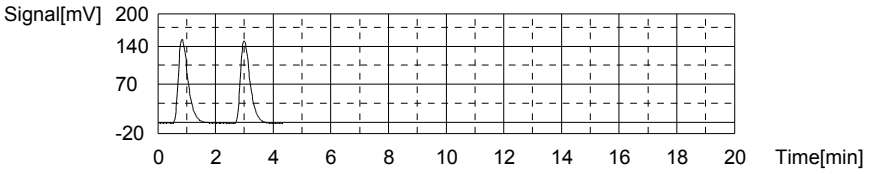

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	32.95	0.8321mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 9:03:59 PM
2	32.63	0.8215mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 9:08:23 PM

Mean Area 32.79
Mean Conc. 0.8268mg/L

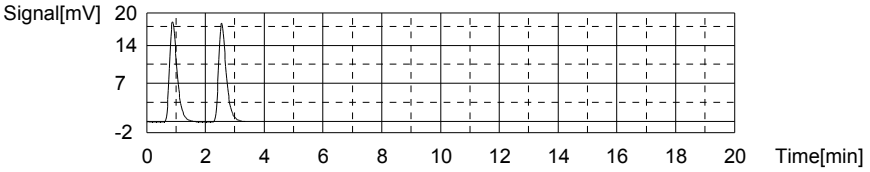

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.283mg/L TC:9.122mg/L IC:0.8388mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	338.6	8.744mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 9:15:56 PM
2	367.5	9.499mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 9:20:42 PM

Mean Area 353.1
Mean Conc. 9.122mg/L

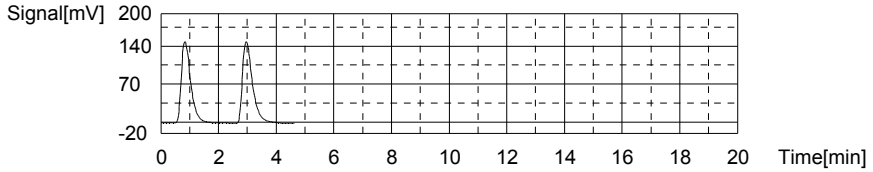

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	33.51	0.8508mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 9:25:15 PM
2	32.79	0.8268mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 9:29:41 PM

Mean Area 33.15
Mean Conc. 0.8388mg/L

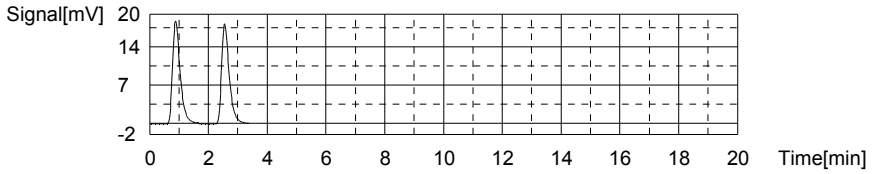

Sample

Sample Name: L14120377-05 (25)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.91mg/L TC:13.17mg/L IC:2.262mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	526.3	13.65mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 9:37:21 PM
2	489.9	12.70mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 9:41:57 PM

Mean Area 508.1
Mean Conc. 13.17mg/L

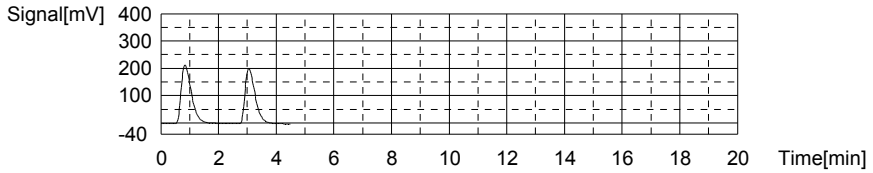

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	76.83	2.297mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 9:46:41 PM
2	74.70	2.226mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 9:51:15 PM

Mean Area 75.77
Mean Conc. 2.262mg/L

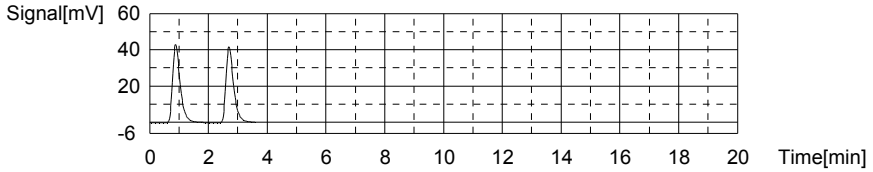

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.359mg/L TC:6.129mg/L IC:0.7700mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	244.8	6.293mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 9:58:47 PM
2	232.2	5.964mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 10:03:06 PM

Mean Area 238.5
Mean Conc. 6.129mg/L

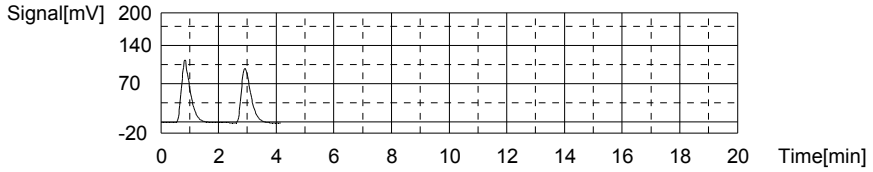

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	31.65	0.7887mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 10:07:42 PM
2	30.53	0.7513mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 10:12:08 PM

Mean Area 31.09
Mean Conc. 0.7700mg/L

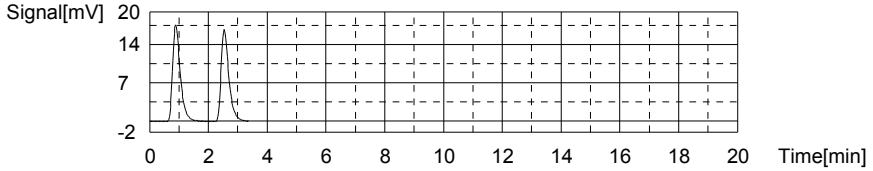

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.320mg/L TC:6.256mg/L IC:0.9355mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	249.9	6.427mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 10:19:37 PM
2	236.8	6.084mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 10:23:53 PM

Mean Area 243.4
Mean Conc. 6.256mg/L

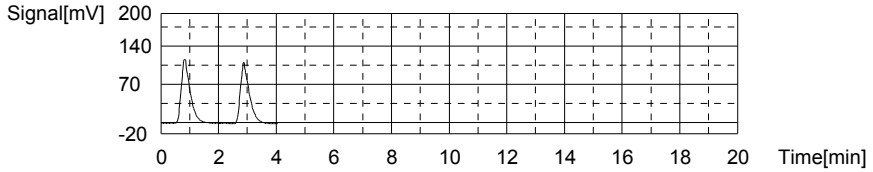

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	36.41	0.9477mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 10:28:30 PM
2	35.68	0.9233mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 10:32:53 PM

Mean Area 36.05
Mean Conc. 0.9355mg/L

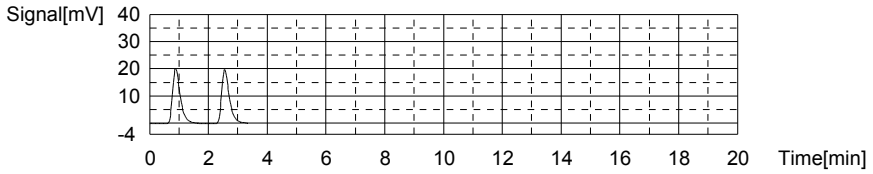

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.402mg/L TC:4.131mg/L IC:0.7296mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	161.7	4.122mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 10:40:18 PM
2	162.4	4.140mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 10:44:33 PM

Mean Area 162.1
Mean Conc. 4.131mg/L

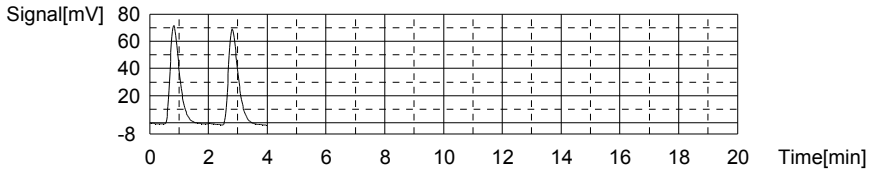

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	30.40	0.7470mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 10:49:10 PM
2	29.36	0.7123mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 10:53:33 PM

Mean Area 29.88
Mean Conc. 0.7296mg/L

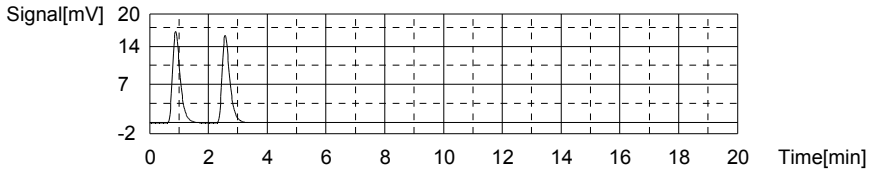

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.910mg/L TC:9.003mg/L IC:1.092mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	359.4	9.288mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 11:01:06 PM
2	337.6	8.718mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 11:05:31 PM

Mean Area 348.5
Mean Conc. 9.003mg/L

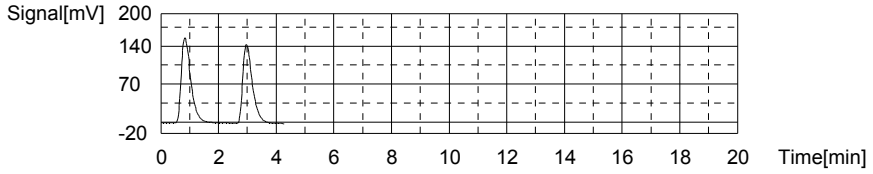

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	40.78	1.094mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 11:10:12 PM
2	40.71	1.091mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 11:14:34 PM

Mean Area 40.75
Mean Conc. 1.092mg/L

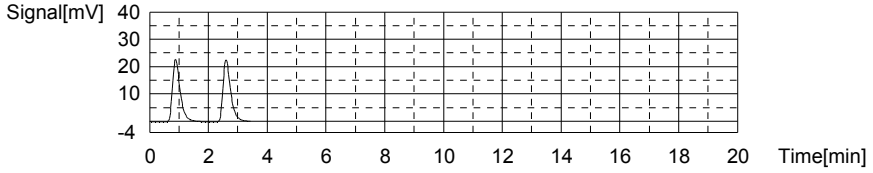

Sample

Sample Name: L14120377-10 (50)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.101mg/L TC:10.26mg/L IC:1.161mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	403.0	10.43mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 11:22:12 PM
2	390.4	10.10mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 11:26:41 PM

Mean Area 396.7
Mean Conc. 10.26mg/L

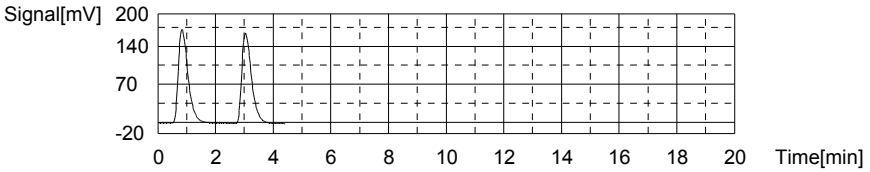

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	43.24	1.176mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 11:31:20 PM
2	42.38	1.147mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 11:35:46 PM

Mean Area 42.81
Mean Conc. 1.161mg/L

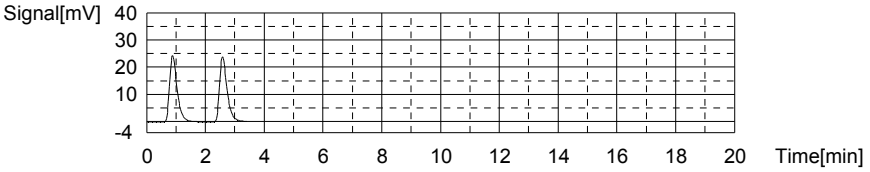

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.48mg/L TC:24.48mg/L IC:-0.00052mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	940.7	24.48mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 11:43:38 PM

Mean Area 940.7
Mean Conc. 24.48mg/L

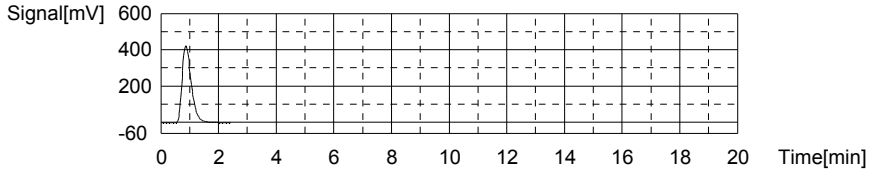

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.009	-0.00052mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 11:48:02 PM

Mean Area 8.009
Mean Conc. -0.00052mg/L

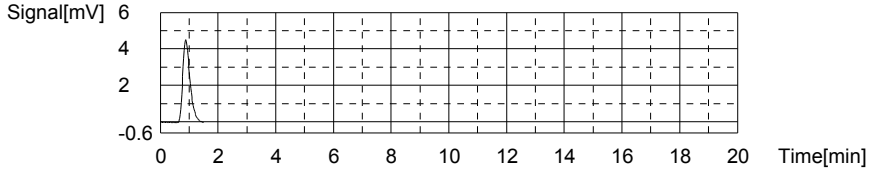

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1310mg/L TC:0.1482mg/L IC:0.01717mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.601	0.1482mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/8/2014 11:53:06 PM

Mean Area 9.601
Mean Conc. 0.1482mg/L

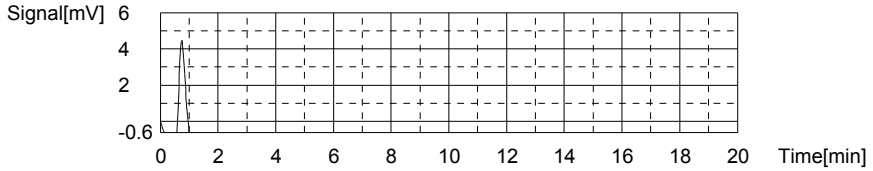

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.539	0.01717mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/8/2014 11:57:08 PM

Mean Area 8.539
Mean Conc. 0.01717mg/L

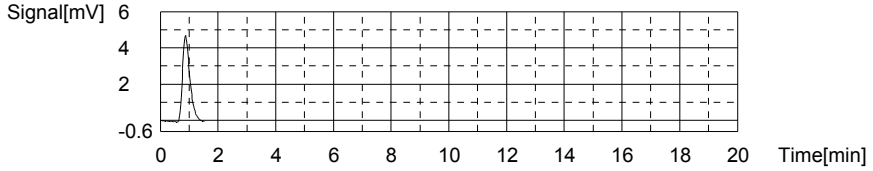

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.364mg/L TC:5.610mg/L IC:0.2464mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	225.8	5.797mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 12:04:38 AM
2	211.5	5.423mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 12:08:57 AM

Mean Area 218.7
Mean Conc. 5.610mg/L

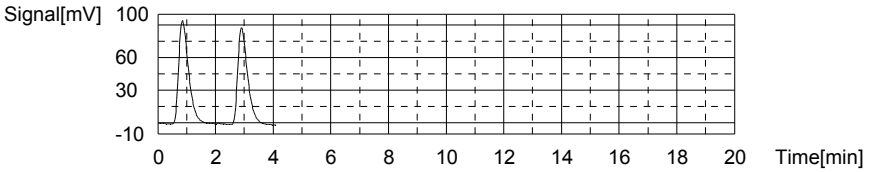

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.61	0.2532mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 12:13:25 AM
2	15.20	0.2396mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 12:17:40 AM

Mean Area 15.41
Mean Conc. 0.2464mg/L

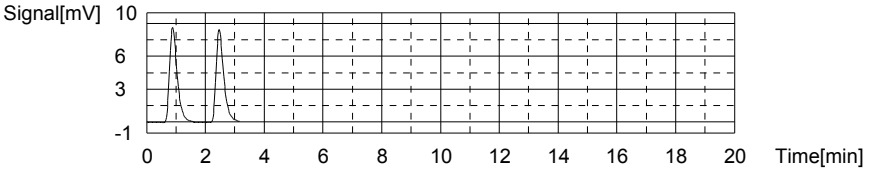

Sample

Sample Name: L14120377-12 (25)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:11.10mg/L TC:11.65mg/L IC:0.5502mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	445.0	11.52mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 12:25:25 AM
2	454.5	11.77mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 12:29:55 AM

Mean Area 449.8
Mean Conc. 11.65mg/L

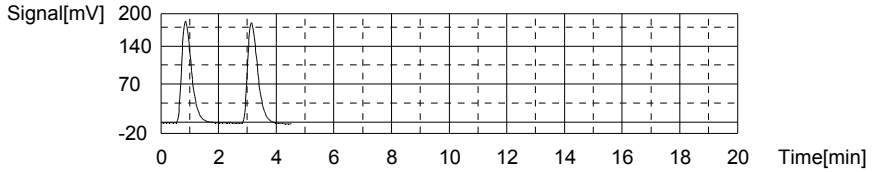

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	24.76	0.5587mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 12:34:29 AM
2	24.25	0.5417mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 12:38:50 AM

Mean Area 24.51
Mean Conc. 0.5502mg/L

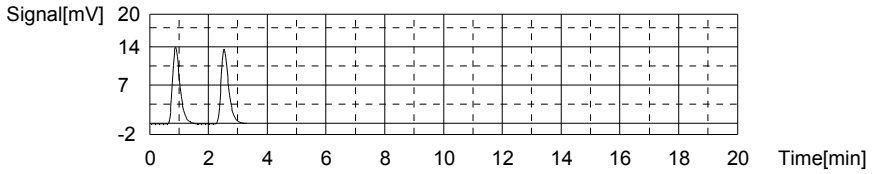

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.962mg/L TC:4.182mg/L IC:0.2207mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	163.7	4.174mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 12:46:17 AM
2	164.3	4.190mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 12:50:33 AM

Mean Area 164.0
Mean Conc. 4.182mg/L

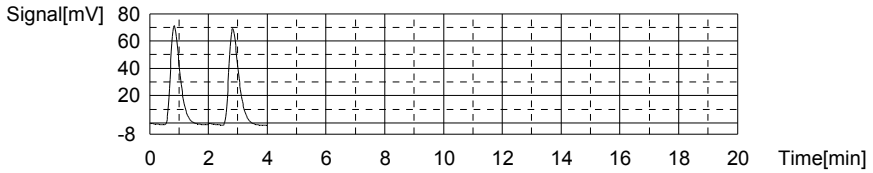

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.72	0.2235mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 12:55:06 AM
2	14.55	0.2179mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 12:59:23 AM

Mean Area 14.64
Mean Conc. 0.2207mg/L

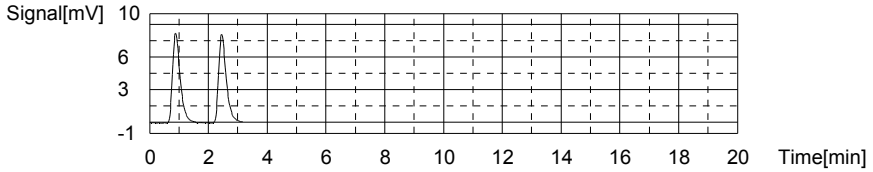

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.565mg/L TC:8.019mg/L IC:0.4546mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	316.9	8.177mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 1:07:01 AM
2	304.8	7.861mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 1:11:27 AM

Mean Area 310.9
Mean Conc. 8.019mg/L

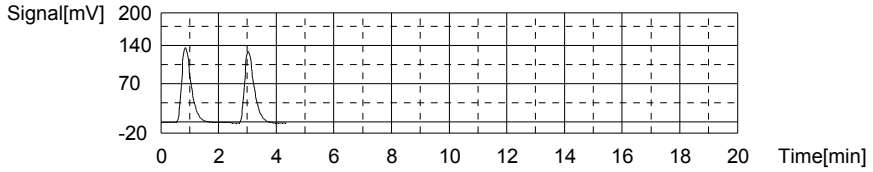

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	21.59	0.4529mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 1:16:00 AM
2	21.69	0.4562mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 1:20:20 AM

Mean Area 21.64
Mean Conc. 0.4546mg/L

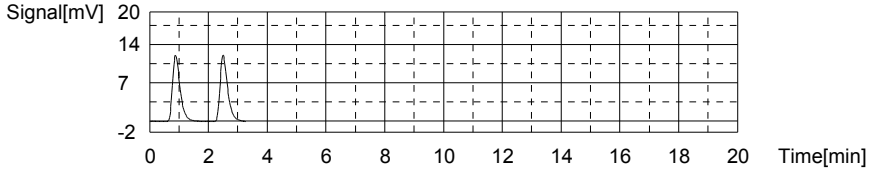

Sample

Sample Name: WG503780-08 DUP
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.6036mg/L TC:0.6121mg/L IC:0.00847mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	27.57	0.6177mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 1:27:20 AM
2	27.14	0.6065mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 1:31:12 AM

Mean Area 27.36
Mean Conc. 0.6121mg/L

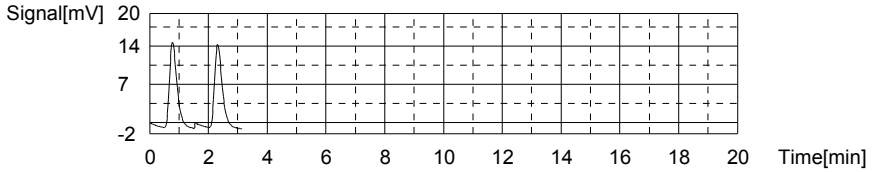

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.311	0.00956mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 1:35:40 AM
2	8.246	0.00739mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 1:39:55 AM

Mean Area 8.279
Mean Conc. 0.00847mg/L

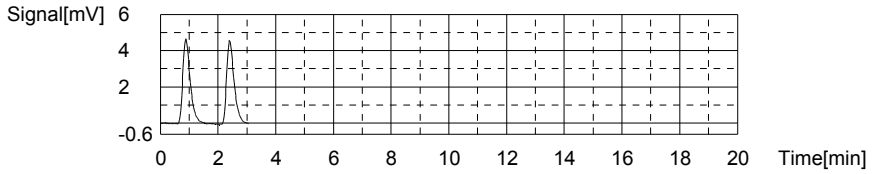

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.07mg/L TC:24.05mg/L IC:-0.01077mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	924.6	24.05mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 1:47:47 AM

Mean Area 924.6
Mean Conc. 24.05mg/L

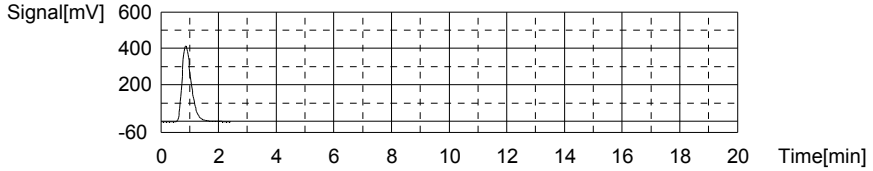

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.702	-0.01077mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 1:52:12 AM

Mean Area 7.702
Mean Conc. -0.01077mg/L

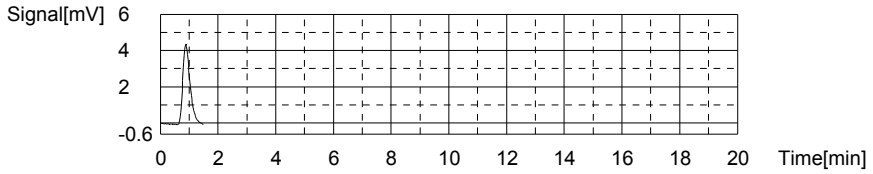

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1339mg/L TC:0.1464mg/L IC:0.01243mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.530	0.1464mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 1:57:17 AM

Mean Area 9.530
Mean Conc. 0.1464mg/L

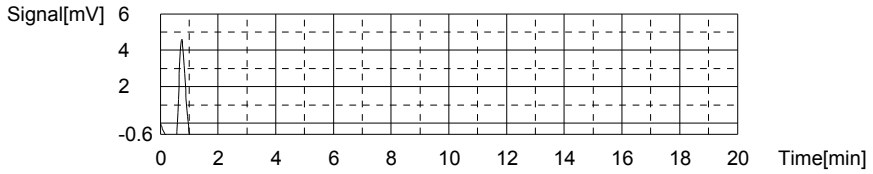

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.397	0.01243mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 2:01:18 AM

Mean Area 8.397
Mean Conc. 0.01243mg/L

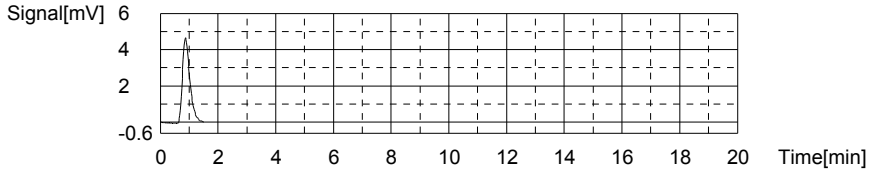

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.18mg/L TC:24.11mg/L IC:-0.07140mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	926.7	24.11mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 9:10:27 AM

Mean Area 926.7
Mean Conc. 24.11mg/L

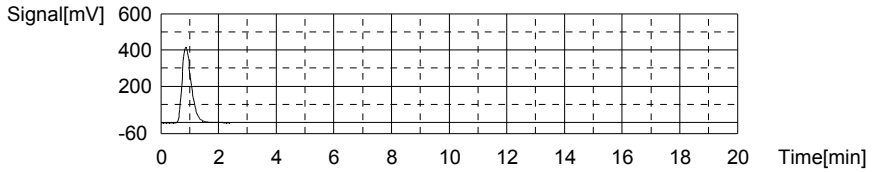

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.886	-0.07140mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 9:14:49 AM

Mean Area 5.886
Mean Conc. -0.07140mg/L

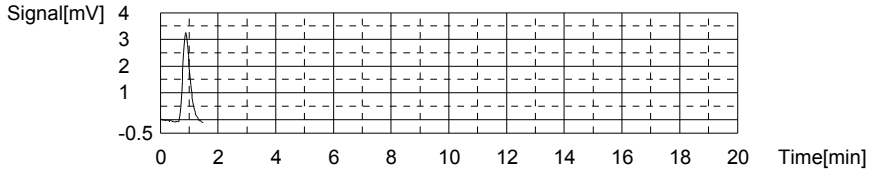

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1522mg/L TC:0.1767mg/L IC:0.02442mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.69	0.1767mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 9:19:53 AM

Mean Area 10.69
Mean Conc. 0.1767mg/L

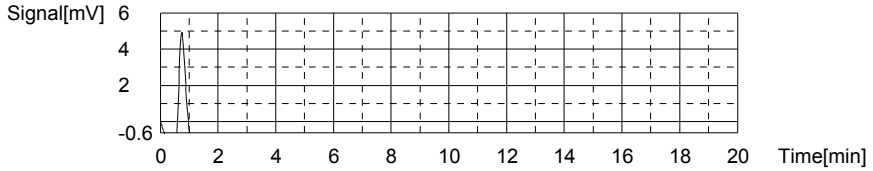

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.756	0.02442mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 9:23:58 AM

Mean Area 8.756
Mean Conc. 0.02442mg/L

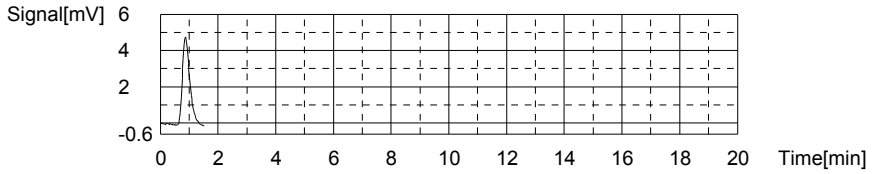

Sample

Sample Name: L14120292-13 (5)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.819mg/L TC:29.84mg/L IC:28.02mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1153	30.02mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 9:32:17 AM
2	1139	29.66mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 9:36:56 AM

Mean Area 1146
Mean Conc. 29.84mg/L

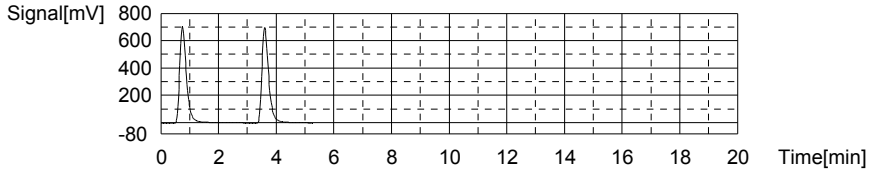

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	837.2	27.68mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 9:42:48 AM
2	857.5	28.36mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 9:48:26 AM

Mean Area 847.4
Mean Conc. 28.02mg/L

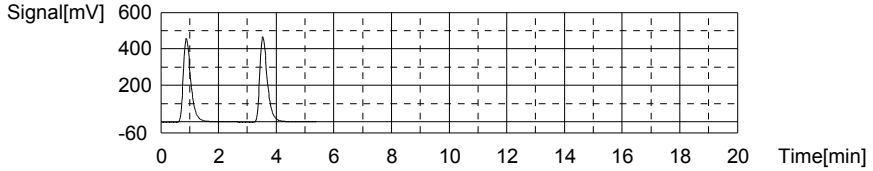

Sample

Sample Name: L14120304-01 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.251mg/L TC:21.54mg/L IC:12.28mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	793.8	20.64mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 9:56:39 AM
2	862.6	22.44mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 10:03:12 AM

Mean Area 828.2
Mean Conc. 21.54mg/L

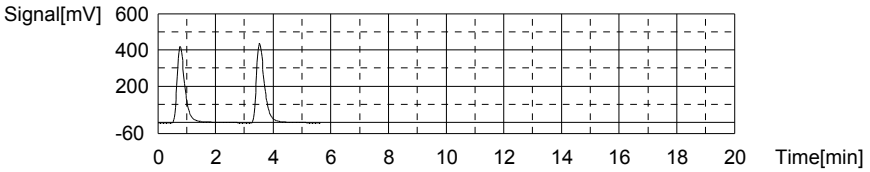

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	380.0	12.42mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 10:08:30 AM
2	372.0	12.15mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 10:13:30 AM

Mean Area 376.0
Mean Conc. 12.28mg/L

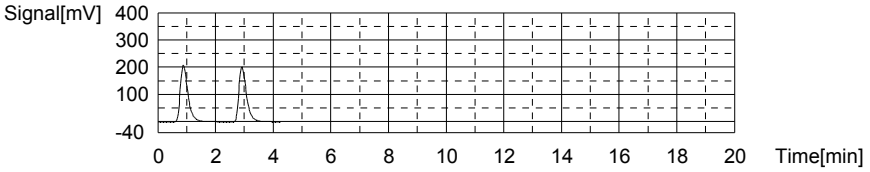

Sample

Sample Name: L14120377-02 (25)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.96mg/L TC:19.53mg/L IC:3.573mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	757.2	19.68mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 10:21:25 AM
2	745.9	19.39mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 10:26:23 AM

Mean Area 751.6
Mean Conc. 19.53mg/L

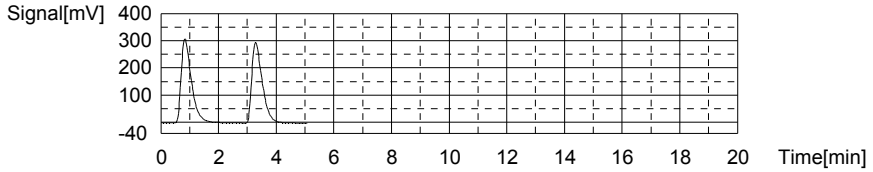

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	115.3	3.581mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 10:31:19 AM
2	114.8	3.565mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 10:35:56 AM

Mean Area 115.1
Mean Conc. 3.573mg/L

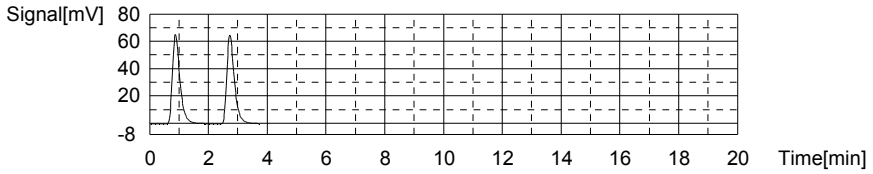

Sample

Sample Name: L14120377-03 (25) MS
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:19.67mg/L TC:22.16mg/L IC:2.487mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	911.7	23.72mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 10:43:54 AM
2	792.1	20.59mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 10:48:35 AM

Mean Area 851.9
Mean Conc. 22.16mg/L

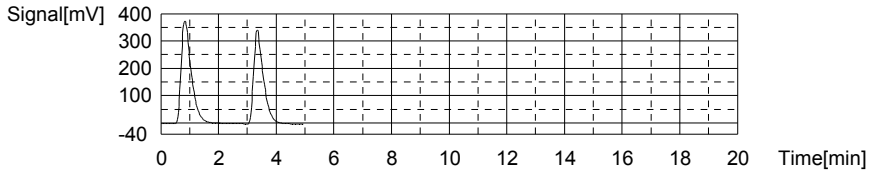

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	100.1	3.074mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 10:53:24 AM
2	64.95	1.900mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 10:57:54 AM

Mean Area 82.53
Mean Conc. 2.487mg/L

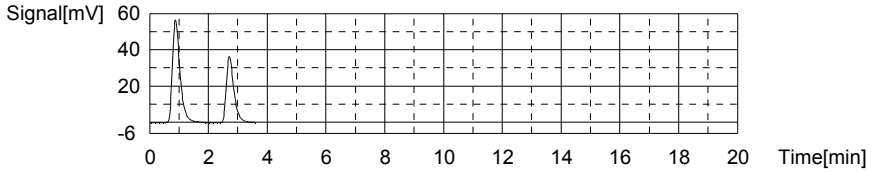

Sample

Sample Name: L14120377-04 (25) MSD
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.71mg/L TC:18.95mg/L IC:2.241mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	759.8	19.75mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 11:05:47 AM
2	699.0	18.16mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 11:10:35 AM

Mean Area 729.4
Mean Conc. 18.95mg/L

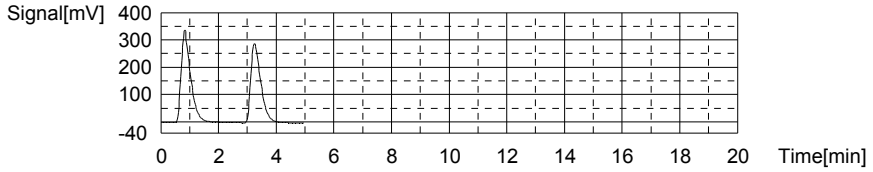

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	76.16	2.275mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 11:15:19 AM
2	74.14	2.207mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 11:19:46 AM

Mean Area 75.15
Mean Conc. 2.241mg/L

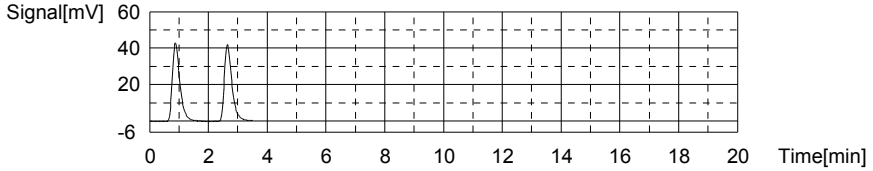

Sample

Sample Name: L14120377-06 (10)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.28mg/L TC:33.89mg/L IC:7.606mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1304	33.97mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 11:27:50 AM
2	1298	33.81mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 11:32:47 AM

Mean Area 1301
Mean Conc. 33.89mg/L

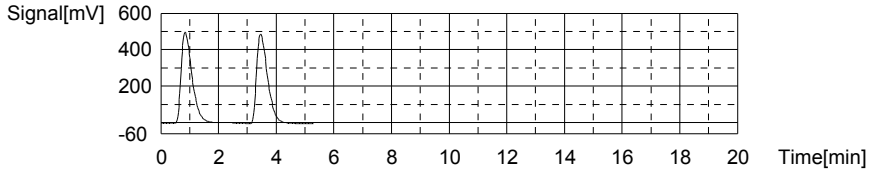

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	239.0	7.711mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 11:37:44 AM
2	232.7	7.501mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 11:42:24 AM

Mean Area 235.9
Mean Conc. 7.606mg/L

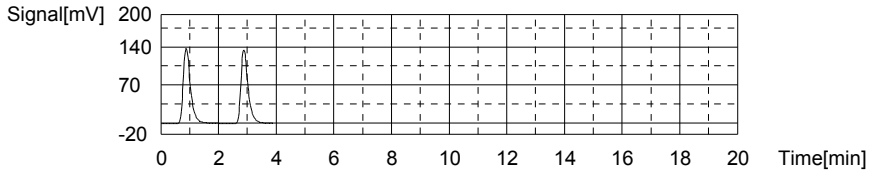

Sample

Sample Name: L14120377-07 (10)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.01mg/L TC:36.27mg/L IC:10.26mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1407	36.66mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 11:50:33 AM
2	1377	35.88mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 11:55:24 AM

Mean Area 1392
Mean Conc. 36.27mg/L

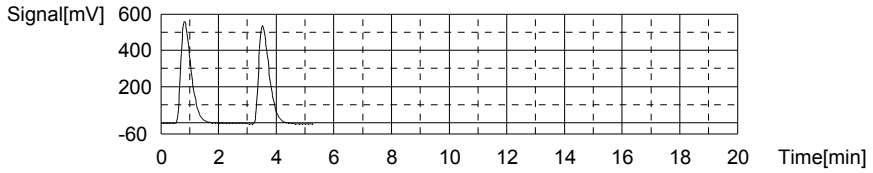

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	314.5	10.23mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 12:00:31 PM
2	316.0	10.28mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 12:05:21 PM

Mean Area 315.3
Mean Conc. 10.26mg/L

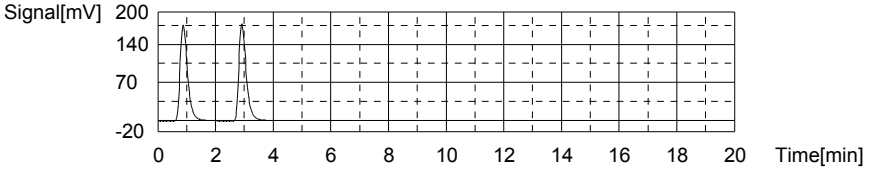

Sample

Sample Name: L14120377-08 (10)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:29.62mg/L TC:45.20mg/L IC:15.59mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1734	45.20mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 12:13:38 PM
2	1734	45.20mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 12:18:49 PM

Mean Area 1734
Mean Conc. 45.20mg/L

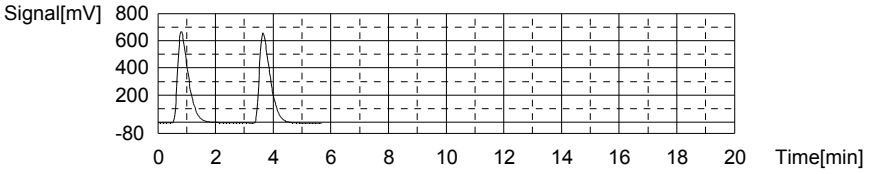

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	479.9	15.75mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 12:24:04 PM
2	469.8	15.42mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 12:29:03 PM

Mean Area 474.9
Mean Conc. 15.59mg/L

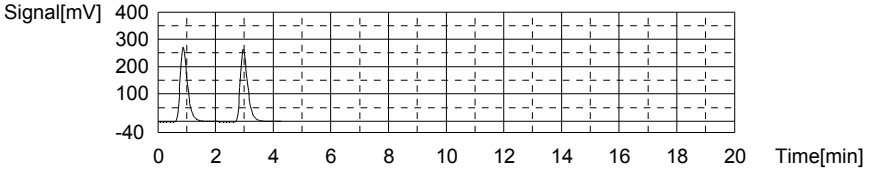

Sample

Sample Name: L14120377-09 (25)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:22.56mg/L TC:25.76mg/L IC:3.200mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1041	27.10mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 12:36:58 PM
2	939.0	24.43mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 12:41:42 PM

Mean Area 990.0
Mean Conc. 25.76mg/L

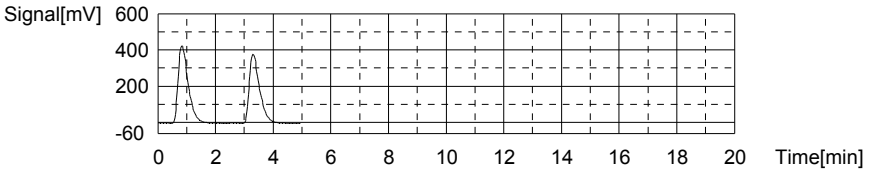

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	128.0	4.005mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 12:46:41 PM
2	79.75	2.395mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 12:51:19 PM

Mean Area 103.9
Mean Conc. 3.200mg/L

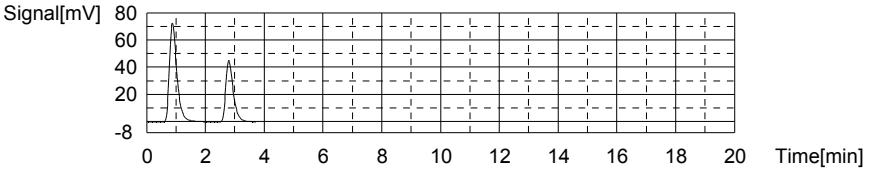

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:49.70mg/L TC:56.16mg/L IC:6.461mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2185	56.99mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 12:59:55 PM
2	2122	55.34mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 1:05:04 PM

Mean Area 2154
Mean Conc. 56.16mg/L

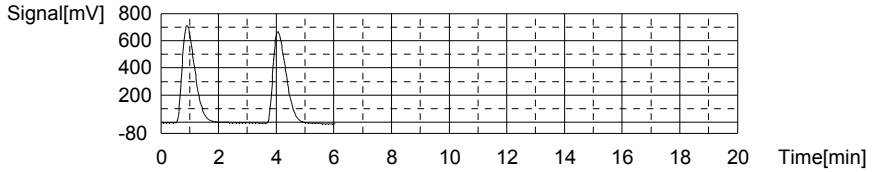

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	201.9	6.473mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 1:10:06 PM
2	201.2	6.449mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 1:14:49 PM

Mean Area 201.6
Mean Conc. 6.461mg/L

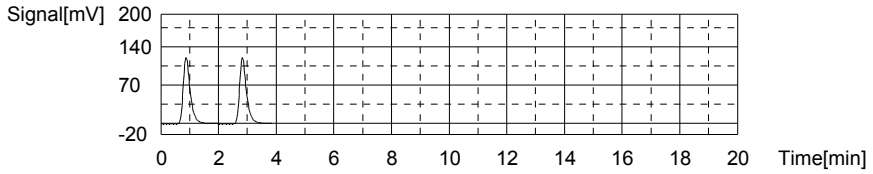

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:22.87mg/L TC:22.89mg/L IC:0.02595mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	880.2	22.89mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 1:22:42 PM

Mean Area 880.2
Mean Conc. 22.89mg/L

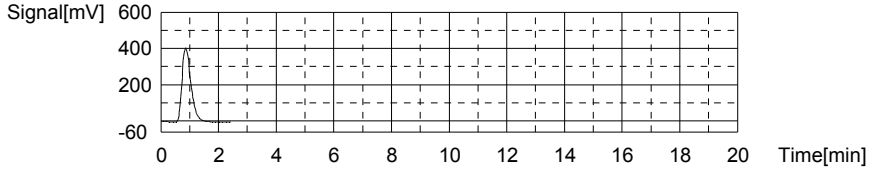

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.802	0.02595mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 1:27:10 PM

Mean Area 8.802
Mean Conc. 0.02595mg/L

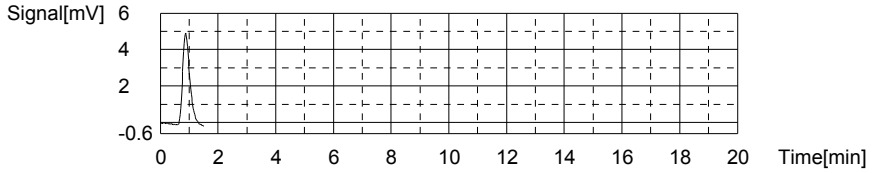

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1281mg/L TC:0.1545mg/L IC:0.02645mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.843	0.1545mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 1:32:15 PM

Mean Area 9.843
Mean Conc. 0.1545mg/L

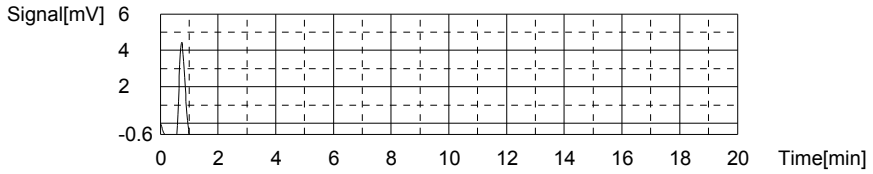

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.817	0.02645mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 1:36:14 PM

Mean Area 8.817
Mean Conc. 0.02645mg/L

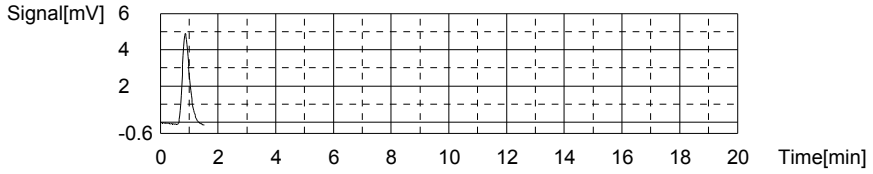

Sample

Sample Name: L14120377-13 (5)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:40.28mg/L TC:45.53mg/L IC:5.252mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1772	46.20mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 1:44:37 PM
2	1721	44.86mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 1:49:59 PM

Mean Area 1747
Mean Conc. 45.53mg/L

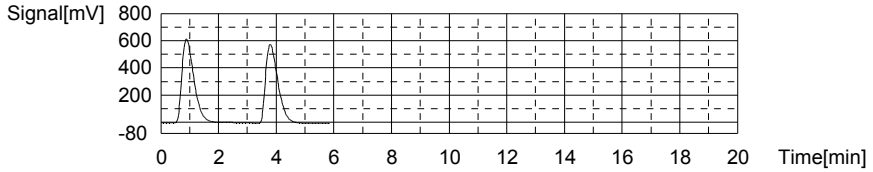

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	165.3	5.251mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 1:54:51 PM
2	165.4	5.254mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 1:59:24 PM

Mean Area 165.4
Mean Conc. 5.252mg/L

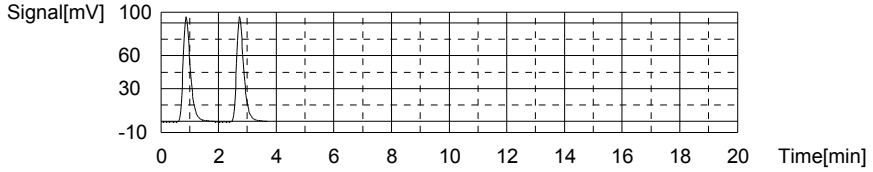

Sample

Sample Name: L14120377-14 (25
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.99mg/L TC:18.46mg/L IC:1.472mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	746.4	19.40mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 2:07:25 PM
2	674.4	17.52mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 2:12:02 PM

Mean Area 710.4
Mean Conc. 18.46mg/L

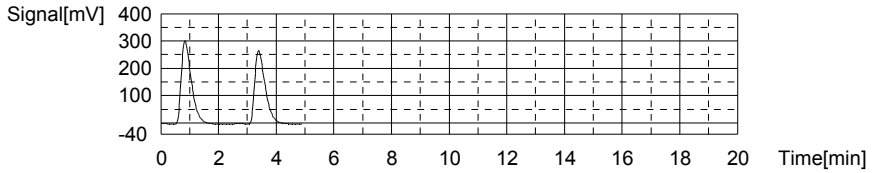

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	59.62	1.723mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 2:16:45 PM
2	44.59	1.221mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 2:21:07 PM

Mean Area 52.11
Mean Conc. 1.472mg/L

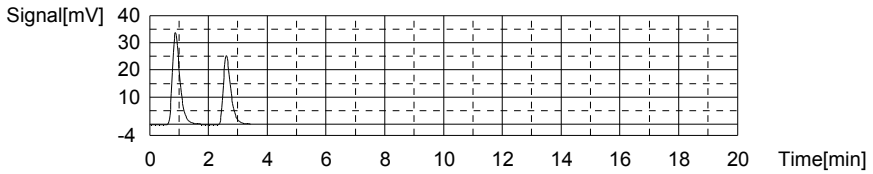

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.09mg/L TC:23.11mg/L IC:0.01897mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	888.3	23.11mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 2:28:55 PM

Mean Area 888.3
Mean Conc. 23.11mg/L

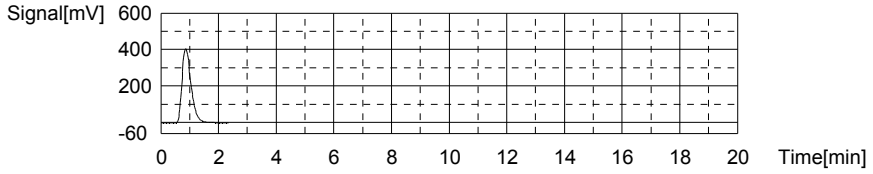

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.593	0.01897mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 2:33:16 PM

Mean Area 8.593
Mean Conc. 0.01897mg/L

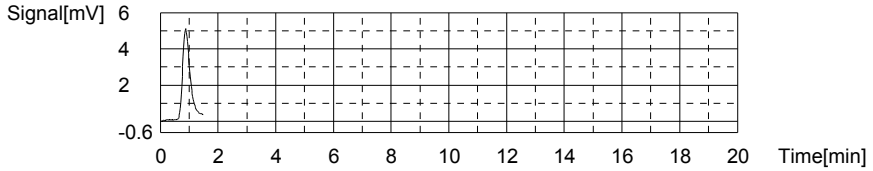

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1232mg/L TC:0.1538mg/L IC:0.03066mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.816	0.1538mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	12/9/2014 2:38:18 PM

Mean Area 9.816
Mean Conc. 0.1538mg/L

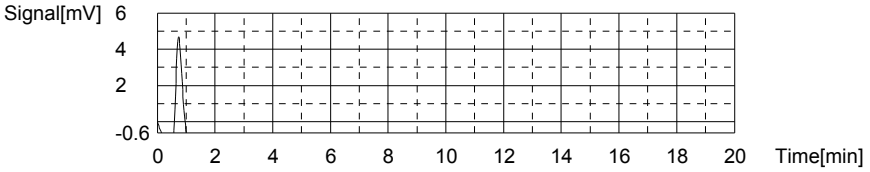

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.943	0.03066mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	12/9/2014 2:42:18 PM

Mean Area 8.943
Mean Conc. 0.03066mg/L

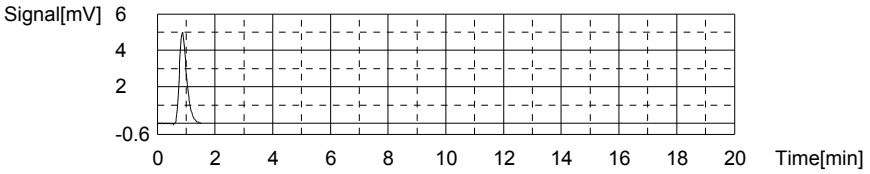

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
December 17, 2014

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE	AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED	AWE - ANDREW W. ESSIG
AZH - AFTER HOURS	BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE	BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD	CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER	CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS	CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN	DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG	DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER	DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK	EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH	JJS - JOHN J. STE MARIE
JLL - JOHN L. LENT	JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON	KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH	KEB - KATIE E. BARNES
KHR - KIM H. RHODES	KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER	KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER	LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS	LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS	PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB	PSW - PEGGY S. WEBB
QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN
RM - RAYMOND MALEKE	RNP - RICK N. PETTY
SAV - SARAH A. VANDENBERG	SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
December 17, 2014

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.

Microbac Laboratories Inc.
List of Valid Qualifiers
December 17, 2014

Qualkey: DOD

U	Analyte was not detected. The concentration is below the reported LOD.
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Kathy Albertson	Project Manager: Dave Wacker	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205		Program:	
Turn Around Time: STANDARD	pH:		
Project Name/Location: Longhorn			
Project Number: 60256135.0002JA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Dissolved Gases Carbon Dioxide	Sulfide	Chloride/Sulfate Nitrate/Nitrite	Ferrous Iron	Inorganic Carbon	Total Organic Carbon	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 67	67WW05-120314			12/3/14	0740		✓	W	3	✓											
	67WW02-120314			12/3/14	0755		✓	W	3	✓											
	67WW01-120314			12/3/14	0815		✓	W	3	✓											
	67WW07-120314			12/3/14	0835		✓	W	3	✓											
	67WW09A-120314			12/3/14	0950		✓	W	3	✓											
	67WW09AFD-120314			12/3/14	0950		✓	W	3	✓											
	67WW10-120314			12/3/14	1115		✓	W	3	✓											
	67WW10MS-120314			12/3/14	1115		✓	W	3	✓											
	67WW10MSD-120314			12/3/14	1115		✓	W	3	✓											
	67WW12-120314			12/3/14	1405		✓	W	3	✓											
	67WW14-120314			12/3/14	1530		✓	W	3	✓											
	67WW08-120414			12/4/14	0820		✓	W	11	✓	✓	✓	✓	✓	✓	✓					
	67WW11-120414			12/4/14	1000		✓	W	11	✓	✓	✓	✓	✓	✓	✓					
	67WW13-120414			12/4/14	1110		✓	W	3	✓											

Comments: STANDARD TAT

	Date	Time		
(Signature) Scott Beesinger	12/4/14	1500	Received by: (Signature)	
Relinquished by: (Signature)			Received for Laboratory by: (Signature)	

Microbac OVD
Received: 12/05/2014 09:54
By: BRENDA GREGORY 221000062926
Brenda Gregory

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Kathy Albertson	Project Manager: Dave Wacker	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60256135.0002JA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 67	67WW13FD-120414			12/4/14	1110		✓	W	3	✓					
	67WW09-120414			12/4/14	1400		✓	W	3	✓					
	TRIP BLANK			12/4/14			✓	W	2	✓					

ERPIMS REQUIRED FIELDS

Comments: STANDARD TAT

(Signature) Scott Beesinger	Date 12/4/14	Time 1500	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)

Microbac OVD
Received: 12/05/2014 09:54
By: BRENDA GREGORY
221000062926
Brenda Gregory

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14120292
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 16-DEC-2014

Samplenum	Container ID	Products
L14120292-01	486106	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

Samplenum	Container ID	Products
L14120292-02	486107	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14120292
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 16-DEC-2014

Samplenum	Container ID	Products
L14120292-03	486108	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

Samplenum	Container ID	Products
L14120292-04	486109	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14120292
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 16-DEC-2014

Samplenum	Container ID	Products
L14120292-05	486110	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

Samplenum	Container ID	Products
L14120292-06	486111	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14120292
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 16-DEC-2014

Samplenum	Container ID	Products
L14120292-07	486112	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

Samplenum	Container ID	Products
L14120292-08	486113	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:38	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14120292
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 16-DEC-2014

Samplenum	Container ID	Products
L14120292-09	486114	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Samplenum	Container ID	Products
L14120292-10	486115	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14120292
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 16-DEC-2014

Samplenum	Container ID	Products
L14120292-11	486116	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Samplenum	Container ID	Products
L14120292-12	486117	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14120292
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 16-DEC-2014

Samplenum	Container ID	Products
L14120292-12	486118	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG1	05-DEC-2014 17:03	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG1	05-DEC-2014 17:03	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG1	05-DEC-2014 17:03	JDS	CLS	

Samplenum	Container ID	Products
L14120292-12	486119	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	05-DEC-2014 12:52	CLS		
2	STORE	SEM	A1	10-DEC-2014 09:13	CLS	AED	

Samplenum	Container ID	Products
L14120292-12	486120	TIC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-DEC-2014 12:52	CLS		
2	ANALYZ	W1	WET	08-DEC-2014 13:18	EPT	BRG	
3	STORE	WET	A1	09-DEC-2014 15:58	BRG	EPT	

Samplenum	Container ID	Products
L14120292-12	486121	FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-DEC-2014 12:52	CLS		
2	ANALYZ	W1	WET	10-DEC-2014 12:29	TMM	BRG	
3	STORE	WET	A1	16-DEC-2014 07:40	AZH	TMM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14120292
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 16-DEC-2014

Samplenum	Container ID	Products
L14120292-12	486122	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-DEC-2014 12:52	CLS		<2
2	ANALYZ	W1	WET	08-DEC-2014 13:18	EPT	BRG	
3	STORE	WET	A1	09-DEC-2014 15:58	BRG	EPT	

Samplenum	Container ID	Products
L14120292-12	486123	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-DEC-2014 12:52	CLS		
2	ANALYZ	W1	WET	08-DEC-2014 10:59	DLP	BRG	
3	STORE	WET	A1	09-DEC-2014 08:30	BRG	DLP	

Samplenum	Container ID	Products
L14120292-13	486124	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14120292
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 16-DEC-2014

Samplenum	Container ID	Products
L14120292-13	486125	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG1	05-DEC-2014 17:03	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG1	05-DEC-2014 17:03	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG1	05-DEC-2014 17:03	JDS	CLS	

Samplenum	Container ID	Products
L14120292-13	486126	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	05-DEC-2014 12:52	CLS		
2	STORE	SEM	A1	10-DEC-2014 09:13	CLS	AED	

Samplenum	Container ID	Products
L14120292-13	486127	TIC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-DEC-2014 12:52	CLS		
2	ANALYZ	W1	WET	08-DEC-2014 13:18	EPT	BRG	
3	STORE	WET	A1	09-DEC-2014 15:58	BRG	EPT	

Samplenum	Container ID	Products
L14120292-13	486128	FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-DEC-2014 12:52	CLS		
2	ANALYZ	W1	WET	10-DEC-2014 12:29	TMM	BRG	
3	STORE	WET	A1	16-DEC-2014 07:40	AZH	TMM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14120292
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 16-DEC-2014

Samplenum	Container ID	Products
L14120292-13	486129	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-DEC-2014 12:52	CLS		<2
2	ANALYZ	W1	WET	15-DEC-2014 10:21	EPT	CLS	
3	STORE	WET	A1	15-DEC-2014 16:16	CLS	DCM	

Samplenum	Container ID	Products
L14120292-13	486130	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-DEC-2014 12:52	CLS		
2	ANALYZ	W1	WET	08-DEC-2014 10:59	DLP	BRG	
3	STORE	WET	A1	09-DEC-2014 08:30	BRG	DLP	

Samplenum	Container ID	Products
L14120292-14	486131	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L14120292
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 16-DEC-2014

Samplenum	Container ID	Products
L14120292-15	486132	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Samplenum	Container ID	Products
L14120292-16	486133	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Samplenum	Container ID	Products
L14120292-17	486134	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-DEC-2014 12:52	CLS		
2	ANALYZ	V1	ORG4	05-DEC-2014 14:39	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - May 22, 2014

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)
Acetate (HPLC-UV)
Formate (HPLC-UV)
Acetaldehyde (HPLC-UV)
Propionaldehyde (HPLC-UV)
Fluoroborate (ISE)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam

Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L15020678

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on February 23 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0018268	I	4.0		J2317161138	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
67WW14-021015	L15020678-01	02/10/2015 08:00	02/12/2015 10:16
67WW14FD-021015	L15020678-02	02/10/2015 08:00	02/12/2015 10:16
67WW10-021015	L15020678-03	02/10/2015 09:55	02/12/2015 10:16
67WW09A-021015	L15020678-04	02/10/2015 10:55	02/12/2015 10:16
67WW12-021015	L15020678-05	02/10/2015 13:40	02/12/2015 10:16
67WW12MS-021015	L15020678-06	02/10/2015 13:40	02/12/2015 10:16
67WW12MSD-021015	L15020678-07	02/10/2015 13:40	02/12/2015 10:16
67WW05-021015	L15020678-08	02/10/2015 14:00	02/12/2015 10:16
67WW02-021015	L15020678-09	02/10/2015 14:15	02/12/2015 10:16
67WW01-021015	L15020678-10	02/10/2015 14:32	02/12/2015 10:16
67WW07-021015	L15020678-11	02/10/2015 15:00	02/12/2015 10:16
67WW13-021115	L15020678-12	02/11/2015 08:15	02/12/2015 10:16
67WW09-021115	L15020678-13	02/11/2015 09:20	02/12/2015 10:16
67WW09FD-021115	L15020678-14	02/11/2015 09:20	02/12/2015 10:16
67WW11-021115	L15020678-15	02/11/2015 10:20	02/12/2015 10:16
67WW08-021115	L15020678-16	02/11/2015 11:35	02/12/2015 10:16
TRIP BLANK	L15020678-17	02/11/2015 00:01	02/12/2015 10:16

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L15020678
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 43
2.0 Full Sample Data Package 104
2.1 Volatiles Data 105
2.1.1 Volatiles GCMS Data (8260) 106
2.1.1.1 Summary Data 107
2.1.1.2 QC Summary Data 161
2.1.1.3 Sample Data 208
2.1.1.4 Standards Data 299
2.1.1.5 Raw QC Data 388
2.1.2 RSK 175 412
2.1.2.1 Summary Data 413
2.1.2.2 QC Summary Data 417
2.1.2.3 Sample Data 436
2.1.2.4 Standards Data 441
2.1.2.5 Raw QC Data 473
2.2 General Chemistry Data 478
2.2.1 Method 9056 479
2.2.1.1 Summary Data 480
2.2.1.2 QC Summary Data 486
2.2.1.3 Sample Data 514
2.2.1.4 Standards Data 519
2.2.1.5 Raw QC Data 546
2.2.2 Ferrous Iron Data 549
2.2.2.1 Summary Data 550
2.2.2.2 QC Summary Data 553
2.2.2.3 Raw Data 560
2.2.3 Sulfide Data 569
2.2.3.1 Summary Data 570
2.2.3.2 QC Summary Data 574
2.2.3.3 Raw Data 581
2.2.4 Total Organic Carbon Data 584
2.2.4.1 Summary Data 585
2.2.4.2 QC Summary Data 588
2.2.4.3 Raw Data 599
3.0 Attachments 640

1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	8260
Prep Batch Number(s):	512365,512497	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-23 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-02-23 19:23:22

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	8260
Prep Batch Number(s):	512365,512497	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	8260
Prep Batch Number(s):	512365,512497	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	8260
Prep Batch Number(s):	512365,512497	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	8260
Prep Batch Number(s):	512365,512497	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	8260
Prep Batch Number(s):	512365,512497	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-23 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Hexachlorobutadiene exceeded the DL but was less than the LOQ in the blank analyzed on 02/17/14 on HPMS6.

2) Bromomethane, 2,2-dichloropropane, and hexachlorobutadiene exceeded the UCL in the CCV analyzed 02/16/15 on HPMS6

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	512246	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-19 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-02-19 20:33:17

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	512246	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-19 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	512246	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-19 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	512246	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-19 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	512246	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-19 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	512246	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-19 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There were no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG512128	**Reviewer Name:**	John W. Richards Jr.
LRC Date:	2015-02-16 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
John W. Richards Jr.	John Richards	Chemist II	2015-02-16 17:43:42

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG512128	**Reviewer Name:**	John W. Richards Jr.
LRC Date:	2015-02-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG512128	**Reviewer Name:**	John W. Richards Jr.
LRC Date:	2015-02-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					1
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG512128	**Reviewer Name:**	John W. Richards Jr.
LRC Date:	2015-02-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG512128	**Reviewer Name:**	John W. Richards Jr.
LRC Date:	2015-02-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG512128	**Reviewer Name:**	John W. Richards Jr.
LRC Date:	2015-02-16 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -15,-16 were analyzed at dilutions only due to their high analyte concentrations (Cl and/or SO4) which were over 200 ppm. Any sample that has a single anion load greater than 200 ppm (or a total anion load greater than 400 ppm) will be diluted in order to prevent damage to the IC from repeated overloading of the analytical column and oversaturation of the suppressor membranes.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG512331	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-02-23 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-02-23 14:13:37

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG512331	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-02-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG512331	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-02-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG512331	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-02-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG512331	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-02-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG512331	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-02-23 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	S
Prep Batch Number(s):	WG512109	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-02-23 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-02-23 14:14:23

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	S
Prep Batch Number(s):	WG512109	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-02-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	S
Prep Batch Number(s):	WG512109	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-02-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	S
Prep Batch Number(s):	WG512109	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-02-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	S
Prep Batch Number(s):	WG512109	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-02-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	S
Prep Batch Number(s):	WG512109	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-02-23 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG512138	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-02-23 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-02-23 14:15:01

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG512138	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-02-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG512138	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-02-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG512138	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-02-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG512138	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-02-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020678
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG512138	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-02-23 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW14-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 15:26
Collect Date:	02/10/2015 08:00	**Dilution:**	1	**File ID:**	6M131117
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.434	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.640	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	3.46		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.9	85	115	
1,2-Dichloroethane-d4	94.8	70	120	
Toluene-d8	98.6	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW14FD-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 15:56
Collect Date:	02/10/2015 08:00	**Dilution:**	1	**File ID:**	6M131118
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.369	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.657	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	3.61		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.4	85	115	
1,2-Dichloroethane-d4	94.2	70	120	
Toluene-d8	99.1	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW10-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 16:26
Collect Date:	02/10/2015 09:55	**Dilution:**	1	**File ID:**	6M131119
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	85	115	
1,2-Dichloroethane-d4	95.1	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW09A-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 16:57
Collect Date:	02/10/2015 10:55	**Dilution:**	1	**File ID:**	6M131120
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.0	85	115	
1,2-Dichloroethane-d4	97.2	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	106	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW12-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 14:55
Collect Date:	02/10/2015 13:40	**Dilution:**	1	**File ID:**	6M131116
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.6	85	115	
1,2-Dichloroethane-d4	92.5	70	120	
Toluene-d8	97.7	85	120	
4-Bromofluorobenzene	106	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW12MS-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 12:49
Collect Date:	02/10/2015 13:40	**Dilution:**	1	**File ID:**	6M131112
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.5		10.0	5.00	2.50
Benzene	71-43-2	21.8		1.00	0.250	0.125
Bromobenzene	108-86-1	20.2		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.6		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.5		1.00	0.500	0.250
Bromoform	75-25-2	19.5		2.00	1.00	0.500
Bromomethane	74-83-9	11.8	Q	2.00	1.00	0.500
2-Butanone	78-93-3	18.7		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.7		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.6		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.6		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	22.4		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.6		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	21.2		1.00	0.500	0.250
Chloroethane	75-00-3	21.7		2.00	1.00	0.500
Chloroform	67-66-3	22.4		1.00	0.250	0.125
Chloromethane	74-87-3	12.7		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.4		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.0		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	20.2		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	21.4		1.00	0.500	0.250
Dibromomethane	74-95-3	21.6		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	17.3		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	17.9		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	18.3		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	11.2		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	20.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.9		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.0		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	22.5		1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	22.1		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.5		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	21.0		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	24.0	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	23.4		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	21.5		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.6		1.00	0.500	0.250
Ethylbenzene	100-41-4	21.1		1.00	0.500	0.250
2-Hexanone	591-78-6	18.2		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	26.9	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.0		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.3		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.3		10.0	5.00	2.50
Methylene chloride	75-09-2	21.5		1.00	0.500	0.250
Naphthalene	91-20-3	20.0		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.3		1.00	0.250	0.125
Styrene	100-42-5	21.9		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.7		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.2		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.3		1.00	0.500	0.250
Toluene	108-88-3	21.9		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	20.7		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	20.8		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	21.7		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.4		1.00	0.500	0.250
Trichloroethene	79-01-6	22.2		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	18.9		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	20.7		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	22.1		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.5		1.00	0.500	0.250
Vinyl chloride	75-01-4	18.2		1.00	0.500	0.250
o-Xylene	95-47-6	19.8		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.8		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	85	115	
1,2-Dichloroethane-d4	94.2	70	120	
Toluene-d8	96.5	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW12MSD-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 13:20
Collect Date:	02/10/2015 13:40	**Dilution:**	1	**File ID:**	6M131113
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.3		10.0	5.00	2.50
Benzene	71-43-2	21.0		1.00	0.250	0.125
Bromobenzene	108-86-1	21.0		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.5		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.8		1.00	0.500	0.250
Bromoform	75-25-2	20.1		2.00	1.00	0.500
Bromomethane	74-83-9	12.0	Q	2.00	1.00	0.500
2-Butanone	78-93-3	18.6		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.3		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.6		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.7		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.4		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	21.3		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.4		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	21.0		1.00	0.500	0.250
Chloroethane	75-00-3	20.9		2.00	1.00	0.500
Chloroform	67-66-3	21.6		1.00	0.250	0.125
Chloromethane	74-87-3	12.6		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.3		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	20.4		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	21.1		1.00	0.500	0.250
Dibromomethane	74-95-3	21.0		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	17.0		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	17.5		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	18.2		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	10.7		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	20.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.9		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	18.3		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	22.0		1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	21.6		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.1		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.9		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	23.0	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	23.0		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	21.3		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.3		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.7		1.00	0.500	0.250
2-Hexanone	591-78-6	18.2		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	26.4	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.6		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.5		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.1		10.0	5.00	2.50
Methylene chloride	75-09-2	21.0		1.00	0.500	0.250
Naphthalene	91-20-3	20.2		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.3		1.00	0.250	0.125
Styrene	100-42-5	21.5		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.7		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.1		1.00	0.400	0.200
Tetrachloroethene	127-18-4	18.9		1.00	0.500	0.250
Toluene	108-88-3	21.7		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.1		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	21.1		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	21.1		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.7		1.00	0.500	0.250
Trichloroethene	79-01-6	21.6		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	18.4		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	20.1		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	22.2		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.6		1.00	0.500	0.250
Vinyl chloride	75-01-4	17.5		1.00	0.500	0.250
o-Xylene	95-47-6	19.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.4		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	85	115	
1,2-Dichloroethane-d4	93.2	70	120	
Toluene-d8	97.6	85	120	
4-Bromofluorobenzene	104	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW05-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 17:28
Collect Date:	02/10/2015 14:00	**Dilution:**	1	**File ID:**	6M131121
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	85	115	
1,2-Dichloroethane-d4	99.5	70	120	
Toluene-d8	96.4	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW02-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 17:59
Collect Date:	02/10/2015 14:15	**Dilution:**	1	**File ID:**	6M131122
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.592	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	3.59		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	85	115	
1,2-Dichloroethane-d4	98.2	70	120	
Toluene-d8	97.3	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW01-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 20:34
Collect Date:	02/10/2015 14:32	**Dilution:**	1	**File ID:**	6M131127
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	23.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	28.7		1.00	0.500	0.250
cis-1,2-Dichloroethene	156-59-2	1.82		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.287	J	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	1.44		1.00	0.500	0.250
Trichloroethene	79-01-6	4.07		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	2.38		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.1	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	97.4	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW01-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512497	**Analyst:**	TMB	**Run Date:**	02/17/2015 15:22
Collect Date:	02/10/2015 14:32	**Dilution:**	10	**File ID:**	6M131149
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1-Dichloroethene	75-35-4	544		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.1	85	115	
1,2-Dichloroethane-d4	97.3	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW07-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 18:31
Collect Date:	02/10/2015 15:00	**Dilution:**	1	**File ID:**	6M131123
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.04		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.1	85	115	
1,2-Dichloroethane-d4	96.6	70	120	
Toluene-d8	95.9	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW13-021115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 21:05
Collect Date:	02/11/2015 08:15	**Dilution:**	2.5	**File ID:**	6M131128
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	Q	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	1.32	J	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	29.1		2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	26.0		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	521		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	1.60	J	2.50	1.25	0.625

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	Q	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	Q	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	1.25	U	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	4.87		2.50	1.25	0.625
Trichloroethene	79-01-6	2.63		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	0.653	J	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.4	85	115	
1,2-Dichloroethane-d4	97.4	70	120	
Toluene-d8	96.3	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW09-021115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 19:02
Collect Date:	02/11/2015 09:20	**Dilution:**	1	**File ID:**	6M131124
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	2.93		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	8.17		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.9	85	115	
1,2-Dichloroethane-d4	97.9	70	120	
Toluene-d8	98.6	85	120	
4-Bromofluorobenzene	104	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW09FD-021115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 19:32
Collect Date:	02/11/2015 09:20	**Dilution:**	1	**File ID:**	6M131125
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	2.92		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	8.29		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.7	85	115	
1,2-Dichloroethane-d4	97.8	70	120	
Toluene-d8	98.0	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-15	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW11-021115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 20:03
Collect Date:	02/11/2015 10:20	**Dilution:**	1	**File ID:**	6M131126
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	9.81		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.559	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	30.4		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.5	85	115	
1,2-Dichloroethane-d4	95.3	70	120	
Toluene-d8	96.7	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-15	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW11-021115	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	01/28/2015 11:27
Workgroup #:	WG512246	**Analyst:**	JDS	**Run Date:**	02/13/2015 18:27
Collect Date:	02/11/2015 10:20	**Dilution:**	1	**File ID:**	16G46690
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	1.78	J	5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-15	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW11-021115	**Prep Method:**	9056	**Prep Date:**	02/12/2015 15:27
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG512128	**Analyst:**	AED	**Run Date:**	02/13/2015 08:33
Collect Date:	02/11/2015 10:20	**Dilution:**	10	**File ID:**	I1_021215-61
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00
Sulfate	14808-79-8	389		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-15	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW11-021115	**Prep Method:**	9056	**Prep Date:**	02/12/2015 15:27
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG512128	**Analyst:**	AED	**Run Date:**	02/13/2015 08:51
Collect Date:	02/11/2015 10:20	**Dilution:**	100	**File ID:**	I1_021215-62
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1350		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-15	**PrePrep Method:**	N/A	**Instrument:**	UV-2600
Client ID:	67WW11-021115	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	01/20/2015 08:00
Workgroup #:	WG512331	**Analyst:**	TMM	**Run Date:**	02/16/2015 08:20
Collect Date:	02/11/2015 10:20	**Dilution:**	1	**File ID:**	00.1502160820-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.0400	U	0.0400	0.0400	0.0200

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-15	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW11-021115	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG512109	**Analyst:**	TB	**Run Date:**	02/12/2015 15:45
Collect Date:	02/11/2015 10:20	**Dilution:**	1	**File ID:**	ET.1502121545-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-15	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW11-021115	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG512138	**Analyst:**	EPT	**Run Date:**	02/13/2015 14:04
Collect Date:	02/11/2015 10:20	**Dilution:**	5	**File ID:**	TC02132015.013
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	12.9		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15020678-15	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW11-021115	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG512138	**Analyst:**	EPT	**Run Date:**	02/13/2015 14:04
Collect Date:	02/11/2015 10:20	**Dilution:**	5	**File ID:**	TC02132015.013
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		121		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15020678-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW08-021115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 21:36
Collect Date:	02/11/2015 11:35	**Dilution:**	10	**File ID:**	6M131129
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	Q	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	2.57	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	61.1		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	104		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	1930		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	2.71	J	10.0	5.00	2.50
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	Q	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	6.96	J	10.0	5.00	2.50
Trichloroethene	79-01-6	3.15	J	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.0	85	115	
1,2-Dichloroethane-d4	98.4	70	120	
Toluene-d8	98.0	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-16	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW08-021115	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	01/28/2015 11:27
Workgroup #:	WG512246	**Analyst:**	JDS	**Run Date:**	02/13/2015 18:38
Collect Date:	02/11/2015 11:35	**Dilution:**	1	**File ID:**	16G46691
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	9.40		5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-16	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-021115	**Prep Method:**	9056	**Prep Date:**	02/12/2015 15:27
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG512128	**Analyst:**	AED	**Run Date:**	02/13/2015 09:44
Collect Date:	02/11/2015 11:35	**Dilution:**	20	**File ID:**	I1_021215-65
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	258		40.0	20.0	10.0

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-16	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-021115	**Prep Method:**	9056	**Prep Date:**	02/12/2015 15:27
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG512128	**Analyst:**	AED	**Run Date:**	02/13/2015 10:02
Collect Date:	02/11/2015 11:35	**Dilution:**	100	**File ID:**	I1_021215-66
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1250		40.0	20.0	10.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-16	**PrePrep Method:**	N/A	**Instrument:**	UV-2600
Client ID:	67WW08-021115	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	01/20/2015 08:00
Workgroup #:	WG512331	**Analyst:**	TMM	**Run Date:**	02/16/2015 08:20
Collect Date:	02/11/2015 11:35	**Dilution:**	1	**File ID:**	00.1502160820-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.0907		0.0400	0.0400	0.0200

Certificate of Analysis

Sample #:	L15020678-16	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW08-021115	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG512109	**Analyst:**	TB	**Run Date:**	02/12/2015 15:45
Collect Date:	02/11/2015 11:35	**Dilution:**	1	**File ID:**	ET.1502121545-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-16	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-021115	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG512138	**Analyst:**	EPT	**Run Date:**	02/13/2015 15:03
Collect Date:	02/11/2015 11:35	**Dilution:**	5	**File ID:**	TC02132015.016
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	22.4		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15020678-16	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-021115	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG512138	**Analyst:**	EPT	**Run Date:**	02/13/2015 15:03
Collect Date:	02/11/2015 11:35	**Dilution:**	5	**File ID:**	TC02132015.016
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		160		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15020678-17	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 14:23
Collect Date:	02/11/2015 00:01	**Dilution:**	1	**File ID:**	6M131115
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.8	85	115	
1,2-Dichloroethane-d4	90.4	70	120	
Toluene-d8	99.1	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW14-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 15:26
Collect Date:	02/10/2015 08:00	**Dilution:**	1	**File ID:**	6M131117
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.434	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.640	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	3.46		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.9	85	115	
1,2-Dichloroethane-d4	94.8	70	120	
Toluene-d8	98.6	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW14FD-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 15:56
Collect Date:	02/10/2015 08:00	**Dilution:**	1	**File ID:**	6M131118
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.369	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.657	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	3.61		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.4	85	115	
1,2-Dichloroethane-d4	94.2	70	120	
Toluene-d8	99.1	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW10-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 16:26
Collect Date:	02/10/2015 09:55	**Dilution:**	1	**File ID:**	6M131119
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	85	115	
1,2-Dichloroethane-d4	95.1	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW09A-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 16:57
Collect Date:	02/10/2015 10:55	**Dilution:**	1	**File ID:**	6M131120
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.0	85	115	
1,2-Dichloroethane-d4	97.2	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	106	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW12-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 14:55
Collect Date:	02/10/2015 13:40	**Dilution:**	1	**File ID:**	6M131116
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.6	85	115	
1,2-Dichloroethane-d4	92.5	70	120	
Toluene-d8	97.7	85	120	
4-Bromofluorobenzene	106	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW12MS-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 12:49
Collect Date:	02/10/2015 13:40	**Dilution:**	1	**File ID:**	6M131112
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.5		10.0	5.00	2.50
Benzene	71-43-2	21.8		1.00	0.250	0.125
Bromobenzene	108-86-1	20.2		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.6		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.5		1.00	0.500	0.250
Bromoform	75-25-2	19.5		2.00	1.00	0.500
Bromomethane	74-83-9	11.8	Q	2.00	1.00	0.500
2-Butanone	78-93-3	18.7		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.7		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.6		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.6		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	22.4		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.6		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	21.2		1.00	0.500	0.250
Chloroethane	75-00-3	21.7		2.00	1.00	0.500
Chloroform	67-66-3	22.4		1.00	0.250	0.125
Chloromethane	74-87-3	12.7		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.4		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.0		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	20.2		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	21.4		1.00	0.500	0.250
Dibromomethane	74-95-3	21.6		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	17.3		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	17.9		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	18.3		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	11.2		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	20.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.9		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.0		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	22.5		1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	22.1		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.5		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	21.0		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	24.0	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	23.4		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	21.5		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.6		1.00	0.500	0.250
Ethylbenzene	100-41-4	21.1		1.00	0.500	0.250
2-Hexanone	591-78-6	18.2		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	26.9	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.0		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.3		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.3		10.0	5.00	2.50
Methylene chloride	75-09-2	21.5		1.00	0.500	0.250
Naphthalene	91-20-3	20.0		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.3		1.00	0.250	0.125
Styrene	100-42-5	21.9		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.7		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.2		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.3		1.00	0.500	0.250
Toluene	108-88-3	21.9		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	20.7		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	20.8		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	21.7		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.4		1.00	0.500	0.250
Trichloroethene	79-01-6	22.2		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	18.9		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	20.7		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	22.1		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.5		1.00	0.500	0.250
Vinyl chloride	75-01-4	18.2		1.00	0.500	0.250
o-Xylene	95-47-6	19.8		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.8		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	85	115	
1,2-Dichloroethane-d4	94.2	70	120	
Toluene-d8	96.5	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW12MSD-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 13:20
Collect Date:	02/10/2015 13:40	**Dilution:**	1	**File ID:**	6M131113
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.3		10.0	5.00	2.50
Benzene	71-43-2	21.0		1.00	0.250	0.125
Bromobenzene	108-86-1	21.0		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.5		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.8		1.00	0.500	0.250
Bromoform	75-25-2	20.1		2.00	1.00	0.500
Bromomethane	74-83-9	12.0	Q	2.00	1.00	0.500
2-Butanone	78-93-3	18.6		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.3		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.6		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.7		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.4		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	21.3		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.4		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	21.0		1.00	0.500	0.250
Chloroethane	75-00-3	20.9		2.00	1.00	0.500
Chloroform	67-66-3	21.6		1.00	0.250	0.125
Chloromethane	74-87-3	12.6		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.3		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	20.4		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	21.1		1.00	0.500	0.250
Dibromomethane	74-95-3	21.0		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	17.0		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	17.5		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	18.2		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	10.7		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	20.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.9		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	18.3		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	22.0		1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	21.6		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.1		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.9		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	23.0	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	23.0		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	21.3		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.3		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.7		1.00	0.500	0.250
2-Hexanone	591-78-6	18.2		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	26.4	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.6		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.5		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.1		10.0	5.00	2.50
Methylene chloride	75-09-2	21.0		1.00	0.500	0.250
Naphthalene	91-20-3	20.2		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.3		1.00	0.250	0.125
Styrene	100-42-5	21.5		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.7		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.1		1.00	0.400	0.200
Tetrachloroethene	127-18-4	18.9		1.00	0.500	0.250
Toluene	108-88-3	21.7		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.1		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	21.1		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	21.1		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.7		1.00	0.500	0.250
Trichloroethene	79-01-6	21.6		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	18.4		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	20.1		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	22.2		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.6		1.00	0.500	0.250
Vinyl chloride	75-01-4	17.5		1.00	0.500	0.250
o-Xylene	95-47-6	19.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.4		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	85	115	
1,2-Dichloroethane-d4	93.2	70	120	
Toluene-d8	97.6	85	120	
4-Bromofluorobenzene	104	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW05-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 17:28
Collect Date:	02/10/2015 14:00	**Dilution:**	1	**File ID:**	6M131121
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	85	115	
1,2-Dichloroethane-d4	99.5	70	120	
Toluene-d8	96.4	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW02-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 17:59
Collect Date:	02/10/2015 14:15	**Dilution:**	1	**File ID:**	6M131122
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.592	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	3.59		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	85	115	
1,2-Dichloroethane-d4	98.2	70	120	
Toluene-d8	97.3	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW01-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 20:34
Collect Date:	02/10/2015 14:32	**Dilution:**	1	**File ID:**	6M131127
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	23.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	28.7		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	552	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.82		1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.287	J	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	1.44		1.00	0.500	0.250
Trichloroethene	79-01-6	4.07		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	2.38		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.1	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	97.4	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

J	Estimated value ; the analyte concentration was greater than the highest standard
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW01-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512497	**Analyst:**	TMB	**Run Date:**	02/17/2015 15:22
Collect Date:	02/10/2015 14:32	**Dilution:**	10	**File ID:**	6M131149
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	Q	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	Q	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	Q	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	2.50	U	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	20.4		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	27.1		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	544		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	Q	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	Q	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
Trichloroethene	79-01-6	3.63	J	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.1	85	115	
1,2-Dichloroethane-d4	97.3	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW07-021015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 18:31
Collect Date:	02/10/2015 15:00	**Dilution:**	1	**File ID:**	6M131123
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.04		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.1	85	115	
1,2-Dichloroethane-d4	96.6	70	120	
Toluene-d8	95.9	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW13-021115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 21:05
Collect Date:	02/11/2015 08:15	**Dilution:**	2.5	**File ID:**	6M131128
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	Q	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	1.32	J	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	29.1		2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	26.0		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	521		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	1.60	J	2.50	1.25	0.625

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	Q	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	Q	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	1.25	U	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	4.87		2.50	1.25	0.625
Trichloroethene	79-01-6	2.63		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	0.653	J	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.4	85	115	
1,2-Dichloroethane-d4	97.4	70	120	
Toluene-d8	96.3	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW09-021115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 19:02
Collect Date:	02/11/2015 09:20	**Dilution:**	1	**File ID:**	6M131124
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	2.93		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	8.17		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.9	85	115	
1,2-Dichloroethane-d4	97.9	70	120	
Toluene-d8	98.6	85	120	
4-Bromofluorobenzene	104	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW09FD-021115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 19:32
Collect Date:	02/11/2015 09:20	**Dilution:**	1	**File ID:**	6M131125
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	2.92		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	8.29		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.7	85	115	
1,2-Dichloroethane-d4	97.8	70	120	
Toluene-d8	98.0	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-15	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW11-021115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 20:03
Collect Date:	02/11/2015 10:20	**Dilution:**	1	**File ID:**	6M131126
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	9.81		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.559	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	30.4		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.5	85	115	
1,2-Dichloroethane-d4	95.3	70	120	
Toluene-d8	96.7	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	67WW08-021115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 21:36
Collect Date:	02/11/2015 11:35	**Dilution:**	10	**File ID:**	6M131129
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	Q	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	2.57	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	61.1		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	104		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	1930		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	2.71	J	10.0	5.00	2.50

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	Q	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	6.96	J	10.0	5.00	2.50
Trichloroethene	79-01-6	3.15	J	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.0	85	115	
1,2-Dichloroethane-d4	98.4	70	120	
Toluene-d8	98.0	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-17	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512365	**Analyst:**	TMB	**Run Date:**	02/16/2015 14:23
Collect Date:	02/11/2015 00:01	**Dilution:**	1	**File ID:**	6M131115
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.8	85	115	
1,2-Dichloroethane-d4	90.4	70	120	
Toluene-d8	99.1	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 093014
Analyst1: TMB Analyst2: NA
Method: 8260B/OVAP SOP: MSV01 Rev: 19/0
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A/OVAP SOP: PAT01 Rev: 16/0
Maintenance Log ID: 51858

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66544 LCS: STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494605

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M128662	WG494605-01 50ng BFB STD 8260	NA	1	1	STD66476	09/30/14 14:48
6M128663	WG494630-02 50ug/L CCV STD 8260	NA	1	1	STD66737	09/30/14 15:13
6M128664	RINSE	NA	1	1		09/30/14 15:46
6M128665	WG494605-02 5ug/L STD A9/FOO	NA	1	1	STD66544	09/30/14 16:17
6M128666	WG494605-03 20ug/L STD A9/FOO	NA	1	1	STD66544	09/30/14 16:49
6M128667	WG494605-04 50ug/L STD A9/FOO	NA	1	1	STD66544	09/30/14 17:21
6M128668	WG494605-05 100ug/L STD A9/FOO	NA	1	1	STD66544	09/30/14 17:52
6M128669	WG494605-06 200ug/L STD A9/FOO	NA	1	1	STD66544	09/30/14 18:24
6M128670	WG494605-07 300ug/L STD A9/FOO	NA	1	1	STD66544	09/30/14 18:55
6M128671	WG494605-08 400ug/L STD A9/FOO	NA	1	1	STD66544	09/30/14 19:27
6M128672	WG494605-09 500ug/L STD A9/FOO	NA	1	1	STD66544	09/30/14 19:59
6M128673	RINSE	NA	1	1		09/30/14 20:31
6M128674	WG494605-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD66677	09/30/14 21:02
6M128675	RINSE	NA	1	1		09/30/14 21:34

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 6M128663				
Not needed. DNR.				

Approved: October 02, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 020515
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 20 / 0
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 17 / 0
Method: 624 SOP: MSV10 Rev: 13
Maintenance Log ID:

Internal Standard: STD68728 Surrogate Standard: STD68728
CCV: NA LCS: STD68730 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG511026

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M130907	WG511026-01 50ng BFB STD 8260	NA	1	1	STD68443	02/05/15 09:01
6M130908	RINSE	NA	1	1	STD68443	02/05/15 09:24
6M130909	WG511026-01 50ng BFB STD 8260	NA	1	1	STD68443	02/05/15 10:06
6M130910	RINSE	NA	1	1	STD68794	02/05/15 10:31
6M130911	WG511026-02 0.3ug/L STD 8260	NA	1	1	STD68794	02/05/15 11:02
6M130912	WG511026-03 0.4ug/L STD 8260	NA	1	1	STD68794	02/05/15 11:33
6M130913	WG511026-04 1ug/L STD 8260	NA	1	1	STD68794	02/05/15 12:05
6M130914	WG511026-05 2ug/L STD 8260	NA	1	1	STD68794	02/05/15 12:36
6M130915	WG511026-06 5ug/L STD 8260	NA	1	1	STD68794	02/05/15 13:07
6M130916	WG511026-07 20ug/L STD 8260	NA	1	1	STD68794	02/05/15 13:38
6M130917	WG511026-08 50ug/L STD 8260	NA	1	1	STD68794	02/05/15 14:09
6M130918	WG511026-09 100ug/L STD 8260	NA	1	1	STD68794	02/05/15 14:40
6M130919	WG511026-10 200ug/L STD 8260	NA	1	1	STD68794	02/05/15 15:11
6M130920	WG511026-11 300ug/L STD 8260	NA	1	1	STD68794	02/05/15 15:42
6M130921	RINSE	NA	1	1		02/05/15 16:14
6M130922	RINSE	NA	1	1		02/05/15 16:45
6M130923	WG511026-12 50ug/L ALT SRC STD 8260	NA	1	1	STD68730	02/05/15 17:16
6M130924	L15010001-01 LOD 826-SPE	NA	1	1	STD68000	02/05/15 17:48
6M130925	L15010006-01 MDL-A 826-SPE	NA	1	1	STD68807	02/05/15 18:18
6M130926	L15010006-02 MDL-A 826-SPE	NA	1	1	STD68807	02/05/15 18:49
6M130927	L15010006-03 MDL-A 826-SPE	NA	1	1	STD68807	02/05/15 19:19
6M130928	L15010006-04 MDL-A 826-SPE	NA	1	1	STD68807	02/05/15 19:50
6M130929	L15010006-05 MDL-A 826-SPE	NA	1	1	STD68807	02/05/15 20:21
6M130930	L15010006-06 MDL-A 826-SPE	NA	1	1	STD68807	02/05/15 20:52
6M130931	L15010006-07 MDL-A 826-SPE	NA	1	1	STD68807	02/05/15 21:23
6M130932	RINSE	NA	1	1		02/05/15 21:54
6M130933	RINSE	NA	1	1		02/05/15 22:25
6M130934	RINSE	NA	1	1		02/05/15 22:56

Approved: February 10, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 021615
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 20
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 17
Maintenance Log ID: 52835

Internal Standard: STD68728 Surrogate Standard: STD68728
CCV: STD68794 LCS: STD68892 MS/MSD: STD68892

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG512365

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M131106	WG512364-01 50ng BFB STD 8260	NA	1	1	STD68443	02/16/15 09:52
6M131107	WG512364-02 50ug/L CCV STD 8260	NA	1	1	STD68794	02/16/15 10:15
6M131108	WG512364-02 50ug/L CCV STD 8260	NA	1	1	STD68794	02/16/15 10:46
6M131109	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD68819	02/16/15 11:16
6M131110	WG512365-01 VBLK0216 BLANK STD 826	NA	1	1		02/16/15 11:47
6M131111	WG512365-02 20ug/L LCS STD 8260	NA	1	1	STD68892	02/16/15 12:18
6M131112	L15020678-06 B MS 826-LOW	<2	1	1	STD68892	02/16/15 12:49
6M131113	L15020678-07 B MSD 826-LOW	<2	1	1	STD68892	02/16/15 13:20
6M131114	RINSE	NA	1	1		02/16/15 13:52
6M131115	L15020678-17 B TB 826-LOW	<2	1	1		02/16/15 14:23
6M131116	L15020678-05 A REF 826-LOW	<2	1	1		02/16/15 14:55
6M131117	L15020678-01 A 826-LOW	<2	1	1		02/16/15 15:26
6M131118	L15020678-02 A 826-LOW	<2	1	1		02/16/15 15:56
6M131119	L15020678-03 A 826-LOW	<2	1	1		02/16/15 16:26
6M131120	L15020678-04 A 826-LOW	<2	1	1		02/16/15 16:57
6M131121	L15020678-08 A 826-LOW	<2	1	1		02/16/15 17:28
6M131122	L15020678-09 A 826-LOW	<2	1	1		02/16/15 17:59
6M131123	L15020678-11 A 826-LOW	<2	1	1		02/16/15 18:31
6M131124	L15020678-13 A 826-LOW	<2	1	1		02/16/15 19:02
6M131125	L15020678-14 A 826-LOW	<2	1	1		02/16/15 19:32
6M131126	L15020678-15 A 826-LOW	<2	1	1		02/16/15 20:03
6M131127	L15020678-10 A 826-LOW	<2	1	1		02/16/15 20:34
6M131128	L15020678-12 A 2.5X 826-LOW	<2	1	2.5		02/16/15 21:05
6M131129	L15020678-16 A 10X 826-LOW	<2	1	10		02/16/15 21:36
6M131130	RINSE	NA	1	1		02/16/15 22:07
6M131131	WG512365-06 VBLK0216 BLANK STD 624	NA	2	1		02/16/15 22:37
6M131132	L15020813-01 A 624-SPE	5	2	1		02/16/15 23:08
6M131133	L15020813-02 A 624-SPE	5	2	1		02/16/15 23:38
6M131134	L15020813-03 A 624-SPE	5	2	1		02/17/15 00:09
6M131135	CCV	NA	1	1		02/17/15 00:40
6M131136	RINSE	NA	1	1		02/17/15 01:12
6M131137	RINSE	NA	1	1		02/17/15 01:43

Approved: February 17, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS6	Dataset:	021615		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	20
Method:	624	SOP:	MSV10	Rev:	13
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	17
Maintenance Log ID:	52835				

Internal Standard: STD68728 Surrogate Standard: STD68728

CCV: STD68794 LCS: STD68892 MS/MSD: STD68892

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG512365

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M131107				
	Gases were low, DNR.			
4				
File ID: 6M131109				
	Not needed, DNR.			
22	X	10	Over Calibration Range	11-DCE
File ID: 6M131127				

Approved: February 17, 2015

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 021715
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 20
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 17
Maintenance Log ID: 52844

Internal Standard: STD68728 Surrogate Standard: STD68728
CCV: STD68794 LCS: STD68892 MS/MSD: STD68892

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG512497

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M131138	WG512496-01 50ng BFB STD 8260	NA	1	1	STD68443	02/17/15 09:44
6M131139	WG512496-02 50ug/L CCV STD 8260	NA	1	1	STD68794	02/17/15 10:07
6M131140	WG512496-02 50ug/L CCV STD 8260	NA	1	1	STD68794	02/17/15 10:44
6M131141	WG000000-01 100ug/L a9 CCV STD 8260	NA	1	1	STD68819	02/17/15 11:15
6M131142	WG512497-01 VBLK0217 BLANK STD 826	NA	1	1		02/17/15 11:45
6M131143	L15020400-01 A 8260	5	1	1		02/17/15 12:16
6M131144	WG512497-02 20ug/L LCS STD 8260	NA	1	1	STD68892	02/17/15 12:47
6M131145	L15020693-03 A MS 826-BETX	<2	1	1	STD68892	02/17/15 13:18
6M131146	L15020693-05 A MSD 826-BETX	<2	1	1	STD68892	02/17/15 13:49
6M131147	L15020596-03 B 100X 826-SPE D1	<2	1	100		02/17/15 14:20
6M131148	L15020596-06 B 20X 826-SPE D1	<2	1	20		02/17/15 14:51
6M131149	L15020678-10 B 10X 826-LOW D1	<2	1	10		02/17/15 15:22
6M131150	L15020694-03 TB A 826-BETX	<2	1	1		02/17/15 15:53
6M131151	L15020805-09 TB A 826-LOW	<2	1	1		02/17/15 16:25
6M131152	L15020693-01 REF A 826-BETX	<2	1	1		02/17/15 16:56
6M131153	L15020805-03 A 826-LOW	<2	1	1		02/17/15 17:28
6M131154	L15020805-07 A 826-LOW	<2	1	1		02/17/15 17:59
6M131155	L15020805-08 A 826-LOW	<2	1	1		02/17/15 18:29
6M131156	L15020805-01 A 826-LOW	<2	1	1		02/17/15 19:00
6M131157	L15020805-02 A 826-LOW	<2	1	1		02/17/15 19:31
6M131158	L15020805-04 A 5X 826-LOW	<2	1	5		02/17/15 20:02
6M131159	L15020805-05 A 25X 826-LOW	<2	1	25		02/17/15 20:33
6M131160	L15020805-06 A 25X 826-LOW	<2	1	25		02/17/15 21:04
6M131161	RINSE	NA	1	1		02/17/15 21:35
6M131162	WG512497-06 VBLK0217 BLANK STD 624	NA	2	1		02/17/15 22:05
6M131163	L15020813-19 A TB 624-SPE	5	2	1		02/17/15 22:36
6M131164	L15020813-18 A FB 624-SPE	5	2	1		02/17/15 23:07
6M131165	L15020813-17 A 624-SPE	5	2	1		02/17/15 23:38

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M131139				

Approved: February 19, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS6	Dataset:	021715		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	20
Method:	624	SOP:	MSV10	Rev:	13
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	17
Maintenance Log ID:	52844				

Internal Standard: STD68728 Surrogate Standard: STD68728

CCV: STD68794 LCS: STD68892 MS/MSD: STD68892

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG512497

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Gases were low. DNR.	
4 File ID: 6M131141				
			Not needed. DNR.	
21 File ID: 6M131158	X	1	Analyzed too dilute	
			DNR.	
22 File ID: 6M131159	X	1	Analyzed too dilute	
			DNR.	
23 File ID: 6M131160	X	1	Analyzed too dilute	
			DNR.	

Approved: February 19, 2015

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 30-SEP-2014
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 63807
Analytical Workgroups: WG494605

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	TMB
Surrogates	NA
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	NA
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-OCT-2014
Tiffany Bailey

Secondary Reviewer:
02-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-02-2014 08:52:20

Microbac Laboratories Inc.

Data Checklist

Date: 05-FEB-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 66168
Analytical Workgroups: WG511026

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
06-FEB-2015
Tiffany Bailey

Secondary Reviewer:
10-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-10-2015 16:22:59

Microbac Laboratories Inc.

Data Checklist

Date: 16-FEB-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 66377
Analytical Workgroups: WG512365

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-FEB-2015
Tiffany Bailey

Secondary Reviewer:
17-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-17-2015 12:22:39

Microbac Laboratories Inc.

Data Checklist

Date: 17-FEB-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 66417
Analytical Workgroups: WG512497

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-FEB-2015
Tiffany Bailey

Secondary Reviewer:
19-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-19-2015 13:16:35

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG512365

Login Number: L15020678

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW14-021015	01	02/10/15					02/16/2015	6.3	14		02/16/15	6.3	14	
67WW14FD-021015	02	02/10/15					02/16/2015	6.3	14		02/16/15	6.3	14	
67WW10-021015	03	02/10/15					02/16/2015	6.3	14		02/16/15	6.3	14	
67WW09A-021015	04	02/10/15					02/16/2015	6.3	14		02/16/15	6.3	14	
67WW12-021015	05	02/10/15					02/16/2015	6.1	14		02/16/15	6.1	14	
67WW12MS-021015	06	02/10/15					02/16/2015	6	14		02/16/15	6	14	
67WW12MSD-021015	07	02/10/15					02/16/2015	6	14		02/16/15	6	14	
67WW05-021015	08	02/10/15					02/16/2015	6.1	14		02/16/15	6.1	14	
67WW02-021015	09	02/10/15					02/16/2015	6.2	14		02/16/15	6.2	14	
67WW01-021015	10	02/10/15					02/16/2015	6.3	14		02/16/15	6.3	14	
67WW07-021015	11	02/10/15					02/16/2015	6.1	14		02/16/15	6.1	14	
67WW13-021115	12	02/11/15					02/16/2015	5.5	14		02/16/15	5.5	14	
67WW09-021115	13	02/11/15					02/16/2015	5.4	14		02/16/15	5.4	14	
67WW09FD-021115	14	02/11/15					02/16/2015	5.4	14		02/16/15	5.4	14	
67WW11-021115	15	02/11/15					02/16/2015	5.4	14		02/16/15	5.4	14	
67WW08-021115	16	02/11/15					02/16/2015	5.4	14		02/16/15	5.4	14	
TRIP BLANK	17	02/11/15					02/16/2015	5.6	14		02/16/15	5.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4022817
Report generated 02/23/2015 13:58

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG512497

Login Number: L15020678

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW01-021015	10	02/10/15					02/17/2015	7	14		02/17/15	7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4022817
Report generated 02/23/2015 13:58

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15020678
Instrument Id: HPMS6
Workgroup (AAB#): WG512497

Method: 8260
CAL ID: HPMS6-05-FEB-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15020678-10	10.0	DL01	97.3	96.1	108	100
WG512497-01	1.00	01	93.7	94.6	108	101
WG512497-02	1.00	01	101	98.8	104	98.5
WG512497-06	1.00	01	103	98.2	106	101

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4022823
Report generated: 02/23/2015 13:58

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15020678
Instrument Id: HPMS6
Workgroup (AAB#): WG512365

Method: 8260
CAL ID: HPMS6-05-FEB-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15020678-01	1.00	01	94.8	95.9	104	98.6
L15020678-02	1.00	01	94.2	96.4	105	99.1
L15020678-03	1.00	01	95.1	97.5	108	97.5
L15020678-04	1.00	01	97.2	97.0	106	97.5
L15020678-05	1.00	01	92.5	93.6	106	97.7
L15020678-06	1.00	01	94.2	97.5	102	96.5
L15020678-07	1.00	01	93.2	97.5	104	97.6
L15020678-08	1.00	01	99.5	97.5	103	96.4
L15020678-09	1.00	01	98.2	99.2	106	97.3
L15020678-10	1.00	01	101	99.1	105	97.4
L15020678-11	1.00	01	96.6	98.1	103	95.9
L15020678-12	2.50	DL01	97.4	99.4	105	96.3
L15020678-13	1.00	01	97.9	96.9	104	98.6
L15020678-14	1.00	01	97.8	96.7	107	98.0
L15020678-15	1.00	01	95.3	96.5	105	96.7
L15020678-16	10.0	DL01	98.4	97.0	105	98.0
L15020678-17	1.00	01	90.4	94.8	107	99.1
WG512365-01	1.00	01	92.2	94.9	107	98.3
WG512365-02	1.00	01	93.3	97.0	105	97.5
WG512365-06	1.00	01	97.0	98.0	107	97.1

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4022823
Report generated: 02/23/2015 13:58

METHOD BLANK SUMMARY

Login Number: L15020678
Blank File ID: 6M131110
Prep Date: 02/16/15 11:47
Analyzed Date: 02/16/15 11:47
Analyst: TMB

Work Group: WG512365
Blank Sample ID: WG512365-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG512365-02	6M131111	02/16/15 12:18	01
67WW12MS-021015	L15020678-06	6M131112	02/16/15 12:49	01
67WW12MSD-021015	L15020678-07	6M131113	02/16/15 13:20	01
TRIP BLANK	L15020678-17	6M131115	02/16/15 14:23	01
67WW12-021015	L15020678-05	6M131116	02/16/15 14:55	01
67WW14-021015	L15020678-01	6M131117	02/16/15 15:26	01
67WW14FD-021015	L15020678-02	6M131118	02/16/15 15:56	01
67WW10-021015	L15020678-03	6M131119	02/16/15 16:26	01
67WW09A-021015	L15020678-04	6M131120	02/16/15 16:57	01
67WW05-021015	L15020678-08	6M131121	02/16/15 17:28	01
67WW02-021015	L15020678-09	6M131122	02/16/15 17:59	01
67WW07-021015	L15020678-11	6M131123	02/16/15 18:31	01
67WW09-021115	L15020678-13	6M131124	02/16/15 19:02	01
67WW09FD-021115	L15020678-14	6M131125	02/16/15 19:32	01
67WW11-021115	L15020678-15	6M131126	02/16/15 20:03	01
67WW01-021015	L15020678-10	6M131127	02/16/15 20:34	01
67WW13-021115	L15020678-12	6M131128	02/16/15 21:05	DL01
67WW08-021115	L15020678-16	6M131129	02/16/15 21:36	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4033934
Report generated 02/23/2015 13:58

METHOD BLANK SUMMARY

Login Number: L15020678
Blank File ID: 6M131142
Prep Date: 02/17/15 11:45
Analyzed Date: 02/17/15 11:45
Analyst: TMB

Work Group: WG512497
Blank Sample ID: WG512497-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG512497-02	6M131144	02/17/15 12:47	01
67WW01-021015	L15020678-10	6M131149	02/17/15 15:22	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4033934
Report generated 02/23/2015 13:58

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15020678 Prep Date: 02/16/15 11:47 Sample ID: WG512365-01
Instrument ID: HPMS6 Run Date: 02/16/15 11:47 Prep Method: 5030B/5030C/503
File ID: 6M131110 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512365 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-05-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.411	1	J
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4033935
23-FEB-2015 13:58

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020678 Prep Date: 02/16/15 11:47 Sample ID: WG512365-01
Instrument ID: HPMS6 Run Date: 02/16/15 11:47 Prep Method: 5030B/5030C/503
File ID: 6M131110 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512365 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-05-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.9	85 - 115	PASS
1,2-Dichloroethane-d4	92.2	70 - 120	PASS
Toluene-d8	98.3	85 - 120	PASS
4-Bromofluorobenzene	107	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4033935
23-FEB-2015 13:58

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020678 Prep Date: 02/17/15 11:45 Sample ID: WG512497-01
Instrument ID: HPMS6 Run Date: 02/17/15 11:45 Prep Method: 5030B/5030C/503
File ID: 6M131142 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512497 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-05-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.609	1	*
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4033935
23-FEB-2015 13:58

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020678 Prep Date: 02/17/15 11:45 Sample ID: WG512497-01
Instrument ID: HPMS6 Run Date: 02/17/15 11:45 Prep Method: 5030B/5030C/503
File ID: 6M131142 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512497 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-05-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.6	85 - 115	PASS
1,2-Dichloroethane-d4	93.7	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	108	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4033935
23-FEB-2015 13:58

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15020678 Prep Date: 02/17/15 22:05 Sample ID: WG512497-06
Instrument ID: HPMS6 Run Date: 02/17/15 22:05 Prep Method: 5030B/5030C/503
File ID: 6M131162 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512497 Matrix: Water 2 Units: ug/L
Contract #: Cal ID: HPMS6-05-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4033935
23-FEB-2015 13:58

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020678 Prep Date: 02/17/15 22:05 Sample ID: WG512497-06
Instrument ID: HPMS6 Run Date: 02/17/15 22:05 Prep Method: 5030B/5030C/503
File ID: 6M131162 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512497 Matrix: Water 2 Units: ug/L
Contract #: Cal ID: HPMS6-05-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	98.2	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	106	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4033935
23-FEB-2015 13:58

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020678 | Run Date: 02/16/2015 | Sample ID: WG512365-02
Instrument ID: HPMS6 | Run Time: 12:18 | Prep Method: 5030B/5030C/503
File ID: 6M131111 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG512365 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD68892 | Cal ID: HPMS6-05-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.4	102	40 - 140	
Benzene	20.0	21.6	108	80 - 120	
Bromobenzene	20.0	21.1	105	75 - 125	
Bromochloromethane	20.0	20.1	100	65 - 130	
Bromodichloromethane	20.0	21.4	107	75 - 120	
Bromoform	20.0	20.5	102	70 - 130	
Bromomethane	20.0	11.0	55.0	30 - 145	
2-Butanone	20.0	18.0	89.9	30 - 150	
n-Butylbenzene	20.0	22.4	112	70 - 135	
sec-Butylbenzene	20.0	20.6	103	70 - 125	
tert-Butylbenzene	20.0	18.3	91.7	70 - 130	
Carbon disulfide	20.0	18.8	94.1	35 - 160	
Carbon tetrachloride	20.0	22.4	112	65 - 140	
Chlorobenzene	20.0	19.9	99.4	80 - 120	
Chlorodibromomethane	20.0	21.2	106	60 - 135	
Chloroethane	20.0	21.3	107	60 - 135	
Chloroform	20.0	22.1	110	65 - 135	
Chloromethane	20.0	13.4	67.1	40 - 125	
2-Chlorotoluene	20.0	20.7	104	75 - 125	
4-Chlorotoluene	20.0	21.3	107	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	21.1	106	50 - 130	
1,2-Dibromoethane	20.0	21.4	107	80 - 120	
Dibromomethane	20.0	20.8	104	75 - 125	
1,2-Dichlorobenzene	20.0	17.7	88.4	70 - 120	
1,3-Dichlorobenzene	20.0	18.2	91.0	75 - 125	
1,4-Dichlorobenzene	20.0	18.8	94.0	75 - 125	
Dichlorodifluoromethane	20.0	11.6	58.2	30 - 155	
1,1-Dichloroethane	20.0	20.4	102	70 - 135	
1,2-Dichloroethane	20.0	20.3	102	70 - 130	
1,1-Dichloroethene	20.0	18.8	93.9	70 - 130	
cis-1,2-Dichloroethene	20.0	22.4	112	70 - 125	
trans-1,2-Dichloroethene	20.0	21.9	110	60 - 140	
1,2-Dichloropropane	20.0	20.2	101	75 - 125	
1,3-Dichloropropane	20.0	21.0	105	75 - 125	
2,2-Dichloropropane	20.0	23.4	117	70 - 135	
cis-1,3-Dichloropropene	20.0	23.0	115	70 - 130	
trans-1,3-Dichloropropene	20.0	21.5	107	55 - 140	
1,1-Dichloropropene	20.0	21.2	106	75 - 130	
Ethylbenzene	20.0	21.0	105	75 - 125	
2-Hexanone	20.0	16.6	83.0	55 - 130	
Hexachlorobutadiene	20.0	25.9	129	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4022818
Report generated: 02/23/2015 13:58

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020678 Run Date: 02/16/2015 Sample ID: WG512365-02
Instrument ID: HPMS6 Run Time: 12:18 Prep Method: 5030B/5030C/503
File ID: 6M131111 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512365 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD68892 Cal ID: HPMS6-05-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.2	101	75 - 125	
p-Isopropyltoluene	20.0	21.3	106	75 - 130	
4-Methyl-2-pentanone	20.0	17.2	86.0	60 - 135	
Methylene chloride	20.0	21.0	105	55 - 140	
Naphthalene	20.0	20.3	101	55 - 140	
n-Propylbenzene	20.0	21.2	106	70 - 130	
Styrene	20.0	22.0	110	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.1	105	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	21.0	105	65 - 130	
Tetrachloroethene	20.0	19.4	97.2	45 - 150	
Toluene	20.0	22.2	111	75 - 120	
1,2,3-Trichlorobenzene	20.0	21.0	105	55 - 140	
1,2,4-Trichlorobenzene	20.0	21.1	105	65 - 135	
1,1,1-Trichloroethane	20.0	21.7	109	65 - 130	
1,1,2-Trichloroethane	20.0	20.3	102	75 - 125	
Trichloroethene	20.0	21.8	109	70 - 125	
Trichlorofluoromethane	20.0	19.1	95.6	60 - 145	
1,2,3-Trichloropropane	20.0	19.6	97.9	75 - 125	
1,2,4-Trimethylbenzene	20.0	23.4	117	75 - 130	
1,3,5-Trimethylbenzene	20.0	23.6	118	75 - 130	
Vinyl chloride	20.0	18.9	94.4	50 - 145	
o-Xylene	20.0	20.0	99.9	80 - 120	
m-,p-Xylene	40.0	41.9	105	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.0	85 - 115	PASS
1,2-Dichloroethane-d4	93.3	70 - 120	PASS
Toluene-d8	97.5	85 - 120	PASS
4-Bromofluorobenzene	105	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4022818
Report generated: 02/23/2015 13:58

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020678 | Run Date: 02/17/2015 | Sample ID: WG512497-02
Instrument ID: HPMS6 | Run Time: 12:47 | Prep Method: 5030B/5030C/503
File ID: 6M131144 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG512497 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD68892 | Cal ID: HPMS6-05-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.9	105	40 - 140	
Benzene	20.0	21.2	106	80 - 120	
Bromobenzene	20.0	21.5	107	75 - 125	
Bromochloromethane	20.0	20.9	104	65 - 130	
Bromodichloromethane	20.0	21.5	107	75 - 120	
Bromoform	20.0	21.9	109	70 - 130	
Bromomethane	20.0	13.2	66.1	30 - 145	
2-Butanone	20.0	18.2	91.0	30 - 150	
n-Butylbenzene	20.0	22.2	111	70 - 135	
sec-Butylbenzene	20.0	20.3	101	70 - 125	
tert-Butylbenzene	20.0	18.1	90.7	70 - 130	
Carbon disulfide	20.0	17.9	89.5	35 - 160	
Carbon tetrachloride	20.0	22.1	110	65 - 140	
Chlorobenzene	20.0	20.2	101	80 - 120	
Chlorodibromomethane	20.0	22.3	112	60 - 135	
Chloroethane	20.0	21.8	109	60 - 135	
Chloroform	20.0	22.1	110	65 - 135	
Chloromethane	20.0	16.4	82.0	40 - 125	
2-Chlorotoluene	20.0	20.8	104	75 - 125	
4-Chlorotoluene	20.0	21.3	106	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	21.8	109	50 - 130	
1,2-Dibromoethane	20.0	22.3	111	80 - 120	
Dibromomethane	20.0	21.6	108	75 - 125	
1,2-Dichlorobenzene	20.0	17.9	89.5	70 - 120	
1,3-Dichlorobenzene	20.0	17.9	89.7	75 - 125	
1,4-Dichlorobenzene	20.0	19.1	95.4	75 - 125	
Dichlorodifluoromethane	20.0	22.7	113	30 - 155	
1,1-Dichloroethane	20.0	20.0	100	70 - 135	
1,2-Dichloroethane	20.0	21.0	105	70 - 130	
1,1-Dichloroethene	20.0	19.0	94.8	70 - 130	
cis-1,2-Dichloroethene	20.0	22.0	110	70 - 125	
trans-1,2-Dichloroethene	20.0	21.7	109	60 - 140	
1,2-Dichloropropane	20.0	20.0	100	75 - 125	
1,3-Dichloropropane	20.0	21.9	109	75 - 125	
2,2-Dichloropropane	20.0	22.7	113	70 - 135	
cis-1,3-Dichloropropene	20.0	23.0	115	70 - 130	
trans-1,3-Dichloropropene	20.0	22.3	112	55 - 140	
1,1-Dichloropropene	20.0	20.9	105	75 - 130	
Ethylbenzene	20.0	21.4	107	75 - 125	
2-Hexanone	20.0	18.2	90.9	55 - 130	
Hexachlorobutadiene	20.0	26.2	131	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4022818
Report generated: 02/23/2015 13:58

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020678 Run Date: 02/17/2015 Sample ID: WG512497-02
Instrument ID: HPMS6 Run Time: 12:47 Prep Method: 5030B/5030C/503
File ID: 6M131144 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512497 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD68892 Cal ID: HPMS6-05-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.5	103	75 - 125	
p-Isopropyltoluene	20.0	21.2	106	75 - 130	
4-Methyl-2-pentanone	20.0	17.5	87.3	60 - 135	
Methylene chloride	20.0	20.8	104	55 - 140	
Naphthalene	20.0	20.9	104	55 - 140	
n-Propylbenzene	20.0	21.0	105	70 - 130	
Styrene	20.0	22.1	111	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.7	109	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	21.4	107	65 - 130	
Tetrachloroethene	20.0	19.3	96.4	45 - 150	
Toluene	20.0	22.3	111	75 - 120	
1,2,3-Trichlorobenzene	20.0	21.4	107	55 - 140	
1,2,4-Trichlorobenzene	20.0	21.6	108	65 - 135	
1,1,1-Trichloroethane	20.0	22.0	110	65 - 130	
1,1,2-Trichloroethane	20.0	21.5	107	75 - 125	
Trichloroethene	20.0	22.6	113	70 - 125	
Trichlorofluoromethane	20.0	19.9	99.4	60 - 145	
1,2,3-Trichloropropane	20.0	22.1	110	75 - 125	
1,2,4-Trimethylbenzene	20.0	23.1	115	75 - 130	
1,3,5-Trimethylbenzene	20.0	23.6	118	75 - 130	
Vinyl chloride	20.0	21.6	108	50 - 145	
o-Xylene	20.0	19.8	99.0	80 - 120	
m-,p-Xylene	40.0	42.1	105	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	98.8	85 - 115	PASS
1,2-Dichloroethane-d4	101	70 - 120	PASS
Toluene-d8	98.5	85 - 120	PASS
4-Bromofluorobenzene	104	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4022818
Report generated: 02/23/2015 13:58

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15020678 Cal ID: HPMS6- 05-FEB-15 Worknum: WG512365

Instrument ID: HPMS6 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15020678-05 File ID: 6M131116 Dil: 1 Method: 5035A

Sample ID: L15020678-06 MS File ID: 6M131112 Dil: 1 Matrix: 8260B

Sample ID: L15020678-07 MSD File ID: 6M131113 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	20.7	103	20.0	20.7	103	0.0018	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	21.7	108	20.0	21.1	105	2.86	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	21.2	106	20.0	21.1	106	0.0425	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	20.4	102	20.0	20.7	103	1.38	75 - 125	30	
1,1-Dichloroethane	U	20.0	20.7	104	20.0	20.2	101	2.26	70 - 135	30	
1,1-Dichloroethene	U	20.0	19.0	95.1	20.0	18.3	91.4	3.97	70 - 130	30	
1,1-Dichloropropene	U	20.0	21.6	108	20.0	20.3	102	6.23	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	20.7	104	20.0	21.1	106	1.91	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	20.7	103	20.0	20.1	101	2.73	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	20.8	104	20.0	21.1	106	1.60	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	22.1	111	20.0	22.2	111	0.391	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	20.2	101	20.0	20.4	102	1.04	50 - 130	30	
1,2-Dibromoethane	U	20.0	21.4	107	20.0	21.1	106	1.39	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	17.3	86.6	20.0	17.0	85.1	1.70	70 - 120	30	
1,2-Dichloroethane	U	20.0	20.9	104	20.0	19.9	99.3	4.94	70 - 130	30	
1,2-Dichloropropane	U	20.0	20.5	103	20.0	20.1	100	2.30	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	22.5	113	20.0	22.6	113	0.559	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	17.9	89.4	20.0	17.5	87.6	1.99	75 - 125	30	
1,3-Dichloropropane	U	20.0	21.0	105	20.0	20.9	104	0.596	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	18.3	91.7	20.0	18.2	91	0.704	75 - 125	30	
2,2-Dichloropropane	U	20.0	24.0	120	20.0	23.0	115	4.42	70 - 135	30	
2-Butanone	U	20.0	18.7	93.5	20.0	18.6	92.8	0.716	30 - 150	30	
2-Chlorotoluene	U	20.0	20.4	102	20.0	20.3	101	0.781	75 - 125	30	
2-Hexanone	U	20.0	18.2	91	20.0	18.2	91	0.0375	55 - 130	30	
4-Chlorotoluene	U	20.0	20.0	99.9	20.0	20.4	102	2.29	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	18.3	91.7	20.0	18.1	90.5	1.32	60 - 135	30	
Acetone	U	20.0	20.5	102	20.0	21.3	106	3.80	40 - 140	30	
Benzene	U	20.0	21.8	109	20.0	21.0	105	3.38	80 - 120	30	
Bromobenzene	U	20.0	20.2	101	20.0	21.0	105	4.27	75 - 125	30	
Bromochloromethane	U	20.0	20.6	103	20.0	20.5	103	0.639	65 - 130	30	
Bromodichloromethane	U	20.0	21.5	107	20.0	20.8	104	3.33	75 - 120	30	
Bromoform	U	20.0	19.5	97.6	20.0	20.1	100	2.84	70 - 130	30	
Bromomethane	U	20.0	11.8	59.1	20.0	12.0	60	1.53	30 - 145	30	
Carbon disulfide	U	20.0	19.6	97.8	20.0	19.4	96.8	1.05	35 - 160	30	
Carbon tetrachloride	U	20.0	22.4	112	20.0	21.3	107	5.14	65 - 140	30	
Chlorobenzene	U	20.0	19.6	98.2	20.0	19.4	97.2	1.06	80 - 120	30	
Chloroethane	U	20.0	21.7	108	20.0	20.9	105	3.55	60 - 135	30	
Chloroform	U	20.0	22.4	112	20.0	21.6	108	3.28	65 - 135	30	
Chloromethane	U	20.0	12.7	63.5	20.0	12.6	63.1	0.667	40 - 125	30	
cis-1,2-Dichloroethene	U	20.0	22.5	113	20.0	22.0	110	2.36	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	23.4	117	20.0	23.0	115	1.48	70 - 130	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4022819
Report generated 02/23/2015 13:58

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15020678 Cal ID: HPMS6 05-FEB-15 Worknum: WG512365

Instrument ID: HPMS6 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15020678-05 File ID: 6M131116 Dil: 1 Method: 5035A

Sample ID: L15020678-06 MS File ID: 6M131112 Dil: 1 Matrix: 8260B

Sample ID: L15020678-07 MSD File ID: 6M131113 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	21.2	106	20.0	21.0	105	0.754	60 - 135	30	
Dibromomethane	U	20.0	21.6	108	20.0	21.0	105	2.53	75 - 125	30	
Dichlorodifluoromethane	U	20.0	11.2	56.2	20.0	10.7	53.3	5.36	30 - 155	30	
Ethylbenzene	U	20.0	21.1	105	20.0	20.7	103	1.99	75 - 125	30	
Hexachlorobutadiene	U	20.0	26.9	134	20.0	26.4	132	1.91	50 - 140	30	
Isopropylbenzene	U	20.0	20.0	99.9	20.0	19.6	98.2	1.69	75 - 125	30	
m-,p-Xylene	U	40.0	41.8	104	40.0	41.4	104	0.804	75 - 130	30	
Methylene chloride	U	20.0	21.5	108	20.0	21.0	105	2.38	55 - 140	30	
n-Butylbenzene	U	20.0	21.7	109	20.0	21.3	107	2.00	70 - 135	30	
n-Propylbenzene	U	20.0	20.3	101	20.0	20.3	101	0.0687	70 - 130	30	
Naphthalene	U	20.0	20.0	100	20.0	20.2	101	0.938	55 - 140	30	
o-Xylene	U	20.0	19.8	99.2	20.0	19.6	97.8	1.46	80 - 120	30	
p-Isopropyltoluene	U	20.0	20.3	101	20.0	20.5	102	0.880	75 - 130	30	
sec-Butylbenzene	U	20.0	19.5	97.3	20.0	19.6	97.9	0.561	70 - 125	30	
Styrene	U	20.0	21.9	109	20.0	21.5	107	1.75	65 - 135	30	
tert-Butylbenzene	U	20.0	17.6	88.2	20.0	17.7	88.4	0.128	70 - 130	30	
Tetrachloroethene	U	20.0	19.3	96.4	20.0	18.9	94.5	1.97	45 - 150	30	
Toluene	U	20.0	21.9	109	20.0	21.7	109	0.751	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	22.1	111	20.0	21.6	108	2.60	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	21.5	108	20.0	21.3	107	0.931	55 - 140	30	
Trichloroethene	U	20.0	22.2	111	20.0	21.6	108	2.80	70 - 125	30	
Trichlorofluoromethane	U	20.0	18.9	94.6	20.0	18.4	91.9	2.80	60 - 145	30	
Vinyl chloride	U	20.0	18.2	90.9	20.0	17.5	87.6	3.69	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4022819
Report generated 02/23/2015 13:58

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15020678
Instrument: HPMS6
Analyst: TMB
Workgroup: WG494605

Tune ID: WG494605-01
Run Date: 09/30/2014
Run Time: 14:48
File ID: 6M128662
Cal ID: HPMS6 - 30-SEP-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.9	8960	PASS
75.0	95.0	30.0	60.0	48.1	19671	PASS
95.0	95.0	100	100	100	40893	PASS
96.0	95.0	5.00	9.00	6.35	2597	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	88.1	36010	PASS
175	174	5.00	9.00	6.84	2462	PASS
176	174	95.0	101	97.8	35205	PASS
177	176	5.00	9.00	6.45	2269	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG494605-02	STD	01	09/30/2014 16:17	
WG494605-03	STD	01	09/30/2014 16:49	
WG494605-04	STD	01	09/30/2014 17:21	
WG494605-05	STD-CCV	01	09/30/2014 17:52	
WG494605-06	STD	01	09/30/2014 18:24	
WG494605-07	STD	01	09/30/2014 18:55	
WG494605-08	STD	01	09/30/2014 19:27	
WG494605-09	STD	01	09/30/2014 19:59	
WG494605-10	SSCV	01	09/30/2014 21:02	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4022821
Report generated 02/23/2015 13:58

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15020678
Instrument: HPMS6
Analyst: TMB
Workgroup: WG511026

Tune ID: WG511026-01
Run Date: 02/05/2015
Run Time: 10:06
File ID: 6M130909
Cal ID: HPMS6 - 05-FEB-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.6	12033	PASS
75.0	95.0	30.0	60.0	54.4	25630	PASS
95.0	95.0	100	100	100	47085	PASS
96.0	95.0	5.00	9.00	6.72	3164	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	80.0	37658	PASS
175	174	5.00	9.00	6.99	2634	PASS
176	174	95.0	101	95.2	35842	PASS
177	176	5.00	9.00	6.31	2263	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG511026-02	STD	01	02/05/2015 11:02	
WG511026-03	STD	01	02/05/2015 11:33	
WG511026-04	STD	01	02/05/2015 12:05	
WG511026-05	STD	01	02/05/2015 12:36	
WG511026-06	STD	01	02/05/2015 13:07	
WG511026-07	STD	01	02/05/2015 13:38	
WG511026-08	STD-CCV	01	02/05/2015 14:09	
WG511026-09	STD	01	02/05/2015 14:40	
WG511026-10	STD	01	02/05/2015 15:11	
WG511026-11	STD	01	02/05/2015 15:42	
WG511026-12	SSCV	01	02/05/2015 17:16	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4022821
Report generated 02/23/2015 13:58

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15020678
Instrument: HPMS6
Analyst: TMB
Workgroup: WG512364

Tune ID: WG512364-01
Run Date: 02/16/2015
Run Time: 09:52
File ID: 6M131106
Cal ID: HPMS6 - 05-FEB-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.1	5150	PASS
75.0	95.0	30.0	60.0	58.2	13544	PASS
95.0	95.0	100	100	100	23285	PASS
96.0	95.0	5.00	9.00	6.77	1577	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	78.9	18368	PASS
175	174	5.00	9.00	6.93	1272	PASS
176	174	95.0	101	95.1	17473	PASS
177	176	5.00	9.00	6.94	1212	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG512364-02	CCV	01	02/16/2015 10:46	
WG512365-01	BLANK	01	02/16/2015 11:47	
WG512365-02	LCS	01	02/16/2015 12:18	
L15020678-06	67WW12MS-021015	01	02/16/2015 12:49	
L15020678-07	67WW12MSD-021015	01	02/16/2015 13:20	
L15020678-17	TRIP BLANK	01	02/16/2015 14:23	
L15020678-05	67WW12-021015	01	02/16/2015 14:55	
L15020678-01	67WW14-021015	01	02/16/2015 15:26	
L15020678-02	67WW14FD-021015	01	02/16/2015 15:56	
L15020678-03	67WW10-021015	01	02/16/2015 16:26	
L15020678-04	67WW09A-021015	01	02/16/2015 16:57	
L15020678-08	67WW05-021015	01	02/16/2015 17:28	
L15020678-09	67WW02-021015	01	02/16/2015 17:59	
L15020678-11	67WW07-021015	01	02/16/2015 18:31	
L15020678-13	67WW09-021115	01	02/16/2015 19:02	
L15020678-14	67WW09FD-021115	01	02/16/2015 19:32	
L15020678-15	67WW11-021115	01	02/16/2015 20:03	
L15020678-10	67WW01-021015	01	02/16/2015 20:34	
L15020678-12	67WW13-021115	DL01	02/16/2015 21:05	
L15020678-16	67WW08-021115	DL01	02/16/2015 21:36	
WG512365-06	BLANK2	01	02/16/2015 22:37	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4022821
Report generated 02/23/2015 13:58

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15020678
Instrument: HPMS6
Analyst: TMB
Workgroup: WG512496

Tune ID: WG512496-01
Run Date: 02/17/2015
Run Time: 09:44
File ID: 6M131138
Cal ID: HPMS6 - 05-FEB-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.2	6201	PASS
75.0	95.0	30.0	60.0	56.7	14523	PASS
95.0	95.0	100	100	100	25629	PASS
96.0	95.0	5.00	9.00	6.40	1640	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.0	19470	PASS
175	174	5.00	9.00	8.81	1716	PASS
176	174	95.0	101	96.0	18691	PASS
177	176	5.00	9.00	6.71	1255	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG512496-02	CCV	01	02/17/2015 10:44	
WG512497-01	BLANK	01	02/17/2015 11:45	
WG512497-02	LCS	01	02/17/2015 12:47	
L15020678-10	67WW01-021015	DL01	02/17/2015 15:22	
WG512497-06	BLANK2	01	02/17/2015 22:05	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4022821
Report generated 02/23/2015 13:58

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 09/30/14 - HPMS6
Last Calibration: Wed Oct 01 15:17:54 2014
Curve: WG494605
Calibration Files

	Compound	5 6M128665.D	20 6M128666.D	50 6M128667.D	100 6M128668.D	200 6M128669.D	300 6M128670.D	400 6M128671.D	500 6M128672.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile		0.020	0.018	0.018	0.019	0.019	0.018	0.019	0.019	4.266		
T	3-Chloro-1-propene	0.458	0.462	0.456	0.483	0.490	0.490	0.487	0.499	0.478	3.529		
T	2-Chloro-1,3-butadiene	0.400	0.403	0.411	0.452	0.489	0.510	0.512	0.524	0.463	11.401		
T	Ethyl Acetate	0.113	0.112	0.114	0.122	0.122	0.123	0.121	0.131	0.120	5.395		
T	Methacrylonitrile	0.041	0.045	0.047	0.050	0.051	0.052	0.051	0.056	0.049	9.778		
T	Isobutyl Alcohol		0.005	0.005	0.005	0.005	0.005	0.005	0.006	0.005	6.271		
T	1-Butanol			0.001	0.002	0.002	0.002	0.002	0.002	0.002	14.956		
T	Methyl methacrylate	0.139	0.146	0.148	0.151	0.157	0.157	0.154	0.164	0.152	5.044		
T	2-Nitropropane		0.028	0.029	0.032	0.035	0.037	0.036	0.040	0.034	12.418		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											
T	Cyclohexanone		0.028	0.030	0.034	0.033	0.037	0.036	0.036	0.033	9.780		

Wed Oct 01 15:18:47 2014

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Calibration: Fri Feb 06 08:51:16 2015
Curve: WG511026
Calibration Files

	Compound	0.3 6M130911.D	0.4 6M130912.D	1 6M130913.D	2 6M130914.D	5 6M130915.D	20 6M130916.D	50 6M130917.D	100 6M130918.D	200 6M130919.D	300 6M130920.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.419	0.425	0.443	0.493	0.497	0.474	0.434	0.369	0.444	9.659		
P	Chloromethane			0.363	0.358	0.361	0.352	0.367	0.358	0.343	0.303	0.351	5.855		
C	Vinyl Chloride		0.271	0.298	0.291	0.309	0.314	0.330	0.327	0.303	0.259	0.300	7.880		
T	1,3-Butadiene				0.280	0.275	0.310	0.304	0.276	0.231	0.189	0.266	15.980		1.000
T	Bromomethane			0.096	0.118	0.111	0.123	0.144	0.160	0.175	0.171	0.137	21.584	0.996	
T	Chloroethane			0.176	0.158	0.175	0.170	0.174	0.182	0.184	0.174	0.174	4.455		
T	Trichlorofluoromethane		0.539	0.588	0.610	0.594	0.583	0.578	0.564	0.526	0.459	0.560	8.277		
T	Diethyl ether				0.166	0.158	0.166	0.160	0.162		0.156	0.161	2.488		
T	Isoprene			0.307	0.295	0.281	0.308	0.299	0.302	0.306	0.287	0.298	3.345		
T	Acrolein					0.002	0.002	0.003	0.004		0.006	0.003	52.547		
T	1,1,2-Trichloro-1,2,2-Trifluoroe			0.261	0.262	0.270	0.271	0.272	0.275	0.270	0.249	0.266	3.278		
T	Acetone					0.036	0.039	0.041	0.039	0.038	0.037	0.039	4.297		
C	1,1-Dichloroethene		0.463	0.467	0.449	0.464	0.457	0.468	0.460	0.439	0.390	0.451	5.484		
T	Tert-Butyl Alcohol				0.007	0.007	0.008	0.009	0.009		0.009	0.008	10.081		
T	Dimethyl Sulfide			0.228	0.226	0.250	0.253	0.254	0.253	0.257	0.245	0.246	4.927		
T	Iodomethane				0.052	0.102	0.189	0.220	0.235	0.246	0.219	0.180	41.181	0.997	
T	Methyl acetate					0.150	0.149	0.153	0.151	0.149	0.149	0.150	1.107		
T	Methylene Chloride			0.221	0.237	0.233	0.216	0.224	0.224	0.223	0.207	0.223	4.121		
T	Carbon Disulfide			0.868	0.846	0.795	0.796	0.752	0.747	0.711	0.617	0.767	10.372		
T	Acrylonitrile			0.051	0.051	0.050	0.052	0.055	0.055		0.062	0.054	7.282		
T	Methyl Tert Butyl Ether		0.408	0.463	0.464	0.480	0.469	0.510	0.509	0.495	0.461	0.473	6.568		
T	trans-1,2-Dichloroethene		0.225	0.222	0.232	0.233	0.236	0.240	0.245	0.240	0.219	0.232	3.843		
T	n-Hexane			0.378	0.375	0.383	0.401	0.378	0.385	0.385	0.367	0.382	2.597		
T	Diisopropyl ether				1.024	0.994	0.983	0.925	0.892		0.779	0.933	9.601		
T	Vinyl Acetate					0.154	0.151	0.164	0.170	0.168	0.168	0.163	5.048		
P	1,1-Dichloroethane		0.528	0.486	0.515	0.522	0.506	0.512	0.507	0.481	0.430	0.499	5.987		
T	Ethyl-Tert-Butyl ether				0.768	0.762	0.769	0.745	0.735		0.663	0.740	5.413		
T	2-Butanone					0.057	0.057	0.062	0.061	0.061	0.061	0.060	3.481		
T	Propionitrile				0.017	0.018	0.018	0.018	0.018		0.019	0.018	2.906		
T	2,2-Dichloropropane		0.360	0.397	0.387	0.421	0.436	0.474	0.481	0.461	0.419	0.426	9.645		
T	cis-1,2-Dichloroethene		0.230	0.232	0.253	0.254	0.254	0.262	0.262	0.254	0.233	0.248	5.311		
C	Chloroform	0.482	0.480	0.469	0.491	0.502	0.505	0.516	0.500	0.470	0.410	0.483	6.166		
T	1-Bromopropane			0.029	0.048	0.050	0.056	0.055	0.055	0.056	0.052	0.050	18.257	0.999	
T	Bromochloromethane		0.110	0.128	0.130	0.138	0.131	0.137	0.136	0.134	0.123	0.130	6.782		
T	Tetrahydrofuran				0.039	0.037	0.038	0.038	0.037		0.037	0.038	2.373		
S	Dibromofluoromethane			0.232	0.236	0.278	0.260	0.262	0.256	0.255	0.239	0.253	6.126		
T	1,1,1-Trichloroethane		0.495	0.459	0.463	0.485	0.492	0.514	0.515	0.481	0.421	0.481	6.161		
T	Cyclohexane			0.460	0.465	0.493	0.507	0.485	0.491	0.484	0.447	0.479	4.142		
T	1,1-Dichloropropene		0.329	0.385	0.372	0.371	0.380	0.393	0.391	0.373	0.336	0.370	6.151		
T	Tert-Amyl-Methyl ether				0.523	0.516	0.525	0.514	0.510		0.480	0.511	3.155		
T	Carbon Tetrachloride		0.358	0.378	0.38	0.402	0.419	0.448	0.46	0.438	0.387	0.4079	8.6477		
S	1,2-Dichloroethane-d4			0.327	0.313	0.312	0.313	0.306	0.293	0.283	0.259	0.3009	7.2009		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.4	0.395	0.402	0.397	0.384	0.406	0.383	0.355	0.314	0.3818	7.7951		
T	Benzene	1.084	0.962	0.962	0.942	0.951	0.915	0.944	0.921	0.817	0.674	0.9171	11.688		
T	Trichloroethene		0.233	0.232	0.239	0.245	0.244	0.252	0.249	0.241	0.218	0.2393	4.2529		
T	Methylcyclohexane			0.367	0.377	0.384	0.39	0.376	0.379	0.378	0.353	0.3755	2.9654		
T	1,2-Dichloropropane		0.246	0.246	0.234	0.244	0.247	0.26	0.256	0.252	0.236	0.2469	3.4358		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0009	3.9268		
T	Bromodichloromethane		0.342	0.355	0.358	0.352	0.356	0.383	0.377	0.356	0.319	0.3553	5.2203		
T	Dibromomethane		0.101	0.105	0.118	0.123	0.122	0.127	0.124	0.12	0.113	0.1169	7.6541		
T	2-Chloroethyl Vinyl Ether					0.092	0.096	0.105	0.103	0.105	0.103	0.1006	5.3228		
T	4-Methyl-2-Pentanone					0.044	0.051	0.054	0.053	0.054	0.054	0.0517	7.5613		
T	cis-1,3-Dichloropropene		0.312	0.321	0.338	0.352	0.357	0.386	0.38	0.366	0.333	0.3494	7.3149		
T	Dimethyl Disulfide					0.134	0.162	0.174	0.186	0.198	0.19	0.174	13.371		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.215	1.248	1.231	1.142	1.117	1.117	1.074	0.983	1.1408	7.8205		
C	Toluene		1.303	1.384	1.385	1.401	1.312	1.315	1.282	1.089	0.875	1.2607	13.636		
T	Ethyl Methacrylate			0.167	0.172	0.215	0.241	0.253	0.253	0.255	0.247	0.2252	16.385	1.000	
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.329	0.354	0.381	0.411	0.454	0.458	0.434	0.399	0.4024	11.547		
T	1,1,2-Trichloroethane		0.192	0.19	0.188	0.203	0.19	0.202	0.202	0.193	0.185	0.194	3.3342		
T	2-Hexanone					0.113	0.121	0.131	0.126	0.126	0.122	0.1233	4.9514		
T	1,3-Dichloropropane		0.353	0.365	0.38	0.359	0.351	0.374	0.377	0.356	0.332	0.3608	4.1556		
T	Tetrachloroethene		0.37	0.372	0.368	0.379	0.36	0.369	0.369	0.352	0.322	0.3625	4.6906		
T	Dibromochloromethane		0.207	0.226	0.247	0.251	0.261	0.297	0.303	0.294	0.275	0.2624	12.645		
T	1,2-Dibromoethane		0.14	0.169	0.185	0.179	0.193	0.21	0.213	0.207	0.194	0.1878	12.28		
T	1-Chlorohexane		0.364	0.416	0.422	0.446	0.47	0.449	0.449	0.437	0.4	0.4282	7.4183		
P	Chlorobenzene		0.987	0.925	0.932	0.939	0.864	0.895	0.868	0.776	0.656	0.8713	11.524		
T	1,1,1,2-Tetrachloroethane		0.252	0.311	0.295	0.309	0.316	0.351	0.355	0.341	0.313	0.316	9.976		
C	Ethylbenzene		0.398	0.478	0.518	0.539	0.484	0.505	0.5	0.47	0.425	0.4797	9.2631		
T	m-,p-Xylene		0.589	0.639	0.61	0.632	0.59	0.606	0.586	0.506	0.407	0.5738	12.779		
T	o-Xylene		0.565	0.586	0.599	0.614	0.6	0.606	0.595	0.552	0.491	0.5785	6.6292		
T	Styrene		0.872	0.992	0.918	1.027	0.989	1.002	0.97	0.85	0.709	0.9256	10.951		
P	Bromoform			0.108	0.135	0.137	0.152	0.172	0.174	0.171	0.16	0.1512	15.3	0.998	
T	Isopropylbenzene		1.452	1.592	1.578	1.642	1.599	1.607	1.504	1.209		1.5229	9.2356		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.342	0.351	0.362	0.372	0.358	0.38	0.374	0.37	0.364	0.3637	3.2633		
S	p-Bromofluorobenzene			0.843	0.913	0.86	0.854	0.824	0.82	0.816	0.795	0.8406	4.3296		

T	1,2,3-Trichloropropane			0.123	0.111	0.126	0.121	0.129	0.122	0.124	0.119	0.1217	4.2183	
T	trans-1,4-Dichloro-2-Butene			0.108	0.116	0.149	0.164	0.171	0.173	0.175	0.172	0.1534	17.494	1.000
T	n-Propylbenzene		3.21	3.312	3.376	3.525	3.255	3.25	2.986	2.343		3.1572	11.485	
T	Bromobenzene	0.587	0.596	0.67	0.665	0.72	0.651	0.677	0.664	0.638	0.598	0.6466	6.5366	
T	1,3,5-Trimethylbenzene		2.12	2.416	2.459	2.613	2.359	2.398	2.273	1.94	1.563	2.2379	14.314	
T	2-Chlorotoluene		2.068	2.221	2.209	2.432	2.031	2.079	2.128	1.878	1.547	2.0659	11.958	
T	4-Chlorotoluene		2.188	2.184	2.247	2.137	2.11	2.164	1.878	1.566		2.0592	11.061	
T	a-Methylstyrene			1.148	1.221	1.284	1.33	1.27	1.239	1.176	1.059	1.2159	7.084	
T	tert-Butylbenzene			0.485	0.504	0.532	0.505	0.511	0.501	0.491	0.461	0.4989	4.1297	
T	1,2,4-Trimethylbenzene		2.347	2.518	2.511	2.61	2.407	2.462	2.321	1.947	1.561	2.2983	14.586	
T	sec-Butylbenzene		2.636	2.932	2.885	2.938	2.772	2.79	2.612	2.157		2.7152	9.4745	
T	p-Isopropyltoluene		2.124	2.403	2.423	2.529	2.381	2.417	2.294	1.934	1.545	2.2278	14.069	
T	1,3-Dichlorobenzene		1.293	1.395	1.473	1.457	1.353	1.384	1.334	1.223	1.06	1.3304	9.5799	
T	1,4-Dichlorobenzene	1.503	1.548	1.36	1.405	1.44	1.338	1.379	1.312	1.201	1.043	1.3529	10.804	
T	n-Butylbenzene		2.175	2.018	2.244	2.279	2.168	2.191	2.075	1.766	1.423	2.0376	13.591	
T	1,2-Dichlorobenzene	1.239	1.265	1.257	1.195	1.255	1.175	1.21	1.168	1.08	0.955	1.18	8.1852	
T	1,2-Dibromo-3-Chloropropane				0.057	0.056	0.065	0.08	0.079	0.079	0.075	0.0701	15.31	0.998
T	1,2,4-Trichlorobenzene		0.764	0.795	0.784	0.768	0.748	0.794	0.783	0.744	0.674	0.7615	4.9277	
T	Hexachlorobutadiene		0.216	0.347	0.344	0.354	0.348	0.357	0.357	0.348	0.321	0.3323	13.522	
T	Naphthalene		1.008	1.179	1.085	1.125	1.114	1.194	1.161	1.11	0.992	1.1075	6.3409	
T	1,2,3-Trichlorobenzene	0.715	0.55	0.646	0.647	0.668	0.631	0.686	0.667	0.638	0.585	0.6433	7.4188	

Fri Feb 06 08:59:35 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15020678 Run Date: 02/05/2015 Sample ID: WG511026-12
Instrument ID: HPMS6 Run Time: 17:16 Method: 8260B
File ID: 6M130923 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG511026 Cal ID: HPMS6 - 05-FEB-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	46.6	ug/L	0.450	6.70	20	
1,1-Dichloroethene	CCC	50.0	44.5	ug/L	0.401	11.0	20	
1,2-Dichloropropane	CCC	50.0	50.9	ug/L	0.251	1.80	20	
Ethylbenzene	CCC	50.0	49.2	ug/L	0.472	1.60	20	
Toluene	CCC	50.0	50.2	ug/L	1.26	0.300	20	
Vinyl Chloride	CCC	50.0	47.8	ug/L	0.287	4.30	20	
Bromoform	SPCC	50.0	47.7	ug/L	0.158	4.70	20	
Chlorobenzene	SPCC	50.0	45.8	ug/L	0.798	8.40	20	
Chloromethane	SPCC	50.0	46.7	ug/L	0.328	6.50	20	
1,1-Dichloroethane	SPCC	50.0	47.6	ug/L	0.475	4.80	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.2	ug/L	0.401	10.3	20	
Acetone		50.0	52.5	ug/L	0.0405	5.00	20	
Benzene		50.0	48.5	ug/L	0.890	3.00	20	
Bromobenzene		50.0	51.3	ug/L	0.663	2.60	20	
Bromochloromethane		50.0	49.4	ug/L	0.128	1.20	20	
Bromodichloromethane		50.0	46.6	ug/L	0.331	6.90	20	
Bromomethane		50.0	40.8	ug/L	0.134	18.4	20	
2-Butanone		50.0	54.7	ug/L	0.0655	9.40	20	
n-Butylbenzene		50.0	50.2	ug/L	2.05	0.400	20	
sec-Butylbenzene		50.0	46.3	ug/L	2.52	7.40	20	
tert-Butylbenzene		50.0	47.2	ug/L	0.471	5.70	20	
Carbon Disulfide		50.0	42.8	ug/L	0.657	14.4	20	
Carbon Tetrachloride		50.0	46.7	ug/L	0.381	6.60	20	
Dibromochloromethane		50.0	52.6	ug/L	0.276	5.20	20	
Chloroethane		50.0	54.8	ug/L	0.191	9.60	20	
2-Chlorotoluene		50.0	45.6	ug/L	1.88	8.90	20	
4-Chlorotoluene		50.0	47.5	ug/L	1.96	5.00	20	
1,2-Dibromo-3-Chloropropane		50.0	50.4	ug/L	0.0767	0.800	20	
1,2-Dibromoethane		50.0	53.4	ug/L	0.200	6.70	20	
Dibromomethane		50.0	48.8	ug/L	0.114	2.40	20	
1,2-Dichlorobenzene		50.0	46.2	ug/L	1.09	7.70	20	
1,3-Dichlorobenzene		50.0	46.1	ug/L	1.23	7.80	20	
1,4-Dichlorobenzene		50.0	48.7	ug/L	1.32	2.70	20	
Dichlorodifluoromethane		50.0	44.8	ug/L	0.398	10.4	20	
1,2-Dichloroethane		50.0	43.8	ug/L	0.334	12.5	20	
cis-1,2-Dichloroethene		50.0	51.0	ug/L	0.253	2.10	20	
trans-1,2-Dichloroethene		50.0	50.7	ug/L	0.236	1.40	20	
1,3-Dichloropropane		50.0	51.1	ug/L	0.369	2.20	20	
2,2-Dichloropropane		50.0	49.3	ug/L	0.420	1.30	20	
cis-1,3-Dichloropropene		50.0	53.2	ug/L	0.372	6.40	20	
trans-1,3-Dichloropropene		50.0	51.4	ug/L	0.413	2.70	20	
1,1-Dichloropropene		50.0	45.9	ug/L	0.340	8.20	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4022820
Report generated 02/23/2015 13:58

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15020678 Run Date: 02/05/2015 Sample ID: WG511026-12
Instrument ID: HPMS6 Run Time: 17:16 Method: 8260B
File ID: 6M130923 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG511026 Cal ID: HPMS6 - 05-FEB-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.9	ug/L	0.133	7.80	20	
Hexachlorobutadiene		50.0	49.7	ug/L	0.330	0.700	20	
Isopropylbenzene		50.0	44.7	ug/L	1.36	10.5	20	
p-Isopropyltoluene		50.0	48.4	ug/L	2.16	3.10	20	
4-Methyl-2-Pentanone		50.0	53.0	ug/L	0.0549	6.10	20	
Methylene Chloride		50.0	49.6	ug/L	0.221	0.800	20	
Naphthalene		50.0	52.1	ug/L	1.15	4.10	20	
n-Propylbenzene		50.0	46.5	ug/L	2.94	7.00	20	
Styrene		50.0	50.9	ug/L	0.943	1.90	20	
1,1,1,2-Tetrachloroethane		50.0	50.4	ug/L	0.319	0.900	20	
Tetrachloroethene		50.0	46.4	ug/L	0.336	7.20	20	
1,2,3-Trichlorobenzene		50.0	49.4	ug/L	0.635	1.30	20	
1,2,4-Trichlorobenzene		50.0	49.6	ug/L	0.756	0.800	20	
1,1,1-Trichloroethane		50.0	44.8	ug/L	0.431	10.4	20	
1,1,2-Trichloroethane		50.0	51.8	ug/L	0.201	3.70	20	
Trichloroethene		50.0	50.1	ug/L	0.240	0.300	20	
Trichlorofluoromethane		50.0	40.9	ug/L	0.458	18.3	20	
1,2,3-Trichloropropane		50.0	51.9	ug/L	0.126	3.90	20	
1,2,4-Trimethylbenzene		50.0	51.8	ug/L	2.38	3.60	20	
1,3,5-Trimethylbenzene		50.0	52.7	ug/L	2.36	5.30	20	
o-Xylene		50.0	46.5	ug/L	0.538	7.00	20	
m-,p-Xylene		100	96.4	ug/L	0.553	3.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4022820
Report generated 02/23/2015 13:58

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020678 Run Date: 02/16/2015 Sample ID: WG512364-02
Instrument ID: HPMS6 Run Time: 10:46 Method: 8260B
File ID: 6M131108 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG512365 Cal ID: HPMS6 - 05-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	53.6	ug/L	0.517	7.10	20	
1,1-Dichloroethene	CCC	50.0	47.9	ug/L	0.432	4.16	20	
1,2-Dichloropropane	CCC	50.0	49.3	ug/L	0.243	1.49	20	
Ethylbenzene	CCC	50.0	51.8	ug/L	0.497	3.65	20	
Toluene	CCC	50.0	52.8	ug/L	1.33	5.69	20	
Vinyl Chloride	CCC	50.0	50.5	ug/L	0.304	1.08	20	
Bromoform	SPCC	50.0	51.9	ug/L	0.172	3.79	20	
Chlorobenzene	SPCC	50.0	50.7	ug/L	0.883	1.34	20	
Chloromethane	SPCC	50.0	41.9	ug/L	0.294	16.3	20	
1,1-Dichloroethane	SPCC	50.0	49.3	ug/L	0.491	1.49	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	50.1	ug/L	0.365	0.277	20	
Xylenes		150	157	ug/L	0.602	4.60	20	
Acetone		50.0	42.3	ug/L	0.0327	15.3	20	
Benzene		50.0	52.1	ug/L	0.956	4.26	20	
Bromobenzene		50.0	49.7	ug/L	0.643	0.551	20	
Bromochloromethane		50.0	50.9	ug/L	0.132	1.71	20	
Bromodichloromethane		50.0	53.5	ug/L	0.380	7.03	20	
Bromomethane		50.0	38.6	ug/L	0.127	22.9	20	*
2-Butanone		50.0	41.0	ug/L	0.0491	18.0	20	
n-Butylbenzene		50.0	52.8	ug/L	2.15	5.58	20	
sec-Butylbenzene		50.0	50.5	ug/L	2.74	1.07	20	
tert-Butylbenzene		50.0	45.4	ug/L	0.453	9.22	20	
Carbon Disulfide		50.0	50.6	ug/L	0.777	1.28	20	
Carbon Tetrachloride		50.0	56.5	ug/L	0.461	13.1	20	
Dibromochloromethane		50.0	54.6	ug/L	0.287	9.23	20	
Chloroethane		50.0	53.2	ug/L	0.185	6.41	20	
2-Chlorotoluene		50.0	51.3	ug/L	2.12	2.53	20	
4-Chlorotoluene		50.0	52.6	ug/L	2.17	5.20	20	
1,2-Dibromo-3-Chloropropane		50.0	51.6	ug/L	0.0786	3.22	20	
1,2-Dibromoethane		50.0	53.9	ug/L	0.202	7.77	20	
Dibromomethane		50.0	51.9	ug/L	0.121	3.82	20	
1,2-Dichlorobenzene		50.0	44.5	ug/L	1.05	10.9	20	
1,3-Dichlorobenzene		50.0	45.8	ug/L	1.22	8.42	20	
1,4-Dichlorobenzene		50.0	44.1	ug/L	1.19	11.7	20	
Dichlorodifluoromethane		50.0	49.9	ug/L	0.444	0.181	20	
1,2-Dichloroethane		50.0	49.2	ug/L	0.375	1.69	20	
cis-1,2-Dichloroethene		50.0	52.8	ug/L	0.262	5.56	20	
trans-1,2-Dichloroethene		50.0	52.5	ug/L	0.244	5.02	20	
1,3-Dichloropropane		50.0	50.2	ug/L	0.362	0.317	20	
2,2-Dichloropropane		50.0	60.8	ug/L	0.518	21.6	20	*
cis-1,3-Dichloropropene		50.0	55.1	ug/L	0.385	10.3	20	
trans-1,3-Dichloropropene		50.0	56.5	ug/L	0.455	13.0	20	

CCV - Modified 03/05/2008
PDF File ID: 4022822
Report generated 02/23/2015 13:58

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020678 Run Date: 02/16/2015 Sample ID: WG512364-02
Instrument ID: HPMS6 Run Time: 10:46 Method: 8260B
File ID: 6M131108 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG512365 Cal ID: HPMS6 - 05-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.4	ug/L	0.395	6.73	20	
2-Hexanone		50.0	41.0	ug/L	0.101	18.0	20	
Hexachlorobutadiene		50.0	63.6	ug/L	0.423	27.2	20	*
Isopropylbenzene		50.0	51.8	ug/L	1.58	3.55	20	
p-Isopropyltoluene		50.0	53.3	ug/L	2.38	6.62	20	
4-Methyl-2-Pentanone		50.0	41.3	ug/L	0.0427	17.4	20	
Methylene Chloride		50.0	51.0	ug/L	0.227	1.91	20	
Naphthalene		50.0	48.0	ug/L	1.06	3.92	20	
n-Propylbenzene		50.0	52.4	ug/L	3.31	4.84	20	
Styrene		50.0	53.0	ug/L	0.981	6.03	20	
1,1,1,2-Tetrachloroethane		50.0	52.6	ug/L	0.332	5.17	20	
Tetrachloroethene		50.0	48.6	ug/L	0.353	2.72	20	
1,2,3-Trichlorobenzene		50.0	51.1	ug/L	0.658	2.21	20	
1,2,4-Trichlorobenzene		50.0	51.6	ug/L	0.785	3.10	20	
1,1,1-Trichloroethane		50.0	54.5	ug/L	0.524	8.91	20	
1,1,2-Trichloroethane		50.0	49.3	ug/L	0.191	1.36	20	
Trichloroethene		50.0	51.5	ug/L	0.246	3.00	20	
Trichlorofluoromethane		50.0	50.6	ug/L	0.567	1.13	20	
1,2,3-Trichloropropane		50.0	48.4	ug/L	0.118	3.10	20	
1,2,4-Trimethylbenzene		50.0	53.0	ug/L	2.44	5.99	20	
1,3,5-Trimethylbenzene		50.0	53.9	ug/L	2.41	7.87	20	
o-Xylene		50.0	52.1	ug/L	0.603	4.22	20	
m-,p-Xylene		100	105	ug/L	0.601	4.79	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4022822
Report generated 02/23/2015 13:58

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020678 Run Date: 02/17/2015 Sample ID: WG512496-02
Instrument ID: HPMS6 Run Time: 10:44 Method: 8260B
File ID: 6M131140 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG512497 Cal ID: HPMS6 - 05-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.6	ug/L	0.488	1.18	20	
1,1-Dichloroethene	CCC	50.0	45.7	ug/L	0.412	8.69	20	
1,2-Dichloropropane	CCC	50.0	45.6	ug/L	0.225	8.80	20	
Ethylbenzene	CCC	50.0	51.6	ug/L	0.495	3.22	20	
Toluene	CCC	50.0	52.1	ug/L	1.31	4.18	20	
Vinyl Chloride	CCC	50.0	48.2	ug/L	0.290	3.58	20	
Bromoform	SPCC	50.0	52.2	ug/L	0.173	4.33	20	
Chlorobenzene	SPCC	50.0	49.1	ug/L	0.856	1.76	20	
Chloromethane	SPCC	50.0	40.4	ug/L	0.283	19.3	20	
1,1-Dichloroethane	SPCC	50.0	46.4	ug/L	0.463	7.21	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.9	ug/L	0.377	3.78	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4022822
Report generated 02/23/2015 13:58

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15020678
Instrument ID: HPMS6
Workgroup (AAB#): WG512365

ICAL CCV Number: WG511026-08
CAL ID: HPMS6 - 05-FEB-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG511026-08	NA	NA	327681	554647	715746
Upper Limit	NA	NA	655362	1109294	1431492
Lower Limit	NA	NA	163841	277324	357873
L15020678-01	1.00	01	251068	459399	602718
L15020678-02	1.00	01	246610	453074	584536
L15020678-03	1.00	01	236494	446910	574361
L15020678-04	1.00	01	236187	442859	569978
L15020678-05	1.00	01	258964	482730	622430
L15020678-06	1.00	01	288916	509399	653900
L15020678-07	1.00	01	289650	520700	679176
L15020678-08	1.00	01	240432	440819	560660
L15020678-09	1.00	01	230886	431469	548690
L15020678-10	1.00	01	233502	430852	553144
L15020678-11	1.00	01	229605	428715	539935
L15020678-12	2.50	DL01	228825	425836	542730
L15020678-13	1.00	01	228464	419743	537574
L15020678-14	1.00	01	221910	412518	532411
L15020678-15	1.00	01	233146	433181	555780
L15020678-16	10.0	DL01	224004	414514	537918
L15020678-17	1.00	01	257200	488622	648970
WG512365-01	1.00	01	258660	497715	652840
WG512365-02	1.00	01	271439	493515	645951

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4033936
Report generated 02/23/2015 13:58

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15020678
Instrument ID: HPMS6
Workgroup (AAB#): WG512497

ICAL CCV Number: WG511026-08
CAL ID: HPMS6 - 05-FEB-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG511026-08	NA	NA	327681	554647	715746
Upper Limit	NA	NA	655362	1109294	1431492
Lower Limit	NA	NA	163841	277324	357873
L15020678-10	10.0	DL01	236397	448112	606336
WG512497-01	1.00	01	242309	472148	641836
WG512497-02	1.00	01	263602	469006	625344

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4033936
Report generated 02/23/2015 13:58

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15020678
Instrument ID: HPMS6
Workgroup (AAB#): WG512365

ICAL CCV Number: WG511026-08
CAL ID: HPMS6-05-FEB-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG511026-08	NA	NA	19.75	16.14	11.58
Upper Limit	NA	NA	20.25	16.64	12.08
Lower Limit	NA	NA	19.25	15.64	11.08
L15020678-01	1.00	01	19.76	16.14	11.59
L15020678-02	1.00	01	19.76	16.14	11.59
L15020678-03	1.00	01	19.76	16.15	11.58
L15020678-04	1.00	01	19.76	16.15	11.58
L15020678-05	1.00	01	19.76	16.14	11.59
L15020678-06	1.00	01	19.76	16.15	11.58
L15020678-07	1.00	01	19.76	16.15	11.59
L15020678-08	1.00	01	19.76	16.14	11.59
L15020678-09	1.00	01	19.76	16.14	11.59
L15020678-10	1.00	01	19.76	16.15	11.58
L15020678-11	1.00	01	19.76	16.14	11.59
L15020678-12	2.50	DL01	19.76	16.14	11.59
L15020678-13	1.00	01	19.76	16.15	11.59
L15020678-14	1.00	01	19.76	16.15	11.58
L15020678-15	1.00	01	19.76	16.15	11.58
L15020678-16	10.0	DL01	19.76	16.14	11.59
L15020678-17	1.00	01	19.76	16.15	11.59
WG512365-01	1.00	01	19.76	16.15	11.59
WG512365-02	1.00	01	19.76	16.14	11.59

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4033937
Report generated: 02/23/2015 13:58

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15020678
Instrument ID: HPMS6
Workgroup (AAB#): WG512497

ICAL CCV Number: WG511026-08
CAL ID: HPMS6 - 05-FEB-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG511026-08	NA	NA	19.75	16.14	11.58
Upper Limit	NA	NA	20.25	16.64	12.08
Lower Limit	NA	NA	19.25	15.64	11.08
L15020678-10	10.0	DL01	19.76	16.14	11.59
WG512497-01	1.00	01	19.76	16.15	11.58
WG512497-02	1.00	01	19.76	16.14	11.59

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4033937
Report generated: 02/23/2015 13:58

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131117.D Vial: 12
Acq On : 16 Feb 2015 15:26 Operator: TMB
Sample : L15020678-01 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 09:11:38 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	602718	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	459399	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	251068	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	146003	23.9841 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.92%		
43) 1,2-Dichloroethane-d4	11.12	65	171873	23.6925 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.76%		
58) Toluene-d8	13.91	98	516844	24.6538 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.60%		
80) p-Bromofluorobenzene	17.94	95	220524	26.1224 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.48%		

Target Compounds					Qvalue
14) 1,1-Dichloroethene	6.84	61	37621	3.4625 ug/L	90
15) Tert-Butyl Alcohol	6.85	59	1000	5.1843 ug/L #	62
27) 1,1-Dichloroethane	8.86	63	5216	0.4339 ug/L	87
45) 1,2-Dichloroethane	11.26	62	5890	0.6399 ug/L #	76
60) Ethyl Methacrylate	13.92	69	765	0.6306 ug/L #	7

(#) = qualifier out of range (m) = manual integration
6M131117.D 8260WT.M Tue Feb 17 09:11:38 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131117.D Vial: 12
Acq On : 16 Feb 2015 15:26 Operator: TMB
Sample : L15020678-01 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 9:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

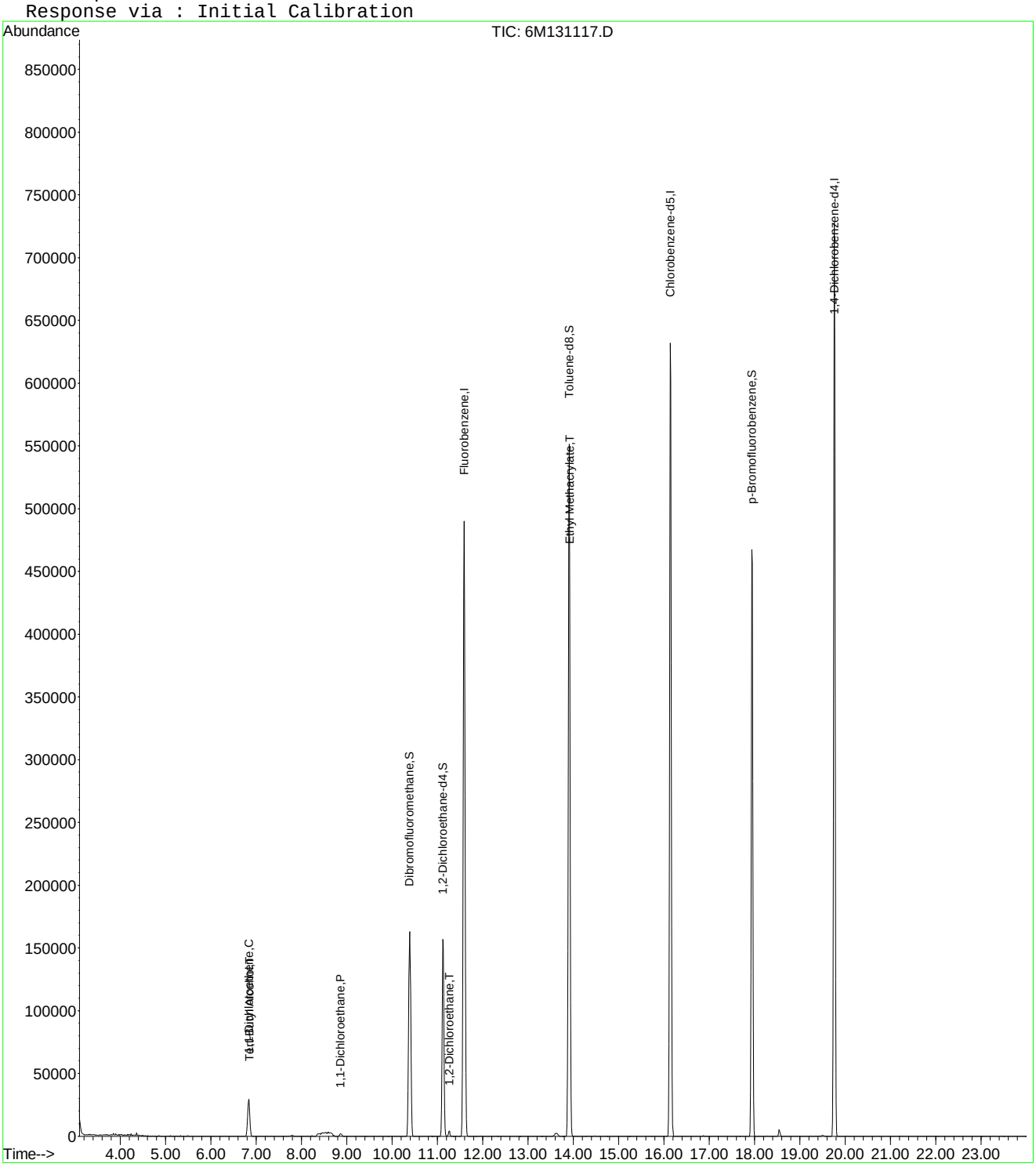

6M131117.D 8260WT.M Tue Feb 17 09:11:38 2015 Page 2

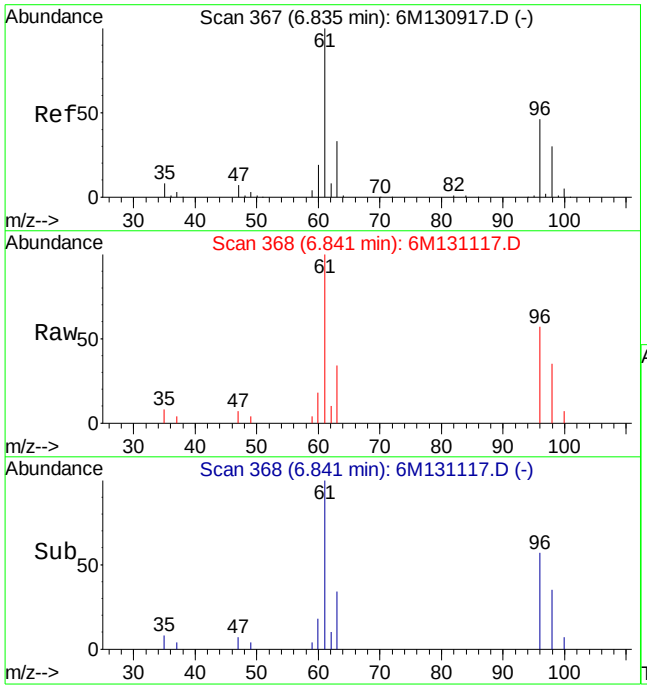

#14
1,1-Dichloroethene
Concen: 3.46 ug/L
RT: 6.84 min Scan# 368
Delta R.T. 0.01 min
Lab File: 6M131117.D
Acq: 16 Feb 2015 15:26

Tgt Ion: 61 Resp: 37621

Ion	Ratio	Lower	Upper
61	100		
96	49.7	34.1	79.7

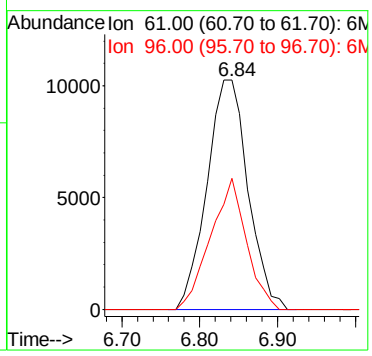

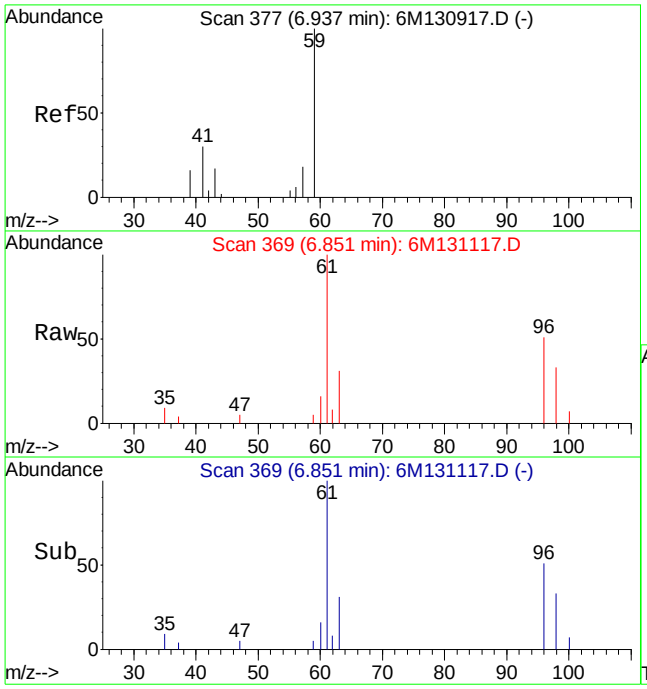

#15
Tert-Butyl Alcohol
Concen: 5.18 ug/L
RT: 6.85 min Scan# 369
Delta R.T. -0.09 min
Lab File: 6M131117.D
Acq: 16 Feb 2015 15:26

Tgt Ion: 59 Resp: 1000

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.3	28.7#
57	0.0	5.6	13.2#

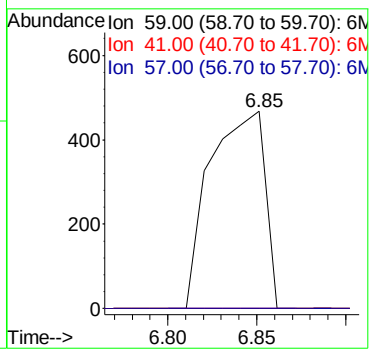

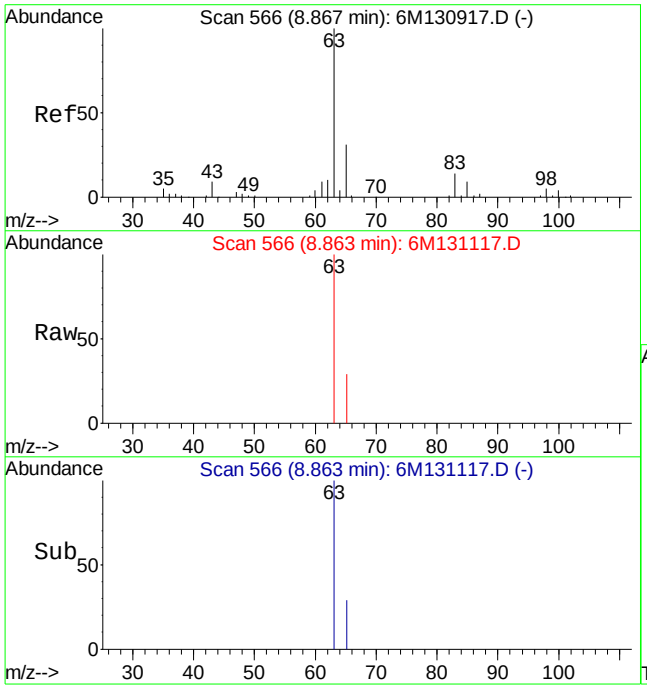

#27
1,1-Dichloroethane
Concen: 0.43 ug/L
RT: 8.86 min Scan# 566
Delta R.T. -0.00 min
Lab File: 6M131117.D
Acq: 16 Feb 2015 15:26

Tgt Ion: 63 Resp: 5216

Ion	Ratio	Lower	Upper
63	100		
65	23.8	18.5	43.1

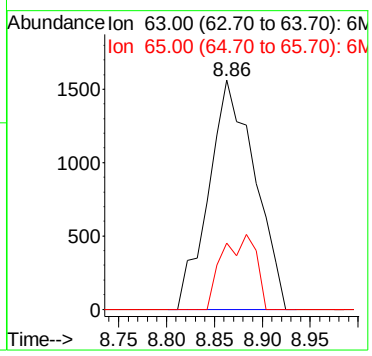

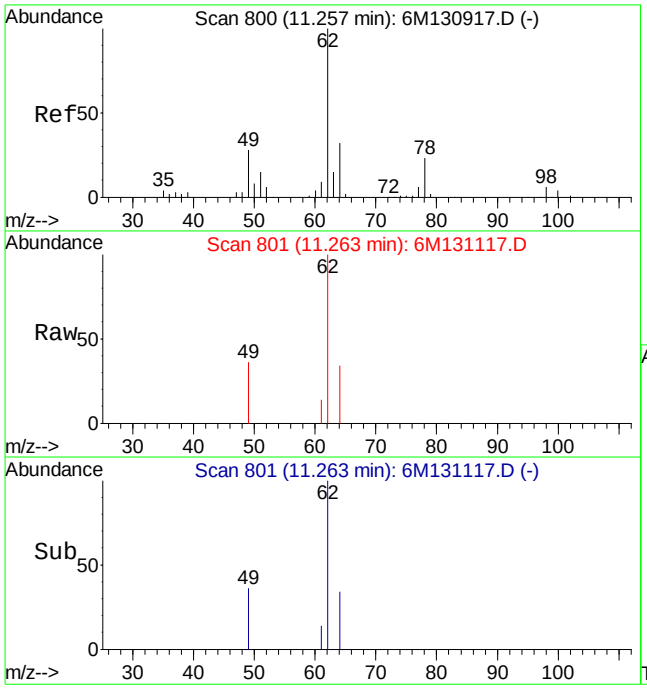

#45
1,2-Dichloroethane
Concen: 0.64 ug/L
RT: 11.26 min Scan# 801
Delta R.T. 0.01 min
Lab File: 6M131117.D
Acq: 16 Feb 2015 15:26

Tgt Ion: 62 Resp: 5890

Ion	Ratio	Lower	Upper
62	100		
49	24.9	23.7	55.3
98	0.0	4.9	11.5#

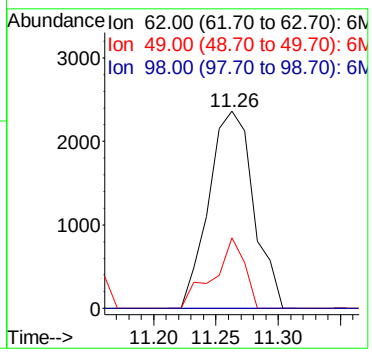

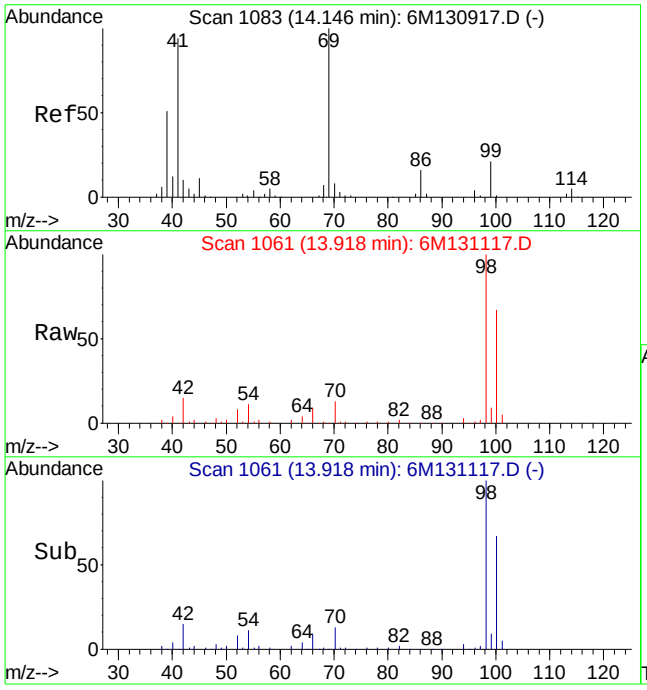

#60
Ethyl Methacrylate
Concen: 0.63 ug/L
RT: 13.92 min Scan# 1061
Delta R.T. -0.22 min
Lab File: 6M131117.D
Acq: 16 Feb 2015 15:26

Tgt Ion: 69 Resp: 765

Ion	Ratio	Lower	Upper
69	100		
41	158.0	46.5	108.5#

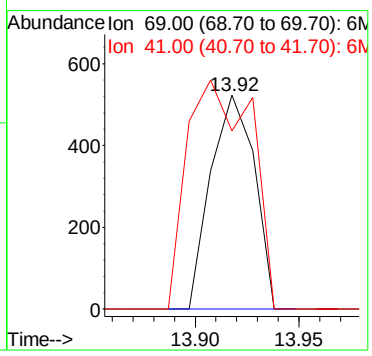

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131118.D Vial: 13
Acq On : 16 Feb 2015 15:56 Operator: TMB
Sample : L15020678-02 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 09:11:39 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	584536	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	453074	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	246610	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	142261	24.0963 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.40%		
43) 1,2-Dichloroethane-d4	11.12	65	165769	23.5619 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.24%		
58) Toluene-d8	13.91	98	512449	24.7854 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.16%		
80) p-Bromofluorobenzene	17.94	95	217058	26.1766 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.72%		

Target Compounds					Qvalue
14) 1,1-Dichloroethene	6.83	61	37993	3.6055 ug/L	89
15) Tert-Butyl Alcohol	6.82	59	1387	7.4142 ug/L #	62
27) 1,1-Dichloroethane	8.86	63	4306	0.3693 ug/L	92
45) 1,2-Dichloroethane	11.26	62	5865	0.6570 ug/L #	69
60) Ethyl Methacrylate	13.91	69	815	0.6439 ug/L #	27

(#) = qualifier out of range (m) = manual integration
6M131118.D 8260WT.M Tue Feb 17 09:11:39 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131118.D Vial: 13
Acq On : 16 Feb 2015 15:56 Operator: TMB
Sample : L15020678-02 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 9:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

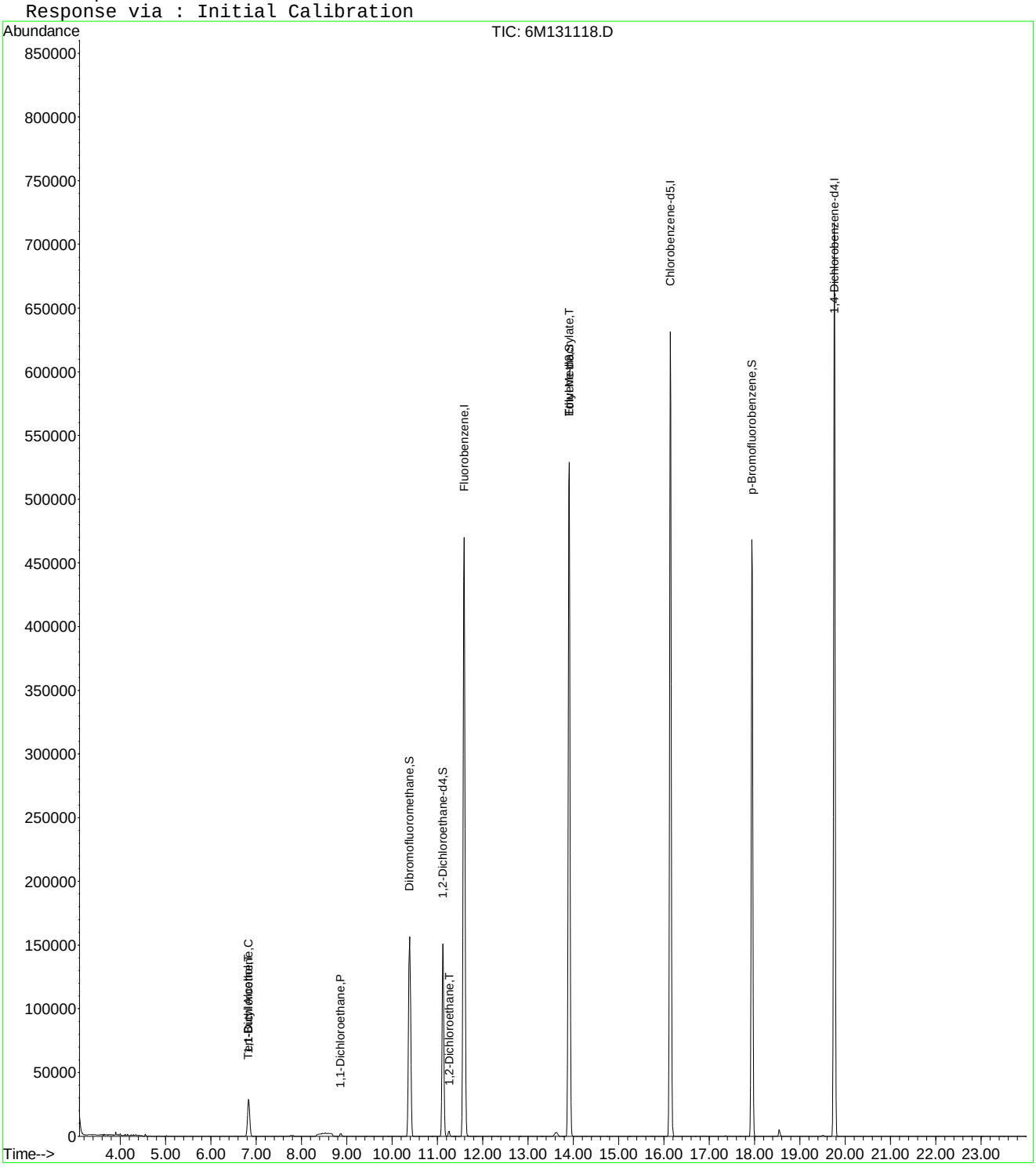

6M131118.D 8260WT.M Tue Feb 17 09:11:39 2015 Page 2

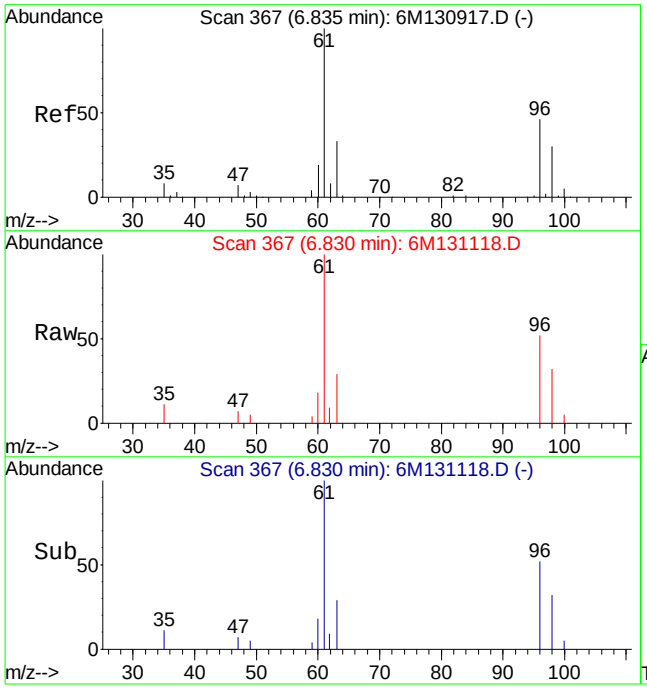

#14
1,1-Dichloroethene
Concen: 3.61 ug/L
RT: 6.83 min Scan# 367
Delta R.T. -0.00 min
Lab File: 6M131118.D
Acq: 16 Feb 2015 15:56

Tgt Ion: 61 Resp: 37993

Ion	Ratio	Lower	Upper
61	100		
96	48.6	34.1	79.7

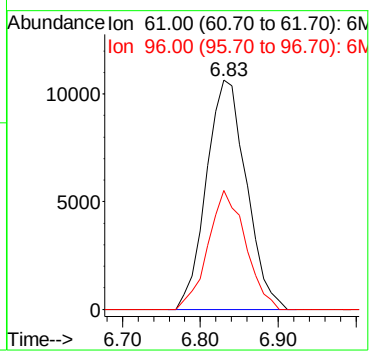

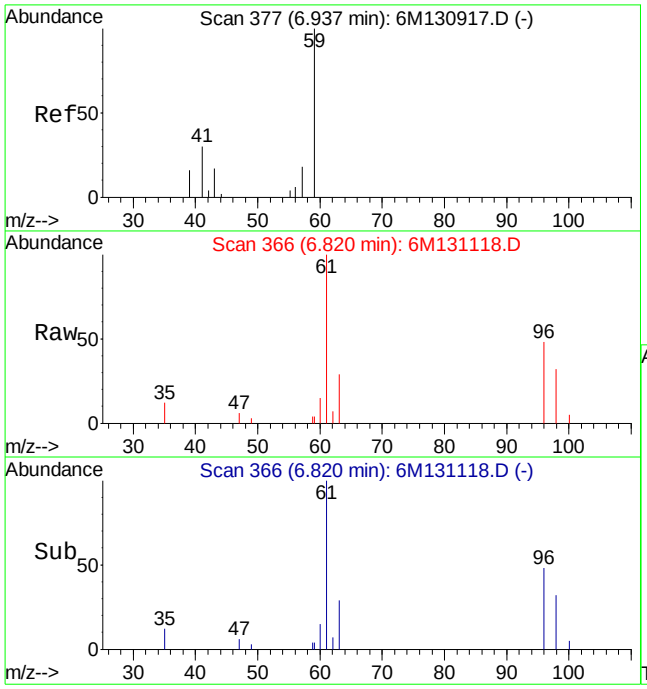

#15
Tert-Butyl Alcohol
Concen: 7.41 ug/L
RT: 6.82 min Scan# 366
Delta R.T. -0.12 min
Lab File: 6M131118.D
Acq: 16 Feb 2015 15:56

Tgt Ion: 59 Resp: 1387

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.3	28.7#
57	0.0	5.6	13.2#

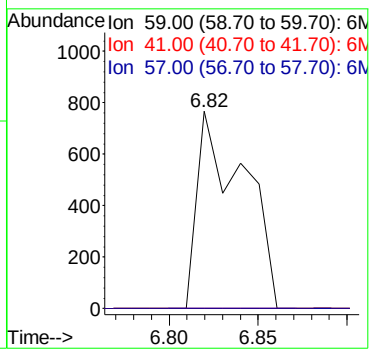

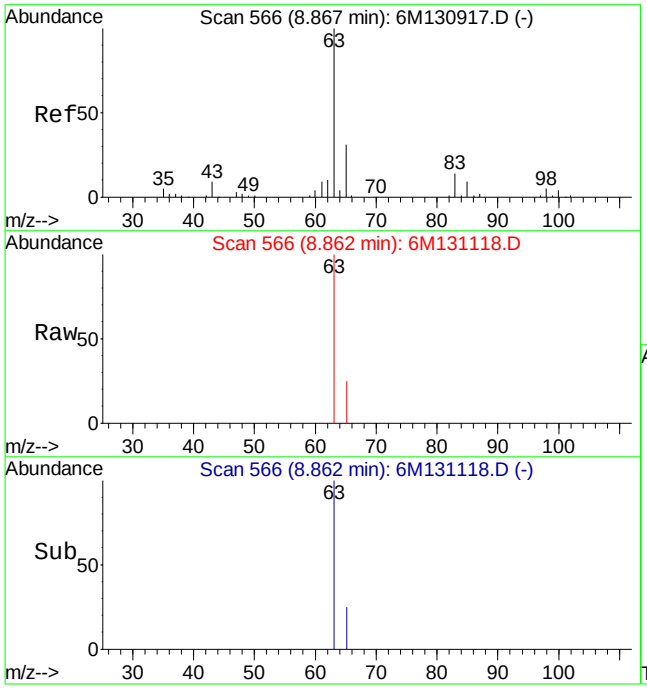

#27
1,1-Dichloroethane
Concen: 0.37 ug/L
RT: 8.86 min Scan# 566
Delta R.T. -0.00 min
Lab File: 6M131118.D
Acq: 16 Feb 2015 15:56

Tgt Ion: 63 Resp: 4306

Ion	Ratio	Lower	Upper
63	100		
65	26.5	18.5	43.1

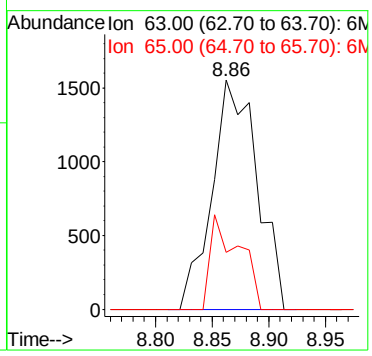

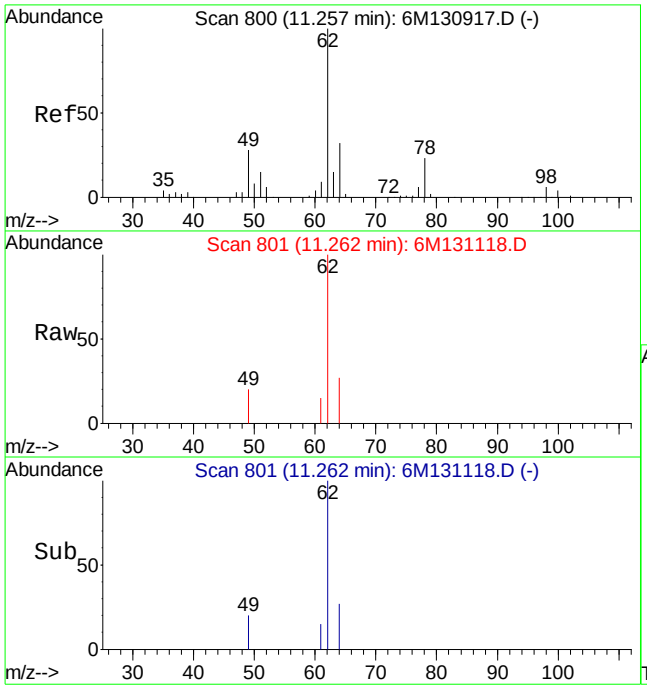

#45
1,2-Dichloroethane
Concen: 0.66 ug/L
RT: 11.26 min Scan# 801
Delta R.T. 0.01 min
Lab File: 6M131118.D
Acq: 16 Feb 2015 15:56

Tgt Ion: 62 Resp: 5865

Ion	Ratio	Lower	Upper
62	100		
49	19.4	23.7	55.3#
98	0.0	4.9	11.5#

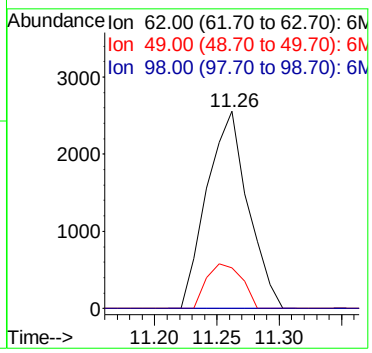

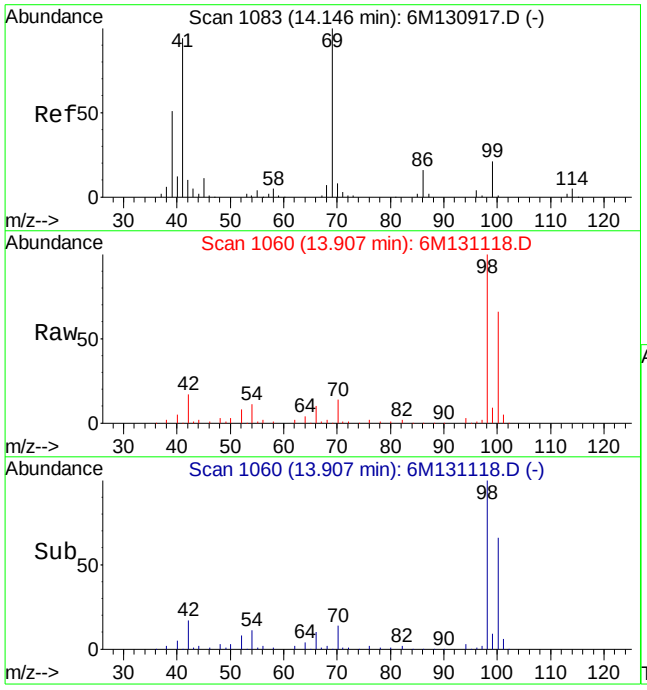

#60
Ethyl Methacrylate
Concen: 0.64 ug/L
RT: 13.91 min Scan# 1060
Delta R.T. -0.24 min
Lab File: 6M131118.D
Acq: 16 Feb 2015 15:56

Tgt Ion: 69 Resp: 815

Ion	Ratio	Lower	Upper
69	100		
41	140.7	46.5	108.5#

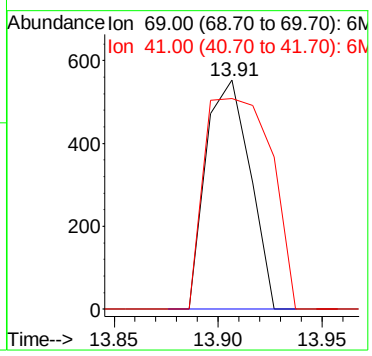

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131119.D Vial: 14
Acq On : 16 Feb 2015 16:26 Operator: TMB
Sample : L15020678-03 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 09:11:40 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	574361	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.15	117	446910	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	236494	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	141338	24.3641 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.44%		
43) 1,2-Dichloroethane-d4	11.12	65	164410	23.7827 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.12%		
58) Toluene-d8	13.90	98	497263	24.3826 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.52%		
80) p-Bromofluorobenzene	17.94	95	215384	27.0858 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.36%		

Target Compounds					Qvalue
26) Vinyl Acetate	8.57	43	656	0.1755 ug/L #	77
60) Ethyl Methacrylate	13.91	69	826	0.6488 ug/L	71

(#) = qualifier out of range (m) = manual integration
6M131119.D 8260WT.M Tue Feb 17 09:11:40 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131119.D Vial: 14
Acq On : 16 Feb 2015 16:26 Operator: TMB
Sample : L15020678-03 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 9:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

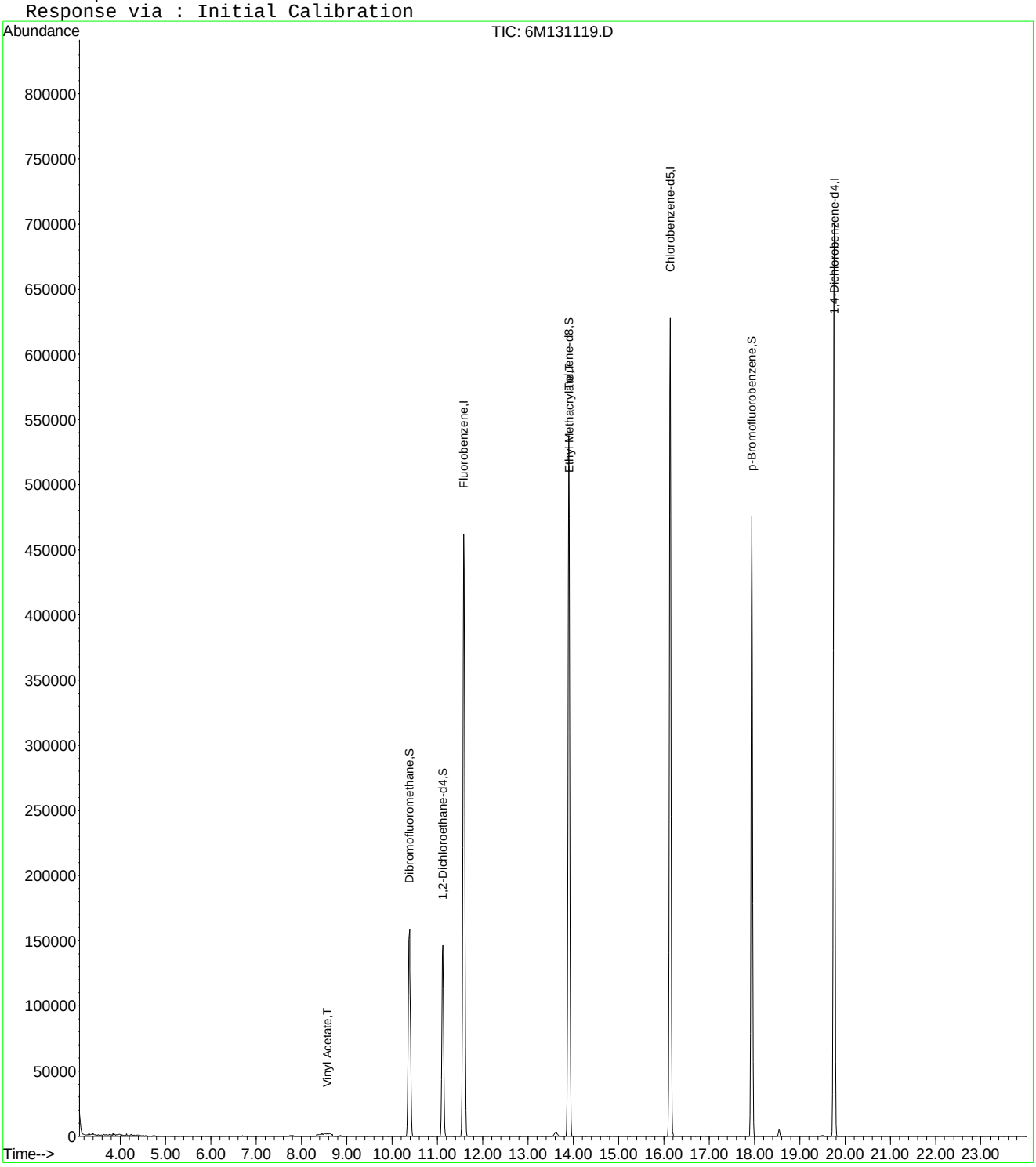

6M131119.D 8260WT.M Tue Feb 17 09:11:40 2015 Page 2

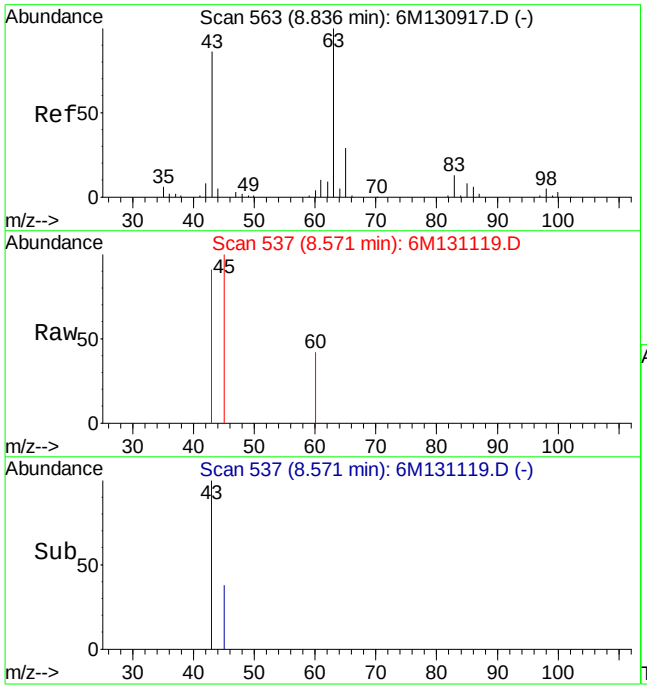

#26
Vinyl Acetate
Concen: 0.18 ug/L
RT: 8.57 min Scan# 537
Delta R.T. -0.26 min
Lab File: 6M131119.D
Acq: 16 Feb 2015 16:26

Tgt Ion: 43 Resp: 656

Ion	Ratio	Lower	Upper
43	100		
86	0.0	5.0	11.6#

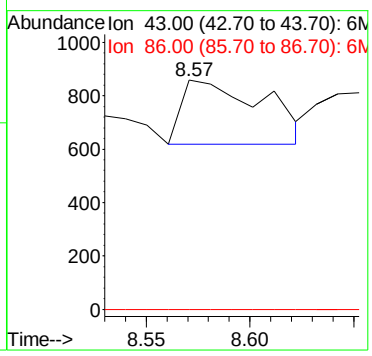

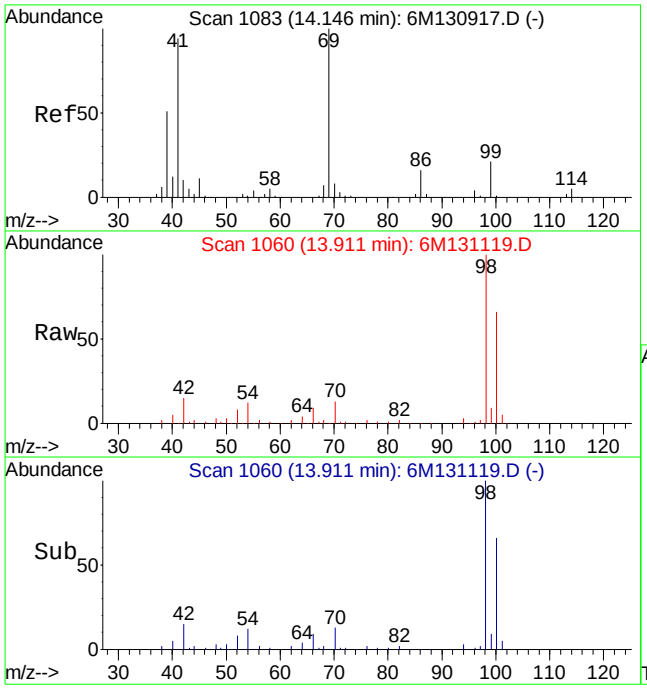

#60
Ethyl Methacrylate
Concen: 0.65 ug/L
RT: 13.91 min Scan# 1060
Delta R.T. -0.23 min
Lab File: 6M131119.D
Acq: 16 Feb 2015 16:26

Tgt Ion: 69 Resp: 826

Ion	Ratio	Lower	Upper
69	100		
41	102.5	46.5	108.5

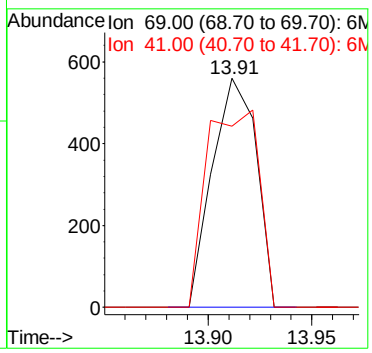

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131120.D Vial: 15
Acq On : 16 Feb 2015 16:57 Operator: TMB
Sample : L15020678-04 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 09:11:41 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	569978	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.15	117	442859	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	236187	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	139655	24.2591 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.04%		
43) 1,2-Dichloroethane-d4	11.12	65	166758	24.3078 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.24%		
58) Toluene-d8	13.90	98	492459	24.3680 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.48%		
80) p-Bromofluorobenzene	17.94	95	210383	26.4913 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.96%		

Target Compounds					Qvalue
26) Vinyl Acetate	8.61	43	4109	1.1079 ug/L #	77
60) Ethyl Methacrylate	13.90	69	1135	0.7199 ug/L	71

(#) = qualifier out of range (m) = manual integration
6M131120.D 8260WT.M Tue Feb 17 09:11:41 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131120.D Vial: 15
Acq On : 16 Feb 2015 16:57 Operator: TMB
Sample : L15020678-04 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 9:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

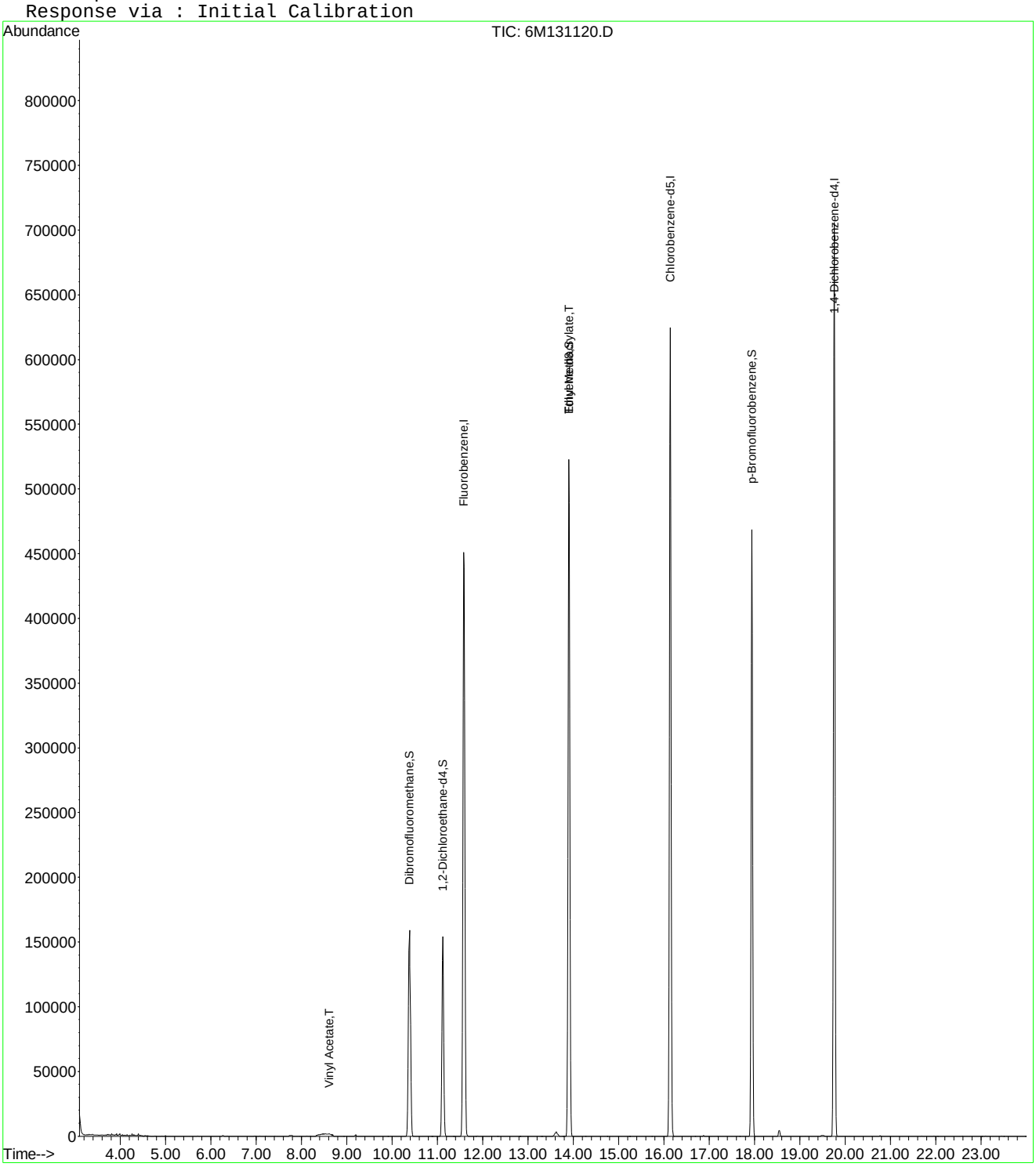

6M131120.D 8260WT.M Tue Feb 17 09:11:41 2015 Page 2

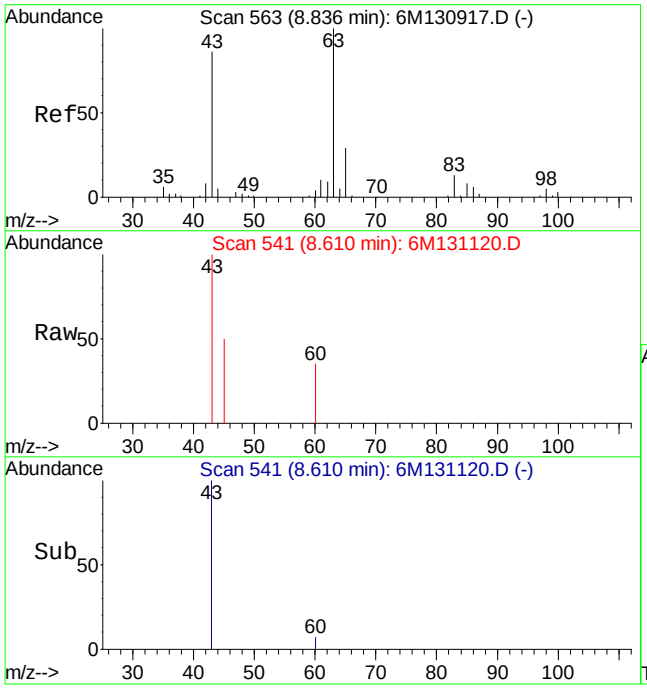

#26
Vinyl Acetate
Concen: 1.11 ug/L
RT: 8.61 min Scan# 541
Delta R.T. -0.22 min
Lab File: 6M131120.D
Acq: 16 Feb 2015 16:57

Tgt Ion: 43 Resp: 4109

Ion	Ratio	Lower	Upper
43	100		
86	0.0	5.0	11.6#

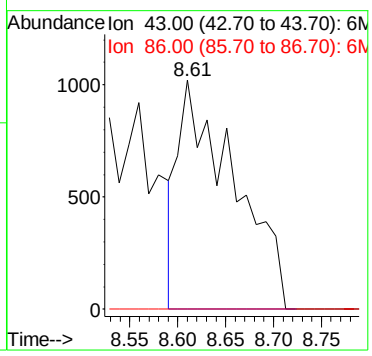

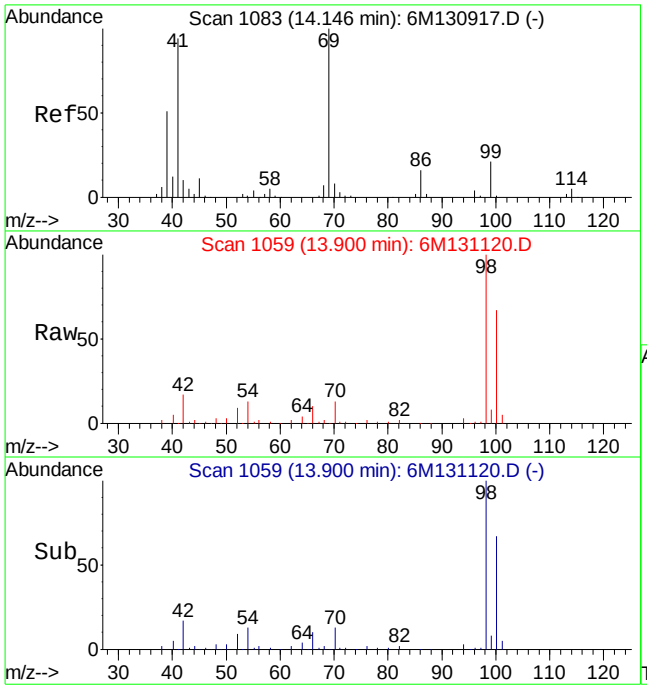

#60
Ethyl Methacrylate
Concen: 0.72 ug/L
RT: 13.90 min Scan# 1059
Delta R.T. -0.24 min
Lab File: 6M131120.D
Acq: 16 Feb 2015 16:57

Tgt Ion: 69 Resp: 1135

Ion	Ratio	Lower	Upper
69	100		
41	102.3	46.5	108.5

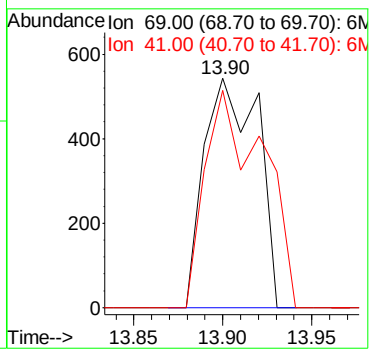

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131116.D Vial: 11
Acq On : 16 Feb 2015 14:55 Operator: TMB
Sample : L15020678-05 A REF 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 09:11:37 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	622430	25.00 ug/L	0.01
57) Chlorobenzene-d5	16.14	117	482730	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	258964	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	147158	23.4083 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.64%		
43) 1,2-Dichloroethane-d4	11.12	65	173172	23.1156 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.48%		
58) Toluene-d8	13.91	98	537898	24.4180 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.68%		
80) p-Bromofluorobenzene	17.94	95	230022	26.4167 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.68%		

Target Compounds					Qvalue
25) Diisopropyl ether	8.44	45	7724	0.3325 ug/L #	57
26) Vinyl Acetate	8.66	43	3821	0.9434 ug/L #	77
60) Ethyl Methacrylate	13.92	69	1036	0.6785 ug/L	77

(#) = qualifier out of range (m) = manual integration
6M131116.D 8260WT.M Tue Feb 17 09:11:37 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131116.D Vial: 11
Acq On : 16 Feb 2015 14:55 Operator: TMB
Sample : L15020678-05 A REF 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 9:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

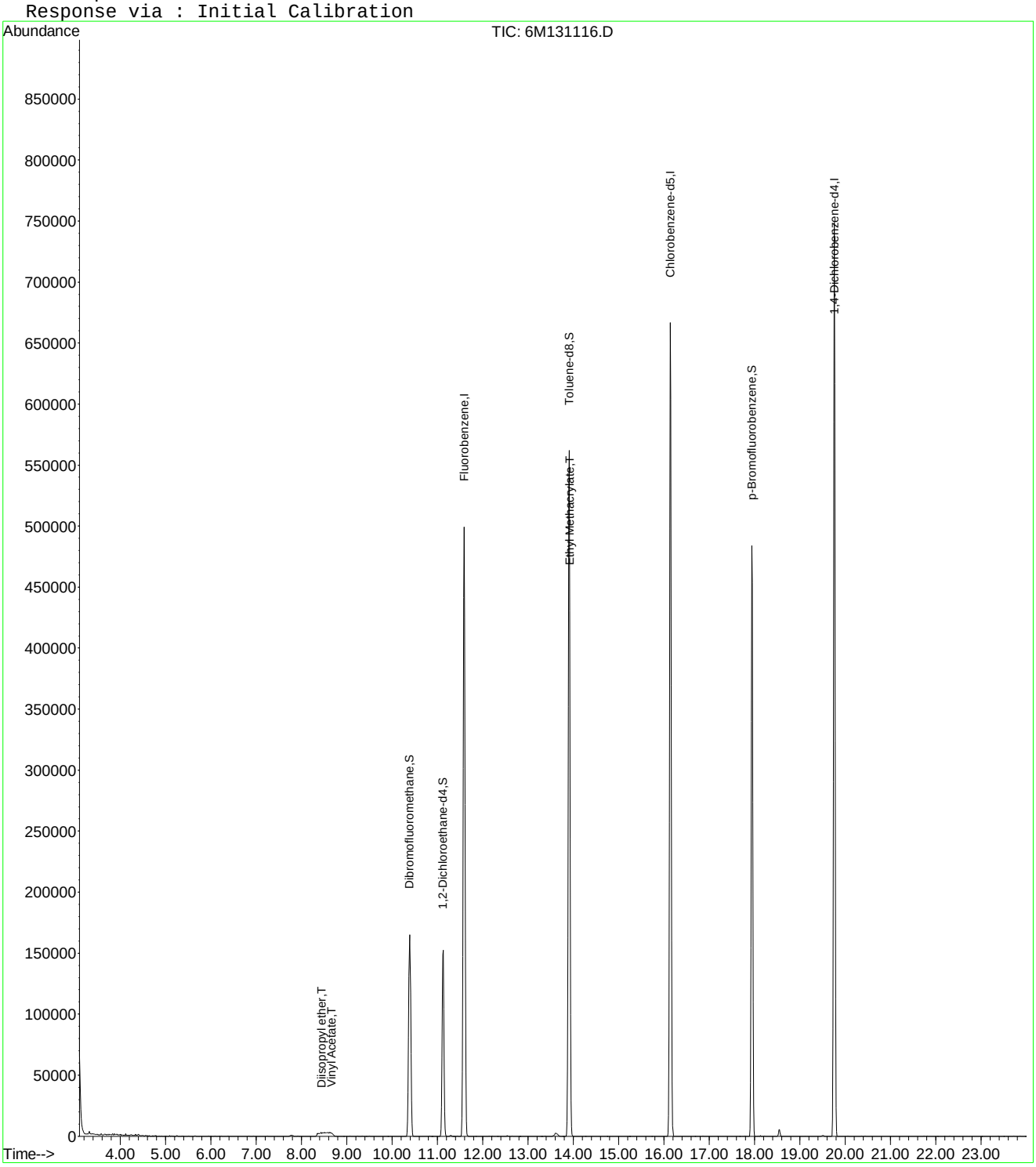

6M131116.D 8260WT.M Tue Feb 17 09:11:37 2015 Page 2

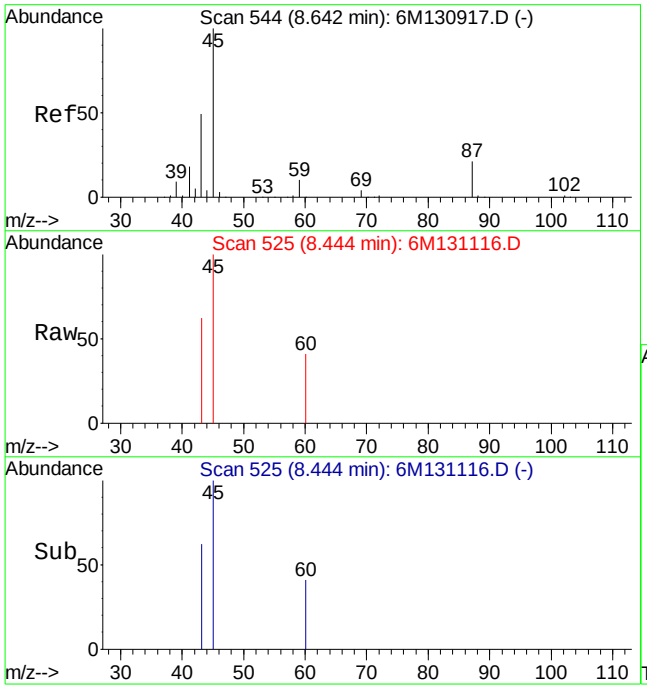

#25
Diisopropyl ether
Concen: 0.33 ug/L
RT: 8.44 min Scan# 525
Delta R.T. -0.19 min
Lab File: 6M131116.D
Acq: 16 Feb 2015 14:55

Tgt Ion: 45 Resp: 7724

Ion	Ratio	Lower	Upper
45	100		
43	19.7	28.1	65.5#
87	0.0	13.9	32.3#

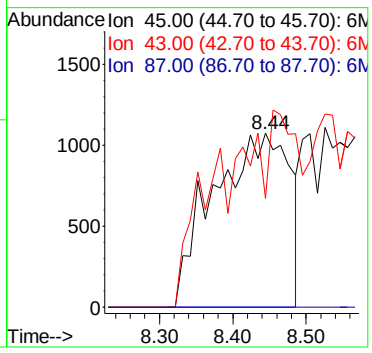

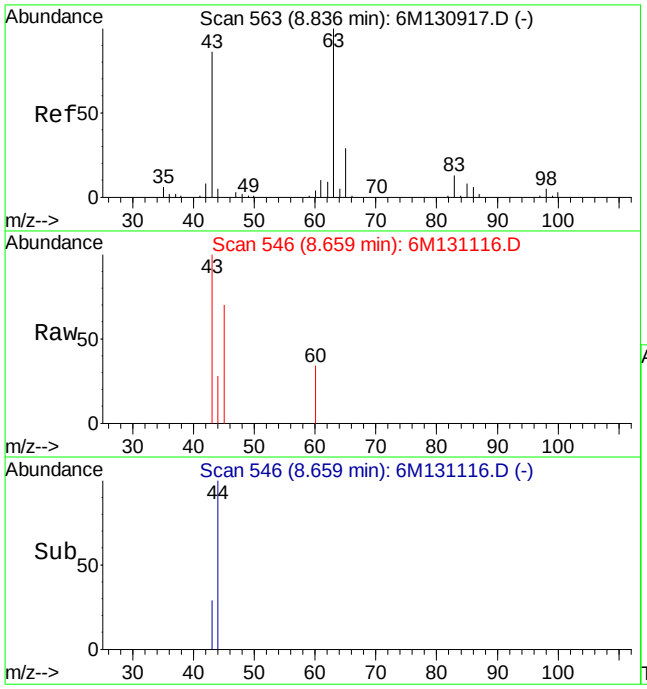

#26
Vinyl Acetate
Concen: 0.94 ug/L
RT: 8.66 min Scan# 546
Delta R.T. -0.17 min
Lab File: 6M131116.D
Acq: 16 Feb 2015 14:55

Tgt Ion: 43 Resp: 3821

Ion	Ratio	Lower	Upper
43	100		
86	0.0	5.0	11.6#

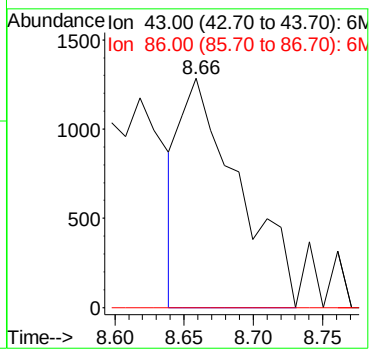

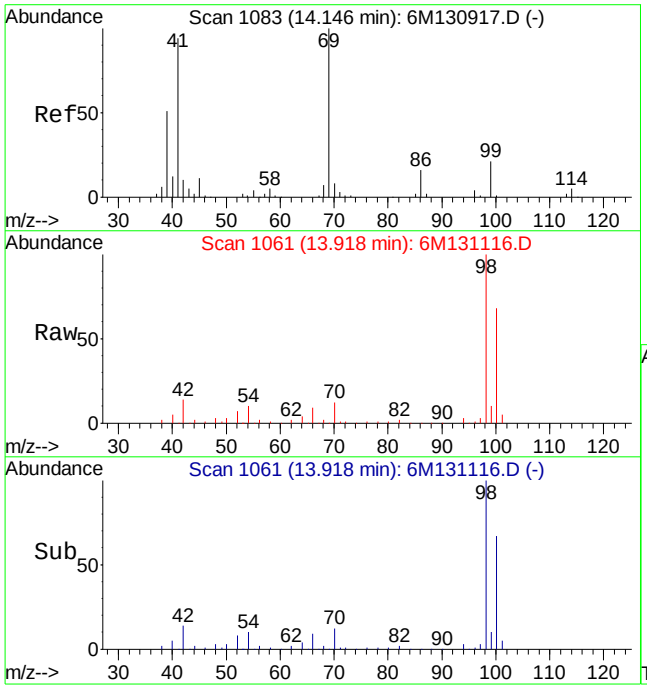

#60
Ethyl Methacrylate
Concen: 0.68 ug/L
RT: 13.92 min Scan# 1061
Delta R.T. -0.22 min
Lab File: 6M131116.D
Acq: 16 Feb 2015 14:55

Tgt Ion: 69 Resp: 1036

Ion	Ratio	Lower	Upper
69	100		
41	97.3	46.5	108.5

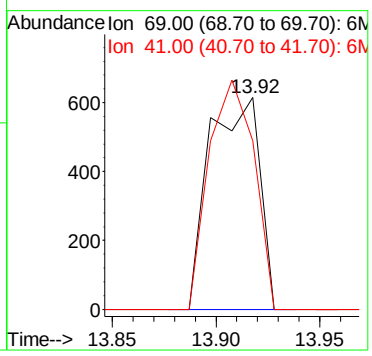

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021615\6M131112.D Vial: 7
Acq On : 16 Feb 2015 12:49 Operator: TMB
Sample : L15020678-06 B MS 826-LOW Inst : HPMS6
Misc : 1,1 STD68892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 16 13:13:43 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	653900	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.15	117	509399	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	288916	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	160938	24.3682 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.48%		
43) 1,2-Dichloroethane-d4	11.12	65	185317	23.5462 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.20%		
58) Toluene-d8	13.90	98	561061	24.1361 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.56%		
80) p-Bromofluorobenzene	17.94	95	246649	25.3896 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	130616	11.2385 ug/L	99
3) Chloromethane	3.85	50	116600	12.7100 ug/L	96
4) Vinyl Chloride	4.09	62	142898	18.1861 ug/L	99
5) 1,3-Butadiene	4.13	54	114278	14.0068 ug/L	94
6) Bromomethane	5.01	94	48366	11.8221 ug/L	95
7) Chloroethane	5.17	64	98685	21.6592 ug/L	97
8) Trichlorofluoromethane	5.67	101	277083	18.9117 ug/L	99
10) Isoprene	6.27	67	205753	26.3735 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	135338	19.4333 ug/L	94
13) Acetone	6.59	43	20650	20.4669 ug/L	96
14) 1,1-Dichloroethene	6.83	61	224151	19.0155 ug/L	90
15) Tert-Butyl Alcohol	6.83	59	9363	44.7409 ug/L #	62
16) Dimethyl Sulfide	7.11	62	142183	22.1195 ug/L	90
17) Iodomethane	7.40	142	54767	11.0057 ug/L	83
18) Methyl acetate	7.41	43	50064	12.7516 ug/L	98
19) Methylene Chloride	7.68	84	125550	21.5122 ug/L	97
20) Carbon Disulfide	7.73	76	392249	19.5602 ug/L	100
21) Acrylonitrile	7.88	53	25150	17.8820 ug/L	98
22) Methyl Tert Butyl Ether	7.91	73	281495	22.7329 ug/L	97
23) trans-1,2-Dichloroethene	8.18	96	134587	22.1391 ug/L	91
24) n-Hexane	8.26	57	180232	18.0620 ug/L	100
26) Vinyl Acetate	8.84	43	191061	44.9030 ug/L	100
27) 1,1-Dichloroethane	8.87	63	270006	20.7008 ug/L	99
29) 2-Butanone	9.50	43	29256	18.6962 ug/L	97
31) 2,2-Dichloropropane	9.74	77	267488	23.9987 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	146310	22.5399 ug/L	96
33) Chloroform	10.06	83	282262	22.3627 ug/L	98
34) 1-Bromopropane	10.21	122	30719	21.9711 ug/L	98
35) Bromochloromethane	10.32	130	69952	20.6459 ug/L	99
36) Tetrahydrofuran	10.20	42	30174	30.5548 ug/L #	38
38) 1,1,1-Trichloroethane	10.66	97	272624	21.6849 ug/L	97
39) Cyclohexane	10.69	56	232240	18.5387 ug/L	96
40) 1,1-Dichloropropene	10.89	75	209323	21.6201 ug/L	93
41) Tert-Amyl-Methyl ether	10.89	73	35270	2.6381 ug/L #	56
42) Carbon Tetrachloride	11.05	117	239324	22.4312 ug/L	97
45) 1,2-Dichloroethane	11.26	62	208355	20.8628 ug/L	89
46) Benzene	11.31	78	521967	21.7606 ug/L	98
47) Trichloroethene	12.17	130	138968	22.2043 ug/L	75
48) Methylcyclohexane	12.27	83	202498	20.6174 ug/L	98
49) 1,2-Dichloropropane	12.42	63	132567	20.5292 ug/L	76

(#) = qualifier out of range (m) = manual integration
6M131112.D 8260WT.M Mon Feb 16 13:13:43 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021615\6M131112.D Vial: 7
Acq On : 16 Feb 2015 12:49 Operator: TMB
Sample : L15020678-06 B MS 826-LOW Inst : HPMS6
Misc : 1,1 STD68892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 16 13:13:43 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
51)	Bromodichloromethane	12.78	83	199775	21.4997 ug/L		98
52)	Dibromomethane	12.87	93	65959	21.5666 ug/L		100
54)	4-Methyl-2-Pentanone	13.17	58	24812	18.3319 ug/L		96
55)	cis-1,3-Dichloropropene	13.52	75	213703	23.3861 ug/L		98
56)	Dimethyl Disulfide	13.83	79	89117	19.5837 ug/L		97
59)	Toluene	14.02	91	561753	21.8685 ug/L		99
60)	Ethyl Methacrylate	14.15	69	108392	21.6287 ug/L		94
62)	trans-1,3-Dichloropropene	14.24	75	176498	21.5279 ug/L		93
63)	1,1,2-Trichloroethane	14.49	97	80670	20.4064 ug/L		98
64)	2-Hexanone	14.42	43	45731	18.2009 ug/L		98
65)	1,3-Dichloropropane	14.85	76	154507	21.0193 ug/L		95
66)	Tetrachloroethene	14.99	166	142396	19.2786 ug/L		88
67)	Dibromochloromethane	15.30	129	113388	21.2059 ug/L		99
68)	1,2-Dibromoethane	15.61	107	81978	21.4271 ug/L		99
69)	1-Chlorohexane	15.73	91	189984	21.7759 ug/L		88
70)	Chlorobenzene	16.21	112	348745	19.6428 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.24	131	133178	20.6840 ug/L		93
72)	Ethylbenzene	16.25	106	206127	21.0905 ug/L		91
73)	m-,p-Xylene	16.35	106	488348	41.7685 ug/L		88
74)	o-Xylene	17.02	106	233841	19.8393 ug/L		89
75)	Styrene	17.07	104	412118	21.8526 ug/L		85
76)	Bromoform	17.65	173	64877	19.5172 ug/L		96
77)	Isopropylbenzene	17.54	105	619798	19.9736 ug/L		96
79)	1,1,2,2-Tetrachloroethane	17.79	83	88898	21.1510 ug/L		98
81)	1,2,3-Trichloropropane	18.03	110	29100	20.6914 ug/L		91
82)	trans-1,4-Dichloro-2-Buten	18.09	53	30659	15.8357 ug/L		81
83)	n-Propylbenzene	18.14	91	739882	20.2779 ug/L		97
84)	Bromobenzene	18.28	156	150688	20.1671 ug/L		85
85)	1,3,5-Trimethylbenzene	18.37	105	582238	22.5132 ug/L		94
86)	2-Chlorotoluene	18.45	91	487401	20.4153 ug/L		99
87)	4-Chlorotoluene	18.52	91	475418	19.9780 ug/L		93
88)	a-Methylstyrene	18.85	118	307755	21.9022 ug/L		97
89)	tert-Butylbenzene	18.92	134	101759	17.6496 ug/L		87
90)	1,2,4-Trimethylbenzene	18.99	105	587919	22.1348 ug/L		85
91)	sec-Butylbenzene	19.24	105	610779	19.4651 ug/L		97
92)	p-Isopropyltoluene	19.43	119	522331	20.2881 ug/L		98
93)	1,3-Dichlorobenzene	19.65	146	274745	17.8702 ug/L		86
94)	1,4-Dichlorobenzene	19.81	146	286613	18.3312 ug/L		85
95)	n-Butylbenzene	20.07	91	512070	21.7460 ug/L		95
96)	1,2-Dichlorobenzene	20.39	146	236162	17.3179 ug/L		86
97)	1,2-Dibromo-3-Chloropropan	21.59	75	17305	20.1919 ug/L		79
98)	1,2,4-Trichlorobenzene	22.97	180	183065	20.8026 ug/L		98
99)	Hexachlorobutadiene	23.16	225	103250	26.8829 ug/L		97
100)	Naphthalene	23.44	128	256579	20.0465 ug/L		100
101)	1,2,3-Trichlorobenzene	23.85	180	154063	20.7215 ug/L		100

(#) = qualifier out of range (m) = manual integration
6M131112.D 8260WT.M Mon Feb 16 13:13:43 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021615\6M131112.D Vial: 7
Acq On : 16 Feb 2015 12:49 Operator: TMB
Sample : L15020678-06 B MS 826-LOW Inst : HPMS6
Misc : 1,1 STD68892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 16 13:13 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

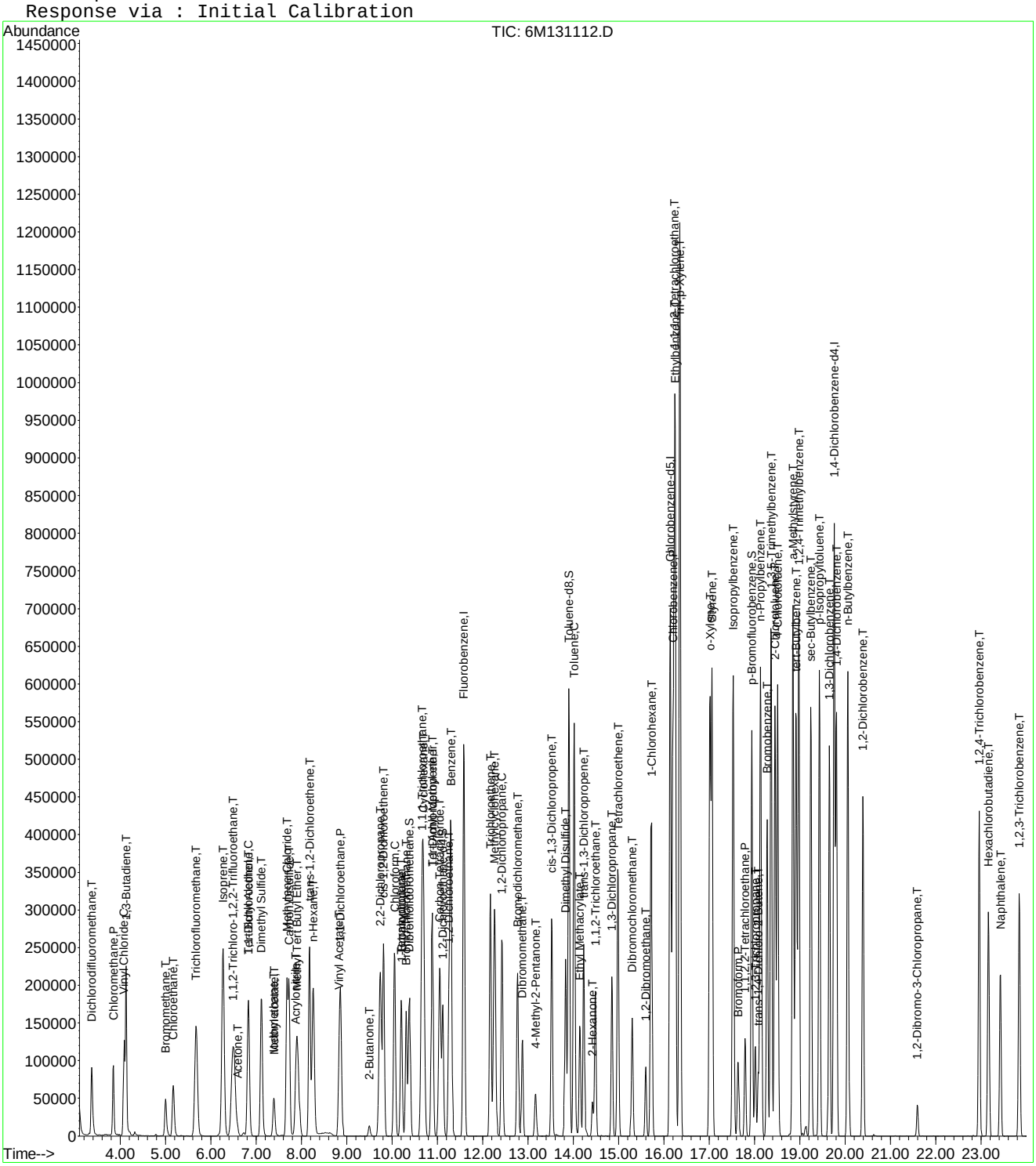

6M131112.D 8260WT.M Mon Feb 16 13:13:44 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021615\6M131113.D Vial: 8
Acq On : 16 Feb 2015 13:20 Operator: TMB
Sample : L15020678-07 B MSD 826-LOW Inst : HPMS6
Misc : 1,1 STD68892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 16 13:44:59 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	679176	25.00 ug/L	0.01
57) Chlorobenzene-d5	16.15	117	520700	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	289650	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	167239	24.3798 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.52%		
43) 1,2-Dichloroethane-d4	11.12	65	190373	23.2884 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.16%		
58) Toluene-d8	13.91	98	579638	24.3941 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.56%		
80) p-Bromofluorobenzene	17.94	95	252044	25.8793 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.52%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	128583	10.6518 ug/L	99
3) Chloromethane	3.85	50	120302	12.6255 ug/L	98
4) Vinyl Chloride	4.09	62	143040	17.5267 ug/L	99
5) 1,3-Butadiene	4.13	54	109237	12.8719 ug/L	98
6) Bromomethane	5.00	94	51070	12.0048 ug/L	97
7) Chloroethane	5.17	64	98925	20.9039 ug/L	95
8) Trichlorofluoromethane	5.68	101	279841	18.3891 ug/L	99
9) Diethyl ether	6.50	59	629	0.1437 ug/L #	14
10) Isoprene	6.27	67	209623	25.8696 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	133920	18.5141 ug/L	95
13) Acetone	6.59	43	22278	21.2587 ug/L	91
14) 1,1-Dichloroethene	6.83	61	223750	18.2751 ug/L	91
15) Tert-Butyl Alcohol	6.84	59	8721	40.1222 ug/L #	62
16) Dimethyl Sulfide	7.12	62	149334	22.3674 ug/L	91
17) Iodomethane	7.39	142	56435	10.9345 ug/L	84
18) Methyl acetate	7.40	43	53060	13.0117 ug/L	98
19) Methylene Chloride	7.68	84	127339	21.0067 ug/L	98
20) Carbon Disulfide	7.73	76	403163	19.3563 ug/L	100
21) Acrylonitrile	7.88	53	25953	17.7662 ug/L	98
22) Methyl Tert Butyl Ether	7.91	73	293363	22.8097 ug/L	99
23) trans-1,2-Dichloroethene	8.18	96	136200	21.5707 ug/L	92
24) n-Hexane	8.26	57	186350	17.9801 ug/L	100
26) Vinyl Acetate	8.83	43	197825	44.7624 ug/L	99
27) 1,1-Dichloroethane	8.87	63	274164	20.2373 ug/L	98
29) 2-Butanone	9.50	43	30170	18.5627 ug/L	100
31) 2,2-Dichloropropane	9.74	77	265824	22.9618 ug/L	97
32) cis-1,2-Dichloroethene	9.81	96	148414	22.0131 ug/L	95
33) Chloroform	10.05	83	283708	21.6408 ug/L	99
34) 1-Bromopropane	10.21	122	30109	20.7530 ug/L	98
35) Bromochloromethane	10.32	130	72193	20.5144 ug/L	99
36) Tetrahydrofuran	10.20	42	28985	28.2584 ug/L #	38
38) 1,1,1-Trichloroethane	10.66	97	275183	21.0739 ug/L	98
39) Cyclohexane	10.69	56	237688	18.2675 ug/L	95
40) 1,1-Dichloropropene	10.89	75	204277	20.3137 ug/L	90
41) Tert-Amyl-Methyl ether	10.89	73	35162	2.5322 ug/L #	55
42) Carbon Tetrachloride	11.06	117	236111	21.3065 ug/L	98
45) 1,2-Dichloroethane	11.25	62	205974	19.8568 ug/L	90
46) Benzene	11.30	78	524098	21.0363 ug/L	97
47) Trichloroethene	12.17	130	140351	21.5907 ug/L	77
48) Methylcyclohexane	12.26	83	205952	20.1886 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M131113.D 8260WT.M Mon Feb 16 13:44:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021615\6M131113.D Vial: 8
Acq On : 16 Feb 2015 13:20 Operator: TMB
Sample : L15020678-07 B MSD 826-LOW Inst : HPMS6
Misc : 1,1 STD68892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 16 13:44:59 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
49)	1,2-Dichloropropane	12.43	63	134566	20.0632 ug/L	78
51)	Bromodichloromethane	12.78	83	200697	20.7951 ug/L	99
52)	Dibromomethane	12.87	93	66799	21.0285 ug/L	98
54)	4-Methyl-2-Pentanone	13.17	58	25432	18.0907 ug/L	98
55)	cis-1,3-Dichloropropene	13.53	75	218708	23.0430 ug/L	98
56)	Dimethyl Disulfide	13.83	79	91251	19.3063 ug/L	95
59)	Toluene	14.02	91	569918	21.7048 ug/L	99
60)	Ethyl Methacrylate	14.15	69	117454	22.9004 ug/L	98
62)	trans-1,3-Dichloropropene	14.24	75	178741	21.3284 ug/L	94
63)	1,1,2-Trichloroethane	14.49	97	83607	20.6904 ug/L	98
64)	2-Hexanone	14.42	43	46728	18.1941 ug/L	97
65)	1,3-Dichloropropane	14.85	76	156996	20.8944 ug/L	94
66)	Tetrachloroethene	14.99	166	142715	18.9024 ug/L	87
67)	Dibromochloromethane	15.30	129	115033	21.0467 ug/L	98
68)	1,2-Dibromoethane	15.60	107	82641	21.1316 ug/L	98
69)	1-Chlorohexane	15.73	91	195306	21.9001 ug/L	89
70)	Chlorobenzene	16.21	112	352722	19.4356 ug/L #	65
71)	1,1,1,2-Tetrachloroethane	16.25	131	136130	20.6836 ug/L	93
72)	Ethylbenzene	16.25	106	206558	20.6759 ug/L	88
73)	m-,p-Xylene	16.35	106	495186	41.4342 ug/L	88
74)	o-Xylene	17.02	106	235559	19.5513 ug/L	88
75)	Styrene	17.06	104	413933	21.4725 ug/L	84
76)	Bromoform	17.65	173	68266	20.0788 ug/L	99
77)	Isopropylbenzene	17.53	105	622908	19.6382 ug/L	97
79)	1,1,2,2-Tetrachloroethane	17.79	83	89086	21.1420 ug/L	98
81)	1,2,3-Trichloropropane	18.02	110	28387	20.1332 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	18.09	53	29619	15.2782 ug/L	77
83)	n-Propylbenzene	18.14	91	741252	20.2639 ug/L	96
84)	Bromobenzene	18.28	156	157663	21.0471 ug/L	87
85)	1,3,5-Trimethylbenzene	18.37	105	586989	22.6394 ug/L	94
86)	2-Chlorotoluene	18.45	91	484837	20.2565 ug/L	99
87)	4-Chlorotoluene	18.51	91	487649	20.4400 ug/L	93
88)	a-Methylstyrene	18.85	118	312668	22.1955 ug/L	98
89)	tert-Butylbenzene	18.92	134	102148	17.6722 ug/L	98
90)	1,2,4-Trimethylbenzene	18.98	105	591719	22.2214 ug/L	83
91)	sec-Butylbenzene	19.24	105	615776	19.5746 ug/L	97
92)	p-Isopropyltoluene	19.43	119	528286	20.4674 ug/L	96
93)	1,3-Dichlorobenzene	19.66	146	270012	17.5178 ug/L	85
94)	1,4-Dichlorobenzene	19.81	146	285324	18.2025 ug/L	85
95)	n-Butylbenzene	20.07	91	503182	21.3144 ug/L	94
96)	1,2-Dichlorobenzene	20.40	146	232771	17.0259 ug/L	84
97)	1,2-Dibromo-3-Chloropropan	21.60	75	17539	20.4040 ug/L	75
98)	1,2,4-Trichlorobenzene	22.97	180	186486	21.1377 ug/L	99
99)	Hexachlorobutadiene	23.17	225	101558	26.3753 ug/L	98
100)	Naphthalene	23.44	128	259654	20.2354 ug/L	99
101)	1,2,3-Trichlorobenzene	23.85	180	157440	21.1220 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M131113.D 8260WT.M Mon Feb 16 13:44:59 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021615\6M131113.D Vial: 8
Acq On : 16 Feb 2015 13:20 Operator: TMB
Sample : L15020678-07 B MSD 826-LOW Inst : HPMS6
Misc : 1,1 STD68892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 16 13:44 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

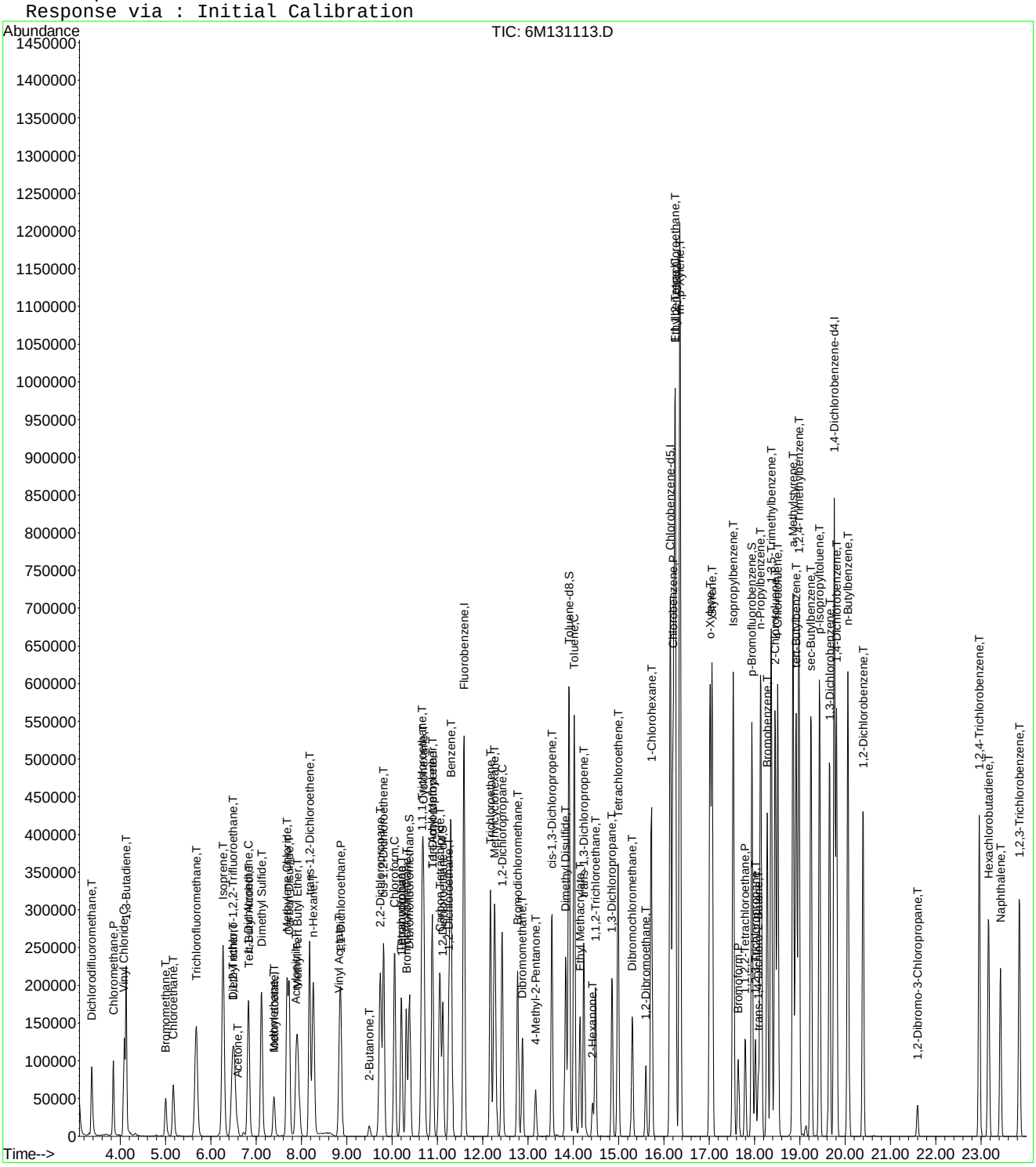

6M131113.D 8260WT.M Mon Feb 16 13:44:59 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131121.D Vial: 16
Acq On : 16 Feb 2015 17:28 Operator: TMB
Sample : L15020678-08 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 09:11:41 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	560660	25.00 ug/L	0.01
57) Chlorobenzene-d5	16.14	117	440819	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	240432	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	138051	24.3790 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.52%		
43) 1,2-Dichloroethane-d4	11.12	65	167799	24.8661 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.48%		
58) Toluene-d8	13.91	98	484995	24.1097 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.44%		
80) p-Bromofluorobenzene	17.94	95	208265	25.7616 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.04%		

Target Compounds					Qvalue
25) Diisopropyl ether	8.63	45	4154	0.1985 ug/L #	59
26) Vinyl Acetate	8.63	43	2999	0.8220 ug/L #	77
60) Ethyl Methacrylate	13.92	69	918	0.6721 ug/L #	32

(#) = qualifier out of range (m) = manual integration
6M131121.D 8260WT.M Tue Feb 17 09:11:42 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131121.D Vial: 16
Acq On : 16 Feb 2015 17:28 Operator: TMB
Sample : L15020678-08 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 9:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

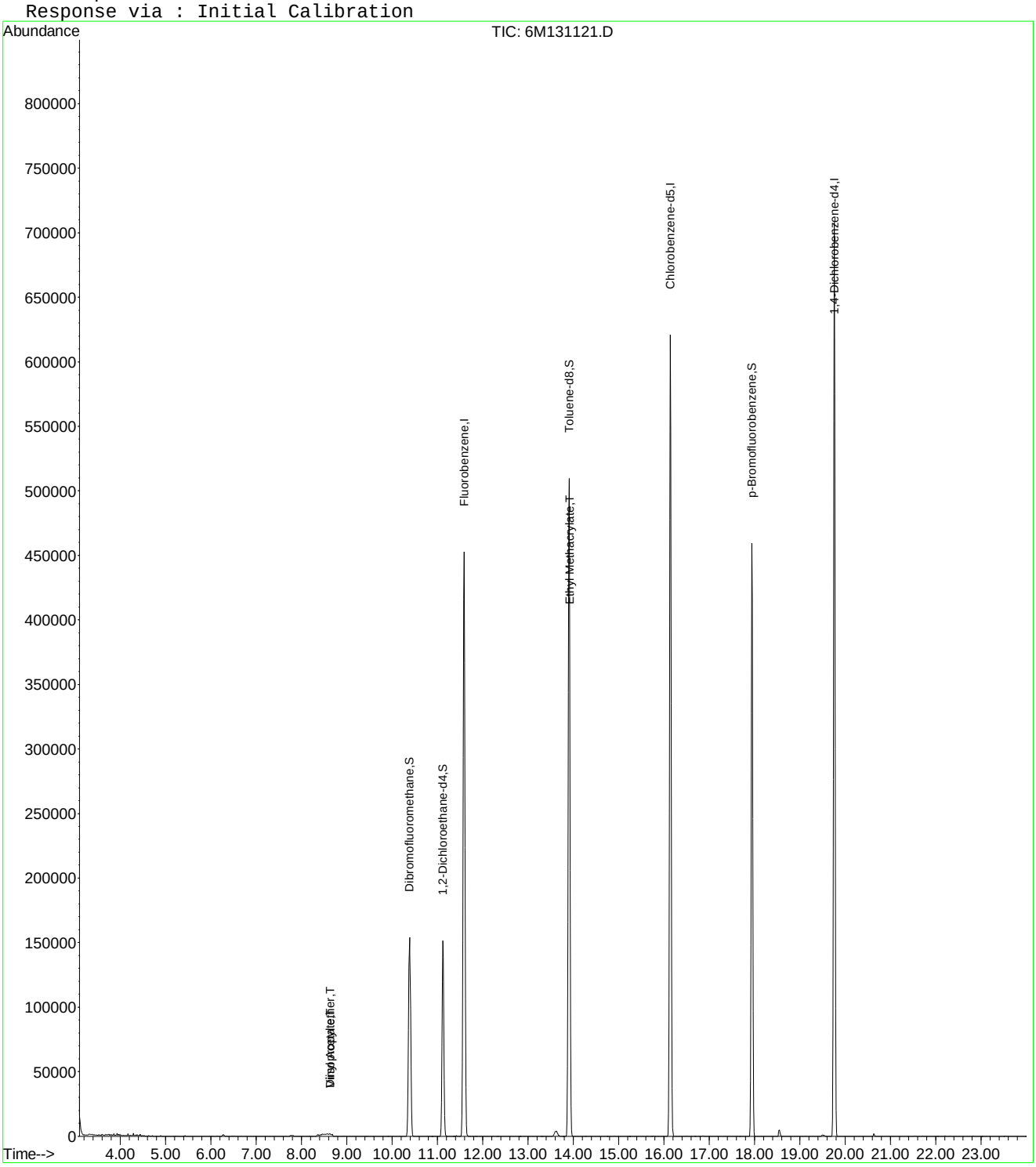

6M131121.D 8260WT.M Tue Feb 17 09:11:42 2015 Page 2

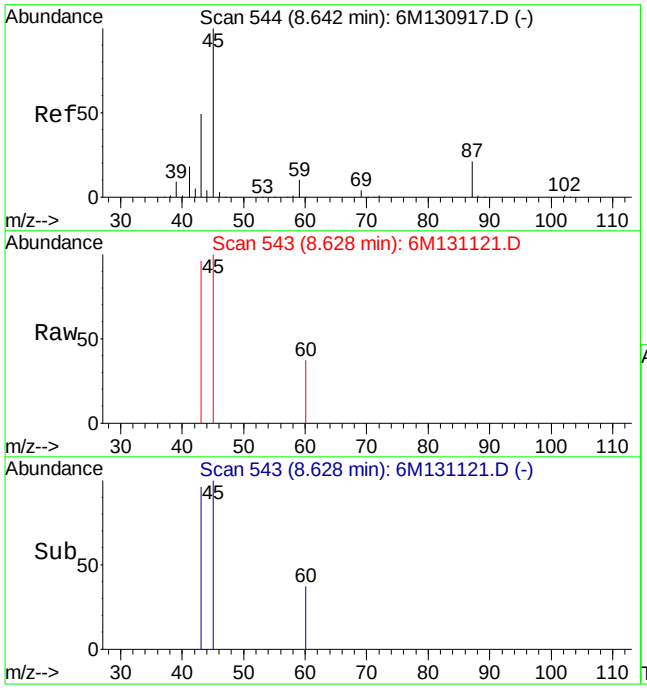

#25
Diisopropyl ether
Concen: 0.20 ug/L
RT: 8.63 min Scan# 543
Delta R.T. -0.01 min
Lab File: 6M131121.D
Acq: 16 Feb 2015 17:28

Tgt Ion: 45 Resp: 4154

Ion	Ratio	Lower	Upper
45	100		
43	72.2	28.1	65.5#
87	0.0	13.9	32.3#

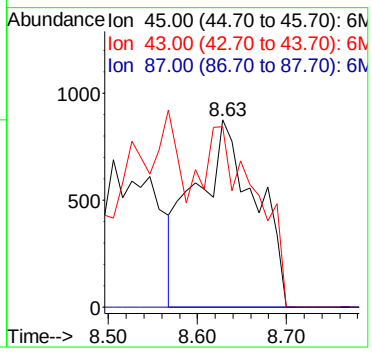

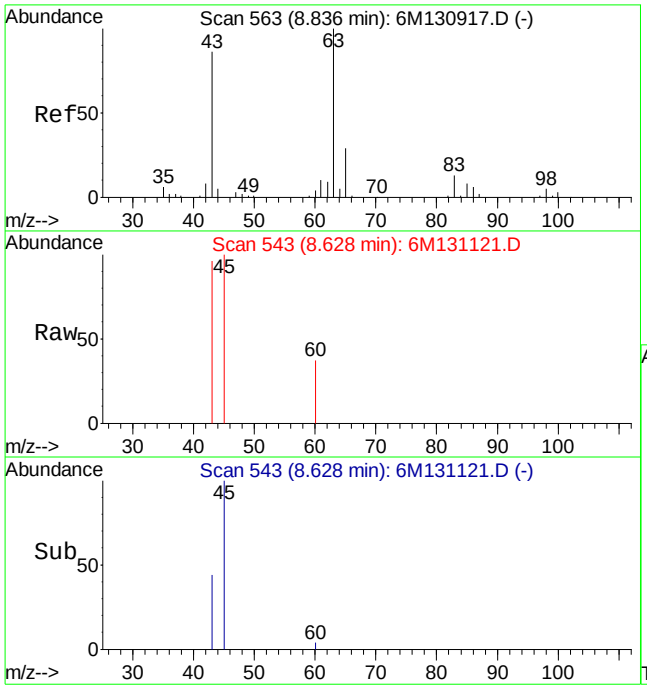

#26
Vinyl Acetate
Concen: 0.82 ug/L
RT: 8.63 min Scan# 543
Delta R.T. -0.20 min
Lab File: 6M131121.D
Acq: 16 Feb 2015 17:28

Tgt Ion: 43 Resp: 2999

Ion	Ratio	Lower	Upper
43	100		
86	0.0	5.0	11.6#

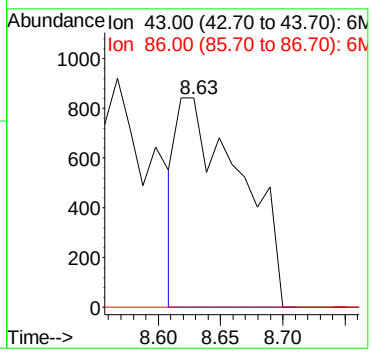

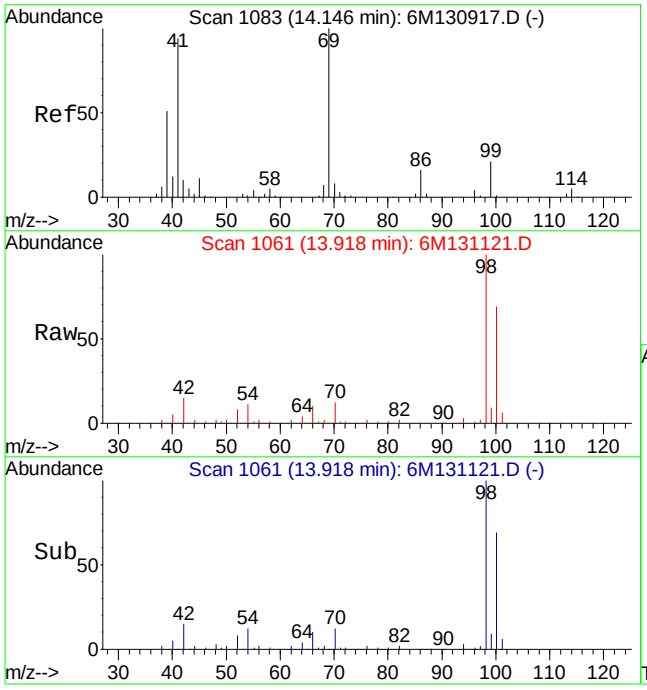

#60
Ethyl Methacrylate
Concen: 0.67 ug/L
RT: 13.92 min Scan# 1061
Delta R.T. -0.22 min
Lab File: 6M131121.D
Acq: 16 Feb 2015 17:28

Tgt Ion: 69 Resp: 918

Ion	Ratio	Lower	Upper
69	100		
41	136.1	46.5	108.5#

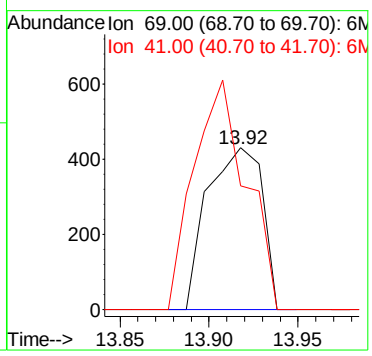

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131122.D Vial: 17
Acq On : 16 Feb 2015 17:59 Operator: TMB
Sample : L15020678-09 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 09:11:42 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	548690	25.00 ug/L	0.01
57) Chlorobenzene-d5	16.14	117	431469	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	230886	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	137386	24.7908 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.16%		
43) 1,2-Dichloroethane-d4	11.12	65	162121	24.5488 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.20%		
58) Toluene-d8	13.91	98	478891	24.3221 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.28%		
80) p-Bromofluorobenzene	17.94	95	206074	26.5445 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.16%		

Target Compounds					Qvalue
14) 1,1-Dichloroethene	6.83	61	35538	3.5929 ug/L	85
15) Tert-Butyl Alcohol	6.85	59	709	4.0376 ug/L #	62
27) 1,1-Dichloroethane	8.86	63	6483	0.5923 ug/L	93
60) Ethyl Methacrylate	13.92	69	789	0.6469 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M131122.D 8260WT.M Tue Feb 17 09:11:43 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131122.D Vial: 17
Acq On : 16 Feb 2015 17:59 Operator: TMB
Sample : L15020678-09 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 9:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

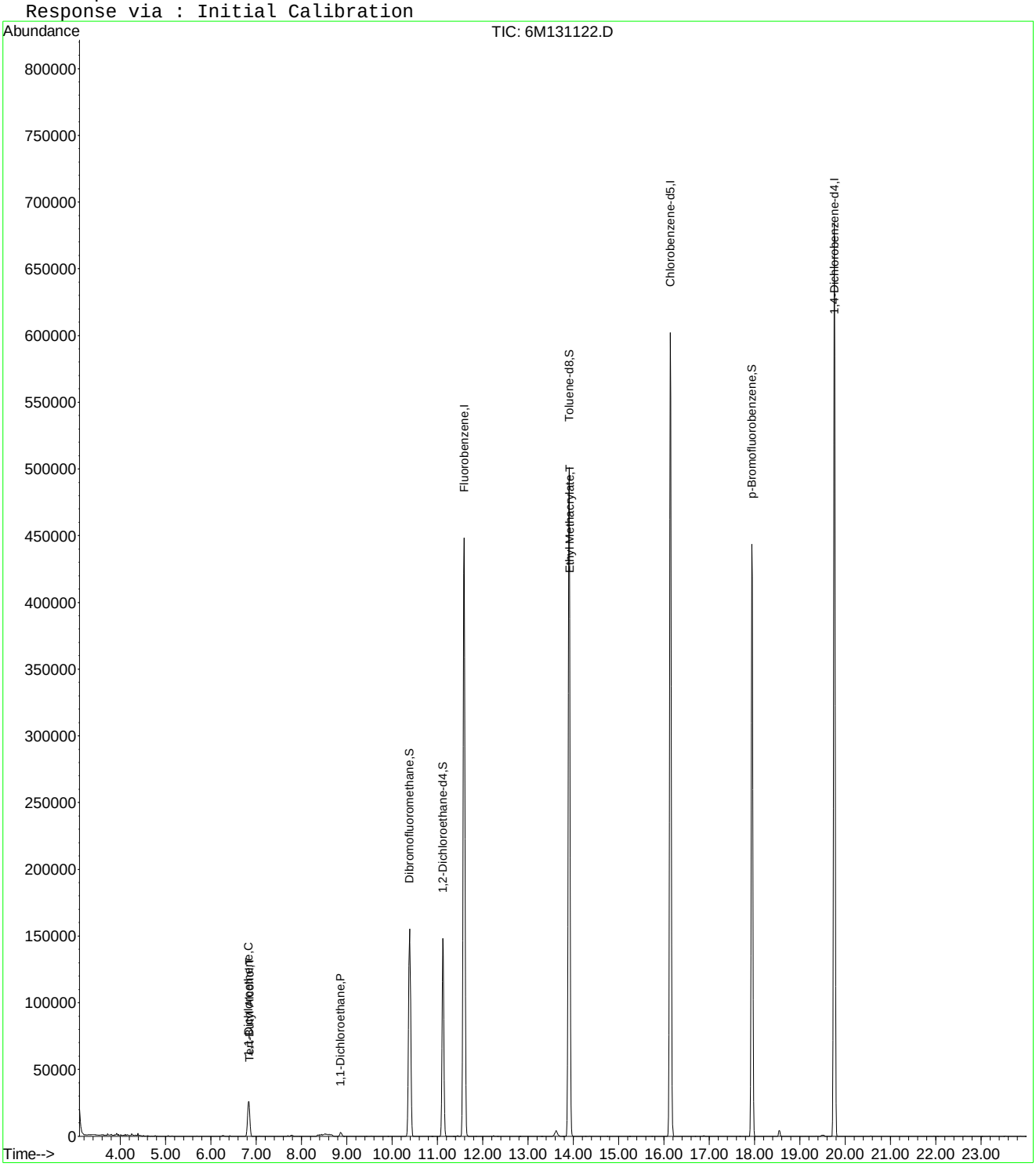

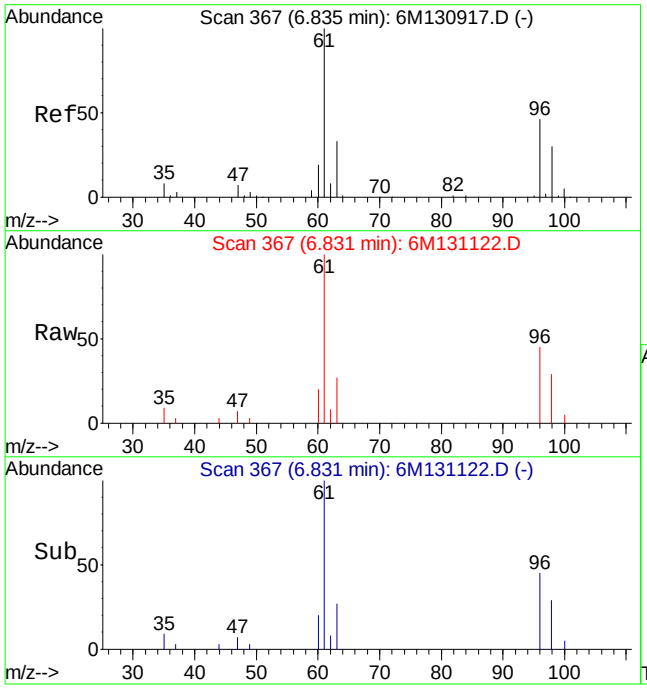

#14
1,1-Dichloroethene
Concen: 3.59 ug/L
RT: 6.83 min Scan# 367
Delta R.T. 0.00 min
Lab File: 6M131122.D
Acq: 16 Feb 2015 17:59

Tgt Ion: 61 Resp: 35538

Ion	Ratio	Lower	Upper
61	100		
96	45.9	34.1	79.7

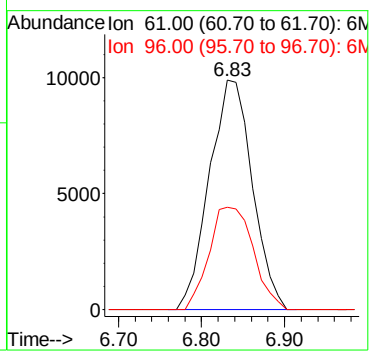

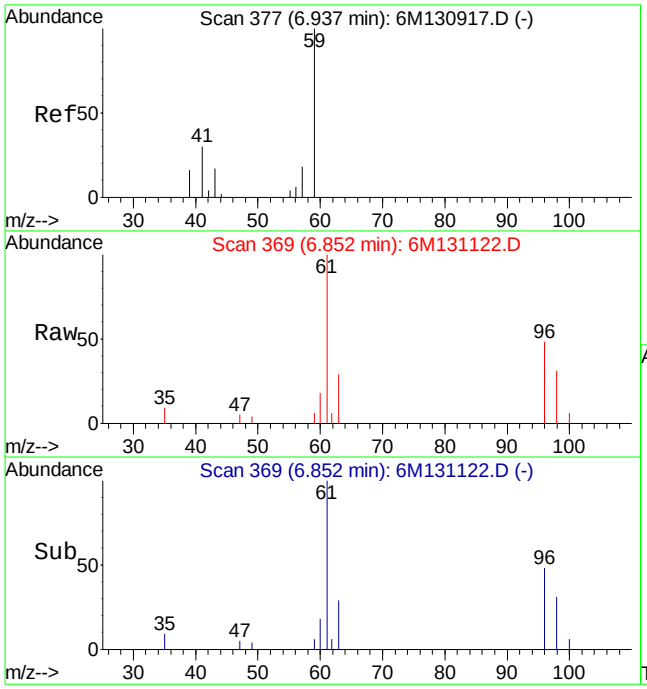

#15
Tert-Butyl Alcohol
Concen: 4.04 ug/L
RT: 6.85 min Scan# 369
Delta R.T. -0.09 min
Lab File: 6M131122.D
Acq: 16 Feb 2015 17:59

Tgt Ion: 59 Resp: 709

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.3	28.7#
57	0.0	5.6	13.2#

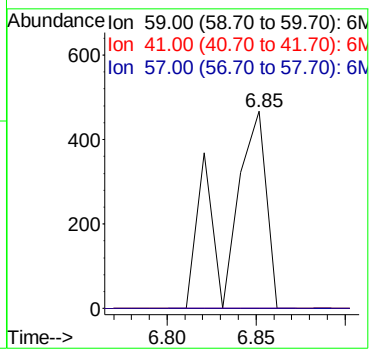

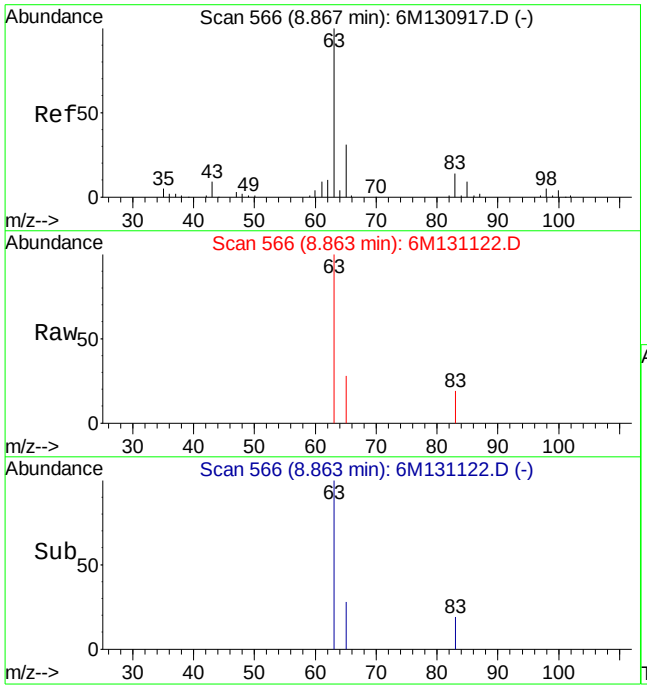

#27
1,1-Dichloroethane
Concen: 0.59 ug/L
RT: 8.86 min Scan# 566
Delta R.T. 0.00 min
Lab File: 6M131122.D
Acq: 16 Feb 2015 17:59

Tgt Ion: 63 Resp: 6483

Ion	Ratio	Lower	Upper
63	100		
65	26.7	18.5	43.1

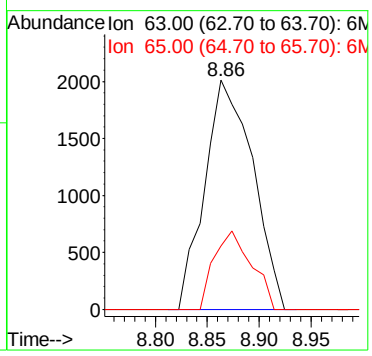

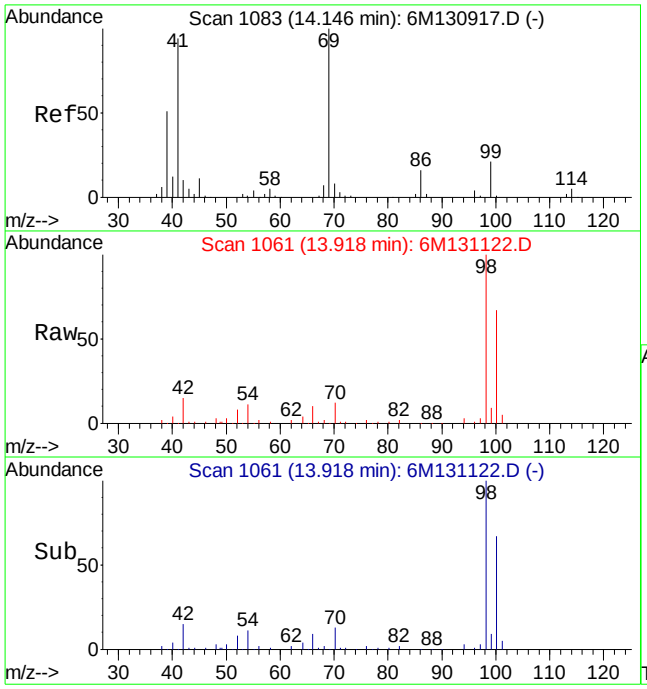

#60
Ethyl Methacrylate
Concen: 0.65 ug/L
RT: 13.92 min Scan# 1061
Delta R.T. -0.22 min
Lab File: 6M131122.D
Acq: 16 Feb 2015 17:59

Tgt Ion: 69 Resp: 789

Ion	Ratio	Lower	Upper
69	100		
41	168.1	46.5	108.5#

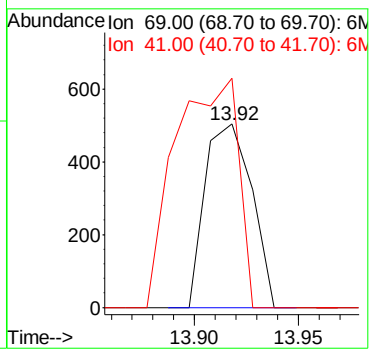

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131127.D Vial: 22
Acq On : 16 Feb 2015 20:34 Operator: TMB
Sample : L15020678-10 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 09:11:48 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	553144	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.15	117	430852	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	233502	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	138362	24.7659 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.08%		
43) 1,2-Dichloroethane-d4	11.12	65	167651	25.1817 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.72%		
58) Toluene-d8	13.90	98	478775	24.3511 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.40%		
80) p-Bromofluorobenzene	17.94	95	206007	26.2386 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.96%		

Target Compounds					Qvalue
4) Vinyl Chloride	4.09	62	15838	2.3828 ug/L	97
14) 1,1-Dichloroethene	6.83	61	5505571	552.1315 ug/L	90
15) Tert-Butyl Alcohol	6.96	59	217	1.2258 ug/L #	62
26) Vinyl Acetate	8.59	43	504	0.1400 ug/L #	77
27) 1,1-Dichloroethane	8.87	63	261633	23.7126 ug/L	98
32) cis-1,2-Dichloroethene	9.82	96	9967	1.8152 ug/L	95
45) 1,2-Dichloroethane	11.26	62	242074	28.6543 ug/L #	76
46) Benzene	11.30	78	3045	0.1501 ug/L #	59
47) Trichloroethene	12.17	130	21528	4.0663 ug/L #	68
50) 1,4-Dioxane	12.76	88	1476	73.2914 ug/L	94
59) Toluene	14.02	91	6243	0.2873 ug/L	93
60) Ethyl Methacrylate	13.90	69	1115	0.7224 ug/L #	52
63) 1,1,2-Trichloroethane	14.48	97	4801	1.4359 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M131127.D 8260WT.M Tue Feb 17 09:11:48 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131127.D Vial: 22
Acq On : 16 Feb 2015 20:34 Operator: TMB
Sample : L15020678-10 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 9:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

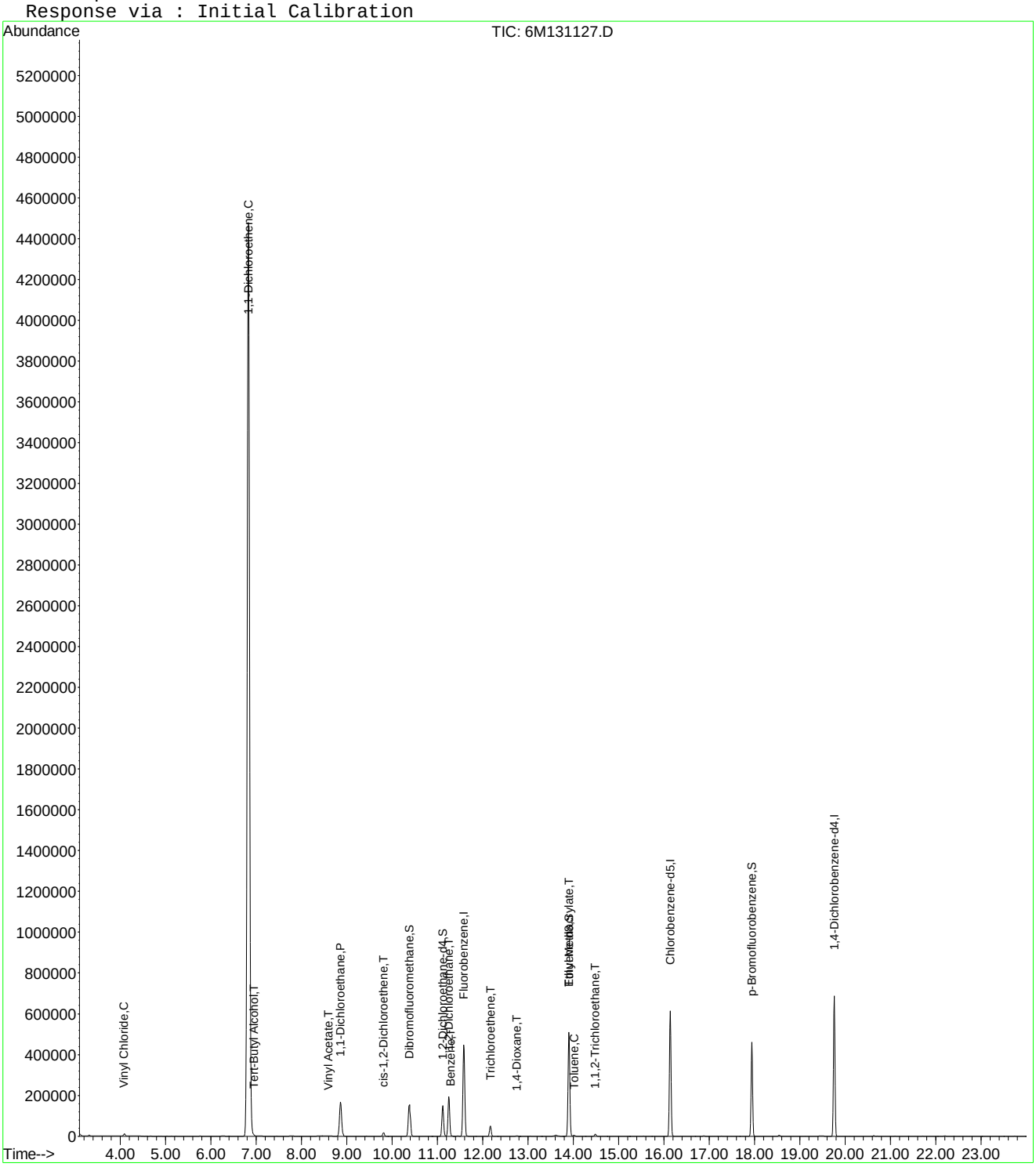

6M131127.D 8260WT.M Tue Feb 17 09:11:48 2015 Page 2

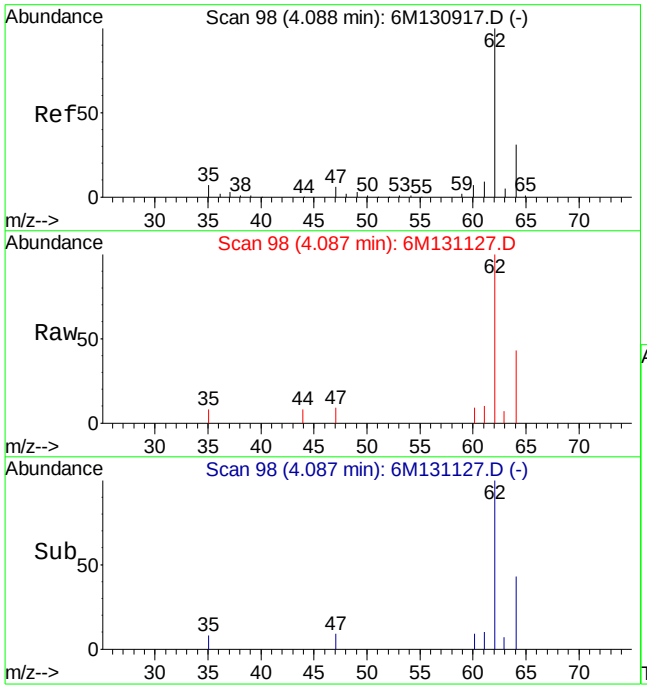

#4
Vinyl Chloride
Concen: 2.38 ug/L
RT: 4.09 min Scan# 98
Delta R.T. 0.00 min
Lab File: 6M131127.D
Acq: 16 Feb 2015 20:34

Tgt Ion: 62 Resp: 15838

Ion	Ratio	Lower	Upper
62	100		
64	33.6	19.3	45.1

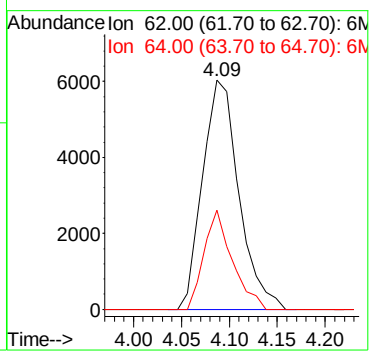

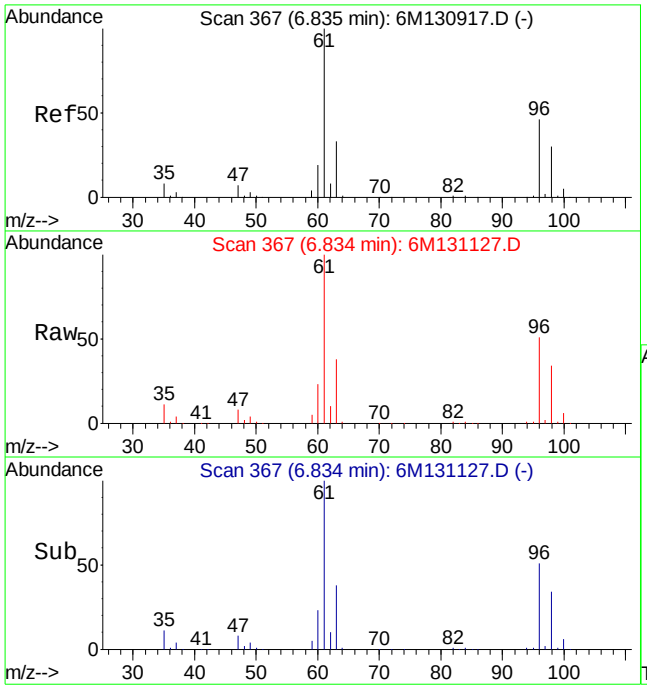

#14
1,1-Dichloroethene
Concen: 552.13 ug/L
RT: 6.83 min Scan# 367
Delta R.T. 0.00 min
Lab File: 6M131127.D
Acq: 16 Feb 2015 20:34

Tgt Ion: 61 Resp: 5505571

Ion	Ratio	Lower	Upper
61	100		
96	49.6	34.1	79.7

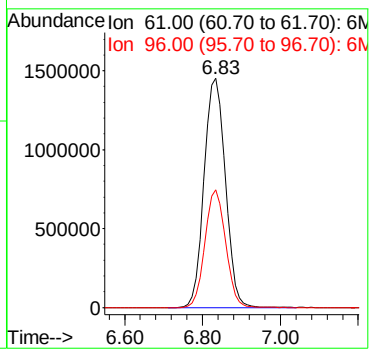

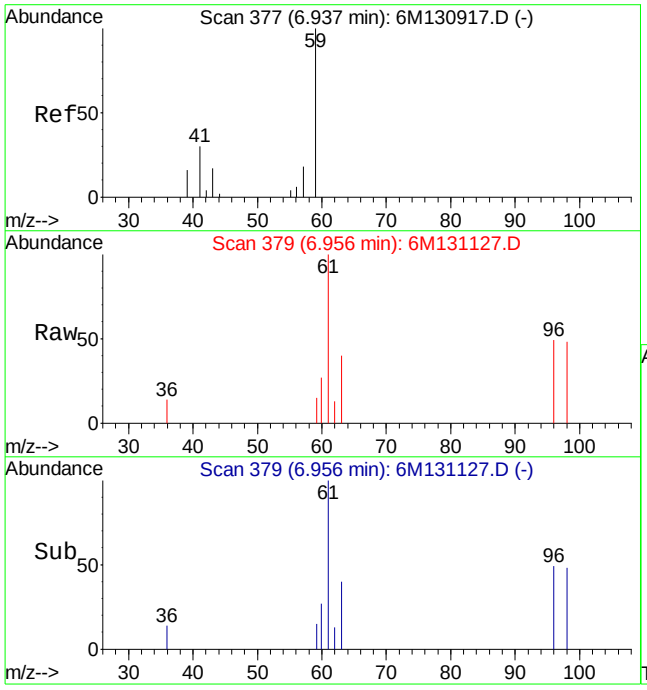

#15
Tert-Butyl Alcohol
Concen: 1.23 ug/L
RT: 6.96 min Scan# 379
Delta R.T. 0.01 min
Lab File: 6M131127.D
Acq: 16 Feb 2015 20:34

Tgt Ion: 59 Resp: 217

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.3	28.7#
57	0.0	5.6	13.2#

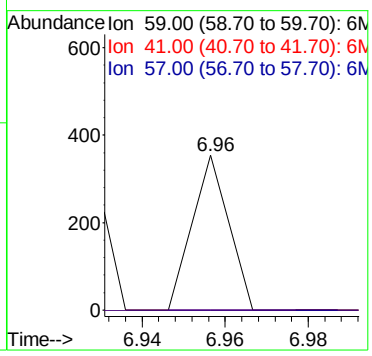

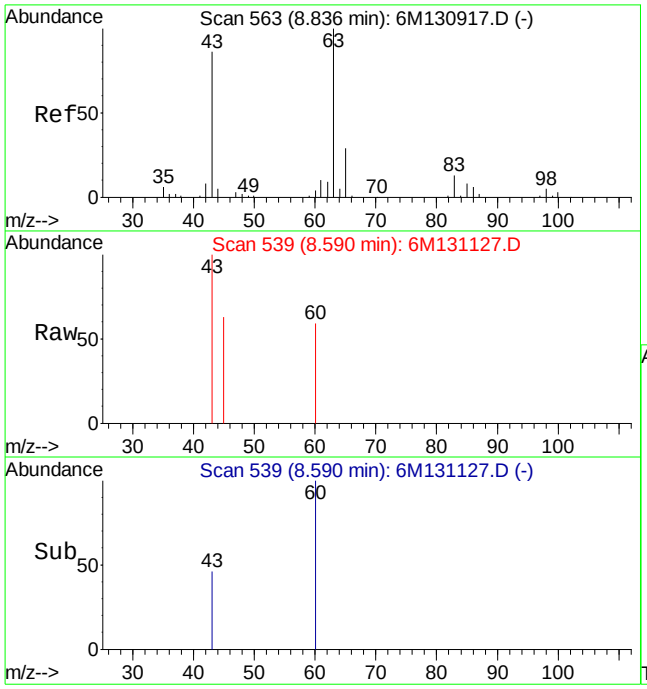

#26
Vinyl Acetate
Concen: 0.14 ug/L
RT: 8.59 min Scan# 539
Delta R.T. -0.24 min
Lab File: 6M131127.D
Acq: 16 Feb 2015 20:34

Tgt Ion: 43 Resp: 504

Ion	Ratio	Lower	Upper
43	100		
86	0.0	5.0	11.6#

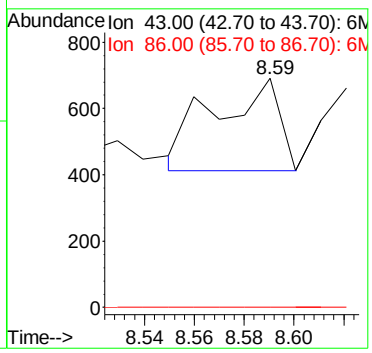

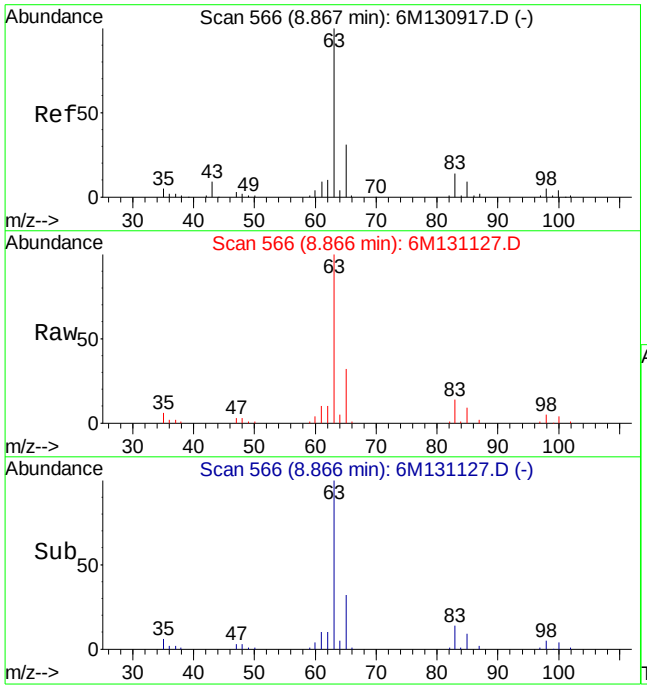

#27
1,1-Dichloroethane
Concen: 23.71 ug/L
RT: 8.87 min Scan# 566
Delta R.T. 0.00 min
Lab File: 6M131127.D
Acq: 16 Feb 2015 20:34

Tgt Ion: 63 Resp: 261633

Ion	Ratio	Lower	Upper
63	100		
65	32.0	18.5	43.1

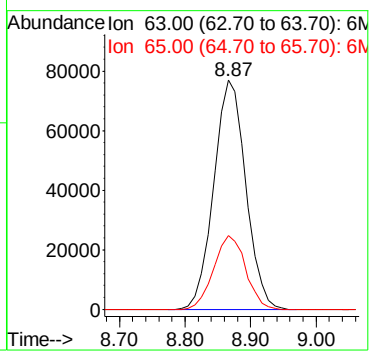

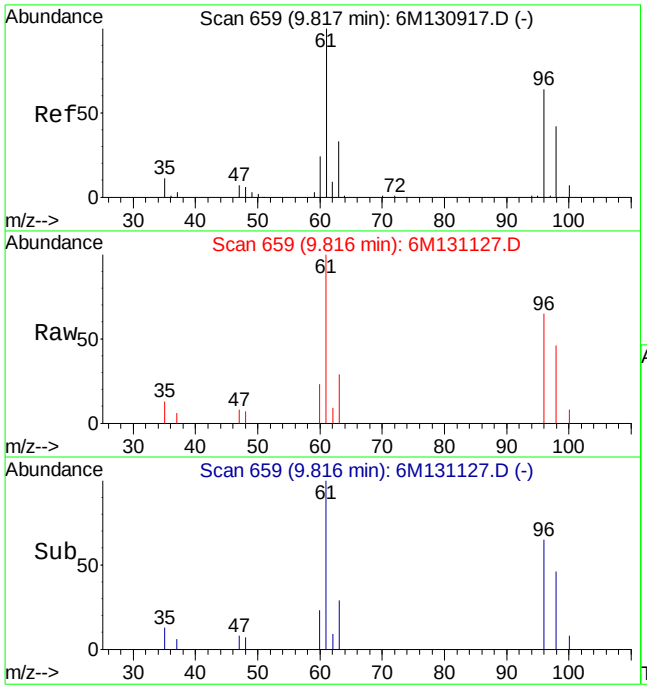

#32
cis-1,2-Dichloroethene
Concen: 1.82 ug/L
RT: 9.82 min Scan# 659
Delta R.T. 0.00 min
Lab File: 6M131127.D
Acq: 16 Feb 2015 20:34

Tgt Ion: 96 Resp: 9967

Ion	Ratio	Lower	Upper
96	100		
61	163.6	94.3	220.1

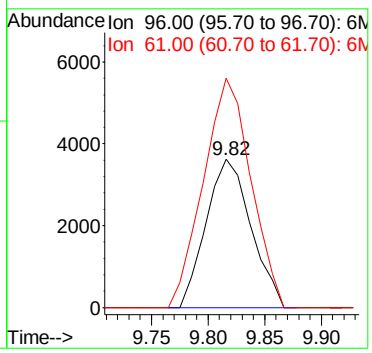

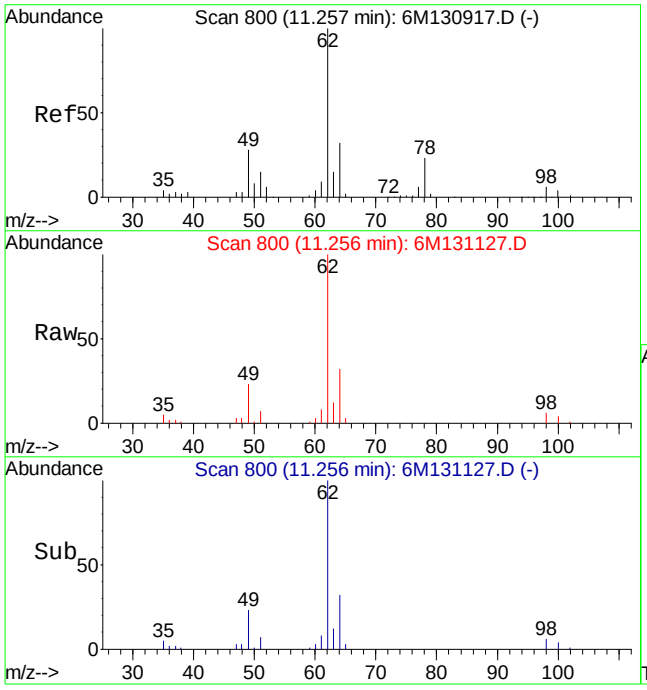

#45
1,2-Dichloroethane
Concen: 28.65 ug/L
RT: 11.26 min Scan# 800
Delta R.T. 0.00 min
Lab File: 6M131127.D
Acq: 16 Feb 2015 20:34

Tgt Ion: 62 Resp: 242074

Ion	Ratio	Lower	Upper
62	100		
49	22.7	23.7	55.3#
98	5.8	4.9	11.5

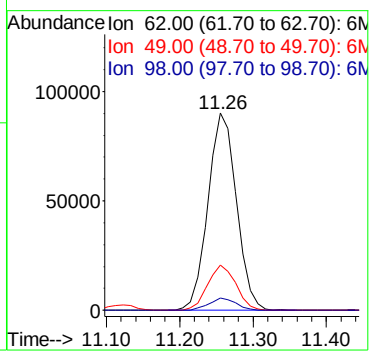

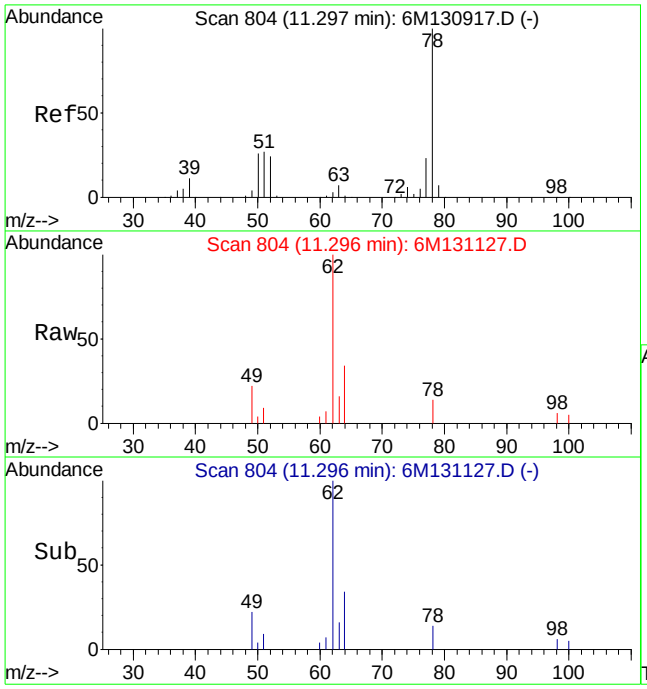

#46
Benzene
Concen: 0.15 ug/L
RT: 11.30 min Scan# 804
Delta R.T. -0.01 min
Lab File: 6M131127.D
Acq: 16 Feb 2015 20:34

Tgt Ion: 78 Resp: 3045

Ion	Ratio	Lower	Upper
78	100		
52	0.0	10.7	25.1#

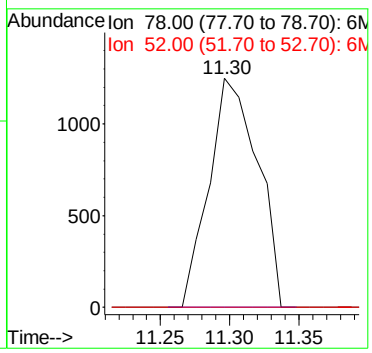

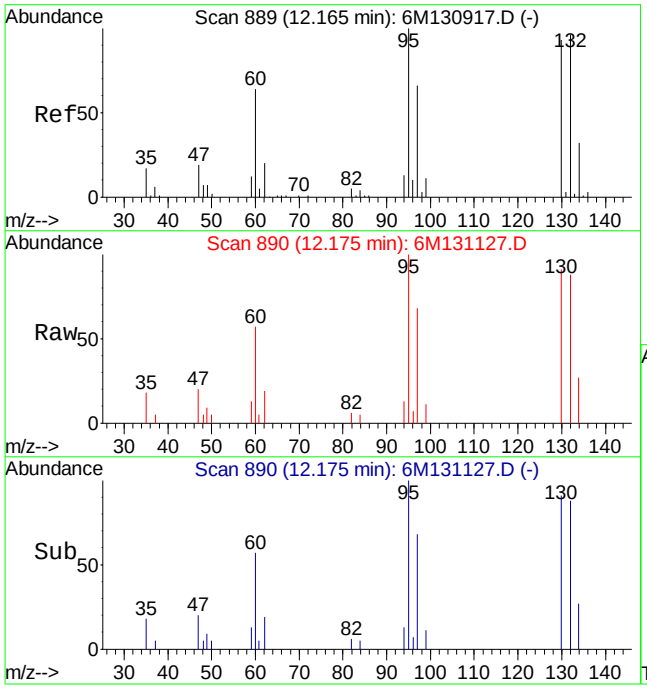

#47
Trichloroethene
Concen: 4.07 ug/L
RT: 12.17 min Scan# 890
Delta R.T. 0.00 min
Lab File: 6M131127.D
Acq: 16 Feb 2015 20:34

Tgt Ion:130 Resp: 21528

Ion	Ratio	Lower	Upper
130	100		
60	69.1	28.6	66.6#

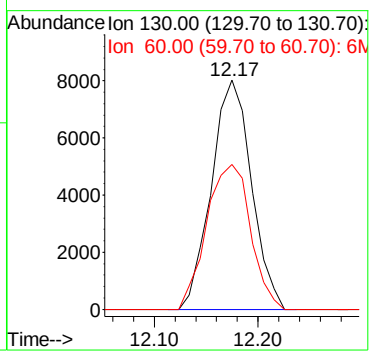

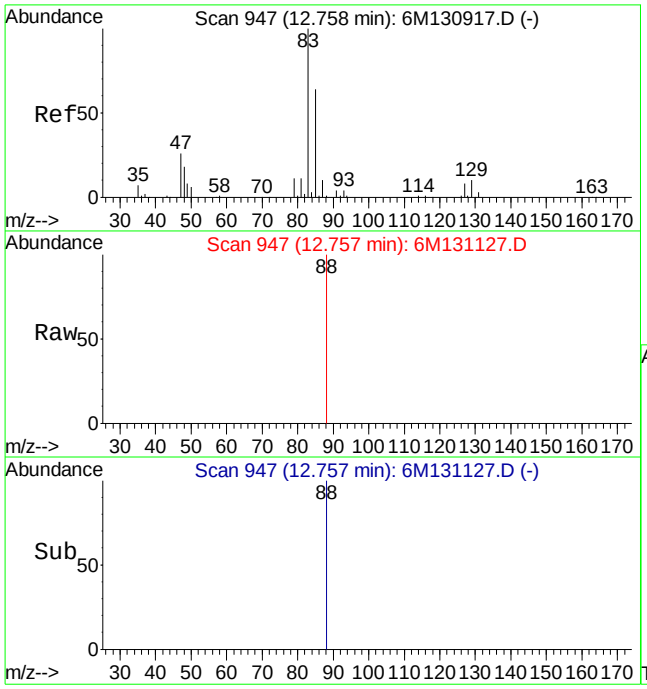

#50
1,4-Dioxane
Concen: 73.29 ug/L
RT: 12.76 min Scan# 947
Delta R.T. -0.02 min
Lab File: 6M131127.D
Acq: 16 Feb 2015 20:34

Tgt Ion: 88 Resp: 1476

Ion	Ratio	Lower	Upper
88	100		
58	47.4	31.1	72.5

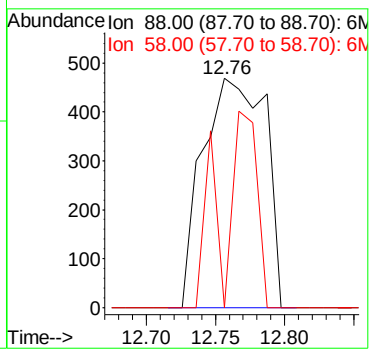

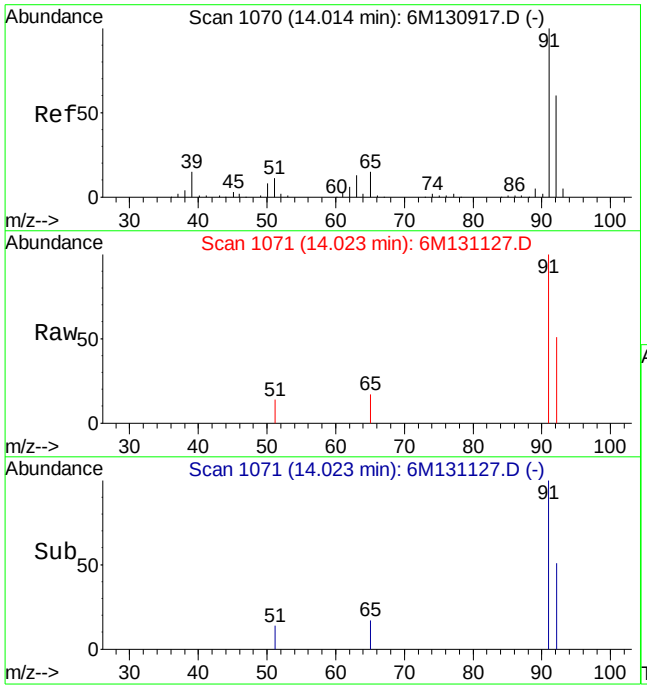

#59
Toluene
Concen: 0.29 ug/L
RT: 14.02 min Scan# 1071
Delta R.T. 0.00 min
Lab File: 6M131127.D
Acq: 16 Feb 2015 20:34

Tgt Ion: 91 Resp: 6243

Ion	Ratio	Lower	Upper
91	100		
92	65.3	35.9	83.9

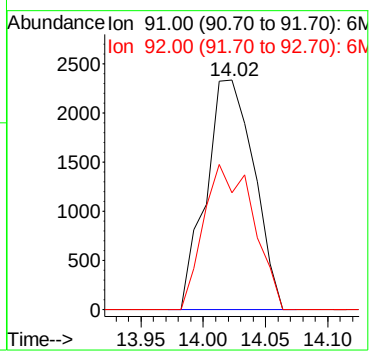

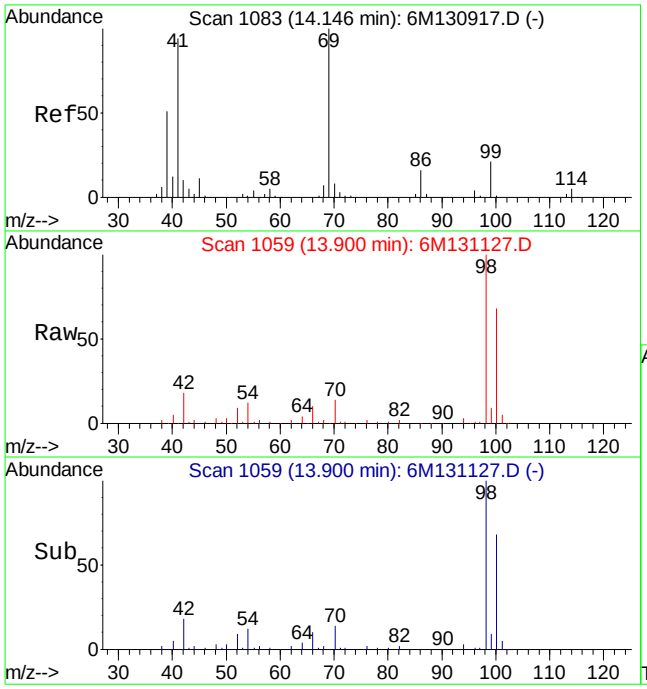

#60
Ethyl Methacrylate
Concen: 0.72 ug/L
RT: 13.90 min Scan# 1059
Delta R.T. -0.24 min
Lab File: 6M131127.D
Acq: 16 Feb 2015 20:34

Tgt Ion: 69 Resp: 1115

Ion	Ratio	Lower	Upper
69	100		
41	118.8	46.5	108.5#

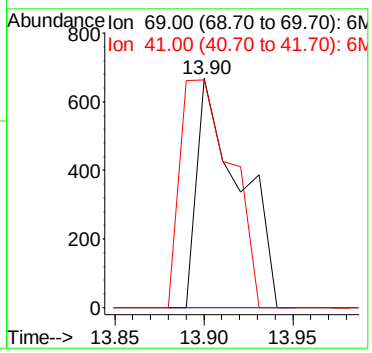

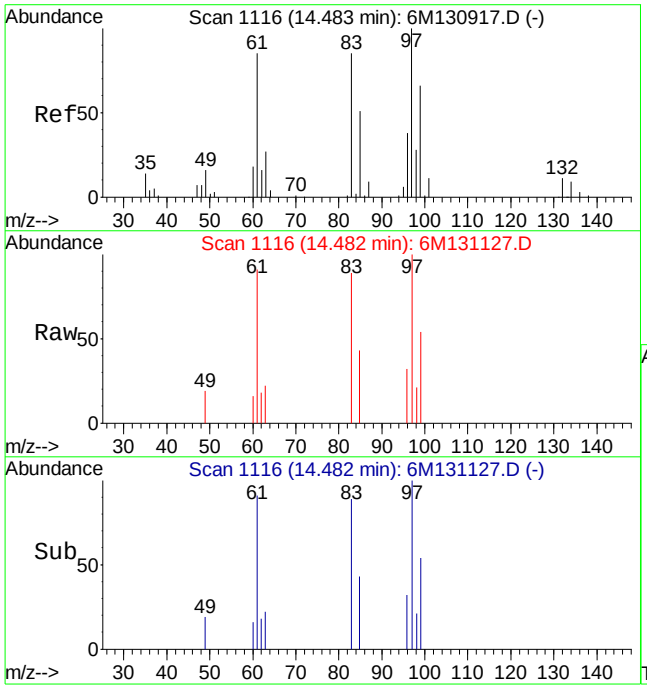

#63
1,1,2-Trichloroethane
Concen: 1.44 ug/L
RT: 14.48 min Scan# 1116
Delta R.T. -0.01 min
Lab File: 6M131127.D
Acq: 16 Feb 2015 20:34

Tgt Ion: 97 Resp: 4801

Ion	Ratio	Lower	Upper
97	100		
83	72.7	50.9	118.7
99	53.4	37.9	88.5

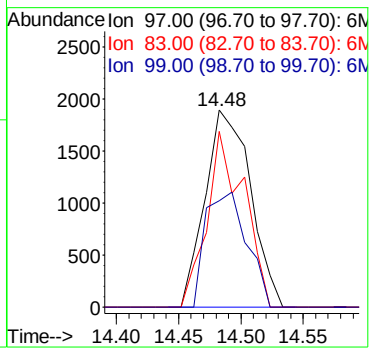

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021715\6M131149.D Vial: 12
Acq On : 17 Feb 2015 15:22 Operator: TMB
Sample : L15020678-10 B 10X 826-LOW D1 Inst : HPMS6
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 08:13:40 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	606336	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	448112	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	236397	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	147083	24.0173 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.08%		
43) 1,2-Dichloroethane-d4	11.12	65	177596	24.3353 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.36%		
58) Toluene-d8	13.91	98	511906	25.0333 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.12%		
80) p-Bromofluorobenzene	17.94	95	214269	26.9567 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.84%		

Target Compounds					Qvalue
4) Vinyl Chloride	4.09	62	1317	0.1808 ug/L #	42
14) 1,1-Dichloroethene	6.83	61	594896	54.4260 ug/L	89
15) Tert-Butyl Alcohol	6.83	59	25283	130.2915 ug/L #	62
27) 1,1-Dichloroethane	8.86	63	24647	2.0379 ug/L	94
32) cis-1,2-Dichloroethene	9.83	96	983	0.1633 ug/L	83
45) 1,2-Dichloroethane	11.26	62	25066	2.7068 ug/L #	76
47) Trichloroethene	12.17	130	2108	0.3632 ug/L	74
60) Ethyl Methacrylate	13.92	69	724	0.6257 ug/L #	14

(#) = qualifier out of range (m) = manual integration
6M131149.D 8260WT.M Thu Feb 19 08:13:40 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021715\6M131149.D Vial: 12
Acq On : 17 Feb 2015 15:22 Operator: TMB
Sample : L15020678-10 B 10X 826-LOW D1 Inst : HPMS6
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 8:13 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

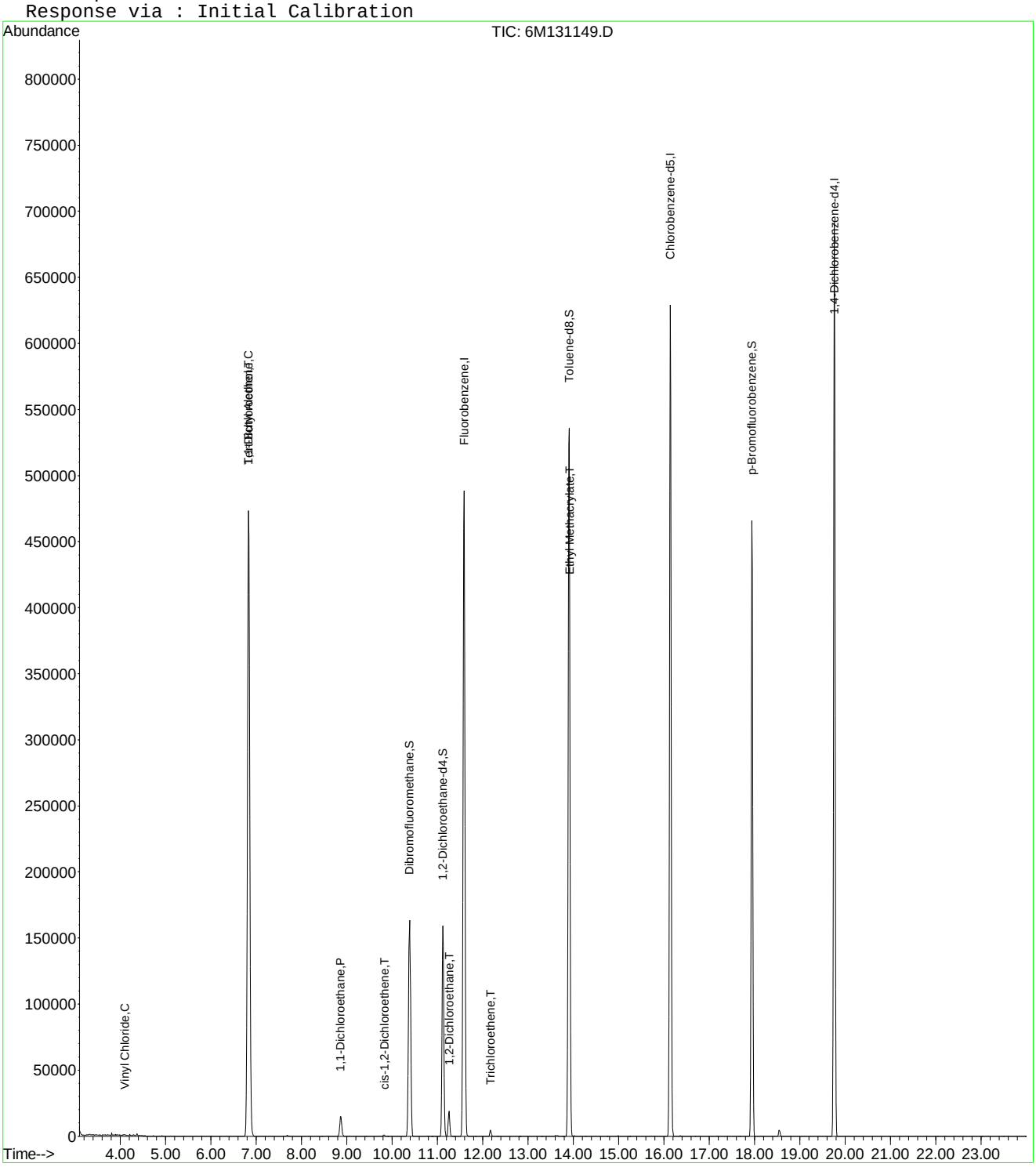

6M131149.D 8260WT.M Thu Feb 19 08:13:40 2015 Page 2

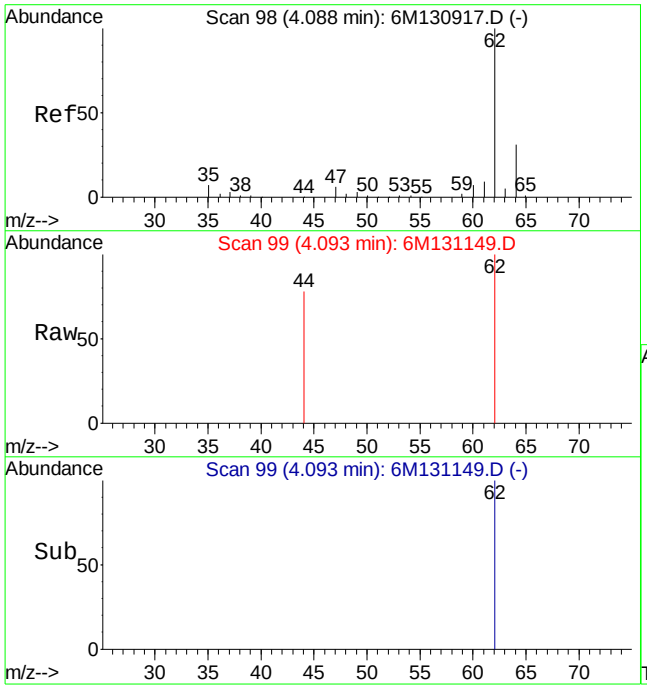

#4
Vinyl Chloride
Concen: 0.18 ug/L
RT: 4.09 min Scan# 99
Delta R.T. 0.01 min
Lab File: 6M131149.D
Acq: 17 Feb 2015 15:22

Tgt Ion: 62 Resp: 1317

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.3	45.1#

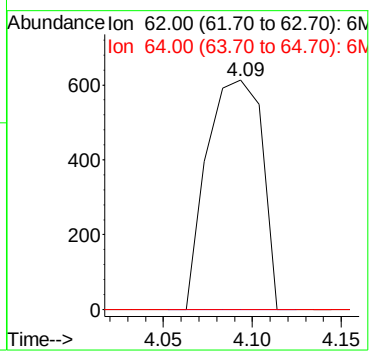

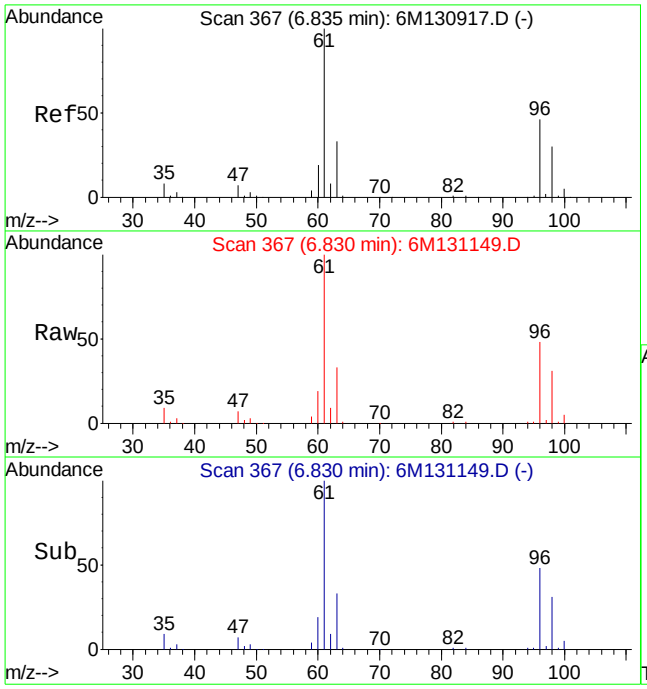

#14
1,1-Dichloroethene
Concen: 54.43 ug/L
RT: 6.83 min Scan# 367
Delta R.T. -0.00 min
Lab File: 6M131149.D
Acq: 17 Feb 2015 15:22

Tgt Ion: 61 Resp: 594896

Ion	Ratio	Lower	Upper
61	100		
96	48.8	34.1	79.7

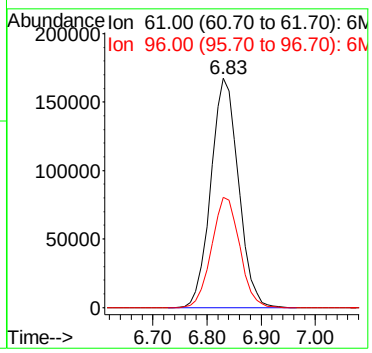

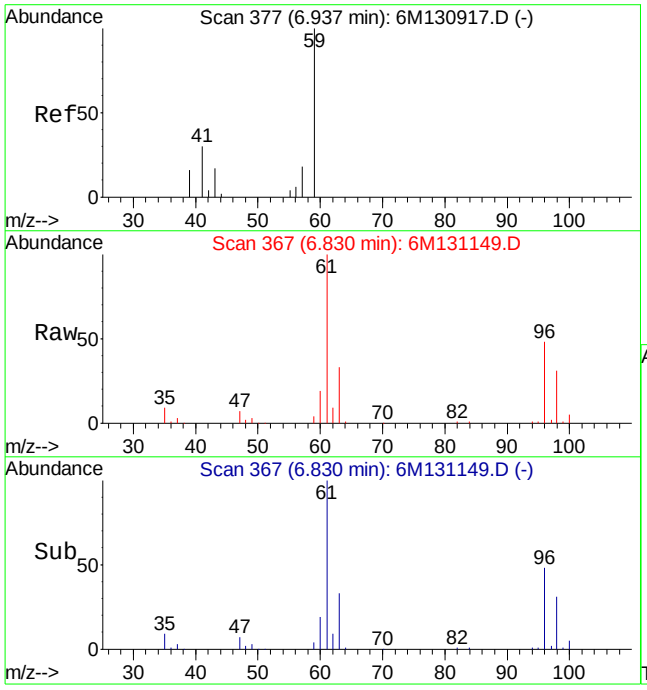

#15
Tert-Butyl Alcohol
Concen: 130.29 ug/L
RT: 6.83 min Scan# 367
Delta R.T. -0.11 min
Lab File: 6M131149.D
Acq: 17 Feb 2015 15:22

Tgt Ion: 59 Resp: 25283

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.3	28.7#
57	0.0	5.6	13.2#

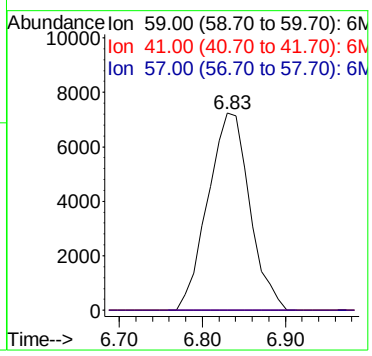

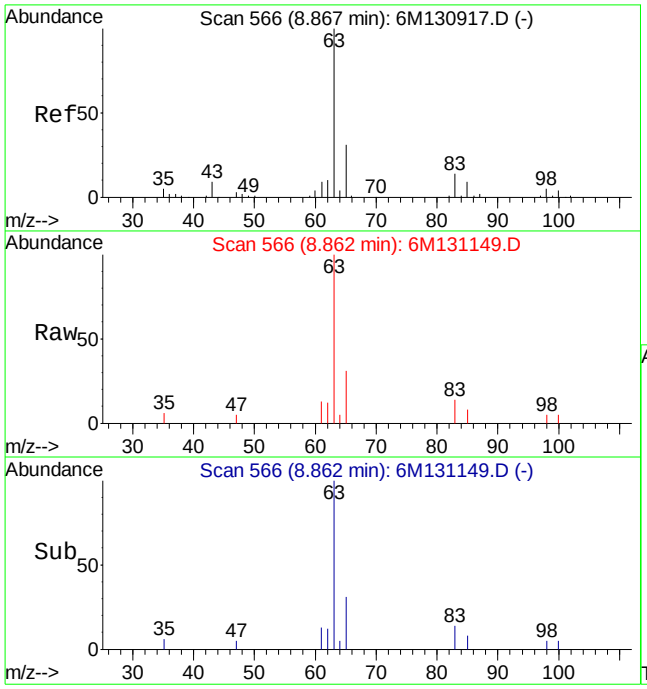

#27
1,1-Dichloroethane
Concen: 2.04 ug/L
RT: 8.86 min Scan# 566
Delta R.T. -0.00 min
Lab File: 6M131149.D
Acq: 17 Feb 2015 15:22

Tgt Ion: 63 Resp: 24647

Ion	Ratio	Lower	Upper
63	100		
65	34.3	18.5	43.1

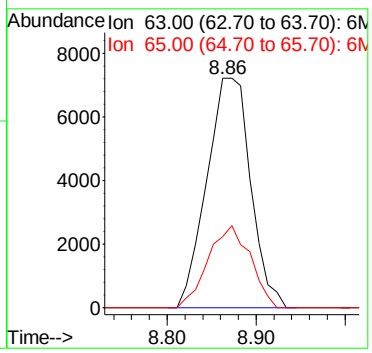

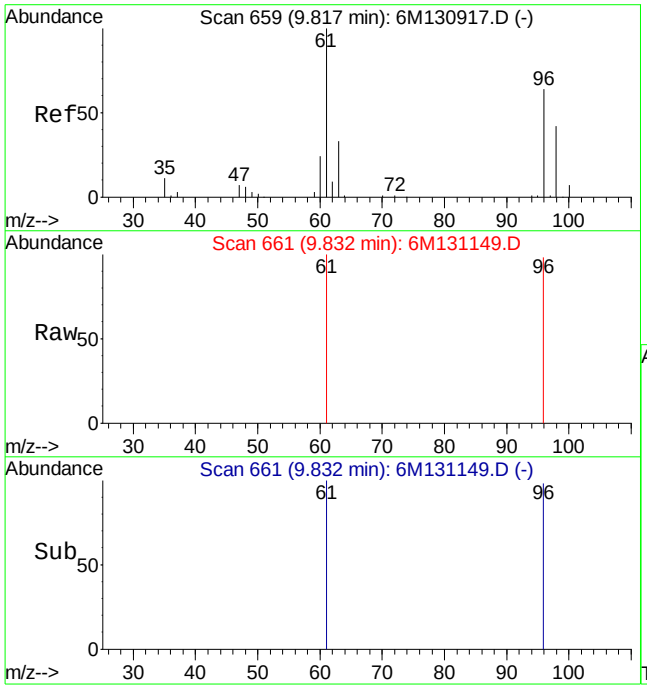

#32
cis-1,2-Dichloroethene
Concen: 0.16 ug/L
RT: 9.83 min Scan# 661
Delta R.T. 0.02 min
Lab File: 6M131149.D
Acq: 17 Feb 2015 15:22

Tgt Ion: 96 Resp: 983

Ion	Ratio	Lower	Upper
96	100		
61	134.9	94.3	220.1

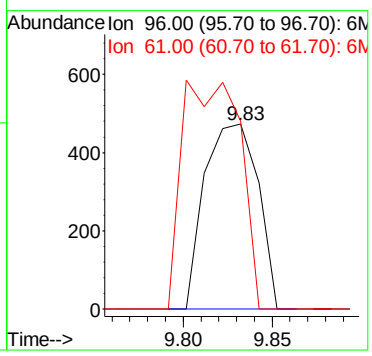

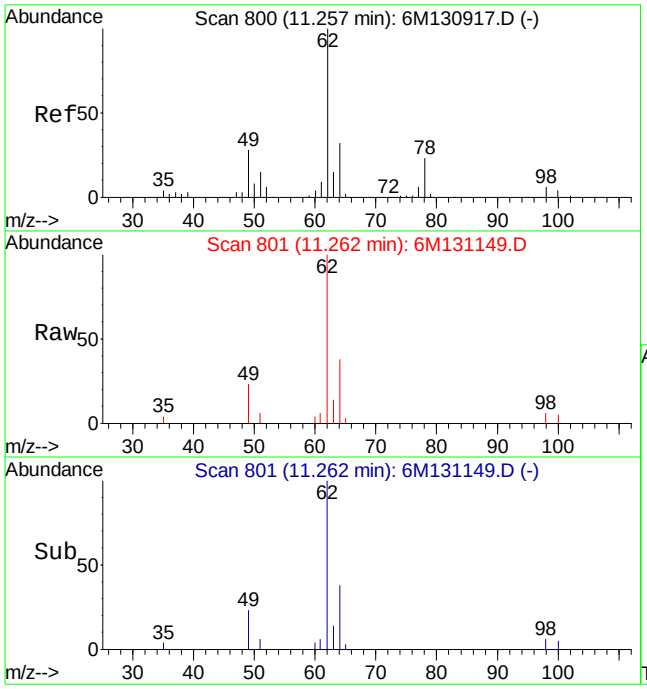

#45
1,2-Dichloroethane
Concen: 2.71 ug/L
RT: 11.26 min Scan# 801
Delta R.T. 0.01 min
Lab File: 6M131149.D
Acq: 17 Feb 2015 15:22

Tgt Ion: 62 Resp: 25066

Ion	Ratio	Lower	Upper
62	100		
49	23.0	23.7	55.3#
98	3.7	4.9	11.5#

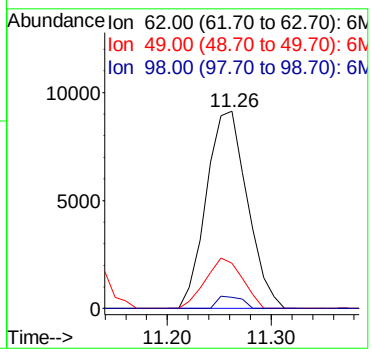

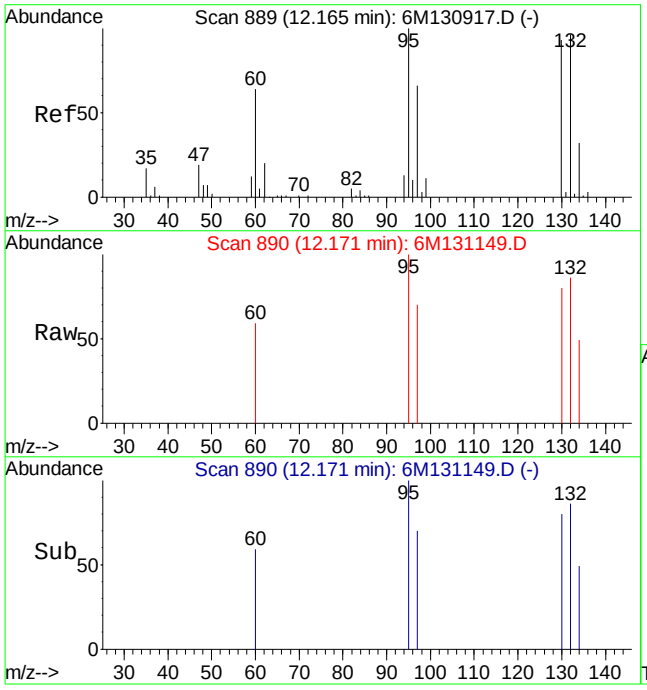

#47
Trichloroethene
Concen: 0.36 ug/L
RT: 12.17 min Scan# 890
Delta R.T. -0.00 min
Lab File: 6M131149.D
Acq: 17 Feb 2015 15:22

Tgt Ion:130 Resp: 2108

Ion	Ratio	Lower	Upper
130	100		
60	65.3	28.6	66.6

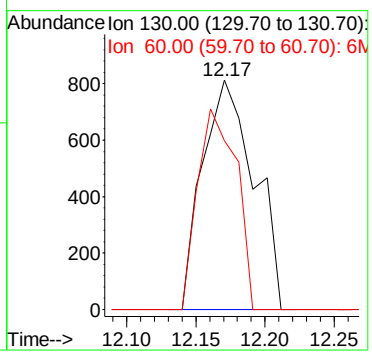

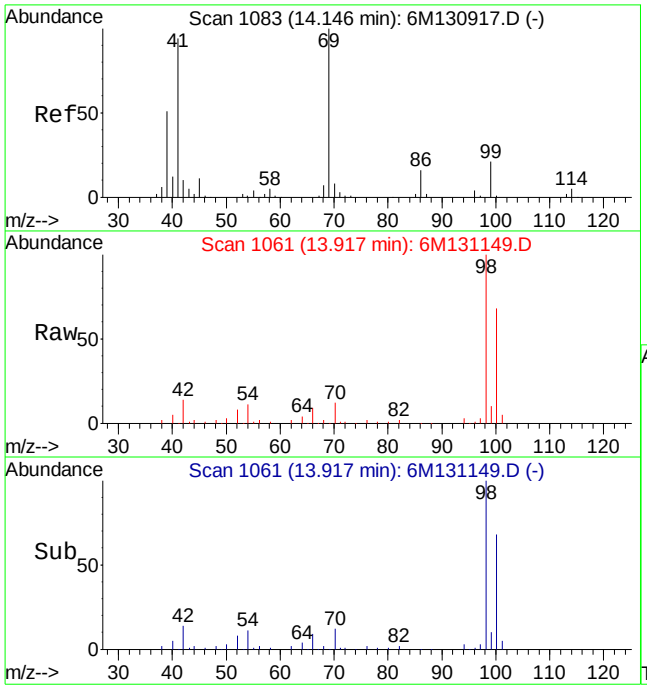

#60
Ethyl Methacrylate
Concen: 0.63 ug/L
RT: 13.92 min Scan# 1061
Delta R.T. -0.23 min
Lab File: 6M131149.D
Acq: 17 Feb 2015 15:22

Tgt Ion: 69 Resp: 724

Ion	Ratio	Lower	Upper
69	100		
41	151.7	46.5	108.5#

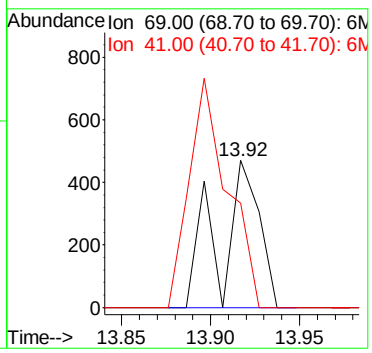

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131123.D Vial: 18
Acq On : 16 Feb 2015 18:31 Operator: TMB
Sample : L15020678-11 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 09:11:43 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	539935	25.00 ug/L	0.01
57) Chlorobenzene-d5	16.14	117	428715	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	229605	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	133709	24.5186 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.08%		
43) 1,2-Dichloroethane-d4	11.12	65	157005	24.1596 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.64%		
58) Toluene-d8	13.91	98	469028	23.9742 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.88%		
80) p-Bromofluorobenzene	17.94	95	199154	25.7963 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.20%		

Target Compounds					Qvalue
13) Acetone	6.58	43	185	0.2221 ug/L #	49
45) 1,2-Dichloroethane	11.25	62	8616	1.0448 ug/L #	70
60) Ethyl Methacrylate	13.90	69	883	0.6699 ug/L #	45

(#) = qualifier out of range (m) = manual integration
6M131123.D 8260WT.M Tue Feb 17 09:11:44 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131123.D Vial: 18
Acq On : 16 Feb 2015 18:31 Operator: TMB
Sample : L15020678-11 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 9:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

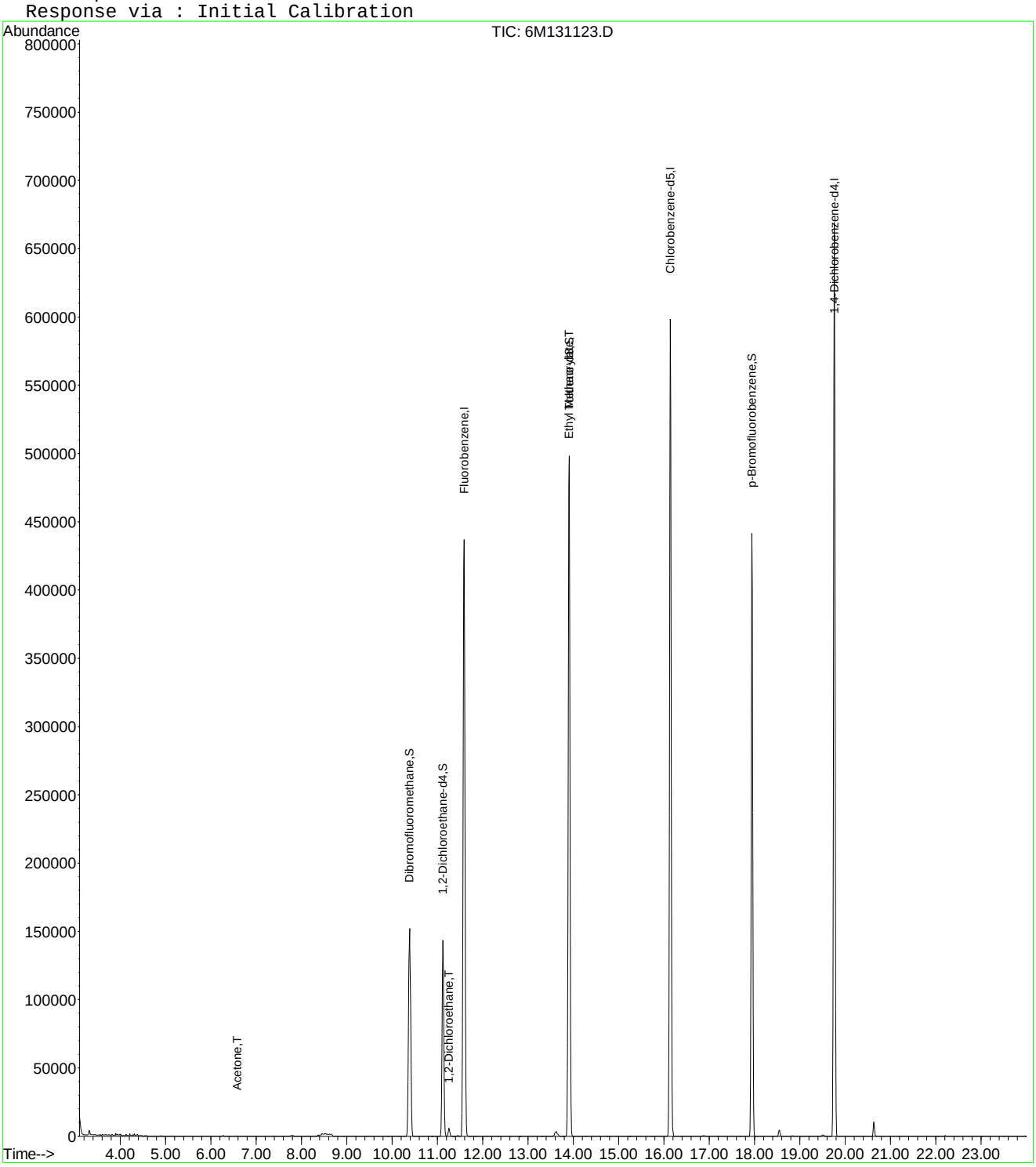

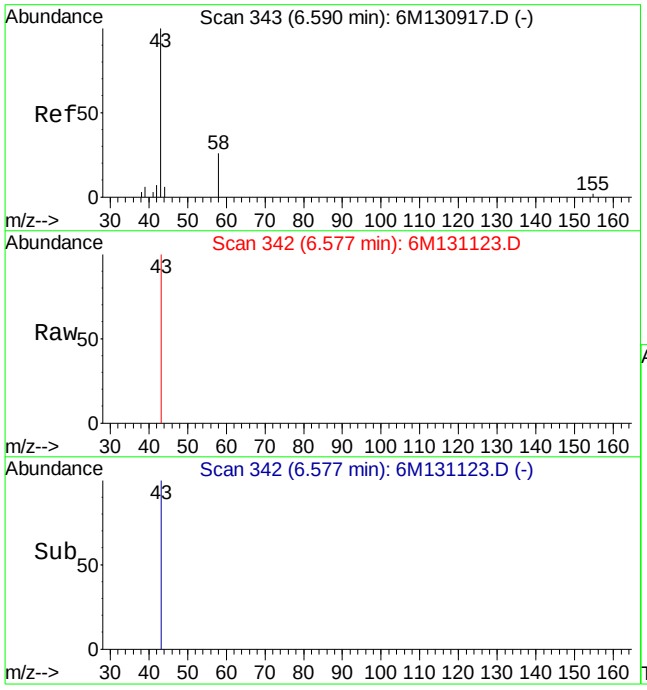

#13
Acetone
Concen: 0.22 ug/L
RT: 6.58 min Scan# 342
Delta R.T. -0.01 min
Lab File: 6M131123.D
Acq: 16 Feb 2015 18:31

Tgt Ion: 43 Resp: 185

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.7	36.5#

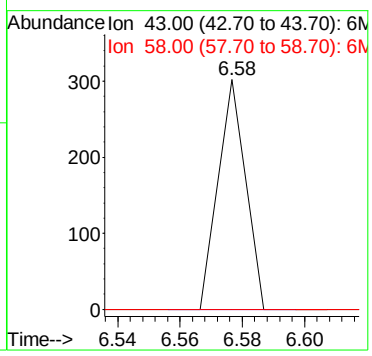

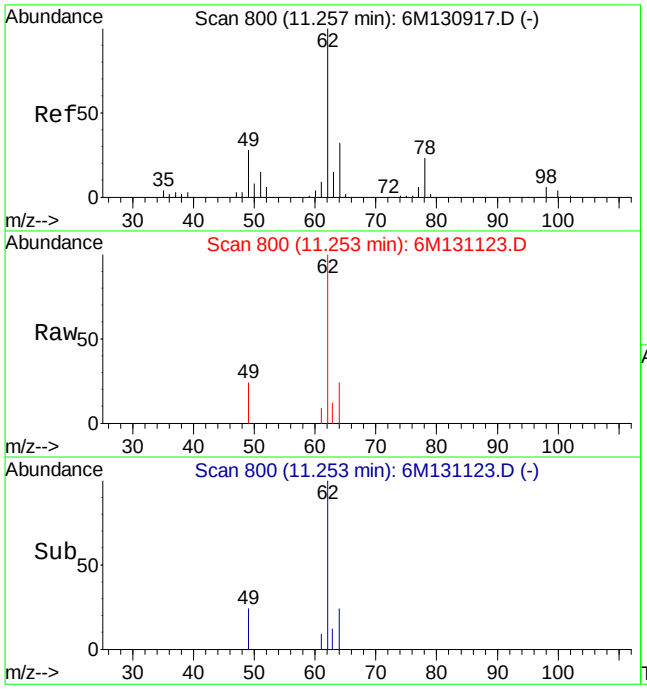

#45
1,2-Dichloroethane
Concen: 1.04 ug/L
RT: 11.25 min Scan# 800
Delta R.T. 0.00 min
Lab File: 6M131123.D
Acq: 16 Feb 2015 18:31

Tgt Ion: 62 Resp: 8616

Ion	Ratio	Lower	Upper
62	100		
49	20.5	23.7	55.3#
98	0.0	4.9	11.5#

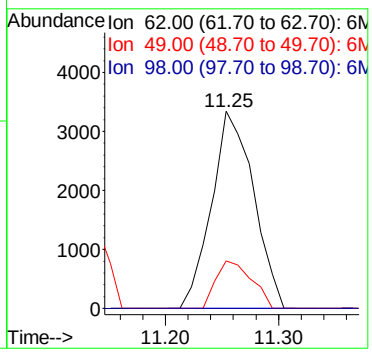

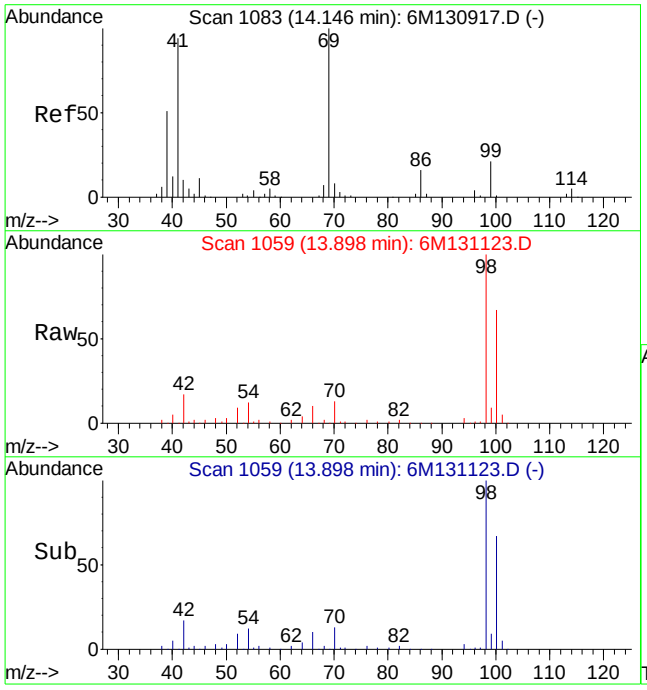

#60
Ethyl Methacrylate
Concen: 0.67 ug/L
RT: 13.90 min Scan# 1059
Delta R.T. -0.24 min
Lab File: 6M131123.D
Acq: 16 Feb 2015 18:31

Tgt Ion: 69 Resp: 883

Ion	Ratio	Lower	Upper
69	100		
41	125.1	46.5	108.5#

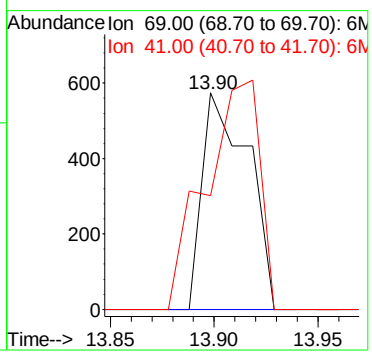

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131128.D Vial: 23
Acq On : 16 Feb 2015 21:05 Operator: TMB
Sample : L15020678-12 A 2.5X 826-LOW Inst : HPMS6
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 09:11:49 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	542730	25.00 ug/L	0.01
57) Chlorobenzene-d5	16.14	117	425836	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	228825	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	136264	24.8584 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.44%		
43) 1,2-Dichloroethane-d4	11.12	65	159041	24.3469 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.40%		
58) Toluene-d8	13.91	98	467780	24.0721 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.28%		
80) p-Bromofluorobenzene	17.94	95	201294	26.1623 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.64%		

Target Compounds					Qvalue
4) Vinyl Chloride	4.09	62	1703	0.2611 ug/L	89
14) 1,1-Dichloroethene	6.83	61	2038829	208.3893 ug/L	88
15) Tert-Butyl Alcohol	6.83	59	91713	528.0168 ug/L #	62
19) Methylene Chloride	7.68	84	768	0.1585 ug/L	96
27) 1,1-Dichloroethane	8.87	63	126029	11.6416 ug/L	96
32) cis-1,2-Dichloroethene	9.82	96	3439	0.6383 ug/L	85
33) Chloroform	10.06	83	5512	0.5261 ug/L	94
45) 1,2-Dichloroethane	11.26	62	86047	10.3808 ug/L	79
47) Trichloroethene	12.17	130	5458	1.0507 ug/L	79
50) 1,4-Dioxane	12.76	88	194	9.8180 ug/L #	26
60) Ethyl Methacrylate	13.91	69	866	0.6673 ug/L	84
63) 1,1,2-Trichloroethane	14.49	97	6438	1.9481 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M131128.D 8260WT.M Tue Feb 17 09:11:50 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131128.D Vial: 23
Acq On : 16 Feb 2015 21:05 Operator: TMB
Sample : L15020678-12 A 2.5X 826-LOW Inst : HPMS6
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 9:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

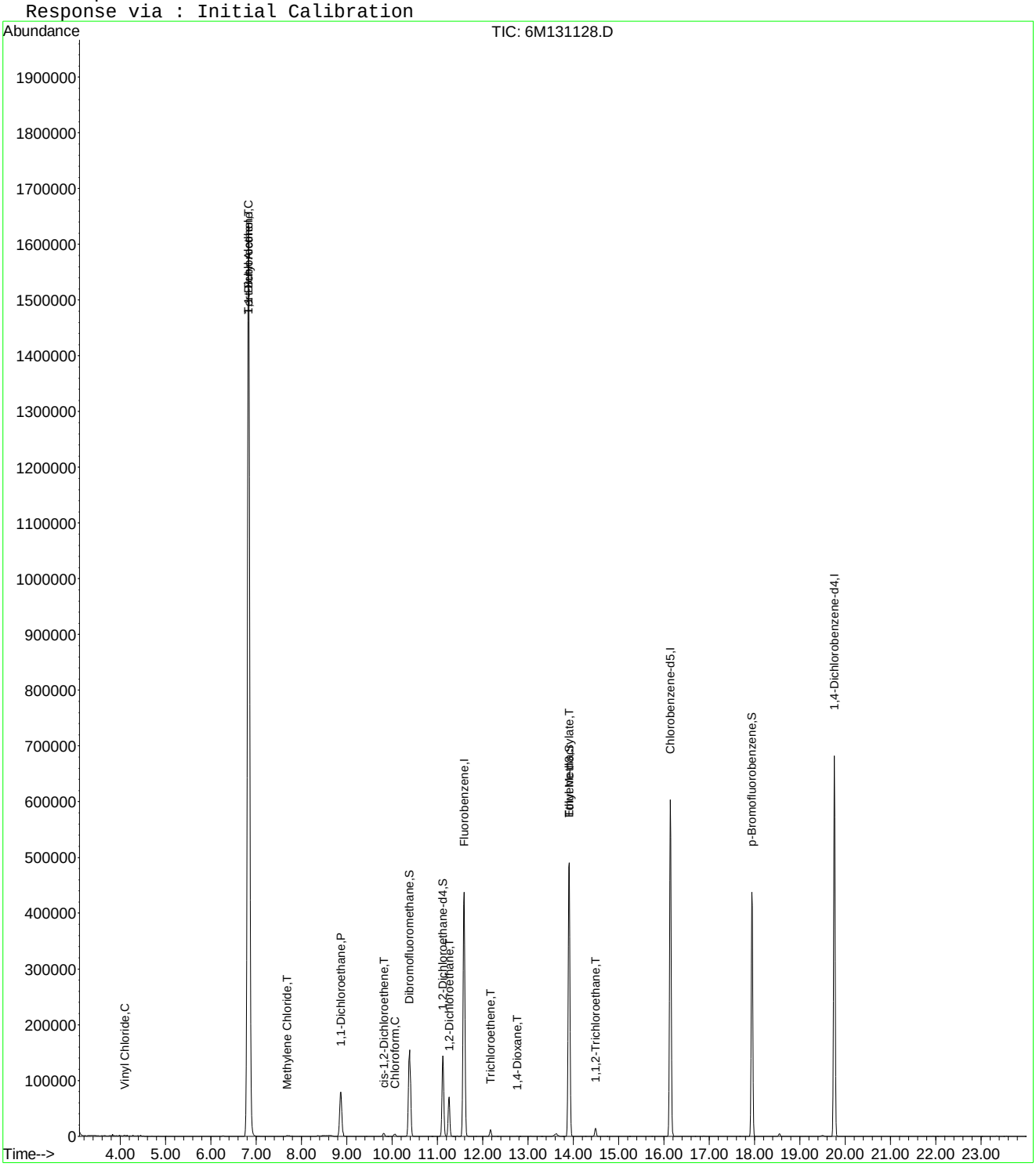

6M131128.D 8260WT.M Tue Feb 17 09:11:50 2015 Page 2

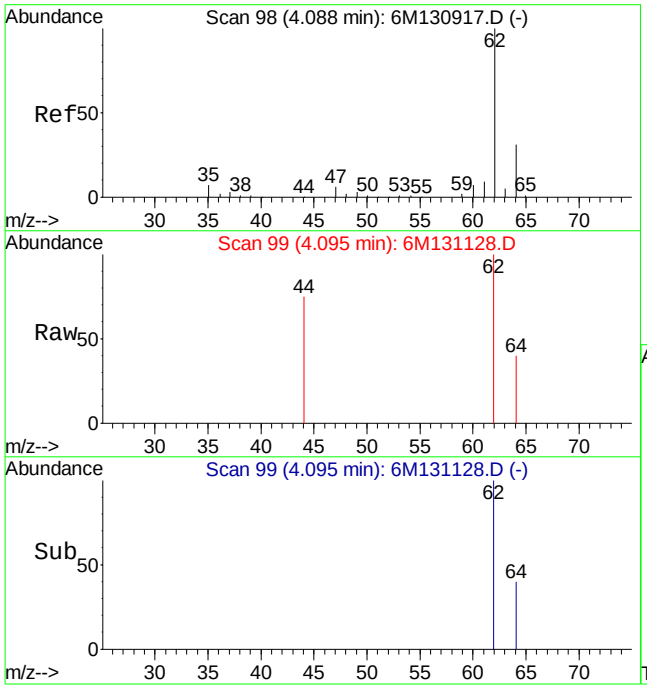

#4
Vinyl Chloride
Concen: 0.26 ug/L
RT: 4.09 min Scan# 99
Delta R.T. 0.01 min
Lab File: 6M131128.D
Acq: 16 Feb 2015 21:05

Tgt Ion: 62 Resp: 1703

Ion	Ratio	Lower	Upper
62	100		
64	26.0	19.3	45.1

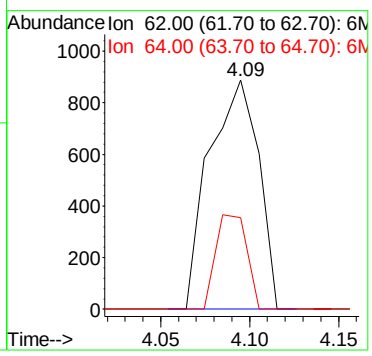

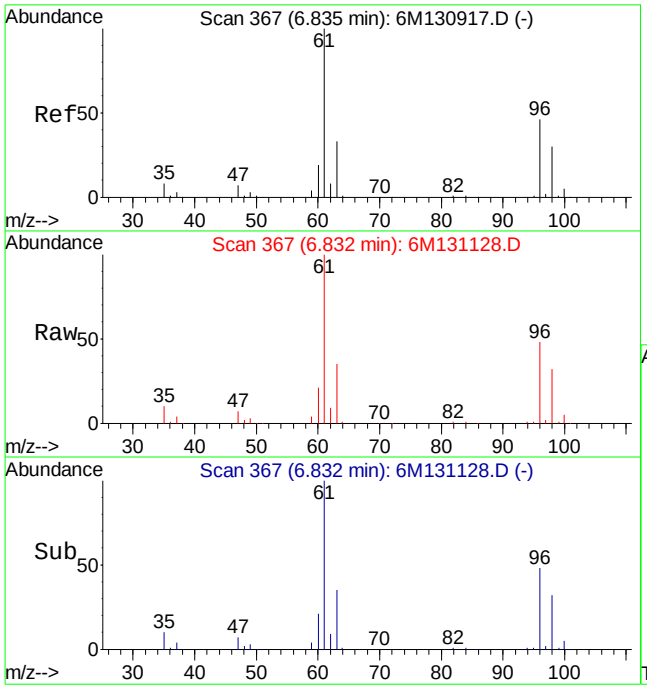

#14
1,1-Dichloroethene
Concen: 208.39 ug/L
RT: 6.83 min Scan# 367
Delta R.T. 0.00 min
Lab File: 6M131128.D
Acq: 16 Feb 2015 21:05

Tgt Ion: 61 Resp: 2038829

Ion	Ratio	Lower	Upper
61	100		
96	48.2	34.1	79.7

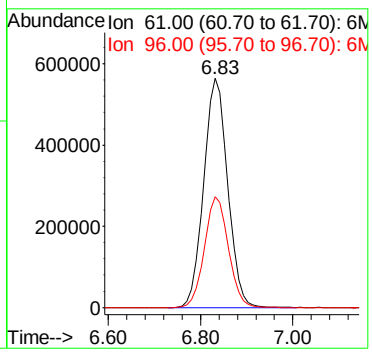

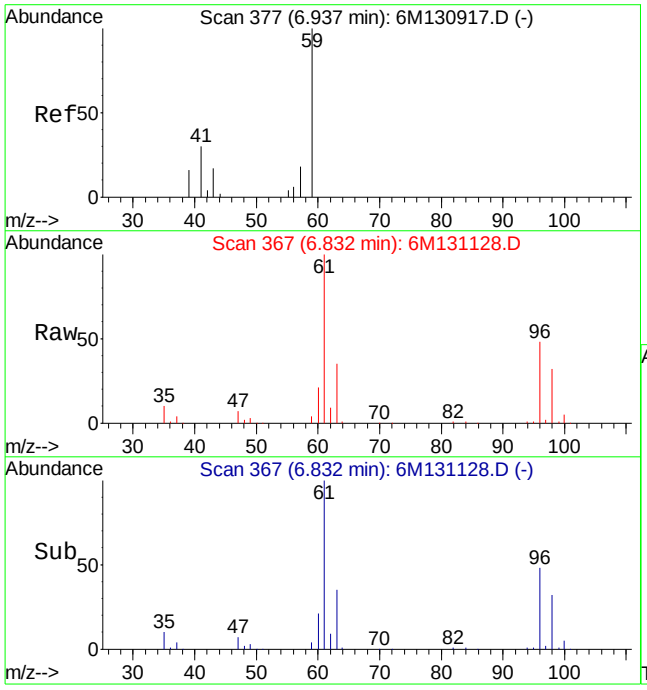

#15
Tert-Butyl Alcohol
Concen: 528.02 ug/L
RT: 6.83 min Scan# 367
Delta R.T. -0.11 min
Lab File: 6M131128.D
Acq: 16 Feb 2015 21:05

Tgt Ion: 59 Resp: 91713

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.3	28.7#
57	0.0	5.6	13.2#

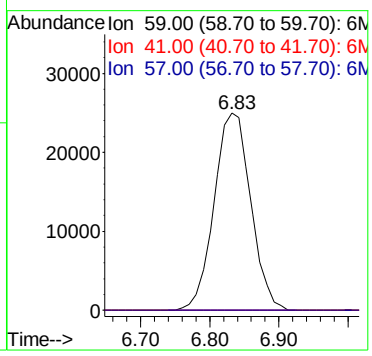

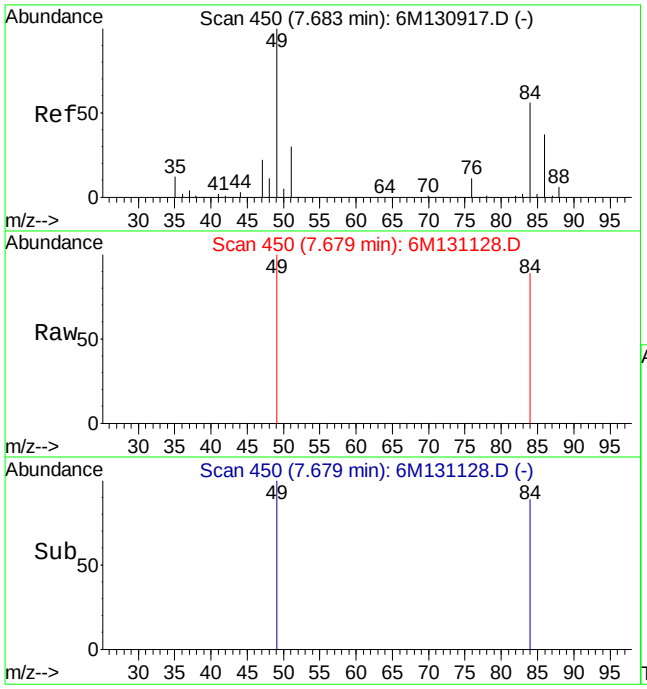

#19
Methylene Chloride
Concen: 0.16 ug/L
RT: 7.68 min Scan# 450
Delta R.T. 0.00 min
Lab File: 6M131128.D
Acq: 16 Feb 2015 21:05

Tgt Ion: 84 Resp: 768

Ion	Ratio	Lower	Upper
84	100		
49	154.3	89.5	208.9

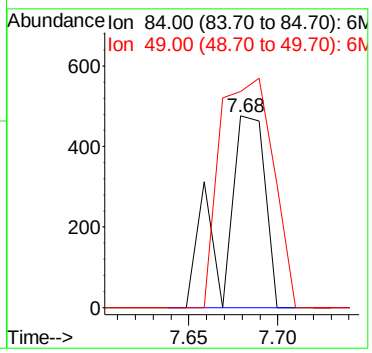

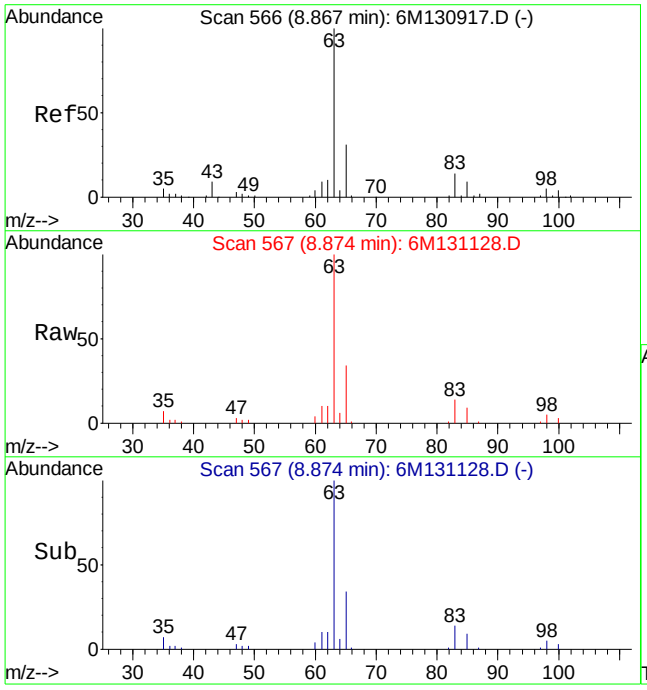

#27
1,1-Dichloroethane
Concen: 11.64 ug/L
RT: 8.87 min Scan# 567
Delta R.T. 0.01 min
Lab File: 6M131128.D
Acq: 16 Feb 2015 21:05

Tgt Ion: 63 Resp: 126029

Ion	Ratio	Lower	Upper
63	100		
65	32.9	18.5	43.1

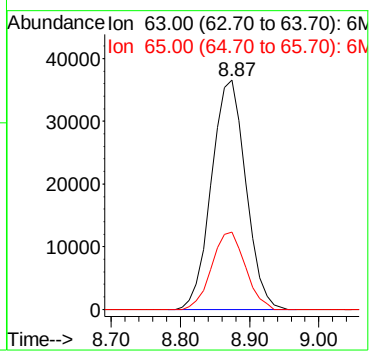

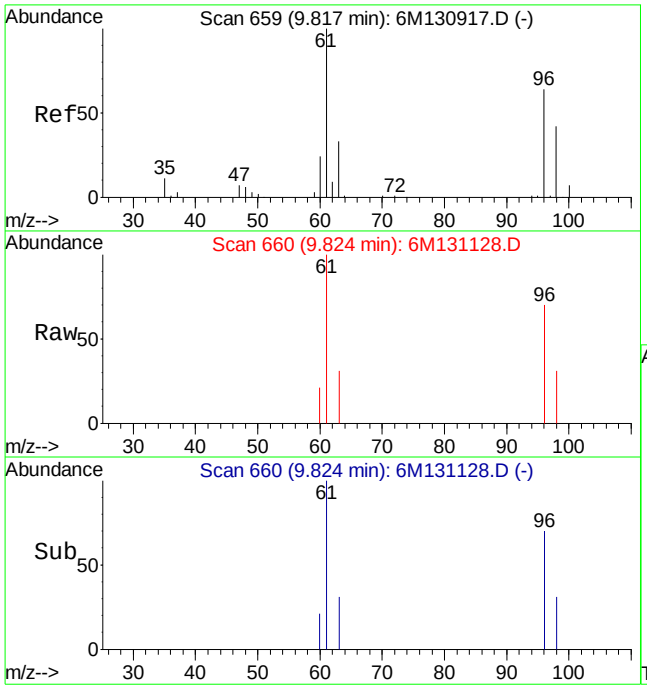

#32
cis-1,2-Dichloroethene
Concen: 0.64 ug/L
RT: 9.82 min Scan# 660
Delta R.T. 0.01 min
Lab File: 6M131128.D
Acq: 16 Feb 2015 21:05

Tgt Ion: 96 Resp: 3439

Ion	Ratio	Lower	Upper
96	100		
61	176.8	94.3	220.1

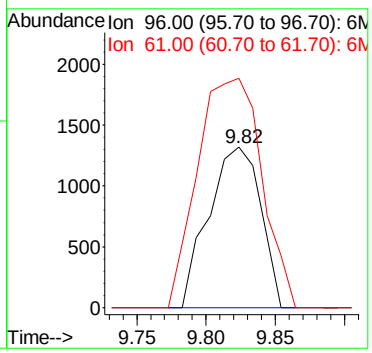

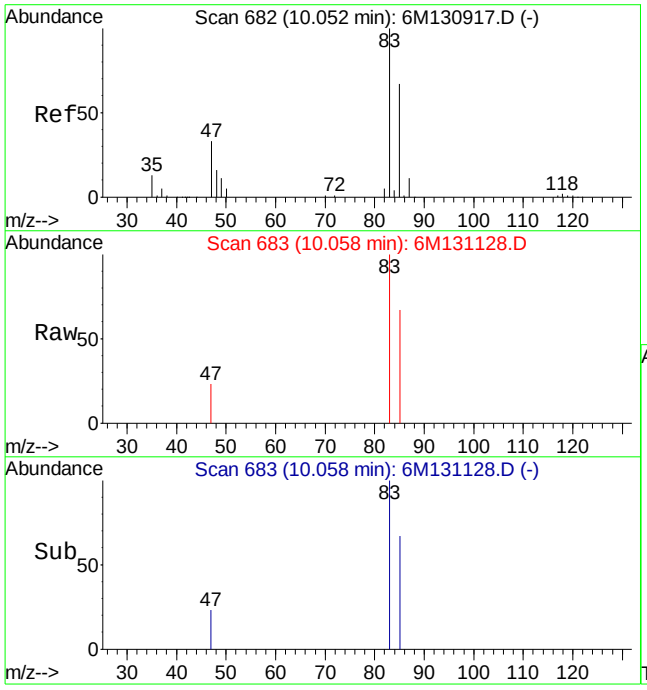

#33
Chloroform
Concen: 0.53 ug/L
RT: 10.06 min Scan# 683
Delta R.T. 0.01 min
Lab File: 6M131128.D
Acq: 16 Feb 2015 21:05

Tgt Ion: 83 Resp: 5512

Ion	Ratio	Lower	Upper
83	100		
85	69.1	39.7	92.5
47	23.3	17.0	39.6

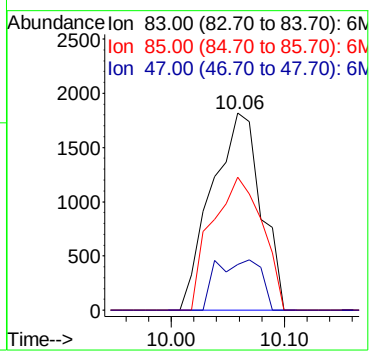

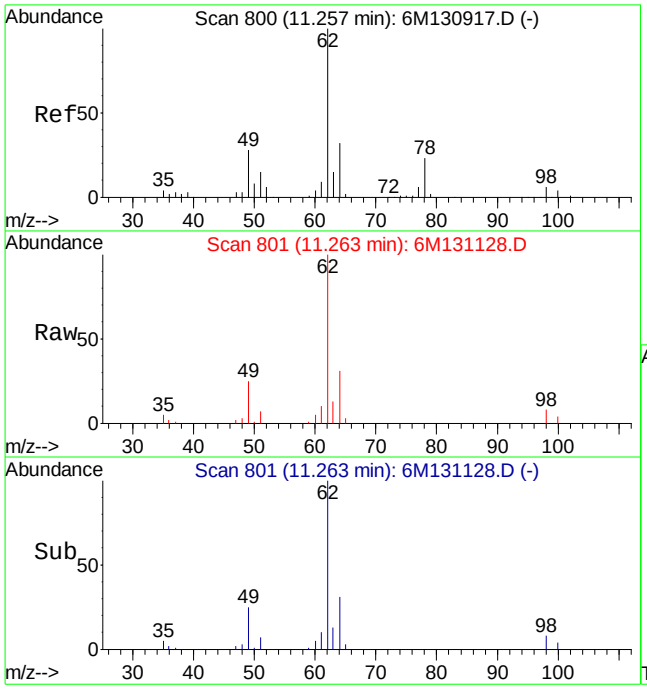

#45
1,2-Dichloroethane
Concen: 10.38 ug/L
RT: 11.26 min Scan# 801
Delta R.T. 0.01 min
Lab File: 6M131128.D
Acq: 16 Feb 2015 21:05

Tgt Ion: 62 Resp: 86047

Ion	Ratio	Lower	Upper
62	100		
49	24.6	23.7	55.3
98	5.7	4.9	11.5

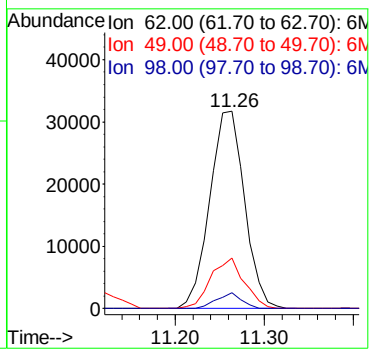

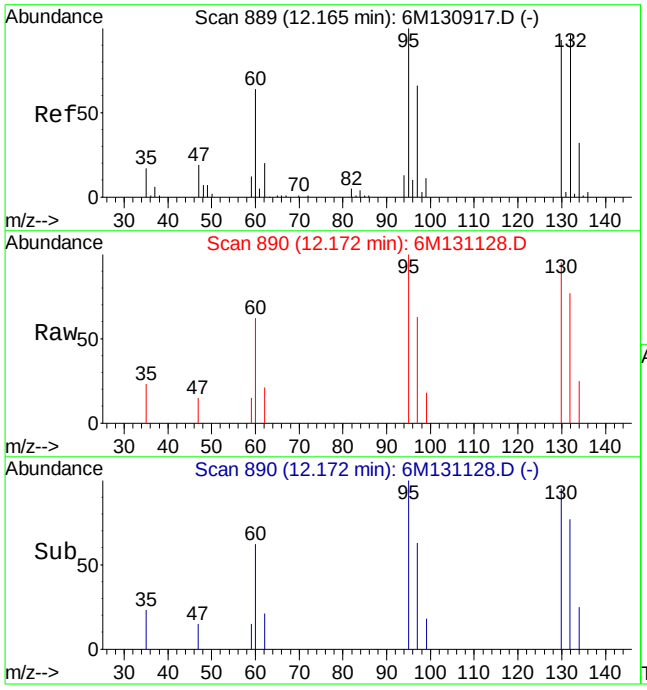

#47
Trichloroethene
Concen: 1.05 ug/L
RT: 12.17 min Scan# 890
Delta R.T. 0.00 min
Lab File: 6M131128.D
Acq: 16 Feb 2015 21:05

Tgt Ion:130 Resp: 5458

Ion	Ratio	Lower	Upper
130	100		
60	61.6	28.6	66.6

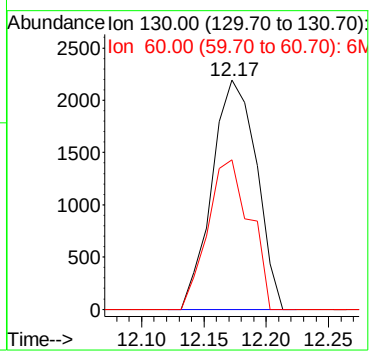

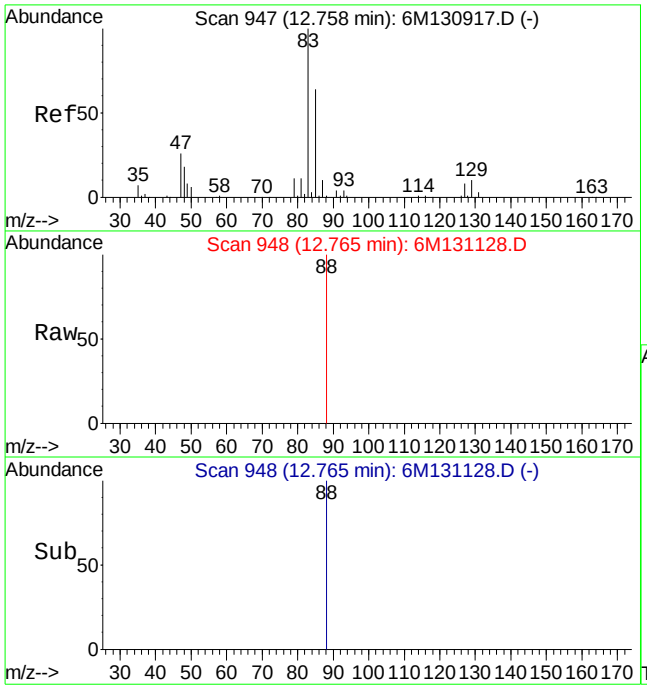

#50
1,4-Dioxane
Concen: 9.82 ug/L
RT: 12.76 min Scan# 948
Delta R.T. -0.01 min
Lab File: 6M131128.D
Acq: 16 Feb 2015 21:05

Tgt Ion: 88 Resp: 194

Ion	Ratio	Lower	Upper
88	100		
58	0.0	31.1	72.5#

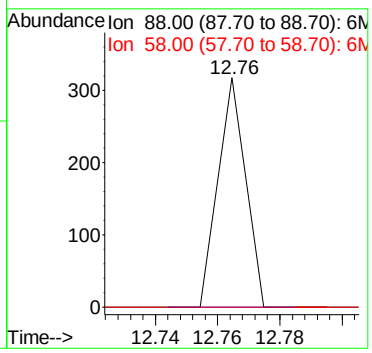

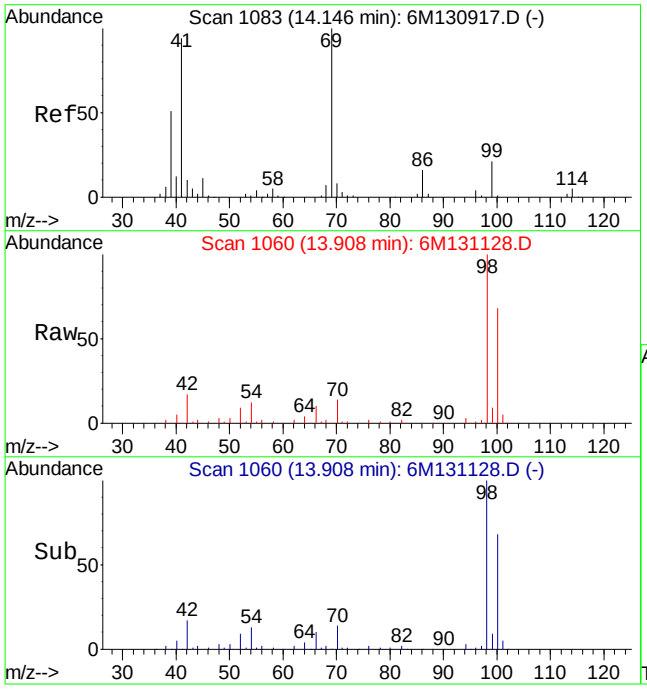

#60
Ethyl Methacrylate
Concen: 0.67 ug/L
RT: 13.91 min Scan# 1060
Delta R.T. -0.23 min
Lab File: 6M131128.D
Acq: 16 Feb 2015 21:05

Tgt Ion: 69 Resp: 866

Ion	Ratio	Lower	Upper
69	100		
41	91.3	46.5	108.5

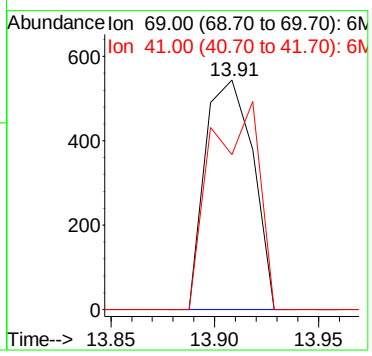

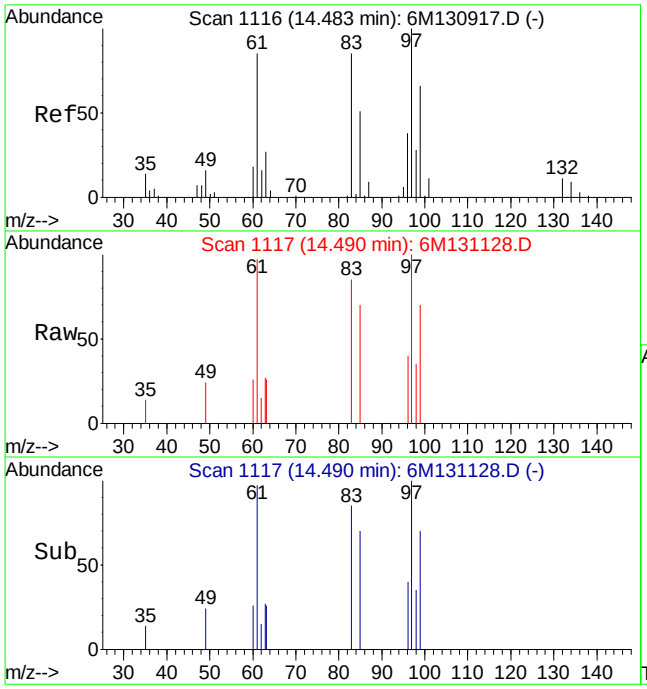

#63
1,1,2-Trichloroethane
Concen: 1.95 ug/L
RT: 14.49 min Scan# 1117
Delta R.T. 0.00 min
Lab File: 6M131128.D
Acq: 16 Feb 2015 21:05

Tgt Ion: 97 Resp: 6438

Ion	Ratio	Lower	Upper
97	100		
83	85.8	50.9	118.7
99	67.5	37.9	88.5

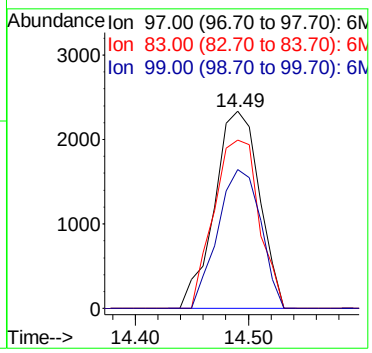

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131124.D Vial: 19
Acq On : 16 Feb 2015 19:02 Operator: TMB
Sample : L15020678-13 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 09:11:44 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	537574	25.00 ug/L	0.01
57) Chlorobenzene-d5	16.15	117	419743	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	228464	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	131540	24.2268 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.92%		
43) 1,2-Dichloroethane-d4	11.12	65	158339	24.4719 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.88%		
58) Toluene-d8	13.90	98	472327	24.6589 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.64%		
80) p-Bromofluorobenzene	17.94	95	200661	26.1213 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.48%		

Target Compounds					Qvalue
4) Vinyl Chloride	4.12	62	1208	0.1870 ug/L #	42
14) 1,1-Dichloroethene	6.83	61	79148	8.1673 ug/L	90
15) Tert-Butyl Alcohol	6.82	59	2723	15.8274 ug/L #	62
26) Vinyl Acetate	8.63	43	2711	0.7750 ug/L #	77
27) 1,1-Dichloroethane	8.88	63	31425	2.9306 ug/L	98
45) 1,2-Dichloroethane	11.27	62	1274	0.1552 ug/L #	43
60) Ethyl Methacrylate	13.91	69	481	0.5790 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M131124.D 8260WT.M Tue Feb 17 09:11:45 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131124.D Vial: 19
Acq On : 16 Feb 2015 19:02 Operator: TMB
Sample : L15020678-13 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 9:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

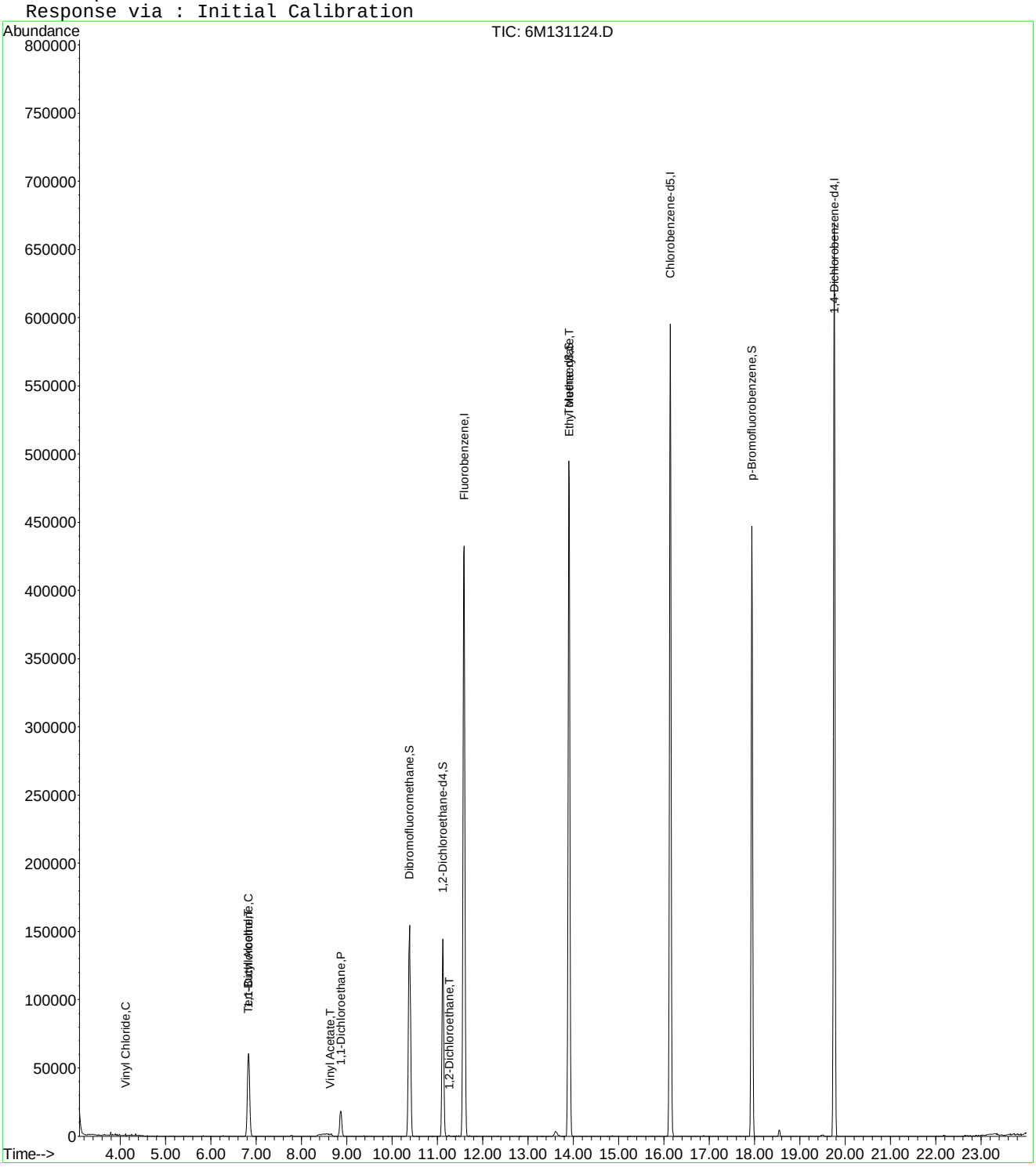

6M131124.D 8260WT.M Tue Feb 17 09:11:45 2015 Page 2

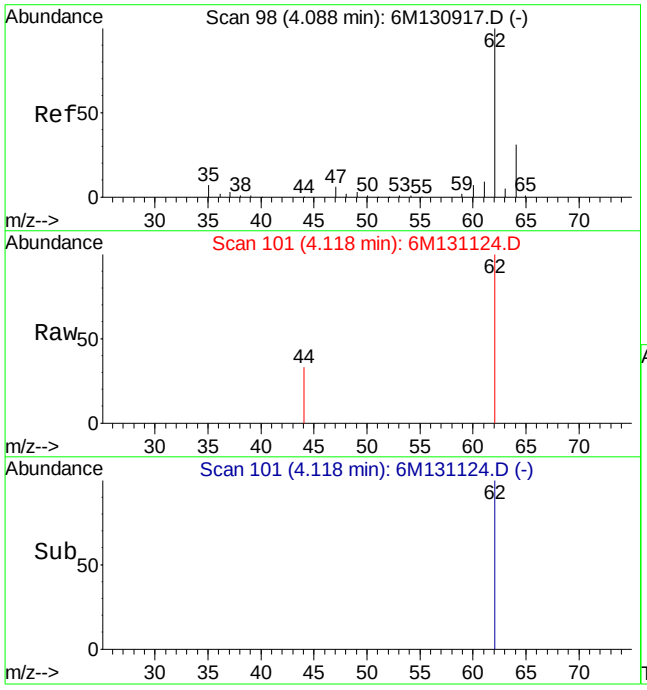

#4
Vinyl Chloride
Concen: 0.19 ug/L
RT: 4.12 min Scan# 101
Delta R.T. 0.03 min
Lab File: 6M131124.D
Acq: 16 Feb 2015 19:02

Tgt Ion: 62 Resp: 1208

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.3	45.1#

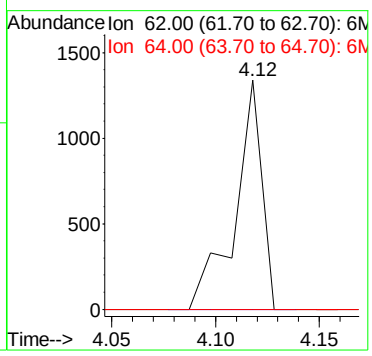

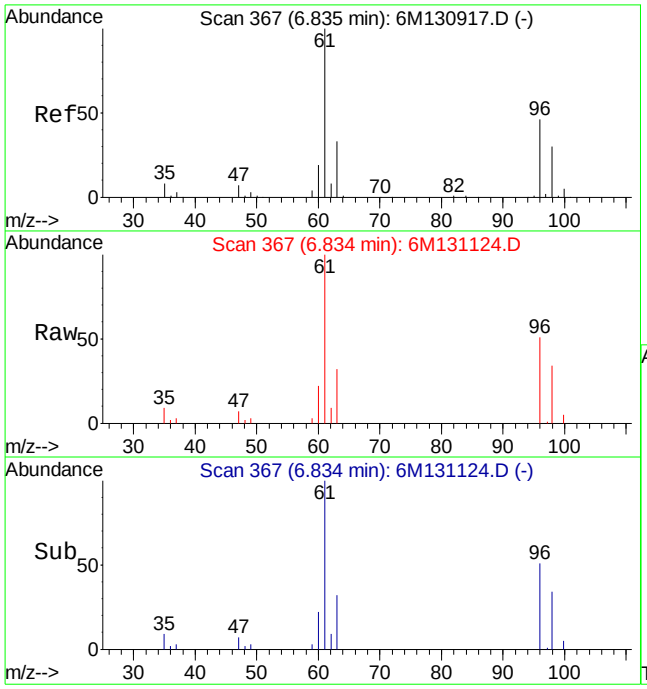

#14
1,1-Dichloroethene
Concen: 8.17 ug/L
RT: 6.83 min Scan# 367
Delta R.T. 0.00 min
Lab File: 6M131124.D
Acq: 16 Feb 2015 19:02

Tgt Ion: 61 Resp: 79148

Ion	Ratio	Lower	Upper
61	100		
96	49.2	34.1	79.7

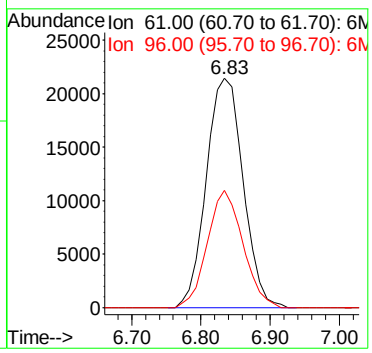

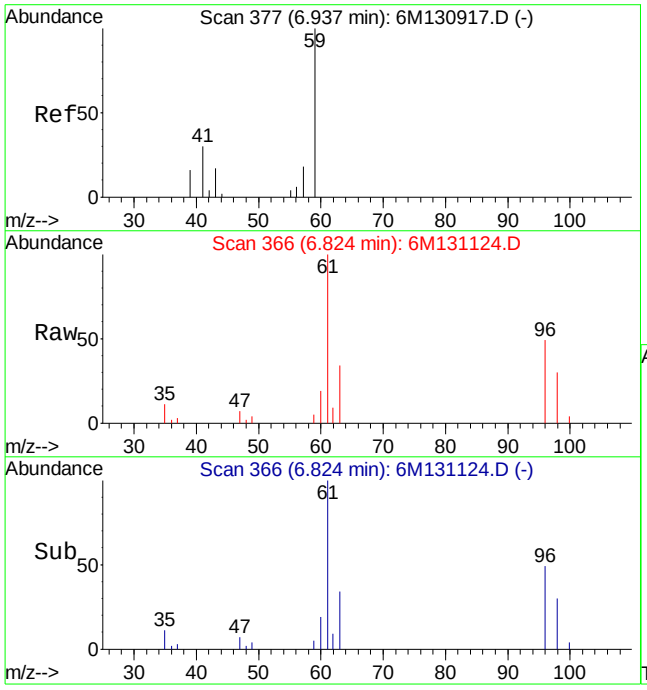

#15
Tert-Butyl Alcohol
Concen: 15.83 ug/L
RT: 6.82 min Scan# 366
Delta R.T. -0.12 min
Lab File: 6M131124.D
Acq: 16 Feb 2015 19:02

Tgt Ion: 59 Resp: 2723

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.3	28.7#
57	0.0	5.6	13.2#

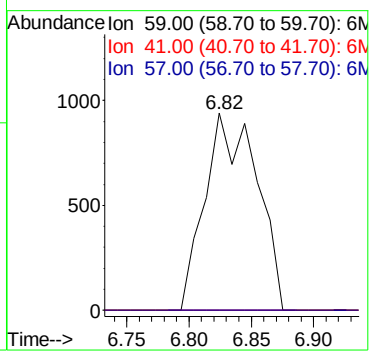

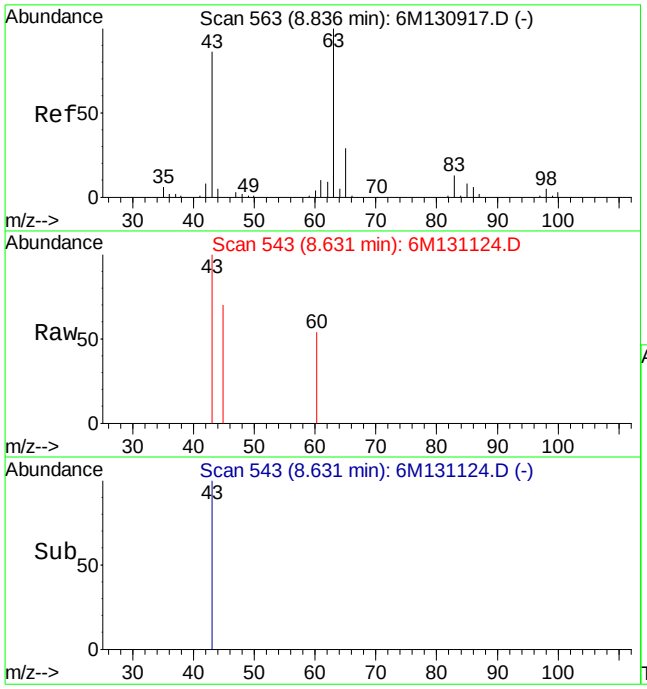

#26
Vinyl Acetate
Concen: 0.78 ug/L
RT: 8.63 min Scan# 543
Delta R.T. -0.20 min
Lab File: 6M131124.D
Acq: 16 Feb 2015 19:02

Tgt Ion: 43 Resp: 2711

Ion	Ratio	Lower	Upper
43	100		
86	0.0	5.0	11.6#

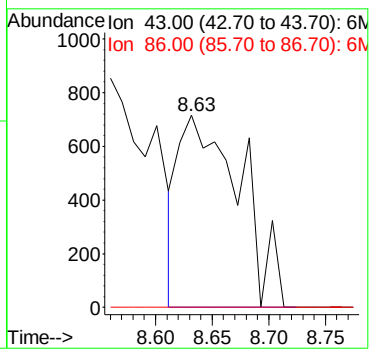

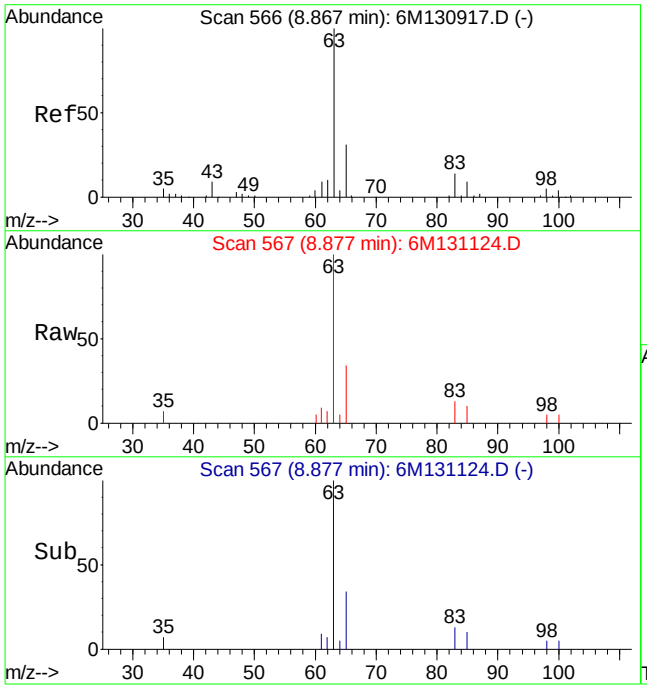

#27
1,1-Dichloroethane
Concen: 2.93 ug/L
RT: 8.88 min Scan# 567
Delta R.T. 0.01 min
Lab File: 6M131124.D
Acq: 16 Feb 2015 19:02

Tgt Ion: 63 Resp: 31425

Ion	Ratio	Lower	Upper
63	100		
65	32.0	18.5	43.1

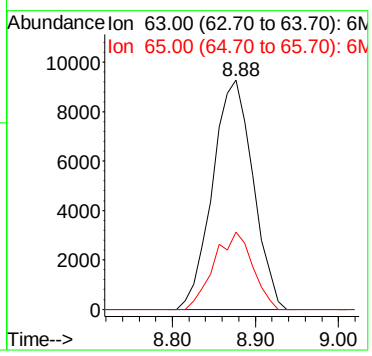

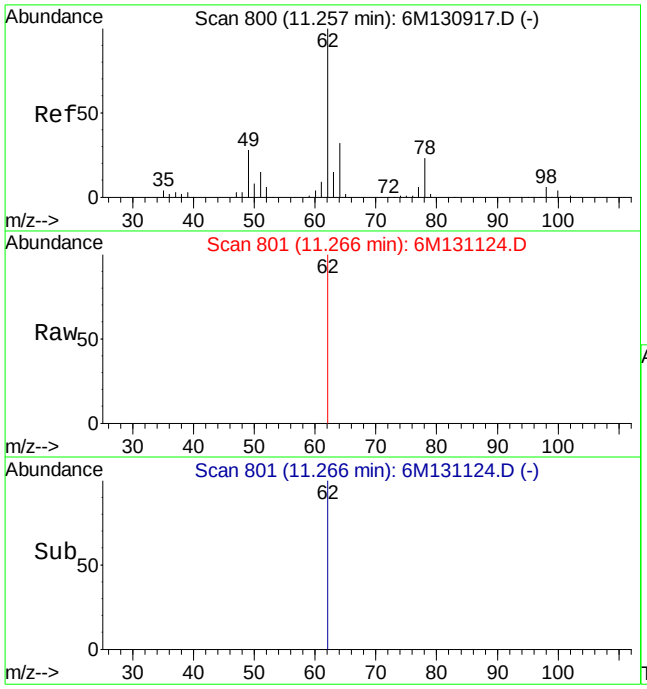

#45
1,2-Dichloroethane
Concen: 0.16 ug/L
RT: 11.27 min Scan# 801
Delta R.T. 0.01 min
Lab File: 6M131124.D
Acq: 16 Feb 2015 19:02

Tgt Ion: 62 Resp: 1274

Ion	Ratio	Lower	Upper
62	100		
49	0.0	23.7	55.3#
98	0.0	4.9	11.5#

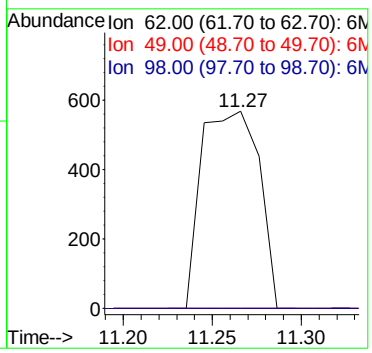

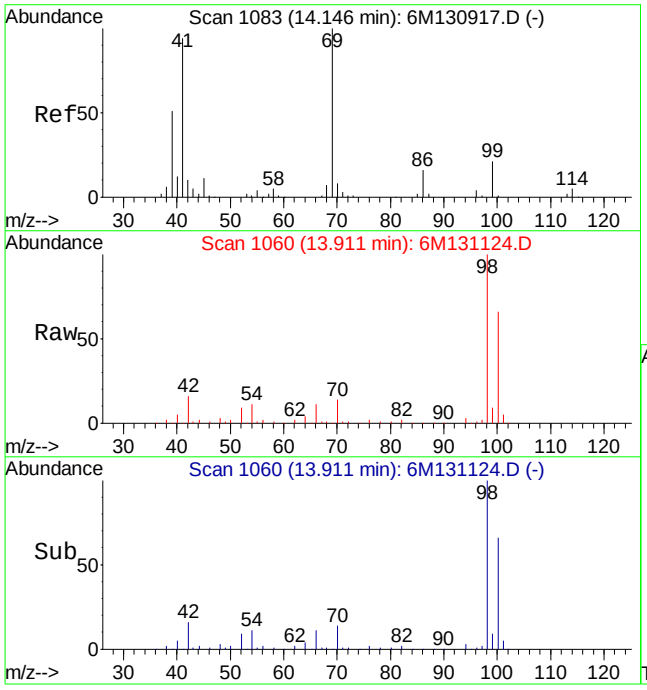

#60
Ethyl Methacrylate
Concen: 0.58 ug/L
RT: 13.91 min Scan# 1060
Delta R.T. -0.23 min
Lab File: 6M131124.D
Acq: 16 Feb 2015 19:02

Tgt Ion: 69 Resp: 481

Ion	Ratio	Lower	Upper
69	100		
41	331.0	46.5	108.5#

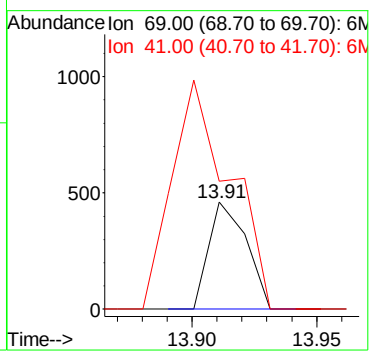

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131125.D Vial: 20
Acq On : 16 Feb 2015 19:32 Operator: TMB
Sample : L15020678-14 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 09:11:45 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	532411	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.15	117	412518	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	221910	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	130062	24.1868 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.76%		
43) 1,2-Dichloroethane-d4	11.12	65	156722	24.4568 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.84%		
58) Toluene-d8	13.90	98	461420	24.5114 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.04%		
80) p-Bromofluorobenzene	17.94	95	198666	26.6254 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.52%		

Target Compounds					Qvalue
13) Acetone	6.61	43	607	0.7389 ug/L #	49
14) 1,1-Dichloroethene	6.83	61	79536	8.2870 ug/L	88
15) Tert-Butyl Alcohol	6.83	59	2940	17.2544 ug/L #	62
27) 1,1-Dichloroethane	8.88	63	31049	2.9236 ug/L	100
60) Ethyl Methacrylate	13.90	69	838	0.6671 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M131125.D 8260WT.M Tue Feb 17 09:11:46 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131125.D Vial: 20
Acq On : 16 Feb 2015 19:32 Operator: TMB
Sample : L15020678-14 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 9:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

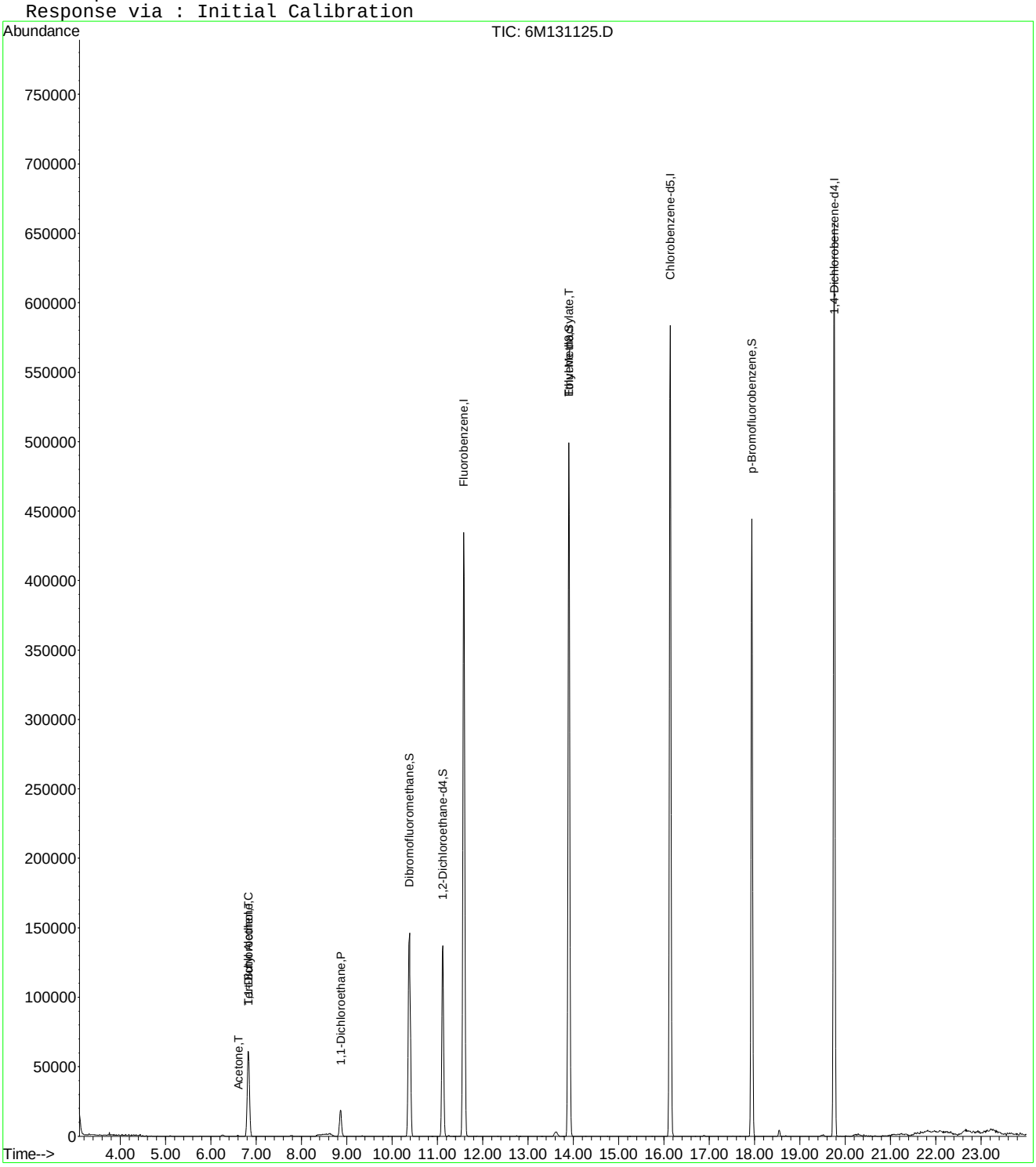

6M131125.D 8260WT.M Tue Feb 17 09:11:46 2015 Page 2

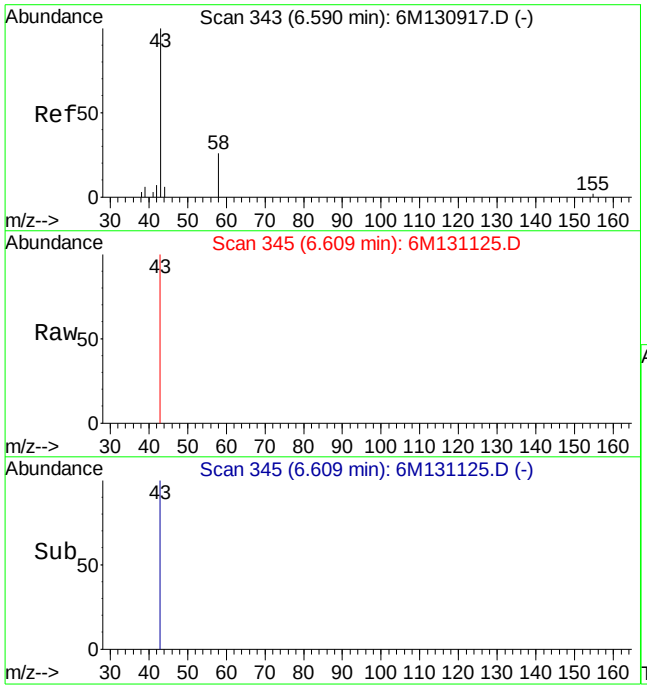

#13
Acetone
Concen: 0.74 ug/L
RT: 6.61 min Scan# 345
Delta R.T. 0.02 min
Lab File: 6M131125.D
Acq: 16 Feb 2015 19:32

Tgt Ion: 43 Resp: 607

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.7	36.5#

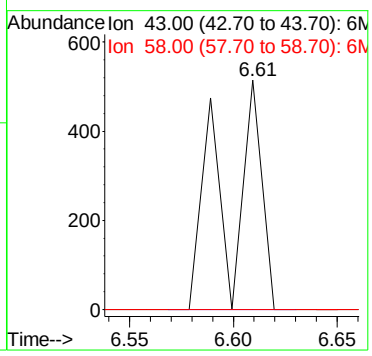

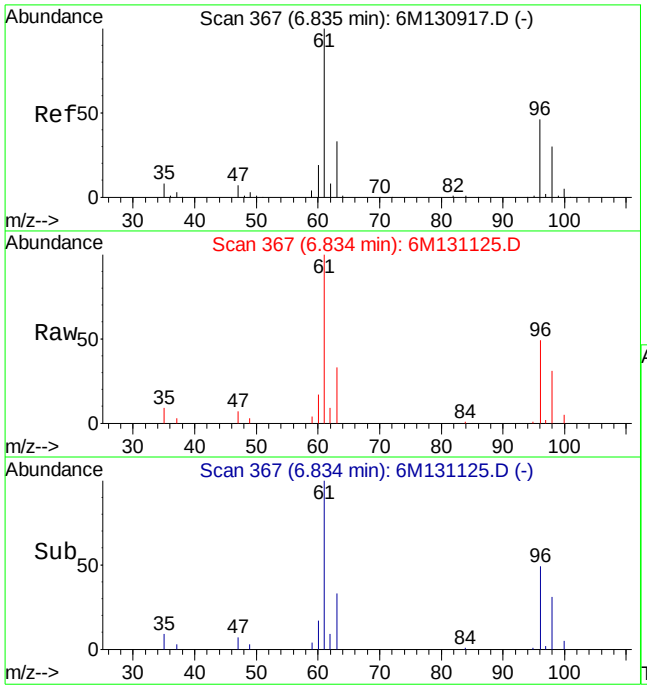

#14
1,1-Dichloroethene
Concen: 8.29 ug/L
RT: 6.83 min Scan# 367
Delta R.T. 0.00 min
Lab File: 6M131125.D
Acq: 16 Feb 2015 19:32

Tgt Ion: 61 Resp: 79536

Ion	Ratio	Lower	Upper
61	100		
96	48.2	34.1	79.7

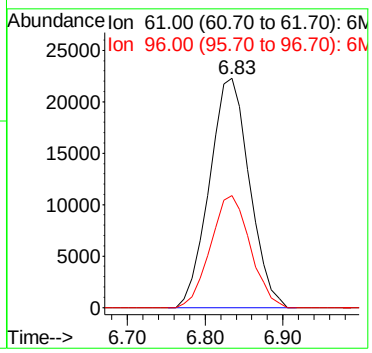

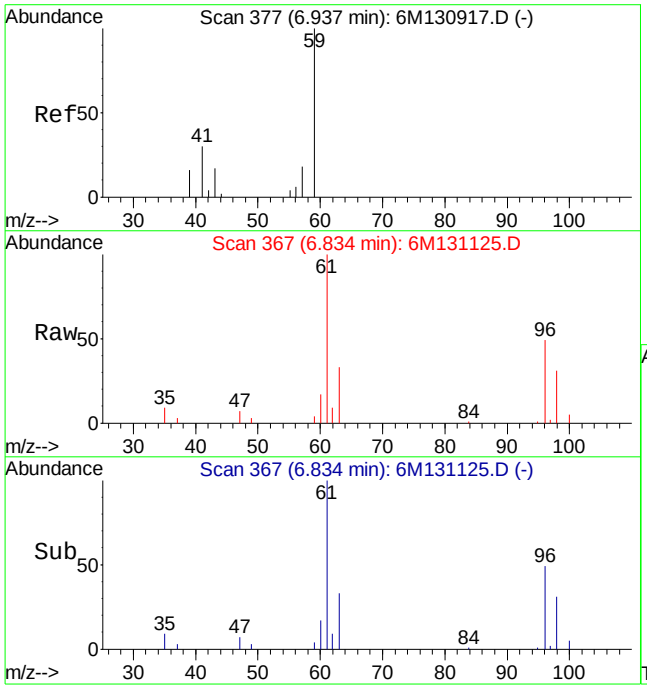

#15
Tert-Butyl Alcohol
Concen: 17.25 ug/L
RT: 6.83 min Scan# 367
Delta R.T. -0.11 min
Lab File: 6M131125.D
Acq: 16 Feb 2015 19:32

Tgt Ion: 59 Resp: 2940

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.3	28.7#
57	0.0	5.6	13.2#

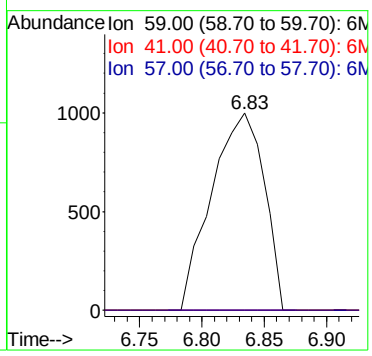

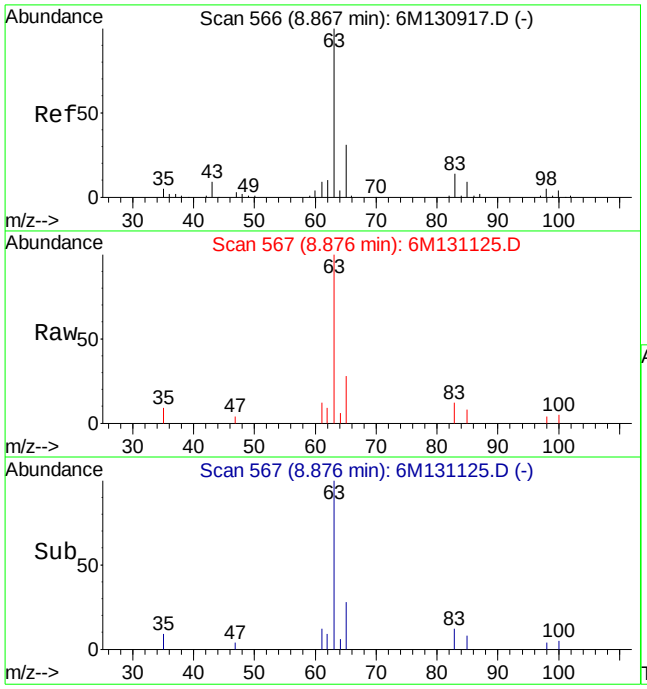

#27
1,1-Dichloroethane
Concen: 2.92 ug/L
RT: 8.88 min Scan# 567
Delta R.T. 0.01 min
Lab File: 6M131125.D
Acq: 16 Feb 2015 19:32

Tgt Ion: 63 Resp: 31049

Ion	Ratio	Lower	Upper
63	100		
65	30.6	18.5	43.1

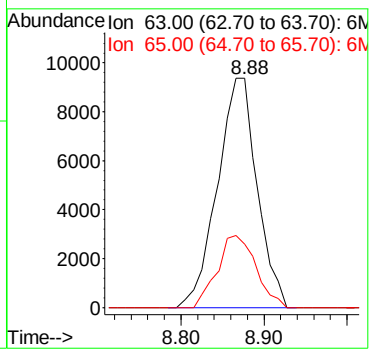

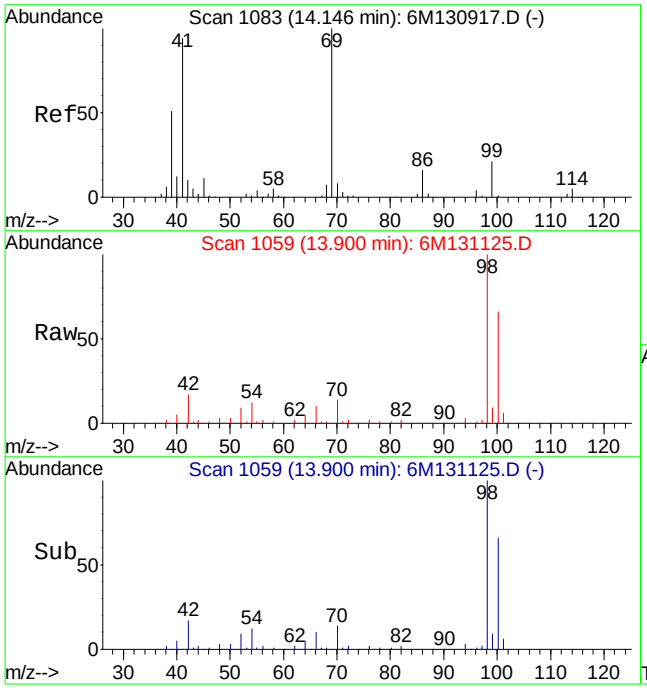

#60
Ethyl Methacrylate
Concen: 0.67 ug/L
RT: 13.90 min Scan# 1059
Delta R.T. -0.24 min
Lab File: 6M131125.D
Acq: 16 Feb 2015 19:32

Tgt Ion: 69 Resp: 838

Ion	Ratio	Lower	Upper
69	100		
41	167.8	46.5	108.5#

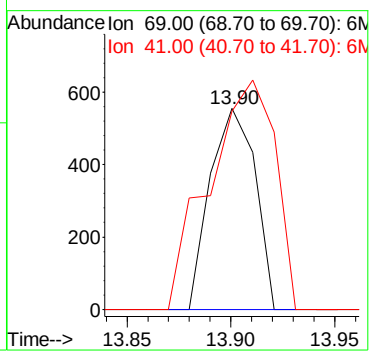

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131126.D Vial: 21
Acq On : 16 Feb 2015 20:03 Operator: TMB
Sample : L15020678-15 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 09:11:46 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	555780	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.15	117	433181	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	233146	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	135470	24.1333 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.52%		
43) 1,2-Dichloroethane-d4	11.11	65	159348	23.8211 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.28%		
58) Toluene-d8	13.90	98	478125	24.1873 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.76%		
80) p-Bromofluorobenzene	17.95	95	206317	26.3182 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.28%		

Target Compounds					Qvalue
4) Vinyl Chloride	4.09	62	932	0.1396 ug/L #	42
13) Acetone	6.59	43	979	1.1416 ug/L #	49
14) 1,1-Dichloroethene	6.84	61	304761	30.4183 ug/L	88
15) Tert-Butyl Alcohol	6.84	59	11747	66.0427 ug/L #	62
27) 1,1-Dichloroethane	8.87	63	108808	9.8148 ug/L	98
45) 1,2-Dichloroethane	11.26	62	4744	0.5589 ug/L #	63
50) 1,4-Dioxane	12.77	88	894	44.1814 ug/L #	58
60) Ethyl Methacrylate	13.90	69	871	0.6650 ug/L #	48

(#) = qualifier out of range (m) = manual integration
6M131126.D 8260WT.M Tue Feb 17 09:11:47 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131126.D Vial: 21
Acq On : 16 Feb 2015 20:03 Operator: TMB
Sample : L15020678-15 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 9:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

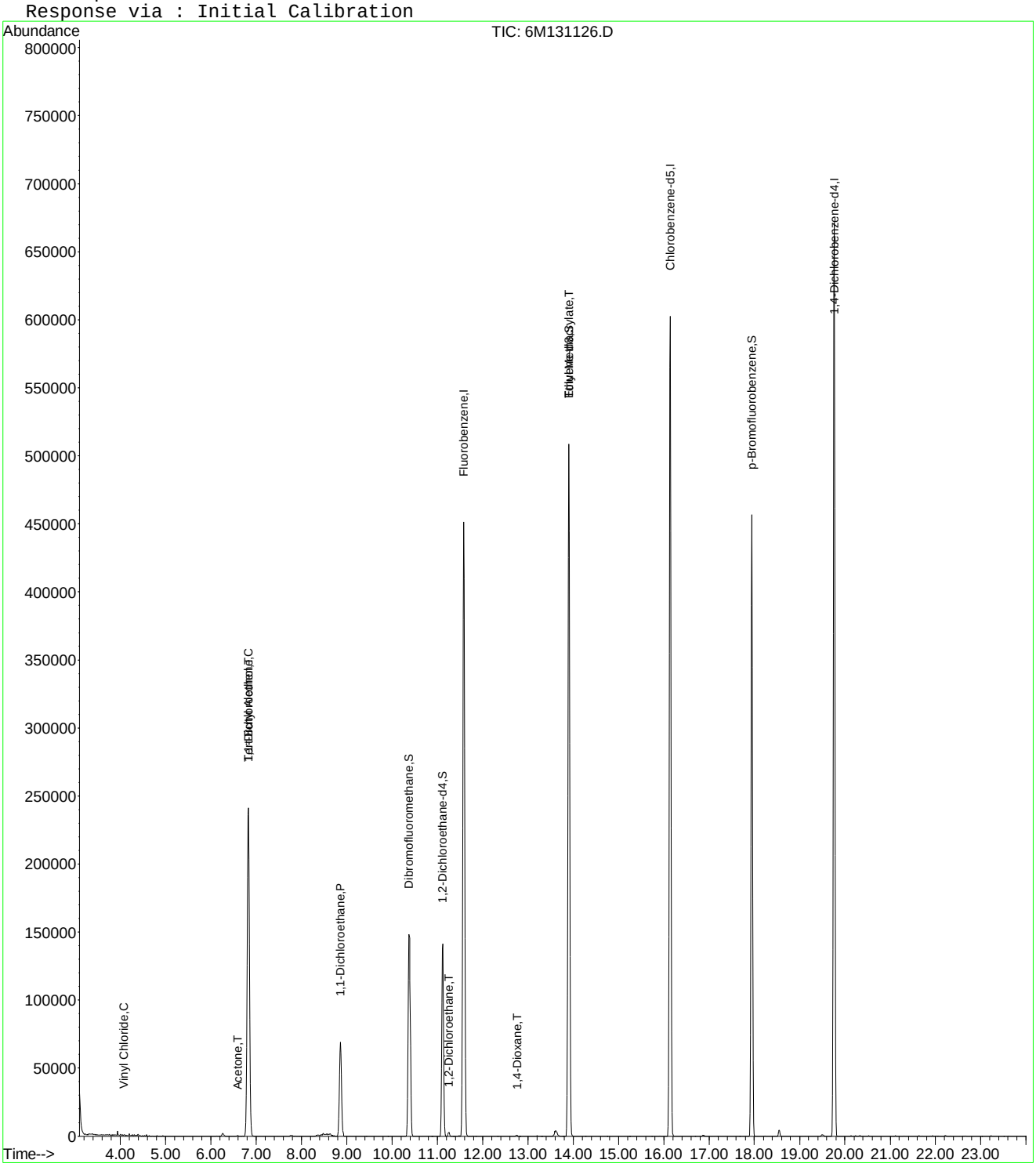

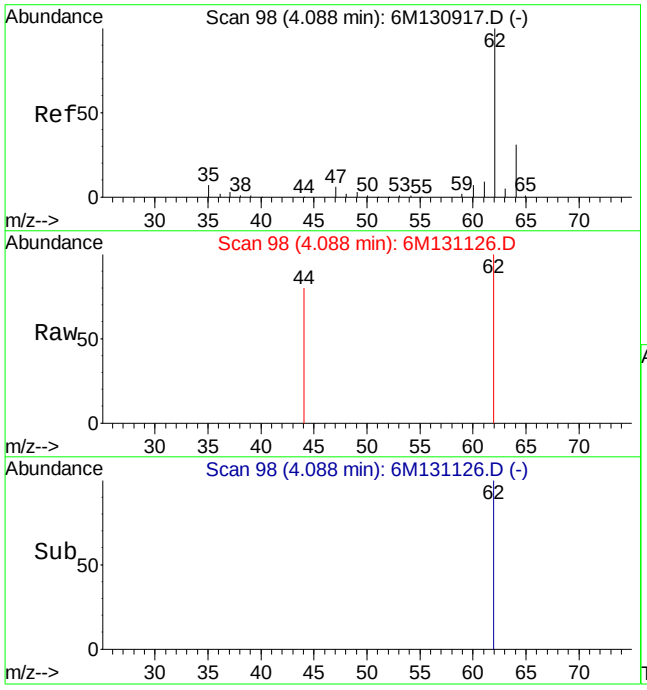

#4
Vinyl Chloride
Concen: 0.14 ug/L
RT: 4.09 min Scan# 98
Delta R.T. 0.00 min
Lab File: 6M131126.D
Acq: 16 Feb 2015 20:03

Tgt Ion: 62 Resp: 932

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.3	45.1#

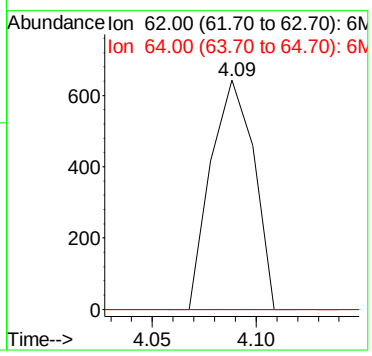

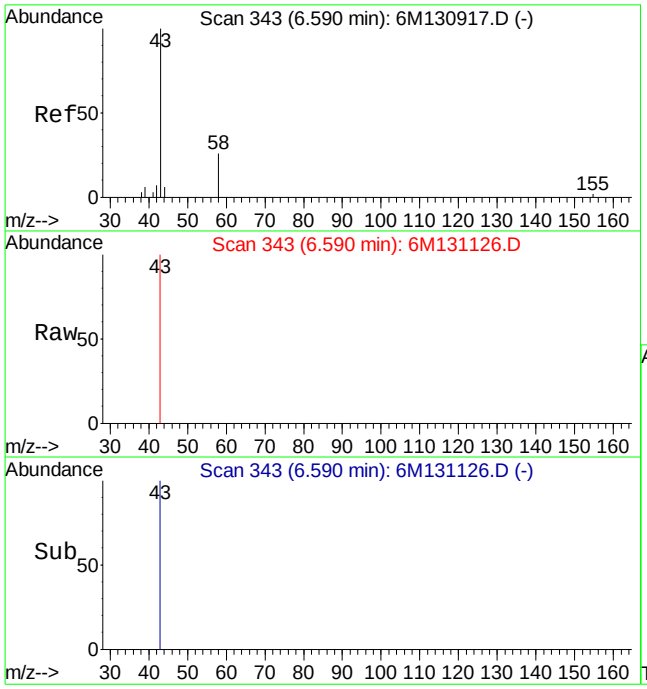

#13
Acetone
Concen: 1.14 ug/L
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M131126.D
Acq: 16 Feb 2015 20:03

Tgt Ion: 43 Resp: 979

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.7	36.5#

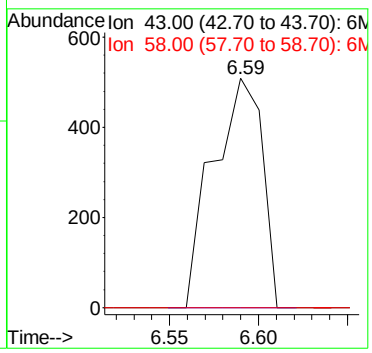

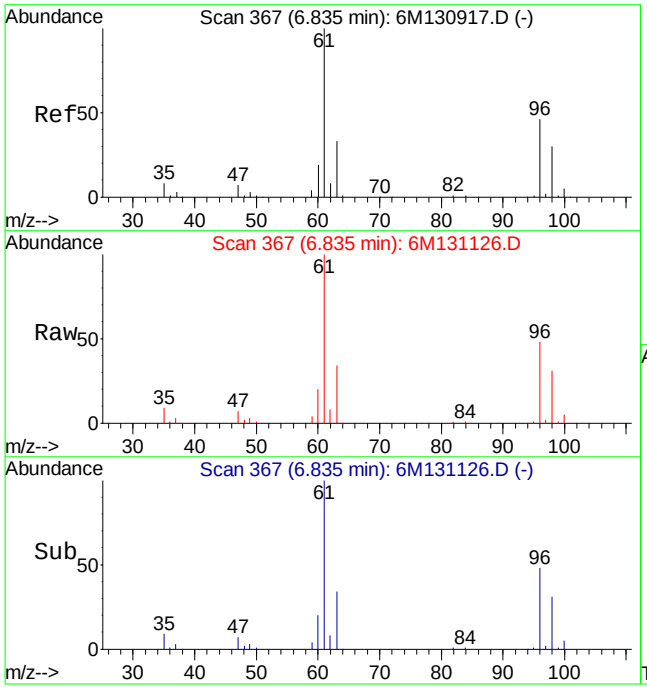

#14
1,1-Dichloroethene
Concen: 30.42 ug/L
RT: 6.84 min Scan# 367
Delta R.T. 0.00 min
Lab File: 6M131126.D
Acq: 16 Feb 2015 20:03

Tgt Ion: 61 Resp: 304761

Ion	Ratio	Lower	Upper
61	100		
96	48.0	34.1	79.7

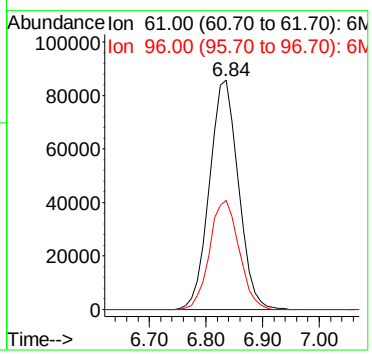

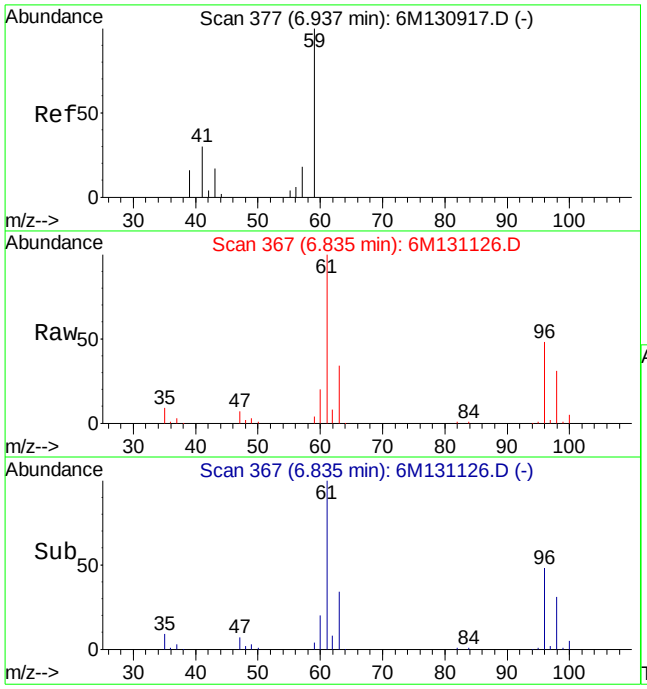

#15
Tert-Butyl Alcohol
Concen: 66.04 ug/L
RT: 6.84 min Scan# 367
Delta R.T. -0.11 min
Lab File: 6M131126.D
Acq: 16 Feb 2015 20:03

Tgt Ion: 59 Resp: 11747

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.3	28.7#
57	0.0	5.6	13.2#

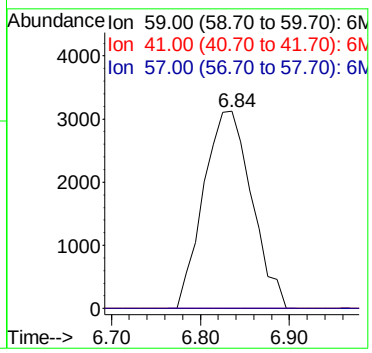

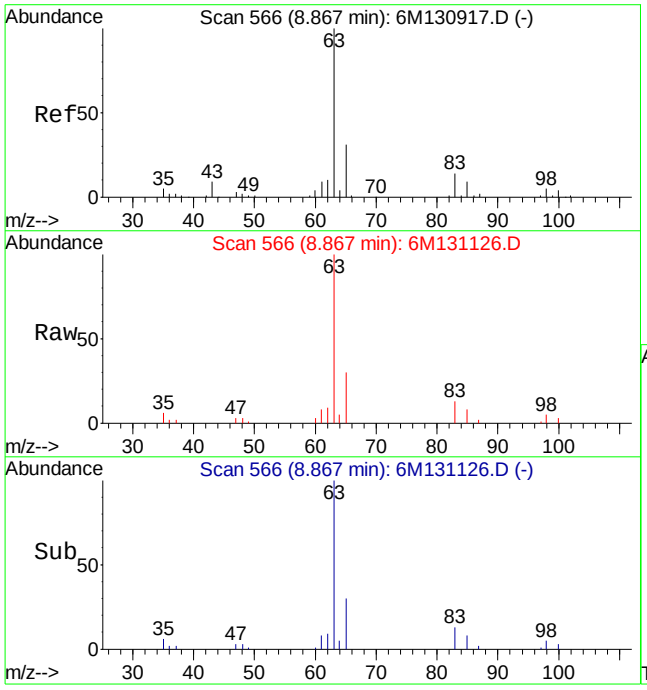

#27
1,1-Dichloroethane
Concen: 9.81 ug/L
RT: 8.87 min Scan# 566
Delta R.T. 0.00 min
Lab File: 6M131126.D
Acq: 16 Feb 2015 20:03

Tgt Ion: 63 Resp: 108808

Ion	Ratio	Lower	Upper
63	100		
65	31.8	18.5	43.1

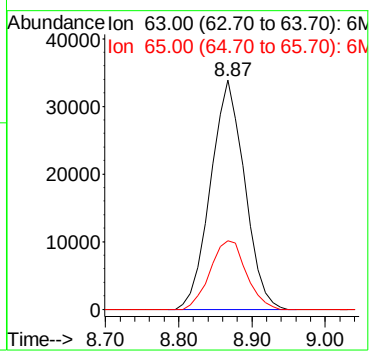

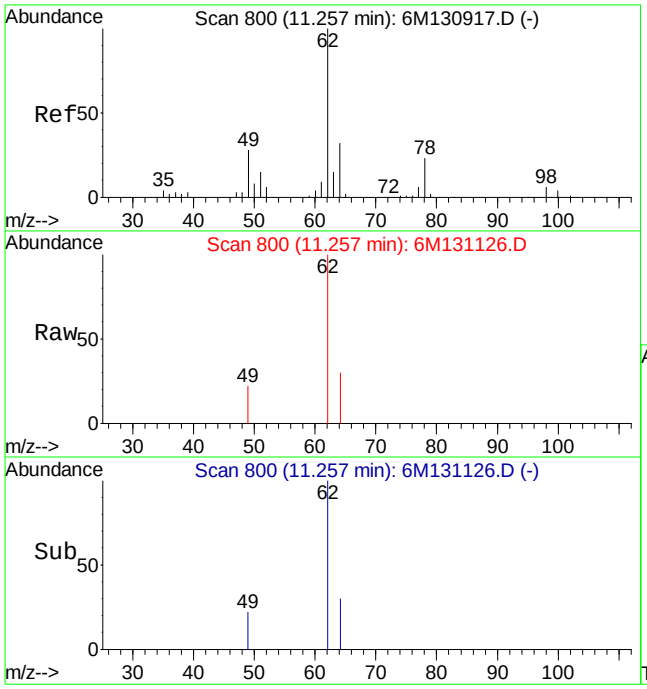

#45
1,2-Dichloroethane
Concen: 0.56 ug/L
RT: 11.26 min Scan# 800
Delta R.T. 0.00 min
Lab File: 6M131126.D
Acq: 16 Feb 2015 20:03

Tgt Ion: 62 Resp: 4744

Ion	Ratio	Lower	Upper
62	100		
49	15.0	23.7	55.3#
98	0.0	4.9	11.5#

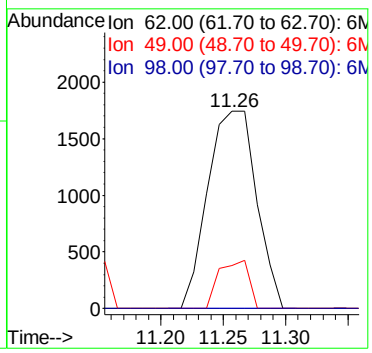

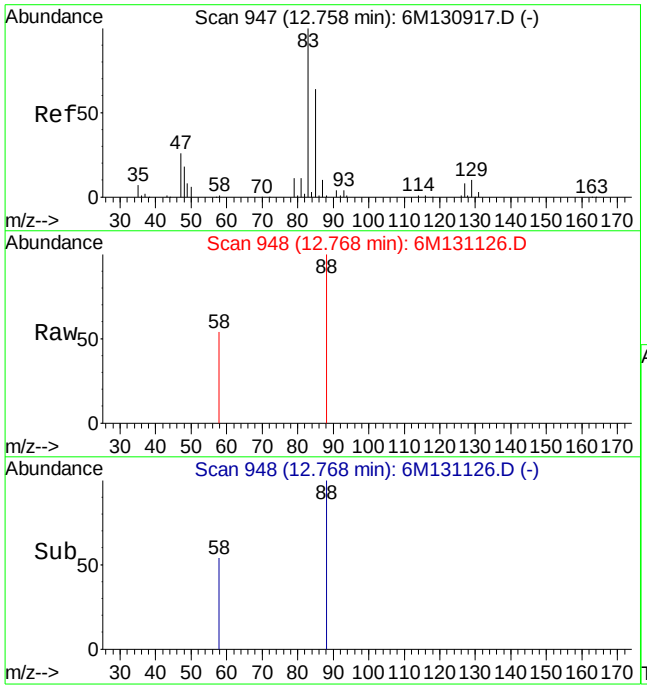

#50
1,4-Dioxane
Concen: 44.18 ug/L
RT: 12.77 min Scan# 948
Delta R.T. -0.01 min
Lab File: 6M131126.D
Acq: 16 Feb 2015 20:03

Tgt Ion: 88 Resp: 894

Ion	Ratio	Lower	Upper
88	100		
58	22.6	31.1	72.5#

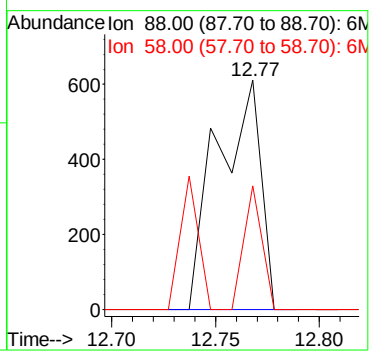

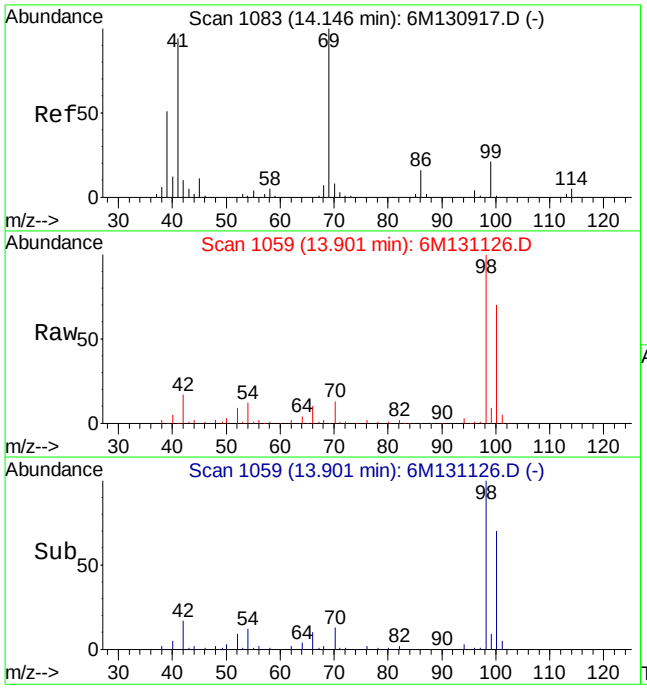

#60
Ethyl Methacrylate
Concen: 0.67 ug/L
RT: 13.90 min Scan# 1059
Delta R.T. -0.24 min
Lab File: 6M131126.D
Acq: 16 Feb 2015 20:03

Tgt Ion: 69 Resp: 871

Ion	Ratio	Lower	Upper
69	100		
41	122.5	46.5	108.5#

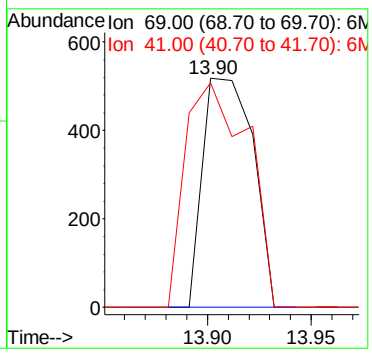

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131129.D Vial: 24
Acq On : 16 Feb 2015 21:36 Operator: TMB
Sample : L15020678-16 A 10X 826-LOW Inst : HPMS6
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 09:11:51 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	537918	25.00 ug/L	0.01
57) Chlorobenzene-d5	16.14	117	414514	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	224004	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	131718	24.2440 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.96%		
43) 1,2-Dichloroethane-d4	11.12	65	159264	24.5991 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.40%		
58) Toluene-d8	13.91	98	463428	24.4995 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.00%		
80) p-Bromofluorobenzene	17.94	95	198447	26.3474 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.40%		

Target Compounds					Qvalue
14) 1,1-Dichloroethene	6.83	61	1868053	192.6422 ug/L	88
15) Tert-Butyl Alcohol	6.83	59	79711	463.0233 ug/L #	62
26) Vinyl Acetate	8.64	43	3235	0.9242 ug/L #	77
27) 1,1-Dichloroethane	8.87	63	65572	6.1112 ug/L	98
32) cis-1,2-Dichloroethene	9.81	96	1448	0.2712 ug/L	81
33) Chloroform	10.05	83	2666	0.2568 ug/L #	68
36) Tetrahydrofuran	10.36	42	189	0.2326 ug/L #	38
45) 1,2-Dichloroethane	11.26	62	85208	10.3716 ug/L #	76
47) Trichloroethene	12.17	130	1620	0.3147 ug/L #	65
50) 1,4-Dioxane	12.76	88	189	9.6505 ug/L #	34
60) Ethyl Methacrylate	13.92	69	445	0.5718 ug/L #	1
63) 1,1,2-Trichloroethane	14.49	97	2240	0.6963 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M131129.D 8260WT.M Tue Feb 17 09:11:51 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131129.D Vial: 24
Acq On : 16 Feb 2015 21:36 Operator: TMB
Sample : L15020678-16 A 10X 826-LOW Inst : HPMS6
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 9:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

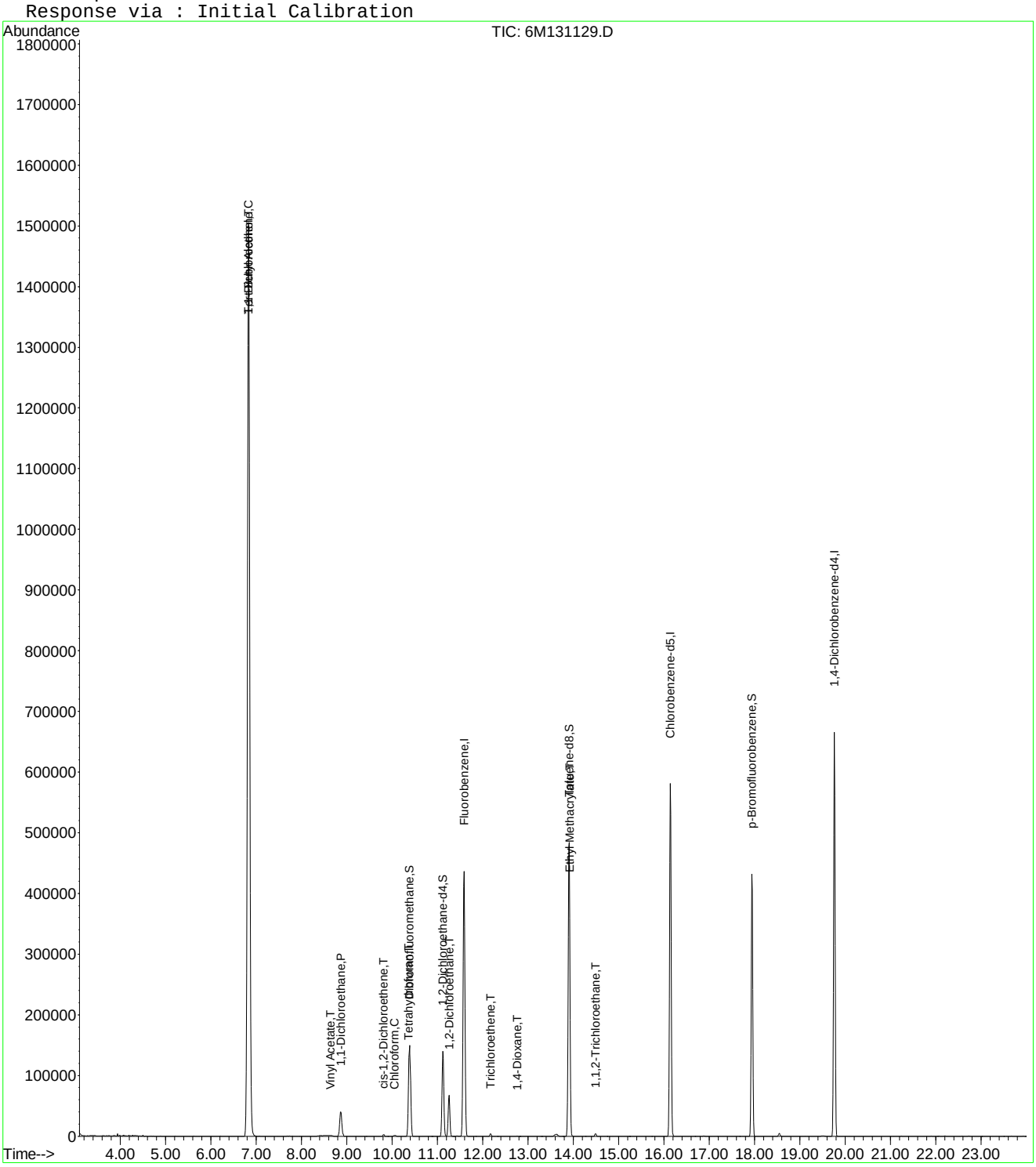

6M131129.D 8260WT.M Tue Feb 17 09:11:51 2015 Page 2

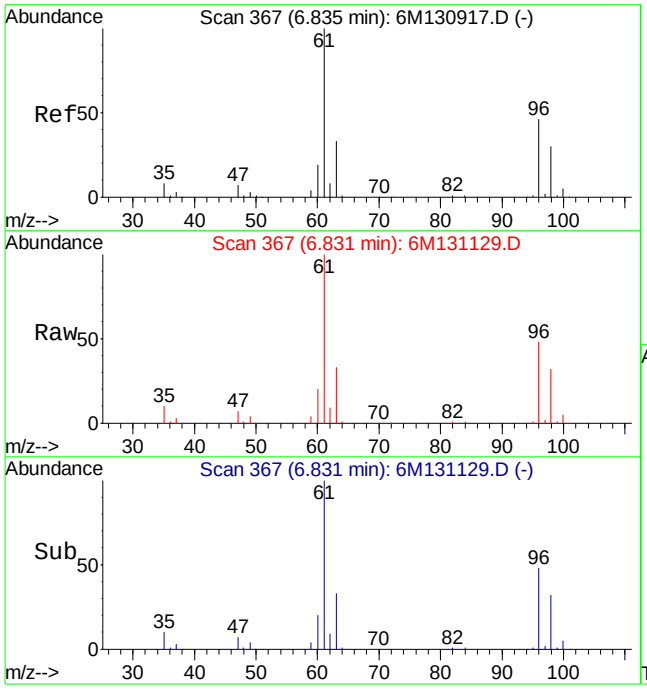

#14
1,1-Dichloroethene
Concen: 192.64 ug/L
RT: 6.83 min Scan# 367
Delta R.T. 0.00 min
Lab File: 6M131129.D
Acq: 16 Feb 2015 21:36

Tgt Ion: 61 Resp: 1868053

Ion	Ratio	Lower	Upper
61	100		
96	47.8	34.1	79.7

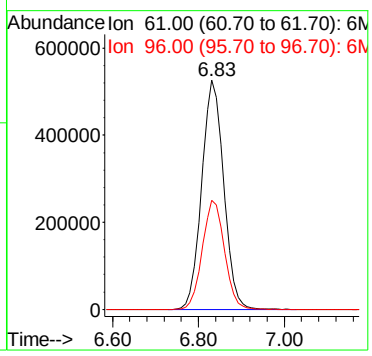

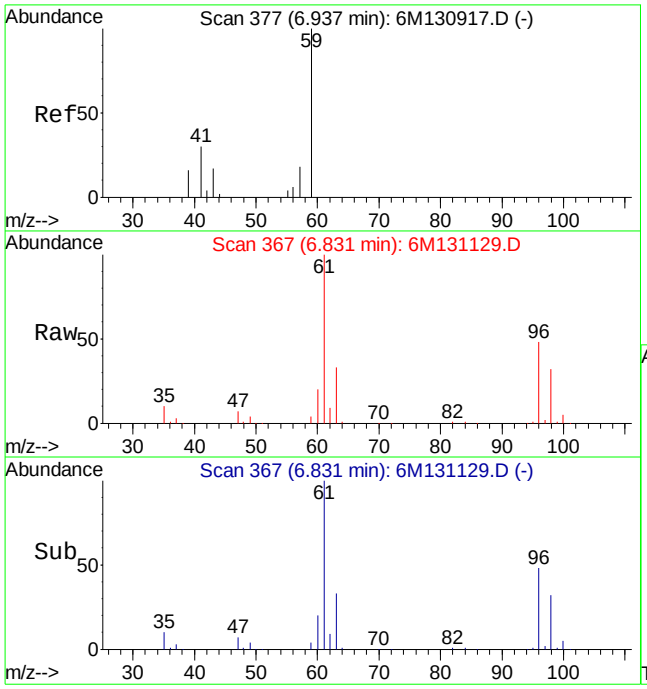

#15
Tert-Butyl Alcohol
Concen: 463.02 ug/L
RT: 6.83 min Scan# 367
Delta R.T. -0.11 min
Lab File: 6M131129.D
Acq: 16 Feb 2015 21:36

Tgt Ion: 59 Resp: 79711

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.3	28.7#
57	0.0	5.6	13.2#

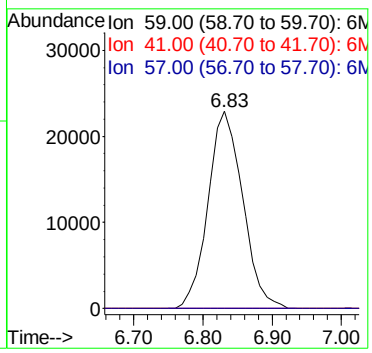

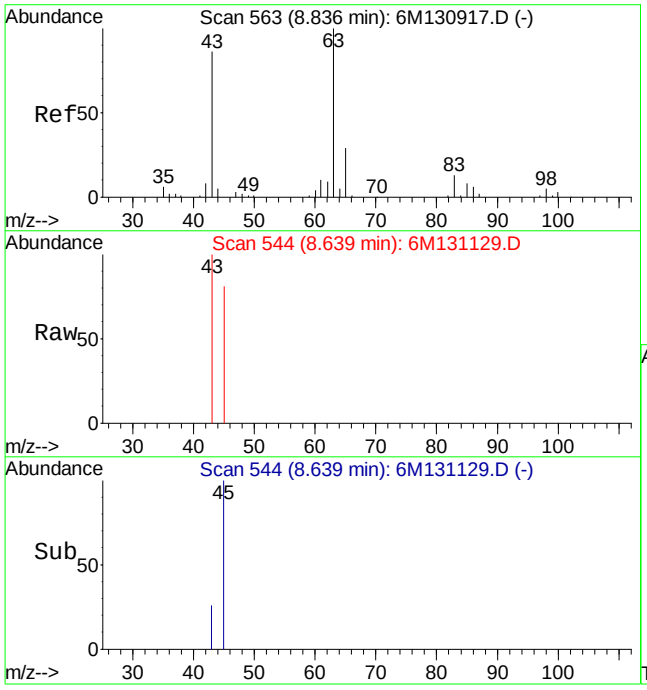

#26
Vinyl Acetate
Concen: 0.92 ug/L
RT: 8.64 min Scan# 544
Delta R.T. -0.19 min
Lab File: 6M131129.D
Acq: 16 Feb 2015 21:36

Tgt Ion: 43 Resp: 3235

Ion	Ratio	Lower	Upper
43	100		
86	0.0	5.0	11.6#

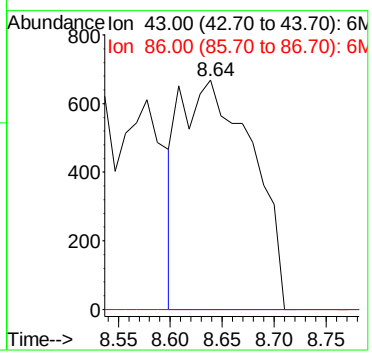

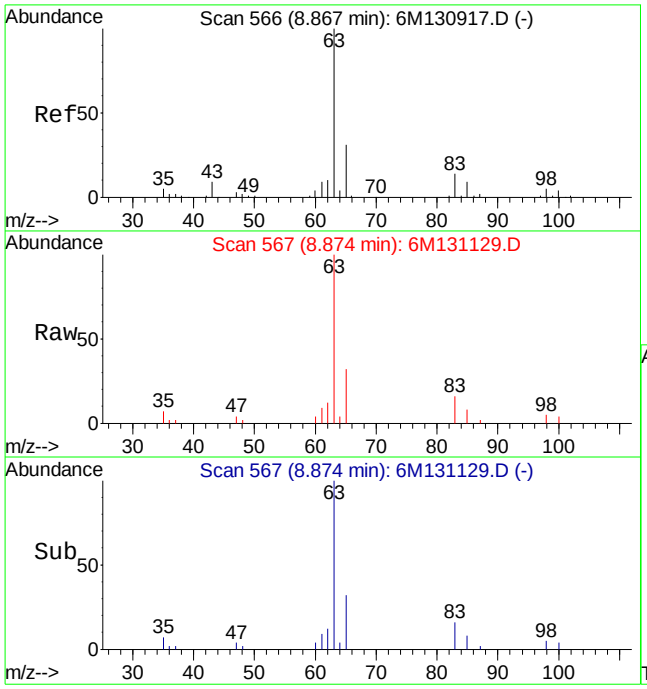

#27
1,1-Dichloroethane
Concen: 6.11 ug/L
RT: 8.87 min Scan# 567
Delta R.T. 0.01 min
Lab File: 6M131129.D
Acq: 16 Feb 2015 21:36

Tgt Ion: 63 Resp: 65572

Ion	Ratio	Lower	Upper
63	100		
65	32.1	18.5	43.1

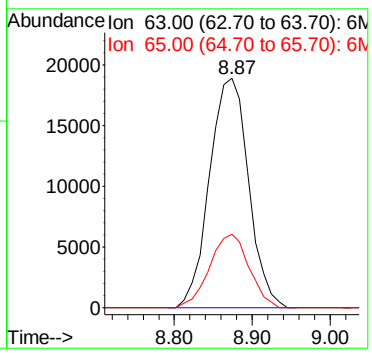

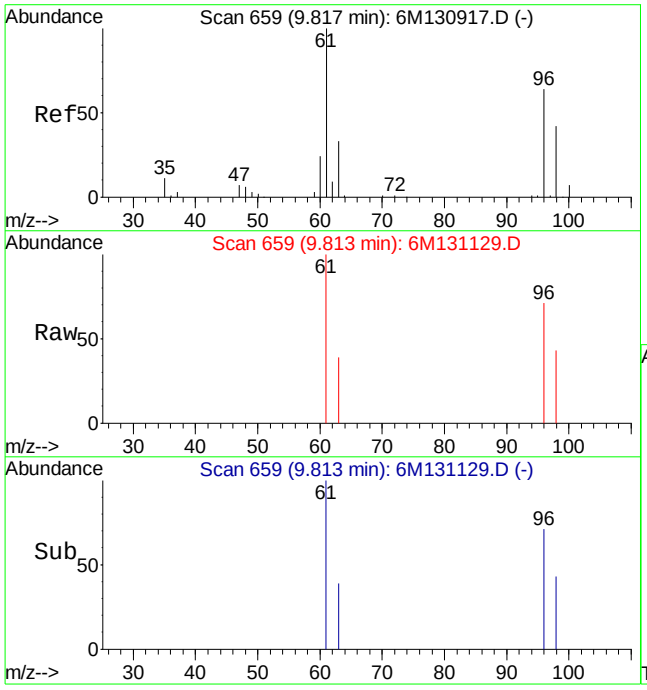

#32
cis-1,2-Dichloroethene
Concen: 0.27 ug/L
RT: 9.81 min Scan# 659
Delta R.T. 0.00 min
Lab File: 6M131129.D
Acq: 16 Feb 2015 21:36

Tgt Ion: 96 Resp: 1448

Ion	Ratio	Lower	Upper
96	100		
61	182.0	94.3	220.1

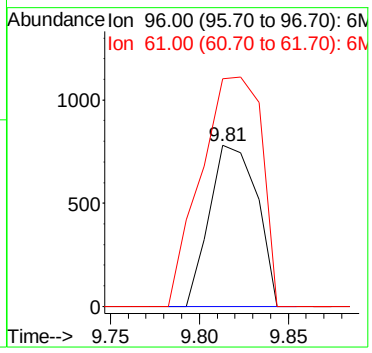

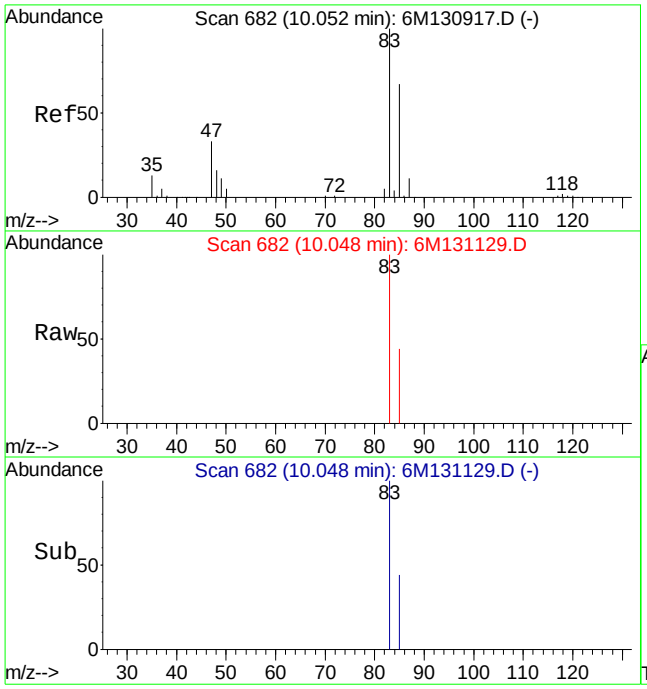

#33
Chloroform
Concen: 0.26 ug/L
RT: 10.05 min Scan# 682
Delta R.T. 0.00 min
Lab File: 6M131129.D
Acq: 16 Feb 2015 21:36

Tgt Ion: 83 Resp: 2666

Ion	Ratio	Lower	Upper
83	100		
85	47.4	39.7	92.5
47	0.0	17.0	39.6#

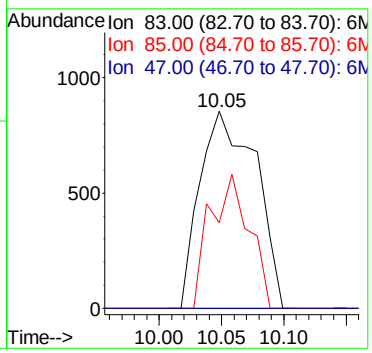

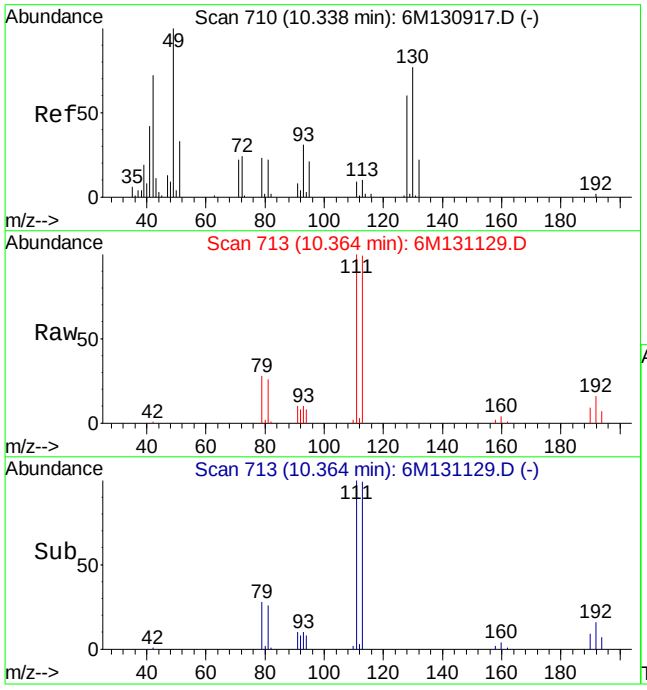

#36
Tetrahydrofuran
Concen: 0.23 ug/L
RT: 10.36 min Scan# 713
Delta R.T. 0.02 min
Lab File: 6M131129.D
Acq: 16 Feb 2015 21:36

Tgt Ion: 42 Resp: 189

Ion	Ratio	Lower	Upper
42	100		
72	0.0	22.8	53.2#
71	0.0	21.5	50.3#

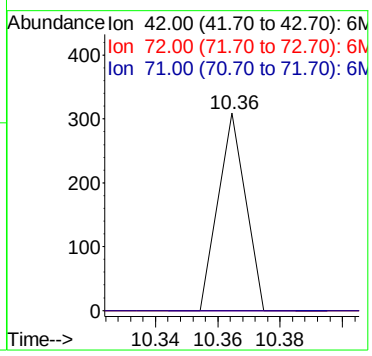

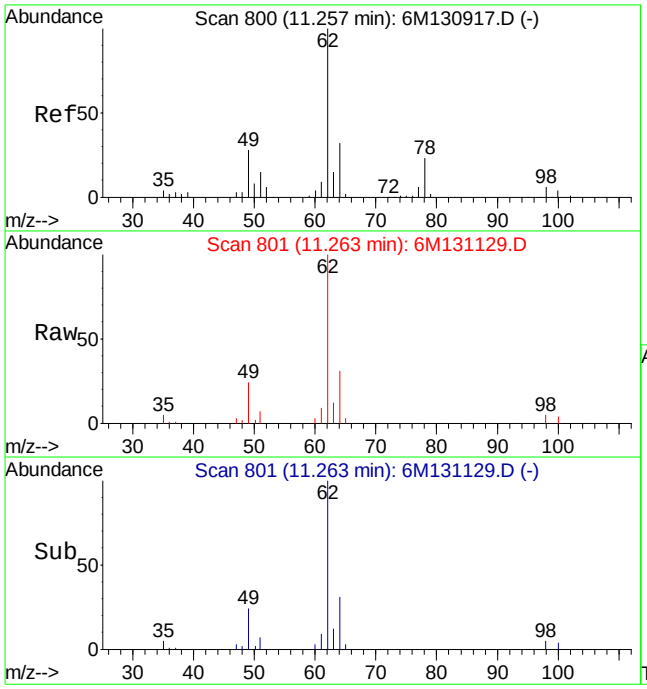

#45
1,2-Dichloroethane
Concen: 10.37 ug/L
RT: 11.26 min Scan# 801
Delta R.T. 0.01 min
Lab File: 6M131129.D
Acq: 16 Feb 2015 21:36

Tgt Ion: 62 Resp: 85208

Ion	Ratio	Lower	Upper
62	100		
49	22.6	23.7	55.3#
98	5.3	4.9	11.5

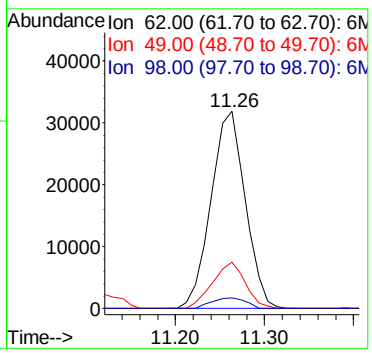

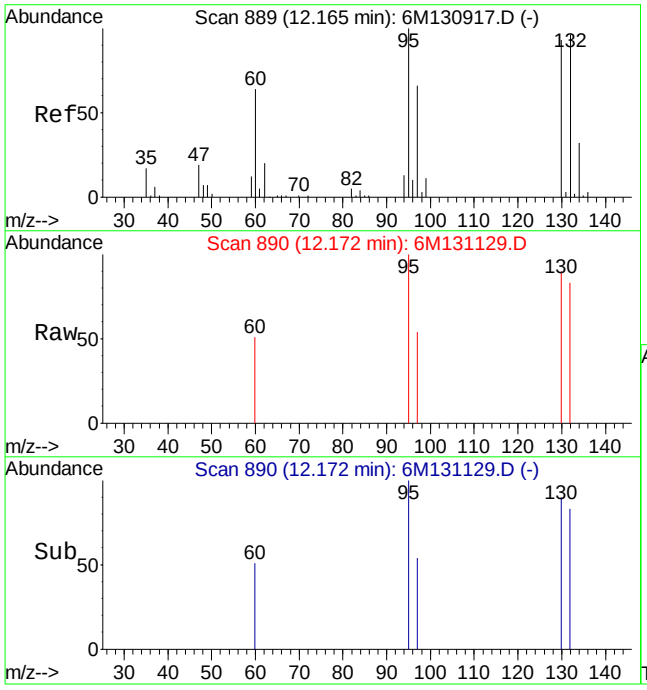

#47
Trichloroethene
Concen: 0.31 ug/L
RT: 12.17 min Scan# 890
Delta R.T. 0.00 min
Lab File: 6M131129.D
Acq: 16 Feb 2015 21:36

Tgt Ion:130 Resp: 1620

Ion	Ratio	Lower	Upper
130	100		
60	71.1	28.6	66.6#

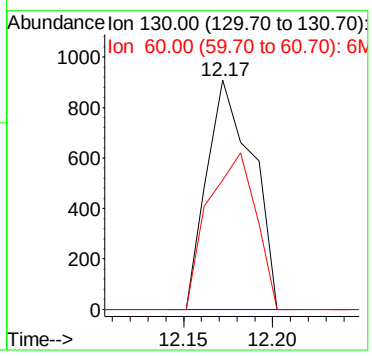

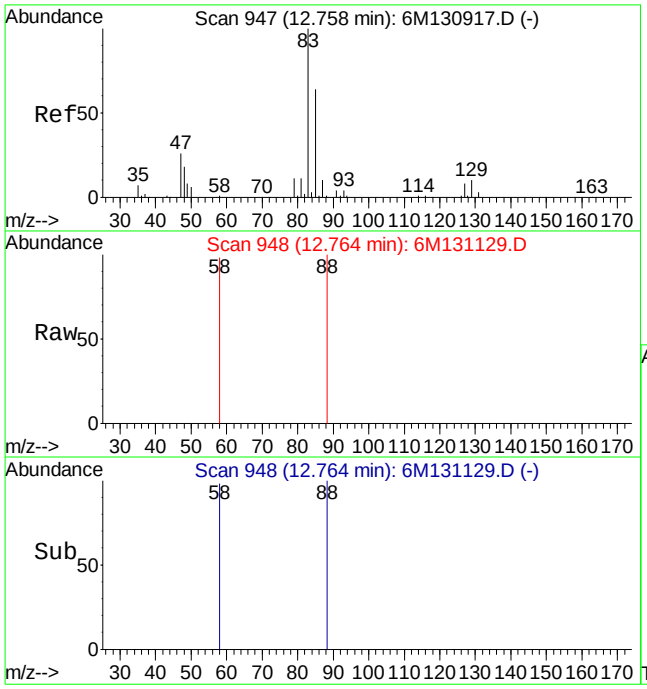

#50
1,4-Dioxane
Concen: 9.65 ug/L
RT: 12.76 min Scan# 948
Delta R.T. -0.01 min
Lab File: 6M131129.D
Acq: 16 Feb 2015 21:36

Tgt Ion: 88 Resp: 189

Ion	Ratio	Lower	Upper
88	100		
58	97.9	31.1	72.5#

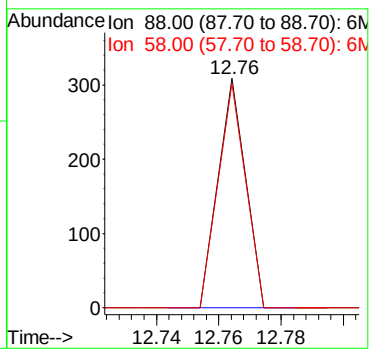

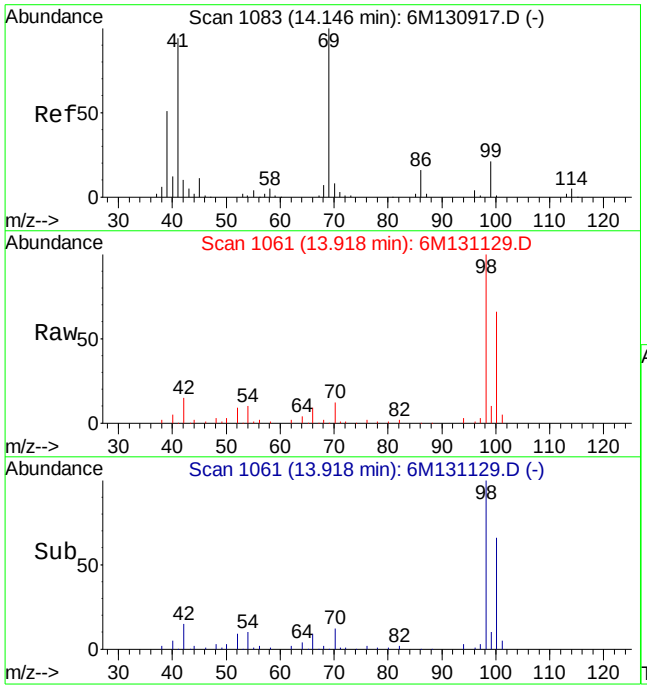

#60
Ethyl Methacrylate
Concen: 0.57 ug/L
RT: 13.92 min Scan# 1061
Delta R.T. -0.22 min
Lab File: 6M131129.D
Acq: 16 Feb 2015 21:36

Tgt Ion: 69 Resp: 445

Ion	Ratio	Lower	Upper
69	100		
41	224.0	46.5	108.5#

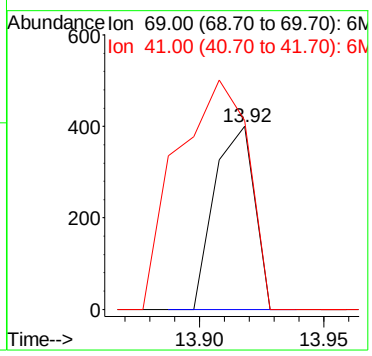

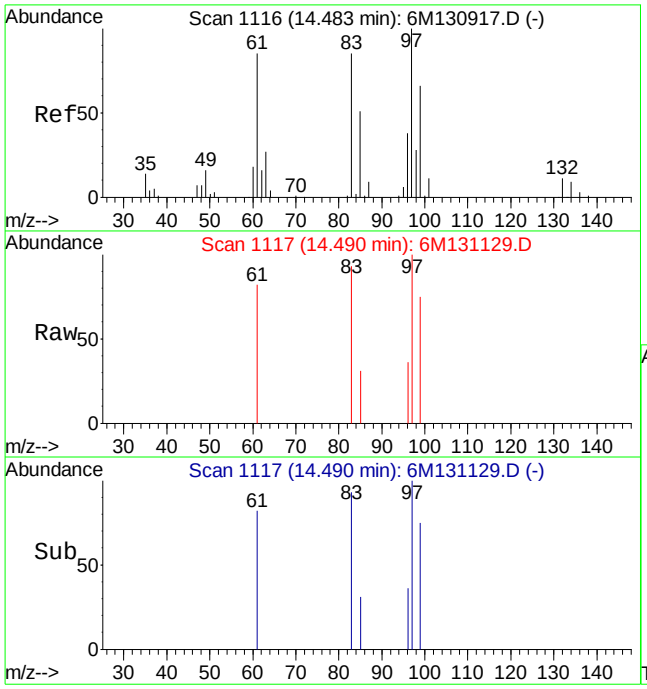

#63
1,1,2-Trichloroethane
Concen: 0.70 ug/L
RT: 14.49 min Scan# 1117
Delta R.T. 0.00 min
Lab File: 6M131129.D
Acq: 16 Feb 2015 21:36

Tgt Ion: 97 Resp: 2240

Ion	Ratio	Lower	Upper
97	100		
83	88.3	50.9	118.7
99	64.1	37.9	88.5

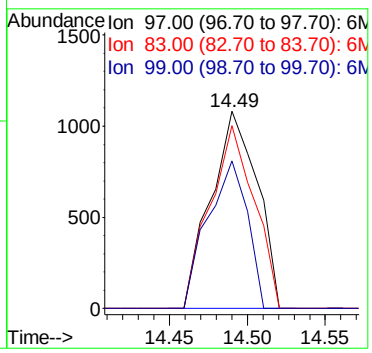

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131115.D Vial: 10
Acq On : 16 Feb 2015 14:23 Operator: TMB
Sample : L15020678-17 B TB 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 09:11:36 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	648970	25.00 ug/L	0.01
57) Chlorobenzene-d5	16.15	117	488622	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	257200	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	155412	23.7102 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.84%		
43) 1,2-Dichloroethane-d4	11.12	65	176456	22.5907 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.36%		
58) Toluene-d8	13.90	98	552299	24.7694 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.08%		
80) p-Bromofluorobenzene	17.94	95	230531	26.6568 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.64%		

Target Compounds					Qvalue
13) Acetone	6.58	43	425	0.4244 ug/L #	49
60) Ethyl Methacrylate	13.92	69	994	0.6674 ug/L #	9
99) Hexachlorobutadiene	23.16	225	560	0.1638 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M131115.D 8260WT.M Tue Feb 17 09:11:36 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131115.D Vial: 10
Acq On : 16 Feb 2015 14:23 Operator: TMB
Sample : L15020678-17 B TB 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 9:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

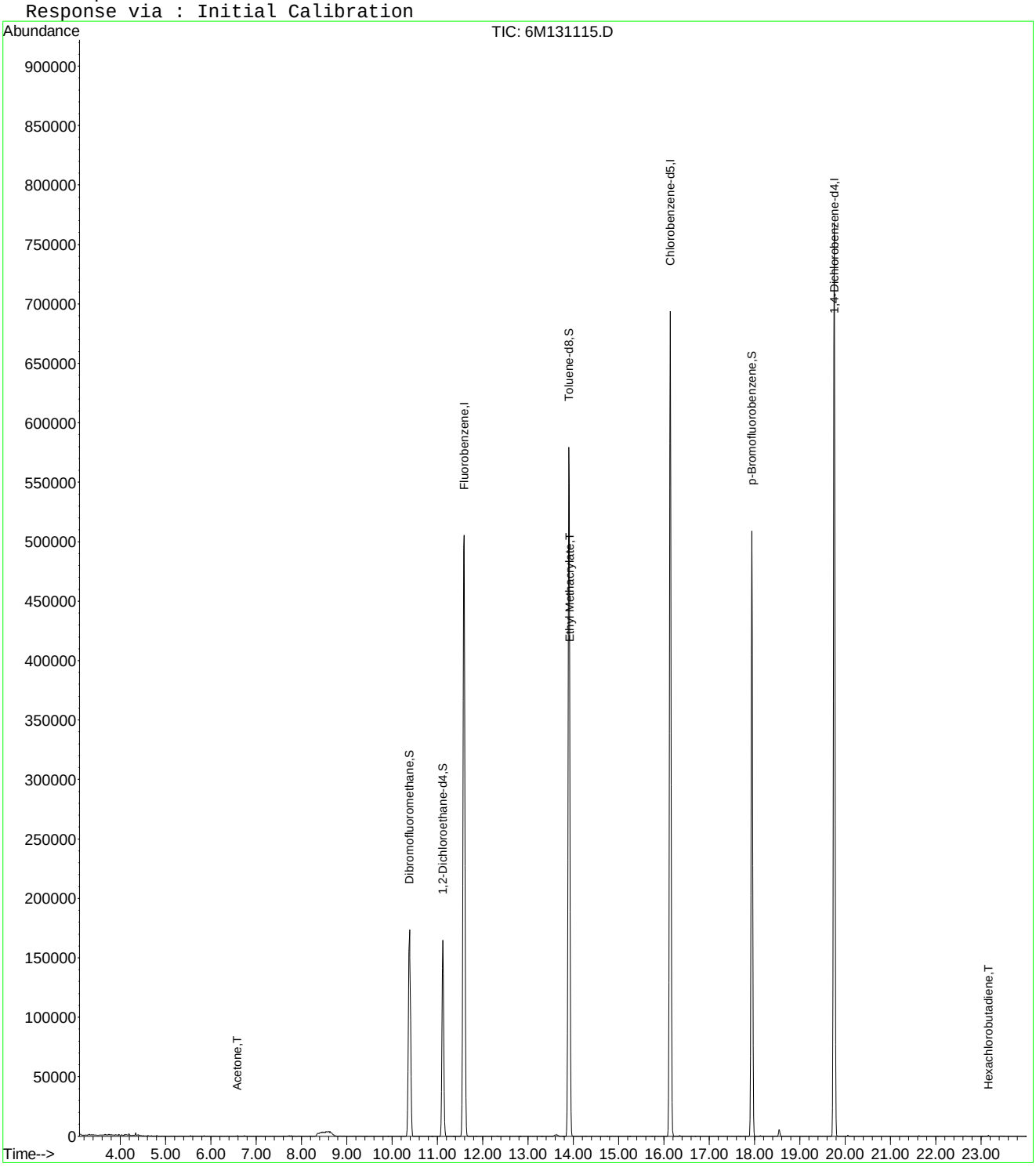

6M131115.D 8260WT.M Tue Feb 17 09:11:36 2015 Page 2

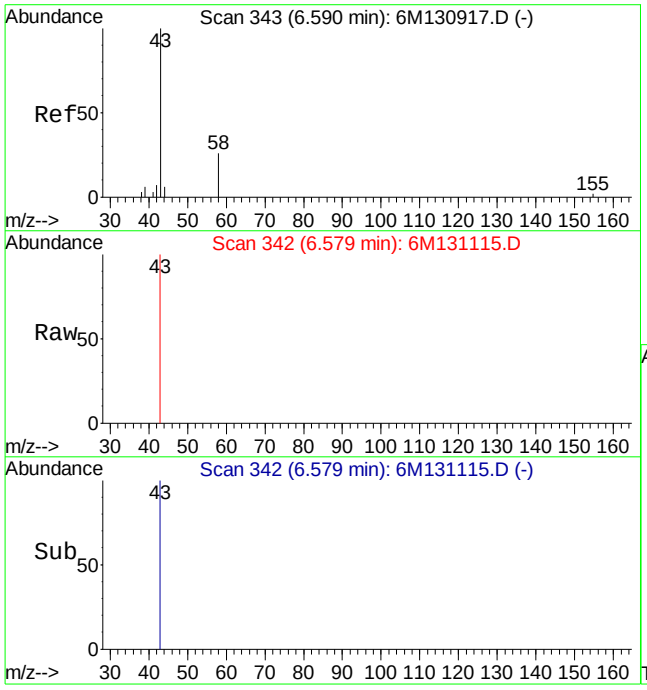

#13
Acetone
Concen: 0.42 ug/L
RT: 6.58 min Scan# 342
Delta R.T. -0.01 min
Lab File: 6M131115.D
Acq: 16 Feb 2015 14:23

Tgt Ion: 43 Resp: 425

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.7	36.5#

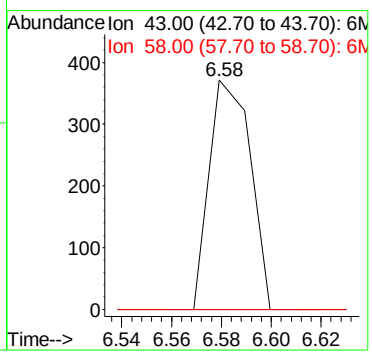

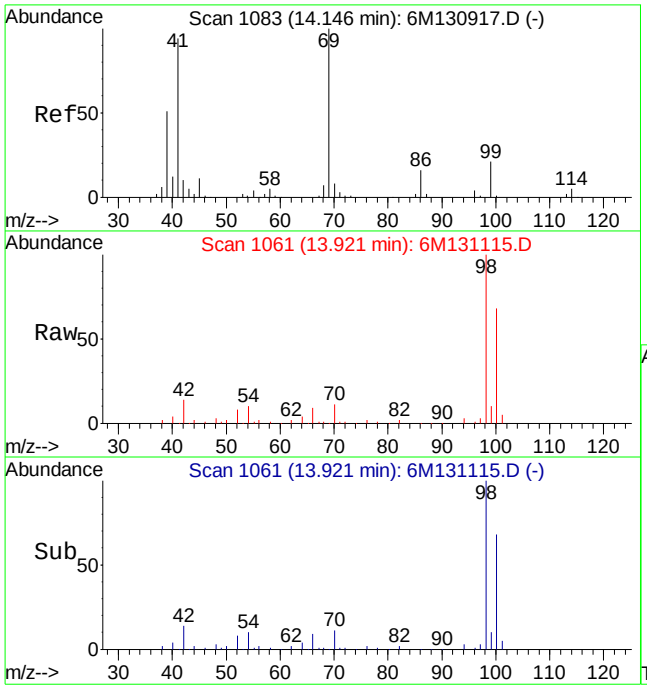

#60
Ethyl Methacrylate
Concen: 0.67 ug/L
RT: 13.92 min Scan# 1061
Delta R.T. -0.22 min
Lab File: 6M131115.D
Acq: 16 Feb 2015 14:23

Tgt Ion: 69 Resp: 994

Ion	Ratio	Lower	Upper
69	100		
41	156.4	46.5	108.5#

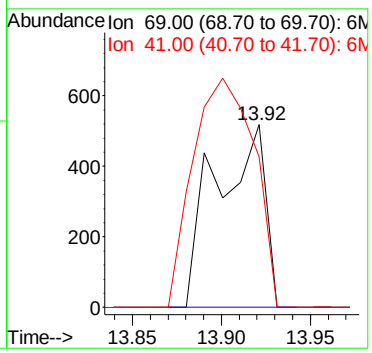

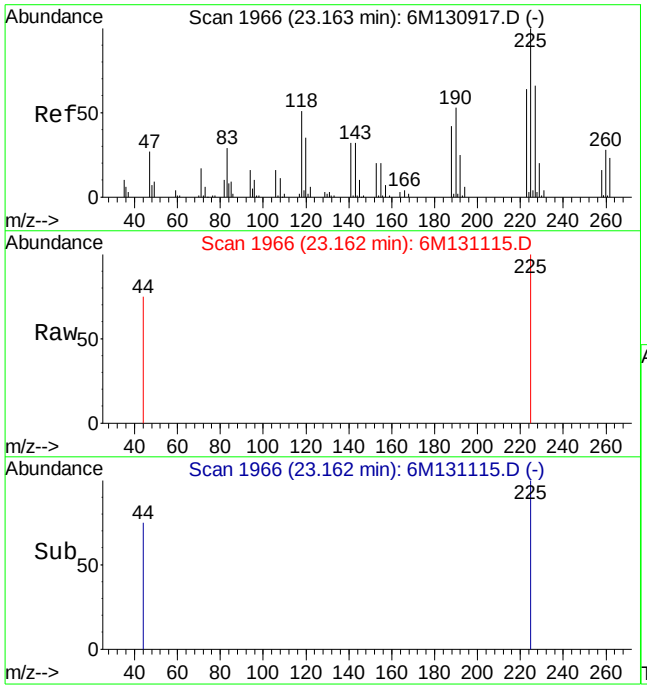

#99
Hexachlorobutadiene
Concen: 0.16 ug/L
RT: 23.16 min Scan# 1966
Delta R.T. 0.00 min
Lab File: 6M131115.D
Acq: 16 Feb 2015 14:23

Tgt Ion:225 Resp: 560

Ion	Ratio	Lower	Upper
225	100		
223	0.0	38.4	89.6#
227	0.0	38.5	89.9#

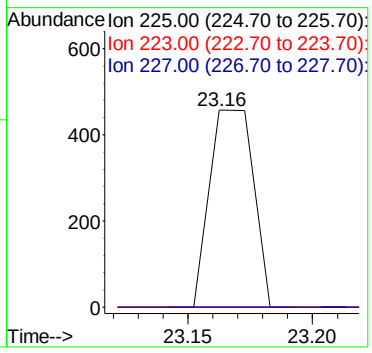

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128665.D Vial: 4
Acq On : 30 Sep 2014 16:17 Operator: TMB
Sample : WG494605-02 5ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 01 15:22:18 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:17:54 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.64	96	678586	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.20	117	583421	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.80	152	292039	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	3217	6.3256 ug/L #	83
3) 3-Chloro-1-propene	7.54	41	62098	4.7857 ug/L	94
4) 2-Chloro-1,3-butadiene	9.07	53	54224	4.3186 ug/L	86
5) Ethyl Acetate	9.79	43	15306	4.7126 ug/L #	87
6) Methacrylonitrile	9.98	67	5527	4.1382 ug/L #	46
7) Isobutyl Alcohol	9.99	43	629	4.4434 ug/L #	85
9) Methyl methacrylate	12.48	41	18911	4.5858 ug/L	79
10) 2-Nitropropane	12.86	43	3598	3.9092 ug/L	90
13) Cyclohexanone	17.71	55	1371	3.5168 ug/L #	73

(#) = qualifier out of range (m) = manual integration
6M128665.D A9FOOWT.M Wed Oct 01 15:22:18 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128665.D Vial: 4
Acq On : 30 Sep 2014 16:17 Operator: TMB
Sample : WG494605-02 5ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 1 15:22 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration

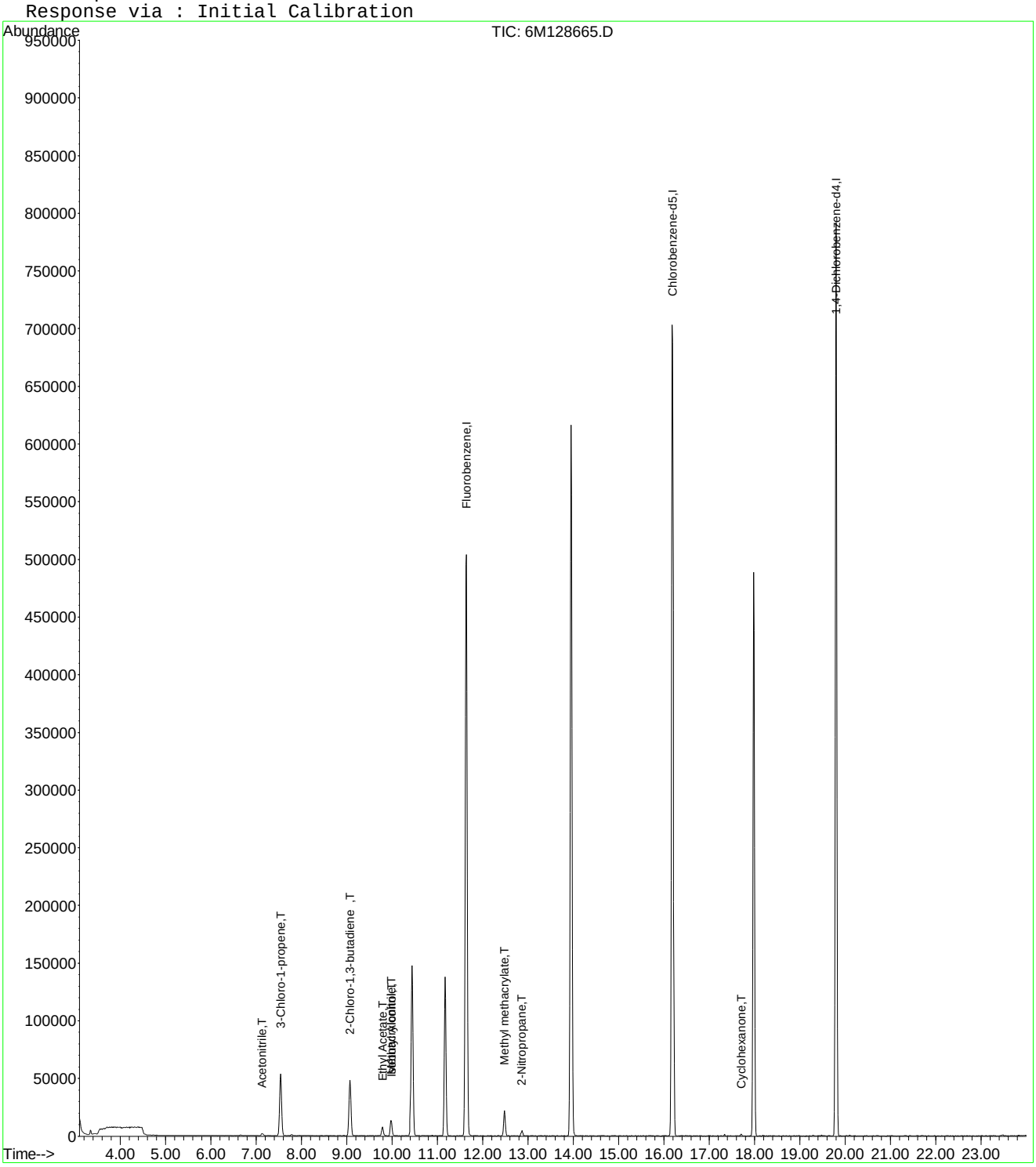

6M128665.D A9FOOWT.M Wed Oct 01 15:22:18 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128666.D Vial: 5
Acq On : 30 Sep 2014 16:49 Operator: TMB
Sample : WG494605-03 20ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 01 15:22:20 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.64	96	630765	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.20	117	559267	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.80	152	282045	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	10274	21.7333 ug/L	99
3) 3-Chloro-1-propene	7.54	41	233050	19.3219 ug/L	93
4) 2-Chloro-1,3-butadiene	9.07	53	203124	17.4041 ug/L	87
5) Ethyl Acetate	9.78	43	56554	18.7328 ug/L	92
6) Methacrylonitrile	9.98	67	22631	18.2288 ug/L #	58
7) Isobutyl Alcohol	9.98	43	4768	36.2354 ug/L #	85
9) Methyl methacrylate	12.48	41	73690	19.2241 ug/L	79
10) 2-Nitropropane	12.86	43	14071	16.4472 ug/L	90
13) Cyclohexanone	17.71	55	6408	17.0197 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M128666.D A9FOOWT.M Wed Oct 01 15:22:20 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128666.D Vial: 5
Acq On : 30 Sep 2014 16:49 Operator: TMB
Sample : WG494605-03 20ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 1 15:22 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration

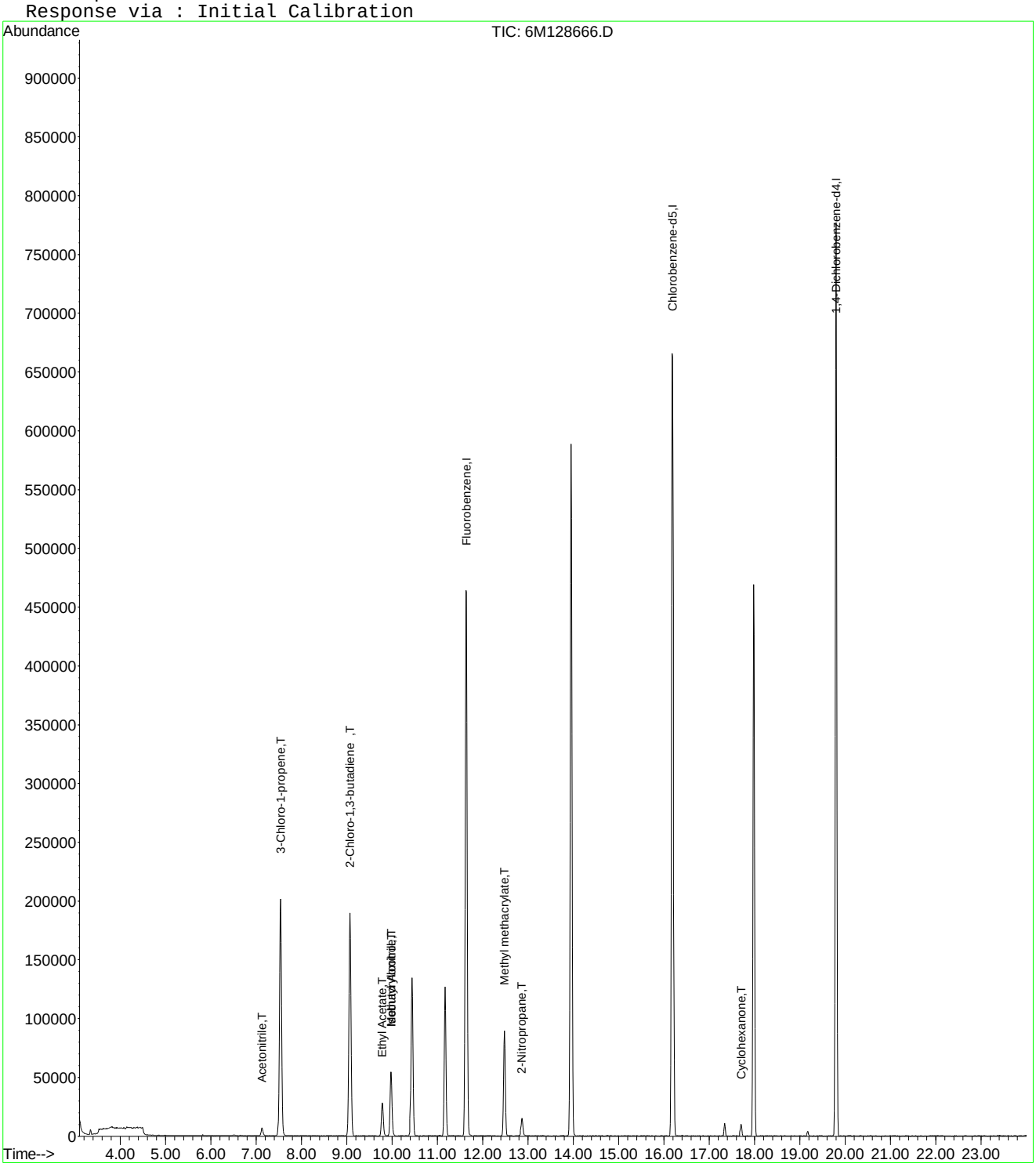

6M128666.D A9FOOWT.M Wed Oct 01 15:22:20 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128667.D Vial: 6
Acq On : 30 Sep 2014 17:21 Operator: TMB
Sample : WG494605-04 50ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 01 15:22:21 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.64	96	657406	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.19	117	562923	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.80	152	284402	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	23808	48.3219 ug/L	97
3) 3-Chloro-1-propene	7.54	41	599918	47.7230 ug/L	93
4) 2-Chloro-1,3-butadiene	9.07	53	540752	44.4551 ug/L	88
5) Ethyl Acetate	9.78	43	149438	47.4935 ug/L	92
6) Methacrylonitrile	9.97	67	61581	47.5922 ug/L #	57
7) Isobutyl Alcohol	9.98	43	12706	92.6489 ug/L #	91
8) 1-Butanol	11.04	41	1957	36.7259 ug/L	84
9) Methyl methacrylate	12.48	41	194238	48.6190 ug/L	80
10) 2-Nitropropane	12.87	43	38700	43.4023 ug/L	90
13) Cyclohexanone	17.70	55	16825	44.3170 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M128667.D A9FOOWT.M Wed Oct 01 15:22:21 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128667.D Vial: 6
Acq On : 30 Sep 2014 17:21 Operator: TMB
Sample : WG494605-04 50ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 1 15:22 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration

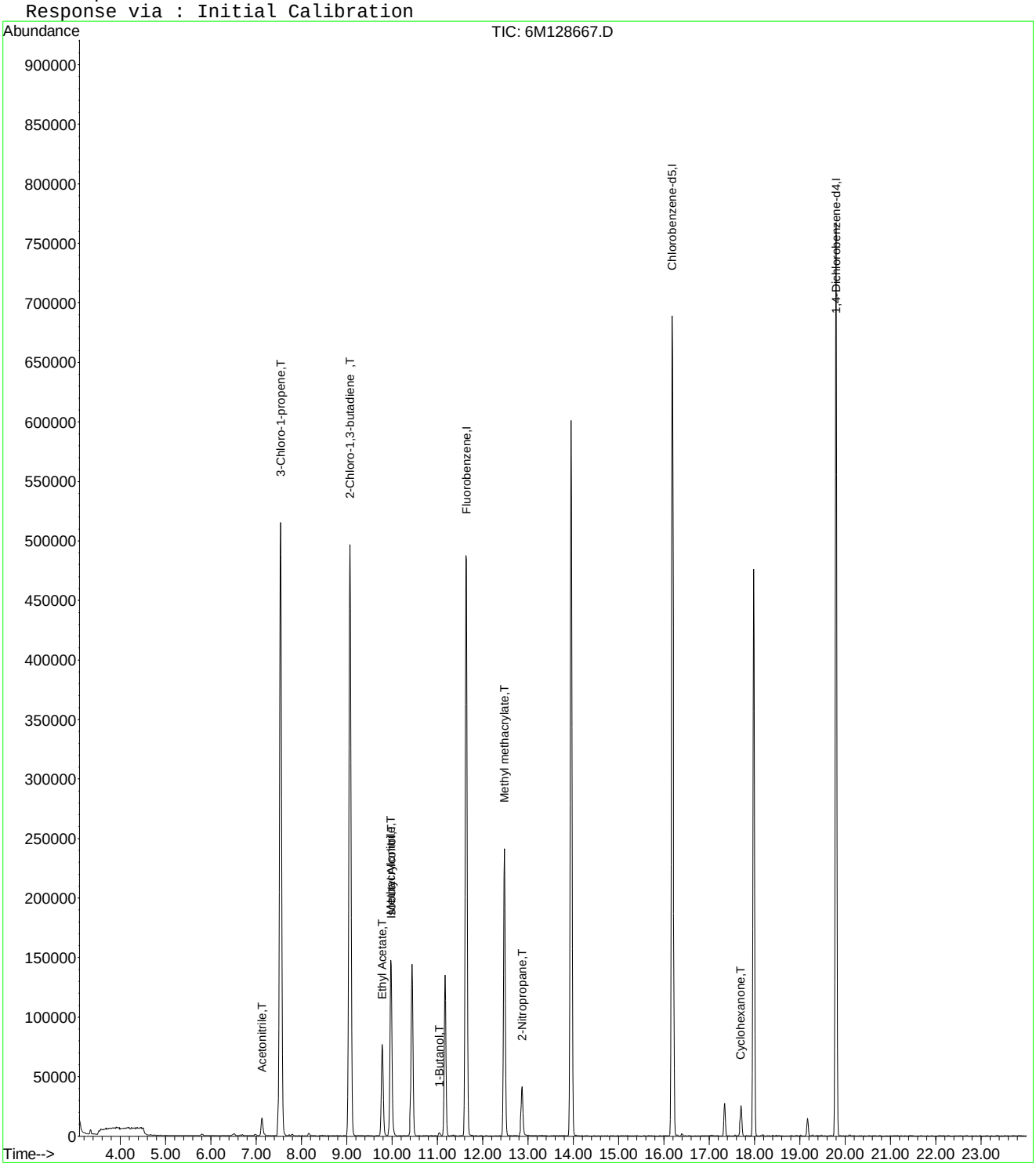

6M128667.D A9FOOWT.M Wed Oct 01 15:22:21 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128668.D Vial: 7
Acq On : 30 Sep 2014 17:52 Operator: TMB
Sample : WG494605-05 100ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 01 15:22:21 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.64	96	692615	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.20	117	568243	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.80	152	283885	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	50582	97.4448 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1337210	100.9664 ug/L	93
4) 2-Chloro-1,3-butadiene	9.07	53	1253282	97.7944 ug/L	88
5) Ethyl Acetate	9.78	43	336894	101.6268 ug/L	92
6) Methacrylonitrile	9.97	67	138695	101.7400 ug/L #	60
7) Isobutyl Alcohol	9.97	43	29523	204.3307 ug/L #	94
8) 1-Butanol	11.04	41	5183	92.3219 ug/L	77
9) Methyl methacrylate	12.48	41	417798	99.2613 ug/L	80
10) 2-Nitropropane	12.87	43	89777	95.5671 ug/L	91
13) Cyclohexanone	17.70	55	38303	101.0738 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M128668.D A9FOOWT.M Wed Oct 01 15:22:21 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128668.D Vial: 7
Acq On : 30 Sep 2014 17:52 Operator: TMB
Sample : WG494605-05 100ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 1 15:22 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration

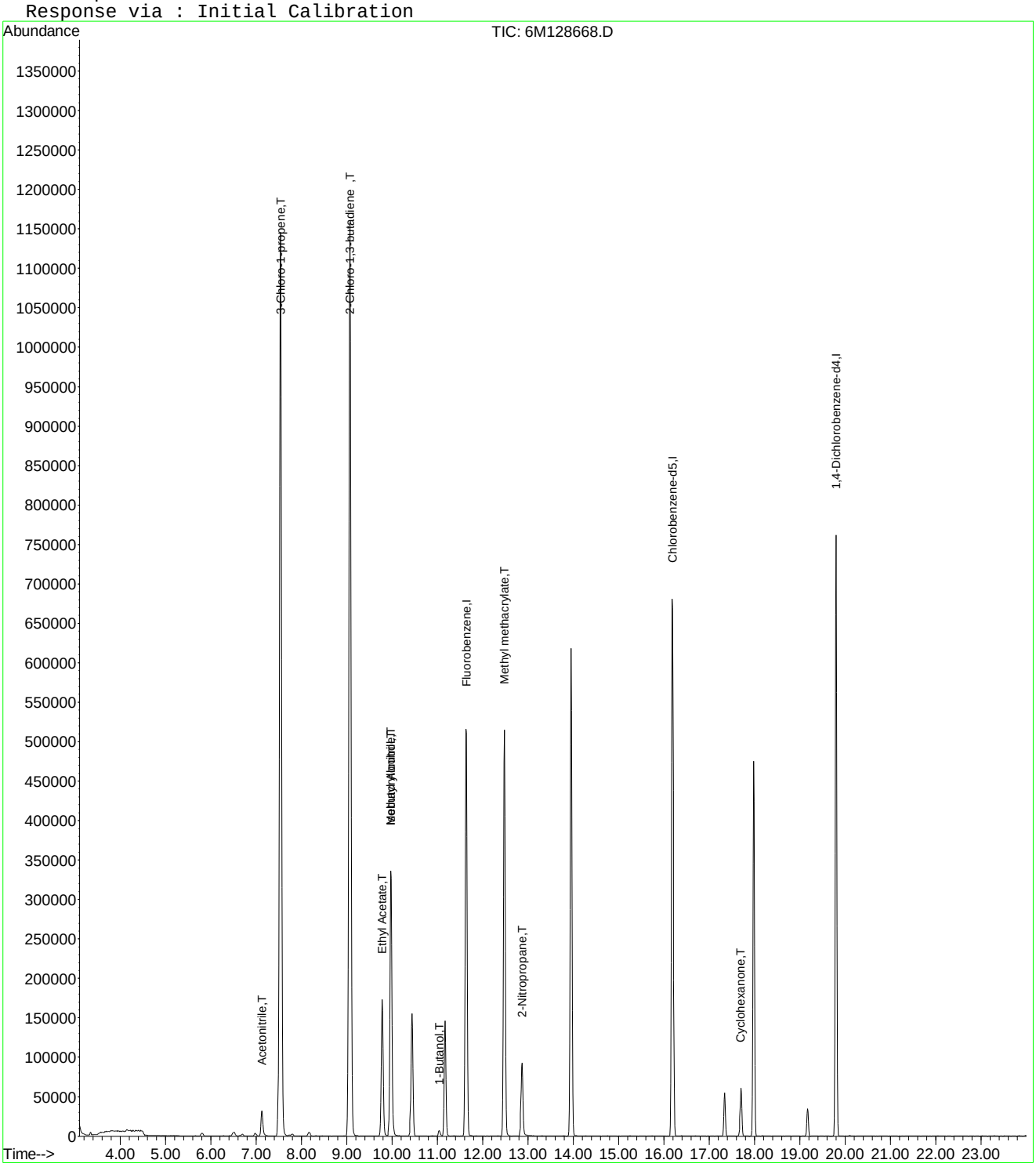

6M128668.D A9FOOWT.M Wed Oct 01 15:22:21 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128669.D Vial: 8
Acq On : 30 Sep 2014 18:24 Operator: TMB
Sample : WG494605-06 200ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 01 15:22:22 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.64	96	660630	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.20	117	563534	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.80	152	285177	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.13	41	98132	198.2015	ug/L	94
3) 3-Chloro-1-propene	7.54	41	2589548	204.9910	ug/L	93
4) 2-Chloro-1,3-butadiene	9.07	53	2583138	211.3228	ug/L	88
5) Ethyl Acetate	9.78	43	647377	204.7415	ug/L	93
6) Methacrylonitrile	9.97	67	271891	209.1026	ug/L #	60
7) Isobutyl Alcohol	9.98	43	57640	418.2449	ug/L #	93
8) 1-Butanol	11.04	41	11167	208.5421	ug/L	80
9) Methyl methacrylate	12.48	41	829368	206.5829	ug/L	80
10) 2-Nitropropane	12.87	43	185425	206.9404	ug/L	92
13) Cyclohexanone	17.70	55	75985	199.6005	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M128669.D A9FOOWT.M Wed Oct 01 15:22:22 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128669.D Vial: 8
Acq On : 30 Sep 2014 18:24 Operator: TMB
Sample : WG494605-06 200ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 1 15:22 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration

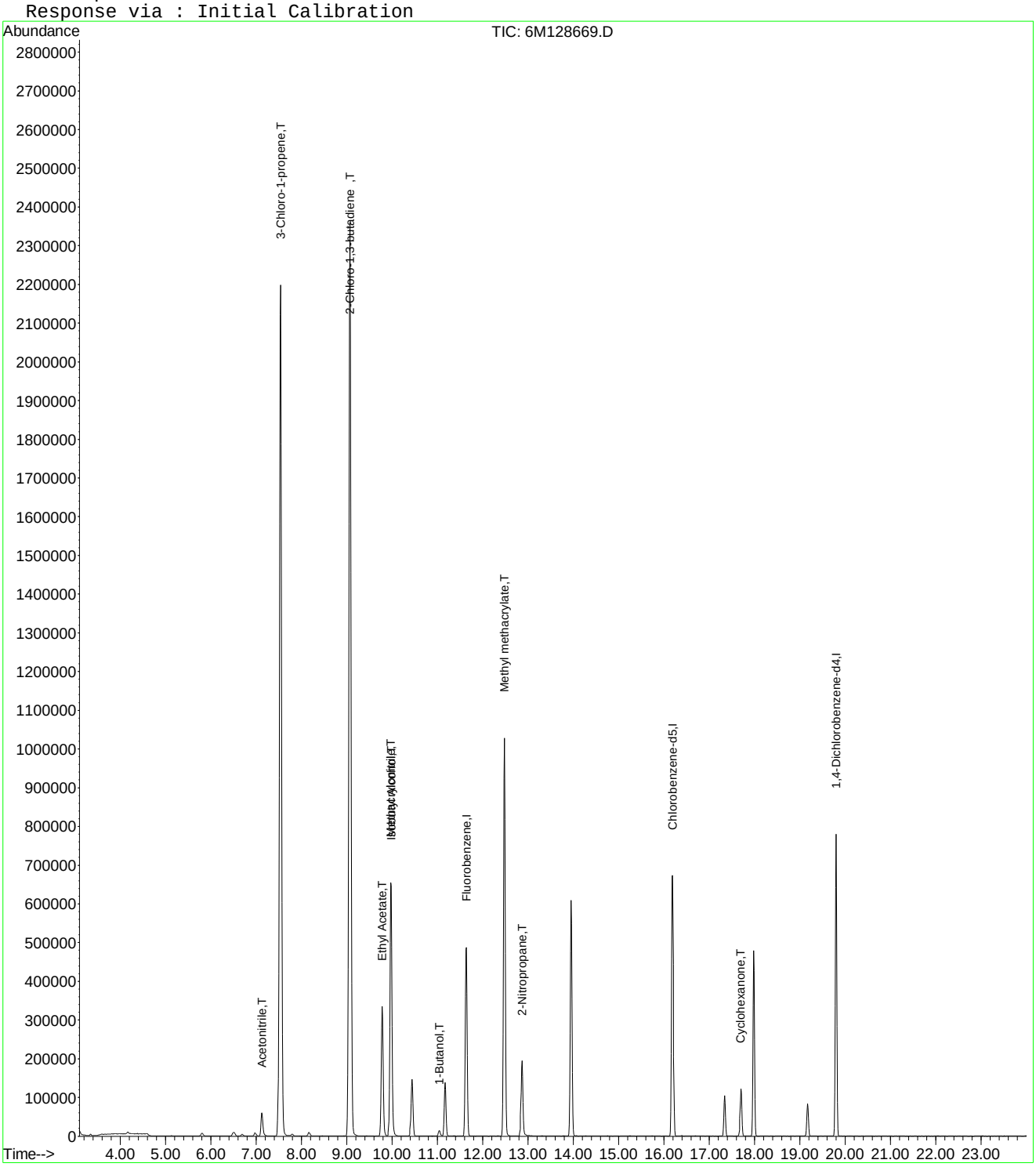

6M128669.D A9FOOWT.M Wed Oct 01 15:22:22 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128670.D Vial: 9
Acq On : 30 Sep 2014 18:55 Operator: TMB
Sample : WG494605-07 300ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 01 15:22:22 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.64	96	655036	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.19	117	562422	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.80	152	285432	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	150371	306.3046 ug/L	93
3) 3-Chloro-1-propene	7.54	41	3852245	307.5515 ug/L	92
4) 2-Chloro-1,3-butadiene	9.07	53	4008887	330.7620 ug/L	88
5) Ethyl Acetate	9.78	43	967848	308.7087 ug/L	93
6) Methacrylonitrile	9.98	67	412286	319.7836 ug/L #	60
7) Isobutyl Alcohol	9.98	43	85742	627.4707 ug/L #	91
8) 1-Butanol	11.04	41	17577	331.0512 ug/L	82
9) Methyl methacrylate	12.48	41	1232683	309.6647 ug/L	80
10) 2-Nitropropane	12.87	43	287788	323.9238 ug/L	93
13) Cyclohexanone	17.70	55	125953	330.5630 ug/L	85

(#) = qualifier out of range (m) = manual integration
6M128670.D A9FOOWT.M Wed Oct 01 15:22:22 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128670.D Vial: 9
Acq On : 30 Sep 2014 18:55 Operator: TMB
Sample : WG494605-07 300ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 1 15:22 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration

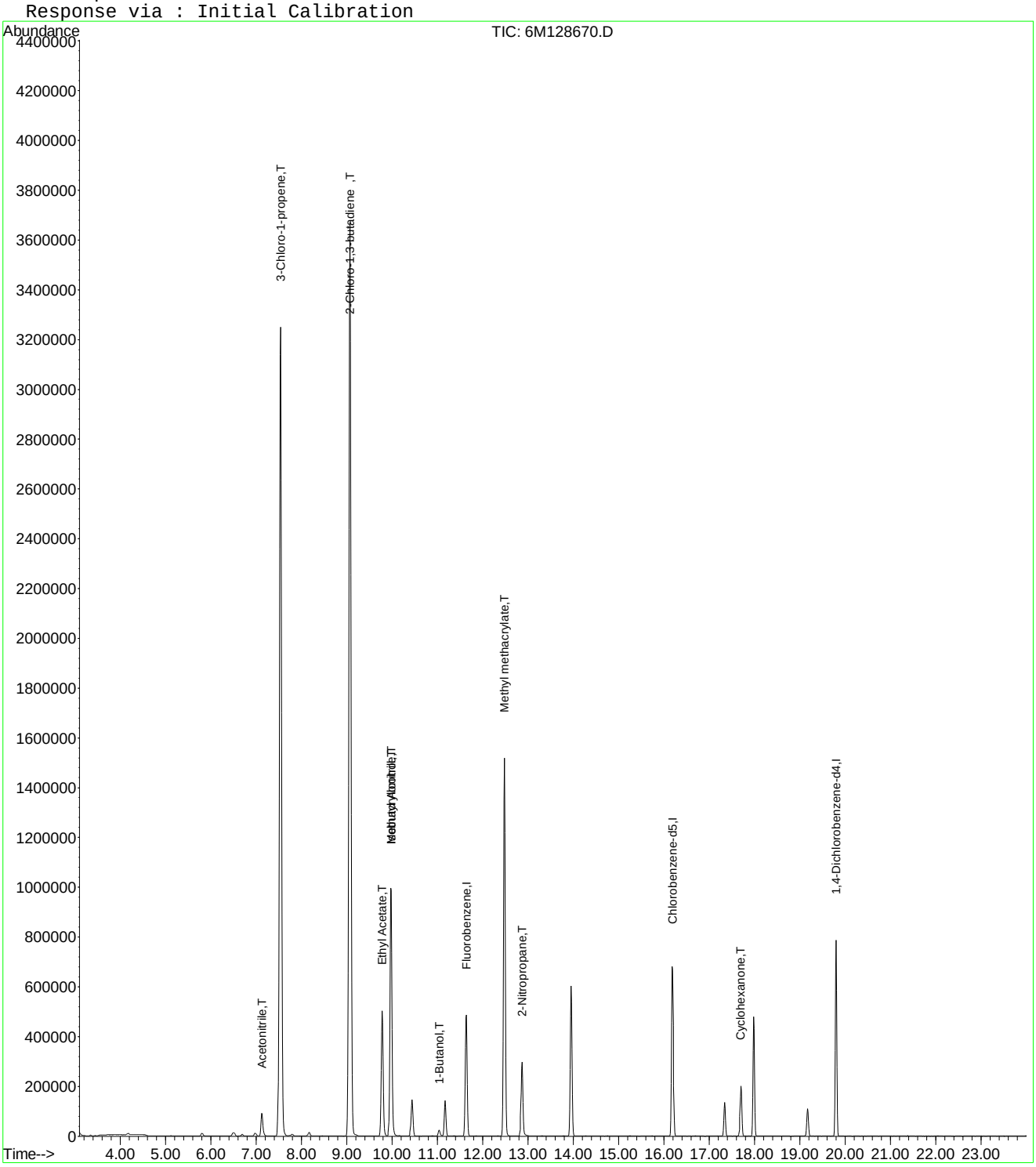

6M128670.D A9FOOWT.M Wed Oct 01 15:22:22 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128671.D Vial: 10
Acq On : 30 Sep 2014 19:27 Operator: TMB
Sample : WG494605-08 400ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 01 15:22:22 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.63	96	673445	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.19	117	570557	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.80	152	284231	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.12	41	195323	386.9955 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5243573	407.1873 ug/L	92
4) 2-Chloro-1,3-butadiene	9.07	53	5521379	443.1007 ug/L	88
5) Ethyl Acetate	9.79	43	1299773	403.2480 ug/L	93
6) Methacrylonitrile	9.97	67	554011	417.9642 ug/L #	59
7) Isobutyl Alcohol	9.98	43	110962	789.8364 ug/L #	90
8) 1-Butanol	11.04	41	23034	421.9712 ug/L	81
9) Methyl methacrylate	12.48	41	1656213	404.6872 ug/L	80
10) 2-Nitropropane	12.86	43	390197	427.1862 ug/L	94
13) Cyclohexanone	17.70	55	164849	434.4734 ug/L	86

(#) = qualifier out of range (m) = manual integration
6M128671.D A9FOOWT.M Wed Oct 01 15:22:23 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128671.D Vial: 10
Acq On : 30 Sep 2014 19:27 Operator: TMB
Sample : WG494605-08 400ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 1 15:22 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration

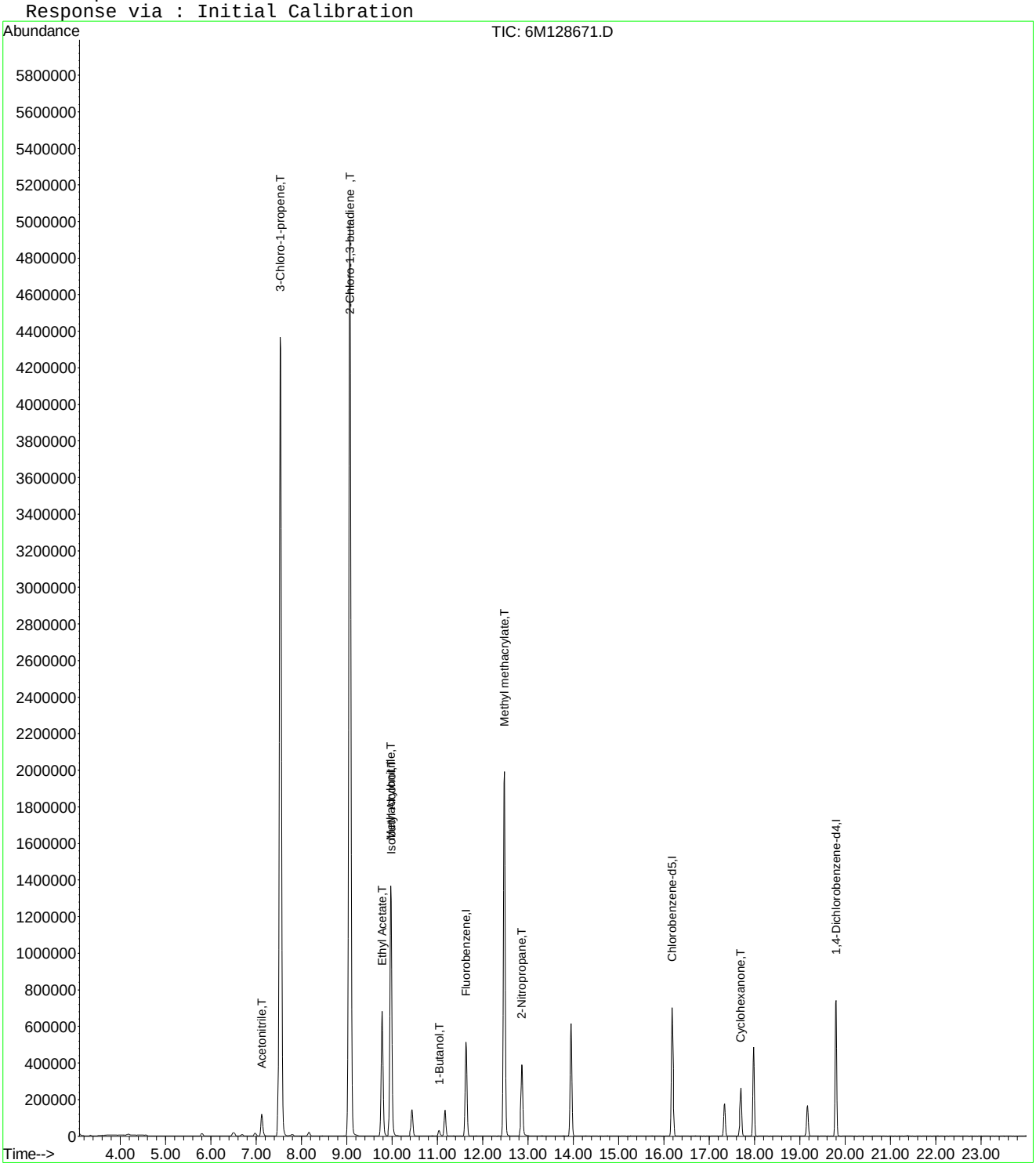

6M128671.D A9FOOWT.M Wed Oct 01 15:22:23 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128672.D Vial: 11
Acq On : 30 Sep 2014 19:59 Operator: TMB
Sample : WG494605-09 500ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 01 15:22:23 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.63	96	701556	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.19	117	576116	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.80	152	287048	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.12	41	261035	496.4677 ug/L	93
3) 3-Chloro-1-propene	7.53	41	7006386	522.2769 ug/L	93
4) 2-Chloro-1,3-butadiene	9.07	53	7348002	566.0619 ug/L	90
5) Ethyl Acetate	9.78	43	1836448	546.9192 ug/L	93
6) Methacrylonitrile	9.97	67	783836	567.6566 ug/L #	61
7) Isobutyl Alcohol	9.98	43	156198	1067.2794 ug/L #	91
8) 1-Butanol	11.04	41	32445	570.5596 ug/L	79
9) Methyl methacrylate	12.48	41	2301801	539.8969 ug/L	80
10) 2-Nitropropane	12.87	43	557368	585.7537 ug/L	94
13) Cyclohexanone	17.70	55	204212	532.9360 ug/L	86

(#) = qualifier out of range (m) = manual integration
6M128672.D A9FOOWT.M Wed Oct 01 15:22:23 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128672.D Vial: 11
Acq On : 30 Sep 2014 19:59 Operator: TMB
Sample : WG494605-09 500ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 1 15:22 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration

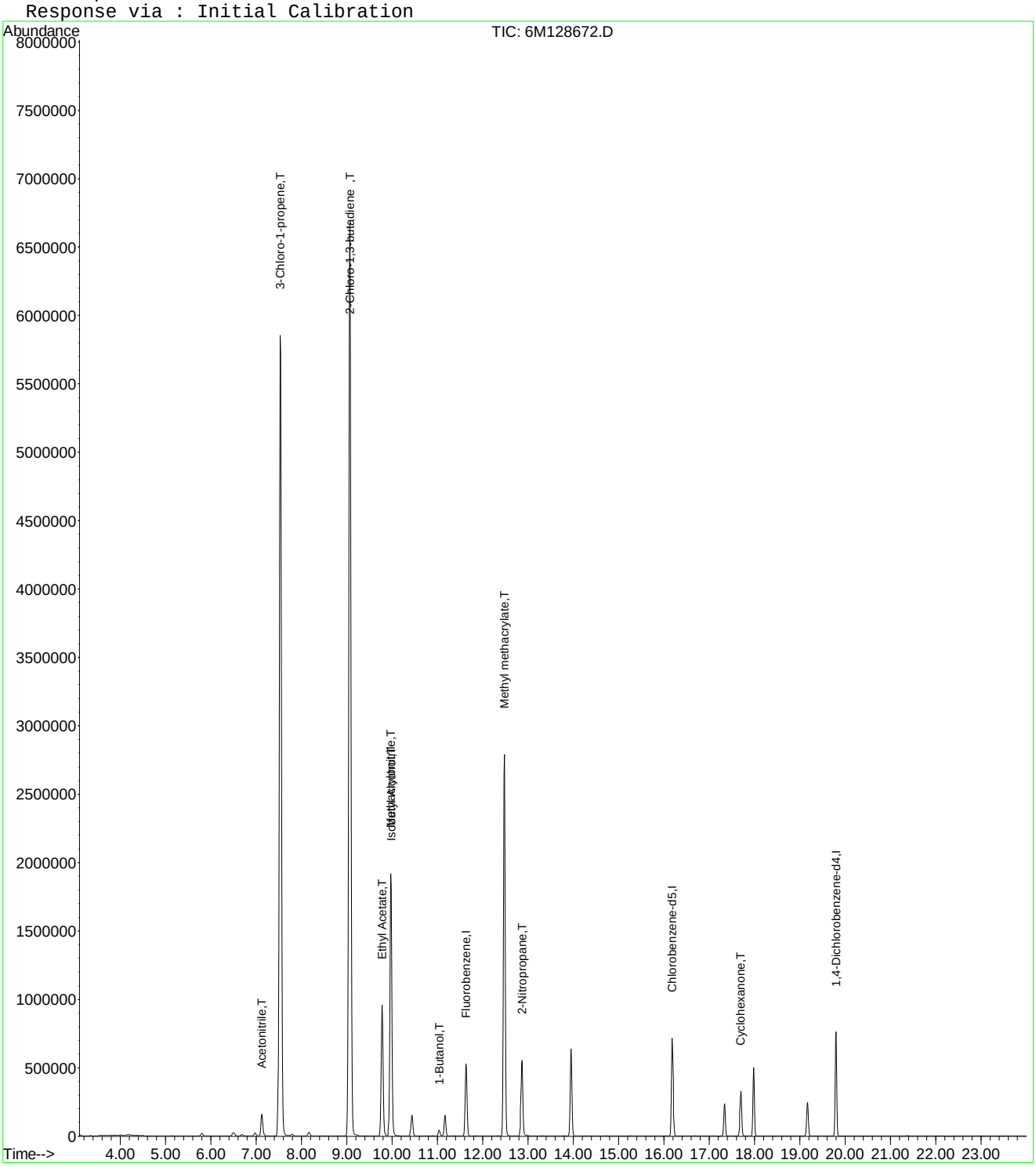

6M128672.D A9FOOWT.M Wed Oct 01 15:22:23 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128674.D Vial: 13
Acq On : 30 Sep 2014 21:02 Operator: TMB
Sample : WG494605-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 01 15:22:24 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.63	96	655508	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.19	117	557283	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.80	152	275753	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.12	41	49534	100.8277 ug/L	93
3) 3-Chloro-1-propene	7.53	41	1290992	102.9946 ug/L	92
4) 2-Chloro-1,3-butadiene	9.07	53	969088	79.8992 ug/L	87
5) Ethyl Acetate	9.78	43	355992	113.4669 ug/L	92
6) Methacrylonitrile	9.97	67	138156	107.0815 ug/L #	60
7) Isobutyl Alcohol	9.98	43	27016	197.5641 ug/L #	95
8) 1-Butanol	11.04	41	3972	74.7561 ug/L	85
9) Methyl methacrylate	12.47	41	405703	101.8440 ug/L	79
10) 2-Nitropropane	12.86	43	84030	94.5130 ug/L	93
13) Cyclohexanone	17.70	55	11940	32.4364 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M128674.D A9FOOWT.M Wed Oct 01 15:22:24 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128674.D Vial: 13
Acq On : 30 Sep 2014 21:02 Operator: TMB
Sample : WG494605-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 1 15:22 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration

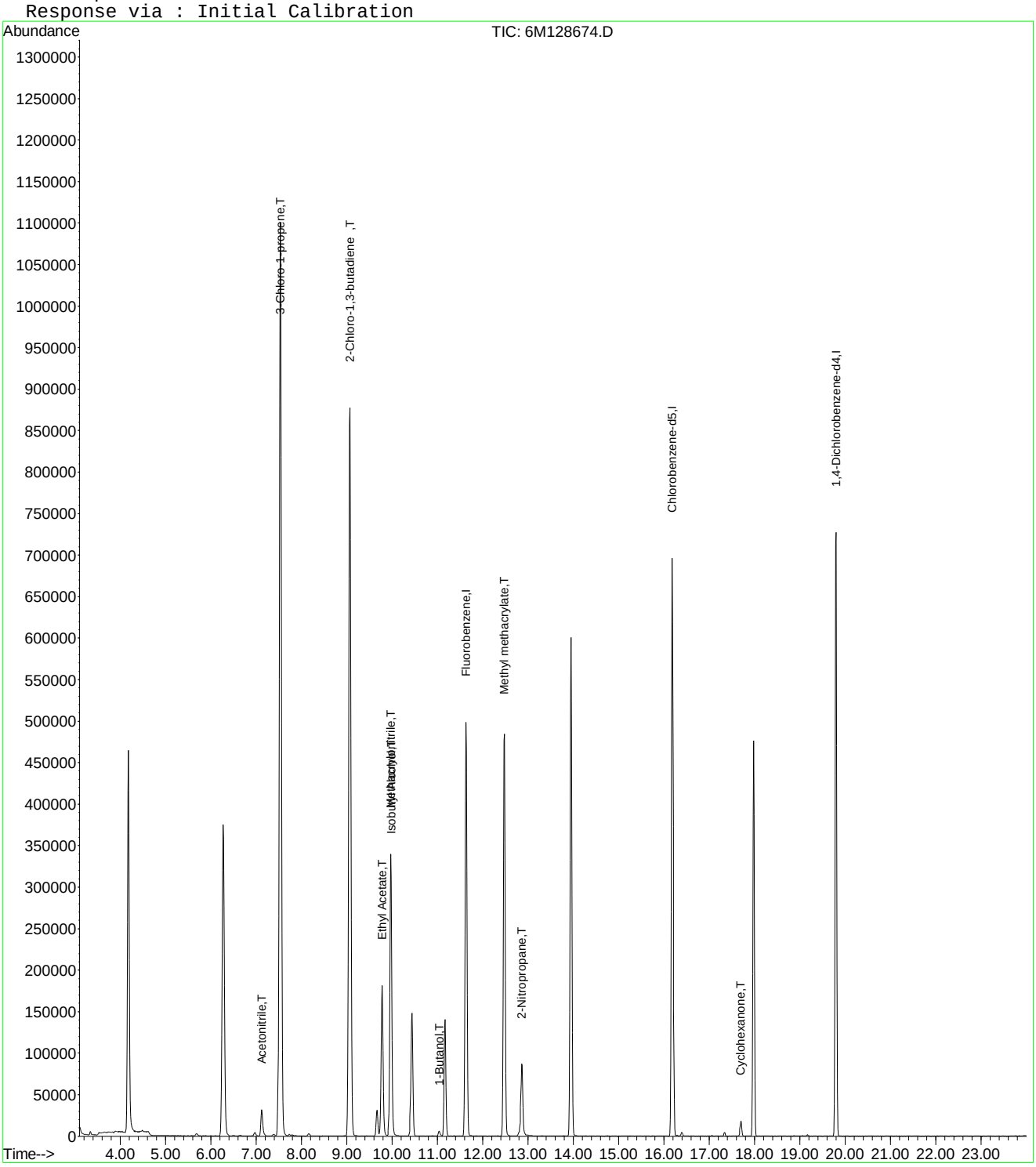

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\093014\6M128674.D Vial: 13
Acq On : 30 Sep 2014 21:02 Operator: TMB
Sample : WG494605-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	100.8277	-0.8	98	0.00
3	T	3-Chloro-1-propene	100.0000	102.9946	-3.0	97	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	79.8992	20.1	77	0.00
5	T	Ethyl Acetate	100.0000	113.4669	-13.5	106	0.00
6	T	Methacrylonitrile	100.0000	107.0815	-7.1	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.5641	1.2	92	0.00
8	T	1-Butanol	100.0000	74.7561	25.2	77	0.00
9	T	Methyl methacrylate	100.0000	101.8440	-1.8	97	-0.01
10	T	2-Nitropropane	100.0000	94.5130	5.5	94	-0.01
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	98	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	97	0.00
13	T	Cyclohexanone	100.0000	32.4364	67.6	31	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M128674.D A9FOOWT.M Wed Oct 01 15:23:18 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130911.D Vial: 3
Acq On : 5 Feb 2015 11:02 Operator: TMB
Sample : WG511026-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:29 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	702318	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	528760	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	283046	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	13.90	98	241	0.0100 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.04%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	3500	0.2804 ug/L #	66
3) Chloromethane	3.85	50	3414	0.3465 ug/L	85
4) Vinyl Chloride	4.07	62	2487	0.2947 ug/L #	56
5) 1,3-Butadiene	4.15	54	1786	0.2173 ug/L #	11
6) Bromomethane	5.00	94	428	0.9114 ug/L	100
7) Chloroethane	5.17	64	1527	0.3120 ug/L #	46
8) Trichlorofluoromethane	5.68	101	4599	0.2923 ug/L #	95
10) Isoprene	6.28	67	2106	0.2513 ug/L	82
14) 1,1-Dichloroethene	6.83	61	4061	0.3208 ug/L	80
16) Dimethyl Sulfide	7.13	62	1734	0.2512 ug/L	69
18) Methyl acetate	7.41	43	729	0.1729 ug/L #	64
19) Methylene Chloride	7.69	84	2059	0.3285 ug/L	78
20) Carbon Disulfide	7.73	76	7151	0.3320 ug/L #	83
22) Methyl Tert Butyl Ether	7.92	73	4131	0.3106 ug/L #	52
23) trans-1,2-Dichloroethene	8.18	96	2027	0.3104 ug/L	84
24) n-Hexane	8.28	57	3123	0.2914 ug/L	96
26) Vinyl Acetate	8.82	43	753	0.1648 ug/L #	77
27) 1,1-Dichloroethane	8.86	63	4499	0.3211 ug/L	89
31) 2,2-Dichloropropane	9.75	77	2973	0.2483 ug/L	69
32) cis-1,2-Dichloroethene	9.81	96	2408	0.3454 ug/L	81
33) Chloroform	10.06	83	4066	0.2999 ug/L	90
34) 1-Bromopropane	10.20	122	193	0.4744 ug/L #	1
35) Bromochloromethane	10.31	130	1077	0.2960 ug/L #	61
36) Tetrahydrofuran	10.69	42	186	0.1754 ug/L #	38
38) 1,1,1-Trichloroethane	10.66	97	3489	0.2584 ug/L	84
39) Cyclohexane	10.70	56	3688	0.2741 ug/L #	67
40) 1,1-Dichloropropene	10.89	75	2818	0.2710 ug/L #	54
42) Carbon Tetrachloride	11.05	117	2554	0.2229 ug/L #	84
45) 1,2-Dichloroethane	11.25	62	3406	0.3175 ug/L #	79
46) Benzene	11.30	78	9132	0.3545 ug/L	98
47) Trichloroethene	12.17	130	2041	0.3036 ug/L	94
48) Methylcyclohexane	12.24	83	3098	0.2937 ug/L	85
49) 1,2-Dichloropropane	12.42	63	2241	0.3231 ug/L	98
51) Bromodichloromethane	12.76	83	2635	0.2640 ug/L	96
52) Dibromomethane	12.87	93	502	0.1528 ug/L	65
53) 2-Chloroethyl Vinyl Ether	13.13	63	348	0.1231 ug/L #	44
55) cis-1,3-Dichloropropene	13.52	75	2894	0.2949 ug/L #	78
56) Dimethyl Disulfide	13.84	79	816	0.1670 ug/L #	51
59) Toluene	14.02	91	9134	0.3426 ug/L	95
60) Ethyl Methacrylate	14.14	69	620	0.5816 ug/L #	1

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130911.D Vial: 3
Acq On : 5 Feb 2015 11:02 Operator: TMB
Sample : WG511026-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:29 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
62)	trans-1,3-Dichloropropene	14.23	75	1929	0.2267 ug/L #	75
63)	1,1,2-Trichloroethane	14.49	97	1163	0.2834 ug/L #	48
65)	1,3-Dichloropropane	14.86	76	2338	0.3064 ug/L	87
66)	Tetrachloroethene	14.99	166	1952	0.2546 ug/L	84
67)	Dibromochloromethane	15.30	129	1504	0.2710 ug/L	80
68)	1,2-Dibromoethane	15.60	107	926	0.2332 ug/L #	60
69)	1-Chlorohexane	15.73	91	2606	0.2878 ug/L #	63
70)	Chlorobenzene	16.20	112	6736	0.3655 ug/L	83
71)	1,1,1,2-Tetrachloroethane	16.23	131	1668	0.2496 ug/L	89
72)	Ethylbenzene	16.24	106	3120	0.3075 ug/L	72
73)	m-,p-Xylene	16.34	106	8759	0.7217 ug/L	96
74)	o-Xylene	17.00	106	3498	0.2859 ug/L	82
75)	Styrene	17.06	104	5971	0.3050 ug/L	90
76)	Bromoform	17.64	173	455	0.5444 ug/L #	77
77)	Isopropylbenzene	17.53	105	10204	0.3168 ug/L	95
79)	1,1,2,2-Tetrachloroethane	17.78	83	886	0.2152 ug/L #	61
83)	n-Propylbenzene	18.14	91	12621	0.3531 ug/L #	87
84)	Bromobenzene	18.28	156	1994	0.2724 ug/L #	49
85)	1,3,5-Trimethylbenzene	18.36	105	8561	0.3379 ug/L	94
86)	2-Chlorotoluene	18.45	91	8739	0.3736 ug/L	93
87)	4-Chlorotoluene	18.50	91	7623	0.3270 ug/L	88
88)	a-Methylstyrene	18.84	118	3871	0.2812 ug/L	96
89)	tert-Butylbenzene	18.91	134	1132	0.2004 ug/L	33
90)	1,2,4-Trimethylbenzene	18.97	105	8355	0.3211 ug/L	84
91)	sec-Butylbenzene	19.24	105	10035	0.3264 ug/L	88
92)	p-Isopropyltoluene	19.43	119	8062	0.3196 ug/L	97
93)	1,3-Dichlorobenzene	19.65	146	5032	0.3341 ug/L	87
94)	1,4-Dichlorobenzene	19.81	146	5104	0.3332 ug/L #	37
95)	n-Butylbenzene	20.07	91	8294	0.3595 ug/L	89
96)	1,2-Dichlorobenzene	20.40	146	4208	0.3150 ug/L	89
98)	1,2,4-Trichlorobenzene	22.97	180	2861	0.3319 ug/L	94
99)	Hexachlorobutadiene	23.17	225	963	0.2559 ug/L #	39
100)	Naphthalene	23.43	128	3721	0.2968 ug/L #	68
101)	1,2,3-Trichlorobenzene	23.85	180	2430	0.3336 ug/L #	86

(#) = qualifier out of range (m) = manual integration
6M130911.D 8260WT.M Fri Feb 06 08:53:29 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130911.D Vial: 3
Acq On : 5 Feb 2015 11:02 Operator: TMB
Sample : WG511026-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

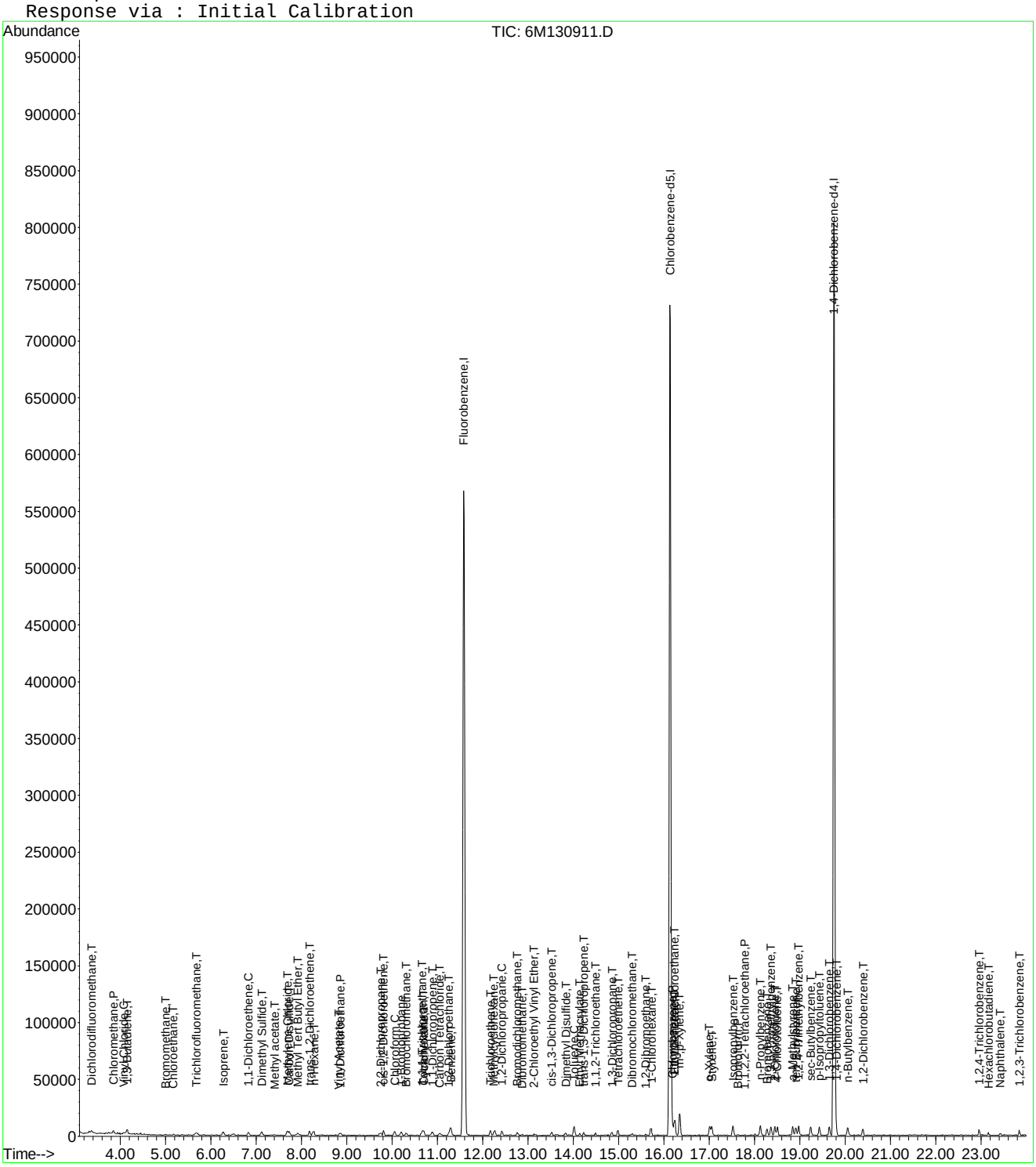

6M130911.D 8260WT.M Fri Feb 06 08:53:29 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130911.D Vial: 3
Acq On : 5 Feb 2015 11:02 Operator: TMB
Sample : WG511026-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2804	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.3465	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2947	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2173	0.0	0	0.02
6	T	Bromomethane	-1.0000	0.9114	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.3120	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.2923	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.23#
10	T	Isoprene	-1.0000	0.2513	0.0	100	0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.48#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0965	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.59#
14	C	1,1-Dichloroethene	-1.0000	0.3208	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.94#
16	T	Dimethyl Sulfide	-1.0000	0.2512	0.0	100	0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.39#
18	T	Methyl acetate	-1.0000	0.1729	0.0	100	0.01
19	T	Methylene Chloride	-1.0000	0.3285	0.0	100	0.01
20	T	Carbon Disulfide	-1.0000	0.3320	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.88#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3106	0.0	100	0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.3104	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.2914	0.0	100	0.02
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.64#
26	T	Vinyl Acetate	-1.0000	0.1648	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3211	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.28#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-9.49#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.62#
31	T	2,2-Dichloropropane	-1.0000	0.2483	0.0	100	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.3454	0.0	100	0.00
33	C	Chloroform	0.3000	0.2999	0.0	100	0.01
34		1-Bromopropane	-1.0000	0.4744	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2960	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.1754	0.0	100	0.35
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-10.38#
38	T	1,1,1-Trichloroethane	-1.0000	0.2584	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2741	0.0	100	0.01
40	T	1,1-Dichloropropene	-1.0000	0.2710	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-11.01#
42	T	Carbon Tetrachloride	-1.0000	0.2229	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-11.12#
44		Heptane	-1.0000	0.0000	0.0	0	-11.01#
45	T	1,2-Dichloroethane	-1.0000	0.3175	0.0	100	0.00
46	T	Benzene	0.3000	0.3545	-18.2	100	0.00
47	T	Trichloroethene	-1.0000	0.3036	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.2937	0.0	100	-0.02
49	C	1,2-Dichloropropane	-1.0000	0.3231	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.77#
51	T	Bromodichloromethane	-1.0000	0.2640	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.1528	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1231	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-13.16#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130911.D Vial: 3
Acq On : 5 Feb 2015 11:02 Operator: TMB
Sample : WG511026-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.2949	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.1670	0.0	100	0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0100	0.0	100	0.00
59	C	Toluene	-1.0000	0.3426	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.5816	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-14.02#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2267	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2834	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-14.42#
65	T	1,3-Dichloropropane	-1.0000	0.3064	0.0	100	0.01
66	T	Tetrachloroethene	-1.0000	0.2546	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2710	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.2332	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.2878	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3655	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2496	0.0	100	-0.02
72	C	Ethylbenzene	-1.0000	0.3075	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.7217	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.2859	0.0	100	0.00
75	T	Styrene	-1.0000	0.3050	0.0	100	0.00
76	P	Bromoform	-1.0000	0.5444	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3168	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2152	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-17.94#
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-18.01#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-18.08#
83	T	n-Propylbenzene	-1.0000	0.3531	0.0	0	0.00
84	T	Bromobenzene	0.3000	0.2724	9.2	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3379	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3736	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3270	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.2812	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2004	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3211	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3264	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3196	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3341	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3332	-11.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3595	0.0	100	0.01
96	T	1,2-Dichlorobenzene	0.3000	0.3150	-5.0	100	0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.59#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3319	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.2559	0.0	100	0.01
100	T	Naphthalene	-1.0000	0.2968	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3336	-11.2	100	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M130911.D 8260WT.M Fri Feb 06 08:54:33 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130912.D Vial: 4
Acq On : 5 Feb 2015 11:33 Operator: TMB
Sample : WG511026-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	674509	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	519699	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	286193	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	13.89	98	197	0.0083 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.04%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	4443	0.3706 ug/L	89
3) Chloromethane	3.84	50	4313	0.4558 ug/L	95
4) Vinyl Chloride	4.09	62	2930	0.3615 ug/L	88
5) 1,3-Butadiene	4.15	54	2752	0.3380 ug/L #	39
6) Bromomethane	5.01	94	761	0.9886 ug/L	90
7) Chloroethane	5.17	64	1894	0.4030 ug/L	93
8) Trichlorofluoromethane	5.67	101	5821	0.3852 ug/L #	91
10) Isoprene	6.26	67	2465	0.3063 ug/L #	60
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	1852	0.2578 ug/L #	66
14) 1,1-Dichloroethene	6.83	61	4995	0.4108 ug/L	81
16) Dimethyl Sulfide	7.10	62	2632	0.3970 ug/L	96
18) Methyl acetate	7.41	43	1404	0.3467 ug/L #	64
19) Methylene Chloride	7.68	84	3073	0.5105 ug/L	83
20) Carbon Disulfide	7.73	76	12683	0.6131 ug/L #	89
22) Methyl Tert Butyl Ether	7.91	73	4407	0.3450 ug/L #	52
23) trans-1,2-Dichloroethene	8.17	96	2426	0.3869 ug/L	77
24) n-Hexane	8.26	57	4035	0.3920 ug/L	93
26) Vinyl Acetate	8.85	43	1356	0.3089 ug/L #	77
27) 1,1-Dichloroethane	8.87	63	5703	0.4239 ug/L	91
31) 2,2-Dichloropropane	9.75	77	3882	0.3376 ug/L	70
32) cis-1,2-Dichloroethene	9.81	96	2479	0.3702 ug/L	94
33) Chloroform	10.05	83	5176	0.3975 ug/L	91
34) 1-Bromopropane	10.21	122	208	0.4899 ug/L #	1
35) Bromochloromethane	10.32	130	1185	0.3391 ug/L	98
36) Tetrahydrofuran	10.69	42	676	0.6636 ug/L #	38
38) 1,1,1-Trichloroethane	10.66	97	5343	0.4120 ug/L	87
39) Cyclohexane	10.69	56	4840	0.3746 ug/L	82
40) 1,1-Dichloropropene	10.89	75	3554	0.3559 ug/L #	73
42) Carbon Tetrachloride	11.05	117	3863	0.3510 ug/L #	90
45) 1,2-Dichloroethane	11.26	62	4316	0.4190 ug/L #	85
46) Benzene	11.30	78	10378	0.4194 ug/L	93
47) Trichloroethene	12.17	130	2518	0.3900 ug/L	84
48) Methylcyclohexane	12.27	83	3446	0.3401 ug/L	76
49) 1,2-Dichloropropane	12.42	63	2660	0.3993 ug/L	99
51) Bromodichloromethane	12.77	83	3696	0.3856 ug/L	87
52) Dibromomethane	12.87	93	1086	0.3442 ug/L	74
53) 2-Chloroethyl Vinyl Ether	13.14	63	522	0.1923 ug/L #	44
55) cis-1,3-Dichloropropene	13.51	75	3364	0.3569 ug/L	87
56) Dimethyl Disulfide	13.83	79	819	0.1745 ug/L #	51
59) Toluene	14.01	91	10834	0.4134 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M130912.D 8260WT.M Fri Feb 06 08:53:31 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130912.D Vial: 4
Acq On : 5 Feb 2015 11:33 Operator: TMB
Sample : WG511026-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
60)	Ethyl Methacrylate	14.15	69	834	0.6246 ug/L #	38
62)	trans-1,3-Dichloropropene	14.23	75	2992	0.3577 ug/L #	51
63)	1,1,2-Trichloroethane	14.48	97	1596	0.3957 ug/L	74
65)	1,3-Dichloropropane	14.84	76	2937	0.3916 ug/L	91
66)	Tetrachloroethene	14.97	166	3079	0.4086 ug/L	93
67)	Dibromochloromethane	15.29	129	1718	0.3149 ug/L	96
68)	1,2-Dibromoethane	15.61	107	1166	0.2987 ug/L	87
69)	1-Chlorohexane	15.72	91	3028	0.3402 ug/L #	52
70)	Chlorobenzene	16.19	112	8211	0.4533 ug/L	84
71)	1,1,1,2-Tetrachloroethane	16.24	131	2099	0.3195 ug/L #	45
72)	Ethylbenzene	16.24	106	3310	0.3320 ug/L	49
73)	m-,p-Xylene	16.34	106	9789	0.8207 ug/L	78
74)	o-Xylene	17.02	106	4697	0.3906 ug/L	90
75)	Styrene	17.06	104	7251	0.3769 ug/L	75
76)	Bromoform	17.64	173	939	0.6863 ug/L #	34
77)	Isopropylbenzene	17.53	105	12073	0.3814 ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.79	83	1568	0.3766 ug/L	79
83)	n-Propylbenzene	18.13	91	14698	0.4067 ug/L #	89
84)	Bromobenzene	18.27	156	2730	0.3688 ug/L	90
85)	1,3,5-Trimethylbenzene	18.36	105	9707	0.3789 ug/L	100
86)	2-Chlorotoluene	18.45	91	9470	0.4004 ug/L	92
87)	4-Chlorotoluene	18.51	91	10020	0.4251 ug/L	86
88)	a-Methylstyrene	18.84	118	5237	0.3763 ug/L	88
89)	tert-Butylbenzene	18.92	134	2068	0.3621 ug/L	76
90)	1,2,4-Trimethylbenzene	18.99	105	10746	0.4084 ug/L	82
91)	sec-Butylbenzene	19.24	105	12069	0.3883 ug/L	97
92)	p-Isopropyltoluene	19.44	119	9727	0.3814 ug/L	96
93)	1,3-Dichlorobenzene	19.65	146	5919	0.3887 ug/L	95
94)	1,4-Dichlorobenzene	19.81	146	7090	0.4578 ug/L #	37
95)	n-Butylbenzene	20.06	91	9960	0.4270 ug/L	99
96)	1,2-Dichlorobenzene	20.40	146	5794	0.4289 ug/L	86
98)	1,2,4-Trichlorobenzene	22.97	180	3499	0.4014 ug/L	93
99)	Hexachlorobutadiene	23.16	225	989	0.2600 ug/L #	53
100)	Naphthalene	23.43	128	4615	0.3640 ug/L #	81
101)	1,2,3-Trichlorobenzene	23.84	180	2518	0.3419 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M130912.D 8260WT.M Fri Feb 06 08:53:31 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130912.D Vial: 4
Acq On : 5 Feb 2015 11:33 Operator: TMB
Sample : WG511026-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

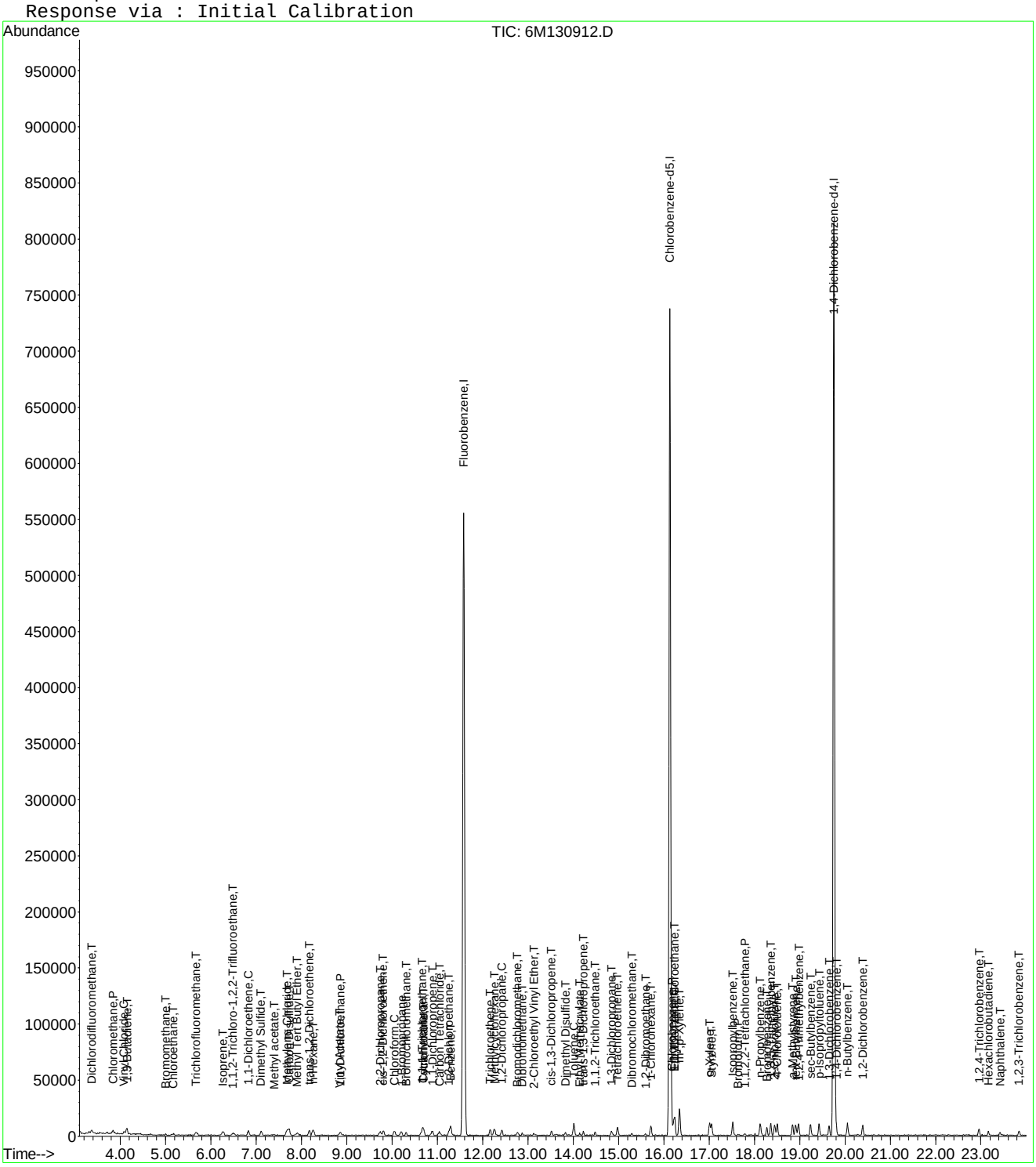

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130912.D Vial: 4
Acq On : 5 Feb 2015 11:33 Operator: TMB
Sample : WG511026-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3706	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4558	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3615	9.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3380	0.0	0	0.02
6	T	Bromomethane	-1.0000	0.9886	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.4030	0.0	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.3852	3.7	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.23#
10	T	Isoprene	-1.0000	0.3063	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.48#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2578	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.59#
14	C	1,1-Dichloroethene	0.4000	0.4108	-2.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.94#
16	T	Dimethyl Sulfide	-1.0000	0.3970	0.0	100	-0.02
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.39#
18	T	Methyl acetate	-1.0000	0.3467	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.5105	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.6131	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.88#
22	T	Methyl Tert Butyl Ether	0.4000	0.3450	13.7	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.3869	3.3	100	0.00
24	T	n-Hexane	-1.0000	0.3920	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.64#
26	T	Vinyl Acetate	-1.0000	0.3089	0.0	100	0.01
27	P	1,1-Dichloroethane	0.4000	0.4239	-6.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.28#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-9.49#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.62#
31	T	2,2-Dichloropropane	0.4000	0.3377	15.6	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3702	7.4	100	0.00
33	C	Chloroform	0.4000	0.3976	0.6	100	0.00
34		1-Bromopropane	-1.0000	0.4899	0.0	100	0.00
35	T	Bromochloromethane	0.4000	0.3391	15.2	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.6636	0.0	100	0.35
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-10.38#
38	T	1,1,1-Trichloroethane	0.4000	0.4120	-3.0	100	0.00
39	T	Cyclohexane	-1.0000	0.3746	0.0	100	0.00
40	T	1,1-Dichloropropene	0.4000	0.3559	11.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-11.01#
42	T	Carbon Tetrachloride	0.4000	0.3510	12.2	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-11.12#
44		Heptane	-1.0000	0.0000	0.0	0	-11.01#
45	T	1,2-Dichloroethane	0.4000	0.4190	-4.7	100	0.00
46	T	Benzene	0.4000	0.4194	-4.9	100	0.00
47	T	Trichloroethene	0.4000	0.3900	2.5	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3401	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.3993	0.2	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.77#
51	T	Bromodichloromethane	0.4000	0.3856	3.6	100	0.00
52	T	Dibromomethane	0.4000	0.3442	13.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1923	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-13.16#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130912.D Vial: 4
Acq On : 5 Feb 2015 11:33 Operator: TMB
Sample : WG511026-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3569	10.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.1745	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0083	0.0	100	0.00
59	C	Toluene	0.4000	0.4134	-3.3	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6246	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-14.02#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3577	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3957	1.1	100	0.00
64	T	2-Hexanone	-1.0000	0.1155	0.0	100	0.00
65	T	1,3-Dichloropropane	0.4000	0.3916	2.1	100	0.00
66	T	Tetrachloroethene	0.4000	0.4086	-2.1	100	-0.02
67	T	Dibromochloromethane	0.4000	0.3149	21.3#	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.2987	25.3#	100	0.00
69	T	1-Chlorohexane	0.4000	0.3402	15.0	100	0.00
70	P	Chlorobenzene	0.4000	0.4533	-13.3	100	-0.02
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3195	20.1#	100	0.00
72	C	Ethylbenzene	0.4000	0.3320	17.0	100	0.00
73	T	m-,p-Xylene	0.8000	0.8207	-2.6	100	0.00
74	T	o-Xylene	0.4000	0.3906	2.4	100	0.00
75	T	Styrene	0.4000	0.3769	5.8	100	0.00
76	P	Bromoform	-1.0000	0.6863	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.3814	4.7	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3766	5.8	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-17.94#
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-18.01#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-18.08#
83	T	n-Propylbenzene	0.4000	0.4067	-1.7	100	0.00
84	T	Bromobenzene	0.4000	0.3688	7.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.3789	5.3	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4004	-0.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4251	-6.3	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3763	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3621	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4084	-2.1	100	0.00
91	T	sec-Butylbenzene	0.4000	0.3883	2.9	100	0.00
92	T	p-Isopropyltoluene	0.4000	0.3814	4.6	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3887	2.8	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4578	-14.4	100	0.00
95	T	n-Butylbenzene	0.4000	0.4270	-6.7	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4289	-7.2	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.59#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4014	-0.3	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.2600	35.0#	100	0.00
100	T	Naphthalene	0.4000	0.3640	9.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.3419	14.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M130912.D 8260WT.M Fri Feb 06 08:54:45 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130913.D Vial: 5
Acq On : 5 Feb 2015 12:05 Operator: TMB
Sample : WG511026-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	656797	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	495123	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	275191	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	3052	0.4601 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.84%#	
43) 1,2-Dichloroethane-d4	11.11	65	4300	0.5439 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.16%#	
58) Toluene-d8	13.90	98	12028	0.5323 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.12%#	
80) p-Bromofluorobenzene	17.93	95	4639	0.5013 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	11005	0.9427 ug/L	99
3) Chloromethane	3.84	50	9546	1.0360 ug/L	98
4) Vinyl Chloride	4.09	62	7840	0.9934 ug/L	91
5) 1,3-Butadiene	4.15	54	7485	0.9135 ug/L	81
6) Bromomethane	5.02	94	2513	1.3899 ug/L	91
7) Chloroethane	5.16	64	4616	1.0086 ug/L	100
8) Trichlorofluoromethane	5.67	101	15457	1.0503 ug/L	98
9) Diethyl ether	6.23	59	20826	4.9194 ug/L	92
10) Isoprene	6.26	67	8076	1.0306 ug/L	77
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	6852	0.9795 ug/L #	84
13) Acetone	6.59	43	1059	1.0450 ug/L #	49
14) 1,1-Dichloroethene	6.83	61	12265	1.0359 ug/L	84
15) Tert-Butyl Alcohol	6.95	59	755	3.5918 ug/L #	62
16) Dimethyl Sulfide	7.11	62	5983	0.9267 ug/L	62
17) Iodomethane	7.41	142	386	2.0362 ug/L #	31
18) Methyl acetate	7.42	43	3876	0.9829 ug/L #	64
19) Methylene Chloride	7.68	84	5803	0.9899 ug/L	53
20) Carbon Disulfide	7.73	76	22813	1.1326 ug/L	100
21) Acrylonitrile	7.89	53	3381	2.3933 ug/L	80
22) Methyl Tert Butyl Ether	7.92	73	12176	0.9790 ug/L	92
23) trans-1,2-Dichloroethene	8.17	96	5821	0.9533 ug/L	64
24) n-Hexane	8.26	57	9929	0.9906 ug/L	98
25) Diisopropyl ether	8.64	45	133938	5.4645 ug/L	94
26) Vinyl Acetate	8.83	43	3696	0.8648 ug/L #	77
27) 1,1-Dichloroethane	8.88	63	12781	0.9756 ug/L	98
28) Ethyl-Tert-Butyl ether	9.29	59	100846	5.1855 ug/L	97
29) 2-Butanone	9.49	43	901	0.5732 ug/L #	55
30) Propionitrile	9.62	54	2246	4.6926 ug/L #	75
31) 2,2-Dichloropropane	9.76	77	10425	0.9312 ug/L	76
32) cis-1,2-Dichloroethene	9.83	96	6083	0.9330 ug/L	79
33) Chloroform	10.04	83	12330	0.9726 ug/L	94
34) 1-Bromopropane	10.21	122	755	0.8771 ug/L	38
35) Bromochloromethane	10.32	130	3358	0.9867 ug/L	98
36) Tetrahydrofuran	10.35	42	5718	5.7646 ug/L #	74
38) 1,1,1-Trichloroethane	10.65	97	12055	0.9546 ug/L	91
39) Cyclohexane	10.68	56	12094	0.9612 ug/L	88
40) 1,1-Dichloropropene	10.89	75	10118	1.0404 ug/L	80
41) Tert-Amyl-Methyl ether	11.00	73	66960	4.9864 ug/L #	84
42) Carbon Tetrachloride	11.06	117	9936	0.9272 ug/L	95
45) 1,2-Dichloroethane	11.26	62	10372	1.0340 ug/L #	79

(#) = qualifier out of range (m) = manual integration
6M130913.D 8260WT.M Fri Feb 06 08:53:32 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130913.D Vial: 5
Acq On : 5 Feb 2015 12:05 Operator: TMB
Sample : WG511026-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	11.30	78	25270	1.0489 ug/L		91
47)	Trichloroethene	12.18	130	6105	0.9712 ug/L	#	56
48)	Methylcyclohexane	12.27	83	9647	0.9779 ug/L	#	74
49)	1,2-Dichloropropane	12.42	63	6473	0.9980 ug/L		80
51)	Bromodichloromethane	12.78	83	9328	0.9994 ug/L		95
52)	Dibromomethane	12.87	93	2754	0.8965 ug/L		89
53)	2-Chloroethyl Vinyl Ether	13.13	63	2042	0.7724 ug/L		78
54)	4-Methyl-2-Pentanone	13.16	58	750	0.5517 ug/L	#	35
55)	cis-1,3-Dichloropropene	13.52	75	8443	0.9199 ug/L		92
56)	Dimethyl Disulfide	13.82	79	3281	0.7178 ug/L	#	75
59)	Toluene	14.01	91	27413	1.0979 ug/L		99
60)	Ethyl Methacrylate	14.15	69	3302	1.1283 ug/L		73
62)	trans-1,3-Dichloropropene	14.23	75	6510	0.8169 ug/L		93
63)	1,1,2-Trichloroethane	14.48	97	3769	0.9809 ug/L		84
64)	2-Hexanone	14.43	43	1958	0.8018 ug/L	#	41
65)	1,3-Dichloropropane	14.85	76	7236	1.0128 ug/L		83
66)	Tetrachloroethene	14.97	166	7364	1.0257 ug/L		91
67)	Dibromochloromethane	15.30	129	4483	0.8626 ug/L		99
68)	1,2-Dibromoethane	15.60	107	3341	0.8984 ug/L		96
69)	1-Chlorohexane	15.72	91	8242	0.9719 ug/L	#	57
70)	Chlorobenzene	16.20	112	18315	1.0613 ug/L		69
71)	1,1,1,2-Tetrachloroethane	16.24	131	6150	0.9827 ug/L		88
72)	Ethylbenzene	16.24	106	9471	0.9970 ug/L		81
73)	m-,p-Xylene	16.34	106	25306	2.2268 ug/L		86
74)	o-Xylene	17.02	106	11599	1.0124 ug/L		89
75)	Styrene	17.06	104	19646	1.0718 ug/L		93
76)	Bromoform	17.64	173	2141	1.0639 ug/L	#	59
77)	Isopropylbenzene	17.53	105	31520	1.0451 ug/L		94
79)	1,1,2,2-Tetrachloroethane	17.78	83	3859	0.9639 ug/L		89
81)	1,2,3-Trichloropropane	18.02	110	1353	1.0100 ug/L	#	87
82)	trans-1,4-Dichloro-2-Buten	18.08	53	1192	1.1344 ug/L	#	32
83)	n-Propylbenzene	18.14	91	36461	1.0491 ug/L		96
84)	Bromobenzene	18.28	156	7370	1.0355 ug/L		88
85)	1,3,5-Trimethylbenzene	18.36	105	26592	1.0795 ug/L		89
86)	2-Chlorotoluene	18.45	91	24443	1.0749 ug/L		98
87)	4-Chlorotoluene	18.51	91	24042	1.0607 ug/L		92
88)	a-Methylstyrene	18.84	118	12638	0.9443 ug/L		97
89)	tert-Butylbenzene	18.92	134	5344	0.9731 ug/L		97
90)	1,2,4-Trimethylbenzene	18.98	105	27722	1.0958 ug/L		95
91)	sec-Butylbenzene	19.24	105	32274	1.0798 ug/L		97
92)	p-Isopropyltoluene	19.44	119	26448	1.0785 ug/L		98
93)	1,3-Dichlorobenzene	19.65	146	15355	1.0485 ug/L		98
94)	1,4-Dichlorobenzene	19.80	146	14973	1.0054 ug/L		98
95)	n-Butylbenzene	20.07	91	22217	0.9905 ug/L		98
96)	1,2-Dichlorobenzene	20.39	146	13833	1.0650 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	21.59	75	397	1.3000 ug/L	#	38
98)	1,2,4-Trichlorobenzene	22.97	180	8748	1.0437 ug/L		97
99)	Hexachlorobutadiene	23.16	225	3818	1.0437 ug/L	#	54
100)	Naphthalene	23.44	128	12974	1.0642 ug/L		94
101)	1,2,3-Trichlorobenzene	23.85	180	7112	1.0043 ug/L		98

(#) = qualifier out of range (m) = manual integration
6M130913.D 8260WT.M Fri Feb 06 08:53:32 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130913.D Vial: 5
Acq On : 5 Feb 2015 12:05 Operator: TMB
Sample : WG511026-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

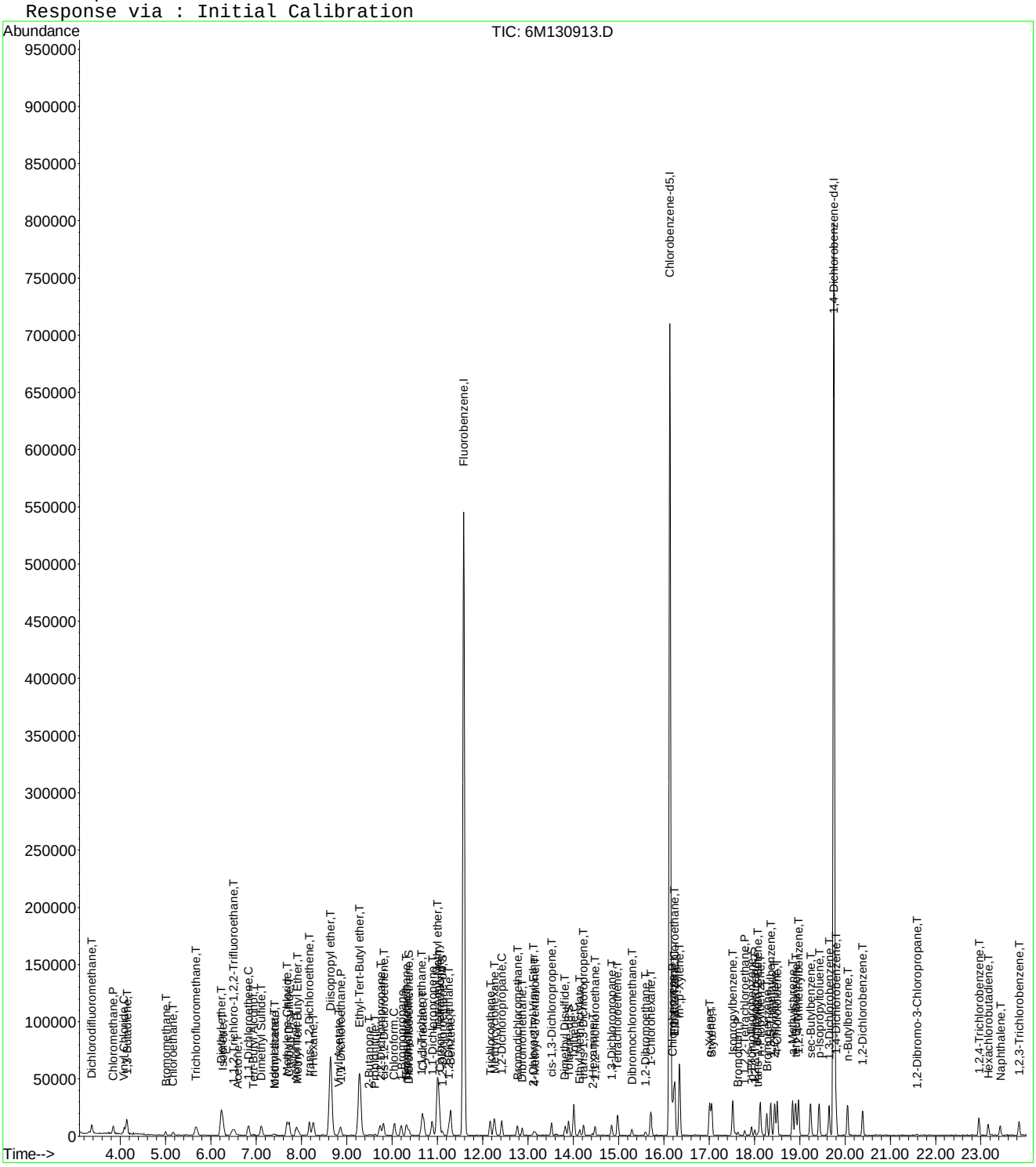

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130913.D Vial: 5
Acq On : 5 Feb 2015 12:05 Operator: TMB
Sample : WG511026-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9427	5.7	100	0.00
3	P	Chloromethane	1.0000	1.0360	-3.6	100	0.00
4	C	Vinyl Chloride	1.0000	0.9934	0.7	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9135	0.0	0	0.02
6	T	Bromomethane	1.0000	1.3899	-39.0#	100	0.01
7	T	Chloroethane	1.0000	1.0086	-0.9	100	0.00
8	T	Trichlorofluoromethane	1.0000	1.0503	-5.0	100	0.00
9	T	Diethyl ether	-1.0000	4.9194	0.0	100	0.00
10	T	Isoprene	1.0000	1.0306	-3.1	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.48#
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9796	2.0	100	0.01
13	T	Acetone	-1.0000	1.0450	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0359	-3.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	3.5918	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.9267	7.3	100	0.00
17	T	Iodomethane	-1.0000	2.0362	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.9829	0.0	100	0.01
19	T	Methylene Chloride	1.0000	0.9899	1.0	100	0.00
20	T	Carbon Disulfide	1.0000	1.1326	-13.3	100	0.00
21	T	Acrylonitrile	2.5000	2.3933	4.3	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9790	2.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	0.9533	4.7	100	0.00
24	T	n-Hexane	1.0000	0.9907	0.9	100	0.00
25	T	Diisopropyl ether	-1.0000	5.4645	0.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8648	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9756	2.4	100	0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	5.1855	0.0	100	0.00
29	T	2-Butanone	-1.0000	0.5732	0.0	100	0.00
30	T	Propionitrile	-1.0000	4.6926	0.0	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9312	6.9	100	0.01
32	T	cis-1,2-Dichloroethene	1.0000	0.9330	6.7	100	0.01
33	C	Chloroform	1.0000	0.9726	2.7	100	0.00
34		1-Bromopropane	1.0000	0.8771	12.3	100	0.00
35	T	Bromochloromethane	1.0000	0.9867	1.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	5.7646	0.0	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4601	8.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9546	4.5	100	0.00
39	T	Cyclohexane	1.0000	0.9611	3.9	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0404	-4.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	4.9864	0.0	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9272	7.3	100	0.01
43	S	1,2-Dichloroethane-d4	0.5000	0.5439	-8.8	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	1.0000	1.0340	-3.4	100	0.00
46	T	Benzene	1.0000	1.0489	-4.9	100	0.00
47	T	Trichloroethene	1.0000	0.9711	2.9	100	0.00
48	T	Methylcyclohexane	1.0000	0.9779	2.2	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9980	0.2	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.77#
51	T	Bromodichloromethane	1.0000	0.9994	0.1	100	0.00
52	T	Dibromomethane	1.0000	0.8965	10.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7724	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.5517	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130913.D Vial: 5
Acq On : 5 Feb 2015 12:05 Operator: TMB
Sample : WG511026-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9199	8.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7178	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.5323	-6.5	100	0.00
59	C	Toluene	1.0000	1.0979	-9.8	100	0.00
60	T	Ethyl Methacrylate	1.0000	1.1283	-12.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	1.0000	0.8169	18.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9809	1.9	100	0.00
64	T	2-Hexanone	-1.0000	0.8018	0.0	100	0.01
65	T	1,3-Dichloropropane	1.0000	1.0128	-1.3	100	0.00
66	T	Tetrachloroethene	1.0000	1.0257	-2.6	100	-0.02
67	T	Dibromochloromethane	1.0000	0.8626	13.7	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.8984	10.2	100	0.00
69	T	1-Chlorohexane	1.0000	0.9719	2.8	100	0.00
70	P	Chlorobenzene	1.0000	1.0613	-6.1	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9827	1.7	100	0.00
72	C	Ethylbenzene	1.0000	0.9970	0.3	100	0.00
73	T	m-,p-Xylene	2.0000	2.2268	-11.3	100	0.00
74	T	o-Xylene	1.0000	1.0125	-1.2	100	0.00
75	T	Styrene	1.0000	1.0718	-7.2	100	0.00
76	P	Bromoform	1.0000	1.0639	-6.4	100	0.00
77	T	Isopropylbenzene	1.0000	1.0451	-4.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9639	3.6	100	0.00
80	S	p-Bromofluorobenzene	0.5000	0.5013	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	1.0100	-1.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1344	-13.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0491	-4.9	100	0.00
84	T	Bromobenzene	1.0000	1.0355	-3.6	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0795	-7.9	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0749	-7.5	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0607	-6.1	100	0.00
88	T	a-Methylstyrene	1.0000	0.9443	5.6	100	0.00
89	T	tert-Butylbenzene	1.0000	0.9731	2.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0958	-9.6	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0799	-8.0	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0785	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0485	-4.9	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0054	-0.5	100	0.00
95	T	n-Butylbenzene	1.0000	0.9905	0.9	100	0.01
96	T	1,2-Dichlorobenzene	1.0000	1.0650	-6.5	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.3000	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	1.0437	-4.4	100	0.00
99	T	Hexachlorobutadiene	1.0000	1.0437	-4.4	100	0.00
100	T	Naphthalene	1.0000	1.0642	-6.4	100	0.01
101	T	1,2,3-Trichlorobenzene	1.0000	1.0043	-0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M130913.D 8260WT.M Fri Feb 06 08:54:57 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130914.D Vial: 6
Acq On : 5 Feb 2015 12:36 Operator: TMB
Sample : WG511026-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:32 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	651742	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	496751	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	278613	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	6160	0.9358 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.76%#	
43) 1,2-Dichloroethane-d4	11.12	65	8166	1.0410 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.16%#	
58) Toluene-d8	13.90	98	24798	1.0939 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.36%#	
80) p-Bromofluorobenzene	17.93	95	10178	1.0865 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.36%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	22172	1.9140 ug/L	98
3) Chloromethane	3.84	50	18650	2.0397 ug/L	97
4) Vinyl Chloride	4.09	62	15157	1.9354 ug/L	98
5) 1,3-Butadiene	4.14	54	14610	1.7821 ug/L	88
6) Bromomethane	5.01	94	6164	2.2275 ug/L	99
7) Chloroethane	5.17	64	8261	1.8191 ug/L #	72
8) Trichlorofluoromethane	5.67	101	31802	2.1778 ug/L	97
9) Diethyl ether	6.23	59	107959	25.6991 ug/L	93
10) Isoprene	6.26	67	15387	1.9788 ug/L	67
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	13641	1.9652 ug/L #	75
13) Acetone	6.61	43	2183	2.1708 ug/L #	65
14) 1,1-Dichloroethene	6.83	61	23409	1.9924 ug/L	83
15) Tert-Butyl Alcohol	6.95	59	8794	42.1611 ug/L #	79
16) Dimethyl Sulfide	7.12	62	11787	1.8398 ug/L	71
17) Iodomethane	7.41	142	2706	2.4206 ug/L	81
18) Methyl acetate	7.40	43	7676	1.9616 ug/L #	81
19) Methylene Chloride	7.68	84	12342	2.1217 ug/L	66
20) Carbon Disulfide	7.73	76	44134	2.2081 ug/L	99
21) Acrylonitrile	7.89	53	16717	11.9254 ug/L	89
22) Methyl Tert Butyl Ether	7.92	73	24192	1.9602 ug/L	97
23) trans-1,2-Dichloroethene	8.17	96	12117	1.9998 ug/L	78
24) n-Hexane	8.26	57	19570	1.9677 ug/L	95
25) Diisopropyl ether	8.64	45	667687	27.4521 ug/L	96
26) Vinyl Acetate	8.84	43	7705	1.8168 ug/L #	85
27) 1,1-Dichloroethane	8.87	63	26842	2.0647 ug/L	98
28) Ethyl-Tert-Butyl ether	9.28	59	500310	25.9254 ug/L	98
29) 2-Butanone	9.50	43	2958	1.8966 ug/L #	55
30) Propionitrile	9.61	54	11250	23.6872 ug/L	93
31) 2,2-Dichloropropane	9.75	77	20168	1.8154 ug/L	72
32) cis-1,2-Dichloroethene	9.82	96	13176	2.0366 ug/L	88
33) Chloroform	10.05	83	25609	2.0356 ug/L	97
34) 1-Bromopropane	10.21	122	2481	2.1001 ug/L	81
35) Bromochloromethane	10.32	130	6756	2.0006 ug/L	95
36) Tetrahydrofuran	10.35	42	25619	26.0282 ug/L	89
38) 1,1,1-Trichloroethane	10.66	97	24149	1.9272 ug/L	91
39) Cyclohexane	10.69	56	24246	1.9419 ug/L	90
40) 1,1-Dichloropropene	10.89	75	19389	2.0092 ug/L	80
41) Tert-Amyl-Methyl ether	11.01	73	340815	25.5769 ug/L #	84
42) Carbon Tetrachloride	11.05	117	19827	1.8645 ug/L	97
45) 1,2-Dichloroethane	11.26	62	20985	2.1082 ug/L	92

(#) = qualifier out of range (m) = manual integration
6M130914.D 8260WT.M Fri Feb 06 08:53:32 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130914.D Vial: 6
Acq On : 5 Feb 2015 12:36 Operator: TMB
Sample : WG511026-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:32 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	11.30	78	49108	2.0541 ug/L #	83
47)	Trichloroethene	12.17	130	12450	1.9958 ug/L #	61
48)	Methylcyclohexane	12.27	83	19638	2.0061 ug/L	84
49)	1,2-Dichloropropane	12.43	63	12212	1.8974 ug/L #	72
50)	1,4-Dioxane	12.75	88	879	37.0440 ug/L #	27
51)	Bromodichloromethane	12.78	83	18663	2.0152 ug/L	95
52)	Dibromomethane	12.87	93	6174	2.0254 ug/L	89
53)	2-Chloroethyl Vinyl Ether	13.13	63	4420	1.6849 ug/L	100
54)	4-Methyl-2-Pentanone	13.19	58	2482	1.8399 ug/L #	49
55)	cis-1,3-Dichloropropene	13.52	75	17610	1.9335 ug/L	95
56)	Dimethyl Disulfide	13.83	79	6879	1.5167 ug/L	89
59)	Toluene	14.02	91	55047	2.1975 ug/L	97
60)	Ethyl Methacrylate	14.15	69	6822	1.8309 ug/L	75
62)	trans-1,3-Dichloropropene	14.24	75	14055	1.7580 ug/L	94
63)	1,1,2-Trichloroethane	14.49	97	7488	1.9424 ug/L	97
64)	2-Hexanone	14.42	43	4029	1.6444 ug/L	93
65)	1,3-Dichloropropane	14.85	76	15098	2.1062 ug/L	87
66)	Tetrachloroethene	14.98	166	14643	2.0329 ug/L	89
67)	Dibromochloromethane	15.30	129	9808	1.8810 ug/L	95
68)	1,2-Dibromoethane	15.61	107	7354	1.9711 ug/L	91
69)	1-Chlorohexane	15.72	91	16774	1.9716 ug/L #	58
70)	Chlorobenzene	16.20	112	37023	2.1384 ug/L #	53
71)	1,1,1,2-Tetrachloroethane	16.24	131	11736	1.8691 ug/L	89
72)	Ethylbenzene	16.24	106	20583	2.1596 ug/L	99
73)	m-,p-Xylene	16.34	106	48453	4.2497 ug/L	81
74)	o-Xylene	17.01	106	23789	2.0697 ug/L	86
75)	Styrene	17.07	104	36496	1.9845 ug/L	73
76)	Bromoform	17.63	173	5382	2.0403 ug/L	98
77)	Isopropylbenzene	17.53	105	62693	2.0718 ug/L	96
79)	1,1,2,2-Tetrachloroethane	17.79	83	8062	1.9891 ug/L	100
81)	1,2,3-Trichloropropane	18.01	110	2484	1.8315 ug/L	77
82)	trans-1,4-Dichloro-2-Buten	18.08	53	2580	1.8462 ug/L #	41
83)	n-Propylbenzene	18.14	91	75258	2.1389 ug/L	96
84)	Bromobenzene	18.27	156	14818	2.0565 ug/L	82
85)	1,3,5-Trimethylbenzene	18.36	105	54800	2.1973 ug/L	91
86)	2-Chlorotoluene	18.44	91	49230	2.1383 ug/L	99
87)	4-Chlorotoluene	18.51	91	50073	2.1820 ug/L	91
88)	a-Methylstyrene	18.84	118	27212	2.0082 ug/L	95
89)	tert-Butylbenzene	18.91	134	11239	2.0214 ug/L	87
90)	1,2,4-Trimethylbenzene	18.98	105	55961	2.1848 ug/L	81
91)	sec-Butylbenzene	19.24	105	64312	2.1254 ug/L	97
92)	p-Isopropyltoluene	19.43	119	54008	2.1753 ug/L	98
93)	1,3-Dichlorobenzene	19.65	146	32840	2.2150 ug/L	97
94)	1,4-Dichlorobenzene	19.80	146	31321	2.0773 ug/L #	69
95)	n-Butylbenzene	20.06	91	50009	2.2023 ug/L	99
96)	1,2-Dichlorobenzene	20.39	146	26626	2.0247 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	21.59	75	1269	2.3058 ug/L	98
98)	1,2,4-Trichlorobenzene	22.96	180	17480	2.0598 ug/L	97
99)	Hexachlorobutadiene	23.16	225	7678	2.0730 ug/L	99
100)	Naphthalene	23.43	128	24176	1.9587 ug/L	96
101)	1,2,3-Trichlorobenzene	23.85	180	14420	2.0112 ug/L	94

(#) = qualifier out of range (m) = manual integration
6M130914.D 8260WT.M Fri Feb 06 08:53:33 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130914.D Vial: 6
Acq On : 5 Feb 2015 12:36 Operator: TMB
Sample : WG511026-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

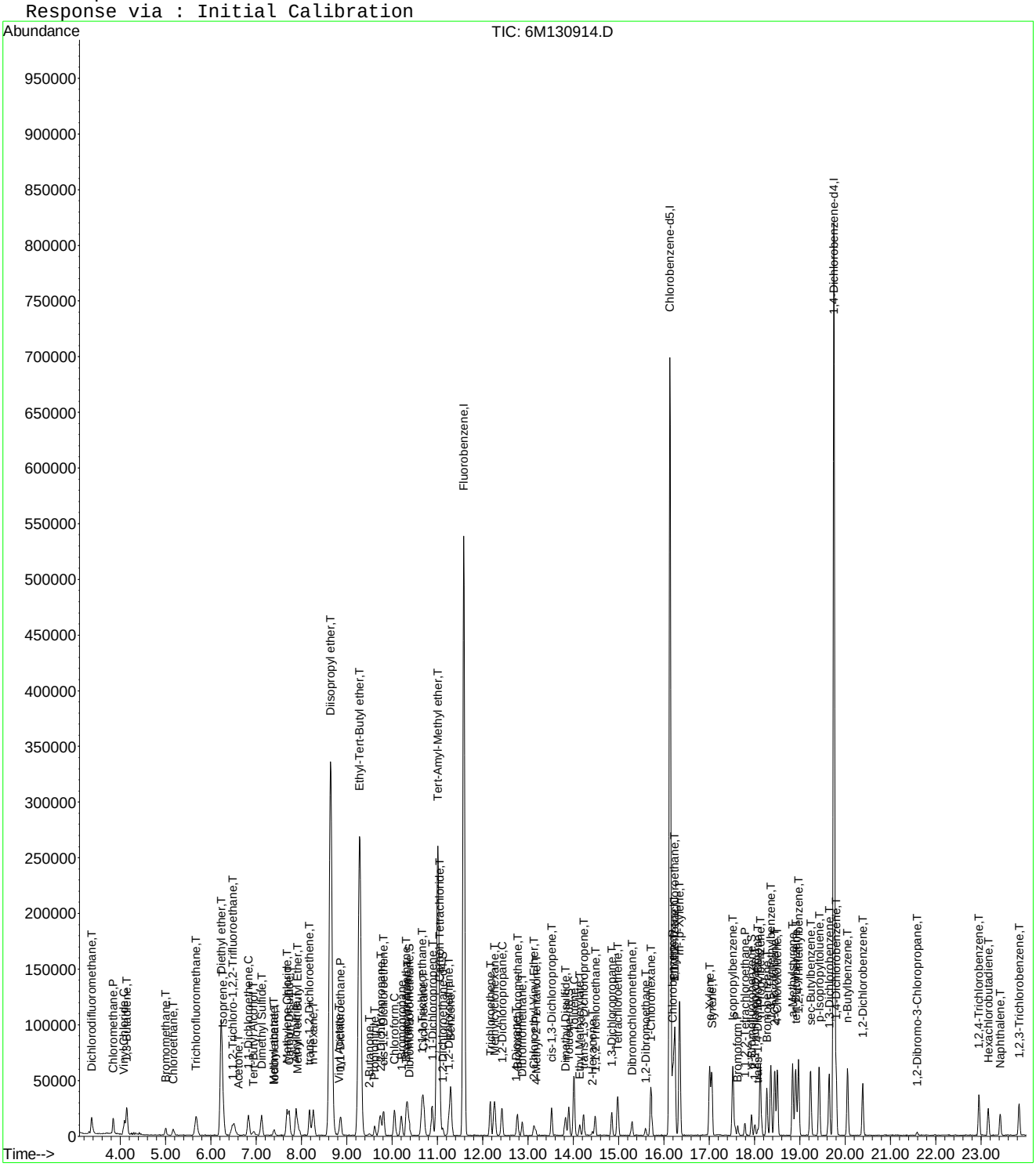

6M130914.D 8260WT.M Fri Feb 06 08:53:33 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130914.D Vial: 6
Acq On : 5 Feb 2015 12:36 Operator: TMB
Sample : WG511026-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.9141	4.3	100	0.00
3	P	Chloromethane	2.0000	2.0397	-2.0	100	0.00
4	C	Vinyl Chloride	2.0000	1.9354	3.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7821	10.9	100	0.01
6	T	Bromomethane	2.0000	2.2275	-11.4	100	0.00
7	T	Chloroethane	2.0000	1.8191	9.0	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.1778	-8.9	100	0.00
9	T	Diethyl ether	25.0000	25.6991	-2.8	100	0.00
10	T	Isoprene	2.0000	1.9788	1.1	100	0.00
11	T	Acrolein	12.5000	0.0000	100.0#	0	-6.48#
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9652	1.7	100	0.00
13	T	Acetone	-1.0000	2.1708	0.0	100	0.02
14	C	1,1-Dichloroethene	2.0000	1.9924	0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	42.1611	15.7	100	0.00
16	T	Dimethyl Sulfide	2.0000	1.8398	8.0	100	0.00
17	T	Iodomethane	2.0000	2.4206	-21.0#	100	0.01
18	T	Methyl acetate	-1.0000	1.9616	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.1217	-6.1	100	0.00
20	T	Carbon Disulfide	2.0000	2.2081	-10.4	100	0.00
21	T	Acrylonitrile	12.5000	11.9254	4.6	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9602	2.0	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9998	0.0	100	0.00
24	T	n-Hexane	2.0000	1.9677	1.6	100	0.00
25	T	Diisopropyl ether	25.0000	27.4521	-9.8	100	0.00
26	T	Vinyl Acetate	-1.0000	1.8168	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0647	-3.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.9254	-3.7	100	0.00
29	T	2-Butanone	-1.0000	1.8966	0.0	100	0.01
30	T	Propionitrile	25.0000	23.6872	5.3	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.8154	9.2	100	0.01
32	T	cis-1,2-Dichloroethene	2.0000	2.0366	-1.8	100	0.00
33	C	Chloroform	2.0000	2.0356	-1.8	100	0.00
34		1-Bromopropane	2.0000	2.1001	-5.0	100	0.00
35	T	Bromochloromethane	2.0000	2.0006	-0.0	100	0.00
36	T	Tetrahydrofuran	25.0000	26.0282	-4.1	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9358	6.4	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9272	3.6	100	0.00
39	T	Cyclohexane	2.0000	1.9419	2.9	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0092	-0.5	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	25.5769	-2.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.8645	6.8	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0410	-4.1	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.01
45	T	1,2-Dichloroethane	2.0000	2.1082	-5.4	100	0.00
46	T	Benzene	2.0000	2.0541	-2.7	100	0.00
47	T	Trichloroethene	2.0000	1.9958	0.2	100	0.00
48	T	Methylcyclohexane	2.0000	2.0061	-0.3	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.8974	5.1	100	0.00
50	T	1,4-Dioxane	-1.0000	37.0440	0.0	100	-0.03
51	T	Bromodichloromethane	2.0000	2.0152	-0.8	100	0.00
52	T	Dibromomethane	2.0000	2.0254	-1.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.6849	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.8399	0.0	100	0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130914.D Vial: 6
Acq On : 5 Feb 2015 12:36 Operator: TMB
Sample : WG511026-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.9335	3.3	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.5167	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0939	-9.4	100	0.00
59	C	Toluene	2.0000	2.1975	-9.9	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.8309	8.5	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	2.0000	1.7580	12.1	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9424	2.9	100	0.00
64	T	2-Hexanone	-1.0000	1.6444	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1063	-5.3	100	0.00
66	T	Tetrachloroethene	2.0000	2.0330	-1.6	100	0.00
67	T	Dibromochloromethane	2.0000	1.8810	5.9	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9711	1.4	100	0.00
69	T	1-Chlorohexane	2.0000	1.9716	1.4	100	0.00
70	P	Chlorobenzene	2.0000	2.1384	-6.9	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.8691	6.5	100	0.00
72	C	Ethylbenzene	2.0000	2.1596	-8.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.2497	-6.2	100	0.00
74	T	o-Xylene	2.0000	2.0697	-3.5	100	0.00
75	T	Styrene	2.0000	1.9845	0.8	100	0.00
76	P	Bromoform	2.0000	2.0403	-2.0	100	0.00
77	T	Isopropylbenzene	2.0000	2.0718	-3.6	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9891	0.5	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0864	-8.6	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.8316	8.4	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.8462	7.7	100	0.00
83	T	n-Propylbenzene	2.0000	2.1389	-6.9	100	0.00
84	T	Bromobenzene	2.0000	2.0565	-2.8	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.1973	-9.9	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1383	-6.9	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1820	-9.1	100	0.00
88	T	a-Methylstyrene	2.0000	2.0082	-0.4	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0214	-1.1	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1848	-9.2	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1254	-6.3	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1753	-8.8	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.2150	-10.7	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0773	-3.9	100	0.00
95	T	n-Butylbenzene	2.0000	2.2023	-10.1	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0247	-1.2	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	2.3058	-15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0598	-3.0	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0730	-3.7	100	0.00
100	T	Naphthalene	2.0000	1.9587	2.1	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	2.0112	-0.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M130914.D 8260WT.M Fri Feb 06 08:55:10 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130915.D Vial: 7
Acq On : 5 Feb 2015 13:07 Operator: TMB
Sample : WG511026-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:33 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	657983	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	496922	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	282946	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.37	111	18307	2.7547 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 11.00%#		
43) 1,2-Dichloroethane-d4	11.12	65	20549	2.5947 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.36%#		
58) Toluene-d8	13.90	98	61180	2.6980 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.80%#		
80) p-Bromofluorobenzene	17.93	95	24330	2.5573 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	58330	4.9877 ug/L	95
3) Chloromethane	3.85	50	47475	5.1429 ug/L	98
4) Vinyl Chloride	4.08	62	40706	5.1484 ug/L	97
5) 1,3-Butadiene	4.14	54	36199	4.3634 ug/L	85
6) Bromomethane	5.00	94	14552	4.1102 ug/L	89
7) Chloroethane	5.17	64	22979	5.0121 ug/L	82
8) Trichlorofluoromethane	5.68	101	78146	5.3006 ug/L	99
9) Diethyl ether	6.23	59	208061	49.0581 ug/L	91
10) Isoprene	6.27	67	36995	4.7126 ug/L #	61
11) Acrolein	6.48	56	1158	14.0268 ug/L	82
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	35577	5.0768 ug/L	95
13) Acetone	6.59	43	4795	4.7230 ug/L	81
14) 1,1-Dichloroethene	6.83	61	61009	5.1435 ug/L	85
15) Tert-Butyl Alcohol	6.94	59	19418	92.2126 ug/L	96
16) Dimethyl Sulfide	7.12	62	32892	5.0853 ug/L	82
17) Iodomethane	7.39	142	13359	4.1625 ug/L	80
18) Methyl acetate	7.39	43	19717	4.9909 ug/L	93
19) Methylene Chloride	7.68	84	30637	5.2169 ug/L	73
20) Carbon Disulfide	7.73	76	104620	5.1847 ug/L	99
21) Acrylonitrile	7.87	53	33053	23.3553 ug/L	94
22) Methyl Tert Butyl Ether	7.90	73	63175	5.0702 ug/L	95
23) trans-1,2-Dichloroethene	8.18	96	30605	5.0032 ug/L	77
24) n-Hexane	8.26	57	50447	5.0242 ug/L	97
25) Diisopropyl ether	8.64	45	1307878	53.2637 ug/L	96
26) Vinyl Acetate	8.83	43	20270	4.7343 ug/L	92
27) 1,1-Dichloroethane	8.86	63	68717	5.2357 ug/L	97
28) Ethyl-Tert-Butyl ether	9.28	59	1002786	51.4701 ug/L	98
29) 2-Butanone	9.49	43	7513	4.7714 ug/L	87
30) Propionitrile	9.62	54	23723	49.4756 ug/L	95
31) 2,2-Dichloropropane	9.73	77	55407	4.9402 ug/L	80
32) cis-1,2-Dichloroethene	9.81	96	33463	5.1232 ug/L	91
33) Chloroform	10.06	83	66014	5.1976 ug/L	96
34) 1-Bromopropane	10.21	122	6583	4.9530 ug/L	96
35) Bromochloromethane	10.31	130	18102	5.3095 ug/L	96
36) Tetrahydrofuran	10.34	42	48920	49.2299 ug/L	90
38) 1,1,1-Trichloroethane	10.66	97	63805	5.0437 ug/L	94
39) Cyclohexane	10.70	56	64812	5.1416 ug/L	91
40) 1,1-Dichloropropene	10.89	75	48791	5.0081 ug/L	82
41) Tert-Amyl-Methyl ether	11.01	73	679010	50.4738 ug/L #	85
42) Carbon Tetrachloride	11.05	117	52952	4.9323 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130915.D Vial: 7
Acq On : 5 Feb 2015 13:07 Operator: TMB
Sample : WG511026-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:33 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.25	62	52218	5.1962 ug/L		94
46)	Benzene	11.29	78	125154	5.1853 ug/L		88
47)	Trichloroethene	12.17	130	32275	5.1249 ug/L	#	66
48)	Methylcyclohexane	12.26	83	50591	5.1190 ug/L		84
49)	1,2-Dichloropropane	12.42	63	32102	4.9404 ug/L		76
50)	1,4-Dioxane	12.76	88	2313	96.5531 ug/L		89
51)	Bromodichloromethane	12.77	83	46267	4.9483 ug/L		98
52)	Dibromomethane	12.87	93	16180	5.2576 ug/L		100
53)	2-Chloroethyl Vinyl Ether	13.13	63	12068	4.5566 ug/L		99
54)	4-Methyl-2-Pentanone	13.16	58	5804	4.2616 ug/L		96
55)	cis-1,3-Dichloropropene	13.52	75	46355	5.0413 ug/L		94
56)	Dimethyl Disulfide	13.83	79	17657	3.8561 ug/L		93
59)	Toluene	14.02	91	139268	5.5577 ug/L		99
60)	Ethyl Methacrylate	14.14	69	21358	4.7399 ug/L		83
62)	trans-1,3-Dichloropropene	14.23	75	37829	4.7300 ug/L		95
63)	1,1,2-Trichloroethane	14.48	97	20145	5.2239 ug/L		94
64)	2-Hexanone	14.42	43	11249	4.5895 ug/L		93
65)	1,3-Dichloropropane	14.85	76	35659	4.9729 ug/L		78
66)	Tetrachloroethene	14.98	166	37692	5.2311 ug/L		88
67)	Dibromochloromethane	15.30	129	24956	4.7845 ug/L		95
68)	1,2-Dibromoethane	15.60	107	17837	4.7792 ug/L		92
69)	1-Chlorohexane	15.72	91	44341	5.2100 ug/L		68
70)	Chlorobenzene	16.20	112	93339	5.3892 ug/L	#	60
71)	1,1,1,2-Tetrachloroethane	16.24	131	30712	4.8897 ug/L		92
72)	Ethylbenzene	16.24	106	53576	5.6194 ug/L		98
73)	m-,p-Xylene	16.35	106	125641	11.0159 ug/L		85
74)	o-Xylene	17.01	106	60996	5.3049 ug/L		86
75)	Styrene	17.06	104	102114	5.5506 ug/L		82
76)	Bromoform	17.63	173	13589	4.5168 ug/L		93
77)	Isopropylbenzene	17.52	105	163227	5.3922 ug/L		97
79)	1,1,2,2-Tetrachloroethane	17.79	83	21056	5.1154 ug/L		99
81)	1,2,3-Trichloropropane	18.01	110	7110	5.1622 ug/L		98
82)	trans-1,4-Dichloro-2-Buten	18.07	53	8452	4.8232 ug/L		65
83)	n-Propylbenzene	18.14	91	199473	5.5823 ug/L		96
84)	Bromobenzene	18.27	156	40764	5.5707 ug/L		91
85)	1,3,5-Trimethylbenzene	18.36	105	147891	5.8391 ug/L		90
86)	2-Chlorotoluene	18.45	91	137618	5.8859 ug/L		98
87)	4-Chlorotoluene	18.50	91	120937	5.1892 ug/L		93
88)	a-Methylstyrene	18.84	118	72674	5.2812 ug/L		100
89)	tert-Butylbenzene	18.91	134	30099	5.3307 ug/L		95
90)	1,2,4-Trimethylbenzene	18.97	105	147717	5.6788 ug/L		83
91)	sec-Butylbenzene	19.24	105	166245	5.4099 ug/L		99
92)	p-Isopropyltoluene	19.43	119	143127	5.6766 ug/L		99
93)	1,3-Dichlorobenzene	19.65	146	82464	5.4769 ug/L		98
94)	1,4-Dichlorobenzene	19.80	146	81461	5.3200 ug/L		88
95)	n-Butylbenzene	20.05	91	128988	5.5933 ug/L		97
96)	1,2-Dichlorobenzene	20.39	146	71037	5.3191 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	21.59	75	3162	4.4455 ug/L		93
98)	1,2,4-Trichlorobenzene	22.97	180	43443	5.0408 ug/L		97
99)	Hexachlorobutadiene	23.17	225	20011	5.3201 ug/L		97
100)	Naphthalene	23.42	128	63676	5.0800 ug/L		99
101)	1,2,3-Trichlorobenzene	23.84	180	37791	5.1901 ug/L		97

(#) = qualifier out of range (m) = manual integration
6M130915.D 8260WT.M Fri Feb 06 08:53:33 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130915.D Vial: 7
Acq On : 5 Feb 2015 13:07 Operator: TMB
Sample : WG511026-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

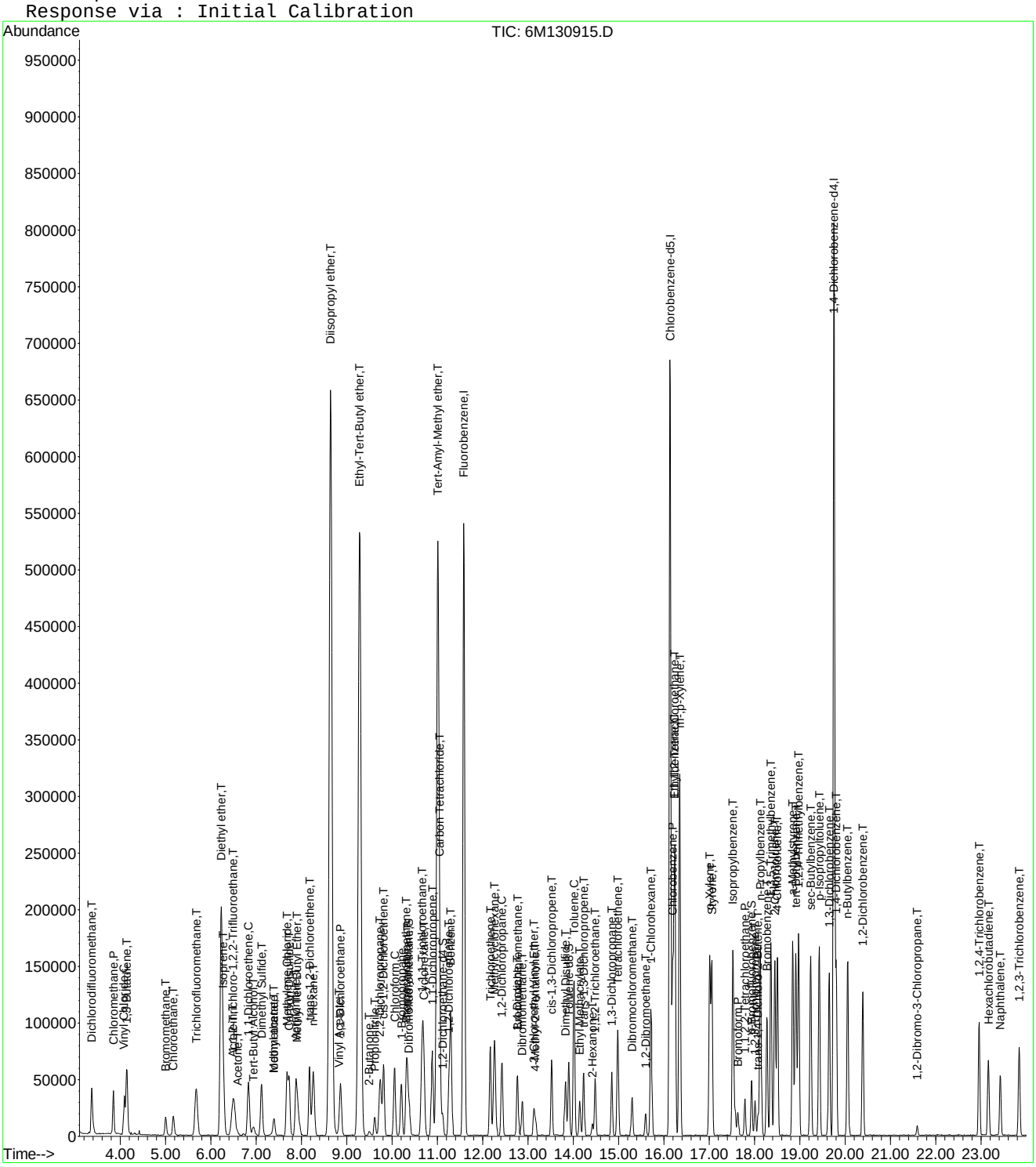

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130915.D Vial: 7
Acq On : 5 Feb 2015 13:07 Operator: TMB
Sample : WG511026-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.9877	0.2	100	0.00
3	P	Chloromethane	5.0000	5.1429	-2.9	100	0.00
4	C	Vinyl Chloride	5.0000	5.1483	-3.0	100	0.00
5	T	1,3-Butadiene	5.0000	4.3634	12.7	100	0.01
6	T	Bromomethane	5.0000	4.1102	17.8	100	0.00
7	T	Chloroethane	5.0000	5.0121	-0.2	100	0.00
8	T	Trichlorofluoromethane	5.0000	5.3006	-6.0	100	0.00
9	T	Diethyl ether	50.0000	49.0581	1.9	100	0.00
10	T	Isoprene	5.0000	4.7126	5.7	100	0.00
11	T	Acrolein	25.0000	14.0268	43.9#	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.0768	-1.5	100	0.00
13	T	Acetone	5.0000	4.7230	5.5	100	0.00
14	C	1,1-Dichloroethene	5.0000	5.1435	-2.9	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	92.2126	7.8	100	0.00
16	T	Dimethyl Sulfide	5.0000	5.0853	-1.7	100	0.00
17	T	Iodomethane	5.0000	4.1625	16.8	100	0.00
18	T	Methyl acetate	5.0000	4.9909	0.2	100	-0.01
19	T	Methylene Chloride	5.0000	5.2169	-4.3	100	0.00
20	T	Carbon Disulfide	5.0000	5.1847	-3.7	100	0.00
21	T	Acrylonitrile	25.0000	23.3553	6.6	100	-0.01
22	T	Methyl Tert Butyl Ether	5.0000	5.0702	-1.4	100	-0.01
23	T	trans-1,2-Dichloroethene	5.0000	5.0032	-0.1	100	0.00
24	T	n-Hexane	5.0000	5.0242	-0.5	100	0.00
25	T	Diisopropyl ether	50.0000	53.2637	-6.5	100	0.00
26	T	Vinyl Acetate	5.0000	4.7343	5.3	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.2357	-4.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.4701	-2.9	100	0.00
29	T	2-Butanone	5.0000	4.7714	4.6	100	0.00
30	T	Propionitrile	50.0000	49.4757	1.0	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9402	1.2	100	-0.01
32	T	cis-1,2-Dichloroethene	5.0000	5.1232	-2.5	100	0.00
33	C	Chloroform	5.0000	5.1976	-4.0	100	0.01
34		1-Bromopropane	5.0000	4.9530	0.9	100	0.00
35	T	Bromochloromethane	5.0000	5.3095	-6.2	100	-0.01
36	T	Tetrahydrofuran	50.0000	49.2299	1.5	100	0.00
37	S	Dibromofluoromethane	2.5000	2.7547	-10.2	100	-0.01
38	T	1,1,1-Trichloroethane	5.0000	5.0437	-0.9	100	0.00
39	T	Cyclohexane	5.0000	5.1415	-2.8	100	0.01
40	T	1,1-Dichloropropene	5.0000	5.0081	-0.2	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	50.4738	-0.9	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.9323	1.4	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5947	-3.8	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.01
45	T	1,2-Dichloroethane	5.0000	5.1962	-3.9	100	0.00
46	T	Benzene	5.0000	5.1852	-3.7	100	-0.01
47	T	Trichloroethene	5.0000	5.1249	-2.5	100	0.00
48	T	Methylcyclohexane	5.0000	5.1190	-2.4	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9404	1.2	100	-0.01
50	T	1,4-Dioxane	100.0000	96.5531	3.4	100	-0.01
51	T	Bromodichloromethane	5.0000	4.9483	1.0	100	0.00
52	T	Dibromomethane	5.0000	5.2576	-5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.5566	8.9	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.2616	14.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130915.D Vial: 7
Acq On : 5 Feb 2015 13:07 Operator: TMB
Sample : WG511026-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	5.0413	-0.8	100	0.00
56	T	Dimethyl Disulfide	5.0000	3.8561	22.9#	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6980	-7.9	100	0.00
59	C	Toluene	5.0000	5.5577	-11.2	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.7399	5.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	5.0000	4.7300	5.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	5.2239	-4.5	100	-0.01
64	T	2-Hexanone	5.0000	4.5895	8.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9729	0.5	100	0.00
66	T	Tetrachloroethene	5.0000	5.2311	-4.6	100	-0.01
67	T	Dibromochloromethane	5.0000	4.7845	4.3	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.7792	4.4	100	0.00
69	T	1-Chlorohexane	5.0000	5.2100	-4.2	100	-0.01
70	P	Chlorobenzene	5.0000	5.3892	-7.8	100	-0.01
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.8897	2.2	100	-0.01
72	C	Ethylbenzene	5.0000	5.6194	-12.4	100	-0.01
73	T	m-,p-Xylene	10.0000	11.0159	-10.2	100	0.00
74	T	o-Xylene	5.0000	5.3049	-6.1	100	0.00
75	T	Styrene	5.0000	5.5506	-11.0	100	0.00
76	P	Bromoform	5.0000	4.5168	9.7	100	0.00
77	T	Isopropylbenzene	5.0000	5.3922	-7.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.1154	-2.3	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.5573	-2.3	100	-0.01
81	T	1,2,3-Trichloropropane	5.0000	5.1622	-3.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.8232	3.5	100	-0.01
83	T	n-Propylbenzene	5.0000	5.5823	-11.6	100	0.00
84	T	Bromobenzene	5.0000	5.5707	-11.4	100	-0.01
85	T	1,3,5-Trimethylbenzene	5.0000	5.8391	-16.8	100	0.00
86	T	2-Chlorotoluene	5.0000	5.8859	-17.7	100	0.00
87	T	4-Chlorotoluene	5.0000	5.1892	-3.8	100	0.00
88	T	a-Methylstyrene	5.0000	5.2812	-5.6	100	-0.01
89	T	tert-Butylbenzene	5.0000	5.3307	-6.6	100	-0.01
90	T	1,2,4-Trimethylbenzene	5.0000	5.6788	-13.6	100	-0.01
91	T	sec-Butylbenzene	5.0000	5.4099	-8.2	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.6766	-13.5	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.4768	-9.5	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.3200	-6.4	100	-0.01
95	T	n-Butylbenzene	5.0000	5.5933	-11.9	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.3191	-6.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.4455	11.1	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	5.0408	-0.8	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.3201	-6.4	100	0.01
100	T	Naphthalene	5.0000	5.0800	-1.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	5.1901	-3.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130916.D Vial: 8
Acq On : 5 Feb 2015 13:38 Operator: TMB
Sample : WG511026-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:34 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	668530	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	515077	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	305481	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	69499	10.2928 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.16%#		
43) 1,2-Dichloroethane-d4	11.11	65	83739	10.4070 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.64%#		
58) Toluene-d8	13.90	98	235276	10.0097 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 40.04%#		
80) p-Bromofluorobenzene	17.93	95	104391	10.1631 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 40.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	263893	22.2091 ug/L	93
3) Chloromethane	3.84	50	188383	20.0853 ug/L	98
4) Vinyl Chloride	4.09	62	168057	20.9199 ug/L	96
5) 1,3-Butadiene	4.14	54	165794	20.0357 ug/L	93
6) Bromomethane	5.01	94	65901	15.4826 ug/L	99
7) Chloroethane	5.17	64	91186	19.5754 ug/L	84
8) Trichlorofluoromethane	5.68	101	311931	20.8243 ug/L	99
9) Diethyl ether	6.22	59	354421	82.2495 ug/L	92
10) Isoprene	6.27	67	164893	20.6735 ug/L #	63
11) Acrolein	6.48	56	1896	22.6039 ug/L	67
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	144847	20.3436 ug/L	94
13) Acetone	6.59	43	20744	20.1102 ug/L	98
14) 1,1-Dichloroethene	6.83	61	244553	20.2923 ug/L	86
15) Tert-Butyl Alcohol	6.96	59	33886	158.3799 ug/L	93
16) Dimethyl Sulfide	7.11	62	135385	20.6010 ug/L	74
17) Iodomethane	7.40	142	101280	18.3118 ug/L	85
18) Methyl acetate	7.40	43	79457	19.7953 ug/L	94
19) Methylene Chloride	7.68	84	115567	19.3683 ug/L	69
20) Carbon Disulfide	7.73	76	425620	20.7599 ug/L	100
21) Acrylonitrile	7.88	53	55391	38.5218 ug/L	91
22) Methyl Tert Butyl Ether	7.92	73	250960	19.8235 ug/L	94
23) trans-1,2-Dichloroethene	8.17	96	126217	20.3079 ug/L	81
24) n-Hexane	8.25	57	214651	21.0406 ug/L	98
25) Diisopropyl ether	8.64	45	2103880	84.3294 ug/L	96
26) Vinyl Acetate	8.84	43	80694	18.5496 ug/L	96
27) 1,1-Dichloroethane	8.87	63	270658	20.2966 ug/L	98
28) Ethyl-Tert-Butyl ether	9.29	59	1645555	83.1291 ug/L	98
29) 2-Butanone	9.49	43	30628	19.1446 ug/L	93
30) Propionitrile	9.61	54	39355	80.7822 ug/L	95
31) 2,2-Dichloropropane	9.74	77	233079	20.4539 ug/L	80
32) cis-1,2-Dichloroethene	9.82	96	135903	20.4784 ug/L	73
33) Chloroform	10.05	83	270317	20.9477 ug/L	96
34) 1-Bromopropane	10.20	122	29808	20.8707 ug/L	98
35) Bromochloromethane	10.32	130	69930	20.1877 ug/L	98
36) Tetrahydrofuran	10.34	42	81579	80.8006 ug/L	90
38) 1,1,1-Trichloroethane	10.66	97	263288	20.4840 ug/L	95
39) Cyclohexane	10.69	56	271077	21.1653 ug/L	93
40) 1,1-Dichloropropene	10.89	75	203429	20.5515 ug/L	86
41) Tert-Amyl-Methyl ether	11.01	73	1122148	82.0982 ug/L #	86
42) Carbon Tetrachloride	11.05	117	224148	20.5491 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M130916.D 8260WT.M Fri Feb 06 08:53:34 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130916.D Vial: 8
Acq On : 5 Feb 2015 13:38 Operator: TMB
Sample : WG511026-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:34 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.26	62	205269	20.1040 ug/L		94
46)	Benzene	11.30	78	489311	19.9528 ug/L		85
47)	Trichloroethene	12.18	130	130350	20.3715 ug/L	#	71
48)	Methylcyclohexane	12.27	83	208498	20.7637 ug/L		84
49)	1,2-Dichloropropane	12.42	63	132361	20.0487 ug/L		80
50)	1,4-Dioxane	12.76	88	3769	154.8497 ug/L	#	67
51)	Bromodichloromethane	12.77	83	190546	20.0577 ug/L		99
52)	Dibromomethane	12.87	93	64991	20.7851 ug/L		98
53)	2-Chloroethyl Vinyl Ether	13.14	63	51575	19.1664 ug/L		97
54)	4-Methyl-2-Pentanone	13.17	58	27320	19.7432 ug/L		88
55)	cis-1,3-Dichloropropene	13.52	75	190921	20.4357 ug/L		94
56)	Dimethyl Disulfide	13.83	79	86508	18.5943 ug/L		92
59)	Toluene	14.01	91	540503	20.8093 ug/L		99
60)	Ethyl Methacrylate	14.15	69	99143	19.6095 ug/L		83
62)	trans-1,3-Dichloropropene	14.23	75	169540	20.4513 ug/L		94
63)	1,1,2-Trichloroethane	14.48	97	78437	19.6228 ug/L		98
64)	2-Hexanone	14.42	43	49943	19.6582 ug/L		96
65)	1,3-Dichloropropane	14.85	76	144462	19.4362 ug/L		79
66)	Tetrachloroethene	14.98	166	148391	19.8687 ug/L		88
67)	Dibromochloromethane	15.29	129	107689	19.9181 ug/L		99
68)	1,2-Dibromoethane	15.60	107	79434	20.5333 ug/L		98
69)	1-Chlorohexane	15.72	91	193658	21.9524 ug/L		71
70)	Chlorobenzene	16.20	112	356089	19.8353 ug/L	#	68
71)	1,1,1,2-Tetrachloroethane	16.24	131	130353	20.0221 ug/L		89
72)	Ethylbenzene	16.24	106	199551	20.1926 ug/L		90
73)	m-,p-Xylene	16.34	106	485827	41.0949 ug/L		86
74)	o-Xylene	17.02	106	247114	20.7343 ug/L		91
75)	Styrene	17.06	104	407650	21.3774 ug/L		83
76)	Bromoform	17.64	173	62600	18.6436 ug/L		98
77)	Isopropylbenzene	17.53	105	658908	20.9999 ug/L		97
79)	1,1,2,2-Tetrachloroethane	17.78	83	87588	19.7093 ug/L		99
81)	1,2,3-Trichloropropane	18.02	110	29460	19.8114 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	18.08	53	40091	19.4641 ug/L		60
83)	n-Propylbenzene	18.13	91	795577	20.6220 ug/L		97
84)	Bromobenzene	18.27	156	159096	20.1377 ug/L		92
85)	1,3,5-Trimethylbenzene	18.36	105	576456	21.0809 ug/L		93
86)	2-Chlorotoluene	18.45	91	496348	19.6627 ug/L		98
87)	4-Chlorotoluene	18.51	91	515568	20.4903 ug/L		94
88)	a-Methylstyrene	18.84	118	325060	21.8793 ug/L		95
89)	tert-Butylbenzene	18.91	134	123370	20.2376 ug/L		91
90)	1,2,4-Trimethylbenzene	18.98	105	588271	20.9470 ug/L		84
91)	sec-Butylbenzene	19.24	105	677535	20.4217 ug/L		98
92)	p-Isopropyltoluene	19.44	119	581905	21.3764 ug/L		97
93)	1,3-Dichlorobenzene	19.65	146	330766	20.3473 ug/L		94
94)	1,4-Dichlorobenzene	19.80	146	326899	19.7741 ug/L		93
95)	n-Butylbenzene	20.06	91	529806	21.2792 ug/L		99
96)	1,2-Dichlorobenzene	20.40	146	287089	19.9108 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.59	75	15775	17.5235 ug/L		81
98)	1,2,4-Trichlorobenzene	22.96	180	182851	19.6516 ug/L		97
99)	Hexachlorobutadiene	23.16	225	85012	20.9341 ug/L		98
100)	Naphthalene	23.43	128	272266	20.1187 ug/L		100
101)	1,2,3-Trichlorobenzene	23.85	180	154147	19.6085 ug/L		97

(#) = qualifier out of range (m) = manual integration
6M130916.D 8260WT.M Fri Feb 06 08:53:34 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130916.D Vial: 8
Acq On : 5 Feb 2015 13:38 Operator: TMB
Sample : WG511026-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

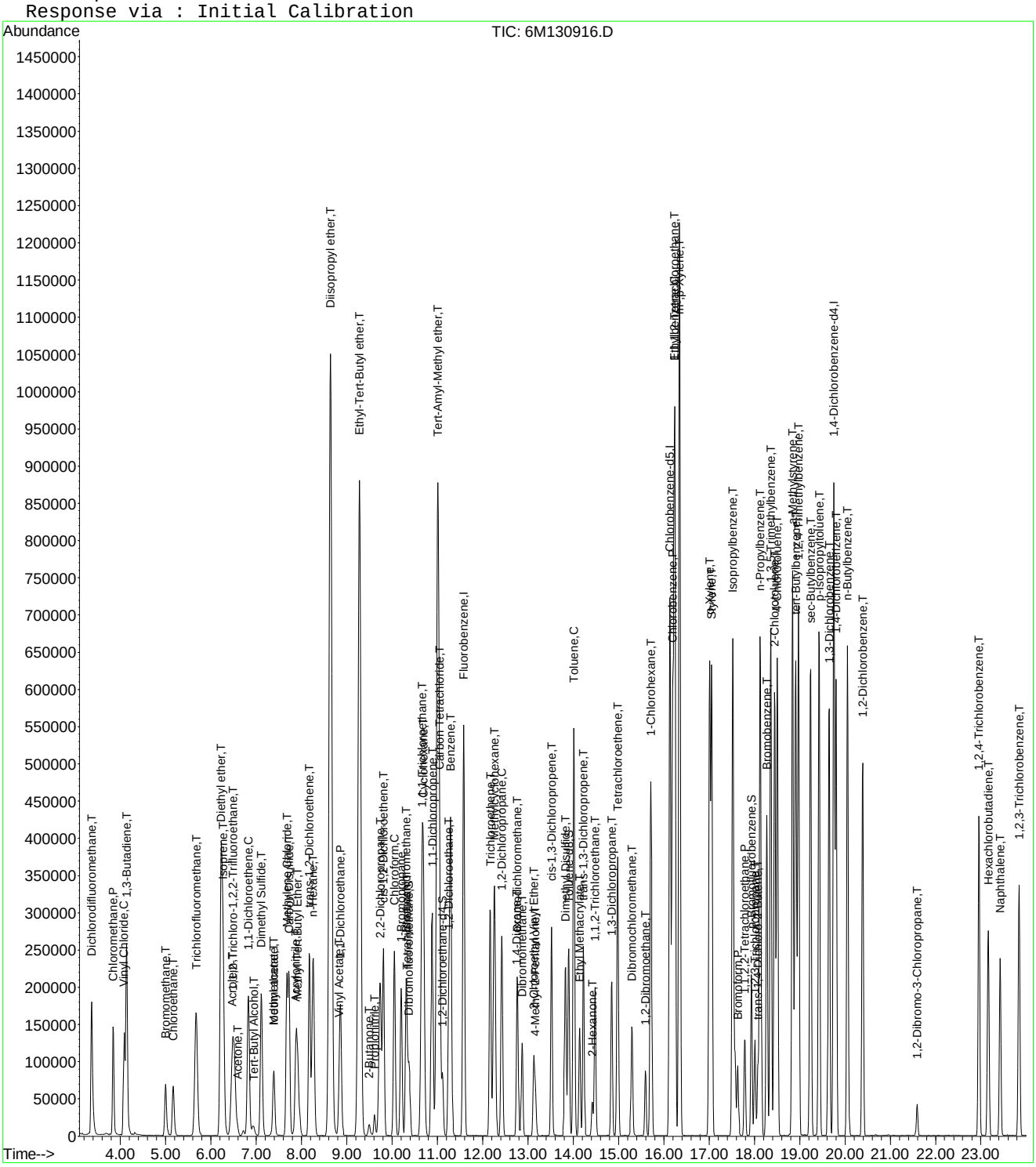

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130917.D Vial: 9
Acq On : 5 Feb 2015 14:09 Operator: TMB
Sample : WG511026-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:34 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	715746	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	554647	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	327681	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	187784	25.9762 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.92%		
43) 1,2-Dichloroethane-d4	11.11	65	219180	25.4425 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.76%		
58) Toluene-d8	13.90	98	619741	24.4855 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.96%		
80) p-Bromofluorobenzene	17.93	95	269935	24.4995 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	711541	55.9325 ug/L	95
3) Chloromethane	3.84	50	525673	52.3497 ug/L	99
4) Vinyl Chloride	4.09	62	472378	54.9231 ug/L	98
5) 1,3-Butadiene	4.13	54	434506	51.2468 ug/L	99
6) Bromomethane	5.01	94	206225	43.6754 ug/L	97
7) Chloroethane	5.17	64	249721	50.0725 ug/L	79
8) Trichlorofluoromethane	5.67	101	827063	51.5718 ug/L	99
9) Diethyl ether	6.22	59	457698	99.2099 ug/L	94
10) Isoprene	6.27	67	428683	50.2008 ug/L	66
11) Acrolein	6.49	56	4016	44.7199 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	389865	51.1439 ug/L	97
13) Acetone	6.59	43	59036	53.4566 ug/L	97
14) 1,1-Dichloroethene	6.84	61	669768	51.9091 ug/L	85
15) Tert-Butyl Alcohol	6.94	59	49253	215.0178 ug/L	93
16) Dimethyl Sulfide	7.11	62	363196	51.6203 ug/L	78
17) Iodomethane	7.39	142	314817	49.4102 ug/L	86
18) Methyl acetate	7.40	43	218746	50.9016 ug/L	96
19) Methylene Chloride	7.68	84	321247	50.2874 ug/L	73
20) Carbon Disulfide	7.72	76	1076534	49.0447 ug/L	99
21) Acrylonitrile	7.88	53	78388	50.9190 ug/L	97
22) Methyl Tert Butyl Ether	7.91	73	730170	53.8718 ug/L	96
23) trans-1,2-Dichloroethene	8.17	96	343190	51.5756 ug/L	78
24) n-Hexane	8.26	57	540730	49.5070 ug/L	97
25) Diisopropyl ether	8.64	45	2648160	99.1435 ug/L	97
26) Vinyl Acetate	8.84	43	235087	50.4759 ug/L	97
27) 1,1-Dichloroethane	8.87	63	732770	51.3255 ug/L	100
28) Ethyl-Tert-Butyl ether	9.29	59	2131878	100.5924 ug/L	98
29) 2-Butanone	9.49	43	88372	51.5947 ug/L	95
30) Propionitrile	9.61	54	52804	101.2382 ug/L	96
31) 2,2-Dichloropropane	9.75	77	678048	55.5771 ug/L	88
32) cis-1,2-Dichloroethene	9.82	96	375666	52.8727 ug/L	75
33) Chloroform	10.05	83	738337	53.4416 ug/L	97
34) 1-Bromopropane	10.20	122	78799	51.0220 ug/L	100
35) Bromochloromethane	10.32	130	195988	52.8464 ug/L	100
36) Tetrahydrofuran	10.34	42	108362	100.2479 ug/L	90
38) 1,1,1-Trichloroethane	10.65	97	735798	53.4694 ug/L	93
39) Cyclohexane	10.69	56	694243	50.6298 ug/L	94
40) 1,1-Dichloropropene	10.89	75	562891	53.1150 ug/L	88
41) Tert-Amyl-Methyl ether	11.01	73	1470218	100.4678 ug/L #	87
42) Carbon Tetrachloride	11.05	117	641580	54.9377 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M130917.D 8260WT.M Fri Feb 06 08:53:35 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130917.D Vial: 9
Acq On : 5 Feb 2015 14:09 Operator: TMB
Sample : WG511026-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:34 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.26	62	581731	53.2161 ug/L	95
46)	Benzene	11.30	78	1350903	51.4523 ug/L	86
47)	Trichloroethene	12.17	130	360611	52.6397 ug/L #	69
48)	Methylcyclohexane	12.27	83	538313	50.0725 ug/L	85
49)	1,2-Dichloropropane	12.42	63	372123	52.6471 ug/L	78
50)	1,4-Dioxane	12.76	88	5181	198.8199 ug/L	71
51)	Bromodichloromethane	12.77	83	547842	53.8640 ug/L	100
52)	Dibromomethane	12.87	93	181594	54.2453 ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.14	63	150075	52.0921 ug/L	99
54)	4-Methyl-2-Pentanone	13.17	58	77389	52.2369 ug/L	96
55)	cis-1,3-Dichloropropene	13.52	75	552224	55.2095 ug/L	95
56)	Dimethyl Disulfide	13.83	79	249648	50.1203 ug/L	91
59)	Toluene	14.01	91	1459043	52.1654 ug/L	99
60)	Ethyl Methacrylate	14.15	69	280367	50.7413 ug/L	83
62)	trans-1,3-Dichloropropene	14.23	75	503475	56.4004 ug/L	93
63)	1,1,2-Trichloroethane	14.48	97	224156	52.0771 ug/L	100
64)	2-Hexanone	14.42	43	145522	53.1927 ug/L	96
65)	1,3-Dichloropropane	14.85	76	414370	51.7727 ug/L	84
66)	Tetrachloroethene	14.98	166	409864	50.9633 ug/L	89
67)	Dibromochloromethane	15.29	129	329223	56.5486 ug/L	100
68)	1,2-Dibromoethane	15.60	107	233005	55.9337 ug/L	100
69)	1-Chlorohexane	15.72	91	497860	52.4093 ug/L	73
70)	Chlorobenzene	16.20	112	992910	51.3625 ug/L	69
71)	1,1,1,2-Tetrachloroethane	16.24	131	389329	55.5342 ug/L	90
72)	Ethylbenzene	16.24	106	559838	52.6086 ug/L	94
73)	m-,p-Xylene	16.34	106	1345096	105.6610 ug/L	92
74)	o-Xylene	17.02	106	672241	52.3809 ug/L	90
75)	Styrene	17.06	104	1111582	54.1333 ug/L	82
76)	Bromoform	17.64	173	190860	52.0262 ug/L	98
77)	Isopropylbenzene	17.53	105	1782598	52.7597 ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.78	83	248743	52.1808 ug/L	98
81)	1,2,3-Trichloropropane	18.02	110	84284	52.8398 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	18.08	53	111832	49.8015 ug/L	66
83)	n-Propylbenzene	18.13	91	2129925	51.4689 ug/L	99
84)	Bromobenzene	18.27	156	443465	52.3291 ug/L	91
85)	1,3,5-Trimethylbenzene	18.36	105	1571503	53.5761 ug/L	95
86)	2-Chlorotoluene	18.45	91	1362807	50.3297 ug/L	99
87)	4-Chlorotoluene	18.51	91	1418197	52.5451 ug/L	93
88)	a-Methylstyrene	18.84	118	832102	52.2131 ug/L	97
89)	tert-Butylbenzene	18.92	134	335180	51.2578 ug/L	83
90)	1,2,4-Trimethylbenzene	18.98	105	1613321	53.5548 ug/L	84
91)	sec-Butylbenzene	19.24	105	1828194	51.3706 ug/L	97
92)	p-Isopropyltoluene	19.44	119	1583697	54.2361 ug/L	97
93)	1,3-Dichlorobenzene	19.65	146	906890	52.0084 ug/L	92
94)	1,4-Dichlorobenzene	19.80	146	903506	50.9503 ug/L	94
95)	n-Butylbenzene	20.06	91	1435580	53.7524 ug/L	99
96)	1,2-Dichlorobenzene	20.40	146	793182	51.2835 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	21.59	75	52578	52.6920 ug/L	81
98)	1,2,4-Trichlorobenzene	22.96	180	520035	52.1033 ug/L	97
99)	Hexachlorobutadiene	23.16	225	233866	53.6875 ug/L	100
100)	Naphthalene	23.43	128	782545	53.9074 ug/L	100
101)	1,2,3-Trichlorobenzene	23.85	180	449780	53.3387 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M130917.D 8260WT.M Fri Feb 06 08:53:35 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130917.D Vial: 9
Acq On : 5 Feb 2015 14:09 Operator: TMB
Sample : WG511026-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

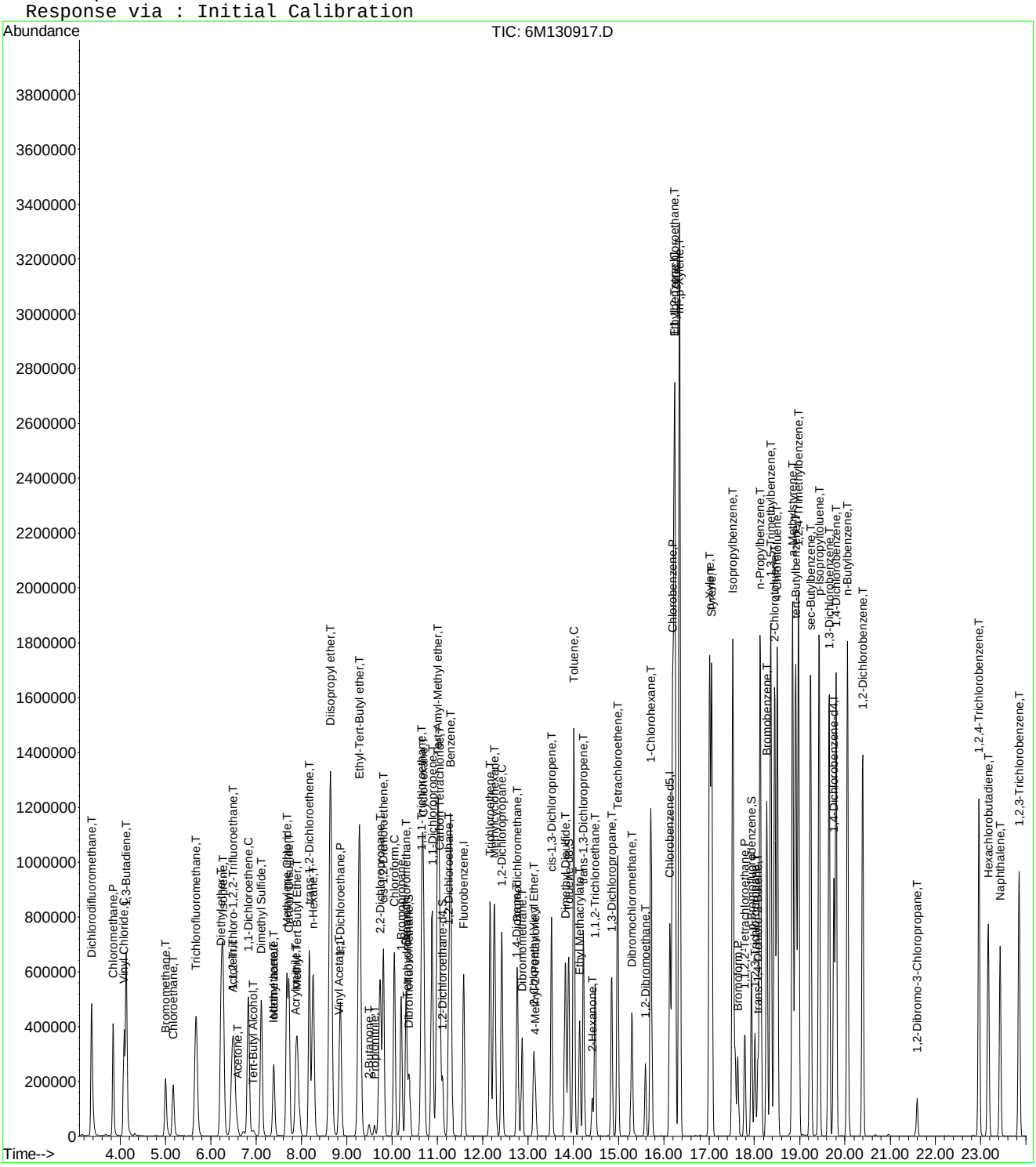

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130918.D Vial: 10
Acq On : 5 Feb 2015 14:40 Operator: TMB
Sample : WG511026-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:35 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	804219	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.15	117	608558	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	357067	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	412314	50.7609 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 203.04%#		
43) 1,2-Dichloroethane-d4	11.12	65	471322	48.6924 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 194.76%#		
58) Toluene-d8	13.90	98	1359721	48.9624 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 195.84%#		
80) p-Bromofluorobenzene	17.93	95	585589	48.7744 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 195.08%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	1525426	106.7186 ug/L	94
3) Chloromethane	3.84	50	1153125	102.2019 ug/L	98
4) Vinyl Chloride	4.09	62	1052944	108.9570 ug/L	99
5) 1,3-Butadiene	4.13	54	888717	100.4740 ug/L	93
6) Bromomethane	5.00	94	515134	96.0918 ug/L	96
7) Chloroethane	5.17	64	584057	104.2279 ug/L	84
8) Trichlorofluoromethane	5.67	101	1815653	100.7606 ug/L	99
9) Diethyl ether	6.23	59	1040577	200.7404 ug/L	93
10) Isoprene	6.27	67	970157	101.1115 ug/L	67
11) Acrolein	6.48	56	11596	114.9211 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	885307	103.3614 ug/L	96
13) Acetone	6.59	43	126321	101.7993 ug/L	99
14) 1,1-Dichloroethene	6.83	61	1480476	102.1187 ug/L	87
15) Tert-Butyl Alcohol	6.94	59	112100	435.5439 ug/L	93
16) Dimethyl Sulfide	7.12	62	815449	103.1481 ug/L	80
17) Iodomethane	7.39	142	754602	103.1692 ug/L	88
18) Methyl acetate	7.40	43	486946	100.8455 ug/L	96
19) Methylene Chloride	7.68	84	721375	100.4999 ug/L	76
20) Carbon Disulfide	7.73	76	2402663	97.4185 ug/L	98
21) Acrylonitrile	7.88	53	177787	102.7814 ug/L	96
22) Methyl Tert Butyl Ether	7.90	73	1638115	107.5638 ug/L	96
23) trans-1,2-Dichloroethene	8.18	96	788057	105.4027 ug/L	82
24) n-Hexane	8.26	57	1237037	100.7984 ug/L	98
25) Diisopropyl ether	8.64	45	5740190	191.2629 ug/L	96
26) Vinyl Acetate	8.83	43	547149	104.5553 ug/L	98
27) 1,1-Dichloroethane	8.86	63	1630834	101.6622 ug/L	100
28) Ethyl-Tert-Butyl ether	9.28	59	4726560	198.4872 ug/L	99
29) 2-Butanone	9.49	43	196731	102.2227 ug/L	93
30) Propionitrile	9.62	54	118235	201.7475 ug/L	94
31) 2,2-Dichloropropane	9.74	77	1547908	112.9185 ug/L	92
32) cis-1,2-Dichloroethene	9.81	96	843481	105.6549 ug/L	97
33) Chloroform	10.05	83	1609365	103.6725 ug/L	97
34) 1-Bromopropane	10.21	122	177524	101.9510 ug/L	99
35) Bromochloromethane	10.31	130	438844	105.3127 ug/L	99
36) Tetrahydrofuran	10.35	42	237046	195.1711 ug/L	94
38) 1,1,1-Trichloroethane	10.66	97	1657948	107.2265 ug/L	95
39) Cyclohexane	10.69	56	1579632	102.5262 ug/L	94
40) 1,1-Dichloropropene	10.89	75	1258967	105.7285 ug/L	89
41) Tert-Amyl-Methyl ether	11.01	73	3278143	199.3691 ug/L	88
42) Carbon Tetrachloride	11.05	117	1480392	112.8186 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130918.D Vial: 10
Acq On : 5 Feb 2015 14:40 Operator: TMB
Sample : WG511026-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:35 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.25	62	1232565	100.3496 ug/L		95
46)	Benzene	11.30	78	2963774	100.4640 ug/L		85
47)	Trichloroethene	12.17	130	799464	103.8623 ug/L	#	72
48)	Methylcyclohexane	12.27	83	1218233	100.8508 ug/L		86
49)	1,2-Dichloropropane	12.42	63	822107	103.5145 ug/L		80
50)	1,4-Dioxane	12.77	88	11841	404.4074 ug/L	#	59
51)	Bromodichloromethane	12.78	83	1212730	106.1188 ug/L		100
52)	Dibromomethane	12.87	93	397852	105.7711 ug/L		100
53)	2-Chloroethyl Vinyl Ether	13.13	63	330806	102.1931 ug/L		100
54)	4-Methyl-2-Pentanone	13.16	58	171278	102.8927 ug/L		94
55)	cis-1,3-Dichloropropene	13.52	75	1222275	108.7557 ug/L		93
56)	Dimethyl Disulfide	13.83	79	596928	106.6577 ug/L		91
59)	Toluene	14.02	91	3119788	101.6610 ug/L		97
60)	Ethyl Methacrylate	14.14	69	615621	101.0804 ug/L		83
62)	trans-1,3-Dichloropropene	14.24	75	1115511	113.8919 ug/L		95
63)	1,1,2-Trichloroethane	14.48	97	490597	103.8809 ug/L		100
64)	2-Hexanone	14.42	43	307481	102.4369 ug/L		98
65)	1,3-Dichloropropane	14.85	76	916800	104.4003 ug/L		88
66)	Tetrachloroethene	14.98	166	898125	101.7817 ug/L		89
67)	Dibromochloromethane	15.30	129	737547	115.4611 ug/L		99
68)	1,2-Dibromoethane	15.59	107	518535	113.4490 ug/L		99
69)	1-Chlorohexane	15.72	91	1093604	104.9243 ug/L		75
70)	Chlorobenzene	16.20	112	2112941	99.6181 ug/L	#	67
71)	1,1,1,2-Tetrachloroethane	16.24	131	864855	112.4351 ug/L		91
72)	Ethylbenzene	16.24	106	1216626	104.1996 ug/L		97
73)	m-,p-Xylene	16.35	106	2853391	204.2854 ug/L		96
74)	o-Xylene	17.01	106	1448162	102.8442 ug/L		95
75)	Styrene	17.06	104	2360850	104.7867 ug/L		80
76)	Bromoform	17.64	173	423067	104.6832 ug/L		98
77)	Isopropylbenzene	17.52	105	3662141	98.7867 ug/L		99
79)	1,1,2,2-Tetrachloroethane	17.79	83	534331	102.8659 ug/L		99
81)	1,2,3-Trichloropropane	18.01	110	174391	100.3326 ug/L		97
82)	trans-1,4-Dichloro-2-Buten	18.08	53	246642	100.2754 ug/L		68
83)	n-Propylbenzene	18.14	91	4264473	94.5687 ug/L		98
84)	Bromobenzene	18.28	156	948168	102.6765 ug/L		91
85)	1,3,5-Trimethylbenzene	18.36	105	3246665	101.5770 ug/L		98
86)	2-Chlorotoluene	18.45	91	3038961	102.9952 ug/L		97
87)	4-Chlorotoluene	18.50	91	2682023	91.1926 ug/L		95
88)	a-Methylstyrene	18.84	118	1768996	101.8665 ug/L		97
89)	tert-Butylbenzene	18.91	134	715569	100.4234 ug/L		89
90)	1,2,4-Trimethylbenzene	18.97	105	3315484	101.0011 ug/L		87
91)	sec-Butylbenzene	19.24	105	3730462	96.1960 ug/L		94
92)	p-Isopropyltoluene	19.43	119	3276085	102.9611 ug/L		95
93)	1,3-Dichlorobenzene	19.65	146	1905922	100.3057 ug/L		91
94)	1,4-Dichlorobenzene	19.80	146	1874356	96.9995 ug/L		92
95)	n-Butylbenzene	20.06	91	2963092	101.8163 ug/L		96
96)	1,2-Dichlorobenzene	20.39	146	1668898	99.0229 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	21.59	75	112903	103.0267 ug/L		85
98)	1,2,4-Trichlorobenzene	22.97	180	1117748	102.7728 ug/L		97
99)	Hexachlorobutadiene	23.16	225	509297	107.2948 ug/L		99
100)	Naphthalene	23.43	128	1657908	104.8095 ug/L		100
101)	1,2,3-Trichlorobenzene	23.84	180	952262	103.6336 ug/L		97

(#) = qualifier out of range (m) = manual integration
6M130918.D 8260WT.M Fri Feb 06 08:53:35 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130918.D Vial: 10
Acq On : 5 Feb 2015 14:40 Operator: TMB
Sample : WG511026-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

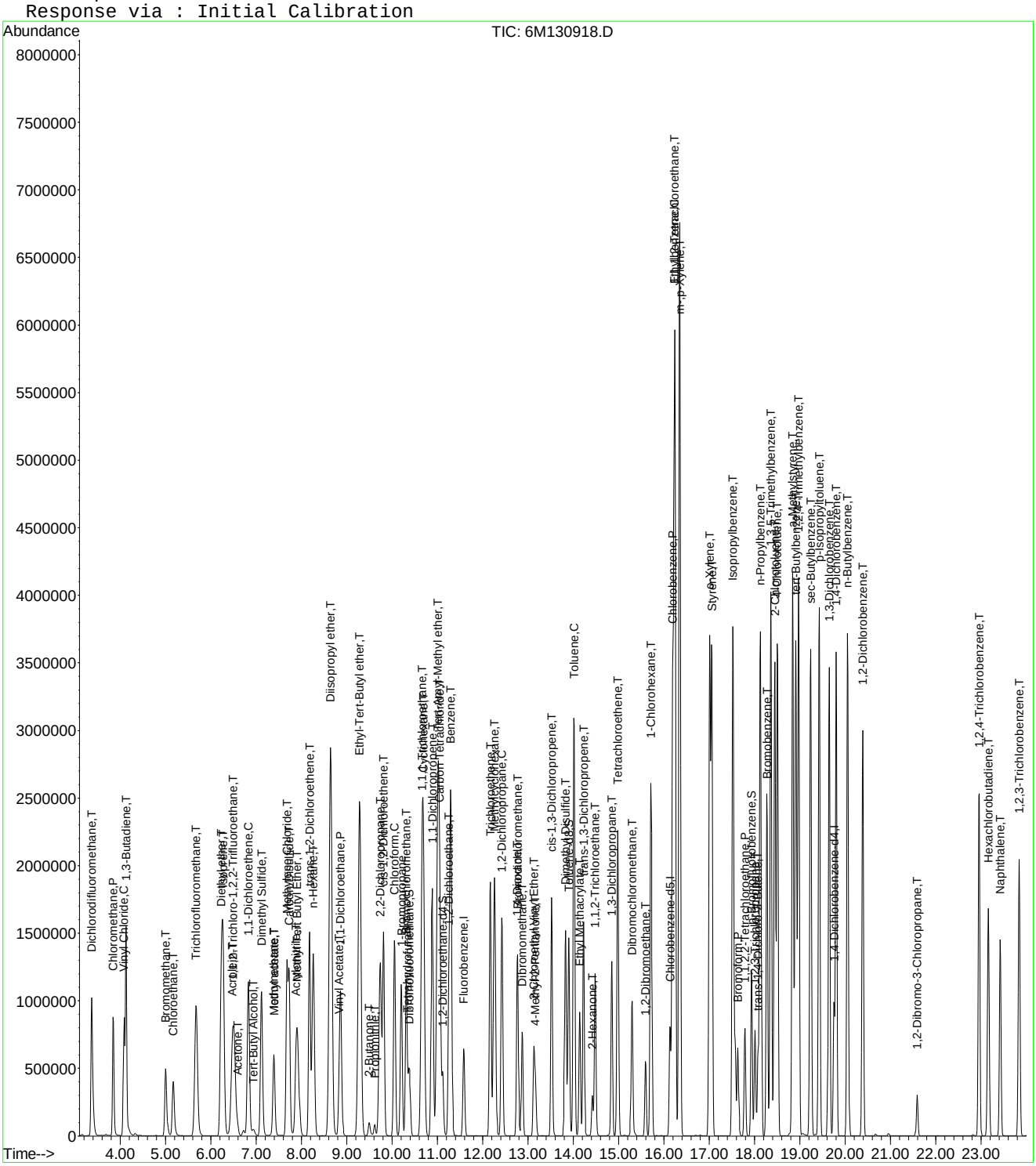

6M130918.D 8260WT.M Fri Feb 06 08:53:36 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130919.D Vial: 11
Acq On : 5 Feb 2015 15:11 Operator: TMB
Sample : WG511026-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:36 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	881708	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	674483	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	381337	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	899697	101.0293 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 404.12%#		
43) 1,2-Dichloroethane-d4	11.12	65	996687	93.9186 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 375.68%#		
58) Toluene-d8	13.90	98	2896844	94.1172 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 376.48%#		
80) p-Bromofluorobenzene	17.93	95	1244943	97.0933 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 388.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	3059610	195.2381 ug/L	94
3) Chloromethane	3.84	50	2418432	195.5088 ug/L	96
4) Vinyl Chloride	4.08	62	2135320	201.5406 ug/L	99
5) 1,3-Butadiene	4.12	54	1625881	197.8858 ug/L	94
6) Bromomethane	5.01	94	1236575	209.4191 ug/L	97
7) Chloroethane	5.17	64	1300239	211.6418 ug/L	86
8) Trichlorofluoromethane	5.67	101	3709860	187.7868 ug/L	97
9) Diethyl ether	6.49	59	23063	4.0581 ug/L #	15
10) Isoprene	6.27	67	2160743	205.4051 ug/L	71
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1906355	203.0101 ug/L	96
13) Acetone	6.59	43	270560	198.8761 ug/L	99
14) 1,1-Dichloroethene	6.83	61	3095781	194.7708 ug/L	89
15) Tert-Butyl Alcohol	6.94	59	3476	12.3184 ug/L #	72
16) Dimethyl Sulfide	7.12	62	1810207	208.8537 ug/L	82
17) Iodomethane	7.40	142	1733215	213.9793 ug/L	92
18) Methyl acetate	7.40	43	1052660	198.8445 ug/L	98
19) Methylene Chloride	7.68	84	1571336	199.6747 ug/L	82
20) Carbon Disulfide	7.73	76	5018212	185.5869 ug/L	96
21) Acrylonitrile	7.91	53	43190	22.7744 ug/L #	36
22) Methyl Tert Butyl Ether	7.91	73	3493004	209.2042 ug/L	94
23) trans-1,2-Dichloroethene	8.18	96	1696219	206.9310 ug/L	86
24) n-Hexane	8.26	57	2712868	201.6271 ug/L	99
26) Vinyl Acetate	8.84	43	1188532	207.1576 ug/L	99
27) 1,1-Dichloroethane	8.87	63	3391836	192.8565 ug/L	98
28) Ethyl-Tert-Butyl ether	9.29	59	4871	0.1866 ug/L #	23
29) 2-Butanone	9.49	43	431046	204.2903 ug/L	94
30) Propionitrile	9.55	54	429	0.6677 ug/L #	56
31) 2,2-Dichloropropane	9.75	77	3253541	216.4841 ug/L	95
32) cis-1,2-Dichloroethene	9.82	96	1791840	204.7214 ug/L	80
33) Chloroform	10.05	83	3313895	194.7141 ug/L	96
34) 1-Bromopropane	10.21	122	395519	206.8224 ug/L	99
35) Bromochloromethane	10.32	130	943494	206.5187 ug/L	99
36) Tetrahydrofuran	10.34	42	916	0.6879 ug/L #	38
38) 1,1,1-Trichloroethane	10.66	97	3394354	200.2340 ug/L	93
39) Cyclohexane	10.69	56	3415084	202.1762 ug/L	95
40) 1,1-Dichloropropene	10.89	75	2632767	201.6692 ug/L	91
41) Tert-Amyl-Methyl ether	10.89	73	459785	25.5055 ug/L #	57
42) Carbon Tetrachloride	11.05	117	3086122	214.5194 ug/L	98
45) 1,2-Dichloroethane	11.26	62	2505627	186.0680 ug/L	97
46) Benzene	11.30	78	5762656	178.1713 ug/L #	80

(#) = qualifier out of range (m) = manual integration
6M130919.D 8260WT.M Fri Feb 06 08:53:36 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130919.D Vial: 11
Acq On : 5 Feb 2015 15:11 Operator: TMB
Sample : WG511026-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:36 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
47)	Trichloroethene	12.18	130	1702257	201.7130 ug/L		73
48)	Methylcyclohexane	12.27	83	2665791	201.2912 ug/L		88
49)	1,2-Dichloropropane	12.42	63	1780426	204.4778 ug/L		82
50)	1,4-Dioxane	12.77	88	5084	158.3747 ug/L	#	63
51)	Bromodichloromethane	12.77	83	2508268	200.1943 ug/L		98
52)	Dibromomethane	12.87	93	848370	205.7218 ug/L		99
53)	2-Chloroethyl Vinyl Ether	13.14	63	738861	208.1903 ug/L		99
54)	4-Methyl-2-Pentanone	13.17	58	380803	208.6570 ug/L		95
55)	cis-1,3-Dichloropropene	13.52	75	2581688	209.5254 ug/L		92
56)	Dimethyl Disulfide	13.83	79	1398529	227.9246 ug/L		91
59)	Toluene	14.01	91	5874633	172.7193 ug/L		89
60)	Ethyl Methacrylate	14.15	69	1377060	203.5298 ug/L		86
62)	trans-1,3-Dichloropropene	14.23	75	2339125	215.4782 ug/L		97
63)	1,1,2-Trichloroethane	14.48	97	1043558	199.3694 ug/L		98
64)	2-Hexanone	14.42	43	679478	204.2418 ug/L		99
65)	1,3-Dichloropropane	14.85	76	1923461	197.6247 ug/L		88
66)	Tetrachloroethene	14.98	166	1900170	194.2926 ug/L		89
67)	Dibromochloromethane	15.30	129	1589000	224.4404 ug/L		100
68)	1,2-Dibromoethane	15.60	107	1114858	220.0763 ug/L		99
69)	1-Chlorohexane	15.72	91	2356330	203.9779 ug/L		77
70)	Chlorobenzene	16.20	112	4184678	178.0097 ug/L	#	62
71)	1,1,1,2-Tetrachloroethane	16.24	131	1840183	215.8493 ug/L		91
72)	Ethylbenzene	16.24	106	2535243	195.9113 ug/L		73
73)	m-,p-Xylene	16.35	106	5462873	352.8809 ug/L		72
74)	o-Xylene	17.02	106	2977906	190.8115 ug/L		91
75)	Styrene	17.07	104	4585513	183.6356 ug/L		75
76)	Bromoform	17.64	173	923656	205.8069 ug/L		98
77)	Isopropylbenzene	17.53	105	6525978	158.8327 ug/L		90
79)	1,1,2,2-Tetrachloroethane	17.79	83	1128735	203.4670 ug/L		97
81)	1,2,3-Trichloropropane	18.02	110	377222	203.2149 ug/L		95
82)	trans-1,4-Dichloro-2-Buten	18.08	53	532575	202.2246 ug/L		73
83)	n-Propylbenzene	18.14	91	7148500	148.4355 ug/L	#	87
84)	Bromobenzene	18.27	156	1947867	197.5085 ug/L		93
85)	1,3,5-Trimethylbenzene	18.36	105	5918886	173.3958 ug/L		95
86)	2-Chlorotoluene	18.46	91	5730720	181.8619 ug/L		93
87)	4-Chlorotoluene	18.51	91	4777291	152.0967 ug/L	#	90
88)	a-Methylstyrene	18.84	118	3588799	193.5060 ug/L		98
89)	tert-Butylbenzene	18.92	134	1497849	196.8305 ug/L		63
90)	1,2,4-Trimethylbenzene	18.98	105	5940973	169.4640 ug/L		95
91)	sec-Butylbenzene	19.24	105	6579337	158.8610 ug/L		87
92)	p-Isopropyltoluene	19.44	119	5900538	173.6402 ug/L		87
93)	1,3-Dichlorobenzene	19.65	146	3730842	183.8519 ug/L		87
94)	1,4-Dichlorobenzene	19.80	146	3664554	177.5739 ug/L		88
95)	n-Butylbenzene	20.06	91	5386994	173.3244 ug/L		89
96)	1,2-Dichlorobenzene	20.40	146	3295839	183.1103 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	21.59	75	240449	204.6221 ug/L		86
98)	1,2,4-Trichlorobenzene	22.97	180	2270211	195.4526 ug/L		96
99)	Hexachlorobutadiene	23.16	225	1061590	209.4138 ug/L		99
100)	Naphthalene	23.43	128	3386041	200.4349 ug/L		99
101)	1,2,3-Trichlorobenzene	23.85	180	1947169	198.4214 ug/L		96

(#) = qualifier out of range (m) = manual integration
6M130919.D 8260WT.M Fri Feb 06 08:53:36 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130919.D Vial: 11
Acq On : 5 Feb 2015 15:11 Operator: TMB
Sample : WG511026-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

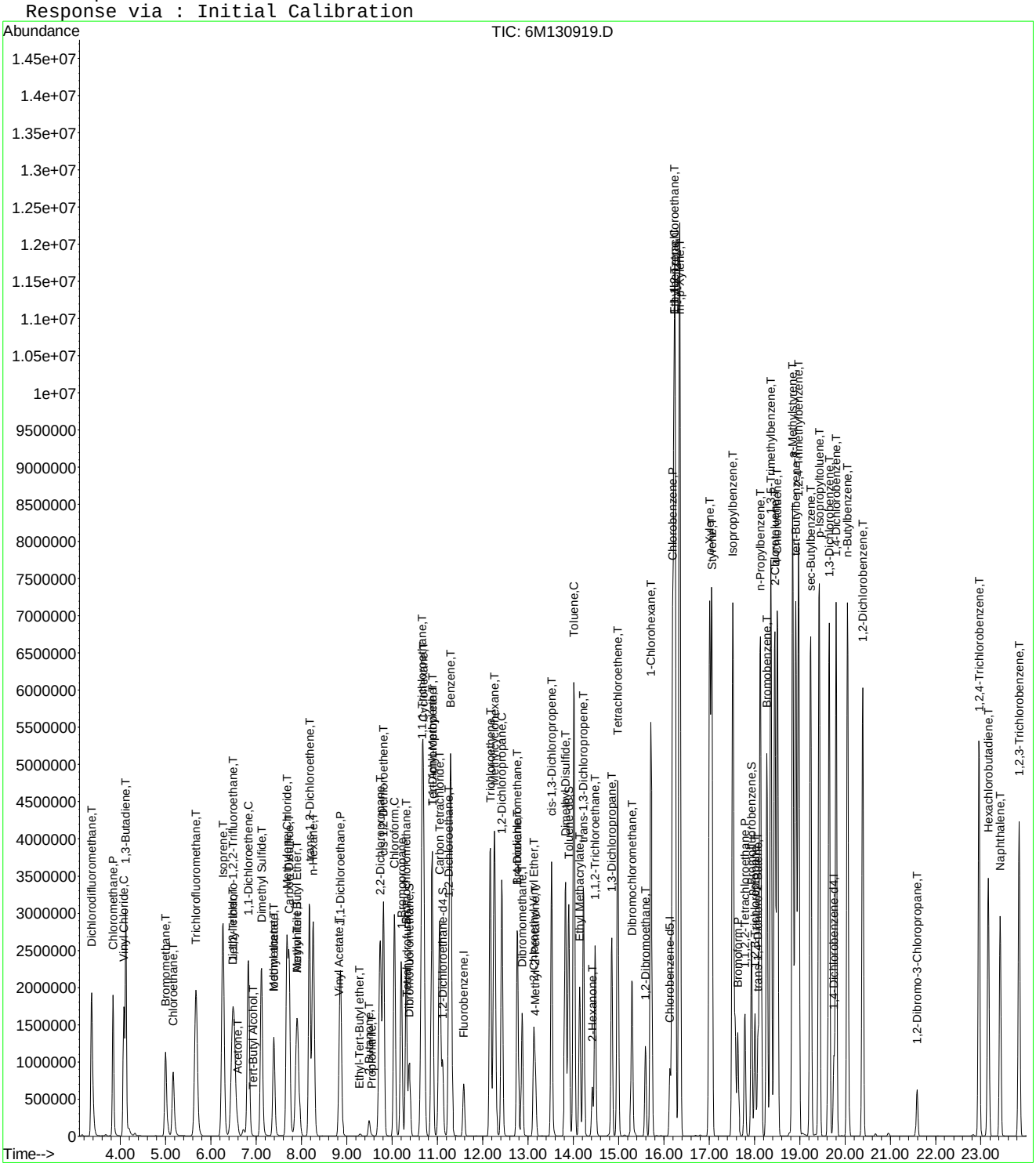

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130920.D Vial: 12
Acq On : 5 Feb 2015 15:42 Operator: TMB
Sample : WG511026-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:37 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	989950	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	742719	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	406385	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	1422285	142.2489 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 569.00%#		
43) 1,2-Dichloroethane-d4	11.11	65	1540229	129.2676 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 517.08%#		
58) Toluene-d8	13.90	98	4379197	129.2066 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 516.84%#		
80) p-Bromofluorobenzene	17.93	95	1937343	141.7809 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 567.12%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.37	85	4382408	249.0709 ug/L	93
3) Chloromethane	3.84	50	3603218	259.4385 ug/L	93
4) Vinyl Chloride	4.08	62	3082681	259.1431 ug/L	97
5) 1,3-Butadiene	4.12	54	2248835	301.9800 ug/L	92
6) Bromomethane	5.01	94	2028563	305.6035 ug/L	96
7) Chloroethane	5.16	64	2066594	299.6021 ug/L	87
8) Trichlorofluoromethane	5.67	101	5447052	245.5730 ug/L	96
9) Diethyl ether	6.22	59	1850996	290.0862 ug/L	95
10) Isoprene	6.26	67	3407210	288.4819 ug/L	72
11) Acrolein	6.49	56	34099	274.5329 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	2953458	280.1278 ug/L	96
13) Acetone	6.59	43	443751	290.5158 ug/L	96
14) 1,1-Dichloroethene	6.82	61	4627558	259.3086 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	205457	648.4976 ug/L	92
16) Dimethyl Sulfide	7.11	62	2914092	299.4530 ug/L	86
17) Iodomethane	7.39	142	2602901	285.5465 ug/L	93
18) Methyl acetate	7.40	43	1767717	297.4059 ug/L	98
19) Methylene Chloride	7.67	84	2460637	278.4923 ug/L	86
20) Carbon Disulfide	7.72	76	7335436	241.6216 ug/L	93
21) Acrylonitrile	7.88	53	365757	171.7783 ug/L	98
22) Methyl Tert Butyl Ether	7.91	73	5478101	292.2220 ug/L	93
23) trans-1,2-Dichloroethene	8.17	96	2604643	283.0111 ug/L	89
24) n-Hexane	8.25	57	4361477	288.7124 ug/L	98
25) Diisopropyl ether	8.64	45	9251760	250.4321 ug/L	95
26) Vinyl Acetate	8.84	43	1999759	310.4410 ug/L	99
27) 1,1-Dichloroethane	8.87	63	5112291	258.8967 ug/L	96
28) Ethyl-Tert-Butyl ether	9.29	59	7880131	268.8325 ug/L	95
29) 2-Butanone	9.49	43	719876	303.8739 ug/L	95
30) Propionitrile	9.61	54	223368	309.6309 ug/L	96
31) 2,2-Dichloropropane	9.73	77	4976599	294.9265 ug/L	96
32) cis-1,2-Dichloroethene	9.82	96	2762328	281.0935 ug/L	99
33) Chloroform	10.05	83	4872468	254.9876 ug/L	94
34) 1-Bromopropane	10.20	122	621686	289.4037 ug/L	98
35) Bromochloromethane	10.32	130	1464022	285.4167 ug/L	100
36) Tetrahydrofuran	10.35	42	442206	295.7798 ug/L	94
38) 1,1,1-Trichloroethane	10.65	97	5001779	262.7947 ug/L	92
39) Cyclohexane	10.69	56	5306135	279.7811 ug/L	96
40) 1,1-Dichloropropene	10.89	75	3993393	272.4462 ug/L	93
41) Tert-Amyl-Methyl ether	11.01	73	5705835	281.9098 ug/L	88
42) Carbon Tetrachloride	11.05	117	4601618	284.8889 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M130920.D 8260WT.M Fri Feb 06 08:53:37 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130920.D Vial: 12
Acq On : 5 Feb 2015 15:42 Operator: TMB
Sample : WG511026-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:37 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.26	62	3728065	246.5756	ug/L		99
46)	Benzene	11.30	78	8004401	220.4222	ug/L	#	72
47)	Trichloroethene	12.17	130	2593222	273.6906	ug/L		74
48)	Methylcyclohexane	12.27	83	4196248	282.2093	ug/L		88
49)	1,2-Dichloropropane	12.42	63	2797869	286.1944	ug/L		84
50)	1,4-Dioxane	12.77	88	22956	636.9246	ug/L		77
51)	Bromodichloromethane	12.77	83	3785347	269.0884	ug/L		97
52)	Dibromomethane	12.87	93	1344872	290.4608	ug/L		99
53)	2-Chloroethyl Vinyl Ether	13.14	63	1226034	307.6889	ug/L		98
54)	4-Methyl-2-Pentanone	13.17	58	641507	313.0729	ug/L		95
55)	cis-1,3-Dichloropropene	13.52	75	3950112	285.5313	ug/L	#	88
56)	Dimethyl Disulfide	13.83	79	2253723	327.1386	ug/L		90
59)	Toluene	14.01	91	7801371	208.2944	ug/L		81
60)	Ethyl Methacrylate	14.15	69	2201961	295.3399	ug/L		87
62)	trans-1,3-Dichloropropene	14.23	75	3554560	297.3598	ug/L		99
63)	1,1,2-Trichloroethane	14.48	97	1652147	286.6402	ug/L		99
64)	2-Hexanone	14.42	43	1087763	296.9273	ug/L		99
65)	1,3-Dichloropropane	14.85	76	2961400	276.3131	ug/L		88
66)	Tetrachloroethene	14.98	166	2869265	266.4286	ug/L		88
67)	Dibromochloromethane	15.29	129	2453402	314.6968	ug/L		100
68)	1,2-Dibromoethane	15.60	107	1728942	309.9421	ug/L		98
69)	1-Chlorohexane	15.72	91	3567606	280.4596	ug/L		77
70)	Chlorobenzene	16.20	112	5848644	225.9349	ug/L	#	55
71)	1,1,1,2-Tetrachloroethane	16.24	131	2789759	297.1685	ug/L		92
72)	Ethylbenzene	16.24	106	3787818	265.8125	ug/L		54
73)	m-,p-Xylene	16.35	106	7253007	425.4726	ug/L		62
74)	o-Xylene	17.02	106	4374030	254.5199	ug/L		77
75)	Styrene	17.07	104	6319905	229.8402	ug/L	#	67
76)	Bromoform	17.64	173	1430158	289.2191	ug/L		98
77)	Isopropylbenzene	17.53	105	8312831	183.7340	ug/L		80
79)	1,1,2,2-Tetrachloroethane	17.79	83	1776788	300.5445	ug/L		97
81)	1,2,3-Trichloropropane	18.02	110	578623	292.4998	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	18.08	53	838247	298.4307	ug/L		76
83)	n-Propylbenzene	18.14	91	8866389	172.7591	ug/L	#	76
84)	Bromobenzene	18.27	156	2914034	277.2632	ug/L		94
85)	1,3,5-Trimethylbenzene	18.36	105	7622267	209.5338	ug/L		85
86)	2-Chlorotoluene	18.46	91	7542663	224.6098	ug/L		84
87)	4-Chlorotoluene	18.52	91	6130290	183.1430	ug/L	#	82
88)	a-Methylstyrene	18.84	118	5164164	261.2863	ug/L		100
89)	tert-Butylbenzene	18.92	134	2249488	277.3826	ug/L	#	22
90)	1,2,4-Trimethylbenzene	18.98	105	7612748	203.7664	ug/L		96
91)	sec-Butylbenzene	19.24	105	8348321	189.1496	ug/L	#	77
92)	p-Isopropyltoluene	19.44	119	7535703	208.0912	ug/L	#	77
93)	1,3-Dichlorobenzene	19.65	146	5171404	239.1339	ug/L		81
94)	1,4-Dichlorobenzene	19.80	146	5088207	231.3631	ug/L		82
95)	n-Butylbenzene	20.06	91	6939593	209.5166	ug/L		80
96)	1,2-Dichlorobenzene	20.40	146	4659164	242.8992	ug/L		84
97)	1,2-Dibromo-3-Chloropropan	21.59	75	366595	292.3845	ug/L		88
98)	1,2,4-Trichlorobenzene	22.97	180	3286984	265.5487	ug/L		96
99)	Hexachlorobutadiene	23.16	225	1564700	289.6348	ug/L		99
100)	Naphthalene	23.43	128	4839636	268.8221	ug/L		96
101)	1,2,3-Trichlorobenzene	23.85	180	2853984	272.9026	ug/L		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130920.D Vial: 12
Acq On : 5 Feb 2015 15:42 Operator: TMB
Sample : WG511026-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

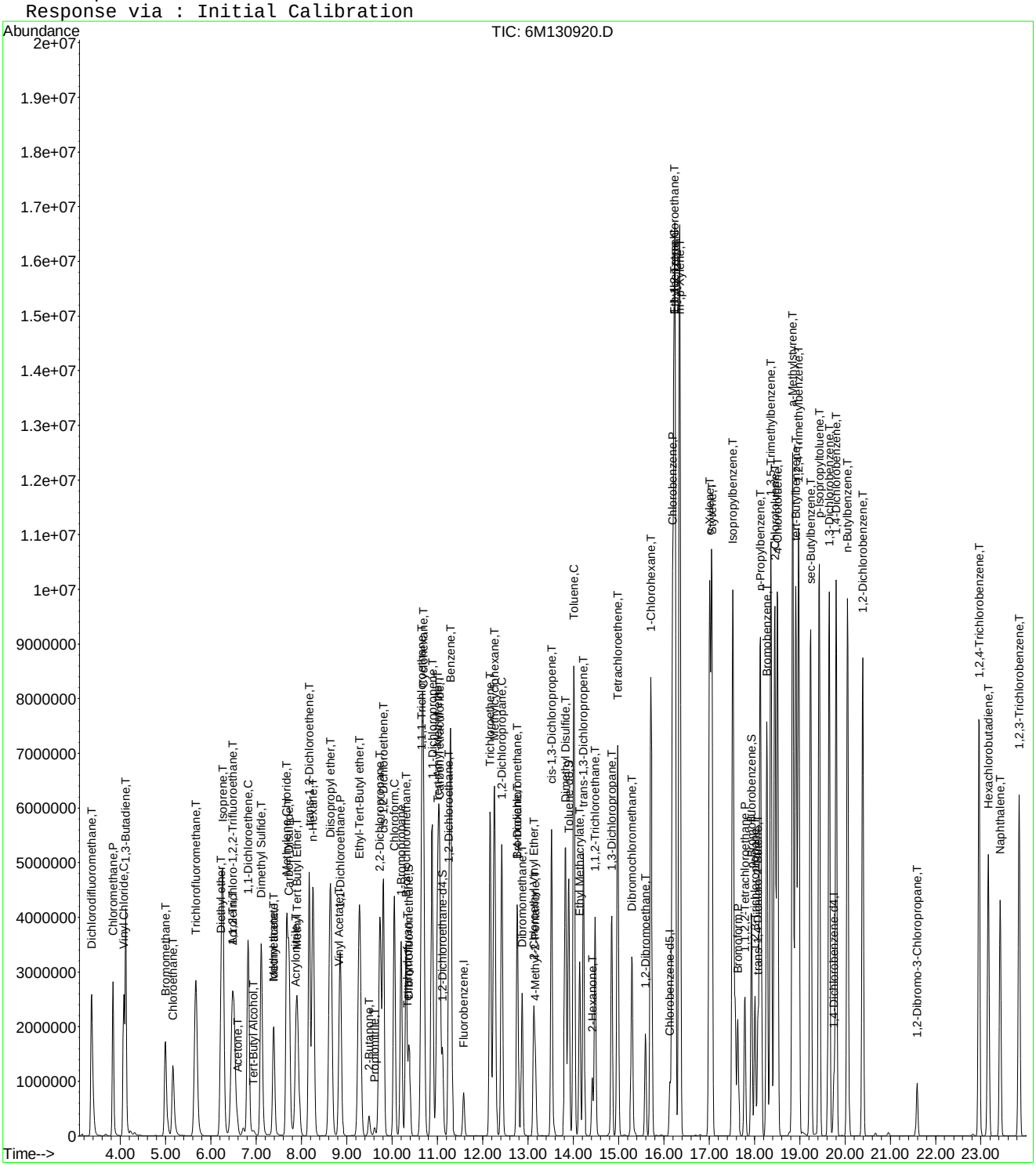

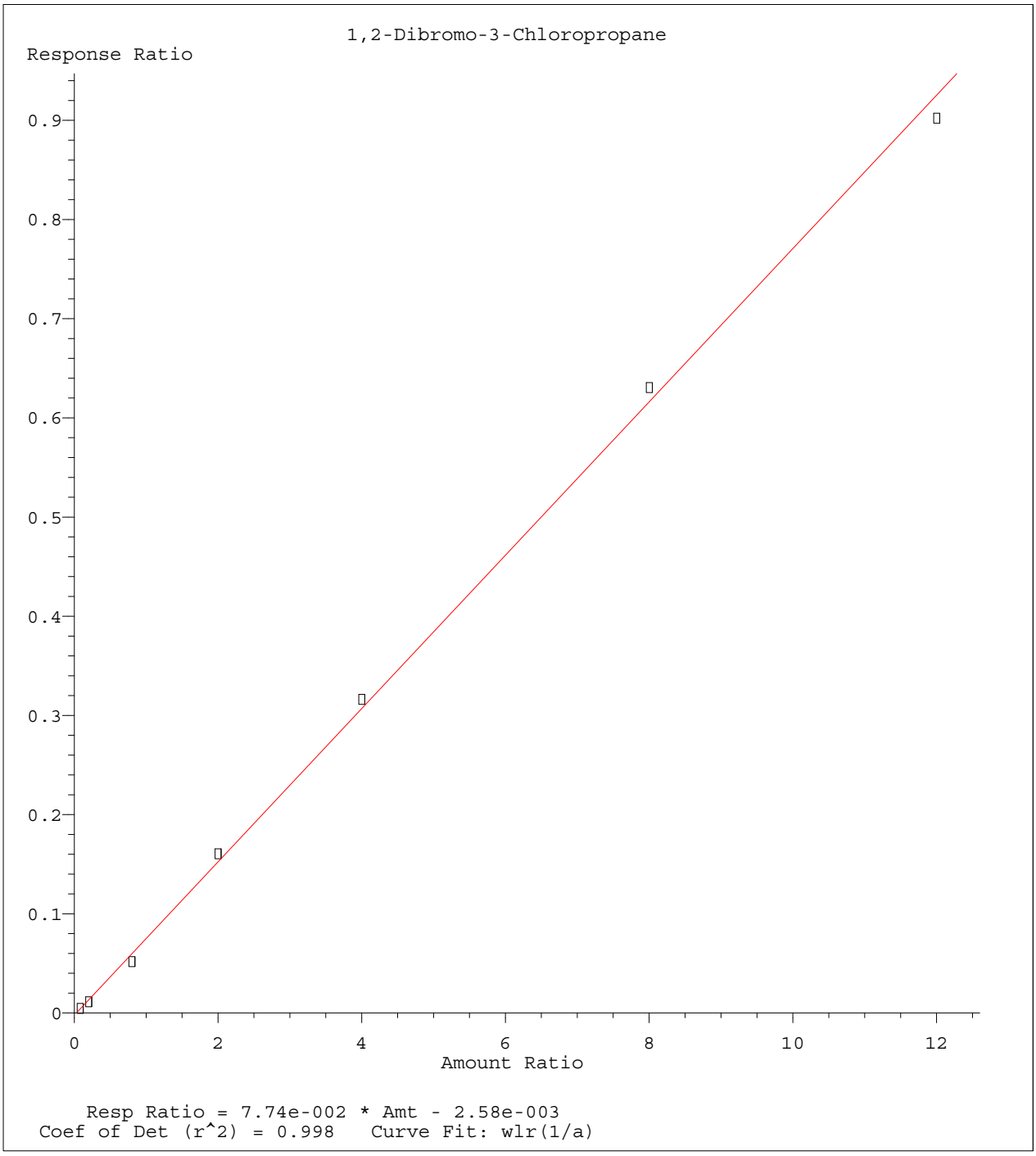

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Feb 06 08:55:49 2015

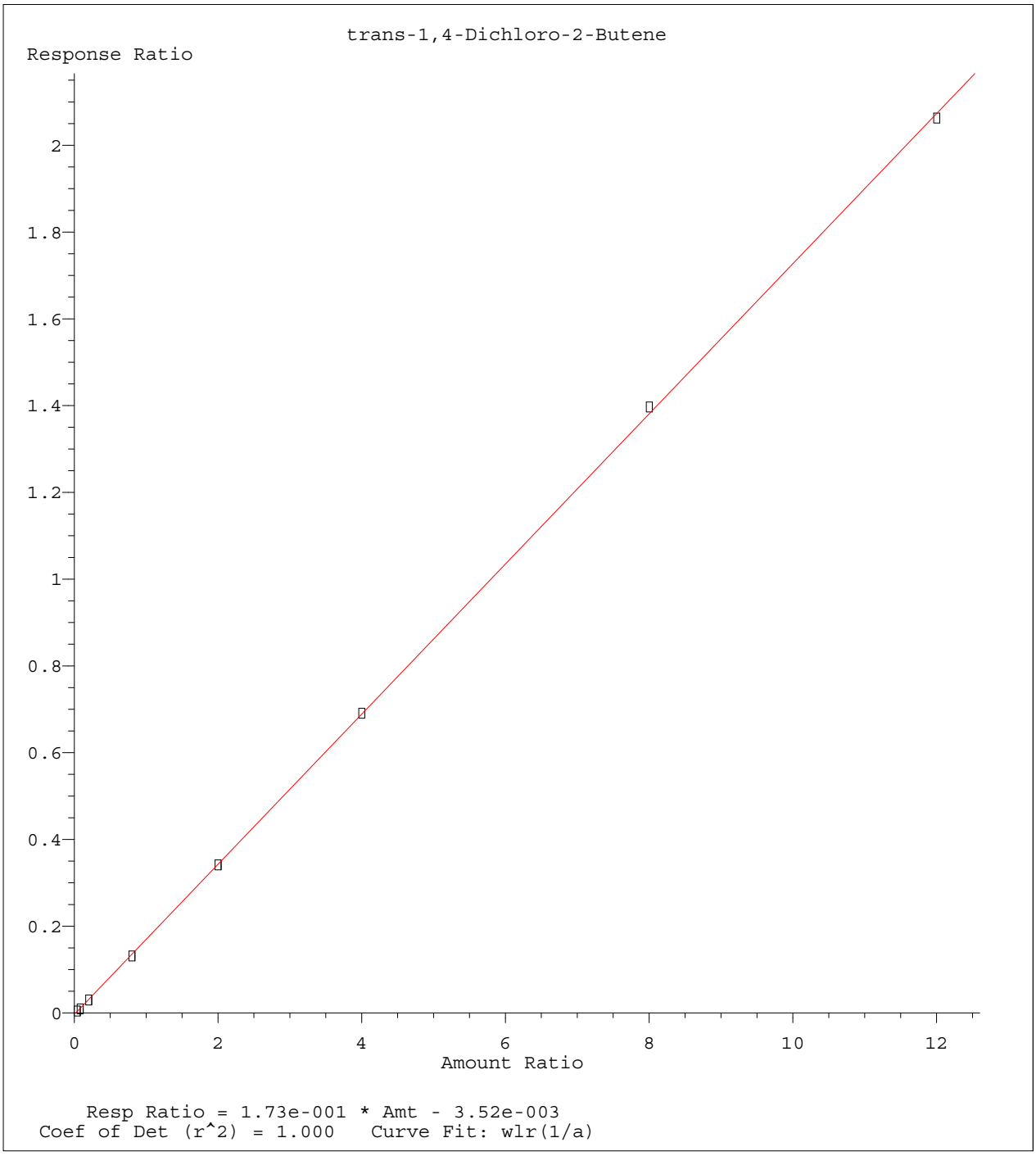

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Feb 06 08:55:49 2015

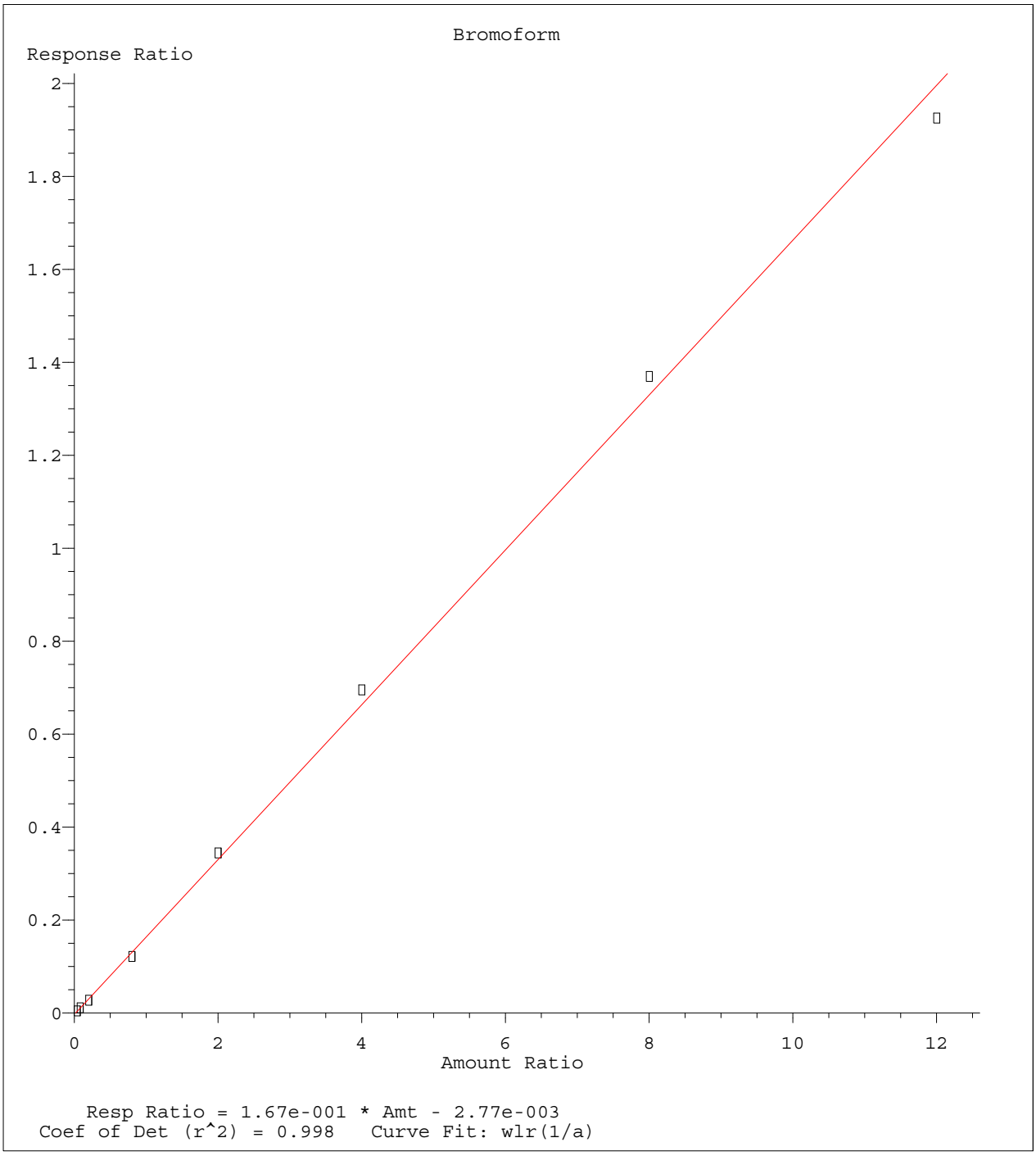

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Feb 06 08:55:49 2015

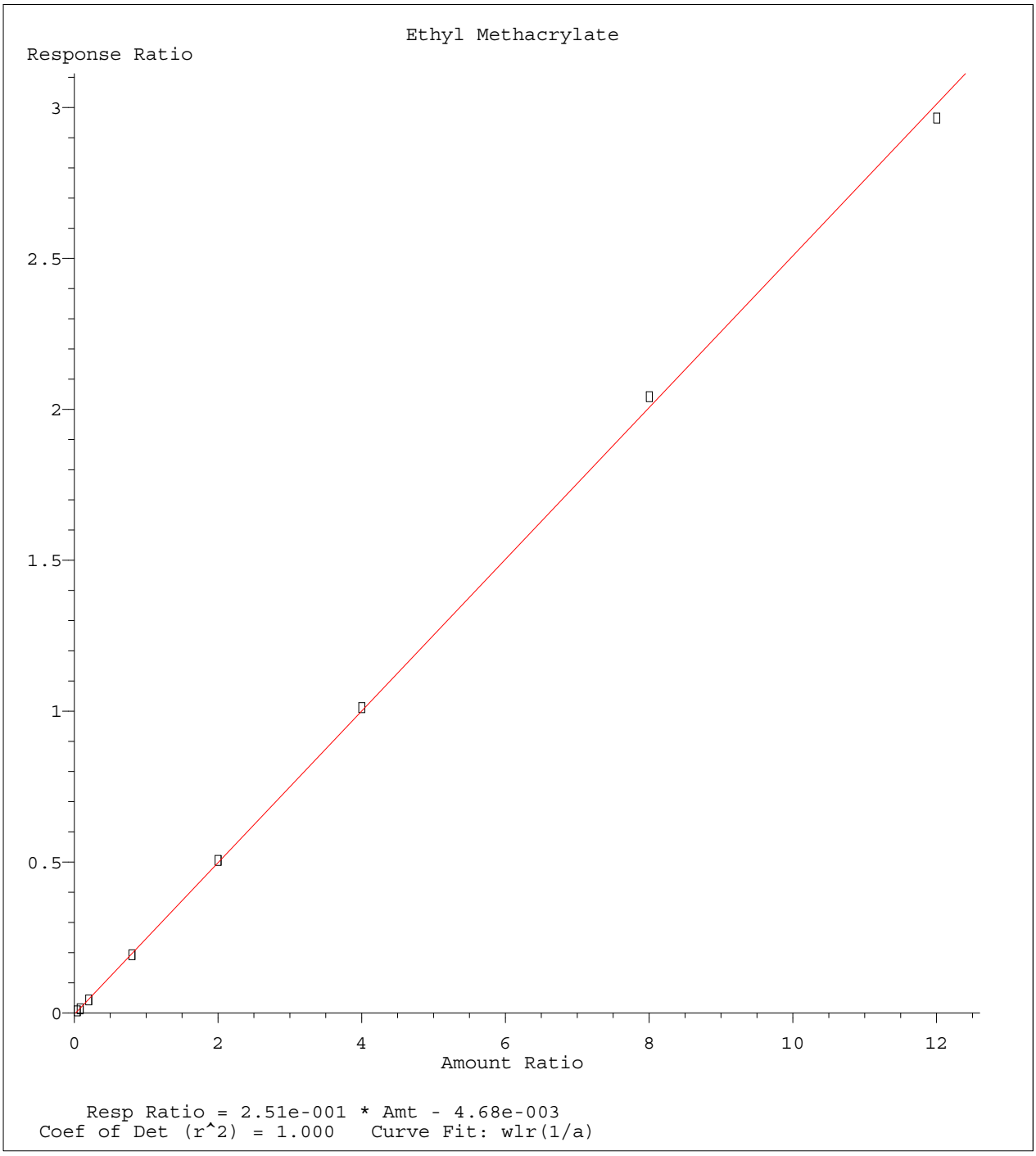

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Feb 06 08:55:49 2015

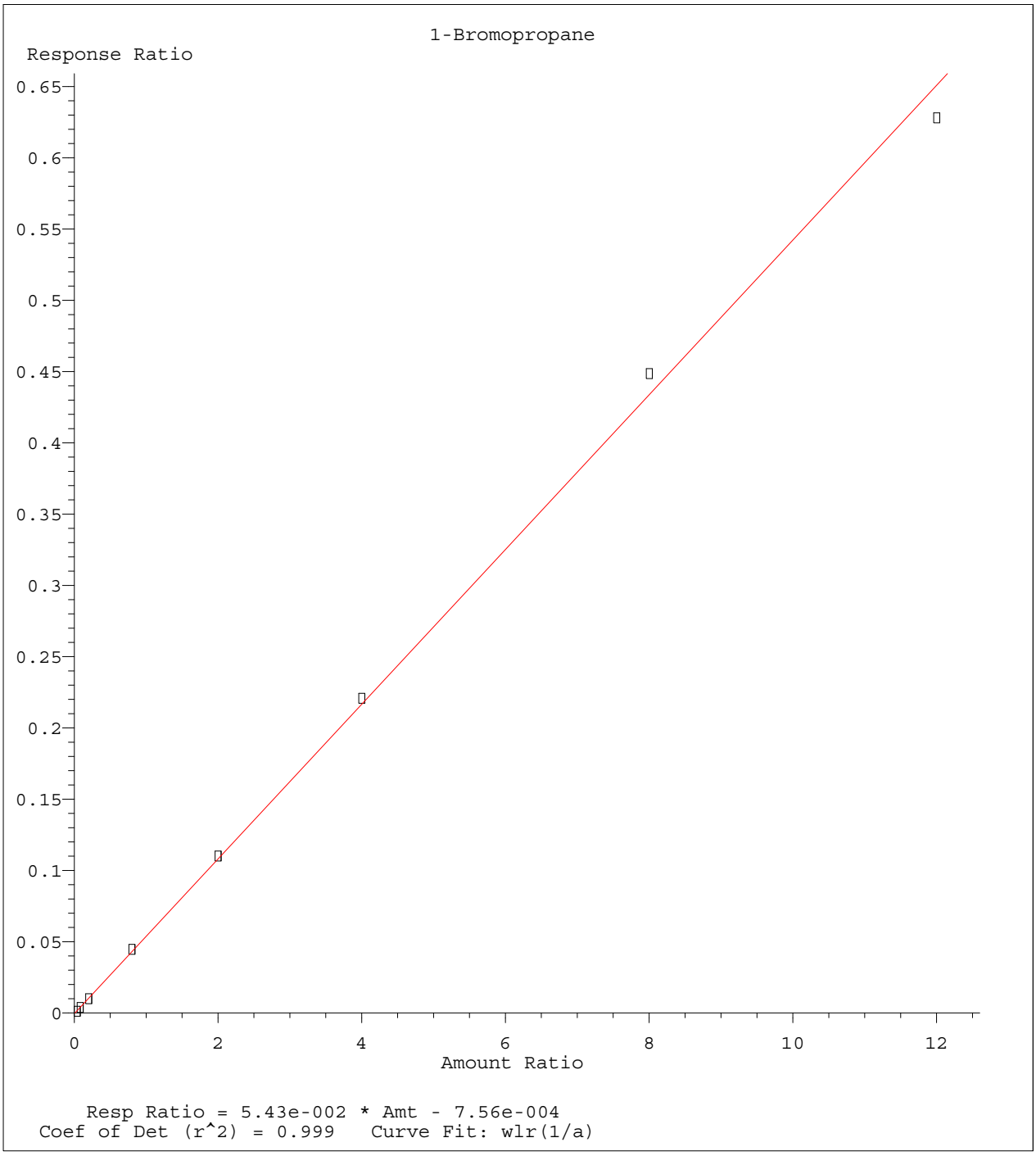

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Feb 06 08:55:49 2015

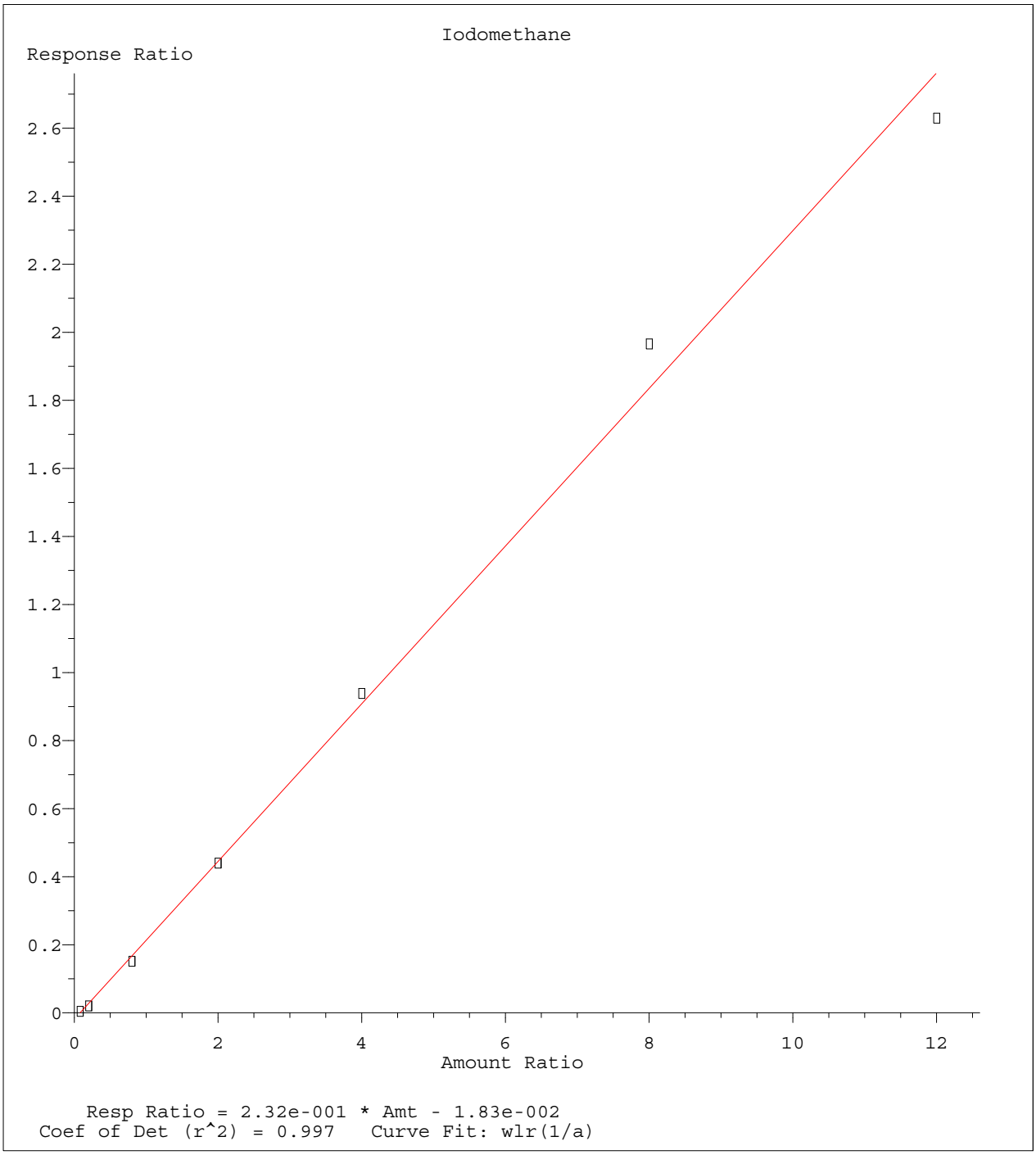

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Feb 06 08:55:49 2015

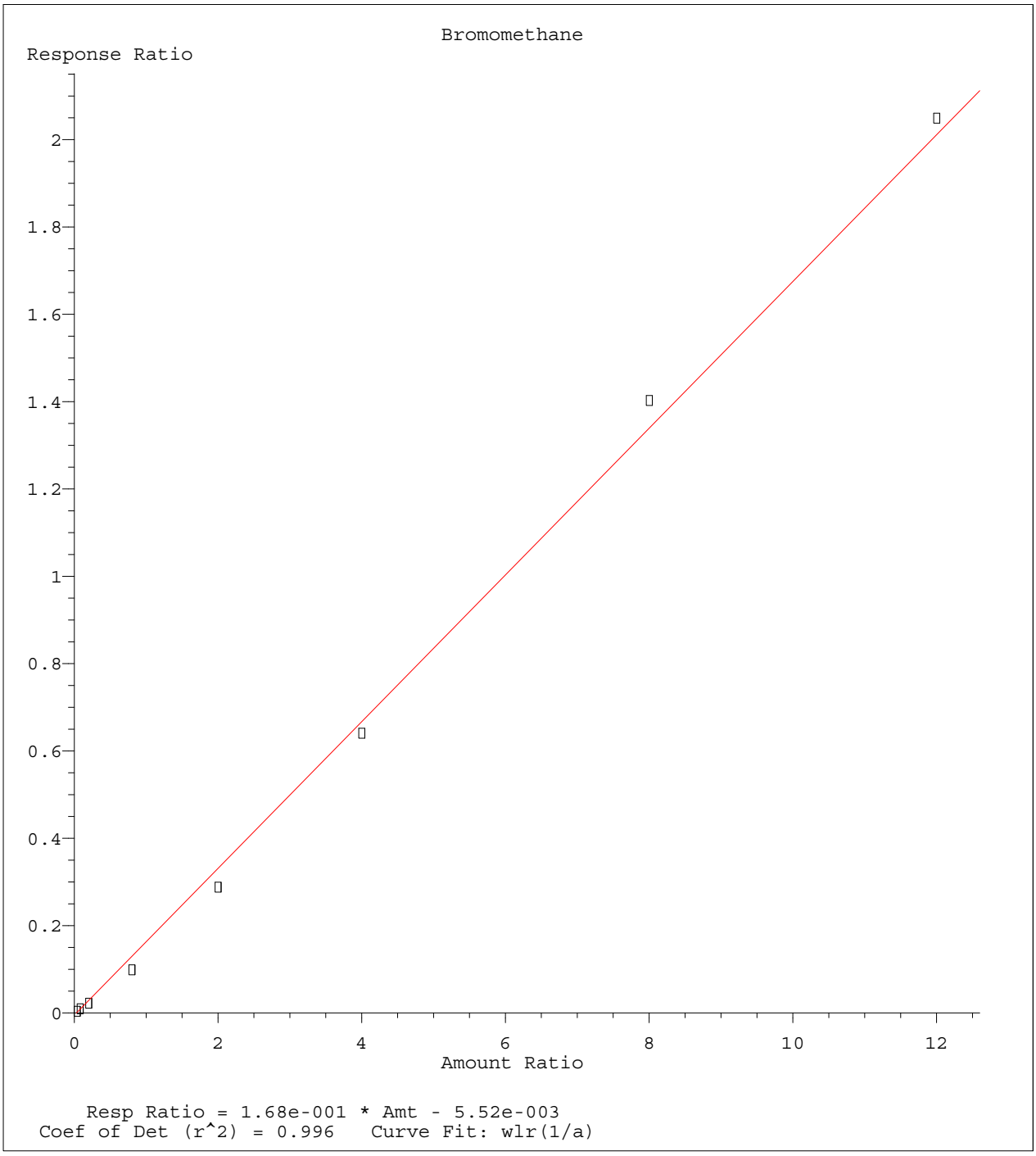

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Feb 06 08:55:49 2015

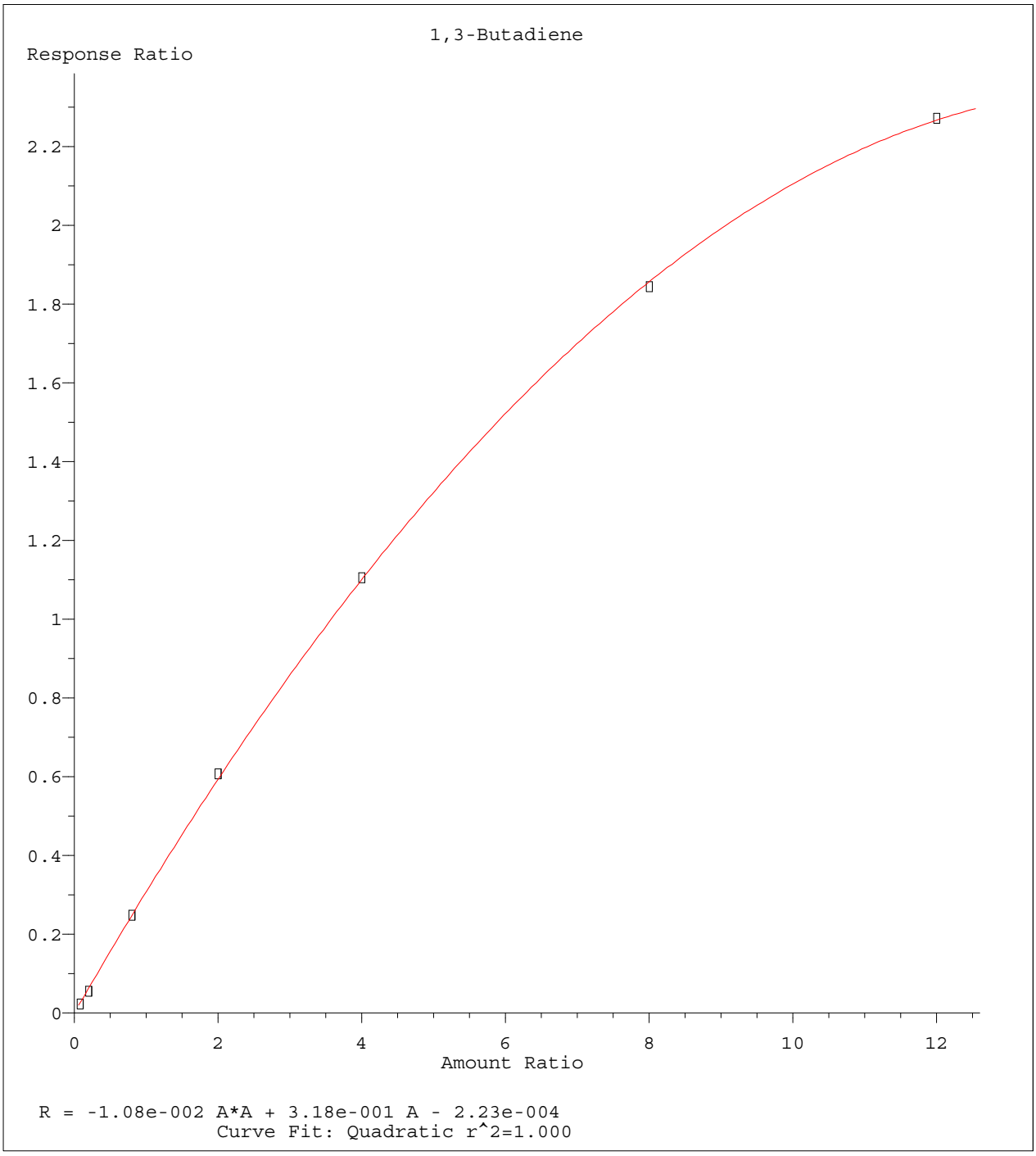

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Feb 06 08:55:49 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130923.D Vial: 15
Acq On : 5 Feb 2015 17:16 Operator: TMB
Sample : WG511026-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:39 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	988491	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	726310	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	396814	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	232989	23.3366 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.36%		
43) 1,2-Dichloroethane-d4	11.12	65	254948	21.4287 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.72%		
58) Toluene-d8	13.90	98	817228	24.6568 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.64%		
80) p-Bromofluorobenzene	17.93	95	335438	25.1405 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	787410	44.8179 ug/L	96
3) Chloromethane	3.84	50	648123	46.7350 ug/L	98
4) Vinyl Chloride	4.08	62	568267	47.8414 ug/L	99
5) 1,3-Butadiene	4.12	54	315132	25.9652 ug/L	91
6) Bromomethane	5.01	94	265603	40.7854 ug/L	98
7) Chloroethane	5.17	64	377302	54.7797 ug/L	90
8) Trichlorofluoromethane	5.67	101	904966	40.8594 ug/L	99
9) Diethyl ether	6.23	59	665872	104.5088 ug/L	93
10) Isoprene	6.26	67	659036	55.8817 ug/L	74
11) Acrolein	6.49	56	15180	122.3954 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	465701	44.2357 ug/L	97
13) Acetone	6.59	43	80041	52.4788 ug/L	95
14) 1,1-Dichloroethene	6.82	61	792942	44.4987 ug/L	90
15) Tert-Butyl Alcohol	6.96	59	76274	241.1040 ug/L	95
16) Dimethyl Sulfide	7.12	62	556146	57.2341 ug/L	85
17) Iodomethane	7.40	142	315964	36.4464 ug/L	97
18) Methyl acetate	7.41	43	219586	36.9983 ug/L	95
19) Methylene Chloride	7.68	84	437739	49.6160 ug/L	81
20) Carbon Disulfide	7.72	76	1297932	42.8156 ug/L	99
21) Acrylonitrile	7.89	53	114304	53.7623 ug/L	98
22) Methyl Tert Butyl Ether	7.92	73	997690	53.2990 ug/L	95
23) trans-1,2-Dichloroethene	8.18	96	465938	50.7019 ug/L	85
24) n-Hexane	8.26	57	720152	47.7416 ug/L	99
25) Diisopropyl ether	8.64	45	3661751	99.2647 ug/L	98
26) Vinyl Acetate	8.84	43	795425	123.6634 ug/L	98
27) 1,1-Dichloroethane	8.87	63	938919	47.6189 ug/L	99
28) Ethyl-Tert-Butyl ether	9.29	59	2936265	100.3192 ug/L	98
29) 2-Butanone	9.49	43	129440	54.7198 ug/L	94
30) Propionitrile	9.62	54	77885	108.1229 ug/L	97
31) 2,2-Dichloropropane	9.74	77	831155	49.3292 ug/L	95
32) cis-1,2-Dichloroethene	9.82	96	500917	51.0484 ug/L	83
33) Chloroform	10.05	83	889774	46.6327 ug/L	99
34) 1-Bromopropane	10.21	122	106626	49.9974 ug/L	99
35) Bromochloromethane	10.32	130	253029	49.4018 ug/L	99
36) Tetrahydrofuran	10.35	42	154972	103.8096 ug/L	95
38) 1,1,1-Trichloroethane	10.66	97	851093	44.7826 ug/L	95
39) Cyclohexane	10.69	56	922413	48.7086 ug/L	95
40) 1,1-Dichloropropene	10.89	75	671721	45.8953 ug/L	92
41) Tert-Amyl-Methyl ether	11.01	73	2020683	99.9838 ug/L	91
42) Carbon Tetrachloride	11.05	117	753244	46.7026 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M130923.D 8260WT.M Fri Feb 06 08:53:39 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130923.D Vial: 15
Acq On : 5 Feb 2015 17:16 Operator: TMB
Sample : WG511026-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:39 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.26	62	660581	43.7556 ug/L	98
46)	Benzene	11.30	78	1759311	48.5188 ug/L	87
47)	Trichloroethene	12.18	130	474455	50.1483 ug/L	80
48)	Methylcyclohexane	12.27	83	712809	48.0091 ug/L	88
49)	1,2-Dichloropropane	12.42	63	496756	50.8882 ug/L	89
50)	1,4-Dioxane	12.77	88	6355	176.5826 ug/L	71
51)	Bromodichloromethane	12.77	83	653890	46.5516 ug/L	99
52)	Dibromomethane	12.87	93	225641	48.8051 ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.14	63	210448	52.8926 ug/L	99
54)	4-Methyl-2-Pentanone	13.17	58	108528	53.0428 ug/L	91
55)	cis-1,3-Dichloropropene	13.52	75	734763	53.1903 ug/L	94
56)	Dimethyl Disulfide	13.83	79	332632	48.3544 ug/L	91
59)	Toluene	14.01	91	1837209	50.1612 ug/L	98
60)	Ethyl Methacrylate	14.15	69	401897	55.5008 ug/L	90
62)	trans-1,3-Dichloropropene	14.23	75	600271	51.3507 ug/L	97
63)	1,1,2-Trichloroethane	14.48	97	292133	51.8288 ug/L	100
64)	2-Hexanone	14.42	43	193023	53.8800 ug/L	99
65)	1,3-Dichloropropane	14.85	76	535794	51.1216 ug/L	90
66)	Tetrachloroethene	14.98	166	488664	46.4005 ug/L	93
67)	Dibromochloromethane	15.30	129	401111	52.6127 ug/L	100
68)	1,2-Dibromoethane	15.60	107	291040	53.3526 ug/L	99
69)	1-Chlorohexane	15.72	91	649804	52.2370 ug/L	79
70)	Chlorobenzene	16.20	112	1159243	45.7936 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.24	131	463070	50.4412 ug/L	94
72)	Ethylbenzene	16.24	106	685956	49.2249 ug/L	98
73)	m-,p-Xylene	16.35	106	1606410	96.3635 ug/L	96
74)	o-Xylene	17.02	106	781088	46.4775 ug/L	94
75)	Styrene	17.07	104	1369938	50.9470 ug/L	87
76)	Bromoform	17.64	173	228757	47.6538 ug/L	99
77)	Isopropylbenzene	17.53	105	1979004	44.7291 ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.79	83	318406	55.1576 ug/L	99
81)	1,2,3-Trichloropropane	18.02	110	100347	51.9499 ug/L	98
82)	trans-1,4-Dichloro-2-Buten	18.08	53	125229	46.0900 ug/L	73
83)	n-Propylbenzene	18.14	91	2330259	46.4996 ug/L	99
84)	Bromobenzene	18.27	156	526392	51.2929 ug/L	91
85)	1,3,5-Trimethylbenzene	18.36	105	1870441	52.6580 ug/L	96
86)	2-Chlorotoluene	18.46	91	1493885	45.5587 ug/L	95
87)	4-Chlorotoluene	18.51	91	1552539	47.5010 ug/L	92
88)	a-Methylstyrene	18.84	118	1027306	53.2313 ug/L	97
89)	tert-Butylbenzene	18.91	134	373413	47.1559 ug/L	93
90)	1,2,4-Trimethylbenzene	18.98	105	1889296	51.7895 ug/L	85
91)	sec-Butylbenzene	19.24	105	1996448	46.3250 ug/L	97
92)	p-Isopropyltoluene	19.44	119	1712936	48.4420 ug/L	96
93)	1,3-Dichlorobenzene	19.65	146	973086	46.0823 ug/L	93
94)	1,4-Dichlorobenzene	19.80	146	1044757	48.6514 ug/L	93
95)	n-Butylbenzene	20.06	91	1624194	50.2196 ug/L	98
96)	1,2-Dichlorobenzene	20.40	146	864573	46.1605 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	21.59	75	60870	50.4109 ug/L	90
98)	1,2,4-Trichlorobenzene	22.97	180	599619	49.6104 ug/L	98
99)	Hexachlorobutadiene	23.16	225	261961	49.6600 ug/L	100
100)	Naphthalene	23.43	128	915288	52.0668 ug/L	100
101)	1,2,3-Trichlorobenzene	23.85	180	504041	49.3597 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M130923.D 8260WT.M Fri Feb 06 08:53:39 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130923.D Vial: 15
Acq On : 5 Feb 2015 17:16 Operator: TMB
Sample : WG511026-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

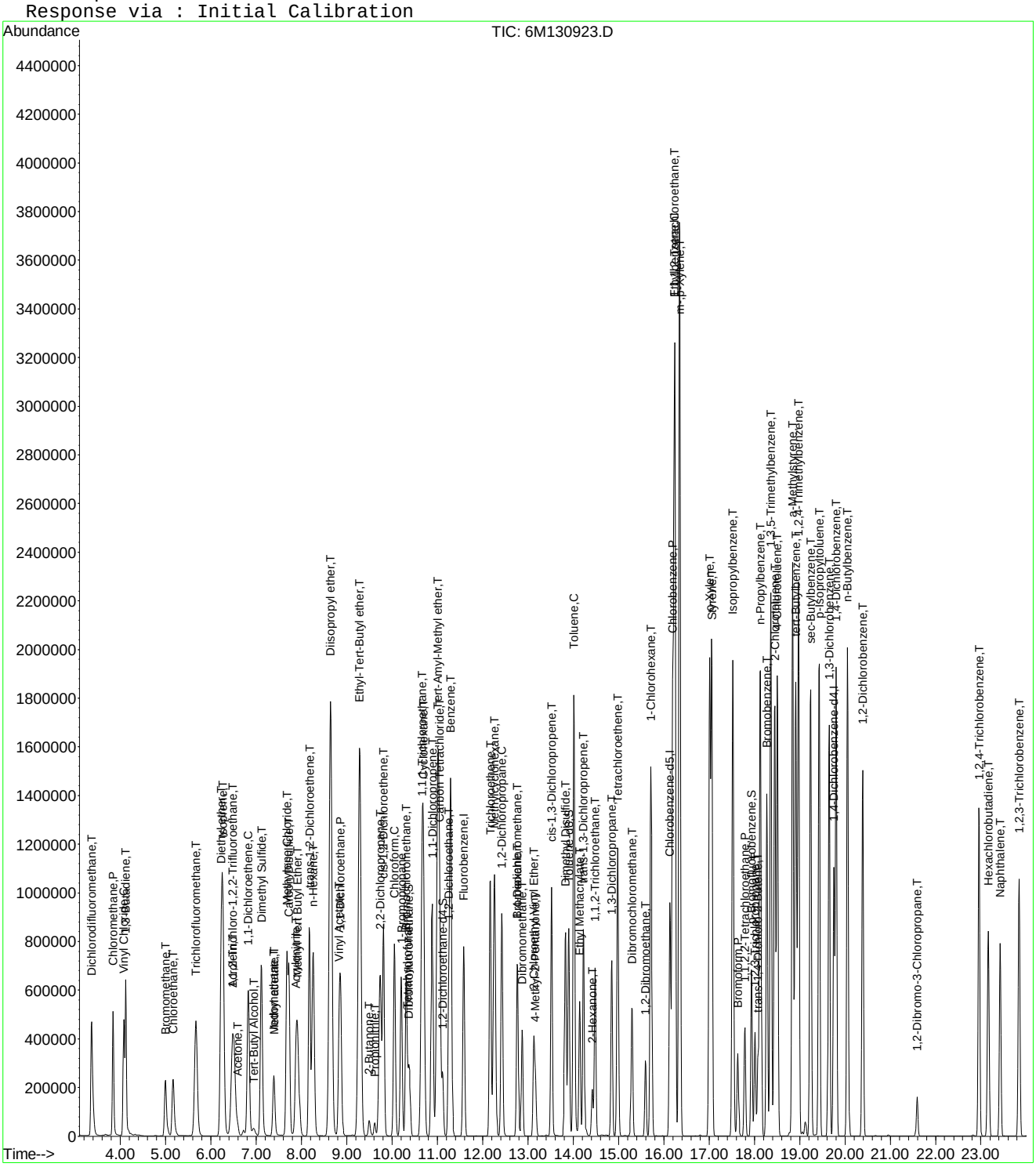

6M130923.D 8260WT.M Fri Feb 06 08:53:39 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130923.D Vial: 15
Acq On : 5 Feb 2015 17:16 Operator: TMB
Sample : WG511026-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	138	0.00
2	T	Dichlorodifluoromethane	50.0000	44.8179	10.4	111	0.00
3	P	Chloromethane	50.0000	46.7349	6.5	123	0.00
4	C	Vinyl Chloride	50.0000	47.8414	4.3	120	0.00
5	T	1,3-Butadiene	50.0000	25.9652	48.1#	73	0.00
6	T	Bromomethane	50.0000	40.7854	18.4	129	0.00
7	T	Chloroethane	50.0000	54.7797	-9.6	151	0.00
8	T	Trichlorofluoromethane	50.0000	40.8594	18.3	109	0.00
9	T	Diethyl ether	100.0000	104.5088	-4.5	145	0.00
10	T	Isoprene	50.0000	55.8817	-11.8	154	0.00
11	T	Acrolein	50.0000	122.3954	-144.8#	378	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	44.2357	11.5	119	0.00
13	T	Acetone	50.0000	52.4788	-5.0	136	0.00
14	C	1,1-Dichloroethene	50.0000	44.4987	11.0	118	0.00
15	T	Tert-Butyl Alcohol	200.0000	241.1040	-20.6#	155	0.01
16	T	Dimethyl Sulfide	50.0000	57.2341	-14.5	153	0.00
17	T	Iodomethane	50.0000	36.4464	27.1#	100	0.00
18	T	Methyl acetate	50.0000	36.9983	26.0#	100	0.00
19	T	Methylene Chloride	50.0000	49.6160	0.8	136	0.00
20	T	Carbon Disulfide	50.0000	42.8156	14.4	121	0.00
21	T	Acrylonitrile	50.0000	53.7623	-7.5	146	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.2990	-6.6	137	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.7019	-1.4	136	0.00
24	T	n-Hexane	50.0000	47.7415	4.5	133	0.00
25	T	Diisopropyl ether	100.0000	99.2647	0.7	138	0.00
26	T	Vinyl Acetate	50.0000	123.6634	-147.3#	338	0.00
27	P	1,1-Dichloroethane	50.0000	47.6189	4.8	128	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	100.3192	-0.3	138	0.00
29	T	2-Butanone	50.0000	54.7198	-9.4	146	0.00
30	T	Propionitrile	100.0000	108.1229	-8.1	147	0.00
31	T	2,2-Dichloropropane	50.0000	49.3292	1.3	123	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.0484	-2.1	133	0.00
33	C	Chloroform	50.0000	46.6327	6.7	121	0.00
34		1-Bromopropane	50.0000	49.9974	0.0	135	0.00
35	T	Bromochloromethane	50.0000	49.4018	1.2	129	0.00
36	T	Tetrahydrofuran	100.0000	103.8097	-3.8	143	0.00
37	S	Dibromofluoromethane	25.0000	23.3366	6.7	124	0.00
38	T	1,1,1-Trichloroethane	50.0000	44.7826	10.4	116	0.00
39	T	Cyclohexane	50.0000	48.7086	2.6	133	0.00
40	T	1,1-Dichloropropene	50.0000	45.8953	8.2	119	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.9838	0.0	137	0.00
42	T	Carbon Tetrachloride	50.0000	46.7026	6.6	117	0.00
43	S	1,2-Dichloroethane-d4	25.0000	21.4287	14.3	116	0.00
44		Heptane	-1.0000	0.0000	0.0	127	0.00
45	T	1,2-Dichloroethane	50.0000	43.7556	12.5	114	0.00
46	T	Benzene	50.0000	48.5188	3.0	130	0.00
47	T	Trichloroethene	50.0000	50.1482	-0.3	132	0.00
48	T	Methylcyclohexane	50.0000	48.0091	4.0	132	0.00
49	C	1,2-Dichloropropane	50.0000	50.8882	-1.8	133	0.00
50	T	1,4-Dioxane	200.0000	176.5826	11.7	123	0.00
51	T	Bromodichloromethane	50.0000	46.5516	6.9	119	0.00
52	T	Dibromomethane	50.0000	48.8051	2.4	124	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.8926	-5.8	140	0.00
54	T	4-Methyl-2-Pentanone	50.0000	53.0428	-6.1	140	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130923.D Vial: 15
Acq On : 5 Feb 2015 17:16 Operator: TMB
Sample : WG511026-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.1903	-6.4	133	0.00
56	T	Dimethyl Disulfide	50.0000	48.3544	3.3	133	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	131	0.00
58	S	Toluene-d8	25.0000	24.6567	1.4	132	0.00
59	C	Toluene	50.0000	50.1612	-0.3	126	0.00
60	T	Ethyl Methacrylate	50.0000	55.5008	-11.0	143	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	127	0.00
62	T	trans-1,3-Dichloropropene	50.0000	51.3507	-2.7	119	0.00
63	T	1,1,2-Trichloroethane	50.0000	51.8289	-3.7	130	0.00
64	T	2-Hexanone	50.0000	53.8800	-7.8	133	0.00
65	T	1,3-Dichloropropane	50.0000	51.1216	-2.2	129	0.00
66	T	Tetrachloroethene	50.0000	46.4005	7.2	119	0.00
67	T	Dibromochloromethane	50.0000	52.6127	-5.2	122	0.00
68	T	1,2-Dibromoethane	50.0000	53.3526	-6.7	125	0.00
69	T	1-Chlorohexane	50.0000	52.2370	-4.5	131	0.00
70	P	Chlorobenzene	50.0000	45.7936	8.4	117	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.4412	-0.9	119	0.00
72	C	Ethylbenzene	50.0000	49.2249	1.6	123	0.00
73	T	m-,p-Xylene	100.0000	96.3635	3.6	119	0.00
74	T	o-Xylene	50.0000	46.4775	7.0	116	0.00
75	T	Styrene	50.0000	50.9470	-1.9	123	0.00
76	P	Bromoform	50.0000	47.6538	4.7	120	0.00
77	T	Isopropylbenzene	50.0000	44.7291	10.5	111	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	121	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.1576	-10.3	128	0.00
80	S	p-Bromofluorobenzene	25.0000	25.1405	-0.6	124	0.00
81	T	1,2,3-Trichloropropane	50.0000	51.9499	-3.9	119	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	46.0900	7.8	112	0.00
83	T	n-Propylbenzene	50.0000	46.4996	7.0	109	0.00
84	T	Bromobenzene	50.0000	51.2929	-2.6	119	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.6580	-5.3	119	0.00
86	T	2-Chlorotoluene	50.0000	45.5588	8.9	110	0.00
87	T	4-Chlorotoluene	50.0000	47.5010	5.0	109	0.00
88	T	a-Methylstyrene	50.0000	53.2313	-6.5	123	0.00
89	T	tert-Butylbenzene	50.0000	47.1559	5.7	111	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.7895	-3.6	117	0.00
91	T	sec-Butylbenzene	50.0000	46.3250	7.4	109	0.00
92	T	p-Isopropyltoluene	50.0000	48.4420	3.1	108	0.00
93	T	1,3-Dichlorobenzene	50.0000	46.0823	7.8	107	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.6514	2.7	116	0.00
95	T	n-Butylbenzene	50.0000	50.2196	-0.4	113	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.1605	7.7	109	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	50.4109	-0.8	116	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.6104	0.8	115	0.00
99	T	Hexachlorobutadiene	50.0000	49.6600	0.7	112	0.00
100	T	Naphthalene	50.0000	52.0668	-4.1	117	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	49.3597	1.3	112	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M130923.D 8260WT.M Fri Feb 06 08:56:18 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021615\6M131108.D Vial: 3
Acq On : 16 Feb 2015 10:46 Operator: TMB
Sample : WG512364-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 16 11:10:10 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	666268	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	507264	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	292398	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	161384	23.9821 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.92%		
43) 1,2-Dichloroethane-d4	11.12	65	189902	23.6809 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.72%		
58) Toluene-d8	13.90	98	570831	24.6597 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.64%		
80) p-Bromofluorobenzene	17.94	95	248413	25.2667 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	591027	49.9093 ug/L	97
3) Chloromethane	3.85	50	391336	41.8657 ug/L	99
4) Vinyl Chloride	4.08	62	404628	50.5395 ug/L	98
5) 1,3-Butadiene	4.14	54	358770	45.0523 ug/L	93
6) Bromomethane	5.00	94	169066	38.5626 ug/L	98
7) Chloroethane	5.17	64	246990	53.2027 ug/L	94
8) Trichlorofluoromethane	5.67	101	754835	50.5633 ug/L	99
9) Diethyl ether	6.22	59	404848	94.2709 ug/L	95
10) Isoprene	6.27	67	445318	56.0214 ug/L	94
11) Acrolein	6.47	56	14938	178.6938 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	369440	52.0635 ug/L	94
13) Acetone	6.59	43	43518	42.3315 ug/L	95
14) 1,1-Dichloroethene	6.83	61	575542	47.9189 ug/L	91
15) Tert-Butyl Alcohol	6.94	59	50865	238.5452 ug/L	99
16) Dimethyl Sulfide	7.12	62	309607	47.2716 ug/L	88
17) Iodomethane	7.39	142	219906	37.5695 ug/L	83
18) Methyl acetate	7.39	43	176178	44.0406 ug/L	97
19) Methylene Chloride	7.68	84	303015	50.9558 ug/L	97
20) Carbon Disulfide	7.73	76	1034699	50.6394 ug/L	99
21) Acrylonitrile	7.87	53	58464	40.7970 ug/L	98
22) Methyl Tert Butyl Ether	7.90	73	654941	51.9098 ug/L	98
23) trans-1,2-Dichloroethene	8.18	96	325247	52.5089 ug/L	91
24) n-Hexane	8.26	57	460884	45.3302 ug/L	99
25) Diisopropyl ether	8.64	45	2164020	87.0345 ug/L	95
26) Vinyl Acetate	8.83	43	134725	31.0752 ug/L	98
27) 1,1-Dichloroethane	8.86	63	654625	49.2570 ug/L	96
28) Ethyl-Tert-Butyl ether	9.28	59	1957791	99.2382 ug/L	98
29) 2-Butanone	9.49	43	65377	41.0039 ug/L	99
30) Propionitrile	9.62	54	39597	81.5549 ug/L	96
31) 2,2-Dichloropropane	9.74	77	690242	60.7781 ug/L	98
32) cis-1,2-Dichloroethene	9.81	96	349077	52.7790 ug/L	82
33) Chloroform	10.05	83	688699	53.5505 ug/L	99
34) 1-Bromopropane	10.20	122	74678	51.9382 ug/L	98
35) Bromochloromethane	10.31	130	175566	50.8553 ug/L	100
36) Tetrahydrofuran	10.34	42	81368	80.8652 ug/L	98
38) 1,1,1-Trichloroethane	10.66	97	697547	54.4540 ug/L	97
39) Cyclohexane	10.69	56	582302	45.6197 ug/L	96
40) 1,1-Dichloropropene	10.89	75	526449	53.3653 ug/L	90
41) Tert-Amyl-Methyl ether	11.01	73	1380582	101.3485 ug/L	94
42) Carbon Tetrachloride	11.05	117	614687	56.5436 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021615\6M131108.D Vial: 3
Acq On : 16 Feb 2015 10:46 Operator: TMB
Sample : WG512364-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 16 11:10:10 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.25	62	500189	49.1547 ug/L		91
46)	Benzene	11.30	78	1274027	52.1278 ug/L		96
47)	Trichloroethene	12.17	130	328402	51.4980 ug/L		76
48)	Methylcyclohexane	12.26	83	500976	50.0601 ug/L		97
49)	1,2-Dichloropropane	12.43	63	324068	49.2532 ug/L	#	74
50)	1,4-Dioxane	12.76	88	4626	190.7049 ug/L		82
51)	Bromodichloromethane	12.77	83	506659	53.5142 ug/L		99
52)	Dibromomethane	12.88	93	161766	51.9108 ug/L		99
53)	2-Chloroethyl Vinyl Ether	13.13	63	125263	46.7086 ug/L		97
54)	4-Methyl-2-Pentanone	13.17	58	56952	41.2969 ug/L		96
55)	cis-1,3-Dichloropropene	13.53	75	513351	55.1345 ug/L		97
56)	Dimethyl Disulfide	13.83	79	238345	51.4046 ug/L		96
59)	Toluene	14.02	91	1351729	52.8429 ug/L		99
60)	Ethyl Methacrylate	14.15	69	259932	51.4308 ug/L		98
62)	trans-1,3-Dichloropropene	14.24	75	461198	56.4904 ug/L		93
63)	1,1,2-Trichloroethane	14.49	97	194162	49.3223 ug/L		97
64)	2-Hexanone	14.42	43	102609	41.0102 ug/L		96
65)	1,3-Dichloropropane	14.85	76	367156	50.1586 ug/L		93
66)	Tetrachloroethene	14.99	166	357753	48.6389 ug/L		86
67)	Dibromochloromethane	15.30	129	290797	54.6140 ug/L		99
68)	1,2-Dibromoethane	15.60	107	205297	53.8857 ug/L		98
69)	1-Chlorohexane	15.73	91	451265	51.9416 ug/L		87
70)	Chlorobenzene	16.21	112	895873	50.6717 ug/L	#	67
71)	1,1,1,2-Tetrachloroethane	16.25	131	337153	52.5840 ug/L		92
72)	Ethylbenzene	16.25	106	504407	51.8272 ug/L		93
73)	m-,p-Xylene	16.35	106	1220011	104.7871 ug/L		89
74)	o-Xylene	17.02	106	611615	52.1085 ug/L		89
75)	Styrene	17.06	104	995596	53.0138 ug/L		80
76)	Bromoform	17.65	173	174103	51.8926 ug/L		98
77)	Isopropylbenzene	17.53	105	1599835	51.7734 ug/L		97
79)	1,1,2,2-Tetrachloroethane	17.79	83	213273	50.1386 ug/L		97
81)	1,2,3-Trichloropropane	18.02	110	68960	48.4496 ug/L		95
82)	trans-1,4-Dichloro-2-Buten	18.08	53	83867	41.9359 ug/L		73
83)	n-Propylbenzene	18.14	91	1935793	52.4223 ug/L		98
84)	Bromobenzene	18.28	156	376018	49.7244 ug/L		87
85)	1,3,5-Trimethylbenzene	18.37	105	1411694	53.9354 ug/L		94
86)	2-Chlorotoluene	18.45	91	1238705	51.2667 ug/L		99
87)	4-Chlorotoluene	18.51	91	1266841	52.6011 ug/L		93
88)	a-Methylstyrene	18.85	118	735041	51.6882 ug/L		98
89)	tert-Butylbenzene	18.92	134	264853	45.3904 ug/L		91
90)	1,2,4-Trimethylbenzene	18.98	105	1424574	52.9955 ug/L		83
91)	sec-Butylbenzene	19.24	105	1604862	50.5368 ug/L		98
92)	p-Isopropyltoluene	19.43	119	1389102	53.3123 ug/L		97
93)	1,3-Dichlorobenzene	19.66	146	712447	45.7877 ug/L		84
94)	1,4-Dichlorobenzene	19.81	146	698274	44.1284 ug/L		86
95)	n-Butylbenzene	20.07	91	1258039	52.7888 ug/L		95
96)	1,2-Dichlorobenzene	20.40	146	614542	44.5280 ug/L		84
97)	1,2-Dibromo-3-Chloropropan	21.60	75	45937	51.6091 ug/L		74
98)	1,2,4-Trichlorobenzene	22.97	180	459126	51.5515 ug/L		99
99)	Hexachlorobutadiene	23.17	225	247305	63.6233 ug/L		99
100)	Naphthalene	23.44	128	622278	48.0397 ug/L		100
101)	1,2,3-Trichlorobenzene	23.85	180	384544	51.1052 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M131108.D 8260WT.M Mon Feb 16 11:10:10 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021615\6M131108.D Vial: 3
Acq On : 16 Feb 2015 10:46 Operator: TMB
Sample : WG512364-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 16 11:10 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

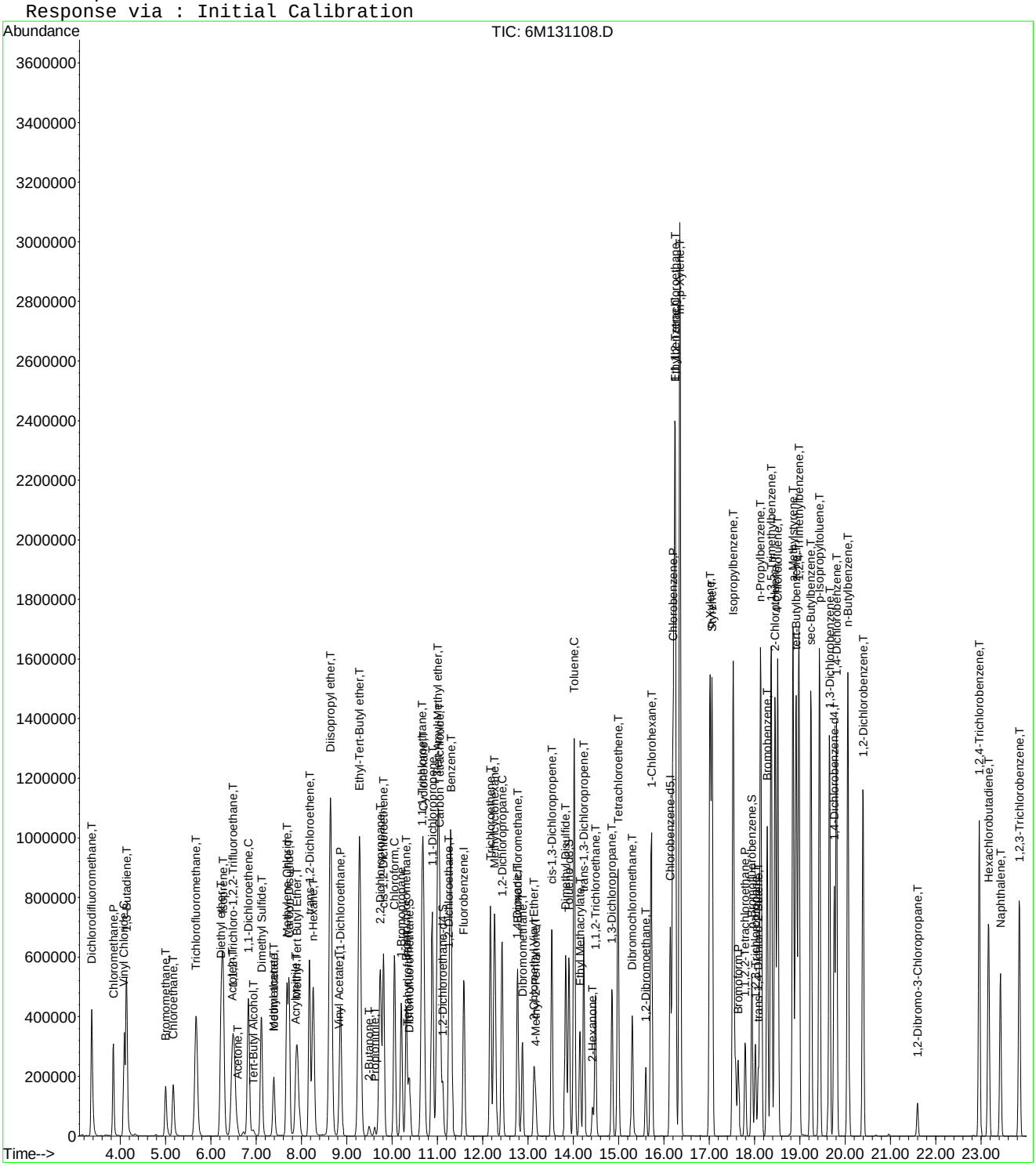

Continuing Calibration Area and RT check

Instrument: HPMS6
Initial cal date: 5 Feb 2015 14:09
CCV date: 16 Feb 2015 10:46
CCV Filename: 6M131108.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	715746	11.58	554647	16.14	327681	19.75
CCV	666268	11.58	507264	16.14	292398	19.76

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\021615\6M131108.D Vial: 3
Acq On : 16 Feb 2015 10:46 Operator: TMB
Sample : WG512364-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	93	0.00
2	T	Dichlorodifluoromethane	0.4443	0.4435	0.2	83	0.00
3	P	Chloromethane	0.3507	0.2937	16.3	74	0.00
4	C	Vinyl Chloride	0.3004	0.3036	-1.1	86	0.00
5	T	1,3-Butadiene	0.2664	0.2692	-1.1	83	0.01
6	T	Bromomethane	0.1372	0.1269	7.5	82	0.00
7	T	Chloroethane	0.1742	0.1853	-6.4	99	0.00
8	T	Trichlorofluoromethane	0.5602	0.5665	-1.1	91	0.00
9	T	Diethyl ether	0.1611	0.1519	5.7	88	0.00
10	T	Isoprene	0.2983	0.3342	-12.0	104	0.00
11	T	Acrolein	0.0031	0.0112	-257.0#	372#	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2663	0.2773	-4.1	95	0.00
13	T	Acetone	0.0386	0.0327	15.3	74	0.00
14	C	1,1-Dichloroethene	0.4507	0.4319	4.2	86	0.00
15	T	Tert-Butyl Alcohol	0.0080	0.0095	-19.2	103	0.00
16	T	Dimethyl Sulfide	0.2458	0.2323	5.5	85	0.00
17	T	Iodomethane	0.1803	0.1650	8.5	70	0.00
18	T	Methyl acetate	0.1501	0.1322	11.9	81	0.00
19	T	Methylene Chloride	0.2231	0.2274	-1.9	94	0.00
20	T	Carbon Disulfide	0.7667	0.7765	-1.3	96	0.00
21	T	Acrylonitrile	0.0538	0.0439	18.4	75	0.00
22	T	Methyl Tert Butyl Ether	0.4734	0.4915	-3.8	90	0.00
23	T	trans-1,2-Dichloroethene	0.2324	0.2441	-5.0	95	0.00
24	T	n-Hexane	0.3815	0.3459	9.3	85	0.00
25	T	Diisopropyl ether	0.9330	0.8120	13.0	82	0.00
26	T	Vinyl Acetate	0.1627	0.1011	37.9#	57	0.00
27	P	1,1-Dichloroethane	0.4987	0.4913	1.5	89	0.00
28	T	Ethyl-Tert-Butyl ether	0.7402	0.7346	0.8	92	0.00
29	T	2-Butanone	0.0598	0.0491	18.0	74	0.00
30	T	Propionitrile	0.0182	0.0149	18.4	75	0.00
31	T	2,2-Dichloropropane	0.4261	0.5180	-21.6#	102	0.00
32	T	cis-1,2-Dichloroethene	0.2482	0.2620	-5.6	93	0.00
33	C	Chloroform	0.4826	0.5168	-7.1	93	0.00
34		1-Bromopropane	0.0501	0.0560	-11.9	95	0.00
35	T	Bromochloromethane	0.1295	0.1318	-1.7	90	0.00
36	T	Tetrahydrofuran	0.0378	0.0305	19.1	75	0.00
37	S	Dibromofluoromethane	0.2525	0.2422	4.1	86	0.00
38	T	1,1,1-Trichloroethane	0.4807	0.5235	-8.9	95	0.00
39	T	Cyclohexane	0.4789	0.4370	8.8	84	0.00
40	T	1,1-Dichloropropene	0.3702	0.3951	-6.7	94	0.00
41	T	Tert-Amyl-Methyl ether	0.5111	0.5180	-1.3	94	0.00
42	T	Carbon Tetrachloride	0.4079	0.4613	-13.1	96	0.00
43	S	1,2-Dichloroethane-d4	0.3009	0.2850	5.3	87	0.00
44		Heptane	0.0000	0.0000	0.0	89	0.00
45	T	1,2-Dichloroethane	0.3818	0.3754	1.7	86	0.00
46	T	Benzene	0.9171	0.9561	-4.3	94	0.00
47	T	Trichloroethene	0.2393	0.2465	-3.0	91	0.00
48	T	Methylcyclohexane	0.3755	0.3760	-0.1	93	0.00
49	C	1,2-Dichloropropane	0.2469	0.2432	1.5	87	0.00
50	T	1,4-Dioxane	0.0009	0.0009	4.4	89	0.00
51	T	Bromodichloromethane	0.3553	0.3802	-7.0	92	0.00
52	T	Dibromomethane	0.1169	0.1214	-3.8	89	0.01
53	T	2-Chloroethyl Vinyl Ether	0.1006	0.0940	6.6	83	0.00
54	T	4-Methyl-2-Pentanone	0.0517	0.0427	17.4	74	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\021615\6M131108.D Vial: 3
Acq On : 16 Feb 2015 10:46 Operator: TMB
Sample : WG512364-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3494	0.3852	-10.3	93	0.01
56	T	Dimethyl Disulfide	0.1740	0.1789	-2.8	95	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	91	0.00
58	S	Toluene-d8	1.1408	1.1253	1.4	92	0.00
59	C	Toluene	1.2607	1.3324	-5.7	93	0.00
60	T	Ethyl Methacrylate	0.2252	0.2562	-13.8	93	0.01
61		Paraldehyde	0.0000	0.0000	0.0	90	0.00
62	T	trans-1,3-Dichloropropene	0.4024	0.4546	-13.0	92	0.00
63	T	1,1,2-Trichloroethane	0.1940	0.1914	1.4	87	0.00
64	T	2-Hexanone	0.1233	0.1011	18.0	71	0.00
65	T	1,3-Dichloropropane	0.3608	0.3619	-0.3	89	0.00
66	T	Tetrachloroethene	0.3625	0.3526	2.7	87	0.00
67	T	Dibromochloromethane	0.2624	0.2866	-9.2	88	0.00
68	T	1,2-Dibromoethane	0.1878	0.2024	-7.8	88	0.00
69	T	1-Chlorohexane	0.4282	0.4448	-3.9	91	0.00
70	P	Chlorobenzene	0.8713	0.8830	-1.3	90	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3160	0.3323	-5.2	87	0.00
72	C	Ethylbenzene	0.4797	0.4972	-3.7	90	0.00
73	T	m-,p-Xylene	0.5738	0.6013	-4.8	91	0.00
74	T	o-Xylene	0.5785	0.6029	-4.2	91	0.01
75	T	Styrene	0.9255	0.9813	-6.0	90	0.00
76	P	Bromoform	0.1512	0.1716	-13.5	91	0.01
77	T	Isopropylbenzene	1.5229	1.5769	-3.5	90	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	89	0.00
79	P	1,1,2,2-Tetrachloroethane	0.3637	0.3647	-0.3	86	0.00
80	S	p-Bromofluorobenzene	0.8406	0.8496	-1.1	92	0.00
81	T	1,2,3-Trichloropropane	0.1217	0.1179	3.1	82	0.01
82	T	trans-1,4-Dichloro-2-Butene	0.1534	0.1434	6.5	75	0.00
83	T	n-Propylbenzene	3.1572	3.3102	-4.8	91	0.00
84	T	Bromobenzene	0.6465	0.6430	0.6	85	0.00
85	T	1,3,5-Trimethylbenzene	2.2379	2.4140	-7.9	90	0.01
86	T	2-Chlorotoluene	2.0659	2.1182	-2.5	91	0.00
87	T	4-Chlorotoluene	2.0592	2.1663	-5.2	89	0.00
88	T	a-Methylstyrene	1.2159	1.2569	-3.4	88	0.00
89	T	tert-Butylbenzene	0.4989	0.4529	9.2	79	0.00
90	T	1,2,4-Trimethylbenzene	2.2983	2.4360	-6.0	88	0.00
91	T	sec-Butylbenzene	2.7152	2.7443	-1.1	88	0.00
92	T	p-Isopropyltoluene	2.2278	2.3754	-6.6	88	0.00
93	T	1,3-Dichlorobenzene	1.3304	1.2183	8.4	79	0.01
94	T	1,4-Dichlorobenzene	1.3529	1.1941	11.7	77	0.00
95	T	n-Butylbenzene	2.0376	2.1512	-5.6	88	0.01
96	T	1,2-Dichlorobenzene	1.1800	1.0509	10.9	77	0.01
97	T	1,2-Dibromo-3-Chloropropane	0.0701	0.0785	-12.1	87	0.01
98	T	1,2,4-Trichlorobenzene	0.7615	0.7851	-3.1	88	0.00
99	T	Hexachlorobutadiene	0.3323	0.4229	-27.2#	106	0.01
100	T	Naphthalene	1.1075	1.0641	3.9	80	0.01
101	T	1,2,3-Trichlorobenzene	0.6433	0.6576	-2.2	85	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M131108.D 8260WT.M Mon Feb 16 11:12:36 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\021615\6M131108.D Vial: 3
Acq On : 16 Feb 2015 10:46 Operator: TMB
Sample : WG512364-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	93	0.00
2	T	Dichlorodifluoromethane	50.0000	49.9093	0.2	83	0.00
3	P	Chloromethane	50.0000	41.8657	16.3	74	0.00
4	C	Vinyl Chloride	50.0000	50.5395	-1.1	86	0.00
5	T	1,3-Butadiene	50.0000	45.0523	9.9	83	0.01
6	T	Bromomethane	50.0000	38.5626	22.9#	82	0.00
7	T	Chloroethane	50.0000	53.2027	-6.4	99	0.00
8	T	Trichlorofluoromethane	50.0000	50.5633	-1.1	91	0.00
9	T	Diethyl ether	100.0000	94.2709	5.7	88	0.00
10	T	Isoprene	50.0000	56.0214	-12.0	104	0.00
11	T	Acrolein	50.0000	178.6938	-257.4#	372	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.0635	-4.1	95	0.00
13	T	Acetone	50.0000	42.3315	15.3	74	0.00
14	C	1,1-Dichloroethene	50.0000	47.9189	4.2	86	0.00
15	T	Tert-Butyl Alcohol	200.0000	238.5452	-19.3	103	0.00
16	T	Dimethyl Sulfide	50.0000	47.2716	5.5	85	0.00
17	T	Iodomethane	50.0000	37.5695	24.9#	70	0.00
18	T	Methyl acetate	50.0000	44.0406	11.9	81	0.00
19	T	Methylene Chloride	50.0000	50.9558	-1.9	94	0.00
20	T	Carbon Disulfide	50.0000	50.6394	-1.3	96	0.00
21	T	Acrylonitrile	50.0000	40.7970	18.4	75	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.9098	-3.8	90	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.5089	-5.0	95	0.00
24	T	n-Hexane	50.0000	45.3302	9.3	85	0.00
25	T	Diisopropyl ether	100.0000	87.0345	13.0	82	0.00
26	T	Vinyl Acetate	50.0000	31.0752	37.8#	57	0.00
27	P	1,1-Dichloroethane	50.0000	49.2570	1.5	89	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.2382	0.8	92	0.00
29	T	2-Butanone	50.0000	41.0039	18.0	74	0.00
30	T	Propionitrile	100.0000	81.5549	18.4	75	0.00
31	T	2,2-Dichloropropane	50.0000	60.7781	-21.6#	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.7790	-5.6	93	0.00
33	C	Chloroform	50.0000	53.5505	-7.1	93	0.00
34		1-Bromopropane	50.0000	51.9382	-3.9	95	0.00
35	T	Bromochloromethane	50.0000	50.8553	-1.7	90	0.00
36	T	Tetrahydrofuran	100.0000	80.8652	19.1	75	0.00
37	S	Dibromofluoromethane	25.0000	23.9821	4.1	86	0.00
38	T	1,1,1-Trichloroethane	50.0000	54.4540	-8.9	95	0.00
39	T	Cyclohexane	50.0000	45.6197	8.8	84	0.00
40	T	1,1-Dichloropropene	50.0000	53.3653	-6.7	94	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	101.3485	-1.3	94	0.00
42	T	Carbon Tetrachloride	50.0000	56.5436	-13.1	96	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.6809	5.3	87	0.00
44		Heptane	-1.0000	0.0000	0.0	89	0.00
45	T	1,2-Dichloroethane	50.0000	49.1547	1.7	86	0.00
46	T	Benzene	50.0000	52.1278	-4.3	94	0.00
47	T	Trichloroethene	50.0000	51.4980	-3.0	91	0.00
48	T	Methylcyclohexane	50.0000	50.0601	-0.1	93	0.00
49	C	1,2-Dichloropropane	50.0000	49.2532	1.5	87	0.00
50	T	1,4-Dioxane	200.0000	190.7049	4.6	89	0.00
51	T	Bromodichloromethane	50.0000	53.5142	-7.0	92	0.00
52	T	Dibromomethane	50.0000	51.9108	-3.8	89	0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	46.7086	6.6	83	0.00
54	T	4-Methyl-2-Pentanone	50.0000	41.2969	17.4	74	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\021615\6M131108.D Vial: 3
Acq On : 16 Feb 2015 10:46 Operator: TMB
Sample : WG512364-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	55.1345	-10.3	93	0.01
56	T	Dimethyl Disulfide	50.0000	51.4046	-2.8	95	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	91	0.00
58	S	Toluene-d8	25.0000	24.6597	1.4	92	0.00
59	C	Toluene	50.0000	52.8429	-5.7	93	0.00
60	T	Ethyl Methacrylate	50.0000	51.4308	-2.9	93	0.01
61		Paraldehyde	-1.0000	0.0000	0.0	90	0.00
62	T	trans-1,3-Dichloropropene	50.0000	56.4903	-13.0	92	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.3223	1.4	87	0.00
64	T	2-Hexanone	50.0000	41.0102	18.0	71	0.00
65	T	1,3-Dichloropropane	50.0000	50.1586	-0.3	89	0.00
66	T	Tetrachloroethene	50.0000	48.6389	2.7	87	0.00
67	T	Dibromochloromethane	50.0000	54.6140	-9.2	88	0.00
68	T	1,2-Dibromoethane	50.0000	53.8857	-7.8	88	0.00
69	T	1-Chlorohexane	50.0000	51.9416	-3.9	91	0.00
70	P	Chlorobenzene	50.0000	50.6717	-1.3	90	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.5840	-5.2	87	0.00
72	C	Ethylbenzene	50.0000	51.8272	-3.7	90	0.00
73	T	m-,p-Xylene	100.0000	104.7871	-4.8	91	0.00
74	T	o-Xylene	50.0000	52.1085	-4.2	91	0.01
75	T	Styrene	50.0000	53.0138	-6.0	90	0.00
76	P	Bromoform	50.0000	51.8926	-3.8	91	0.01
77	T	Isopropylbenzene	50.0000	51.7734	-3.5	90	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	89	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	50.1386	-0.3	86	0.00
80	S	p-Bromofluorobenzene	25.0000	25.2667	-1.1	92	0.00
81	T	1,2,3-Trichloropropane	50.0000	48.4496	3.1	82	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	41.9359	16.1	75	0.00
83	T	n-Propylbenzene	50.0000	52.4223	-4.8	91	0.00
84	T	Bromobenzene	50.0000	49.7244	0.6	85	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	53.9354	-7.9	90	0.01
86	T	2-Chlorotoluene	50.0000	51.2667	-2.5	91	0.00
87	T	4-Chlorotoluene	50.0000	52.6011	-5.2	89	0.00
88	T	a-Methylstyrene	50.0000	51.6882	-3.4	88	0.00
89	T	tert-Butylbenzene	50.0000	45.3904	9.2	79	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.9955	-6.0	88	0.00
91	T	sec-Butylbenzene	50.0000	50.5367	-1.1	88	0.00
92	T	p-Isopropyltoluene	50.0000	53.3123	-6.6	88	0.00
93	T	1,3-Dichlorobenzene	50.0000	45.7877	8.4	79	0.01
94	T	1,4-Dichlorobenzene	50.0000	44.1284	11.7	77	0.00
95	T	n-Butylbenzene	50.0000	52.7888	-5.6	88	0.01
96	T	1,2-Dichlorobenzene	50.0000	44.5280	10.9	77	0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	51.6091	-3.2	87	0.01
98	T	1,2,4-Trichlorobenzene	50.0000	51.5515	-3.1	88	0.00
99	T	Hexachlorobutadiene	50.0000	63.6232	-27.2#	106	0.01
100	T	Naphthalene	50.0000	48.0397	3.9	80	0.01
101	T	1,2,3-Trichlorobenzene	50.0000	51.1052	-2.2	85	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M131108.D 8260WT.M Mon Feb 16 11:12:37 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021715\6M131140.D Vial: 3
Acq On : 17 Feb 2015 10:44 Operator: TMB
Sample : WG512496-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 11:08:28 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	681444	25.00 ug/L	0.01
57) Chlorobenzene-d5	16.15	117	497848	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	19.77	152	276825	25.00 ug/L	0.01
System Monitoring Compounds					
37) Dibromofluoromethane	10.40	111	163969	23.8236 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.28%		
43) 1,2-Dichloroethane-d4	11.13	65	191828	23.3883 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.56%		
58) Toluene-d8	13.91	98	567280	24.9698 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.88%		
80) p-Bromofluorobenzene	17.95	95	238317	25.6035 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.40%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	565513	46.6913 ug/L	97
3) Chloromethane	3.85	50	385785	40.3527 ug/L	97
4) Vinyl Chloride	4.08	62	394775	48.2107 ug/L	99
5) 1,3-Butadiene	4.14	54	347888	42.5609 ug/L	91
6) Bromomethane	5.01	94	178117	39.6976 ug/L	97
7) Chloroethane	5.17	64	236779	49.8673 ug/L	94
8) Trichlorofluoromethane	5.68	101	748772	49.0401 ug/L	99
9) Diethyl ether	6.23	59	379685	86.4427 ug/L	96
10) Isoprene	6.27	67	447038	54.9854 ug/L	93
11) Acrolein	6.48	56	7971	93.2285 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	364057	50.1624 ug/L	95
13) Acetone	6.59	43	41754	39.7111 ug/L	96
14) 1,1-Dichloroethene	6.83	61	560817	45.6530 ug/L	91
15) Tert-Butyl Alcohol	6.94	59	45938	210.6408 ug/L	96
16) Dimethyl Sulfide	7.12	62	310022	46.2808 ug/L	90
17) Iodomethane	7.39	142	239592	39.8924 ug/L	78
18) Methyl acetate	7.40	43	177688	43.4288 ug/L	99
19) Methylene Chloride	7.69	84	289656	47.6246 ug/L	96
20) Carbon Disulfide	7.73	76	1017735	48.6999 ug/L	99
21) Acrylonitrile	7.88	53	54029	36.8626 ug/L	100
22) Methyl Tert Butyl Ether	7.91	73	615527	47.6994 ug/L	99
23) trans-1,2-Dichloroethene	8.18	96	313737	49.5227 ug/L	91
24) n-Hexane	8.27	57	462691	44.4945 ug/L	98
25) Diisopropyl ether	8.65	45	2034912	80.0192 ug/L	96
26) Vinyl Acetate	8.84	43	118339	26.6878 ug/L	98
27) 1,1-Dichloroethane	8.87	63	630644	46.3958 ug/L	97
28) Ethyl-Tert-Butyl ether	9.29	59	1837609	91.0719 ug/L	98
29) 2-Butanone	9.50	43	62426	38.2811 ug/L	99
30) Propionitrile	9.62	54	36711	73.9269 ug/L	95
31) 2,2-Dichloropropane	9.75	77	674993	58.1117 ug/L	98
32) cis-1,2-Dichloroethene	9.82	96	333291	49.2700 ug/L	98
33) Chloroform	10.06	83	665433	50.5892 ug/L	99
34) 1-Bromopropane	10.22	122	71577	48.6947 ug/L	96
35) Bromochloromethane	10.32	130	165444	46.8561 ug/L	99
36) Tetrahydrofuran	10.35	42	75168	73.0399 ug/L	97
38) 1,1,1-Trichloroethane	10.67	97	675773	51.5794 ug/L	98
39) Cyclohexane	10.70	56	594268	45.5203 ug/L	97
40) 1,1-Dichloropropene	10.90	75	512438	50.7882 ug/L	91
41) Tert-Amyl-Methyl ether	11.02	73	1279113	91.8085 ug/L	93
42) Carbon Tetrachloride	11.06	117	606147	54.5163 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021715\6M131140.D Vial: 3
Acq On : 17 Feb 2015 10:44 Operator: TMB
Sample : WG512496-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 11:08:28 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.26	62	483743	46.4798	ug/L		89
46)	Benzene	11.30	78	1215284	48.6169	ug/L		96
47)	Trichloroethene	12.18	130	310677	47.6335	ug/L		72
48)	Methylcyclohexane	12.27	83	511406	49.9642	ug/L		97
49)	1,2-Dichloropropane	12.43	63	306857	45.5987	ug/L	#	71
50)	1,4-Dioxane	12.77	88	4911	197.9451	ug/L		77
51)	Bromodichloromethane	12.78	83	485495	50.1369	ug/L		99
52)	Dibromomethane	12.88	93	154756	48.5554	ug/L		98
53)	2-Chloroethyl Vinyl Ether	13.14	63	117348	42.7827	ug/L		97
54)	4-Methyl-2-Pentanone	13.17	58	54875	38.9047	ug/L		96
55)	cis-1,3-Dichloropropene	13.53	75	489709	51.4240	ug/L		97
56)	Dimethyl Disulfide	13.84	79	246483	51.9758	ug/L		96
59)	Toluene	14.03	91	1307726	52.0896	ug/L		99
60)	Ethyl Methacrylate	14.15	69	268573	54.1210	ug/L		98
62)	trans-1,3-Dichloropropene	14.24	75	445779	55.6344	ug/L		93
63)	1,1,2-Trichloroethane	14.50	97	187516	48.5349	ug/L		99
64)	2-Hexanone	14.43	43	98932	40.2884	ug/L		95
65)	1,3-Dichloropropane	14.86	76	355018	49.4177	ug/L		94
66)	Tetrachloroethene	15.00	166	345921	47.9198	ug/L	#	85
67)	Dibromochloromethane	15.31	129	280952	53.7630	ug/L		99
68)	1,2-Dibromoethane	15.61	107	194542	52.0285	ug/L		100
69)	1-Chlorohexane	15.74	91	462968	54.2965	ug/L		87
70)	Chlorobenzene	16.22	112	852347	49.1216	ug/L	#	65
71)	1,1,1,2-Tetrachloroethane	16.26	131	330273	52.4852	ug/L		90
72)	Ethylbenzene	16.26	106	492967	51.6098	ug/L		94
73)	m-,p-Xylene	16.36	106	1177186	103.0211	ug/L		88
74)	o-Xylene	17.02	106	583029	50.6125	ug/L		88
75)	Styrene	17.07	104	960221	52.0972	ug/L		80
76)	Bromoform	17.65	173	171781	52.1667	ug/L		98
77)	Isopropylbenzene	17.54	105	1550249	51.1175	ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.80	83	208961	51.8885	ug/L		100
81)	1,2,3-Trichloropropane	18.02	110	68084	50.5251	ug/L		99
82)	trans-1,4-Dichloro-2-Buten	18.09	53	90732	47.8482	ug/L		80
83)	n-Propylbenzene	18.15	91	1890796	54.0843	ug/L		97
84)	Bromobenzene	18.29	156	364838	50.9601	ug/L		87
85)	1,3,5-Trimethylbenzene	18.37	105	1370338	55.3006	ug/L		94
86)	2-Chlorotoluene	18.46	91	1249010	54.6012	ug/L		99
87)	4-Chlorotoluene	18.52	91	1189227	52.1563	ug/L		94
88)	a-Methylstyrene	18.86	118	766184	56.9091	ug/L		97
89)	tert-Butylbenzene	18.92	134	259427	46.9616	ug/L		90
90)	1,2,4-Trimethylbenzene	18.99	105	1393605	54.7600	ug/L		82
91)	sec-Butylbenzene	19.25	105	1574187	52.3594	ug/L		98
92)	p-Isopropyltoluene	19.44	119	1363153	55.2595	ug/L		97
93)	1,3-Dichlorobenzene	19.66	146	698684	47.4292	ug/L		85
94)	1,4-Dichlorobenzene	19.82	146	680031	45.3932	ug/L		85
95)	n-Butylbenzene	20.08	91	1250935	55.4436	ug/L		95
96)	1,2-Dichlorobenzene	20.40	146	596172	45.6270	ug/L		84
97)	1,2-Dibromo-3-Chloropropan	21.60	75	45057	53.4381	ug/L		76
98)	1,2,4-Trichlorobenzene	22.98	180	456154	54.0991	ug/L		100
99)	Hexachlorobutadiene	23.17	225	249260	67.7337	ug/L		99
100)	Naphthalene	23.44	128	615610	50.1985	ug/L		99
101)	1,2,3-Trichlorobenzene	23.85	180	383314	53.8075	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021715\6M131140.D Vial: 3
Acq On : 17 Feb 2015 10:44 Operator: TMB
Sample : WG512496-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 11:08 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

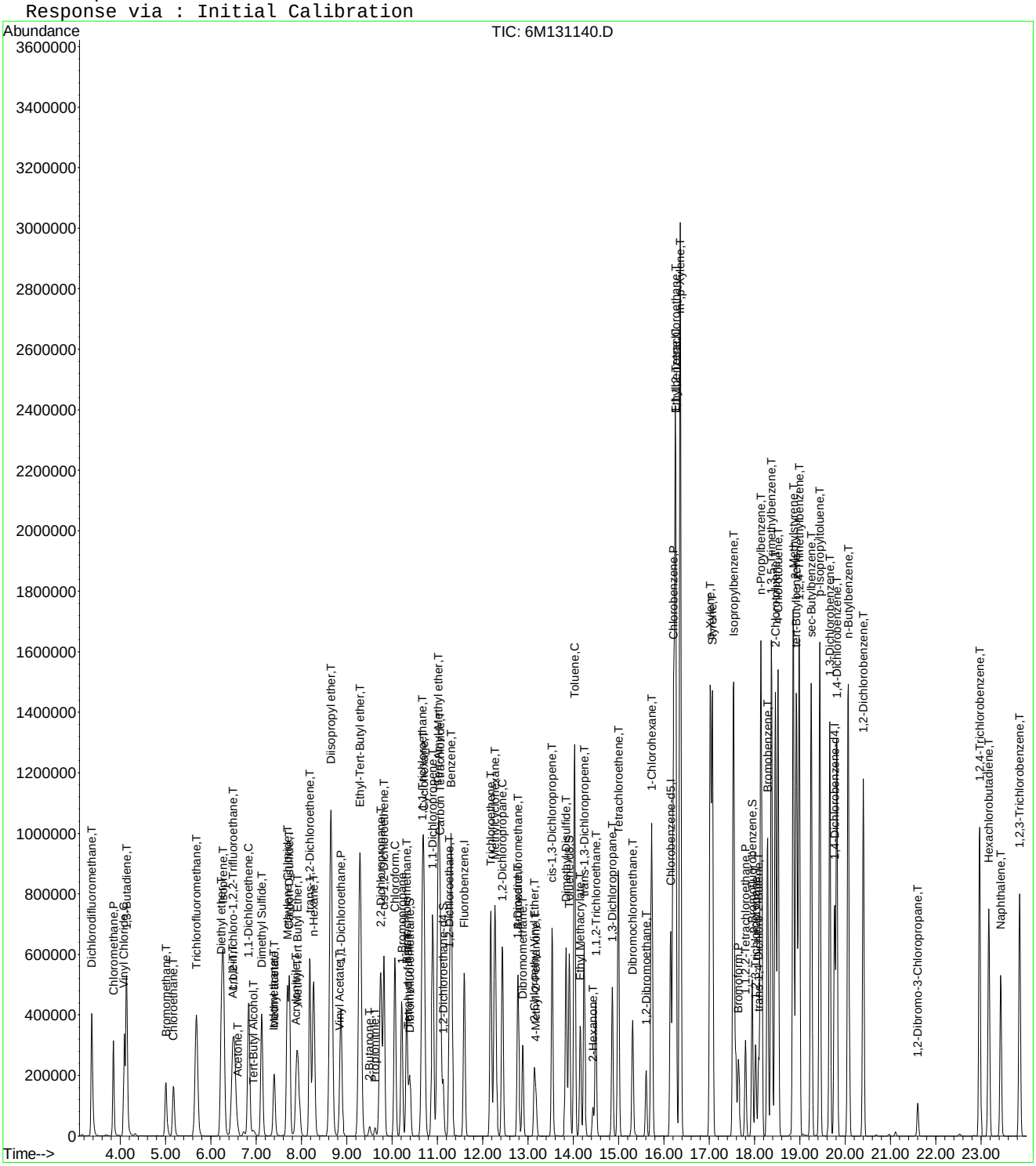

Continuing Calibration Area and RT check

Instrument: HPMS6
Initial cal date: 5 Feb 2015 14:09
CCV date: 17 Feb 2015 10:44
CCV Filename: 6M131140.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	715746	11.58	554647	16.14	327681	19.75
CCV	681444	11.59	497848	16.15	276825	19.77

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\021715\6M131140.D Vial: 3
Acq On : 17 Feb 2015 10:44 Operator: TMB
Sample : WG512496-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	95	0.01
2	T	Dichlorodifluoromethane	0.4443	0.4149	6.6	79	0.00
3	P	Chloromethane	0.3507	0.2831	19.3	73	0.00
4	C	Vinyl Chloride	0.3004	0.2897	3.6	84	0.00
5	T	1,3-Butadiene	0.2664	0.2553	4.2	80	0.01
6	T	Bromomethane	0.1372	0.1307	4.8	86	0.01
7	T	Chloroethane	0.1742	0.1737	0.3	95	0.00
8	T	Trichlorofluoromethane	0.5602	0.5494	1.9	91	0.00
9	T	Diethyl ether	0.1611	0.1393	13.6	83	0.00
10	T	Isoprene	0.2983	0.3280	-10.0	104	0.00
11	T	Acrolein	0.0031	0.0059	-86.3#	198	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2663	0.2671	-0.3	93	0.00
13	T	Acetone	0.0386	0.0306	20.6#	71	0.00
14	C	1,1-Dichloroethene	0.4507	0.4115	8.7	84	0.00
15	T	Tert-Butyl Alcohol	0.0080	0.0084	-5.4	93	0.00
16	T	Dimethyl Sulfide	0.2458	0.2275	7.4	85	0.00
17	T	Iodomethane	0.1803	0.1758	2.5	76	0.00
18	T	Methyl acetate	0.1501	0.1304	13.1	81	0.00
19	T	Methylene Chloride	0.2231	0.2125	4.8	90	0.01
20	T	Carbon Disulfide	0.7667	0.7468	2.6	95	0.00
21	T	Acrylonitrile	0.0538	0.0396	26.3#	69	0.00
22	T	Methyl Tert Butyl Ether	0.4734	0.4516	4.6	84	0.00
23	T	trans-1,2-Dichloroethene	0.2324	0.2302	1.0	91	0.00
24	T	n-Hexane	0.3815	0.3395	11.0	86	0.01
25	T	Diisopropyl ether	0.9330	0.7465	20.0	77	0.01
26	T	Vinyl Acetate	0.1627	0.0868	46.6#	50	0.01
27	P	1,1-Dichloroethane	0.4987	0.4627	7.2	86	0.01
28	T	Ethyl-Tert-Butyl ether	0.7402	0.6742	8.9	86	0.01
29	T	2-Butanone	0.0598	0.0458	23.4#	71	0.01
30	T	Propionitrile	0.0182	0.0135	26.1#	70	0.00
31	T	2,2-Dichloropropane	0.4261	0.4953	-16.2	100	0.01
32	T	cis-1,2-Dichloroethene	0.2482	0.2445	1.5	89	0.01
33	C	Chloroform	0.4826	0.4883	-1.2	90	0.01
34		1-Bromopropane	0.0501	0.0525	-4.9	91	0.01
35	T	Bromochloromethane	0.1295	0.1214	6.3	84	0.00
36	T	Tetrahydrofuran	0.0378	0.0276	27.0#	69	0.01
37	S	Dibromofluoromethane	0.2525	0.2406	4.7	87	0.01
38	T	1,1,1-Trichloroethane	0.4807	0.4958	-3.2	92	0.01
39	T	Cyclohexane	0.4789	0.4360	9.0	86	0.01
40	T	1,1-Dichloropropene	0.3702	0.3760	-1.6	91	0.01
41	T	Tert-Amyl-Methyl ether	0.5111	0.4693	8.2	87	0.01
42	T	Carbon Tetrachloride	0.4079	0.4447	-9.0	94	0.01
43	S	1,2-Dichloroethane-d4	0.3009	0.2815	6.4	88	0.01
44		Heptane	0.0000	0.0000	0.0	84	0.01
45	T	1,2-Dichloroethane	0.3818	0.3549	7.0	83	0.01
46	T	Benzene	0.9171	0.8917	2.8	90	0.00
47	T	Trichloroethene	0.2393	0.2280	4.7	86	0.01
48	T	Methylcyclohexane	0.3755	0.3752	0.1	95	0.01
49	C	1,2-Dichloropropane	0.2469	0.2251	8.8	82	0.00
50	T	1,4-Dioxane	0.0009	0.0009	1.1	95	0.00
51	T	Bromodichloromethane	0.3553	0.3562	-0.3	89	0.01
52	T	Dibromomethane	0.1169	0.1136	2.9	85	0.01
53	T	2-Chloroethyl Vinyl Ether	0.1006	0.0861	14.4	78	0.01
54	T	4-Methyl-2-Pentanone	0.0517	0.0403	22.2#	71	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\021715\6M131140.D Vial: 3
Acq On : 17 Feb 2015 10:44 Operator: TMB
Sample : WG512496-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3494	0.3593	-2.8	89	0.01
56	T	Dimethyl Disulfide	0.1740	0.1809	-3.9	99	0.01
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	90	0.01
58	S	Toluene-d8	1.1408	1.1395	0.1	92	0.01
59	C	Toluene	1.2607	1.3134	-4.2	90	0.01
60	T	Ethyl Methacrylate	0.2252	0.2697	-19.8	96	0.01
61		Paraldehyde	0.0000	0.0000	0.0	92	0.01
62	T	trans-1,3-Dichloropropene	0.4024	0.4477	-11.3	89	0.01
63	T	1,1,2-Trichloroethane	0.1940	0.1883	2.9	84	0.01
64	T	2-Hexanone	0.1233	0.0994	19.4	68	0.01
65	T	1,3-Dichloropropane	0.3608	0.3565	1.2	86	0.01
66	T	Tetrachloroethene	0.3625	0.3474	4.2	84	0.01
67	T	Dibromochloromethane	0.2624	0.2822	-7.5	85	0.01
68	T	1,2-Dibromoethane	0.1878	0.1954	-4.1	83	0.01
69	T	1-Chlorohexane	0.4282	0.4650	-8.6	93	0.01
70	P	Chlorobenzene	0.8713	0.8560	1.8	86	0.01
71	T	1,1,1,2-Tetrachloroethane	0.3160	0.3317	-5.0	85	0.01
72	C	Ethylbenzene	0.4797	0.4951	-3.2	88	0.01
73	T	m-,p-Xylene	0.5738	0.5911	-3.0	88	0.01
74	T	o-Xylene	0.5785	0.5856	-1.2	87	0.01
75	T	Styrene	0.9255	0.9644	-4.2	86	0.01
76	P	Bromoform	0.1512	0.1725	-14.1	90	0.01
77	T	Isopropylbenzene	1.5229	1.5570	-2.2	87	0.01
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	84	0.01
79	P	1,1,2,2-Tetrachloroethane	0.3637	0.3774	-3.8	84	0.01
80	S	p-Bromofluorobenzene	0.8406	0.8609	-2.4	88	0.01
81	T	1,2,3-Trichloropropane	0.1217	0.1230	-1.1	81	0.01
82	T	trans-1,4-Dichloro-2-Butene	0.1534	0.1639	-6.8	81	0.01
83	T	n-Propylbenzene	3.1572	3.4152	-8.2	89	0.01
84	T	Bromobenzene	0.6465	0.6590	-1.9	82	0.01
85	T	1,3,5-Trimethylbenzene	2.2379	2.4751	-10.6	87	0.01
86	T	2-Chlorotoluene	2.0659	2.2560	-9.2	92	0.01
87	T	4-Chlorotoluene	2.0592	2.1480	-4.3	84	0.01
88	T	a-Methylstyrene	1.2159	1.3839	-13.8	92	0.01
89	T	tert-Butylbenzene	0.4989	0.4686	6.1	77	0.00
90	T	1,2,4-Trimethylbenzene	2.2983	2.5171	-9.5	86	0.01
91	T	sec-Butylbenzene	2.7152	2.8433	-4.7	86	0.01
92	T	p-Isopropyltoluene	2.2278	2.4621	-10.5	86	0.01
93	T	1,3-Dichlorobenzene	1.3304	1.2620	5.1	77	0.01
94	T	1,4-Dichlorobenzene	1.3529	1.2283	9.2	75	0.01
95	T	n-Butylbenzene	2.0376	2.2594	-10.9	87	0.02
96	T	1,2-Dichlorobenzene	1.1800	1.0768	8.7	75	0.01
97	T	1,2-Dibromo-3-Chloropropane	0.0701	0.0814	-16.1	86	0.01
98	T	1,2,4-Trichlorobenzene	0.7615	0.8239	-8.2	88	0.01
99	T	Hexachlorobutadiene	0.3323	0.4502	-35.5#	107	0.01
100	T	Naphthalene	1.1075	1.1119	-0.4	79	0.01
101	T	1,2,3-Trichlorobenzene	0.6433	0.6923	-7.6	85	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M131140.D 8260WT.M Tue Feb 17 11:13:26 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\021715\6M131140.D Vial: 3
Acq On : 17 Feb 2015 10:44 Operator: TMB
Sample : WG512496-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.01
2	T	Dichlorodifluoromethane	50.0000	46.6913	6.6	79	0.00
3	P	Chloromethane	50.0000	40.3527	19.3	73	0.00
4	C	Vinyl Chloride	50.0000	48.2107	3.6	84	0.00
5	T	1,3-Butadiene	50.0000	42.5609	14.9	80	0.01
6	T	Bromomethane	50.0000	39.6976	20.6#	86	0.01
7	T	Chloroethane	50.0000	49.8673	0.3	95	0.00
8	T	Trichlorofluoromethane	50.0000	49.0401	1.9	91	0.00
9	T	Diethyl ether	100.0000	86.4427	13.6	83	0.00
10	T	Isoprene	50.0000	54.9854	-10.0	104	0.00
11	T	Acrolein	50.0000	93.2285	-86.5#	198	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.1624	-0.3	93	0.00
13	T	Acetone	50.0000	39.7111	20.6#	71	0.00
14	C	1,1-Dichloroethene	50.0000	45.6530	8.7	84	0.00
15	T	Tert-Butyl Alcohol	200.0000	210.6408	-5.3	93	0.00
16	T	Dimethyl Sulfide	50.0000	46.2808	7.4	85	0.00
17	T	Iodomethane	50.0000	39.8924	20.2#	76	0.00
18	T	Methyl acetate	50.0000	43.4288	13.1	81	0.00
19	T	Methylene Chloride	50.0000	47.6246	4.8	90	0.01
20	T	Carbon Disulfide	50.0000	48.6998	2.6	95	0.00
21	T	Acrylonitrile	50.0000	36.8626	26.3#	69	0.00
22	T	Methyl Tert Butyl Ether	50.0000	47.6994	4.6	84	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.5227	1.0	91	0.00
24	T	n-Hexane	50.0000	44.4945	11.0	86	0.01
25	T	Diisopropyl ether	100.0000	80.0192	20.0	77	0.01
26	T	Vinyl Acetate	50.0000	26.6878	46.6#	50	0.01
27	P	1,1-Dichloroethane	50.0000	46.3958	7.2	86	0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	91.0719	8.9	86	0.01
29	T	2-Butanone	50.0000	38.2811	23.4#	71	0.01
30	T	Propionitrile	100.0000	73.9269	26.1#	70	0.00
31	T	2,2-Dichloropropane	50.0000	58.1117	-16.2	100	0.01
32	T	cis-1,2-Dichloroethene	50.0000	49.2700	1.5	89	0.01
33	C	Chloroform	50.0000	50.5892	-1.2	90	0.01
34		1-Bromopropane	50.0000	48.6947	2.6	91	0.01
35	T	Bromochloromethane	50.0000	46.8561	6.3	84	0.00
36	T	Tetrahydrofuran	100.0000	73.0399	27.0#	69	0.01
37	S	Dibromofluoromethane	25.0000	23.8236	4.7	87	0.01
38	T	1,1,1-Trichloroethane	50.0000	51.5794	-3.2	92	0.01
39	T	Cyclohexane	50.0000	45.5203	9.0	86	0.01
40	T	1,1-Dichloropropene	50.0000	50.7882	-1.6	91	0.01
41	T	Tert-Amyl-Methyl ether	100.0000	91.8085	8.2	87	0.01
42	T	Carbon Tetrachloride	50.0000	54.5163	-9.0	94	0.01
43	S	1,2-Dichloroethane-d4	25.0000	23.3883	6.4	88	0.01
44		Heptane	-1.0000	0.0000	0.0	84	0.01
45	T	1,2-Dichloroethane	50.0000	46.4798	7.0	83	0.01
46	T	Benzene	50.0000	48.6169	2.8	90	0.00
47	T	Trichloroethene	50.0000	47.6335	4.7	86	0.01
48	T	Methylcyclohexane	50.0000	49.9642	0.1	95	0.01
49	C	1,2-Dichloropropane	50.0000	45.5987	8.8	82	0.00
50	T	1,4-Dioxane	200.0000	197.9451	1.0	95	0.00
51	T	Bromodichloromethane	50.0000	50.1369	-0.3	89	0.01
52	T	Dibromomethane	50.0000	48.5553	2.9	85	0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	42.7827	14.4	78	0.01
54	T	4-Methyl-2-Pentanone	50.0000	38.9047	22.2#	71	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\021715\6M131140.D Vial: 3
Acq On : 17 Feb 2015 10:44 Operator: TMB
Sample : WG512496-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.4240	-2.8	89	0.01
56	T	Dimethyl Disulfide	50.0000	51.9758	-4.0	99	0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	90	0.01
58	S	Toluene-d8	25.0000	24.9698	0.1	92	0.01
59	C	Toluene	50.0000	52.0896	-4.2	90	0.01
60	T	Ethyl Methacrylate	50.0000	54.1210	-8.2	96	0.01
61		Paraldehyde	-1.0000	0.0000	0.0	92	0.01
62	T	trans-1,3-Dichloropropene	50.0000	55.6344	-11.3	89	0.01
63	T	1,1,2-Trichloroethane	50.0000	48.5349	2.9	84	0.01
64	T	2-Hexanone	50.0000	40.2884	19.4	68	0.01
65	T	1,3-Dichloropropane	50.0000	49.4177	1.2	86	0.01
66	T	Tetrachloroethene	50.0000	47.9198	4.2	84	0.01
67	T	Dibromochloromethane	50.0000	53.7630	-7.5	85	0.01
68	T	1,2-Dibromoethane	50.0000	52.0285	-4.1	83	0.01
69	T	1-Chlorohexane	50.0000	54.2965	-8.6	93	0.01
70	P	Chlorobenzene	50.0000	49.1216	1.8	86	0.01
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.4852	-5.0	85	0.01
72	C	Ethylbenzene	50.0000	51.6098	-3.2	88	0.01
73	T	m-,p-Xylene	100.0000	103.0211	-3.0	88	0.01
74	T	o-Xylene	50.0000	50.6125	-1.2	87	0.01
75	T	Styrene	50.0000	52.0972	-4.2	86	0.01
76	P	Bromoform	50.0000	52.1667	-4.3	90	0.01
77	T	Isopropylbenzene	50.0000	51.1175	-2.2	87	0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	84	0.01
79	P	1,1,2,2-Tetrachloroethane	50.0000	51.8885	-3.8	84	0.01
80	S	p-Bromofluorobenzene	25.0000	25.6035	-2.4	88	0.01
81	T	1,2,3-Trichloropropane	50.0000	50.5251	-1.1	81	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	47.8482	4.3	81	0.01
83	T	n-Propylbenzene	50.0000	54.0843	-8.2	89	0.01
84	T	Bromobenzene	50.0000	50.9601	-1.9	82	0.01
85	T	1,3,5-Trimethylbenzene	50.0000	55.3006	-10.6	87	0.01
86	T	2-Chlorotoluene	50.0000	54.6012	-9.2	92	0.01
87	T	4-Chlorotoluene	50.0000	52.1563	-4.3	84	0.01
88	T	a-Methylstyrene	50.0000	56.9091	-13.8	92	0.01
89	T	tert-Butylbenzene	50.0000	46.9616	6.1	77	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	54.7600	-9.5	86	0.01
91	T	sec-Butylbenzene	50.0000	52.3595	-4.7	86	0.01
92	T	p-Isopropyltoluene	50.0000	55.2595	-10.5	86	0.01
93	T	1,3-Dichlorobenzene	50.0000	47.4292	5.1	77	0.01
94	T	1,4-Dichlorobenzene	50.0000	45.3932	9.2	75	0.01
95	T	n-Butylbenzene	50.0000	55.4436	-10.9	87	0.02
96	T	1,2-Dichlorobenzene	50.0000	45.6270	8.7	75	0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	53.4381	-6.9	86	0.01
98	T	1,2,4-Trichlorobenzene	50.0000	54.0991	-8.2	88	0.01
99	T	Hexachlorobutadiene	50.0000	67.7337	-35.5#	107	0.01
100	T	Naphthalene	50.0000	50.1985	-0.4	79	0.01
101	T	1,2,3-Trichlorobenzene	50.0000	53.8075	-7.6	85	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M131140.D 8260WT.M Tue Feb 17 11:13:27 2015 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\1\DATA\093014\6M128662.D Vial: 1
Acq On : 30 Sep 2014 14:48 Operator: TMB
Sample : WG494605-01 50ng BFB STD 8260 Inst : HPMS6
Misc : 1,1 STD66476 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

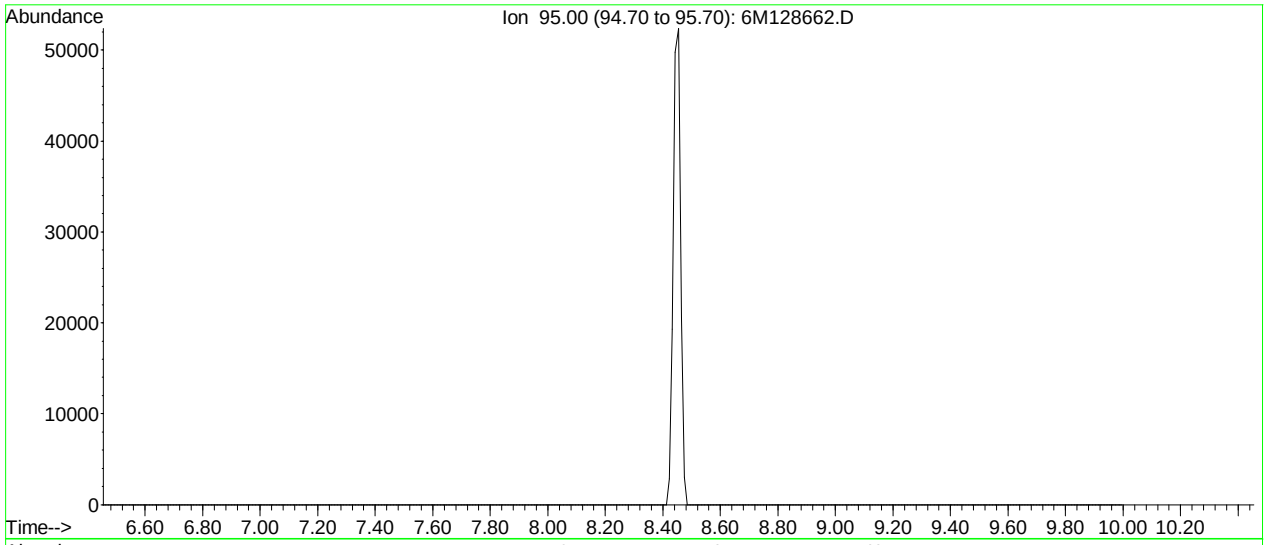

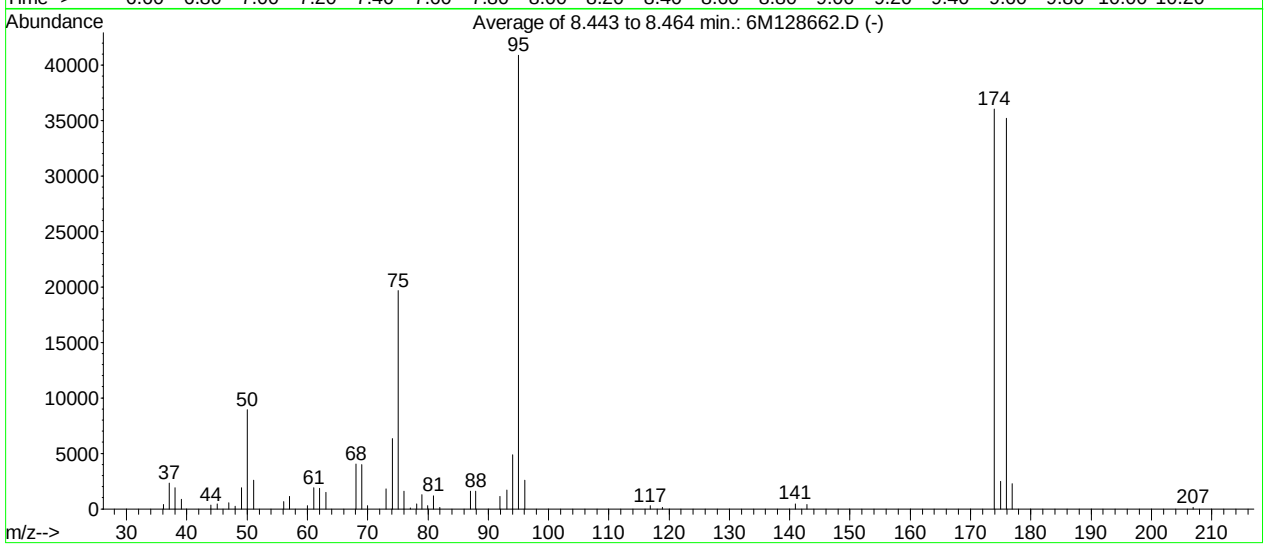

AutoFind: Scans 329, 330, 331; Background Corrected with Scan 324

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.9	8960	PASS
75	95	30	60	48.1	19671	PASS
95	95	100	100	100.0	40893	PASS
96	95	5	9	6.4	2597	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	88.1	36010	PASS
175	174	5	9	6.8	2462	PASS
176	174	95	101	97.8	35205	PASS
177	176	5	9	6.4	2269	PASS

6M128662.D BFB.M Wed Oct 01 15:27:00 2014

BFB

```
Data File : C:\MSDCHEM\1\DATA\020515\6M130909.D          Vial: 1
Acq On    :  5 Feb 2015  10:06                       Operator: TMB
Sample    : WG511026-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 1,1 STD68443                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

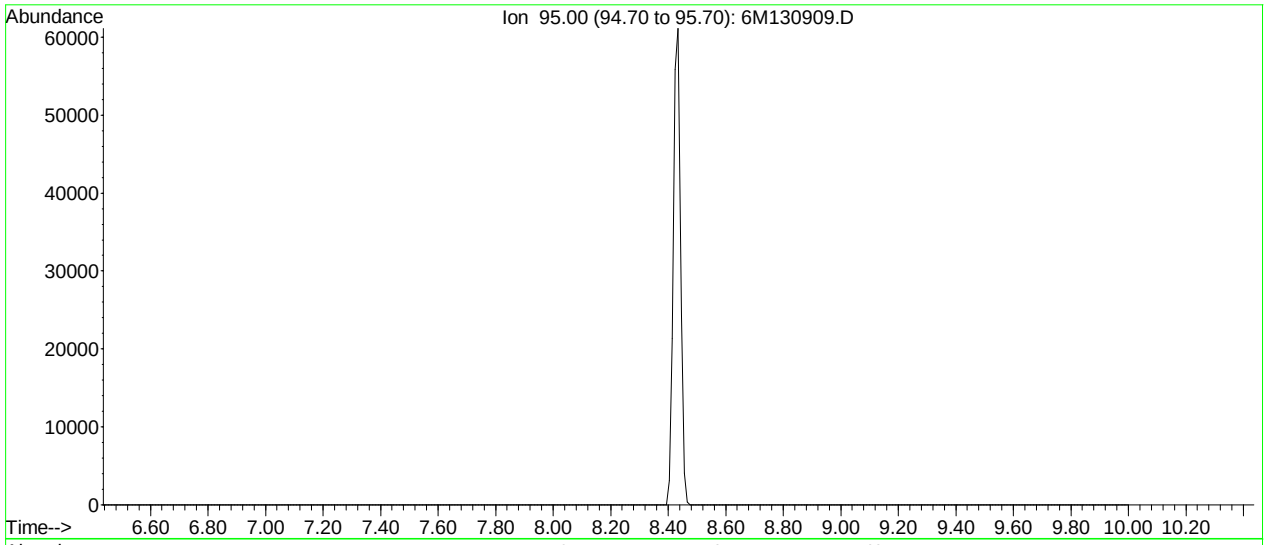

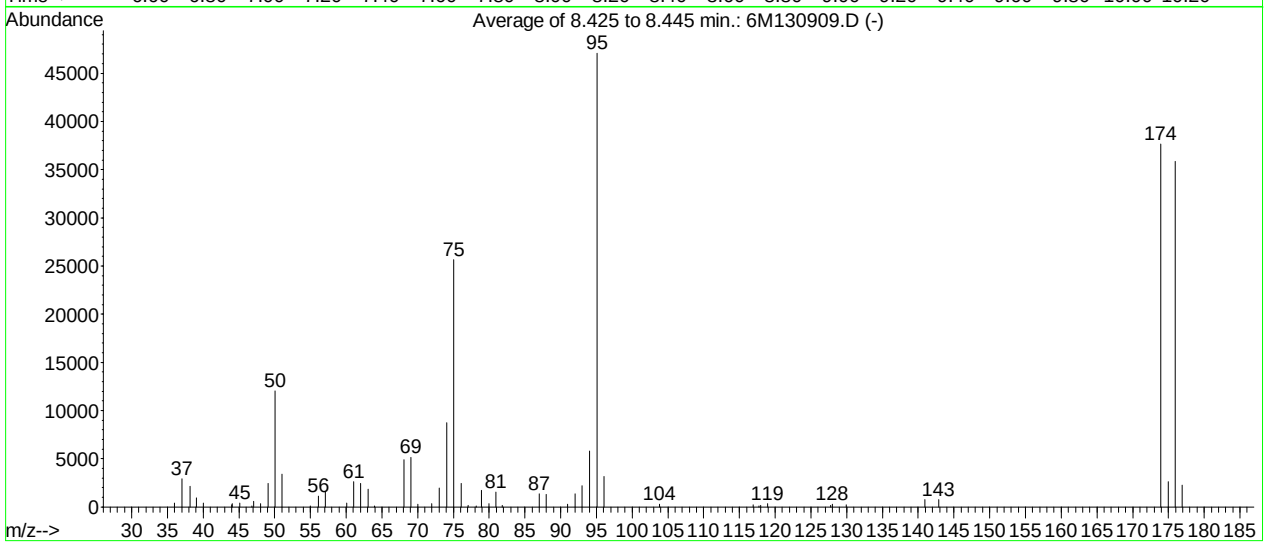

AutoFind: Scans 327, 328, 329; Background Corrected with Scan 322

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.6	12033	PASS
75	95	30	60	54.4	25630	PASS
95	95	100	100	100.0	47085	PASS
96	95	5	9	6.7	3164	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	80.0	37658	PASS
175	174	5	9	7.0	2634	PASS
176	174	95	101	95.2	35842	PASS
177	176	5	9	6.3	2263	PASS

6M130909.D BFB.M Thu Feb 05 10:18:06 2015

BFB

```
Data File : C:\MSDCHEM\1\DATA\021615\6M131106.D          Vial: 1
Acq On    : 16 Feb 2015   9:52                        Operator: TMB
Sample    : WG512364-01 50ng BFB STD 8260             Inst    : HPMS6
Misc      : 1,1 STD68443                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

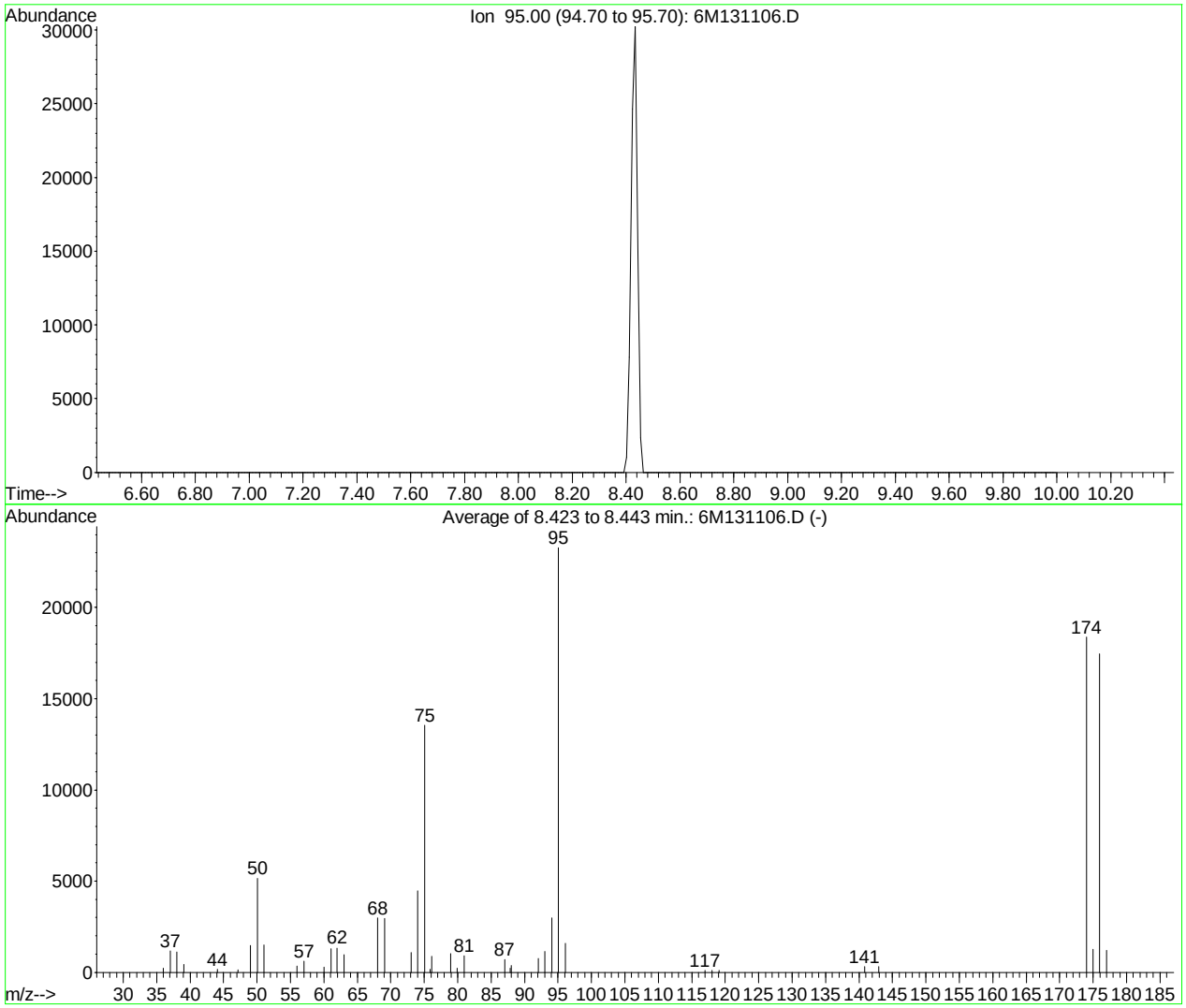

AutoFind: Scans 327, 328, 329; Background Corrected with Scan 322

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.1	5150	PASS
75	95	30	60	58.2	13544	PASS
95	95	100	100	100.0	23285	PASS
96	95	5	9	6.8	1577	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	78.9	18368	PASS
175	174	5	9	6.9	1272	PASS
176	174	95	101	95.1	17473	PASS
177	176	5	9	6.9	1212	PASS

6M131106.D BFB.M Mon Feb 16 10:05:22 2015

BFB

Data File : C:\MSDCHEM\1\DATA\021715\6M131138.D Vial: 1
Acq On : 17 Feb 2015 9:44 Operator: TMB
Sample : WG512496-01 50ng BFB STD 8260 Inst : HPMS6
Misc : 1,1 STD68443 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

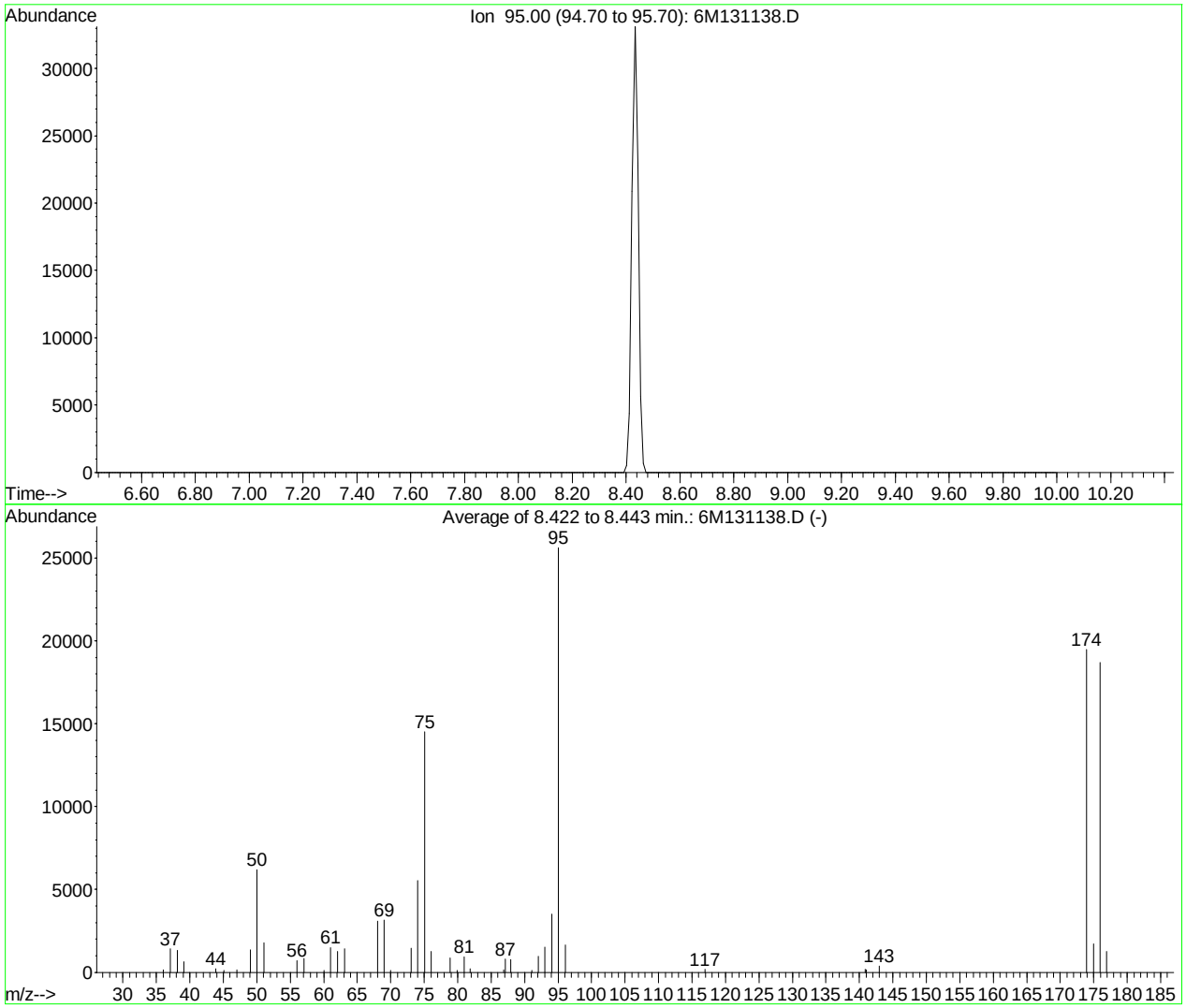

AutoFind: Scans 327, 328, 329; Background Corrected with Scan 322

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.2	6201	PASS
75	95	30	60	56.7	14523	PASS
95	95	100	100	100.0	25629	PASS
96	95	5	9	6.4	1640	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.0	19470	PASS
175	174	5	9	8.8	1716	PASS
176	174	95	101	96.0	18691	PASS
177	176	5	9	6.7	1255	PASS

6M131138.D BFB.M Tue Feb 17 09:56:47 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131110.D Vial: 5
Acq On : 16 Feb 2015 11:47 Operator: TMB
Sample : WG512365-01 VBLK0216 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 09:11:34 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	652840	25.00 ug/L	0.01
57) Chlorobenzene-d5	16.15	117	497715	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	258660	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	156380	23.7165 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.88%		
43) 1,2-Dichloroethane-d4	11.12	65	181066	23.0435 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.16%		
58) Toluene-d8	13.90	98	557936	24.5651 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.28%		
80) p-Bromofluorobenzene	17.94	95	232817	26.7691 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.08%		

Target Compounds					Qvalue
19) Methylene Chloride	7.67	84	1189	0.2041 ug/L	77
36) Tetrahydrofuran	10.35	42	187	0.1897 ug/L #	38
60) Ethyl Methacrylate	13.91	69	933	0.6515 ug/L #	1
99) Hexachlorobutadiene	23.17	225	1414	0.4112 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M131110.D 8260WT.M Tue Feb 17 09:11:34 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131110.D Vial: 5
Acq On : 16 Feb 2015 11:47 Operator: TMB
Sample : WG512365-01 VBLK0216 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 9:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

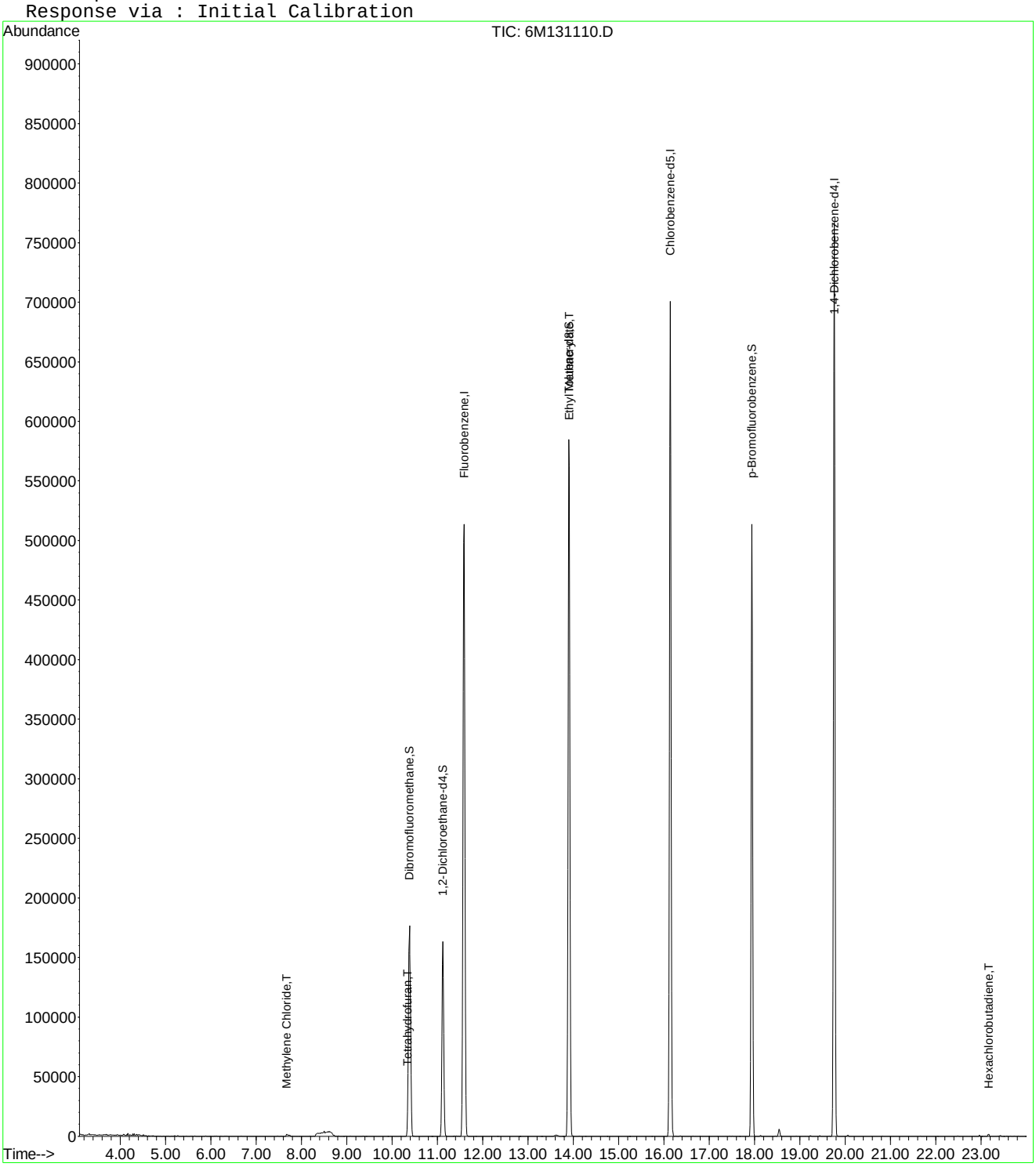

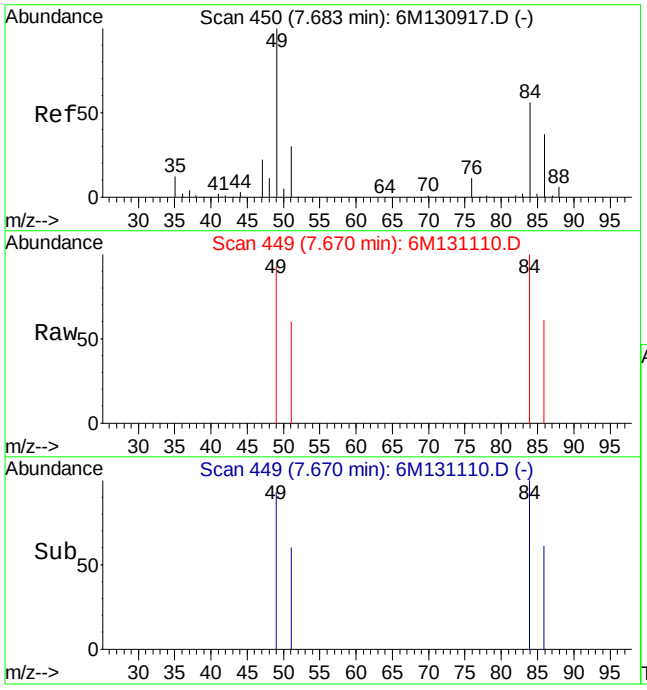

#19
Methylene Chloride
Concen: 0.20 ug/L
RT: 7.67 min Scan# 449
Delta R.T. -0.01 min
Lab File: 6M131110.D
Acq: 16 Feb 2015 11:47

Tgt Ion: 84 Resp: 1189

Ion	Ratio	Lower	Upper
84	100		
49	178.8	89.5	208.9

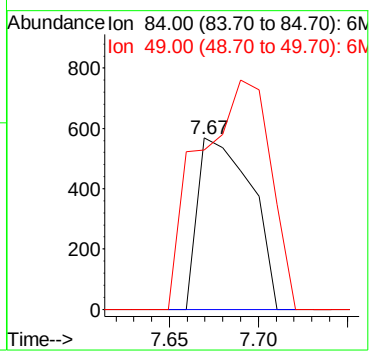

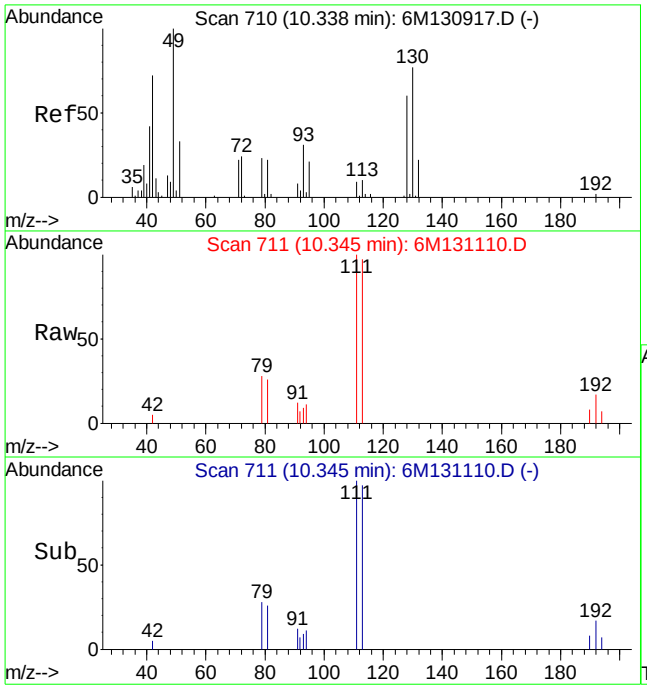

#36
Tetrahydrofuran
Concen: 0.19 ug/L
RT: 10.35 min Scan# 711
Delta R.T. 0.00 min
Lab File: 6M131110.D
Acq: 16 Feb 2015 11:47

Tgt Ion: 42 Resp: 187

Ion	Ratio	Lower	Upper
42	100		
72	0.0	22.8	53.2#
71	0.0	21.5	50.3#

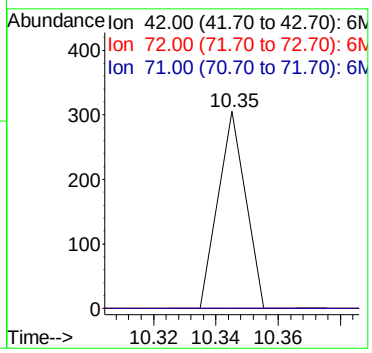

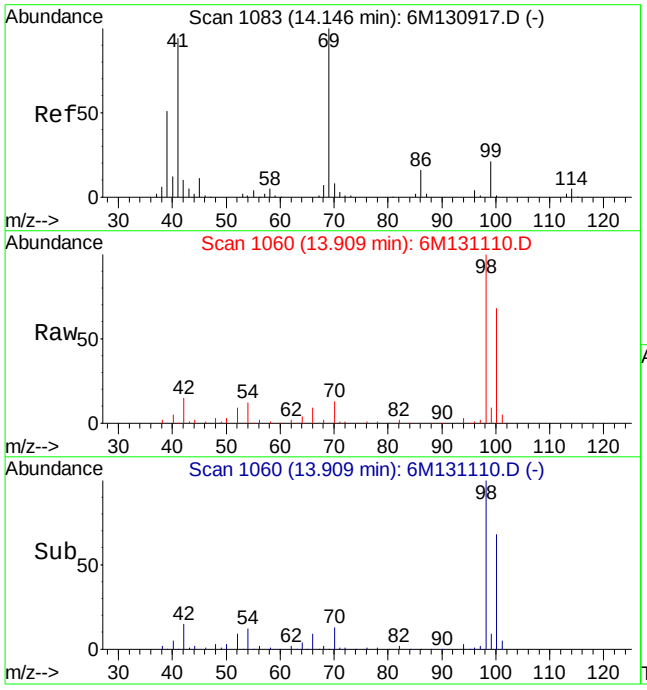

#60
Ethyl Methacrylate
Concen: 0.65 ug/L
RT: 13.91 min Scan# 1060
Delta R.T. -0.23 min
Lab File: 6M131110.D
Acq: 16 Feb 2015 11:47

Tgt Ion: 69 Resp: 933

Ion	Ratio	Lower	Upper
69	100		
41	184.9	46.5	108.5#

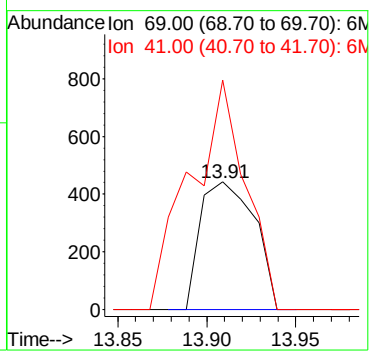

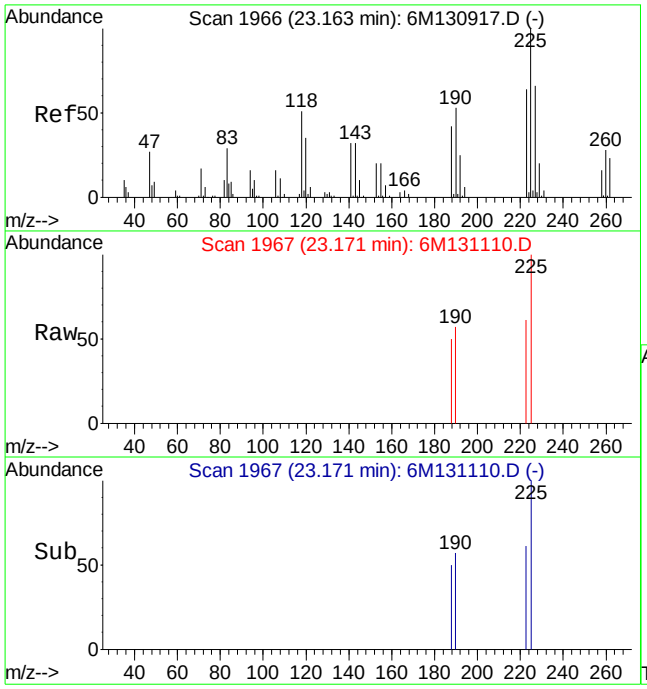

#99
Hexachlorobutadiene
Concen: 0.41 ug/L
RT: 23.17 min Scan# 1967
Delta R.T. 0.01 min
Lab File: 6M131110.D
Acq: 16 Feb 2015 11:47

Tgt Ion:225 Resp: 1414

Ion	Ratio	Lower	Upper
225	100		
223	66.5	38.4	89.6
227	46.7	38.5	89.9

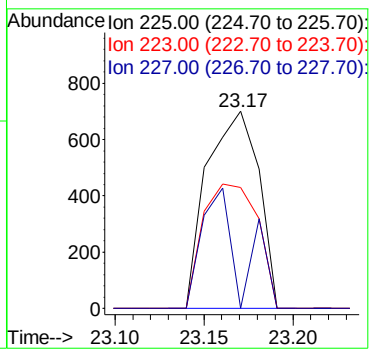

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021715\6M131142.D Vial: 5
Acq On : 17 Feb 2015 11:45 Operator: TMB
Sample : WG512497-01 VBLK0217 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 08:13:35 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	641836	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.15	117	472148	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	242309	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	153340	23.6541 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.60%		
43) 1,2-Dichloroethane-d4	11.12	65	180969	23.4260 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.72%		
58) Toluene-d8	13.90	98	542324	25.1707 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.68%		
80) p-Bromofluorobenzene	17.94	95	219956	26.9970 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.00%		

Target Compounds					Qvalue
60) Ethyl Methacrylate	13.90	69	1801	0.8444 ug/L	89
99) Hexachlorobutadiene	23.17	225	1961	0.6088 ug/L	89

(#) = qualifier out of range (m) = manual integration
6M131142.D 8260WT.M Thu Feb 19 08:13:35 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021715\6M131142.D Vial: 5
Acq On : 17 Feb 2015 11:45 Operator: TMB
Sample : WG512497-01 VBLK0217 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 8:13 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

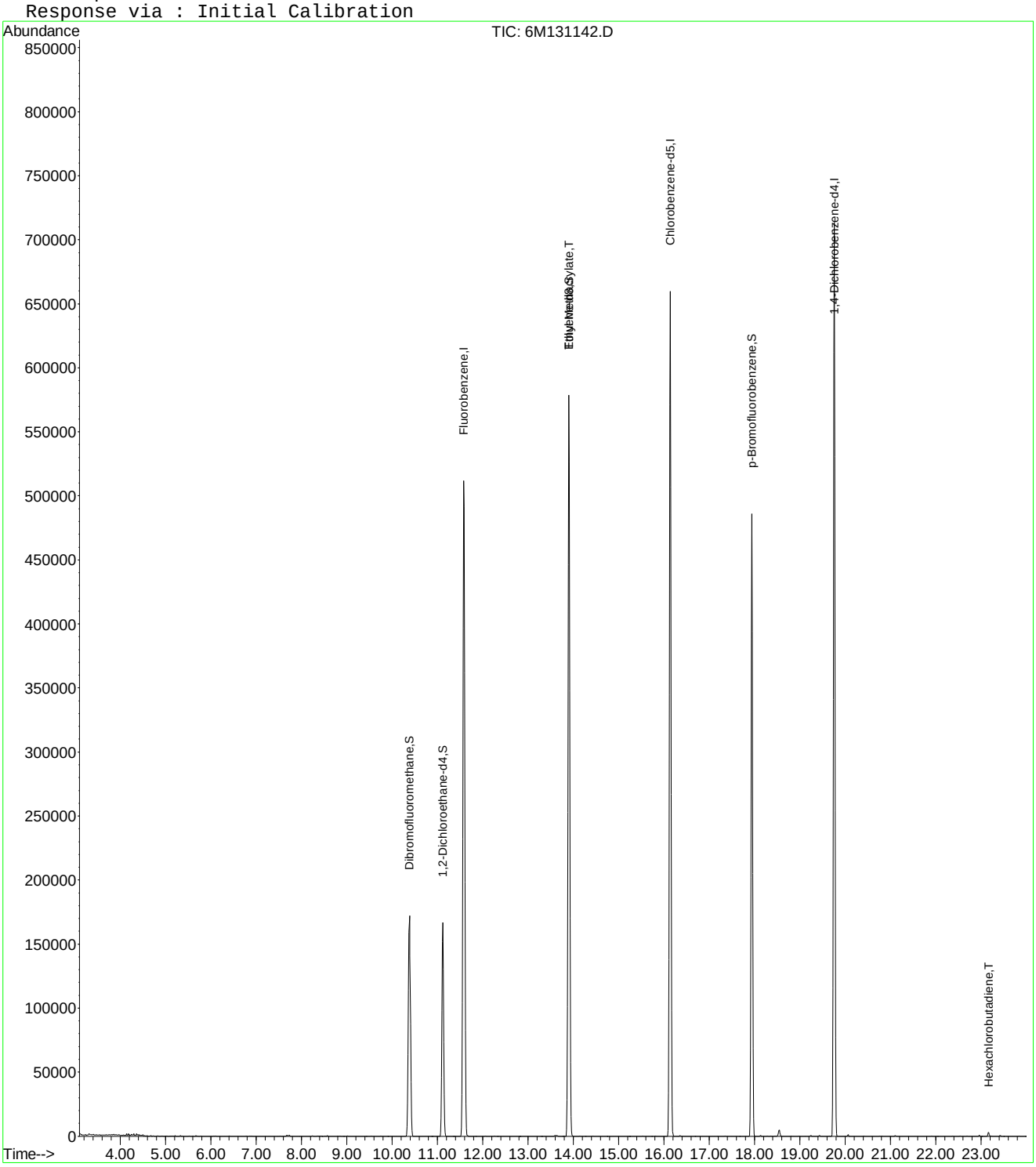

6M131142.D 8260WT.M Thu Feb 19 08:13:35 2015 Page 2

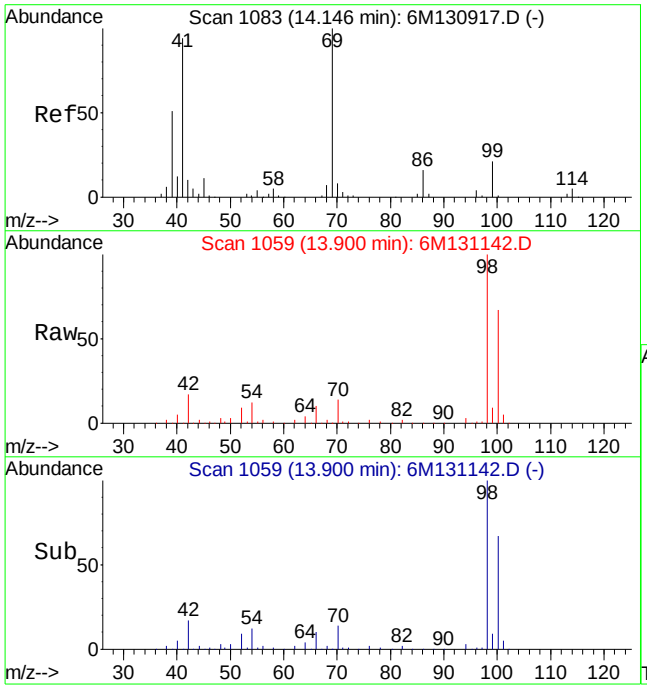

#60
Ethyl Methacrylate
Concen: 0.84 ug/L
RT: 13.90 min Scan# 1059
Delta R.T. -0.24 min
Lab File: 6M131142.D
Acq: 17 Feb 2015 11:45

Tgt Ion: 69 Resp: 1801

Ion	Ratio	Lower	Upper
69	100		
41	68.0	46.5	108.5

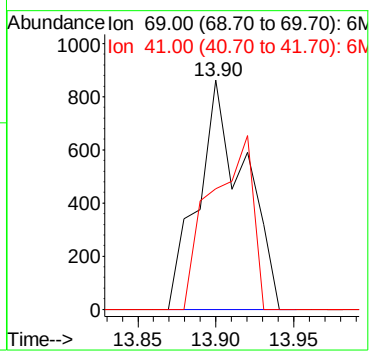

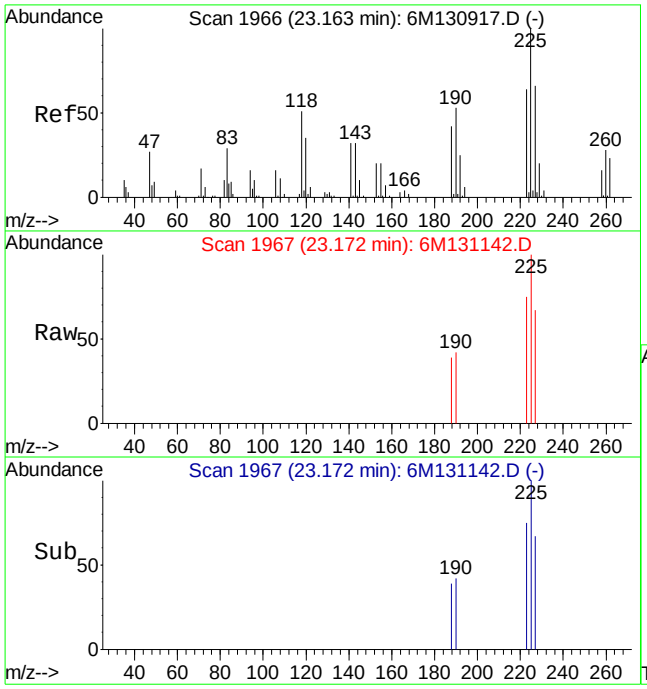

#99
Hexachlorobutadiene
Concen: 0.61 ug/L
RT: 23.17 min Scan# 1967
Delta R.T. 0.01 min
Lab File: 6M131142.D
Acq: 17 Feb 2015 11:45

Tgt Ion:225 Resp: 1961

Ion	Ratio	Lower	Upper
225	100		
223	47.0	38.4	89.6
227	63.4	38.5	89.9

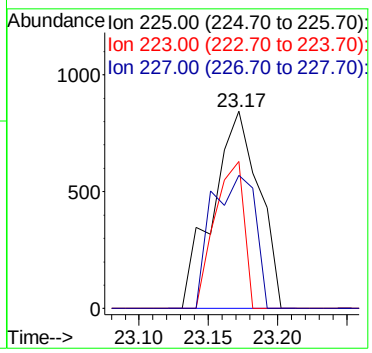

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131131.D Vial: 26
Acq On : 16 Feb 2015 22:37 Operator: TMB
Sample : WG512365-06 VBLK0216 BLANK STD 624 Inst : HPMS6
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 09:11:53 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	514546	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	403007	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	215569	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	127368	24.5082 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.04%		
43) 1,2-Dichloroethane-d4	11.12	65	150237	24.2589 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.04%		
58) Toluene-d8	13.91	98	446452	24.2760 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.12%		
80) p-Bromofluorobenzene	17.94	95	193390	26.6807 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.72%		
Target Compounds					Qvalue
26) Vinyl Acetate	8.61	43	1337	0.3993 ug/L #	77
60) Ethyl Methacrylate	13.90	69	1042	0.7222 ug/L #	29

(#) = qualifier out of range (m) = manual integration
6M131131.D 8260WT.M Tue Feb 17 09:11:53 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021615\6M131131.D Vial: 26
Acq On : 16 Feb 2015 22:37 Operator: TMB
Sample : WG512365-06 VBLK0216 BLANK STD 624 Inst : HPMS6
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 9:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

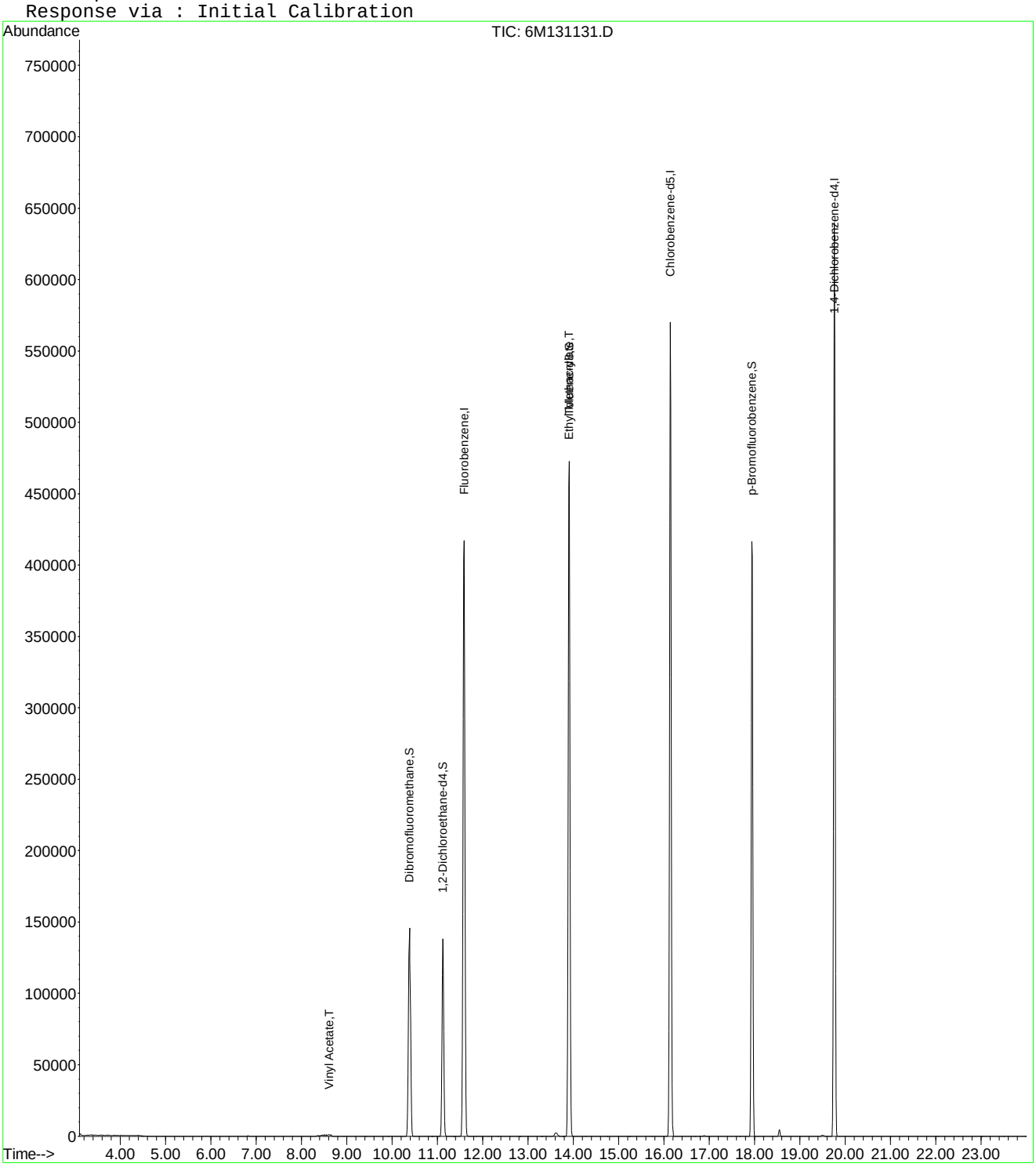

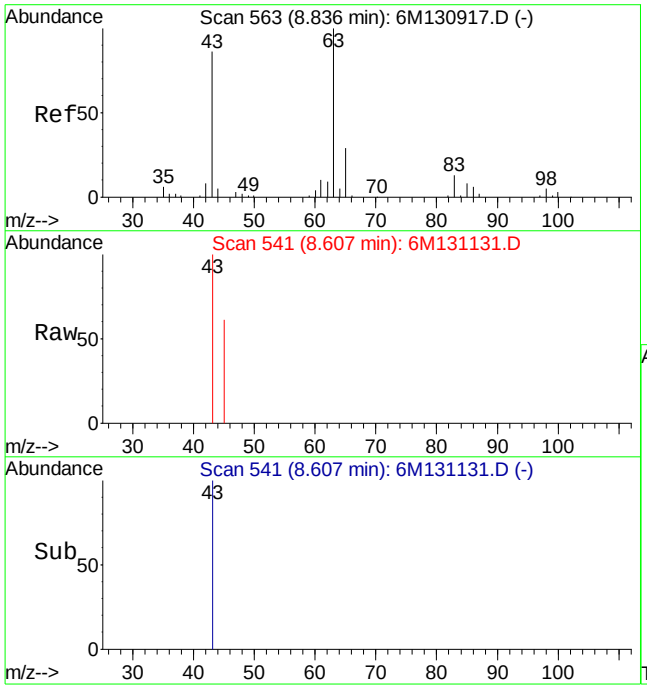

#26
Vinyl Acetate
Concen: 0.40 ug/L
RT: 8.61 min Scan# 541
Delta R.T. -0.22 min
Lab File: 6M131131.D
Acq: 16 Feb 2015 22:37

Tgt Ion: 43 Resp: 1337

Ion	Ratio	Lower	Upper
43	100		
86	0.0	5.0	11.6#

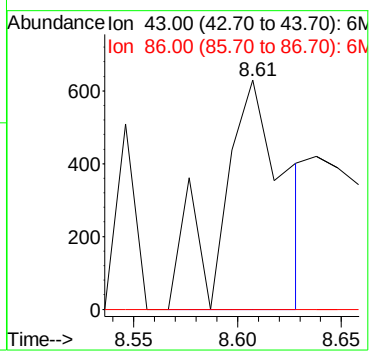

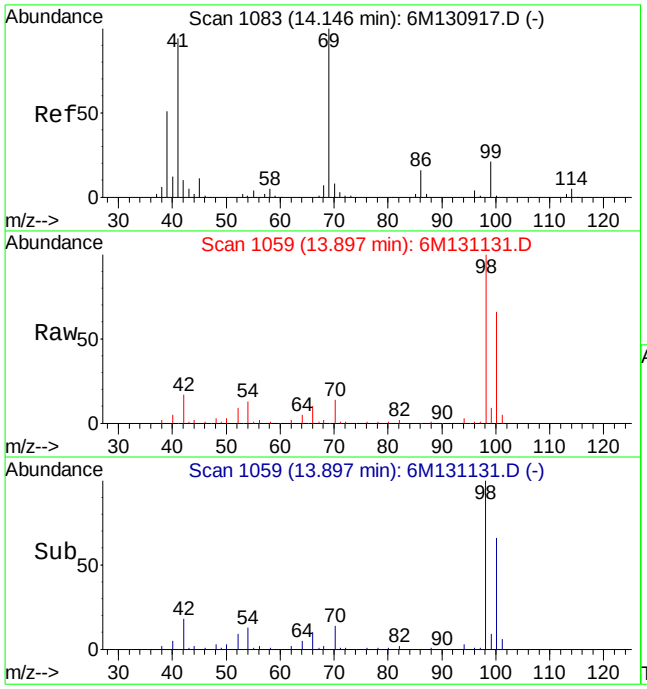

#60
Ethyl Methacrylate
Concen: 0.72 ug/L
RT: 13.90 min Scan# 1059
Delta R.T. -0.25 min
Lab File: 6M131131.D
Acq: 16 Feb 2015 22:37

Tgt Ion: 69 Resp: 1042

Ion	Ratio	Lower	Upper
69	100		
41	138.8	46.5	108.5#

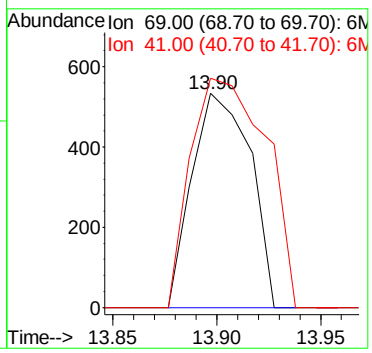

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021715\6M131162.D Vial: 25
Acq On : 17 Feb 2015 22:05 Operator: TMB
Sample : WG512497-06 VBLK0217 BLANK STD 624 Inst : HPMS6
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 08:13:50 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	514598	25.00 ug/L	0.01
57) Chlorobenzene-d5	16.14	117	381590	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	204903	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	127580	24.5465 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.20%		
43) 1,2-Dichloroethane-d4	11.12	65	159056	25.6803 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.72%		
58) Toluene-d8	13.90	98	440634	25.3044 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.20%		
80) p-Bromofluorobenzene	17.94	95	182136	26.4360 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.76%		

Target Compounds					Qvalue
60) Ethyl Methacrylate	13.91	69	955	0.7139 ug/L #	50

(#) = qualifier out of range (m) = manual integration
6M131162.D 8260WT.M Thu Feb 19 08:13:51 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021715\6M131162.D Vial: 25
Acq On : 17 Feb 2015 22:05 Operator: TMB
Sample : WG512497-06 VBLK0217 BLANK STD 624 Inst : HPMS6
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 8:13 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

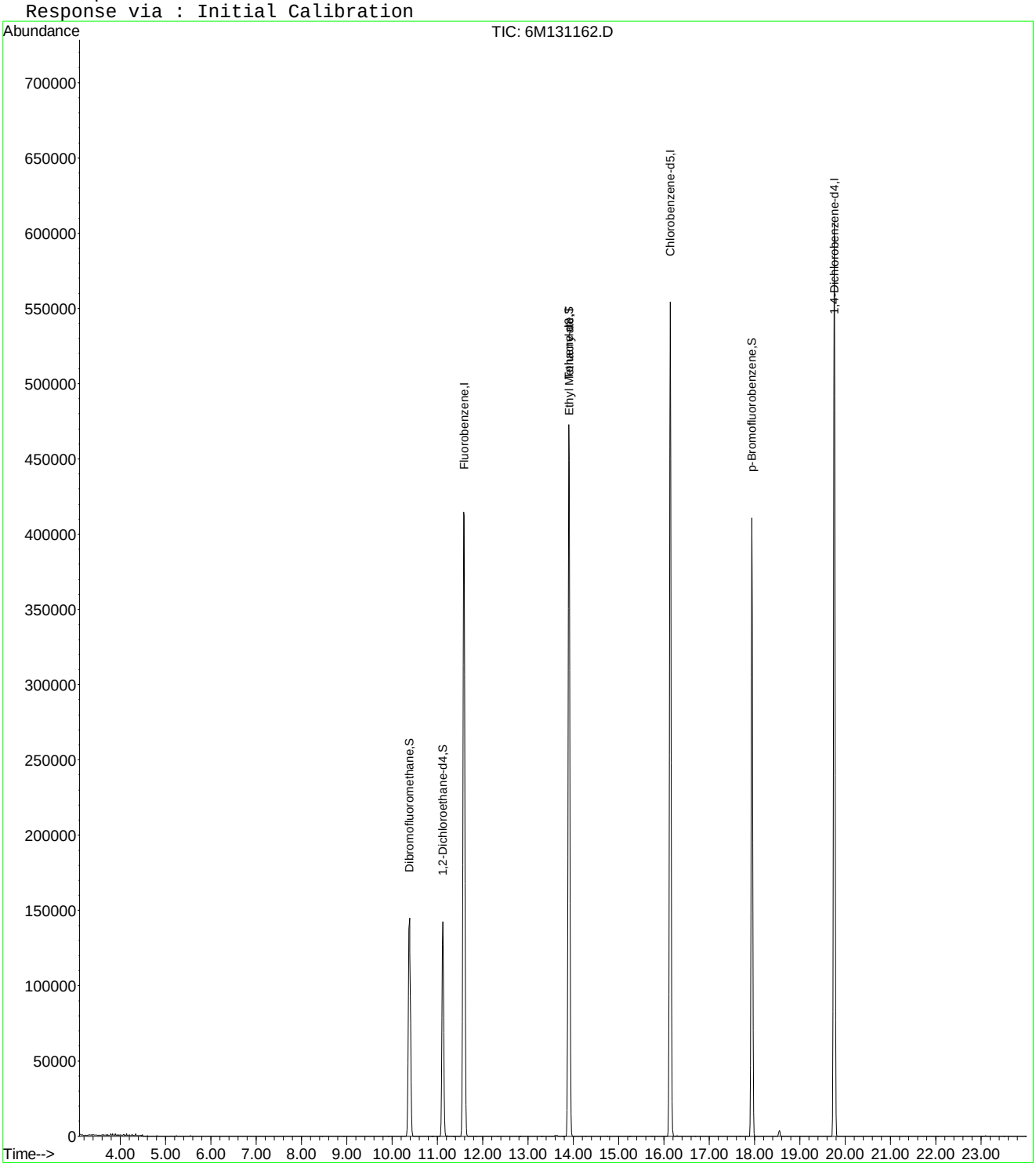

6M131162.D 8260WT.M Thu Feb 19 08:13:51 2015 Page 2

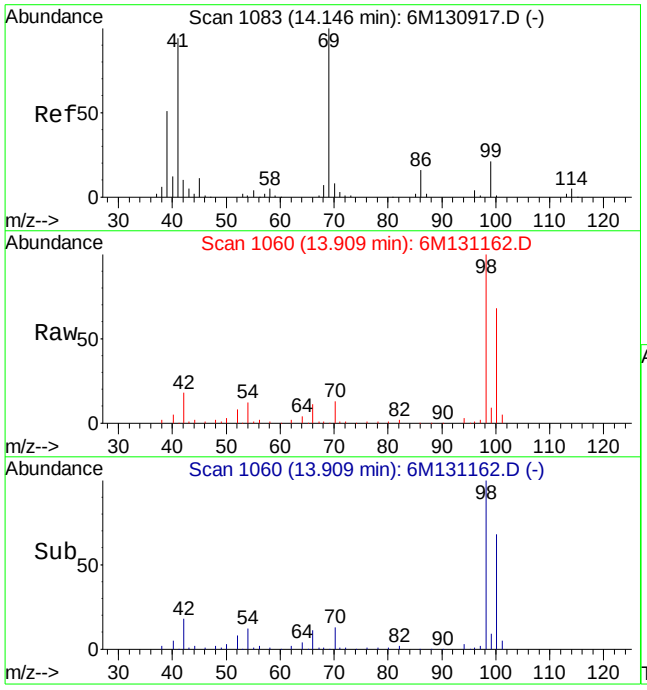

#60
Ethyl Methacrylate
Concen: 0.71 ug/L
RT: 13.91 min Scan# 1060
Delta R.T. -0.23 min
Lab File: 6M131162.D
Acq: 17 Feb 2015 22:05

Tgt Ion: 69 Resp: 955

Ion	Ratio	Lower	Upper
69	100		
41	120.6	46.5	108.5#

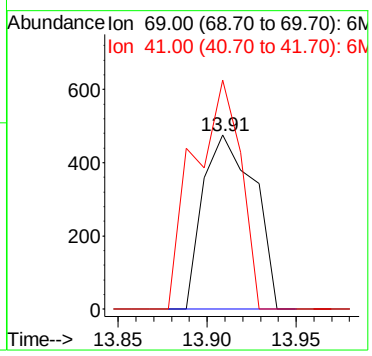

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021615\6M131111.D Vial: 6
Acq On : 16 Feb 2015 12:18 Operator: TMB
Sample : WG512365-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD68892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 16 12:42:43 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	645951	25.00 ug/L	0.01
57) Chlorobenzene-d5	16.14	117	493515	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	271439	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	158261	24.2577 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.04%		
43) 1,2-Dichloroethane-d4	11.12	65	181275	23.3161 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.28%		
58) Toluene-d8	13.91	98	549024	24.3784 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.52%		
80) p-Bromofluorobenzene	17.94	95	239963	26.2918 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.16%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	133552	11.6325 ug/L	99
3) Chloromethane	3.85	50	121543	13.4118 ug/L	97
4) Vinyl Chloride	4.08	62	146539	18.8790 ug/L	98
5) 1,3-Butadiene	4.12	54	91666	11.3351 ug/L	96
6) Bromomethane	5.00	94	44238	11.0070 ug/L	100
7) Chloroethane	5.17	64	95975	21.3236 ug/L	95
8) Trichlorofluoromethane	5.68	101	276607	19.1115 ug/L	99
9) Diethyl ether	6.23	59	391097	93.9333 ug/L	96
10) Isoprene	6.27	67	198834	25.8003 ug/L	94
11) Acrolein	6.48	56	27134	334.7960 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	133748	19.4413 ug/L	93
13) Acetone	6.59	43	20298	20.3656 ug/L	92
14) 1,1-Dichloroethene	6.83	61	218629	18.7753 ug/L	89
15) Tert-Butyl Alcohol	6.95	59	48061	232.4844 ug/L	96
16) Dimethyl Sulfide	7.12	62	141151	22.2292 ug/L	92
17) Iodomethane	7.40	142	48405	10.0547 ug/L	86
18) Methyl acetate	7.40	43	48097	12.4013 ug/L	96
19) Methylene Chloride	7.68	84	121260	21.0328 ug/L	96
20) Carbon Disulfide	7.73	76	372995	18.8290 ug/L	100
21) Acrylonitrile	7.88	53	24699	17.7774 ug/L	97
22) Methyl Tert Butyl Ether	7.91	73	263103	21.5091 ug/L	99
23) trans-1,2-Dichloroethene	8.18	96	131739	21.9373 ug/L	91
24) n-Hexane	8.27	57	169604	17.2061 ug/L	97
25) Diisopropyl ether	8.65	45	2088984	86.6591 ug/L	96
26) Vinyl Acetate	8.84	43	178354	42.4324 ug/L	100
27) 1,1-Dichloroethane	8.87	63	262728	20.3906 ug/L	97
28) Ethyl-Tert-Butyl ether	9.29	59	1871497	97.8478 ug/L	98
29) 2-Butanone	9.50	43	27808	17.9895 ug/L	95
30) Propionitrile	9.62	54	38614	82.0317 ug/L	97
31) 2,2-Dichloropropane	9.74	77	257378	23.3758 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	143736	22.4158 ug/L	95
33) Chloroform	10.06	83	274979	22.0538 ug/L	99
34) 1-Bromopropane	10.21	122	29606	21.4441 ug/L	97
35) Bromochloromethane	10.32	130	67207	20.0798 ug/L	97
36) Tetrahydrofuran	10.34	42	80845	82.8726 ug/L	99
38) 1,1,1-Trichloroethane	10.67	97	269608	21.7089 ug/L	98
39) Cyclohexane	10.69	56	228215	18.4416 ug/L	95
40) 1,1-Dichloropropene	10.88	75	202452	21.1677 ug/L	91
41) Tert-Amyl-Methyl ether	11.02	73	1325403	100.3581 ug/L	94
42) Carbon Tetrachloride	11.05	117	236014	22.3932 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M131111.D 8260WT.M Mon Feb 16 12:42:43 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021615\6M131111.D Vial: 6
Acq On : 16 Feb 2015 12:18 Operator: TMB
Sample : WG512365-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD68892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 16 12:42:43 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.26	62	200403	20.3135 ug/L		90
46)	Benzene	11.30	78	512459	21.6272 ug/L		96
47)	Trichloroethene	12.17	130	134954	21.8283 ug/L		72
48)	Methylcyclohexane	12.27	83	197113	20.3160 ug/L		98
49)	1,2-Dichloropropane	12.43	63	129174	20.2499 ug/L	#	74
50)	1,4-Dioxane	12.76	88	4294	182.5860 ug/L		91
51)	Bromodichloromethane	12.77	83	196870	21.4478 ug/L		98
52)	Dibromomethane	12.88	93	62709	20.7563 ug/L		99
53)	2-Chloroethyl Vinyl Ether	13.13	63	50289	19.3418 ug/L		94
54)	4-Methyl-2-Pentanone	13.17	58	23008	17.2082 ug/L		97
55)	cis-1,3-Dichloropropene	13.53	75	207562	22.9935 ug/L		97
56)	Dimethyl Disulfide	13.84	79	85257	18.9660 ug/L		96
59)	Toluene	14.02	91	551243	22.1500 ug/L		100
60)	Ethyl Methacrylate	14.15	69	105641	21.7555 ug/L		100
62)	trans-1,3-Dichloropropene	14.23	75	170711	21.4923 ug/L		92
63)	1,1,2-Trichloroethane	14.49	97	77796	20.3128 ug/L		99
64)	2-Hexanone	14.43	43	40401	16.5971 ug/L		97
65)	1,3-Dichloropropane	14.86	76	149548	20.9995 ug/L		95
66)	Tetrachloroethene	14.99	166	139069	19.4341 ug/L	#	85
67)	Dibromochloromethane	15.31	129	109826	21.2008 ug/L		97
68)	1,2-Dibromoethane	15.60	107	79376	21.4148 ug/L		100
69)	1-Chlorohexane	15.73	91	187972	22.2388 ug/L		88
70)	Chlorobenzene	16.20	112	341895	19.8767 ug/L	#	64
71)	1,1,1,2-Tetrachloroethane	16.25	131	131594	21.0958 ug/L		91
72)	Ethylbenzene	16.25	106	198913	21.0075 ug/L		89
73)	m-,p-Xylene	16.36	106	475154	41.9481 ug/L		86
74)	o-Xylene	17.02	106	228186	19.9827 ug/L		88
75)	Styrene	17.07	104	401977	22.0009 ug/L		83
76)	Bromoform	17.64	173	65966	20.4629 ug/L		98
77)	Isopropylbenzene	17.53	105	608302	20.2341 ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.80	83	82855	20.9825 ug/L		99
81)	1,2,3-Trichloropropane	18.02	110	25874	19.5821 ug/L		92
82)	trans-1,4-Dichloro-2-Buten	18.09	53	27802	15.3023 ug/L		77
83)	n-Propylbenzene	18.15	91	726304	21.1874 ug/L		97
84)	Bromobenzene	18.28	156	148035	21.0876 ug/L		86
85)	1,3,5-Trimethylbenzene	18.37	105	573058	23.5849 ug/L		93
86)	2-Chlorotoluene	18.46	91	465316	20.7452 ug/L		97
87)	4-Chlorotoluene	18.51	91	476415	21.3089 ug/L		89
88)	a-Methylstyrene	18.85	118	302781	22.9356 ug/L		95
89)	tert-Butylbenzene	18.92	134	99300	18.3320 ug/L		98
90)	1,2,4-Trimethylbenzene	18.98	105	583397	23.3787 ug/L		83
91)	sec-Butylbenzene	19.25	105	607404	20.6039 ug/L		97
92)	p-Isopropyltoluene	19.44	119	514345	21.2642 ug/L		97
93)	1,3-Dichlorobenzene	19.66	146	262845	18.1969 ug/L		87
94)	1,4-Dichlorobenzene	19.81	146	276236	18.8051 ug/L		85
95)	n-Butylbenzene	20.06	91	495751	22.4085 ug/L		93
96)	1,2-Dichlorobenzene	20.40	146	226485	17.6776 ug/L		87
97)	1,2-Dibromo-3-Chloropropan	21.60	75	17028	21.1085 ug/L		76
98)	1,2,4-Trichlorobenzene	22.96	180	174316	21.0838 ug/L		98
99)	Hexachlorobutadiene	23.17	225	93422	25.8901 ug/L		99
100)	Naphthalene	23.43	128	243961	20.2879 ug/L		100
101)	1,2,3-Trichlorobenzene	23.85	180	146449	20.9656 ug/L		98

(#) = qualifier out of range (m) = manual integration
6M131111.D 8260WT.M Mon Feb 16 12:42:43 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021615\6M131111.D Vial: 6
Acq On : 16 Feb 2015 12:18 Operator: TMB
Sample : WG512365-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD68892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 16 12:42 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

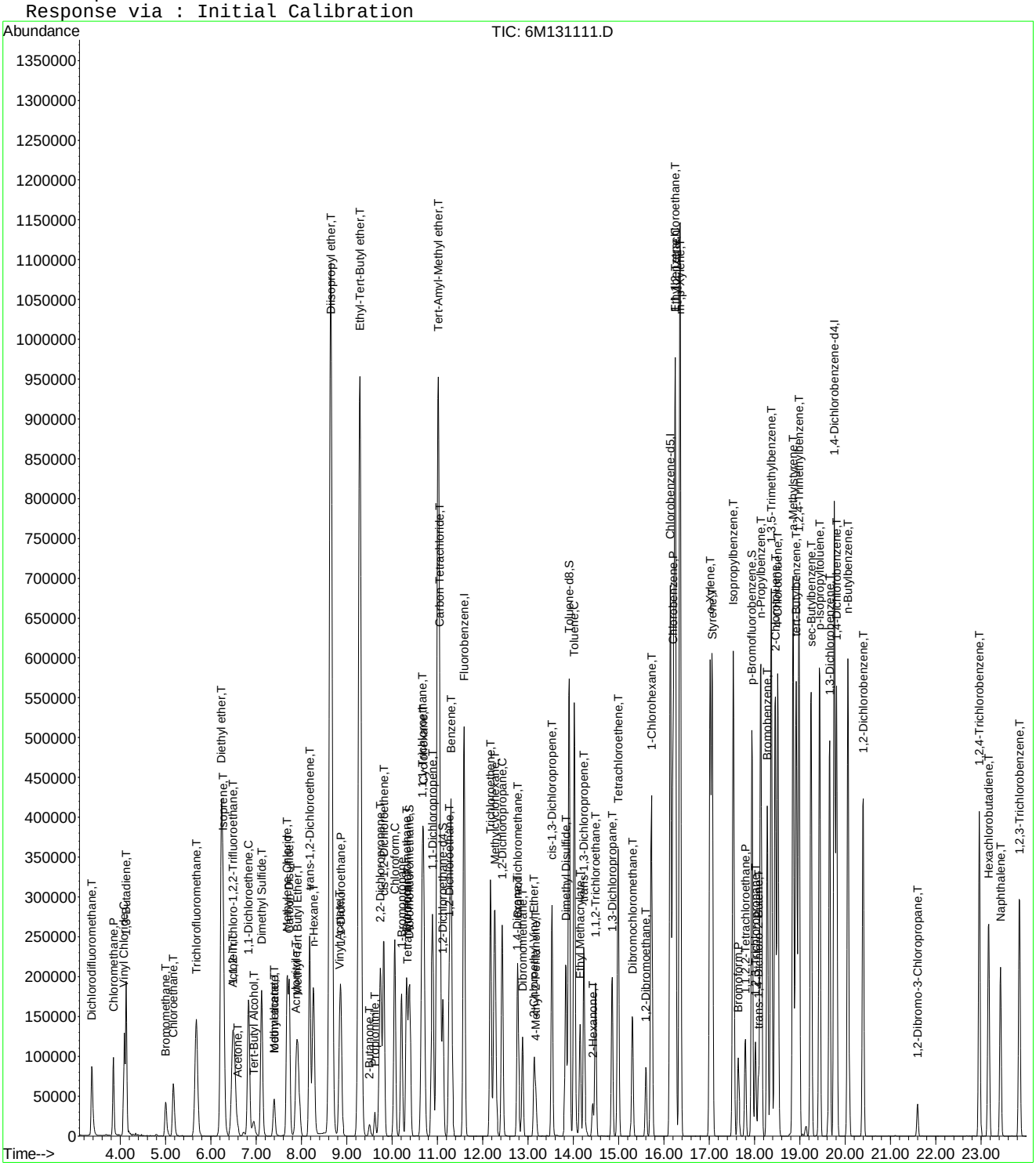
Abundance
TIC: 6M131111.D
Time-->
Dichlorodifluoromethane,T
Chloromethane,P
Vinyl Chloride,T
Bromomethane,T
Chloroethane,T
Trichlorofluoromethane,T
Acetone,T
Tert-Butyl Alcohol,T
Diethyl ether,T
Dimethyl Sulfide,T
Isopropyl ether,T
Ethyl-Tert-Butyl ether,T
Tert-Amyl-Methyl ether,T
Carbon Tetrachloride,T
Fluorobenzene,I
Benzene,T
Toluene-d8,S
Toluene,C
Chlorobenzene-d5,I
Chlorobenzene,P
Ethylbenzene,T
Styrene,T
Xylene,T
Isopropylbenzene,T
n-Propylbenzene,T
1,3,5-Trimethylbenzene,T
1,2,4-Trimethylbenzene,T
n-Butylbenzene,T
1,4-Dichlorobenzene-d4,I
1,2-Dichlorobenzene,T
1,2,4-Trichlorobenzene,T
1,2,3-Trichlorobenzene,T
Naphthalene,T
Hexachlorobutadiene,T
1,2-Dibromo-3-Chloropropane,T
1-Chlorohexane,T
Tetrachloroethene,T
1,3-Dichloropropane,T
1,2-Dibromoethane,T
Dibromochloromethane,T
Bromoform,P
p-Bromofluorobenzene,S
Bromobenzene,T
sec-Butylbenzene,T
p-Isopropyltoluene,T
1,3-Dichlorobenzene,T
cis-1,3-Dichloropropene,T
Dimethyl Disulfide,T
Methyl Methacrylate,T
2-Hexanone,T
1,1,2-Trichloroethane,T
Chloroform,C
Benzene,T
Tetrachloroethene,T
Methyl Trichloroethane,T
1,2-Dichloroethane,T
1,2-Dichloropropane,C
Methylene Chloride,T
Acrylonitrile,T
Methyl Tert Butyl Ether,T
n-Hexane,T
trans-1,2-Dichloroethene,T
Vinyl Acetate,P
2-Butanone,T
Bromoethane,T
Acrylonitrile,T
Methyl Acrylate,T
Methyl Methacrylate,T
Methyl Iodide,T
Methyl Methacrylate,T
Methyl Methacrylate,T
Methyl Methacrylate

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021715\6M131144.D Vial: 7
Acq On : 17 Feb 2015 12:47 Operator: TMB
Sample : WG512497-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD68892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 13:11:36 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	625344	25.00 ug/L	0.01
57) Chlorobenzene-d5	16.14	117	469006	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	263602	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	155949	24.6910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.76%		
43) 1,2-Dichloroethane-d4	11.12	65	190756	25.3441 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.36%		
58) Toluene-d8	13.91	98	527032	24.6248 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.48%		
80) p-Bromofluorobenzene	17.94	95	229492	25.8921 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	252004	22.6731 ug/L	98
3) Chloromethane	3.85	50	143882	16.4000 ug/L	100
4) Vinyl Chloride	4.08	62	162167	21.5808 ug/L	99
5) 1,3-Butadiene	4.13	54	81342	10.3777 ug/L	98
6) Bromomethane	5.00	94	52138	13.2216 ug/L	100
7) Chloroethane	5.17	64	94974	21.7966 ug/L	92
8) Trichlorofluoromethane	5.68	101	278415	19.8704 ug/L	98
9) Diethyl ether	6.23	59	376331	93.3654 ug/L	96
10) Isoprene	6.27	67	185561	24.8714 ug/L	95
11) Acrolein	6.48	56	14729	187.7242 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	131485	19.7422 ug/L	95
13) Acetone	6.59	43	20168	20.9020 ug/L	89
14) 1,1-Dichloroethene	6.83	61	213804	18.9660 ug/L	89
15) Tert-Butyl Alcohol	6.94	59	48219	240.9350 ug/L	94
16) Dimethyl Sulfide	7.12	62	131053	21.3190 ug/L	90
17) Iodomethane	7.39	142	47163	10.1068 ug/L	77
18) Methyl acetate	7.40	43	47129	12.5522 ug/L	98
19) Methylene Chloride	7.68	84	115875	20.7611 ug/L	98
20) Carbon Disulfide	7.73	76	343208	17.8962 ug/L	99
21) Acrylonitrile	7.88	53	23310	17.3305 ug/L	99
22) Methyl Tert Butyl Ether	7.91	73	269610	22.7674 ug/L	97
23) trans-1,2-Dichloroethene	8.18	96	126184	21.7047 ug/L	92
24) n-Hexane	8.26	57	159684	16.7335 ug/L	98
25) Diisopropyl ether	8.65	45	1965111	84.2068 ug/L	95
26) Vinyl Acetate	8.83	43	152806	37.5523 ug/L	99
27) 1,1-Dichloroethane	8.86	63	249646	20.0138 ug/L	97
28) Ethyl-Tert-Butyl ether	9.28	59	1820284	98.3064 ug/L	98
29) 2-Butanone	9.50	43	27233	18.1981 ug/L	98
30) Propionitrile	9.62	54	38738	85.0070 ug/L	97
31) 2,2-Dichloropropane	9.74	77	241717	22.6768 ug/L	94
32) cis-1,2-Dichloroethene	9.81	96	136280	21.9534 ug/L	98
33) Chloroform	10.06	83	266642	22.0899 ug/L	98
34) 1-Bromopropane	10.21	122	27468	20.5657 ug/L	100
35) Bromochloromethane	10.32	130	67715	20.8983 ug/L	98
36) Tetrahydrofuran	10.34	42	80399	85.1312 ug/L	98
38) 1,1,1-Trichloroethane	10.66	97	264683	22.0147 ug/L	97
39) Cyclohexane	10.70	56	213298	17.8041 ug/L	97
40) 1,1-Dichloropropene	10.89	75	193888	20.9403 ug/L	90
41) Tert-Amyl-Methyl ether	11.01	73	1289894	100.8879 ug/L	93
42) Carbon Tetrachloride	11.06	117	225150	22.0664 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M131144.D 8260WT.M Tue Feb 17 13:11:37 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021715\6M131144.D Vial: 7
Acq On : 17 Feb 2015 12:47 Operator: TMB
Sample : WG512497-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD68892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 13:11:36 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.25	62	200968	21.0420 ug/L		89
46)	Benzene	11.30	78	486143	21.1926 ug/L		97
47)	Trichloroethene	12.17	130	134988	22.5533 ug/L		78
48)	Methylcyclohexane	12.27	83	186042	19.8069 ug/L		96
49)	1,2-Dichloropropane	12.43	63	123566	20.0091 ug/L	#	73
50)	1,4-Dioxane	12.76	88	3796	166.7294 ug/L		79
51)	Bromodichloromethane	12.77	83	190702	21.4604 ug/L		99
52)	Dibromomethane	12.87	93	63091	21.5709 ug/L		100
53)	2-Chloroethyl Vinyl Ether	13.13	63	50649	20.1222 ug/L		96
54)	4-Methyl-2-Pentanone	13.17	58	22603	17.4624 ug/L		96
55)	cis-1,3-Dichloropropene	13.53	75	200630	22.9580 ug/L		97
56)	Dimethyl Disulfide	13.83	79	85904	19.7396 ug/L		96
59)	Toluene	14.02	91	527113	22.2873 ug/L		99
60)	Ethyl Methacrylate	14.15	69	105341	22.8044 ug/L		97
62)	trans-1,3-Dichloropropene	14.23	75	168464	22.3177 ug/L		93
63)	1,1,2-Trichloroethane	14.49	97	78252	21.4996 ug/L		100
64)	2-Hexanone	14.43	43	42077	18.1889 ug/L		98
65)	1,3-Dichloropropane	14.86	76	147887	21.8515 ug/L		93
66)	Tetrachloroethene	14.99	166	131074	19.2740 ug/L	#	81
67)	Dibromochloromethane	15.30	129	109832	22.3100 ug/L		97
68)	1,2-Dibromoethane	15.60	107	78503	22.2860 ug/L		97
69)	1-Chlorohexane	15.73	91	175934	21.9023 ug/L		88
70)	Chlorobenzene	16.21	112	329761	20.1731 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.25	131	128659	21.7031 ug/L		90
72)	Ethylbenzene	16.25	106	192662	21.4106 ug/L		89
73)	m-,p-Xylene	16.35	106	453386	42.1180 ug/L		84
74)	o-Xylene	17.02	106	214958	19.8080 ug/L		82
75)	Styrene	17.06	104	383929	22.1112 ug/L		81
76)	Bromoform	17.65	173	67073	21.8646 ug/L		99
77)	Isopropylbenzene	17.53	105	585698	20.5003 ug/L		97
79)	1,1,2,2-Tetrachloroethane	17.80	83	82195	21.4342 ug/L		98
81)	1,2,3-Trichloropropane	18.02	110	28346	22.0908 ug/L		99
82)	trans-1,4-Dichloro-2-Buten	18.09	53	29557	16.7037 ug/L		74
83)	n-Propylbenzene	18.15	91	699725	21.0189 ug/L		96
84)	Bromobenzene	18.28	156	146299	21.4599 ug/L		84
85)	1,3,5-Trimethylbenzene	18.37	105	557222	23.6150 ug/L		93
86)	2-Chlorotoluene	18.45	91	452855	20.7899 ug/L		97
87)	4-Chlorotoluene	18.51	91	462139	21.2849 ug/L		88
88)	a-Methylstyrene	18.85	118	282607	22.0439 ug/L		99
89)	tert-Butylbenzene	18.92	134	95442	18.1436 ug/L		85
90)	1,2,4-Trimethylbenzene	18.98	105	559395	23.0833 ug/L		84
91)	sec-Butylbenzene	19.25	105	579907	20.2560 ug/L		98
92)	p-Isopropyltoluene	19.44	119	499143	21.2493 ug/L		97
93)	1,3-Dichlorobenzene	19.66	146	251656	17.9403 ug/L		84
94)	1,4-Dichlorobenzene	19.81	146	272296	19.0880 ug/L		84
95)	n-Butylbenzene	20.07	91	476592	22.1830 ug/L		94
96)	1,2-Dichlorobenzene	20.40	146	222598	17.8907 ug/L		85
97)	1,2-Dibromo-3-Chloropropan	21.59	75	17109	21.8106 ug/L		76
98)	1,2,4-Trichlorobenzene	22.97	180	173814	21.6481 ug/L		99
99)	Hexachlorobutadiene	23.17	225	91778	26.1907 ug/L		97
100)	Naphthalene	23.43	128	244027	20.8968 ug/L		98
101)	1,2,3-Trichlorobenzene	23.85	180	145334	21.4246 ug/L		98

(#) = qualifier out of range (m) = manual integration
6M131144.D 8260WT.M Tue Feb 17 13:11:37 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021715\6M131144.D Vial: 7
Acq On : 17 Feb 2015 12:47 Operator: TMB
Sample : WG512497-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD68892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 13:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

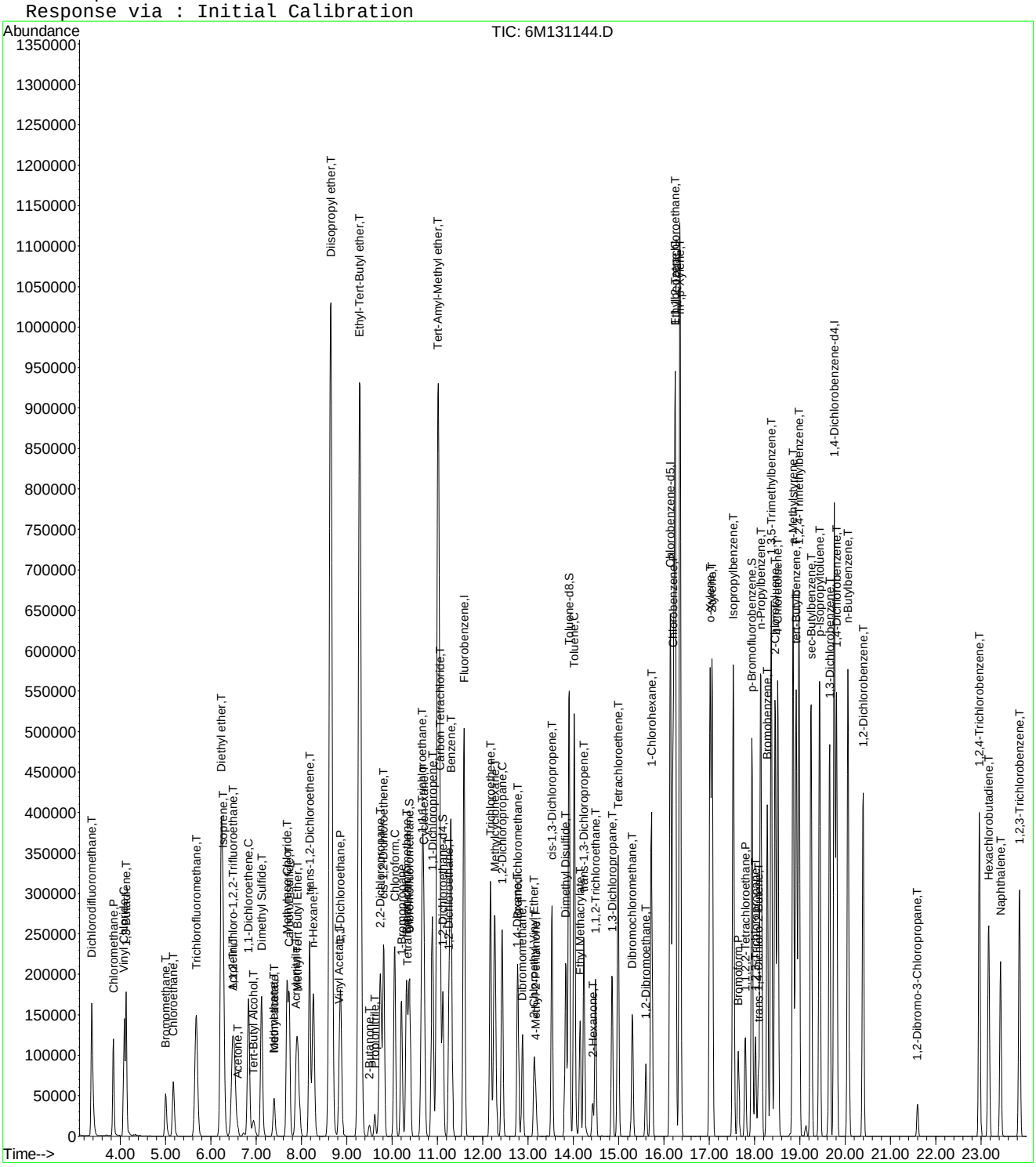

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-15	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW11-021115	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	01/28/2015 11:27
Workgroup #:	WG512246	**Analyst:**	JDS	**Run Date:**	02/13/2015 18:27
Collect Date:	02/11/2015 10:20	**Dilution:**	1	**File ID:**	16G46690
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	1.78	J	5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-16	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW08-021115	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	01/28/2015 11:27
Workgroup #:	WG512246	**Analyst:**	JDS	**Run Date:**	02/13/2015 18:38
Collect Date:	02/11/2015 11:35	**Dilution:**	1	**File ID:**	16G46691
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	9.40		5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:

y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 012815
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: STD68250

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG509993 WG510060

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46393	WG509993-01 0.67 umol/mol STD RSK175	NA	1	1	STD67276	01/28/15 10:20
16G46394	WG509993-02 1.67 umol/mol STD RSK175	NA	1	1	STD67276	01/28/15 10:31
16G46395	WG509993-03 33.3 umol/mol STD RSK175	NA	1	1	STD67276	01/28/15 10:42
16G46396	WG509993-04 66.7 umol/mol STD RSK175	NA	1	1	STD67274	01/28/15 10:53
16G46397	WG509993-05 133 umol/mol STD RSK175	NA	1	1	STD67274	01/28/15 11:04
16G46398	WG509993-06 333 umol/mol STD RSK175	NA	1	1	STD67274	01/28/15 11:15
16G46399	WG509993-07 533 umol/mol STD RSK175	NA	1	1	STD67274	01/28/15 11:27
16G46400	RINSE	NA	1	1		01/28/15 11:38
16G46401	WG509993-08 133 umol/mol ALT SRC STD	NA	1	1	STD68250	01/28/15 12:28
16G46402	WG510060-01 BLANK STD RSK175	NA	1	1		01/28/15 12:48
16G46403	L15011184-08 C D3 5X RSK175	7	1	5		01/28/15 13:02
16G46404	L15011184-10 C D3 5X RSK175	6	1	5		01/28/15 13:13
16G46405	L15011184-06 C D3 20X RSK175	7	1	20		01/28/15 13:24
16G46406	WG510060-02 67umol/mol LCS RSK175	NA	1	1	STD68250	01/28/15 14:45
16G46407	L15011110-01 C REF RSK175	<2	1	1		01/28/15 15:19
16G46408	L15011110-02 C MS RSK175	<2	1	1	STD68250	01/28/15 15:30
16G46409	L15011110-03 C MSD RSK175	<2	1	1	STD68250	01/28/15 15:42
16G46410	L15011110-04 C RSK175	<2	1	1		01/28/15 15:54
16G46411	L15011110-05 C RSK175	<2	1	1		01/28/15 16:06
16G46412	WG510088-01 133umol/mol CCV STD RSK	NA	1	1	STD67274	01/28/15 16:17
16G46413	L15011110-06 C RSK175	<2	1	1		01/28/15 16:28
16G46414	L15011110-08 C RSK175	<2	1	1		01/28/15 16:40
16G46415	L15011110-09 C RSK175	<2	1	1		01/28/15 16:51
16G46416	L15011110-10 C RSK175	<2	1	1		01/28/15 17:02
16G46417	L15011110-11 C RSK175	<2	1	1		01/28/15 17:14
16G46418	L15011096-01 C RSK175	<2	1	1		01/28/15 17:25
16G46419	L15011098-01 C RSK175	<2	1	1		01/28/15 17:41
16G46420	L15011172-01 B RSK175	<2	1	1		01/28/15 17:52
16G46421	L15011172-02 B RSK175	<2	1	1		01/28/15 18:03
16G46422	WG510088-02 133umol/mol CCV STD RSK	NA	1	1	STD67274	01/28/15 18:14

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: January 30, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 012815
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: STD68250

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG509993 WG510060

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13				
File ID: 16G46405				
	ran out of hold			
26	X		Check Standard Failure	p
File ID: 16G46418				
27	X	5	Over Calibration Range	m,p
File ID: 16G46419				
	low failing ccv for p			
28	X		Check Standard Failure	M,P
File ID: 16G46420				
	M c/o from previous sample			
29	X		Check Standard Failure	P
File ID: 16G46421				
30			Check Standard Failure	p
File ID: 16G46422				
	failed low			

Approved: January 30, 2015

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 021315
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: STD68250

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG512246

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46672	WG512210-01 133umol/mol CCV STD RSK	NA	1	1	STD67274	02/13/15 12:23
16G46673	WG512246-01 BLANK STD RSK175	NA	1	1		02/13/15 14:18
16G46674	WG512246-02 67umol/mol LCS STD RSK17	NA	1	1	STD68250	02/13/15 14:29
16G46675	L15020596-03 B REF RSK175	6	1	1		02/13/15 15:36
16G46676	L15020596-04 B MS RSK175	5	1	1	STD68250	02/13/15 15:47
16G46677	L15020596-05 B MSD RSK175	5	1	1	STD68250	02/13/15 15:59
16G46678	L15020596-06 B RSK175	5	1	1		02/13/15 16:10
16G46679	L15020630-01 B RSK175	<2	1	1		02/13/15 16:22
16G46680	L15020621-01 B RSK175	5	1	1		02/13/15 16:33
16G46681	L15020624-01 B RSK175	<2	1	1		02/13/15 16:44
16G46682	L15020639-01 B RSK175	<2	1	1		02/13/15 16:56
16G46683	WG512210-02 133umol/mol CCV STD RSK	NA	1	1	STD67274	02/13/15 17:07
16G46684	L15020663-02 A RSK175	<2	1	1		02/13/15 17:18
16G46685	L15020663-03 A RSK175	5	1	1		02/13/15 17:29
16G46686	L15020663-04 A RSK175	5	1	1		02/13/15 17:42
16G46687	L15020663-05 A RSK175	5	1	1		02/13/15 17:53
16G46688	L15020743-01 A RSK175	5	1	1		02/13/15 18:05
16G46689	L15020743-02 A RSK175	5	1	1		02/13/15 18:16
16G46690	L15020678-15 A RSK175	6	1	1		02/13/15 18:27
16G46691	L15020678-16 A RSK175	6	1	1		02/13/15 18:38
16G46692	L15020693-01 A REF RSK175	<2	1	1		02/13/15 18:53
16G46693	L15020693-03 A MS RSK175	<2	1	1	STD68250	02/13/15 19:04
16G46694	WG512210-03 133umol/mol CCV STD RSK	NA	1	1	STD67274	02/13/15 19:15
16G46695	L15020693-05 A MSD RSK175	<2	1	1	STD68250	02/13/15 19:26
16G46696	L15020694-01 A RSK175	<2	1	1		02/13/15 19:37
16G46697	WG512210-04 133umol/mol CCV STD RSK	NA	1	1	STD67274	02/13/15 19:49

Comments

Seq.	Rerun	Dil.	Reason	Analytes
25	X	1		
File ID: 16G46696				
confirmation for propane. there is a bump in the chromatography around propane.				

Approved: February 18, 2015

Page: 1

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B201022

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG509993-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG509993-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG509993-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG509993-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG509993-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG509993-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG509993-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG509993-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B201899

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG512210-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512210-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512210-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512210-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020693-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020694-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020596-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020639-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512246-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15020596-04	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15020663-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020693-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15020693-05	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15020663-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020663-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020743-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020678-16	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020678-15	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512246-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020596-05	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15020630-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020743-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020624-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020663-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020596-06	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020621-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 28-JAN-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 66013
Analytical Workgroups: WG509993 WG510060

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	X
Samples	X
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
29-JAN-2015

Secondary Reviewer:
30-JAN-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-30-2015 16:54:38

Microbac Laboratories Inc.

Data Checklist

Date: 13-FEB-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 66384
Analytical Workgroups: WG512246

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	X
Samples	X
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
17-FEB-2015

Secondary Reviewer:
18-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-18-2015 11:36:13

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG512246

Login Number: L15020678

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW11-021115	15	02/11/15					02/13/2015	2.3	14		02/13/15	2.3	14	
67WW08-021115	16	02/11/15					02/13/2015	2.3	14		02/13/15	2.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4023803
Report generated 02/19/2015 14:47

METHOD BLANK SUMMARY

Login Number: L15020678
Blank File ID: 16G46673
Prep Date: 02/13/15 14:18
Analyzed Date: 02/13/15 14:18
Analyst: JDS

Work Group: WG512246
Blank Sample ID: WG512246-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG512246-02	16G46674	02/13/15 14:29	01
67WW11-021115	L15020678-15	16G46690	02/13/15 18:27	01
67WW08-021115	L15020678-16	16G46691	02/13/15 18:38	01

Report Name: BLANK_SUMMARY
PDF File ID: 4023804
Report generated 02/19/2015 14:47

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15020678 Prep Date: 02/13/15 14:18 Sample ID: WG512246-01
Instrument ID: HP16 Run Date: 02/13/15 14:18 Prep Method: 5021
File ID: 16G46673 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG512246 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16-28-JAN-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Methane	1.00	5.00	1.00	1	U
Ethene	1.00	5.00	1.00	1	U
Ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4023805
19-FEB-2015 14:47

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020678 Run Date: 02/13/2015 Sample ID: WG512246-02
Instrument ID: HP16 Run Time: 14:29 Prep Method: 5021
File ID: 16G46674 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG512246 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD68250 Cal ID: HP16-28-JAN-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Methane	114	112	98.0	85 - 115	
Ethene	200	197	98.6	85 - 115	
Ethane	214	206	96.5	85 - 115	

LCS - Modified 03/06/2008
PDF File ID: 4023806
Report generated: 02/19/2015 14:47

Calibration Table Report
Method: RSKEXT.M
Title: RSK175 HP16 (SOP: OVL RSK01) 012815
Last Calibration: Wed Jan 28 12:05:14 2015
Curve: WG509993
Calibration Files

	Compound	0.67 16G46393.D	1.67 16G46394.D	33.3 16G46395.D	66.7 16G46396.D	133 16G46397.D	333 16G46398.D	533 16G46399.D	Avg	%RSD
T	methane		203964	178353	177849	176223	164207	191988	182097	7.620
T	ethene		307996	300506	295327	290210	258205	326725	296495	7.645
T	acetylene		299580	304841	302998	308065	277736	360803	309004	8.926
T	ethane	340812	318949	308193	308410	302606	267913	341728	312659	8.069
T	propane	472109	440588	445751	441874	428024	366139	496511	441571	9.172
T	n-butane	605945	559248	563516	554698	537734	450777	640213	558876	10.586
	Signal #2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
T	carbon dioxide		4837	5026	5199	5126	4794	6080	5177	9.072

Wed Jan 28 12:11:09 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15020678 Run Date: 01/28/2015 Sample ID: WG509993-08
Instrument ID: HP16 Run Time: 12:28 Method: RSK175
File ID: 16G46401 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG509993 Cal ID: HP16 - 28-JAN-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
methane		228	234	ug/L	187000	2.60	15	
ethene		398	419	ug/L	312000	5.10	15	
ethane		427	439	ug/L	322000	3.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4023807
Report generated 02/19/2015 14:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020678
Run Date: 02/13/2015
Sample ID: WG512210-01
Instrument ID: HP16
Run Time: 12:23
Method: RSK175
File ID: 16G46672
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG512246
Cal ID: HP16 - 28-JAN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	211	ug/L	169000	7.29	15	
ethene		398	381	ug/L	283000	4.40	15	
ethane		427	404	ug/L	296000	5.39	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4023808
Report generated 02/19/2015 14:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020678
Run Date: 02/13/2015
Sample ID: WG512210-02
Instrument ID: HP16
Run Time: 17:07
Method: RSK175
File ID: 16G46683
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG512246
Cal ID: HP16 - 28-JAN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	223	ug/L	178000	2.20	15	
ethene		398	396	ug/L	295000	0.546	15	
ethane		427	420	ug/L	307000	1.71	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4023808
Report generated 02/19/2015 14:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020678
Run Date: 02/13/2015
Sample ID: WG512210-03
Instrument ID: HP16
Run Time: 19:15
Method: RSK175
File ID: 16G46694
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG512246
Cal ID: HP16 - 28-JAN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	227	ug/L	182000	0.317	15	
ethene		398	404	ug/L	301000	1.36	15	
ethane		427	431	ug/L	315000	0.857	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4023808
Report generated 02/19/2015 14:47

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\021315\16G46690.D\FID1A.CH Vial: 19
Signal #2 : C:\MSDchem\1\DATA\021315\16G46690.D\TCD2B.CH
Acq On : 13 Feb 2015 18:27 Operator: JDS
Sample : L15020678-15 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 13 18:33:51 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	190024	1.044	umol/
2) T	ethene	1.06	14872	0.050	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	14566	0.047	umol/
5) T	propane	3.80	1012	0.002	umol/
6) T	n-butane	5.35	556231	0.995	umol/
8) T	carbon dioxide	0.20	346450454	66921.087	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46690.D RSKEXT.M Fri Feb 13 18:33:51 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\021315\16G46690.D\FID1A.CH Vial: 19
Signal #2 : C:\MSDchem\1\DATA\021315\16G46690.D\TCD2B.CH
Acq On : 13 Feb 2015 18:27 Operator: JDS
Sample : L15020678-15 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 13 18:33 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

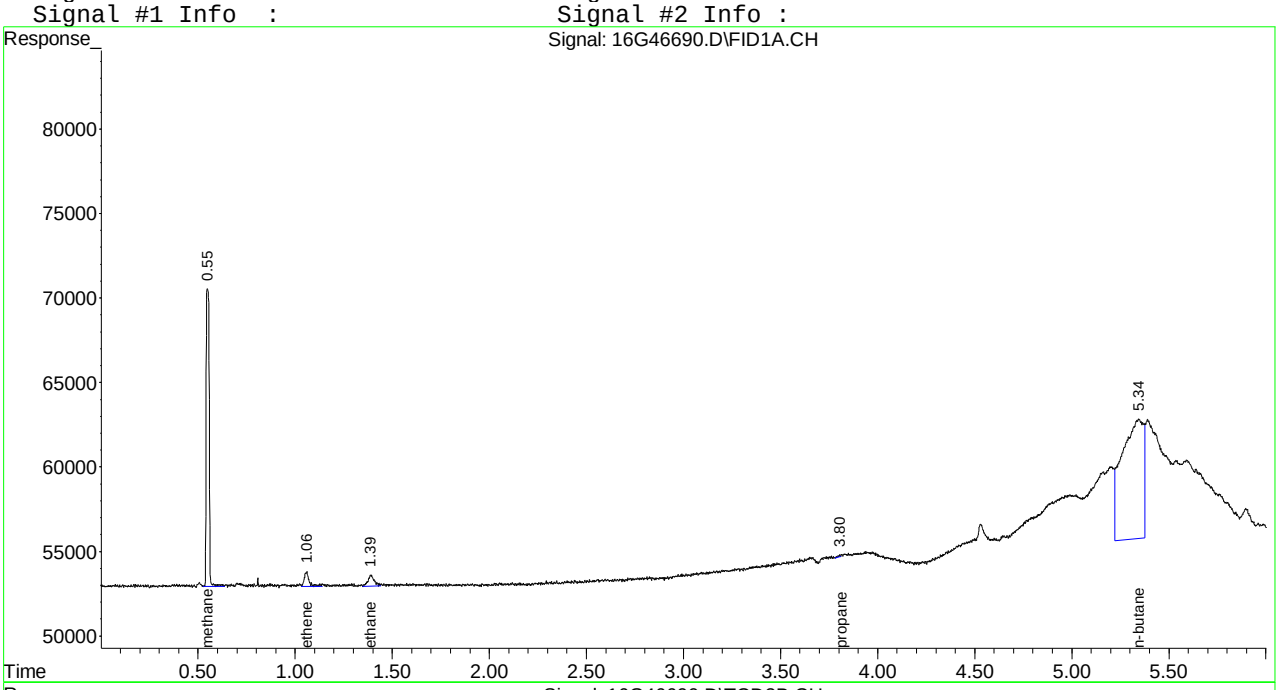

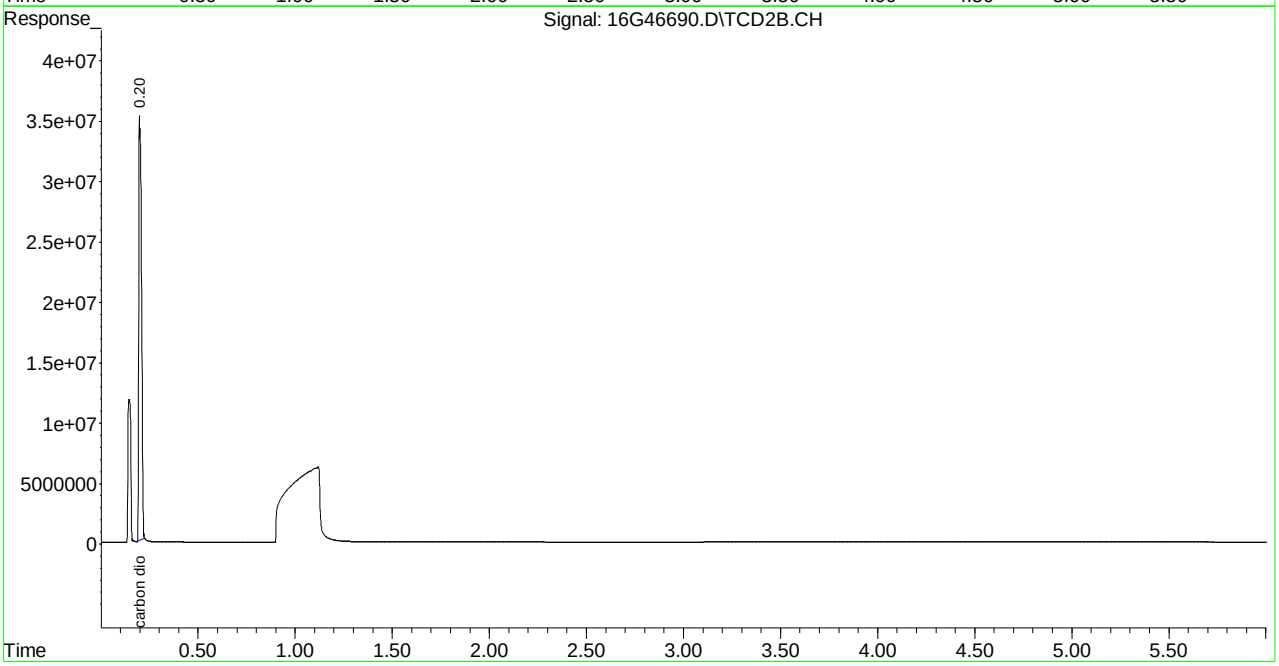

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\021315\16G46691.D\FID1A.CH Vial: 20
Signal #2 : C:\MSDchem\1\DATA\021315\16G46691.D\TCD2B.CH
Acq On : 13 Feb 2015 18:38 Operator: JDS
Sample : L15020678-16 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 13 18:44:50 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	999647	5.490	umol/
2) T	ethene	1.06	31493	0.106	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	12404	0.040	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	273827472	52893.082	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46691.D RSKEXT.M Fri Feb 13 18:44:51 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\021315\16G46691.D\FID1A.CH Vial: 20
Signal #2 : C:\MSDchem\1\DATA\021315\16G46691.D\TCD2B.CH
Acq On : 13 Feb 2015 18:38 Operator: JDS
Sample : L15020678-16 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 13 18:44 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

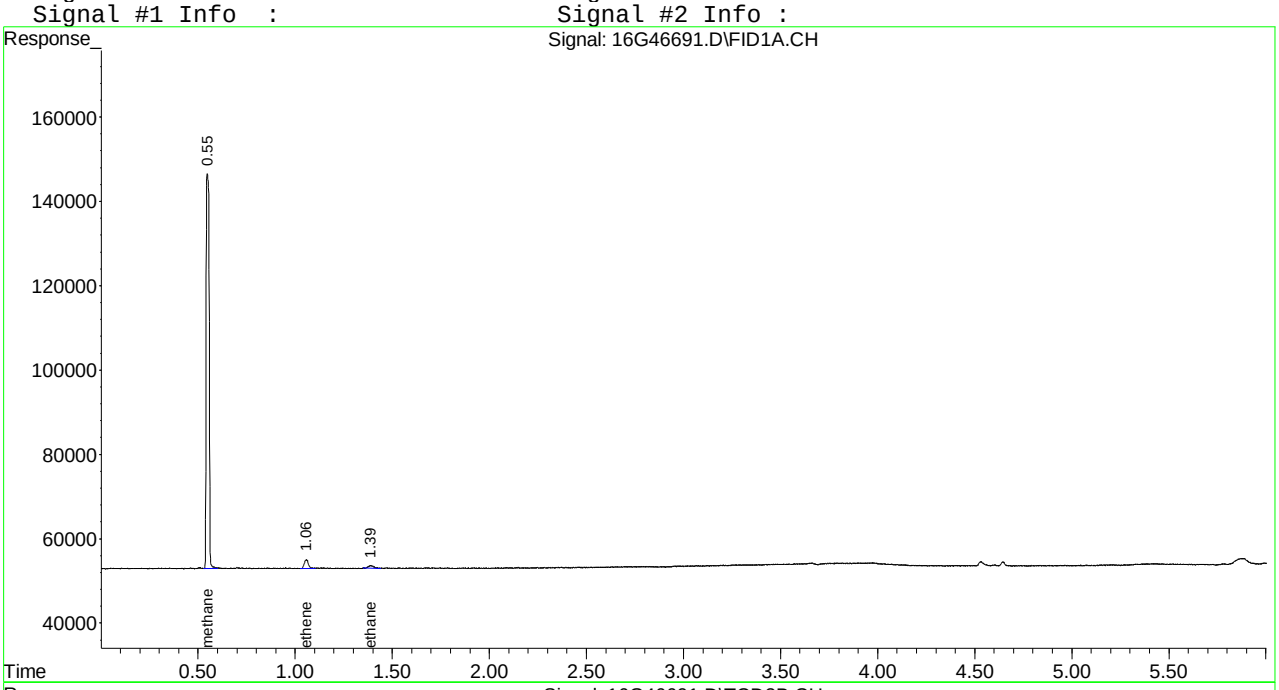

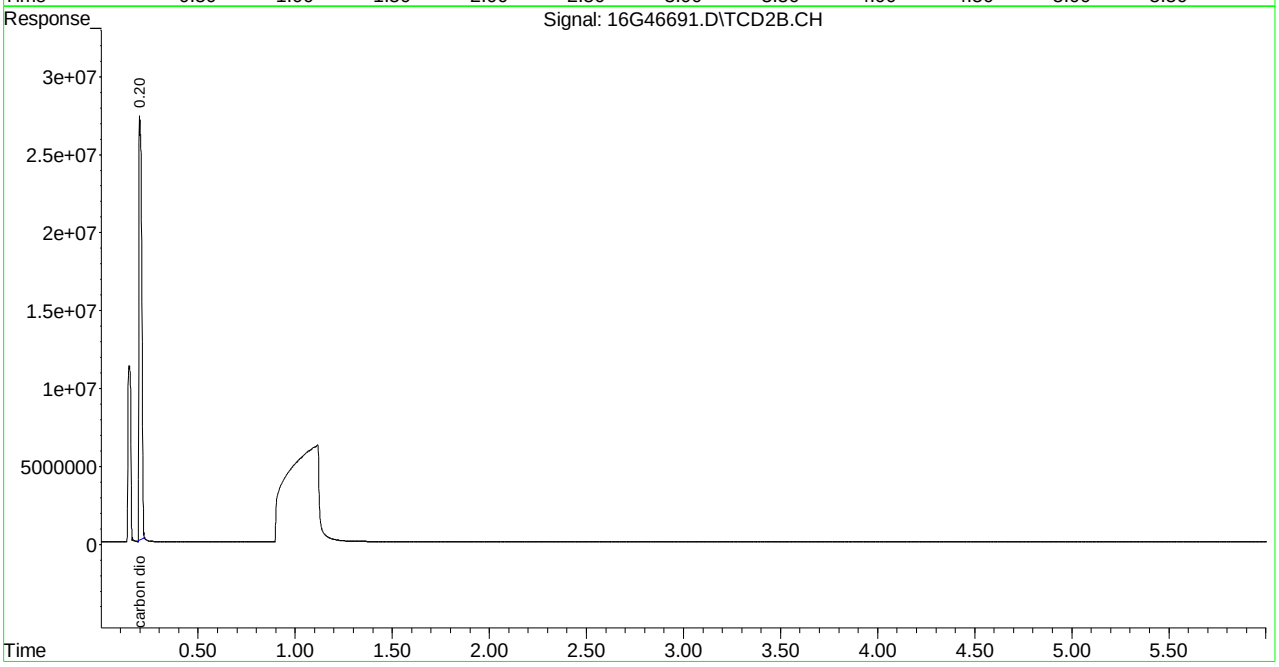

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\012815\16G46393.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\012815\16G46393.D\TCD2B.CH
Acq On : 28 Jan 2015 10:20 Operator: JDS
Sample : WG509993-01 0.67 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jan 28 12:07:43 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	192437	1.057	umol/
2) T	ethene	1.05	216063	0.729	umol/
3) T	acetylene	1.14	173010	0.560	umol/
4) T	ethane	1.38	227322	0.727	umol/
5) T	propane	3.83	314897	0.713	umol/
6) T	n-butane	5.34	404166	0.723	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46393.D RSKEXT.M Wed Jan 28 12:08:10 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\012815\16G46393.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\012815\16G46393.D\TCD2B.CH
Acq On : 28 Jan 2015 10:20 Operator: JDS
Sample : WG509993-01 0.67 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jan 28 12:07 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

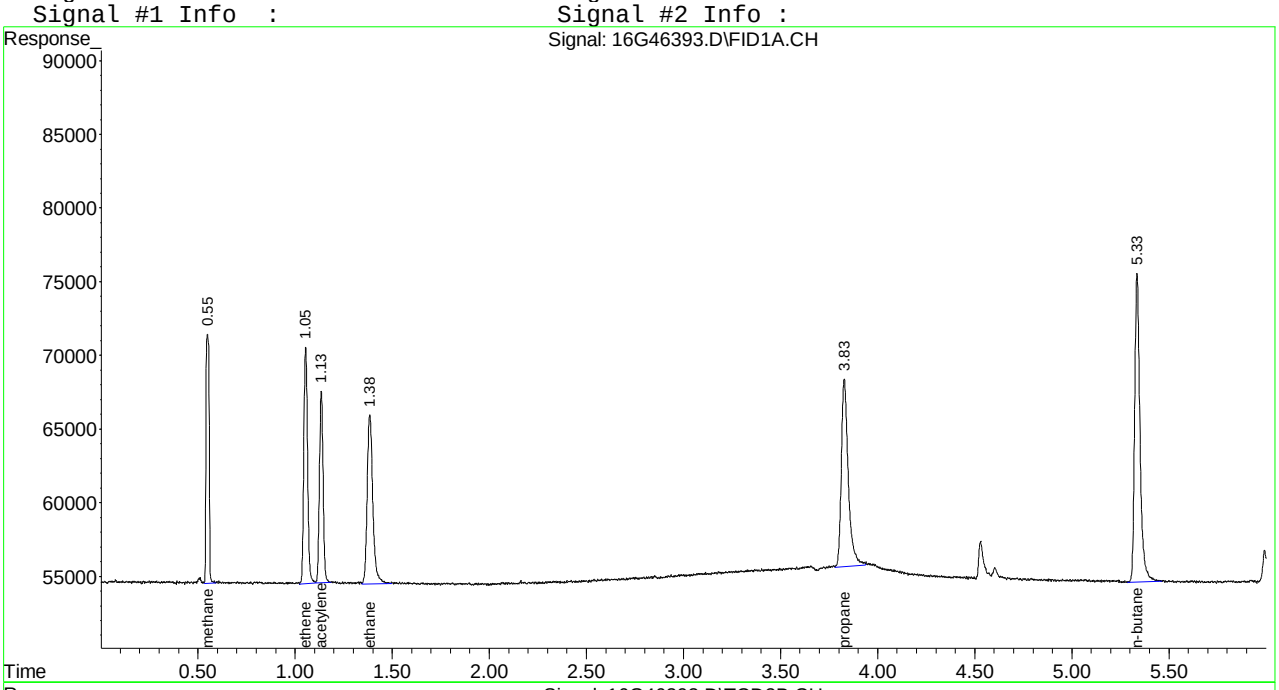

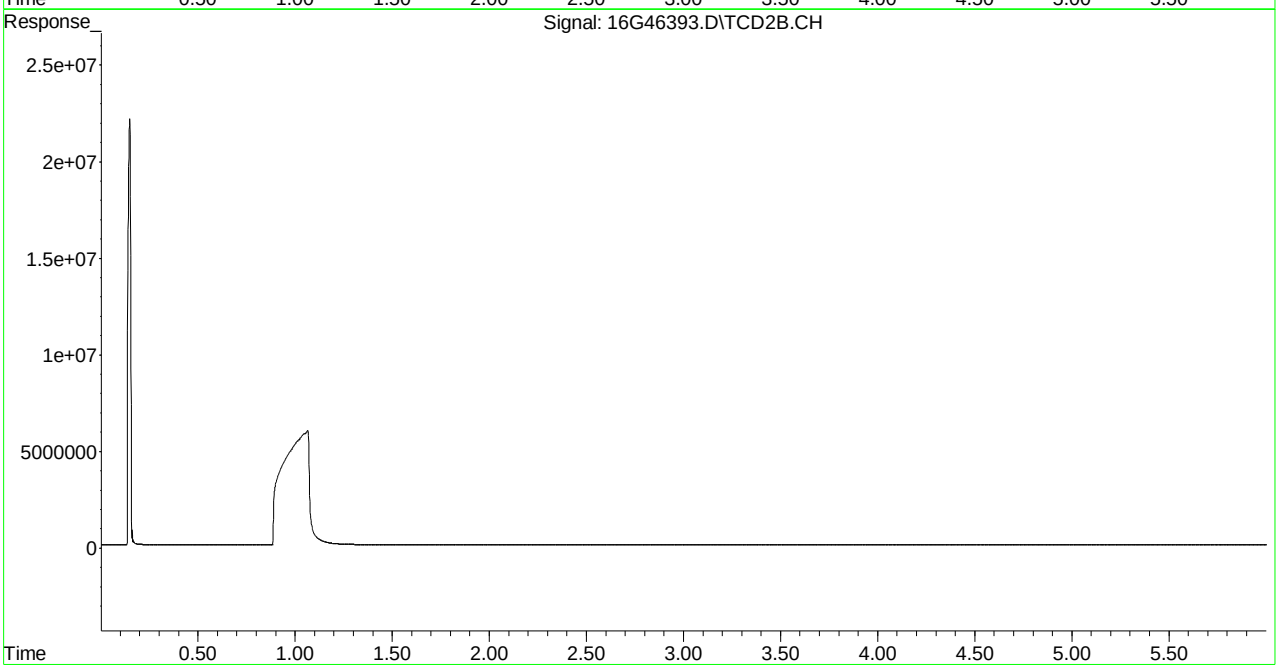

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\012815\16G46394.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\012815\16G46394.D\TCD2B.CH
Acq On : 28 Jan 2015 10:31 Operator: JDS
Sample : WG509993-02 1.67 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jan 28 12:08:23 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	340619	1.871	umol/
2) T	ethene	1.06	514353	1.735	umol/
3) T	acetylene	1.14	500298	1.619	umol/
4) T	ethane	1.39	532645	1.704	umol/
5) T	propane	3.83	735782	1.666	umol/
6) T	n-butane	5.33	933944	1.671	umol/
8) T	carbon dioxide	0.21	9674623	1868.770	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46394.D RSKEXT.M Wed Jan 28 12:08:24 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\012815\16G46394.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\012815\16G46394.D\TCD2B.CH
Acq On : 28 Jan 2015 10:31 Operator: JDS
Sample : WG509993-02 1.67 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jan 28 12:08 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

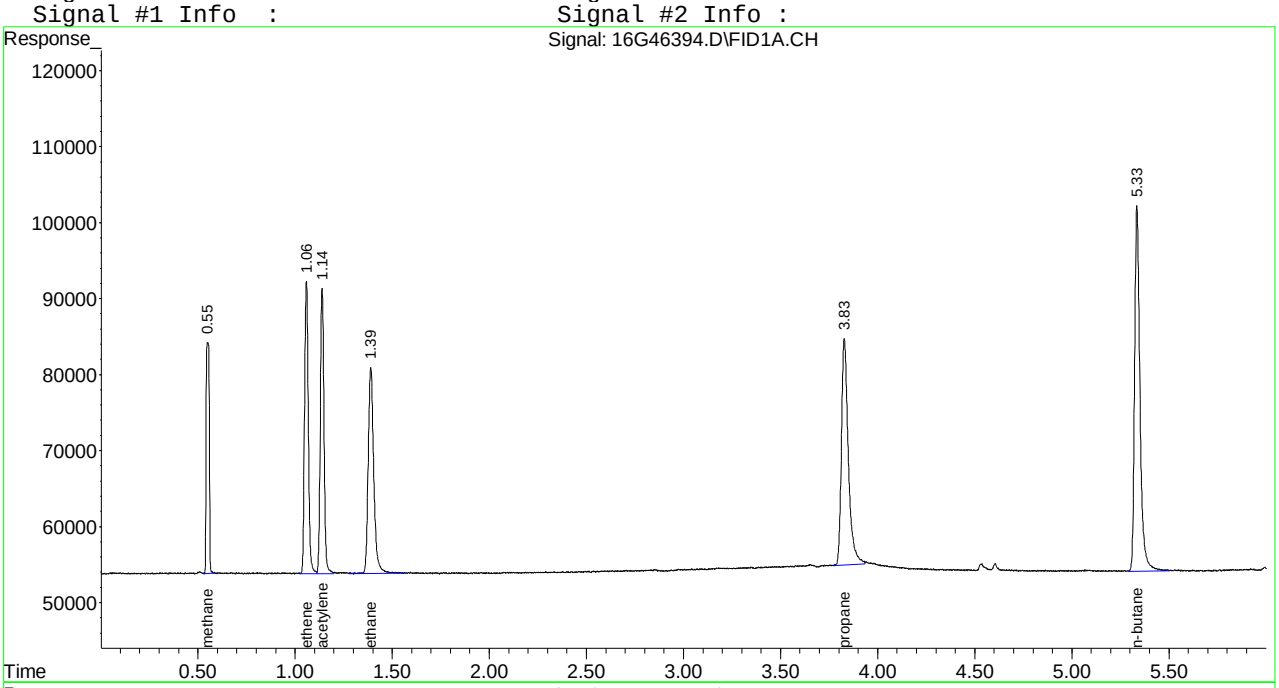

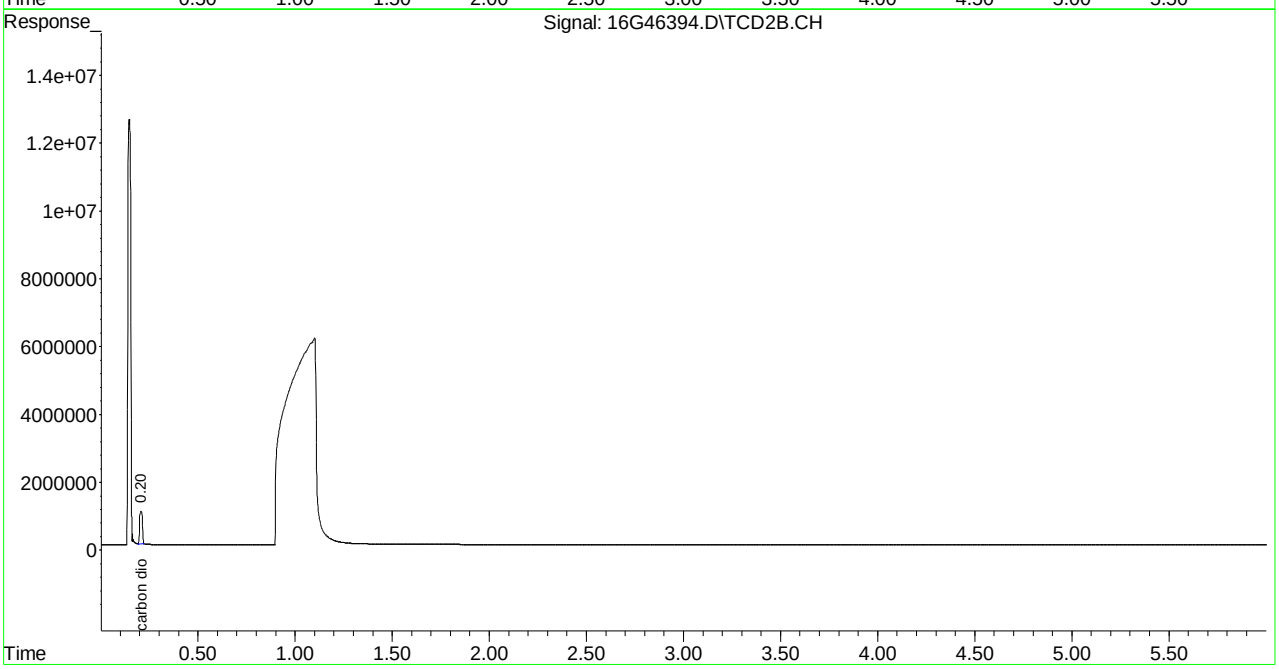

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\012815\16G46395.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\012815\16G46395.D\TCD2B.CH
Acq On : 28 Jan 2015 10:42 Operator: JDS
Sample : WG509993-03 33.3 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jan 28 12:08:25 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	5939167	32.615	umol/
2) T	ethene	1.06	10006839	33.750	umol/
3) T	acetylene	1.14	10151212	32.851	umol/
4) T	ethane	1.39	10262818	32.824	umol/
5) T	propane	3.83	14843520	33.615	umol/
6) T	n-butane	5.33	18765087	33.576	umol/
8) T	carbon dioxide	0.21	16751461	3235.747	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46395.D RSKEXT.M Wed Jan 28 12:08:26 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\012815\16G46395.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\012815\16G46395.D\TCD2B.CH
Acq On : 28 Jan 2015 10:42 Operator: JDS
Sample : WG509993-03 33.3 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jan 28 12:08 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

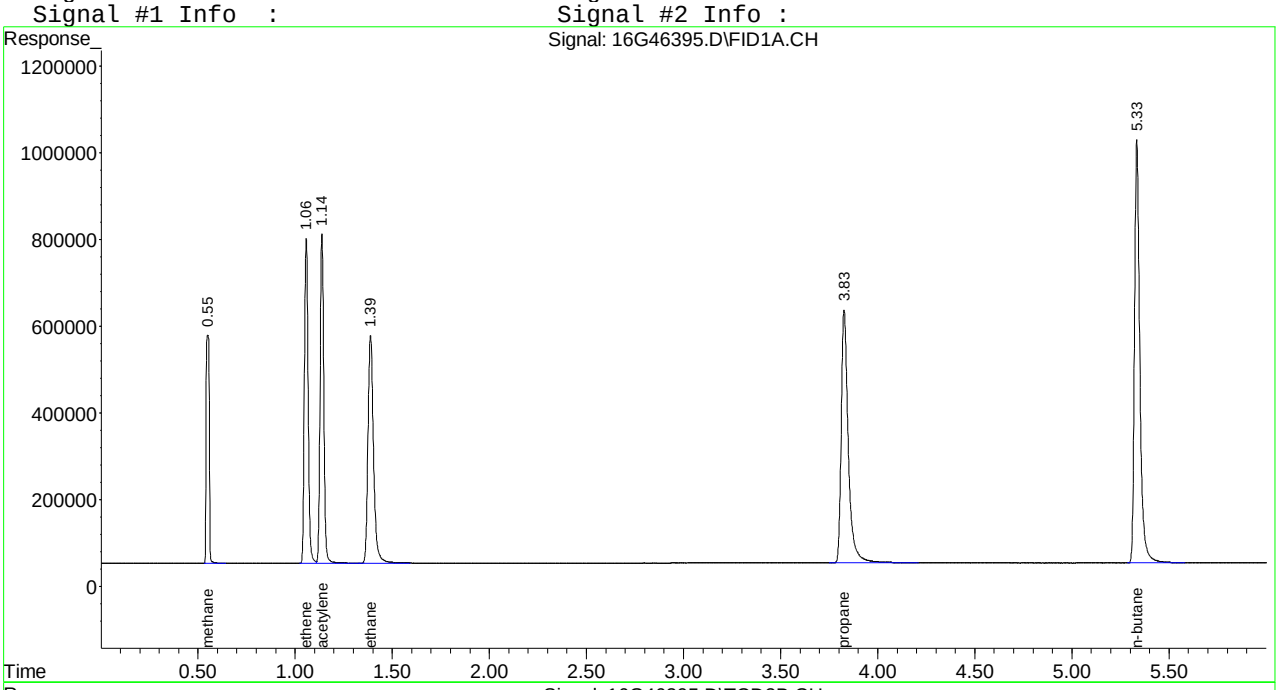

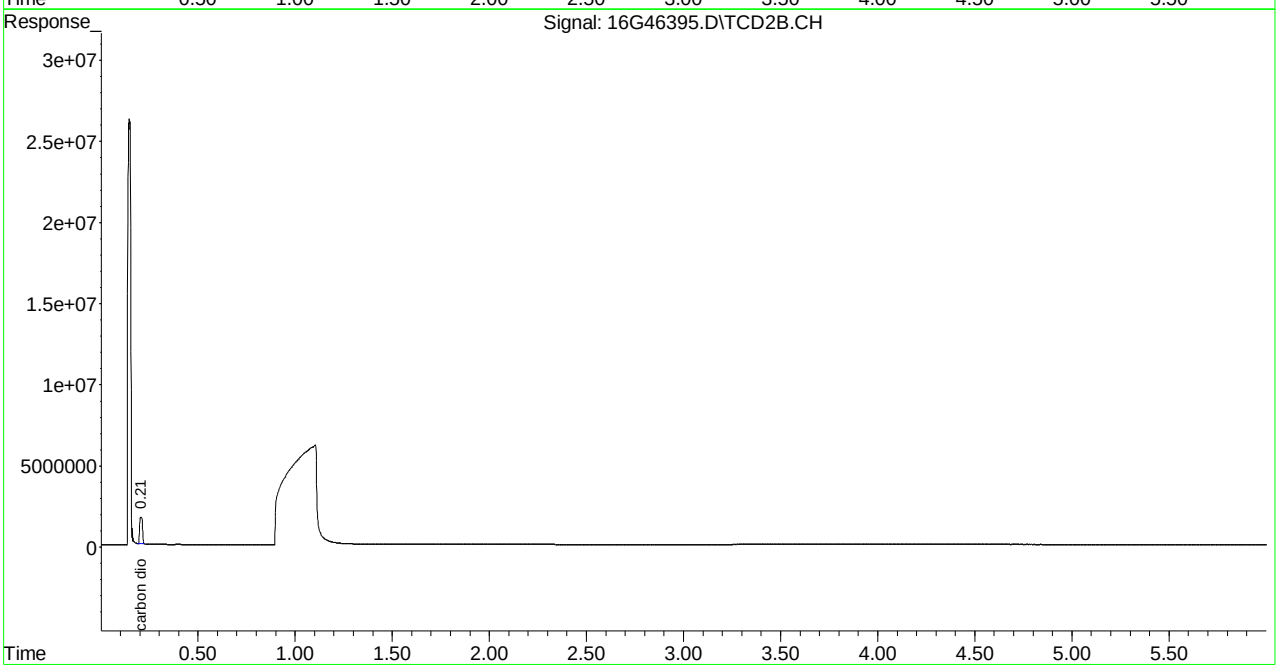

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\012815\16G46396.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\012815\16G46396.D\TCD2B.CH
Acq On : 28 Jan 2015 10:53 Operator: JDS
Sample : WG509993-04 66.7 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jan 28 12:08:26 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11862509	65.144	umol/
2) T	ethene	1.06	19698318	66.437	umol/
3) T	acetylene	1.14	20209992	65.404	umol/
4) T	ethane	1.39	20570941	65.794	umol/
5) T	propane	3.83	29473010	66.746	umol/
6) T	n-butane	5.33	36998356	66.201	umol/
8) T	carbon dioxide	0.21	34661160	6695.221	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46396.D RSKEXT.M Wed Jan 28 12:08:26 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\012815\16G46396.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\012815\16G46396.D\TCD2B.CH
Acq On : 28 Jan 2015 10:53 Operator: JDS
Sample : WG509993-04 66.7 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jan 28 12:08 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

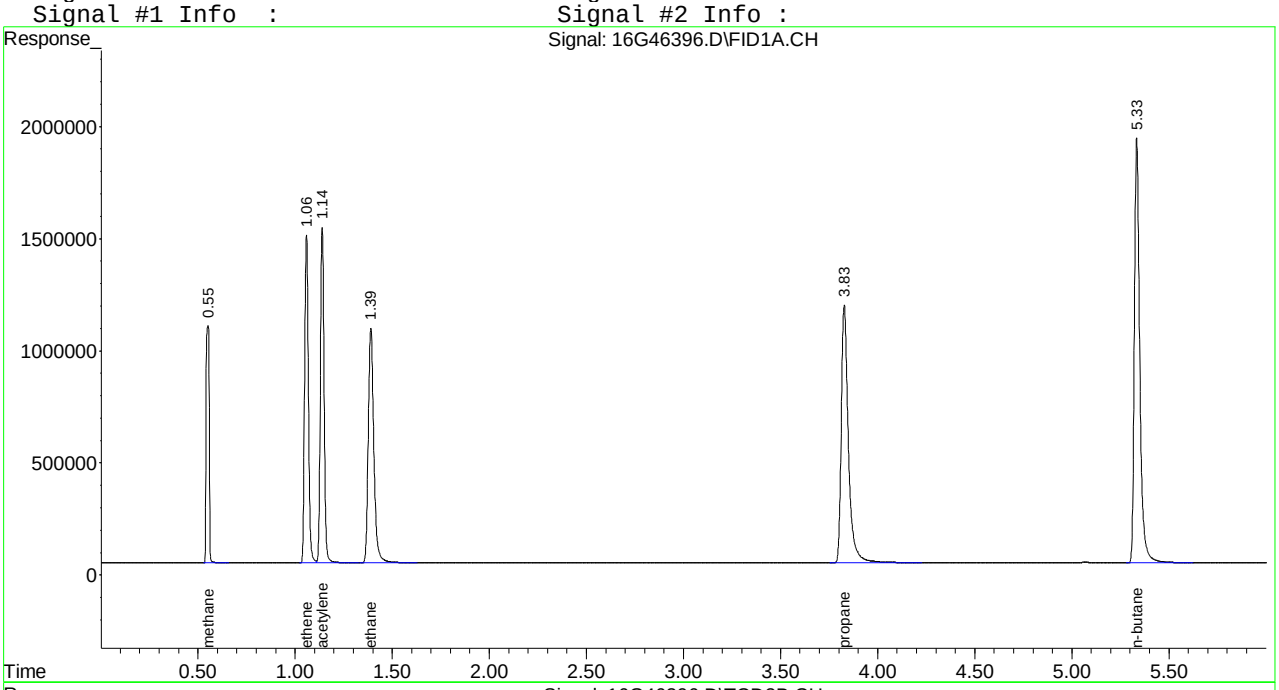

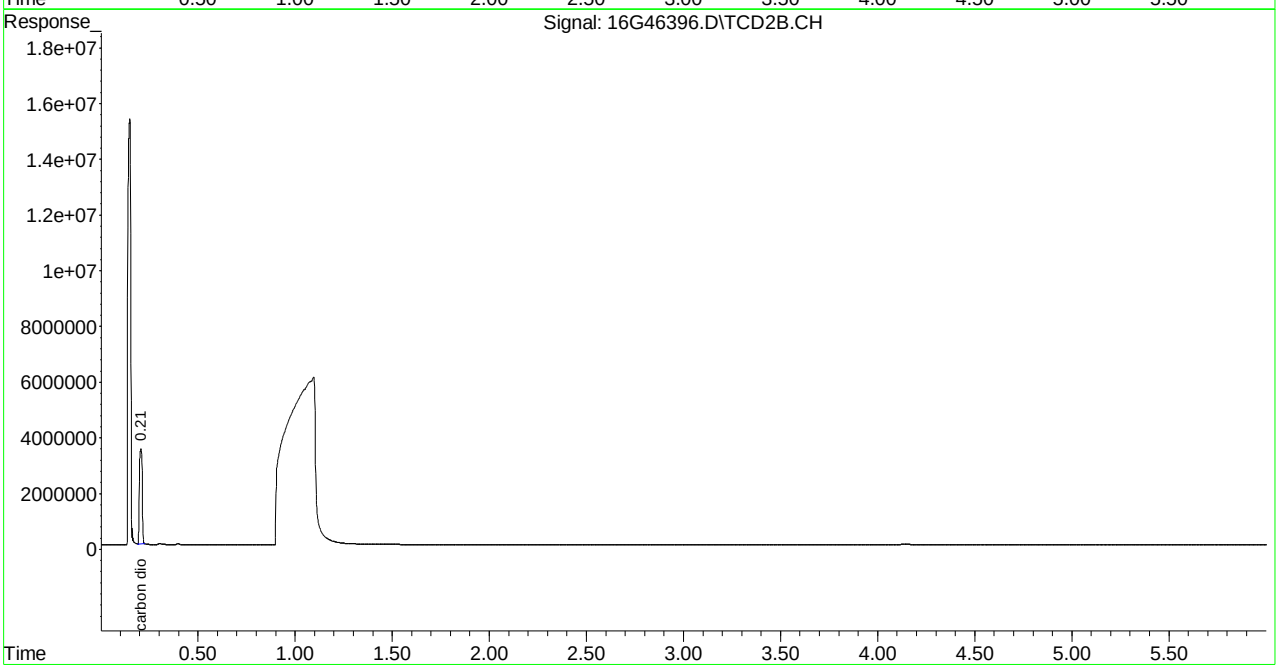

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\012815\16G46397.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\012815\16G46397.D\TCD2B.CH
Acq On : 28 Jan 2015 11:04 Operator: JDS
Sample : WG509993-05 133 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jan 28 12:08:27 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23437641	128.709	umol/
2) T	ethene	1.06	38597920	130.181	umol/
3) T	acetylene	1.14	40972666	132.596	umol/
4) T	ethane	1.39	40246608	128.724	umol/
5) T	propane	3.83	56927171	128.920	umol/
6) T	n-butane	5.33	71518630	127.969	umol/
8) T	carbon dioxide	0.21	68348084	13202.257	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46397.D RSKEXT.M Wed Jan 28 12:08:27 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\012815\16G46397.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\012815\16G46397.D\TCD2B.CH
Acq On : 28 Jan 2015 11:04 Operator: JDS
Sample : WG509993-05 133 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jan 28 12:08 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

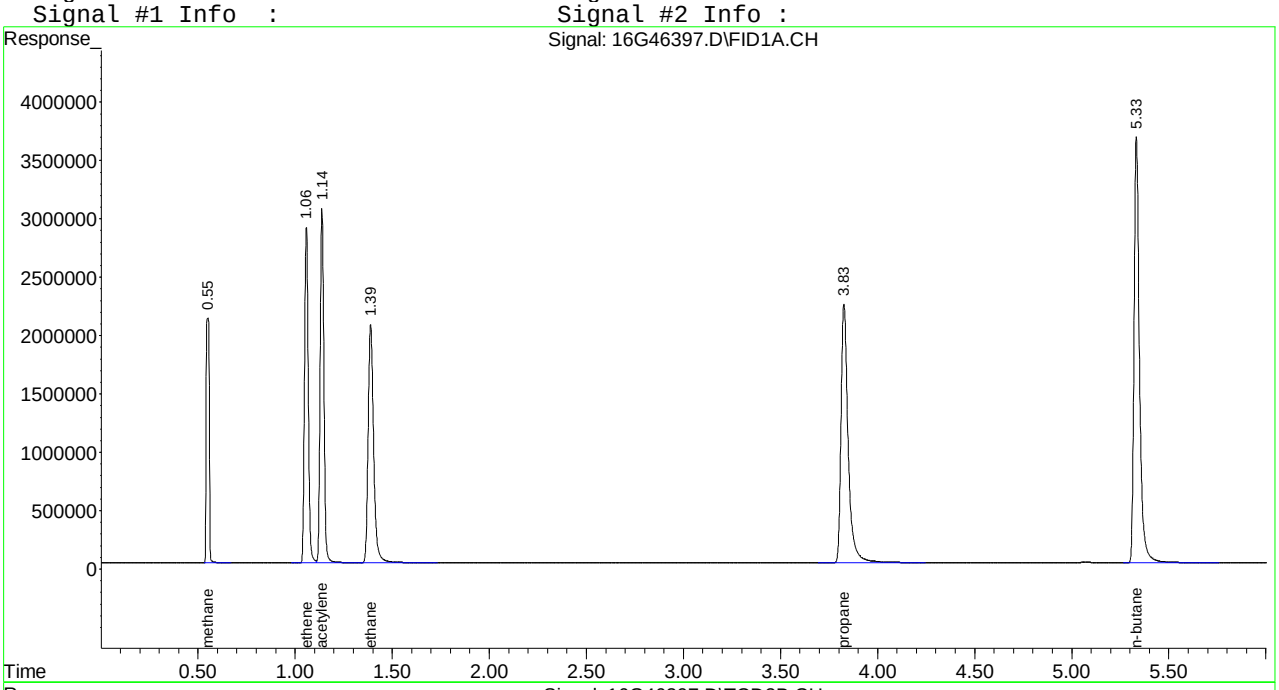

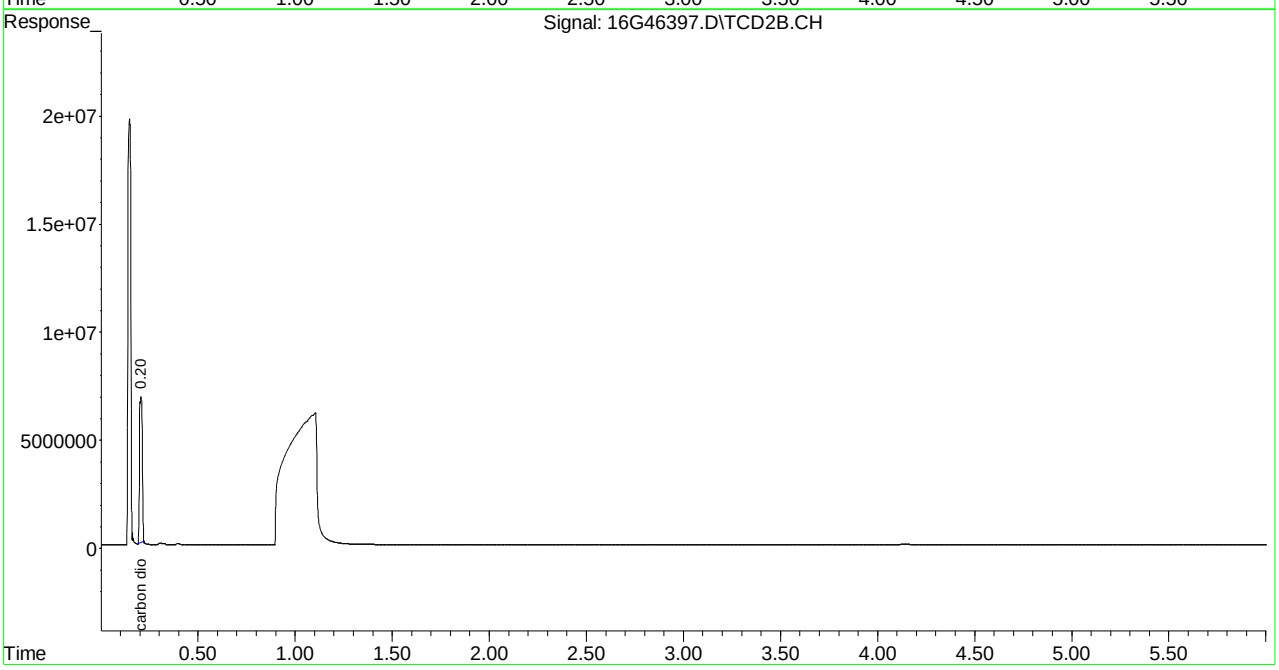

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\012815\16G46398.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\012815\16G46398.D\TCD2B.CH
Acq On : 28 Jan 2015 11:15 Operator: JDS
Sample : WG509993-06 333 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jan 28 12:08:27 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	54680912	300.284	umol/
2) T	ethene	1.06	85982394	289.996	umol/
3) T	acetylene	1.14	92486036	299.304	umol/
4) T	ethane	1.39	89214914	285.343	umol/
5) T	propane	3.82	121924395	276.115	umol/
6) T	n-butane	5.33	150108901	268.591	umol/
8) T	carbon dioxide	0.20	159793858	30866.113	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46398.D RSKEXT.M Wed Jan 28 12:08:28 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\012815\16G46398.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\012815\16G46398.D\TCD2B.CH
Acq On : 28 Jan 2015 11:15 Operator: JDS
Sample : WG509993-06 333 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jan 28 12:08 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

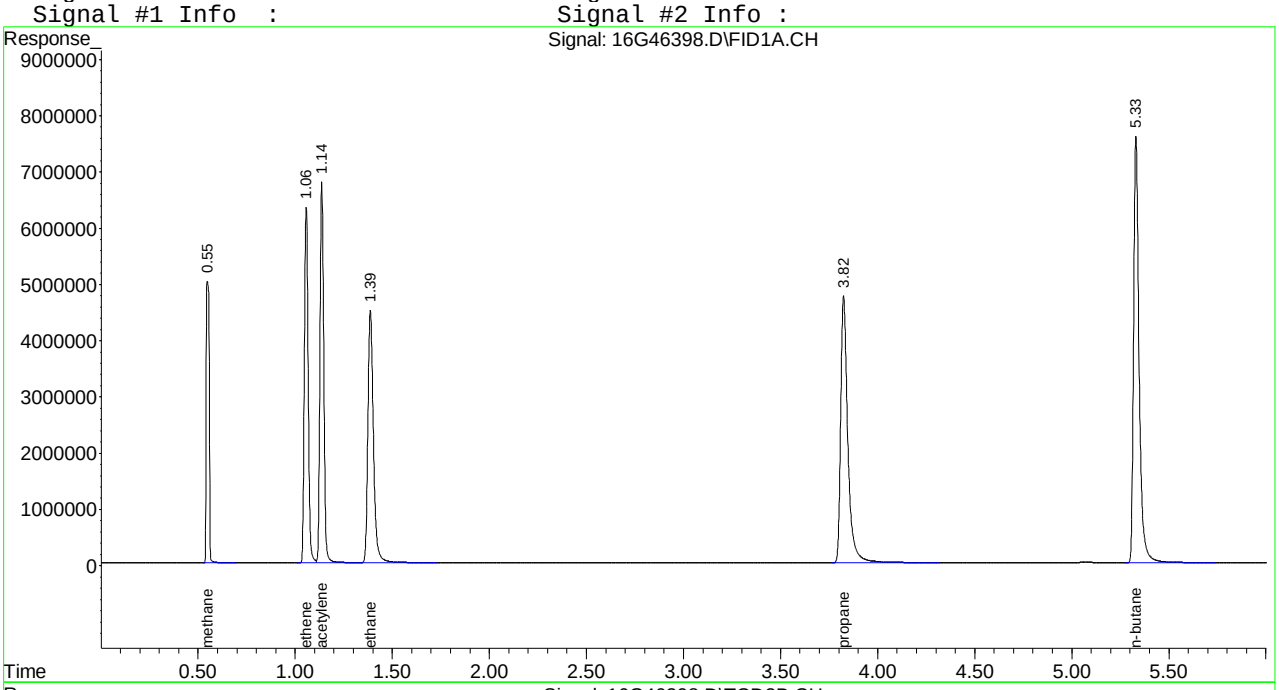

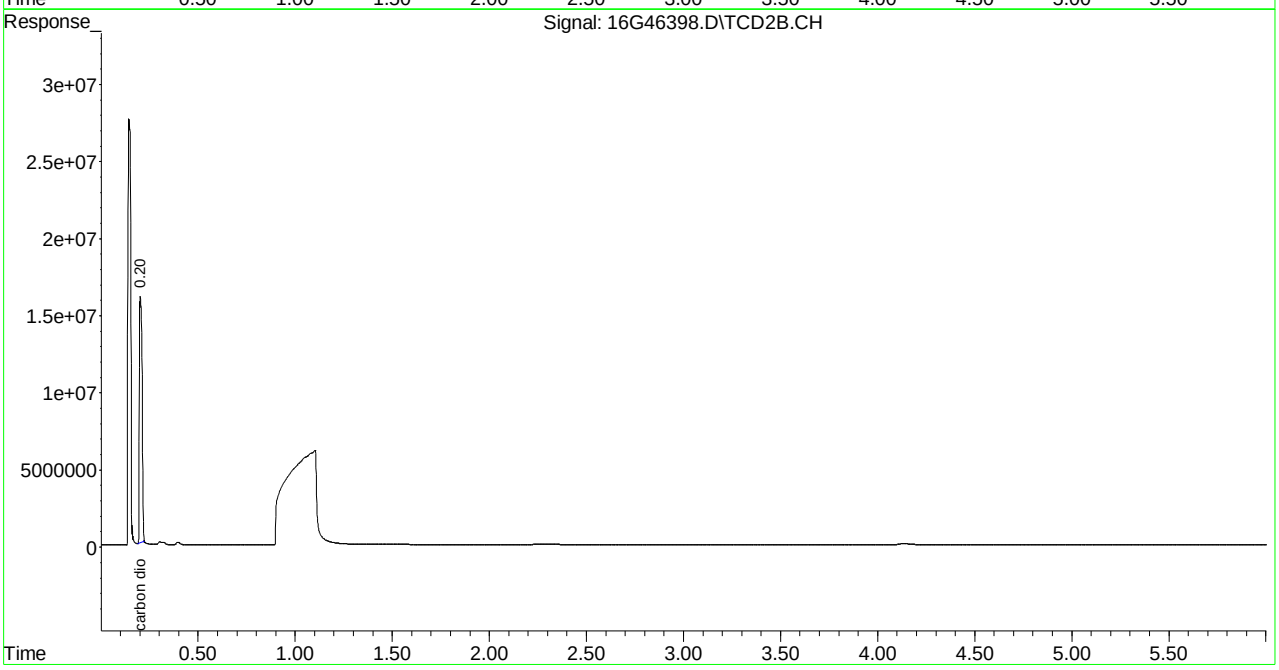

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\012815\16G46399.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\012815\16G46399.D\TCD2B.CH
Acq On : 28 Jan 2015 11:27 Operator: JDS
Sample : WG509993-07 533 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jan 28 12:08:28 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	102329643	561.950	umol/
2) T	ethene	1.06	174144338	587.344	umol/
3) T	acetylene	1.14	192308097	622.348	umol/
4) T	ethane	1.39	182141144	582.556	umol/
5) T	propane	3.82	264640282	599.315	umol/
6) T	n-butane	5.33	341233505	610.571	umol/
8) T	carbon dioxide	0.20	324250458	62632.890	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46399.D RSKEXT.M Wed Jan 28 12:08:28 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\012815\16G46399.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\012815\16G46399.D\TCD2B.CH
Acq On : 28 Jan 2015 11:27 Operator: JDS
Sample : WG509993-07 533 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jan 28 12:08 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

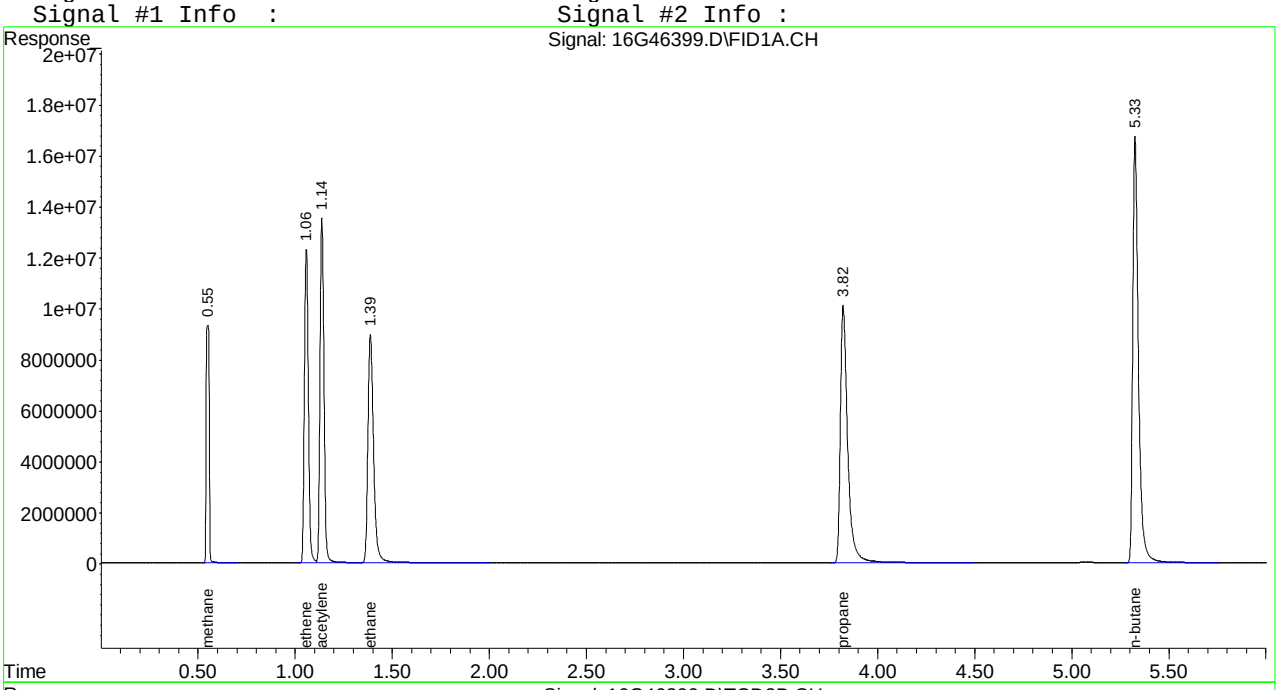

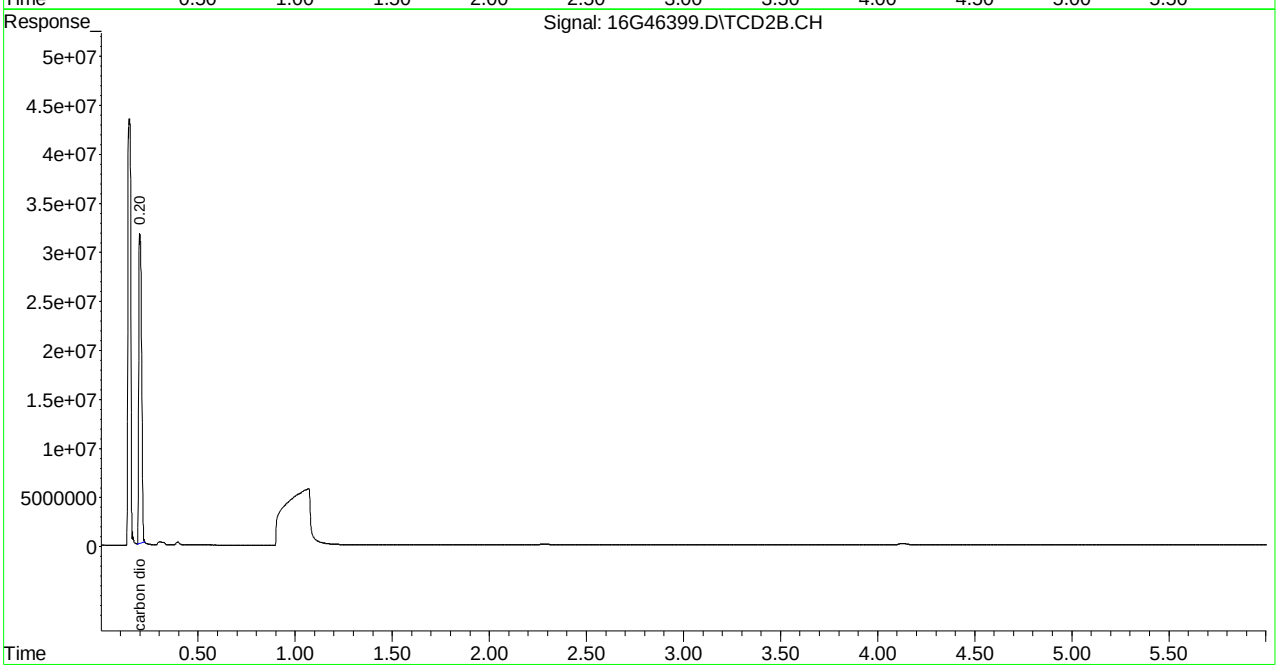

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\012815\16G46401.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDchem\1\DATA\012815\16G46401.D\TCD2B.CH
Acq On : 28 Jan 2015 12:28 Operator: JDS
Sample : WG509993-08 133 umol/mol ALT SRC STD RSK Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jan 28 12:34:20 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24843026	136.427	umol/
2) T	ethene	1.06	41440495	139.768	umol/
3) T	acetylene	1.14	44642068	144.471	umol/
4) T	ethane	1.39	42810734	136.925	umol/
5) T	propane	3.82	60652732	137.357	umol/
6) T	n-butane	5.33	76481881	136.849	umol/
8) T	carbon dioxide	0.20	77482848	14966.747	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46401.D RSKEXT.M Wed Jan 28 12:34:20 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\012815\16G46401.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDchem\1\DATA\012815\16G46401.D\TCD2B.CH
Acq On : 28 Jan 2015 12:28 Operator: JDS
Sample : WG509993-08 133 umol/mol ALT SRC STD RSK Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jan 28 12:34 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

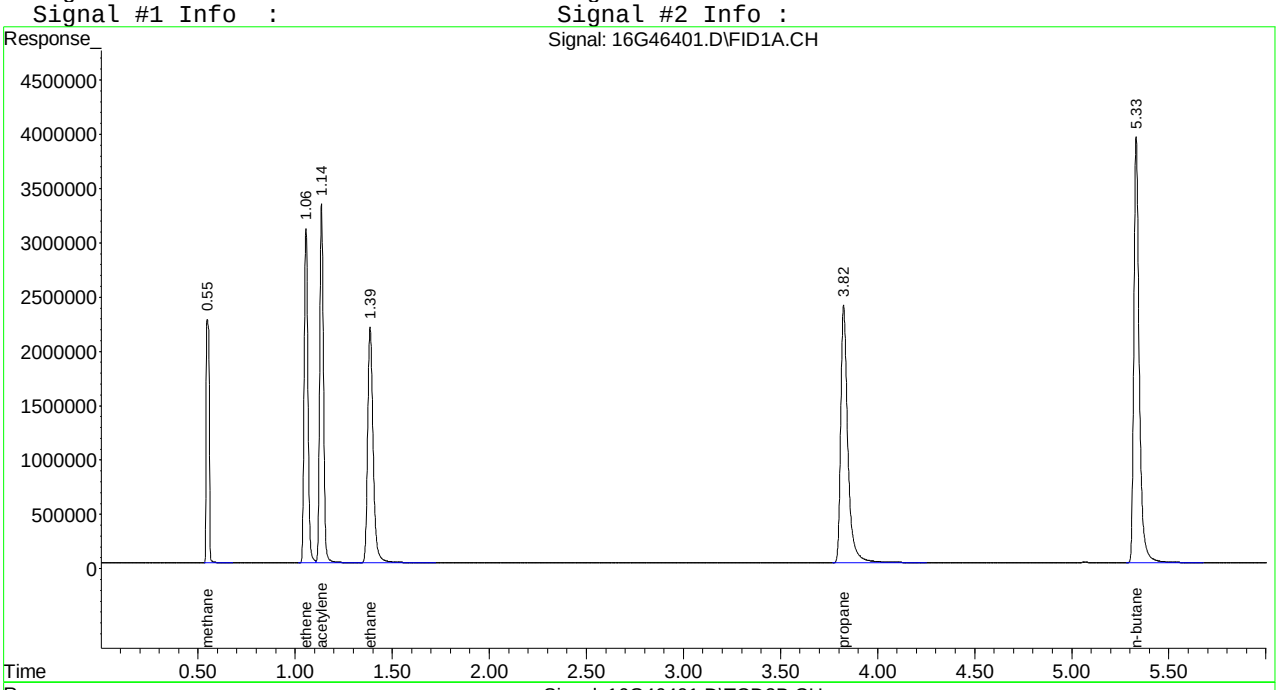

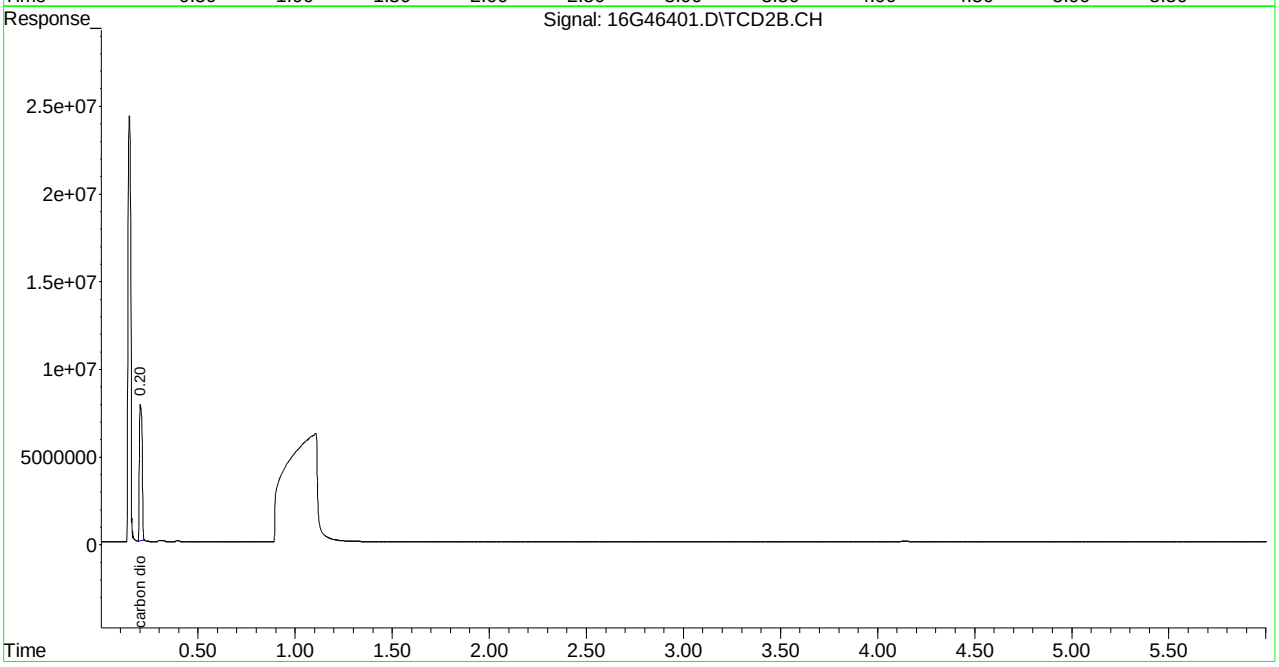

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\012815\16G46401.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDCHEM\1\DATA\012815\16G46401.D\TCD2B.CH
Acq On : 28 Jan 2015 12:28 Operator: JDS
Sample : WG509993-08 133 umol/mol ALT SRC STD RSK Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	136.427	-2.6	106	0.00
2	T	ethene	133.000	139.768	-5.1	107	0.00
3	T	acetylene	133.000	144.471	-8.6	109	0.00
4	T	ethane	133.000	136.925	-3.0	106	0.00
5	T	propane	133.000	137.357	-3.3	107	0.00
6	T	n-butane	133.000	136.849	-2.9	107	0.00

Signal #2

8	T	carbon dioxide	13333.000	14966.747	-12.3	113	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46401.D RSKEXT.M Wed Jan 28 12:35:44 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\012815\16G46401.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDCHEM\1\DATA\012815\16G46401.D\TCD2B.CH
Acq On    : 28 Jan 2015  12:28                        Operator: JDS
Sample    : WG509993-08 133 umol/mol ALT SRC STD RSK Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update  : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\021315\16G46672.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\021315\16G46672.D\TCD2B.CH
Acq On    : 13 Feb 2015  12:23                        Operator: JDS
Sample    : WG512210-01 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 13 12:29:23 2015  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update  : Wed Jan 28 12:05:14 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	22453101	123.303 umol/
2) T	ethene	1.06	37699134	127.149 umol/
3) T	acetylene	1.14	41225114	133.413 umol/
4) T	ethane	1.39	39341481	125.829 umol/
5) T	propane	3.83	56389859	127.703 umol/
6) T	n-butane	5.33	71491972	127.921 umol/
8) T	carbon dioxide	0.21	70870355	13689.465 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G46672.D RSKEXT.M Fri Feb 13 12:29:23 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\021315\16G46672.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\021315\16G46672.D\TCD2B.CH
Acq On : 13 Feb 2015 12:23 Operator: JDS
Sample : WG512210-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 13 12:29 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

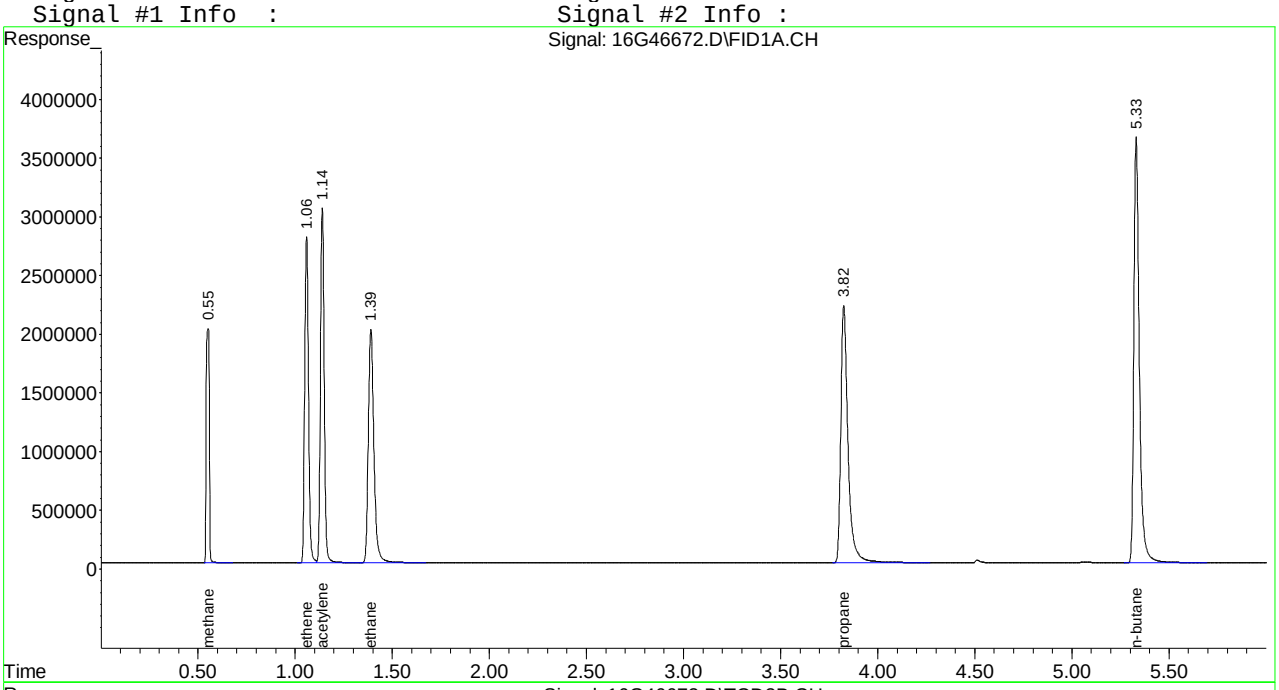

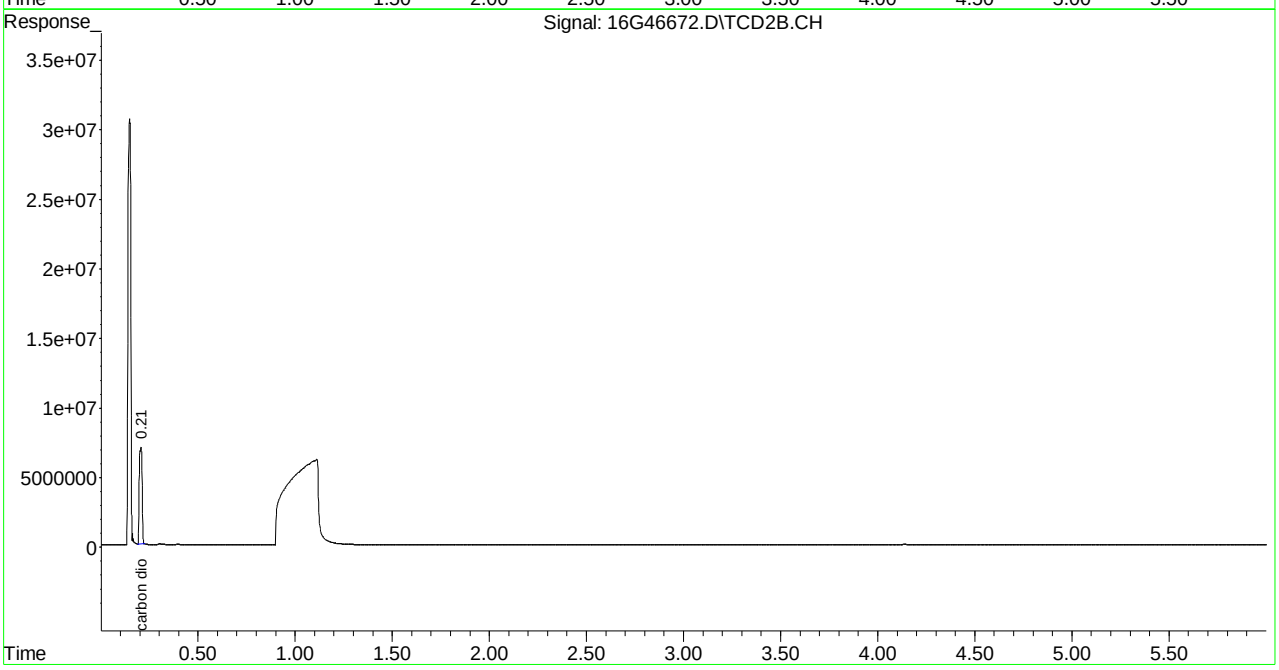

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\021315\16G46672.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\021315\16G46672.D\TCD2B.CH
Acq On : 13 Feb 2015 12:23 Operator: JDS
Sample : WG512210-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	123.303	7.3	96	0.00
2	T	ethene	133.000	127.149	4.4	98	0.00
3	T	acetylene	133.000	133.413	-0.3	101	0.00
4	T	ethane	133.000	125.829	5.4	98	0.00
5	T	propane	133.000	127.703	4.0	99	0.00
6	T	n-butane	133.000	127.921	3.8	100	0.00
		Signal #2					
8	T	carbon dioxide	13333.000	13689.465	-2.7	104	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46672.D RSKEXT.M Mon Feb 16 08:01:43 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\021315\16G46672.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\021315\16G46672.D\TCD2B.CH
Acq On    : 13 Feb 2015  12:23                        Operator: JDS
Sample    : WG512210-01 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update  : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\021315\16G46683.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\021315\16G46683.D\TCD2B.CH
Acq On    : 13 Feb 2015  17:07                        Operator: JDS
Sample    : WG512210-02 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 13 17:13:23 2015  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update  : Wed Jan 28 12:05:14 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	23686348	130.075 umol/
2) T	ethene	1.06	39218307	132.273 umol/
3) T	acetylene	1.14	42305667	136.910 umol/
4) T	ethane	1.39	40873452	130.729 umol/
5) T	propane	3.83	58520538	132.528 umol/
6) T	n-butane	5.33	74332964	133.004 umol/
8) T	carbon dioxide	0.21	73023478	14105.366 umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\021315\16G46683.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\021315\16G46683.D\TCD2B.CH
Acq On : 13 Feb 2015 17:07 Operator: JDS
Sample : WG512210-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 13 17:13 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

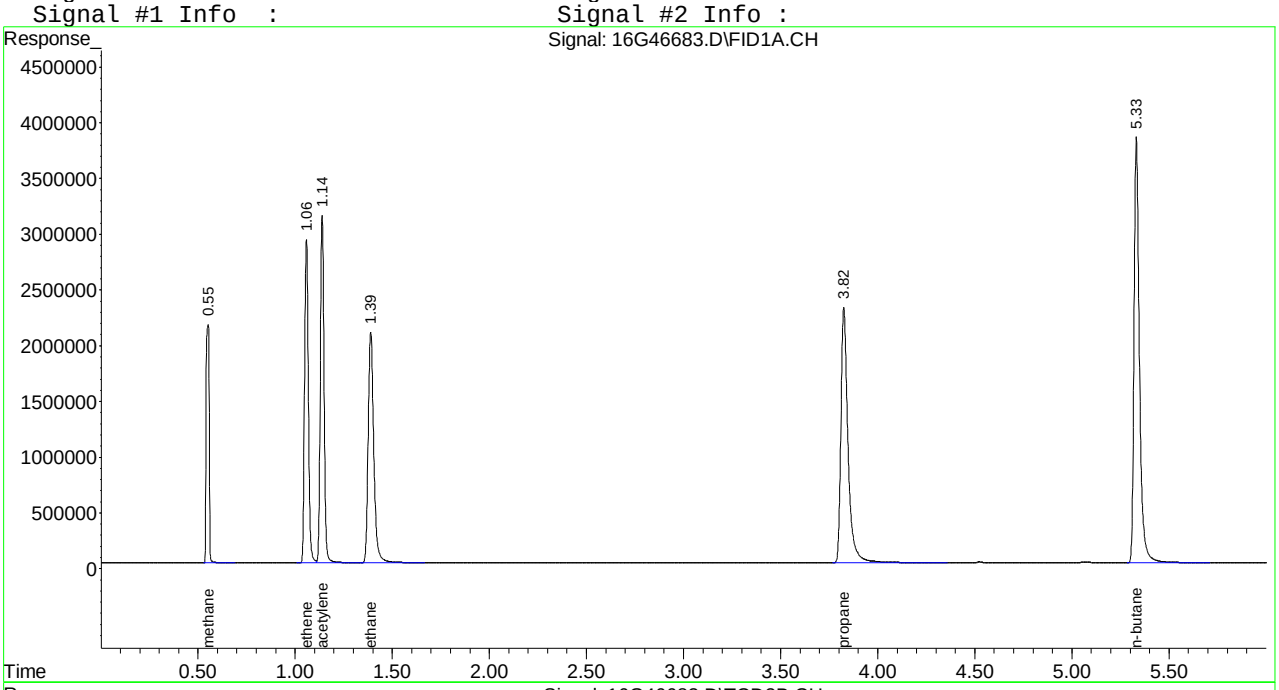

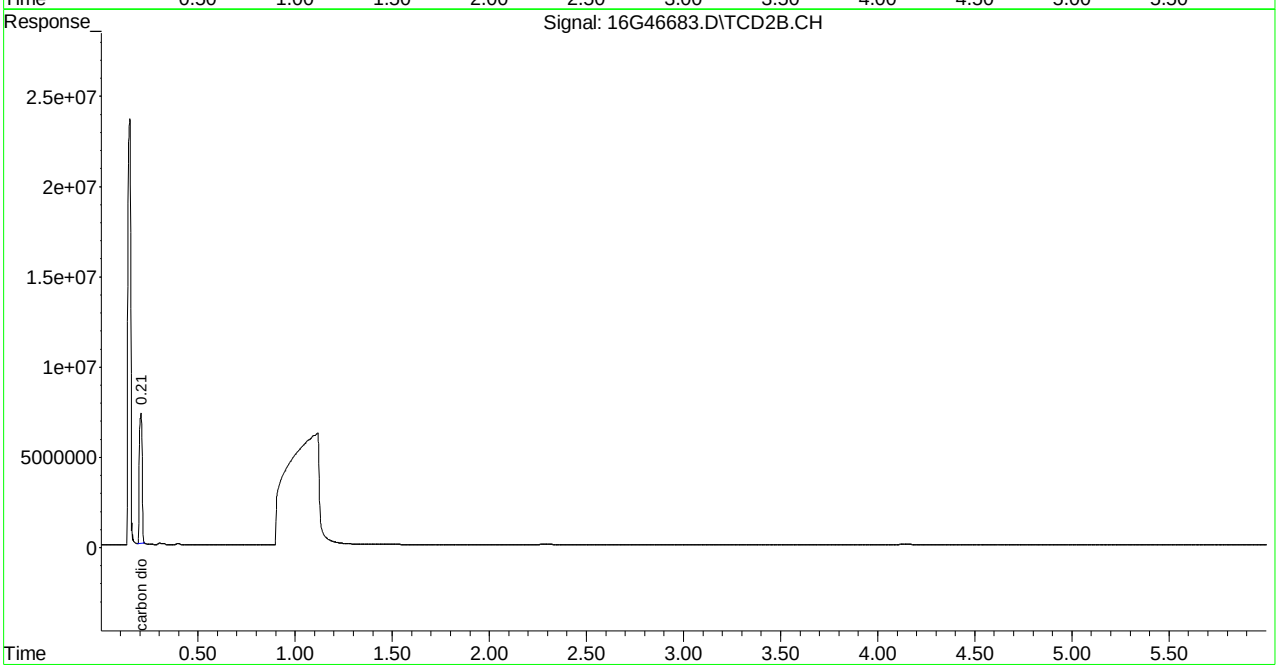

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\021315\16G46683.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\021315\16G46683.D\TCD2B.CH
Acq On : 13 Feb 2015 17:07 Operator: JDS
Sample : WG512210-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	130.075	2.2	101	0.00
2	T	ethene	133.000	132.273	0.5	102	0.00
3	T	acetylene	133.000	136.910	-2.9	103	0.00
4	T	ethane	133.000	130.729	1.7	102	0.00
5	T	propane	133.000	132.528	0.4	103	0.00
6	T	n-butane	133.000	133.004	-0.0	104	0.00
		Signal #2					
8	T	carbon dioxide	13333.000	14105.366	-5.8	107	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46683.D RSKEXT.M Mon Feb 16 08:01:50 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\021315\16G46683.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\021315\16G46683.D\TCD2B.CH
Acq On    : 13 Feb 2015  17:07                        Operator: JDS
Sample    : WG512210-02 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update  : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\021315\16G46694.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDchem\1\DATA\021315\16G46694.D\TCD2B.CH
Acq On    : 13 Feb 2015  19:15                        Operator: JDS
Sample    : WG512210-03 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 13 19:21:56 2015  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update  : Wed Jan 28 12:05:14 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	24142065	132.578 umol/
2) T	ethene	1.06	39968471	134.803 umol/
3) T	acetylene	1.14	39898448	129.120 umol/
4) T	ethane	1.39	41939972	134.140 umol/
5) T	propane	3.83	60089219	136.081 umol/
6) T	n-butane	5.33	75042721	134.274 umol/
8) T	carbon dioxide	0.21	68032019	13141.206 umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\021315\16G46694.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDchem\1\DATA\021315\16G46694.D\TCD2B.CH
Acq On : 13 Feb 2015 19:15 Operator: JDS
Sample : WG512210-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 13 19:21 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

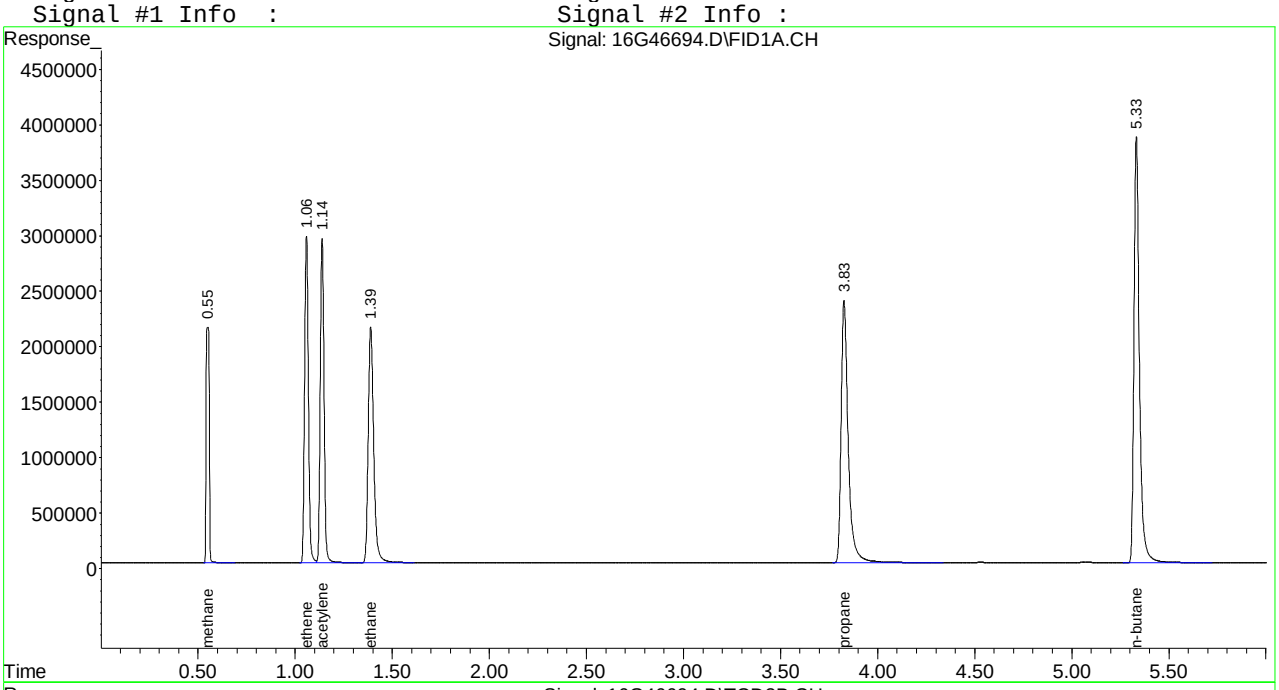

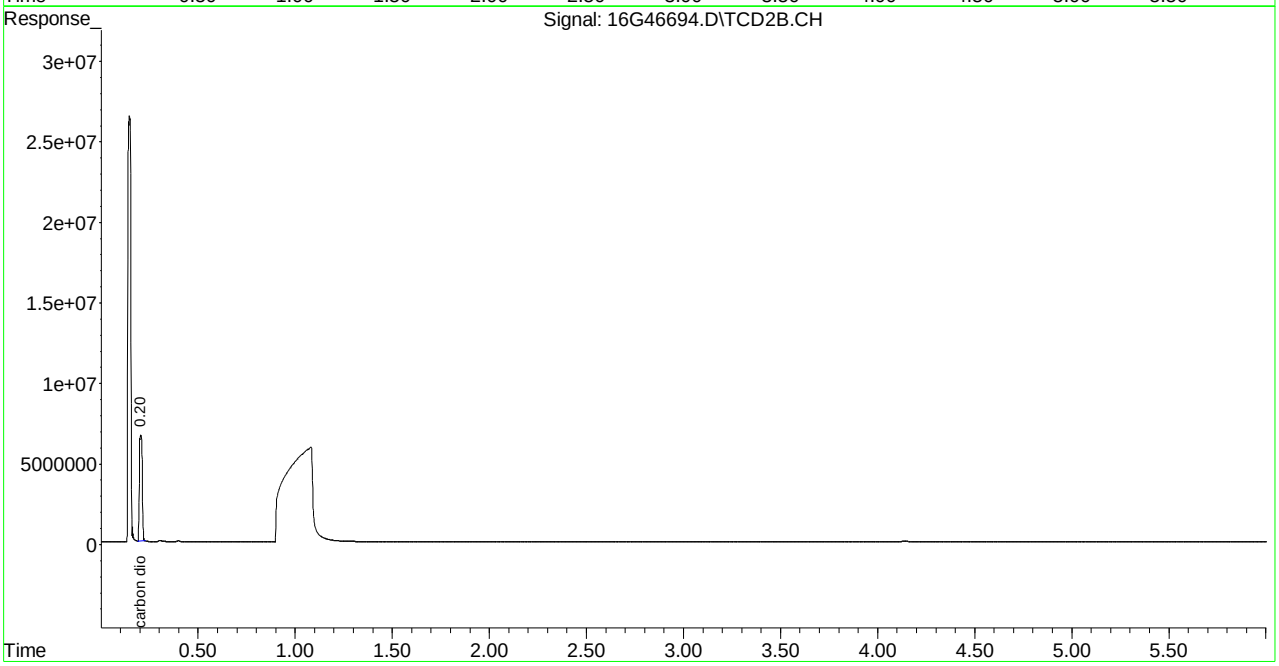

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\021315\16G46694.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDCHEM\1\DATA\021315\16G46694.D\TCD2B.CH
Acq On : 13 Feb 2015 19:15 Operator: JDS
Sample : WG512210-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	132.578	0.3	103	0.00
2	T	ethene	133.000	134.803	-1.4	104	0.00
3	T	acetylene	133.000	129.120	2.9	97	0.00
4	T	ethane	133.000	134.140	-0.9	104	0.00
5	T	propane	133.000	136.081	-2.3	106	0.00
6	T	n-butane	133.000	134.274	-1.0	105	0.00

Signal #2

8	T	carbon dioxide	13333.000	13141.206	1.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46694.D RSKEXT.M Mon Feb 16 08:01:58 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\021315\16G46694.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDCHEM\1\DATA\021315\16G46694.D\TCD2B.CH
Acq On    : 13 Feb 2015  19:15                        Operator: JDS
Sample    : WG512210-03 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update  : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15020678 **Run Date:** 02/13/2015 **Sample ID:** WG512210-01
Instrument: HP16 **Run Time:** 12:23 **Method:** RSK175
Workgroup (AAB#): WG512246 **File ID:** 16G46672

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.39	1.360	1.420
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.33	5.300	5.360
CARBON DIOXIDE	.2	.2	.2	.21	0.180	0.240
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4023809
Report generated 02/19/2015 14:47

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021315\16G46673.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\021315\16G46673.D\TCD2B.CH
Acq On : 13 Feb 2015 14:18 Operator: JDS
Sample : WG512246-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 13 14:24:04 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	48522	0.266	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46673.D RSKEXT.M Fri Feb 13 14:34:56 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\021315\16G46673.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\021315\16G46673.D\TCD2B.CH
Acq On    : 13 Feb 2015  14:18                        Operator: JDS
Sample    : WG512246-01 BLANK STD RSK175              Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 13 14:24 2015  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update  : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

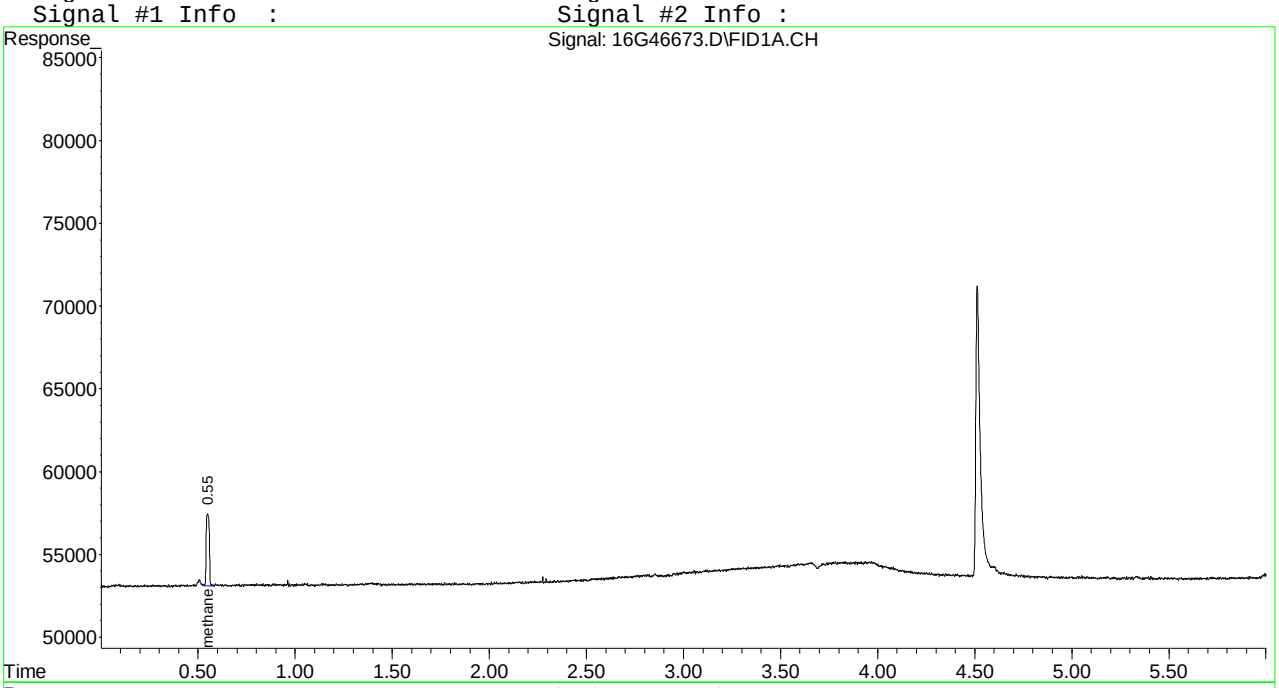

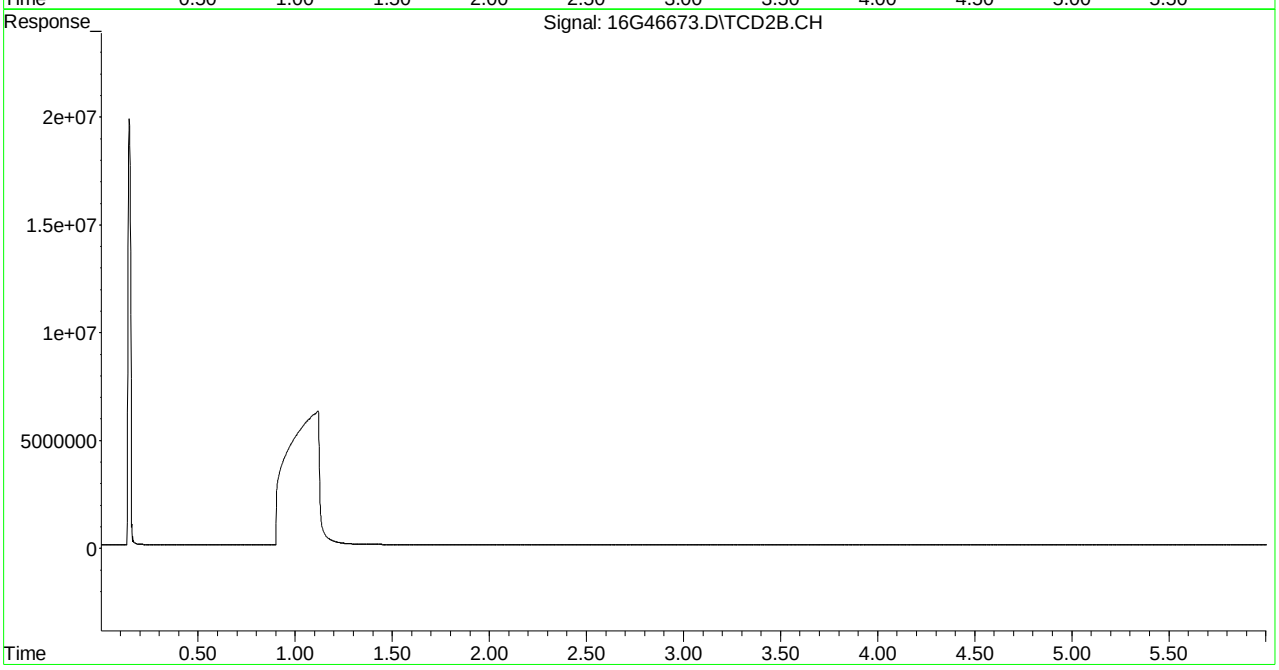

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\021315\16G46674.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\021315\16G46674.D\TCD2B.CH
Acq On    : 13 Feb 2015  14:29                        Operator: JDS
Sample    : WG512246-02 67umol/mol LCS STD RSK175     Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 13 14:35:29 2015  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update  : Wed Jan 28 12:05:14 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11895623	65.326	umol/
2) T	ethene	1.06	19492208	65.742	umol/
3) T	acetylene	1.14	20312538	65.736	umol/
4) T	ethane	1.39	20111520	64.324	umol/
5) T	propane	3.83	27970450	63.343	umol/
6) T	n-butane	5.33	33872894	60.609	umol/
8) T	carbon dioxide	0.21	22062524	4261.643	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G46674.D RSKEXT.M Fri Feb 13 14:35:29 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\021315\16G46674.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\021315\16G46674.D\TCD2B.CH
Acq On : 13 Feb 2015 14:29 Operator: JDS
Sample : WG512246-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 13 14:35 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 012815
Last Update : Wed Jan 28 12:05:14 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

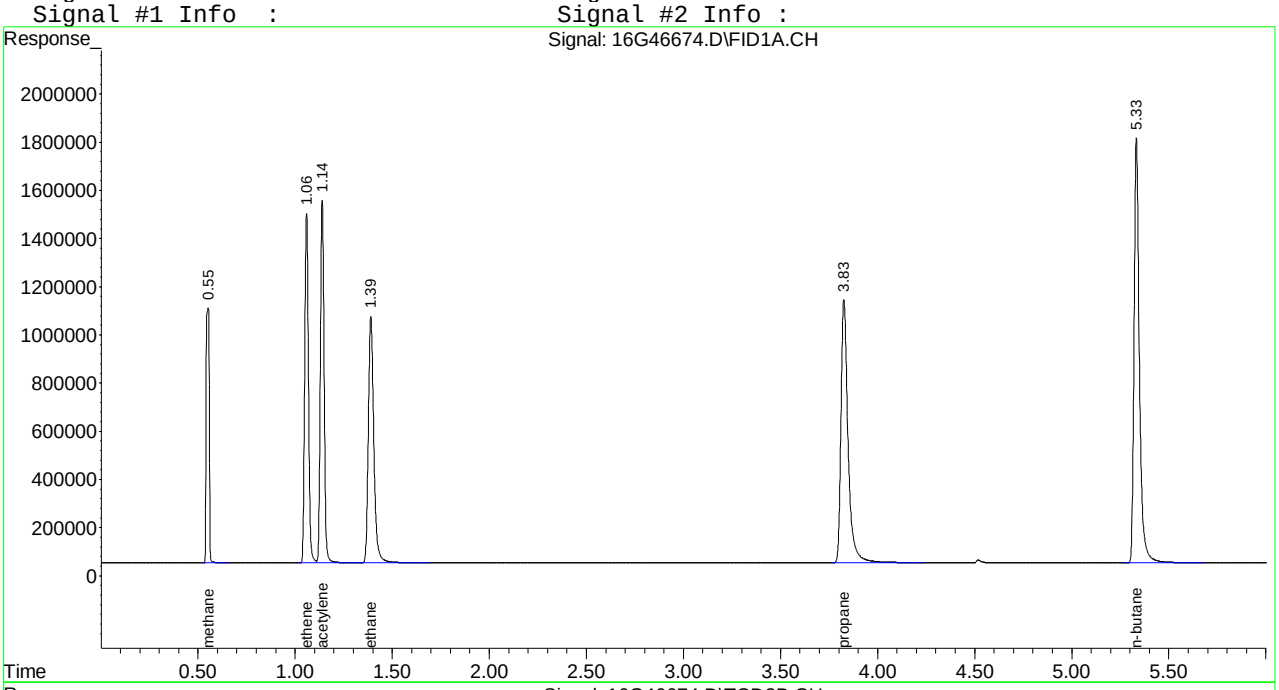

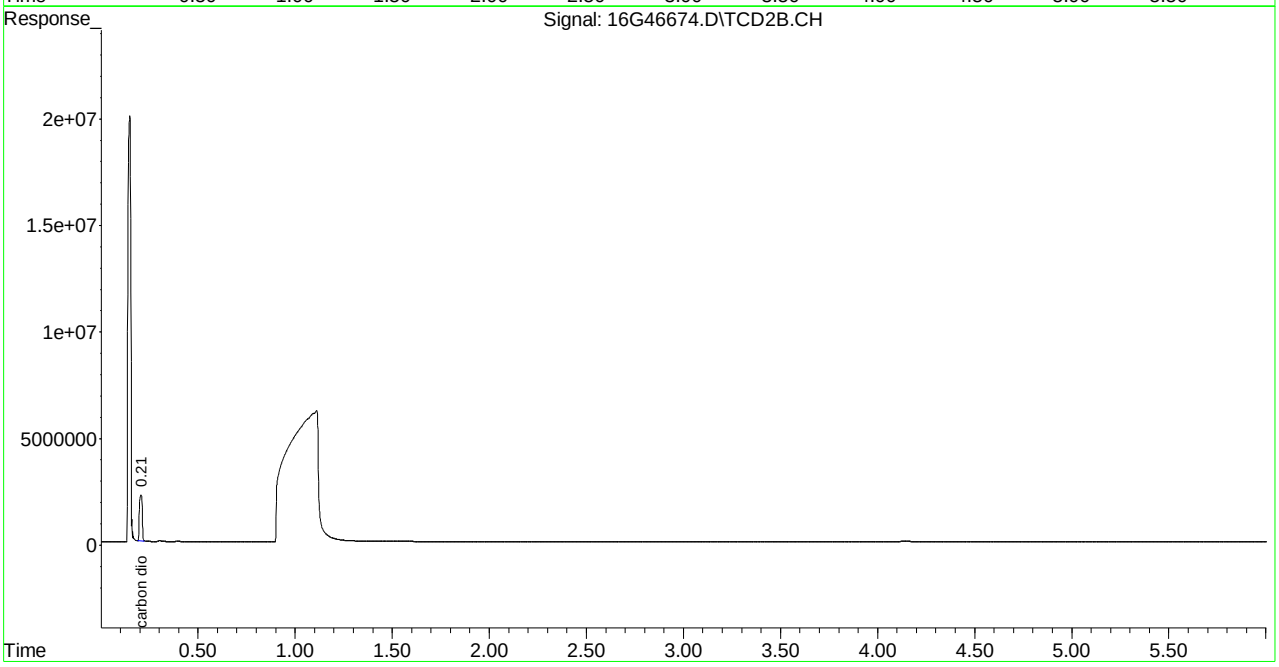

2.2 General Chemistry Data

2.2.1 Method 9056

2.2.1.1 Summary Data

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-15	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW11-021115	**Prep Method:**	9056	**Prep Date:**	02/12/2015 15:27
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG512128	**Analyst:**	AED	**Run Date:**	02/13/2015 08:33
Collect Date:	02/11/2015 10:20	**Dilution:**	10	**File ID:**	I1_021215-61
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1800	J	4.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00
Sulfate	14808-79-8	389		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-15	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW11-021115	**Prep Method:**	9056	**Prep Date:**	02/12/2015 15:27
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG512128	**Analyst:**	AED	**Run Date:**	02/13/2015 08:51
Collect Date:	02/11/2015 10:20	**Dilution:**	100	**File ID:**	I1_021215-62
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1350		40.0	20.0	10.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0
Sulfate	14808-79-8	331		200	100	50.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-16	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-021115	**Prep Method:**	9056	**Prep Date:**	02/12/2015 15:27
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG512128	**Analyst:**	AED	**Run Date:**	02/13/2015 09:44
Collect Date:	02/11/2015 11:35	**Dilution:**	20	**File ID:**	I1_021215-65
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1420	J	8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	258		40.0	20.0	10.0

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-16	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-021115	**Prep Method:**	9056	**Prep Date:**	02/12/2015 15:27
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/11/2014 16:08
Workgroup #:	WG512128	**Analyst:**	AED	**Run Date:**	02/13/2015 10:02
Collect Date:	02/11/2015 11:35	**Dilution:**	100	**File ID:**	I1_021215-66
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1250		40.0	20.0	10.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0
Sulfate	14808-79-8	173	J	200	100	50.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(-c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 061114 ICAL IC1.SEQ

Analyst1: JBK Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 50533 Syringe Filter Lot#: 00177388

Eluent ID#: RGT30625

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG479914

Internal STD: NA Surrogate STD: NA Calibration STD STD63859 (06/11/14)

CCV STD: STD63859 LCS STD: STD63859 MS/MSD STD: STD63859

Comments: ICAL only.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_061114-01	ELUENT	1	1		06/11/14 14:05
2	I1_061114-02	DI WATER	1	1		06/11/14 14:22
3	I1_061114-03	WG479914-01 STD \#6	1	1		06/11/14 14:40
4	I1_061114-04	WG479914-02 STD \#5	1	1		06/11/14 14:58
5	I1_061114-05	WG479914-03 STD \#4	1	1		06/11/14 15:15
6	I1_061114-06	WG479914-04 STD \#3	1	1		06/11/14 15:33
7	I1_061114-07	WG479914-05 STD \#2	1	1		06/11/14 15:51
8	I1_061114-08	WG479914-06 STD \#1	1	1		06/11/14 16:08
9	I1_061114-09	WG479914-07 ALT STD	1	1		06/11/14 16:26
10	I1_061114-10	LCR LEVEL 6	1	1		06/11/14 16:44
11	I1_061114-11	LCR LEVEL 2	1	1		06/11/14 17:02
12	I1_061114-12	LCR LEVEL 0	1	1		06/11/14 17:19
13	I1_061114-13	END	1	1		06/11/14 17:37

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 16-JUN-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 021215 IC1.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 16

Maintenance Log ID: 52826 Syringe Filter Lot#: 00190001
Eluent ID#: RGT32833
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG512126 WG512127 WG512128 WG512167 WG512229
Internal STD: NA Surrogate STD: NA Calibration STD STD63859 (06/11/14)
CCV STD: STD66516 LCS STD: STD66517 MS/MSD STD: STD66516

Comments: Due to KOBRA not recognizing injections 100-119, the file ID was adjusted for unique ID's. Note the letter A=100 and B=110. The sequence number is unchanged and is correct.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_021215-01	ELUENT	1	1		02/12/15 14:49
2	I1_021215-02	DI WATER	1	1		02/12/15 15:07
3	I1_021215-03	WG512126-01 ANION CCV	1	1		02/12/15 15:25
4	I1_021215-04	WG512126-02 ANION CCB	1	1		02/12/15 15:42
5	I1_021215-05	WG512127-01 ANION BLANK	2	1		02/12/15 16:00
6	I1_021215-06	WG512127-02 ANION LCS	2	1		02/12/15 16:18
120	I1_021215-07	L15020547-08 (SO4) RS	2	1		02/12/15 16:35
8	I1_021215-08	WG512127-04 DUP	2	1		02/12/15 16:53
9	I1_021215-09	WG512127-05 MS	2	1		02/12/15 17:11
10	I1_021215-10	WG512127-06 MSD	2	1		02/12/15 17:29
11	I1_021215-11	L15020547-09 (SO4)	2	1		02/12/15 17:46
12	I1_021215-12	L15020547-10 (SO4)	2	1		02/12/15 18:04
13	I1_021215-13	L15020559-01 1/10 (SO4)	2	10		02/12/15 18:22
14	I1_021215-14	L15020559-02 1/5 (SO4)	2	5		02/12/15 18:39
15	I1_021215-15	WG512126-03 ANION CCV	1	1		02/12/15 18:57
16	I1_021215-16	WG512126-04 ANION CCB	1	1		02/12/15 19:15
17	I1_021215-17	L15020559-03 1/3 (SO4)	2	3		02/12/15 19:33
18	I1_021215-18	L15020559-04 1/10 (SO4)	2	10		02/12/15 19:50
19	I1_021215-19	L15020560-01 1/3 (SO4)	2	3		02/12/15 20:08
20	I1_021215-20	L15020560-02 1/2 (SO4)	2	2		02/12/15 20:26
21	I1_021215-21	L15020562-01 1/10 (SO4)	2	10		02/12/15 20:43
22	I1_021215-22	L15020564-01 1/10 (SO4)	2	10		02/12/15 21:01
23	I1_021215-23	L15020566-01 1/50 (SO4)	2	50		02/12/15 21:19
24	I1_021215-24	L15020568-02 1/10 (SO4)	2	10		02/12/15 21:37
25	I1_021215-25	L15020568-03 1/3 (SO4)	2	3		02/12/15 21:54
26	I1_021215-26	L15020571-01 1/10 (SO4)	2	10		02/12/15 22:12
27	I1_021215-27	WG512126-05 ANION CCV	1	1		02/12/15 22:30
28	I1_021215-28	WG512126-06 ANION CCB	1	1		02/12/15 22:47
29	I1_021215-29	L15020573-01 1/10 (SO4)	2	10		02/12/15 23:05
30	I1_021215-30	L15020589-10 (SO4,CL)	2	1		02/12/15 23:23
31	I1_021215-31	L15020589-11 (SO4,CL)	2	1		02/12/15 23:40
32	I1_021215-32	L15020592-06 1/3 (SO4,CL)	2	3		02/12/15 23:58
33	I1_021215-33	L15020592-07 (SO4,CL)	2	1		02/13/15 00:16

Page: 1 Approved: 16-FEB-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 021215 IC1.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 16

Maintenance Log ID: 52826 Syringe Filter Lot#: 00190001
Eluent ID#: RGT32833
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG512126 WG512127 WG512128 WG512167 WG512229
Internal STD: NA Surrogate STD: NA STD63859 (06/11/14)
CCV STD: STD66516 LCS STD: STD66517 STD66516

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I1_021215-34	WG512128-01 ANION BLANK	1	1		02/13/15 00:34
35	I1_021215-35	WG512128-02 ANION LCS	1	1		02/13/15 00:51
121	I1_021215-36	L15020598-01 (FL) RS	2	1		02/13/15 01:09
37	I1_021215-37	WG512128-04 DUP	2	1		02/13/15 01:27
122	I1_021215-38	L15020598-02 (FL) MS	2	1		02/13/15 01:44
39	I1_021215-39	WG512126-07 ANION CCV	1	1		02/13/15 02:02
40	I1_021215-40	WG512126-08 ANION CCB	1	1		02/13/15 02:20
123	I1_021215-41	L15020598-03 (FL) MSD	2	1		02/13/15 02:38
42	I1_021215-42	L15020610-03 (ALL)	18	1		02/13/15 02:55
43	I1_021215-43	L15020610-06 (ALL)	18	1		02/13/15 03:13
44	I1_021215-44	L15020610-09 1/10 (ALL)	18	10		02/13/15 03:31
45	I1_021215-45	L15020610-15 1/200 (ALL)	18	200		02/13/15 03:48
46	I1_021215-46	WG511903 FLUID BLANK	18	1		02/13/15 04:06
47	I1_021215-47	L15020637-03 1/3 (FL)	2	1		02/13/15 04:24
48	I1_021215-48	L15020640-01 1/20 (CL,BR)	1	20		02/13/15 04:42
49	I1_021215-49	L15020640-01 1/200 (CL,BR)	1	200		02/13/15 04:59
50	I1_021215-50	L15020640-02 1/2 (CL,BR)	1	2		02/13/15 05:17
51	I1_021215-51	WG512126-09 ANION CCV	1	1		02/13/15 05:35
52	I1_021215-52	WG512126-10 ANION CCB	1	1		02/13/15 05:52
53	I1_021215-53	L15020640-02 1/50 (CL,BR)	1	50		02/13/15 06:10
54	I1_021215-54	L15020640-03 1/15 (CL,BR)	1	15		02/13/15 06:28
55	I1_021215-55	L15020640-03 1/150 (CL,BR)	1	150		02/13/15 06:45
56	I1_021215-56	L15020644-02 1/100 (CL,SO4)	2	100		02/13/15 07:03
57	I1_021215-57	L15020663-02 1/10 (CL,SO4,NO3)	1	10		02/13/15 07:22
58	I1_021215-58	L15020663-03 1/5 (CL,SO4,NO3)	1	5		02/13/15 07:40
59	I1_021215-59	L15020663-04 1/5 (CL,SO4,NO3)	1	5		02/13/15 07:58
60	I1_021215-60	L15020663-05 1/10 (CL,SO4,NO3)	1	10		02/13/15 08:15
61	I1_021215-61	L15020678-15 1/10 (NO2,NO3,CL,SO4)	1	10		02/13/15 08:33
62	I1_021215-62	L15020678-15 1/100 (NO2,NO3,CL,SO4)	1	100		02/13/15 08:51
63	I1_021215-63	WG512126-11 ANION CCV	1	1		02/13/15 09:09
64	I1_021215-64	WG512126-12 ANION CCB	1	1		02/13/15 09:26
65	I1_021215-65	L15020678-16 1/20 (NO2,NO3,CL,SO4)	1	20		02/13/15 09:44
66	I1_021215-66	L15020678-16 1/100 (NO2,NO3,CL,SO4)	1	100		02/13/15 10:02
67	I1_021215-67	WG512167-01 SOIL BLANK	7	1		02/13/15 10:55
68	I1_021215-68	WG512167-02 SOIL LCS	7	1		02/13/15 11:13
69	I1_021215-69	WG512167-03 SOIL LCS2	7	1		02/13/15 11:31

Page: 2 Approved: 16-FEB-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 021215 IC1.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 16

Maintenance Log ID: 52826 Syringe Filter Lot#: 00190001
Eluent ID#: RGT32833
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG512126 WG512127 WG512128 WG512167 WG512229
Internal STD: NA Surrogate STD: NA STD63859 (06/11/14)
CCV STD: STD66516 LCS STD: STD66517 STD66516

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	I1_021215-70	L15010002-01 (FL,CL,BR,SO4) LOD	7	1		02/13/15 11:54
71	I1_021215-71	L15010002-01 (NO2,NO3) LOD	7	1		02/13/15 12:11
72	I1_021215-72	L15010004-01 (FL,CL,BR,SO4) LOQ	7	1		02/13/15 12:29
73	I1_021215-73	L15010004-01 (NO2,NO3) LOQ	7	1		02/13/15 12:47
74	I1_021215-74	L15011395-19 (ALL)	7	1		02/13/15 13:04
75	I1_021215-75	WG512126-13 ANION CCV	1	1		02/13/15 13:22
76	I1_021215-76	WG512126-14 ANION CCB	1	1		02/13/15 13:40
77	I1_021215-77	L15011395-19 1/2 (ALL)	7	2		02/13/15 13:58
78	I1_021215-78	L15020223-01 (NO2)	7	1		02/13/15 14:15
79	I1_021215-79	L15020641-01 (CL)	7	1		02/13/15 14:33
80	I1_021215-80	L15020641-02 1/5 (CL)	7	5		02/13/15 14:51
81	I1_021215-81	L15020641-03 1/5 (CL)	7	5		02/13/15 15:08
82	I1_021215-82	L15020641-04 (CL)	7	1		02/13/15 15:26
83	I1_021215-83	L15020641-05 1/5 (CL)	7	5		02/13/15 15:44
84	I1_021215-84	L15020641-06 1/2 (CL)	7	2		02/13/15 16:02
85	I1_021215-85	L15020641-07 (CL)	7	1		02/13/15 16:19
86	I1_021215-86	WG512126-15 ANION CCV	1	1		02/13/15 16:37
87	I1_021215-87	WG512126-16 ANION CCB	1	1		02/13/15 16:55
88	I1_021215-88	WG512229-01 ANION BLANK	1	1		02/13/15 17:12
89	I1_021215-89	WG512229-02 ANION LCS	1	1		02/13/15 17:30
90	I1_021215-90	L15020712-01 1/10 (CL)	2	10		02/13/15 17:48
124	I1_021215-91	L15020714-01 (CL,SO4)	1	1		02/13/15 18:06
92	I1_021215-92	L15020714-02 (CL,SO4)	1	1		02/13/15 18:23
93	I1_021215-93	L15020714-02 1/10 (CL,SO4)	1	10		02/13/15 18:41
94	I1_021215-94	L15020714-03 1/2 (CL,SO4)	1	2		02/13/15 18:59
95	I1_021215-95	L15020714-04 (CL,SO4)	1	1		02/13/15 19:16
96	I1_021215-96	L15020718-01 (SO4)	2	1		02/13/15 19:34
97	I1_021215-97	WG512126-17 ANION CCV	1	1		02/13/15 19:52
98	I1_021215-98	WG512126-18 ANION CCB	1	1		02/13/15 20:09
99	I1_021215-99	L15020718-03 1/20 (SO4)	2	20		02/13/15 20:27
100	I1_021215-A0	L15020718-05 1/20 (SO4)	2	20		02/13/15 20:45
101	I1_021215-A1	L15020718-07 1/20 (SO4)	2	20		02/13/15 21:03
102	I1_021215-A2	L15020718-09 1/3 (SO4)	2	3		02/13/15 21:20
103	I1_021215-A3	L15020718-11 (SO4)	2	1		02/13/15 21:38
104	I1_021215-A4	L15020719-01 (SO4)	2	1		02/13/15 21:56
105	I1_021215-A5	L15020719-03 1/25 (SO4)	2	25		02/13/15 22:13

Page: 3 Approved: 16-FEB-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 021215 IC1.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 16

Maintenance Log ID: 52826 Syringe Filter Lot#: 00190001
Eluent ID#: RGT32833
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG512126 WG512127 WG512128 WG512167 WG512229
Internal STD: NA Surrogate STD: NA STD63859 (06/11/14)
CCV STD: STD66516 LCS STD: STD66517 STD66516

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
106	I1_021215-A6	L15020719-05 (SO4) REF	2	1		02/13/15 22:31
107	I1_021215-A7	WG512229-04 DUP 0719-05	2	1		02/13/15 22:49
108	I1_021215-A8	WG512126-19 ANION CCV	1	1		02/13/15 23:07
109	I1_021215-A9	WG512126-20 ANION CCB	1	1		02/13/15 23:24
110	I1_021215-B0	WG512229-05 MS	2	1		02/13/15 23:42
111	I1_021215-B1	WG512229-06 MSD	2	1		02/14/15 00:00
112	I1_021215-B2	L15020719-07 (SO4)	2	1		02/14/15 00:17
113	I1_021215-B3	L15020743-01 (CL,NO3,SO4)	1	1		02/14/15 00:35
114	I1_021215-B4	L15020743-01 1/10 (CL,NO3,SO4)	1	10		02/14/15 00:53
115	I1_021215-B5	L15020743-02 (CL,NO3,SO4)	1	1		02/14/15 01:11
116	I1_021215-B6	L15020743-02 1/10 (CL,NO3,SO4)	1	10		02/14/15 01:28
117	I1_021215-B7	WG512126-21 ANION CCV	1	1		02/14/15 01:46
118	I1_021215-B8	WG512126-22 ANION CCB	1	1		02/14/15 02:04
119	I1_021215-B9	END	1	1		02/15/15 12:25

Comments

Seq.	Rerun	Dil.	Reason	Analytes
44				
	L15020610-09 was analyzed at dilution due to high analyte screening.			
45				
	L15020610-15 was analyzed at dilution due to high analyte screening.			
48	X	200	Over Calibration Range	CL
	L15020640-01			
50	X	50	Over Calibration Range	CL
	L15020640-02			
54	X	150	Over Calibration Range	CL
	L15020640-03			
57				
	L15020663-02 was analyzed at dilution due to high analyte screening.			
58				
	L15020663-03 was analyzed at dilution due to high analyte screening.			
59				
	L15020663-04 was analyzed at dilution due to high analyte screening.			
60				
	L15020663-05 was analyzed at dilution due to high analyte screening.			
61	X	100	Over Calibration Range	CL

Page: 4 Approved: 16-FEB-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 021215 IC1.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 16

Maintenance Log ID: 52826 Syringe Filter Lot#: 00190001
Eluent ID#: RGT32833
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG512126 WG512127 WG512128 WG512167 WG512229
Internal STD: NA Surrogate STD: NA STD63859 (06/11/14)
CCV STD: STD66516 LCS STD: STD66517 STD66516

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L15020678-15 was analyzed at dilution due to high analyte screening.			
62				
	L15020678-15 was analyzed at dilution due to high analyte screening.			
65	X	100	Over Calibration Range	CL
	L15020678-16 was analyzed at dilution due to high analyte screening.			
66				
	L15020678-16 was analyzed at dilution due to high analyte screening.			
74	X	2	Over Calibration Range	CL,NO3
	L15011395-19			
78	X	2	Over Calibration Range	NO2
	L15020223-01			
113	X	10	Over Calibration Range	CL
	L15020743-01			
115	X	10	Over Calibration Range	CL
	L15020743-02			

Page: 5 Approved: 16-FEB-15

Microbac Laboratories Inc.

Data Checklist

Date: 11-JUN-2014
Analyst: JBK
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 61523
Analytical Workgroups: ICAL ONLY

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	JBK
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MDC

Primary Reviewer:
12-JUN-2014

Secondary Reviewer:
16-JUN-2014

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-18-2015 11:22:46

Microbac Laboratories Inc.

Data Checklist

Date: 12-FEB-2015
Analyst: AED
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 66342
Analytical Workgroups: 02-0547,0559,0560,0562,0564,0566,0568,0571,0573,0589,0592,0598,0

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual Integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
16-FEB-2015

Secondary Reviewer:
16-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-16-2015 16:36:29

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG512128

Login Number: L15020678

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW11-021115	15	02/11/15					02/12/2015	1.2	2		02/13/15	1.9	2	
67WW11-021115	15	02/11/15					02/12/2015	1.2	2		02/13/15	1.9	2	
67WW08-021115	16	02/11/15					02/12/2015	1.2	2		02/13/15	1.9	2	
67WW08-021115	16	02/11/15					02/12/2015	1.2	2		02/13/15	1.9	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4021328
Report generated 02/19/2015 11:39

METHOD BLANK SUMMARY

Login Number: L15020678
Blank File ID: I1_021215-34
Prep Date: 02/12/15 15:27
Analyzed Date: 02/13/15 00:34
Analyst: AED

Work Group: WG512128
Blank Sample ID: WG512128-01
Instrument ID: IC1
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG512128-02	I1_021215-35	02/13/15 00:51	01
DUP	WG512128-04	I1_021215-37	02/13/15 01:27	01
67WW11-021115	L15020678-15	I1_021215-61	02/13/15 08:33	DL01
67WW11-021115	L15020678-15	I1_021215-62	02/13/15 08:51	DL02
67WW08-021115	L15020678-16	I1_021215-65	02/13/15 09:44	DL01
67WW08-021115	L15020678-16	I1_021215-66	02/13/15 10:02	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4021329
Report generated 02/19/2015 11:39

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020678 Prep Date: 02/12/15 15:27 Sample ID: WG512128-01
Instrument ID: IC1 Run Date: 02/13/15 00:34 Prep Method: 9056
File ID: I1 021215-34 Analyst: AED Method: 9056
Workgroup (AAB#): WG512128 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1-11-JUN-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4021330
19-FEB-2015 11:39

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020678 Run Date: 02/13/2015 Sample ID: WG512128-02
Instrument ID: IC1 Run Time: 00:51 Prep Method: 9056
File ID: I1 021215-35 Analyst: AED Method: 9056
Workgroup (AAB#): WG512128 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD66516 Cal ID: IC1-11-JUN-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	7.68	96.0	90 - 110	
Nitrate	5.42	5.16	95.2	90 - 110	
Nitrite	4.87	5.19	107	90 - 110	
Sulfate	40.0	39.2	97.9	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4021337
Report generated: 02/19/2015 11:39

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15020678
Analytical Method: 9056
ICAL Workgroup: WG479914

Instrument ID: IC1
Initial Calibration Date: 11-JUN-14 16:08
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.497	5.65	0.99800	
Nitrate		2.292	8.25	0.99800	
Nitrite		3.198	12.0	1.00000	
Sulfate		7.818	13.6	0.99700	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4021338
Report generated 02/19/2015 11:39

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15020678

Analytical Method: 9056

Instrument ID: IC1

Initial Calibration Date: 11-JUN-14 16:08

Column ID: F

Analyte	WG479914-01			WG479914-02			WG479914-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.78500000	5.016	12.0	2.17700000	5.512	8.00	1.38500000	5.776
Nitrate	16.3	8.19500000	1.985	8.13	3.69800000	2.199	5.42	2.34000000	2.317
Nitrite	14.6	5.11100000	2.859	7.31	2.50900000	2.912	4.87	1.62300000	3.001
Sulfate	120	18.7160000	6.412	60.0	8.44000000	7.109	40.0	5.30500000	7.540

INT_CAL - Modified 03/06/2008
PDF File ID: 4021338
Report generated 02/19/2015 11:39

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L15020678
Analytical Method: 9056
Instrument ID: IC1
Initial Calibration Date: 11-JUN-14 16:08
Column ID: F

Analyte	WG479914-04			WG479914-05			WG479914-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.682000000	5.865	1.00	0.185000000	5.405	0.200	0.0370000000	5.405
Nitrate	2.71	1.14100000	2.376	0.678	0.282000000	2.402	0.134	0.0540000000	2.473
Nitrite	2.44	0.795000000	3.064	0.609	0.185000000	3.291	0.122	0.0300000000	4.060
Sulfate	20.0	2.53500000	7.890	5.00	0.593000000	8.432	1.00	0.105000000	9.524

INT_CAL - Modified 03/06/2008
PDF File ID: 4021338
Report generated 02/19/2015 11:39

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15020678 Run Date: 06/11/2014 Sample ID: WG479914-07
Instrument ID: IC1 Run Time: 16:26 Method: 9056
File ID: I1 061114-09 Analyst: JBK QC Key: DOD4
ICal Workgroup: WG479914 Cal ID: IC1 - 11-JUN-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.48	mg/L	5.71	6.50	10	
Nitrate		5.42	5.09	mg/L	2.27	6.20	10	
Nitrite		4.87	4.78	mg/L	2.98	1.90	10	
Sulfate		40.0	37.4	mg/L	7.43	6.60	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4021333
Report generated 02/19/2015 11:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020678
Run Date: 02/12/2015
Sample ID: WG512126-06
Instrument ID: IC1
Run Time: 22:47
Method: 9056
File ID: I1 021215-28
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG512128
Cal ID: IC1 - 11-JUN-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4021335
Report generated 02/19/2015 11:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020678
Run Date: 02/13/2015
Sample ID: WG512126-08
Instrument ID: IC1
Run Time: 02:20
Method: 9056
File ID: I1 021215-40
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG512128
Cal ID: IC1 - 11-JUN-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4021335
Report generated 02/19/2015 11:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020678
Run Date: 02/13/2015
Sample ID: WG512126-10
Instrument ID: IC1
Run Time: 05:52
Method: 9056
File ID: I1 021215-52
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG512128
Cal ID: IC1 - 11-JUN-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4021335
Report generated 02/19/2015 11:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020678
Run Date: 02/13/2015
Sample ID: WG512126-12
Instrument ID: IC1
Run Time: 09:26
Method: 9056
File ID: I1 021215-64
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG512128
Cal ID: IC1 - 11-JUN-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4021335
Report generated 02/19/2015 11:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020678
Run Date: 02/13/2015
Sample ID: WG512126-14
Instrument ID: IC1
Run Time: 13:40
Method: 9056
File ID: I1 021215-76
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG512128
Cal ID: IC1 - 11-JUN-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4021335
Report generated 02/19/2015 11:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020678 Run Date: 02/12/2015 Sample ID: WG512126-05
Instrument ID: IC1 Run Time: 22:30 Method: 9056
File ID: I1 021215-27 Analyst: AED QC Key: DOD4
Workgroup (AAB#): WG512128 Cal ID: IC1 - 11-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.59	mg/L	5.63	5.13	10	
Nitrate		5.42	5.12	mg/L	2.26	5.62	10	
Nitrite		4.87	5.13	mg/L	2.78	5.31	10	
Sulfate		40.0	38.9	mg/L	7.13	2.70	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4021334
Report generated 02/19/2015 11:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020678 Run Date: 02/13/2015 Sample ID: WG512126-07
Instrument ID: IC1 Run Time: 02:02 Method: 9056
File ID: I1 021215-39 Analyst: AED QC Key: DOD4
Workgroup (AAB#): WG512128 Cal ID: IC1 - 11-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.60	mg/L	5.62	4.95	10	
Nitrate		5.42	5.11	mg/L	2.26	5.78	10	
Nitrite		4.87	5.18	mg/L	2.75	6.40	10	
Sulfate		40.0	39.0	mg/L	7.11	2.51	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4021334
Report generated 02/19/2015 11:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020678 Run Date: 02/13/2015 Sample ID: WG512126-09
Instrument ID: IC1 Run Time: 05:35 Method: 9056
File ID: I1 021215-51 Analyst: AED QC Key: DOD4
Workgroup (AAB#): WG512128 Cal ID: IC1 - 11-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.59	mg/L	5.63	5.19	10	
Nitrate		5.42	5.13	mg/L	2.25	5.30	10	
Nitrite		4.87	5.14	mg/L	2.77	5.41	10	
Sulfate		40.0	38.9	mg/L	7.12	2.65	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4021334
Report generated 02/19/2015 11:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020678 Run Date: 02/13/2015 Sample ID: WG512126-11
Instrument ID: IC1 Run Time: 09:09 Method: 9056
File ID: I1 021215-63 Analyst: AED QC Key: DOD4
Workgroup (AAB#): WG512128 Cal ID: IC1 - 11-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.51	mg/L	5.69	6.13	10	
Nitrate		5.42	5.06	mg/L	2.28	6.61	10	
Nitrite		4.87	5.11	mg/L	2.79	4.84	10	
Sulfate		40.0	38.5	mg/L	7.20	3.65	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4021334
Report generated 02/19/2015 11:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020678 Run Date: 02/13/2015 Sample ID: WG512126-13
Instrument ID: IC1 Run Time: 13:22 Method: 9056
File ID: I1 021215-75 Analyst: AED QC Key: DOD4
Workgroup (AAB#): WG512128 Cal ID: IC1 - 11-JUN-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.62	mg/L	5.61	4.75	10	
Nitrate		5.42	5.12	mg/L	2.26	5.49	10	
Nitrite		4.87	5.17	mg/L	2.75	6.15	10	
Sulfate		40.0	38.8	mg/L	7.16	3.11	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4021334
Report generated 02/19/2015 11:40

2.2.1.3 Sample Data

61 L15020678-15 1/10 (NO2,NO3,CL,SO4)

1,10 AED

Sample Name:	**L15020678-15 1/10 (NO2,NO3,CL,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/13/2015 8:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

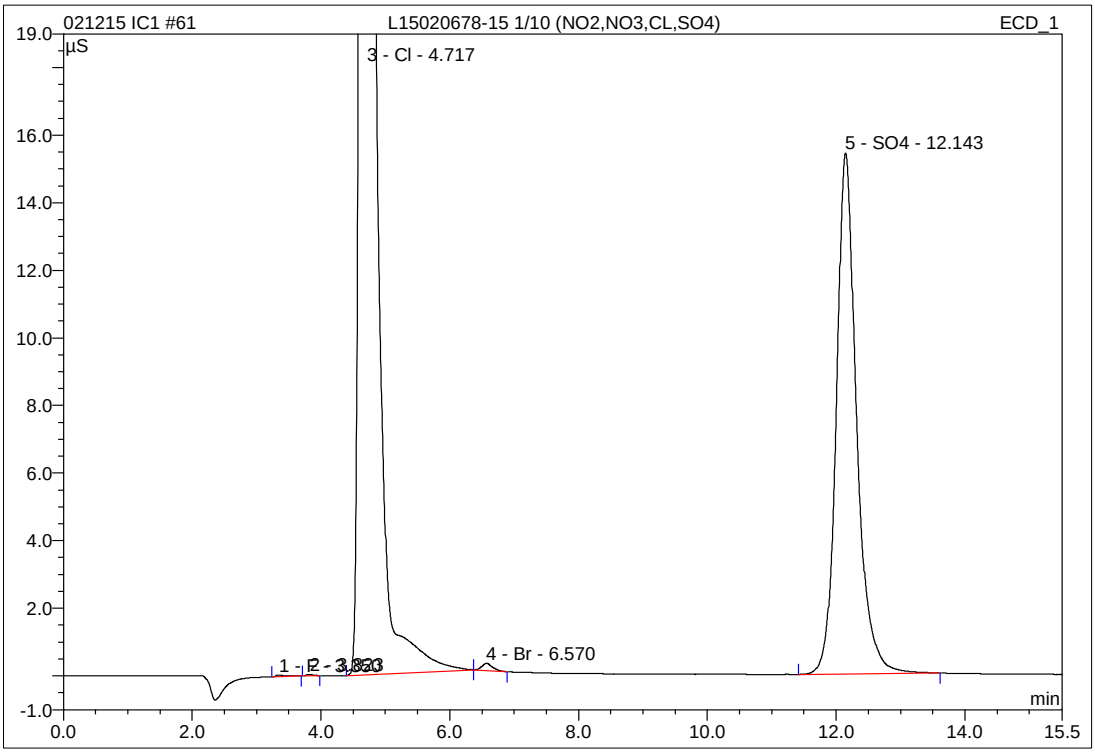

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	0.046	0.008	0.02	0.106	BMB
2	3.82	n.a.	0.038	0.004	0.01	n.a.	BMB
3	4.72	Cl	231.847	33.904	85.70	180.406	BMb
4	6.57	Br	0.212	0.040	0.10	0.570	bMB
5	12.14	SO4	15.412	5.606	14.17	38.869	BMB
Total:			247.555	39.563	100.00	219.952	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

62 L15020678-15 1/100 (NO2,NO3,CL,SO4)

1,100 AED

Sample Name:	**L15020678-15 1/100 (NO2,NO3,CL,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/13/2015 8:51**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

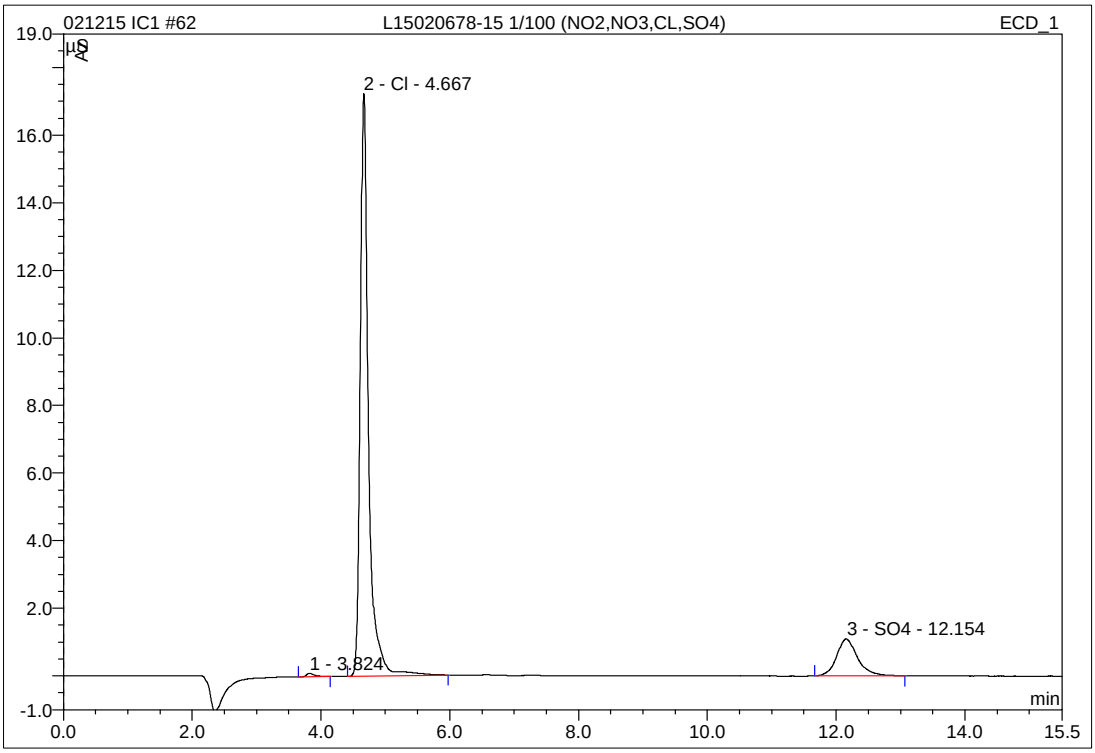

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.82	n.a.	0.107	0.016	0.53	n.a.	BMB
2	4.67	Cl	17.237	2.538	85.57	13.532	BMB
3	12.15	SO4	1.092	0.412	13.91	3.311	BMB
Total:			18.436	2.966	100.00	16.843	

65 L15020678-16 1/20 (NO2,NO3,CL,SO4)

1,20 AED

Sample Name:	**L15020678-16 1/20 (NO2,NO3,CL,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/13/2015 9:44**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

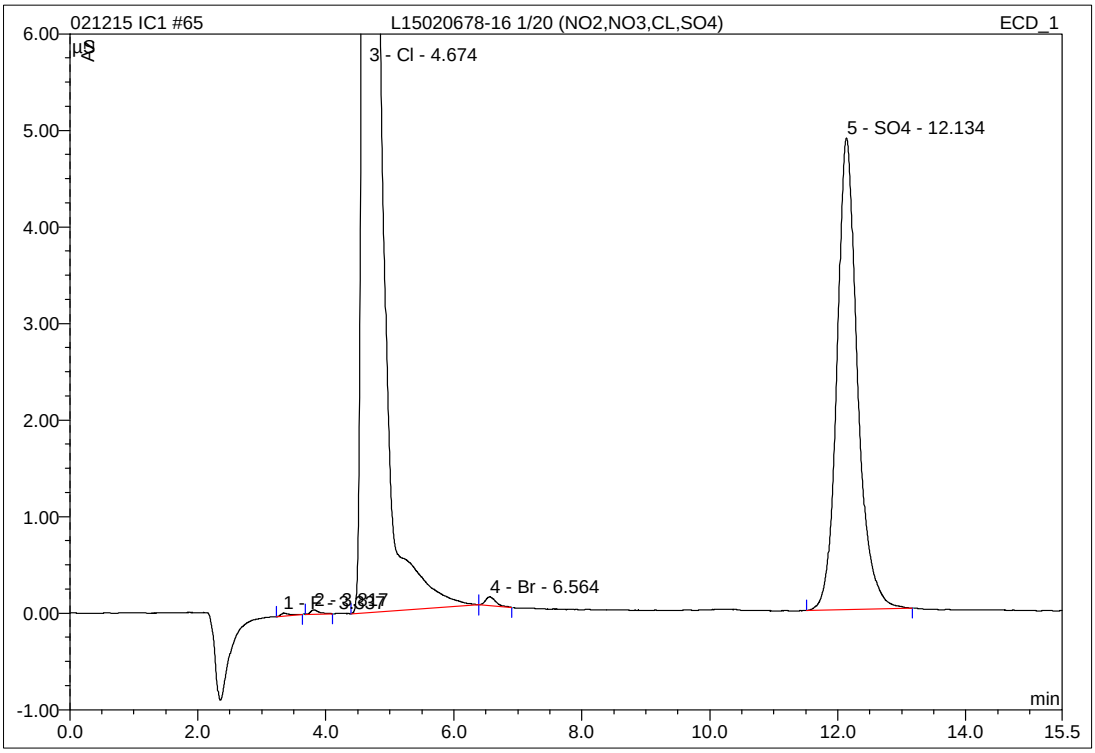

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.34	F	0.033	0.005	0.03	0.096	BMB
2	3.82	n.a.	0.043	0.006	0.04	n.a.	BMB
3	4.67	Cl	94.113	13.319	87.85	70.888	BMb
4	6.56	Br	0.092	0.017	0.11	0.255	bMB
5	12.13	SO4	4.882	1.813	11.96	12.901	BMB
Total:			99.163	15.161	100.00	84.140	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

66 L15020678-16 1/100 (NO2,NO3,CL,SO4)

1,100 AED

Sample Name:	**L15020678-16 1/100 (NO2,NO3,CL,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/13/2015 10:02**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

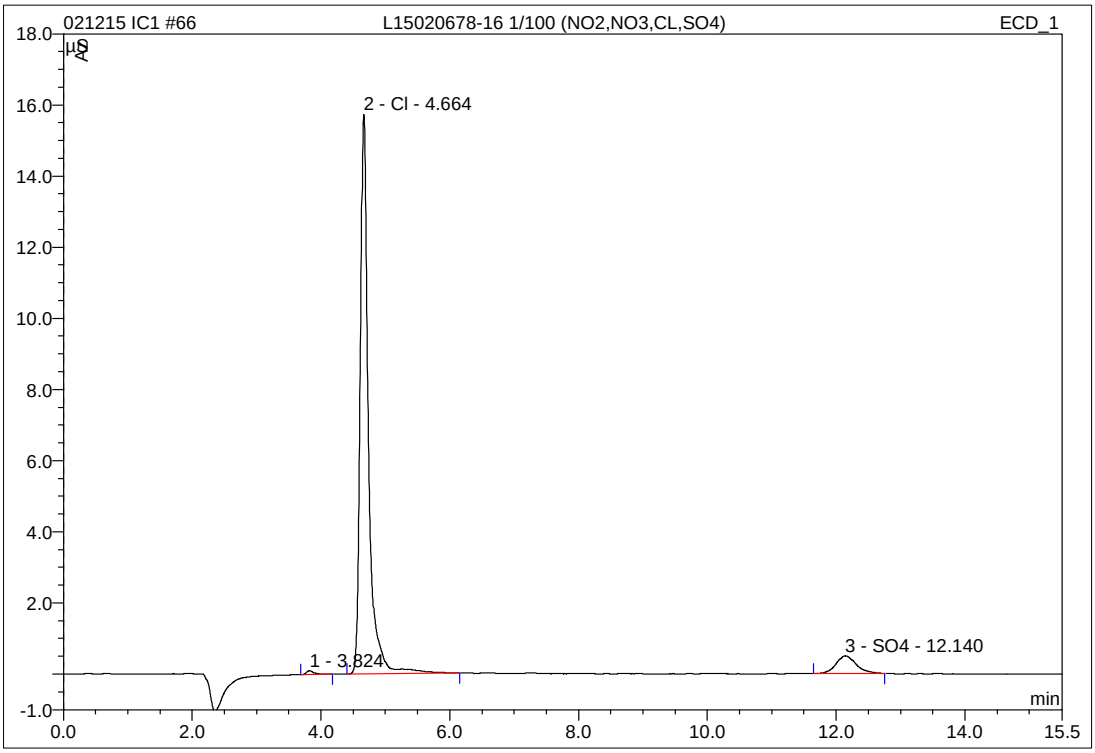

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.82	n.a.	0.108	0.016	0.64	n.a.	BMB
2	4.66	Cl	15.729	2.342	92.21	12.490	BMB
3	12.14	SO4	0.497	0.182	7.15	1.731	BMB
Total:			16.334	2.540	100.00	14.220	

2.2.1.4 Standards Data

3 WG479914-01 STD #6

1,1 JBK STD63859

Sample Name:	**WG479914-01 STD #6**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 14:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

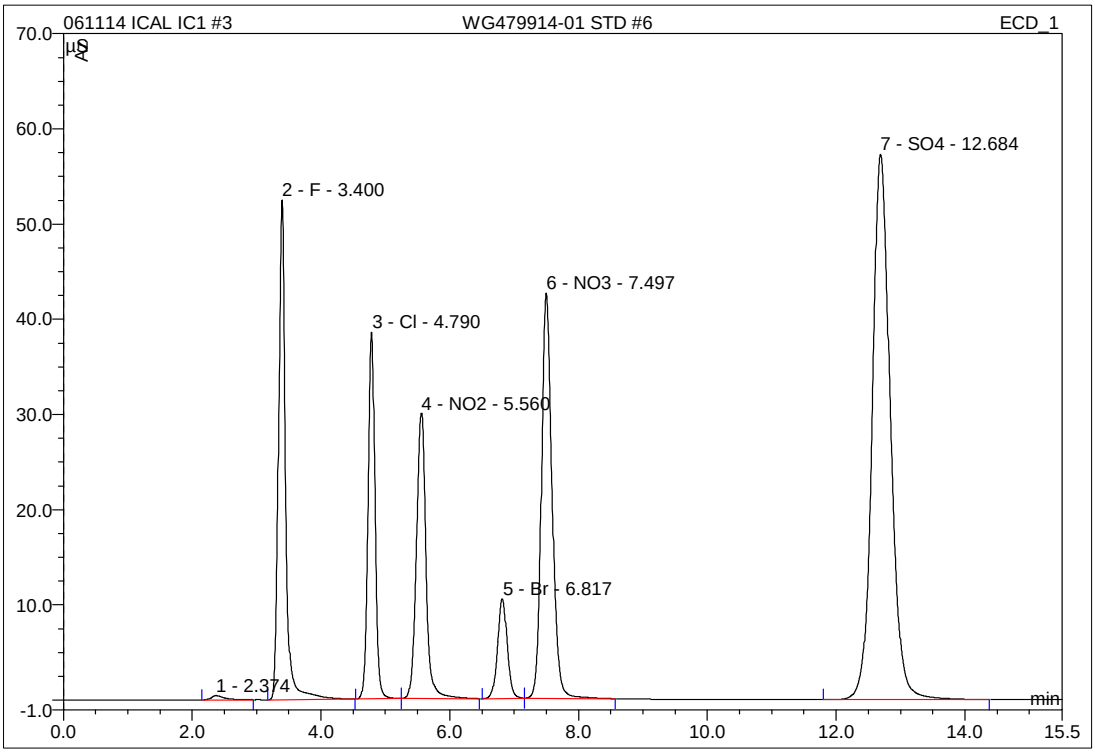

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.451	0.110	0.24	n.a.	BMB
2	3.40	F	52.495	6.678	14.70	24.720	BMB
3	4.79	Cl	38.513	4.785	10.54	25.485	BMb
4	5.56	NO2	29.937	5.111	11.25	14.854	bMB
5	6.82	Br	10.470	1.822	4.01	24.661	BMB
6	7.50	NO3	42.558	8.195	18.04	17.371	BMB
7	12.68	SO4	57.269	18.716	41.21	128.620	BMB
Total:			231.693	45.416	100.00	235.711	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG479914-02 STD #5

1,1 JBK STD63859

Sample Name:	**WG479914-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 14:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

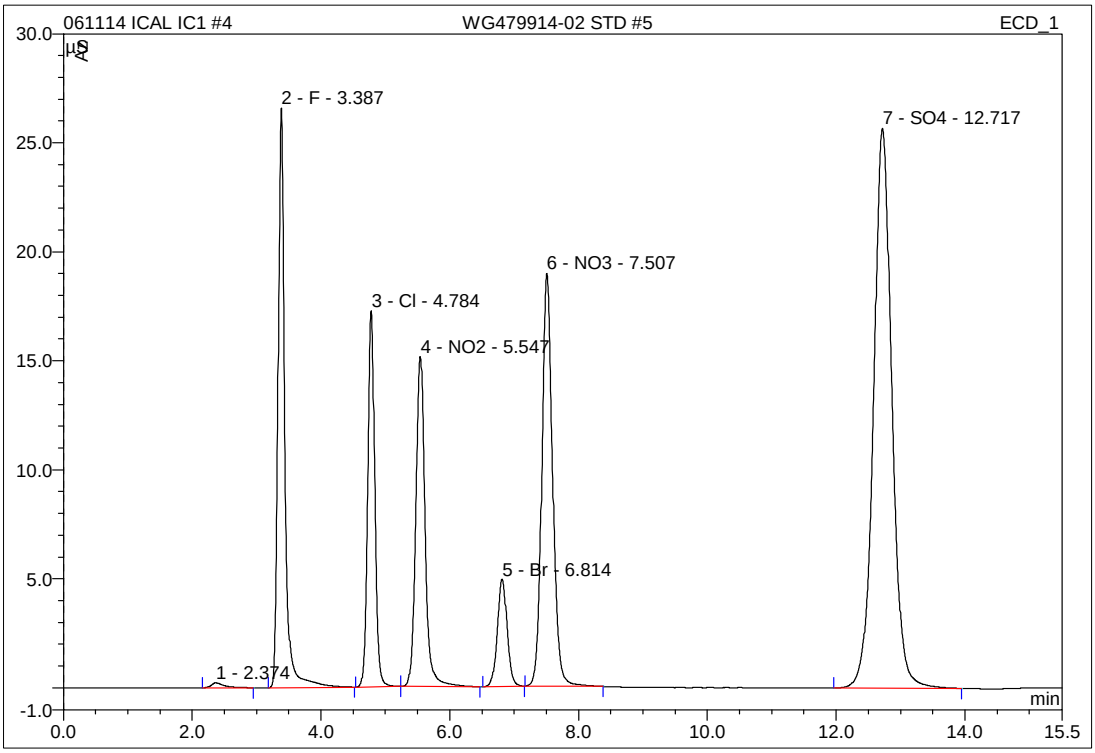

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.233	0.057	0.27	n.a.	BMB
2	3.39	F	26.585	3.244	15.45	12.048	BMB
3	4.78	Cl	17.242	2.177	10.37	11.609	BMb
4	5.55	NO2	15.121	2.509	11.95	7.315	bMB
5	6.81	Br	4.919	0.872	4.15	11.818	BMB
6	7.51	NO3	18.940	3.698	17.61	7.865	BMB
7	12.72	SO4	25.675	8.440	40.19	58.267	BMB
Total:			108.716	20.997	100.00	108.921	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

5 WG479914-03 STD #4

1,1 JBK STD63859

Sample Name:	**WG479914-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 15:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

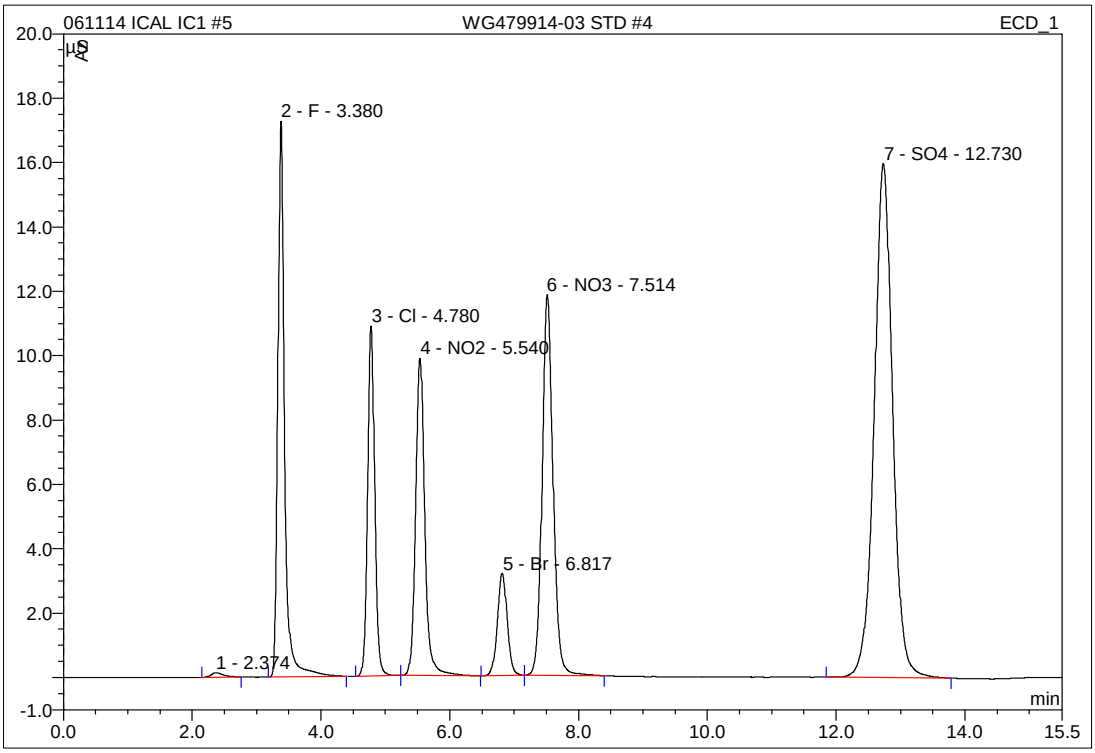

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.144	0.032	0.24	n.a.	BMB
2	3.38	F	17.270	2.084	15.62	7.767	BMB
3	4.78	Cl	10.873	1.385	10.38	7.396	BMB
4	5.54	NO2	9.854	1.623	12.17	4.747	bMB
5	6.82	Br	3.178	0.568	4.26	7.698	BMB
6	7.51	NO3	11.835	2.340	17.55	4.994	BMB
7	12.73	SO4	15.975	5.305	39.77	36.803	BMB
Total:			69.128	13.336	100.00	69.405	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

00739513

5 WG479914-03 STD #4

1,1 JBK STD63859

Sample Name:	**WG479914-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 15:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

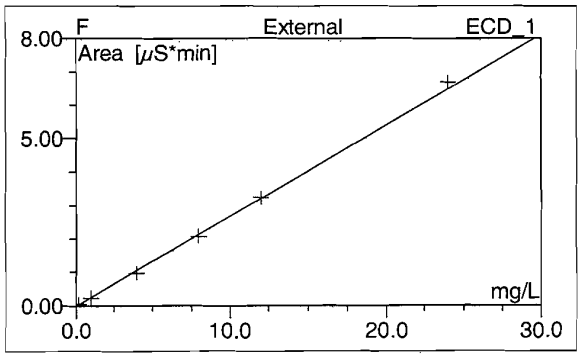

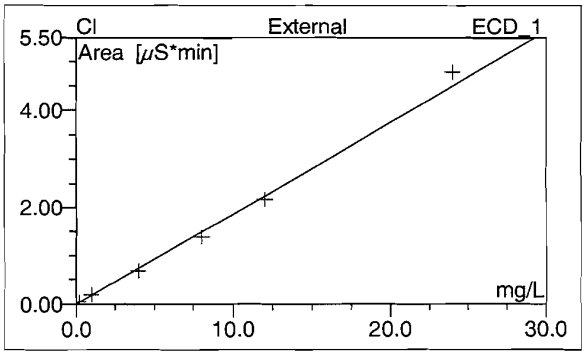

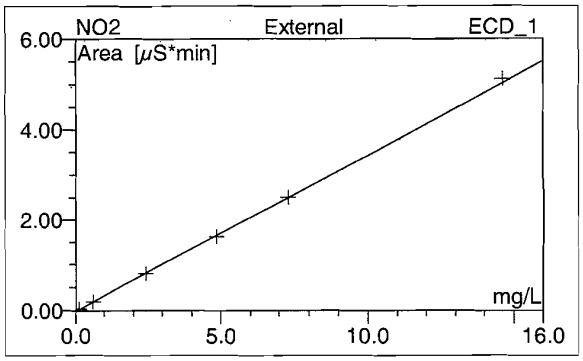

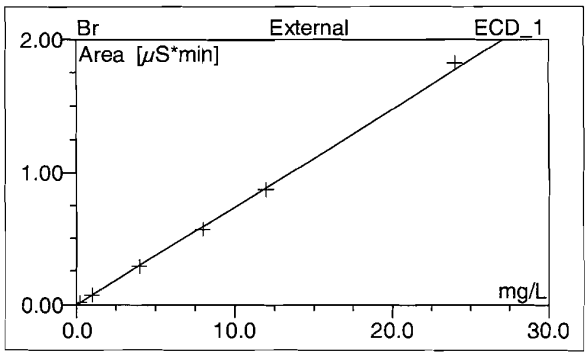

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.37	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.38	F	YLOff	6	99.8997	-0.0209	0.2710	0.0000
3	4.78	Cl	YLOff	6	99.7874	-0.0055	0.1880	0.0000
4	5.54	NO2	YLOff	6	99.9757	-0.0149	0.3451	0.0000
5	6.82	Br	YLOff	6	99.9557	-0.0018	0.0740	0.0000
6	7.51	NO3	YLOff	6	99.7488	-0.0221	0.4730	0.0000
7	12.73	SO4	YLOff	6	99.7115	-0.0712	0.1461	0.0000
Average:					99.8465	-0.0227	0.2495	0.0000

00739514

5 WG479914-03 STD #4

1,1 JBK STD63859

Sample Name:	**WG479914-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 15:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

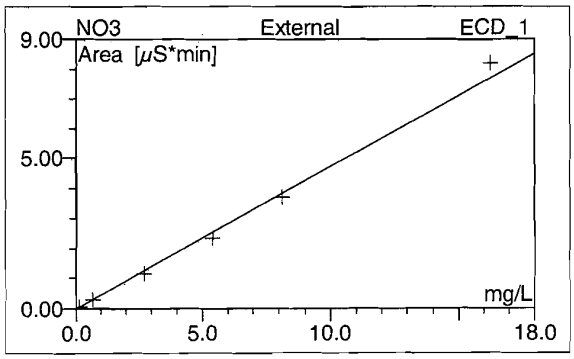

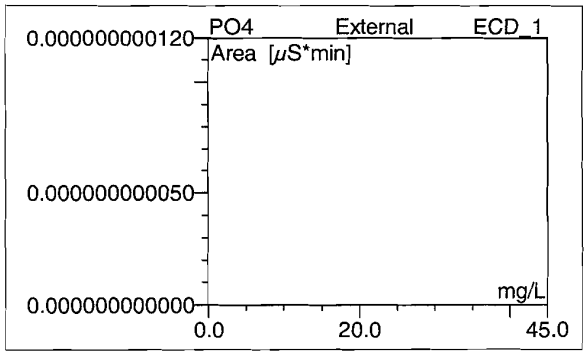

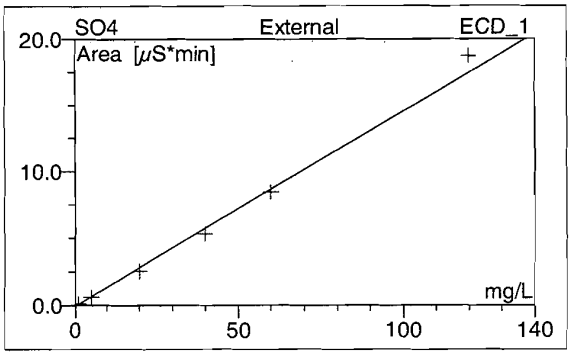

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.37	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.38	F	YLOff	6	99.8997	-0.0209	0.2710	0.0000
3	4.78	Cl	YLOff	6	99.7874	-0.0055	0.1880	0.0000
4	5.54	NO2	YLOff	6	99.9757	-0.0149	0.3451	0.0000
5	6.82	Br	YLOff	6	99.9557	-0.0018	0.0740	0.0000
6	7.51	NO3	YLOff	6	99.7488	-0.0221	0.4730	0.0000
7	12.73	SO4	YLOff	6	99.7115	-0.0712	0.1461	0.0000
Average:					99.8465	-0.0227	0.2495	0.0000

6 WG479914-04 STD #3

1,1 JBK STD63859

Sample Name:	**WG479914-04 STD #3**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 15:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

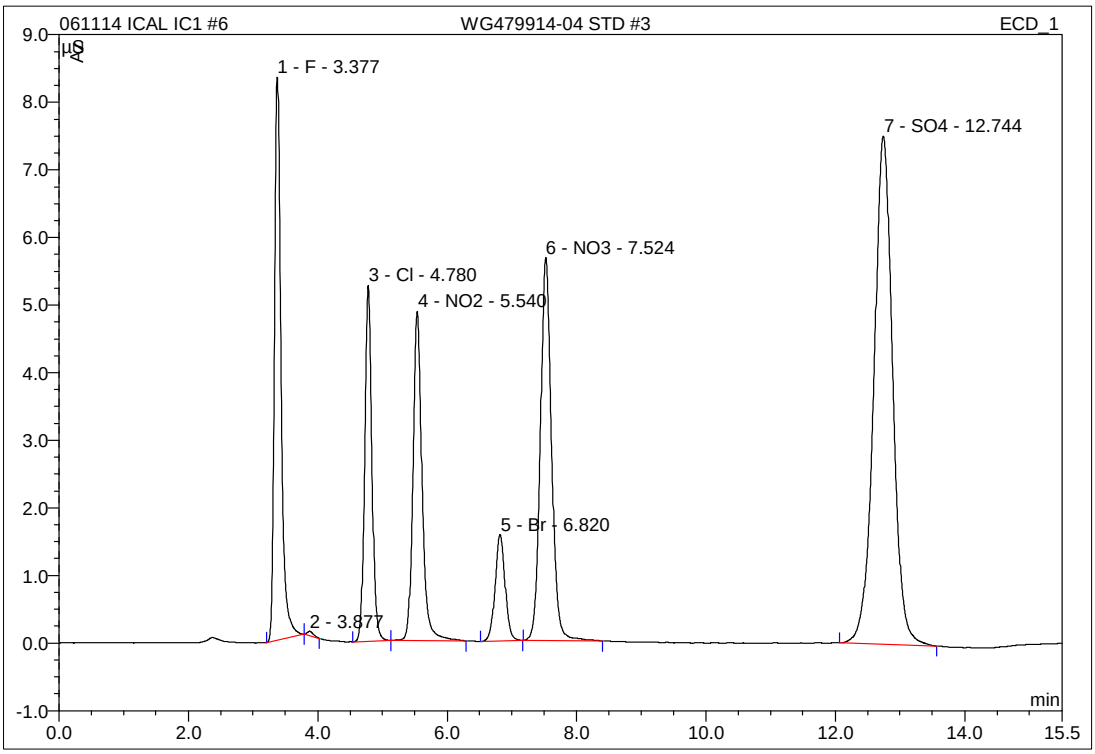

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.38	F	8.328	0.959	14.98	3.616	BMb
2	3.88	n.a.	0.065	0.007	0.11	n.a.	bMB
3	4.78	Cl	5.262	0.682	10.65	3.658	BMB
4	5.54	NO2	4.871	0.795	12.41	2.346	BMB
5	6.82	Br	1.579	0.284	4.43	3.863	BMB
6	7.52	NO3	5.662	1.141	17.82	2.458	BMB
7	12.74	SO4	7.520	2.535	39.60	17.845	BMB
Total:			33.287	6.403	100.00	33.786	

7 WG479914-05 STD #2

1,1 JBK STD63859

Sample Name:	**WG479914-05 STD #2**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 15:51**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

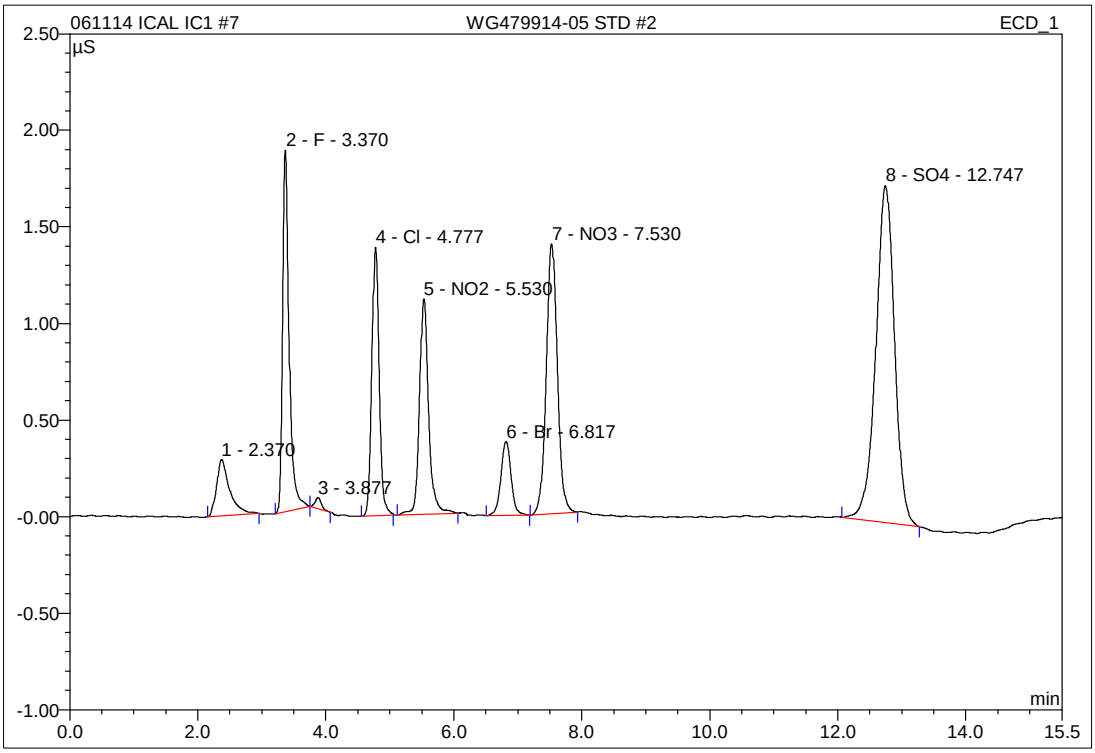

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.292	0.069	4.28	n.a.	BMB
2	3.37	F	1.872	0.224	13.86	0.904	BMb
3	3.88	n.a.	0.057	0.007	0.41	n.a.	bMB
4	4.78	Cl	1.389	0.185	11.42	1.011	BMB
5	5.53	NO2	1.116	0.185	11.45	0.579	BMB
6	6.82	Br	0.382	0.071	4.39	0.984	BMB
7	7.53	NO3	1.396	0.282	17.46	0.643	BMB
8	12.75	SO4	1.744	0.593	36.72	4.549	BMB
Total:			8.249	1.616	100.00	8.670	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

8 WG479914-06 STD #1

1,1 JBK STD63859

Sample Name:	**WG479914-06 STD #1**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 16:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

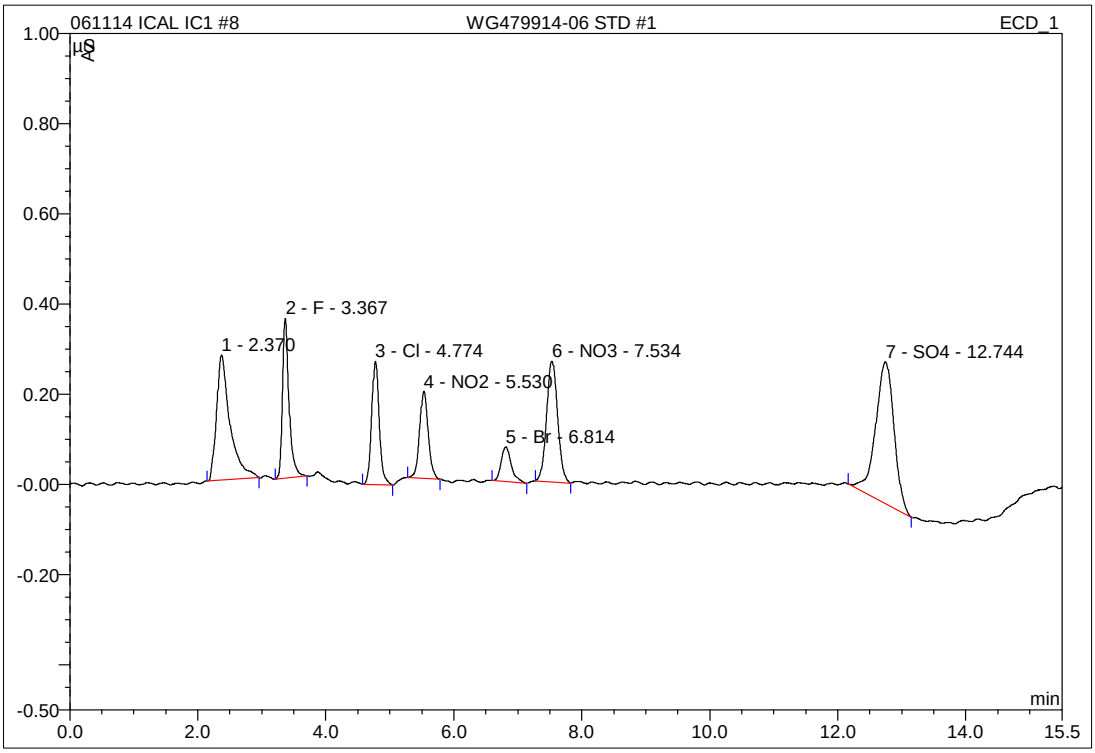

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.278	0.068	19.36	n.a.	BMB
2	3.37	F	0.354	0.043	12.18	0.235	BMB
3	4.77	Cl	0.273	0.037	10.65	0.228	BMB
4	5.53	NO2	0.193	0.030	8.62	0.131	BMB
5	6.81	Br	0.077	0.014	4.02	0.215	BMB
6	7.53	NO3	0.268	0.054	15.30	0.160	BMB
7	12.74	SO4	0.314	0.105	29.86	1.205	BMB
Total:			1.757	0.351	100.00	2.175	

9 WG479914-07 ALT STD

1,1 JBK STD63860

Sample Name:	**WG479914-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 16:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

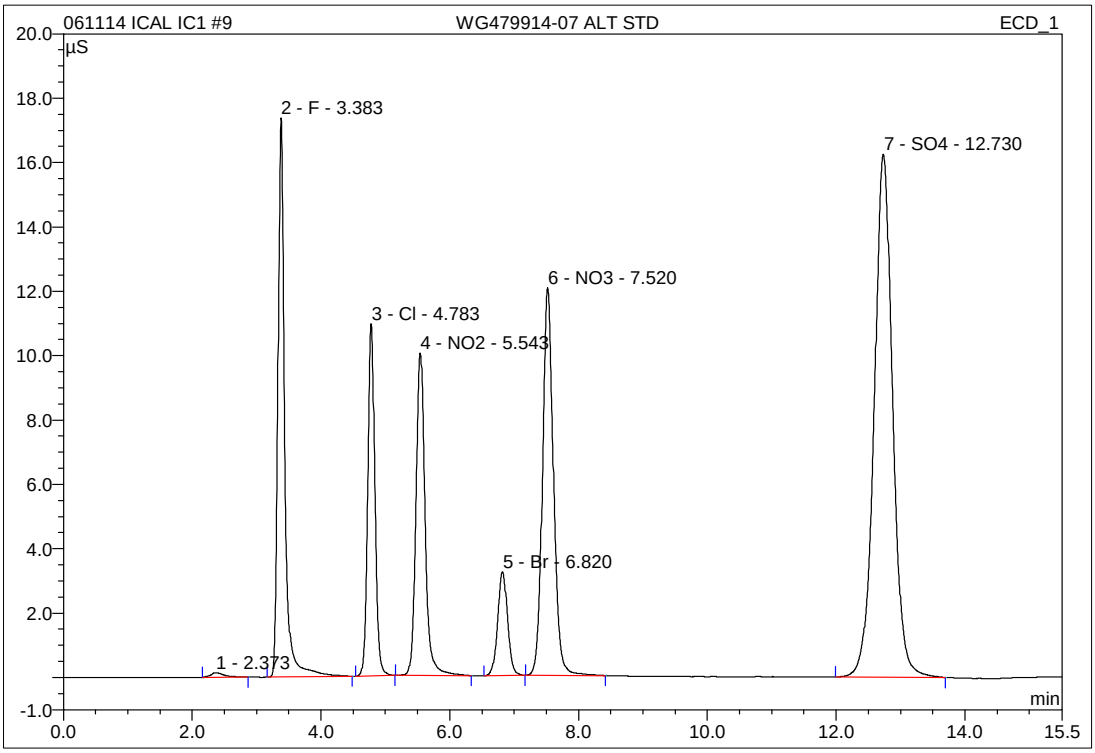

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.145	0.035	0.26	n.a.	BMB
2	3.38	F	17.370	2.120	15.66	7.900	BMB
3	4.78	Cl	10.942	1.400	10.34	7.479	BMB
4	5.54	NO2	10.010	1.635	12.08	4.781	BMB
5	6.82	Br	3.231	0.577	4.26	7.830	BMB
6	7.52	NO3	12.035	2.384	17.61	5.087	BMB
7	12.73	SO4	16.243	5.385	39.78	37.351	BMB
Total:			69.976	13.536	100.00	70.428	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

9 WG479914-07 ALT STD

1,1 JBK STD63860

Sample Name:	**WG479914-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/11/2014 16:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG479914-07 ALT S	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.9004	-1.24	PASS
Cl	8.00	7.4789	-6.51	PASS
NO2-N	4.8714	4.7807	-1.86	PASS
Br	8.00	7.8299	-2.13	PASS
NO3-N	5.4216	5.0867	-6.18	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	37.3511	-6.62	PASS

27 WG512126-05 ANION CCV

1,1 AED STD66516

Sample Name:	**WG512126-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/12/2015 22:30**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

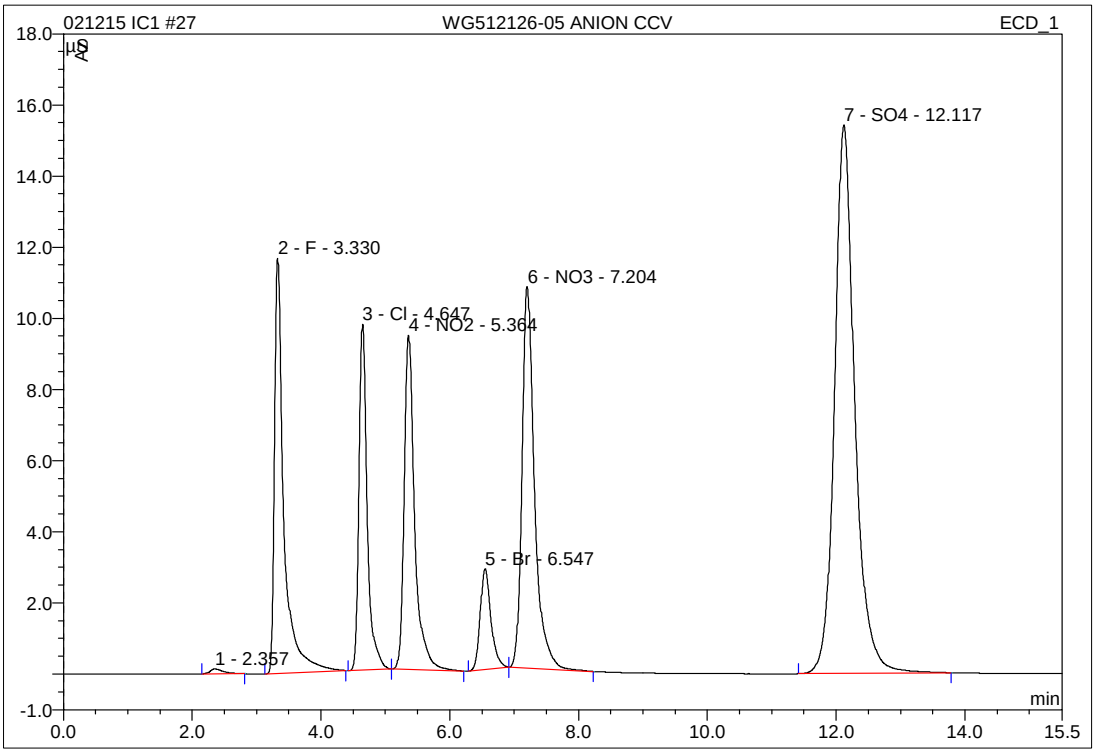

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.36	n.a.	0.138	0.033	0.24	n.a.	BMB
2	3.33	F	11.661	1.933	14.11	7.211	BMB
3	4.65	Cl	9.727	1.421	10.37	7.590	BMb
4	5.36	NO2	9.398	1.755	12.81	5.130	bMB
5	6.55	Br	2.836	0.551	4.02	7.474	BMb
6	7.20	NO3	10.734	2.398	17.50	5.117	bMB
7	12.12	SO4	15.416	5.614	40.96	38.920	BMB
Total:			59.909	13.706	100.00	71.442	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

27 WG512126-05 ANION CCV

1,1 AED STD66516

Sample Name:	**WG512126-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/12/2015 22:30**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG512126-05 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.2115	-9.86	PASS
Cl	8.00	7.5902	-5.12	PASS
NO2-N	4.8714	5.1296	5.30	PASS
Br	8.00	7.4741	-6.57	PASS
NO3-N	5.4216	5.1168	-5.62	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.9199	-2.70	PASS

39 WG512126-07 ANION CCV

1,1 AED STD66516

Sample Name:	**WG512126-07 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/13/2015 2:02**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

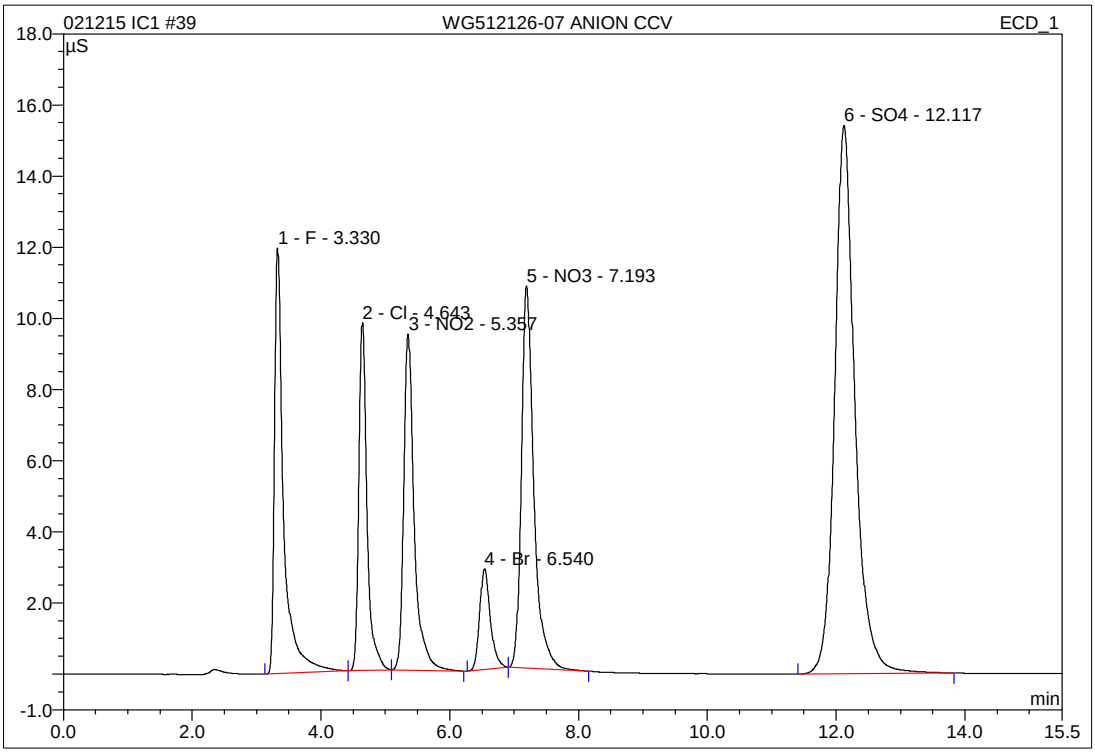

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.33	F	11.960	1.950	14.22	7.273	BMB
2	4.64	Cl	9.781	1.424	10.38	7.604	BMb
3	5.36	NO2	9.452	1.774	12.93	5.183	bMB
4	6.54	Br	2.833	0.549	4.00	7.447	BMb
5	7.19	NO3	10.749	2.394	17.46	5.108	bMB
6	12.12	SO4	15.421	5.625	41.01	38.997	BMB
Total:			60.196	13.716	100.00	71.612	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

39 WG512126-07 ANION CCV

1,1 AED STD66516

Sample Name:	**WG512126-07 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/13/2015 2:02**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG512126-07 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.2728	-9.09	PASS
Cl	8.00	7.6043	-4.95	PASS
NO2-N	4.8714	5.1828	6.39	PASS
Br	8.00	7.4471	-6.91	PASS
NO3-N	5.4216	5.1081	-5.78	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.9971	-2.51	PASS

51 WG512126-09 ANION CCV

1,1 AED STD66516

Sample Name:	**WG512126-09 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/13/2015 5:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

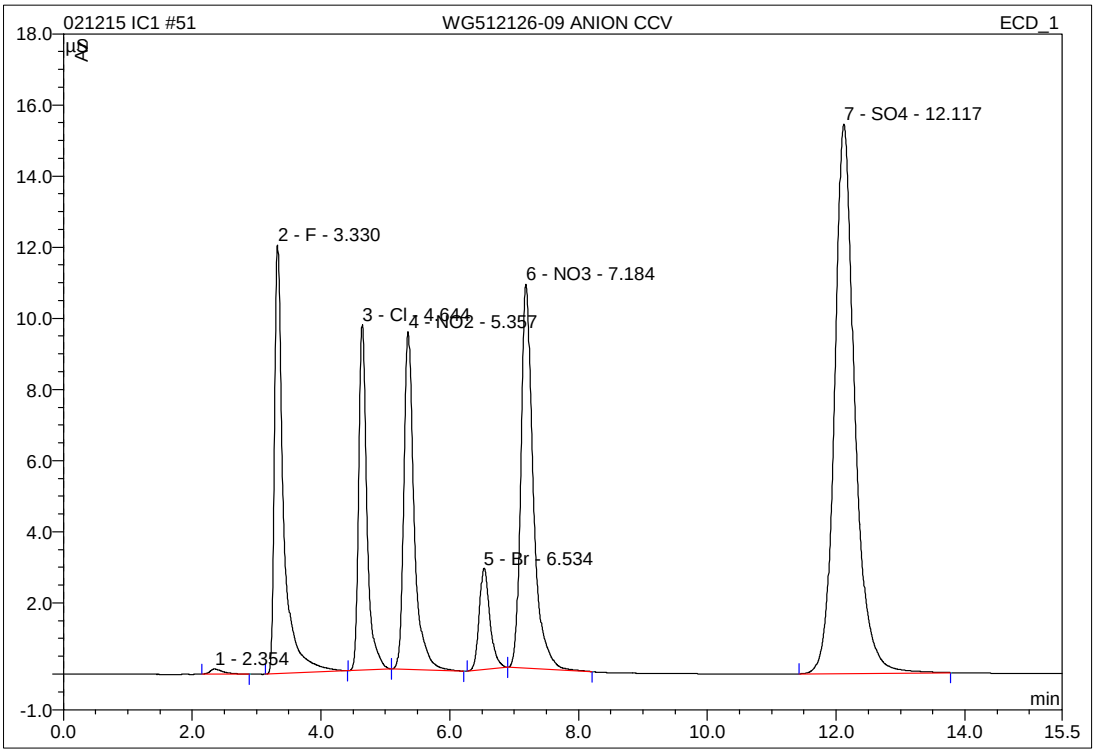

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.35	n.a.	0.148	0.036	0.26	n.a.	BMB
2	3.33	F	12.047	1.956	14.24	7.296	BMB
3	4.64	Cl	9.701	1.420	10.34	7.585	BMb
4	5.36	NO2	9.498	1.757	12.79	5.135	bMB
5	6.53	Br	2.848	0.548	3.99	7.440	BMb
6	7.18	NO3	10.802	2.406	17.51	5.134	bMB
7	12.12	SO4	15.449	5.617	40.87	38.939	BMB
Total:			60.493	13.741	100.00	71.530	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

51 WG512126-09 ANION CCV

1,1 AED STD66516

Sample Name:	**WG512126-09 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/13/2015 5:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG512126-09 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.2962	-8.80	PASS
Cl	8.00	7.5854	-5.18	PASS
NO2-N	4.8714	5.1351	5.41	PASS
Br	8.00	7.4402	-7.00	PASS
NO3-N	5.4216	5.1339	-5.31	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.9393	-2.65	PASS

63 WG512126-11 ANION CCV

1,1 AED STD66516

Sample Name:	**WG512126-11 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/13/2015 9:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

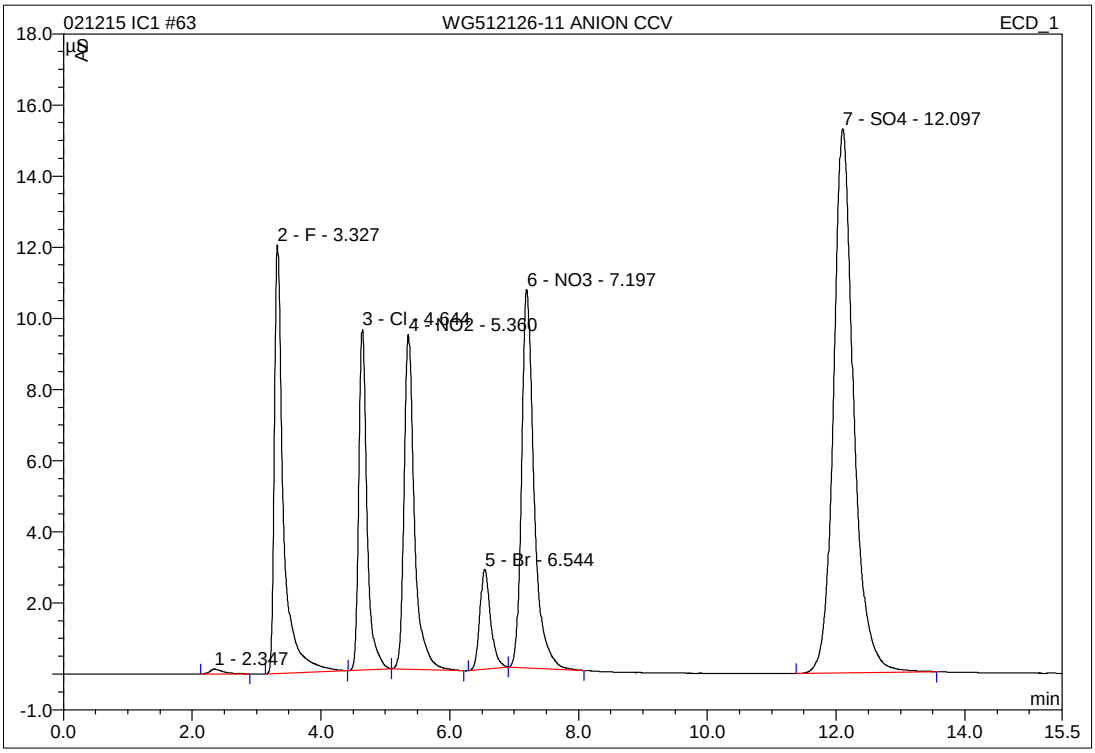

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.35	n.a.	0.142	0.035	0.26	n.a.	BMB
2	3.33	F	12.047	1.952	14.34	7.279	BMB
3	4.64	Cl	9.569	1.406	10.33	7.510	BMb
4	5.36	NO2	9.397	1.747	12.83	5.107	bMB
5	6.54	Br	2.811	0.543	3.99	7.368	BMB
6	7.20	NO3	10.638	2.373	17.43	5.063	bMB
7	12.10	SO4	15.302	5.559	40.83	38.542	BMB
Total:			59.906	13.614	100.00	70.870	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

63 WG512126-11 ANION CCV

1,1 AED STD66516

Sample Name:	**WG512126-11 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/13/2015 9:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG512126-11 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.2794	-9.01	PASS
Cl	8.00	7.5101	-6.12	PASS
NO2-N	4.8714	5.1066	4.83	PASS
Br	8.00	7.3683	-7.90	PASS
NO3-N	5.4216	5.0628	-6.62	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.5423	-3.64	PASS

75 WG512126-13 ANION CCV

1,1 AED STD66516

Sample Name:	**WG512126-13 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/13/2015 13:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

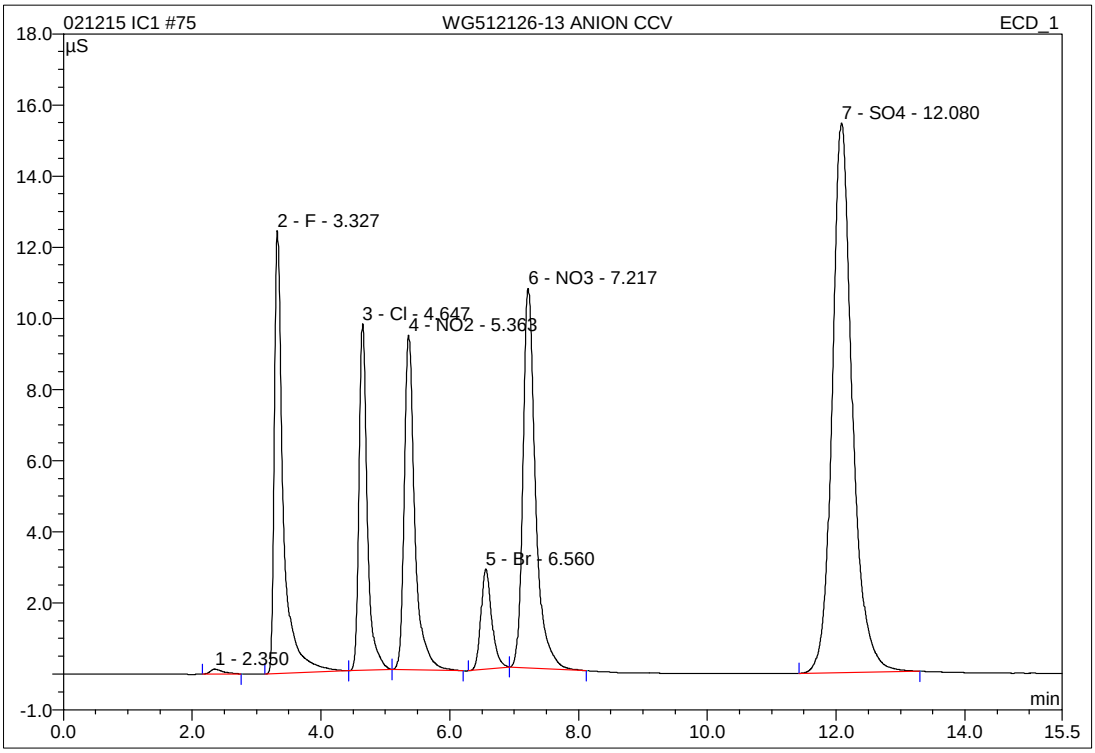

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.35	n.a.	0.143	0.034	0.25	n.a.	BMB
2	3.33	F	12.445	1.986	14.44	7.405	BMB
3	4.65	Cl	9.739	1.427	10.37	7.620	BMB
4	5.36	NO2	9.406	1.770	12.86	5.171	BMB
5	6.56	Br	2.817	0.548	3.98	7.433	BMB
6	7.22	NO3	10.669	2.402	17.46	5.124	bMB
7	12.08	SO4	15.448	5.590	40.64	38.757	BMB
Total:			60.668	13.756	100.00	71.511	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

75 WG512126-13 ANION CCV

1,1 AED STD66516

Sample Name:	**WG512126-13 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/13/2015 13:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG512126-13 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.4054	-7.43	PASS
Cl	8.00	7.6201	-4.75	PASS
NO2-N	4.8714	5.1710	6.15	PASS
Br	8.00	7.4326	-7.09	PASS
NO3-N	5.4216	5.1242	-5.49	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.7574	-3.11	PASS

28 WG512126-06 ANION CCB

1,1 AED

Sample Name:	**WG512126-06 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/12/2015 22:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

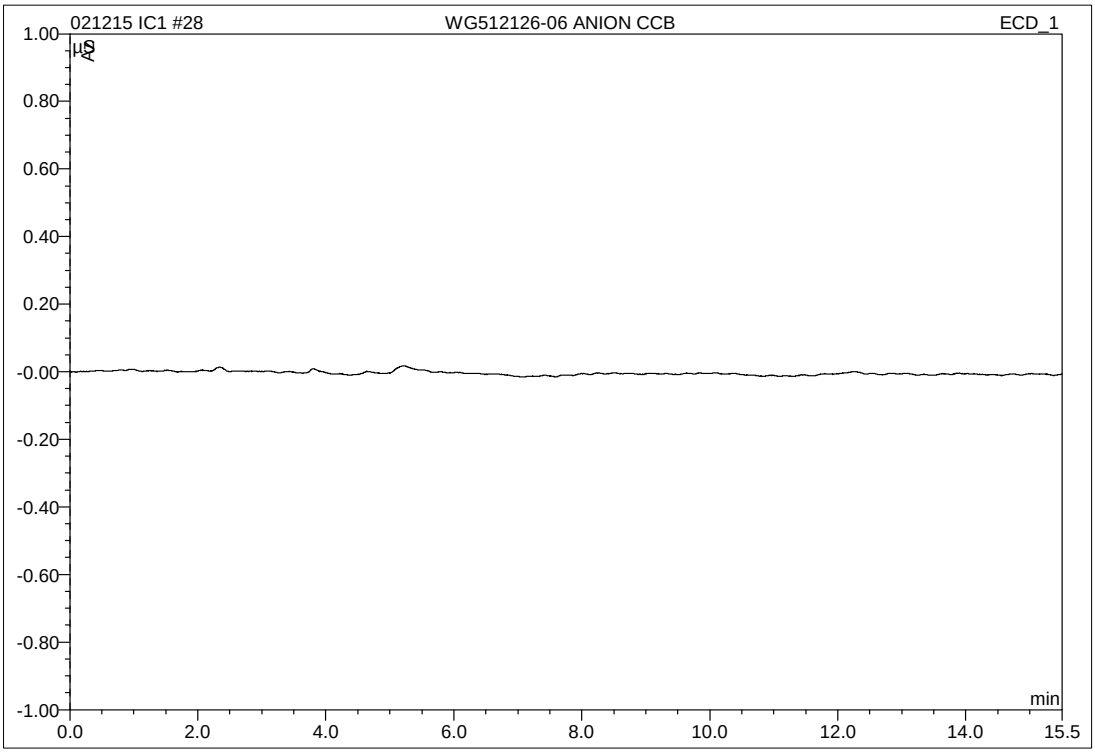

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

40 WG512126-08 ANION CCB

1,1 AED

Sample Name:	**WG512126-08 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/13/2015 2:20**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

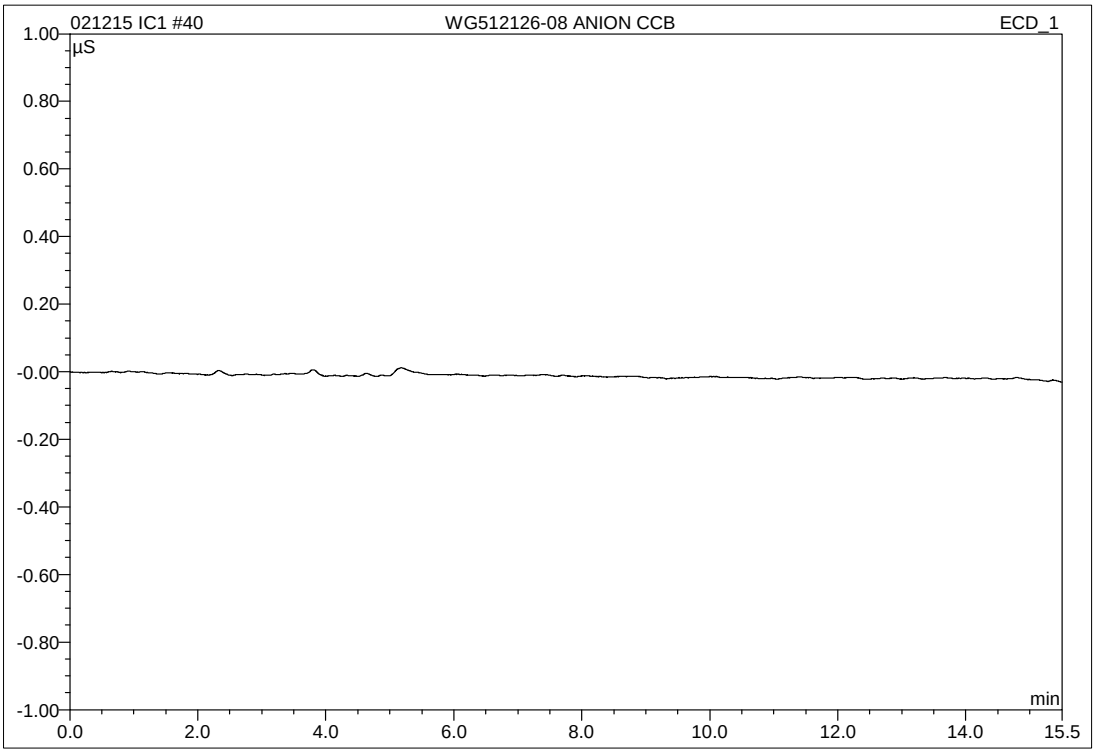

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

52 WG512126-10 ANION CCB

1,1 AED

Sample Name:	**WG512126-10 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/13/2015 5:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

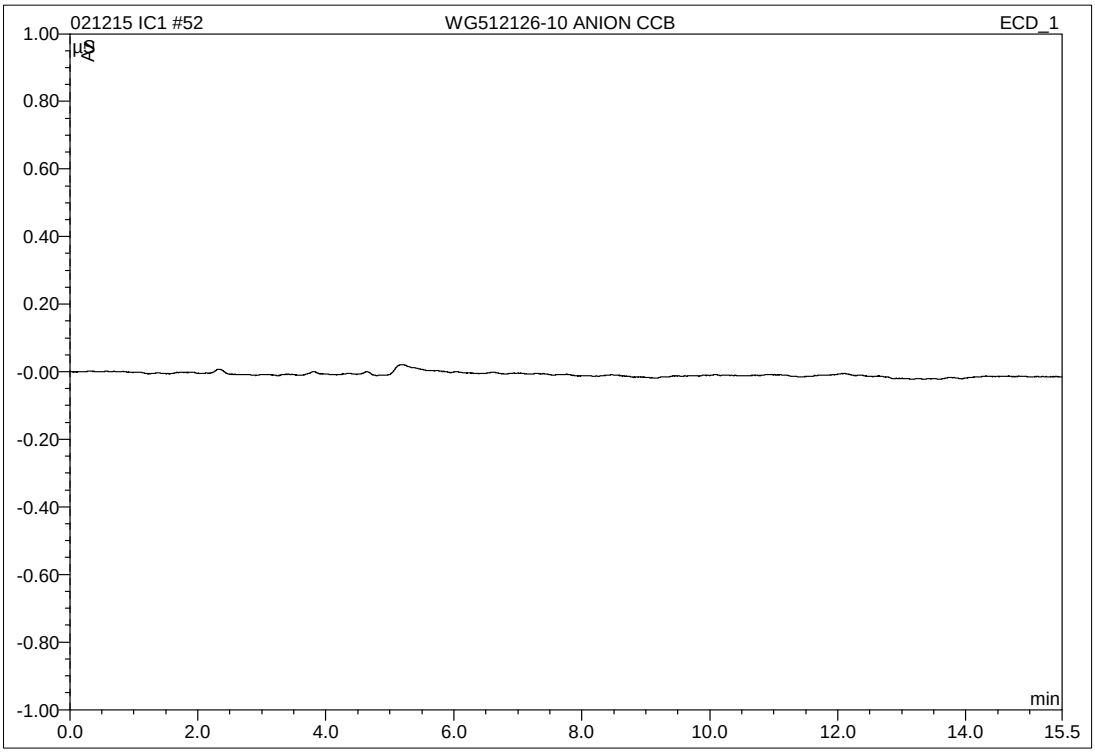

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

64 WG512126-12 ANION CCB

1,1 AED

Sample Name:	**WG512126-12 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/13/2015 9:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

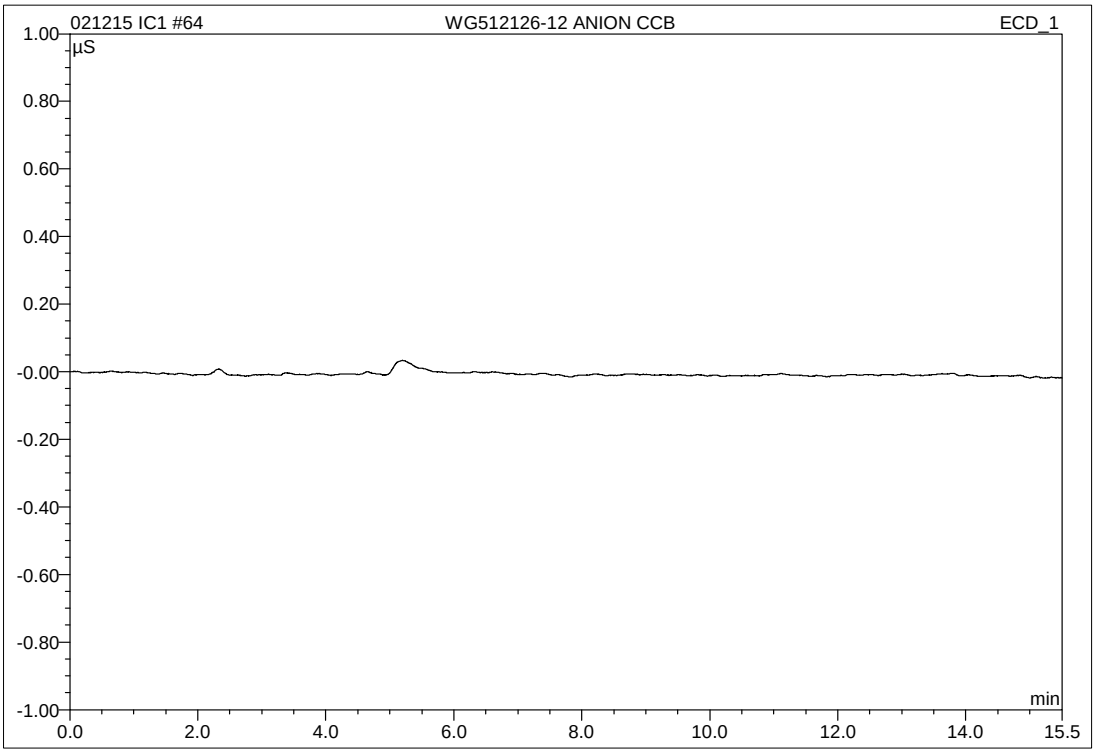

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

76 WG512126-14 ANION CCB

1,1 AED

Sample Name:	**WG512126-14 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/13/2015 13:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

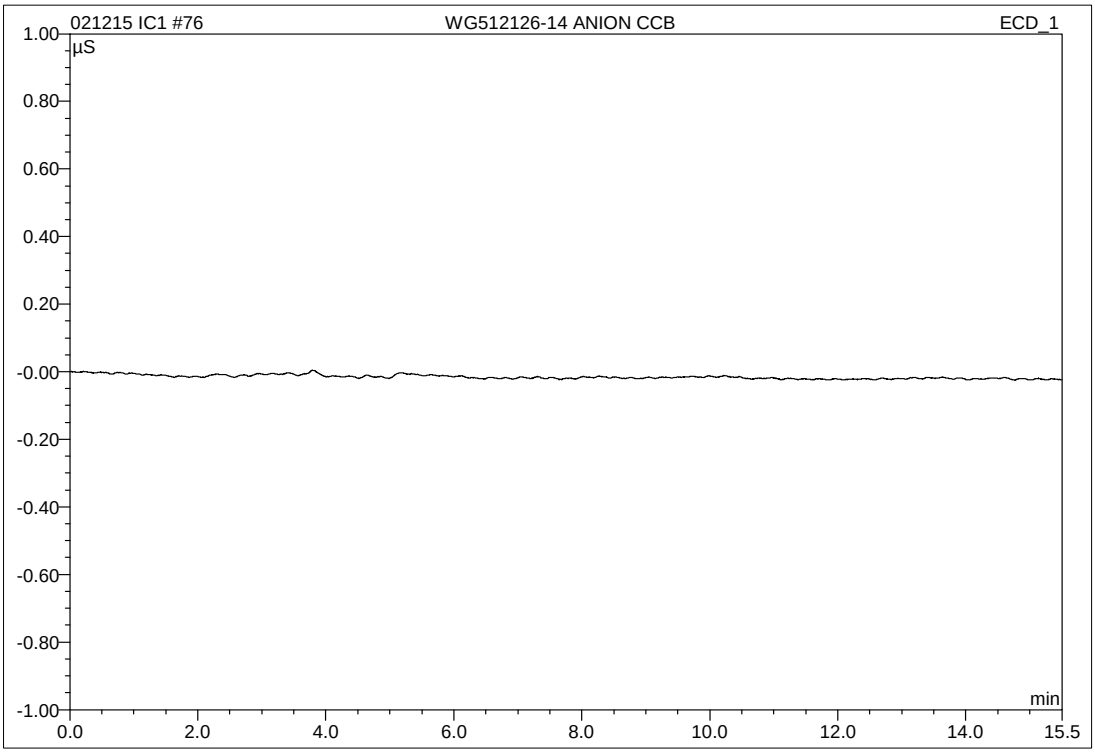

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/6/2013	6/6/2013	6/7/2013
File #	WG433163-01	WG433163-05	WG433448-01
Time	12:58	18:54	12:23

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.31	3.30	3.31	0.017
Cl	4.90	4.89	4.92	0.046
NO2-N	5.79	5.78	5.83	0.079
Br	7.34	7.31	7.43	0.187
NO3-N	8.21	8.18	8.32	0.221
SO4	13.74	13.74	13.67	0.121

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.2.1.5 Raw QC Data

34 WG512128-01 ANION BLANK

1,1 AED

Sample Name:	**WG512128-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/13/2015 0:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

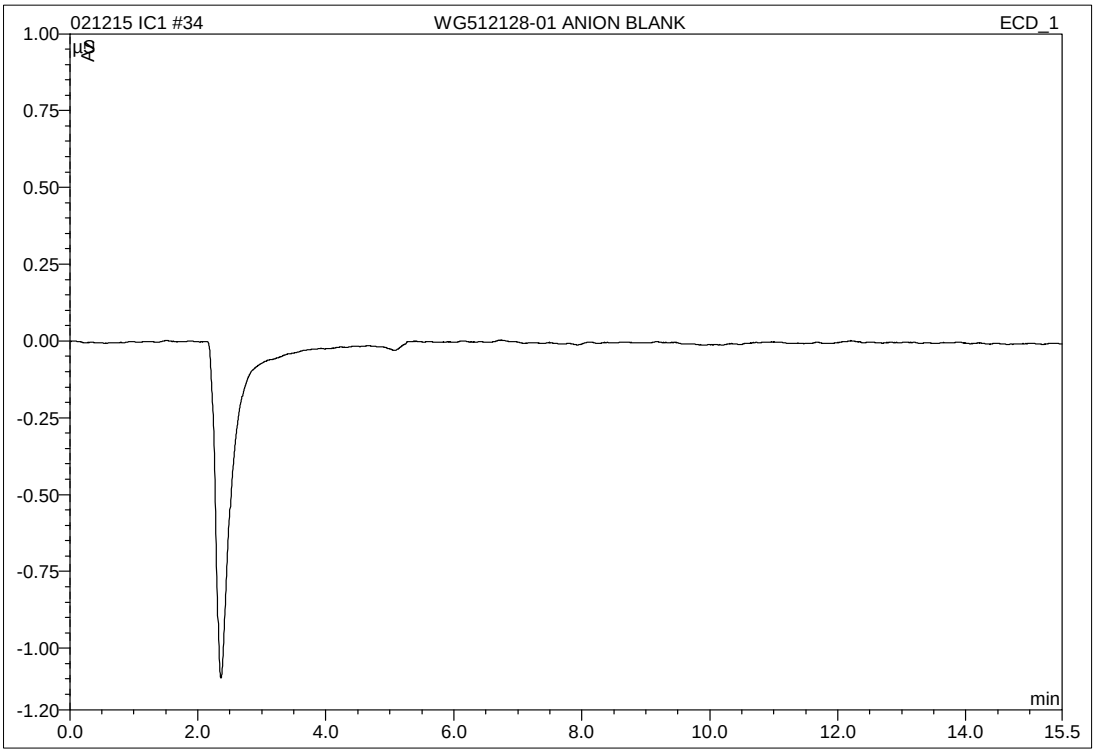

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

35 WG512128-02 ANION LCS

1,1 AED

Sample Name:	**WG512128-02 ANION LCS**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/13/2015 0:51**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

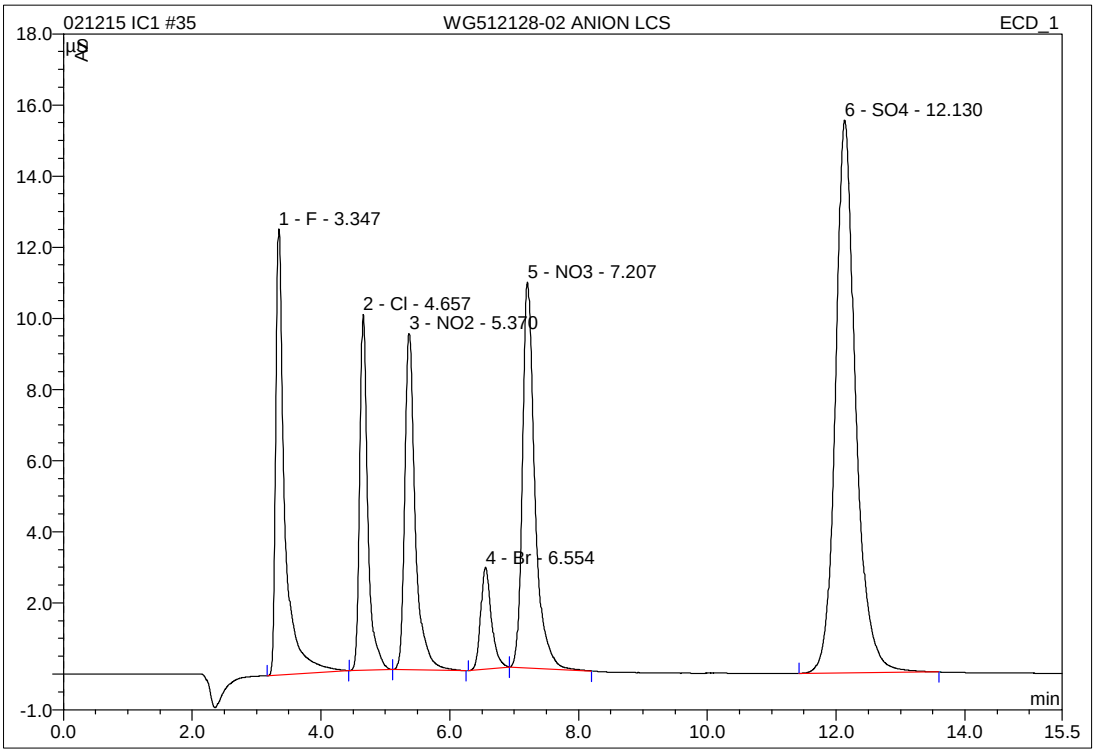

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	12.536	2.016	14.56	7.517	BMB
2	4.66	Cl	10.001	1.439	10.39	7.682	BMB
3	5.37	NO2	9.457	1.777	12.83	5.191	BMB
4	6.55	Br	2.867	0.554	4.00	7.521	BMb
5	7.21	NO3	10.844	2.417	17.45	5.156	bMB
6	12.13	SO4	15.543	5.649	40.78	39.158	BMB
Total:			61.249	13.851	100.00	72.227	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.2.2 Ferrous Iron Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-15	**PrePrep Method:**	N/A	**Instrument:**	UV-2600
Client ID:	67WW11-021115	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	01/20/2015 08:00
Workgroup #:	WG512331	**Analyst:**	TMM	**Run Date:**	02/16/2015 08:20
Collect Date:	02/11/2015 10:20	**Dilution:**	1	**File ID:**	00.1502160820-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.0400	U	0.0400	0.0400	0.0200

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-16	**PrePrep Method:**	N/A	**Instrument:**	UV-2600
Client ID:	67WW08-021115	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	01/20/2015 08:00
Workgroup #:	WG512331	**Analyst:**	TMM	**Run Date:**	02/16/2015 08:20
Collect Date:	02/11/2015 11:35	**Dilution:**	1	**File ID:**	00.1502160820-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.0907		0.0400	0.0400	0.0200

2.2.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 16-FEB-2015
Analyst: TMM
Analyst: NA
Method: FERROUS
Instrument: UV-2600
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG512331

Calibration/Linearity	2/16/15
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TMM
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
18-FEB-2015
Tammy Morris

Secondary Reviewer:
19-FEB-2015
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-19-2015 12:30:37

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM3500Fe-B-1997 AAB#: WG512331

Login Number: L15020678

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW11-021115	15	02/11/15					02/16/2015	4.9	7		02/16/15	4.9	7	
67WW08-021115	16	02/11/15					02/16/2015	4.9	7		02/16/15	4.9	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4028877
Report generated 02/19/2015 12:24

METHOD BLANK SUMMARY

Login Number: L15020678
Blank File ID: 00.1502160820-02
Prep Date: 02/16/15 08:20
Analyzed Date: 02/16/15 08:20
Analyst: TMM

Work Group: WG512331
Blank Sample ID: WG512331-01
Instrument ID: UV-2600
Method: SM3500Fe-B-1997

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG512331-02	00.1502160820-03	02/16/15 08:20	
LCS2	WG512331-03	00.1502160820-04	02/16/15 08:20	
67WW11-021115	L15020678-15	00.1502160820-05	02/16/15 08:20	
67WW08-021115	L15020678-16	00.1502160820-06	02/16/15 08:20	
DUP	WG512331-05	00.1502160820-15	02/16/15 08:20	

Report Name: BLANK_SUMMARY
PDF File ID: 4028878
Report generated 02/19/2015 12:24

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020678 Prep Date: 02/16/15 08:20 Sample ID: WG512331-01
Instrument ID: UV-2600 Run Date: 02/16/15 08:20 Prep Method: SM3500Fe-B-1997
File ID: 00.1502160820-02 Analyst: TMM Method: SM3500Fe-B-1997
Workgroup (AAB#): WG512331 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-260-20-JAN-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Ferrous - Laboratory	0.0200	0.0400	0.0200	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4028879
19-FEB-2015 12:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020678 Analyst: TMM Prep Method: SM3500Fe-B-1997
Instrument ID: UV-2600 Matrix: Water Method: SM3500Fe-B-1997
Workgroup (AAB#): WG512331 Units: mg/L
QC Key: DOD4 Lot #: STD67894

Sample ID: WG512331-02 LCS File ID: 00.1502160820-03 Run Date: 02/16/2015 08:20
Sample ID: WG512331-03 LCS2 File ID: 00.1502160820-04 Run Date: 02/16/2015 08:20

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Iron, Ferrous - Laboratory	0.200	0.231	115	0.200	0.231	115	0.00	75 - 125	25	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4028880
Report generated: 02/19/2015 12:24

2.2.2.3 Raw Data

WQ508791

Curves

Parameter: Ferrous Iron

Spectrophotometer: UV-2600

Calibration (Curve) standard stock: Std 67109

Concentration: 100 mg/L

Recipe for preparation of curve standards found in:
SOP: 3500 Revision: 7 Page: 8

Second Source Stock: Std 67894 (concentration: 100 mg/L)

Daily Preparation: 2(100)/1000

concentration = = 0.2

Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance
0	50	10cm	510	0.003
0.04				0.037
0.08				0.079
0.2				0.187
0.4				0.381
0.6				0.567
2nd Source	—	—	—	—
(20)				0.204

Analyst: Tommy Moore Date/Time: 1/20/15 @ 800

DCN#108031

Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG508791
Analytical Method: FERROUS
Instrument ID: UV-2600

Analyst: TMM
Initial Calibration Date: 01/20/2015

Analyte: FERROUS IRON
Number of Points: 6
Slope: 0.943516
Y-Intercept: 0.00142651
Coef. Of Correlation (R^2): 0.999893
Coef. Of Correlation (R): 0.999947

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00300	0.00	0.00	0.00142651
0.0400	0.0370	0.00160	0.00148	0.0391671
0.0800	0.0790	0.00640	0.00632	0.0769078
0.200	0.187	0.0400	0.0374	0.190130
0.400	0.381	0.160	0.152	0.378833
0.600	0.567	0.360	0.340	0.567536

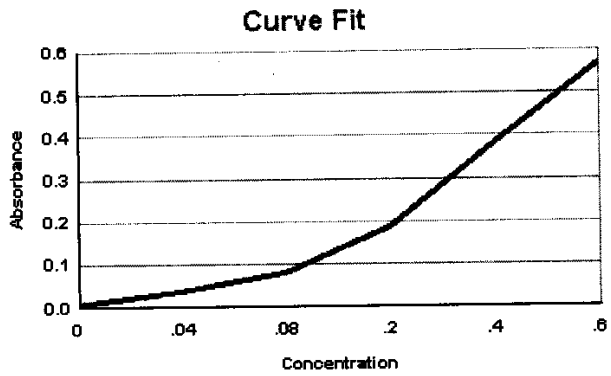

WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 01/20/2015 08:57

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG508791
File ID: 00.1501200800-07
CCV ID: WG508791-07
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-2600
Run Date: 01/20/2015
Run Time: 08:00
Analyst: TMM
Cal ID: UV-260 - 20-JAN-15 08:00:06

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.2	0.215	1.02	7.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 01/20/2015 08:57

[redacted]

WORKGROUP: WG512331

Ferrous Iron

SM 3500Fe-B

SOP K3500 Revision # 7

Instrument: UV-2600 ~~UV-120-IV~~

Curve Reference: 1/20/15

CCV: Std 67109
Daily Dilution: 3(100)/1000
Daily Dilution: =0.3

RGTS: 32320
RGTS: 28280
RGTS: 32270

LCS: Std 67894
Daily Dilution: 2(100)/1000 = 0.2
Daily Dilution:

Spike: Std 67894
Daily Dilution: 0.1(100)/50
Daily Dilution: =0.2

Sample	Blank	Volume (mL)	Dilution	Cell Size (nm)	Absorbance
CCV: 0.3 mg/L	✓	50			0.286
BLANK	✓	50			0.001
LCS: 0.2 mg/L	✓	50			0.219
LCS DUP: (0.2 mg/L)	✓	50			0.219
02-678-15	✓	50			0.010
16	✓	50			0.087
02-813-03	✓	50			0.007
06	✓	50	1/100		0.288
09	✓	50	1/100		0.258
10	✓	50	1/100		0.283
13	✓	50	1/100		0.252
14	✓	50	1/100		0.255
15	✓	50			0.003
17	✓	50			0.020
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
@ 13:10 CCV 0.3		50			0.291
		50			
DUP: 02-678-15	✓	50			0.013
MS: ( )	✓	50			0.226
MSD: ( )		50			
CCV: ( )	✓	50			0.287

Analyst: Jammy Marsia Date/Time: 2/16/15 @ 820

*Samples were analyzed in the laboratory and not immediately in the field.

DCN#108655

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG512331
Analyte: FERROUS IRON

Analyst: TMM
Date: 02/16/2015

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG512331-01	50	50	0.00100	0.9435	0.001427	-0.00045205	-0.00045205	1	mg/L
WG512331-02	50	50	0.219	0.9435	0.001427	0.23060	0.23060	1	mg/L
WG512331-03	50	50	0.219	0.9435	0.001427	0.23060	0.23060	1	mg/L
L15020678-15	50	50	0.0100	0.9435	0.001427	0.0090867	ND	1	mg/L
WG512331-04	50	50	0.0100	0.9435	0.001427	0.0090867	0.0090867	1	mg/L
L15020678-16	50	50	0.0870	0.9435	0.001427	0.090696	0.090696	1	mg/L
L15020813-03	50	50	0.00700	0.9435	0.001427	0.0059071	ND	1	mg/L
L15020813-06	50	50	0.288	0.9435	0.001427	0.30373	30.373	100	mg/L
L15020813-09	50	50	0.258	0.9435	0.001427	0.27193	27.193	100	mg/L
L15020813-10	50	50	0.283	0.9435	0.001427	0.29843	29.843	100	mg/L
L15020813-13	50	50	0.252	0.9435	0.001427	0.26557	26.557	100	mg/L
L15020813-14	50	50	0.255	0.9435	0.001427	0.26875	26.875	100	mg/L
L15020813-15	50	50	0.00300	0.9435	0.001427	0.0016677	ND	1	mg/L
L15020813-17	50	50	0.0200	0.9435	0.001427	0.019685	ND	1	mg/L
WG512331-05	50	50	0.0130	0.9435	0.001427	0.012266	0.012266	1	mg/L
WG512331-06	50	50	0.226	0.9435	0.001427	0.23802	0.23802	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 02/18/2015 08:36

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG512687
File ID: 00.1502160820-01
CCV ID: WG512687-01
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-2600
Run Date: 02/16/2015
Run Time: 08:20
Analyst: TMM
Cal ID: UV-260 - 09-FEB-15

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.302	0.953	0.7	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/18/2015 08:35

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG512687
File ID: 00.1502160820-17
CCV ID: WG512687-02
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-2600
Run Date: 02/16/2015
Run Time: 08:20
Analyst: TMM
Cal ID: UV-260 - 09-FEB-15

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.307	0.970	2.3	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/18/2015 08:35

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG512687
File ID: 00.1502160820-18
CCV ID: WG512687-03
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-2600
Run Date: 02/16/2015
Run Time: 08:20
Analyst: TMM
Cal ID: UV-260 - 09-FEB-15

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.303	0.957	1.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/18/2015 08:35

[redacted]

2.2.3 Sulfide Data

2.2.3.1 Summary Data

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-15	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW11-021115	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG512109	**Analyst:**	TB	**Run Date:**	02/12/2015 15:45
Collect Date:	02/11/2015 10:20	**Dilution:**	1	**File ID:**	ET.1502121545-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-16	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW08-021115	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG512109	**Analyst:**	TB	**Run Date:**	02/12/2015 15:45
Collect Date:	02/11/2015 11:35	**Dilution:**	1	**File ID:**	ET.1502121545-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.3.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 12-FEB-2015
Analyst: TB
Analyst: NA
Method: S
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG512109

Calibration/Linearity	02/12/2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TB
Secondary Reviewer	SAV
Comments	

Primary Reviewer: 13-FEB-2015 Todd Boyle

Secondary Reviewer: 17-FEB-2015 Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-17-2015 16:32:08

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F-

AAB#: WG512109

Login Number: L15020678

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW11-021115	15	02/11/15					02/12/2015	1.2	7		02/12/15	1.2	7	
67WW08-021115	16	02/11/15					02/12/2015	1.2	7		02/12/15	1.2	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4024551
Report generated 02/17/2015 16:19

METHOD BLANK SUMMARY

Login Number: L15020678
Blank File ID: ET.1502121545-01
Prep Date: 02/12/15 15:45
Analyzed Date: 02/12/15 15:45
Analyst: TB

Work Group: WG512109
Blank Sample ID: WG512109-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG512109-02	ET.1502121545-02	02/12/15 15:45	
LCS2	WG512109-03	ET.1502121545-03	02/12/15 15:45	
67WW11-021115	L15020678-15	ET.1502121545-04	02/12/15 15:45	
67WW08-021115	L15020678-16	ET.1502121545-05	02/12/15 15:45	

Report Name: BLANK_SUMMARY
PDF File ID: 4024552
Report generated 02/17/2015 16:19

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020678 Prep Date: 02/12/15 15:45 Sample ID: WG512109-01
Instrument ID: BURET Run Date: 02/12/15 15:45 Prep Method: SM4500-S-(-2)-F
File ID: ET.1502121545-01 Analyst: TB Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG512109 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4024553
17-FEB-2015 16:19

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020678 Analyst: TB Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG512109 Units: mg/L
QC Key: DOD4 Lot #: STD68895

Sample ID: WG512109-02 LCS File ID: ET.1502121545-02 Run Date: 02/12/2015 15:45
Sample ID: WG512109-03 LCS2 File ID: ET.1502121545-03 Run Date: 02/12/2015 15:45

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	24.4	23.8	97.7	24.4	23.8	97.7	0.00	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4024554
Report generated: 02/17/2015 16:19

2.2.3.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG512109

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: 16

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: SL 68895

Iodine standardization (0.025N) COA: 17611
mL 0.025N titrant: 10.0
Volume I: 10.0 mL
Normality I: 0.025

(0.1 N I) COA: 17765
mL 0.025 N titrant: 8.0
Volume I: 2.0 mL
Normality I: 0.10

Stock standardization (in duplicate) 5.0 mL stock

mL I	1) 10.0	2) 10.0
N I	1) 0.10	2) 0.10
mL 0.025 titrant	1) 19.7	2) 19.7

LCS daily dilution: 3(1624)/200 = 24.36 mg/L

1624 = stock conc (mg/L)

Titrant: T- 1484-15-02

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	0.025 N Sodium Thiosulfate (mL)
BLANK	200	15.0	0.025	15.0
LCS (mL)	200	15.0	0.025	3.1
LCSDUP (mL)	200	15.0	0.025	3.1
2-678-15	470	15.0	0.025	>15.0
16	450	15.0	0.025	15.0
624-01	510	15.0	0.025	14.9
621-01	520	15.0	0.025	15.0

Analyst: [signature] Date/Time: 1545 2/12/15

DCN#108606

Microbac Laboratories Inc.

TITRAMETRIC REPORT

Workgroup (AAB#): WG512109

Product: EPA 376.1\9034

Analyte: Sulfide

Analyst: TB

Run Date: 02/12/2015 15:45

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG512109-01	200.0	15	.025	15	.025	1	0	0	mg/L
WG512109-02	200.0	15	.025	3.1	.025	1	23.8	23.80	mg/L
WG512109-03	200.0	15	.025	3.1	.025	1	23.8	23.80	mg/L
L15020678-15	470.0	15	.025	15	.025	1	0	ND	mg/L
L15020678-16	480.0	15	.025	15	.025	1	0	ND	mg/L
L15020624-01	510.0	15	.025	14.9	.025	1	0.0784	ND	mg/L
L15020621-01	520.0	15	.025	15	.025	1	0	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 02/17/2015 13:33

[redacted]

2.2.4 Total Organic Carbon Data

2.2.4.1 Summary Data

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020678-15	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW11-021115	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG512138	**Analyst:**	EPT	**Run Date:**	02/13/2015 14:04
Collect Date:	02/11/2015 10:20	**Dilution:**	5	**File ID:**	TC02132015.013
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	12.9		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15020678-15	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW11-021115	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG512138	**Analyst:**	EPT	**Run Date:**	02/13/2015 14:04
Collect Date:	02/11/2015 10:20	**Dilution:**	5	**File ID:**	TC02132015.013
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		121		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15020678-16	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-021115	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG512138	**Analyst:**	EPT	**Run Date:**	02/13/2015 15:03
Collect Date:	02/11/2015 11:35	**Dilution:**	5	**File ID:**	TC02132015.016
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	22.4		10.0	5.00	2.50

Certificate of Analysis

Microbac

Lab Report #: L15020678
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15020678-16	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-021115	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG512138	**Analyst:**	EPT	**Run Date:**	02/13/2015 15:03
Collect Date:	02/11/2015 11:35	**Dilution:**	5	**File ID:**	TC02132015.016
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		160		10.0	5.00	2.50

2.2.4.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 13-FEB-2015
Analyst: EPT
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG512144 WG512138

Calibration/Linearity	7/16/14
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
16-FEB-2015
Ethan Tido

Secondary Reviewer:
17-FEB-2015
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-17-2015 12:07:43

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG512138

Login Number: L15020678

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW11-021115	15	02/11/15					02/13/2015	2.2	28		02/13/15	2.2	28	
67WW08-021115	16	02/11/15					02/13/2015	2.1	28		02/13/15	2.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4023222
Report generated 02/17/2015 11:25

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG512138

Login Number: L15020678

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW11-021115	15	02/11/15					02/13/2015	2.2	28		02/13/15	2.2	28	
67WW08-021115	16	02/11/15					02/13/2015	2.1	28		02/13/15	2.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4023226
Report generated 02/17/2015 11:25

METHOD BLANK SUMMARY

Login Number: L15020678
Blank File ID: TC02132015.003
Prep Date: 02/13/15 10:18
Analyzed Date: 02/13/15 10:18
Analyst: EPT

Work Group: WG512138
Blank Sample ID: WG512138-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG512138-02	TC02132015.004	02/13/15 11:22	01
LCS2	WG512138-03	TC02132015.005	02/13/15 11:54	01
67WW11-021115	L15020678-15	TC02132015.013	02/13/15 14:04	DL01
67WW11-021115	L15020678-15	TC02132015.013	02/13/15 14:04	DL01
67WW08-021115	L15020678-16	TC02132015.016	02/13/15 15:03	DL01
67WW08-021115	L15020678-16	TC02132015.016	02/13/15 15:03	DL01
DUP	WG512138-05	TC02132015.030	02/13/15 18:10	01

Report Name: BLANK_SUMMARY
PDF File ID: 4023223
Report generated 02/17/2015 11:25

METHOD BLANK SUMMARY

Login Number: L15020678
Blank File ID: TC02132015.003
Prep Date: 02/13/15 10:18
Analyzed Date: 02/13/15 10:18
Analyst: EPT

Work Group: WG512138
Blank Sample ID: WG512138-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG512138-02	TC02132015.004	02/13/15 11:22	01
LCS2	WG512138-03	TC02132015.005	02/13/15 11:54	01
67WW11-021115	L15020678-15	TC02132015.013	02/13/15 14:04	DL01
67WW11-021115	L15020678-15	TC02132015.013	02/13/15 14:04	DL01
67WW08-021115	L15020678-16	TC02132015.016	02/13/15 15:03	DL01
67WW08-021115	L15020678-16	TC02132015.016	02/13/15 15:03	DL01
DUP	WG512138-05	TC02132015.030	02/13/15 18:10	01

Report Name: BLANK_SUMMARY
PDF File ID: 4023227
Report generated 02/17/2015 11:25

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number:	L15020678	Prep Date:	02/13/15 10:18	Sample ID:	WG512138-01
Instrument ID:	TOC-VWP	Run Date:	02/13/15 10:18	Prep Method:	415.1
File ID:	TC02132015.003	Analyst:	EPT	Method:	415.1
Workgroup (AAB#):	WG512138	Matrix:	Water	Units:	mg/L
Contract #:		Cal ID:	TOC-VW-16-JUL-14		

Report Name:BLANK
PDF ID: 4023224
17-FEB-2015 11:25

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020678 Prep Date: 02/13/15 10:18 Sample ID: WG512138-01
Instrument ID: TOC-VWP Run Date: 02/13/15 10:18 Prep Method: 415.1
File ID: TC02132015.003 Analyst: EPT Method: 415.1
Workgroup (AAB#): WG512138 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-16-JUL-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4023228
17-FEB-2015 11:25

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4023225
Report generated: 02/17/2015 11:25

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020678 Analyst: EPT Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG512138 Units: mg/L
QC Key: DOD4 Lot #: STD67086

Sample ID: WG512138-02 LCS File ID: TC02132015.004 Run Date: 02/13/2015 11:22
Sample ID: WG512138-03 LCS2 File ID: TC02132015.005 Run Date: 02/13/2015 11:54

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	27.0	108	25.0	27.1	108	0.333	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4023229
Report generated: 02/17/2015 11:25

2.2.4.3 Raw Data

TC/TIC Curves wg484708

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): see below (5/200)(1000) = 25mg/L

MS (TOC): _____

Calibration Curve Date: _____

Reagent: 30583 30943

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 16

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full

☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate

☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC Curve		27	Std 65368		52		
3	TC ICV		28			53	see SOP	
4	TIC ICV		29	TIC Curve		54	for curve	
5			30	Std 65406		55	points	
6			31			56		
7			32			57		
8			33	TC ICV		58	ept 7/16/14	
9			34	Std 63965		59	~~5/200~~ 5/200	(1000)
10			35			60		=25mg/L
11			36	TIC ICV		61		
12			37	Std 65405		62		
13			38			63		
14	all points		39	analyzed	in	64	duplicate	
15			40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: Ethan Todd / Deanne Hessen

Date/Time: 07/16/14 0930 + 7/17

DCN#103908

C:\TOC3201\Data\07-16-2014-DIH-CURVE.t32

	Anal	Sample Name	Result	Status	Date / Time
1	TC	TCCURVE		Completed	7/16/2014 12:06:36 PM
2	TC	TC ICV	TC:24.54mg/L	Completed	7/16/2014 1:33:15 PM
3	IC	TICCURVE		Completed	7/17/2014 12:33:06 PM
4	IC	TIC ICV	IC:25.59mg/L	Completed	7/17/2014 12:47:00 PM

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-07-16-2014.2014_07_16_11_05_11.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	5.492	500uL	1	*******		7/16/2014 11:08:39 AM
2	4.691	500uL	1	*******		7/16/2014 11:12:03 AM

Acid Add. 0.000%
Mean Area 5.091

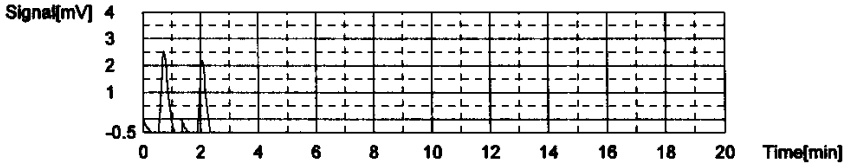

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	51.17	500uL	1	*******		7/16/2014 11:17:40 AM
2	51.30	500uL	1	*******		7/16/2014 11:21:41 AM

Acid Add. 0.000%
Mean Area 51.23

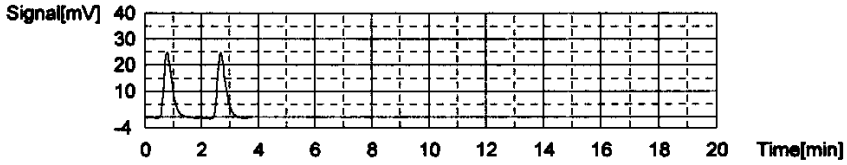

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	184.4	500uL	1	*******		7/16/2014 11:27:31 AM
2	188.1	500uL	1	*******		7/16/2014 11:31:40 AM

Acid Add. 0.000%
Mean Area 186.3

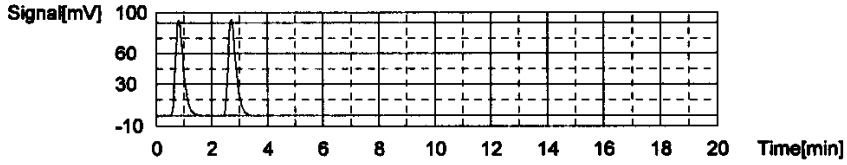

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	371.5	500uL	1	*******		7/16/2014 11:37:40 AM
2	397.8	500uL	1	*******		7/16/2014 11:42:09 AM

Acid Add. 0.000%
Mean Area 384.6

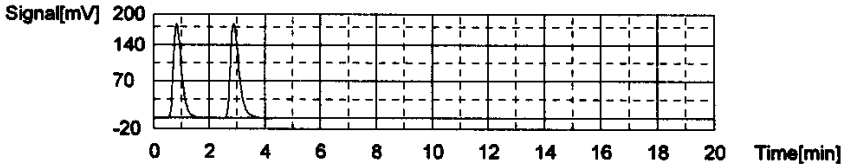

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	928.1	500uL	1	*******		7/16/2014 11:48:37 AM
2	992.4	500uL	1	*******		7/16/2014 11:53:28 AM

Acid Add. 0.000%
Mean Area 960.3

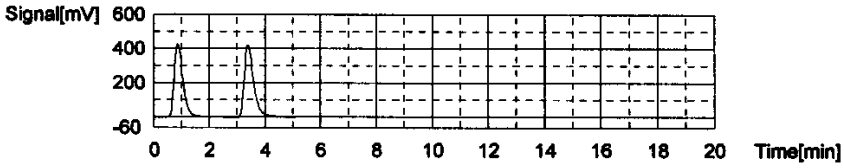

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1809	500uL	1	*******		7/16/2014 12:00:11 PM
2	2029	500uL	1	*******		7/16/2014 12:06:36 PM

Acid Add. 0.000%
Mean Area 1919

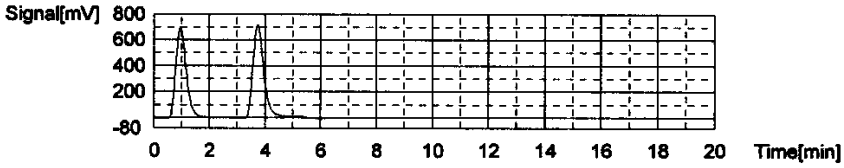

Slope: 38.27
Intercept 3.929
r^2 0.999938 ✓
Zero Shift No

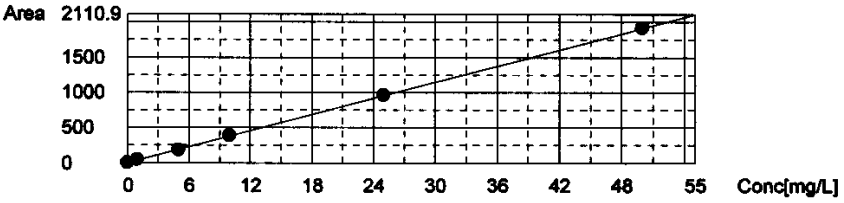

Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-07-16-2014.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:24.54mg/L

= 98%

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	966.9	25.16mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/16/2014 1:28:24 PM
2	919.5	23.92mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/16/2014 1:33:15 PM

Mean Area 943.2
Mean Conc. 24.54mg/L

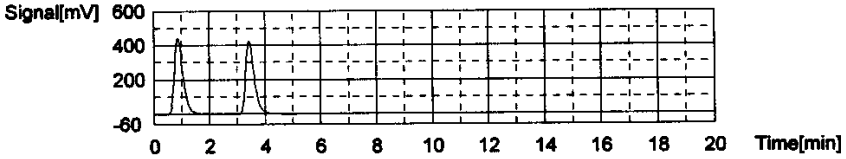

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-A-07-17-2014.2014_07_17_11_16_59.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	7.193	500uL	1	*******		7/17/2014 11:21:04 AM
2	6.644	500uL	1	*******		7/17/2014 11:25:12 AM

Acid Add. 10.00%
Mean Area 6.918

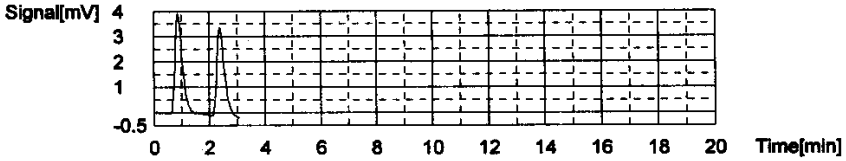

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	49.75	500uL	1	*******		7/17/2014 11:32:57 AM
2	50.58	500uL	1	*******		7/17/2014 11:37:28 AM

Acid Add. 10.00%
Mean Area 50.17

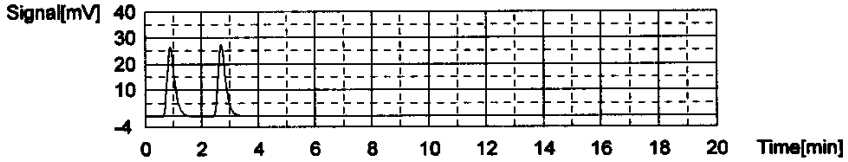

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	98.15	500uL	1	*******		7/17/2014 11:46:02 AM
2	158.0	500uL	1	*******		7/17/2014 11:50:52 AM

Acid Add. 10.00%
Mean Area 128.1

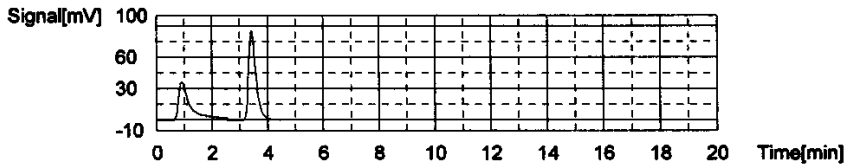

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	313.9	500uL	1	*******		7/17/2014 11:59:03 AM
2	314.5	500uL	1	*******		7/17/2014 12:04:02 PM

Acid Add. 10.00%
Mean Area 314.2

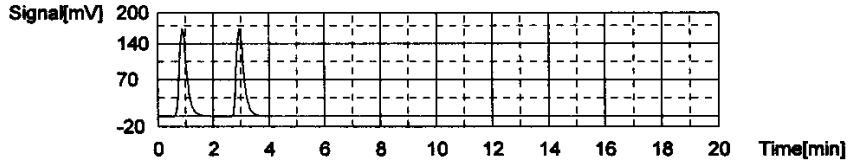

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	774.3	500uL	1	*******		7/17/2014 12:12:42 PM
2	781.8	500uL	1	*******		7/17/2014 12:17:58 PM

Acid Add. 10.00%
Mean Area 778.1

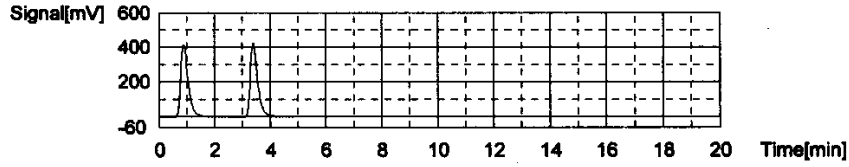

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1490	500uL	1	*******		7/17/2014 12:27:11 PM
2	1503	500uL	1	*******		7/17/2014 12:33:06 PM

Acid Add. 10.00%
Mean Area 1497

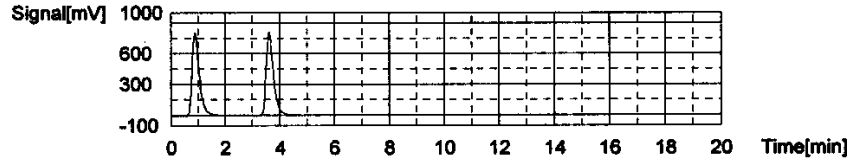

Slope: 29.95
Intercept 8.025
r^2 0.999041 ✓
Zero Shift No

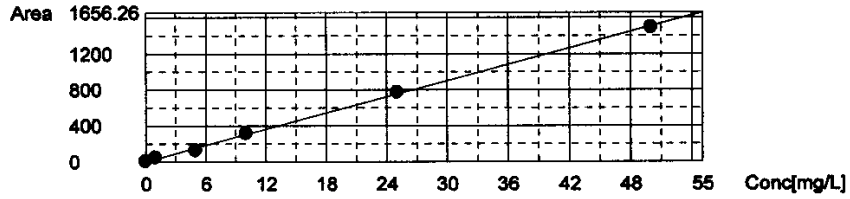

Sample

Sample Name: TIC ICV
Sample ID: Untitled
Origin: TICCURVE-A-07-17-2014.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:25.59mg/L

=102%

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	775.9	25.64mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/17/2014 12:41:44 PM
2	773.4	25.55mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/17/2014 12:47:00 PM

Mean Area 774.7
Mean Conc. 25.59mg/L

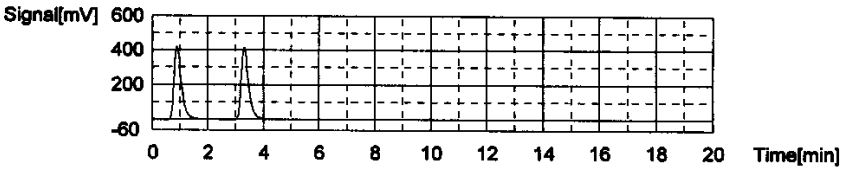

WORKGROUP: WG512138
WG 512144

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 65368
(5/200)(1000) = 25mg/L

LCS (TOC): Std 67086 Std 68222
(5/200)(1000) = 25mg/L

CCV (TIC): std 68222
(5/200)(1000) = 25mg/L

MS (TOC): Std 67086
(.4)(1000)/40 = 10

Calibration Curve Date: 7/16/14

Reagent: 32645
32721

☐ SM5310-C : Matrix 2 WG_____
☒ EPA 415.1/9060A(mod): Matrix 1 WG 512138 SOP: K 4151 Rev. 17
WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☒ drain reservoir filled
☒ ASI water bottle full
☒ dilution water bottle full
☒ 3rd bottle full
☒ sufficient gas
☒ sufficient persulfate
☒ sufficient acid
☒ waste container

Position	Sample ID	Dilution
1	TIC	
2	CCV	
3	BLK	
4	LCS	
5	LCSDUP	
6	02-0355-03	1/5
7	02-0621-01	
8	02-0624-01	cpt 02/16/15
9	02-0683-02	~~1/3~~
10	-03	~~1/3~~
11	-04	1/3
12	-05	1/3
13	02-0678-15	1/5
14	CCV	
15	CCB	
16	-16	1/5
17	02-0683-04	1/3
18	-05	1/3
19	02-0698-01	
20	-02	
21	-03	
22	-04	
23	-05	
24	-06	
25	-07	

Position	Sample ID	Dilution
26	CCV	
27	CCB	
28	02-0698-08	
29	-09	
30	DUP 621-1	
31	MS 621-1	
32	BLK	
33	LCS	
34	LCSDUP	
35	02-0683-06	1/3
36	Ref -07	1/3
37	MS -08	1/3
38	CCV	
39	CCB	
40	MSD -09	1/3
41	-10	1/3
42	-11	1/3
43	-12	1/3
44	DUPlc 683-06	1/3
45	CCV	
46	CCB	
47		
48		
49		
50		

Position	Sample ID	Dilution
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		

Analyst: Esther Todd Date/Time: 02/13/15 0945

DCN#108611

C:\TOC3201\Data\02-13-2015-EPT-TOC.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	TOC:1.180mg/L TC:25.79mg/L IC:24.61mg/L	Complete	2/13/2015 9:59:35 AM	1
2	TOC	CCV	!!Error!! TOC:26.87mg/L TC:26.86mg/L IC:-0.01117mg/	Complete	2/13/2015 10:13:20 AM	2
3	TOC	WG512138-01 BLK	TOC:0.1077mg/L TC:0.1652mg/L IC:0.05750mg/L	Complete	2/13/2015 10:22:54 AM	0
4	TOC	WG512138-02 LCS	TOC:26.96mg/L TC:47.87mg/L IC:20.90mg/L	Complete	2/13/2015 11:28:03 AM	4
5	TOC	WG512138-03 LCSDUP	TOC:27.05mg/L TC:42.59mg/L IC:15.54mg/L	Complete	2/13/2015 11:59:54 AM	5
6	TOC	L15020355-03 (5)	TOC:8.323mg/L TC:20.27mg/L IC:11.95mg/L	Complete	2/13/2015 12:13:23 PM	6
7	TOC	L15020621-01	TOC:1.588mg/L TC:19.41mg/L IC:17.83mg/L	Complete	2/13/2015 12:26:51 PM	7
8	TOC	L15020624-01	TOC:1.899mg/L TC:17.55mg/L IC:15.65mg/L	Complete	2/13/2015 12:40:17 PM	8
9	TOC	L15020663-02	TOC:3.716mg/L TC:45.65mg/L IC:41.93mg/L	Complete	2/13/2015 1:08:38 PM	9
10	TOC	L15020663-03	TOC:3.606mg/L TC:37.39mg/L IC:33.78mg/L	Complete	2/13/2015 1:31:16 PM	10
11	TOC		TOC:1.164mg/L TC:7.984mg/L IC:6.820mg/L	Complete	2/13/2015 1:43:53 PM	11
12	TOC		TOC:0.9038mg/L TC:9.570mg/L IC:8.666mg/L	Complete	2/13/2015 1:56:24 PM	12
13	TOC	L15020678-15 (5)	TOC:2.575mg/L TC:26.68mg/L IC:24.10mg/L	Complete	2/13/2015 2:09:51 PM	13
14	TOC	CCV	TOC:26.64mg/L TC:26.73mg/L IC:0.09432mg/L	Complete	2/13/2015 2:23:35 PM	14
15	TOC	CCB	TOC:0.1038mg/L TC:0.1675mg/L IC:0.06374mg/L	Complete	2/13/2015 2:32:42 PM	0
16	TOC	L15020678-16 (5)	TOC:4.485mg/L TC:36.42mg/L IC:31.94mg/L	Complete	2/13/2015 3:09:39 PM	16
17	TOC	L15020683-04 (3)	TOC:6.951mg/L TC:23.21mg/L IC:16.26mg/L	Complete	2/13/2015 3:23:13 PM	17
18	TOC	L15020683-05 (3)	TOC:13.67mg/L TC:45.41mg/L IC:31.74mg/L	Complete	2/13/2015 3:38:46 PM	18
19	TOC	L15020698-01	TOC:2.069mg/L TC:14.20mg/L IC:12.13mg/L	Complete	2/13/2015 3:51:50 PM	19
20	TOC	L15020698-02	TOC:2.072mg/L TC:15.46mg/L IC:13.39mg/L	Complete	2/13/2015 4:04:47 PM	20
21	TOC	L15020698-03	TOC:2.406mg/L TC:18.13mg/L IC:15.72mg/L	Complete	2/13/2015 4:17:39 PM	21
22	TOC	L15020698-04	TOC:1.952mg/L TC:13.95mg/L IC:11.99mg/L	Complete	2/13/2015 4:30:33 PM	22
23	TOC	L15020698-05	TOC:1.819mg/L TC:12.60mg/L IC:10.78mg/L	Complete	2/13/2015 4:44:35 PM	23
24	TOC	L15020698-06	TOC:1.618mg/L TC:11.76mg/L IC:10.14mg/L	Complete	2/13/2015 5:00:41 PM	24
25	TOC	L15020698-07	TOC:1.669mg/L TC:11.84mg/L IC:10.17mg/L	Complete	2/13/2015 5:13:28 PM	25
26	TOC	CCV	TOC:26.93mg/L TC:27.02mg/L IC:0.08498mg/L	Complete	2/13/2015 5:27:49 PM	26
27	TOC	CCB	TOC:0.1006mg/L TC:0.1623mg/L IC:0.06164mg/L	Complete	2/13/2015 5:37:02 PM	0
28	TOC	L15020698-08	TOC:1.604mg/L TC:10.28mg/L IC:8.679mg/L	Complete	2/13/2015 5:49:45 PM	28
29	TOC	L15020698-09	TOC:1.516mg/L TC:10.88mg/L IC:9.360mg/L	Complete	2/13/2015 6:02:27 PM	29
30	TOC	WG512138-05 DUP	TOC:1.855mg/L TC:15.82mg/L IC:13.96mg/L	Complete	2/13/2015 6:15:28 PM	30
31	TOC	WG512138-06 MS	TOC:12.11mg/L TC:25.02mg/L IC:12.92mg/L	Complete	2/13/2015 6:28:41 PM	31
32	TOC	WG512144-01 BLK	TOC:0.09698mg/L TC:0.1936mg/L IC:0.09666mg/L	Complete	2/13/2015 6:37:59 PM	0
33	TOC	WG512144-02 LCS	TOC:27.70mg/L TC:33.24mg/L IC:5.538mg/L	Complete	2/13/2015 6:52:27 PM	33
34	TOC	WG512144-03 LCSDUP	TOC:26.56mg/L TC:32.48mg/L IC:5.922mg/L	Complete	2/13/2015 7:05:42 PM	34
35	TOC	L15020683-06 (3)	TOC:8.599mg/L TC:24.22mg/L IC:15.62mg/L	Complete	2/13/2015 7:19:24 PM	35
36	TOC	L15020683-07 (3)	TOC:7.963mg/L TC:16.13mg/L IC:8.165mg/L	Complete	2/13/2015 7:32:21 PM	36
37	TOC	L15020683-08 (3) MS	TOC:12.15mg/L TC:17.51mg/L IC:5.361mg/L	Complete	2/13/2015 7:45:17 PM	37
38	TOC	CCV	TOC:24.71mg/L TC:24.76mg/L IC:0.05102mg/L	Complete	2/13/2015 7:57:40 PM	38
39	TOC	CCB	TOC:0.1546mg/L TC:0.2106mg/L IC:0.05607mg/L	Complete	2/13/2015 8:07:06 PM	0
40	TOC	L15020683-09 (3) MSD	TOC:12.02mg/L TC:16.27mg/L IC:4.246mg/L	Complete	2/13/2015 8:20:09 PM	40
41	TOC	L15020683-10 (3)	TOC:7.834mg/L TC:13.92mg/L IC:6.089mg/L	Complete	2/13/2015 8:33:17 PM	41
42	TOC		TOC:1.716mg/L TC:1.775mg/L IC:0.05897mg/L	Complete	2/13/2015 8:44:55 PM	42
43	TOC		TOC:30.60mg/L TC:59.08mg/L IC:28.47mg/L	Complete	2/13/2015 8:59:10 PM	43
44	TOC	WG512144-08 (3) DUP	TOC:8.306mg/L TC:30.62mg/L IC:22.32mg/L	Complete	2/13/2015 9:13:14 PM	44
45	TOC	CCV	TOC:23.27mg/L TC:23.39mg/L IC:0.1240mg/L	Complete	2/13/2015 9:25:44 PM	45
46	TOC	CCB	TOC:0.1082mg/L TC:0.1709mg/L IC:0.06274mg/L	Complete	2/13/2015 9:34:59 PM	0

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.180mg/L TC:25.79mg/L IC:24.61mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	990.9	25.79mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 9:53:39 AM

Mean Area 990.9
Mean Conc. 25.79mg/L

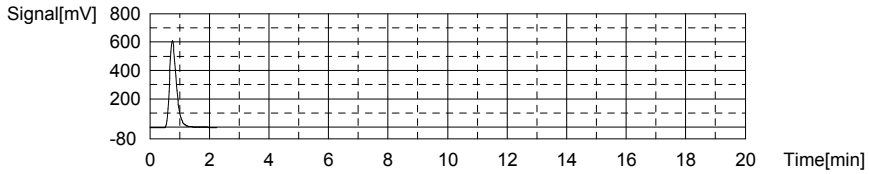

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	745.1	24.61mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 9:59:35 AM

Mean Area 745.1
Mean Conc. 24.61mg/L

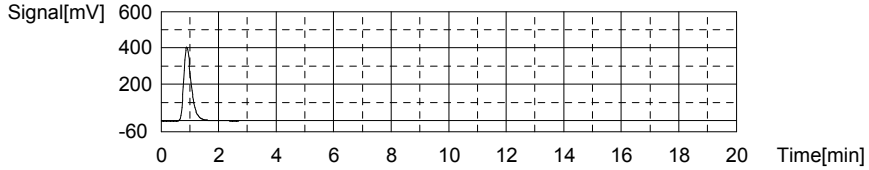

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:26.87mg/L TC:26.86mg/L IC:-0.01117mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1032	26.86mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 10:08:40 AM

Mean Area 1032
Mean Conc. 26.86mg/L

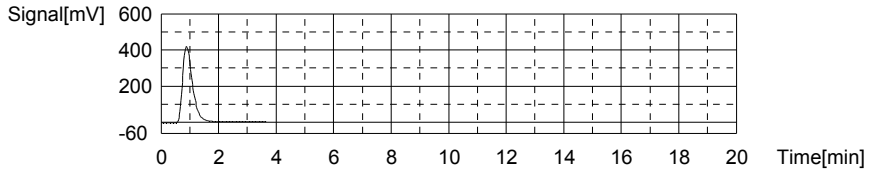

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.690	-0.01117mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 10:13:20 AM

Mean Area 7.690
Mean Conc. -0.01117mg/L

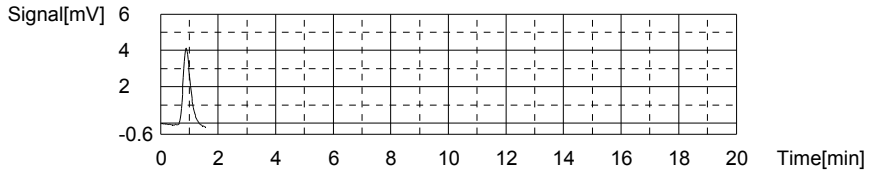

Sample

Sample Name: WG512138-01 BLK
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1077mg/L TC:0.1652mg/L IC:0.05750mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.25	0.1652mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 10:18:43 AM

Mean Area 10.25
Mean Conc. 0.1652mg/L

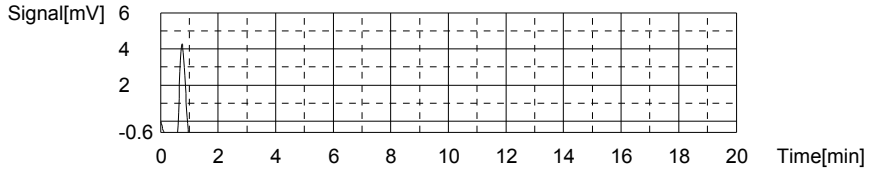

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.747	0.05750mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 10:22:54 AM

Mean Area 9.747
Mean Conc. 0.05750mg/L

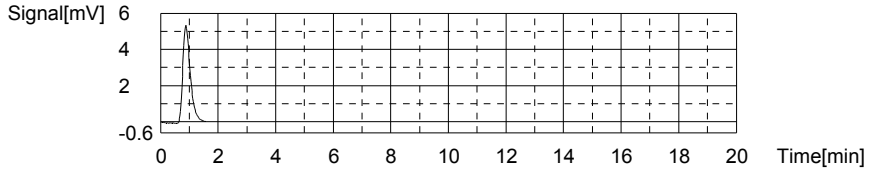

Sample

Sample Name: WG512138-02 LCS
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.96mg/L TC:47.87mg/L IC:20.90mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1836	47.87mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 11:22:29 AM

Mean Area 1836
Mean Conc. 47.87mg/L

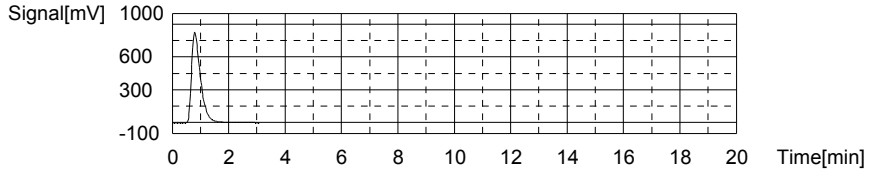

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	634.2	20.90mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 11:28:03 AM

Mean Area 634.2
Mean Conc. 20.90mg/L

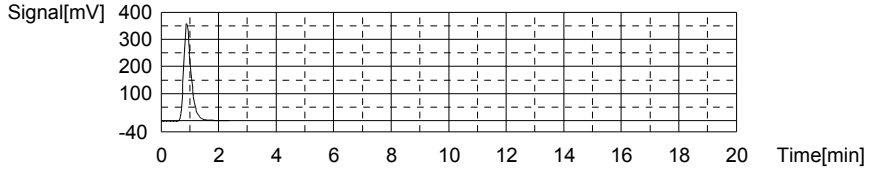

Sample

Sample Name: WG512138-03 LCSDUP
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.05mg/L TC:42.59mg/L IC:15.54mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1634	42.59mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 11:54:15 AM

Mean Area 1634
Mean Conc. 42.59mg/L

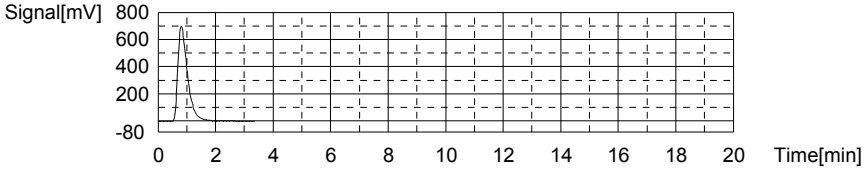

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	473.5	15.54mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 11:59:54 AM

Mean Area 473.5
Mean Conc. 15.54mg/L

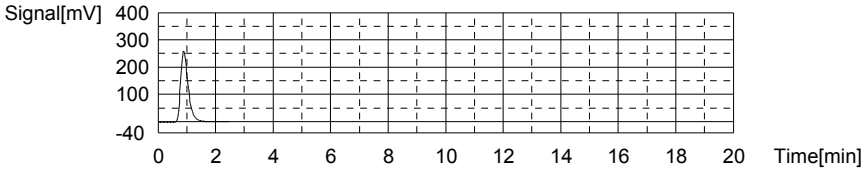

Sample

Sample Name: L15020355-03 (5)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.323mg/L TC:20.27mg/L IC:11.95mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	779.9	20.27mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 12:08:02 PM

Mean Area 779.9
Mean Conc. 20.27mg/L

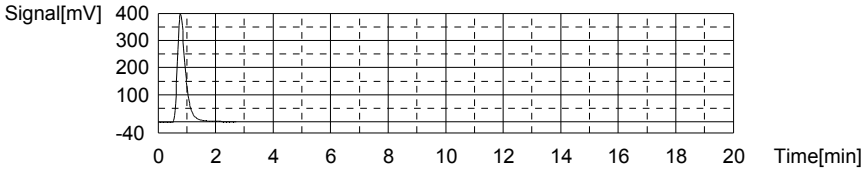

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	366.0	11.95mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 12:13:23 PM

Mean Area 366.0
Mean Conc. 11.95mg/L

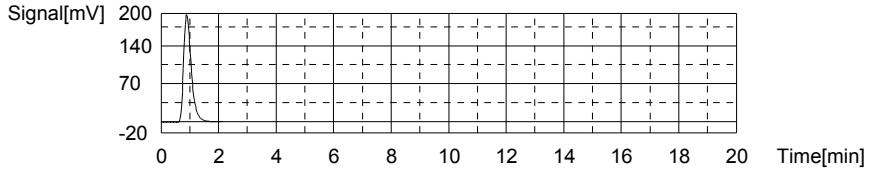

Sample

Sample Name: L15020621-01
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.588mg/L TC:19.41mg/L IC:17.83mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	747.0	19.41mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 12:21:29 PM

Mean Area 747.0
Mean Conc. 19.41mg/L

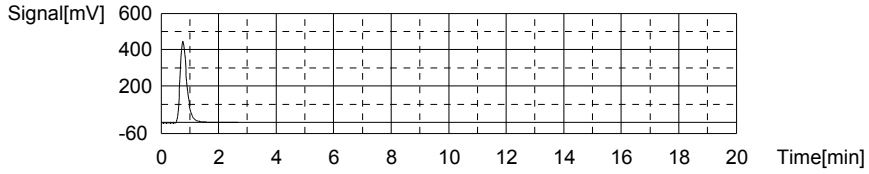

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	542.0	17.83mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 12:26:51 PM

Mean Area 542.0
Mean Conc. 17.83mg/L

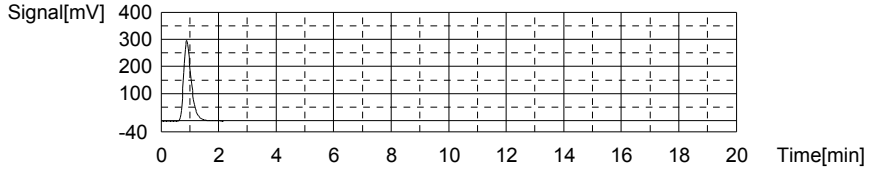

Sample

Sample Name: L15020624-01
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.899mg/L TC:17.55mg/L IC:15.65mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	675.6	17.55mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 12:35:00 PM

Mean Area 675.6
Mean Conc. 17.55mg/L

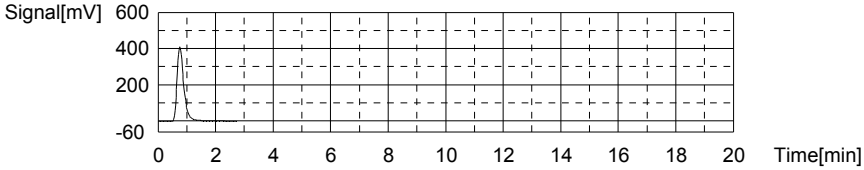

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	476.8	15.65mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 12:40:17 PM

Mean Area 476.8
Mean Conc. 15.65mg/L

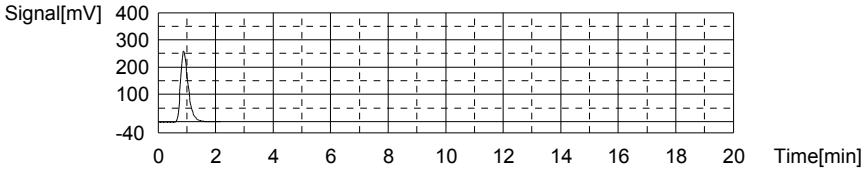

Sample

Sample Name: L15020663-02
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.716mg/L TC:45.65mg/L IC:41.93mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1751	45.65mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 1:02:29 PM

Mean Area 1751
Mean Conc. 45.65mg/L

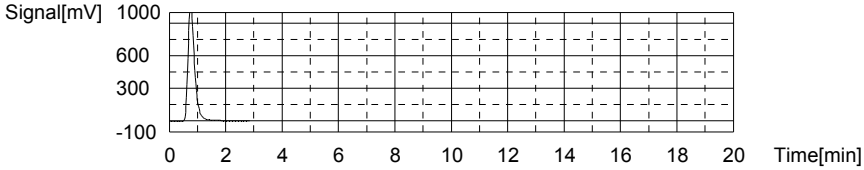

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1264	41.93mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 1:08:38 PM

Mean Area 1264
Mean Conc. 41.93mg/L

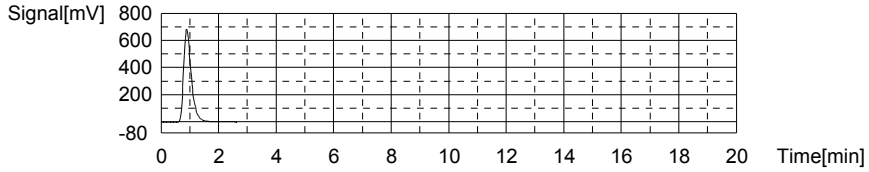

Sample

Sample Name: L15020663-03
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.606mg/L TC:37.39mg/L IC:33.78mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1435	37.39mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 1:25:23 PM

Mean Area 1435
Mean Conc. 37.39mg/L

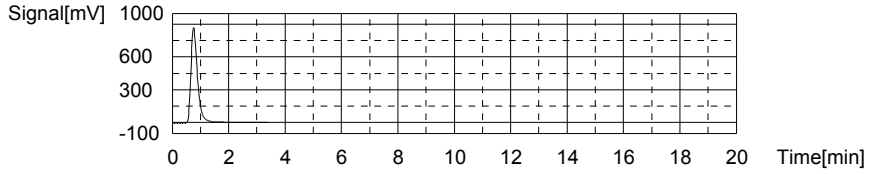

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1020	33.78mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 1:31:16 PM

Mean Area 1020
Mean Conc. 33.78mg/L

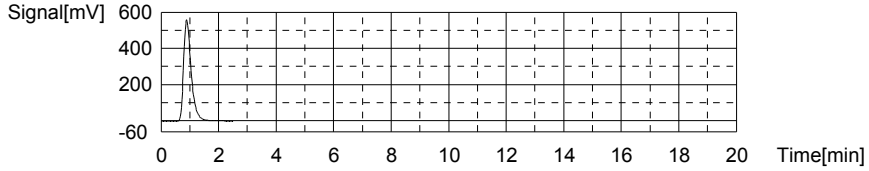

Sample

Sample Name:
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.164mg/L TC:7.984mg/L IC:6.820mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	309.5	7.984mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 1:38:46 PM

Mean Area 309.5
Mean Conc. 7.984mg/L

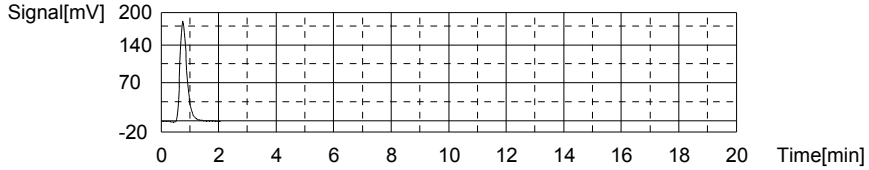

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	212.3	6.820mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 1:43:53 PM

Mean Area 212.3
Mean Conc. 6.820mg/L

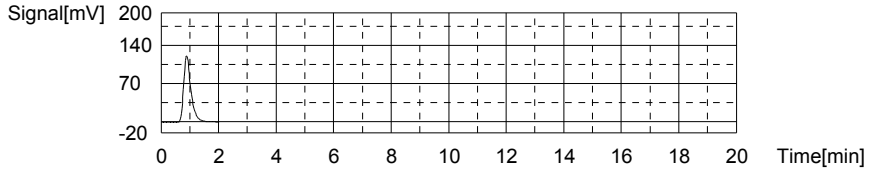

Sample

Sample Name:
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9038mg/L TC:9.570mg/L IC:8.666mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	370.2	9.570mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 1:51:24 PM

Mean Area 370.2
Mean Conc. 9.570mg/L

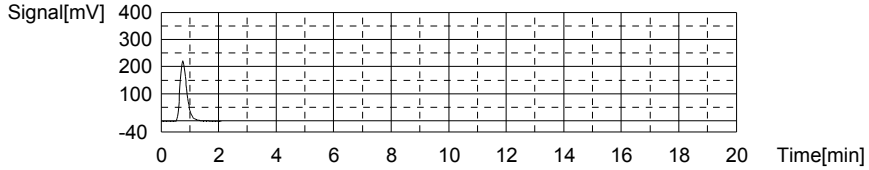

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	267.6	8.666mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 1:56:24 PM

Mean Area 267.6
Mean Conc. 8.666mg/L

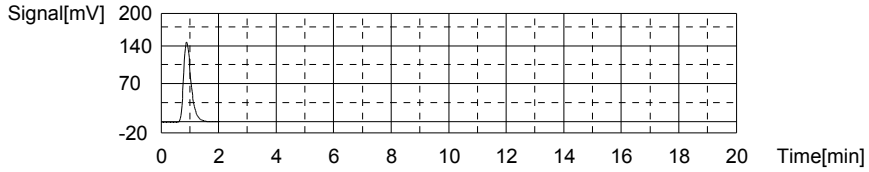

Sample

Sample Name: L15020678-15 (5)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.575mg/L TC:26.68mg/L IC:24.10mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1025	26.68mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 2:04:22 PM

Mean Area 1025
Mean Conc. 26.68mg/L

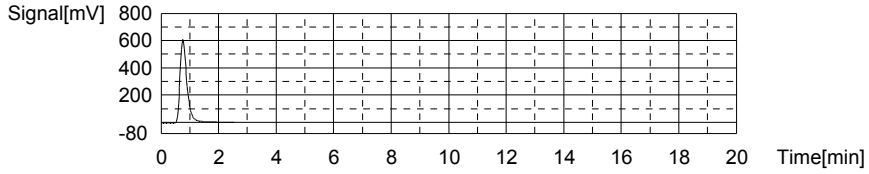

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	730.0	24.10mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 2:09:51 PM

Mean Area 730.0
Mean Conc. 24.10mg/L

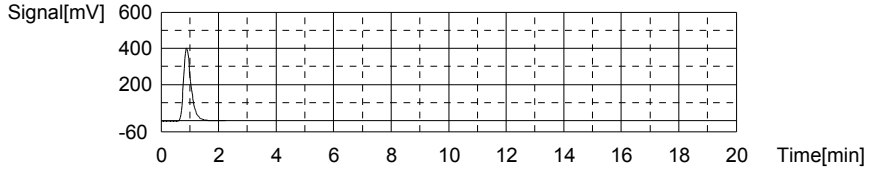

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.64mg/L TC:26.73mg/L IC:0.09432mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1027	26.73mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 2:19:04 PM

Mean Area 1027
Mean Conc. 26.73mg/L

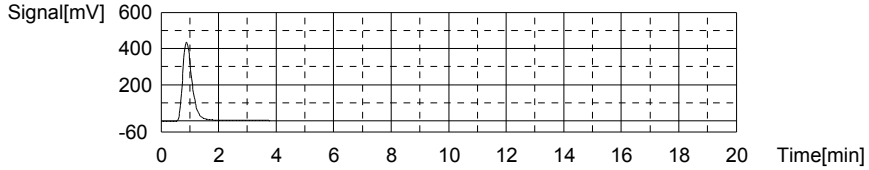

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.85	0.09432mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 2:23:35 PM

Mean Area 10.85
Mean Conc. 0.09432mg/L

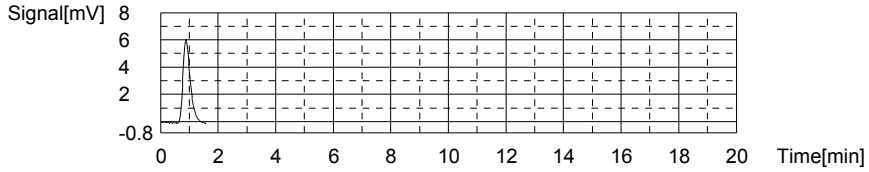

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1038mg/L TC:0.1675mg/L IC:0.06374mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.34	0.1675mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 2:28:41 PM

Mean Area 10.34
Mean Conc. 0.1675mg/L

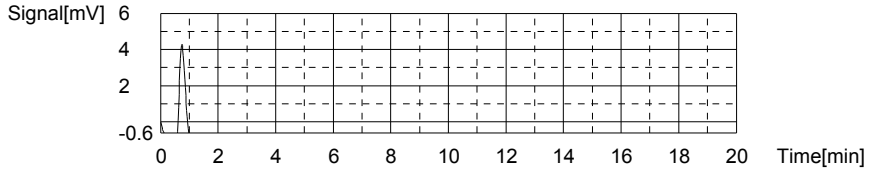

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.934	0.06374mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 2:32:42 PM

Mean Area 9.934
Mean Conc. 0.06374mg/L

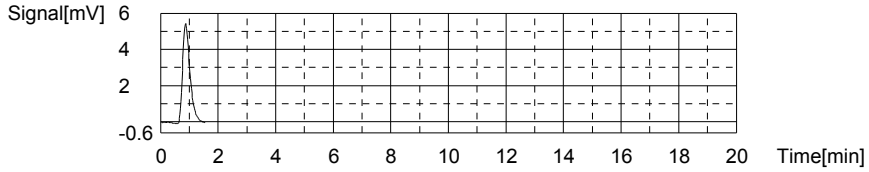

Sample

Sample Name: L15020678-16 (5)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.485mg/L TC:36.42mg/L IC:31.94mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1398	36.42mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 3:03:36 PM

Mean Area 1398
Mean Conc. 36.42mg/L

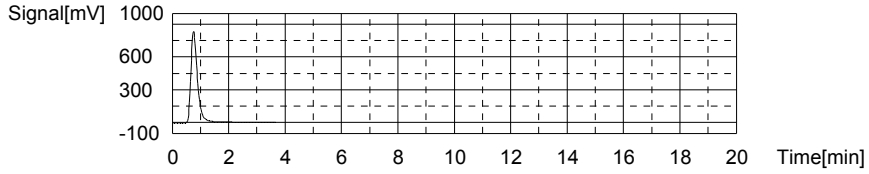

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	964.7	31.94mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 3:09:39 PM

Mean Area 964.7
Mean Conc. 31.94mg/L

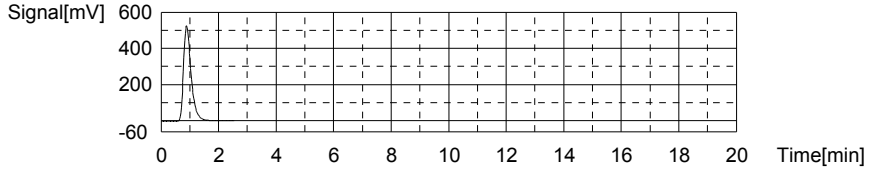

Sample

Sample Name: L15020683-04 (3)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.951mg/L TC:23.21mg/L IC:16.26mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	892.2	23.21mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 3:17:49 PM

Mean Area 892.2
Mean Conc. 23.21mg/L

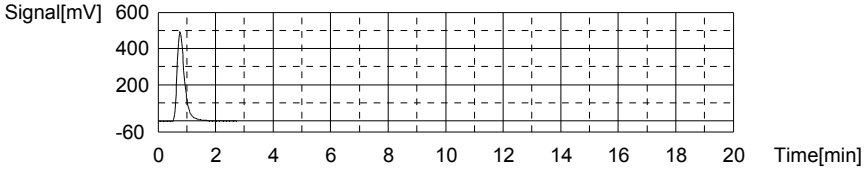

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	495.0	16.26mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 3:23:13 PM

Mean Area 495.0
Mean Conc. 16.26mg/L

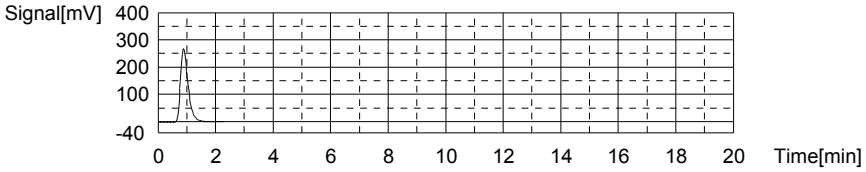

Sample

Sample Name: L15020683-05 (3)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.67mg/L TC:45.41mg/L IC:31.74mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1742	45.41mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 3:33:13 PM

Mean Area 1742
Mean Conc. 45.41mg/L

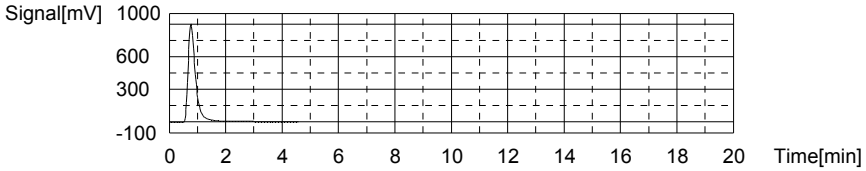

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	958.8	31.74mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 3:38:46 PM

Mean Area 958.8
Mean Conc. 31.74mg/L

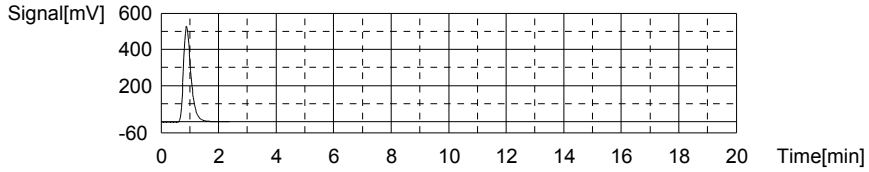

Sample

Sample Name: L15020698-01
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.069mg/L TC:14.20mg/L IC:12.13mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	547.3	14.20mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 3:46:24 PM

Mean Area 547.3
Mean Conc. 14.20mg/L

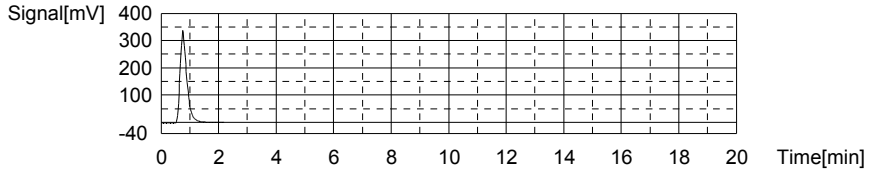

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	371.3	12.13mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 3:51:50 PM

Mean Area 371.3
Mean Conc. 12.13mg/L

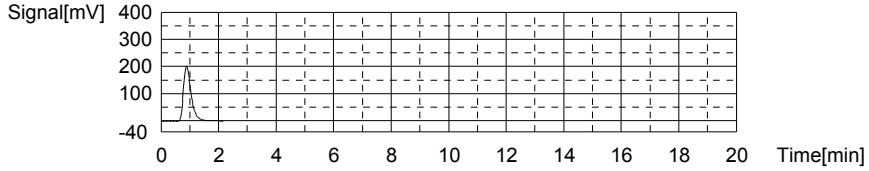

Sample

Sample Name: L15020698-02
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.072mg/L TC:15.46mg/L IC:13.39mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	595.6	15.46mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 3:59:32 PM

Mean Area 595.6
Mean Conc. 15.46mg/L

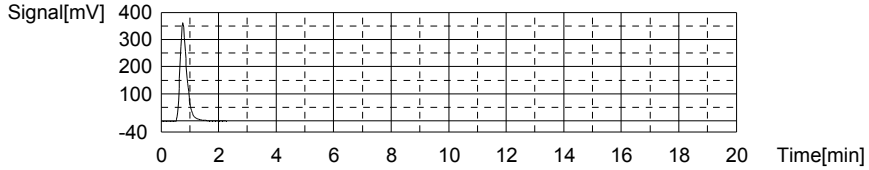

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	409.0	13.39mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 4:04:47 PM

Mean Area 409.0
Mean Conc. 13.39mg/L

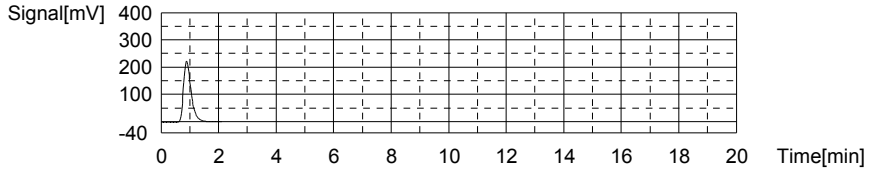

Sample

Sample Name: L15020698-03
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.406mg/L TC:18.13mg/L IC:15.72mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	697.8	18.13mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 4:12:15 PM

Mean Area 697.8
Mean Conc. 18.13mg/L

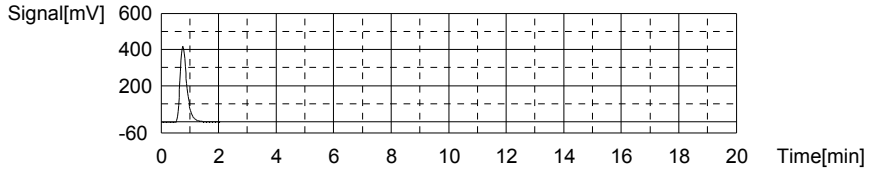

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	479.0	15.72mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 4:17:39 PM

Mean Area 479.0
Mean Conc. 15.72mg/L

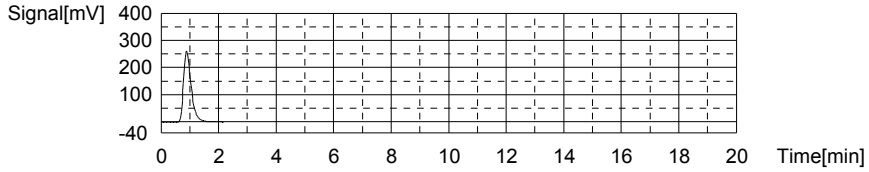

Sample

Sample Name: L15020698-04
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.952mg/L TC:13.95mg/L IC:11.99mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	537.7	13.95mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 4:25:16 PM

Mean Area 537.7
Mean Conc. 13.95mg/L

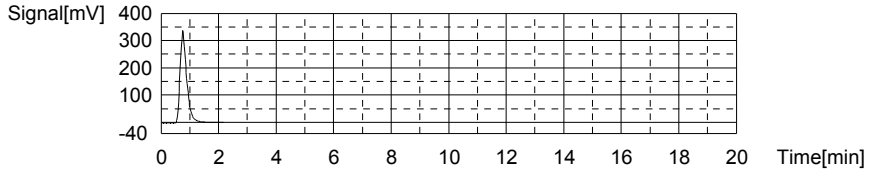

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	367.3	11.99mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 4:30:33 PM

Mean Area 367.3
Mean Conc. 11.99mg/L

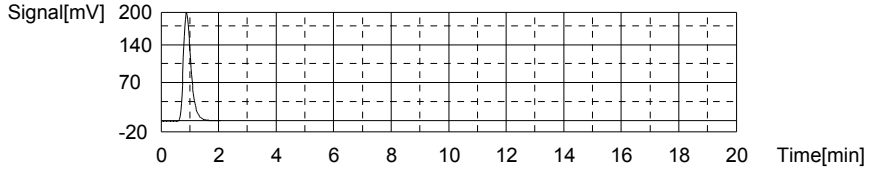

Sample

Sample Name: L15020698-05
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.819mg/L TC:12.60mg/L IC:10.78mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	486.0	12.60mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 4:39:22 PM

Mean Area 486.0
Mean Conc. 12.60mg/L

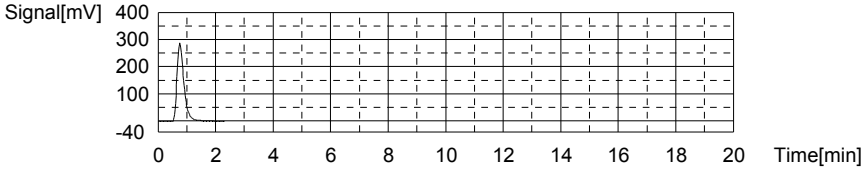

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	330.8	10.78mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 4:44:35 PM

Mean Area 330.8
Mean Conc. 10.78mg/L

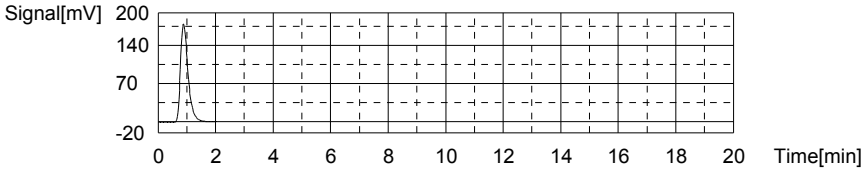

Sample

Sample Name: L15020698-06
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.618mg/L TC:11.76mg/L IC:10.14mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	453.9	11.76mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 4:55:29 PM

Mean Area 453.9
Mean Conc. 11.76mg/L

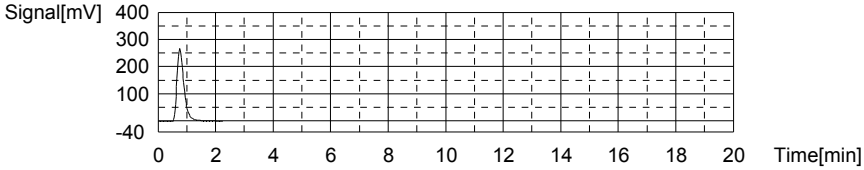

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	311.7	10.14mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 5:00:41 PM

Mean Area 311.7
Mean Conc. 10.14mg/L

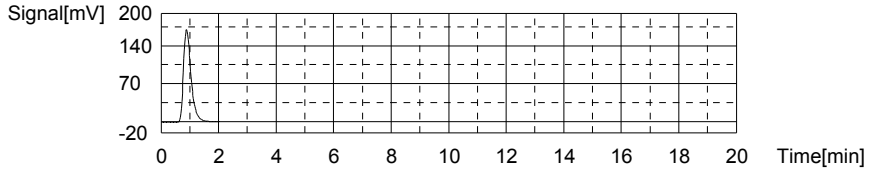

Sample

Sample Name: L15020698-07
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.669mg/L TC:11.84mg/L IC:10.17mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	457.0	11.84mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 5:08:17 PM

Mean Area 457.0
Mean Conc. 11.84mg/L

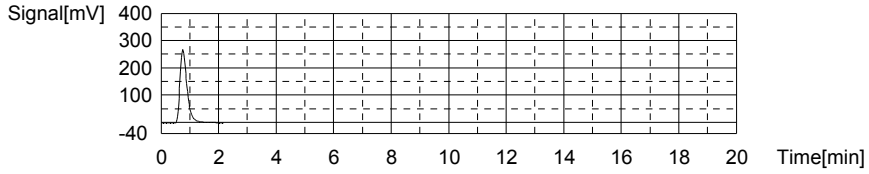

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	312.6	10.17mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 5:13:28 PM

Mean Area 312.6
Mean Conc. 10.17mg/L

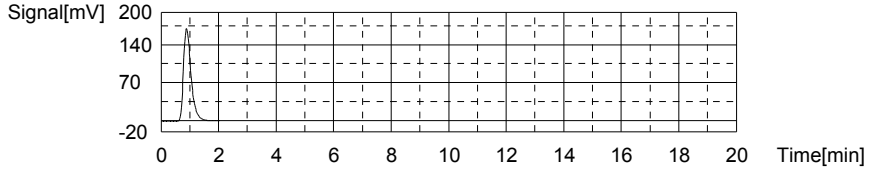

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.93mg/L TC:27.02mg/L IC:0.08498mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1038	27.02mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 5:23:19 PM

Mean Area 1038
Mean Conc. 27.02mg/L

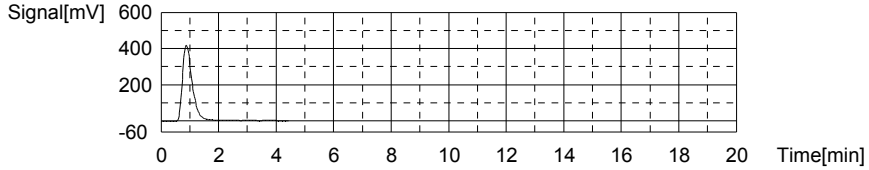

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.57	0.08498mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 5:27:49 PM

Mean Area 10.57
Mean Conc. 0.08498mg/L

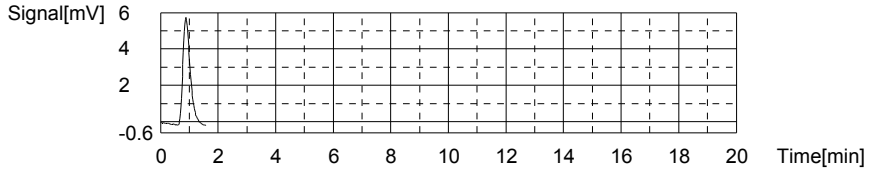

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1006mg/L TC:0.1623mg/L IC:0.06164mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.14	0.1623mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 5:32:58 PM

Mean Area 10.14
Mean Conc. 0.1623mg/L

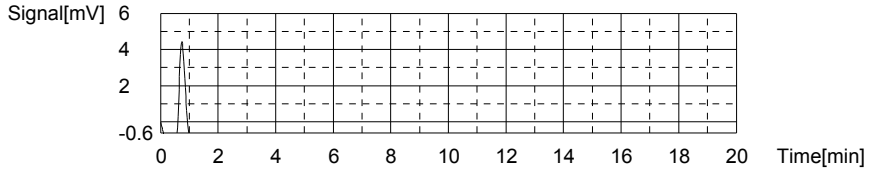

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.871	0.06164mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 5:37:02 PM

Mean Area 9.871
Mean Conc. 0.06164mg/L

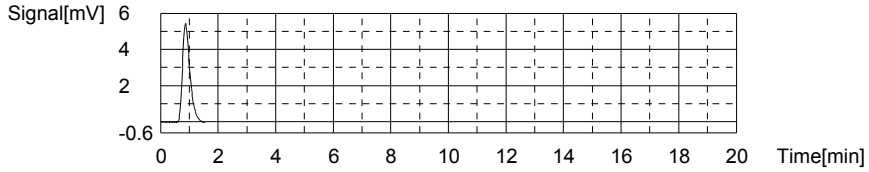

Sample

Sample Name: L15020698-08
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.604mg/L TC:10.28mg/L IC:8.679mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	397.5	10.28mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 5:44:37 PM

Mean Area 397.5
Mean Conc. 10.28mg/L

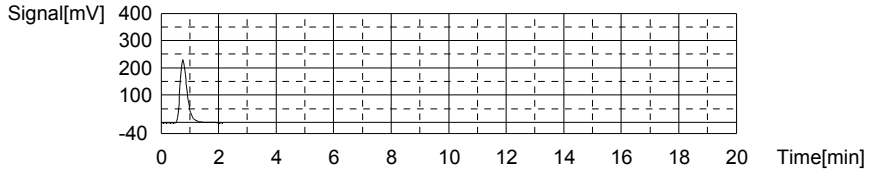

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	268.0	8.679mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 5:49:45 PM

Mean Area 268.0
Mean Conc. 8.679mg/L

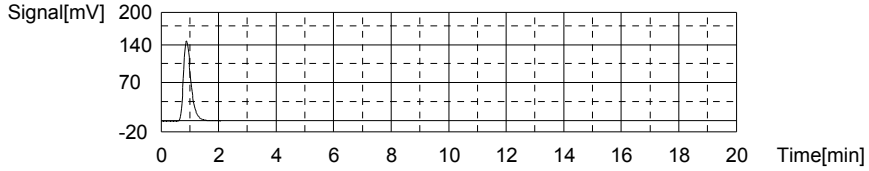

Sample

Sample Name: L15020698-09
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.516mg/L TC:10.88mg/L IC:9.360mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	420.2	10.88mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 5:57:15 PM

Mean Area 420.2
Mean Conc. 10.88mg/L

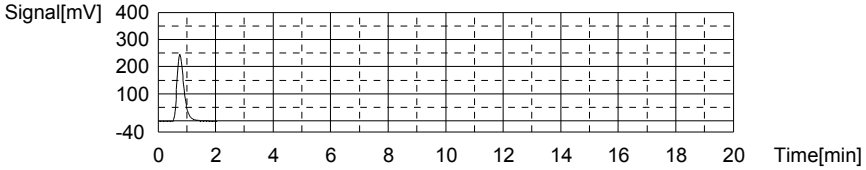

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	288.4	9.360mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 6:02:27 PM

Mean Area 288.4
Mean Conc. 9.360mg/L

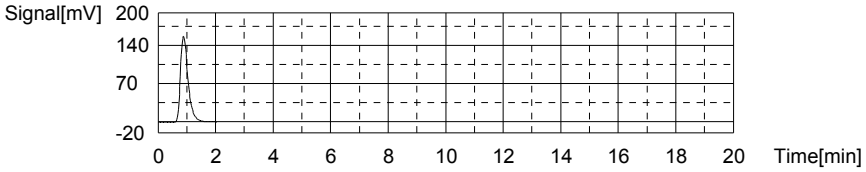

Sample

Sample Name: WG512138-05 DUP
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.855mg/L TC:15.82mg/L IC:13.96mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	609.4	15.82mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 6:10:11 PM

Mean Area 609.4
Mean Conc. 15.82mg/L

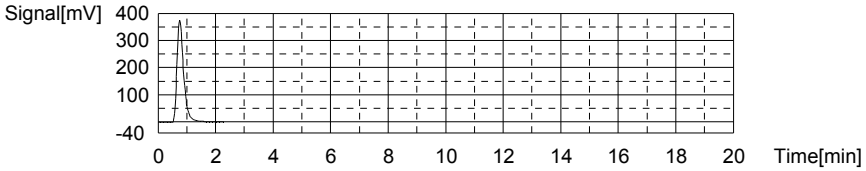

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	426.3	13.96mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 6:15:28 PM

Mean Area 426.3
Mean Conc. 13.96mg/L

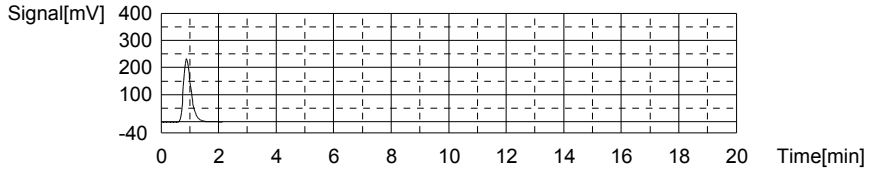

Sample

Sample Name: WG512138-06 MS
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.11mg/L TC:25.02mg/L IC:12.92mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	961.7	25.02mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 6:23:23 PM

Mean Area 961.7
Mean Conc. 25.02mg/L

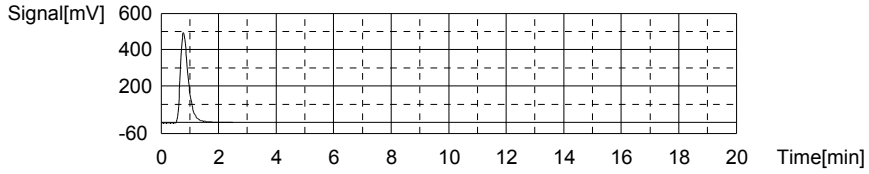

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	394.9	12.92mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 6:28:41 PM

Mean Area 394.9
Mean Conc. 12.92mg/L

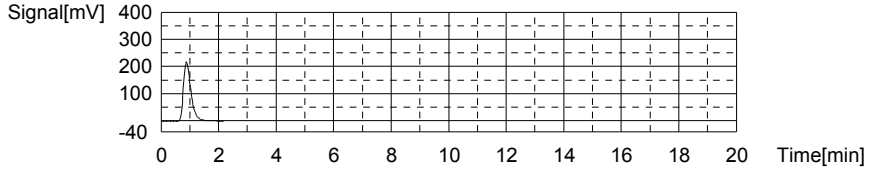

Sample

Sample Name: WG512144-01 BLK
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.09698mg/L TC:0.1936mg/L IC:0.09666mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.34	0.1936mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 6:33:50 PM

Mean Area 11.34
Mean Conc. 0.1936mg/L

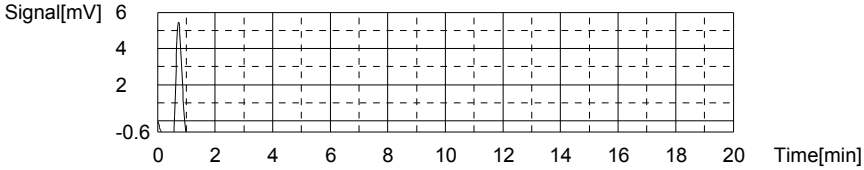

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.92	0.09666mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 6:37:59 PM

Mean Area 10.92
Mean Conc. 0.09666mg/L

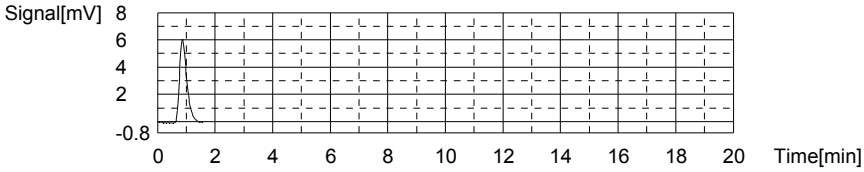

Sample

Sample Name: WG512144-02 LCS
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.70mg/L TC:33.24mg/L IC:5.538mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1276	33.24mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 6:47:24 PM

Mean Area 1276
Mean Conc. 33.24mg/L

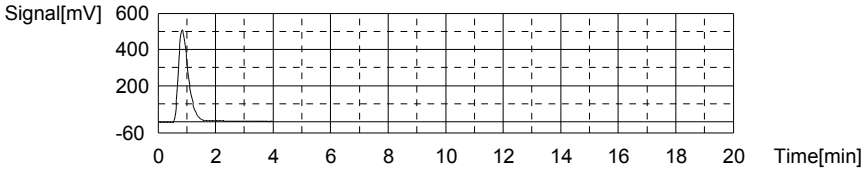

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	173.9	5.538mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 6:52:27 PM

Mean Area 173.9
Mean Conc. 5.538mg/L

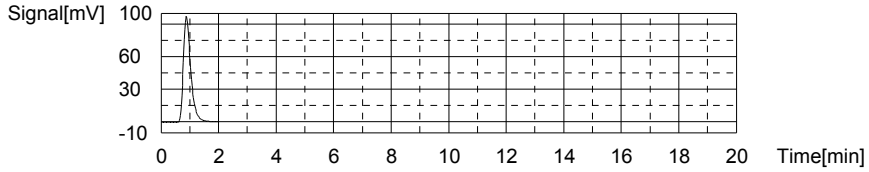

Sample

Sample Name: WG512144-03 LCSDUP
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.56mg/L TC:32.48mg/L IC:5.922mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1247	32.48mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 7:00:43 PM

Mean Area 1247
Mean Conc. 32.48mg/L

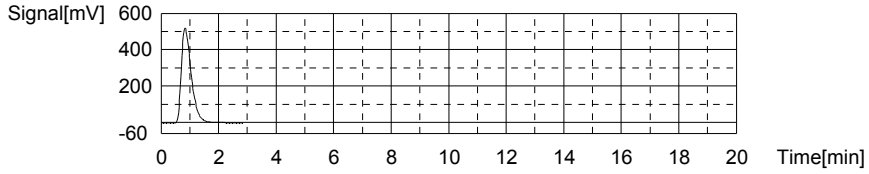

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	185.4	5.922mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 7:05:42 PM

Mean Area 185.4
Mean Conc. 5.922mg/L

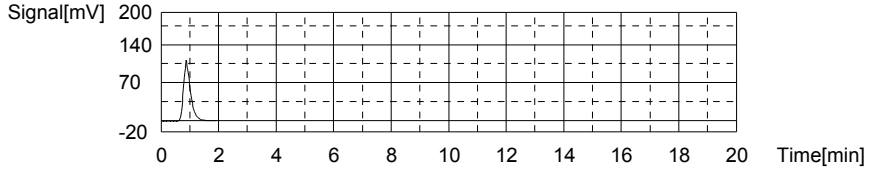

Sample

Sample Name: L15020683-06 (3)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.599mg/L TC:24.22mg/L IC:15.62mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	931.0	24.22mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 7:13:49 PM

Mean Area 931.0
Mean Conc. 24.22mg/L

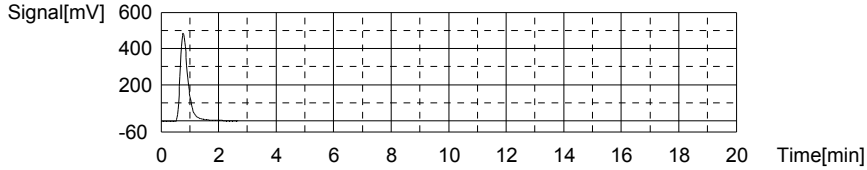

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	476.0	15.62mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 7:19:24 PM

Mean Area 476.0
Mean Conc. 15.62mg/L

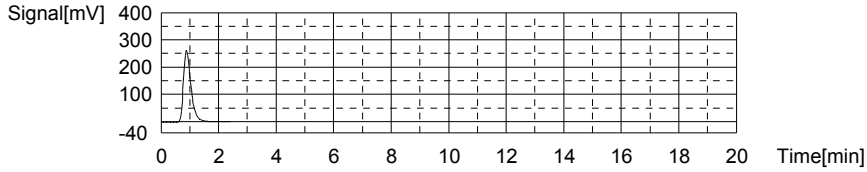

Sample

Sample Name: L15020683-07 (3)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.963mg/L TC:16.13mg/L IC:8.165mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	621.2	16.13mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 7:27:12 PM

Mean Area 621.2
Mean Conc. 16.13mg/L

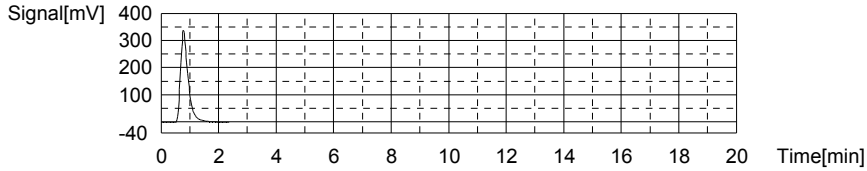

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	252.6	8.165mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 7:32:21 PM

Mean Area 252.6
Mean Conc. 8.165mg/L

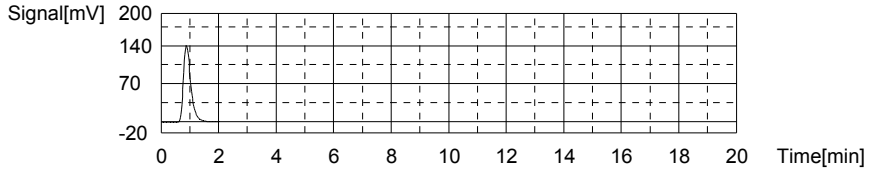

Sample

Sample Name: L15020683-08 (3) MS
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.15mg/L TC:17.51mg/L IC:5.361mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	674.2	17.51mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 7:40:22 PM

Mean Area 674.2
Mean Conc. 17.51mg/L

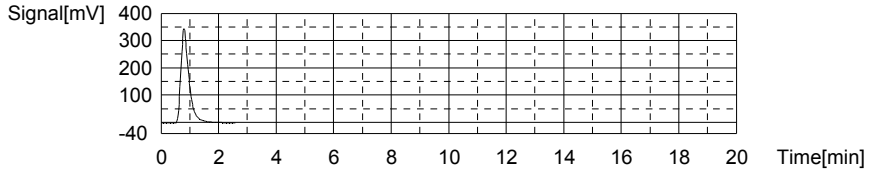

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	168.6	5.361mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 7:45:17 PM

Mean Area 168.6
Mean Conc. 5.361mg/L

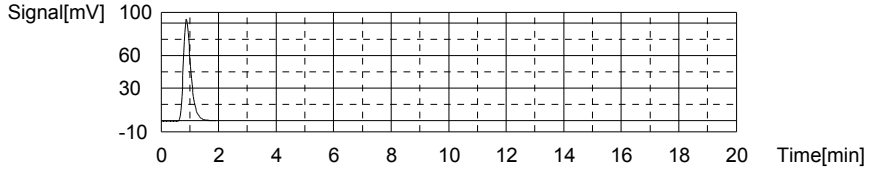

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:24.71mg/L TC:24.76mg/L IC:0.05102mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	951.5	24.76mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 7:53:11 PM

Mean Area 951.5
Mean Conc. 24.76mg/L

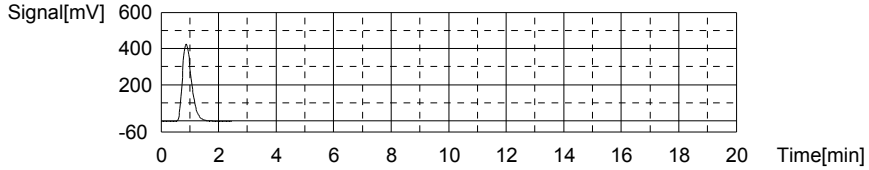

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.553	0.05102mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 7:57:40 PM

Mean Area 9.553
Mean Conc. 0.05102mg/L

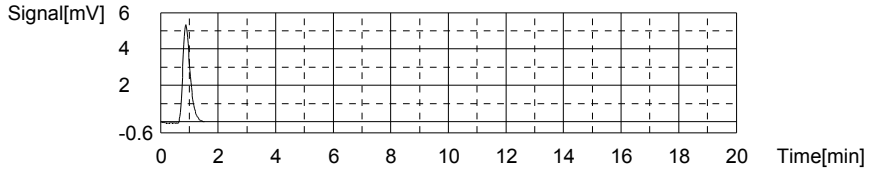

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1546mg/L TC:0.2106mg/L IC:0.05607mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.99	0.2106mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 8:03:03 PM

Mean Area 11.99
Mean Conc. 0.2106mg/L

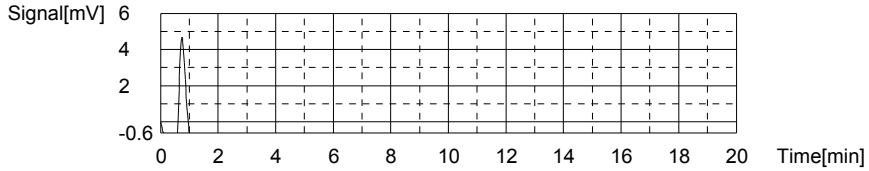

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.704	0.05607mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 8:07:06 PM

Mean Area 9.704
Mean Conc. 0.05607mg/L

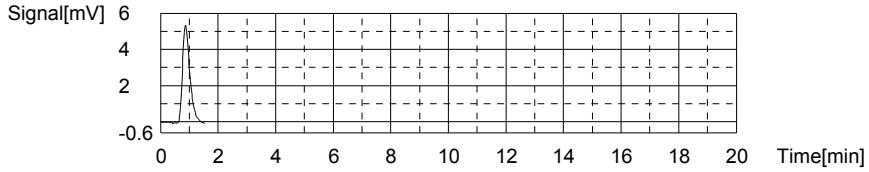

Sample

Sample Name: L15020683-09 (3) MSD
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.02mg/L TC:16.27mg/L IC:4.246mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	626.5	16.27mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 8:15:12 PM

Mean Area 626.5
Mean Conc. 16.27mg/L

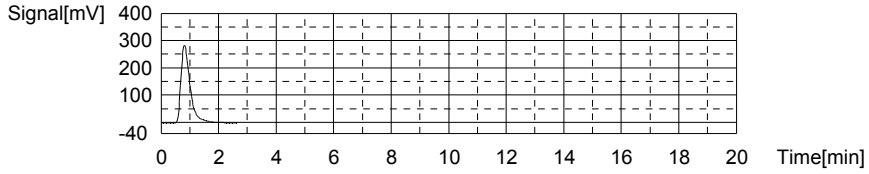

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	135.2	4.246mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 8:20:09 PM

Mean Area 135.2
Mean Conc. 4.246mg/L

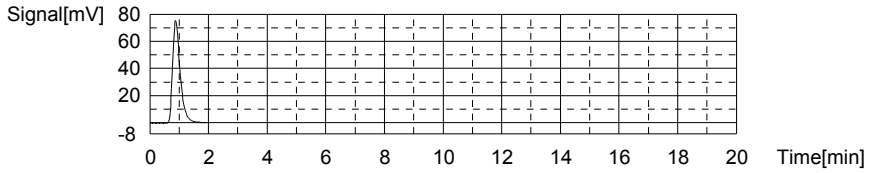

Sample

Sample Name: L15020683-10 (3)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.834mg/L TC:13.92mg/L IC:6.089mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	536.8	13.92mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 8:28:13 PM

Mean Area 536.8
Mean Conc. 13.92mg/L

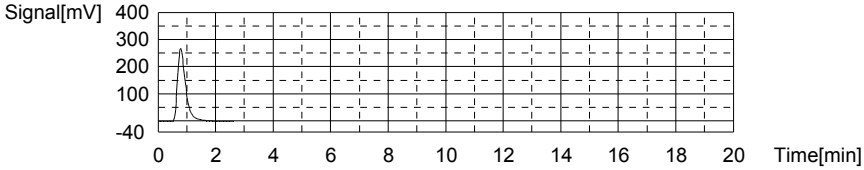

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	190.4	6.089mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 8:33:17 PM

Mean Area 190.4
Mean Conc. 6.089mg/L

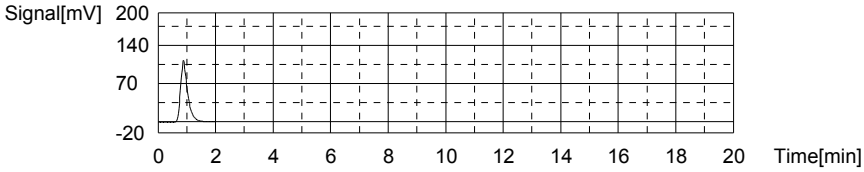

Sample

Sample Name:
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.716mg/L TC:1.775mg/L IC:0.05897mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	71.85	1.775mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 8:40:25 PM

Mean Area 71.85
Mean Conc. 1.775mg/L

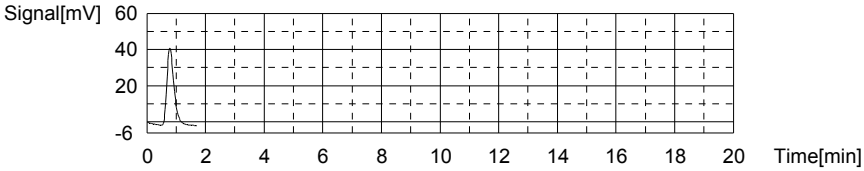

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.791	0.05897mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 8:44:55 PM

Mean Area 9.791
Mean Conc. 0.05897mg/L

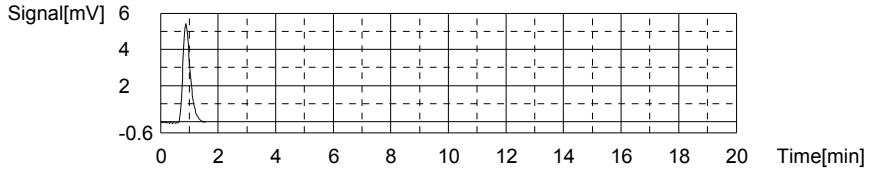

Sample

Sample Name:
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:30.60mg/L TC:59.08mg/L IC:28.47mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2265	59.08mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 8:53:25 PM

Mean Area 2265
Mean Conc. 59.08mg/L

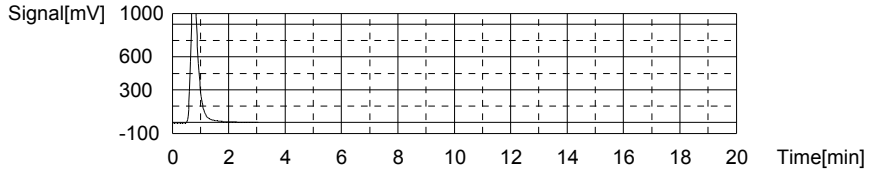

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	860.9	28.47mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 8:59:10 PM

Mean Area 860.9
Mean Conc. 28.47mg/L

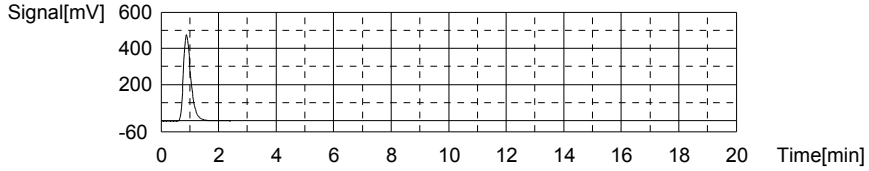

Sample

Sample Name: WG512144-08 (3) DUP
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.306mg/L TC:30.62mg/L IC:22.32mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1176	30.62mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 9:07:38 PM

Mean Area 1176
Mean Conc. 30.62mg/L

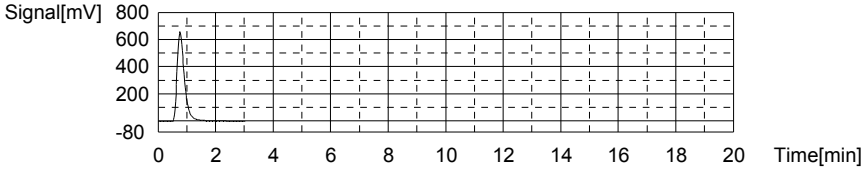

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	676.5	22.32mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 9:13:14 PM

Mean Area 676.5
Mean Conc. 22.32mg/L

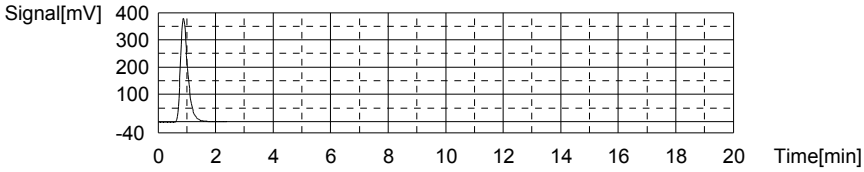

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.27mg/L TC:23.39mg/L IC:0.1240mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	899.2	23.39mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 9:21:16 PM

Mean Area 899.2
Mean Conc. 23.39mg/L

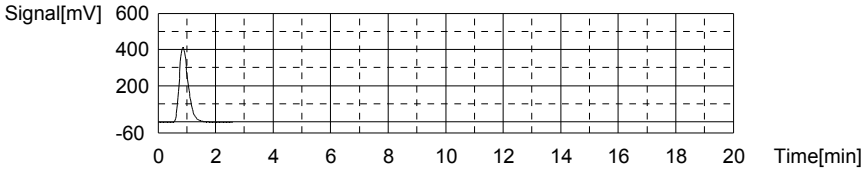

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.74	0.1240mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 9:25:44 PM

Mean Area 11.74
Mean Conc. 0.1240mg/L

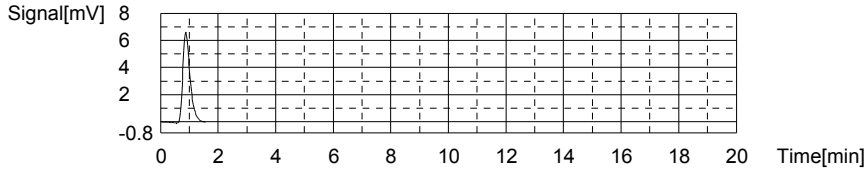

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1082mg/L TC:0.1709mg/L IC:0.06274mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.47	0.1709mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/13/2015 9:30:58 PM

Mean Area 10.47
Mean Conc. 0.1709mg/L

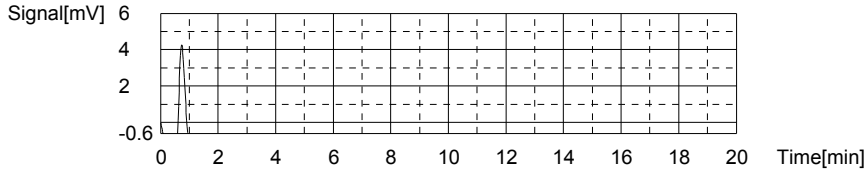

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.904	0.06274mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/13/2015 9:34:59 PM

Mean Area 9.904
Mean Conc. 0.06274mg/L

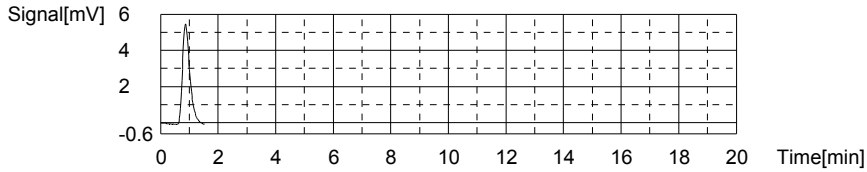

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
February 23, 2015

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE	AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED	AWE - ANDREW W. ESSIG
AZH - AFTER HOURS	BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE	BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD	CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER	CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS	CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN	DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG	DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER	DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT	DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON	ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE	JKP - JACQUELINE K. PARSONS
JLL - JOHN L. LENT	JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON	KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH	KEB - KATIE E. BARNES
KHR - KIM H. RHODES	KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS	LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF	LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA	MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON	MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING	MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY	MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG	SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
February 23, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.

Microbac Laboratories Inc.
List of Valid Qualifiers
February 23, 2015

Qualkey: DOD

TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Kathy Albertson	Project Manager: ~~Dave Wacker~~ Mark Hanston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60256135.0002JA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 67	67WW14-021015			2/10/15	0800		✓	W	3	✓					
	67WW14FD-021015			2/10/15	0800		✓	W	3	✓					
	67WW10-021015			2/10/15	0955		✓	W	3	✓					
	67WW09A-021015			2/10/15	1055		✓	W	3	✓					
	67WW12-021015			2/10/15	1340		✓	W	3	✓					
	67WW12MS-021015			2/10/15	1340		✓	W	3	✓					
	67WW12MSD-021015			2/10/15	1340		✓	W	3	✓					
	67WW05-021015			2/10/15	1400		✓	W	3	✓					
	67WW02-021015			2/10/15	1415		✓	W	3	✓					
	67WW01-021015			2/10/15	1432		✓	W	3	✓					
	67WW07-021015			2/10/15	1500		✓	W	3	✓					
	67WW13-021115			2/11/15	0815		✓	W	3	✓					
	67WW09-021115			2/11/15	0920		✓	W	3	✓					
	67WW09FD-021115			2/11/15	0920		✓	W	3	✓					

ERPIMS REQUIRED FIELDS

Comments: STANDARD TAT

	Date	Time		
1 (Signature) Scott Beesinger	2/11/15	1400	Received by: (Signature)	
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	

Microbac OVD
Received: 02/12/2015 10:16
By: BRENDA GREGORY 221000065609
Brenda Gregory

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Kathy Albertson	Project Manager: ~~Dave Wecker~~ MARK Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60256135.0002JA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Dissolved Gases Carbon Dioxide	Sulfide	Nitrate/Nitrite Chloride/Sulfate	Ferrous Iron	Inorganic Carbon	Total Organic Carbon	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	67WW11-021115			2/11/15	1020		✓	W	11	✓	✓	✓	✓	✓	✓	✓					
	67WW08-021115			2/11/15	1135		✓	W	11	✓	✓	✓	✓	✓	✓	✓					
	TRIP BLANK			2/11/15			✓	W	2	✓											
596715																					

ERPIMS REQUIRED FIELDS

Comments: STANDARD TAT

	Date	Time		
Relinquished by: (Signature) Scott Beesinger	2/11/15	1400	Received by: (Signature)	
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	

Microbac OVD
Received: 02/12/2015 10:16
By: BRENDA GREGORY
221000065609
Brenda Gregory

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020678
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 23-FEB-2015

Samplenum	Container ID	Products
L15020678-01	521769	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Samplenum	Container ID	Products
L15020678-02	521770	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020678
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 23-FEB-2015

Samplenum	Container ID	Products
L15020678-03	521771	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Samplenum	Container ID	Products
L15020678-04	521772	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020678
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 23-FEB-2015

Samplenum	Container ID	Products
L15020678-05	521773	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Samplenum	Container ID	Products
L15020678-06	521774	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020678
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 23-FEB-2015

Samplenum	Container ID	Products
L15020678-07	521775	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Samplenum	Container ID	Products
L15020678-08	521776	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020678
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 23-FEB-2015

Samplenum	Container ID	Products
L15020678-09	521777	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Samplenum	Container ID	Products
L15020678-10	521778	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020678
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 23-FEB-2015

Samplenum	Container ID	Products
L15020678-11	521779	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:40	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:40	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:40	AWE	CLS	

Samplenum	Container ID	Products
L15020678-12	521780	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:40	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:39	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020678
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 23-FEB-2015

Samplenum	Container ID	Products
L15020678-13	521781	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:40	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:40	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:40	AWE	CLS	

Samplenum	Container ID	Products
L15020678-14	521782	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:40	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:40	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:40	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020678
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 23-FEB-2015

Samplenum	Container ID	Products
L15020678-15	521783	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:40	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:40	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:40	AWE	CLS	

Samplenum	Container ID	Products
L15020678-15	521784	RSK175

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		<2
2	ANALYZ	V1	ORG1	13-FEB-2015 08:35	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		<2
2	ANALYZ	V1	ORG1	13-FEB-2015 08:35	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		<2
2	ANALYZ	V1	ORG1	13-FEB-2015 08:35	AWE	CLS	

Samplenum	Container ID	Products
L15020678-15	521785	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	12-FEB-2015 13:25	BRG		
2	STORE	SEM	A1	17-FEB-2015 14:58	CLS	AED	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020678
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 23-FEB-2015

Samplenum	Container ID	Products
L15020678-15	521786	TIC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-FEB-2015 13:25	BRG		
2	ANALYZ	W1	WET	13-FEB-2015 08:01	EPT	BRG	
3	DISP	WET	A1	16-FEB-2015 08:10	BRG	EPT	

Samplenum	Container ID	Products
L15020678-15	521787	FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-FEB-2015 13:25	BRG		
2	ANALYZ	W1	WET	16-FEB-2015 07:50	TMM	AZH	
3	STORE	WET	A1	17-FEB-2015 08:09	AZH	TMM	

Samplenum	Container ID	Products
L15020678-15	521788	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-FEB-2015 13:25	BRG		<2
2	ANALYZ	W1	WET	13-FEB-2015 08:01	EPT	BRG	
3	DISP	WET	A1	16-FEB-2015 08:11	BRG	EPT	

Samplenum	Container ID	Products
L15020678-15	521789	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-FEB-2015 13:25	BRG		
2	ANALYZ	W1	WET	12-FEB-2015 14:21	TB	AZH	
3	STORE	WET	A1	13-FEB-2015 17:38	BRG	TB	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020678
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 23-FEB-2015

Samplenum	Container ID	Products
L15020678-16	521790	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:40	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:40	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:40	AWE	CLS	

Samplenum	Container ID	Products
L15020678-16	521791	RSK175

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		<2
2	ANALYZ	V1	ORG1	13-FEB-2015 08:35	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		<2
2	ANALYZ	V1	ORG1	13-FEB-2015 08:35	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		<2
2	ANALYZ	V1	ORG1	13-FEB-2015 08:35	AWE	CLS	

Samplenum	Container ID	Products
L15020678-16	521792	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	12-FEB-2015 13:25	BRG		
2	STORE	SEM	A1	17-FEB-2015 14:58	CLS	AED	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020678
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 23-FEB-2015

Samplenum	Container ID	Products
L15020678-16	521793	TIC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-FEB-2015 13:25	BRG		
2	ANALYZ	W1	WET	13-FEB-2015 08:01	EPT	BRG	
3	DISP	WET	A1	16-FEB-2015 08:11	BRG	EPT	

Samplenum	Container ID	Products
L15020678-16	521794	FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-FEB-2015 13:25	BRG		
2	ANALYZ	W1	WET	16-FEB-2015 07:50	TMM	AZH	
3	STORE	WET	A1	17-FEB-2015 08:09	AZH	TMM	

Samplenum	Container ID	Products
L15020678-16	521795	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-FEB-2015 13:25	BRG		<2
2	ANALYZ	W1	WET	13-FEB-2015 08:01	EPT	BRG	
3	DISP	WET	A1	16-FEB-2015 08:10	BRG	EPT	

Samplenum	Container ID	Products
L15020678-16	521796	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-FEB-2015 13:25	BRG		
2	ANALYZ	W1	WET	12-FEB-2015 14:21	TB	AZH	
3	STORE	WET	A1	13-FEB-2015 17:38	BRG	TB	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020678
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 23-FEB-2015

Samplenum	Container ID	Products
L15020678-17	521797	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:40	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	12-FEB-2015 13:25	BRG		
2	ANALYZ	V1	ORG4	13-FEB-2015 08:40	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - May 22, 2014

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)
Acetate (HPLC-UV)
Formate (HPLC-UV)
Acetaldehyde (HPLC-UV)
Propionaldehyde (HPLC-UV)
Fluoroborate (ISE)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam

Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L15031486

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on April 03 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112496	I	2.0		J2317161370	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
67WW13-032515	L15031486-01	03/25/2015 14:10	03/26/2015 10:03

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L15031486
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 37
2.0 Full Sample Data Package 45
2.1 Volatiles Data 46
2.1.1 RSK 175 47
2.1.1.1 Summary Data 48
2.1.1.2 QC Summary Data 51
2.1.1.3 Sample Data 71
2.1.1.4 Standards Data 74
2.1.1.5 Raw QC Data 111
2.2 General Chemistry Data 118
2.2.1 Method 9056 119
2.2.1.1 Summary Data 120
2.2.1.2 QC Summary Data 124
2.2.1.3 Sample Data 147
2.2.1.4 Standards Data 150
2.2.1.5 Raw QC Data 174
2.2.2 Ferrous Iron Data 177
2.2.2.1 Summary Data 178
2.2.2.2 QC Summary Data 181
2.2.2.3 Raw Data 188
2.2.3 Sulfide Data 196
2.2.3.1 Summary Data 197
2.2.3.2 QC Summary Data 200
2.2.3.3 Raw Data 207
2.2.4 Total Organic Carbon Data 210
2.2.4.1 Summary Data 211
2.2.4.2 QC Summary Data 214
2.2.4.3 Raw Data 225
3.0 Attachments 281

1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	517320	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-04-02 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-04-02 16:01:13

RG-366/TRRP-13 May 2010 **ID:** 6237

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	517320	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-04-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	517320	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-04-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	517320	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-04-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	517320	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-04-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	517320	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-04-02 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There were no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG517027	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-03-27 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Adriane Steed	Adriane Steed		2015-03-27 13:29:02

RG-366/TRRP-13 May 2010 **ID:** 6226

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG517027	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-03-27 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG517027	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-03-27 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					1
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG517027	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-03-27 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG517027	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-03-27 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG517027	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-03-27 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -01 was analyzed at dilution only due to its high analyte concentrations (Cl and/or SO4) which was over 200 ppm. Any sample that has a single anion load greater than 200 ppm (or a total anion load greater than 400 ppm) will be diluted in order to prevent damage to the IC from repeated overloading of the analytical column and oversaturation of the suppressor membranes.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG517316	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-04-03 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-04-03 13:57:33

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG517316	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-04-03 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG517316	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-04-03 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG517316	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-04-03 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG517316	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-04-03 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG517316	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-04-03 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	S
Prep Batch Number(s):	WG517498	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-04-03 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-04-03 13:56:42

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	S
Prep Batch Number(s):	WG517498	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-04-03 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	S
Prep Batch Number(s):	WG517498	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-04-03 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	S
Prep Batch Number(s):	WG517498	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-04-03 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	S
Prep Batch Number(s):	WG517498	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-04-03 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	S
Prep Batch Number(s):	WG517498	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-04-03 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG517282	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-04-03 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-04-03 13:58:15

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG517282	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-04-03 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG517282	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-04-03 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG517282	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-04-03 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG517282	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-04-03 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15031486
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG517282	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-04-03 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15031486-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW13-032515	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG517320	**Analyst:**	JDS	**Run Date:**	03/30/2015 15:10
Collect Date:	03/25/2015 14:10	**Dilution:**	1	**File ID:**	16G47106
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15031486-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	67WW13-032515	**Prep Method:**	9056	**Prep Date:**	03/26/2015 14:09
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	02/17/2015 19:43
Workgroup #:	WG517027	**Analyst:**	ALS	**Run Date:**	03/26/2015 22:57
Collect Date:	03/25/2015 14:10	**Dilution:**	10	**File ID:**	I2_032615-32
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U	6.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00
Sulfate	14808-79-8	334		10.0	10.0	5.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15031486-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	67WW13-032515	**Prep Method:**	9056	**Prep Date:**	03/26/2015 14:09
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	02/17/2015 19:43
Workgroup #:	WG517027	**Analyst:**	ALS	**Run Date:**	03/26/2015 23:15
Collect Date:	03/25/2015 14:10	**Dilution:**	100	**File ID:**	I2_032615-33
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1820		20.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15031486-01	**PrePrep Method:**	N/A	**Instrument:**	UV-2600
Client ID:	67WW13-032515	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	01/20/2015 08:00
Workgroup #:	WG517316	**Analyst:**	DCM	**Run Date:**	03/30/2015 10:15
Collect Date:	03/25/2015 14:10	**Dilution:**	1	**File ID:**	00.1503301015-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.0400	U	0.0400	0.0400	0.0200

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15031486-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW13-032515	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG517498	**Analyst:**	TB	**Run Date:**	03/31/2015 12:45
Collect Date:	03/25/2015 14:10	**Dilution:**	1	**File ID:**	ET.1503311245-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15031486-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW13-032515	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG517282	**Analyst:**	EPT	**Run Date:**	03/31/2015 09:52
Collect Date:	03/25/2015 14:10	**Dilution:**	10	**File ID:**	TC03302015.062
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		144		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L15031486-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW13-032515	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG517282	**Analyst:**	EPT	**Run Date:**	03/31/2015 09:52
Collect Date:	03/25/2015 14:10	**Dilution:**	10	**File ID:**	TC03302015.062
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	16.8	J	20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 RSK 175

2.1.1.1 Summary Data

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15031486-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW13-032515	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG517320	**Analyst:**	JDS	**Run Date:**	03/30/2015 15:10
Collect Date:	03/25/2015 14:10	**Dilution:**	1	**File ID:**	16G47106
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:

y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 030315
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG514119

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46874	RINSE	NA	1	1		03/03/15 14:05
16G46875	WG514119-01 0.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:17
16G46876	WG514119-02 1.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:30
16G46877	WG514119-03 33.3umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:42
16G46878	WG514119-04 66.7umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 14:53
16G46879	WG514119-05 133umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:05
16G46880	WG514119-06 333umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:17
16G46881	WG514119-07 533umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:29
16G46882	RINSE	NA	1	1		03/03/15 15:41
16G46883	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 16:14
16G46884	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 17:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X			
File ID: 16G46883				
	Wrong vial taken up by HT3 autosampler			

Approved: March 11, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 033015
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG517320

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G47092	WG517319-01 133umol/mol CCV RSK175	NA	1	1	STD67274	03/30/15 10:14
16G47093	WG517319-01 133umol/mol CCV RSK175	NA	1	1	STD67274	03/30/15 10:43
16G47094	WG517320-01 BLANK RSK175	NA	1	1		03/30/15 11:10
16G47095	WG517320-02 67umol/mol LCS RSK175	NA	1	1	STD68250	03/30/15 11:22
16G47096	WG517320-03 67umol/mol LCS2 RSK175	NA	1	1	STD68250	03/30/15 11:36
16G47097	L15031545-01 A RSK175	5	1	1		03/30/15 13:17
16G47098	L15031547-01 A RSK175	5	1	1		03/30/15 13:29
16G47099	L15031549-01 A RSK175	6	1	1		03/30/15 13:42
16G47100	L15031565-01 A RSK175	6	1	1		03/30/15 13:54
16G47101	L15031579-01 A RSK175	5	1	1		03/30/15 14:07
16G47102	L15031548-01 A RSK175	6	1	1		03/30/15 14:20
16G47103	L15031564-01 A RSK175	6	1	1		03/30/15 14:33
16G47104	WG517319-02 133umol/mol CCV RSK175	NA	1	1	STD67274	03/30/15 14:45
16G47105	L15031577-01 A RSK175	6	1	1		03/30/15 14:57
16G47106	L15031486-01 A RSK175	6	1	1		03/30/15 15:10
16G47107	WG517319-03 133umol/mol CCV RSK175	NA	1	1	STD67274	03/30/15 15:21
16G47108	L15031564-01 B D1 20X RSK175	<2	1	20		03/30/15 16:04
16G47109	L15031577-01 B A1 RSK175	6	1	1		03/30/15 16:18
16G47110	WG517319-04 133umol/mol CCV RSK175	NA	1	1	STD67274	03/30/15 16:29

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X		Check Standard Failure	all ex. m
File ID: 16G47092				
	failed low			
12	X	20	Over Calibration Range	m
File ID: 16G47103				
14	X	1	Carry-over contamination	m
File ID: 16G47105				
15				
File ID: 16G47106				
	preceded by rinse			

Approved: April 01, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 033015
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG517320

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
File ID: 16G47108				
	preceded by rinse			
18				
File ID: 16G47109				
	preceded by rinse			

Approved: April 01, 2015

Page: 2

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B202656

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG514119-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B203810

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG517319-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG517319-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG517319-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG517319-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG517320-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
WG517320-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15031579-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15031549-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15031564-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15031545-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15031547-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG517320-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15031486-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15031548-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15031565-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15031577-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAR-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 66688
Analytical Workgroups: WG514119

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	NA
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
06-MAR-2015

Secondary Reviewer:
11-MAR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-11-2015 12:34:12

Microbac Laboratories Inc.

Data Checklist

Date: 30-MAR-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 67099
Analytical Workgroups: WG517320

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
01-APR-2015

Secondary Reviewer:
01-APR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: APR-01-2015 15:30:15

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG517320

Login Number: L15031486

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW13-032515	01	03/25/15					03/30/2015	5	14		03/30/15	5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4093832
Report generated 04/02/2015 11:33

METHOD BLANK SUMMARY

Login Number: L15031486
Blank File ID: 16G47094
Prep Date: 03/30/15 11:10
Analyzed Date: 03/30/15 11:10
Analyst: JDS

Work Group: WG517320
Blank Sample ID: WG517320-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG517320-02	16G47095	03/30/15 11:22	01
LCS2	WG517320-03	16G47096	03/30/15 11:36	01
67WW13-032515	L15031486-01	16G47106	03/30/15 15:10	01

Report Name: BLANK_SUMMARY
PDF File ID: 4093833
Report generated 04/02/2015 11:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15031486 Prep Date: 03/30/15 11:10 Sample ID: WG517320-01
Instrument ID: HP16 Run Date: 03/30/15 11:10 Prep Method: 5021
File ID: 16G47094 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG517320 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Methane	1.00	5.00	1.00	1	U
Ethene	1.00	5.00	1.00	1	U
Ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4093834
02-APR-2015 11:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15031486 Run Date: 03/30/2015 Sample ID: WG517320-02
Instrument ID: HP16 Run Time: 11:22 Prep Method: 5021
File ID: 16G47095 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG517320 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD68250 Cal ID: HP16 - 03-MAR-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Methane	114	111	97.4	85 - 115	
Ethene	200	192	96.2	85 - 115	
Ethane	214	199	93.2	85 - 115	

LCS - Modified 03/06/2008
PDF File ID: 4095806
Report generated: 04/02/2015 11:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15031486 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG517320 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG517320-02 LCS File ID: 16G47095 Run Date: 03/30/2015 11:22
Sample ID: WG517320-03 LCS2 File ID: 16G47096 Run Date: 03/30/2015 11:36

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	111	97.4	114	111	97.1	0.247	85 - 115	20	
Ethene	200	192	96.2	200	191	95.9	0.266	85 - 115	20	
Ethane	214	199	93.2	214	198	92.7	0.500	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4093835
Report generated: 04/02/2015 11:33

Calibration Table Report
Method: RSKEXT1.M
Title: RSK175 HP16 (SOP: OVL RSK01) 030315
Last Calibration: Fri Mar 06 11:52:33 2015
Curve:WG514119
Calibration Files

		0.67	1.67	33.3	66.7	133	333	533			
		16G46875.	16G46876.	16G46877.	16G46878.	16G46879.	16G46880.	16G46881.D			
	Compound								Avg	%RSD	Linear
T	methane		442542.3	201716.7	175611.6	187516.9	186065.3	188702.9	230359.0	45.3	0.999
T	ethene		322209.5	334124.6	295911.1	313430.8	319356.4	318282.1	317219.0	3.9	
T	acetylene		316851.9	343603.6	313507.6	354933.8	357109.5	344601.6	338435.0	5.6	
T	ethane	381661.4	339569.9	346403.4	312338.4	328333.4	335709.7	335266.3	339897.0	6.3	
T	propane	528069.3	481580.8	518227.1	469331.7	483950.9	500133.6	493547.4	496406.0	4.2	
T	n-butane	686564.3	616037.4	680754.9	613926.5	634552.4	659898.4	646188.9	648275.0	4.5	
	Signal #2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T	carbon dioxide		3977.4	5604.2	5581.8	6054.5	6060.7	5810.7	5514.9	14.2	

Fri Mar 06 11:59:12 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15031486 Run Date: 03/03/2015 Sample ID: WG514119-08
Instrument ID: HP16 Run Time: 17:10 Method: RSK175
File ID: 16G46884 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG514119 Cal ID: HP16 - 03-MAR-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
methane		228	236	ug/L	195000	3.50	15	
ethene		398	407	ug/L	324000	2.20	15	
ethane		427	423	ug/L	337000	0.900	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4093836
Report generated 04/02/2015 11:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15031486
Run Date: 03/30/2015
Sample ID: WG517319-01
Instrument ID: HP16
Run Time: 10:43
Method: RSK175
File ID: 16G47093
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG517320
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	232	ug/L	192000	1.94	15	
ethene		398	397	ug/L	316000	0.404	15	
ethane		427	416	ug/L	331000	2.51	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4093837
Report generated 04/02/2015 11:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15031486
Run Date: 03/30/2015
Sample ID: WG517319-02
Instrument ID: HP16
Run Time: 14:45
Method: RSK175
File ID: 16G47104
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG517320
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	217	ug/L	180000	4.60	15	
ethene		398	371	ug/L	296000	6.76	15	
ethane		427	390	ug/L	310000	8.65	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4093837
Report generated 04/02/2015 11:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15031486
Run Date: 03/30/2015
Sample ID: WG517319-03
Instrument ID: HP16
Run Time: 15:21
Method: RSK175
File ID: 16G47107
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG517320
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	223	ug/L	185000	2.13	15	
ethene		398	384	ug/L	306000	3.63	15	
ethane		427	403	ug/L	321000	5.62	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4093837
Report generated 04/02/2015 11:33

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\033015\16G47106.D Vial: 15
Acq On : 30 Mar 2015 15:10 Operator: JDS
Sample : L15031486-01 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 30 15:16:05 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	302131	N.D.	umol/
2) T	ethene	1.06	9393	0.030	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	13725	0.040	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47106.D RSK1.M Mon Mar 30 15:16:05 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\033015\16G47106.D Vial: 15
Acq On : 30 Mar 2015 15:10 Operator: JDS
Sample : L15031486-01 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 30 15:16 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

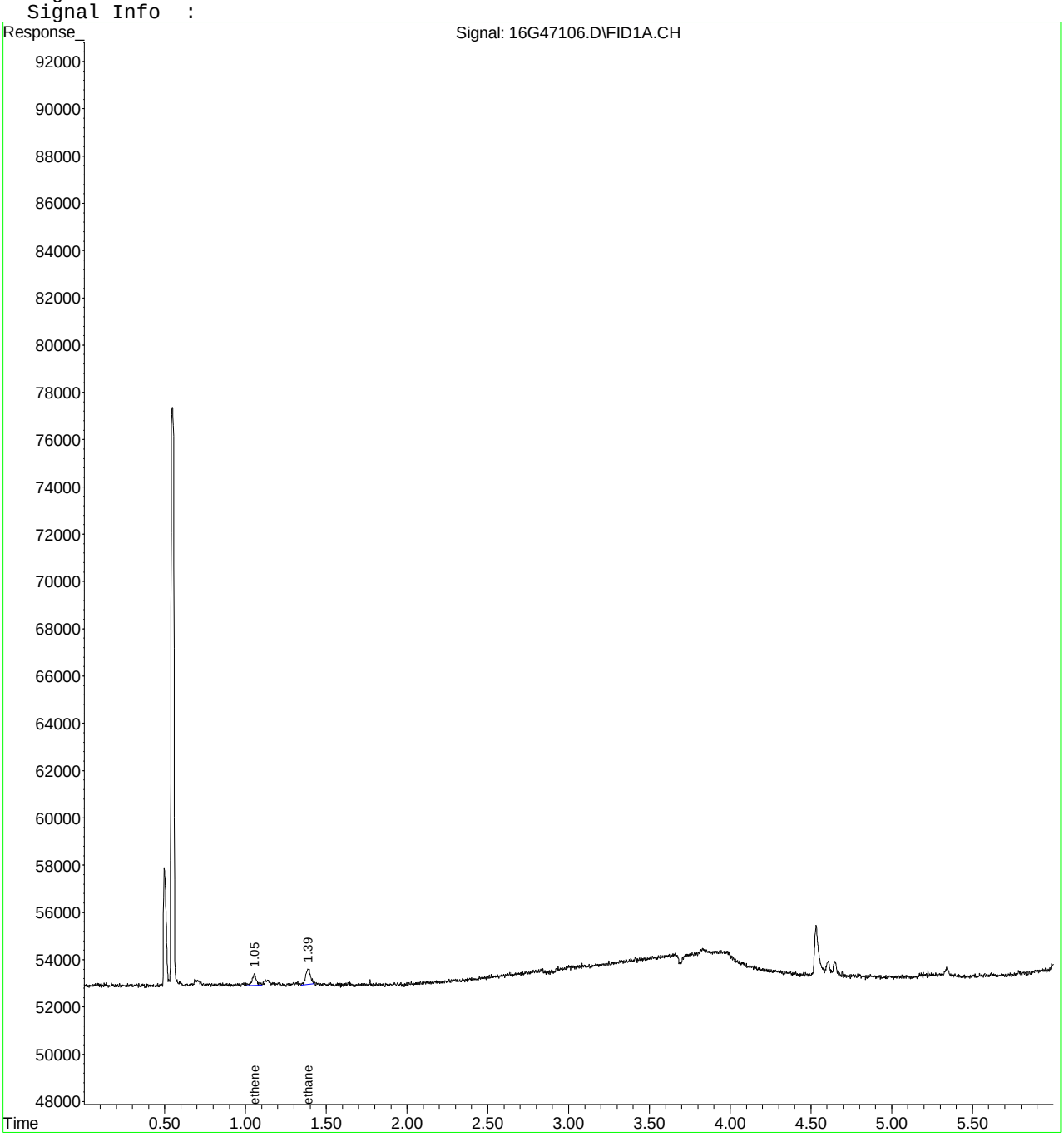

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:54:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	566979	0.846	umol/
2) T	ethene	1.06	233416	0.736	umol/
3) T	acetylene	1.14	213812	0.632	umol/
4) T	ethane	1.39	254568	0.749	umol/
5) T	propane	3.83	352222	0.710	umol/
6) T	n-butane	5.34	457938	0.706	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46875.D RSKEXT1.M Fri Mar 06 11:56:43 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:54 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

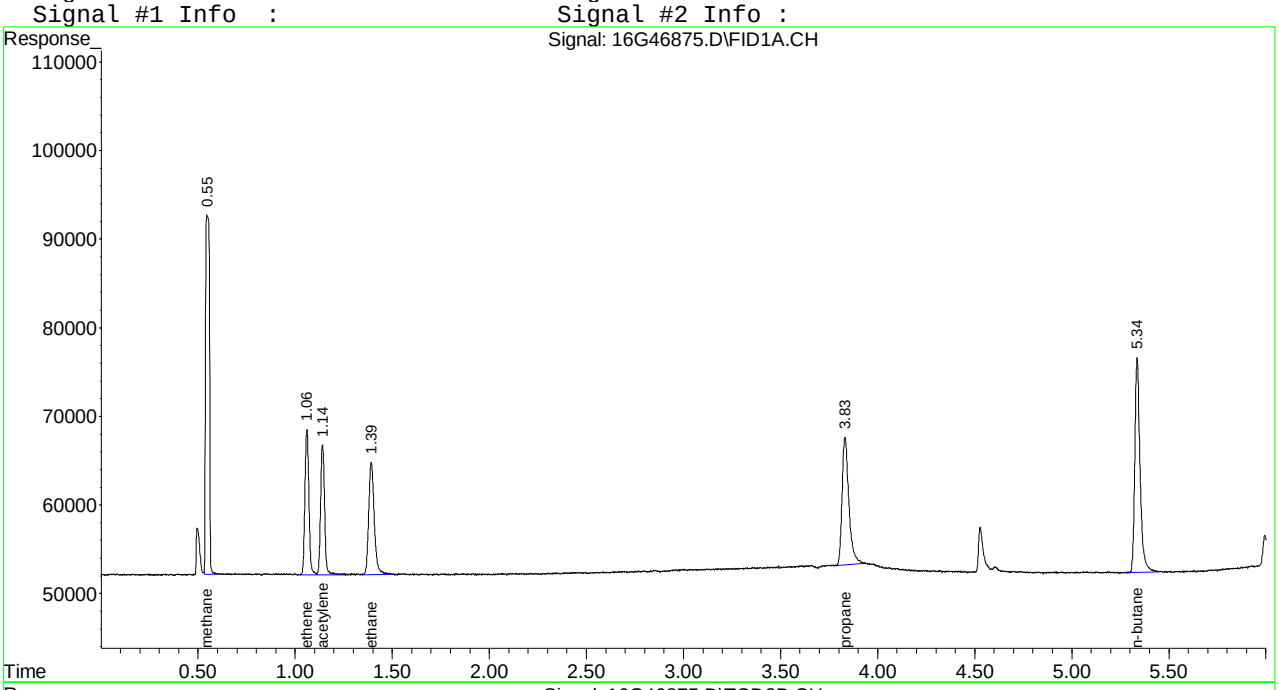

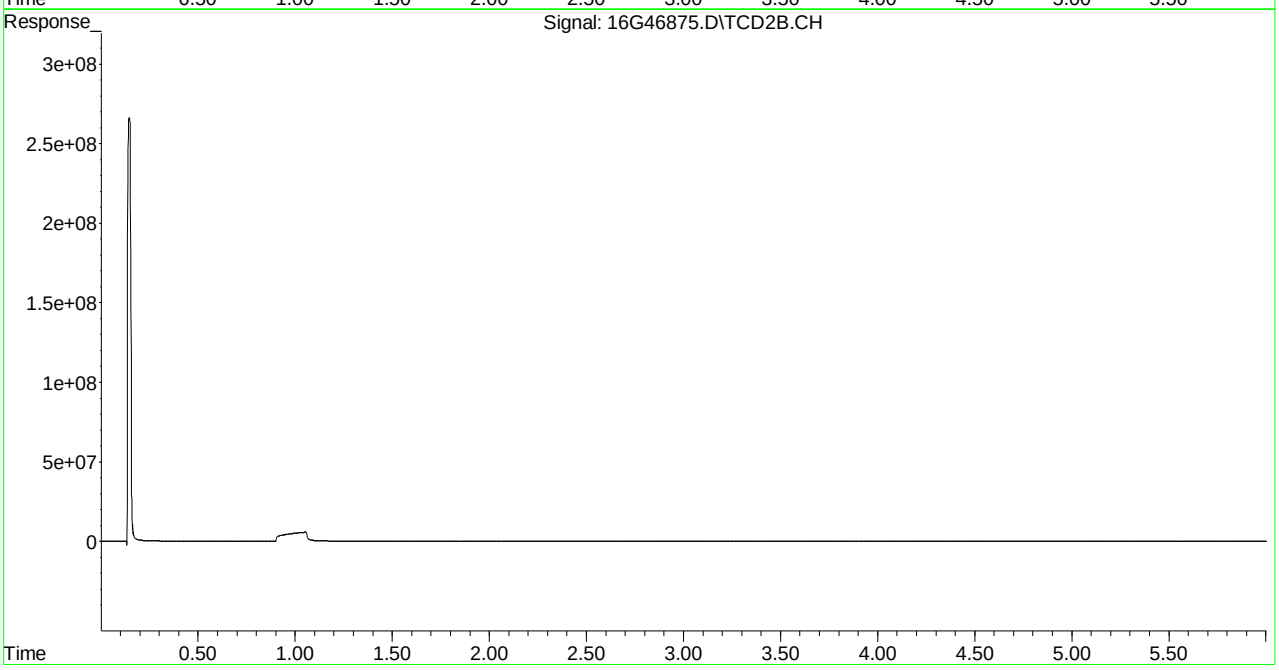

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	-1.000	0.846	0.0	0	0.00
2	T	ethene	-1.000	0.736	0.0	100	0.00
3	T	acetylene	-1.000	0.632	0.0	100	0.00
4	T	ethane	0.667	0.749	-12.3	100	0.00
5	T	propane	0.667	0.710	-6.4	100	0.00
6	T	n-butane	0.667	0.706	-5.8	100	0.00

Signal #2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46875.D RSKEXT1.M Fri Mar 06 11:55:53 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:17                        Operator: JDS
Sample    : WG514119-01 0.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
	Signal #2					
8 T	carbon dioxide	-1.000	0.000	0.0	0	-0.21

```
---------------------------------------------------------------------------
(#) = Out of Range            SPCC's out = 0  CCC's out = 0
16G46875.D  RSKEXT1.M      Fri Mar 06 11:55:53 2015                    Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	739046	1.773	umol/
2) T	ethene	1.06	538090	1.696	umol/
3) T	acetylene	1.14	529143	1.564	umol/
4) T	ethane	1.39	567082	1.668	umol/
5) T	propane	3.83	804240	1.620	umol/
6) T	n-butane	5.34	1028782	1.587	umol/
8) T	carbon dioxide	0.20	7954783	1442.423	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46876.D RSKEXT1.M Fri Mar 06 11:57:08 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

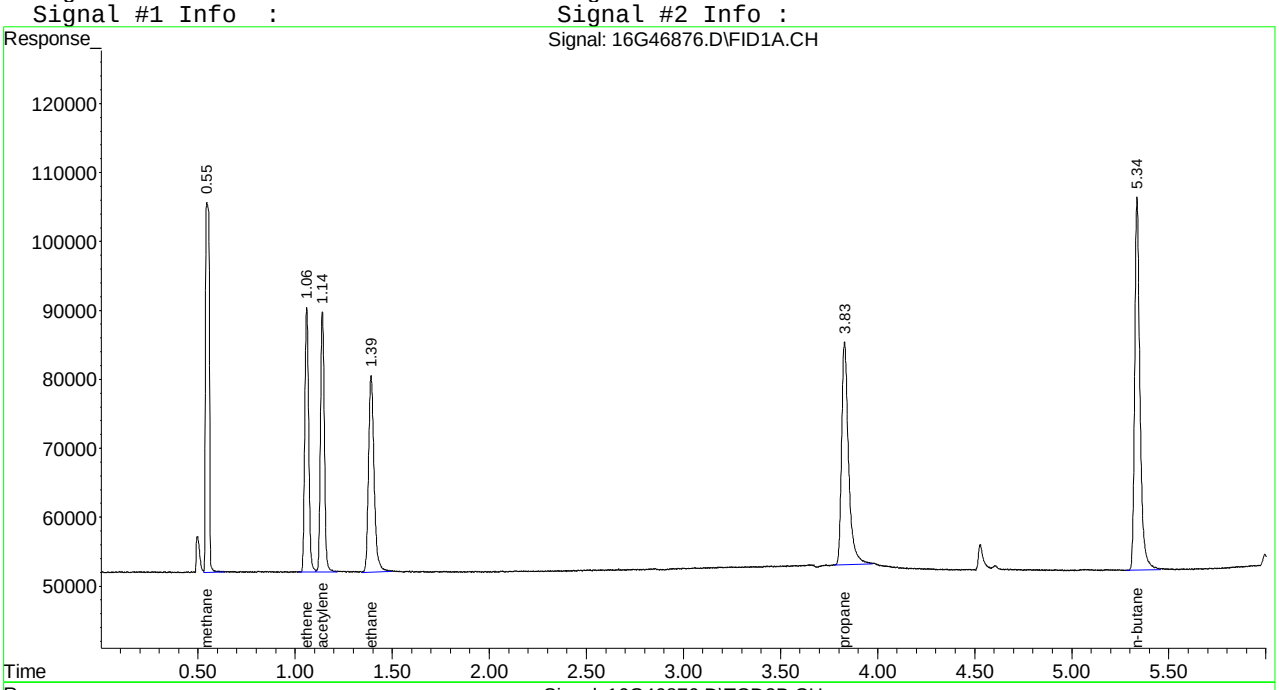

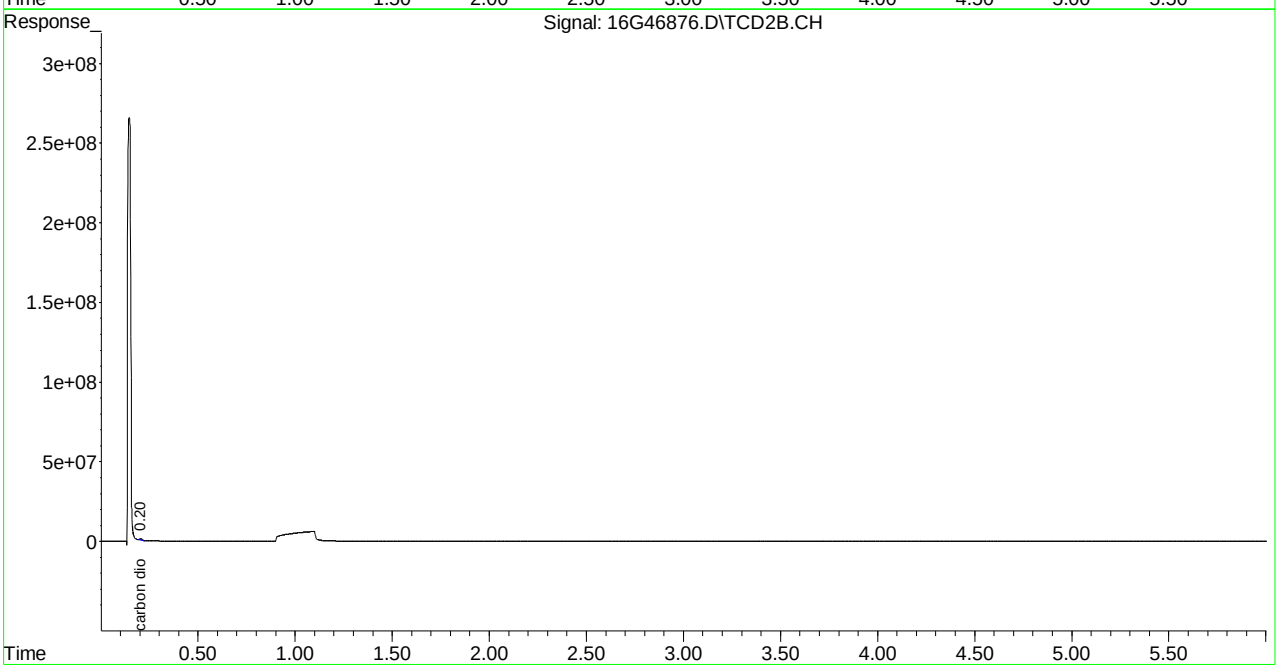

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	1.670	1.773	-6.2	100	0.00
2	T	ethene	1.670	1.696	-1.6	100	0.00
3	T	acetylene	1.670	1.564	6.3	100	0.00
4	T	ethane	1.670	1.668	0.1	100	0.00
5	T	propane	1.670	1.620	3.0	100	0.00
6	T	n-butane	1.670	1.587	5.0	100	0.00
		Signal #2					
8	T	carbon dioxide	2000.000	1442.423	27.9#	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46876.D RSKEXT1.M Fri Mar 06 11:52:49 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:30                        Operator: JDS
Sample    : WG514119-02 1.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:10 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	6717167	33.998	umol/
2) T	ethene	1.06	11126351	35.075	umol/
3) T	acetylene	1.14	11442001	33.809	umol/
4) T	ethane	1.39	11535235	33.937	umol/
5) T	propane	3.83	17256964	34.764	umol/
6) T	n-butane	5.34	22669140	34.968	umol/
8) T	carbon dioxide	0.20	18661832	3383.908	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46877.D RSKEXT1.M Fri Mar 06 11:57:10 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

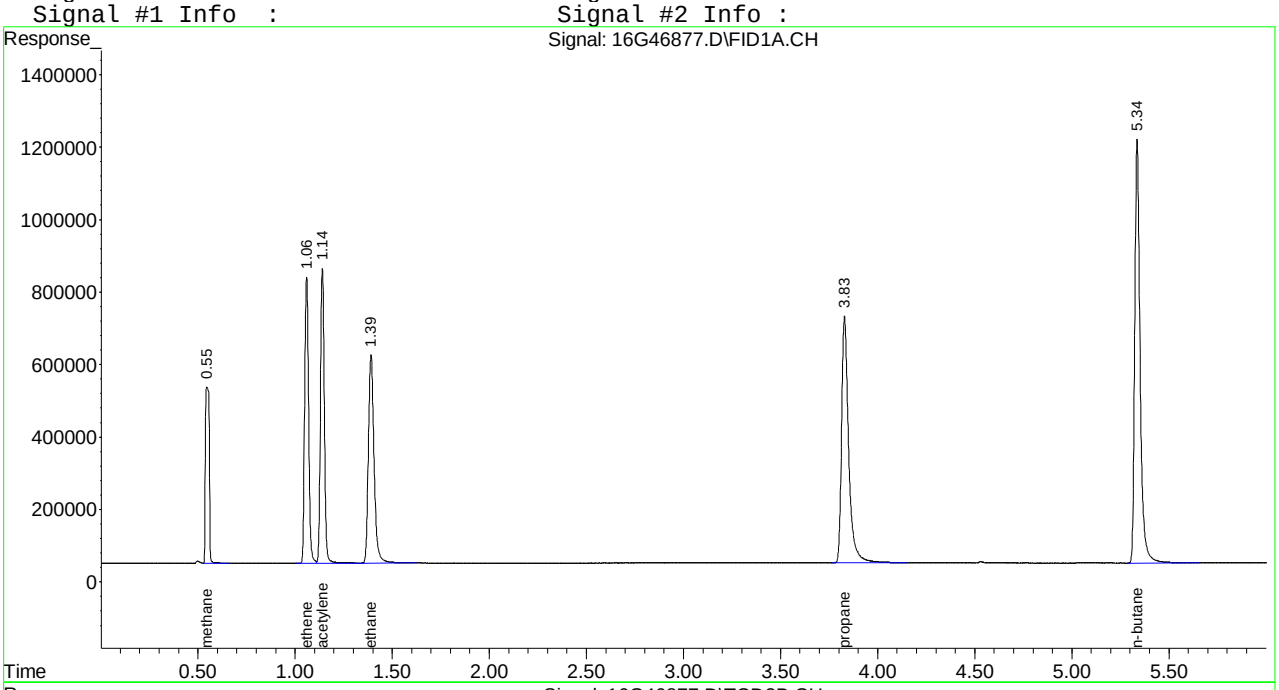

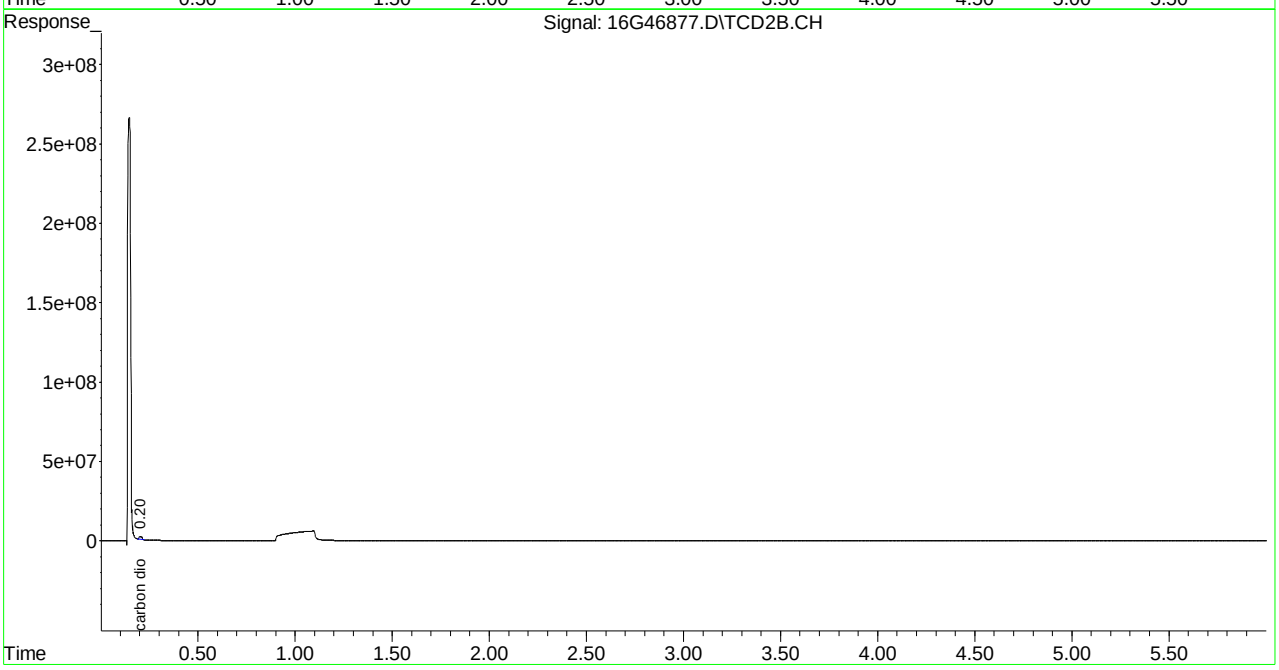

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11713293	60.930	umol/
2) T	ethene	1.06	19737271	62.220	umol/
3) T	acetylene	1.14	20910957	61.787	umol/
4) T	ethane	1.39	20832969	61.292	umol/
5) T	propane	3.83	31304425	63.062	umol/
6) T	n-butane	5.33	40948894	63.166	umol/
8) T	carbon dioxide	0.20	37230879	6750.991	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46878.D RSKEXT1.M Fri Mar 06 11:57:11 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

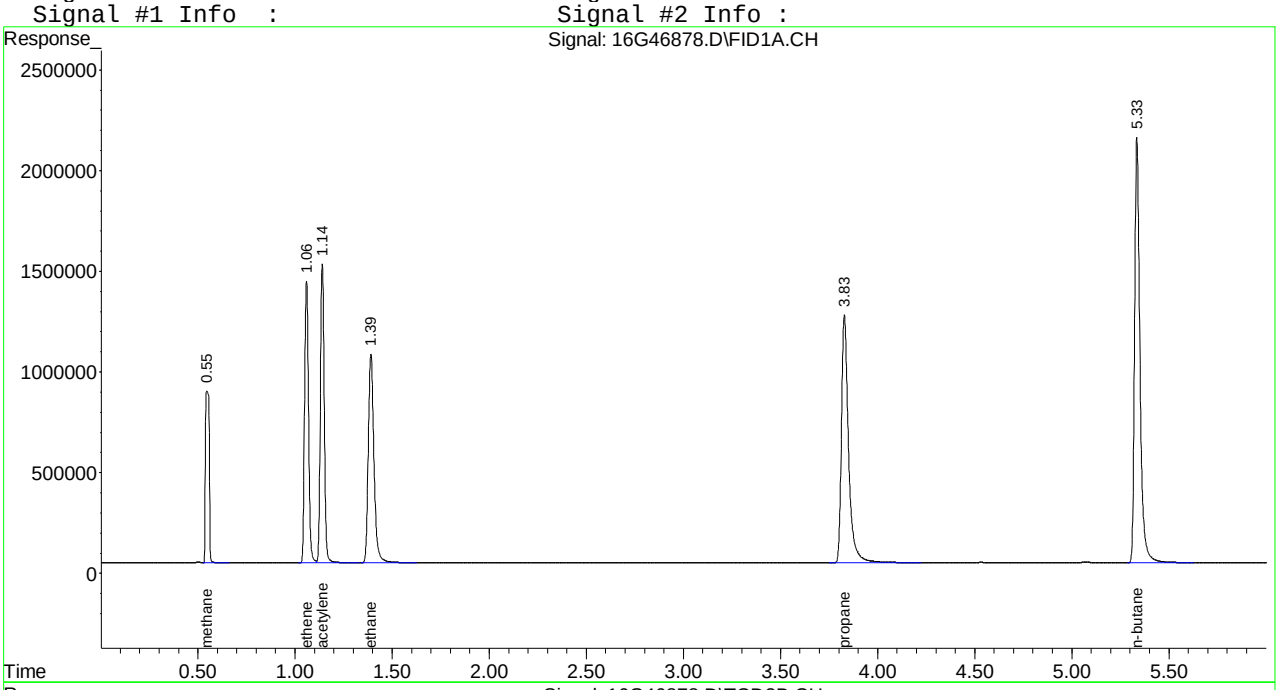

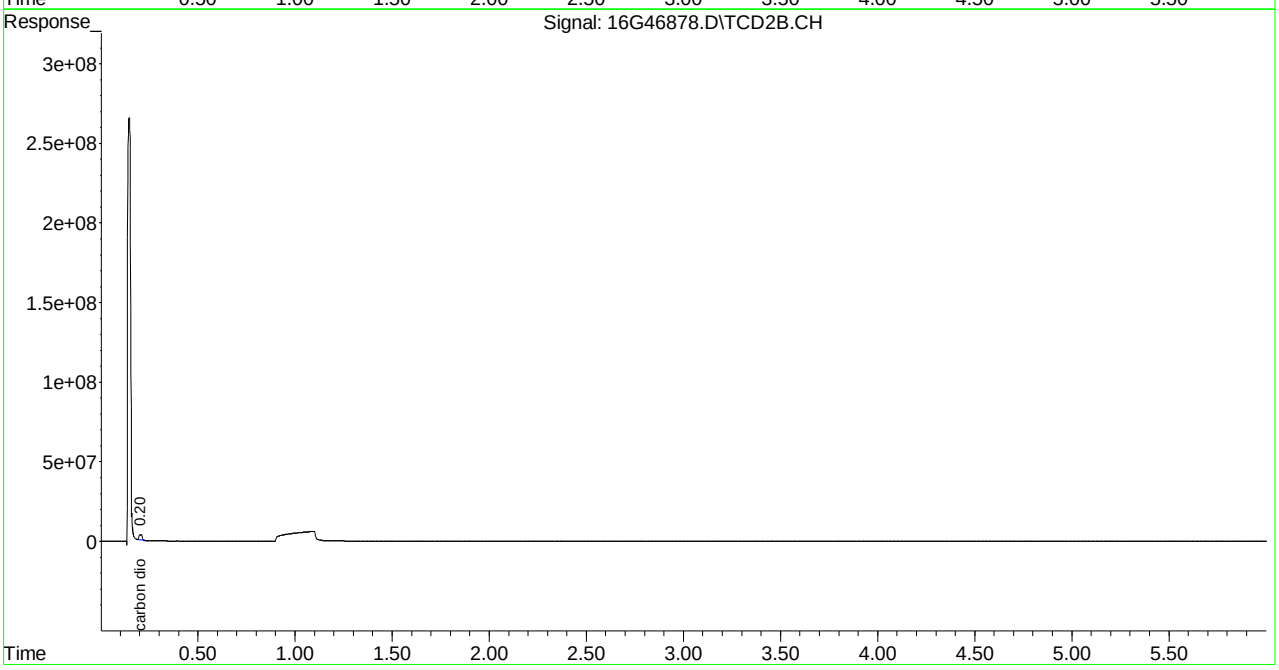

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24939741	132.227	umol/
2) T	ethene	1.06	41686300	131.412	umol/
3) T	acetylene	1.14	47206199	139.484	umol/
4) T	ethane	1.39	43668346	128.475	umol/
5) T	propane	3.83	64365472	129.663	umol/
6) T	n-butane	5.33	84395468	130.185	umol/
8) T	carbon dioxide	0.20	80524699	14601.362	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46879.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

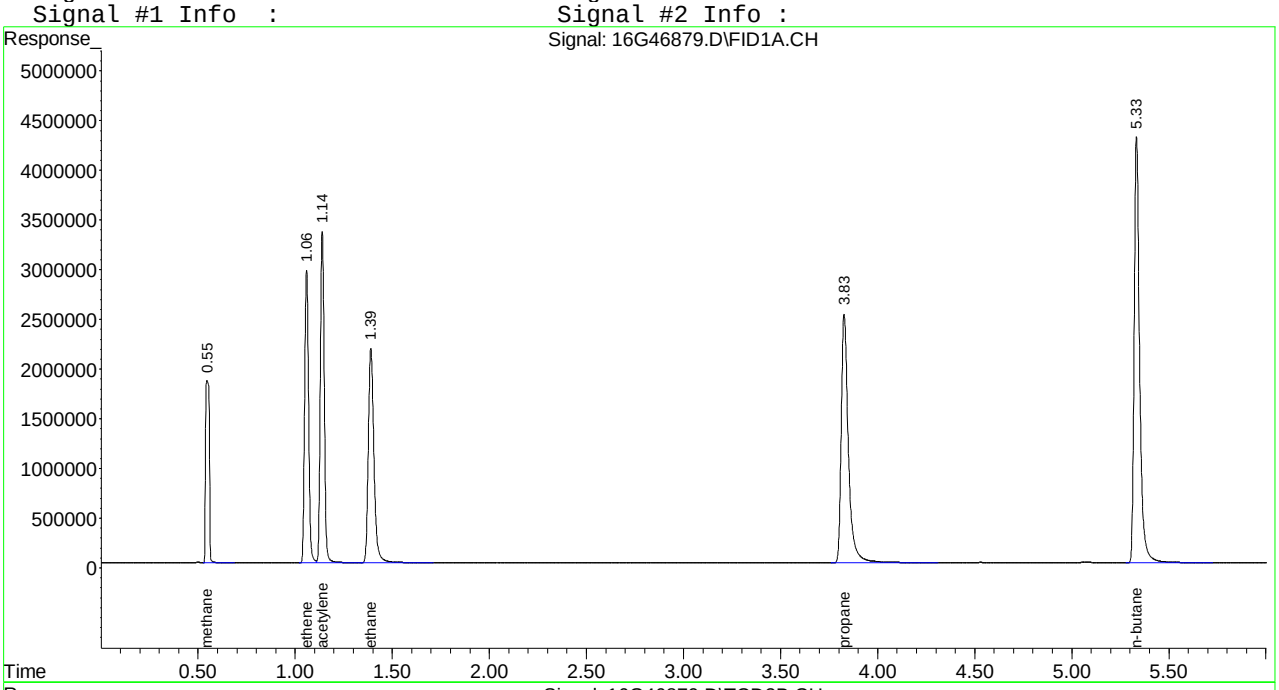

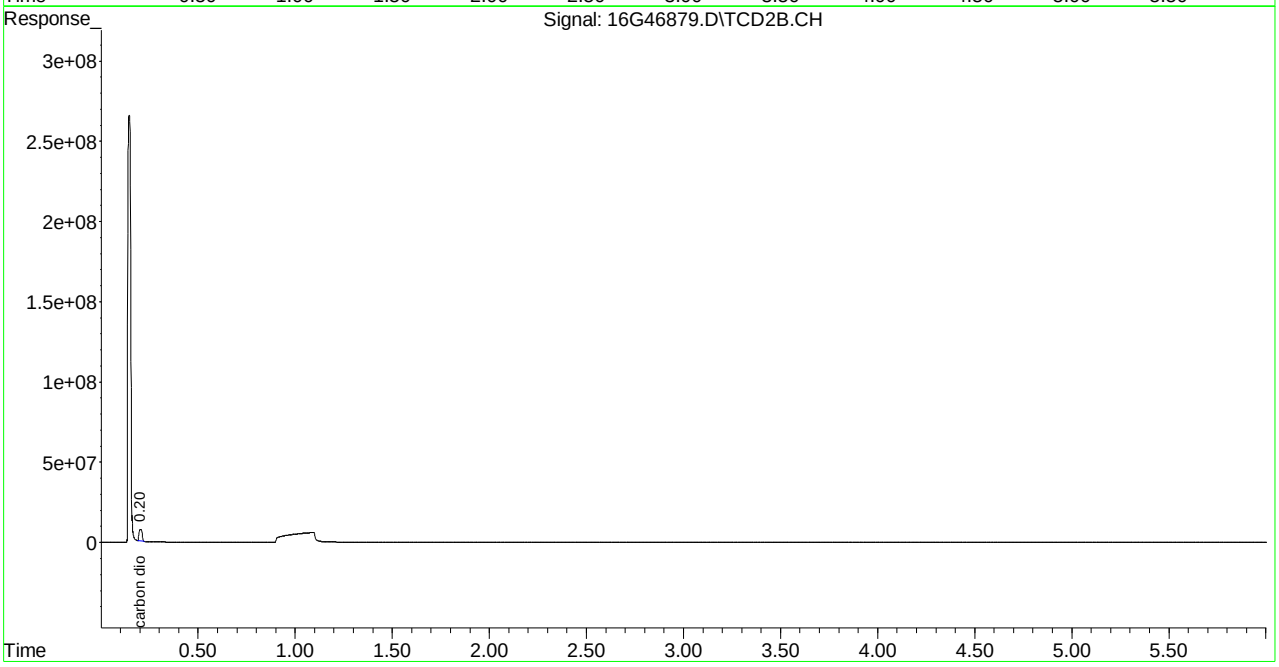

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On    : 03 Mar 2015  15:17                        Operator: JDS
Sample    : WG514119-06 333umol/mol STD RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:12 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	61959752	331.783	umol/
2) T	ethene	1.06	106345688	335.244	umol/
3) T	acetylene	1.14	118917475	351.375	umol/
4) T	ethane	1.39	111791323	328.897	umol/
5) T	propane	3.83	166544491	335.501	umol/
6) T	n-butane	5.33	219746160	338.971	umol/
8) T	carbon dioxide	0.20	201820251	36595.610	umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

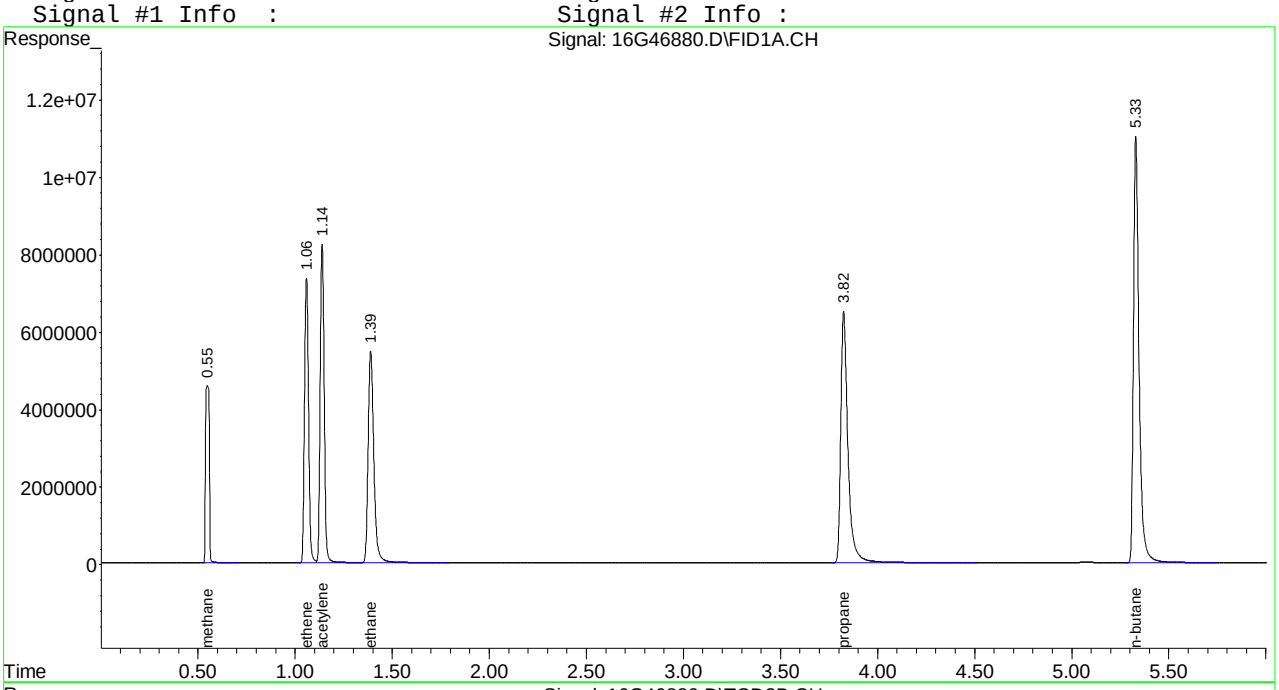

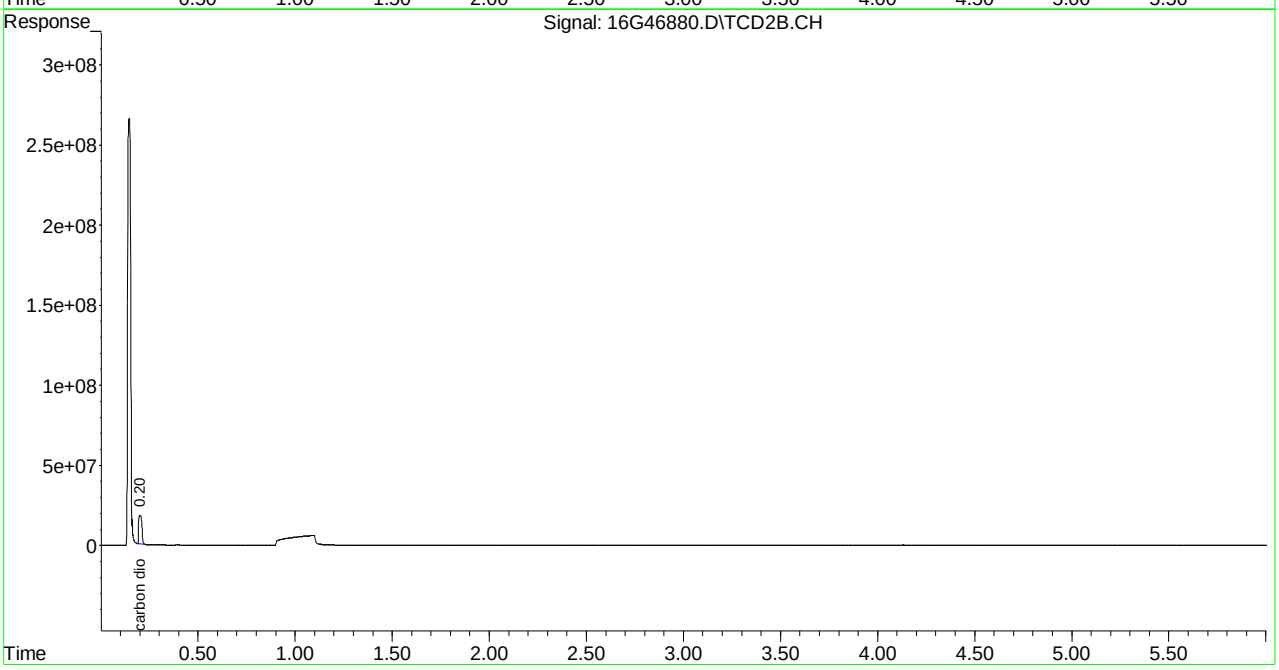

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On : 03 Mar 2015 15:29 Operator: JDS
Sample : WG514119-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:13 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	100578633	539.958	umol/
2) T	ethene	1.06	169644372	534.786	umol/
3) T	acetylene	1.14	183672662	542.712	umol/
4) T	ethane	1.39	178696917	525.738	umol/
5) T	propane	3.82	263060772	529.931	umol/
6) T	n-butane	5.33	344418707	531.285	umol/
8) T	carbon dioxide	0.20	309711021	56159.199	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46881.D RSKEXT1.M Fri Mar 06 11:57:13 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On : 03 Mar 2015 15:29 Operator: JDS
Sample : WG514119-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

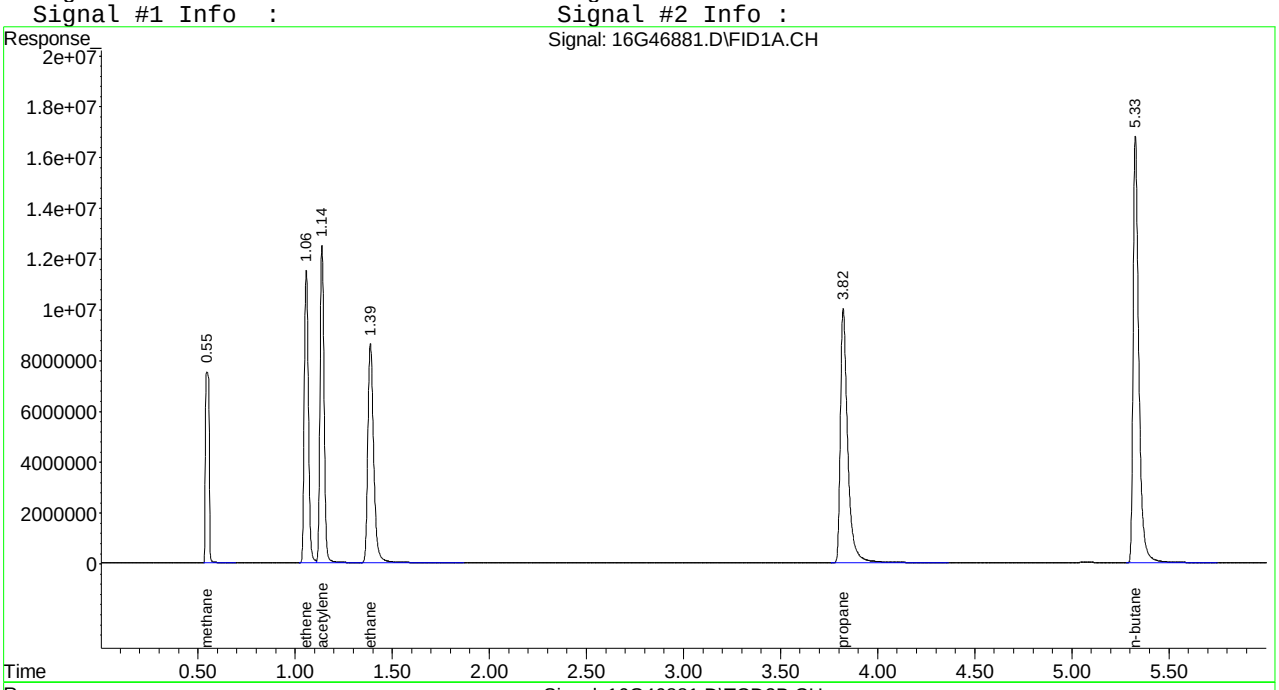

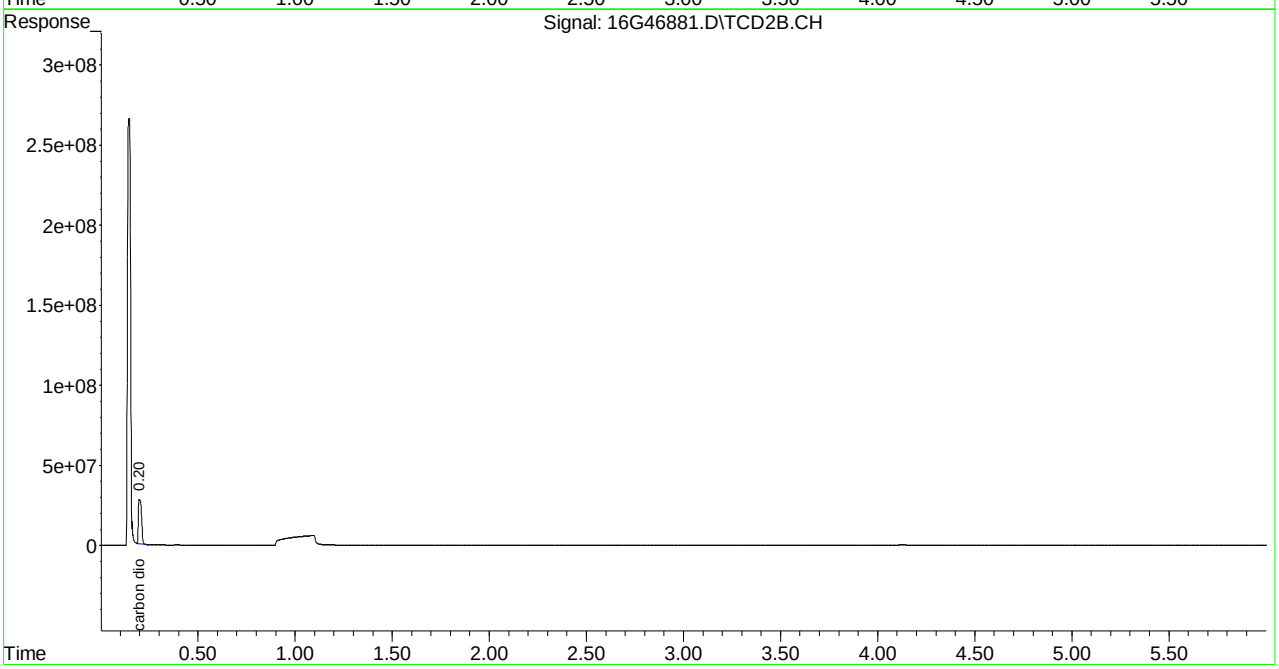

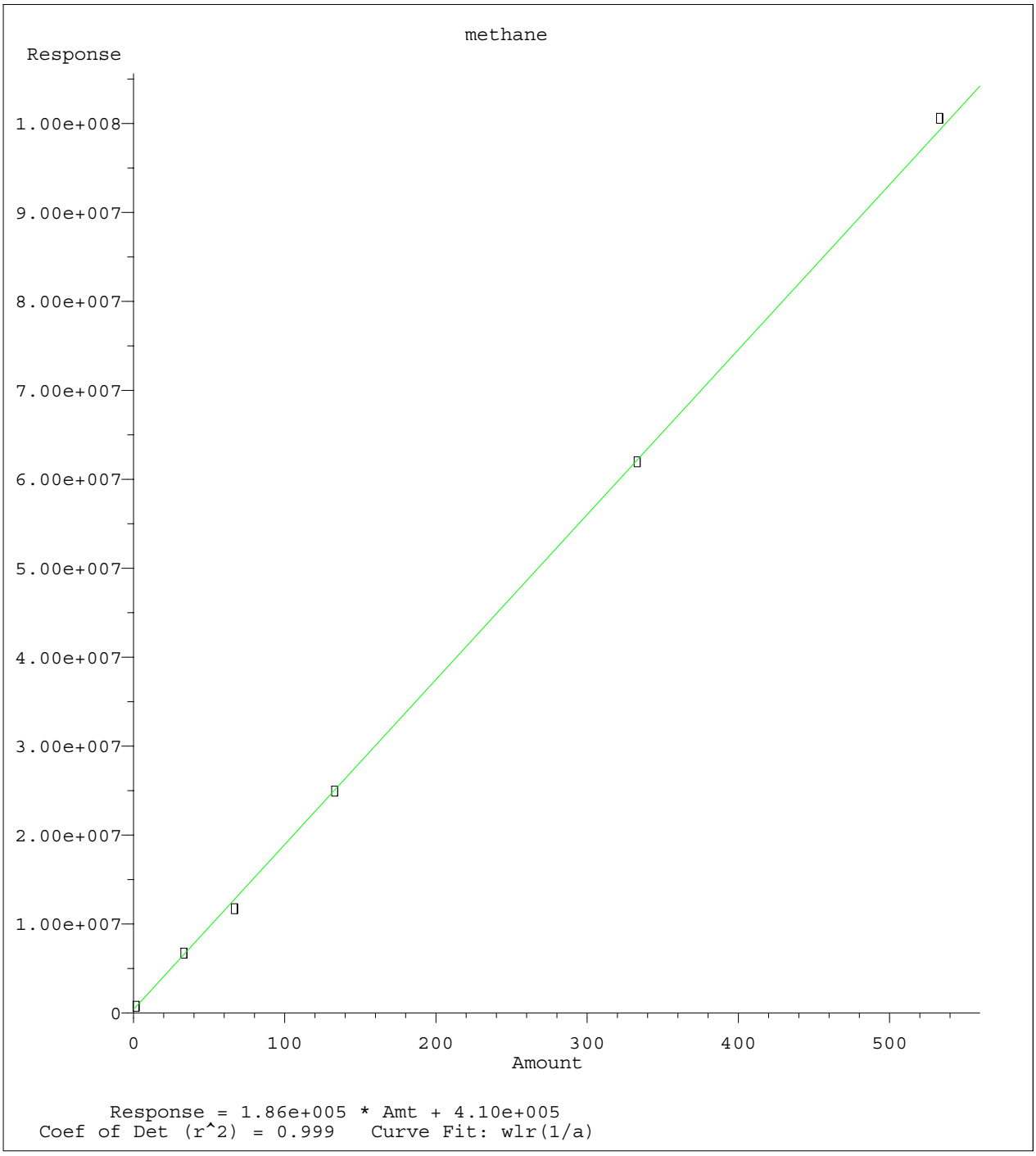

Method Name: C:\MSDCHEM\1\METHODS\RSKEXT1.M
Calibration Table Last Updated: Fri Mar 06 11:52:33 2015

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:58:49 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	25936090	137.598 umol/
2) T	ethene	1.06	43111404	135.904 umol/
3) T	acetylene	1.14	47098795	139.167 umol/
4) T	ethane	1.39	44778091	131.740 umol/
5) T	propane	3.83	64822008	130.583 umol/
6) T	n-butane	5.33	82856392	127.811 umol/
8) T	carbon dioxide	0.20	76359751	13846.141 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46884.D RSKEXT1.M Fri Mar 06 11:58:49 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:58 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

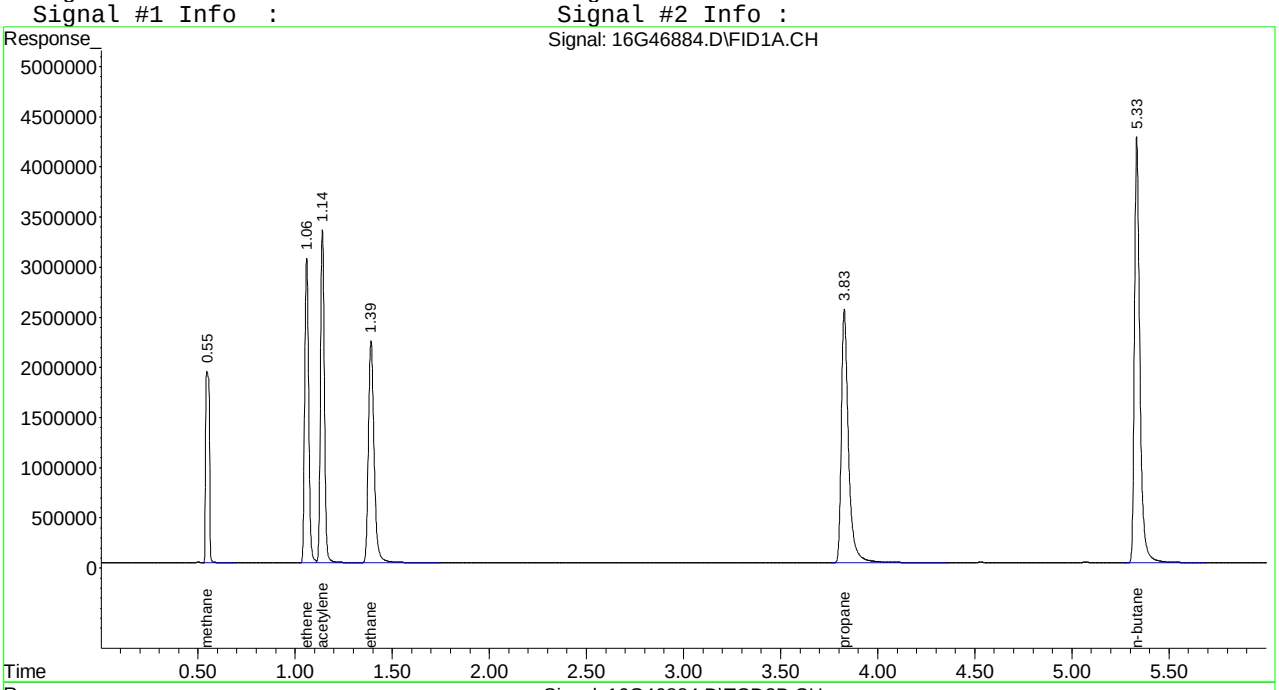

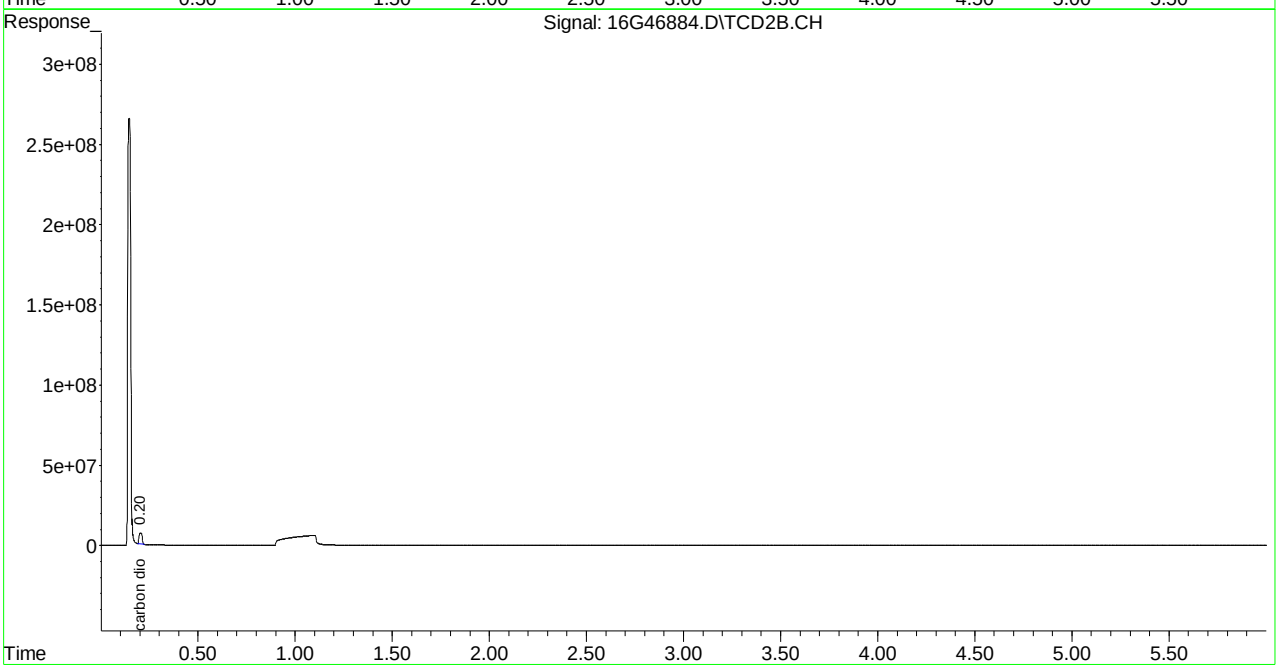

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	137.598	-3.5	104	0.00
2	T	ethene	133.000	135.904	-2.2	103	0.00
3	T	acetylene	133.000	139.167	-4.6	100	0.00
4	T	ethane	133.000	131.740	0.9	103	0.00
5	T	propane	133.000	130.583	1.8	101	0.00
6	T	n-butane	133.000	127.811	3.9	98	0.00

Signal #2

8	T	carbon dioxide	13300.000	13846.141	-4.1	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46884.D RSKEXT1.M Fri Mar 06 11:59:02 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On    : 03 Mar 2015  17:10                        Operator: JDS
Sample    : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

```
---------------------------------------------------------------------------
 (#) = Out of Range            SPCC's out = 0  CCC's out = 0
 16G46884.D  RSKEXT1.M      Fri Mar 06 11:59:02 2015                    Page 2
```

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\033015\16G47093.D Vial: 2
Acq On : 30 Mar 2015 10:43 Operator: JDS
Sample : WG517319-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 30 10:49:32 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	25561192	135.577	umol/
2) T	ethene	1.05	42019859	132.463	umol/
3) T	acetylene	1.13	47766896	141.141	umol/
4) T	ethane	1.38	44071707	129.662	umol/
5) T	propane	3.83	65362999	131.673	umol/
6) T	n-butane	5.33	86142707	132.880	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47093.D RSK1.M Mon Mar 30 10:49:32 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\033015\16G47093.D Vial: 2
Acq On : 30 Mar 2015 10:43 Operator: JDS
Sample : WG517319-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 30 10:49 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

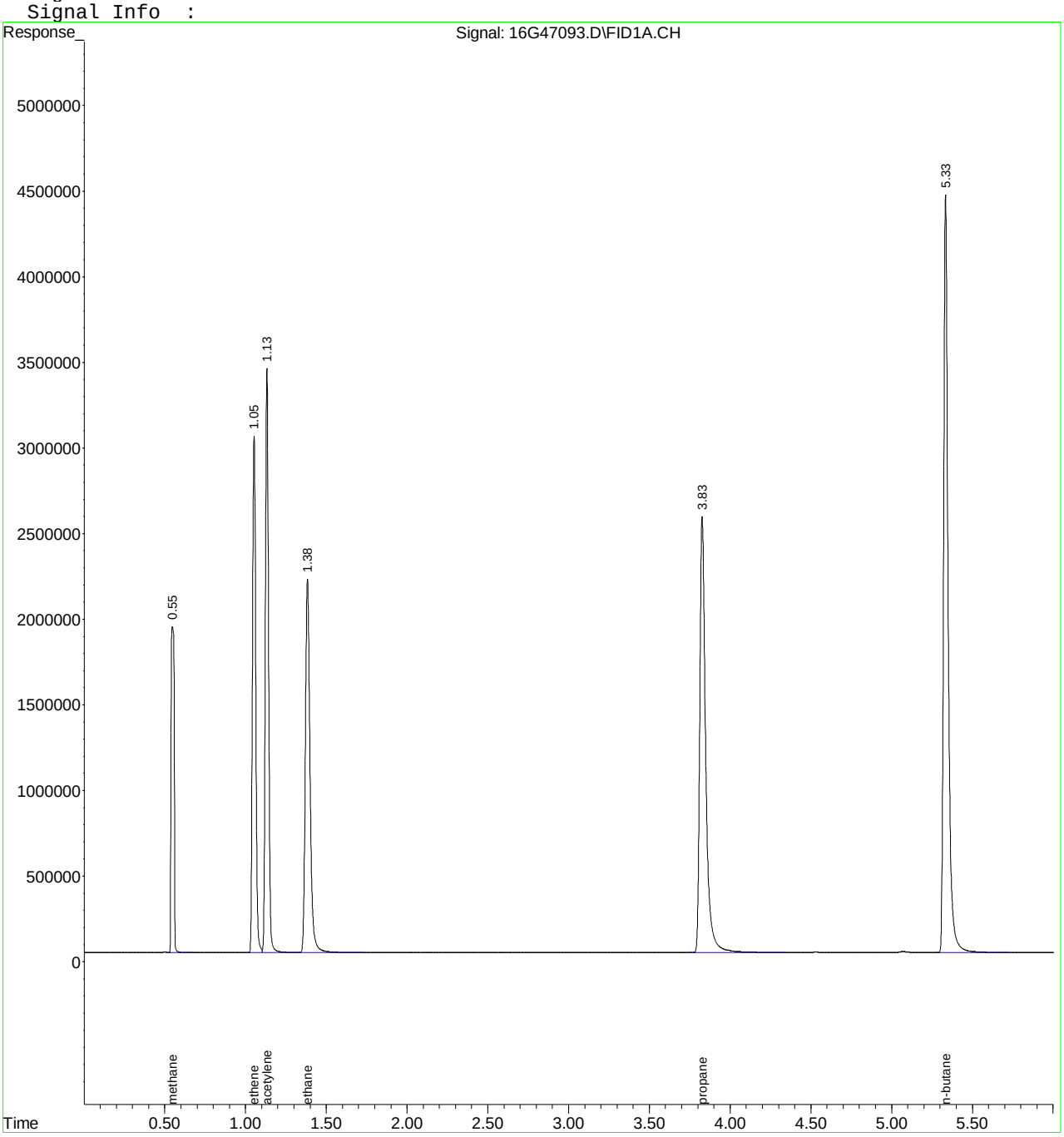

16G47093.D RSK1.M Mon Mar 30 10:49:32 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\033015\16G47093.D Vial: 2
Acq On : 30 Mar 2015 10:43 Operator: JDS
Sample : WG517319-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile : EVENTS.E

Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	135.577	-1.9	102	0.00
2	T	ethene	133.000	132.463	0.4	101	0.00
3	T	acetylene	133.000	141.141	-6.1	101	0.00
4	T	ethane	133.000	129.662	2.5	101	0.00
5	T	propane	133.000	131.673	1.0	102	0.00
6	T	n-butane	133.000	132.880	0.1	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G47093.D RSK1.M Tue Mar 31 08:57:44 2015 Page 1

Evaluate Continuing Calibration Report - Not Founds

```
Data File : C:\MSDCHEM\1\DATA\033015\16G47093.D          Vial: 2
Acq On    : 30 Mar 2015  10:43                       Operator: JDS
Sample    : WG517319-01 133umol/mol CCV RSK175       Inst    : HP16
Misc      : 1,1 STD67274                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------
```

```
---------------------------------------------------------------------------
 (#) = Out of Range             SPCC's out = 0  CCC's out = 0
 16G47093.D  RSK1.M      Tue Mar 31 08:57:44 2015                                Page 2
```

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\033015\16G47104.D Vial: 13
Acq On : 30 Mar 2015 14:45 Operator: JDS
Sample : WG517319-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 31 08:57:59 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23948103	126.882	umol/
2) T	ethene	1.06	39339458	124.014	umol/
3) T	acetylene	1.14	41631394	123.012	umol/
4) T	ethane	1.39	41294480	121.491	umol/
5) T	propane	3.83	60217098	121.306	umol/
6) T	n-butane	5.34	78292684	120.771	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47104.D RSK1.M Tue Mar 31 08:57:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\033015\16G47104.D Vial: 13
Acq On : 30 Mar 2015 14:45 Operator: JDS
Sample : WG517319-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 31 8:57 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

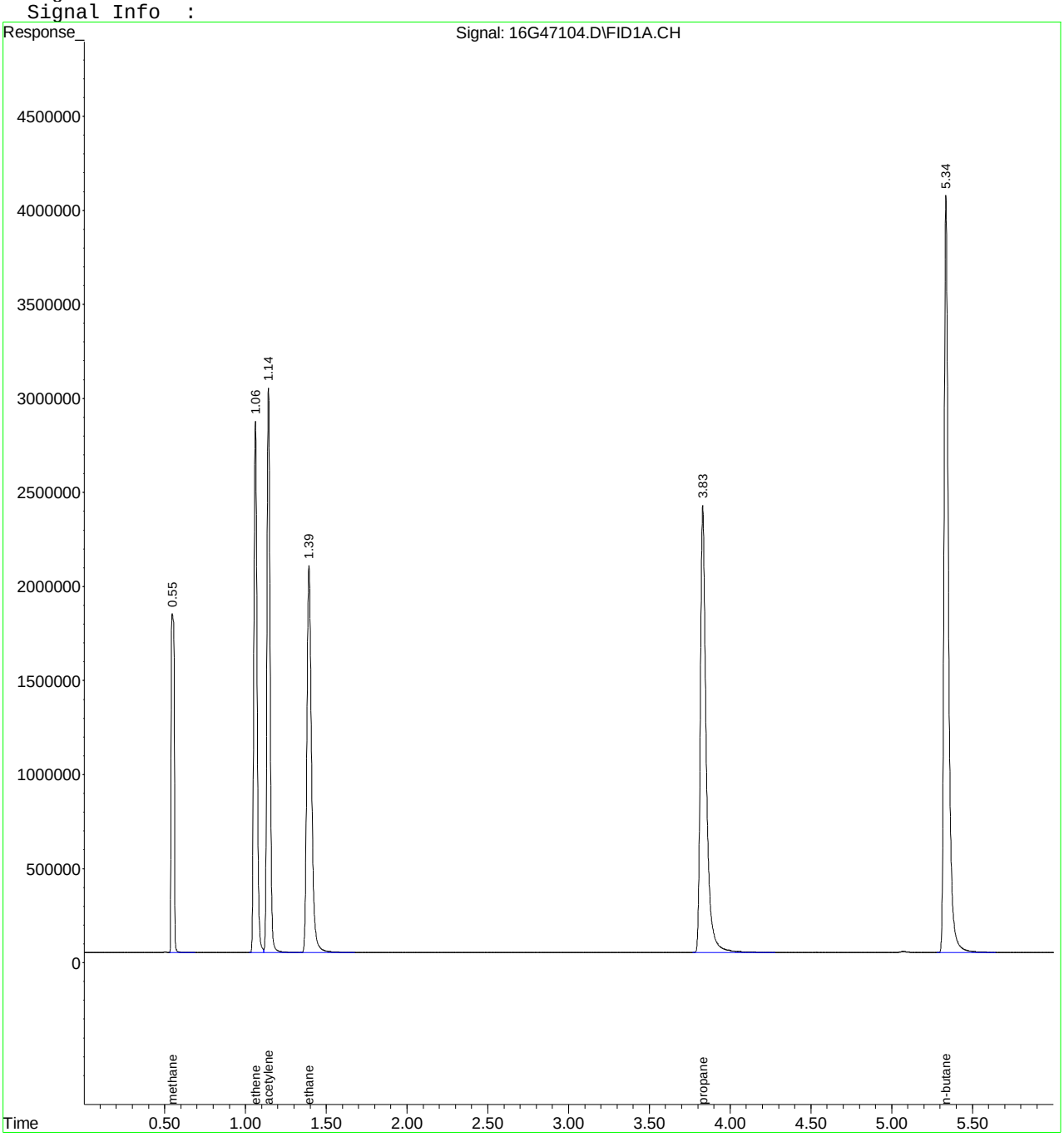

16G47104.D RSK1.M Tue Mar 31 08:57:59 2015 Page 2

Evaluate Continuing Calibration Report

```
Data File : C:\MSDCHEM\1\DATA\033015\16G47104.D          Vial: 13
Acq On    : 30 Mar 2015  14:45                       Operator: JDS
Sample    : WG517319-02 133umol/mol CCV RSK175       Inst    : HP16
Misc      : 1,1 STD67274                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	126.882	4.6	96	0.00
2	T	ethene	133.000	124.014	6.8	94	0.00
3	T	acetylene	133.000	123.012	7.5	88	0.00
4	T	ethane	133.000	121.491	8.7	95	0.00
5	T	propane	133.000	121.306	8.8	94	0.00
6	T	n-butane	133.000	120.771	9.2	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G47104.D RSK1.M Tue Mar 31 08:58:04 2015 Page 1

```
Data File : C:\MSDCHEM\1\DATA\033015\16G47104.D          Vial: 13
Acq On    : 30 Mar 2015  14:45                       Operator: JDS
Sample    : WG517319-02 133umol/mol CCV RSK175       Inst    : HP16
Misc      : 1,1 STD67274                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------
```

```
---------------------------------------------------------------------------
 (#) = Out of Range             SPCC's out = 0  CCC's out = 0
 16G47104.D  RSK1.M      Tue Mar 31 08:58:04 2015                          Page 2
```

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\033015\16G47107.D Vial: 16
Acq On : 30 Mar 2015 15:21 Operator: JDS
Sample : WG517319-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 30 15:27:45 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24557421	130.166	umol/
2) T	ethene	1.06	40657556	128.169	umol/
3) T	acetylene	1.14	43731835	129.218	umol/
4) T	ethane	1.39	42667474	125.530	umol/
5) T	propane	3.83	62210893	125.323	umol/
6) T	n-butane	5.34	80674055	124.444	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47107.D RSK1.M Mon Mar 30 15:27:45 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\033015\16G47107.D Vial: 16
Acq On : 30 Mar 2015 15:21 Operator: JDS
Sample : WG517319-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 30 15:27 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

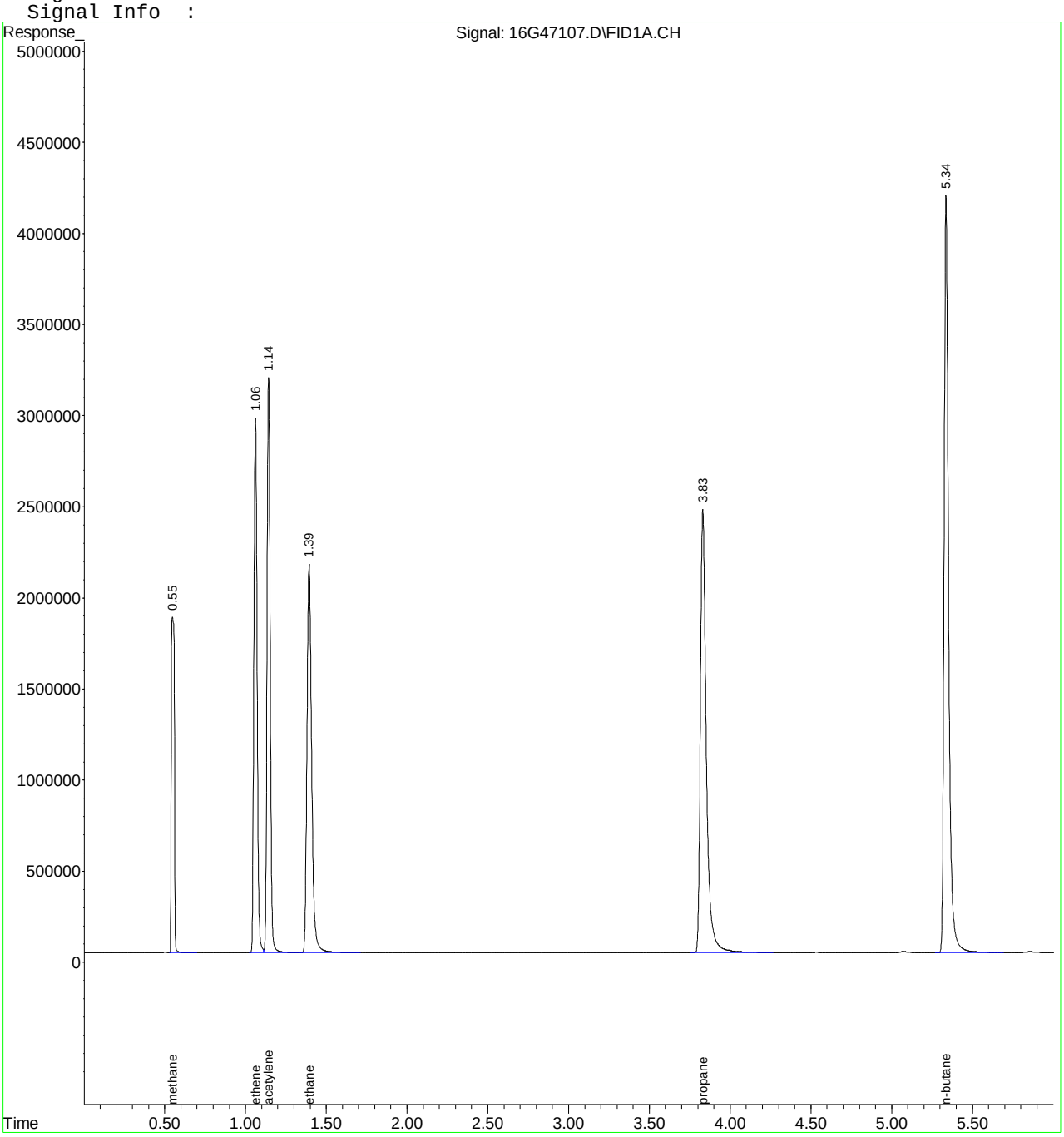

16G47107.D RSK1.M Mon Mar 30 15:27:45 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\033015\16G47107.D Vial: 16
Acq On : 30 Mar 2015 15:21 Operator: JDS
Sample : WG517319-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile : EVENTS.E

Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	130.166	2.1	98	0.00
2	T	ethene	133.000	128.169	3.6	98	0.00
3	T	acetylene	133.000	129.218	2.8	93	0.00
4	T	ethane	133.000	125.530	5.6	98	0.00
5	T	propane	133.000	125.323	5.8	97	0.00
6	T	n-butane	133.000	124.444	6.4	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G47107.D RSK1.M Tue Mar 31 08:58:16 2015 Page 1

Evaluate Continuing Calibration Report - Not Founds

```
Data File : C:\MSDCHEM\1\DATA\033015\16G47107.D          Vial: 16
Acq On    : 30 Mar 2015  15:21                       Operator: JDS
Sample    : WG517319-03 133umol/mol CCV RSK175       Inst    : HP16
Misc      : 1,1 STD67274                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------
```

```
---------------------------------------------------------------------------
 (#) = Out of Range             SPCC's out = 0  CCC's out = 0
 16G47107.D  RSK1.M      Tue Mar 31 08:58:16 2015                          Page 2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15031486 **Run Date:** 03/30/2015 **Sample ID:** WG517319-01
Instrument: HP16 **Run Time:** 10:43 **Method:** RSK175
Workgroup (AAB#): WG517320 **File ID:** 16G47093

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.05	1.020	1.080
ETHANE	1.39	1.39	1.39	1.38	1.350	1.410
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.33	5.300	5.360
CARBON DIOXIDE	.2	.2	.2			
ACETYLENE	1.14	1.14	1.14	1.13	1.100	1.160

RT_WIN - Modified 01/06/2010
PDF File ID: 4093838
Report generated 04/02/2015 11:33

2.1.1.5 Raw QC Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\033015\16G47094.D Vial: 3
Acq On : 30 Mar 2015 11:10 Operator: JDS
Sample : WG517320-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 30 11:16:03 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	303755	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	3.83	1625	0.003	umol/
6) T	n-butane	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47094.D RSK1.M Mon Mar 30 11:16:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\033015\16G47094.D Vial: 3
Acq On : 30 Mar 2015 11:10 Operator: JDS
Sample : WG517320-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 30 11:16 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

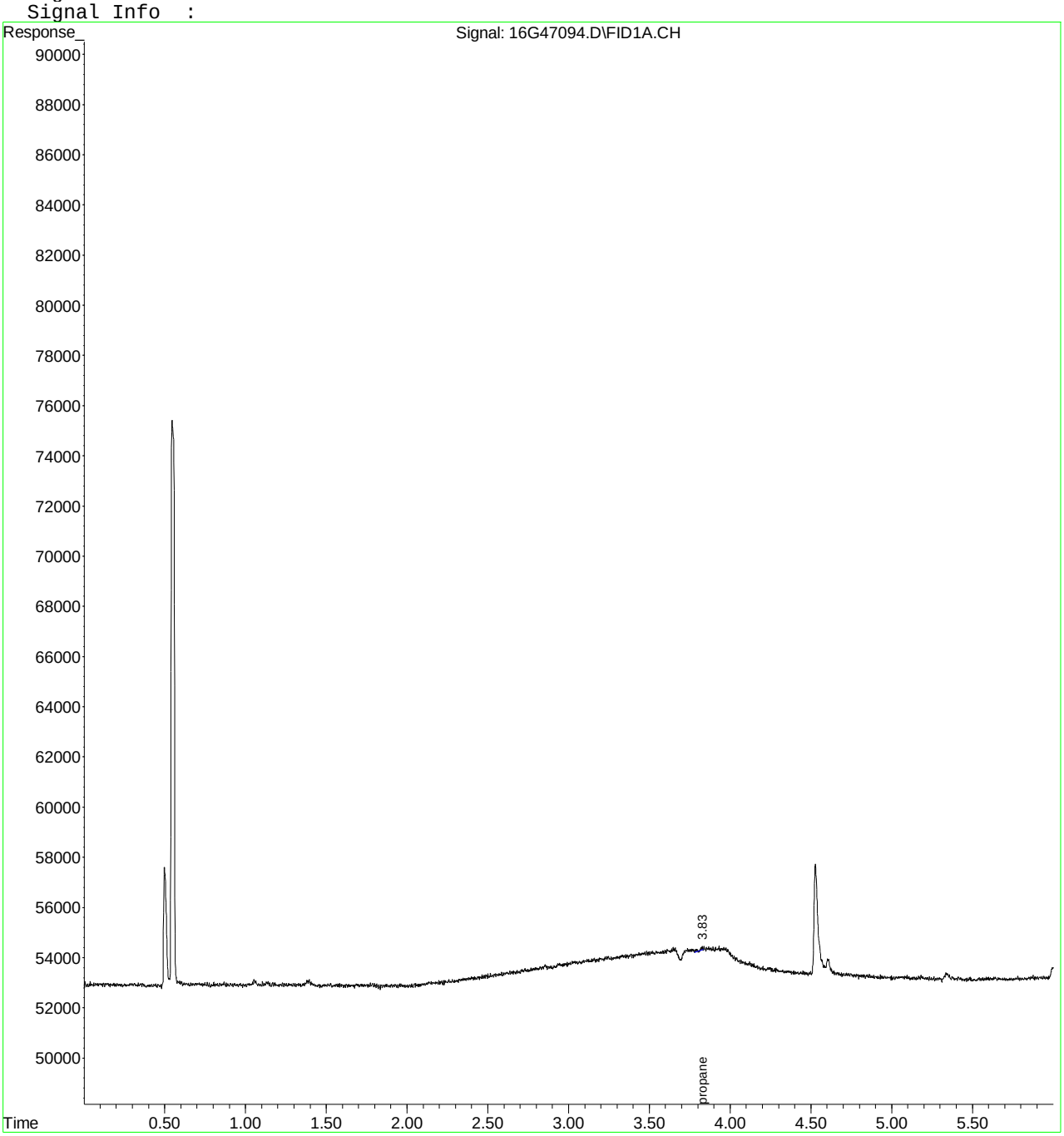

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\033015\16G47095.D Vial: 4
Acq On : 30 Mar 2015 11:22 Operator: JDS
Sample : WG517320-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 30 11:28:54 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12450008	64.901	umol/
2) T	ethene	1.05	20335308	64.105	umol/
3) T	acetylene	1.13	21671610	64.035	umol/
4) T	ethane	1.38	21119229	62.134	umol/
5) T	propane	3.83	30320219	61.079	umol/
6) T	n-butane	5.34	38217855	58.953	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47095.D RSK1.M Mon Mar 30 11:28:54 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\033015\16G47095.D Vial: 4
Acq On : 30 Mar 2015 11:22 Operator: JDS
Sample : WG517320-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 30 11:28 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

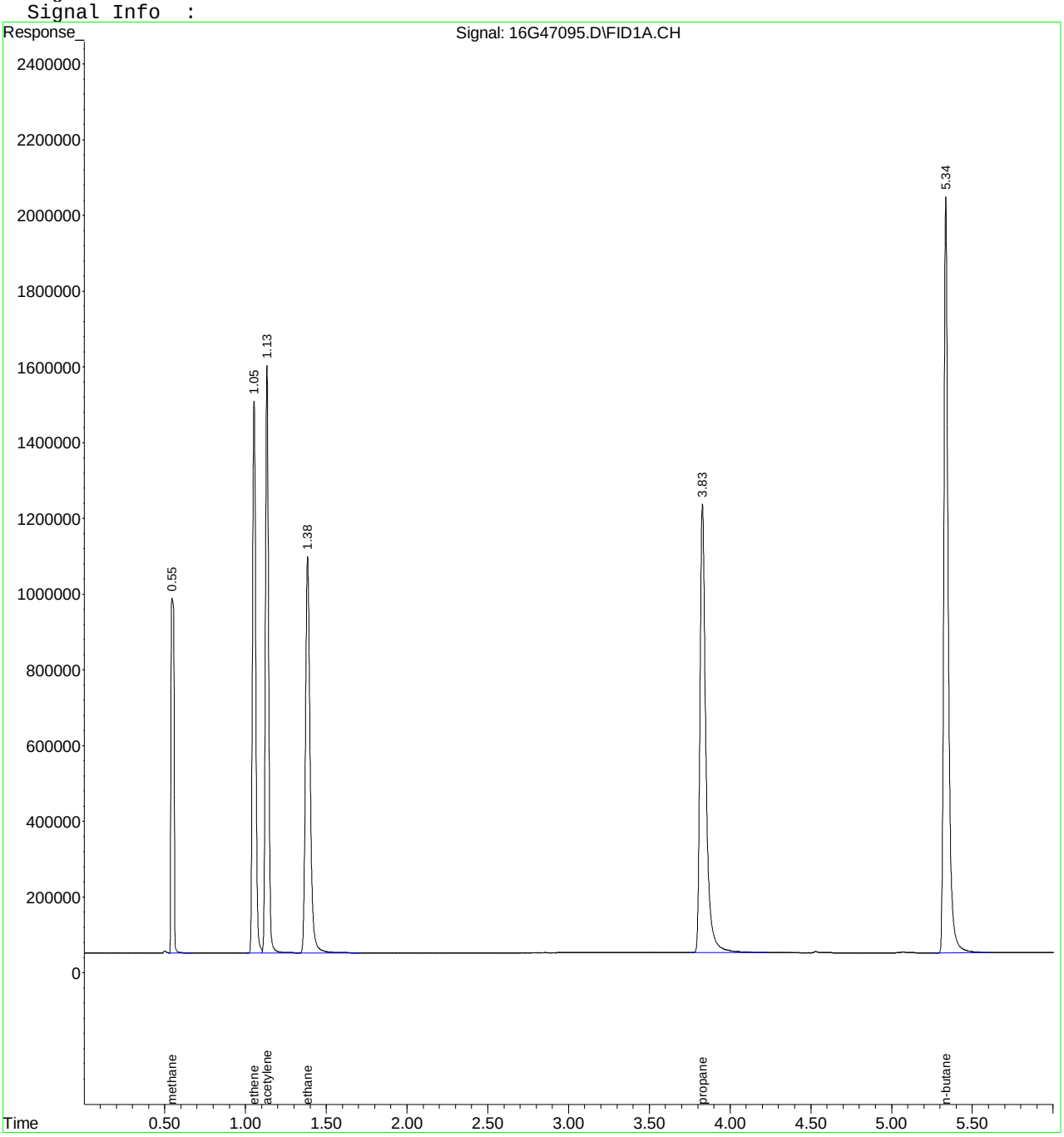

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\033015\16G47096.D Vial: 5
Acq On : 30 Mar 2015 11:36 Operator: JDS
Sample : WG517320-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 30 11:42:10 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12420068	64.740	umol/
2) T	ethene	1.05	20281207	63.934	umol/
3) T	acetylene	1.13	21371526	63.148	umol/
4) T	ethane	1.38	21012297	61.820	umol/
5) T	propane	3.83	30089051	60.614	umol/
6) T	n-butane	5.34	37955314	58.548	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47096.D RSK1.M Mon Mar 30 11:42:10 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\033015\16G47096.D Vial: 5
Acq On : 30 Mar 2015 11:36 Operator: JDS
Sample : WG517320-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: Mar 30 11:42 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

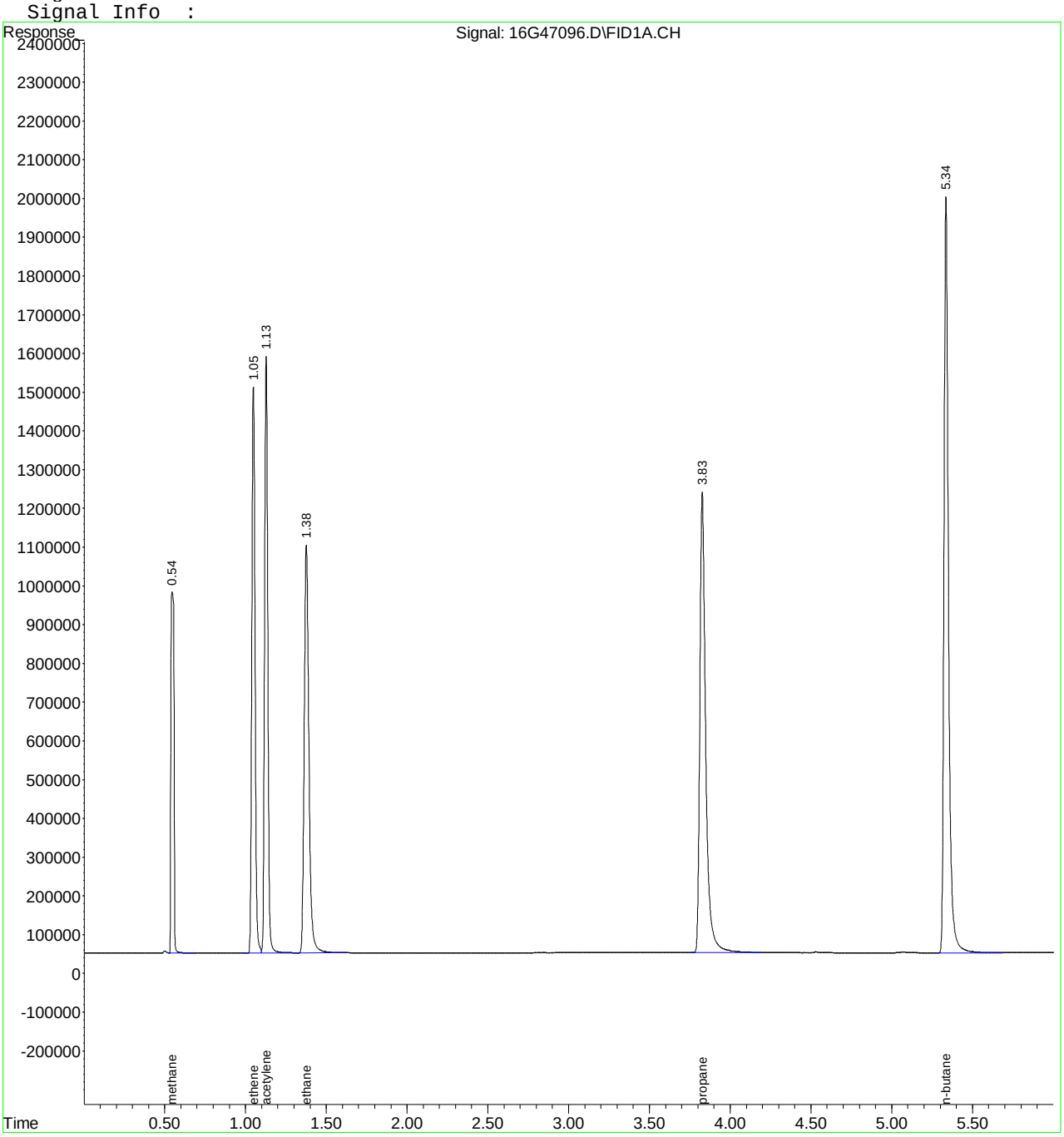

2.2 General Chemistry Data

2.2.1 Method 9056

2.2.1.1 Summary Data

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15031486-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	67WW13-032515	**Prep Method:**	9056	**Prep Date:**	03/26/2015 14:09
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	02/17/2015 19:43
Workgroup #:	WG517027	**Analyst:**	ALS	**Run Date:**	03/26/2015 22:57
Collect Date:	03/25/2015 14:10	**Dilution:**	10	**File ID:**	I2_032615-32
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	2290	J	2.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	6.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00
Sulfate	14808-79-8	334		10.0	10.0	5.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15031486-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	67WW13-032515	**Prep Method:**	9056	**Prep Date:**	03/26/2015 14:09
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	02/17/2015 19:43
Workgroup #:	WG517027	**Analyst:**	ALS	**Run Date:**	03/26/2015 23:15
Collect Date:	03/25/2015 14:10	**Dilution:**	100	**File ID:**	I2_032615-33
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1820		20.0	20.0	10.0
Nitrate	14797-55-8	20.0	U	60.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0
Sulfate	14808-79-8	352		100	100	50.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(- c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 021715 ICAL IC2.SEQ

Analyst1: JWR Analyst2: AED

Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 52882 Syringe Filter Lot#: 00190001

Eluent ID#: RGT32861

Column 1 ID: AG14A : 012951 Column 2 ID: AS14A : 010283

Workgroups: ICAL Only

Internal STD: NA Surrogate STD: NA Calibration STD STD66516 (02/17/15)

CCV STD: NA LCS STD: NA MS/MSD STD: NA

Comments: ICAL WG512538 : Alternate Source STD66517
System Backpressure 1836psi

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I2_021715-01	ELUENT	1	1		02/17/15 17:35
2	I2_021715-02	DI WATER	1	1		02/17/15 17:53
3	I2_021715-03	WG512538-01 STD \#6	1	1	STD66516	02/17/15 18:12
4	I2_021715-04	WG512538-02 STD \#5	1	1	STD66516	02/17/15 18:30
5	I2_021715-05	WG512538-03 STD-CCV \#4	1	1	STD66516	02/17/15 18:48
6	I2_021715-06	WG512538-04 STD \#3	1	1	STD66516	02/17/15 19:06
7	I2_021715-07	WG512538-05 STD \#2	1	1	STD66516	02/17/15 19:24
8	I2_021715-08	WG512538-06 STD \#1	1	1	STD66516	02/17/15 19:43
9	I2_021715-09	WG512538-07 SSCV	1	1	STD66517	02/17/15 20:01
10	I2_021715-10	LCRV Level \#6	1	1		02/17/15 20:19
11	I2_021715-11	LCRV Level \#2	1	1		02/17/15 20:37
12	I2_021715-12	LCRV Eluent Blank	1	1		02/17/15 20:55
13	I2_021715-13	END	1	1		02/17/15 21:14

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 26-FEB-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 032615 IC2.SEQ

Analyst1: AED Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 52994 Syringe Filter Lot#: 00193905

Eluent ID#: RGT33167

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG517027

Internal STD: NA Surrogate STD: NA Calibration STD STD66516 (02/17/15)

CCV STD: STD69215 LCS STD: STD69216 MS/MSD STD: STD69216

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I2_032615-01	ELUENT	1	1		03/26/15 13:33
2	I2_032615-02	DI WATER	1	1		03/26/15 13:51
3	I2_032615-03	WG517030-01 Anion CCV	1	1		03/26/15 14:09
4	I2_032615-04	WG517030-02 Anion CCB	1	1		03/26/15 14:27
5	I2_032615-05	WG517027-01 Anion Blank	1	1		03/26/15 14:45
6	I2_032615-06	WG517027-02 Anion LCS	1	1		03/26/15 15:04
7	I2_032615-07	L15031463-01 (SO4) 3X	2	3		03/26/15 15:22
8	I2_032615-08	L15031465-01 (SO4) RS	1	1		03/26/15 15:40
9	I2_032615-09	WG517027-04 DUP	2	1		03/26/15 15:58
10	I2_032615-10	WG517027-05 MS	2	1		03/26/15 16:16
11	I2_032615-11	WG517027-06 MSD	2	1		03/26/15 16:35
12	I2_032615-12	L15031465-02 (SO4)	2	1		03/26/15 16:53
13	I2_032615-13	L15031465-03 (SO4)	2	1		03/26/15 17:11
14	I2_032615-14	L15031467-01 (SO4) 3X	2	3		03/26/15 17:29
15	I2_032615-15	WG517030-03 Anion CCV	1	1		03/26/15 17:47
16	I2_032615-16	WG517030-04 Anion CCB	1	1		03/26/15 18:06
17	I2_032615-17	L15031467-02 (SO4)	2	1		03/26/15 18:24
18	I2_032615-18	L15031472-02 (CL,SO4) 20X	2	20		03/26/15 18:42
19	I2_032615-19	L15031472-03 (CL,SO4) 150X	2	150		03/26/15 19:00
20	I2_032615-20	L15031472-04 (CL,SO4) 20X	2	20		03/26/15 19:19
21	I2_032615-21	L15031472-04 (CL,SO4) 200X	2	200		03/26/15 19:37
22	I2_032615-22	L15031472-05 (CL,SO4) 50X	2	50		03/26/15 19:55
23	I2_032615-23	L15031472-06 (CL,SO4) 100X	2	100		03/26/15 20:13
24	I2_032615-24	L15031472-08 (CL,SO4) 10X	2	10		03/26/15 20:31
25	I2_032615-25	L15031475-02 (SO4)	2	1		03/26/15 20:50
26	I2_032615-26	L15031475-03 (SO4)	2	1		03/26/15 21:08
27	I2_032615-27	WG517030-05 Anion CCV	1	1		03/26/15 21:26
28	I2_032615-28	WG517030-06 Anion CCB	1	1		03/26/15 21:44
29	I2_032615-29	L15031475-04 (SO4)	2	1		03/26/15 22:02
30	I2_032615-30	L15031475-05 (SO4)	2	1		03/26/15 22:21
31	I2_032615-31	L15031475-06 (SO4)	2	1		03/26/15 22:39
32	I2_032615-32	L15031486-01 (NO3,NO2,CL,SO4) 10X	1	10		03/26/15 22:57
33	I2_032615-33	L15031486-01 (NO3,NO2,CL,SO4) 100X	1	100		03/26/15 23:15

Page: 1 Approved: 27-MAR-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 032615 IC2.SEQ

Analyst1: AED Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 52994 Syringe Filter Lot#: 00193905

Eluent ID#: RGT33167

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG517027

Internal STD: NA Surrogate STD: NA STD66516 (02/17/15)

CCV STD: STD69215 LCS STD: STD69216 STD69216

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I2_032615-34	WG517030-07 Anion CCV	1	1		03/26/15 23:34
35	I2_032615-35	WG517030-08 Anion CCB	1	1		03/26/15 23:52
36	I2_032615-36	END	1	1		03/27/15 00:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
20	X	200	Over Calibration Range	CL
	L15031472-04 20x			
32	X	100	Over Calibration Range	CL
	L15031486-01: Analyzed at dilution due to high CL/SO4 screen results.			

Page: 2 Approved: 27-MAR-15

Microbac Laboratories Inc.

Data Checklist

Date: 17-FEB-2015
Analyst: JWR
Analyst: AED
Method: 300/9056
Instrument: IC2
Curve Workgroup: WG512538
Runlog ID: 66528
Analytical Workgroups: ICAL ONLY

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	NA
Project/client specific requirements	NA
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
26-FEB-2015

Secondary Reviewer:
26-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-26-2015 12:34:54

Microbac Laboratories Inc.

Data Checklist

Date: 26-MAR-2015
Analyst: AED
Analyst: NA
Method: 300/9056
Instrument: IC2
Curve Workgroup: NA
Runlog ID: 67053
Analytical Workgroups: 03-1463, 03-1465, 03-1467, 03-1472, 03-1475, 03-1486

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
27-MAR-2015

Secondary Reviewer:
27-MAR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-27-2015 16:01:28

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG517027

Login Number: L15031486

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW13-032515	01	03/25/15					03/26/2015	1	2		03/26/15	1.4	2	
67WW13-032515	01	03/25/15					03/26/2015	1	2		03/26/15	1.4	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4085011
Report generated 03/31/2015 14:59

METHOD BLANK SUMMARY

Login Number: L15031486
Blank File ID: I2_032615-05
Prep Date: 03/26/15 14:09
Analyzed Date: 03/26/15 14:45
Analyst: ALS

Work Group: WG517027
Blank Sample ID: WG517027-01
Instrument ID: IC2
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG517027-02	I2_032615-06	03/26/15 15:04	01
DUP	WG517027-04	I2_032615-09	03/26/15 15:58	01
67WW13-032515	L15031486-01	I2_032615-32	03/26/15 22:57	DL01
67WW13-032515	L15031486-01	I2_032615-33	03/26/15 23:15	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4085012
Report generated 03/31/2015 14:59

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15031486 Prep Date: 03/26/15 14:09 Sample ID: WG517027-01
Instrument ID: IC2 Run Date: 03/26/15 14:45 Prep Method: 9056
File ID: I2 032615-05 Analyst: ALS Method: 9056
Workgroup (AAB#): WG517027 Matrix: Water Units: mg/L
Contract #: Cal ID: IC2 - 17-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.200	0.100	1	U
Nitrate	0.100	0.600	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	1.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4085013
31-MAR-2015 14:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15031486 Run Date: 03/26/2015 Sample ID: WG517027-02
Instrument ID: IC2 Run Time: 15:04 Prep Method: 9056
File ID: I2 032615-06 Analyst: ALS Method: 9056
Workgroup (AAB#): WG517027 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD69215 Cal ID: IC2 - 17-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	7.29	91.2	90 - 110	
Nitrate	5.42	4.94	91.3	90 - 110	
Nitrite	4.87	4.99	103	90 - 110	
Sulfate	40.0	36.6	91.4	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4085014
Report generated: 03/31/2015 14:59

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15031486
Analytical Method: 9056
ICAL Workgroup: WG512538

Instrument ID: IC2
Initial Calibration Date: 17-FEB-15 19:43
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.538	7.77	0.99800	
Nitrate		2.302	8.99	0.99800	
Nitrite		3.877	22.1	0.99900	
Sulfate		7.495	13.5	0.99700	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4085016
Report generated 03/31/2015 14:59

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15031486

Analytical Method: 9056

Instrument ID: IC2

Initial Calibration Date: 17-FEB-15 19:43

Column ID: F

Analyte	WG512538-01			WG512538-02			WG512538-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.92900000	4.869	12.0	2.25700000	5.317	8.00	1.45300000	5.506
Nitrate	16.3	8.16400000	1.992	8.13	3.73600000	2.177	5.42	2.39300000	2.266
Nitrite	14.6	4.81600000	3.034	7.31	2.32100000	3.148	4.87	1.47500000	3.303
Sulfate	120	19.4210000	6.179	60.0	8.83200000	6.793	40.0	5.58300000	7.165

INT_CAL - Modified 03/06/2008
PDF File ID: 4085016
Report generated 03/31/2015 14:59

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15031486

Analytical Method: 9056

Instrument ID: IC2

Initial Calibration Date: 17-FEB-15 19:43

Column ID: F

Analyte	WG512538-04			WG512538-05			WG512538-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.702000000	5.698	1.00	0.173000000	5.780	0.200	0.0330000000	6.061
Nitrate	2.71	1.13700000	2.384	0.678	0.274000000	2.473	0.134	0.0530000000	2.520
Nitrite	2.44	0.671000000	3.630	0.609	0.140000000	4.349	0.122	0.0210000000	5.800
Sulfate	20.0	2.63600000	7.587	5.00	0.607000000	8.237	1.00	0.111000000	9.009

INT_CAL - Modified 03/06/2008
PDF File ID: 4085016
Report generated 03/31/2015 14:59

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15031486 Run Date: 02/17/2015 Sample ID: WG512538-07
Instrument ID: IC2 Run Time: 20:01 Method: 9056
File ID: I2 021715-09 Analyst: AED QC Key: DOD4
ICal Workgroup: WG512538 Cal ID: IC2 - 17-FEB-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.48	mg/L	5.51	6.50	10	
Nitrate		5.42	5.08	mg/L	2.26	6.30	10	
Nitrite		4.87	4.54	mg/L	3.41	6.80	10	
Sulfate		40.0	37.1	mg/L	7.13	7.10	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4085017
Report generated 03/31/2015 14:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15031486
Run Date: 03/26/2015
Sample ID: WG517030-02
Instrument ID: IC2
Run Time: 14:27
Method: 9056
File ID: I2_032615-04
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG517027
Cal ID: IC2 - 17-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Nitrate	0.100	0.600	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4085054
Report generated 03/31/2015 14:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15031486
Run Date: 03/26/2015
Sample ID: WG517030-04
Instrument ID: IC2
Run Time: 18:06
Method: 9056
File ID: I2 032615-16
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG517027
Cal ID: IC2 - 17-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Nitrate	0.100	0.600	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4085054
Report generated 03/31/2015 14:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15031486
Run Date: 03/26/2015
Sample ID: WG517030-06
Instrument ID: IC2
Run Time: 21:44
Method: 9056
File ID: I2 032615-28
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG517027
Cal ID: IC2 - 17-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Nitrate	0.100	0.600	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4085054
Report generated 03/31/2015 14:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15031486
Run Date: 03/26/2015
Sample ID: WG517030-08
Instrument ID: IC2
Run Time: 23:52
Method: 9056
File ID: I2_032615-35
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG517027
Cal ID: IC2 - 17-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Nitrate	0.100	0.600	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4085054
Report generated 03/31/2015 14:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15031486
Run Date: 03/26/2015
Sample ID: WG517030-01
Instrument ID: IC2
Run Time: 14:09
Method: 9056
File ID: I2 032615-03
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG517027
Cal ID: IC2 - 17-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.47	mg/L	5.52	6.65	10	
Nitrate		5.42	5.09	mg/L	2.26	6.19	10	
Nitrite		4.87	5.05	mg/L	3.06	3.63	10	
Sulfate		40.0	37.4	mg/L	7.09	6.54	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4085018
Report generated 03/31/2015 14:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15031486
Run Date: 03/26/2015
Sample ID: WG517030-03
Instrument ID: IC2
Run Time: 17:47
Method: 9056
File ID: I2 032615-15
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG517027
Cal ID: IC2 - 17-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.51	mg/L	5.49	6.10	10	
Nitrate		5.42	5.10	mg/L	2.25	5.99	10	
Nitrite		4.87	5.10	mg/L	3.03	4.73	10	
Sulfate		40.0	37.5	mg/L	7.07	6.30	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4085018
Report generated 03/31/2015 14:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15031486 Run Date: 03/26/2015 Sample ID: WG517030-05
Instrument ID: IC2 Run Time: 21:26 Method: 9056
File ID: I2 032615-27 Analyst: ALS QC Key: DOD4
Workgroup (AAB#): WG517027 Cal ID: IC2 - 17-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.52	mg/L	5.49	6.05	10	
Nitrate		5.42	5.11	mg/L	2.24	5.67	10	
Nitrite		4.87	5.13	mg/L	3.01	5.39	10	
Sulfate		40.0	37.7	mg/L	7.04	5.88	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4085018
Report generated 03/31/2015 14:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15031486 Run Date: 03/26/2015 Sample ID: WG517030-07
Instrument ID: IC2 Run Time: 23:34 Method: 9056
File ID: I2_032615-34 Analyst: ALS QC Key: DOD4
Workgroup (AAB#): WG517027 Cal ID: IC2 - 17-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.57	mg/L	5.45	5.43	10	
Nitrate		5.42	5.11	mg/L	2.25	5.71	10	
Nitrite		4.87	5.14	mg/L	3.01	5.45	10	
Sulfate		40.0	37.6	mg/L	7.05	6.12	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4085018
Report generated 03/31/2015 14:59

2.2.1.3 Sample Data

32 L15031486-01 (NO3,NO2,CL,SO4) 10X

1,10 ALS

Sample Name:	**L15031486-01 (NO3,NO2,CL,SO4) 10X**	*Injection Volume:*	**25.0**
Vial Number:	**32**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2015 22:57**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

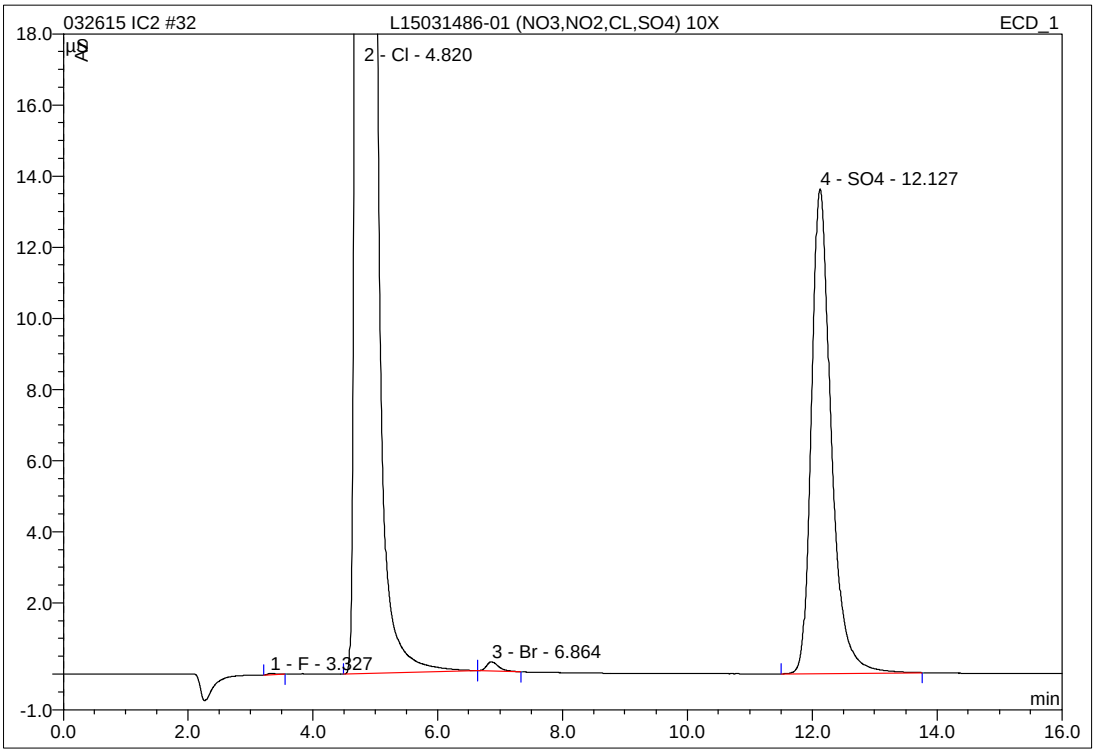

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.33	F	0.041	0.006	0.01	0.093	BMB
2	4.82	Cl	197.153	44.754	89.78	228.810	BMb
3	6.86	Br	0.260	0.058	0.12	0.838	bMB
4	12.13	SO4	13.616	5.028	10.09	33.358	BMB
Total:			211.071	49.846	100.00	263.099	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

33 L15031486-01 (NO3,NO2,CL,SO4) 100X

1,100 ALS

Sample Name:	**L15031486-01 (NO3,NO2,CL,SO4) 100X**	*Injection Volume:*	**25.0**
Vial Number:	**33**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2015 23:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

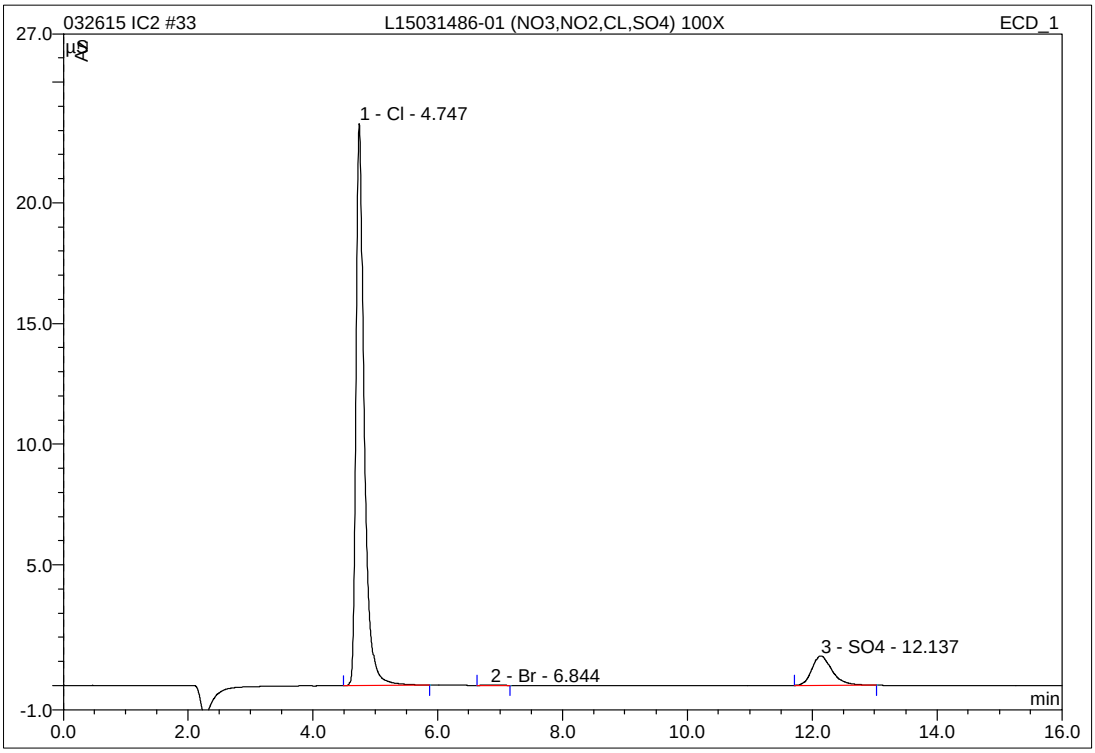

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.75	Cl	23.279	3.555	88.49	18.238	BMB
2	6.84	Br	0.024	0.005	0.13	0.127	BMB
3	12.14	SO4	1.223	0.457	11.38	3.519	BMB
Total:			24.526	4.018	100.00	21.884	

2.2.1.4 Standards Data

3 WG512538-01 STD #6

1,1 AED STD66516 (1836psi)

Sample Name:	**WG512538-01 STD #6**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/17/2015 18:12**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

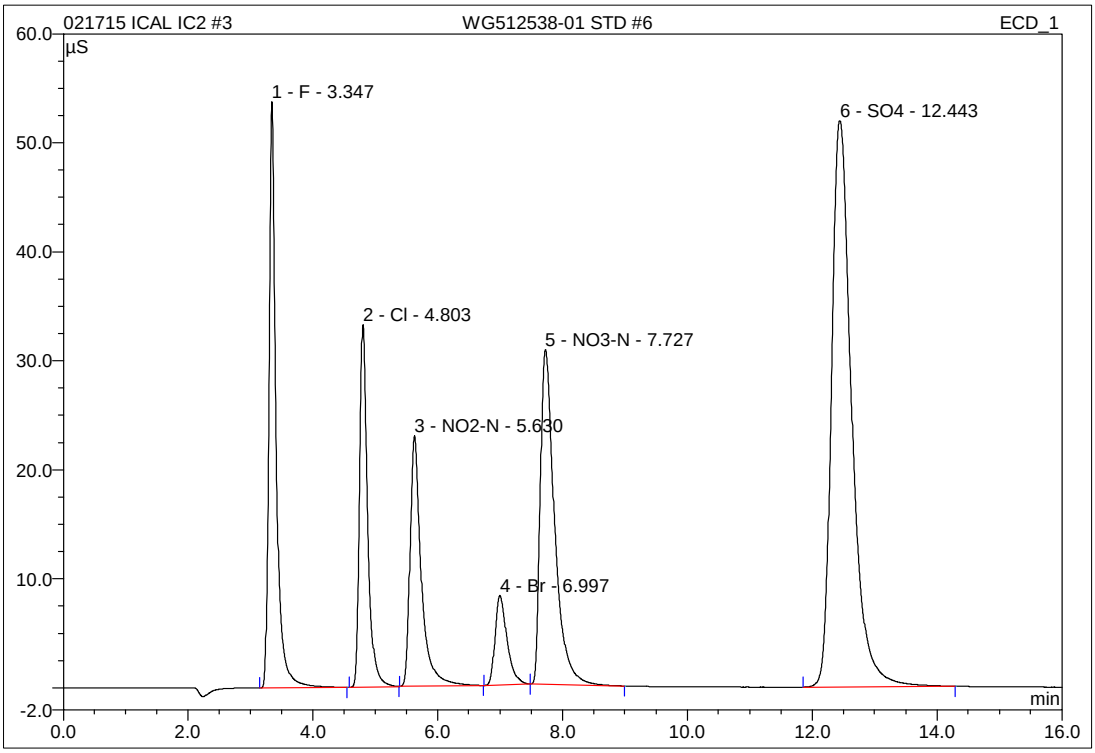

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	53.788	7.211	15.55	24.650	BMB
2	4.80	Cl	33.223	4.929	10.63	25.260	BMB
3	5.63	NO2-N	22.951	4.816	10.39	15.099	BMB
4	7.00	Br	8.214	1.828	3.94	24.564	BMB
5	7.73	NO3-N	30.730	8.164	17.61	17.162	BMB
6	12.44	SO4	51.942	19.421	41.88	127.324	BMB
Total:			200.848	46.369	100.00	234.060	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG512538-02 STD #5

1,1 AED STD66516

Sample Name:	**WG512538-02 STD #5**	*Injection Volume:*	**25.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/17/2015 18:30**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

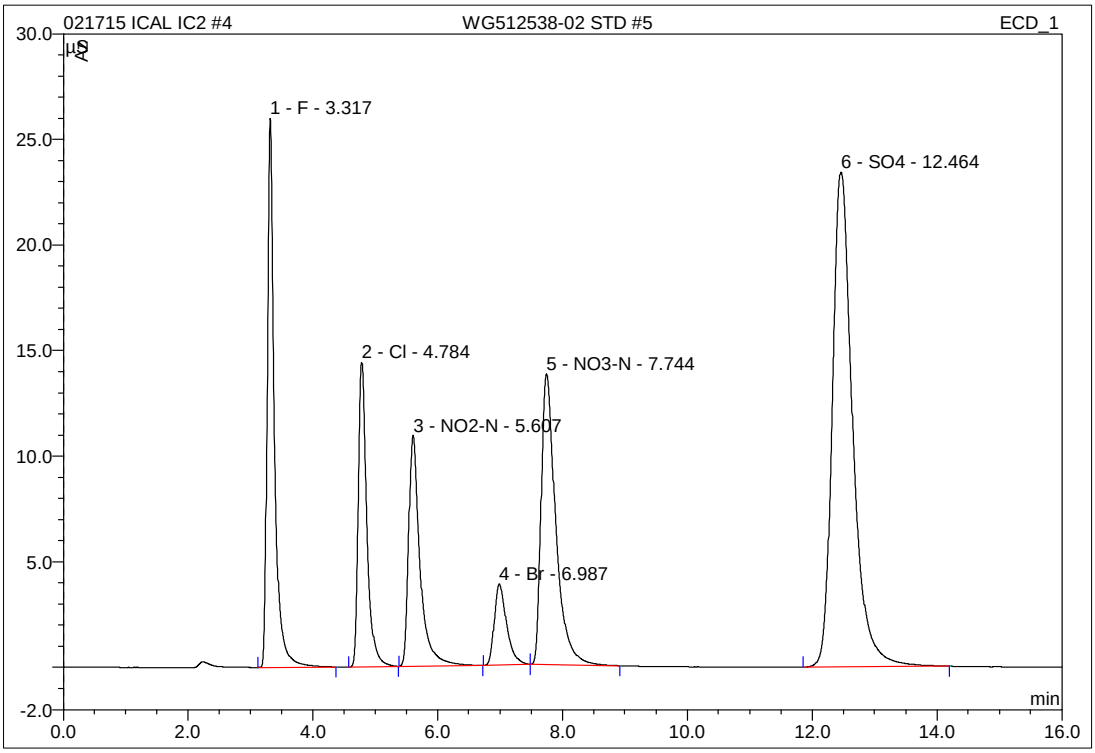

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.32	F	25.985	3.479	16.18	11.930	BMB
2	4.78	Cl	14.415	2.257	10.50	11.603	BMB
3	5.61	NO2-N	10.932	2.321	10.79	7.321	BMB
4	6.99	Br	3.833	0.878	4.09	11.832	BMb
5	7.74	NO3-N	13.742	3.736	17.37	7.882	bMB
6	12.46	SO4	23.424	8.832	41.07	58.193	BMB
Total:			92.331	21.503	100.00	108.760	

5 WG512538-03 STD #4

1,1 AED STD66516

Sample Name:	**WG512538-03 STD #4**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/17/2015 18:48**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

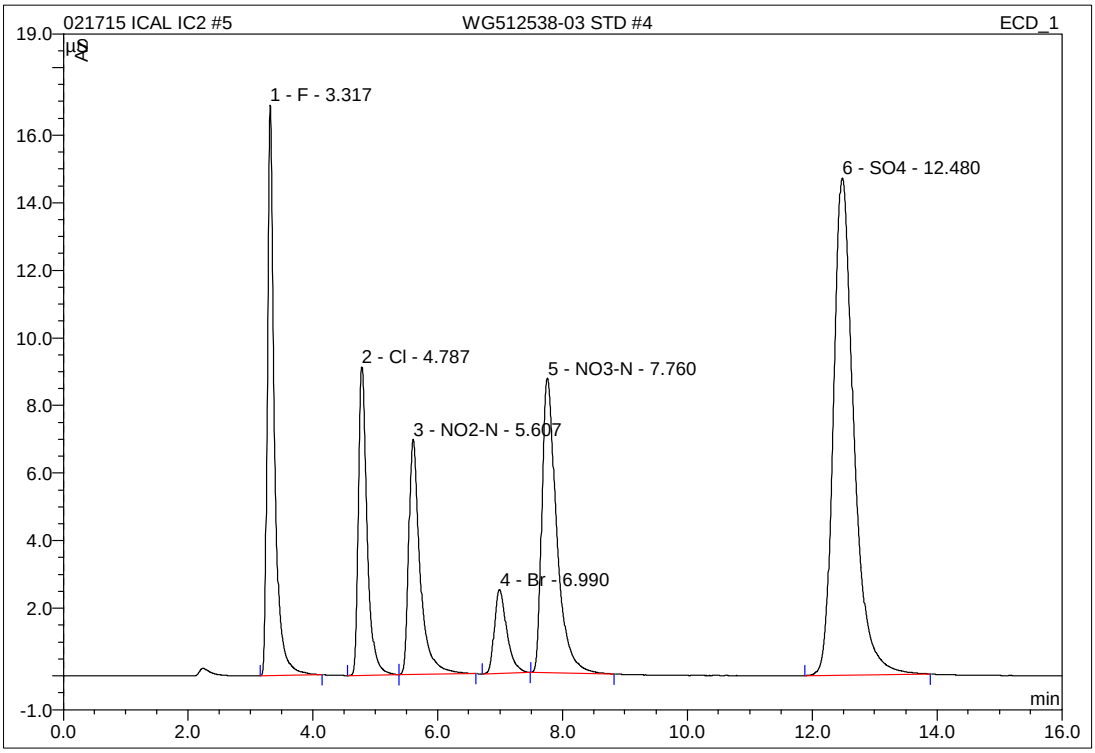

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.32	F	16.884	2.243	16.34	7.716	BMB
2	4.79	Cl	9.125	1.453	10.59	7.492	BMB
3	5.61	NO2-N	6.963	1.475	10.75	4.685	BMB
4	6.99	Br	2.488	0.576	4.20	7.776	BMB
5	7.76	NO3-N	8.721	2.393	17.44	5.068	BMB
6	12.48	SO4	14.711	5.583	40.68	36.980	BMB
Total:			58.893	13.722	100.00	69.717	

6 WG512538-04 STD #3

1,1 AED STD66516

Sample Name:	**WG512538-04 STD #3**	*Injection Volume:*	**25.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/17/2015 19:06**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

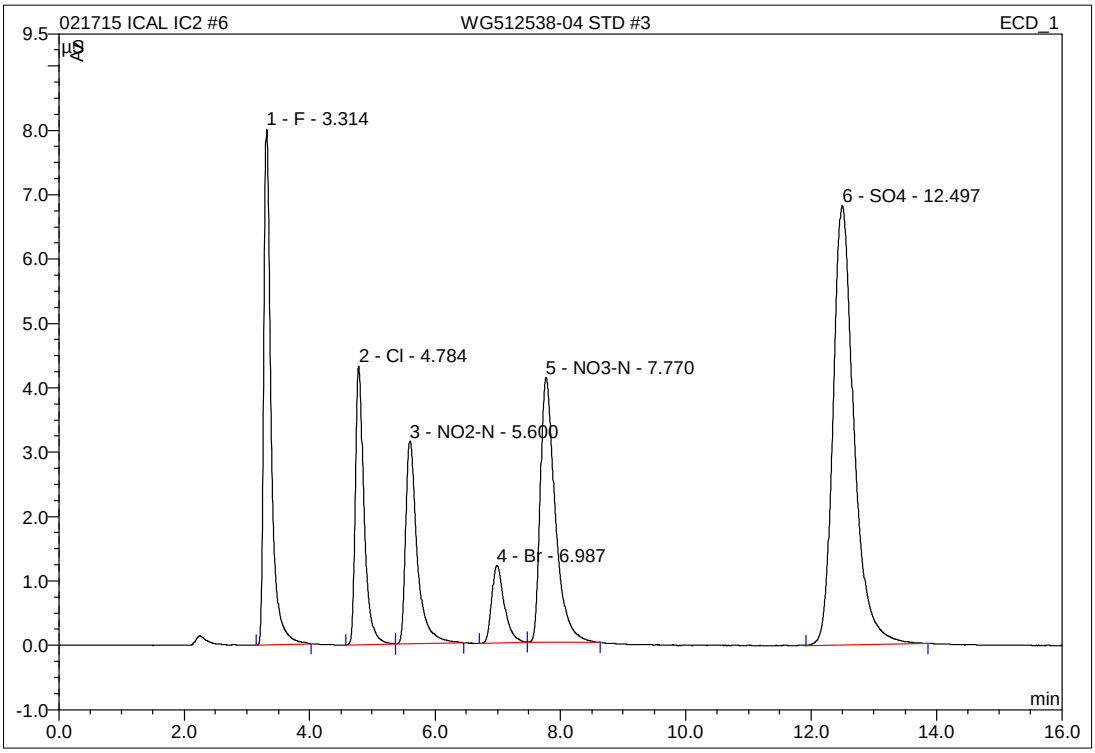

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.31	F	8.013	1.075	16.53	3.737	BMB
2	4.78	Cl	4.332	0.702	10.80	3.657	BMB
3	5.60	NO2-N	3.151	0.671	10.32	2.178	BMB
4	6.99	Br	1.206	0.281	4.32	3.827	BMB
5	7.77	NO3-N	4.113	1.137	17.49	2.437	BMB
6	12.50	SO4	6.822	2.636	40.54	17.746	BMB
Total:			27.637	6.504	100.00	33.582	

7 WG512538-05 STD #2

1,1 AED STD66516

Sample Name:	**WG512538-05 STD #2**	*Injection Volume:*	**25.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/17/2015 19:24**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

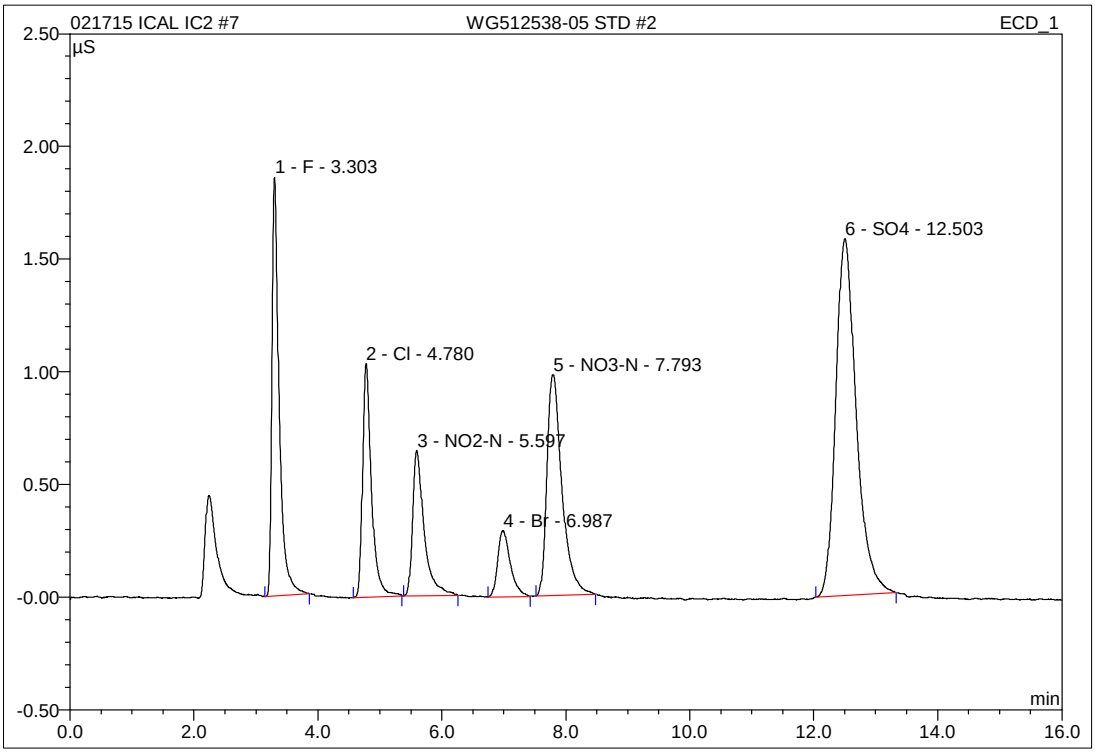

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.30	F	1.859	0.254	16.73	0.938	BMB
2	4.78	Cl	1.038	0.173	11.42	0.953	BMB
3	5.60	NO2-N	0.645	0.140	9.22	0.523	BMB
4	6.99	Br	0.294	0.069	4.57	0.986	BMB
5	7.79	NO3-N	0.980	0.274	18.07	0.628	BMB
6	12.50	SO4	1.585	0.607	40.00	4.500	BMB
Total:			6.401	1.518	100.00	8.528	

8 WG512538-06 STD #1

1,1 AED STD66516

Sample Name:	**WG512538-06 STD #1**	*Injection Volume:*	**25.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/17/2015 19:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

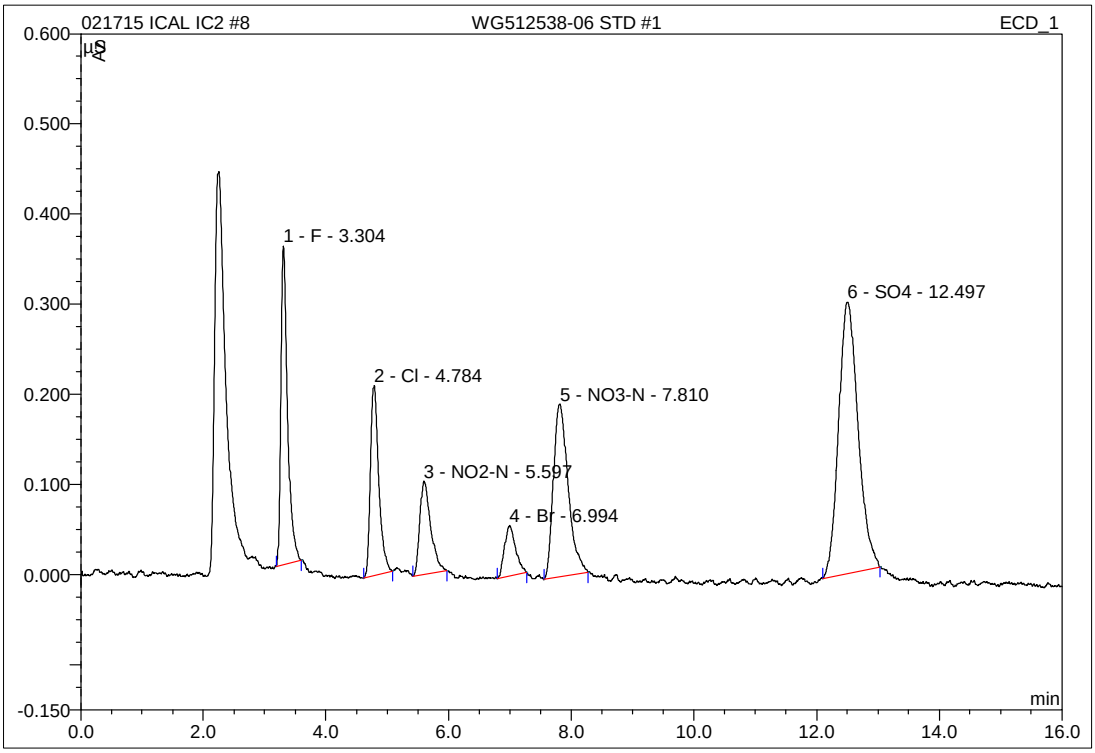

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.30	F	0.353	0.046	16.57	0.228	BMB
2	4.78	Cl	0.211	0.033	11.97	0.235	BMB
3	5.60	NO2-N	0.104	0.021	7.73	0.152	BMB
4	6.99	Br	0.056	0.012	4.29	0.215	BMB
5	7.81	NO3-N	0.192	0.053	19.29	0.165	BMB
6	12.50	SO4	0.301	0.111	40.15	1.257	BMB
Total:			1.217	0.276	100.00	2.253	

9 WG512538-07 SSCV

1,1 AED STD66517

Sample Name:	**WG512538-07 SSCV**	*Injection Volume:*	**25.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/17/2015 20:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

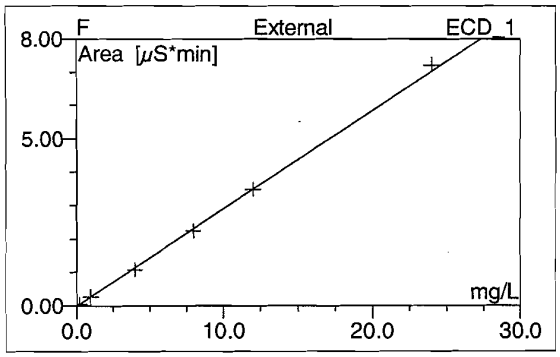

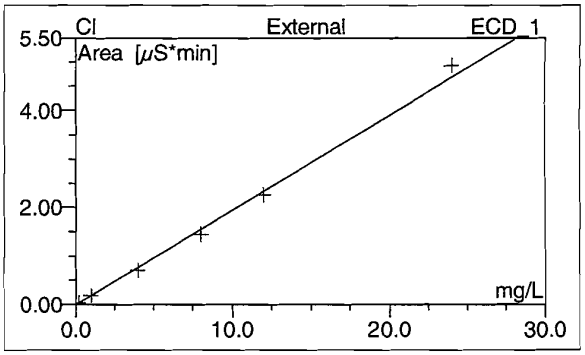

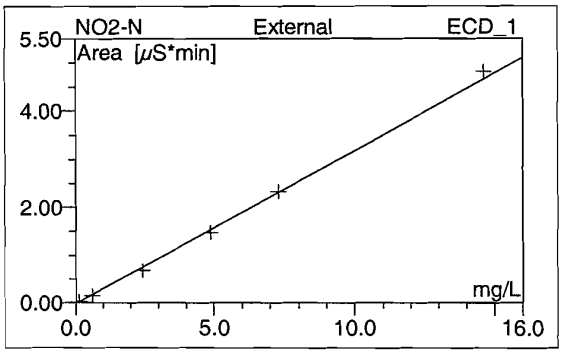

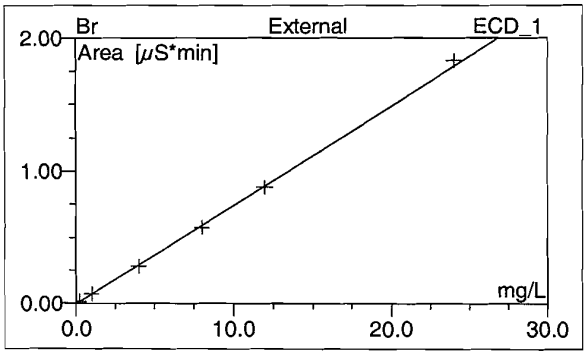

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	3.33	F	XLOff	6	99.9391	-0.0213	0.2934	0.0000
2	4.79	Cl	XLOff	6	99.8293	-0.0131	0.1957	0.0000
3	5.61	NO2-N	XLOff	6	99.8679	-0.0276	0.3208	0.0000
4	6.99	Br	XLOff	6	99.9649	-0.0042	0.0746	0.0000
5	7.76	NO3-N	XLOff	6	99.8014	-0.0254	0.4772	0.0000
6	12.50	SO4	XLOff	6	99.7491	-0.0819	0.1532	0.0000
Average:					99.8586	-0.0289	0.2525	0.0000

00739808

9 WG512538-07 SSCV

1,1 AED STD66517

Sample Name:	**WG512538-07 SSCV**	*Injection Volume:*	**25.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/17/2015 20:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

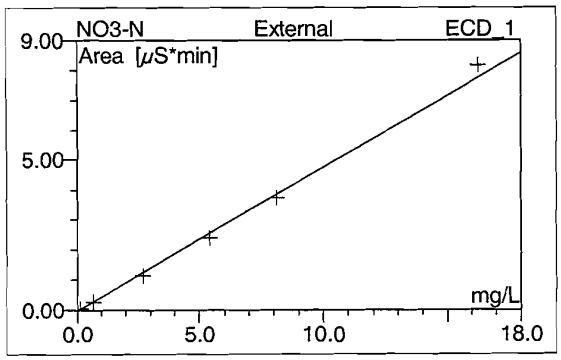

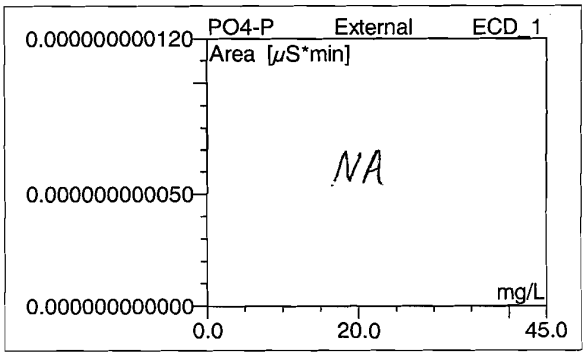

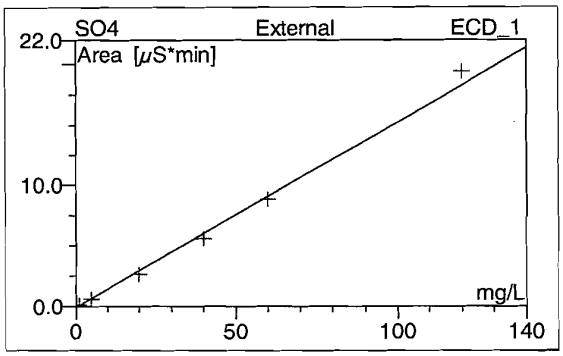

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	3.33	F	XLOff	6	99.9391	-0.0213	0.2934	0.0000
2	4.79	Cl	XLOff	6	99.8293	-0.0131	0.1957	0.0000
3	5.61	NO2-N	XLOff	6	99.8679	-0.0276	0.3208	0.0000
4	6.99	Br	XLOff	6	99.9649	-0.0042	0.0746	0.0000
5	7.76	NO3-N	XLOff	6	99.8014	-0.0254	0.4772	0.0000
6	12.50	SO4	XLOff	6	99.7491	-0.0819	0.1532	0.0000
Average:					99.8586	-0.0289	0.2525	0.0000

9 WG512538-07 SSCV

1,1 AED STD66517

Sample Name:	**WG512538-07 SSCV**	*Injection Volume:*	**25.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/17/2015 20:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

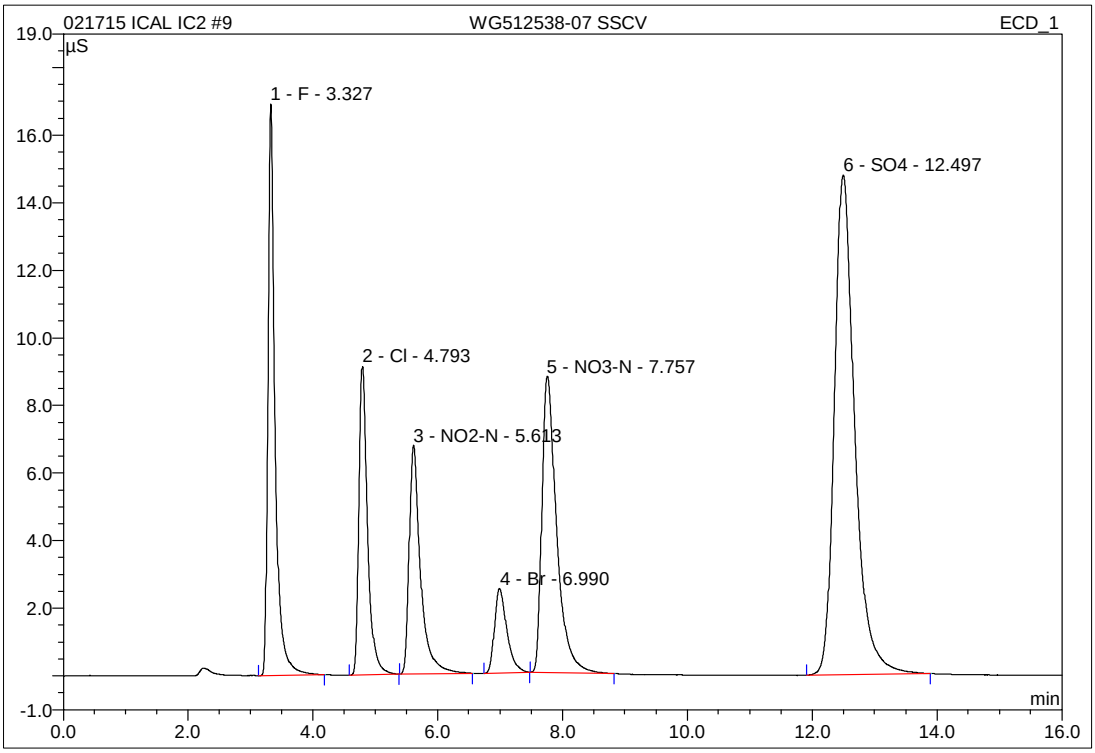

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.33	F	16.916	2.252	16.42	7.750	BMB
2	4.79	Cl	9.124	1.451	10.58	7.482	BMB
3	5.61	NO2-N	6.774	1.429	10.42	4.542	BMB
4	6.99	Br	2.505	0.576	4.20	7.784	BMB
5	7.76	NO3-N	8.772	2.399	17.49	5.081	BMB
6	12.50	SO4	14.787	5.608	40.89	37.144	BMB
Total:			58.877	13.716	100.00	69.783	

9 WG512538-07 SSCV

1,1 AED STD66517

Sample Name:	**WG512538-07 SSCV**	*Injection Volume:*	**25.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/17/2015 20:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG512538-07 SSC	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.7497	-3.13	PASS
Cl	8	7.4824	-6.47	PASS
NO2-N	4.8714	4.5416	-6.77	PASS
NO3-N	5.4216	5.0807	-6.29	PASS
Br	8	7.7844	-2.69	PASS
SO4	40	37.1444	-7.14	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

3 WG517030-01 Anion CCV

1,1 ALS STD69215 (_____ psi)

Sample Name:	**WG517030-01 Anion CCV**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2015 14:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

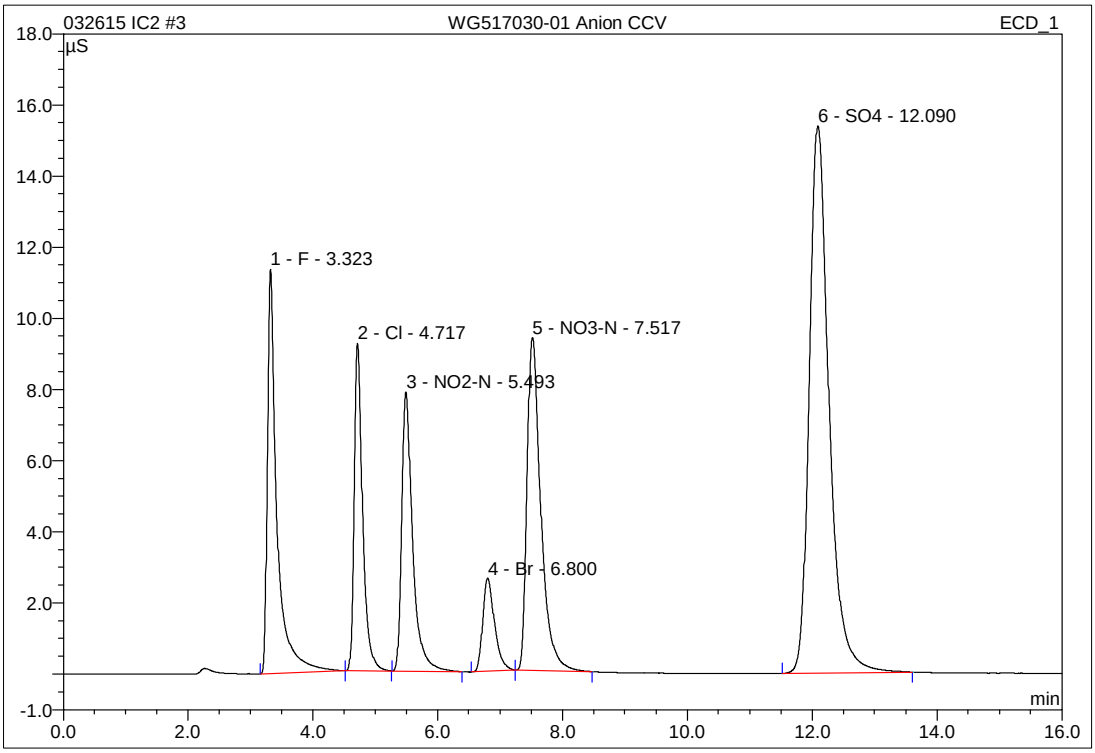

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.32	F	11.367	2.018	14.75	6.951	BMB
2	4.72	Cl	9.204	1.448	10.59	7.468	bMB
3	5.49	NO2-N	7.846	1.592	11.63	5.048	BMB
4	6.80	Br	2.615	0.575	4.20	7.765	BMB
5	7.52	NO3-N	9.362	2.402	17.56	5.086	BMB
6	12.09	SO4	15.386	5.645	41.27	37.385	BMB
Total:			55.780	13.679	100.00	69.703	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG517030-01 Anion CCV

1,1 ALS STD69215 (_____ psi)

Sample Name:	**WG517030-01 Anion CCV**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**3/26/2015 14:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG517030-01 Anic	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	6.9506	-13.12	FAIL
Cl	8	7.4684	-6.64	PASS
NO2-N	4.8714	5.0477	3.62	PASS
NO3-N	5.4216	5.0864	-6.18	PASS
Br	8	7.7646	-2.94	PASS
SO4	40	37.3855	-6.54	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

15 WG517030-03 Anion CCV

1,1 ALS STD69216

Sample Name:	**WG517030-03 Anion CCV**	*Injection Volume:*	**25.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2015 17:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

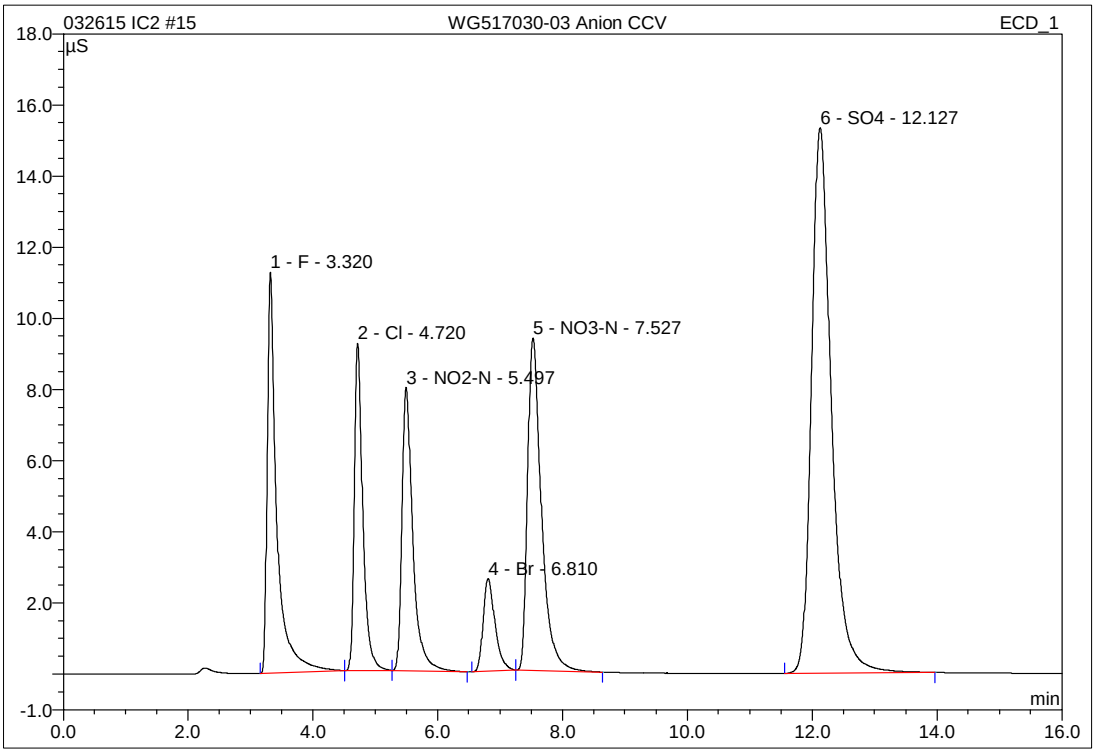

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.32	F	11.273	2.007	14.64	6.913	BMB
2	4.72	Cl	9.194	1.457	10.62	7.512	bMB
3	5.50	NO2-N	7.960	1.609	11.73	5.102	BMB
4	6.81	Br	2.605	0.574	4.19	7.749	BMB
5	7.53	NO3-N	9.336	2.407	17.55	5.097	BMB
6	12.13	SO4	15.332	5.659	41.27	37.480	BMB
Total:			55.700	13.713	100.00	69.854	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

15 WG517030-03 Anion CCV

1,1 ALS STD69216

Sample Name:	**WG517030-03 Anion CCV**	*Injection Volume:*	**25.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**3/26/2015 17:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG517030-03 Anic	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	6.9134	-13.58	FAIL
Cl	8	7.5119	-6.10	PASS
NO2-N	4.8714	5.1024	4.74	PASS
NO3-N	5.4216	5.0972	-5.98	PASS
Br	8	7.7495	-3.13	PASS
SO4	40	37.4796	-6.30	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

27 WG517030-05 Anion CCV

1,1 ALS STD69216

Sample Name:	**WG517030-05 Anion CCV**	*Injection Volume:*	**25.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2015 21:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

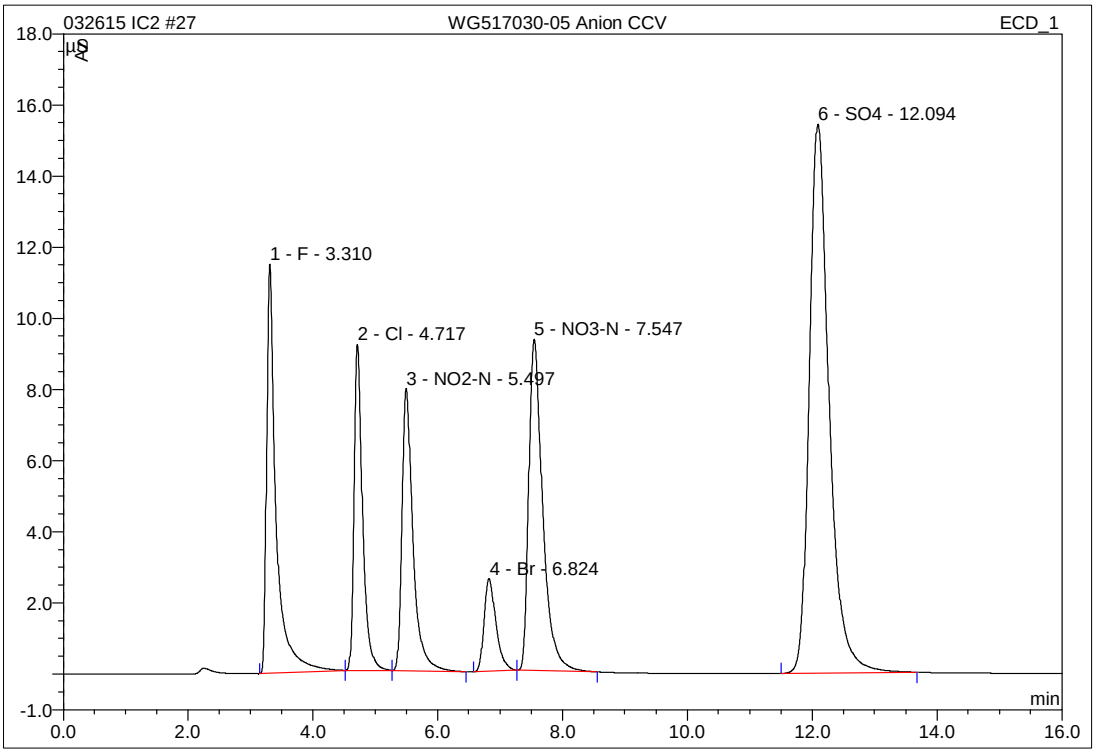

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.31	F	11.498	2.030	14.73	6.991	BMB
2	4.72	Cl	9.169	1.457	10.57	7.516	BMB
3	5.50	NO2-N	7.936	1.619	11.75	5.134	BMB
4	6.82	Br	2.602	0.577	4.19	7.791	BMb
5	7.55	NO3-N	9.305	2.415	17.52	5.114	bMB
6	12.09	SO4	15.423	5.685	41.25	37.650	BMB
Total:			55.934	13.783	100.00	70.196	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

27 WG517030-05 Anion CCV

1,1 ALS STD69216

Sample Name:	**WG517030-05 Anion CCV**	*Injection Volume:*	**25.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**3/26/2015 21:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG517030-05 Anic	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	6.9909	-12.61	FAIL
Cl	8	7.5159	-6.05	PASS
NO2-N	4.8714	5.1340	5.39	PASS
NO3-N	5.4216	5.1141	-5.67	PASS
Br	8	7.7906	-2.62	PASS
SO4	40	37.6504	-5.87	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

34 WG517030-07 Anion CCV

1,1 ALS STD69216

Sample Name:	**WG517030-07 Anion CCV**	*Injection Volume:*	**25.0**
Vial Number:	**39**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2015 23:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

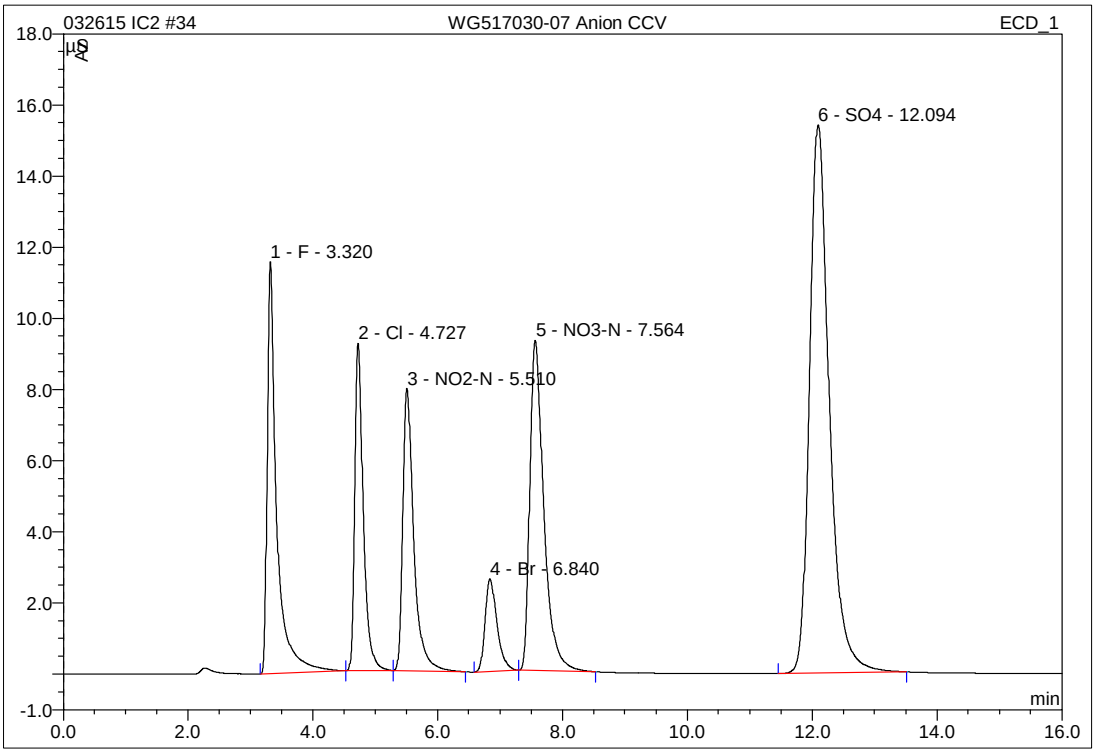

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.32	F	11.579	2.036	14.77	7.014	BMB
2	4.73	Cl	9.199	1.467	10.64	7.566	BMB
3	5.51	NO2-N	7.942	1.620	11.75	5.137	BMB
4	6.84	Br	2.599	0.577	4.19	7.791	BMb
5	7.56	NO3-N	9.280	2.414	17.51	5.112	bMB
6	12.09	SO4	15.411	5.670	41.13	37.552	BMB
Total:			56.010	13.785	100.00	70.171	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

34 WG517030-07 Anion CCV

1,1 ALS STD69216

Sample Name:	**WG517030-07 Anion CCV**	*Injection Volume:*	**25.0**
Vial Number:	**39**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**3/26/2015 23:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG517030-07 Anic	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.0136	-12.33	FAIL
Cl	8	7.5660	-5.42	PASS
NO2-N	4.8714	5.1367	5.45	PASS
NO3-N	5.4216	5.1123	-5.71	PASS
Br	8	7.7908	-2.62	PASS
SO4	40	37.5517	-6.12	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

4 WG517030-02 Anion CCB

1,1 ALS

Sample Name:	**WG517030-02 Anion CCB**	*Injection Volume:*	**25.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2015 14:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

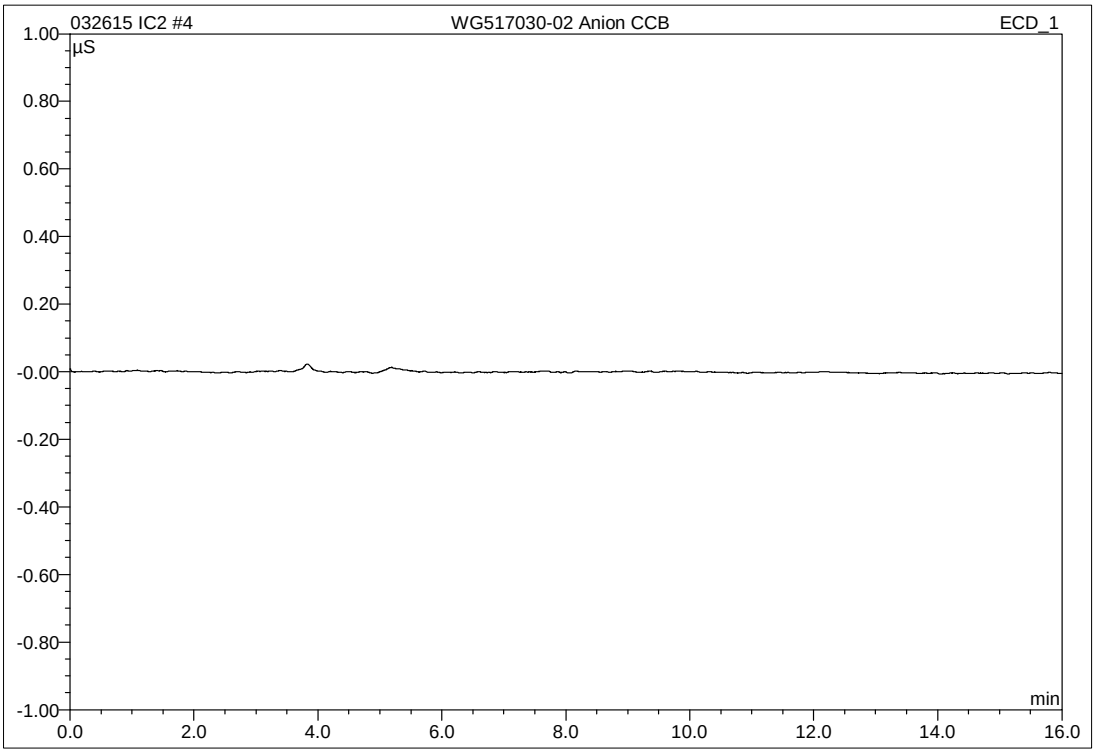

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

16 WG517030-04 Anion CCB

1,1 ALS

Sample Name:	**WG517030-04 Anion CCB**	*Injection Volume:*	**25.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2015 18:06**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

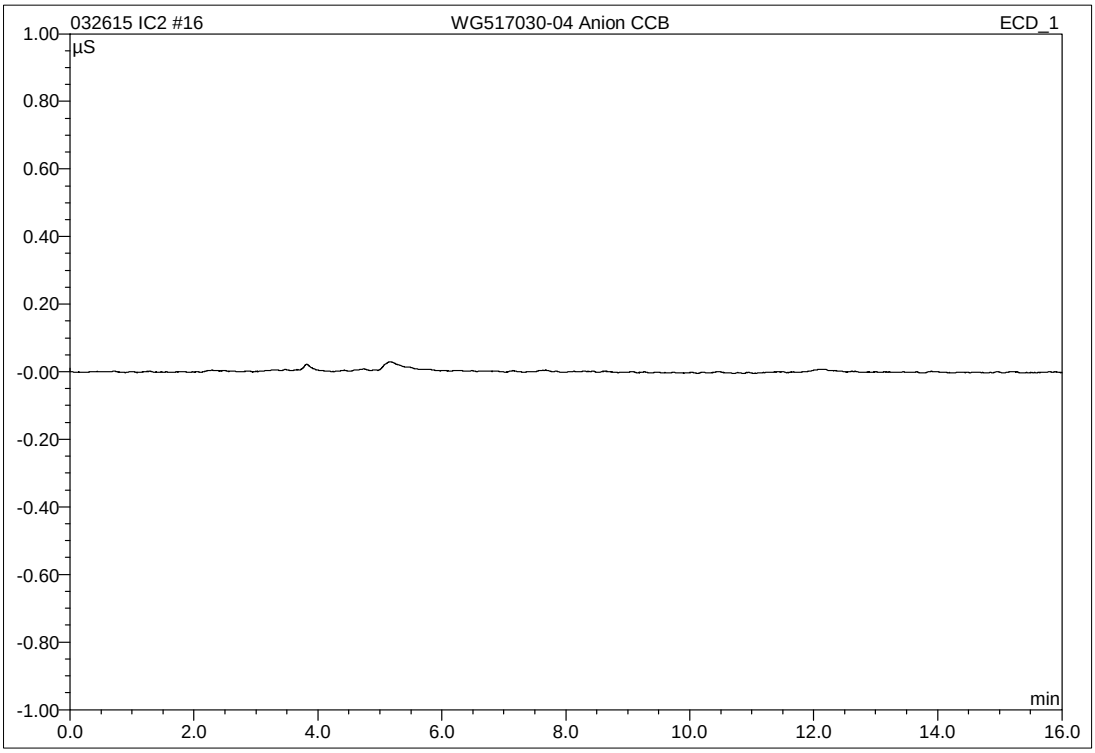

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

28 WG517030-06 Anion CCB

1,1 ALS

Sample Name:	**WG517030-06 Anion CCB**	*Injection Volume:*	**25.0**
Vial Number:	**28**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2015 21:44**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

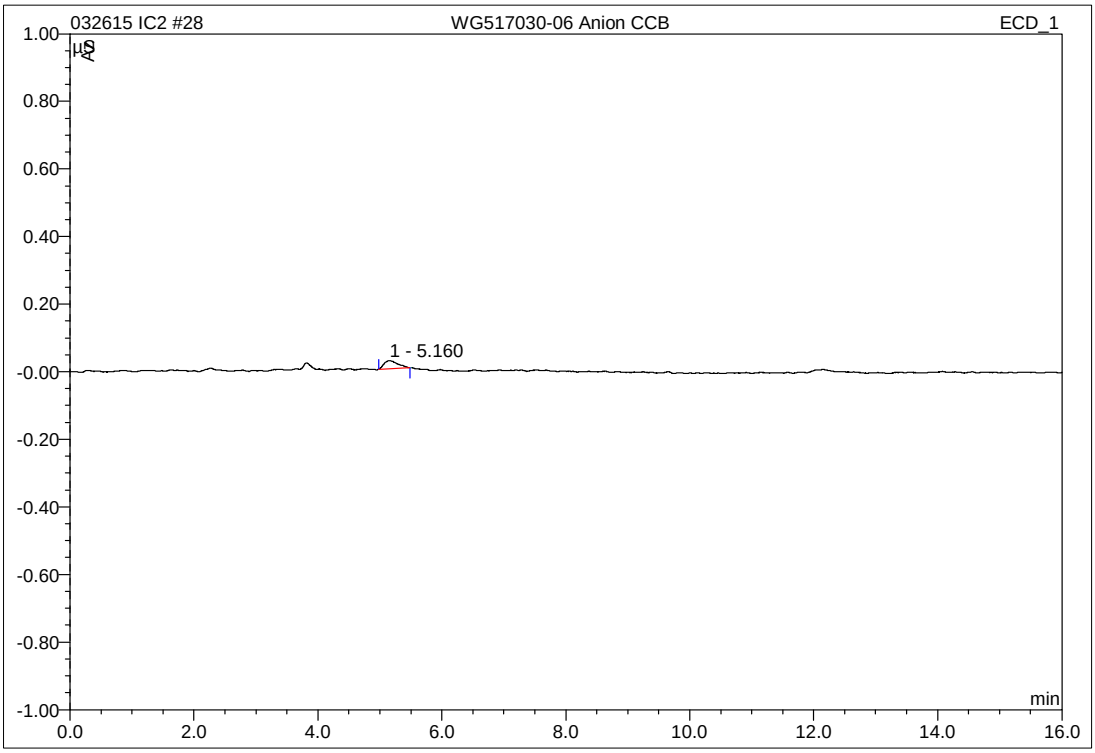

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	5.16	n.a.	0.024	0.006	100.00	n.a.	BMB
Total:			0.024	0.006	100.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

35 WG517030-08 Anion CCB

1,1 ALS

Sample Name:	**WG517030-08 Anion CCB**	*Injection Volume:*	**25.0**
Vial Number:	**40**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2015 23:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

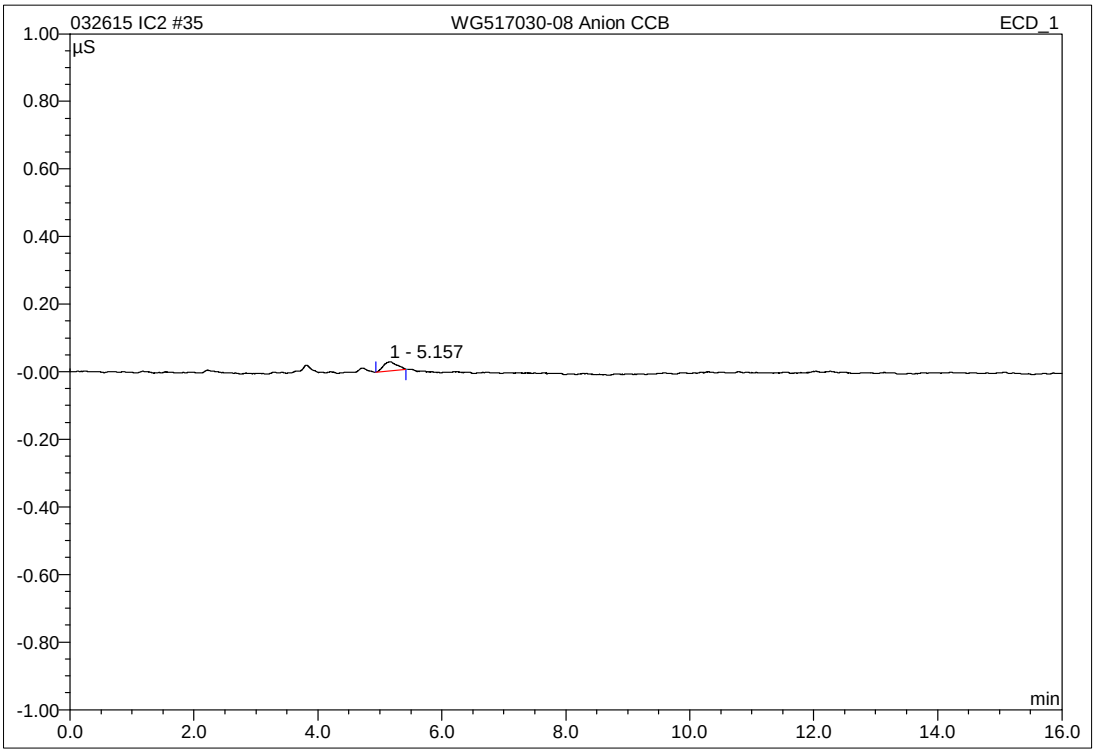

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	5.16	n.a.	0.026	0.007	100.00	n.a.	BMB
Total:			0.026	0.007	100.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/6/2013	6/6/2013	6/7/2013
File #	WG433163-01	WG433163-05	WG433448-01
Time	12:58	18:54	12:23

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.31	3.30	3.31	0.017
Cl	4.90	4.89	4.92	0.046
NO2-N	5.79	5.78	5.83	0.079
Br	7.34	7.31	7.43	0.187
NO3-N	8.21	8.18	8.32	0.221
SO4	13.74	13.74	13.67	0.121

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.2.1.5 Raw QC Data

5 WG517027-01 Anion Blank

1,1 ALS

Sample Name:	**WG517027-01 Anion Blank**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2015 14:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

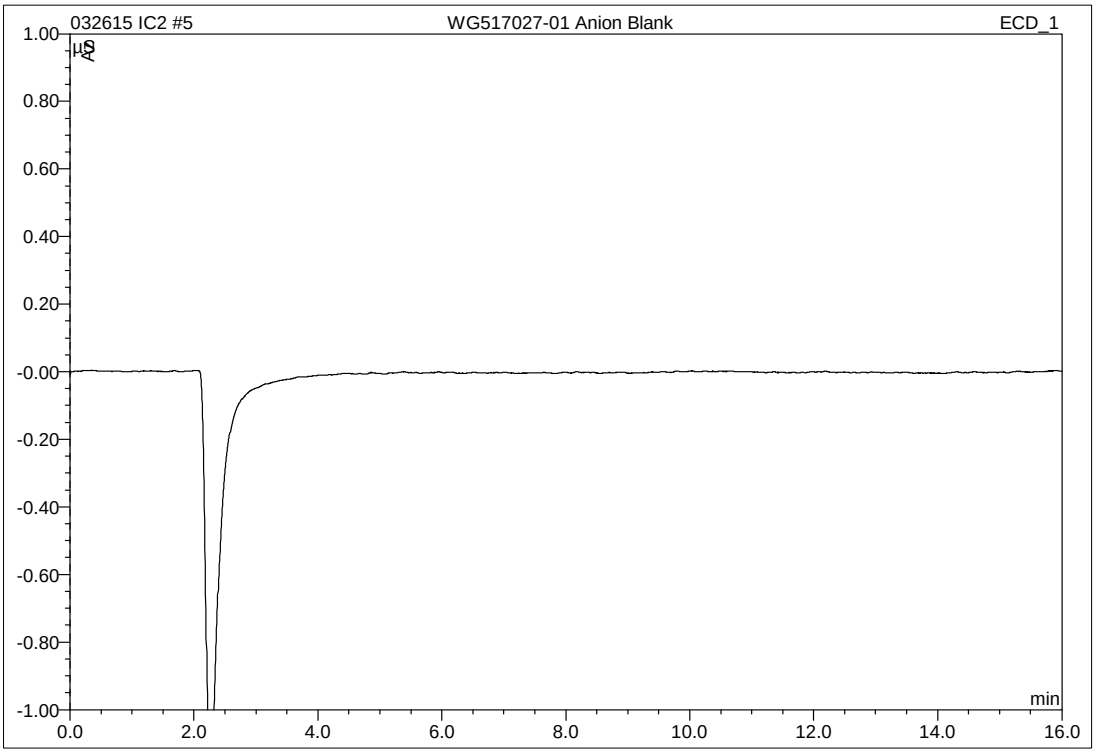

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

6 WG517027-02 Anion LCS

1,1 ALS STD69216

Sample Name:	**WG517027-02 Anion LCS**	*Injection Volume:*	**25.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2015 15:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

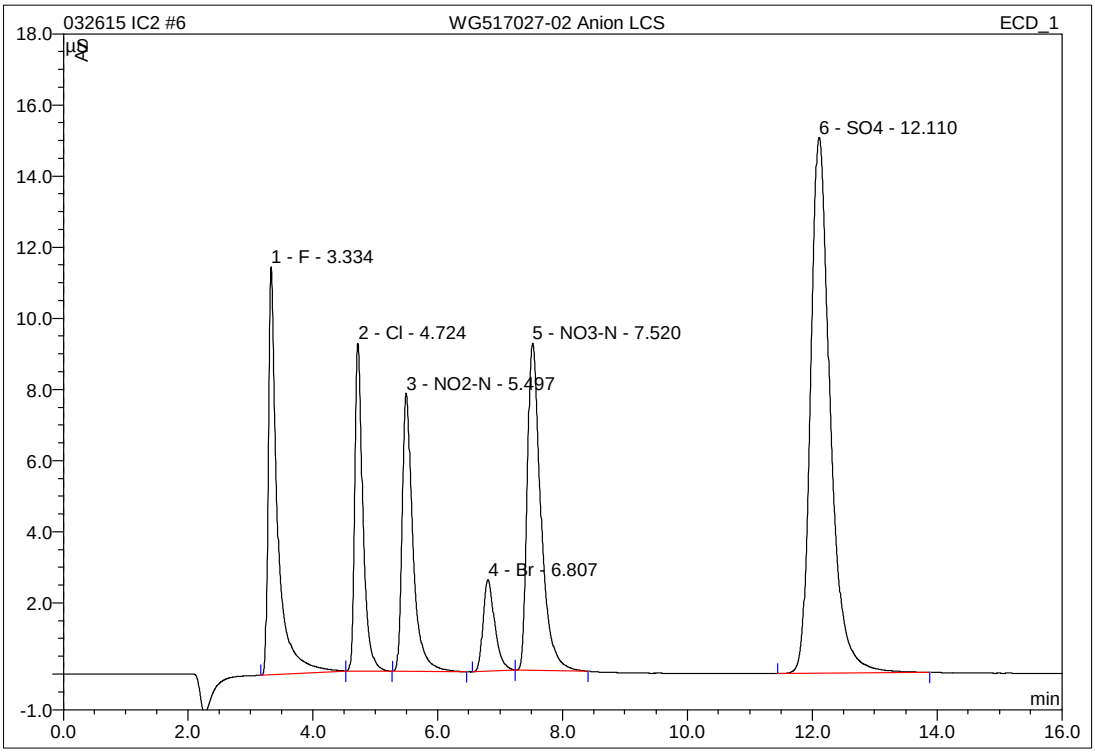

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.33	F	11.461	1.990	14.86	6.854	BMB
2	4.72	Cl	9.222	1.414	10.56	7.294	bMB
3	5.50	NO2-N	7.820	1.574	11.76	4.994	BMB
4	6.81	Br	2.581	0.561	4.19	7.579	BMb
5	7.52	NO3-N	9.196	2.334	17.43	4.944	bMB
6	12.11	SO4	15.063	5.519	41.21	36.563	BMB
Total:			55.342	13.392	100.00	68.229	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.2.2 Ferrous Iron Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15031486-01	**PrePrep Method:**	N/A	**Instrument:**	UV-2600
Client ID:	67WW13-032515	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	01/20/2015 08:00
Workgroup #:	WG517316	**Analyst:**	DCM	**Run Date:**	03/30/2015 10:15
Collect Date:	03/25/2015 14:10	**Dilution:**	1	**File ID:**	00.1503301015-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.0400	U	0.0400	0.0400	0.0200

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 30-MAR-2015
Analyst: DCM
Analyst: NA
Method: FERROUS IRON
Instrument: UV-2600
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG517316

Calibration/Linearity	01-20-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
30-MAR-2015

Secondary Reviewer:
31-MAR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-31-2015 10:39:52

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM3500Fe-B-1997 AAB#: WG517316

Login Number: L15031486

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW13-032515	01	03/25/15					03/30/2015	4.8	7		03/30/15	4.8	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4090707
Report generated 03/30/2015 16:59

METHOD BLANK SUMMARY

Login Number: L15031486
Blank File ID: 00.1503301015-02
Prep Date: 03/30/15 10:15
Analyzed Date: 03/30/15 10:15
Analyst: DCM

Work Group: WG517316
Blank Sample ID: WG517316-01
Instrument ID: UV-2600
Method: SM3500Fe-B-1997

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG517316-02	00.1503301015-03	03/30/15 10:15	
LCS2	WG517316-03	00.1503301015-04	03/30/15 10:15	
67WW13-032515	L15031486-01	00.1503301015-05	03/30/15 10:15	
DUP	WG517316-05	00.1503301015-06	03/30/15 10:15	
LCS	WG517316-07	00.1503301015-08	03/30/15 10:15	1
LCS	WG517316-08	00.1503301015-09	03/30/15 10:15	2

Report Name: BLANK_SUMMARY
PDF File ID: 4090708
Report generated 03/30/2015 16:59

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15031486 Prep Date: 03/30/15 10:15 Sample ID: WG517316-01
Instrument ID: UV-2600 Run Date: 03/30/15 10:15 Prep Method: SM3500Fe-B-1997
File ID: 00.1503301015-02 Analyst: DCM Method: SM3500Fe-B-1997
Workgroup (AAB#): WG517316 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-260 - 20-JAN-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Ferrous - Laboratory	0.0200	0.0400	0.0200	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4090709
30-MAR-2015 16:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15031486 Analyst: DCM Prep Method: SM3500Fe-B-1997
Instrument ID: UV-2600 Matrix: Water Method: SM3500Fe-B-1997
Workgroup (AAB#): WG517316 Units: mg/L
QC Key: DOD4 Lot #: STD67894

Sample ID: WG517316-02 LCS File ID: 00.1503301015-03 Run Date: 03/30/2015 10:15
Sample ID: WG517316-03 LCS2 File ID: 00.1503301015-04 Run Date: 03/30/2015 10:15

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Iron, Ferrous - Laboratory	0.200	0.201	100	0.200	0.218	109	8.10	75 - 125	25	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4090710
Report generated: 03/30/2015 16:59

2.2.2.3 Raw Data

WQ508791

Curves

Parameter: Ferrous Iron

Spectrophotometer: UV-2600

Calibration (Curve) standard stock: Std 67109

Concentration: 100 mg/L

Recipe for preparation of curve standards found in:
SOP: 3500 Revision: 7 Page: 8

Second Source Stock: Std 67894 (concentration: 100 mg/L)

Daily Preparation: 2(100)/1000

concentration = = 0.2

Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance
0	50	10cm	510	0.003
0.04				0.037
0.08				0.079
0.2				0.187
0.4				0.381
0.6				0.567
2nd Source	—	—	—	—
(20)				0.204

Analyst: Tommy Moore Date/Time: 1/20/15 @ 800

DCN#108031

Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG508791
Analytical Method: FERROUS
Instrument ID: UV-2600

Analyst: TMM
Initial Calibration Date: 01/20/2015

Analyte: FERROUS IRON
Number of Points: 6
Slope: 0.943516
Y-Intercept: 0.00142651
Coef. Of Correlation (R^2): 0.999893
Coef. Of Correlation (R): 0.999947

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00300	0.00	0.00	0.00142651
0.0400	0.0370	0.00160	0.00148	0.0391671
0.0800	0.0790	0.00640	0.00632	0.0769078
0.200	0.187	0.0400	0.0374	0.190130
0.400	0.381	0.160	0.152	0.378833
0.600	0.567	0.360	0.340	0.567536

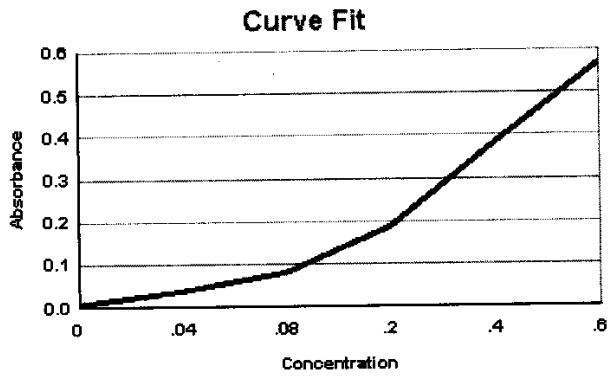

WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 01/20/2015 08:57

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG508791
File ID: 00.1501200800-07
CCV ID: WG508791-07
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-2600
Run Date: 01/20/2015
Run Time: 08:00
Analyst: TMM
Cal ID: UV-260 - 20-JAN-15 08:00:06

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.2	0.215	1.02	7.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 01/20/2015 08:57

[redacted]

WORKGROUP: WG517316

Ferrous Iron

SM 3500Fe-B

SOP K3500 Revision # 7

CCV: Std 67109
Daily Dilution: 3(100)/1000
Daily Dilution: = 0.3

LCS: Std 67894
Daily Dilution: 2(100)/1000
Daily Dilution: = 0.2

Instrument: ~~UV-120-IV~~ UV-2600

Curve Reference: 1/20/15

RGTS: 31812
RGTS: 32320
RGTS: 32723

Spike: Std 67894
Daily Dilution: 0.1(100)/50
Daily Dilution: = 0.2

Sample	Blank	Volume (mL)	Dilution	Cell Size (nm)	Absorbance
CCV: 0.3 mg/L		50		10	0.286
BLANK		50		10	0.000
LCS: 0.2 mg/L		50		10	0.191
LCS DUP: (0.2 mg/L)		50		10	0.207
03-1486-01		50		10	0.001
LCS		50		10	0.198
LCS		50		10	0.196
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
DUP: 03-1486-01		50		10	0.001
MS: ( ) 03-1486-01		50		10	0.212
MSD: ( )		50			
CCV:( ) 0.3		50		10	0.286

Analyst: David Merchle Date/Time: 3/30/15 1015

*Samples were analyzed in the laboratory and not immediately in the field.

DCN#109542

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG517316
Analyte: FERROUS IRON

Analyst: DCM
Date: 03/30/2015

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG517316-01	50	50	0	0.9435	0.001427	-0.0015119	-0.0015119	1	mg/L
WG517316-02	50	50	0.191	0.9435	0.001427	0.20092	0.20092	1	mg/L
WG517316-03	50	50	0.207	0.9435	0.001427	0.21788	0.21788	1	mg/L
L15031486-01	50	50	0.00100	0.9435	0.001427	-0.00045205	ND	1	mg/L
WG517316-04	50	50	0.00100	0.9435	0.001427	-0.00045205	-0.00045205	1	mg/L
WG517316-05	50	50	0.00100	0.9435	0.001427	-0.00045205	-0.00045205	1	mg/L
WG517316-06	50	50	0.212	0.9435	0.001427	0.22318	0.22318	1	mg/L
WG517316-07	50	50	0.198	0.9435	0.001427	0.20834	0.20834	1	mg/L
WG517316-08	50	50	0.196	0.9435	0.001427	0.20622	0.20622	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 03/30/2015 16:31

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG517415
File ID: 00.1503301015-01
CCV ID: WG517415-01
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-2600
Run Date: 03/30/2015
Run Time: 10:15
Analyst: DCM
Cal ID: UV-260 - 09-FEB-15

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.302	0.953	0.7	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 03/30/2015 16:30

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG517415
File ID: 00.1503301015-10
CCV ID: WG517415-02
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-2600
Run Date: 03/30/2015
Run Time: 10:15
Analyst: DCM
Cal ID: UV-260 - 09-FEB-15

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.302	0.953	0.7	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 03/30/2015 16:30

[redacted]

2.2.3 Sulfide Data

2.2.3.1 Summary Data

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15031486-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW13-032515	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG517498	**Analyst:**	TB	**Run Date:**	03/31/2015 12:45
Collect Date:	03/25/2015 14:10	**Dilution:**	1	**File ID:**	ET.1503311245-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.3.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 31-MAR-2015
Analyst: TB
Analyst: NA
Method: S
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG517498

Calibration/Linearity	03/31/2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TB
Secondary Reviewer	DIH
Comments	

Primary Reviewer: 01-APR-2015
Todd Boyle

Secondary Reviewer: 03-APR-2015
Donna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: APR-03-2015 10:14:59

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F-

AAB#: WG517498

Login Number: L15031486

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW13-032515	01	03/25/15					03/31/2015	5.9	7		03/31/15	5.9	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4095693
Report generated 04/02/2015 10:44

METHOD BLANK SUMMARY

Login Number: L15031486
Blank File ID: ET.1503311245-01
Prep Date: 03/31/15 12:45
Analyzed Date: 03/31/15 12:45
Analyst: TB

Work Group: WG517498
Blank Sample ID: WG517498-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG517498-02	ET.1503311245-02	03/31/15 12:45	
LCS2	WG517498-03	ET.1503311245-03	03/31/15 12:45	
67WW13-032515	L15031486-01	ET.1503311245-04	03/31/15 12:45	

Report Name: BLANK_SUMMARY
PDF File ID: 4095694
Report generated 04/02/2015 10:44

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15031486 Prep Date: 03/31/15 12:45 Sample ID: WG517498-01
Instrument ID: BURET Run Date: 03/31/15 12:45 Prep Method: SM4500-S-(-2)-F
File ID: ET.1503311245-01 Analyst: TB Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG517498 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4095695
02-APR-2015 10:44

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15031486 Analyst: TB Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG517498 Units: mg/L
QC Key: DOD4 Lot #: STD69593

Sample ID: WG517498-02 LCS File ID: ET.1503311245-02 Run Date: 03/31/2015 12:45
Sample ID: WG517498-03 LCS2 File ID: ET.1503311245-03 Run Date: 03/31/2015 12:45

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	20.8	20.8	100	20.8	20.8	100	0.00	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4095696
Report generated: 04/02/2015 10:44

2.2.3.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG517498

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: 17

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: STL 69593

Iodine standardization (0.025N) COA: 17891
mL 0.025N titrant: 10.0
Volume I: 10.0 mL
Normality I: 0.0250

(0.1 N I) COA: 18088
mL 0.025 N titrant: 8.0
Volume I: 2.0 mL
Normality I: 0.100

Stock standardization (in duplicate) 5.0 mL stock

mL I	1) 10.0	2) 10.0
N I	1) 0.100	2) 0.100
mL 0.025 titrant	1) 22.7	2) 22.7

LCS daily dilution: 3(1384)/200 = 20.76 mg/L

1384 = stock conc (mg/L)

Titrant: T- 1606-05-01

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	0.0250 N Sodium Thiosulfate (mL)
BLANK	200	15.0	0.0250	15.0
LCS (mL)	200	15.0	0.0250	4.6
LCSDUP (mL)	200	15.0	0.0250	4.6
3-1456-01	460	15.0	0.0250	14.7

Analyst: Frank Bayle Date/Time: 1245 3/31/15

DCN#109577

Microbac Laboratories Inc.

TITRAMETRIC REPORT

Workgroup (AAB#): WG517498

Product: EPA 376.1\9034

Analyte: Sulfide

Analyst: TB

Run Date: 03/31/2015 12:45

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG517498-01	200.0	15	.025	15	.025	1	0	0	mg/L
WG517498-02	200.0	15	.025	4.6	.025	1	20.8	20.80	mg/L
WG517498-03	200.0	15	.025	4.6	.025	1	20.8	20.80	mg/L
L15031486-01	460.0	15	.025	14.7	.025	1	0.261	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 04/02/2015 10:37

[redacted]

2.2.4 Total Organic Carbon Data

2.2.4.1 Summary Data

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15031486-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW13-032515	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG517282	**Analyst:**	EPT	**Run Date:**	03/31/2015 09:52
Collect Date:	03/25/2015 14:10	**Dilution:**	10	**File ID:**	TC03302015.062
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		144		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L15031486-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW13-032515	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG517282	**Analyst:**	EPT	**Run Date:**	03/31/2015 09:52
Collect Date:	03/25/2015 14:10	**Dilution:**	10	**File ID:**	TC03302015.062
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	16.8	J	20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15031486
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.4.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 30-MAR-2015
Analyst: EPT
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG517280 WG517282

Calibration/Linearity	7/16/14
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
31-MAR-2015
Ethan Tido

Secondary Reviewer:
31-MAR-2015
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-31-2015 13:47:34

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG517282

Login Number: L15031486

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW13-032515	01	03/25/15					03/31/2015	5.8	28		03/31/15	5.8	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4092612
Report generated 03/31/2015 13:45

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG517282

Login Number: L15031486

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW13-032515	01	03/25/15					03/31/2015	5.8	28		03/31/15	5.8	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4092608
Report generated 03/31/2015 13:45

METHOD BLANK SUMMARY

Login Number: L15031486
Blank File ID: TC03302015.031
Prep Date: 03/30/15 23:03
Analyzed Date: 03/30/15 23:03
Analyst: EPT

Work Group: WG517282
Blank Sample ID: WG517282-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG517282-02	TC03302015.032	03/30/15 23:22	01
LCS2	WG517282-03	TC03302015.033	03/30/15 23:45	01
DUP	WG517282-05	TC03302015.057	03/31/15 07:50	01
67WW13-032515	L15031486-01	TC03302015.062	03/31/15 09:52	DL01
67WW13-032515	L15031486-01	TC03302015.062	03/31/15 09:52	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4092613
Report generated 03/31/2015 13:45

METHOD BLANK SUMMARY

Login Number: L15031486
Blank File ID: TC03302015.031
Prep Date: 03/30/15 23:03
Analyzed Date: 03/30/15 23:03
Analyst: EPT

Work Group: WG517282
Blank Sample ID: WG517282-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG517282-02	TC03302015.032	03/30/15 23:22	01
LCS2	WG517282-03	TC03302015.033	03/30/15 23:45	01
DUP	WG517282-05	TC03302015.057	03/31/15 07:50	01
67WW13-032515	L15031486-01	TC03302015.062	03/31/15 09:52	DL01
67WW13-032515	L15031486-01	TC03302015.062	03/31/15 09:52	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4092609
Report generated 03/31/2015 13:45

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number:	L15031486	Prep Date:	03/30/15 23:03	Sample ID:	WG517282-01
Instrument ID:	TOC-VWP	Run Date:	03/30/15 23:03	Prep Method:	415.1
File ID:	TC03302015.031	Analyst:	EPT	Method:	415.1
Workgroup (AAB#):	WG517282	Matrix:	Water	Units:	mg/L
Contract #:		Cal ID:	TOC-VW-16-JUL-14		

Report Name:BLANK
PDF ID: 4092614
31-MAR-2015 13:45

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15031486 Prep Date: 03/30/15 23:03 Sample ID: WG517282-01
Instrument ID: TOC-VWP Run Date: 03/30/15 23:03 Prep Method: 415.1
File ID: TC03302015.031 Analyst: EPT Method: 415.1
Workgroup (AAB#): WG517282 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-16-JUL-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4092610
31-MAR-2015 13:45

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4092615
Report generated: 03/31/2015 13:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15031486 Analyst: EPT Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG517282 Units: mg/L
QC Key: DOD4 Lot #: STD67086

Sample ID: WG517282-02 LCS File ID: TC03302015.032 Run Date: 03/30/2015 23:22
Sample ID: WG517282-03 LCS2 File ID: TC03302015.033 Run Date: 03/30/2015 23:45

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	26.5	106	25.0	26.6	106	0.490	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4092611
Report generated: 03/31/2015 13:45

2.2.4.3 Raw Data

TC/TIC Curves wg484708

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): see below (5/200)(1000) = 25mg/L

MS (TOC): _____

Calibration Curve Date: _____

Reagent: 30583 / 30943

☒ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 16

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

- ☑ drain reservoir filled
- ☑ ASI water bottle full
- ☑ dilution water bottle full
- ☑ 3rd bottle full
- ☑ sufficient gas
- ☑ sufficient persulfate
- ☑ sufficient acid
- ☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC Curve		27	Std 65368		52		
3	TC ICV		28			53	see SOP	
4	TIC ICV		29	TIC Curve		54	for curve	
5			30	Std 65406		55	points	
6			31			56		
7			32			57		
8			33	TC ICV		58	ept 7/16/14	
9			34	Std 63965		59	~~5/200~~ 5/200	(1000)
10			35			60		=25mg/L
11			36	TIC ICV		61		
12			37	Std 65405		62		
13			38			63		
14	all points		39	analyzed	in	64	duplicate	
15			40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: Ethan Todd / Deanne Hesson

Date/Time: 07/16/14 0930 + 7/17

DCN#103908

C:\TOC3201\Data\07-16-2014-DIH-CURVE.t32

	Anal	Sample Name	Result	Status	Date / Time
1	TC	TCCURVE		Completed	7/16/2014 12:06:36 PM
2	TC	TC ICV	TC:24.54mg/L	Completed	7/16/2014 1:33:15 PM
3	IC	TICCURVE		Completed	7/17/2014 12:33:06 PM
4	IC	TIC ICV	IC:25.59mg/L	Completed	7/17/2014 12:47:00 PM

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-07-16-2014.2014_07_16_11_05_11.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	5.492	500uL	1	*******		7/16/2014 11:08:39 AM
2	4.691	500uL	1	*******		7/16/2014 11:12:03 AM

Acid Add. 0.000%
Mean Area 5.091

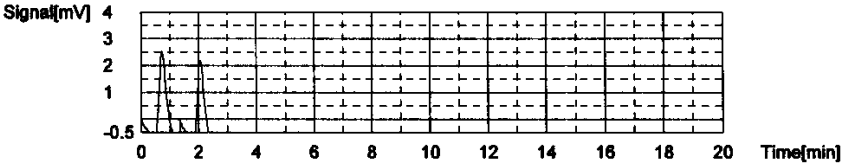

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	51.17	500uL	1	*******		7/16/2014 11:17:40 AM
2	51.30	500uL	1	*******		7/16/2014 11:21:41 AM

Acid Add. 0.000%
Mean Area 51.23

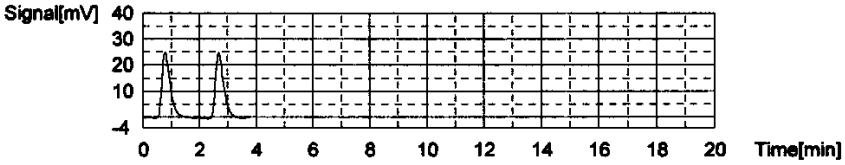

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	184.4	500uL	1	*******		7/16/2014 11:27:31 AM
2	188.1	500uL	1	*******		7/16/2014 11:31:40 AM

Acid Add. 0.000%
Mean Area 186.3

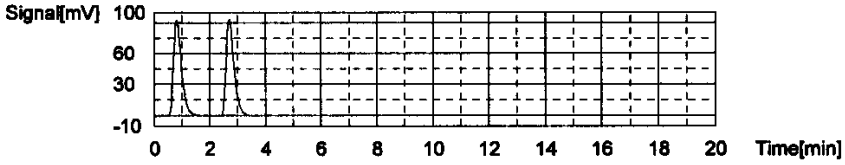

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	371.5	500uL	1	*******		7/16/2014 11:37:40 AM
2	397.8	500uL	1	*******		7/16/2014 11:42:09 AM

Acid Add. 0.000%
Mean Area 384.6

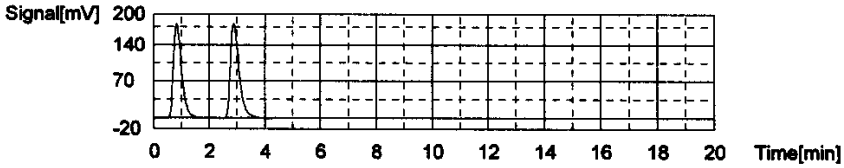

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	928.1	500uL	1	*******		7/16/2014 11:48:37 AM
2	992.4	500uL	1	*******		7/16/2014 11:53:28 AM

Acid Add. 0.000%
Mean Area 960.3

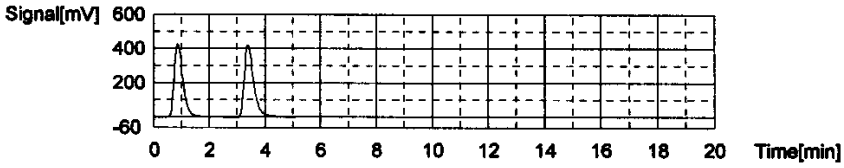

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1809	500uL	1	*******		7/16/2014 12:00:11 PM
2	2029	500uL	1	*******		7/16/2014 12:06:36 PM

Acid Add. 0.000%
Mean Area 1919

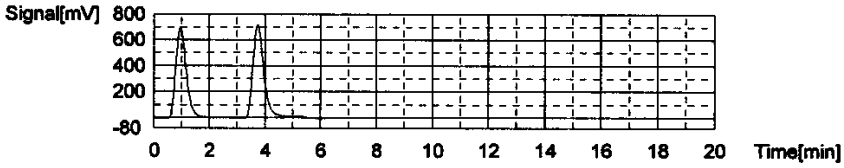

Slope: 38.27
Intercept 3.929
r^2 0.999938 ✓
Zero Shift No

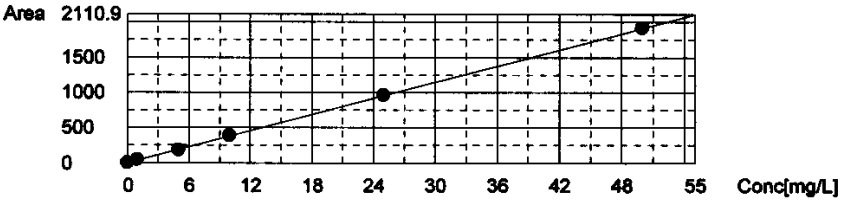

Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-07-16-2014.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:24.54mg/L

= 98%

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	966.9	25.16mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/16/2014 1:28:24 PM
2	919.5	23.92mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/16/2014 1:33:15 PM

Mean Area 943.2
Mean Conc. 24.54mg/L

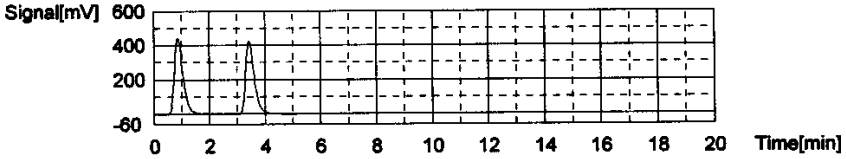

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-A-07-17-2014.2014_07_17_11_16_59.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	7.193	500uL	1	*******		7/17/2014 11:21:04 AM
2	6.644	500uL	1	*******		7/17/2014 11:25:12 AM

Acid Add. 10.00%
Mean Area 6.918

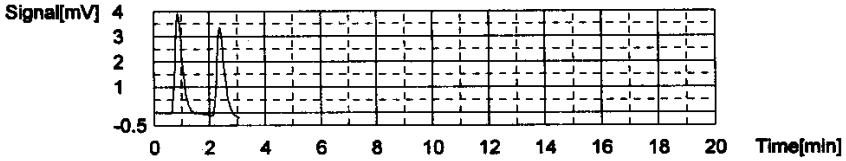

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	49.75	500uL	1	*******		7/17/2014 11:32:57 AM
2	50.58	500uL	1	*******		7/17/2014 11:37:28 AM

Acid Add. 10.00%
Mean Area 50.17

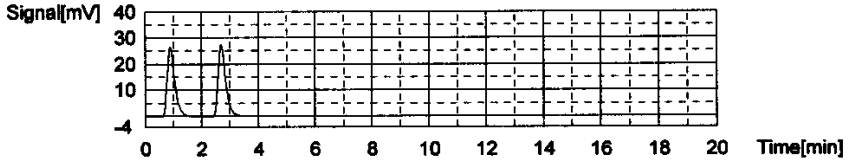

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	98.15	500uL	1	*******		7/17/2014 11:46:02 AM
2	158.0	500uL	1	*******		7/17/2014 11:50:52 AM

Acid Add. 10.00%
Mean Area 128.1

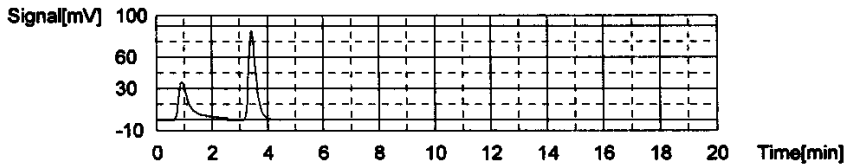

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	313.9	500uL	1	*******		7/17/2014 11:59:03 AM
2	314.5	500uL	1	*******		7/17/2014 12:04:02 PM

Acid Add. 10.00%
Mean Area 314.2

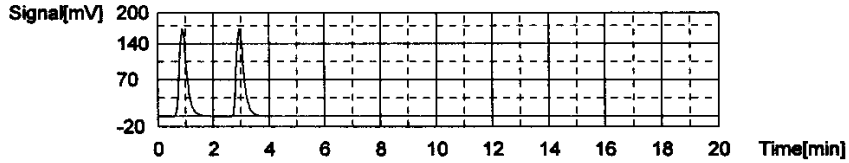

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	774.3	500uL	1	*******		7/17/2014 12:12:42 PM
2	781.8	500uL	1	*******		7/17/2014 12:17:58 PM

Acid Add. 10.00%
Mean Area 778.1

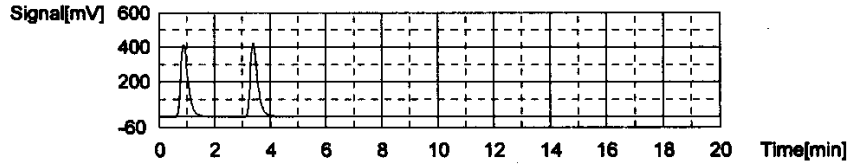

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1490	500uL	1	*******		7/17/2014 12:27:11 PM
2	1503	500uL	1	*******		7/17/2014 12:33:06 PM

Acid Add. 10.00%
Mean Area 1497

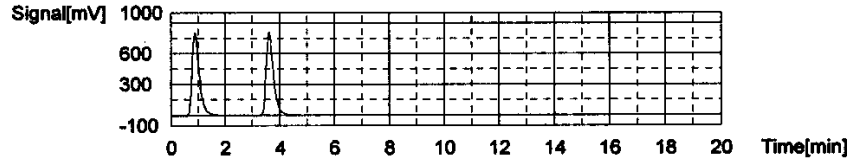

Slope: 29.95
Intercept 8.025
r^2 0.999041 ✓
Zero Shift No

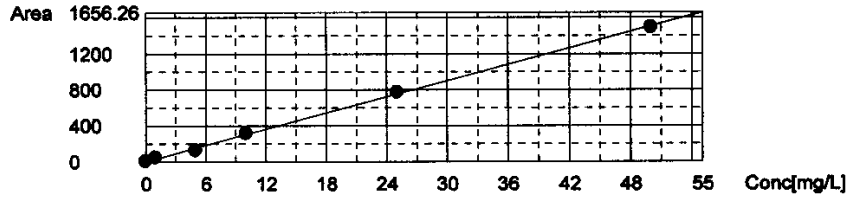

Sample

Sample Name: TIC ICV
Sample ID: Untitled
Origin: TICCURVE-A-07-17-2014.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:25.59mg/L

=102%

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	775.9	25.64mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/17/2014 12:41:44 PM
2	773.4	25.55mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/17/2014 12:47:00 PM

Mean Area 774.7
Mean Conc. 25.59mg/L

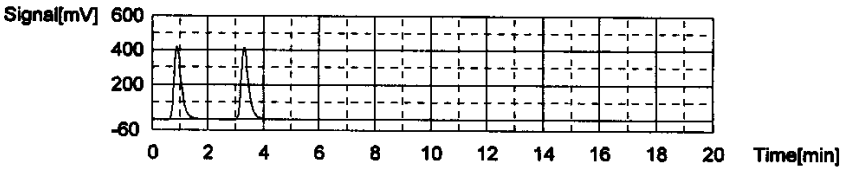

WORKGROUP: WG517280 WG 517282

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 65368 (5/200)(1000) = 25mg/L

LCS (TOC): Std 67086 Std 68222 (5/200)(1000) = 25mg/L

CCV (TIC): Std 68222 (5/200)(1000) = 25mg/L

MS (TOC): Std 67086 (.4)(1000)/40=10

Calibration Curve Date: 7/16/14

Reagent: 33065 32721

☒ SM5310-C : Matrix 2 WG 517280

☐ EPA 415.1/9060A(mod): Matrix 1 WG _____ SOP: K 4151 Rev. 17

Matrix 2 WG 517282 Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☒ drain reservoir filled
☒ ASI water bottle full
☒ dilution water bottle full
☒ 3rd bottle full
☒ sufficient gas
☒ sufficient persulfate
☒ sufficient acid
☒ waste container

Position	Sample ID	Dilution
1	TIC	
2	CCV	
3	BLK	
4	LCS	
5	LCSDUP	
6	03-1421-01	1/10
7	03-1422-01	
8	03-1492-01	
9	-02	
10	03-1496-01	
11	-02	
12	-03	
13	-04	
14	CCV	
15	CCB	
16	-05	
17	-06	
18	03-1497-01	
19	03-1498-01	
20	-02	
21	-03	
22	-04	
23	-05	
24	-06	
25	03-1499-01 ~~-07~~	

Position	Sample ID	Dilution
26	CCV	
27	CCB	
28	03-1499-02	
29	DUP 1422-01	
30	MS 1422-01	
31	BLK	
32	LCS	
33	LCSDUP	
34	03-1404-01	
35	-02	
36	-03	
* 37	03-1486-01	
38	CCV	
39	CCB	
40	03-1499-03	
41	-04	
42	03-1590-01	
43	-02	
44	-03	
45	-04	
46	03-1591-01	
47	-02	
48	-03	
49	-04	
50	~~03-1593-01~~ CCV	

ept 3/30/15

Position	Sample ID	Dilution
51	CCB	
52	03-1593-01	
53	-02	
54	03-1594-01	
55	03-1600-01	
56	-02	
57	DUP 1600-02	
58	MS 1600-02	
59	~~CCV~~ 1421-01	1/50
60	~~1498-05 CCV~~ 1485-05	1/2
61	~~1498-06~~ 1485-06	1/2
62	03-1486-01	1/10
63	03-1593-01	~~1/5~~ 1/20
64	CCV	
65	CCB	
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		

ept 3/30/15
1498-05
1498-06

Analyst: Erin Todd Date/Time: 03/30/15 0945

* TIC, included result

DCN#109537

C:\TOC3201\Data\03-30-2015-EPT-TOC.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	TOC:0.8164mg/L TC:24.84mg/L IC:24.02mg/L	Complete	3/30/2015 9:58:36 AM	1
2	TOC	CCV	!!Error!! TOC:24.32mg/L TC:24.28mg/L IC:-0.03778mg/L	Complete	3/30/2015 10:11:22 AM	2
3	TOC	WG517280-01 BLK	TOC:0.1409mg/L TC:0.1769mg/L IC:0.03603mg/L	Complete	3/30/2015 10:28:06 AM	0
4	TOC	WG517280-02 LCS	TOC:27.56mg/L TC:44.88mg/L IC:17.32mg/L	Complete	3/30/2015 10:52:19 AM	4
5	TOC	WG517280-03 LCSDUP	TOC:28.26mg/L TC:44.28mg/L IC:16.02mg/L	Complete	3/30/2015 1:51:13 PM	5
6	TOC		TOC:106.1mg/L TC:107.9mg/L IC:1.807mg/L	Complete	3/30/2015 2:19:21 PM	6
7	TOC	L15031422-01	TOC:0.4176mg/L TC:0.4328mg/L IC:0.01527mg/L	Complete	3/30/2015 2:39:00 PM	7
8	TOC	L15031492-01	TOC:5.313mg/L TC:9.147mg/L IC:3.833mg/L	Complete	3/30/2015 3:00:41 PM	8
9	TOC	L15031492-02	TOC:9.441mg/L TC:22.07mg/L IC:12.63mg/L	Complete	3/30/2015 3:25:07 PM	9
10	TOC	L15031496-01	TOC:6.359mg/L TC:12.38mg/L IC:6.022mg/L	Complete	3/30/2015 3:47:29 PM	10
11	TOC	L15031496-02	TOC:3.353mg/L TC:8.612mg/L IC:5.259mg/L	Complete	3/30/2015 4:09:11 PM	11
12	TOC	L15031496-03	TOC:2.426mg/L TC:5.840mg/L IC:3.414mg/L	Complete	3/30/2015 4:30:28 PM	12
13	TOC	L15031496-04	TOC:3.916mg/L TC:8.773mg/L IC:4.857mg/L	Complete	3/30/2015 4:58:11 PM	13
14	TOC	CCV	TOC:27.34mg/L TC:27.36mg/L IC:0.01911mg/L	Complete	3/30/2015 5:11:24 PM	14
15	TOC	CCB	TOC:0.1850mg/L TC:0.2083mg/L IC:0.02328mg/L	Complete	3/30/2015 5:20:32 PM	0
16	TOC	L15031496-05	TOC:4.087mg/L TC:8.902mg/L IC:4.815mg/L	Complete	3/30/2015 5:42:04 PM	16
17	TOC	L15031496-06	TOC:2.745mg/L TC:5.678mg/L IC:2.933mg/L	Complete	3/30/2015 6:03:21 PM	17
18	TOC	L15031497-01	TOC:23.11mg/L TC:24.26mg/L IC:1.148mg/L	Complete	3/30/2015 6:30:01 PM	18
19	TOC	L15031498-01	TOC:31.86mg/L TC:45.96mg/L IC:14.10mg/L	Complete	3/30/2015 6:58:31 PM	19
20	TOC	L15031498-02	TOC:31.53mg/L TC:44.81mg/L IC:13.28mg/L	Complete	3/30/2015 7:24:43 PM	20
21	TOC	L15031498-03	TOC:31.05mg/L TC:41.48mg/L IC:10.43mg/L	Complete	3/30/2015 7:52:08 PM	21
22	TOC	L15031498-04	TOC:33.42mg/L TC:43.19mg/L IC:9.769mg/L	Complete	3/30/2015 8:16:47 PM	22
23	TOC		TOC:53.44mg/L TC:54.22mg/L IC:0.7782mg/L	Complete	3/30/2015 8:44:15 PM	23
24	TOC	L1499-01	TOC:53.20mg/L TC:53.99mg/L IC:0.7939mg/L	Complete	3/30/2015 9:11:57 PM	24
25	TOC	L15031~~498-07~~	TOC:5.201mg/L TC:5.698mg/L IC:0.4963mg/L	Complete	3/30/2015 9:34:13 PM	25
26	TOC	CCV	!!Error!! TOC:28.05mg/L TC:28.04mg/L IC:-0.00934mg/L	Complete	3/30/2015 9:47:43 PM	26
27	TOC	CCB	TOC:0.1608mg/L TC:0.1777mg/L IC:0.01694mg/L	Complete	3/30/2015 9:56:49 PM	0
28	TOC	L15031499-02	TOC:5.193mg/L TC:5.597mg/L IC:0.4045mg/L	Complete	3/30/2015 10:18:05 PM	28
29	TOC	WG517280-05 DUP	!!Error!! TOC:0.3738mg/L TC:0.3460mg/L IC:-0.02780mg/	Complete	3/30/2015 10:37:30 PM	29
30	TOC	WG517280-06 MS	!!Error!! TOC:10.89mg/L TC:10.86mg/L IC:-0.02795mg/L	Complete	3/30/2015 10:58:11 PM	30
31	TOC	WG517282-01 BLK	TOC:0.1520mg/L TC:0.1658mg/L IC:0.01378mg/L	Complete	3/30/2015 11:14:47 PM	0
32	TOC	WG517282-02 LCS	TOC:26.49mg/L TC:29.37mg/L IC:2.883mg/L	Complete	3/30/2015 11:37:11 PM	32
33	TOC	WG517282-03 LCSDUP	TOC:26.62mg/L TC:28.96mg/L IC:2.345mg/L	Complete	3/30/2015 11:59:28 PM	33
34	TOC	L15031404-01	TOC:5.217mg/L TC:7.973mg/L IC:2.757mg/L	Complete	3/31/2015 12:21:52 AM	34
35	TOC	L15031404-02	TOC:6.154mg/L TC:6.834mg/L IC:0.6806mg/L	Complete	3/31/2015 12:42:49 AM	35
36	TOC	L15031404-03	TOC:2.962mg/L TC:3.789mg/L IC:0.8275mg/L	Complete	3/31/2015 1:04:35 AM	36
37	TOC		!!Error!! TOC:-1.353mg/L TC:77.54mg/L IC:78.89mg/L	Complete	3/31/2015 1:34:39 AM	37
38	TOC	CCV	TOC:24.43mg/L TC:24.79mg/L IC:0.3641mg/L	Complete	3/31/2015 1:47:17 AM	38
39	TOC	CCB	TOC:0.1275mg/L TC:0.1981mg/L IC:0.07062mg/L	Complete	3/31/2015 1:56:19 AM	0
40	TOC	L15031499-03	TOC:7.871mg/L TC:9.725mg/L IC:1.854mg/L	Complete	3/31/2015 2:18:28 AM	40
41	TOC	L15031499-04	TOC:4.473mg/L TC:5.698mg/L IC:1.225mg/L	Complete	3/31/2015 2:39:53 AM	41
42	TOC	L15031590-01	TOC:5.181mg/L TC:5.527mg/L IC:0.3459mg/L	Complete	3/31/2015 3:02:03 AM	42
43	TOC	L15031590-02	TOC:2.697mg/L TC:3.239mg/L IC:0.5424mg/L	Complete	3/31/2015 3:23:30 AM	43
44	TOC	L15031590-03	TOC:1.154mg/L TC:1.472mg/L IC:0.3182mg/L	Complete	3/31/2015 3:43:37 AM	44
45	TOC	L15031590-04	TOC:0.7299mg/L TC:1.888mg/L IC:1.158mg/L	Complete	3/31/2015 4:03:53 AM	45
46	TOC	L15031591-01	TOC:0.7059mg/L TC:1.321mg/L IC:0.6151mg/L	Complete	3/31/2015 4:24:02 AM	46
47	TOC	L15031591-02	TOC:1.658mg/L TC:3.128mg/L IC:1.470mg/L	Complete	3/31/2015 4:44:37 AM	47
48	TOC	L15031591-03	TOC:1.592mg/L TC:2.342mg/L IC:0.7497mg/L	Complete	3/31/2015 5:05:20 AM	48
49	TOC	L15031591-04	TOC:0.7501mg/L TC:0.8965mg/L IC:0.1464mg/L	Complete	3/31/2015 5:25:08 AM	49
50	TOC	CCV	!!Error!! TOC:25.15mg/L TC:25.14mg/L IC:-0.01481mg/L	Complete	3/31/2015 5:37:39 AM	50
51	TOC	CCB	TOC:0.1488mg/L TC:0.1649mg/L IC:0.01614mg/L	Complete	3/31/2015 5:46:41 AM	0
52	TOC		TOC:35.73mg/L TC:58.38mg/L IC:22.66mg/L	Complete	3/31/2015 6:16:06 AM	52
53	TOC	L15031593-02	TOC:6.565mg/L TC:8.001mg/L IC:1.436mg/L	Complete	3/31/2015 6:38:07 AM	53
54	TOC	L15031594-01	TOC:39.35mg/L TC:41.21mg/L IC:1.859mg/L	Complete	3/31/2015 7:04:52 AM	54
55	TOC	L15031600-01	!!Error!! TOC:0.5255mg/L TC:0.5072mg/L IC:-0.01833mg/	Complete	3/31/2015 7:24:20 AM	55
56	TOC	L15031600-02	!!Error!! TOC:0.4988mg/L TC:0.4754mg/L IC:-0.02341mg/	Complete	3/31/2015 7:43:39 AM	56
57	TOC	WG517282-05 DUP	!!Error!! TOC:0.4821mg/L TC:0.4587mg/L IC:-0.02344mg/	Complete	3/31/2015 8:03:17 AM	57
58	TOC	WG517282-06 MS	!!Error!! TOC:10.20mg/L TC:10.18mg/L IC:-0.02139mg/L	Complete	3/31/2015 8:23:45 AM	58
59	TOC	L15031421-01 (50)	TOC:16.76mg/L TC:16.78mg/L IC:0.02138mg/L	Complete	3/31/2015 8:46:45 AM	59
60	TOC	L15031~~496~~-05 (2) L1498-05	TOC:30.51mg/L TC:31.88mg/L IC:1.365mg/L	Complete	3/31/2015 9:19:35 AM	60
61	TOC	L15031~~496~~-06 (2) L1498-06	TOC:28.39mg/L TC:30.11mg/L IC:1.727mg/L	Complete	3/31/2015 9:45:05 AM	61
62	TOC	L15031486-01 (10)	TOC:1.683mg/L TC:16.05mg/L IC:14.37mg/L	Complete	3/31/2015 10:08:33 AM	62
63	TOC	L15031593-01 (20)	TOC:9.198mg/L TC:37.35mg/L IC:28.15mg/L	Complete	3/31/2015 10:51:28 AM	63
64	TOC	CCV	TOC:27.15mg/L TC:27.23mg/L IC:0.07596mg/L	Complete	3/31/2015 11:05:38 AM	64
65	TOC	CCB	TOC:0.1484mg/L TC:0.1811mg/L IC:0.03270mg/L	Complete	3/31/2015 11:14:41 AM	0

3/31/2015 12:34:10 PM 1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.8164mg/L TC:24.84mg/L IC:24.02mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	954.5	24.84mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 9:52:49 AM

Mean Area 954.5
Mean Conc. 24.84mg/L

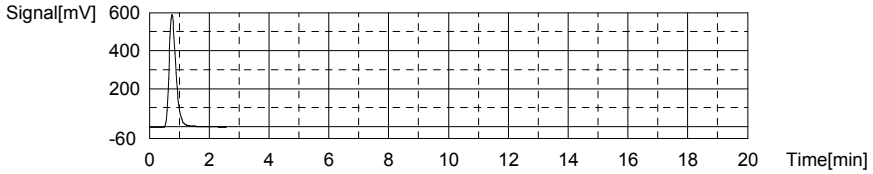

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	727.5	24.02mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 9:58:36 AM

Mean Area 727.5
Mean Conc. 24.02mg/L

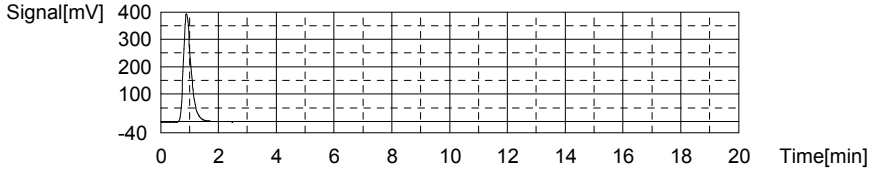

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.32mg/L TC:24.28mg/L IC:-0.03778mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	933.3	24.28mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 10:06:50 AM

Mean Area 933.3
Mean Conc. 24.28mg/L

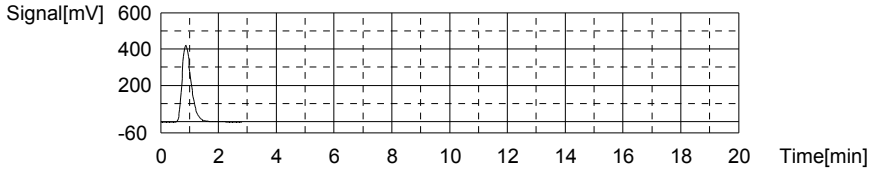

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.893	-0.03778mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 10:11:22 AM

Mean Area 6.893
Mean Conc. -0.03778mg/L

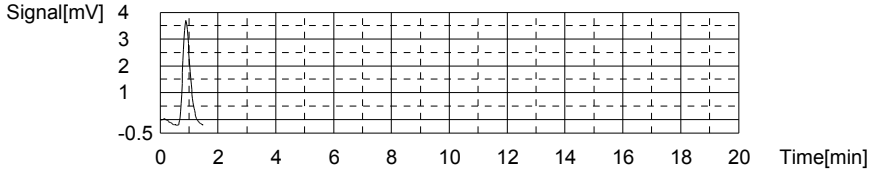

Sample

Sample Name: WG517280-01 BLK
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1409mg/L TC:0.1769mg/L IC:0.03603mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.05	0.1861mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 10:16:26 AM
2	10.35	0.1678mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 10:19:59 AM

Mean Area 10.70
Mean Conc. 0.1769mg/L

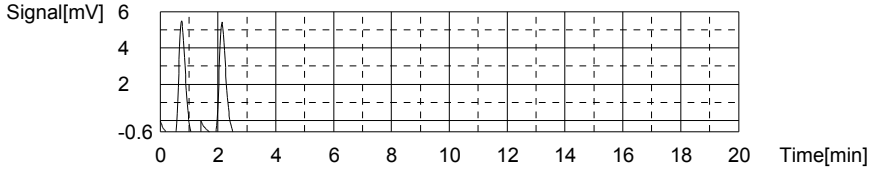

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.076	0.03510mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 10:24:03 AM
2	9.132	0.03697mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 10:28:06 AM

Mean Area 9.104
Mean Conc. 0.03603mg/L

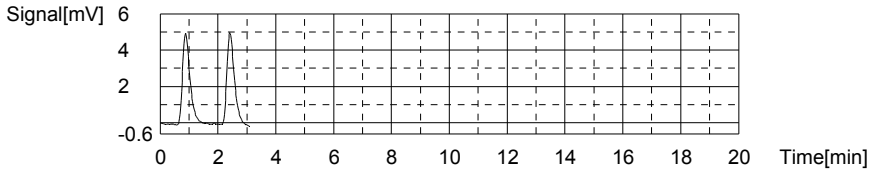

Sample

Sample Name: WG517280-02 LCS
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.56mg/L TC:44.88mg/L IC:17.32mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1736	45.25mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 10:36:32 AM
2	1707	44.50mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 10:41:33 AM

Mean Area 1722
Mean Conc. 44.88mg/L

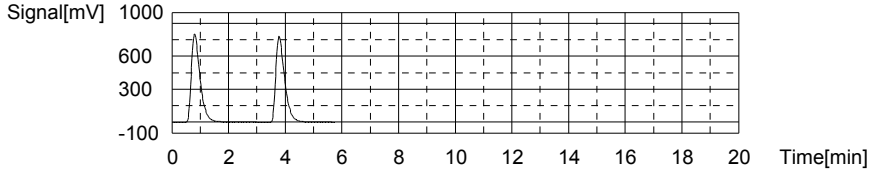

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	529.8	17.42mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 10:47:07 AM
2	523.8	17.22mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 10:52:19 AM

Mean Area 526.8
Mean Conc. 17.32mg/L

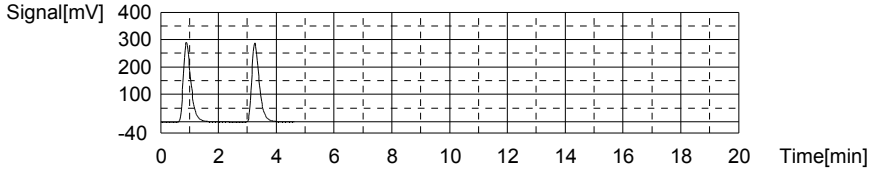

Sample

Sample Name: WG517280-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.26mg/L TC:44.28mg/L IC:16.02mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1617	42.15mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 1:34:29 PM
2	1780	46.40mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 1:40:11 PM

Mean Area 1699
Mean Conc. 44.28mg/L

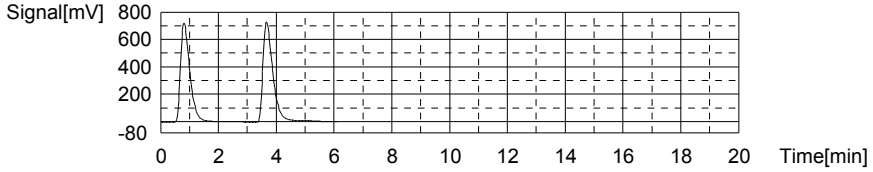

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	487.3	16.00mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 1:45:57 PM
2	488.2	16.03mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 1:51:13 PM

Mean Area 487.8
Mean Conc. 16.02mg/L

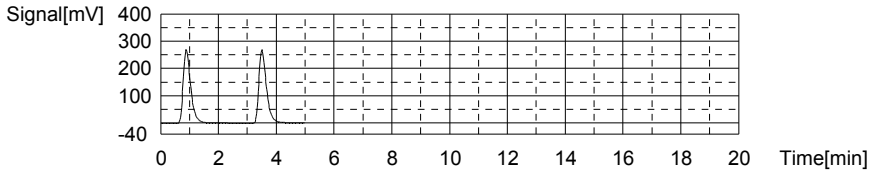

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:106.1mg/L TC:107.9mg/L IC:1.807mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4136	108.0mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 2:01:33 PM
2	4135	107.9mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 2:10:08 PM

Mean Area 4136
Mean Conc. 107.9mg/L

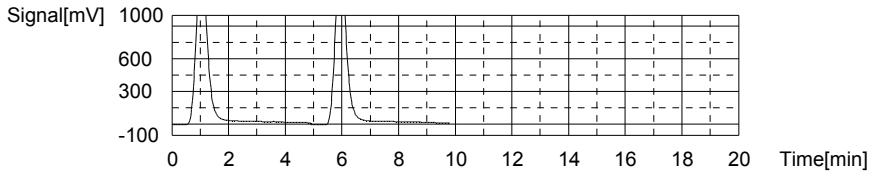

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	62.26	1.811mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 2:14:53 PM
2	62.07	1.804mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 2:19:21 PM

Mean Area 62.17
Mean Conc. 1.807mg/L

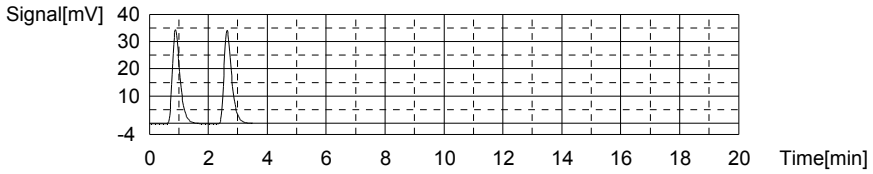

Sample

Sample Name: L15031422-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.4176mg/L TC:0.4328mg/L IC:0.01527mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	21.40	0.4565mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 2:26:23 PM
2	19.59	0.4092mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 2:30:16 PM

Mean Area 20.50
Mean Conc. 0.4328mg/L

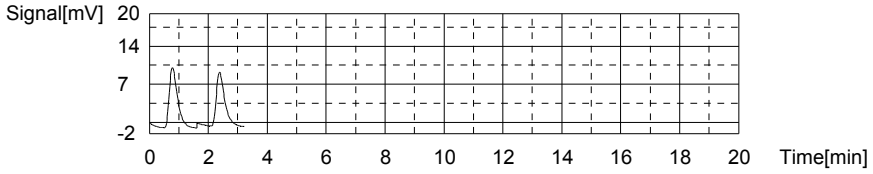

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.551	0.01757mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 2:34:46 PM
2	8.413	0.01297mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 2:39:00 PM

Mean Area 8.482
Mean Conc. 0.01527mg/L

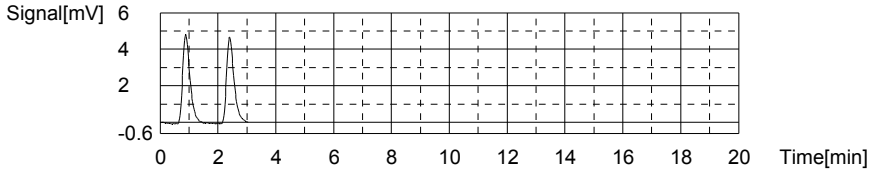

Sample

Sample Name: L15031492-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.313mg/L TC:9.147mg/L IC:3.833mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	351.7	9.086mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 2:46:35 PM
2	356.3	9.207mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 2:51:14 PM

Mean Area 354.0
Mean Conc. 9.147mg/L

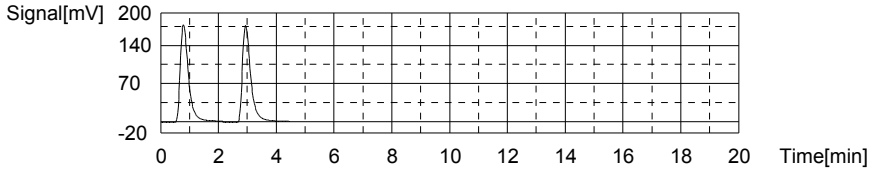

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	122.5	3.822mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 2:56:06 PM
2	123.2	3.845mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 3:00:41 PM

Mean Area 122.8
Mean Conc. 3.833mg/L

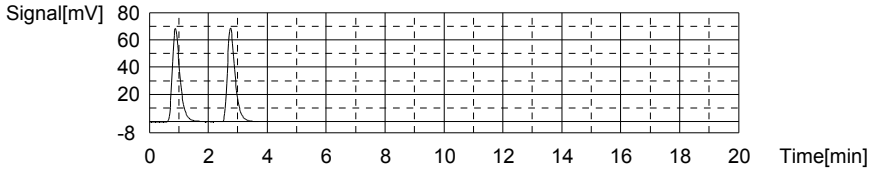

Sample

Sample Name: L15031492-02
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.441mg/L TC:22.07mg/L IC:12.63mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	833.2	21.67mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 3:09:12 PM
2	863.8	22.47mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 3:14:52 PM

Mean Area 848.5
Mean Conc. 22.07mg/L

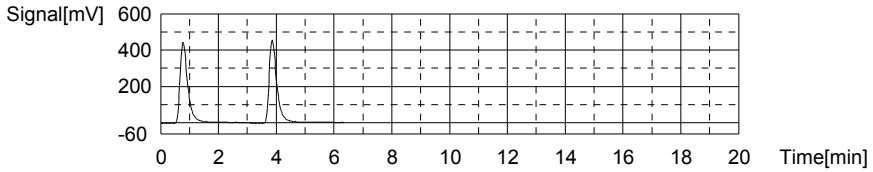

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	383.6	12.54mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 3:20:06 PM
2	388.8	12.71mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 3:25:07 PM

Mean Area 386.2
Mean Conc. 12.63mg/L

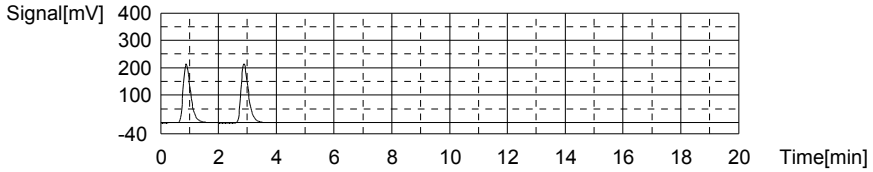

Sample

Sample Name: L15031496-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.359mg/L TC:12.38mg/L IC:6.022mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	478.3	12.39mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 3:33:04 PM
2	477.3	12.37mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 3:37:53 PM

Mean Area 477.8
Mean Conc. 12.38mg/L

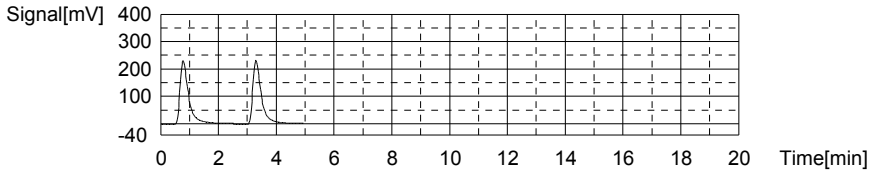

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	189.3	6.052mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 3:42:43 PM
2	187.5	5.992mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 3:47:29 PM

Mean Area 188.4
Mean Conc. 6.022mg/L

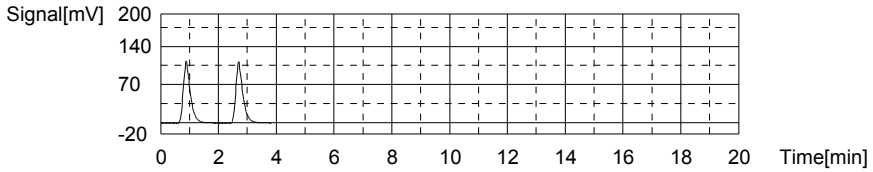

Sample

Sample Name: L15031496-02
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.353mg/L TC:8.612mg/L IC:5.259mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	327.9	8.465mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 3:55:02 PM
2	339.2	8.760mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 3:59:29 PM

Mean Area 333.6
Mean Conc. 8.612mg/L

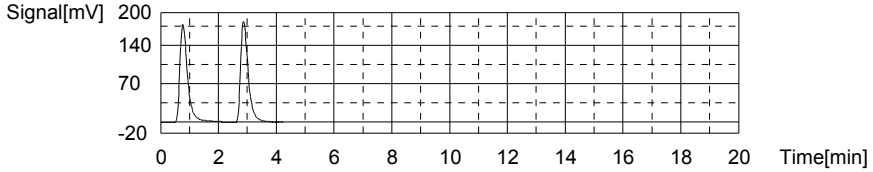

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	165.9	5.271mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 4:04:31 PM
2	165.2	5.247mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 4:09:11 PM

Mean Area 165.6
Mean Conc. 5.259mg/L

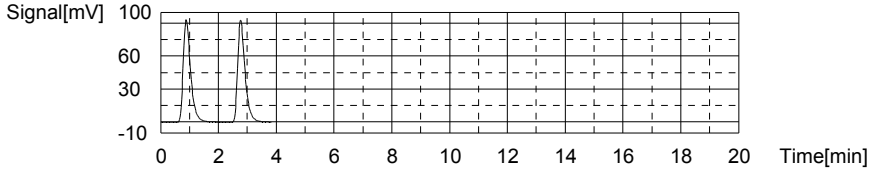

Sample

Sample Name: L15031496-03
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.426mg/L TC:5.840mg/L IC:3.414mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	222.7	5.716mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 4:16:35 PM
2	232.2	5.964mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 4:20:59 PM

Mean Area 227.5
Mean Conc. 5.840mg/L

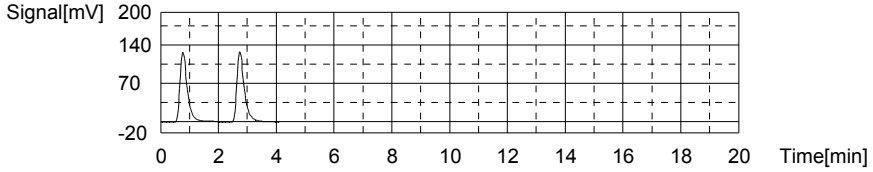

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	111.3	3.448mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 4:25:52 PM
2	109.3	3.381mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 4:30:28 PM

Mean Area 110.3
Mean Conc. 3.414mg/L

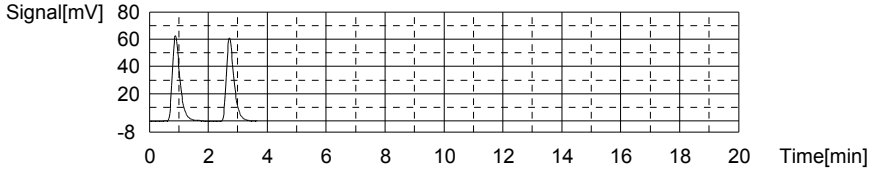

Sample

Sample Name: L15031496-04
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.916mg/L TC:8.773mg/L IC:4.857mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	341.7	8.825mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 4:44:20 PM
2	337.7	8.721mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 4:48:44 PM

Mean Area 339.7
Mean Conc. 8.773mg/L

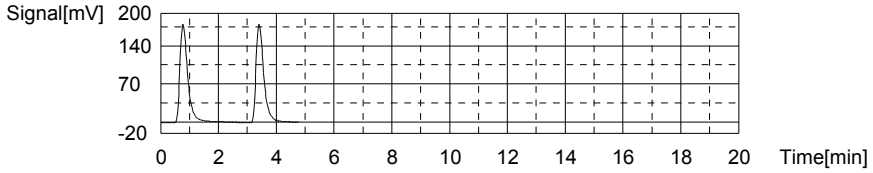

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	154.6	4.893mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 4:53:34 PM
2	152.4	4.820mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 4:58:11 PM

Mean Area 153.5
Mean Conc. 4.857mg/L

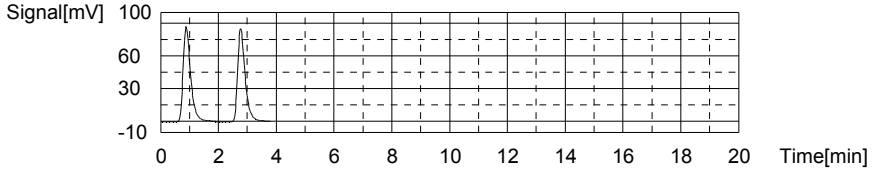

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.34mg/L TC:27.36mg/L IC:0.01911mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1051	27.36mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 5:07:00 PM

Mean Area 1051
Mean Conc. 27.36mg/L

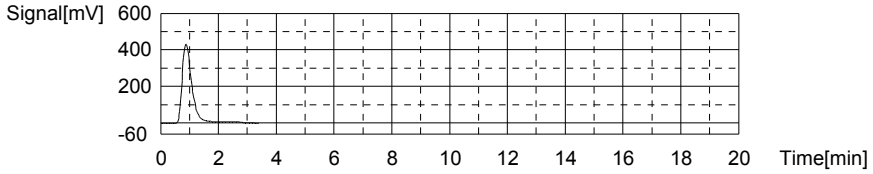

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.597	0.01911mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 5:11:24 PM

Mean Area 8.597
Mean Conc. 0.01911mg/L

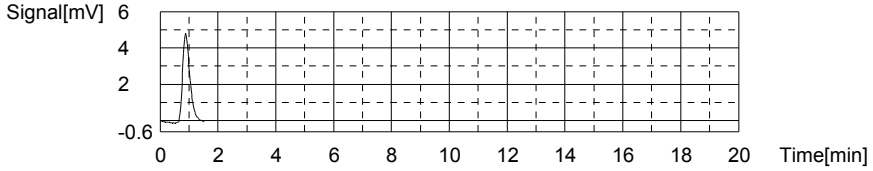

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1850mg/L TC:0.2083mg/L IC:0.02328mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.90	0.2083mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 5:16:30 PM

Mean Area 11.90
Mean Conc. 0.2083mg/L

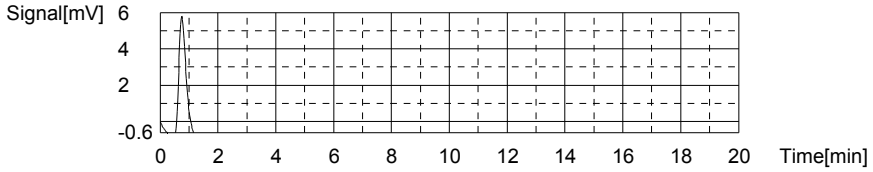

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.722	0.02328mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 5:20:32 PM

Mean Area 8.722
Mean Conc. 0.02328mg/L

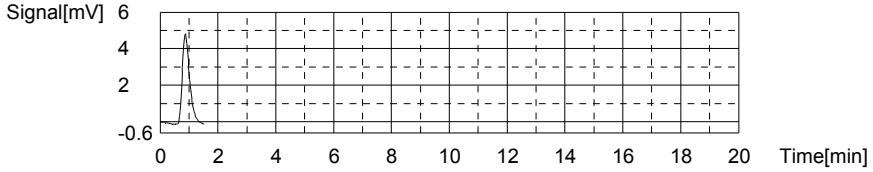

Sample

Sample Name: L15031496-05
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.087mg/L TC:8.902mg/L IC:4.815mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	345.8	8.932mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 5:28:06 PM
2	343.5	8.872mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 5:32:31 PM

Mean Area 344.6
Mean Conc. 8.902mg/L

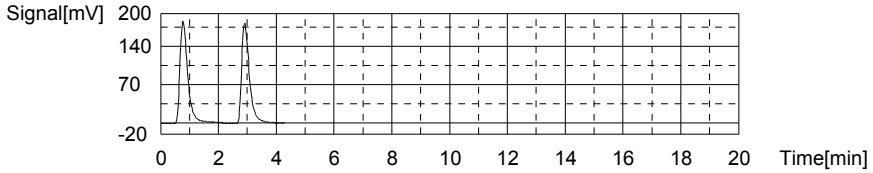

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	150.2	4.747mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 5:37:22 PM
2	154.3	4.883mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 5:42:04 PM

Mean Area 152.3
Mean Conc. 4.815mg/L

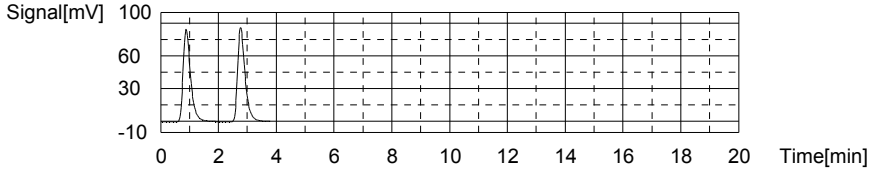

Sample

Sample Name: L15031496-06
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.745mg/L TC:5.678mg/L IC:2.933mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	221.7	5.690mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 5:49:45 PM
2	220.8	5.666mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 5:54:02 PM

Mean Area 221.3
Mean Conc. 5.678mg/L

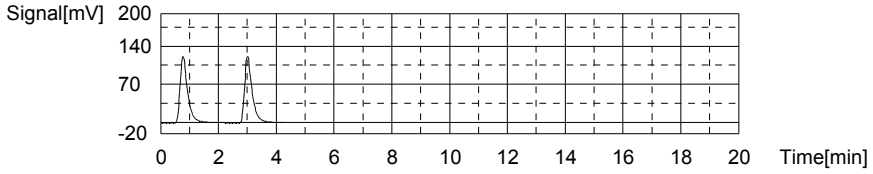

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	96.48	2.953mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 5:58:50 PM
2	95.27	2.913mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 6:03:21 PM

Mean Area 95.88
Mean Conc. 2.933mg/L

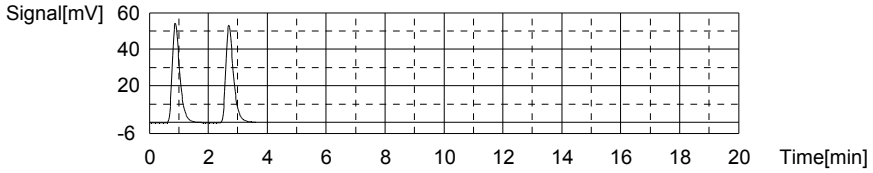

Sample

Sample Name: L15031497-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.11mg/L TC:24.26mg/L IC:1.148mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	934.7	24.32mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 6:13:05 PM
2	929.9	24.19mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 6:20:51 PM

Mean Area 932.3
Mean Conc. 24.26mg/L

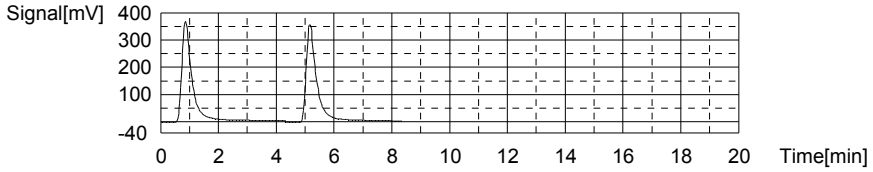

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	42.84	1.162mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 6:25:31 PM
2	42.00	1.134mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 6:30:01 PM

Mean Area 42.42
Mean Conc. 1.148mg/L

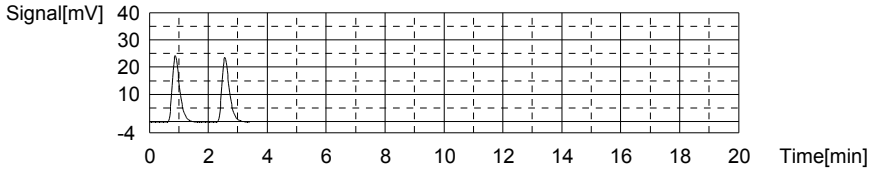

Sample

Sample Name: L15031498-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:31.86mg/L TC:45.96mg/L IC:14.10mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1728	45.05mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 6:40:02 PM
2	1798	46.87mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 6:48:11 PM

Mean Area 1763
Mean Conc. 45.96mg/L

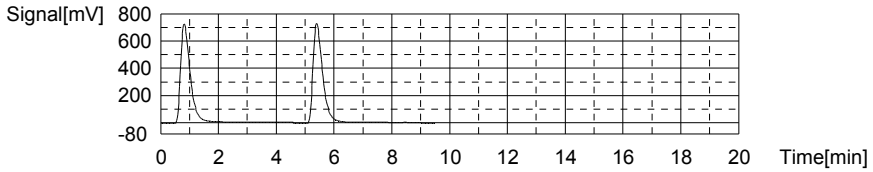

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	440.5	14.44mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 6:53:31 PM
2	420.0	13.75mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 6:58:31 PM

Mean Area 430.3
Mean Conc. 14.10mg/L

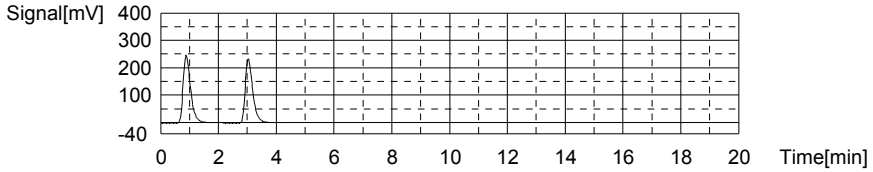

Sample

Sample Name: L15031498-02
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:31.53mg/L TC:44.81mg/L IC:13.28mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1748	45.57mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 7:08:44 PM
2	1690	44.05mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 7:14:25 PM

Mean Area 1719
Mean Conc. 44.81mg/L

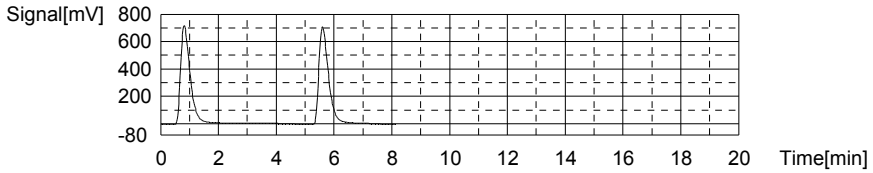

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	412.8	13.51mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 7:19:44 PM
2	398.6	13.04mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 7:24:43 PM

Mean Area 405.7
Mean Conc. 13.28mg/L

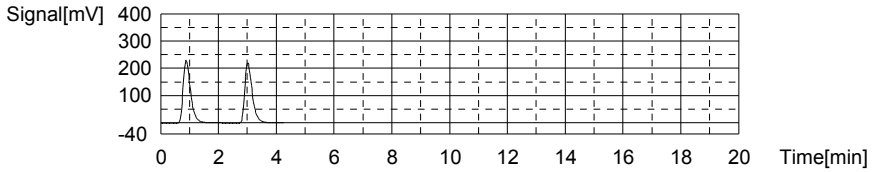

Sample

Sample Name: L15031498-03
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:31.05mg/L TC:41.48mg/L IC:10.43mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1605	41.83mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 7:34:37 PM
2	1578	41.13mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 7:42:09 PM

Mean Area 1592
Mean Conc. 41.48mg/L

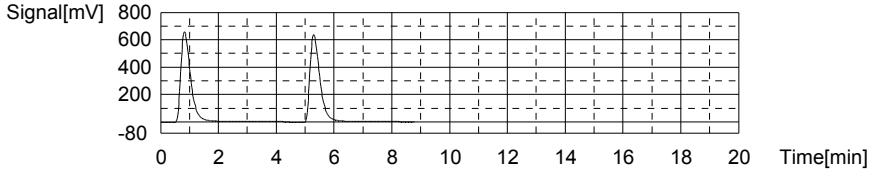

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	324.0	10.55mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 7:47:18 PM
2	317.0	10.32mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 7:52:08 PM

Mean Area 320.5
Mean Conc. 10.43mg/L

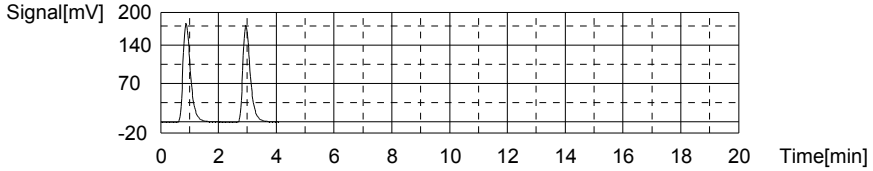

Sample

Sample Name: L15031498-04
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:33.42mg/L TC:43.19mg/L IC:9.769mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1712	44.63mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 8:01:51 PM
2	1602	41.75mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 8:06:47 PM

Mean Area 1657
Mean Conc. 43.19mg/L

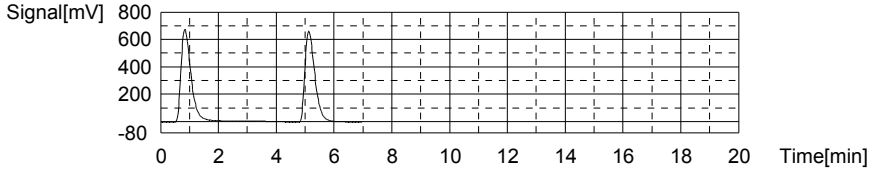

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	302.6	9.834mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 8:11:56 PM
2	298.7	9.704mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 8:16:47 PM

Mean Area 300.6
Mean Conc. 9.769mg/L

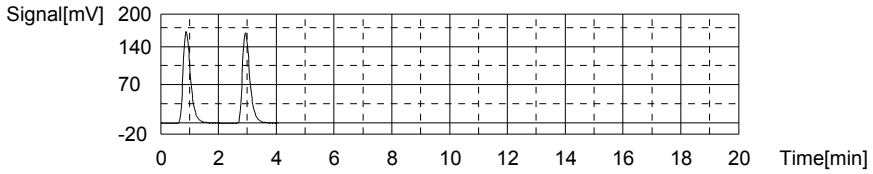

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:53.44mg/L TC:54.22mg/L IC:0.7782mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2075	54.11mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 8:27:07 PM
2	2083	54.32mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 8:35:19 PM

Mean Area 2079
Mean Conc. 54.22mg/L

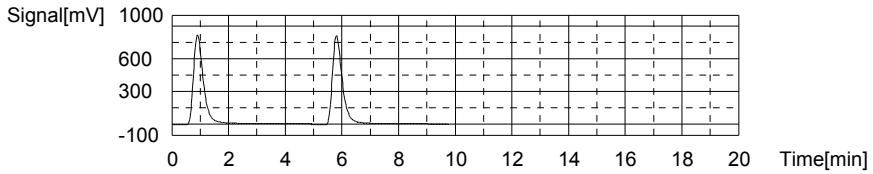

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	31.78	0.7931mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 8:39:53 PM
2	30.89	0.7634mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 8:44:15 PM

Mean Area 31.34
Mean Conc. 0.7782mg/L

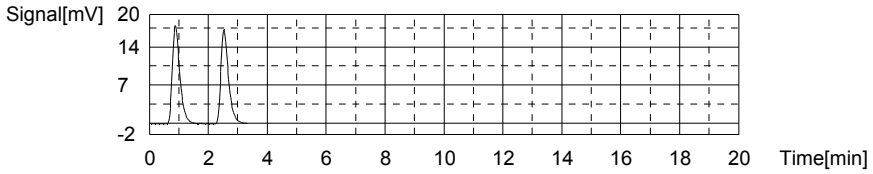

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:53.20mg/L TC:53.99mg/L IC:0.7939mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2075	54.11mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 8:54:36 PM
2	2066	53.88mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 9:02:50 PM

Mean Area 2071
Mean Conc. 53.99mg/L

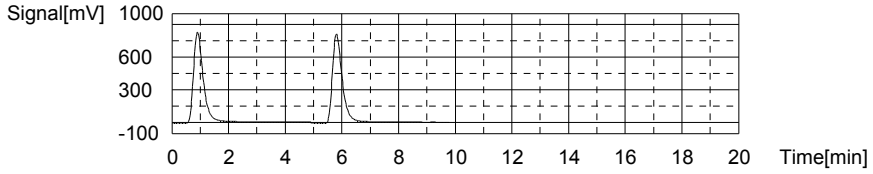

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	32.17	0.8061mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 9:07:29 PM
2	31.44	0.7817mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 9:11:57 PM

Mean Area 31.81
Mean Conc. 0.7939mg/L

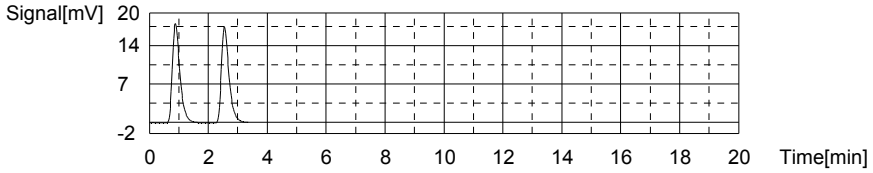

Sample

Sample Name: L15031498-07
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.201mg/L TC:5.698mg/L IC:0.4963mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	222.3	5.706mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 9:19:38 PM
2	221.7	5.690mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 9:25:17 PM

Mean Area 222.0
Mean Conc. 5.698mg/L

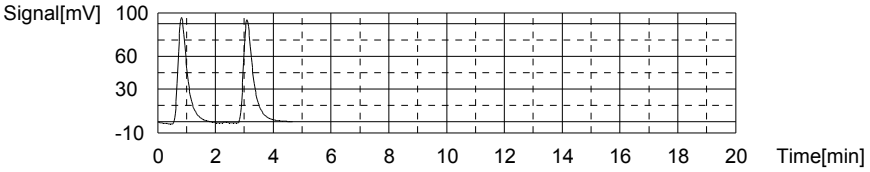

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	23.08	0.5026mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 9:29:53 PM
2	22.70	0.4899mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 9:34:13 PM

Mean Area 22.89
Mean Conc. 0.4963mg/L

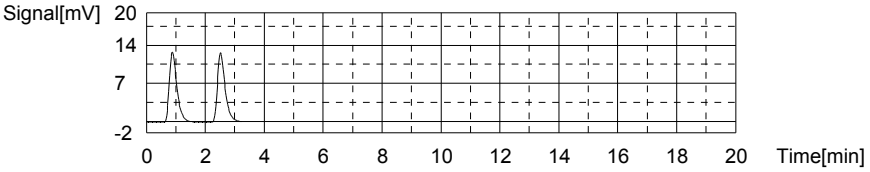

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:28.05mg/L TC:28.04mg/L IC:-0.00934mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1077	28.04mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 9:43:18 PM

Mean Area 1077
Mean Conc. 28.04mg/L

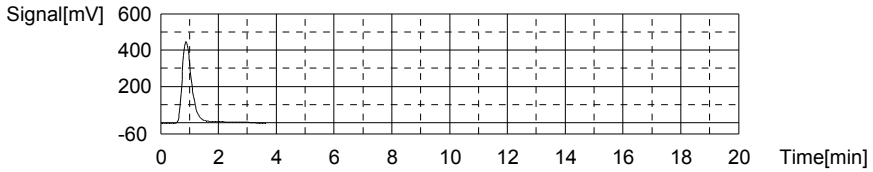

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.745	-0.00934mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 9:47:43 PM

Mean Area 7.745
Mean Conc. -0.00934mg/L

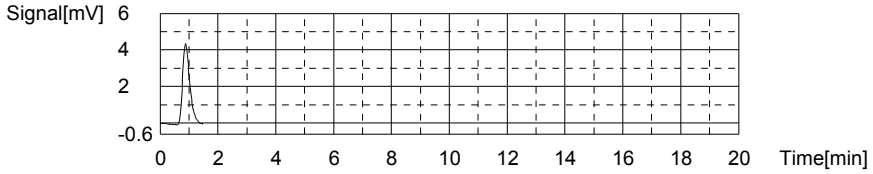

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1608mg/L TC:0.1777mg/L IC:0.01694mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.73	0.1777mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 9:52:47 PM

Mean Area 10.73
Mean Conc. 0.1777mg/L

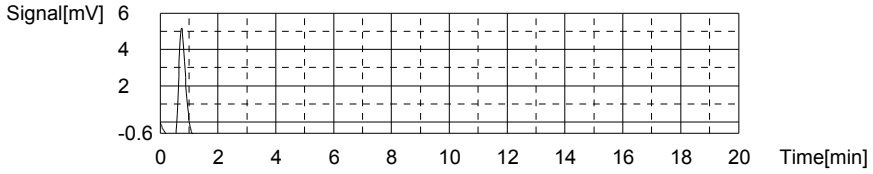

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.532	0.01694mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 9:56:49 PM

Mean Area 8.532
Mean Conc. 0.01694mg/L

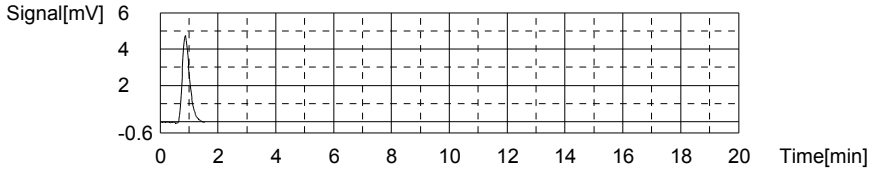

Sample

Sample Name: L15031499-02
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.193mg/L TC:5.597mg/L IC:0.4045mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	219.7	5.638mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 10:04:31 PM
2	216.6	5.557mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 10:09:08 PM

Mean Area 218.2
Mean Conc. 5.597mg/L

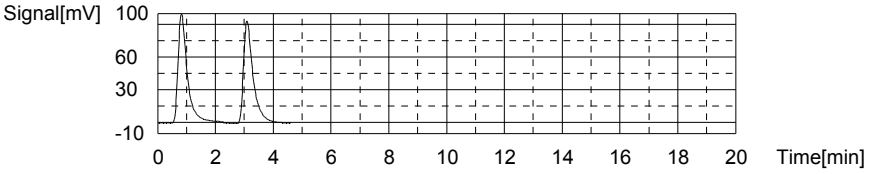

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	20.22	0.4071mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 10:13:42 PM
2	20.06	0.4018mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 10:18:05 PM

Mean Area 20.14
Mean Conc. 0.4045mg/L

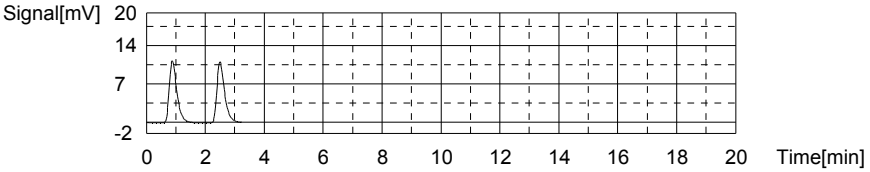

Sample

Sample Name: WG517280-05 DUP
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3738mg/L TC:0.3460mg/L IC:-0.02780mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.17	0.3460mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 10:25:05 PM
2	17.17	0.3460mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 10:28:56 PM

Mean Area 17.17
Mean Conc. 0.3460mg/L

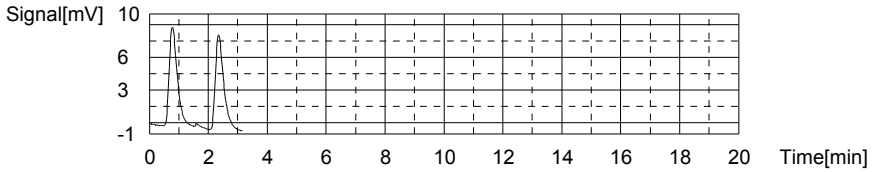

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.261	-0.02549mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 10:33:19 PM
2	7.123	-0.03010mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 10:37:30 PM

Mean Area 7.192
Mean Conc. -0.02780mg/L

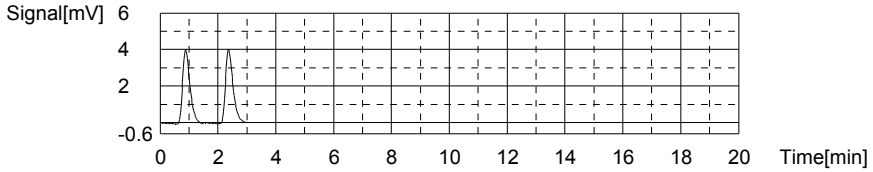

Sample

Sample Name: WG517280-06 MS
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:10.89mg/L TC:10.86mg/L IC:-0.02795mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	413.7	10.71mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 10:45:09 PM
2	425.4	11.01mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 10:49:37 PM

Mean Area 419.6
Mean Conc. 10.86mg/L

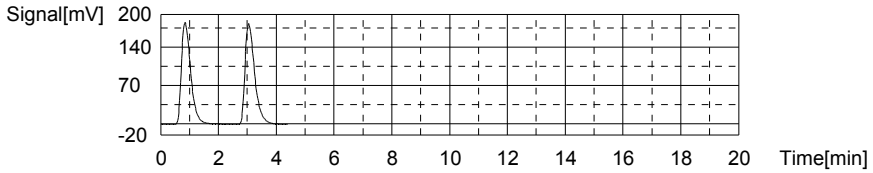

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.213	-0.02710mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 10:54:02 PM
2	7.162	-0.02880mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 10:58:11 PM

Mean Area 7.188
Mean Conc. -0.02795mg/L

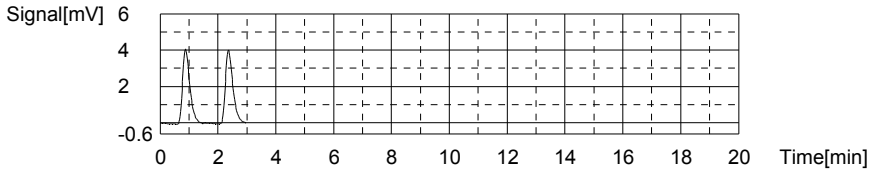

Sample

Sample Name: WG517282-01 BLK
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1520mg/L TC:0.1658mg/L IC:0.01378mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.48	0.1712mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 11:03:13 PM
2	10.07	0.1605mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 11:06:46 PM

Mean Area 10.28
Mean Conc. 0.1658mg/L

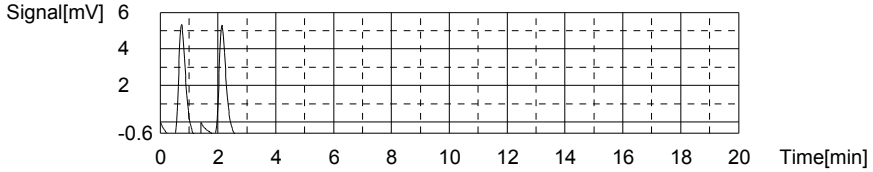

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.390	0.01220mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 11:10:48 PM
2	8.485	0.01537mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 11:14:47 PM

Mean Area 8.438
Mean Conc. 0.01378mg/L

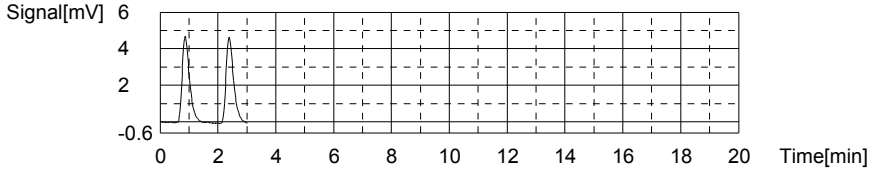

Sample

Sample Name: WG517282-02 LCS
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.49mg/L TC:29.37mg/L IC:2.883mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1108	28.85mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 11:22:53 PM
2	1148	29.89mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 11:27:53 PM

Mean Area 1128
Mean Conc. 29.37mg/L

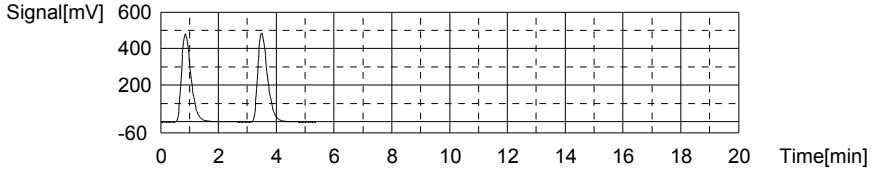

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	94.47	2.886mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 11:32:39 PM
2	94.29	2.880mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 11:37:11 PM

Mean Area 94.38
Mean Conc. 2.883mg/L

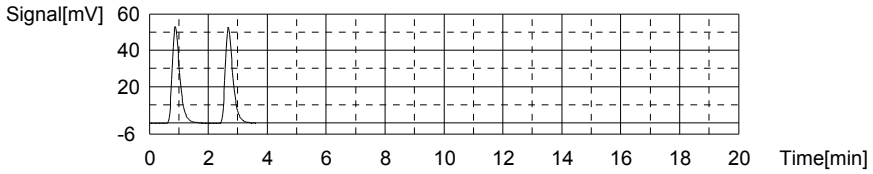

Sample

Sample Name: WG517282-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.62mg/L TC:28.96mg/L IC:2.345mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1072	27.91mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 11:45:09 PM
2	1153	30.02mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/30/2015 11:50:15 PM

Mean Area 1113
Mean Conc. 28.96mg/L

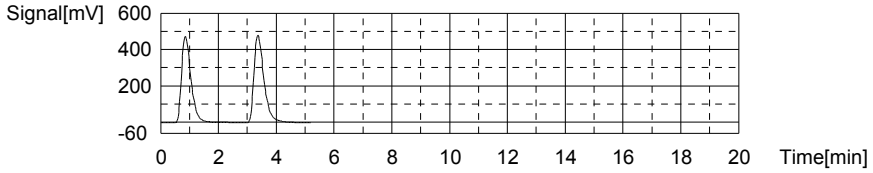

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	79.07	2.372mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 11:55:01 PM
2	77.47	2.318mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/30/2015 11:59:28 PM

Mean Area 78.27
Mean Conc. 2.345mg/L

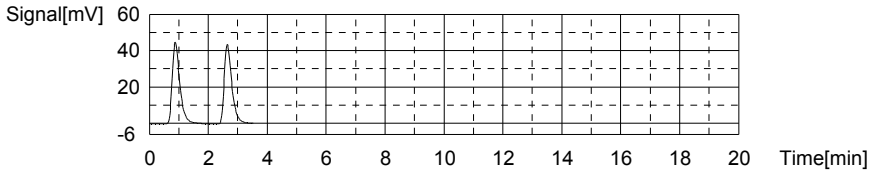

Sample

Sample Name: L15031404-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.217mg/L TC:7.973mg/L IC:2.757mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	307.1	7.921mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 12:06:59 AM
2	311.1	8.026mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 12:12:31 AM

Mean Area 309.1
Mean Conc. 7.973mg/L

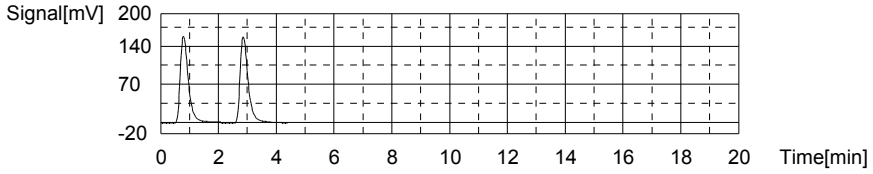

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	91.16	2.775mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 12:17:19 AM
2	90.03	2.738mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 12:21:52 AM

Mean Area 90.59
Mean Conc. 2.757mg/L

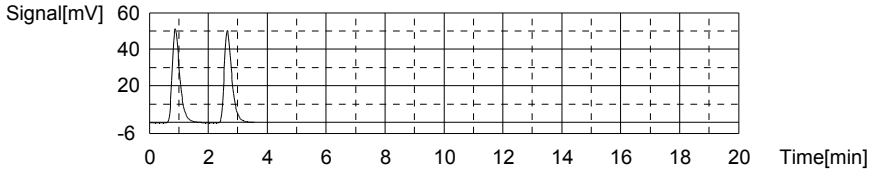

Sample

Sample Name: L15031404-02
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.154mg/L TC:6.834mg/L IC:0.6806mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	266.5	6.860mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 12:29:26 AM
2	264.5	6.808mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 12:33:54 AM

Mean Area 265.5
Mean Conc. 6.834mg/L

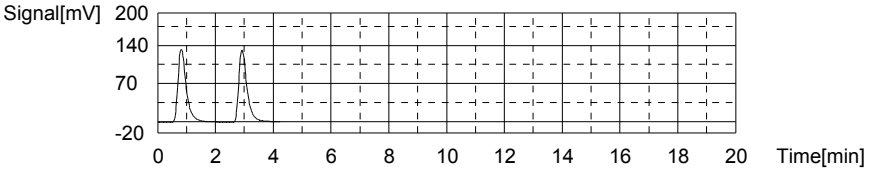

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	28.63	0.6879mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 12:38:27 AM
2	28.19	0.6732mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 12:42:49 AM

Mean Area 28.41
Mean Conc. 0.6806mg/L

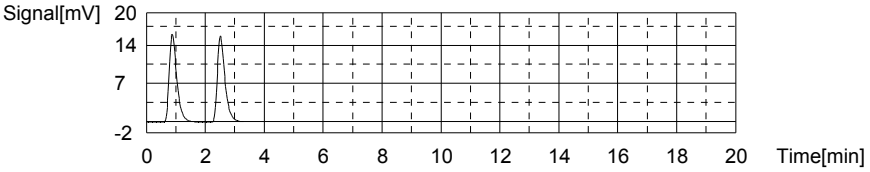

Sample

Sample Name: L15031404-03
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.962mg/L TC:3.789mg/L IC:0.8275mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	148.7	3.783mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 12:50:11 AM
2	149.2	3.796mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 12:55:36 AM

Mean Area 149.0
Mean Conc. 3.789mg/L

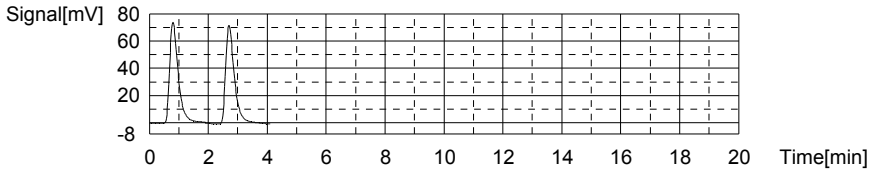

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	33.23	0.8415mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 1:00:11 AM
2	32.39	0.8134mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 1:04:35 AM

Mean Area 32.81
Mean Conc. 0.8275mg/L

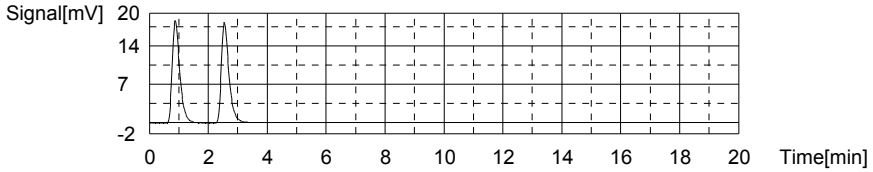

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-1.353mg/L TC:77.54mg/L IC:78.89mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3025	78.93mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 1:14:55 AM
2	2918	76.14mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 1:22:16 AM

Mean Area 2972
Mean Conc. 77.54mg/L

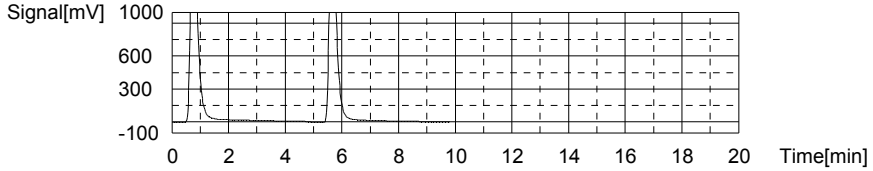

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2389	79.49mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 1:28:29 AM
2	2353	78.29mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 1:34:39 AM

Mean Area 2371
Mean Conc. 78.89mg/L

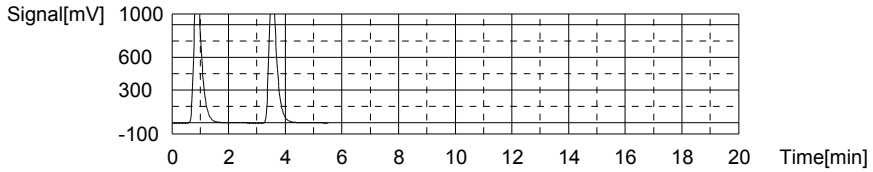

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:24.43mg/L TC:24.79mg/L IC:0.3641mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	952.7	24.79mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 1:42:32 AM

Mean Area 952.7
Mean Conc. 24.79mg/L

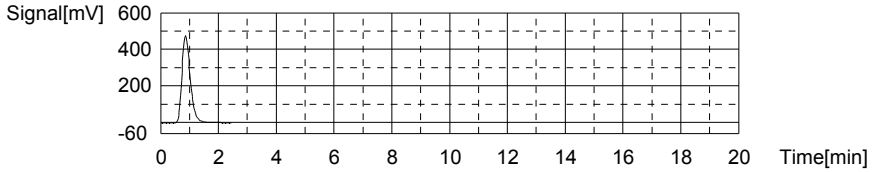

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	18.93	0.3641mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 1:47:17 AM

Mean Area 18.93
Mean Conc. 0.3641mg/L

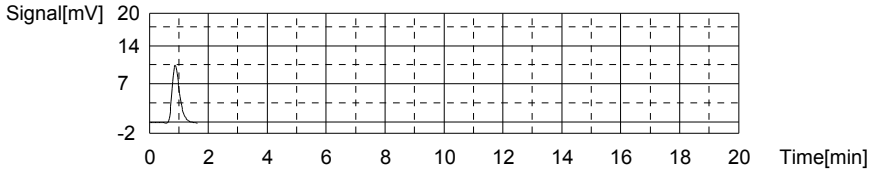

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1275mg/L TC:0.1981mg/L IC:0.07062mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.51	0.1981mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 1:52:19 AM

Mean Area 11.51
Mean Conc. 0.1981mg/L

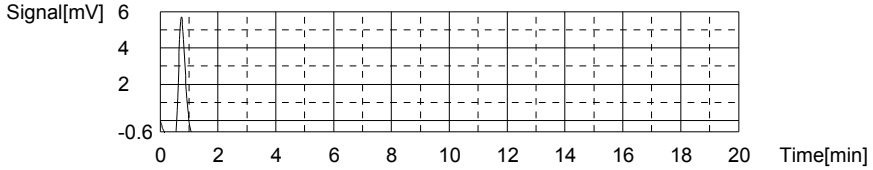

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.14	0.07062mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 1:56:19 AM

Mean Area 10.14
Mean Conc. 0.07062mg/L

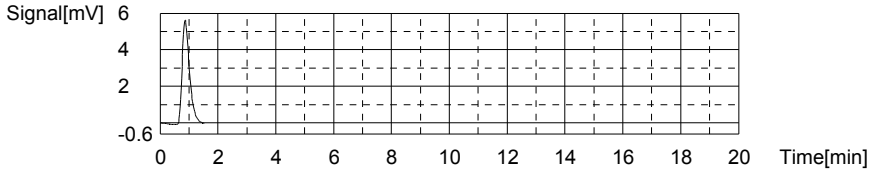

Sample

Sample Name: L15031499-03
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.871mg/L TC:9.725mg/L IC:1.854mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	381.7	9.870mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 2:04:34 AM
2	370.6	9.580mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 2:09:10 AM

Mean Area 376.2
Mean Conc. 9.725mg/L

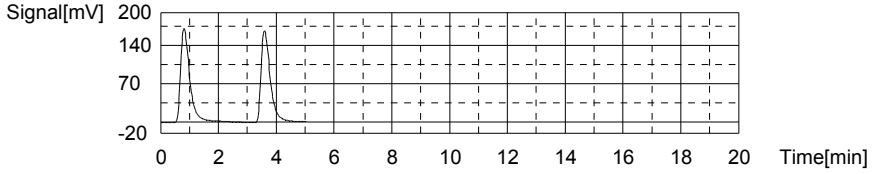

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	64.52	1.886mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 2:13:56 AM
2	62.62	1.823mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 2:18:28 AM

Mean Area 63.57
Mean Conc. 1.854mg/L

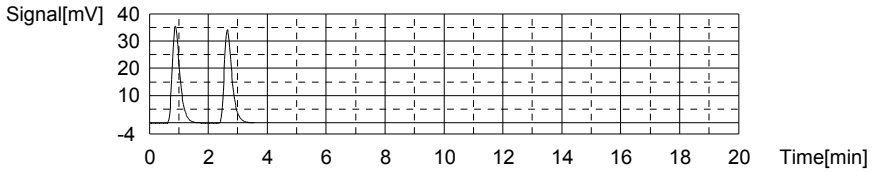

Sample

Sample Name: L15031499-04
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.473mg/L TC:5.698mg/L IC:1.225mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	224.1	5.753mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 2:26:13 AM
2	219.9	5.643mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 2:30:47 AM

Mean Area 222.0
Mean Conc. 5.698mg/L

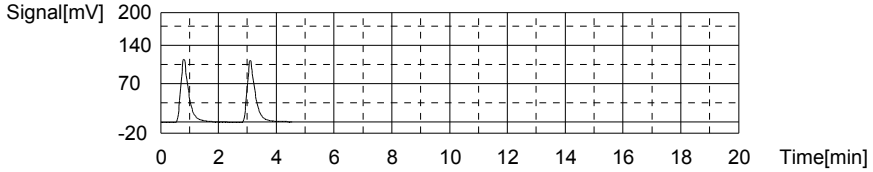

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	45.61	1.255mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 2:35:27 AM
2	43.83	1.195mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 2:39:53 AM

Mean Area 44.72
Mean Conc. 1.225mg/L

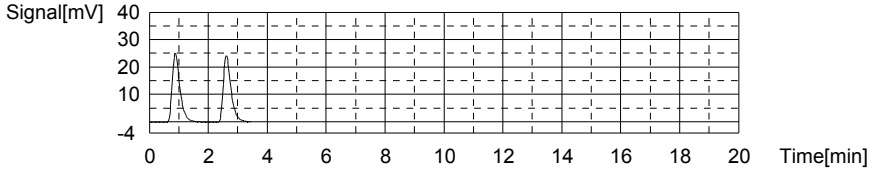

Sample

Sample Name: L15031590-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.181mg/L TC:5.527mg/L IC:0.3459mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	214.4	5.499mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 2:47:41 AM
2	216.5	5.554mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 2:53:14 AM

Mean Area 215.4
Mean Conc. 5.527mg/L

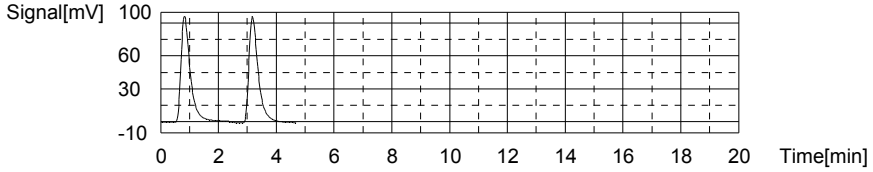

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	18.68	0.3557mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 2:57:45 AM
2	18.09	0.3360mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 3:02:03 AM

Mean Area 18.38
Mean Conc. 0.3459mg/L

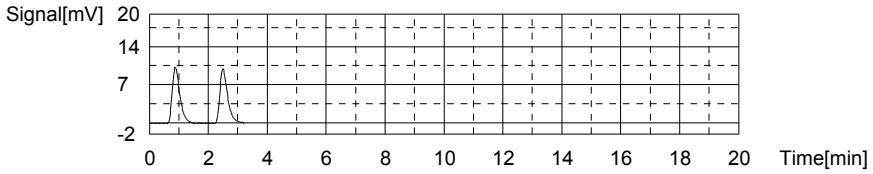

Sample

Sample Name: L15031590-02
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.697mg/L TC:3.239mg/L IC:0.5424mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	128.2	3.247mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 3:09:59 AM
2	127.6	3.231mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 3:14:35 AM

Mean Area 127.9
Mean Conc. 3.239mg/L

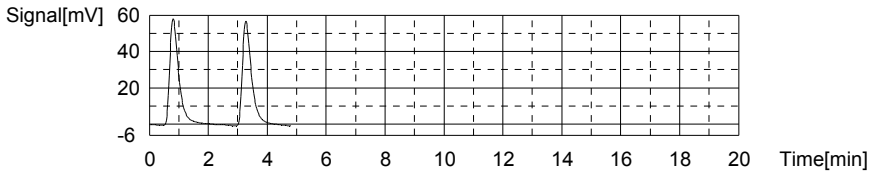

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	24.37	0.5457mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 3:19:09 AM
2	24.17	0.5390mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 3:23:30 AM

Mean Area 24.27
Mean Conc. 0.5424mg/L

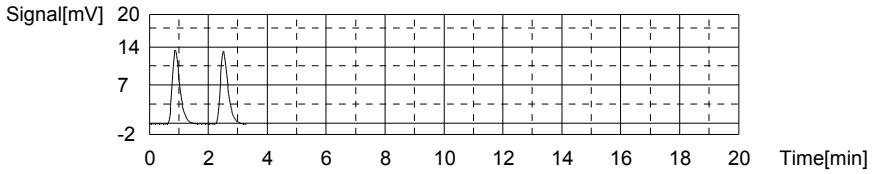

Sample

Sample Name: L15031590-03
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.154mg/L TC:1.472mg/L IC:0.3182mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	59.61	1.455mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 3:30:44 AM
2	60.94	1.490mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 3:34:47 AM

Mean Area 60.28
Mean Conc. 1.472mg/L

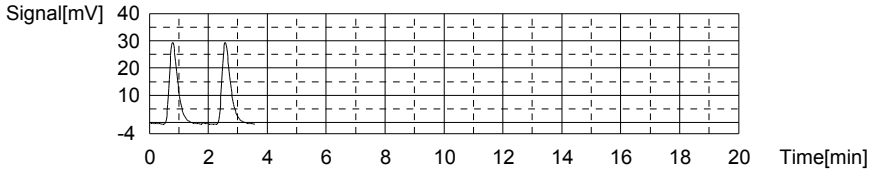

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.67	0.3220mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 3:39:19 AM
2	17.44	0.3143mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 3:43:37 AM

Mean Area 17.56
Mean Conc. 0.3182mg/L

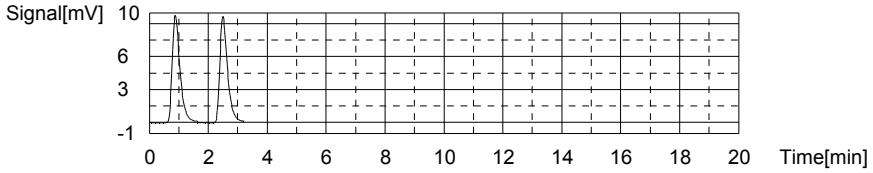

Sample

Sample Name: L15031590-04
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.7299mg/L TC:1.888mg/L IC:1.158mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	76.55	1.897mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 3:50:51 AM
2	75.81	1.878mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 3:54:48 AM

Mean Area 76.18
Mean Conc. 1.888mg/L

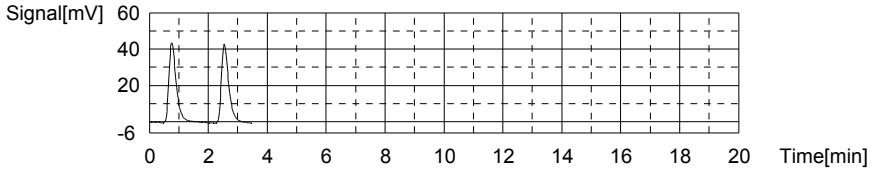

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	43.09	1.171mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 3:59:26 AM
2	42.32	1.145mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 4:03:53 AM

Mean Area 42.70
Mean Conc. 1.158mg/L

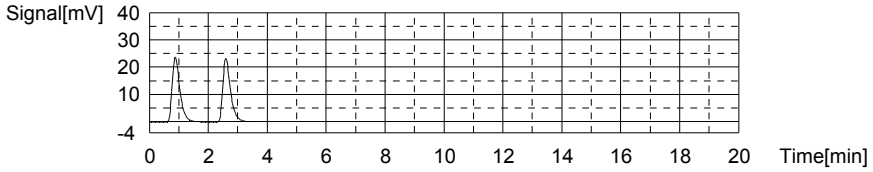

Sample

Sample Name: L15031591-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.7059mg/L TC:1.321mg/L IC:0.6151mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	55.73	1.353mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 4:11:06 AM
2	53.25	1.289mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 4:15:01 AM

Mean Area 54.49
Mean Conc. 1.321mg/L

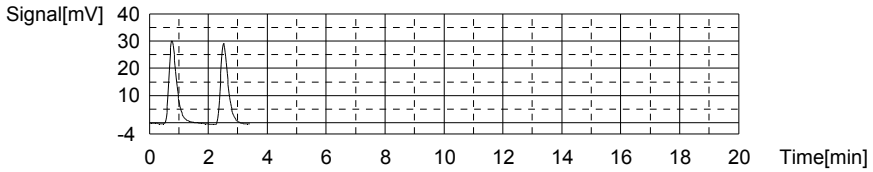

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	26.67	0.6225mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 4:19:40 AM
2	26.23	0.6078mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 4:24:02 AM

Mean Area 26.45
Mean Conc. 0.6151mg/L

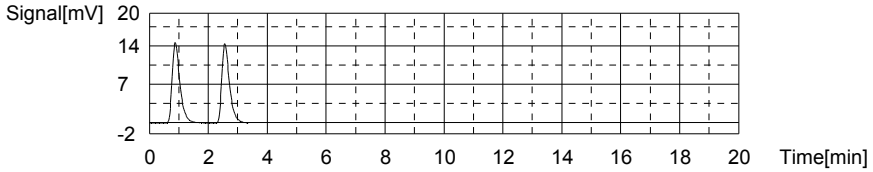

Sample

Sample Name: L15031591-02
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.658mg/L TC:3.128mg/L IC:1.470mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	123.0	3.111mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 4:31:21 AM
2	124.3	3.145mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 4:35:29 AM

Mean Area 123.7
Mean Conc. 3.128mg/L

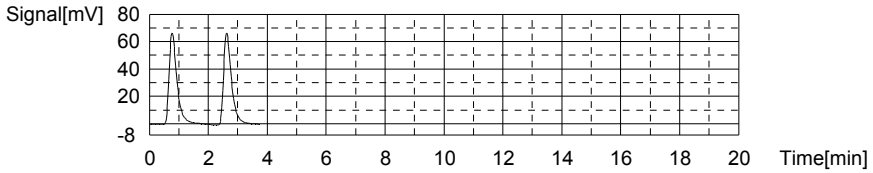

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	52.96	1.500mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 4:40:10 AM
2	51.17	1.440mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 4:44:37 AM

Mean Area 52.06
Mean Conc. 1.470mg/L

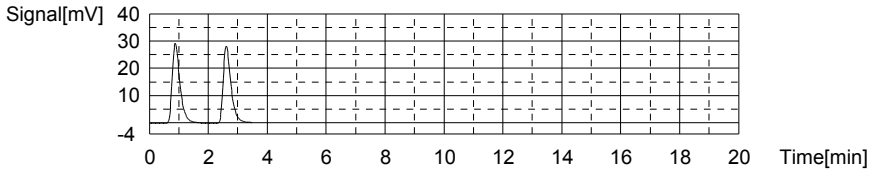

Sample

Sample Name: L15031591-03
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.592mg/L TC:2.342mg/L IC:0.7497mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	93.05	2.329mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 4:51:56 AM
2	94.06	2.355mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 4:56:09 AM

Mean Area 93.56
Mean Conc. 2.342mg/L

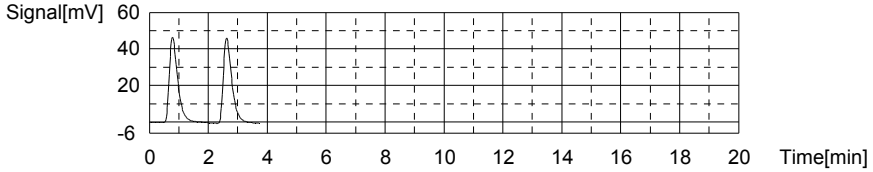

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	30.27	0.7427mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 5:00:51 AM
2	30.69	0.7567mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 5:05:20 AM

Mean Area 30.48
Mean Conc. 0.7497mg/L

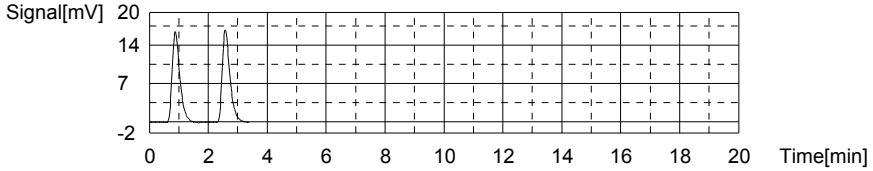

Sample

Sample Name: L15031591-04
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.7501mg/L TC:0.8965mg/L IC:0.1464mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	37.83	0.8858mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 5:12:25 AM
2	38.65	0.9072mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 5:16:24 AM

Mean Area 38.24
Mean Conc. 0.8965mg/L

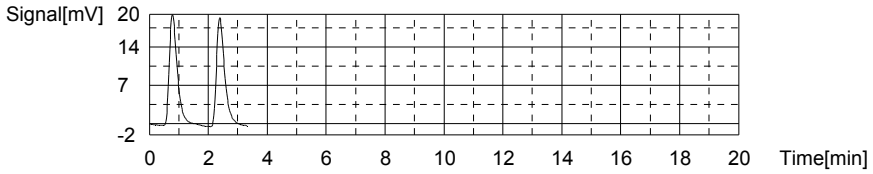

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.54	0.1507mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 5:20:50 AM
2	12.28	0.1421mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 5:25:08 AM

Mean Area 12.41
Mean Conc. 0.1464mg/L

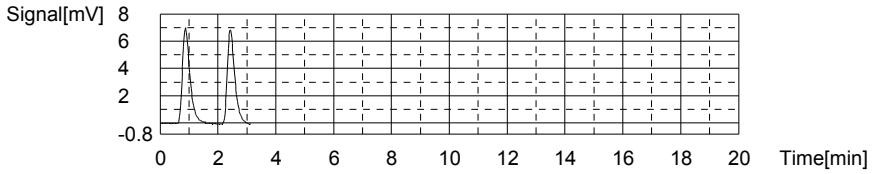

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.15mg/L TC:25.14mg/L IC:-0.01481mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	966.1	25.14mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 5:33:10 AM

Mean Area 966.1
Mean Conc. 25.14mg/L

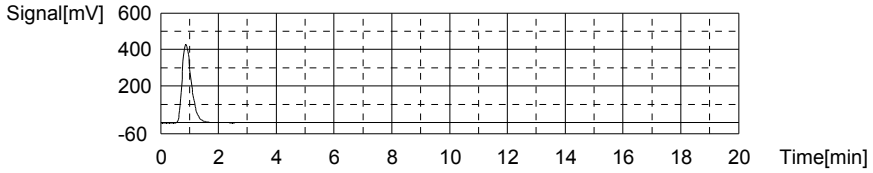

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.581	-0.01481mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 5:37:39 AM

Mean Area 7.581
Mean Conc. -0.01481mg/L

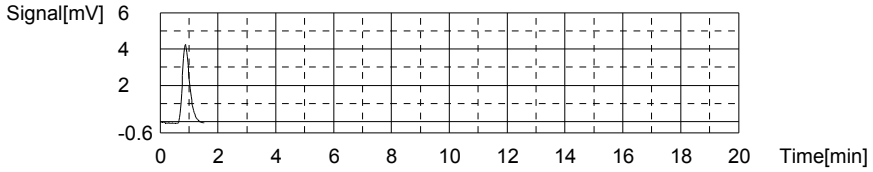

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1488mg/L TC:0.1649mg/L IC:0.01614mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.24	0.1649mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 5:42:39 AM

Mean Area 10.24
Mean Conc. 0.1649mg/L

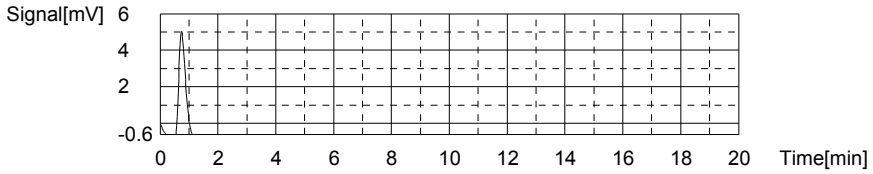

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.508	0.01614mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 5:46:41 AM

Mean Area 8.508
Mean Conc. 0.01614mg/L

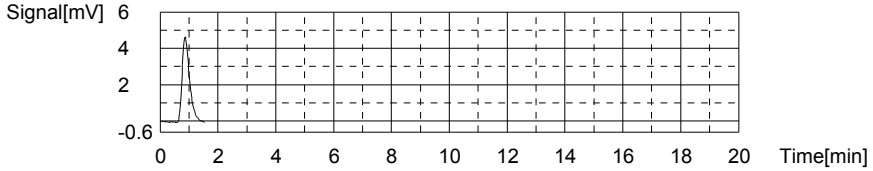

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:35.73mg/L TC:58.38mg/L IC:22.66mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2251	58.71mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 5:57:04 AM
2	2226	58.06mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 6:05:17 AM

Mean Area 2239
Mean Conc. 58.38mg/L

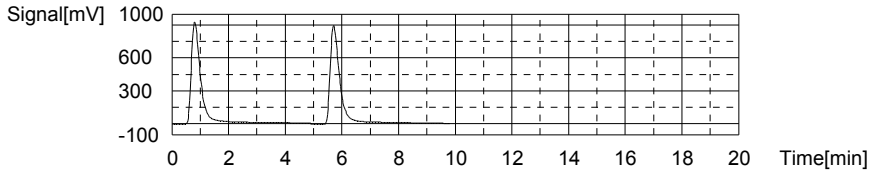

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	684.7	22.59mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 6:10:47 AM
2	688.7	22.72mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 6:16:06 AM

Mean Area 686.7
Mean Conc. 22.66mg/L

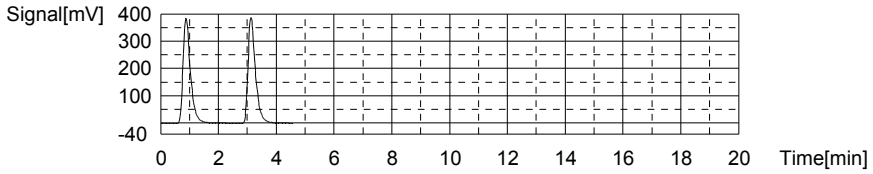

Sample

Sample Name: L15031593-02
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.565mg/L TC:8.001mg/L IC:1.436mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	316.8	8.175mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 6:24:25 AM
2	303.5	7.827mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 6:29:02 AM

Mean Area 310.1
Mean Conc. 8.001mg/L

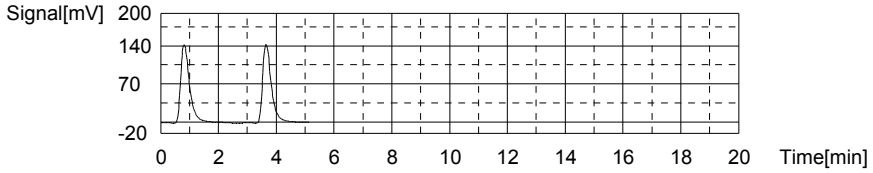

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	51.75	1.460mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 6:33:44 AM
2	50.33	1.412mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 6:38:07 AM

Mean Area 51.04
Mean Conc. 1.436mg/L

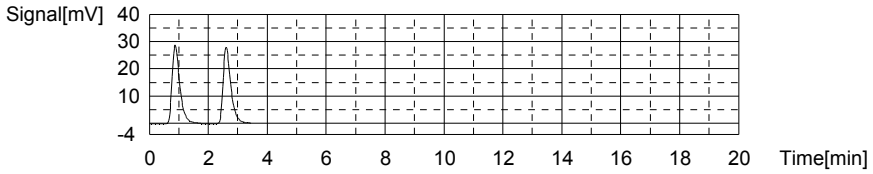

Sample

Sample Name: L15031594-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:39.35mg/L TC:41.21mg/L IC:1.859mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1588	41.39mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 6:48:28 AM
2	1574	41.02mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 6:55:27 AM

Mean Area 1581
Mean Conc. 41.21mg/L

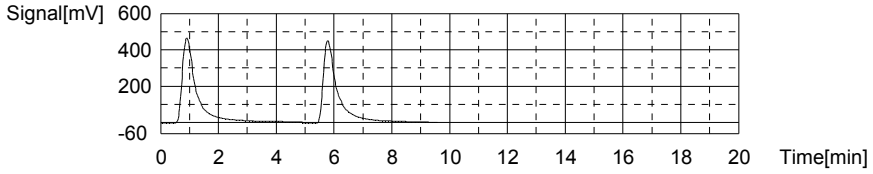

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	62.90	1.832mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 7:00:19 AM
2	64.52	1.886mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 7:04:52 AM

Mean Area 63.71
Mean Conc. 1.859mg/L

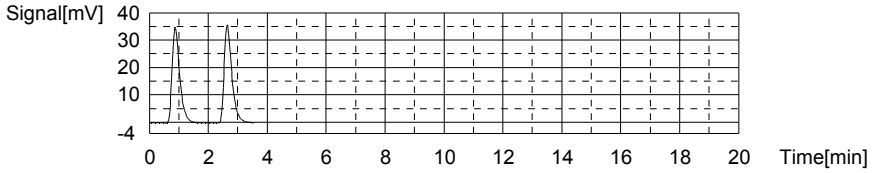

Sample

Sample Name: L15031600-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.5255mg/L TC:0.5072mg/L IC:-0.01833mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	24.14	0.5281mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 7:11:53 AM
2	22.54	0.4863mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 7:15:41 AM

Mean Area 23.34
Mean Conc. 0.5072mg/L

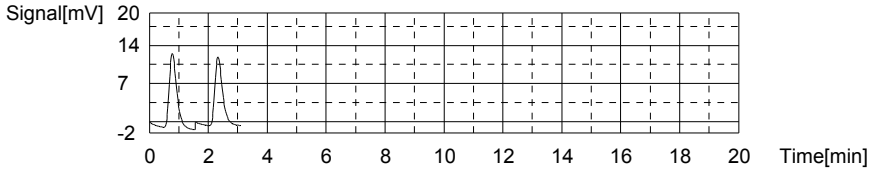

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.540	-0.01618mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 7:20:09 AM
2	7.411	-0.02049mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 7:24:20 AM

Mean Area 7.476
Mean Conc. -0.01833mg/L

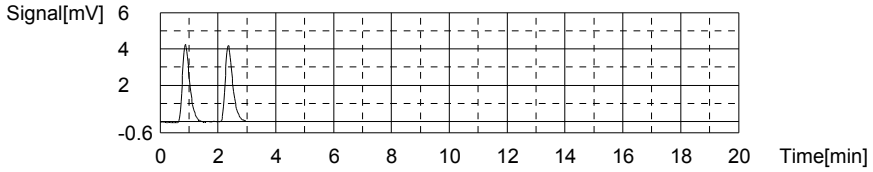

Sample

Sample Name: L15031600-02
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.4988mg/L TC:0.4754mg/L IC:-0.02341mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	22.30	0.4800mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 7:31:18 AM
2	21.95	0.4709mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 7:35:05 AM

Mean Area 22.13
Mean Conc. 0.4754mg/L

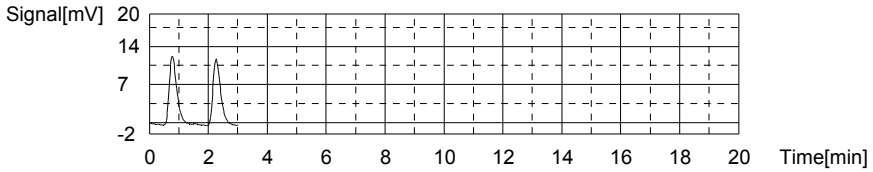

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.333	-0.02309mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 7:39:27 AM
2	7.314	-0.02373mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 7:43:39 AM

Mean Area 7.324
Mean Conc. -0.02341mg/L

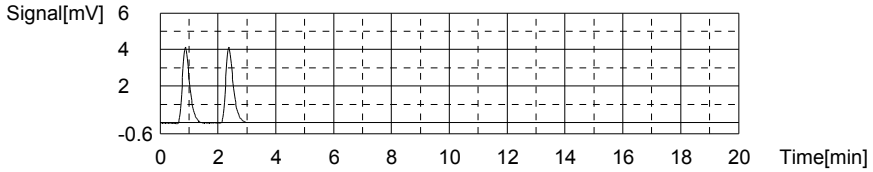

Sample

Sample Name: WG517282-05 DUP
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.4821mg/L TC:0.4587mg/L IC:-0.02344mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	21.77	0.4662mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 7:50:48 AM
2	21.20	0.4513mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 7:54:34 AM

Mean Area 21.48
Mean Conc. 0.4587mg/L

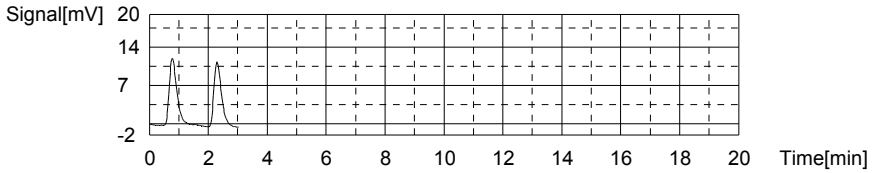

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.341	-0.02282mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 7:59:02 AM
2	7.304	-0.02406mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 8:03:17 AM

Mean Area 7.322
Mean Conc. -0.02344mg/L

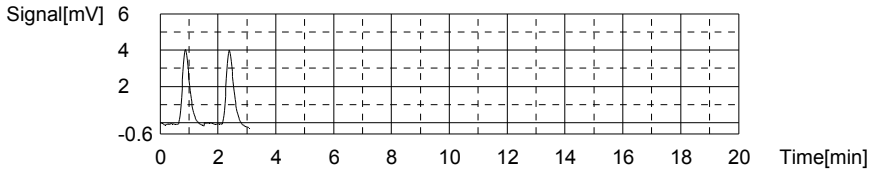

Sample

Sample Name: WG517282-06 MS
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:10.20mg/L TC:10.18mg/L IC:-0.02139mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	392.1	10.14mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 8:10:50 AM
2	395.2	10.22mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 8:15:15 AM

Mean Area 393.7
Mean Conc. 10.18mg/L

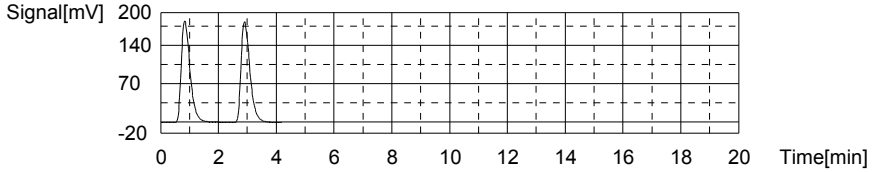

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.386	-0.02132mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 8:19:36 AM
2	7.382	-0.02145mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 8:23:45 AM

Mean Area 7.384
Mean Conc. -0.02139mg/L

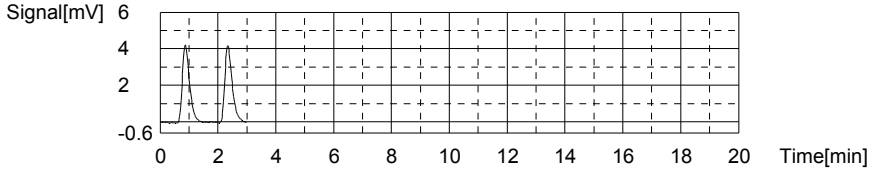

Sample

Sample Name: L15031421-01 (50)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.76mg/L TC:16.78mg/L IC:0.02138mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	637.4	16.55mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 8:32:05 AM
2	655.1	17.01mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 8:37:50 AM

Mean Area 646.3
Mean Conc. 16.78mg/L

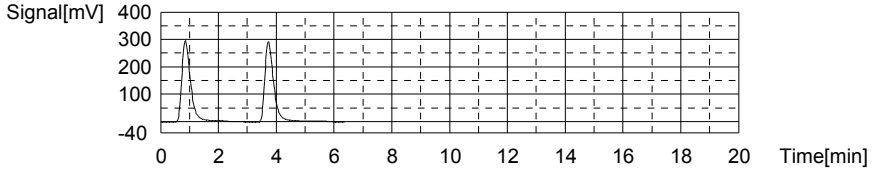

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.531	0.01690mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 8:42:24 AM
2	8.799	0.02585mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 8:46:45 AM

Mean Area 8.665
Mean Conc. 0.02138mg/L

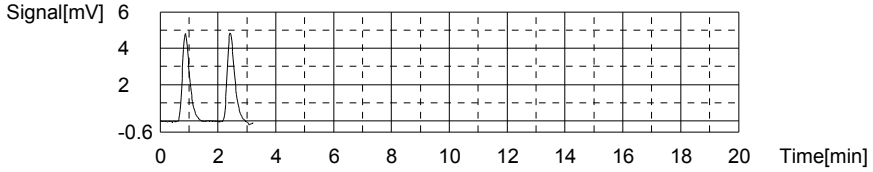

Sample

Sample Name: L15031485-05 (2)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:30.51mg/L TC:31.88mg/L IC:1.365mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1241	32.32mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 9:02:32 AM
2	1207	31.43mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 9:10:34 AM

Mean Area 1224
Mean Conc. 31.88mg/L

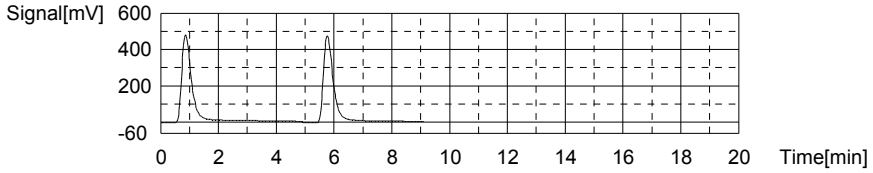

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	48.76	1.360mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 9:15:09 AM
2	49.08	1.371mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 9:19:35 AM

Mean Area 48.92
Mean Conc. 1.365mg/L

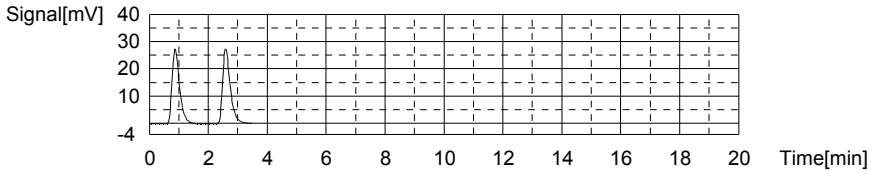

Sample

Sample Name: L15031485-06 (2)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.39mg/L TC:30.11mg/L IC:1.727mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1143	29.76mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 9:28:59 AM
2	1170	30.47mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 9:35:44 AM

Mean Area 1157
Mean Conc. 30.11mg/L

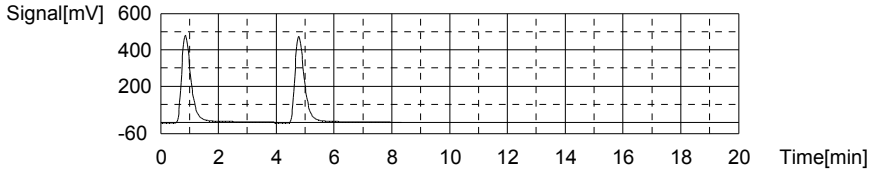

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	63.40	1.849mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 9:40:39 AM
2	56.13	1.606mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 9:45:05 AM

Mean Area 59.77
Mean Conc. 1.727mg/L

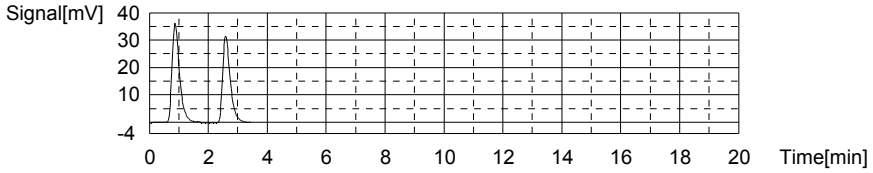

Sample

Sample Name: L15031486-01 (10)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.683mg/L TC:16.05mg/L IC:14.37mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	615.9	15.99mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 9:52:57 AM
2	620.6	16.11mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 9:58:03 AM

Mean Area 618.3
Mean Conc. 16.05mg/L

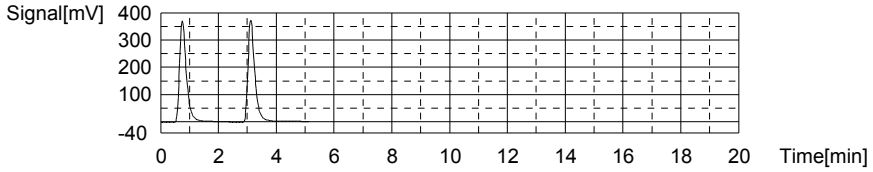

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	441.4	14.47mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 10:03:24 AM
2	435.4	14.27mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 10:08:33 AM

Mean Area 438.4
Mean Conc. 14.37mg/L

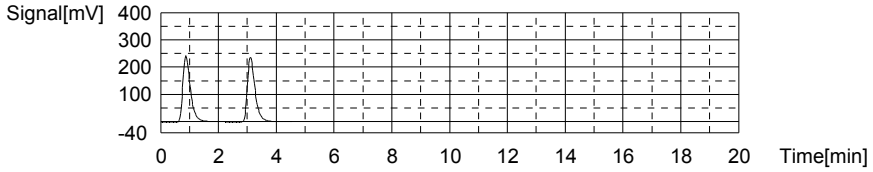

Sample

Sample Name: L15031593-01 (20)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.198mg/L TC:37.35mg/L IC:28.15mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1461	38.07mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 10:34:25 AM
2	1406	36.63mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 10:40:49 AM

Mean Area 1434
Mean Conc. 37.35mg/L

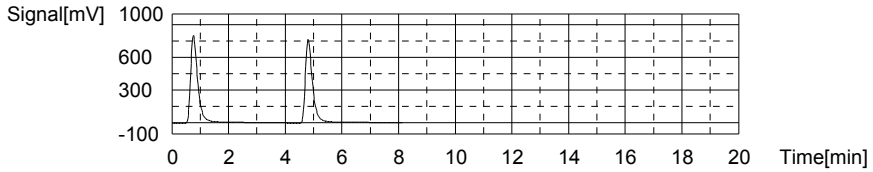

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	862.0	28.51mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 10:46:07 AM
2	840.6	27.80mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 10:51:28 AM

Mean Area 851.3
Mean Conc. 28.15mg/L

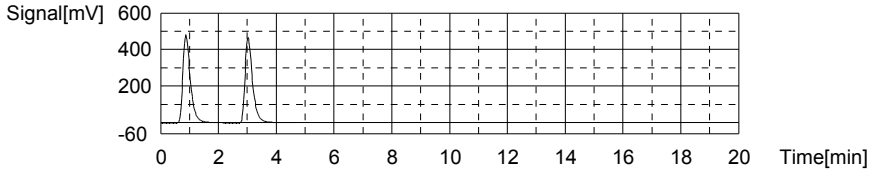

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.15mg/L TC:27.23mg/L IC:0.07596mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1046	27.23mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 11:00:56 AM

Mean Area 1046
Mean Conc. 27.23mg/L

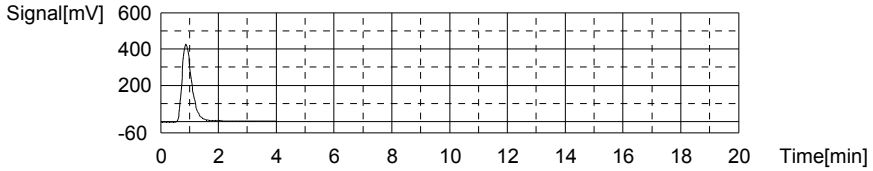

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.30	0.07596mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 11:05:38 AM

Mean Area 10.30
Mean Conc. 0.07596mg/L

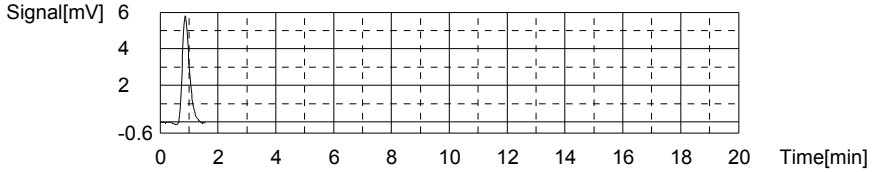

Sample

Sample Name:	CCB
Sample ID:	
Origin:	TOC-07-16-2014.met
Status	Completed
Chk. Result	

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1484mg/L TC:0.1811mg/L IC:0.03270mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.86	0.1811mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	3/31/2015 11:10:41 AM

Mean Area 10.86
Mean Conc. 0.1811mg/L

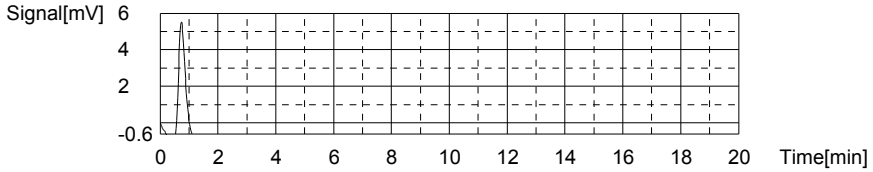

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.004	0.03270mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	3/31/2015 11:14:41 AM

Mean Area 9.004
Mean Conc. 0.03270mg/L

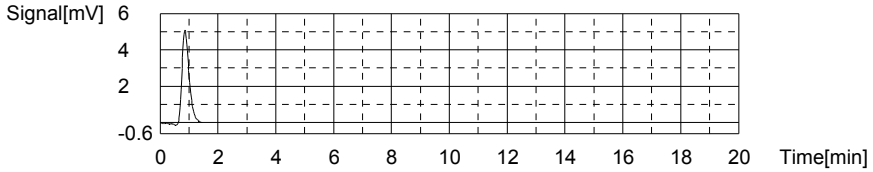

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
April 3, 2015

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
April 03, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.

Microbac Laboratories Inc.
List of Valid Qualifiers
April 03, 2015

Qualkey: DOD

TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Kathy Albertson	Project Manager: ~~[illegible]~~ MARK HEASTON	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott BEESINGER	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60256135.0002JA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	Dissolved GASES	NITRATE/NITRITE Chloride/sulfate	Sulfide	TOC	TIC	Ferrous IRON			SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 67	67WW13-032515			3/25/15	1410		✓	W	8	✓	✓	✓	✓	✓	✓							

ERPIMS REQUIRED FIELDS

Comments: STANDARD TAT

	Date	Time		
Relinquished by: (Signature) Scott Beesinger	3/25/15	1530	Received by: (Signature)	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	

Microbac OVD
Received: 03/26/2015 10:03
By: BRENDA GREGORY 221000067278
Brenda Gregory

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15031486
Account: 2551
Project: 2551.096
Samples: 1
Due Date: 06-APR-2015

Samplenum	Container ID	Products
L15031486-01	543420	RSK175

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-MAR-2015 12:08	CLS		<2
2	ANALYZ	V1	ORG1	26-MAR-2015 14:07	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-MAR-2015 12:08	CLS		<2
2	ANALYZ	V1	ORG1	26-MAR-2015 14:07	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-MAR-2015 12:08	CLS		<2
2	ANALYZ	V1	ORG1	26-MAR-2015 14:07	DLW	CLS	

Samplenum	Container ID	Products
L15031486-01	543421	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		26-MAR-2015 12:08	CLS		

Samplenum	Container ID	Products
L15031486-01	543422	TIC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-MAR-2015 12:08	CLS		
2	ANALYZ	W1	WET	30-MAR-2015 08:45	DCM	BRG	
3	STORE	WET	A1	01-APR-2015 10:51	BRG	EPT	

Samplenum	Container ID	Products
L15031486-01	543423	FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-MAR-2015 12:08	CLS		
2	ANALYZ	W1	WET	27-MAR-2015 07:14	DCM	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15031486
Account: 2551
Project: 2551.096
Samples: 1
Due Date: 06-APR-2015

Samplenum	Container ID	Products
L15031486-01	543424	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-MAR-2015 12:08	CLS		<2
2	ANALYZ	W1	WET	30-MAR-2015 08:18	EPT	BRG	
3	STORE	WET	A1	01-APR-2015 10:51	BRG	EPT	

Samplenum	Container ID	Products
L15031486-01	543425	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-MAR-2015 12:08	CLS		
2	ANALYZ	W1	WET	31-MAR-2015 09:53	TB	BRG	
3	ANALYZ	WET	A1	01-APR-2015 10:58	BRG	TB	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - March 27, 2015

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Formate (HPLC-UV)
Propionaldehyde (HPLC-UV)
Fluoroborate (ISE)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
m,p-xylenes
o-xylene

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene

Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVL HPLC12/HPLC/UV
Acetate

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L15050872

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on May 28 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
67WW03-051215: no date/time sampled or ID listed on the labels. This is the only ID that we are missing, so by process of elimination, we are able to determine that the VOAs are this sample ID. CLS	Please proceed.

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0019783	H	2.0		J2317161576	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	No
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
67WW05-051215	L15050872-01	05/12/2015 08:10	05/14/2015 10:00
67WW02-051215	L15050872-02	05/12/2015 08:30	05/14/2015 10:00
67WW02FD-051215	L15050872-03	05/12/2015 08:30	05/14/2015 10:00
67WW03-051215	L15050872-04	05/12/2015 08:45	05/14/2015 10:00
67WW07-051215	L15050872-05	05/12/2015 08:55	05/14/2015 10:00
67WW10-051215	L15050872-06	05/12/2015 10:00	05/14/2015 10:00
67WW10MS-051215	L15050872-07	05/12/2015 10:00	05/14/2015 10:00
67WW10MSD-051215	L15050872-08	05/12/2015 10:00	05/14/2015 10:00
67WW12-051215	L15050872-09	05/12/2015 11:05	05/14/2015 10:00
67WW09A-051215	L15050872-10	05/12/2015 13:15	05/14/2015 10:00
67WW14-051215	L15050872-11	05/12/2015 14:40	05/14/2015 10:00
67WW14FD-051215	L15050872-12	05/12/2015 14:40	05/14/2015 10:00
TRIP BLANK	L15050872-13	05/12/2015 00:01	05/14/2015 10:00

Microbac REPORT L15050872
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 13
2.0 Full Sample Data Package 51
2.1 Volatiles Data 52
2.1.1 Volatiles GCMS Data (8260) 53
2.1.1.1 Summary Data 54
2.1.1.2 QC Summary Data 92
2.1.1.3 Sample Data 154
2.1.1.4 Standards Data 204
2.1.1.5 Raw QC Data 345
3.0 Attachments 378

1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15050872
Project Name:		**Method:**	8260
Prep Batch Number(s):	523885,524783	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-27 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-05-27 16:44:54

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15050872
Project Name:		**Method:**	8260
Prep Batch Number(s):	523885,524783	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-27 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15050872
Project Name:		**Method:**	8260
Prep Batch Number(s):	523885,524783	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-27 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?		X			1
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15050872
Project Name:		**Method:**	8260
Prep Batch Number(s):	523885,524783	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-27 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			3
Was the ICAL curve verified for each analyte?		X			2
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15050872
Project Name:		**Method:**	8260
Prep Batch Number(s):	523885,524783	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-27 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15050872
Project Name:		**Method:**	8260
Prep Batch Number(s):	523885,524783	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-27 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Acetone was outside the control limits in the water MS/MSD.

2) Chloromethane, carbon disulfide and dichlorofluoromethane exceeded the UCL in the ICV analyzed 04/16/2015 on HPMS17.

3 Chloromethane, bromomethane, 2-butanone, 2-hexanone, and 4-methyl-2-pentanone exceeded the UCL in the CCV analyzed 05/15/2015 on HPMS 17. Hexachlorobutadiene exceed the UCL in the CCV analyzed 05/22/2015 on HPMS8.

1.2 Certificate of Analysis

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW05-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 19:34
Collect Date:	05/12/2015 08:10	**Dilution:**	1	**File ID:**	17M011874
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW02-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 19:53
Collect Date:	05/12/2015 08:30	**Dilution:**	1	**File ID:**	17M011875
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.883	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	13.2		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW02FD-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 20:13
Collect Date:	05/12/2015 08:30	**Dilution:**	1	**File ID:**	17M011876
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.873	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	13.0		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW03-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 20:33
Collect Date:	05/12/2015 08:45	**Dilution:**	1	**File ID:**	17M011877
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.411	J	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW07-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 20:53
Collect Date:	05/12/2015 08:55	**Dilution:**	1	**File ID:**	17M011878
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.817	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	3.18	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW10-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 19:14
Collect Date:	05/12/2015 10:00	**Dilution:**	1	**File ID:**	17M011873
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW10MS-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 17:55
Collect Date:	05/12/2015 10:00	**Dilution:**	1	**File ID:**	17M011869
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	14.9		10.0	5.00	2.50
Benzene	71-43-2	21.8		1.00	0.250	0.125
Bromobenzene	108-86-1	21.0		1.00	0.250	0.125
Bromochloromethane	74-97-5	19.6		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.2		1.00	0.500	0.250
Bromoform	75-25-2	18.2		2.00	1.00	0.500
Bromomethane	74-83-9	22.5	Q	2.00	1.00	0.500
2-Butanone	78-93-3	13.2	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	23.2		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	21.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	21.3		1.00	0.500	0.250
Carbon disulfide	75-15-0	12.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	19.7		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.5		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	18.6		1.00	0.500	0.250
Chloroethane	75-00-3	21.0		2.00	1.00	0.500
Chloroform	67-66-3	22.9		1.00	0.250	0.125
Chloromethane	74-87-3	18.3	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.4		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.6		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	15.1		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	17.8		1.00	0.500	0.250
Dibromomethane	74-95-3	19.7		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.9		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.4		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	21.5		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	12.3		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.4		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	20.2		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.7		1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	21.7		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.6		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.6		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.2		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.3		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.3		1.00	0.500	0.250
Ethylbenzene	100-41-4	22.0		1.00	0.500	0.250
2-Hexanone	591-78-6	13.5	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	23.2		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.7		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	21.1		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	13.7	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	19.2		1.00	0.500	0.250
Naphthalene	91-20-3	17.3		1.00	0.400	0.200
n-Propylbenzene	103-65-1	21.1		1.00	0.250	0.125
Styrene	100-42-5	21.2		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.7		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.9		1.00	0.400	0.200
Tetrachloroethene	127-18-4	21.1		1.00	0.500	0.250
Toluene	108-88-3	21.6		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.2		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	20.7		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	20.8		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	18.8		1.00	0.500	0.250
Trichloroethene	79-01-6	21.9		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	21.1		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.0		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	22.7		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.8		1.00	0.500	0.250
Vinyl chloride	75-01-4	19.1		1.00	0.500	0.250
o-Xylene	95-47-6	20.5		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	43.5		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	98.3	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW10MSD-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 18:15
Collect Date:	05/12/2015 10:00	**Dilution:**	1	**File ID:**	17M011870
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.3		10.0	5.00	2.50
Benzene	71-43-2	22.1		1.00	0.250	0.125
Bromobenzene	108-86-1	21.5		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.8		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.9		1.00	0.500	0.250
Bromoform	75-25-2	19.4		2.00	1.00	0.500
Bromomethane	74-83-9	22.2	Q	2.00	1.00	0.500
2-Butanone	78-93-3	14.8	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	23.1		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	21.6		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	21.5		1.00	0.500	0.250
Carbon disulfide	75-15-0	12.4		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.0		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.7		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.5		1.00	0.500	0.250
Chloroethane	75-00-3	22.7		2.00	1.00	0.500
Chloroform	67-66-3	23.1		1.00	0.250	0.125
Chloromethane	74-87-3	18.5	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.3		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	16.8		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.3		1.00	0.500	0.250
Dibromomethane	74-95-3	21.0		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.4		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.5		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	21.7		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	12.2		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.5		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.2		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	20.3		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.9		1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	22.0		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	22.5		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.6		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.7		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.8		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.5		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.6		1.00	0.500	0.250
Ethylbenzene	100-41-4	22.1		1.00	0.500	0.250
2-Hexanone	591-78-6	15.2	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	23.2		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.7		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	21.2		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	16.0	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	19.7		1.00	0.500	0.250
Naphthalene	91-20-3	18.6		1.00	0.400	0.200
n-Propylbenzene	103-65-1	21.0		1.00	0.250	0.125
Styrene	100-42-5	21.6		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	21.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.7		1.00	0.400	0.200
Tetrachloroethene	127-18-4	21.0		1.00	0.500	0.250
Toluene	108-88-3	21.7		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	20.2		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	21.1		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	21.1		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.9		1.00	0.500	0.250
Trichloroethene	79-01-6	22.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	20.9		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.2		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	22.8		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.7		1.00	0.500	0.250
Vinyl chloride	75-01-4	19.4		1.00	0.500	0.250
o-Xylene	95-47-6	20.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	43.3		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	99.9	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW12-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 21:12
Collect Date:	05/12/2015 11:05	**Dilution:**	1	**File ID:**	17M011879
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09A-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG524783	**Analyst:**	TMB	**Run Date:**	05/22/2015 19:14
Collect Date:	05/12/2015 13:15	**Dilution:**	1	**File ID:**	8M404859
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	99.3	70	120	
Toluene-d8	97.4	85	120	
4-Bromofluorobenzene	93.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW14-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 21:52
Collect Date:	05/12/2015 14:40	**Dilution:**	1	**File ID:**	17M011881
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.00	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.418	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.799	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	2.77		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW14FD-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 22:12
Collect Date:	05/12/2015 14:40	**Dilution:**	1	**File ID:**	17M011882
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.427	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.815	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	2.93		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 18:54
Collect Date:	05/12/2015 00:01	**Dilution:**	1	**File ID:**	17M011872
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	98.7	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	106	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW05-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 19:34
Collect Date:	05/12/2015 08:10	**Dilution:**	1	**File ID:**	17M011874
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW02-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 19:53
Collect Date:	05/12/2015 08:30	**Dilution:**	1	**File ID:**	17M011875
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.883	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	13.2		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW02FD-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 20:13
Collect Date:	05/12/2015 08:30	**Dilution:**	1	**File ID:**	17M011876
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.873	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	13.0		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW03-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 20:33
Collect Date:	05/12/2015 08:45	**Dilution:**	1	**File ID:**	17M011877
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.411	J	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW07-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 20:53
Collect Date:	05/12/2015 08:55	**Dilution:**	1	**File ID:**	17M011878
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.817	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	3.18	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW10-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 19:14
Collect Date:	05/12/2015 10:00	**Dilution:**	1	**File ID:**	17M011873
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW10MS-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 17:55
Collect Date:	05/12/2015 10:00	**Dilution:**	1	**File ID:**	17M011869
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	14.9		10.0	5.00	2.50
Benzene	71-43-2	21.8		1.00	0.250	0.125
Bromobenzene	108-86-1	21.0		1.00	0.250	0.125
Bromochloromethane	74-97-5	19.6		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.2		1.00	0.500	0.250
Bromoform	75-25-2	18.2		2.00	1.00	0.500
Bromomethane	74-83-9	22.5	Q	2.00	1.00	0.500
2-Butanone	78-93-3	13.2	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	23.2		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	21.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	21.3		1.00	0.500	0.250
Carbon disulfide	75-15-0	12.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	19.7		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.5		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	18.6		1.00	0.500	0.250
Chloroethane	75-00-3	21.0		2.00	1.00	0.500
Chloroform	67-66-3	22.9		1.00	0.250	0.125
Chloromethane	74-87-3	18.3	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.4		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.6		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	15.1		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	17.8		1.00	0.500	0.250
Dibromomethane	74-95-3	19.7		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.9		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.4		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	21.5		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	12.3		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.4		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	20.2		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.7		1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	21.7		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.6		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.6		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.2		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.3		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.3		1.00	0.500	0.250
Ethylbenzene	100-41-4	22.0		1.00	0.500	0.250
2-Hexanone	591-78-6	13.5	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	23.2		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.7		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	21.1		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	13.7	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	19.2		1.00	0.500	0.250
Naphthalene	91-20-3	17.3		1.00	0.400	0.200
n-Propylbenzene	103-65-1	21.1		1.00	0.250	0.125
Styrene	100-42-5	21.2		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.7		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.9		1.00	0.400	0.200
Tetrachloroethene	127-18-4	21.1		1.00	0.500	0.250
Toluene	108-88-3	21.6		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.2		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	20.7		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	20.8		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	18.8		1.00	0.500	0.250
Trichloroethene	79-01-6	21.9		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	21.1		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.0		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	22.7		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.8		1.00	0.500	0.250
Vinyl chloride	75-01-4	19.1		1.00	0.500	0.250
o-Xylene	95-47-6	20.5		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	43.5		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	98.3	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW10MSD-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 18:15
Collect Date:	05/12/2015 10:00	**Dilution:**	1	**File ID:**	17M011870
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.3		10.0	5.00	2.50
Benzene	71-43-2	22.1		1.00	0.250	0.125
Bromobenzene	108-86-1	21.5		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.8		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.9		1.00	0.500	0.250
Bromoform	75-25-2	19.4		2.00	1.00	0.500
Bromomethane	74-83-9	22.2	Q	2.00	1.00	0.500
2-Butanone	78-93-3	14.8	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	23.1		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	21.6		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	21.5		1.00	0.500	0.250
Carbon disulfide	75-15-0	12.4		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.0		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.7		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.5		1.00	0.500	0.250
Chloroethane	75-00-3	22.7		2.00	1.00	0.500
Chloroform	67-66-3	23.1		1.00	0.250	0.125
Chloromethane	74-87-3	18.5	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.3		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	16.8		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.3		1.00	0.500	0.250
Dibromomethane	74-95-3	21.0		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.4		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.5		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	21.7		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	12.2		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.5		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.2		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	20.3		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.9		1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	22.0		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	22.5		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.6		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.7		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.8		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.5		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.6		1.00	0.500	0.250
Ethylbenzene	100-41-4	22.1		1.00	0.500	0.250
2-Hexanone	591-78-6	15.2	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	23.2		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.7		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	21.2		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	16.0	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	19.7		1.00	0.500	0.250
Naphthalene	91-20-3	18.6		1.00	0.400	0.200
n-Propylbenzene	103-65-1	21.0		1.00	0.250	0.125
Styrene	100-42-5	21.6		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	21.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.7		1.00	0.400	0.200
Tetrachloroethene	127-18-4	21.0		1.00	0.500	0.250
Toluene	108-88-3	21.7		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	20.2		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	21.1		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	21.1		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.9		1.00	0.500	0.250
Trichloroethene	79-01-6	22.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	20.9		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.2		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	22.8		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.7		1.00	0.500	0.250
Vinyl chloride	75-01-4	19.4		1.00	0.500	0.250
o-Xylene	95-47-6	20.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	43.3		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	99.9	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW12-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 21:12
Collect Date:	05/12/2015 11:05	**Dilution:**	1	**File ID:**	17M011879
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09A-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG524783	**Analyst:**	TMB	**Run Date:**	05/22/2015 19:14
Collect Date:	05/12/2015 13:15	**Dilution:**	1	**File ID:**	8M404859
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	99.3	70	120	
Toluene-d8	97.4	85	120	
4-Bromofluorobenzene	93.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW14-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 21:52
Collect Date:	05/12/2015 14:40	**Dilution:**	1	**File ID:**	17M011881
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.00	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.418	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.799	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	2.77		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	67WW14FD-051215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 22:12
Collect Date:	05/12/2015 14:40	**Dilution:**	1	**File ID:**	17M011882
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.427	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.815	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	2.93		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050872-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/16/2015 13:36
Workgroup #:	WG523885	**Analyst:**	ADC	**Run Date:**	05/15/2015 18:54
Collect Date:	05/12/2015 00:01	**Dilution:**	1	**File ID:**	17M011872
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	98.7	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	106	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050872
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400354	RINSE	NA	1	1		10/02/14 10:24
8M400355	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:16
8M400356	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:33
8M400357	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:58
8M400358	WG494714-02 5ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:24
8M400359	WG494714-03 20ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:53
8M400360	WG494714-04 50ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:22
8M400361	WG494714-05 100ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:51
8M400362	WG494714-06 200ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:19
8M400363	WG494714-07 300ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:48
8M400364	WG494714-08 400ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:16
8M400365	WG494714-09 500ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:45
8M400366	RINSE	NA	1	1		10/02/14 16:14
8M400367	WG494714-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD66677	10/02/14 16:47
8M400368	WG494979-01 50ug/L CCV STD 8260	NA	1	1	STD66687	10/02/14 17:22
8M400371	WG494980-02 20ug/L LCS STD 624	NA	2	1	STD66693	10/02/14 17:51
8M400372	WG494980-03 20ug/L LCSDUP STD 624	NA	2	1	STD66693	10/02/14 18:20
8M400373	RINSE	NA	2	1		10/02/14 18:49
8M400374	WG494980-01 VBLK1002 BLANK STD 624	NA	2	1		10/02/14 19:18
8M400375	L14100004-01 LOD 826-SPE A9/FOO	NA	1	1		10/02/14 19:47
8M400376	L14100006-01 LOQ 826-SPE A9/FOO	NA	1	1		10/02/14 20:16
8M400377	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 20:45
8M400378	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 21:14
8M400379	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 21:42
8M400380	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 22:12
8M400381	L14100098-10 A 624-SPE	5	2	1		10/02/14 22:40
8M400382	L14100089-02 A 624-SPE	5	2	1		10/02/14 23:09
8M400383	L14100098-04 A 624-SPE	<2	2	1		10/02/14 23:38
8M400384	L14100098-05 A 624-SPE	<2	2	1		10/03/14 00:06
8M400385	L14100098-06 A 624-SPE	<2	2	1		10/03/14 00:36
8M400386	L14100098-07 A 624-SPE	<2	2	1		10/03/14 01:06
8M400387	L14100098-08 A 624-SPE	<2	2	1		10/03/14 01:34
8M400388	L14100098-09 A 624-SPE	<2	2	1		10/03/14 02:04
8M400389	L14100110-01 A 624-SPE2	<2	2	1		10/03/14 02:32

Approved: October 03, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400390	L14100110-02 A 624-SPE1	<2	2	1		10/03/14 03:02
8M400391	RINSE	NA	1	1		10/03/14 03:30
8M400392	RINSE	NA	1	1		10/03/14 03:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M400355				
	Tune failed, DNR.			
3	X			
File ID: 8M400356				
	Tune failed, DNR.			
4				
File ID: 8M400357				
	Purged BFB.			
30	X	100	Over Calibration Range	TCE
File ID: 8M400385				
31	X	1	Carry-over contamination	
File ID: 8M400386				
	DNR.			
32	X	1	Carry-over contamination	
File ID: 8M400387				
	DNR.			
33	X	50	Over Calibration Range	TCE
File ID: 8M400388				
34	X	1	Carry-over contamination	
File ID: 8M400389				
	DNR.			

Approved: October 03, 2014

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 041615
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 20
Method: 5030C SOP: PAT01 Rev: 17

Maintenance Log ID: 53074

Internal Standard: STD69797 Surrogate Standard: STD69798
CCV: STD69853 LCS: STD69940 MS/MSD: STD69940

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG519118

Comments: WG519911 is not reported due to instrument error.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M011174	WG519118-01 50ng BFB 8260	NA	1	1	STD68998	04/16/15 09:58
17M011175	WG519118-02 50ug/L CCV 8260	NA	1	1	STD69853	04/16/15 10:16
17M011176	RINSE	NA	1	1		04/16/15 10:36
17M011177	WG519118-03 0.3ug/L STD	NA	1	1	STD69853	04/16/15 10:56
17M011178	WG519118-04 0.4ug/L STD	NA	1	1	STD69853	04/16/15 11:16
17M011179	WG519118-05 1.0ug/L STD	NA	1	1	STD69853	04/16/15 11:36
17M011180	WG519118-06 2.0ug/L STD	NA	1	1	STD69853	04/16/15 11:56
17M011181	WG519118-07 5.0ug/L STD	NA	1	1	STD69853	04/16/15 12:16
17M011182	WG519118-08 20.0ug/L STD	NA	1	1	STD69853	04/16/15 12:36
17M011183	WG519118-09 100.0ug/L STD	NA	1	1	STD69853	04/16/15 12:56
17M011184	WG519118-10 200.0ug/L STD	NA	1	1	STD69853	04/16/15 13:16
17M011185	WG519118-11 300.0ug/L STD	NA	1	1	STD69853	04/16/15 13:36
17M011187	WG519118-12 50.0ug/L ALT SRC	NA	1	1	STD69813	04/16/15 14:57
17M011188	RINSE	NA	1	1		04/16/15 15:17
17M011189	WG519118-12 20.0ug/L ALT SRC	NA	1	1	STD69813	04/16/15 15:37
17M011190	rinse	NA	1	1		04/16/15 15:57
17M011191	WG519911-01 BLK 04/16	NA	1	1		04/16/15 16:17
17M011192	WG519911-02 20ug/L LCS	NA	1	1	STD69813	04/16/15 16:37
17M011193	L15040804-21 A MS 826-SPE	NA	1	1	STD69813	04/16/15 16:57
17M011194	L15040804-22 A MSD 826-SPE	NA	1	1	STD69813	04/16/15 17:17
17M011195	RINSE	NA	1	1		04/16/15 17:37
17M011196	L15040804-08 A 826-SPE	NA	1	1		04/16/15 17:57
17M011197	L15040804-09 A 826-SPE	NA	1	1		04/17/15 08:20
17M011198	L15040804-10 A 826-SPE	NA	1	1		04/17/15 08:40
17M011199	L15040804-11 A 826-SPE	NA	1	1		04/17/15 09:00
17M011200	RINSE	NA	1	1		04/17/15 09:20

Approved: April 23, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051215
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53130

Internal Standard: STD70050 Surrogate Standard: STD70050
CCV: STD70474 LCS: STD70475 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG523161

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M404566	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 08:44
8M404567	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 09:01
8M404568	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 09:37
8M404569	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 10:02
8M404570	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 10:16
8M404571	WG523161-02 50ug/L CCV STD 8260	NA	1	1	STD70341	05/12/15 10:39
8M404572	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 11:07
8M404573	WG523161-02 50ug/L CCV STD 8260	NA	1	1	STD70341	05/12/15 11:30
8M404574	RINSE	NA	1	1		05/12/15 11:59
8M404575	RINSE	NA	1	1		05/12/15 13:56
8M404576	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 15:38
8M404577	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 15:55
8M404578	RINSE	NA	1	1		05/12/15 16:21
8M404579	WG523161-02 0.3ug/L STD 8260	NA	1	1	STD70474	05/12/15 16:50
8M404580	WG523161-03 0.4ug/L STD 8260	NA	1	1	STD70474	05/12/15 17:19
8M404581	WG523161-04 1ug/L STD 8260	NA	1	1	STD70474	05/12/15 17:48
8M404582	WG523161-05 2ug/L STD 8260	NA	1	1	STD70474	05/12/15 18:16
8M404583	WG523161-06 5ug/L STD 8260	NA	1	1	STD70474	05/12/15 18:45
8M404584	WG523161-07 20ug/L STD 8260	NA	1	1	STD70474	05/12/15 19:13
8M404585	WG523161-08 50ug/L STD 8260	NA	1	1	STD70474	05/12/15 19:42
8M404586	WG523161-09 100ug/L STD 8260	NA	1	1	STD70474	05/12/15 20:11
8M404587	WG523161-10 200ug/L STD 8260	NA	1	1	STD70474	05/12/15 20:40
8M404588	WG523161-11 300ug/L STD 8260	NA	1	1	STD70474	05/12/15 21:08
8M404589	RINSE	NA	1	1		05/12/15 21:37
8M404590	RINSE	NA	1	1		05/12/15 22:06
8M404591	WG523161-12 50ug/L ALT SRC STD 8260	NA	1	1	STD70475	05/12/15 22:34
8M404592	RINSE	NA	1	1		05/12/15 23:03
8M404593	RINSE	NA	1	1		05/12/15 23:31

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M404566				

Approved: May 14, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051215		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	21
Method:	624	SOP:	MSV10	Rev:	13
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53130				

Internal Standard: STD70050 Surrogate Standard: STD70050

CCV: STD70474 LCS: STD70475 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG523161

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Tune failed, DNR.	
2	X			
File ID: 8M404567				
			Tune failed, DNR. Changed the septa.	
3	X			
File ID: 8M404568				
			Tune failed, DNR.	
4				
File ID: 8M404569				
			Tune failed, DNR. Purged BFB.	
6	X			
File ID: 8M404571				
			Vc was high, DNR. Increased the voltage.	
8				
File ID: 8M404573				
			Vc was high, running a curve.	
11	X			
File ID: 8M404576				
			Tune failed, DNR.	

Approved: May 14, 2015

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 051515
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030C/5030B/5035 SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD70450 Surrogate Standard: STD70451
CCV: STD70453 LCS: STD70455 MS/MSD: STD70455

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG523885

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M011863	WG523883-01 50ng BFB 8260	NA	1	1	STD70032	05/15/15 15:06
17M011864	WG523883-02 50ug/L CCV 8260	NA	1	1	STD70453	05/15/15 15:24
17M011865	RINSE	NA	1	1		05/15/15 15:48
17M011866	WG523885-01 BLK 05/15 8260	NA	1	1		05/15/15 16:08
17M011867	WG523885-01 BLK 05/15 8260	NA	1	1		05/15/15 17:06
17M011868	WG523885-02 20ug/L LCS 8260	NA	1	1	STD70455	05/15/15 17:26
17M011869	L15050872-07 A MS 826-SPE	<2	1	1	STD70455	05/15/15 17:55
17M011870	L15050872-08 A MSD 826-LOW	<2	1	1	STD70455	05/15/15 18:15
17M011871	RINSE	NA	1	1		05/15/15 18:34
17M011872	L15050872-13 A 826-LOW	<2	1	1		05/15/15 18:54
17M011873	L15050872-06 A 826-LOW	<2	1	1		05/15/15 19:14
17M011874	L15050872-01 A 826-LOW	<2	1	1		05/15/15 19:34
17M011875	L15050872-02 A 826-LOW	<2	1	1		05/15/15 19:53
17M011876	L15050872-03 A 826-LOW	<2	1	1		05/15/15 20:13
17M011877	L15050872-04 A 826-LOW	<2	1	1		05/15/15 20:33
17M011878	L15050872-05 A 826-LOW	<2	1	1		05/15/15 20:53
17M011879	L15050872-09 A 826-LOW	<2	1	1		05/15/15 21:12
17M011880	L15050872-10 A 826-LOW	<2	1	1		05/15/15 21:33
17M011881	L15050872-11 A 826-LOW	<2	1	1		05/15/15 21:52
17M011882	L15050872-12 A 826-LOW	<2	1	1		05/15/15 22:12
17M011883	RINSE	NA	1	1		05/15/15 22:32
17M011884	WG523885-06 624-BLK	NA	2	1		05/15/15 22:51
17M011885	L15050962-01 A 624-SPE	<2	2	1		05/15/15 23:11
17M011886	L15050962-02 A 624-SPE	<2	2	1		05/15/15 23:31
17M011887	L15050962-03 A 624-SPE	<2	2	1		05/15/15 23:51
17M011888	L15050962-04 A 624-SPE	<2	2	1		05/16/15 00:11
17M011889	L15050962-05 A 624-SPE	<2	2	1		05/16/15 00:30
17M011890	L15050962-06 A 624-SPE	<2	2	1		05/17/15 13:22
17M011892	RINSE	NA	2	1		05/17/15 13:41
17M011893	RINSE	NA	2	1		05/17/15 14:00
17M011894	RINSE	NA	2	1		05/17/15 14:20
17M011895	RINSE	NA	2	1		05/17/15 14:39
17M011896	RINSE	NA	2	1		05/17/15 14:59
17M011897	RINSE	NA	2	1		05/17/15 15:18

Approved: May 20, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 051515
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030C/5030B/5035 SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD70450 Surrogate Standard: STD70451
CCV: STD70453 LCS: STD70455 MS/MSD: STD70455

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG523885

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M011898	RINSE	NA	2	1		05/17/15 15:38
17M011899	RINSE	NA	2	1		05/17/15 15:58
17M011900	RINSE	NA	2	1		05/17/15 16:17
17M011901	RINSE	NA	2	1		05/17/15 16:37
17M011902	RINSE	NA	2	1		05/17/15 17:19
17M011903	RINSE	NA	2	1		05/17/15 17:38
17M011904	RINSE	NA	2	1		05/17/15 17:57
17M011905	RINSE	NA	2	1		05/17/15 18:17
17M011906	RINSE	NA	2	1		05/17/15 18:36
17M011907	RINSE	NA	2	1		05/17/15 18:56
17M011908	RINSE	NA	2	1		05/17/15 19:15
17M011909	RINSE	NA	2	1		05/17/15 19:35
17M011910	RINSE	NA	2	1		05/17/15 19:54
17M011911	RINSE	NA	2	1		05/17/15 20:14
17M011912	RINSE	NA	2	1		05/17/15 20:33
17M011913	RINSE	NA	2	1		05/17/15 20:53
17M011914	RINSE	NA	2	1		05/17/15 21:12
17M011915	RINSE	NA	2	1		05/17/15 21:32
17M011916	RINSE	NA	2	1		05/17/15 21:51
17M011917	RINSE	NA	2	1		05/17/15 22:11
17M011918	RINSE	NA	2	1		05/17/15 22:30
17M011919	RINSE	NA	2	1		05/17/15 22:50
17M011920	RINSE	NA	2	1		05/17/15 23:09
17M011921	RINSE	NA	2	1		05/17/15 23:29
17M011922	RINSE	NA	2	1		05/17/15 23:49
17M011923	RINSE	NA	2	1		05/18/15 00:08
17M011924	RINSE	NA	2	1		05/18/15 00:27
17M011925	RINSE	NA	2	1		05/18/15 00:47
17M011926	RINSE	NA	2	1		05/18/15 01:06
17M011927	RINSE	NA	2	1		05/18/15 01:26
17M011928	RINSE	NA	2	1		05/18/15 01:45
17M011929	RINSE	NA	2	1		05/18/15 02:05
17M011930	RINSE	NA	2	1		05/18/15 02:24
17M011931	RINSE	NA	2	1		05/18/15 02:44

Approved: May 20, 2015

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 051515
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030C/5030B/5035 SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD70450 Surrogate Standard: STD70451
CCV: STD70453 LCS: STD70455 MS/MSD: STD70455

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG523885

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M011932	RINSE	NA	2	1		05/18/15 03:03
17M011933	RINSE	NA	2	1		05/18/15 03:23
17M011934	RINSE	NA	2	1		05/18/15 03:42
17M011935	RINSE	NA	2	1		05/18/15 04:02
17M011936	RINSE	NA	2	1		05/18/15 04:21
17M011937	RINSE	NA	2	1		05/18/15 04:41
17M011938	RINSE	NA	2	1		05/18/15 05:00
17M011939	RINSE	NA	2	1		05/18/15 05:20
17M011940	RINSE	NA	2	1		05/18/15 05:39
17M011941	RINSE	NA	2	1		05/18/15 05:59
17M011942	RINSE	NA	2	1		05/18/15 06:19
17M011943	RINSE	NA	2	1		05/18/15 06:38

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18				
File ID: 17M011880				
	L15050872-10 DNR RT SHIFT ON ATOMX. RR STR.			
23	X	10	Over Calibration Range	
File ID: 17M011885				
	L15050962-01			
24	X	10	Over Calibration Range	
File ID: 17M011886				
	L15050962-02			
26	X	10	Over Calibration Range	
File ID: 17M011888				
	L15050962-04			
28				
File ID: 17M011890				
	L15050962-06 Instrumenet error, MT. RR 2x			

Approved: May 20, 2015

Page: 3

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 052215
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53165

Internal Standard: STD70050 Surrogate Standard: STD70050
CCV: STD70656; STD70547 LCS: STD70658; STD70514 MS/MSD: STD70658; STD70688

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG524783

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M404840	WG524780-01 50ng BFB STD 8260	NA	1	1	STD70032	05/22/15 10:36
8M404841	WG524780-01 50ng BFB STD 8260	NA	1	1	STD70032	05/22/15 10:51
8M404842	WG524780-01 50ng BFB STD 8260	NA	1	1	STD70032	05/22/15 11:16
8M404843	WG524780-01 50ng BFB STD 8260	NA	1	1	STD70032	05/22/15 11:32
8M404844	WG524780-02 50ug/L CCV STD 8260	NA	1	1	STD70656	05/22/15 11:57
8M404845	WG524781-01 100ug/L A9 CCV STD 8260	NA	1	1	STD70547	05/22/15 12:29
8M404846	WG524783-01 VBLK0522 BLANK STD 826	NA	1	1		05/22/15 12:58
8M404847	L15050685-20 B TB 826-SPE	<2	1	1		05/22/15 13:27
8M404848	L15050685-19 B 826-SPE	<2	1	1		05/22/15 13:56
8M404849	L15050685-15 B 826-SPE	<2	1	1		05/22/15 14:25
8M404850	L15050685-14 B 826-SPE	<2	1	1		05/22/15 14:53
8M404851	WG524783-02 20ug/L LCS STD 8260	NA	1	1	STD70658	05/22/15 15:22
8M404852	L15051017-05 B MS 200X 826-A9-SPE	<2	1	200	STD70688	05/22/15 15:51
8M404853	L15051017-06 B MSD 200X 826-A9-SPE	<2	1	200	STD70688	05/22/15 16:20
8M404854	L15051250-03 A MS 826-SPE1	<2	1	1	STD70658	05/22/15 16:48
8M404855	L15051250-04 A MSD 826-SPE1	<2	1	1	STD70658	05/22/15 17:18
8M404856	WG524783-03 100ug/L A9/FOO LCS STD 8	NA	1	1	STD70514	05/22/15 17:46
8M404857	L15051250-10 A TB 826-SPE1	<2	1	1		05/22/15 18:16
8M404858	L15051250-01 A ER 826-SPE1	<2	1	1		05/22/15 18:44
8M404859	L15050872-10 B 826-LOW	<2	1	1		05/22/15 19:14
8M404860	L15051017-04 B REF 200X 826-A9-SPE	<2	1	200		05/22/15 19:43
8M404861	L15051017-09 B REF 50X 826-A9-SPE	<2	1	50		05/22/15 20:12
8M404862	L15051250-02 A REF 826-SPE1	<2	1	1		05/22/15 20:41
8M404863	L15051250-05 A 826-SPE1	<2	1	1		05/22/15 21:09
8M404864	L15051250-06 A 826-SPE1	<2	1	1		05/22/15 21:38
8M404865	L15051250-07 A 826-SPE1	<2	1	1		05/22/15 22:07
8M404866	L15051250-08 A 826-SPE1	<2	1	1		05/22/15 22:37
8M404867	L15051250-09 A 826-SPE1	<2	1	1		05/22/15 23:06
8M404868	CCV	NA	1	1		05/22/15 23:34
8M404869	RINSE	NA	1	1		05/23/15 00:03
8M404870	RINSE	NA	1	1		05/23/15 00:32
8M404871	RINSE	NA	1	1		05/23/15 01:00
8M404872	L15051053-01 A 8260	5	1	1		05/23/15 01:29

Approved: May 26, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 052215
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53165

Internal Standard: STD70050 Surrogate Standard: STD70050
CCV: STD70656; STD70547 LCS: STD70658; STD70514 MS/MSD: STD70658; STD70688

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG524783

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M404840				
	Tune failed, DNR.			
2	X			
File ID: 8M404841				
	Tune failed, DNR.			
3	X			
File ID: 8M404842				
	Tune failed, DNR. Purged BFB. Changed the septa.			
26	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M404865				
27	X	1	Carry-over contamination	
File ID: 8M404866				
	Possible CIS12-DCE carry over. DNR			
28	X	1	Carry-over contamination	
File ID: 8M404867				
	Possible CIS12-DCE carry over. DNR			

Approved: May 26, 2015

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 02-OCT-2014
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 63840
Analytical Workgroups: WG494714; WG494980

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
03-OCT-2014
Tiffany Bailey

Secondary Reviewer:
03-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-03-2014 13:21:54

Microbac Laboratories Inc.

Data Checklist

Date: 16-APR-2015
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: WG519118
Runlog ID: 67534
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
22-APR-2015

Secondary Reviewer:
23-APR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: APR-23-2015 12:07:24

Microbac Laboratories Inc.

Data Checklist

Date: 12-MAY-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 67921
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
13-MAY-2015
Tiffany Bailey

Secondary Reviewer:
14-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-14-2015 16:28:01

Microbac Laboratories Inc.

Data Checklist

Date: 15-MAY-2015
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 68061
Analytical Workgroups: WG523885

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2015

Secondary Reviewer:
20-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2015 10:05:36

Microbac Laboratories Inc.

Data Checklist

Date: 22-MAY-2015
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 68173
Analytical Workgroups: WG524783

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	X
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
26-MAY-2015
Tiffany Bailey

Secondary Reviewer:
26-MAY-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-26-2015 11:56:25

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG523885

Login Number: L15050872

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW05-051215	01	05/12/15					05/15/2015	3.5	14		05/15/15	3.5	14	
67WW02-051215	02	05/12/15					05/15/2015	3.5	14		05/15/15	3.5	14	
67WW02FD-051215	03	05/12/15					05/15/2015	3.5	14		05/15/15	3.5	14	
67WW03-051215	04	05/12/15					05/15/2015	3.5	14		05/15/15	3.5	14	
67WW07-051215	05	05/12/15					05/15/2015	3.5	14		05/15/15	3.5	14	
67WW10-051215	06	05/12/15					05/15/2015	3.4	14		05/15/15	3.4	14	
67WW10MS-051215	07	05/12/15					05/15/2015	3.3	14		05/15/15	3.3	14	
67WW10MSD-051215	08	05/12/15					05/15/2015	3.3	14		05/15/15	3.3	14	
67WW12-051215	09	05/12/15					05/15/2015	3.4	14		05/15/15	3.4	14	
67WW14-051215	11	05/12/15					05/15/2015	3.3	14		05/15/15	3.3	14	
67WW14FD-051215	12	05/12/15					05/15/2015	3.3	14		05/15/15	3.3	14	
TRIP BLANK	13	05/12/15					05/15/2015	3.8	14		05/15/15	3.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4186694
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG524783

Login Number: L15050872

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW09A-051215	10	05/12/15					05/22/2015	10.2	14		05/22/15	10.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4186694
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15050872
Instrument Id: HPMS17
Workgroup (AAB#): WG523885

Method: 8260
CAL ID: HPMS17-16-APR-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15050872-01	1.00	01	105	110	105	104
L15050872-02	1.00	01	101	109	105	103
L15050872-03	1.00	01	101	108	103	103
L15050872-04	1.00	01	104	109	103	103
L15050872-05	1.00	01	101	110	106	103
L15050872-06	1.00	01	102	111	101	103
L15050872-07	1.00	01	98.3	112	103	104
L15050872-08	1.00	01	99.9	113	103	103
L15050872-09	1.00	01	102	110	105	103
L15050872-11	1.00	01	103	110	104	104
L15050872-12	1.00	01	104	110	105	104
L15050872-13	1.00	01	98.7	108	106	103
WG523885-01	1.00	01	101	110	104	103
WG523885-01	1.00	02	100	111	106	104
WG523885-02	1.00	01	101	113	103	103
WG523885-06	1.00	01	102	109	104	103

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4186705
Report generated: 05/27/2015 11:30

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15050872
Instrument Id: HPMS8
Workgroup (AAB#): WG524783

Method: 8260
CAL ID: HPMS8-12-MAY-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15050872-10	1.00	01	99.3	102	93.0	97.4
WG524783-01	1.00	01	96.3	102	92.4	95.2
WG524783-02	1.00	01	95.7	101	89.7	95.7
WG524783-03	1.00	02	100	106	97.8	97.1

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4186705
Report generated: 05/27/2015 11:30

METHOD BLANK SUMMARY

Login Number: L15050872
Blank File ID: 17M011866
Prep Date: 05/15/15 16:08
Analyzed Date: 05/15/15 16:08
Analyst: ADC

Work Group: WG523885
Blank Sample ID: WG523885-01
Instrument ID: HPMS17
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG523885-02	17M011868	05/15/15 17:26	01
67WW10MS-051215	L15050872-07	17M011869	05/15/15 17:55	01
67WW10MSD-051215	L15050872-08	17M011870	05/15/15 18:15	01
TRIP BLANK	L15050872-13	17M011872	05/15/15 18:54	01
67WW10-051215	L15050872-06	17M011873	05/15/15 19:14	01
67WW05-051215	L15050872-01	17M011874	05/15/15 19:34	01
67WW02-051215	L15050872-02	17M011875	05/15/15 19:53	01
67WW02FD-051215	L15050872-03	17M011876	05/15/15 20:13	01
67WW03-051215	L15050872-04	17M011877	05/15/15 20:33	01
67WW07-051215	L15050872-05	17M011878	05/15/15 20:53	01
67WW12-051215	L15050872-09	17M011879	05/15/15 21:12	01
67WW14-051215	L15050872-11	17M011881	05/15/15 21:52	01
67WW14FD-051215	L15050872-12	17M011882	05/15/15 22:12	01

Report Name: BLANK_SUMMARY
PDF File ID: 4186695
Report generated 05/27/2015 11:30

METHOD BLANK SUMMARY

Login Number: L15050872
Blank File ID: 17M011867
Prep Date: 05/15/15 17:06
Analyzed Date: 05/15/15 17:06
Analyst: ADC

Work Group: WG523885
Blank Sample ID: WG523885-01
Instrument ID: HPMS17
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG523885-02	17M011868	05/15/15 17:26	01
67WW10MS-051215	L15050872-07	17M011869	05/15/15 17:55	01
67WW10MSD-051215	L15050872-08	17M011870	05/15/15 18:15	01
TRIP BLANK	L15050872-13	17M011872	05/15/15 18:54	01
67WW10-051215	L15050872-06	17M011873	05/15/15 19:14	01
67WW05-051215	L15050872-01	17M011874	05/15/15 19:34	01
67WW02-051215	L15050872-02	17M011875	05/15/15 19:53	01
67WW02FD-051215	L15050872-03	17M011876	05/15/15 20:13	01
67WW03-051215	L15050872-04	17M011877	05/15/15 20:33	01
67WW07-051215	L15050872-05	17M011878	05/15/15 20:53	01
67WW12-051215	L15050872-09	17M011879	05/15/15 21:12	01
67WW14-051215	L15050872-11	17M011881	05/15/15 21:52	01
67WW14FD-051215	L15050872-12	17M011882	05/15/15 22:12	01

Report Name: BLANK_SUMMARY
PDF File ID: 4186695
Report generated 05/27/2015 11:30

METHOD BLANK SUMMARY

Login Number: L15050872
Blank File ID: 17M011884
Prep Date: 05/15/15 22:51
Analyzed Date: 05/15/15 22:51
Analyst: ADC

Work Group: WG523885
Blank Sample ID: WG523885-06
Instrument ID: HPMS17
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG523885-02	17M011868	05/15/15 17:26	01
67WW10MS-051215	L15050872-07	17M011869	05/15/15 17:55	01
67WW10MSD-051215	L15050872-08	17M011870	05/15/15 18:15	01
TRIP BLANK	L15050872-13	17M011872	05/15/15 18:54	01
67WW10-051215	L15050872-06	17M011873	05/15/15 19:14	01
67WW05-051215	L15050872-01	17M011874	05/15/15 19:34	01
67WW02-051215	L15050872-02	17M011875	05/15/15 19:53	01
67WW02FD-051215	L15050872-03	17M011876	05/15/15 20:13	01
67WW03-051215	L15050872-04	17M011877	05/15/15 20:33	01
67WW07-051215	L15050872-05	17M011878	05/15/15 20:53	01
67WW12-051215	L15050872-09	17M011879	05/15/15 21:12	01
67WW14-051215	L15050872-11	17M011881	05/15/15 21:52	01
67WW14FD-051215	L15050872-12	17M011882	05/15/15 22:12	01

Report Name: BLANK_SUMMARY
PDF File ID: 4186695
Report generated 05/27/2015 11:30

METHOD BLANK SUMMARY

Login Number: L15050872
Blank File ID: 8M404846
Prep Date: 05/22/15 12:58
Analyzed Date: 05/22/15 12:58
Analyst: TMB

Work Group: WG524783
Blank Sample ID: WG524783-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524783-02	8M404851	05/22/15 15:22	01
LCS	WG524783-03	8M404856	05/22/15 17:46	02
67WW09A-051215	L15050872-10	8M404859	05/22/15 19:14	01

Report Name: BLANK_SUMMARY
PDF File ID: 4186695
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15050872 Prep Date: 05/15/15 16:08 Sample ID: WG523885-01
Instrument ID: HPMS17 Run Date: 05/15/15 16:08 Prep Method: 5030B/5030C/503
File ID: 17M011866 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG523885 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-16-APR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4186696
27-MAY-2015 11:30

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15050872 Prep Date: 05/15/15 16:08 Sample ID: WG523885-01
Instrument ID: HPMS17 Run Date: 05/15/15 16:08 Prep Method: 5030B/5030C/503
File ID: 17M011866 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG523885 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-16-APR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.281	1	J
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	101	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	104	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4186696
27-MAY-2015 11:30

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15050872 Prep Date: 05/15/15 17:06 Sample ID: WG523885-01
Instrument ID: HPMS17 Run Date: 05/15/15 17:06 Prep Method: 5030B/5030C/503
File ID: 17M011867 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG523885 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-16-APR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4186696
27-MAY-2015 11:30

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15050872 Prep Date: 05/15/15 17:06 Sample ID: WG523885-01
Instrument ID: HPMS17 Run Date: 05/15/15 17:06 Prep Method: 5030B/5030C/503
File ID: 17M011867 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG523885 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-16-APR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.418	1	J
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	111	85 - 115	PASS
1,2-Dichloroethane-d4	100	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	106	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4186696
27-MAY-2015 11:30

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15050872 Prep Date: 05/15/15 22:51 Sample ID: WG523885-06
Instrument ID: HPMS17 Run Date: 05/15/15 22:51 Prep Method: 5030B/5030C/503
File ID: 17M011884 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG523885 Matrix: Water 2 Units: ug/L
Contract #: Cal ID: HPMS17-16-APR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4186696
27-MAY-2015 11:30

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15050872 Prep Date: 05/15/15 22:51 Sample ID: WG523885-06
Instrument ID: HPMS17 Run Date: 05/15/15 22:51 Prep Method: 5030B/5030C/503
File ID: 17M011884 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG523885 Matrix: Water 2 Units: ug/L
Contract #: Cal ID: HPMS17-16-APR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	109	85 - 115	PASS
1,2-Dichloroethane-d4	102	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	104	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4186696
27-MAY-2015 11:30

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15050872 Prep Date: 05/22/15 12:58 Sample ID: WG524783-01
Instrument ID: HPMS8 Run Date: 05/22/15 12:58 Prep Method: 5030B/5030C/503
File ID: 8M404846 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG524783 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-12-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4186696
27-MAY-2015 11:30

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15050872 Prep Date: 05/22/15 12:58 Sample ID: WG524783-01
Instrument ID: HPMS8 Run Date: 05/22/15 12:58 Prep Method: 5030B/5030C/503
File ID: 8M404846 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG524783 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-12-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	85 - 115	PASS
1,2-Dichloroethane-d4	96.3	70 - 120	PASS
Toluene-d8	95.2	85 - 120	PASS
4-Bromofluorobenzene	92.4	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4186696
27-MAY-2015 11:30

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15050872 | Run Date: 05/15/2015 | Sample ID: WG523885-02
Instrument ID: HPMS17 | Run Time: 17:26 | Prep Method: 5030B/5030C/503
File ID: 17M011868 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG523885 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD70455 | Cal ID: HPMS17-16-APR-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	16.2	81.2	40 - 140	
Benzene	20.0	21.5	107	80 - 120	
Bromobenzene	20.0	20.2	101	75 - 125	
Bromochloromethane	20.0	20.4	102	65 - 130	
Bromodichloromethane	20.0	20.1	100	75 - 120	
Bromoform	20.0	18.2	91.2	70 - 130	
Bromomethane	20.0	24.7	124	30 - 145	
2-Butanone	20.0	15.0	75.1	30 - 150	
n-Butylbenzene	20.0	21.2	106	70 - 135	
sec-Butylbenzene	20.0	20.0	99.9	70 - 125	
tert-Butylbenzene	20.0	20.1	100	70 - 130	
Carbon disulfide	20.0	11.3	56.7	35 - 160	
Carbon tetrachloride	20.0	19.3	96.7	65 - 140	
Chlorobenzene	20.0	19.6	98.2	80 - 120	
Chlorodibromomethane	20.0	18.4	92.2	60 - 135	
Chloroethane	20.0	21.8	109	60 - 135	
Chloroform	20.0	22.4	112	65 - 135	
Chloromethane	20.0	24.8	124	40 - 125	
2-Chlorotoluene	20.0	19.3	96.6	75 - 125	
4-Chlorotoluene	20.0	19.2	96.0	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	15.3	76.3	50 - 130	
1,2-Dibromoethane	20.0	18.3	91.4	80 - 120	
Dibromomethane	20.0	20.4	102	75 - 125	
1,2-Dichlorobenzene	20.0	19.0	95.1	70 - 120	
1,3-Dichlorobenzene	20.0	19.1	95.4	75 - 125	
1,4-Dichlorobenzene	20.0	20.0	99.8	75 - 125	
Dichlorodifluoromethane	20.0	23.9	119	30 - 155	
1,1-Dichloroethane	20.0	20.9	104	70 - 135	
1,2-Dichloroethane	20.0	19.7	98.4	70 - 130	
1,1-Dichloroethene	20.0	19.9	99.4	70 - 130	
cis-1,2-Dichloroethene	20.0	21.4	107	70 - 125	
trans-1,2-Dichloroethene	20.0	21.5	107	60 - 140	
1,2-Dichloropropane	20.0	21.8	109	75 - 125	
1,3-Dichloropropane	20.0	19.8	99.0	75 - 125	
2,2-Dichloropropane	20.0	19.5	97.7	70 - 135	
cis-1,3-Dichloropropene	20.0	21.0	105	70 - 130	
trans-1,3-Dichloropropene	20.0	18.5	92.6	55 - 140	
1,1-Dichloropropene	20.0	20.9	104	75 - 130	
Ethylbenzene	20.0	20.9	105	75 - 125	
2-Hexanone	20.0	14.6	73.1	55 - 130	
Hexachlorobutadiene	20.0	21.3	106	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4186697
Report generated: 05/27/2015 11:30

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15050872 Run Date: 05/15/2015 Sample ID: WG523885-02
Instrument ID: HPMS17 Run Time: 17:26 Prep Method: 5030B/5030C/503
File ID: 17M011868 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG523885 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD70455 Cal ID: HPMS17-16-APR-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	19.5	97.5	75 - 125	
p-Isopropyltoluene	20.0	19.6	98.0	75 - 130	
4-Methyl-2-pentanone	20.0	15.3	76.5	60 - 135	
Methylene chloride	20.0	19.5	97.4	55 - 140	
Naphthalene	20.0	17.5	87.4	55 - 140	
n-Propylbenzene	20.0	19.7	98.5	70 - 130	
Styrene	20.0	20.3	102	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.0	100	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	17.9	89.6	65 - 130	
Tetrachloroethene	20.0	20.1	101	45 - 150	
Toluene	20.0	20.8	104	75 - 120	
1,2,3-Trichlorobenzene	20.0	18.7	93.6	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.4	96.9	65 - 135	
1,1,1-Trichloroethane	20.0	20.6	103	65 - 130	
1,1,2-Trichloroethane	20.0	19.1	95.6	75 - 125	
Trichloroethene	20.0	21.6	108	70 - 125	
Trichlorofluoromethane	20.0	22.2	111	60 - 145	
1,2,3-Trichloropropane	20.0	18.1	90.4	75 - 125	
1,2,4-Trimethylbenzene	20.0	21.3	106	75 - 130	
1,3,5-Trimethylbenzene	20.0	21.2	106	75 - 130	
Vinyl chloride	20.0	23.7	119	50 - 145	
o-Xylene	20.0	19.5	97.4	80 - 120	
m-,p-Xylene	40.0	41.1	103	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	113	85 - 115	PASS
1,2-Dichloroethane-d4	101	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	103	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4186697
Report generated: 05/27/2015 11:30

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15050872 | Run Date: 05/22/2015 | Sample ID: WG524783-02
Instrument ID: HPMS8 | Run Time: 15:22 | Prep Method: 5030B/5030C/503
File ID: 8M404851 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG524783 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD70658 | Cal ID: HPMS8-12-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	23.4	117	40 - 140	
Benzene	20.0	21.0	105	80 - 120	
Bromobenzene	20.0	18.2	90.8	75 - 125	
Bromochloromethane	20.0	19.4	96.9	65 - 130	
Bromodichloromethane	20.0	20.7	103	75 - 120	
Bromoform	20.0	18.1	90.7	70 - 130	
Bromomethane	20.0	22.0	110	30 - 145	
2-Butanone	20.0	23.2	116	30 - 150	
n-Butylbenzene	20.0	18.4	91.9	70 - 135	
sec-Butylbenzene	20.0	18.2	91.0	70 - 125	
tert-Butylbenzene	20.0	16.7	83.6	70 - 130	
Carbon disulfide	20.0	18.9	94.7	35 - 160	
Carbon tetrachloride	20.0	20.7	103	65 - 140	
Chlorobenzene	20.0	18.2	90.8	80 - 120	
Chlorodibromomethane	20.0	19.2	95.9	60 - 135	
Chloroethane	20.0	22.5	112	60 - 135	
Chloroform	20.0	20.7	104	65 - 135	
Chloromethane	20.0	21.7	109	40 - 125	
2-Chlorotoluene	20.0	15.3	76.4	75 - 125	
4-Chlorotoluene	20.0	18.4	92.0	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.6	98.0	50 - 130	
1,2-Dibromoethane	20.0	19.7	98.5	80 - 120	
Dibromomethane	20.0	21.4	107	75 - 125	
1,2-Dichlorobenzene	20.0	17.9	89.3	70 - 120	
1,3-Dichlorobenzene	20.0	17.2	86.1	75 - 125	
1,4-Dichlorobenzene	20.0	18.2	91.0	75 - 125	
Dichlorodifluoromethane	20.0	24.7	123	30 - 155	
1,1-Dichloroethane	20.0	19.7	98.4	70 - 135	
1,2-Dichloroethane	20.0	19.8	99.2	70 - 130	
1,1-Dichloroethene	20.0	18.7	93.6	70 - 130	
cis-1,2-Dichloroethene	20.0	20.3	101	70 - 125	
trans-1,2-Dichloroethene	20.0	19.7	98.6	60 - 140	
1,2-Dichloropropane	20.0	20.3	102	75 - 125	
1,3-Dichloropropane	20.0	18.9	94.6	75 - 125	
2,2-Dichloropropane	20.0	18.3	91.5	70 - 135	
cis-1,3-Dichloropropene	20.0	22.1	110	70 - 130	
trans-1,3-Dichloropropene	20.0	18.2	91.1	55 - 140	
1,1-Dichloropropene	20.0	19.8	99.0	75 - 130	
Ethylbenzene	20.0	18.3	91.4	75 - 125	
2-Hexanone	20.0	21.6	108	55 - 130	
Hexachlorobutadiene	20.0	15.3	76.7	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4186697
Report generated: 05/27/2015 11:30

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15050872 Run Date: 05/22/2015 Sample ID: WG524783-02
Instrument ID: HPMS8 Run Time: 15:22 Prep Method: 5030B/5030C/503
File ID: 8M404851 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG524783 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD70658 Cal ID: HPMS8-12-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	19.4	96.9	75 - 125	
p-Isopropyltoluene	20.0	17.5	87.7	75 - 130	
4-Methyl-2-pentanone	20.0	23.7	118	60 - 135	
Methylene chloride	20.0	21.2	106	55 - 140	
Naphthalene	20.0	20.9	105	55 - 140	
n-Propylbenzene	20.0	17.3	86.3	70 - 130	
Styrene	20.0	20.2	101	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	18.5	92.4	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.6	93.1	65 - 130	
Tetrachloroethene	20.0	18.0	89.9	45 - 150	
Toluene	20.0	19.7	98.6	75 - 120	
1,2,3-Trichlorobenzene	20.0	18.2	91.0	55 - 140	
1,2,4-Trichlorobenzene	20.0	17.8	89.0	65 - 135	
1,1,1-Trichloroethane	20.0	20.3	102	65 - 130	
1,1,2-Trichloroethane	20.0	19.0	94.9	75 - 125	
Trichloroethene	20.0	20.9	105	70 - 125	
Trichlorofluoromethane	20.0	19.9	99.5	60 - 145	
1,2,3-Trichloropropane	20.0	18.9	94.5	75 - 125	
1,2,4-Trimethylbenzene	20.0	18.9	94.7	75 - 130	
1,3,5-Trimethylbenzene	20.0	19.5	97.7	75 - 130	
Vinyl chloride	20.0	24.4	122	50 - 145	
o-Xylene	20.0	17.9	89.6	80 - 120	
m-,p-Xylene	40.0	37.2	93.0	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	85 - 115	PASS
1,2-Dichloroethane-d4	95.7	70 - 120	PASS
Toluene-d8	95.7	85 - 120	PASS
4-Bromofluorobenzene	89.7	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4186697
Report generated: 05/27/2015 11:30

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15050872 Cal ID: HPMS17- 16-APR-15 Worknum: WG523885

Instrument ID: HPMS17 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15050872-06 File ID: 17M011873 Dil: 1 Method: 5035A

Sample ID: L15050872-07 MS File ID: 17M011869 Dil: 1 Matrix: 8260B

Sample ID: L15050872-08 MSD File ID: 17M011870 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	20.7	103	20.0	21.1	105	1.93	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	20.8	104	20.0	21.1	106	1.73	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	17.9	89.4	20.0	19.7	98.4	9.65	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	18.8	94	20.0	19.9	99.6	5.82	75 - 125	30	
1,1-Dichloroethane	U	20.0	21.2	106	20.0	21.5	107	1.10	70 - 135	30	
1,1-Dichloroethene	U	20.0	20.2	101	20.0	20.3	101	0.260	70 - 130	30	
1,1-Dichloropropene	U	20.0	21.3	107	20.0	21.6	108	1.59	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	19.2	95.8	20.0	20.2	101	5.51	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	18.0	90	20.0	19.2	96.1	6.54	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	20.7	104	20.0	21.1	105	1.85	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	22.7	113	20.0	22.8	114	0.404	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	15.1	75.4	20.0	16.8	84.2	11.0	50 - 130	30	
1,2-Dibromoethane	U	20.0	17.8	88.9	20.0	19.3	96.7	8.51	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	19.9	99.5	20.0	20.4	102	2.59	70 - 120	30	
1,2-Dichloroethane	U	20.0	19.4	96.8	20.0	20.2	101	4.19	70 - 130	30	
1,2-Dichloropropane	U	20.0	21.8	109	20.0	22.5	113	3.10	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	22.8	114	20.0	22.7	114	0.215	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	20.4	102	20.0	20.5	103	0.830	75 - 125	30	
1,3-Dichloropropane	U	20.0	19.6	97.9	20.0	20.6	103	5.09	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	21.5	107	20.0	21.7	109	1.16	75 - 125	30	
2,2-Dichloropropane	U	20.0	20.6	103	20.0	20.7	104	0.606	70 - 135	30	
2-Butanone	U	20.0	13.2	66	20.0	14.8	74	11.4	30 - 150	30	
2-Chlorotoluene	U	20.0	20.4	102	20.0	20.6	103	0.806	75 - 125	30	
2-Hexanone	U	20.0	13.5	67.5	20.0	15.2	76.2	12.1	55 - 130	30	
4-Chlorotoluene	U	20.0	20.6	103	20.0	20.3	101	1.37	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	13.7	68.7	20.0	16.0	80	15.1	60 - 135	30	
Acetone	U	20.0	14.9	74.7	20.0	20.3	102	30.4	40 - 140	30	#
Benzene	U	20.0	21.8	109	20.0	22.1	110	1.03	80 - 120	30	
Bromobenzene	U	20.0	21.0	105	20.0	21.5	107	2.07	75 - 125	30	
Bromochloromethane	U	20.0	19.6	98.1	20.0	20.8	104	5.96	65 - 130	30	
Bromodichloromethane	U	20.0	20.2	101	20.0	20.9	105	3.34	75 - 120	30	
Bromoform	U	20.0	18.2	90.9	20.0	19.4	96.9	6.40	70 - 130	30	
Bromomethane	U	20.0	22.5	112	20.0	22.2	111	1.30	30 - 145	30	
Carbon disulfide	U	20.0	12.2	60.9	20.0	12.4	62.2	2.07	35 - 160	30	
Carbon tetrachloride	U	20.0	19.7	98.6	20.0	20.0	100	1.49	65 - 140	30	
Chlorobenzene	U	20.0	20.5	102	20.0	20.7	103	0.972	80 - 120	30	
Chloroethane	U	20.0	21.0	105	20.0	22.7	113	7.77	60 - 135	30	
Chloroform	U	20.0	22.9	114	20.0	23.1	115	0.973	65 - 135	30	
Chloromethane	U	20.0	18.3	91.5	20.0	18.5	92.4	1.03	40 - 125	30	
cis-1,2-Dichloroethene	U	20.0	21.7	109	20.0	21.9	109	0.814	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	21.2	106	20.0	21.8	109	2.78	70 - 130	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4186698
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15050872 Cal ID: HPMS17 16-APR-15 Worknum: WG523885

Instrument ID: HPMS17 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15050872-06 File ID: 17M011873 Dil: 1 Method: 5035A

Sample ID: L15050872-07 MS File ID: 17M011869 Dil: 1 Matrix: 8260B

Sample ID: L15050872-08 MSD File ID: 17M011870 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	18.6	92.9	20.0	19.5	97.5	4.83	60 - 135	30	
Dibromomethane	U	20.0	19.7	98.7	20.0	21.0	105	6.37	75 - 125	30	
Dichlorodifluoromethane	U	20.0	12.3	61.5	20.0	12.2	60.8	1.15	30 - 155	30	
Ethylbenzene	U	20.0	22.0	110	20.0	22.1	110	0.279	75 - 125	30	
Hexachlorobutadiene	U	20.0	23.2	116	20.0	23.2	116	0.358	50 - 140	30	
Isopropylbenzene	U	20.0	20.7	103	20.0	20.7	104	0.404	75 - 125	30	
m-,p-Xylene	U	40.0	43.5	109	40.0	43.3	108	0.354	75 - 130	30	
Methylene chloride	U	20.0	19.2	96	20.0	19.7	98.6	2.67	55 - 140	30	
n-Butylbenzene	U	20.0	23.2	116	20.0	23.1	116	0.184	70 - 135	30	
n-Propylbenzene	U	20.0	21.1	105	20.0	21.0	105	0.303	70 - 130	30	
Naphthalene	U	20.0	17.3	86.3	20.0	18.6	93.2	7.66	55 - 140	30	
o-Xylene	U	20.0	20.5	102	20.0	20.6	103	0.544	80 - 120	30	
p-Isopropyltoluene	U	20.0	21.1	106	20.0	21.2	106	0.548	75 - 130	30	
sec-Butylbenzene	U	20.0	21.5	107	20.0	21.6	108	0.538	70 - 125	30	
Styrene	U	20.0	21.2	106	20.0	21.6	108	1.95	65 - 135	30	
tert-Butylbenzene	U	20.0	21.3	106	20.0	21.5	108	1.14	70 - 130	30	
Tetrachloroethene	U	20.0	21.1	106	20.0	21.0	105	0.815	45 - 150	30	
Toluene	U	20.0	21.6	108	20.0	21.7	109	0.740	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	21.7	109	20.0	22.0	110	1.29	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	18.3	91.7	20.0	19.5	97.4	6.02	55 - 140	30	
Trichloroethene	U	20.0	21.9	109	20.0	22.1	110	1.06	70 - 125	30	
Trichlorofluoromethane	U	20.0	21.1	105	20.0	20.9	105	0.675	60 - 145	30	
Vinyl chloride	U	20.0	19.1	95.5	20.0	19.4	97.1	1.62	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4186698
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15050872
Instrument: HPMS17
Analyst: ADC
Workgroup: WG519118

Tune ID: WG519118-01
Run Date: 04/16/2015
Run Time: 09:58
File ID: 17M011174
Cal ID: HPMS17 - 16-APR-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.4	6118	PASS
75.0	95.0	30.0	60.0	46.7	17388	PASS
95.0	95.0	100	100	100	37269	PASS
96.0	95.0	5.00	9.00	6.73	2510	PASS
173	174	0	2.00	0.791	266	PASS
174	95.0	50.0	100	90.3	33648	PASS
175	174	5.00	9.00	7.54	2537	PASS
176	174	95.0	101	97.0	32627	PASS
177	176	5.00	9.00	6.68	2178	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG519118-02	STD-CCV	01	04/16/2015 10:16	
WG519118-03	STD	01	04/16/2015 10:56	
WG519118-04	STD	01	04/16/2015 11:16	
WG519118-05	STD	01	04/16/2015 11:36	
WG519118-06	STD	01	04/16/2015 11:56	
WG519118-07	STD	01	04/16/2015 12:16	
WG519118-08	STD	01	04/16/2015 12:36	
WG519118-09	STD	01	04/16/2015 12:56	
WG519118-10	STD	01	04/16/2015 13:16	
WG519118-11	STD	01	04/16/2015 13:36	
WG519118-12	SSCV	01	04/16/2015 15:37	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4186700
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15050872
Instrument: HPMS17
Analyst: ADC
Workgroup: WG523883

Tune ID: WG523883-01
Run Date: 05/15/2015
Run Time: 15:06
File ID: 17M011863
Cal ID: HPMS17 - 16-APR-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.1	4438	PASS
75.0	95.0	30.0	60.0	48.0	13215	PASS
95.0	95.0	100	100	100	27531	PASS
96.0	95.0	5.00	9.00	6.83	1879	PASS
173	174	0	2.00	0.599	152	PASS
174	95.0	50.0	100	92.2	25387	PASS
175	174	5.00	9.00	7.15	1816	PASS
176	174	95.0	101	96.3	24435	PASS
177	176	5.00	9.00	6.53	1595	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG523883-02	CCV	01	05/15/2015 15:24	
WG523885-01	BLANK	01	05/15/2015 16:08	
WG523885-01	BLANK	02	05/15/2015 17:06	
WG523885-02	LCS	01	05/15/2015 17:26	
L15050872-07	67WW10MS-051215	01	05/15/2015 17:55	
L15050872-08	67WW10MSD-051215	01	05/15/2015 18:15	
L15050872-13	TRIP BLANK	01	05/15/2015 18:54	
L15050872-06	67WW10-051215	01	05/15/2015 19:14	
L15050872-01	67WW05-051215	01	05/15/2015 19:34	
L15050872-02	67WW02-051215	01	05/15/2015 19:53	
L15050872-03	67WW02FD-051215	01	05/15/2015 20:13	
L15050872-04	67WW03-051215	01	05/15/2015 20:33	
L15050872-05	67WW07-051215	01	05/15/2015 20:53	
L15050872-09	67WW12-051215	01	05/15/2015 21:12	
L15050872-11	67WW14-051215	01	05/15/2015 21:52	
L15050872-12	67WW14FD-051215	01	05/15/2015 22:12	
WG523885-06	BLANK2	01	05/15/2015 22:51	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4186700
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15050872
Instrument: HPMS8
Analyst: TMB
Workgroup: WG494714

Tune ID: WG494714-01
Run Date: 10/02/2014
Run Time: 11:58
File ID: 8M400357
Cal ID: HPMS8 - 02-OCT-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	5158	PASS
75.0	95.0	30.0	60.0	51.7	12312	PASS
95.0	95.0	100	100	100	23818	PASS
96.0	95.0	5.00	9.00	7.56	1800	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	69.7	16590	PASS
175	174	5.00	9.00	7.78	1290	PASS
176	174	95.0	101	97.3	16145	PASS
177	176	5.00	9.00	6.34	1023	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG494714-02	STD	01	10/02/2014 12:24	
WG494714-03	STD	01	10/02/2014 12:53	
WG494714-04	STD	01	10/02/2014 13:22	
WG494714-05	STD	01	10/02/2014 13:51	
WG494714-06	STD	01	10/02/2014 14:19	
WG494714-07	STD	01	10/02/2014 14:48	
WG494714-08	STD	01	10/02/2014 15:16	
WG494714-09	STD	01	10/02/2014 15:45	
WG494714-10	SSCV	01	10/02/2014 16:47	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4186700
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15050872
Instrument: HPMS8
Analyst: TMB
Workgroup: WG523161

Tune ID: WG523161-01
Run Date: 05/12/2015
Run Time: 15:55
File ID: 8M404577
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	26.3	7551	PASS
75.0	95.0	30.0	60.0	59.4	17014	PASS
95.0	95.0	100	100	100	28666	PASS
96.0	95.0	5.00	9.00	6.91	1981	PASS
173	174	0	2.00	0.480	119	PASS
174	95.0	50.0	100	86.5	24808	PASS
175	174	5.00	9.00	8.19	2031	PASS
176	174	95.0	101	95.4	23666	PASS
177	176	5.00	9.00	7.24	1714	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG523161-02	STD	01	05/12/2015 16:50	
WG523161-03	STD	01	05/12/2015 17:19	
WG523161-04	STD	01	05/12/2015 17:48	
WG523161-05	STD	01	05/12/2015 18:16	
WG523161-06	STD	01	05/12/2015 18:45	
WG523161-07	STD	01	05/12/2015 19:13	
WG523161-08	STD-CCV	01	05/12/2015 19:42	
WG523161-09	STD	01	05/12/2015 20:11	
WG523161-10	STD	01	05/12/2015 20:40	
WG523161-11	STD	01	05/12/2015 21:08	
WG523161-12	SSCV	01	05/12/2015 22:34	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4186700
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15050872
Instrument: HPMS8
Analyst: TMB
Workgroup: WG524780

Tune ID: WG524780-01
Run Date: 05/22/2015
Run Time: 11:32
File ID: 8M404843
Cal ID: HPMS8 - 12-MAY-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	28.8	6321	PASS
75.0	95.0	30.0	60.0	52.5	11507	PASS
95.0	95.0	100	100	100	21919	PASS
96.0	95.0	5.00	9.00	7.54	1653	PASS
173	174	0	2.00	0.611	116	PASS
174	95.0	50.0	100	86.7	18993	PASS
175	174	5.00	9.00	8.59	1632	PASS
176	174	95.0	101	98.3	18671	PASS
177	176	5.00	9.00	6.43	1201	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG524780-02	CCV	01	05/22/2015 11:57	
WG524781-01	CCV	01	05/22/2015 12:29	
WG524783-01	BLANK	01	05/22/2015 12:58	
WG524783-02	LCS	01	05/22/2015 15:22	
L15050872-10	67WW09A-051215	01	05/22/2015 19:14	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4186700
Report generated 05/27/2015 11:30

Response Factor Report HPMS17

Method Path : D:\MassHunter\GCMS\1\methods\
Method File : 8260VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
Last Update : Tue Apr 21 10:50:08 2015
Response Via : Initial Calibration
Curve: WG519118
Calibration Files
0.3 =17M011177.D 0.4 =17M011178.D 1 =17M011179.D 2 =17M011180.D 5 =17M011181.D 20 =17M011182.D 50 =17M01117
100 =17M011183.D 200 =17M011184.D 300 =17M011185.D

		Compound	0.3	0.4	1	2	5	20	50	100	200	300	Avg	%RSD	Linear R^2
1)	I	Fluorobenzene	----------ISTD----------												
2)	T	Dichlorodifluo...		0.264	0.291	0.265	0.266	0.321	0.323	0.328	0.332	0.320	0.301	9.77	
3)	P	Chloromethane			0.249	0.236	0.243	0.264	0.266	0.277	0.284	0.288	0.263	7.24	
4)	C	Vinyl Chloride		0.258	0.280	0.278	0.275	0.298	0.305	0.312	0.315	0.311	0.292	6.92#	
5)	T	1,3-Butadiene		0.210	0.223	0.209	0.207	0.233	0.239	0.239	0.236	0.239	0.226	6.20	
6)	T	Bromomethane			0.162	0.159	0.162	0.175	0.161	0.188	0.193	0.197	0.175	9.05	
7)	T	Chloroethane			0.160	0.151	0.153	0.160	0.159	0.161	0.143	0.139	0.153	5.67	
8)	T	Trichlorofluor...		0.342	0.379	0.371	0.373	0.396	0.391	0.404	0.398	0.336	0.377	6.48	
9)	T	Diethyl ether		0.152	0.167	0.163	0.162	0.177	0.156	0.175	0.179	0.181	0.168	6.23	
10)	C	1,1-Dichloroet...		0.328	0.351	0.337	0.344	0.358	0.358	0.370	0.371	0.365	0.354	4.22#	
11)	T	Carbon Disulfide		0.788	0.733	0.667	0.658	0.737	0.747	0.750	0.747	0.765	0.732	5.88	
12)	T	1,1,2-Trichlor...		0.232	0.235	0.227	0.232	0.242	0.247	0.248	0.248	0.236	0.239	3.23	
13)	T	Acrolein				0.023	0.023	0.025	0.022	0.021	0.020	0.021	0.022	8.18	
14)	T	Methylene Chlo...		0.352	0.297	0.276	0.254	0.247	0.244	0.254	0.256	0.255	0.271	12.81	
15)	T	Acetone					0.051	0.048	0.031	0.037	0.038	0.040	0.041	18.40	0.993
16)	T	trans-1,2-Dich...		0.227	0.235	0.227	0.228	0.233	0.236	0.242	0.246	0.244	0.235	3.08	
17)	T	Methyl Tert Bu...		0.549	0.607	0.586	0.596	0.615	0.537	0.624	0.628	0.622	0.596	5.55	
18)	P	1,1-Dichloroet...		0.381	0.430	0.418	0.428	0.437	0.436	0.453	0.458	0.453	0.433	5.43	
19)	T	Acrylonitrile			0.052	0.053	0.058	0.062	0.051	0.061	0.061	0.062	0.057	8.48	
20)	T	Vinyl Acetate						0.004	0.005	0.006	0.006	0.006	0.005	14.51	
21)	T	cis-1,2-Dichlo...		0.253	0.270	0.259	0.260	0.264	0.263	0.274	0.279	0.278	0.267	3.40	
22)	T	2,2-Dichloropr...		0.324	0.370	0.345	0.345	0.369	0.377	0.382	0.380	0.373	0.363	5.47	
23)	T	Cyclohexane		0.424	0.421	0.399	0.396	0.422	0.421	0.423	0.414	0.416	0.415	2.54	
24)	T	Bromochloromet...			0.156	0.159	0.162	0.171	0.164	0.179	0.181	0.181	0.169	6.04	
25)	C	Chloroform	0.345	0.337	0.395	0.409	0.422	0.439	0.428	0.450	0.453	0.447	0.412	10.15#	
26)	T	Carbon Tetrach...		0.127	0.245	0.270	0.310	0.351	0.367	0.375	0.377	0.369	0.310	27.15	1.000
27)	S	Dibromofluorom...					0.248	0.232	0.246	0.247	0.229		0.240	3.75	
28)	T	1,1,1-Trichlor...		0.345	0.405	0.385	0.389	0.399	0.396	0.414	0.418	0.411	0.396	5.58	
29)	T	1,1-Dichloropr...		0.296	0.328	0.313	0.315	0.329	0.332	0.340	0.345	0.341	0.326	4.86	
30)	T	2-Butanone					0.076	0.080	0.056	0.070	0.071	0.074	0.071	11.47	
31)	T	Benzene		0.934	0.997	0.954	0.957	0.974	0.968	1.007	1.015	1.002	0.979	2.82	
32)	S	1,2-Dichloroet...					0.253	0.231	0.226	0.244	0.237		0.238	4.47	
33)	T	1,2-Dichloroet...		0.259	0.303	0.295	0.302	0.302	0.279	0.309	0.314	0.311	0.297	5.94	
34)	T	Trichloroethene		0.246	0.283	0.277	0.272	0.276	0.279	0.289	0.294	0.294	0.279	5.30	
35)	T	Dibromomethane		0.093	0.134	0.133	0.139	0.144	0.133	0.151	0.155	0.156	0.137	13.78	
36)	C	1,2-Dichloropr...		0.227	0.261	0.258	0.260	0.262	0.255	0.272	0.276	0.275	0.261	5.70#	
37)	T	Bromodichlorom...		0.265	0.323	0.315	0.322	0.335	0.328	0.353	0.362	0.364	0.330	9.17	

38)	T	1,4-Dioxane					0.002	0.001	0.002	0.002	0.002	0.002	12.86
39)	T	2-Chloroethyl ...			0.117	0.125	0.138	0.111	0.130	0.135	0.141	0.128	8.69
40)	T	cis-1,3-Dichlo...		0.339	0.381	0.377	0.373	0.394	0.388	0.418	0.427	0.431	0.392	7.55
41)	T	4-Methyl-2-Pen...				0.060	0.059	0.073	0.049	0.062	0.069	0.071	0.063	13.20
42)	T	trans-1,3-Dich...		0.305	0.332	0.320	0.327	0.345	0.328	0.364	0.376	0.386	0.343	7.92
43)	I	Chlorobenzene-d5	----------ISTD----------											
44)	S	Toluene-d8					1.413	1.281	1.363	1.374	1.291		1.344	4.21
45)	C	Toluene		1.562	1.599	1.521	1.501	1.543	1.549	1.575	1.528	1.444	1.536	2.94#
46)	Y	Tetrachloroethene		0.456	0.429	0.407	0.407	0.425	0.435	0.438	0.432	0.413	0.427	3.74
47)	T	1,1,2-Trichlor...		0.255	0.297	0.280	0.278	0.281	0.256	0.286	0.285	0.281	0.278	4.91
48)	Y	Dibromochlorom...		0.300	0.349	0.352	0.354	0.374	0.360	0.398	0.407	0.405	0.367	9.34
49)	T	1,3-Dichloropr...		0.416	0.450	0.445	0.442	0.449	0.410	0.454	0.452	0.443	0.440	3.61
50)	T	1,2-Dibromoethane		0.270	0.291	0.281	0.277	0.283	0.256	0.292	0.296	0.295	0.282	4.61
51)	Y	2-Hexanone				0.173	0.164	0.196	0.131	0.161	0.171	0.167	0.166	11.58
52)	P	Chlorobenzene		1.004	1.030	0.979	0.970	0.991	0.997	1.029	1.038	1.009	1.005	2.33
53)	T	1-Chlorohexane		0.095	0.091	0.089	0.087	0.094	0.097	0.097	0.096	0.096	0.094	4.09
54)	C	Ethylbenzene		0.510	0.533	0.528	0.522	0.542	0.546	0.562	0.569	0.558	0.541	3.62#
55)	T	1,1,1,2-Tetrac...		0.325	0.356	0.359	0.365	0.374	0.371	0.390	0.399	0.391	0.370	6.04
56)	T	m-,p-Xylene		0.636	0.655	0.640	0.636	0.660	0.667	0.684	0.674	0.633	0.654	2.86
57)	T	o-Xylene		0.605	0.650	0.632	0.635	0.651	0.644	0.667	0.692	0.673	0.650	3.92
58)	T	Styrene		0.997	1.056	1.014	1.019	1.064	1.070	1.125	1.164	1.105	1.068	5.15
59)	P	Bromoform		0.215	0.231	0.239	0.234	0.254	0.237	0.275	0.300	0.290	0.253	11.58
60)	T	Isopropylbenzene		1.626	1.731	1.651	1.664	1.716	1.724	1.774	1.789	1.663	1.704	3.32
61)	I	1,4-Dichlorobenzen...	----------ISTD----------											
62)	T	1,3,5-Trimethy...		2.856	2.890	2.772	2.783	2.862	2.841	2.833	2.813	2.650	2.811	2.53
63)	S	p-Bromofluorob...					0.928	0.854	0.897	0.881	0.921		0.896	3.37
64)	T	Bromobenzene	0.987	0.879	0.871	0.873	0.845	0.872	0.842	0.847			0.877	5.32
65)	T	n-Propylbenzene		3.643	3.641	3.541	3.596	3.728	3.715	3.589	3.653	3.463	3.619	2.29
66)	P	1,1,2,2-Tetrac...		0.625	0.631	0.641	0.629	0.645	0.516	0.612	0.652	0.646	0.622	6.68
67)	T	2-Chlorotoluene		2.245	2.304	2.216	2.226	2.246	2.199	2.167	2.266	2.215	2.231	1.78
68)	T	1,2,3-Trichlor...		0.145	0.164	0.168	0.169	0.170	0.143	0.165	0.174	0.171	0.163	6.91
69)	T	1,2,4-Trimethy...		2.768	2.859	2.775	2.792	2.870	2.854	2.868	2.810	2.657	2.806	2.45
70)	T	4-Chlorotoluene		2.348	2.295	2.210	2.201	2.256	2.254	2.225	2.324	2.248	2.263	2.23
71)	T	tert-Butylbenzene		0.464	0.512	0.503	0.508	0.523	0.516	0.521	0.535	0.525	0.512	3.98
72)	T	sec-Butylbenzene		3.410	3.512	3.374	3.437	3.566	3.569	3.526	3.415	3.181	3.443	3.53
73)	T	p-Isopropyltol...		2.929	3.026	2.920	2.952	3.103	3.196	3.120	2.988	2.799	3.004	4.05
74)	T	1,3-Dichlorobe...		1.724	1.614	1.559	1.563	1.618	1.637	1.660	1.669	1.620	1.629	3.17
75)	T	1,4-Dichlorobe...	2.083	1.734	1.624	1.549	1.535	1.597	1.615	1.652	1.651	1.607	1.665	9.44
76)	T	n-Butylbenzene		2.587	2.541	2.425	2.484	2.701	2.929	2.785	2.715	2.563	2.637	6.04
77)	T	1,2-Dichlorobe...	1.656	1.521	1.582	1.501	1.530	1.557	1.534	1.583	1.576	1.545	1.558	2.81
78)	T	1,2-Dibromo-3-...		0.102	0.108	0.111	0.117	0.122	0.108	0.122	0.123	0.122	0.115	7.03
79)	Y	Hexachlorobuta...		0.716	0.712	0.664	0.681	0.759	0.818	0.687	0.764	0.766	0.730	6.87
80)	T	1,2,4-Trichlor...		1.430	1.252	1.181	1.186	1.303	1.327	1.277	1.282	1.275	1.279	5.85
81)	T	Naphthalene		2.454	2.501	2.413	2.422	2.575	2.212	2.379	2.302	2.237	2.388	5.03
82)	T	1,2,3-Trichlor...		1.237	1.207	1.176	1.178	1.279	1.195	1.191	1.172	1.180	1.202	2.95

(#) = Out of Range

8260VMS.M Tue Apr 21 10:58:37 2015

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Calibration: Fri Oct 03 12:32:07 2014
Curve: WG494714
Calibration Files

	Compound	5 8M400358.D	20 8M400359.D	50 8M400360.D	100 8M400361.D	200 8M400362.D	300 8M400363.D	400 8M400364.D	500 8M400365.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.015	0.015	0.015	0.016	0.017	0.016	0.015	0.016	0.016	4.015		
T	3-Chloro-1-propene	0.416	0.403	0.416	0.438	0.434	0.423	0.407	0.394	0.416	3.619		
T	2-Chloro-1,3-butadiene	0.467	0.479	0.496	0.520	0.522	0.508	0.485	0.462	0.493	4.640		
T	Ethyl Acetate	0.104	0.115	0.123	0.133	0.135	0.133	0.126	0.130	0.125	8.569		
T	Methacrylonitrile	0.062	0.065	0.072	0.077	0.080	0.080	0.077	0.081	0.074	9.397		
T	Isobutyl Alcohol			0.004	0.005	0.005	0.005	0.005	0.005	0.005	9.693		
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.003	21.690	0.995	
T	Methyl methacrylate	0.115	0.123	0.137	0.147	0.154	0.151	0.145	0.150	0.140	10.193		
T	2-Nitropropane	0.032	0.035	0.039	0.043	0.047	0.046	0.046	0.048	0.042	14.057		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											
T	Cyclohexanone			0.039	0.043	0.037	0.043	0.036	0.038	0.039	7.787		

Fri Oct 03 12:35:36 2014

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Calibration: Wed May 13 06:45:06 2015
Curve: WG523161
Calibration Files

	Compound	0.3 8M404579.D	0.4 8M404580.D	1 8M404581.D	2 8M404582.D	5 8M404583.D	20 8M404584.D	50 8M404585.D	100 8M404586.D	200 8M404587.D	300 8M404588.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.377	0.342	0.343	0.422	0.413	0.414	0.402	0.386	0.387	8.120		
P	Chloromethane			0.927	0.855	0.806	0.813	0.772	0.750	0.681	0.585	0.774	13.567		
C	Vinyl Chloride		0.899	0.773	0.766	0.735	0.785	0.754	0.711	0.621	0.515	0.729	14.853		
T	1,3-Butadiene				0.699	0.708	0.786	0.774	0.545	0.428	0.368	0.615	27.438		1.005
T	Bromomethane			0.093	0.095	0.114	0.140	0.167	0.187	0.213	0.220	0.154	33.064		1.000
T	Chloroethane			0.191	0.195	0.184	0.199	0.197	0.205	0.210	0.206	0.198	4.214		
T	Trichlorofluoromethane		0.485	0.424	0.436	0.436	0.458	0.456	0.468	0.474	0.482	0.458	4.832		
T	Diethyl ether			0.175	0.173	0.175	0.177	0.163	0.175		0.189	0.175	4.331		
T	Isoprene					0.291	0.328	0.345	0.349	0.355	0.368	0.339	7.996		
T	Acrolein				0.005	0.004	0.005	0.006	0.009		0.016	0.007	61.765		0.992
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.248	0.251	0.246	0.262	0.256	0.268	0.269	0.268	0.258	3.627		
T	Acetone					0.035	0.041	0.034	0.033	0.037	0.033	0.036	9.052		
C	1,1-Dichloroethene		0.463	0.416	0.442	0.398	0.434	0.442	0.451	0.456	0.452	0.439	4.731		
T	Tert-Butyl Alcohol				0.009	0.010	0.010	0.009	0.010		0.010	0.010	5.597		
T	Dimethyl Sulfide				0.247	0.222	0.255	0.260	0.261	0.274	0.274	0.256	6.964		
T	Iodomethane			0.077	0.088	0.088	0.132	0.173	0.188	0.198	0.189	0.142	36.465		0.999
T	Methyl acetate				0.120	0.134	0.127	0.123	0.123	0.133	0.131	0.127	4.336		
T	Methylene Chloride			0.232	0.249	0.239	0.243	0.249	0.256	0.267	0.268	0.250	5.171		
T	Carbon Disulfide			0.790	0.760	0.723	0.839	0.853	0.855	0.851	0.795	0.808	6.082		
T	Acrylonitrile				0.051	0.053	0.055	0.057	0.057		0.069	0.057	11.396		
T	Methyl Tert Butyl Ether			0.459	0.495	0.467	0.481	0.475	0.478	0.512	0.492	0.482	3.510		
T	trans-1,2-Dichloroethene		0.471	0.390	0.413	0.388	0.406	0.416	0.426	0.439	0.427	0.419	6.106		
T	n-Hexane					0.373	0.430	0.426	0.433	0.442	0.440	0.424	6.103		
T	Diisopropyl ether			0.925	0.939	0.970	0.966	0.910	0.930		0.865	0.929	3.857		
T	Vinyl Acetate					0.306	0.314	0.317	0.295	0.308	0.299	0.307	2.774		
P	1,1-Dichloroethane		0.473	0.490	0.518	0.483	0.515	0.517	0.524	0.527	0.509	0.506	3.812		
T	Ethyl-Tert-Butyl ether			0.710	0.717	0.754	0.757	0.708	0.736		0.721	0.729	2.801		
T	2-Butanone					0.052	0.063	0.057	0.058	0.061	0.057	0.058	6.522		
T	Propionitrile			0.018	0.017	0.019	0.019	0.017	0.019		0.020	0.019	5.338		
T	2,2-Dichloropropane		0.492	0.405	0.421	0.369	0.406	0.409	0.415	0.423	0.419	0.418	7.676		
T	cis-1,2-Dichloroethene		0.322	0.282	0.278	0.252	0.284	0.286	0.290	0.300	0.299	0.288	6.589		
C	Chloroform	0.454	0.443	0.488	0.461	0.460	0.482	0.472	0.483	0.490	0.470	0.470	3.300		
T	1-Bromopropane			0.026	0.049	0.046	0.049	0.050	0.051	0.053	0.054	0.047	18.483	0.999	
T	Bromochloromethane		0.166	0.153	0.136	0.130	0.143	0.147	0.147	0.152	0.148	0.147	7.112		
T	Tetrahydrofuran			0.039	0.038	0.039	0.041	0.037	0.038		0.042	0.039	4.342		
S	Dibromofluoromethane						0.245	0.245	0.245	0.252	0.252	0.248	1.641		
T	1,1,1-Trichloroethane		0.386	0.384	0.407	0.393	0.429	0.439	0.455	0.472	0.477	0.427	8.450		
T	Cyclohexane			0.452	0.505	0.452	0.520	0.520	0.544	0.568	0.578	0.517	9.145		
T	1,1-Dichloropropene			0.379	0.360	0.347	0.369	0.371	0.378	0.385	0.384	0.371	3.475		
T	Tert-Amyl-Methyl ether			0.517	0.511	0.548	0.549	0.516	0.540		0.564	0.535	3.832		
T	Carbon Tetrachloride		0.376	0.35	0.374	0.344	0.386	0.395	0.416	0.42	0.432	0.388	7.9058		
S	1,2-Dichloroethane-d4						0.235	0.234	0.226	0.235	0.235	0.2329	1.58451		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.36	0.324	0.315	0.334	0.334	0.33	0.338	0.354	0.345	0.3372	4.22305		
T	Benzene	1.049	0.999	1.049	1.062	0.995	1.029	1.019	1.016	0.957	0.831	1.0006	6.72085		
T	Trichloroethene		0.253	0.251	0.235	0.242	0.273	0.268	0.276	0.291	0.293	0.2647	7.84867		
T	Methylcyclohexane					0.378	0.424	0.431	0.435	0.45	0.459	0.4296	6.55883		
C	1,2-Dichloropropane		0.285	0.284	0.28	0.254	0.278	0.277	0.279	0.292	0.294	0.2803	4.12451		
T	Bromodichloromethane		0.339	0.348	0.324	0.31	0.34	0.348	0.356	0.374	0.367	0.345	5.77994		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	17.6544	0.995	
T	Dibromomethane		0.147	0.106	0.134	0.123	0.133	0.13	0.132	0.141	0.142	0.132	9.16014		
T	2-Chloroethyl Vinyl Ether					0.092	0.063	0.063	0.063	0.069	0.068	0.0698	16.4535	0.997	
T	4-Methyl-2-Pentanone					0.041	0.048	0.048	0.049	0.053	0.051	0.0482	8.53113		
T	cis-1,3-Dichloropropene		0.405	0.323	0.335	0.358	0.388	0.39	0.393	0.409	0.395	0.3772	8.2344		

T	Dimethyl Disulfide					0.151	0.179	0.196	0.211	0.236	0.246	0.2031	17.4457	0.996
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8						1.158	1.204	1.183	1.155	1.132	1.1666	2.3719	
C	Toluene		1.559	1.545	1.585	1.513	1.564	1.565	1.539	1.342	1.133	1.4829	10.1102	
T	Ethyl Methacrylate			0.194	0.236	0.242	0.279	0.287	0.277	0.297	0.299	0.2638	13.8744	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.407	0.395	0.446	0.448	0.46	0.457	0.473	0.469	0.4445	6.38368	
T	1,1,2-Trichloroethane		0.229	0.224	0.213	0.22	0.236	0.233	0.233	0.239	0.246	0.2304	4.41199	
T	2-Hexanone					0.054	0.066	0.067	0.062	0.068	0.065	0.0634	8.02299	
T	1,3-Dichloropropane		0.375	0.385	0.434	0.402	0.411	0.407	0.402	0.41	0.407	0.4039	4.14111	
T	Tetrachloroethene		0.262	0.324	0.305	0.265	0.304	0.316	0.331	0.343	0.365	0.313	10.7766	
T	Dibromochloromethane		0.277	0.288	0.286	0.274	0.3	0.313	0.327	0.342	0.352	0.3066	9.30077	
T	1,2-Dibromoethane		0.197	0.183	0.211	0.217	0.227	0.23	0.23	0.242	0.243	0.2199	9.12529	
T	1-Chlorohexane		0.532	0.476	0.473	0.473	0.511	0.512	0.521	0.527	0.54	0.5072	5.23688	
P	Chlorobenzene		0.957	0.977	1.015	0.968	0.99	1.028	1.06	1.055	0.957	1.0009	4.02311	
T	1,1,1,2-Tetrachloroethane		0.34	0.306	0.325	0.323	0.343	0.366	0.404	0.465		0.3593	14.5906	
C	Ethylbenzene		0.535	0.556	0.529	0.546	0.55	0.595	0.64	0.711	0.733	0.5995	12.9604	
T	m-,p-Xylene		0.721	0.649	0.68	0.664	0.681	0.723	0.743	0.676	0.566	0.678	7.68979	
T	o-Xylene			0.602	0.621	0.637	0.667	0.678	0.701	0.723	0.73	0.67	7.0386	
T	Styrene		0.969	1.046	1.021	1.015	1.106	1.145	1.15	1.104	0.996	1.0613	6.27884	
P	Bromoform			0.106	0.138	0.145	0.163	0.171	0.18	0.199	0.209	0.1638	20.5568	0.995
T	Isopropylbenzene		1.881	1.631	1.677	1.671	1.736	1.756	1.725	1.46	1.212	1.6386	11.9341	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.491	0.493	0.49	0.461	0.463	0.464	0.463	0.483	0.467	0.475	2.92575	
S	p-Bromofluorobenzene						0.839	0.85	0.836	0.857	0.87	0.8505	1.6345	
T	1,2,3-Trichloropropane			0.091	0.152	0.125	0.133	0.127	0.129	0.138	0.134	0.1287	13.5025	
T	trans-1,4-Dichloro-2-Butene			0.152	0.135	0.147	0.156	0.169	0.154	0.186	0.163	0.1577	9.69396	
T	n-Propylbenzene		4.239	3.867	3.923	3.631	3.953	3.946	3.76	2.942		3.7826	10.1008	
T	Bromobenzene	0.878	0.687	0.721	0.666	0.693	0.747	0.743	0.773	0.803	0.8	0.7512	8.60544	
T	1,3,5-Trimethylbenzene		2.655	2.667	2.65	2.513	2.744	2.797	2.805	2.461	2.001	2.5881	9.61996	
T	2-Chlorotoluene		3.171	2.749	2.18	2.328	2.61	2.64	2.387	2.358		2.5528	12.2648	
T	4-Chlorotoluene		2.141	1.856	2.314	2.269	2.064	2.119	2.321	1.851	1.442	2.0419	13.9758	
T	a-Methylstyrene					1.27	1.457	1.528	1.558	1.57	1.46	1.4739	7.51384	
T	tert-Butylbenzene			0.589	0.508	0.516	0.551	0.566	0.587	0.626	0.661	0.5754	9.07804	
T	1,2,4-Trimethylbenzene		2.906	2.617	2.745	2.633	2.823	2.876	2.845	2.485	2.018	2.6608	10.4646	
T	sec-Butylbenzene			3.477	3.386	3.37	3.532	3.531	3.45	2.821	2.248	3.2269	14.184	
T	p-Isopropyltoluene			2.794	2.847	2.733	2.986	3	2.97	2.527	2.031	2.7358	11.9085	
T	1,3-Dichlorobenzene		1.602	1.477	1.544	1.384	1.538	1.567	1.605	1.574	1.411	1.5224	5.31773	
T	1,4-Dichlorobenzene	1.844	1.572	1.516	1.485	1.469	1.51	1.553	1.578	1.55	1.378	1.5456	7.79548	
T	n-Butylbenzene			2.729	2.794	2.736	2.906	2.923	2.888	2.449	1.956	2.6725	12.2433	
T	1,2-Dichlorobenzene	1.364	1.197	1.323	1.355	1.229	1.332	1.367	1.376	1.389	1.279	1.3211	4.95077	
T	1,2-Dibromo-3-Chloropropane				0.052	0.078	0.076	0.077	0.078	0.086	0.083	0.0758	14.5402	
T	1,2,4-Trichlorobenzene		1.028	0.83	0.936	0.907	0.982	1.025	1.059	1.127	1.064	0.9952	9.18602	
T	Hexachlorobutadiene		0.52	0.429	0.459	0.493	0.494	0.508	0.56	0.595	0.621	0.5199	11.9722	
T	Naphthalene		1.182	1.213	1.397	1.288	1.379	1.398	1.428	1.446	1.282	1.3347	7.21249	
T	1,2,3-Trichlorobenzene	0.901	0.732	0.762	0.836	0.778	0.829	0.859	0.89	0.947	0.9	0.8433	8.22754	

Wed May 13 07:00:21 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15050872 Run Date: 04/16/2015 Sample ID: WG519118-12
Instrument ID: HPMS17 Run Time: 15:37 Method: 8260B
File ID: 17M011189 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG519118 Cal ID: HPMS17 - 16-APR-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	20.0	21.6	ug/L	0.446	8.20	20	
1,1-Dichloroethene	CCC	20.0	19.6	ug/L	0.347	1.90	20	
1,2-Dichloropropane	CCC	20.0	20.8	ug/L	0.271	4.00	20	
Ethylbenzene	CCC	20.0	20.6	ug/L	0.558	3.10	20	
Toluene	CCC	20.0	20.6	ug/L	1.58	2.90	20	
Vinyl Chloride	CCC	20.0	17.5	ug/L	0.256	12.6	20	
Bromoform	SPCC	20.0	20.8	ug/L	0.263	4.10	20	
Chlorobenzene	SPCC	20.0	19.2	ug/L	0.967	3.90	20	
Chloromethane	SPCC	20.0	15.1	ug/L	0.199	24.3	20	*
1,1-Dichloroethane	SPCC	20.0	19.9	ug/L	0.430	0.600	20	
1,1,2,2-Tetrachloroethane	SPCC	20.0	20.6	ug/L	0.642	3.20	20	
Acetone		20.0	16.8	ug/L	0.0349	16.1	20	
Benzene		20.0	20.6	ug/L	1.01	3.10	20	
Bromobenzene		20.0	20.1	ug/L	0.882	0.600	20	
Bromochloromethane		20.0	20.4	ug/L	0.172	1.90	20	
Bromodichloromethane		20.0	20.2	ug/L	0.333	1.00	20	
Bromomethane		20.0	19.7	ug/L	0.172	1.50	20	
2-Butanone		20.0	22.9	ug/L	0.0813	14.3	20	
n-Butylbenzene		20.0	21.1	ug/L	2.78	5.30	20	
sec-Butylbenzene		20.0	19.7	ug/L	3.39	1.50	20	
tert-Butylbenzene		20.0	19.7	ug/L	0.504	1.70	20	
Carbon Disulfide		20.0	11.1	ug/L	0.407	44.4	20	*
Carbon Tetrachloride		20.0	18.6	ug/L	0.339	7.20	20	
Dibromochloromethane		20.0	20.2	ug/L	0.370	0.900	20	
Chloroethane		20.0	20.7	ug/L	0.159	3.50	20	
2-Chlorotoluene		20.0	19.2	ug/L	2.15	3.90	20	
4-Chlorotoluene		20.0	19.0	ug/L	2.15	4.80	20	
1,2-Dibromo-3-Chloropropane		20.0	21.2	ug/L	0.122	5.80	20	
1,2-Dibromoethane		20.0	20.0	ug/L	0.282	0.100	20	
Dibromomethane		20.0	21.1	ug/L	0.145	5.40	20	
1,2-Dichlorobenzene		20.0	19.0	ug/L	1.48	4.90	20	
1,3-Dichlorobenzene		20.0	18.9	ug/L	1.54	5.70	20	
1,4-Dichlorobenzene		20.0	19.8	ug/L	1.65	1.10	20	
Dichlorodifluoromethane		20.0	13.5	ug/L	0.203	32.7	20	*
1,2-Dichloroethane		20.0	20.5	ug/L	0.305	2.60	20	
cis-1,2-Dichloroethene		20.0	20.5	ug/L	0.273	2.50	20	
trans-1,2-Dichloroethene		20.0	20.8	ug/L	0.244	3.80	20	
1,3-Dichloropropane		20.0	20.8	ug/L	0.458	4.10	20	
2,2-Dichloropropane		20.0	21.3	ug/L	0.386	6.40	20	
cis-1,3-Dichloropropene		20.0	21.5	ug/L	0.422	7.70	20	
trans-1,3-Dichloropropene		20.0	19.9	ug/L	0.341	0.500	20	
1,1-Dichloropropene		20.0	20.6	ug/L	0.336	3.00	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4186699
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15050872 Run Date: 04/16/2015 Sample ID: WG519118-12
Instrument ID: HPMS17 Run Time: 15:37 Method: 8260B
File ID: 17M011189 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG519118 Cal ID: HPMS17 - 16-APR-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		20.0	20.8	ug/L	0.173	4.00	20	
Hexachlorobutadiene		20.0	21.8	ug/L	0.794	8.80	20	
Isopropylbenzene		20.0	19.3	ug/L	1.64	3.70	20	
p-Isopropyltoluene		20.0	19.4	ug/L	2.92	2.90	20	
4-Methyl-2-Pentanone		20.0	20.7	ug/L	0.0657	3.60	20	
Methylene Chloride		20.0	19.0	ug/L	0.258	4.80	20	
Naphthalene		20.0	21.1	ug/L	2.52	5.50	20	
n-Propylbenzene		20.0	19.6	ug/L	3.54	2.20	20	
Styrene		20.0	20.5	ug/L	1.09	2.40	20	
1,1,1,2-Tetrachloroethane		20.0	20.5	ug/L	0.379	2.50	20	
Tetrachloroethene		20.0	20.2	ug/L	0.430	0.800	20	
1,2,3-Trichlorobenzene		20.0	21.0	ug/L	1.26	5.00	20	
1,2,4-Trichlorobenzene		20.0	20.7	ug/L	1.32	3.30	20	
1,1,1-Trichloroethane		20.0	20.9	ug/L	0.413	4.40	20	
1,1,2-Trichloroethane		20.0	20.0	ug/L	0.278	0.200	20	
Trichloroethene		20.0	20.4	ug/L	0.285	2.00	20	
Trichlorofluoromethane		20.0	18.3	ug/L	0.344	8.60	20	
1,2,3-Trichloropropane		20.0	21.0	ug/L	0.172	5.10	20	
1,2,4-Trimethylbenzene		20.0	21.1	ug/L	2.96	5.40	20	
1,3,5-Trimethylbenzene		20.0	21.0	ug/L	2.96	5.20	20	
o-Xylene		20.0	19.3	ug/L	0.627	3.50	20	
m-,p-Xylene		40.0	40.1	ug/L	0.656	0.200	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4186699
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15050872 Run Date: 05/12/2015 Sample ID: WG523161-12
Instrument ID: HPMS8 Run Time: 22:34 Method: 8260B
File ID: 8M404591 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG523161 Cal ID: HPMS8 - 12-MAY-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.2	ug/L	0.463	1.60	20	
1,1-Dichloroethene	CCC	50.0	46.8	ug/L	0.411	6.50	20	
1,2-Dichloropropane	CCC	50.0	48.6	ug/L	0.273	2.80	20	
Ethylbenzene	CCC	50.0	48.7	ug/L	0.584	2.60	20	
Toluene	CCC	50.0	50.9	ug/L	1.51	1.80	20	
Vinyl Chloride	CCC	50.0	48.0	ug/L	0.700	4.00	20	
Bromoform	SPCC	50.0	45.3	ug/L	0.177	9.30	20	
Chlorobenzene	SPCC	50.0	47.2	ug/L	0.944	5.70	20	
Chloromethane	SPCC	50.0	50.1	ug/L	0.775	0.200	20	
1,1-Dichloroethane	SPCC	50.0	48.8	ug/L	0.494	2.40	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.8	ug/L	0.454	4.50	20	
Acetone		50.0	56.9	ug/L	0.0406	13.7	20	
Benzene		50.0	50.3	ug/L	1.01	0.600	20	
Bromobenzene		50.0	48.1	ug/L	0.722	3.90	20	
Bromochloromethane		50.0	48.1	ug/L	0.141	3.90	20	
Bromodichloromethane		50.0	48.6	ug/L	0.335	2.90	20	
Bromomethane		50.0	49.4	ug/L	0.171	1.20	20	
2-Butanone		50.0	53.3	ug/L	0.0620	6.50	20	
n-Butylbenzene		50.0	51.8	ug/L	2.77	3.60	20	
sec-Butylbenzene		50.0	48.9	ug/L	3.16	2.20	20	
tert-Butylbenzene		50.0	45.4	ug/L	0.522	9.20	20	
Carbon Disulfide		50.0	47.0	ug/L	0.761	5.90	20	
Carbon Tetrachloride		50.0	49.2	ug/L	0.382	1.60	20	
Dibromochloromethane		50.0	49.1	ug/L	0.301	1.80	20	
Chloroethane		50.0	55.5	ug/L	0.220	10.9	20	
2-Chlorotoluene		50.0	40.9	ug/L	2.09	18.2	20	
4-Chlorotoluene		50.0	53.3	ug/L	2.18	6.70	20	
1,2-Dibromo-3-Chloropropane		50.0	52.6	ug/L	0.0797	5.20	20	
1,2-Dibromoethane		50.0	50.9	ug/L	0.224	1.70	20	
Dibromomethane		50.0	48.0	ug/L	0.127	3.90	20	
1,2-Dichlorobenzene		50.0	46.2	ug/L	1.22	7.50	20	
1,3-Dichlorobenzene		50.0	45.6	ug/L	1.39	8.80	20	
1,4-Dichlorobenzene		50.0	48.7	ug/L	1.51	2.60	20	
Dichlorodifluoromethane		50.0	56.2	ug/L	0.435	12.4	20	
1,2-Dichloroethane		50.0	48.7	ug/L	0.328	2.70	20	
cis-1,2-Dichloroethene		50.0	48.5	ug/L	0.280	2.90	20	
trans-1,2-Dichloroethene		50.0	49.8	ug/L	0.418	0.500	20	
1,3-Dichloropropane		50.0	50.8	ug/L	0.411	1.60	20	
2,2-Dichloropropane		50.0	45.8	ug/L	0.383	8.50	20	
cis-1,3-Dichloropropene		50.0	52.5	ug/L	0.396	5.00	20	
trans-1,3-Dichloropropene		50.0	49.2	ug/L	0.437	1.70	20	
1,1-Dichloropropene		50.0	47.8	ug/L	0.355	4.30	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4186699
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15050872 Run Date: 05/12/2015 Sample ID: WG523161-12
Instrument ID: HPMS8 Run Time: 22:34 Method: 8260B
File ID: 8M404591 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG523161 Cal ID: HPMS8 - 12-MAY-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	54.8	ug/L	0.0695	9.50	20	
Hexachlorobutadiene		50.0	50.4	ug/L	0.524	0.800	20	
Isopropylbenzene		50.0	47.9	ug/L	1.57	4.20	20	
p-Isopropyltoluene		50.0	48.0	ug/L	2.63	4.00	20	
4-Methyl-2-Pentanone		50.0	54.4	ug/L	0.0524	8.80	20	
Methylene Chloride		50.0	50.3	ug/L	0.252	0.600	20	
Naphthalene		50.0	51.5	ug/L	1.37	3.00	20	
n-Propylbenzene		50.0	46.3	ug/L	3.51	7.30	20	
Styrene		50.0	52.5	ug/L	1.11	5.00	20	
1,1,1,2-Tetrachloroethane		50.0	50.2	ug/L	0.361	0.400	20	
Tetrachloroethene		50.0	49.0	ug/L	0.307	2.00	20	
1,2,3-Trichlorobenzene		50.0	49.7	ug/L	0.838	0.600	20	
1,2,4-Trichlorobenzene		50.0	49.7	ug/L	0.989	0.600	20	
1,1,1-Trichloroethane		50.0	50.3	ug/L	0.430	0.600	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.226	2.00	20	
Trichloroethene		50.0	49.9	ug/L	0.264	0.100	20	
Trichlorofluoromethane		50.0	48.8	ug/L	0.447	2.50	20	
1,2,3-Trichloropropane		50.0	51.6	ug/L	0.133	3.20	20	
1,2,4-Trimethylbenzene		50.0	52.5	ug/L	2.79	5.00	20	
1,3,5-Trimethylbenzene		50.0	52.9	ug/L	2.74	5.70	20	
o-Xylene		50.0	46.8	ug/L	0.627	6.40	20	
m-,p-Xylene		100	99.5	ug/L	0.674	0.500	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4186699
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15050872 Run Date: 05/15/2015 Sample ID: WG523883-02
Instrument ID: HPMS17 Run Time: 15:24 Method: 8260B
File ID: 17M011864 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG523885 Cal ID: HPMS17 - 16-APR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	57.9	ug/L	0.478	15.8	20	
1,1-Dichloroethene	CCC	50.0	57.2	ug/L	0.404	14.3	20	
1,2-Dichloropropane	CCC	50.0	55.6	ug/L	0.290	11.2	20	
Ethylbenzene	CCC	50.0	56.3	ug/L	0.610	12.7	20	
Toluene	CCC	50.0	54.5	ug/L	1.68	9.06	20	
Vinyl Chloride	CCC	50.0	58.5	ug/L	0.342	17.0	20	
Bromoform	SPCC	50.0	49.9	ug/L	0.252	0.140	20	
Chlorobenzene	SPCC	50.0	55.8	ug/L	1.12	11.5	20	
Chloromethane	SPCC	50.0	62.7	ug/L	0.330	25.4	20	*
1,1-Dichloroethane	SPCC	50.0	56.6	ug/L	0.490	13.2	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.0	ug/L	0.609	2.09	20	
Xylenes		150	171	ug/L	0.741	14.3	20	
Acetone		50.0	44.8	ug/L	0.0353	10.4	20	
Benzene		50.0	55.5	ug/L	1.09	11.0	20	
Bromobenzene		50.0	54.7	ug/L	0.959	9.36	20	
Bromochloromethane		50.0	53.2	ug/L	0.180	6.35	20	
Bromodichloromethane		50.0	53.6	ug/L	0.353	7.16	20	
Bromomethane		50.0	60.1	ug/L	0.210	20.3	20	*
2-Butanone		50.0	39.4	ug/L	0.0560	21.2	20	*
n-Butylbenzene		50.0	59.8	ug/L	3.16	19.7	20	
sec-Butylbenzene		50.0	58.0	ug/L	4.00	16.1	20	
tert-Butylbenzene		50.0	57.7	ug/L	0.591	15.5	20	
Carbon Disulfide		50.0	50.6	ug/L	0.741	1.21	20	
Carbon Tetrachloride		50.0	50.9	ug/L	0.377	1.85	20	
Dibromochloromethane		50.0	50.7	ug/L	0.372	1.36	20	
Chloroethane		50.0	55.2	ug/L	0.169	10.4	20	
2-Chlorotoluene		50.0	55.9	ug/L	2.50	11.9	20	
4-Chlorotoluene		50.0	56.6	ug/L	2.56	13.2	20	
1,2-Dibromo-3-Chloropropane		50.0	41.9	ug/L	0.0963	16.3	20	
1,2-Dibromoethane		50.0	48.1	ug/L	0.272	3.83	20	
Dibromomethane		50.0	52.3	ug/L	0.144	4.64	20	
1,2-Dichlorobenzene		50.0	55.7	ug/L	1.73	11.3	20	
1,3-Dichlorobenzene		50.0	57.4	ug/L	1.87	14.9	20	
1,4-Dichlorobenzene		50.0	55.4	ug/L	1.85	10.9	20	
Dichlorodifluoromethane		50.0	59.7	ug/L	0.360	19.5	20	
1,2-Dichloroethane		50.0	49.9	ug/L	0.297	0.127	20	
cis-1,2-Dichloroethene		50.0	55.0	ug/L	0.293	9.96	20	
trans-1,2-Dichloroethene		50.0	55.4	ug/L	0.261	10.9	20	
1,3-Dichloropropane		50.0	49.9	ug/L	0.439	0.267	20	
2,2-Dichloropropane		50.0	53.9	ug/L	0.391	7.75	20	
cis-1,3-Dichloropropene		50.0	53.5	ug/L	0.419	6.98	20	
trans-1,3-Dichloropropene		50.0	49.7	ug/L	0.340	0.660	20	

CCV - Modified 03/05/2008
PDF File ID: 4186702
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15050872 Run Date: 05/15/2015 Sample ID: WG523883-02
Instrument ID: HPMS17 Run Time: 15:24 Method: 8260B
File ID: 17M011864 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG523885 Cal ID: HPMS17 - 16-APR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	55.9	ug/L	0.365	11.9	20	
2-Hexanone		50.0	35.8	ug/L	0.119	28.3	20	*
Hexachlorobutadiene		50.0	56.6	ug/L	0.826	13.2	20	
Isopropylbenzene		50.0	56.9	ug/L	1.94	13.7	20	
p-Isopropyltoluene		50.0	58.9	ug/L	3.54	17.9	20	
4-Methyl-2-Pentanone		50.0	37.7	ug/L	0.0478	24.6	20	*
Methylene Chloride		50.0	49.8	ug/L	0.269	0.430	20	
Naphthalene		50.0	45.0	ug/L	2.15	10.1	20	
n-Propylbenzene		50.0	58.0	ug/L	4.19	15.9	20	
Styrene		50.0	56.7	ug/L	1.21	13.4	20	
1,1,1,2-Tetrachloroethane		50.0	54.2	ug/L	0.401	8.41	20	
Tetrachloroethene		50.0	54.0	ug/L	0.461	7.94	20	
1,2,3-Trichlorobenzene		50.0	49.3	ug/L	1.18	1.42	20	
1,2,4-Trichlorobenzene		50.0	53.4	ug/L	1.37	6.85	20	
1,1,1-Trichloroethane		50.0	53.5	ug/L	0.424	7.05	20	
1,1,2-Trichloroethane		50.0	49.4	ug/L	0.274	1.18	20	
Trichloroethene		50.0	56.1	ug/L	0.313	12.2	20	
Trichlorofluoromethane		50.0	59.4	ug/L	0.448	18.9	20	
1,2,3-Trichloropropane		50.0	50.0	ug/L	0.163	0.0708	20	
1,2,4-Trimethylbenzene		50.0	57.6	ug/L	3.23	15.2	20	
1,3,5-Trimethylbenzene		50.0	57.3	ug/L	3.22	14.6	20	
o-Xylene		50.0	55.9	ug/L	0.726	11.8	20	
m-,p-Xylene		100	116	ug/L	0.756	15.6	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4186702
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15050872 Run Date: 05/22/2015 Sample ID: WG524780-02
Instrument ID: HPMS8 Run Time: 11:57 Method: 8260B
File ID: 8M404844 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG524783 Cal ID: HPMS8 - 12-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.8	ug/L	0.487	3.63	20	
1,1-Dichloroethene	CCC	50.0	52.1	ug/L	0.458	4.19	20	
1,2-Dichloropropane	CCC	50.0	52.7	ug/L	0.295	5.34	20	
Ethylbenzene	CCC	50.0	46.3	ug/L	0.556	7.33	20	
Toluene	CCC	50.0	49.4	ug/L	1.46	1.23	20	
Vinyl Chloride	CCC	50.0	59.8	ug/L	0.872	19.6	20	
Bromoform	SPCC	50.0	46.6	ug/L	0.182	6.89	20	
Chlorobenzene	SPCC	50.0	48.5	ug/L	0.970	3.07	20	
Chloromethane	SPCC	50.0	55.9	ug/L	0.864	11.7	20	
1,1-Dichloroethane	SPCC	50.0	52.1	ug/L	0.527	4.16	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.3	ug/L	0.431	9.35	20	
Xylenes		150	149	ug/L	0.666	0.856	20	
Acetone		50.0	47.9	ug/L	0.0342	4.22	20	
Benzene		50.0	53.6	ug/L	1.07	7.17	20	
Bromobenzene		50.0	45.8	ug/L	0.688	8.44	20	
Bromochloromethane		50.0	49.8	ug/L	0.146	0.458	20	
Bromodichloromethane		50.0	55.5	ug/L	0.383	11.0	20	
Bromomethane		50.0	53.5	ug/L	0.186	6.92	20	
2-Butanone		50.0	52.6	ug/L	0.0612	5.19	20	
n-Butylbenzene		50.0	48.9	ug/L	2.61	2.17	20	
sec-Butylbenzene		50.0	49.4	ug/L	3.19	1.22	20	
tert-Butylbenzene		50.0	44.0	ug/L	0.507	12.0	20	
Carbon Disulfide		50.0	54.4	ug/L	0.880	8.85	20	
Carbon Tetrachloride		50.0	54.6	ug/L	0.424	9.28	20	
Dibromochloromethane		50.0	49.8	ug/L	0.306	0.349	20	
Chloroethane		50.0	51.9	ug/L	0.206	3.75	20	
2-Chlorotoluene		50.0	44.2	ug/L	2.26	11.5	20	
4-Chlorotoluene		50.0	49.7	ug/L	2.03	0.597	20	
1,2-Dibromo-3-Chloropropane		50.0	48.8	ug/L	0.0741	2.33	20	
1,2-Dibromoethane		50.0	48.8	ug/L	0.215	2.41	20	
Dibromomethane		50.0	53.0	ug/L	0.140	5.96	20	
1,2-Dichlorobenzene		50.0	47.5	ug/L	1.26	4.98	20	
1,3-Dichlorobenzene		50.0	47.8	ug/L	1.46	4.39	20	
1,4-Dichlorobenzene		50.0	46.5	ug/L	1.44	7.04	20	
Dichlorodifluoromethane		50.0	56.7	ug/L	0.439	13.3	20	
1,2-Dichloroethane		50.0	49.9	ug/L	0.336	0.253	20	
cis-1,2-Dichloroethene		50.0	50.2	ug/L	0.290	0.498	20	
trans-1,2-Dichloroethene		50.0	50.1	ug/L	0.421	0.285	20	
1,3-Dichloropropane		50.0	47.4	ug/L	0.383	5.19	20	
2,2-Dichloropropane		50.0	50.0	ug/L	0.418	0.0246	20	
cis-1,3-Dichloropropene		50.0	53.5	ug/L	0.404	7.05	20	
trans-1,3-Dichloropropene		50.0	47.6	ug/L	0.424	4.72	20	

CCV - Modified 03/05/2008
PDF File ID: 4186702
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15050872 Run Date: 05/22/2015 Sample ID: WG524780-02
Instrument ID: HPMS8 Run Time: 11:57 Method: 8260B
File ID: 8M404844 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG524783 Cal ID: HPMS8 - 12-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.0	ug/L	0.379	1.96	20	
2-Hexanone		50.0	46.9	ug/L	0.0595	6.14	20	
Hexachlorobutadiene		50.0	38.5	ug/L	0.401	23.0	20	*
Isopropylbenzene		50.0	51.5	ug/L	1.69	2.97	20	
p-Isopropyltoluene		50.0	49.3	ug/L	2.70	1.45	20	
4-Methyl-2-Pentanone		50.0	58.0	ug/L	0.0559	16.1	20	
Methylene Chloride		50.0	52.7	ug/L	0.264	5.47	20	
Naphthalene		50.0	51.9	ug/L	1.38	3.75	20	
n-Propylbenzene		50.0	46.8	ug/L	3.54	6.49	20	
Styrene		50.0	51.3	ug/L	1.09	2.53	20	
1,1,1,2-Tetrachloroethane		50.0	50.3	ug/L	0.361	0.509	20	
Tetrachloroethene		50.0	45.9	ug/L	0.287	8.21	20	
1,2,3-Trichlorobenzene		50.0	47.0	ug/L	0.794	5.91	20	
1,2,4-Trichlorobenzene		50.0	47.3	ug/L	0.942	5.37	20	
1,1,1-Trichloroethane		50.0	53.4	ug/L	0.456	6.86	20	
1,1,2-Trichloroethane		50.0	47.3	ug/L	0.218	5.41	20	
Trichloroethene		50.0	53.4	ug/L	0.283	6.80	20	
Trichlorofluoromethane		50.0	51.9	ug/L	0.475	3.78	20	
1,2,3-Trichloropropane		50.0	46.2	ug/L	0.119	7.63	20	
1,2,4-Trimethylbenzene		50.0	48.7	ug/L	2.59	2.59	20	
1,3,5-Trimethylbenzene		50.0	47.9	ug/L	2.48	4.14	20	
o-Xylene		50.0	48.9	ug/L	0.656	2.16	20	
m-,p-Xylene		100	99.8	ug/L	0.677	0.205	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4186702
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15050872
Instrument ID: HPMS17
Workgroup (AAB#): WG523885

ICAL CCV Number: WG519118-02
CAL ID: HPMS17-16-APR-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG519118-02	NA	NA	108719	201307	282632
Upper Limit	NA	NA	217438	402614	565264
Lower Limit	NA	NA	54360	100654	141316
L15050872-01	1.00	01	84736	162751	220795
L15050872-02	1.00	01	91981	178255	243077
L15050872-03	1.00	01	90647	173570	237210
L15050872-04	1.00	01	86936	165291	225202
L15050872-05	1.00	01	88375	171857	233462
L15050872-06	1.00	01	92577	175788	238558
L15050872-07	1.00	01	93175	175330	237465
L15050872-08	1.00	01	92114	174013	234413
L15050872-09	1.00	01	90550	174545	236606
L15050872-11	1.00	01	92915	177031	240177
L15050872-12	1.00	01	88412	169717	229082
L15050872-13	1.00	01	88056	172252	236267
WG523885-01	1.00	01	90104	174322	236405
WG523885-01	1.00	02	86638	167714	227681
WG523885-02	1.00	01	89924	169634	227392

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4186704
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15050872
Instrument ID: HPMS8
Workgroup (AAB#): WG524783

ICAL CCV Number: WG523161-08
CAL ID: HPMS8-12-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523161-08	NA	NA	300564	545682	779258
Upper Limit	NA	NA	601128	1091364	1558516
Lower Limit	NA	NA	150282	272841	389629
L15050872-10	1.00	01	279002	516957	645864
WG524783-01	1.00	01	279119	520794	643411
WG524783-02	1.00	01	324627	550179	690383
WG524783-03	1.00	02	332928	625455	775501

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4186704
Report generated 05/27/2015 11:30

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15050872
Instrument ID: HPMS17
Workgroup (AAB#): WG523885

ICAL CCV Number: WG519118-02
CAL ID: HPMS17-16-APR-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG519118-02	NA	NA	9.319	7.993	5.173
Upper Limit	NA	NA	9.819	8.493	5.673
Lower Limit	NA	NA	8.819	7.493	4.673
L15050872-01	1.00	01	9.32	7.99	5.17
L15050872-02	1.00	01	9.32	7.99	5.17
L15050872-03	1.00	01	9.32	7.99	5.17
L15050872-04	1.00	01	9.32	7.99	5.17
L15050872-05	1.00	01	9.32	7.99	5.17
L15050872-06	1.00	01	9.32	7.99	5.17
L15050872-07	1.00	01	9.32	7.99	5.17
L15050872-08	1.00	01	9.32	7.99	5.17
L15050872-09	1.00	01	9.32	7.99	5.17
L15050872-11	1.00	01	9.32	7.99	5.17
L15050872-12	1.00	01	9.32	7.99	5.17
L15050872-13	1.00	01	9.32	7.99	5.17
WG523885-01	1.00	01	9.32	7.99	5.17
WG523885-01	1.00	02	9.31	7.99	5.17
WG523885-02	1.00	01	9.32	7.99	5.17

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4186708
Report generated: 05/27/2015 11:30

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15050872
Instrument ID: HPMS8
Workgroup (AAB#): WG524783

ICAL CCV Number: WG523161-08
CAL ID: HPMS8-12-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523161-08	NA	NA	17.65	14.62	10.75
Upper Limit	NA	NA	18.15	15.12	11.25
Lower Limit	NA	NA	17.15	14.12	10.25
L15050872-10	1.00	01	17.64	14.62	10.75
WG524783-01	1.00	01	17.64	14.62	10.75
WG524783-02	1.00	01	17.64	14.62	10.75
WG524783-03	1.00	02	17.64	14.62	10.75

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4186708
Report generated: 05/27/2015 11:30

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011874.D
Acq On : 15 May 2015 19:34
Operator : ADC
Sample : L15050872-01 A 826-LOW
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 19 11:41:21 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	220795	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	162751	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	84736	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	58609	27.6020 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.408%		
32) 1,2-Dichloroethane-d4	4.843	65	55034	26.1345 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.538%		
44) Toluene-d8	6.734	98	227022	25.9415 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.766%		
63) p-Bromofluorobenzene	8.737	95	80076	26.3657 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.463%		
Target Compounds					Qvalue
15) Acetone	2.364	43	231	Below Cal #	41
34) Trichloroethene	5.352	130	309	0.1253 ug/L #	36

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011874.D
Acq On : 15 May 2015 19:34
Operator : ADC
Sample : L15050872-01 A 826-LOW
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 19 11:41:21 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

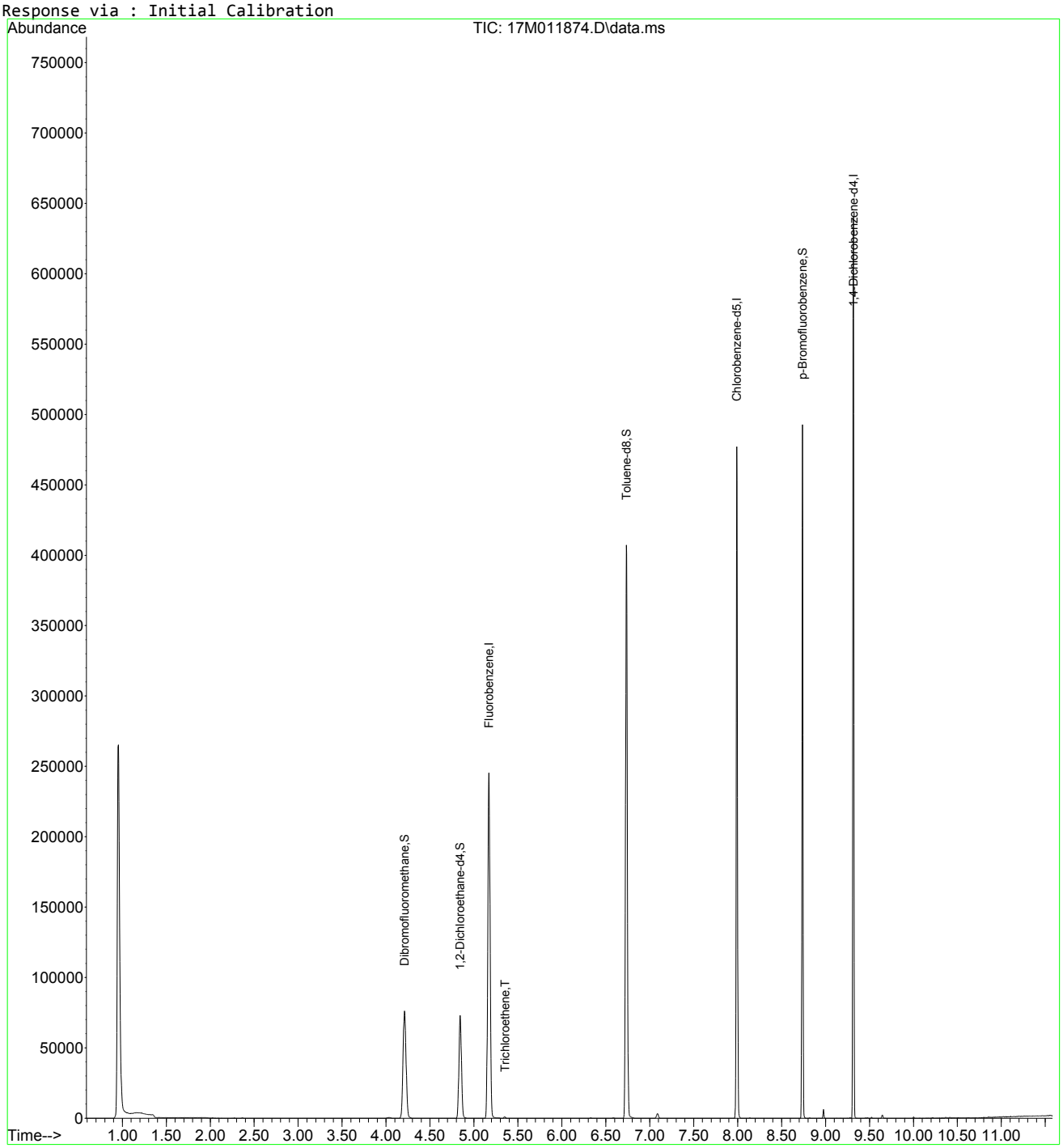

8260VMS.M Tue May 19 11:41:22 2015 Page: 2

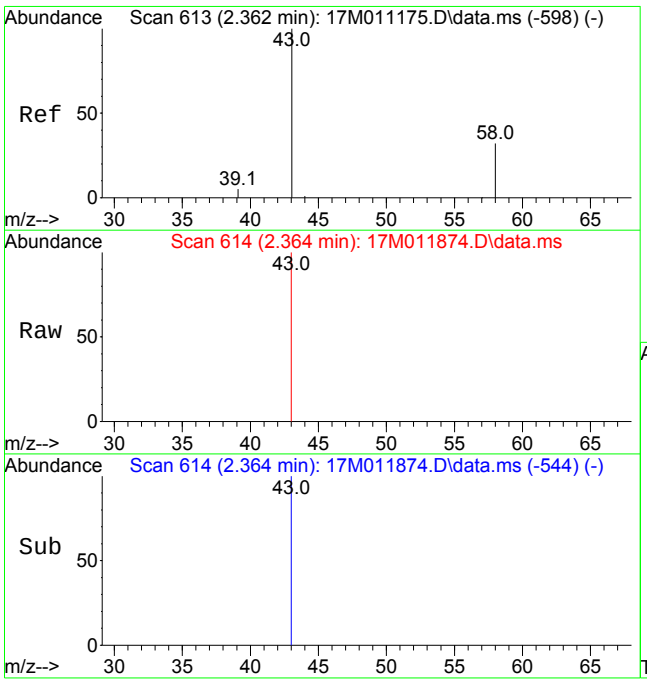

#15
Acetone
Concen: Below Cal
RT: 2.364 min Scan# 614
Delta R.T. 0.002 min
Lab File: 17M011874.D
Acq: 15 May 2015 19:34

Tgt Ion: 43 Resp: 231

Ion	Ratio	Lower	Upper
43	100		
58	0.0	20.0	46.8#

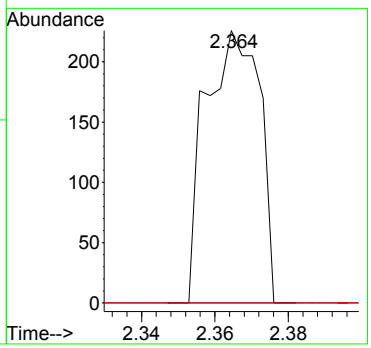

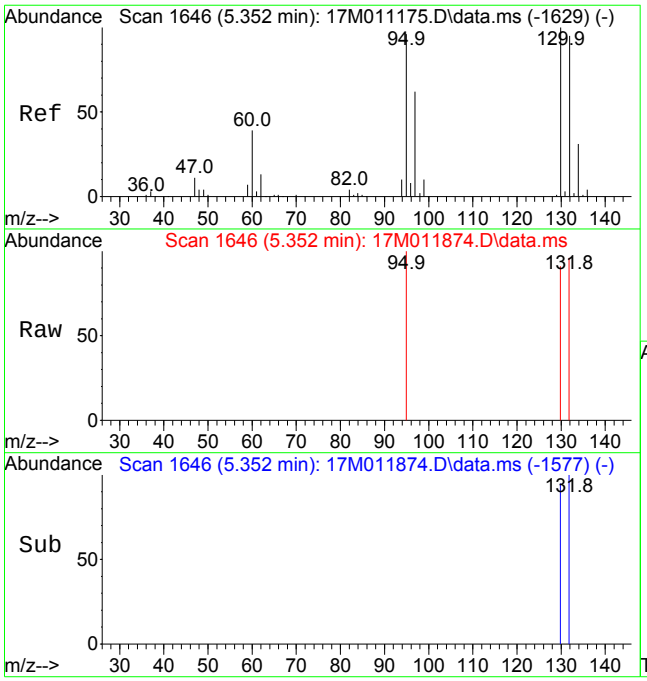

#34
Trichloroethene
Concen: 0.1253 ug/L
RT: 5.352 min Scan# 1646
Delta R.T. 0.000 min
Lab File: 17M011874.D
Acq: 15 May 2015 19:34

Tgt Ion:130 Resp: 309

Ion	Ratio	Lower	Upper
130	100		
60	0.0	23.8	55.6#

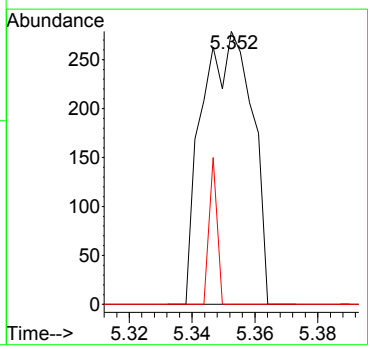

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011875.D
Acq On : 15 May 2015 19:53
Operator : ADC
Sample : L15050872-02 A 826-LOW
Misc : 1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 19 11:41:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	243077	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	178255	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	91981	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.212	111	63746	27.2694 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.078%		
32) 1,2-Dichloroethane-d4	4.846	65	58382	25.1830 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.732%		
44) Toluene-d8	6.736	98	246886	25.7576 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.030%		
63) p-Bromofluorobenzene	8.737	95	86313	26.1808 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.723%		
Target Compounds					Qvalue
10) 1,1-Dichloroethene	1.881	61	45515	13.2307 ug/L	99
15) Acetone	2.361	43	511	Below Cal #	41
18) 1,1-Dichloroethane	2.998	63	3714	0.8826 ug/L	94
34) Trichloroethene	5.349	130	417	0.1537 ug/L #	36
51) 2-Hexanone	7.828	43	911	0.7689 ug/L #	25

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011875.D
Acq On : 15 May 2015 19:53
Operator : ADC
Sample : L15050872-02 A 826-LOW
Misc : 1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 19 11:41:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

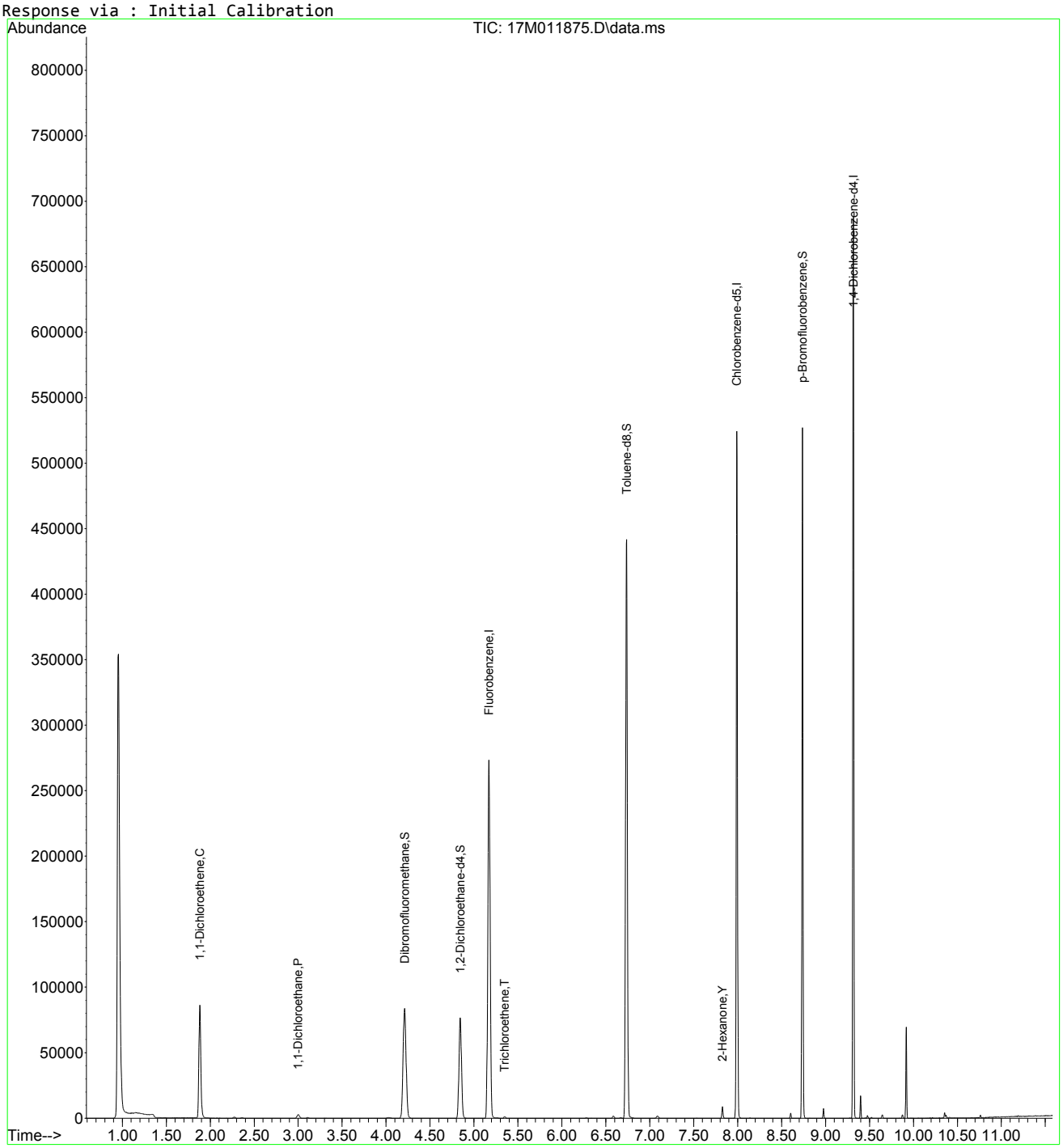

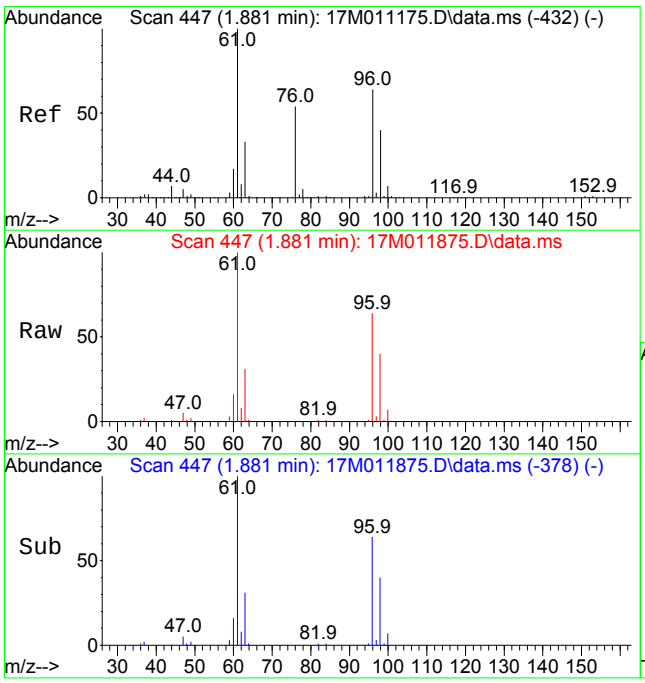

#10
1,1-Dichloroethene
Concen: 13.2307 ug/L
RT: 1.881 min Scan# 447
Delta R.T. -0.000 min
Lab File: 17M011875.D
Acq: 15 May 2015 19:53

Tgt Ion: 61 Resp: 45515

Ion	Ratio	Lower	Upper
61	100		
96	62.3	50.6	76.0

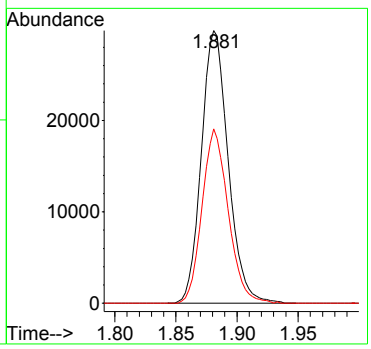

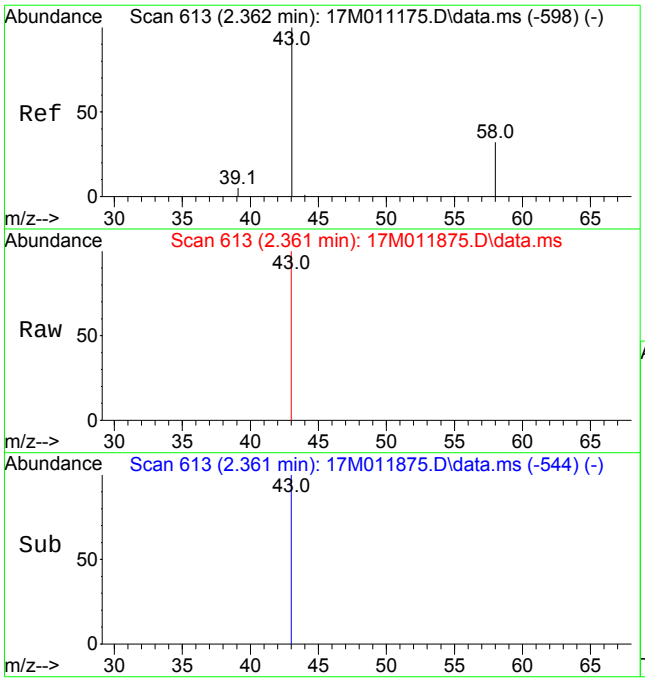

#15
Acetone
Concen: Below Cal
RT: 2.361 min Scan# 613
Delta R.T. -0.001 min
Lab File: 17M011875.D
Acq: 15 May 2015 19:53

Tgt Ion: 43 Resp: 511

Ion	Ratio	Lower	Upper
43	100		
58	0.0	20.0	46.8#

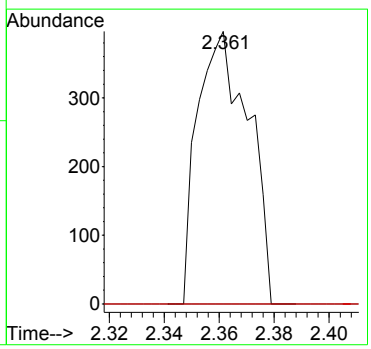

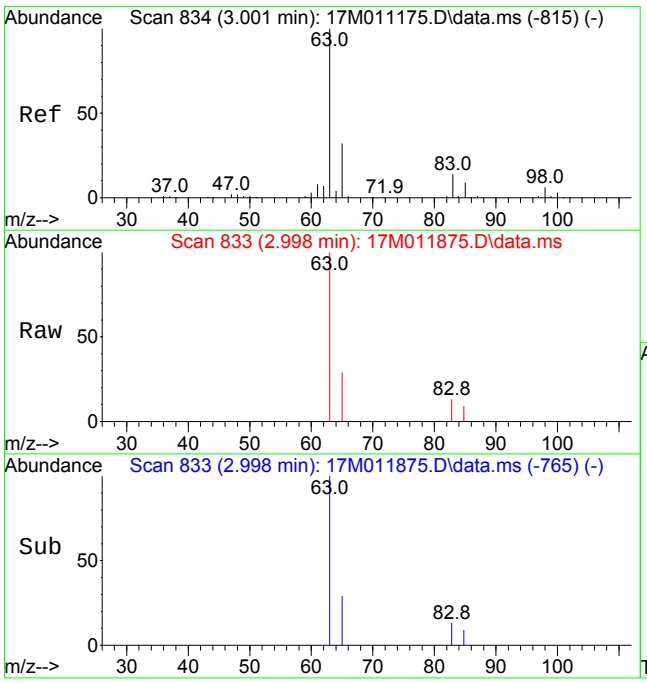

#18
1,1-Dichloroethane
Concen: 0.8826 ug/L
RT: 2.998 min Scan# 833
Delta R.T. -0.003 min
Lab File: 17M011875.D
Acq: 15 May 2015 19:53

Tgt Ion: 63 Resp: 3714

Ion	Ratio	Lower	Upper
63	100		
65	28.2	25.4	38.2

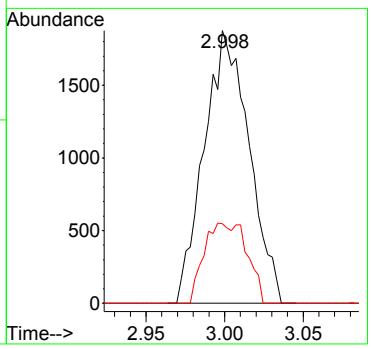

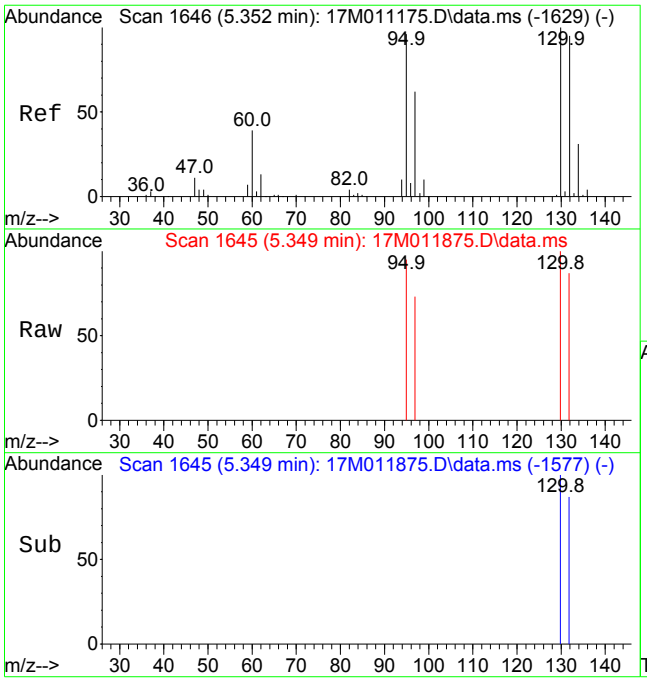

#34
Trichloroethene
Concen: 0.1537 ug/L
RT: 5.349 min Scan# 1645
Delta R.T. -0.003 min
Lab File: 17M011875.D
Acq: 15 May 2015 19:53

Tgt Ion:130 Resp: 417

Ion	Ratio	Lower	Upper
130	100		
60	0.0	23.8	55.6#

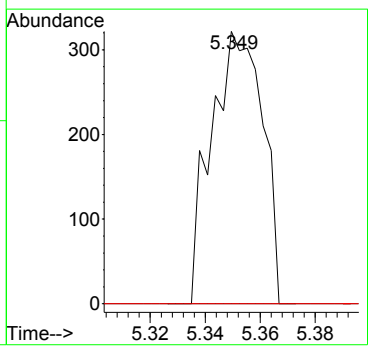

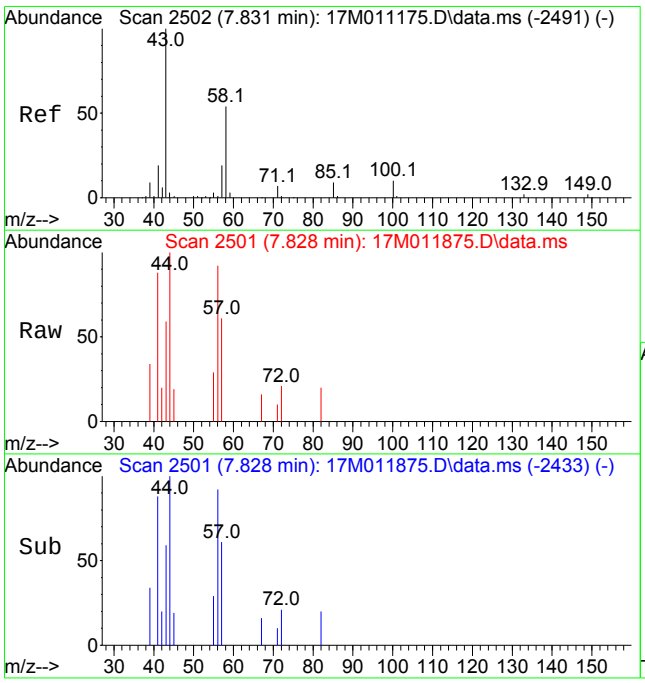

#51
2-Hexanone
Concen: 0.7689 ug/L
RT: 7.828 min Scan# 2501
Delta R.T. -0.003 min
Lab File: 17M011875.D
Acq: 15 May 2015 19:53

Tgt Ion: 43 Resp: 911

Ion	Ratio	Lower	Upper
43	100		
58	0.0	42.2	63.4#

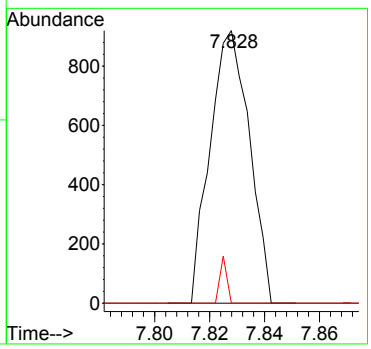

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011876.D
Acq On : 15 May 2015 20:13
Operator : ADC
Sample : L15050872-03 A 826-LOW
Misc : 1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 19 11:41:27 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	237210	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	173570	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	90647	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.212	111	61654	27.0268 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.107%		
32) 1,2-Dichloroethane-d4	4.843	65	57005	25.1972 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.789%		
44) Toluene-d8	6.733	98	240466	25.7649 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.060%		
63) p-Bromofluorobenzene	8.737	95	84032	25.8640 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.456%		
Target Compounds					Qvalue
10) 1,1-Dichloroethene	1.881	61	43704	13.0185 ug/L	100
15) Acetone	2.356	43	271	Below Cal #	41
18) 1,1-Dichloroethane	3.004	63	3584	0.8727 ug/L	97
34) Trichloroethene	5.347	130	383	0.1446 ug/L #	36

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011876.D
Acq On : 15 May 2015 20:13
Operator : ADC
Sample : L15050872-03 A 826-LOW
Misc : 1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 19 11:41:27 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

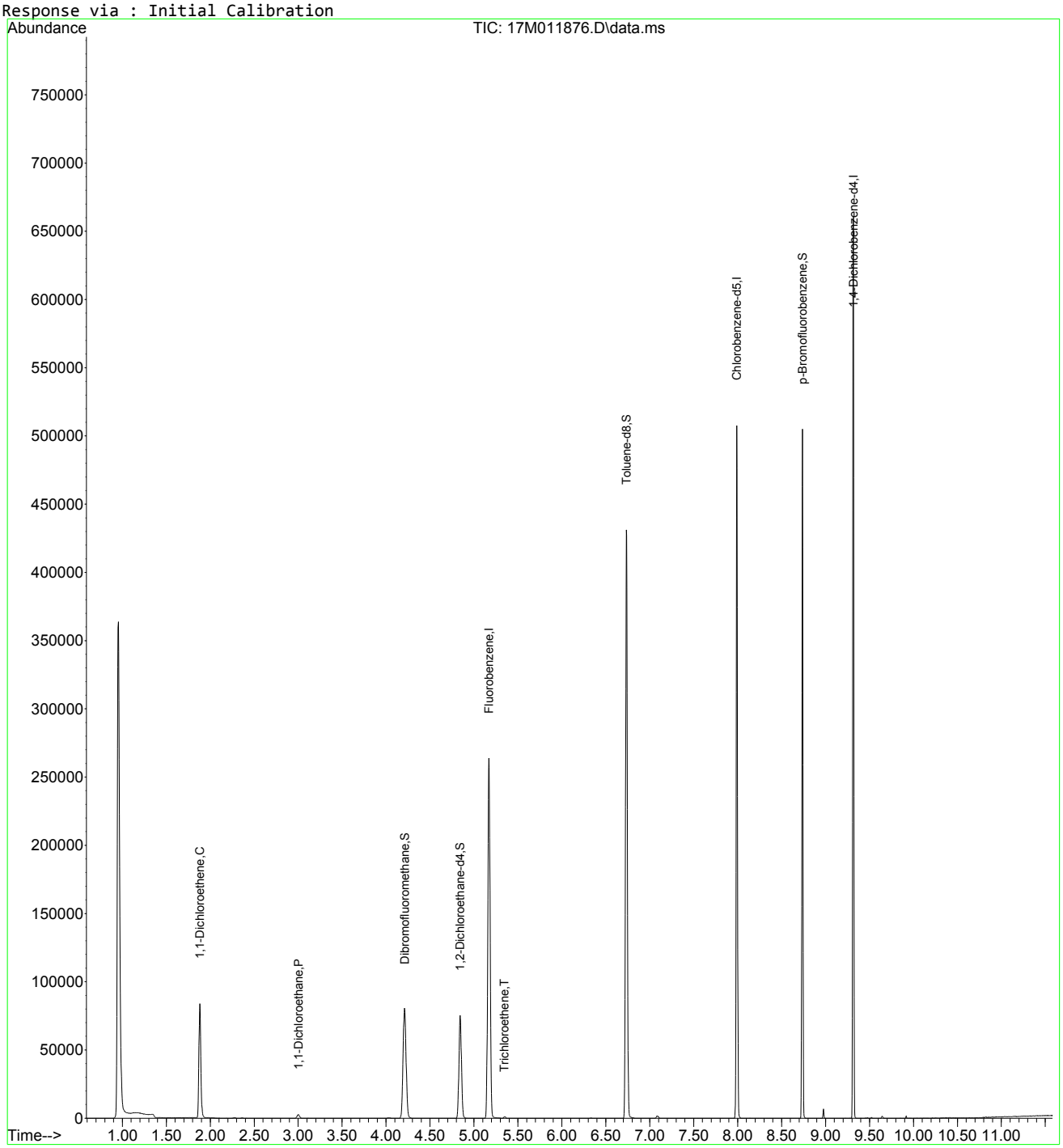

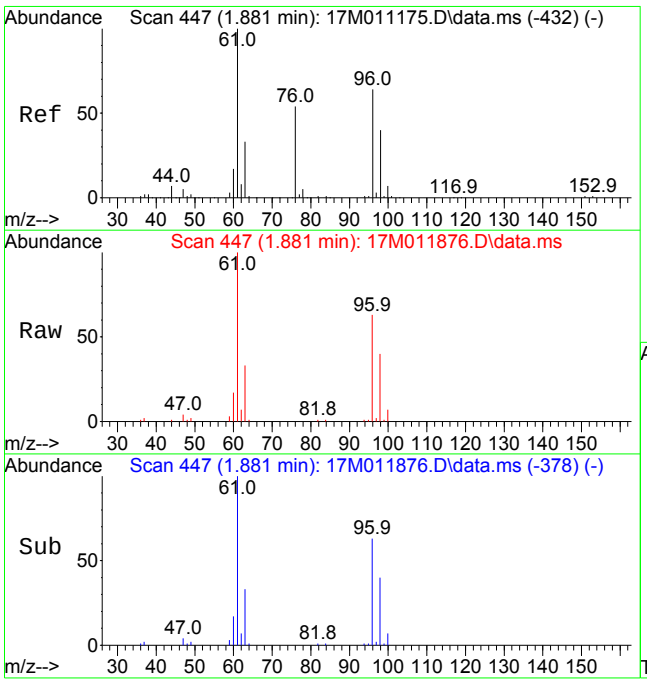

#10
1,1-Dichloroethene
Concen: 13.0185 ug/L
RT: 1.881 min Scan# 447
Delta R.T. -0.000 min
Lab File: 17M011876.D
Acq: 15 May 2015 20:13

Tgt Ion: 61 Resp: 43704

Ion	Ratio	Lower	Upper
61	100		
96	63.4	50.6	76.0

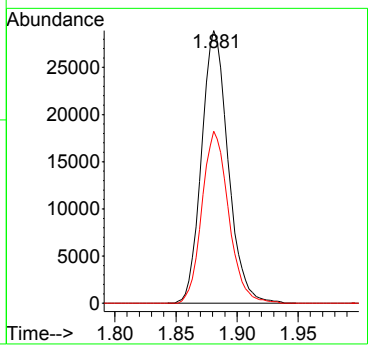

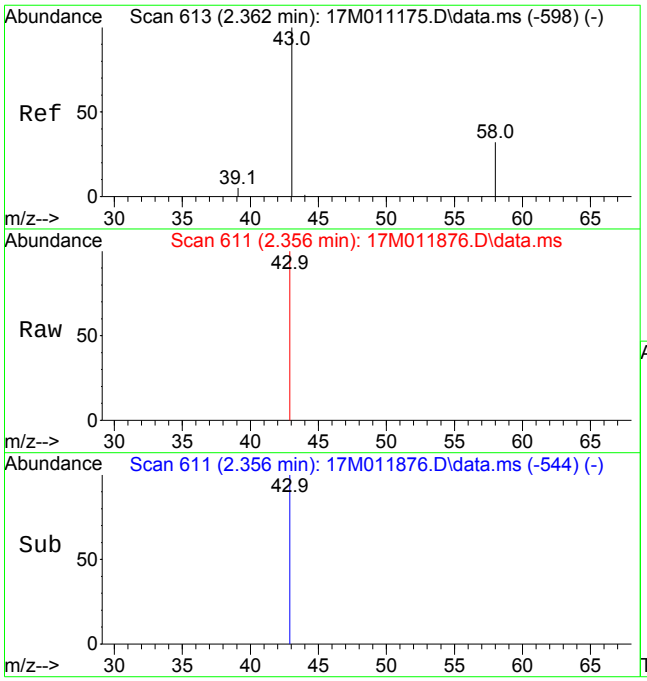

#15
Acetone
Concen: Below Cal
RT: 2.356 min Scan# 611
Delta R.T. -0.006 min
Lab File: 17M011876.D
Acq: 15 May 2015 20:13

Tgt Ion: 43 Resp: 271

Ion	Ratio	Lower	Upper
43	100		
58	0.0	20.0	46.8#

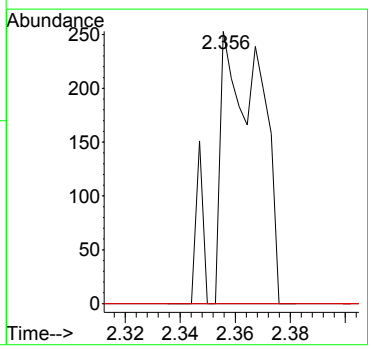

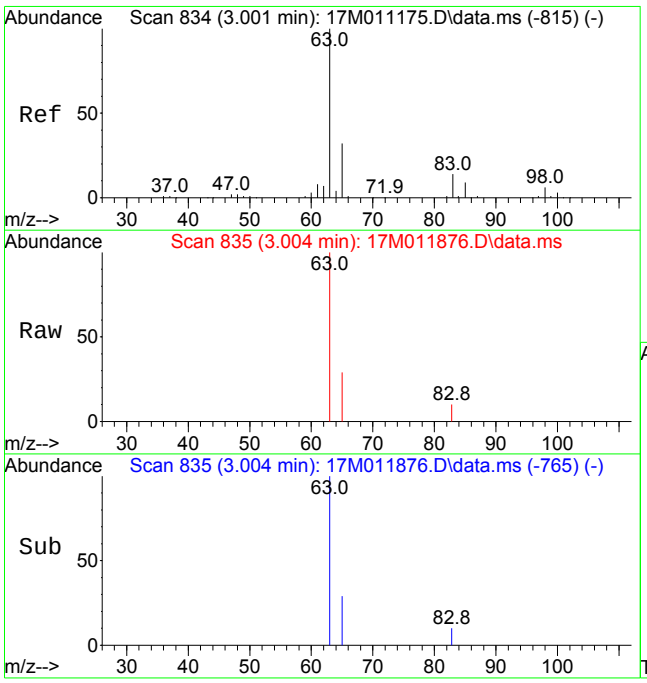

#18
1,1-Dichloroethane
Concen: 0.8727 ug/L
RT: 3.004 min Scan# 835
Delta R.T. 0.003 min
Lab File: 17M011876.D
Acq: 15 May 2015 20:13

Tgt Ion: 63 Resp: 3584

Ion	Ratio	Lower	Upper
63	100		
65	30.0	25.4	38.2

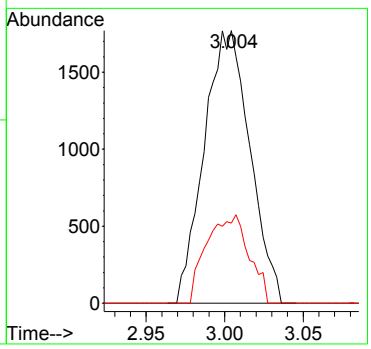

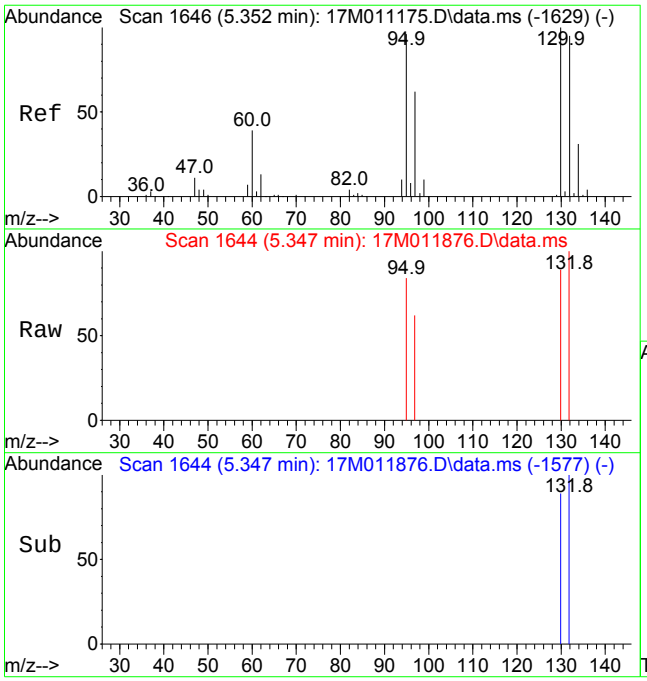

#34
Trichloroethene
Concen: 0.1446 ug/L
RT: 5.347 min Scan# 1644
Delta R.T. -0.005 min
Lab File: 17M011876.D
Acq: 15 May 2015 20:13

Tgt Ion:130 Resp: 383

Ion	Ratio	Lower	Upper
130	100		
60	0.0	23.8	55.6#

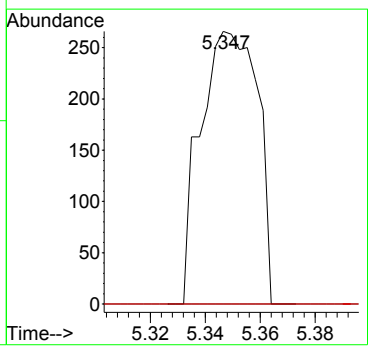

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011877.D
Acq On : 15 May 2015 20:33
Operator : ADC
Sample : L15050872-04 A 826-LOW
Misc : 1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: May 19 11:41:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	225202	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	165291	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	86936	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	59122	27.2988 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.195%		
32) 1,2-Dichloroethane-d4	4.843	65	55668	25.9183 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.673%		
44) Toluene-d8	6.737	98	228765	25.7389 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.956%		
63) p-Bromofluorobenzene	8.737	95	80507	25.8368 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.347%		
Target Compounds					Qvalue
15) Acetone	2.359	43	430	Below Cal #	41
73) p-Isopropyltoluene	9.250	119	4293	0.4110 ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011877.D
Acq On : 15 May 2015 20:33
Operator : ADC
Sample : L15050872-04 A 826-LOW
Misc : 1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: May 19 11:41:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

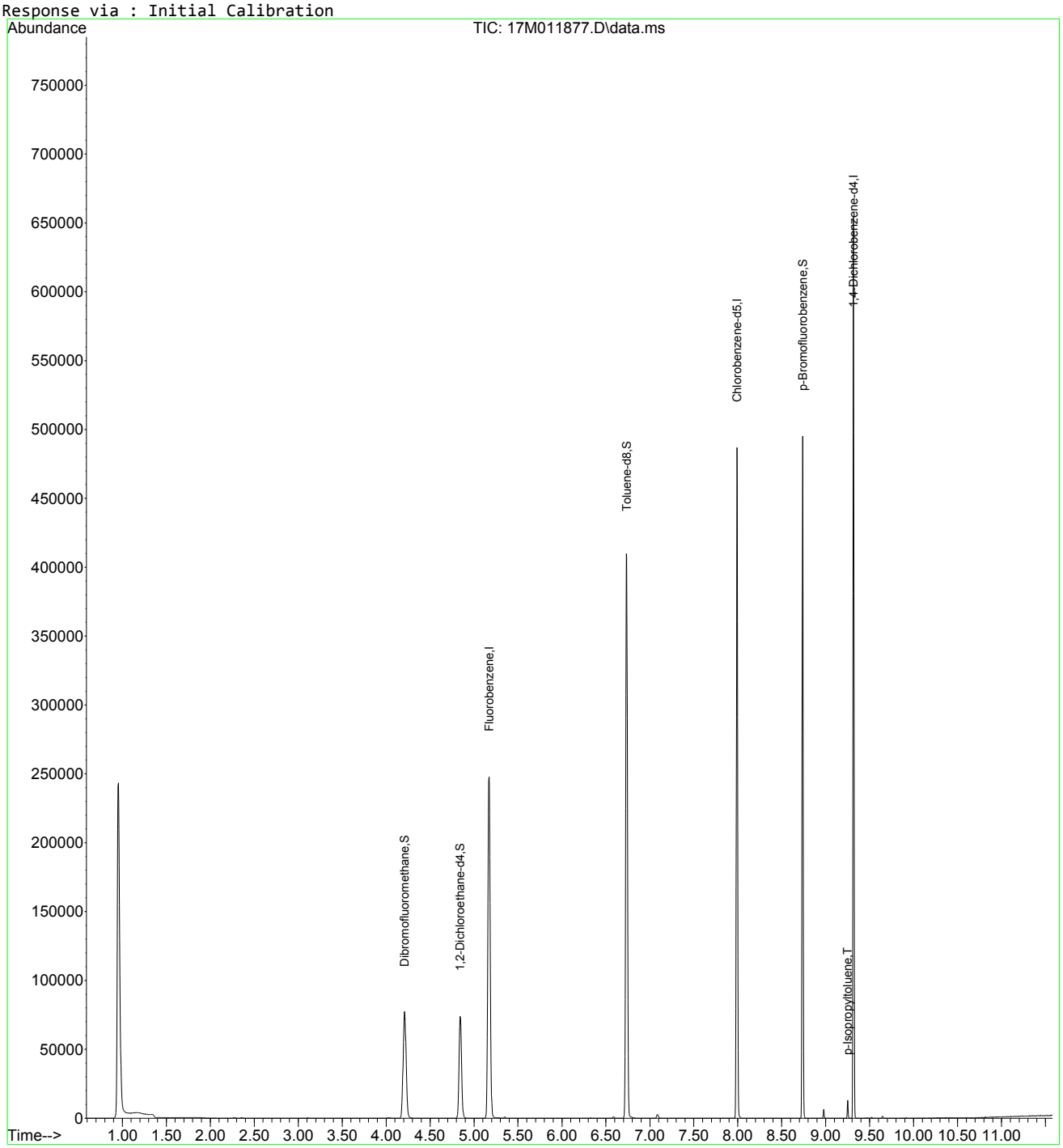

8260VMS.M Tue May 19 11:41:31 2015 Page: 2

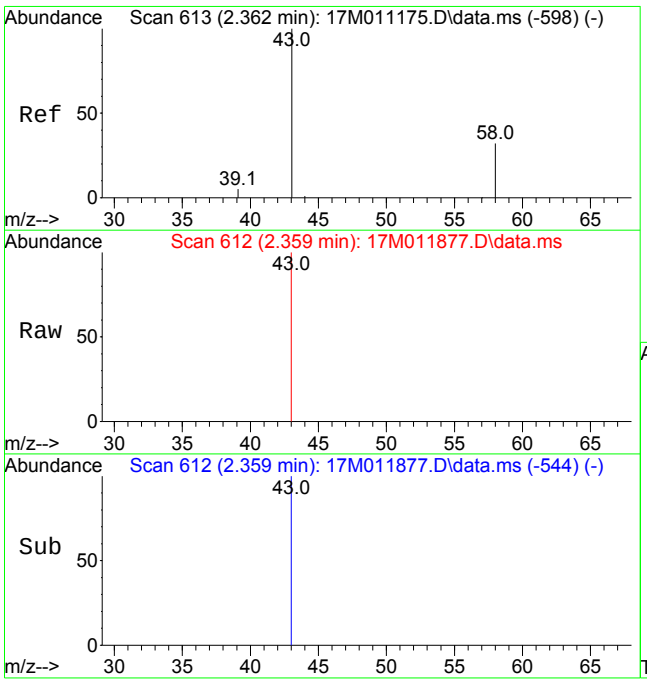

#15
Acetone
Concen: Below Cal
RT: 2.359 min Scan# 612
Delta R.T. -0.003 min
Lab File: 17M011877.D
Acq: 15 May 2015 20:33

Tgt Ion: 43 Resp: 430

Ion	Ratio	Lower	Upper
43	100		
58	0.0	20.0	46.8#

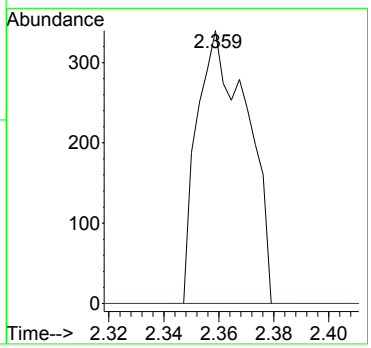

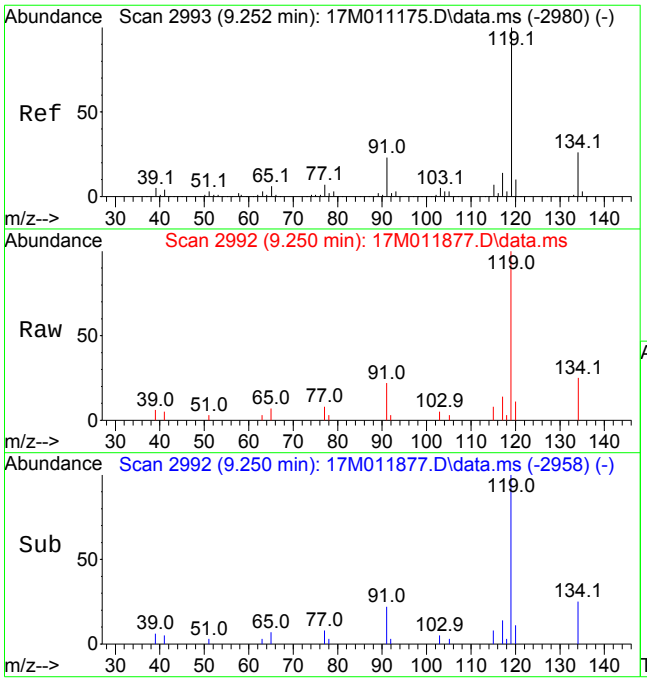

#73
p-Isopropyltoluene
Concen: 0.4110 ug/L
RT: 9.250 min Scan# 2992
Delta R.T. -0.002 min
Lab File: 17M011877.D
Acq: 15 May 2015 20:33

Tgt Ion:119 Resp: 4293

Ion	Ratio	Lower	Upper
119	100		
134	24.8	15.9	37.1

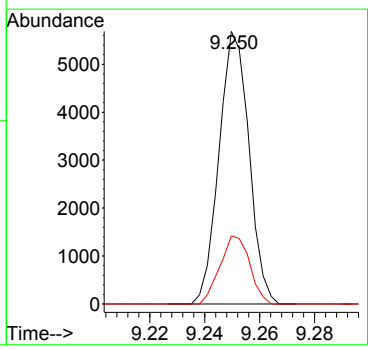

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011878.D
Acq On : 15 May 2015 20:53
Operator : ADC
Sample : L15050872-05 A 826-LOW
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 19 11:41:33 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	233462	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	171857	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	88375	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.212	111	61579	27.4273 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.709%		
32) 1,2-Dichloroethane-d4	4.843	65	56283	25.2775 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.110%		
44) Toluene-d8	6.734	98	238668	25.8272 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.309%		
63) p-Bromofluorobenzene	8.737	95	84022	26.5258 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.103%		
Target Compounds					Qvalue
15) Acetone	2.362	43	338	Below Cal #	41
33) 1,2-Dichloroethane	4.924	62	2267	0.8174 ug/L #	87
41) 4-Methyl-2-Pentanone	7.825	58	523	0.8835 ug/L #	58
51) 2-Hexanone	7.825	43	3628	3.1762 ug/L #	46

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011878.D
Acq On : 15 May 2015 20:53
Operator : ADC
Sample : L15050872-05 A 826-LOW
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 19 11:41:33 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

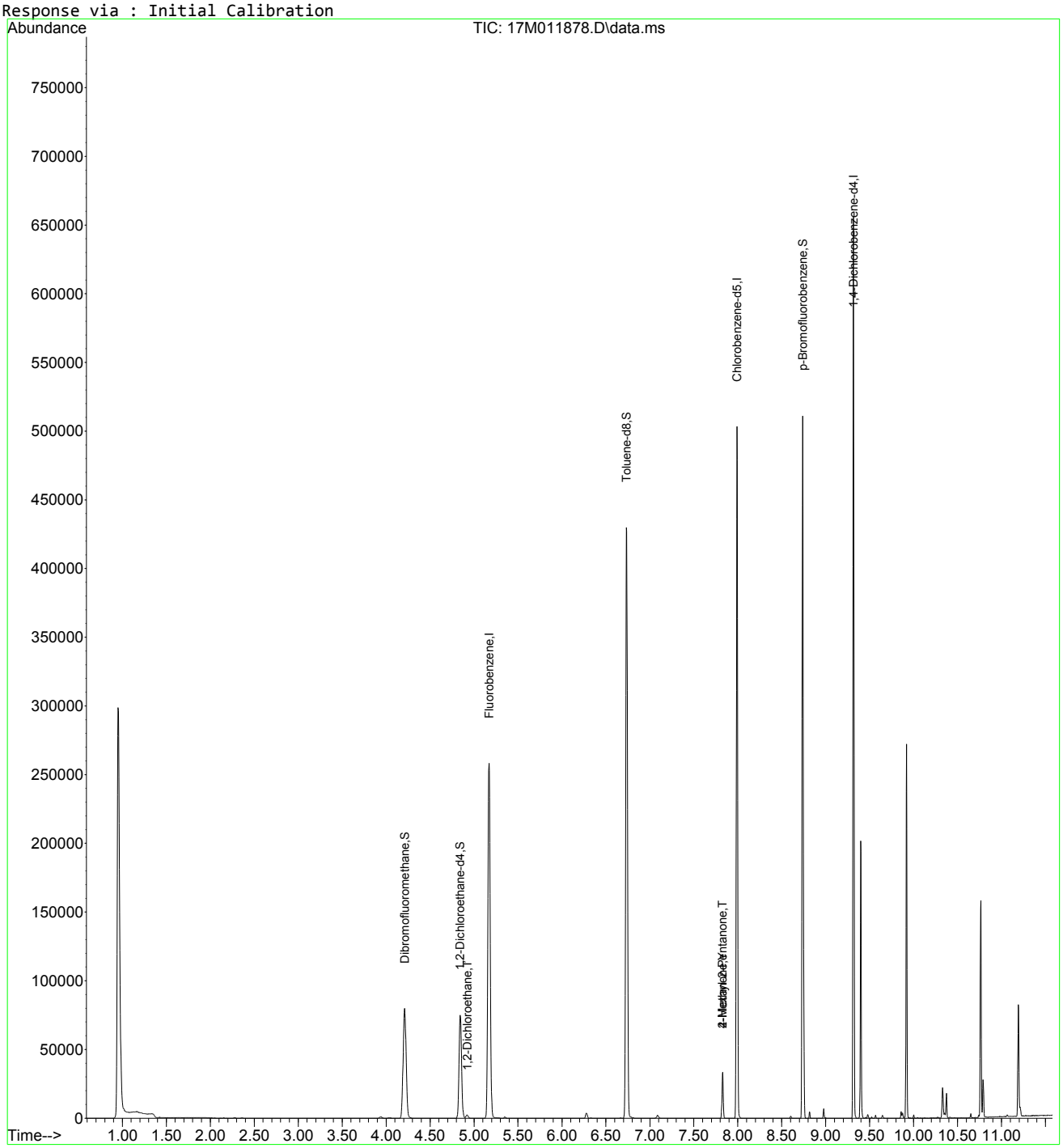

8260VMS.M Tue May 19 11:41:34 2015 Page: 2

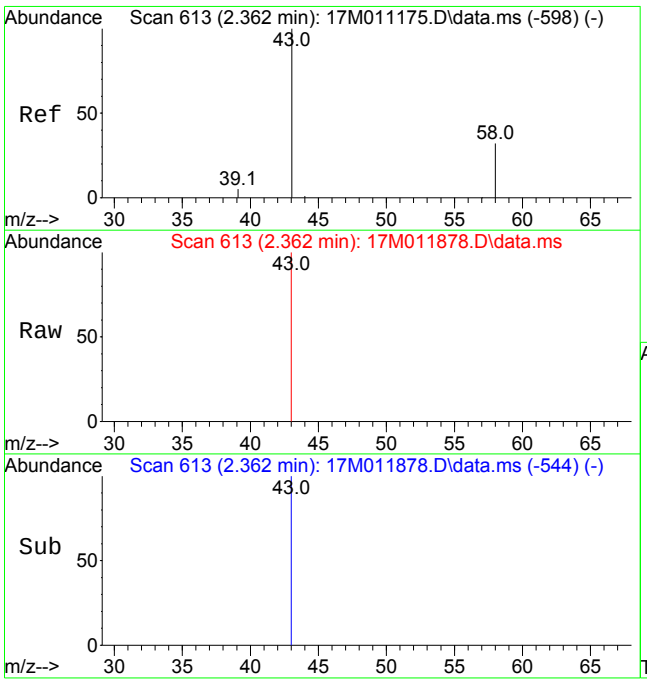

#15
Acetone
Concen: Below Cal
RT: 2.362 min Scan# 613
Delta R.T. -0.000 min
Lab File: 17M011878.D
Acq: 15 May 2015 20:53

Tgt Ion: 43 Resp: 338

Ion	Ratio	Lower	Upper
43	100		
58	0.0	20.0	46.8#

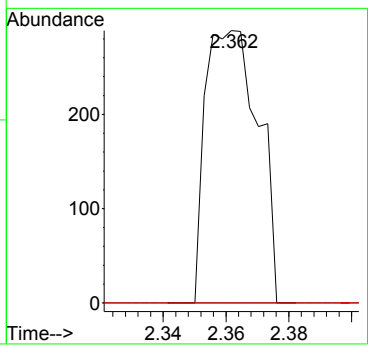

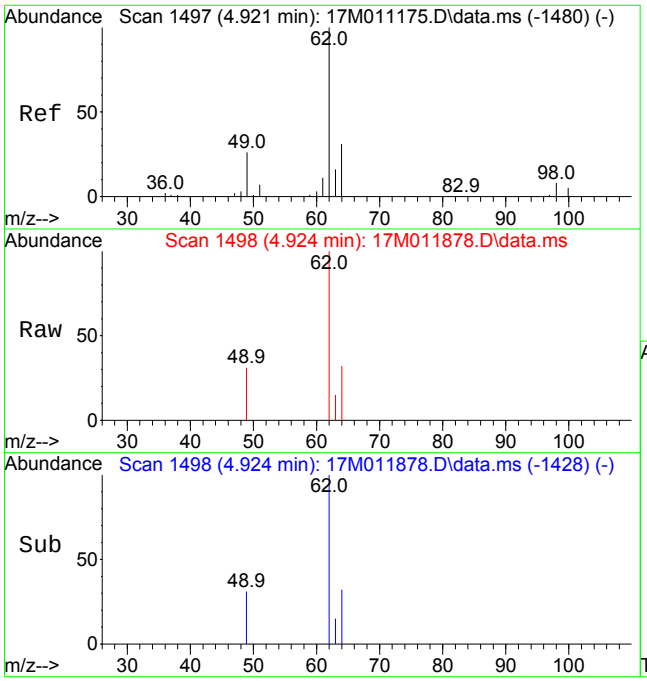

#33
1,2-Dichloroethane
Concen: 0.8174 ug/L
RT: 4.924 min Scan# 1498
Delta R.T. 0.003 min
Lab File: 17M011878.D
Acq: 15 May 2015 20:53

Tgt Ion: 62 Resp: 2267

Ion	Ratio	Lower	Upper
62	100		
49	21.6	16.1	37.7
98	0.0	5.0	11.6#

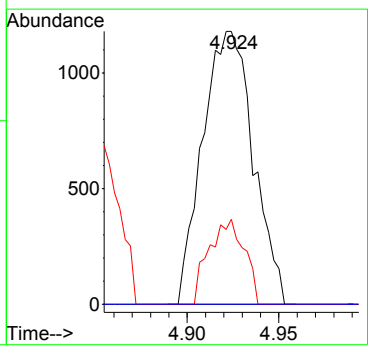

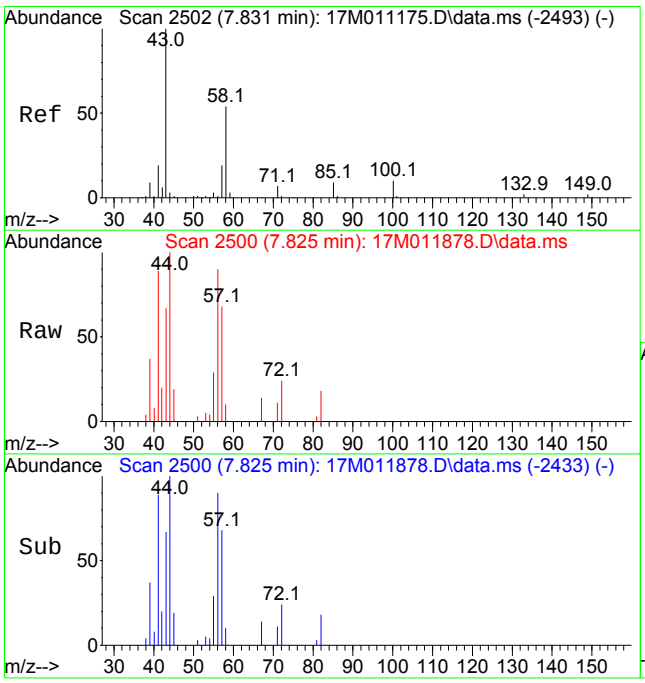

#41
4-Methyl-2-Pentanone
Concen: 0.8835 ug/L
RT: 7.825 min Scan# 2500
Delta R.T. -0.006 min
Lab File: 17M011878.D
Acq: 15 May 2015 20:53

Tgt Ion: 58 Resp: 523

Ion	Ratio	Lower	Upper
58	100		
85	0.0	11.2	26.0#

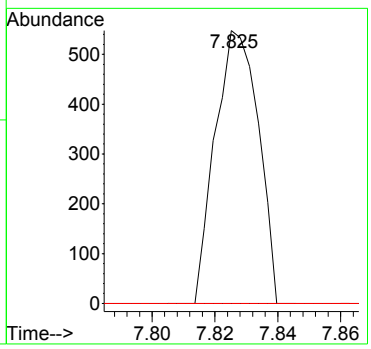

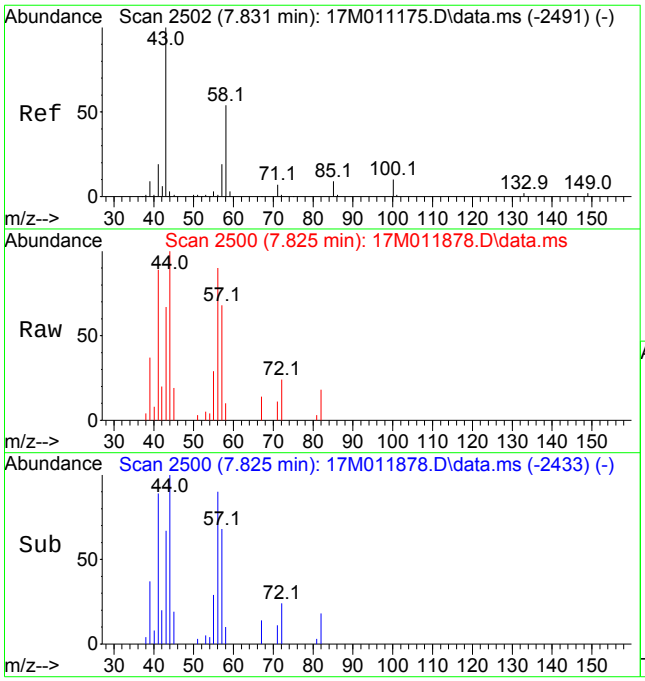

#51
2-Hexanone
Concen: 3.1762 ug/L
RT: 7.825 min Scan# 2500
Delta R.T. -0.006 min
Lab File: 17M011878.D
Acq: 15 May 2015 20:53

Tgt Ion: 43 Resp: 3628

Ion	Ratio	Lower	Upper
43	100		
58	14.4	42.2	63.4#

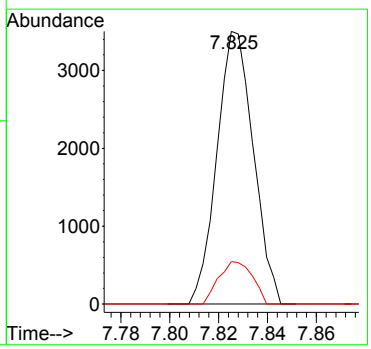

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011873.D
Acq On : 15 May 2015 19:14
Operator : ADC
Sample : L15050872-06 A 826-LOW
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 19 11:41:18 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.170	96	238558	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	175788	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	92577	25.00000	ug/L	0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	4.212	111	63444	27.6543	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.617%			
32) 1,2-Dichloroethane-d4	4.843	65	57762	25.3875	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.550%			
44) Toluene-d8	6.734	98	243757	25.7880	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.152%			
63) p-Bromofluorobenzene	8.737	95	83771	25.2462	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.985%			
Target Compounds						Qvalue
34) Trichloroethene	5.347	130	367	0.1378	ug/L #	36

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011873.D
Acq On : 15 May 2015 19:14
Operator : ADC
Sample : L15050872-06 A 826-LOW
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 19 11:41:18 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

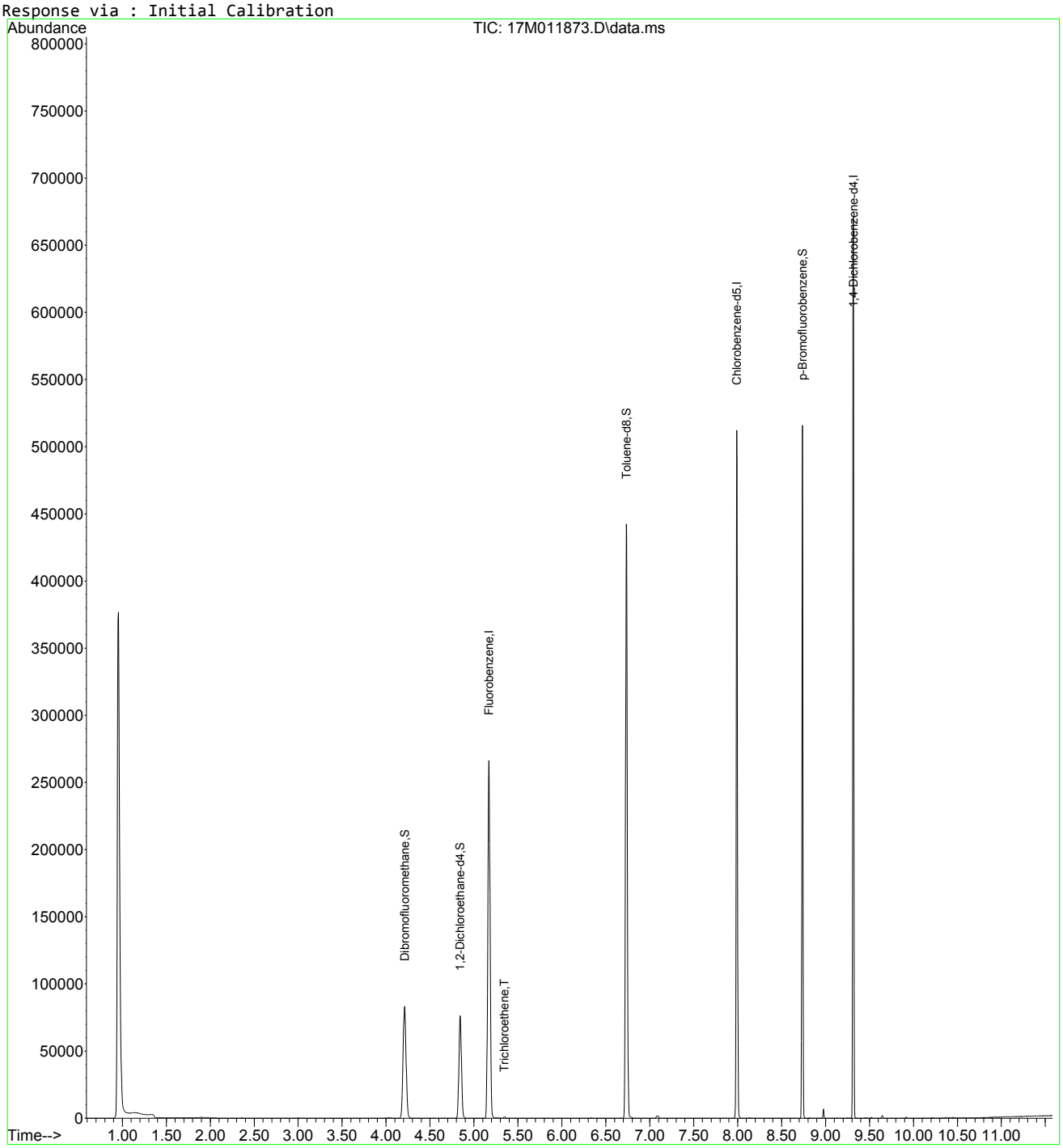

8260VMS.M Tue May 19 11:41:19 2015 Page: 2

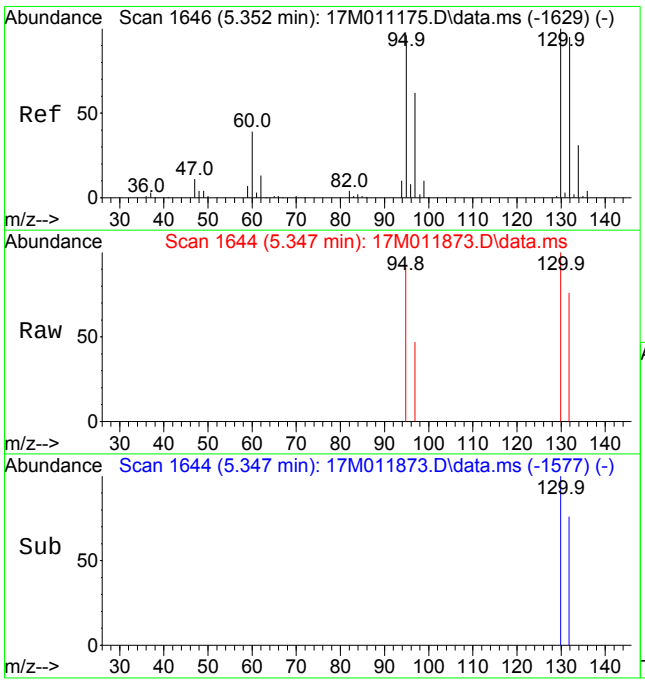

#34
Trichloroethene
Concen: 0.1378 ug/L
RT: 5.347 min Scan# 1644
Delta R.T. -0.005 min
Lab File: 17M011873.D
Acq: 15 May 2015 19:14

Tgt Ion:130 Resp: 367

Ion	Ratio	Lower	Upper
130	100		
60	0.0	23.8	55.6#

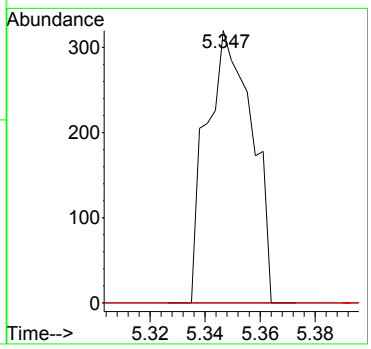

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011869.D
Acq On : 15 May 2015 17:55
Operator : ADC
Sample : L15050872-07 A MS 826-SPE
Misc : 1,1 STD70455
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 19 11:44:35 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	237465	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.993	117	175330	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	93175	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	63702	27.8946 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.578%		
32) 1,2-Dichloroethane-d4	4.843	65	55631	24.5635 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.254%		
44) Toluene-d8	6.734	98	245898	26.0825 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.330%		
63) p-Bromofluorobenzene	8.737	95	85594	25.6300 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.520%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	35177	12.3036 ug/L	99
3) Chloromethane	1.154	50	45779	18.2972 ug/L	99
4) Vinyl Chloride	1.201	62	53080	19.1100 ug/L	100
6) Bromomethane	1.389	94	37246	22.4697 ug/L	100
7) Chloroethane	1.458	64	30520	20.9758 ug/L	99
8) Trichlorofluoromethane	1.548	101	75355	21.0572 ug/L	99
9) Diethyl ether	1.757	59	165285	103.5516 ug/L	99
10) 1,1-Dichloroethene	1.878	61	67972	20.2257 ug/L	100
11) Carbon Disulfide	1.893	76	84720	12.1778 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.910	101	47565	20.9943 ug/L	99
14) Methylene Chloride	2.307	84	49332	19.1948 ug/L	99
15) Acetone	2.359	43	5967	14.9475 ug/L	94
16) trans-1,2-Dichloroethene	2.437	96	48532	21.7087 ug/L	98
17) Methyl Tert Butyl Ether	2.547	73	110805	19.5771 ug/L	99
18) 1,1-Dichloroethane	2.999	63	87221	21.2163 ug/L	100
19) Acrylonitrile	3.060	53	8269	15.1816 ug/L	100
21) cis-1,2-Dichloroethene	3.598	96	55001	21.7146 ug/L	97
22) 2,2-Dichloropropane	3.723	77	71049	20.6094 ug/L	99
23) Cyclohexane	3.827	56	83435	21.1571 ug/L #	78
24) Bromochloromethane	3.838	130	31523	19.6152 ug/L	99
25) Chloroform	3.966	83	89565	22.8610 ug/L	99
26) Carbon Tetrachloride	4.116	117	68475	19.7123 ug/L	99
28) 1,1,1-Trichloroethane	4.209	97	78072	20.7728 ug/L	99
29) 1,1-Dichloropropene	4.377	75	66073	21.3068 ug/L	97
30) 2-Butanone	4.400	43	8919	13.2083 ug/L #	91
31) Benzene	4.678	78	203008	21.8384 ug/L	99
33) 1,2-Dichloroethane	4.921	62	54604	19.3555 ug/L	100
34) Trichloroethene	5.350	130	57960	21.8611 ug/L	98
35) Dibromomethane	5.767	93	25781	19.7435 ug/L	100
36) 1,2-Dichloropropane	5.877	63	54049	21.8243 ug/L	99
37) Bromodichloromethane	5.961	83	63317	20.2169 ug/L	100
38) 1,4-Dioxane	6.172	88	1195	72.5636 ug/L	94
39) 2-Chloroethyl Vinyl Ether	6.551	63	5284	4.3392 ug/L	95
40) cis-1,3-Dichloropropene	6.569	75	78846	21.1739 ug/L	100
41) 4-Methyl-2-Pentanone	7.834	58	8274	13.7410 ug/L	96
42) trans-1,3-Dichloropropene	7.168	75	59697	18.3430 ug/L	100
45) Toluene	6.780	91	232328	21.5679 ug/L	99
46) Tetrachloroethene	7.110	166	63320	21.1438 ug/L	99
47) 1,1,2-Trichloroethane	7.298	97	36597	18.8002 ug/L	99
48) Dibromochloromethane	7.437	129	47783	18.5899 ug/L	100
49) 1,3-Dichloropropane	7.518	76	60450	19.5899 ug/L	95
50) 1,2-Dibromoethane	7.605	107	35190	17.7706 ug/L	99
51) 2-Hexanone	7.831	43	15733	13.5007 ug/L	100
52) Chlorobenzene	8.002	112	144511	20.4961 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011869.D
Acq On : 15 May 2015 17:55
Operator : ADC
Sample : L15050872-07 A MS 826-SPE
Misc : 1,1 STD70455
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 19 11:44:35 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) 1-Chlorohexane	8.016	69	13857	21.1300 ug/L	85
54) Ethylbenzene	8.040	106	83654	22.0374 ug/L	98
55) 1,1,1,2-Tetrachloroethane	8.054	131	53670	20.6828 ug/L	99
56) m-,p-Xylene	8.138	106	199318	43.4534 ug/L	98
57) o-Xylene	8.401	106	93261	20.4600 ug/L	97
58) Styrene	8.433	104	158628	21.1747 ug/L	99
59) Bromoform	8.436	173	32239	18.1851 ug/L	99
60) Isopropylbenzene	8.590	105	246964	20.6617 ug/L	100
62) 1,3,5-Trimethylbenzene	8.928	105	238418	22.7555 ug/L	99
64) Bromobenzene	8.789	156	68766	21.0424 ug/L	98
65) n-Propylbenzene	8.818	91	284547	21.0973 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.859	83	41429	17.8731 ug/L	98
67) 2-Chlorotoluene	8.894	91	169642	20.3985 ug/L	99
68) 1,2,3-Trichloropropane	8.923	110	10952	17.9989 ug/L	97
69) 1,2,4-Trimethylbenzene	9.125	105	236994	22.6625 ug/L	100
70) 4-Chlorotoluene	8.983	91	173395	20.5630 ug/L	100
71) tert-Butylbenzene	9.091	134	40646	21.2991 ug/L	99
72) sec-Butylbenzene	9.180	105	275362	21.4563 ug/L	100
73) p-Isopropyltoluene	9.253	119	236247	21.1029 ug/L	100
74) 1,3-Dichlorobenzene	9.279	146	123638	20.3602 ug/L	99
75) 1,4-Dichlorobenzene	9.325	146	133187	21.4675 ug/L	100
76) n-Butylbenzene	9.455	91	227728	23.1726 ug/L	100
77) 1,2-Dichlorobenzene	9.528	146	115623	19.9065 ug/L	98
78) 1,2-Dibromo-3-Chloropr...	9.907	75	6470	15.0899 ug/L	97
79) Hexachlorobutadiene	10.208	225	62986	23.1598 ug/L	100
80) 1,2,4-Trichlorobenzene	10.223	180	98705	20.7045 ug/L	100
81) Naphthalene	10.376	128	153598	17.2560 ug/L	100
82) 1,2,3-Trichlorobenzene	10.460	180	85766	19.1509 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011869.D
Acq On : 15 May 2015 17:55
Operator : ADC
Sample : L15050872-07 A MS 826-SPE
Misc : 1,1 STD70455
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 19 11:44:35 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

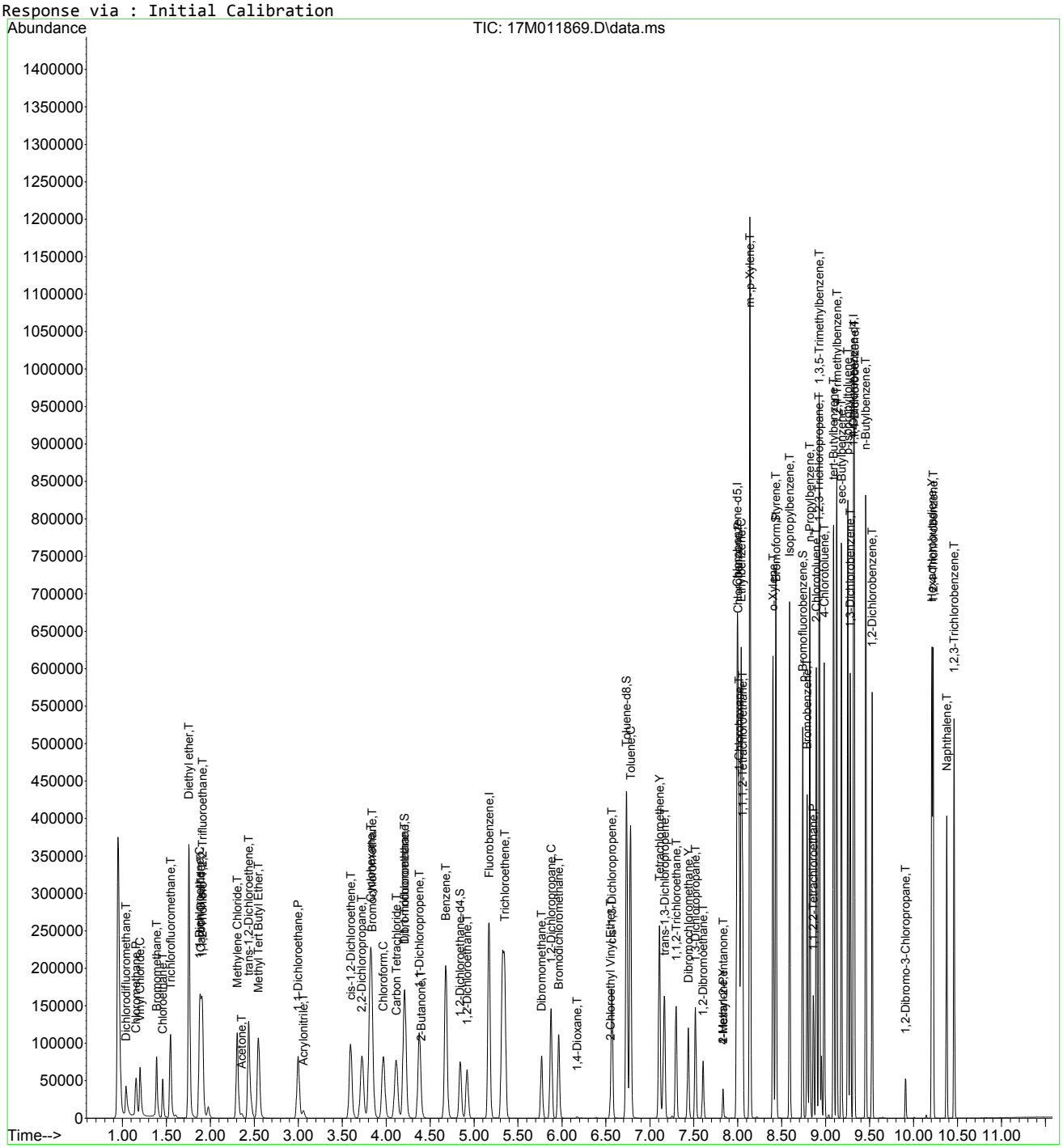

8260VMS.M Tue May 19 11:44:36 2015 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011870.D
Acq On : 15 May 2015 18:15
Operator : ADC
Sample : L15050872-08 A MSD 826-LOW
Misc : 1,1 STD70455
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 19 11:44:38 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	234413	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.993	117	174013	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	92114	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	63773	28.2892 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.157%		
32) 1,2-Dichloroethane-d4	4.843	65	55841	24.9772 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.909%		
44) Toluene-d8	6.736	98	241985	25.8617 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.447%		
63) p-Bromofluorobenzene	8.737	95	85352	25.8519 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.408%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.044	85	34328	12.1629 ug/L	100
3) Chloromethane	1.157	50	45657	18.4860 ug/L	100
4) Vinyl Chloride	1.203	62	53252	19.4215 ug/L	100
5) 1,3-Butadiene	1.212	54	330	0.1558 ug/L	88
6) Bromomethane	1.389	94	36293	22.1798 ug/L	99
7) Chloroethane	1.458	64	32564	22.6719 ug/L	99
8) Trichlorofluoromethane	1.551	101	73886	20.9155 ug/L	100
9) Diethyl ether	1.756	59	174916	111.0122 ug/L	99
10) 1,1-Dichloroethene	1.881	61	67273	20.2783 ug/L	100
11) Carbon Disulfide	1.895	76	85377	12.4321 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.913	101	47211	21.1094 ug/L	99
14) Methylene Chloride	2.306	84	50014	19.7135 ug/L	99
15) Acetone	2.359	43	7803	20.3025 ug/L	95
16) trans-1,2-Dichloroethene	2.437	96	48528	21.9896 ug/L	98
17) Methyl Tert Butyl Ether	2.547	73	119020	21.3023 ug/L	99
18) 1,1-Dichloroethane	2.998	63	87049	21.4502 ug/L	100
19) Acrylonitrile	3.059	53	9144	17.0066 ug/L	98
21) cis-1,2-Dichloroethene	3.598	96	54738	21.8921 ug/L	99
22) 2,2-Dichloropropane	3.725	77	70562	20.7346 ug/L	99
23) Cyclohexane	3.829	56	83864	21.5428 ug/L #	77
24) Bromochloromethane	3.838	130	33028	20.8193 ug/L	99
25) Chloroform	3.968	83	89278	23.0844 ug/L	100
26) Carbon Tetrachloride	4.113	117	68629	20.0085 ug/L	100
28) 1,1,1-Trichloroethane	4.214	97	78414	21.1354 ug/L	100
29) 1,1-Dichloropropene	4.380	75	66267	21.6476 ug/L	96
30) 2-Butanone	4.397	43	9868	14.8040 ug/L #	95
31) Benzene	4.678	78	202467	22.0638 ug/L	99
33) 1,2-Dichloroethane	4.921	62	56211	20.1845 ug/L	99
34) Trichloroethene	5.349	130	57824	22.0937 ug/L	98
35) Dibromomethane	5.766	93	27123	21.0416 ug/L	100
36) 1,2-Dichloropropane	5.876	63	55036	22.5121 ug/L	99
37) Bromodichloromethane	5.960	83	64626	20.9035 ug/L	100
38) 1,4-Dioxane	6.169	88	1185	72.8933 ug/L	85
39) 2-Chloroethyl Vinyl Ether	6.566	63	623	0.5183 ug/L #	43
40) cis-1,3-Dichloropropene	6.568	75	80028	21.7712 ug/L	99
41) 4-Methyl-2-Pentanone	7.831	58	9506	15.9926 ug/L	96
42) trans-1,3-Dichloropropene	7.165	75	62586	19.4811 ug/L	99
45) Toluene	6.780	91	232296	21.7282 ug/L	99
46) Tetrachloroethene	7.110	166	62334	20.9721 ug/L	100
47) 1,1,2-Trichloroethane	7.298	97	38500	19.9275 ug/L	99
48) Dibromochloromethane	7.437	129	49770	19.5095 ug/L	100
49) 1,3-Dichloropropane	7.518	76	63128	20.6126 ug/L	95
50) 1,2-Dibromoethane	7.605	107	38029	19.3496 ug/L	100
51) 2-Hexanone	7.831	43	17628	15.2413 ug/L	98

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011870.D
Acq On : 15 May 2015 18:15
Operator : ADC
Sample : L15050872-08 A MSD 826-LOW
Misc : 1,1 STD70455
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 19 11:44:38 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52) Chlorobenzene	8.002	112	144826	20.6962 ug/L	99
53) 1-Chlorohexane	8.016	69	14045	21.5787 ug/L	88
54) Ethylbenzene	8.039	106	83258	22.0991 ug/L	99
55) 1,1,1,2-Tetrachloroethane	8.054	131	54305	21.0859 ug/L	99
56) m-,p-Xylene	8.138	106	197121	43.2997 ug/L	99
57) o-Xylene	8.401	106	93065	20.5715 ug/L	98
58) Styrene	8.433	104	160542	21.5923 ug/L	98
59) Bromoform	8.436	173	34111	19.3867 ug/L	99
60) Isopropylbenzene	8.589	105	246102	20.7454 ug/L	100
62) 1,3,5-Trimethylbenzene	8.925	105	235197	22.7066 ug/L	99
64) Bromobenzene	8.789	156	69405	21.4825 ug/L	99
65) n-Propylbenzene	8.818	91	280455	21.0334 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.859	83	45111	19.6858 ug/L	100
67) 2-Chlorotoluene	8.893	91	169068	20.5637 ug/L	99
68) 1,2,3-Trichloropropane	8.922	110	11559	19.2153 ug/L	96
69) 1,2,4-Trimethylbenzene	9.125	105	235244	22.7543 ug/L	100
70) 4-Chlorotoluene	8.980	91	169081	20.2824 ug/L	99
71) tert-Butylbenzene	9.087	134	40642	21.5423 ug/L	99
72) sec-Butylbenzene	9.177	105	273695	21.5721 ug/L	100
73) p-Isopropyltoluene	9.252	119	234841	21.2189 ug/L	100
74) 1,3-Dichlorobenzene	9.278	146	123249	20.5299 ug/L	99
75) 1,4-Dichlorobenzene	9.325	146	133208	21.7182 ug/L	100
76) n-Butylbenzene	9.455	91	224720	23.1299 ug/L	100
77) 1,2-Dichlorobenzene	9.527	146	117307	20.4291 ug/L	99
78) 1,2-Dibromo-3-Chloropr...	9.907	75	7142	16.8491 ug/L	96
79) Hexachlorobutadiene	10.205	225	62492	23.2428 ug/L	99
80) 1,2,4-Trichlorobenzene	10.219	180	99405	21.0915 ug/L	100
81) Naphthalene	10.373	128	163942	18.6302 ug/L	99
82) 1,2,3-Trichlorobenzene	10.457	180	89597	20.2368 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011870.D
Acq On : 15 May 2015 18:15
Operator : ADC
Sample : L15050872-08 A MSD 826-LOW
Misc : 1,1 STD70455
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 19 11:44:38 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

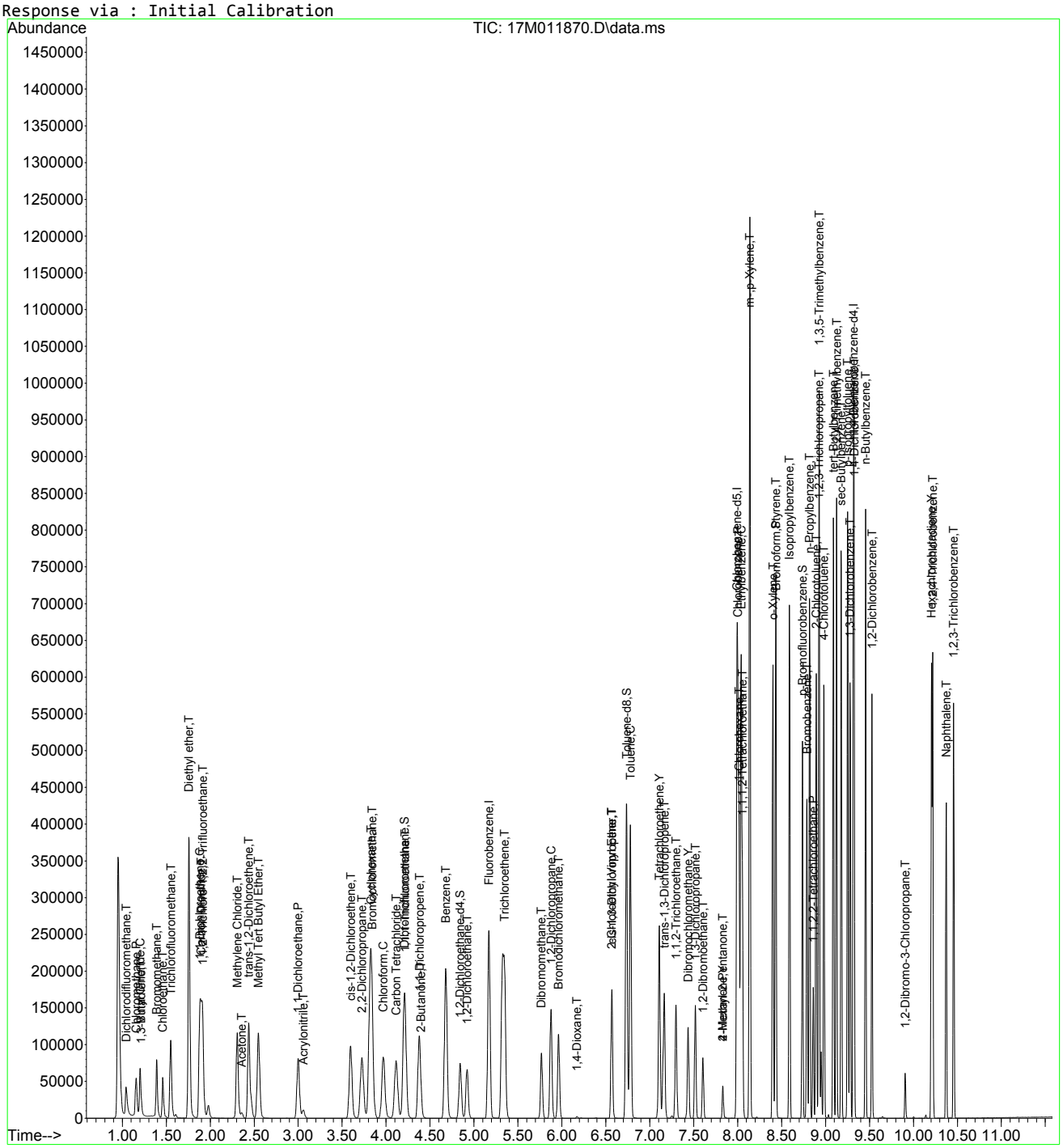

8260VMS.M Tue May 19 11:44:39 2015 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011879.D
Acq On : 15 May 2015 21:12
Operator : ADC
Sample : L15050872-09 A 826-LOW
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: May 19 11:41:36 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	236606	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	174545	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	90550	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	62781	27.5911 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.364%		
32) 1,2-Dichloroethane-d4	4.843	65	57717	25.5770 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.308%		
44) Toluene-d8	6.737	98	241798	25.7629 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.052%		
63) p-Bromofluorobenzene	8.737	95	84967	26.1798 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.719%		
Target Compounds					Qvalue
10) 1,1-Dichloroethene	1.878	61	636	0.1899 ug/L	89
15) Acetone	2.359	43	444	Below Cal #	41
34) Trichloroethene	5.353	130	349	0.1321 ug/L #	36

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011879.D
Acq On : 15 May 2015 21:12
Operator : ADC
Sample : L15050872-09 A 826-LOW
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: May 19 11:41:36 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

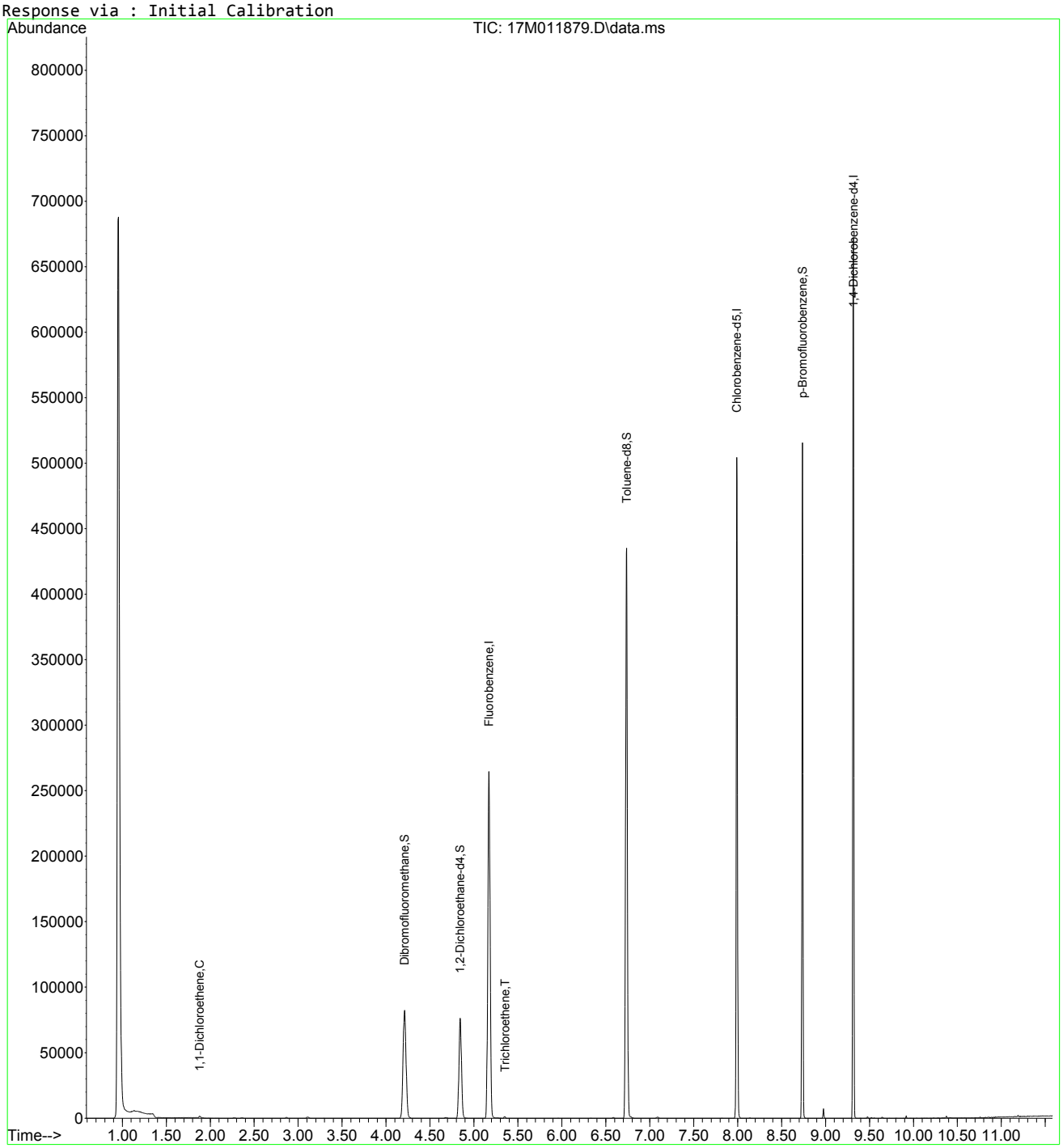

8260VMS.M Tue May 19 11:41:37 2015 Page: 2

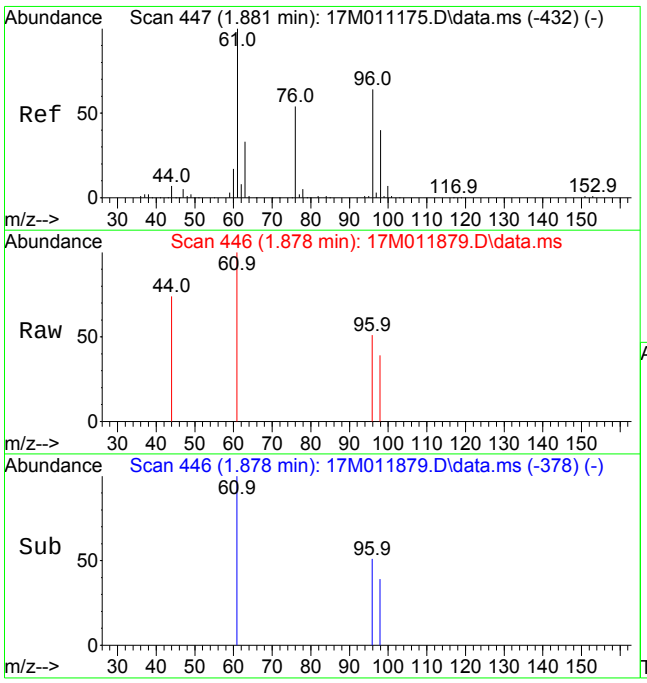

#10
1,1-Dichloroethene
Concen: 0.1899 ug/L
RT: 1.878 min Scan# 446
Delta R.T. -0.003 min
Lab File: 17M011879.D
Acq: 15 May 2015 21:12

Tgt Ion: 61 Resp: 636

Ion	Ratio	Lower	Upper
61	100		
96	55.0	50.6	76.0

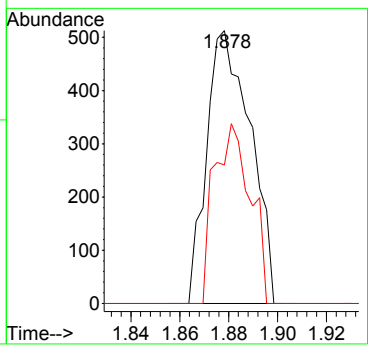

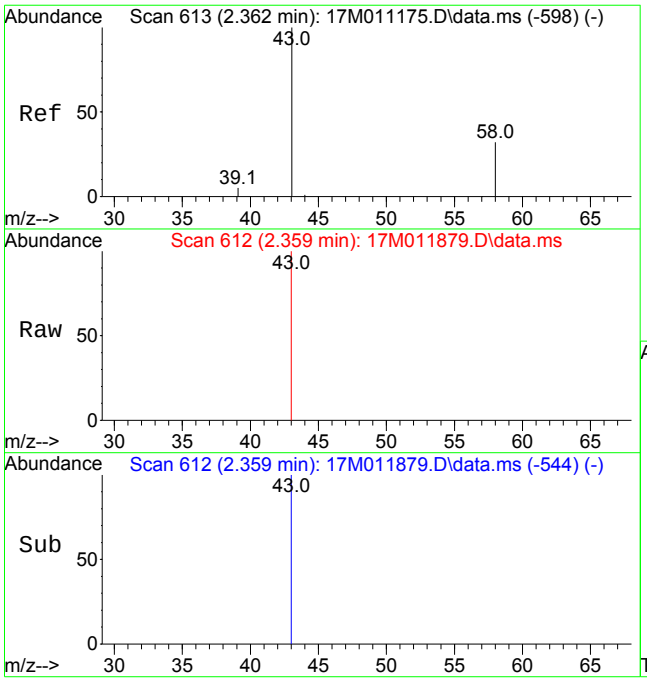

#15
Acetone
Concen: Below Cal
RT: 2.359 min Scan# 612
Delta R.T. -0.003 min
Lab File: 17M011879.D
Acq: 15 May 2015 21:12

Tgt Ion: 43 Resp: 444

Ion	Ratio	Lower	Upper
43	100		
58	0.0	20.0	46.8#

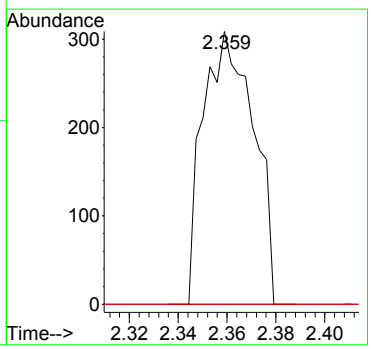

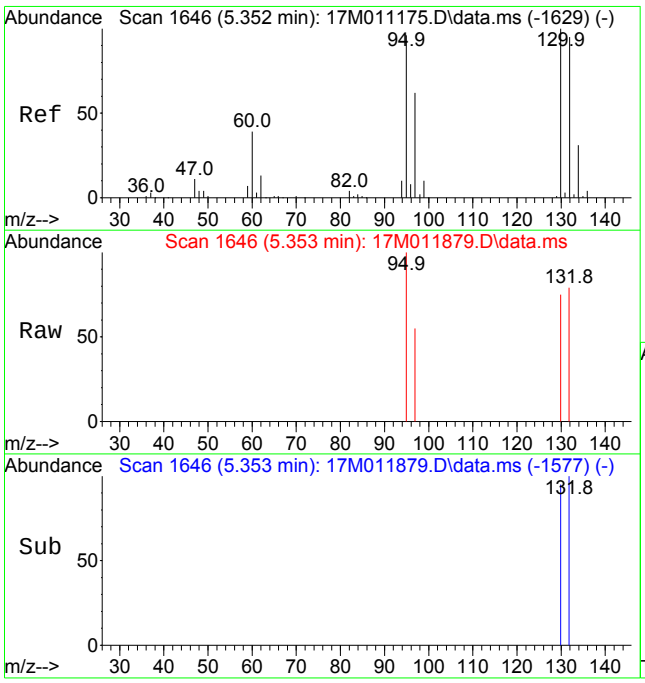

#34
Trichloroethene
Concen: 0.1321 ug/L
RT: 5.353 min Scan# 1646
Delta R.T. 0.001 min
Lab File: 17M011879.D
Acq: 15 May 2015 21:12

Tgt Ion:130 Resp: 349

Ion	Ratio	Lower	Upper
130	100		
60	0.0	23.8	55.6#

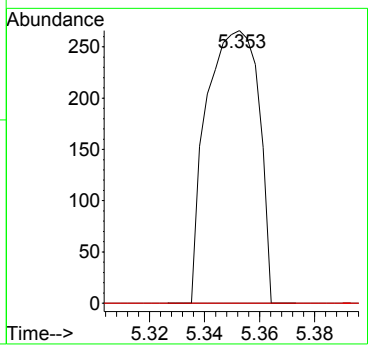

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052215\8M404859.D Vial: 17
Acq On : 22 May 2015 19:14 Operator: TMB
Sample : L15050872-10 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 08:15:54 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	645864	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	516957	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	279002	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	163170	25.4887 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.96%		
43) 1,2-Dichloroethane-d4	10.35	65	149398	24.8334 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.32%		
58) Toluene-d8	12.73	98	587374	24.3484 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.40%		
80) p-Bromofluorobenzene	16.12	95	220792	23.2604 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.04%		

Target Compounds					Qvalue
13) Acetone	6.27	43	534	0.5789 ug/L #	36
81) 1,2,3-Trichloropropane	16.08	110	222	0.1546 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M404859.D 8260WT.M Tue May 26 08:15:55 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052215\8M404859.D Vial: 17
Acq On : 22 May 2015 19:14 Operator: TMB
Sample : L15050872-10 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:15 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

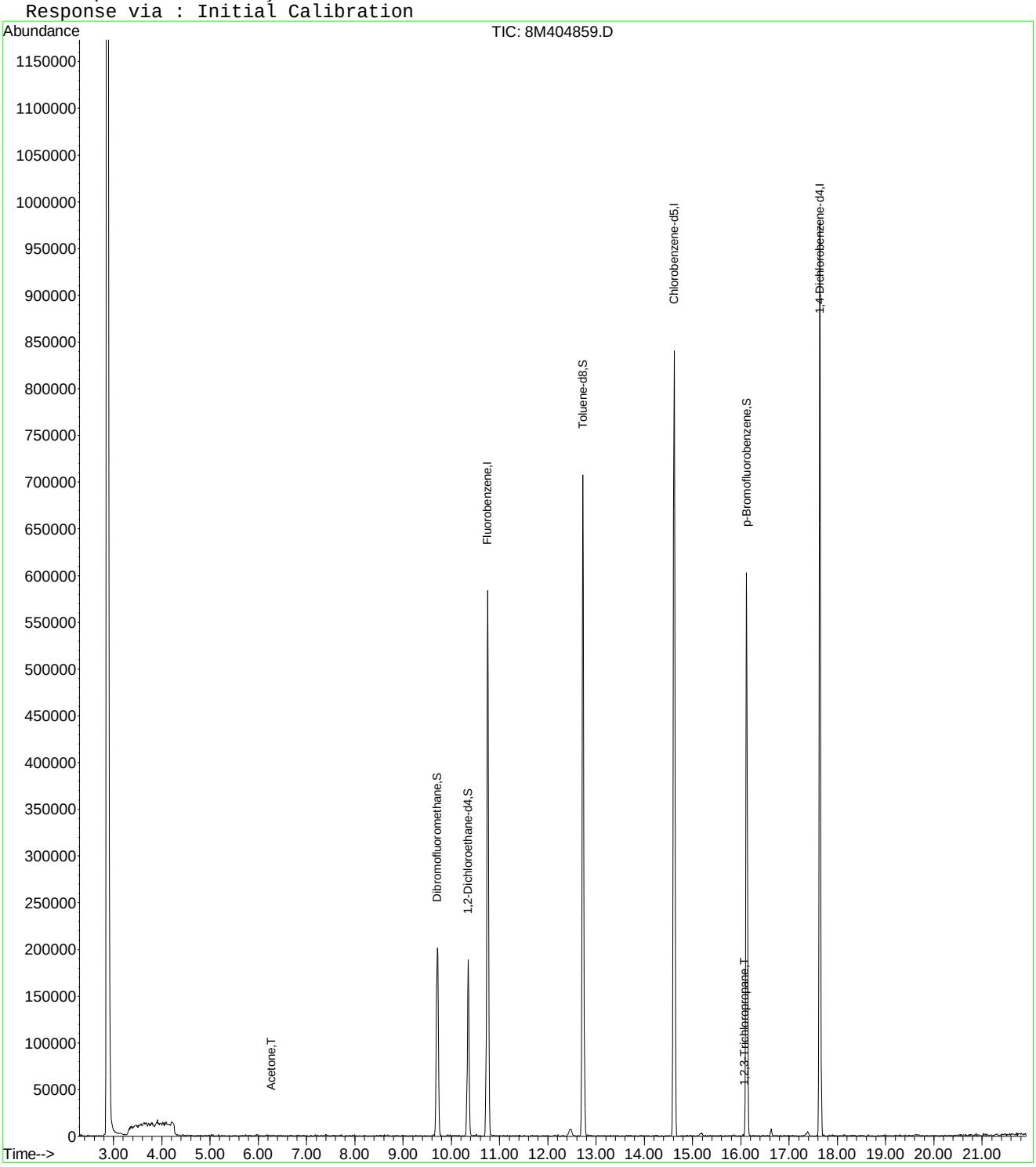

8M404859.D 8260WT.M Tue May 26 08:15:55 2015 Page 2

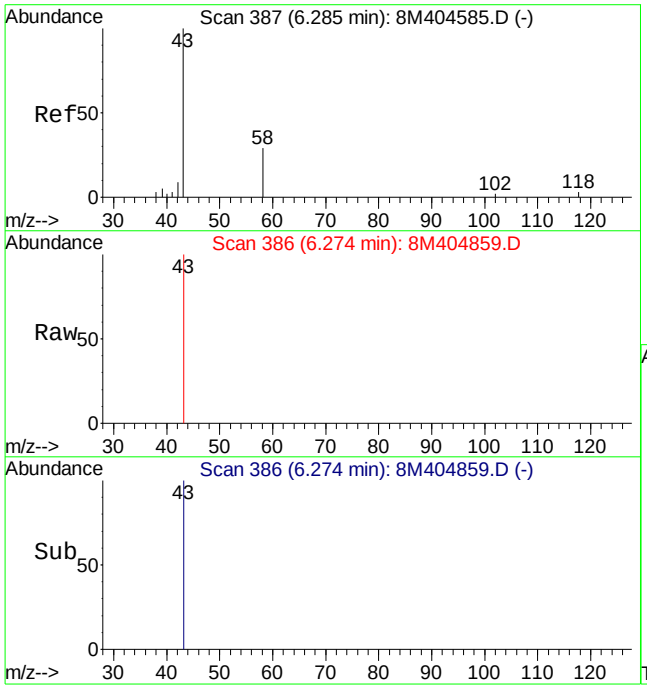

#13
Acetone
Concen: 0.58 ug/L
RT: 6.27 min Scan# 386
Delta R.T. -0.01 min
Lab File: 8M404859.D
Acq: 22 May 2015 19:14

Tgt Ion: 43 Resp: 534

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

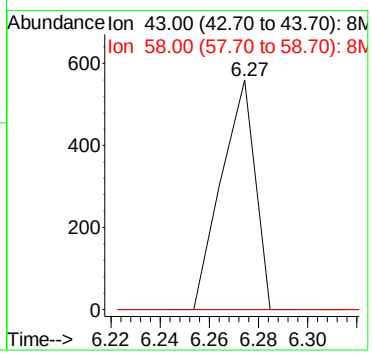

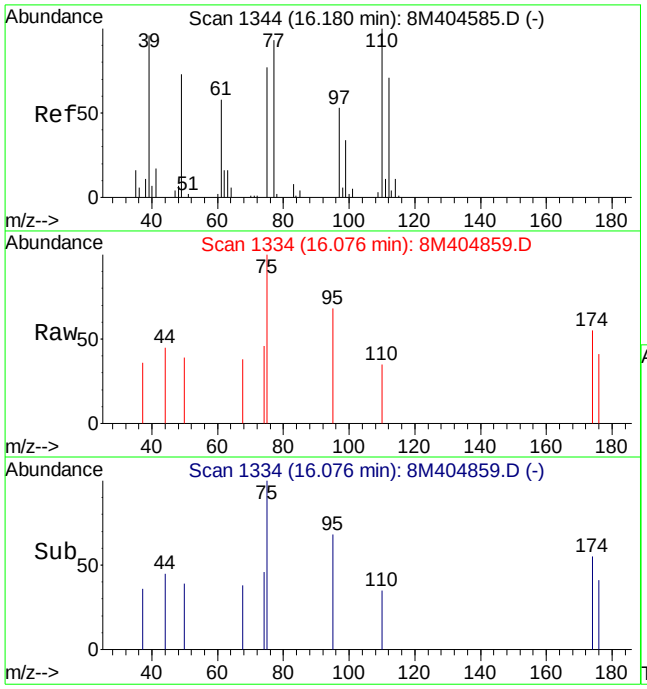

#81
1,2,3-Trichloropropane
Concen: 0.15 ug/L
RT: 16.08 min Scan# 1334
Delta R.T. -0.11 min
Lab File: 8M404859.D
Acq: 22 May 2015 19:14

Tgt Ion:110 Resp: 222

Ion	Ratio	Lower	Upper
110	100		
75	57125.2	115.6	269.6#
97	100.5	36.7	85.7#

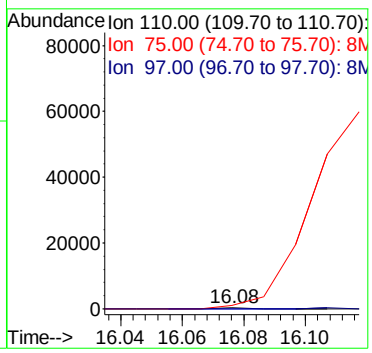

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011881.D
Acq On : 15 May 2015 21:52
Operator : ADC
Sample : L15050872-11 A 826-LOW
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: May 19 11:41:42 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	240177	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	177031	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	92915	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.212	111	63496	27.4904 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.962%		
32) 1,2-Dichloroethane-d4	4.846	65	58705	25.6281 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.512%		
44) Toluene-d8	6.734	98	246843	25.9311 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.724%		
63) p-Bromofluorobenzene	8.737	95	86312	25.9173 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.669%		
Target Compounds					Qvalue
3) Chloromethane	1.160	50	686	0.2711 ug/L	81
10) 1,1-Dichloroethene	1.881	61	9422	2.7719 ug/L	99
15) Acetone	2.356	43	2028	3.9980 ug/L	88
18) 1,1-Dichloroethane	2.999	63	1736	0.4175 ug/L #	88
33) 1,2-Dichloroethane	4.918	62	2280	0.7991 ug/L #	88
34) Trichloroethene	5.350	130	366	0.1365 ug/L #	36

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011881.D
Acq On : 15 May 2015 21:52
Operator : ADC
Sample : L15050872-11 A 826-LOW
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: May 19 11:41:42 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

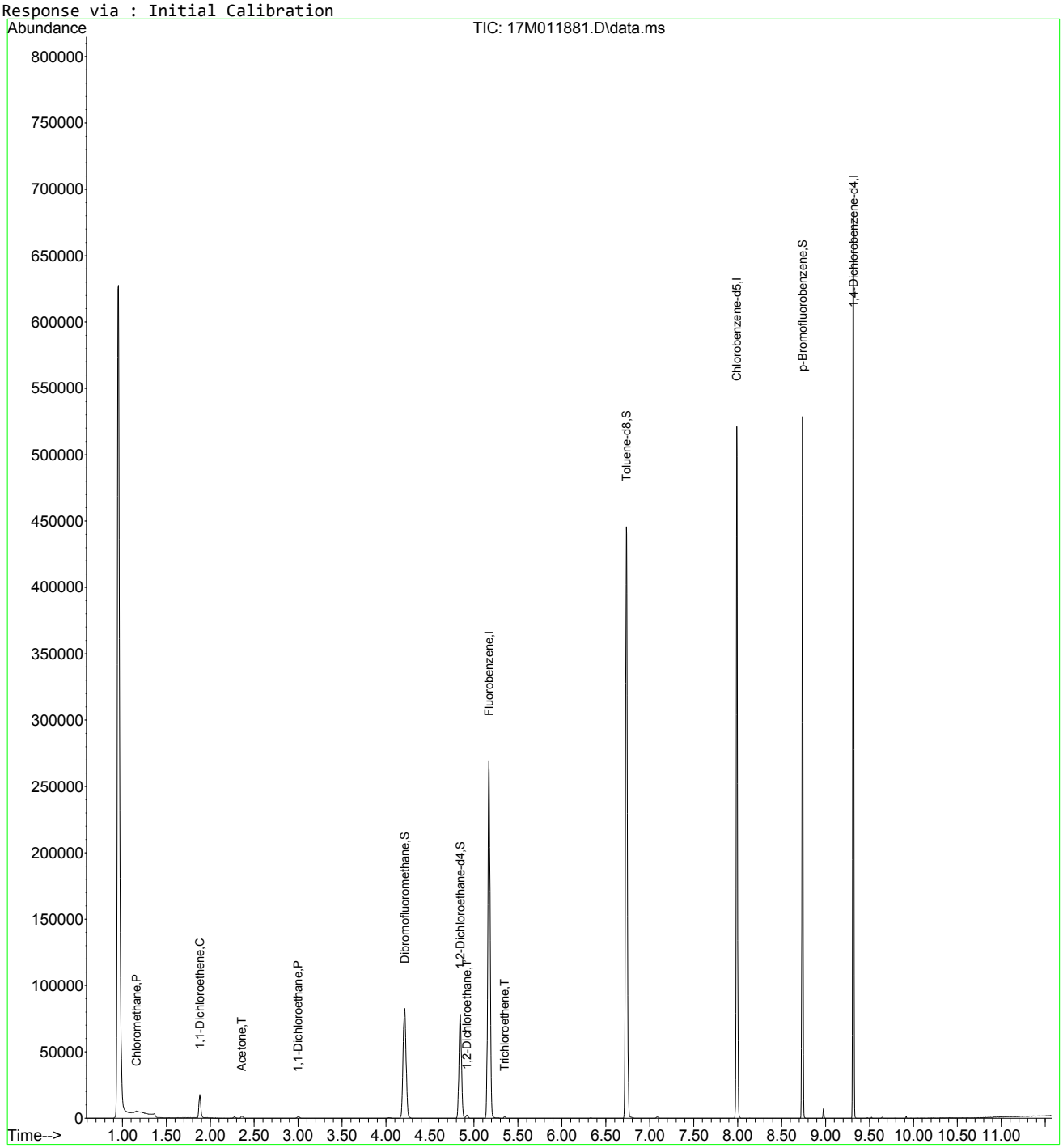

8260VMS.M Tue May 19 11:41:43 2015 Page: 2

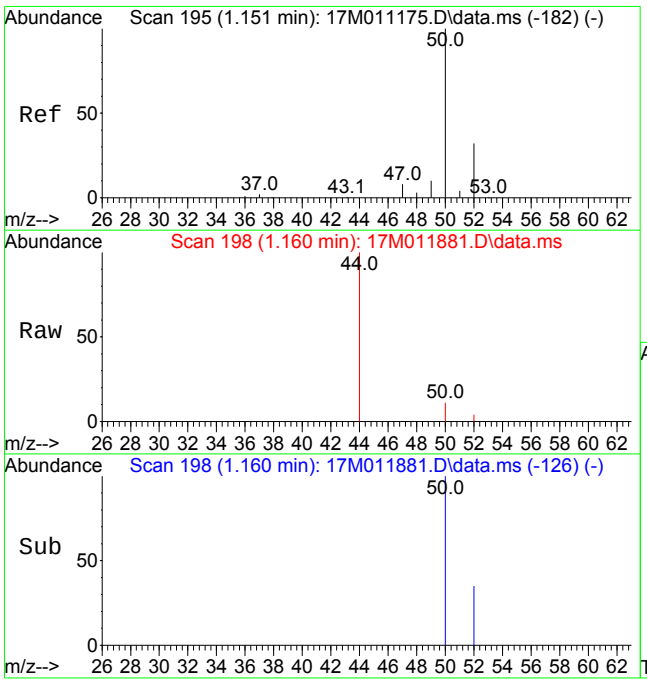

#3
Chloromethane
Concen: 0.2711 ug/L
RT: 1.160 min Scan# 198
Delta R.T. 0.009 min
Lab File: 17M011881.D
Acq: 15 May 2015 21:52

Tgt Ion: 50 Resp: 686

Ion	Ratio	Lower	Upper
50	100		
52	22.2	19.6	45.8

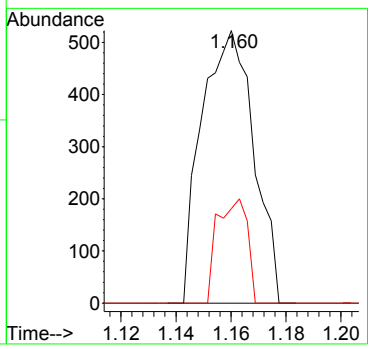

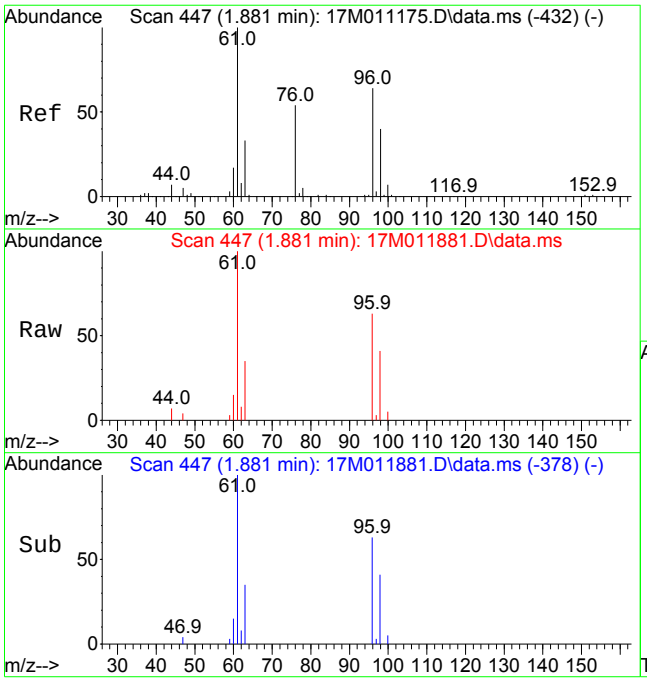

#10
1,1-Dichloroethene
Concen: 2.7719 ug/L
RT: 1.881 min Scan# 447
Delta R.T. 0.000 min
Lab File: 17M011881.D
Acq: 15 May 2015 21:52

Tgt Ion: 61 Resp: 9422

Ion	Ratio	Lower	Upper
61	100		
96	64.0	50.6	76.0

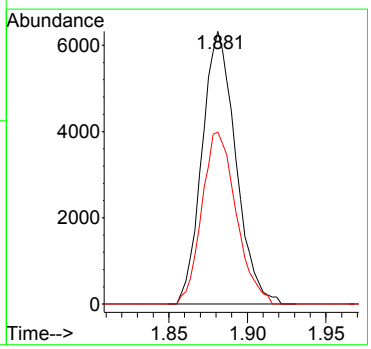

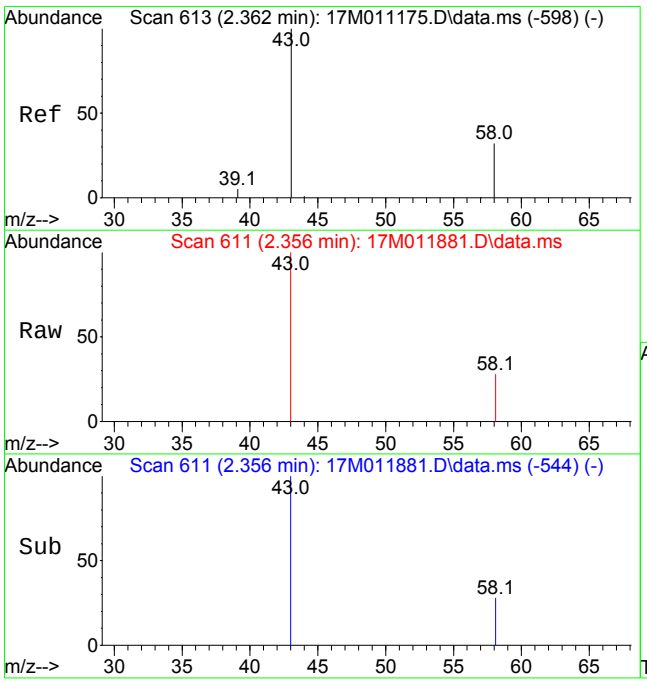

#15
Acetone
Concen: 3.9980 ug/L
RT: 2.356 min Scan# 611
Delta R.T. -0.006 min
Lab File: 17M011881.D
Acq: 15 May 2015 21:52

Tgt Ion: 43 Resp: 2028

Ion	Ratio	Lower	Upper
43	100		
58	26.4	20.0	46.8

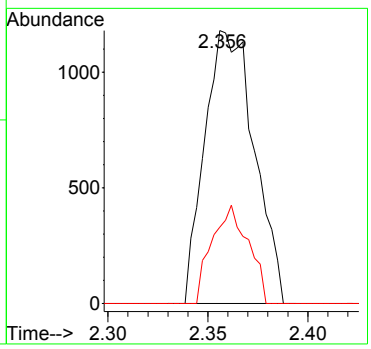

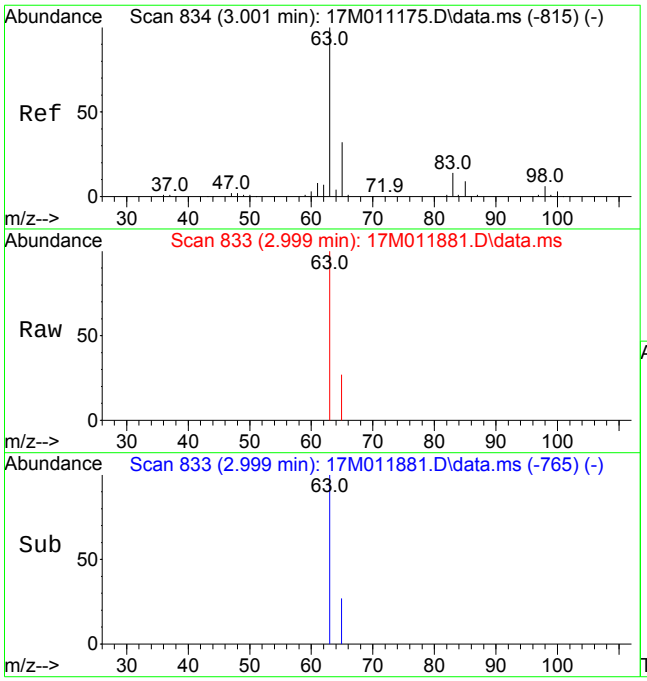

#18
1,1-Dichloroethane
Concen: 0.4175 ug/L
RT: 2.999 min Scan# 833
Delta R.T. -0.002 min
Lab File: 17M011881.D
Acq: 15 May 2015 21:52

Tgt Ion: 63 Resp: 1736

Ion	Ratio	Lower	Upper
63	100		
65	24.9	25.4	38.2#

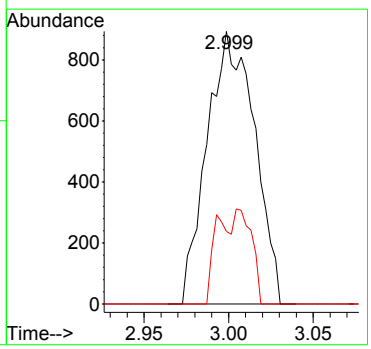

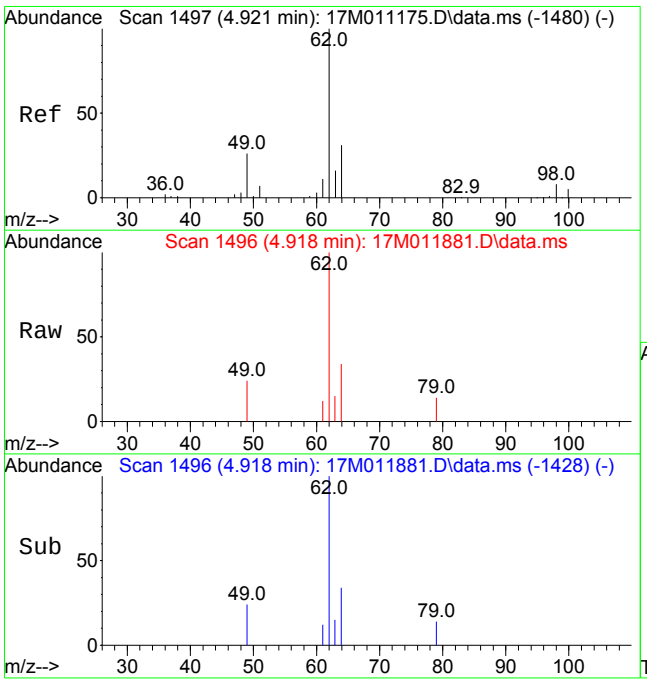

#33
1,2-Dichloroethane
Concen: 0.7991 ug/L
RT: 4.918 min Scan# 1496
Delta R.T. -0.003 min
Lab File: 17M011881.D
Acq: 15 May 2015 21:52

Tgt Ion: 62 Resp: 2280

Ion	Ratio	Lower	Upper
62	100		
49	22.4	16.1	37.7
98	0.0	5.0	11.6#

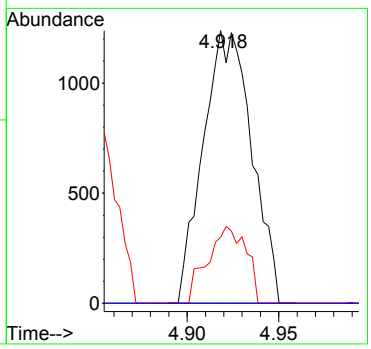

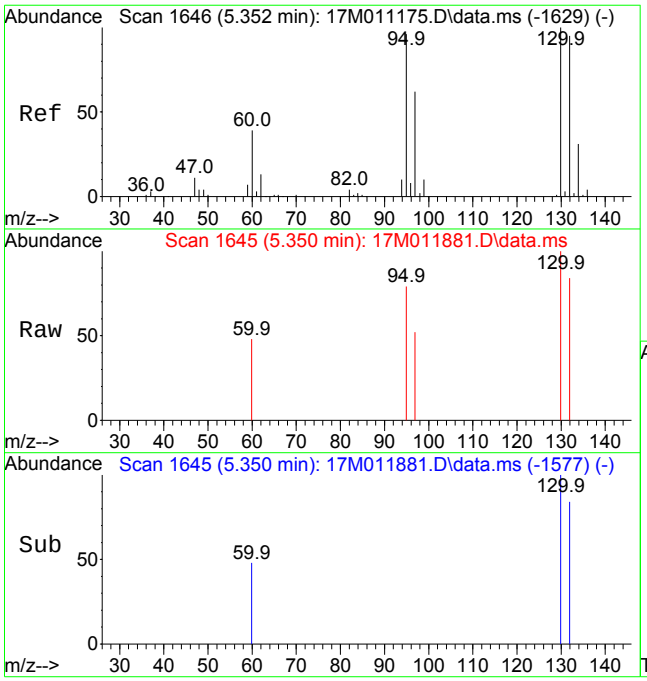

#34
Trichloroethene
Concen: 0.1365 ug/L
RT: 5.350 min Scan# 1645
Delta R.T. -0.002 min
Lab File: 17M011881.D
Acq: 15 May 2015 21:52

Tgt Ion:130 Resp: 366

Ion	Ratio	Lower	Upper
130	100		
60	0.0	23.8	55.6#

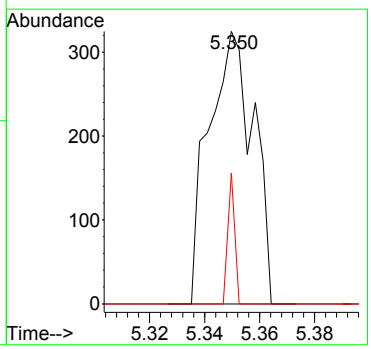

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011882.D
Acq On : 15 May 2015 22:12
Operator : ADC
Sample : L15050872-12 A 826-LOW
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: May 19 11:41:45 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	229082	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	169717	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	88412	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	60805	27.6003 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.401%		
32) 1,2-Dichloroethane-d4	4.840	65	56754	25.9763 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.905%		
44) Toluene-d8	6.737	98	237365	26.0101 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.040%		
63) p-Bromofluorobenzene	8.737	95	83177	26.2480 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.992%		
Target Compounds					Qvalue
10) 1,1-Dichloroethene	1.881	61	9495	2.9287 ug/L	97
15) Acetone	2.356	43	387	Below Cal #	41
18) 1,1-Dichloroethane	2.999	63	1693	0.4269 ug/L #	86
30) 2-Butanone	4.299	43	173	0.2656 ug/L #	36
33) 1,2-Dichloroethane	4.921	62	2219	0.8154 ug/L #	86
34) Trichloroethene	5.353	130	375	0.1466 ug/L #	36

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011882.D
Acq On : 15 May 2015 22:12
Operator : ADC
Sample : L15050872-12 A 826-LOW
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: May 19 11:41:45 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

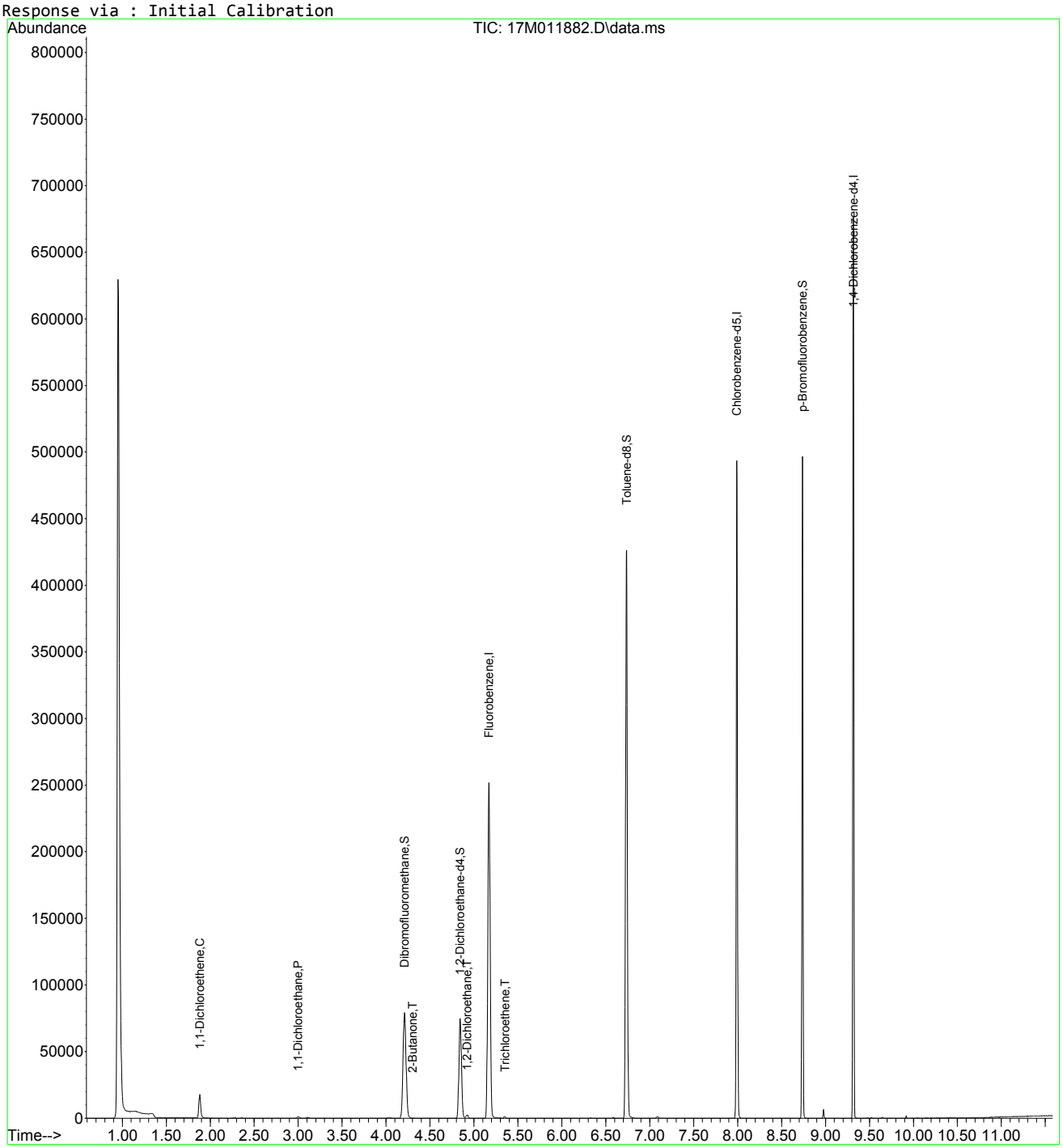

8260VMS.M Tue May 19 11:41:46 2015 Page: 2

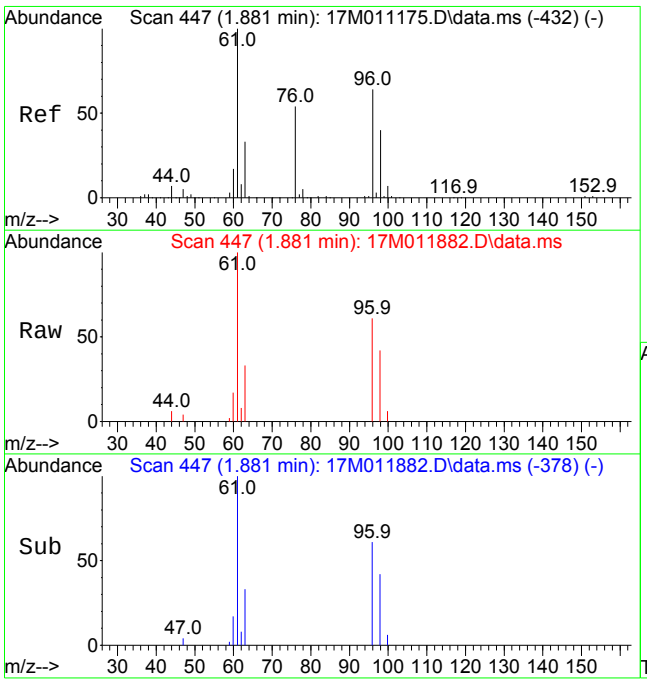

#10
1,1-Dichloroethene
Concen: 2.9287 ug/L
RT: 1.881 min Scan# 447
Delta R.T. 0.000 min
Lab File: 17M011882.D
Acq: 15 May 2015 22:12

Tgt Ion: 61 Resp: 9495

Ion	Ratio	Lower	Upper
61	100		
96	60.8	50.6	76.0

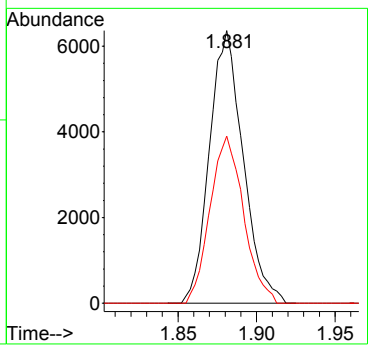

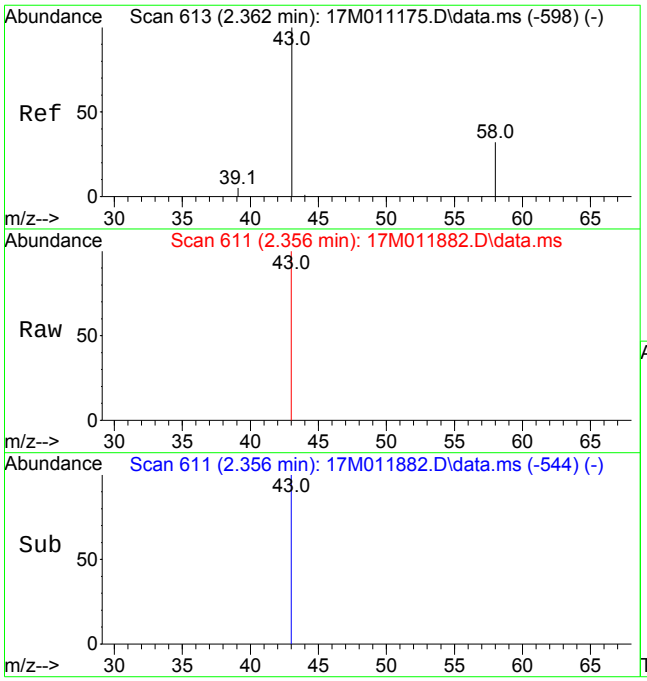

#15
Acetone
Concen: Below Cal
RT: 2.356 min Scan# 611
Delta R.T. -0.006 min
Lab File: 17M011882.D
Acq: 15 May 2015 22:12

Tgt Ion: 43 Resp: 387

Ion	Ratio	Lower	Upper
43	100		
58	0.0	20.0	46.8#

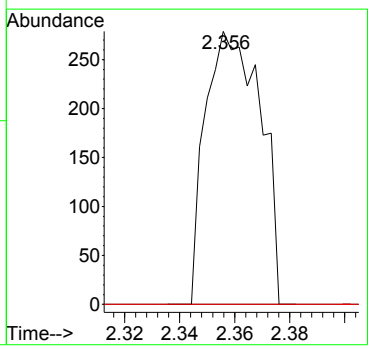

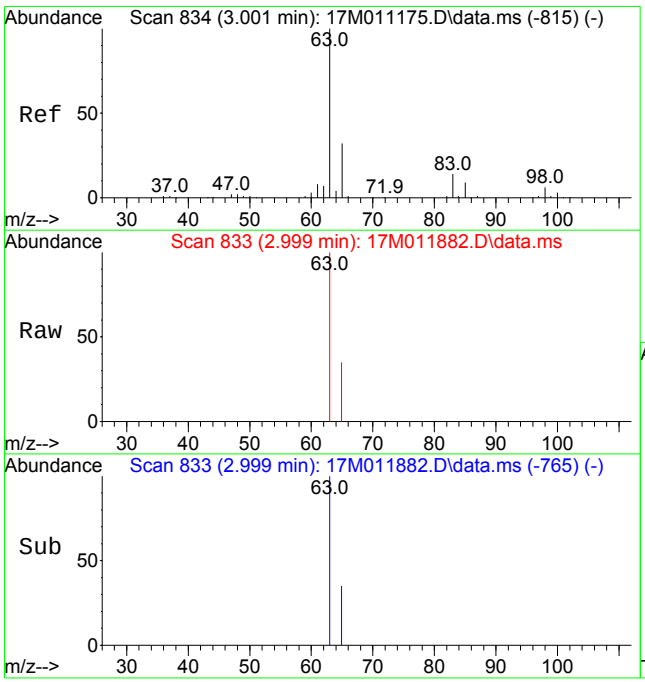

#18
1,1-Dichloroethane
Concen: 0.4269 ug/L
RT: 2.999 min Scan# 833
Delta R.T. -0.002 min
Lab File: 17M011882.D
Acq: 15 May 2015 22:12

Tgt Ion: 63 Resp: 1693

Ion	Ratio	Lower	Upper
63	100		
65	23.8	25.4	38.2#

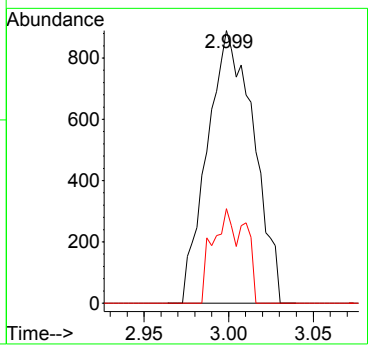

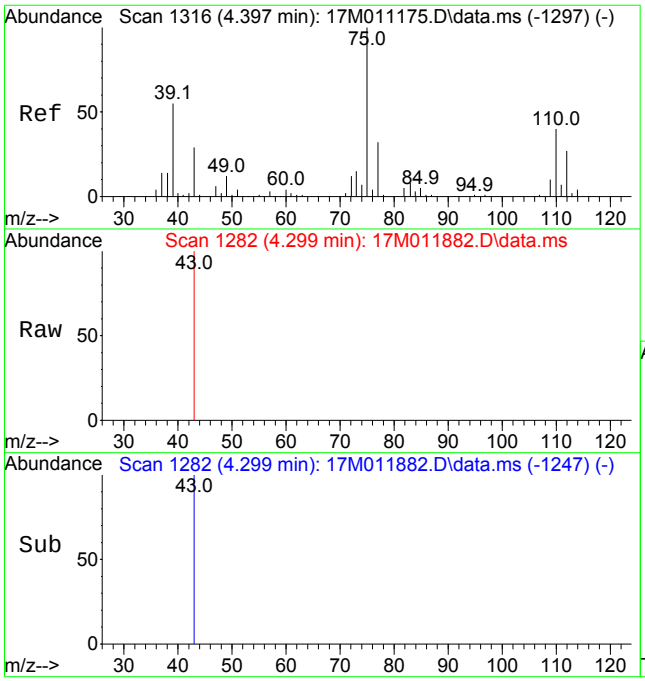

#30
2-Butanone
Concen: 0.2656 ug/L
RT: 4.299 min Scan# 1282
Delta R.T. -0.098 min
Lab File: 17M011882.D
Acq: 15 May 2015 22:12

Tgt Ion: 43 Resp: 173

Ion	Ratio	Lower	Upper
43	100		
72	0.0	39.3	58.9#
57	0.0	7.6	11.4#

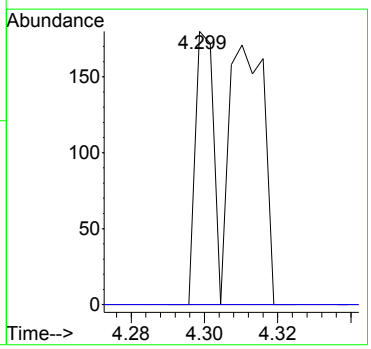

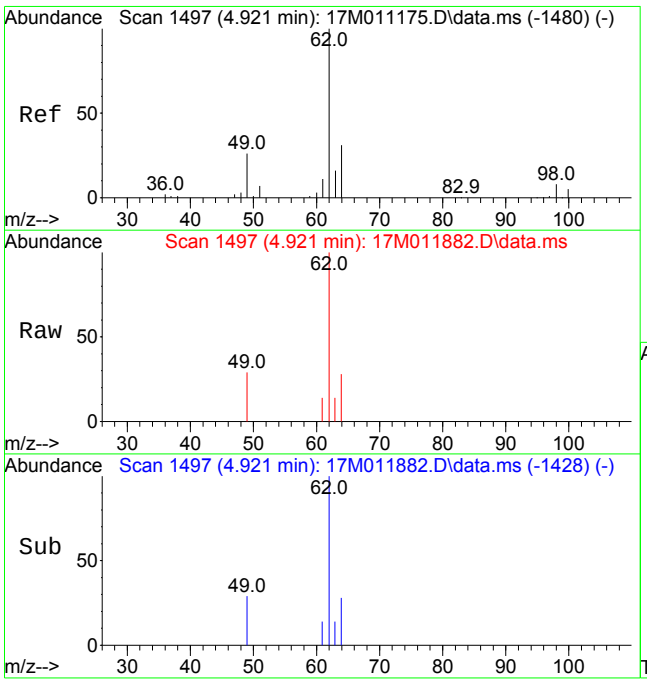

#33
1,2-Dichloroethane
Concen: 0.8154 ug/L
RT: 4.921 min Scan# 1497
Delta R.T. 0.000 min
Lab File: 17M011882.D
Acq: 15 May 2015 22:12

Tgt Ion: 62 Resp: 2219

Ion	Ratio	Lower	Upper
62	100		
49	21.0	16.1	37.7
98	0.0	5.0	11.6#

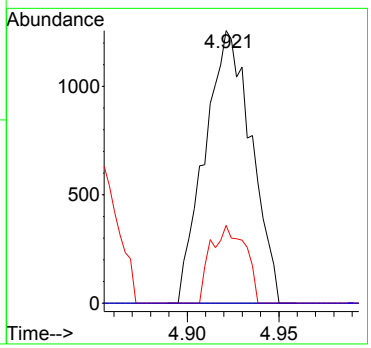

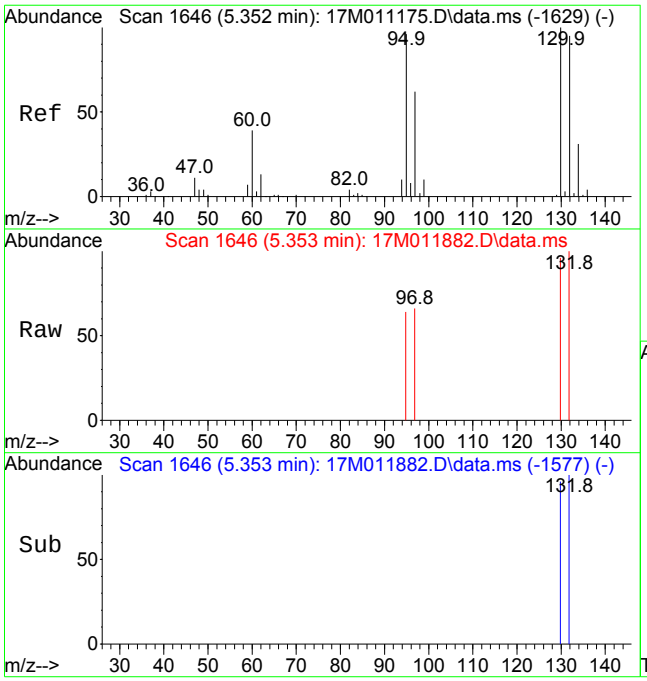

#34
Trichloroethene
Concen: 0.1466 ug/L
RT: 5.353 min Scan# 1646
Delta R.T. 0.001 min
Lab File: 17M011882.D
Acq: 15 May 2015 22:12

Tgt Ion:130 Resp: 375

Ion	Ratio	Lower	Upper
130	100		
60	0.0	23.8	55.6#

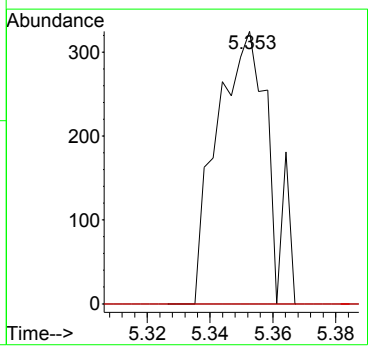

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011872.D
Acq On : 15 May 2015 18:54
Operator : ADC
Sample : L15050872-13 A 826-LOW
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 19 11:41:15 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	236267	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	172252	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	88056	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.212	111	61227	26.9467 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.787%		
32) 1,2-Dichloroethane-d4	4.843	65	55608	24.6778 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.711%		
44) Toluene-d8	6.734	98	238548	25.7550 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.020%		
63) p-Bromofluorobenzene	8.737	95	83626	26.4964 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.986%		
Target Compounds					Qvalue
14) Methylene Chloride	2.307	84	414	0.1619 ug/L	92
15) Acetone	2.353	43	147	Below Cal #	41
34) Trichloroethene	5.353	130	416	0.1577 ug/L #	36

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011872.D
Acq On : 15 May 2015 18:54
Operator : ADC
Sample : L15050872-13 A 826-LOW
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 19 11:41:15 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

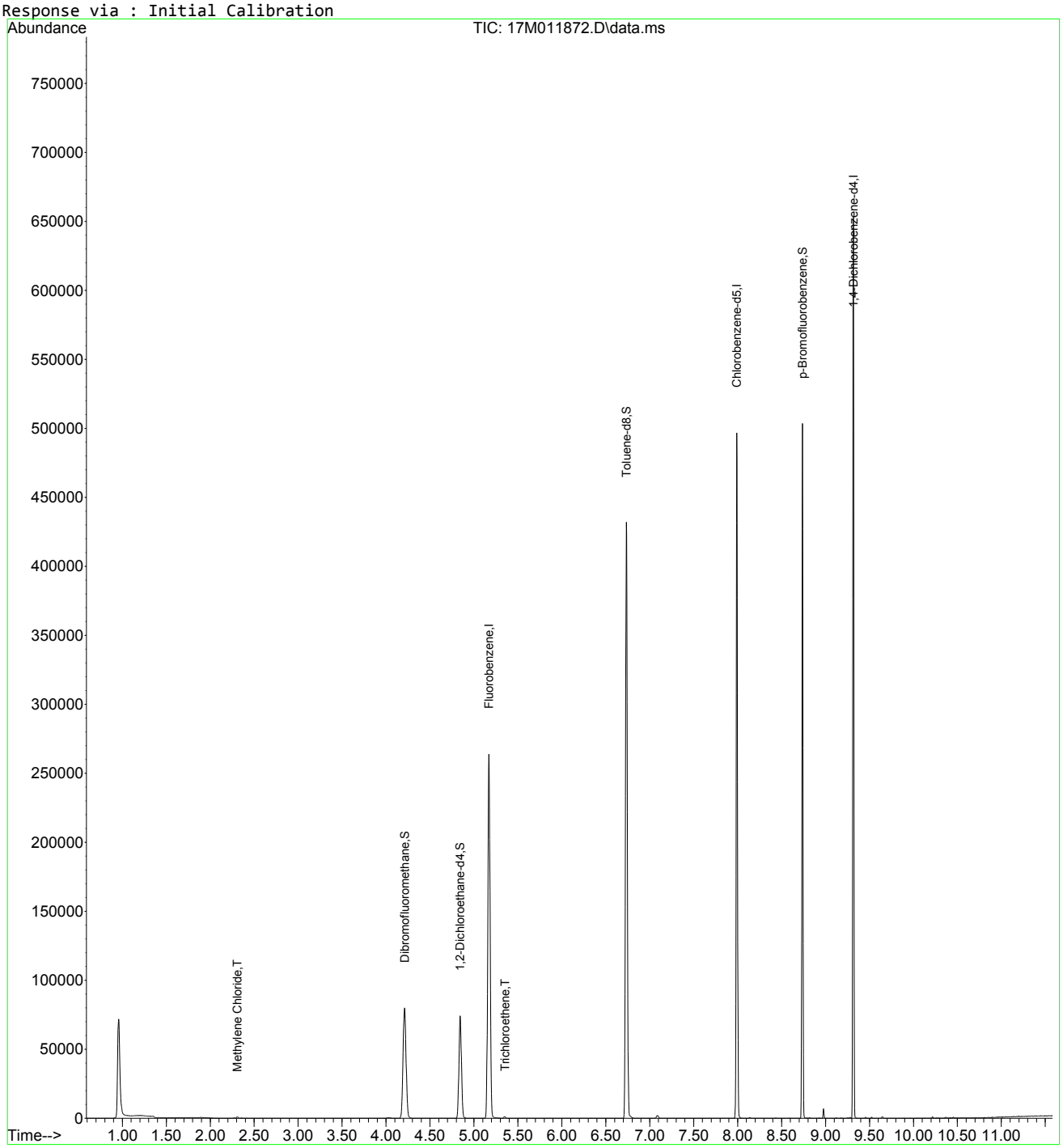

8260VMS.M Tue May 19 11:41:16 2015 Page: 2

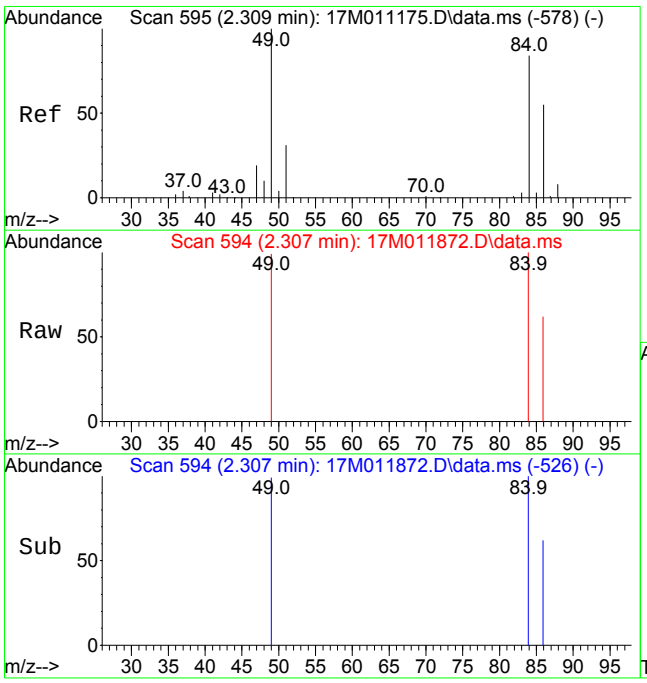

#14
Methylene Chloride
Concen: 0.1619 ug/L
RT: 2.307 min Scan# 594
Delta R.T. -0.002 min
Lab File: 17M011872.D
Acq: 15 May 2015 18:54

Tgt Ion: 84 Resp: 414

Ion	Ratio	Lower	Upper
84	100		
49	128.0	95.2	142.8

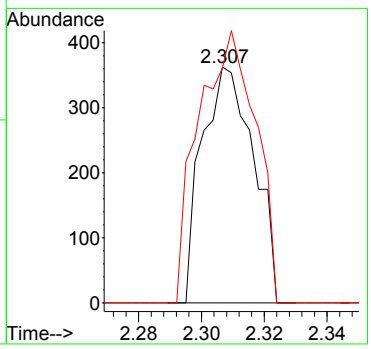

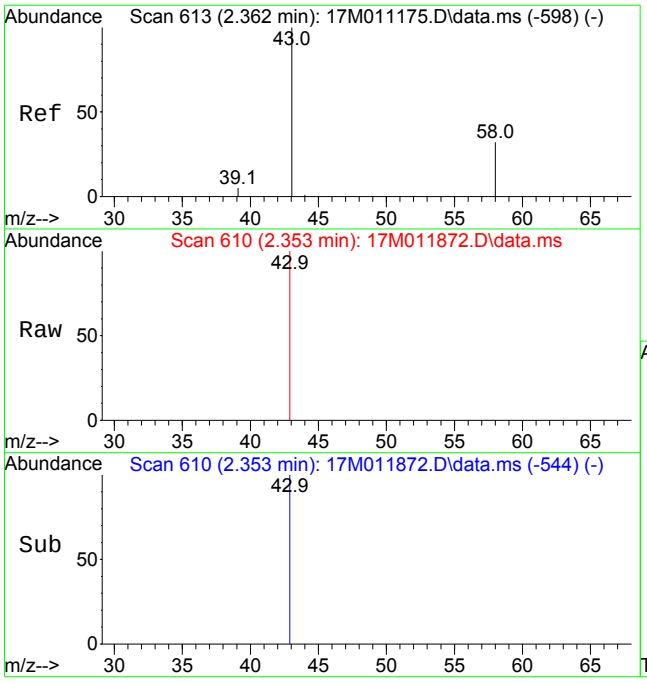

#15
Acetone
Concen: Below Cal
RT: 2.353 min Scan# 610
Delta R.T. -0.009 min
Lab File: 17M011872.D
Acq: 15 May 2015 18:54

Tgt Ion: 43 Resp: 147

Ion	Ratio	Lower	Upper
43	100		
58	0.0	20.0	46.8#

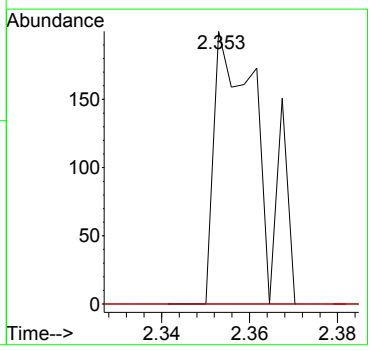

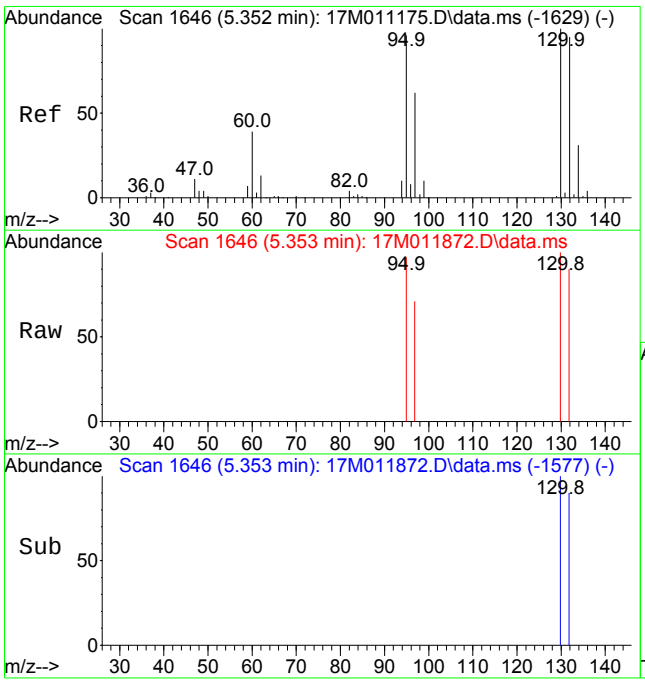

#34
Trichloroethene
Concen: 0.1577 ug/L
RT: 5.353 min Scan# 1646
Delta R.T. 0.001 min
Lab File: 17M011872.D
Acq: 15 May 2015 18:54

Tgt Ion:130 Resp: 416

Ion	Ratio	Lower	Upper
130	100		
60	0.0	23.8	55.6#

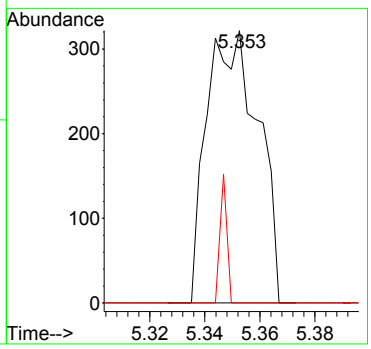

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011175.D
Acq On : 16 Apr 2015 10:16
Operator : ADC
Sample : WG519118-02 50ug/L CCV 8260
Misc : 1,1 STD69853
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 21 10:51:37 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.173	96	282632	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.993	117	201307	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.319	152	108719	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.212	111	69453	25.5526 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.210%		
32) 1,2-Dichloroethane-d4	4.846	65	63969	23.7313 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.925%		
44) Toluene-d8	6.736	98	274308	25.3413 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.365%		
63) p-Bromofluorobenzene	8.737	95	97499	25.0207 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.083%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	182367	53.5916 ug/L	100
3) Chloromethane	1.151	50	150604	50.5745 ug/L	100
4) Vinyl Chloride	1.203	62	172288	52.1149 ug/L	100
5) 1,3-Butadiene	1.212	54	135223	52.9396 ug/L	100
6) Bromomethane	1.389	94	91222	46.2376 ug/L	100
7) Chloroethane	1.461	64	89933	51.9314 ug/L	100
8) Trichlorofluoromethane	1.551	101	220845	51.8507 ug/L	100
9) Diethyl ether	1.759	59	88324	46.4922 ug/L	100
10) 1,1-Dichloroethene	1.881	61	202497	50.6255 ug/L	100
11) Carbon Disulfide	1.895	76	422546	51.0313 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.913	101	139676	51.7981 ug/L	100
13) Acrolein	2.127	56	12203	48.5182 ug/L	100
14) Methylene Chloride	2.309	84	137771	45.0391 ug/L	100
15) Acetone	2.362	43	17668	39.4824 ug/L	99
16) trans-1,2-Dichloroethene	2.440	96	133388	50.1304 ug/L	100
17) Methyl Tert Butyl Ether	2.547	73	303875	45.1088 ug/L	100
18) 1,1-Dichloroethane	3.001	63	246365	50.3509 ug/L	100
19) Acrylonitrile	3.059	53	28591	44.1033 ug/L	100
20) Vinyl Acetate	3.308	86	2857	45.9546 ug/L	100
21) cis-1,2-Dichloroethene	3.598	96	148911	49.3953 ug/L	100
22) 2,2-Dichloropropane	3.728	77	213452	52.0219 ug/L	100
23) Cyclohexane	3.832	56	238196	50.7482 ug/L	100
24) Bromochloromethane	3.841	130	92769	48.5005 ug/L	100
25) Chloroform	3.971	83	241730	51.8400 ug/L	100
26) Carbon Tetrachloride	4.116	117	207753	49.7047 ug/L	100
28) 1,1,1-Trichloroethane	4.215	97	223744	50.0184 ug/L	100
29) 1,1-Dichloropropene	4.383	75	187944	50.9215 ug/L	100
30) 2-Butanone	4.397	43	31644	39.3732 ug/L	100
31) Benzene	4.684	78	547639	49.4972 ug/L	100
33) 1,2-Dichloroethane	4.921	62	157575	46.9294 ug/L	100
34) Trichloroethene	5.352	130	157635	49.9544 ug/L	100
35) Dibromomethane	5.769	93	75041	48.2837 ug/L	100
36) 1,2-Dichloropropane	5.876	63	144315	48.9601 ug/L	100
37) Bromodichloromethane	5.963	83	185558	49.7797 ug/L	100
38) 1,4-Dioxane	6.172	88	1534	78.2627 ug/L	100
39) 2-Chloroethyl Vinyl Ether	6.551	63	62892	43.3928 ug/L	100
40) cis-1,3-Dichloropropene	6.568	75	219428	49.5099 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	27782	38.7655 ug/L	100
42) trans-1,3-Dichloropropene	7.168	75	185660	47.9309 ug/L	100
45) Toluene	6.783	91	623719	50.4305 ug/L	100
46) Tetrachloroethene	7.110	166	175306	50.9842 ug/L	100
47) 1,1,2-Trichloroethane	7.298	97	103037	46.1008 ug/L	100
48) Dibromochloromethane	7.437	129	144966	49.1210 ug/L	100
49) 1,3-Dichloropropane	7.518	76	164932	46.5520 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011175.D
Acq On : 16 Apr 2015 10:16
Operator : ADC
Sample : WG519118-02 50ug/L CCV 8260
Misc : 1,1 STD69853
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 21 10:51:37 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.605	107	103236	45.4057 ug/L	100
51) 2-Hexanone	7.831	43	52666	39.3616 ug/L	100
52) Chlorobenzene	8.005	112	401460	49.5918 ug/L	100
53) 1-Chlorohexane	8.019	69	39162	52.0106 ug/L	100
54) Ethylbenzene	8.042	106	220036	50.4853 ug/L	100
55) 1,1,1,2-Tetrachloroethane	8.057	131	149302	50.1119 ug/L	100
56) m-,p-Xylene	8.141	106	537288	102.0191 ug/L	100
57) o-Xylene	8.401	106	259341	49.5534 ug/L	100
58) Styrene	8.433	104	430915	50.0986 ug/L	100
59) Bromoform	8.436	173	95240	46.7898 ug/L	100
60) Isopropylbenzene	8.589	105	693835	50.5574 ug/L	100
62) 1,3,5-Trimethylbenzene	8.928	105	618002	50.5511 ug/L	100
64) Bromobenzene	8.789	156	183208	48.0462 ug/L	100
65) n-Propylbenzene	8.818	91	808009	51.3433 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.862	83	118314	43.7448 ug/L	99
67) 2-Chlorotoluene	8.893	91	477773	49.2358 ug/L	100
68) 1,2,3-Trichloropropane	8.925	110	31094	43.7948 ug/L	99
69) 1,2,4-Trimethylbenzene	9.125	105	620789	50.8755 ug/L	100
70) 4-Chlorotoluene	8.983	91	491562	49.9601 ug/L	100
71) tert-Butylbenzene	9.090	134	112331	50.4471 ug/L	100
72) sec-Butylbenzene	9.180	105	776442	51.8506 ug/L	100
73) p-Isopropyltoluene	9.252	119	695126	53.2149 ug/L	100
74) 1,3-Dichlorobenzene	9.281	146	356345	50.2915 ug/L	98
75) 1,4-Dichlorobenzene	9.325	146	350242	48.3818 ug/L #	100
76) n-Butylbenzene	9.455	91	637140	55.5632 ug/L	100
77) 1,2-Dichlorobenzene	9.528	146	333622	49.2265 ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.904	75	23429	46.8306 ug/L #	100
79) Hexachlorobutadiene	10.202	225	177935	56.0720 ug/L #	100
80) 1,2,4-Trichlorobenzene	10.217	180	289521	52.0475 ug/L	89
81) Naphthalene	10.367	128	481187	46.3300 ug/L #	100
82) 1,2,3-Trichlorobenzene	10.451	180	259953	49.7466 ug/L #	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011175.D
Acq On : 16 Apr 2015 10:16
Operator : ADC
Sample : WG519118-02 50ug/L CCV 8260
Misc : 1,1 STD69853
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 21 10:51:37 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

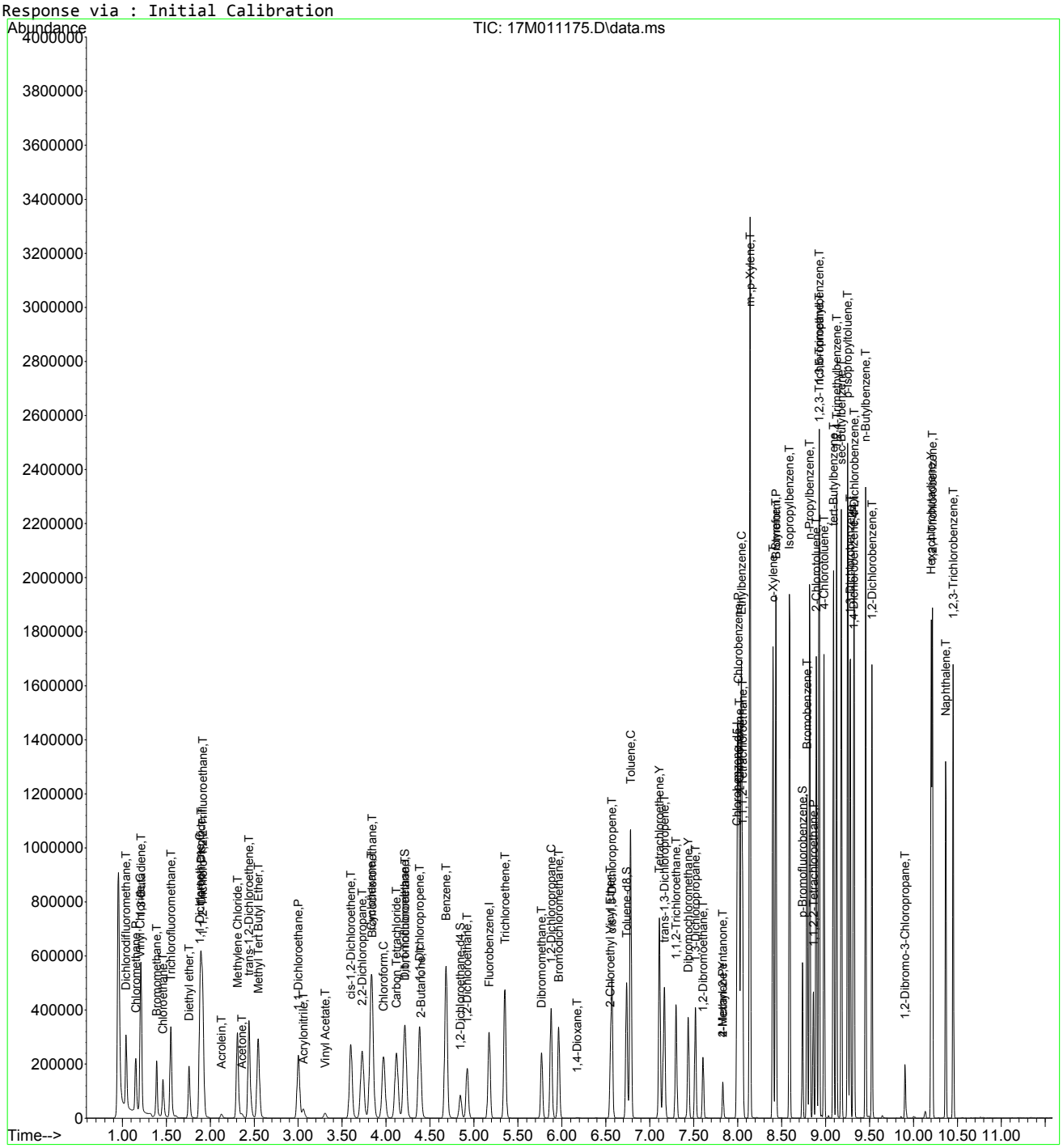

8260VMS.M Tue Apr 21 10:51:38 2015 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011177.D
Acq On : 16 Apr 2015 10:56
Operator : ADC
Sample : WG519118-03 0.3ug/L STD
Misc : 1,1 STD69853
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 16 14:07:06 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:06:31 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.173	96	273055	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.993	117	194050	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	100269	25.00000	ug/L	0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	0.000	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.000%#	
32) 1,2-Dichloroethane-d4	0.000	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.000%#	
44) Toluene-d8	6.734	98	570	0.0546	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.218%#	
63) p-Bromofluorobenzene	8.737	95	187	0.0520	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.208%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.041	85	967	0.2942	ug/L #	71
3) Chloromethane	1.154	50	813	0.2826	ug/L	83
4) Vinyl Chloride	1.204	62	922	0.2887	ug/L	89
5) 1,3-Butadiene	1.218	54	850	0.3445	ug/L	84
6) Bromomethane	1.395	94	602	0.3159	ug/L	99
7) Chloroethane	1.470	64	466	0.2785	ug/L #	47
8) Trichlorofluoromethane	1.557	101	1155	0.2807	ug/L	95
9) Diethyl ether	1.759	59	482	0.2626	ug/L	97
10) 1,1-Dichloroethene	1.887	61	1118	0.2893	ug/L	96
11) Carbon Disulfide	1.901	76	3253	0.4067	ug/L #	90
12) 1,1,2-Trichloro-1,2,2-...	1.916	101	796	0.3056	ug/L	93
14) Methylene Chloride	2.310	84	1393	0.4714	ug/L	98
16) trans-1,2-Dichloroethene	2.443	96	882	0.3431	ug/L	92
17) Methyl Tert Butyl Ether	2.550	73	1812	0.2784	ug/L #	88
18) 1,1-Dichloroethane	3.007	63	1230	0.2602	ug/L #	77
21) cis-1,2-Dichloroethene	3.607	96	895	0.3073	ug/L	93
22) 2,2-Dichloropropane	3.734	77	1126	0.2841	ug/L #	60
23) Cyclohexane	3.830	56	1497	0.3301	ug/L #	76
24) Bromochloromethane	3.841	130	322	0.1743	ug/L #	80
25) Chloroform	3.971	83	1129	0.2507	ug/L #	81
26) Carbon Tetrachloride	4.122	117	325	0.4315	ug/L #	86
28) 1,1,1-Trichloroethane	4.209	97	1250	0.2893	ug/L #	31
29) 1,1-Dichloropropene	4.377	75	1107	0.3105	ug/L	76
30) 2-Butanone	4.406	43	481	0.6194	ug/L #	36
31) Benzene	4.684	78	3370	0.3153	ug/L #	89
33) 1,2-Dichloroethane	4.924	62	877	0.2704	ug/L #	55
34) Trichloroethene	5.355	130	1044	0.3425	ug/L	89
35) Dibromomethane	5.767	93	409	0.2724	ug/L #	71
36) 1,2-Dichloropropane	5.877	63	791	0.2778	ug/L #	69
37) Bromodichloromethane	5.969	83	870	0.2416	ug/L	95
39) 2-Chloroethyl Vinyl Ether	6.554	63	318	0.2271	ug/L #	43
40) cis-1,3-Dichloropropene	6.566	75	1218	0.2845	ug/L #	85
41) 4-Methyl-2-Pentanone	7.831	58	143	0.2066	ug/L #	58
42) trans-1,3-Dichloropropene	7.168	75	1155	0.3087	ug/L #	91
45) Toluene	6.783	91	3894	0.3267	ug/L	99
46) Tetrachloroethene	7.107	166	1183	0.3570	ug/L	97
47) 1,1,2-Trichloroethane	7.301	97	618	0.2869	ug/L	94
48) Dibromochloromethane	7.437	129	718	0.2524	ug/L	92
49) 1,3-Dichloropropane	7.518	76	942	0.2759	ug/L #	60
50) 1,2-Dibromoethane	7.608	107	651	0.2971	ug/L	98
51) 2-Hexanone	7.834	43	589	0.4567	ug/L #	60
52) Chlorobenzene	8.002	112	2611	0.3346	ug/L #	10
53) 1-Chlorohexane	8.016	69	252	0.3473	ug/L #	57
54) Ethylbenzene	8.039	106	1305	0.3106	ug/L	74

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011177.D
Acq On : 16 Apr 2015 10:56
Operator : ADC
Sample : WG519118-03 0.3ug/L STD
Misc : 1,1 STD69853
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 16 14:07:06 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:06:31 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
55) 1,1,1,2-Tetrachloroethane	8.054	131	793	0.2762 ug/L	83
56) m-,p-Xylene	8.138	106	3319	0.6539 ug/L	98
57) o-Xylene	8.398	106	1513	0.3000 ug/L	92
58) Styrene	8.433	104	2649	0.3195 ug/L	100
59) Bromoform	8.433	173	458	0.2335 ug/L #	77
60) Isopropylbenzene	8.590	105	4155	0.3142 ug/L	95
62) 1,3,5-Trimethylbenzene	8.925	105	3608	0.3200 ug/L	98
64) Bromobenzene	8.786	156	1187	0.3375 ug/L	96
65) n-Propylbenzene	8.818	91	4934	0.3400 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.862	83	748	0.3151 ug/L	97
67) 2-Chlorotoluene	8.894	91	3030	0.3385 ug/L	96
68) 1,2,3-Trichloropropane	8.922	110	160	0.2444 ug/L #	57
69) 1,2,4-Trimethylbenzene	9.122	105	3782	0.3361 ug/L	96
70) 4-Chlorotoluene	8.980	91	3332	0.3674 ug/L	96
71) tert-Butylbenzene	9.088	134	613	0.2985 ug/L	86
72) sec-Butylbenzene	9.177	105	4498	0.3257 ug/L	99
73) p-Isopropyltoluene	9.253	119	4083	0.3390 ug/L	96
74) 1,3-Dichlorobenzene	9.279	146	2432	0.3734 ug/L	98
75) 1,4-Dichlorobenzene	9.325	146	2506	0.4240 ug/L #	100
76) n-Butylbenzene	9.455	91	3845	0.3636 ug/L	95
77) 1,2-Dichlorobenzene	9.528	146	1992	0.3187 ug/L	99
79) Hexachlorobutadiene	10.199	225	991	0.3882 ug/L #	100
80) 1,2,4-Trichlorobenzene	10.214	180	2102	0.4309 ug/L	95
81) Naphthalene	10.364	128	3391	0.3906 ug/L #	100
82) 1,2,3-Trichlorobenzene	10.448	180	1798	0.4153 ug/L #	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011177.D
Acq On : 16 Apr 2015 10:56
Operator : ADC
Sample : WG519118-03 0.3ug/L STD
Misc : 1,1 STD69853
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 16 14:07:06 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:06:31 2015
Response via : Initial Calibration

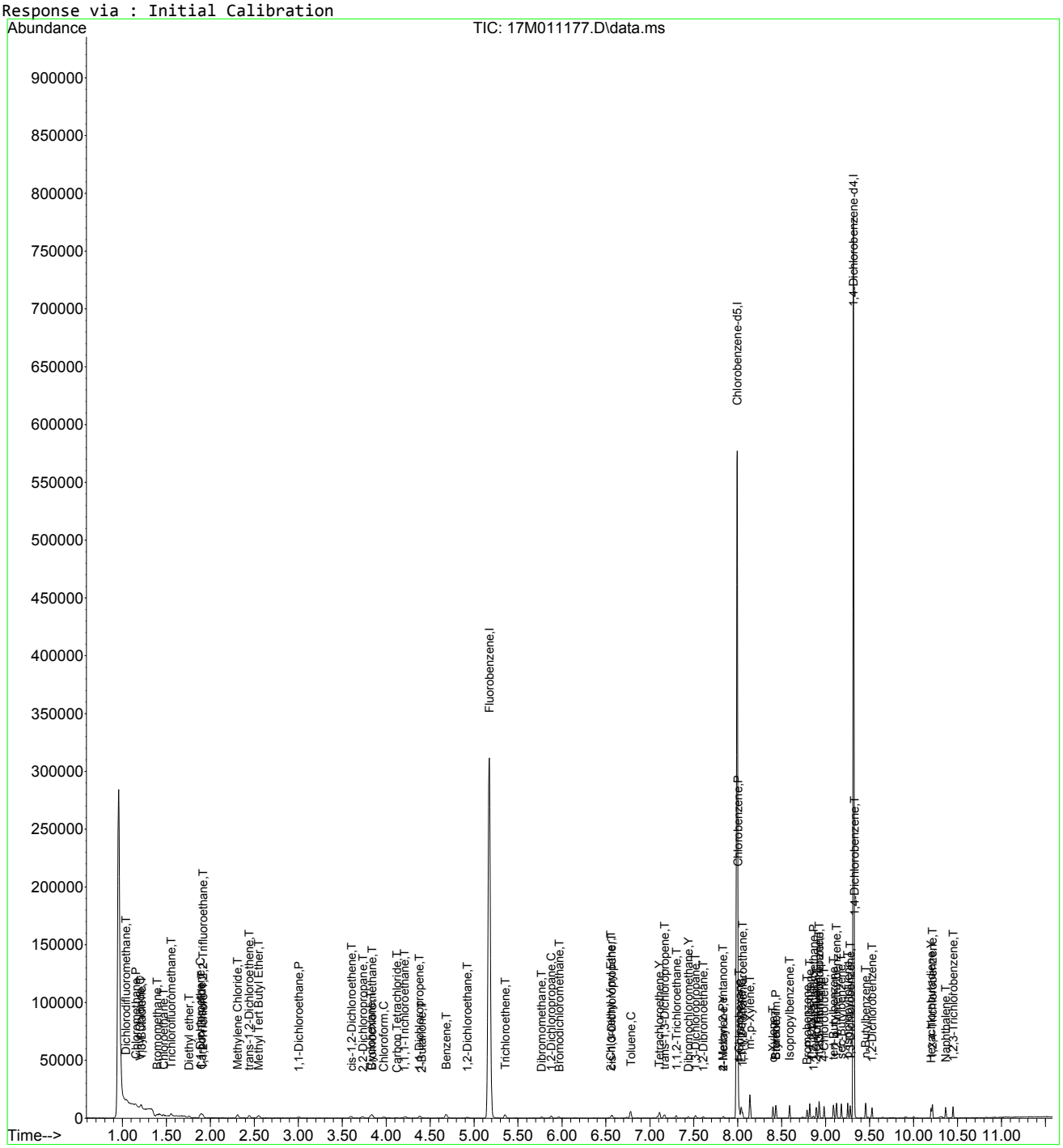

8260VMS.M Tue Apr 21 10:13:29 2015 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011177.D
Acq On : 16 Apr 2015 10:56
Operator : ADC
Sample : WG519118-03 0.3ug/L STD
Misc : 1,1 STD69853
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 16 14:07:06 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:06:31 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	-1.000	0.294	0.0	0	0.000
3	P	Chloromethane	-1.000	0.283	0.0	0	0.000
4	C	Vinyl Chloride	-1.000	0.289	0.0	0	0.000
5	T	1,3-Butadiene	-1.000	0.344	0.0	0	0.000
6	T	Bromomethane	-1.000	0.316	0.0	0	0.000
7	T	Chloroethane	-1.000	0.279	0.0	0	0.000
8	T	Trichlorofluoromethane	-1.000	0.281	0.0	0	0.000
9	T	Diethyl ether	-1.000	0.263	0.0	0	0.000
10	C	1,1-Dichloroethene	-1.000	0.289	0.0	0	0.000
11	T	Carbon Disulfide	-1.000	0.407	0.0	0	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.000	0.306	0.0	0	0.000
13	T	Acrolein	-1.000	0.000	0.0	0	-2.127#
14	T	Methylene Chloride	-1.000	0.471	0.0	0	0.000
15	T	Acetone	-1.000	0.079	0.0	0	0.000
16	T	trans-1,2-Dichloroethene	-1.000	0.343	0.0	0	0.000
17	T	Methyl Tert Butyl Ether	-1.000	0.278	0.0	0	0.000
18	P	1,1-Dichloroethane	-1.000	0.260	0.0	0	0.000
19	T	Acrylonitrile	-1.000	0.000	0.0	0	-3.059#
20	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.308#
21	T	cis-1,2-Dichloroethene	-1.000	0.307	0.0	0	0.000
22	T	2,2-Dichloropropane	-1.000	0.284	0.0	0	0.000
23	T	Cyclohexane	-1.000	0.330	0.0	0	0.000
24	T	Bromochloromethane	-1.000	0.174	0.0	0	0.000
25	C	Chloroform	0.300	0.251	16.3#	100	0.000
26	T	Carbon Tetrachloride	-1.000	0.431	0.0	0	0.000
27	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.212#
28	T	1,1,1-Trichloroethane	-1.000	0.289	0.0	0	0.000
29	T	1,1-Dichloropropene	-1.000	0.310	0.0	0	0.000
30	T	2-Butanone	-1.000	0.619	0.0	0	0.000
31	T	Benzene	-1.000	0.315	0.0	0	0.000
32	S	1,2-Dichloroethane-d4	-1.000	0.000	0.0	0	-4.846#
33	T	1,2-Dichloroethane	-1.000	0.270	0.0	0	0.000
34	T	Trichloroethene	-1.000	0.342	0.0	0	0.000
35	T	Dibromomethane	-1.000	0.272	0.0	0	0.000
36	C	1,2-Dichloropropane	-1.000	0.278	0.0	0	0.000
37	T	Bromodichloromethane	-1.000	0.242	0.0	0	0.000
38	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.172#
39	T	2-Chloroethyl Vinyl Ether	-1.000	0.227	0.0	0	0.000
40	T	cis-1,3-Dichloropropene	-1.000	0.284	0.0	0	0.000
41	T	4-Methyl-2-Pentanone	-1.000	0.207	0.0	0	0.000
42	T	trans-1,3-Dichloropropene	-1.000	0.309	0.0	0	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
44	S	Toluene-d8	-1.000	0.055	0.0	0	0.000
45	C	Toluene	-1.000	0.327	0.0	0	0.000
46	Y	Tetrachloroethene	-1.000	0.357	0.0	0	0.000
47	T	1,1,2-Trichloroethane	-1.000	0.287	0.0	0	0.000
48	Y	Dibromochloromethane	-1.000	0.252	0.0	0	0.000
49	T	1,3-Dichloropropane	-1.000	0.276	0.0	0	0.000
50	T	1,2-Dibromoethane	-1.000	0.297	0.0	0	0.000
51	Y	2-Hexanone	-1.000	0.457	0.0	0	0.000
52	P	Chlorobenzene	-1.000	0.335	0.0	0	0.000
53	T	1-Chlorohexane	-1.000	0.347	0.0	0	0.000
54	C	Ethylbenzene	-1.000	0.311	0.0	0	0.000
55	T	1,1,1,2-Tetrachloroethane	-1.000	0.276	0.0	0	0.000

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011177.D
Acq On : 16 Apr 2015 10:56
Operator : ADC
Sample : WG519118-03 0.3ug/L STD
Misc : 1,1 STD69853
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 16 14:07:06 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:06:31 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	-1.000	0.654	0.0	0	0.000
57	T	o-Xylene	-1.000	0.300	0.0	0	0.000
58	T	Styrene	-1.000	0.320	0.0	0	0.000
59	P	Bromoform	-1.000	0.233	0.0	0	0.000
60	T	Isopropylbenzene	-1.000	0.314	0.0	0	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
62	T	1,3,5-Trimethylbenzene	-1.000	0.320	0.0	0	0.000
63	S	p-Bromofluorobenzene	-1.000	0.052	0.0	0	0.000
64	T	Bromobenzene	0.300	0.338	-12.7	100	0.000
65	T	n-Propylbenzene	-1.000	0.340	0.0	0	0.000
66	P	1,1,2,2-Tetrachloroethane	-1.000	0.315	0.0	0	0.000
67	T	2-Chlorotoluene	-1.000	0.338	0.0	0	0.000
68	T	1,2,3-Trichloropropane	-1.000	0.244	0.0	0	0.000
69	T	1,2,4-Trimethylbenzene	-1.000	0.336	0.0	0	0.000
70	T	4-Chlorotoluene	-1.000	0.367	0.0	0	0.000
71	T	tert-Butylbenzene	-1.000	0.299	0.0	0	0.000
72	T	sec-Butylbenzene	-1.000	0.326	0.0	0	0.000
73	T	p-Isopropyltoluene	-1.000	0.339	0.0	0	0.000
74	T	1,3-Dichlorobenzene	-1.000	0.373	0.0	0	0.000
75	T	1,4-Dichlorobenzene	0.300	0.424	-41.3#	100	0.000
76	T	n-Butylbenzene	-1.000	0.364	0.0	0	0.000
77	T	1,2-Dichlorobenzene	0.300	0.319	-6.3	100	0.000
78	T	1,2-Dibromo-3-Chloropropane	-1.000	0.000	0.0	0	-9.904#
79	Y	Hexachlorobutadiene	-1.000	0.388	0.0	0	0.000
80	T	1,2,4-Trichlorobenzene	-1.000	0.431	0.0	0	0.000
81	T	Naphthalene	-1.000	0.391	0.0	0	0.000
82	T	1,2,3-Trichlorobenzene	-1.000	0.415	0.0	0	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 1

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011178.D
Acq On : 16 Apr 2015 11:16
Operator : ADC
Sample : WG519118-04 0.4ug/L STD
Misc : 1,1 STD69853
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 16 14:07:08 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:06:31 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.173	96	270852	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.993	117	191748	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	98964	25.00000	ug/L	0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	0.000	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.000%#	
32) 1,2-Dichloroethane-d4	0.000	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.000%#	
44) Toluene-d8	6.736	98	499	0.0484	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.194%#	
63) p-Bromofluorobenzene	8.737	95	168	0.0474	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.190%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.044	85	1143	0.3506	ug/L #	71
3) Chloromethane	1.151	50	1016	0.3560	ug/L	83
4) Vinyl Chloride	1.201	62	1117	0.3526	ug/L	88
5) 1,3-Butadiene	1.212	54	910	0.3718	ug/L	77
6) Bromomethane	1.395	94	717	0.3793	ug/L	92
7) Chloroethane	1.470	64	581	0.3501	ug/L #	47
8) Trichlorofluoromethane	1.560	101	1480	0.3626	ug/L #	95
9) Diethyl ether	1.759	59	657	0.3609	ug/L	95
10) 1,1-Dichloroethene	1.881	61	1422	0.3710	ug/L	99
11) Carbon Disulfide	1.898	76	3417	0.4306	ug/L #	94
12) 1,1,2-Trichloro-1,2,2-...	1.916	101	1007	0.3897	ug/L	92
14) Methylene Chloride	2.312	84	1524	0.5199	ug/L	97
16) trans-1,2-Dichloroethene	2.446	96	985	0.3863	ug/L	97
17) Methyl Tert Butyl Ether	2.556	73	2377	0.3682	ug/L	93
18) 1,1-Dichloroethane	3.004	63	1653	0.3525	ug/L #	88
21) cis-1,2-Dichloroethene	3.607	96	1096	0.3794	ug/L	98
22) 2,2-Dichloropropane	3.737	77	1406	0.3576	ug/L #	55
23) Cyclohexane	3.827	56	1839	0.4089	ug/L #	79
24) Bromochloromethane	3.841	130	490	0.2673	ug/L	99
25) Chloroform	3.971	83	1462	0.3272	ug/L #	77
26) Carbon Tetrachloride	4.122	117	549	0.4877	ug/L #	88
28) 1,1,1-Trichloroethane	4.217	97	1495	0.3488	ug/L	88
29) 1,1-Dichloropropene	4.380	75	1284	0.3630	ug/L	86
30) 2-Butanone	4.400	43	517	0.6711	ug/L #	36
31) Benzene	4.684	78	4049	0.3819	ug/L	93
33) 1,2-Dichloroethane	4.921	62	1123	0.3490	ug/L #	69
34) Trichloroethene	5.347	130	1066	0.3525	ug/L	96
35) Dibromomethane	5.772	93	404	0.2712	ug/L #	81
36) 1,2-Dichloropropane	5.876	63	982	0.3477	ug/L	78
37) Bromodichloromethane	5.960	83	1150	0.3220	ug/L	100
39) 2-Chloroethyl Vinyl Ether	6.548	63	404	0.2909	ug/L #	43
40) cis-1,3-Dichloropropene	6.568	75	1468	0.3457	ug/L	96
41) 4-Methyl-2-Pentanone	7.831	58	222	0.3233	ug/L #	58
42) trans-1,3-Dichloropropene	7.168	75	1323	0.3564	ug/L	95
45) Toluene	6.780	91	4791	0.4068	ug/L	95
46) Tetrachloroethene	7.107	166	1400	0.4275	ug/L	96
47) 1,1,2-Trichloroethane	7.298	97	783	0.3679	ug/L	95
48) Dibromochloromethane	7.437	129	919	0.3270	ug/L	94
49) 1,3-Dichloropropane	7.518	76	1277	0.3785	ug/L	83
50) 1,2-Dibromoethane	7.605	107	829	0.3829	ug/L	92
51) 2-Hexanone	7.831	43	716	0.5618	ug/L #	69
52) Chlorobenzene	8.005	112	3081	0.3996	ug/L #	22
53) 1-Chlorohexane	8.016	69	292	0.4072	ug/L	87
54) Ethylbenzene	8.036	106	1566	0.3772	ug/L	83

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011178.D
Acq On : 16 Apr 2015 11:16
Operator : ADC
Sample : WG519118-04 0.4ug/L STD
Misc : 1,1 STD69853
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 16 14:07:08 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:06:31 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
55) 1,1,1,2-Tetrachloroethane	8.057	131	998	0.3517 ug/L	83
56) m-,p-Xylene	8.138	106	3904	0.7784 ug/L	98
57) o-Xylene	8.401	106	1857	0.3726 ug/L	96
58) Styrene	8.433	104	3058	0.3733 ug/L	99
59) Bromoform	8.433	173	659	0.3399 ug/L #	82
60) Isopropylbenzene	8.589	105	4989	0.3817 ug/L	98
62) 1,3,5-Trimethylbenzene	8.925	105	4522	0.4064 ug/L	98
64) Bromobenzene	8.789	156	1392	0.4010 ug/L	94
65) n-Propylbenzene	8.818	91	5769	0.4027 ug/L	97
66) 1,1,2,2-Tetrachloroethane	8.862	83	989	0.4221 ug/L	99
67) 2-Chlorotoluene	8.893	91	3554	0.4022 ug/L	98
68) 1,2,3-Trichloropropane	8.922	110	230	0.3560 ug/L #	76
69) 1,2,4-Trimethylbenzene	9.125	105	4383	0.3947 ug/L	98
70) 4-Chlorotoluene	8.980	91	3718	0.4154 ug/L	99
71) tert-Butylbenzene	9.087	134	735	0.3627 ug/L	93
72) sec-Butylbenzene	9.177	105	5400	0.3962 ug/L	99
73) p-Isopropyltoluene	9.252	119	4638	0.3901 ug/L	99
74) 1,3-Dichlorobenzene	9.279	146	2730	0.4247 ug/L	100
75) 1,4-Dichlorobenzene	9.322	146	2746	0.4707 ug/L #	100
76) n-Butylbenzene	9.455	91	4097	0.3925 ug/L	97
77) 1,2-Dichlorobenzene	9.528	146	2408	0.3903 ug/L	99
78) 1,2-Dibromo-3-Chloropr...	9.904	75	161	0.4494 ug/L #	100
79) Hexachlorobutadiene	10.196	225	1134	0.4501 ug/L #	100
80) 1,2,4-Trichlorobenzene	10.214	180	2265	0.4705 ug/L	95
81) Naphthalene	10.361	128	3886	0.4535 ug/L #	100
82) 1,2,3-Trichlorobenzene	10.445	180	1958	0.4583 ug/L #	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011178.D
Acq On : 16 Apr 2015 11:16
Operator : ADC
Sample : WG519118-04 0.4ug/L STD
Misc : 1,1 STD69853
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 16 14:07:08 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:06:31 2015
Response via : Initial Calibration

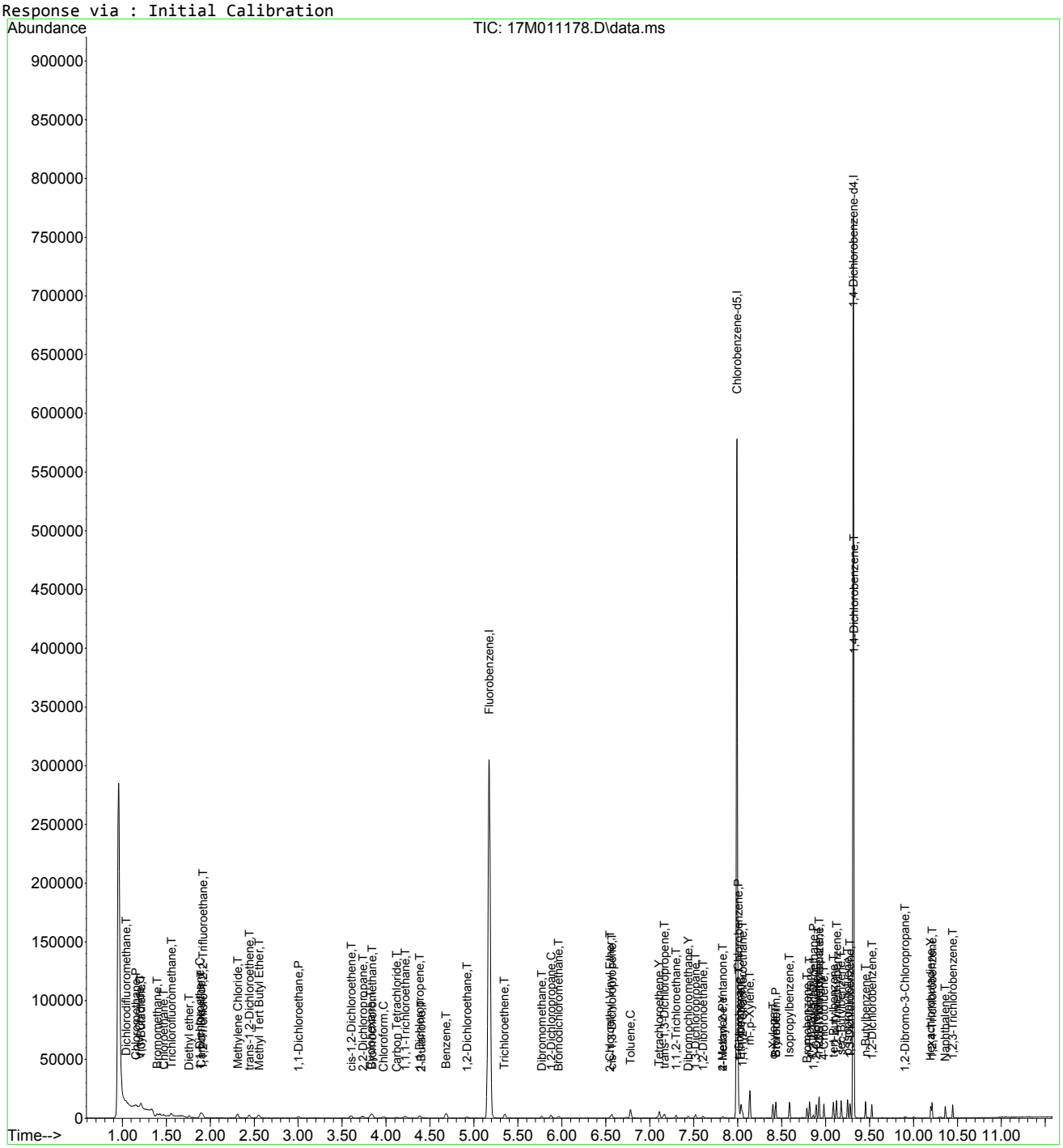

8260VMS.M Tue Apr 21 10:13:23 2015 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011178.D
Acq On : 16 Apr 2015 11:16
Operator : ADC
Sample : WG519118-04 0.4ug/L STD
Misc : 1,1 STD69853
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 16 14:07:08 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:06:31 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	0.400	0.351	12.3	100	0.000
3	P	Chloromethane	-1.000	0.356	0.0	0	0.000
4	C	Vinyl Chloride	0.400	0.353	11.8#	100	0.000
5	T	1,3-Butadiene	0.400	0.372	7.0	100	0.000
6	T	Bromomethane	-1.000	0.379	0.0	0	0.000
7	T	Chloroethane	-1.000	0.350	0.0	0	0.000
8	T	Trichlorofluoromethane	0.400	0.363	9.3	100	0.000
9	T	Diethyl ether	0.400	0.361	9.8	100	0.000
10	C	1,1-Dichloroethene	0.400	0.371	7.3#	100	0.000
11	T	Carbon Disulfide	0.400	0.431	-7.7	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.400	0.390	2.5	100	0.000
13	T	Acrolein	-1.000	0.000	0.0	0	-2.127#
14	T	Methylene Chloride	0.400	0.520	-30.0#	100	0.000
15	T	Acetone	-1.000	0.106	0.0	0	0.000
16	T	trans-1,2-Dichloroethene	0.400	0.386	3.5	100	0.000
17	T	Methyl Tert Butyl Ether	0.400	0.368	8.0	100	0.000
18	P	1,1-Dichloroethane	0.400	0.353	11.8	100	0.000
19	T	Acrylonitrile	-1.000	0.000	0.0	0	-3.059#
20	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.308#
21	T	cis-1,2-Dichloroethene	0.400	0.379	5.3	100	0.000
22	T	2,2-Dichloropropane	0.400	0.358	10.5	100	0.000
23	T	Cyclohexane	0.400	0.409	-2.2	100	0.000
24	T	Bromochloromethane	-1.000	0.267	0.0	0	0.000
25	C	Chloroform	0.400	0.327	18.3#	100	0.000
26	T	Carbon Tetrachloride	0.400	0.488	-22.0	100	0.000
27	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.212#
28	T	1,1,1-Trichloroethane	0.400	0.349	12.8	100	0.000
29	T	1,1-Dichloropropene	0.400	0.363	9.3	100	0.000
30	T	2-Butanone	-1.000	0.671	0.0	0	0.000
31	T	Benzene	0.400	0.382	4.5	100	0.000
32	S	1,2-Dichloroethane-d4	-1.000	0.000	0.0	0	-4.846#
33	T	1,2-Dichloroethane	0.400	0.349	12.8	100	0.000
34	T	Trichloroethene	0.400	0.353	11.8	100	0.000
35	T	Dibromomethane	0.400	0.271	32.3#	100	0.000
36	C	1,2-Dichloropropane	0.400	0.348	13.0#	100	0.000
37	T	Bromodichloromethane	0.400	0.322	19.5	100	0.000
38	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.172#
39	T	2-Chloroethyl Vinyl Ether	-1.000	0.291	0.0	0	0.000
40	T	cis-1,3-Dichloropropene	0.400	0.346	13.5	100	0.000
41	T	4-Methyl-2-Pentanone	-1.000	0.323	0.0	0	0.000
42	T	trans-1,3-Dichloropropene	0.400	0.356	11.0	100	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
44	S	Toluene-d8	-1.000	0.048	0.0	0	0.000
45	C	Toluene	0.400	0.407	-1.7#	100	0.000
46	Y	Tetrachloroethene	0.400	0.428	-7.0	100	0.000
47	T	1,1,2-Trichloroethane	0.400	0.368	8.0	100	0.000
48	Y	Dibromochloromethane	0.400	0.327	18.3	100	0.000
49	T	1,3-Dichloropropane	0.400	0.378	5.5	100	0.000
50	T	1,2-Dibromoethane	0.400	0.383	4.3	100	0.000
51	Y	2-Hexanone	-1.000	0.562	0.0	0	0.000
52	P	Chlorobenzene	0.400	0.400	0.0	100	0.000
53	T	1-Chlorohexane	0.400	0.407	-1.7	100	0.000
54	C	Ethylbenzene	0.400	0.377	5.8#	100	0.000
55	T	1,1,1,2-Tetrachloroethane	0.400	0.352	12.0	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011178.D
Acq On : 16 Apr 2015 11:16
Operator : ADC
Sample : WG519118-04 0.4ug/L STD
Misc : 1,1 STD69853
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 16 14:07:08 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:06:31 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	0.800	0.778	2.8	100	0.000
57	T	o-Xylene	0.400	0.373	6.8	100	0.000
58	T	Styrene	0.400	0.373	6.8	100	0.000
59	P	Bromoform	0.400	0.340	15.0	100	0.000
60	T	Isopropylbenzene	0.400	0.382	4.5	100	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
62	T	1,3,5-Trimethylbenzene	0.400	0.406	-1.5	100	0.000
63	S	p-Bromofluorobenzene	-1.000	0.047	0.0	0	0.000
64	T	Bromobenzene	0.400	0.401	-0.3	100	0.000
65	T	n-Propylbenzene	0.400	0.403	-0.8	100	0.000
66	P	1,1,2,2-Tetrachloroethane	0.400	0.422	-5.5	100	0.000
67	T	2-Chlorotoluene	0.400	0.402	-0.5	100	0.000
68	T	1,2,3-Trichloropropane	0.400	0.356	11.0	100	0.000
69	T	1,2,4-Trimethylbenzene	0.400	0.395	1.3	100	0.000
70	T	4-Chlorotoluene	0.400	0.415	-3.7	100	0.000
71	T	tert-Butylbenzene	0.400	0.363	9.3	100	0.000
72	T	sec-Butylbenzene	0.400	0.396	1.0	100	0.000
73	T	p-Isopropyltoluene	0.400	0.390	2.5	100	0.000
74	T	1,3-Dichlorobenzene	0.400	0.425	-6.2	100	0.000
75	T	1,4-Dichlorobenzene	0.400	0.471	-17.7	100	0.000
76	T	n-Butylbenzene	0.400	0.393	1.8	100	0.000
77	T	1,2-Dichlorobenzene	0.400	0.390	2.5	100	0.000
78	T	1,2-Dibromo-3-Chloropropane	0.400	0.449	-12.2	100	0.000
79	Y	Hexachlorobutadiene	0.400	0.450	-12.5	100	0.000
80	T	1,2,4-Trichlorobenzene	0.400	0.470	-17.5	100	0.000
81	T	Naphthalene	0.400	0.453	-13.2	100	0.000
82	T	1,2,3-Trichlorobenzene	0.400	0.458	-14.5	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011179.D
Acq On : 16 Apr 2015 11:36
Operator : ADC
Sample : WG519118-05 1.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 21 10:13:42 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:12:03 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.173	96	272865	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.993	117	194450	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	100992	25.00000	ug/L	0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	0.000	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.000%#	
32) 1,2-Dichloroethane-d4	0.000	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.000%#	
44) Toluene-d8	6.739	98	449	0.0429	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.172%#	
63) p-Bromofluorobenzene	8.740	95	133	0.0367	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.147%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.041	85	3173	0.9658	ug/L	94
3) Chloromethane	1.151	50	2716	0.9447	ug/L	98
4) Vinyl Chloride	1.204	62	3057	0.9578	ug/L	98
5) 1,3-Butadiene	1.215	54	2429	0.9850	ug/L	88
6) Bromomethane	1.392	94	1773	0.9308	ug/L	99
7) Chloroethane	1.470	64	1749	1.0461	ug/L	93
8) Trichlorofluoromethane	1.554	101	4141	1.0070	ug/L	99
9) Diethyl ether	1.759	59	1827	0.9961	ug/L	95
10) 1,1-Dichloroethene	1.884	61	3834	0.9928	ug/L	99
11) Carbon Disulfide	1.898	76	7995	1.0001	ug/L	98
12) 1,1,2-Trichloro-1,2,2-...	1.919	101	2568	0.9864	ug/L	97
13) Acrolein	2.130	56	168	0.6919	ug/L #	1
14) Methylene Chloride	2.310	84	3247	1.0995	ug/L	97
15) Acetone	2.362	43	894	0.6067	ug/L #	41
16) trans-1,2-Dichloroethene	2.443	96	2560	0.9965	ug/L	97
17) Methyl Tert Butyl Ether	2.550	73	6624	1.0185	ug/L	93
18) 1,1-Dichloroethane	3.004	63	4691	0.9930	ug/L	99
19) Acrylonitrile	3.065	53	563	0.8995	ug/L	81
21) cis-1,2-Dichloroethene	3.601	96	2946	1.0122	ug/L	97
22) 2,2-Dichloropropane	3.731	77	4040	1.0199	ug/L	88
23) Cyclohexane	3.827	56	4593	1.0136	ug/L	94
24) Bromochloromethane	3.838	130	1699	0.9200	ug/L	99
25) Chloroform	3.977	83	4314	0.9583	ug/L	98
26) Carbon Tetrachloride	4.125	117	2669	1.0083	ug/L	99
28) 1,1,1-Trichloroethane	4.218	97	4421	1.0237	ug/L	94
29) 1,1-Dichloropropene	4.377	75	3580	1.0047	ug/L	94
30) 2-Butanone	4.397	43	1069	1.3777	ug/L #	36
31) Benzene	4.684	78	10878	1.0184	ug/L	100
33) 1,2-Dichloroethane	4.921	62	3305	1.0195	ug/L #	88
34) Trichloroethene	5.350	130	3094	1.0156	ug/L	98
35) Dibromomethane	5.769	93	1459	0.9724	ug/L	98
36) 1,2-Dichloropropane	5.877	63	2848	1.0008	ug/L	99
37) Bromodichloromethane	5.963	83	3522	0.9787	ug/L	96
39) 2-Chloroethyl Vinyl Ether	6.551	63	1259	0.8997	ug/L	87
40) cis-1,3-Dichloropropene	6.569	75	4163	0.9729	ug/L	98
41) 4-Methyl-2-Pentanone	7.831	58	629	0.9091	ug/L #	58
42) trans-1,3-Dichloropropene	7.168	75	3626	0.9696	ug/L	99
45) Toluene	6.783	91	12438	1.0411	ug/L	98
46) Tetrachloroethene	7.110	166	3336	1.0044	ug/L	98
47) 1,1,2-Trichloroethane	7.301	97	2308	1.0691	ug/L	98
48) Dibromochloromethane	7.440	129	2712	0.9514	ug/L	99
49) 1,3-Dichloropropane	7.521	76	3499	1.0224	ug/L	90
50) 1,2-Dibromoethane	7.605	107	2260	1.0291	ug/L	99
51) 2-Hexanone	7.831	43	1509	1.1676	ug/L #	84

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011179.D
Acq On : 16 Apr 2015 11:36
Operator : ADC
Sample : WG519118-05 1.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 21 10:13:42 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:12:03 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52) Chlorobenzene	8.002	112	8008	1.0241 ug/L	71
53) 1-Chlorohexane	8.016	69	705	0.9693 ug/L	78
54) Ethylbenzene	8.039	106	4143	0.9841 ug/L	93
55) 1,1,1,2-Tetrachloroethane	8.057	131	2769	0.9622 ug/L	91
56) m-,p-Xylene	8.138	106	10196	2.0043 ug/L	97
57) o-Xylene	8.401	106	5058	1.0005 ug/L	98
58) Styrene	8.433	104	8212	0.9884 ug/L	98
59) Bromoform	8.433	173	1800	0.9155 ug/L	96
60) Isopropylbenzene	8.590	105	13467	1.0159 ug/L	99
62) 1,3,5-Trimethylbenzene	8.925	105	11676	1.0281 ug/L	99
64) Bromobenzene	8.789	156	3518	0.9932 ug/L	97
65) n-Propylbenzene	8.818	91	14707	1.0060 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.859	83	2550	1.0150 ug/L	98
67) 2-Chlorotoluene	8.894	91	9308	1.0326 ug/L	99
68) 1,2,3-Trichloropropane	8.922	110	664	1.0068 ug/L	92
69) 1,2,4-Trimethylbenzene	9.125	105	11551	1.0191 ug/L	100
70) 4-Chlorotoluene	8.983	91	9273	1.0146 ug/L	98
71) tert-Butylbenzene	9.090	134	2070	1.0007 ug/L	96
72) sec-Butylbenzene	9.177	105	14189	1.0200 ug/L	98
73) p-Isopropyltoluene	9.253	119	12225	1.0075 ug/L	97
74) 1,3-Dichlorobenzene	9.279	146	6522	0.9909 ug/L	96
75) 1,4-Dichlorobenzene	9.325	146	6559	0.9754 ug/L #	100
76) n-Butylbenzene	9.455	91	10265	0.9637 ug/L	100
77) 1,2-Dichlorobenzene	9.528	146	6392	1.0153 ug/L	97
78) 1,2-Dibromo-3-Chloropr...	9.904	75	436	0.9382 ug/L #	100
79) Hexachlorobutadiene	10.199	225	2875	0.9753 ug/L #	100
80) 1,2,4-Trichlorobenzene	10.214	180	5056	0.9785 ug/L	90
81) Naphthalene	10.364	128	10103	1.0472 ug/L #	100
82) 1,2,3-Trichlorobenzene	10.448	180	4876	1.0045 ug/L #	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011179.D
Acq On : 16 Apr 2015 11:36
Operator : ADC
Sample : WG519118-05 1.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 21 10:13:42 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:12:03 2015
Response via : Initial Calibration

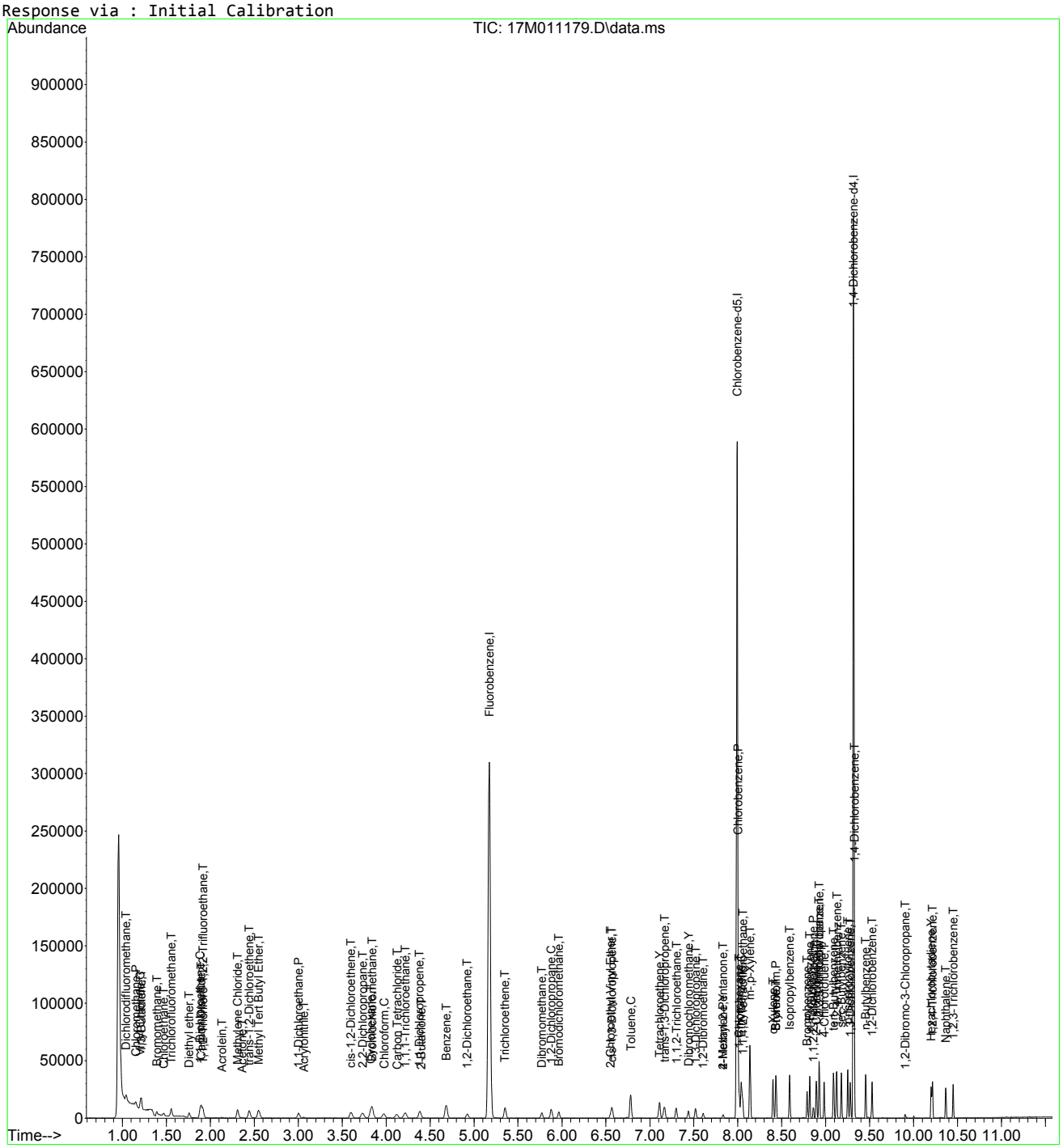

8260VMS.M Tue Apr 21 10:13:58 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011179.D
Acq On : 16 Apr 2015 11:36
Operator : ADC
Sample : WG519118-05 1.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 21 10:13:42 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:12:03 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	1.000	0.966	3.4	100	0.000
3	P	Chloromethane	1.000	0.945	5.5	100	0.000
4	C	Vinyl Chloride	1.000	0.958	4.2#	100	0.000
5	T	1,3-Butadiene	1.000	0.985	1.5	100	0.000
6	T	Bromomethane	1.000	0.931	6.9	100	0.000
7	T	Chloroethane	1.000	1.046	-4.6	100	0.000
8	T	Trichlorofluoromethane	1.000	1.007	-0.7	100	0.000
9	T	Diethyl ether	1.000	0.996	0.4	100	0.000
10	C	1,1-Dichloroethene	1.000	0.993	0.7#	100	0.000
11	T	Carbon Disulfide	1.000	1.000	0.0	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.000	0.986	1.4	100	0.000
13	T	Acrolein	-1.000	0.692	0.0	0	0.000
14	T	Methylene Chloride	1.000	1.099	-9.9	100	0.000
15	T	Acetone	-1.000	0.607	0.0	0	0.000
16	T	trans-1,2-Dichloroethene	1.000	0.997	0.3	100	0.000
17	T	Methyl Tert Butyl Ether	1.000	1.018	-1.8	100	0.000
18	P	1,1-Dichloroethane	1.000	0.993	0.7	100	0.000
19	T	Acrylonitrile	1.000	0.900	10.0	100	0.000
20	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.308#
21	T	cis-1,2-Dichloroethene	1.000	1.012	-1.2	100	0.000
22	T	2,2-Dichloropropane	1.000	1.020	-2.0	100	0.000
23	T	Cyclohexane	1.000	1.014	-1.4	100	0.000
24	T	Bromochloromethane	1.000	0.920	8.0	100	0.000
25	C	Chloroform	1.000	0.958	4.2#	100	0.000
26	T	Carbon Tetrachloride	1.000	1.008	-0.8	100	0.000
27	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.212#
28	T	1,1,1-Trichloroethane	1.000	1.024	-2.4	100	0.000
29	T	1,1-Dichloropropene	1.000	1.005	-0.5	100	0.000
30	T	2-Butanone	-1.000	1.378	0.0	0	0.000
31	T	Benzene	1.000	1.018	-1.8	100	0.000
32	S	1,2-Dichloroethane-d4	-1.000	0.000	0.0	0	-4.846#
33	T	1,2-Dichloroethane	1.000	1.020	-2.0	100	0.000
34	T	Trichloroethene	1.000	1.016	-1.6	100	0.000
35	T	Dibromomethane	1.000	0.972	2.8	100	0.000
36	C	1,2-Dichloropropane	1.000	1.001	-0.1#	100	0.000
37	T	Bromodichloromethane	1.000	0.979	2.1	100	0.000
38	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.172#
39	T	2-Chloroethyl Vinyl Ether	-1.000	0.900	0.0	0	0.000
40	T	cis-1,3-Dichloropropene	1.000	0.973	2.7	100	0.000
41	T	4-Methyl-2-Pentanone	-1.000	0.909	0.0	0	0.000
42	T	trans-1,3-Dichloropropene	1.000	0.970	3.0	100	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
44	S	Toluene-d8	-1.000	0.043	0.0	0	0.000
45	C	Toluene	1.000	1.041	-4.1#	100	0.000
46	Y	Tetrachloroethene	1.000	1.004	-0.4	100	0.000
47	T	1,1,2-Trichloroethane	1.000	1.069	-6.9	100	0.000
48	Y	Dibromochloromethane	1.000	0.951	4.9	100	0.000
49	T	1,3-Dichloropropane	1.000	1.022	-2.2	100	0.000
50	T	1,2-Dibromoethane	1.000	1.029	-2.9	100	0.000
51	Y	2-Hexanone	-1.000	1.168	0.0	0	0.000
52	P	Chlorobenzene	1.000	1.024	-2.4	100	0.000
53	T	1-Chlorohexane	1.000	0.969	3.1	100	0.000
54	C	Ethylbenzene	1.000	0.984	1.6#	100	0.000
55	T	1,1,1,2-Tetrachloroethane	1.000	0.962	3.8	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011179.D
Acq On : 16 Apr 2015 11:36
Operator : ADC
Sample : WG519118-05 1.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 21 10:13:42 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:12:03 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	2.000	2.004	-0.2	100	0.000
57	T	o-Xylene	1.000	1.001	-0.1	100	0.000
58	T	Styrene	1.000	0.988	1.2	100	0.000
59	P	Bromoform	1.000	0.915	8.5	100	0.000
60	T	Isopropylbenzene	1.000	1.016	-1.6	100	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
62	T	1,3,5-Trimethylbenzene	1.000	1.028	-2.8	100	0.000
63	S	p-Bromofluorobenzene	-1.000	0.037	0.0	0	0.000
64	T	Bromobenzene	1.000	0.993	0.7	100	0.000
65	T	n-Propylbenzene	1.000	1.006	-0.6	100	0.000
66	P	1,1,2,2-Tetrachloroethane	1.000	1.015	-1.5	100	0.000
67	T	2-Chlorotoluene	1.000	1.033	-3.3	100	0.000
68	T	1,2,3-Trichloropropane	1.000	1.007	-0.7	100	0.000
69	T	1,2,4-Trimethylbenzene	1.000	1.019	-1.9	100	0.000
70	T	4-Chlorotoluene	1.000	1.015	-1.5	100	0.000
71	T	tert-Butylbenzene	1.000	1.001	-0.1	100	0.000
72	T	sec-Butylbenzene	1.000	1.020	-2.0	100	0.000
73	T	p-Isopropyltoluene	1.000	1.007	-0.7	100	0.000
74	T	1,3-Dichlorobenzene	1.000	0.991	0.9	100	0.000
75	T	1,4-Dichlorobenzene	1.000	0.975	2.5	100	0.000
76	T	n-Butylbenzene	1.000	0.964	3.6	100	0.000
77	T	1,2-Dichlorobenzene	1.000	1.015	-1.5	100	0.000
78	T	1,2-Dibromo-3-Chloropropane	1.000	0.938	6.2	100	0.000
79	Y	Hexachlorobutadiene	1.000	0.975	2.5	100	0.000
80	T	1,2,4-Trichlorobenzene	1.000	0.978	2.2	100	0.000
81	T	Naphthalene	1.000	1.047	-4.7	100	0.000
82	T	1,2,3-Trichlorobenzene	1.000	1.005	-0.5	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011180.D
Acq On : 16 Apr 2015 11:56
Operator : ADC
Sample : WG519118-06 2.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 16 14:07:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:06:31 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.173	96	275833	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.993	117	195246	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	101165	25.00000	ug/L	0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	0.000	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.000%#	
32) 1,2-Dichloroethane-d4	0.000	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.000%#	
44) Toluene-d8	6.739	98	453	0.0432	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.173%#	
63) p-Bromofluorobenzene	8.740	95	119	0.0328	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.131%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.044	85	5856	1.7637	ug/L	99
3) Chloromethane	1.154	50	5215	1.7945	ug/L	100
4) Vinyl Chloride	1.203	62	6140	1.9031	ug/L	98
5) 1,3-Butadiene	1.215	54	4616	1.8519	ug/L	95
6) Bromomethane	1.392	94	3503	1.8195	ug/L	98
7) Chloroethane	1.470	64	3324	1.9669	ug/L	95
8) Trichlorofluoromethane	1.554	101	8196	1.9716	ug/L	100
9) Diethyl ether	1.757	59	3600	1.9418	ug/L	98
10) 1,1-Dichloroethene	1.884	61	7444	1.9070	ug/L	99
11) Carbon Disulfide	1.898	76	14722	1.8219	ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.916	101	5012	1.9047	ug/L	99
13) Acrolein	2.130	56	515	2.0997	ug/L	78
14) Methylene Chloride	2.309	84	6092	2.0408	ug/L	99
15) Acetone	2.365	43	1515	2.0732	ug/L #	55
16) trans-1,2-Dichloroethene	2.443	96	5010	1.9292	ug/L	98
17) Methyl Tert Butyl Ether	2.547	73	12926	1.9662	ug/L	97
18) 1,1-Dichloroethane	3.004	63	9231	1.9332	ug/L	100
19) Acrylonitrile	3.057	53	1175	1.8550	ug/L	95
21) cis-1,2-Dichloroethene	3.601	96	5720	1.9443	ug/L	98
22) 2,2-Dichloropropane	3.728	77	7620	1.9030	ug/L	86
23) Cyclohexane	3.830	56	8796	1.9203	ug/L	94
24) Bromochloromethane	3.847	130	3512	1.8815	ug/L	100
25) Chloroform	3.971	83	9029	1.9844	ug/L	98
26) Carbon Tetrachloride	4.119	117	5951	1.8002	ug/L	99
28) 1,1,1-Trichloroethane	4.215	97	8486	1.9439	ug/L	99
29) 1,1-Dichloropropene	4.383	75	6896	1.9146	ug/L	95
30) 2-Butanone	4.403	43	1838	2.3429	ug/L #	64
31) Benzene	4.681	78	21057	1.9500	ug/L	100
33) 1,2-Dichloroethane	4.927	62	6503	1.9846	ug/L	97
34) Trichloroethene	5.350	130	6121	1.9877	ug/L	99
35) Dibromomethane	5.769	93	2944	1.9409	ug/L	100
36) 1,2-Dichloropropane	5.879	63	5702	1.9823	ug/L	97
37) Bromodichloromethane	5.963	83	6944	1.9089	ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.554	63	2581	1.8248	ug/L	98
40) cis-1,3-Dichloropropene	6.569	75	8314	1.9223	ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	1318	1.8847	ug/L	99
42) trans-1,3-Dichloropropene	7.165	75	7057	1.8669	ug/L	99
45) Toluene	6.780	91	23762	1.9812	ug/L	98
46) Tetrachloroethene	7.110	166	6359	1.9071	ug/L	98
47) 1,1,2-Trichloroethane	7.298	97	4372	2.0172	ug/L	99
48) Dibromochloromethane	7.437	129	5493	1.9194	ug/L	98
49) 1,3-Dichloropropane	7.518	76	6944	2.0211	ug/L	95
50) 1,2-Dibromoethane	7.608	107	4384	1.9884	ug/L	99
51) 2-Hexanone	7.831	43	2699	2.0799	ug/L	95

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011180.D
Acq On : 16 Apr 2015 11:56
Operator : ADC
Sample : WG519118-06 2.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 16 14:07:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:06:31 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52) Chlorobenzene	8.002	112	15298	1.9487 ug/L	83
53) 1-Chlorohexane	8.016	69	1388	1.9009 ug/L #	80
54) Ethylbenzene	8.039	106	8243	1.9500 ug/L	99
55) 1,1,1,2-Tetrachloroethane	8.054	131	5613	1.9427 ug/L	94
56) m-,p-Xylene	8.138	106	19985	3.9133 ug/L	99
57) o-Xylene	8.401	106	9867	1.9442 ug/L	99
58) Styrene	8.433	104	15846	1.8998 ug/L	98
59) Bromoform	8.436	173	3726	1.8876 ug/L	97
60) Isopropylbenzene	8.589	105	25782	1.9374 ug/L	100
62) 1,3,5-Trimethylbenzene	8.925	105	22431	1.9720 ug/L	99
64) Bromobenzene	8.789	156	7062	1.9903 ug/L	98
65) n-Propylbenzene	8.818	91	28661	1.9573 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.859	83	5189	2.1665 ug/L	100
67) 2-Chlorotoluene	8.894	91	17933	1.9854 ug/L	99
68) 1,2,3-Trichloropropane	8.922	110	1357	2.0547 ug/L	99
69) 1,2,4-Trimethylbenzene	9.125	105	22458	1.9781 ug/L	99
70) 4-Chlorotoluene	8.980	91	17884	1.9544 ug/L	99
71) tert-Butylbenzene	9.088	134	4073	1.9659 ug/L	97
72) sec-Butylbenzene	9.177	105	27309	1.9602 ug/L	99
73) p-Isopropyltoluene	9.250	119	23633	1.9446 ug/L	99
74) 1,3-Dichlorobenzene	9.279	146	12615	1.9199 ug/L	99
75) 1,4-Dichlorobenzene	9.325	146	12539	2.1025 ug/L #	100
76) n-Butylbenzene	9.455	91	19627	1.8395 ug/L	99
77) 1,2-Dichlorobenzene	9.528	146	12151	1.9268 ug/L	98
78) 1,2-Dibromo-3-Chloropr...	9.904	75	901	2.4603 ug/L #	100
79) Hexachlorobutadiene	10.199	225	5376	2.0873 ug/L #	100
80) 1,2,4-Trichlorobenzene	10.214	180	9558	1.9421 ug/L	89
81) Naphthalene	10.364	128	19527	2.2292 ug/L #	100
82) 1,2,3-Trichlorobenzene	10.448	180	9515	2.1785 ug/L #	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011180.D
Acq On : 16 Apr 2015 11:56
Operator : ADC
Sample : WG519118-06 2.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 16 14:07:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:06:31 2015
Response via : Initial Calibration

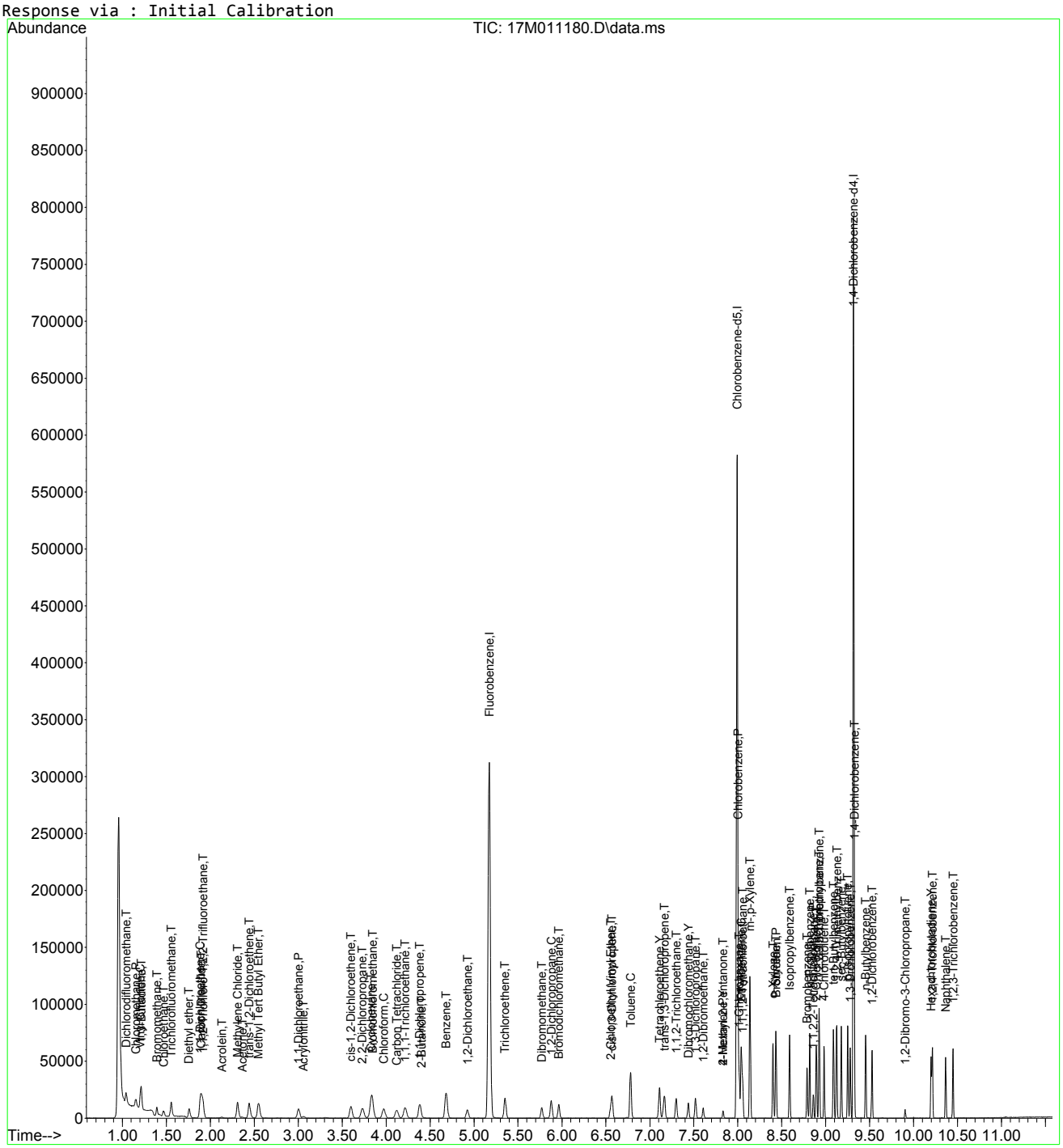

8260VMS.M Tue Apr 21 10:14:09 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011180.D
Acq On : 16 Apr 2015 11:56
Operator : ADC
Sample : WG519118-06 2.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 16 14:07:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:06:31 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	2.000	1.764	11.8	100	0.000
3	P	Chloromethane	2.000	1.795	10.3	100	0.000
4	C	Vinyl Chloride	2.000	1.903	4.8#	100	0.000
5	T	1,3-Butadiene	2.000	1.852	7.4	100	0.000
6	T	Bromomethane	2.000	1.819	9.1	100	0.000
7	T	Chloroethane	2.000	1.967	1.6	100	0.000
8	T	Trichlorofluoromethane	2.000	1.972	1.4	100	0.000
9	T	Diethyl ether	2.000	1.942	2.9	100	0.000
10	C	1,1-Dichloroethene	2.000	1.907	4.6#	100	0.000
11	T	Carbon Disulfide	2.000	1.822	8.9	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.000	1.905	4.7	100	0.000
13	T	Acrolein	2.000	2.100	-5.0	100	0.000
14	T	Methylene Chloride	2.000	2.041	-2.0	100	0.000
15	T	Acetone	-1.000	2.073	0.0	0	0.000
16	T	trans-1,2-Dichloroethene	2.000	1.929	3.5	100	0.000
17	T	Methyl Tert Butyl Ether	2.000	1.966	1.7	100	0.000
18	P	1,1-Dichloroethane	2.000	1.933	3.3	100	0.000
19	T	Acrylonitrile	2.000	1.855	7.3	100	0.000
20	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.308#
21	T	cis-1,2-Dichloroethene	2.000	1.944	2.8	100	0.000
22	T	2,2-Dichloropropane	2.000	1.903	4.8	100	0.000
23	T	Cyclohexane	2.000	1.920	4.0	100	0.000
24	T	Bromochloromethane	2.000	1.881	5.9	100	0.000
25	C	Chloroform	2.000	1.984	0.8#	100	0.000
26	T	Carbon Tetrachloride	2.000	1.800	10.0	100	0.000
27	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.212#
28	T	1,1,1-Trichloroethane	2.000	1.944	2.8	100	0.000
29	T	1,1-Dichloropropene	2.000	1.915	4.2	100	0.000
30	T	2-Butanone	-1.000	2.343	0.0	0	0.000
31	T	Benzene	2.000	1.950	2.5	100	0.000
32	S	1,2-Dichloroethane-d4	-1.000	0.000	0.0	0	-4.846#
33	T	1,2-Dichloroethane	2.000	1.985	0.7	100	0.000
34	T	Trichloroethene	2.000	1.988	0.6	100	0.000
35	T	Dibromomethane	2.000	1.941	2.9	100	0.000
36	C	1,2-Dichloropropane	2.000	1.982	0.9#	100	0.000
37	T	Bromodichloromethane	2.000	1.909	4.5	100	0.000
38	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.172#
39	T	2-Chloroethyl Vinyl Ether	2.000	1.825	8.8	100	0.000
40	T	cis-1,3-Dichloropropene	2.000	1.922	3.9	100	0.000
41	T	4-Methyl-2-Pentanone	2.000	1.885	5.8	100	0.000
42	T	trans-1,3-Dichloropropene	2.000	1.867	6.7	100	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
44	S	Toluene-d8	-1.000	0.043	0.0	0	0.000
45	C	Toluene	2.000	1.981	0.9#	100	0.000
46	Y	Tetrachloroethene	2.000	1.907	4.6	100	0.000
47	T	1,1,2-Trichloroethane	2.000	2.017	-0.8	100	0.000
48	Y	Dibromochloromethane	2.000	1.919	4.0	100	0.000
49	T	1,3-Dichloropropane	2.000	2.021	-1.0	100	0.000
50	T	1,2-Dibromoethane	2.000	1.988	0.6	100	0.000
51	Y	2-Hexanone	2.000	2.080	-4.0	100	0.000
52	P	Chlorobenzene	2.000	1.949	2.5	100	0.000
53	T	1-Chlorohexane	2.000	1.901	4.9	100	0.000
54	C	Ethylbenzene	2.000	1.950	2.5#	100	0.000
55	T	1,1,1,2-Tetrachloroethane	2.000	1.943	2.8	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011180.D
Acq On : 16 Apr 2015 11:56
Operator : ADC
Sample : WG519118-06 2.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 16 14:07:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:06:31 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	4.000	3.913	2.2	100	0.000
57	T	o-Xylene	2.000	1.944	2.8	100	0.000
58	T	Styrene	2.000	1.900	5.0	100	0.000
59	P	Bromoform	2.000	1.888	5.6	100	0.000
60	T	Isopropylbenzene	2.000	1.937	3.1	100	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
62	T	1,3,5-Trimethylbenzene	2.000	1.972	1.4	100	0.000
63	S	p-Bromofluorobenzene	-1.000	0.033	0.0	0	0.000
64	T	Bromobenzene	2.000	1.990	0.5	100	0.000
65	T	n-Propylbenzene	2.000	1.957	2.1	100	0.000
66	P	1,1,2,2-Tetrachloroethane	2.000	2.167	-8.3	100	0.000
67	T	2-Chlorotoluene	2.000	1.985	0.7	100	0.000
68	T	1,2,3-Trichloropropane	2.000	2.055	-2.8	100	0.000
69	T	1,2,4-Trimethylbenzene	2.000	1.978	1.1	100	0.000
70	T	4-Chlorotoluene	2.000	1.954	2.3	100	0.000
71	T	tert-Butylbenzene	2.000	1.966	1.7	100	0.000
72	T	sec-Butylbenzene	2.000	1.960	2.0	100	0.000
73	T	p-Isopropyltoluene	2.000	1.945	2.7	100	0.000
74	T	1,3-Dichlorobenzene	2.000	1.920	4.0	100	0.000
75	T	1,4-Dichlorobenzene	2.000	2.103	-5.2	100	0.000
76	T	n-Butylbenzene	2.000	1.839	8.1	100	0.000
77	T	1,2-Dichlorobenzene	2.000	1.927	3.6	100	0.000
78	T	1,2-Dibromo-3-Chloropropane	2.000	2.460	-23.0	100	0.000
79	Y	Hexachlorobutadiene	2.000	2.087	-4.4	100	0.000
80	T	1,2,4-Trichlorobenzene	2.000	1.942	2.9	100	0.000
81	T	Naphthalene	2.000	2.229	-11.5	100	0.000
82	T	1,2,3-Trichlorobenzene	2.000	2.178	-8.9	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011181.D
Acq On : 16 Apr 2015 12:16
Operator : ADC
Sample : WG519118-07 5.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 21 10:15:00 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:12:03 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.173	96	273964	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.993	117	196215	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	101419	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.212	111	13602	5.1627 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 20.651%#		
32) 1,2-Dichloroethane-d4	4.843	65	13875	5.3102 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 21.241%#		
44) Toluene-d8	6.736	98	55439	5.2545 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 21.018%#		
63) p-Bromofluorobenzene	8.737	95	18827	5.1792 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 20.717%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	14554	4.4123 ug/L	100
3) Chloromethane	1.151	50	13333	4.6190 ug/L	99
4) Vinyl Chloride	1.203	62	15074	4.7040 ug/L	99
5) 1,3-Butadiene	1.215	54	11317	4.5708 ug/L	97
6) Bromomethane	1.389	94	8853	4.6293 ug/L	100
7) Chloroethane	1.464	64	8370	4.9861 ug/L	95
8) Trichlorofluoromethane	1.554	101	20439	4.9506 ug/L	99
9) Diethyl ether	1.759	59	8891	4.8281 ug/L	99
10) 1,1-Dichloroethene	1.884	61	18860	4.8643 ug/L	98
11) Carbon Disulfide	1.898	76	36030	4.4891 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.916	101	12699	4.8584 ug/L	99
13) Acrolein	2.127	56	1261	5.1723 ug/L	81
14) Methylene Chloride	2.309	84	13901	4.6882 ug/L	99
15) Acetone	2.359	43	2821	5.2142 ug/L	83
16) trans-1,2-Dichloroethene	2.440	96	12517	4.8530 ug/L	99
17) Methyl Tert Butyl Ether	2.547	73	32631	4.9972 ug/L	100
18) 1,1-Dichloroethane	2.999	63	23424	4.9387 ug/L	99
19) Acrylonitrile	3.062	53	3153	5.0176 ug/L	96
21) cis-1,2-Dichloroethene	3.598	96	14223	4.8672 ug/L	98
22) 2,2-Dichloropropane	3.728	77	18924	4.7580 ug/L	93
23) Cyclohexane	3.830	56	21722	4.7743 ug/L	98
24) Bromochloromethane	3.841	130	8903	4.8018 ug/L	100
25) Chloroform	3.969	83	23142	5.1199 ug/L	99
26) Carbon Tetrachloride	4.122	117	16982	4.5134 ug/L	99
28) 1,1,1-Trichloroethane	4.218	97	21316	4.9160 ug/L	100
29) 1,1-Dichloropropene	4.385	75	17236	4.8177 ug/L	97
30) 2-Butanone	4.400	43	4145	5.3206 ug/L #	82
31) Benzene	4.681	78	52423	4.8881 ug/L	100
33) 1,2-Dichloroethane	4.921	62	16522	5.0763 ug/L	98
34) Trichloroethene	5.350	130	14922	4.8784 ug/L	100
35) Dibromomethane	5.772	93	7598	5.0435 ug/L	99
36) 1,2-Dichloropropane	5.877	63	14245	4.9856 ug/L	98
37) Bromodichloromethane	5.963	83	17640	4.8820 ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.554	63	6851	4.8764 ug/L	98
40) cis-1,3-Dichloropropene	6.569	75	20440	4.7578 ug/L	100
41) 4-Methyl-2-Pentanone	7.834	58	3249	4.6769 ug/L	97
42) trans-1,3-Dichloropropene	7.168	75	17936	4.7769 ug/L	99
45) Toluene	6.783	91	58910	4.8867 ug/L	100
46) Tetrachloroethene	7.110	166	15988	4.7705 ug/L	99
47) 1,1,2-Trichloroethane	7.298	97	10903	5.0048 ug/L	99
48) Dibromochloromethane	7.437	129	13910	4.8357 ug/L	100
49) 1,3-Dichloropropane	7.521	76	17365	5.0285 ug/L	97
50) 1,2-Dibromoethane	7.605	107	10882	4.9104 ug/L	100
51) 2-Hexanone	7.831	43	6438	4.9365 ug/L	97

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011181.D
Acq On : 16 Apr 2015 12:16
Operator : ADC
Sample : WG519118-07 5.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 21 10:15:00 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:12:03 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52) Chlorobenzene	8.002	112	38078	4.8258 ug/L	94
53) 1-Chlorohexane	8.016	69	3402	4.6354 ug/L	81
54) Ethylbenzene	8.039	106	20503	4.8263 ug/L	99
55) 1,1,1,2-Tetrachloroethane	8.054	131	14322	4.9318 ug/L	99
56) m-,p-Xylene	8.138	106	49921	9.7249 ug/L	99
57) o-Xylene	8.401	106	24924	4.8859 ug/L	98
58) Styrene	8.433	104	39999	4.7710 ug/L	99
59) Bromoform	8.436	173	9181	4.6275 ug/L	98
60) Isopropylbenzene	8.589	105	65305	4.8820 ug/L	100
62) 1,3,5-Trimethylbenzene	8.925	105	56452	4.9500 ug/L	100
64) Bromobenzene	8.789	156	17130	4.8157 ug/L	97
65) n-Propylbenzene	8.818	91	72934	4.9680 ug/L	99
66) 1,1,2,2-Tetrachloroethane	8.859	83	12767	5.0602 ug/L	99
67) 2-Chlorotoluene	8.893	91	45159	4.9887 ug/L	99
68) 1,2,3-Trichloropropane	8.922	110	3429	5.1773 ug/L	98
69) 1,2,4-Trimethylbenzene	9.122	105	56634	4.9754 ug/L	100
70) 4-Chlorotoluene	8.980	91	44652	4.8649 ug/L	99
71) tert-Butylbenzene	9.087	134	10298	4.9576 ug/L	97
72) sec-Butylbenzene	9.177	105	69720	4.9910 ug/L	99
73) p-Isopropyltoluene	9.252	119	59883	4.9143 ug/L	99
74) 1,3-Dichlorobenzene	9.279	146	31697	4.7954 ug/L	98
75) 1,4-Dichlorobenzene	9.325	146	31126	4.6092 ug/L #	100
76) n-Butylbenzene	9.455	91	50382	4.7099 ug/L	100
77) 1,2-Dichlorobenzene	9.528	146	31025	4.9073 ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.904	75	2368	5.0739 ug/L #	100
79) Hexachlorobutadiene	10.199	225	13819	4.6682 ug/L #	100
80) 1,2,4-Trichlorobenzene	10.214	180	24054	4.6355 ug/L	90
81) Naphthalene	10.364	128	49135	5.0714 ug/L #	100
82) 1,2,3-Trichlorobenzene	10.448	180	23895	4.9019 ug/L #	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011181.D
Acq On : 16 Apr 2015 12:16
Operator : ADC
Sample : WG519118-07 5.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 21 10:15:00 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:12:03 2015
Response via : Initial Calibration

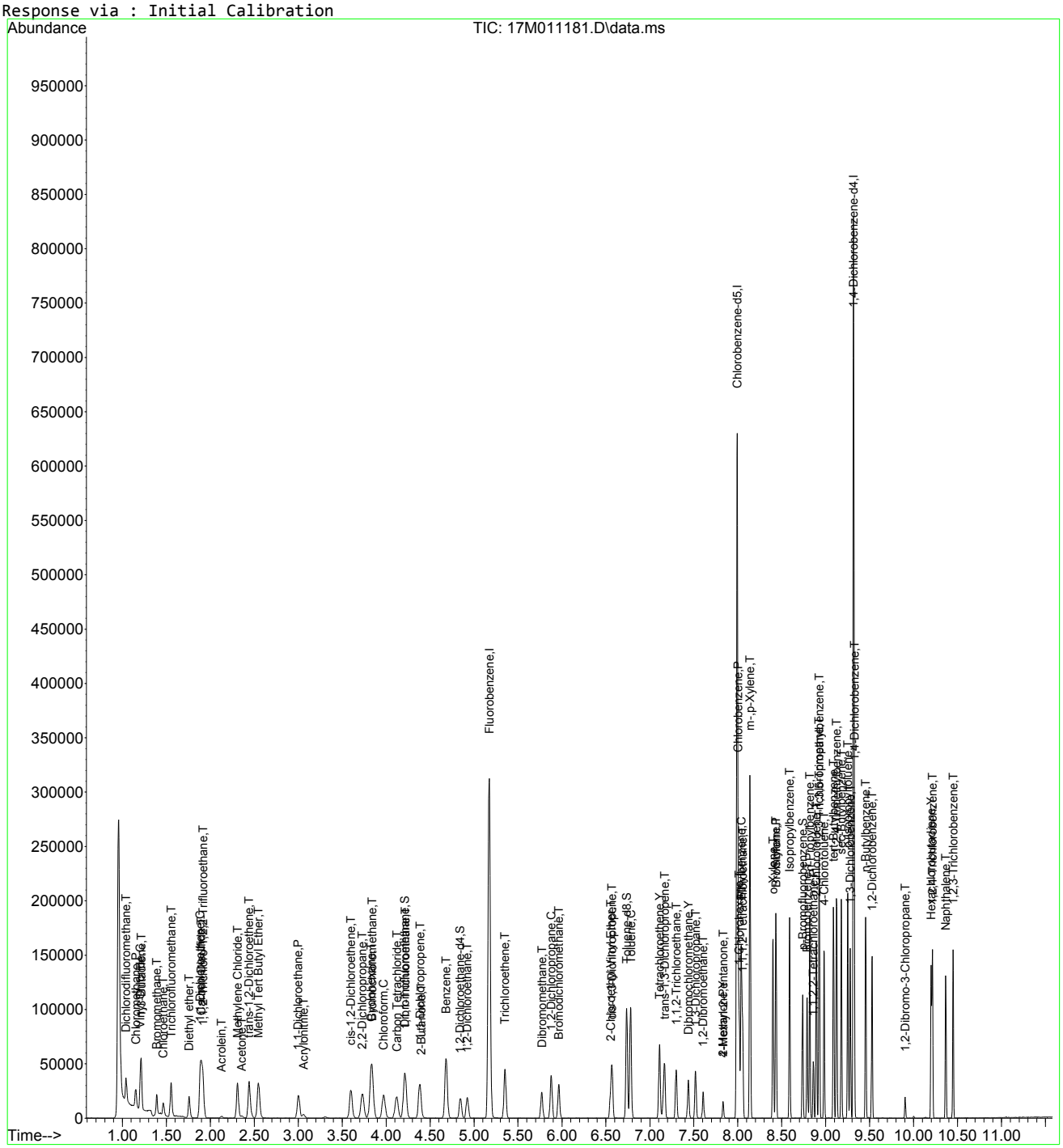

8260VMS.M Tue Apr 21 10:15:01 2015 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011181.D
Acq On : 16 Apr 2015 12:16
Operator : ADC
Sample : WG519118-07 5.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 16 14:07:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:06:31 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	5.000	4.413	11.7	100	0.000
3	P	Chloromethane	5.000	4.619	7.6	100	0.000
4	C	Vinyl Chloride	5.000	4.704	5.9#	100	0.000
5	T	1,3-Butadiene	5.000	4.571	8.6	100	0.000
6	T	Bromomethane	5.000	4.630	7.4	100	0.000
7	T	Chloroethane	5.000	4.986	0.3	100	0.000
8	T	Trichlorofluoromethane	5.000	4.950	1.0	100	0.000
9	T	Diethyl ether	5.000	4.828	3.4	100	0.000
10	C	1,1-Dichloroethene	5.000	4.864	2.7#	100	0.000
11	T	Carbon Disulfide	5.000	4.489	10.2	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.000	4.859	2.8	100	0.000
13	T	Acrolein	5.000	5.176	-3.5	100	0.000
14	T	Methylene Chloride	5.000	4.688	6.2	100	0.000
15	T	Acetone	5.000	5.223	-4.5	100	0.000
16	T	trans-1,2-Dichloroethene	5.000	4.853	2.9	100	0.000
17	T	Methyl Tert Butyl Ether	5.000	4.998	0.0	100	0.000
18	P	1,1-Dichloroethane	5.000	4.939	1.2	100	0.000
19	T	Acrylonitrile	5.000	5.012	-0.2	100	0.000
20	T	Vinyl Acetate	5.000	0.000	100.0#	0	-3.308#
21	T	cis-1,2-Dichloroethene	5.000	4.867	2.7	100	0.000
22	T	2,2-Dichloropropane	5.000	4.758	4.8	100	0.000
23	T	Cyclohexane	5.000	4.775	4.5	100	0.000
24	T	Bromochloromethane	5.000	4.802	4.0	100	0.000
25	C	Chloroform	5.000	5.121	-2.4#	100	0.000
26	T	Carbon Tetrachloride	5.000	4.514	9.7	100	0.000
27	S	Dibromofluoromethane	5.000	5.163	-3.3	100	0.000
28	T	1,1,1-Trichloroethane	5.000	4.916	1.7	100	0.000
29	T	1,1-Dichloropropene	5.000	4.818	3.6	100	0.000
30	T	2-Butanone	5.000	5.320	-6.4	100	0.000
31	T	Benzene	5.000	4.888	2.2	100	0.000
32	S	1,2-Dichloroethane-d4	5.000	5.311	-6.2	100	0.000
33	T	1,2-Dichloroethane	5.000	5.077	-1.5	100	0.000
34	T	Trichloroethene	5.000	4.879	2.4	100	0.000
35	T	Dibromomethane	5.000	5.043	-0.9	100	0.000
36	C	1,2-Dichloropropane	5.000	4.986	0.3#	100	0.000
37	T	Bromodichloromethane	5.000	4.882	2.4	100	0.000
38	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.172#
39	T	2-Chloroethyl Vinyl Ether	5.000	4.877	2.5	100	0.000
40	T	cis-1,3-Dichloropropene	5.000	4.758	4.8	100	0.000
41	T	4-Methyl-2-Pentanone	5.000	4.678	6.4	100	0.000
42	T	trans-1,3-Dichloropropene	5.000	4.777	4.5	100	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
44	S	Toluene-d8	5.000	5.256	-5.1	100	0.000
45	C	Toluene	5.000	4.888	2.2#	100	0.000
46	Y	Tetrachloroethene	5.000	4.771	4.6	100	0.000
47	T	1,1,2-Trichloroethane	5.000	5.006	-0.1	100	0.000
48	Y	Dibromochloromethane	5.000	4.836	3.3	100	0.000
49	T	1,3-Dichloropropane	5.000	5.029	-0.6	100	0.000
50	T	1,2-Dibromoethane	5.000	4.911	1.8	100	0.000
51	Y	2-Hexanone	5.000	4.937	1.3	100	0.000
52	P	Chlorobenzene	5.000	4.826	3.5	100	0.000
53	T	1-Chlorohexane	5.000	4.636	7.3	100	0.000
54	C	Ethylbenzene	5.000	4.826	3.5#	100	0.000
55	T	1,1,1,2-Tetrachloroethane	5.000	4.933	1.3	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011181.D
Acq On : 16 Apr 2015 12:16
Operator : ADC
Sample : WG519118-07 5.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 16 14:07:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Thu Apr 16 14:06:31 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	10.000	9.727	2.7	100	0.000
57	T	o-Xylene	5.000	4.887	2.3	100	0.000
58	T	Styrene	5.000	4.772	4.6	100	0.000
59	P	Bromoform	5.000	4.628	7.4	100	0.000
60	T	Isopropylbenzene	5.000	4.883	2.3	100	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
62	T	1,3,5-Trimethylbenzene	5.000	4.950	1.0	100	0.000
63	S	p-Bromofluorobenzene	5.000	5.179	-3.6	100	0.000
64	T	Bromobenzene	5.000	4.816	3.7	100	0.000
65	T	n-Propylbenzene	5.000	4.968	0.6	100	0.000
66	P	1,1,2,2-Tetrachloroethane	5.000	5.317	-6.3	100	0.000
67	T	2-Chlorotoluene	5.000	4.987	0.3	100	0.000
68	T	1,2,3-Trichloropropane	5.000	5.179	-3.6	100	0.000
69	T	1,2,4-Trimethylbenzene	5.000	4.976	0.5	100	0.000
70	T	4-Chlorotoluene	5.000	4.867	2.7	100	0.000
71	T	tert-Butylbenzene	5.000	4.958	0.8	100	0.000
72	T	sec-Butylbenzene	5.000	4.992	0.2	100	0.000
73	T	p-Isopropyltoluene	5.000	4.915	1.7	100	0.000
74	T	1,3-Dichlorobenzene	5.000	4.812	3.8	100	0.000
75	T	1,4-Dichlorobenzene	5.000	5.206	-4.1	100	0.000
76	T	n-Butylbenzene	5.000	4.710	5.8	100	0.000
77	T	1,2-Dichlorobenzene	5.000	4.907	1.9	100	0.000
78	T	1,2-Dibromo-3-Chloropropane	5.000	6.450	-29.0#	100	0.000
79	Y	Hexachlorobutadiene	5.000	5.352	-7.0	100	0.000
80	T	1,2,4-Trichlorobenzene	5.000	4.875	2.5	100	0.000
81	T	Naphthalene	5.000	5.595	-11.9	100	0.000
82	T	1,2,3-Trichlorobenzene	5.000	5.457	-9.1	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011182.D
Acq On : 16 Apr 2015 12:36
Operator : ADC
Sample : WG519118-08 20.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 21 10:51:41 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.173	96	261623	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.993	117	187551	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	98491	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.212	111	24257	9.6411 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 38.564%#		
32) 1,2-Dichloroethane-d4	4.849	65	24216	9.7051 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 38.820%#		
44) Toluene-d8	6.736	98	96103	9.5294 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 38.118%#		
63) p-Bromofluorobenzene	8.737	95	33639	9.5291 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 38.116%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	67262	21.3533 ug/L	99
3) Chloromethane	1.151	50	55227	20.0351 ug/L	99
4) Vinyl Chloride	1.203	62	62334	20.3694 ug/L	100
5) 1,3-Butadiene	1.215	54	48769	20.6262 ug/L	98
6) Bromomethane	1.392	94	36528	20.0017 ug/L	100
7) Chloroethane	1.464	64	33484	20.8879 ug/L	98
8) Trichlorofluoromethane	1.554	101	82947	21.0384 ug/L	100
9) Diethyl ether	1.759	59	36965	21.0202 ug/L	99
10) 1,1-Dichloroethene	1.884	61	74958	20.2448 ug/L	98
11) Carbon Disulfide	1.898	76	154204	20.1189 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.916	101	50558	20.2548 ug/L	100
13) Acrolein	2.124	56	5335	22.9149 ug/L	96
14) Methylene Chloride	2.309	84	51641	18.2378 ug/L	99
15) Acetone	2.359	43	10027	23.6093 ug/L	92
16) trans-1,2-Dichloroethene	2.443	96	48745	19.7907 ug/L	99
17) Methyl Tert Butyl Ether	2.547	73	128746	20.6465 ug/L	99
18) 1,1-Dichloroethane	3.001	63	91515	20.2053 ug/L	100
19) Acrylonitrile	3.062	53	12926	21.5403 ug/L	99
20) Vinyl Acetate	3.308	86	919	15.9691 ug/L	73
21) cis-1,2-Dichloroethene	3.601	96	55245	19.7969 ug/L	99
22) 2,2-Dichloropropane	3.728	77	77148	20.3122 ug/L	97
23) Cyclohexane	3.832	56	88348	20.3343 ug/L	99
24) Bromochloromethane	3.838	130	35853	20.2495 ug/L	99
25) Chloroform	3.974	83	91802	21.2683 ug/L	100
26) Carbon Tetrachloride	4.116	117	73374	19.1818 ug/L	99
28) 1,1,1-Trichloroethane	4.218	97	83491	20.1634 ug/L	99
29) 1,1-Dichloropropene	4.380	75	68855	20.1536 ug/L	98
30) 2-Butanone	4.397	43	16696	22.4423 ug/L	89
31) Benzene	4.681	78	203944	19.9133 ug/L	100
33) 1,2-Dichloroethane	4.921	62	63154	20.3191 ug/L	99
34) Trichloroethene	5.352	130	57752	19.7712 ug/L	99
35) Dibromomethane	5.769	93	30165	20.9677 ug/L	99
36) 1,2-Dichloropropane	5.877	63	54933	20.1330 ug/L	100
37) Bromodichloromethane	5.963	83	70066	20.3061 ug/L	99
38) 1,4-Dioxane	6.175	88	737	40.6202 ug/L	95
39) 2-Chloroethyl Vinyl Ether	6.551	63	28925	21.5596 ug/L	100
40) cis-1,3-Dichloropropene	6.569	75	82433	20.0931 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	15273	23.0225 ug/L	100
42) trans-1,3-Dichloropropene	7.168	75	72215	20.1405 ug/L	99
45) Toluene	6.780	91	231571	20.0968 ug/L	100
46) Tetrachloroethene	7.110	166	63736	19.8959 ug/L	99
47) 1,1,2-Trichloroethane	7.298	97	42219	20.2751 ug/L	99
48) Dibromochloromethane	7.437	129	56127	20.4133 ug/L	100
49) 1,3-Dichloropropane	7.518	76	67328	20.3971 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011182.D
Acq On : 16 Apr 2015 12:36
Operator : ADC
Sample : WG519118-08 20.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 21 10:51:41 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.605	107	42457	20.0433 ug/L	100
51) 2-Hexanone	7.831	43	29364	23.5558 ug/L	99
52) Chlorobenzene	8.002	112	148745	19.7219 ug/L	99
53) 1-Chlorohexane	8.016	69	14128	20.1394 ug/L	93
54) Ethylbenzene	8.039	106	81391	20.0441 ug/L	100
55) 1,1,1,2-Tetrachloroethane	8.054	131	56165	20.2339 ug/L	100
56) m-,p-Xylene	8.138	106	198138	40.3814 ug/L	99
57) o-Xylene	8.401	106	97629	20.0226 ug/L	99
58) Styrene	8.433	104	159572	19.9127 ug/L	99
59) Bromoform	8.436	173	38130	20.1066 ug/L	100
60) Isopropylbenzene	8.589	105	257472	20.1372 ug/L	100
62) 1,3,5-Trimethylbenzene	8.925	105	225536	20.3641 ug/L	100
64) Bromobenzene	8.789	156	68722	19.8939 ug/L	99
65) n-Propylbenzene	8.818	91	293729	20.6026 ug/L	99
66) 1,1,2,2-Tetrachloroethane	8.859	83	50807	20.7359 ug/L	99
67) 2-Chlorotoluene	8.893	91	176944	20.1282 ug/L	100
68) 1,2,3-Trichloropropane	8.922	110	13361	20.7728 ug/L	99
69) 1,2,4-Trimethylbenzene	9.125	105	226116	20.4553 ug/L	99
70) 4-Chlorotoluene	8.983	91	177784	19.9456 ug/L	100
71) tert-Butylbenzene	9.087	134	41204	20.4261 ug/L	100
72) sec-Butylbenzene	9.177	105	280954	20.7104 ug/L	100
73) p-Isopropyltoluene	9.252	119	244495	20.6609 ug/L	100
74) 1,3-Dichlorobenzene	9.279	146	127465	19.8575 ug/L	98
75) 1,4-Dichlorobenzene	9.325	146	125871	19.1932 ug/L #	100
76) n-Butylbenzene	9.455	91	212802	20.4850 ug/L	100
77) 1,2-Dichlorobenzene	9.528	146	122648	19.9762 ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.901	75	9633	21.2543 ug/L #	100
79) Hexachlorobutadiene	10.199	225	59825	20.8102 ug/L #	100
80) 1,2,4-Trichlorobenzene	10.214	180	102634	20.3667 ug/L	89
81) Naphthalene	10.364	128	202905	21.5650 ug/L #	100
82) 1,2,3-Trichlorobenzene	10.448	180	100803	21.2937 ug/L #	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011182.D
Acq On : 16 Apr 2015 12:36
Operator : ADC
Sample : WG519118-08 20.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 21 10:51:41 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

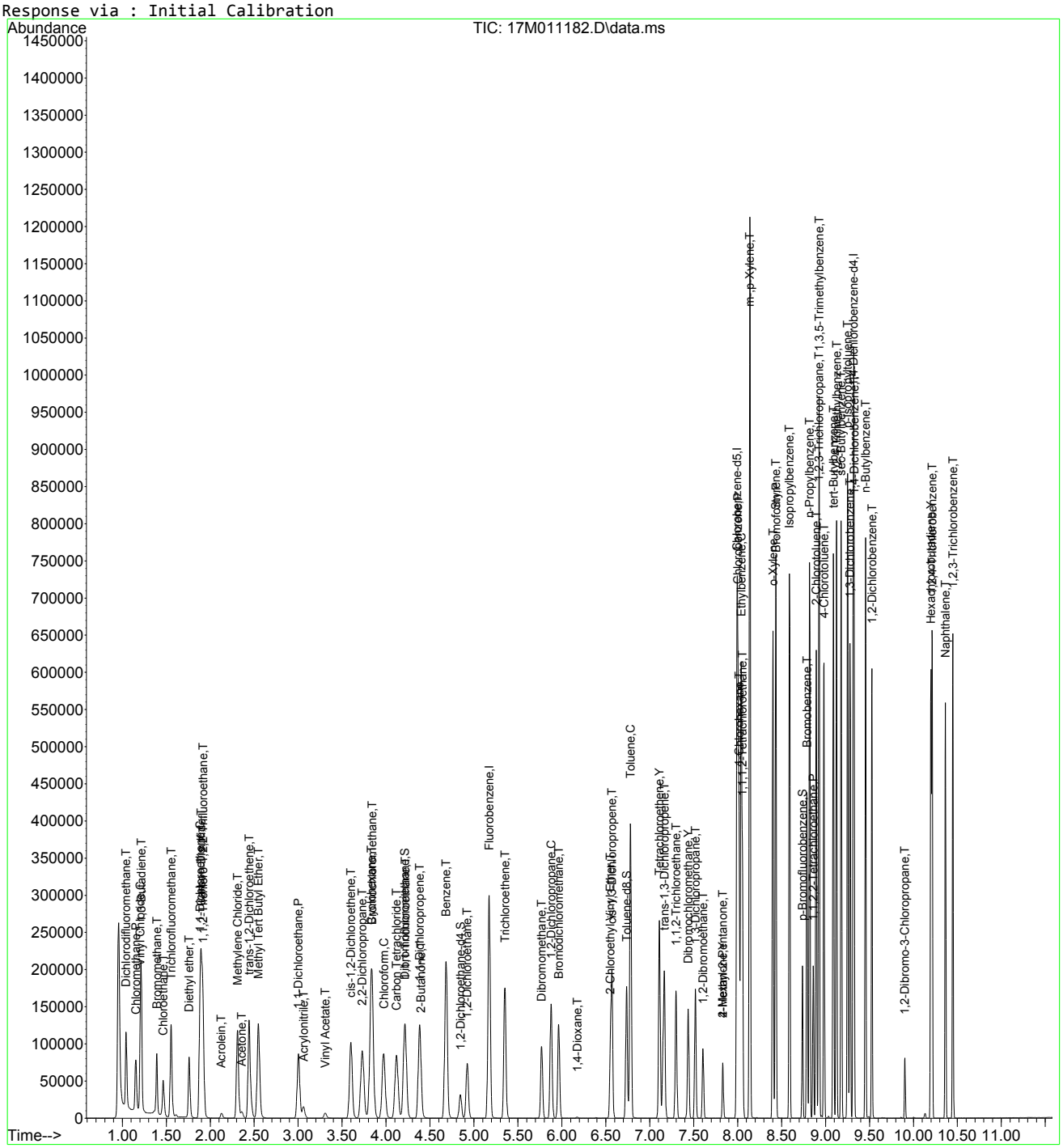

8260VMS.M Tue Apr 21 10:51:42 2015 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011183.D
Acq On : 16 Apr 2015 12:56
Operator : ADC
Sample : WG519118-09 100.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 21 10:51:44 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.173	96	265392	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.993	117	192875	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.319	152	111471	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.215	111	131074	51.3564 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 205.426%#		
32) 1,2-Dichloroethane-d4	4.846	65	129692	51.2387 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 204.955%#		
44) Toluene-d8	6.737	98	530151	51.1180 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 204.472%#		
63) p-Bromofluorobenzene	8.737	95	196433	49.1652 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 196.661%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	347968	108.8989 ug/L	99
3) Chloromethane	1.151	50	294105	105.1796 ug/L	100
4) Vinyl Chloride	1.201	62	330934	106.6060 ug/L	100
5) 1,3-Butadiene	1.212	54	253248	105.5868 ug/L	99
6) Bromomethane	1.389	94	199425	107.6486 ug/L	100
7) Chloroethane	1.461	64	171404	105.4061 ug/L	99
8) Trichlorofluoromethane	1.548	101	429374	107.3585 ug/L	100
9) Diethyl ether	1.759	59	186217	104.3889 ug/L	100
10) 1,1-Dichloroethene	1.881	61	393201	104.6885 ug/L	99
11) Carbon Disulfide	1.896	76	795937	102.3705 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.913	101	262878	103.8197 ug/L	100
13) Acrolein	2.130	56	22589	95.6463 ug/L	96
14) Methylene Chloride	2.310	84	269499	93.8259 ug/L	100
15) Acetone	2.359	43	39633	96.4645 ug/L	99
16) trans-1,2-Dichloroethene	2.440	96	256955	102.8431 ug/L	100
17) Methyl Tert Butyl Ether	2.547	73	662055	104.6632 ug/L	99
18) 1,1-Dichloroethane	3.002	63	481401	104.7776 ug/L	100
19) Acrylonitrile	3.059	53	64267	105.5756 ug/L	100
20) Vinyl Acetate	3.306	86	5924	101.4769 ug/L	96
21) cis-1,2-Dichloroethene	3.598	96	291032	102.8094 ug/L	100
22) 2,2-Dichloropropane	3.728	77	405390	105.2186 ug/L	99
23) Cyclohexane	3.832	56	448972	101.8683 ug/L	100
24) Bromochloromethane	3.841	130	189956	105.7622 ug/L	100
25) Chloroform	3.971	83	477204	108.9864 ug/L	100
26) Carbon Tetrachloride	4.119	117	397882	101.0113 ug/L	100
28) 1,1,1-Trichloroethane	4.215	97	439401	104.6099 ug/L	100
29) 1,1-Dichloropropene	4.380	75	361426	104.2858 ug/L	99
30) 2-Butanone	4.397	43	74458	98.6629 ug/L	95
31) Benzene	4.684	78	1068548	102.8523 ug/L	100
33) 1,2-Dichloroethane	4.924	62	328466	104.1794 ug/L	100
34) Trichloroethene	5.353	130	307053	103.6258 ug/L	99
35) Dibromomethane	5.769	93	160225	109.7907 ug/L	100
36) 1,2-Dichloropropane	5.880	63	288441	104.2128 ug/L	99
37) Bromodichloromethane	5.963	83	375127	107.1728 ug/L	100
38) 1,4-Dioxane	6.175	88	4052	220.1569 ug/L	91
39) 2-Chloroethyl Vinyl Ether	6.554	63	137961	101.3705 ug/L	100
40) cis-1,3-Dichloropropene	6.571	75	443788	106.6373 ug/L	100
41) 4-Methyl-2-Pentanone	7.834	58	66236	98.4260 ug/L	99
42) trans-1,3-Dichloropropene	7.168	75	386597	106.2891 ug/L	100
45) Toluene	6.783	91	1215361	102.5634 ug/L	100
46) Tetrachloroethene	7.113	166	337735	102.5176 ug/L	100
47) 1,1,2-Trichloroethane	7.301	97	220440	102.9411 ug/L	100
48) Dibromochloromethane	7.437	129	307049	108.5905 ug/L	100
49) 1,3-Dichloropropane	7.521	76	350121	103.1418 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011183.D
Acq On : 16 Apr 2015 12:56
Operator : ADC
Sample : WG519118-09 100.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 21 10:51:44 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.608	107	225391	103.4663 ug/L	100
51) 2-Hexanone	7.834	43	124468	97.0919 ug/L	99
52) Chlorobenzene	8.005	112	794013	102.3713 ug/L	100
53) 1-Chlorohexane	8.019	69	74688	103.5287 ug/L	95
54) Ethylbenzene	8.042	106	433959	103.9209 ug/L	98
55) 1,1,1,2-Tetrachloroethane	8.057	131	300523	105.2775 ug/L	100
56) m-,p-Xylene	8.144	106	1055396	209.1572 ug/L	99
57) o-Xylene	8.404	106	514404	102.5864 ug/L	99
58) Styrene	8.436	104	868184	105.3485 ug/L	100
59) Bromoform	8.436	173	212489	108.9561 ug/L	100
60) Isopropylbenzene	8.592	105	1369001	104.1156 ug/L	99
62) 1,3,5-Trimethylbenzene	8.928	105	1263252	100.7800 ug/L	99
64) Bromobenzene	8.789	156	377515	96.5589 ug/L	100
65) n-Propylbenzene	8.821	91	1600479	99.1884 ug/L	99
66) 1,1,2,2-Tetrachloroethane	8.862	83	272782	98.3671 ug/L	99
67) 2-Chlorotoluene	8.894	91	966032	97.0945 ug/L	100
68) 1,2,3-Trichloropropane	8.925	110	73695	101.2344 ug/L	98
69) 1,2,4-Trimethylbenzene	9.125	105	1278661	102.2031 ug/L	100
70) 4-Chlorotoluene	8.983	91	991986	98.3318 ug/L	100
71) tert-Butylbenzene	9.090	134	232201	101.7054 ug/L	99
72) sec-Butylbenzene	9.180	105	1572180	102.3978 ug/L	99
73) p-Isopropyltoluene	9.253	119	1391324	103.8823 ug/L	99
74) 1,3-Dichlorobenzene	9.282	146	740040	101.8645 ug/L	98
75) 1,4-Dichlorobenzene	9.325	146	736591	99.2392 ug/L #	100
76) n-Butylbenzene	9.455	91	1241961	105.6340 ug/L	99
77) 1,2-Dichlorobenzene	9.528	146	705744	101.5629 ug/L	99
78) 1,2-Dibromo-3-Chloropr...	9.904	75	54425	106.1006 ug/L #	100
79) Hexachlorobutadiene	10.199	225	306349	94.1553 ug/L #	100
80) 1,2,4-Trichlorobenzene	10.214	180	569360	99.8276 ug/L	89
81) Naphthalene	10.364	128	1060926	99.6270 ug/L #	100
82) 1,2,3-Trichlorobenzene	10.448	180	531155	99.1364 ug/L #	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011183.D
Acq On : 16 Apr 2015 12:56
Operator : ADC
Sample : WG519118-09 100.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 21 10:51:44 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

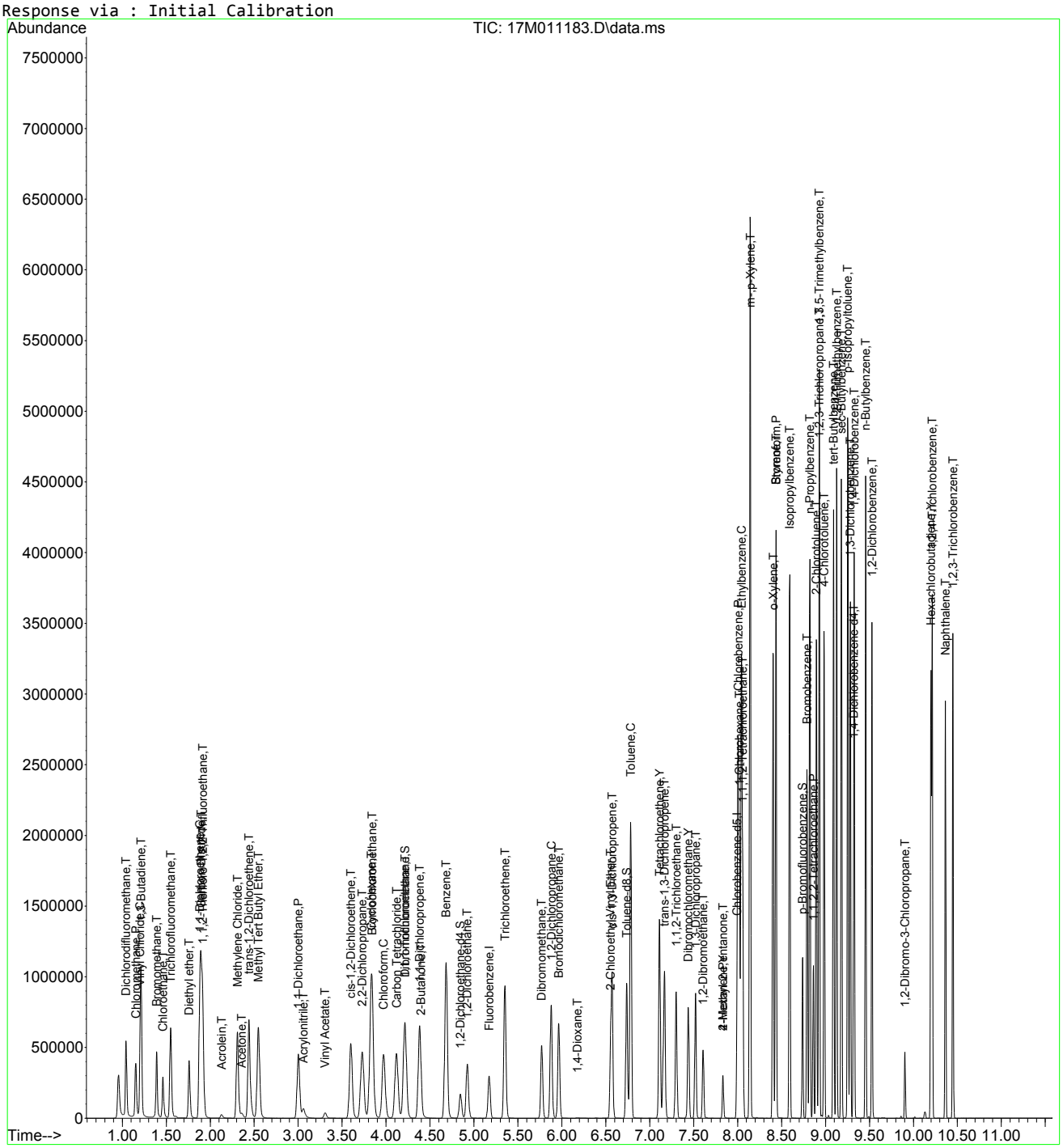

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011184.D
Acq On : 16 Apr 2015 13:16
Operator : ADC
Sample : WG519118-10 200.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 21 10:51:47 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.173	96	259152	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.996	117	195404	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.319	152	110323	25.00000	ug/L	# 0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	4.212	111	237876	95.4470	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 381.788%#			
32) 1,2-Dichloroethane-d4	4.846	65	245618	99.3752	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 397.501%#			
44) Toluene-d8	6.739	98	1008774	96.0087	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 384.035%#			
63) p-Bromofluorobenzene	8.740	95	406244	102.7367	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 410.947%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.041	85	687964	220.4871	ug/L	100
3) Chloromethane	1.151	50	588698	215.6030	ug/L	100
4) Vinyl Chloride	1.201	62	653751	215.6682	ug/L	99
5) 1,3-Butadiene	1.212	54	488377	208.5222	ug/L	100
6) Bromomethane	1.389	94	399766	220.9877	ug/L	100
7) Chloroethane	1.458	64	295794	186.2805	ug/L	98
8) Trichlorofluoromethane	1.539	101	825649	211.4118	ug/L	100
9) Diethyl ether	1.762	59	371118	213.0494	ug/L	99
10) 1,1-Dichloroethene	1.875	61	769999	209.9460	ug/L	100
11) Carbon Disulfide	1.890	76	1548818	203.9998	ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.907	101	513151	207.5410	ug/L	100
13) Acrolein	2.130	56	41857	181.4984	ug/L	95
14) Methylene Chloride	2.307	84	531779	189.5964	ug/L	99
15) Acetone	2.362	43	78619	197.5539	ug/L	100
16) trans-1,2-Dichloroethene	2.440	96	509142	208.6845	ug/L	100
17) Methyl Tert Butyl Ether	2.550	73	1301693	210.7375	ug/L	100
18) 1,1-Dichloroethane	3.001	63	950560	211.8723	ug/L	100
19) Acrylonitrile	3.065	53	126694	213.1399	ug/L	99
20) Vinyl Acetate	3.308	86	12693	222.6638	ug/L	91
21) cis-1,2-Dichloroethene	3.601	96	578738	209.3665	ug/L	100
22) 2,2-Dichloropropane	3.731	77	788793	209.6601	ug/L	99
23) Cyclohexane	3.832	56	857755	199.3042	ug/L	99
24) Bromochloromethane	3.844	130	375547	214.1287	ug/L	100
25) Chloroform	3.971	83	938927	219.6006	ug/L	100
26) Carbon Tetrachloride	4.119	117	781121	202.7247	ug/L	100
28) 1,1,1-Trichloroethane	4.215	97	866703	211.3076	ug/L	100
29) 1,1-Dichloropropene	4.383	75	714324	211.0739	ug/L	99
30) 2-Butanone	4.403	43	148108	200.9806	ug/L	95
31) Benzene	4.684	78	2103833	207.3788	ug/L	100
33) 1,2-Dichloroethane	4.927	62	650031	211.1342	ug/L	100
34) Trichloroethene	5.352	130	610545	211.0112	ug/L	99
35) Dibromomethane	5.772	93	321040	225.2826	ug/L	100
36) 1,2-Dichloropropane	5.879	63	571768	211.5520	ug/L	99
37) Bromodichloromethane	5.966	83	751246	219.7970	ug/L	100
38) 1,4-Dioxane	6.181	88	7264	404.1774	ug/L	80
39) 2-Chloroethyl Vinyl Ether	6.557	63	279039	209.9682	ug/L	100
40) cis-1,3-Dichloropropene	6.574	75	886076	218.0409	ug/L	99
41) 4-Methyl-2-Pentanone	7.834	58	142880	217.4304	ug/L	99
42) trans-1,3-Dichloropropene	7.171	75	778913	219.3070	ug/L	100
45) Toluene	6.786	91	2389125	199.0070	ug/L	99
46) Tetrachloroethene	7.113	166	675183	202.2955	ug/L	100
47) 1,1,2-Trichloroethane	7.301	97	445266	205.2392	ug/L	99
48) Dibromochloromethane	7.440	129	636335	222.1327	ug/L	100
49) 1,3-Dichloropropane	7.521	76	706362	205.3933	ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011184.D
Acq On : 16 Apr 2015 13:16
Operator : ADC
Sample : WG519118-10 200.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 21 10:51:47 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.611	107	463400	209.9718 ug/L	99
51) 2-Hexanone	7.834	43	267572	206.0196 ug/L	99
52) Chlorobenzene	8.008	112	1622473	206.4765 ug/L	99
53) 1-Chlorohexane	8.022	69	149671	204.7813 ug/L	94
54) Ethylbenzene	8.048	106	889178	210.1771 ug/L	94
55) 1,1,1,2-Tetrachloroethane	8.063	131	623432	215.5706 ug/L	99
56) m-,p-Xylene	8.146	106	2107665	412.2886 ug/L	96
57) o-Xylene	8.404	106	1082327	213.0523 ug/L	97
58) Styrene	8.439	104	1818844	217.8486 ug/L	98
59) Bromoform	8.442	173	468536	237.1376 ug/L	100
60) Isopropylbenzene	8.592	105	2796968	209.9626 ug/L	98
62) 1,3,5-Trimethylbenzene	8.931	105	2482475	200.1083 ug/L	98
64) Bromobenzene	8.792	156	811638	209.7569 ug/L	100
65) n-Propylbenzene	8.824	91	3223829	201.8732 ug/L	97
66) 1,1,2,2-Tetrachloroethane	8.862	83	575644	209.7412 ug/L	99
67) 2-Chlorotoluene	8.899	91	1999550	203.0632 ug/L	99
68) 1,2,3-Trichloropropane	8.925	110	153803	213.4768 ug/L	98
69) 1,2,4-Trimethylbenzene	9.128	105	2480060	200.2934 ug/L	98
70) 4-Chlorotoluene	8.986	91	2051115	205.4349 ug/L	99
71) tert-Butylbenzene	9.093	134	472535	209.1269 ug/L	94
72) sec-Butylbenzene	9.183	105	3014159	198.3583 ug/L	97
73) p-Isopropyltoluene	9.255	119	2636912	198.9320 ug/L	97
74) 1,3-Dichlorobenzene	9.284	146	1472966	204.8596 ug/L	96
75) 1,4-Dichlorobenzene	9.328	146	1456821	198.3166 ug/L #	100
76) n-Butylbenzene	9.458	91	2396328	205.9387 ug/L	97
77) 1,2-Dichlorobenzene	9.530	146	1391344	202.3105 ug/L	98
78) 1,2-Dibromo-3-Chloropr...	9.904	75	108934	214.5748 ug/L #	100
79) Hexachlorobutadiene	10.199	225	674194	209.3673 ug/L #	100
80) 1,2,4-Trichlorobenzene	10.217	180	1131525	200.4580 ug/L	89
81) Naphthalene	10.367	128	2031315	192.7370 ug/L #	100
82) 1,2,3-Trichlorobenzene	10.451	180	1034145	195.0244 ug/L #	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011184.D
Acq On : 16 Apr 2015 13:16
Operator : ADC
Sample : WG519118-10 200.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 21 10:51:47 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

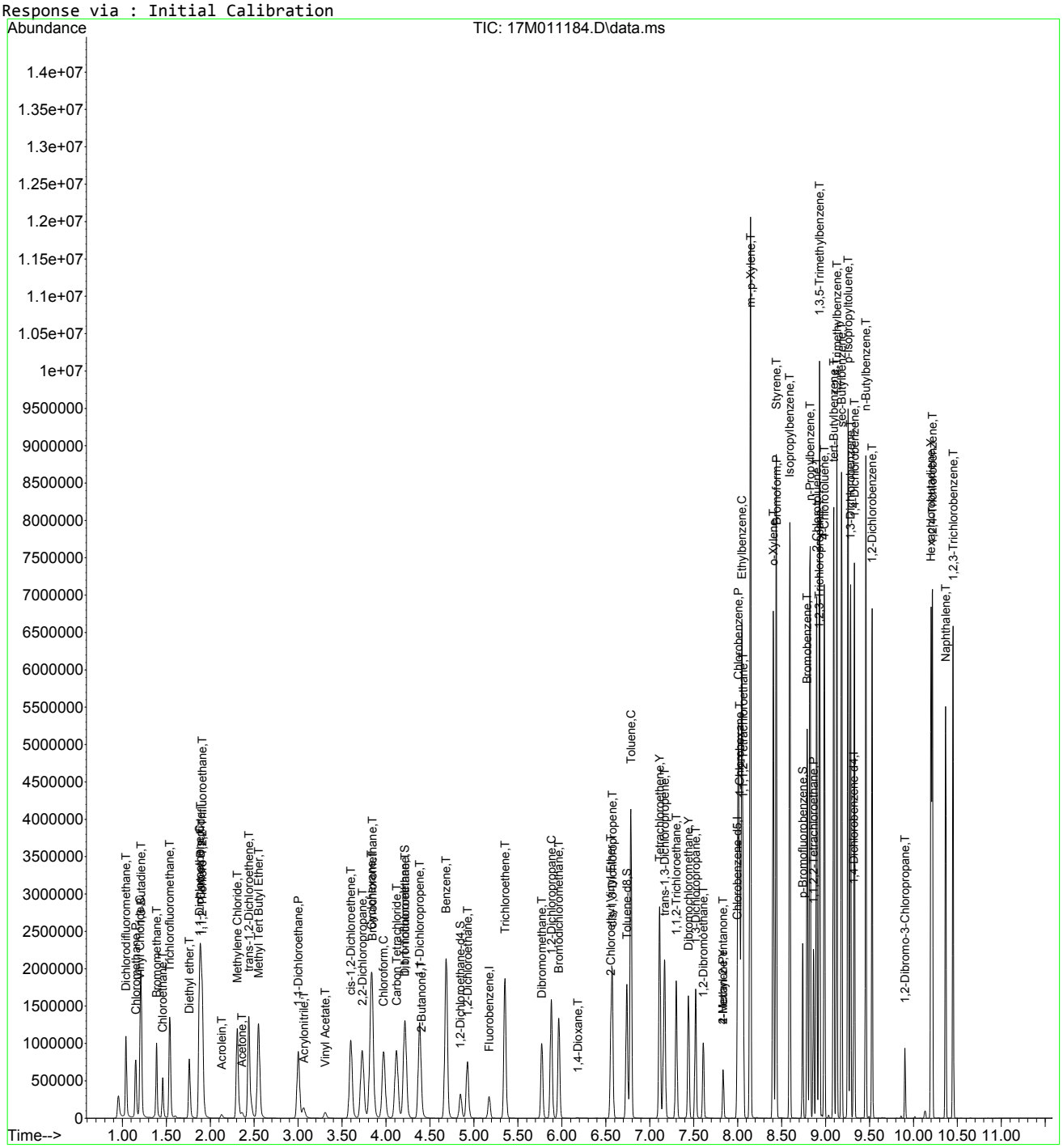

8260VMS.M Tue Apr 21 10:51:48 2015 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011185.D
Acq On : 16 Apr 2015 13:36
Operator : ADC
Sample : WG519118-11 300.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 21 10:51:50 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.173	96	251647	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.996	117	199349	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.322	152	108104	25.00000	ug/L	# 0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	0.000	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.000%#	
32) 1,2-Dichloroethane-d4	4.927	65	41008	17.0863	ug/L	0.0809
Spiked Amount 25.000	Range 80 - 120		Recovery	=	68.345%#	
44) Toluene-d8	6.736	98	1970	0.1838	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.735%#	
63) p-Bromofluorobenzene	8.740	95	1339	0.3456	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	=	1.382%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.041	85	966353	318.9451	ug/L	100
3) Chloromethane	1.151	50	868248	327.4680	ug/L	100
4) Vinyl Chloride	1.201	62	939132	319.0532	ug/L	99
5) 1,3-Butadiene	1.212	54	721472	317.2337	ug/L	100
6) Bromomethane	1.389	94	594273	338.3071	ug/L	100
7) Chloroethane	1.458	64	418706	271.5502	ug/L	97
8) Trichlorofluoromethane	1.536	101	1014094	267.4082	ug/L	100
9) Diethyl ether	1.762	59	545782	322.6638	ug/L	99
10) 1,1-Dichloroethene	1.875	61	1103025	309.7175	ug/L	99
11) Carbon Disulfide	1.890	76	2310286	313.3704	ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.907	101	713949	297.3643	ug/L	100
13) Acrolein	2.130	56	62935	281.0345	ug/L	97
14) Methylene Chloride	2.307	84	771512	283.2725	ug/L	99
15) Acetone	2.367	43	120660	313.1330	ug/L	100
16) trans-1,2-Dichloroethene	2.437	96	738249	311.6141	ug/L	99
17) Methyl Tert Butyl Ether	2.550	73	1878566	313.2006	ug/L	100
18) 1,1-Dichloroethane	3.001	63	1368757	314.1838	ug/L	100
19) Acrylonitrile	3.062	53	188424	326.4433	ug/L	100
20) Vinyl Acetate	3.308	86	19175	346.4046	ug/L	89
21) cis-1,2-Dichloroethene	3.601	96	838705	312.4621	ug/L	100
22) 2,2-Dichloropropane	3.728	77	1125562	308.0952	ug/L	100
23) Cyclohexane	3.832	56	1257256	300.8429	ug/L	100
24) Bromochloromethane	3.844	130	545902	320.5443	ug/L	100
25) Chloroform	3.971	83	1349843	325.1230	ug/L	100
26) Carbon Tetrachloride	4.119	117	1115538	297.9850	ug/L	100
28) 1,1,1-Trichloroethane	4.215	97	1240700	311.5118	ug/L	100
29) 1,1-Dichloropropene	4.383	75	1028287	312.9078	ug/L	100
30) 2-Butanone	4.406	43	222198	310.5121	ug/L	95
31) Benzene	4.687	78	3025012	307.0740	ug/L	100
33) 1,2-Dichloroethane	4.924	62	940622	314.6318	ug/L	100
34) Trichloroethene	5.353	130	889300	316.5183	ug/L	100
35) Dibromomethane	5.772	93	470021	339.6633	ug/L	100
36) 1,2-Dichloropropane	5.879	63	831828	316.9520	ug/L	100
37) Bromodichloromethane	5.966	83	1099671	331.3333	ug/L	100
38) 1,4-Dioxane	6.181	88	11423	654.5445	ug/L	94
39) 2-Chloroethyl Vinyl Ether	6.557	63	427130	330.9874	ug/L	99
40) cis-1,3-Dichloropropene	6.574	75	1301347	329.7789	ug/L	99
41) 4-Methyl-2-Pentanone	7.837	58	215365	337.5101	ug/L	99
42) trans-1,3-Dichloropropene	7.174	75	1164871	337.7569	ug/L	100
45) Toluene	6.786	91	3454913	282.0889	ug/L	99
46) Tetrachloroethene	7.116	166	989069	290.4763	ug/L	99
47) 1,1,2-Trichloroethane	7.304	97	671057	303.1933	ug/L	100
48) Dibromochloromethane	7.443	129	968791	331.4944	ug/L	100
49) 1,3-Dichloropropane	7.524	76	1059043	301.8505	ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011185.D
Acq On : 16 Apr 2015 13:36
Operator : ADC
Sample : WG519118-11 300.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 21 10:51:50 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.611	107	704515	312.9065 ug/L	100
51) 2-Hexanone	7.837	43	400222	302.0565 ug/L	98
52) Chlorobenzene	8.010	112	2413342	301.0449 ug/L	97
53) 1-Chlorohexane	8.028	69	230208	308.7396 ug/L	95
54) Ethylbenzene	8.051	106	1334610	309.2220 ug/L	92
55) 1,1,1,2-Tetrachloroethane	8.065	131	935104	316.9420 ug/L	99
56) m-,p-Xylene	8.149	106	3029050	580.7987 ug/L	92
57) o-Xylene	8.407	106	1610295	310.7082 ug/L	96
58) Styrene	8.442	104	2642590	310.2476 ug/L	97
59) Bromoform	8.442	173	694910	344.7508 ug/L	99
60) Isopropylbenzene	8.595	105	3978810	292.7702 ug/L	96
62) 1,3,5-Trimethylbenzene	8.934	105	3438130	282.8308 ug/L	97
64) Bromobenzene	8.792	156	1199428	316.3387 ug/L	99
65) n-Propylbenzene	8.827	91	4492677	287.1019 ug/L	95
66) 1,1,2,2-Tetrachloroethane	8.865	83	837896	311.5618 ug/L	98
67) 2-Chlorotoluene	8.899	91	2872794	297.7335 ug/L	99
68) 1,2,3-Trichloropropane	8.928	110	221820	314.2033 ug/L	98
69) 1,2,4-Trimethylbenzene	9.131	105	3446495	284.0576 ug/L	97
70) 4-Chlorotoluene	8.989	91	2916653	298.1215 ug/L	98
71) tert-Butylbenzene	9.093	134	681255	307.6876 ug/L	90
72) sec-Butylbenzene	9.186	105	4126271	277.1189 ug/L	95
73) p-Isopropyltoluene	9.258	119	3630427	279.5060 ug/L	96
74) 1,3-Dichlorobenzene	9.287	146	2101860	298.3264 ug/L	95
75) 1,4-Dichlorobenzene	9.331	146	2085150	289.6773 ug/L #	100
76) n-Butylbenzene	9.461	91	3325189	291.6301 ug/L	95
77) 1,2-Dichlorobenzene	9.533	146	2004374	297.4315 ug/L	97
78) 1,2-Dibromo-3-Chloropr...	9.904	75	158578	318.7737 ug/L #	100
79) Hexachlorobutadiene	10.202	225	993304	314.7969 ug/L #	100
80) 1,2,4-Trichlorobenzene	10.220	180	1654056	299.0431 ug/L	89
81) Naphthalene	10.370	128	2901443	280.9482 ug/L #	100
82) 1,2,3-Trichlorobenzene	10.454	180	1530527	294.5594 ug/L #	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011185.D
Acq On : 16 Apr 2015 13:36
Operator : ADC
Sample : WG519118-11 300.0ug/L STD
Misc : 1,1 STD69853
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 21 10:51:50 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

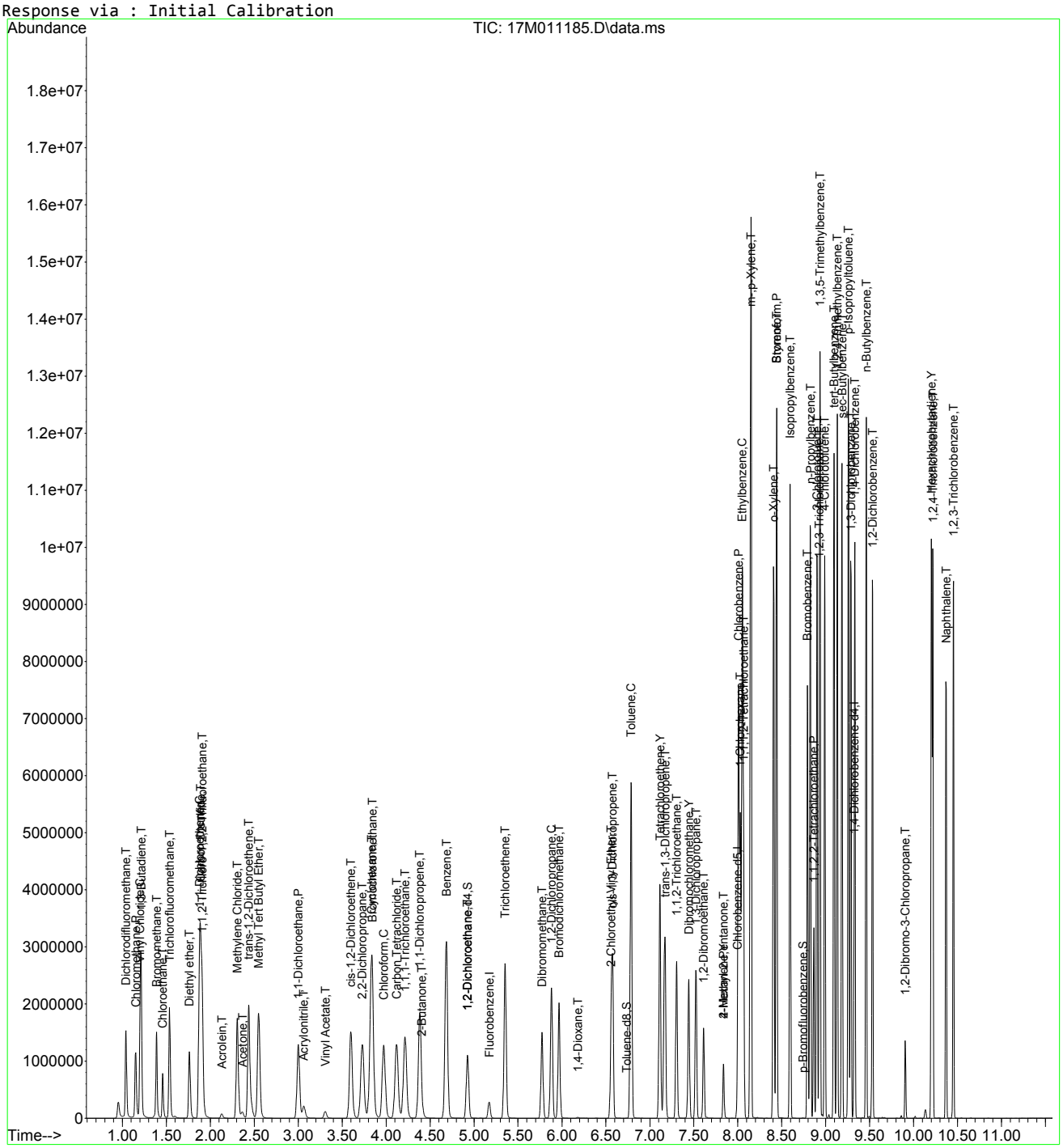

8260VMS.M Tue Apr 21 10:51:51 2015 Page: 3

Carbon Tetrachloride

00740185

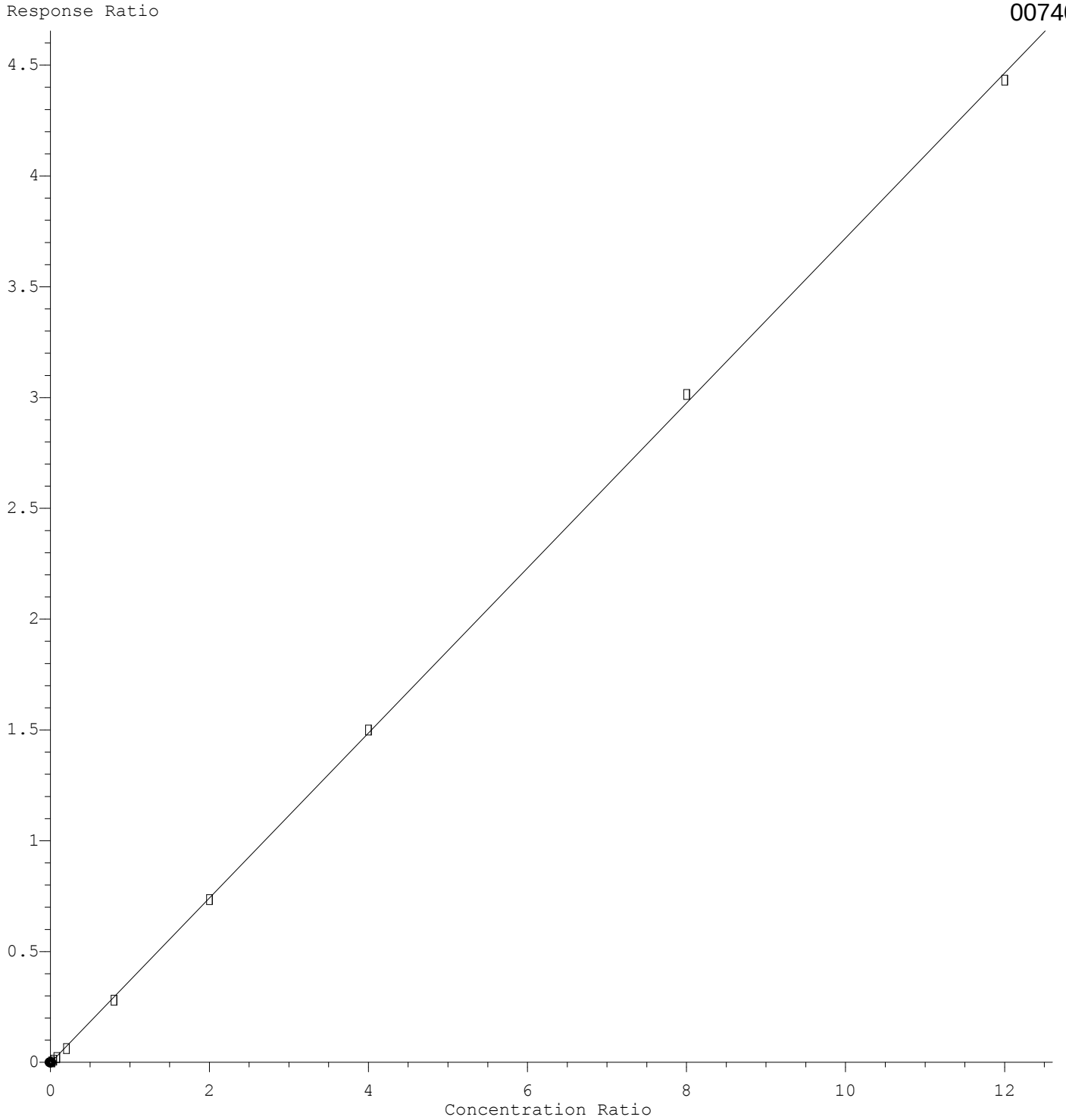

Response = 3.723e-001 * Amt - 5.236e-003
Coef of Det (r^2) = 0.999723 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Tue Apr 21 10:50:08 2015

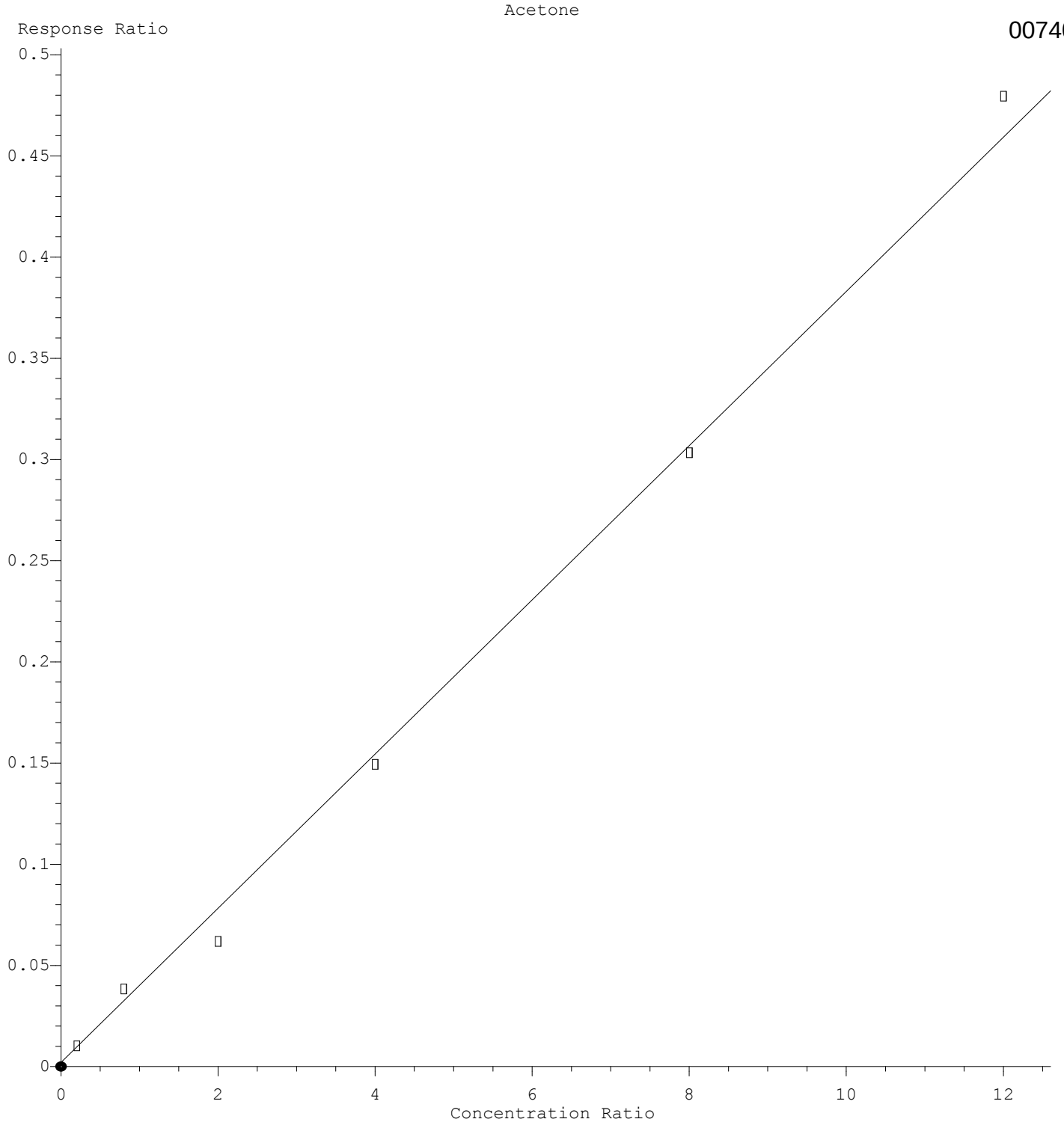

Response = 3.809e-002 * Amt + 2.352e-003
Coef of Det (r^2) = 0.993141 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Tue Apr 21 10:50:08 2015

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011189.D
Acq On : 16 Apr 2015 15:37
Operator : ADC
Sample : WG519118-12 20.0ug/L ALT SRC
Misc : 1,1 STD69813
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Apr 21 10:51:53 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.173	96	263361	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.993	117	189916	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	100187	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.212	111	67381	26.6043 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.417%		
32) 1,2-Dichloroethane-d4	4.846	65	64748	25.7779 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.112%		
44) Toluene-d8	6.737	98	264202	25.8717 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.487%		
63) p-Bromofluorobenzene	8.737	95	94753	26.3868 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.547%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	42702	13.4669 ug/L	99
3) Chloromethane	1.151	50	42016	15.1419 ug/L	100
4) Vinyl Chloride	1.204	62	53872	17.4880 ug/L	100
5) 1,3-Butadiene	1.215	54	31574	13.2657 ug/L	99
6) Bromomethane	1.392	94	36212	19.6978 ug/L	100
7) Chloroethane	1.464	64	33401	20.6986 ug/L	98
8) Trichlorofluoromethane	1.551	101	72525	18.2736 ug/L	100
9) Diethyl ether	1.759	59	185967	105.0527 ug/L	99
10) 1,1-Dichloroethene	1.881	61	73156	19.6278 ug/L	99
11) Carbon Disulfide	1.896	76	85812	11.1219 ug/L	98
12) 1,1,2-Trichloro-1,2,2-...	1.913	101	47233	18.7978 ug/L	99
13) Acrolein	2.130	56	28593	122.0021 ug/L	97
14) Methylene Chloride	2.310	84	54251	19.0331 ug/L	100
15) Acetone	2.367	43	7355	16.7848 ug/L	82
16) trans-1,2-Dichloroethene	2.440	96	51484	20.7648 ug/L	98
17) Methyl Tert Butyl Ether	2.550	73	139148	22.1673 ug/L	100
18) 1,1-Dichloroethane	3.002	63	90640	19.8801 ug/L	100
19) Acrylonitrile	3.065	53	8350	13.8229 ug/L #	60
20) Vinyl Acetate	3.308	86	5930	102.3630 ug/L	90
21) cis-1,2-Dichloroethene	3.598	96	57593	20.5021 ug/L	100
22) 2,2-Dichloropropane	3.728	77	81346	21.2761 ug/L	98
23) Cyclohexane	3.833	56	86856	19.8589 ug/L #	75
24) Bromochloromethane	3.838	130	36313	20.3740 ug/L	99
25) Chloroform	3.974	83	94033	21.6414 ug/L	100
26) Carbon Tetrachloride	4.116	117	71405	18.5555 ug/L	99
28) 1,1,1-Trichloroethane	4.212	97	87031	20.8796 ug/L	99
29) 1,1-Dichloropropene	4.380	75	70821	20.5923 ug/L	99
30) 2-Butanone	4.409	43	17127	22.8697 ug/L #	88
31) Benzene	4.681	78	212538	20.6155 ug/L	100
33) 1,2-Dichloroethane	4.921	62	64186	20.5148 ug/L	100
34) Trichloroethene	5.353	130	59965	20.3934 ug/L	99
35) Dibromomethane	5.769	93	30542	21.0896 ug/L	100
36) 1,2-Dichloropropane	5.877	63	57123	20.7975 ug/L	100
37) Bromodichloromethane	5.963	83	70187	20.2069 ug/L	100
38) 1,4-Dioxane	6.181	88	2902	158.8901 ug/L #	42
39) 2-Chloroethyl Vinyl Ether	6.554	63	29937	22.1666 ug/L	98
40) cis-1,3-Dichloropropene	6.572	75	88988	21.5477 ug/L	99
41) 4-Methyl-2-Pentanone	7.834	58	13834	20.7157 ug/L	98
42) trans-1,3-Dichloropropene	7.168	75	71849	19.9062 ug/L	100
45) Toluene	6.780	91	240022	20.5709 ug/L	99
46) Tetrachloroethene	7.110	166	65366	20.1506 ug/L	100
47) 1,1,2-Trichloroethane	7.298	97	42272	20.0477 ug/L	100
48) Dibromochloromethane	7.437	129	56163	20.1720 ug/L	100
49) 1,3-Dichloropropane	7.518	76	69577	20.8160 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011189.D
Acq On : 16 Apr 2015 15:37
Operator : ADC
Sample : WG519118-12 20.0ug/L ALT SRC
Misc : 1,1 STD69813
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Apr 21 10:51:53 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.605	107	42865	19.9839 ug/L	99
51) 2-Hexanone	7.834	43	26249	20.7947 ug/L	100
52) Chlorobenzene	8.002	112	146857	19.2291 ug/L	99
53) 1-Chlorohexane	8.016	69	14638	20.6066 ug/L	93
54) Ethylbenzene	8.039	106	84800	20.6236 ug/L	100
55) 1,1,1,2-Tetrachloroethane	8.057	131	57627	20.5021 ug/L	100
56) m-,p-Xylene	8.138	106	199224	40.0971 ug/L	100
57) o-Xylene	8.401	106	95285	19.2985 ug/L	99
58) Styrene	8.433	104	166147	20.4750 ug/L	99
59) Bromoform	8.436	173	39970	20.8144 ug/L	99
60) Isopropylbenzene	8.590	105	249439	19.2660 ug/L	100
62) 1,3,5-Trimethylbenzene	8.928	105	237051	21.0415 ug/L	100
64) Bromobenzene	8.789	156	70691	20.1174 ug/L	100
65) n-Propylbenzene	8.818	91	283529	19.5505 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.859	83	51432	20.6356 ug/L	99
67) 2-Chlorotoluene	8.894	91	171926	19.2263 ug/L	100
68) 1,2,3-Trichloropropane	8.923	110	13751	21.0172 ug/L	98
69) 1,2,4-Trimethylbenzene	9.125	105	237010	21.0778 ug/L	100
70) 4-Chlorotoluene	8.983	91	172700	19.0472 ug/L	100
71) tert-Butylbenzene	9.088	134	40362	19.6700 ug/L	98
72) sec-Butylbenzene	9.177	105	271833	19.6989 ug/L	100
73) p-Isopropyltoluene	9.253	119	233773	19.4204 ug/L	100
74) 1,3-Dichlorobenzene	9.279	146	123129	18.8573 ug/L	98
75) 1,4-Dichlorobenzene	9.325	146	132007	19.7881 ug/L #	100
76) n-Butylbenzene	9.455	91	222599	21.0654 ug/L	100
77) 1,2-Dichlorobenzene	9.528	146	118757	19.0151 ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.904	75	9754	21.1569 ug/L #	100
79) Hexachlorobutadiene	10.199	225	63627	21.7581 ug/L #	100
80) 1,2,4-Trichlorobenzene	10.214	180	105949	20.6686 ug/L	89
81) Naphthalene	10.364	128	202031	21.1087 ug/L #	100
82) 1,2,3-Trichlorobenzene	10.448	180	101125	21.0001 ug/L #	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011189.D
Acq On : 16 Apr 2015 15:37
Operator : ADC
Sample : WG519118-12 20.0ug/L ALT SRC
Misc : 1,1 STD69813
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Apr 21 10:51:53 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

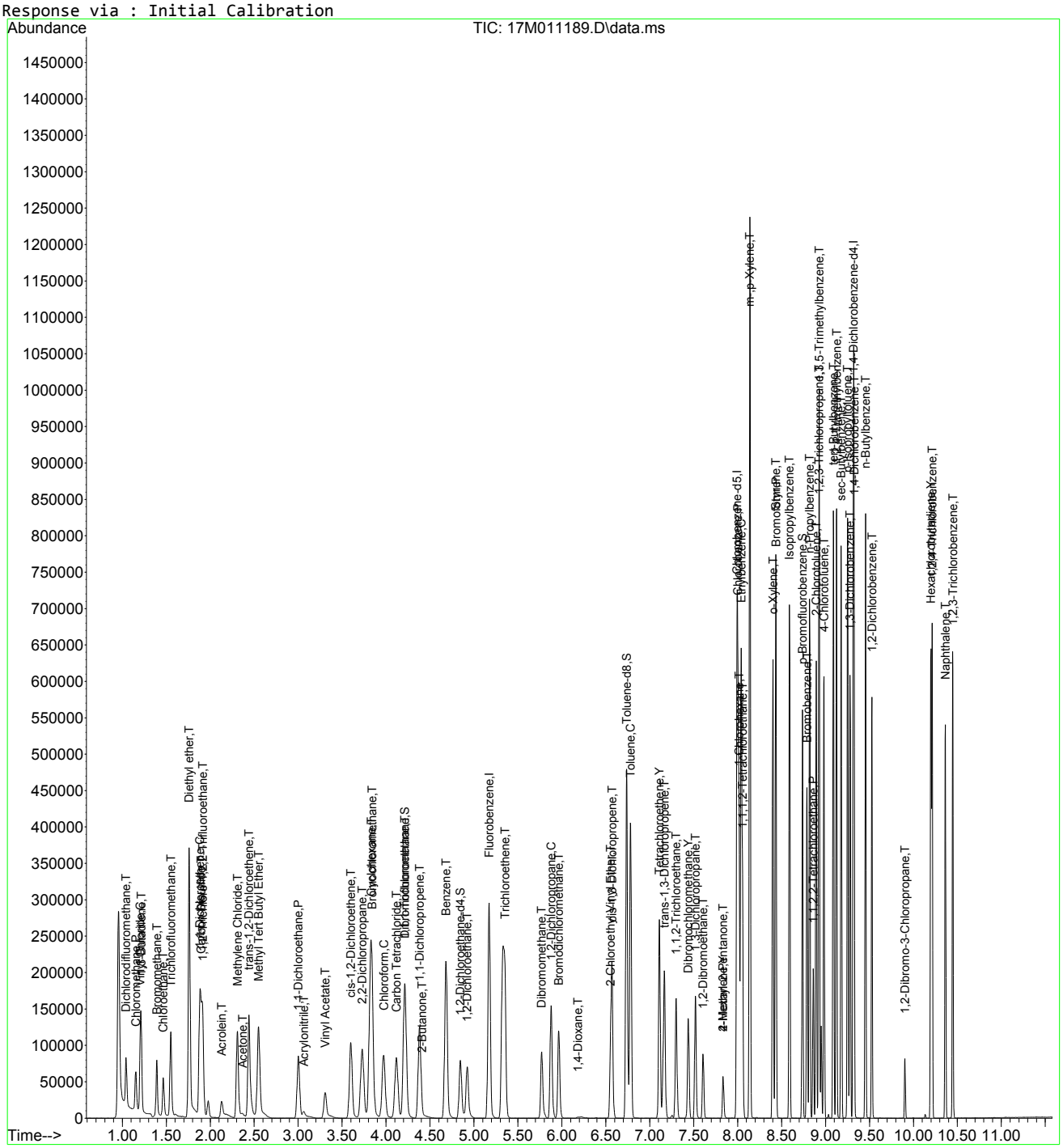

8260VMS.M Tue Apr 21 10:51:54 2015 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011189.D
Acq On : 16 Apr 2015 15:37
Operator : ADC
Sample : WG519118-12 20.0ug/L ALT SRC
Misc : 1,1 STD69813
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Apr 21 10:51:53 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	101	0.000
2	T	Dichlorodifluoromethane	20.000	13.467	32.7#	63	0.000
3	P	Chloromethane	20.000	15.142	24.3	76	0.000
4	C	Vinyl Chloride	20.000	17.488	12.6#	86	0.000
5	T	1,3-Butadiene	20.000	13.266	33.7#	65	0.000
6	T	Bromomethane	20.000	19.698	1.5	99	0.000
7	T	Chloroethane	20.000	20.699	-3.5	100	0.000
8	T	Trichlorofluoromethane	20.000	18.274	8.6	87	0.000
9	T	Diethyl ether	20.000	105.053	-425.3#	503	0.000
10	C	1,1-Dichloroethene	20.000	19.628	1.9#	98	0.000
11	T	Carbon Disulfide	20.000	11.122	44.4#	56	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	20.000	18.798	6.0	93	0.000
13	T	Acrolein	20.000	122.002	-510.0#	536	0.000
14	T	Methylene Chloride	20.000	19.033	4.8	105	0.000
15	T	Acetone	20.000	16.785	16.1	73	0.000
16	T	trans-1,2-Dichloroethene	20.000	20.765	-3.8	106	0.000
17	T	Methyl Tert Butyl Ether	20.000	22.167	-10.8	108	0.000
18	P	1,1-Dichloroethane	20.000	19.880	0.6	99	0.000
19	T	Acrylonitrile	20.000	13.823	30.9#	65	0.000
20	T	Vinyl Acetate	20.000	102.363	-411.8#	645	0.000
21	T	cis-1,2-Dichloroethene	20.000	20.502	-2.5	104	0.000
22	T	2,2-Dichloropropane	20.000	21.276	-6.4	105	0.000
23	T	Cyclohexane	20.000	19.859	0.7	98	0.000
24	T	Bromochloromethane	20.000	20.374	-1.9	101	0.000
25	C	Chloroform	20.000	21.641	-8.2#	102	0.000
26	T	Carbon Tetrachloride	20.000	18.556	7.2	97	0.000
27	S	Dibromofluoromethane	10.000	26.604	-166.0#	278	0.000
28	T	1,1,1-Trichloroethane	20.000	20.880	-4.4	104	0.000
29	T	1,1-Dichloropropene	20.000	20.592	-3.0	103	0.000
30	T	2-Butanone	20.000	22.870	-14.4	103	0.012
31	T	Benzene	20.000	20.615	-3.1	104	0.000
32	S	1,2-Dichloroethane-d4	10.000	25.778	-157.8#	267	0.000
33	T	1,2-Dichloroethane	20.000	20.515	-2.6	102	0.000
34	T	Trichloroethene	20.000	20.393	-2.0	104	0.000
35	T	Dibromomethane	20.000	21.090	-5.4	101	0.000
36	C	1,2-Dichloropropane	20.000	20.798	-4.0#	104	0.000
37	T	Bromodichloromethane	20.000	20.207	-1.0	100	0.000
38	T	1,4-Dioxane	40.000	158.890	-297.2#	394	0.000
39	T	2-Chloroethyl Vinyl Ether	20.000	22.167	-10.8	103	0.000
40	T	cis-1,3-Dichloropropene	20.000	21.548	-7.7	108	0.000
41	T	4-Methyl-2-Pentanone	20.000	20.716	-3.6	91	0.000
42	T	trans-1,3-Dichloropropene	20.000	19.906	0.5	99	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	101	0.000
44	S	Toluene-d8	10.000	25.872	-158.7#	275	0.000
45	C	Toluene	20.000	20.571	-2.9#	104	0.000
46	Y	Tetrachloroethene	20.000	20.151	-0.8	103	0.000
47	T	1,1,2-Trichloroethane	20.000	20.048	-0.2	100	0.000
48	Y	Dibromochloromethane	20.000	20.172	-0.9	100	0.000
49	T	1,3-Dichloropropane	20.000	20.816	-4.1	103	0.000
50	T	1,2-Dibromoethane	20.000	19.984	0.1	101	0.000
51	Y	2-Hexanone	20.000	20.795	-4.0	89	0.000
52	P	Chlorobenzene	20.000	19.229	3.9	99	0.000
53	T	1-Chlorohexane	20.000	20.607	-3.0	104	0.000
54	C	Ethylbenzene	20.000	20.624	-3.1#	104	0.000
55	T	1,1,1,2-Tetrachloroethane	20.000	20.502	-2.5	103	0.000

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011189.D
Acq On : 16 Apr 2015 15:37
Operator : ADC
Sample : WG519118-12 20.0ug/L ALT SRC
Misc : 1,1 STD69813
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Apr 21 10:51:53 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Tue Apr 21 10:50:08 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	40.000	40.097	-0.2	101	0.000
57	T	o-Xylene	20.000	19.299	3.5	98	0.000
58	T	Styrene	20.000	20.475	-2.4	104	0.000
59	P	Bromoform	20.000	20.814	-4.1	105	0.000
60	T	Isopropylbenzene	20.000	19.266	3.7	97	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	102	0.000
62	T	1,3,5-Trimethylbenzene	20.000	21.041	-5.2	105	0.000
63	S	p-Bromofluorobenzene	10.000	26.387	-163.9#	282	0.000
64	T	Bromobenzene	20.000	20.117	-0.6	103	0.000
65	T	n-Propylbenzene	20.000	19.551	2.2	97	0.000
66	P	1,1,2,2-Tetrachloroethane	20.000	20.636	-3.2	101	0.000
67	T	2-Chlorotoluene	20.000	19.226	3.9	97	0.000
68	T	1,2,3-Trichloropropane	20.000	21.017	-5.1	103	0.000
69	T	1,2,4-Trimethylbenzene	20.000	21.078	-5.4	105	0.000
70	T	4-Chlorotoluene	20.000	19.047	4.8	97	0.000
71	T	tert-Butylbenzene	20.000	19.670	1.6	98	0.000
72	T	sec-Butylbenzene	20.000	19.699	1.5	97	0.000
73	T	p-Isopropyltoluene	20.000	19.420	2.9	96	0.000
74	T	1,3-Dichlorobenzene	20.000	18.857	5.7	97	0.000
75	T	1,4-Dichlorobenzene	20.000	19.788	1.1	105	0.000
76	T	n-Butylbenzene	20.000	21.065	-5.3	105	0.000
77	T	1,2-Dichlorobenzene	20.000	19.015	4.9	97	0.000
78	T	1,2-Dibromo-3-Chloropropane	20.000	21.157	-5.8	101	0.000
79	Y	Hexachlorobutadiene	20.000	21.758	-8.8	106	0.000
80	T	1,2,4-Trichlorobenzene	20.000	20.669	-3.3	103	0.000
81	T	Naphthalene	20.000	21.109	-5.5	100	0.000
82	T	1,2,3-Trichlorobenzene	20.000	21.000	-5.0	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:40 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	619208	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	544510	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	254129	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1884	4.8234 ug/L #	23
3) 3-Chloro-1-propene	7.26	41	51461	4.9911 ug/L	88
4) 2-Chloro-1,3-butadiene	8.64	53	57885	4.7445 ug/L	89
5) Ethyl Acetate	9.28	43	12831	4.1474 ug/L	98
6) Methacrylonitrile	9.44	67	7738	4.2085 ug/L #	61
7) Isobutyl Alcohol	9.28	43	12831	104.0280 ug/L #	12
9) Methyl methacrylate	11.60	41	14247	4.0960 ug/L	83
10) 2-Nitropropane	11.94	43	3986	3.8294 ug/L	98
13) Cyclohexanone	16.03	55	1559	3.8882 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M400358.D A9FOOWTR.M Fri Oct 03 12:32:40 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

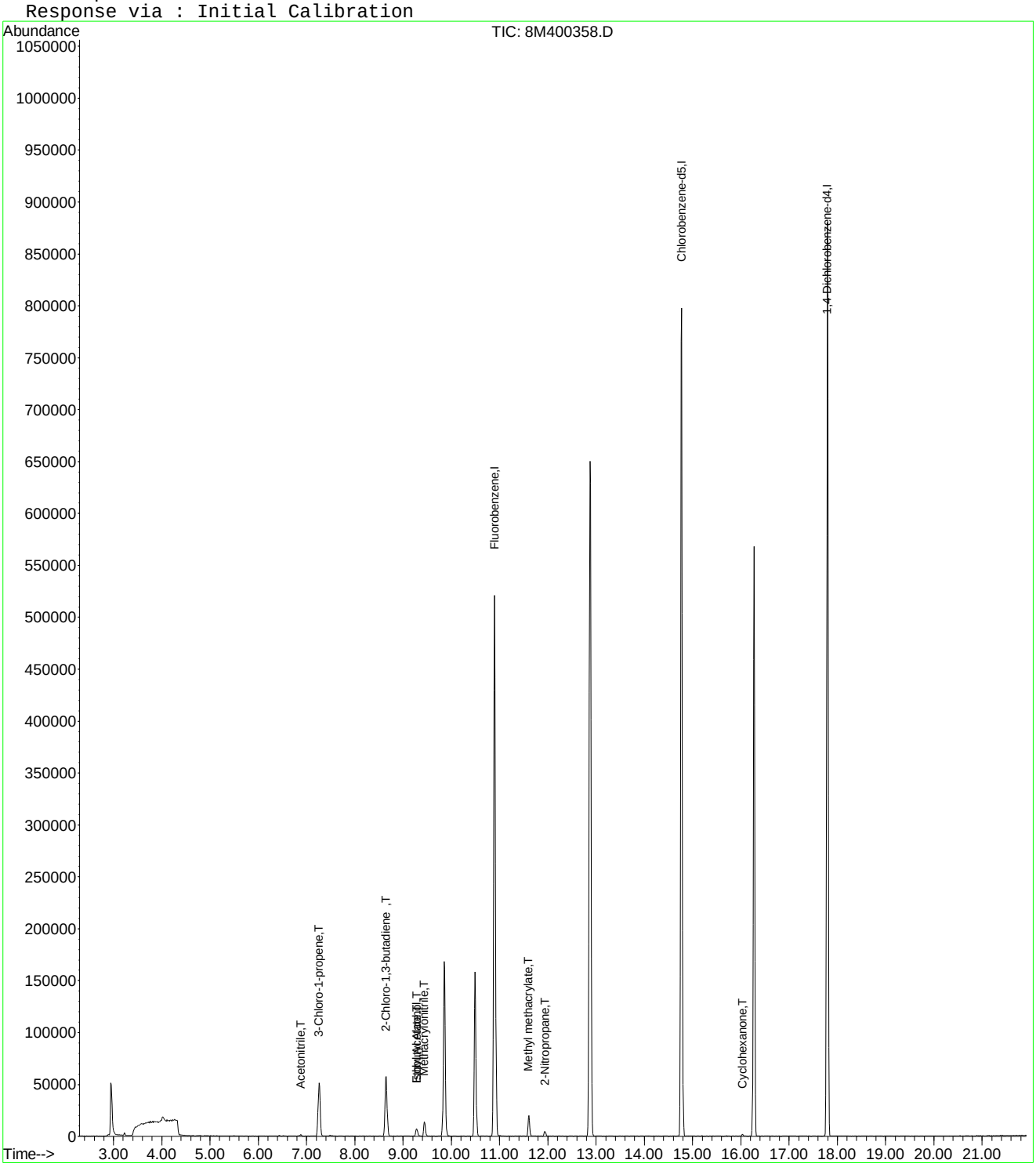

8M400358.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:41 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590707	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	530005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	246254	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	7263	19.4920 ug/L	97
3) 3-Chloro-1-propene	7.26	41	190581	19.3757 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	226534	19.4636 ug/L	90
5) Ethyl Acetate	9.28	43	54503	18.4670 ug/L	94
6) Methacrylonitrile	9.44	67	30898	17.6155 ug/L #	65
7) Isobutyl Alcohol	9.45	43	3143	26.7115 ug/L #	95
9) Methyl methacrylate	11.61	41	58234	17.5500 ug/L	72
10) 2-Nitropropane	11.94	43	16687	16.8050 ug/L	98
13) Cyclohexanone	16.03	55	7124	18.3357 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400359.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

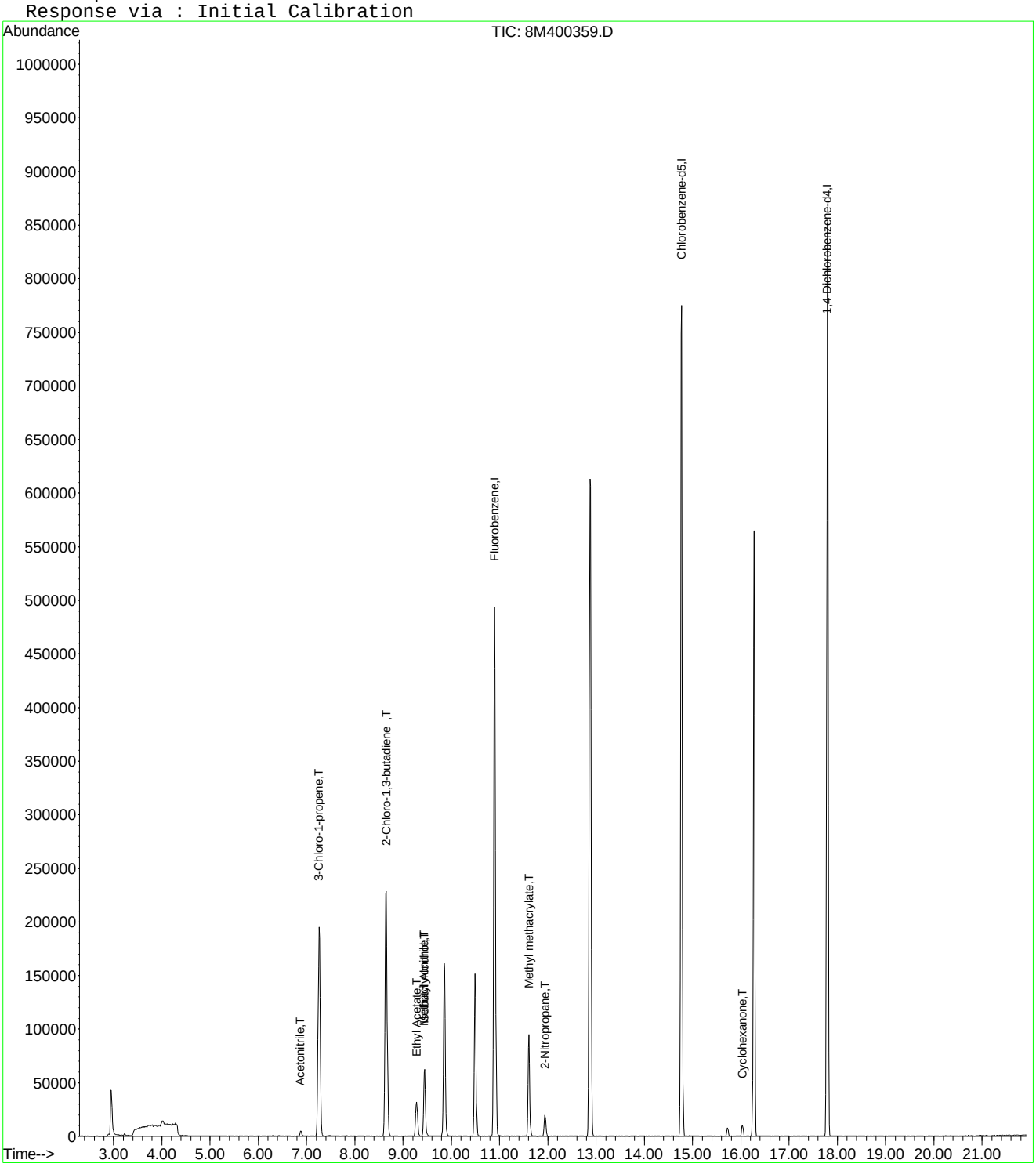

8M400359.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:42 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590667	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	524443	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	249595	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	17698	47.5001 ug/L	100
3) 3-Chloro-1-propene	7.26	41	491365	49.9588 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	586258	50.3743 ug/L	90
5) Ethyl Acetate	9.27	43	145862	49.4250 ug/L	93
6) Methacrylonitrile	9.44	67	84924	48.4200 ug/L #	62
7) Isobutyl Alcohol	9.46	43	9563	81.2789 ug/L #	95
8) 1-Butanol	10.38	56	1895	48.4971 ug/L	87
9) Methyl methacrylate	11.61	41	161451	48.6599 ug/L	75
10) 2-Nitropropane	11.94	43	45766	46.0929 ug/L	98
13) Cyclohexanone	16.04	55	19698	50.0200 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

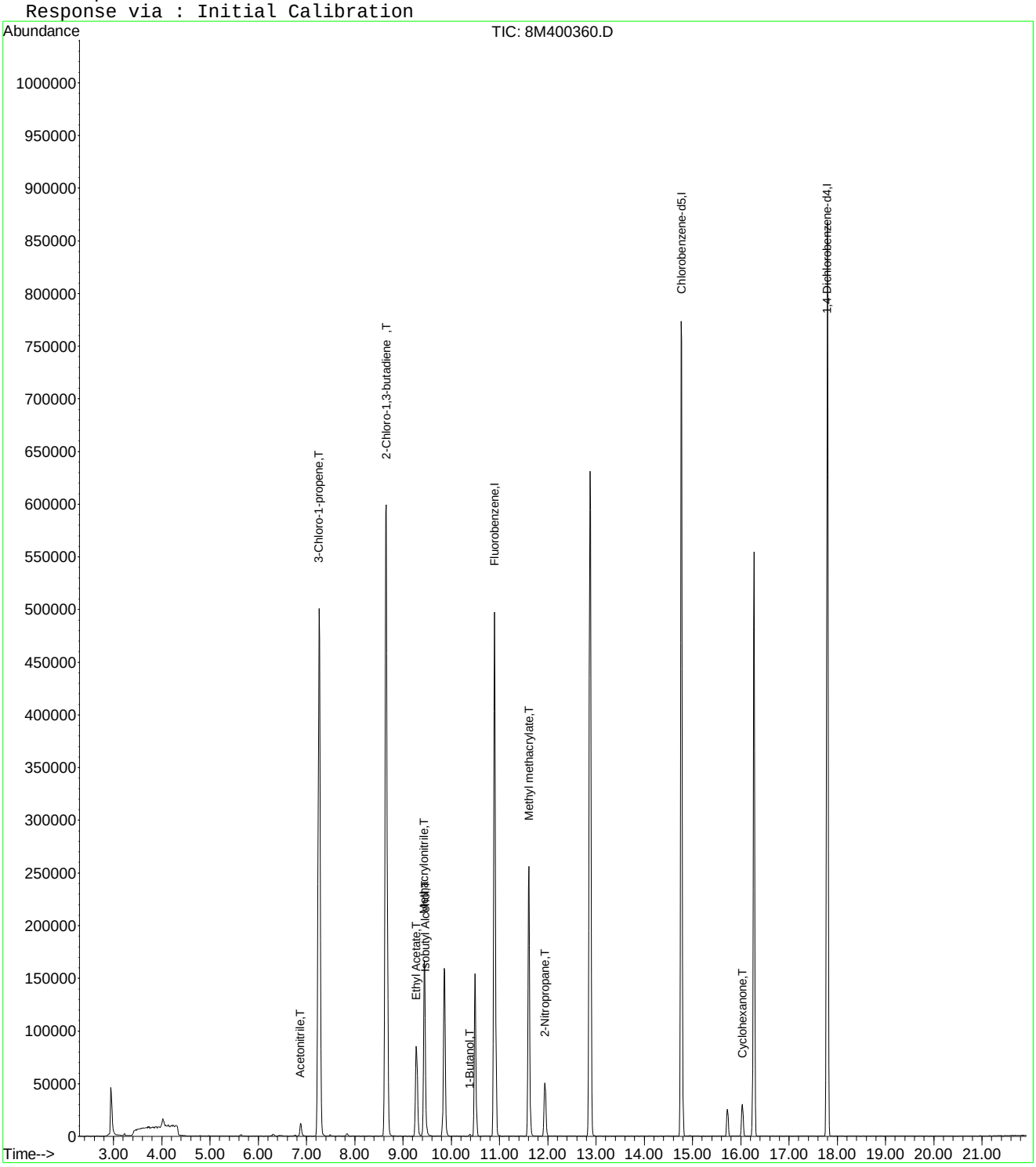

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	595542	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	525736	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	251203	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	38265	101.8596 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1042545	105.1315 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	1239135	105.6013 ug/L	88
5) Ethyl Acetate	9.27	43	315872	106.1564 ug/L	93
6) Methacrylonitrile	9.44	67	182857	103.4038 ug/L #	63
7) Isobutyl Alcohol	9.45	43	23247	195.9661 ug/L #	92
8) 1-Butanol	10.38	56	5482	96.3312 ug/L	88
9) Methyl methacrylate	11.61	41	351287	105.0082 ug/L	73
10) 2-Nitropropane	11.94	43	103249	103.1352 ug/L	99
13) Cyclohexanone	16.04	55	43523	109.8125 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

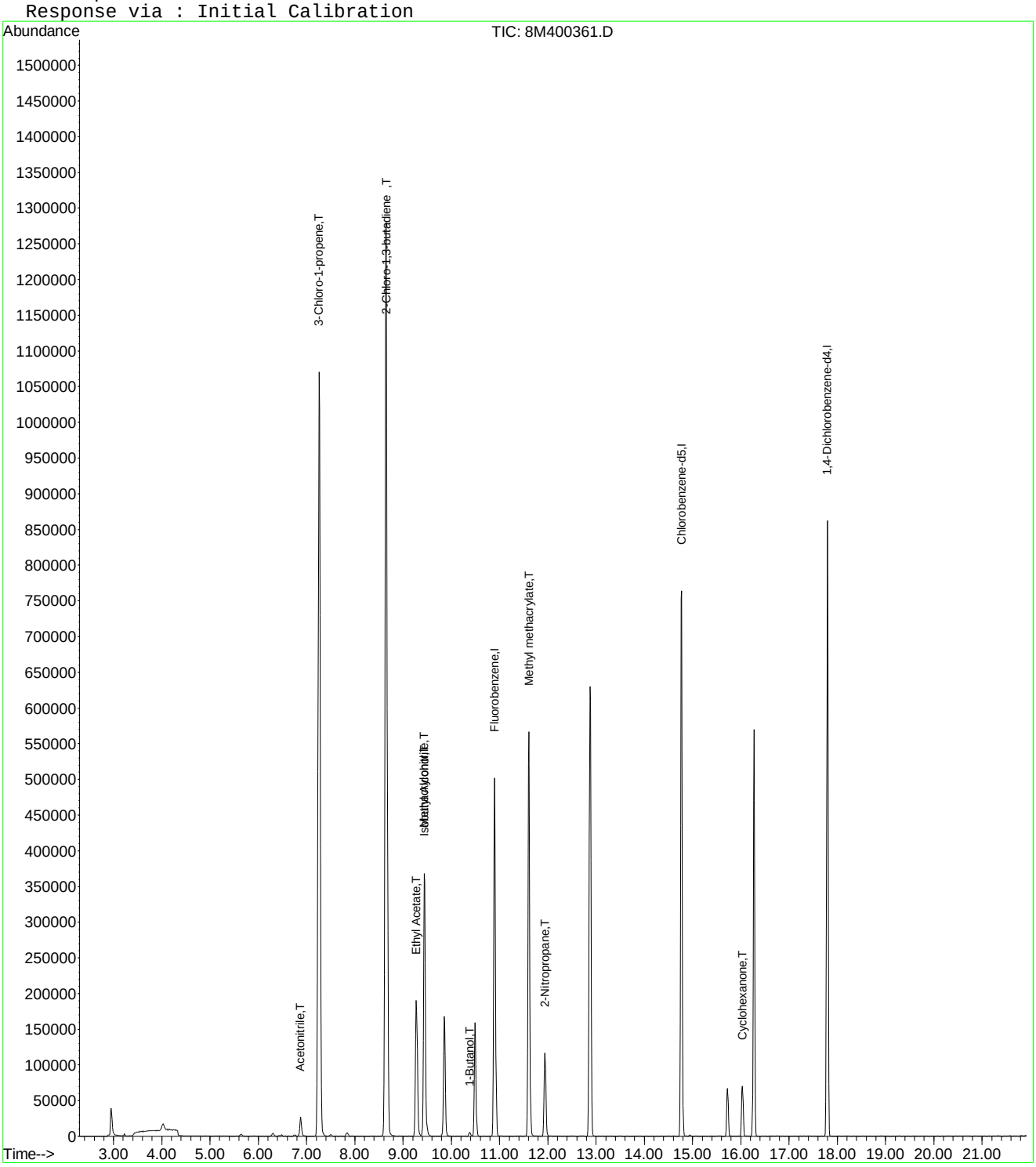

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	605985	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	543073	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	256990	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	81322	212.7447 ug/L	93
3) 3-Chloro-1-propene	7.26	41	2105378	208.6501 ug/L	89
4) 2-Chloro-1,3-butadiene	8.65	53	2530154	211.9083 ug/L	84
5) Ethyl Acetate	9.28	43	654842	216.2828 ug/L	92
6) Methacrylonitrile	9.44	67	386897	215.0159 ug/L #	62
7) Isobutyl Alcohol	9.44	43	51188	424.0654 ug/L	97
8) 1-Butanol	10.37	56	13189	196.5131 ug/L	88
9) Methyl methacrylate	11.60	41	747593	219.6225 ug/L	71
10) 2-Nitropropane	11.94	43	227212	223.0503 ug/L	99
13) Cyclohexanone	16.03	55	76140	187.7821 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400362.D A9FOOWTR.M Fri Oct 03 12:32:44 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

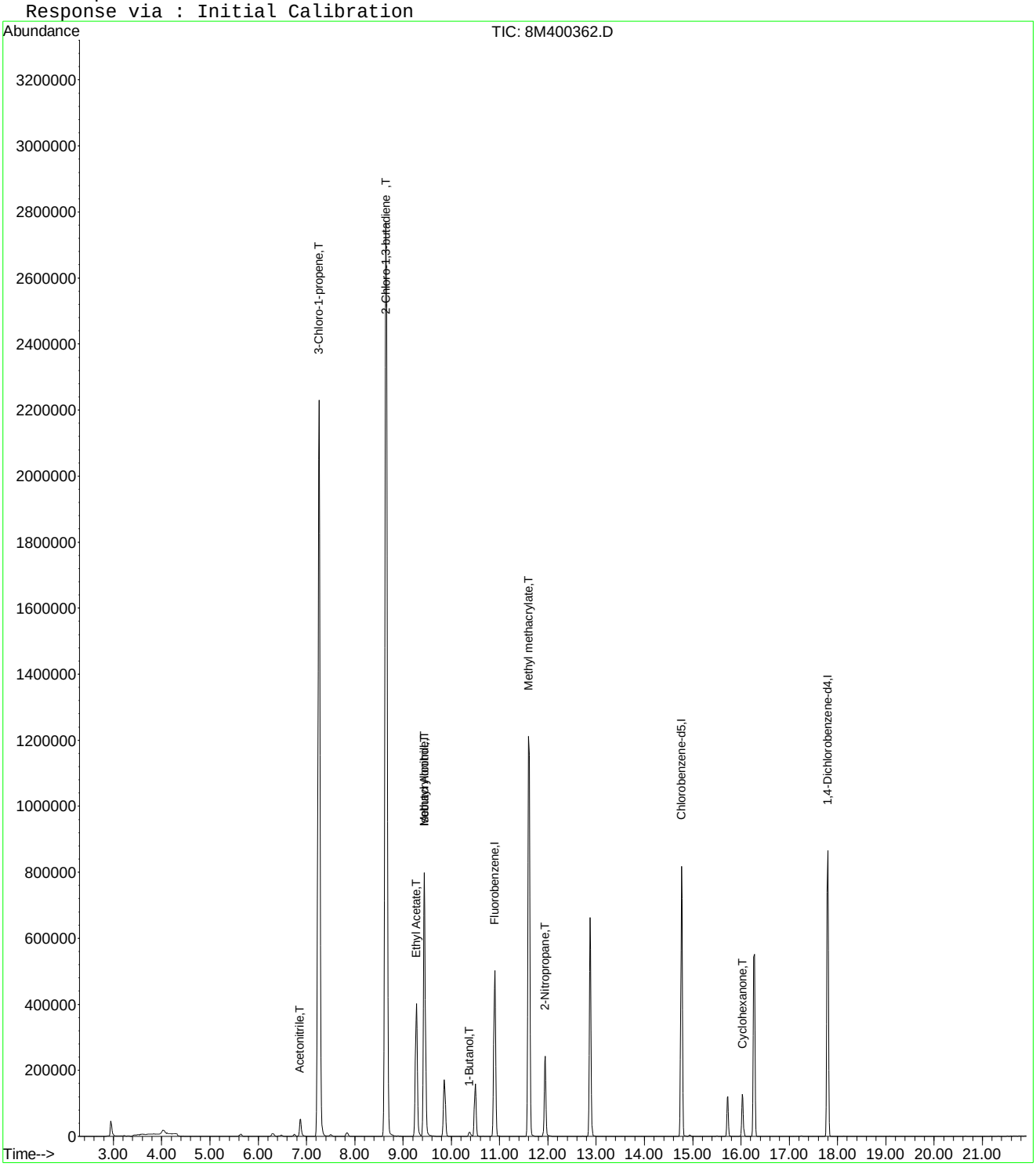

8M400362.D A9FOOWTR.M Fri Oct 03 12:32:44 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:45 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	617316	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	555877	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	259867	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	120718	310.0110 ug/L	94
3) 3-Chloro-1-propene	7.26	41	3133181	304.8093 ug/L	86
4) 2-Chloro-1,3-butadiene	8.64	53	3764580	309.5080 ug/L	79
5) Ethyl Acetate	9.27	43	984728	319.2685 ug/L	92
6) Methacrylonitrile	9.44	67	589378	321.5315 ug/L #	62
7) Isobutyl Alcohol	9.45	43	76604	622.9747 ug/L	98
8) 1-Butanol	10.37	56	23186	322.5015 ug/L	89
9) Methyl methacrylate	11.61	41	1120843	323.2293 ug/L	70
10) 2-Nitropropane	11.94	43	340074	327.7172 ug/L	99
13) Cyclohexanone	16.03	55	133635	325.9318 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400363.D A9FOOWTR.M Fri Oct 03 12:32:45 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

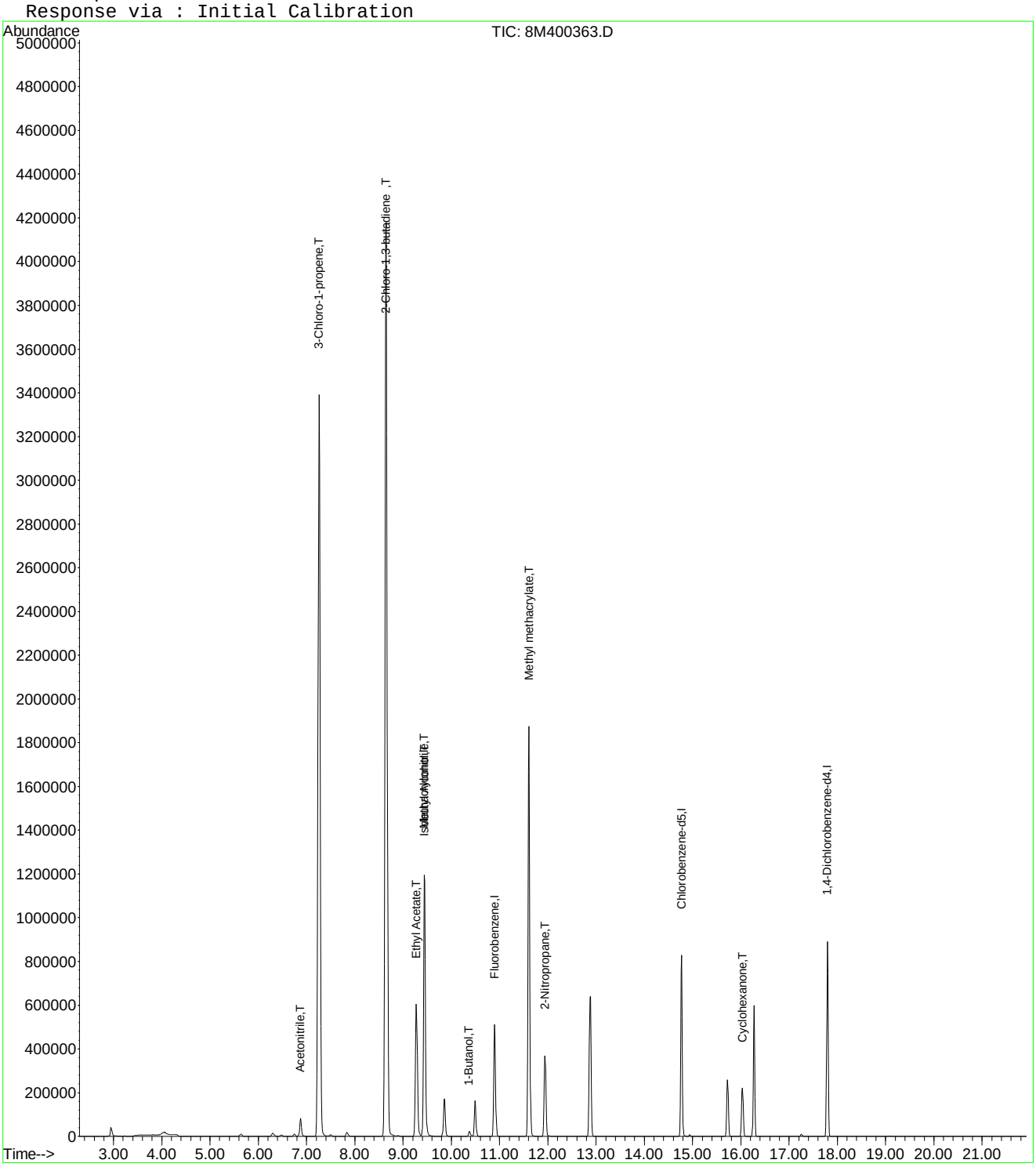

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:46 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	618926	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	559909	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	262346	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	151708	388.5818 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4028272	390.8682 ug/L	83
4) 2-Chloro-1,3-butadiene	8.65	53	4802050	393.7774 ug/L	74
5) Ethyl Acetate	9.28	43	1250397	404.3491 ug/L	91
6) Methacrylonitrile	9.44	67	762998	415.1660 ug/L #	61
7) Isobutyl Alcohol	9.45	43	102436	830.8840 ug/L #	97
8) 1-Butanol	10.37	56	28243	386.8957 ug/L	89
9) Methyl methacrylate	11.60	41	1436773	413.2595 ug/L	68
10) 2-Nitropropane	11.94	43	451706	434.1607 ug/L	98
13) Cyclohexanone	16.03	55	150327	363.1785 ug/L	84

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

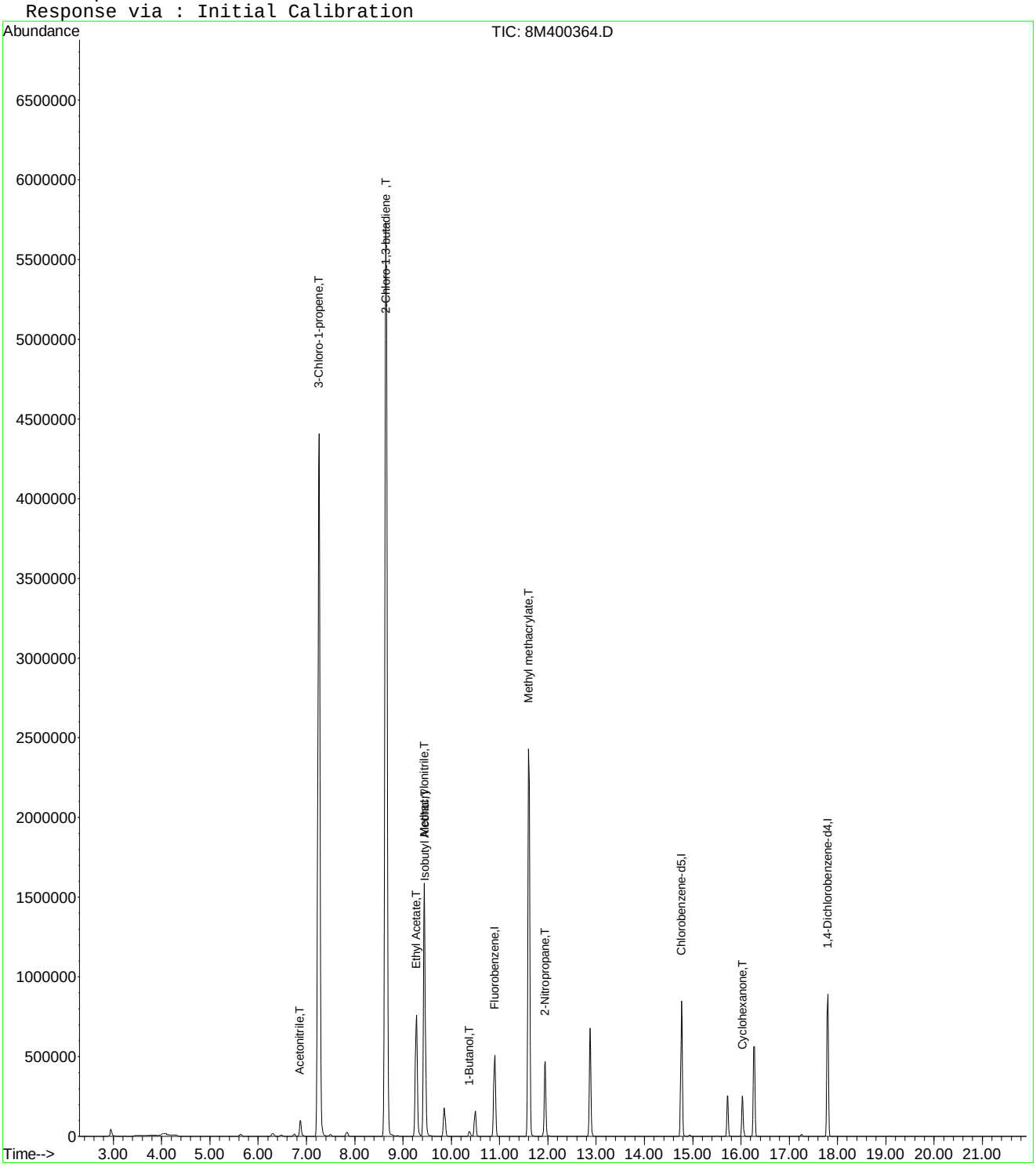

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:47 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	611679	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	574048	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	266141	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	197468	511.7830 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4817953	473.0307 ug/L	79
4) 2-Chloro-1,3-butadiene	8.64	53	5656851	469.3686 ug/L	68
5) Ethyl Acetate	9.27	43	1590123	520.3008 ug/L	90
6) Methacrylonitrile	9.44	67	990168	545.1581 ug/L #	61
7) Isobutyl Alcohol	9.45	43	130410	1070.3205 ug/L	98
8) 1-Butanol	10.38	56	36529	499.2614 ug/L	87
9) Methyl methacrylate	11.61	41	1840524	535.6626 ug/L	68
10) 2-Nitropropane	11.94	43	590003	573.8046 ug/L	98
13) Cyclohexanone	16.04	55	203273	484.0894 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M400365.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

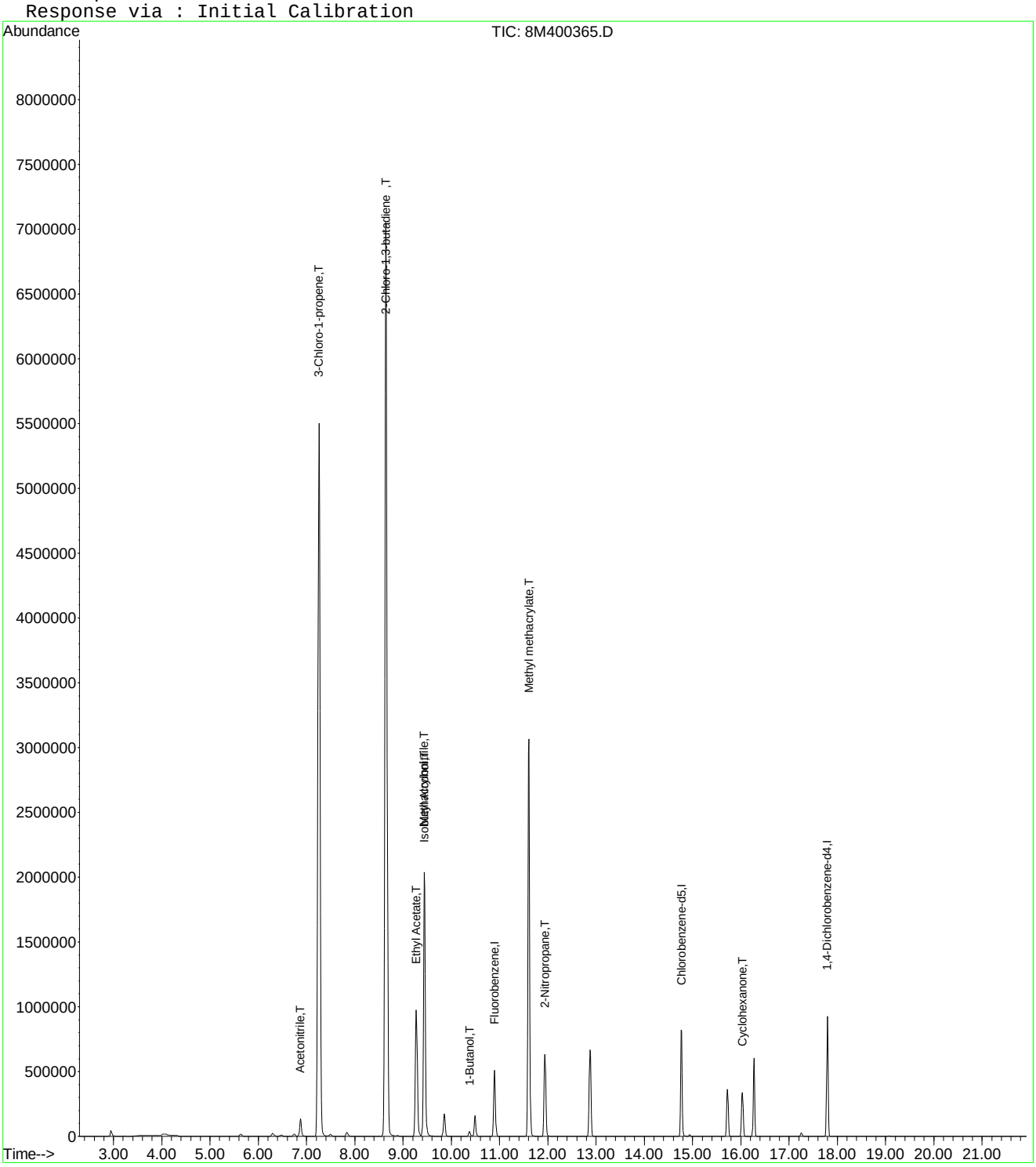

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:48 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	548066	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	508831	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	240116	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	36847	106.5815 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1001386	109.7284 ug/L	90
4) 2-Chloro-1,3-butadiene	8.64	53	982184	90.9542 ug/L	89
5) Ethyl Acetate	9.27	43	328991	120.1430 ug/L	94
6) Methacrylonitrile	9.44	67	174278	107.0895 ug/L #	64
7) Isobutyl Alcohol	9.45	43	21185	194.0538 ug/L	99
8) 1-Butanol	10.39	56	5303	100.0865 ug/L	77
9) Methyl methacrylate	11.61	41	317777	103.2198 ug/L	73
10) 2-Nitropropane	11.94	43	95761	103.9416 ug/L	99
13) Cyclohexanone	16.03	55	11614	30.6562 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

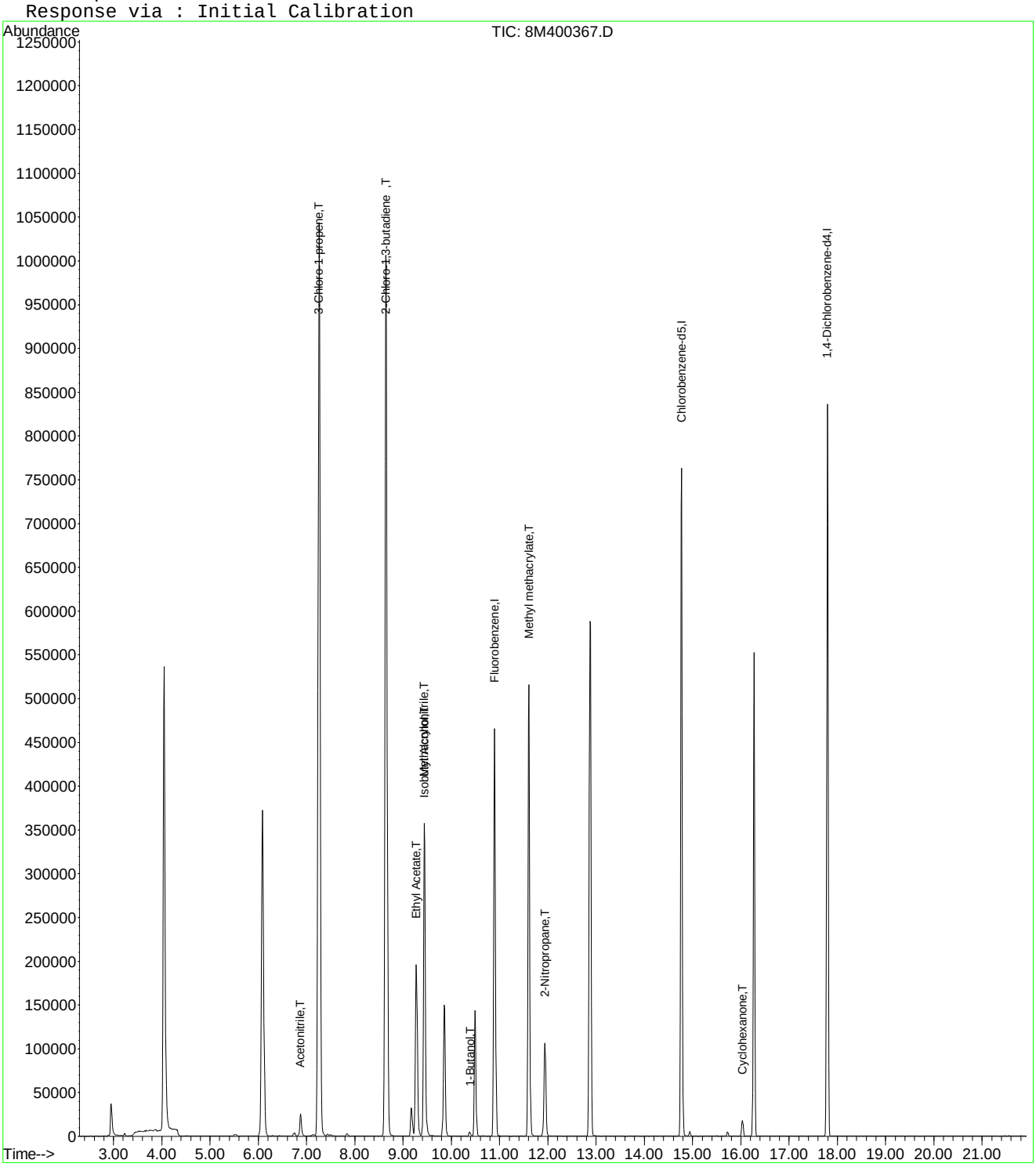

8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	-0.03
2	T	Acetonitrile	100.0000	106.5815	-6.6	96	-0.02
3	T	3-Chloro-1-propene	100.0000	109.7284	-9.7	96	-0.03
4	T	2-Chloro-1,3-butadiene	100.0000	90.9542	9.0	79	-0.03
5	T	Ethyl Acetate	100.0000	120.1430	-20.1	104	-0.02
6	T	Methacrylonitrile	100.0000	107.0895	-7.1	95	-0.03
7	T	Isobutyl Alcohol	200.0000	194.0538	3.0	91	-0.02
8	T	1-Butanol	100.0000	100.0865	-0.1	97	0.00
9	T	Methyl methacrylate	100.0000	103.2198	-3.2	90	-0.02
10	T	2-Nitropropane	100.0000	103.9416	-3.9	93	-0.03
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	97	-0.03
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	-0.04
13	T	Cyclohexanone	100.0000	30.6562	69.3	27	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M400367.D A9FOOWTR.M Fri Oct 03 12:33:23 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:43:58 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	686121	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	491169	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	260131	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	2048	0.1926 ug/L	86
3) Chloromethane	3.66	50	9733	0.4585 ug/L	81
4) Vinyl Chloride	3.89	62	5954	0.2976 ug/L	92
6) Bromomethane	4.78	94	888	0.9695 ug/L #	29
7) Chloroethane	4.93	64	1608	0.2954 ug/L #	61
8) Trichlorofluoromethane	5.42	101	3385	0.2695 ug/L #	80
10) Isoprene	6.00	67	2101	0.2256 ug/L #	57
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	1894	0.2671 ug/L	56
13) Acetone	6.28	43	313	0.3194 ug/L #	36
14) 1,1-Dichloroethene	6.52	61	3506	0.2908 ug/L	76
16) Dimethyl Sulfide	6.78	62	1875	0.2667 ug/L	83
18) Methyl acetate	7.06	43	570	0.1630 ug/L #	58
19) Methylene Chloride	7.30	84	1819	0.2647 ug/L #	13
20) Carbon Disulfide	7.34	76	7144	0.3220 ug/L	89
22) Methyl Tert Butyl Ether	7.53	73	3822	0.2887 ug/L #	62
23) trans-1,2-Dichloroethene	7.74	61	3271	0.2841 ug/L	66
24) n-Hexane	7.83	57	2928	0.2515 ug/L	88
26) Vinyl Acetate	8.34	43	3028	0.3597 ug/L #	71
27) 1,1-Dichloroethane	8.37	63	5008	0.3604 ug/L #	79
29) 2-Butanone	8.93	43	453	0.2837 ug/L #	49
31) 2,2-Dichloropropane	9.14	77	3681	0.3210 ug/L	85
32) cis-1,2-Dichloroethene	9.21	96	2604	0.3293 ug/L	91
33) Chloroform	9.42	83	3741	0.2898 ug/L	89
35) Bromochloromethane	9.66	130	1064	0.2639 ug/L #	47
36) Tetrahydrofuran	9.69	42	742	0.6900 ug/L #	32
38) 1,1,1-Trichloroethane	9.96	97	3379	0.2884 ug/L	96
39) Cyclohexane	10.00	56	3808	0.2681 ug/L #	87
40) 1,1-Dichloropropene	10.14	75	2928	0.2872 ug/L #	71
42) Carbon Tetrachloride	10.29	117	2361	0.2217 ug/L	85
45) 1,2-Dichloroethane	10.47	62	2773	0.2997 ug/L	96
46) Benzene	10.50	78	8640	0.3146 ug/L	97
47) Trichloroethene	11.26	130	2342	0.3224 ug/L	94
48) Methylcyclohexane	11.34	83	3466	0.2940 ug/L	93
49) 1,2-Dichloropropane	11.48	63	1845	0.2399 ug/L	87
50) Bromodichloromethane	11.76	83	2889	0.3051 ug/L #	95
52) Dibromomethane	11.87	93	917	0.2531 ug/L #	54
53) 2-Chloroethyl Vinyl Ether	12.09	63	251	Below Cal #	1
55) cis-1,3-Dichloropropene	12.41	75	3322	0.3209 ug/L	81
56) Dimethyl Disulfide	12.66	79	1068	3.1879 ug/L	88
59) Toluene	12.83	91	9961	0.3419 ug/L	76

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:43:58 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
60)	Ethyl Methacrylate	12.92	69	836	0.1613 ug/L #	31
62)	trans-1,3-Dichloropropene	13.01	75	2509	0.2873 ug/L	87
63)	1,1,2-Trichloroethane	13.21	97	1152	0.2545 ug/L	100
65)	1,3-Dichloropropane	13.53	76	2228	0.2808 ug/L	87
66)	Tetrachloroethene	13.66	164	1478	0.2404 ug/L #	77
67)	Dibromochloromethane	13.91	129	2244	0.3726 ug/L	69
68)	1,2-Dibromoethane	14.17	107	698	0.1615 ug/L #	54
69)	1-Chlorohexane	14.26	91	2890	0.2900 ug/L	92
70)	Chlorobenzene	14.67	112	5841	0.2970 ug/L	96
71)	1,1,1,2-Tetrachloroethane	14.72	131	1900	0.2692 ug/L	86
72)	Ethylbenzene	14.71	106	2753	0.2337 ug/L #	1
73)	m-,p-Xylene	14.78	106	7323	0.5498 ug/L #	22
74)	o-Xylene	15.35	106	3679	0.2795 ug/L #	50
75)	Styrene	15.39	104	5769	0.2767 ug/L	99
76)	Bromoform	15.88	173	482	0.9047 ug/L #	57
77)	Isopropylbenzene	15.78	105	9462	0.2939 ug/L	87
79)	1,1,2,2-Tetrachloroethane	15.98	83	1325	0.2681 ug/L #	80
81)	1,2,3-Trichloropropane	16.18	110	215	0.1606 ug/L #	1
83)	n-Propylbenzene	16.28	91	13082	0.3324 ug/L #	66
84)	Bromobenzene	16.42	156	2742	0.3508 ug/L	85
85)	1,3,5-Trimethylbenzene	16.47	105	8035	0.2984 ug/L	91
86)	2-Chlorotoluene	16.55	91	8093	0.3047 ug/L #	59
87)	4-Chlorotoluene	16.60	91	6492	0.3056 ug/L	77
88)	a-Methylstyrene	16.87	118	3783	0.2467 ug/L	88
89)	tert-Butylbenzene	16.93	134	1688	0.2820 ug/L #	69
90)	1,2,4-Trimethylbenzene	16.99	105	8182	0.2955 ug/L	73
91)	sec-Butylbenzene	17.20	105	10759	0.3204 ug/L #	77
92)	p-Isopropyltoluene	17.37	119	7368	0.2588 ug/L	78
93)	1,3-Dichlorobenzene	17.55	146	5344	0.3374 ug/L #	72
94)	1,4-Dichlorobenzene	17.68	146	5757	0.3580 ug/L #	37
95)	n-Butylbenzene	17.89	91	8329	0.2995 ug/L	84
96)	1,2-Dichlorobenzene	18.19	146	4259	0.3098 ug/L	86
98)	1,2,4-Trichlorobenzene	20.33	180	2637	0.2546 ug/L #	71
99)	Hexachlorobutadiene	20.47	225	1581	0.2922 ug/L	88
100)	Naphthalene	20.70	128	4884	0.3517 ug/L #	72
101)	1,2,3-Trichlorobenzene	21.00	180	2811	0.3203 ug/L #	74

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

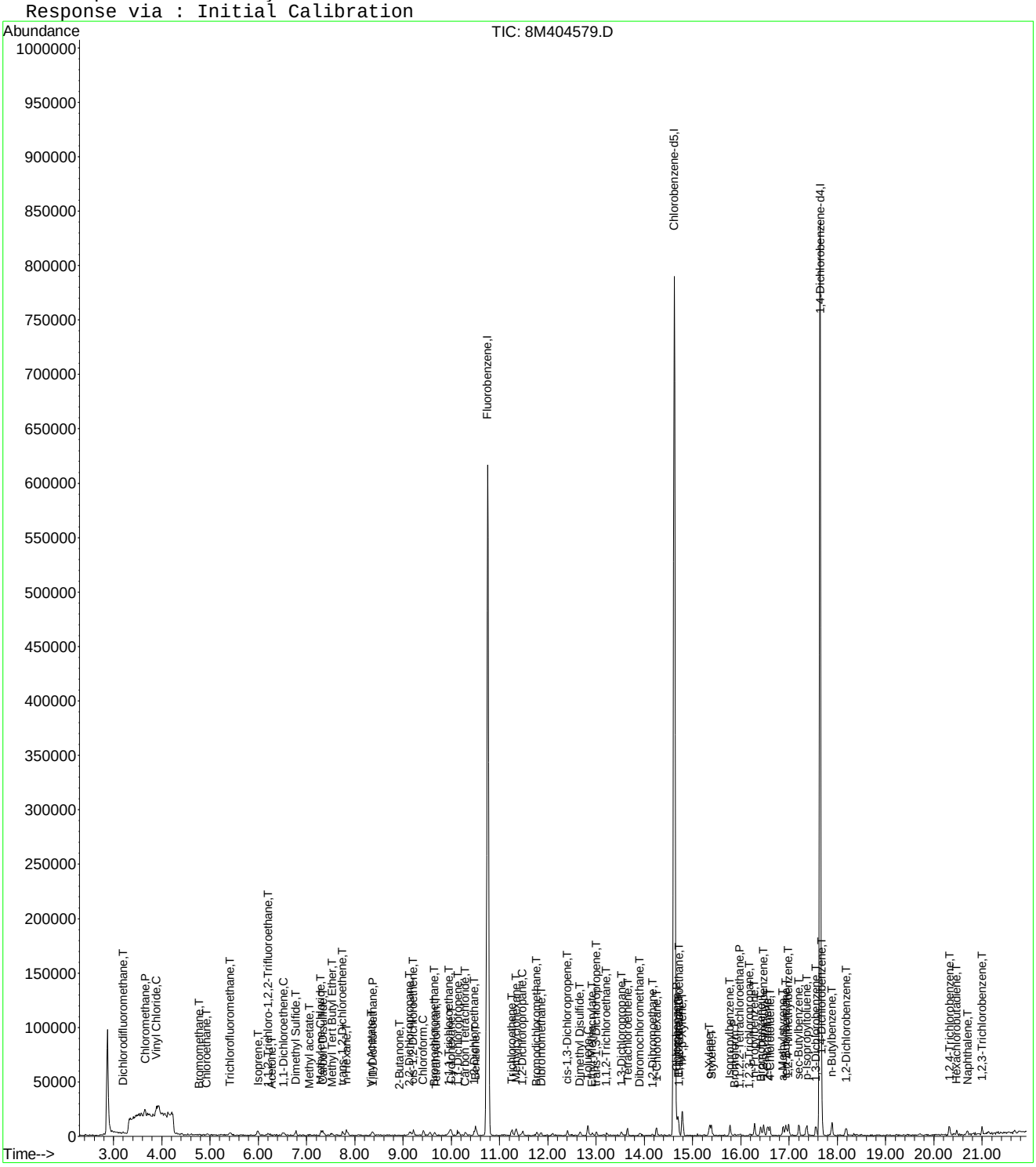

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.1926	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4585	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2976	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.0459	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.9695	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2954	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.2695	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.95#
10	T	Isoprene	-1.0000	0.2256	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.18#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2671	0.0	100	0.00
13	T	Acetone	-1.0000	0.3194	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.2908	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.63#
16	T	Dimethyl Sulfide	-1.0000	0.2667	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.03#
18	T	Methyl acetate	-1.0000	0.1630	0.0	100	0.02
19	T	Methylene Chloride	-1.0000	0.2647	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3220	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.48#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2887	0.0	100	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2841	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.2515	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.17#
26	T	Vinyl Acetate	-1.0000	0.3597	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3604	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.75#
29	T	2-Butanone	-1.0000	0.2837	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.04#
31	T	2,2-Dichloropropane	-1.0000	0.3210	0.0	100	-0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.3293	0.0	100	0.00
33	C	Chloroform	0.3000	0.2898	3.4	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.55#
35	T	Bromochloromethane	-1.0000	0.2639	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.6900	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.71#
38	T	1,1,1-Trichloroethane	-1.0000	0.2884	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2681	0.0	100	0.02
40	T	1,1-Dichloropropene	-1.0000	0.2872	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.26#
42	T	Carbon Tetrachloride	-1.0000	0.2217	0.0	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.35#
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	-1.0000	0.2997	0.0	100	0.00
46	T	Benzene	0.3000	0.3146	-4.9	100	0.00
47	T	Trichloroethene	-1.0000	0.3224	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.2940	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2399	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.3051	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.77#
52	T	Dibromomethane	-1.0000	0.2531	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	-0.8060	0.0	0	0.02
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.10#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3209	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.1879	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.73#
59	C	Toluene	-1.0000	0.3419	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.1613	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2873	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2545	0.0	100	-0.01
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.15#
65	T	1,3-Dichloropropane	-1.0000	0.2808	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.2404	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.3726	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.1615	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.2900	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.2970	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2692	0.0	0	0.02
72	C	Ethylbenzene	-1.0000	0.2337	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.5498	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.2795	0.0	100	0.00
75	T	Styrene	-1.0000	0.2767	0.0	100	0.00
76	P	Bromoform	-1.0000	0.9047	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.2939	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2681	0.0	100	-0.01
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.12#
81	T	1,2,3-Trichloropropane	-1.0000	0.1606	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.23#
83	T	n-Propylbenzene	-1.0000	0.3324	0.0	0	0.00
84	T	Bromobenzene	0.3000	0.3508	-16.9	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.2984	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3047	0.0	0	0.00
87	T	4-Chlorotoluene	-1.0000	0.3056	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2467	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2820	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.2955	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3204	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.2588	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3374	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3580	-19.3	100	-0.01
95	T	n-Butylbenzene	-1.0000	0.2995	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3098	-3.3	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.17#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.2546	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.2922	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3517	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3203	-6.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404579.D 8260WT.M Wed May 13 06:47:16 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	663902	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	470309	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	244778	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	3796	0.3689 ug/L	92
3) Chloromethane	3.66	50	13511	0.6578 ug/L	93
4) Vinyl Chloride	3.89	62	9546	0.4932 ug/L	94
5) 1,3-Butadiene	3.94	54	7454	0.1559 ug/L #	54
6) Bromomethane	4.79	94	656	0.9235 ug/L	68
7) Chloroethane	4.94	64	2482	0.4712 ug/L #	53
8) Trichlorofluoromethane	5.43	101	5157	0.4243 ug/L #	85
10) Isoprene	5.98	67	3614	0.4010 ug/L	80
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	2569	0.3745 ug/L	93
13) Acetone	6.31	43	627	0.6613 ug/L #	36
14) 1,1-Dichloroethene	6.52	61	4922	0.4218 ug/L	75
16) Dimethyl Sulfide	6.77	62	2958	0.4349 ug/L	85
17) Iodomethane	7.04	142	526	1.1457 ug/L #	35
18) Methyl acetate	7.06	43	1214	0.3588 ug/L #	58
19) Methylene Chloride	7.31	84	2766	0.4160 ug/L #	41
20) Carbon Disulfide	7.34	76	8914	0.4153 ug/L	89
22) Methyl Tert Butyl Ether	7.52	73	5194	0.4055 ug/L #	70
23) trans-1,2-Dichloroethene	7.74	61	5006	0.4494 ug/L	68
24) n-Hexane	7.83	57	5343	0.4743 ug/L	96
26) Vinyl Acetate	8.34	43	3343	0.4104 ug/L #	71
27) 1,1-Dichloroethane	8.37	63	5026	0.3738 ug/L #	81
29) 2-Butanone	8.94	43	273	0.1767 ug/L #	49
31) 2,2-Dichloropropane	9.15	77	5223	0.4708 ug/L	89
32) cis-1,2-Dichloroethene	9.20	96	3418	0.4468 ug/L	89
33) Chloroform	9.43	83	4710	0.3771 ug/L	96
35) Bromochloromethane	9.64	130	1767	0.4529 ug/L	90
36) Tetrahydrofuran	9.68	42	233	0.2239 ug/L #	32
38) 1,1,1-Trichloroethane	9.96	97	4103	0.3619 ug/L	87
39) Cyclohexane	9.98	56	5465	0.3977 ug/L	96
40) 1,1-Dichloropropene	10.15	75	3687	0.3738 ug/L #	72
42) Carbon Tetrachloride	10.31	117	3996	0.3878 ug/L	87
45) 1,2-Dichloroethane	10.47	62	3824	0.4271 ug/L	84
46) Benzene	10.51	78	10613	0.3994 ug/L	93
47) Trichloroethene	11.27	130	2689	0.3826 ug/L	73
48) Methylcyclohexane	11.34	83	4479	0.3926 ug/L #	75
49) 1,2-Dichloropropane	11.48	63	3027	0.4067 ug/L #	73
50) Bromodichloromethane	11.78	83	3600	0.3929 ug/L #	89
52) Dibromomethane	11.87	93	1560	0.4451 ug/L #	61
53) 2-Chloroethyl Vinyl Ether	12.08	63	1210	Below Cal #	48
55) cis-1,3-Dichloropropene	12.41	75	4299	0.4292 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M404580.D 8260WT.M Wed May 13 06:46:13 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
56)	Dimethyl Disulfide	12.68	79	1741	3.3001 ug/L		97
59)	Toluene	12.83	91	11735	0.4207 ug/L		81
60)	Ethyl Methacrylate	12.92	69	1520	0.3062 ug/L	#	66
62)	trans-1,3-Dichloropropene	13.01	75	3168	0.3789 ug/L		84
63)	1,1,2-Trichloroethane	13.22	97	1720	0.3969 ug/L		72
65)	1,3-Dichloropropane	13.53	76	2820	0.3712 ug/L	#	43
66)	Tetrachloroethene	13.66	164	1973	0.3351 ug/L		82
67)	Dibromochloromethane	13.92	129	2081	0.3608 ug/L		72
68)	1,2-Dibromoethane	14.17	107	1483	0.3584 ug/L		84
69)	1-Chlorohexane	14.26	91	4005	0.4197 ug/L		96
70)	Chlorobenzene	14.67	112	7203	0.3826 ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.70	131	2560	0.3788 ug/L		82
72)	Ethylbenzene	14.70	106	4026	0.3570 ug/L	#	17
73)	m-,p-Xylene	14.78	106	10847	0.8505 ug/L		57
74)	o-Xylene	15.35	106	5229	0.4149 ug/L		57
75)	Styrene	15.38	104	7288	0.3650 ug/L		100
76)	Bromoform	15.89	173	942	1.0334 ug/L	#	44
77)	Isopropylbenzene	15.78	105	14152	0.4591 ug/L		77
79)	1,1,2,2-Tetrachloroethane	16.00	83	1923	0.4135 ug/L	#	91
83)	n-Propylbenzene	16.28	91	16602	0.4483 ug/L	#	67
84)	Bromobenzene	16.43	156	2690	0.3657 ug/L		88
85)	1,3,5-Trimethylbenzene	16.47	105	10398	0.4103 ug/L		80
86)	2-Chlorotoluene	16.55	91	12418	0.4968 ug/L		75
87)	4-Chlorotoluene	16.60	91	8385	0.4194 ug/L		71
88)	a-Methylstyrene	16.87	118	5253	0.3640 ug/L		98
89)	tert-Butylbenzene	16.93	134	1913	0.3396 ug/L	#	28
90)	1,2,4-Trimethylbenzene	16.99	105	11381	0.4368 ug/L		73
91)	sec-Butylbenzene	17.20	105	13195	0.4176 ug/L	#	71
92)	p-Isopropyltoluene	17.37	119	12187	0.4550 ug/L	#	73
93)	1,3-Dichlorobenzene	17.57	146	6274	0.4209 ug/L		98
94)	1,4-Dichlorobenzene	17.68	146	6156	0.4068 ug/L	#	24
95)	n-Butylbenzene	17.89	91	12345	0.4718 ug/L	#	75
96)	1,2-Dichlorobenzene	18.19	146	4688	0.3624 ug/L		93
98)	1,2,4-Trichlorobenzene	20.33	180	4027	0.4133 ug/L		90
99)	Hexachlorobutadiene	20.48	225	2038	0.4003 ug/L	#	69
100)	Naphthalene	20.69	128	4629	0.3542 ug/L	#	62
101)	1,2,3-Trichlorobenzene	21.01	180	2866	0.3471 ug/L		78

(#) = qualifier out of range (m) = manual integration
8M404580.D 8260WT.M Wed May 13 06:46:14 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

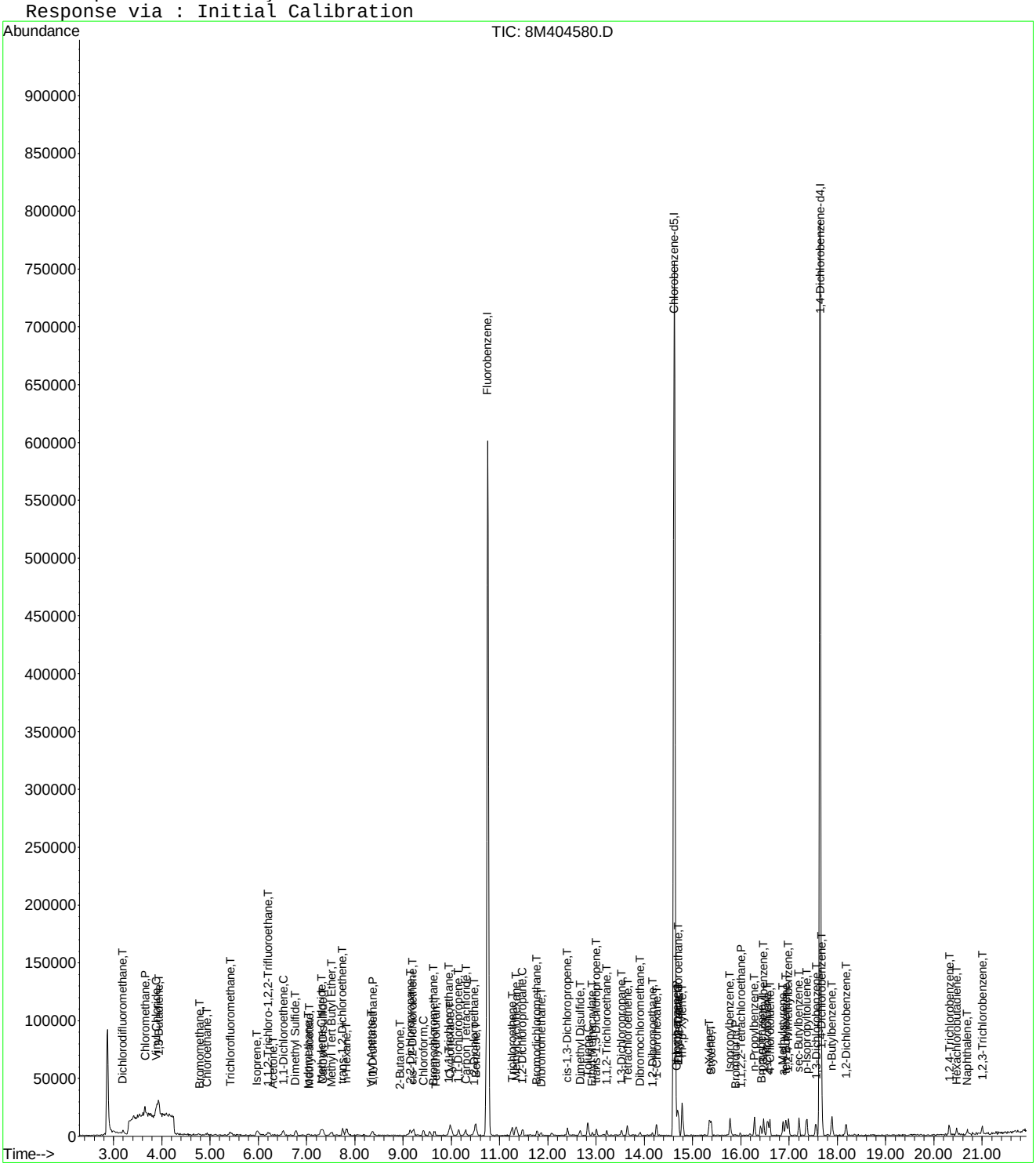

8M404580.D 8260WT.M Wed May 13 06:46:14 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3689	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.6578	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.4932	-23.3#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.1559	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.9235	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.4712	0.0	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4243	-6.1	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.95#
10	T	Isoprene	-1.0000	0.4010	0.0	100	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.18#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3745	0.0	100	0.00
13	T	Acetone	-1.0000	0.6613	0.0	100	0.02
14	C	1,1-Dichloroethene	0.4000	0.4218	-5.5	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.63#
16	T	Dimethyl Sulfide	-1.0000	0.4349	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.1457	0.0	0	0.00
18	T	Methyl acetate	-1.0000	0.3588	0.0	100	0.02
19	T	Methylene Chloride	-1.0000	0.4160	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4153	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.48#
22	T	Methyl Tert Butyl Ether	-1.0000	0.4055	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4494	-12.4	100	0.00
24	T	n-Hexane	-1.0000	0.4743	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.17#
26	T	Vinyl Acetate	-1.0000	0.4104	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.3738	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.75#
29	T	2-Butanone	-1.0000	0.1767	0.0	100	0.02
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.04#
31	T	2,2-Dichloropropane	0.4000	0.4708	-17.7	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4468	-11.7	100	-0.01
33	C	Chloroform	0.4000	0.3771	5.7	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.55#
35	T	Bromochloromethane	0.4000	0.4529	-13.2	100	-0.02
36	T	Tetrahydrofuran	-1.0000	0.2239	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.71#
38	T	1,1,1-Trichloroethane	0.4000	0.3619	9.5	100	0.00
39	T	Cyclohexane	-1.0000	0.3977	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3738	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.26#
42	T	Carbon Tetrachloride	0.4000	0.3878	3.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.35#
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	0.4000	0.4271	-6.8	100	0.00
46	T	Benzene	0.4000	0.3994	0.2	100	0.00
47	T	Trichloroethene	0.4000	0.3826	4.4	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3926	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.4067	-1.7	100	0.00
50	T	Bromodichloromethane	0.4000	0.3929	1.8	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.77#
52	T	Dibromomethane	0.4000	0.4451	-11.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	-0.2604	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.10#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.4292	-7.3	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.3001	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.73#
59	C	Toluene	0.4000	0.4207	-5.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3062	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3789	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3968	0.8	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.15#
65	T	1,3-Dichloropropane	0.4000	0.3712	7.2	100	0.00
66	T	Tetrachloroethene	0.4000	0.3351	16.2	100	0.00
67	T	Dibromochloromethane	0.4000	0.3608	9.8	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3584	10.4	100	0.00
69	T	1-Chlorohexane	0.4000	0.4197	-4.9	100	0.00
70	P	Chlorobenzene	0.4000	0.3826	4.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3788	5.3	100	0.00
72	C	Ethylbenzene	0.4000	0.3570	10.8	100	0.00
73	T	m-,p-Xylene	0.8000	0.8505	-6.3	100	0.00
74	T	o-Xylene	-1.0000	0.4149	0.0	100	0.00
75	T	Styrene	0.4000	0.3650	8.7	100	0.00
76	P	Bromoform	-1.0000	1.0334	0.0	0	0.00
77	T	Isopropylbenzene	0.4000	0.4591	-14.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.4135	-3.4	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.12#
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.18#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.23#
83	T	n-Propylbenzene	0.4000	0.4483	-12.1	100	0.00
84	T	Bromobenzene	0.4000	0.3657	8.6	100	0.02
85	T	1,3,5-Trimethylbenzene	0.4000	0.4103	-2.6	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4968	-24.2	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4194	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3640	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3396	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4369	-9.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4176	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4550	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4209	-5.2	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4068	-1.7	100	-0.01
95	T	n-Butylbenzene	-1.0000	0.4718	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3624	9.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.17#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4133	-3.3	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4003	-0.1	100	0.00
100	T	Naphthalene	0.4000	0.3542	11.4	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.3471	13.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
8M404580.D 8260WT.M Wed May 13 06:47:27 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	659590	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	460400	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	243542	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	2938	0.4494 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.80%#	
43) 1,2-Dichloroethane-d4	10.35	65	2843	0.4627 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.84%#	
58) Toluene-d8	12.73	98	11695	0.5443 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.16%#	
80) p-Bromofluorobenzene	16.12	95	4255	0.5135 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.04%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	9953	0.9736 ug/L	87
3) Chloromethane	3.65	50	24429	1.1970 ug/L	99
4) Vinyl Chloride	3.89	62	20406	1.0612 ug/L	96
5) 1,3-Butadiene	3.94	54	17219	0.6767 ug/L	82
6) Bromomethane	4.79	94	2450	1.3331 ug/L	94
7) Chloroethane	4.94	64	5035	0.9622 ug/L	90
8) Trichlorofluoromethane	5.43	101	11177	0.9255 ug/L	98
9) Diethyl ether	5.95	59	23102	4.9898 ug/L	87
10) Isoprene	6.00	67	7629	0.8520 ug/L	76
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	6538	0.9592 ug/L	92
13) Acetone	6.30	43	745	0.7909 ug/L #	36
14) 1,1-Dichloroethene	6.51	61	10988	0.9479 ug/L	82
15) Tert-Butyl Alcohol	6.59	59	2356	9.2949 ug/L #	61
16) Dimethyl Sulfide	6.77	62	6885	1.0188 ug/L	85
17) Iodomethane	7.02	142	2038	1.4675 ug/L	95
18) Methyl acetate	7.05	43	2929	0.8714 ug/L #	79
19) Methylene Chloride	7.30	84	6116	0.9258 ug/L #	33
20) Carbon Disulfide	7.34	76	20852	0.9778 ug/L	97
21) Acrylonitrile	7.48	53	3571	2.3817 ug/L	97
22) Methyl Tert Butyl Ether	7.53	73	12114	0.9518 ug/L	86
23) trans-1,2-Dichloroethene	7.76	61	10287	0.9296 ug/L	85
24) n-Hexane	7.84	57	10789	0.9641 ug/L	98
25) Diisopropyl ether	8.17	45	121991	4.9765 ug/L	90
26) Vinyl Acetate	8.34	43	8061	0.9960 ug/L #	78
27) 1,1-Dichloroethane	8.38	63	12933	0.9681 ug/L	91
28) Ethyl-Tert-Butyl ether	8.75	59	93602	4.8664 ug/L	91
29) 2-Butanone	8.93	43	1254	0.8171 ug/L #	49
30) Propionitrile	9.03	54	2357	4.8184 ug/L	83
31) 2,2-Dichloropropane	9.15	77	10696	0.9704 ug/L	96
32) cis-1,2-Dichloroethene	9.21	96	7441	0.9790 ug/L	62
33) Chloroform	9.42	83	12873	1.0374 ug/L	89
34) 1-Bromopropane	9.55	122	699	0.9722 ug/L	13
35) Bromochloromethane	9.66	130	4028	1.0392 ug/L	77
36) Tetrahydrofuran	9.68	42	5122	4.9547 ug/L	85
38) 1,1,1-Trichloroethane	9.95	97	10138	0.9000 ug/L	95
39) Cyclohexane	9.99	56	11930	0.8739 ug/L	89
40) 1,1-Dichloropropene	10.14	75	9993	1.0196 ug/L	92
41) Tert-Amyl-Methyl ether	10.25	73	68220	4.8322 ug/L	94
42) Carbon Tetrachloride	10.30	117	9231	0.9018 ug/L	97
45) 1,2-Dichloroethane	10.47	62	8537	0.9597 ug/L	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.51	78	27669	1.0481 ug/L		98
47)	Trichloroethene	11.27	130	6630	0.9494 ug/L		95
48)	Methylcyclohexane	11.34	83	9973	0.8799 ug/L		81
49)	1,2-Dichloropropane	11.48	63	7489	1.0128 ug/L		99
50)	Bromodichloromethane	11.78	83	9171	1.0074 ug/L		95
52)	Dibromomethane	11.86	93	2794	0.8023 ug/L		87
53)	2-Chloroethyl Vinyl Ether	12.08	63	2512	0.4835 ug/L	#	64
54)	4-Methyl-2-Pentanone	12.11	58	522	0.4106 ug/L	#	36
55)	cis-1,3-Dichloropropene	12.41	75	8511	0.8553 ug/L		94
56)	Dimethyl Disulfide	12.67	79	3441	3.5730 ug/L		81
59)	Toluene	12.83	91	28445	1.0416 ug/L		80
60)	Ethyl Methacrylate	12.93	69	3578	0.7364 ug/L	#	33
62)	trans-1,3-Dichloropropene	13.01	75	7499	0.9161 ug/L		93
63)	1,1,2-Trichloroethane	13.23	97	4124	0.9720 ug/L		97
64)	2-Hexanone	13.15	58	995	0.8516 ug/L	#	31
65)	1,3-Dichloropropane	13.52	76	7090	0.9532 ug/L		70
66)	Tetrachloroethene	13.66	164	5967	1.0352 ug/L		87
67)	Dibromochloromethane	13.91	129	5305	0.9396 ug/L		84
68)	1,2-Dibromoethane	14.18	107	3373	0.8328 ug/L		82
69)	1-Chlorohexane	14.26	91	8764	0.9382 ug/L		86
70)	Chlorobenzene	14.67	112	17996	0.9764 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.70	131	5637	0.8520 ug/L		99
72)	Ethylbenzene	14.69	106	10247	0.9282 ug/L	#	34
73)	m-,p-Xylene	14.79	106	23914	1.9154 ug/L	#	43
74)	o-Xylene	15.35	106	11085	0.8984 ug/L		61
75)	Styrene	15.39	104	19272	0.9860 ug/L		86
76)	Bromoform	15.88	173	1949	1.3145 ug/L		86
77)	Isopropylbenzene	15.78	105	30028	0.9951 ug/L		78
79)	1,1,2,2-Tetrachloroethane	16.00	83	4807	1.0388 ug/L	#	91
81)	1,2,3-Trichloropropane	16.18	110	889	0.7091 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.23	53	1479	0.9628 ug/L	#	23
83)	n-Propylbenzene	16.29	91	37672	1.0223 ug/L	#	71
84)	Bromobenzene	16.42	156	7025	0.9600 ug/L		81
85)	1,3,5-Trimethylbenzene	16.47	105	25978	1.0304 ug/L		75
86)	2-Chlorotoluene	16.55	91	26781	1.0769 ug/L	#	69
87)	4-Chlorotoluene	16.61	91	18077	0.9088 ug/L		73
88)	a-Methylstyrene	16.87	118	11588	0.8071 ug/L		95
89)	tert-Butylbenzene	16.94	134	5736	1.0234 ug/L		92
90)	1,2,4-Trimethylbenzene	16.99	105	25492	0.9834 ug/L		75
91)	sec-Butylbenzene	17.21	105	33874	1.0776 ug/L		80
92)	p-Isopropyltoluene	17.36	119	27221	1.0214 ug/L		76
93)	1,3-Dichlorobenzene	17.56	146	14385	0.9699 ug/L		92
94)	1,4-Dichlorobenzene	17.69	146	14766	0.9807 ug/L		79
95)	n-Butylbenzene	17.89	91	26584	1.0211 ug/L		79
96)	1,2-Dichlorobenzene	18.19	146	12891	1.0017 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.18	75	792	1.0722 ug/L	#	17
98)	1,2,4-Trichlorobenzene	20.32	180	8084	0.8338 ug/L		96
99)	Hexachlorobutadiene	20.47	225	4179	0.8251 ug/L	#	82
100)	Naphthalene	20.69	128	11817	0.9088 ug/L		91
101)	1,2,3-Trichlorobenzene	21.00	180	7425	0.9038 ug/L		93

(#) = qualifier out of range (m) = manual integration
8M404581.D 8260WT.M Wed May 13 06:46:15 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

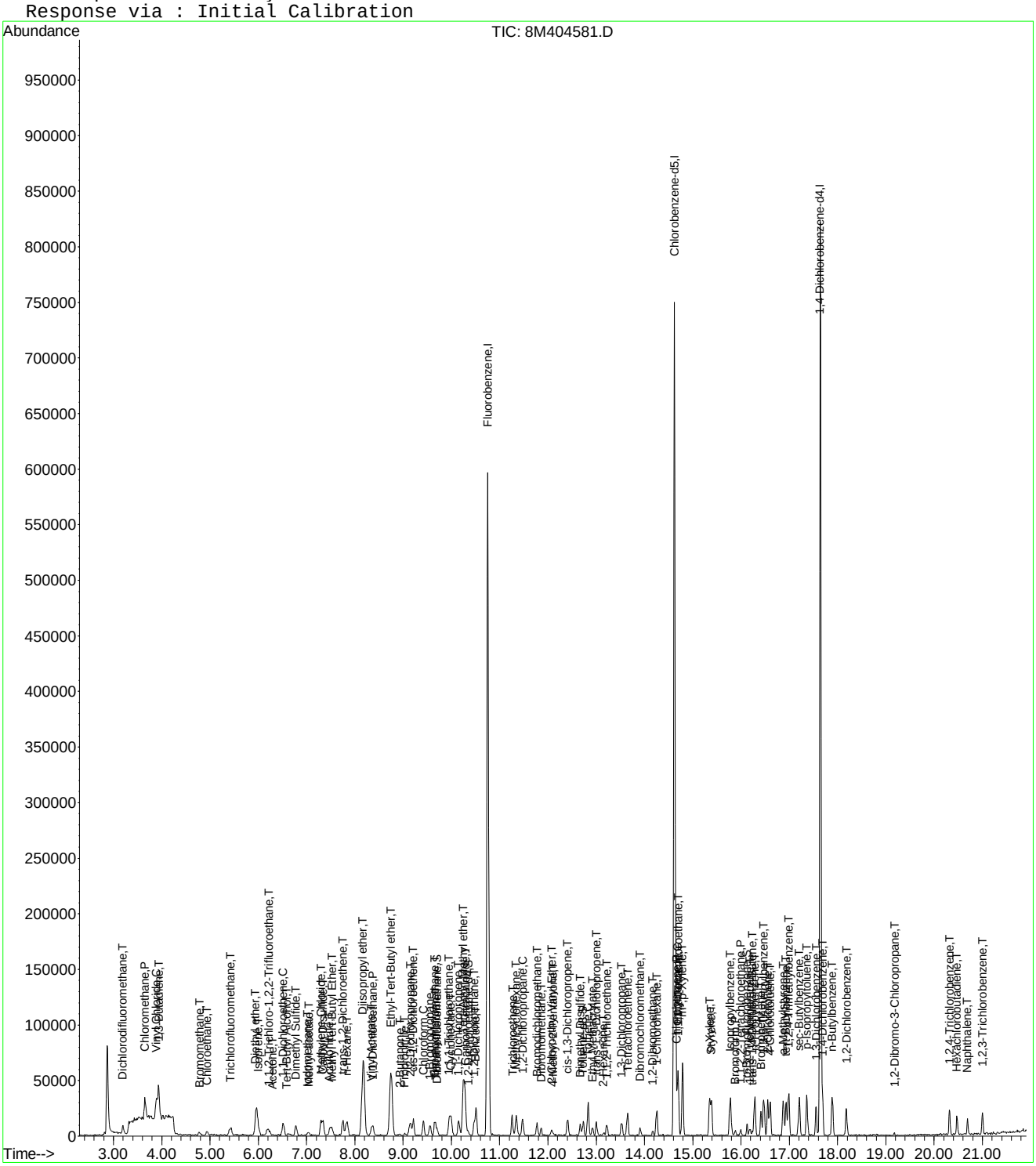

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9736	2.6	100	0.00
3	P	Chloromethane	1.0000	1.1970	-19.7	100	0.00
4	C	Vinyl Chloride	1.0000	1.0612	-6.1	100	0.01
5	T	1,3-Butadiene	-1.0000	0.6767	0.0	0	0.03
6	T	Bromomethane	1.0000	1.3331	-33.3#	100	0.02
7	T	Chloroethane	1.0000	0.9622	3.8	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9255	7.4	100	0.00
9	T	Diethyl ether	5.0000	4.9898	0.2	100	0.00
10	T	Isoprene	-1.0000	0.8520	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.18#
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9592	4.1	100	0.02
13	T	Acetone	-1.0000	0.7909	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	0.9479	5.2	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	9.2949	0.0	0	-0.04
16	T	Dimethyl Sulfide	-1.0000	1.0188	0.0	100	0.00
17	T	Iodomethane	1.0000	1.4675	-46.8#	100	-0.01
18	T	Methyl acetate	-1.0000	0.8714	0.0	100	0.00
19	T	Methylene Chloride	1.0000	0.9258	7.4	100	0.00
20	T	Carbon Disulfide	1.0000	0.9778	2.2	100	0.00
21	T	Acrylonitrile	-1.0000	2.3817	0.0	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9518	4.8	100	0.02
23	T	trans-1,2-Dichloroethene	1.0000	0.9296	7.0	100	0.00
24	T	n-Hexane	-1.0000	0.9641	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.9765	0.5	100	0.00
26	T	Vinyl Acetate	-1.0000	0.9960	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9681	3.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.8664	2.7	100	0.00
29	T	2-Butanone	-1.0000	0.8171	0.0	100	0.00
30	T	Propionitrile	5.0000	4.8184	3.6	100	-0.01
31	T	2,2-Dichloropropane	1.0000	0.9704	3.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9790	2.1	100	0.00
33	C	Chloroform	1.0000	1.0374	-3.7	100	0.00
34		1-Bromopropane	1.0000	0.9722	2.8	100	0.00
35	T	Bromochloromethane	1.0000	1.0392	-3.9	100	0.00
36	T	Tetrahydrofuran	5.0000	4.9547	0.9	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.4494	0.0	0	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9000	10.0	100	-0.01
39	T	Cyclohexane	1.0000	0.8739	12.6	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0196	-2.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.8322	3.4	100	-0.01
42	T	Carbon Tetrachloride	1.0000	0.9018	9.8	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.4627	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	1.0000	0.9597	4.0	100	0.00
46	T	Benzene	1.0000	1.0481	-4.8	100	0.00
47	T	Trichloroethene	1.0000	0.9494	5.1	100	0.00
48	T	Methylcyclohexane	-1.0000	0.8799	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	1.0128	-1.3	100	0.00
50	T	Bromodichloromethane	1.0000	1.0074	-0.7	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.77#
52	T	Dibromomethane	1.0000	0.8023	19.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.4835	0.0	0	0.01
54	T	4-Methyl-2-Pentanone	-1.0000	0.4106	0.0	162	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.8553	14.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.5730	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5443	0.0	0	0.00
59	C	Toluene	1.0000	1.0416	-4.2	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.7364	26.4#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	1.0000	0.9161	8.4	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9720	2.8	100	0.00
64	T	2-Hexanone	-1.0000	0.8516	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	0.9533	4.7	100	0.00
66	T	Tetrachloroethene	1.0000	1.0352	-3.5	100	0.00
67	T	Dibromochloromethane	1.0000	0.9396	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.8328	16.7	100	0.00
69	T	1-Chlorohexane	1.0000	0.9382	6.2	100	0.00
70	P	Chlorobenzene	1.0000	0.9764	2.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.8520	14.8	100	0.00
72	C	Ethylbenzene	1.0000	0.9282	7.2	100	-0.01
73	T	m-,p-Xylene	2.0000	1.9154	4.2	100	0.00
74	T	o-Xylene	1.0000	0.8984	10.2	100	0.00
75	T	Styrene	1.0000	0.9860	1.4	100	0.00
76	P	Bromoform	1.0000	1.3144	-31.4#	100	0.00
77	T	Isopropylbenzene	1.0000	0.9951	0.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	1.0388	-3.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5135	0.0	0	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7091	29.1#	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.9628	3.7	100	0.00
83	T	n-Propylbenzene	1.0000	1.0224	-2.2	100	0.00
84	T	Bromobenzene	1.0000	0.9600	4.0	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0304	-3.0	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0769	-7.7	100	0.00
87	T	4-Chlorotoluene	1.0000	0.9088	9.1	100	0.00
88	T	a-Methylstyrene	-1.0000	0.8071	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0234	-2.3	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	0.9835	1.7	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0776	-7.8	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0214	-2.1	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	0.9699	3.0	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	0.9807	1.9	100	0.00
95	T	n-Butylbenzene	1.0000	1.0211	-2.1	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0017	-0.2	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.0722	0.0	0	0.01
98	T	1,2,4-Trichlorobenzene	1.0000	0.8338	16.6	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.8251	17.5	100	0.00
100	T	Naphthalene	1.0000	0.9088	9.1	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	0.9038	9.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404581.D 8260WT.M Wed May 13 06:47:37 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	668457	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	470511	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	251240	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.72	111	6565	0.9909 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.96%#	
43) 1,2-Dichloroethane-d4	10.35	65	6190	0.9941 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.96%#	
58) Toluene-d8	12.73	98	21782	0.9921 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.96%#	
80) p-Bromofluorobenzene	16.12	95	9059	1.0598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	18273	1.7638 ug/L	99
3) Chloromethane	3.65	50	45698	2.2095 ug/L	99
4) Vinyl Chloride	3.89	62	40979	2.1027 ug/L	96
5) 1,3-Butadiene	3.94	54	37404	1.7245 ug/L	86
6) Bromomethane	4.78	94	5092	1.9188 ug/L	91
7) Chloroethane	4.93	64	10438	1.9682 ug/L	95
8) Trichlorofluoromethane	5.42	101	23291	1.9031 ug/L	96
9) Diethyl ether	5.95	59	115894	24.7000 ug/L	90
10) Isoprene	6.00	67	16844	1.8561 ug/L	82
11) Acrolein	6.20	56	1525	Below Cal	65
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	13397	1.9395 ug/L	85
13) Acetone	6.30	43	2254	2.3611 ug/L #	52
14) 1,1-Dichloroethene	6.51	61	23611	2.0098 ug/L	83
15) Tert-Butyl Alcohol	6.63	59	12335	48.0186 ug/L	96
16) Dimethyl Sulfide	6.77	62	13216	1.9296 ug/L	76
17) Iodomethane	7.03	142	4697	2.0188 ug/L	98
18) Methyl acetate	7.04	43	6429	1.8872 ug/L #	63
19) Methylene Chloride	7.30	84	13330	1.9910 ug/L #	51
20) Carbon Disulfide	7.34	76	40646	1.8807 ug/L	94
21) Acrylonitrile	7.47	53	16949	11.1543 ug/L	75
22) Methyl Tert Butyl Ether	7.53	73	26473	2.0525 ug/L	98
23) trans-1,2-Dichloroethene	7.74	61	22069	1.9677 ug/L	86
24) n-Hexane	7.84	57	21654	1.9093 ug/L	97
25) Diisopropyl ether	8.17	45	627644	25.2643 ug/L	90
26) Vinyl Acetate	8.34	43	16025	1.9538 ug/L #	84
27) 1,1-Dichloroethane	8.37	63	27711	2.0467 ug/L	97
28) Ethyl-Tert-Butyl ether	8.75	59	479574	24.6025 ug/L	93
29) 2-Butanone	8.91	43	2904	1.8670 ug/L #	49
30) Propionitrile	9.04	54	11650	23.5000 ug/L	93
31) 2,2-Dichloropropane	9.16	77	22508	2.0150 ug/L	87
32) cis-1,2-Dichloroethene	9.21	96	14863	1.9295 ug/L	80
33) Chloroform	9.42	83	24639	1.9592 ug/L	100
34) 1-Bromopropane	9.54	122	2635	2.3365 ug/L	96
35) Bromochloromethane	9.65	130	7260	1.8482 ug/L #	61
36) Tetrahydrofuran	9.68	42	25601	24.4363 ug/L	89
38) 1,1,1-Trichloroethane	9.96	97	21783	1.9081 ug/L	98
39) Cyclohexane	9.98	56	27008	1.9521 ug/L	78
40) 1,1-Dichloropropene	10.15	75	19262	1.9393 ug/L	87
41) Tert-Amyl-Methyl ether	10.26	73	341606	23.8760 ug/L	96
42) Carbon Tetrachloride	10.30	117	19985	1.9264 ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	16851	1.8691 ug/L		92
46)	Benzene	10.50	78	56814	2.1235 ug/L		96
47)	Trichloroethene	11.26	130	12549	1.7732 ug/L		96
48)	Methylcyclohexane	11.35	83	19938	1.7357 ug/L		89
49)	1,2-Dichloropropane	11.47	63	14953	1.9954 ug/L		91
50)	Bromodichloromethane	11.78	83	17347	1.8802 ug/L		98
51)	1,4-Dioxane	11.76	88	945	73.3339 ug/L		93
52)	Dibromomethane	11.86	93	7170	2.0316 ug/L		88
53)	2-Chloroethyl Vinyl Ether	12.08	63	5523	2.1519 ug/L	#	78
54)	4-Methyl-2-Pentanone	12.11	58	2984	2.3162 ug/L	#	83
55)	cis-1,3-Dichloropropene	12.41	75	17917	1.7766 ug/L		95
56)	Dimethyl Disulfide	12.67	79	7600	4.2202 ug/L		84
59)	Toluene	12.83	91	59670	2.1381 ug/L		80
60)	Ethyl Methacrylate	12.92	69	8875	1.7872 ug/L	#	54
62)	trans-1,3-Dichloropropene	13.01	75	14883	1.7791 ug/L		97
63)	1,1,2-Trichloroethane	13.22	97	8013	1.8480 ug/L		88
64)	2-Hexanone	13.16	58	2369	1.9841 ug/L	#	38
65)	1,3-Dichloropropane	13.52	76	16337	2.1493 ug/L		83
66)	Tetrachloroethene	13.65	164	11497	1.9518 ug/L		88
67)	Dibromochloromethane	13.92	129	10779	1.8681 ug/L		99
68)	1,2-Dibromoethane	14.16	107	7938	1.9177 ug/L		100
69)	1-Chlorohexane	14.26	91	17801	1.8648 ug/L		87
70)	Chlorobenzene	14.67	112	38190	2.0274 ug/L		92
71)	1,1,1,2-Tetrachloroethane	14.70	131	12247	1.8113 ug/L		100
72)	Ethylbenzene	14.70	106	19901	1.7639 ug/L	#	18
73)	m-,p-Xylene	14.78	106	51169	4.0103 ug/L	#	48
74)	o-Xylene	15.35	106	23385	1.8546 ug/L	#	50
75)	Styrene	15.39	104	38422	1.9235 ug/L		88
76)	Bromoform	15.88	173	5191	2.1713 ug/L		94
77)	Isopropylbenzene	15.78	105	63107	2.0464 ug/L		76
79)	1,1,2,2-Tetrachloroethane	15.98	83	9845	2.0623 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	3065	2.3699 ug/L	#	30
82)	trans-1,4-Dichloro-2-Buten	16.23	53	2710	1.7101 ug/L	#	13
83)	n-Propylbenzene	16.28	91	78854	2.0744 ug/L	#	72
84)	Bromobenzene	16.42	156	13385	1.7731 ug/L		74
85)	1,3,5-Trimethylbenzene	16.47	105	53268	2.0480 ug/L		79
86)	2-Chlorotoluene	16.55	91	43814	1.7078 ug/L		82
87)	4-Chlorotoluene	16.60	91	46513	2.2667 ug/L		77
88)	a-Methylstyrene	16.87	118	25754	1.7387 ug/L		89
89)	tert-Butylbenzene	16.94	134	10204	1.7647 ug/L		42
90)	1,2,4-Trimethylbenzene	16.99	105	55177	2.0634 ug/L		70
91)	sec-Butylbenzene	17.20	105	68065	2.0989 ug/L	#	74
92)	p-Isopropyltoluene	17.36	119	57213	2.0809 ug/L		75
93)	1,3-Dichlorobenzene	17.56	146	31027	2.0280 ug/L		93
94)	1,4-Dichlorobenzene	17.69	146	29852	1.9219 ug/L		92
95)	n-Butylbenzene	17.90	91	56152	2.0908 ug/L	#	77
96)	1,2-Dichlorobenzene	18.18	146	27243	2.0520 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.18	75	1051	1.3793 ug/L		76
98)	1,2,4-Trichlorobenzene	20.32	180	18804	1.8801 ug/L		95
99)	Hexachlorobutadiene	20.47	225	9220	1.7646 ug/L		93
100)	Naphthalene	20.69	128	28078	2.0933 ug/L		91
101)	1,2,3-Trichlorobenzene	21.00	180	16807	1.9831 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M404582.D 8260WT.M Wed May 13 06:46:16 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

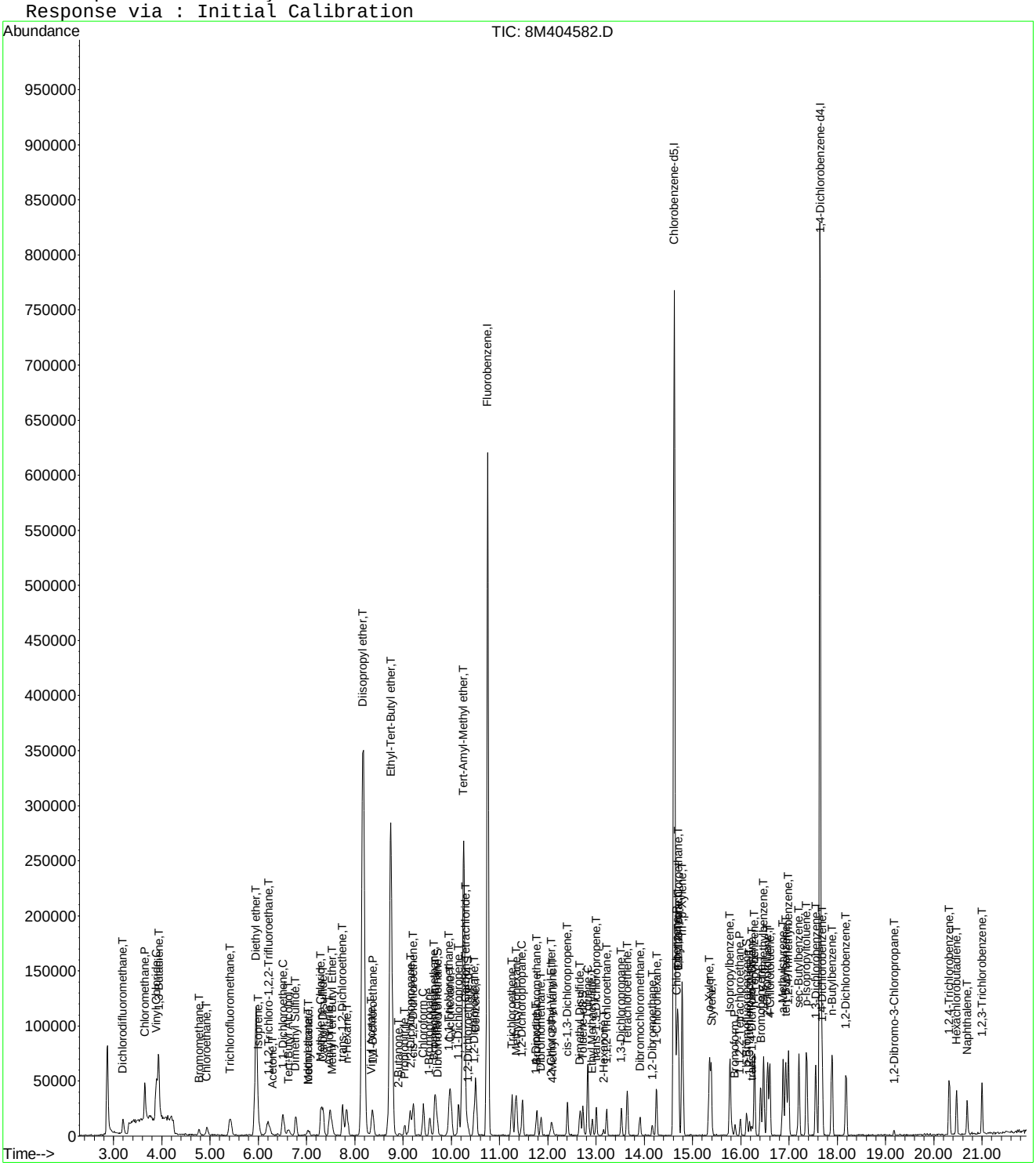

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.7638	11.8	100	0.00
3	P	Chloromethane	2.0000	2.2095	-10.5	100	0.00
4	C	Vinyl Chloride	2.0000	2.1027	-5.1	100	0.00
5	T	1,3-Butadiene	2.0000	1.7245	13.8	100	0.03
6	T	Bromomethane	2.0000	1.9188	4.1	100	0.00
7	T	Chloroethane	2.0000	1.9682	1.6	100	0.00
8	T	Trichlorofluoromethane	2.0000	1.9031	4.8	100	0.00
9	T	Diethyl ether	25.0000	24.7000	1.2	100	0.00
10	T	Isoprene	-1.0000	1.8561	0.0	100	0.00
11	T	Acrolein	12.5000	-1.0000	108.0#	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9395	3.0	100	0.00
13	T	Acetone	-1.0000	2.3611	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0098	-0.5	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	48.0186	4.0	100	0.00
16	T	Dimethyl Sulfide	2.0000	1.9297	3.5	100	0.00
17	T	Iodomethane	2.0000	2.0188	-0.9	100	0.00
18	T	Methyl acetate	2.0000	1.8872	5.6	100	0.00
19	T	Methylene Chloride	2.0000	1.9910	0.4	100	0.00
20	T	Carbon Disulfide	2.0000	1.8807	6.0	100	0.00
21	T	Acrylonitrile	12.5000	11.1543	10.8	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0525	-2.6	100	0.02
23	T	trans-1,2-Dichloroethene	2.0000	1.9678	1.6	100	0.00
24	T	n-Hexane	-1.0000	1.9093	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	25.2643	-1.1	100	0.00
26	T	Vinyl Acetate	-1.0000	1.9538	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0467	-2.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.6025	1.6	100	0.00
29	T	2-Butanone	-1.0000	1.8670	0.0	100	-0.01
30	T	Propionitrile	25.0000	23.5000	6.0	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.0150	-0.7	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9295	3.5	100	0.00
33	C	Chloroform	2.0000	1.9592	2.0	100	0.00
34		1-Bromopropane	2.0000	2.3365	-16.8	100	-0.01
35	T	Bromochloromethane	2.0000	1.8482	7.6	100	-0.01
36	T	Tetrahydrofuran	25.0000	24.4363	2.3	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.9909	0.0	0	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9081	4.6	100	0.00
39	T	Cyclohexane	2.0000	1.9521	2.4	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9393	3.0	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	23.8760	4.5	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.9264	3.7	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.9941	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	2.0000	1.8691	6.5	100	0.00
46	T	Benzene	2.0000	2.1235	-6.2	100	0.00
47	T	Trichloroethene	2.0000	1.7732	11.3	100	0.00
48	T	Methylcyclohexane	-1.0000	1.7357	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.9954	0.2	100	0.00
50	T	Bromodichloromethane	2.0000	1.8803	6.0	100	0.00
51	T	1,4-Dioxane	-1.0000	73.3339	0.0	0	-0.01
52	T	Dibromomethane	2.0000	2.0316	-1.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	2.1519	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	2.3162	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.7766	11.2	100	0.00
56	T	Dimethyl Disulfide	-1.0000	4.2202	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.9921	0.0	0	0.00
59	C	Toluene	2.0000	2.1381	-6.9	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.7872	10.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	2.0000	1.7791	11.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.8480	7.6	100	0.00
64	T	2-Hexanone	-1.0000	1.9841	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1493	-7.5	100	0.00
66	T	Tetrachloroethene	2.0000	1.9518	2.4	100	0.00
67	T	Dibromochloromethane	2.0000	1.8681	6.6	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9177	4.1	100	0.00
69	T	1-Chlorohexane	2.0000	1.8647	6.8	100	0.00
70	P	Chlorobenzene	2.0000	2.0274	-1.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.8113	9.4	100	0.00
72	C	Ethylbenzene	2.0000	1.7639	11.8	100	0.00
73	T	m-,p-Xylene	4.0000	4.0103	-0.3	100	0.00
74	T	o-Xylene	2.0000	1.8546	7.3	100	0.00
75	T	Styrene	2.0000	1.9235	3.8	100	0.00
76	P	Bromoform	2.0000	2.1713	-8.6	100	0.00
77	T	Isopropylbenzene	2.0000	2.0464	-2.3	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0623	-3.1	100	-0.01
80	S	p-Bromofluorobenzene	-1.0000	1.0598	0.0	0	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.3699	-18.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7101	14.5	100	0.00
83	T	n-Propylbenzene	2.0000	2.0744	-3.7	100	0.00
84	T	Bromobenzene	2.0000	1.7731	11.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0480	-2.4	100	0.00
86	T	2-Chlorotoluene	2.0000	1.7078	14.6	100	0.00
87	T	4-Chlorotoluene	2.0000	2.2667	-13.3	100	0.00
88	T	a-Methylstyrene	-1.0000	1.7387	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.7647	11.8	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.0634	-3.2	100	0.00
91	T	sec-Butylbenzene	2.0000	2.0989	-4.9	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.0809	-4.0	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.0280	-1.4	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	1.9219	3.9	100	0.00
95	T	n-Butylbenzene	2.0000	2.0908	-4.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0520	-2.6	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.3793	31.0#	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.8801	6.0	100	0.00
99	T	Hexachlorobutadiene	2.0000	1.7646	11.8	100	0.00
100	T	Naphthalene	2.0000	2.0933	-4.7	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9831	0.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404582.D 8260WT.M Wed May 13 06:47:46 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:16 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	686040	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	475199	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	267048	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	168048	24.7134 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.84%		
43) 1,2-Dichloroethane-d4	10.35	65	161918	25.3383 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.36%		
58) Toluene-d8	12.73	98	587226	26.4814 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.92%		
80) p-Bromofluorobenzene	16.12	95	222599	24.5005 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	47127	4.4324 ug/L	96
3) Chloromethane	3.65	50	110533	5.2074 ug/L	96
4) Vinyl Chloride	3.89	62	100868	5.0431 ug/L	95
5) 1,3-Butadiene	3.93	54	97161	4.7530 ug/L	93
6) Bromomethane	4.77	94	15690	4.2002 ug/L	92
7) Chloroethane	4.93	64	25308	4.6497 ug/L #	87
8) Trichlorofluoromethane	5.42	101	59779	4.7593 ug/L	97
9) Diethyl ether	5.96	59	240712	49.9870 ug/L	88
10) Isoprene	6.00	67	39892	4.2833 ug/L	78
11) Acrolein	6.18	56	2733	26.2227 ug/L	71
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	33786	4.7658 ug/L	88
13) Acetone	6.29	43	4839	4.9390 ug/L #	61
14) 1,1-Dichloroethene	6.51	61	54546	4.5240 ug/L	79
15) Tert-Butyl Alcohol	6.63	59	26541	100.6726 ug/L	99
16) Dimethyl Sulfide	6.78	62	30481	4.3364 ug/L	68
17) Iodomethane	7.04	142	12011	3.4856 ug/L	79
18) Methyl acetate	7.04	43	18409	5.2654 ug/L #	80
19) Methylene Chloride	7.30	84	32753	4.7667 ug/L #	49
20) Carbon Disulfide	7.34	76	99247	4.4746 ug/L	97
21) Acrylonitrile	7.48	53	36223	23.2277 ug/L	86
22) Methyl Tert Butyl Ether	7.51	73	64059	4.8393 ug/L	97
23) trans-1,2-Dichloroethene	7.76	61	53278	4.6287 ug/L	86
24) n-Hexane	7.84	57	51137	4.3934 ug/L	92
25) Diisopropyl ether	8.17	45	1331241	52.2124 ug/L	91
26) Vinyl Acetate	8.34	43	42002	4.9898 ug/L #	87
27) 1,1-Dichloroethane	8.38	63	66294	4.7710 ug/L	96
28) Ethyl-Tert-Butyl ether	8.75	59	1034994	51.7352 ug/L	91
29) 2-Butanone	8.92	43	7169	4.4910 ug/L #	71
30) Propionitrile	9.03	54	26318	51.7272 ug/L	97
31) 2,2-Dichloropropane	9.15	77	50659	4.4189 ug/L	96
32) cis-1,2-Dichloroethene	9.21	96	34547	4.3699 ug/L	68
33) Chloroform	9.42	83	63118	4.8903 ug/L	92
34) 1-Bromopropane	9.56	122	6302	4.8190 ug/L	90
35) Bromochloromethane	9.65	130	17796	4.4142 ug/L #	59
36) Tetrahydrofuran	9.68	42	54123	50.3367 ug/L	83
38) 1,1,1-Trichloroethane	9.96	97	53980	4.6072 ug/L	95
39) Cyclohexane	9.99	56	62040	4.3691 ug/L	85
40) 1,1-Dichloropropene	10.15	75	47579	4.6675 ug/L	92
41) Tert-Amyl-Methyl ether	10.26	73	751367	51.1697 ug/L	96
42) Carbon Tetrachloride	10.30	117	47176	4.4308 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M404583.D 8260WT.M Wed May 13 06:46:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:16 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	45883	4.9589 ug/L		91
46)	Benzene	10.51	78	136536	4.9724 ug/L		100
47)	Trichloroethene	11.26	130	33200	4.5710 ug/L		97
48)	Methylcyclohexane	11.34	83	51913	4.4036 ug/L		92
49)	1,2-Dichloropropane	11.48	63	34846	4.5308 ug/L		98
50)	Bromodichloromethane	11.77	83	42494	4.4879 ug/L		99
51)	1,4-Dioxane	11.76	88	2217	105.6275 ug/L		86
52)	Dibromomethane	11.86	93	16927	4.6733 ug/L		92
53)	2-Chloroethyl Vinyl Ether	12.07	63	12688	5.9847 ug/L		92
54)	4-Methyl-2-Pentanone	12.10	58	5613	4.2452 ug/L		93
55)	cis-1,3-Dichloropropene	12.41	75	49114	4.7452 ug/L		94
56)	Dimethyl Disulfide	12.67	79	20718	6.2009 ug/L		94
59)	Toluene	12.83	91	143782	5.1011 ug/L		83
60)	Ethyl Methacrylate	12.92	69	22986	4.5832 ug/L		68
62)	trans-1,3-Dichloropropene	13.01	75	42367	5.0147 ug/L		94
63)	1,1,2-Trichloroethane	13.21	97	20948	4.7835 ug/L		93
64)	2-Hexanone	13.16	58	5134	4.2573 ug/L	#	42
65)	1,3-Dichloropropane	13.52	76	38249	4.9824 ug/L		77
66)	Tetrachloroethene	13.65	164	25212	4.2379 ug/L		87
67)	Dibromochloromethane	13.92	129	26066	4.4729 ug/L		98
68)	1,2-Dibromoethane	14.17	107	20580	4.9228 ug/L		97
69)	1-Chlorohexane	14.26	91	44970	4.6644 ug/L		87
70)	Chlorobenzene	14.67	112	92011	4.8365 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.70	131	30717	4.4982 ug/L		96
72)	Ethylbenzene	14.70	106	51864	4.5516 ug/L	#	32
73)	m-,p-Xylene	14.79	106	126124	9.7872 ug/L	#	41
74)	o-Xylene	15.35	106	60560	4.7554 ug/L		61
75)	Styrene	15.39	104	96464	4.7816 ug/L		89
76)	Bromoform	15.88	173	13800	4.4404 ug/L		97
77)	Isopropylbenzene	15.78	105	158770	5.0977 ug/L		77
79)	1,1,2,2-Tetrachloroethane	16.00	83	24622	4.8524 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	6682	4.8607 ug/L		76
82)	trans-1,4-Dichloro-2-Buten	16.22	53	7861	4.6669 ug/L	#	59
83)	n-Propylbenzene	16.29	91	193929	4.7996 ug/L	#	74
84)	Bromobenzene	16.41	156	36989	4.6097 ug/L		85
85)	1,3,5-Trimethylbenzene	16.47	105	134210	4.8546 ug/L		79
86)	2-Chlorotoluene	16.55	91	124340	4.5598 ug/L		77
87)	4-Chlorotoluene	16.61	91	121177	5.5558 ug/L		73
88)	a-Methylstyrene	16.87	118	67830	4.3083 ug/L		97
89)	tert-Butylbenzene	16.94	134	27541	4.4811 ug/L		56
90)	1,2,4-Trimethylbenzene	16.99	105	140624	4.9476 ug/L		74
91)	sec-Butylbenzene	17.21	105	179981	5.2214 ug/L	#	76
92)	p-Isopropyltoluene	17.36	119	145950	4.9942 ug/L		76
93)	1,3-Dichlorobenzene	17.56	146	73899	4.5442 ug/L		95
94)	1,4-Dichlorobenzene	17.69	146	78460	4.7523 ug/L		96
95)	n-Butylbenzene	17.89	91	146124	5.1187 ug/L	#	78
96)	1,2-Dichlorobenzene	18.18	146	65645	4.6518 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.18	75	4176	5.1559 ug/L		78
98)	1,2,4-Trichlorobenzene	20.33	180	48452	4.5577 ug/L		95
99)	Hexachlorobutadiene	20.47	225	26321	4.7392 ug/L		93
100)	Naphthalene	20.69	128	68778	4.8240 ug/L		93
101)	1,2,3-Trichlorobenzene	21.00	180	41531	4.6102 ug/L		96

(#) = qualifier out of range (m) = manual integration
8M404583.D 8260WT.M Wed May 13 06:46:17 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

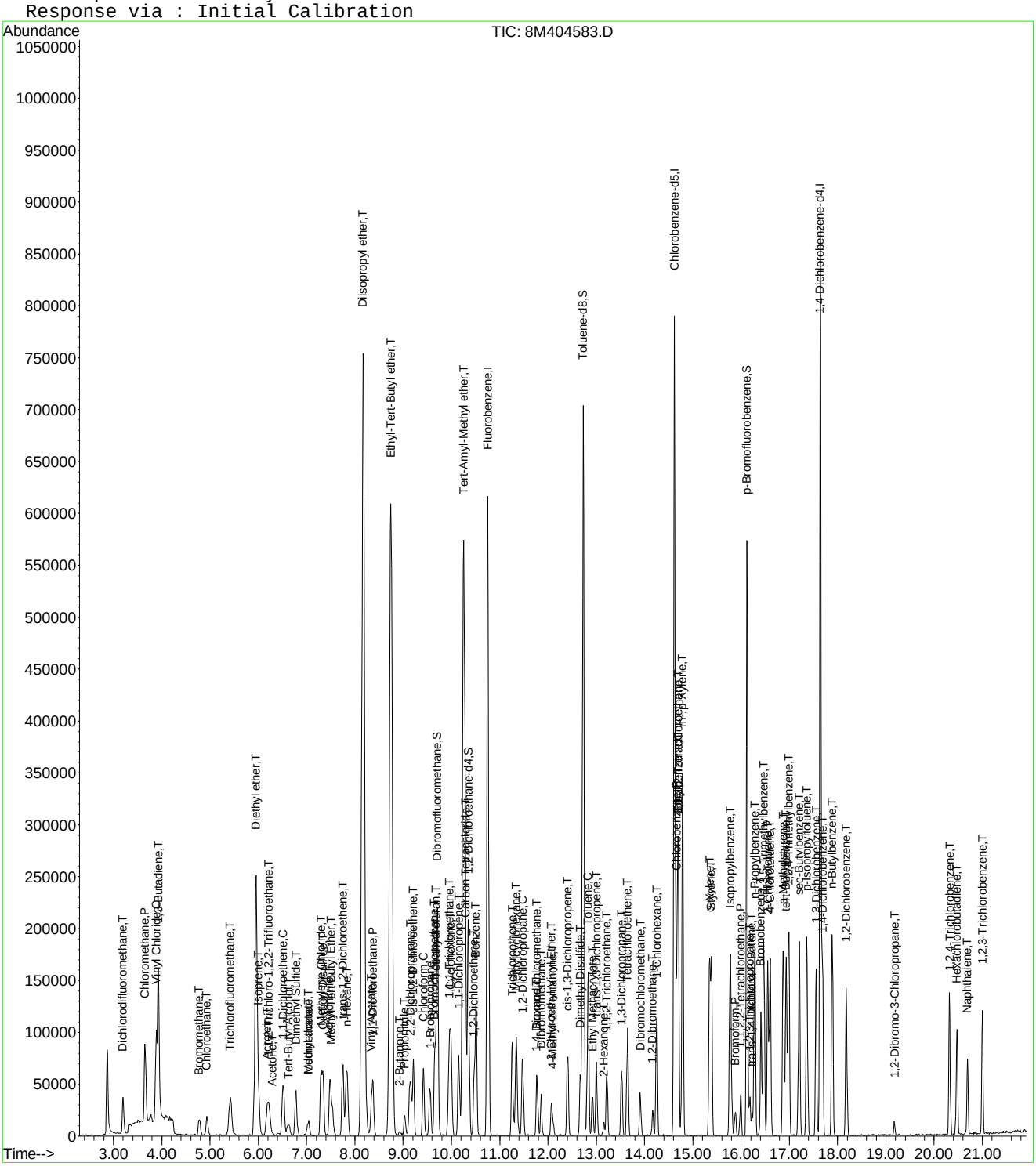

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.4324	11.4	100	0.00
3	P	Chloromethane	5.0000	5.2074	-4.1	100	0.00
4	C	Vinyl Chloride	5.0000	5.0431	-0.9	100	0.01
5	T	1,3-Butadiene	5.0000	4.7530	4.9	100	0.02
6	T	Bromomethane	5.0000	4.2002	16.0	100	0.00
7	T	Chloroethane	5.0000	4.6498	7.0	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7594	4.8	100	0.00
9	T	Diethyl ether	50.0000	49.9870	0.0	100	0.01
10	T	Isoprene	5.0000	4.2833	14.3	100	0.00
11	T	Acrolein	25.0000	26.2227	-4.9	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7658	4.7	100	0.00
13	T	Acetone	5.0000	4.9390	1.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.5240	9.5	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.6726	-0.7	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.3364	13.3	100	0.00
17	T	Iodomethane	5.0000	3.4856	30.3#	100	0.00
18	T	Methyl acetate	5.0000	5.2654	-5.3	100	0.00
19	T	Methylene Chloride	5.0000	4.7667	4.7	100	0.00
20	T	Carbon Disulfide	5.0000	4.4746	10.5	100	0.00
21	T	Acrylonitrile	25.0000	23.2277	7.1	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.8393	3.2	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.6287	7.4	100	0.00
24	T	n-Hexane	5.0000	4.3934	12.1	100	0.00
25	T	Diisopropyl ether	50.0000	52.2124	-4.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.9898	0.2	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7710	4.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.7352	-3.5	100	0.00
29	T	2-Butanone	5.0000	4.4910	10.2	100	0.00
30	T	Propionitrile	50.0000	51.7272	-3.5	100	-0.01
31	T	2,2-Dichloropropane	5.0000	4.4189	11.6	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.3699	12.6	100	0.00
33	C	Chloroform	5.0000	4.8903	2.2	100	0.00
34		1-Bromopropane	5.0000	4.8190	3.6	100	0.00
35	T	Bromochloromethane	5.0000	4.4142	11.7	100	-0.01
36	T	Tetrahydrofuran	50.0000	50.3367	-0.7	100	0.00
37	S	Dibromofluoromethane	-1.0000	24.7134	0.0	0	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.6072	7.9	100	0.00
39	T	Cyclohexane	5.0000	4.3691	12.6	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6675	6.7	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	51.1696	-2.3	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.4308	11.4	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	25.3383	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	5.0000	4.9589	0.8	100	0.00
46	T	Benzene	5.0000	4.9724	0.6	100	0.00
47	T	Trichloroethene	5.0000	4.5710	8.6	100	0.00
48	T	Methylcyclohexane	5.0000	4.4036	11.9	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5308	9.4	100	0.00
50	T	Bromodichloromethane	5.0000	4.4879	10.2	100	0.00
51	T	1,4-Dioxane	100.0000	105.6275	-5.6	100	-0.01
52	T	Dibromomethane	5.0000	4.6733	6.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.9847	-19.7	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.2452	15.1	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.7452	5.1	100	0.00
56	T	Dimethyl Disulfide	5.0000	6.2009	-24.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	26.4814	0.0	0	0.00
59	C	Toluene	5.0000	5.1011	-2.0	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.5832	8.3	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	5.0000	5.0146	-0.3	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.7835	4.3	100	-0.01
64	T	2-Hexanone	5.0000	4.2573	14.9	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9824	0.4	100	0.00
66	T	Tetrachloroethene	5.0000	4.2379	15.2	100	0.00
67	T	Dibromochloromethane	5.0000	4.4729	10.5	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.9228	1.5	100	0.00
69	T	1-Chlorohexane	5.0000	4.6644	6.7	100	0.00
70	P	Chlorobenzene	5.0000	4.8365	3.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.4982	10.0	100	0.00
72	C	Ethylbenzene	5.0000	4.5516	9.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.7873	2.1	100	0.00
74	T	o-Xylene	5.0000	4.7554	4.9	100	0.00
75	T	Styrene	5.0000	4.7816	4.4	100	0.00
76	P	Bromoform	5.0000	4.4404	11.2	100	0.00
77	T	Isopropylbenzene	5.0000	5.0977	-2.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8524	3.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	24.5005	0.0	0	0.00
81	T	1,2,3-Trichloropropane	5.0000	4.8607	2.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.6669	6.7	100	-0.01
83	T	n-Propylbenzene	5.0000	4.7996	4.0	100	0.00
84	T	Bromobenzene	5.0000	4.6097	7.8	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.8546	2.9	100	0.00
86	T	2-Chlorotoluene	5.0000	4.5598	8.8	100	0.00
87	T	4-Chlorotoluene	5.0000	5.5558	-11.1	100	0.00
88	T	a-Methylstyrene	5.0000	4.3083	13.8	100	0.00
89	T	tert-Butylbenzene	5.0000	4.4811	10.4	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	4.9476	1.0	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2214	-4.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	4.9942	0.1	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.5442	9.1	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.7523	5.0	100	0.00
95	T	n-Butylbenzene	5.0000	5.1187	-2.4	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.6518	7.0	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1559	-3.1	100	0.01
98	T	1,2,4-Trichlorobenzene	5.0000	4.5577	8.8	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.7392	5.2	100	0.00
100	T	Naphthalene	5.0000	4.8240	3.5	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6102	7.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404583.D 8260WT.M Wed May 13 06:47:55 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404584.D Vial: 8
Acq On : 12 May 2015 19:13 Operator: TMB
Sample : WG523161-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:17 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	727593	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	518323	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	285092	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	71169	9.8685 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 39.48%#		
43) 1,2-Dichloroethane-d4	10.35	65	68318	10.0804 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.32%#		
58) Toluene-d8	12.73	98	240107	9.9269 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 39.72%#		
80) p-Bromofluorobenzene	16.13	95	95680	9.8645 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 39.44%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	245768	21.7949 ug/L	97
3) Chloromethane	3.65	50	473219	21.0210 ug/L	95
4) Vinyl Chloride	3.89	62	456773	21.5331 ug/L	94
5) 1,3-Butadiene	3.93	54	457261	22.6102 ug/L	96
6) Bromomethane	4.78	94	81387	17.2761 ug/L	97
7) Chloroethane	4.93	64	115752	20.0522 ug/L	90
8) Trichlorofluoromethane	5.43	101	266817	20.0296 ug/L	97
9) Diethyl ether	5.95	59	412029	80.6767 ug/L	89
10) Isoprene	5.99	67	191093	19.3462 ug/L	79
11) Acrolein	6.18	56	5561	41.8032 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	152298	20.2560 ug/L	94
13) Acetone	6.28	43	24034	23.1296 ug/L	76
14) 1,1-Dichloroethene	6.51	61	252867	19.7750 ug/L	83
15) Tert-Butyl Alcohol	6.63	59	45992	164.4892 ug/L	97
16) Dimethyl Sulfide	6.78	62	148261	19.8879 ug/L	78
17) Iodomethane	7.03	142	76927	15.7797 ug/L	78
18) Methyl acetate	7.04	43	73990	19.9541 ug/L	93
19) Methylene Chloride	7.30	84	141246	19.3823 ug/L #	49
20) Carbon Disulfide	7.34	76	488267	20.7563 ug/L	94
21) Acrylonitrile	7.47	53	63930	38.6534 ug/L	85
22) Methyl Tert Butyl Ether	7.50	73	280227	19.9606 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	236060	19.3372 ug/L	85
24) n-Hexane	7.84	57	250582	20.2991 ug/L	98
25) Diisopropyl ether	8.18	45	2248464	83.1503 ug/L	92
26) Vinyl Acetate	8.34	43	183005	20.4992 ug/L	92
27) 1,1-Dichloroethane	8.37	63	299777	20.3420 ug/L	95
28) Ethyl-Tert-Butyl ether	8.74	59	1762800	83.0830 ug/L	92
29) 2-Butanone	8.92	43	36822	21.7495 ug/L	90
30) Propionitrile	9.03	54	44813	83.0484 ug/L	97
31) 2,2-Dichloropropane	9.15	77	236580	19.4577 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	165038	19.6836 ug/L	75
33) Chloroform	9.42	83	280488	20.4908 ug/L	92
34) 1-Bromopropane	9.55	122	28284	18.8723 ug/L	97
35) Bromochloromethane	9.65	130	83271	19.4752 ug/L #	66
36) Tetrahydrofuran	9.68	42	94391	82.7740 ug/L	85
38) 1,1,1-Trichloroethane	9.95	97	249818	20.1043 ug/L	99
39) Cyclohexane	9.99	56	302464	20.0844 ug/L	85
40) 1,1-Dichloropropene	10.15	75	214768	19.8654 ug/L	93
41) Tert-Amyl-Methyl ether	10.25	73	1279207	82.1414 ug/L	97
42) Carbon Tetrachloride	10.30	117	224404	19.8726 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M404584.D 8260WT.M Wed May 13 06:46:18 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404584.D Vial: 8
Acq On : 12 May 2015 19:13 Operator: TMB
Sample : WG523161-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:17 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	194558	19.8265 ug/L		92
46)	Benzene	10.51	78	598890	20.5650 ug/L		100
47)	Trichloroethene	11.26	130	158829	20.6187 ug/L		97
48)	Methylcyclohexane	11.35	83	246700	19.7314 ug/L		89
49)	1,2-Dichloropropane	11.47	63	161651	19.8183 ug/L		99
50)	Bromodichloromethane	11.77	83	198014	19.7184 ug/L		99
51)	1,4-Dioxane	11.76	88	4731	163.7290 ug/L	#	69
52)	Dibromomethane	11.86	93	77466	20.1658 ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.06	63	36919	18.0638 ug/L		91
54)	4-Methyl-2-Pentanone	12.11	58	28112	20.0473 ug/L		92
55)	cis-1,3-Dichloropropene	12.41	75	225646	20.5559 ug/L		94
56)	Dimethyl Disulfide	12.67	79	104466	18.1272 ug/L		94
59)	Toluene	12.83	91	648413	21.0904 ug/L		84
60)	Ethyl Methacrylate	12.92	69	115634	21.1382 ug/L		76
62)	trans-1,3-Dichloropropene	13.00	75	185796	20.1616 ug/L		93
63)	1,1,2-Trichloroethane	13.22	97	97920	20.4999 ug/L		98
64)	2-Hexanone	13.15	58	27272	20.7336 ug/L	#	36
65)	1,3-Dichloropropane	13.52	76	170530	20.3655 ug/L		80
66)	Tetrachloroethene	13.65	164	126104	19.4334 ug/L		90
67)	Dibromochloromethane	13.91	129	124382	19.5682 ug/L		99
68)	1,2-Dibromoethane	14.16	107	94289	20.6778 ug/L		96
69)	1-Chlorohexane	14.26	91	211868	20.1470 ug/L		86
70)	Chlorobenzene	14.67	112	410486	19.7817 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.70	131	142319	19.1072 ug/L		99
72)	Ethylbenzene	14.70	106	228219	18.3622 ug/L	#	21
73)	m-,p-Xylene	14.78	106	564794	40.1817 ug/L	#	41
74)	o-Xylene	15.35	106	276601	19.9127 ug/L		63
75)	Styrene	15.38	104	458747	20.8476 ug/L		89
76)	Bromoform	15.88	173	67444	17.1776 ug/L		99
77)	Isopropylbenzene	15.78	105	719990	21.1936 ug/L		77
79)	1,1,2,2-Tetrachloroethane	15.99	83	105532	19.4816 ug/L		100
81)	1,2,3-Trichloropropane	16.18	110	30367	20.6917 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.23	53	35550	19.7693 ug/L		79
83)	n-Propylbenzene	16.28	91	901587	20.9015 ug/L	#	72
84)	Bromobenzene	16.42	156	170410	19.8931 ug/L		87
85)	1,3,5-Trimethylbenzene	16.47	105	625945	21.2085 ug/L		78
86)	2-Chlorotoluene	16.55	91	595181	20.4450 ug/L		80
87)	4-Chlorotoluene	16.60	91	470804	20.2195 ug/L		75
88)	a-Methylstyrene	16.87	118	332268	19.7685 ug/L		91
89)	tert-Butylbenzene	16.93	134	125558	19.1361 ug/L		58
90)	1,2,4-Trimethylbenzene	16.99	105	643764	21.2160 ug/L		74
91)	sec-Butylbenzene	17.20	105	805481	21.8888 ug/L	#	76
92)	p-Isopropyltoluene	17.37	119	680965	21.8269 ug/L		77
93)	1,3-Dichlorobenzene	17.55	146	350883	20.2110 ug/L		93
94)	1,4-Dichlorobenzene	17.69	146	344395	19.5398 ug/L		93
95)	n-Butylbenzene	17.89	91	662694	21.7450 ug/L		78
96)	1,2-Dichlorobenzene	18.18	146	303795	20.1651 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.18	75	17277	19.9810 ug/L		77
98)	1,2,4-Trichlorobenzene	20.31	180	223937	19.7317 ug/L		96
99)	Hexachlorobutadiene	20.47	225	112729	19.0128 ug/L		94
100)	Naphthalene	20.69	128	314530	20.6645 ug/L		92
101)	1,2,3-Trichlorobenzene	21.00	180	188988	19.6510 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404584.D 8260WT.M Wed May 13 06:46:18 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404584.D Vial: 8
Acq On : 12 May 2015 19:13 Operator: TMB
Sample : WG523161-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

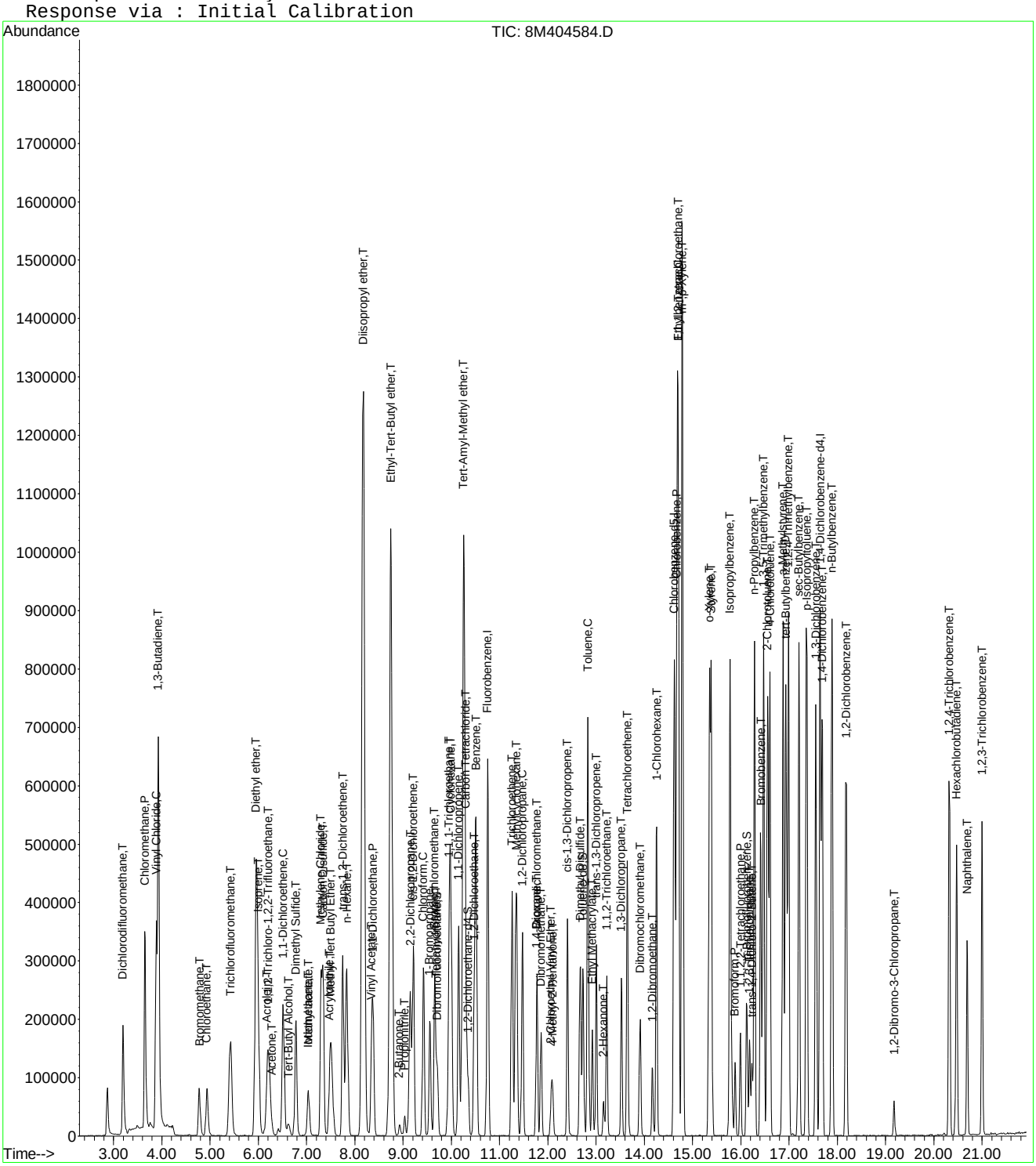
Abundance
TIC: 8M404584.D
Time-->
Dichlorodifluoromethane,T
Chloromethane,P
Vinyl Chloride,C
1,3-Butadiene,T
Bromomethane,T
Chloroethane,T
Trichlorofluoromethane,T
Diethyl ether,T
Acetone,T
Tert-Butyl Alcohol,T
Dimethyl Sulfide,T
Vinyl Acetate,T
2-Butanone,T
Diisopropyl ether,T
Ethyl-Tert-Butyl ether,T
Tert-Amyl-Methyl ether,T
Benzene,T
Fluorobenzene,I
Toluene,C
1-Chlorohexane,T
Tetrachloroethene,T
1,2-Dibromo-3-Chloropropane,T
Hexachlorobutadiene,T
Naphthalene,T
1,2,3-Trichlorobenzene,T
1,2-Dichlorobenzene,T
n-Butylbenzene,T
Isopropylbenzene,T
o-Xylene,T
Bromobenzene,T
1,2-Dibromoethane,T
Dibromochloromethane,T
1,3-Dichloropropane,T
2-Hexanone,T
Ethyl Methacrylate,T
cis-1,3-Dichloropropene,T
trans-1,3-Dichloropropene,T
1,1,2-Trichloroethane,T
Chloroform,C
1,2-Dichloroethane,P
1,1-Dichloroethane,T
Carbon Tetrachloride,T
Methylcyclohexane,T
1,2-Dichloropropane,C
Bromodichloromethane,T
Dibromomethane,T
Bromoform,T
Tetrachloroethane,T
Trichloroethene,T
Chlorobenzene-d5,I
Ethylbenzene,T
Styrene,T
Chlorobenzene,P
Ethylbenzene-d10,I
1,4-Dichlorobenzene-d4,I
1,2-Dichlorobenzene-d4,I
1,3-Dichlorobenzene,T
1,4-Dichlorobenzene,T
1,2,4-Trichlorobenzene,T
n-Propylbenzene,T
2-Chlorotoluene,T
4-Chlorotoluene,T
1,3,5-Trimethylbenzene,T
tert-Butylbenzene,T
1,2,4-Trimethylbenzene,T
sec-Butylbenzene,T
p-Isopropyltoluene,T
1,3-Dichlorobenzene,T
Bromochloromethane,T
Tetrachloroethane,P
Trichloroethene,S
trans-1,2-Dichloroethene,T
Dibromofluoromethane,T
1,2-Dichloroethane-d4,S
1,1-Dichloroethane,T
Methyl Tert Butyl Ether,T
n-Hexane,T
Methylene Chloride,T
Acrylonitrile,T
Isopropanol,T
Isobutanol,T
Methyl Acetate,T
Ethyl Acetate,T
Methyl Methacrylate,T
Propionitrile,T
Acrylonitrile,T
Methyl Iodide,T
Propionitrile,T
Methacrylonitrile,T
Pentachloroethane,T
Isobutyl Alcohol,T
Propionitrile,T
Methyl Methacrylate,T
2-Chloroethyl Vinyl Ether,T
Methyl Methacrylate,T
Propionitrile,T
Acrylonitrile,T
Dimethyl Disulfide,T
Methacrylonitrile,T
Ethyl Methacrylate,T
Pentachloroethane,T
Isobutyl Alcohol,T
Propionitrile,T
Methyl Methacrylate,T
2-Chloroethyl Vinyl Ether

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404585.D Vial: 9
Acq On : 12 May 2015 19:42 Operator: TMB
Sample : WG523161-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:18 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	779258	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	545682	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	300564	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	191218	24.7569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.04%		
43) 1,2-Dichloroethane-d4	10.35	65	182556	25.1505 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.60%		
58) Toluene-d8	12.73	98	657086	25.8044 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	16.12	95	255554	24.9912 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	644248	53.3446 ug/L	99
3) Chloromethane	3.65	50	1203600	49.9206 ug/L	96
4) Vinyl Chloride	3.89	62	1175474	51.7399 ug/L	95
5) 1,3-Butadiene	3.93	54	1205454	60.0260 ug/L	99
6) Bromomethane	4.78	94	260223	48.3389 ug/L	99
7) Chloroethane	4.94	64	307028	49.6613 ug/L #	91
8) Trichlorofluoromethane	5.42	101	710092	49.7716 ug/L	98
9) Diethyl ether	5.95	59	509109	93.0762 ug/L	90
10) Isoprene	5.98	67	538313	50.8854 ug/L	80
11) Acrolein	6.19	56	9077	53.0585 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	399689	49.6350 ug/L	95
13) Acetone	6.28	43	53732	48.2817 ug/L	85
14) 1,1-Dichloroethene	6.51	61	689257	50.3284 ug/L	83
15) Tert-Butyl Alcohol	6.62	59	54364	181.5406 ug/L #	83
16) Dimethyl Sulfide	6.78	62	405835	50.8299 ug/L	79
17) Iodomethane	7.03	142	270107	48.8910 ug/L	80
18) Methyl acetate	7.04	43	191315	48.1743 ug/L	90
19) Methylene Chloride	7.30	84	388830	49.8192 ug/L #	54
20) Carbon Disulfide	7.34	76	1328711	52.7389 ug/L	96
21) Acrylonitrile	7.48	53	88115	49.7440 ug/L	94
22) Methyl Tert Butyl Ether	7.50	73	740269	49.2335 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	647880	49.5534 ug/L	85
24) n-Hexane	7.84	57	664406	50.2537 ug/L	95
25) Diisopropyl ether	8.18	45	2835089	97.8931 ug/L	92
26) Vinyl Acetate	8.34	43	494717	51.7415 ug/L	92
27) 1,1-Dichloroethane	8.37	63	805792	51.0536 ug/L	94
28) Ethyl-Tert-Butyl ether	8.75	59	2207186	97.1304 ug/L	93
29) 2-Butanone	8.92	43	89196	49.1919 ug/L	89
30) Propionitrile	9.03	54	54220	93.8197 ug/L	96
31) 2,2-Dichloropropane	9.15	77	637866	48.9836 ug/L	98
32) cis-1,2-Dichloroethene	9.21	96	446398	49.7108 ug/L	76
33) Chloroform	9.42	83	736233	50.2190 ug/L	95
34) 1-Bromopropane	9.56	122	78073	47.8976 ug/L	100
35) Bromochloromethane	9.66	130	229706	50.1611 ug/L #	70
36) Tetrahydrofuran	9.68	42	114556	93.7969 ug/L	86
38) 1,1,1-Trichloroethane	9.96	97	683447	51.3543 ug/L	97
39) Cyclohexane	9.99	56	810422	50.2462 ug/L	85
40) 1,1-Dichloropropene	10.15	75	577549	49.8796 ug/L	93
41) Tert-Amyl-Methyl ether	10.26	73	1610216	96.5412 ug/L	97
42) Carbon Tetrachloride	10.30	117	616028	50.9368 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404585.D Vial: 9
Acq On : 12 May 2015 19:42 Operator: TMB
Sample : WG523161-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:18 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	514353	48.9401	ug/L		92
46)	Benzene	10.51	78	1588546	50.9317	ug/L		98
47)	Trichloroethene	11.26	130	417289	50.5797	ug/L		97
48)	Methylcyclohexane	11.34	83	671759	50.1660	ug/L		90
49)	1,2-Dichloropropane	11.48	63	431723	49.4196	ug/L		100
50)	Bromodichloromethane	11.77	83	541835	50.3790	ug/L		96
51)	1,4-Dioxane	11.76	88	6692	200.7748	ug/L		82
52)	Dibromomethane	11.86	93	202188	49.1436	ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.06	63	97536	45.9419	ug/L		94
54)	4-Methyl-2-Pentanone	12.10	58	74090	49.3322	ug/L		94
55)	cis-1,3-Dichloropropene	12.41	75	607979	51.7135	ug/L		95
56)	Dimethyl Disulfide	12.67	79	305206	44.2233	ug/L		96
59)	Toluene	12.83	91	1708453	52.7833	ug/L		84
60)	Ethyl Methacrylate	12.92	69	313437	54.4245	ug/L		74
62)	trans-1,3-Dichloropropene	13.01	75	501796	51.7221	ug/L		96
63)	1,1,2-Trichloroethane	13.22	97	254652	50.6394	ug/L		98
64)	2-Hexanone	13.16	58	72751	52.5360	ug/L	#	44
65)	1,3-Dichloropropane	13.52	76	444705	50.4460	ug/L		78
66)	Tetrachloroethene	13.65	164	345411	50.5613	ug/L		89
67)	Dibromochloromethane	13.92	129	341863	51.0864	ug/L		99
68)	1,2-Dibromoethane	14.16	107	250654	52.2130	ug/L		98
69)	1-Chlorohexane	14.26	91	558441	50.4410	ug/L		81
70)	Chlorobenzene	14.67	112	1122311	51.3735	ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.70	131	399743	50.9771	ug/L		100
72)	Ethylbenzene	14.70	106	648843	49.5877	ug/L	#	32
73)	m-,p-Xylene	14.78	106	1577469	106.6006	ug/L	#	49
74)	o-Xylene	15.35	106	739767	50.5862	ug/L		62
75)	Styrene	15.38	104	1249268	53.9262	ug/L		88
76)	Bromoform	15.88	173	186775	43.9120	ug/L		98
77)	Isopropylbenzene	15.78	105	1915898	53.5687	ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.99	83	278891	48.8342	ug/L		96
81)	1,2,3-Trichloropropane	16.18	110	76300	49.3137	ug/L		95
82)	trans-1,4-Dichloro-2-Buten	16.23	53	101529	53.5537	ug/L		73
83)	n-Propylbenzene	16.28	91	2371932	52.1578	ug/L	#	73
84)	Bromobenzene	16.42	156	446692	49.4611	ug/L		87
85)	1,3,5-Trimethylbenzene	16.47	105	1681429	54.0381	ug/L		79
86)	2-Chlorotoluene	16.55	91	1586959	51.7074	ug/L		79
87)	4-Chlorotoluene	16.60	91	1273589	51.8809	ug/L		76
88)	a-Methylstyrene	16.87	118	918764	51.8486	ug/L		94
89)	tert-Butylbenzene	16.93	134	340180	49.1775	ug/L		57
90)	1,2,4-Trimethylbenzene	16.99	105	1728864	54.0438	ug/L		75
91)	sec-Butylbenzene	17.20	105	2122575	54.7114	ug/L		78
92)	p-Isopropyltoluene	17.36	119	1803151	54.8210	ug/L		78
93)	1,3-Dichlorobenzene	17.55	146	941775	51.4543	ug/L		92
94)	1,4-Dichlorobenzene	17.69	146	933434	50.2338	ug/L		92
95)	n-Butylbenzene	17.89	91	1757124	54.6885	ug/L		79
96)	1,2-Dichlorobenzene	18.19	146	821672	51.7329	ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.18	75	46082	50.5509	ug/L		85
98)	1,2,4-Trichlorobenzene	20.33	180	615919	51.4767	ug/L		99
99)	Hexachlorobutadiene	20.47	225	305672	48.9007	ug/L		94
100)	Naphthalene	20.69	128	840527	52.3797	ug/L		92
101)	1,2,3-Trichlorobenzene	21.00	180	516669	50.9579	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404585.D Vial: 9
Acq On : 12 May 2015 19:42 Operator: TMB
Sample : WG523161-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

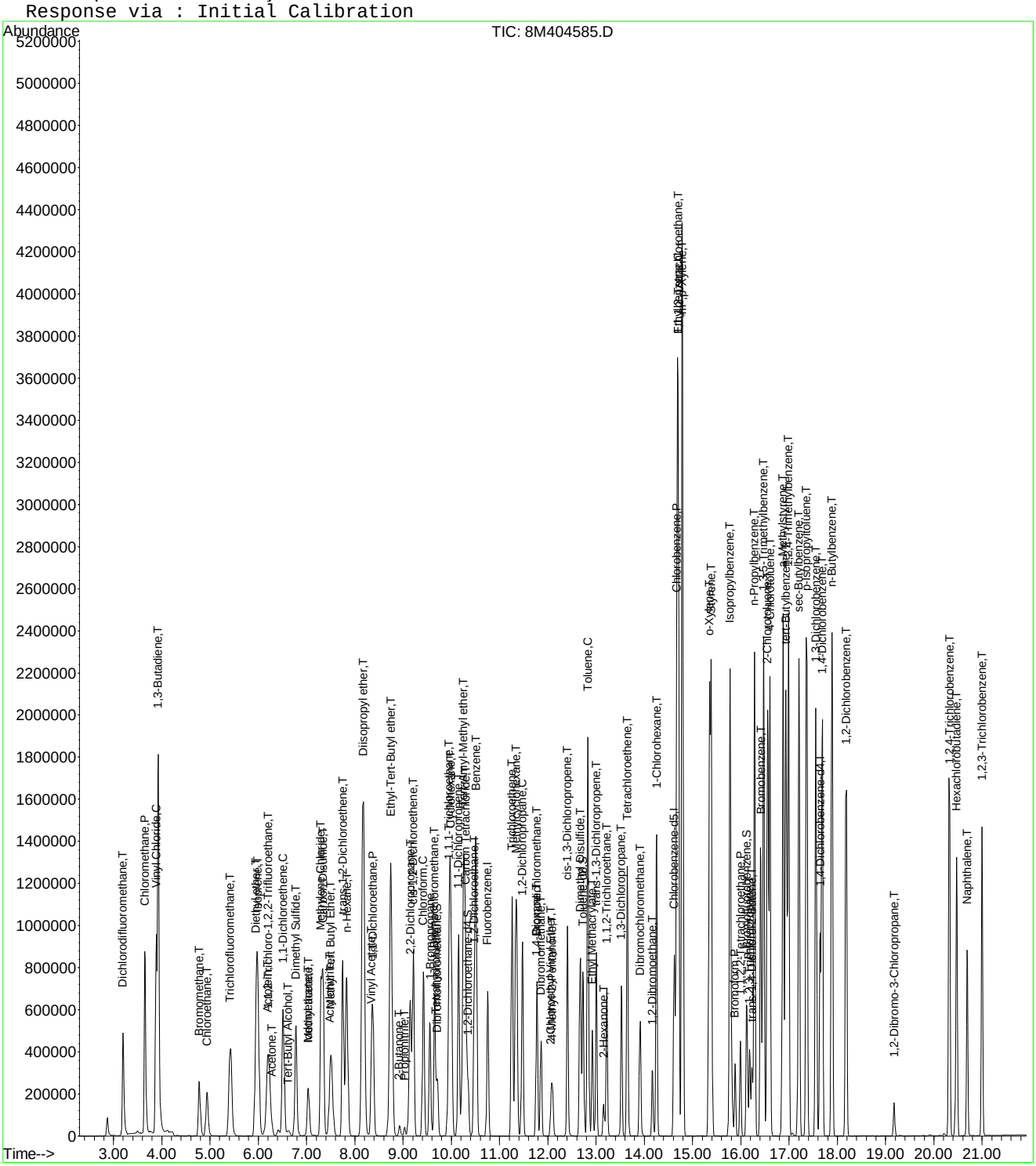

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404586.D Vial: 10
Acq On : 12 May 2015 20:11 Operator: TMB
Sample : WG523161-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:20 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	835793	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	592311	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	322769	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	408845	49.3524 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 197.40%#		
43) 1,2-Dichloroethane-d4	10.35	65	378235	48.5842 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 194.32%#		
58) Toluene-d8	12.73	98	1401831	50.7174 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 202.88%#		
80) p-Bromofluorobenzene	16.12	95	539730	49.1503 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 196.60%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	1383354	106.7956 ug/L	97
3) Chloromethane	3.65	50	2506665	96.9341 ug/L	98
4) Vinyl Chloride	3.88	62	2378459	97.6093 ug/L	97
5) 1,3-Butadiene	3.92	54	1821955	89.8183 ug/L	94
6) Bromomethane	4.78	94	626348	101.5627 ug/L	98
7) Chloroethane	4.93	64	685164	103.3278 ug/L	91
8) Trichlorofluoromethane	5.42	101	1565645	102.3158 ug/L	98
9) Diethyl ether	5.95	59	1168845	199.2357 ug/L	90
10) Isoprene	5.99	67	1166935	102.8460 ug/L	78
11) Acrolein	6.19	56	31264	95.9802 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	894848	103.6091 ug/L	94
13) Acetone	6.29	43	110215	92.3363 ug/L	86
14) 1,1-Dichloroethene	6.52	61	1506669	102.5728 ug/L	84
15) Tert-Butyl Alcohol	6.63	59	127964	398.4122 ug/L	99
16) Dimethyl Sulfide	6.79	62	872019	101.8306 ug/L	79
17) Iodomethane	7.03	142	628717	103.2155 ug/L	82
18) Methyl acetate	7.04	43	412223	96.7791 ug/L	90
19) Methylene Chloride	7.30	84	855087	102.1479 ug/L	57
20) Carbon Disulfide	7.34	76	2858622	105.7889 ug/L	96
21) Acrylonitrile	7.48	53	190020	100.0167 ug/L	92
22) Methyl Tert Butyl Ether	7.52	73	1596559	99.0009 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	1424677	101.5963 ug/L	84
24) n-Hexane	7.83	57	1448349	102.1387 ug/L	96
25) Diisopropyl ether	8.17	45	6219435	200.2252 ug/L	92
26) Vinyl Acetate	8.35	43	987523	96.2968 ug/L	93
27) 1,1-Dichloroethane	8.37	63	1750301	103.3947 ug/L	95
28) Ethyl-Tert-Butyl ether	8.75	59	4921546	201.9298 ug/L	94
29) 2-Butanone	8.93	43	192807	99.1412 ug/L	89
30) Propionitrile	9.04	54	125291	202.1329 ug/L	100
31) 2,2-Dichloropropane	9.15	77	1386765	99.2903 ug/L	99
32) cis-1,2-Dichloroethene	9.22	96	970632	100.7779 ug/L	77
33) Chloroform	9.42	83	1615985	102.7714 ug/L	96
34) 1-Bromopropane	9.56	122	171401	97.5487 ug/L	97
35) Bromochloromethane	9.65	130	492984	100.3714 ug/L #	70
36) Tetrahydrofuran	9.68	42	256736	195.9927 ug/L	87
38) 1,1,1-Trichloroethane	9.96	97	1521529	106.5945 ug/L	97
39) Cyclohexane	9.99	56	1818826	105.1394 ug/L	84
40) 1,1-Dichloropropene	10.15	75	1264140	101.7916 ug/L	92
41) Tert-Amyl-Methyl ether	10.26	73	3613952	202.0196 ug/L	96
42) Carbon Tetrachloride	10.30	117	1390334	107.1846 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404586.D Vial: 10
Acq On : 12 May 2015 20:11 Operator: TMB
Sample : WG523161-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:20 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	1128430	100.1062 ug/L		92
46)	Benzene	10.51	78	3395811	101.5114 ug/L		99
47)	Trichloroethene	11.26	130	922762	104.2826 ug/L		97
48)	Methylcyclohexane	11.35	83	1455920	101.3714 ug/L		89
49)	1,2-Dichloropropane	11.47	63	933784	99.6606 ug/L		100
50)	Bromodichloromethane	11.77	83	1190418	103.1964 ug/L		97
51)	1,4-Dioxane	11.77	88	15430	376.1778 ug/L		87
52)	Dibromomethane	11.86	93	440813	99.8961 ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.07	63	209924	93.1404 ug/L		94
54)	4-Methyl-2-Pentanone	12.10	58	162221	100.7072 ug/L		91
55)	cis-1,3-Dichloropropene	12.41	75	1312387	104.0782 ug/L		95
56)	Dimethyl Disulfide	12.67	79	704664	91.7111 ug/L		100
59)	Toluene	12.83	91	3647044	103.8064 ug/L		85
60)	Ethyl Methacrylate	12.93	69	656031	104.9442 ug/L		72
62)	trans-1,3-Dichloropropene	13.00	75	1083873	102.9242 ug/L		96
63)	1,1,2-Trichloroethane	13.22	97	551455	101.0280 ug/L		99
64)	2-Hexanone	13.15	58	146129	97.2175 ug/L	#	75
65)	1,3-Dichloropropane	13.53	76	953196	99.6155 ug/L		79
66)	Tetrachloroethene	13.65	164	783174	105.6160 ug/L		90
67)	Dibromochloromethane	13.91	129	774593	106.6392 ug/L		98
68)	1,2-Dibromoethane	14.17	107	545217	104.6318 ug/L		99
69)	1-Chlorohexane	14.25	91	1233565	102.6499 ug/L		82
70)	Chlorobenzene	14.67	112	2511075	105.8950 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.71	131	958028	112.5543 ug/L		99
72)	Ethylbenzene	14.70	106	1517369	106.8354 ug/L	#	44
73)	m-,p-Xylene	14.79	106	3521035	219.2093 ug/L		66
74)	o-Xylene	15.35	106	1661714	104.6847 ug/L		66
75)	Styrene	15.39	104	2725004	108.3681 ug/L		91
76)	Bromoform	15.88	173	425724	91.3519 ug/L		99
77)	Isopropylbenzene	15.78	105	4087264	105.2836 ug/L		80
79)	1,1,2,2-Tetrachloroethane	15.99	83	597831	97.4794 ug/L		97
81)	1,2,3-Trichloropropane	16.18	110	166377	100.1340 ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.23	53	198733	97.6146 ug/L		83
83)	n-Propylbenzene	16.29	91	4854104	99.3965 ug/L		76
84)	Bromobenzene	16.41	156	998426	102.9478 ug/L		90
85)	1,3,5-Trimethylbenzene	16.47	105	3620860	108.3623 ug/L		82
86)	2-Chlorotoluene	16.56	91	3081622	93.5000 ug/L		82
87)	4-Chlorotoluene	16.60	91	2997134	113.6920 ug/L		78
88)	a-Methylstyrene	16.88	118	2011260	105.6931 ug/L		94
89)	tert-Butylbenzene	16.94	134	758018	102.0429 ug/L		62
90)	1,2,4-Trimethylbenzene	16.99	105	3673145	106.9222 ug/L		78
91)	sec-Butylbenzene	17.21	105	4454269	106.9145 ug/L		80
92)	p-Isopropyltoluene	17.36	119	3834274	108.5533 ug/L		81
93)	1,3-Dichlorobenzene	17.56	146	2072717	105.4531 ug/L		93
94)	1,4-Dichlorobenzene	17.68	146	2037658	102.1148 ug/L		94
95)	n-Butylbenzene	17.89	91	3728716	108.0683 ug/L		81
96)	1,2-Dichlorobenzene	18.18	146	1776025	104.1269 ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.17	75	101241	103.4188 ug/L		84
98)	1,2,4-Trichlorobenzene	20.32	180	1367029	106.3922 ug/L		99
99)	Hexachlorobutadiene	20.47	225	722376	107.6137 ug/L		95
100)	Naphthalene	20.69	128	1844011	107.0090 ug/L		94
101)	1,2,3-Trichlorobenzene	21.00	180	1148705	105.5000 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M404586.D 8260WT.M Wed May 13 06:46:20 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404586.D Vial: 10
Acq On : 12 May 2015 20:11 Operator: TMB
Sample : WG523161-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

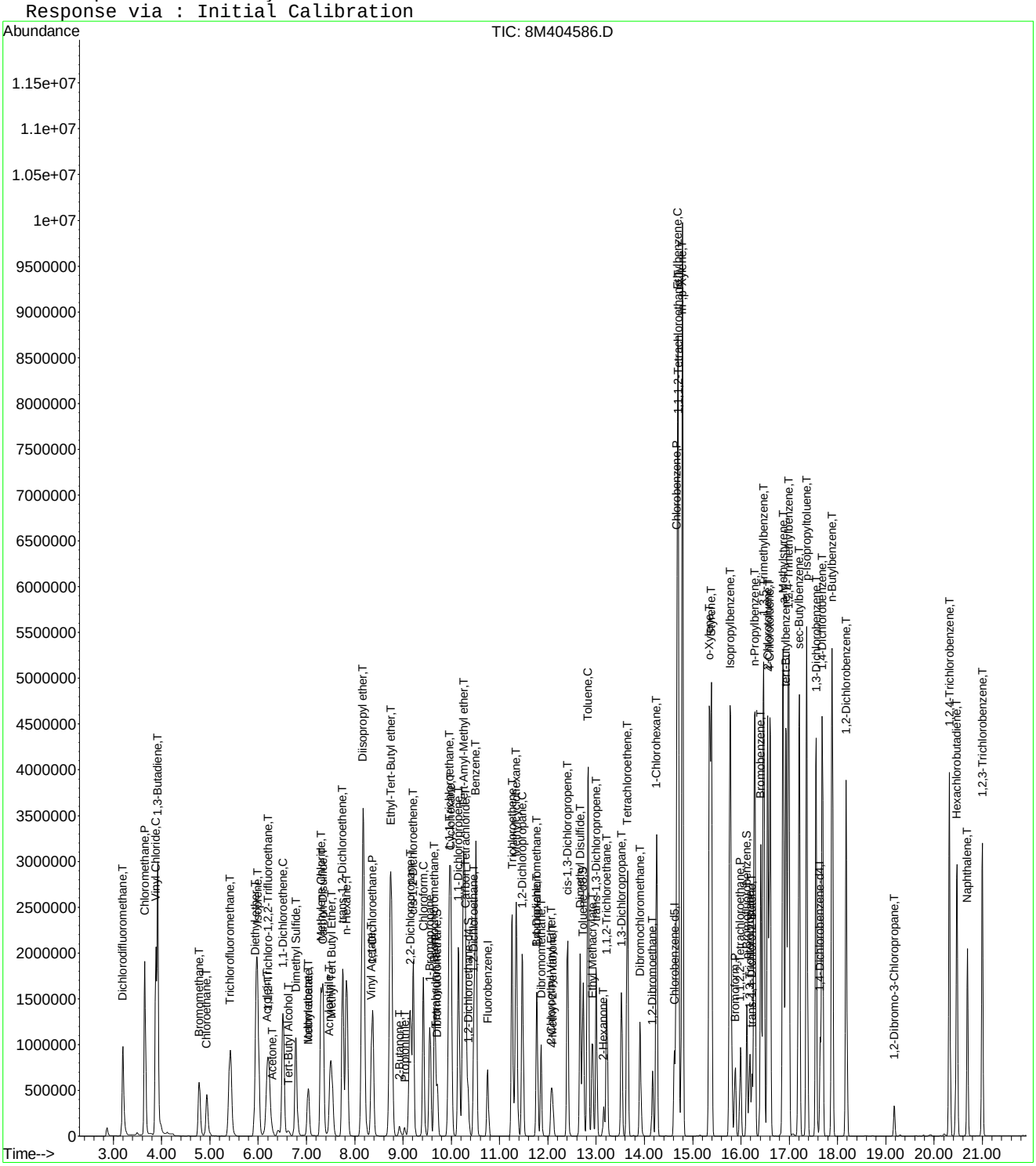

8M404586.D 8260WT.M Wed May 13 06:46:20 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404587.D Vial: 11
Acq On : 12 May 2015 20:40 Operator: TMB
Sample : WG523161-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:21 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	889446	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	653814	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	358038	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	897295	101.7803 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 407.12%#		
43) 1,2-Dichloroethane-d4	10.35	65	834454	100.7199 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 402.88%#		
58) Toluene-d8	12.73	98	3020686	99.0061 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 396.04%#		
80) p-Bromofluorobenzene	16.12	95	1227532	100.7731 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 403.08%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	2862202	207.6346 ug/L	100
3) Chloromethane	3.65	50	4844973	176.0559 ug/L	97
4) Vinyl Chloride	3.88	62	4418229	170.3816 ug/L	98
5) 1,3-Butadiene	3.92	54	3042896	167.5645 ug/L	93
6) Bromomethane	4.78	94	1514622	207.0087 ug/L	99
7) Chloroethane	4.93	64	1492001	211.4320 ug/L	91
8) Trichlorofluoromethane	5.42	101	3375416	207.2794 ug/L	99
10) Isoprene	5.99	67	2523633	208.9999 ug/L	79
11) Acrolein	6.19	56	215	Below Cal # 13	
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	1910657	207.8790 ug/L	94
13) Acetone	6.29	43	266605	209.8839 ug/L	86
14) 1,1-Dichloroethene	6.51	61	3247825	207.7715 ug/L	85
15) Tert-Butyl Alcohol	6.65	59	409	1.1966 ug/L #	61
16) Dimethyl Sulfide	6.78	62	1949857	213.9608 ug/L	79
17) Iodomethane	7.03	142	1410075	209.7673 ug/L	81
18) Methyl acetate	7.04	43	947887	209.1149 ug/L	92
19) Methylene Chloride	7.30	84	1900593	213.3475 ug/L	59
20) Carbon Disulfide	7.34	76	6053547	210.5098 ug/L	97
21) Acrylonitrile	7.52	53	43757	21.6421 ug/L #	38
22) Methyl Tert Butyl Ether	7.51	73	3646249	212.4611 ug/L	95
23) trans-1,2-Dichloroethene	7.74	61	3120484	209.1042 ug/L	85
24) n-Hexane	7.83	57	3144492	208.3756 ug/L	96
26) Vinyl Acetate	8.34	43	2191703	200.8286 ug/L	92
27) 1,1-Dichloroethane	8.37	63	3753089	208.3309 ug/L	97
29) 2-Butanone	8.92	43	435590	210.4690 ug/L	87
30) Propionitrile	9.05	54	214	0.3244 ug/L #	1
31) 2,2-Dichloropropane	9.15	77	3011577	202.6176 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	2136676	208.4628 ug/L	77
33) Chloroform	9.42	83	3483917	208.2006 ug/L	97
34) 1-Bromopropane	9.56	122	375097	200.1030 ug/L	99
35) Bromochloromethane	9.66	130	1081406	206.8927 ug/L #	73
36) Tetrahydrofuran	9.68	42	1304	0.9354 ug/L #	32
38) 1,1,1-Trichloroethane	9.96	97	3356452	220.9602 ug/L	99
39) Cyclohexane	9.99	56	4044031	219.6687 ug/L	84
40) 1,1-Dichloropropene	10.15	75	2738411	207.2023 ug/L	93
42) Carbon Tetrachloride	10.30	117	2985746	216.2945 ug/L	98
45) 1,2-Dichloroethane	10.47	62	2521588	210.2034 ug/L	93
46) Benzene	10.51	78	6808887	191.2611 ug/L	93
47) Trichloroethene	11.26	130	2070517	219.8771 ug/L	97
48) Methylcyclohexane	11.34	83	3202469	209.5281 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M404587.D 8260WT.M Wed May 13 06:46:21 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404587.D Vial: 11
Acq On : 12 May 2015 20:40 Operator: TMB
Sample : WG523161-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:21 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
49)	1,2-Dichloropropane	11.48	63	2078666	208.4687 ug/L		99
50)	Bromodichloromethane	11.78	83	2658161	216.5336 ug/L		97
51)	1,4-Dioxane	11.77	88	3610	120.3207 ug/L	#	23
52)	Dibromomethane	11.86	93	1002659	213.5141 ug/L		90
53)	2-Chloroethyl Vinyl Ether	12.07	63	491467	206.0353 ug/L		95
54)	4-Methyl-2-Pentanone	12.10	58	378377	220.7279 ug/L		93
55)	cis-1,3-Dichloropropene	12.41	75	2907986	216.7051 ug/L		97
56)	Dimethyl Disulfide	12.68	79	1679554	201.6567 ug/L		98
59)	Toluene	12.83	91	7021493	181.0540 ug/L		94
60)	Ethyl Methacrylate	12.92	69	1552021	224.9195 ug/L		72
62)	trans-1,3-Dichloropropene	13.01	75	2472627	212.7125 ug/L		98
63)	1,1,2-Trichloroethane	13.22	97	1251523	207.7141 ug/L		99
64)	2-Hexanone	13.16	58	355605	214.3243 ug/L	#	80
65)	1,3-Dichloropropane	13.52	76	2145547	203.1319 ug/L		79
66)	Tetrachloroethene	13.65	164	1796038	219.4233 ug/L		90
67)	Dibromochloromethane	13.92	129	1788944	223.1185 ug/L		99
68)	1,2-Dibromoethane	14.16	107	1265159	219.9555 ug/L		98
69)	1-Chlorohexane	14.26	91	2758216	207.9315 ug/L		79
70)	Chlorobenzene	14.67	112	5520224	210.8958 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.70	131	2433988	259.0586 ug/L		100
72)	Ethylbenzene	14.70	106	3719039	237.2193 ug/L		89
73)	m-,p-Xylene	14.79	106	7071131	398.8164 ug/L		97
74)	o-Xylene	15.35	106	3783766	215.9467 ug/L		86
75)	Styrene	15.38	104	5773777	208.0127 ug/L		99
76)	Bromoform	15.88	173	1041191	201.4528 ug/L		100
77)	Isopropylbenzene	15.78	105	7635859	178.1893 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.99	83	1382772	203.2581 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	394464	214.0220 ug/L		60
82)	trans-1,4-Dichloro-2-Buten	16.23	53	532498	235.7900 ug/L	#	49
83)	n-Propylbenzene	16.28	91	8425487	155.5320 ug/L		89
84)	Bromobenzene	16.42	156	2300151	213.8061 ug/L		91
85)	1,3,5-Trimethylbenzene	16.47	105	7048923	190.1744 ug/L		92
86)	2-Chlorotoluene	16.55	91	6754472	184.7508 ug/L		88
87)	4-Chlorotoluene	16.60	91	5302382	181.3248 ug/L		88
88)	a-Methylstyrene	16.87	118	4497302	213.0558 ug/L		100
89)	tert-Butylbenzene	16.94	134	1793662	217.6740 ug/L		76
90)	1,2,4-Trimethylbenzene	16.99	105	7116862	186.7588 ug/L		91
91)	sec-Butylbenzene	17.20	105	8080340	174.8447 ug/L		91
92)	p-Isopropyltoluene	17.37	119	7238323	184.7399 ug/L		92
93)	1,3-Dichlorobenzene	17.56	146	4509634	206.8347 ug/L		99
94)	1,4-Dichlorobenzene	17.69	146	4440196	200.5960 ug/L		99
95)	n-Butylbenzene	17.89	91	7013484	183.2464 ug/L		91
96)	1,2-Dichlorobenzene	18.19	146	3977816	210.2429 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.18	75	246654	227.1401 ug/L		82
98)	1,2,4-Trichlorobenzene	20.33	180	3226918	226.4032 ug/L		99
99)	Hexachlorobutadiene	20.47	225	1704346	228.8889 ug/L		95
100)	Naphthalene	20.69	128	4140977	216.6318 ug/L		96
101)	1,2,3-Trichlorobenzene	21.00	180	2713711	224.6831 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404587.D 8260WT.M Wed May 13 06:46:21 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404587.D Vial: 11
Acq On : 12 May 2015 20:40 Operator: TMB
Sample : WG523161-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

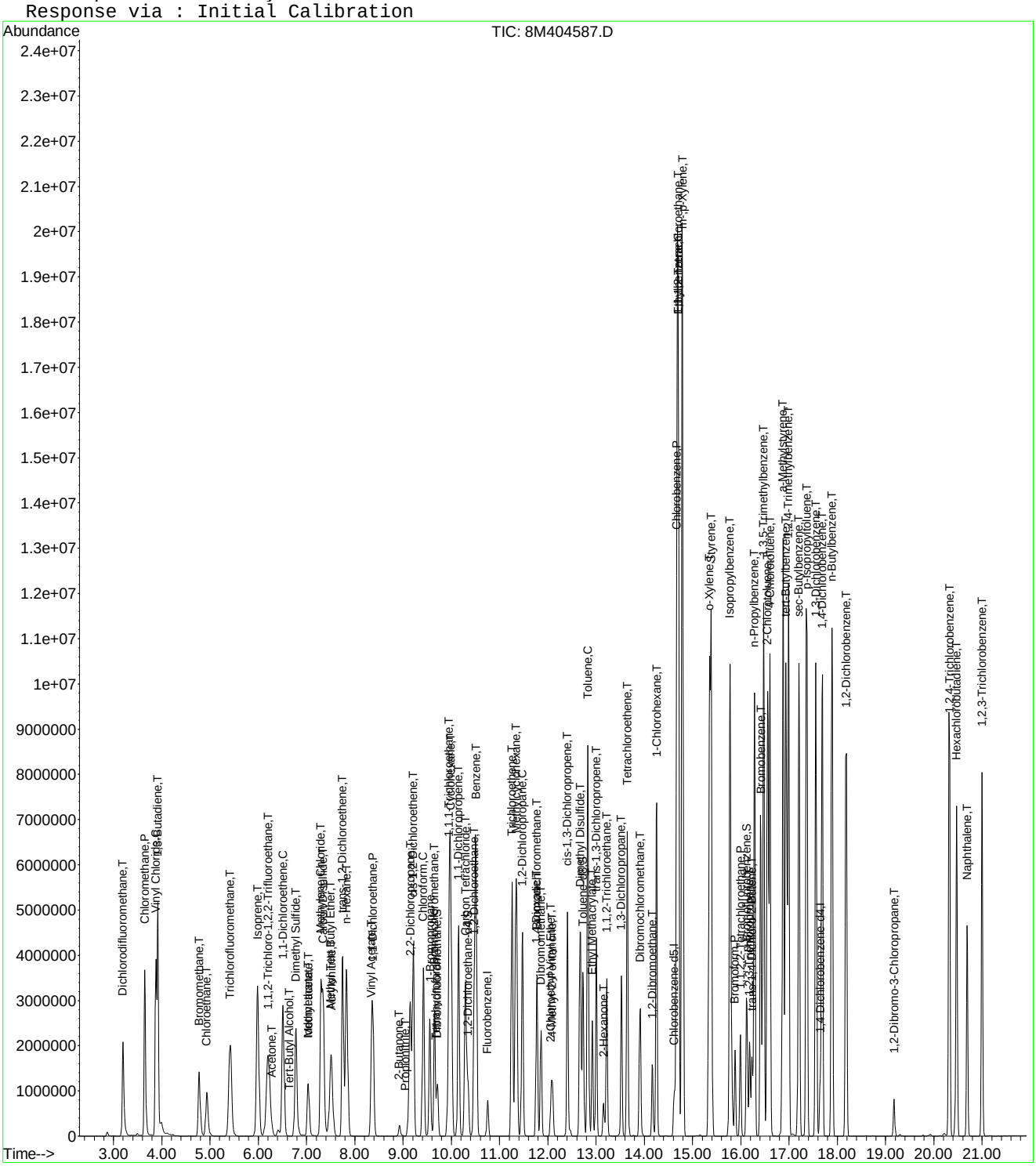

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404588.D Vial: 12
Acq On : 12 May 2015 21:08 Operator: TMB
Sample : WG523161-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:22 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	956908	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	688487	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	385083	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	1448349	152.7042 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 610.80%#		
43) 1,2-Dichloroethane-d4	10.35	65	1346423	151.0580 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 604.24%#		
58) Toluene-d8	12.73	98	4678124	145.6085 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.44%#		
80) p-Bromofluorobenzene	16.12	95	2010706	153.4742 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 613.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	4427735	298.5591 ug/L	99
3) Chloromethane	3.65	50	6722257	227.0512 ug/L	89
4) Vinyl Chloride	3.88	62	5912550	211.9331 ug/L	91
5) 1,3-Butadiene	3.91	54	4227927	Below Cal	94
6) Bromomethane	4.77	94	2527001	295.8588 ug/L	99
7) Chloroethane	4.93	64	2363039	311.2590 ug/L	92
8) Trichlorofluoromethane	5.42	101	5539478	316.1892 ug/L	99
9) Diethyl ether	5.95	59	2174019	323.6697 ug/L	91
10) Isoprene	5.99	67	4227943	325.4605 ug/L	77
11) Acrolein	6.18	56	90963	151.2625 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	3075974	311.0713 ug/L	96
13) Acetone	6.29	43	381061	278.8398 ug/L	93
14) 1,1-Dichloroethene	6.52	61	5185912	308.3670 ug/L	86
15) Tert-Butyl Alcohol	6.63	59	239538	651.4001 ug/L	99
16) Dimethyl Sulfide	6.77	62	3143641	320.6371 ug/L	79
17) Iodomethane	7.03	142	2174912	293.2570 ug/L	80
18) Methyl acetate	7.04	43	1497945	307.1664 ug/L	93
19) Methylene Chloride	7.30	84	3081232	321.4935 ug/L	64
20) Carbon Disulfide	7.34	76	9131673	295.1632 ug/L	99
21) Acrylonitrile	7.48	53	397136	182.5748 ug/L	98
22) Methyl Tert Butyl Ether	7.51	73	5644499	305.7088 ug/L	93
23) trans-1,2-Dichloroethene	7.75	61	4902610	305.3638 ug/L	87
24) n-Hexane	7.83	57	5055705	311.4064 ug/L	94
25) Diisopropyl ether	8.17	45	9927030	279.1359 ug/L	91
26) Vinyl Acetate	8.35	43	3434730	292.5404 ug/L	93
27) 1,1-Dichloroethane	8.37	63	5850225	301.8470 ug/L	99
28) Ethyl-Tert-Butyl ether	8.75	59	8274414	296.5272 ug/L	94
29) 2-Butanone	8.92	43	659119	296.0217 ug/L	90
30) Propionitrile	9.04	54	228827	322.4430 ug/L	99
31) 2,2-Dichloropropane	9.15	77	4810863	300.8539 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	3430243	311.0744 ug/L	78
33) Chloroform	9.42	83	5392781	299.5549 ug/L	100
34) 1-Bromopropane	9.56	122	616502	305.4506 ug/L	99
35) Bromochloromethane	9.66	130	1697935	301.9443 ug/L	75
36) Tetrahydrofuran	9.68	42	482439	321.6801 ug/L	86
38) 1,1,1-Trichloroethane	9.96	97	5475504	335.0480 ug/L	99
39) Cyclohexane	9.98	56	6639422	335.2226 ug/L	86
40) 1,1-Dichloropropene	10.14	75	4403988	309.7359 ug/L	95
41) Tert-Amyl-Methyl ether	10.26	73	6483836	316.5714 ug/L	95
42) Carbon Tetrachloride	10.30	117	4961684	334.0958 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M404588.D 8260WT.M Wed May 13 06:46:22 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404588.D Vial: 12
Acq On : 12 May 2015 21:08 Operator: TMB
Sample : WG523161-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:22 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	3965116	307.2351 ug/L		92
46)	Benzene	10.51	78	9538776	249.0534 ug/L		82
47)	Trichloroethene	11.26	130	3369408	332.5862 ug/L		96
48)	Methylcyclohexane	11.34	83	5268711	320.4137 ug/L		88
49)	1,2-Dichloropropane	11.47	63	3373652	314.4892 ug/L		98
50)	Bromodichloromethane	11.77	83	4217899	319.3667 ug/L		100
51)	1,4-Dioxane	11.77	88	30460	613.6909 ug/L		85
52)	Dibromomethane	11.86	93	1632189	323.0675 ug/L		90
53)	2-Chloroethyl Vinyl Ether	12.07	63	783687	305.8338 ug/L		95
54)	4-Methyl-2-Pentanone	12.10	58	581624	315.3728 ug/L		93
55)	cis-1,3-Dichloropropene	12.41	75	4539085	314.4087 ug/L		100
56)	Dimethyl Disulfide	12.67	79	2820560	313.0809 ug/L		93
59)	Toluene	12.83	91	9359764	229.1934 ug/L		97
60)	Ethyl Methacrylate	12.93	69	2471849	340.1809 ug/L		71
62)	trans-1,3-Dichloropropene	13.01	75	3878029	316.8138 ug/L		100
63)	1,1,2-Trichloroethane	13.23	97	2033857	320.5576 ug/L		98
64)	2-Hexanone	13.15	58	533241	305.2008 ug/L	#	81
65)	1,3-Dichloropropane	13.53	76	3365829	302.6151 ug/L		78
66)	Tetrachloroethene	13.65	164	3018572	350.2090 ug/L		90
67)	Dibromochloromethane	13.91	129	2906820	344.2828 ug/L		100
68)	1,2-Dibromoethane	14.17	107	2005124	331.0469 ug/L		99
69)	1-Chlorohexane	14.26	91	4462387	319.4608 ug/L		78
70)	Chlorobenzene	14.67	112	7907308	286.8788 ug/L		85
71)	1,1,1,2-Tetrachloroethane	14.70	131	4172914	421.7717 ug/L		99
72)	Ethylbenzene	14.70	106	6055831	366.8188 ug/L		80
73)	m-,p-Xylene	14.79	106	9345850	500.5661 ug/L		94
74)	o-Xylene	15.36	106	6029480	326.7839 ug/L		94
75)	Styrene	15.39	104	8231523	281.6232 ug/L		89
76)	Bromoform	15.88	173	1723238	316.1796 ug/L		99
77)	Isopropylbenzene	15.78	105	10012029	221.8729 ug/L		94
79)	1,1,2,2-Tetrachloroethane	16.00	83	2160112	295.2217 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	619391	312.4573 ug/L		58
82)	trans-1,4-Dichloro-2-Buten	16.23	53	753579	310.2494 ug/L	#	58
83)	n-Propylbenzene	16.29	91	10577160	181.5385 ug/L		95
84)	Bromobenzene	16.41	156	3698392	319.6329 ug/L		98
85)	1,3,5-Trimethylbenzene	16.47	105	9247035	231.9565 ug/L		96
86)	2-Chlorotoluene	16.55	91	7786851	198.0302 ug/L		86
87)	4-Chlorotoluene	16.61	91	6661327	211.7980 ug/L		97
88)	a-Methylstyrene	16.88	118	6747826	297.2213 ug/L		92
89)	tert-Butylbenzene	16.94	134	3054650	344.6689 ug/L		94
90)	1,2,4-Trimethylbenzene	16.99	105	9326416	227.5528 ug/L		94
91)	sec-Butylbenzene	17.21	105	10388453	209.0011 ug/L		95
92)	p-Isopropyltoluene	17.36	119	9384689	222.6985 ug/L		93
93)	1,3-Dichlorobenzene	17.56	146	6518770	277.9858 ug/L		91
94)	1,4-Dichlorobenzene	17.69	146	6369556	267.5495 ug/L		91
95)	n-Butylbenzene	17.89	91	9037379	219.5427 ug/L		96
96)	1,2-Dichlorobenzene	18.19	146	5908048	290.3323 ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.17	75	385147	329.7669 ug/L		85
98)	1,2,4-Trichlorobenzene	20.32	180	4917771	320.8025 ug/L		98
99)	Hexachlorobutadiene	20.47	225	2870393	358.4124 ug/L		94
100)	Naphthalene	20.69	128	5921865	288.0399 ug/L		100
101)	1,2,3-Trichlorobenzene	21.00	180	4158303	320.1088 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404588.D 8260WT.M Wed May 13 06:46:22 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404588.D Vial: 12
Acq On : 12 May 2015 21:08 Operator: TMB
Sample : WG523161-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

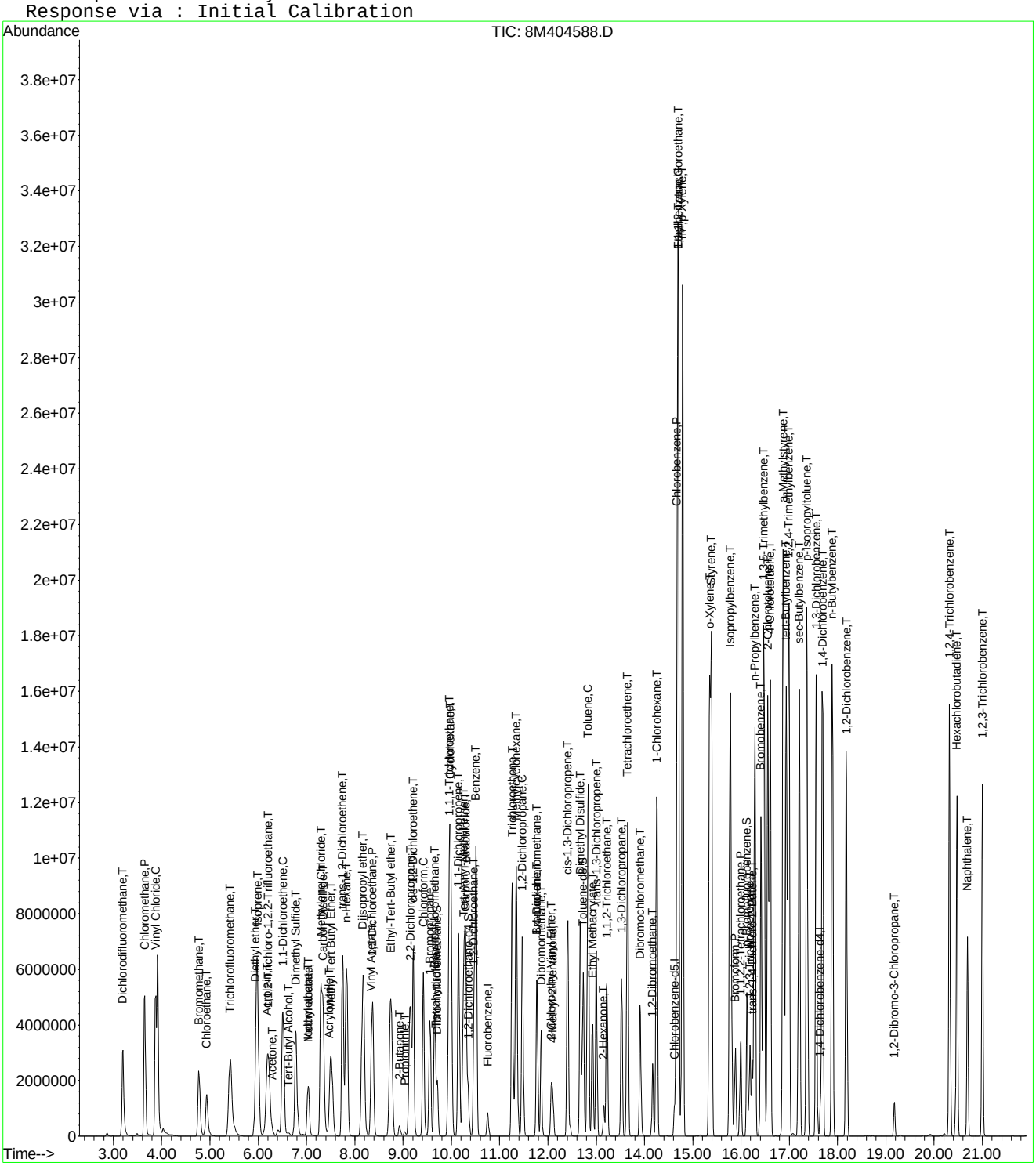

8M404588.D 8260WT.M Wed May 13 06:46:23 2015 Page 3

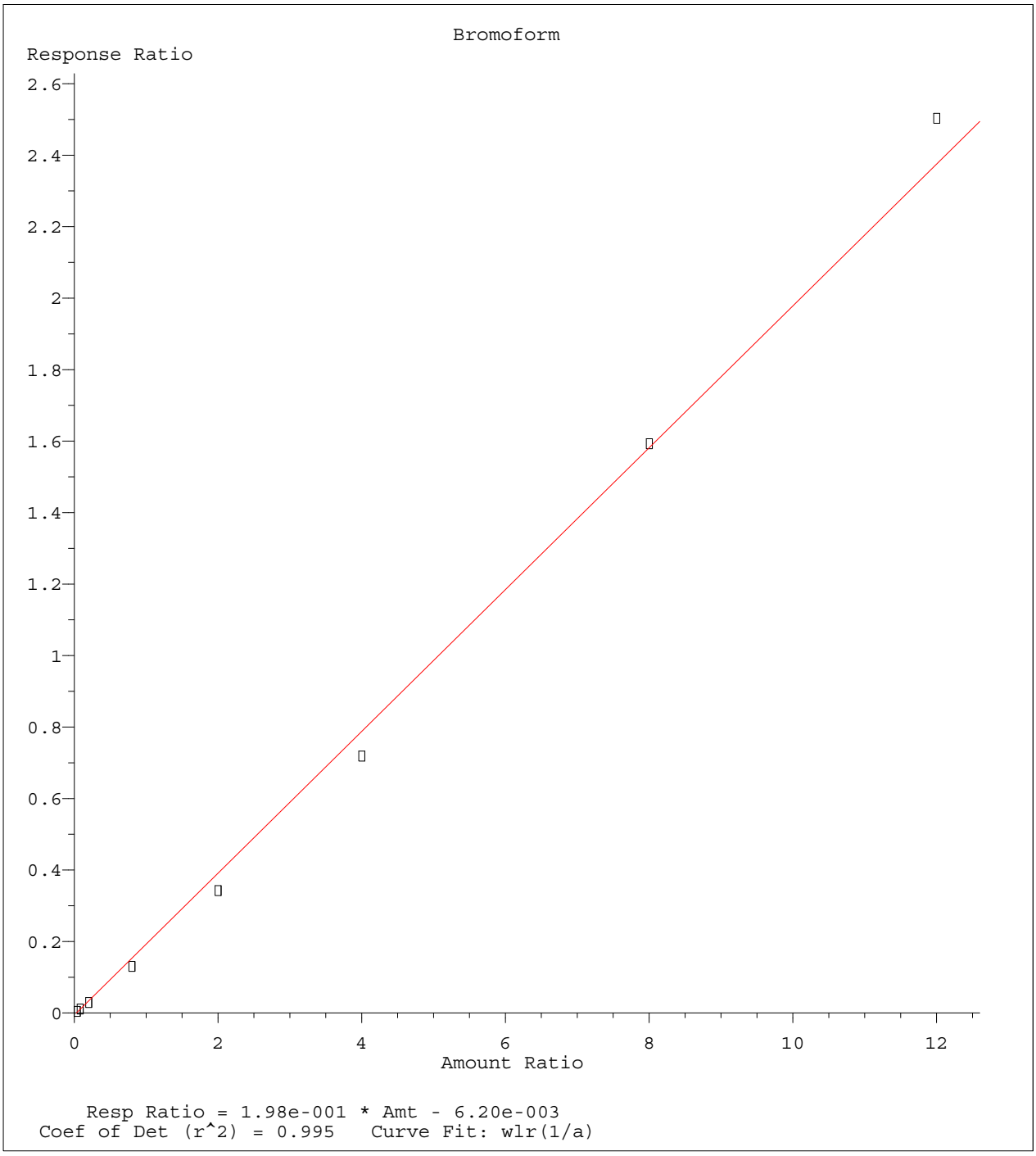

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

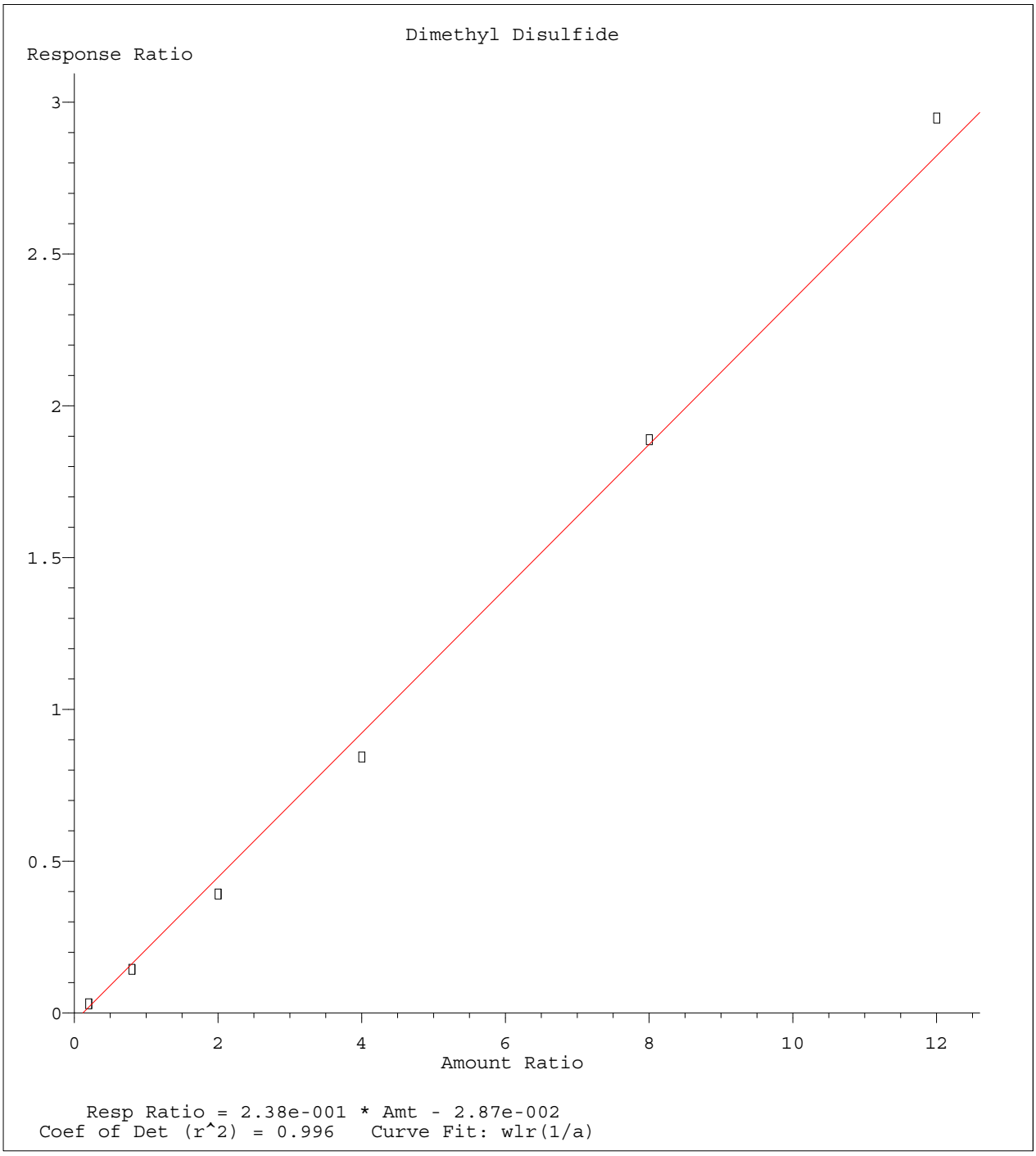

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

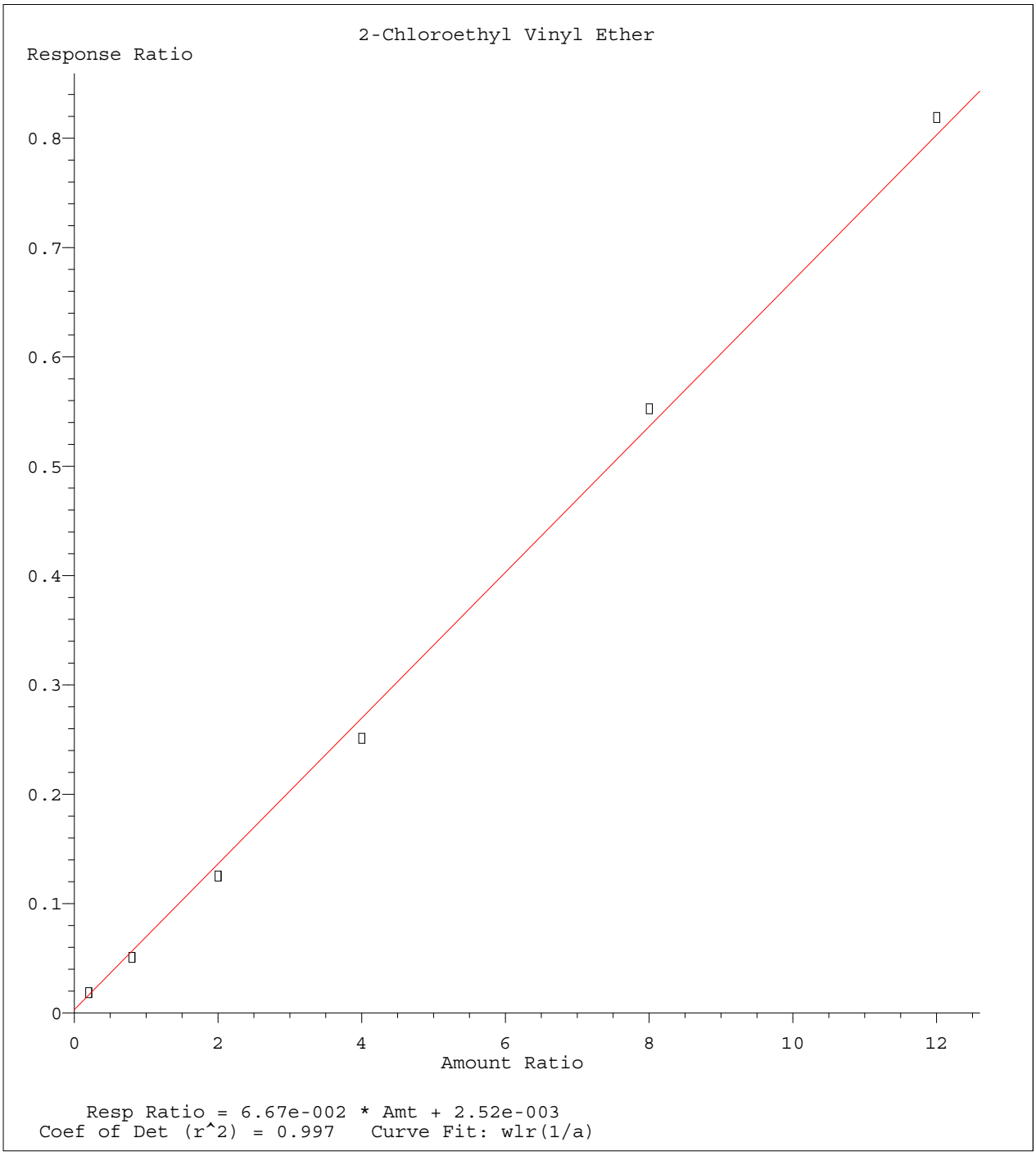

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

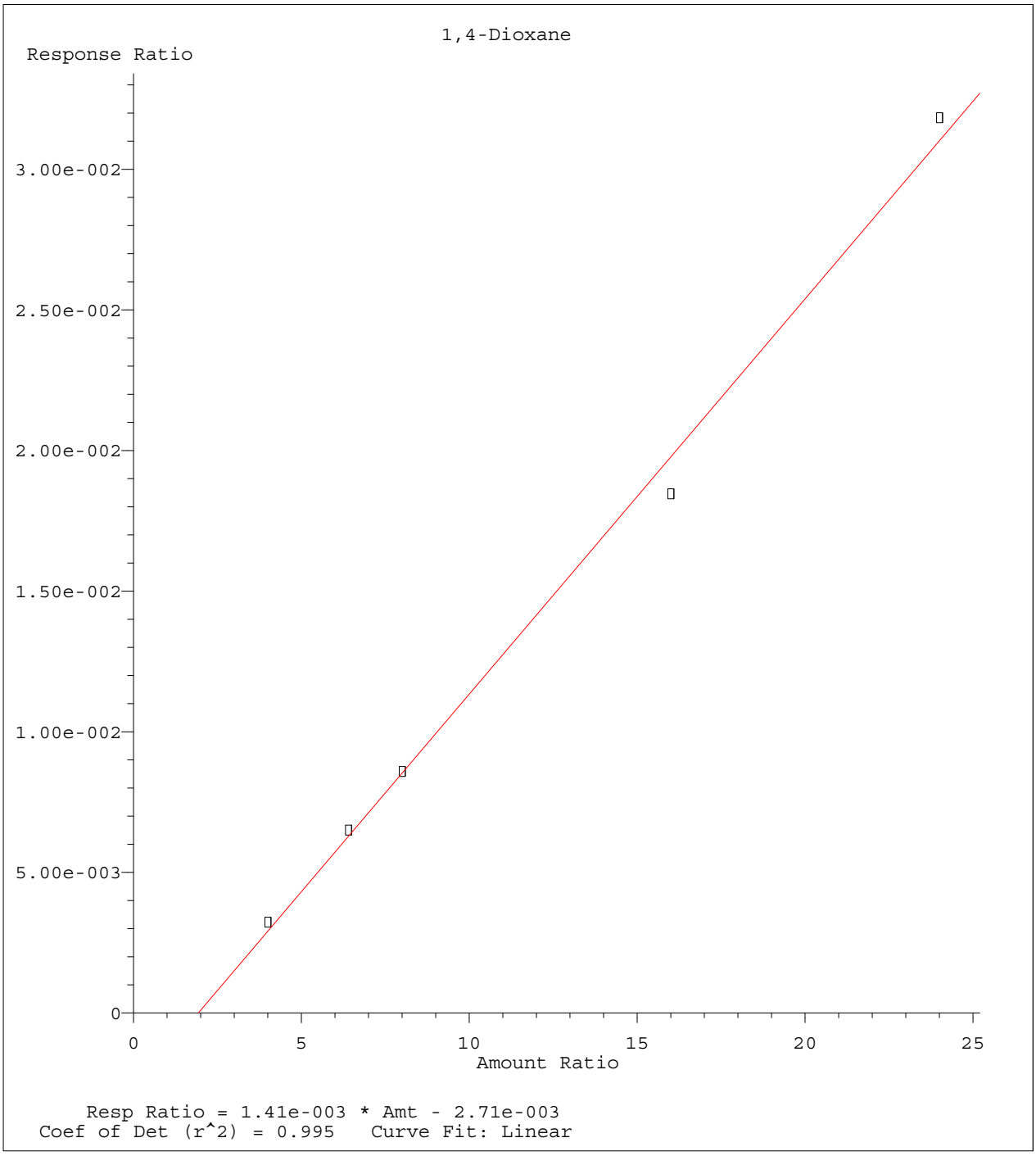

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

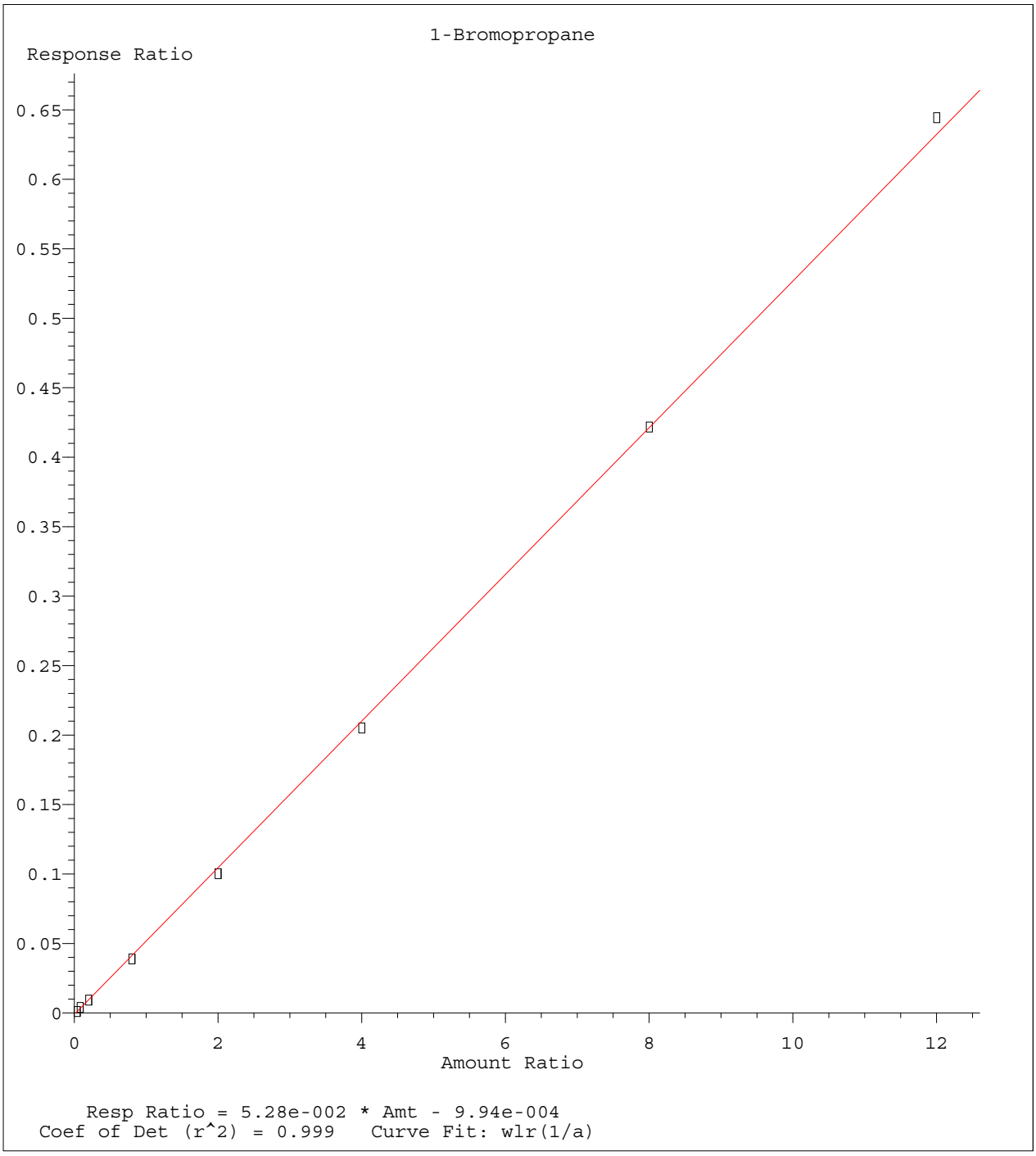

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

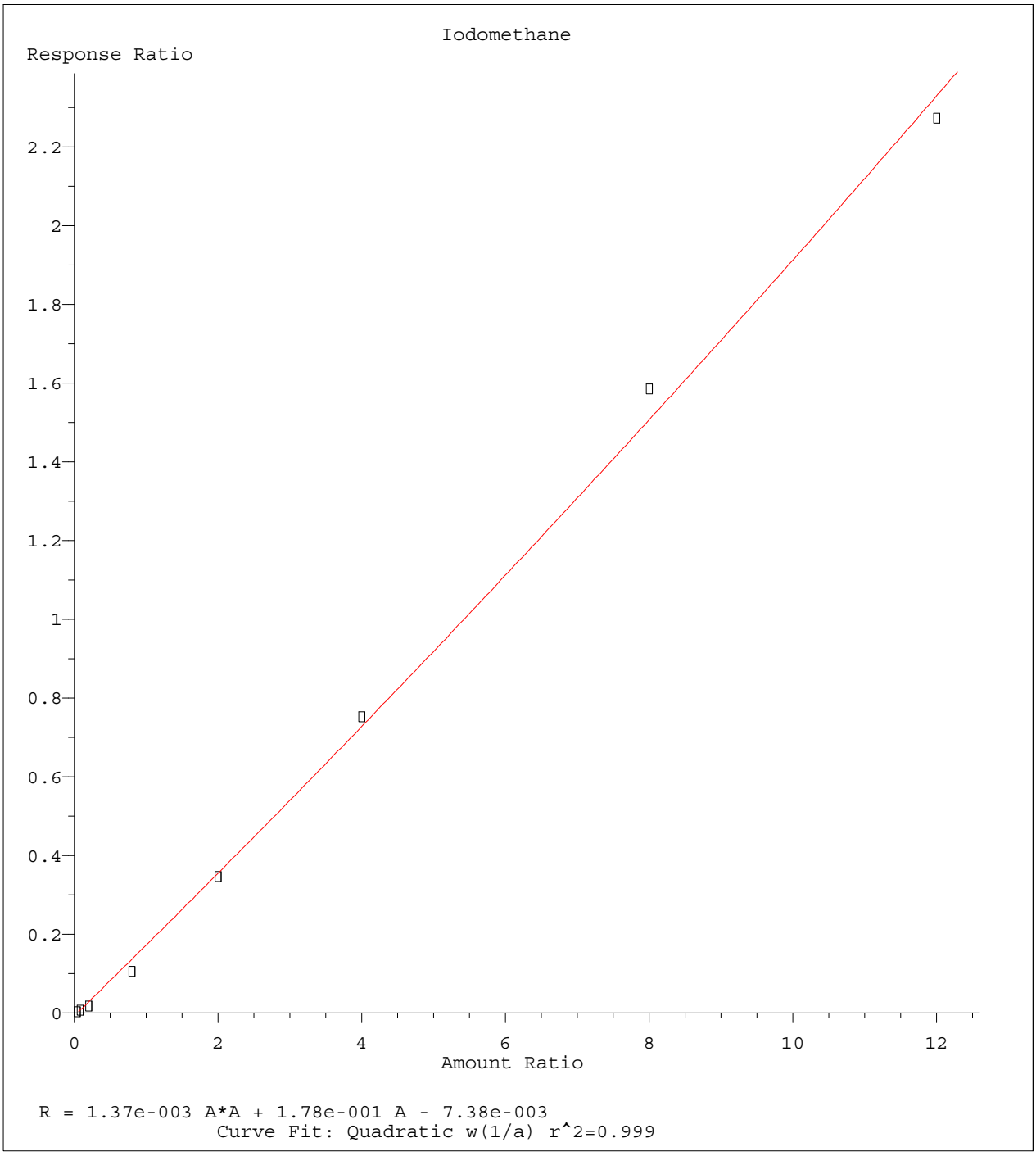

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

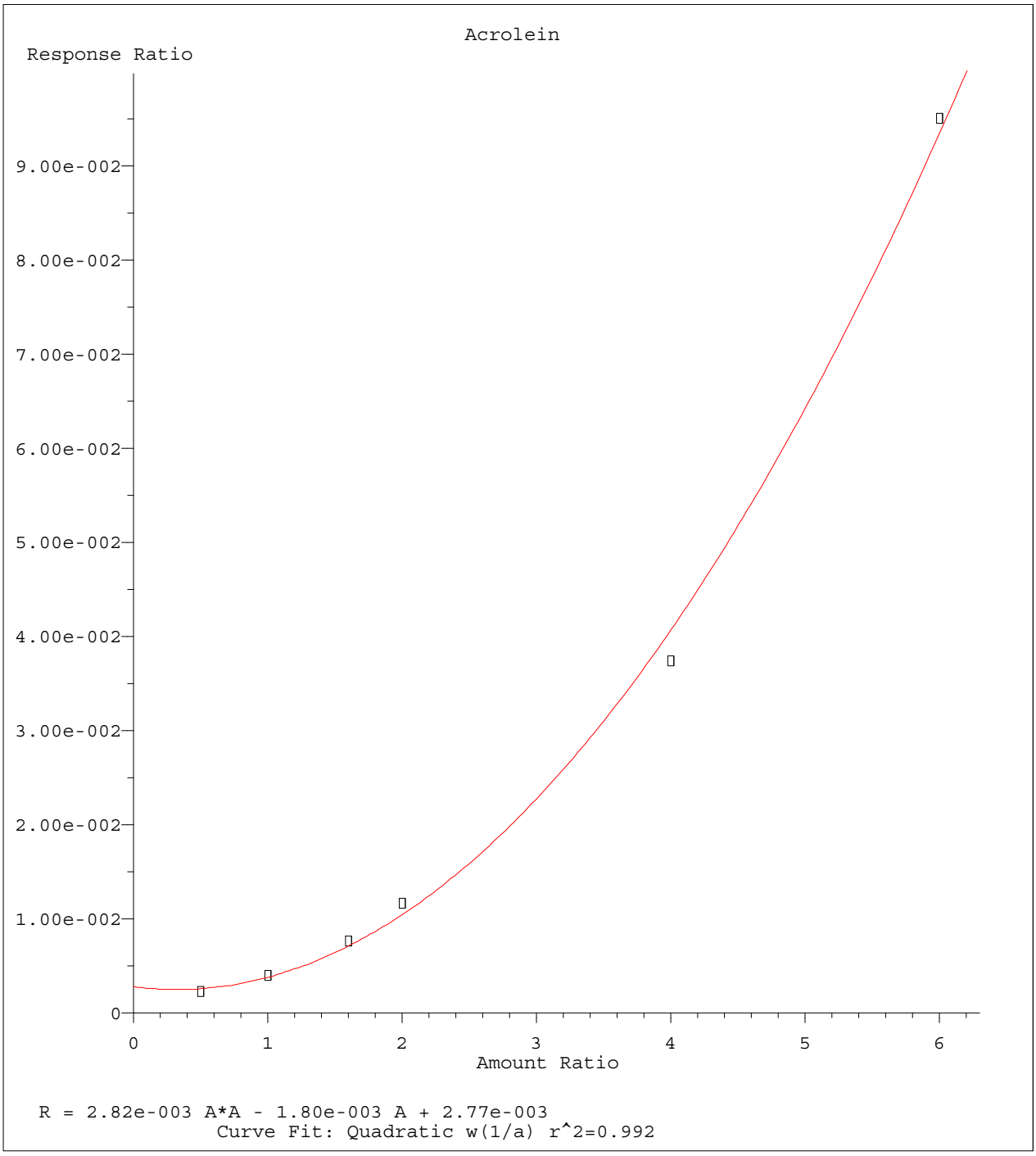

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

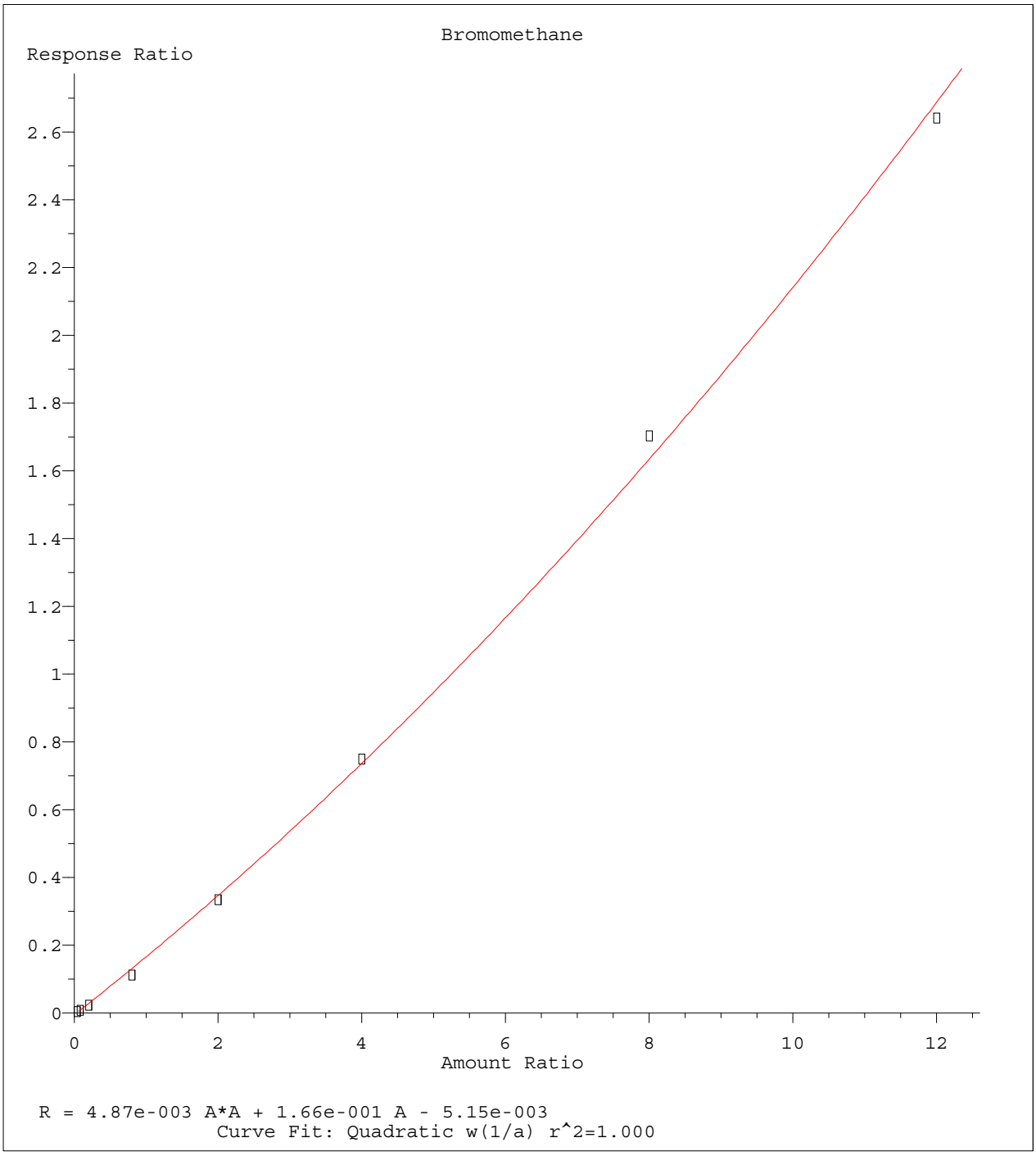

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

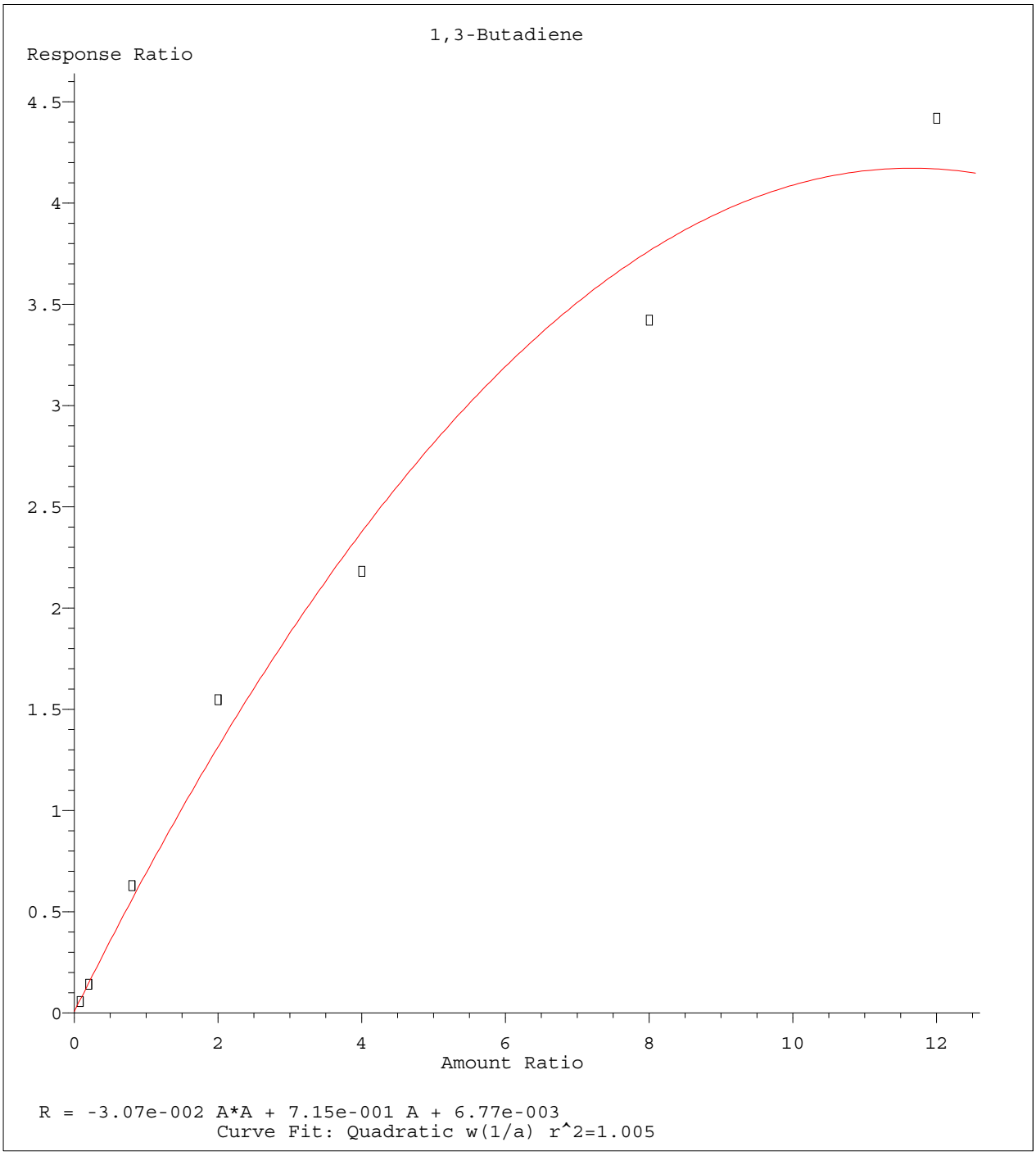

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:23 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	919308	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	650523	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	355810	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	220169	24.1626 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.64%		
43) 1,2-Dichloroethane-d4	10.35	65	208786	24.3822 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.52%		
58) Toluene-d8	12.73	98	742207	24.4497 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.80%		
80) p-Bromofluorobenzene	16.12	95	296553	24.4977 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	800374	56.1760 ug/L	98
3) Chloromethane	3.65	50	1424558	50.0839 ug/L	97
4) Vinyl Chloride	3.88	62	1286582	48.0032 ug/L	96
5) 1,3-Butadiene	3.92	54	691807	27.3545 ug/L	93
6) Bromomethane	4.78	94	314349	49.4206 ug/L	98
7) Chloroethane	4.93	64	404454	55.4535 ug/L	92
8) Trichlorofluoromethane	5.42	101	820931	48.7746 ug/L	98
9) Diethyl ether	5.94	59	587435	91.0349 ug/L	91
10) Isoprene	5.99	67	718544	57.5747 ug/L	80
11) Acrolein	6.18	56	24471	81.1360 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	455967	47.9976 ug/L	92
13) Acetone	6.29	43	74651	56.8598 ug/L	83
14) 1,1-Dichloroethene	6.51	61	755549	46.7643 ug/L	83
15) Tert-Butyl Alcohol	6.64	59	73310	207.5132 ug/L	94
16) Dimethyl Sulfide	6.77	62	630937	66.9848 ug/L	79
17) Iodomethane	7.03	142	395975	60.2995 ug/L	77
18) Methyl acetate	7.04	43	216897	46.2957 ug/L	92
19) Methylene Chloride	7.30	84	463114	50.2973 ug/L	59
20) Carbon Disulfide	7.34	76	1398233	47.0436 ug/L	95
21) Acrylonitrile	7.48	53	109604	52.4490 ug/L	91
22) Methyl Tert Butyl Ether	7.52	73	949202	53.5119 ug/L	97
23) trans-1,2-Dichloroethene	7.74	61	767654	49.7697 ug/L	85
24) n-Hexane	7.83	57	700372	44.9039 ug/L	97
25) Diisopropyl ether	8.17	45	3332814	97.5476 ug/L	93
26) Vinyl Acetate	8.34	43	617016	54.7014 ug/L	92
27) 1,1-Dichloroethane	8.37	63	908724	48.8040 ug/L	94
28) Ethyl-Tert-Butyl ether	8.75	59	2675688	99.8095 ug/L	93
29) 2-Butanone	8.92	43	113924	53.2579 ug/L	88
30) Propionitrile	9.04	54	72509	106.3523 ug/L	95
31) 2,2-Dichloropropane	9.15	77	703200	45.7742 ug/L	97
32) cis-1,2-Dichloroethene	9.21	96	514228	48.5405 ug/L	76
33) Chloroform	9.42	83	851052	49.2072 ug/L	95
34) 1-Bromopropane	9.56	122	104801	54.4355 ug/L	97
35) Bromochloromethane	9.66	130	259626	48.0577 ug/L #	73
36) Tetrahydrofuran	9.68	42	146217	101.4819 ug/L	87
38) 1,1,1-Trichloroethane	9.96	97	789635	50.2943 ug/L	97
39) Cyclohexane	9.99	56	902530	47.4323 ug/L	86
40) 1,1-Dichloropropene	10.15	75	653293	47.8258 ug/L	92
41) Tert-Amyl-Methyl ether	10.26	73	1985009	100.8814 ug/L	97
42) Carbon Tetrachloride	10.30	117	702126	49.2114 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M404591.D 8260WT.M Wed May 13 06:46:23 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:23 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	603214	48.6514 ug/L		93
46)	Benzene	10.50	78	1850022	50.2789 ug/L		98
47)	Trichloroethene	11.26	130	486136	49.9479 ug/L		96
48)	Methylcyclohexane	11.34	83	749827	47.4654 ug/L		89
49)	1,2-Dichloropropane	11.48	63	501116	48.6242 ug/L		98
50)	Bromodichloromethane	11.78	83	616315	48.5742 ug/L		96
51)	1,4-Dioxane	11.77	88	7938	201.6115 ug/L		95
52)	Dibromomethane	11.86	93	233106	48.0270 ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.07	63	212350	85.5819 ug/L		96
54)	4-Methyl-2-Pentanone	12.10	58	96374	54.3940 ug/L		95
55)	cis-1,3-Dichloropropene	12.41	75	728119	52.4974 ug/L		95
56)	Dimethyl Disulfide	12.66	79	376819	46.1411 ug/L		99
59)	Toluene	12.83	91	1963822	50.8947 ug/L		83
60)	Ethyl Methacrylate	12.92	69	394247	57.4235 ug/L		75
62)	trans-1,3-Dichloropropene	13.01	75	568578	49.1605 ug/L		94
63)	1,1,2-Trichloroethane	13.22	97	293758	49.0014 ug/L		97
64)	2-Hexanone	13.16	58	90401	54.7606 ug/L	#	80
65)	1,3-Dichloropropane	13.52	76	534108	50.8231 ug/L		82
66)	Tetrachloroethene	13.65	164	399242	49.0225 ug/L		92
67)	Dibromochloromethane	13.92	129	391690	49.0990 ug/L		100
68)	1,2-Dibromoethane	14.16	107	291132	50.8711 ug/L		99
69)	1-Chlorohexane	14.26	91	667237	50.5549 ug/L		84
70)	Chlorobenzene	14.67	112	1227973	47.1511 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.70	131	469282	50.2001 ug/L		99
72)	Ethylbenzene	14.70	106	759764	48.7068 ug/L	#	33
73)	m-,p-Xylene	14.78	106	1754806	99.4729 ug/L	#	49
74)	o-Xylene	15.35	106	816052	46.8093 ug/L		63
75)	Styrene	15.38	104	1449226	52.4756 ug/L		88
76)	Bromoform	15.88	173	229962	45.3265 ug/L		98
77)	Isopropylbenzene	15.78	105	2042078	47.8947 ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.99	83	322882	47.7586 ug/L		96
81)	1,2,3-Trichloropropane	16.18	110	94494	51.5901 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.23	53	119151	53.0904 ug/L		78
83)	n-Propylbenzene	16.28	91	2494553	46.3371 ug/L	#	73
84)	Bromobenzene	16.41	156	513898	48.0675 ug/L		87
85)	1,3,5-Trimethylbenzene	16.47	105	1947168	52.8620 ug/L		80
86)	2-Chlorotoluene	16.55	91	1485272	40.8801 ug/L		89
87)	4-Chlorotoluene	16.60	91	1550170	53.3429 ug/L	#	67
88)	a-Methylstyrene	16.87	118	1093998	52.1517 ug/L		94
89)	tert-Butylbenzene	16.93	134	371781	45.4009 ug/L		58
90)	1,2,4-Trimethylbenzene	16.99	105	1987730	52.4881 ug/L		75
91)	sec-Butylbenzene	17.20	105	2246378	48.9121 ug/L		78
92)	p-Isopropyltoluene	17.36	119	1868949	47.9989 ug/L		78
93)	1,3-Dichlorobenzene	17.56	146	987544	45.5774 ug/L		92
94)	1,4-Dichlorobenzene	17.69	146	1071014	48.6885 ug/L		93
95)	n-Butylbenzene	17.89	91	1969840	51.7897 ug/L		80
96)	1,2-Dichlorobenzene	18.19	146	869480	46.2431 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.18	75	56744	52.5819 ug/L		84
98)	1,2,4-Trichlorobenzene	20.32	180	703789	49.6876 ug/L		99
99)	Hexachlorobutadiene	20.47	225	372888	50.3914 ug/L		95
100)	Naphthalene	20.69	128	978141	51.4911 ug/L		93
101)	1,2,3-Trichlorobenzene	21.00	180	596654	49.7096 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404591.D 8260WT.M Wed May 13 06:46:24 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

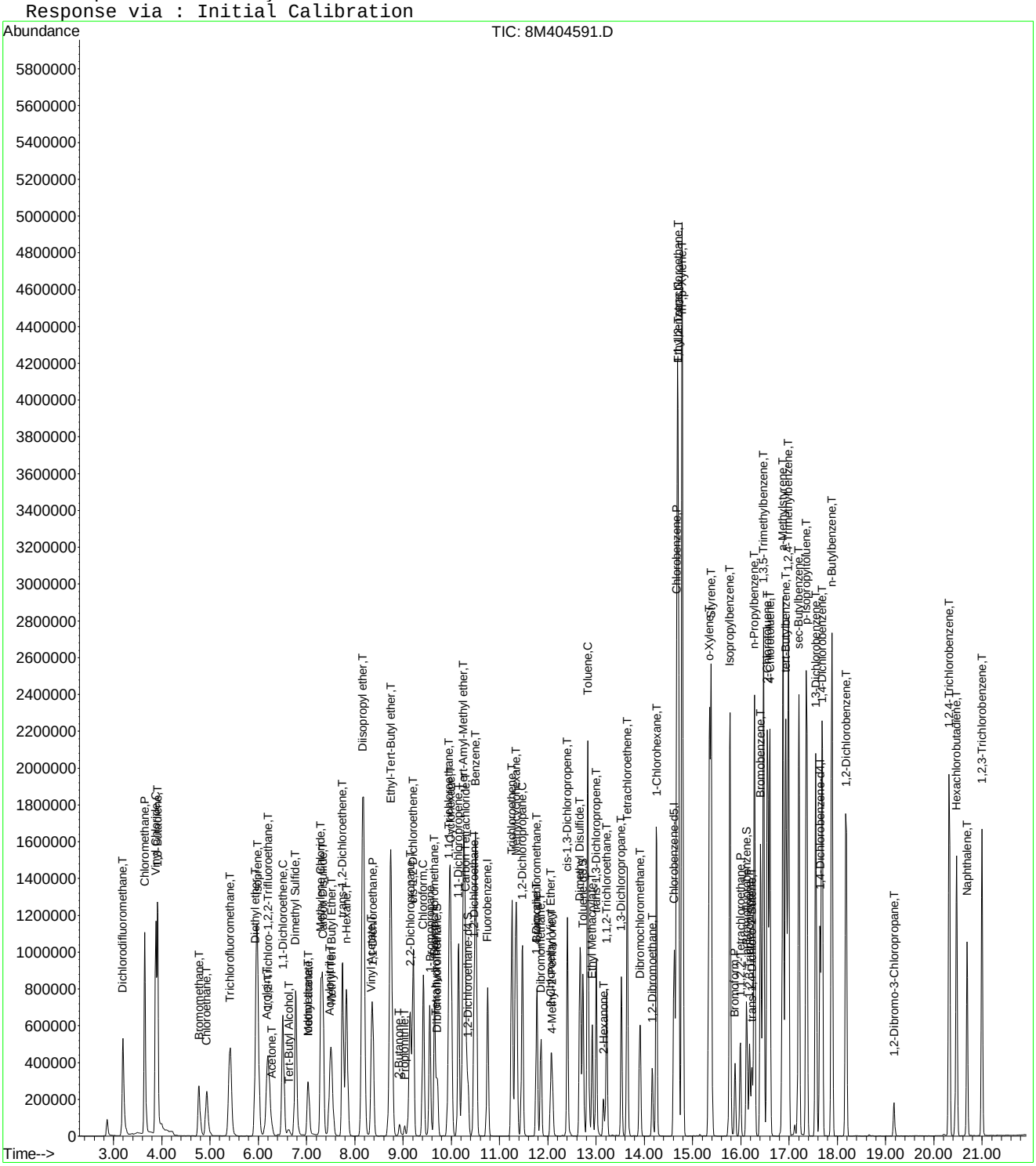

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	118	0.00
2	T	Dichlorodifluoromethane	50.0000	56.1760	-12.4	124	0.00
3	P	Chloromethane	50.0000	50.0839	-0.2	118	0.00
4	C	Vinyl Chloride	50.0000	48.0032	4.0	109	0.00
5	T	1,3-Butadiene	50.0000	27.3545	45.3#	57	0.00
6	T	Bromomethane	50.0000	49.4205	1.2	121	0.00
7	T	Chloroethane	50.0000	55.4535	-10.9	132	0.00
8	T	Trichlorofluoromethane	50.0000	48.7746	2.5	116	0.00
9	T	Diethyl ether	100.0000	91.0349	9.0	115	0.00
10	T	Isoprene	50.0000	57.5747	-15.1	133	0.00
11	T	Acrolein	50.0000	81.1360	-62.3#	270	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	47.9976	4.0	114	0.00
13	T	Acetone	50.0000	56.8598	-13.7	139	0.00
14	C	1,1-Dichloroethene	50.0000	46.7643	6.5	110	0.00
15	T	Tert-Butyl Alcohol	200.0000	207.5132	-3.8	133	0.00
16	T	Dimethyl Sulfide	50.0000	66.9848	-34.0#	155	0.00
17	T	Iodomethane	50.0000	60.2995	-20.6	147	0.00
18	T	Methyl acetate	50.0000	46.2957	7.4	113	0.00
19	T	Methylene Chloride	50.0000	50.2973	-0.6	119	0.00
20	T	Carbon Disulfide	50.0000	47.0436	5.9	105	0.00
21	T	Acrylonitrile	50.0000	52.4490	-4.9	124	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.5119	-7.0	128	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.7697	0.5	118	0.00
24	T	n-Hexane	50.0000	44.9039	10.2	105	0.00
25	T	Diisopropyl ether	100.0000	97.5476	2.5	118	0.00
26	T	Vinyl Acetate	50.0000	54.7015	-9.4	125	0.00
27	P	1,1-Dichloroethane	50.0000	48.8040	2.4	113	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.8095	0.2	121	0.00
29	T	2-Butanone	50.0000	53.2579	-6.5	128	0.00
30	T	Propionitrile	100.0000	106.3523	-6.4	134	0.00
31	T	2,2-Dichloropropane	50.0000	45.7742	8.5	110	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.5405	2.9	115	0.00
33	C	Chloroform	50.0000	49.2072	1.6	116	0.00
34		1-Bromopropane	50.0000	54.4355	-8.9	134	0.00
35	T	Bromochloromethane	50.0000	48.0577	3.9	113	0.00
36	T	Tetrahydrofuran	100.0000	101.4819	-1.5	128	0.00
37	S	Dibromofluoromethane	25.0000	24.1626	3.3	115	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.2943	-0.6	116	0.00
39	T	Cyclohexane	50.0000	47.4323	5.1	111	0.00
40	T	1,1-Dichloropropene	50.0000	47.8258	4.3	113	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.8814	-0.9	123	0.00
42	T	Carbon Tetrachloride	50.0000	49.2114	1.6	114	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.3822	2.5	114	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	50.0000	48.6514	2.7	117	0.00
46	T	Benzene	50.0000	50.2789	-0.6	116	0.00
47	T	Trichloroethene	50.0000	49.9479	0.1	116	0.00
48	T	Methylcyclohexane	50.0000	47.4654	5.1	112	0.00
49	C	1,2-Dichloropropane	50.0000	48.6243	2.8	116	0.00
50	T	Bromodichloromethane	50.0000	48.5742	2.9	114	0.00
51	T	1,4-Dioxane	200.0000	201.6115	-0.8	119	0.00
52	T	Dibromomethane	50.0000	48.0270	3.9	115	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	85.5819	-71.2#	218	0.00
54	T	4-Methyl-2-Pentanone	50.0000	54.3940	-8.8	130	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.4974	-5.0	120	0.00
56	T	Dimethyl Disulfide	50.0000	46.1411	7.7	123	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	119	0.00
58	S	Toluene-d8	25.0000	24.4497	2.2	113	0.00
59	C	Toluene	50.0000	50.8947	-1.8	115	0.00
60	T	Ethyl Methacrylate	50.0000	57.4235	-14.8	126	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	50.0000	49.1605	1.7	113	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0014	2.0	115	0.00
64	T	2-Hexanone	50.0000	54.7606	-9.5	124	0.00
65	T	1,3-Dichloropropane	50.0000	50.8231	-1.6	120	0.00
66	T	Tetrachloroethene	50.0000	49.0224	2.0	116	0.00
67	T	Dibromochloromethane	50.0000	49.0990	1.8	115	0.00
68	T	1,2-Dibromoethane	50.0000	50.8711	-1.7	116	0.00
69	T	1-Chlorohexane	50.0000	50.5549	-1.1	119	0.00
70	P	Chlorobenzene	50.0000	47.1511	5.7	109	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.2002	-0.4	117	0.00
72	C	Ethylbenzene	50.0000	48.7068	2.6	117	0.00
73	T	m-,p-Xylene	100.0000	99.4729	0.5	111	0.00
74	T	o-Xylene	50.0000	46.8093	6.4	110	0.00
75	T	Styrene	50.0000	52.4756	-5.0	116	0.00
76	P	Bromoform	50.0000	45.3265	9.3	123	0.00
77	T	Isopropylbenzene	50.0000	47.8947	4.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.7586	4.5	116	0.00
80	S	p-Bromofluorobenzene	25.0000	24.4977	2.0	116	0.00
81	T	1,2,3-Trichloropropane	50.0000	51.5901	-3.2	124	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	53.0904	-6.2	117	0.00
83	T	n-Propylbenzene	50.0000	46.3371	7.3	105	0.00
84	T	Bromobenzene	50.0000	48.0675	3.9	115	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.8620	-5.7	116	0.00
86	T	2-Chlorotoluene	50.0000	40.8801	18.2	94	0.00
87	T	4-Chlorotoluene	50.0000	53.3429	-6.7	122	0.00
88	T	a-Methylstyrene	50.0000	52.1517	-4.3	119	0.00
89	T	tert-Butylbenzene	50.0000	45.4008	9.2	109	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.4881	-5.0	115	0.00
91	T	sec-Butylbenzene	50.0000	48.9121	2.2	106	0.00
92	T	p-Isopropyltoluene	50.0000	47.9989	4.0	104	0.00
93	T	1,3-Dichlorobenzene	50.0000	45.5774	8.8	105	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.6885	2.6	115	0.00
95	T	n-Butylbenzene	50.0000	51.7897	-3.6	112	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.2431	7.5	106	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.5819	-5.2	123	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.6876	0.6	114	0.00
99	T	Hexachlorobutadiene	50.0000	50.3914	-0.8	122	0.00
100	T	Naphthalene	50.0000	51.4911	-3.0	116	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	49.7096	0.6	115	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404591.D 8260WT.M Wed May 13 06:49:00 2015 Page 2

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011864.D
Acq On : 15 May 2015 15:24
Operator : ADC
Sample : WG523883-02 50ug/L CCV 8260
Misc : 1,1 STD70453
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 19 11:44:26 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	240400	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.993	117	179138	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.319	152	96518	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	65454	28.3118 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.247%		
32) 1,2-Dichloroethane-d4	4.840	65	56794	24.7708 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.083%		
44) Toluene-d8	6.736	98	250421	25.9976 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.990%		
63) p-Bromofluorobenzene	8.737	95	87259	25.2236 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.894%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	172880	59.7286 ug/L	100
3) Chloromethane	1.157	50	158804	62.6966 ug/L	100
4) Vinyl Chloride	1.201	62	164511	58.5044 ug/L	100
5) 1,3-Butadiene	1.212	54	91169	41.9628 ug/L	99
6) Bromomethane	1.389	94	100907	60.1317 ug/L	100
7) Chloroethane	1.458	64	81289	55.1861 ug/L	99
8) Trichlorofluoromethane	1.548	101	215322	59.4350 ug/L	99
9) Diethyl ether	1.759	59	77425	47.9148 ug/L	98
10) 1,1-Dichloroethene	1.878	61	194443	57.1518 ug/L	99
11) Carbon Disulfide	1.893	76	356406	50.6051 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.910	101	131865	57.4921 ug/L	99
13) Acrolein	2.127	56	9931	46.4213 ug/L	94
14) Methylene Chloride	2.307	84	129533	49.7851 ug/L	99
15) Acetone	2.362	43	16968	44.7786 ug/L	98
16) trans-1,2-Dichloroethene	2.437	96	125476	55.4411 ug/L	98
17) Methyl Tert Butyl Ether	2.547	73	265061	46.2593 ug/L	99
18) 1,1-Dichloroethane	3.001	63	235643	56.6199 ug/L	100
19) Acrylonitrile	3.059	53	24284	44.0402 ug/L	100
21) cis-1,2-Dichloroethene	3.595	96	140982	54.9805 ug/L	99
22) 2,2-Dichloropropane	3.725	77	188029	53.8763 ug/L	99
23) Cyclohexane	3.827	56	207993	52.0981 ug/L	99
24) Bromochloromethane	3.838	130	86508	53.1725 ug/L	100
25) Chloroform	3.969	83	229646	57.9003 ug/L	99
26) Carbon Tetrachloride	4.113	117	181074	50.9236 ug/L	99
28) 1,1,1-Trichloroethane	4.209	97	203659	53.5265 ug/L	100
29) 1,1-Dichloropropene	4.377	75	175572	55.9261 ug/L	97
30) 2-Butanone	4.400	43	26944	39.4147 ug/L	96
31) Benzene	4.678	78	522123	55.4812 ug/L	99
33) 1,2-Dichloroethane	4.921	62	142617	49.9363 ug/L	99
34) Trichloroethene	5.350	130	150525	56.0811 ug/L	98
35) Dibromomethane	5.767	93	69166	52.3216 ug/L	99
36) 1,2-Dichloropropane	5.877	63	139432	55.6134 ug/L	98
37) Bromodichloromethane	5.963	83	169877	53.5790 ug/L	100
38) 1,4-Dioxane	6.172	88	1399	83.9139 ug/L	92
39) 2-Chloroethyl Vinyl Ether	6.551	63	116592	94.5752 ug/L	100
40) cis-1,3-Dichloropropene	6.569	75	201652	53.4921 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	22994	37.7210 ug/L	98
42) trans-1,3-Dichloropropene	7.168	75	163648	49.6700 ug/L	100
45) Toluene	6.780	91	600161	54.5309 ug/L	100
46) Tetrachloroethene	7.110	166	165129	53.9677 ug/L	100
47) 1,1,2-Trichloroethane	7.298	97	98267	49.4077 ug/L	99
48) Dibromochloromethane	7.437	129	133093	50.6789 ug/L	99
49) 1,3-Dichloropropane	7.518	76	157219	49.8666 ug/L	95
50) 1,2-Dibromoethane	7.605	107	97283	48.0826 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011864.D
Acq On : 15 May 2015 15:24
Operator : ADC
Sample : WG523883-02 50ug/L CCV 8260
Misc : 1,1 STD70453
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 19 11:44:26 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) 2-Hexanone	7.831	43	42657	35.8265 ug/L	98
52) Chlorobenzene	8.002	112	401681	55.7597 ug/L	99
53) 1-Chlorohexane	8.016	69	36069	53.8310 ug/L	85
54) Ethylbenzene	8.039	106	218497	56.3362 ug/L	97
55) 1,1,1,2-Tetrachloroethane	8.054	131	143710	54.2042 ug/L	99
56) m-,p-Xylene	8.141	106	541751	115.5966 ug/L	99
57) o-Xylene	8.401	106	260239	55.8787 ug/L	97
58) Styrene	8.433	104	434053	56.7084 ug/L	98
59) Bromoform	8.436	173	90440	49.9302 ug/L	99
60) Isopropylbenzene	8.589	105	694331	56.8547 ug/L	100
62) 1,3,5-Trimethylbenzene	8.928	105	621834	57.2944 ug/L	99
64) Bromobenzene	8.789	156	185098	54.6781 ug/L	99
65) n-Propylbenzene	8.821	91	809745	57.9579 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.859	83	117551	48.9569 ug/L	99
67) 2-Chlorotoluene	8.893	91	481975	55.9476 ug/L	99
68) 1,2,3-Trichloropropane	8.925	110	31538	50.0354 ug/L	99
69) 1,2,4-Trimethylbenzene	9.125	105	624125	57.6148 ug/L	100
70) 4-Chlorotoluene	8.983	91	494487	56.6105 ug/L	99
71) tert-Butylbenzene	9.090	134	114124	57.7312 ug/L	98
72) sec-Butylbenzene	9.180	105	771697	58.0482 ug/L	100
73) p-Isopropyltoluene	9.253	119	683585	58.9467 ug/L	100
74) 1,3-Dichlorobenzene	9.281	146	361330	57.4414 ug/L	99
75) 1,4-Dichlorobenzene	9.325	146	356336	55.4460 ug/L	100
76) n-Butylbenzene	9.458	91	609055	59.8282 ug/L	100
77) 1,2-Dichlorobenzene	9.530	146	334849	55.6533 ug/L	99
78) 1,2-Dibromo-3-Chloropr...	9.907	75	18598	41.8735 ug/L	94
79) Hexachlorobutadiene	10.208	225	159403	56.5820 ug/L	100
80) 1,2,4-Trichlorobenzene	10.222	180	263829	53.4244 ug/L	99
81) Naphthalene	10.376	128	414614	44.9666 ug/L	100
82) 1,2,3-Trichlorobenzene	10.460	180	228655	49.2886 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011864.D
Acq On : 15 May 2015 15:24
Operator : ADC
Sample : WG523883-02 50ug/L CCV 8260
Misc : 1,1 STD70453
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 19 11:44:26 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

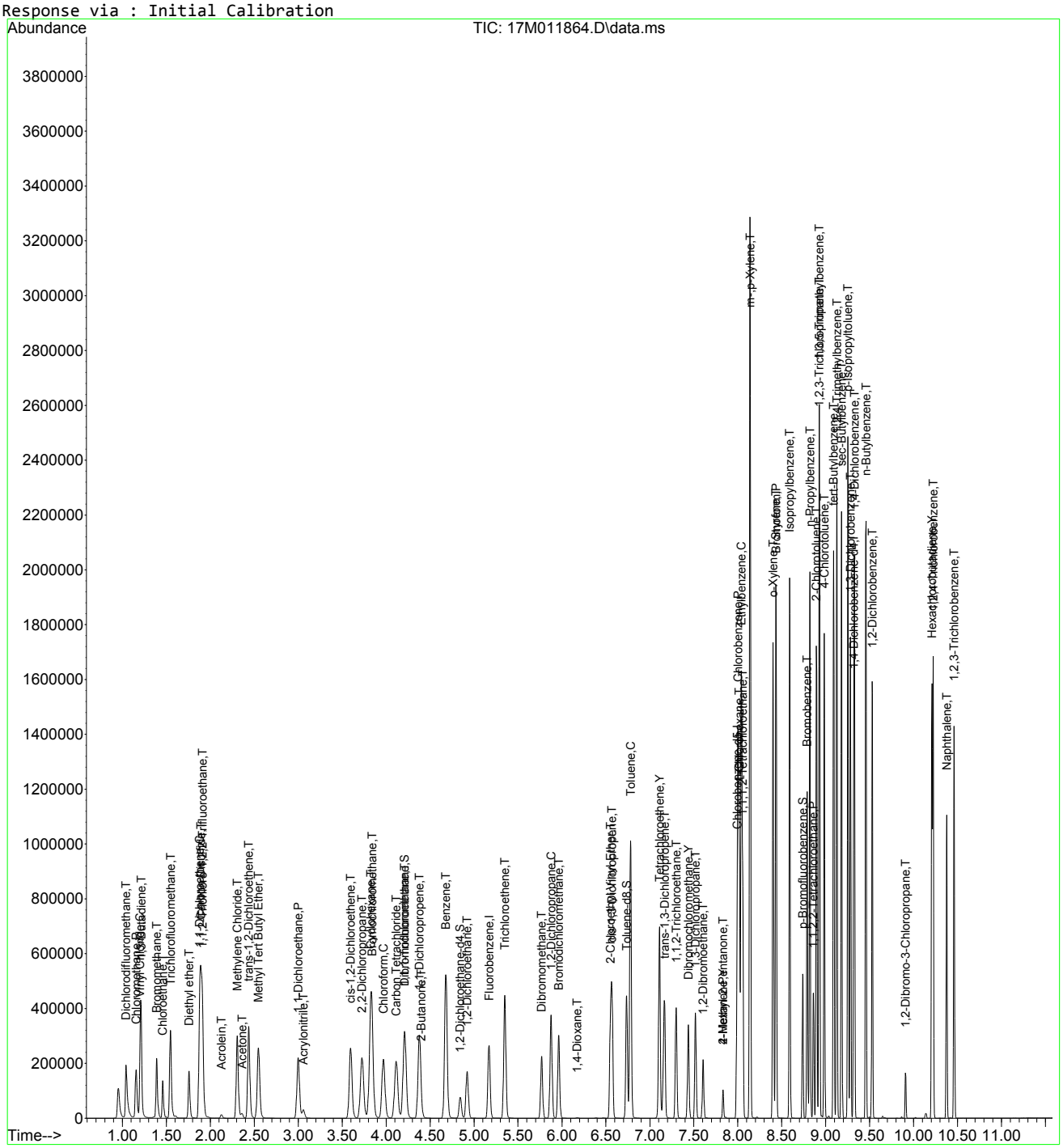

8260VMS.M Tue May 19 11:44:27 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011864.D
Acq On : 15 May 2015 15:24
Operator : ADC
Sample : WG523883-02 50ug/L CCV 8260
Misc : 1,1 STD70453
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 15 15:36:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	85	0.000
2	T	Dichlorodifluoromethane	0.301	0.360	-19.6	95	0.000
3	P	Chloromethane	0.263	0.330	-25.5#	105	0.000
4	C	Vinyl Chloride	0.292	0.342	-17.1#	95	0.000
5	T	1,3-Butadiene	0.226	0.190	15.9	67	0.000
6	T	Bromomethane	0.175	0.210	-20.0	111	0.000
7	T	Chloroethane	0.153	0.169	-10.5	90	0.000
8	T	Trichlorofluoromethane	0.377	0.448	-18.8	98	0.000
9	T	Diethyl ether	0.168	0.161	4.2	88	0.000
10	C	1,1-Dichloroethene	0.354	0.404	-14.1#	96	0.000
11	T	Carbon Disulfide	0.732	0.741	-1.2	84	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.239	0.274	-14.6	94	0.000
13	T	Acrolein	0.022	0.021	4.5	81	0.000
14	T	Methylene Chloride	0.271	0.269	0.7	94	0.000
15	T	Acetone	0.041	0.035	14.6	97	0.000
16	T	trans-1,2-Dichloroethene	0.235	0.261	-11.1	94	0.000
17	T	Methyl Tert Butyl Ether	0.596	0.551	7.6	87	0.000
18	P	1,1-Dichloroethane	0.433	0.490	-13.2	96	0.000
19	T	Acrylonitrile	0.057	0.051	10.5	85	0.000
20	T	Vinyl Acetate	0.005	0.000	100.0#	0#	-3.308#
21	T	cis-1,2-Dichloroethene	0.267	0.293	-9.7	95	0.000
22	T	2,2-Dichloropropane	0.363	0.391	-7.7	88	0.000
23	T	Cyclohexane	0.415	0.433	-4.3	87	0.000
24	T	Bromochloromethane	0.169	0.180	-6.5	93	0.000
25	C	Chloroform	0.412	0.478	-16.0#	95	0.000
26	T	Carbon Tetrachloride	0.310	0.377	-21.6	87	0.000
27	S	Dibromofluoromethane	0.240	0.272	-13.3	94	0.000
28	T	1,1,1-Trichloroethane	0.396	0.424	-7.1	91	0.000
29	T	1,1-Dichloropropene	0.326	0.365	-12.0	93	0.000
30	T	2-Butanone	0.071	0.056	21.1	85	0.000
31	T	Benzene	0.979	1.086	-10.9	95	0.000
32	S	1,2-Dichloroethane-d4	0.238	0.236	0.8	89	0.000
33	T	1,2-Dichloroethane	0.297	0.297	0.0	91	0.000
34	T	Trichloroethene	0.279	0.313	-12.2	95	0.000
35	T	Dibromomethane	0.137	0.144	-5.1	92	0.000
36	C	1,2-Dichloropropane	0.261	0.290	-11.1#	97	0.000
37	T	Bromodichloromethane	0.330	0.353	-7.0	92	0.000
38	T	1,4-Dioxane	0.002	0.001	50.0#	91	0.000
39	T	2-Chloroethyl Vinyl Ether	0.128	0.242	-89.1#	185#	0.000
40	T	cis-1,3-Dichloropropene	0.392	0.419	-6.9	92	0.000
41	T	4-Methyl-2-Pentanone	0.063	0.048	23.8	83	0.000
42	T	trans-1,3-Dichloropropene	0.343	0.340	0.9	88	0.000
43	I	Chlorobenzene-d5	1.000	1.000	0.0	89	0.000
44	S	Toluene-d8	1.344	1.398	-4.0	91	0.000
45	C	Toluene	1.536	1.675	-9.0#	96	0.000
46	Y	Tetrachloroethene	0.427	0.461	-8.0	94	0.000
47	T	1,1,2-Trichloroethane	0.278	0.274	1.4	95	0.000
48	Y	Dibromochloromethane	0.367	0.371	-1.1	92	0.000
49	T	1,3-Dichloropropane	0.440	0.439	0.2	95	0.000
50	T	1,2-Dibromoethane	0.282	0.272	3.5	94	0.000
51	Y	2-Hexanone	0.166	0.119	28.3#	81	0.000
52	P	Chlorobenzene	1.005	1.121	-11.5	100	0.000
53	T	1-Chlorohexane	0.094	0.101	-7.4	92	0.000
54	C	Ethylbenzene	0.541	0.610	-12.8#	99	0.000
55	T	1,1,1,2-Tetrachloroethane	0.370	0.401	-8.4	96	0.000

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011864.D
Acq On : 15 May 2015 15:24
Operator : ADC
Sample : WG523883-02 50ug/L CCV 8260
Misc : 1,1 STD70453
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 15 15:36:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	0.654	0.756	-15.6	101	0.000
57	T	o-Xylene	0.650	0.726	-11.7	100	0.000
58	T	Styrene	1.068	1.212	-13.5	101	0.000
59	P	Bromoform	0.253	0.252	0.4	95	0.000
60	T	Isopropylbenzene	1.704	1.938	-13.7	100	0.000
61	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	89	0.000
62	T	1,3,5-Trimethylbenzene	2.811	3.221	-14.6	101	0.000
63	S	p-Bromofluorobenzene	0.896	0.904	-0.9	89	0.000
64	T	Bromobenzene	0.877	0.959	-9.4	101	0.000
65	T	n-Propylbenzene	3.619	4.195	-15.9	100	0.000
66	P	1,1,2,2-Tetrachloroethane	0.622	0.609	2.1	105	0.000
67	T	2-Chlorotoluene	2.231	2.497	-11.9	101	0.000
68	T	1,2,3-Trichloropropane	0.163	0.163	0.0	101	0.000
69	T	1,2,4-Trimethylbenzene	2.806	3.233	-15.2	101	0.000
70	T	4-Chlorotoluene	2.263	2.562	-13.2	101	0.000
71	T	tert-Butylbenzene	0.512	0.591	-15.4	102	0.000
72	T	sec-Butylbenzene	3.443	3.998	-16.1	99	0.000
73	T	p-Isopropyltoluene	3.004	3.541	-17.9	98	0.000
74	T	1,3-Dichlorobenzene	1.629	1.872	-14.9	101	0.000
75	T	1,4-Dichlorobenzene	1.665	1.846	-10.9	101	0.000
76	T	n-Butylbenzene	2.637	3.155	-19.6	96	0.000
77	T	1,2-Dichlorobenzene	1.558	1.735	-11.4	100	0.000
78	T	1,2-Dibromo-3-Chloropropane	0.115	0.096	16.5	79	0.000
79	Y	Hexachlorobutadiene	0.730	0.826	-13.2	90	0.000
80	T	1,2,4-Trichlorobenzene	1.279	1.367	-6.9	91	0.000
81	T	Naphthalene	2.388	2.148	10.1	86	0.000
82	T	1,2,3-Trichlorobenzene	1.202	1.185	1.4	88	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011864.D
Acq On : 15 May 2015 15:24
Operator : ADC
Sample : WG523883-02 50ug/L CCV 8260
Misc : 1,1 STD70453
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 15 15:36:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	85	0.000
2	T	Dichlorodifluoromethane	50.000	59.729	-19.5	95	0.000
3	P	Chloromethane	50.000	62.697	-25.4#	105	0.000
4	C	Vinyl Chloride	50.000	58.504	-17.0#	95	0.000
5	T	1,3-Butadiene	50.000	41.963	16.1	67	0.000
6	T	Bromomethane	50.000	60.132	-20.3	111	0.000
7	T	Chloroethane	50.000	55.186	-10.4	90	0.000
8	T	Trichlorofluoromethane	50.000	59.435	-18.9	98	0.000
9	T	Diethyl ether	50.000	47.915	4.2	88	0.000
10	C	1,1-Dichloroethene	50.000	57.152	-14.3#	96	0.000
11	T	Carbon Disulfide	50.000	50.605	-1.2	84	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	57.492	-15.0	94	0.000
13	T	Acrolein	50.000	46.421	7.2	81	0.000
14	T	Methylene Chloride	50.000	49.785	0.4	94	0.000
15	T	Acetone	50.000	44.779	10.4	97	0.000
16	T	trans-1,2-Dichloroethene	50.000	55.441	-10.9	94	0.000
17	T	Methyl Tert Butyl Ether	50.000	46.259	7.5	87	0.000
18	P	1,1-Dichloroethane	50.000	56.620	-13.2	96	0.000
19	T	Acrylonitrile	50.000	44.040	11.9	85	0.000
20	T	Vinyl Acetate	50.000	0.000	100.0#	0	-3.308#
21	T	cis-1,2-Dichloroethene	50.000	54.981	-10.0	95	0.000
22	T	2,2-Dichloropropane	50.000	53.876	-7.8	88	0.000
23	T	Cyclohexane	50.000	52.098	-4.2	87	0.000
24	T	Bromochloromethane	50.000	53.172	-6.3	93	0.000
25	C	Chloroform	50.000	57.900	-15.8#	95	0.000
26	T	Carbon Tetrachloride	50.000	50.924	-1.8	87	0.000
27	S	Dibromofluoromethane	25.000	28.312	-13.2	94	0.000
28	T	1,1,1-Trichloroethane	50.000	53.526	-7.1	91	0.000
29	T	1,1-Dichloropropene	50.000	55.926	-11.9	93	0.000
30	T	2-Butanone	50.000	39.415	21.2	85	0.000
31	T	Benzene	50.000	55.481	-11.0	95	0.000
32	S	1,2-Dichloroethane-d4	25.000	24.771	0.9	89	0.000
33	T	1,2-Dichloroethane	50.000	49.936	0.1	91	0.000
34	T	Trichloroethene	50.000	56.081	-12.2	95	0.000
35	T	Dibromomethane	50.000	52.322	-4.6	92	0.000
36	C	1,2-Dichloropropane	50.000	55.613	-11.2#	97	0.000
37	T	Bromodichloromethane	50.000	53.579	-7.2	92	0.000
38	T	1,4-Dioxane	100.000	83.914	16.1	91	0.000
39	T	2-Chloroethyl Vinyl Ether	50.000	94.575	-89.2#	185	0.000
40	T	cis-1,3-Dichloropropene	50.000	53.492	-7.0	92	0.000
41	T	4-Methyl-2-Pentanone	50.000	37.721	24.6	83	0.000
42	T	trans-1,3-Dichloropropene	50.000	49.670	0.7	88	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	89	0.000
44	S	Toluene-d8	25.000	25.998	-4.0	91	0.000
45	C	Toluene	50.000	54.531	-9.1#	96	0.000
46	Y	Tetrachloroethene	50.000	53.968	-7.9	94	0.000
47	T	1,1,2-Trichloroethane	50.000	49.408	1.2	95	0.000
48	Y	Dibromochloromethane	50.000	50.679	-1.4	92	0.000
49	T	1,3-Dichloropropane	50.000	49.867	0.3	95	0.000
50	T	1,2-Dibromoethane	50.000	48.083	3.8	94	0.000
51	Y	2-Hexanone	50.000	35.826	28.3#	81	0.000
52	P	Chlorobenzene	50.000	55.760	-11.5	100	0.000
53	T	1-Chlorohexane	50.000	53.831	-7.7	92	0.000
54	C	Ethylbenzene	50.000	56.336	-12.7#	99	0.000
55	T	1,1,1,2-Tetrachloroethane	50.000	54.204	-8.4	96	0.000

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011864.D
Acq On : 15 May 2015 15:24
Operator : ADC
Sample : WG523883-02 50ug/L CCV 8260
Misc : 1,1 STD70453
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 15 15:36:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	100.000	115.597	-15.6	101	0.000
57	T	o-Xylene	50.000	55.879	-11.8	100	0.000
58	T	Styrene	50.000	56.708	-13.4	101	0.000
59	P	Bromoform	50.000	49.930	0.1	95	0.000
60	T	Isopropylbenzene	50.000	56.855	-13.7	100	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	89	0.000
62	T	1,3,5-Trimethylbenzene	50.000	57.294	-14.6	101	0.000
63	S	p-Bromofluorobenzene	25.000	25.224	-0.9	89	0.000
64	T	Bromobenzene	50.000	54.678	-9.4	101	0.000
65	T	n-Propylbenzene	50.000	57.958	-15.9	100	0.000
66	P	1,1,2,2-Tetrachloroethane	50.000	48.957	2.1	105	0.000
67	T	2-Chlorotoluene	50.000	55.948	-11.9	101	0.000
68	T	1,2,3-Trichloropropane	50.000	50.035	-0.1	101	0.000
69	T	1,2,4-Trimethylbenzene	50.000	57.615	-15.2	101	0.000
70	T	4-Chlorotoluene	50.000	56.610	-13.2	101	0.000
71	T	tert-Butylbenzene	50.000	57.731	-15.5	102	0.000
72	T	sec-Butylbenzene	50.000	58.048	-16.1	99	0.000
73	T	p-Isopropyltoluene	50.000	58.947	-17.9	98	0.000
74	T	1,3-Dichlorobenzene	50.000	57.441	-14.9	101	0.000
75	T	1,4-Dichlorobenzene	50.000	55.446	-10.9	101	0.000
76	T	n-Butylbenzene	50.000	59.828	-19.7	96	0.000
77	T	1,2-Dichlorobenzene	50.000	55.653	-11.3	100	0.000
78	T	1,2-Dibromo-3-Chloropropane	50.000	41.873	16.3	79	0.000
79	Y	Hexachlorobutadiene	50.000	56.582	-13.2	90	0.000
80	T	1,2,4-Trichlorobenzene	50.000	53.424	-6.8	91	0.000
81	T	Naphthalene	50.000	44.967	10.1	86	0.000
82	T	1,2,3-Trichlorobenzene	50.000	49.289	1.4	88	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052215\8M404844.D Vial: 2
Acq On : 22 May 2015 11:57 Operator: TMB
Sample : WG524780-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:19:28 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	688639	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	551859	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	327570	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	171642	25.1466 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.60%		
43) 1,2-Dichloroethane-d4	10.34	65	152949	23.8445 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.36%		
58) Toluene-d8	12.73	98	618446	24.0151 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.08%		
80) p-Bromofluorobenzene	16.12	95	248607	22.3075 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 89.24%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	604740	56.6625 ug/L	97
3) Chloromethane	3.65	50	1190157	55.8588 ug/L	96
4) Vinyl Chloride	3.88	62	1200606	59.8003 ug/L	94
5) 1,3-Butadiene	3.92	54	1331986	77.7607 ug/L	96
6) Bromomethane	4.78	94	256173	53.4608 ug/L	97
7) Chloroethane	4.93	64	283414	51.8741 ug/L	91
8) Trichlorofluoromethane	5.42	101	654204	51.8884 ug/L	98
9) Diethyl ether	5.95	59	454965	94.1229 ug/L	88
10) Isoprene	5.99	67	471140	50.3962 ug/L	79
11) Acrolein	6.18	56	8020	53.0533 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	378026	53.1224 ug/L	93
13) Acetone	6.29	43	47096	47.8876 ug/L	88
14) 1,1-Dichloroethene	6.50	61	630458	52.0928 ug/L	84
15) Tert-Butyl Alcohol	6.62	59	52168	197.1316 ug/L	88
16) Dimethyl Sulfide	6.77	62	365730	51.8346 ug/L	77
17) Iodomethane	7.03	142	175272	36.3092 ug/L	77
18) Methyl acetate	7.04	43	188157	53.6138 ug/L	86
19) Methylene Chloride	7.30	84	363719	52.7342 ug/L #	51
20) Carbon Disulfide	7.33	76	1211743	54.4253 ug/L	95
21) Acrylonitrile	7.48	53	79651	50.8828 ug/L	93
22) Methyl Tert Butyl Ether	7.51	73	665615	50.0938 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	579345	50.1425 ug/L	86
24) n-Hexane	7.83	57	588700	50.3870 ug/L	94
25) Diisopropyl ether	8.17	45	2634028	102.9190 ug/L	91
26) Vinyl Acetate	8.34	43	399548	47.2869 ug/L	91
27) 1,1-Dichloroethane	8.37	63	726433	52.0821 ug/L	95
28) Ethyl-Tert-Butyl ether	8.75	59	2004662	99.8268 ug/L	93
29) 2-Butanone	8.92	43	84280	52.5972 ug/L	88
30) Propionitrile	9.03	54	52630	103.0523 ug/L	96
31) 2,2-Dichloropropane	9.14	77	575527	50.0123 ug/L	98
32) cis-1,2-Dichloroethene	9.21	96	398760	50.2492 ug/L	75
33) Chloroform	9.42	83	671310	51.8162 ug/L	96
34) 1-Bromopropane	9.56	122	68655	47.6646 ug/L	100
35) Bromochloromethane	9.65	130	201415	49.7710 ug/L #	65
36) Tetrahydrofuran	9.67	42	105254	97.5212 ug/L	83
38) 1,1,1-Trichloroethane	9.95	97	628404	53.4319 ug/L	97
39) Cyclohexane	9.98	56	739707	51.8969 ug/L	84
40) 1,1-Dichloropropene	10.14	75	521667	50.9821 ug/L	93
41) Tert-Amyl-Methyl ether	10.25	73	1475202	100.0852 ug/L	96
42) Carbon Tetrachloride	10.29	117	583969	54.6400 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M404844.D 8260WT.M Fri May 22 12:19:29 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052215\8M404844.D Vial: 2
Acq On : 22 May 2015 11:57 Operator: TMB
Sample : WG524780-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:19:28 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	463207	49.8734	ug/L		90
46)	Benzene	10.51	78	1477004	53.5871	ug/L		98
47)	Trichloroethene	11.25	130	389323	53.3998	ug/L		98
48)	Methylcyclohexane	11.34	83	584009	49.3520	ug/L		89
49)	1,2-Dichloropropane	11.47	63	406598	52.6683	ug/L		99
50)	Bromodichloromethane	11.77	83	527611	55.5119	ug/L		94
51)	1,4-Dioxane	11.76	88	6521	216.4385	ug/L		82
52)	Dibromomethane	11.85	93	192620	52.9789	ug/L		87
53)	2-Chloroethyl Vinyl Ether	12.07	63	160963	86.6127	ug/L		95
54)	4-Methyl-2-Pentanone	12.10	58	77037	58.0443	ug/L		92
55)	cis-1,3-Dichloropropene	12.41	75	556093	53.5244	ug/L		95
56)	Dimethyl Disulfide	12.67	79	293455	47.8498	ug/L		95
59)	Toluene	12.82	91	1616597	49.3863	ug/L		84
60)	Ethyl Methacrylate	12.93	69	284767	48.8928	ug/L		71
62)	trans-1,3-Dichloropropene	13.00	75	467430	47.6406	ug/L		95
63)	1,1,2-Trichloroethane	13.22	97	240523	47.2944	ug/L		96
64)	2-Hexanone	13.15	58	65722	46.9289	ug/L	#	33
65)	1,3-Dichloropropane	13.53	76	422622	47.4044	ug/L		80
66)	Tetrachloroethene	13.65	164	317085	45.8954	ug/L		84
67)	Dibromochloromethane	13.91	129	337200	49.8256	ug/L		100
68)	1,2-Dibromoethane	14.17	107	236907	48.7971	ug/L		100
69)	1-Chlorohexane	14.25	91	519494	46.3979	ug/L		84
70)	Chlorobenzene	14.67	112	1070800	48.4670	ug/L		93
71)	1,1,1,2-Tetrachloroethane	14.69	131	398536	50.2543	ug/L		99
72)	Ethylbenzene	14.69	106	613159	46.3360	ug/L	#	31
73)	m-,p-Xylene	14.79	106	1493477	99.7950	ug/L	#	47
74)	o-Xylene	15.35	106	723522	48.9216	ug/L		64
75)	Styrene	15.39	104	1201105	51.2669	ug/L		87
76)	Bromoform	15.88	173	200475	46.5575	ug/L		97
77)	Isopropylbenzene	15.77	105	1862161	51.4834	ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.99	83	282112	45.3256	ug/L		97
81)	1,2,3-Trichloropropane	16.18	110	77877	46.1833	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.22	53	94047	45.5174	ug/L		82
83)	n-Propylbenzene	16.28	91	2317194	46.7533	ug/L	#	73
84)	Bromobenzene	16.41	156	450587	45.7791	ug/L		91
85)	1,3,5-Trimethylbenzene	16.46	105	1625301	47.9279	ug/L		80
86)	2-Chlorotoluene	16.55	91	1479548	44.2333	ug/L		79
87)	4-Chlorotoluene	16.60	91	1329715	49.7015	ug/L		76
88)	a-Methylstyrene	16.87	118	894297	46.3071	ug/L		92
89)	tert-Butylbenzene	16.93	134	331807	44.0125	ug/L		59
90)	1,2,4-Trimethylbenzene	16.98	105	1698150	48.7073	ug/L		76
91)	sec-Butylbenzene	17.20	105	2088359	49.3916	ug/L		77
92)	p-Isopropyltoluene	17.36	119	1766409	49.2764	ug/L		79
93)	1,3-Dichlorobenzene	17.56	146	953602	47.8051	ug/L		92
94)	1,4-Dichlorobenzene	17.68	146	941246	46.4781	ug/L		93
95)	n-Butylbenzene	17.89	91	1712770	48.9132	ug/L		79
96)	1,2-Dichlorobenzene	18.18	146	822436	47.5120	ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.17	75	48516	48.8333	ug/L		78
98)	1,2,4-Trichlorobenzene	20.32	180	616998	47.3155	ug/L		99
99)	Hexachlorobutadiene	20.47	225	262396	38.5167	ug/L		95
100)	Naphthalene	20.69	128	907182	51.8727	ug/L		92
101)	1,2,3-Trichlorobenzene	21.00	180	519844	47.0441	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052215\8M404844.D Vial: 2
Acq On : 22 May 2015 11:57 Operator: TMB
Sample : WG524780-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:19 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

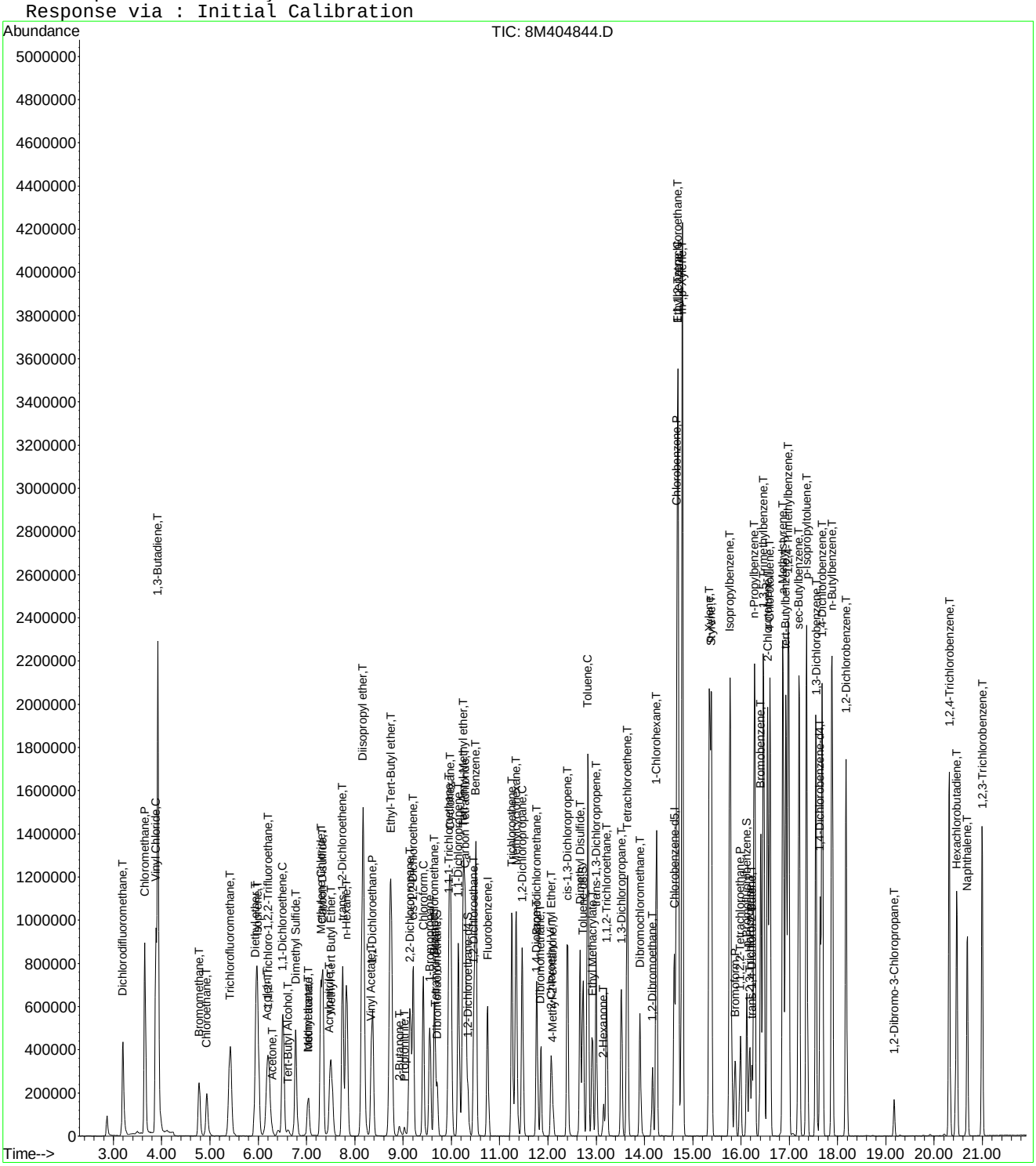

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 12 May 2015 19:42
CCV date: 22 May 2015 11:57
CCV Filename: 8M404844.D

	Fluorobenzene		**Chlorobenzene-d5**		**1,4-Dichlorobenzene-d4**	
	Amount	RT	Amount	RT	Amount	RT
InitCal	779258	10.75	545682	14.62	300564	17.65
CCV	688639	10.75	551859	14.62	327570	17.64

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052215\8M404844.D Vial: 2
Acq On : 22 May 2015 11:57 Operator: TMB
Sample : WG524780-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	88	0.00
2	T	Dichlorodifluoromethane	0.3875	0.4391	-13.3	94	0.00
3	P	Chloromethane	0.7735	0.8641	-11.7	99	0.00
4	C	Vinyl Chloride	0.7289	0.8717	-19.6	102	0.00
5	T	1,3-Butadiene	0.6155	0.9671	-57.1#	110	0.01
6	T	Bromomethane	0.1537	0.1860	-21.0	98	0.01
7	T	Chloroethane	0.1983	0.2058	-3.8	92	0.00
8	T	Trichlorofluoromethane	0.4577	0.4750	-3.8	92	0.00
9	T	Diethyl ether	0.1755	0.1652	5.9	89	0.00
10	T	Isoprene	0.3394	0.3421	-0.8	88	0.00
11	T	Acrolein	0.0074	0.0058	21.2	88	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2583	0.2745	-6.2	95	0.00
13	T	Acetone	0.0357	0.0342	4.2	88	0.00
14	C	1,1-Dichloroethene	0.4394	0.4578	-4.2	91	-0.01
15	T	Tert-Butyl Alcohol	0.0096	0.0095	1.5	94	0.00
16	T	Dimethyl Sulfide	0.2561	0.2656	-3.7	90	0.00
17	T	Iodomethane	0.1417	0.1273	10.2	65	0.00
18	T	Methyl acetate	0.1274	0.1366	-7.2	98	0.00
19	T	Methylene Chloride	0.2504	0.2641	-5.5	94	0.00
20	T	Carbon Disulfide	0.8083	0.8798	-8.9	91	-0.01
21	T	Acrylonitrile	0.0568	0.0578	-1.8	90	0.00
22	T	Methyl Tert Butyl Ether	0.4824	0.4833	-0.2	90	0.00
23	T	trans-1,2-Dichloroethene	0.4194	0.4206	-0.3	89	0.00
24	T	n-Hexane	0.4242	0.4274	-0.8	89	0.00
25	T	Diisopropyl ether	0.9291	0.9562	-2.9	93	0.00
26	T	Vinyl Acetate	0.3067	0.2901	5.4	81	-0.01
27	P	1,1-Dichloroethane	0.5064	0.5274	-4.2	90	0.00
28	T	Ethyl-Tert-Butyl ether	0.7290	0.7278	0.2	91	0.00
29	T	2-Butanone	0.0582	0.0612	-5.2	94	0.00
30	T	Propionitrile	0.0185	0.0191	-3.1	97	-0.01
31	T	2,2-Dichloropropane	0.4178	0.4179	-0.0	90	-0.01
32	T	cis-1,2-Dichloroethene	0.2881	0.2895	-0.5	89	0.00
33	C	Chloroform	0.4703	0.4874	-3.6	91	0.00
34		1-Bromopropane	0.0473	0.0498	-5.5	88	0.00
35	T	Bromochloromethane	0.1469	0.1462	0.5	88	-0.01
36	T	Tetrahydrofuran	0.0392	0.0382	2.5	92	-0.01
37	S	Dibromofluoromethane	0.2478	0.2493	-0.6	90	0.00
38	T	1,1,1-Trichloroethane	0.4270	0.4563	-6.9	92	-0.01
39	T	Cyclohexane	0.5174	0.5371	-3.8	91	0.00
40	T	1,1-Dichloropropene	0.3715	0.3788	-2.0	90	0.00
41	T	Tert-Amyl-Methyl ether	0.5351	0.5355	-0.1	92	-0.01
42	T	Carbon Tetrachloride	0.3880	0.4240	-9.3	95	-0.01
43	S	1,2-Dichloroethane-d4	0.2329	0.2221	4.6	84	-0.01
44		Heptane	0.0000	0.0000	0.0	0#	-2.58#
45	T	1,2-Dichloroethane	0.3372	0.3363	0.3	90	0.00
46	T	Benzene	1.0006	1.0724	-7.2	93	0.00
47	T	Trichloroethene	0.2647	0.2827	-6.8	93	-0.01
48	T	Methylcyclohexane	0.4296	0.4240	1.3	87	0.00
49	C	1,2-Dichloropropane	0.2803	0.2952	-5.3	94	0.00
50	T	Bromodichloromethane	0.3451	0.3831	-11.0	97	0.00
51	T	1,4-Dioxane	0.0011	0.0012	-9.3	97	0.00
52	T	Dibromomethane	0.1320	0.1399	-6.0	95	-0.01
53	T	2-Chloroethyl Vinyl Ether	0.0698	0.1169	-67.5#	165#	0.00
54	T	4-Methyl-2-Pentanone	0.0482	0.0559	-16.1	104	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052215\8M404844.D Vial: 2
Acq On : 22 May 2015 11:57 Operator: TMB
Sample : WG524780-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3772	0.4038	-7.0	91	0.00
56	T	Dimethyl Disulfide	0.2031	0.2131	-4.9	96	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	101	0.00
58	S	Toluene-d8	1.1666	1.1207	3.9	94	0.00
59	C	Toluene	1.4829	1.4647	1.2	95	-0.01
60	T	Ethyl Methacrylate	0.2638	0.2580	2.2	91	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.18#
62	T	trans-1,3-Dichloropropene	0.4445	0.4235	4.7	93	-0.01
63	T	1,1,2-Trichloroethane	0.2304	0.2179	5.4	94	-0.01
64	T	2-Hexanone	0.0634	0.0595	6.1	90	0.00
65	T	1,3-Dichloropropane	0.4039	0.3829	5.2	95	0.00
66	T	Tetrachloroethene	0.3130	0.2873	8.2	92	0.00
67	T	Dibromochloromethane	0.3066	0.3055	0.3	99	0.00
68	T	1,2-Dibromoethane	0.2199	0.2146	2.4	95	0.00
69	T	1-Chlorohexane	0.5072	0.4707	7.2	93	-0.01
70	P	Chlorobenzene	1.0009	0.9702	3.1	95	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3593	0.3611	-0.5	100	-0.01
72	C	Ethylbenzene	0.5995	0.5555	7.3	95	-0.01
73	T	m-,p-Xylene	0.6780	0.6766	0.2	95	0.00
74	T	o-Xylene	0.6700	0.6555	2.2	98	-0.01
75	T	Styrene	1.0613	1.0882	-2.5	96	0.00
76	P	Bromoform	0.1638	0.1816	-10.9	107	0.00
77	T	Isopropylbenzene	1.6386	1.6872	-3.0	97	-0.01
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	109	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4750	0.4306	9.3	101	-0.01
80	S	p-Bromofluorobenzene	0.8506	0.7589	10.8	97	0.00
81	T	1,2,3-Trichloropropane	0.1287	0.1189	7.6	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1577	0.1436	9.0	93	-0.01
83	T	n-Propylbenzene	3.7826	3.5369	6.5	98	-0.01
84	T	Bromobenzene	0.7512	0.6878	8.4	101	0.00
85	T	1,3,5-Trimethylbenzene	2.5881	2.4809	4.1	97	-0.01
86	T	2-Chlorotoluene	2.5528	2.2584	11.5	93	0.00
87	T	4-Chlorotoluene	2.0419	2.0297	0.6	104	-0.01
88	T	a-Methylstyrene	1.4739	1.3651	7.4	97	-0.01
89	T	tert-Butylbenzene	0.5754	0.5065	12.0	98	-0.01
90	T	1,2,4-Trimethylbenzene	2.6608	2.5920	2.6	98	-0.01
91	T	sec-Butylbenzene	3.2269	3.1877	1.2	98	-0.01
92	T	p-Isopropyltoluene	2.7358	2.6962	1.4	98	0.00
93	T	1,3-Dichlorobenzene	1.5224	1.4556	4.4	101	0.00
94	T	1,4-Dichlorobenzene	1.5456	1.4367	7.0	101	-0.01
95	T	n-Butylbenzene	2.6725	2.6144	2.2	97	0.00
96	T	1,2-Dichlorobenzene	1.3211	1.2554	5.0	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	0.0758	0.0741	2.3	105	0.00
98	T	1,2,4-Trichlorobenzene	0.9952	0.9418	5.4	100	0.00
99	T	Hexachlorobutadiene	0.5199	0.4005	23.0	86	0.00
100	T	Naphthalene	1.3347	1.3847	-3.7	108	0.00
101	T	1,2,3-Trichlorobenzene	0.8433	0.7935	5.9	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404844.D 8260WT.M Fri May 22 12:23:24 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052215\8M404844.D Vial: 2
Acq On : 22 May 2015 11:57 Operator: TMB
Sample : WG524780-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	88	0.00
2	T	Dichlorodifluoromethane	50.0000	56.6625	-13.3	94	0.00
3	P	Chloromethane	50.0000	55.8588	-11.7	99	0.00
4	C	Vinyl Chloride	50.0000	59.8002	-19.6	102	0.00
5	T	1,3-Butadiene	50.0000	77.7607	-55.5#	110	0.01
6	T	Bromomethane	50.0000	53.4608	-6.9	98	0.01
7	T	Chloroethane	50.0000	51.8741	-3.7	92	0.00
8	T	Trichlorofluoromethane	50.0000	51.8884	-3.8	92	0.00
9	T	Diethyl ether	100.0000	94.1229	5.9	89	0.00
10	T	Isoprene	50.0000	50.3962	-0.8	88	0.00
11	T	Acrolein	50.0000	53.0533	-6.1	88	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.1224	-6.2	95	0.00
13	T	Acetone	50.0000	47.8876	4.2	88	0.00
14	C	1,1-Dichloroethene	50.0000	52.0928	-4.2	91	-0.01
15	T	Tert-Butyl Alcohol	200.0000	197.1316	1.4	94	0.00
16	T	Dimethyl Sulfide	50.0000	51.8346	-3.7	90	0.00
17	T	Iodomethane	50.0000	36.3092	27.4#	65	0.00
18	T	Methyl acetate	50.0000	53.6138	-7.2	98	0.00
19	T	Methylene Chloride	50.0000	52.7342	-5.5	94	0.00
20	T	Carbon Disulfide	50.0000	54.4253	-8.9	91	-0.01
21	T	Acrylonitrile	50.0000	50.8828	-1.8	90	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.0938	-0.2	90	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.1425	-0.3	89	0.00
24	T	n-Hexane	50.0000	50.3870	-0.8	89	0.00
25	T	Diisopropyl ether	100.0000	102.9190	-2.9	93	0.00
26	T	Vinyl Acetate	50.0000	47.2869	5.4	81	-0.01
27	P	1,1-Dichloroethane	50.0000	52.0821	-4.2	90	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.8268	0.2	91	0.00
29	T	2-Butanone	50.0000	52.5972	-5.2	94	0.00
30	T	Propionitrile	100.0000	103.0523	-3.1	97	-0.01
31	T	2,2-Dichloropropane	50.0000	50.0123	-0.0	90	-0.01
32	T	cis-1,2-Dichloroethene	50.0000	50.2492	-0.5	89	0.00
33	C	Chloroform	50.0000	51.8162	-3.6	91	0.00
34		1-Bromopropane	50.0000	47.6646	4.7	88	0.00
35	T	Bromochloromethane	50.0000	49.7710	0.5	88	-0.01
36	T	Tetrahydrofuran	100.0000	97.5212	2.5	92	-0.01
37	S	Dibromofluoromethane	25.0000	25.1466	-0.6	90	0.00
38	T	1,1,1-Trichloroethane	50.0000	53.4319	-6.9	92	-0.01
39	T	Cyclohexane	50.0000	51.8969	-3.8	91	0.00
40	T	1,1-Dichloropropene	50.0000	50.9821	-2.0	90	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.0852	-0.1	92	-0.01
42	T	Carbon Tetrachloride	50.0000	54.6399	-9.3	95	-0.01
43	S	1,2-Dichloroethane-d4	25.0000	23.8444	4.6	84	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	50.0000	49.8734	0.3	90	0.00
46	T	Benzene	50.0000	53.5871	-7.2	93	0.00
47	T	Trichloroethene	50.0000	53.3998	-6.8	93	-0.01
48	T	Methylcyclohexane	50.0000	49.3520	1.3	87	0.00
49	C	1,2-Dichloropropane	50.0000	52.6683	-5.3	94	0.00
50	T	Bromodichloromethane	50.0000	55.5119	-11.0	97	0.00
51	T	1,4-Dioxane	200.0000	216.4385	-8.2	97	0.00
52	T	Dibromomethane	50.0000	52.9789	-6.0	95	-0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	86.6127	-73.2#	165	0.00
54	T	4-Methyl-2-Pentanone	50.0000	58.0443	-16.1	104	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052215\8M404844.D Vial: 2
Acq On : 22 May 2015 11:57 Operator: TMB
Sample : WG524780-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.5245	-7.0	91	0.00
56	T	Dimethyl Disulfide	50.0000	47.8498	4.3	96	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
58	S	Toluene-d8	25.0000	24.0151	3.9	94	0.00
59	C	Toluene	50.0000	49.3863	1.2	95	-0.01
60	T	Ethyl Methacrylate	50.0000	48.8928	2.2	91	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	50.0000	47.6406	4.7	93	-0.01
63	T	1,1,2-Trichloroethane	50.0000	47.2944	5.4	94	-0.01
64	T	2-Hexanone	50.0000	46.9289	6.1	90	0.00
65	T	1,3-Dichloropropane	50.0000	47.4044	5.2	95	0.00
66	T	Tetrachloroethene	50.0000	45.8954	8.2	92	0.00
67	T	Dibromochloromethane	50.0000	49.8256	0.3	99	0.00
68	T	1,2-Dibromoethane	50.0000	48.7971	2.4	95	0.00
69	T	1-Chlorohexane	50.0000	46.3979	7.2	93	-0.01
70	P	Chlorobenzene	50.0000	48.4670	3.1	95	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.2543	-0.5	100	-0.01
72	C	Ethylbenzene	50.0000	46.3360	7.3	95	-0.01
73	T	m-,p-Xylene	100.0000	99.7950	0.2	95	0.00
74	T	o-Xylene	50.0000	48.9216	2.2	98	-0.01
75	T	Styrene	50.0000	51.2669	-2.5	96	0.00
76	P	Bromoform	50.0000	46.5575	6.9	107	0.00
77	T	Isopropylbenzene	50.0000	51.4834	-3.0	97	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	109	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	45.3256	9.3	101	-0.01
80	S	p-Bromofluorobenzene	25.0000	22.3075	10.8	97	0.00
81	T	1,2,3-Trichloropropane	50.0000	46.1833	7.6	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	45.5174	9.0	93	-0.01
83	T	n-Propylbenzene	50.0000	46.7533	6.5	98	-0.01
84	T	Bromobenzene	50.0000	45.7791	8.4	101	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	47.9279	4.1	97	-0.01
86	T	2-Chlorotoluene	50.0000	44.2332	11.5	93	0.00
87	T	4-Chlorotoluene	50.0000	49.7015	0.6	104	-0.01
88	T	a-Methylstyrene	50.0000	46.3072	7.4	97	-0.01
89	T	tert-Butylbenzene	50.0000	44.0125	12.0	98	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	48.7073	2.6	98	-0.01
91	T	sec-Butylbenzene	50.0000	49.3916	1.2	98	-0.01
92	T	p-Isopropyltoluene	50.0000	49.2764	1.4	98	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.8051	4.4	101	0.00
94	T	1,4-Dichlorobenzene	50.0000	46.4781	7.0	101	-0.01
95	T	n-Butylbenzene	50.0000	48.9132	2.2	97	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.5120	5.0	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.8333	2.3	105	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.3155	5.4	100	0.00
99	T	Hexachlorobutadiene	50.0000	38.5167	23.0	86	0.00
100	T	Naphthalene	50.0000	51.8727	-3.7	108	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.0441	5.9	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404844.D 8260WT.M Fri May 22 12:23:25 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052215\8M404845.D Vial: 3
Acq On : 22 May 2015 12:29 Operator: TMB
Sample : WG524781-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70547 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:51:49 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	707696	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	556959	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	300259	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	180922	25.7924 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.16%		
43) 1,2-Dichloroethane-d4	10.35	65	158817	24.0925 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.36%		
58) Toluene-d8	12.73	98	635990	24.4702 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.88%		
80) p-Bromofluorobenzene	16.12	95	246872	24.1667 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.68%		

Target Compounds

					Qvalue
3) Chloromethane	3.64	50	3923	0.1792 ug/L #	72
5) 1,3-Butadiene	3.92	54	3824	Below Cal #	29
6) Bromomethane	4.71	94	202	0.8178 ug/L #	2
13) Acetone	6.27	43	812	0.8034 ug/L #	36
20) Carbon Disulfide	7.34	76	7154	0.3127 ug/L #	71
24) n-Hexane	7.83	57	5384	0.4484 ug/L	100
29) 2-Butanone	8.97	43	220	0.1336 ug/L #	49
30) Propionitrile	9.11	54	200	0.3811 ug/L #	1
36) Tetrahydrofuran	9.69	42	256	0.2308 ug/L #	32
39) Cyclohexane	9.98	56	2855	0.1949 ug/L #	90
73) m-,p-Xylene	14.78	106	2168	0.1435 ug/L	55
94) 1,4-Dichlorobenzene	17.68	146	2405	0.1296 ug/L #	30
98) 1,2,4-Trichlorobenzene	20.32	180	2130	0.1782 ug/L #	77
100) Naphthalene	20.70	128	4124	0.2573 ug/L #	62
101) 1,2,3-Trichlorobenzene	20.99	180	1833	0.1810 ug/L	81

(#) = qualifier out of range (m) = manual integration
8M404845.D 8260WT.M Fri May 22 12:51:49 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052215\8M404845.D Vial: 3
Acq On : 22 May 2015 12:29 Operator: TMB
Sample : WG524781-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70547 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:51 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

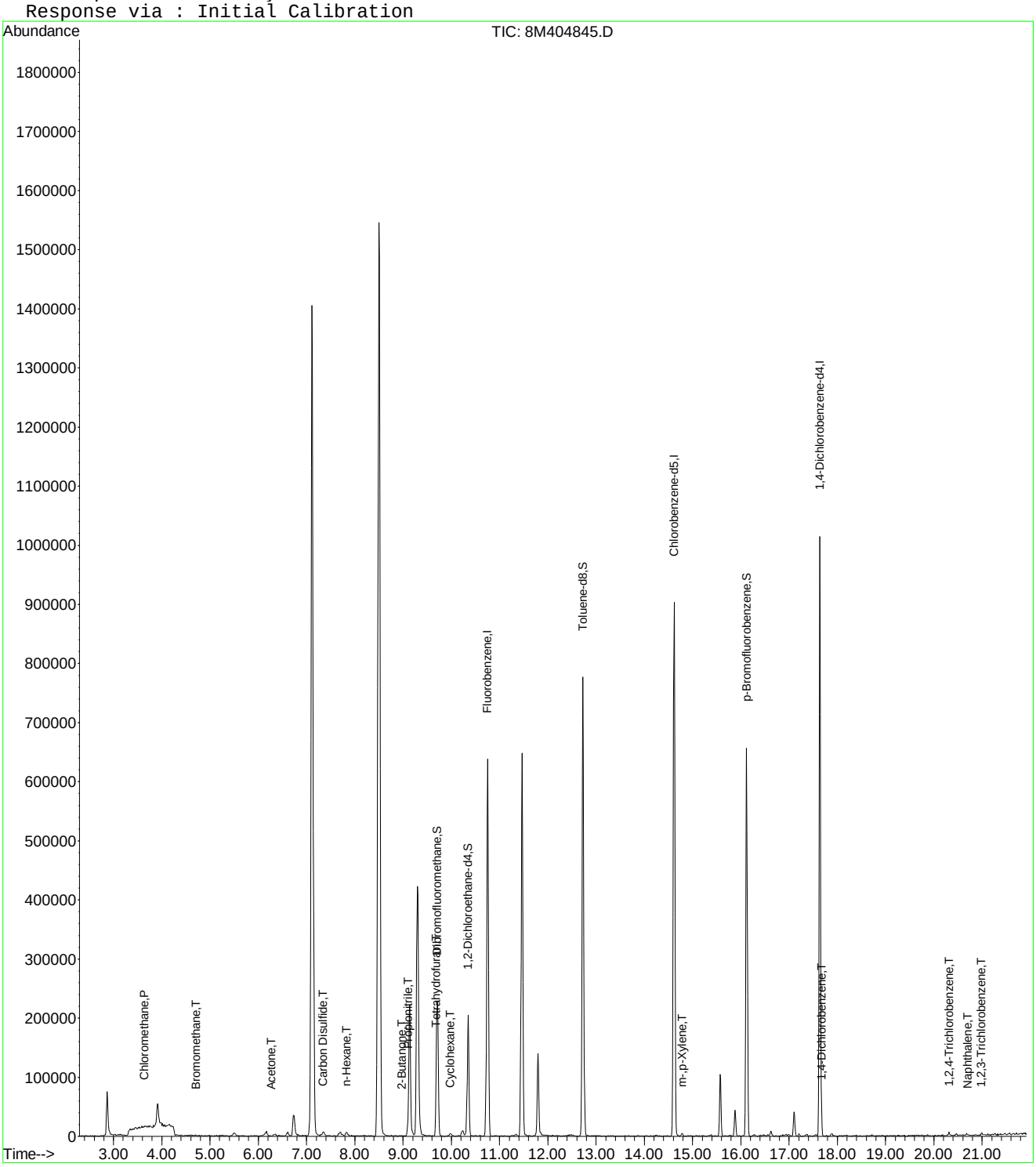

8M404845.D 8260WT.M Fri May 22 12:51:49 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052215\8M404845.D Vial: 3
Acq On : 22 May 2015 12:29 Operator: TMB
Sample : WG524781-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70547 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 22 12:54:31 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Mon May 18 08:37:54 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	707696	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.62	117	556959	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.64	152	300259	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	53772	120.4542 ug/L	98
3) 3-Chloro-1-propene	7.11	41	1411756	119.8018 ug/L	99
4) 2-Chloro-1,3-butadiene	8.50	53	1459837	104.6937 ug/L	96
5) Ethyl Acetate	9.14	43	383418	108.4359 ug/L	100
6) Methacrylonitrile	9.30	67	162088	77.1332 ug/L	94
7) Isobutyl Alcohol	9.30	43	29774	211.2112 ug/L	97
8) 1-Butanol	9.98	56	2855	55.0856 ug/L	94
9) Methyl methacrylate	11.47	41	432970	108.9142 ug/L	98
10) 2-Nitropropane	11.80	43	116324	97.7813 ug/L	100
13) Cyclohexanone	15.88	55	25571	53.9771 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M404845.D A9FOOWTR.M Fri May 22 12:54:31 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052215\8M404845.D Vial: 3
Acq On : 22 May 2015 12:29 Operator: TMB
Sample : WG524781-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70547 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 22 12:54 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Mon May 18 08:37:54 2015
Response via : Initial Calibration

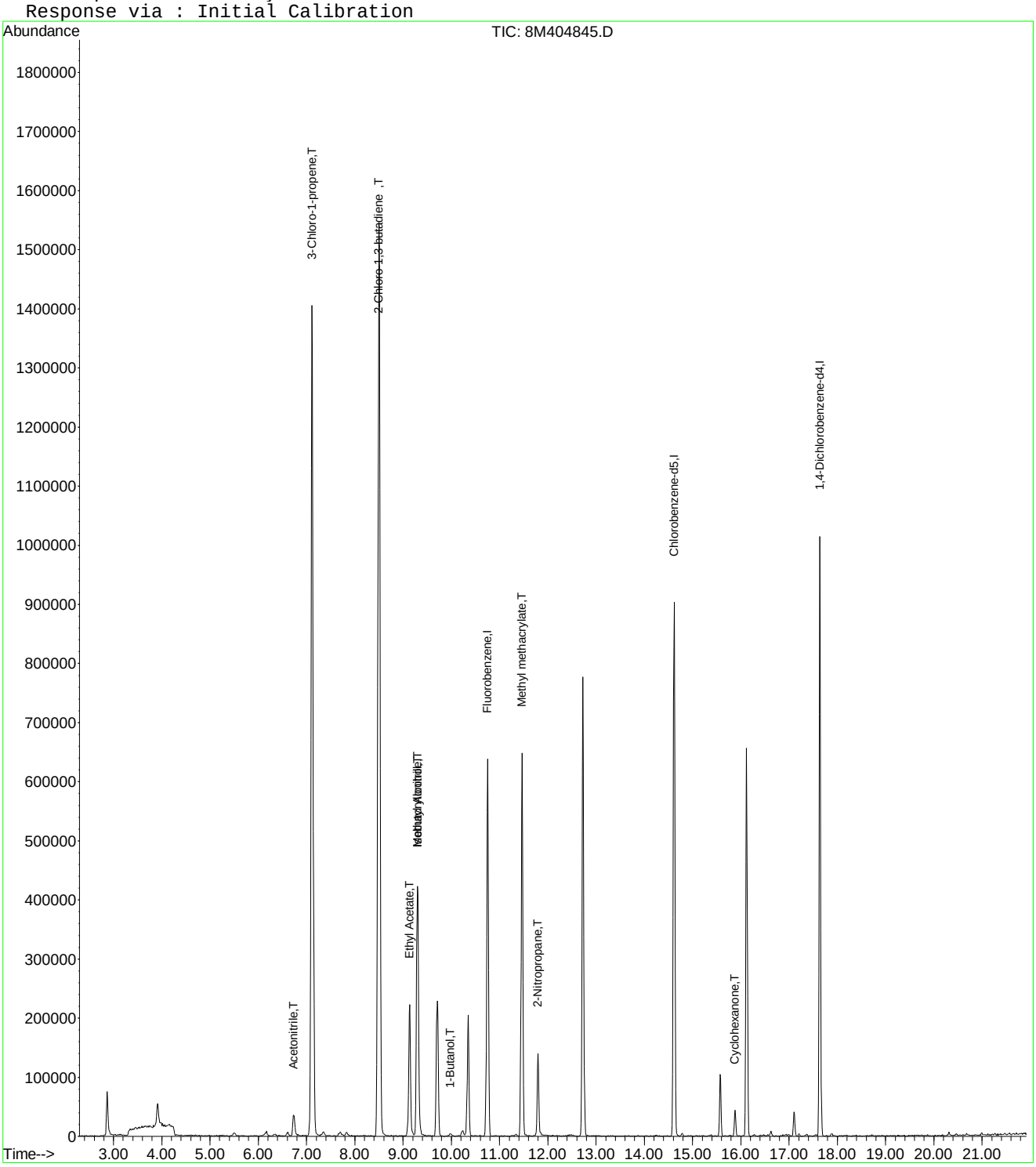

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052215\8M404845.D Vial: 3
Acq On : 22 May 2015 12:29 Operator: TMB
Sample : WG524781-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70547 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Mon May 18 08:37:54 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	119	0.00
2	T	Acetonitrile	100.0000	120.4542	-20.5	141	0.01
3	T	3-Chloro-1-propene	100.0000	119.8018	-19.8	135	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.6937	-4.7	118	0.00
5	T	Ethyl Acetate	100.0000	108.4359	-8.4	121	0.02
6	T	Methacrylonitrile	100.0000	77.1332	22.9	89	0.01
7	T	Isobutyl Alcohol	200.0000	211.2112	-5.6	128	0.01
8	T	1-Butanol	100.0000	55.0856	44.9	52	-0.24
9	T	Methyl methacrylate	100.0000	108.9142	-8.9	123	0.01
10	T	2-Nitropropane	100.0000	97.7813	2.2	113	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	106	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	120	0.00
13	T	Cyclohexanone	100.0000	53.9771	46.0	59	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404845.D A9FOOWTR.M Fri May 22 12:54:35 2015 Page 1

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\100214\8M400357.D          Vial: 3
Acq On    :  2 Oct 2014  11:58                       Operator: TMB
Sample    : WG494714-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD66476                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

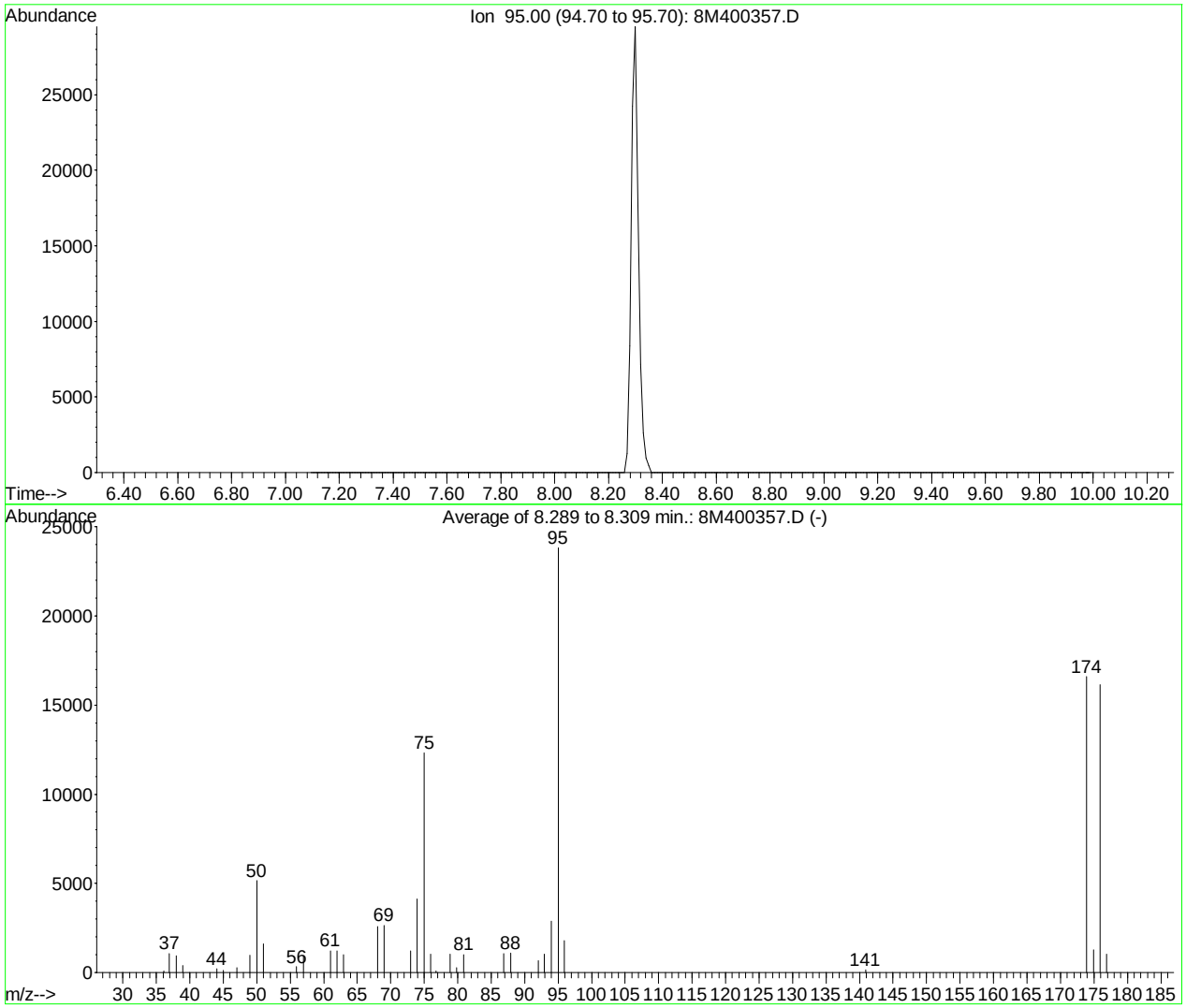

AutoFind: Scans 118, 119, 120; Background Corrected with Scan 113

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	5158	PASS
75	95	30	60	51.7	12312	PASS
95	95	100	100	100.0	23818	PASS
96	95	5	9	7.6	1800	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	69.7	16590	PASS
175	174	5	9	7.8	1290	PASS
176	174	95	101	97.3	16145	PASS
177	176	5	9	6.3	1023	PASS

8M400357.D BFB.M Thu Oct 02 12:09:27 2014

Data Path : D:\MassHunter\GCMS\1\data\041615\
Data File : 17M011174.D
Acq On : 16 Apr 2015 09:58
Operator : ADC
Sample : WG519118-01 50ng BFB 8260
Misc : 1,1 STD68998
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
Last Update : Tue Apr 21 10:50:08 2015

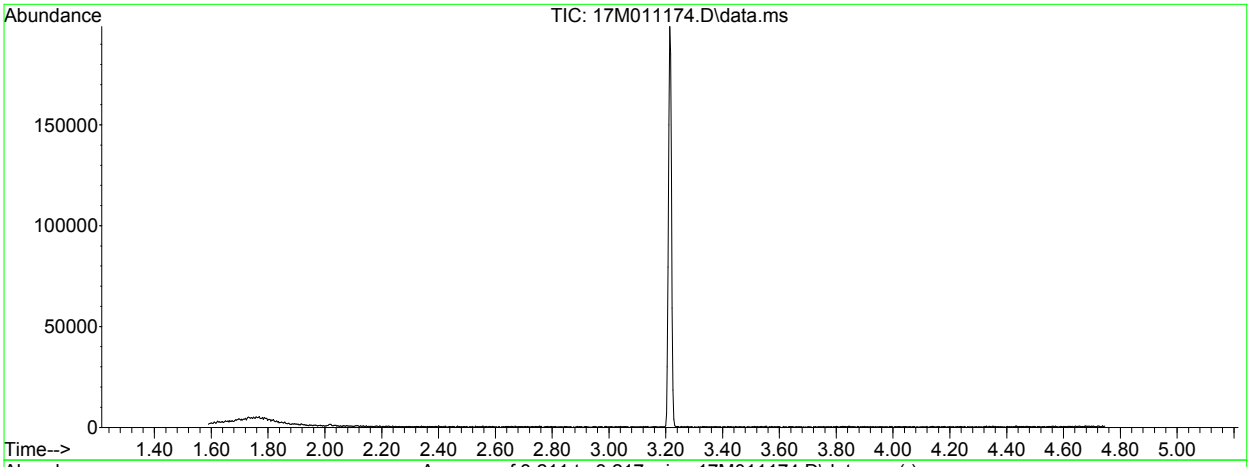

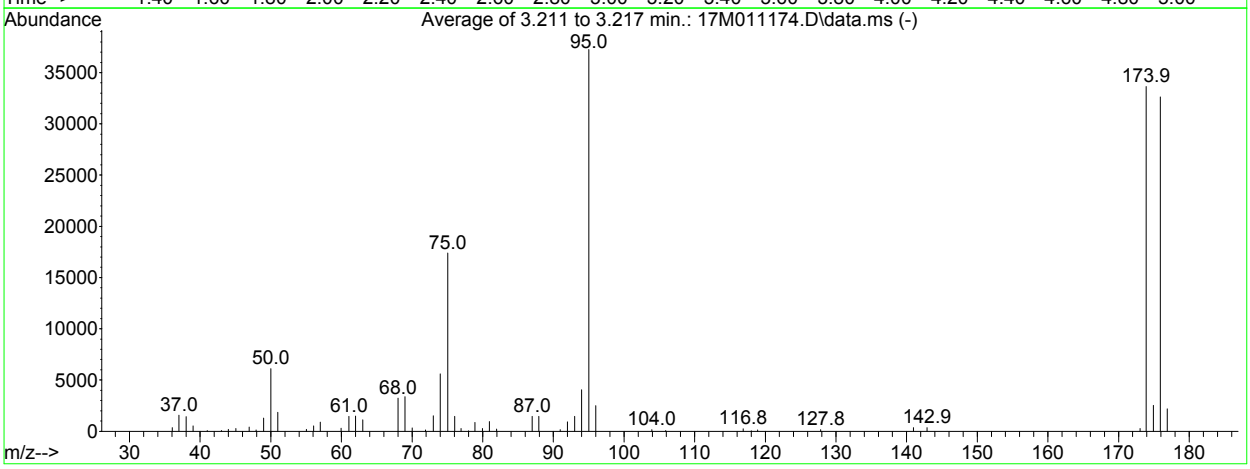

AutoFind: Scans 561, 562, 563; Background Corrected with Scan 552

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.4	6118	PASS
75	95	30	60	46.7	17388	PASS
95	95	100	100	100.0	37269	PASS
96	95	5	9	6.7	2510	PASS
173	174	0.00	2	0.8	266	PASS
174	95	50	100	90.3	33648	PASS
175	174	5	9	7.5	2537	PASS
176	174	95	101	97.0	32627	PASS
177	176	5	9	6.7	2178	PASS

BFB

```
Data File : C:\MSDCHEM\2\DATA\051215\8M404577.D          Vial: 2
Acq On    : 12 May 2015  15:55                       Operator: TMB
Sample    : WG523161-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD70032                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

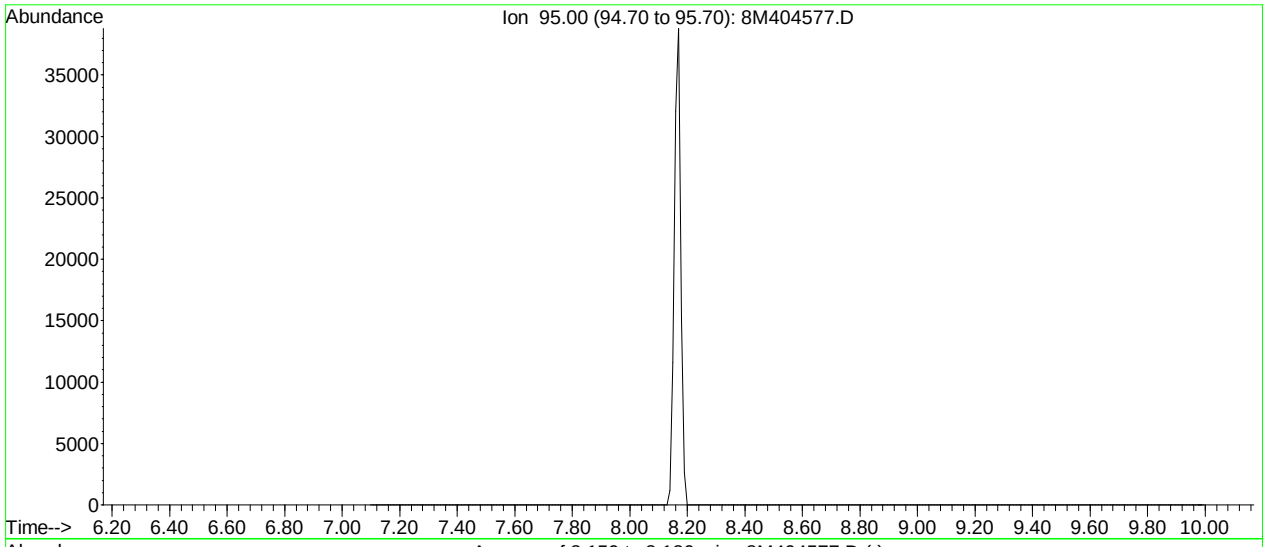

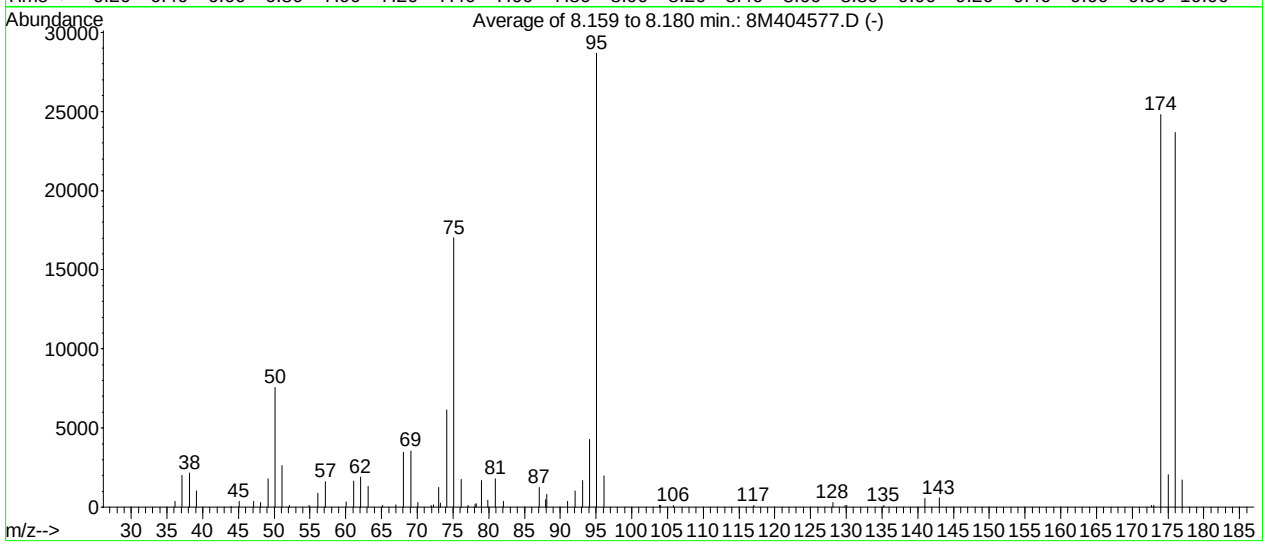

AutoFind: Scans 105, 106, 107; Background Corrected with Scan 100

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	26.3	7551	PASS
75	95	30	60	59.4	17014	PASS
95	95	100	100	100.0	28666	PASS
96	95	5	9	6.9	1981	PASS
173	174	0.00	2	0.5	119	PASS
174	95	50	100	86.5	24808	PASS
175	174	5	9	8.2	2031	PASS
176	174	95	101	95.4	23666	PASS
177	176	5	9	7.2	1714	PASS

8M404577.D BFB.M Tue May 12 16:07:11 2015

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011863.D
Acq On : 15 May 2015 15:06
Operator : ADC
Sample : WG523883-01 50ng BFB 8260
Misc : 1,1 STD70032
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
Last Update : Wed Apr 22 16:19:50 2015

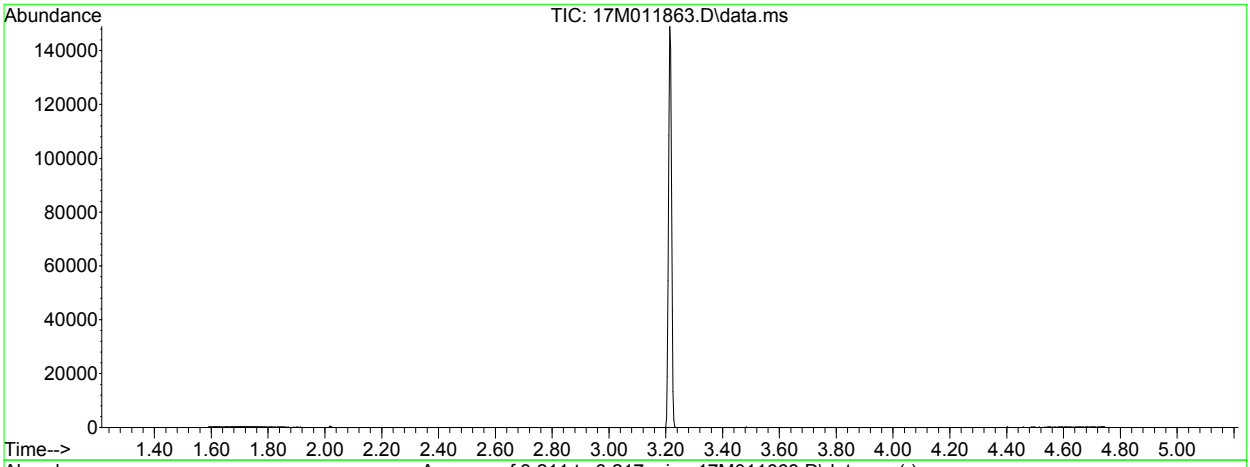

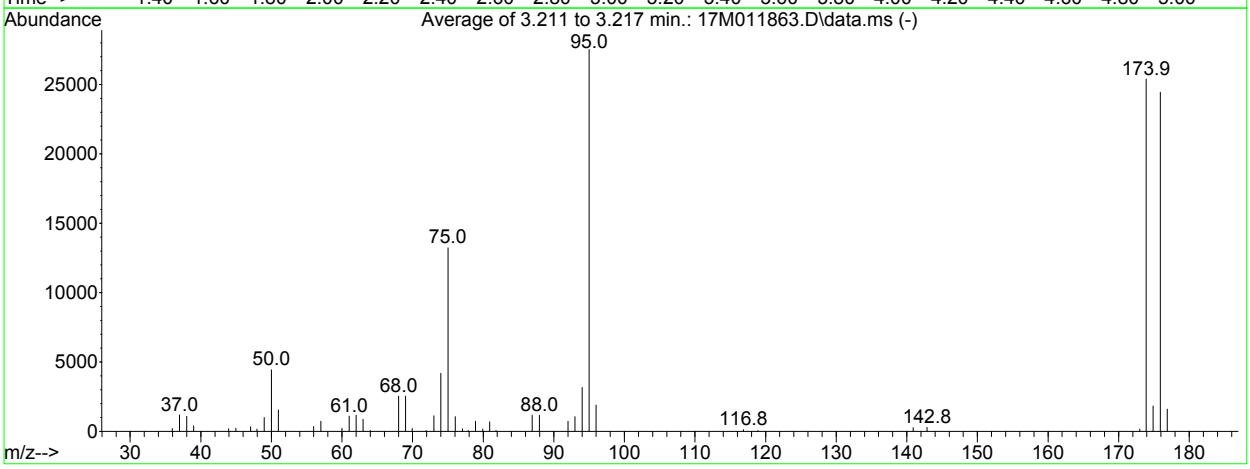

AutoFind: Scans 561, 562, 563; Background Corrected with Scan 552

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.1	4438	PASS
75	95	30	60	48.0	13215	PASS
95	95	100	100	100.0	27531	PASS
96	95	5	9	6.8	1879	PASS
173	174	0.00	2	0.6	152	PASS
174	95	50	100	92.2	25387	PASS
175	174	5	9	7.2	1816	PASS
176	174	95	101	96.3	24435	PASS
177	176	5	9	6.5	1595	PASS

BFB

```
Data File : C:\MSDCHEM\2\DATA\052215\8M404843.D          Vial: 4
Acq On    : 22 May 2015  11:32                       Operator: TMB
Sample    : WG524780-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD70032                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

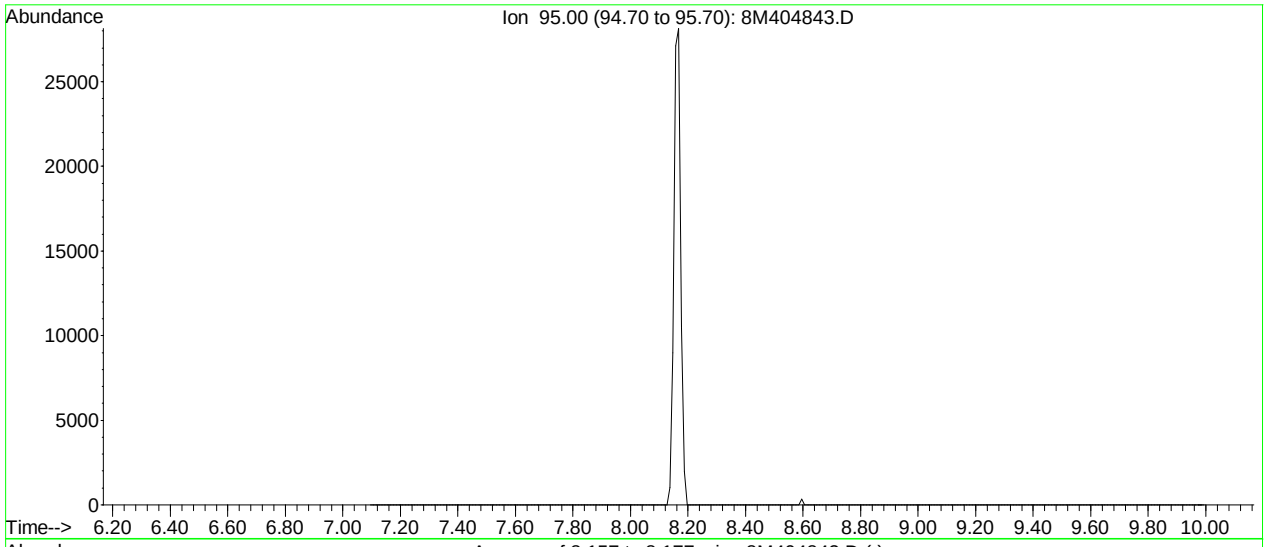

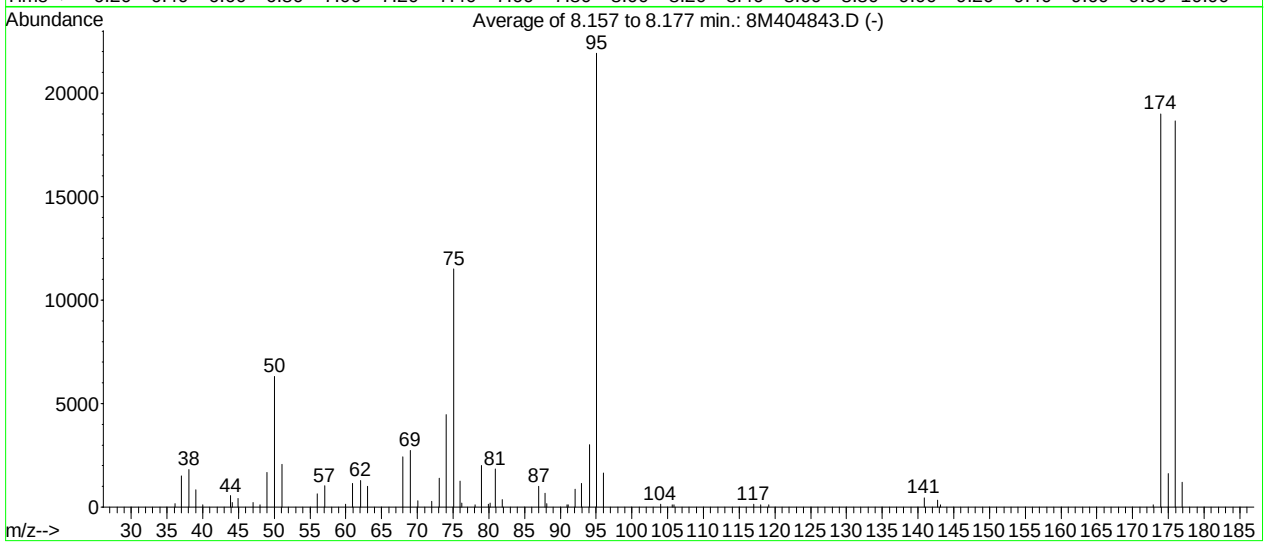

AutoFind: Scans 105, 106, 107; Background Corrected with Scan 100

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	28.8	6321	PASS
75	95	30	60	52.5	11507	PASS
95	95	100	100	100.0	21919	PASS
96	95	5	9	7.5	1653	PASS
173	174	0.00	2	0.6	116	PASS
174	95	50	100	86.7	18993	PASS
175	174	5	9	8.6	1632	PASS
176	174	95	101	98.3	18671	PASS
177	176	5	9	6.4	1201	PASS

8M404843.D BFB.M Fri May 22 11:43:34 2015

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011866.D
Acq On : 15 May 2015 16:08
Operator : ADC
Sample : WG523885-01 BLK 05/15 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 19 11:41:05 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	236405	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	174322	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	90104	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.212	111	62584	27.5279 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.112%		
32) 1,2-Dichloroethane-d4	4.843	65	57101	25.3256 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.302%		
44) Toluene-d8	6.737	98	242000	25.8174 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.270%		
63) p-Bromofluorobenzene	8.737	95	84095	26.0394 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.158%		
Target Compounds					Qvalue
34) Trichloroethene	5.350	130	743	0.2815 ug/L #	72

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011866.D
Acq On : 15 May 2015 16:08
Operator : ADC
Sample : WG523885-01 BLK 05/15 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 19 11:41:05 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

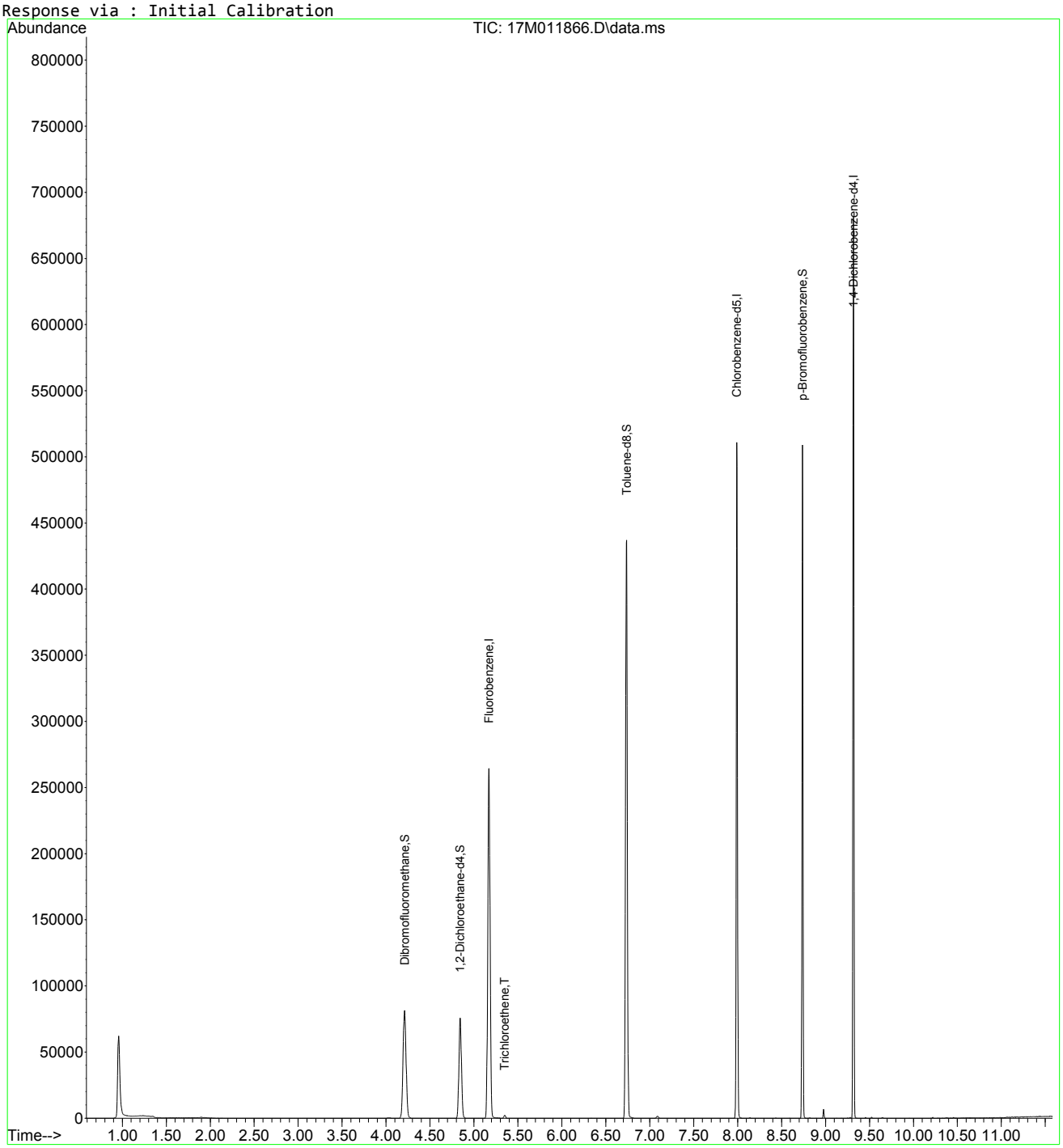

8260VMS.M Tue May 19 11:41:06 2015 Page: 2

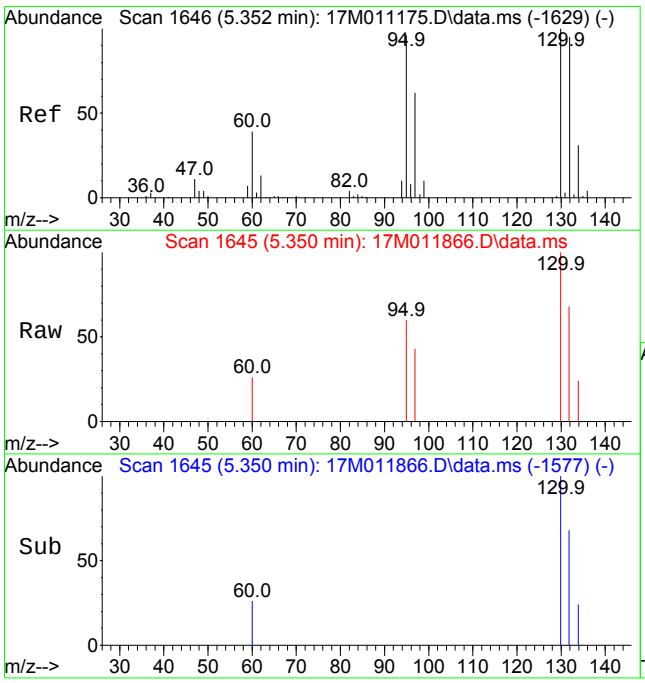

#34
Trichloroethene
Concen: 0.2815 ug/L
RT: 5.350 min Scan# 1645
Delta R.T. -0.002 min
Lab File: 17M011866.D
Acq: 15 May 2015 16:08

Tgt Ion:130 Resp: 743

Ion	Ratio	Lower	Upper
130	100		
60	22.7	23.8	55.6#

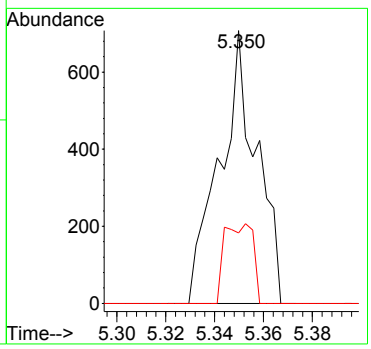

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011867.D
Acq On : 15 May 2015 17:06
Operator : ADC
Sample : WG523885-01 BLK 05/15 8260
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 19 11:41:08 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	227681	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	167714	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	86638	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	60564	27.6601 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.640%		
32) 1,2-Dichloroethane-d4	4.840	65	54530	25.1120 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.448%		
44) Toluene-d8	6.733	98	234369	25.9885 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.954%		
63) p-Bromofluorobenzene	8.737	95	82443	26.5491 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.196%		
Target Compounds					Qvalue
14) Methylene Chloride	2.304	84	1031	0.4184 ug/L	97
34) Trichloroethene	5.355	130	387	0.1522 ug/L #	36

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011867.D
Acq On : 15 May 2015 17:06
Operator : ADC
Sample : WG523885-01 BLK 05/15 8260
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 19 11:41:08 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

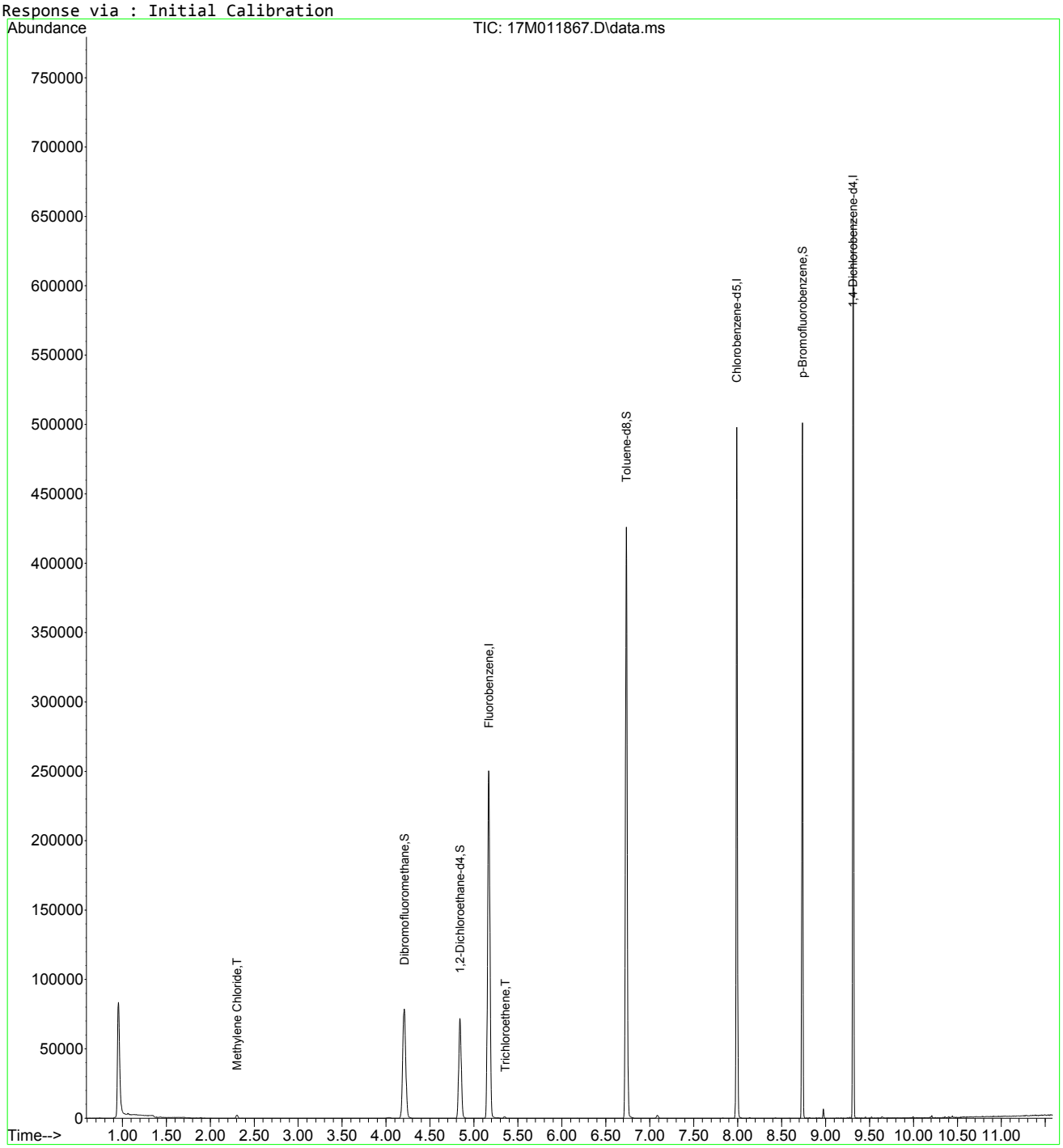

8260VMS.M Tue May 19 11:41:09 2015 Page: 2

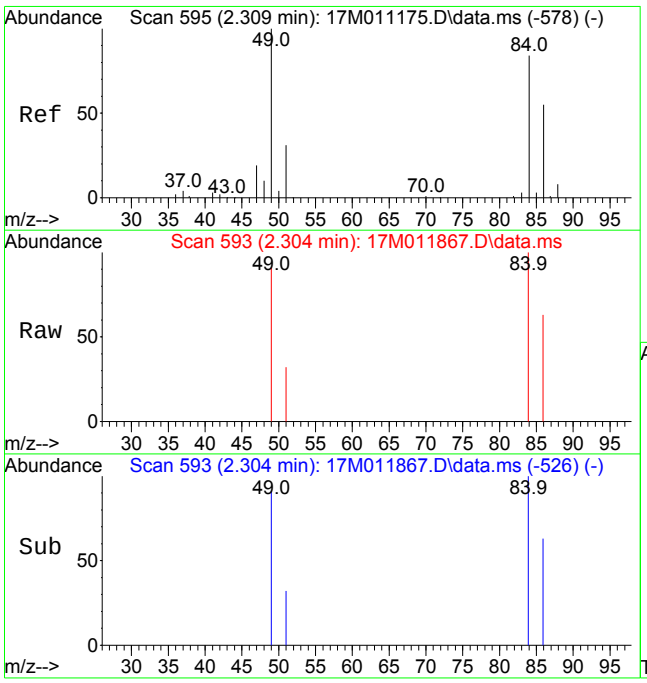

#14
Methylene Chloride
Concen: 0.4184 ug/L
RT: 2.304 min Scan# 593
Delta R.T. -0.005 min
Lab File: 17M011867.D
Acq: 15 May 2015 17:06

Tgt Ion: 84 Resp: 1031

Ion	Ratio	Lower	Upper
84	100		
49	115.6	95.2	142.8

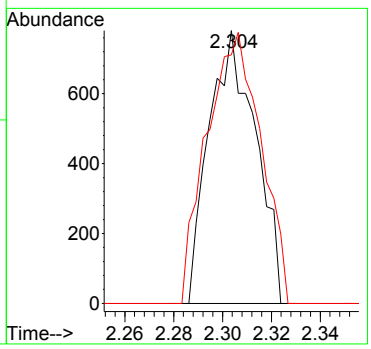

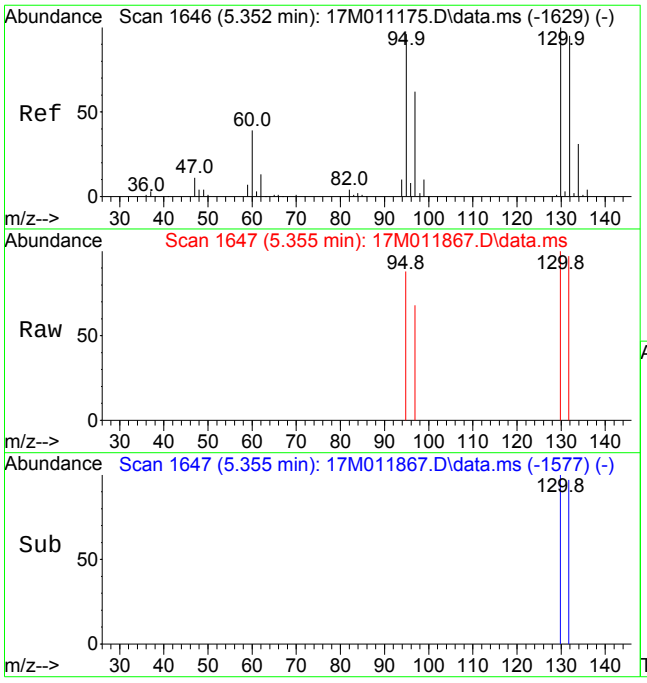

#34
Trichloroethene
Concen: 0.1522 ug/L
RT: 5.355 min Scan# 1647
Delta R.T. 0.003 min
Lab File: 17M011867.D
Acq: 15 May 2015 17:06

Tgt Ion:130 Resp: 387

Ion	Ratio	Lower	Upper
130	100		
60	0.0	23.8	55.6#

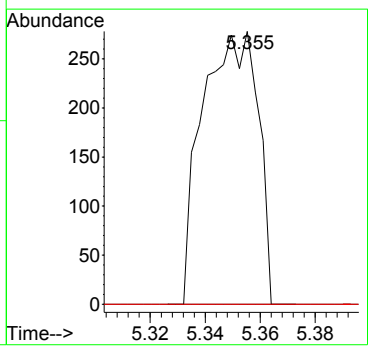

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052215\8M404846.D Vial: 4
Acq On : 22 May 2015 12:58 Operator: TMB
Sample : WG524783-01 VBLK0522 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 08:15:44 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	643411	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	520794	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	279119	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	161915	25.3891 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.56%		
43) 1,2-Dichloroethane-d4	10.35	65	144271	24.0726 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.28%		
58) Toluene-d8	12.73	98	578333	23.7970 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.20%		
80) p-Bromofluorobenzene	16.12	95	219268	23.0902 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.36%		

Target Compounds					Qvalue
5) 1,3-Butadiene	3.93	54	250	Below Cal #	1
36) Tetrahydrofuran	9.69	42	504	0.4998 ug/L #	32

(#) = qualifier out of range (m) = manual integration
8M404846.D 8260WT.M Tue May 26 08:15:45 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052215\8M404846.D Vial: 4
Acq On : 22 May 2015 12:58 Operator: TMB
Sample : WG524783-01 VBLK0522 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:15 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

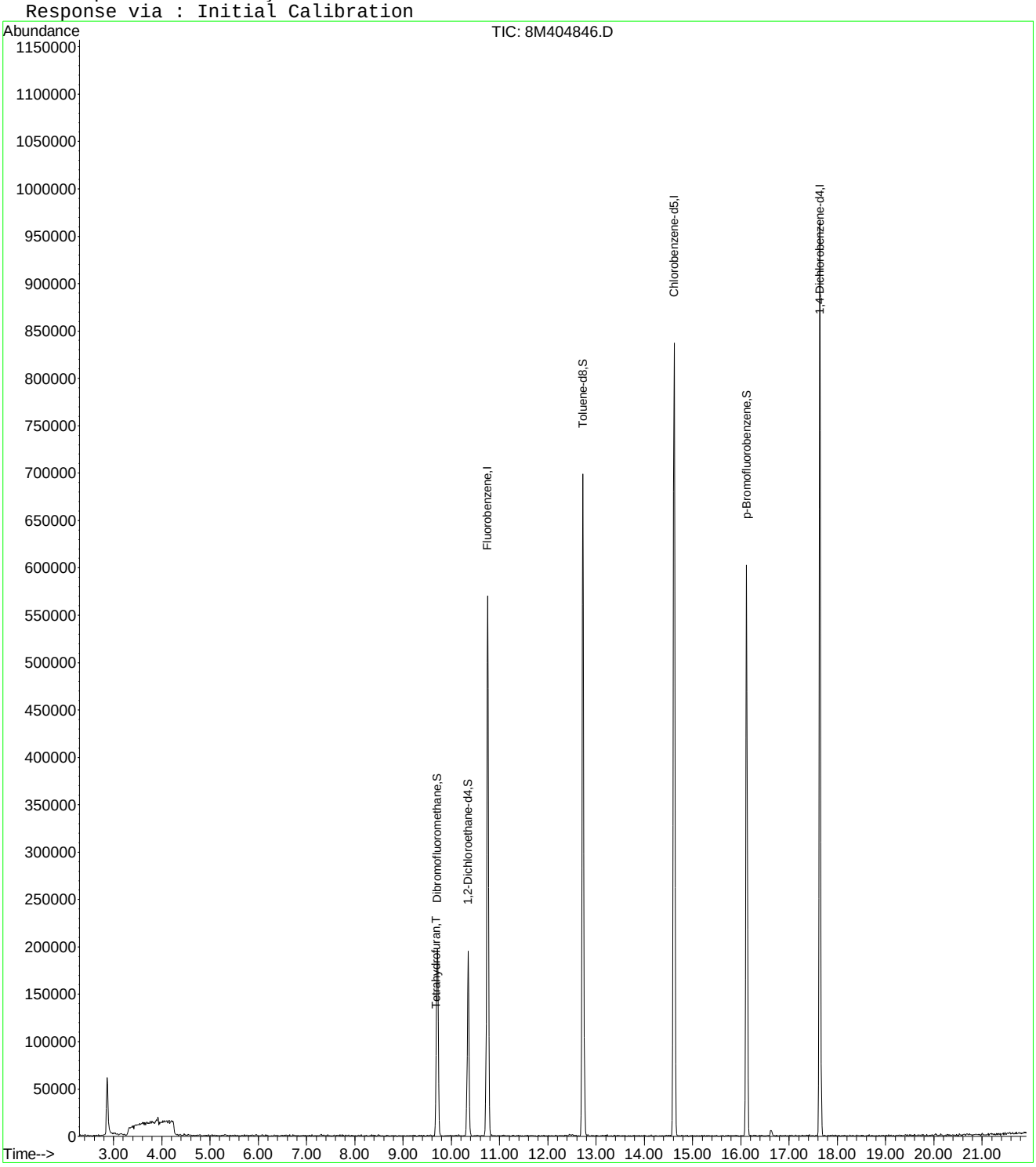

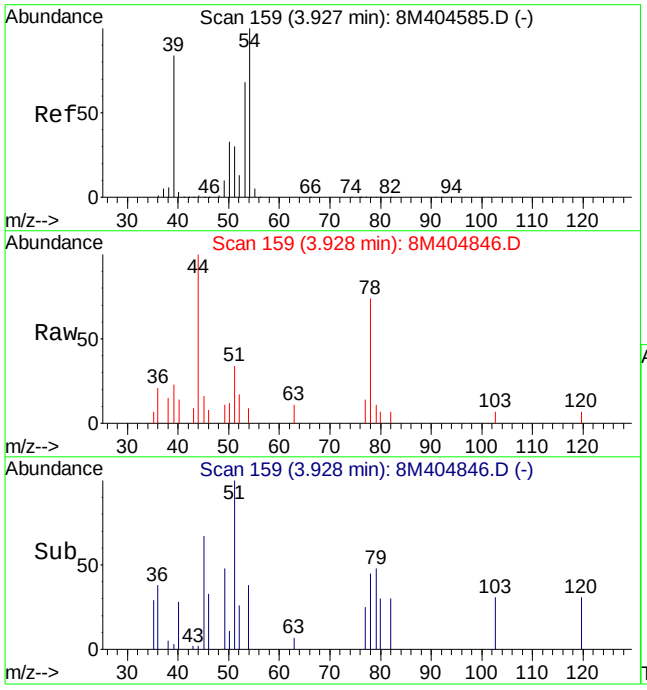

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.93 min Scan# 159
Delta R.T. 0.02 min
Lab File: 8M404846.D
Acq: 22 May 2015 12:58

Tgt Ion: 54 Resp: 250

Ion	Ratio	Lower	Upper
54	100		
39	280.0	50.7	118.3#
53	0.0	40.4	94.4#

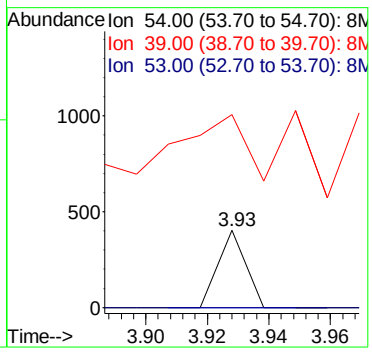

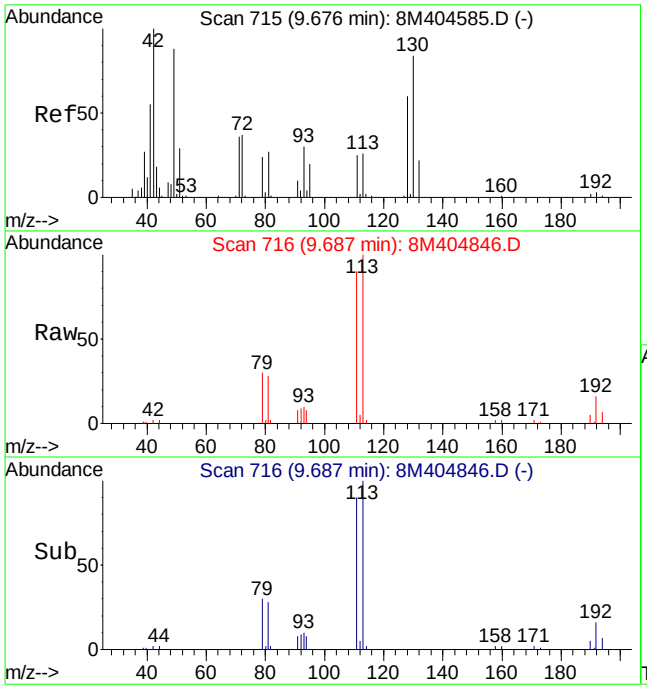

#36
Tetrahydrofuran
Concen: 0.50 ug/L
RT: 9.69 min Scan# 716
Delta R.T. 0.01 min
Lab File: 8M404846.D
Acq: 22 May 2015 12:58

Tgt Ion: 42 Resp: 504

Ion	Ratio	Lower	Upper
42	100		
72	0.0	27.5	64.3#
71	0.0	25.4	59.2#

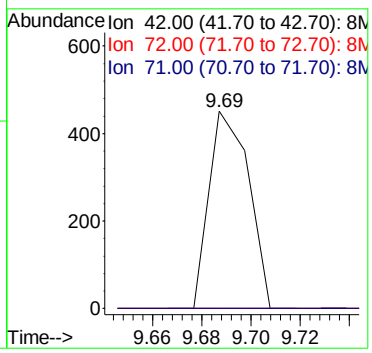

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052215\8M404846.D Vial: 4
Acq On : 22 May 2015 12:58 Operator: TMB
Sample : WG524783-01 VBLK0522 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 26 08:37:03 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Mon May 18 08:37:54 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	643411	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.62	117	520794	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.64	152	279119	25.00 ug/L	0.00

Target Compounds					Qvalue
13) Cyclohexanone	16.12	55	795	1.8052 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M404846.D A9FOOWTR.M Tue May 26 08:37:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052215\8M404846.D Vial: 4
Acq On : 22 May 2015 12:58 Operator: TMB
Sample : WG524783-01 VBLK0522 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 26 8:37 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Mon May 18 08:37:54 2015
Response via : Initial Calibration

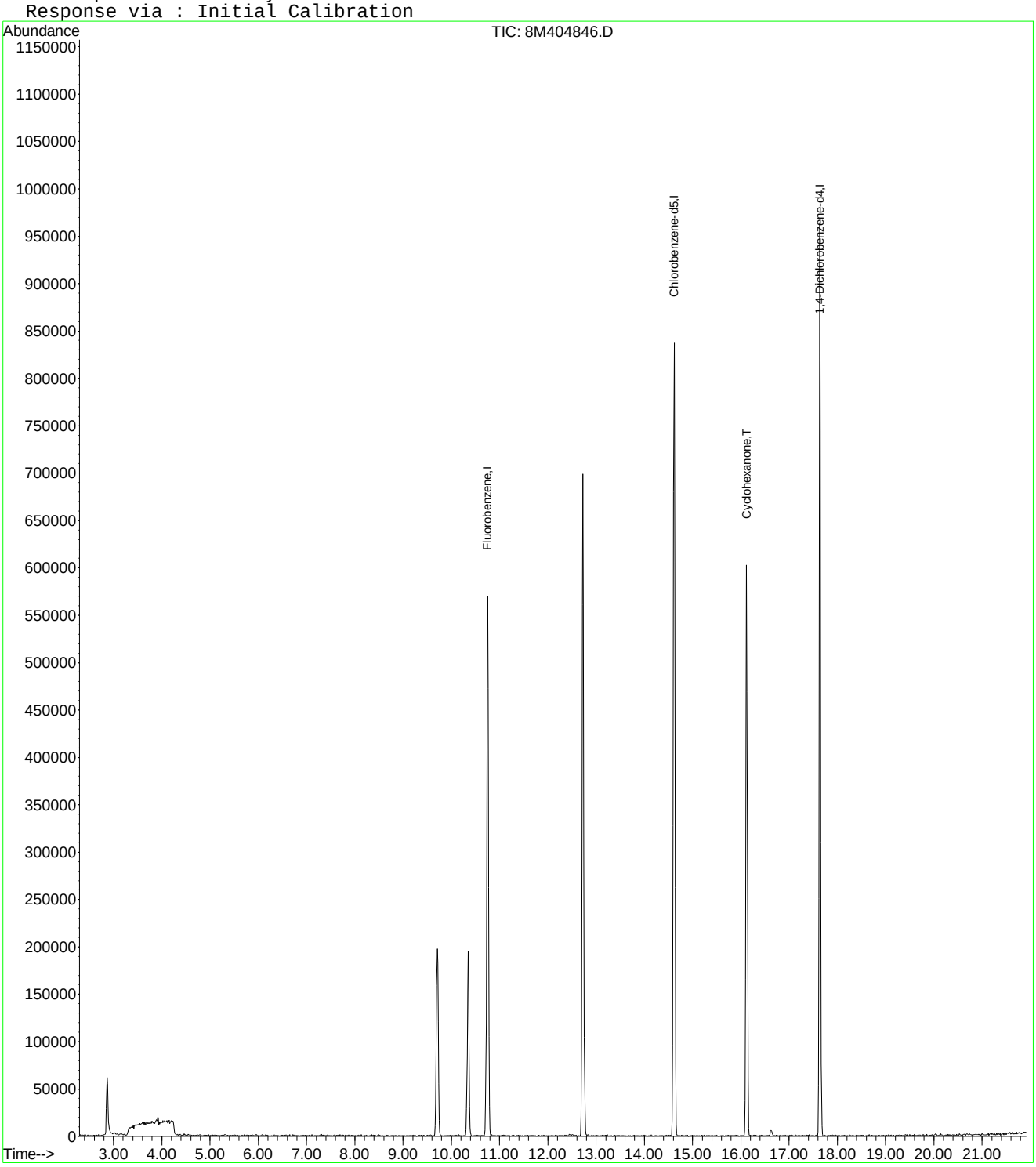

8M404846.D A9FOOWTR.M Tue May 26 08:37:03 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052215\8M404846.D Vial: 4
Acq On : 22 May 2015 12:58 Operator: TMB
Sample : WG524783-01 VBLK0522 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 26 08:38:19 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Mon May 18 08:37:54 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	643411	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.62	117	520794	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.64	152	279119	25.00 ug/L	0.00

Target Compounds					Qvalue
13) Cyclohexanone	16.12	55	795	1.8052 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M404846.D A9FOOWTR.M Tue May 26 08:38:19 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052215\8M404846.D Vial: 4
Acq On : 22 May 2015 12:58 Operator: TMB
Sample : WG524783-01 VBLK0522 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 26 8:38 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Mon May 18 08:37:54 2015
Response via : Initial Calibration

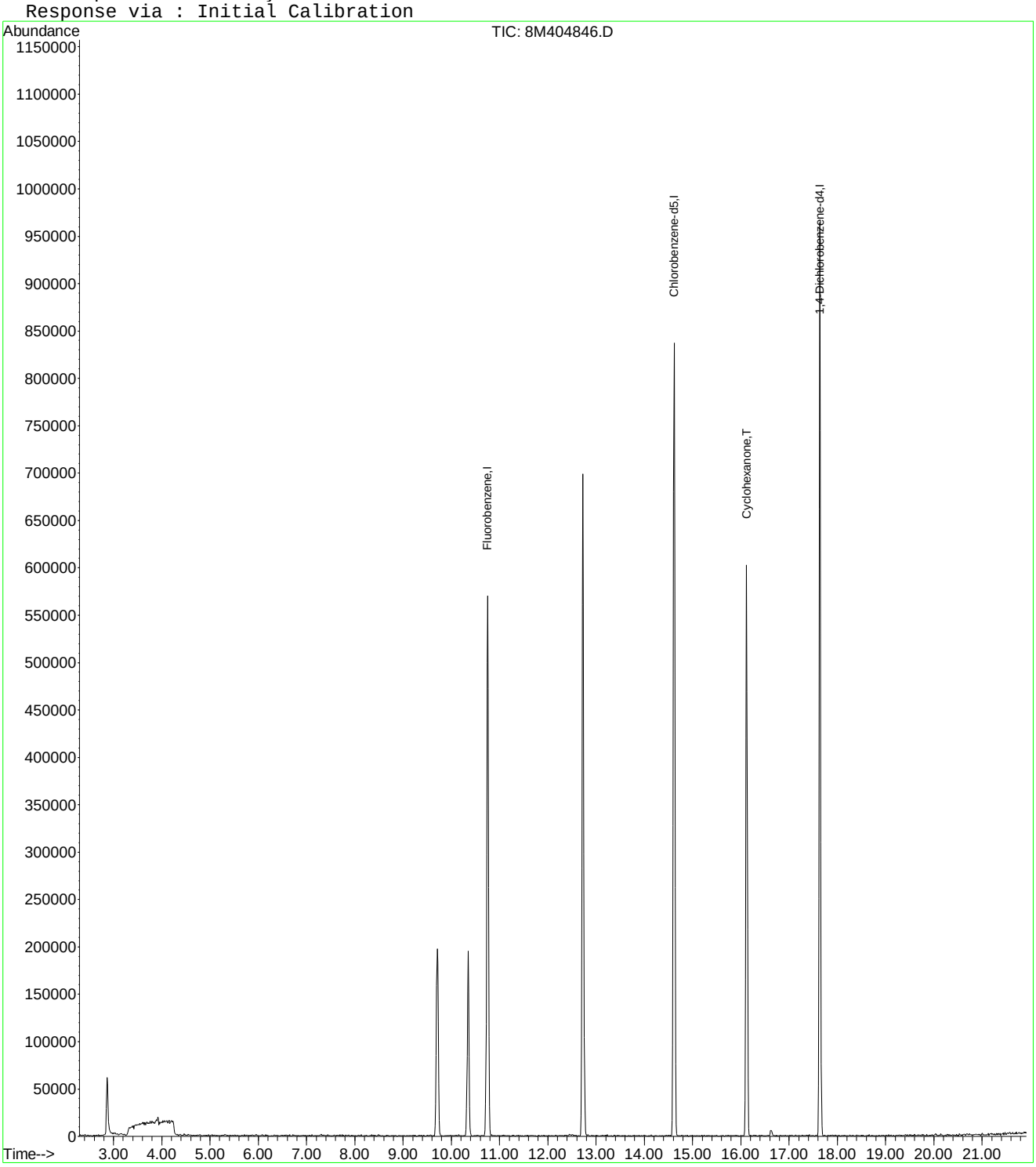

8M404846.D A9FOOWTR.M Tue May 26 08:38:19 2015 Page 2

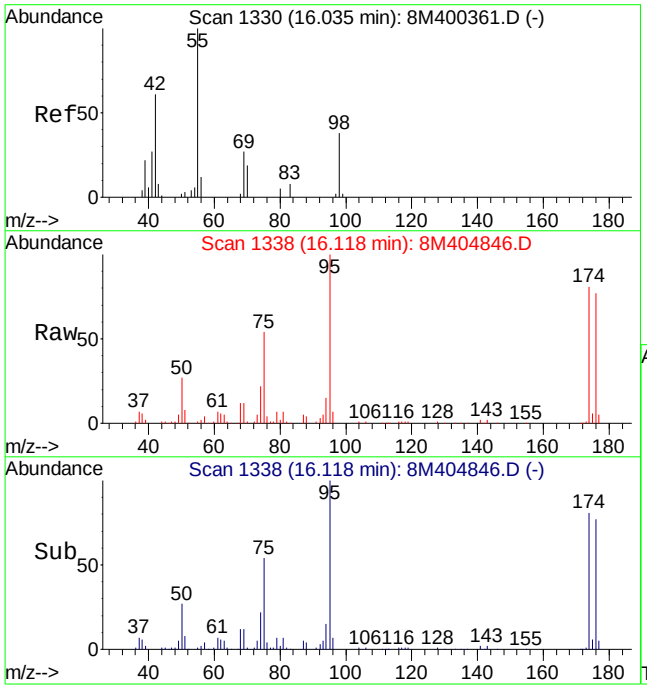

#13
Cyclohexanone
Concen: 1.81 ug/L
RT: 16.12 min Scan# 1338
Delta R.T. 0.23 min
Lab File: 8M404846.D
Acq: 22 May 2015 12:58

Tgt Ion: 55 Resp: 795

Ion	Ratio	Lower	Upper
55	100		
98	0.0	19.2	44.8#

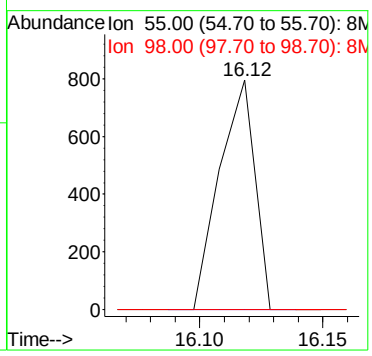

LSC Area Percent Report

Data File : C:\MSDCHEM\2\DATA\052215\8M404846.D Vial: 4
Acq On : 22 May 2015 12:58 Operator: TMB
Sample : WG524783-01 VBLK0522 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 200 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.383	200	203	207	rVB	1314	2508	0.13%	0.027%
2	4.466	209	211	214	rVB	2039	2858	0.15%	0.030%
3	5.045	262	267	270	rBV	1439	3304	0.17%	0.035%
4	5.241	285	286	289	rBV	995	2142	0.11%	0.023%
5	5.313	291	293	297	rVB	1686	3442	0.18%	0.037%
6	5.572	315	318	323	rVB	1217	4219	0.22%	0.045%
7	5.665	323	327	331	rBV	1244	4237	0.22%	0.045%
8	5.717	331	332	335	rBV	1748	2327	0.12%	0.025%
9	5.944	352	354	359	rVB	1526	3227	0.17%	0.034%
10	6.079	362	367	372	rBV	1348	3873	0.20%	0.041%
11	6.389	394	397	403	rVB2	1092	2867	0.15%	0.030%
12	6.482	403	406	409	rBV2	1317	2921	0.15%	0.031%
13	6.565	413	414	418	rBV2	1173	2232	0.12%	0.024%
14	6.720	427	429	434	rVB	1517	3274	0.17%	0.035%
15	7.061	459	462	465	rVB	1552	2940	0.15%	0.031%
16	7.113	465	467	470	rBV	1995	2731	0.14%	0.029%
17	7.309	480	486	489	rBV	2054	5301	0.28%	0.056%
18	7.567	509	511	516	rBV	1089	2567	0.13%	0.027%
19	7.630	516	517	521	rVB	1144	2114	0.11%	0.022%
20	7.743	526	528	532	rBV	1824	2515	0.13%	0.027%
21	7.878	537	541	543	rVB	1357	3276	0.17%	0.035%
22	8.074	556	560	562	rBV	1258	2771	0.15%	0.029%
23	8.136	564	566	570	rVV	1930	2409	0.13%	0.026%
24	8.488	596	600	607	rBV	1934	5894	0.31%	0.063%
25	8.663	614	617	622	rBB	1554	3544	0.19%	0.038%
26	8.777	624	628	632	rVB	1199	3657	0.19%	0.039%
27	8.850	632	635	638	rBB	1097	2314	0.12%	0.025%
28	8.943	638	644	646	rBV	1150	3983	0.21%	0.042%
29	9.211	667	670	672	rVB2	1538	2643	0.14%	0.028%
30	9.336	677	682	684	rBV2	1444	3278	0.17%	0.035%
31	9.501	694	698	699	rBV	1226	2109	0.11%	0.022%
32	9.563	702	704	708	rVV2	1404	3315	0.17%	0.035%
33	9.708	712	718	726	rBV	198101	543525	28.48%	5.772%
34	9.987	742	745	747	rVV	1215	2232	0.12%	0.024%
35	10.152	759	761	766	rBV2	1544	2549	0.13%	0.027%
36	10.349	774	780	789	rVB	195517	465579	24.40%	4.945%
37	10.618	804	806	811	rBV	1016	3561	0.19%	0.038%
38	10.752	812	819	829	rBV	570006	1493395	78.26%	15.860%
39	11.083	848	851	854	rBV	1260	2563	0.13%	0.027%
40	11.269	865	869	875	rBB	1281	4083	0.21%	0.043%
41	11.372	875	879	880	rBV	1192	2982	0.16%	0.032%
42	11.869	925	927	930	rBV	1025	2051	0.11%	0.022%

43	12.024	939	942	944	rBV	1216	2329	0.12%	0.025%
44	12.293	966	968	973	rVB	1206	3513	0.18%	0.037%
45	12.355	973	974	976	rBV	1429	2071	0.11%	0.022%
46	12.448	980	983	987	rBV2	1999	4432	0.23%	0.047%
47	12.520	987	990	992	rVB2	1284	2532	0.13%	0.027%
48	12.727	1002	1010	1018	rVV	699164	1653379	86.64%	17.560%
49	12.830	1019	1020	1024	rVV	1739	2911	0.15%	0.031%
50	12.913	1024	1028	1030	rVB	1231	2497	0.13%	0.027%
51	13.451	1079	1080	1087	rVV	1537	3167	0.17%	0.034%
52	13.688	1100	1103	1107	rBB	1079	2118	0.11%	0.022%
53	13.999	1131	1133	1141	rVB	1639	3457	0.18%	0.037%
54	14.133	1143	1146	1151	rBB	1587	3624	0.19%	0.038%
55	14.319	1160	1164	1167	rVB	1203	2257	0.12%	0.024%
56	14.619	1186	1193	1202	rBV	837581	1813779	95.04%	19.263%
57	14.774	1206	1208	1213	rVV	1651	3897	0.20%	0.041%
58	15.002	1227	1230	1232	rVV	1521	2248	0.12%	0.024%
59	15.239	1251	1253	1257	rBB	1426	2417	0.13%	0.026%
60	15.332	1260	1262	1266	rBV	1185	2746	0.14%	0.029%
61	15.498	1275	1278	1281	rVB	1556	2370	0.12%	0.025%
62	15.684	1294	1296	1299	rBV	1196	2493	0.13%	0.026%
63	16.005	1323	1327	1330	rBV	1157	3151	0.17%	0.033%
64	16.118	1332	1338	1345	rVB	602745	1233517	64.64%	13.100%
65	16.263	1350	1352	1355	rVB	1166	2297	0.12%	0.024%
66	16.377	1361	1363	1365	rBV	1304	2106	0.11%	0.022%
67	16.428	1367	1368	1373	rVB	1656	3379	0.18%	0.036%
68	16.542	1376	1379	1382	rBV	1141	2609	0.14%	0.028%
69	16.615	1382	1386	1394	rVB5	6063	18508	0.97%	0.197%
70	16.832	1402	1407	1408	rVB	989	2260	0.12%	0.024%
71	17.204	1440	1443	1448	rVB	834	2406	0.13%	0.026%
72	17.493	1469	1471	1475	rVB	1074	2182	0.11%	0.023%
73	17.566	1475	1478	1479	rBV	1368	2257	0.12%	0.024%
74	17.638	1479	1485	1492	rVB	964033	1908351	100.00%	20.267%
75	17.804	1500	1501	1506	rBV	1126	2232	0.12%	0.024%
76	18.031	1521	1523	1527	rVB	1288	2960	0.16%	0.031%
77	18.083	1527	1528	1531	rBV	1020	2045	0.11%	0.022%
78	18.610	1575	1579	1580	rBV	1171	2135	0.11%	0.023%
79	18.662	1580	1584	1587	rVV	1658	3421	0.18%	0.036%
80	18.869	1599	1604	1606	rBV	1605	3274	0.17%	0.035%
81	18.920	1606	1609	1612	rVV	1248	2336	0.12%	0.025%
82	19.220	1635	1638	1641	rBV	1363	3673	0.19%	0.039%
83	19.417	1653	1657	1658	rVB	1163	2168	0.11%	0.023%
84	19.520	1664	1667	1670	rVB	1736	3157	0.17%	0.034%
85	19.603	1672	1675	1677	rBV	1806	2991	0.16%	0.032%
86	19.758	1688	1690	1692	rBV	1828	2519	0.13%	0.027%
87	19.851	1697	1699	1703	rBV	2256	3259	0.17%	0.035%
88	19.933	1706	1707	1709	rBV	1314	2097	0.11%	0.022%
89	20.037	1713	1717	1721	rVV2	2254	4629	0.24%	0.049%
90	20.140	1723	1727	1733	rVB	2405	5608	0.29%	0.060%
91	20.244	1733	1737	1738	rVB	1623	3114	0.16%	0.033%
92	20.285	1738	1741	1744	rBV	2587	6433	0.34%	0.068%
93	20.533	1763	1765	1769	rBV	2860	5847	0.31%	0.062%
94	20.637	1771	1775	1777	rBV2	1747	3893	0.20%	0.041%
95	20.688	1777	1780	1784	rBV2	2042	5617	0.29%	0.060%
96	21.009	1807	1811	1813	rBV2	2630	5743	0.30%	0.061%
97	21.133	1820	1823	1824	rVB2	2137	2374	0.12%	0.025%
98	21.195	1825	1829	1830	rVB3	1635	3382	0.18%	0.036%
99	21.298	1838	1839	1842	rVB	2160	2763	0.14%	0.029%
100	21.443	1848	1853	1854	rVB2	2075	3599	0.19%	0.038%

Sum of corrected areas: 9415841

8M404846.D 8260WT.M Tue May 26 08:56:19 2015 Page 2

LSC Report - Integrated Chromatogram

File : C:\MSDCHEM\2\DATA\052215\8M404846.D
Operator : TMB
Acquired : 22 May 2015 12:58 using AcqMethod 8260WT
Instrument : HPMS8
Sample Name: WG524783-01 VBLK0522 BLANK STD 8260
Misc Info : 1,1
Vial Number: 4
Quant File :8260WT.RES (RTE Integrator)

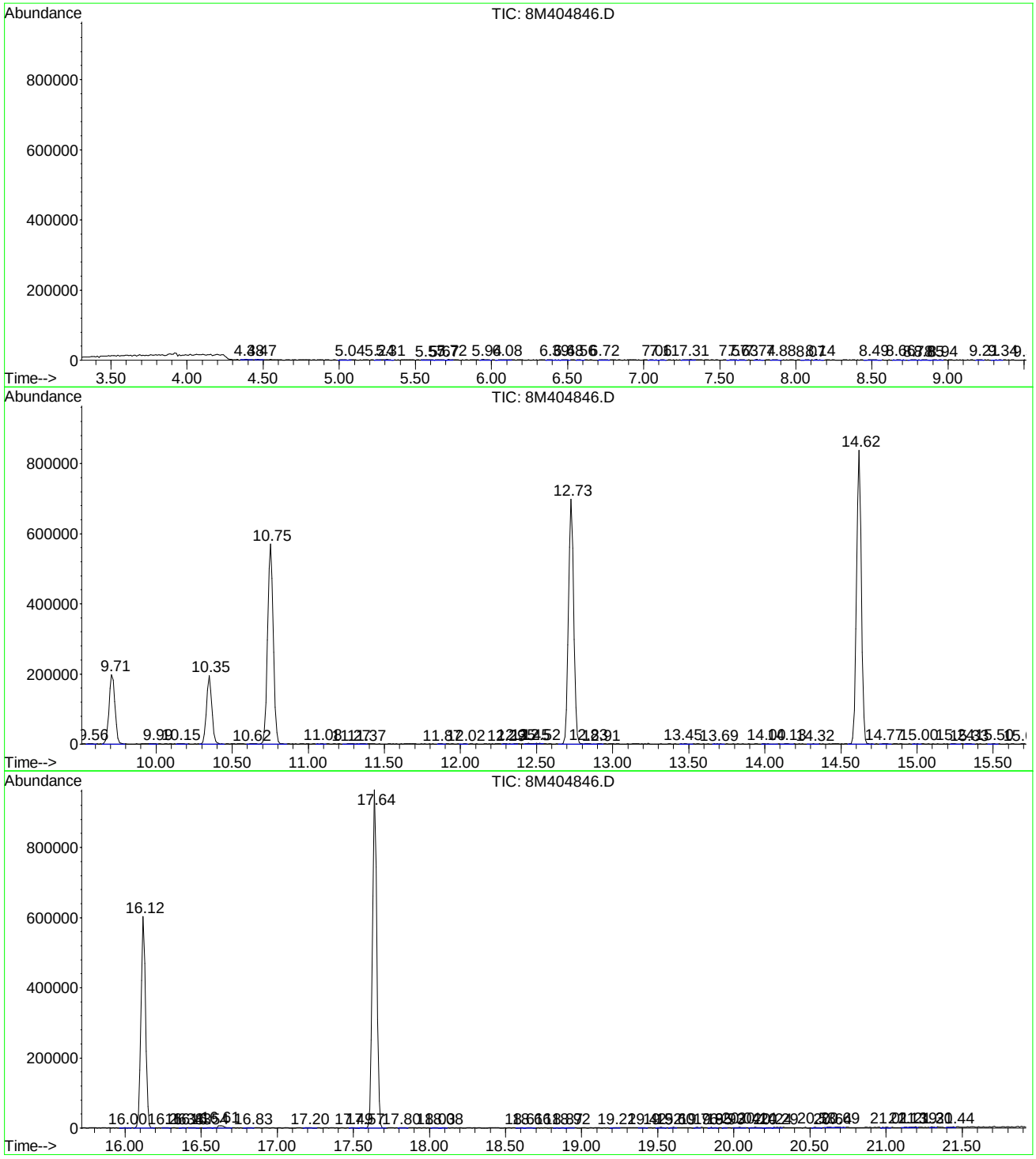

8M404846.D 8260WT.M Tue May 26 08:56:20 2015 Page 3

Tentatively Identified Compound (LSC) summary

Operator ID: TMB Date Acquired: 22 May 2015 12:58
Data File: C:\MSDCHEM\2\DATA\052215\8M404846.D
Name: WG524783-01 VBLK0522 BLANK STD 8260
Misc: 1,1
Method: C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Library Searched: C:\DATABASE\NIST02.L

						--Internal Standard---			
TIC	Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011884.D
Acq On : 15 May 2015 22:51
Operator : ADC
Sample : WG523885-06 624-BLK
Misc : 2,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 19 11:41:51 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	230760	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	170184	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.314	152	89381	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	60709	27.3564 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.426%		
32) 1,2-Dichloroethane-d4	4.843	65	56178	25.5257 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.103%		
44) Toluene-d8	6.734	98	236134	25.8042 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.217%		
63) p-Bromofluorobenzene	8.737	95	83230	25.9800 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.920%		
Target Compounds					Qvalue
34) Trichloroethene	5.347	130	351	0.1362 ug/L #	36

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011884.D
Acq On : 15 May 2015 22:51
Operator : ADC
Sample : WG523885-06 624-BLK
Misc : 2,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 19 11:41:51 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

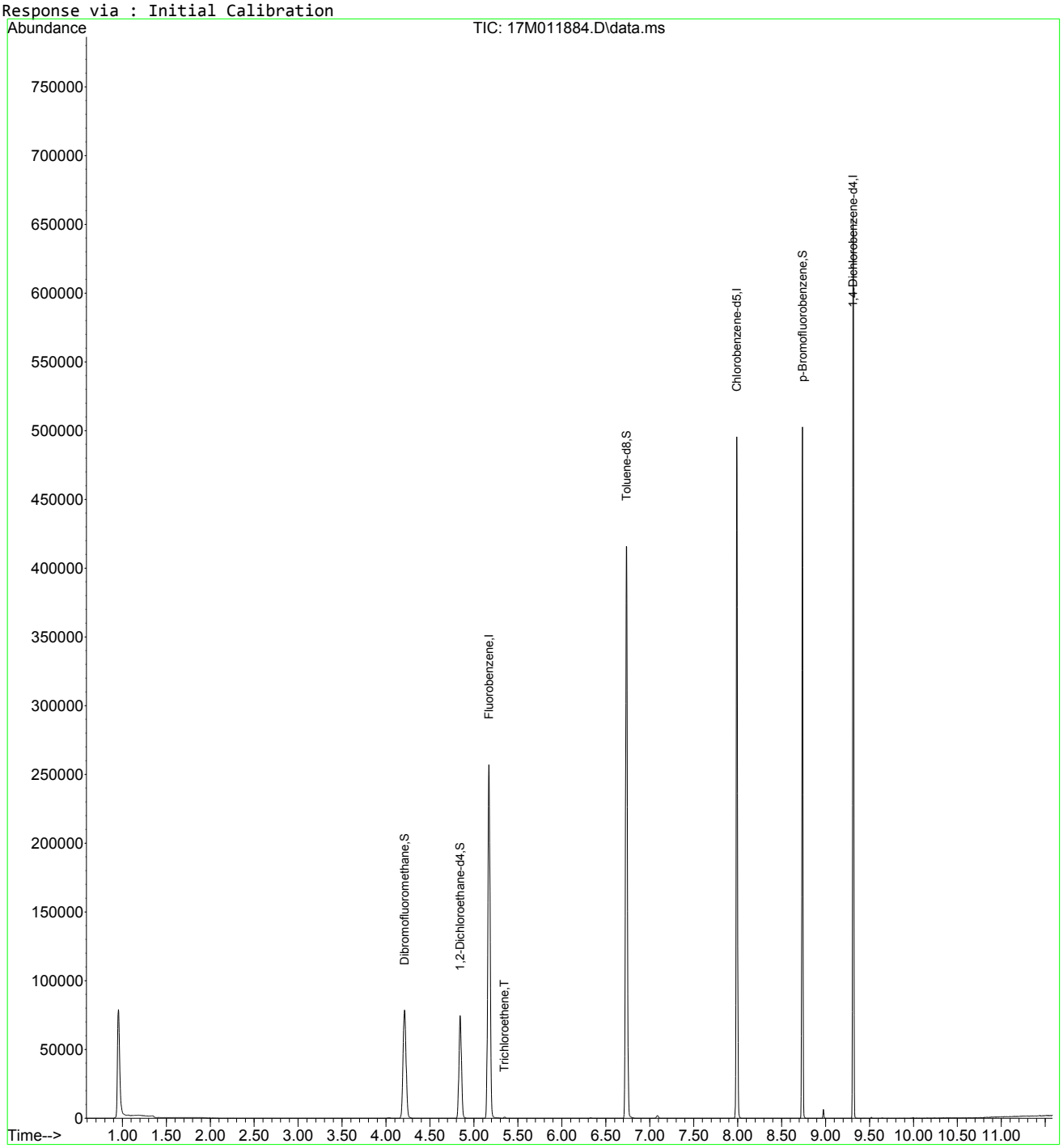

8260VMS.M Tue May 19 11:41:52 2015 Page: 2

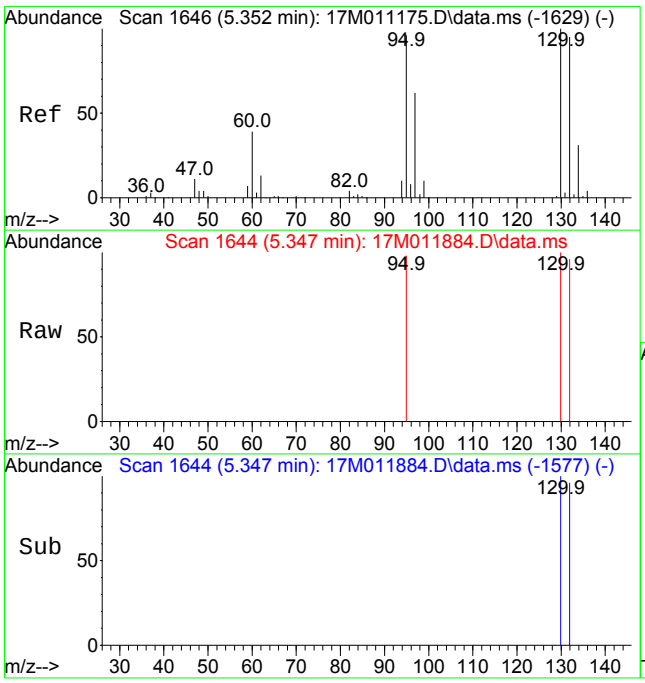

#34
Trichloroethene
Concen: 0.1362 ug/L
RT: 5.347 min Scan# 1644
Delta R.T. -0.005 min
Lab File: 17M011884.D
Acq: 15 May 2015 22:51

Tgt Ion:130 Resp: 351

Ion	Ratio	Lower	Upper
130	100		
60	0.0	23.8	55.6#

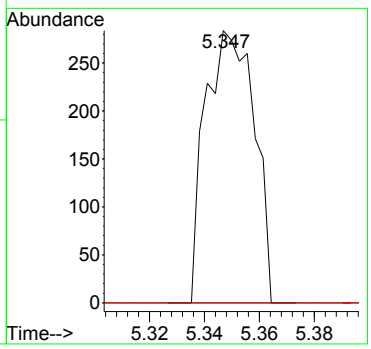

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011868.D
Acq On : 15 May 2015 17:26
Operator : ADC
Sample : WG523885-02 20ug/L LCS 8260
Misc : 1,1 STD70455
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 19 11:44:32 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	227392	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	169634	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	89924	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	61585	28.1621 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.648%		
32) 1,2-Dichloroethane-d4	4.843	65	54562	25.1587 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.635%		
44) Toluene-d8	6.734	98	235145	25.7794 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.118%		
63) p-Bromofluorobenzene	8.737	95	82863	25.7093 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.837%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	65342	23.8665 ug/L	100
3) Chloromethane	1.154	50	59362	24.7771 ug/L	100
4) Vinyl Chloride	1.201	62	63148	23.7417 ug/L	100
5) 1,3-Butadiene	1.209	54	41672	20.2778 ug/L	99
6) Bromomethane	1.386	94	39211	24.7030 ug/L	100
7) Chloroethane	1.455	64	30435	21.8439 ug/L	95
8) Trichlorofluoromethane	1.539	101	76170	22.2278 ug/L	99
9) Diethyl ether	1.757	59	157648	103.1421 ug/L	100
10) 1,1-Dichloroethene	1.875	61	63955	19.8734 ug/L	100
11) Carbon Disulfide	1.887	76	75589	11.3466 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.904	101	45405	20.9287 ug/L	99
13) Acrolein	2.127	56	20059	99.1273 ug/L	95
14) Methylene Chloride	2.304	84	47932	19.4762 ug/L	99
15) Acetone	2.362	43	6163	16.2437 ug/L	95
16) trans-1,2-Dichloroethene	2.434	96	45979	21.4778 ug/L	98
17) Methyl Tert Butyl Ether	2.547	73	112692	20.7925 ug/L	99
18) 1,1-Dichloroethane	2.999	63	82191	20.8785 ug/L	100
19) Acrylonitrile	3.057	53	8600	16.4887 ug/L	100
20) Vinyl Acetate	3.300	86	4367	87.3068 ug/L	92
21) cis-1,2-Dichloroethene	3.595	96	51945	21.4165 ug/L	98
22) 2,2-Dichloropropane	3.728	77	64473	19.5304 ug/L	99
23) Cyclohexane	3.821	56	78593	20.8121 ug/L #	78
24) Bromochloromethane	3.838	130	31319	20.3516 ug/L	99
25) Chloroform	3.966	83	83885	22.3597 ug/L	99
26) Carbon Tetrachloride	4.110	117	64315	19.3416 ug/L	100
28) 1,1,1-Trichloroethane	4.209	97	74097	20.5885 ug/L	100
29) 1,1-Dichloropropene	4.377	75	62062	20.8999 ug/L	97
30) 2-Butanone	4.400	43	9711	15.0182 ug/L #	95
31) Benzene	4.678	78	191125	21.4709 ug/L	99
33) 1,2-Dichloroethane	4.921	62	53181	19.6861 ug/L	99
34) Trichloroethene	5.350	130	54787	21.5797 ug/L	98
35) Dibromomethane	5.767	93	25447	20.3509 ug/L	100
36) 1,2-Dichloropropane	5.877	63	51585	21.7520 ug/L	98
37) Bromodichloromethane	5.964	83	60197	20.0721 ug/L	99
38) 1,4-Dioxane	6.169	88	950	60.2420 ug/L	89
39) 2-Chloroethyl Vinyl Ether	6.551	63	23299	19.9804 ug/L	100
40) cis-1,3-Dichloropropene	6.569	75	74763	20.9668 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	8820	15.2967 ug/L	95
42) trans-1,3-Dichloropropene	7.165	75	57689	18.5113 ug/L	99
45) Toluene	6.780	91	216917	20.8134 ug/L	99
46) Tetrachloroethene	7.107	166	58253	20.1050 ug/L	99
47) 1,1,2-Trichloroethane	7.298	97	36016	19.1230 ug/L	100
48) Dibromochloromethane	7.437	129	45875	18.4469 ug/L	99
49) 1,3-Dichloropropane	7.518	76	59089	19.7918 ug/L	94

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011868.D
Acq On : 15 May 2015 17:26
Operator : ADC
Sample : WG523885-02 20ug/L LCS 8260
Misc : 1,1 STD70455
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 19 11:44:32 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.605	107	35011	18.2738 ug/L	99
51) 2-Hexanone	7.831	43	16491	14.6263 ug/L	99
52) Chlorobenzene	8.002	112	133944	19.6353 ug/L	99
53) 1-Chlorohexane	8.016	69	12628	19.9025 ug/L	81
54) Ethylbenzene	8.039	106	76932	20.9471 ug/L	98
55) 1,1,1,2-Tetrachloroethane	8.054	131	50205	19.9971 ug/L	99
56) m-,p-Xylene	8.138	106	182504	41.1238 ug/L	99
57) o-Xylene	8.401	106	85906	19.4792 ug/L	97
58) Styrene	8.433	104	147483	20.3480 ug/L	99
59) Bromoform	8.436	173	31302	18.2495 ug/L	100
60) Isopropylbenzene	8.590	105	225469	19.4967 ug/L	100
62) 1,3,5-Trimethylbenzene	8.925	105	214302	21.1932 ug/L	99
64) Bromobenzene	8.789	156	63801	20.2289 ug/L	99
65) n-Propylbenzene	8.818	91	256424	19.6995 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.859	83	40100	17.9252 ug/L	99
67) 2-Chlorotoluene	8.894	91	155108	19.3252 ug/L	99
68) 1,2,3-Trichloropropane	8.923	110	10619	18.0826 ug/L	95
69) 1,2,4-Trimethylbenzene	9.125	105	214471	21.2502 ug/L	100
70) 4-Chlorotoluene	8.980	91	156190	19.1923 ug/L	99
71) tert-Butylbenzene	9.088	134	36975	20.0759 ug/L	99
72) sec-Butylbenzene	9.177	105	247367	19.9718 ug/L	100
73) p-Isopropyltoluene	9.253	119	211706	19.5944 ug/L	100
74) 1,3-Dichlorobenzene	9.279	146	111870	19.0883 ug/L	98
75) 1,4-Dichlorobenzene	9.325	146	119526	19.9621 ug/L	99
76) n-Butylbenzene	9.455	91	200642	21.1546 ug/L	100
77) 1,2-Dichlorobenzene	9.528	146	106575	19.0121 ug/L	99
78) 1,2-Dibromo-3-Chloropr...	9.904	75	6311	15.2512 ug/L	95
79) Hexachlorobutadiene	10.202	225	55811	21.2635 ug/L	100
80) 1,2,4-Trichlorobenzene	10.217	180	89141	19.3744 ug/L	99
81) Naphthalene	10.370	128	150174	17.4813 ug/L	99
82) 1,2,3-Trichlorobenzene	10.454	180	80949	18.7288 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051515\
Data File : 17M011868.D
Acq On : 15 May 2015 17:26
Operator : ADC
Sample : WG523885-02 20ug/L LCS 8260
Misc : 1,1 STD70455
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 19 11:44:32 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 04/16/15 HPMS17
QLast Update : Wed Apr 22 16:19:50 2015
Response via : Initial Calibration

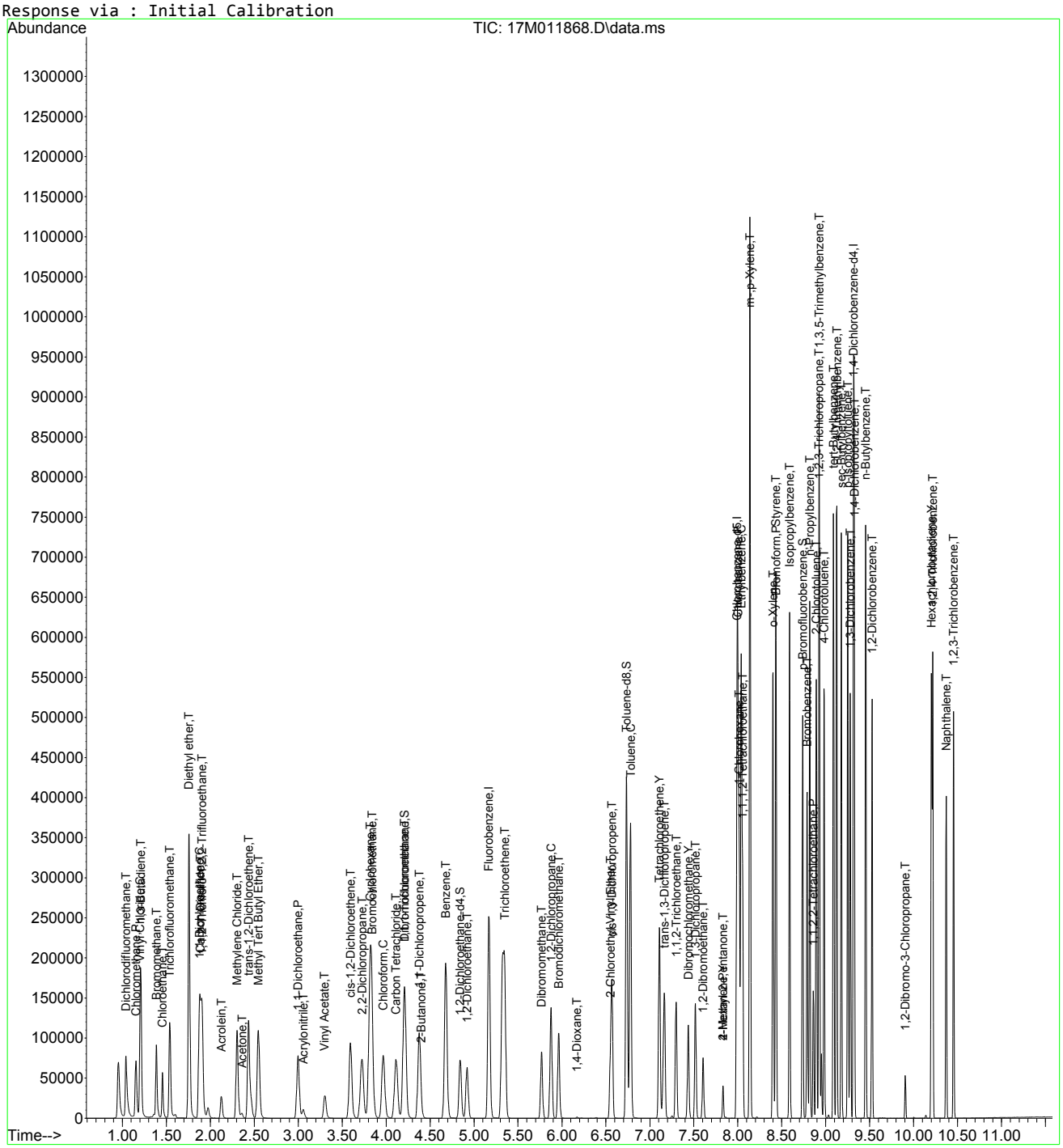

8260VMS.M Tue May 19 11:44:33 2015 Page: 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052215\8M404851.D Vial: 9
Acq On : 22 May 2015 15:22 Operator: TMB
Sample : WG524783-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 15:44:29 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	690383	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	550179	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	324627	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	173024	25.2851 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.16%		
43) 1,2-Dichloroethane-d4	10.35	65	153905	23.9329 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.72%		
58) Toluene-d8	12.73	98	614009	23.9156 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.68%		
80) p-Bromofluorobenzene	16.12	95	247741	22.4313 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 89.72%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	264108	24.6837 ug/L	97
3) Chloromethane	3.65	50	463600	21.7036 ug/L	95
4) Vinyl Chloride	3.88	62	491620	24.4249 ug/L	97
5) 1,3-Butadiene	3.92	54	369180	19.0818 ug/L	94
6) Bromomethane	4.78	94	100023	22.0314 ug/L	99
7) Chloroethane	4.93	64	123234	22.4989 ug/L	92
8) Trichlorofluoromethane	5.43	101	251625	19.9073 ug/L	97
9) Diethyl ether	5.95	59	485631	100.2133 ug/L	90
10) Isoprene	5.99	67	209398	22.3420 ug/L	80
11) Acrolein	6.18	56	18927	82.3330 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	138610	19.4291 ug/L	93
13) Acetone	6.29	43	23042	23.3701 ug/L	88
14) 1,1-Dichloroethene	6.51	61	227081	18.7156 ug/L	82
15) Tert-Butyl Alcohol	6.63	59	64417	242.8030 ug/L	96
16) Dimethyl Sulfide	6.78	62	186559	26.3741 ug/L	76
17) Iodomethane	7.03	142	62777	13.7240 ug/L	80
18) Methyl acetate	7.04	43	67361	19.1455 ug/L	89
19) Methylene Chloride	7.30	84	146750	21.2230 ug/L	59
20) Carbon Disulfide	7.34	76	422743	18.9395 ug/L	94
21) Acrylonitrile	7.47	53	33167	21.1343 ug/L	95
22) Methyl Tert Butyl Ether	7.51	73	276986	20.7932 ug/L	95
23) trans-1,2-Dichloroethene	7.75	61	228334	19.7125 ug/L	85
24) n-Hexane	7.83	57	204280	17.4402 ug/L	93
25) Diisopropyl ether	8.17	45	2774778	108.1446 ug/L	91
26) Vinyl Acetate	8.34	43	187227	22.1025 ug/L	92
27) 1,1-Dichloroethane	8.37	63	275095	19.6733 ug/L	94
28) Ethyl-Tert-Butyl ether	8.75	59	2134578	106.0277 ug/L	93
29) 2-Butanone	8.92	43	37280	23.2068 ug/L	84
30) Propionitrile	9.03	54	56336	110.0302 ug/L	94
31) 2,2-Dichloropropane	9.15	77	211173	18.3042 ug/L	98
32) cis-1,2-Dichloroethene	9.21	96	161156	20.2566 ug/L	80
33) Chloroform	9.42	83	268861	20.7001 ug/L	93
34) 1-Bromopropane	9.56	122	30332	21.2684 ug/L	96
35) Bromochloromethane	9.65	130	78643	19.3841 ug/L #	64
36) Tetrahydrofuran	9.68	42	120231	111.1164 ug/L	83
38) 1,1,1-Trichloroethane	9.96	97	239418	20.3058 ug/L	99
39) Cyclohexane	9.99	56	275542	19.2828 ug/L	84
40) 1,1-Dichloropropene	10.15	75	203210	19.8094 ug/L	94
41) Tert-Amyl-Methyl ether	10.26	73	1567249	106.0615 ug/L	97
42) Carbon Tetrachloride	10.30	117	221600	20.6820 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M404851.D 8260WT.M Fri May 22 15:44:30 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052215\8M404851.D Vial: 9
Acq On : 22 May 2015 15:22 Operator: TMB
Sample : WG524783-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 15:44:29 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	184804	19.8475 ug/L		90
46)	Benzene	10.50	78	580927	21.0233 ug/L		98
47)	Trichloroethene	11.26	130	152918	20.9213 ug/L		97
48)	Methylcyclohexane	11.34	83	223194	18.8135 ug/L		89
49)	1,2-Dichloropropane	11.48	63	157349	20.3306 ug/L		99
50)	Bromodichloromethane	11.77	83	197150	20.6905 ug/L		96
51)	1,4-Dioxane	11.75	88	6977	227.7470 ug/L		94
52)	Dibromomethane	11.86	93	78001	21.3995 ug/L		87
53)	2-Chloroethyl Vinyl Ether	12.06	63	64251	33.9179 ug/L		96
54)	4-Methyl-2-Pentanone	12.10	58	31484	23.6620 ug/L		88
55)	cis-1,3-Dichloropropene	12.41	75	229852	22.0676 ug/L		94
56)	Dimethyl Disulfide	12.66	79	118281	21.0461 ug/L		92
59)	Toluene	12.83	91	643218	19.7100 ug/L		82
60)	Ethyl Methacrylate	12.92	69	120479	20.7487 ug/L		72
62)	trans-1,3-Dichloropropene	13.01	75	178228	18.2205 ug/L		95
63)	1,1,2-Trichloroethane	13.22	97	96206	18.9749 ug/L		99
64)	2-Hexanone	13.15	58	30161	21.6023 ug/L		80
65)	1,3-Dichloropropane	13.52	76	168206	18.9248 ug/L		78
66)	Tetrachloroethene	13.65	164	123799	17.9736 ug/L		87
67)	Dibromochloromethane	13.91	129	129390	19.1774 ug/L		99
68)	1,2-Dibromoethane	14.16	107	95367	19.7033 ug/L		96
69)	1-Chlorohexane	14.25	91	206899	18.5353 ug/L		85
70)	Chlorobenzene	14.67	112	399878	18.1547 ug/L		92
71)	1,1,1,2-Tetrachloroethane	14.70	131	146153	18.4858 ug/L		97
72)	Ethylbenzene	14.70	106	241184	18.2818 ug/L	#	31
73)	m-,p-Xylene	14.78	106	555224	37.2137 ug/L	#	42
74)	o-Xylene	15.34	106	264080	17.9105 ug/L		63
75)	Styrene	15.38	104	471845	20.2013 ug/L		83
76)	Bromoform	15.88	173	75777	18.1368 ug/L		98
77)	Isopropylbenzene	15.77	105	698594	19.3731 ug/L		77
79)	1,1,2,2-Tetrachloroethane	15.98	83	114880	18.6246 ug/L		96
81)	1,2,3-Trichloropropane	16.18	110	31572	18.8929 ug/L		88
82)	trans-1,4-Dichloro-2-Buten	16.22	53	32557	15.9000 ug/L		84
83)	n-Propylbenzene	16.28	91	847699	17.2588 ug/L	#	72
84)	Bromobenzene	16.41	156	177093	18.1556 ug/L		95
85)	1,3,5-Trimethylbenzene	16.47	105	656998	19.5496 ug/L		78
86)	2-Chlorotoluene	16.55	91	506616	15.2833 ug/L		81
87)	4-Chlorotoluene	16.59	91	488020	18.4064 ug/L		78
88)	a-Methylstyrene	16.87	118	345225	18.0380 ug/L		96
89)	tert-Butylbenzene	16.92	134	124853	16.7113 ug/L		62
90)	1,2,4-Trimethylbenzene	16.99	105	654689	18.9484 ug/L		75
91)	sec-Butylbenzene	17.20	105	762938	18.2078 ug/L	#	76
92)	p-Isopropyltoluene	17.36	119	623036	17.5380 ug/L		78
93)	1,3-Dichlorobenzene	17.56	146	340278	17.2132 ug/L		91
94)	1,4-Dichlorobenzene	17.68	146	365322	18.2029 ug/L		92
95)	n-Butylbenzene	17.89	91	638012	18.3855 ug/L		79
96)	1,2-Dichlorobenzene	18.18	146	306230	17.8513 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.17	75	19290	19.5922 ug/L		84
98)	1,2,4-Trichlorobenzene	20.32	180	230047	17.8015 ug/L		99
99)	Hexachlorobutadiene	20.47	225	103602	15.3454 ug/L		93
100)	Naphthalene	20.69	128	362427	20.9115 ug/L		92
101)	1,2,3-Trichlorobenzene	21.00	180	199363	18.2052 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M404851.D 8260WT.M Fri May 22 15:44:30 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052215\8M404851.D Vial: 9
Acq On : 22 May 2015 15:22 Operator: TMB
Sample : WG524783-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 15:44 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

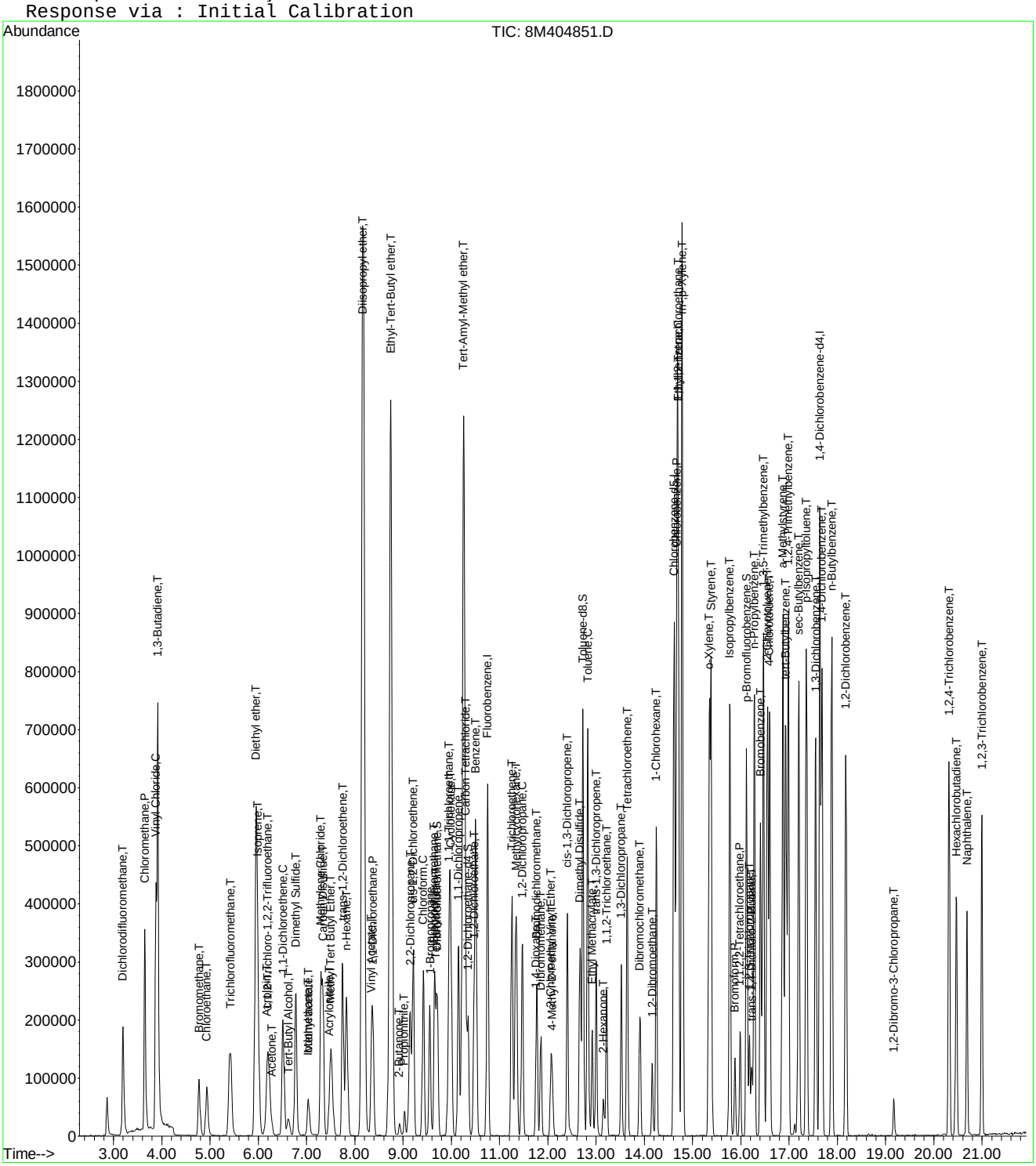

8M404851.D 8260WT.M Fri May 22 15:44:30 2015 Page 3

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
May 28, 2015

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
May 28, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.

Microbac Laboratories Inc.
List of Valid Qualifiers
May 28, 2015

Qualkey: DOD

TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002JA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp	Grab	Matrix	Number of Containers	VOC	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 67	67WW05-051215			5/12/15	0810		✓	W	3	✓					
	67WW02-051215			5/12/15	0830		✓	W	3	✓					
	67WW02FD-051215			5/12/15	0830		✓	W	3	✓					
	67WW03-051215			5/12/15	0845		✓	W	3	✓					
	67WW07-051215			5/12/15	0855		✓	W	3	✓					
	67WW10-051215			5/12/15	1000		✓	W	3	✓					
	67WW10MS-051215			5/12/15	1000		✓	W	3	✓					
	67WW10MSD-051215			5/12/15	1000		✓	W	3	✓					
	67WW12-051215			5/12/15	1105		✓	W	3	✓					
	67WW09A-051215			5/12/15	1315		✓	W	3	✓					
	67WW14-051215			5/12/15	1440		✓	W	3	✓					
	67WW14FD-051215			5/12/15	1440		✓	W	3	✓					
	TRip Blank			5/12/15			✓	W	2	✓					

Comments: STANDARD TAT

Relinquished by: (Signature) Scott Beesinger	Date 5/13/15	Time 1400	Received by: (Signature)	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Lab (Signature) Cara Strickler	Remarks:

Microbac OVD
Received: 05/14/2015 10:00
By: CARA STRICKLER 221000069775

Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15050872
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 25-MAY-2015

Samplenum	Container ID	Products
L15050872-01	572032	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Samplenum	Container ID	Products
L15050872-02	572033	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15050872
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 25-MAY-2015

Samplenum	Container ID	Products
L15050872-03	572034	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Samplenum	Container ID	Products
L15050872-04	572035	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15050872
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 25-MAY-2015

Samplenum	Container ID	Products
L15050872-05	572036	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Samplenum	Container ID	Products
L15050872-06	572037	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15050872
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 25-MAY-2015

Samplenum	Container ID	Products
L15050872-07	572038	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Samplenum	Container ID	Products
L15050872-08	572039	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15050872
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 25-MAY-2015

Samplenum	Container ID	Products
L15050872-09	572040	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Samplenum	Container ID	Products
L15050872-10	572041	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		14-MAY-2015 11:42	CLS		

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15050872
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 25-MAY-2015

Samplenum	Container ID	Products
L15050872-11	572042	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 07:59	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 07:59	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 07:59	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Samplenum	Container ID	Products
L15050872-12	572043	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 08:00	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15050872
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 25-MAY-2015

Samplenum	Container ID	Products
L15050872-13	572044	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 07:59	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-MAY-2015 11:42	CLS		
2	STORE	V1	ORG4	15-MAY-2015 07:59	AWE	CLS	
3	STORE	ORG4	A1	28-MAY-2015 07:37	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - May 26, 2015

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Formate (HPLC-UV)
Propionaldehyde (HPLC-UV)
Fluoroborate (ISE)
n-Butane (RSK175)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Acetylene
Propane

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVL HPLC12/HPLC/UV
Acetate

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide

Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L15051231

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on June 01 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
Sample ID: 67WW08-051915 (5/19 @ 0825). 1 of 3 voa vials received with headspace and 1 of 3 RSK vials received with headspace. BRG Sample ID: 67WW01-051915 (5/19 @ 12:20). 1 of 3 RSK vials received with headspace. BRG	Please proceed.

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112668	I	3.0		J2317161594	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	No

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
67WW08-051915	L15051231-01	05/19/2015 08:25	05/20/2015 10:22
67WW11-051915	L15051231-02	05/19/2015 09:40	05/20/2015 10:22
67WW09-051915	L15051231-03	05/19/2015 10:45	05/20/2015 10:22
67WW13-051915	L15051231-04	05/19/2015 11:50	05/20/2015 10:22
67WW01-051915	L15051231-05	05/19/2015 12:20	05/20/2015 10:22
TRIP BLANK	L15051231-06	05/19/2015 00:01	05/20/2015 10:22

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L15051231
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 43
2.0 Full Sample Data Package 75
2.1 Volatiles Data 76
2.1.1 Volatiles GCMS Data (8260) 77
2.1.1.1 Summary Data 78
2.1.1.2 QC Summary Data 97
2.1.1.3 Sample Data 143
2.1.1.4 Standards Data 185
2.1.1.5 Raw QC Data 274
2.1.2 RSK 175 300
2.1.2.1 Summary Data 301
2.1.2.2 QC Summary Data 306
2.1.2.3 Sample Data 325
2.1.2.4 Standards Data 332
2.1.2.5 Raw QC Data 369
2.2 General Chemistry Data 376
2.2.1 Method 9056 377
2.2.1.1 Summary Data 378
2.2.1.2 QC Summary Data 386
2.2.1.3 Sample Data 407
2.2.1.4 Standards Data 414
2.2.1.5 Raw QC Data 435
2.2.2 Ferrous Iron Data 438
2.2.2.1 Summary Data 439
2.2.2.2 QC Summary Data 442
2.2.2.3 Raw Data 449
2.2.3 Sulfide Data 457
2.2.3.1 Summary Data 458
2.2.3.2 QC Summary Data 463
2.2.3.3 Raw Data 470
2.2.4 Total Organic Carbon Data 473
2.2.4.1 Summary Data 474
2.2.4.2 QC Summary Data 477
2.2.4.3 Raw Data 484
3.0 Attachments 529

1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	8260
Prep Batch Number(s):	524936,525056	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-05-29 19:17:38

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	8260
Prep Batch Number(s):	524936,525056	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	8260
Prep Batch Number(s):	524936,525056	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			1
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	8260
Prep Batch Number(s):	524936,525056	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	8260
Prep Batch Number(s):	524936,525056	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	8260
Prep Batch Number(s):	524936,525056	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)2-Chlorotoluene Exceeded the %REC in the LCS analyzed 05/23/2015 on HPMS8.

2)Bromomethaneexceeded the UCL in the CCV analyzed 05/23/2015 onHPMS8.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	524390	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-22 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-05-22 13:33:40

RG-366/TRRP-13 May 2010 **ID:** 6376

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	524390	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-22 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	524390	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-22 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	524390	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-22 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	524390	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-22 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	524390	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-22 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There were no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG524505	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-05-20 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Adriane Steed	Adriane Steed		2015-05-21 13:36:25

RG-366/TRRP-13 May 2010 **ID:** 6374

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG524505	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-05-20 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG524505	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-05-20 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG524505	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-05-20 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG524505	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-05-20 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG524505	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-05-20 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -01, -04 and -05 were analyzed at dilutions only due to their high analyte concentrations (Cl and/or SO4) which were over 200 ppm. Any sample that has a single anion load greater than 200 ppm (or a total anion load greater than 400 ppm) will be diluted in order to prevent damage to the IC from repeated overloading of the analytical column and oversaturation of the suppressor membranes.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG524733	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-27 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-05-27 11:42:18

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG524733	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-27 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG524733	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-27 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG524733	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-27 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG524733	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-27 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	FERROUS
Prep Batch Number(s):	WG524733	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-27 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	S
Prep Batch Number(s):	WG524848	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-27 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-05-27 11:43:07

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	S
Prep Batch Number(s):	WG524848	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-27 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	S
Prep Batch Number(s):	WG524848	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-27 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	S
Prep Batch Number(s):	WG524848	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-27 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	S
Prep Batch Number(s):	WG524848	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-27 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	S
Prep Batch Number(s):	WG524848	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-27 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG524525	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-27 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-05-27 11:43:41

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG524525	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-27 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG524525	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-27 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG524525	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-27 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG524525	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-27 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051231
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG524525	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-27 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW08-051915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG525056	**Analyst:**	TMB	**Run Date:**	05/26/2015 21:28
Collect Date:	05/19/2015 08:25	**Dilution:**	10	**File ID:**	8M404926
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	3.04	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	52.1		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	85.6		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	1570		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	5.00	U	10.0	5.00	2.50
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	4.50	J	10.0	5.00	2.50
Trichloroethene	79-01-6	5.00	U	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	94.3	85	120	
4-Bromofluorobenzene	94.9	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW08-051915	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524390	**Analyst:**	JDS	**Run Date:**	05/20/2015 14:07
Collect Date:	05/19/2015 08:25	**Dilution:**	1	**File ID:**	16G47560
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	5.16		5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-051915	**Prep Method:**	9056	**Prep Date:**	05/20/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524505	**Analyst:**	ALS	**Run Date:**	05/20/2015 18:36
Collect Date:	05/19/2015 08:25	**Dilution:**	10	**File ID:**	I1_052015-11
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	3.95	J	4.00	2.00	1.00
Sulfate	14808-79-8	524		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-051915	**Prep Method:**	9056	**Prep Date:**	05/20/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524505	**Analyst:**	ALS	**Run Date:**	05/20/2015 18:54
Collect Date:	05/19/2015 08:25	**Dilution:**	100	**File ID:**	I1_052015-12
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1750		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-01	**PrePrep Method:**	N/A	**Instrument:**	UV-2600
Client ID:	67WW08-051915	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	04/20/2015 10:00
Workgroup #:	WG524733	**Analyst:**	TMM	**Run Date:**	05/22/2015 09:40
Collect Date:	05/19/2015 08:25	**Dilution:**	2	**File ID:**	00.1505220940-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.944		0.0800	0.0800	0.0400

Certificate of Analysis

Sample #:	L15051231-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW08-051915	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524848	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:50
Collect Date:	05/19/2015 08:25	**Dilution:**	1	**File ID:**	ET.1505221450-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-051915	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/21/2015 15:05
Collect Date:	05/19/2015 08:25	**Dilution:**	3	**File ID:**	TC05212015.013
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		55.2		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15051231-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-051915	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/21/2015 15:05
Collect Date:	05/19/2015 08:25	**Dilution:**	3	**File ID:**	TC05212015.013
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	8.32		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15051231-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW11-051915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG524936	**Analyst:**	FJB	**Run Date:**	05/24/2015 00:09
Collect Date:	05/19/2015 09:40	**Dilution:**	1	**File ID:**	8M404892
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	8.25		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.518	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	21.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.1	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	98.1	85	120	
4-Bromofluorobenzene	95.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09-051915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG524936	**Analyst:**	FJB	**Run Date:**	05/24/2015 00:38
Collect Date:	05/19/2015 10:45	**Dilution:**	1	**File ID:**	8M404893
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	1.56		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	2.71		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	98.2	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	90.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW13-051915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG524936	**Analyst:**	FJB	**Run Date:**	05/24/2015 03:30
Collect Date:	05/19/2015 11:50	**Dilution:**	2.5	**File ID:**	8M404899
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	Q	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	1.70	J	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	30.2		2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	30.6		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	522		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	2.08	J	2.50	1.25	0.625

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	1.25	U	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	5.96		2.50	1.25	0.625
Trichloroethene	79-01-6	2.91		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	0.695	J	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	99.5	70	120	
Toluene-d8	97.6	85	120	
4-Bromofluorobenzene	96.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-04	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW13-051915	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524390	**Analyst:**	JDS	**Run Date:**	05/20/2015 16:37
Collect Date:	05/19/2015 11:50	**Dilution:**	1	**File ID:**	16G47561
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-04	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW13-051915	**Prep Method:**	9056	**Prep Date:**	05/20/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524505	**Analyst:**	ALS	**Run Date:**	05/20/2015 19:12
Collect Date:	05/19/2015 11:50	**Dilution:**	10	**File ID:**	I1_052015-13
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	3.40	J	4.00	2.00	1.00
Sulfate	14808-79-8	344		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-04	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW13-051915	**Prep Method:**	9056	**Prep Date:**	05/20/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524505	**Analyst:**	ALS	**Run Date:**	05/20/2015 19:29
Collect Date:	05/19/2015 11:50	**Dilution:**	100	**File ID:**	I1_052015-14
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1680		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-04	**PrePrep Method:**	N/A	**Instrument:**	UV-2600
Client ID:	67WW13-051915	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	04/20/2015 10:00
Workgroup #:	WG524733	**Analyst:**	TMM	**Run Date:**	05/22/2015 09:40
Collect Date:	05/19/2015 11:50	**Dilution:**	1	**File ID:**	00.1505220940-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.0400	U	0.0400	0.0400	0.0200

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-04	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW13-051915	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524848	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:50
Collect Date:	05/19/2015 11:50	**Dilution:**	1	**File ID:**	ET.1505221450-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-04	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW13-051915	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 09:28
Collect Date:	05/19/2015 11:50	**Dilution:**	10	**File ID:**	TC05212015.032
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	62.4		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L15051231-04	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW13-051915	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 09:28
Collect Date:	05/19/2015 11:50	**Dilution:**	10	**File ID:**	TC05212015.032
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		224		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L15051231-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW01-051915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG524936	**Analyst:**	FJB	**Run Date:**	05/24/2015 03:59
Collect Date:	05/19/2015 12:20	**Dilution:**	2.5	**File ID:**	8M404900
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	Q	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	0.626	U	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	23.5		2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	31.4		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	631		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	1.54	J	2.50	1.25	0.625
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	1.25	U	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.72	J	2.50	1.25	0.625
Trichloroethene	79-01-6	3.03		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	1.86	J	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	98.8	70	120	
Toluene-d8	98.7	85	120	
4-Bromofluorobenzene	93.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW01-051915	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524390	**Analyst:**	JDS	**Run Date:**	05/20/2015 16:49
Collect Date:	05/19/2015 12:20	**Dilution:**	1	**File ID:**	16G47562
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	20.0		5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-05	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW01-051915	**Prep Method:**	9056	**Prep Date:**	05/20/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524505	**Analyst:**	ALS	**Run Date:**	05/20/2015 20:22
Collect Date:	05/19/2015 12:20	**Dilution:**	5	**File ID:**	I1_052015-17
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	2.02		2.00	1.00	0.500
Sulfate	14808-79-8	143		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-05	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW01-051915	**Prep Method:**	9056	**Prep Date:**	05/20/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524505	**Analyst:**	ALS	**Run Date:**	05/20/2015 20:40
Collect Date:	05/19/2015 12:20	**Dilution:**	50	**File ID:**	I1_052015-18
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	988		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-05	**PrePrep Method:**	N/A	**Instrument:**	UV-2600
Client ID:	67WW01-051915	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	04/20/2015 10:00
Workgroup #:	WG524733	**Analyst:**	TMM	**Run Date:**	05/22/2015 09:40
Collect Date:	05/19/2015 12:20	**Dilution:**	1	**File ID:**	00.1505220940-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.0539		0.0400	0.0400	0.0200

Certificate of Analysis

Sample #:	L15051231-05	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW01-051915	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524848	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:50
Collect Date:	05/19/2015 12:20	**Dilution:**	1	**File ID:**	ET.1505221450-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW01-051915	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 09:53
Collect Date:	05/19/2015 12:20	**Dilution:**	3	**File ID:**	TC05212015.033
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		42.6		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15051231-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW01-051915	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 09:53
Collect Date:	05/19/2015 12:20	**Dilution:**	3	**File ID:**	TC05212015.033
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	12.7		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15051231-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG524936	**Analyst:**	FJB	**Run Date:**	05/23/2015 20:17
Collect Date:	05/19/2015 00:01	**Dilution:**	1	**File ID:**	8M404884
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	99.4	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	94.9	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW08-051915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG525056	**Analyst:**	TMB	**Run Date:**	05/26/2015 21:28
Collect Date:	05/19/2015 08:25	**Dilution:**	10	**File ID:**	8M404926
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	3.04	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	52.1		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	85.6		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	1570		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	5.00	U	10.0	5.00	2.50
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	4.50	J	10.0	5.00	2.50
Trichloroethene	79-01-6	5.00	U	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	94.3	85	120	
4-Bromofluorobenzene	94.9	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW11-051915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG524936	**Analyst:**	FJB	**Run Date:**	05/24/2015 00:09
Collect Date:	05/19/2015 09:40	**Dilution:**	1	**File ID:**	8M404892
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	8.25		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.518	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	21.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.1	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	98.1	85	120	
4-Bromofluorobenzene	95.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW09-051915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG524936	**Analyst:**	FJB	**Run Date:**	05/24/2015 00:38
Collect Date:	05/19/2015 10:45	**Dilution:**	1	**File ID:**	8M404893
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	1.56		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	2.71		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	98.2	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	90.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW13-051915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG524936	**Analyst:**	FJB	**Run Date:**	05/24/2015 03:30
Collect Date:	05/19/2015 11:50	**Dilution:**	2.5	**File ID:**	8M404899
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	Q	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	1.70	J	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	30.2		2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	30.6		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	522		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	2.08	J	2.50	1.25	0.625

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	1.25	U	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	5.96		2.50	1.25	0.625
Trichloroethene	79-01-6	2.91		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	0.695	J	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	99.5	70	120	
Toluene-d8	97.6	85	120	
4-Bromofluorobenzene	96.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	67WW01-051915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG524936	**Analyst:**	FJB	**Run Date:**	05/24/2015 03:59
Collect Date:	05/19/2015 12:20	**Dilution:**	2.5	**File ID:**	8M404900
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	Q	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	0.626	U	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	23.5		2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	31.4		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	631		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	1.54	J	2.50	1.25	0.625

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	1.25	U	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.72	J	2.50	1.25	0.625
Trichloroethene	79-01-6	3.03		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	1.86	J	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	98.8	70	120	
Toluene-d8	98.7	85	120	
4-Bromofluorobenzene	93.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG524936	**Analyst:**	FJB	**Run Date:**	05/23/2015 20:17
Collect Date:	05/19/2015 00:01	**Dilution:**	1	**File ID:**	8M404884
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	99.4	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	94.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400354	RINSE	NA	1	1		10/02/14 10:24
8M400355	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:16
8M400356	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:33
8M400357	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:58
8M400358	WG494714-02 5ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:24
8M400359	WG494714-03 20ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:53
8M400360	WG494714-04 50ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:22
8M400361	WG494714-05 100ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:51
8M400362	WG494714-06 200ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:19
8M400363	WG494714-07 300ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:48
8M400364	WG494714-08 400ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:16
8M400365	WG494714-09 500ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:45
8M400366	RINSE	NA	1	1		10/02/14 16:14
8M400367	WG494714-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD66677	10/02/14 16:47
8M400368	WG494979-01 50ug/L CCV STD 8260	NA	1	1	STD66687	10/02/14 17:22
8M400371	WG494980-02 20ug/L LCS STD 624	NA	2	1	STD66693	10/02/14 17:51
8M400372	WG494980-03 20ug/L LCSDUP STD 624	NA	2	1	STD66693	10/02/14 18:20
8M400373	RINSE	NA	2	1		10/02/14 18:49
8M400374	WG494980-01 VBLK1002 BLANK STD 624	NA	2	1		10/02/14 19:18
8M400375	L14100004-01 LOD 826-SPE A9/FOO	NA	1	1		10/02/14 19:47
8M400376	L14100006-01 LOQ 826-SPE A9/FOO	NA	1	1		10/02/14 20:16
8M400377	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 20:45
8M400378	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 21:14
8M400379	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 21:42
8M400380	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 22:12
8M400381	L14100098-10 A 624-SPE	5	2	1		10/02/14 22:40
8M400382	L14100089-02 A 624-SPE	5	2	1		10/02/14 23:09
8M400383	L14100098-04 A 624-SPE	<2	2	1		10/02/14 23:38
8M400384	L14100098-05 A 624-SPE	<2	2	1		10/03/14 00:06
8M400385	L14100098-06 A 624-SPE	<2	2	1		10/03/14 00:36
8M400386	L14100098-07 A 624-SPE	<2	2	1		10/03/14 01:06
8M400387	L14100098-08 A 624-SPE	<2	2	1		10/03/14 01:34
8M400388	L14100098-09 A 624-SPE	<2	2	1		10/03/14 02:04
8M400389	L14100110-01 A 624-SPE2	<2	2	1		10/03/14 02:32

Approved: October 03, 2014

Microbac

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400390	L14100110-02 A 624-SPE1	<2	2	1		10/03/14 03:02
8M400391	RINSE	NA	1	1		10/03/14 03:30
8M400392	RINSE	NA	1	1		10/03/14 03:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M400355				
	Tune failed, DNR.			
3	X			
File ID: 8M400356				
	Tune failed, DNR.			
4				
File ID: 8M400357				
	Purged BFB.			
30	X	100	Over Calibration Range	TCE
File ID: 8M400385				
31	X	1	Carry-over contamination	
File ID: 8M400386				
	DNR.			
32	X	1	Carry-over contamination	
File ID: 8M400387				
	DNR.			
33	X	50	Over Calibration Range	TCE
File ID: 8M400388				
34	X	1	Carry-over contamination	
File ID: 8M400389				
	DNR.			

Approved: October 03, 2014

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051215
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53130

Internal Standard: STD70050 Surrogate Standard: STD70050
CCV: STD70474 LCS: STD70475 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG523161

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M404566	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 08:44
8M404567	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 09:01
8M404568	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 09:37
8M404569	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 10:02
8M404570	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 10:16
8M404571	WG523161-02 50ug/L CCV STD 8260	NA	1	1	STD70341	05/12/15 10:39
8M404572	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 11:07
8M404573	WG523161-02 50ug/L CCV STD 8260	NA	1	1	STD70341	05/12/15 11:30
8M404574	RINSE	NA	1	1		05/12/15 11:59
8M404575	RINSE	NA	1	1		05/12/15 13:56
8M404576	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 15:38
8M404577	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 15:55
8M404578	RINSE	NA	1	1		05/12/15 16:21
8M404579	WG523161-02 0.3ug/L STD 8260	NA	1	1	STD70474	05/12/15 16:50
8M404580	WG523161-03 0.4ug/L STD 8260	NA	1	1	STD70474	05/12/15 17:19
8M404581	WG523161-04 1ug/L STD 8260	NA	1	1	STD70474	05/12/15 17:48
8M404582	WG523161-05 2ug/L STD 8260	NA	1	1	STD70474	05/12/15 18:16
8M404583	WG523161-06 5ug/L STD 8260	NA	1	1	STD70474	05/12/15 18:45
8M404584	WG523161-07 20ug/L STD 8260	NA	1	1	STD70474	05/12/15 19:13
8M404585	WG523161-08 50ug/L STD 8260	NA	1	1	STD70474	05/12/15 19:42
8M404586	WG523161-09 100ug/L STD 8260	NA	1	1	STD70474	05/12/15 20:11
8M404587	WG523161-10 200ug/L STD 8260	NA	1	1	STD70474	05/12/15 20:40
8M404588	WG523161-11 300ug/L STD 8260	NA	1	1	STD70474	05/12/15 21:08
8M404589	RINSE	NA	1	1		05/12/15 21:37
8M404590	RINSE	NA	1	1		05/12/15 22:06
8M404591	WG523161-12 50ug/L ALT SRC STD 8260	NA	1	1	STD70475	05/12/15 22:34
8M404592	RINSE	NA	1	1		05/12/15 23:03
8M404593	RINSE	NA	1	1		05/12/15 23:31

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M404566				

Approved: May 14, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051215		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	21
Method:	624	SOP:	MSV10	Rev:	13
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53130				

Internal Standard: STD70050 Surrogate Standard: STD70050

CCV: STD70474 LCS: STD70475 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG523161

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Tune failed, DNR.	
2	X			
File ID: 8M404567				
			Tune failed, DNR. Changed the septa.	
3	X			
File ID: 8M404568				
			Tune failed, DNR.	
4				
File ID: 8M404569				
			Tune failed, DNR. Purged BFB.	
6	X			
File ID: 8M404571				
			Vc was high, DNR. Increased the voltage.	
8				
File ID: 8M404573				
			Vc was high, running a curve.	
11	X			
File ID: 8M404576				
			Tune failed, DNR.	

Approved: May 14, 2015

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 052315
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53167

Internal Standard: STD70050 Surrogate Standard: STD70050
CCV: STD70656 LCS: STD70658 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG524936

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M404873	WG524935-01 BFB 50ng 8260	NA	1	1	STD70032	05/23/15 15:18
8M404874	WG524935-01 BFB 50ng 8260	NA	1	1	STD70032	05/23/15 15:33
8M404875	WG524935-01 BFB 50ng 8260	NA	1	1	STD70032	05/23/15 16:12
8M404876	WG524935-01 BFB 50ng 8260	NA	1	1	STD70032	05/23/15 16:34
8M404877	WG524935-02 50ug/L CCV 8260	NA	1	1	STD70656	05/23/15 16:57
8M404878	WG524XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	05/23/15 17:25
8M404879	WG524936-01 VBLK0523 BLANK 8260	NA	1	1		05/23/15 17:53
8M404880	WG524936-02 20ug/L LCS 8260	NA	1	1	STD70658	05/23/15 18:22
8M404881	WG524936-03 20ug/L LCS2 8260	NA	1	1	STD70658	05/23/15 18:50
8M404882	L15051250-07 10X B 826-SPE1	<2	1	10		05/23/15 19:19
8M404883	L15051142-01 A 826-LOW	<2	1	1		05/23/15 19:48
8M404884	L15051231-06 A 826-LOW	<2	1	1		05/23/15 20:17
8M404885	L15051250-08 B 826-SPE1	<2	1	1		05/23/15 20:46
8M404886	L15051250-09 B 826-SPE1	<2	1	1		05/23/15 21:15
8M404887	L15051142-02 A 826-LOW	<2	1	1		05/23/15 21:44
8M404888	L15051142-03 A 826-LOW	<2	1	1		05/23/15 22:13
8M404889	L15051142-04 A 826-LOW	<2	1	1		05/23/15 22:42
8M404890	L15051142-05 A 826-LOW	<2	1	1		05/23/15 23:11
8M404891	L15051209-29 A 826-SPE	<2	1	1		05/23/15 23:40
8M404892	L15051231-02 A 826-LOW	<2	1	1		05/24/15 00:09
8M404893	L15051231-03 A 826-LOW	<2	1	1		05/24/15 00:38
8M404894	L15051303-01 A 826-LOW	<2	1	1		05/24/15 01:06
8M404895	L15051303-03 A 826-LOW	<2	1	1		05/24/15 01:35
8M404896	L15051303-05 A 826-LOW	<2	1	1		05/24/15 02:04
8M404897	L15051303-07 A 826-LOW	<2	1	1		05/24/15 02:32
8M404898	L15051231-01 10X A 826-LOW	<2	1	10		05/24/15 03:01
8M404899	L15051231-04 2.5X A 826-LOW	<2	1	2.5		05/24/15 03:30
8M404900	L15051231-05 2.5X A 826-LOW	<2	1	2.5		05/24/15 03:59
8M404901	CCV	NA	1	1		05/24/15 04:28
8M404902	RINSE	NA	1	1		05/24/15 04:57
8M404903	RINSE	NA	1	1		05/24/15 05:26

Comments

Approved: May 29, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 052315
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53167

Internal Standard: STD70050 Surrogate Standard: STD70050
CCV: STD70656 LCS: STD70658 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG524936

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M404873				
	Tune failed, DNR.			
2	X			
File ID: 8M404874				
	Tune failed, DNR.			
3	X			
File ID: 8M404875				
	Purged BFB. Tune failed, DNR. Changed the liner and o-ring.			
6				
File ID: 8M404878				
	Not needed, DNR.			
22	X	10	Over Calibration Range	TCE
File ID: 8M404894				
23	X	1	Carry-over contamination	
File ID: 8M404895				
	Possible TCE carry over. Re-analysis confirmed result not due to carry-over. This data reported.			
26	X	10	Over Calibration Range	
File ID: 8M404898				
	Possible TCE carry over. DNR.			

Approved: May 29, 2015

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 052615
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53172

Internal Standard: STD70050 Surrogate Standard: STD70050
CCV: STD70656 LCS: STD70658 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG525056

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M404904	WG525055-01 50ng BFB STD 8260	NA	1	1	STD70707	05/26/15 11:11
8M404905	WG525055-01 50ng BFB STD 8260	NA	1	1	STD70707	05/26/15 11:26
8M404906	WG525055-02 50ug/L CCV STD 8260	NA	1	1	STD70656	05/26/15 11:50
8M404907	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD70547	05/26/15 12:19
8M404908	WG525056-01 VBLK0526 BLANK STD 826	NA	1	1		05/26/15 12:48
8M404909	WG525056-02 20ug/L LCS STD 8260	NA	1	1	STD70658	05/26/15 13:17
8M404910	WG525056-03 20ug/L LCSDUP STD 8260	NA	1	1	STD70658	05/26/15 13:46
8M404911	L15051143-02 A 10X 826-TC	NA	17	10		05/26/15 14:16
8M404912	L15051143-04 A 10X 826-TC	NA	17	10		05/26/15 14:45
8M404913	L15051303-01 B 10X 826-LOW D1	<2	1	10		05/26/15 15:14
8M404914	L15051303-13 TB A 826-LOW	<2	1	1		05/26/15 15:43
8M404915	L15051329-08 TB A 826-SPE	<2	1	1		05/26/15 16:12
8M404916	L15051340-03 TB A 826-SPE	<2	1	1		05/26/15 16:42
8M404917	L15051329-05 RB A 826-SPE	<2	1	1		05/26/15 17:10
8M404918	L15051303-03 B 826-LOW	<2	1	1		05/26/15 17:38
8M404919	L15051303-09 A 826-LOW	<2	1	1		05/26/15 18:07
8M404920	L15051303-11 A 826-LOW	<2	1	1		05/26/15 18:35
8M404921	L15051329-01 A 826-SPE	<2	1	1		05/26/15 19:04
8M404922	L15051329-02 A 826-SPE	<2	1	1		05/26/15 19:33
8M404923	L15051329-03 A 826-SPE	<2	1	1		05/26/15 20:02
8M404924	L15051329-04 A 826-SPE	<2	1	1		05/26/15 20:31
8M404925	L15051329-06 A 826-SPE	<2	1	1		05/26/15 21:00
8M404926	L15051231-01 B 10X 826-LOW	<2	1	10		05/26/15 21:28
8M404927	L15051329-07 A 100X 826-SPE	<2	1	100		05/26/15 21:57
8M404928	L15051340-01 A 50X 826-SPE	<2	1	50		05/26/15 22:26
8M404929	L15051340-02 A 10X 826-SPE	<2	1	10		05/26/15 22:55
8M404930	CCV	NA	1	1		05/26/15 23:24
8M404931	RINSE	NA	1	1		05/26/15 23:53
8M404932	RINSE	NA	1	1		05/27/15 00:22
8M404933	RINSE	NA	1	1		05/27/15 00:51

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: May 28, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 052615
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53172

Internal Standard: STD70050 Surrogate Standard: STD70050
CCV: STD70656 LCS: STD70658 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG525056

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M404904				
	Tune failed, DNR.			
4				
File ID: 8M404907				
	Not needed. DNR.			
21	X	1	Surrogate standard failure	
File ID: 8M404924				
25	X	10	Analyzed too dilute	
File ID: 8M404928				
26	X	200	Over Calibration Range	TCE
File ID: 8M404929				

Approved: May 28, 2015

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 02-OCT-2014
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 63840
Analytical Workgroups: WG494714; WG494980

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
03-OCT-2014
Tiffany Bailey

Secondary Reviewer:
03-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-03-2014 13:21:54

Microbac Laboratories Inc.

Data Checklist

Date: 12-MAY-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 67921
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
13-MAY-2015
Tiffany Bailey

Secondary Reviewer:
14-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-14-2015 16:28:01

Microbac Laboratories Inc.

Data Checklist

Date: 23-MAY-2015
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 68178
Analytical Workgroups: WG524936

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
26-MAY-2015
Tiffany Bailey

Secondary Reviewer:
29-MAY-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-29-2015 08:51:25

Microbac Laboratories Inc.

Data Checklist

Date: 26-MAY-2015
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 68202
Analytical Workgroups: WG525056

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-MAY-2015
Tiffany Bailey

Secondary Reviewer:
28-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-28-2015 12:42:56

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG524936

Login Number: L15051231

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW11-051915	02	05/19/15					05/24/2015	4.6	14		05/24/15	4.6	14	
67WW09-051915	03	05/19/15					05/24/2015	4.6	14		05/24/15	4.6	14	
67WW13-051915	04	05/19/15					05/24/2015	4.7	14		05/24/15	4.7	14	
67WW01-051915	05	05/19/15					05/24/2015	4.7	14		05/24/15	4.7	14	
TRIP BLANK	06	05/19/15					05/23/2015	4.8	14		05/23/15	4.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4196780
Report generated 05/29/2015 13:56

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG525056

Login Number: L15051231

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-051915	01	05/19/15					05/26/2015	7.5	14		05/26/15	7.5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4196780
Report generated 05/29/2015 13:56

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15051231
Instrument Id: HPMS8
Workgroup (AAB#): WG524936

Method: 8260
CAL ID: HPMS8-12-MAY-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15051231-02	1.00	01	101	99.1	95.3	98.1
L15051231-03	1.00	01	98.2	103	90.8	97.5
L15051231-04	2.50	DL01	99.5	104	96.0	97.6
L15051231-05	2.50	DL01	98.8	101	93.5	98.7
L15051231-06	1.00	01	99.4	101	94.9	98.3
WG524936-01	1.00	01	95.9	99.4	94.8	98.3
WG524936-02	1.00	01	98.3	99.5	93.1	96.2
WG524936-03	1.00	01	94.6	99.5	92.5	96.8

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4196788
Report generated: 05/29/2015 13:56

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15051231
Instrument Id: HPMS8
Workgroup (AAB#): WG525056

Method: 8260
CAL ID: HPMS8-12-MAY-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15051231-01	10.0	DL01	105	101	94.9	94.3
WG525056-01	1.00	01	96.5	99.9	95.3	97.0
WG525056-02	1.00	01	93.1	102	88.8	96.9
WG525056-03	1.00	01	96.7	104	87.5	96.7

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4196788
Report generated: 05/29/2015 13:56

METHOD BLANK SUMMARY

Login Number: L15051231
Blank File ID: 8M404879
Prep Date: 05/23/15 17:53
Analyzed Date: 05/23/15 17:53
Analyst: FJB

Work Group: WG524936
Blank Sample ID: WG524936-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524936-02	8M404880	05/23/15 18:22	01
LCS2	WG524936-03	8M404881	05/23/15 18:50	01
TRIP BLANK	L15051231-06	8M404884	05/23/15 20:17	01
67WW11-051915	L15051231-02	8M404892	05/24/15 00:09	01
67WW09-051915	L15051231-03	8M404893	05/24/15 00:38	01
67WW13-051915	L15051231-04	8M404899	05/24/15 03:30	DL01
67WW01-051915	L15051231-05	8M404900	05/24/15 03:59	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4203787
Report generated 05/29/2015 13:56

METHOD BLANK SUMMARY

Login Number: L15051231
Blank File ID: 8M404908
Prep Date: 05/26/15 12:48
Analyzed Date: 05/26/15 12:48
Analyst: TMB

Work Group: WG525056
Blank Sample ID: WG525056-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525056-02	8M404909	05/26/15 13:17	01
LCS2	WG525056-03	8M404910	05/26/15 13:46	01
67WW08-051915	L15051231-01	8M404926	05/26/15 21:28	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4203787
Report generated 05/29/2015 13:56

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051231 Prep Date: 05/23/15 17:53 Sample ID: WG524936-01
Instrument ID: HPMS8 Run Date: 05/23/15 17:53 Prep Method: 5030B/5030C/503
File ID: 8M404879 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG524936 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-12-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4203788
29-MAY-2015 13:56

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15051231 Prep Date: 05/23/15 17:53 Sample ID: WG524936-01
Instrument ID: HPMS8 Run Date: 05/23/15 17:53 Prep Method: 5030B/5030C/503
File ID: 8M404879 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG524936 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-12-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	99.4	85 - 115	PASS
1,2-Dichloroethane-d4	95.9	70 - 120	PASS
Toluene-d8	98.3	85 - 120	PASS
4-Bromofluorobenzene	94.8	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4203788
29-MAY-2015 13:56

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051231 Prep Date: 05/26/15 12:48 Sample ID: WG525056-01
Instrument ID: HPMS8 Run Date: 05/26/15 12:48 Prep Method: 5030B/5030C/503
File ID: 8M404908 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG525056 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-12-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4203788
29-MAY-2015 13:56

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051231 Prep Date: 05/26/15 12:48 Sample ID: WG525056-01
Instrument ID: HPMS8 Run Date: 05/26/15 12:48 Prep Method: 5030B/5030C/503
File ID: 8M404908 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG525056 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-12-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.252	1	J
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	99.9	85 - 115	PASS
1,2-Dichloroethane-d4	96.5	70 - 120	PASS
Toluene-d8	97.0	85 - 120	PASS
4-Bromofluorobenzene	95.3	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4203788
29-MAY-2015 13:56

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051231 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG524936 Units: ug/L
QC Key: DOD4 Lot #: STD70658

Sample ID: WG524936-02 LCS File ID: 8M404880 Run Date: 05/23/2015 18:22
Sample ID: WG524936-03 LCS2 File ID: 8M404881 Run Date: 05/23/2015 18:50

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	18.5	92.3	20.0	18.0	90.2	2.30	80 - 130	30	
1,1,1-Trichloroethane	20.0	19.9	99.5	20.0	18.4	91.9	7.99	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.6	93.1	20.0	18.4	92.0	1.16	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.1	95.5	20.0	19.0	94.8	0.665	75 - 125	30	
1,1-Dichloroethane	20.0	19.3	96.3	20.0	18.1	90.3	6.52	70 - 135	30	
1,1-Dichloroethene	20.0	17.6	88.2	20.0	16.0	80.2	9.48	70 - 130	30	
1,1-Dichloropropene	20.0	18.9	94.6	20.0	17.6	88.0	7.24	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	18.6	93.1	20.0	18.2	90.9	2.40	55 - 140	30	
1,2,3-Trichloropropane	20.0	18.5	92.3	20.0	18.8	94.0	1.79	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	18.0	90.1	20.0	18.0	90.2	0.199	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	18.7	93.5	20.0	18.2	90.8	2.95	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.3	96.3	20.0	20.4	102	5.66	50 - 130	30	
1,2-Dibromoethane	20.0	19.3	96.5	20.0	19.3	96.3	0.240	80 - 120	30	
1,2-Dichlorobenzene	20.0	17.4	86.9	20.0	17.1	85.7	1.35	70 - 120	30	
1,2-Dichloroethane	20.0	20.1	100	20.0	19.1	95.4	5.15	70 - 130	30	
1,2-Dichloropropane	20.0	20.8	104	20.0	19.1	95.4	8.59	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	18.7	93.7	20.0	18.0	90.2	3.76	75 - 130	30	
1,3-Dichlorobenzene	20.0	17.0	85.0	20.0	16.5	82.3	3.26	75 - 125	30	
1,3-Dichloropropane	20.0	19.5	97.4	20.0	18.4	92.1	5.63	75 - 125	30	
1,4-Dichlorobenzene	20.0	18.0	90.0	20.0	17.6	87.8	2.47	75 - 125	30	
2,2-Dichloropropane	20.0	18.8	94.1	20.0	16.8	84.0	11.4	70 - 135	30	
2-Butanone	20.0	23.4	117	20.0	21.9	110	6.36	30 - 150	30	
2-Chlorotoluene	20.0	15.9	79.5	20.0	14.5	72.4	9.33	75 - 125	30	*
2-Hexanone	20.0	20.6	103	20.0	19.9	99.6	3.42	55 - 130	30	
4-Chlorotoluene	20.0	18.1	90.5	20.0	17.9	89.4	1.20	75 - 130	30	
4-Methyl-2-pentanone	20.0	24.7	124	20.0	21.7	109	13.0	60 - 135	30	
Acetone	20.0	23.1	116	20.0	24.0	120	3.70	40 - 140	30	
Benzene	20.0	20.9	105	20.0	19.5	97.6	6.85	80 - 120	30	
Bromobenzene	20.0	17.4	86.9	20.0	17.3	86.3	0.641	75 - 125	30	
Bromochloromethane	20.0	20.4	102	20.0	20.0	99.9	1.91	65 - 130	30	
Bromodichloromethane	20.0	21.1	106	20.0	20.0	100	5.27	75 - 120	30	
Bromoform	20.0	18.5	92.4	20.0	18.6	93.0	0.566	70 - 130	30	
Bromomethane	20.0	24.7	124	20.0	23.5	118	5.00	30 - 145	30	
Carbon disulfide	20.0	18.8	94.2	20.0	17.8	88.8	5.92	35 - 160	30	
Carbon tetrachloride	20.0	20.6	103	20.0	18.3	91.7	11.5	65 - 140	30	
Chlorobenzene	20.0	17.7	88.7	20.0	16.9	84.7	4.52	80 - 120	30	
Chloroethane	20.0	21.0	105	20.0	19.7	98.5	6.19	60 - 135	30	
Chloroform	20.0	20.0	99.9	20.0	19.1	95.4	4.60	65 - 135	30	
Chloromethane	20.0	20.4	102	20.0	18.8	93.8	8.30	40 - 125	30	
cis-1,2-Dichloroethene	20.0	19.8	99.2	20.0	18.9	94.7	4.57	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4196781
Report generated: 05/29/2015 13:56

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051231 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG524936 Units: ug/L
QC Key: DOD4 Lot #: STD70658

Sample ID: WG524936-02 LCS File ID: 8M404880 Run Date: 05/23/2015 18:22
Sample ID: WG524936-03 LCS2 File ID: 8M404881 Run Date: 05/23/2015 18:50

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.0	110	20.0	21.1	106	4.02	70 - 130	30	
Chlorodibromomethane	20.0	19.3	96.6	20.0	19.0	95.1	1.57	60 - 135	30	
Dibromomethane	20.0	20.5	102	20.0	20.7	103	1.03	75 - 125	30	
Dichlorodifluoromethane	20.0	23.9	119	20.0	21.2	106	12.0	30 - 155	30	
Ethylbenzene	20.0	17.0	85.1	20.0	16.4	82.2	3.50	75 - 125	30	
Hexachlorobutadiene	20.0	15.5	77.3	20.0	14.1	70.6	9.00	50 - 140	30	
Isopropylbenzene	20.0	18.1	90.6	20.0	17.1	85.5	5.89	75 - 125	30	
m-,p-Xylene	40.0	36.2	90.6	40.0	33.8	84.5	6.91	75 - 130	30	
Methylene chloride	20.0	20.4	102	20.0	20.1	101	1.45	55 - 140	30	
n-Butylbenzene	20.0	18.2	91.1	20.0	16.6	83.2	9.08	70 - 135	30	
n-Propylbenzene	20.0	17.0	85.0	20.0	15.8	79.2	7.00	70 - 130	30	
Naphthalene	20.0	21.1	106	20.0	20.7	104	2.03	55 - 140	30	
o-Xylene	20.0	17.1	85.5	20.0	16.1	80.7	5.84	80 - 120	30	
p-Isopropyltoluene	20.0	17.1	85.6	20.0	16.1	80.4	6.16	75 - 130	30	
sec-Butylbenzene	20.0	17.4	87.0	20.0	16.4	81.8	6.27	70 - 125	30	
Styrene	20.0	19.4	97.0	20.0	18.7	93.5	3.60	65 - 135	30	
tert-Butylbenzene	20.0	16.1	80.5	20.0	14.8	74.0	8.41	70 - 130	30	
Tetrachloroethene	20.0	17.5	87.6	20.0	15.6	78.0	11.7	45 - 150	30	
Toluene	20.0	18.7	93.3	20.0	18.0	89.8	3.81	75 - 120	30	
trans-1,2-Dichloroethene	20.0	18.8	93.9	20.0	17.1	85.7	9.16	60 - 140	30	
trans-1,3-Dichloropropene	20.0	18.3	91.5	20.0	17.7	88.4	3.51	55 - 140	30	
Trichloroethene	20.0	20.3	101	20.0	18.9	94.7	6.66	70 - 125	30	
Trichlorofluoromethane	20.0	19.5	97.5	20.0	17.1	85.5	13.1	60 - 145	30	
Vinyl chloride	20.0	23.1	116	20.0	19.9	99.7	14.8	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	98.3	94.6	70 - 120	PASS
Dibromofluoromethane	99.5	99.5	85 - 115	PASS
4-Bromofluorobenzene	93.1	92.5	75 - 120	PASS
Toluene-d8	96.2	96.8	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4196781
Report generated: 05/29/2015 13:56

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051231 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG525056 Units: ug/L
QC Key: DOD4 Lot #: STD70658

Sample ID: WG525056-02 LCS File ID: 8M404909 Run Date: 05/26/2015 13:17
Sample ID: WG525056-03 LCS2 File ID: 8M404910 Run Date: 05/26/2015 13:46

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	19.5	97.4	20.0	19.1	95.6	1.87	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.0	110	20.0	21.7	109	1.27	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.4	91.8	20.0	18.1	90.6	1.34	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.1	100	20.0	19.3	96.6	3.95	75 - 125	30	
1,1-Dichloroethane	20.0	20.0	100	20.0	20.5	103	2.28	70 - 135	30	
1,1-Dichloroethene	20.0	19.4	97.0	20.0	19.6	98.1	1.16	70 - 130	30	
1,1-Dichloropropene	20.0	20.9	105	20.0	21.0	105	0.598	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	18.7	93.6	20.0	19.0	95.0	1.50	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.2	96.0	20.0	18.2	91.1	5.26	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	18.0	89.9	20.0	18.7	93.6	4.08	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.0	94.9	20.0	19.2	96.0	1.19	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	18.8	94.0	20.0	18.3	91.5	2.63	50 - 130	30	
1,2-Dibromoethane	20.0	19.9	99.7	20.0	20.1	100	0.655	80 - 120	30	
1,2-Dichlorobenzene	20.0	17.9	89.4	20.0	17.8	88.8	0.679	70 - 120	30	
1,2-Dichloroethane	20.0	20.8	104	20.0	20.1	100	3.43	70 - 130	30	
1,2-Dichloropropane	20.0	21.2	106	20.0	21.0	105	0.819	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	19.2	96.1	20.0	19.4	97.2	1.21	75 - 130	30	
1,3-Dichlorobenzene	20.0	17.4	86.8	20.0	17.1	85.3	1.68	75 - 125	30	
1,3-Dichloropropane	20.0	19.7	98.7	20.0	19.6	97.8	0.886	75 - 125	30	
1,4-Dichlorobenzene	20.0	18.4	92.0	20.0	18.5	92.3	0.295	75 - 125	30	
2,2-Dichloropropane	20.0	19.9	99.6	20.0	20.8	104	4.51	70 - 135	30	
2-Butanone	20.0	23.1	115	20.0	22.0	110	4.98	30 - 150	30	
2-Chlorotoluene	20.0	16.4	82.0	20.0	16.5	82.3	0.264	75 - 125	30	
2-Hexanone	20.0	19.1	95.3	20.0	19.9	99.5	4.36	55 - 130	30	
4-Chlorotoluene	20.0	17.7	88.6	20.0	18.0	90.2	1.80	75 - 130	30	
4-Methyl-2-pentanone	20.0	23.4	117	20.0	23.1	116	1.22	60 - 135	30	
Acetone	20.0	23.1	115	20.0	24.0	120	4.01	40 - 140	30	
Benzene	20.0	22.1	110	20.0	21.8	109	1.42	80 - 120	30	
Bromobenzene	20.0	17.7	88.5	20.0	17.2	85.8	3.17	75 - 125	30	
Bromochloromethane	20.0	21.2	106	20.0	20.6	103	2.79	65 - 130	30	
Bromodichloromethane	20.0	21.2	106	20.0	21.3	106	0.434	75 - 120	30	
Bromoform	20.0	19.9	99.4	20.0	18.6	93.1	6.51	70 - 130	30	
Bromomethane	20.0	23.1	116	20.0	24.2	121	4.63	30 - 145	30	
Carbon disulfide	20.0	19.2	96.0	20.0	19.1	95.7	0.283	35 - 160	30	
Carbon tetrachloride	20.0	21.7	108	20.0	22.1	111	2.05	65 - 140	30	
Chlorobenzene	20.0	18.7	93.5	20.0	18.5	92.3	1.35	80 - 120	30	
Chloroethane	20.0	22.9	114	20.0	22.9	115	0.403	60 - 135	30	
Chloroform	20.0	21.2	106	20.0	21.5	107	1.26	65 - 135	30	
Chloromethane	20.0	21.3	106	20.0	21.5	108	1.05	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.9	104	20.0	20.6	103	1.48	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4196781
Report generated: 05/29/2015 13:56

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051231 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG525056 Units: ug/L
QC Key: DOD4 Lot #: STD70658

Sample ID: WG525056-02 LCS File ID: 8M404909 Run Date: 05/26/2015 13:17
Sample ID: WG525056-03 LCS2 File ID: 8M404910 Run Date: 05/26/2015 13:46

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	23.2	116	20.0	23.1	115	0.282	70 - 130	30	
Chlorodibromomethane	20.0	20.0	100	20.0	18.8	93.8	6.36	60 - 135	30	
Dibromomethane	20.0	21.5	108	20.0	21.9	109	1.47	75 - 125	30	
Dichlorodifluoromethane	20.0	24.3	121	20.0	26.7	134	9.42	30 - 155	30	
Ethylbenzene	20.0	18.5	92.7	20.0	19.0	94.8	2.26	75 - 125	30	
Hexachlorobutadiene	20.0	15.6	77.9	20.0	16.5	82.5	5.78	50 - 140	30	
Isopropylbenzene	20.0	19.6	97.9	20.0	19.3	96.7	1.17	75 - 125	30	
m-,p-Xylene	40.0	39.2	98.1	40.0	39.1	97.7	0.439	75 - 130	30	
Methylene chloride	20.0	22.1	111	20.0	21.5	108	2.67	55 - 140	30	
n-Butylbenzene	20.0	18.4	92.0	20.0	18.8	93.8	1.93	70 - 135	30	
n-Propylbenzene	20.0	17.0	84.9	20.0	17.5	87.4	2.89	70 - 130	30	
Naphthalene	20.0	21.3	106	20.0	20.9	104	1.90	55 - 140	30	
o-Xylene	20.0	18.4	91.9	20.0	18.3	91.6	0.333	80 - 120	30	
p-Isopropyltoluene	20.0	17.8	89.0	20.0	17.7	88.7	0.310	75 - 130	30	
sec-Butylbenzene	20.0	18.0	90.2	20.0	18.4	92.1	2.09	70 - 125	30	
Styrene	20.0	20.7	104	20.0	20.4	102	1.48	65 - 135	30	
tert-Butylbenzene	20.0	16.6	82.9	20.0	16.5	82.5	0.431	70 - 130	30	
Tetrachloroethene	20.0	19.5	97.4	20.0	19.2	95.9	1.51	45 - 150	30	
Toluene	20.0	19.9	99.5	20.0	19.8	98.9	0.588	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.6	103	20.0	19.7	98.6	4.40	60 - 140	30	
trans-1,3-Dichloropropene	20.0	19.2	96.0	20.0	18.8	93.9	2.30	55 - 140	30	
Trichloroethene	20.0	22.2	111	20.0	23.1	115	4.03	70 - 125	30	
Trichlorofluoromethane	20.0	20.5	102	20.0	21.4	107	4.33	60 - 145	30	
Vinyl chloride	20.0	23.6	118	20.0	23.2	116	1.40	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	93.1	96.7	70 - 120	PASS
Dibromofluoromethane	102	104	85 - 115	PASS
4-Bromofluorobenzene	88.8	87.5	75 - 120	PASS
Toluene-d8	96.9	96.7	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4196781
Report generated: 05/29/2015 13:56

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051231
Instrument: HPMS8
Analyst: TMB
Workgroup: WG494714

Tune ID: WG494714-01
Run Date: 10/02/2014
Run Time: 11:58
File ID: 8M400357
Cal ID: HPMS8 - 02-OCT-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	5158	PASS
75.0	95.0	30.0	60.0	51.7	12312	PASS
95.0	95.0	100	100	100	23818	PASS
96.0	95.0	5.00	9.00	7.56	1800	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	69.7	16590	PASS
175	174	5.00	9.00	7.78	1290	PASS
176	174	95.0	101	97.3	16145	PASS
177	176	5.00	9.00	6.34	1023	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG494714-02	STD	01	10/02/2014 12:24	
WG494714-03	STD	01	10/02/2014 12:53	
WG494714-04	STD	01	10/02/2014 13:22	
WG494714-05	STD	01	10/02/2014 13:51	
WG494714-06	STD	01	10/02/2014 14:19	
WG494714-07	STD	01	10/02/2014 14:48	
WG494714-08	STD	01	10/02/2014 15:16	
WG494714-09	STD	01	10/02/2014 15:45	
WG494714-10	SSCV	01	10/02/2014 16:47	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4196783
Report generated 05/29/2015 13:56

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051231
Instrument: HPMS8
Analyst: TMB
Workgroup: WG523161

Tune ID: WG523161-01
Run Date: 05/12/2015
Run Time: 15:55
File ID: 8M404577
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	26.3	7551	PASS
75.0	95.0	30.0	60.0	59.4	17014	PASS
95.0	95.0	100	100	100	28666	PASS
96.0	95.0	5.00	9.00	6.91	1981	PASS
173	174	0	2.00	0.480	119	PASS
174	95.0	50.0	100	86.5	24808	PASS
175	174	5.00	9.00	8.19	2031	PASS
176	174	95.0	101	95.4	23666	PASS
177	176	5.00	9.00	7.24	1714	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG523161-02	STD	01	05/12/2015 16:50	
WG523161-03	STD	01	05/12/2015 17:19	
WG523161-04	STD	01	05/12/2015 17:48	
WG523161-05	STD	01	05/12/2015 18:16	
WG523161-06	STD	01	05/12/2015 18:45	
WG523161-07	STD	01	05/12/2015 19:13	
WG523161-08	STD-CCV	01	05/12/2015 19:42	
WG523161-09	STD	01	05/12/2015 20:11	
WG523161-10	STD	01	05/12/2015 20:40	
WG523161-11	STD	01	05/12/2015 21:08	
WG523161-12	SSCV	01	05/12/2015 22:34	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4196783
Report generated 05/29/2015 13:56

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051231
Instrument: HPMS8
Analyst: FJB
Workgroup: WG524935

Tune ID: WG524935-01
Run Date: 05/23/2015
Run Time: 16:34
File ID: 8M404876
Cal ID: HPMS8 - 12-MAY-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	26.6	11234	PASS
75.0	95.0	30.0	60.0	52.1	22062	PASS
95.0	95.0	100	100	100	42312	PASS
96.0	95.0	5.00	9.00	7.66	3241	PASS
173	174	0	2.00	0.873	335	PASS
174	95.0	50.0	100	90.7	38394	PASS
175	174	5.00	9.00	6.47	2485	PASS
176	174	95.0	101	98.0	37610	PASS
177	176	5.00	9.00	6.48	2436	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG524935-02	CCV	01	05/23/2015 16:57	
WG524936-01	BLANK	01	05/23/2015 17:53	
WG524936-02	LCS	01	05/23/2015 18:22	
WG524936-03	LCS2	01	05/23/2015 18:50	
L15051231-06	TRIP BLANK	01	05/23/2015 20:17	
L15051231-02	67WW11-051915	01	05/24/2015 00:09	
L15051231-03	67WW09-051915	01	05/24/2015 00:38	
L15051231-04	67WW13-051915	DL01	05/24/2015 03:30	
L15051231-05	67WW01-051915	DL01	05/24/2015 03:59	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4196783
Report generated 05/29/2015 13:56

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051231
Instrument: HPMS8
Analyst: TMB
Workgroup: WG525055

Tune ID: WG525055-01
Run Date: 05/26/2015
Run Time: 11:26
File ID: 8M404905
Cal ID: HPMS8 - 12-MAY-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	29.4	10466	PASS
75.0	95.0	30.0	60.0	56.4	20089	PASS
95.0	95.0	100	100	100	35637	PASS
96.0	95.0	5.00	9.00	8.35	2974	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	80.5	28683	PASS
175	174	5.00	9.00	8.16	2341	PASS
176	174	95.0	101	98.9	28379	PASS
177	176	5.00	9.00	6.44	1829	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG525055-02	CCV	01	05/26/2015 11:50	
WG525056-01	BLANK	01	05/26/2015 12:48	
WG525056-02	LCS	01	05/26/2015 13:17	
WG525056-03	LCS2	01	05/26/2015 13:46	
L15051231-01	67WW08-051915	DL01	05/26/2015 21:28	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4196783
Report generated 05/29/2015 13:56

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Calibration: Fri Oct 03 12:32:07 2014
Curve: WG494714
Calibration Files

	Compound	5 8M400358.D	20 8M400359.D	50 8M400360.D	100 8M400361.D	200 8M400362.D	300 8M400363.D	400 8M400364.D	500 8M400365.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.015	0.015	0.015	0.016	0.017	0.016	0.015	0.016	0.016	4.015		
T	3-Chloro-1-propene	0.416	0.403	0.416	0.438	0.434	0.423	0.407	0.394	0.416	3.619		
T	2-Chloro-1,3-butadiene	0.467	0.479	0.496	0.520	0.522	0.508	0.485	0.462	0.493	4.640		
T	Ethyl Acetate	0.104	0.115	0.123	0.133	0.135	0.133	0.126	0.130	0.125	8.569		
T	Methacrylonitrile	0.062	0.065	0.072	0.077	0.080	0.080	0.077	0.081	0.074	9.397		
T	Isobutyl Alcohol			0.004	0.005	0.005	0.005	0.005	0.005	0.005	9.693		
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.003	21.690	0.995	
T	Methyl methacrylate	0.115	0.123	0.137	0.147	0.154	0.151	0.145	0.150	0.140	10.193		
T	2-Nitropropane	0.032	0.035	0.039	0.043	0.047	0.046	0.046	0.048	0.042	14.057		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											
T	Cyclohexanone			0.039	0.043	0.037	0.043	0.036	0.038	0.039	7.787		

Fri Oct 03 12:35:36 2014

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Calibration: Wed May 13 06:45:06 2015
Curve: WG523161
Calibration Files

	Compound	0.3 8M404579.D	0.4 8M404580.D	1 8M404581.D	2 8M404582.D	5 8M404583.D	20 8M404584.D	50 8M404585.D	100 8M404586.D	200 8M404587.D	300 8M404588.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.377	0.342	0.343	0.422	0.413	0.414	0.402	0.386	0.387	8.120		
P	Chloromethane			0.927	0.855	0.806	0.813	0.772	0.750	0.681	0.585	0.774	13.567		
C	Vinyl Chloride		0.899	0.773	0.766	0.735	0.785	0.754	0.711	0.621	0.515	0.729	14.853		
T	1,3-Butadiene				0.699	0.708	0.786	0.774	0.545	0.428	0.368	0.615	27.438		1.005
T	Bromomethane			0.093	0.095	0.114	0.140	0.167	0.187	0.213	0.220	0.154	33.064		1.000
T	Chloroethane			0.191	0.195	0.184	0.199	0.197	0.205	0.210	0.206	0.198	4.214		
T	Trichlorofluoromethane		0.485	0.424	0.436	0.436	0.458	0.456	0.468	0.474	0.482	0.458	4.832		
T	Diethyl ether			0.175	0.173	0.175	0.177	0.163	0.175		0.189	0.175	4.331		
T	Isoprene					0.291	0.328	0.345	0.349	0.355	0.368	0.339	7.996		
T	Acrolein				0.005	0.004	0.005	0.006	0.009		0.016	0.007	61.765		0.992
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.248	0.251	0.246	0.262	0.256	0.268	0.269	0.268	0.258	3.627		
T	Acetone					0.035	0.041	0.034	0.033	0.037	0.033	0.036	9.052		
C	1,1-Dichloroethene		0.463	0.416	0.442	0.398	0.434	0.442	0.451	0.456	0.452	0.439	4.731		
T	Tert-Butyl Alcohol				0.009	0.010	0.010	0.009	0.010		0.010	0.010	5.597		
T	Dimethyl Sulfide				0.247	0.222	0.255	0.260	0.261	0.274	0.274	0.256	6.964		
T	Iodomethane			0.077	0.088	0.088	0.132	0.173	0.188	0.198	0.189	0.142	36.465		0.999
T	Methyl acetate				0.120	0.134	0.127	0.123	0.123	0.133	0.131	0.127	4.336		
T	Methylene Chloride			0.232	0.249	0.239	0.243	0.249	0.256	0.267	0.268	0.250	5.171		
T	Carbon Disulfide			0.790	0.760	0.723	0.839	0.853	0.855	0.851	0.795	0.808	6.082		
T	Acrylonitrile				0.051	0.053	0.055	0.057	0.057		0.069	0.057	11.396		
T	Methyl Tert Butyl Ether			0.459	0.495	0.467	0.481	0.475	0.478	0.512	0.492	0.482	3.510		
T	trans-1,2-Dichloroethene		0.471	0.390	0.413	0.388	0.406	0.416	0.426	0.439	0.427	0.419	6.106		
T	n-Hexane					0.373	0.430	0.426	0.433	0.442	0.440	0.424	6.103		
T	Diisopropyl ether			0.925	0.939	0.970	0.966	0.910	0.930		0.865	0.929	3.857		
T	Vinyl Acetate					0.306	0.314	0.317	0.295	0.308	0.299	0.307	2.774		
P	1,1-Dichloroethane		0.473	0.490	0.518	0.483	0.515	0.517	0.524	0.527	0.509	0.506	3.812		
T	Ethyl-Tert-Butyl ether			0.710	0.717	0.754	0.757	0.708	0.736		0.721	0.729	2.801		
T	2-Butanone					0.052	0.063	0.057	0.058	0.061	0.057	0.058	6.522		
T	Propionitrile			0.018	0.017	0.019	0.019	0.017	0.019		0.020	0.019	5.338		
T	2,2-Dichloropropane		0.492	0.405	0.421	0.369	0.406	0.409	0.415	0.423	0.419	0.418	7.676		
T	cis-1,2-Dichloroethene		0.322	0.282	0.278	0.252	0.284	0.286	0.290	0.300	0.299	0.288	6.589		
C	Chloroform	0.454	0.443	0.488	0.461	0.460	0.482	0.472	0.483	0.490	0.470	0.470	3.300		
T	1-Bromopropane			0.026	0.049	0.046	0.049	0.050	0.051	0.053	0.054	0.047	18.483	0.999	
T	Bromochloromethane		0.166	0.153	0.136	0.130	0.143	0.147	0.147	0.152	0.148	0.147	7.112		
T	Tetrahydrofuran			0.039	0.038	0.039	0.041	0.037	0.038		0.042	0.039	4.342		
S	Dibromofluoromethane						0.245	0.245	0.245	0.252	0.252	0.248	1.641		
T	1,1,1-Trichloroethane		0.386	0.384	0.407	0.393	0.429	0.439	0.455	0.472	0.477	0.427	8.450		
T	Cyclohexane			0.452	0.505	0.452	0.520	0.520	0.544	0.568	0.578	0.517	9.145		
T	1,1-Dichloropropene			0.379	0.360	0.347	0.369	0.371	0.378	0.385	0.384	0.371	3.475		
T	Tert-Amyl-Methyl ether			0.517	0.511	0.548	0.549	0.516	0.540		0.564	0.535	3.832		
T	Carbon Tetrachloride		0.376	0.35	0.374	0.344	0.386	0.395	0.416	0.42	0.432	0.388	7.9058		
S	1,2-Dichloroethane-d4						0.235	0.234	0.226	0.235	0.235	0.2329	1.58451		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.36	0.324	0.315	0.334	0.334	0.33	0.338	0.354	0.345	0.3372	4.22305		
T	Benzene	1.049	0.999	1.049	1.062	0.995	1.029	1.019	1.016	0.957	0.831	1.0006	6.72085		
T	Trichloroethene		0.253	0.251	0.235	0.242	0.273	0.268	0.276	0.291	0.293	0.2647	7.84867		
T	Methylcyclohexane					0.378	0.424	0.431	0.435	0.45	0.459	0.4296	6.55883		
C	1,2-Dichloropropane		0.285	0.284	0.28	0.254	0.278	0.277	0.279	0.292	0.294	0.2803	4.12451		
T	Bromodichloromethane		0.339	0.348	0.324	0.31	0.34	0.348	0.356	0.374	0.367	0.345	5.77994		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	17.6544	0.995	
T	Dibromomethane		0.147	0.106	0.134	0.123	0.133	0.13	0.132	0.141	0.142	0.132	9.16014		
T	2-Chloroethyl Vinyl Ether					0.092	0.063	0.063	0.063	0.069	0.068	0.0698	16.4535	0.997	
T	4-Methyl-2-Pentanone					0.041	0.048	0.048	0.049	0.053	0.051	0.0482	8.53113		
T	cis-1,3-Dichloropropene		0.405	0.323	0.335	0.358	0.388	0.39	0.393	0.409	0.395	0.3772	8.2344		

T	Dimethyl Disulfide					0.151	0.179	0.196	0.211	0.236	0.246	0.2031	17.4457	0.996
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8						1.158	1.204	1.183	1.155	1.132	1.1666	2.3719	
C	Toluene		1.559	1.545	1.585	1.513	1.564	1.565	1.539	1.342	1.133	1.4829	10.1102	
T	Ethyl Methacrylate			0.194	0.236	0.242	0.279	0.287	0.277	0.297	0.299	0.2638	13.8744	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.407	0.395	0.446	0.448	0.46	0.457	0.473	0.469	0.4445	6.38368	
T	1,1,2-Trichloroethane		0.229	0.224	0.213	0.22	0.236	0.233	0.233	0.239	0.246	0.2304	4.41199	
T	2-Hexanone					0.054	0.066	0.067	0.062	0.068	0.065	0.0634	8.02299	
T	1,3-Dichloropropane		0.375	0.385	0.434	0.402	0.411	0.407	0.402	0.41	0.407	0.4039	4.14111	
T	Tetrachloroethene		0.262	0.324	0.305	0.265	0.304	0.316	0.331	0.343	0.365	0.313	10.7766	
T	Dibromochloromethane		0.277	0.288	0.286	0.274	0.3	0.313	0.327	0.342	0.352	0.3066	9.30077	
T	1,2-Dibromoethane		0.197	0.183	0.211	0.217	0.227	0.23	0.23	0.242	0.243	0.2199	9.12529	
T	1-Chlorohexane		0.532	0.476	0.473	0.473	0.511	0.512	0.521	0.527	0.54	0.5072	5.23688	
P	Chlorobenzene		0.957	0.977	1.015	0.968	0.99	1.028	1.06	1.055	0.957	1.0009	4.02311	
T	1,1,1,2-Tetrachloroethane		0.34	0.306	0.325	0.323	0.343	0.366	0.404	0.465		0.3593	14.5906	
C	Ethylbenzene		0.535	0.556	0.529	0.546	0.55	0.595	0.64	0.711	0.733	0.5995	12.9604	
T	m-,p-Xylene		0.721	0.649	0.68	0.664	0.681	0.723	0.743	0.676	0.566	0.678	7.68979	
T	o-Xylene			0.602	0.621	0.637	0.667	0.678	0.701	0.723	0.73	0.67	7.0386	
T	Styrene		0.969	1.046	1.021	1.015	1.106	1.145	1.15	1.104	0.996	1.0613	6.27884	
P	Bromoform			0.106	0.138	0.145	0.163	0.171	0.18	0.199	0.209	0.1638	20.5568	0.995
T	Isopropylbenzene		1.881	1.631	1.677	1.671	1.736	1.756	1.725	1.46	1.212	1.6386	11.9341	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.491	0.493	0.49	0.461	0.463	0.464	0.463	0.483	0.467	0.475	2.92575	
S	p-Bromofluorobenzene						0.839	0.85	0.836	0.857	0.87	0.8505	1.6345	
T	1,2,3-Trichloropropane			0.091	0.152	0.125	0.133	0.127	0.129	0.138	0.134	0.1287	13.5025	
T	trans-1,4-Dichloro-2-Butene			0.152	0.135	0.147	0.156	0.169	0.154	0.186	0.163	0.1577	9.69396	
T	n-Propylbenzene		4.239	3.867	3.923	3.631	3.953	3.946	3.76	2.942		3.7826	10.1008	
T	Bromobenzene	0.878	0.687	0.721	0.666	0.693	0.747	0.743	0.773	0.803	0.8	0.7512	8.60544	
T	1,3,5-Trimethylbenzene		2.655	2.667	2.65	2.513	2.744	2.797	2.805	2.461	2.001	2.5881	9.61996	
T	2-Chlorotoluene		3.171	2.749	2.18	2.328	2.61	2.64	2.387	2.358		2.5528	12.2648	
T	4-Chlorotoluene		2.141	1.856	2.314	2.269	2.064	2.119	2.321	1.851	1.442	2.0419	13.9758	
T	a-Methylstyrene					1.27	1.457	1.528	1.558	1.57	1.46	1.4739	7.51384	
T	tert-Butylbenzene			0.589	0.508	0.516	0.551	0.566	0.587	0.626	0.661	0.5754	9.07804	
T	1,2,4-Trimethylbenzene		2.906	2.617	2.745	2.633	2.823	2.876	2.845	2.485	2.018	2.6608	10.4646	
T	sec-Butylbenzene			3.477	3.386	3.37	3.532	3.531	3.45	2.821	2.248	3.2269	14.184	
T	p-Isopropyltoluene			2.794	2.847	2.733	2.986	3	2.97	2.527	2.031	2.7358	11.9085	
T	1,3-Dichlorobenzene		1.602	1.477	1.544	1.384	1.538	1.567	1.605	1.574	1.411	1.5224	5.31773	
T	1,4-Dichlorobenzene	1.844	1.572	1.516	1.485	1.469	1.51	1.553	1.578	1.55	1.378	1.5456	7.79548	
T	n-Butylbenzene			2.729	2.794	2.736	2.906	2.923	2.888	2.449	1.956	2.6725	12.2433	
T	1,2-Dichlorobenzene	1.364	1.197	1.323	1.355	1.229	1.332	1.367	1.376	1.389	1.279	1.3211	4.95077	
T	1,2-Dibromo-3-Chloropropane				0.052	0.078	0.076	0.077	0.078	0.086	0.083	0.0758	14.5402	
T	1,2,4-Trichlorobenzene		1.028	0.83	0.936	0.907	0.982	1.025	1.059	1.127	1.064	0.9952	9.18602	
T	Hexachlorobutadiene		0.52	0.429	0.459	0.493	0.494	0.508	0.56	0.595	0.621	0.5199	11.9722	
T	Naphthalene		1.182	1.213	1.397	1.288	1.379	1.398	1.428	1.446	1.282	1.3347	7.21249	
T	1,2,3-Trichlorobenzene	0.901	0.732	0.762	0.836	0.778	0.829	0.859	0.89	0.947	0.9	0.8433	8.22754	

Wed May 13 07:00:21 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051231 Run Date: 05/12/2015 Sample ID: WG523161-12
Instrument ID: HPMS8 Run Time: 22:34 Method: 8260B
File ID: 8M404591 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG523161 Cal ID: HPMS8 - 12-MAY-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.2	ug/L	0.463	1.60	20	
1,1-Dichloroethene	CCC	50.0	46.8	ug/L	0.411	6.50	20	
1,2-Dichloropropane	CCC	50.0	48.6	ug/L	0.273	2.80	20	
Ethylbenzene	CCC	50.0	48.7	ug/L	0.584	2.60	20	
Toluene	CCC	50.0	50.9	ug/L	1.51	1.80	20	
Vinyl Chloride	CCC	50.0	48.0	ug/L	0.700	4.00	20	
Bromoform	SPCC	50.0	45.3	ug/L	0.177	9.30	20	
Chlorobenzene	SPCC	50.0	47.2	ug/L	0.944	5.70	20	
Chloromethane	SPCC	50.0	50.1	ug/L	0.775	0.200	20	
1,1-Dichloroethane	SPCC	50.0	48.8	ug/L	0.494	2.40	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.8	ug/L	0.454	4.50	20	
Acetone		50.0	56.9	ug/L	0.0406	13.7	20	
Benzene		50.0	50.3	ug/L	1.01	0.600	20	
Bromobenzene		50.0	48.1	ug/L	0.722	3.90	20	
Bromochloromethane		50.0	48.1	ug/L	0.141	3.90	20	
Bromodichloromethane		50.0	48.6	ug/L	0.335	2.90	20	
Bromomethane		50.0	49.4	ug/L	0.171	1.20	20	
2-Butanone		50.0	53.3	ug/L	0.0620	6.50	20	
n-Butylbenzene		50.0	51.8	ug/L	2.77	3.60	20	
sec-Butylbenzene		50.0	48.9	ug/L	3.16	2.20	20	
tert-Butylbenzene		50.0	45.4	ug/L	0.522	9.20	20	
Carbon Disulfide		50.0	47.0	ug/L	0.761	5.90	20	
Carbon Tetrachloride		50.0	49.2	ug/L	0.382	1.60	20	
Dibromochloromethane		50.0	49.1	ug/L	0.301	1.80	20	
Chloroethane		50.0	55.5	ug/L	0.220	10.9	20	
2-Chlorotoluene		50.0	40.9	ug/L	2.09	18.2	20	
4-Chlorotoluene		50.0	53.3	ug/L	2.18	6.70	20	
1,2-Dibromo-3-Chloropropane		50.0	52.6	ug/L	0.0797	5.20	20	
1,2-Dibromoethane		50.0	50.9	ug/L	0.224	1.70	20	
Dibromomethane		50.0	48.0	ug/L	0.127	3.90	20	
1,2-Dichlorobenzene		50.0	46.2	ug/L	1.22	7.50	20	
1,3-Dichlorobenzene		50.0	45.6	ug/L	1.39	8.80	20	
1,4-Dichlorobenzene		50.0	48.7	ug/L	1.51	2.60	20	
Dichlorodifluoromethane		50.0	56.2	ug/L	0.435	12.4	20	
1,2-Dichloroethane		50.0	48.7	ug/L	0.328	2.70	20	
cis-1,2-Dichloroethene		50.0	48.5	ug/L	0.280	2.90	20	
trans-1,2-Dichloroethene		50.0	49.8	ug/L	0.418	0.500	20	
1,3-Dichloropropane		50.0	50.8	ug/L	0.411	1.60	20	
2,2-Dichloropropane		50.0	45.8	ug/L	0.383	8.50	20	
cis-1,3-Dichloropropene		50.0	52.5	ug/L	0.396	5.00	20	
trans-1,3-Dichloropropene		50.0	49.2	ug/L	0.437	1.70	20	
1,1-Dichloropropene		50.0	47.8	ug/L	0.355	4.30	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4196782
Report generated 05/29/2015 13:56

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051231 Run Date: 05/12/2015 Sample ID: WG523161-12
Instrument ID: HPMS8 Run Time: 22:34 Method: 8260B
File ID: 8M404591 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG523161 Cal ID: HPMS8 - 12-MAY-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	54.8	ug/L	0.0695	9.50	20	
Hexachlorobutadiene		50.0	50.4	ug/L	0.524	0.800	20	
Isopropylbenzene		50.0	47.9	ug/L	1.57	4.20	20	
p-Isopropyltoluene		50.0	48.0	ug/L	2.63	4.00	20	
4-Methyl-2-Pentanone		50.0	54.4	ug/L	0.0524	8.80	20	
Methylene Chloride		50.0	50.3	ug/L	0.252	0.600	20	
Naphthalene		50.0	51.5	ug/L	1.37	3.00	20	
n-Propylbenzene		50.0	46.3	ug/L	3.51	7.30	20	
Styrene		50.0	52.5	ug/L	1.11	5.00	20	
1,1,1,2-Tetrachloroethane		50.0	50.2	ug/L	0.361	0.400	20	
Tetrachloroethene		50.0	49.0	ug/L	0.307	2.00	20	
1,2,3-Trichlorobenzene		50.0	49.7	ug/L	0.838	0.600	20	
1,2,4-Trichlorobenzene		50.0	49.7	ug/L	0.989	0.600	20	
1,1,1-Trichloroethane		50.0	50.3	ug/L	0.430	0.600	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.226	2.00	20	
Trichloroethene		50.0	49.9	ug/L	0.264	0.100	20	
Trichlorofluoromethane		50.0	48.8	ug/L	0.447	2.50	20	
1,2,3-Trichloropropane		50.0	51.6	ug/L	0.133	3.20	20	
1,2,4-Trimethylbenzene		50.0	52.5	ug/L	2.79	5.00	20	
1,3,5-Trimethylbenzene		50.0	52.9	ug/L	2.74	5.70	20	
o-Xylene		50.0	46.8	ug/L	0.627	6.40	20	
m-,p-Xylene		100	99.5	ug/L	0.674	0.500	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4196782
Report generated 05/29/2015 13:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051231 Run Date: 05/23/2015 Sample ID: WG524935-02
Instrument ID: HPMS8 Run Time: 16:57 Method: 8260B
File ID: 8M404877 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG524936 Cal ID: HPMS8 - 12-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.0	ug/L	0.489	4.06	20	
1,1-Dichloroethene	CCC	50.0	51.6	ug/L	0.453	3.10	20	
1,2-Dichloropropane	CCC	50.0	50.8	ug/L	0.285	1.51	20	
Ethylbenzene	CCC	50.0	46.4	ug/L	0.557	7.17	20	
Toluene	CCC	50.0	48.8	ug/L	1.45	2.31	20	
Vinyl Chloride	CCC	50.0	58.6	ug/L	0.854	17.2	20	
Bromoform	SPCC	50.0	46.1	ug/L	0.180	7.73	20	
Chlorobenzene	SPCC	50.0	48.4	ug/L	0.968	3.27	20	
Chloromethane	SPCC	50.0	53.0	ug/L	0.821	6.09	20	
1,1-Dichloroethane	SPCC	50.0	51.8	ug/L	0.525	3.67	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	42.8	ug/L	0.407	14.4	20	
Xylenes		150	149	ug/L	0.667	0.571	20	
Acetone		50.0	56.0	ug/L	0.0400	12.0	20	
Benzene		50.0	53.6	ug/L	1.07	7.13	20	
Bromobenzene		50.0	46.0	ug/L	0.691	8.00	20	
Bromochloromethane		50.0	51.0	ug/L	0.150	2.00	20	
Bromodichloromethane		50.0	53.9	ug/L	0.372	7.83	20	
Bromomethane		50.0	61.8	ug/L	0.217	23.5	20	*
2-Butanone		50.0	50.7	ug/L	0.0590	1.39	20	
n-Butylbenzene		50.0	49.8	ug/L	2.66	0.423	20	
sec-Butylbenzene		50.0	50.4	ug/L	3.25	0.744	20	
tert-Butylbenzene		50.0	45.5	ug/L	0.524	8.92	20	
Carbon Disulfide		50.0	56.8	ug/L	0.918	13.6	20	
Carbon Tetrachloride		50.0	55.9	ug/L	0.434	11.7	20	
Dibromochloromethane		50.0	49.8	ug/L	0.305	0.471	20	
Chloroethane		50.0	52.2	ug/L	0.207	4.39	20	
2-Chlorotoluene		50.0	44.1	ug/L	2.25	11.8	20	
4-Chlorotoluene		50.0	48.7	ug/L	1.99	2.67	20	
1,2-Dibromo-3-Chloropropane		50.0	49.3	ug/L	0.0747	1.48	20	
1,2-Dibromoethane		50.0	48.9	ug/L	0.215	2.13	20	
Dibromomethane		50.0	51.4	ug/L	0.136	2.82	20	
1,2-Dichlorobenzene		50.0	48.6	ug/L	1.28	2.86	20	
1,3-Dichlorobenzene		50.0	47.7	ug/L	1.45	4.62	20	
1,4-Dichlorobenzene		50.0	47.4	ug/L	1.46	5.24	20	
Dichlorodifluoromethane		50.0	56.6	ug/L	0.438	13.1	20	
1,2-Dichloroethane		50.0	48.5	ug/L	0.327	2.98	20	
cis-1,2-Dichloroethene		50.0	50.0	ug/L	0.288	0.0118	20	
trans-1,2-Dichloroethene		50.0	49.3	ug/L	0.414	1.37	20	
1,3-Dichloropropane		50.0	46.3	ug/L	0.374	7.36	20	
2,2-Dichloropropane		50.0	50.4	ug/L	0.421	0.778	20	
cis-1,3-Dichloropropene		50.0	52.5	ug/L	0.396	4.94	20	
trans-1,3-Dichloropropene		50.0	47.1	ug/L	0.419	5.70	20	

CCV - Modified 03/05/2008
PDF File ID: 4196785
Report generated 05/29/2015 13:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051231 Run Date: 05/23/2015 Sample ID: WG524935-02
Instrument ID: HPMS8 Run Time: 16:57 Method: 8260B
File ID: 8M404877 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG524936 Cal ID: HPMS8 - 12-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.6	ug/L	0.383	3.12	20	
2-Hexanone		50.0	44.4	ug/L	0.0563	11.2	20	
Hexachlorobutadiene		50.0	41.4	ug/L	0.431	17.1	20	
Isopropylbenzene		50.0	51.7	ug/L	1.70	3.49	20	
p-Isopropyltoluene		50.0	50.2	ug/L	2.75	0.429	20	
4-Methyl-2-Pentanone		50.0	51.5	ug/L	0.0496	3.00	20	
Methylene Chloride		50.0	52.1	ug/L	0.261	4.24	20	
Naphthalene		50.0	50.8	ug/L	1.36	1.66	20	
n-Propylbenzene		50.0	47.2	ug/L	3.57	5.69	20	
Styrene		50.0	50.9	ug/L	1.08	1.86	20	
1,1,1,2-Tetrachloroethane		50.0	48.9	ug/L	0.351	2.18	20	
Tetrachloroethene		50.0	48.4	ug/L	0.303	3.26	20	
1,2,3-Trichlorobenzene		50.0	47.9	ug/L	0.809	4.12	20	
1,2,4-Trichlorobenzene		50.0	48.1	ug/L	0.957	3.86	20	
1,1,1-Trichloroethane		50.0	53.1	ug/L	0.453	6.16	20	
1,1,2-Trichloroethane		50.0	46.6	ug/L	0.215	6.82	20	
Trichloroethene		50.0	54.3	ug/L	0.287	8.51	20	
Trichlorofluoromethane		50.0	52.6	ug/L	0.482	5.24	20	
1,2,3-Trichloropropane		50.0	46.0	ug/L	0.118	8.09	20	
1,2,4-Trimethylbenzene		50.0	49.0	ug/L	2.61	1.98	20	
1,3,5-Trimethylbenzene		50.0	48.5	ug/L	2.51	3.02	20	
o-Xylene		50.0	48.9	ug/L	0.655	2.21	20	
m-,p-Xylene		100	100	ug/L	0.680	0.251	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4196785
Report generated 05/29/2015 13:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051231 Run Date: 05/26/2015 Sample ID: WG525055-02
Instrument ID: HPMS8 Run Time: 11:50 Method: 8260B
File ID: 8M404906 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG525056 Cal ID: HPMS8 - 12-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	54.0	ug/L	0.508	8.01	20	
1,1-Dichloroethene	CCC	50.0	54.5	ug/L	0.479	9.01	20	
1,2-Dichloropropane	CCC	50.0	53.5	ug/L	0.300	6.98	20	
Ethylbenzene	CCC	50.0	49.5	ug/L	0.593	1.05	20	
Toluene	CCC	50.0	50.7	ug/L	1.51	1.49	20	
Vinyl Chloride	CCC	50.0	59.4	ug/L	0.865	18.7	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.188	3.59	20	
Chlorobenzene	SPCC	50.0	50.8	ug/L	1.02	1.61	20	
Chloromethane	SPCC	50.0	54.6	ug/L	0.845	9.20	20	
1,1-Dichloroethane	SPCC	50.0	54.4	ug/L	0.551	8.89	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	43.2	ug/L	0.411	13.5	20	
Xylenes		150	153	ug/L	0.683	2.01	20	
Acetone		50.0	49.4	ug/L	0.0353	1.21	20	
Benzene		50.0	56.3	ug/L	1.13	12.7	20	
Bromobenzene		50.0	45.3	ug/L	0.681	9.38	20	
Bromochloromethane		50.0	55.3	ug/L	0.163	10.6	20	
Bromodichloromethane		50.0	56.0	ug/L	0.386	12.0	20	
Bromomethane		50.0	57.9	ug/L	0.203	15.7	20	
2-Butanone		50.0	49.3	ug/L	0.0573	1.48	20	
n-Butylbenzene		50.0	48.9	ug/L	2.61	2.29	20	
sec-Butylbenzene		50.0	49.0	ug/L	3.16	1.96	20	
tert-Butylbenzene		50.0	44.6	ug/L	0.513	10.9	20	
Carbon Disulfide		50.0	57.4	ug/L	0.927	14.7	20	
Carbon Tetrachloride		50.0	59.1	ug/L	0.459	18.3	20	
Dibromochloromethane		50.0	52.4	ug/L	0.321	4.75	20	
Chloroethane		50.0	55.7	ug/L	0.221	11.5	20	
2-Chlorotoluene		50.0	42.4	ug/L	2.17	15.1	20	
4-Chlorotoluene		50.0	52.1	ug/L	2.13	4.15	20	
1,2-Dibromo-3-Chloropropane		50.0	46.5	ug/L	0.0705	7.00	20	
1,2-Dibromoethane		50.0	51.7	ug/L	0.227	3.34	20	
Dibromomethane		50.0	53.6	ug/L	0.142	7.24	20	
1,2-Dichlorobenzene		50.0	48.2	ug/L	1.27	3.62	20	
1,3-Dichlorobenzene		50.0	48.2	ug/L	1.47	3.56	20	
1,4-Dichlorobenzene		50.0	46.3	ug/L	1.43	7.31	20	
Dichlorodifluoromethane		50.0	57.1	ug/L	0.443	14.3	20	
1,2-Dichloroethane		50.0	51.5	ug/L	0.347	3.01	20	
cis-1,2-Dichloroethene		50.0	53.9	ug/L	0.311	7.88	20	
trans-1,2-Dichloroethene		50.0	52.3	ug/L	0.439	4.57	20	
1,3-Dichloropropane		50.0	47.5	ug/L	0.384	4.93	20	
2,2-Dichloropropane		50.0	54.1	ug/L	0.452	8.15	20	
cis-1,3-Dichloropropene		50.0	56.3	ug/L	0.425	12.6	20	
trans-1,3-Dichloropropene		50.0	49.1	ug/L	0.437	1.75	20	

CCV - Modified 03/05/2008
PDF File ID: 4196785
Report generated 05/29/2015 13:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051231 Run Date: 05/26/2015 Sample ID: WG525055-02
Instrument ID: HPMS8 Run Time: 11:50 Method: 8260B
File ID: 8M404906 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG525056 Cal ID: HPMS8 - 12-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	55.0	ug/L	0.409	10.1	20	
2-Hexanone		50.0	47.0	ug/L	0.0596	6.02	20	
Hexachlorobutadiene		50.0	41.9	ug/L	0.436	16.1	20	
Isopropylbenzene		50.0	53.3	ug/L	1.75	6.60	20	
p-Isopropyltoluene		50.0	49.7	ug/L	2.72	0.574	20	
4-Methyl-2-Pentanone		50.0	55.2	ug/L	0.0532	10.3	20	
Methylene Chloride		50.0	55.6	ug/L	0.278	11.2	20	
Naphthalene		50.0	49.6	ug/L	1.32	0.840	20	
n-Propylbenzene		50.0	46.7	ug/L	3.53	6.64	20	
Styrene		50.0	52.7	ug/L	1.12	5.50	20	
1,1,1,2-Tetrachloroethane		50.0	51.3	ug/L	0.369	2.68	20	
Tetrachloroethene		50.0	50.7	ug/L	0.318	1.48	20	
1,2,3-Trichlorobenzene		50.0	47.2	ug/L	0.797	5.51	20	
1,2,4-Trichlorobenzene		50.0	47.4	ug/L	0.943	5.30	20	
1,1,1-Trichloroethane		50.0	56.5	ug/L	0.483	13.0	20	
1,1,2-Trichloroethane		50.0	49.3	ug/L	0.227	1.43	20	
Trichloroethene		50.0	57.3	ug/L	0.303	14.6	20	
Trichlorofluoromethane		50.0	55.7	ug/L	0.510	11.5	20	
1,2,3-Trichloropropane		50.0	43.8	ug/L	0.113	12.5	20	
1,2,4-Trimethylbenzene		50.0	48.6	ug/L	2.59	2.71	20	
1,3,5-Trimethylbenzene		50.0	48.2	ug/L	2.50	3.60	20	
o-Xylene		50.0	49.7	ug/L	0.666	0.577	20	
m-,p-Xylene		100	103	ug/L	0.700	3.31	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4196785
Report generated 05/29/2015 13:56

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051231
Instrument ID: HPMS8
Workgroup (AAB#): WG524936

ICAL CCV Number: WG523161-08
CAL ID: HPMS8-12-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523161-08	NA	NA	300564	545682	779258
Upper Limit	NA	NA	601128	1091364	1558516
Lower Limit	NA	NA	150282	272841	389629
L15051231-02	1.00	01	270473	502124	626435
L15051231-03	1.00	01	270766	495661	618269
L15051231-04	2.50	DL01	261943	491131	603308
L15051231-05	2.50	DL01	264017	488458	613395
L15051231-06	1.00	01	292215	548388	677691
WG524936-01	1.00	01	292737	546576	689774
WG524936-02	1.00	01	334709	581225	715700
WG524936-03	1.00	01	346374	614188	764250

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4203789
Report generated 05/29/2015 13:56

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051231
Instrument ID: HPMS8
Workgroup (AAB#): WG525056

ICAL CCV Number: WG523161-08
CAL ID: HPMS8-12-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523161-08	NA	NA	300564	545682	779258
Upper Limit	NA	NA	601128	1091364	1558516
Lower Limit	NA	NA	150282	272841	389629
L15051231-01	10.0	DL01	270093	495324	601377
WG525056-01	1.00	01	303161	574760	711532
WG525056-02	1.00	01	353506	581966	721452
WG525056-03	1.00	01	366436	613510	756341

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4203789
Report generated 05/29/2015 13:56

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051231
Instrument ID: HPMS8
Workgroup (AAB#): WG524936

ICAL CCV Number: WG523161-08
CAL ID: HPMS8-12-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523161-08	NA	NA	17.65	14.62	10.75
Upper Limit	NA	NA	18.15	15.12	11.25
Lower Limit	NA	NA	17.15	14.12	10.25
L15051231-02	1.00	01	17.64	14.62	10.75
L15051231-03	1.00	01	17.64	14.62	10.75
L15051231-04	2.50	DL01	17.64	14.62	10.75
L15051231-05	2.50	DL01	17.64	14.62	10.75
L15051231-06	1.00	01	17.64	14.62	10.75
WG524936-01	1.00	01	17.64	14.62	10.75
WG524936-02	1.00	01	17.64	14.62	10.75
WG524936-03	1.00	01	17.64	14.62	10.75

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4203790
Report generated: 05/29/2015 13:56

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051231
Instrument ID: HPMS8
Workgroup (AAB#): WG525056

ICAL CCV Number: WG523161-08
CAL ID: HPMS8-12-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523161-08	NA	NA	17.65	14.62	10.75
Upper Limit	NA	NA	18.15	15.12	11.25
Lower Limit	NA	NA	17.15	14.12	10.25
L15051231-01	10.0	DL01	17.64	14.62	10.75
WG525056-01	1.00	01	17.64	14.62	10.75
WG525056-02	1.00	01	17.64	14.62	10.75
WG525056-03	1.00	01	17.64	14.62	10.75

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4203790
Report generated: 05/29/2015 13:56

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052615\8M404926.D Vial: 22
Acq On : 26 May 2015 21:28 Operator: TMB
Sample : L15051231-01 B 10X 826-LOW Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 27 08:49:23 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	601377	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	495324	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	270093	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	151147	25.3572 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.44%		
43) 1,2-Dichloroethane-d4	10.35	65	146977	26.2382 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.96%		
58) Toluene-d8	12.73	98	545201	23.5873 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.36%		
80) p-Bromofluorobenzene	16.12	95	218065	23.7309 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.92%		

Target Compounds

					Qvalue
5) 1,3-Butadiene	3.92	54	222	Below Cal #	1
14) 1,1-Dichloroethene	6.51	61	1657893	156.8638 ug/L	84
15) Tert-Butyl Alcohol	6.52	59	67626	292.6244 ug/L #	62
18) Methyl acetate	6.98	43	2525	0.8239 ug/L #	58
27) 1,1-Dichloroethane	8.37	63	63466	5.2105 ug/L	92
32) cis-1,2-Dichloroethene	9.20	96	1157	0.1670 ug/L	97
33) Chloroform	9.44	83	3437	0.3038 ug/L	94
36) Tetrahydrofuran	9.67	42	224	0.2377 ug/L #	1
45) 1,2-Dichloroethane	10.46	62	69398	8.5563 ug/L	98
47) Trichloroethene	11.27	130	1242	0.1951 ug/L	73
63) 1,1,2-Trichloroethane	13.23	97	2055	0.4502 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M404926.D 8260WT.M Wed May 27 08:49:23 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052615\8M404926.D Vial: 22
Acq On : 26 May 2015 21:28 Operator: TMB
Sample : L15051231-01 B 10X 826-LOW Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 27 8:49 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

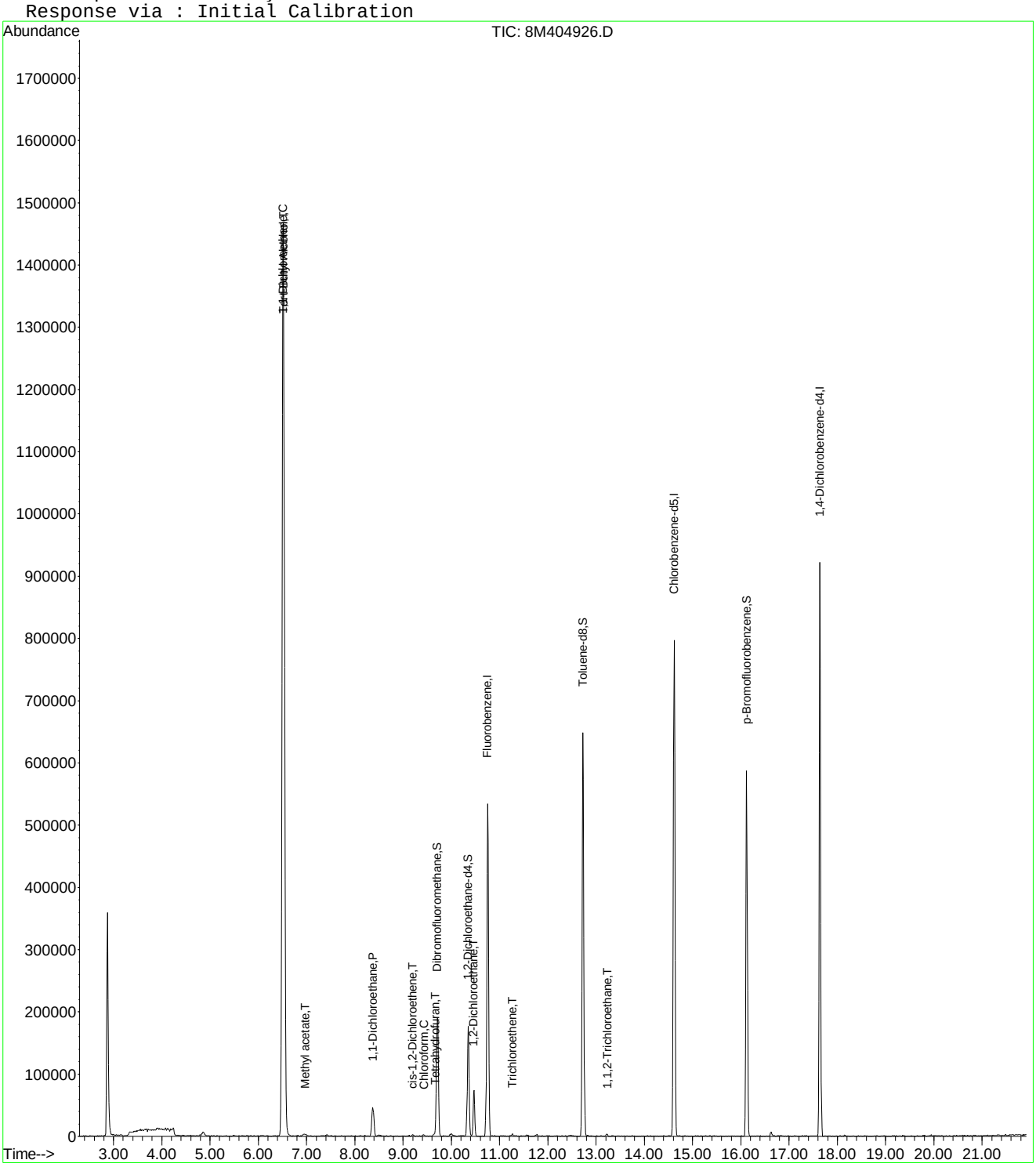

8M404926.D 8260WT.M Wed May 27 08:49:24 2015 Page 2

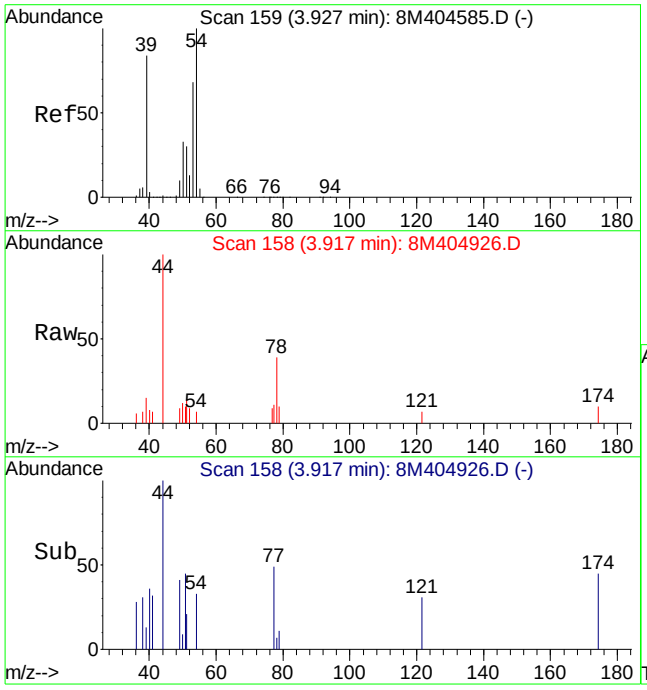

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.92 min Scan# 158
Delta R.T. 0.01 min
Lab File: 8M404926.D
Acq: 26 May 2015 21:28

Tgt Ion: 54 Resp: 222

Ion	Ratio	Lower	Upper
54	100		
39	864.0	50.7	118.3#
53	0.0	40.4	94.4#

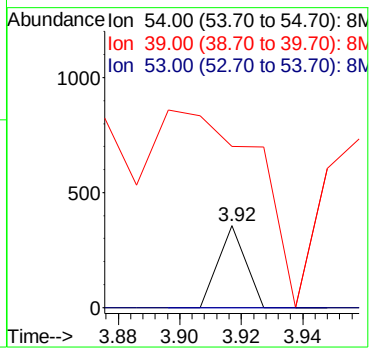

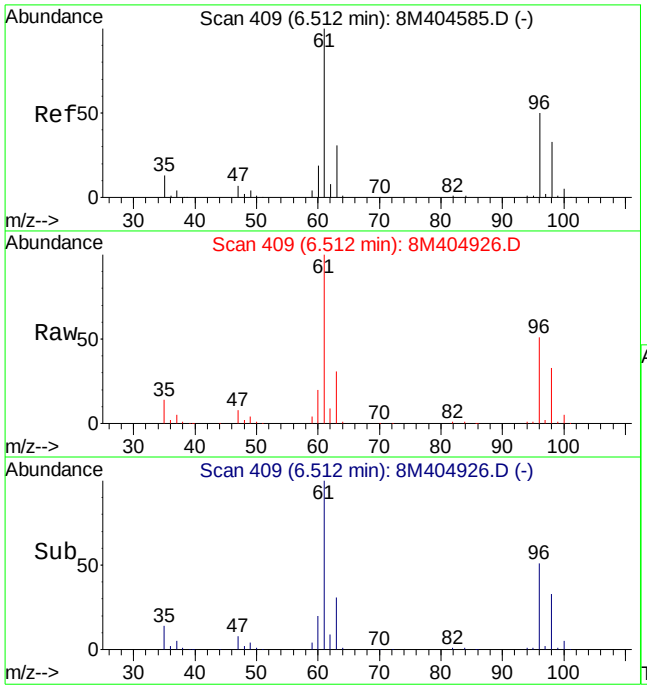

#14
1,1-Dichloroethene
Concen: 156.86 ug/L
RT: 6.51 min Scan# 409
Delta R.T. -0.00 min
Lab File: 8M404926.D
Acq: 26 May 2015 21:28

Tgt Ion: 61 Resp: 1657893

Ion	Ratio	Lower	Upper
61	100		
96	52.3	39.1	91.3

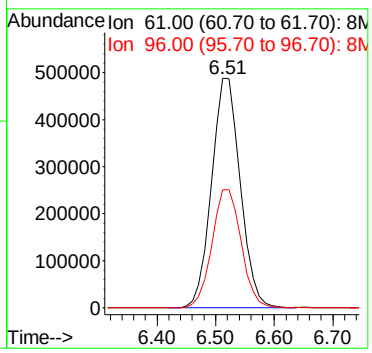

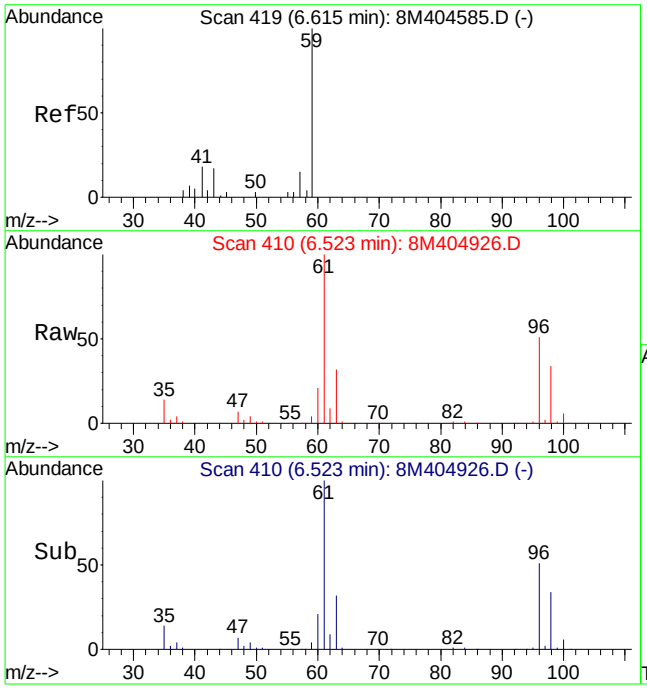

#15
Tert-Butyl Alcohol
Concen: 292.62 ug/L
RT: 6.52 min Scan# 410
Delta R.T. -0.11 min
Lab File: 8M404926.D
Acq: 26 May 2015 21:28

Tgt Ion: 59 Resp: 67626

Ion	Ratio	Lower	Upper
59	100		
41	0.4	12.8	29.8#
57	0.6	6.1	14.3#

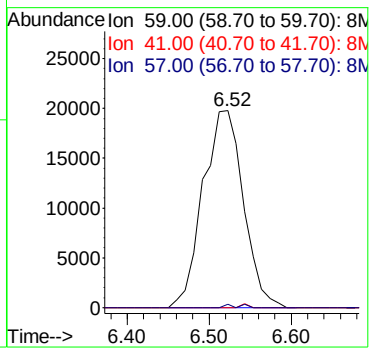

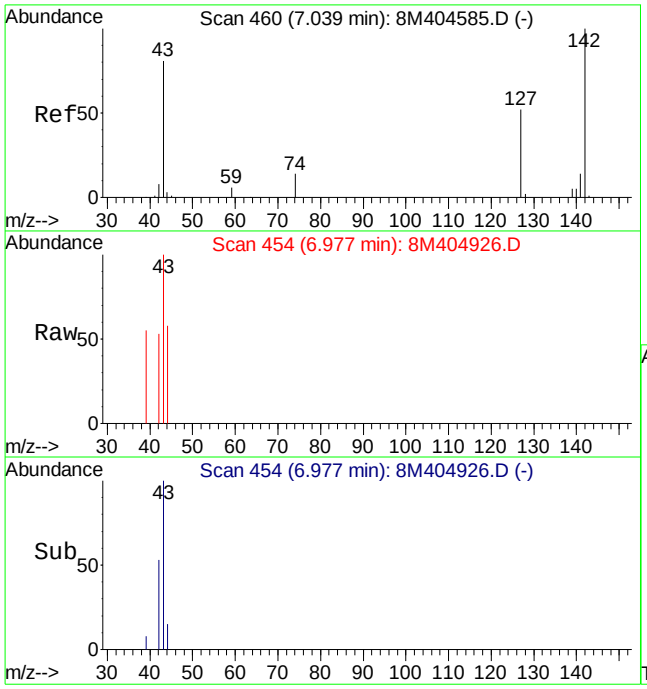

#18
Methyl acetate
Concen: 0.82 ug/L
RT: 6.98 min Scan# 454
Delta R.T. -0.07 min
Lab File: 8M404926.D
Acq: 26 May 2015 21:28

Tgt Ion: 43 Resp: 2525

Ion	Ratio	Lower	Upper
43	100		
74	0.0	14.2	33.2#
59	0.0	5.3	12.3#

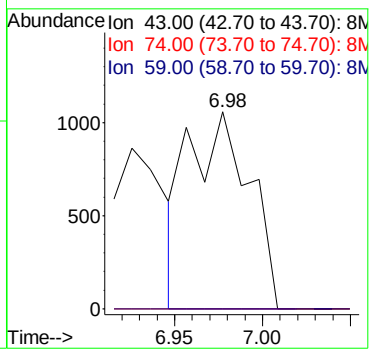

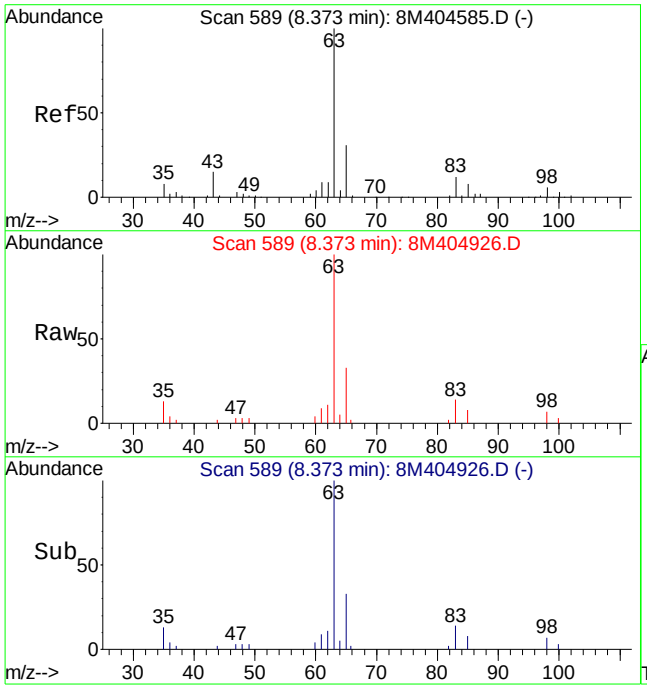

#27
1,1-Dichloroethane
Concen: 5.21 ug/L
RT: 8.37 min Scan# 589
Delta R.T. 0.01 min
Lab File: 8M404926.D
Acq: 26 May 2015 21:28

Tgt Ion: 63 Resp: 63466

Ion	Ratio	Lower	Upper
63	100		
65	28.4	20.7	48.3
83	13.6	8.6	20.2

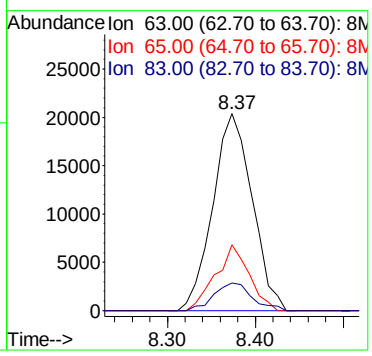

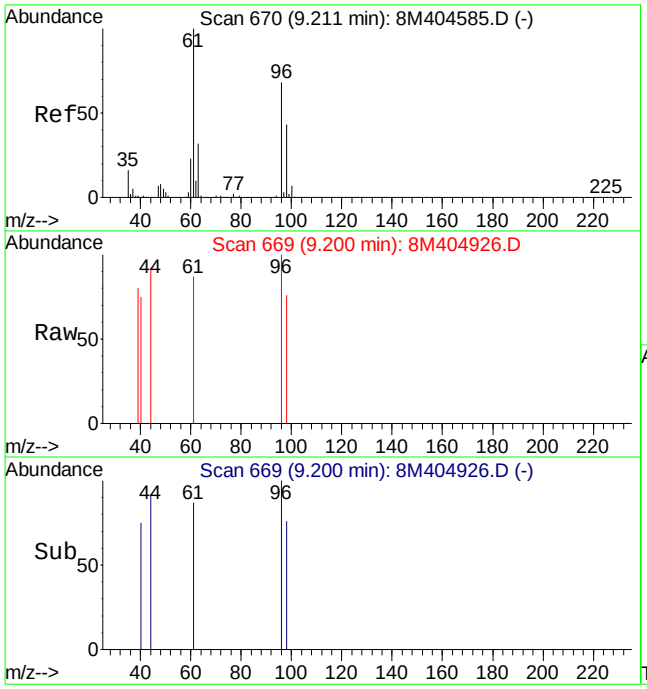

#32
cis-1,2-Dichloroethene
Concen: 0.17 ug/L
RT: 9.20 min Scan# 669
Delta R.T. -0.01 min
Lab File: 8M404926.D
Acq: 26 May 2015 21:28

Tgt Ion: 96 Resp: 1157

Ion	Ratio	Lower	Upper
96	100		
61	136.0	84.0	196.0

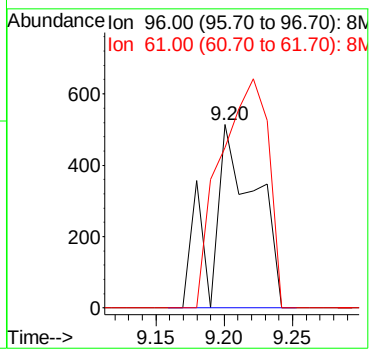

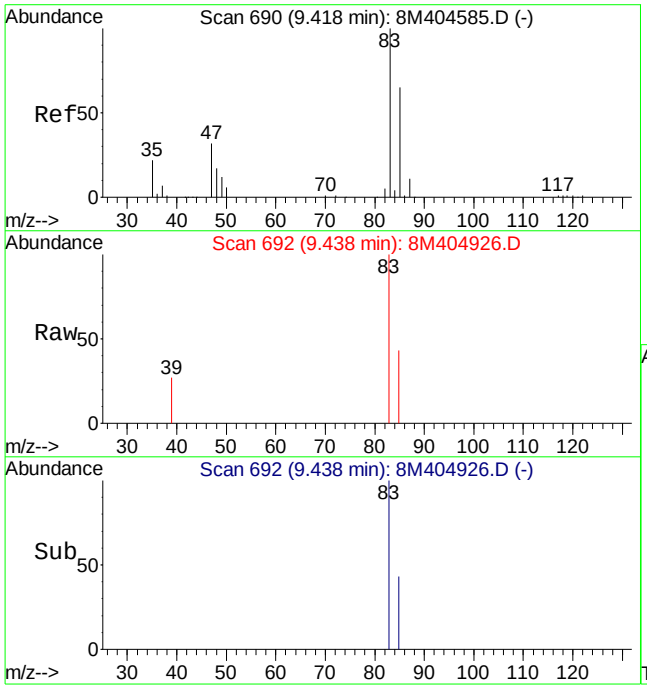

#33
Chloroform
Concen: 0.30 ug/L
RT: 9.44 min Scan# 692
Delta R.T. 0.02 min
Lab File: 8M404926.D
Acq: 26 May 2015 21:28

Tgt Ion: 83 Resp: 3437

Ion	Ratio	Lower	Upper
83	100		
85	63.7	41.3	96.3

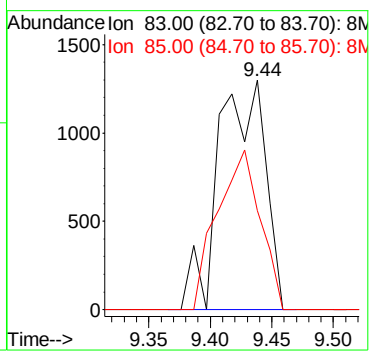

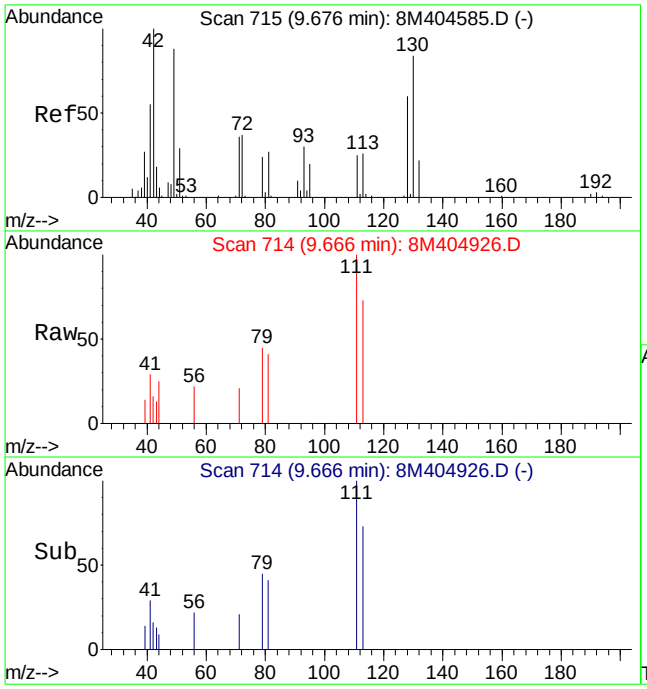

#36
Tetrahydrofuran
Concen: 0.24 ug/L
RT: 9.67 min Scan# 714
Delta R.T. -0.01 min
Lab File: 8M404926.D
Acq: 26 May 2015 21:28

Tgt Ion: 42 Resp: 224

Ion	Ratio	Lower	Upper
42	100		
72	0.0	27.5	64.3#
71	310.7	25.4	59.2#

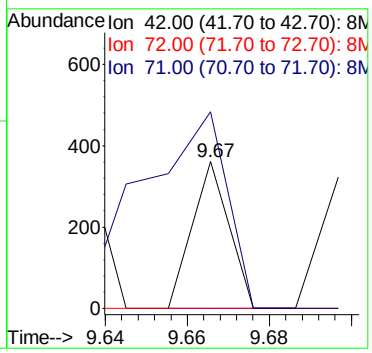

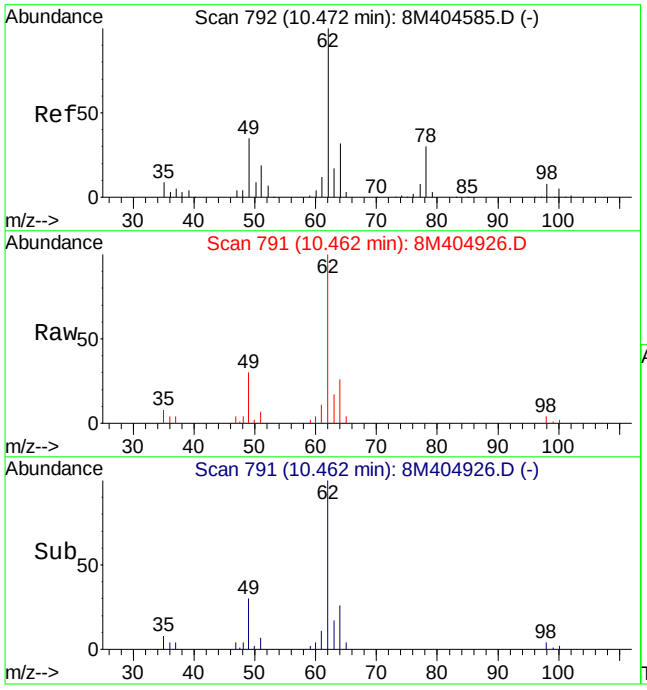

#45
1,2-Dichloroethane
Concen: 8.56 ug/L
RT: 10.46 min Scan# 791
Delta R.T. -0.00 min
Lab File: 8M404926.D
Acq: 26 May 2015 21:28

Tgt Ion: 62 Resp: 69398

Ion	Ratio	Lower	Upper
62	100		
64	32.7	20.5	47.9
49	35.3	21.8	51.0

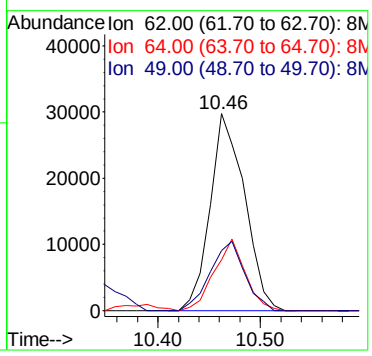

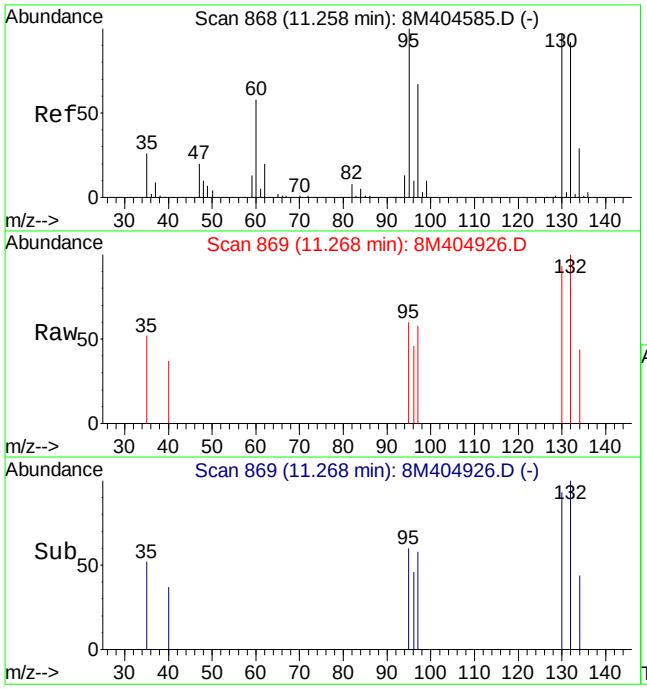

#47
Trichloroethene
Concen: 0.20 ug/L
RT: 11.27 min Scan# 869
Delta R.T. 0.01 min
Lab File: 8M404926.D
Acq: 26 May 2015 21:28

Tgt Ion:130 Resp: 1242

Ion	Ratio	Lower	Upper
130	100		
132	133.5	58.3	135.9
95	81.3	59.2	138.2

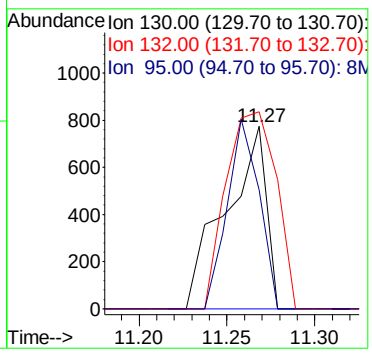

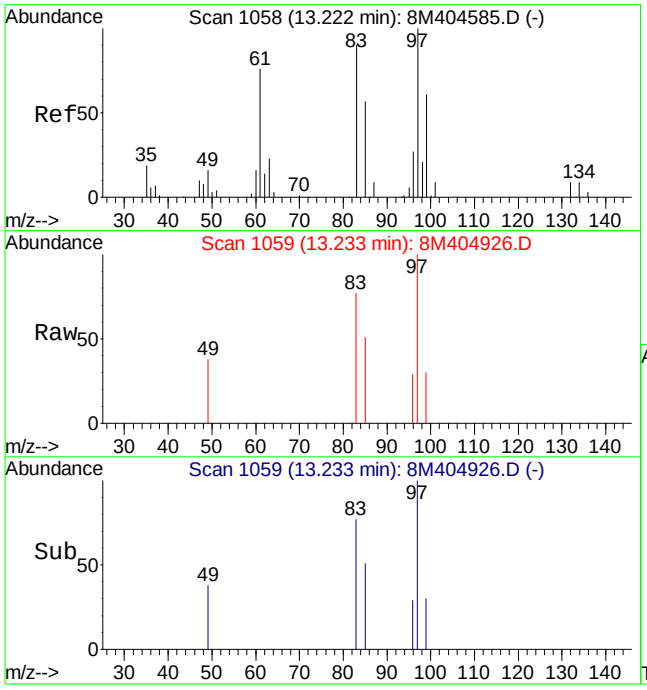

#63
1,1,2-Trichloroethane
Concen: 0.45 ug/L
RT: 13.23 min Scan# 1059
Delta R.T. 0.01 min
Lab File: 8M404926.D
Acq: 26 May 2015 21:28

Tgt Ion: 97 Resp: 2055

Ion	Ratio	Lower	Upper
97	100		
83	71.2	51.6	120.4

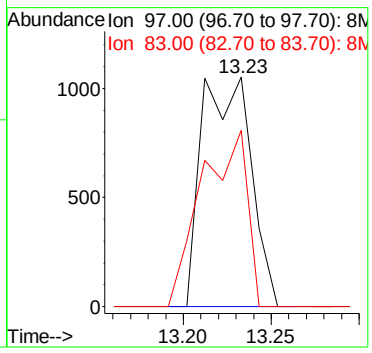

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404892.D Vial: 17
Acq On : 24 May 2015 00:09 Operator: FJB
Sample : L15051231-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 08:18:38 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	626435	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	502124	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	270473	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	153864	24.7804 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.12%		
43) 1,2-Dichloroethane-d4	10.35	65	146819	25.1616 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.64%		
58) Toluene-d8	12.73	98	574885	24.5347 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.12%		
80) p-Bromofluorobenzene	16.12	95	219295	23.8312 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.32%		

Target Compounds

					Qvalue
3) Chloromethane	3.63	50	2694	0.1390 ug/L #	65
4) Vinyl Chloride	3.89	62	2525	0.1383 ug/L #	74
13) Acetone	6.30	43	1803	2.0153 ug/L #	36
14) 1,1-Dichloroethene	6.52	61	237943	21.6127 ug/L	83
27) 1,1-Dichloroethane	8.38	63	104716	8.2532 ug/L	95
45) 1,2-Dichloroethane	10.46	62	4377	0.5181 ug/L	90
51) 1,4-Dioxane	11.77	88	2365	115.2868 ug/L #	49
56) Dimethyl Disulfide	12.73	79	266	3.0689 ug/L #	1
81) 1,2,3-Trichloropropane	16.12	110	262	0.1882 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M404892.D 8260WT.M Tue May 26 08:18:38 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404892.D Vial: 17
Acq On : 24 May 2015 00:09 Operator: FJB
Sample : L15051231-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

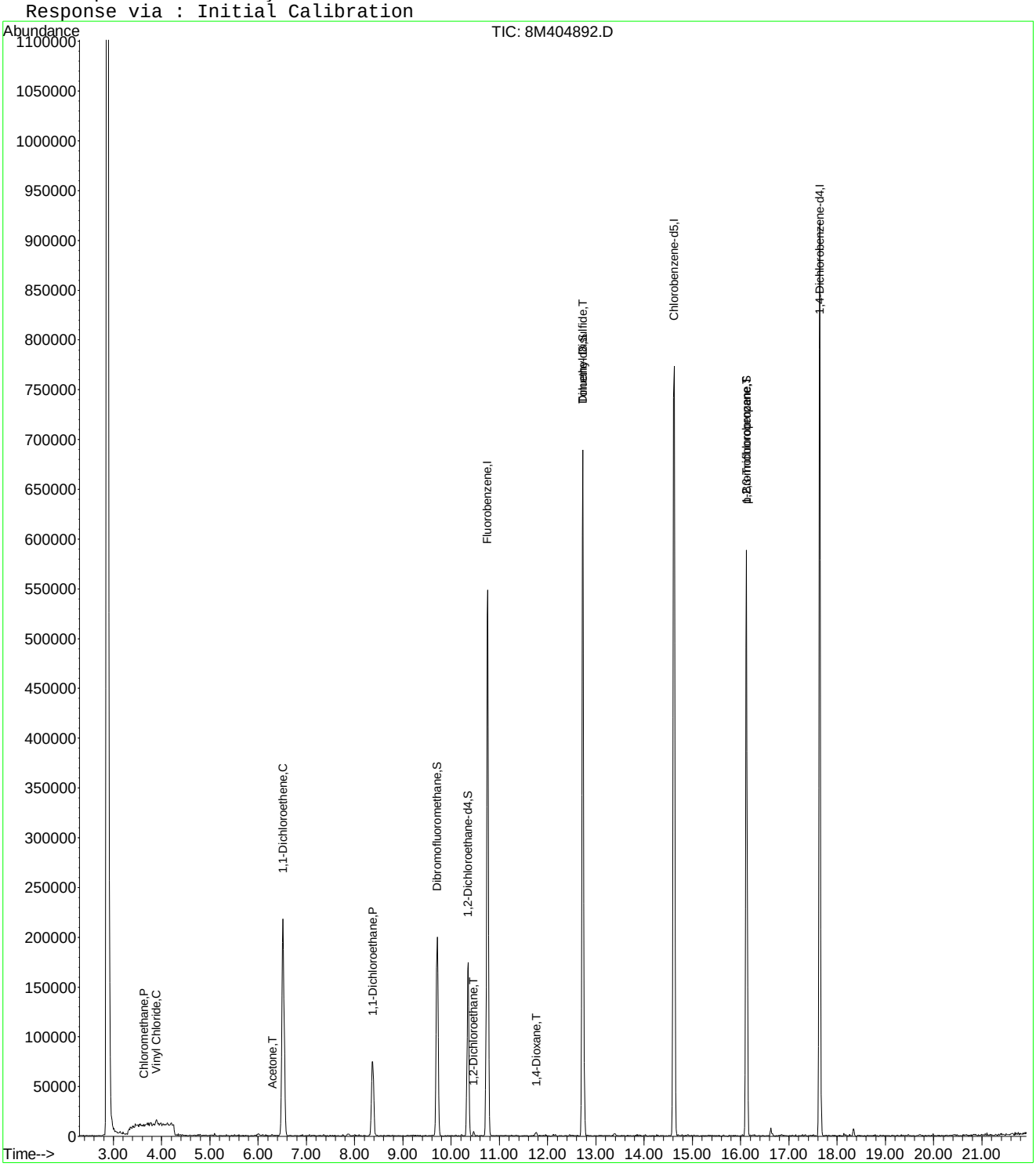

8M404892.D 8260WT.M Tue May 26 08:18:39 2015 Page 2

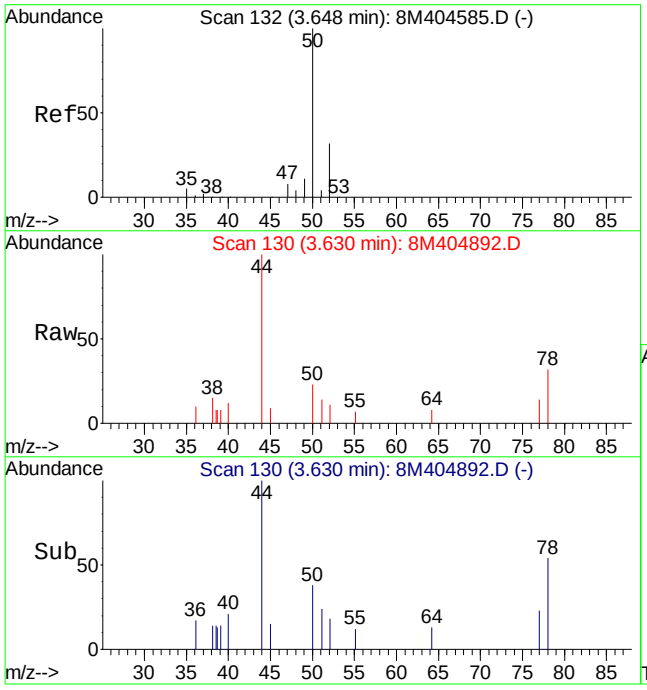

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.63 min Scan# 130
Delta R.T. -0.02 min
Lab File: 8M404892.D
Acq: 24 May 2015 00:09

Tgt Ion: 50 Resp: 2694

Ion	Ratio	Lower	Upper
50	100		
52	55.3	20.9	48.7#

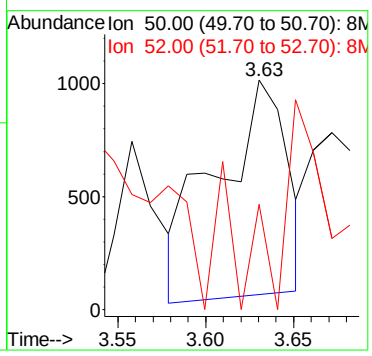

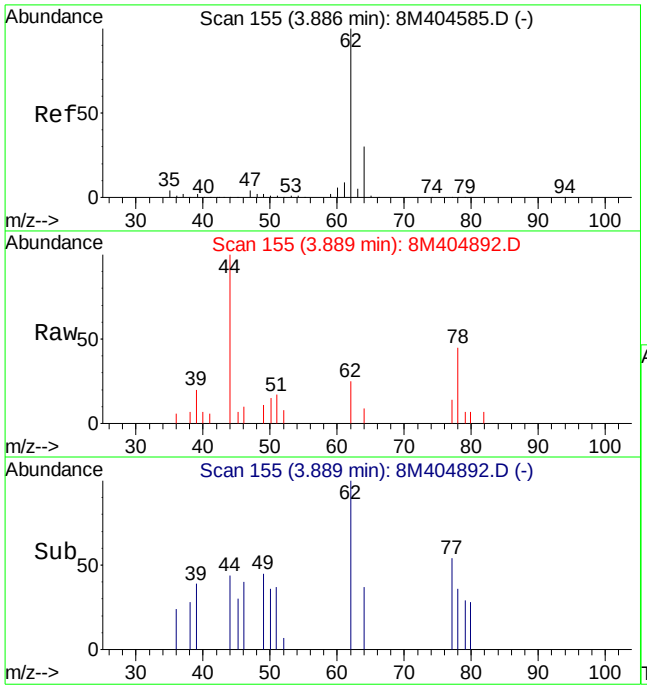

#4
Vinyl Chloride
Concen: 0.14 ug/L
RT: 3.89 min Scan# 155
Delta R.T. 0.01 min
Lab File: 8M404892.D
Acq: 24 May 2015 00:09

Tgt Ion: 62 Resp: 2525

Ion	Ratio	Lower	Upper
62	100		
64	19.3	20.4	47.6#

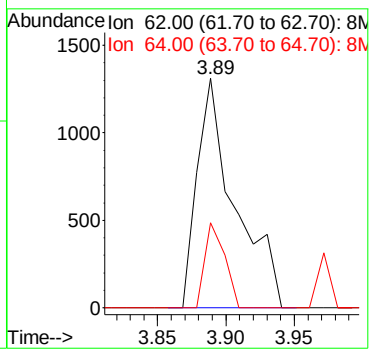

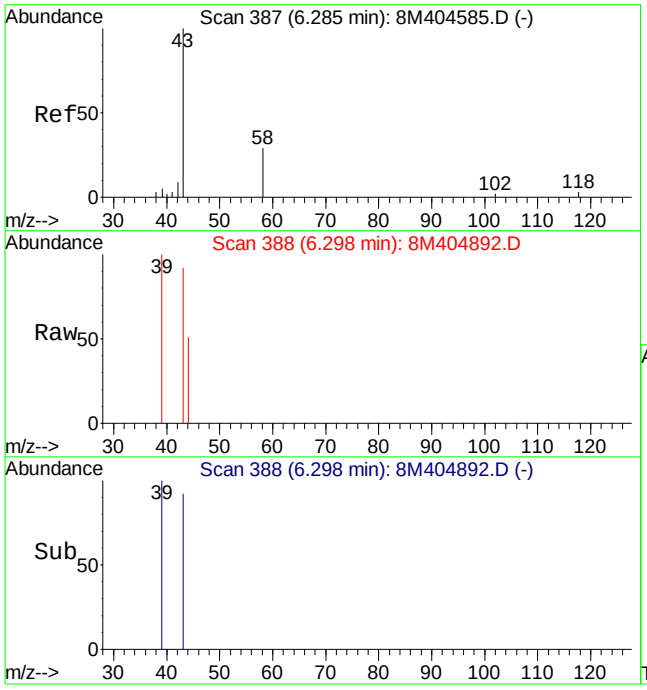

#13
Acetone
Concen: 2.02 ug/L
RT: 6.30 min Scan# 388
Delta R.T. 0.01 min
Lab File: 8M404892.D
Acq: 24 May 2015 00:09

Tgt Ion: 43 Resp: 1803

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

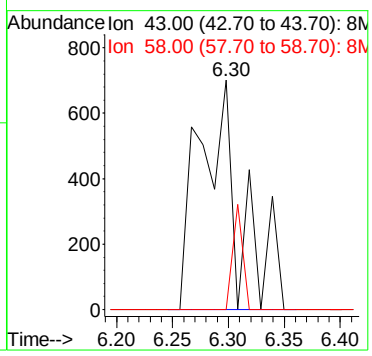

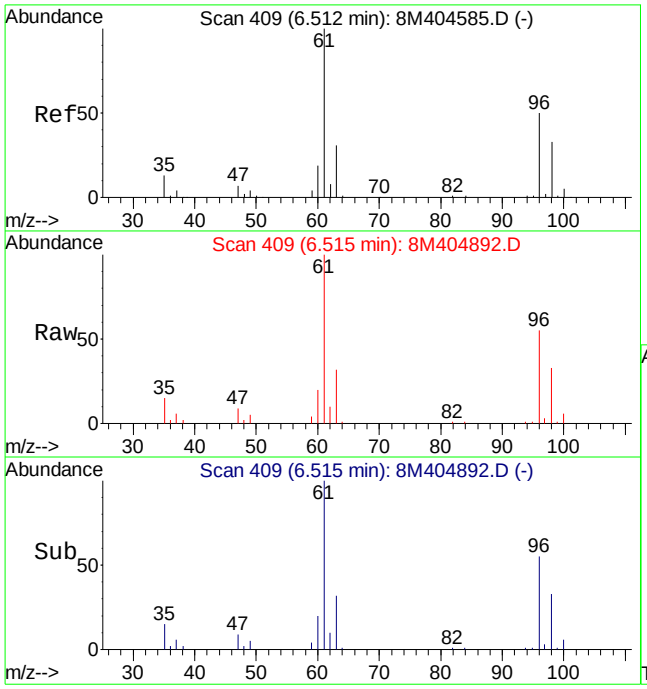

#14
1,1-Dichloroethene
Concen: 21.61 ug/L
RT: 6.52 min Scan# 409
Delta R.T. -0.00 min
Lab File: 8M404892.D
Acq: 24 May 2015 00:09

Tgt Ion: 61 Resp: 237943

Ion	Ratio	Lower	Upper
61	100		
96	51.6	39.1	91.3

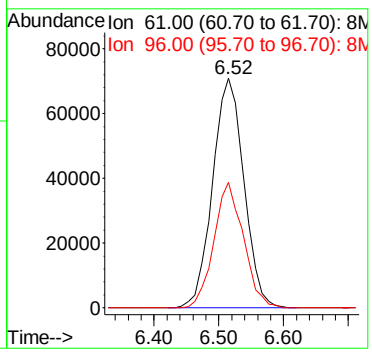

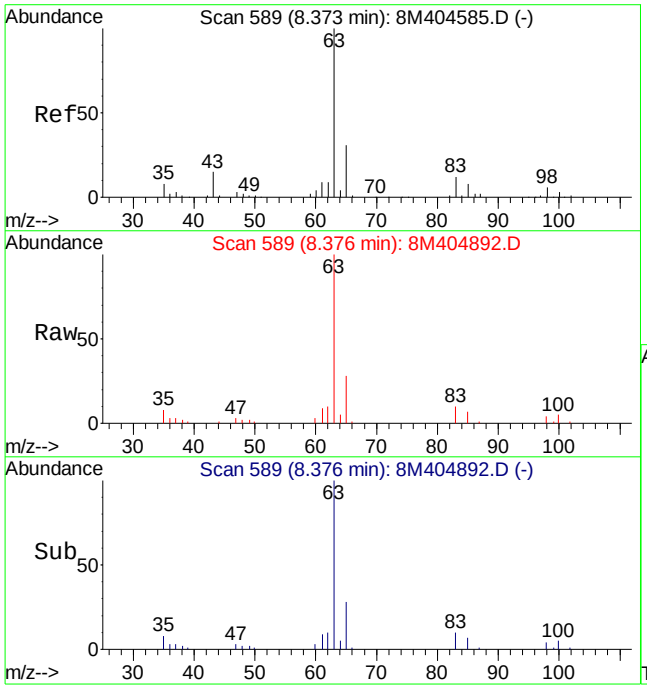

#27
1,1-Dichloroethane
Concen: 8.25 ug/L
RT: 8.38 min Scan# 589
Delta R.T. 0.01 min
Lab File: 8M404892.D
Acq: 24 May 2015 00:09

Tgt Ion: 63 Resp: 104716

Ion	Ratio	Lower	Upper
63	100		
65	31.0	20.7	48.3
83	13.2	8.6	20.2

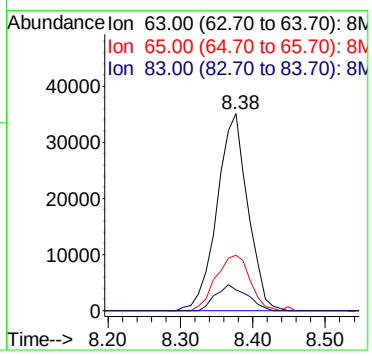

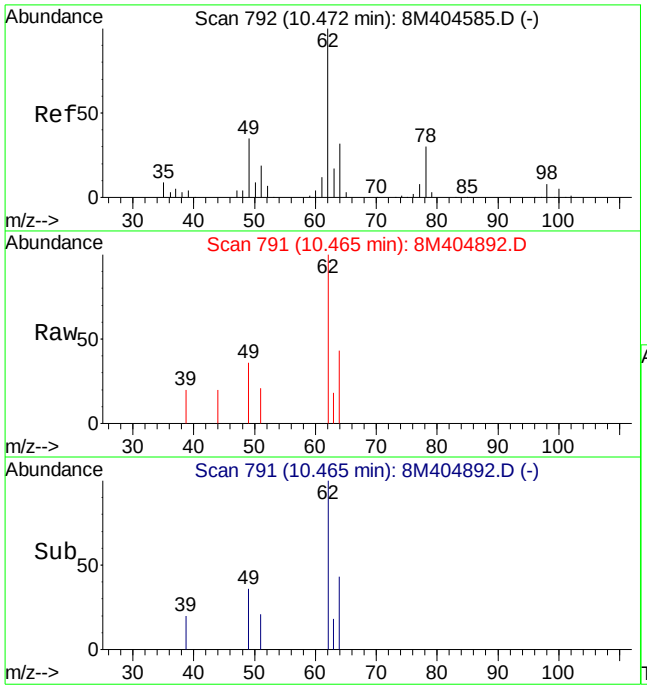

#45
1,2-Dichloroethane
Concen: 0.52 ug/L
RT: 10.46 min Scan# 791
Delta R.T. -0.00 min
Lab File: 8M404892.D
Acq: 24 May 2015 00:09

Tgt Ion: 62 Resp: 4377

Ion	Ratio	Lower	Upper
62	100		
64	24.5	20.5	47.9
49	34.1	21.8	51.0

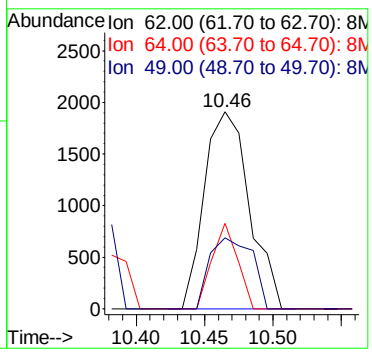

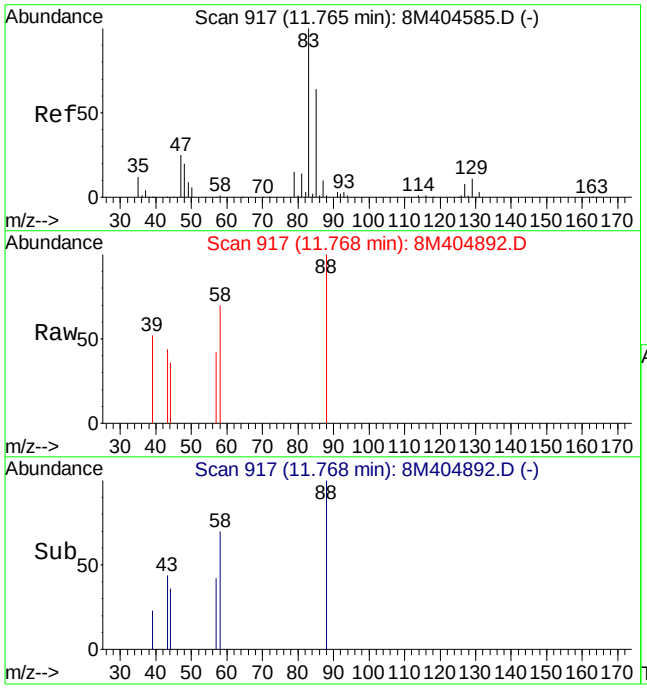

#51
1,4-Dioxane
Concen: 115.29 ug/L
RT: 11.77 min Scan# 917
Delta R.T. 0.00 min
Lab File: 8M404892.D
Acq: 24 May 2015 00:09

Tgt Ion: 88 Resp: 2365

Ion	Ratio	Lower	Upper
88	100		
58	93.4	33.5	78.3#

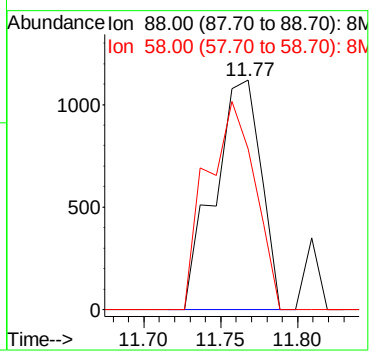

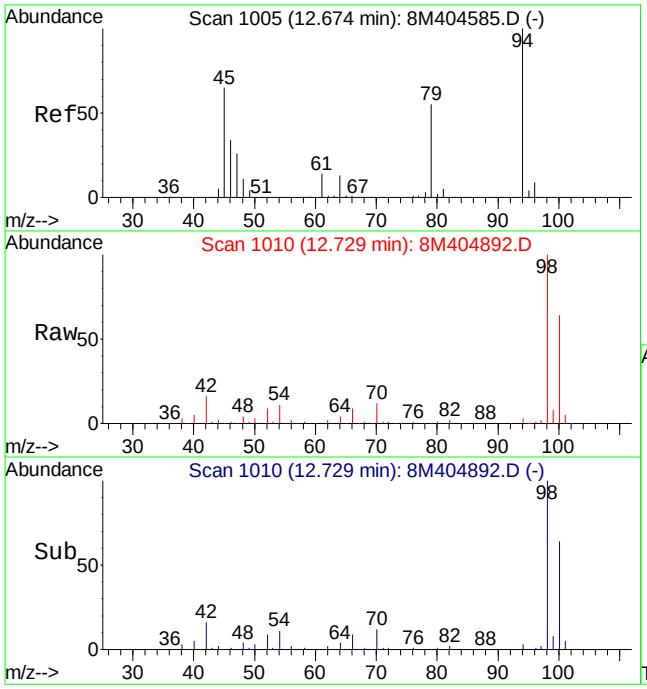

#56
Dimethyl Disulfide
Concen: 3.07 ug/L
RT: 12.73 min Scan# 1010
Delta R.T. 0.06 min
Lab File: 8M404892.D
Acq: 24 May 2015 00:09

Tgt Ion: 79 Resp: 266

Ion	Ratio	Lower	Upper
79	100		
94	5939.1	110.5	257.9#

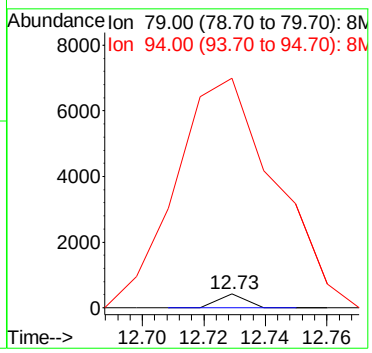

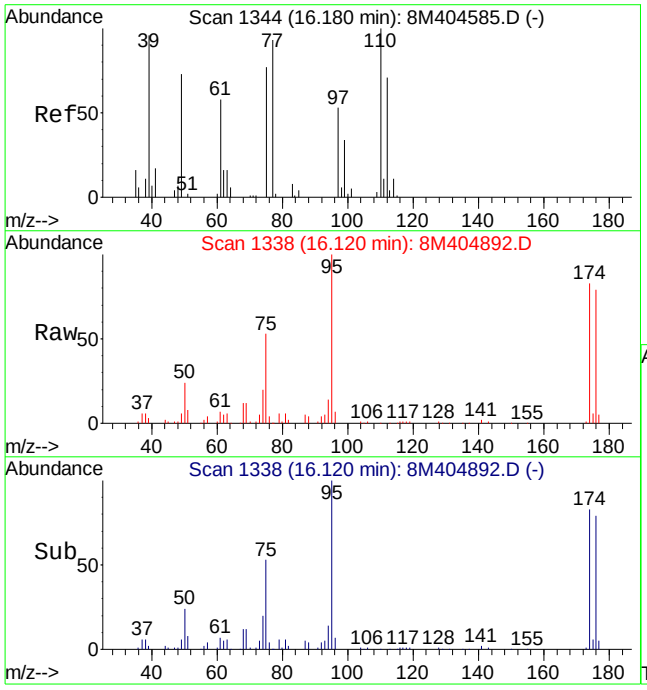

#81
1,2,3-Trichloropropane
Concen: 0.19 ug/L
RT: 16.12 min Scan# 1338
Delta R.T. -0.06 min
Lab File: 8M404892.D
Acq: 24 May 2015 00:09

Tgt Ion:110 Resp: 262

Ion	Ratio	Lower	Upper
110	100		
75	46321.8	115.6	269.6#
97	0.0	36.7	85.7#

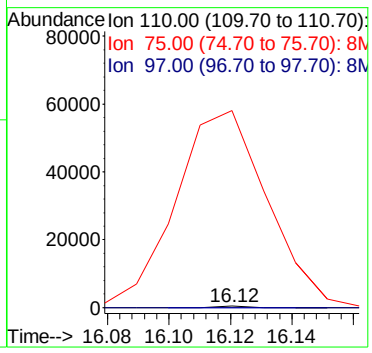

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404893.D Vial: 18
Acq On : 24 May 2015 00:38 Operator: FJB
Sample : L15051231-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 08:18:40 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	618269	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	495661	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	270766	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	157582	25.7144 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.84%		
43) 1,2-Dichloroethane-d4	10.35	65	141397	24.5525 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.20%		
58) Toluene-d8	12.73	98	563603	24.3668 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.48%		
80) p-Bromofluorobenzene	16.12	95	209092	22.6978 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.80%		

Target Compounds					Qvalue
3) Chloromethane	3.66	50	2442	0.1277 ug/L #	7
13) Acetone	6.29	43	1298	1.4700 ug/L #	36
14) 1,1-Dichloroethene	6.51	61	29433	2.7088 ug/L	84
27) 1,1-Dichloroethane	8.37	63	19532	1.5597 ug/L	95
51) 1,4-Dioxane	11.74	88	212	54.3116 ug/L #	1
56) Dimethyl Disulfide	12.73	79	223	3.0621 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M404893.D 8260WT.M Tue May 26 08:18:40 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404893.D Vial: 18
Acq On : 24 May 2015 00:38 Operator: FJB
Sample : L15051231-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

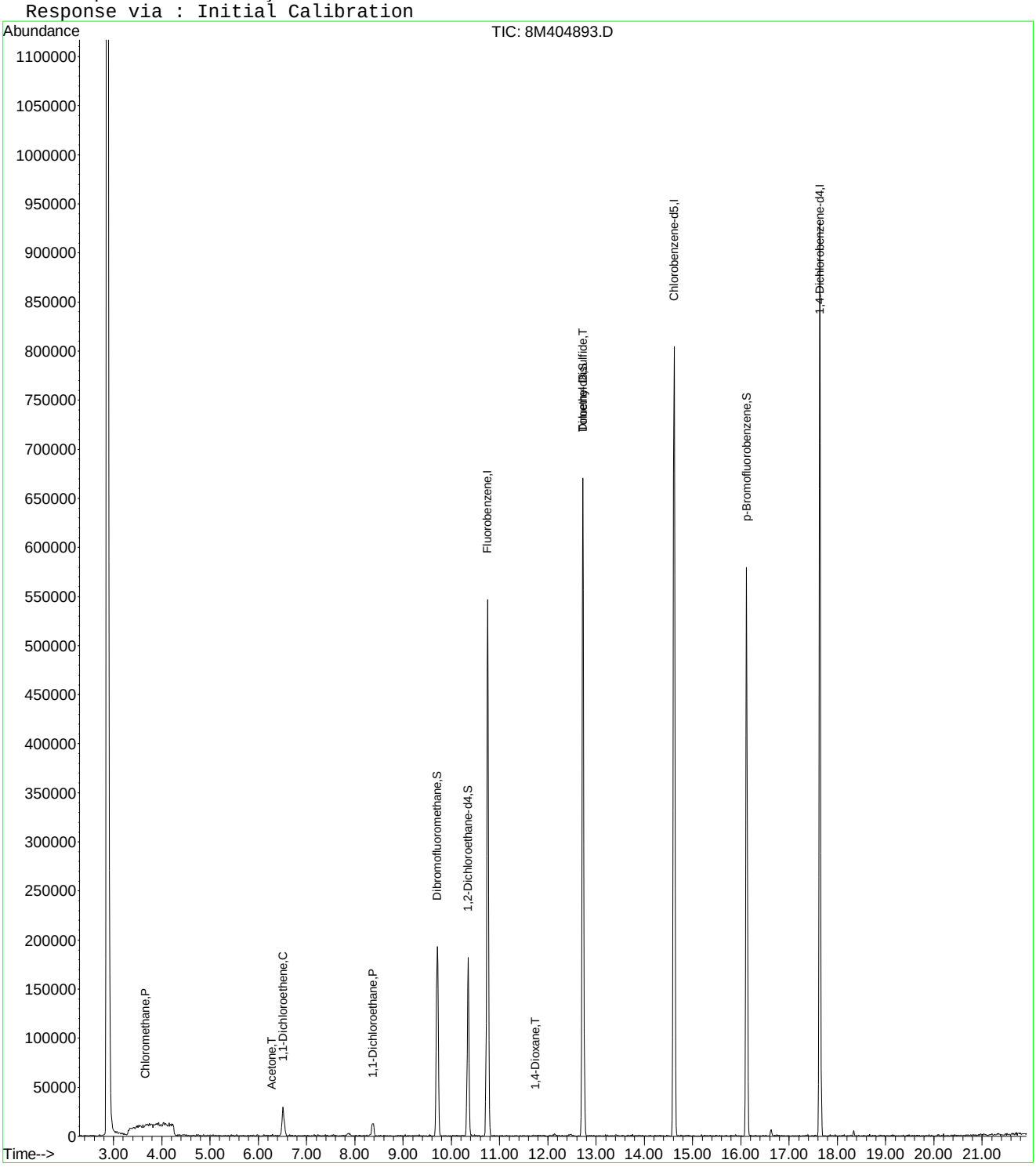

8M404893.D 8260WT.M Tue May 26 08:18:40 2015 Page 2

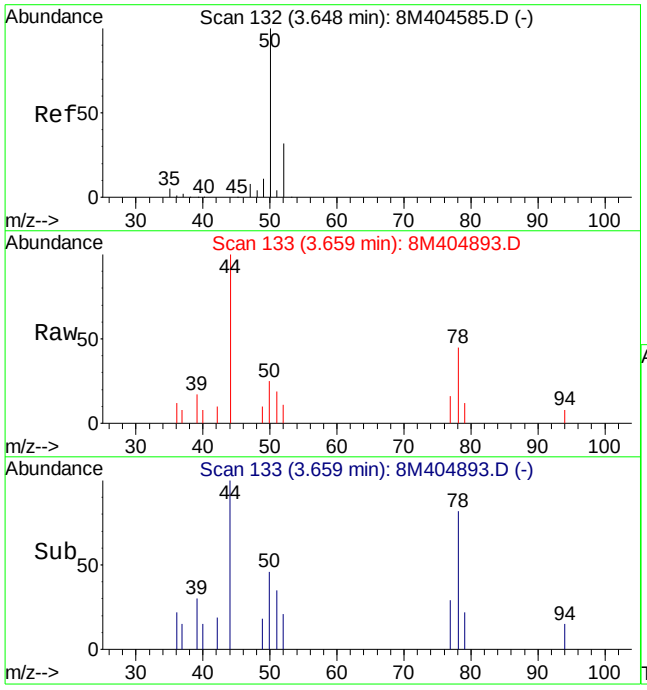

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.66 min Scan# 133
Delta R.T. 0.01 min
Lab File: 8M404893.D
Acq: 24 May 2015 00:38

Tgt Ion: 50 Resp: 2442

Ion	Ratio	Lower	Upper
50	100		
52	88.6	20.9	48.7#

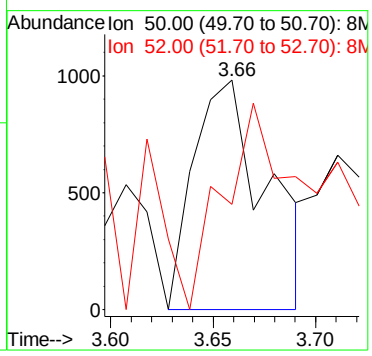

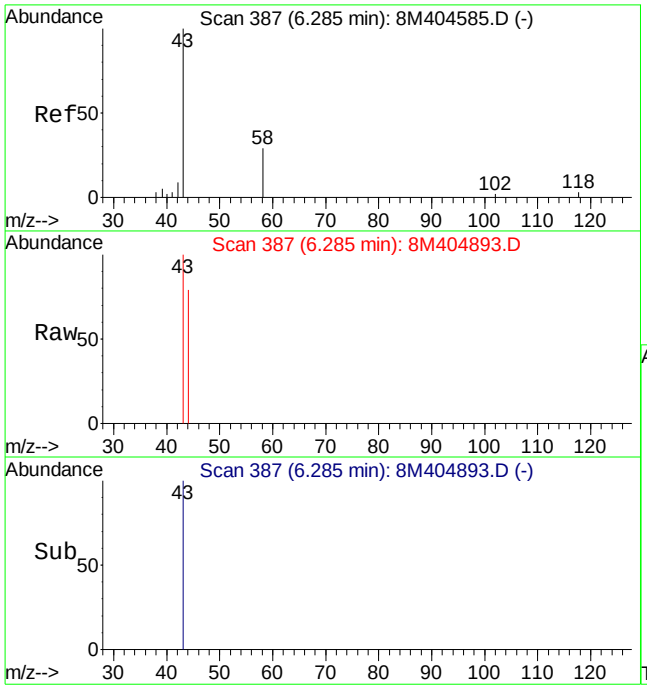

#13
Acetone
Concen: 1.47 ug/L
RT: 6.29 min Scan# 387
Delta R.T. -0.00 min
Lab File: 8M404893.D
Acq: 24 May 2015 00:38

Tgt Ion: 43 Resp: 1298

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

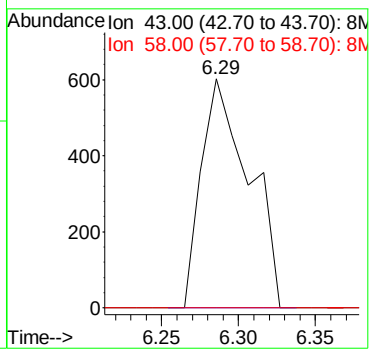

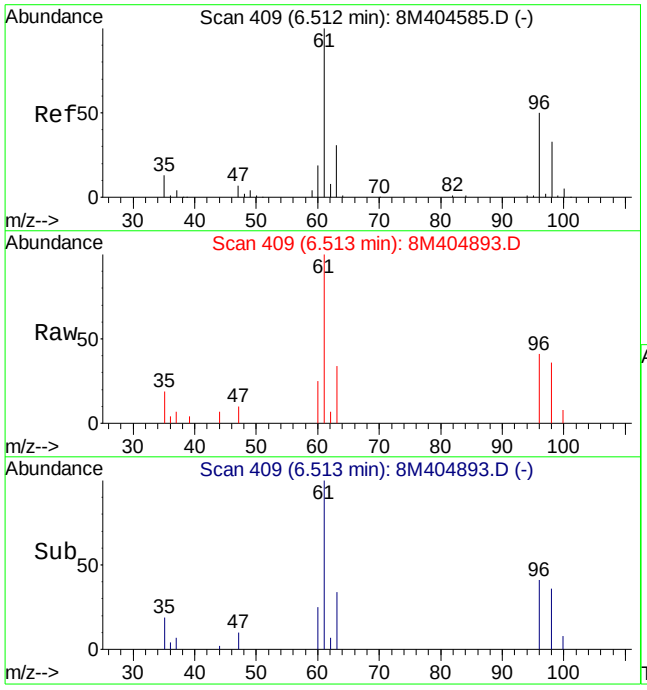

#14
1,1-Dichloroethene
Concen: 2.71 ug/L
RT: 6.51 min Scan# 409
Delta R.T. -0.00 min
Lab File: 8M404893.D
Acq: 24 May 2015 00:38

Tgt Ion: 61 Resp: 29433

Ion	Ratio	Lower	Upper
61	100		
96	52.8	39.1	91.3

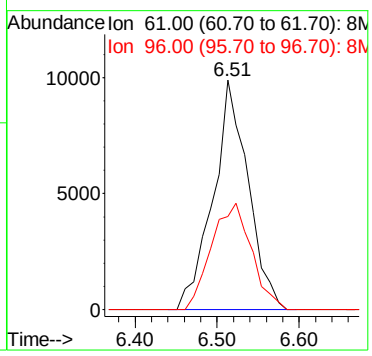

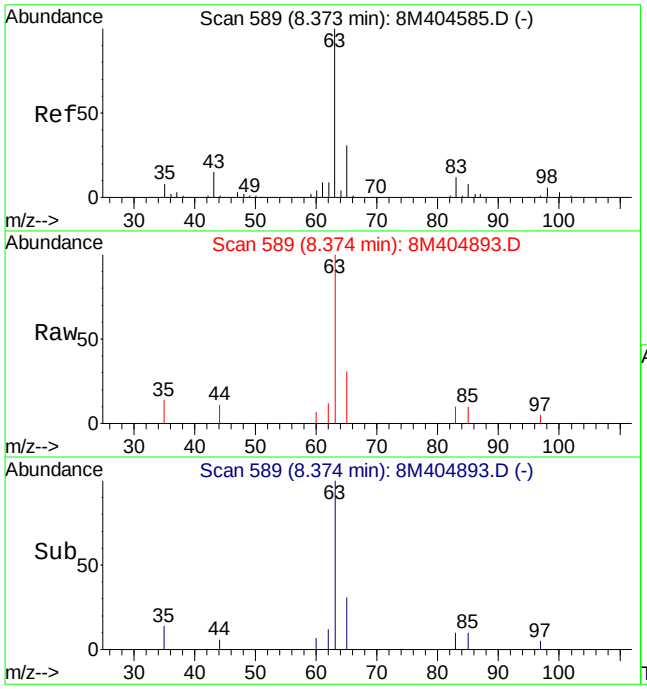

#27
1,1-Dichloroethane
Concen: 1.56 ug/L
RT: 8.37 min Scan# 589
Delta R.T. 0.01 min
Lab File: 8M404893.D
Acq: 24 May 2015 00:38

Tgt Ion: 63 Resp: 19532

Ion	Ratio	Lower	Upper
63	100		
65	31.2	20.7	48.3
83	13.7	8.6	20.2

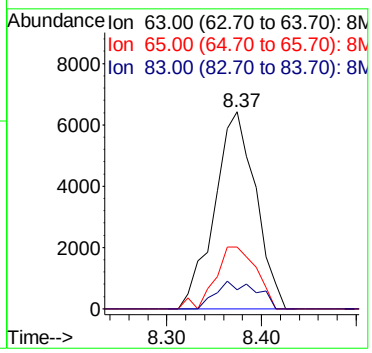

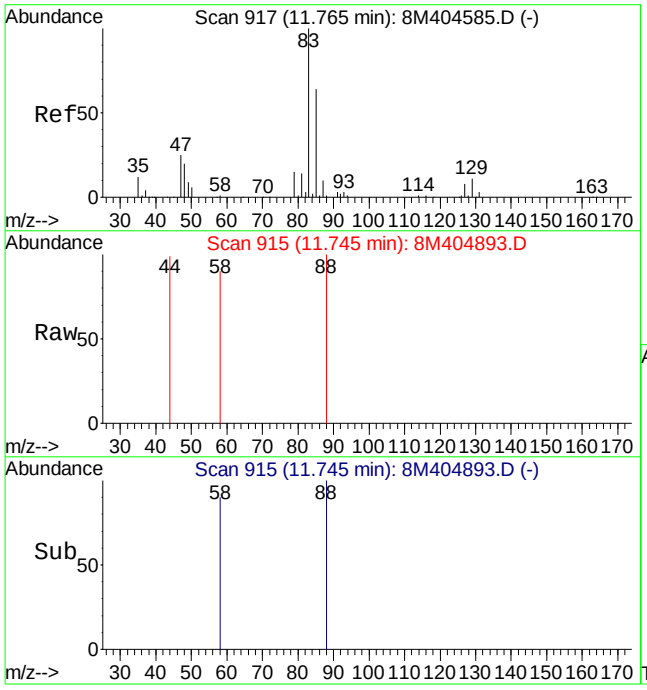

#51
1,4-Dioxane
Concen: 54.31 ug/L
RT: 11.74 min Scan# 915
Delta R.T. -0.02 min
Lab File: 8M404893.D
Acq: 24 May 2015 00:38

Tgt Ion: 88 Resp: 212

Ion	Ratio	Lower	Upper
88	100		
58	342.0	33.5	78.3#

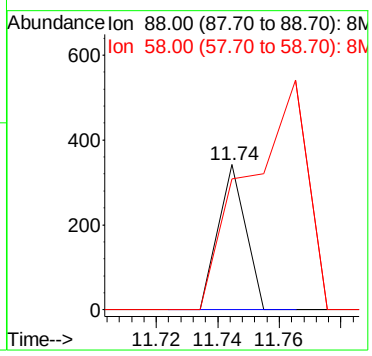

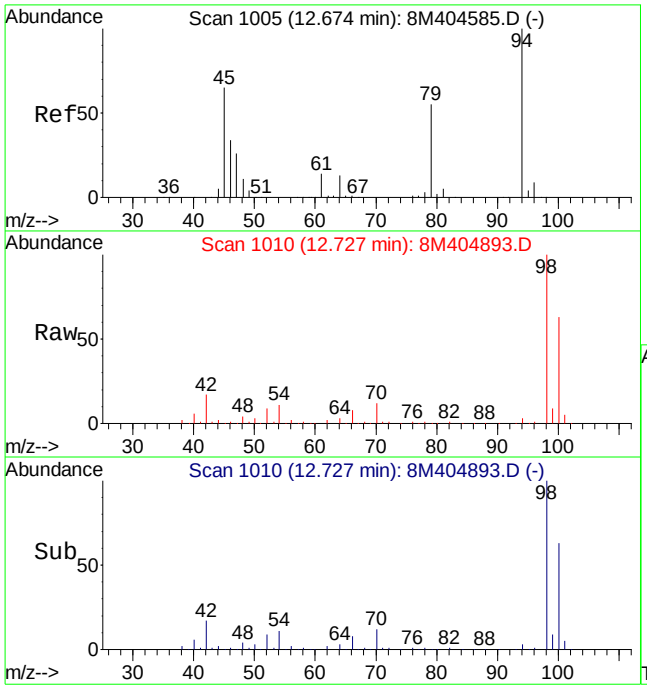

#56
Dimethyl Disulfide
Concen: 3.06 ug/L
RT: 12.73 min Scan# 1010
Delta R.T. 0.06 min
Lab File: 8M404893.D
Acq: 24 May 2015 00:38

Tgt Ion: 79 Resp: 223

Ion	Ratio	Lower	Upper
79	100		
94	7643.9	110.5	257.9#

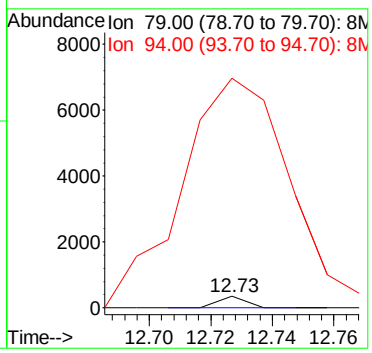

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404899.D Vial: 24
Acq On : 24 May 2015 3:30 Operator: FJB
Sample : L15051231-04 2.5X A 826-LOW Inst : HPMS8
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 08:18:50 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	603308	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	491131	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	261943	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	155507	26.0051 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.04%		
43) 1,2-Dichloroethane-d4	10.35	65	139781	24.8738 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.48%		
58) Toluene-d8	12.73	98	558955	24.3888 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.56%		
80) p-Bromofluorobenzene	16.12	95	213891	24.0009 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.00%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.89	62	4887	0.2778 ug/L	87
11) Acrolein	6.22	56	205	Below Cal # 13	
13) Acetone	6.29	43	306	0.3552 ug/L #	36
14) 1,1-Dichloroethene	6.52	61	2213253	208.7397 ug/L	83
27) 1,1-Dichloroethane	8.37	63	147661	12.0840 ug/L	98
32) cis-1,2-Dichloroethene	9.22	96	5775	0.8307 ug/L	90
33) Chloroform	9.42	83	7711	0.6794 ug/L	88
36) Tetrahydrofuran	9.67	42	462	0.4886 ug/L #	32
45) 1,2-Dichloroethane	10.46	62	99609	12.2418 ug/L	97
47) Trichloroethene	11.25	130	7430	1.1632 ug/L	98
51) 1,4-Dioxane	11.75	88	1325	87.2349 ug/L	99
63) 1,1,2-Trichloroethane	13.22	97	10789	2.3838 ug/L	91
94) 1,4-Dichlorobenzene	17.63	146	1983	0.1225 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M404899.D 8260WT.M Tue May 26 08:18:51 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404899.D Vial: 24
Acq On : 24 May 2015 3:30 Operator: FJB
Sample : L15051231-04 2.5X A 826-LOW Inst : HPMS8
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

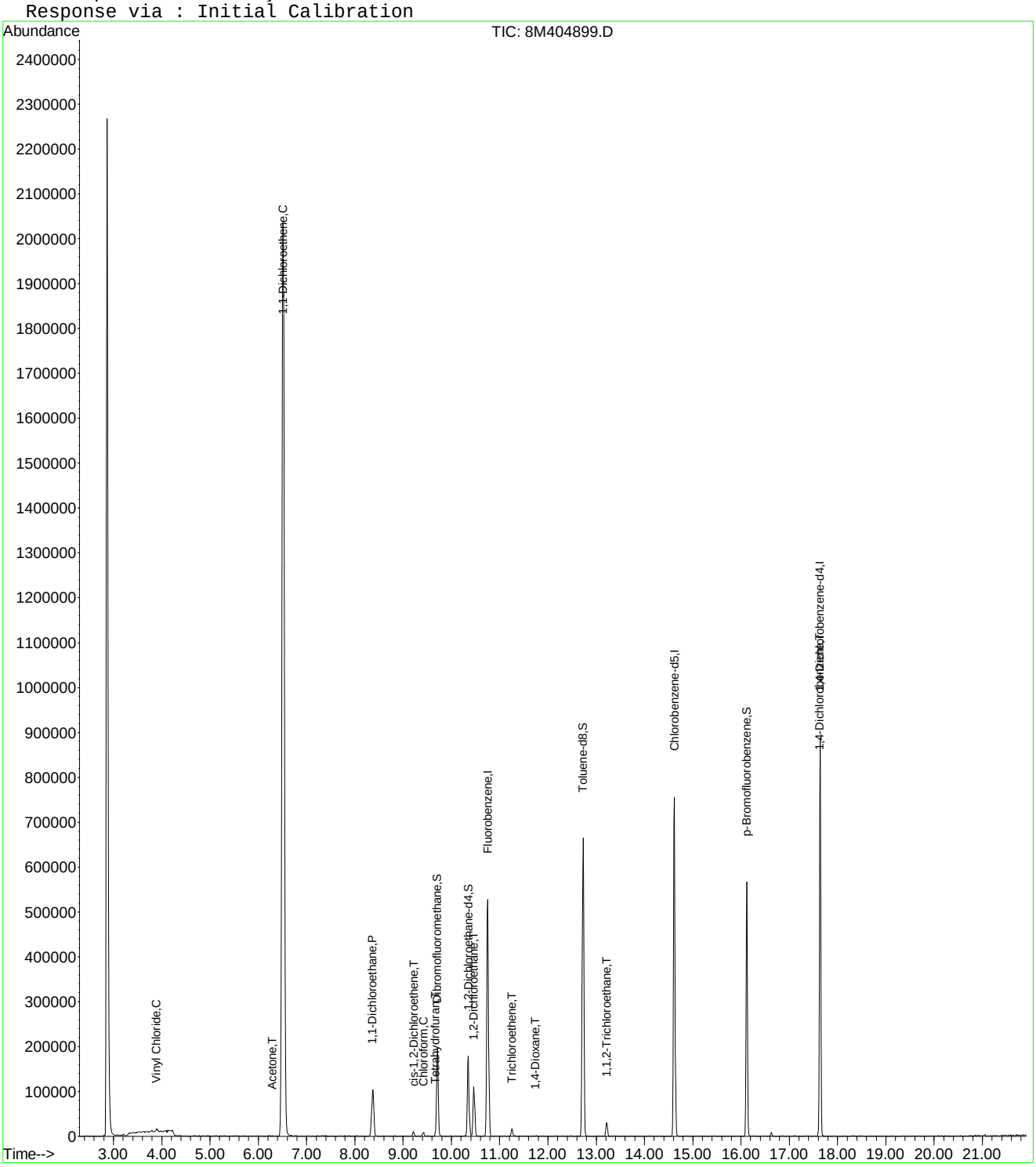

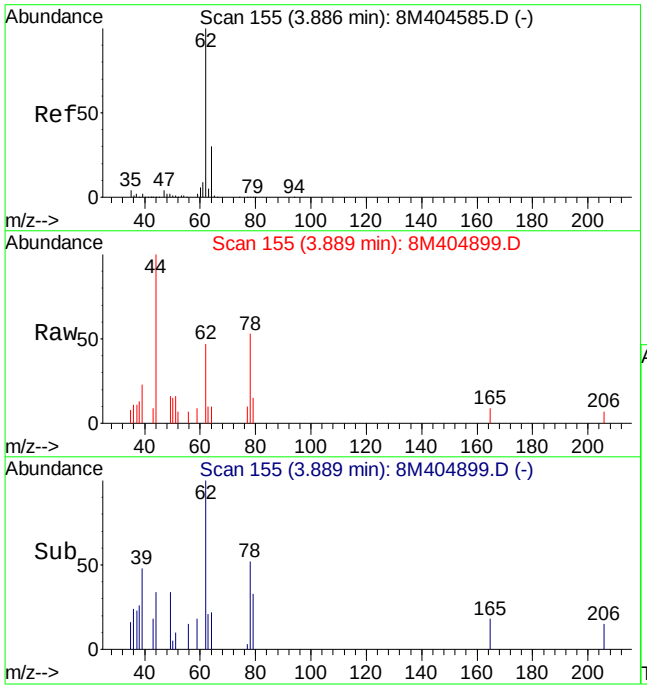

#4
Vinyl Chloride
Concen: 0.28 ug/L
RT: 3.89 min Scan# 155
Delta R.T. 0.01 min
Lab File: 8M404899.D
Acq: 24 May 2015 3:30

Tgt Ion: 62 Resp: 4887

Ion	Ratio	Lower	Upper
62	100		
64	26.5	20.4	47.6

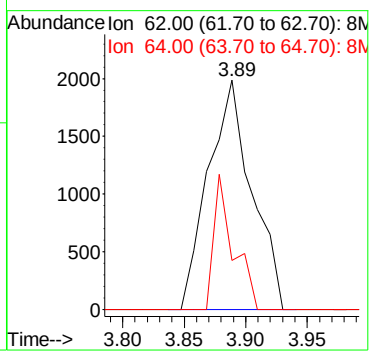

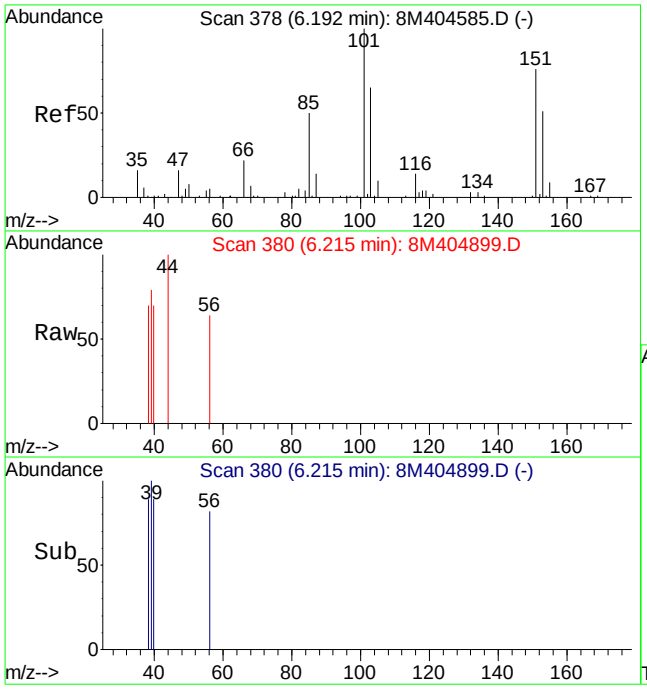

#11
Acrolein
Concen: Below Cal
RT: 6.22 min Scan# 380
Delta R.T. 0.03 min
Lab File: 8M404899.D
Acq: 24 May 2015 3:30

Tgt Ion: 56 Resp: 205

Ion	Ratio	Lower	Upper
56	100		
55	0.0	44.2	103.0#

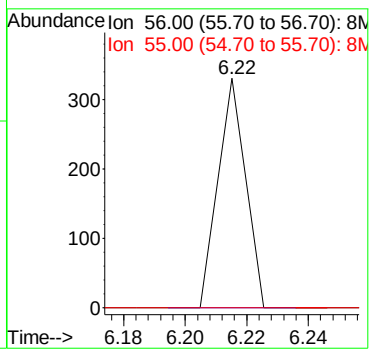

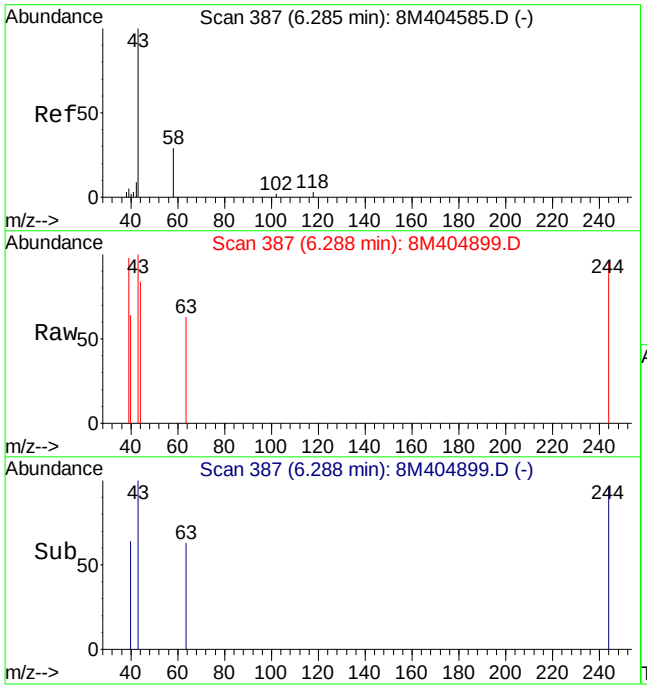

#13
Acetone
Concen: 0.36 ug/L
RT: 6.29 min Scan# 387
Delta R.T. -0.00 min
Lab File: 8M404899.D
Acq: 24 May 2015 3:30

Tgt Ion: 43 Resp: 306

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

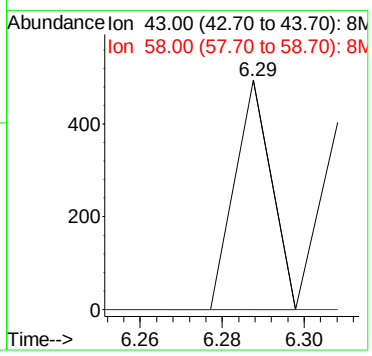

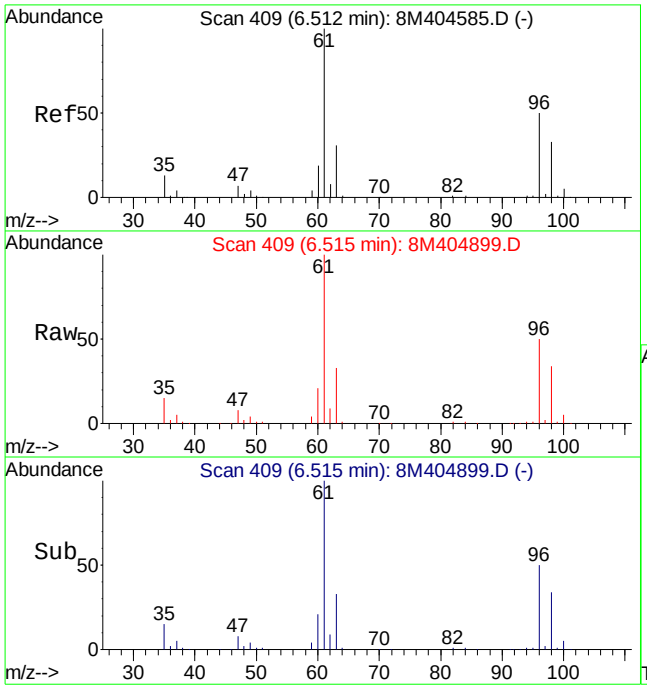

#14
1,1-Dichloroethene
Concen: 208.74 ug/L
RT: 6.52 min Scan# 409
Delta R.T. -0.00 min
Lab File: 8M404899.D
Acq: 24 May 2015 3:30

Tgt Ion: 61 Resp: 2213253

Ion	Ratio	Lower	Upper
61	100		
96	52.1	39.1	91.3

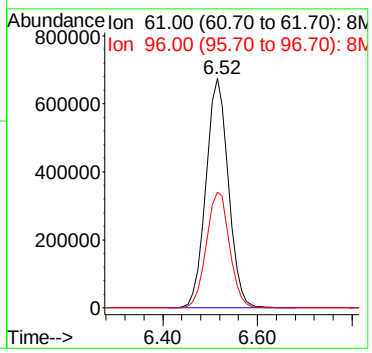

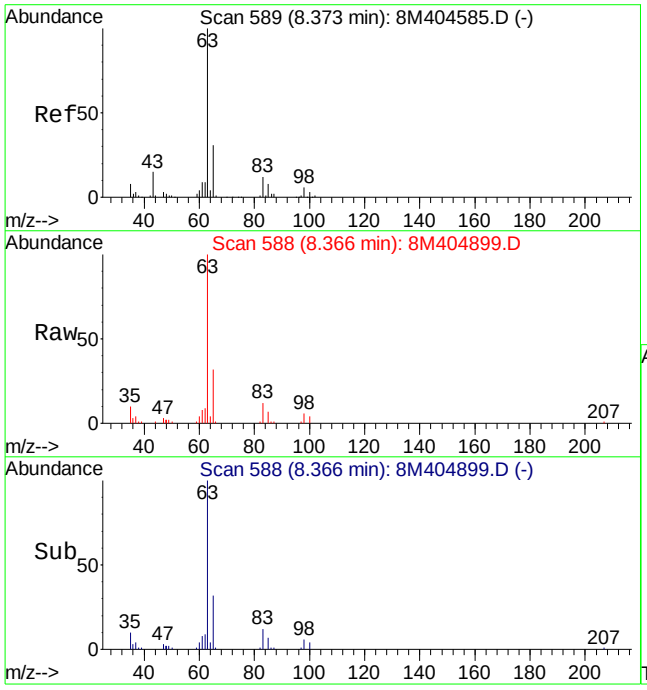

#27
1,1-Dichloroethane
Concen: 12.08 ug/L
RT: 8.37 min Scan# 588
Delta R.T. -0.00 min
Lab File: 8M404899.D
Acq: 24 May 2015 3:30

Tgt Ion: 63 Resp: 147661

Ion	Ratio	Lower	Upper
63	100		
65	33.1	20.7	48.3
83	13.6	8.6	20.2

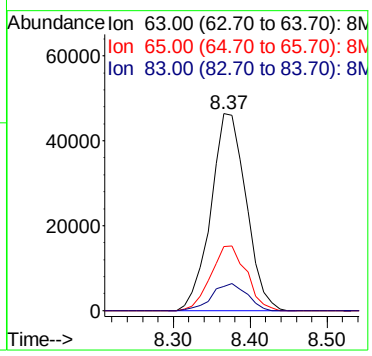

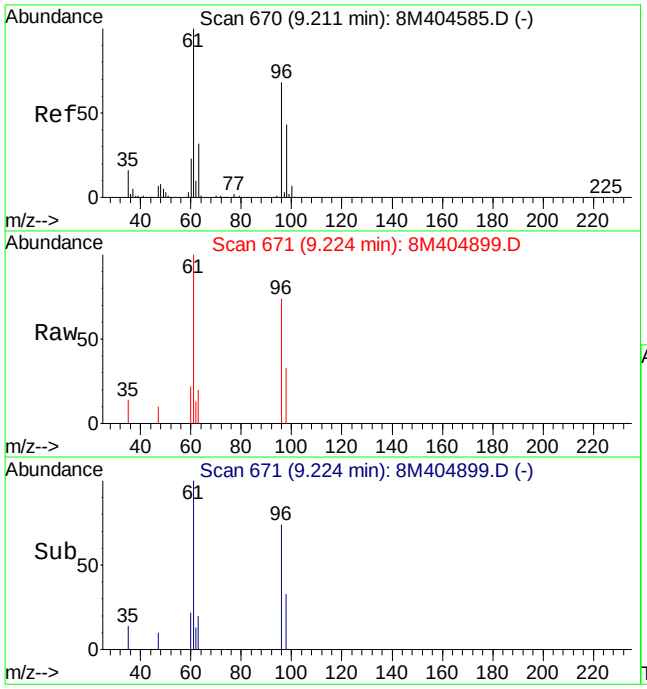

#32
cis-1,2-Dichloroethene
Concen: 0.83 ug/L
RT: 9.22 min Scan# 671
Delta R.T. 0.01 min
Lab File: 8M404899.D
Acq: 24 May 2015 3:30

Tgt Ion: 96 Resp: 5775

Ion	Ratio	Lower	Upper
96	100		
61	127.4	84.0	196.0

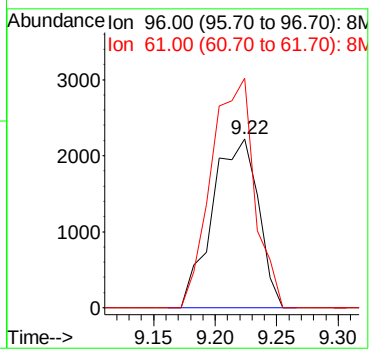

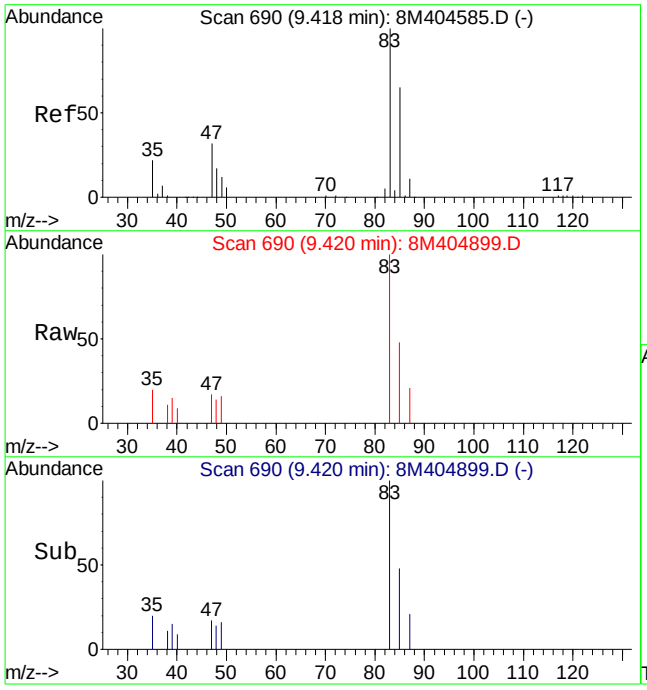

#33
Chloroform
Concen: 0.68 ug/L
RT: 9.42 min Scan# 690
Delta R.T. -0.00 min
Lab File: 8M404899.D
Acq: 24 May 2015 3:30

Tgt Ion: 83 Resp: 7711

Ion	Ratio	Lower	Upper
83	100		
85	59.2	41.3	96.3

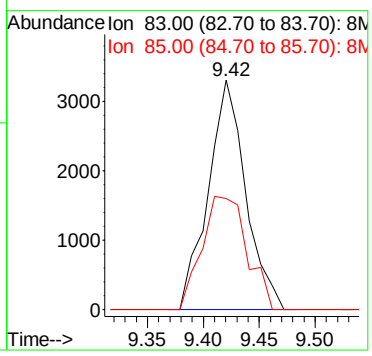

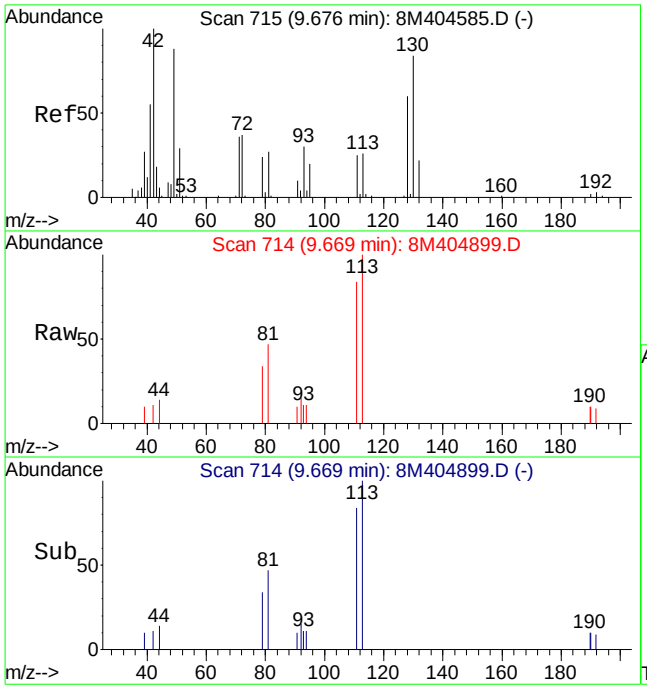

#36
Tetrahydrofuran
Concen: 0.49 ug/L
RT: 9.67 min Scan# 714
Delta R.T. -0.01 min
Lab File: 8M404899.D
Acq: 24 May 2015 3:30

Tgt Ion: 42 Resp: 462

Ion	Ratio	Lower	Upper
42	100		
72	0.0	27.5	64.3#
71	0.0	25.4	59.2#

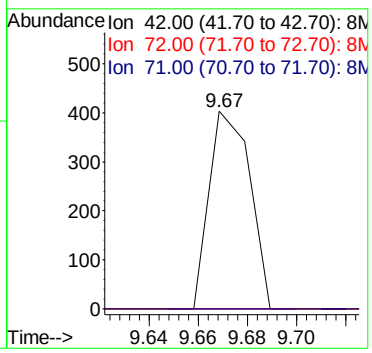

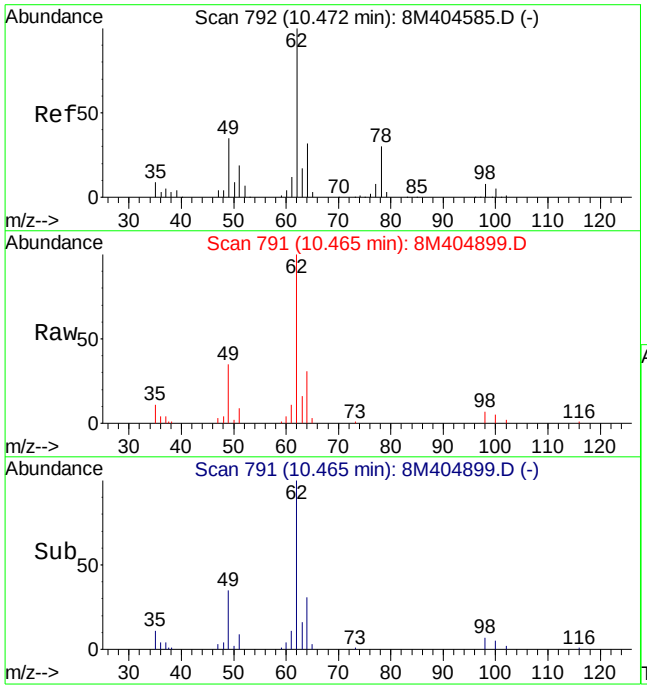

#45
1,2-Dichloroethane
Concen: 12.24 ug/L
RT: 10.46 min Scan# 791
Delta R.T. -0.00 min
Lab File: 8M404899.D
Acq: 24 May 2015 3:30

Tgt Ion: 62 Resp: 99609

Ion	Ratio	Lower	Upper
62	100		
64	31.5	20.5	47.9
49	37.2	21.8	51.0

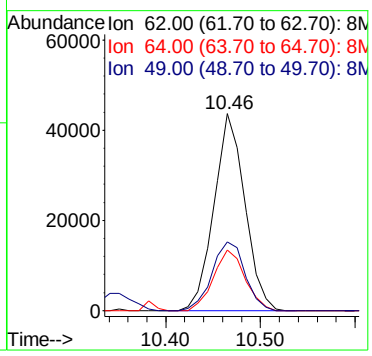

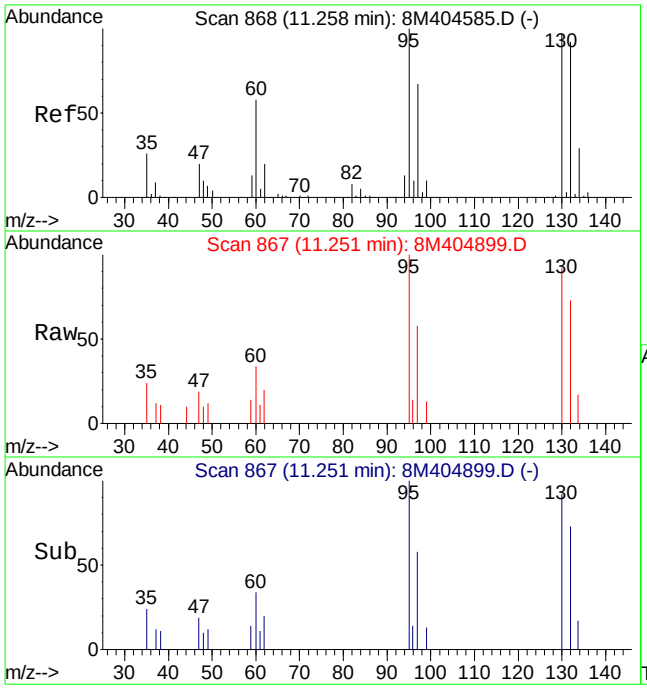

#47
Trichloroethene
Concen: 1.16 ug/L
RT: 11.25 min Scan# 867
Delta R.T. -0.01 min
Lab File: 8M404899.D
Acq: 24 May 2015 3:30

Tgt Ion:130 Resp: 7430

Ion	Ratio	Lower	Upper
130	100		
132	94.8	58.3	135.9
95	101.1	59.2	138.2

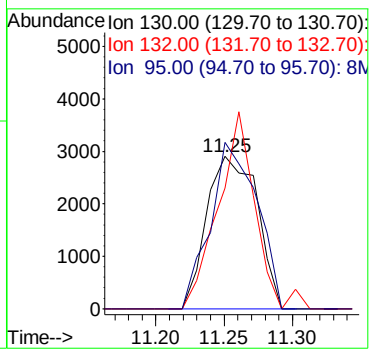

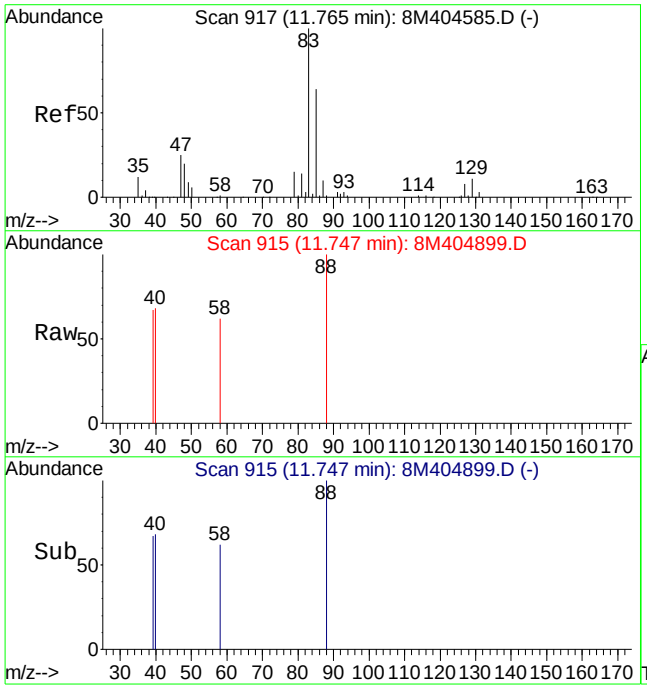

#51
1,4-Dioxane
Concen: 87.23 ug/L
RT: 11.75 min Scan# 915
Delta R.T. -0.02 min
Lab File: 8M404899.D
Acq: 24 May 2015 3:30

Tgt Ion: 88 Resp: 1325

Ion	Ratio	Lower	Upper
88	100		
58	54.9	33.5	78.3

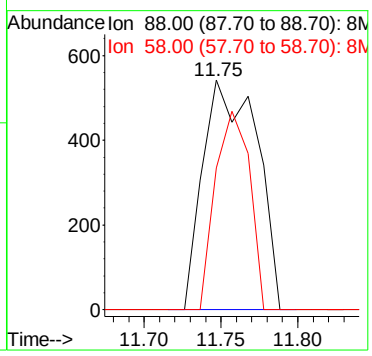

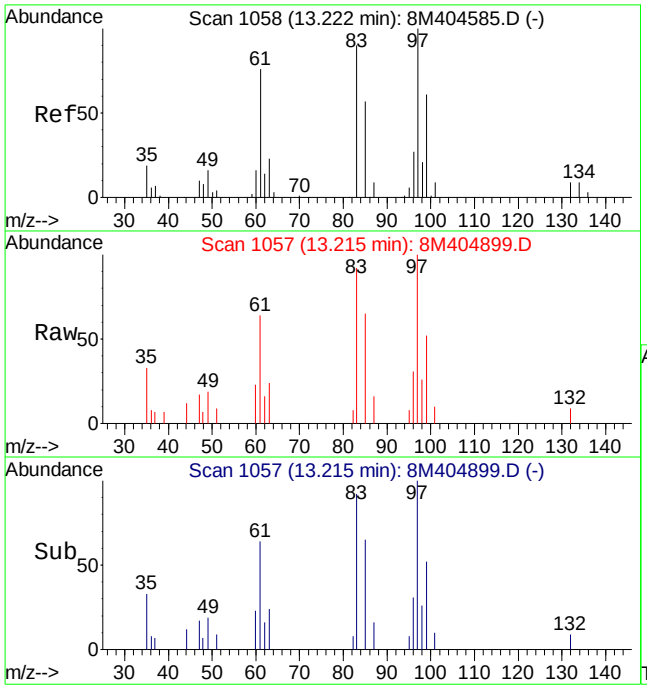

#63
1,1,2-Trichloroethane
Concen: 2.38 ug/L
RT: 13.22 min Scan# 1057
Delta R.T. -0.01 min
Lab File: 8M404899.D
Acq: 24 May 2015 3:30

Tgt Ion: 97 Resp: 10789

Ion	Ratio	Lower	Upper
97	100		
83	93.8	51.6	120.4

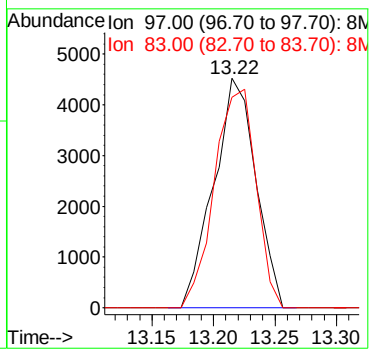

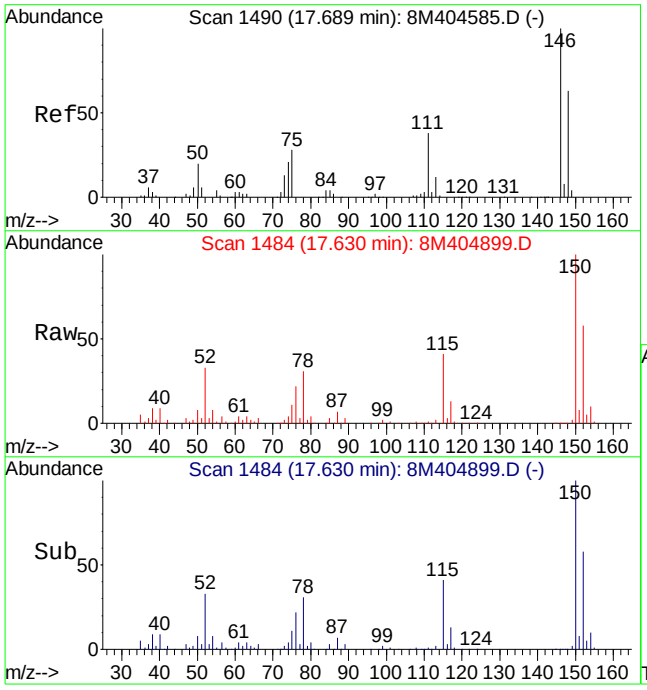

#94
1,4-Dichlorobenzene
Concen: 0.12 ug/L
RT: 17.63 min Scan# 1484
Delta R.T. -0.06 min
Lab File: 8M404899.D
Acq: 24 May 2015 3:30

Tgt Ion:146 Resp: 1983

Ion	Ratio	Lower	Upper
146	100		
111	212.2	27.5	64.3#

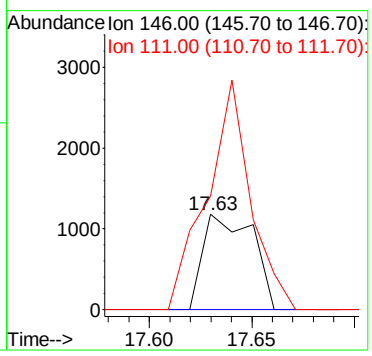

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404900.D Vial: 25
Acq On : 24 May 2015 3:59 Operator: FJB
Sample : L15051231-05 2.5X A 826-LOW Inst : HPMS8
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 08:18:52 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	613395	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	488458	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	264017	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	152790	25.1306 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.52%		
43) 1,2-Dichloroethane-d4	10.35	65	141110	24.6973 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.80%		
58) Toluene-d8	12.73	98	562312	24.6695 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.68%		
80) p-Bromofluorobenzene	16.12	95	210059	23.3857 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.56%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.89	62	13284	0.7428 ug/L	92
5) 1,3-Butadiene	3.96	54	231	Below Cal # 1	
13) Acetone	6.28	43	757	0.8641 ug/L #	36
14) 1,1-Dichloroethene	6.51	61	2718831	252.2057 ug/L	83
27) 1,1-Dichloroethane	8.37	63	116672	9.3910 ug/L	96
32) cis-1,2-Dichloroethene	9.22	96	4342	0.6143 ug/L	99
36) Tetrahydrofuran	9.68	42	525	0.5461 ug/L #	32
45) 1,2-Dichloroethane	10.47	62	104039	12.5760 ug/L	96
47) Trichloroethene	11.25	130	7859	1.2102 ug/L	90
63) 1,1,2-Trichloroethane	13.22	97	3098	0.6882 ug/L	66

(#) = qualifier out of range (m) = manual integration
8M404900.D 8260WT.M Tue May 26 08:18:53 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404900.D Vial: 25
Acq On : 24 May 2015 3:59 Operator: FJB
Sample : L15051231-05 2.5X A 826-LOW Inst : HPMS8
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

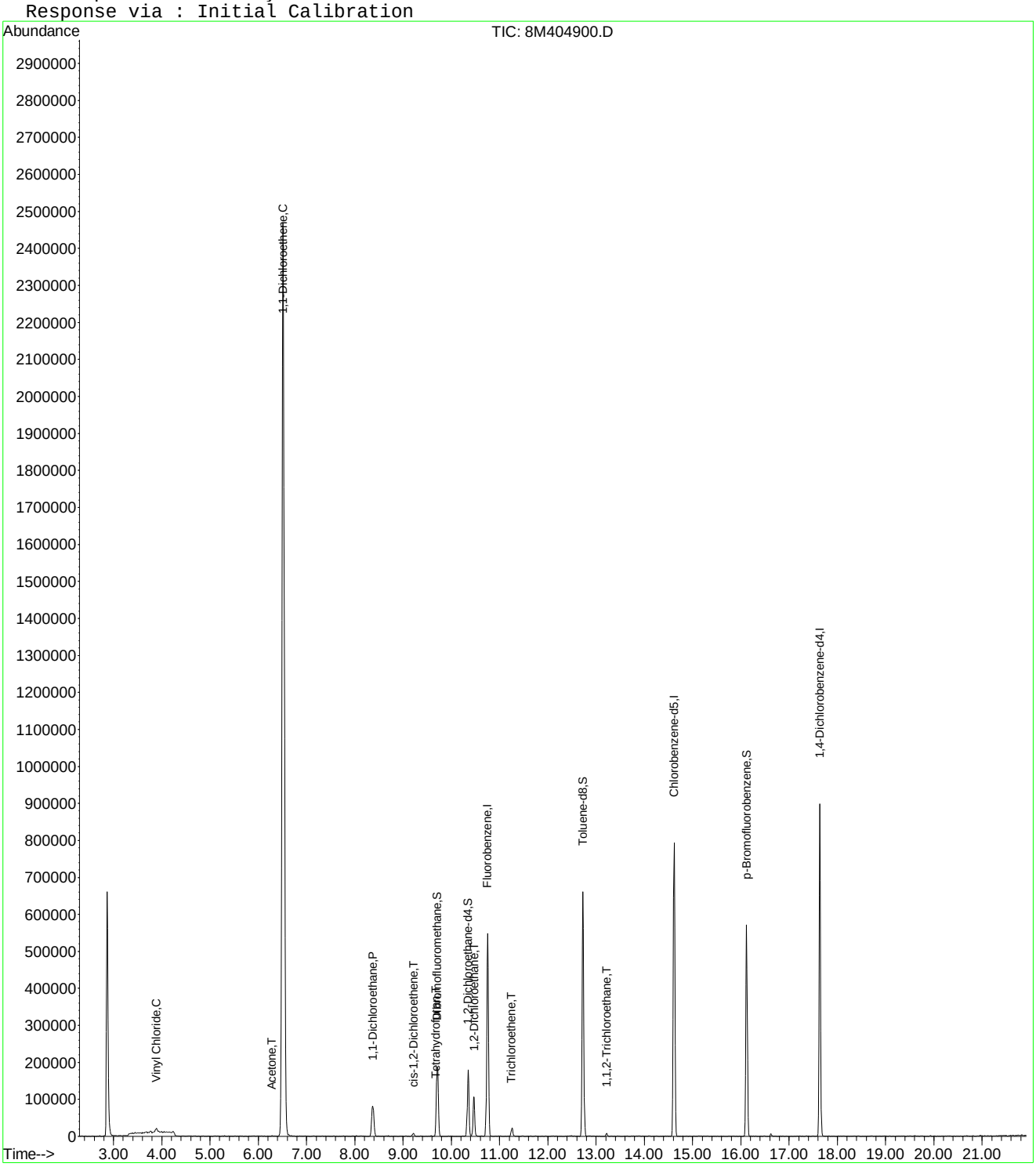

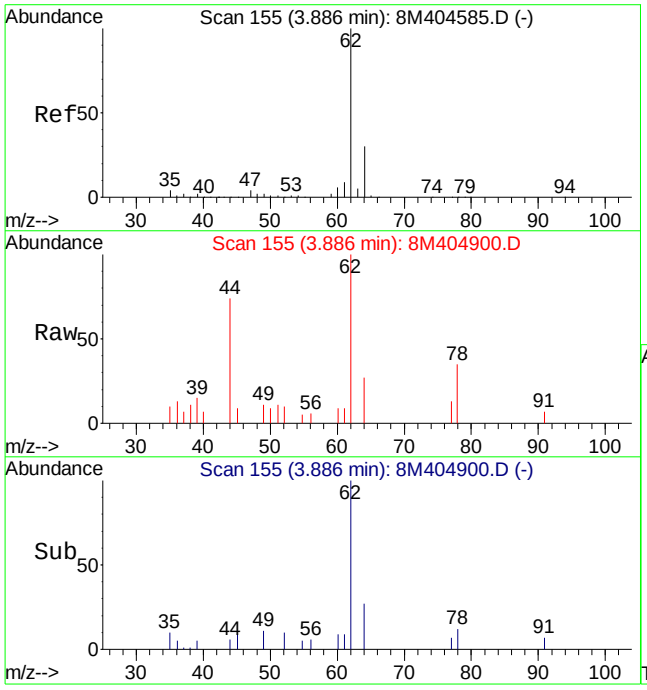

#4
Vinyl Chloride
Concen: 0.74 ug/L
RT: 3.89 min Scan# 155
Delta R.T. 0.01 min
Lab File: 8M404900.D
Acq: 24 May 2015 3:59

Tgt Ion: 62 Resp: 13284

Ion	Ratio	Lower	Upper
62	100		
64	29.6	20.4	47.6

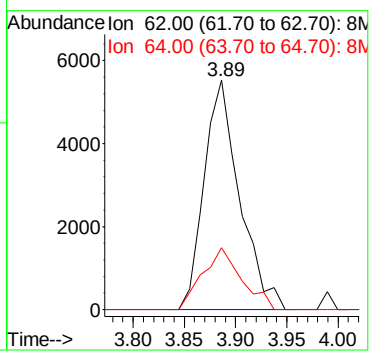

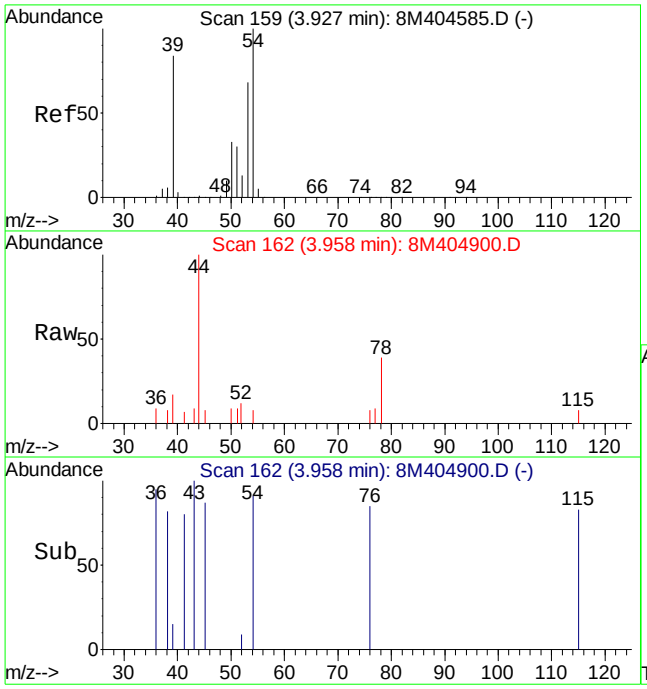

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.96 min Scan# 162
Delta R.T. 0.05 min
Lab File: 8M404900.D
Acq: 24 May 2015 3:59

Tgt Ion: 54 Resp: 231

Ion	Ratio	Lower	Upper
54	100		
39	1184.0	50.7	118.3#
53	171.0	40.4	94.4#

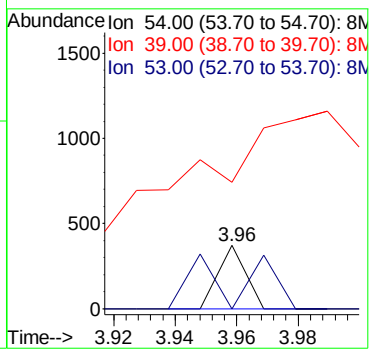

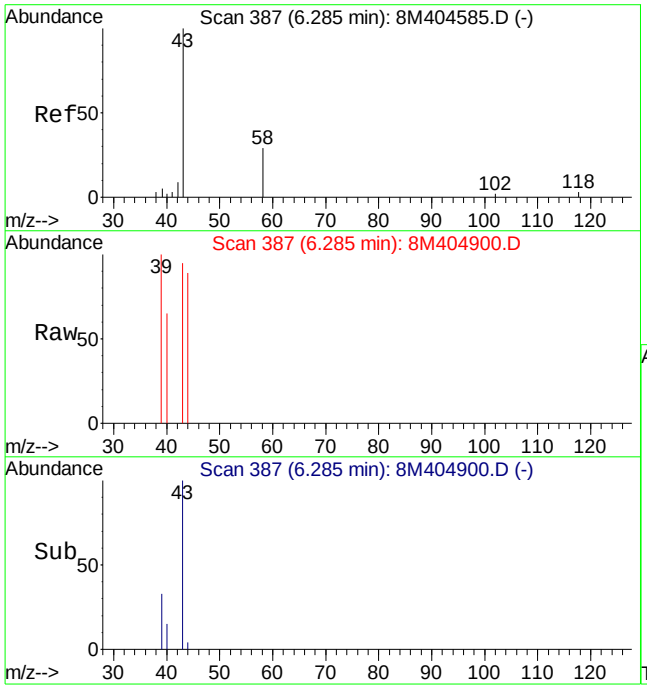

#13
Acetone
Concen: 0.86 ug/L
RT: 6.28 min Scan# 387
Delta R.T. -0.00 min
Lab File: 8M404900.D
Acq: 24 May 2015 3:59

Tgt Ion: 43 Resp: 757

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

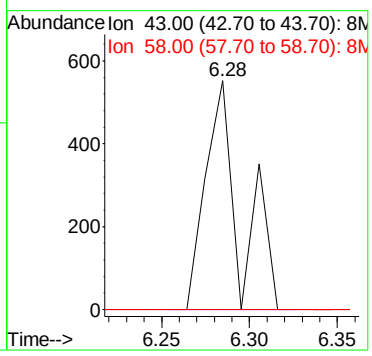

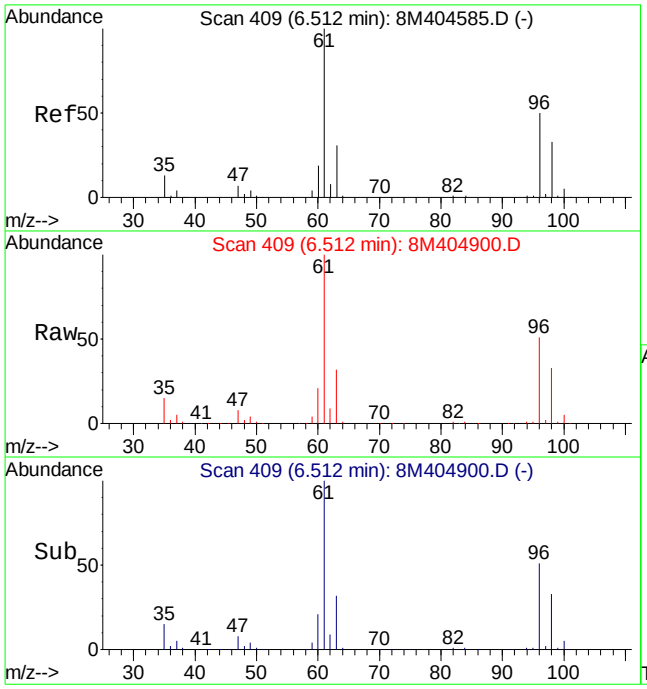

#14
1,1-Dichloroethene
Concen: 252.21 ug/L
RT: 6.51 min Scan# 409
Delta R.T. -0.00 min
Lab File: 8M404900.D
Acq: 24 May 2015 3:59

Tgt Ion: 61 Resp: 2718831

Ion	Ratio	Lower	Upper
61	100		
96	51.7	39.1	91.3

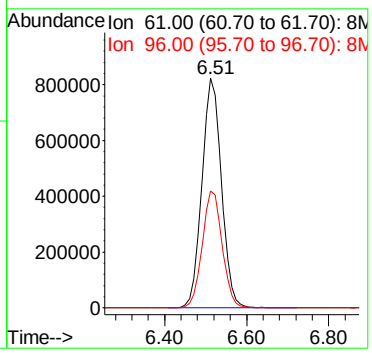

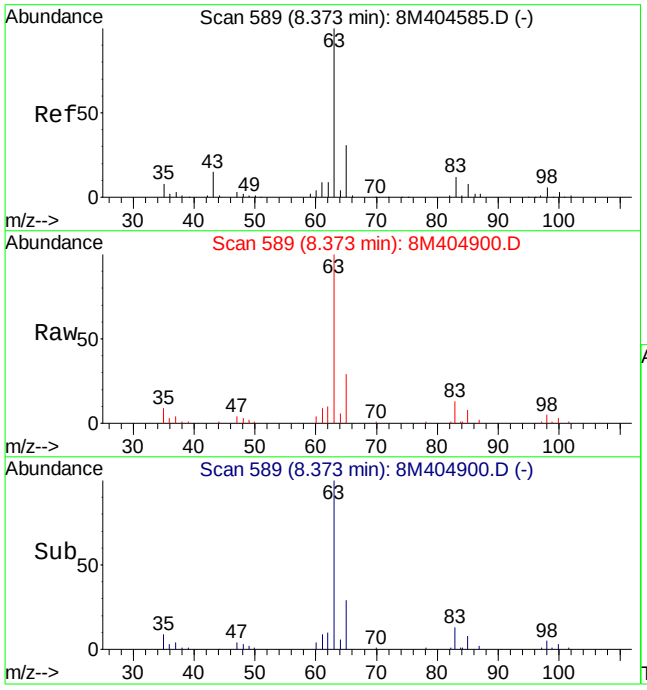

#27
1,1-Dichloroethane
Concen: 9.39 ug/L
RT: 8.37 min Scan# 589
Delta R.T. 0.01 min
Lab File: 8M404900.D
Acq: 24 May 2015 3:59

Tgt Ion: 63 Resp: 116672

Ion	Ratio	Lower	Upper
63	100		
65	31.7	20.7	48.3
83	13.4	8.6	20.2

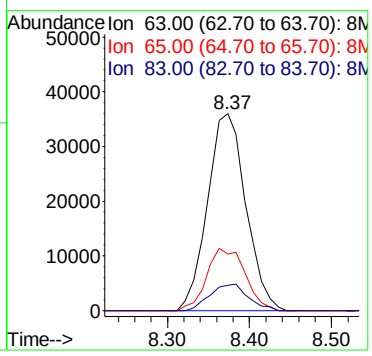

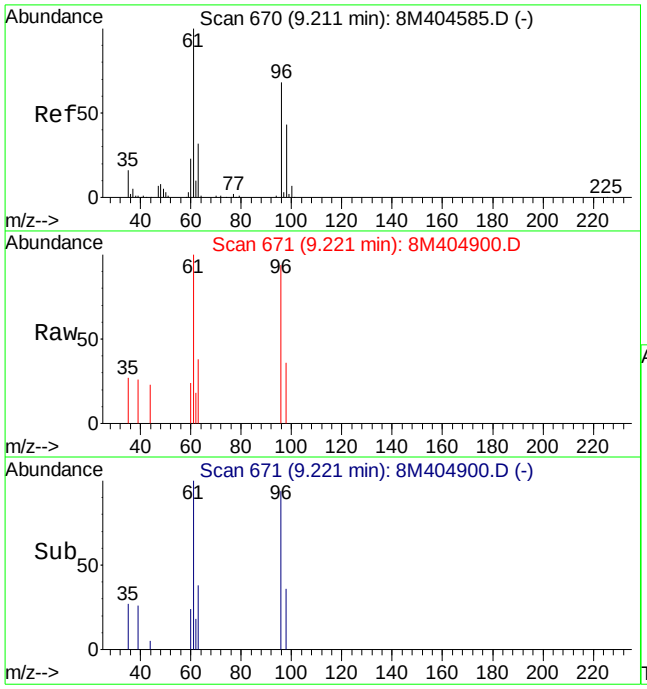

#32
cis-1,2-Dichloroethene
Concen: 0.61 ug/L
RT: 9.22 min Scan# 671
Delta R.T. 0.01 min
Lab File: 8M404900.D
Acq: 24 May 2015 3:59

Tgt Ion: 96 Resp: 4342

Ion	Ratio	Lower	Upper
96	100		
61	138.7	84.0	196.0

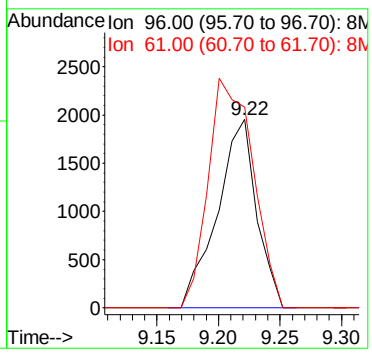

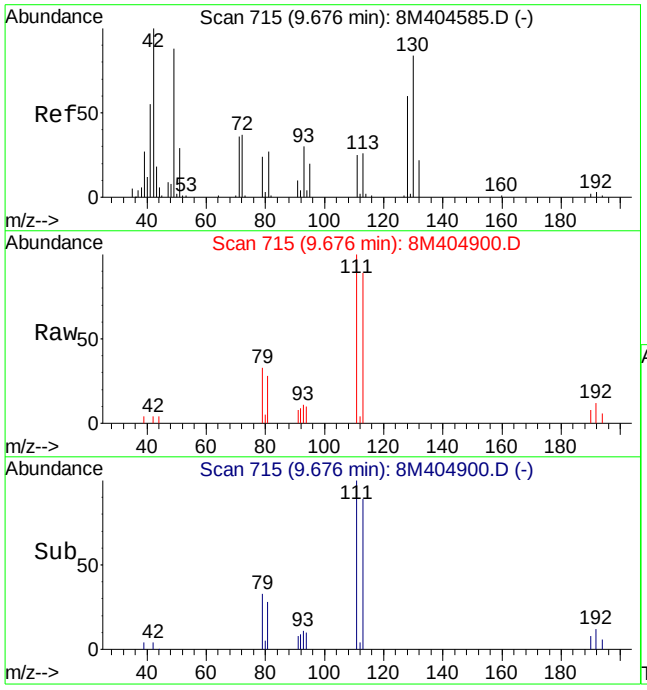

#36
Tetrahydrofuran
Concen: 0.55 ug/L
RT: 9.68 min Scan# 715
Delta R.T. -0.00 min
Lab File: 8M404900.D
Acq: 24 May 2015 3:59

Tgt Ion: 42 Resp: 525

Ion	Ratio	Lower	Upper
42	100		
72	0.0	27.5	64.3#
71	0.0	25.4	59.2#

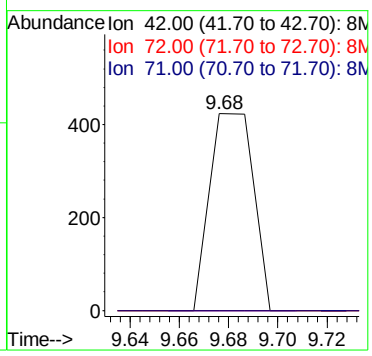

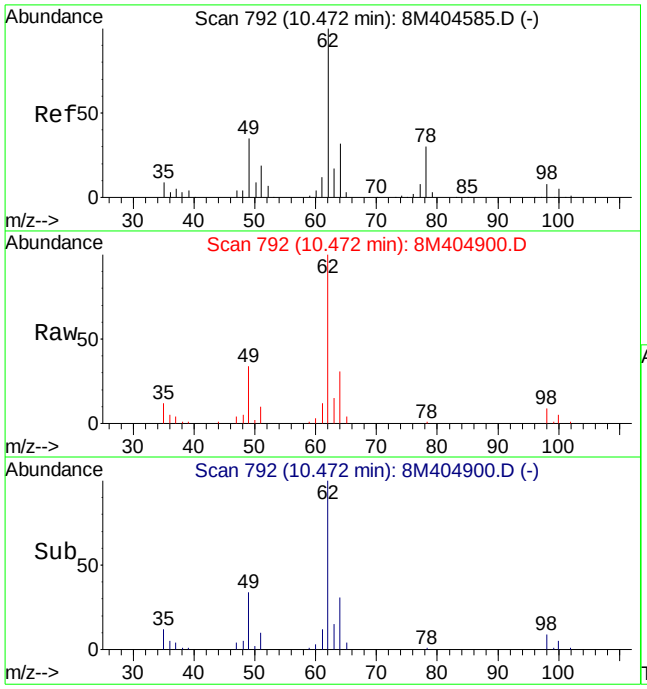

#45
1,2-Dichloroethane
Concen: 12.58 ug/L
RT: 10.47 min Scan# 792
Delta R.T. 0.01 min
Lab File: 8M404900.D
Acq: 24 May 2015 3:59

Tgt Ion: 62 Resp: 104039

Ion	Ratio	Lower	Upper
62	100		
64	31.1	20.5	47.9
49	35.2	21.8	51.0

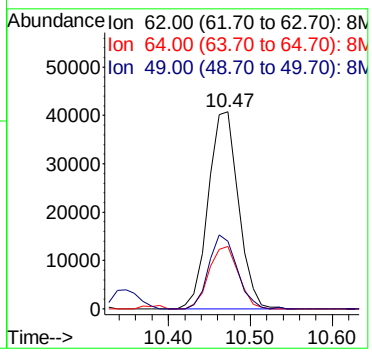

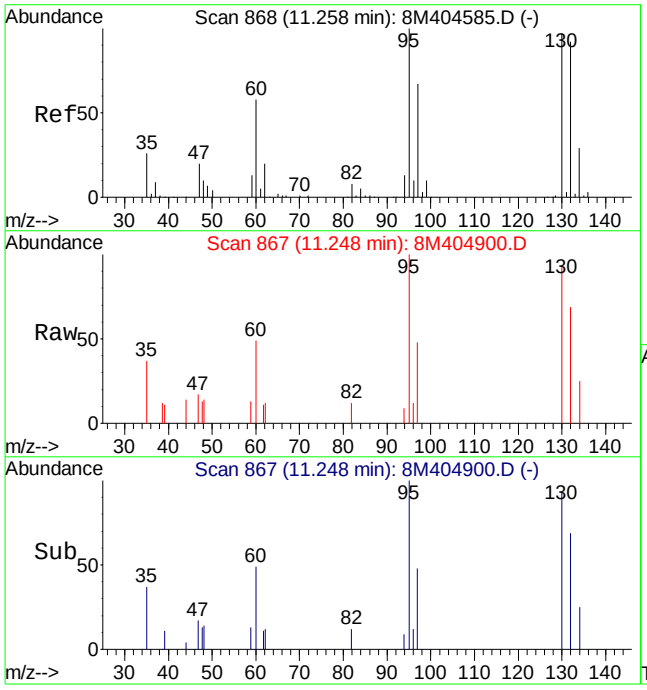

#47
Trichloroethene
Concen: 1.21 ug/L
RT: 11.25 min Scan# 867
Delta R.T. -0.01 min
Lab File: 8M404900.D
Acq: 24 May 2015 3:59

Tgt Ion:130 Resp: 7859

Ion	Ratio	Lower	Upper
130	100		
132	104.5	58.3	135.9
95	110.7	59.2	138.2

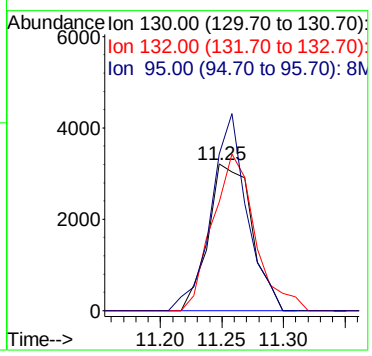

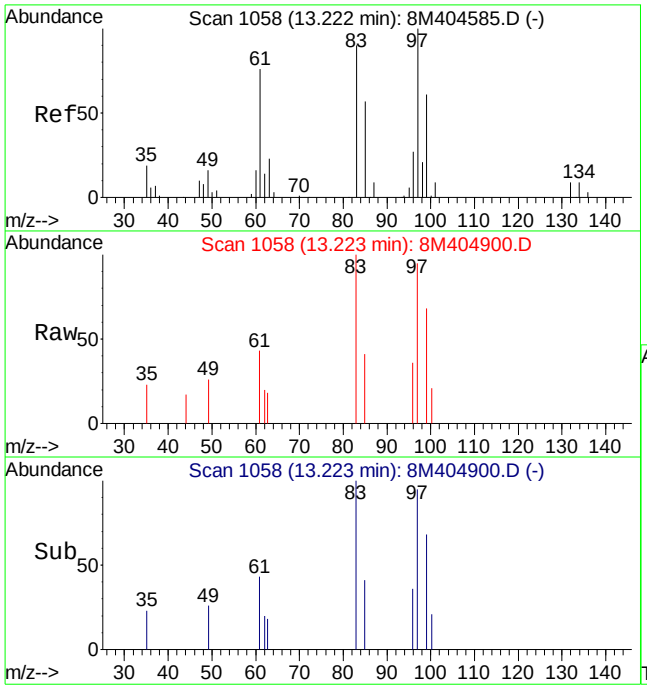

#63
1,1,2-Trichloroethane
Concen: 0.69 ug/L
RT: 13.22 min Scan# 1058
Delta R.T. -0.00 min
Lab File: 8M404900.D
Acq: 24 May 2015 3:59

Tgt Ion: 97 Resp: 3098

Ion	Ratio	Lower	Upper
97	100		
83	117.5	51.6	120.4

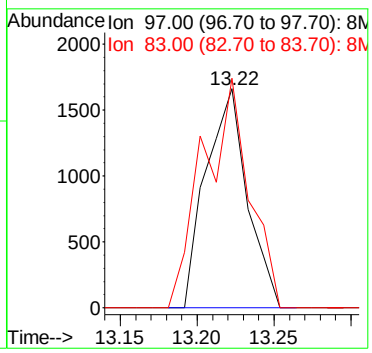

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404884.D Vial: 9
Acq On : 23 May 2015 20:17 Operator: FJB
Sample : L15051231-06 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 08:18:25 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	677691	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	548388	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	292215	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	169182	25.1866 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.76%		
43) 1,2-Dichloroethane-d4	10.35	65	156831	24.8446 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.36%		
58) Toluene-d8	12.73	98	628736	24.5692 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.28%		
80) p-Bromofluorobenzene	16.12	95	235806	23.7188 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.88%		

Target Compounds

					Qvalue
3) Chloromethane	3.65	50	3248	0.1549 ug/L #	40
5) 1,3-Butadiene	3.99	54	213	Below Cal #	1
13) Acetone	6.30	43	388	0.4009 ug/L #	36
36) Tetrahydrofuran	9.67	42	359	0.3380 ug/L #	32
56) Dimethyl Disulfide	12.72	79	219	3.0582 ug/L #	1
81) 1,2,3-Trichloropropane	16.13	110	229	0.1522 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M404884.D 8260WT.M Tue May 26 08:18:26 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404884.D Vial: 9
Acq On : 23 May 2015 20:17 Operator: FJB
Sample : L15051231-06 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

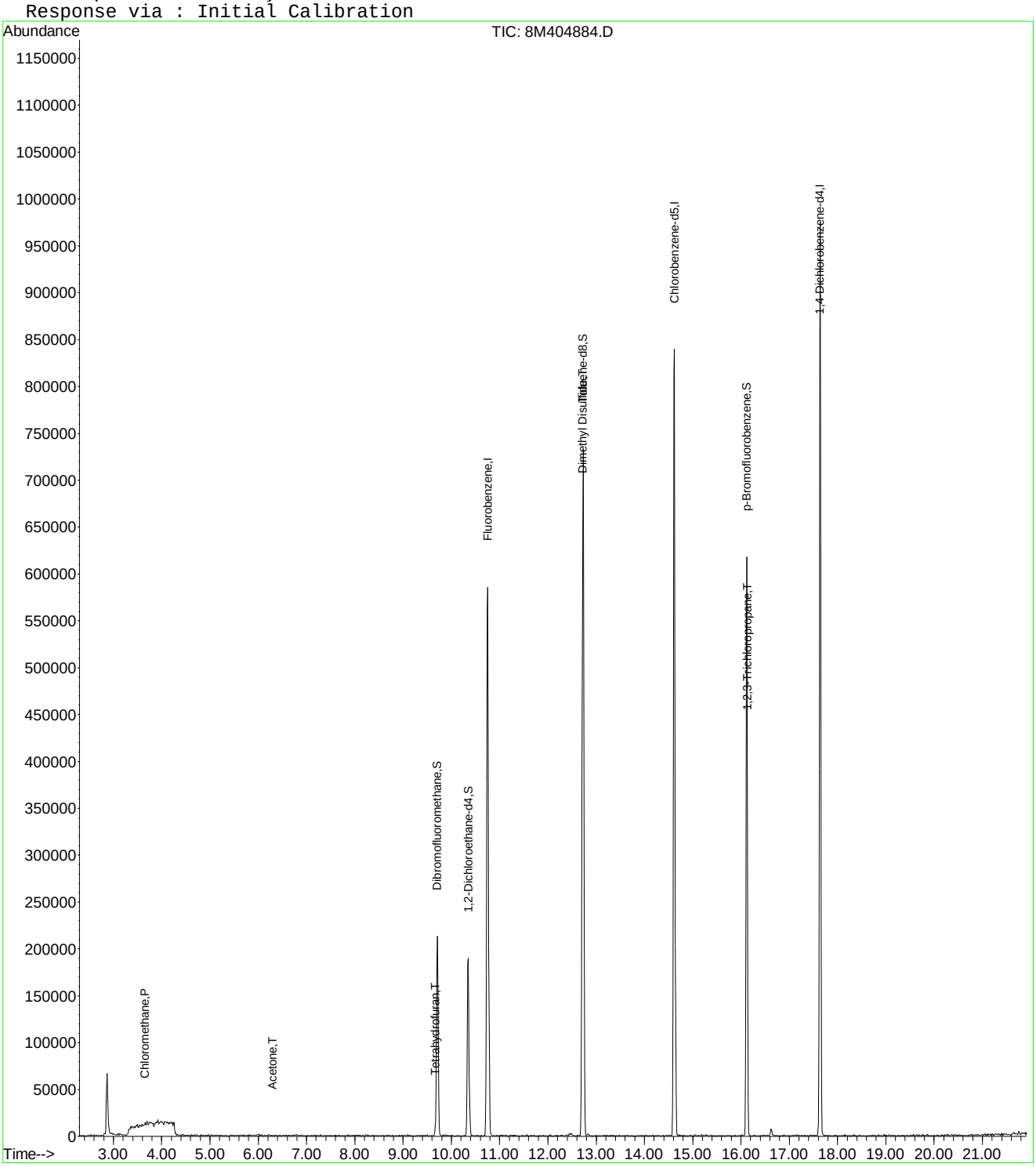

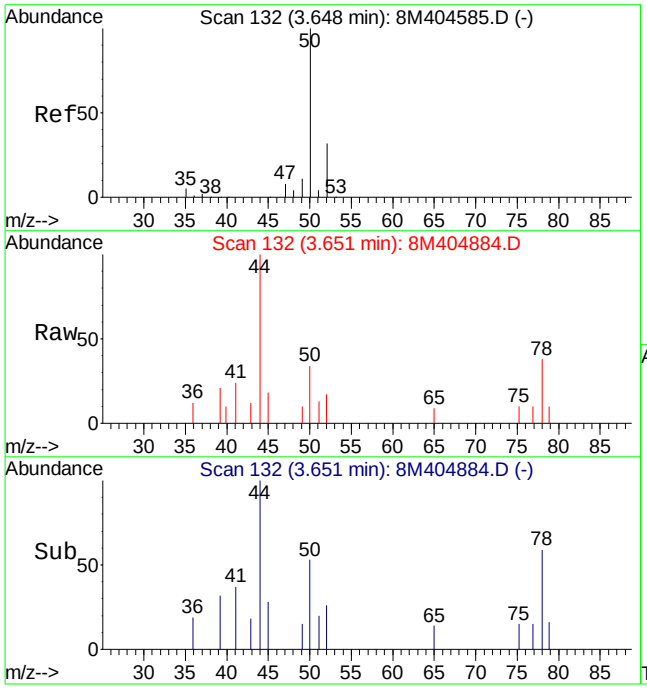

#3
Chloromethane
Concen: 0.15 ug/L
RT: 3.65 min Scan# 132
Delta R.T. 0.00 min
Lab File: 8M404884.D
Acq: 23 May 2015 20:17

Tgt Ion: 50 Resp: 3248

Ion	Ratio	Lower	Upper
50	100		
52	0.0	20.9	48.7#

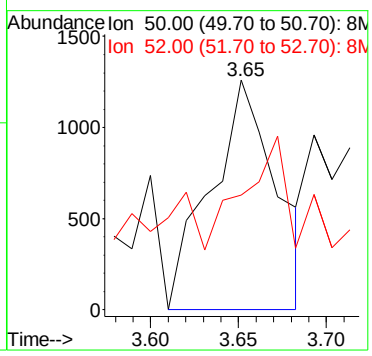

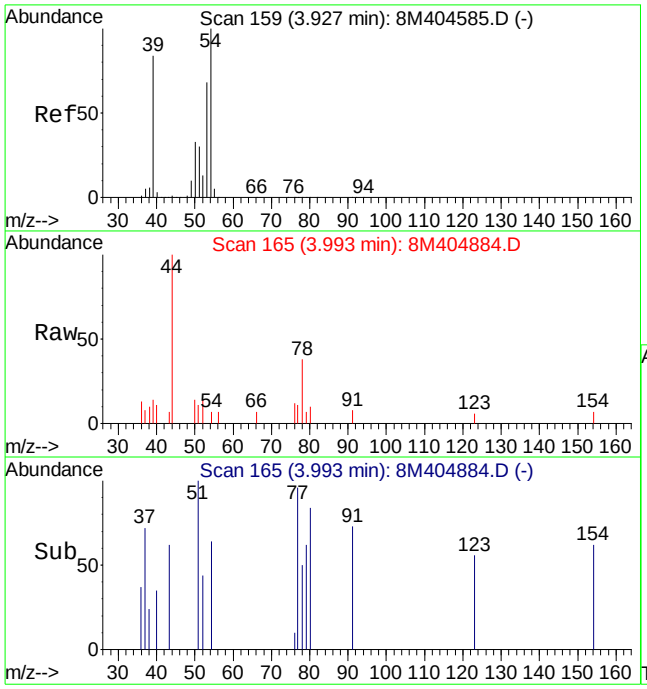

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.99 min Scan# 165
Delta R.T. 0.08 min
Lab File: 8M404884.D
Acq: 23 May 2015 20:17

Tgt Ion: 54 Resp: 213

Ion	Ratio	Lower	Upper
54	100		
39	437.1	50.7	118.3#
53	215.5	40.4	94.4#

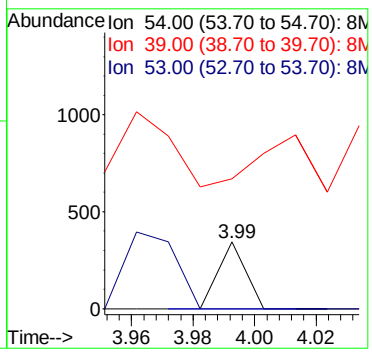

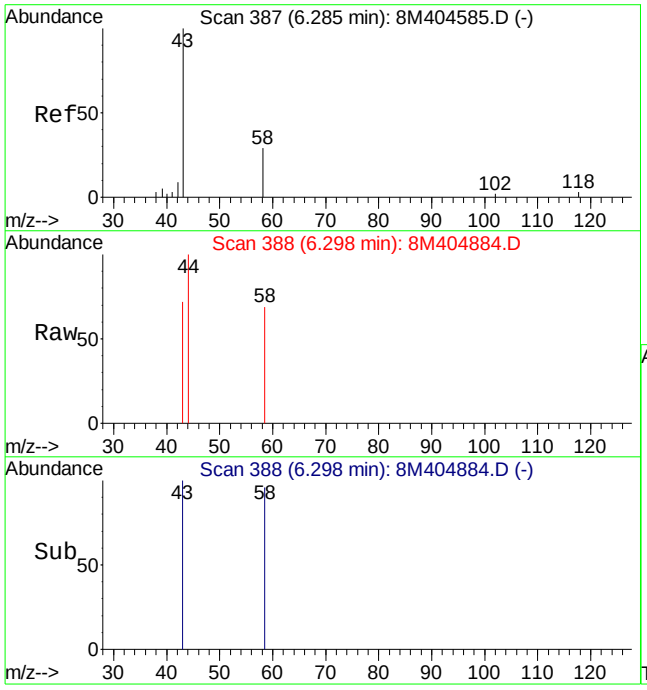

#13
Acetone
Concen: 0.40 ug/L
RT: 6.30 min Scan# 388
Delta R.T. 0.01 min
Lab File: 8M404884.D
Acq: 23 May 2015 20:17

Tgt Ion: 43 Resp: 388

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

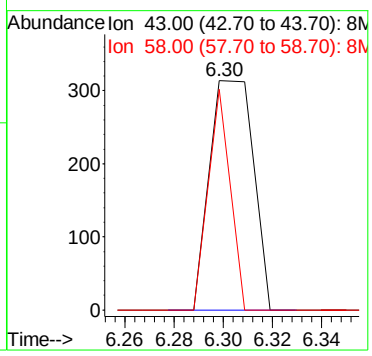

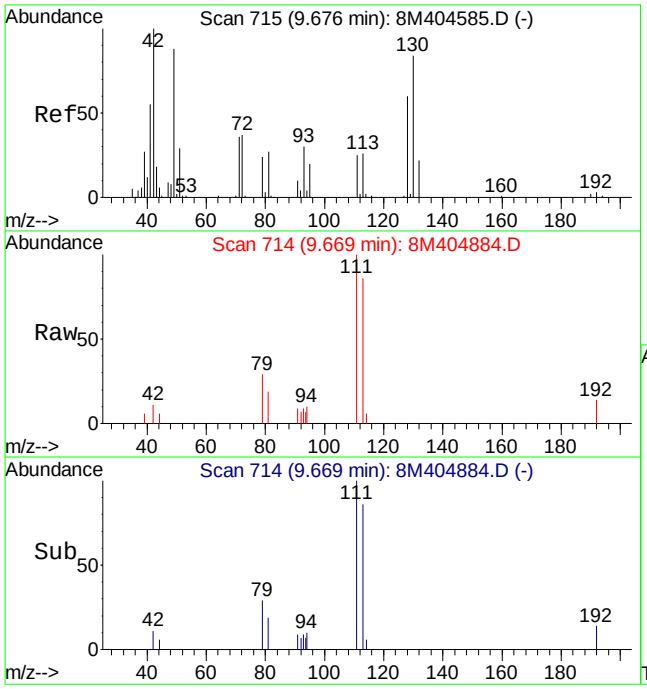

#36
Tetrahydrofuran
Concen: 0.34 ug/L
RT: 9.67 min Scan# 714
Delta R.T. -0.01 min
Lab File: 8M404884.D
Acq: 23 May 2015 20:17

Tgt Ion: 42 Resp: 359

Ion	Ratio	Lower	Upper
42	100		
72	0.0	27.5	64.3#
71	0.0	25.4	59.2#

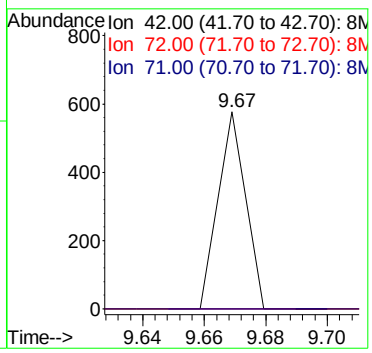

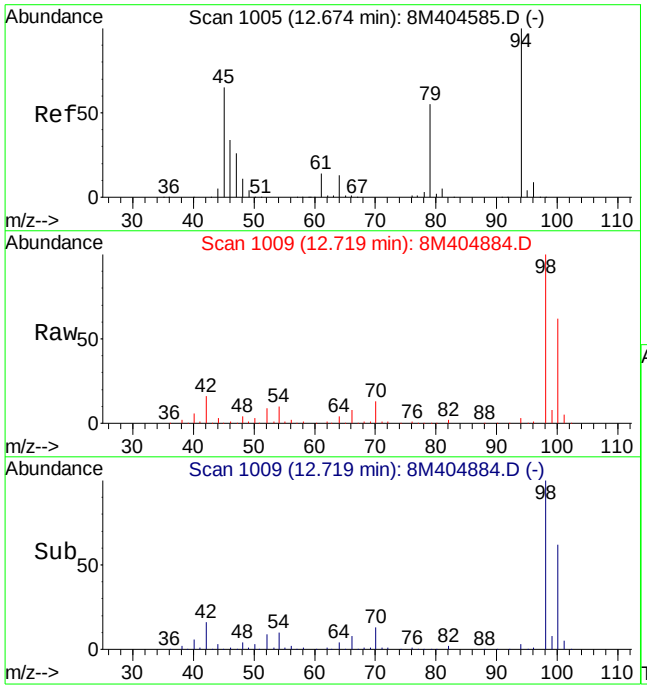

#56
Dimethyl Disulfide
Concen: 3.06 ug/L
RT: 12.72 min Scan# 1009
Delta R.T. 0.05 min
Lab File: 8M404884.D
Acq: 23 May 2015 20:17

Tgt Ion: 79 Resp: 219

Ion	Ratio	Lower	Upper
79	100		
94	8205.9	110.5	257.9#

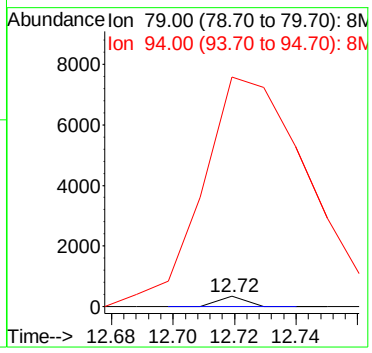

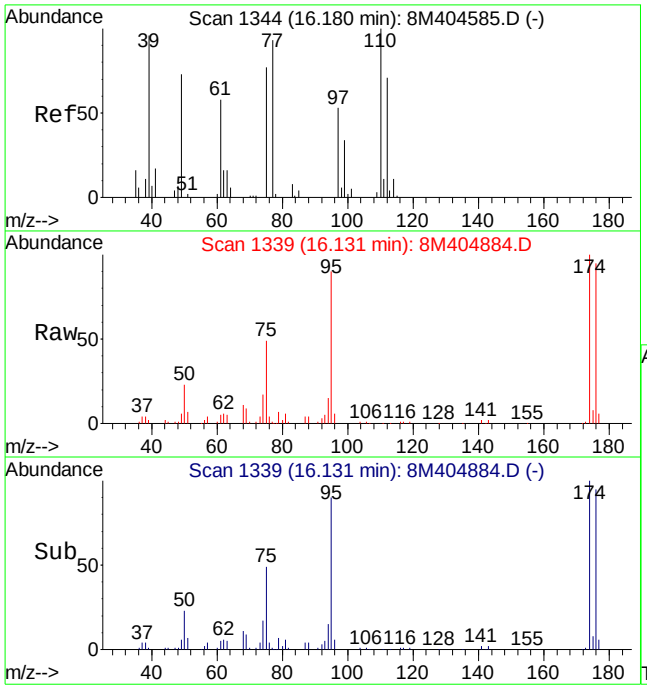

#81
1,2,3-Trichloropropane
Concen: 0.15 ug/L
RT: 16.13 min Scan# 1339
Delta R.T. -0.05 min
Lab File: 8M404884.D
Acq: 23 May 2015 20:17

Tgt Ion:110 Resp: 229

Ion	Ratio	Lower	Upper
110	100		
75	57015.3	115.6	269.6#
97	91.7	36.7	85.7#

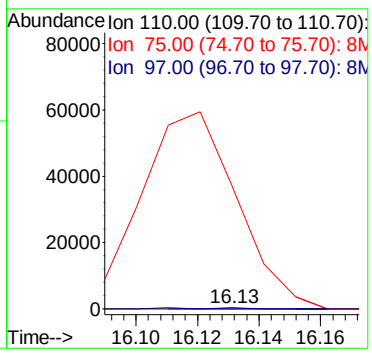

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:40 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	619208	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	544510	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	254129	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1884	4.8234 ug/L #	23
3) 3-Chloro-1-propene	7.26	41	51461	4.9911 ug/L	88
4) 2-Chloro-1,3-butadiene	8.64	53	57885	4.7445 ug/L	89
5) Ethyl Acetate	9.28	43	12831	4.1474 ug/L	98
6) Methacrylonitrile	9.44	67	7738	4.2085 ug/L #	61
7) Isobutyl Alcohol	9.28	43	12831	104.0280 ug/L #	12
9) Methyl methacrylate	11.60	41	14247	4.0960 ug/L	83
10) 2-Nitropropane	11.94	43	3986	3.8294 ug/L	98
13) Cyclohexanone	16.03	55	1559	3.8882 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M400358.D A9FOOWTR.M Fri Oct 03 12:32:40 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

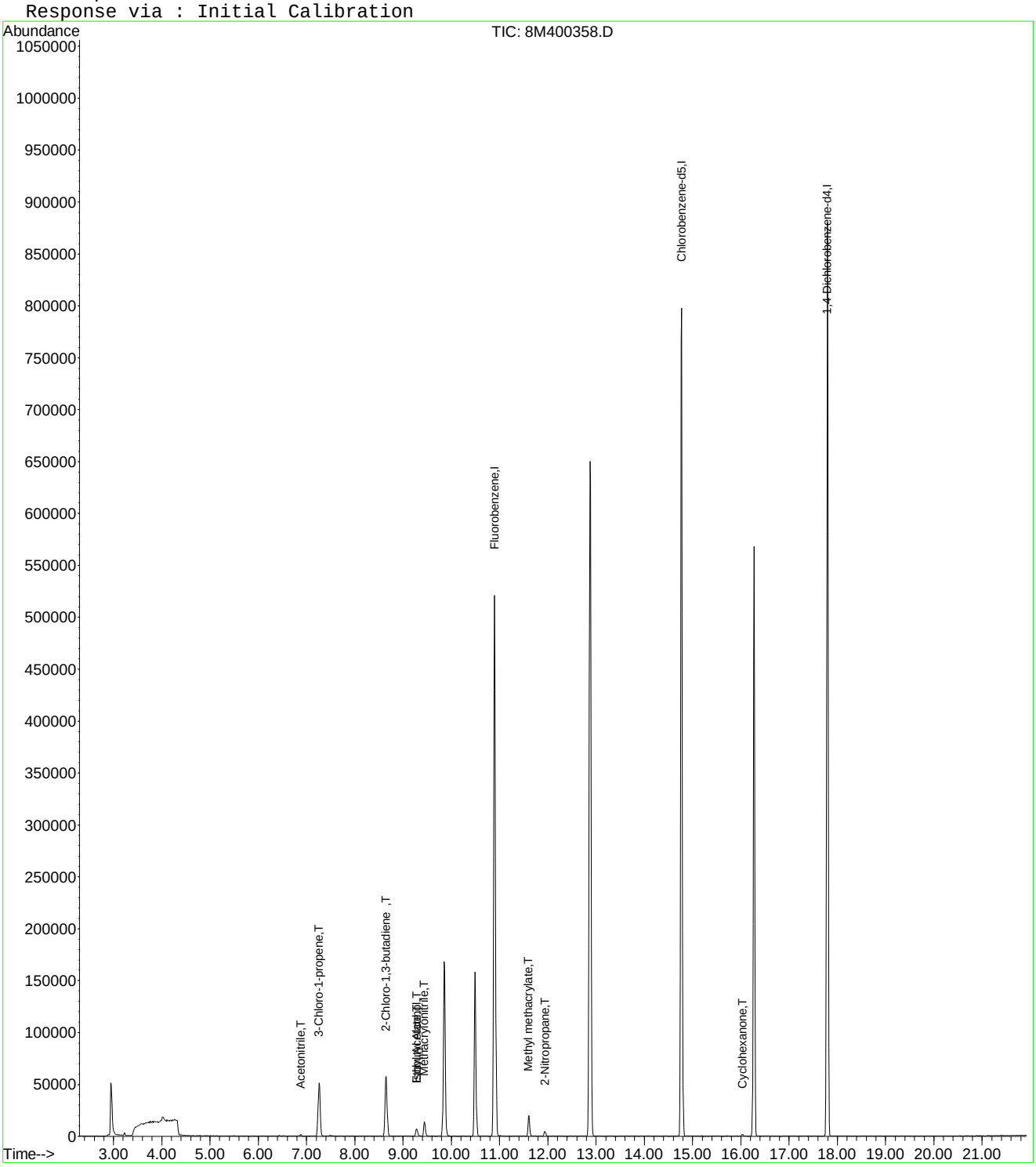

8M400358.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:41 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590707	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	530005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	246254	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	7263	19.4920 ug/L	97
3) 3-Chloro-1-propene	7.26	41	190581	19.3757 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	226534	19.4636 ug/L	90
5) Ethyl Acetate	9.28	43	54503	18.4670 ug/L	94
6) Methacrylonitrile	9.44	67	30898	17.6155 ug/L #	65
7) Isobutyl Alcohol	9.45	43	3143	26.7115 ug/L #	95
9) Methyl methacrylate	11.61	41	58234	17.5500 ug/L	72
10) 2-Nitropropane	11.94	43	16687	16.8050 ug/L	98
13) Cyclohexanone	16.03	55	7124	18.3357 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400359.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

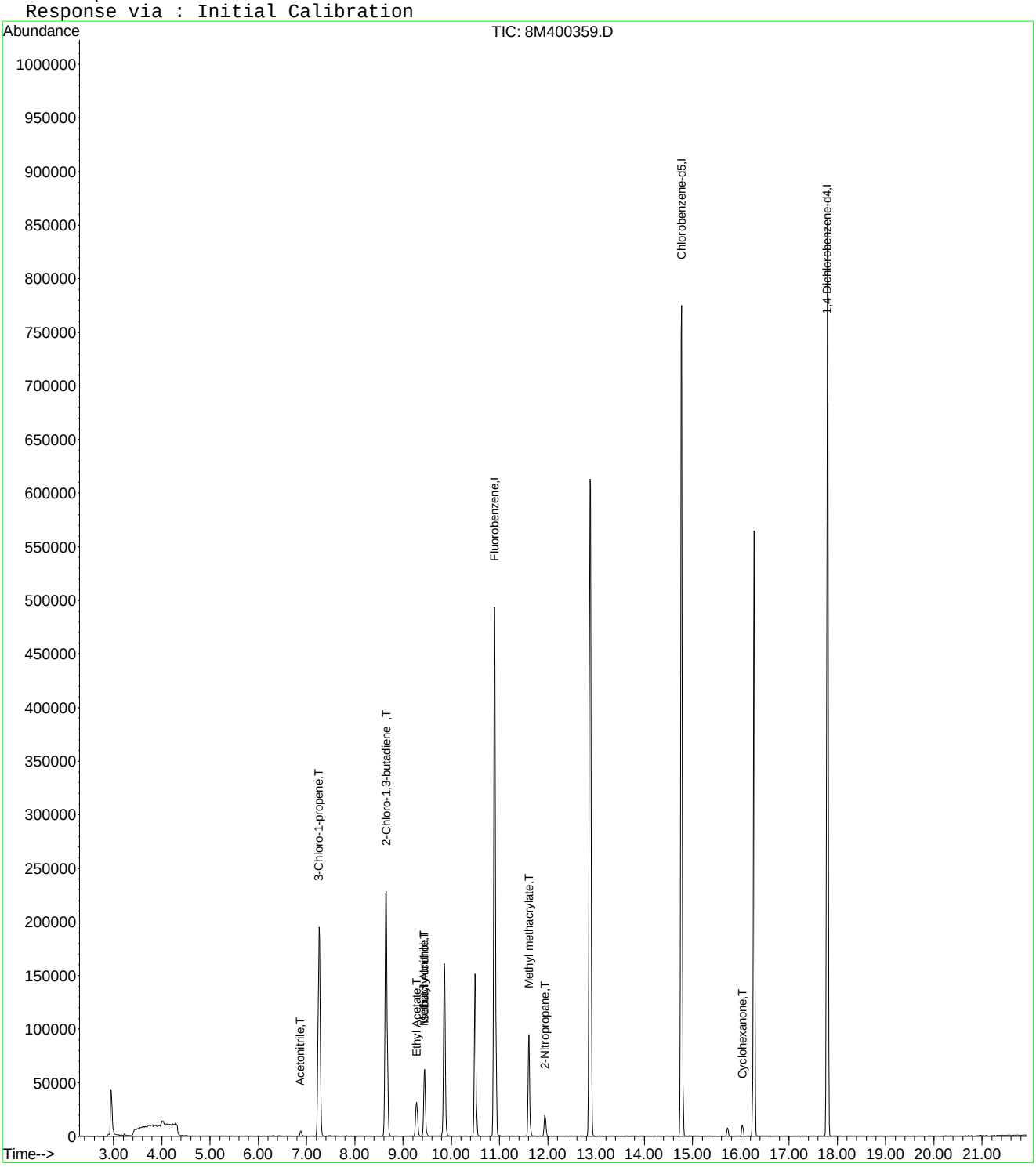

8M400359.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:42 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590667	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	524443	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	249595	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	17698	47.5001 ug/L	100
3) 3-Chloro-1-propene	7.26	41	491365	49.9588 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	586258	50.3743 ug/L	90
5) Ethyl Acetate	9.27	43	145862	49.4250 ug/L	93
6) Methacrylonitrile	9.44	67	84924	48.4200 ug/L #	62
7) Isobutyl Alcohol	9.46	43	9563	81.2789 ug/L #	95
8) 1-Butanol	10.38	56	1895	48.4971 ug/L	87
9) Methyl methacrylate	11.61	41	161451	48.6599 ug/L	75
10) 2-Nitropropane	11.94	43	45766	46.0929 ug/L	98
13) Cyclohexanone	16.04	55	19698	50.0200 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

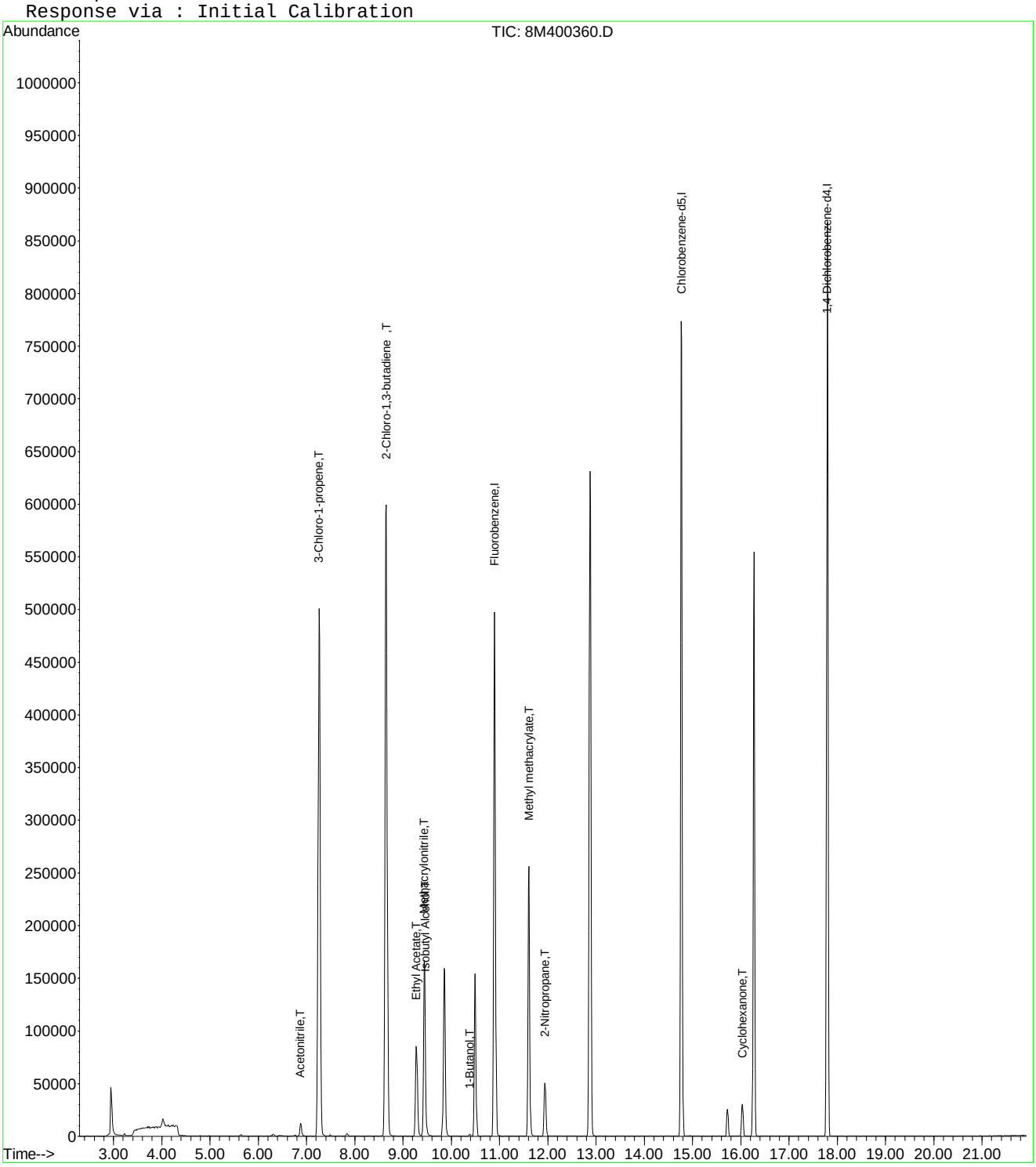

8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	595542	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	525736	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	251203	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	38265	101.8596 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1042545	105.1315 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	1239135	105.6013 ug/L	88
5) Ethyl Acetate	9.27	43	315872	106.1564 ug/L	93
6) Methacrylonitrile	9.44	67	182857	103.4038 ug/L #	63
7) Isobutyl Alcohol	9.45	43	23247	195.9661 ug/L #	92
8) 1-Butanol	10.38	56	5482	96.3312 ug/L	88
9) Methyl methacrylate	11.61	41	351287	105.0082 ug/L	73
10) 2-Nitropropane	11.94	43	103249	103.1352 ug/L	99
13) Cyclohexanone	16.04	55	43523	109.8125 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

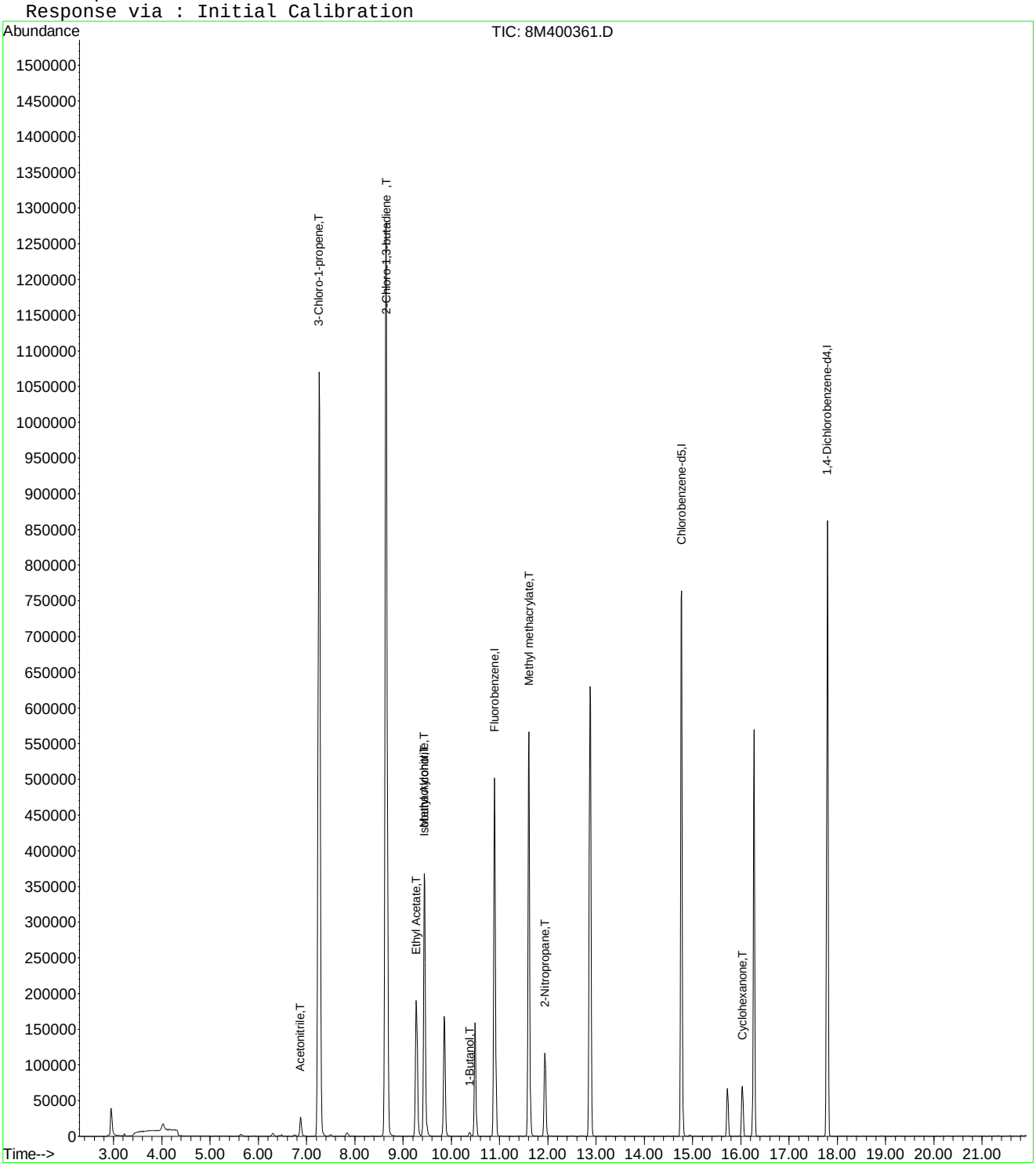

8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	605985	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	543073	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	256990	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	81322	212.7447 ug/L	93
3) 3-Chloro-1-propene	7.26	41	2105378	208.6501 ug/L	89
4) 2-Chloro-1,3-butadiene	8.65	53	2530154	211.9083 ug/L	84
5) Ethyl Acetate	9.28	43	654842	216.2828 ug/L	92
6) Methacrylonitrile	9.44	67	386897	215.0159 ug/L #	62
7) Isobutyl Alcohol	9.44	43	51188	424.0654 ug/L	97
8) 1-Butanol	10.37	56	13189	196.5131 ug/L	88
9) Methyl methacrylate	11.60	41	747593	219.6225 ug/L	71
10) 2-Nitropropane	11.94	43	227212	223.0503 ug/L	99
13) Cyclohexanone	16.03	55	76140	187.7821 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400362.D A9FOOWTR.M Fri Oct 03 12:32:44 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

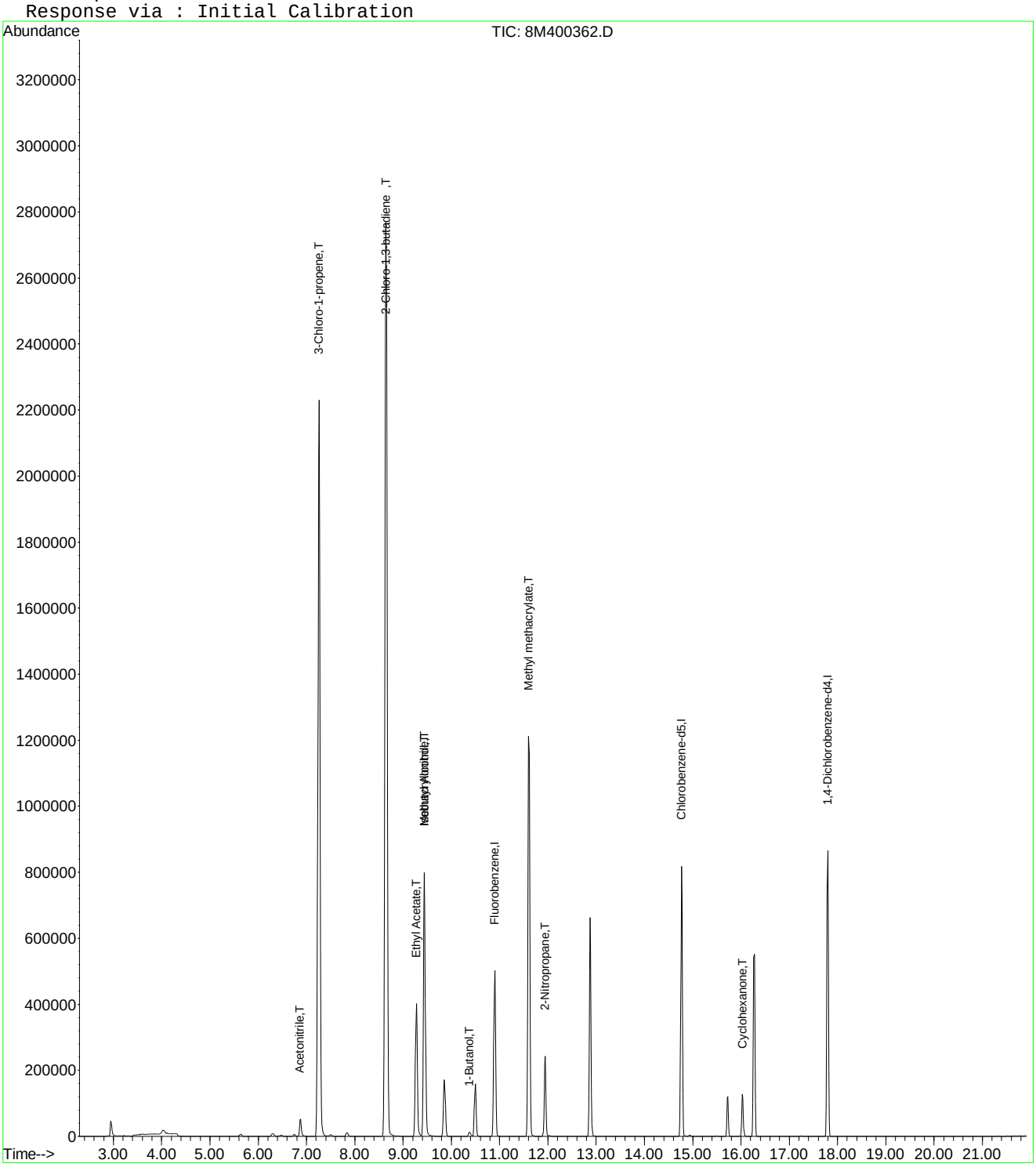

8M400362.D A9FOOWTR.M Fri Oct 03 12:32:44 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:45 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	617316	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	555877	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	259867	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	120718	310.0110 ug/L	94
3) 3-Chloro-1-propene	7.26	41	3133181	304.8093 ug/L	86
4) 2-Chloro-1,3-butadiene	8.64	53	3764580	309.5080 ug/L	79
5) Ethyl Acetate	9.27	43	984728	319.2685 ug/L	92
6) Methacrylonitrile	9.44	67	589378	321.5315 ug/L #	62
7) Isobutyl Alcohol	9.45	43	76604	622.9747 ug/L	98
8) 1-Butanol	10.37	56	23186	322.5015 ug/L	89
9) Methyl methacrylate	11.61	41	1120843	323.2293 ug/L	70
10) 2-Nitropropane	11.94	43	340074	327.7172 ug/L	99
13) Cyclohexanone	16.03	55	133635	325.9318 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400363.D A9FOOWTR.M Fri Oct 03 12:32:45 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

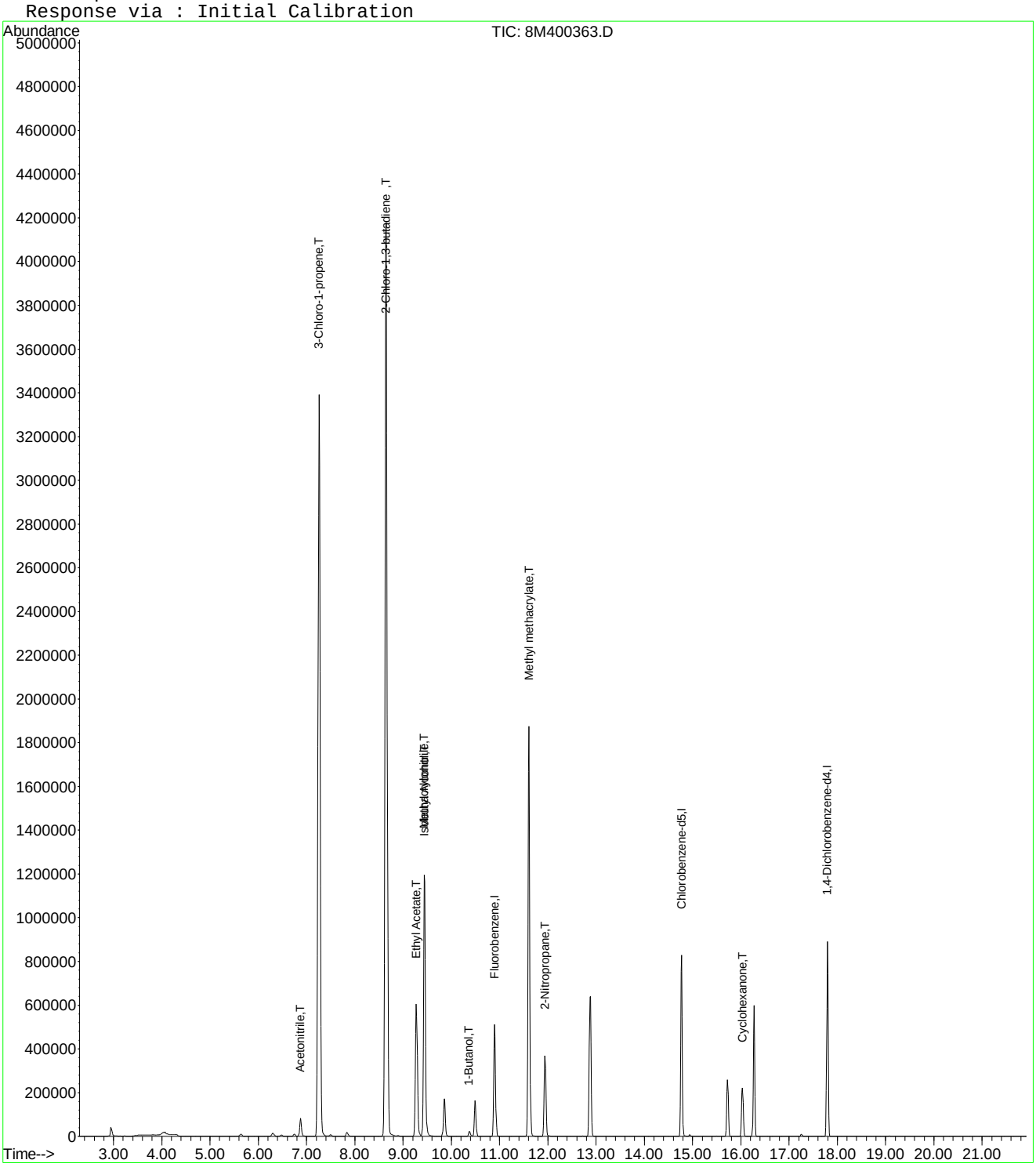

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:46 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	618926	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	559909	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	262346	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	151708	388.5818 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4028272	390.8682 ug/L	83
4) 2-Chloro-1,3-butadiene	8.65	53	4802050	393.7774 ug/L	74
5) Ethyl Acetate	9.28	43	1250397	404.3491 ug/L	91
6) Methacrylonitrile	9.44	67	762998	415.1660 ug/L #	61
7) Isobutyl Alcohol	9.45	43	102436	830.8840 ug/L #	97
8) 1-Butanol	10.37	56	28243	386.8957 ug/L	89
9) Methyl methacrylate	11.60	41	1436773	413.2595 ug/L	68
10) 2-Nitropropane	11.94	43	451706	434.1607 ug/L	98
13) Cyclohexanone	16.03	55	150327	363.1785 ug/L	84

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

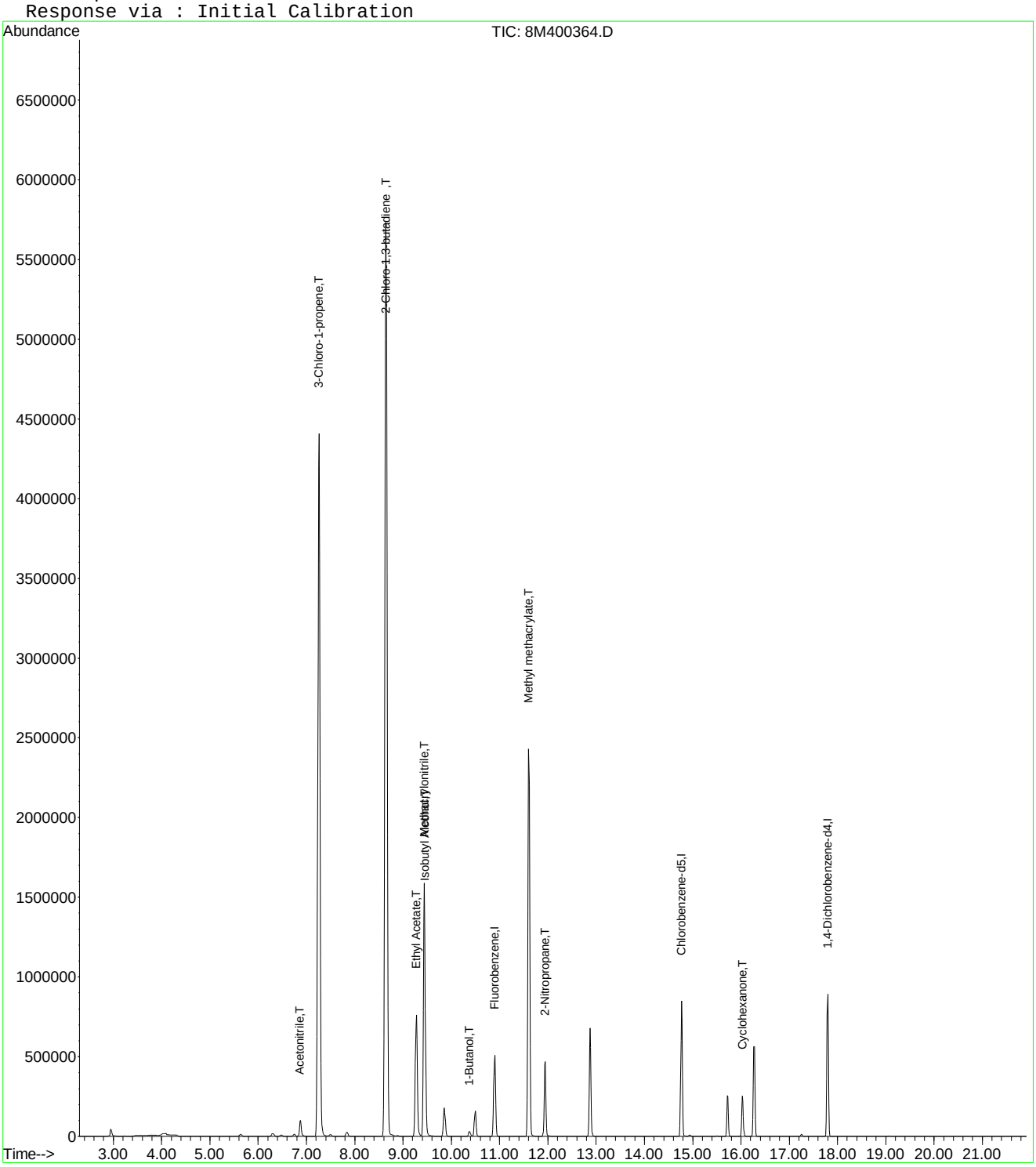

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:47 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	611679	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	574048	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	266141	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	197468	511.7830 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4817953	473.0307 ug/L	79
4) 2-Chloro-1,3-butadiene	8.64	53	5656851	469.3686 ug/L	68
5) Ethyl Acetate	9.27	43	1590123	520.3008 ug/L	90
6) Methacrylonitrile	9.44	67	990168	545.1581 ug/L #	61
7) Isobutyl Alcohol	9.45	43	130410	1070.3205 ug/L	98
8) 1-Butanol	10.38	56	36529	499.2614 ug/L	87
9) Methyl methacrylate	11.61	41	1840524	535.6626 ug/L	68
10) 2-Nitropropane	11.94	43	590003	573.8046 ug/L	98
13) Cyclohexanone	16.04	55	203273	484.0894 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M400365.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

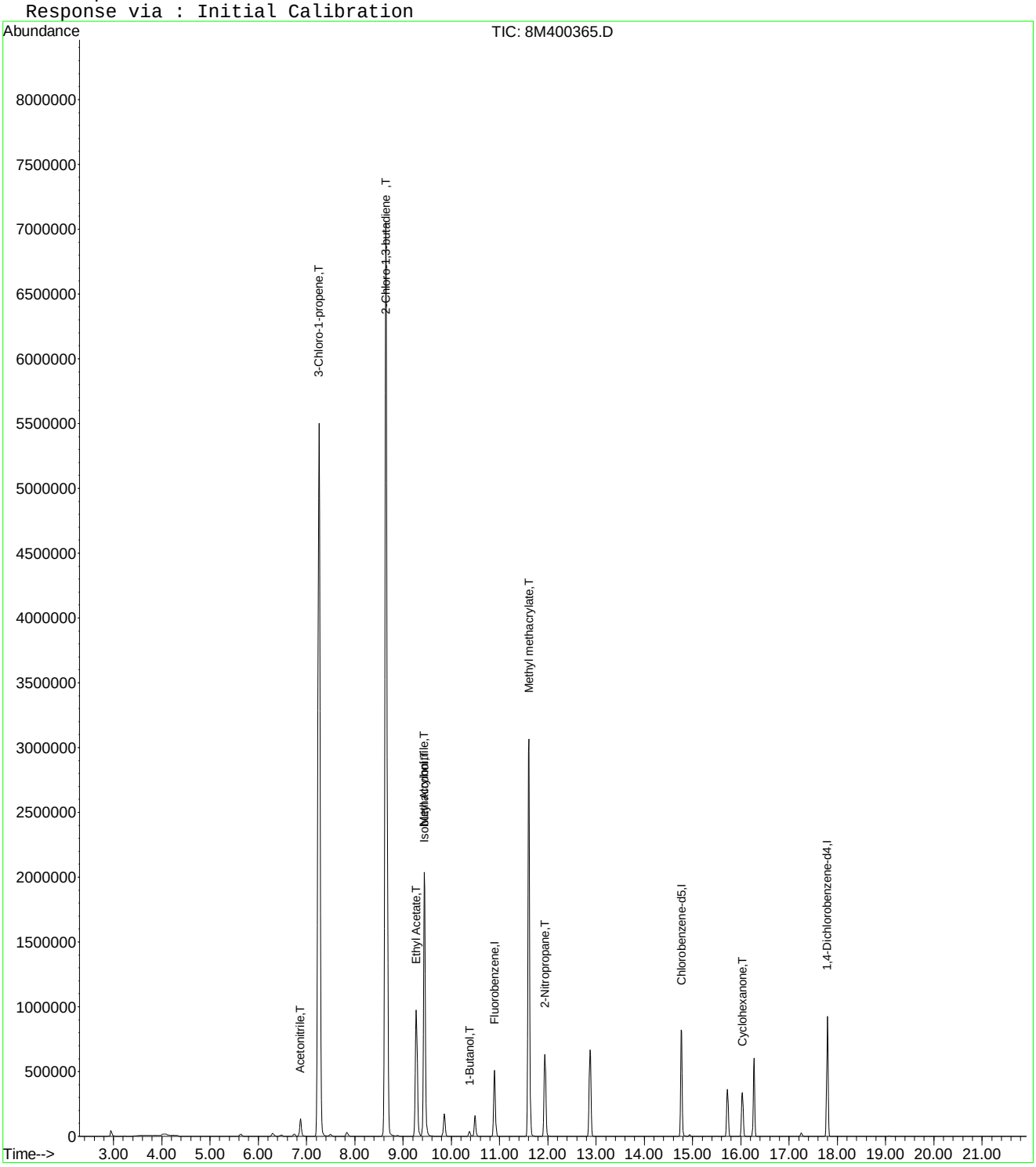

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:48 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	548066	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	508831	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	240116	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	36847	106.5815 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1001386	109.7284 ug/L	90
4) 2-Chloro-1,3-butadiene	8.64	53	982184	90.9542 ug/L	89
5) Ethyl Acetate	9.27	43	328991	120.1430 ug/L	94
6) Methacrylonitrile	9.44	67	174278	107.0895 ug/L #	64
7) Isobutyl Alcohol	9.45	43	21185	194.0538 ug/L	99
8) 1-Butanol	10.39	56	5303	100.0865 ug/L	77
9) Methyl methacrylate	11.61	41	317777	103.2198 ug/L	73
10) 2-Nitropropane	11.94	43	95761	103.9416 ug/L	99
13) Cyclohexanone	16.03	55	11614	30.6562 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

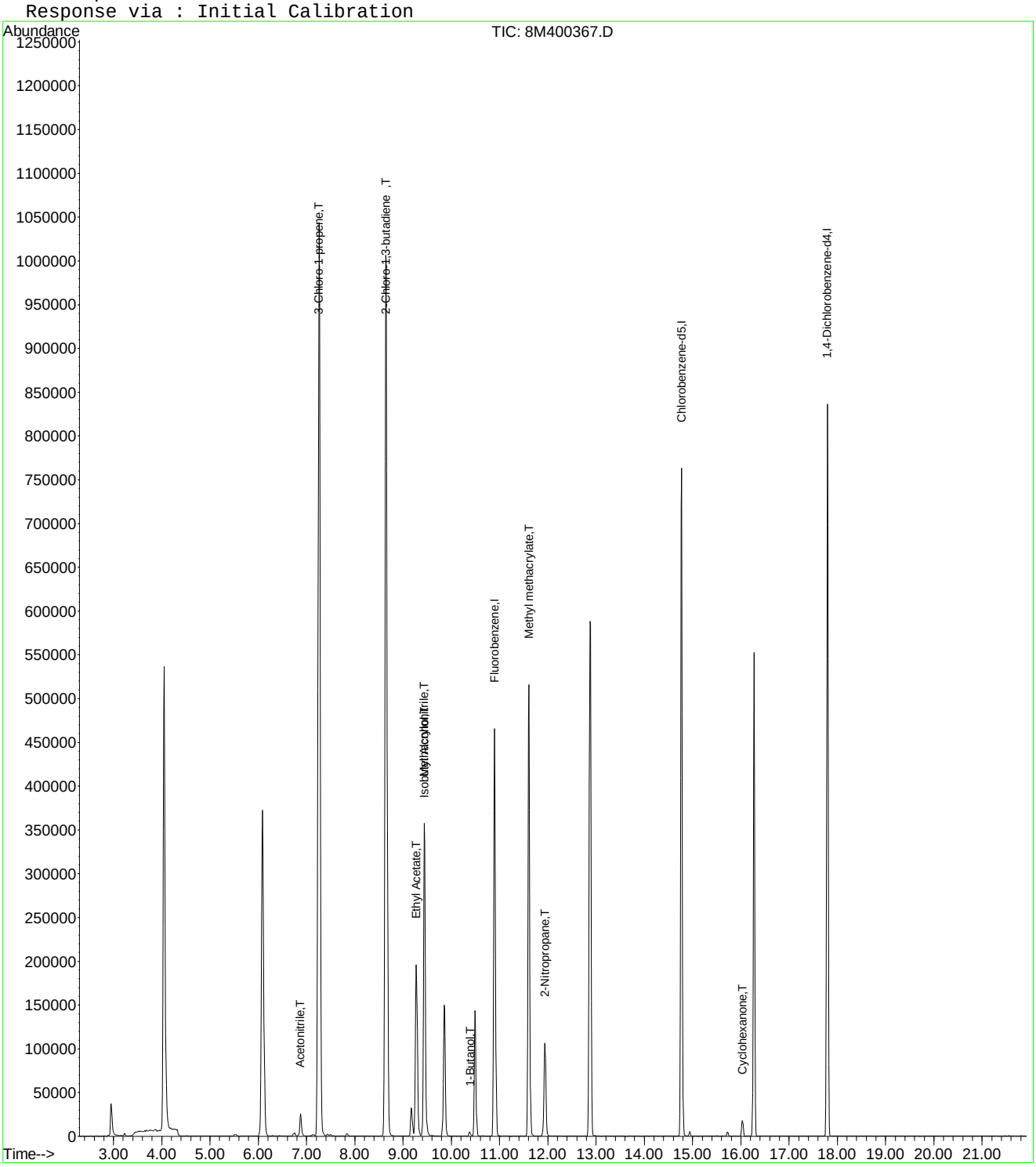

8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	-0.03
2	T	Acetonitrile	100.0000	106.5815	-6.6	96	-0.02
3	T	3-Chloro-1-propene	100.0000	109.7284	-9.7	96	-0.03
4	T	2-Chloro-1,3-butadiene	100.0000	90.9542	9.0	79	-0.03
5	T	Ethyl Acetate	100.0000	120.1430	-20.1	104	-0.02
6	T	Methacrylonitrile	100.0000	107.0895	-7.1	95	-0.03
7	T	Isobutyl Alcohol	200.0000	194.0538	3.0	91	-0.02
8	T	1-Butanol	100.0000	100.0865	-0.1	97	0.00
9	T	Methyl methacrylate	100.0000	103.2198	-3.2	90	-0.02
10	T	2-Nitropropane	100.0000	103.9416	-3.9	93	-0.03
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	97	-0.03
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	-0.04
13	T	Cyclohexanone	100.0000	30.6562	69.3	27	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M400367.D A9FOOWTR.M Fri Oct 03 12:33:23 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:43:58 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	686121	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	491169	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	260131	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	2048	0.1926 ug/L	86
3) Chloromethane	3.66	50	9733	0.4585 ug/L	81
4) Vinyl Chloride	3.89	62	5954	0.2976 ug/L	92
6) Bromomethane	4.78	94	888	0.9695 ug/L #	29
7) Chloroethane	4.93	64	1608	0.2954 ug/L #	61
8) Trichlorofluoromethane	5.42	101	3385	0.2695 ug/L #	80
10) Isoprene	6.00	67	2101	0.2256 ug/L #	57
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	1894	0.2671 ug/L	56
13) Acetone	6.28	43	313	0.3194 ug/L #	36
14) 1,1-Dichloroethene	6.52	61	3506	0.2908 ug/L	76
16) Dimethyl Sulfide	6.78	62	1875	0.2667 ug/L	83
18) Methyl acetate	7.06	43	570	0.1630 ug/L #	58
19) Methylene Chloride	7.30	84	1819	0.2647 ug/L #	13
20) Carbon Disulfide	7.34	76	7144	0.3220 ug/L	89
22) Methyl Tert Butyl Ether	7.53	73	3822	0.2887 ug/L #	62
23) trans-1,2-Dichloroethene	7.74	61	3271	0.2841 ug/L	66
24) n-Hexane	7.83	57	2928	0.2515 ug/L	88
26) Vinyl Acetate	8.34	43	3028	0.3597 ug/L #	71
27) 1,1-Dichloroethane	8.37	63	5008	0.3604 ug/L #	79
29) 2-Butanone	8.93	43	453	0.2837 ug/L #	49
31) 2,2-Dichloropropane	9.14	77	3681	0.3210 ug/L	85
32) cis-1,2-Dichloroethene	9.21	96	2604	0.3293 ug/L	91
33) Chloroform	9.42	83	3741	0.2898 ug/L	89
35) Bromochloromethane	9.66	130	1064	0.2639 ug/L #	47
36) Tetrahydrofuran	9.69	42	742	0.6900 ug/L #	32
38) 1,1,1-Trichloroethane	9.96	97	3379	0.2884 ug/L	96
39) Cyclohexane	10.00	56	3808	0.2681 ug/L #	87
40) 1,1-Dichloropropene	10.14	75	2928	0.2872 ug/L #	71
42) Carbon Tetrachloride	10.29	117	2361	0.2217 ug/L	85
45) 1,2-Dichloroethane	10.47	62	2773	0.2997 ug/L	96
46) Benzene	10.50	78	8640	0.3146 ug/L	97
47) Trichloroethene	11.26	130	2342	0.3224 ug/L	94
48) Methylcyclohexane	11.34	83	3466	0.2940 ug/L	93
49) 1,2-Dichloropropane	11.48	63	1845	0.2399 ug/L	87
50) Bromodichloromethane	11.76	83	2889	0.3051 ug/L #	95
52) Dibromomethane	11.87	93	917	0.2531 ug/L #	54
53) 2-Chloroethyl Vinyl Ether	12.09	63	251	Below Cal #	1
55) cis-1,3-Dichloropropene	12.41	75	3322	0.3209 ug/L	81
56) Dimethyl Disulfide	12.66	79	1068	3.1879 ug/L	88
59) Toluene	12.83	91	9961	0.3419 ug/L	76

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:43:58 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
60)	Ethyl Methacrylate	12.92	69	836	0.1613 ug/L #	31
62)	trans-1,3-Dichloropropene	13.01	75	2509	0.2873 ug/L	87
63)	1,1,2-Trichloroethane	13.21	97	1152	0.2545 ug/L	100
65)	1,3-Dichloropropane	13.53	76	2228	0.2808 ug/L	87
66)	Tetrachloroethene	13.66	164	1478	0.2404 ug/L #	77
67)	Dibromochloromethane	13.91	129	2244	0.3726 ug/L	69
68)	1,2-Dibromoethane	14.17	107	698	0.1615 ug/L #	54
69)	1-Chlorohexane	14.26	91	2890	0.2900 ug/L	92
70)	Chlorobenzene	14.67	112	5841	0.2970 ug/L	96
71)	1,1,1,2-Tetrachloroethane	14.72	131	1900	0.2692 ug/L	86
72)	Ethylbenzene	14.71	106	2753	0.2337 ug/L #	1
73)	m-,p-Xylene	14.78	106	7323	0.5498 ug/L #	22
74)	o-Xylene	15.35	106	3679	0.2795 ug/L #	50
75)	Styrene	15.39	104	5769	0.2767 ug/L	99
76)	Bromoform	15.88	173	482	0.9047 ug/L #	57
77)	Isopropylbenzene	15.78	105	9462	0.2939 ug/L	87
79)	1,1,2,2-Tetrachloroethane	15.98	83	1325	0.2681 ug/L #	80
81)	1,2,3-Trichloropropane	16.18	110	215	0.1606 ug/L #	1
83)	n-Propylbenzene	16.28	91	13082	0.3324 ug/L #	66
84)	Bromobenzene	16.42	156	2742	0.3508 ug/L	85
85)	1,3,5-Trimethylbenzene	16.47	105	8035	0.2984 ug/L	91
86)	2-Chlorotoluene	16.55	91	8093	0.3047 ug/L #	59
87)	4-Chlorotoluene	16.60	91	6492	0.3056 ug/L	77
88)	a-Methylstyrene	16.87	118	3783	0.2467 ug/L	88
89)	tert-Butylbenzene	16.93	134	1688	0.2820 ug/L #	69
90)	1,2,4-Trimethylbenzene	16.99	105	8182	0.2955 ug/L	73
91)	sec-Butylbenzene	17.20	105	10759	0.3204 ug/L #	77
92)	p-Isopropyltoluene	17.37	119	7368	0.2588 ug/L	78
93)	1,3-Dichlorobenzene	17.55	146	5344	0.3374 ug/L #	72
94)	1,4-Dichlorobenzene	17.68	146	5757	0.3580 ug/L #	37
95)	n-Butylbenzene	17.89	91	8329	0.2995 ug/L	84
96)	1,2-Dichlorobenzene	18.19	146	4259	0.3098 ug/L	86
98)	1,2,4-Trichlorobenzene	20.33	180	2637	0.2546 ug/L #	71
99)	Hexachlorobutadiene	20.47	225	1581	0.2922 ug/L	88
100)	Naphthalene	20.70	128	4884	0.3517 ug/L #	72
101)	1,2,3-Trichlorobenzene	21.00	180	2811	0.3203 ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M404579.D 8260WT.M Wed May 13 06:46:12 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

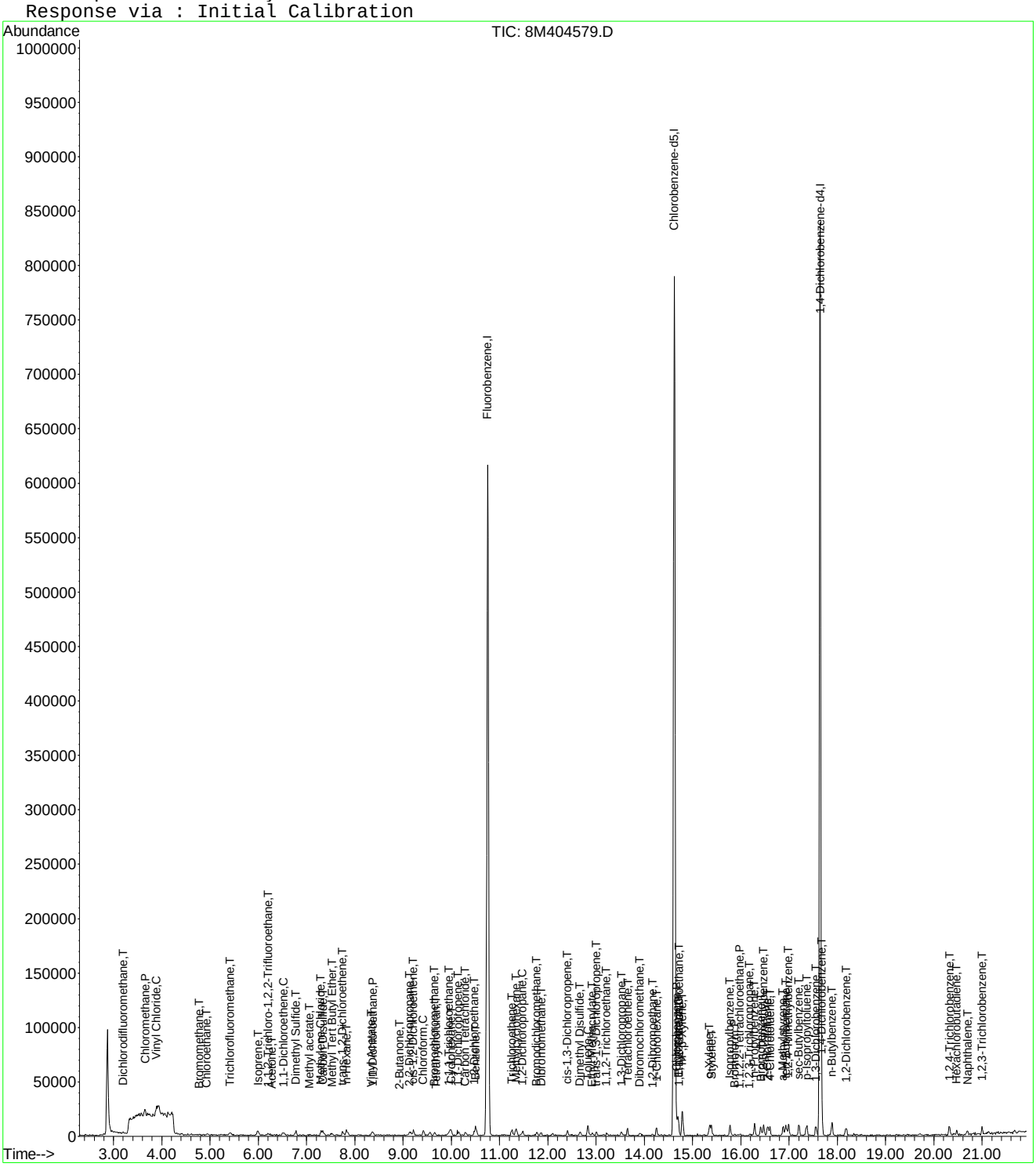

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.1926	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4585	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2976	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.0459	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.9695	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2954	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.2695	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.95#
10	T	Isoprene	-1.0000	0.2256	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.18#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2671	0.0	100	0.00
13	T	Acetone	-1.0000	0.3194	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.2908	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.63#
16	T	Dimethyl Sulfide	-1.0000	0.2667	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.03#
18	T	Methyl acetate	-1.0000	0.1630	0.0	100	0.02
19	T	Methylene Chloride	-1.0000	0.2647	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3220	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.48#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2887	0.0	100	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2841	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.2515	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.17#
26	T	Vinyl Acetate	-1.0000	0.3597	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3604	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.75#
29	T	2-Butanone	-1.0000	0.2837	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.04#
31	T	2,2-Dichloropropane	-1.0000	0.3210	0.0	100	-0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.3293	0.0	100	0.00
33	C	Chloroform	0.3000	0.2898	3.4	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.55#
35	T	Bromochloromethane	-1.0000	0.2639	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.6900	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.71#
38	T	1,1,1-Trichloroethane	-1.0000	0.2884	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2681	0.0	100	0.02
40	T	1,1-Dichloropropene	-1.0000	0.2872	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.26#
42	T	Carbon Tetrachloride	-1.0000	0.2217	0.0	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.35#
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	-1.0000	0.2997	0.0	100	0.00
46	T	Benzene	0.3000	0.3146	-4.9	100	0.00
47	T	Trichloroethene	-1.0000	0.3224	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.2940	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2399	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.3051	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.77#
52	T	Dibromomethane	-1.0000	0.2531	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	-0.8060	0.0	0	0.02
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.10#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3209	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.1879	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.73#
59	C	Toluene	-1.0000	0.3419	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.1613	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2873	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2545	0.0	100	-0.01
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.15#
65	T	1,3-Dichloropropane	-1.0000	0.2808	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.2404	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.3726	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.1615	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.2900	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.2970	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2692	0.0	0	0.02
72	C	Ethylbenzene	-1.0000	0.2337	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.5498	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.2795	0.0	100	0.00
75	T	Styrene	-1.0000	0.2767	0.0	100	0.00
76	P	Bromoform	-1.0000	0.9047	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.2939	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2681	0.0	100	-0.01
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.12#
81	T	1,2,3-Trichloropropane	-1.0000	0.1606	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.23#
83	T	n-Propylbenzene	-1.0000	0.3324	0.0	0	0.00
84	T	Bromobenzene	0.3000	0.3508	-16.9	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.2984	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3047	0.0	0	0.00
87	T	4-Chlorotoluene	-1.0000	0.3056	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2467	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2820	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.2955	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3204	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.2588	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3374	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3580	-19.3	100	-0.01
95	T	n-Butylbenzene	-1.0000	0.2995	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3098	-3.3	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.17#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.2546	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.2922	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3517	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3203	-6.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404579.D 8260WT.M Wed May 13 06:47:16 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	663902	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	470309	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	244778	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	3796	0.3689 ug/L	92
3) Chloromethane	3.66	50	13511	0.6578 ug/L	93
4) Vinyl Chloride	3.89	62	9546	0.4932 ug/L	94
5) 1,3-Butadiene	3.94	54	7454	0.1559 ug/L #	54
6) Bromomethane	4.79	94	656	0.9235 ug/L	68
7) Chloroethane	4.94	64	2482	0.4712 ug/L #	53
8) Trichlorofluoromethane	5.43	101	5157	0.4243 ug/L #	85
10) Isoprene	5.98	67	3614	0.4010 ug/L	80
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	2569	0.3745 ug/L	93
13) Acetone	6.31	43	627	0.6613 ug/L #	36
14) 1,1-Dichloroethene	6.52	61	4922	0.4218 ug/L	75
16) Dimethyl Sulfide	6.77	62	2958	0.4349 ug/L	85
17) Iodomethane	7.04	142	526	1.1457 ug/L #	35
18) Methyl acetate	7.06	43	1214	0.3588 ug/L #	58
19) Methylene Chloride	7.31	84	2766	0.4160 ug/L #	41
20) Carbon Disulfide	7.34	76	8914	0.4153 ug/L	89
22) Methyl Tert Butyl Ether	7.52	73	5194	0.4055 ug/L #	70
23) trans-1,2-Dichloroethene	7.74	61	5006	0.4494 ug/L	68
24) n-Hexane	7.83	57	5343	0.4743 ug/L	96
26) Vinyl Acetate	8.34	43	3343	0.4104 ug/L #	71
27) 1,1-Dichloroethane	8.37	63	5026	0.3738 ug/L #	81
29) 2-Butanone	8.94	43	273	0.1767 ug/L #	49
31) 2,2-Dichloropropane	9.15	77	5223	0.4708 ug/L	89
32) cis-1,2-Dichloroethene	9.20	96	3418	0.4468 ug/L	89
33) Chloroform	9.43	83	4710	0.3771 ug/L	96
35) Bromochloromethane	9.64	130	1767	0.4529 ug/L	90
36) Tetrahydrofuran	9.68	42	233	0.2239 ug/L #	32
38) 1,1,1-Trichloroethane	9.96	97	4103	0.3619 ug/L	87
39) Cyclohexane	9.98	56	5465	0.3977 ug/L	96
40) 1,1-Dichloropropene	10.15	75	3687	0.3738 ug/L #	72
42) Carbon Tetrachloride	10.31	117	3996	0.3878 ug/L	87
45) 1,2-Dichloroethane	10.47	62	3824	0.4271 ug/L	84
46) Benzene	10.51	78	10613	0.3994 ug/L	93
47) Trichloroethene	11.27	130	2689	0.3826 ug/L	73
48) Methylcyclohexane	11.34	83	4479	0.3926 ug/L #	75
49) 1,2-Dichloropropane	11.48	63	3027	0.4067 ug/L #	73
50) Bromodichloromethane	11.78	83	3600	0.3929 ug/L #	89
52) Dibromomethane	11.87	93	1560	0.4451 ug/L #	61
53) 2-Chloroethyl Vinyl Ether	12.08	63	1210	Below Cal #	48
55) cis-1,3-Dichloropropene	12.41	75	4299	0.4292 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M404580.D 8260WT.M Wed May 13 06:46:13 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
56)	Dimethyl Disulfide	12.68	79	1741	3.3001 ug/L		97
59)	Toluene	12.83	91	11735	0.4207 ug/L		81
60)	Ethyl Methacrylate	12.92	69	1520	0.3062 ug/L	#	66
62)	trans-1,3-Dichloropropene	13.01	75	3168	0.3789 ug/L		84
63)	1,1,2-Trichloroethane	13.22	97	1720	0.3969 ug/L		72
65)	1,3-Dichloropropane	13.53	76	2820	0.3712 ug/L	#	43
66)	Tetrachloroethene	13.66	164	1973	0.3351 ug/L		82
67)	Dibromochloromethane	13.92	129	2081	0.3608 ug/L		72
68)	1,2-Dibromoethane	14.17	107	1483	0.3584 ug/L		84
69)	1-Chlorohexane	14.26	91	4005	0.4197 ug/L		96
70)	Chlorobenzene	14.67	112	7203	0.3826 ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.70	131	2560	0.3788 ug/L		82
72)	Ethylbenzene	14.70	106	4026	0.3570 ug/L	#	17
73)	m-,p-Xylene	14.78	106	10847	0.8505 ug/L		57
74)	o-Xylene	15.35	106	5229	0.4149 ug/L		57
75)	Styrene	15.38	104	7288	0.3650 ug/L		100
76)	Bromoform	15.89	173	942	1.0334 ug/L	#	44
77)	Isopropylbenzene	15.78	105	14152	0.4591 ug/L		77
79)	1,1,2,2-Tetrachloroethane	16.00	83	1923	0.4135 ug/L	#	91
83)	n-Propylbenzene	16.28	91	16602	0.4483 ug/L	#	67
84)	Bromobenzene	16.43	156	2690	0.3657 ug/L		88
85)	1,3,5-Trimethylbenzene	16.47	105	10398	0.4103 ug/L		80
86)	2-Chlorotoluene	16.55	91	12418	0.4968 ug/L		75
87)	4-Chlorotoluene	16.60	91	8385	0.4194 ug/L		71
88)	a-Methylstyrene	16.87	118	5253	0.3640 ug/L		98
89)	tert-Butylbenzene	16.93	134	1913	0.3396 ug/L	#	28
90)	1,2,4-Trimethylbenzene	16.99	105	11381	0.4368 ug/L		73
91)	sec-Butylbenzene	17.20	105	13195	0.4176 ug/L	#	71
92)	p-Isopropyltoluene	17.37	119	12187	0.4550 ug/L	#	73
93)	1,3-Dichlorobenzene	17.57	146	6274	0.4209 ug/L		98
94)	1,4-Dichlorobenzene	17.68	146	6156	0.4068 ug/L	#	24
95)	n-Butylbenzene	17.89	91	12345	0.4718 ug/L	#	75
96)	1,2-Dichlorobenzene	18.19	146	4688	0.3624 ug/L		93
98)	1,2,4-Trichlorobenzene	20.33	180	4027	0.4133 ug/L		90
99)	Hexachlorobutadiene	20.48	225	2038	0.4003 ug/L	#	69
100)	Naphthalene	20.69	128	4629	0.3542 ug/L	#	62
101)	1,2,3-Trichlorobenzene	21.01	180	2866	0.3471 ug/L		78

(#) = qualifier out of range (m) = manual integration
8M404580.D 8260WT.M Wed May 13 06:46:14 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

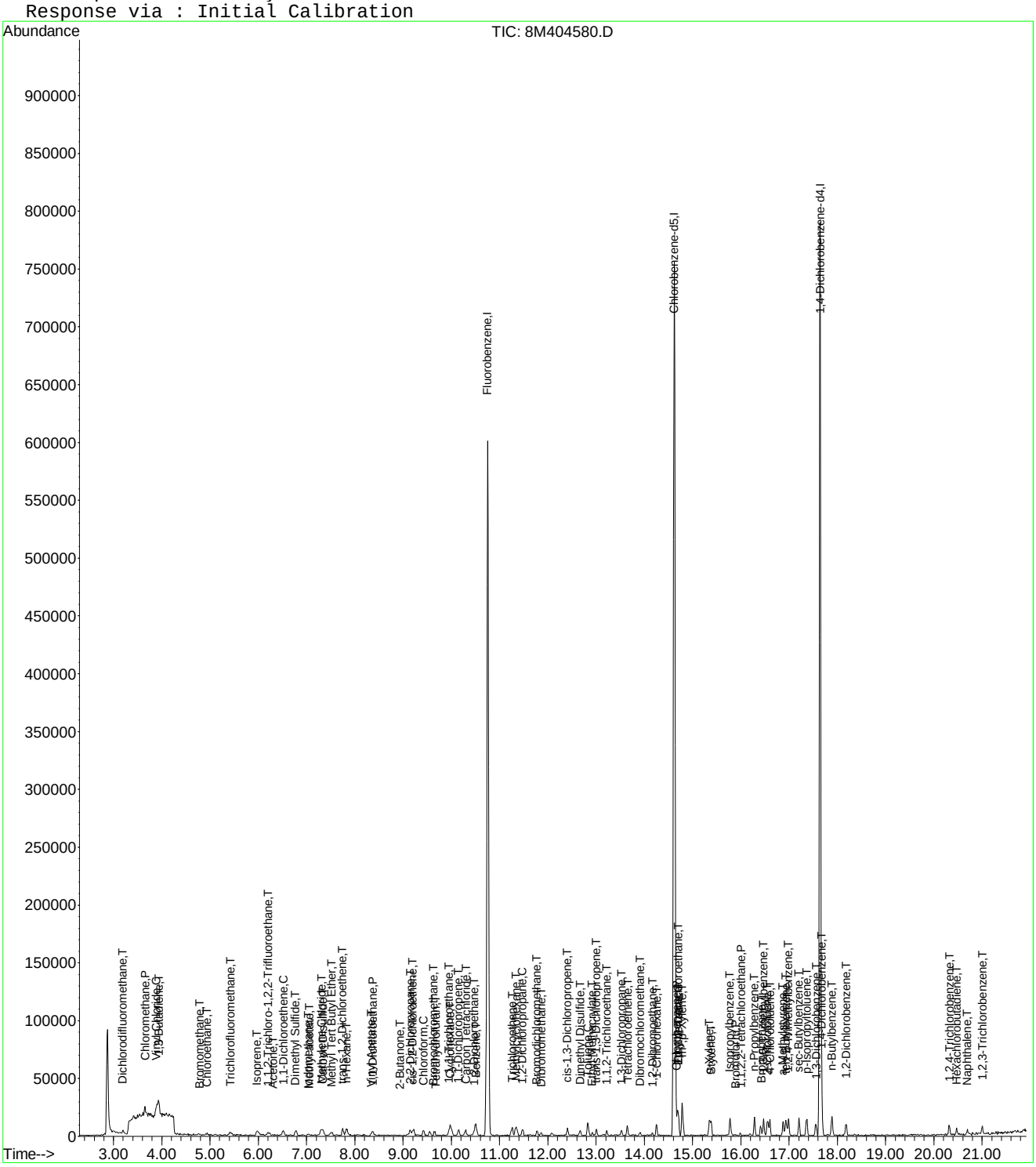

8M404580.D 8260WT.M Wed May 13 06:46:14 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3689	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.6578	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.4932	-23.3#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.1559	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.9235	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.4712	0.0	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4243	-6.1	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.95#
10	T	Isoprene	-1.0000	0.4010	0.0	100	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.18#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3745	0.0	100	0.00
13	T	Acetone	-1.0000	0.6613	0.0	100	0.02
14	C	1,1-Dichloroethene	0.4000	0.4218	-5.5	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.63#
16	T	Dimethyl Sulfide	-1.0000	0.4349	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.1457	0.0	0	0.00
18	T	Methyl acetate	-1.0000	0.3588	0.0	100	0.02
19	T	Methylene Chloride	-1.0000	0.4160	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4153	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.48#
22	T	Methyl Tert Butyl Ether	-1.0000	0.4055	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4494	-12.4	100	0.00
24	T	n-Hexane	-1.0000	0.4743	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.17#
26	T	Vinyl Acetate	-1.0000	0.4104	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.3738	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.75#
29	T	2-Butanone	-1.0000	0.1767	0.0	100	0.02
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.04#
31	T	2,2-Dichloropropane	0.4000	0.4708	-17.7	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4468	-11.7	100	-0.01
33	C	Chloroform	0.4000	0.3771	5.7	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.55#
35	T	Bromochloromethane	0.4000	0.4529	-13.2	100	-0.02
36	T	Tetrahydrofuran	-1.0000	0.2239	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.71#
38	T	1,1,1-Trichloroethane	0.4000	0.3619	9.5	100	0.00
39	T	Cyclohexane	-1.0000	0.3977	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3738	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.26#
42	T	Carbon Tetrachloride	0.4000	0.3878	3.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.35#
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	0.4000	0.4271	-6.8	100	0.00
46	T	Benzene	0.4000	0.3994	0.2	100	0.00
47	T	Trichloroethene	0.4000	0.3826	4.4	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3926	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.4067	-1.7	100	0.00
50	T	Bromodichloromethane	0.4000	0.3929	1.8	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.77#
52	T	Dibromomethane	0.4000	0.4451	-11.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	-0.2604	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.10#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.4292	-7.3	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.3001	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.73#
59	C	Toluene	0.4000	0.4207	-5.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3062	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3789	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3968	0.8	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.15#
65	T	1,3-Dichloropropane	0.4000	0.3712	7.2	100	0.00
66	T	Tetrachloroethene	0.4000	0.3351	16.2	100	0.00
67	T	Dibromochloromethane	0.4000	0.3608	9.8	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3584	10.4	100	0.00
69	T	1-Chlorohexane	0.4000	0.4197	-4.9	100	0.00
70	P	Chlorobenzene	0.4000	0.3826	4.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3788	5.3	100	0.00
72	C	Ethylbenzene	0.4000	0.3570	10.8	100	0.00
73	T	m-,p-Xylene	0.8000	0.8505	-6.3	100	0.00
74	T	o-Xylene	-1.0000	0.4149	0.0	100	0.00
75	T	Styrene	0.4000	0.3650	8.7	100	0.00
76	P	Bromoform	-1.0000	1.0334	0.0	0	0.00
77	T	Isopropylbenzene	0.4000	0.4591	-14.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.4135	-3.4	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.12#
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.18#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.23#
83	T	n-Propylbenzene	0.4000	0.4483	-12.1	100	0.00
84	T	Bromobenzene	0.4000	0.3657	8.6	100	0.02
85	T	1,3,5-Trimethylbenzene	0.4000	0.4103	-2.6	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4968	-24.2	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4194	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3640	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3396	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4369	-9.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4176	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4550	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4209	-5.2	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4068	-1.7	100	-0.01
95	T	n-Butylbenzene	-1.0000	0.4718	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3624	9.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.17#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4133	-3.3	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4003	-0.1	100	0.00
100	T	Naphthalene	0.4000	0.3542	11.4	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.3471	13.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
8M404580.D 8260WT.M Wed May 13 06:47:27 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	659590	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	460400	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	243542	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	2938	0.4494 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.80%#	
43) 1,2-Dichloroethane-d4	10.35	65	2843	0.4627 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.84%#	
58) Toluene-d8	12.73	98	11695	0.5443 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.16%#	
80) p-Bromofluorobenzene	16.12	95	4255	0.5135 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.04%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	9953	0.9736 ug/L	87
3) Chloromethane	3.65	50	24429	1.1970 ug/L	99
4) Vinyl Chloride	3.89	62	20406	1.0612 ug/L	96
5) 1,3-Butadiene	3.94	54	17219	0.6767 ug/L	82
6) Bromomethane	4.79	94	2450	1.3331 ug/L	94
7) Chloroethane	4.94	64	5035	0.9622 ug/L	90
8) Trichlorofluoromethane	5.43	101	11177	0.9255 ug/L	98
9) Diethyl ether	5.95	59	23102	4.9898 ug/L	87
10) Isoprene	6.00	67	7629	0.8520 ug/L	76
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	6538	0.9592 ug/L	92
13) Acetone	6.30	43	745	0.7909 ug/L #	36
14) 1,1-Dichloroethene	6.51	61	10988	0.9479 ug/L	82
15) Tert-Butyl Alcohol	6.59	59	2356	9.2949 ug/L #	61
16) Dimethyl Sulfide	6.77	62	6885	1.0188 ug/L	85
17) Iodomethane	7.02	142	2038	1.4675 ug/L	95
18) Methyl acetate	7.05	43	2929	0.8714 ug/L #	79
19) Methylene Chloride	7.30	84	6116	0.9258 ug/L #	33
20) Carbon Disulfide	7.34	76	20852	0.9778 ug/L	97
21) Acrylonitrile	7.48	53	3571	2.3817 ug/L	97
22) Methyl Tert Butyl Ether	7.53	73	12114	0.9518 ug/L	86
23) trans-1,2-Dichloroethene	7.76	61	10287	0.9296 ug/L	85
24) n-Hexane	7.84	57	10789	0.9641 ug/L	98
25) Diisopropyl ether	8.17	45	121991	4.9765 ug/L	90
26) Vinyl Acetate	8.34	43	8061	0.9960 ug/L #	78
27) 1,1-Dichloroethane	8.38	63	12933	0.9681 ug/L	91
28) Ethyl-Tert-Butyl ether	8.75	59	93602	4.8664 ug/L	91
29) 2-Butanone	8.93	43	1254	0.8171 ug/L #	49
30) Propionitrile	9.03	54	2357	4.8184 ug/L	83
31) 2,2-Dichloropropane	9.15	77	10696	0.9704 ug/L	96
32) cis-1,2-Dichloroethene	9.21	96	7441	0.9790 ug/L	62
33) Chloroform	9.42	83	12873	1.0374 ug/L	89
34) 1-Bromopropane	9.55	122	699	0.9722 ug/L	13
35) Bromochloromethane	9.66	130	4028	1.0392 ug/L	77
36) Tetrahydrofuran	9.68	42	5122	4.9547 ug/L	85
38) 1,1,1-Trichloroethane	9.95	97	10138	0.9000 ug/L	95
39) Cyclohexane	9.99	56	11930	0.8739 ug/L	89
40) 1,1-Dichloropropene	10.14	75	9993	1.0196 ug/L	92
41) Tert-Amyl-Methyl ether	10.25	73	68220	4.8322 ug/L	94
42) Carbon Tetrachloride	10.30	117	9231	0.9018 ug/L	97
45) 1,2-Dichloroethane	10.47	62	8537	0.9597 ug/L	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.51	78	27669	1.0481 ug/L		98
47)	Trichloroethene	11.27	130	6630	0.9494 ug/L		95
48)	Methylcyclohexane	11.34	83	9973	0.8799 ug/L		81
49)	1,2-Dichloropropane	11.48	63	7489	1.0128 ug/L		99
50)	Bromodichloromethane	11.78	83	9171	1.0074 ug/L		95
52)	Dibromomethane	11.86	93	2794	0.8023 ug/L		87
53)	2-Chloroethyl Vinyl Ether	12.08	63	2512	0.4835 ug/L	#	64
54)	4-Methyl-2-Pentanone	12.11	58	522	0.4106 ug/L	#	36
55)	cis-1,3-Dichloropropene	12.41	75	8511	0.8553 ug/L		94
56)	Dimethyl Disulfide	12.67	79	3441	3.5730 ug/L		81
59)	Toluene	12.83	91	28445	1.0416 ug/L		80
60)	Ethyl Methacrylate	12.93	69	3578	0.7364 ug/L	#	33
62)	trans-1,3-Dichloropropene	13.01	75	7499	0.9161 ug/L		93
63)	1,1,2-Trichloroethane	13.23	97	4124	0.9720 ug/L		97
64)	2-Hexanone	13.15	58	995	0.8516 ug/L	#	31
65)	1,3-Dichloropropane	13.52	76	7090	0.9532 ug/L		70
66)	Tetrachloroethene	13.66	164	5967	1.0352 ug/L		87
67)	Dibromochloromethane	13.91	129	5305	0.9396 ug/L		84
68)	1,2-Dibromoethane	14.18	107	3373	0.8328 ug/L		82
69)	1-Chlorohexane	14.26	91	8764	0.9382 ug/L		86
70)	Chlorobenzene	14.67	112	17996	0.9764 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.70	131	5637	0.8520 ug/L		99
72)	Ethylbenzene	14.69	106	10247	0.9282 ug/L	#	34
73)	m-,p-Xylene	14.79	106	23914	1.9154 ug/L	#	43
74)	o-Xylene	15.35	106	11085	0.8984 ug/L		61
75)	Styrene	15.39	104	19272	0.9860 ug/L		86
76)	Bromoform	15.88	173	1949	1.3145 ug/L		86
77)	Isopropylbenzene	15.78	105	30028	0.9951 ug/L		78
79)	1,1,2,2-Tetrachloroethane	16.00	83	4807	1.0388 ug/L	#	91
81)	1,2,3-Trichloropropane	16.18	110	889	0.7091 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.23	53	1479	0.9628 ug/L	#	23
83)	n-Propylbenzene	16.29	91	37672	1.0223 ug/L	#	71
84)	Bromobenzene	16.42	156	7025	0.9600 ug/L		81
85)	1,3,5-Trimethylbenzene	16.47	105	25978	1.0304 ug/L		75
86)	2-Chlorotoluene	16.55	91	26781	1.0769 ug/L	#	69
87)	4-Chlorotoluene	16.61	91	18077	0.9088 ug/L		73
88)	a-Methylstyrene	16.87	118	11588	0.8071 ug/L		95
89)	tert-Butylbenzene	16.94	134	5736	1.0234 ug/L		92
90)	1,2,4-Trimethylbenzene	16.99	105	25492	0.9834 ug/L		75
91)	sec-Butylbenzene	17.21	105	33874	1.0776 ug/L		80
92)	p-Isopropyltoluene	17.36	119	27221	1.0214 ug/L		76
93)	1,3-Dichlorobenzene	17.56	146	14385	0.9699 ug/L		92
94)	1,4-Dichlorobenzene	17.69	146	14766	0.9807 ug/L		79
95)	n-Butylbenzene	17.89	91	26584	1.0211 ug/L		79
96)	1,2-Dichlorobenzene	18.19	146	12891	1.0017 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.18	75	792	1.0722 ug/L	#	17
98)	1,2,4-Trichlorobenzene	20.32	180	8084	0.8338 ug/L		96
99)	Hexachlorobutadiene	20.47	225	4179	0.8251 ug/L	#	82
100)	Naphthalene	20.69	128	11817	0.9088 ug/L		91
101)	1,2,3-Trichlorobenzene	21.00	180	7425	0.9038 ug/L		93

(#) = qualifier out of range (m) = manual integration
8M404581.D 8260WT.M Wed May 13 06:46:15 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

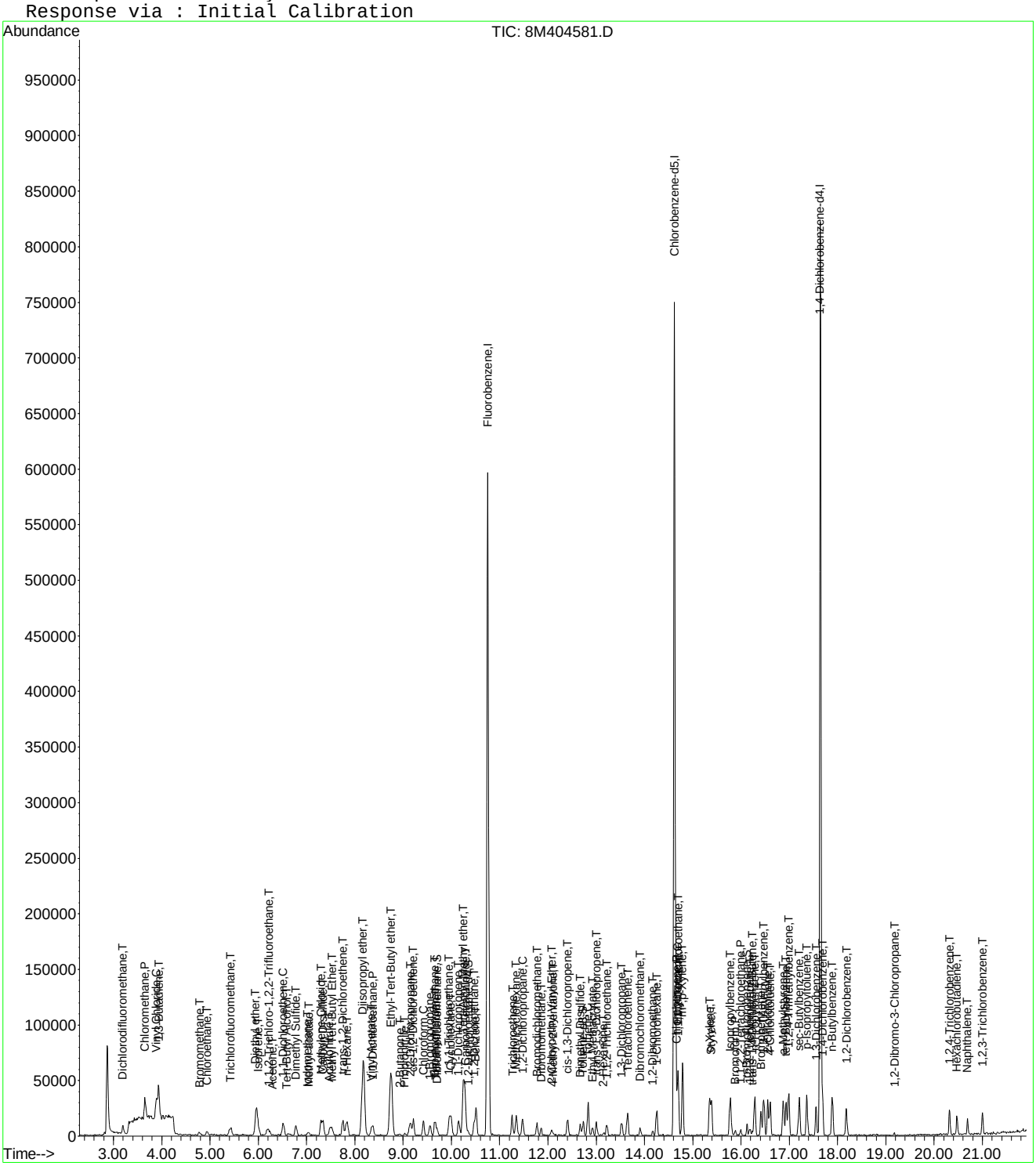

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9736	2.6	100	0.00
3	P	Chloromethane	1.0000	1.1970	-19.7	100	0.00
4	C	Vinyl Chloride	1.0000	1.0612	-6.1	100	0.01
5	T	1,3-Butadiene	-1.0000	0.6767	0.0	0	0.03
6	T	Bromomethane	1.0000	1.3331	-33.3#	100	0.02
7	T	Chloroethane	1.0000	0.9622	3.8	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9255	7.4	100	0.00
9	T	Diethyl ether	5.0000	4.9898	0.2	100	0.00
10	T	Isoprene	-1.0000	0.8520	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.18#
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9592	4.1	100	0.02
13	T	Acetone	-1.0000	0.7909	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	0.9479	5.2	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	9.2949	0.0	0	-0.04
16	T	Dimethyl Sulfide	-1.0000	1.0188	0.0	100	0.00
17	T	Iodomethane	1.0000	1.4675	-46.8#	100	-0.01
18	T	Methyl acetate	-1.0000	0.8714	0.0	100	0.00
19	T	Methylene Chloride	1.0000	0.9258	7.4	100	0.00
20	T	Carbon Disulfide	1.0000	0.9778	2.2	100	0.00
21	T	Acrylonitrile	-1.0000	2.3817	0.0	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9518	4.8	100	0.02
23	T	trans-1,2-Dichloroethene	1.0000	0.9296	7.0	100	0.00
24	T	n-Hexane	-1.0000	0.9641	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.9765	0.5	100	0.00
26	T	Vinyl Acetate	-1.0000	0.9960	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9681	3.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.8664	2.7	100	0.00
29	T	2-Butanone	-1.0000	0.8171	0.0	100	0.00
30	T	Propionitrile	5.0000	4.8184	3.6	100	-0.01
31	T	2,2-Dichloropropane	1.0000	0.9704	3.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9790	2.1	100	0.00
33	C	Chloroform	1.0000	1.0374	-3.7	100	0.00
34		1-Bromopropane	1.0000	0.9722	2.8	100	0.00
35	T	Bromochloromethane	1.0000	1.0392	-3.9	100	0.00
36	T	Tetrahydrofuran	5.0000	4.9547	0.9	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.4494	0.0	0	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9000	10.0	100	-0.01
39	T	Cyclohexane	1.0000	0.8739	12.6	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0196	-2.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.8322	3.4	100	-0.01
42	T	Carbon Tetrachloride	1.0000	0.9018	9.8	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.4627	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	1.0000	0.9597	4.0	100	0.00
46	T	Benzene	1.0000	1.0481	-4.8	100	0.00
47	T	Trichloroethene	1.0000	0.9494	5.1	100	0.00
48	T	Methylcyclohexane	-1.0000	0.8799	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	1.0128	-1.3	100	0.00
50	T	Bromodichloromethane	1.0000	1.0074	-0.7	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.77#
52	T	Dibromomethane	1.0000	0.8023	19.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.4835	0.0	0	0.01
54	T	4-Methyl-2-Pentanone	-1.0000	0.4106	0.0	162	0.00

(#) = Out of Range
8M404581.D 8260WT.M Wed May 13 06:47:37 2015 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.8553	14.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.5730	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5443	0.0	0	0.00
59	C	Toluene	1.0000	1.0416	-4.2	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.7364	26.4#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	1.0000	0.9161	8.4	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9720	2.8	100	0.00
64	T	2-Hexanone	-1.0000	0.8516	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	0.9533	4.7	100	0.00
66	T	Tetrachloroethene	1.0000	1.0352	-3.5	100	0.00
67	T	Dibromochloromethane	1.0000	0.9396	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.8328	16.7	100	0.00
69	T	1-Chlorohexane	1.0000	0.9382	6.2	100	0.00
70	P	Chlorobenzene	1.0000	0.9764	2.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.8520	14.8	100	0.00
72	C	Ethylbenzene	1.0000	0.9282	7.2	100	-0.01
73	T	m-,p-Xylene	2.0000	1.9154	4.2	100	0.00
74	T	o-Xylene	1.0000	0.8984	10.2	100	0.00
75	T	Styrene	1.0000	0.9860	1.4	100	0.00
76	P	Bromoform	1.0000	1.3144	-31.4#	100	0.00
77	T	Isopropylbenzene	1.0000	0.9951	0.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	1.0388	-3.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5135	0.0	0	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7091	29.1#	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.9628	3.7	100	0.00
83	T	n-Propylbenzene	1.0000	1.0224	-2.2	100	0.00
84	T	Bromobenzene	1.0000	0.9600	4.0	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0304	-3.0	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0769	-7.7	100	0.00
87	T	4-Chlorotoluene	1.0000	0.9088	9.1	100	0.00
88	T	a-Methylstyrene	-1.0000	0.8071	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0234	-2.3	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	0.9835	1.7	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0776	-7.8	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0214	-2.1	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	0.9699	3.0	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	0.9807	1.9	100	0.00
95	T	n-Butylbenzene	1.0000	1.0211	-2.1	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0017	-0.2	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.0722	0.0	0	0.01
98	T	1,2,4-Trichlorobenzene	1.0000	0.8338	16.6	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.8251	17.5	100	0.00
100	T	Naphthalene	1.0000	0.9088	9.1	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	0.9038	9.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404581.D 8260WT.M Wed May 13 06:47:37 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	668457	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	470511	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	251240	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.72	111	6565	0.9909 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.96%#	
43) 1,2-Dichloroethane-d4	10.35	65	6190	0.9941 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.96%#	
58) Toluene-d8	12.73	98	21782	0.9921 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.96%#	
80) p-Bromofluorobenzene	16.12	95	9059	1.0598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	18273	1.7638 ug/L	99
3) Chloromethane	3.65	50	45698	2.2095 ug/L	99
4) Vinyl Chloride	3.89	62	40979	2.1027 ug/L	96
5) 1,3-Butadiene	3.94	54	37404	1.7245 ug/L	86
6) Bromomethane	4.78	94	5092	1.9188 ug/L	91
7) Chloroethane	4.93	64	10438	1.9682 ug/L	95
8) Trichlorofluoromethane	5.42	101	23291	1.9031 ug/L	96
9) Diethyl ether	5.95	59	115894	24.7000 ug/L	90
10) Isoprene	6.00	67	16844	1.8561 ug/L	82
11) Acrolein	6.20	56	1525	Below Cal	65
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	13397	1.9395 ug/L	85
13) Acetone	6.30	43	2254	2.3611 ug/L #	52
14) 1,1-Dichloroethene	6.51	61	23611	2.0098 ug/L	83
15) Tert-Butyl Alcohol	6.63	59	12335	48.0186 ug/L	96
16) Dimethyl Sulfide	6.77	62	13216	1.9296 ug/L	76
17) Iodomethane	7.03	142	4697	2.0188 ug/L	98
18) Methyl acetate	7.04	43	6429	1.8872 ug/L #	63
19) Methylene Chloride	7.30	84	13330	1.9910 ug/L #	51
20) Carbon Disulfide	7.34	76	40646	1.8807 ug/L	94
21) Acrylonitrile	7.47	53	16949	11.1543 ug/L	75
22) Methyl Tert Butyl Ether	7.53	73	26473	2.0525 ug/L	98
23) trans-1,2-Dichloroethene	7.74	61	22069	1.9677 ug/L	86
24) n-Hexane	7.84	57	21654	1.9093 ug/L	97
25) Diisopropyl ether	8.17	45	627644	25.2643 ug/L	90
26) Vinyl Acetate	8.34	43	16025	1.9538 ug/L #	84
27) 1,1-Dichloroethane	8.37	63	27711	2.0467 ug/L	97
28) Ethyl-Tert-Butyl ether	8.75	59	479574	24.6025 ug/L	93
29) 2-Butanone	8.91	43	2904	1.8670 ug/L #	49
30) Propionitrile	9.04	54	11650	23.5000 ug/L	93
31) 2,2-Dichloropropane	9.16	77	22508	2.0150 ug/L	87
32) cis-1,2-Dichloroethene	9.21	96	14863	1.9295 ug/L	80
33) Chloroform	9.42	83	24639	1.9592 ug/L	100
34) 1-Bromopropane	9.54	122	2635	2.3365 ug/L	96
35) Bromochloromethane	9.65	130	7260	1.8482 ug/L #	61
36) Tetrahydrofuran	9.68	42	25601	24.4363 ug/L	89
38) 1,1,1-Trichloroethane	9.96	97	21783	1.9081 ug/L	98
39) Cyclohexane	9.98	56	27008	1.9521 ug/L	78
40) 1,1-Dichloropropene	10.15	75	19262	1.9393 ug/L	87
41) Tert-Amyl-Methyl ether	10.26	73	341606	23.8760 ug/L	96
42) Carbon Tetrachloride	10.30	117	19985	1.9264 ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	16851	1.8691 ug/L		92
46)	Benzene	10.50	78	56814	2.1235 ug/L		96
47)	Trichloroethene	11.26	130	12549	1.7732 ug/L		96
48)	Methylcyclohexane	11.35	83	19938	1.7357 ug/L		89
49)	1,2-Dichloropropane	11.47	63	14953	1.9954 ug/L		91
50)	Bromodichloromethane	11.78	83	17347	1.8802 ug/L		98
51)	1,4-Dioxane	11.76	88	945	73.3339 ug/L		93
52)	Dibromomethane	11.86	93	7170	2.0316 ug/L		88
53)	2-Chloroethyl Vinyl Ether	12.08	63	5523	2.1519 ug/L	#	78
54)	4-Methyl-2-Pentanone	12.11	58	2984	2.3162 ug/L	#	83
55)	cis-1,3-Dichloropropene	12.41	75	17917	1.7766 ug/L		95
56)	Dimethyl Disulfide	12.67	79	7600	4.2202 ug/L		84
59)	Toluene	12.83	91	59670	2.1381 ug/L		80
60)	Ethyl Methacrylate	12.92	69	8875	1.7872 ug/L	#	54
62)	trans-1,3-Dichloropropene	13.01	75	14883	1.7791 ug/L		97
63)	1,1,2-Trichloroethane	13.22	97	8013	1.8480 ug/L		88
64)	2-Hexanone	13.16	58	2369	1.9841 ug/L	#	38
65)	1,3-Dichloropropane	13.52	76	16337	2.1493 ug/L		83
66)	Tetrachloroethene	13.65	164	11497	1.9518 ug/L		88
67)	Dibromochloromethane	13.92	129	10779	1.8681 ug/L		99
68)	1,2-Dibromoethane	14.16	107	7938	1.9177 ug/L		100
69)	1-Chlorohexane	14.26	91	17801	1.8648 ug/L		87
70)	Chlorobenzene	14.67	112	38190	2.0274 ug/L		92
71)	1,1,1,2-Tetrachloroethane	14.70	131	12247	1.8113 ug/L		100
72)	Ethylbenzene	14.70	106	19901	1.7639 ug/L	#	18
73)	m-,p-Xylene	14.78	106	51169	4.0103 ug/L	#	48
74)	o-Xylene	15.35	106	23385	1.8546 ug/L	#	50
75)	Styrene	15.39	104	38422	1.9235 ug/L		88
76)	Bromoform	15.88	173	5191	2.1713 ug/L		94
77)	Isopropylbenzene	15.78	105	63107	2.0464 ug/L		76
79)	1,1,2,2-Tetrachloroethane	15.98	83	9845	2.0623 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	3065	2.3699 ug/L	#	30
82)	trans-1,4-Dichloro-2-Buten	16.23	53	2710	1.7101 ug/L	#	13
83)	n-Propylbenzene	16.28	91	78854	2.0744 ug/L	#	72
84)	Bromobenzene	16.42	156	13385	1.7731 ug/L		74
85)	1,3,5-Trimethylbenzene	16.47	105	53268	2.0480 ug/L		79
86)	2-Chlorotoluene	16.55	91	43814	1.7078 ug/L		82
87)	4-Chlorotoluene	16.60	91	46513	2.2667 ug/L		77
88)	a-Methylstyrene	16.87	118	25754	1.7387 ug/L		89
89)	tert-Butylbenzene	16.94	134	10204	1.7647 ug/L		42
90)	1,2,4-Trimethylbenzene	16.99	105	55177	2.0634 ug/L		70
91)	sec-Butylbenzene	17.20	105	68065	2.0989 ug/L	#	74
92)	p-Isopropyltoluene	17.36	119	57213	2.0809 ug/L		75
93)	1,3-Dichlorobenzene	17.56	146	31027	2.0280 ug/L		93
94)	1,4-Dichlorobenzene	17.69	146	29852	1.9219 ug/L		92
95)	n-Butylbenzene	17.90	91	56152	2.0908 ug/L	#	77
96)	1,2-Dichlorobenzene	18.18	146	27243	2.0520 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.18	75	1051	1.3793 ug/L		76
98)	1,2,4-Trichlorobenzene	20.32	180	18804	1.8801 ug/L		95
99)	Hexachlorobutadiene	20.47	225	9220	1.7646 ug/L		93
100)	Naphthalene	20.69	128	28078	2.0933 ug/L		91
101)	1,2,3-Trichlorobenzene	21.00	180	16807	1.9831 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M404582.D 8260WT.M Wed May 13 06:46:16 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

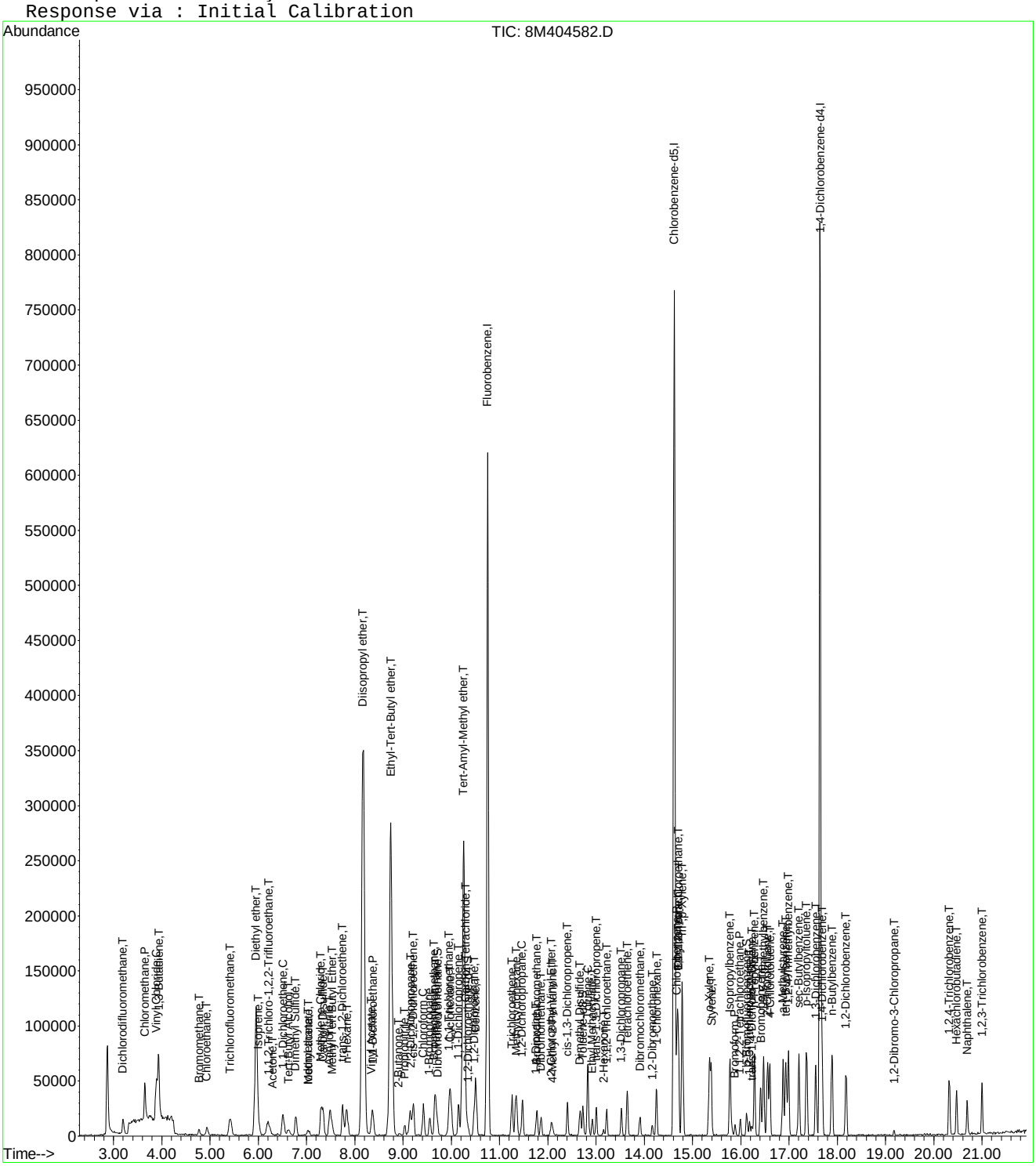

8M404582.D 8260WT.M Wed May 13 06:46:16 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.7638	11.8	100	0.00
3	P	Chloromethane	2.0000	2.2095	-10.5	100	0.00
4	C	Vinyl Chloride	2.0000	2.1027	-5.1	100	0.00
5	T	1,3-Butadiene	2.0000	1.7245	13.8	100	0.03
6	T	Bromomethane	2.0000	1.9188	4.1	100	0.00
7	T	Chloroethane	2.0000	1.9682	1.6	100	0.00
8	T	Trichlorofluoromethane	2.0000	1.9031	4.8	100	0.00
9	T	Diethyl ether	25.0000	24.7000	1.2	100	0.00
10	T	Isoprene	-1.0000	1.8561	0.0	100	0.00
11	T	Acrolein	12.5000	-1.0000	108.0#	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9395	3.0	100	0.00
13	T	Acetone	-1.0000	2.3611	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0098	-0.5	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	48.0186	4.0	100	0.00
16	T	Dimethyl Sulfide	2.0000	1.9297	3.5	100	0.00
17	T	Iodomethane	2.0000	2.0188	-0.9	100	0.00
18	T	Methyl acetate	2.0000	1.8872	5.6	100	0.00
19	T	Methylene Chloride	2.0000	1.9910	0.4	100	0.00
20	T	Carbon Disulfide	2.0000	1.8807	6.0	100	0.00
21	T	Acrylonitrile	12.5000	11.1543	10.8	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0525	-2.6	100	0.02
23	T	trans-1,2-Dichloroethene	2.0000	1.9678	1.6	100	0.00
24	T	n-Hexane	-1.0000	1.9093	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	25.2643	-1.1	100	0.00
26	T	Vinyl Acetate	-1.0000	1.9538	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0467	-2.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.6025	1.6	100	0.00
29	T	2-Butanone	-1.0000	1.8670	0.0	100	-0.01
30	T	Propionitrile	25.0000	23.5000	6.0	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.0150	-0.7	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9295	3.5	100	0.00
33	C	Chloroform	2.0000	1.9592	2.0	100	0.00
34		1-Bromopropane	2.0000	2.3365	-16.8	100	-0.01
35	T	Bromochloromethane	2.0000	1.8482	7.6	100	-0.01
36	T	Tetrahydrofuran	25.0000	24.4363	2.3	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.9909	0.0	0	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9081	4.6	100	0.00
39	T	Cyclohexane	2.0000	1.9521	2.4	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9393	3.0	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	23.8760	4.5	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.9264	3.7	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.9941	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	2.0000	1.8691	6.5	100	0.00
46	T	Benzene	2.0000	2.1235	-6.2	100	0.00
47	T	Trichloroethene	2.0000	1.7732	11.3	100	0.00
48	T	Methylcyclohexane	-1.0000	1.7357	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.9954	0.2	100	0.00
50	T	Bromodichloromethane	2.0000	1.8803	6.0	100	0.00
51	T	1,4-Dioxane	-1.0000	73.3339	0.0	0	-0.01
52	T	Dibromomethane	2.0000	2.0316	-1.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	2.1519	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	2.3162	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.7766	11.2	100	0.00
56	T	Dimethyl Disulfide	-1.0000	4.2202	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.9921	0.0	0	0.00
59	C	Toluene	2.0000	2.1381	-6.9	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.7872	10.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	2.0000	1.7791	11.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.8480	7.6	100	0.00
64	T	2-Hexanone	-1.0000	1.9841	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1493	-7.5	100	0.00
66	T	Tetrachloroethene	2.0000	1.9518	2.4	100	0.00
67	T	Dibromochloromethane	2.0000	1.8681	6.6	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9177	4.1	100	0.00
69	T	1-Chlorohexane	2.0000	1.8647	6.8	100	0.00
70	P	Chlorobenzene	2.0000	2.0274	-1.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.8113	9.4	100	0.00
72	C	Ethylbenzene	2.0000	1.7639	11.8	100	0.00
73	T	m-,p-Xylene	4.0000	4.0103	-0.3	100	0.00
74	T	o-Xylene	2.0000	1.8546	7.3	100	0.00
75	T	Styrene	2.0000	1.9235	3.8	100	0.00
76	P	Bromoform	2.0000	2.1713	-8.6	100	0.00
77	T	Isopropylbenzene	2.0000	2.0464	-2.3	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0623	-3.1	100	-0.01
80	S	p-Bromofluorobenzene	-1.0000	1.0598	0.0	0	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.3699	-18.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7101	14.5	100	0.00
83	T	n-Propylbenzene	2.0000	2.0744	-3.7	100	0.00
84	T	Bromobenzene	2.0000	1.7731	11.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0480	-2.4	100	0.00
86	T	2-Chlorotoluene	2.0000	1.7078	14.6	100	0.00
87	T	4-Chlorotoluene	2.0000	2.2667	-13.3	100	0.00
88	T	a-Methylstyrene	-1.0000	1.7387	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.7647	11.8	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.0634	-3.2	100	0.00
91	T	sec-Butylbenzene	2.0000	2.0989	-4.9	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.0809	-4.0	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.0280	-1.4	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	1.9219	3.9	100	0.00
95	T	n-Butylbenzene	2.0000	2.0908	-4.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0520	-2.6	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.3793	31.0#	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.8801	6.0	100	0.00
99	T	Hexachlorobutadiene	2.0000	1.7646	11.8	100	0.00
100	T	Naphthalene	2.0000	2.0933	-4.7	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9831	0.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404582.D 8260WT.M Wed May 13 06:47:46 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:16 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	686040	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	475199	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	267048	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	168048	24.7134 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.84%		
43) 1,2-Dichloroethane-d4	10.35	65	161918	25.3383 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.36%		
58) Toluene-d8	12.73	98	587226	26.4814 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.92%		
80) p-Bromofluorobenzene	16.12	95	222599	24.5005 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	47127	4.4324 ug/L	96
3) Chloromethane	3.65	50	110533	5.2074 ug/L	96
4) Vinyl Chloride	3.89	62	100868	5.0431 ug/L	95
5) 1,3-Butadiene	3.93	54	97161	4.7530 ug/L	93
6) Bromomethane	4.77	94	15690	4.2002 ug/L	92
7) Chloroethane	4.93	64	25308	4.6497 ug/L #	87
8) Trichlorofluoromethane	5.42	101	59779	4.7593 ug/L	97
9) Diethyl ether	5.96	59	240712	49.9870 ug/L	88
10) Isoprene	6.00	67	39892	4.2833 ug/L	78
11) Acrolein	6.18	56	2733	26.2227 ug/L	71
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	33786	4.7658 ug/L	88
13) Acetone	6.29	43	4839	4.9390 ug/L #	61
14) 1,1-Dichloroethene	6.51	61	54546	4.5240 ug/L	79
15) Tert-Butyl Alcohol	6.63	59	26541	100.6726 ug/L	99
16) Dimethyl Sulfide	6.78	62	30481	4.3364 ug/L	68
17) Iodomethane	7.04	142	12011	3.4856 ug/L	79
18) Methyl acetate	7.04	43	18409	5.2654 ug/L #	80
19) Methylene Chloride	7.30	84	32753	4.7667 ug/L #	49
20) Carbon Disulfide	7.34	76	99247	4.4746 ug/L	97
21) Acrylonitrile	7.48	53	36223	23.2277 ug/L	86
22) Methyl Tert Butyl Ether	7.51	73	64059	4.8393 ug/L	97
23) trans-1,2-Dichloroethene	7.76	61	53278	4.6287 ug/L	86
24) n-Hexane	7.84	57	51137	4.3934 ug/L	92
25) Diisopropyl ether	8.17	45	1331241	52.2124 ug/L	91
26) Vinyl Acetate	8.34	43	42002	4.9898 ug/L #	87
27) 1,1-Dichloroethane	8.38	63	66294	4.7710 ug/L	96
28) Ethyl-Tert-Butyl ether	8.75	59	1034994	51.7352 ug/L	91
29) 2-Butanone	8.92	43	7169	4.4910 ug/L #	71
30) Propionitrile	9.03	54	26318	51.7272 ug/L	97
31) 2,2-Dichloropropane	9.15	77	50659	4.4189 ug/L	96
32) cis-1,2-Dichloroethene	9.21	96	34547	4.3699 ug/L	68
33) Chloroform	9.42	83	63118	4.8903 ug/L	92
34) 1-Bromopropane	9.56	122	6302	4.8190 ug/L	90
35) Bromochloromethane	9.65	130	17796	4.4142 ug/L #	59
36) Tetrahydrofuran	9.68	42	54123	50.3367 ug/L	83
38) 1,1,1-Trichloroethane	9.96	97	53980	4.6072 ug/L	95
39) Cyclohexane	9.99	56	62040	4.3691 ug/L	85
40) 1,1-Dichloropropene	10.15	75	47579	4.6675 ug/L	92
41) Tert-Amyl-Methyl ether	10.26	73	751367	51.1697 ug/L	96
42) Carbon Tetrachloride	10.30	117	47176	4.4308 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M404583.D 8260WT.M Wed May 13 06:46:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:16 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	45883	4.9589 ug/L		91
46)	Benzene	10.51	78	136536	4.9724 ug/L		100
47)	Trichloroethene	11.26	130	33200	4.5710 ug/L		97
48)	Methylcyclohexane	11.34	83	51913	4.4036 ug/L		92
49)	1,2-Dichloropropane	11.48	63	34846	4.5308 ug/L		98
50)	Bromodichloromethane	11.77	83	42494	4.4879 ug/L		99
51)	1,4-Dioxane	11.76	88	2217	105.6275 ug/L		86
52)	Dibromomethane	11.86	93	16927	4.6733 ug/L		92
53)	2-Chloroethyl Vinyl Ether	12.07	63	12688	5.9847 ug/L		92
54)	4-Methyl-2-Pentanone	12.10	58	5613	4.2452 ug/L		93
55)	cis-1,3-Dichloropropene	12.41	75	49114	4.7452 ug/L		94
56)	Dimethyl Disulfide	12.67	79	20718	6.2009 ug/L		94
59)	Toluene	12.83	91	143782	5.1011 ug/L		83
60)	Ethyl Methacrylate	12.92	69	22986	4.5832 ug/L		68
62)	trans-1,3-Dichloropropene	13.01	75	42367	5.0147 ug/L		94
63)	1,1,2-Trichloroethane	13.21	97	20948	4.7835 ug/L		93
64)	2-Hexanone	13.16	58	5134	4.2573 ug/L	#	42
65)	1,3-Dichloropropane	13.52	76	38249	4.9824 ug/L		77
66)	Tetrachloroethene	13.65	164	25212	4.2379 ug/L		87
67)	Dibromochloromethane	13.92	129	26066	4.4729 ug/L		98
68)	1,2-Dibromoethane	14.17	107	20580	4.9228 ug/L		97
69)	1-Chlorohexane	14.26	91	44970	4.6644 ug/L		87
70)	Chlorobenzene	14.67	112	92011	4.8365 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.70	131	30717	4.4982 ug/L		96
72)	Ethylbenzene	14.70	106	51864	4.5516 ug/L	#	32
73)	m-,p-Xylene	14.79	106	126124	9.7872 ug/L	#	41
74)	o-Xylene	15.35	106	60560	4.7554 ug/L		61
75)	Styrene	15.39	104	96464	4.7816 ug/L		89
76)	Bromoform	15.88	173	13800	4.4404 ug/L		97
77)	Isopropylbenzene	15.78	105	158770	5.0977 ug/L		77
79)	1,1,2,2-Tetrachloroethane	16.00	83	24622	4.8524 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	6682	4.8607 ug/L		76
82)	trans-1,4-Dichloro-2-Buten	16.22	53	7861	4.6669 ug/L	#	59
83)	n-Propylbenzene	16.29	91	193929	4.7996 ug/L	#	74
84)	Bromobenzene	16.41	156	36989	4.6097 ug/L		85
85)	1,3,5-Trimethylbenzene	16.47	105	134210	4.8546 ug/L		79
86)	2-Chlorotoluene	16.55	91	124340	4.5598 ug/L		77
87)	4-Chlorotoluene	16.61	91	121177	5.5558 ug/L		73
88)	a-Methylstyrene	16.87	118	67830	4.3083 ug/L		97
89)	tert-Butylbenzene	16.94	134	27541	4.4811 ug/L		56
90)	1,2,4-Trimethylbenzene	16.99	105	140624	4.9476 ug/L		74
91)	sec-Butylbenzene	17.21	105	179981	5.2214 ug/L	#	76
92)	p-Isopropyltoluene	17.36	119	145950	4.9942 ug/L		76
93)	1,3-Dichlorobenzene	17.56	146	73899	4.5442 ug/L		95
94)	1,4-Dichlorobenzene	17.69	146	78460	4.7523 ug/L		96
95)	n-Butylbenzene	17.89	91	146124	5.1187 ug/L	#	78
96)	1,2-Dichlorobenzene	18.18	146	65645	4.6518 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.18	75	4176	5.1559 ug/L		78
98)	1,2,4-Trichlorobenzene	20.33	180	48452	4.5577 ug/L		95
99)	Hexachlorobutadiene	20.47	225	26321	4.7392 ug/L		93
100)	Naphthalene	20.69	128	68778	4.8240 ug/L		93
101)	1,2,3-Trichlorobenzene	21.00	180	41531	4.6102 ug/L		96

(#) = qualifier out of range (m) = manual integration
8M404583.D 8260WT.M Wed May 13 06:46:17 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

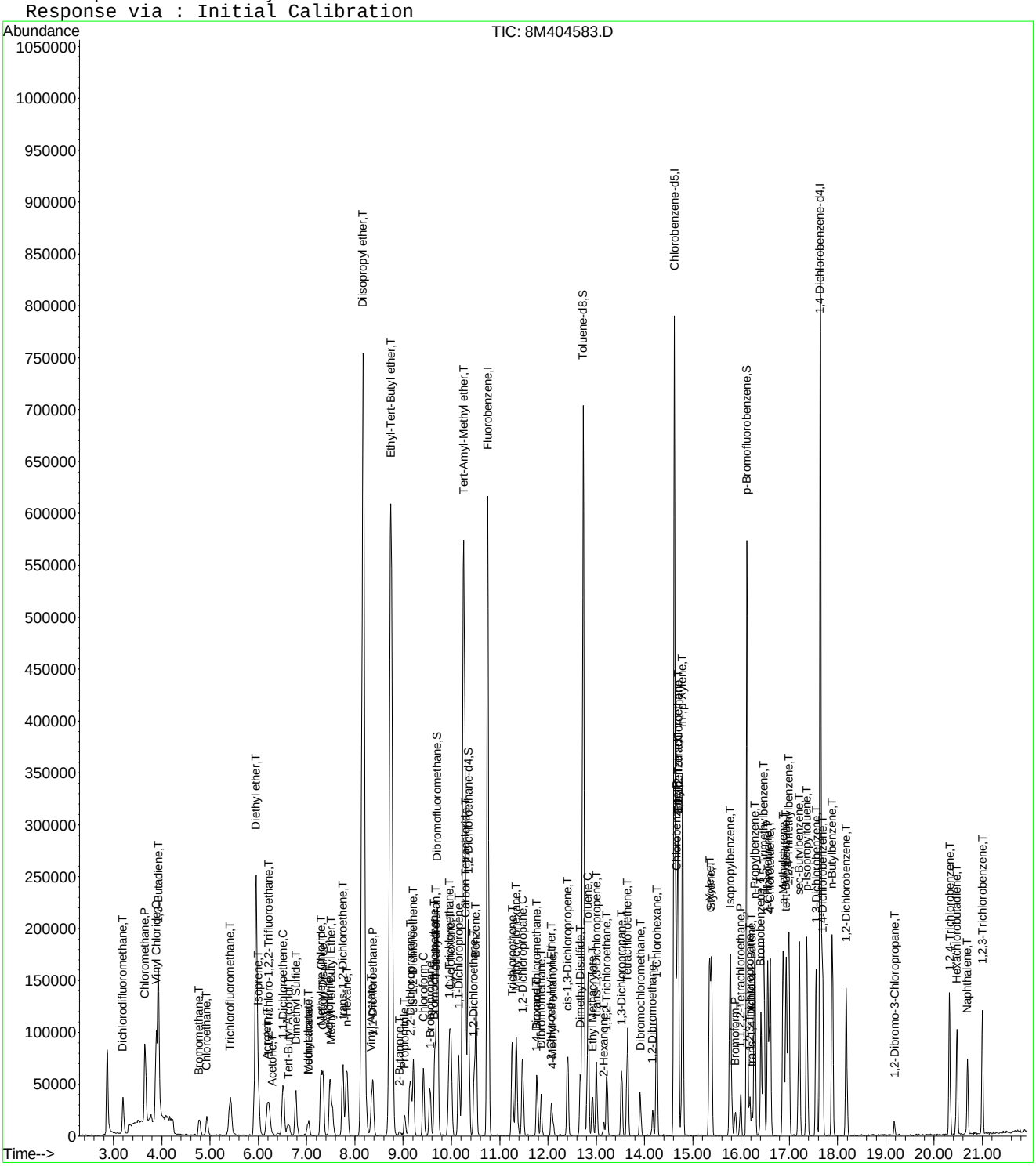

8M404583.D 8260WT.M Wed May 13 06:46:17 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.4324	11.4	100	0.00
3	P	Chloromethane	5.0000	5.2074	-4.1	100	0.00
4	C	Vinyl Chloride	5.0000	5.0431	-0.9	100	0.01
5	T	1,3-Butadiene	5.0000	4.7530	4.9	100	0.02
6	T	Bromomethane	5.0000	4.2002	16.0	100	0.00
7	T	Chloroethane	5.0000	4.6498	7.0	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7594	4.8	100	0.00
9	T	Diethyl ether	50.0000	49.9870	0.0	100	0.01
10	T	Isoprene	5.0000	4.2833	14.3	100	0.00
11	T	Acrolein	25.0000	26.2227	-4.9	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7658	4.7	100	0.00
13	T	Acetone	5.0000	4.9390	1.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.5240	9.5	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.6726	-0.7	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.3364	13.3	100	0.00
17	T	Iodomethane	5.0000	3.4856	30.3#	100	0.00
18	T	Methyl acetate	5.0000	5.2654	-5.3	100	0.00
19	T	Methylene Chloride	5.0000	4.7667	4.7	100	0.00
20	T	Carbon Disulfide	5.0000	4.4746	10.5	100	0.00
21	T	Acrylonitrile	25.0000	23.2277	7.1	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.8393	3.2	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.6287	7.4	100	0.00
24	T	n-Hexane	5.0000	4.3934	12.1	100	0.00
25	T	Diisopropyl ether	50.0000	52.2124	-4.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.9898	0.2	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7710	4.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.7352	-3.5	100	0.00
29	T	2-Butanone	5.0000	4.4910	10.2	100	0.00
30	T	Propionitrile	50.0000	51.7272	-3.5	100	-0.01
31	T	2,2-Dichloropropane	5.0000	4.4189	11.6	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.3699	12.6	100	0.00
33	C	Chloroform	5.0000	4.8903	2.2	100	0.00
34		1-Bromopropane	5.0000	4.8190	3.6	100	0.00
35	T	Bromochloromethane	5.0000	4.4142	11.7	100	-0.01
36	T	Tetrahydrofuran	50.0000	50.3367	-0.7	100	0.00
37	S	Dibromofluoromethane	-1.0000	24.7134	0.0	0	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.6072	7.9	100	0.00
39	T	Cyclohexane	5.0000	4.3691	12.6	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6675	6.7	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	51.1696	-2.3	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.4308	11.4	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	25.3383	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	5.0000	4.9589	0.8	100	0.00
46	T	Benzene	5.0000	4.9724	0.6	100	0.00
47	T	Trichloroethene	5.0000	4.5710	8.6	100	0.00
48	T	Methylcyclohexane	5.0000	4.4036	11.9	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5308	9.4	100	0.00
50	T	Bromodichloromethane	5.0000	4.4879	10.2	100	0.00
51	T	1,4-Dioxane	100.0000	105.6275	-5.6	100	-0.01
52	T	Dibromomethane	5.0000	4.6733	6.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.9847	-19.7	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.2452	15.1	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.7452	5.1	100	0.00
56	T	Dimethyl Disulfide	5.0000	6.2009	-24.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	26.4814	0.0	0	0.00
59	C	Toluene	5.0000	5.1011	-2.0	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.5832	8.3	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	5.0000	5.0146	-0.3	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.7835	4.3	100	-0.01
64	T	2-Hexanone	5.0000	4.2573	14.9	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9824	0.4	100	0.00
66	T	Tetrachloroethene	5.0000	4.2379	15.2	100	0.00
67	T	Dibromochloromethane	5.0000	4.4729	10.5	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.9228	1.5	100	0.00
69	T	1-Chlorohexane	5.0000	4.6644	6.7	100	0.00
70	P	Chlorobenzene	5.0000	4.8365	3.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.4982	10.0	100	0.00
72	C	Ethylbenzene	5.0000	4.5516	9.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.7873	2.1	100	0.00
74	T	o-Xylene	5.0000	4.7554	4.9	100	0.00
75	T	Styrene	5.0000	4.7816	4.4	100	0.00
76	P	Bromoform	5.0000	4.4404	11.2	100	0.00
77	T	Isopropylbenzene	5.0000	5.0977	-2.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8524	3.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	24.5005	0.0	0	0.00
81	T	1,2,3-Trichloropropane	5.0000	4.8607	2.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.6669	6.7	100	-0.01
83	T	n-Propylbenzene	5.0000	4.7996	4.0	100	0.00
84	T	Bromobenzene	5.0000	4.6097	7.8	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.8546	2.9	100	0.00
86	T	2-Chlorotoluene	5.0000	4.5598	8.8	100	0.00
87	T	4-Chlorotoluene	5.0000	5.5558	-11.1	100	0.00
88	T	a-Methylstyrene	5.0000	4.3083	13.8	100	0.00
89	T	tert-Butylbenzene	5.0000	4.4811	10.4	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	4.9476	1.0	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2214	-4.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	4.9942	0.1	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.5442	9.1	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.7523	5.0	100	0.00
95	T	n-Butylbenzene	5.0000	5.1187	-2.4	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.6518	7.0	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1559	-3.1	100	0.01
98	T	1,2,4-Trichlorobenzene	5.0000	4.5577	8.8	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.7392	5.2	100	0.00
100	T	Naphthalene	5.0000	4.8240	3.5	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6102	7.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404583.D 8260WT.M Wed May 13 06:47:55 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404584.D Vial: 8
Acq On : 12 May 2015 19:13 Operator: TMB
Sample : WG523161-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:17 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	727593	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	518323	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	285092	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	71169	9.8685 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 39.48%#		
43) 1,2-Dichloroethane-d4	10.35	65	68318	10.0804 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.32%#		
58) Toluene-d8	12.73	98	240107	9.9269 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 39.72%#		
80) p-Bromofluorobenzene	16.13	95	95680	9.8645 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 39.44%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	245768	21.7949 ug/L	97
3) Chloromethane	3.65	50	473219	21.0210 ug/L	95
4) Vinyl Chloride	3.89	62	456773	21.5331 ug/L	94
5) 1,3-Butadiene	3.93	54	457261	22.6102 ug/L	96
6) Bromomethane	4.78	94	81387	17.2761 ug/L	97
7) Chloroethane	4.93	64	115752	20.0522 ug/L	90
8) Trichlorofluoromethane	5.43	101	266817	20.0296 ug/L	97
9) Diethyl ether	5.95	59	412029	80.6767 ug/L	89
10) Isoprene	5.99	67	191093	19.3462 ug/L	79
11) Acrolein	6.18	56	5561	41.8032 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	152298	20.2560 ug/L	94
13) Acetone	6.28	43	24034	23.1296 ug/L	76
14) 1,1-Dichloroethene	6.51	61	252867	19.7750 ug/L	83
15) Tert-Butyl Alcohol	6.63	59	45992	164.4892 ug/L	97
16) Dimethyl Sulfide	6.78	62	148261	19.8879 ug/L	78
17) Iodomethane	7.03	142	76927	15.7797 ug/L	78
18) Methyl acetate	7.04	43	73990	19.9541 ug/L	93
19) Methylene Chloride	7.30	84	141246	19.3823 ug/L #	49
20) Carbon Disulfide	7.34	76	488267	20.7563 ug/L	94
21) Acrylonitrile	7.47	53	63930	38.6534 ug/L	85
22) Methyl Tert Butyl Ether	7.50	73	280227	19.9606 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	236060	19.3372 ug/L	85
24) n-Hexane	7.84	57	250582	20.2991 ug/L	98
25) Diisopropyl ether	8.18	45	2248464	83.1503 ug/L	92
26) Vinyl Acetate	8.34	43	183005	20.4992 ug/L	92
27) 1,1-Dichloroethane	8.37	63	299777	20.3420 ug/L	95
28) Ethyl-Tert-Butyl ether	8.74	59	1762800	83.0830 ug/L	92
29) 2-Butanone	8.92	43	36822	21.7495 ug/L	90
30) Propionitrile	9.03	54	44813	83.0484 ug/L	97
31) 2,2-Dichloropropane	9.15	77	236580	19.4577 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	165038	19.6836 ug/L	75
33) Chloroform	9.42	83	280488	20.4908 ug/L	92
34) 1-Bromopropane	9.55	122	28284	18.8723 ug/L	97
35) Bromochloromethane	9.65	130	83271	19.4752 ug/L #	66
36) Tetrahydrofuran	9.68	42	94391	82.7740 ug/L	85
38) 1,1,1-Trichloroethane	9.95	97	249818	20.1043 ug/L	99
39) Cyclohexane	9.99	56	302464	20.0844 ug/L	85
40) 1,1-Dichloropropene	10.15	75	214768	19.8654 ug/L	93
41) Tert-Amyl-Methyl ether	10.25	73	1279207	82.1414 ug/L	97
42) Carbon Tetrachloride	10.30	117	224404	19.8726 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M404584.D 8260WT.M Wed May 13 06:46:18 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404584.D Vial: 8
Acq On : 12 May 2015 19:13 Operator: TMB
Sample : WG523161-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:17 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	194558	19.8265 ug/L		92
46)	Benzene	10.51	78	598890	20.5650 ug/L		100
47)	Trichloroethene	11.26	130	158829	20.6187 ug/L		97
48)	Methylcyclohexane	11.35	83	246700	19.7314 ug/L		89
49)	1,2-Dichloropropane	11.47	63	161651	19.8183 ug/L		99
50)	Bromodichloromethane	11.77	83	198014	19.7184 ug/L		99
51)	1,4-Dioxane	11.76	88	4731	163.7290 ug/L	#	69
52)	Dibromomethane	11.86	93	77466	20.1658 ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.06	63	36919	18.0638 ug/L		91
54)	4-Methyl-2-Pentanone	12.11	58	28112	20.0473 ug/L		92
55)	cis-1,3-Dichloropropene	12.41	75	225646	20.5559 ug/L		94
56)	Dimethyl Disulfide	12.67	79	104466	18.1272 ug/L		94
59)	Toluene	12.83	91	648413	21.0904 ug/L		84
60)	Ethyl Methacrylate	12.92	69	115634	21.1382 ug/L		76
62)	trans-1,3-Dichloropropene	13.00	75	185796	20.1616 ug/L		93
63)	1,1,2-Trichloroethane	13.22	97	97920	20.4999 ug/L		98
64)	2-Hexanone	13.15	58	27272	20.7336 ug/L	#	36
65)	1,3-Dichloropropane	13.52	76	170530	20.3655 ug/L		80
66)	Tetrachloroethene	13.65	164	126104	19.4334 ug/L		90
67)	Dibromochloromethane	13.91	129	124382	19.5682 ug/L		99
68)	1,2-Dibromoethane	14.16	107	94289	20.6778 ug/L		96
69)	1-Chlorohexane	14.26	91	211868	20.1470 ug/L		86
70)	Chlorobenzene	14.67	112	410486	19.7817 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.70	131	142319	19.1072 ug/L		99
72)	Ethylbenzene	14.70	106	228219	18.3622 ug/L	#	21
73)	m-,p-Xylene	14.78	106	564794	40.1817 ug/L	#	41
74)	o-Xylene	15.35	106	276601	19.9127 ug/L		63
75)	Styrene	15.38	104	458747	20.8476 ug/L		89
76)	Bromoform	15.88	173	67444	17.1776 ug/L		99
77)	Isopropylbenzene	15.78	105	719990	21.1936 ug/L		77
79)	1,1,2,2-Tetrachloroethane	15.99	83	105532	19.4816 ug/L		100
81)	1,2,3-Trichloropropane	16.18	110	30367	20.6917 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.23	53	35550	19.7693 ug/L		79
83)	n-Propylbenzene	16.28	91	901587	20.9015 ug/L	#	72
84)	Bromobenzene	16.42	156	170410	19.8931 ug/L		87
85)	1,3,5-Trimethylbenzene	16.47	105	625945	21.2085 ug/L		78
86)	2-Chlorotoluene	16.55	91	595181	20.4450 ug/L		80
87)	4-Chlorotoluene	16.60	91	470804	20.2195 ug/L		75
88)	a-Methylstyrene	16.87	118	332268	19.7685 ug/L		91
89)	tert-Butylbenzene	16.93	134	125558	19.1361 ug/L		58
90)	1,2,4-Trimethylbenzene	16.99	105	643764	21.2160 ug/L		74
91)	sec-Butylbenzene	17.20	105	805481	21.8888 ug/L	#	76
92)	p-Isopropyltoluene	17.37	119	680965	21.8269 ug/L		77
93)	1,3-Dichlorobenzene	17.55	146	350883	20.2110 ug/L		93
94)	1,4-Dichlorobenzene	17.69	146	344395	19.5398 ug/L		93
95)	n-Butylbenzene	17.89	91	662694	21.7450 ug/L		78
96)	1,2-Dichlorobenzene	18.18	146	303795	20.1651 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.18	75	17277	19.9810 ug/L		77
98)	1,2,4-Trichlorobenzene	20.31	180	223937	19.7317 ug/L		96
99)	Hexachlorobutadiene	20.47	225	112729	19.0128 ug/L		94
100)	Naphthalene	20.69	128	314530	20.6645 ug/L		92
101)	1,2,3-Trichlorobenzene	21.00	180	188988	19.6510 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404584.D 8260WT.M Wed May 13 06:46:18 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404584.D Vial: 8
Acq On : 12 May 2015 19:13 Operator: TMB
Sample : WG523161-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

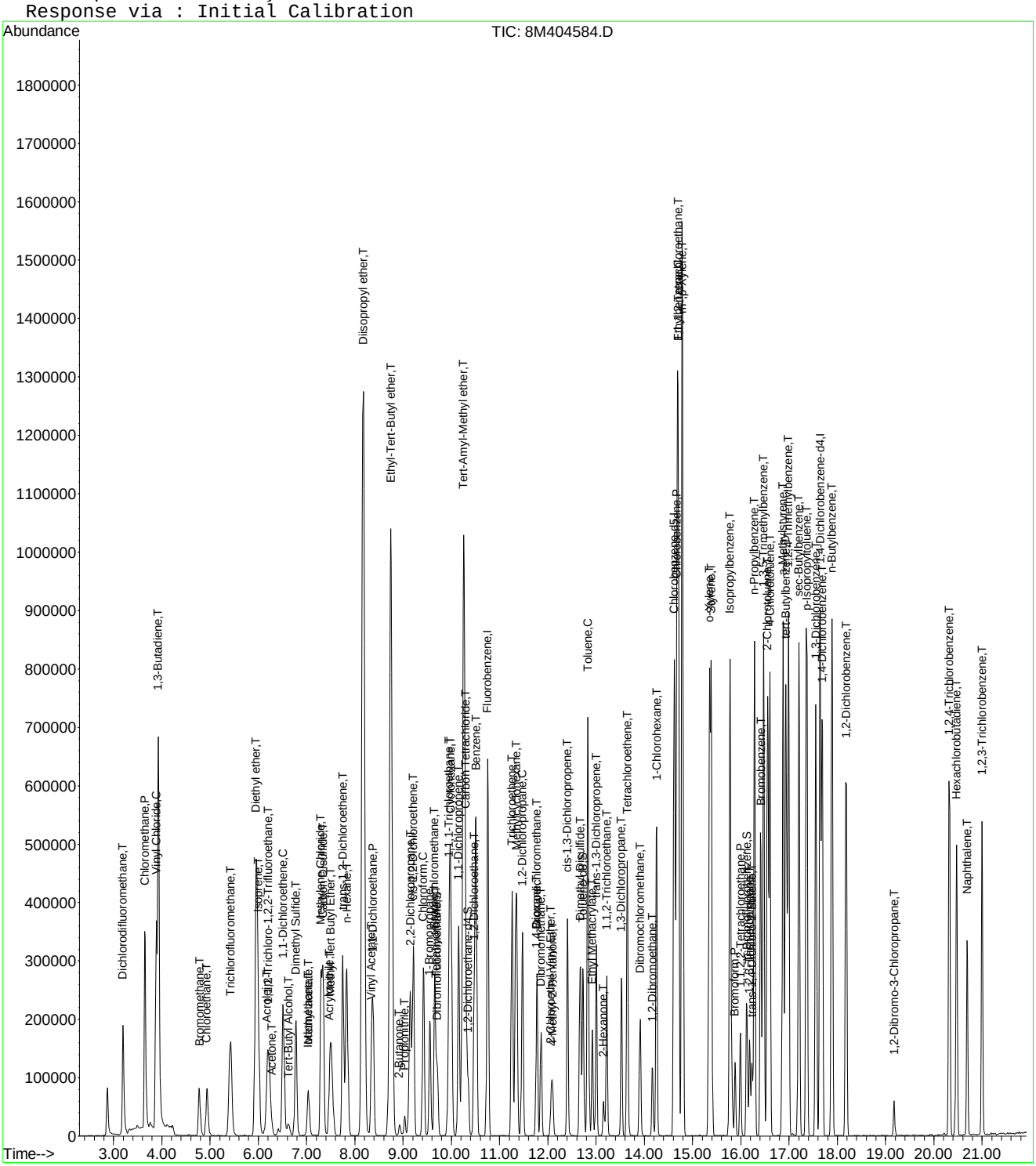
Abundance
TIC: 8M404584.D
Time-->
Dichlorodifluoromethane,T
Chloromethane,P
Vinyl Chloride,C
1,3-Butadiene,T
Bromomethane,T
Chloroethane,T
Trichlorofluoromethane,T
Diethyl ether,T
Acetone,T
Tert-Butyl Alcohol,T
Dimethyl Sulfide,T
Vinyl Acetate,T
2-Butanone,T
Diisopropyl ether,T
Ethyl-Tert-Butyl ether,T
Tert-Amyl-Methyl ether,T
Benzene,T
Fluorobenzene,I
Toluene,C
1-Chlorohexane,T
Tetrachloroethene,T
1,2-Dibromo-3-Chloropropane,T
Hexachlorobutadiene,T
Naphthalene,T
1,2,3-Trichlorobenzene,T
1,2-Dichlorobenzene,T
n-Butylbenzene,T
Isopropylbenzene,T
o-Xylene,T
Bromobenzene,T
1,2-Dibromoethane,T
Dibromochloromethane,T
1,3-Dichloropropane,T
2-Hexanone,T
Ethyl Methacrylate,T
cis-1,3-Dichloropropene,T
1,1,2-Trichloroethane,T
trans-1,3-Dichloropropene,T
Carbon Tetrachloride,T
1,1-Dichloroethane,T
1,2-Dichloroethane,T
Chloroform,C
Bromochloromethane,T
2,2-Dichloropropane,T
1,2-Dichloroethene,T
Methylene Chloride,T
Acrylonitrile,T
Tert Butyl Ether,T
n-Hexane,T
Acrylonitrile,T
Methyl Acetate,T
Methyl Iodide,T
Isoprene,T
1,2,2-Trichloro-1,2,2-Trifluoroethane,T
1,1-Dichloroethene,C
Dichlorodifluoromethane,T
Chloroethane,T
Bromomethane,T
Chloromethane,P
Vinyl Chloride,C
1,3-Butadiene

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404585.D Vial: 9
Acq On : 12 May 2015 19:42 Operator: TMB
Sample : WG523161-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:18 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	779258	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	545682	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	300564	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	191218	24.7569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.04%		
43) 1,2-Dichloroethane-d4	10.35	65	182556	25.1505 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.60%		
58) Toluene-d8	12.73	98	657086	25.8044 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	16.12	95	255554	24.9912 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	644248	53.3446 ug/L	99
3) Chloromethane	3.65	50	1203600	49.9206 ug/L	96
4) Vinyl Chloride	3.89	62	1175474	51.7399 ug/L	95
5) 1,3-Butadiene	3.93	54	1205454	60.0260 ug/L	99
6) Bromomethane	4.78	94	260223	48.3389 ug/L	99
7) Chloroethane	4.94	64	307028	49.6613 ug/L #	91
8) Trichlorofluoromethane	5.42	101	710092	49.7716 ug/L	98
9) Diethyl ether	5.95	59	509109	93.0762 ug/L	90
10) Isoprene	5.98	67	538313	50.8854 ug/L	80
11) Acrolein	6.19	56	9077	53.0585 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	399689	49.6350 ug/L	95
13) Acetone	6.28	43	53732	48.2817 ug/L	85
14) 1,1-Dichloroethene	6.51	61	689257	50.3284 ug/L	83
15) Tert-Butyl Alcohol	6.62	59	54364	181.5406 ug/L #	83
16) Dimethyl Sulfide	6.78	62	405835	50.8299 ug/L	79
17) Iodomethane	7.03	142	270107	48.8910 ug/L	80
18) Methyl acetate	7.04	43	191315	48.1743 ug/L	90
19) Methylene Chloride	7.30	84	388830	49.8192 ug/L #	54
20) Carbon Disulfide	7.34	76	1328711	52.7389 ug/L	96
21) Acrylonitrile	7.48	53	88115	49.7440 ug/L	94
22) Methyl Tert Butyl Ether	7.50	73	740269	49.2335 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	647880	49.5534 ug/L	85
24) n-Hexane	7.84	57	664406	50.2537 ug/L	95
25) Diisopropyl ether	8.18	45	2835089	97.8931 ug/L	92
26) Vinyl Acetate	8.34	43	494717	51.7415 ug/L	92
27) 1,1-Dichloroethane	8.37	63	805792	51.0536 ug/L	94
28) Ethyl-Tert-Butyl ether	8.75	59	2207186	97.1304 ug/L	93
29) 2-Butanone	8.92	43	89196	49.1919 ug/L	89
30) Propionitrile	9.03	54	54220	93.8197 ug/L	96
31) 2,2-Dichloropropane	9.15	77	637866	48.9836 ug/L	98
32) cis-1,2-Dichloroethene	9.21	96	446398	49.7108 ug/L	76
33) Chloroform	9.42	83	736233	50.2190 ug/L	95
34) 1-Bromopropane	9.56	122	78073	47.8976 ug/L	100
35) Bromochloromethane	9.66	130	229706	50.1611 ug/L #	70
36) Tetrahydrofuran	9.68	42	114556	93.7969 ug/L	86
38) 1,1,1-Trichloroethane	9.96	97	683447	51.3543 ug/L	97
39) Cyclohexane	9.99	56	810422	50.2462 ug/L	85
40) 1,1-Dichloropropene	10.15	75	577549	49.8796 ug/L	93
41) Tert-Amyl-Methyl ether	10.26	73	1610216	96.5412 ug/L	97
42) Carbon Tetrachloride	10.30	117	616028	50.9368 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404585.D Vial: 9
Acq On : 12 May 2015 19:42 Operator: TMB
Sample : WG523161-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:18 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	514353	48.9401	ug/L		92
46)	Benzene	10.51	78	1588546	50.9317	ug/L		98
47)	Trichloroethene	11.26	130	417289	50.5797	ug/L		97
48)	Methylcyclohexane	11.34	83	671759	50.1660	ug/L		90
49)	1,2-Dichloropropane	11.48	63	431723	49.4196	ug/L		100
50)	Bromodichloromethane	11.77	83	541835	50.3790	ug/L		96
51)	1,4-Dioxane	11.76	88	6692	200.7748	ug/L		82
52)	Dibromomethane	11.86	93	202188	49.1436	ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.06	63	97536	45.9419	ug/L		94
54)	4-Methyl-2-Pentanone	12.10	58	74090	49.3322	ug/L		94
55)	cis-1,3-Dichloropropene	12.41	75	607979	51.7135	ug/L		95
56)	Dimethyl Disulfide	12.67	79	305206	44.2233	ug/L		96
59)	Toluene	12.83	91	1708453	52.7833	ug/L		84
60)	Ethyl Methacrylate	12.92	69	313437	54.4245	ug/L		74
62)	trans-1,3-Dichloropropene	13.01	75	501796	51.7221	ug/L		96
63)	1,1,2-Trichloroethane	13.22	97	254652	50.6394	ug/L		98
64)	2-Hexanone	13.16	58	72751	52.5360	ug/L	#	44
65)	1,3-Dichloropropane	13.52	76	444705	50.4460	ug/L		78
66)	Tetrachloroethene	13.65	164	345411	50.5613	ug/L		89
67)	Dibromochloromethane	13.92	129	341863	51.0864	ug/L		99
68)	1,2-Dibromoethane	14.16	107	250654	52.2130	ug/L		98
69)	1-Chlorohexane	14.26	91	558441	50.4410	ug/L		81
70)	Chlorobenzene	14.67	112	1122311	51.3735	ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.70	131	399743	50.9771	ug/L		100
72)	Ethylbenzene	14.70	106	648843	49.5877	ug/L	#	32
73)	m-,p-Xylene	14.78	106	1577469	106.6006	ug/L	#	49
74)	o-Xylene	15.35	106	739767	50.5862	ug/L		62
75)	Styrene	15.38	104	1249268	53.9262	ug/L		88
76)	Bromoform	15.88	173	186775	43.9120	ug/L		98
77)	Isopropylbenzene	15.78	105	1915898	53.5687	ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.99	83	278891	48.8342	ug/L		96
81)	1,2,3-Trichloropropane	16.18	110	76300	49.3137	ug/L		95
82)	trans-1,4-Dichloro-2-Buten	16.23	53	101529	53.5537	ug/L		73
83)	n-Propylbenzene	16.28	91	2371932	52.1578	ug/L	#	73
84)	Bromobenzene	16.42	156	446692	49.4611	ug/L		87
85)	1,3,5-Trimethylbenzene	16.47	105	1681429	54.0381	ug/L		79
86)	2-Chlorotoluene	16.55	91	1586959	51.7074	ug/L		79
87)	4-Chlorotoluene	16.60	91	1273589	51.8809	ug/L		76
88)	a-Methylstyrene	16.87	118	918764	51.8486	ug/L		94
89)	tert-Butylbenzene	16.93	134	340180	49.1775	ug/L		57
90)	1,2,4-Trimethylbenzene	16.99	105	1728864	54.0438	ug/L		75
91)	sec-Butylbenzene	17.20	105	2122575	54.7114	ug/L		78
92)	p-Isopropyltoluene	17.36	119	1803151	54.8210	ug/L		78
93)	1,3-Dichlorobenzene	17.55	146	941775	51.4543	ug/L		92
94)	1,4-Dichlorobenzene	17.69	146	933434	50.2338	ug/L		92
95)	n-Butylbenzene	17.89	91	1757124	54.6885	ug/L		79
96)	1,2-Dichlorobenzene	18.19	146	821672	51.7329	ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.18	75	46082	50.5509	ug/L		85
98)	1,2,4-Trichlorobenzene	20.33	180	615919	51.4767	ug/L		99
99)	Hexachlorobutadiene	20.47	225	305672	48.9007	ug/L		94
100)	Naphthalene	20.69	128	840527	52.3797	ug/L		92
101)	1,2,3-Trichlorobenzene	21.00	180	516669	50.9579	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404585.D Vial: 9
Acq On : 12 May 2015 19:42 Operator: TMB
Sample : WG523161-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

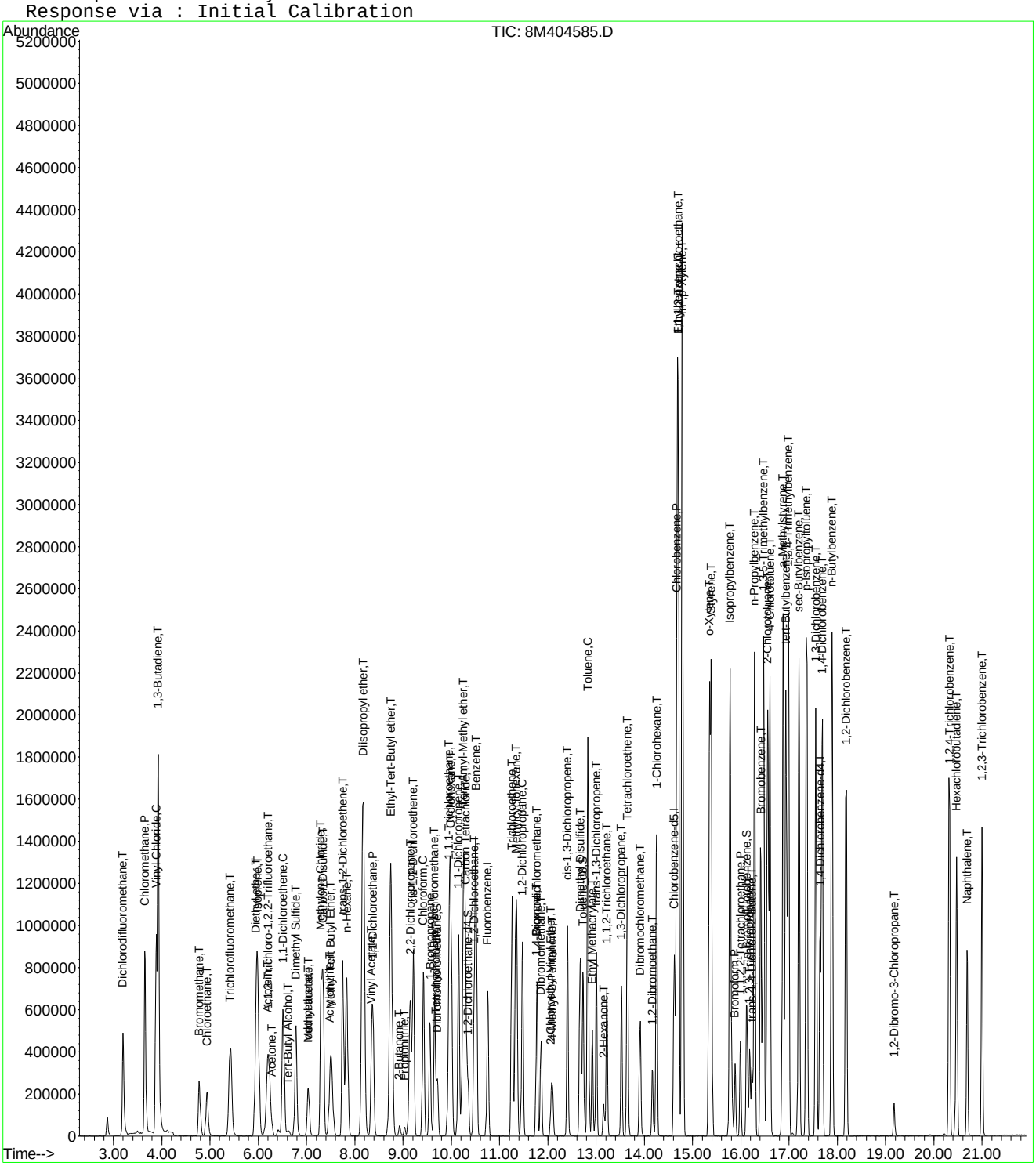

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404586.D Vial: 10
Acq On : 12 May 2015 20:11 Operator: TMB
Sample : WG523161-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:20 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	835793	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	592311	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	322769	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	408845	49.3524 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 197.40%#		
43) 1,2-Dichloroethane-d4	10.35	65	378235	48.5842 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 194.32%#		
58) Toluene-d8	12.73	98	1401831	50.7174 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 202.88%#		
80) p-Bromofluorobenzene	16.12	95	539730	49.1503 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 196.60%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	1383354	106.7956 ug/L	97
3) Chloromethane	3.65	50	2506665	96.9341 ug/L	98
4) Vinyl Chloride	3.88	62	2378459	97.6093 ug/L	97
5) 1,3-Butadiene	3.92	54	1821955	89.8183 ug/L	94
6) Bromomethane	4.78	94	626348	101.5627 ug/L	98
7) Chloroethane	4.93	64	685164	103.3278 ug/L	91
8) Trichlorofluoromethane	5.42	101	1565645	102.3158 ug/L	98
9) Diethyl ether	5.95	59	1168845	199.2357 ug/L	90
10) Isoprene	5.99	67	1166935	102.8460 ug/L	78
11) Acrolein	6.19	56	31264	95.9802 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	894848	103.6091 ug/L	94
13) Acetone	6.29	43	110215	92.3363 ug/L	86
14) 1,1-Dichloroethene	6.52	61	1506669	102.5728 ug/L	84
15) Tert-Butyl Alcohol	6.63	59	127964	398.4122 ug/L	99
16) Dimethyl Sulfide	6.79	62	872019	101.8306 ug/L	79
17) Iodomethane	7.03	142	628717	103.2155 ug/L	82
18) Methyl acetate	7.04	43	412223	96.7791 ug/L	90
19) Methylene Chloride	7.30	84	855087	102.1479 ug/L	57
20) Carbon Disulfide	7.34	76	2858622	105.7889 ug/L	96
21) Acrylonitrile	7.48	53	190020	100.0167 ug/L	92
22) Methyl Tert Butyl Ether	7.52	73	1596559	99.0009 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	1424677	101.5963 ug/L	84
24) n-Hexane	7.83	57	1448349	102.1387 ug/L	96
25) Diisopropyl ether	8.17	45	6219435	200.2252 ug/L	92
26) Vinyl Acetate	8.35	43	987523	96.2968 ug/L	93
27) 1,1-Dichloroethane	8.37	63	1750301	103.3947 ug/L	95
28) Ethyl-Tert-Butyl ether	8.75	59	4921546	201.9298 ug/L	94
29) 2-Butanone	8.93	43	192807	99.1412 ug/L	89
30) Propionitrile	9.04	54	125291	202.1329 ug/L	100
31) 2,2-Dichloropropane	9.15	77	1386765	99.2903 ug/L	99
32) cis-1,2-Dichloroethene	9.22	96	970632	100.7779 ug/L	77
33) Chloroform	9.42	83	1615985	102.7714 ug/L	96
34) 1-Bromopropane	9.56	122	171401	97.5487 ug/L	97
35) Bromochloromethane	9.65	130	492984	100.3714 ug/L #	70
36) Tetrahydrofuran	9.68	42	256736	195.9927 ug/L	87
38) 1,1,1-Trichloroethane	9.96	97	1521529	106.5945 ug/L	97
39) Cyclohexane	9.99	56	1818826	105.1394 ug/L	84
40) 1,1-Dichloropropene	10.15	75	1264140	101.7916 ug/L	92
41) Tert-Amyl-Methyl ether	10.26	73	3613952	202.0196 ug/L	96
42) Carbon Tetrachloride	10.30	117	1390334	107.1846 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404586.D Vial: 10
Acq On : 12 May 2015 20:11 Operator: TMB
Sample : WG523161-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:20 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	1128430	100.1062 ug/L		92
46)	Benzene	10.51	78	3395811	101.5114 ug/L		99
47)	Trichloroethene	11.26	130	922762	104.2826 ug/L		97
48)	Methylcyclohexane	11.35	83	1455920	101.3714 ug/L		89
49)	1,2-Dichloropropane	11.47	63	933784	99.6606 ug/L		100
50)	Bromodichloromethane	11.77	83	1190418	103.1964 ug/L		97
51)	1,4-Dioxane	11.77	88	15430	376.1778 ug/L		87
52)	Dibromomethane	11.86	93	440813	99.8961 ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.07	63	209924	93.1404 ug/L		94
54)	4-Methyl-2-Pentanone	12.10	58	162221	100.7072 ug/L		91
55)	cis-1,3-Dichloropropene	12.41	75	1312387	104.0782 ug/L		95
56)	Dimethyl Disulfide	12.67	79	704664	91.7111 ug/L		100
59)	Toluene	12.83	91	3647044	103.8064 ug/L		85
60)	Ethyl Methacrylate	12.93	69	656031	104.9442 ug/L		72
62)	trans-1,3-Dichloropropene	13.00	75	1083873	102.9242 ug/L		96
63)	1,1,2-Trichloroethane	13.22	97	551455	101.0280 ug/L		99
64)	2-Hexanone	13.15	58	146129	97.2175 ug/L	#	75
65)	1,3-Dichloropropane	13.53	76	953196	99.6155 ug/L		79
66)	Tetrachloroethene	13.65	164	783174	105.6160 ug/L		90
67)	Dibromochloromethane	13.91	129	774593	106.6392 ug/L		98
68)	1,2-Dibromoethane	14.17	107	545217	104.6318 ug/L		99
69)	1-Chlorohexane	14.25	91	1233565	102.6499 ug/L		82
70)	Chlorobenzene	14.67	112	2511075	105.8950 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.71	131	958028	112.5543 ug/L		99
72)	Ethylbenzene	14.70	106	1517369	106.8354 ug/L	#	44
73)	m-,p-Xylene	14.79	106	3521035	219.2093 ug/L		66
74)	o-Xylene	15.35	106	1661714	104.6847 ug/L		66
75)	Styrene	15.39	104	2725004	108.3681 ug/L		91
76)	Bromoform	15.88	173	425724	91.3519 ug/L		99
77)	Isopropylbenzene	15.78	105	4087264	105.2836 ug/L		80
79)	1,1,2,2-Tetrachloroethane	15.99	83	597831	97.4794 ug/L		97
81)	1,2,3-Trichloropropane	16.18	110	166377	100.1340 ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.23	53	198733	97.6146 ug/L		83
83)	n-Propylbenzene	16.29	91	4854104	99.3965 ug/L		76
84)	Bromobenzene	16.41	156	998426	102.9478 ug/L		90
85)	1,3,5-Trimethylbenzene	16.47	105	3620860	108.3623 ug/L		82
86)	2-Chlorotoluene	16.56	91	3081622	93.5000 ug/L		82
87)	4-Chlorotoluene	16.60	91	2997134	113.6920 ug/L		78
88)	a-Methylstyrene	16.88	118	2011260	105.6931 ug/L		94
89)	tert-Butylbenzene	16.94	134	758018	102.0429 ug/L		62
90)	1,2,4-Trimethylbenzene	16.99	105	3673145	106.9222 ug/L		78
91)	sec-Butylbenzene	17.21	105	4454269	106.9145 ug/L		80
92)	p-Isopropyltoluene	17.36	119	3834274	108.5533 ug/L		81
93)	1,3-Dichlorobenzene	17.56	146	2072717	105.4531 ug/L		93
94)	1,4-Dichlorobenzene	17.68	146	2037658	102.1148 ug/L		94
95)	n-Butylbenzene	17.89	91	3728716	108.0683 ug/L		81
96)	1,2-Dichlorobenzene	18.18	146	1776025	104.1269 ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.17	75	101241	103.4188 ug/L		84
98)	1,2,4-Trichlorobenzene	20.32	180	1367029	106.3922 ug/L		99
99)	Hexachlorobutadiene	20.47	225	722376	107.6137 ug/L		95
100)	Naphthalene	20.69	128	1844011	107.0090 ug/L		94
101)	1,2,3-Trichlorobenzene	21.00	180	1148705	105.5000 ug/L		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404586.D Vial: 10
Acq On : 12 May 2015 20:11 Operator: TMB
Sample : WG523161-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

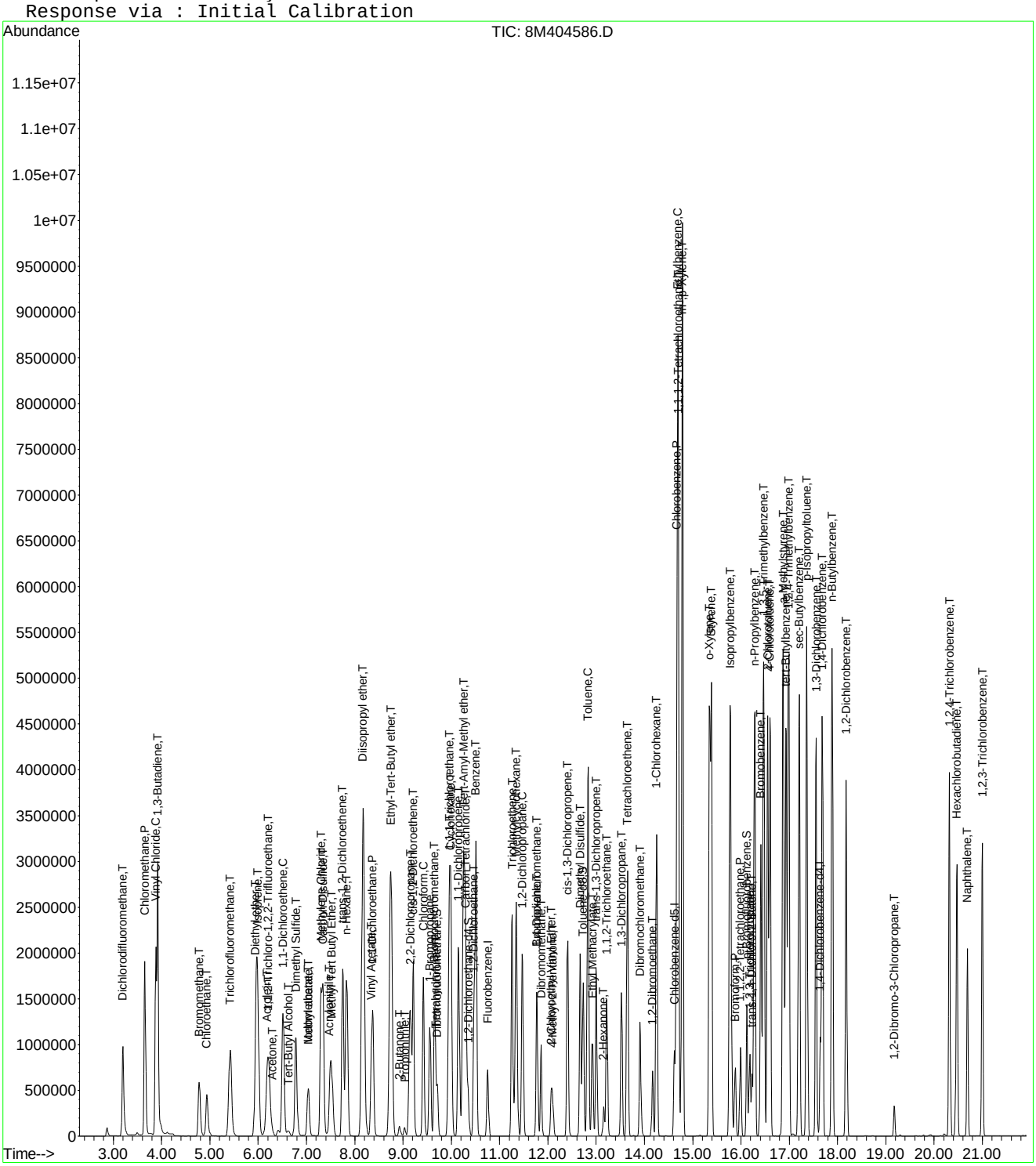

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404587.D Vial: 11
Acq On : 12 May 2015 20:40 Operator: TMB
Sample : WG523161-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:21 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	889446	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	653814	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	358038	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	897295	101.7803 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 407.12%#		
43) 1,2-Dichloroethane-d4	10.35	65	834454	100.7199 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 402.88%#		
58) Toluene-d8	12.73	98	3020686	99.0061 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 396.04%#		
80) p-Bromofluorobenzene	16.12	95	1227532	100.7731 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 403.08%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	2862202	207.6346 ug/L	100
3) Chloromethane	3.65	50	4844973	176.0559 ug/L	97
4) Vinyl Chloride	3.88	62	4418229	170.3816 ug/L	98
5) 1,3-Butadiene	3.92	54	3042896	167.5645 ug/L	93
6) Bromomethane	4.78	94	1514622	207.0087 ug/L	99
7) Chloroethane	4.93	64	1492001	211.4320 ug/L	91
8) Trichlorofluoromethane	5.42	101	3375416	207.2794 ug/L	99
10) Isoprene	5.99	67	2523633	208.9999 ug/L	79
11) Acrolein	6.19	56	215	Below Cal # 13	
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	1910657	207.8790 ug/L	94
13) Acetone	6.29	43	266605	209.8839 ug/L	86
14) 1,1-Dichloroethene	6.51	61	3247825	207.7715 ug/L	85
15) Tert-Butyl Alcohol	6.65	59	409	1.1966 ug/L #	61
16) Dimethyl Sulfide	6.78	62	1949857	213.9608 ug/L	79
17) Iodomethane	7.03	142	1410075	209.7673 ug/L	81
18) Methyl acetate	7.04	43	947887	209.1149 ug/L	92
19) Methylene Chloride	7.30	84	1900593	213.3475 ug/L	59
20) Carbon Disulfide	7.34	76	6053547	210.5098 ug/L	97
21) Acrylonitrile	7.52	53	43757	21.6421 ug/L #	38
22) Methyl Tert Butyl Ether	7.51	73	3646249	212.4611 ug/L	95
23) trans-1,2-Dichloroethene	7.74	61	3120484	209.1042 ug/L	85
24) n-Hexane	7.83	57	3144492	208.3756 ug/L	96
26) Vinyl Acetate	8.34	43	2191703	200.8286 ug/L	92
27) 1,1-Dichloroethane	8.37	63	3753089	208.3309 ug/L	97
29) 2-Butanone	8.92	43	435590	210.4690 ug/L	87
30) Propionitrile	9.05	54	214	0.3244 ug/L #	1
31) 2,2-Dichloropropane	9.15	77	3011577	202.6176 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	2136676	208.4628 ug/L	77
33) Chloroform	9.42	83	3483917	208.2006 ug/L	97
34) 1-Bromopropane	9.56	122	375097	200.1030 ug/L	99
35) Bromochloromethane	9.66	130	1081406	206.8927 ug/L #	73
36) Tetrahydrofuran	9.68	42	1304	0.9354 ug/L #	32
38) 1,1,1-Trichloroethane	9.96	97	3356452	220.9602 ug/L	99
39) Cyclohexane	9.99	56	4044031	219.6687 ug/L	84
40) 1,1-Dichloropropene	10.15	75	2738411	207.2023 ug/L	93
42) Carbon Tetrachloride	10.30	117	2985746	216.2945 ug/L	98
45) 1,2-Dichloroethane	10.47	62	2521588	210.2034 ug/L	93
46) Benzene	10.51	78	6808887	191.2611 ug/L	93
47) Trichloroethene	11.26	130	2070517	219.8771 ug/L	97
48) Methylcyclohexane	11.34	83	3202469	209.5281 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M404587.D 8260WT.M Wed May 13 06:46:21 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404587.D Vial: 11
Acq On : 12 May 2015 20:40 Operator: TMB
Sample : WG523161-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:21 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
49)	1,2-Dichloropropane	11.48	63	2078666	208.4687 ug/L		99
50)	Bromodichloromethane	11.78	83	2658161	216.5336 ug/L		97
51)	1,4-Dioxane	11.77	88	3610	120.3207 ug/L	#	23
52)	Dibromomethane	11.86	93	1002659	213.5141 ug/L		90
53)	2-Chloroethyl Vinyl Ether	12.07	63	491467	206.0353 ug/L		95
54)	4-Methyl-2-Pentanone	12.10	58	378377	220.7279 ug/L		93
55)	cis-1,3-Dichloropropene	12.41	75	2907986	216.7051 ug/L		97
56)	Dimethyl Disulfide	12.68	79	1679554	201.6567 ug/L		98
59)	Toluene	12.83	91	7021493	181.0540 ug/L		94
60)	Ethyl Methacrylate	12.92	69	1552021	224.9195 ug/L		72
62)	trans-1,3-Dichloropropene	13.01	75	2472627	212.7125 ug/L		98
63)	1,1,2-Trichloroethane	13.22	97	1251523	207.7141 ug/L		99
64)	2-Hexanone	13.16	58	355605	214.3243 ug/L	#	80
65)	1,3-Dichloropropane	13.52	76	2145547	203.1319 ug/L		79
66)	Tetrachloroethene	13.65	164	1796038	219.4233 ug/L		90
67)	Dibromochloromethane	13.92	129	1788944	223.1185 ug/L		99
68)	1,2-Dibromoethane	14.16	107	1265159	219.9555 ug/L		98
69)	1-Chlorohexane	14.26	91	2758216	207.9315 ug/L		79
70)	Chlorobenzene	14.67	112	5520224	210.8958 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.70	131	2433988	259.0586 ug/L		100
72)	Ethylbenzene	14.70	106	3719039	237.2193 ug/L		89
73)	m-,p-Xylene	14.79	106	7071131	398.8164 ug/L		97
74)	o-Xylene	15.35	106	3783766	215.9467 ug/L		86
75)	Styrene	15.38	104	5773777	208.0127 ug/L		99
76)	Bromoform	15.88	173	1041191	201.4528 ug/L		100
77)	Isopropylbenzene	15.78	105	7635859	178.1893 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.99	83	1382772	203.2581 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	394464	214.0220 ug/L		60
82)	trans-1,4-Dichloro-2-Buten	16.23	53	532498	235.7900 ug/L	#	49
83)	n-Propylbenzene	16.28	91	8425487	155.5320 ug/L		89
84)	Bromobenzene	16.42	156	2300151	213.8061 ug/L		91
85)	1,3,5-Trimethylbenzene	16.47	105	7048923	190.1744 ug/L		92
86)	2-Chlorotoluene	16.55	91	6754472	184.7508 ug/L		88
87)	4-Chlorotoluene	16.60	91	5302382	181.3248 ug/L		88
88)	a-Methylstyrene	16.87	118	4497302	213.0558 ug/L		100
89)	tert-Butylbenzene	16.94	134	1793662	217.6740 ug/L		76
90)	1,2,4-Trimethylbenzene	16.99	105	7116862	186.7588 ug/L		91
91)	sec-Butylbenzene	17.20	105	8080340	174.8447 ug/L		91
92)	p-Isopropyltoluene	17.37	119	7238323	184.7399 ug/L		92
93)	1,3-Dichlorobenzene	17.56	146	4509634	206.8347 ug/L		99
94)	1,4-Dichlorobenzene	17.69	146	4440196	200.5960 ug/L		99
95)	n-Butylbenzene	17.89	91	7013484	183.2464 ug/L		91
96)	1,2-Dichlorobenzene	18.19	146	3977816	210.2429 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.18	75	246654	227.1401 ug/L		82
98)	1,2,4-Trichlorobenzene	20.33	180	3226918	226.4032 ug/L		99
99)	Hexachlorobutadiene	20.47	225	1704346	228.8889 ug/L		95
100)	Naphthalene	20.69	128	4140977	216.6318 ug/L		96
101)	1,2,3-Trichlorobenzene	21.00	180	2713711	224.6831 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404587.D 8260WT.M Wed May 13 06:46:21 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404587.D Vial: 11
Acq On : 12 May 2015 20:40 Operator: TMB
Sample : WG523161-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

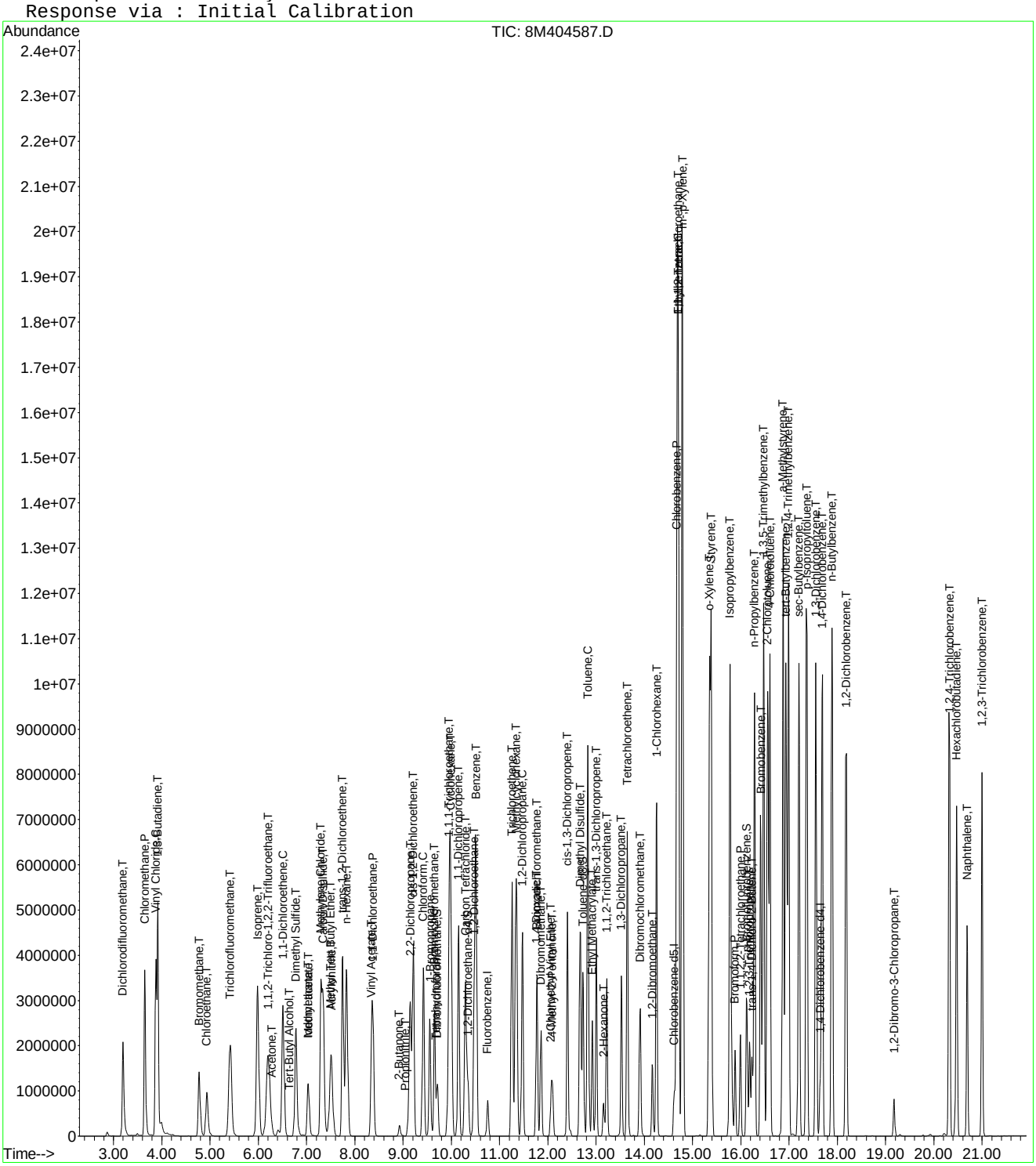

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404588.D Vial: 12
Acq On : 12 May 2015 21:08 Operator: TMB
Sample : WG523161-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:22 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	956908	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	688487	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	385083	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	1448349	152.7042 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 610.80%#		
43) 1,2-Dichloroethane-d4	10.35	65	1346423	151.0580 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 604.24%#		
58) Toluene-d8	12.73	98	4678124	145.6085 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.44%#		
80) p-Bromofluorobenzene	16.12	95	2010706	153.4742 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 613.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	4427735	298.5591 ug/L	99
3) Chloromethane	3.65	50	6722257	227.0512 ug/L	89
4) Vinyl Chloride	3.88	62	5912550	211.9331 ug/L	91
5) 1,3-Butadiene	3.91	54	4227927	Below Cal	94
6) Bromomethane	4.77	94	2527001	295.8588 ug/L	99
7) Chloroethane	4.93	64	2363039	311.2590 ug/L	92
8) Trichlorofluoromethane	5.42	101	5539478	316.1892 ug/L	99
9) Diethyl ether	5.95	59	2174019	323.6697 ug/L	91
10) Isoprene	5.99	67	4227943	325.4605 ug/L	77
11) Acrolein	6.18	56	90963	151.2625 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	3075974	311.0713 ug/L	96
13) Acetone	6.29	43	381061	278.8398 ug/L	93
14) 1,1-Dichloroethene	6.52	61	5185912	308.3670 ug/L	86
15) Tert-Butyl Alcohol	6.63	59	239538	651.4001 ug/L	99
16) Dimethyl Sulfide	6.77	62	3143641	320.6371 ug/L	79
17) Iodomethane	7.03	142	2174912	293.2570 ug/L	80
18) Methyl acetate	7.04	43	1497945	307.1664 ug/L	93
19) Methylene Chloride	7.30	84	3081232	321.4935 ug/L	64
20) Carbon Disulfide	7.34	76	9131673	295.1632 ug/L	99
21) Acrylonitrile	7.48	53	397136	182.5748 ug/L	98
22) Methyl Tert Butyl Ether	7.51	73	5644499	305.7088 ug/L	93
23) trans-1,2-Dichloroethene	7.75	61	4902610	305.3638 ug/L	87
24) n-Hexane	7.83	57	5055705	311.4064 ug/L	94
25) Diisopropyl ether	8.17	45	9927030	279.1359 ug/L	91
26) Vinyl Acetate	8.35	43	3434730	292.5404 ug/L	93
27) 1,1-Dichloroethane	8.37	63	5850225	301.8470 ug/L	99
28) Ethyl-Tert-Butyl ether	8.75	59	8274414	296.5272 ug/L	94
29) 2-Butanone	8.92	43	659119	296.0217 ug/L	90
30) Propionitrile	9.04	54	228827	322.4430 ug/L	99
31) 2,2-Dichloropropane	9.15	77	4810863	300.8539 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	3430243	311.0744 ug/L	78
33) Chloroform	9.42	83	5392781	299.5549 ug/L	100
34) 1-Bromopropane	9.56	122	616502	305.4506 ug/L	99
35) Bromochloromethane	9.66	130	1697935	301.9443 ug/L	75
36) Tetrahydrofuran	9.68	42	482439	321.6801 ug/L	86
38) 1,1,1-Trichloroethane	9.96	97	5475504	335.0480 ug/L	99
39) Cyclohexane	9.98	56	6639422	335.2226 ug/L	86
40) 1,1-Dichloropropene	10.14	75	4403988	309.7359 ug/L	95
41) Tert-Amyl-Methyl ether	10.26	73	6483836	316.5714 ug/L	95
42) Carbon Tetrachloride	10.30	117	4961684	334.0958 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404588.D Vial: 12
Acq On : 12 May 2015 21:08 Operator: TMB
Sample : WG523161-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:22 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	3965116	307.2351 ug/L		92
46)	Benzene	10.51	78	9538776	249.0534 ug/L		82
47)	Trichloroethene	11.26	130	3369408	332.5862 ug/L		96
48)	Methylcyclohexane	11.34	83	5268711	320.4137 ug/L		88
49)	1,2-Dichloropropane	11.47	63	3373652	314.4892 ug/L		98
50)	Bromodichloromethane	11.77	83	4217899	319.3667 ug/L		100
51)	1,4-Dioxane	11.77	88	30460	613.6909 ug/L		85
52)	Dibromomethane	11.86	93	1632189	323.0675 ug/L		90
53)	2-Chloroethyl Vinyl Ether	12.07	63	783687	305.8338 ug/L		95
54)	4-Methyl-2-Pentanone	12.10	58	581624	315.3728 ug/L		93
55)	cis-1,3-Dichloropropene	12.41	75	4539085	314.4087 ug/L		100
56)	Dimethyl Disulfide	12.67	79	2820560	313.0809 ug/L		93
59)	Toluene	12.83	91	9359764	229.1934 ug/L		97
60)	Ethyl Methacrylate	12.93	69	2471849	340.1809 ug/L		71
62)	trans-1,3-Dichloropropene	13.01	75	3878029	316.8138 ug/L		100
63)	1,1,2-Trichloroethane	13.23	97	2033857	320.5576 ug/L		98
64)	2-Hexanone	13.15	58	533241	305.2008 ug/L	#	81
65)	1,3-Dichloropropane	13.53	76	3365829	302.6151 ug/L		78
66)	Tetrachloroethene	13.65	164	3018572	350.2090 ug/L		90
67)	Dibromochloromethane	13.91	129	2906820	344.2828 ug/L		100
68)	1,2-Dibromoethane	14.17	107	2005124	331.0469 ug/L		99
69)	1-Chlorohexane	14.26	91	4462387	319.4608 ug/L		78
70)	Chlorobenzene	14.67	112	7907308	286.8788 ug/L		85
71)	1,1,1,2-Tetrachloroethane	14.70	131	4172914	421.7717 ug/L		99
72)	Ethylbenzene	14.70	106	6055831	366.8188 ug/L		80
73)	m-,p-Xylene	14.79	106	9345850	500.5661 ug/L		94
74)	o-Xylene	15.36	106	6029480	326.7839 ug/L		94
75)	Styrene	15.39	104	8231523	281.6232 ug/L		89
76)	Bromoform	15.88	173	1723238	316.1796 ug/L		99
77)	Isopropylbenzene	15.78	105	10012029	221.8729 ug/L		94
79)	1,1,2,2-Tetrachloroethane	16.00	83	2160112	295.2217 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	619391	312.4573 ug/L		58
82)	trans-1,4-Dichloro-2-Buten	16.23	53	753579	310.2494 ug/L	#	58
83)	n-Propylbenzene	16.29	91	10577160	181.5385 ug/L		95
84)	Bromobenzene	16.41	156	3698392	319.6329 ug/L		98
85)	1,3,5-Trimethylbenzene	16.47	105	9247035	231.9565 ug/L		96
86)	2-Chlorotoluene	16.55	91	7786851	198.0302 ug/L		86
87)	4-Chlorotoluene	16.61	91	6661327	211.7980 ug/L		97
88)	a-Methylstyrene	16.88	118	6747826	297.2213 ug/L		92
89)	tert-Butylbenzene	16.94	134	3054650	344.6689 ug/L		94
90)	1,2,4-Trimethylbenzene	16.99	105	9326416	227.5528 ug/L		94
91)	sec-Butylbenzene	17.21	105	10388453	209.0011 ug/L		95
92)	p-Isopropyltoluene	17.36	119	9384689	222.6985 ug/L		93
93)	1,3-Dichlorobenzene	17.56	146	6518770	277.9858 ug/L		91
94)	1,4-Dichlorobenzene	17.69	146	6369556	267.5495 ug/L		91
95)	n-Butylbenzene	17.89	91	9037379	219.5427 ug/L		96
96)	1,2-Dichlorobenzene	18.19	146	5908048	290.3323 ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.17	75	385147	329.7669 ug/L		85
98)	1,2,4-Trichlorobenzene	20.32	180	4917771	320.8025 ug/L		98
99)	Hexachlorobutadiene	20.47	225	2870393	358.4124 ug/L		94
100)	Naphthalene	20.69	128	5921865	288.0399 ug/L		100
101)	1,2,3-Trichlorobenzene	21.00	180	4158303	320.1088 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404588.D Vial: 12
Acq On : 12 May 2015 21:08 Operator: TMB
Sample : WG523161-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

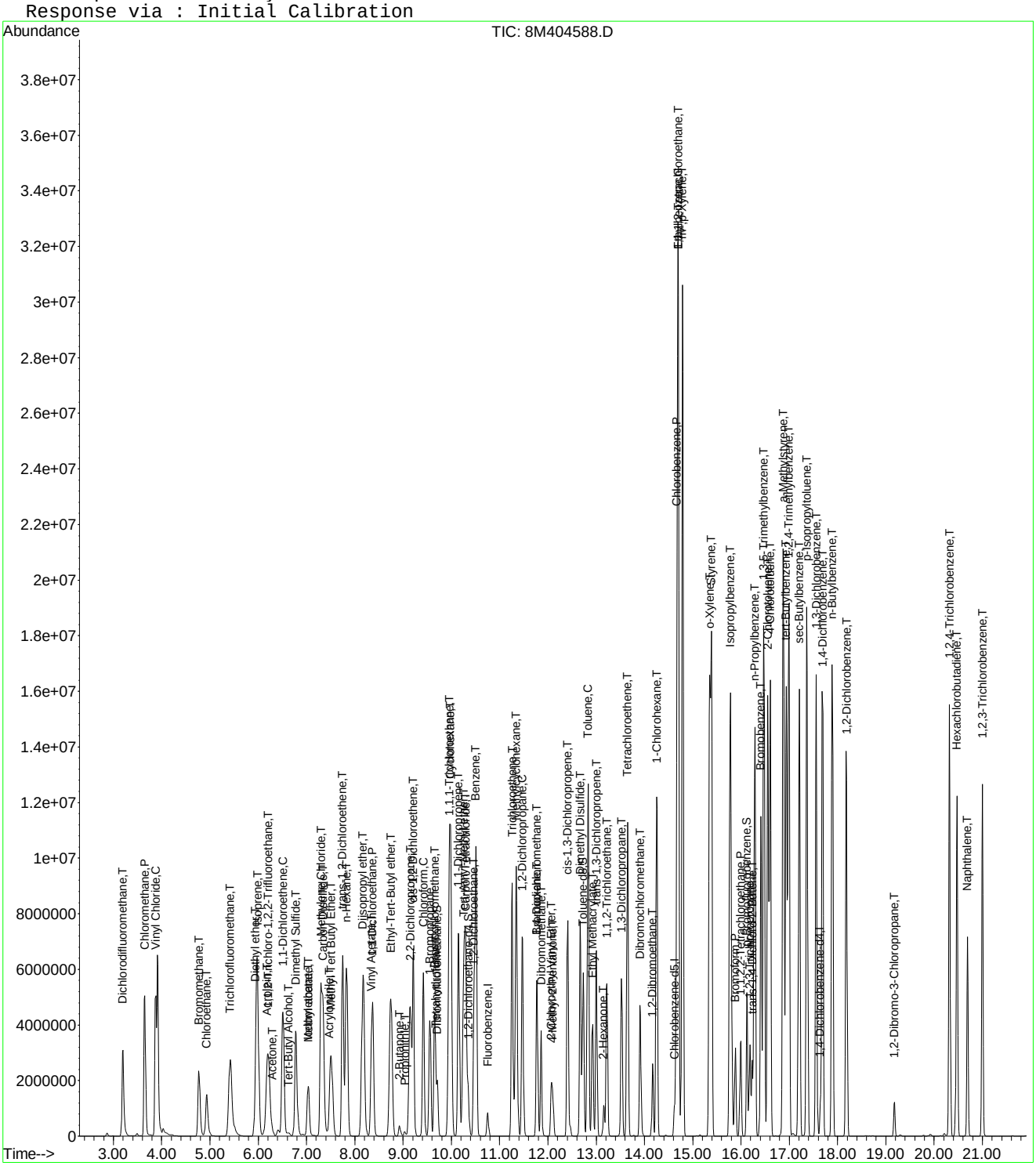

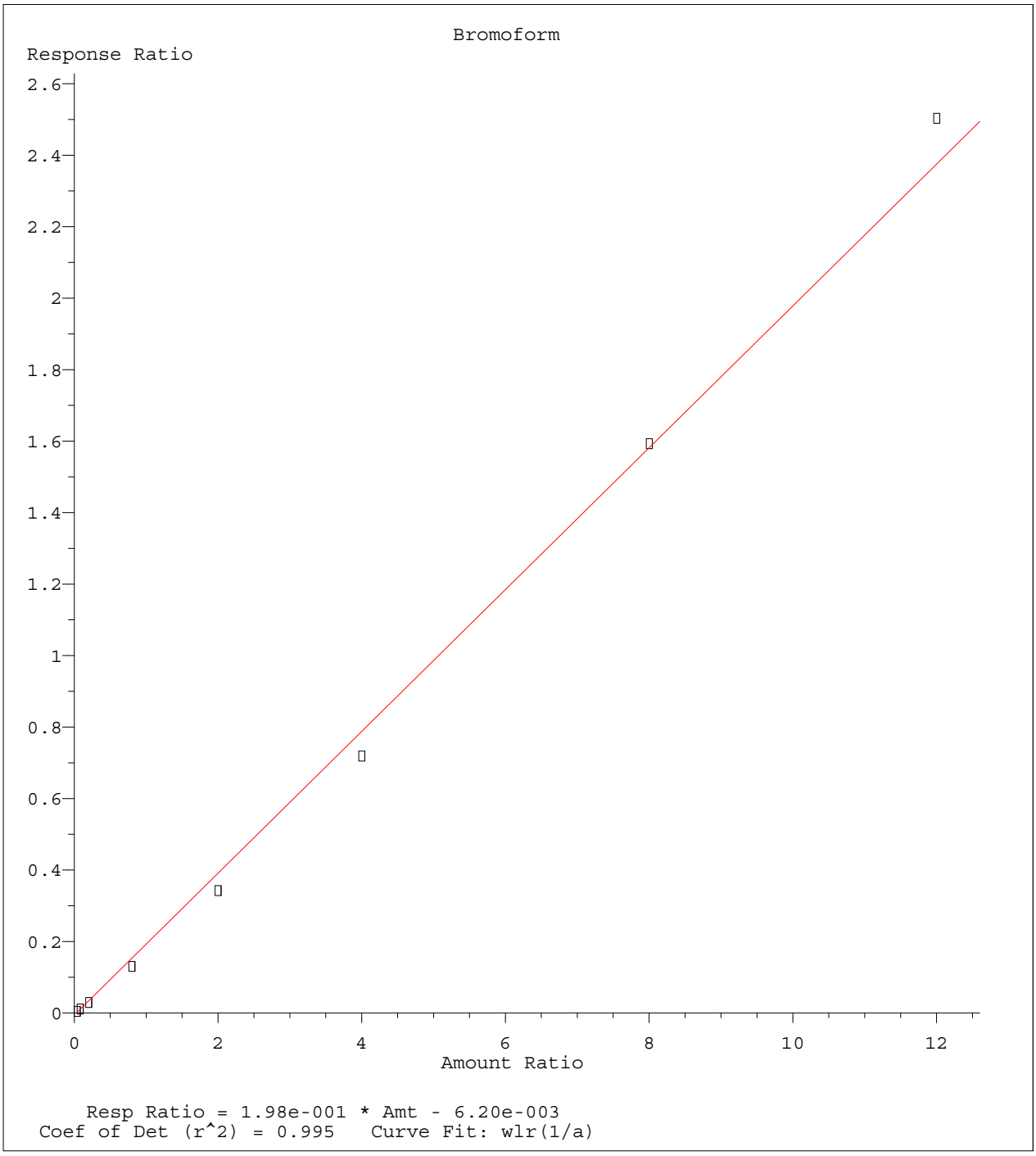

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

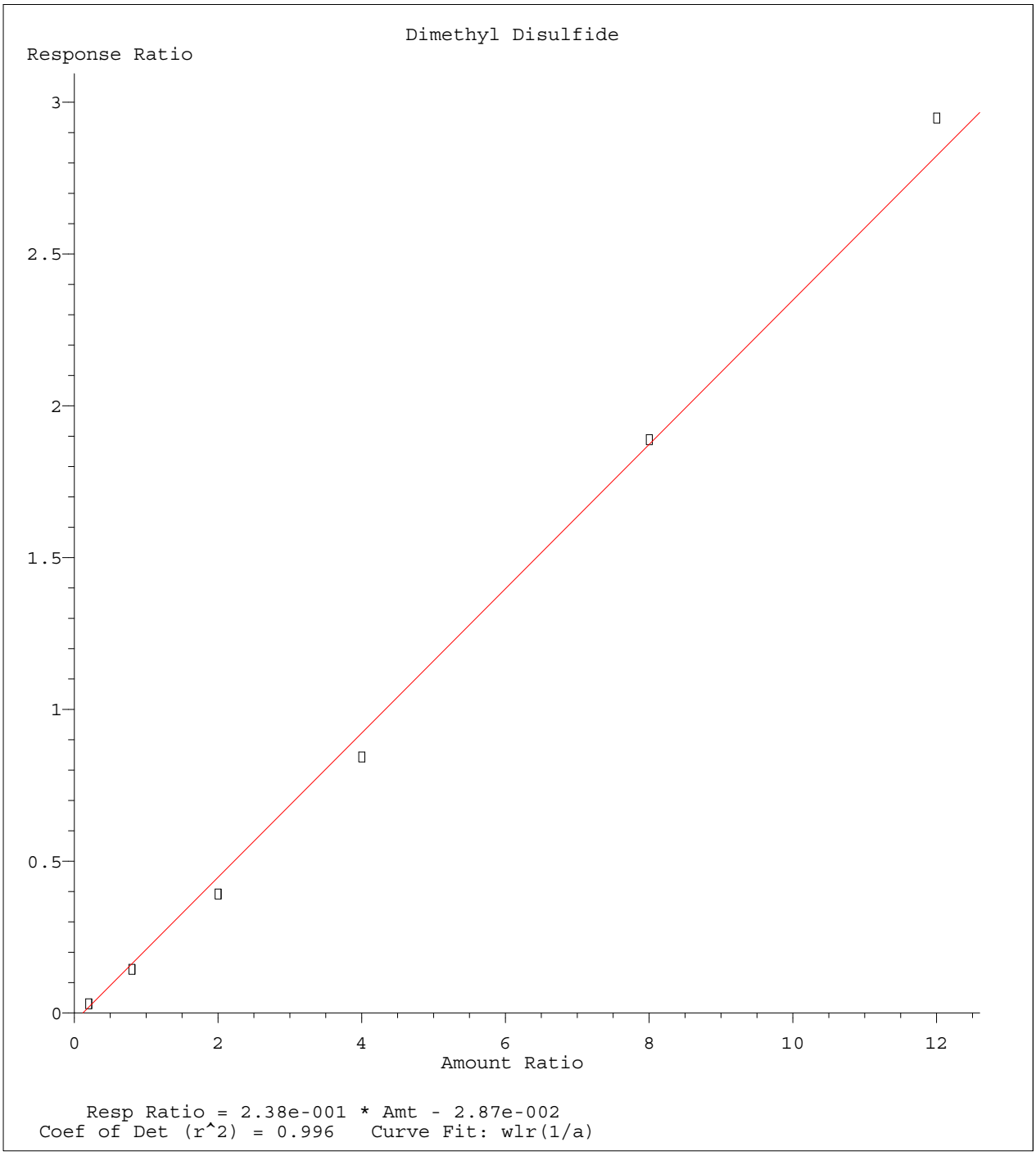

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

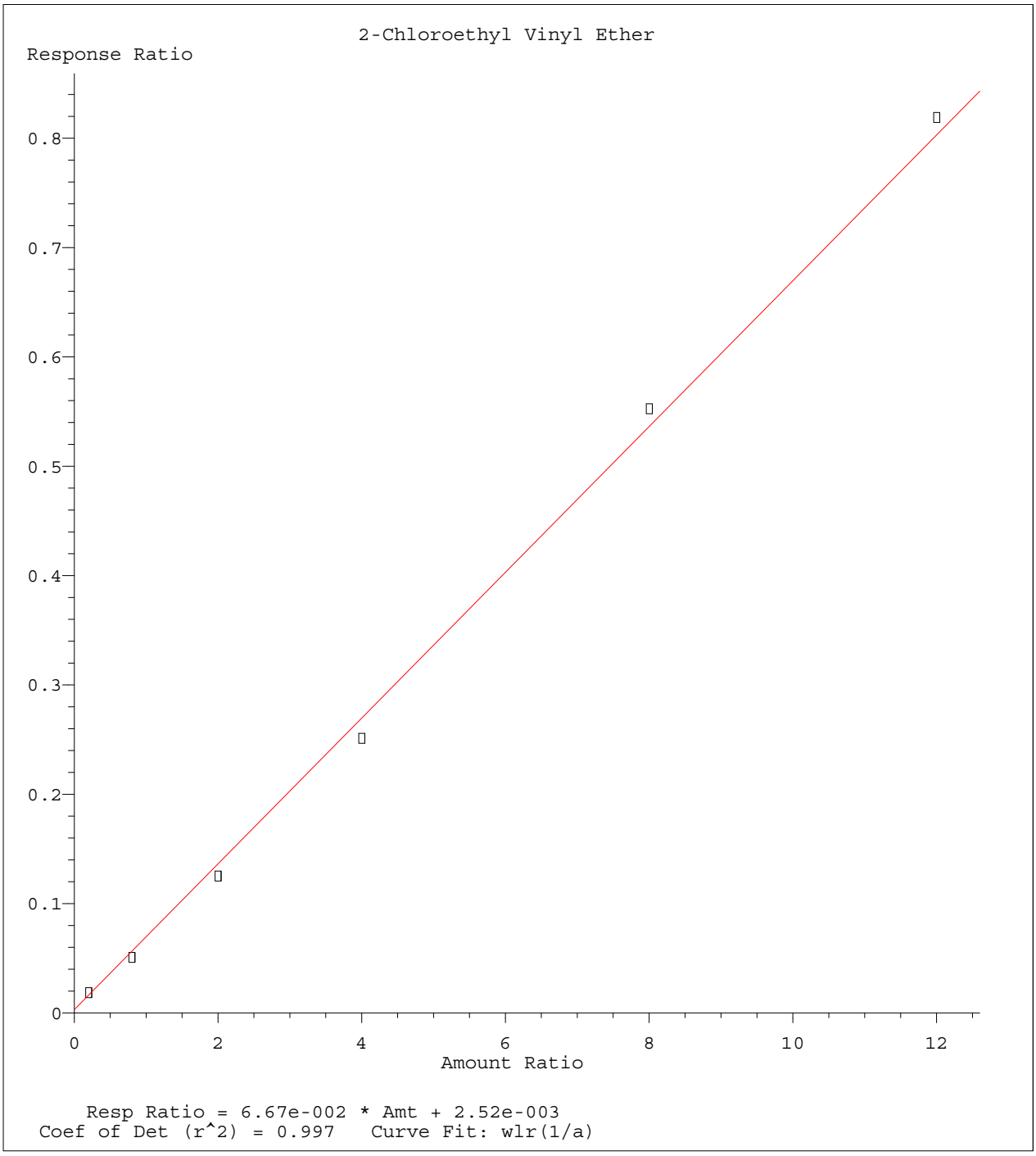

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

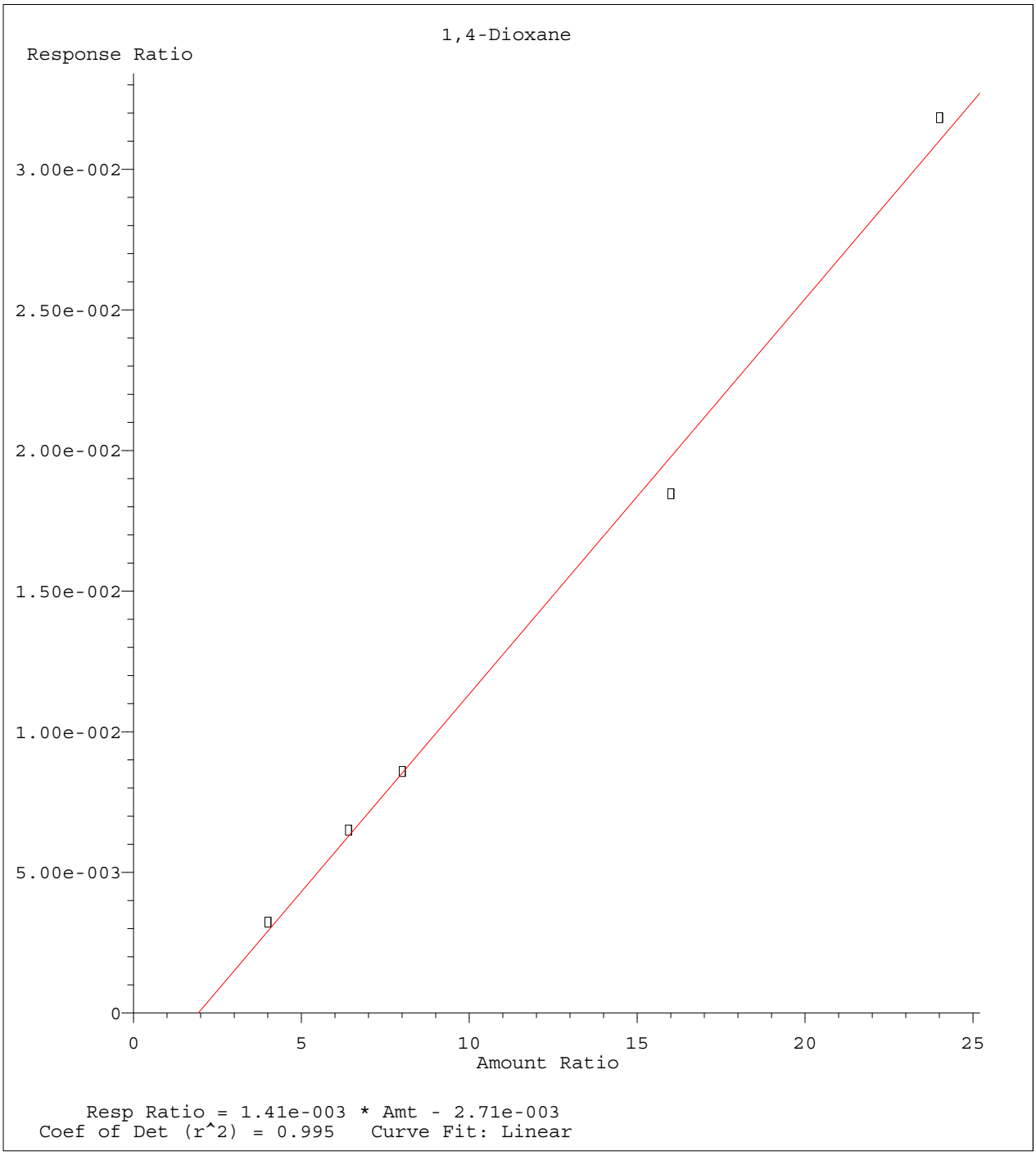

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

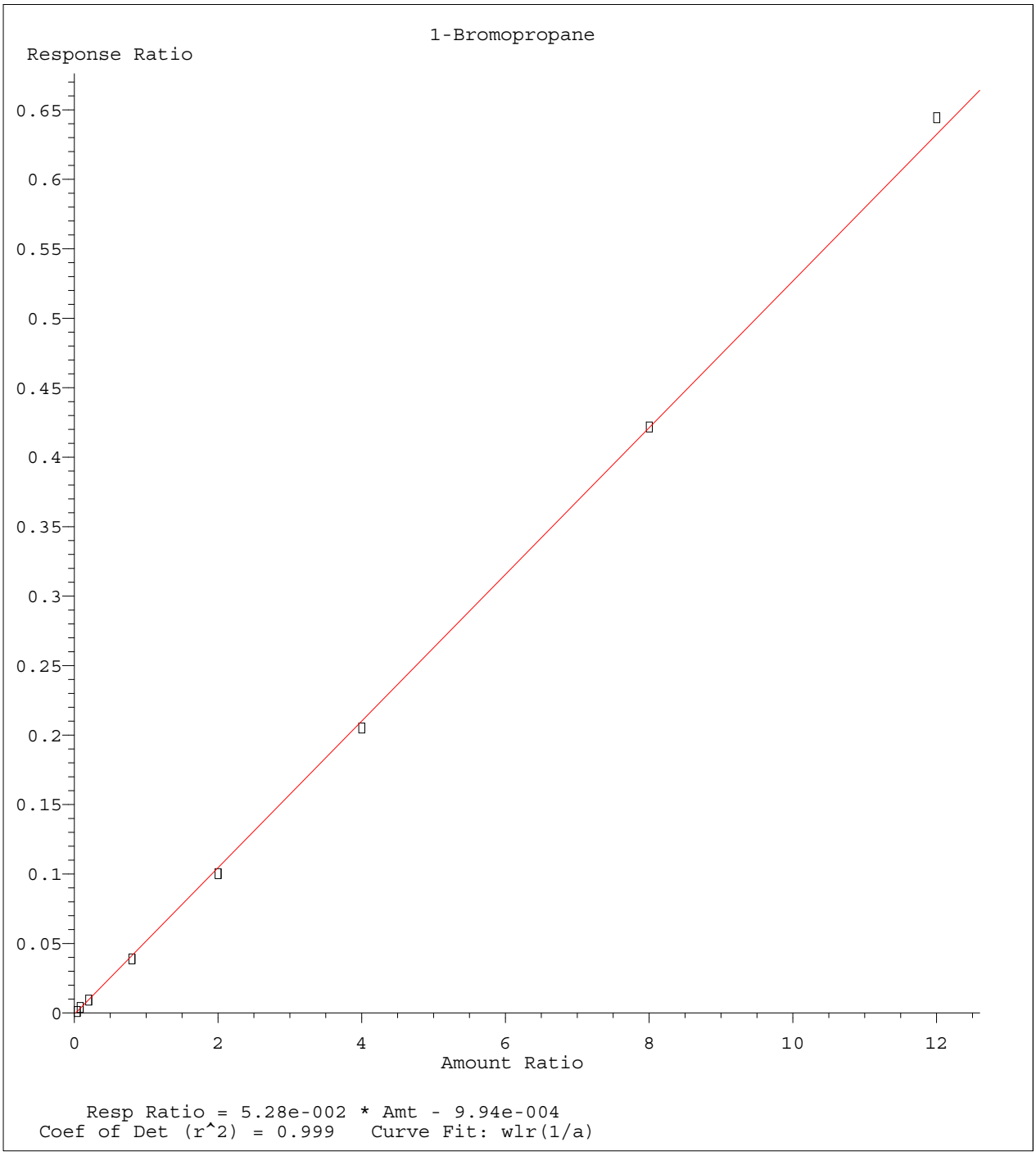

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

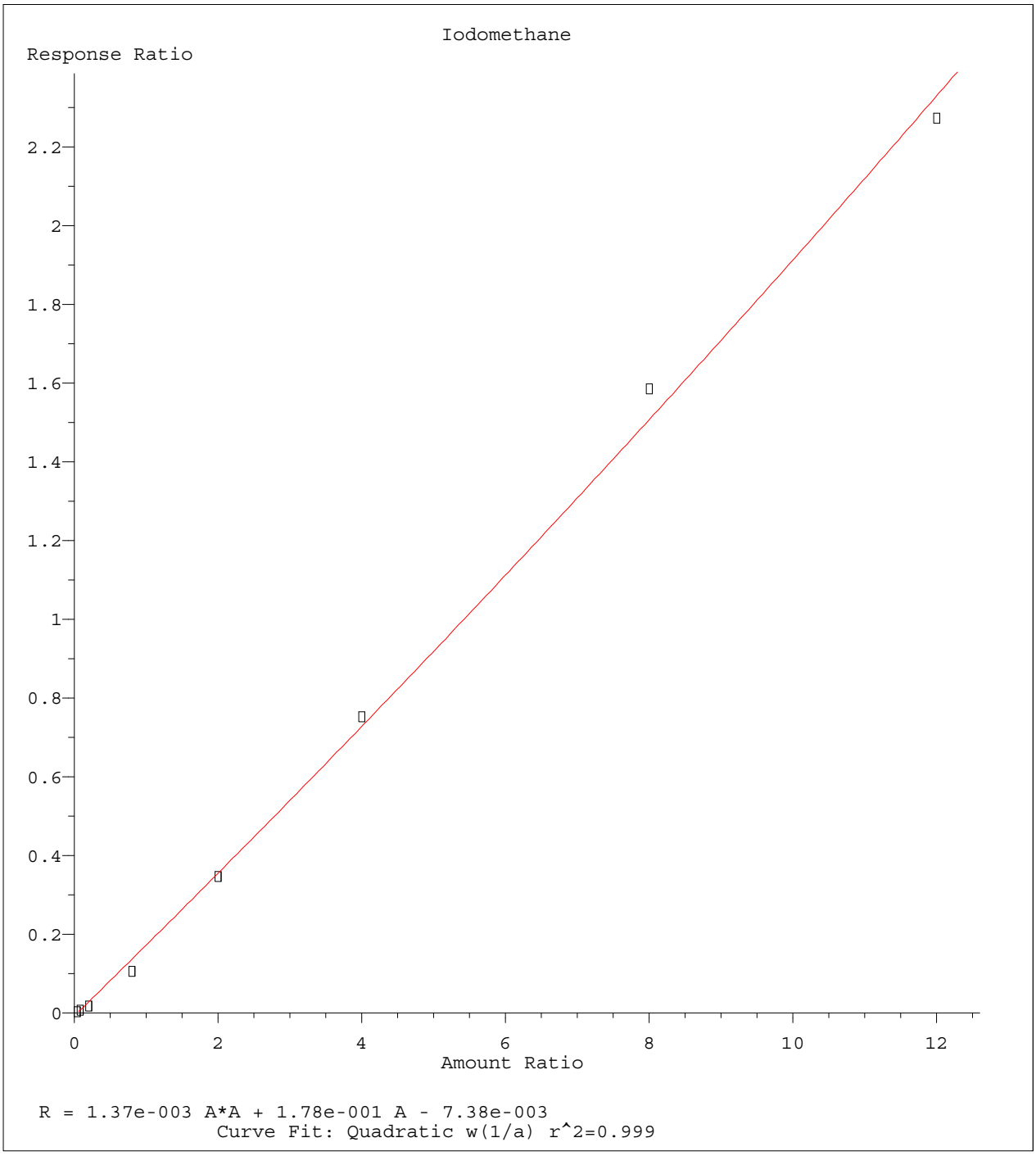

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

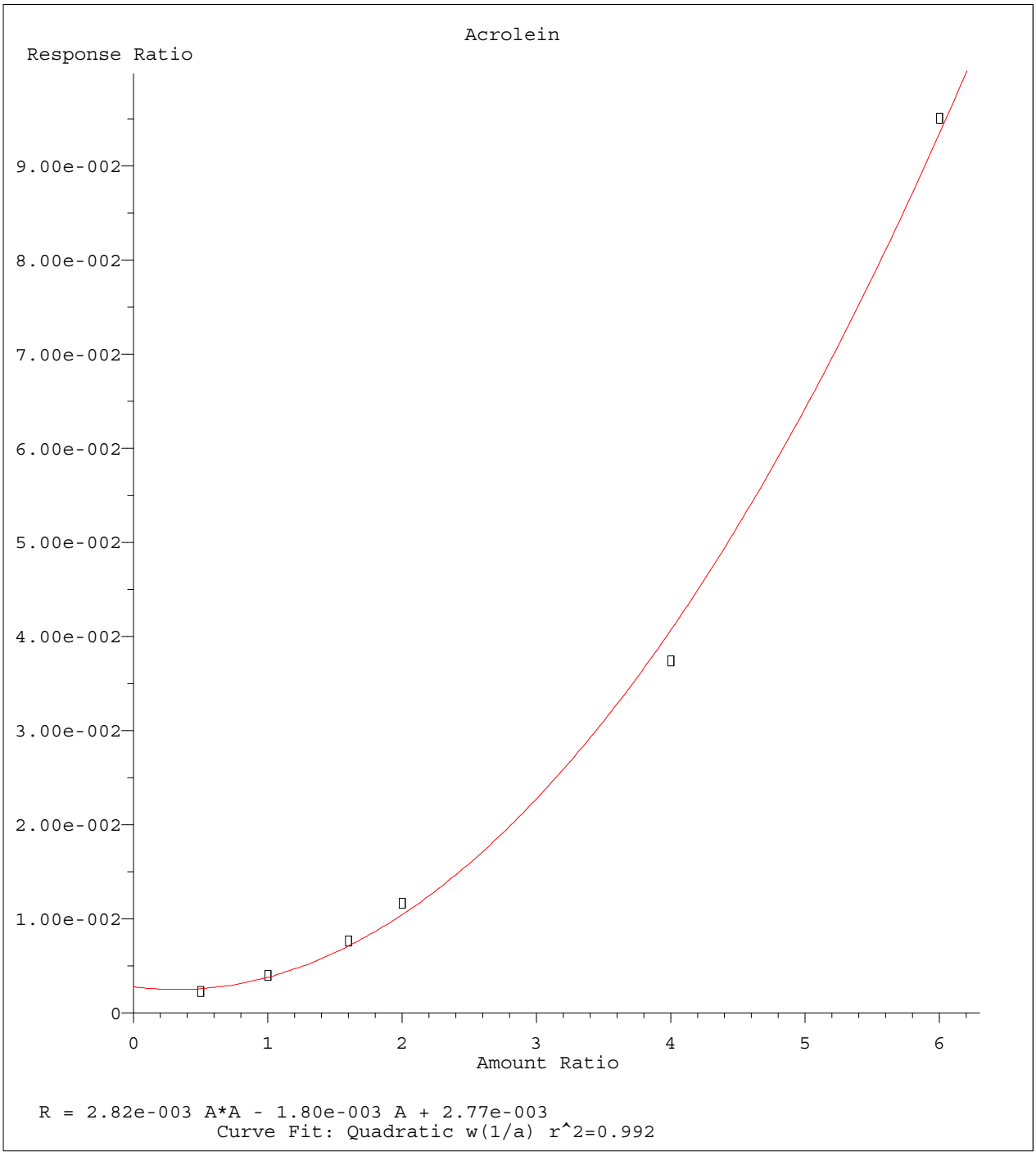

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

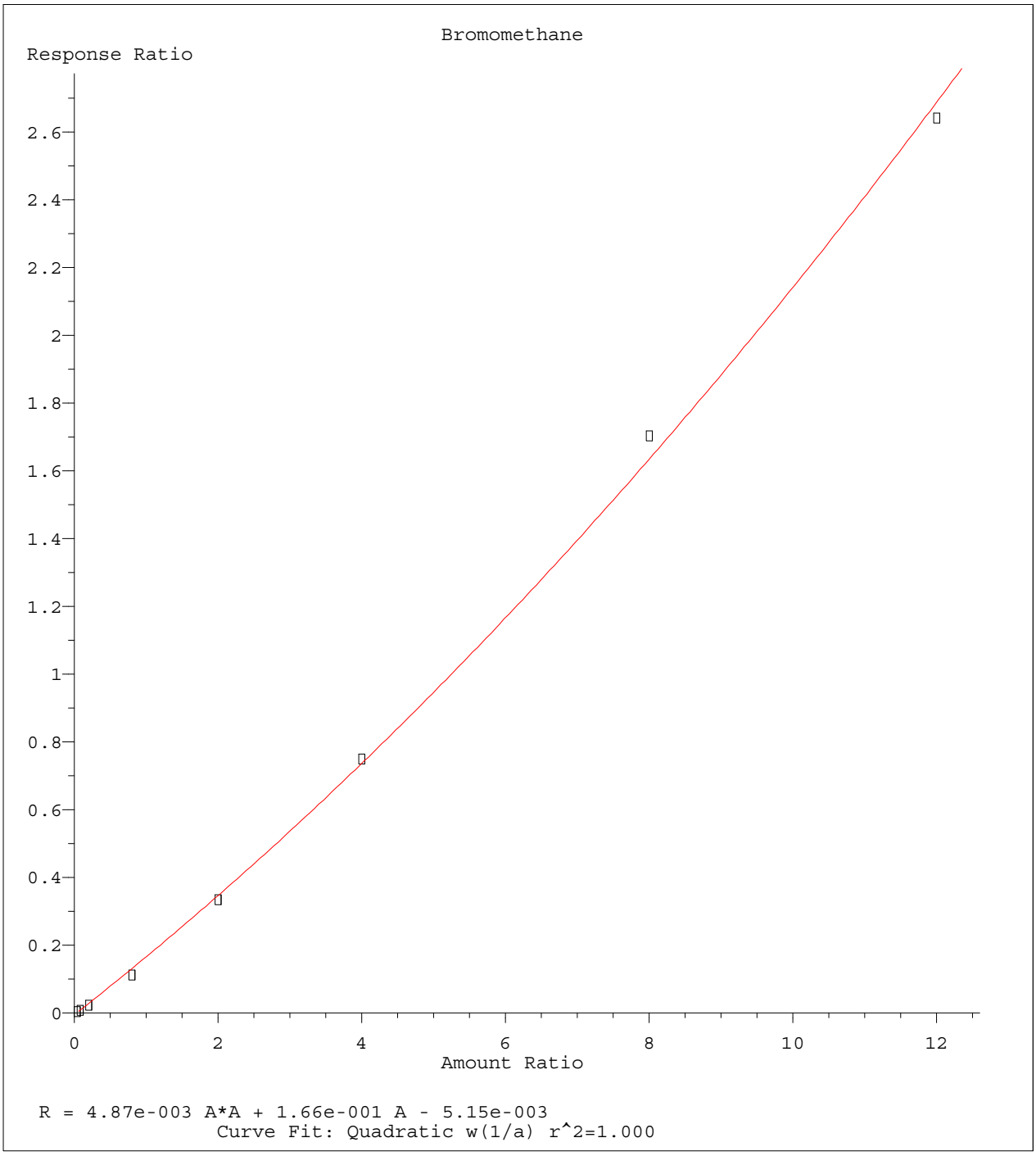

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

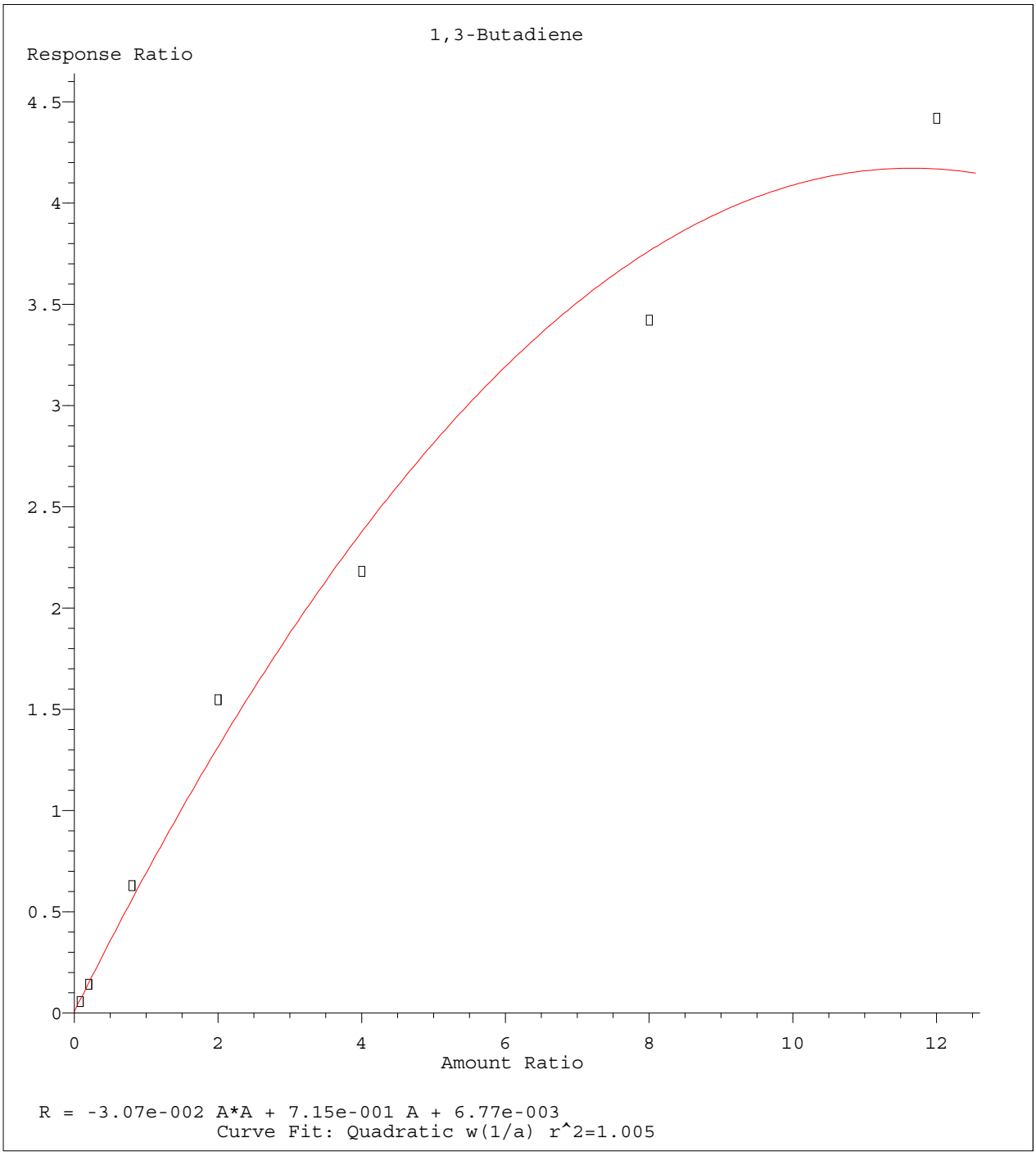

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:23 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	919308	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	650523	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	355810	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	220169	24.1626 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.64%		
43) 1,2-Dichloroethane-d4	10.35	65	208786	24.3822 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.52%		
58) Toluene-d8	12.73	98	742207	24.4497 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.80%		
80) p-Bromofluorobenzene	16.12	95	296553	24.4977 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	800374	56.1760 ug/L	98
3) Chloromethane	3.65	50	1424558	50.0839 ug/L	97
4) Vinyl Chloride	3.88	62	1286582	48.0032 ug/L	96
5) 1,3-Butadiene	3.92	54	691807	27.3545 ug/L	93
6) Bromomethane	4.78	94	314349	49.4206 ug/L	98
7) Chloroethane	4.93	64	404454	55.4535 ug/L	92
8) Trichlorofluoromethane	5.42	101	820931	48.7746 ug/L	98
9) Diethyl ether	5.94	59	587435	91.0349 ug/L	91
10) Isoprene	5.99	67	718544	57.5747 ug/L	80
11) Acrolein	6.18	56	24471	81.1360 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	455967	47.9976 ug/L	92
13) Acetone	6.29	43	74651	56.8598 ug/L	83
14) 1,1-Dichloroethene	6.51	61	755549	46.7643 ug/L	83
15) Tert-Butyl Alcohol	6.64	59	73310	207.5132 ug/L	94
16) Dimethyl Sulfide	6.77	62	630937	66.9848 ug/L	79
17) Iodomethane	7.03	142	395975	60.2995 ug/L	77
18) Methyl acetate	7.04	43	216897	46.2957 ug/L	92
19) Methylene Chloride	7.30	84	463114	50.2973 ug/L	59
20) Carbon Disulfide	7.34	76	1398233	47.0436 ug/L	95
21) Acrylonitrile	7.48	53	109604	52.4490 ug/L	91
22) Methyl Tert Butyl Ether	7.52	73	949202	53.5119 ug/L	97
23) trans-1,2-Dichloroethene	7.74	61	767654	49.7697 ug/L	85
24) n-Hexane	7.83	57	700372	44.9039 ug/L	97
25) Diisopropyl ether	8.17	45	3332814	97.5476 ug/L	93
26) Vinyl Acetate	8.34	43	617016	54.7014 ug/L	92
27) 1,1-Dichloroethane	8.37	63	908724	48.8040 ug/L	94
28) Ethyl-Tert-Butyl ether	8.75	59	2675688	99.8095 ug/L	93
29) 2-Butanone	8.92	43	113924	53.2579 ug/L	88
30) Propionitrile	9.04	54	72509	106.3523 ug/L	95
31) 2,2-Dichloropropane	9.15	77	703200	45.7742 ug/L	97
32) cis-1,2-Dichloroethene	9.21	96	514228	48.5405 ug/L	76
33) Chloroform	9.42	83	851052	49.2072 ug/L	95
34) 1-Bromopropane	9.56	122	104801	54.4355 ug/L	97
35) Bromochloromethane	9.66	130	259626	48.0577 ug/L #	73
36) Tetrahydrofuran	9.68	42	146217	101.4819 ug/L	87
38) 1,1,1-Trichloroethane	9.96	97	789635	50.2943 ug/L	97
39) Cyclohexane	9.99	56	902530	47.4323 ug/L	86
40) 1,1-Dichloropropene	10.15	75	653293	47.8258 ug/L	92
41) Tert-Amyl-Methyl ether	10.26	73	1985009	100.8814 ug/L	97
42) Carbon Tetrachloride	10.30	117	702126	49.2114 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M404591.D 8260WT.M Wed May 13 06:46:23 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:23 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	603214	48.6514	ug/L		93
46)	Benzene	10.50	78	1850022	50.2789	ug/L		98
47)	Trichloroethene	11.26	130	486136	49.9479	ug/L		96
48)	Methylcyclohexane	11.34	83	749827	47.4654	ug/L		89
49)	1,2-Dichloropropane	11.48	63	501116	48.6242	ug/L		98
50)	Bromodichloromethane	11.78	83	616315	48.5742	ug/L		96
51)	1,4-Dioxane	11.77	88	7938	201.6115	ug/L		95
52)	Dibromomethane	11.86	93	233106	48.0270	ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.07	63	212350	85.5819	ug/L		96
54)	4-Methyl-2-Pentanone	12.10	58	96374	54.3940	ug/L		95
55)	cis-1,3-Dichloropropene	12.41	75	728119	52.4974	ug/L		95
56)	Dimethyl Disulfide	12.66	79	376819	46.1411	ug/L		99
59)	Toluene	12.83	91	1963822	50.8947	ug/L		83
60)	Ethyl Methacrylate	12.92	69	394247	57.4235	ug/L		75
62)	trans-1,3-Dichloropropene	13.01	75	568578	49.1605	ug/L		94
63)	1,1,2-Trichloroethane	13.22	97	293758	49.0014	ug/L		97
64)	2-Hexanone	13.16	58	90401	54.7606	ug/L	#	80
65)	1,3-Dichloropropane	13.52	76	534108	50.8231	ug/L		82
66)	Tetrachloroethene	13.65	164	399242	49.0225	ug/L		92
67)	Dibromochloromethane	13.92	129	391690	49.0990	ug/L		100
68)	1,2-Dibromoethane	14.16	107	291132	50.8711	ug/L		99
69)	1-Chlorohexane	14.26	91	667237	50.5549	ug/L		84
70)	Chlorobenzene	14.67	112	1227973	47.1511	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.70	131	469282	50.2001	ug/L		99
72)	Ethylbenzene	14.70	106	759764	48.7068	ug/L	#	33
73)	m-,p-Xylene	14.78	106	1754806	99.4729	ug/L	#	49
74)	o-Xylene	15.35	106	816052	46.8093	ug/L		63
75)	Styrene	15.38	104	1449226	52.4756	ug/L		88
76)	Bromoform	15.88	173	229962	45.3265	ug/L		98
77)	Isopropylbenzene	15.78	105	2042078	47.8947	ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.99	83	322882	47.7586	ug/L		96
81)	1,2,3-Trichloropropane	16.18	110	94494	51.5901	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.23	53	119151	53.0904	ug/L		78
83)	n-Propylbenzene	16.28	91	2494553	46.3371	ug/L	#	73
84)	Bromobenzene	16.41	156	513898	48.0675	ug/L		87
85)	1,3,5-Trimethylbenzene	16.47	105	1947168	52.8620	ug/L		80
86)	2-Chlorotoluene	16.55	91	1485272	40.8801	ug/L		89
87)	4-Chlorotoluene	16.60	91	1550170	53.3429	ug/L	#	67
88)	a-Methylstyrene	16.87	118	1093998	52.1517	ug/L		94
89)	tert-Butylbenzene	16.93	134	371781	45.4009	ug/L		58
90)	1,2,4-Trimethylbenzene	16.99	105	1987730	52.4881	ug/L		75
91)	sec-Butylbenzene	17.20	105	2246378	48.9121	ug/L		78
92)	p-Isopropyltoluene	17.36	119	1868949	47.9989	ug/L		78
93)	1,3-Dichlorobenzene	17.56	146	987544	45.5774	ug/L		92
94)	1,4-Dichlorobenzene	17.69	146	1071014	48.6885	ug/L		93
95)	n-Butylbenzene	17.89	91	1969840	51.7897	ug/L		80
96)	1,2-Dichlorobenzene	18.19	146	869480	46.2431	ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.18	75	56744	52.5819	ug/L		84
98)	1,2,4-Trichlorobenzene	20.32	180	703789	49.6876	ug/L		99
99)	Hexachlorobutadiene	20.47	225	372888	50.3914	ug/L		95
100)	Naphthalene	20.69	128	978141	51.4911	ug/L		93
101)	1,2,3-Trichlorobenzene	21.00	180	596654	49.7096	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

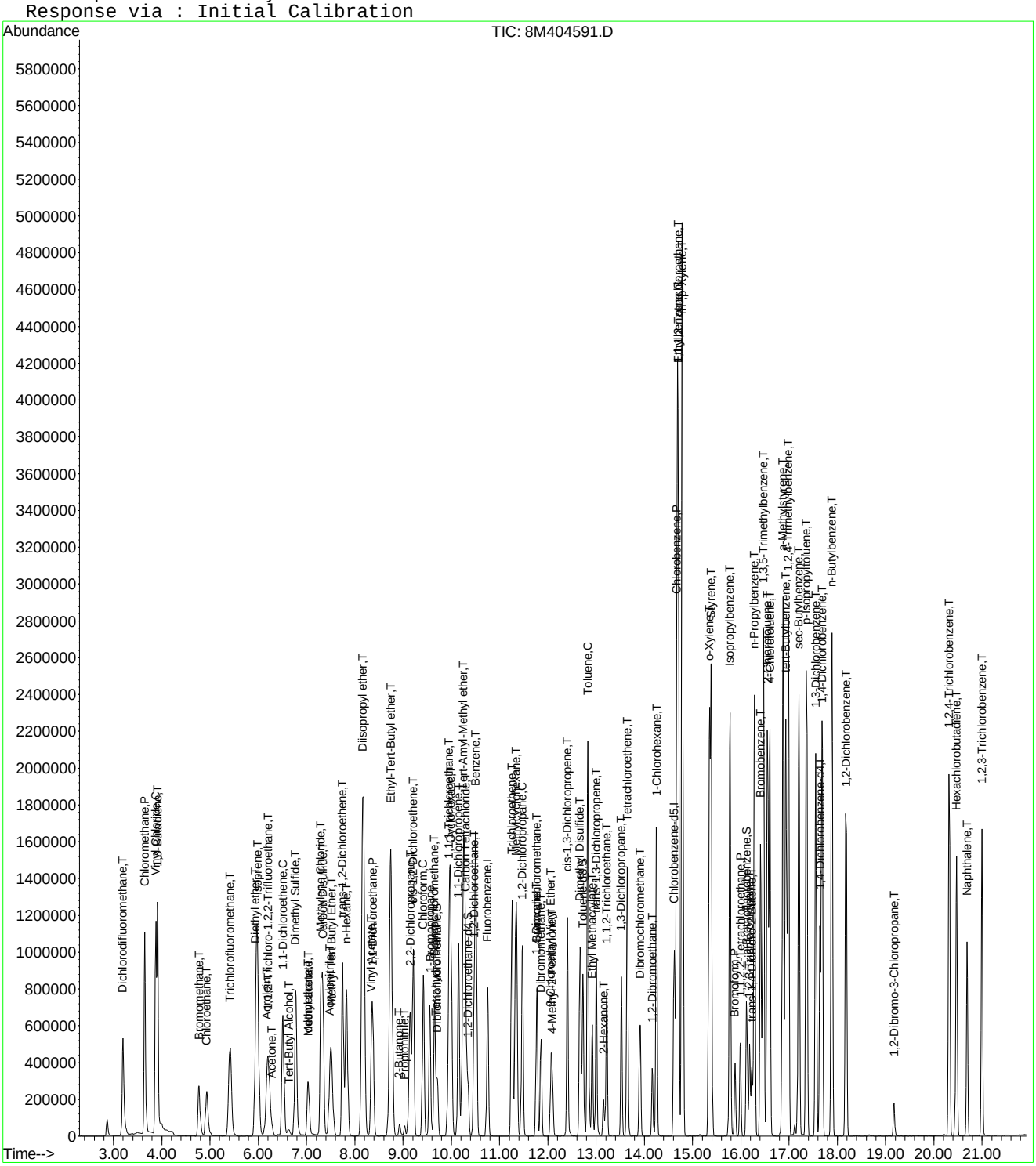

8M404591.D 8260WT.M Wed May 13 06:46:24 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	118	0.00
2	T	Dichlorodifluoromethane	50.0000	56.1760	-12.4	124	0.00
3	P	Chloromethane	50.0000	50.0839	-0.2	118	0.00
4	C	Vinyl Chloride	50.0000	48.0032	4.0	109	0.00
5	T	1,3-Butadiene	50.0000	27.3545	45.3#	57	0.00
6	T	Bromomethane	50.0000	49.4205	1.2	121	0.00
7	T	Chloroethane	50.0000	55.4535	-10.9	132	0.00
8	T	Trichlorofluoromethane	50.0000	48.7746	2.5	116	0.00
9	T	Diethyl ether	100.0000	91.0349	9.0	115	0.00
10	T	Isoprene	50.0000	57.5747	-15.1	133	0.00
11	T	Acrolein	50.0000	81.1360	-62.3#	270	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	47.9976	4.0	114	0.00
13	T	Acetone	50.0000	56.8598	-13.7	139	0.00
14	C	1,1-Dichloroethene	50.0000	46.7643	6.5	110	0.00
15	T	Tert-Butyl Alcohol	200.0000	207.5132	-3.8	133	0.00
16	T	Dimethyl Sulfide	50.0000	66.9848	-34.0#	155	0.00
17	T	Iodomethane	50.0000	60.2995	-20.6	147	0.00
18	T	Methyl acetate	50.0000	46.2957	7.4	113	0.00
19	T	Methylene Chloride	50.0000	50.2973	-0.6	119	0.00
20	T	Carbon Disulfide	50.0000	47.0436	5.9	105	0.00
21	T	Acrylonitrile	50.0000	52.4490	-4.9	124	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.5119	-7.0	128	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.7697	0.5	118	0.00
24	T	n-Hexane	50.0000	44.9039	10.2	105	0.00
25	T	Diisopropyl ether	100.0000	97.5476	2.5	118	0.00
26	T	Vinyl Acetate	50.0000	54.7015	-9.4	125	0.00
27	P	1,1-Dichloroethane	50.0000	48.8040	2.4	113	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.8095	0.2	121	0.00
29	T	2-Butanone	50.0000	53.2579	-6.5	128	0.00
30	T	Propionitrile	100.0000	106.3523	-6.4	134	0.00
31	T	2,2-Dichloropropane	50.0000	45.7742	8.5	110	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.5405	2.9	115	0.00
33	C	Chloroform	50.0000	49.2072	1.6	116	0.00
34		1-Bromopropane	50.0000	54.4355	-8.9	134	0.00
35	T	Bromochloromethane	50.0000	48.0577	3.9	113	0.00
36	T	Tetrahydrofuran	100.0000	101.4819	-1.5	128	0.00
37	S	Dibromofluoromethane	25.0000	24.1626	3.3	115	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.2943	-0.6	116	0.00
39	T	Cyclohexane	50.0000	47.4323	5.1	111	0.00
40	T	1,1-Dichloropropene	50.0000	47.8258	4.3	113	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.8814	-0.9	123	0.00
42	T	Carbon Tetrachloride	50.0000	49.2114	1.6	114	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.3822	2.5	114	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	50.0000	48.6514	2.7	117	0.00
46	T	Benzene	50.0000	50.2789	-0.6	116	0.00
47	T	Trichloroethene	50.0000	49.9479	0.1	116	0.00
48	T	Methylcyclohexane	50.0000	47.4654	5.1	112	0.00
49	C	1,2-Dichloropropane	50.0000	48.6243	2.8	116	0.00
50	T	Bromodichloromethane	50.0000	48.5742	2.9	114	0.00
51	T	1,4-Dioxane	200.0000	201.6115	-0.8	119	0.00
52	T	Dibromomethane	50.0000	48.0270	3.9	115	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	85.5819	-71.2#	218	0.00
54	T	4-Methyl-2-Pentanone	50.0000	54.3940	-8.8	130	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.4974	-5.0	120	0.00
56	T	Dimethyl Disulfide	50.0000	46.1411	7.7	123	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	119	0.00
58	S	Toluene-d8	25.0000	24.4497	2.2	113	0.00
59	C	Toluene	50.0000	50.8947	-1.8	115	0.00
60	T	Ethyl Methacrylate	50.0000	57.4235	-14.8	126	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	50.0000	49.1605	1.7	113	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0014	2.0	115	0.00
64	T	2-Hexanone	50.0000	54.7606	-9.5	124	0.00
65	T	1,3-Dichloropropane	50.0000	50.8231	-1.6	120	0.00
66	T	Tetrachloroethene	50.0000	49.0224	2.0	116	0.00
67	T	Dibromochloromethane	50.0000	49.0990	1.8	115	0.00
68	T	1,2-Dibromoethane	50.0000	50.8711	-1.7	116	0.00
69	T	1-Chlorohexane	50.0000	50.5549	-1.1	119	0.00
70	P	Chlorobenzene	50.0000	47.1511	5.7	109	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.2002	-0.4	117	0.00
72	C	Ethylbenzene	50.0000	48.7068	2.6	117	0.00
73	T	m-,p-Xylene	100.0000	99.4729	0.5	111	0.00
74	T	o-Xylene	50.0000	46.8093	6.4	110	0.00
75	T	Styrene	50.0000	52.4756	-5.0	116	0.00
76	P	Bromoform	50.0000	45.3265	9.3	123	0.00
77	T	Isopropylbenzene	50.0000	47.8947	4.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.7586	4.5	116	0.00
80	S	p-Bromofluorobenzene	25.0000	24.4977	2.0	116	0.00
81	T	1,2,3-Trichloropropane	50.0000	51.5901	-3.2	124	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	53.0904	-6.2	117	0.00
83	T	n-Propylbenzene	50.0000	46.3371	7.3	105	0.00
84	T	Bromobenzene	50.0000	48.0675	3.9	115	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.8620	-5.7	116	0.00
86	T	2-Chlorotoluene	50.0000	40.8801	18.2	94	0.00
87	T	4-Chlorotoluene	50.0000	53.3429	-6.7	122	0.00
88	T	a-Methylstyrene	50.0000	52.1517	-4.3	119	0.00
89	T	tert-Butylbenzene	50.0000	45.4008	9.2	109	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.4881	-5.0	115	0.00
91	T	sec-Butylbenzene	50.0000	48.9121	2.2	106	0.00
92	T	p-Isopropyltoluene	50.0000	47.9989	4.0	104	0.00
93	T	1,3-Dichlorobenzene	50.0000	45.5774	8.8	105	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.6885	2.6	115	0.00
95	T	n-Butylbenzene	50.0000	51.7897	-3.6	112	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.2431	7.5	106	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.5819	-5.2	123	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.6876	0.6	114	0.00
99	T	Hexachlorobutadiene	50.0000	50.3914	-0.8	122	0.00
100	T	Naphthalene	50.0000	51.4911	-3.0	116	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	49.7096	0.6	115	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404591.D 8260WT.M Wed May 13 06:49:00 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052315\8M404877.D Vial: 2
Acq On : 23 May 2015 16:57 Operator: FJB
Sample : WG524935-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 17:19:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	701522	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	566818	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	334436	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	167946	24.1533 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.60%		
43) 1,2-Dichloroethane-d4	10.35	65	152255	23.3004 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.20%		
58) Toluene-d8	12.73	98	632073	23.8965 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.60%		
80) p-Bromofluorobenzene	16.12	95	251183	22.0759 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 88.32%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	615043	56.5696 ug/L	97
3) Chloromethane	3.65	50	1151308	53.0431 ug/L	96
4) Vinyl Chloride	3.88	62	1198239	58.5863 ug/L	96
5) 1,3-Butadiene	3.92	54	1346020	77.0220 ug/L	96
6) Bromomethane	4.78	94	304789	61.7505 ug/L	99
7) Chloroethane	4.93	64	290497	52.1941 ug/L	91
8) Trichlorofluoromethane	5.42	101	675862	52.6217 ug/L	99
9) Diethyl ether	5.95	59	446865	90.7494 ug/L	89
10) Isoprene	5.99	67	493948	51.8656 ug/L	78
11) Acrolein	6.19	56	12159	65.3599 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	381609	52.6411 ug/L	93
13) Acetone	6.28	43	56108	56.0033 ug/L	87
14) 1,1-Dichloroethene	6.52	61	635579	51.5515 ug/L	84
15) Tert-Butyl Alcohol	6.62	59	50938	188.9488 ug/L	93
16) Dimethyl Sulfide	6.77	62	367379	51.1121 ug/L	78
17) Iodomethane	7.03	142	153421	31.3898 ug/L	80
18) Methyl acetate	7.04	43	181187	50.6797 ug/L	90
19) Methylene Chloride	7.29	84	366210	52.1203 ug/L #	54
20) Carbon Disulfide	7.33	76	1287846	56.7812 ug/L	94
21) Acrylonitrile	7.48	53	75758	47.5071 ug/L	94
22) Methyl Tert Butyl Ether	7.51	73	622735	46.0060 ug/L	95
23) trans-1,2-Dichloroethene	7.75	61	580464	49.3167 ug/L	87
24) n-Hexane	7.83	57	626691	52.6536 ug/L	95
25) Diisopropyl ether	8.17	45	2612217	100.1924 ug/L	91
26) Vinyl Acetate	8.34	43	387721	45.0445 ug/L	92
27) 1,1-Dichloroethane	8.37	63	736502	51.8343 ug/L	94
28) Ethyl-Tert-Butyl ether	8.74	59	1945169	95.0853 ug/L	94
29) 2-Butanone	8.93	43	82748	50.6928 ug/L	90
30) Propionitrile	9.03	54	49494	95.1321 ug/L	94
31) 2,2-Dichloropropane	9.14	77	590708	50.3888 ug/L	97
32) cis-1,2-Dichloroethene	9.21	96	404253	50.0059 ug/L	77
33) Chloroform	9.42	83	686699	52.0306 ug/L	95
34) 1-Bromopropane	9.56	122	71561	48.7589 ug/L	98
35) Bromochloromethane	9.65	130	210243	50.9984 ug/L #	73
36) Tetrahydrofuran	9.67	42	138263	125.7525 ug/L	84
38) 1,1,1-Trichloroethane	9.96	97	635960	53.0813 ug/L	99
39) Cyclohexane	9.98	56	778652	53.6260 ug/L	84
40) 1,1-Dichloropropene	10.15	75	537435	51.5585 ug/L	93
41) Tert-Amyl-Methyl ether	10.25	73	1406865	93.6960 ug/L	97
42) Carbon Tetrachloride	10.29	117	608302	55.8715 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052315\8M404877.D Vial: 2
Acq On : 23 May 2015 16:57 Operator: FJB
Sample : WG524935-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 17:19:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	458978	48.5105 ug/L		90
46)	Benzene	10.51	78	1503968	53.5633 ug/L		98
47)	Trichloroethene	11.26	130	402947	54.2535 ug/L		98
48)	Methylcyclohexane	11.34	83	632674	52.4826 ug/L		90
49)	1,2-Dichloropropane	11.47	63	399155	50.7547 ug/L		100
50)	Bromodichloromethane	11.77	83	522000	53.9129 ug/L		95
51)	1,4-Dioxane	11.76	88	7342	234.1391 ug/L		81
52)	Dibromomethane	11.85	93	190419	51.4117 ug/L		87
53)	2-Chloroethyl Vinyl Ether	12.07	63	125401	66.0161 ug/L		94
54)	4-Methyl-2-Pentanone	12.10	58	69631	51.5007 ug/L		90
55)	cis-1,3-Dichloropropene	12.40	75	555324	52.4688 ug/L		95
56)	Dimethyl Disulfide	12.67	79	307065	49.0673 ug/L		96
59)	Toluene	12.82	91	1642238	48.8456 ug/L		83
60)	Ethyl Methacrylate	12.92	69	279443	46.7125 ug/L		70
62)	trans-1,3-Dichloropropene	13.00	75	475133	47.1477 ug/L		94
63)	1,1,2-Trichloroethane	13.22	97	243370	46.5913 ug/L		100
64)	2-Hexanone	13.15	58	63853	44.3911 ug/L	#	74
65)	1,3-Dichloropropane	13.53	76	424144	46.3195 ug/L		80
66)	Tetrachloroethene	13.65	164	343245	48.3707 ug/L		90
67)	Dibromochloromethane	13.91	129	345915	49.7644 ug/L		97
68)	1,2-Dibromoethane	14.17	107	244017	48.9351 ug/L		98
69)	1-Chlorohexane	14.25	91	562029	48.8721 ug/L		85
70)	Chlorobenzene	14.66	112	1097542	48.3663 ug/L		92
71)	1,1,1,2-Tetrachloroethane	14.69	131	398392	48.9103 ug/L		100
72)	Ethylbenzene	14.69	106	630832	46.4134 ug/L	#	34
73)	m-,p-Xylene	14.79	106	1540973	100.2512 ug/L	#	49
74)	o-Xylene	15.35	106	742699	48.8929 ug/L		65
75)	Styrene	15.39	104	1225519	50.9284 ug/L		87
76)	Bromoform	15.88	173	204017	46.1368 ug/L		99
77)	Isopropylbenzene	15.77	105	1922281	51.7430 ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.99	83	271875	42.7841 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	79118	45.9560 ug/L		92
82)	trans-1,4-Dichloro-2-Buten	16.22	53	90513	42.9076 ug/L		79
83)	n-Propylbenzene	16.28	91	2386031	47.1538 ug/L	#	73
84)	Bromobenzene	16.41	156	462273	46.0022 ug/L		92
85)	1,3,5-Trimethylbenzene	16.46	105	1678859	48.4908 ug/L		81
86)	2-Chlorotoluene	16.56	91	1506128	44.1035 ug/L		82
87)	4-Chlorotoluene	16.60	91	1329280	48.6652 ug/L		77
88)	a-Methylstyrene	16.87	118	918729	46.5956 ug/L		93
89)	tert-Butylbenzene	16.93	134	350518	45.5399 ug/L		61
90)	1,2,4-Trimethylbenzene	16.98	105	1744589	49.0119 ug/L		77
91)	sec-Butylbenzene	17.20	105	2174453	50.3720 ug/L		78
92)	p-Isopropyltoluene	17.36	119	1837772	50.2147 ug/L		79
93)	1,3-Dichlorobenzene	17.55	146	971203	47.6879 ug/L		92
94)	1,4-Dichlorobenzene	17.68	146	979674	47.3825 ug/L		90
95)	n-Butylbenzene	17.89	91	1779958	49.7883 ug/L		79
96)	1,2-Dichlorobenzene	18.18	146	858330	48.5676 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.17	75	49966	49.2602 ug/L		80
98)	1,2,4-Trichlorobenzene	20.32	180	639989	48.0710 ug/L		97
99)	Hexachlorobutadiene	20.47	225	288257	41.4441 ug/L		94
100)	Naphthalene	20.69	128	907614	50.8319 ug/L		93
101)	1,2,3-Trichlorobenzene	21.00	180	540844	47.9397 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404877.D 8260WT.M Sat May 23 17:19:07 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052315\8M404877.D Vial: 2
Acq On : 23 May 2015 16:57 Operator: FJB
Sample : WG524935-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 17:19 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

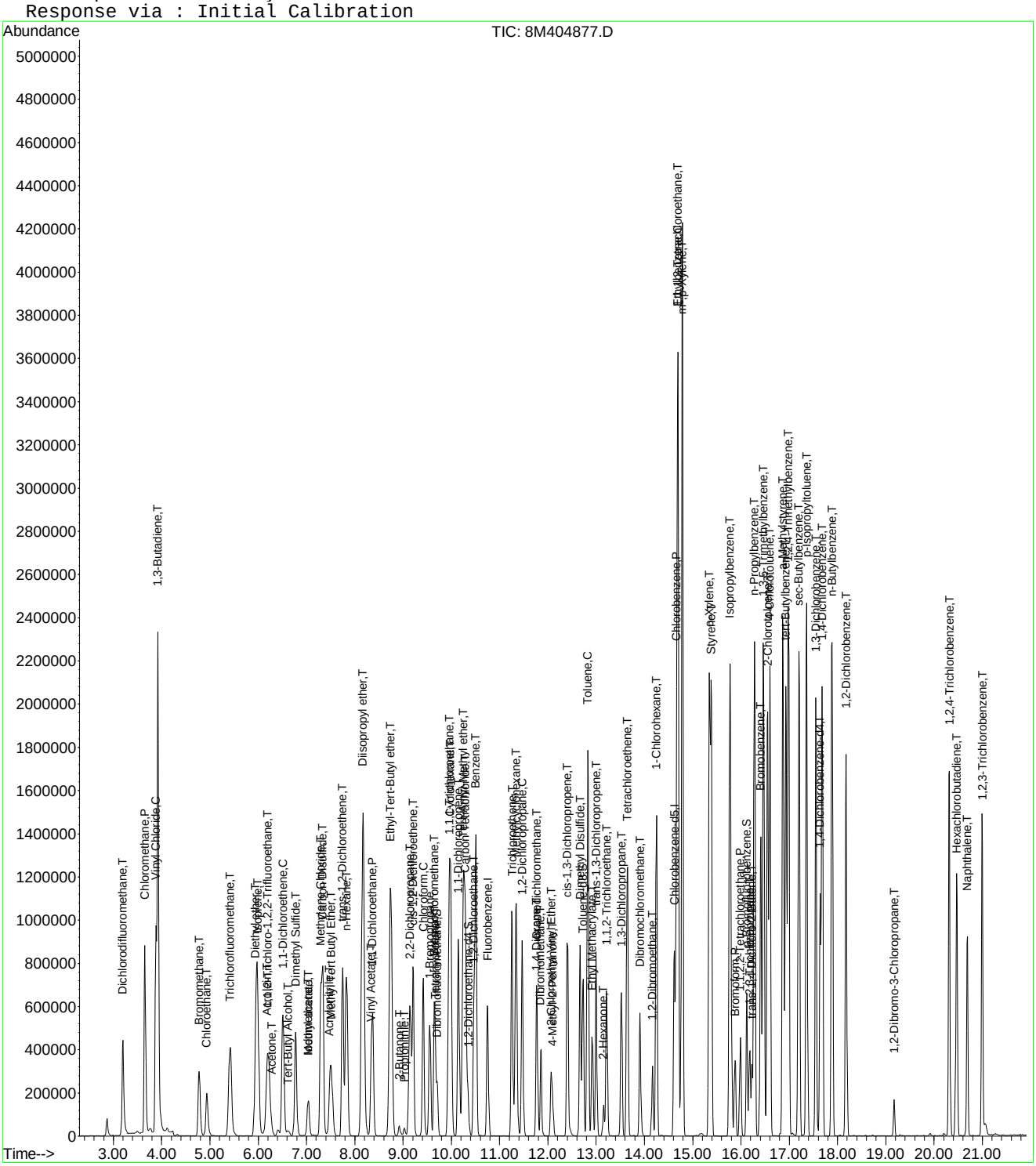

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052315\8M404877.D Vial: 2
Acq On : 23 May 2015 16:57 Operator: FJB
Sample : WG524935-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	90	0.00
2	T	Dichlorodifluoromethane	0.3875	0.4384	-13.1	95	0.00
3	P	Chloromethane	0.7735	0.8206	-6.1	96	0.00
4	C	Vinyl Chloride	0.7289	0.8540	-17.2	102	0.00
5	T	1,3-Butadiene	0.6155	0.9594	-55.9#	112	0.01
6	T	Bromomethane	0.1537	0.2172	-41.3#	117	0.01
7	T	Chloroethane	0.1983	0.2071	-4.4	95	0.00
8	T	Trichlorofluoromethane	0.4577	0.4817	-5.2	95	0.00
9	T	Diethyl ether	0.1755	0.1593	9.2	88	0.00
10	T	Isoprene	0.3394	0.3520	-3.7	92	0.00
11	T	Acrolein	0.0074	0.0087	-17.3	134	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2583	0.2720	-5.3	95	0.00
13	T	Acetone	0.0357	0.0400	-12.0	104	0.00
14	C	1,1-Dichloroethene	0.4394	0.4530	-3.1	92	0.00
15	T	Tert-Butyl Alcohol	0.0096	0.0091	5.5	92	0.00
16	T	Dimethyl Sulfide	0.2561	0.2618	-2.2	91	0.00
17	T	Iodomethane	0.1417	0.1094	22.8	57	0.00
18	T	Methyl acetate	0.1274	0.1291	-1.4	95	0.00
19	T	Methylene Chloride	0.2504	0.2610	-4.2	94	0.00
20	T	Carbon Disulfide	0.8083	0.9179	-13.6	97	0.00
21	T	Acrylonitrile	0.0568	0.0540	5.0	86	0.00
22	T	Methyl Tert Butyl Ether	0.4824	0.4439	8.0	84	0.00
23	T	trans-1,2-Dichloroethene	0.4194	0.4137	1.4	90	0.00
24	T	n-Hexane	0.4242	0.4467	-5.3	94	0.00
25	T	Diisopropyl ether	0.9291	0.9309	-0.2	92	0.00
26	T	Vinyl Acetate	0.3067	0.2763	9.9	78	0.00
27	P	1,1-Dichloroethane	0.5064	0.5249	-3.7	91	0.00
28	T	Ethyl-Tert-Butyl ether	0.7290	0.6932	4.9	88	0.00
29	T	2-Butanone	0.0582	0.0590	-1.4	93	0.00
30	T	Propionitrile	0.0185	0.0176	4.9	91	0.00
31	T	2,2-Dichloropropane	0.4178	0.4210	-0.8	93	0.00
32	T	cis-1,2-Dichloroethene	0.2881	0.2881	-0.0	91	0.00
33	C	Chloroform	0.4703	0.4894	-4.1	93	0.00
34		1-Bromopropane	0.0473	0.0510	-7.9	92	0.00
35	T	Bromochloromethane	0.1469	0.1499	-2.0	92	0.00
36	T	Tetrahydrofuran	0.0392	0.0493	-25.8#	121	0.00
37	S	Dibromofluoromethane	0.2478	0.2394	3.4	88	0.00
38	T	1,1,1-Trichloroethane	0.4270	0.4533	-6.2	93	0.00
39	T	Cyclohexane	0.5174	0.5550	-7.3	96	0.00
40	T	1,1-Dichloropropene	0.3715	0.3831	-3.1	93	0.00
41	T	Tert-Amyl-Methyl ether	0.5351	0.5014	6.3	88	0.00
42	T	Carbon Tetrachloride	0.3880	0.4336	-11.7	99	0.00
43	S	1,2-Dichloroethane-d4	0.2329	0.2170	6.8	83	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.58#
45	T	1,2-Dichloroethane	0.3372	0.3271	3.0	89	0.00
46	T	Benzene	1.0006	1.0719	-7.1	95	0.00
47	T	Trichloroethene	0.2647	0.2872	-8.5	97	0.00
48	T	Methylcyclohexane	0.4296	0.4509	-5.0	94	0.00
49	C	1,2-Dichloropropane	0.2803	0.2845	-1.5	92	0.00
50	T	Bromodichloromethane	0.3451	0.3720	-7.8	96	0.00
51	T	1,4-Dioxane	0.0011	0.0013	-21.3	110	0.00
52	T	Dibromomethane	0.1320	0.1357	-2.8	94	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0698	0.0894	-28.1#	129	0.00
54	T	4-Methyl-2-Pentanone	0.0482	0.0496	-3.0	94	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052315\8M404877.D Vial: 2
Acq On : 23 May 2015 16:57 Operator: FJB
Sample : WG524935-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3772	0.3958	-4.9	91	0.00
56	T	Dimethyl Disulfide	0.2031	0.2189	-7.7	101	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	104	0.00
58	S	Toluene-d8	1.1666	1.1151	4.4	96	0.00
59	C	Toluene	1.4829	1.4487	2.3	96	0.00
60	T	Ethyl Methacrylate	0.2638	0.2465	6.6	89	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.18#
62	T	trans-1,3-Dichloropropene	0.4445	0.4191	5.7	95	0.00
63	T	1,1,2-Trichloroethane	0.2304	0.2147	6.8	96	0.00
64	T	2-Hexanone	0.0634	0.0563	11.2	88	0.00
65	T	1,3-Dichloropropane	0.4039	0.3741	7.4	95	0.00
66	T	Tetrachloroethene	0.3130	0.3028	3.3	99	0.00
67	T	Dibromochloromethane	0.3066	0.3051	0.5	101	0.00
68	T	1,2-Dibromoethane	0.2199	0.2153	2.1	97	0.00
69	T	1-Chlorohexane	0.5072	0.4958	2.3	101	0.00
70	P	Chlorobenzene	1.0009	0.9682	3.3	98	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3593	0.3514	2.2	100	0.00
72	C	Ethylbenzene	0.5995	0.5565	7.2	97	0.00
73	T	m-,p-Xylene	0.6780	0.6797	-0.3	98	0.00
74	T	o-Xylene	0.6700	0.6552	2.2	100	0.00
75	T	Styrene	1.0613	1.0811	-1.9	98	0.00
76	P	Bromoform	0.1638	0.1800	-9.9	109	0.00
77	T	Isopropylbenzene	1.6386	1.6957	-3.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	111	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4750	0.4065	14.4	97	0.00
80	S	p-Bromofluorobenzene	0.8506	0.7511	11.7	98	0.00
81	T	1,2,3-Trichloropropane	0.1287	0.1183	8.1	104	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1577	0.1353	14.2	89	0.00
83	T	n-Propylbenzene	3.7826	3.5673	5.7	101	0.00
84	T	Bromobenzene	0.7512	0.6911	8.0	103	0.00
85	T	1,3,5-Trimethylbenzene	2.5881	2.5100	3.0	100	0.00
86	T	2-Chlorotoluene	2.5528	2.2517	11.8	95	0.00
87	T	4-Chlorotoluene	2.0419	1.9873	2.7	104	0.00
88	T	a-Methylstyrene	1.4739	1.3736	6.8	100	0.00
89	T	tert-Butylbenzene	0.5754	0.5240	8.9	103	0.00
90	T	1,2,4-Trimethylbenzene	2.6608	2.6083	2.0	101	0.00
91	T	sec-Butylbenzene	3.2269	3.2509	-0.7	102	0.00
92	T	p-Isopropyltoluene	2.7358	2.7476	-0.4	102	0.00
93	T	1,3-Dichlorobenzene	1.5224	1.4520	4.6	103	0.00
94	T	1,4-Dichlorobenzene	1.5456	1.4647	5.2	105	0.00
95	T	n-Butylbenzene	2.6725	2.6611	0.4	101	0.00
96	T	1,2-Dichlorobenzene	1.3211	1.2833	2.9	104	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0758	0.0747	1.5	108	0.00
98	T	1,2,4-Trichlorobenzene	0.9952	0.9568	3.9	104	0.00
99	T	Hexachlorobutadiene	0.5199	0.4310	17.1	94	0.00
100	T	Naphthalene	1.3347	1.3569	-1.7	108	0.00
101	T	1,2,3-Trichlorobenzene	0.8433	0.8086	4.1	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404877.D 8260WT.M Sat May 23 17:24:24 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052315\8M404877.D Vial: 2
Acq On : 23 May 2015 16:57 Operator: FJB
Sample : WG524935-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	90	0.00
2	T	Dichlorodifluoromethane	50.0000	56.5696	-13.1	95	0.00
3	P	Chloromethane	50.0000	53.0431	-6.1	96	0.00
4	C	Vinyl Chloride	50.0000	58.5863	-17.2	102	0.00
5	T	1,3-Butadiene	50.0000	77.0220	-54.0#	112	0.01
6	T	Bromomethane	50.0000	61.7505	-23.5	117	0.01
7	T	Chloroethane	50.0000	52.1941	-4.4	95	0.00
8	T	Trichlorofluoromethane	50.0000	52.6217	-5.2	95	0.00
9	T	Diethyl ether	100.0000	90.7494	9.3	88	0.00
10	T	Isoprene	50.0000	51.8656	-3.7	92	0.00
11	T	Acrolein	50.0000	65.3599	-30.7#	134	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.6411	-5.3	95	0.00
13	T	Acetone	50.0000	56.0033	-12.0	104	0.00
14	C	1,1-Dichloroethene	50.0000	51.5515	-3.1	92	0.00
15	T	Tert-Butyl Alcohol	200.0000	188.9488	5.5	92	0.00
16	T	Dimethyl Sulfide	50.0000	51.1121	-2.2	91	0.00
17	T	Iodomethane	50.0000	31.3898	37.2#	57	0.00
18	T	Methyl acetate	50.0000	50.6797	-1.4	95	0.00
19	T	Methylene Chloride	50.0000	52.1203	-4.2	94	0.00
20	T	Carbon Disulfide	50.0000	56.7812	-13.6	97	0.00
21	T	Acrylonitrile	50.0000	47.5072	5.0	86	0.00
22	T	Methyl Tert Butyl Ether	50.0000	46.0060	8.0	84	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.3167	1.4	90	0.00
24	T	n-Hexane	50.0000	52.6536	-5.3	94	0.00
25	T	Diisopropyl ether	100.0000	100.1924	-0.2	92	0.00
26	T	Vinyl Acetate	50.0000	45.0445	9.9	78	0.00
27	P	1,1-Dichloroethane	50.0000	51.8343	-3.7	91	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	95.0853	4.9	88	0.00
29	T	2-Butanone	50.0000	50.6928	-1.4	93	0.00
30	T	Propionitrile	100.0000	95.1321	4.9	91	0.00
31	T	2,2-Dichloropropane	50.0000	50.3888	-0.8	93	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.0059	-0.0	91	0.00
33	C	Chloroform	50.0000	52.0306	-4.1	93	0.00
34		1-Bromopropane	50.0000	48.7589	2.5	92	0.00
35	T	Bromochloromethane	50.0000	50.9984	-2.0	92	0.00
36	T	Tetrahydrofuran	100.0000	125.7525	-25.8#	121	0.00
37	S	Dibromofluoromethane	25.0000	24.1533	3.4	88	0.00
38	T	1,1,1-Trichloroethane	50.0000	53.0813	-6.2	93	0.00
39	T	Cyclohexane	50.0000	53.6260	-7.3	96	0.00
40	T	1,1-Dichloropropene	50.0000	51.5585	-3.1	93	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	93.6960	6.3	88	0.00
42	T	Carbon Tetrachloride	50.0000	55.8715	-11.7	99	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.3004	6.8	83	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	50.0000	48.5105	3.0	89	0.00
46	T	Benzene	50.0000	53.5633	-7.1	95	0.00
47	T	Trichloroethene	50.0000	54.2535	-8.5	97	0.00
48	T	Methylcyclohexane	50.0000	52.4826	-5.0	94	0.00
49	C	1,2-Dichloropropane	50.0000	50.7547	-1.5	92	0.00
50	T	Bromodichloromethane	50.0000	53.9129	-7.8	96	0.00
51	T	1,4-Dioxane	200.0000	234.1391	-17.1	110	0.00
52	T	Dibromomethane	50.0000	51.4117	-2.8	94	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	66.0161	-32.0#	129	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.5007	-3.0	94	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052315\8M404877.D Vial: 2
Acq On : 23 May 2015 16:57 Operator: FJB
Sample : WG524935-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.4689	-4.9	91	0.00
56	T	Dimethyl Disulfide	50.0000	49.0673	1.9	101	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	104	0.00
58	S	Toluene-d8	25.0000	23.8965	4.4	96	0.00
59	C	Toluene	50.0000	48.8456	2.3	96	0.00
60	T	Ethyl Methacrylate	50.0000	46.7125	6.6	89	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	50.0000	47.1477	5.7	95	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.5913	6.8	96	0.00
64	T	2-Hexanone	50.0000	44.3911	11.2	88	0.00
65	T	1,3-Dichloropropane	50.0000	46.3195	7.4	95	0.00
66	T	Tetrachloroethene	50.0000	48.3707	3.3	99	0.00
67	T	Dibromochloromethane	50.0000	49.7644	0.5	101	0.00
68	T	1,2-Dibromoethane	50.0000	48.9351	2.1	97	0.00
69	T	1-Chlorohexane	50.0000	48.8721	2.3	101	0.00
70	P	Chlorobenzene	50.0000	48.3663	3.3	98	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	48.9104	2.2	100	0.00
72	C	Ethylbenzene	50.0000	46.4134	7.2	97	0.00
73	T	m-,p-Xylene	100.0000	100.2512	-0.3	98	0.00
74	T	o-Xylene	50.0000	48.8929	2.2	100	0.00
75	T	Styrene	50.0000	50.9284	-1.9	98	0.00
76	P	Bromoform	50.0000	46.1368	7.7	109	0.00
77	T	Isopropylbenzene	50.0000	51.7430	-3.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	111	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	42.7841	14.4	97	0.00
80	S	p-Bromofluorobenzene	25.0000	22.0759	11.7	98	0.00
81	T	1,2,3-Trichloropropane	50.0000	45.9560	8.1	104	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	42.9076	14.2	89	0.00
83	T	n-Propylbenzene	50.0000	47.1538	5.7	101	0.00
84	T	Bromobenzene	50.0000	46.0022	8.0	103	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.4908	3.0	100	0.00
86	T	2-Chlorotoluene	50.0000	44.1035	11.8	95	0.00
87	T	4-Chlorotoluene	50.0000	48.6652	2.7	104	0.00
88	T	a-Methylstyrene	50.0000	46.5956	6.8	100	0.00
89	T	tert-Butylbenzene	50.0000	45.5399	8.9	103	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.0119	2.0	101	0.00
91	T	sec-Butylbenzene	50.0000	50.3720	-0.7	102	0.00
92	T	p-Isopropyltoluene	50.0000	50.2146	-0.4	102	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.6879	4.6	103	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.3825	5.2	105	0.00
95	T	n-Butylbenzene	50.0000	49.7883	0.4	101	0.00
96	T	1,2-Dichlorobenzene	50.0000	48.5676	2.9	104	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	49.2602	1.5	108	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.0710	3.9	104	0.00
99	T	Hexachlorobutadiene	50.0000	41.4441	17.1	94	0.00
100	T	Naphthalene	50.0000	50.8319	-1.7	108	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.9397	4.1	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404877.D 8260WT.M Sat May 23 17:24:25 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052615\8M404906.D Vial: 2
Acq On : 26 May 2015 11:50 Operator: TMB
Sample : WG525055-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 12:12:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	760558	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	615965	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	374943	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	191414	25.3916 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.56%		
43) 1,2-Dichloroethane-d4	10.35	65	168698	23.8128 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.24%		
58) Toluene-d8	12.73	98	686387	23.8794 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.52%		
80) p-Bromofluorobenzene	16.12	95	281702	22.0834 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 88.32%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	673577	57.1444 ug/L	97
3) Chloromethane	3.65	50	1284846	54.6006 ug/L	95
4) Vinyl Chloride	3.89	62	1316166	59.3571 ug/L	95
5) 1,3-Butadiene	3.93	54	1390539	72.7677 ug/L	98
6) Bromomethane	4.77	94	308065	57.8645 ug/L	99
7) Chloroethane	4.94	64	336304	55.7341 ug/L	91
8) Trichlorofluoromethane	5.42	101	776262	55.7474 ug/L	99
9) Diethyl ether	5.95	59	494434	92.6158 ug/L	90
10) Isoprene	5.98	67	539092	52.2120 ug/L	78
11) Acrolein	6.19	56	10097	56.8978 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	449498	57.1930 ug/L	93
13) Acetone	6.28	43	53652	49.3951 ug/L	91
14) 1,1-Dichloroethene	6.51	61	728553	54.5057 ug/L	84
15) Tert-Butyl Alcohol	6.62	59	62476	213.7590 ug/L	97
16) Dimethyl Sulfide	6.78	62	417299	53.5508 ug/L	78
17) Iodomethane	7.04	142	223266	41.6534 ug/L	84
18) Methyl acetate	7.04	43	208316	53.7450 ug/L	90
19) Methylene Chloride	7.30	84	423368	55.5781 ug/L #	54
20) Carbon Disulfide	7.34	76	1410756	57.3722 ug/L	95
21) Acrylonitrile	7.48	53	88720	51.3170 ug/L	95
22) Methyl Tert Butyl Ether	7.51	73	744128	50.7070 ug/L	94
23) trans-1,2-Dichloroethene	7.75	61	667189	52.2850 ug/L	86
24) n-Hexane	7.82	57	688670	53.3697 ug/L	94
25) Diisopropyl ether	8.17	45	2890468	102.2592 ug/L	92
26) Vinyl Acetate	8.34	43	428447	45.9122 ug/L	93
27) 1,1-Dichloroethane	8.37	63	838736	54.4474 ug/L	95
28) Ethyl-Tert-Butyl ether	8.75	59	2201967	99.2832 ug/L	94
29) 2-Butanone	8.92	43	87175	49.2594 ug/L	87
30) Propionitrile	9.03	54	58671	104.0177 ug/L	99
31) 2,2-Dichloropropane	9.15	77	687274	54.0755 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	472769	53.9419 ug/L	79
33) Chloroform	9.42	83	772760	54.0065 ug/L	96
34) 1-Bromopropane	9.56	122	76495	48.0816 ug/L	92
35) Bromochloromethane	9.66	130	247165	55.3007 ug/L	74
36) Tetrahydrofuran	9.68	42	249656	209.4410 ug/L	85
38) 1,1,1-Trichloroethane	9.95	97	734197	56.5241 ug/L	97
39) Cyclohexane	9.99	56	843028	53.5529 ug/L	86
40) 1,1-Dichloropropene	10.15	75	622058	55.0445 ug/L	93
41) Tert-Amyl-Methyl ether	10.25	73	1636427	100.5250 ug/L	97
42) Carbon Tetrachloride	10.30	117	697962	59.1305 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M404906.D 8260WT.M Tue May 26 12:12:32 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052615\8M404906.D Vial: 2
Acq On : 26 May 2015 11:50 Operator: TMB
Sample : WG525055-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 12:12:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	528324	51.5054	ug/L		91
46)	Benzene	10.50	78	1715338	56.3492	ug/L		98
47)	Trichloroethene	11.26	130	461281	57.2867	ug/L		98
48)	Methylcyclohexane	11.34	83	689079	52.7246	ug/L		91
49)	1,2-Dichloropropane	11.47	63	456084	53.4919	ug/L		100
50)	Bromodichloromethane	11.77	83	587778	55.9944	ug/L		95
51)	1,4-Dioxane	11.75	88	9474	269.5050	ug/L		92
52)	Dibromomethane	11.86	93	215303	53.6180	ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.06	63	166477	81.0490	ug/L		96
54)	4-Methyl-2-Pentanone	12.10	58	80868	55.1692	ug/L		89
55)	cis-1,3-Dichloropropene	12.41	75	646160	56.3124	ug/L		93
56)	Dimethyl Disulfide	12.66	79	330648	48.7551	ug/L		95
59)	Toluene	12.83	91	1854015	50.7446	ug/L		85
60)	Ethyl Methacrylate	12.92	69	321229	49.4131	ug/L		74
62)	trans-1,3-Dichloropropene	13.01	75	537979	49.1245	ug/L		95
63)	1,1,2-Trichloroethane	13.22	97	279759	49.2844	ug/L		99
64)	2-Hexanone	13.16	58	73454	46.9913	ug/L	#	78
65)	1,3-Dichloropropane	13.52	76	473022	47.5357	ug/L		82
66)	Tetrachloroethene	13.65	164	391269	50.7389	ug/L		89
67)	Dibromochloromethane	13.91	129	395636	52.3760	ug/L		98
68)	1,2-Dibromoethane	14.16	107	279983	51.6678	ug/L		98
69)	1-Chlorohexane	14.26	91	598538	47.8941	ug/L		82
70)	Chlorobenzene	14.67	112	1252829	50.8044	ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.70	131	454462	51.3423	ug/L		98
72)	Ethylbenzene	14.70	106	730757	49.4755	ug/L	#	37
73)	m-,p-Xylene	14.78	106	1725688	103.3105	ug/L	#	50
74)	o-Xylene	15.35	106	820606	49.7113	ug/L		62
75)	Styrene	15.38	104	1379374	52.7485	ug/L		87
76)	Bromoform	15.88	173	231824	48.2066	ug/L		98
77)	Isopropylbenzene	15.78	105	2151804	53.2997	ug/L		79
79)	1,1,2,2-Tetrachloroethane	15.98	83	308018	43.2352	ug/L		99
81)	1,2,3-Trichloropropane	16.18	110	84476	43.7671	ug/L		89
82)	trans-1,4-Dichloro-2-Buten	16.23	53	110890	46.8882	ug/L		79
83)	n-Propylbenzene	16.28	91	2648101	46.6792	ug/L	#	74
84)	Bromobenzene	16.41	156	510459	45.3094	ug/L		94
85)	1,3,5-Trimethylbenzene	16.47	105	1871012	48.2025	ug/L		81
86)	2-Chlorotoluene	16.55	91	1624961	42.4426	ug/L		81
87)	4-Chlorotoluene	16.60	91	1594673	52.0741	ug/L		77
88)	a-Methylstyrene	16.87	118	1034303	46.7900	ug/L		91
89)	tert-Butylbenzene	16.93	134	384546	44.5634	ug/L		61
90)	1,2,4-Trimethylbenzene	16.99	105	1941255	48.6451	ug/L		76
91)	sec-Butylbenzene	17.20	105	2372505	49.0223	ug/L		78
92)	p-Isopropyltoluene	17.36	119	2039778	49.7129	ug/L		79
93)	1,3-Dichlorobenzene	17.55	146	1101035	48.2222	ug/L		92
94)	1,4-Dichlorobenzene	17.68	146	1074341	46.3475	ug/L		91
95)	n-Butylbenzene	17.89	91	1958137	48.8550	ug/L		80
96)	1,2-Dichlorobenzene	18.17	146	954794	48.1892	ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.18	75	52879	46.5000	ug/L		89
98)	1,2,4-Trichlorobenzene	20.32	180	706743	47.3500	ug/L		99
99)	Hexachlorobutadiene	20.47	225	326960	41.9300	ug/L		94
100)	Naphthalene	20.69	128	992487	49.5802	ug/L		93
101)	1,2,3-Trichlorobenzene	21.00	180	597576	47.2459	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404906.D 8260WT.M Tue May 26 12:12:32 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052615\8M404906.D Vial: 2
Acq On : 26 May 2015 11:50 Operator: TMB
Sample : WG525055-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 12:12 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

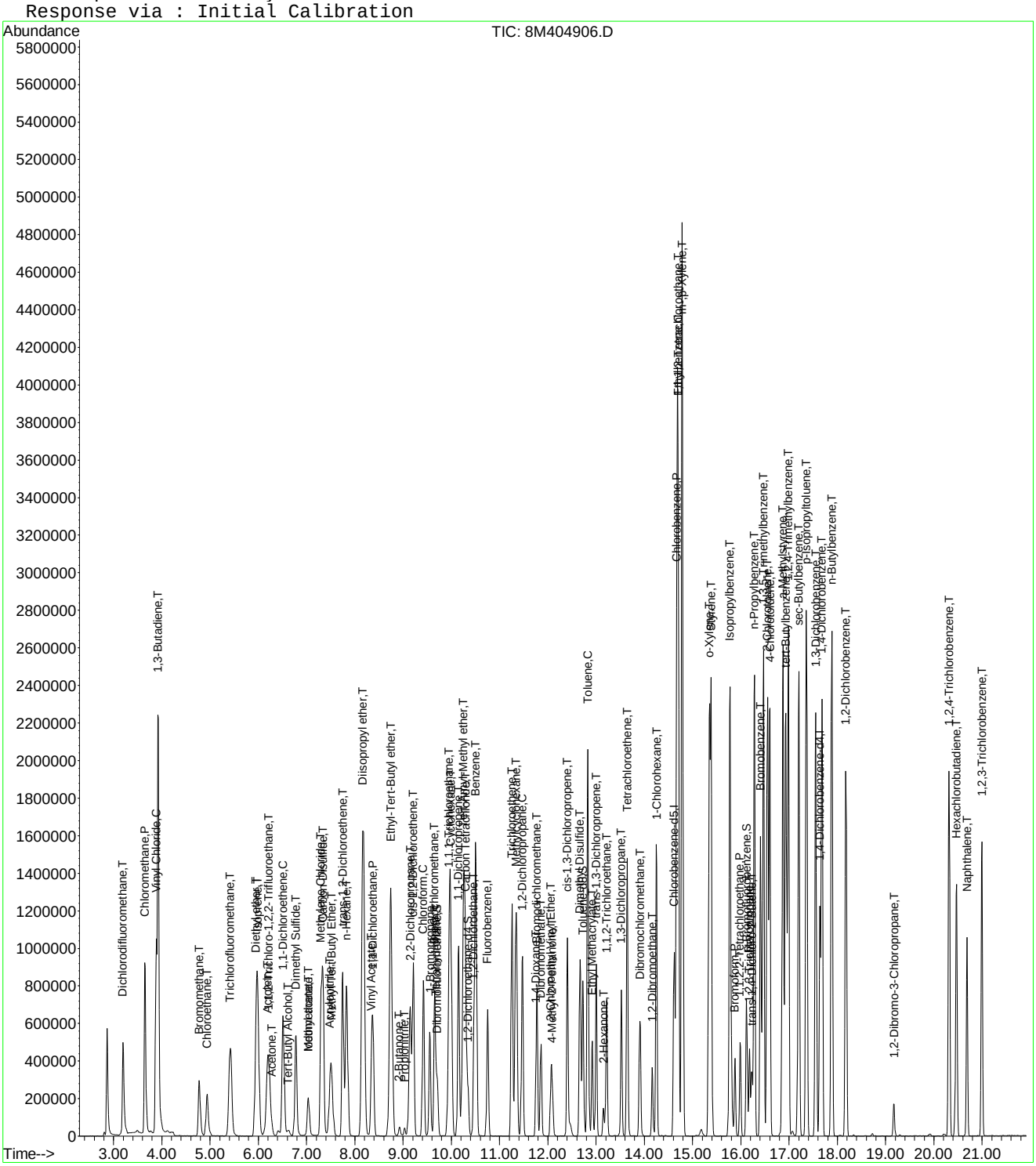

8M404906.D 8260WT.M Tue May 26 12:12:32 2015 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 12 May 2015 19:42
CCV date: 26 May 2015 11:50
CCV Filename: 8M404906.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	779258	10.75	545682	14.62	300564	17.65
CCV	760558	10.75	615965	14.62	374943	17.64

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052615\8M404906.D Vial: 2
Acq On : 26 May 2015 11:50 Operator: TMB
Sample : WG525055-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	98	0.00
2	T	Dichlorodifluoromethane	0.3875	0.4428	-14.3	105	0.00
3	P	Chloromethane	0.7735	0.8447	-9.2	107	0.00
4	C	Vinyl Chloride	0.7289	0.8653	-18.7	112	0.00
5	T	1,3-Butadiene	0.6155	0.9142	-48.5#	115	0.02
6	T	Bromomethane	0.1537	0.2025	-31.8#	118	0.00
7	T	Chloroethane	0.1983	0.2211	-11.5	110	0.00
8	T	Trichlorofluoromethane	0.4577	0.5103	-11.5	109	0.00
9	T	Diethyl ether	0.1755	0.1625	7.4	97	0.00
10	T	Isoprene	0.3394	0.3544	-4.4	100	0.00
11	T	Acrolein	0.0074	0.0066	10.1	111	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2583	0.2955	-14.4	112	0.00
13	T	Acetone	0.0357	0.0353	1.2	100	0.00
14	C	1,1-Dichloroethene	0.4394	0.4790	-9.0	106	0.00
15	T	Tert-Butyl Alcohol	0.0096	0.0103	-6.9	113	-0.01
16	T	Dimethyl Sulfide	0.2561	0.2743	-7.1	103	0.00
17	T	Iodomethane	0.1417	0.1468	-3.6	83	0.00
18	T	Methyl acetate	0.1274	0.1369	-7.5	109	0.00
19	T	Methylene Chloride	0.2504	0.2783	-11.2	109	0.00
20	T	Carbon Disulfide	0.8083	0.9275	-14.7	106	0.00
21	T	Acrylonitrile	0.0568	0.0583	-2.6	101	0.00
22	T	Methyl Tert Butyl Ether	0.4824	0.4892	-1.4	101	0.00
23	T	trans-1,2-Dichloroethene	0.4194	0.4386	-4.6	103	0.00
24	T	n-Hexane	0.4242	0.4527	-6.7	104	0.00
25	T	Diisopropyl ether	0.9291	0.9501	-2.3	102	0.00
26	T	Vinyl Acetate	0.3067	0.2817	8.2	87	0.00
27	P	1,1-Dichloroethane	0.5064	0.5514	-8.9	104	0.00
28	T	Ethyl-Tert-Butyl ether	0.7290	0.7238	0.7	100	0.00
29	T	2-Butanone	0.0582	0.0573	1.5	98	0.00
30	T	Propionitrile	0.0185	0.0193	-4.0	108	0.00
31	T	2,2-Dichloropropane	0.4178	0.4518	-8.2	108	0.00
32	T	cis-1,2-Dichloroethene	0.2881	0.3108	-7.9	106	0.00
33	C	Chloroform	0.4703	0.5080	-8.0	105	0.00
34		1-Bromopropane	0.0473	0.0503	-6.4	98	0.00
35	T	Bromochloromethane	0.1469	0.1625	-10.6	108	0.00
36	T	Tetrahydrofuran	0.0392	0.0821	-109.4#	218#	0.00
37	S	Dibromofluoromethane	0.2478	0.2517	-1.6	100	0.00
38	T	1,1,1-Trichloroethane	0.4270	0.4827	-13.0	107	0.00
39	T	Cyclohexane	0.5174	0.5542	-7.1	104	0.00
40	T	1,1-Dichloropropene	0.3715	0.4089	-10.1	108	0.00
41	T	Tert-Amyl-Methyl ether	0.5351	0.5379	-0.5	102	0.00
42	T	Carbon Tetrachloride	0.3880	0.4588	-18.3	113	0.00
43	S	1,2-Dichloroethane-d4	0.2329	0.2218	4.7	92	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.58#
45	T	1,2-Dichloroethane	0.3372	0.3473	-3.0	103	0.00
46	T	Benzene	1.0006	1.1277	-12.7	108	0.00
47	T	Trichloroethene	0.2647	0.3033	-14.6	111	0.00
48	T	Methylcyclohexane	0.4296	0.4530	-5.4	103	0.00
49	C	1,2-Dichloropropane	0.2803	0.2998	-7.0	106	0.00
50	T	Bromodichloromethane	0.3451	0.3864	-12.0	108	0.00
51	T	1,4-Dioxane	0.0011	0.0016	-44.4#	142	-0.01
52	T	Dibromomethane	0.1320	0.1415	-7.2	106	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0698	0.1094	-56.9#	171#	0.00
54	T	4-Methyl-2-Pentanone	0.0482	0.0532	-10.3	109	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052615\8M404906.D Vial: 2
Acq On : 26 May 2015 11:50 Operator: TMB
Sample : WG525055-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3772	0.4248	-12.6	106	0.00
56	T	Dimethyl Disulfide	0.2031	0.2174	-7.0	108	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	113	0.00
58	S	Toluene-d8	1.1666	1.1143	4.5	104	0.00
59	C	Toluene	1.4829	1.5050	-1.5	109	0.00
60	T	Ethyl Methacrylate	0.2638	0.2607	1.2	102	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.18#
62	T	trans-1,3-Dichloropropene	0.4445	0.4367	1.8	107	0.00
63	T	1,1,2-Trichloroethane	0.2304	0.2271	1.4	110	0.00
64	T	2-Hexanone	0.0634	0.0596	6.0	101	0.00
65	T	1,3-Dichloropropane	0.4039	0.3840	4.9	106	0.00
66	T	Tetrachloroethene	0.3130	0.3176	-1.5	113	0.00
67	T	Dibromochloromethane	0.3066	0.3211	-4.8	116	0.00
68	T	1,2-Dibromoethane	0.2199	0.2273	-3.3	112	0.00
69	T	1-Chlorohexane	0.5072	0.4859	4.2	107	0.00
70	P	Chlorobenzene	1.0009	1.0170	-1.6	112	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3593	0.3689	-2.7	114	0.00
72	C	Ethylbenzene	0.5995	0.5932	1.0	113	0.00
73	T	m-,p-Xylene	0.6780	0.7004	-3.3	109	0.00
74	T	o-Xylene	0.6700	0.6661	0.6	111	0.00
75	T	Styrene	1.0613	1.1197	-5.5	110	0.00
76	P	Bromoform	0.1638	0.1882	-14.9	124	0.00
77	T	Isopropylbenzene	1.6386	1.7467	-6.6	112	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	125	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4750	0.4108	13.5	110	-0.01
80	S	p-Bromofluorobenzene	0.8506	0.7513	11.7	110	0.00
81	T	1,2,3-Trichloropropane	0.1287	0.1127	12.5	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1577	0.1479	6.2	109	0.00
83	T	n-Propylbenzene	3.7826	3.5313	6.6	112	0.00
84	T	Bromobenzene	0.7512	0.6807	9.4	114	0.00
85	T	1,3,5-Trimethylbenzene	2.5881	2.4951	3.6	111	0.00
86	T	2-Chlorotoluene	2.5528	2.1669	15.1	102	0.00
87	T	4-Chlorotoluene	2.0419	2.1265	-4.1	125	0.00
88	T	a-Methylstyrene	1.4739	1.3793	6.4	113	0.00
89	T	tert-Butylbenzene	0.5754	0.5128	10.9	113	0.00
90	T	1,2,4-Trimethylbenzene	2.6608	2.5887	2.7	112	0.00
91	T	sec-Butylbenzene	3.2269	3.1638	2.0	112	0.00
92	T	p-Isopropyltoluene	2.7358	2.7201	0.6	113	0.00
93	T	1,3-Dichlorobenzene	1.5224	1.4683	3.6	117	0.00
94	T	1,4-Dichlorobenzene	1.5456	1.4327	7.3	115	-0.01
95	T	n-Butylbenzene	2.6725	2.6113	2.3	111	0.00
96	T	1,2-Dichlorobenzene	1.3211	1.2733	3.6	116	-0.01
97	T	1,2-Dibromo-3-Chloropropane	0.0758	0.0705	7.0	115	0.00
98	T	1,2,4-Trichlorobenzene	0.9952	0.9425	5.3	115	0.00
99	T	Hexachlorobutadiene	0.5199	0.4360	16.1	107	0.00
100	T	Naphthalene	1.3347	1.3235	0.8	118	0.00
101	T	1,2,3-Trichlorobenzene	0.8433	0.7969	5.5	116	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404906.D 8260WT.M Tue May 26 12:17:57 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052615\8M404906.D Vial: 2
Acq On : 26 May 2015 11:50 Operator: TMB
Sample : WG525055-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	98	0.00
2	T	Dichlorodifluoromethane	50.0000	57.1444	-14.3	105	0.00
3	P	Chloromethane	50.0000	54.6006	-9.2	107	0.00
4	C	Vinyl Chloride	50.0000	59.3571	-18.7	112	0.00
5	T	1,3-Butadiene	50.0000	72.7677	-45.5#	115	0.02
6	T	Bromomethane	50.0000	57.8645	-15.7	118	0.00
7	T	Chloroethane	50.0000	55.7341	-11.5	110	0.00
8	T	Trichlorofluoromethane	50.0000	55.7474	-11.5	109	0.00
9	T	Diethyl ether	100.0000	92.6158	7.4	97	0.00
10	T	Isoprene	50.0000	52.2120	-4.4	100	0.00
11	T	Acrolein	50.0000	56.8978	-13.8	111	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	57.1930	-14.4	112	0.00
13	T	Acetone	50.0000	49.3951	1.2	100	0.00
14	C	1,1-Dichloroethene	50.0000	54.5057	-9.0	106	0.00
15	T	Tert-Butyl Alcohol	200.0000	213.7590	-6.9	113	-0.01
16	T	Dimethyl Sulfide	50.0000	53.5508	-7.1	103	0.00
17	T	Iodomethane	50.0000	41.6534	16.7	83	0.00
18	T	Methyl acetate	50.0000	53.7450	-7.5	109	0.00
19	T	Methylene Chloride	50.0000	55.5781	-11.2	109	0.00
20	T	Carbon Disulfide	50.0000	57.3722	-14.7	106	0.00
21	T	Acrylonitrile	50.0000	51.3170	-2.6	101	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.7070	-1.4	101	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.2850	-4.6	103	0.00
24	T	n-Hexane	50.0000	53.3697	-6.7	104	0.00
25	T	Diisopropyl ether	100.0000	102.2592	-2.3	102	0.00
26	T	Vinyl Acetate	50.0000	45.9122	8.2	87	0.00
27	P	1,1-Dichloroethane	50.0000	54.4474	-8.9	104	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.2832	0.7	100	0.00
29	T	2-Butanone	50.0000	49.2594	1.5	98	0.00
30	T	Propionitrile	100.0000	104.0177	-4.0	108	0.00
31	T	2,2-Dichloropropane	50.0000	54.0755	-8.2	108	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.9419	-7.9	106	0.00
33	C	Chloroform	50.0000	54.0065	-8.0	105	0.00
34		1-Bromopropane	50.0000	48.0816	3.8	98	0.00
35	T	Bromochloromethane	50.0000	55.3007	-10.6	108	0.00
36	T	Tetrahydrofuran	100.0000	209.4409	-109.4#	218	0.00
37	S	Dibromofluoromethane	25.0000	25.3915	-1.6	100	0.00
38	T	1,1,1-Trichloroethane	50.0000	56.5241	-13.0	107	0.00
39	T	Cyclohexane	50.0000	53.5529	-7.1	104	0.00
40	T	1,1-Dichloropropene	50.0000	55.0445	-10.1	108	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.5250	-0.5	102	0.00
42	T	Carbon Tetrachloride	50.0000	59.1305	-18.3	113	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.8128	4.7	92	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	50.0000	51.5054	-3.0	103	0.00
46	T	Benzene	50.0000	56.3492	-12.7	108	0.00
47	T	Trichloroethene	50.0000	57.2867	-14.6	111	0.00
48	T	Methylcyclohexane	50.0000	52.7246	-5.4	103	0.00
49	C	1,2-Dichloropropane	50.0000	53.4919	-7.0	106	0.00
50	T	Bromodichloromethane	50.0000	55.9944	-12.0	108	0.00
51	T	1,4-Dioxane	200.0000	269.5050	-34.8#	142	-0.01
52	T	Dibromomethane	50.0000	53.6180	-7.2	106	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	81.0490	-62.1#	171	0.00
54	T	4-Methyl-2-Pentanone	50.0000	55.1692	-10.3	109	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052615\8M404906.D Vial: 2
Acq On : 26 May 2015 11:50 Operator: TMB
Sample : WG525055-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.3124	-12.6	106	0.00
56	T	Dimethyl Disulfide	50.0000	48.7551	2.5	108	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	113	0.00
58	S	Toluene-d8	25.0000	23.8794	4.5	104	0.00
59	C	Toluene	50.0000	50.7446	-1.5	109	0.00
60	T	Ethyl Methacrylate	50.0000	49.4131	1.2	102	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	50.0000	49.1245	1.8	107	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.2844	1.4	110	0.00
64	T	2-Hexanone	50.0000	46.9913	6.0	101	0.00
65	T	1,3-Dichloropropane	50.0000	47.5357	4.9	106	0.00
66	T	Tetrachloroethene	50.0000	50.7389	-1.5	113	0.00
67	T	Dibromochloromethane	50.0000	52.3760	-4.8	116	0.00
68	T	1,2-Dibromoethane	50.0000	51.6678	-3.3	112	0.00
69	T	1-Chlorohexane	50.0000	47.8941	4.2	107	0.00
70	P	Chlorobenzene	50.0000	50.8044	-1.6	112	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.3423	-2.7	114	0.00
72	C	Ethylbenzene	50.0000	49.4755	1.0	113	0.00
73	T	m-,p-Xylene	100.0000	103.3105	-3.3	109	0.00
74	T	o-Xylene	50.0000	49.7113	0.6	111	0.00
75	T	Styrene	50.0000	52.7485	-5.5	110	0.00
76	P	Bromoform	50.0000	48.2066	3.6	124	0.00
77	T	Isopropylbenzene	50.0000	53.2997	-6.6	112	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	125	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	43.2352	13.5	110	-0.01
80	S	p-Bromofluorobenzene	25.0000	22.0834	11.7	110	0.00
81	T	1,2,3-Trichloropropane	50.0000	43.7671	12.5	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	46.8882	6.2	109	0.00
83	T	n-Propylbenzene	50.0000	46.6792	6.6	112	0.00
84	T	Bromobenzene	50.0000	45.3094	9.4	114	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.2025	3.6	111	0.00
86	T	2-Chlorotoluene	50.0000	42.4426	15.1	102	0.00
87	T	4-Chlorotoluene	50.0000	52.0741	-4.1	125	0.00
88	T	a-Methylstyrene	50.0000	46.7900	6.4	113	0.00
89	T	tert-Butylbenzene	50.0000	44.5634	10.9	113	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.6451	2.7	112	0.00
91	T	sec-Butylbenzene	50.0000	49.0223	2.0	112	0.00
92	T	p-Isopropyltoluene	50.0000	49.7129	0.6	113	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.2222	3.6	117	0.00
94	T	1,4-Dichlorobenzene	50.0000	46.3475	7.3	115	-0.01
95	T	n-Butylbenzene	50.0000	48.8550	2.3	111	0.00
96	T	1,2-Dichlorobenzene	50.0000	48.1893	3.6	116	-0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	46.5000	7.0	115	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.3500	5.3	115	0.00
99	T	Hexachlorobutadiene	50.0000	41.9301	16.1	107	0.00
100	T	Naphthalene	50.0000	49.5802	0.8	118	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.2459	5.5	116	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404906.D 8260WT.M Tue May 26 12:17:59 2015 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\100214\8M400357.D          Vial: 3
Acq On    :  2 Oct 2014  11:58                       Operator: TMB
Sample    : WG494714-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD66476                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

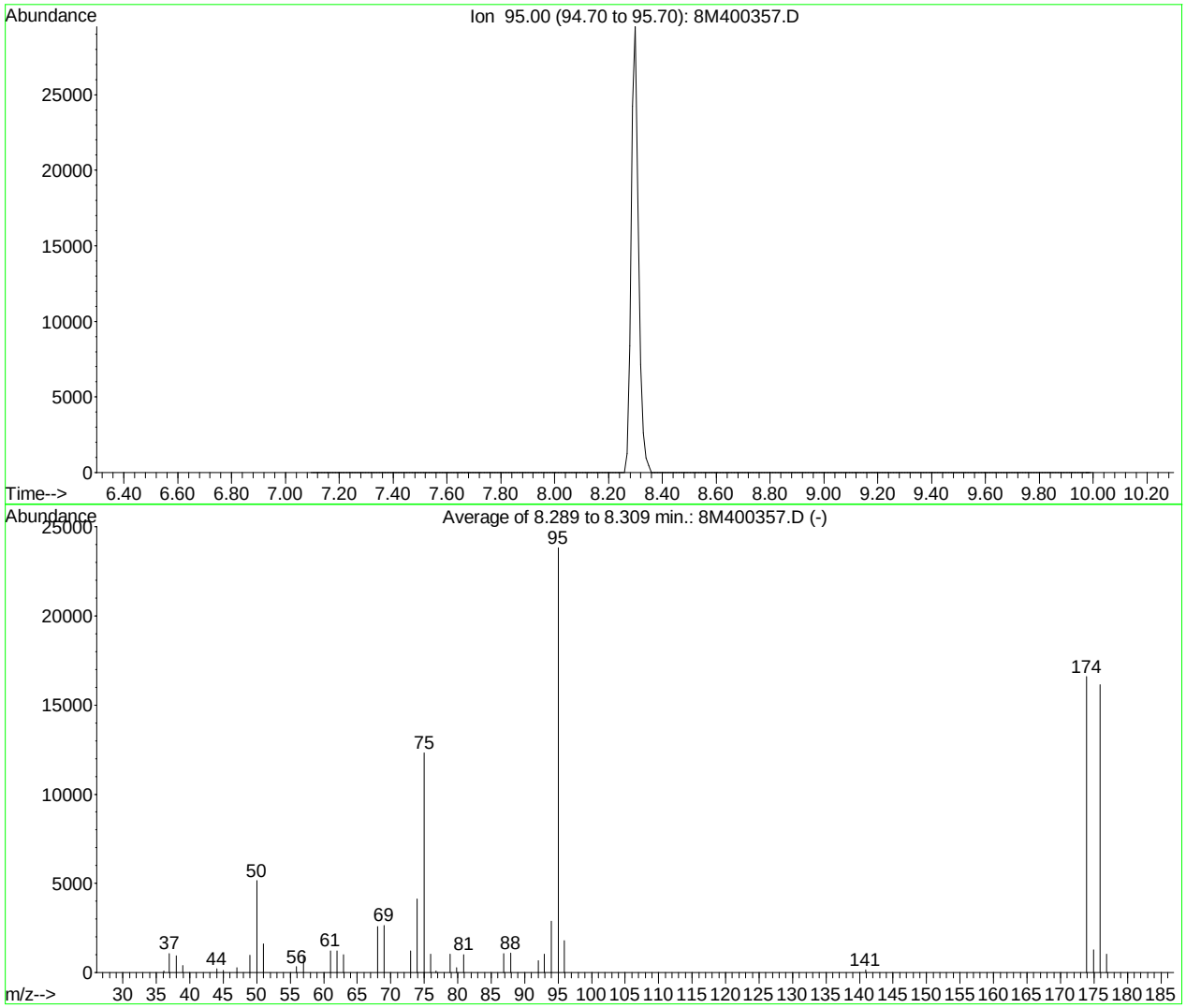

AutoFind: Scans 118, 119, 120; Background Corrected with Scan 113

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	5158	PASS
75	95	30	60	51.7	12312	PASS
95	95	100	100	100.0	23818	PASS
96	95	5	9	7.6	1800	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	69.7	16590	PASS
175	174	5	9	7.8	1290	PASS
176	174	95	101	97.3	16145	PASS
177	176	5	9	6.3	1023	PASS

8M400357.D BFB.M Thu Oct 02 12:09:27 2014

BFB

```
Data File : C:\MSDCHEM\2\DATA\051215\8M404577.D          Vial: 2
Acq On    : 12 May 2015  15:55                       Operator: TMB
Sample    : WG523161-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD70032                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

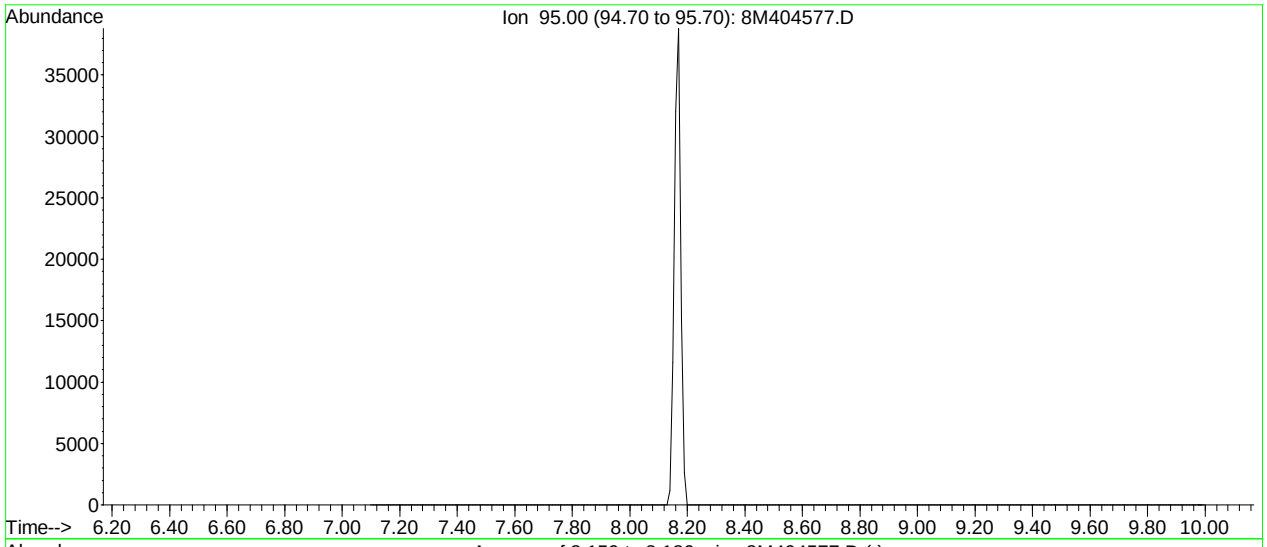

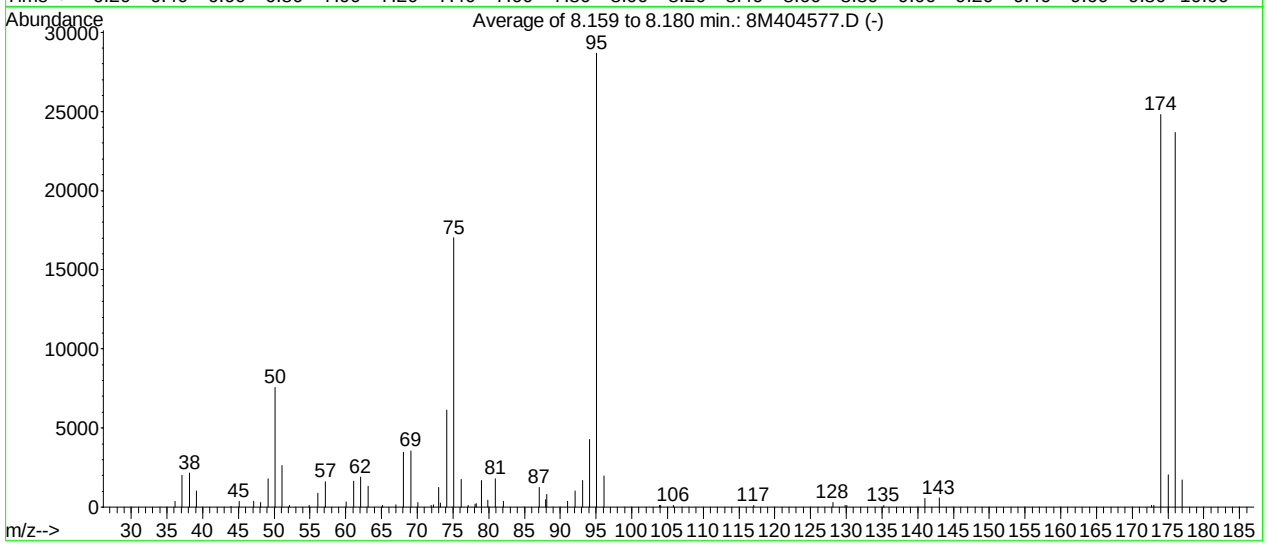

AutoFind: Scans 105, 106, 107; Background Corrected with Scan 100

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	26.3	7551	PASS
75	95	30	60	59.4	17014	PASS
95	95	100	100	100.0	28666	PASS
96	95	5	9	6.9	1981	PASS
173	174	0.00	2	0.5	119	PASS
174	95	50	100	86.5	24808	PASS
175	174	5	9	8.2	2031	PASS
176	174	95	101	95.4	23666	PASS
177	176	5	9	7.2	1714	PASS

8M404577.D BFB.M Tue May 12 16:07:11 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\052315\8M404876.D          Vial: 1
Acq On    : 23 May 2015  16:34                        Operator: FJB
Sample    : WG524935-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD70032                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
```

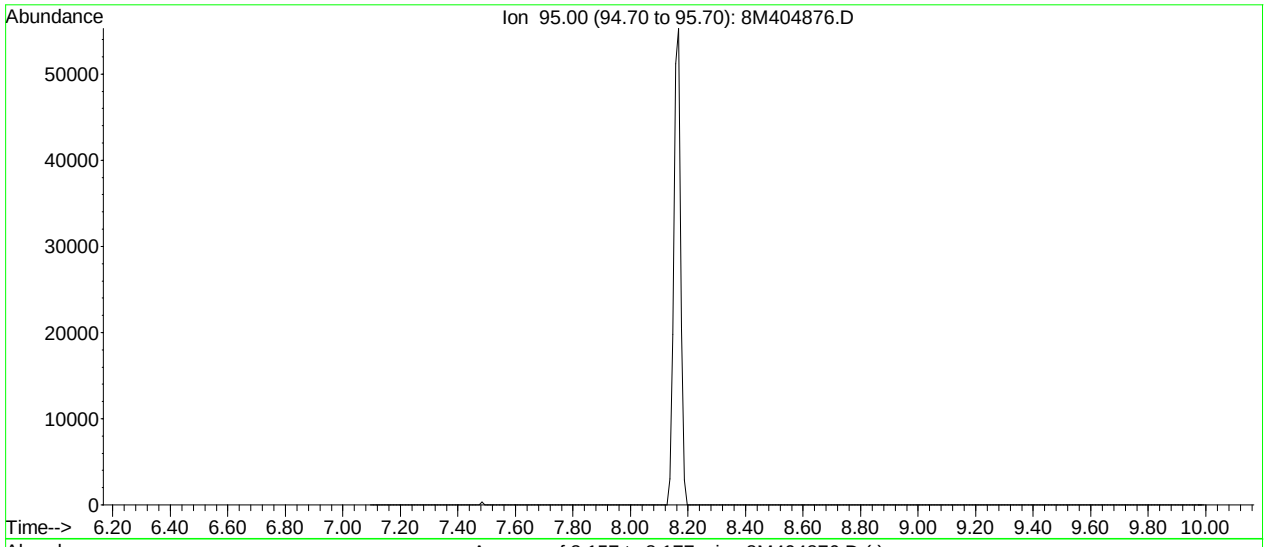

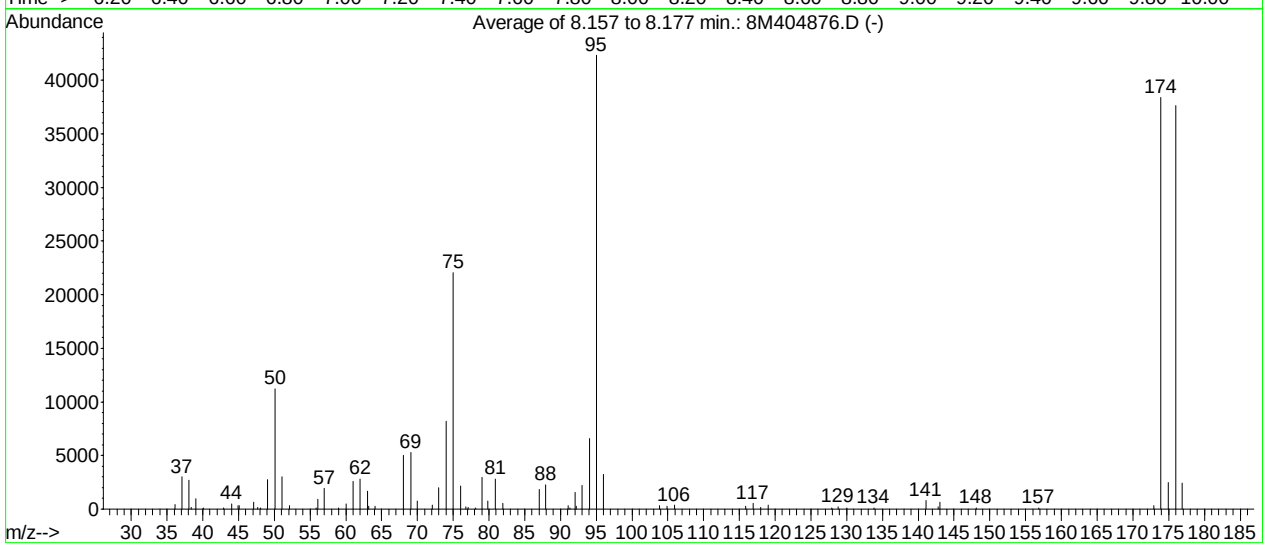

AutoFind: Scans 105, 106, 107; Background Corrected with Scan 100

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	26.6	11234	PASS
75	95	30	60	52.1	22062	PASS
95	95	100	100	100.0	42312	PASS
96	95	5	9	7.7	3241	PASS
173	174	0.00	2	0.9	335	PASS
174	95	50	100	90.7	38394	PASS
175	174	5	9	6.5	2485	PASS
176	174	95	101	98.0	37610	PASS
177	176	5	9	6.5	2436	PASS

8M404876.D 8260WT.M Sat May 23 17:24:17 2015

BFB

Data File : C:\MSDCHEM\2\DATA\052615\8M404905.D Vial: 2
Acq On : 26 May 2015 11:26 Operator: TMB
Sample : WG525055-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD70707 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

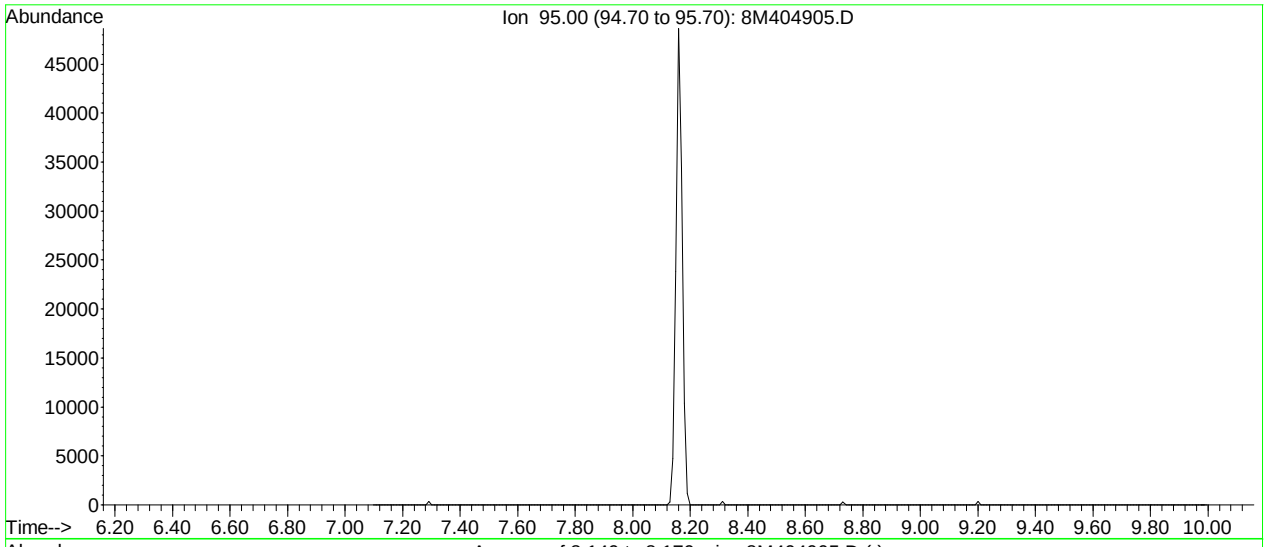

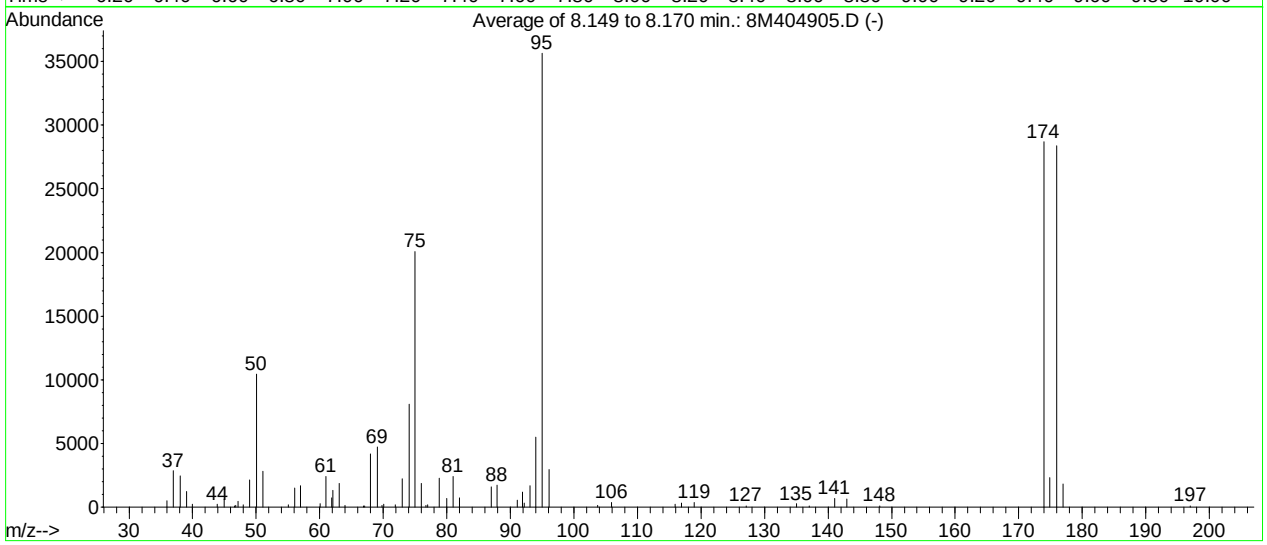

AutoFind: Scans 104, 105, 106; Background Corrected with Scan 99

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	29.4	10466	PASS
75	95	30	60	56.4	20089	PASS
95	95	100	100	100.0	35637	PASS
96	95	5	9	8.3	2974	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	80.5	28683	PASS
175	174	5	9	8.2	2341	PASS
176	174	95	101	98.9	28379	PASS
177	176	5	9	6.4	1829	PASS

8M404905.D BFB.M Tue May 26 11:41:17 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404879.D Vial: 4
Acq On : 23 May 2015 17:53 Operator: FJB
Sample : WG524936-01 VBLK0523 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 08:18:21 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	689774	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	546576	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	292737	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	169850	24.8432 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.36%		
43) 1,2-Dichloroethane-d4	10.35	65	154075	23.9805 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.92%		
58) Toluene-d8	12.73	98	626549	24.5649 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.24%		
80) p-Bromofluorobenzene	16.12	95	236140	23.7101 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.84%		

Target Compounds

					Qvalue
5) 1,3-Butadiene	3.93	54	375	Below Cal #	58
13) Acetone	6.28	43	592	0.6010 ug/L #	36
56) Dimethyl Disulfide	12.74	79	202	3.0550 ug/L #	1
81) 1,2,3-Trichloropropane	16.12	110	398	0.2641 ug/L #	1
97) 1,2-Dibromo-3-Chloropropan	19.25	75	222	0.2500 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M404879.D 8260WT.M Tue May 26 08:18:21 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404879.D Vial: 4
Acq On : 23 May 2015 17:53 Operator: FJB
Sample : WG524936-01 VBLK0523 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

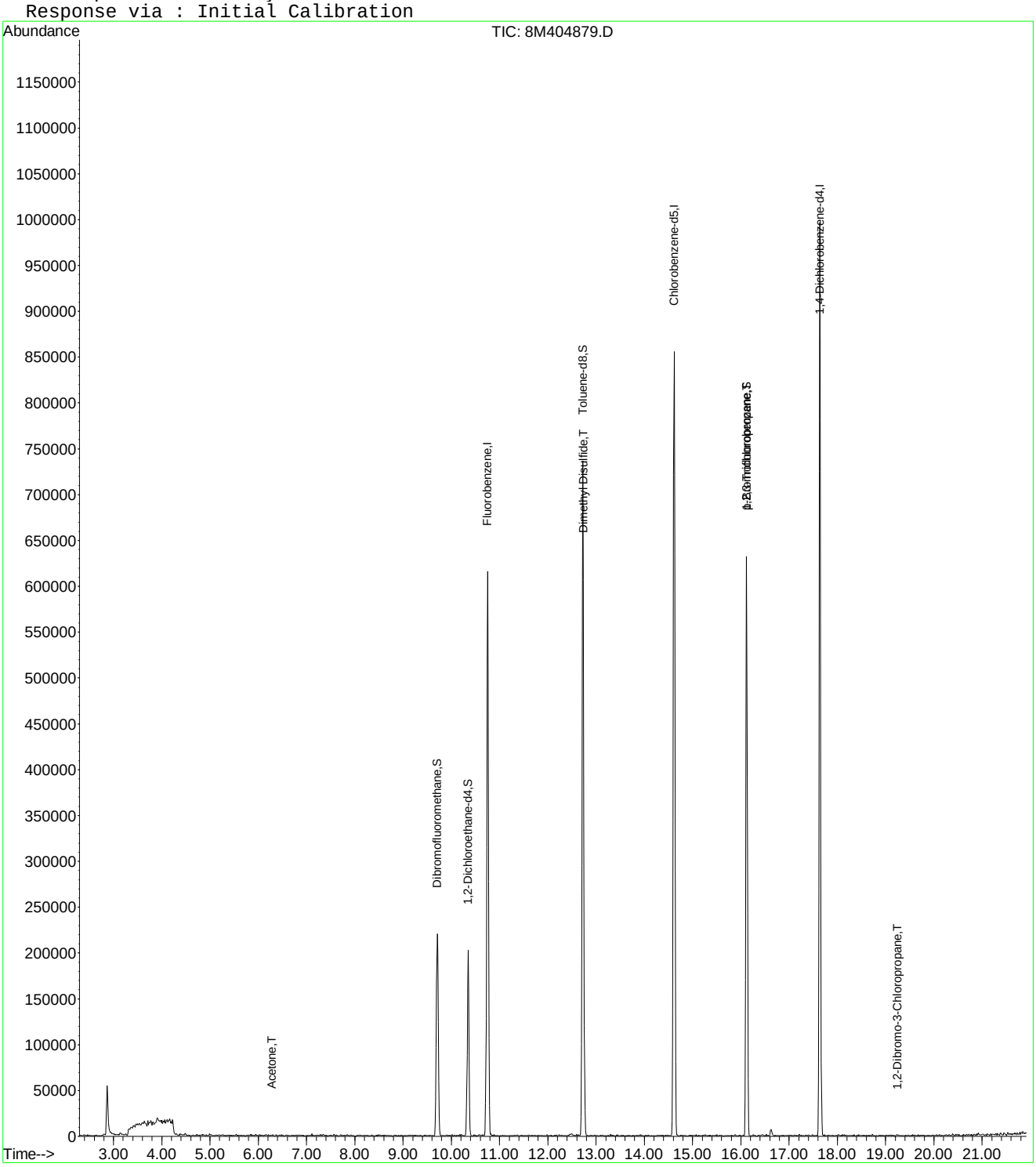

8M404879.D 8260WT.M Tue May 26 08:18:21 2015 Page 2

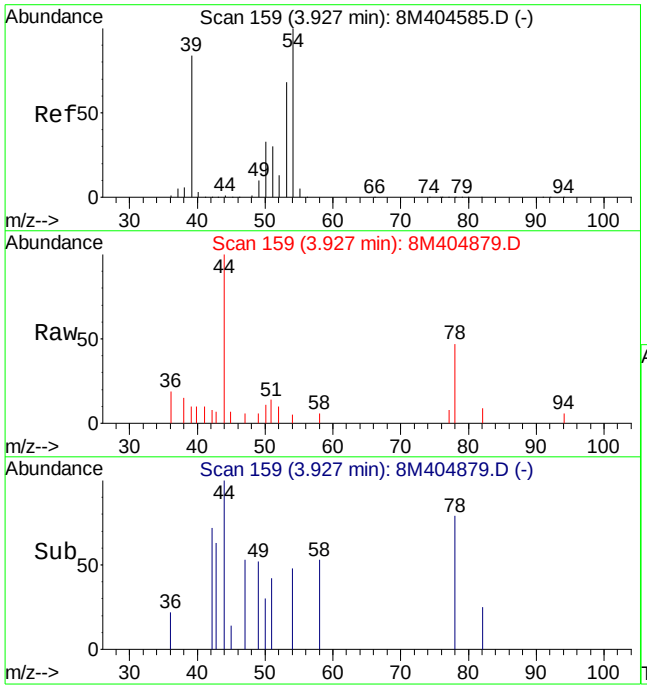

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.93 min Scan# 159
Delta R.T. 0.02 min
Lab File: 8M404879.D
Acq: 23 May 2015 17:53

Tgt Ion: 54 Resp: 375

Ion	Ratio	Lower	Upper
54	100		
39	151.2	50.7	118.3#
53	65.6	40.4	94.4

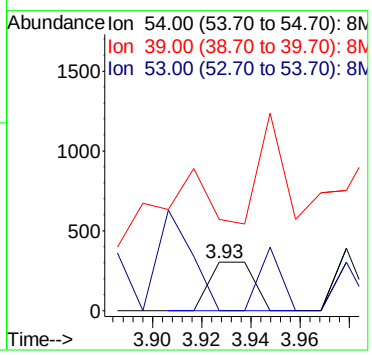

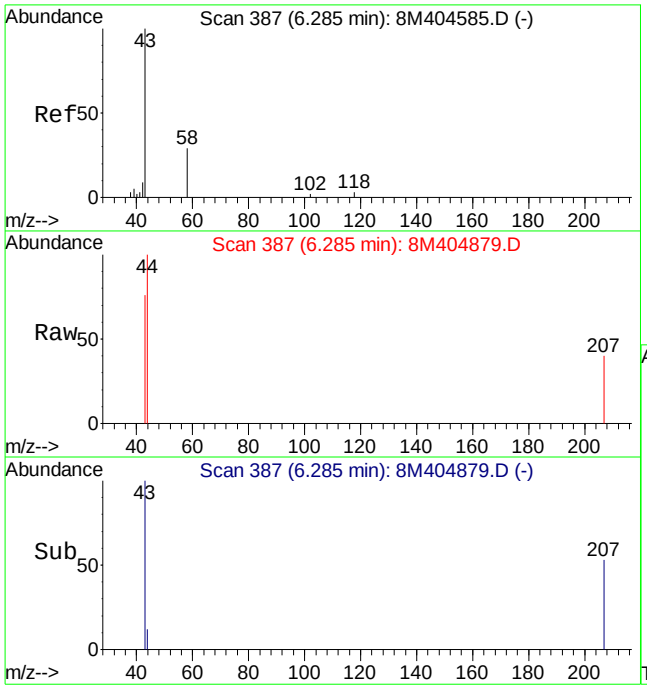

#13
Acetone
Concen: 0.60 ug/L
RT: 6.28 min Scan# 387
Delta R.T. -0.00 min
Lab File: 8M404879.D
Acq: 23 May 2015 17:53

Tgt Ion: 43 Resp: 592

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

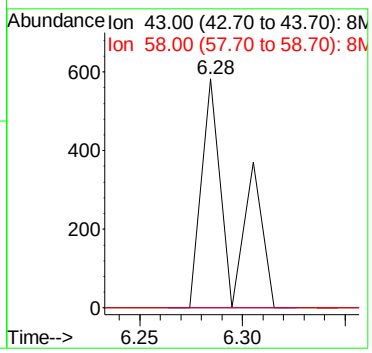

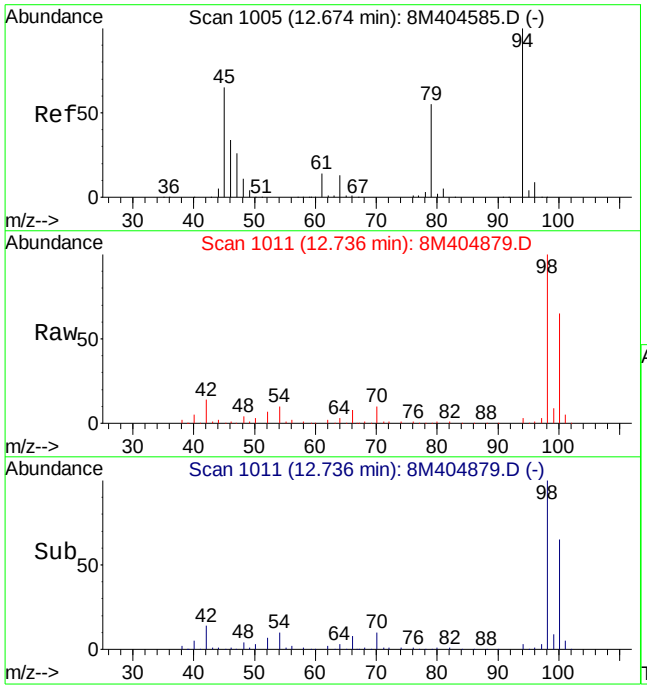

#56
Dimethyl Disulfide
Concen: 3.06 ug/L
RT: 12.74 min Scan# 1011
Delta R.T. 0.07 min
Lab File: 8M404879.D
Acq: 23 May 2015 17:53

Tgt Ion: 79 Resp: 202

Ion	Ratio	Lower	Upper
79	100		
94	8469.8	110.5	257.9#

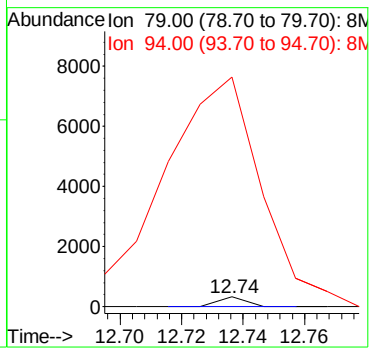

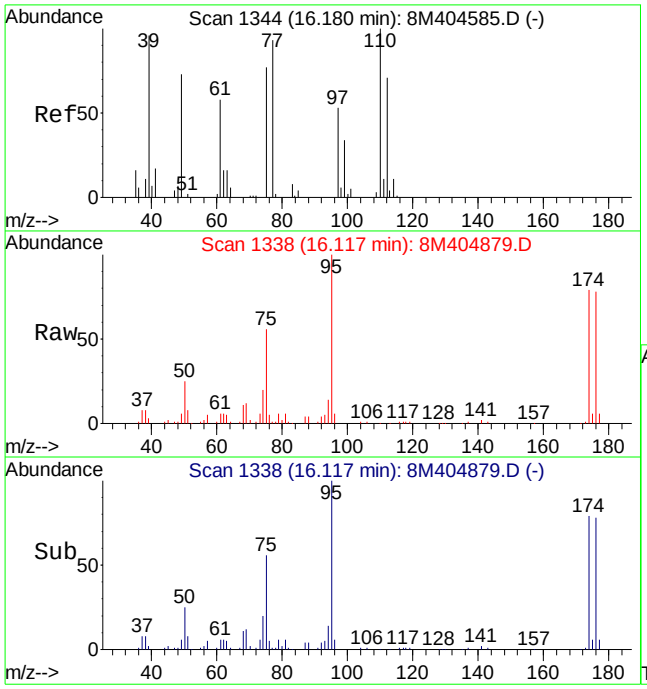

#81
1,2,3-Trichloropropane
Concen: 0.26 ug/L
RT: 16.12 min Scan# 1338
Delta R.T. -0.07 min
Lab File: 8M404879.D
Acq: 23 May 2015 17:53

Tgt Ion:110 Resp: 398

Ion	Ratio	Lower	Upper
110	100		
75	33570.6	115.6	269.6#
97	52.5	36.7	85.7

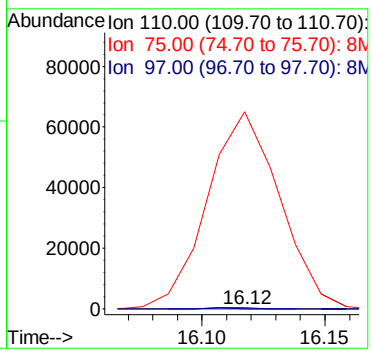

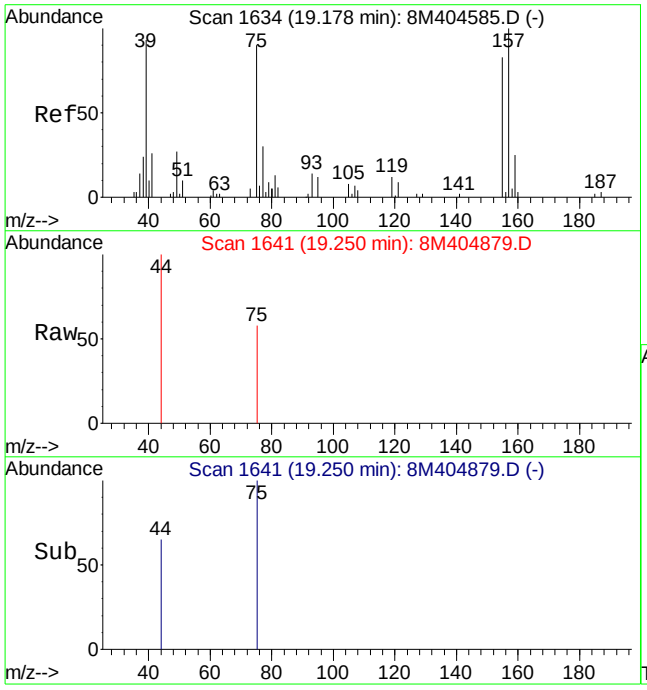

#97
1,2-Dibromo-3-Chloropropane
Concen: 0.25 ug/L
RT: 19.25 min Scan# 1641
Delta R.T. 0.08 min
Lab File: 8M404879.D
Acq: 23 May 2015 17:53

Tgt Ion: 75 Resp: 222

Ion	Ratio	Lower	Upper
75	100		
157	0.0	74.8	174.6#

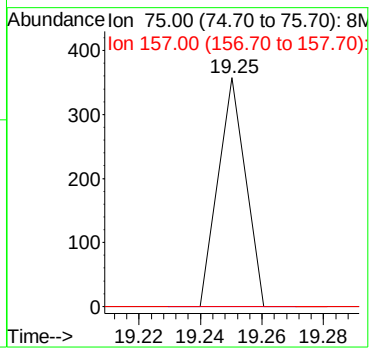

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052615\8M404908.D Vial: 4
Acq On : 26 May 2015 12:48 Operator: TMB
Sample : WG525056-01 VBLK0526 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 27 08:48:59 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	711532	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	574760	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	303161	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	176215	24.9860 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.96%		
43) 1,2-Dichloroethane-d4	10.35	65	159812	24.1128 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.44%		
58) Toluene-d8	12.73	98	650102	24.2385 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.96%		
80) p-Bromofluorobenzene	16.12	95	245758	23.8273 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.32%		

Target Compounds

					Qvalue
13) Acetone	6.28	43	248	0.2441 ug/L #	36
19) Methylene Chloride	7.32	84	1795	0.2519 ug/L	73
36) Tetrahydrofuran	9.68	42	211	0.1892 ug/L #	32
56) Dimethyl Disulfide	12.72	79	259	3.0625 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M404908.D 8260WT.M Wed May 27 08:49:00 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052615\8M404908.D Vial: 4
Acq On : 26 May 2015 12:48 Operator: TMB
Sample : WG525056-01 VBLK0526 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 27 8:48 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

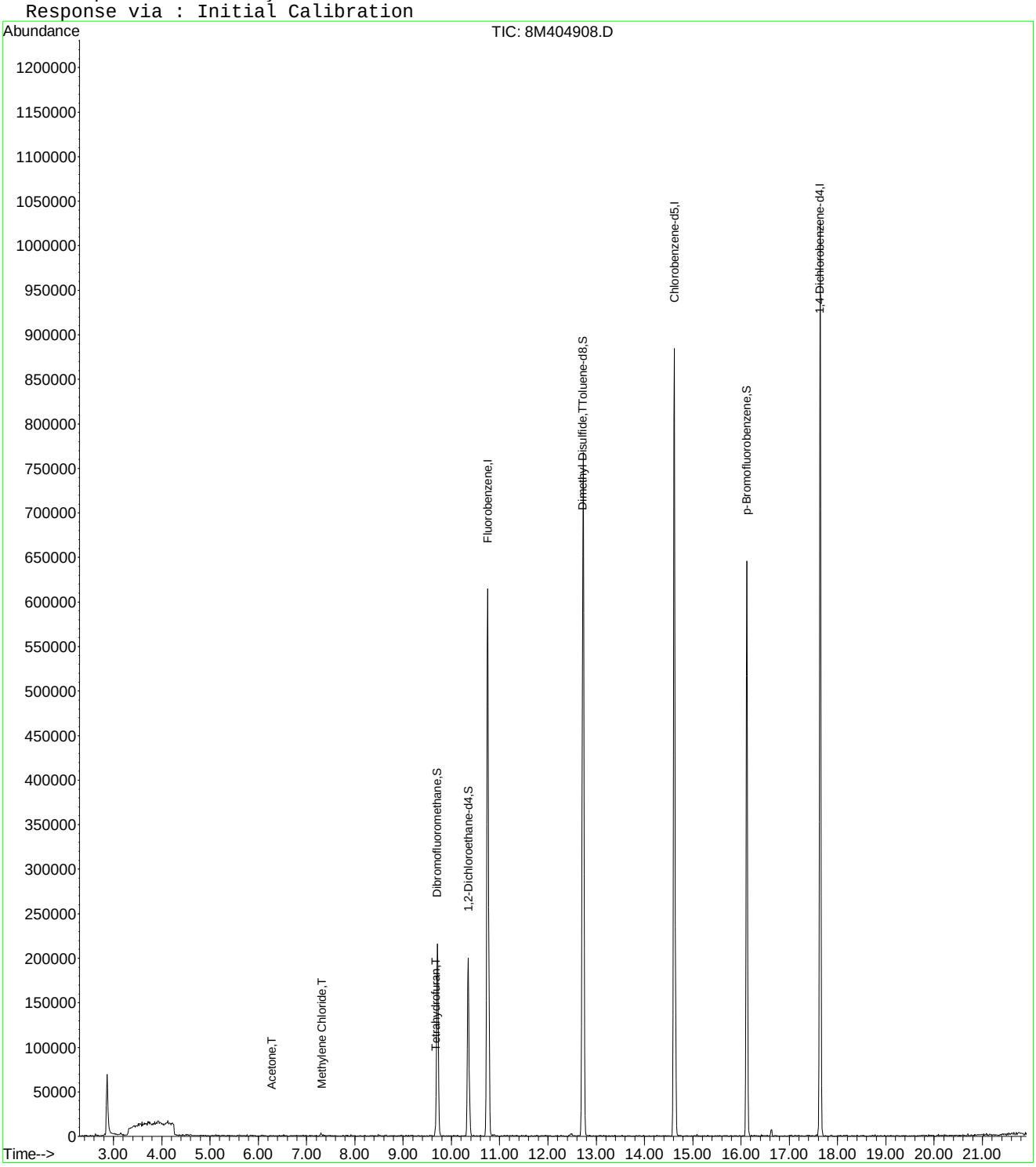

8M404908.D 8260WT.M Wed May 27 08:49:00 2015 Page 2

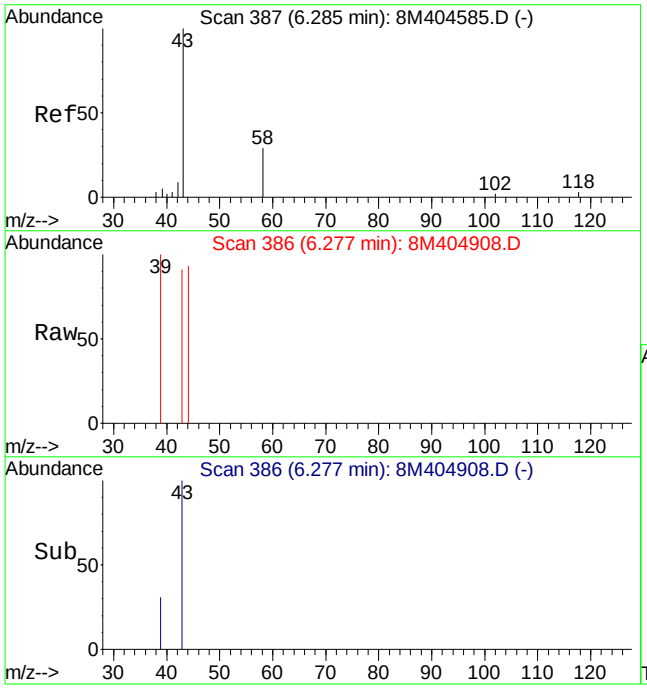

#13
Acetone
Concen: 0.24 ug/L
RT: 6.28 min Scan# 386
Delta R.T. -0.01 min
Lab File: 8M404908.D
Acq: 26 May 2015 12:48

Tgt Ion: 43 Resp: 248

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

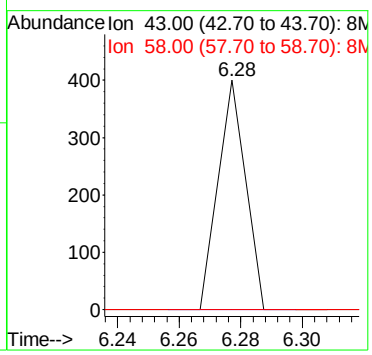

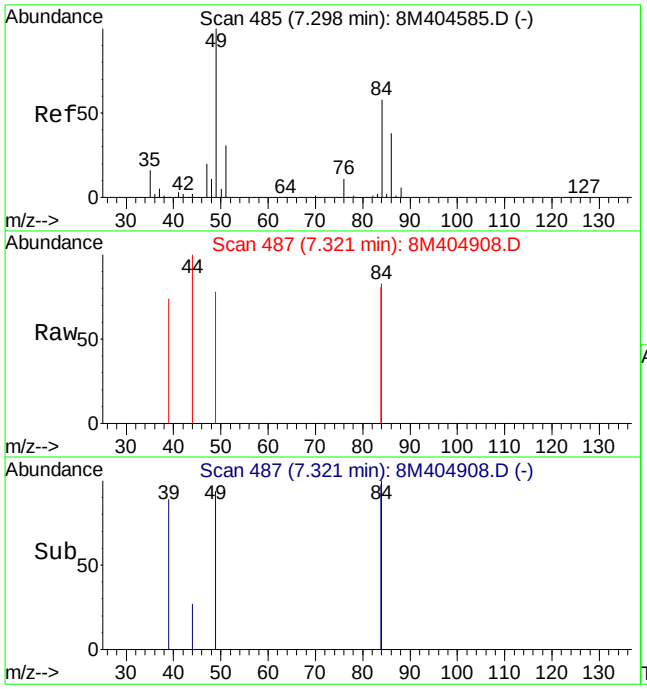

#19
Methylene Chloride
Concen: 0.25 ug/L
RT: 7.32 min Scan# 487
Delta R.T. 0.02 min
Lab File: 8M404908.D
Acq: 26 May 2015 12:48

Tgt Ion: 84 Resp: 1795

Ion	Ratio	Lower	Upper
84	100		
49	89.5	71.5	166.7

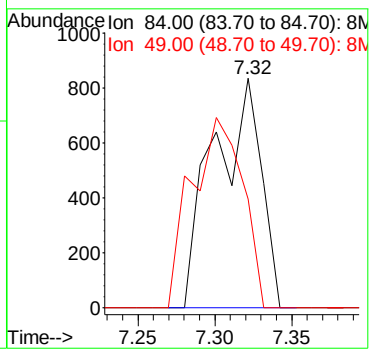

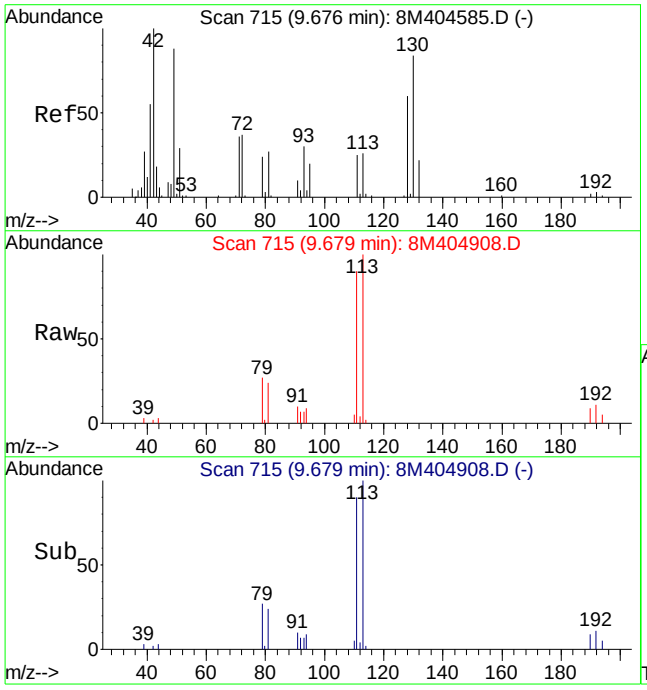

#36
Tetrahydrofuran
Concen: 0.19 ug/L
RT: 9.68 min Scan# 715
Delta R.T. -0.00 min
Lab File: 8M404908.D
Acq: 26 May 2015 12:48

Tgt Ion: 42 Resp: 211

Ion	Ratio	Lower	Upper
42	100		
72	0.0	27.5	64.3#
71	0.0	25.4	59.2#

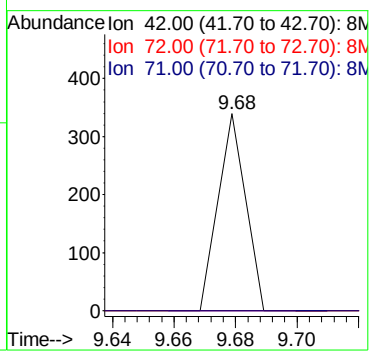

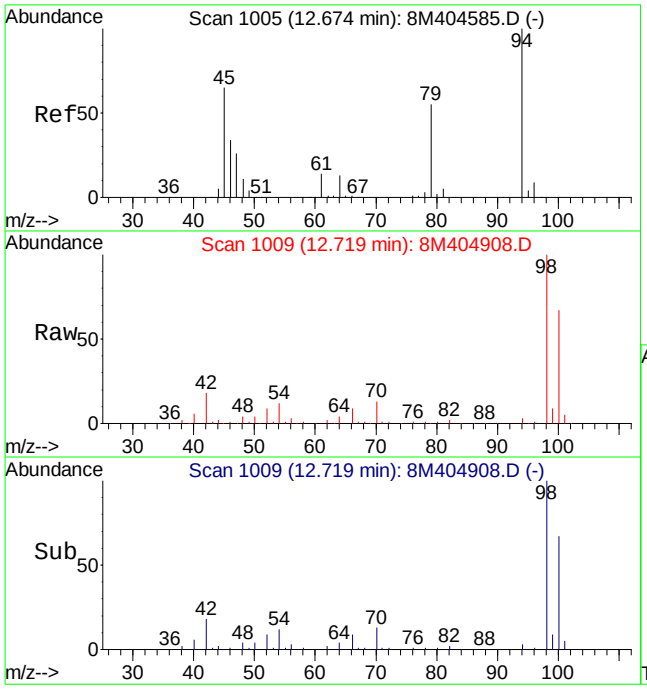

#56
Dimethyl Disulfide
Concen: 3.06 ug/L
RT: 12.72 min Scan# 1009
Delta R.T. 0.05 min
Lab File: 8M404908.D
Acq: 26 May 2015 12:48

Tgt Ion: 79 Resp: 259

Ion	Ratio	Lower	Upper
79	100		
94	6471.0	110.5	257.9#

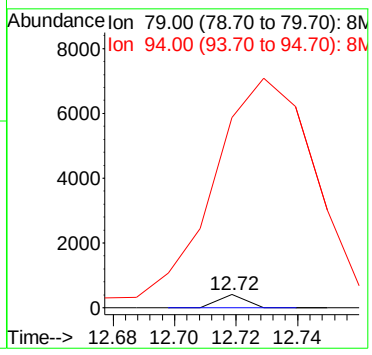

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052315\8M404880.D Vial: 5
Acq On : 23 May 2015 18:22 Operator: FJB
Sample : WG524936-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 18:44:08 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	715700	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	581225	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	334709	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	176420	24.8694 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.48%		
43) 1,2-Dichloroethane-d4	10.35	65	163762	24.5649 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.24%		
58) Toluene-d8	12.73	98	652213	24.0467 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.20%		
80) p-Bromofluorobenzene	16.12	95	265178	23.2869 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.16%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	264927	23.8844 ug/L	100
3) Chloromethane	3.65	50	451345	20.3825 ug/L	96
4) Vinyl Chloride	3.88	62	482539	23.1257 ug/L	95
5) 1,3-Butadiene	3.92	54	355631	17.6697 ug/L	95
6) Bromomethane	4.78	94	117296	24.7460 ug/L	99
7) Chloroethane	4.93	64	119025	20.9618 ug/L	90
8) Trichlorofluoromethane	5.42	101	255593	19.5059 ug/L	98
9) Diethyl ether	5.94	59	495342	98.6014 ug/L	89
10) Isoprene	5.99	67	218600	22.4988 ug/L	80
11) Acrolein	6.18	56	32241	105.1331 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	142392	19.2532 ug/L	94
13) Acetone	6.29	43	23625	23.1138 ug/L	84
14) 1,1-Dichloroethene	6.51	61	221881	17.6401 ug/L	86
15) Tert-Butyl Alcohol	6.63	59	48779	177.3558 ug/L	95
16) Dimethyl Sulfide	6.78	62	199452	27.1993 ug/L	77
17) Iodomethane	7.04	142	72184	15.1034 ug/L	84
18) Methyl acetate	7.04	43	67174	18.4170 ug/L	91
19) Methylene Chloride	7.30	84	146342	20.4153 ug/L #	56
20) Carbon Disulfide	7.34	76	436116	18.8475 ug/L	96
21) Acrylonitrile	7.47	53	34392	21.1397 ug/L	95
22) Methyl Tert Butyl Ether	7.52	73	287611	20.8270 ug/L	96
23) trans-1,2-Dichloroethene	7.74	61	225503	18.7794 ug/L	88
24) n-Hexane	7.83	57	216373	17.8192 ug/L	93
25) Diisopropyl ether	8.17	45	2841430	106.8249 ug/L	91
26) Vinyl Acetate	8.34	43	222713	25.3617 ug/L	91
27) 1,1-Dichloroethane	8.37	63	279300	19.2675 ug/L	94
28) Ethyl-Tert-Butyl ether	8.75	59	2214797	106.1208 ug/L	93
29) 2-Butanone	8.92	43	38911	23.3653 ug/L	86
30) Propionitrile	9.03	54	56180	105.8441 ug/L	99
31) 2,2-Dichloropropane	9.14	77	225166	18.8267 ug/L	98
32) cis-1,2-Dichloroethene	9.21	96	163584	19.8344 ug/L	80
33) Chloroform	9.42	83	269059	19.9825 ug/L	96
34) 1-Bromopropane	9.56	122	32958	22.2696 ug/L	99
35) Bromochloromethane	9.65	130	85670	20.3692 ug/L #	71
36) Tetrahydrofuran	9.67	42	119503	106.5368 ug/L	85
38) 1,1,1-Trichloroethane	9.96	97	243313	19.9062 ug/L	99
39) Cyclohexane	9.99	56	286368	19.3316 ug/L	86
40) 1,1-Dichloropropene	10.15	75	201250	18.9243 ug/L	97
41) Tert-Amyl-Methyl ether	10.26	73	1630333	106.4278 ug/L	97
42) Carbon Tetrachloride	10.29	117	228616	20.5820 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M404880.D 8260WT.M Sat May 23 18:44:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052315\8M404880.D Vial: 5
Acq On : 23 May 2015 18:22 Operator: FJB
Sample : WG524936-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 18:44:08 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	193980	20.0961 ug/L		91
46)	Benzene	10.50	78	598768	20.9025 ug/L		98
47)	Trichloroethene	11.26	130	153457	20.2524 ug/L		97
48)	Methylcyclohexane	11.34	83	241871	19.6666 ug/L		90
49)	1,2-Dichloropropane	11.48	63	166834	20.7936 ug/L		97
50)	Bromodichloromethane	11.77	83	208714	21.1293 ug/L		95
51)	1,4-Dioxane	11.76	88	5107	174.9812 ug/L		85
52)	Dibromomethane	11.86	93	77413	20.4869 ug/L		90
53)	2-Chloroethyl Vinyl Ether	12.07	63	57807	29.3121 ug/L		92
54)	4-Methyl-2-Pentanone	12.10	58	34123	24.7382 ug/L		88
55)	cis-1,3-Dichloropropene	12.41	75	237613	22.0057 ug/L		96
56)	Dimethyl Disulfide	12.67	79	127190	21.7180 ug/L		90
59)	Toluene	12.83	91	643426	18.6632 ug/L		84
60)	Ethyl Methacrylate	12.91	69	128180	20.8958 ug/L		74
62)	trans-1,3-Dichloropropene	13.01	75	189133	18.3026 ug/L		96
63)	1,1,2-Trichloroethane	13.21	97	102260	19.0916 ug/L		100
64)	2-Hexanone	13.15	58	30399	20.6098 ug/L	#	83
65)	1,3-Dichloropropane	13.52	76	183004	19.4899 ug/L		83
66)	Tetrachloroethene	13.65	164	127513	17.5239 ug/L		89
67)	Dibromochloromethane	13.91	129	137673	19.3151 ug/L		98
68)	1,2-Dibromoethane	14.16	107	98682	19.2991 ug/L		99
69)	1-Chlorohexane	14.25	91	213052	18.0671 ug/L		85
70)	Chlorobenzene	14.67	112	412627	17.7329 ug/L		91
71)	1,1,1,2-Tetrachloroethane	14.70	131	154137	18.4542 ug/L		97
72)	Ethylbenzene	14.69	106	237335	17.0291 ug/L	#	27
73)	m-,p-Xylene	14.78	106	571226	36.2412 ug/L	#	45
74)	o-Xylene	15.34	106	266495	17.1089 ug/L		62
75)	Styrene	15.38	104	478564	19.3946 ug/L		84
76)	Bromoform	15.88	173	81667	18.4867 ug/L		98
77)	Isopropylbenzene	15.77	105	690611	18.1287 ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.98	83	118396	18.6164 ug/L		97
81)	1,2,3-Trichloropropane	16.18	110	31806	18.4596 ug/L		87
82)	trans-1,4-Dichloro-2-Buten	16.23	53	40364	19.1189 ug/L		69
83)	n-Propylbenzene	16.27	91	860738	16.9964 ug/L	#	72
84)	Bromobenzene	16.41	156	174715	17.3722 ug/L		90
85)	1,3,5-Trimethylbenzene	16.47	105	649351	18.7400 ug/L		80
86)	2-Chlorotoluene	16.55	91	543448	15.9006 ug/L		80
87)	4-Chlorotoluene	16.59	91	494918	18.1043 ug/L		77
88)	a-Methylstyrene	16.87	118	368681	18.6833 ug/L		90
89)	tert-Butylbenzene	16.94	134	123991	16.0960 ug/L		61
90)	1,2,4-Trimethylbenzene	16.99	105	665997	18.6950 ug/L		76
91)	sec-Butylbenzene	17.20	105	752125	17.4090 ug/L	#	76
92)	p-Isopropyltoluene	17.36	119	626761	17.1114 ug/L		76
93)	1,3-Dichlorobenzene	17.56	146	346411	16.9956 ug/L		91
94)	1,4-Dichlorobenzene	17.68	146	372431	17.9981 ug/L		93
95)	n-Butylbenzene	17.89	91	652122	18.2260 ug/L		78
96)	1,2-Dichlorobenzene	18.18	146	307382	17.3787 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.17	75	19553	19.2611 ug/L		74
98)	1,2,4-Trichlorobenzene	20.32	180	240016	18.0134 ug/L		98
99)	Hexachlorobutadiene	20.47	225	107619	15.4603 ug/L		95
100)	Naphthalene	20.69	128	377722	21.1375 ug/L		92
101)	1,2,3-Trichlorobenzene	21.00	180	210210	18.6175 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M404880.D 8260WT.M Sat May 23 18:44:08 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052315\8M404880.D Vial: 5
Acq On : 23 May 2015 18:22 Operator: FJB
Sample : WG524936-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 18:44 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

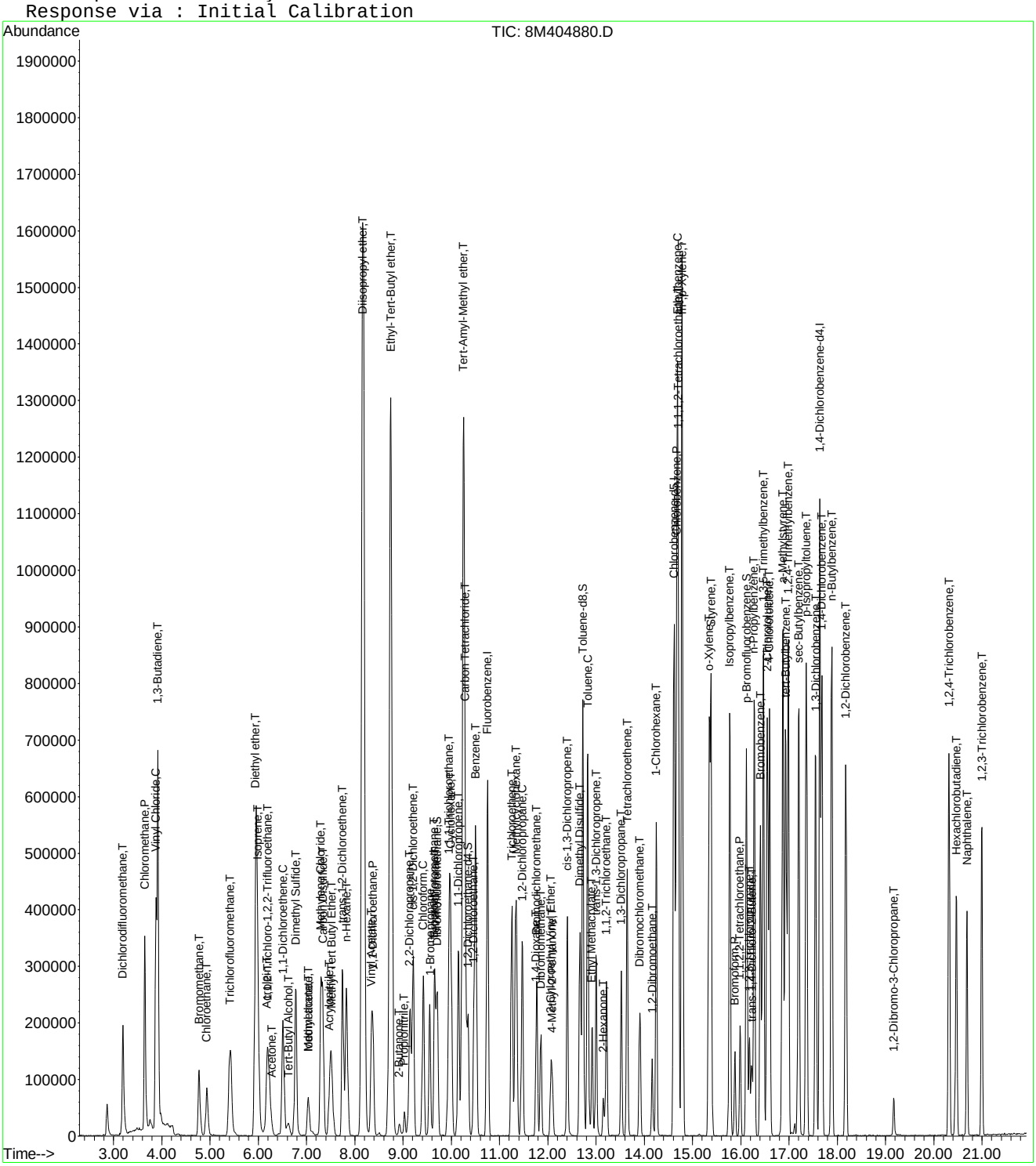

8M404880.D 8260WT.M Sat May 23 18:44:08 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052615\8M404909.D Vial: 5
Acq On : 26 May 2015 13:17 Operator: TMB
Sample : WG525056-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 13:39:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	721452	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	581966	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	353506	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	181844	25.4296 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.72%		
43) 1,2-Dichloroethane-d4	10.35	65	156334	23.2637 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.04%		
58) Toluene-d8	12.73	98	657857	24.2239 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.88%		
80) p-Bromofluorobenzene	16.12	95	266856	22.1882 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 88.76%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	271685	24.2984 ug/L	97
3) Chloromethane	3.65	50	475222	21.2896 ug/L	97
4) Vinyl Chloride	3.88	62	495421	23.5538 ug/L	94
5) 1,3-Butadiene	3.92	54	355362	17.5084 ug/L	96
6) Bromomethane	4.78	94	110138	23.1446 ug/L	97
7) Chloroethane	4.94	64	130828	22.8567 ug/L	90
8) Trichlorofluoromethane	5.43	101	270148	20.4523 ug/L	98
9) Diethyl ether	5.95	59	508351	100.3842 ug/L	90
10) Isoprene	6.00	67	221266	22.5916 ug/L	78
11) Acrolein	6.20	56	28034	97.7903 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	152746	20.4885 ug/L	94
13) Acetone	6.29	43	23776	23.0761 ug/L	88
14) 1,1-Dichloroethene	6.52	61	245956	19.3983 ug/L	85
15) Tert-Butyl Alcohol	6.62	59	53807	194.0774 ug/L	95
16) Dimethyl Sulfide	6.78	62	195237	26.4123 ug/L	73
17) Iodomethane	7.03	142	83354	17.1408 ug/L	81
18) Methyl acetate	7.05	43	62571	17.0182 ug/L	95
19) Methylene Chloride	7.30	84	159862	22.1236 ug/L	60
20) Carbon Disulfide	7.34	76	447833	19.1995 ug/L	94
21) Acrylonitrile	7.49	53	34430	20.9943 ug/L	92
22) Methyl Tert Butyl Ether	7.52	73	294495	21.1555 ug/L	96
23) trans-1,2-Dichloroethene	7.76	61	249448	20.6079 ug/L	85
24) n-Hexane	7.83	57	223463	18.2564 ug/L	94
25) Diisopropyl ether	8.17	45	2822495	105.2670 ug/L	92
26) Vinyl Acetate	8.35	43	217599	24.5818 ug/L	91
27) 1,1-Dichloroethane	8.38	63	292814	20.0387 ug/L	95
28) Ethyl-Tert-Butyl ether	8.75	59	2222528	105.6422 ug/L	94
29) 2-Butanone	8.92	43	38773	23.0968 ug/L	90
30) Propionitrile	9.04	54	56387	105.3871 ug/L	97
31) 2,2-Dichloropropane	9.15	77	240128	19.9177 ug/L	98
32) cis-1,2-Dichloroethene	9.21	96	173580	20.8786 ug/L	80
33) Chloroform	9.42	83	287616	21.1904 ug/L	96
34) 1-Bromopropane	9.57	122	34875	23.3536 ug/L	99
35) Bromochloromethane	9.66	130	89921	21.2095 ug/L	73
36) Tetrahydrofuran	9.68	42	117277	103.7188 ug/L	84
38) 1,1,1-Trichloroethane	9.96	97	270942	21.9898 ug/L	94
39) Cyclohexane	9.99	56	294150	19.6986 ug/L	84
40) 1,1-Dichloropropene	10.16	75	224207	20.9150 ug/L	94
41) Tert-Amyl-Methyl ether	10.26	73	1644661	106.5071 ug/L	98
42) Carbon Tetrachloride	10.30	117	242575	21.6646 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M404909.D 8260WT.M Tue May 26 13:39:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052615\8M404909.D Vial: 5
Acq On : 26 May 2015 13:17 Operator: TMB
Sample : WG525056-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 13:39:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	202132	20.7736	ug/L		91
46)	Benzene	10.51	78	638113	22.0984	ug/L		98
47)	Trichloroethene	11.26	130	169220	22.1547	ug/L		97
48)	Methylcyclohexane	11.34	83	248418	20.0379	ug/L		92
49)	1,2-Dichloropropane	11.47	63	171542	21.2099	ug/L		100
50)	Bromodichloromethane	11.78	83	210874	21.1777	ug/L		96
51)	1,4-Dioxane	11.76	88	6677	212.6288	ug/L		91
52)	Dibromomethane	11.86	93	82073	21.5470	ug/L		91
53)	2-Chloroethyl Vinyl Ether	12.07	63	69588	35.1877	ug/L		93
54)	4-Methyl-2-Pentanone	12.10	58	32585	23.4349	ug/L		93
55)	cis-1,3-Dichloropropene	12.41	75	252030	23.1548	ug/L		95
56)	Dimethyl Disulfide	12.67	79	121186	20.6936	ug/L		87
59)	Toluene	12.83	91	687005	19.9019	ug/L		84
60)	Ethyl Methacrylate	12.93	69	125406	20.4176	ug/L		76
62)	trans-1,3-Dichloropropene	13.00	75	198754	19.2091	ug/L		95
63)	1,1,2-Trichloroethane	13.22	97	107785	20.0975	ug/L		98
64)	2-Hexanone	13.16	58	28147	19.0587	ug/L		69
65)	1,3-Dichloropropane	13.53	76	185529	19.7337	ug/L		82
66)	Tetrachloroethene	13.65	164	141894	19.4755	ug/L		93
67)	Dibromochloromethane	13.91	129	142705	19.9956	ug/L		100
68)	1,2-Dibromoethane	14.17	107	102137	19.9494	ug/L		97
69)	1-Chlorohexane	14.25	91	224930	19.0500	ug/L		86
70)	Chlorobenzene	14.67	112	435718	18.7014	ug/L		92
71)	1,1,1,2-Tetrachloroethane	14.69	131	162877	19.4758	ug/L		100
72)	Ethylbenzene	14.69	106	258594	18.5308	ug/L	#	28
73)	m-,p-Xylene	14.79	106	619241	39.2374	ug/L	#	46
74)	o-Xylene	15.35	106	286566	18.3740	ug/L		62
75)	Styrene	15.39	104	512135	20.7286	ug/L		84
76)	Bromoform	15.88	173	88202	19.8791	ug/L		95
77)	Isopropylbenzene	15.77	105	746674	19.5754	ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.99	83	123343	18.3630	ug/L		94
81)	1,2,3-Trichloropropane	16.18	110	34938	19.1991	ug/L		84
82)	trans-1,4-Dichloro-2-Buten	16.22	53	34905	15.6541	ug/L		88
83)	n-Propylbenzene	16.28	91	907983	16.9760	ug/L	#	72
84)	Bromobenzene	16.41	156	188058	17.7047	ug/L		91
85)	1,3,5-Trimethylbenzene	16.46	105	703057	19.2111	ug/L		80
86)	2-Chlorotoluene	16.56	91	592334	16.4094	ug/L		80
87)	4-Chlorotoluene	16.60	91	511675	17.7220	ug/L		77
88)	a-Methylstyrene	16.87	118	384229	18.4359	ug/L		90
89)	tert-Butylbenzene	16.93	134	134827	16.5720	ug/L		58
90)	1,2,4-Trimethylbenzene	16.98	105	713782	18.9710	ug/L		76
91)	sec-Butylbenzene	17.20	105	823460	18.0467	ug/L		77
92)	p-Isopropyltoluene	17.36	119	688663	17.8017	ug/L		77
93)	1,3-Dichlorobenzene	17.55	146	373537	17.3519	ug/L		90
94)	1,4-Dichlorobenzene	17.68	146	402188	18.4027	ug/L		92
95)	n-Butylbenzene	17.89	91	695049	18.3929	ug/L		80
96)	1,2-Dichlorobenzene	18.18	146	333850	17.8715	ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.17	75	20152	18.7956	ug/L		84
98)	1,2,4-Trichlorobenzene	20.32	180	252933	17.9735	ug/L		99
99)	Hexachlorobutadiene	20.46	225	114554	15.5815	ug/L		94
100)	Naphthalene	20.69	128	401999	21.2999	ug/L		92
101)	1,2,3-Trichlorobenzene	21.00	180	223225	18.7190	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052615\8M404909.D Vial: 5
Acq On : 26 May 2015 13:17 Operator: TMB
Sample : WG525056-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 13:39 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

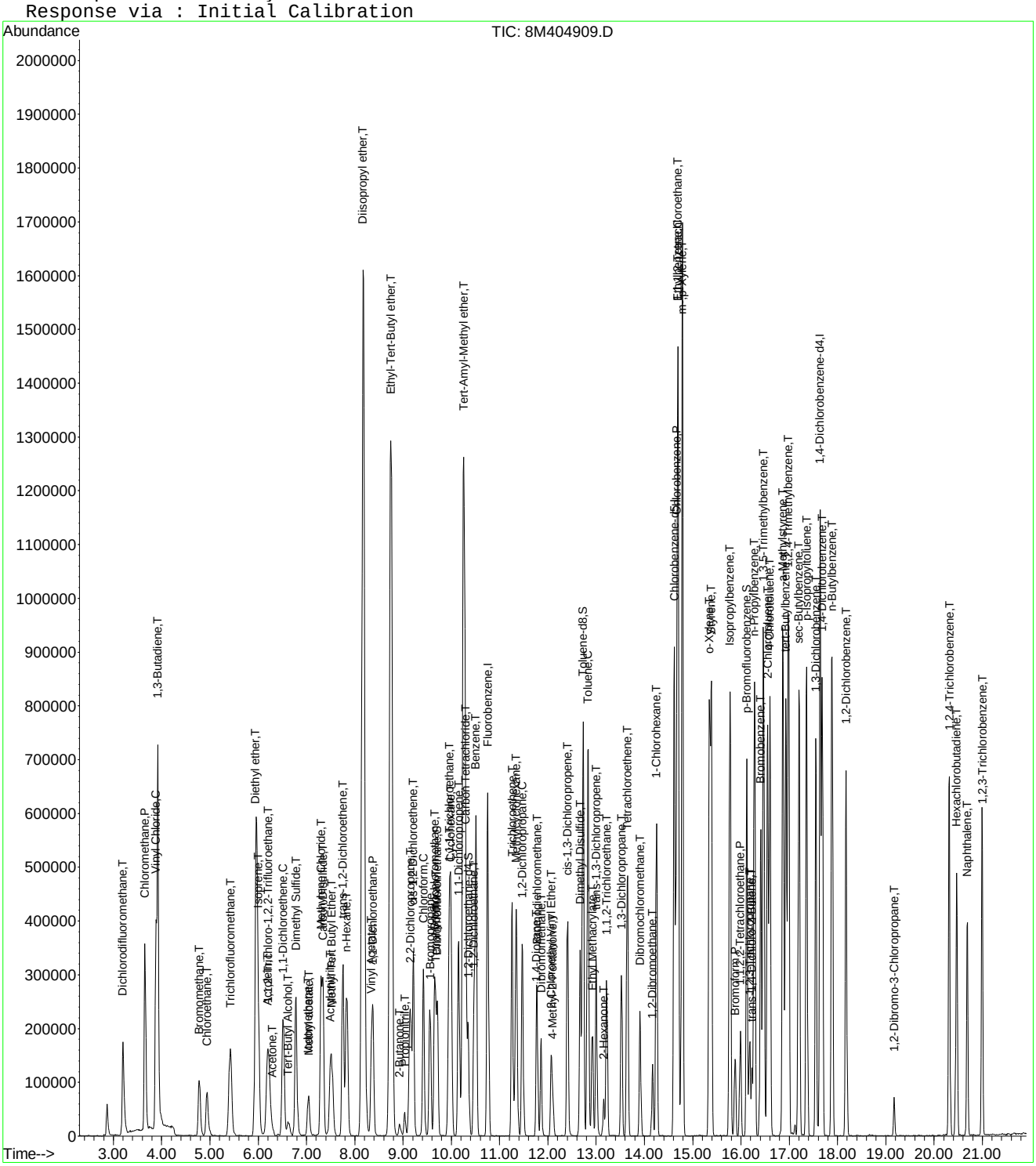

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052315\8M404881.D Vial: 6
Acq On : 23 May 2015 18:50 Operator: FJB
Sample : WG524936-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 19:12:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	764250	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	614188	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	346374	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	188522	24.8871 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.56%		
43) 1,2-Dichloroethane-d4	10.35	65	168427	23.6597 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.64%		
58) Toluene-d8	12.73	98	693931	24.2117 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.84%		
80) p-Bromofluorobenzene	16.12	95	272372	23.1131 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	250935	21.1858 ug/L	98
3) Chloromethane	3.65	50	443554	18.7581 ug/L	96
4) Vinyl Chloride	3.87	62	444352	19.9428 ug/L	94
5) 1,3-Butadiene	3.92	54	314455	14.5081 ug/L	94
6) Bromomethane	4.77	94	118785	23.5395 ug/L	99
7) Chloroethane	4.93	64	119473	19.7041 ug/L	92
8) Trichlorofluoromethane	5.42	101	239297	17.1021 ug/L	98
9) Diethyl ether	5.95	59	512399	95.5172 ug/L	90
10) Isoprene	5.98	67	215724	20.7923 ug/L	82
11) Acrolein	6.18	56	38174	110.5749 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	136333	17.2629 ug/L	94
13) Acetone	6.28	43	26179	23.9855 ug/L	86
14) 1,1-Dichloroethene	6.51	61	215498	16.0443 ug/L	84
15) Tert-Butyl Alcohol	6.61	59	52706	179.4602 ug/L	97
16) Dimethyl Sulfide	6.77	62	207807	26.5385 ug/L	80
17) Iodomethane	7.04	142	85405	16.6155 ug/L	84
18) Methyl acetate	7.04	43	66933	17.1851 ug/L	91
19) Methylene Chloride	7.30	84	154019	20.1213 ug/L #	56
20) Carbon Disulfide	7.34	76	438905	17.7630 ug/L	95
21) Acrylonitrile	7.48	53	37001	21.2985 ug/L	94
22) Methyl Tert Butyl Ether	7.51	73	307912	20.8806 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	219698	17.1337 ug/L	87
24) n-Hexane	7.82	57	219811	16.9524 ug/L	96
25) Diisopropyl ether	8.18	45	2886011	101.6083 ug/L	92
26) Vinyl Acetate	8.34	43	237555	25.3333 ug/L	91
27) 1,1-Dichloroethane	8.37	63	279406	18.0503 ug/L	94
28) Ethyl-Tert-Butyl ether	8.74	59	2270479	101.8778 ug/L	93
29) 2-Butanone	8.92	43	38990	21.9254 ug/L	86
30) Propionitrile	9.02	54	57947	102.2378 ug/L	100
31) 2,2-Dichloropropane	9.15	77	214450	16.7917 ug/L	98
32) cis-1,2-Dichloroethene	9.21	96	166875	18.9481 ug/L	84
33) Chloroform	9.42	83	274401	19.0846 ug/L	97
34) 1-Bromopropane	9.56	122	34431	21.7971 ug/L	94
35) Bromochloromethane	9.65	130	89749	19.9834 ug/L	74
36) Tetrahydrofuran	9.68	42	126880	105.9277 ug/L	85
38) 1,1,1-Trichloroethane	9.95	97	239850	18.3763 ug/L	96
39) Cyclohexane	9.98	56	289221	18.2838 ug/L	84
40) 1,1-Dichloropropene	10.14	75	199891	17.6025 ug/L	92
41) Tert-Amyl-Methyl ether	10.25	73	1694523	103.5910 ug/L	98
42) Carbon Tetrachloride	10.29	117	217539	18.3406 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052315\8M404881.D Vial: 6
Acq On : 23 May 2015 18:50 Operator: FJB
Sample : WG524936-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 19:12:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	196748	19.0880 ug/L		92
46)	Benzene	10.51	78	597053	19.5185 ug/L		98
47)	Trichloroethene	11.26	130	153299	18.9463 ug/L		97
48)	Methylcyclohexane	11.34	83	240305	18.2980 ug/L		90
49)	1,2-Dichloropropane	11.47	63	163476	19.0807 ug/L		98
50)	Bromodichloromethane	11.77	83	211429	20.0444 ug/L		96
51)	1,4-Dioxane	11.75	88	6379	196.4951 ug/L		86
52)	Dibromomethane	11.86	93	83518	20.6984 ug/L		87
53)	2-Chloroethyl Vinyl Ether	12.06	63	59071	28.0096 ug/L		96
54)	4-Methyl-2-Pentanone	12.09	58	32003	21.7274 ug/L		93
55)	cis-1,3-Dichloropropene	12.41	75	243741	21.1392 ug/L		95
56)	Dimethyl Disulfide	12.66	79	128756	20.7460 ug/L		88
59)	Toluene	12.83	91	654499	17.9656 ug/L		83
60)	Ethyl Methacrylate	12.92	69	132317	20.4126 ug/L		77
62)	trans-1,3-Dichloropropene	13.00	75	192968	17.6715 ug/L		96
63)	1,1,2-Trichloroethane	13.22	97	107343	18.9650 ug/L		99
64)	2-Hexanone	13.15	58	31042	19.9162 ug/L	#	44
65)	1,3-Dichloropropane	13.52	76	182786	18.4220 ug/L		82
66)	Tetrachloroethene	13.65	164	119882	15.5910 ug/L		87
67)	Dibromochloromethane	13.91	129	143214	19.0142 ug/L		99
68)	1,2-Dibromoethane	14.16	107	104029	19.2529 ug/L		97
69)	1-Chlorohexane	14.26	91	221904	17.8078 ug/L		91
70)	Chlorobenzene	14.67	112	416773	16.9498 ug/L		91
71)	1,1,1,2-Tetrachloroethane	14.70	131	159181	18.0353 ug/L		97
72)	Ethylbenzene	14.70	106	242161	16.4428 ug/L	#	30
73)	m-,p-Xylene	14.78	106	563277	33.8189 ug/L	#	47
74)	o-Xylene	15.34	106	265624	16.1377 ug/L		62
75)	Styrene	15.38	104	487812	18.7083 ug/L		84
76)	Bromoform	15.88	173	86810	18.5916 ug/L		95
77)	Isopropylbenzene	15.78	105	687997	17.0908 ug/L		75
79)	1,1,2,2-Tetrachloroethane	15.99	83	121106	18.4012 ug/L		99
81)	1,2,3-Trichloropropane	16.18	110	33509	18.7930 ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.22	53	39238	17.9597 ug/L	#	46
83)	n-Propylbenzene	16.28	91	830468	15.8464 ug/L	#	74
84)	Bromobenzene	16.41	156	179649	17.2613 ug/L		92
85)	1,3,5-Trimethylbenzene	16.47	105	647181	18.0484 ug/L		79
86)	2-Chlorotoluene	16.55	91	512275	14.4838 ug/L		82
87)	4-Chlorotoluene	16.59	91	506048	17.8880 ug/L		76
88)	a-Methylstyrene	16.87	118	373608	18.2954 ug/L		92
89)	tert-Butylbenzene	16.93	134	117951	14.7962 ug/L		55
90)	1,2,4-Trimethylbenzene	16.99	105	669141	18.1507 ug/L		73
91)	sec-Butylbenzene	17.20	105	731026	16.3508 ug/L		77
92)	p-Isopropyltoluene	17.36	119	609823	16.0883 ug/L		78
93)	1,3-Dichlorobenzene	17.55	146	346993	16.4508 ug/L		89
94)	1,4-Dichlorobenzene	17.68	146	375993	17.5584 ug/L		89
95)	n-Butylbenzene	17.88	91	616225	16.6427 ug/L		79
96)	1,2-Dichlorobenzene	18.17	146	313832	17.1458 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.17	75	21412	20.3820 ug/L		90
98)	1,2,4-Trichlorobenzene	20.31	180	248875	18.0493 ug/L		99
99)	Hexachlorobutadiene	20.47	225	101776	14.1285 ug/L		95
100)	Naphthalene	20.69	128	383036	20.7130 ug/L		93
101)	1,2,3-Trichlorobenzene	21.00	180	212374	18.1757 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404881.D 8260WT.M Sat May 23 19:12:31 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052315\8M404881.D Vial: 6
Acq On : 23 May 2015 18:50 Operator: FJB
Sample : WG524936-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 19:12 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

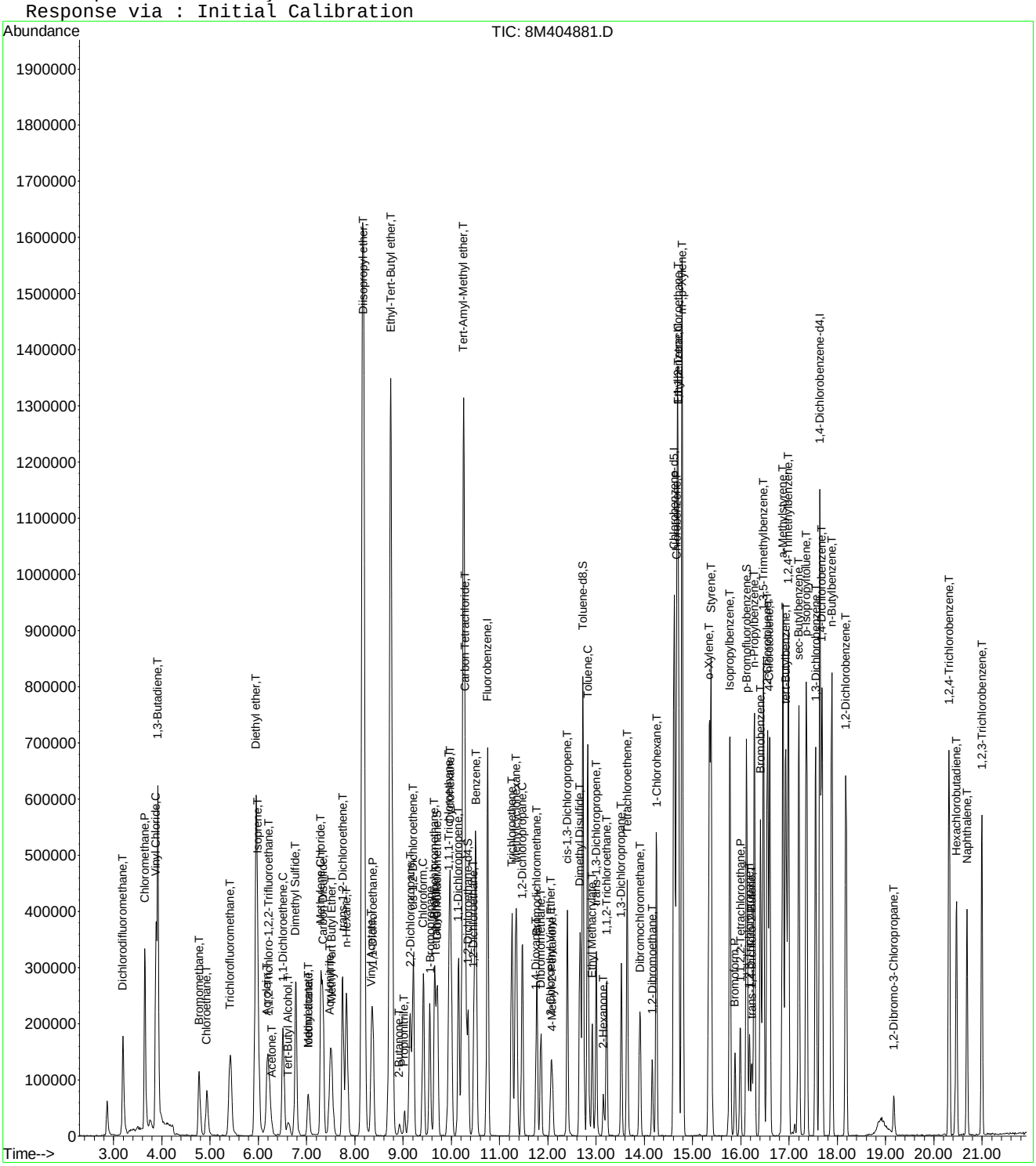

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052615\8M404910.D Vial: 6
Acq On : 26 May 2015 13:46 Operator: TMB
Sample : WG525056-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 14:08:42 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	756341	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	613510	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	366436	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	195557	26.0858 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.36%		
43) 1,2-Dichloroethane-d4	10.35	65	170395	24.1864 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.76%		
58) Toluene-d8	12.73	98	692273	24.1806 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.72%		
80) p-Bromofluorobenzene	16.12	95	272686	21.8729 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 87.48%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	312995	26.7017 ug/L	97
3) Chloromethane	3.65	50	503482	21.5152 ug/L	96
4) Vinyl Chloride	3.88	62	512159	23.2264 ug/L	94
5) 1,3-Butadiene	3.92	54	360459	16.9146 ug/L	96
6) Bromomethane	4.78	94	121278	24.2415 ug/L	97
7) Chloroethane	4.94	64	137708	22.9489 ug/L	91
8) Trichlorofluoromethane	5.42	101	295740	21.3570 ug/L	98
9) Diethyl ether	5.95	59	522765	98.4686 ug/L	91
10) Isoprene	6.00	67	240975	23.4690 ug/L	83
11) Acrolein	6.18	56	33812	104.7403 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	166884	21.3523 ug/L	98
13) Acetone	6.30	43	25947	24.0215 ug/L	79
14) 1,1-Dichloroethene	6.51	61	260868	19.6253 ug/L	83
15) Tert-Butyl Alcohol	6.62	59	59725	205.4859 ug/L	97
16) Dimethyl Sulfide	6.78	62	208812	26.9457 ug/L	78
17) Iodomethane	7.03	142	102503	19.9113 ug/L	88
18) Methyl acetate	7.04	43	70034	18.1693 ug/L	90
19) Methylene Chloride	7.30	84	163176	21.5405 ug/L #	55
20) Carbon Disulfide	7.34	76	468162	19.1452 ug/L	96
21) Acrylonitrile	7.48	53	34520	20.0782 ug/L	88
22) Methyl Tert Butyl Ether	7.51	73	309106	21.1808 ug/L	97
23) trans-1,2-Dichloroethene	7.75	61	250242	19.7198 ug/L	91
24) n-Hexane	7.83	57	253311	19.7402 ug/L	99
25) Diisopropyl ether	8.17	45	2960779	105.3307 ug/L	92
26) Vinyl Acetate	8.35	43	240911	25.9599 ug/L	94
27) 1,1-Dichloroethane	8.37	63	314069	20.5018 ug/L	94
28) Ethyl-Tert-Butyl ether	8.75	59	2327056	105.5083 ug/L	94
29) 2-Butanone	8.92	43	38673	21.9746 ug/L	85
30) Propionitrile	9.04	54	58280	103.9005 ug/L	97
31) 2,2-Dichloropropane	9.15	77	263360	20.8370 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	179303	20.5721 ug/L	78
33) Chloroform	9.42	83	305337	21.4583 ug/L	92
34) 1-Bromopropane	9.55	122	37359	23.8527 ug/L	97
35) Bromochloromethane	9.65	130	91674	20.6255 ug/L #	71
36) Tetrahydrofuran	9.68	42	130137	109.7830 ug/L	85
38) 1,1,1-Trichloroethane	9.95	97	280450	21.7116 ug/L	97
39) Cyclohexane	9.99	56	312046	19.9331 ug/L	85
40) 1,1-Dichloropropene	10.15	75	236459	21.0404 ug/L	93
41) Tert-Amyl-Methyl ether	10.26	73	1740605	107.5208 ug/L	98
42) Carbon Tetrachloride	10.30	117	259561	22.1123 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M404910.D 8260WT.M Tue May 26 14:08:42 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052615\8M404910.D Vial: 6
Acq On : 26 May 2015 13:46 Operator: TMB
Sample : WG525056-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 14:08:42 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	204755	20.0725 ug/L		91
46)	Benzene	10.51	78	659521	21.7862 ug/L		98
47)	Trichloroethene	11.26	130	184700	23.0659 ug/L		97
48)	Methylcyclohexane	11.34	83	267413	20.5751 ug/L		92
49)	1,2-Dichloropropane	11.47	63	178371	21.0369 ug/L		99
50)	Bromodichloromethane	11.78	83	222033	21.2698 ug/L		97
51)	1,4-Dioxane	11.77	88	6025	189.7311 ug/L		78
52)	Dibromomethane	11.86	93	87315	21.8657 ug/L		88
53)	2-Chloroethyl Vinyl Ether	12.07	63	68831	33.1461 ug/L		94
54)	4-Methyl-2-Pentanone	12.10	58	33745	23.1496 ug/L		94
55)	cis-1,3-Dichloropropene	12.41	75	263475	23.0897 ug/L		92
56)	Dimethyl Disulfide	12.67	79	126221	20.5788 ug/L		88
59)	Toluene	12.82	91	719998	19.7853 ug/L		82
60)	Ethyl Methacrylate	12.93	69	132314	20.4347 ug/L		73
62)	trans-1,3-Dichloropropene	13.00	75	204765	18.7725 ug/L		94
63)	1,1,2-Trichloroethane	13.21	97	109224	19.3187 ug/L		97
64)	2-Hexanone	13.15	58	30994	19.9074 ug/L	#	42
65)	1,3-Dichloropropane	13.53	76	193860	19.5596 ug/L		82
66)	Tetrachloroethene	13.65	164	147339	19.1830 ug/L		91
67)	Dibromochloromethane	13.91	129	141161	18.7623 ug/L		96
68)	1,2-Dibromoethane	14.17	107	108381	20.0805 ug/L		98
69)	1-Chlorohexane	14.25	91	243154	19.5347 ug/L		90
70)	Chlorobenzene	14.67	112	453190	18.4512 ug/L		92
71)	1,1,1,2-Tetrachloroethane	14.69	131	168524	19.1150 ug/L		97
72)	Ethylbenzene	14.69	106	278840	18.9543 ug/L	#	37
73)	m-,p-Xylene	14.79	106	649943	39.0654 ug/L	#	48
74)	o-Xylene	15.34	106	301095	18.3130 ug/L		65
75)	Styrene	15.39	104	531973	20.4245 ug/L		85
76)	Bromoform	15.88	173	86880	18.6257 ug/L		98
77)	Isopropylbenzene	15.77	105	777975	19.3474 ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.99	83	126158	18.1194 ug/L		99
81)	1,2,3-Trichloropropane	16.18	110	34359	18.2147 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.22	53	41440	17.9291 ug/L	#	29
83)	n-Propylbenzene	16.28	91	968799	17.4739 ug/L	#	74
84)	Bromobenzene	16.41	156	188846	17.1515 ug/L		90
85)	1,3,5-Trimethylbenzene	16.47	105	737641	19.4449 ug/L		79
86)	2-Chlorotoluene	16.55	91	615623	16.4528 ug/L		79
87)	4-Chlorotoluene	16.60	91	540012	18.0435 ug/L		77
88)	a-Methylstyrene	16.88	118	383029	17.7298 ug/L		92
89)	tert-Butylbenzene	16.93	134	139157	16.5007 ug/L		59
90)	1,2,4-Trimethylbenzene	16.98	105	748720	19.1974 ug/L		74
91)	sec-Butylbenzene	17.20	105	871614	18.4280 ug/L	#	76
92)	p-Isopropyltoluene	17.36	119	711641	17.7466 ug/L		78
93)	1,3-Dichlorobenzene	17.56	146	380732	17.0621 ug/L		91
94)	1,4-Dichlorobenzene	17.68	146	418129	18.4570 ug/L		90
95)	n-Butylbenzene	17.89	91	734512	18.7513 ug/L		79
96)	1,2-Dichlorobenzene	18.18	146	343718	17.7505 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.17	75	20346	18.3069 ug/L		83
98)	1,2,4-Trichlorobenzene	20.32	180	273105	18.7221 ug/L		97
99)	Hexachlorobutadiene	20.47	225	125814	16.5092 ug/L		94
100)	Naphthalene	20.69	128	408849	20.8984 ug/L		95
101)	1,2,3-Trichlorobenzene	21.00	180	234894	19.0025 ug/L		97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052615\8M404910.D Vial: 6
Acq On : 26 May 2015 13:46 Operator: TMB
Sample : WG525056-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 14:08 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

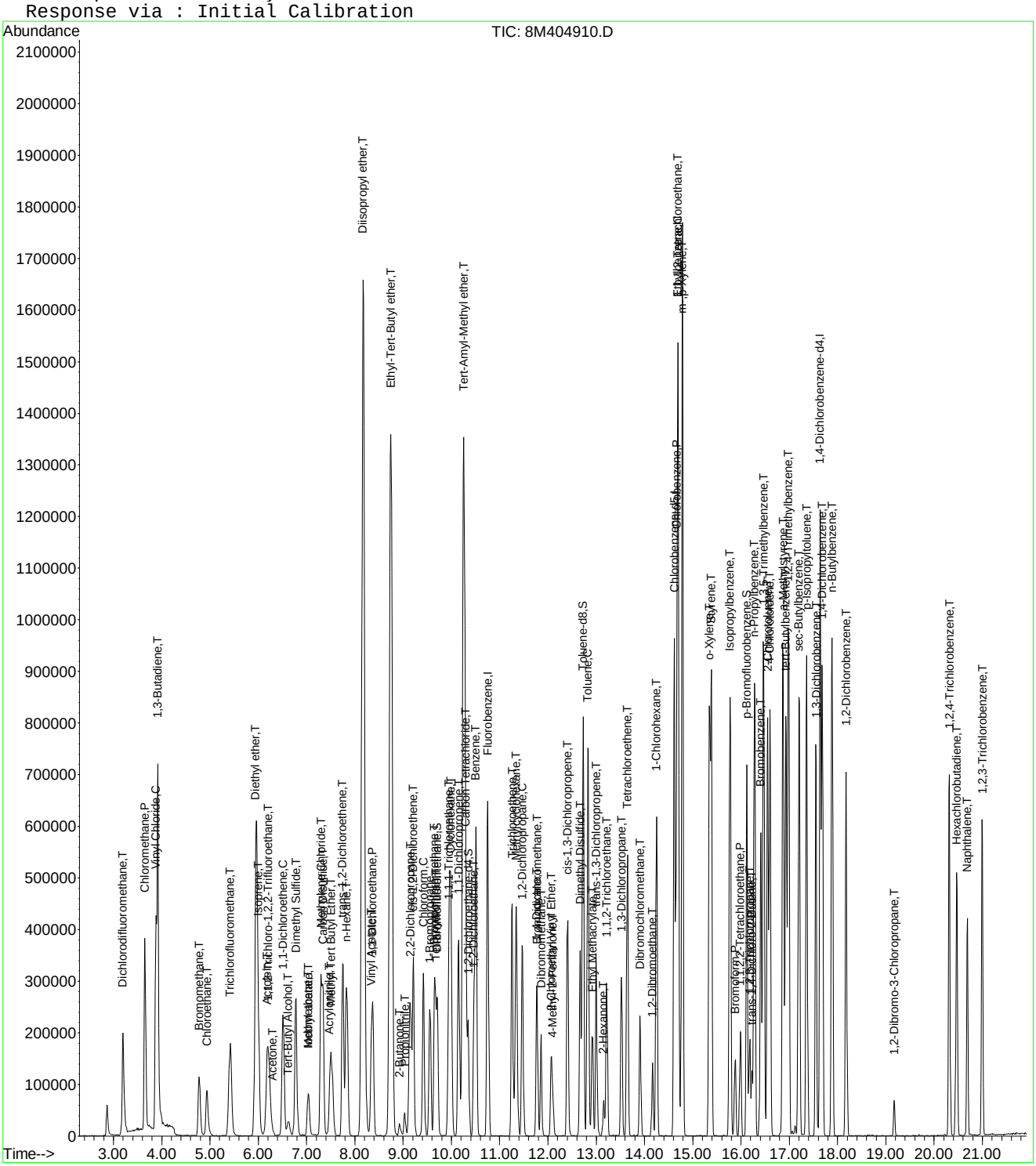

8M404910.D 8260WT.M Tue May 26 14:08:43 2015 Page 3

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW08-051915	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524390	**Analyst:**	JDS	**Run Date:**	05/20/2015 14:07
Collect Date:	05/19/2015 08:25	**Dilution:**	1	**File ID:**	16G47560
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	5.16		5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-04	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW13-051915	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524390	**Analyst:**	JDS	**Run Date:**	05/20/2015 16:37
Collect Date:	05/19/2015 11:50	**Dilution:**	1	**File ID:**	16G47561
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	67WW01-051915	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524390	**Analyst:**	JDS	**Run Date:**	05/20/2015 16:49
Collect Date:	05/19/2015 12:20	**Dilution:**	1	**File ID:**	16G47562
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	20.0		5.00	2.00	1.00
Ethene	74-85-1	2.00	U	5.00	2.00	1.00
Ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:

y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 030315
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG514119

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46874	RINSE	NA	1	1		03/03/15 14:05
16G46875	WG514119-01 0.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:17
16G46876	WG514119-02 1.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:30
16G46877	WG514119-03 33.3umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:42
16G46878	WG514119-04 66.7umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 14:53
16G46879	WG514119-05 133umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:05
16G46880	WG514119-06 333umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:17
16G46881	WG514119-07 533umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:29
16G46882	RINSE	NA	1	1		03/03/15 15:41
16G46883	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 16:14
16G46884	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 17:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X			
File ID: 16G46883				
	Wrong vial taken up by HT3 autosampler			

Approved: March 11, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 052015
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG524390

Comments: All vials except L15051152-01 B, L15051154-01 B, and L15051224-01 A were received with small amounts of headspace.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G47545	WG524389-01 133umol/mol CCV RSK1757	NA	1	1	STD67274	05/20/15 09:09
16G47546	WG524390-01 BLANK RSK175	NA	1	1		05/20/15 09:26
16G47547	WG524390-02 67umol/mol LCS RSK175	NA	1	1	STD68250	05/20/15 09:38
16G47548	WG524390-03 67umol/mol LCS2 RSK175	NA	1	1	STD68250	05/20/15 09:50
16G47549	L15051152-01 B D1 20X RSK175	6	1	20		05/20/15 11:59
16G47550	L15051154-01 B A1 RSK175	6	1	1		05/20/15 12:11
16G47551	L15051209-15 A RSK175	<2	1	1		05/20/15 12:22
16G47552	L15051209-16 A RSK175	<2	1	1		05/20/15 12:34
16G47553	L15051209-17 A RSK175	<2	1	1		05/20/15 12:46
16G47554	L15051209-27 A RSK175	<2	1	1		05/20/15 12:57
16G47555	L15051209-28 A RSK175	<2	1	1		05/20/15 13:09
16G47556	WG524389-02 133umol/mol CCV RSK175	NA	1	1	STD67274	05/20/15 13:21
16G47557	L15051209-29 A RSK175	7	1	1		05/20/15 13:32
16G47558	L15051223-01 A RSK175	<2	1	1		05/20/15 13:43
16G47559	L15051224-01 A RSK175	<2	1	1		05/20/15 13:55
16G47560	L15051231-01 A RSK175	<2	1	1		05/20/15 14:07
16G47561	L15051231-04 A RSK175	<2	1	1		05/20/15 16:37
16G47562	L15051231-05 A RSK175	<2	1	1		05/20/15 16:49
16G47563	L15051209-28 B D1 5X RSK175	<2	1	5		05/20/15 17:00
16G47564	L15051209-29 B A1 RSK175	<2	1	1		05/20/15 17:11
16G47565	L15051223-01 B D1 10X RSK175	<2	1	10		05/20/15 17:23
16G47566	L15051224-01 B A1 RSK175	<2	1	1		05/20/15 17:34
16G47567	WG524389-03 133umol/mol CCV RSK175	NA	1	1	STD67274	05/20/15 17:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
11	X	5	Over Calibration Range	m
File ID: 16G47555				
13	X		Carry-over contamination	m
File ID: 16G47557				
14	X	10	Over Calibration Range	m

Approved: May 21, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 052015
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG524390

Comments: All vials except L15051152-01 B, L15051154-01 B, and L15051224-01 A were received with small amounts of headspace.

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 16G47558				
15	X		Carry-over contamination	m
File ID: 16G47559				

Approved: May 21, 2015

Page: 2

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B202656

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG514119-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B206435

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG524389-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524389-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524389-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051224-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051231-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051209-27	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051209-29	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524390-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051209-28	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051223-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524390-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15051231-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051209-17	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051154-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051209-15	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051209-16	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051231-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524390-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15051152-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAR-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 66688
Analytical Workgroups: WG514119

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	NA
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
06-MAR-2015

Secondary Reviewer:
11-MAR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-11-2015 12:34:12

Microbac Laboratories Inc.

Data Checklist

Date: 20-MAY-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 68122
Analytical Workgroups: WG524390

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
21-MAY-2015

Secondary Reviewer:
21-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-21-2015 17:07:07

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG524390

Login Number: L15051231

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-051915	01	05/19/15					05/20/2015	1.2	14		05/20/15	1.2	14	
67WW13-051915	04	05/19/15					05/20/2015	1.2	14		05/20/15	1.2	14	
67WW01-051915	05	05/19/15					05/20/2015	1.2	14		05/20/15	1.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4191292
Report generated 05/22/2015 09:05

METHOD BLANK SUMMARY

Login Number: L15051231
Blank File ID: 16G47546
Prep Date: 05/20/15 09:26
Analyzed Date: 05/20/15 09:26
Analyst: JDS

Work Group: WG524390
Blank Sample ID: WG524390-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524390-02	16G47547	05/20/15 09:38	01
LCS2	WG524390-03	16G47548	05/20/15 09:50	01
67WW08-051915	L15051231-01	16G47560	05/20/15 14:07	01
67WW13-051915	L15051231-04	16G47561	05/20/15 16:37	01
67WW01-051915	L15051231-05	16G47562	05/20/15 16:49	01

Report Name: BLANK_SUMMARY
PDF File ID: 4191293
Report generated 05/22/2015 09:05

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051231 Prep Date: 05/20/15 09:26 Sample ID: WG524390-01
Instrument ID: HP16 Run Date: 05/20/15 09:26 Prep Method: 5021
File ID: 16G47546 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG524390 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Methane	1.00	5.00	1.00	1	U
Ethene	1.00	5.00	1.00	1	U
Ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4191294
22-MAY-2015 09:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051231 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG524390 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG524390-02 LCS File ID: 16G47547 Run Date: 05/20/2015 09:38
Sample ID: WG524390-03 LCS2 File ID: 16G47548 Run Date: 05/20/2015 09:50

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	110	96.2	114	108	94.6	1.70	85 - 115	20	
Ethene	200	191	95.5	200	188	94.0	1.60	85 - 115	20	
Ethane	214	198	92.5	214	195	91.0	1.60	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4191295
Report generated: 05/22/2015 09:05

Calibration Table Report
Method: RSKEXT1.M
Title: RSK175 HP16 (SOP: OVL RSK01) 030315
Last Calibration: Fri Mar 06 11:52:33 2015
Curve:WG514119
Calibration Files

		0.67	1.67	33.3	66.7	133	333	533			
		16G46875.	16G46876.	16G46877.	16G46878.	16G46879.	16G46880.	16G46881.D			
	Compound								Avg	%RSD	Linear
T	methane		442542.3	201716.7	175611.6	187516.9	186065.3	188702.9	230359.0	45.3	0.999
T	ethene		322209.5	334124.6	295911.1	313430.8	319356.4	318282.1	317219.0	3.9	
T	acetylene		316851.9	343603.6	313507.6	354933.8	357109.5	344601.6	338435.0	5.6	
T	ethane	381661.4	339569.9	346403.4	312338.4	328333.4	335709.7	335266.3	339897.0	6.3	
T	propane	528069.3	481580.8	518227.1	469331.7	483950.9	500133.6	493547.4	496406.0	4.2	
T	n-butane	686564.3	616037.4	680754.9	613926.5	634552.4	659898.4	646188.9	648275.0	4.5	
	Signal #2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T	carbon dioxide		3977.4	5604.2	5581.8	6054.5	6060.7	5810.7	5514.9	14.2	

Fri Mar 06 11:59:12 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051231 Run Date: 03/03/2015 Sample ID: WG514119-08
Instrument ID: HP16 Run Time: 17:10 Method: RSK175
File ID: 16G46884 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG514119 Cal ID: HP16 - 03-MAR-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
methane		228	236	ug/L	195000	3.50	15	
ethene		398	407	ug/L	324000	2.20	15	
ethane		427	423	ug/L	337000	0.900	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4191296
Report generated 05/22/2015 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051231
Run Date: 05/20/2015
Sample ID: WG524389-01
Instrument ID: HP16
Run Time: 09:09
Method: RSK175
File ID: 16G47545
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG524390
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	215	ug/L	178000	5.78	15	
ethene		398	373	ug/L	297000	6.41	15	
ethane		427	390	ug/L	310000	8.72	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4191297
Report generated 05/22/2015 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051231
Run Date: 05/20/2015
Sample ID: WG524389-02
Instrument ID: HP16
Run Time: 13:21
Method: RSK175
File ID: 16G47556
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG524390
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	217	ug/L	180000	4.65	15	
ethene		398	379	ug/L	302000	4.91	15	
ethane		427	396	ug/L	315000	7.25	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4191297
Report generated 05/22/2015 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051231
Run Date: 05/20/2015
Sample ID: WG524389-03
Instrument ID: HP16
Run Time: 17:46
Method: RSK175
File ID: 16G47567
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG524390
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	216	ug/L	179000	5.24	15	
ethene		398	374	ug/L	298000	6.12	15	
ethane		427	393	ug/L	313000	8.01	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4191297
Report generated 05/22/2015 09:05

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\052015\16G47560.D Vial: 16
Acq On : 20 May 2015 14:07 Operator: JDS
Sample : L15051231-01 A RSK175 Inst : HP16
Misc : 1,1 received with small amnt. headspace Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: May 20 14:13:14 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	968890	3.012	umol/
2) T	ethene	1.06	26157	0.082	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	5.35	23759	0.037	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47560.D RSK1.M Wed May 20 14:13:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\052015\16G47560.D Vial: 16
Acq On : 20 May 2015 14:07 Operator: JDS
Sample : L15051231-01 A RSK175 Inst : HP16
Misc : 1,1 received with small amnt. headspace Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: May 20 14:13 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

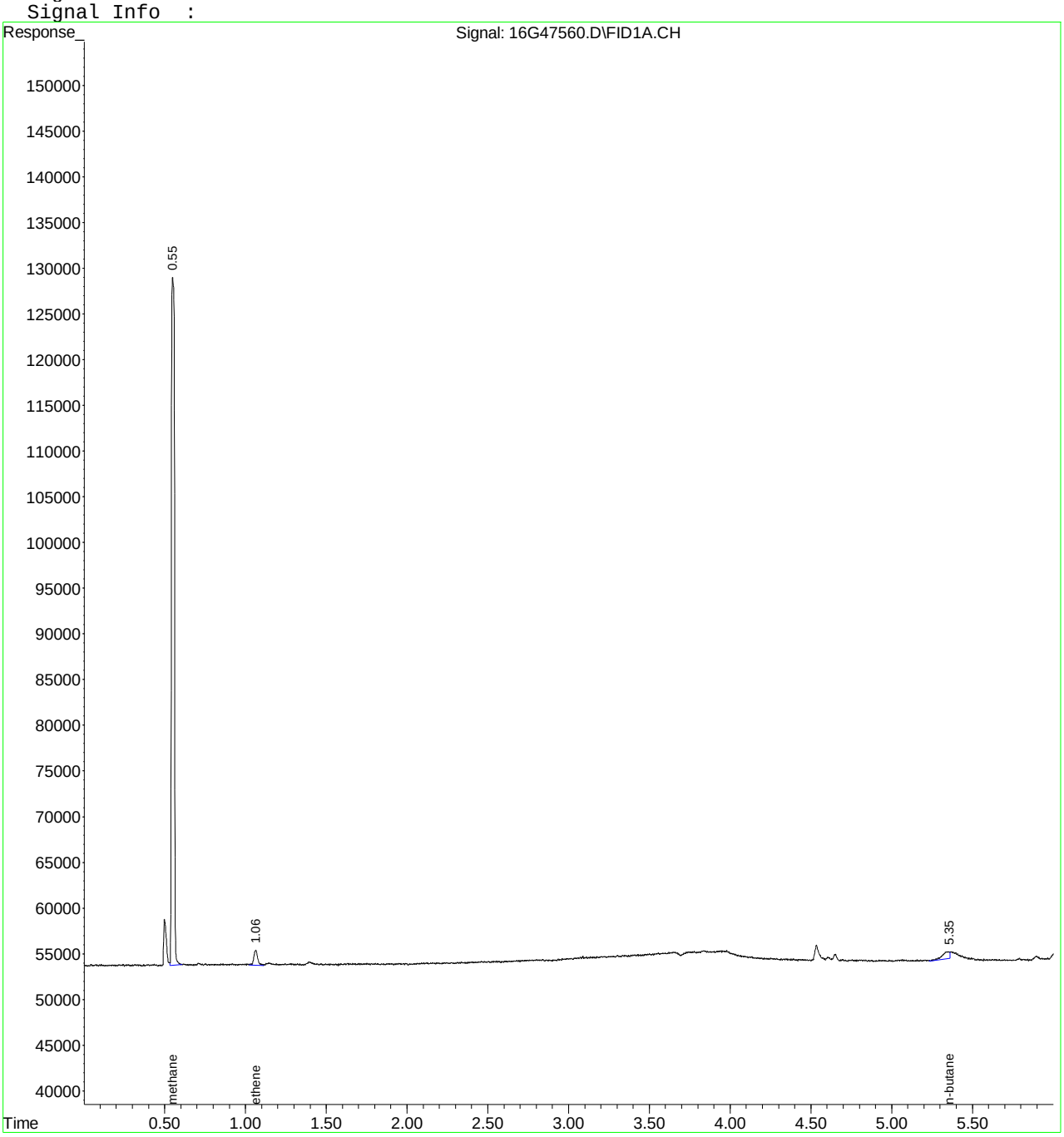

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\052015\16G47561.D Vial: 17
Acq On : 20 May 2015 16:37 Operator: JDS
Sample : L15051231-04 A RSK175 Inst : HP16
Misc : 1,1 received with small amnt. headspace Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: May 20 16:44:47 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	334292	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	19416	0.057	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47561.D RSK1.M Wed May 20 16:44:47 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\052015\16G47561.D Vial: 17
Acq On : 20 May 2015 16:37 Operator: JDS
Sample : L15051231-04 A RSK175 Inst : HP16
Misc : 1,1 received with small amnt. headspace Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: May 20 16:44 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

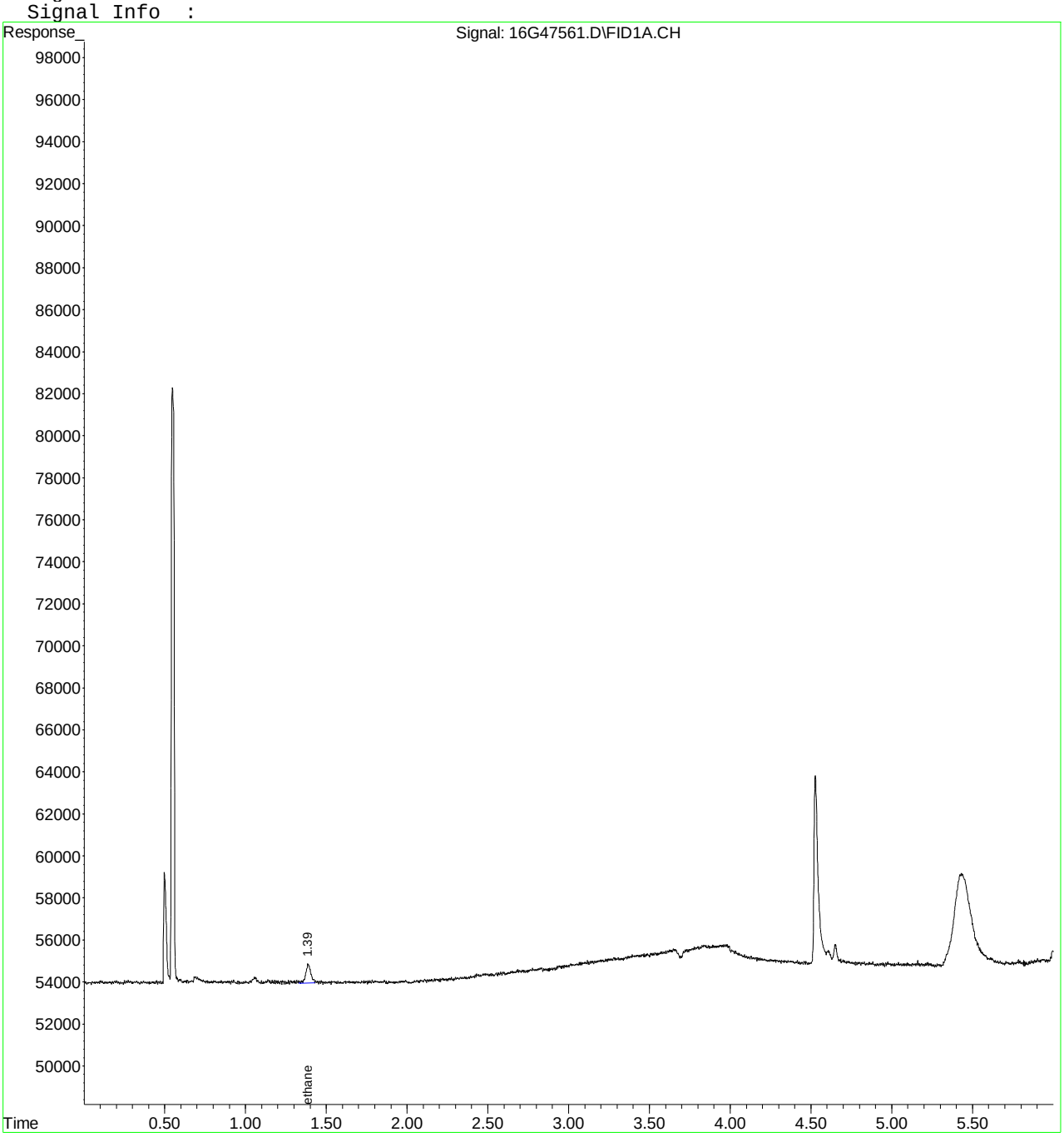

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\052015\16G47562.D Vial: 18
Acq On : 20 May 2015 16:49 Operator: JDS
Sample : L15051231-05 A RSK175 Inst : HP16
Misc : 1,1 received with small amnt. headspace Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: May 20 16:55:15 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	2578174	11.687	umol/
2) T	ethene	1.06	20449	0.064	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47562.D RSK1.M Wed May 20 16:55:15 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\052015\16G47562.D Vial: 18
Acq On : 20 May 2015 16:49 Operator: JDS
Sample : L15051231-05 A RSK175 Inst : HP16
Misc : 1,1 received with small amnt. headspace Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: May 20 16:55 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

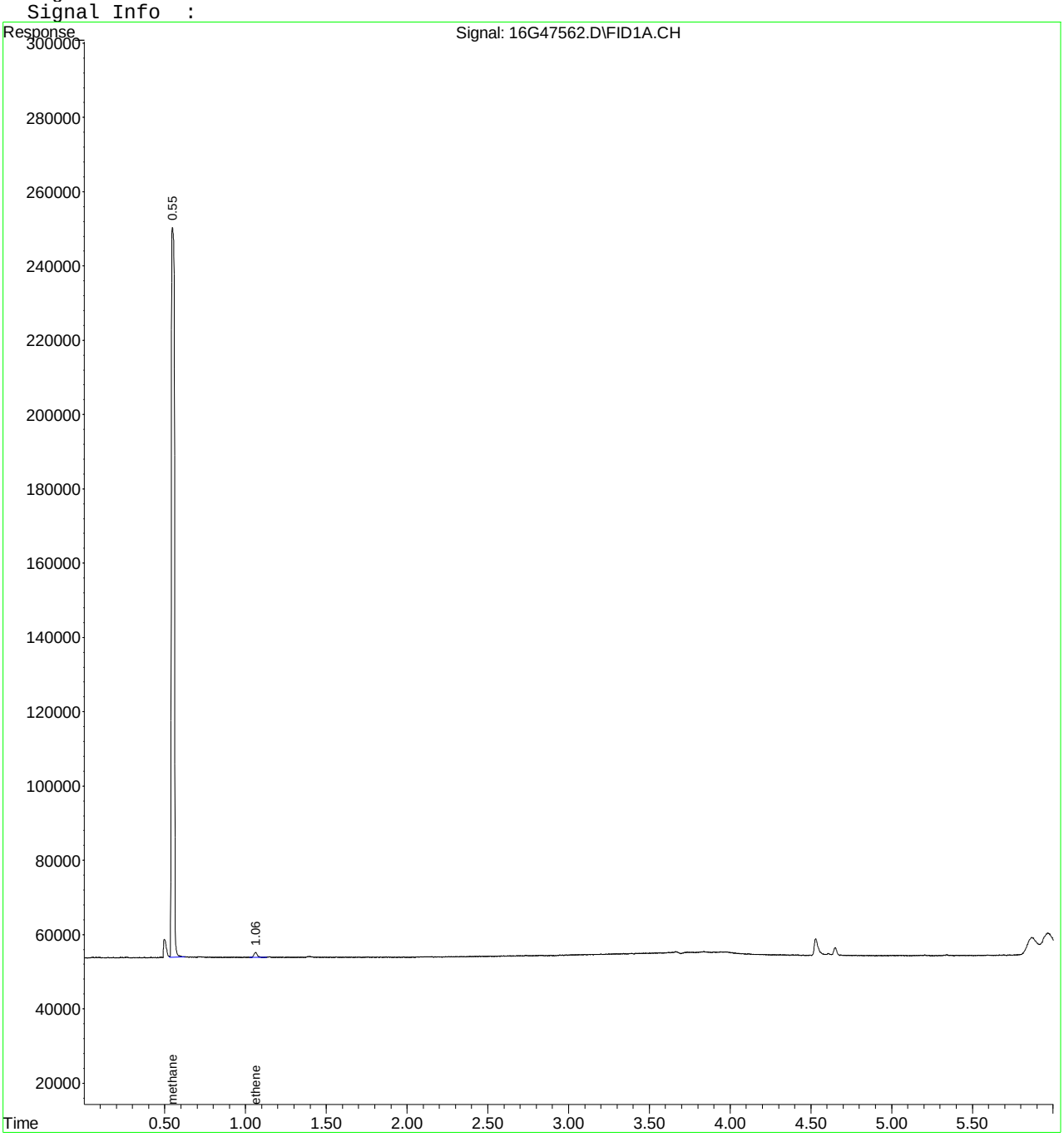

16G47562.D RSK1.M Wed May 20 16:55:15 2015 Page 2

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:54:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	566979	0.846	umol/
2) T	ethene	1.06	233416	0.736	umol/
3) T	acetylene	1.14	213812	0.632	umol/
4) T	ethane	1.39	254568	0.749	umol/
5) T	propane	3.83	352222	0.710	umol/
6) T	n-butane	5.34	457938	0.706	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46875.D RSKEXT1.M Fri Mar 06 11:56:43 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:54 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

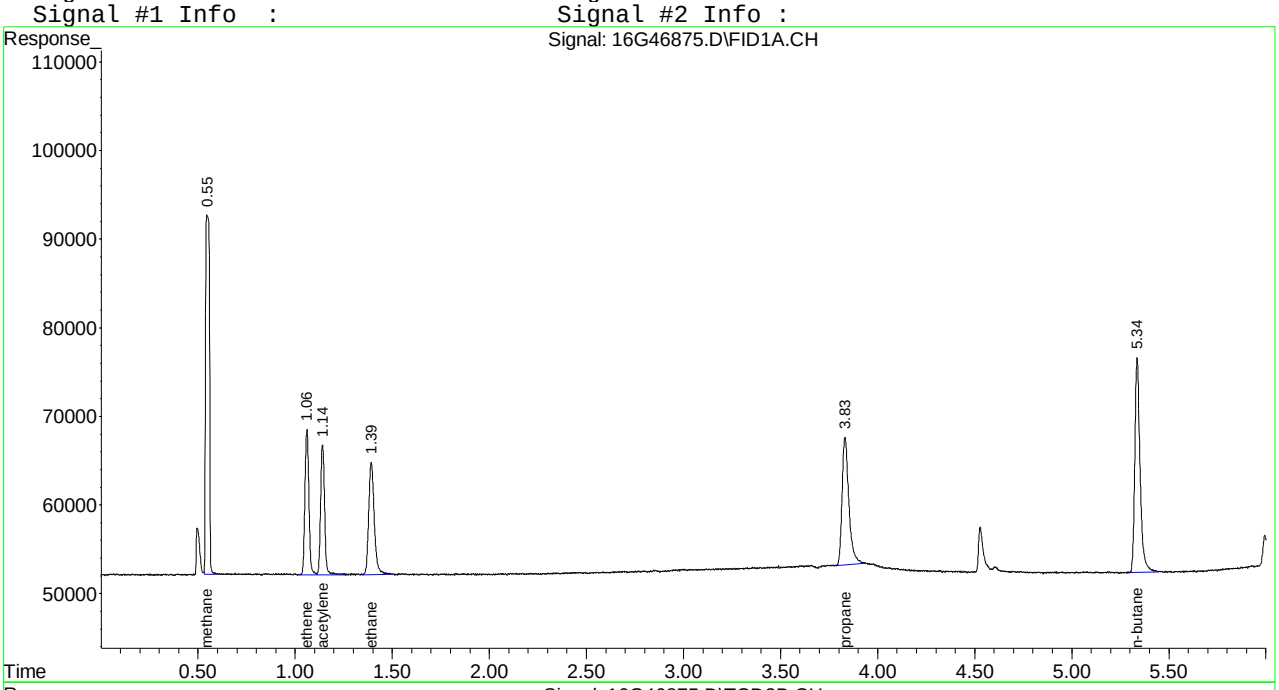

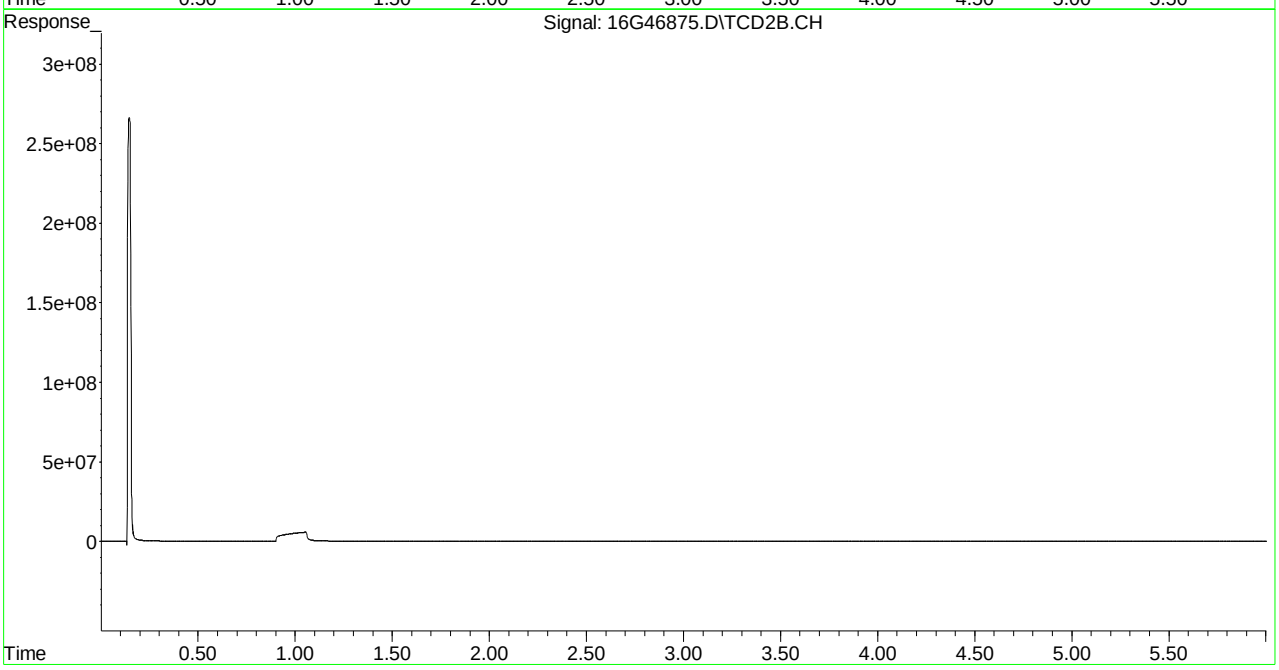

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	-1.000	0.846	0.0	0	0.00
2	T	ethene	-1.000	0.736	0.0	100	0.00
3	T	acetylene	-1.000	0.632	0.0	100	0.00
4	T	ethane	0.667	0.749	-12.3	100	0.00
5	T	propane	0.667	0.710	-6.4	100	0.00
6	T	n-butane	0.667	0.706	-5.8	100	0.00

Signal #2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46875.D RSKEXT1.M Fri Mar 06 11:55:53 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:17                        Operator: JDS
Sample    : WG514119-01 0.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
	Signal #2					
8 T	carbon dioxide	-1.000	0.000	0.0	0	-0.21

```
---------------------------------------------------------------------------
(#) = Out of Range            SPCC's out = 0  CCC's out = 0
16G46875.D  RSKEXT1.M      Fri Mar 06 11:55:53 2015                    Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	739046	1.773	umol/
2) T	ethene	1.06	538090	1.696	umol/
3) T	acetylene	1.14	529143	1.564	umol/
4) T	ethane	1.39	567082	1.668	umol/
5) T	propane	3.83	804240	1.620	umol/
6) T	n-butane	5.34	1028782	1.587	umol/
8) T	carbon dioxide	0.20	7954783	1442.423	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46876.D RSKEXT1.M Fri Mar 06 11:57:08 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

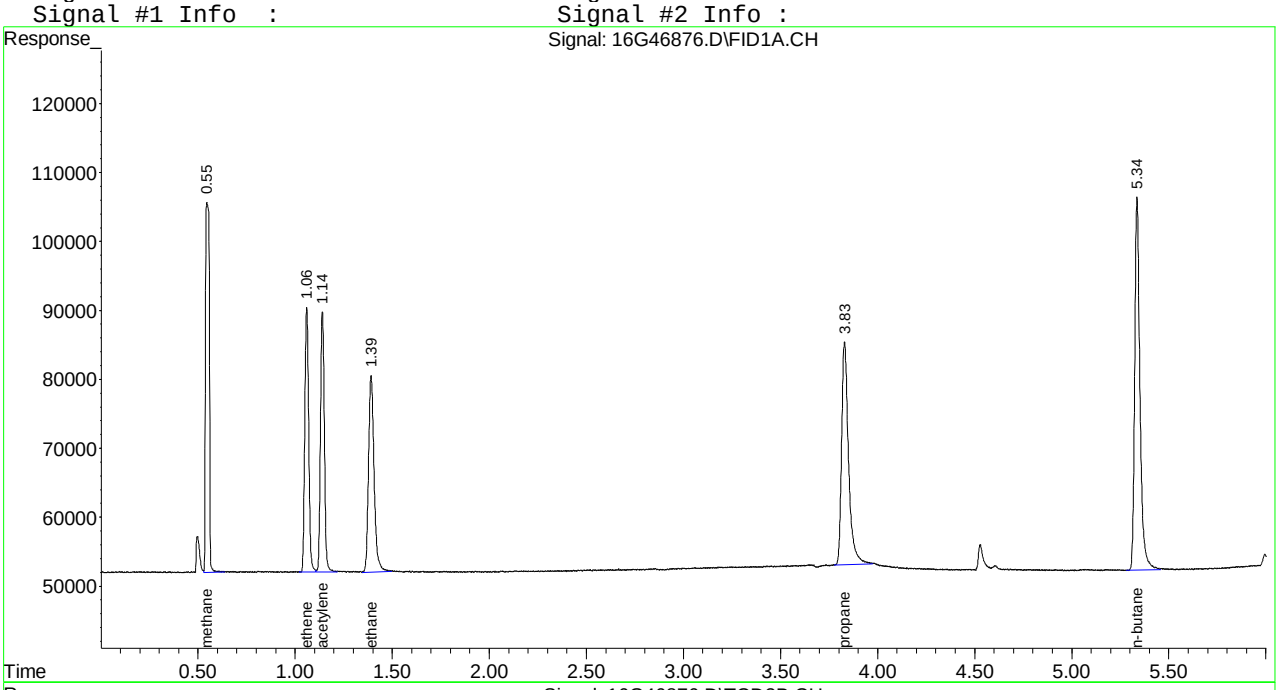

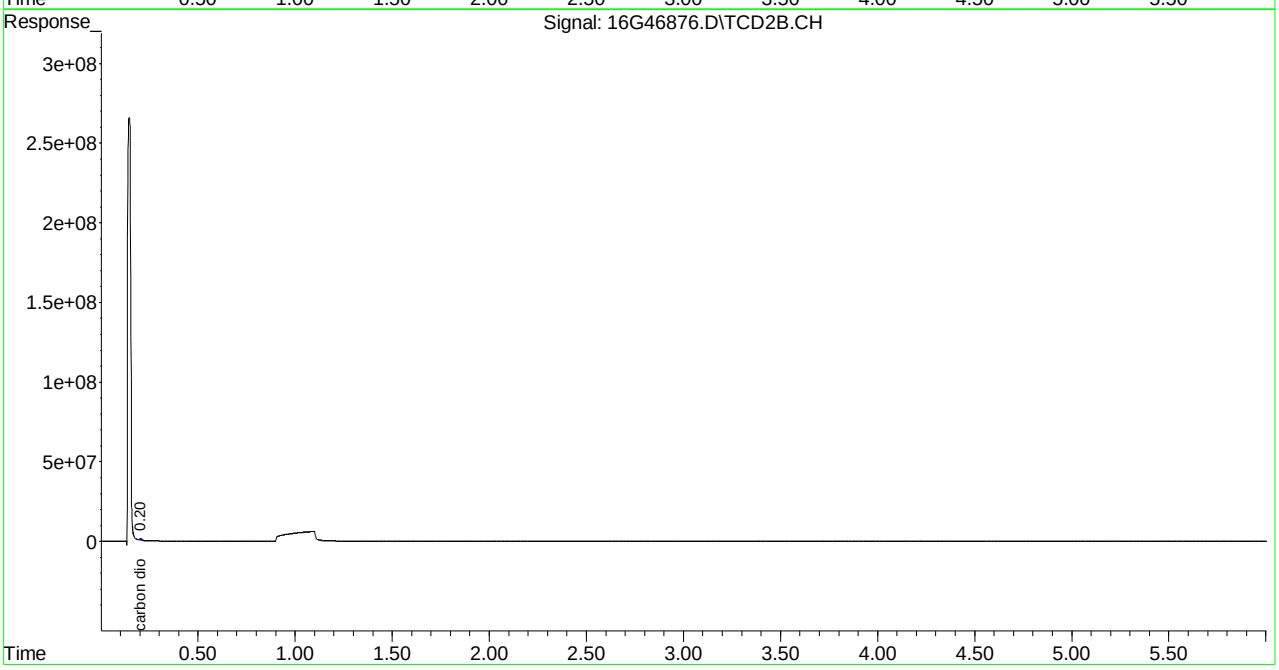

Evaluate Continuing Calibration Report

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:30                        Operator: JDS
Sample    : WG514119-02 1.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	1.670	1.773	-6.2	100	0.00
2	T	ethene	1.670	1.696	-1.6	100	0.00
3	T	acetylene	1.670	1.564	6.3	100	0.00
4	T	ethane	1.670	1.668	0.1	100	0.00
5	T	propane	1.670	1.620	3.0	100	0.00
6	T	n-butane	1.670	1.587	5.0	100	0.00
		Signal #2					
8	T	carbon dioxide	2000.000	1442.423	27.9#	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G46876.D RSKEXT1.M Fri Mar 06 11:52:49 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:30                        Operator: JDS
Sample    : WG514119-02 1.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:10 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	6717167	33.998	umol/
2) T	ethene	1.06	11126351	35.075	umol/
3) T	acetylene	1.14	11442001	33.809	umol/
4) T	ethane	1.39	11535235	33.937	umol/
5) T	propane	3.83	17256964	34.764	umol/
6) T	n-butane	5.34	22669140	34.968	umol/
8) T	carbon dioxide	0.20	18661832	3383.908	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46877.D RSKEXT1.M Fri Mar 06 11:57:10 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

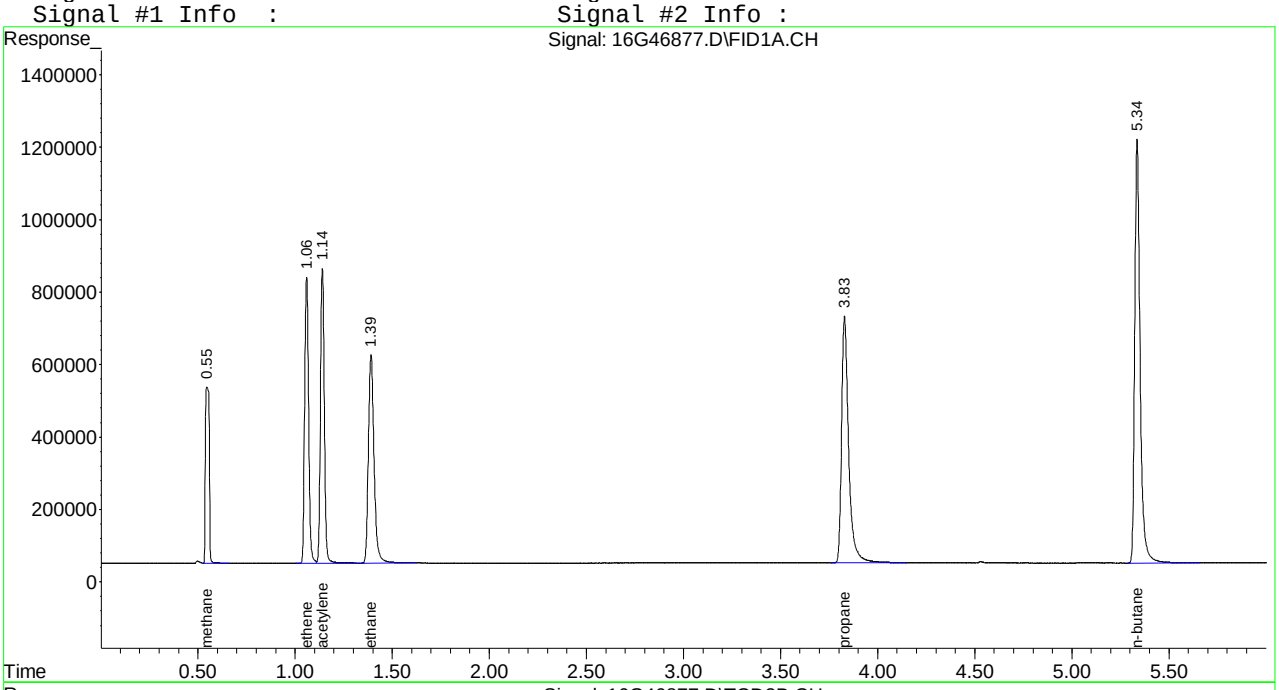

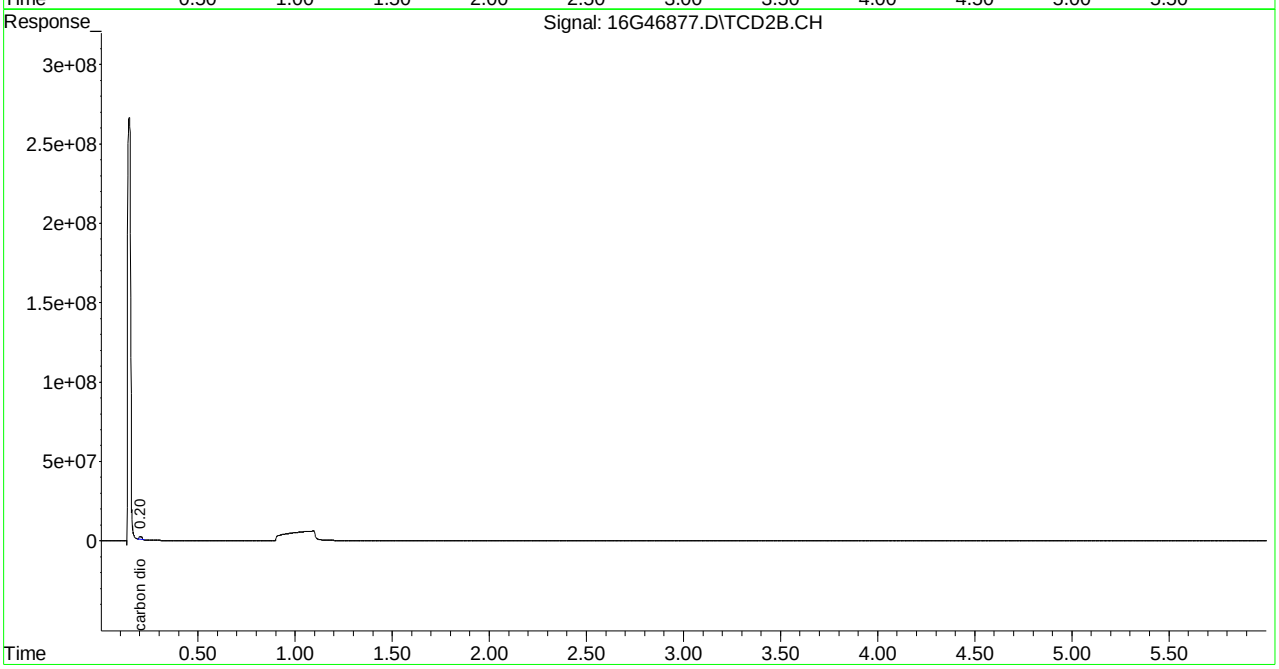

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11713293	60.930	umol/
2) T	ethene	1.06	19737271	62.220	umol/
3) T	acetylene	1.14	20910957	61.787	umol/
4) T	ethane	1.39	20832969	61.292	umol/
5) T	propane	3.83	31304425	63.062	umol/
6) T	n-butane	5.33	40948894	63.166	umol/
8) T	carbon dioxide	0.20	37230879	6750.991	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46878.D RSKEXT1.M Fri Mar 06 11:57:11 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

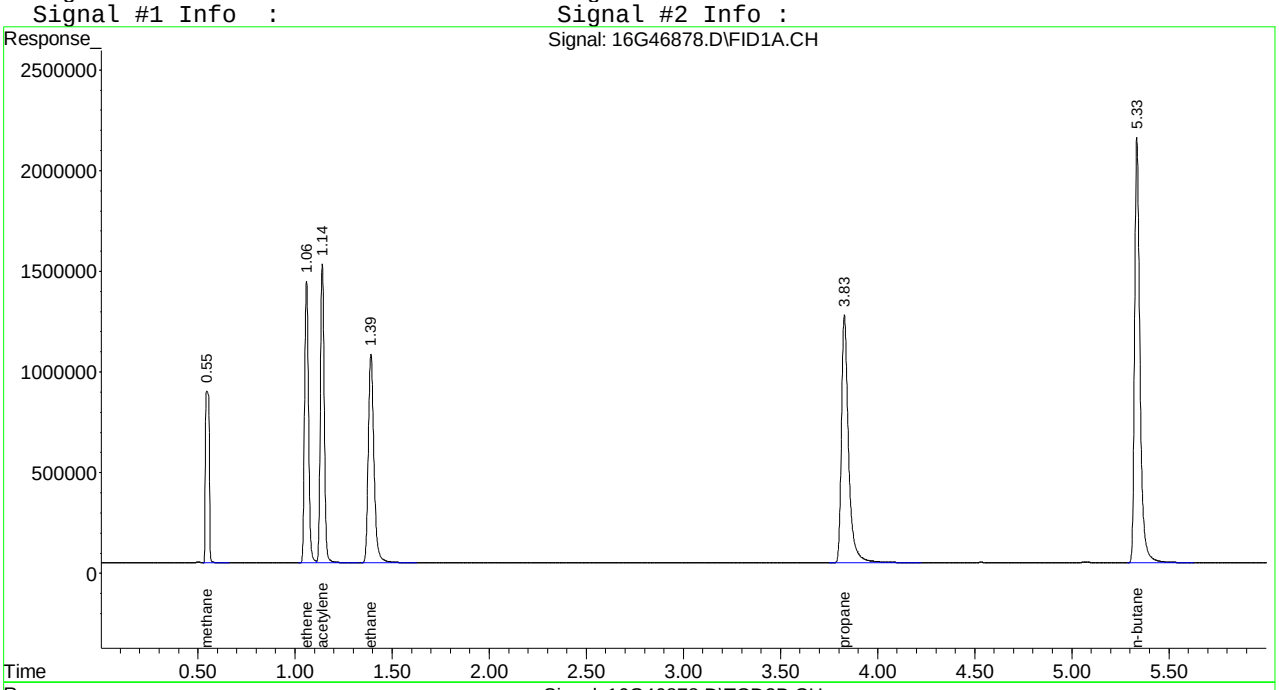

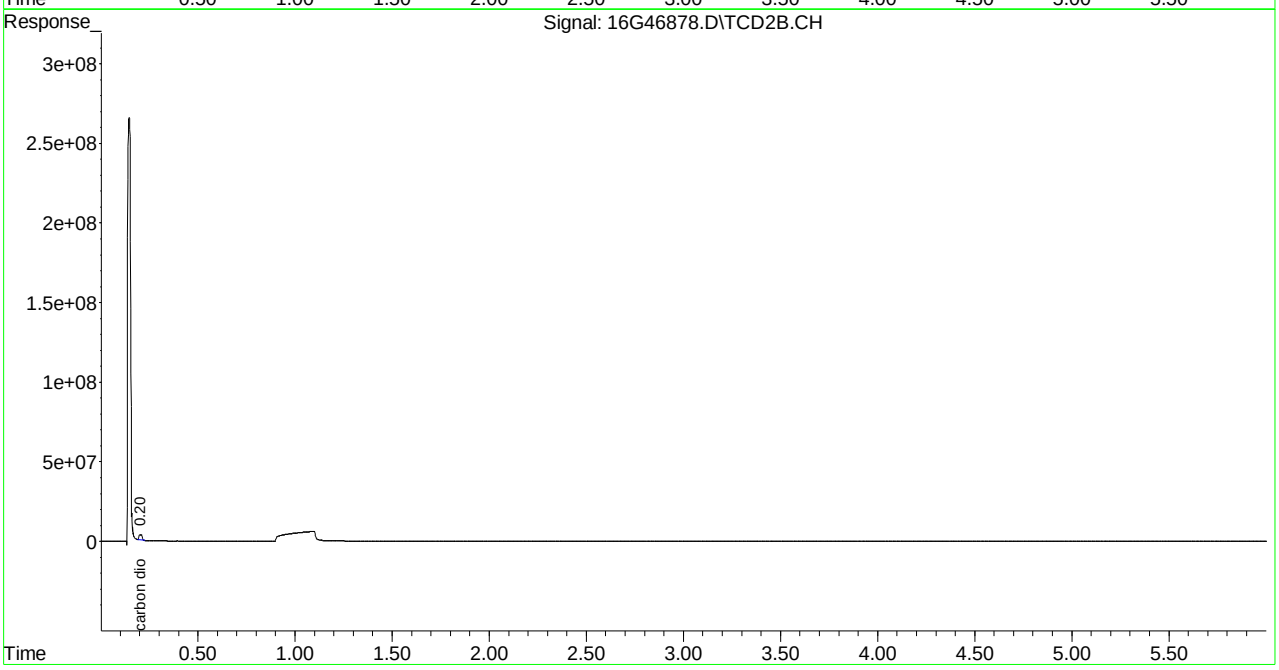

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On    : 03 Mar 2015  15:05                        Operator: JDS
Sample    : WG514119-05 133umol/mol STD RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	24939741	132.227 umol/
2) T	ethene	1.06	41686300	131.412 umol/
3) T	acetylene	1.14	47206199	139.484 umol/
4) T	ethane	1.39	43668346	128.475 umol/
5) T	propane	3.83	64365472	129.663 umol/
6) T	n-butane	5.33	84395468	130.185 umol/
8) T	carbon dioxide	0.20	80524699	14601.362 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G46879.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

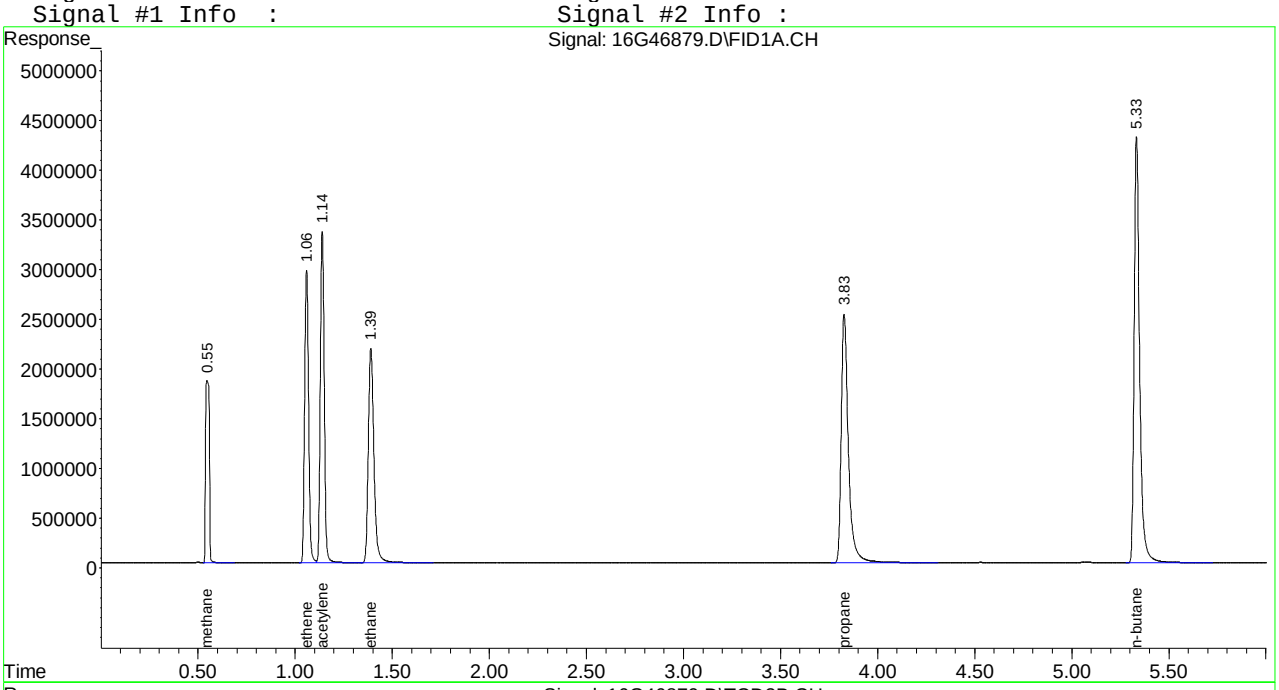

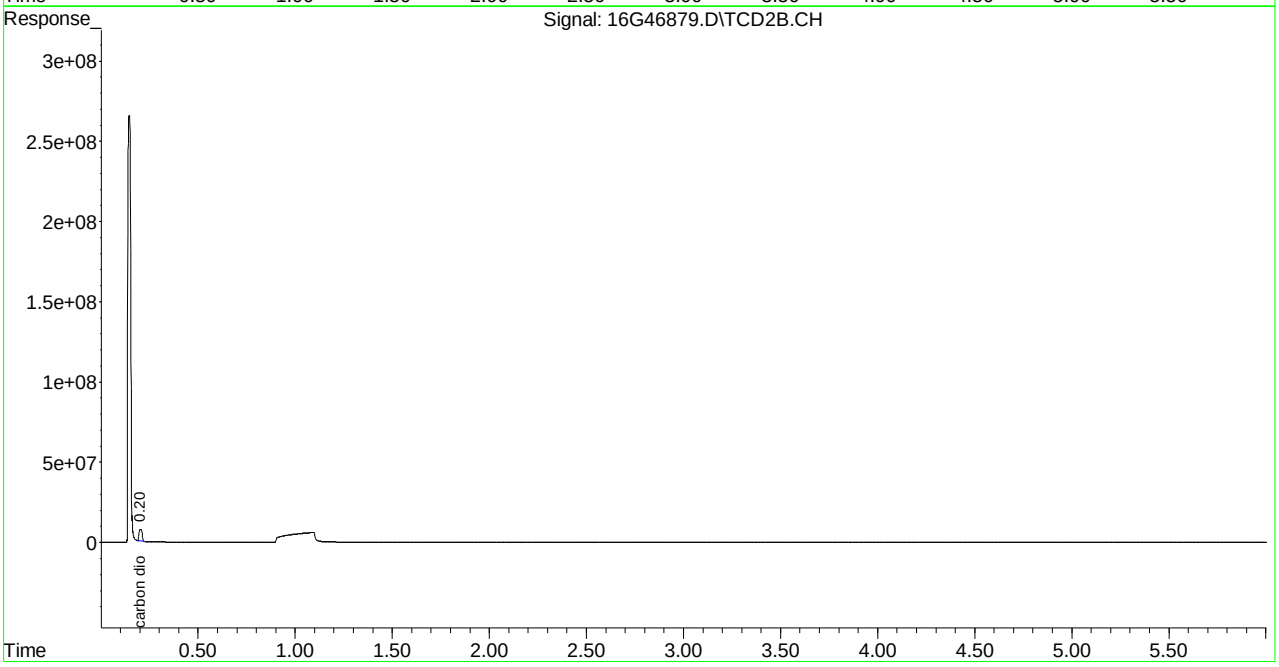

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:12 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	61959752	331.783	umol/
2) T	ethene	1.06	106345688	335.244	umol/
3) T	acetylene	1.14	118917475	351.375	umol/
4) T	ethane	1.39	111791323	328.897	umol/
5) T	propane	3.83	166544491	335.501	umol/
6) T	n-butane	5.33	219746160	338.971	umol/
8) T	carbon dioxide	0.20	201820251	36595.610	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46880.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

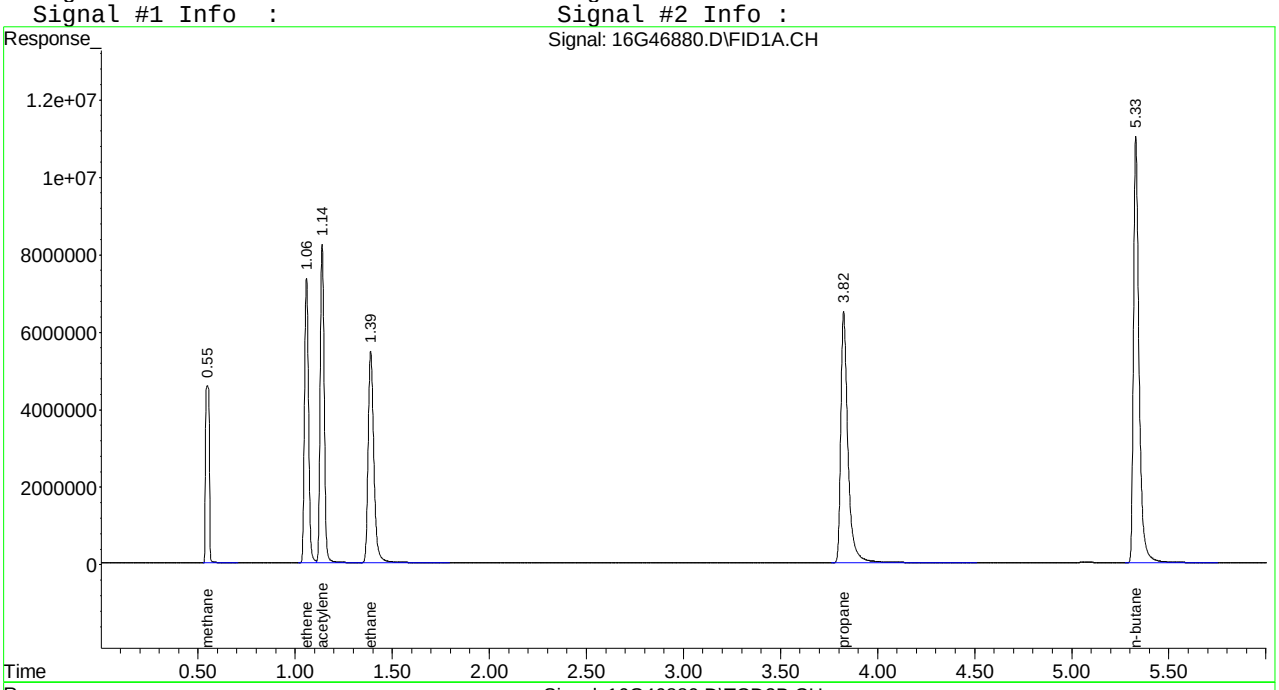

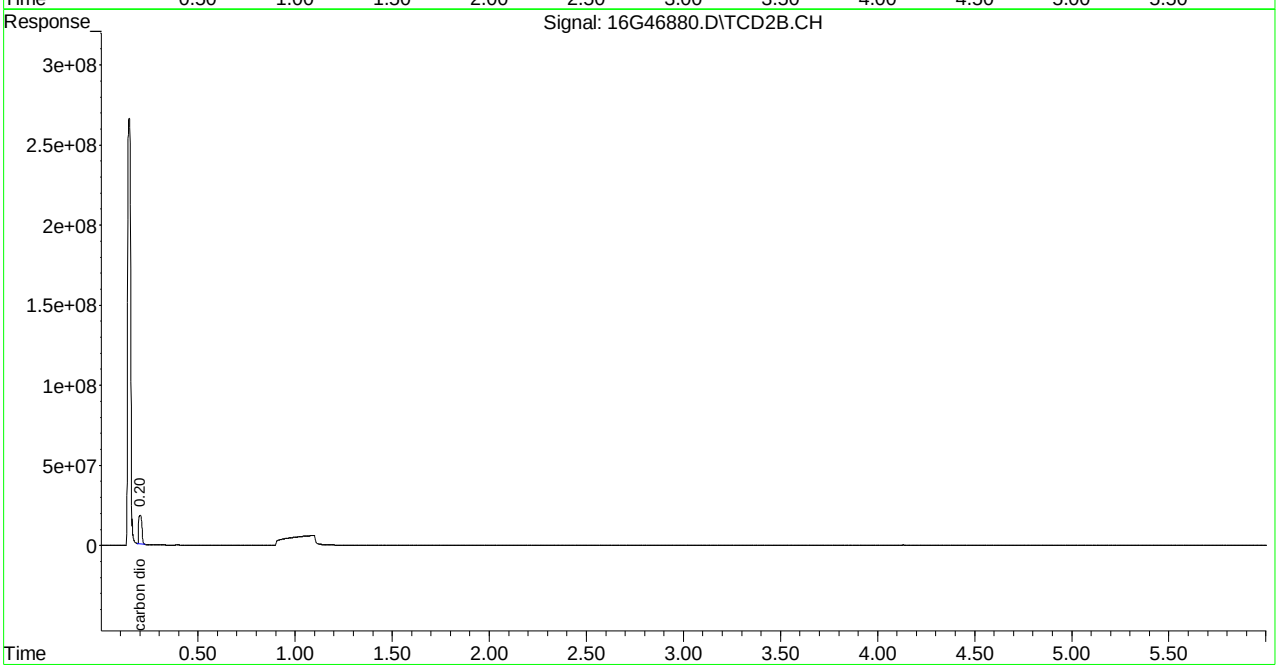

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On    : 03 Mar 2015  15:29                        Operator: JDS
Sample    : WG514119-07 533umol/mol STD RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:13 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	100578633	539.958	umol/
2) T	ethene	1.06	169644372	534.786	umol/
3) T	acetylene	1.14	183672662	542.712	umol/
4) T	ethane	1.39	178696917	525.738	umol/
5) T	propane	3.82	263060772	529.931	umol/
6) T	n-butane	5.33	344418707	531.285	umol/
8) T	carbon dioxide	0.20	309711021	56159.199	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On : 03 Mar 2015 15:29 Operator: JDS
Sample : WG514119-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

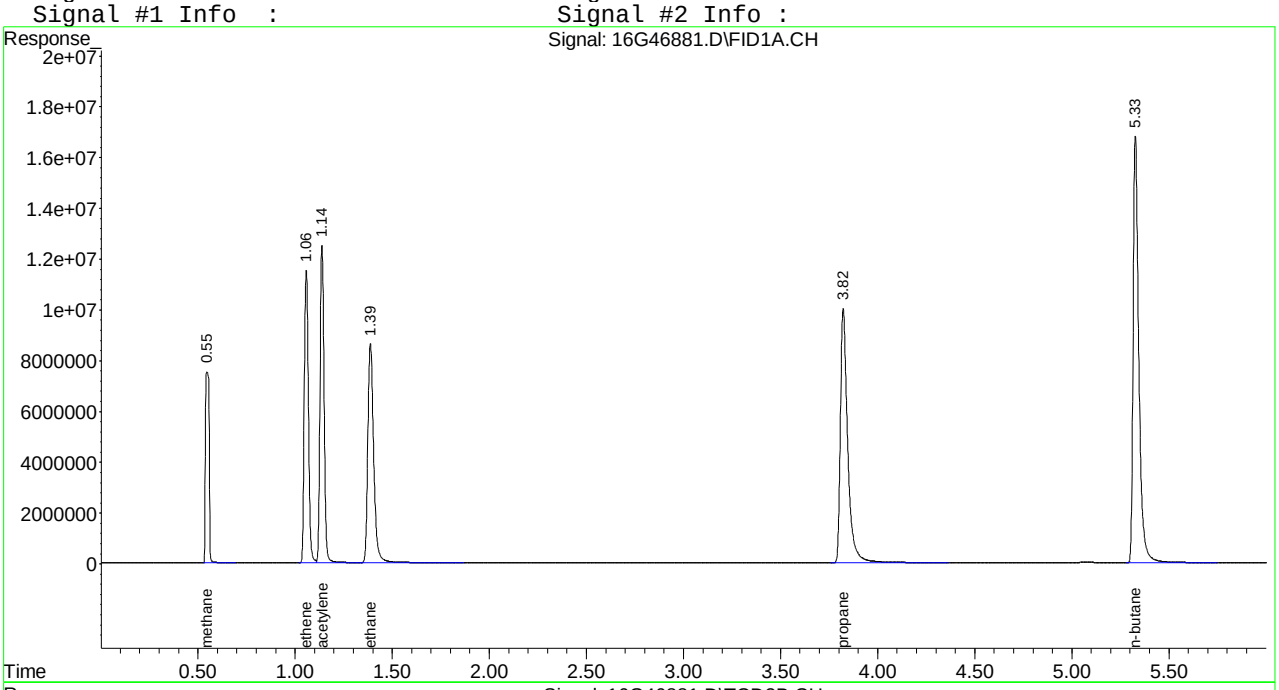

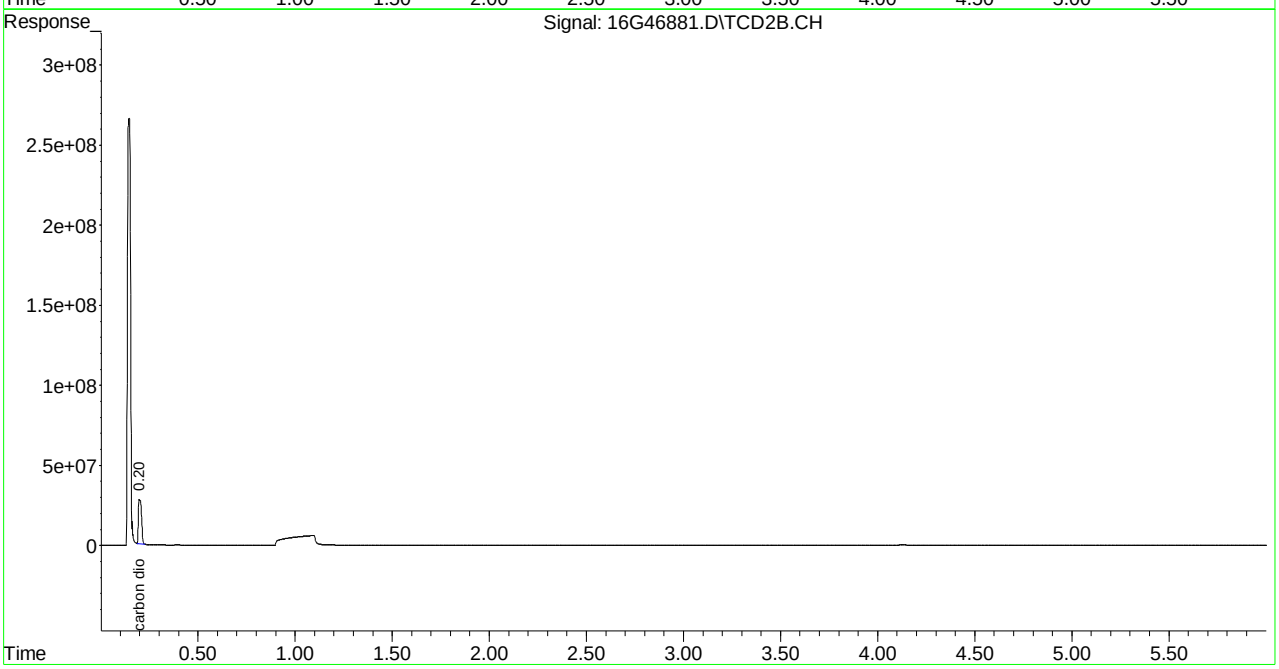

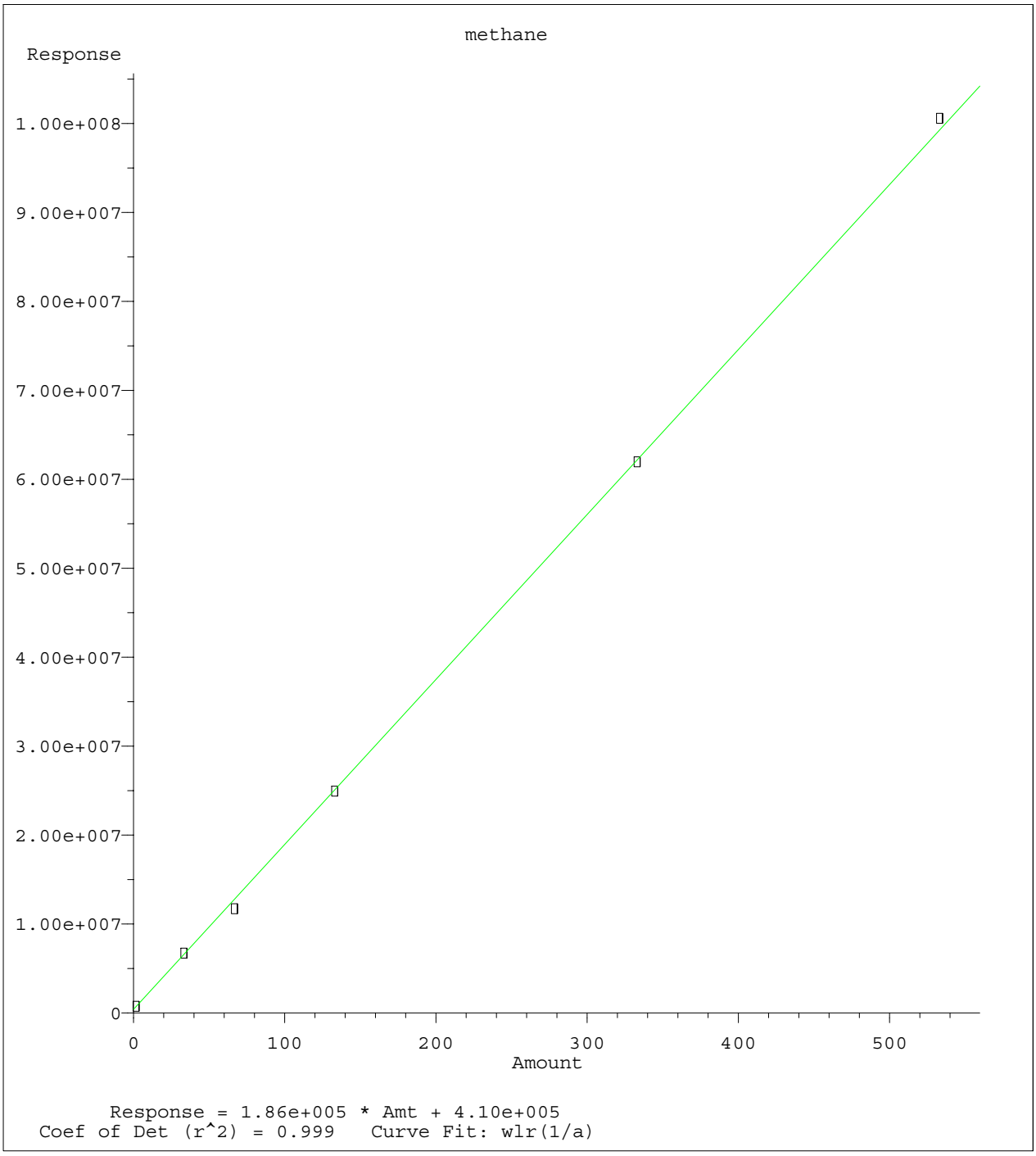

Method Name: C:\MSDCHEM\1\METHODS\RSKEXT1.M
Calibration Table Last Updated: Fri Mar 06 11:52:33 2015

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:58:49 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	25936090	137.598	umol/
2) T	ethene	1.06	43111404	135.904	umol/
3) T	acetylene	1.14	47098795	139.167	umol/
4) T	ethane	1.39	44778091	131.740	umol/
5) T	propane	3.83	64822008	130.583	umol/
6) T	n-butane	5.33	82856392	127.811	umol/
8) T	carbon dioxide	0.20	76359751	13846.141	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46884.D RSKEXT1.M Fri Mar 06 11:58:49 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:58 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

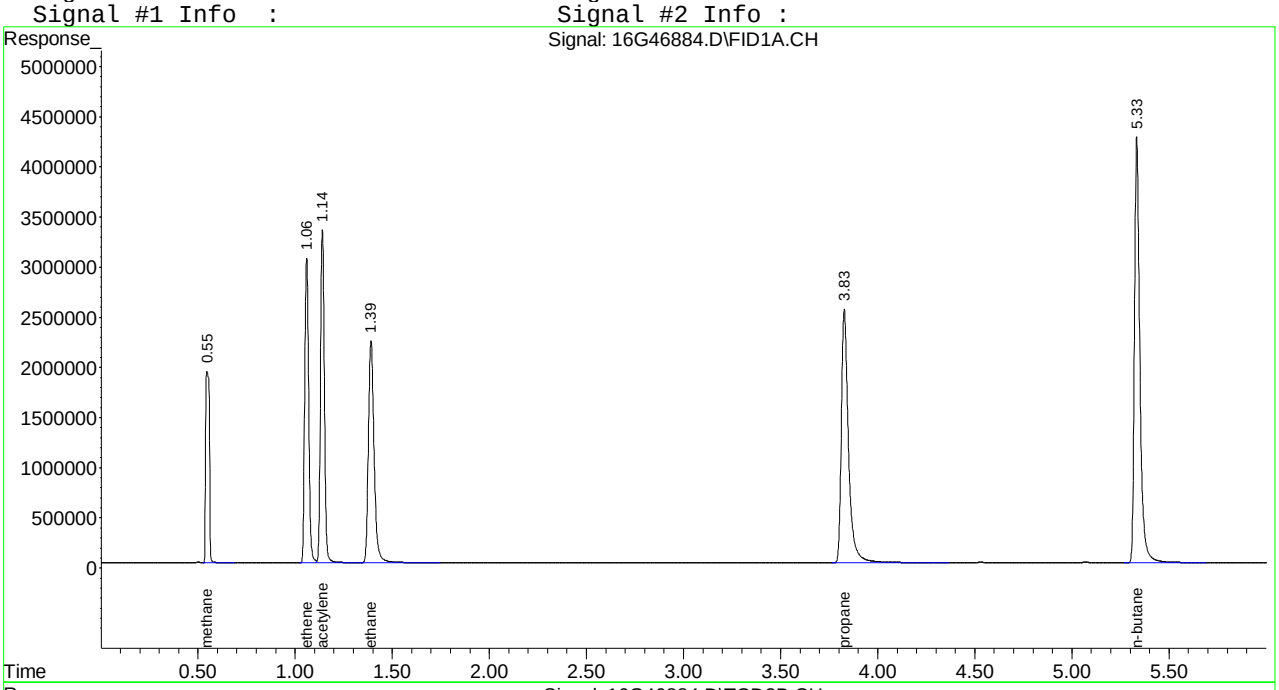

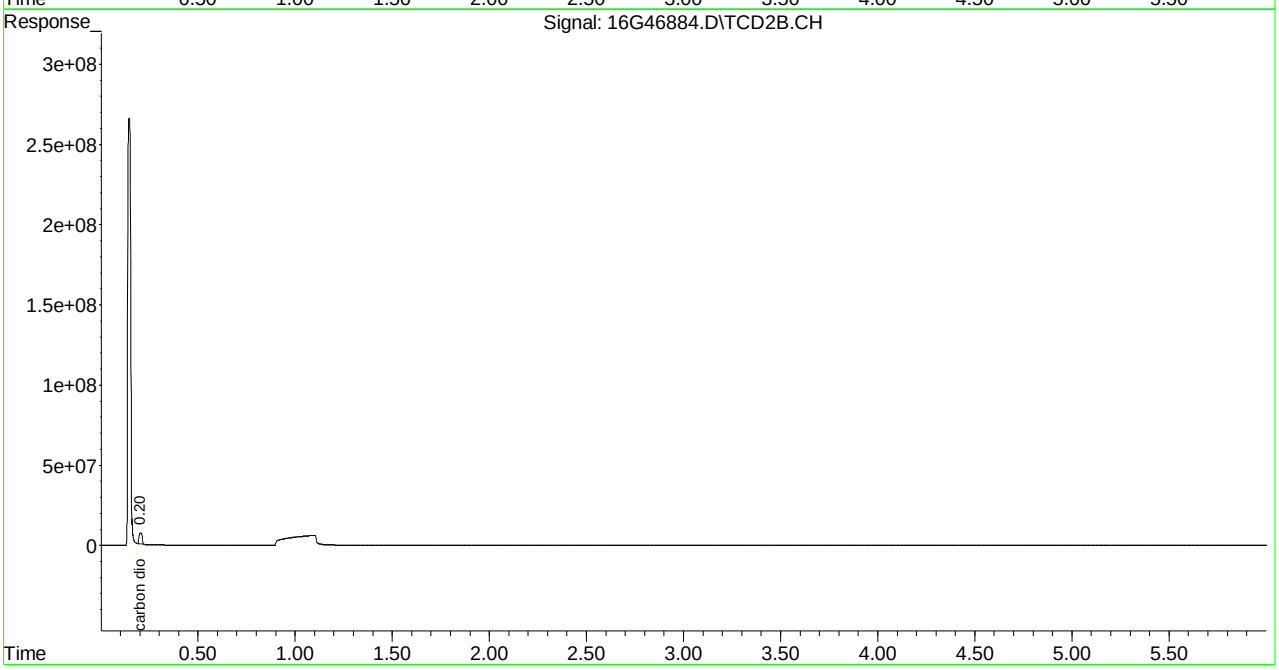

Evaluate Continuing Calibration Report

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On    : 03 Mar 2015  17:10                        Operator: JDS
Sample    : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	137.598	-3.5	104	0.00
2	T	ethene	133.000	135.904	-2.2	103	0.00
3	T	acetylene	133.000	139.167	-4.6	100	0.00
4	T	ethane	133.000	131.740	0.9	103	0.00
5	T	propane	133.000	130.583	1.8	101	0.00
6	T	n-butane	133.000	127.811	3.9	98	0.00
		Signal #2					
8	T	carbon dioxide	13300.000	13846.141	-4.1	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G46884.D RSKEXT1.M Fri Mar 06 11:59:02 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On    : 03 Mar 2015  17:10                        Operator: JDS
Sample    : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\052015\16G47545.D Vial: 1
Acq On : 20 May 2015 9:09 Operator: JDS
Sample : WG524389-01 133umol/mol CCV RSK17575 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: May 20 09:15:09 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23657896	125.317	umol/
2) T	ethene	1.06	39484288	124.470	umol/
3) T	acetylene	1.14	44516298	131.536	umol/
4) T	ethane	1.39	41266047	121.407	umol/
5) T	propane	3.83	60123687	121.118	umol/
6) T	n-butane	5.34	78097664	120.470	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47545.D RSK1.M Wed May 20 09:15:10 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\052015\16G47545.D Vial: 1
Acq On : 20 May 2015 9:09 Operator: JDS
Sample : WG524389-01 133umol/mol CCV RSK17575 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: May 20 9:15 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

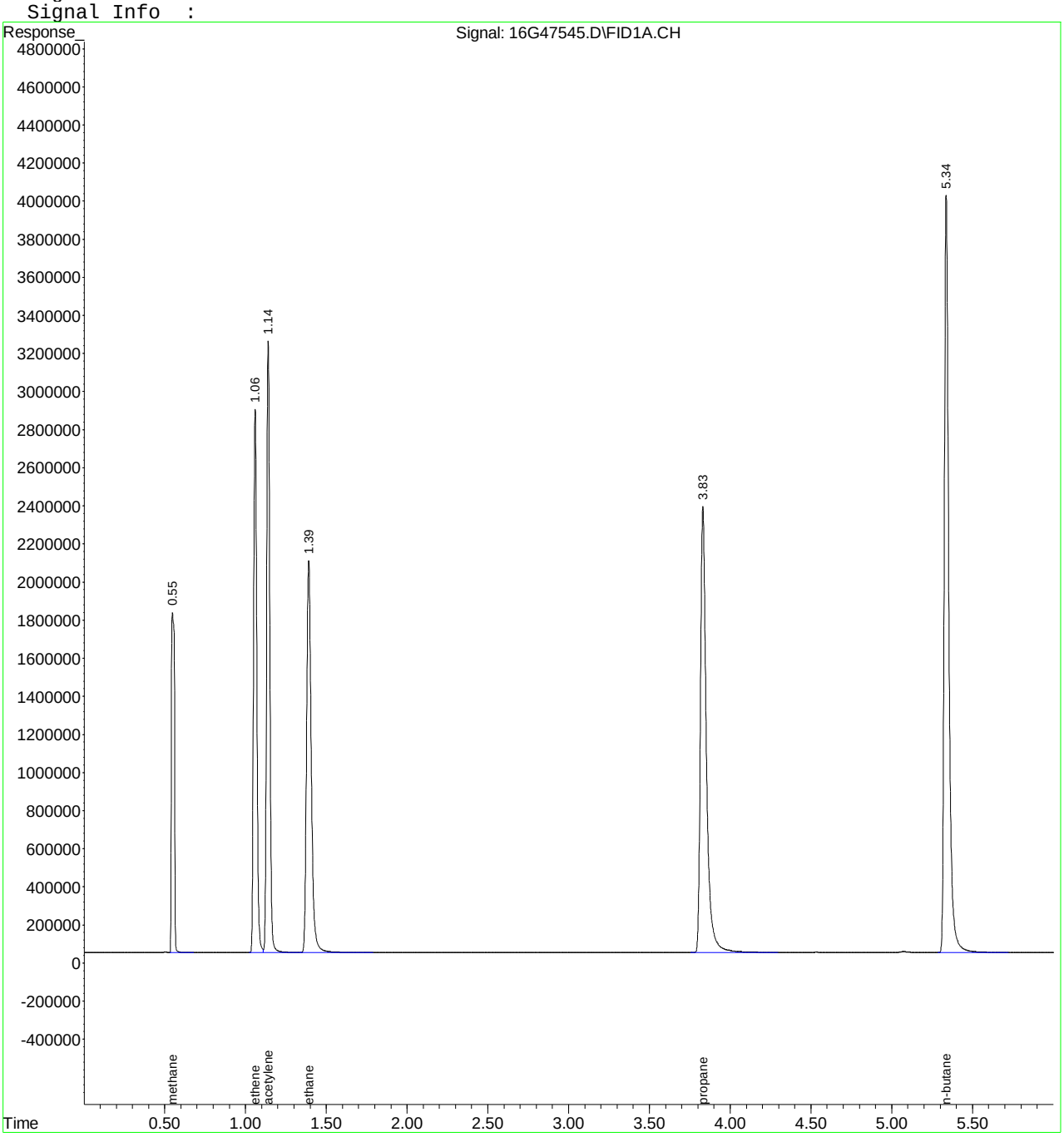

Evaluate Continuing Calibration Report

```
Data File : C:\MSDCHEM\1\DATA\052015\16G47545.D          Vial: 1
Acq On    : 20 May 2015   9:09                       Operator: JDS
Sample    : WG524389-01 133umol/mol CCV RSK17575     Inst    : HP16
Misc      : 1,1 STD67274                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	125.317	5.8	95	0.00
2	T	ethene	133.000	124.470	6.4	95	0.00
3	T	acetylene	133.000	131.536	1.1	94	0.00
4	T	ethane	133.000	121.407	8.7	94	0.00
5	T	propane	133.000	121.118	8.9	93	0.00
6	T	n-butane	133.000	120.470	9.4	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G47545.D RSK1.M Thu May 21 11:03:52 2015 Page 1

Evaluate Continuing Calibration Report - Not Founds

```
Data File : C:\MSDCHEM\1\DATA\052015\16G47545.D          Vial: 1
Acq On    : 20 May 2015   9:09                       Operator: JDS
Sample    : WG524389-01 133umol/mol CCV RSK17575     Inst    : HP16
Misc      : 1,1 STD67274                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------
```

```
---------------------------------------------------------------------------
 (#) = Out of Range             SPCC's out = 0  CCC's out = 0
 16G47545.D  RSK1.M      Thu May 21 11:03:52 2015                                Page 2
```

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\052015\16G47556.D Vial: 12
Acq On : 20 May 2015 13:21 Operator: JDS
Sample : WG524389-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: May 20 13:27:03 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23936404	126.819	umol/
2) T	ethene	1.06	40119921	126.474	umol/
3) T	acetylene	1.14	44832425	132.470	umol/
4) T	ethane	1.40	41929756	123.360	umol/
5) T	propane	3.83	61546112	123.983	umol/
6) T	n-butane	5.34	80337856	123.926	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47556.D RSK1.M Wed May 20 13:27:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\052015\16G47556.D Vial: 12
Acq On : 20 May 2015 13:21 Operator: JDS
Sample : WG524389-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: May 20 13:27 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

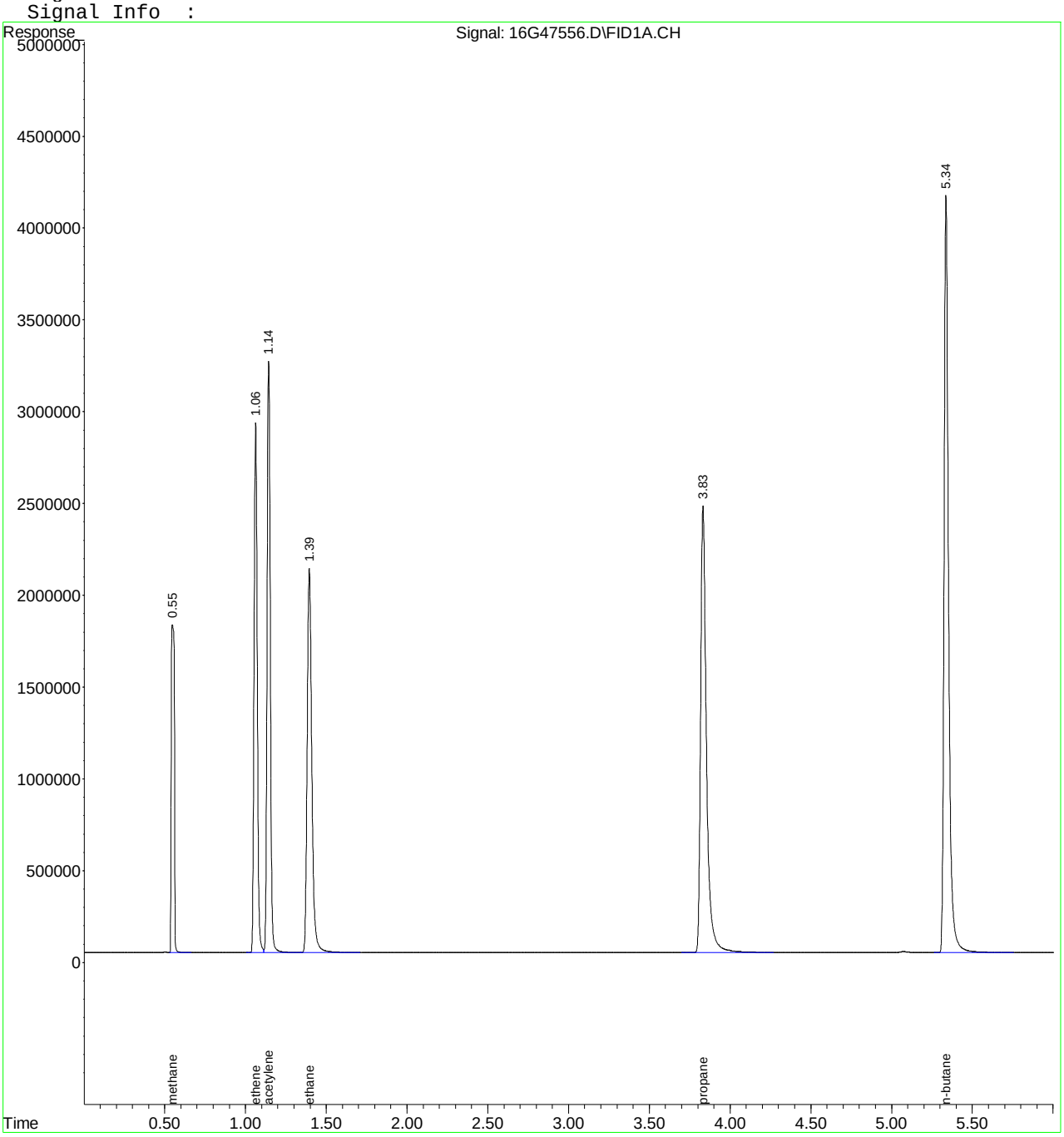

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\052015\16G47556.D Vial: 12
Acq On : 20 May 2015 13:21 Operator: JDS
Sample : WG524389-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile : EVENTS.E

Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	126.819	4.6	96	0.00
2	T	ethene	133.000	126.474	4.9	96	0.00
3	T	acetylene	133.000	132.470	0.4	95	0.00
4	T	ethane	133.000	123.360	7.2	96	0.00
5	T	propane	133.000	123.983	6.8	96	0.00
6	T	n-butane	133.000	123.926	6.8	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G47556.D RSK1.M Thu May 21 11:04:01 2015 Page 1

Evaluate Continuing Calibration Report - Not Founds

```
Data File : C:\MSDCHEM\1\DATA\052015\16G47556.D          Vial: 12
Acq On    : 20 May 2015  13:21                       Operator: JDS
Sample    : WG524389-02 133umol/mol CCV RSK175       Inst    : HP16
Misc      : 1,1 STD67274                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------
```

```
---------------------------------------------------------------------------
 (#) = Out of Range             SPCC's out = 0  CCC's out = 0
 16G47556.D  RSK1.M      Thu May 21 11:04:01 2015                                Page 2
```

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\052015\16G47567.D Vial: 23
Acq On : 20 May 2015 17:46 Operator: JDS
Sample : WG524389-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: May 20 17:52:22 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23791321	126.037	umol/
2) T	ethene	1.06	39607395	124.858	umol/
3) T	acetylene	1.14	41724847	123.288	umol/
4) T	ethane	1.39	41584200	122.343	umol/
5) T	propane	3.83	61030628	122.945	umol/
6) T	n-butane	5.34	79487919	122.615	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47567.D RSK1.M Wed May 20 17:52:22 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\052015\16G47567.D Vial: 23
Acq On : 20 May 2015 17:46 Operator: JDS
Sample : WG524389-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: May 20 17:52 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

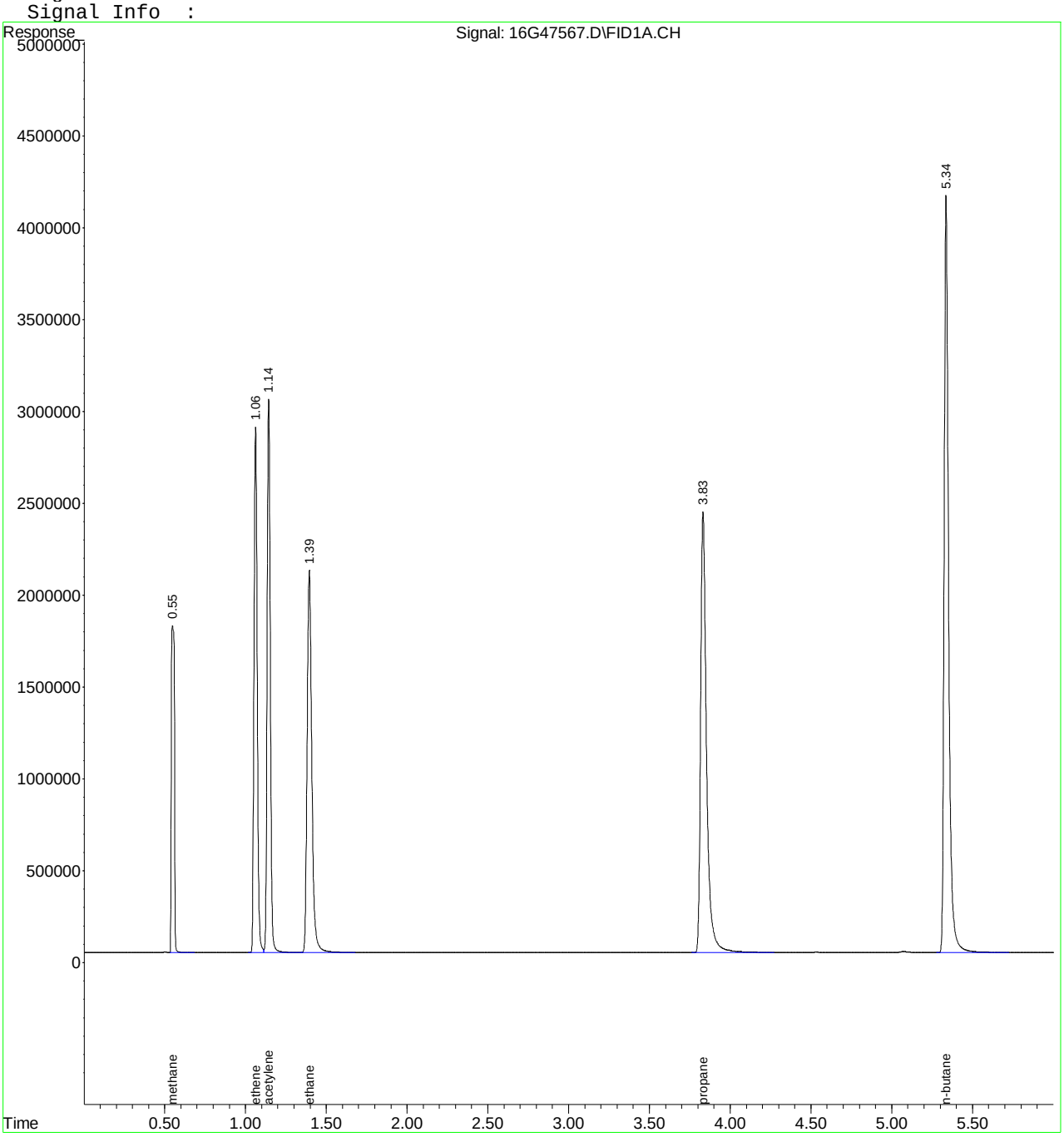

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\052015\16G47567.D Vial: 23
Acq On : 20 May 2015 17:46 Operator: JDS
Sample : WG524389-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile : EVENTS.E

Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	126.037	5.2	95	0.00
2	T	ethene	133.000	124.858	6.1	95	0.00
3	T	acetylene	133.000	123.288	7.3	88	0.00
4	T	ethane	133.000	122.343	8.0	95	0.00
5	T	propane	133.000	122.945	7.6	95	0.00
6	T	n-butane	133.000	122.615	7.8	94	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G47567.D RSK1.M Thu May 21 11:04:14 2015 Page 1

Evaluate Continuing Calibration Report - Not Founds

```
Data File : C:\MSDCHEM\1\DATA\052015\16G47567.D          Vial: 23
Acq On    : 20 May 2015  17:46                       Operator: JDS
Sample    : WG524389-03 133umol/mol CCV RSK175       Inst    : HP16
Misc      : 1,1 STD67274                             Multiplr: 1.00
IntFile   : EVENTS.E

Method       : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------
```

```
---------------------------------------------------------------------------
 (#) = Out of Range             SPCC's out = 0  CCC's out = 0
 16G47567.D  RSK1.M      Thu May 21 11:04:14 2015                          Page 2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15051231 **Run Date:** 05/20/2015 **Sample ID:** WG524389-01
Instrument: HP16 **Run Time:** 09:09 **Method:** RSK175
Workgroup (AAB#): WG524390 **File ID:** 16G47545

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.39	1.360	1.420
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2			
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4192824
Report generated 05/22/2015 09:05

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\052015\16G47546.D Vial: 2
Acq On : 20 May 2015 9:26 Operator: JDS
Sample : WG524390-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: May 20 09:32:11 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	320760	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	3.84	18255	0.037	umol/
6) T	n-butane	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47546.D RSK1.M Wed May 20 09:32:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\052015\16G47546.D Vial: 2
Acq On : 20 May 2015 9:26 Operator: JDS
Sample : WG524390-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: May 20 9:32 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

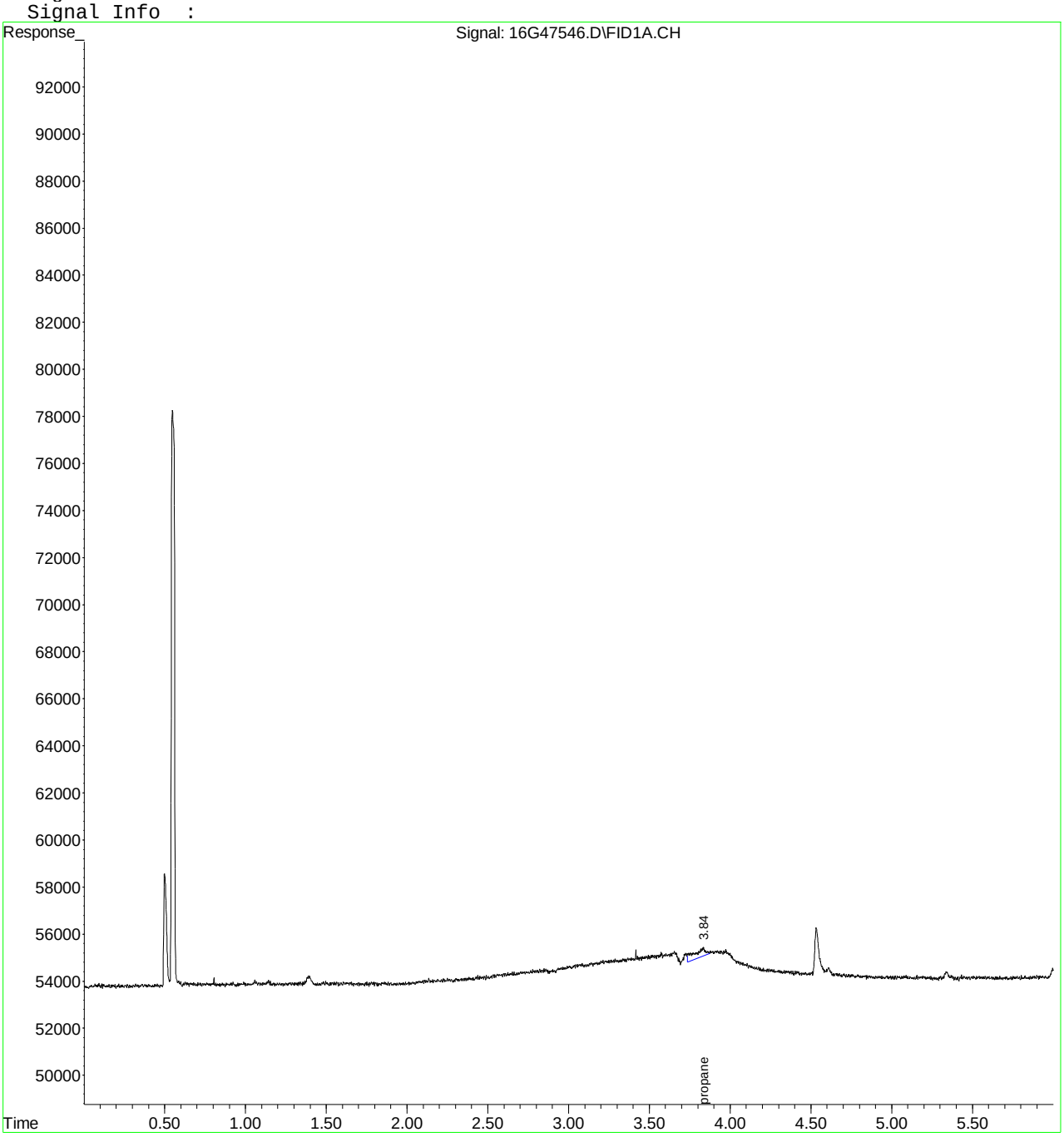

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\052015\16G47547.D Vial: 3
Acq On : 20 May 2015 9:38 Operator: JDS
Sample : WG524390-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: May 20 09:44:42 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12307161	64.131	umol/
2) T	ethene	1.06	20190382	63.648	umol/
3) T	acetylene	1.14	21564771	63.719	umol/
4) T	ethane	1.40	20955545	61.653	umol/
5) T	propane	3.83	30230147	60.898	umol/
6) T	n-butane	5.34	38106667	58.782	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47547.D RSK1.M Wed May 20 09:44:42 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\052015\16G47547.D Vial: 3
Acq On : 20 May 2015 9:38 Operator: JDS
Sample : WG524390-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: May 20 9:44 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

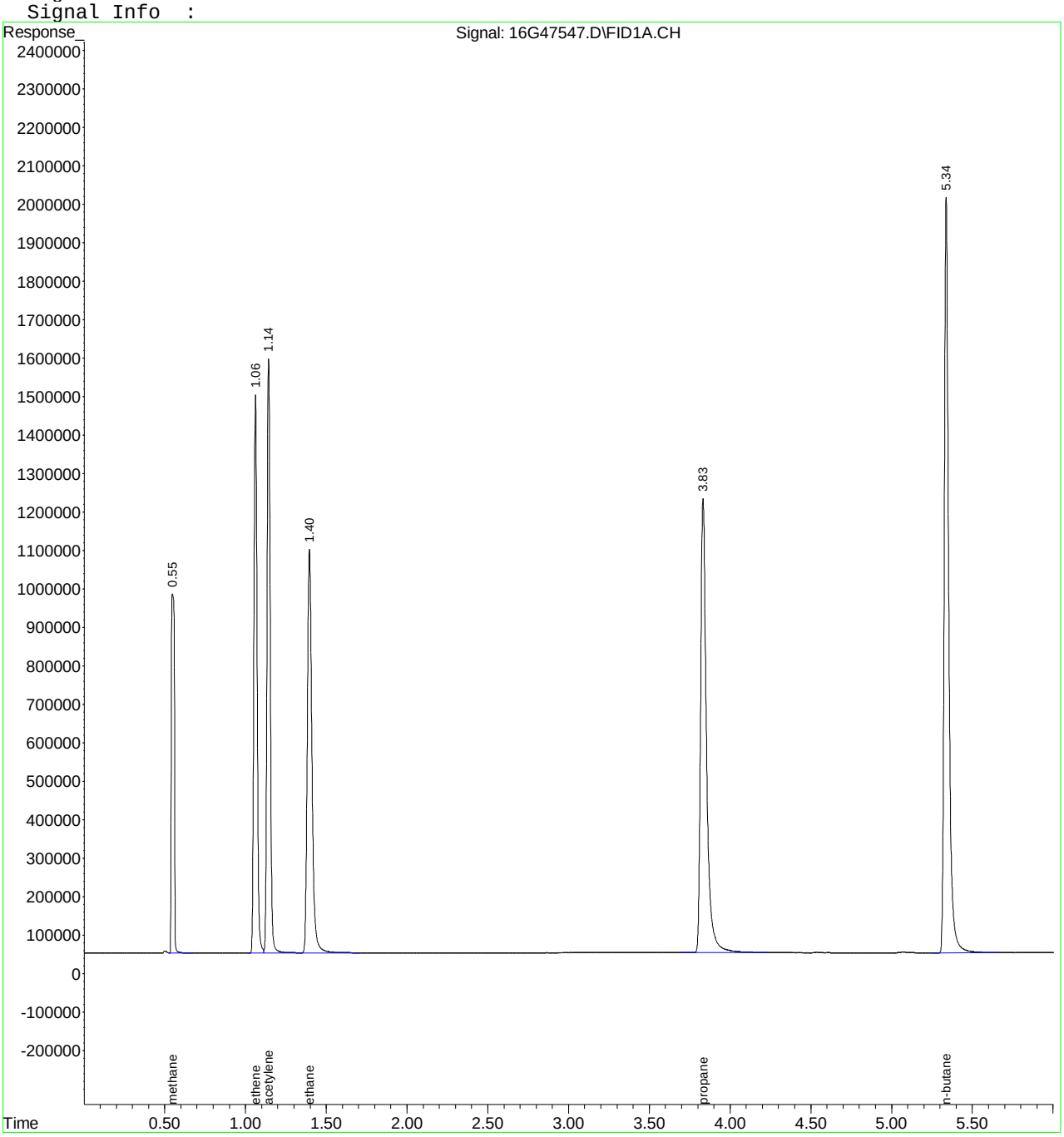

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\052015\16G47548.D Vial: 4
Acq On : 20 May 2015 9:50 Operator: JDS
Sample : WG524390-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: May 20 09:56:50 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12106983	63.052	umol/
2) T	ethene	1.06	19871574	62.643	umol/
3) T	acetylene	1.14	20709570	61.192	umol/
4) T	ethane	1.40	20622727	60.673	umol/
5) T	propane	3.83	29803887	60.039	umol/
6) T	n-butane	5.34	38187554	58.906	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47548.D RSK1.M Wed May 20 09:56:51 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\DATA\052015\16G47548.D Vial: 4
Acq On : 20 May 2015 9:50 Operator: JDS
Sample : WG524390-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile : EVENTS.E
Quant Time: May 20 9:56 2015 Quant Results File: RSK1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSK1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSK1.M

Volume Inj. :
Signal Phase :
Signal Info :

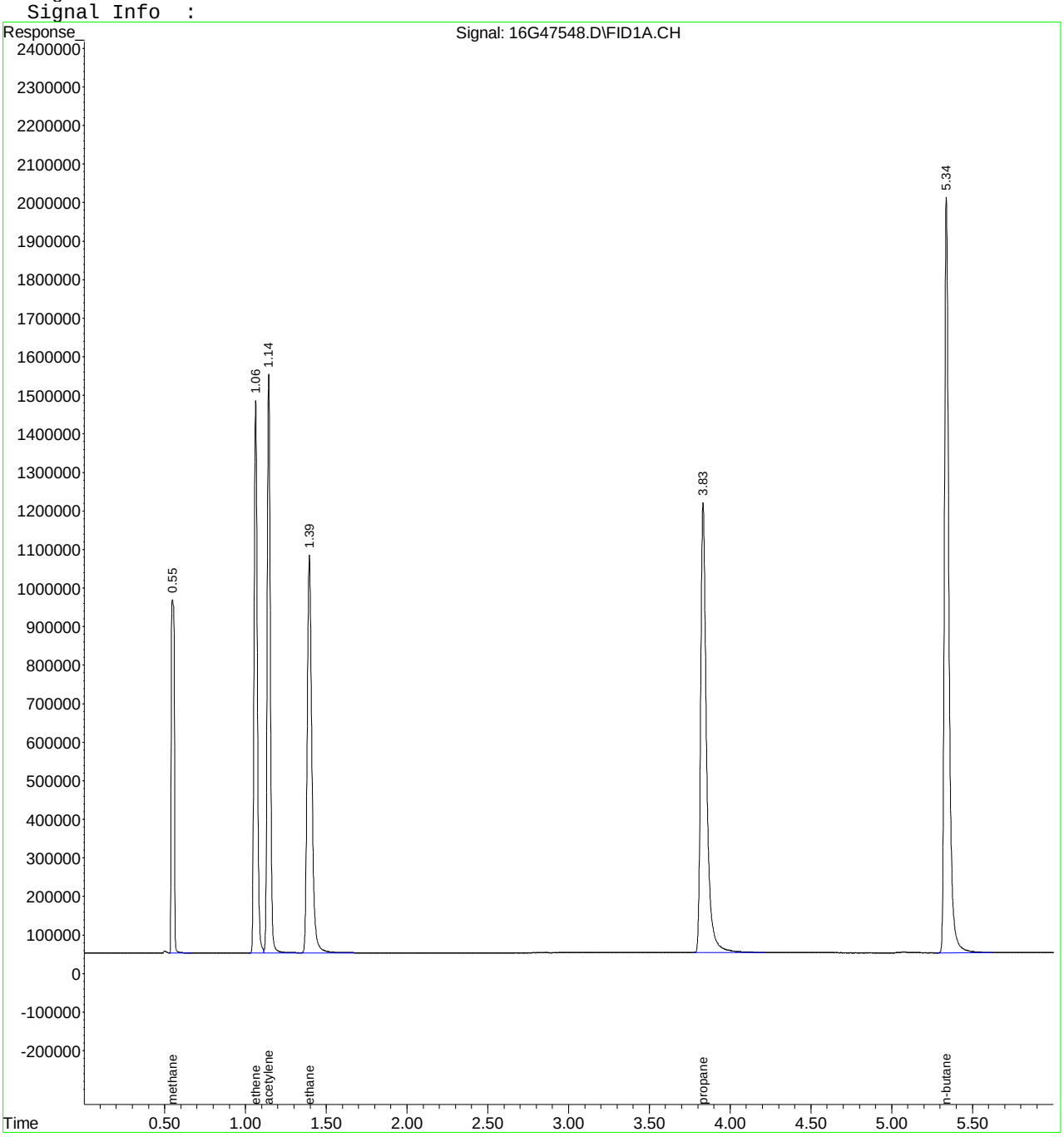

2.2 General Chemistry Data

2.2.1 Method 9056

2.2.1.1 Summary Data

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-051915	**Prep Method:**	9056	**Prep Date:**	05/20/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524505	**Analyst:**	ALS	**Run Date:**	05/20/2015 18:36
Collect Date:	05/19/2015 08:25	**Dilution:**	10	**File ID:**	I1_052015-11
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	2420	J	4.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	3.95	J	4.00	2.00	1.00
Sulfate	14808-79-8	524		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW08-051915	**Prep Method:**	9056	**Prep Date:**	05/20/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524505	**Analyst:**	ALS	**Run Date:**	05/20/2015 18:54
Collect Date:	05/19/2015 08:25	**Dilution:**	100	**File ID:**	I1_052015-12
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1750		40.0	20.0	10.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0
Sulfate	14808-79-8	468		200	100	50.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-04	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW13-051915	**Prep Method:**	9056	**Prep Date:**	05/20/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524505	**Analyst:**	ALS	**Run Date:**	05/20/2015 19:12
Collect Date:	05/19/2015 11:50	**Dilution:**	10	**File ID:**	I1_052015-13
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	2330	J	4.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	3.40	J	4.00	2.00	1.00
Sulfate	14808-79-8	344		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-04	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW13-051915	**Prep Method:**	9056	**Prep Date:**	05/20/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524505	**Analyst:**	ALS	**Run Date:**	05/20/2015 19:29
Collect Date:	05/19/2015 11:50	**Dilution:**	100	**File ID:**	I1_052015-14
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1680		40.0	20.0	10.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0
Sulfate	14808-79-8	316		200	100	50.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-05	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW01-051915	**Prep Method:**	9056	**Prep Date:**	05/20/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524505	**Analyst:**	ALS	**Run Date:**	05/20/2015 20:22
Collect Date:	05/19/2015 12:20	**Dilution:**	5	**File ID:**	I1_052015-17
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1390	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	2.02		2.00	1.00	0.500
Sulfate	14808-79-8	143		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-05	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	67WW01-051915	**Prep Method:**	9056	**Prep Date:**	05/20/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524505	**Analyst:**	ALS	**Run Date:**	05/20/2015 20:40
Collect Date:	05/19/2015 12:20	**Dilution:**	50	**File ID:**	I1_052015-18
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	988		20.0	10.0	5.00
Nitrate	14797-55-8	10.0	U	20.0	10.0	5.00
Nitrite	14797-65-0	10.0	U	20.0	10.0	5.00
Sulfate	14808-79-8	133		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(- c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 042115 ICAL IC1.SEQ

Analyst1: AED Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53072 Syringe Filter Lot#: 00193905

Eluent ID#: RGT33321

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG520208

Internal STD: NA Surrogate STD: NA Calibration STD STD69215

CCV STD: STD69215 LCS STD: STD69216 MS/MSD STD: STD69216

Comments: 04/21/15 IC1 ICAL

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_042115-01	ELUENT	1	1		04/21/15 13:54
2	I1_042115-02	DI WATER	1	1		04/21/15 14:12
3	I1_042115-03	WG520208-01 STD \#6	1	1		04/21/15 14:29
4	I1_042115-04	WG520208-02 STD \#5	1	1		04/21/15 14:47
5	I1_042115-05	WG520208-03 STD \#4	1	1		04/21/15 15:05
6	I1_042115-06	WG520208-04 STD \#3	1	1		04/21/15 15:23
7	I1_042115-07	WG520208-05 STD \#2	1	1		04/21/15 15:40
8	I1_042115-08	WG520208-06 STD \#1	1	1		04/21/15 15:58
9	I1_042115-09	WG520208-07 ALT STD	1	1		04/21/15 16:16
10	I1_042115-10	LCR LEVEL 6	1	1		04/21/15 16:33
11	I1_042115-11	LCR LEVEL 2	1	1		04/21/15 16:51
12	I1_042115-12	LCR LEVEL 0	1	1		04/21/15 17:09
13	I1_042115-13	END	1	1		04/21/15 17:27

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 24-APR-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 052015 IC1.SEQ
Analyst1: ALS Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53155 Syringe Filter Lot#: 00197629
Eluent ID#: RGT33645
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG524505
Internal STD: NA Surrogate STD: NA Calibration STD STD69215
CCV STD: STD69215 LCS STD: STD69216 MS/MSD STD: STD69216

Comments: Fractions L15051231-01,04,05 were analyzed at dilutions due to analyte concentrations exceeding 200ppm.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_052015-01	ELUENT	1	1		05/20/15 15:39
2	I1_052015-02	DI WATER	1	1		05/20/15 15:57
3	I1_052015-03	WG524507-01 ANION CCV	1	1		05/20/15 16:15
4	I1_052015-04	WG524507-02 ANION CCB	1	1		05/20/15 16:32
5	I1_052015-05	WG524505-01 ANION BLANK	1	1		05/20/15 16:50
6	I1_052015-06	WG524505-02 ANION LCS	1	1		05/20/15 17:08
7	I1_052015-07	L15051230-01 (NO2,NO3) RR NO3	2	1		05/20/15 17:25
8	I1_052015-08	L15051230-02 (NO2,NO3) RR NO3	2	1		05/20/15 17:43
9	I1_052015-09	L15051230-03 (NO2,NO3)	2	1		05/20/15 18:01
10	I1_052015-10	L15051230-04 (NO2,NO3) RR NO3	2	1		05/20/15 18:19
11	I1_052015-11	L15051231-01 1/10 (CL,NO2,NO3,SO4)	1	10		05/20/15 18:36
12	I1_052015-12	L15051231-01 1/100 (CL,NO2,NO3,SO4)	1	100		05/20/15 18:54
13	I1_052015-13	L15051231-04 1/10 (CL,NO2,NO3,SO4)	1	10		05/20/15 19:12
14	I1_052015-14	L15051231-04 1/100 (CL,NO2,NO3,SO4)	1	100		05/20/15 19:29
15	I1_052015-15	WG524507-03 ANION CCV	1	1		05/20/15 19:47
16	I1_052015-16	WG524507-04 ANION CCB	1	1		05/20/15 20:05
17	I1_052015-17	L15051231-05 1/5 (CL,NO2,NO3,SO4)	1	5		05/20/15 20:22
18	I1_052015-18	L15051231-05 1/50 (CL,NO2,NO3,SO4)	1	50		05/20/15 20:40
19	I1_052015-19	L15051074-01 1/5 (SO4)	2	5		05/20/15 20:58
20	I1_052015-20	L15051074-02 1/50 (SO4)	2	50		05/20/15 21:16
21	I1_052015-21	L15051077-01 1/10 (SO4)	2	10		05/20/15 21:33
22	I1_052015-22	L15051077-03 1/10 (SO4)	2	10		05/20/15 21:51
23	I1_052015-23	L15051092-04 (SO4) REF	1	1		05/20/15 22:09
24	I1_052015-24	WG524505-04 DUP 1092-04	2	1		05/20/15 22:26
25	I1_052015-25	WG524505-05 MS	2	1		05/20/15 22:44
26	I1_052015-26	WG524505-06 MSD	2	1		05/20/15 23:02
27	I1_052015-27	WG524507-05 ANION CCV	1	1		05/20/15 23:20
28	I1_052015-28	WG524507-06 ANION CCB	1	1		05/20/15 23:37
29	I1_052015-29	END	1	1		05/20/15 23:55

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7	X	10	Over Calibration Range	NO3

Page: 1 Approved: 22-MAY-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 052015 IC1.SEQ
Analyst1: ALS Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53155 Syringe Filter Lot#: 00197629
Eluent ID#: RGT33645
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG524505
Internal STD: NA Surrogate STD: NA STD69215
CCV STD: STD69215 LCS STD: STD69216 STD69216

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L15051230-01 (NO2,NO3) RR NO3			
8	X	10	Over Calibration Range	NO3
	L15051230-02 (NO2,NO3) RR NO3			
10	X	5	Over Calibration Range	NO3
	L15051230-04 (NO2,NO3) RR NO3			

Page: 2 Approved: 22-MAY-15

Microbac Laboratories Inc.

Data Checklist

Date: 21-APR-2015
Analyst: AED
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 67520
Analytical Workgroups: WG520208 ICAL

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
22-APR-2015

Secondary Reviewer:
24-APR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: APR-24-2015 12:54:11

Microbac Laboratories Inc.

Data Checklist

Date: 20-MAY-2015
Analyst: ALS
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 68098
Analytical Workgroups: 05-1074,1077,1092,1230,1231

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	ALS
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 21-MAY-2015

Secondary Reviewer: 22-MAY-2015

CHECKLIST1 - Modified 03/05/2008

Generated: MAY-22-2015 08:50:01

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG524505

Login Number: L15051231

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-051915	01	05/19/15					05/20/2015	1.3	2		05/20/15	1.4	2	
67WW08-051915	01	05/19/15					05/20/2015	1.3	2		05/20/15	1.4	2	
67WW13-051915	04	05/19/15					05/20/2015	1.1	2		05/20/15	1.3	2	
67WW13-051915	04	05/19/15					05/20/2015	1.1	2		05/20/15	1.3	2	
67WW01-051915	05	05/19/15					05/20/2015	1.1	2		05/20/15	1.3	2	
67WW01-051915	05	05/19/15					05/20/2015	1.1	2		05/20/15	1.3	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4189657
Report generated 05/22/2015 10:17

METHOD BLANK SUMMARY

Login Number: L15051231
Blank File ID: I1_052015-05
Prep Date: 05/20/15 15:00
Analyzed Date: 05/20/15 16:50
Analyst: ALS

Work Group: WG524505
Blank Sample ID: WG524505-01
Instrument ID: IC1
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524505-02	I1_052015-06	05/20/15 17:08	01
67WW08-051915	L15051231-01	I1_052015-11	05/20/15 18:36	DL01
67WW08-051915	L15051231-01	I1_052015-12	05/20/15 18:54	DL02
67WW13-051915	L15051231-04	I1_052015-13	05/20/15 19:12	DL01
67WW13-051915	L15051231-04	I1_052015-14	05/20/15 19:29	DL02
67WW01-051915	L15051231-05	I1_052015-17	05/20/15 20:22	DL01
67WW01-051915	L15051231-05	I1_052015-18	05/20/15 20:40	DL02
DUP	WG524505-04	I1_052015-24	05/20/15 22:26	01

Report Name: BLANK_SUMMARY
PDF File ID: 4189658
Report generated 05/22/2015 10:17

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051231 Prep Date: 05/20/15 15:00 Sample ID: WG524505-01
Instrument ID: IC1 Run Date: 05/20/15 16:50 Prep Method: 9056
File ID: I1 052015-05 Analyst: ALS Method: 9056
Workgroup (AAB#): WG524505 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1-21-APR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4189659
22-MAY-2015 10:17

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051231 Run Date: 05/20/2015 Sample ID: WG524505-02
Instrument ID: IC1 Run Time: 17:08 Prep Method: 9056
File ID: I1 052015-06 Analyst: ALS Method: 9056
Workgroup (AAB#): WG524505 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD69215 Cal ID: IC1 - 21-APR-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	7.60	95.0	90 - 110	
Nitrate	5.42	5.31	98.0	90 - 110	
Nitrite	4.87	4.69	96.2	90 - 110	
Sulfate	40.0	38.9	97.2	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4189660
Report generated: 05/22/2015 10:17

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15051231
Analytical Method: 9056
ICAL Workgroup: WG520208

Instrument ID: IC1
Initial Calibration Date: 21-APR-15 15:58
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.585	7.66	0.99800	
Nitrate		2.277	8.84	0.99700	
Nitrite		2.770	4.28	0.99900	
Sulfate		7.395	11.2	0.99700	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4189661
Report generated 05/22/2015 10:17

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15051231

Analytical Method: 9056

Instrument ID: IC1

Initial Calibration Date: 21-APR-15 15:58

Column ID: F

Analyte	WG520208-01			WG520208-02			WG520208-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.89900000	4.899	12.0	2.24100000	5.355	8.00	1.43000000	5.594
Nitrate	16.3	8.29100000	1.962	8.13	3.76300000	2.161	5.42	2.38200000	2.276
Nitrite	14.6	5.59100000	2.614	7.31	2.74000000	2.667	4.87	1.77500000	2.744
Sulfate	120	19.2650000	6.229	60.0	8.80400000	6.815	40.0	5.51100000	7.258

INT_CAL - Modified 03/06/2008
PDF File ID: 4189661
Report generated 05/22/2015 10:17

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15051231

Analytical Method: 9056

Instrument ID: IC1

Initial Calibration Date: 21-APR-15 15:58

Column ID: F

Analyte	WG520208-04			WG520208-05			WG520208-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.691000000	5.789	1.00	0.167000000	5.988	0.200	0.0340000000	5.882
Nitrate	2.71	1.13800000	2.382	0.678	0.276000000	2.455	0.134	0.0550000000	2.428
Nitrite	2.44	0.872000000	2.793	0.609	0.210000000	2.900	0.122	0.0420000000	2.900
Sulfate	20.0	2.62800000	7.610	5.00	0.621000000	8.052	1.00	0.119000000	8.403

INT_CAL - Modified 03/06/2008
PDF File ID: 4189661
Report generated 05/22/2015 10:17

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051231 Run Date: 04/21/2015 Sample ID: WG520208-07
Instrument ID: IC1 Run Time: 16:16 Method: 9056
File ID: I1 042115-09 Analyst: AED QC Key: DOD4
ICal Workgroup: WG520208 Cal ID: IC1 - 21-APR-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.93	mg/L	5.56	0.900	10	
Nitrate		5.42	5.53	mg/L	2.26	1.90	10	
Nitrite		4.87	4.86	mg/L	2.74	0.200	10	
Sulfate		40.0	39.9	mg/L	7.18	0.300	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4189662
Report generated 05/22/2015 10:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051231
Run Date: 05/20/2015
Sample ID: WG524507-02
Instrument ID: IC1
Run Time: 16:32
Method: 9056
File ID: I1 052015-04
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG524505
Cal ID: IC1 - 21-APR-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4189664
Report generated 05/22/2015 10:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051231
Run Date: 05/20/2015
Sample ID: WG524507-04
Instrument ID: IC1
Run Time: 20:05
Method: 9056
File ID: I1 052015-16
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG524505
Cal ID: IC1 - 21-APR-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4189664
Report generated 05/22/2015 10:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051231
Run Date: 05/20/2015
Sample ID: WG524507-06
Instrument ID: IC1
Run Time: 23:37
Method: 9056
File ID: I1 052015-28
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG524505
Cal ID: IC1 - 21-APR-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4189664
Report generated 05/22/2015 10:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051231
Run Date: 05/20/2015
Sample ID: WG524507-01
Instrument ID: IC1
Run Time: 16:15
Method: 9056
File ID: I1 052015-03
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG524505
Cal ID: IC1 - 21-APR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.62	mg/L	5.79	4.75	10	
Nitrate		5.42	5.33	mg/L	2.34	1.78	10	
Nitrite		4.87	4.64	mg/L	2.87	4.67	10	
Sulfate		40.0	38.7	mg/L	7.40	3.20	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4189663
Report generated 05/22/2015 10:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051231
Run Date: 05/20/2015
Sample ID: WG524507-03
Instrument ID: IC1
Run Time: 19:47
Method: 9056
File ID: I1 052015-15
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG524505
Cal ID: IC1 - 21-APR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.54	mg/L	5.85	5.71	10	
Nitrate		5.42	5.28	mg/L	2.37	2.69	10	
Nitrite		4.87	4.65	mg/L	2.87	4.54	10	
Sulfate		40.0	38.2	mg/L	7.50	4.49	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4189663
Report generated 05/22/2015 10:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051231
Run Date: 05/20/2015
Sample ID: WG524507-05
Instrument ID: IC1
Run Time: 23:20
Method: 9056
File ID: I1 052015-27
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG524505
Cal ID: IC1 - 21-APR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.53	mg/L	5.86	5.84	10	
Nitrate		5.42	5.28	mg/L	2.37	2.63	10	
Nitrite		4.87	4.73	mg/L	2.81	2.82	10	
Sulfate		40.0	38.5	mg/L	7.44	3.70	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4189663
Report generated 05/22/2015 10:18

2.2.1.3 Sample Data

11 L15051231-01 1/10 (CL,NO2,NO3,SO4)

1,10 ALS (CL,SO4>200PPM)

Sample Name:	**L15051231-01 1/10 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2015 18:36**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

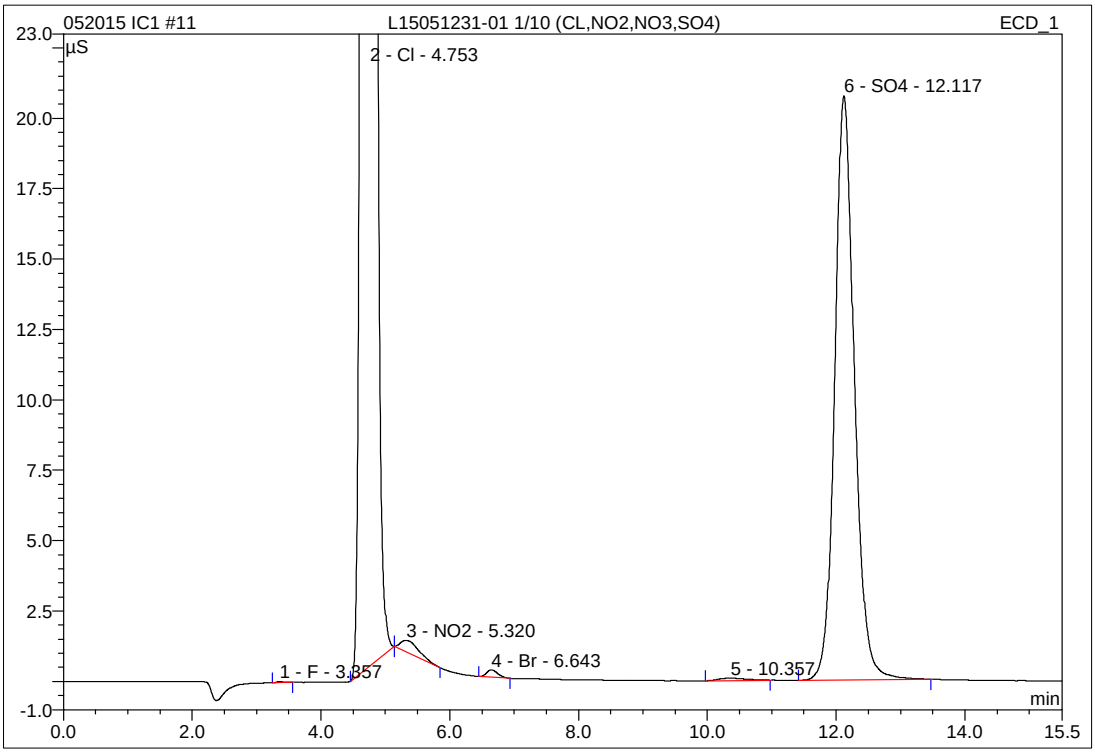

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	0.039	0.005	0.01	0.059	BMB
2	4.75	Cl	296.300	43.986	85.32	241.984	BMb
3	5.32	NO2	0.406	0.141	0.27	0.395	bMB
4	6.64	Br	0.269	0.054	0.10	0.752	BMB
5	10.36	n.a.	0.088	0.041	0.08	n.a.	BMB
6	12.12	SO4	20.750	7.327	14.21	52.413	BMB
Total:			317.852	51.554	100.00	295.603	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

12 L15051231-01 1/100 (CL,NO2,NO3,SO4)

1,100 ALS (CL>ICAL)

Sample Name:	**L15051231-01 1/100 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2015 18:54**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

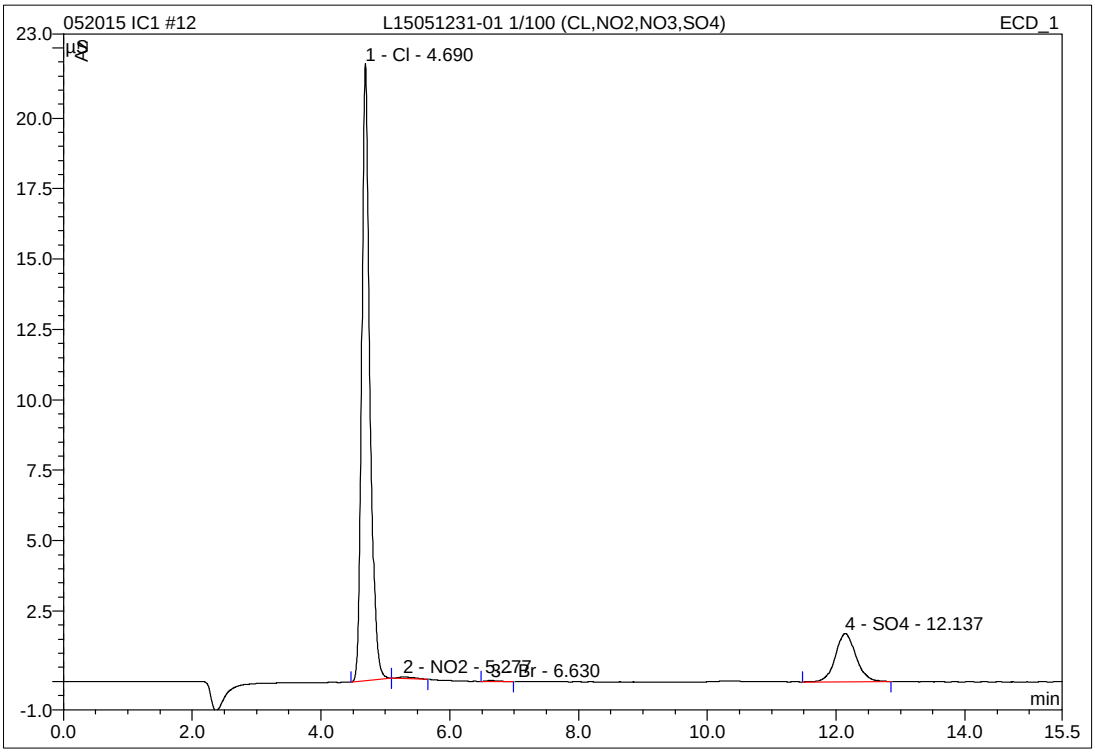

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.69	Cl	21.928	3.182	82.86	17.519	BMb
2	5.28	NO2	0.062	0.019	0.51	0.062	bMB
3	6.63	Br	0.031	0.007	0.17	0.089	BMB
4	12.14	SO4	1.713	0.632	16.46	4.677	BMB
Total:			23.734	3.840	100.00	22.347	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

13 L15051231-04 1/10 (CL,NO2,NO3,SO4)

1,10 ALS (CL,SO4>200PPM)

Sample Name:	**L15051231-04 1/10 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2015 19:12**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

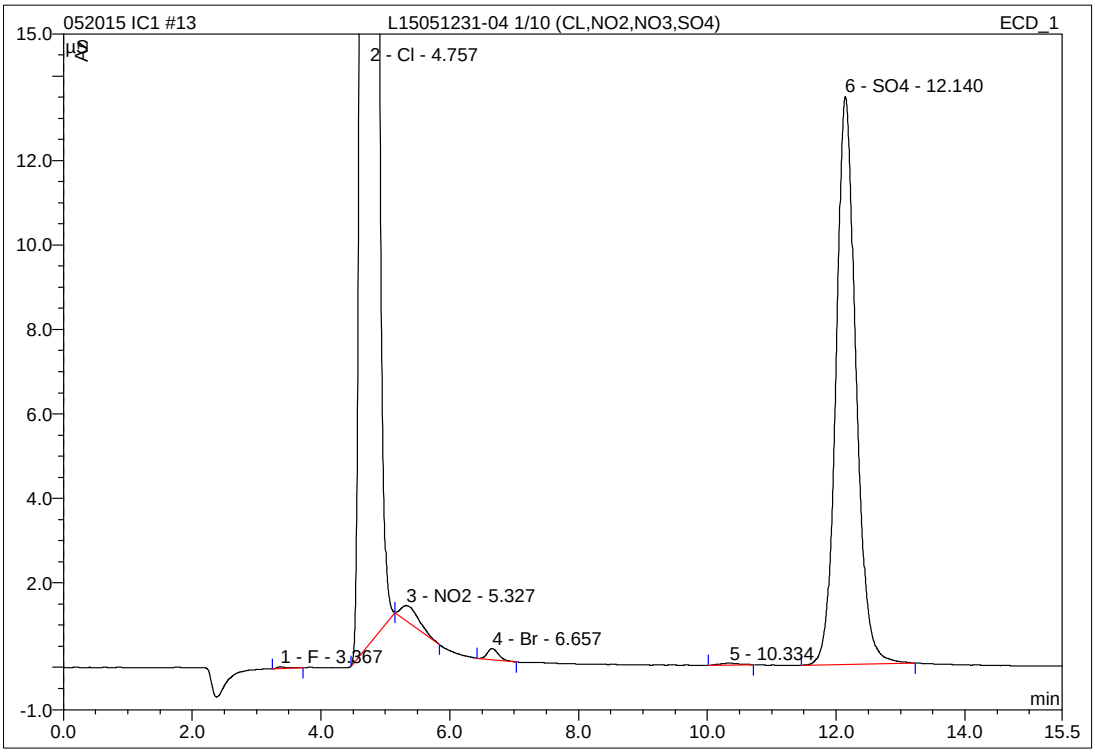

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.37	F	0.047	0.009	0.02	0.074	BMB
2	4.76	Cl	280.148	42.429	89.45	233.421	BMb
3	5.33	NO2	0.354	0.121	0.26	0.340	bMB
4	6.66	Br	0.262	0.053	0.11	0.745	BMB
5	10.33	n.a.	0.046	0.016	0.03	n.a.	BMB
6	12.14	SO4	13.439	4.805	10.13	34.433	BMB
Total:			294.296	47.434	100.00	269.012	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

14 L15051231-04 1/100 (CL,NO2,NO3,SO4)

1,100 ALS (CL>ICAL)

Sample Name:	**L15051231-04 1/100 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2015 19:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

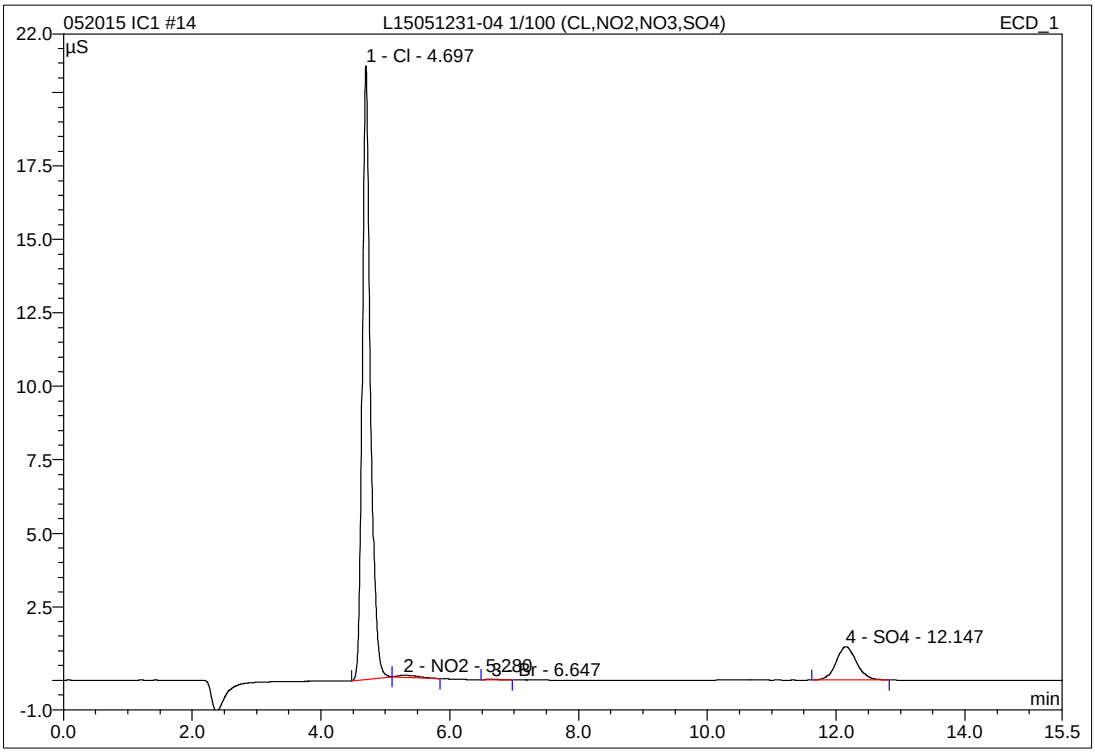

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.70	Cl	20.886	3.045	87.08	16.765	BMb
2	5.28	NO2	0.066	0.026	0.73	0.078	bMB
3	6.65	Br	0.029	0.006	0.18	0.082	BMB
4	12.15	SO4	1.138	0.420	12.01	3.164	BMB
Total:			22.119	3.496	100.00	20.090	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

17 L15051231-05 1/5 (CL,NO2,NO3,SO4)

1,5 ALS (CL>200PPM)

Sample Name:	**L15051231-05 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2015 20:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

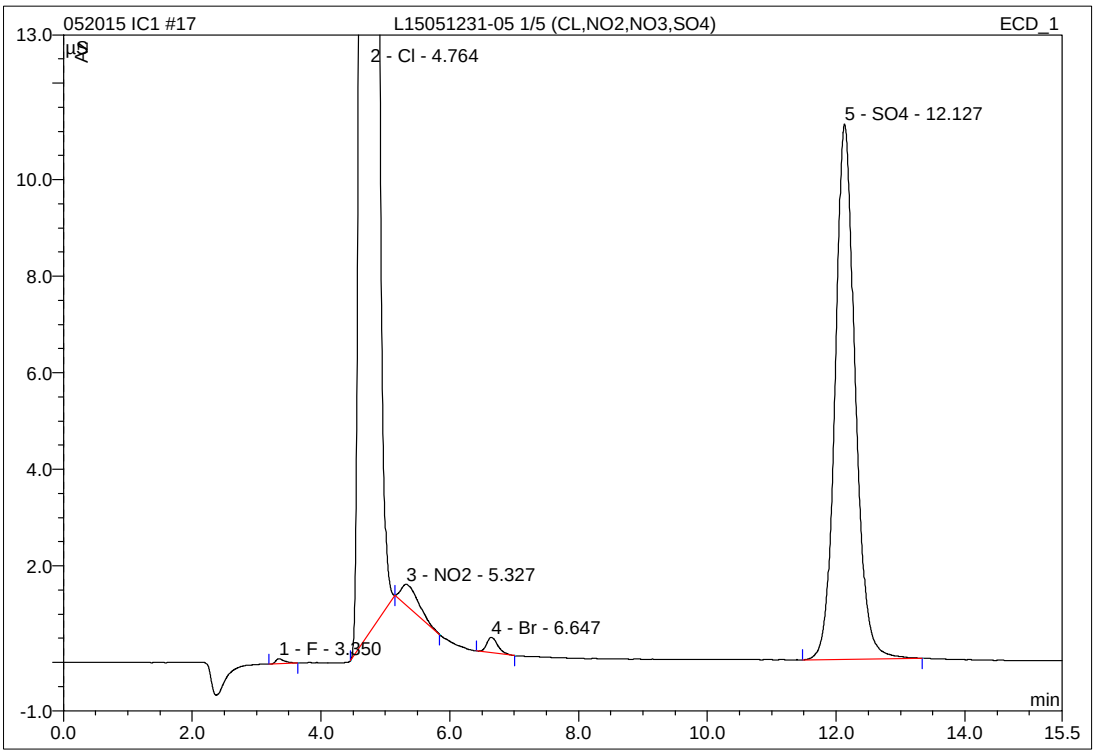

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	0.104	0.016	0.03	0.102	BMB
2	4.76	Cl	335.741	50.410	92.29	277.322	BMb
3	5.33	NO2	0.438	0.144	0.26	0.403	bMB
4	6.65	Br	0.321	0.064	0.12	0.890	BMB
5	12.13	SO4	11.090	3.988	7.30	28.605	BMB
Total:			347.695	54.622	100.00	307.323	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

18 L15051231-05 1/50 (CL,NO2,NO3,SO4)

1,50 ALS (CL>ICAL)

Sample Name:	**L15051231-05 1/50 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2015 20:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

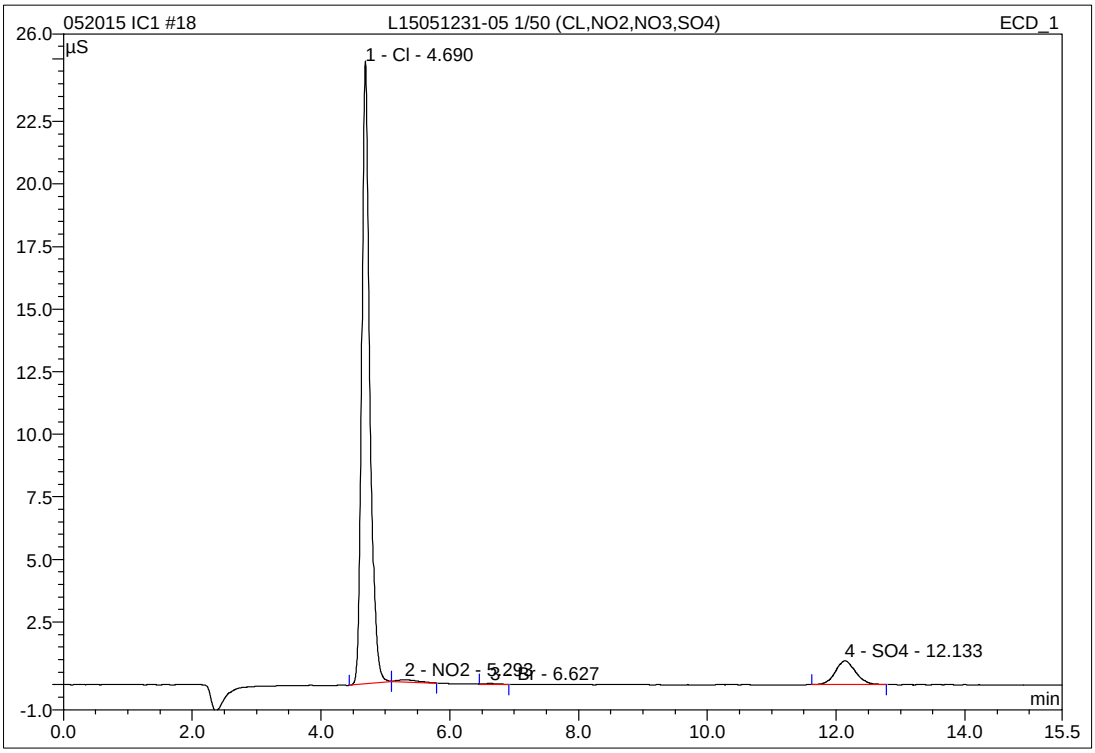

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.69	Cl	24.865	3.590	90.31	19.768	BMb
2	5.29	NO2	0.076	0.029	0.73	0.088	bMB
3	6.63	Br	0.031	0.007	0.17	0.088	BMB
4	12.13	SO4	0.952	0.350	8.79	2.662	BMB
Total:			25.924	3.976	100.00	22.606	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.2.1.4 Standards Data

3 WG520208-01 STD #6

1,1 AED STD69215

Sample Name:	**WG520208-01 STD #6**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 14:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

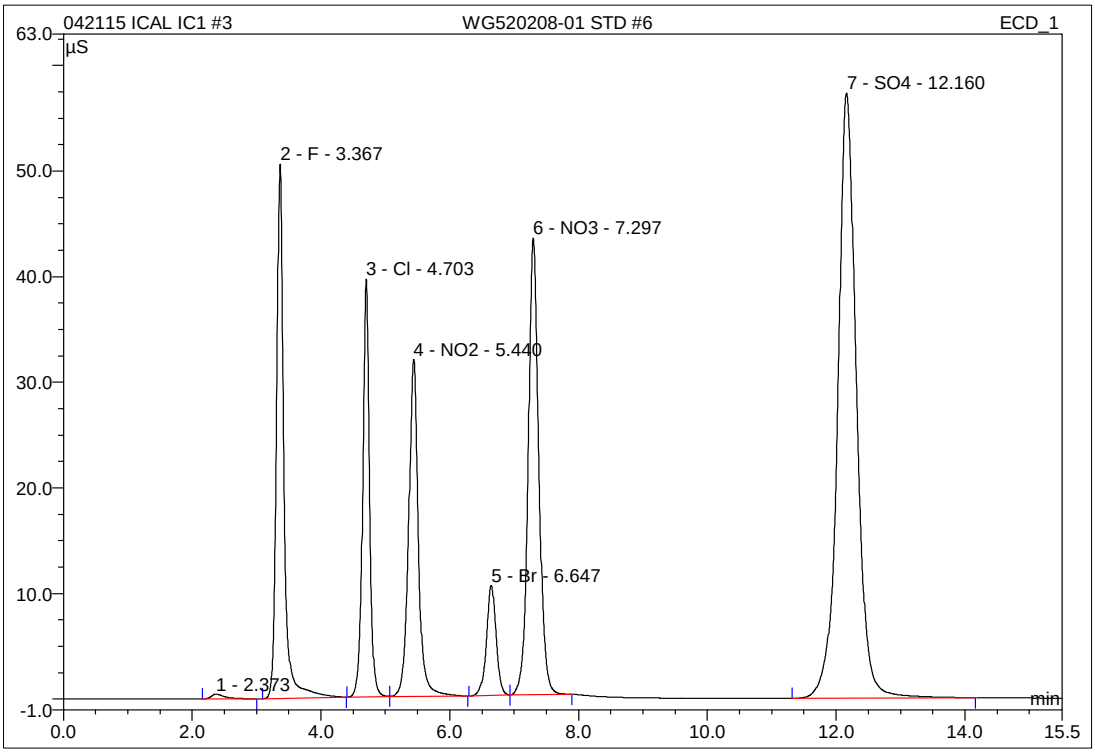

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.448	0.111	0.24	n.a.	BMB
2	3.37	F	50.599	6.707	14.37	25.250	BMB
3	4.70	Cl	39.565	4.899	10.50	26.967	BMB
4	5.44	NO2	31.907	5.591	11.98	15.271	bMB
5	6.65	Br	10.441	1.816	3.89	25.554	BMB
6	7.30	NO3	43.238	8.291	17.76	19.067	BMB
7	12.16	SO4	57.303	19.265	41.27	137.537	BMB
Total:			233.501	46.680	100.00	249.646	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG520208-02 STD #5

1,1 AED STD69215

Sample Name:	**WG520208-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 14:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

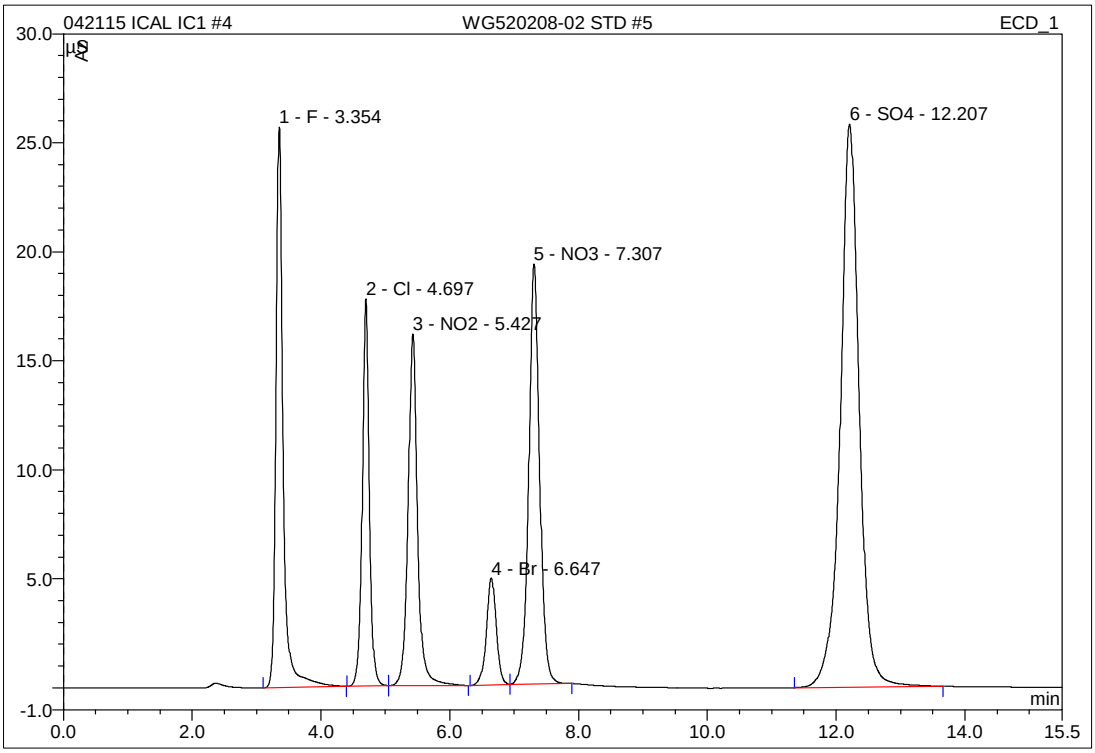

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	25.707	3.262	15.05	12.300	BMB
2	4.70	Cl	17.752	2.241	10.34	12.346	BMB
3	5.43	NO2	16.111	2.740	12.64	7.487	bMB
4	6.65	Br	4.905	0.868	4.00	12.206	BMB
5	7.31	NO3	19.267	3.763	17.36	8.658	BMB
6	12.21	SO4	25.818	8.804	40.61	62.945	BMB
Total:			109.561	21.676	100.00	115.941	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG520208-02 STD #5

1,1 AED STD69215

Sample Name:	**WG520208-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 14:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

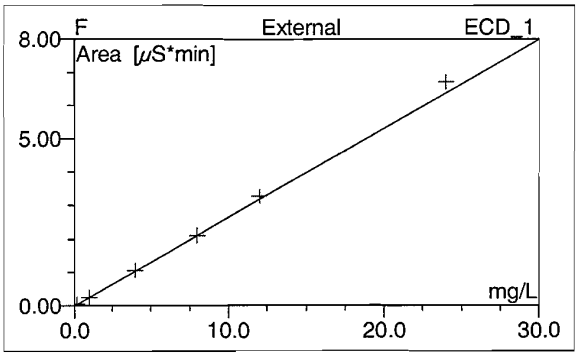

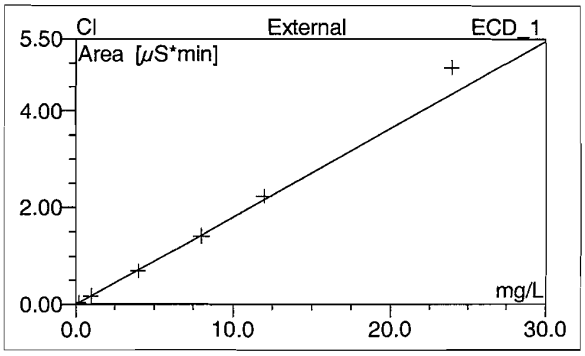

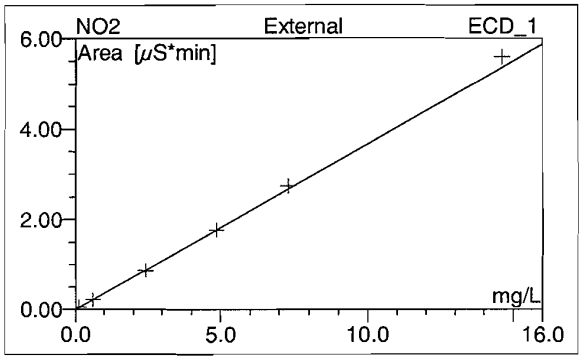

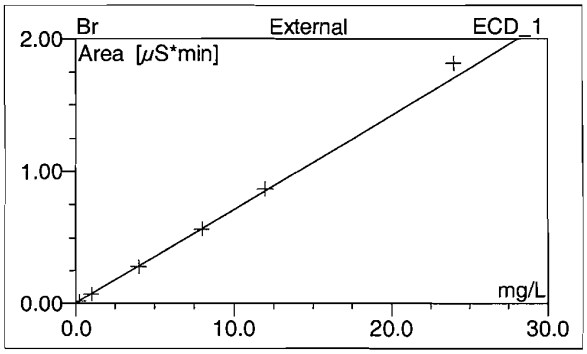

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	3.35	F	YYLOff	6	99.9011	-0.0108	0.2661	0.0000
2	4.70	Cl	YYLOff	6	99.7641	-0.0031	0.1818	0.0000
3	5.43	NO2	YYLOff	6	99.9396	-0.0032	0.3664	0.0000
4	6.65	Br	YYLOff	6	99.9032	0.0004	0.0710	0.0000
5	7.31	NO3	YYLOff	6	99.6701	-0.0041	0.4350	0.0000
6	12.21	SO4	YYLOff	6	99.6529	-0.0238	0.1402	0.0000
Average:					99.8052	-0.0075	0.2434	0.0000

IC/Calibration(Batch)

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG520208-02 STD #5

1,1 AED STD69215

Sample Name:	**WG520208-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 14:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

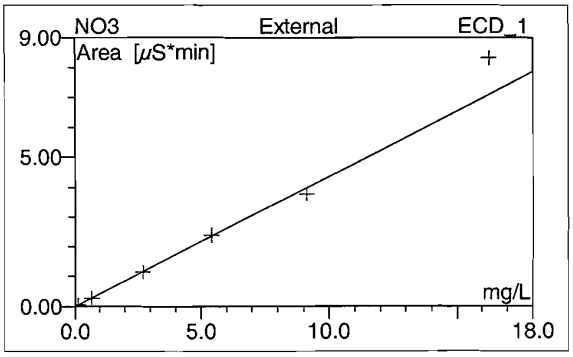

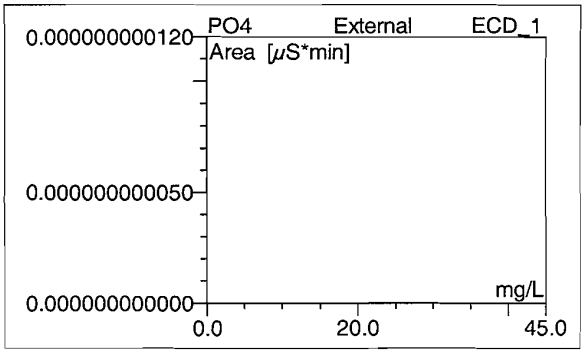

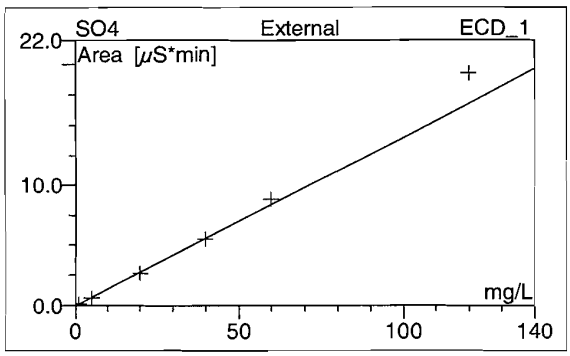

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	3.35	F	YYLOff	6	99.9011	-0.0108	0.2661	0.0000
2	4.70	Cl	YYLOff	6	99.7641	-0.0031	0.1818	0.0000
3	5.43	NO2	YYLOff	6	99.9396	-0.0032	0.3664	0.0000
4	6.65	Br	YYLOff	6	99.9032	0.0004	0.0710	0.0000
5	7.31	NO3	YYLOff	6	99.6701	-0.0041	0.4350	0.0000
6	12.21	SO4	YYLOff	6	99.6529	-0.0238	0.1402	0.0000
Average:					99.8052	-0.0075	0.2434	0.0000

5 WG520208-03 STD #4

1,1 AED STD69215

Sample Name:	**WG520208-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 15:05**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

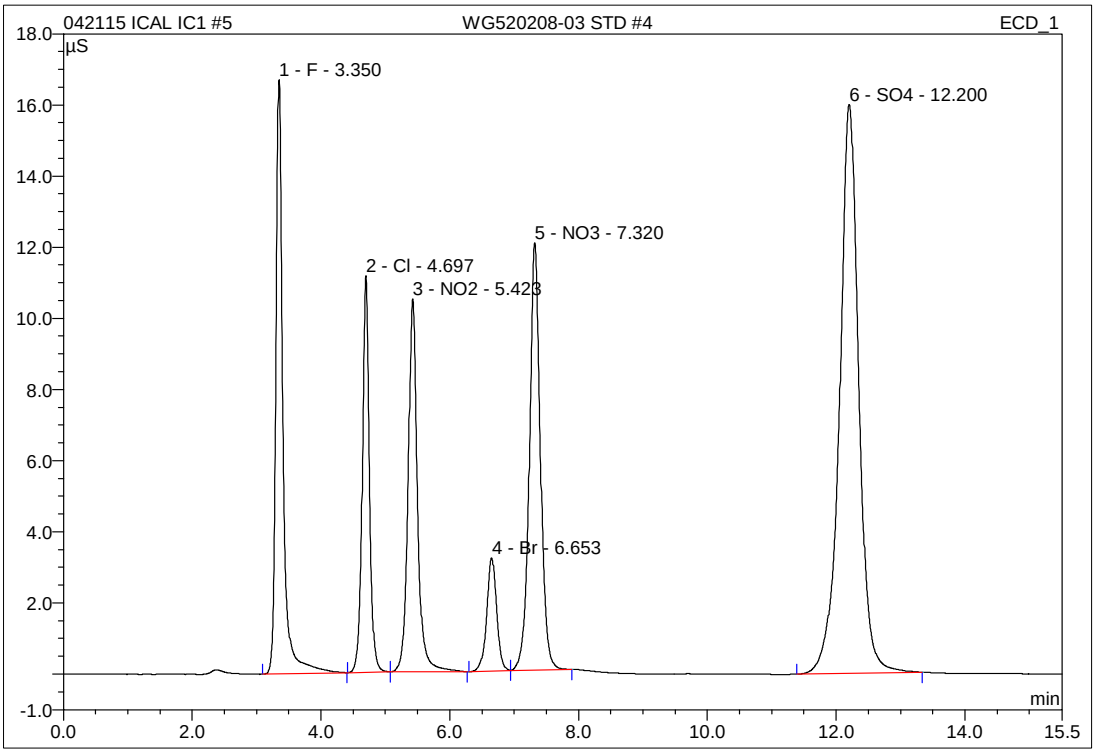

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	16.707	2.106	15.29	7.957	BMB
2	4.70	Cl	11.141	1.430	10.38	7.884	BMB
3	5.42	NO2	10.491	1.775	12.89	4.855	BMB
4	6.65	Br	3.173	0.567	4.12	7.978	BMB
5	7.32	NO3	12.011	2.382	17.30	5.485	BMB
6	12.20	SO4	15.994	5.511	40.02	39.468	BMB
Total:			69.517	13.772	100.00	73.626	

6 WG520208-04 STD #3

1,1 AED STD69215

Sample Name:	**WG520208-04 STD #3**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 15:23**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

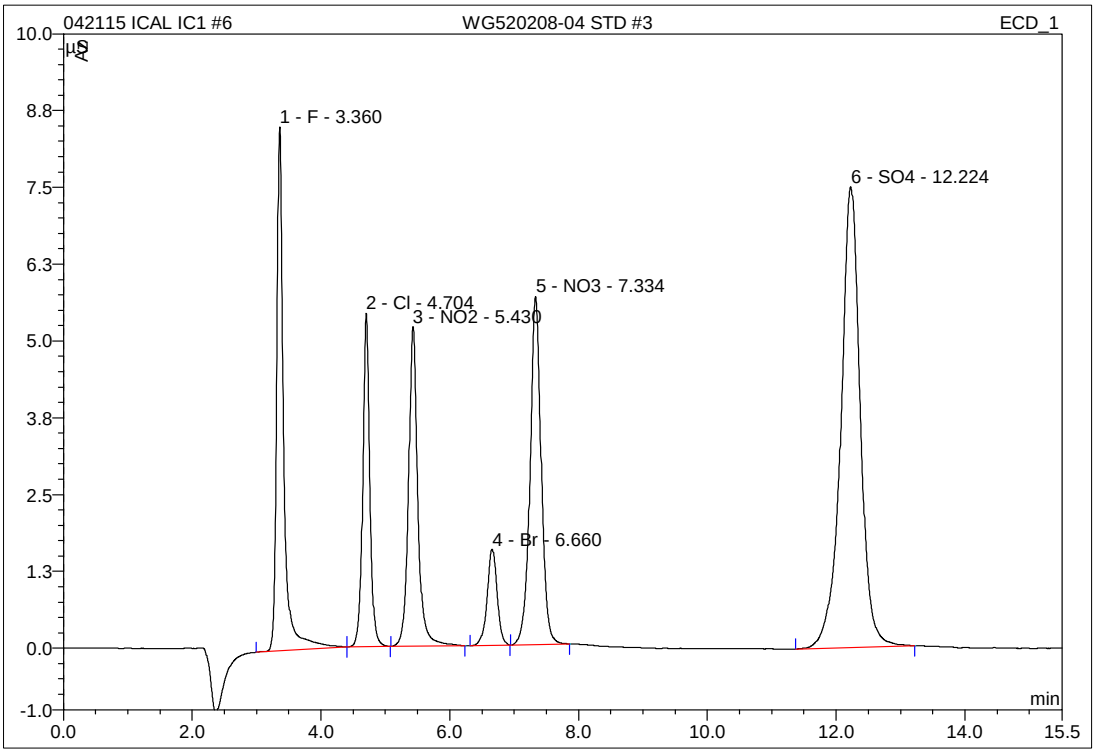

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	8.528	1.055	15.84	4.008	BMB
2	4.70	Cl	5.426	0.691	10.37	3.820	bMB
3	5.43	NO2	5.202	0.872	13.08	2.389	BMB
4	6.66	Br	1.564	0.279	4.19	3.928	BMB
5	7.33	NO3	5.667	1.138	17.08	2.626	BMB
6	12.22	SO4	7.499	2.628	39.43	18.906	BMB
Total:			33.887	6.664	100.00	35.676	

7 WG520208-05 STD #2

1,1 AED STD69215

Sample Name:	**WG520208-05 STD #2**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 15:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

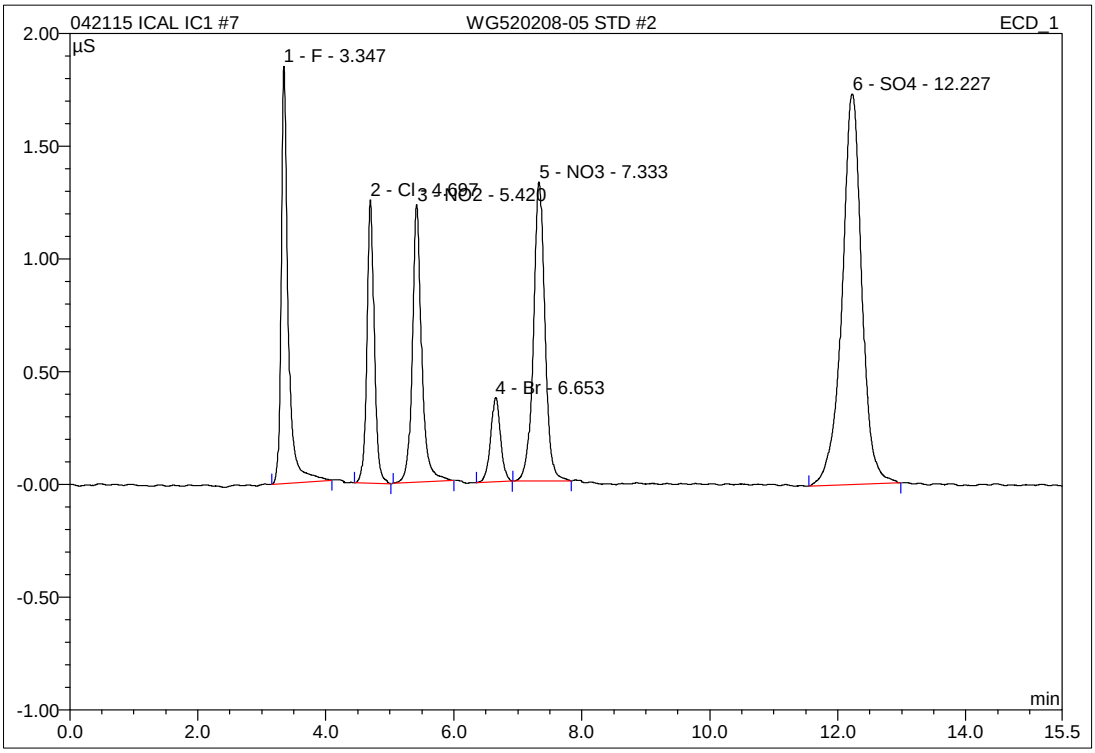

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	1.853	0.237	15.05	0.933	BMB
2	4.70	Cl	1.258	0.167	10.57	0.935	BMB
3	5.42	NO2	1.232	0.210	13.29	0.581	BMB
4	6.65	Br	0.373	0.067	4.26	0.941	BMB
5	7.33	NO3	1.327	0.276	17.47	0.643	BMB
6	12.23	SO4	1.732	0.621	39.36	4.598	BMB
Total:			7.774	1.578	100.00	8.631	

8 WG520208-06 STD #1

1,1 AED STD69215

Sample Name:	**WG520208-06 STD #1**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 15:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

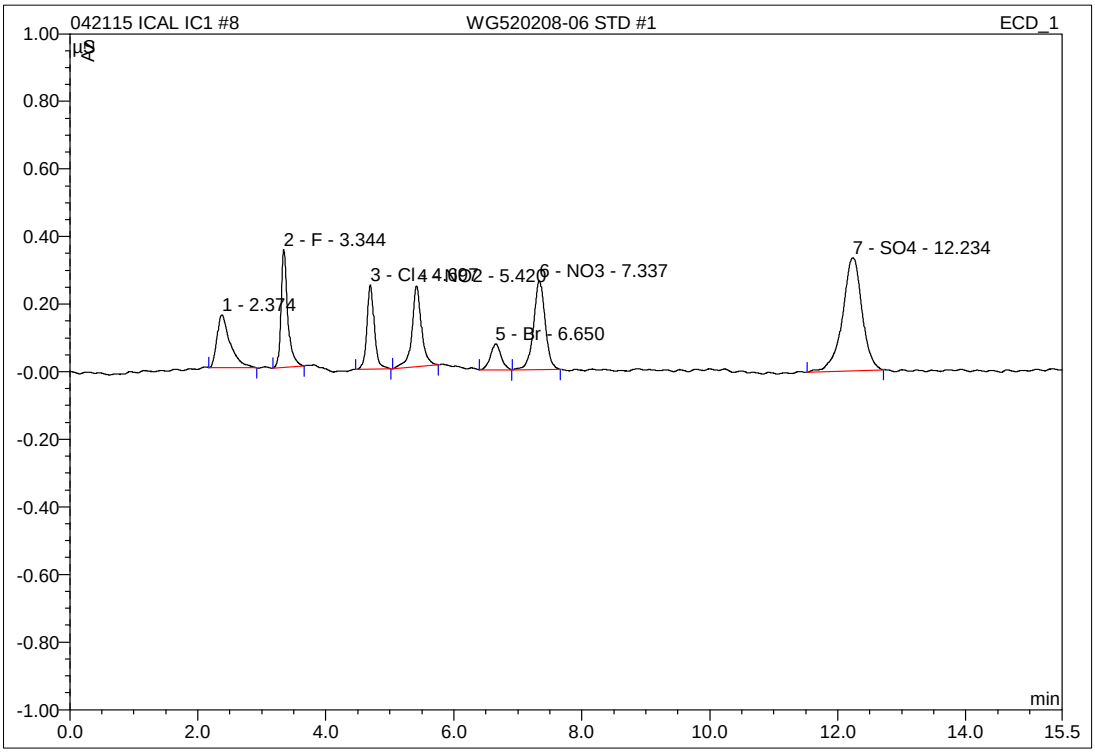

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.156	0.037	10.80	n.a.	BMB
2	3.34	F	0.349	0.043	12.46	0.202	BMB
3	4.70	Cl	0.250	0.034	9.80	0.203	BMB
4	5.42	NO2	0.239	0.042	12.13	0.123	BMB
5	6.65	Br	0.077	0.015	4.29	0.203	BMB
6	7.34	NO3	0.262	0.055	16.10	0.137	BMB
7	12.23	SO4	0.334	0.119	34.44	1.016	BMB
Total:			1.667	0.345	100.00	1.884	

9 WG520208-07 ALT STD

1,1 AED STD69216

Sample Name:	**WG520208-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 16:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

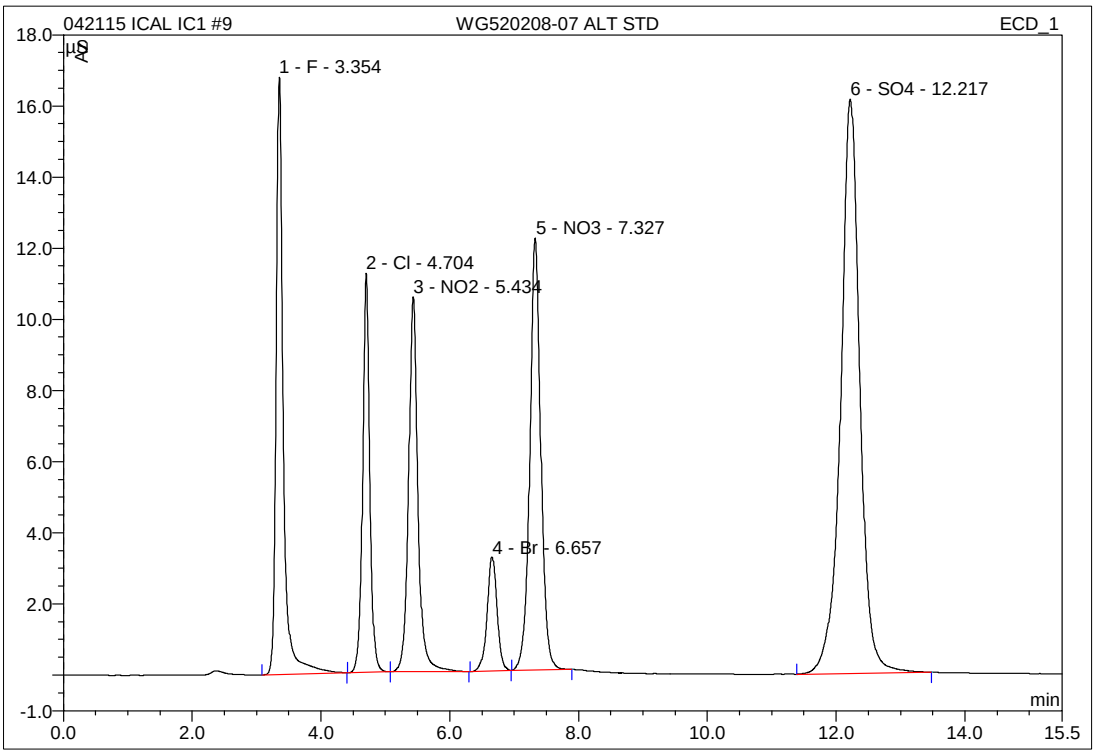

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	16.796	2.124	15.30	8.023	BMB
2	4.70	Cl	11.218	1.439	10.36	7.932	BMB
3	5.43	NO2	10.544	1.778	12.81	4.863	BMB
4	6.66	Br	3.210	0.573	4.13	8.062	BMB
5	7.33	NO3	12.140	2.400	17.29	5.526	BMB
6	12.22	SO4	16.146	5.570	40.12	39.884	BMB
Total:			70.055	13.884	100.00	74.290	

9 WG520208-07 ALT STD

1,1 AED STD69216

Sample Name:	**WG520208-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 16:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG520208-07 ALT S	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	8.0226	0.28	PASS
Cl	8.00	7.9321	-0.85	PASS
NO2-N	4.8714	4.8631	-0.17	PASS
Br	8.00	8.0623	0.78	PASS
NO3-N	5.4216	5.5263	1.93	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	39.8839	-0.29	PASS

3 WG524507-01 ANION CCV

1,1 ALS STD69215 (_____psi @___:___)

Sample Name:	**WG524507-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2015 16:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

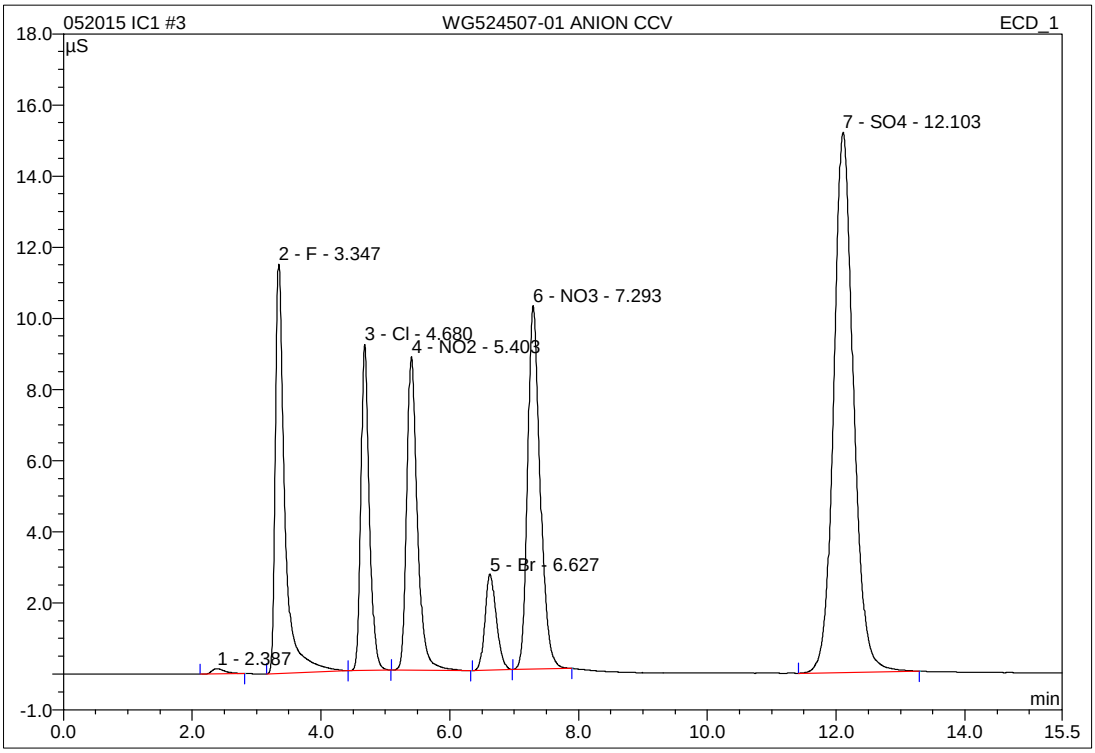

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.39	n.a.	0.150	0.037	0.28	n.a.	BMB
2	3.35	F	11.501	1.954	14.64	7.385	BMB
3	4.68	Cl	9.165	1.382	10.36	7.620	bMB
4	5.40	NO2	8.817	1.698	12.73	4.644	BMB
5	6.63	Br	2.707	0.554	4.15	7.792	BMB
6	7.29	NO3	10.211	2.313	17.33	5.325	BMB
7	12.10	SO4	15.186	5.406	40.51	38.719	BMB
Total:			57.738	13.344	100.00	71.485	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG524507-01 ANION CCV

1,1 ALS STD69215 (_____psi @___:___)

Sample Name:	**WG524507-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2015 16:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG524507-01 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.3847	-7.69	PASS
Cl	8.00	7.6197	-4.75	PASS
NO2-N	4.8714	4.6444	-4.66	PASS
Br	8.00	7.7925	-2.59	PASS
NO3-N	5.4216	5.3252	-1.78	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.7187	-3.20	PASS

15 WG524507-03 ANION CCV

1,1 ALS STD69215

Sample Name:	**WG524507-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2015 19:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

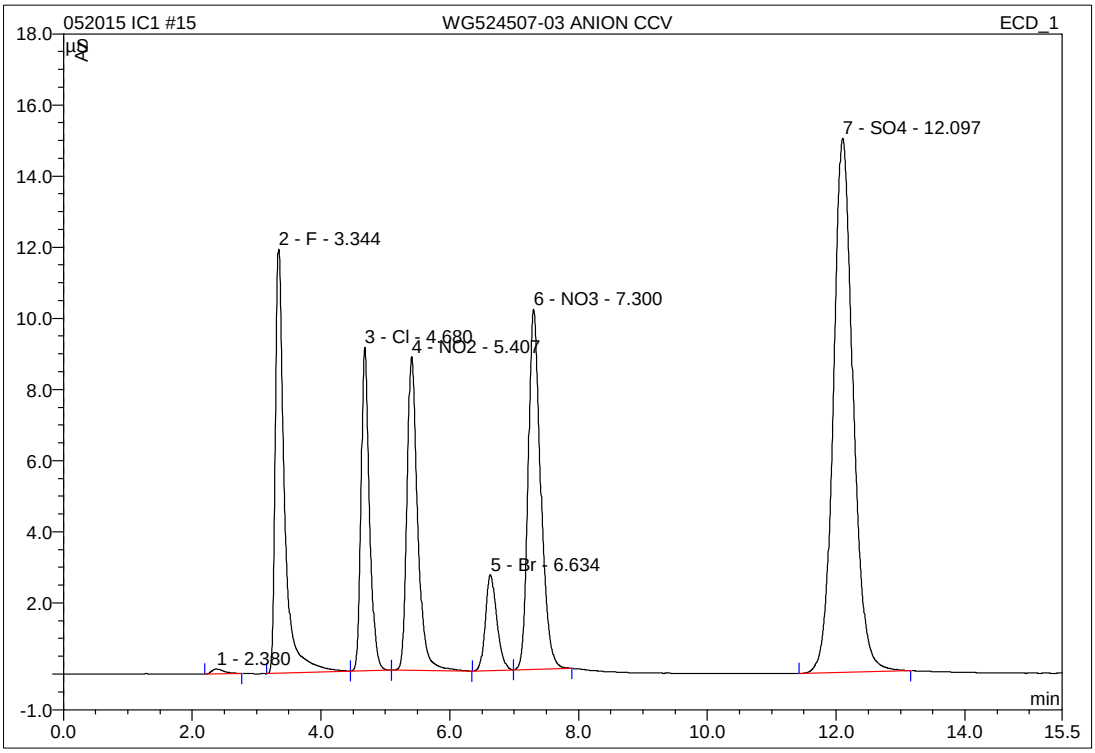

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.38	n.a.	0.135	0.031	0.23	n.a.	BMB
2	3.34	F	11.929	1.958	14.80	7.401	BMB
3	4.68	Cl	9.083	1.368	10.34	7.543	BMb
4	5.41	NO2	8.827	1.700	12.85	4.650	bMB
5	6.63	Br	2.696	0.552	4.17	7.764	BMB
6	7.30	NO3	10.119	2.291	17.31	5.276	BMB
7	12.10	SO4	15.014	5.334	40.30	38.206	BMB
Total:			57.803	13.235	100.00	70.841	

15 WG524507-03 ANION CCV

1,1 ALS STD69215

Sample Name:	**WG524507-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2015 19:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG524507-03 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.4015	-7.48	PASS
Cl	8.00	7.5429	-5.71	PASS
NO2-N	4.8714	4.6500	-4.54	PASS
Br	8.00	7.7644	-2.94	PASS
NO3-N	5.4216	5.2763	-2.68	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.2060	-4.48	PASS

27 WG524507-05 ANION CCV

1,1 ALS STD69215

Sample Name:	**WG524507-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2015 23:20**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

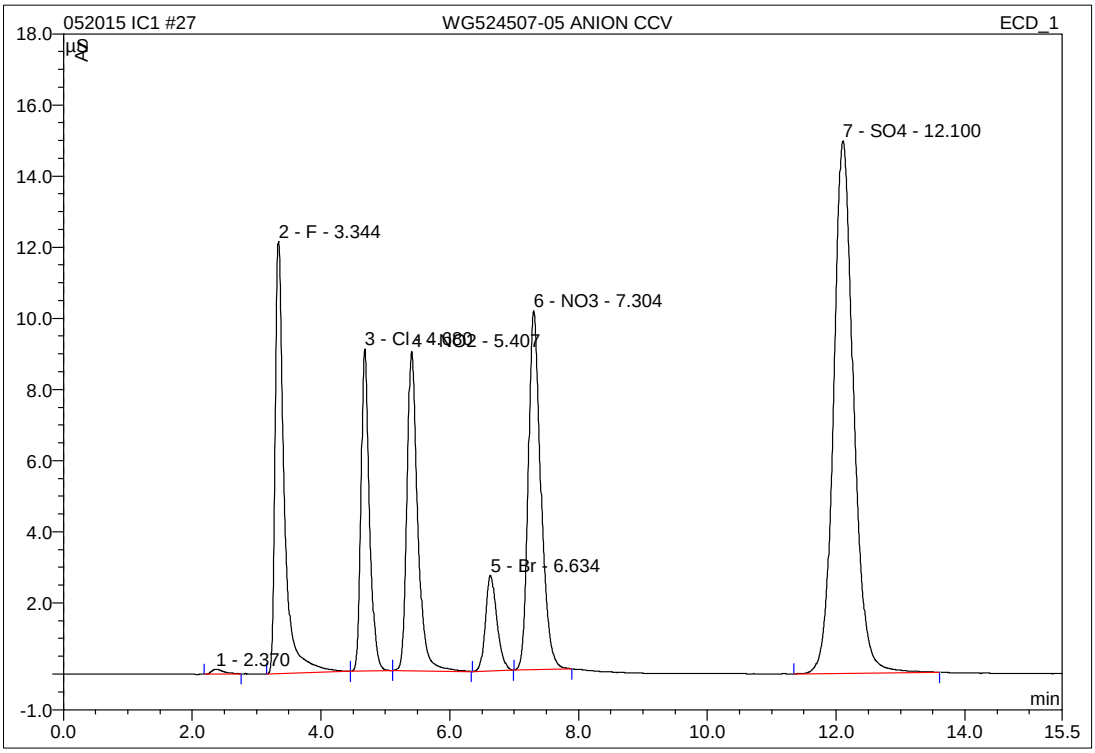

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.134	0.030	0.23	n.a.	BMB
2	3.34	F	12.138	1.973	14.81	7.457	BMB
3	4.68	Cl	9.049	1.366	10.26	7.533	BMB
4	5.41	NO2	8.965	1.731	12.99	4.734	bMB
5	6.63	Br	2.686	0.552	4.14	7.757	BMB
6	7.30	NO3	10.086	2.292	17.21	5.279	BMB
7	12.10	SO4	14.969	5.378	40.37	38.519	BMB
Total:			58.027	13.323	100.00	71.279	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

27 WG524507-05 ANION CCV

1,1 ALS STD69215

Sample Name:	**WG524507-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2015 23:20**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG524507-05 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.4566	-6.79	PASS
Cl	8.00	7.5332	-5.83	PASS
NO2-N	4.8714	4.7342	-2.82	PASS
Br	8.00	7.7574	-3.03	PASS
NO3-N	5.4216	5.2786	-2.64	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.5193	-3.70	PASS

4 WG524507-02 ANION CCB

1,1 ALS

Sample Name:	**WG524507-02 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2015 16:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

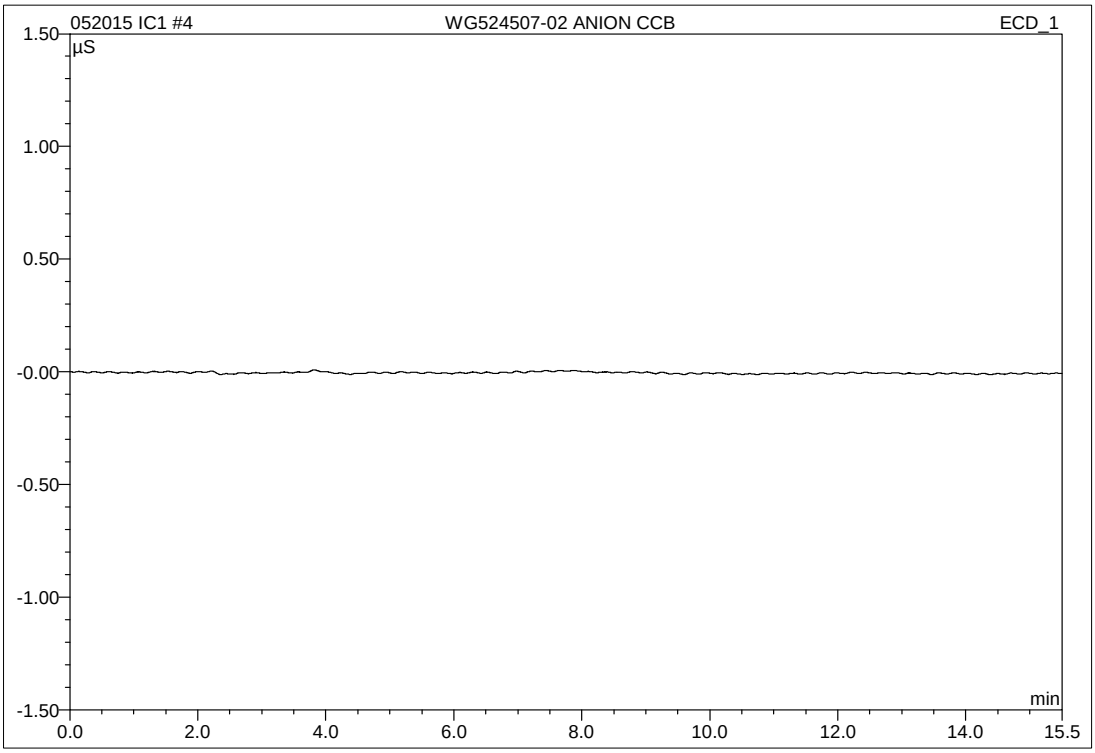

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

16 WG524507-04 ANION CCB

1,1 ALS

Sample Name:	**WG524507-04 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2015 20:05**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

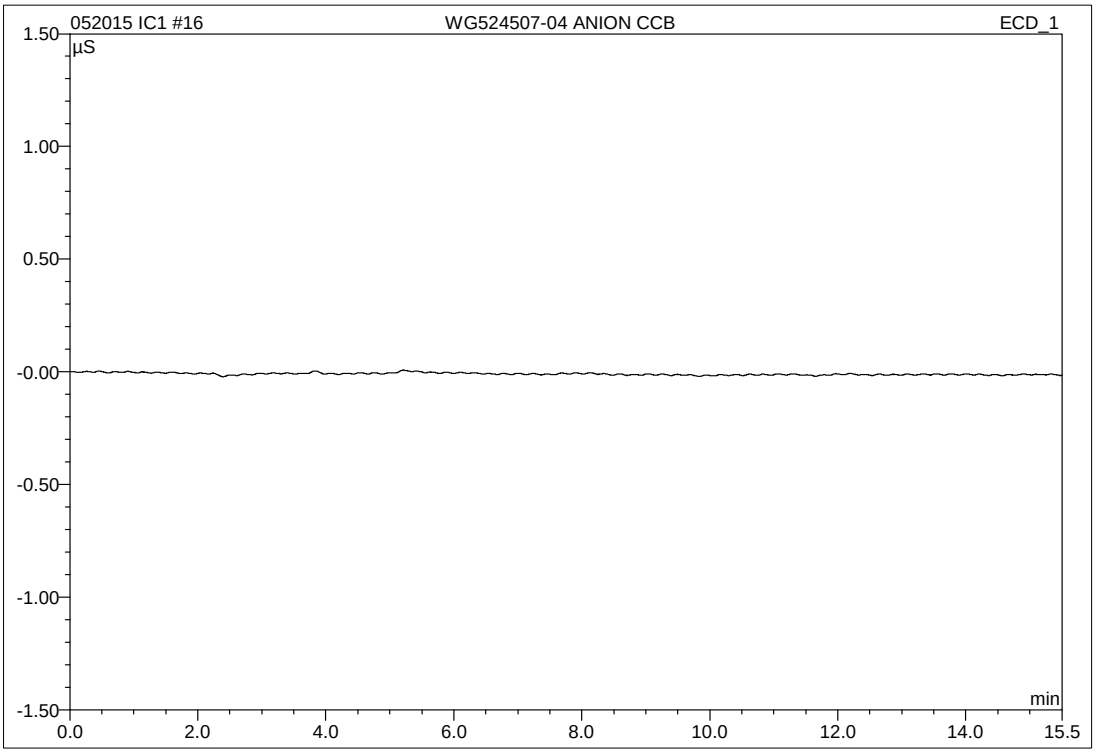

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

28 WG524507-06 ANION CCB

1,1 ALS

Sample Name:	**WG524507-06 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**28**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2015 23:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

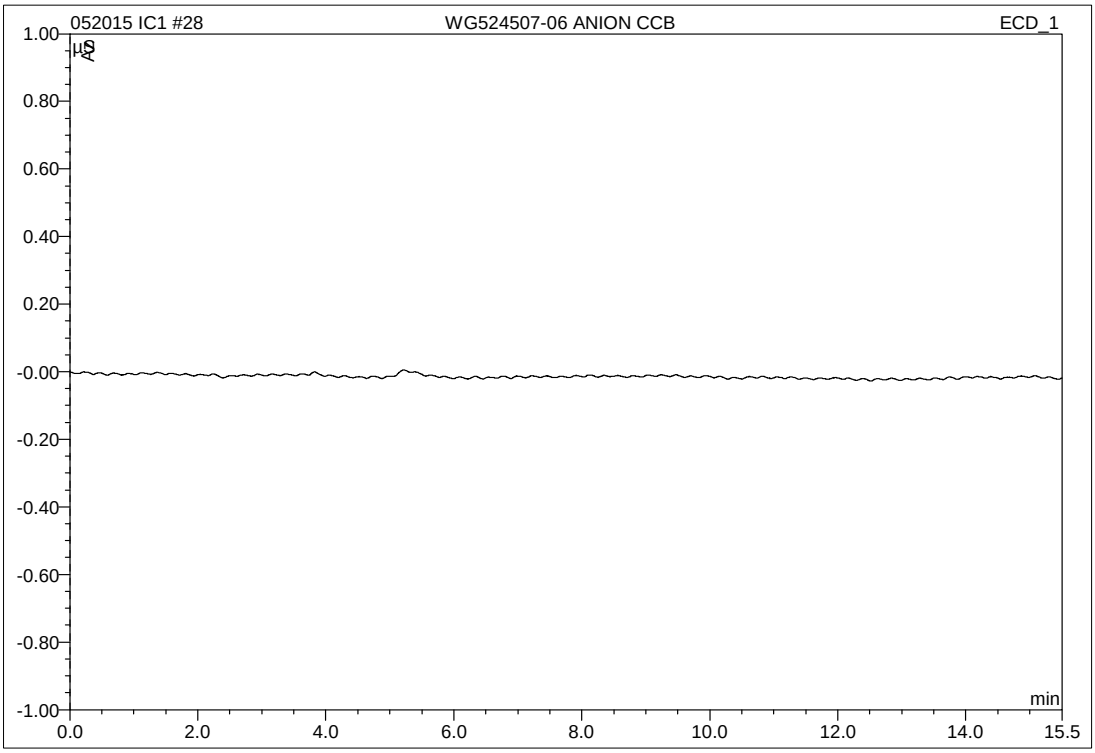

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AS14A-4mm

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	3/2/2015	3/4/2015	3/5/2015
File #	WG514023-02	WG514341-02	WG514431-02
Time	23:15	18:47	17:41

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.33	3.33	3.32	0.017
Cl	4.75	4.78	4.76	0.043
NO2-N	5.54	5.59	5.56	0.082
Br	6.86	6.98	6.93	0.180
NO3-N	7.59	7.73	7.67	0.222
SO4	12.42	12.38	12.34	0.116

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.2.1.5 Raw QC Data

5 WG524505-01 ANION BLANK

1,1 ALS

Sample Name:	**WG524505-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2015 16:50**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

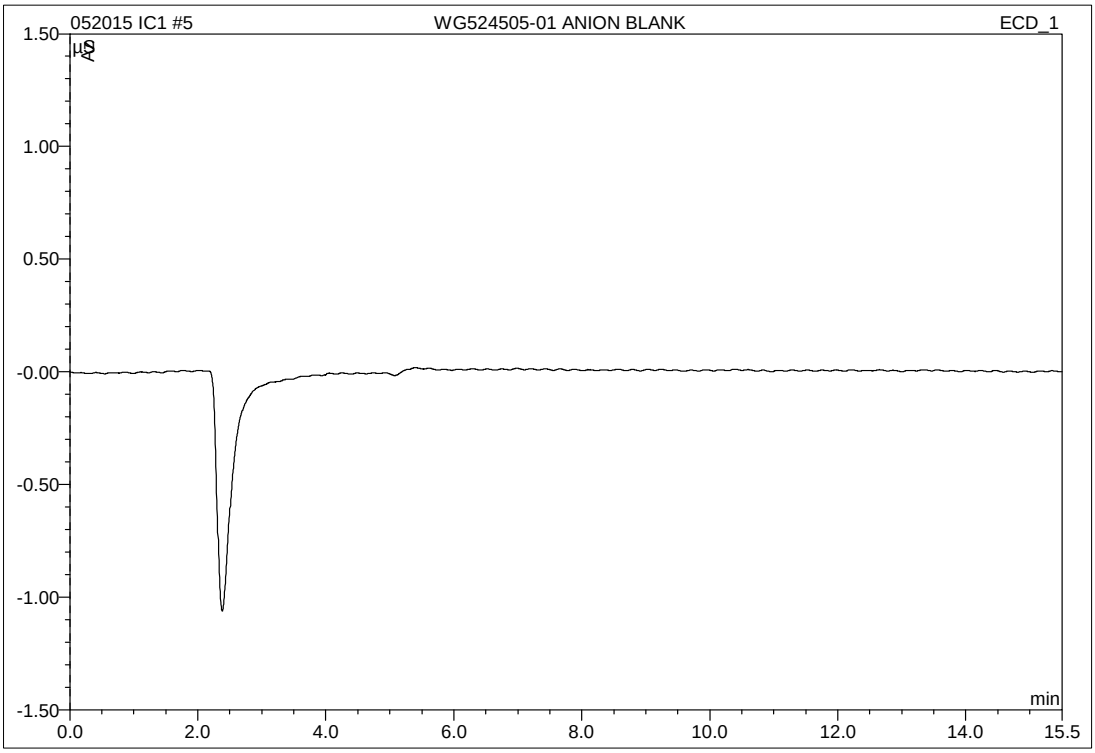

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

6 WG524505-02 ANION LCS

1,1 ALS

Sample Name:	**WG524505-02 ANION LCS**	*Injection Volume:*	**20.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/20/2015 17:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

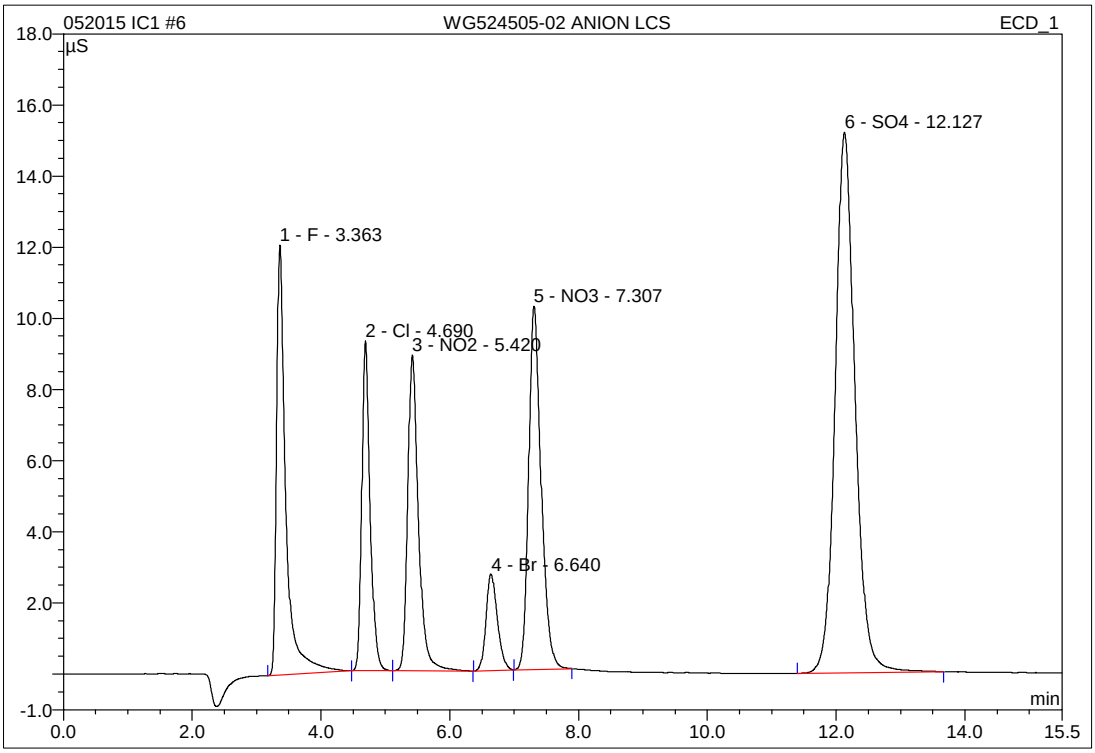

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	12.088	2.006	14.98	7.579	BMB
2	4.69	Cl	9.270	1.379	10.30	7.603	bMb
3	5.42	NO2	8.873	1.714	12.80	4.686	bMB
4	6.64	Br	2.715	0.555	4.14	7.802	BMB
5	7.31	NO3	10.208	2.304	17.21	5.306	BMB
6	12.13	SO4	15.192	5.430	40.56	38.888	BMB
Total:			58.346	13.387	100.00	71.864	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.2.2 Ferrous Iron Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-01	**PrePrep Method:**	N/A	**Instrument:**	UV-2600
Client ID:	67WW08-051915	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	04/20/2015 10:00
Workgroup #:	WG524733	**Analyst:**	TMM	**Run Date:**	05/22/2015 09:40
Collect Date:	05/19/2015 08:25	**Dilution:**	2	**File ID:**	00.1505220940-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.944		0.0800	0.0800	0.0400

Certificate of Analysis

Sample #:	L15051231-04	**PrePrep Method:**	N/A	**Instrument:**	UV-2600
Client ID:	67WW13-051915	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	04/20/2015 10:00
Workgroup #:	WG524733	**Analyst:**	TMM	**Run Date:**	05/22/2015 09:40
Collect Date:	05/19/2015 11:50	**Dilution:**	1	**File ID:**	00.1505220940-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.0400	U	0.0400	0.0400	0.0200

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-05	**PrePrep Method:**	N/A	**Instrument:**	UV-2600
Client ID:	67WW01-051915	**Prep Method:**	SM3500Fe-B-1997	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM3500Fe-B-1997	**Cal Date:**	04/20/2015 10:00
Workgroup #:	WG524733	**Analyst:**	TMM	**Run Date:**	05/22/2015 09:40
Collect Date:	05/19/2015 12:20	**Dilution:**	1	**File ID:**	00.1505220940-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Ferrous - Laboratory		0.0539		0.0400	0.0400	0.0200

2.2.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 22-MAY-2015
Analyst: TMM
Analyst: NA
Method: FERROUS
Instrument: UV-2600
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG524733

Calibration/Linearity	4/20/15
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TMM
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
22-MAY-2015
Tammy Morris

Secondary Reviewer:
22-MAY-2015
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-22-2015 11:00:03

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM3500Fe-B-1997 AAB#: WG524733

Login Number: L15051231

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-051915	01	05/19/15					05/22/2015	3.1	7		05/22/15	3.1	7	
67WW13-051915	04	05/19/15					05/22/2015	2.9	7		05/22/15	2.9	7	
67WW01-051915	05	05/19/15					05/22/2015	2.9	7		05/22/15	2.9	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4194032
Report generated 05/22/2015 10:59

METHOD BLANK SUMMARY

Login Number: L15051231
Blank File ID: 00.1505220940-02
Prep Date: 05/22/15 09:40
Analyzed Date: 05/22/15 09:40
Analyst: TMM

Work Group: WG524733
Blank Sample ID: WG524733-01
Instrument ID: UV-2600
Method: SM3500Fe-B-1997

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524733-02	00.1505220940-03	05/22/15 09:40	
LCS2	WG524733-03	00.1505220940-04	05/22/15 09:40	
67WW13-051915	L15051231-04	00.1505220940-05	05/22/15 09:40	
67WW01-051915	L15051231-05	00.1505220940-06	05/22/15 09:40	
67WW08-051915	L15051231-01	00.1505220940-07	05/22/15 09:40	
DUP	WG524733-05	00.1505220940-08	05/22/15 09:40	

Report Name: BLANK_SUMMARY
PDF File ID: 4194033
Report generated 05/22/2015 10:59

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051231 Prep Date: 05/22/15 09:40 Sample ID: WG524733-01
Instrument ID: UV-2600 Run Date: 05/22/15 09:40 Prep Method: SM3500Fe-B-1997
File ID: 00.1505220940-02 Analyst: TMM Method: SM3500Fe-B-1997
Workgroup (AAB#): WG524733 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-260-20-APR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Ferrous - Laboratory	0.0200	0.0400	0.0200	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4194034
22-MAY-2015 10:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051231 Analyst: TMM Prep Method: SM3500Fe-B-1997
Instrument ID: UV-2600 Matrix: Water Method: SM3500Fe-B-1997
Workgroup (AAB#): WG524733 Units: mg/L
QC Key: DOD4 Lot #: STD67894

Sample ID: WG524733-02 LCS File ID: 00.1505220940-03 Run Date: 05/22/2015 09:40
Sample ID: WG524733-03 LCS2 File ID: 00.1505220940-04 Run Date: 05/22/2015 09:40

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Iron, Ferrous - Laboratory	0.200	0.199	99.4	0.200	0.202	101	1.51	75 - 125	25	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4194035
Report generated: 05/22/2015 10:59

2.2.2.3 Raw Data

wg520164

Element 15D0015

Curves

Parameter: Ferrous Iron

Spectrophotometer: UV-2600

Calibration (Curve) standard stock: Std ~~67109~~ 70047 4/27/15

Concentration: 100 mg/L

Recipe for preparation of curve standards found in:
SOP: 3500 Revision: 7 Page: 8

Second Source Stock: Std 67894 (concentration: 100mg/L)

Daily Preparation: 2(100)/1000

concentration = = 0.2

Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance
0	50	10cm	510	0.003
0.04	↓	↓	↓	0.041
0.08	↓	↓	↓	0.082
0.2	↓	↓	↓	0.190
0.4	↓	↓	↓	0.424
0.6	↓	↓	↓	0.587
2nd Source	–	–	–	
(20)				0.203

Analyst: Jammy Morris

Date/Time: 4/20/15 @ 10:00

DCN#110012

Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG520166
Analytical Method: FERROUS
Instrument ID: UV-2600

Analyst: TMM
Initial Calibration Date: 04/20/2015

Analyte: FERROUS IRON
Number of Points: 6
Slope: 0.994452
Y-Intercept: 0.00238713
Coef. Of Correlation (R^2): 0.996941
Coef. Of Correlation (R): 0.998469

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00300	0.00	0.00	0.00238713
0.0400	0.0410	0.00160	0.00164	0.0421652
0.0800	0.0820	0.00640	0.00656	0.0819433
0.200	0.190	0.0400	0.0380	0.201278
0.400	0.424	0.160	0.170	0.400168
0.600	0.587	0.360	0.352	0.599059

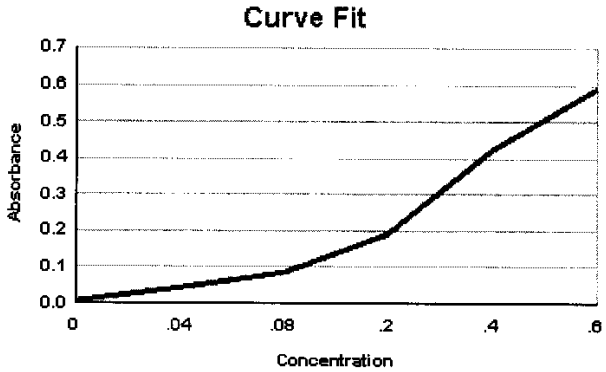

WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 04/20/2015 10:54

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG520166
File ID: 00.1504201000-07
CCV ID: WG520166-07
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-2600
Run Date: 04/20/2015
Run Time: 10:00
Analyst: TMM
Cal ID: UV-260 - 20-APR-15 10:00:06

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.2	0.202	1.02	1.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 04/20/2015 11:24

[redacted]

WORKGROUP: WG524733

Ferrous Iron

SM 3500Fe-B

SOP K3500 Revision # 7

CCV: Std 69912
Daily Dilution: 3(100)/1000
Daily Dilution: =0.3

LCS: 67894
Daily Dilution: 2(100)/1000
Daily Dilution: =0.2 Tmm 5/22/15

Instrument: ~~UV-120-IV~~ Uv-2600
Curve Reference: 4/20/15

RGTS: 33353
RGTS: 33359
RGTS: 32723

Spike: 67894
Daily Dilution: 0.1(100)/50
Daily Dilution: =0.2

Sample	Blank	Volume (mL)	Dilution	Cell Size (nm)	Absorbance
CCV: 0.3 mg/L	✓	50		10cm	0.307
BLANK	✓	50			0.003
LCS: 0.2 mg/L	✓	50			0.200
LCS DUP: (0.2 mg/L)	✓	50			0.203
05-1231-01	✓	50			0.802
04	✓	50			0.001
05	✓	50			0.056
01	✓	50	1/2	✓	0.473
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			
		50			~~0.002~~ Tmm 5/22/15
DUP: 05-1231- 04	✓	50		10cm	0.002
MS: (0.2) ✓ 04	✓	50			~~0~~ 0.212 Tmm 5/22/15
MSD: (____)		50			
CCV: (0.3)	✓	50		✓	0.310

Analyst: Tammy Morris Date/Time: 5/22/15 @ 940

*Samples were analyzed in the laboratory and not immediately in the field.

DCN#110794

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG524733 **Analyst:** TMM
Analyte: FERROUS IRON **Date:** 05/22/2015

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG524733-01	50	50	0.00300	0.9945	0.002387	0.00061629	0.00061629	1	mg/L
WG524733-02	50	50	0.200	0.9945	0.002387	0.19872	0.19872	1	mg/L
WG524733-03	50	50	0.203	0.9945	0.002387	0.20173	0.20173	1	mg/L
L15051231-04	50	50	0.00100	0.9945	0.002387	-0.0013949	ND	1	mg/L
WG524733-04	50	50	0.00100	0.9945	0.002387	-0.0013949	-0.0013949	1	mg/L
L15051231-05	50	50	0.0560	0.9945	0.002387	0.053912	0.053912	1	mg/L
L15051231-01	50	50	0.472	0.9945	0.002387	0.47223	0.94447	2	mg/L
WG524733-05	50	50	0.00200	0.9945	0.002387	-0.00038929	-0.00038929	1	mg/L
WG524733-06	50	50	0.212	0.9945	0.002387	0.21078	0.21078	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 05/22/2015 10:25

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG524778
File ID: 00.1505220940-01
CCV ID: WG524778-01
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-2600
Run Date: 05/22/2015
Run Time: 09:40
Analyst: TMM
Cal ID: UV-260 - 24-APR-15

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.306	1.02	2.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 05/22/2015 10:26

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG524778
File ID: 00.1505220940-10
CCV ID: WG524778-02
Units: mg/L
Analyte: FERROUS IRON

Instrument ID: UV-2600
Run Date: 05/22/2015
Run Time: 09:40
Analyst: TMM
Cal ID: UV-260 - 24-APR-15

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.309	1.03	3.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 05/22/2015 10:26

[redacted]

2.2.3 Sulfide Data

2.2.3.1 Summary Data

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW08-051915	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524848	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:50
Collect Date:	05/19/2015 08:25	**Dilution:**	1	**File ID:**	ET.1505221450-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-04	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW13-051915	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524848	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:50
Collect Date:	05/19/2015 11:50	**Dilution:**	1	**File ID:**	ET.1505221450-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-05	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	67WW01-051915	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524848	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:50
Collect Date:	05/19/2015 12:20	**Dilution:**	1	**File ID:**	ET.1505221450-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.3.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 22-MAY-2015
Analyst: EPT
Analyst: NA
Method: SULFIDE
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG524848

Calibration/Linearity	05/22/15
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
26-MAY-2015
Ethan Tido

Secondary Reviewer:
28-MAY-2015
Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-28-2015 10:14:03

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F-

AAB#: WG524848

Login Number: L15051231

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-051915	01	05/19/15					05/22/2015	3.3	7		05/22/15	3.3	7	
67WW13-051915	04	05/19/15					05/22/2015	3.1	7		05/22/15	3.1	7	
67WW01-051915	05	05/19/15					05/22/2015	3.1	7		05/22/15	3.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4202175
Report generated 05/28/2015 09:06

METHOD BLANK SUMMARY

Login Number: L15051231
Blank File ID: ET.1505221450-01
Prep Date: 05/22/15 14:50
Analyzed Date: 05/22/15 14:50
Analyst: EPT

Work Group: WG524848
Blank Sample ID: WG524848-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524848-02	ET.1505221450-02	05/22/15 14:50	
LCS2	WG524848-03	ET.1505221450-03	05/22/15 14:50	
67WW08-051915	L15051231-01	ET.1505221450-04	05/22/15 14:50	
67WW13-051915	L15051231-04	ET.1505221450-05	05/22/15 14:50	
67WW01-051915	L15051231-05	ET.1505221450-06	05/22/15 14:50	

Report Name: BLANK_SUMMARY
PDF File ID: 4202176
Report generated 05/28/2015 09:06

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051231 Prep Date: 05/22/15 14:50 Sample ID: WG524848-01
Instrument ID: BURET Run Date: 05/22/15 14:50 Prep Method: SM4500-S-(-2)-F
File ID: ET.1505221450-01 Analyst: EPT Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG524848 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4202177
28-MAY-2015 09:06

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051231 Analyst: EPT Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG524848 Units: mg/L
QC Key: DOD4 Lot #: STD70710

Sample ID: WG524848-02 LCS File ID: ET.1505221450-02 Run Date: 05/22/2015 14:50
Sample ID: WG524848-03 LCS2 File ID: ET.1505221450-03 Run Date: 05/22/2015 14:50

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	16.7	16.4	98.3	16.7	16.6	99.5	1.21	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4202178
Report generated: 05/28/2015 09:06

2.2.3.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG524848

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: 14

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: Std 70710

Iodine standardization (0.025N) COA: 17891
mL 0.025N titrant: 10.0
Volume I: 10.0 mL
Normality I: 0.0250

(0.1 N I) COA: 18088
mL 0.025 N titrant: 8.0
Volume I: 2.0 mL
Normality I: 0.100

Stock standardization (in duplicate) 5.0 mL stock
mL I 1) 10.0 2) 10.0
N I 1) 0.100 2) 0.100
mL 0.025 titrant 1) 26.1 2) 26.1
LCS daily dilution: $\frac{(3)(1112)}{200}$ = 16.68 mg/L

1112 = stock conc (mg/L)

Titrant: T- 1606-05-03

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	0.025N Sodium Thiosulfate (mL)
BLANK	200	15.0	0.0250	15.0
LCS (mL)	200	15.0	0.0250	6.8
LCSDUP (mL)	200	15.0	0.0250	6.7
05-1231-01	530	15.0	0.0250	15.0
-04	500	15.0	0.0250	14.8
-05	510	15.0	0.0250	15.0
05-1274-01	500	15.0	0.0250	15.0
-03	530	15.0	0.0250	15.0
-05	550	15.0	0.0250	14.9
-07	510	15.0	0.0250	14.8
-09	520	15.0	0.0250	15.0
-11	500	15.0	0.0250	15.0
-13	540	15.0	0.0250	15.0
05-1303-01	500	15.0	0.0250	14.7
-03	500	15.0	0.0250	15.0
-05	500	15.0	0.0250	14.5
-07	500	15.0	0.0250	15.0
-09	500	15.0	0.0250	14.5
-11	510	15.0	0.0250	14.2
05-1430-02	556	15.0	0.0250	15.0
05-1431-02	540	15.0	0.0250	14.5
05-1432-02	540	15.0	0.0250	14.8
05-1433-02	550	15.0	0.0250	15.0

Analyst: Ethan Tidd Date/Time: 05/22/15 1456

DCN#110813

Microbac Laboratories Inc.

TITRAMETRIC REPORT

Workgroup (AAB#): WG524848

Product: EPA 376.1\9034

Analyte: Sulfide

Analyst: EPT

Run Date: 05/22/2015 14:50

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG524848-01	200.0	15	.025	15	.025	1	0	0	mg/L
WG524848-02	200.0	15	.025	6.8	.025	1	16.4	16.40	mg/L
WG524848-03	200.0	15	.025	6.7	.025	1	16.6	16.60	mg/L
L15051231-01	530.0	15	.025	15	.025	1	0	ND	mg/L
L15051231-04	500.0	15	.025	14.8	.025	1	0.160	ND	mg/L
L15051231-05	510.0	15	.025	15	.025	1	0	ND	mg/L
L15051274-01	500.0	15	.025	15	.025	1	0	ND	mg/L
L15051274-03	530.0	15	.025	15	.025	1	0	ND	mg/L
L15051274-05	550.0	15	.025	14.9	.025	1	0.0727	ND	mg/L
L15051274-07	510.0	15	.025	14.8	.025	1	0.157	ND	mg/L
L15051274-09	520.0	15	.025	15	.025	1	0	ND	mg/L
L15051274-11	500.0	15	.025	15	.025	1	0	ND	mg/L
L15051274-13	540.0	15	.025	15	.025	1	0	ND	mg/L
L15051303-01	500.0	15	.025	14.7	.025	1	0.240	ND	mg/L
L15051303-03	500.0	15	.025	15	.025	1	0	ND	mg/L
L15051303-05	500.0	15	.025	14.5	.025	1	0.400	ND	mg/L
L15051303-07	500.0	15	.025	15	.025	1	0	ND	mg/L
L15051303-09	500.0	15	.025	14.5	.025	1	0.400	ND	mg/L
L15051303-11	510.0	15	.025	14.2	.025	1	0.627	0.6275 F	mg/L
L15051430-02	550.0	15	.025	15	.025	1	0	ND	mg/L
L15051431-02	540.0	15	.025	14.5	.025	1	0.370	ND	mg/L
L15051432-02	540.0	15	.025	14.8	.025	1	0.148	ND	mg/L
L15051433-02	550.0	15	.025	15	.025	1	0	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 05/26/2015 11:29

2.2.4 Total Organic Carbon Data

2.2.4.1 Summary Data

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051231-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-051915	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/21/2015 15:05
Collect Date:	05/19/2015 08:25	**Dilution:**	3	**File ID:**	TC05212015.013
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	8.32		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15051231-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW08-051915	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/21/2015 15:05
Collect Date:	05/19/2015 08:25	**Dilution:**	3	**File ID:**	TC05212015.013
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		55.2		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15051231-04	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW13-051915	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 09:28
Collect Date:	05/19/2015 11:50	**Dilution:**	10	**File ID:**	TC05212015.032
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	62.4		20.0	10.0	5.00

Certificate of Analysis

Microbac

Lab Report #: L15051231
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15051231-04	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW13-051915	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 09:28
Collect Date:	05/19/2015 11:50	**Dilution:**	10	**File ID:**	TC05212015.032
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		224		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L15051231-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW01-051915	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 09:53
Collect Date:	05/19/2015 12:20	**Dilution:**	3	**File ID:**	TC05212015.033
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Inorganic Carbon		42.6		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15051231-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	67WW01-051915	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 09:53
Collect Date:	05/19/2015 12:20	**Dilution:**	3	**File ID:**	TC05212015.033
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	12.7		6.00	3.00	1.50

2.2.4.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 21-MAY-2015
Analyst: EPT
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG524525

Calibration/Linearity	7/16/14
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
26-MAY-2015

Ethan Tido

Secondary Reviewer:
27-MAY-2015

Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-27-2015 07:49:29

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG524525

Login Number: L15051231

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
67WW08-051915	01	05/19/15					05/21/2015	2.3	28		05/21/15	2.3	28	
67WW13-051915	04	05/19/15					05/22/2015	2.9	28		05/22/15	2.9	28	
67WW01-051915	05	05/19/15					05/22/2015	2.9	28		05/22/15	2.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4196588
Report generated 05/26/2015 09:14

METHOD BLANK SUMMARY

Login Number: L15051231
Blank File ID: TC05212015.003
Prep Date: 05/21/15 10:54
Analyzed Date: 05/21/15 10:54
Analyst: EPT

Work Group: WG524525
Blank Sample ID: WG524525-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524525-02	TC05212015.004	05/21/15 11:14	01
LCS2	WG524525-03	TC05212015.005	05/21/15 11:38	01
67WW08-051915	L15051231-01	TC05212015.013	05/21/15 15:05	DL01
67WW08-051915	L15051231-01	TC05212015.013	05/21/15 15:05	DL01
67WW13-051915	L15051231-04	TC05212015.032	05/22/15 09:28	DL01
67WW13-051915	L15051231-04	TC05212015.032	05/22/15 09:28	DL01
67WW01-051915	L15051231-05	TC05212015.033	05/22/15 09:53	DL01
67WW01-051915	L15051231-05	TC05212015.033	05/22/15 09:53	DL01
DUP	WG524525-05	TC05212015.046	05/22/15 15:08	01

Report Name: BLANK_SUMMARY
PDF File ID: 4196589
Report generated 05/26/2015 09:14

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051231 Prep Date: 05/21/15 10:54 Sample ID: WG524525-01
Instrument ID: TOC-VWP Run Date: 05/21/15 10:54 Prep Method: 415.1
File ID: TC05212015.003 Analyst: EPT Method: 415.1
Workgroup (AAB#): WG524525 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-16-JUL-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4196590
26-MAY-2015 09:14

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051231 Analyst: EPT Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG524525 Units: mg/L
QC Key: DOD4 Lot #: STD69935

Sample ID: WG524525-02 LCS File ID: TC05212015.004 Run Date: 05/21/2015 11:14
Sample ID: WG524525-03 LCS2 File ID: TC05212015.005 Run Date: 05/21/2015 11:38

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	26.1	104	25.0	25.2	101	3.59	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4196591
Report generated: 05/26/2015 09:14

2.2.4.3 Raw Data

TC/TIC Curves wg484708

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): see below (5/200)(1000) = 25mg/L

MS (TOC): _____

Calibration Curve Date: _____

Reagent: 30583 / 30943

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 16

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full

☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate

☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC Curve		27	Std 65368		52		
3	TC ICV		28			53	see SOP	
4	TIC ICV		29	TIC Curve		54	for curve	
5			30	Std 65406		55	points	
6			31			56		
7			32			57		
8			33	TC ICV		58	ept 7/16/14	
9			34	Std 63965		59	~~5/200~~ 5/200	(1000)
10			35			60		=25mg/L
11			36	TIC ICV		61		
12			37	Std 65405		62		
13			38			63		
14	all points		39	analyzed	in	64	duplicate	
15			40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: Ethan Todd / Deanne Hesson

Date/Time: 07/16/14 0930 + 7/17

DCN#103908

C:\TOC3201\Data\07-16-2014-DIH-CURVE.t32

	Anal	Sample Name	Result	Status	Date / Time
1	TC	TCCURVE		Completed	7/16/2014 12:06:36 PM
2	TC	TC ICV	TC:24.54mg/L	Completed	7/16/2014 1:33:15 PM
3	IC	TICCURVE		Completed	7/17/2014 12:33:06 PM
4	IC	TIC ICV	IC:25.59mg/L	Completed	7/17/2014 12:47:00 PM

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-07-16-2014.2014_07_16_11_05_11.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	5.492	500uL	1	*******		7/16/2014 11:08:39 AM
2	4.691	500uL	1	*******		7/16/2014 11:12:03 AM

Acid Add. 0.000%
Mean Area 5.091

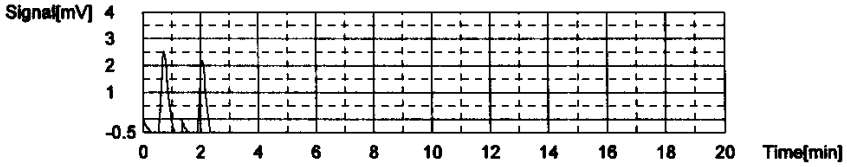

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	51.17	500uL	1	*******		7/16/2014 11:17:40 AM
2	51.30	500uL	1	*******		7/16/2014 11:21:41 AM

Acid Add. 0.000%
Mean Area 51.23

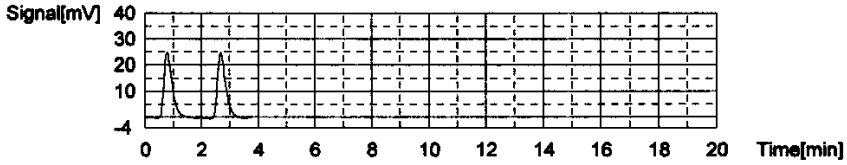

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	184.4	500uL	1	*******		7/16/2014 11:27:31 AM
2	188.1	500uL	1	*******		7/16/2014 11:31:40 AM

Acid Add. 0.000%
Mean Area 186.3

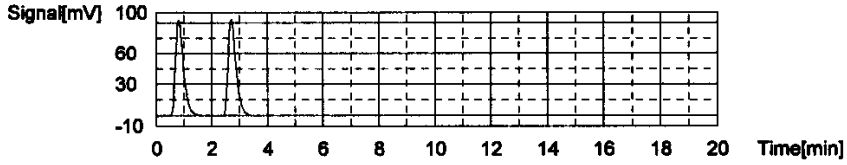

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	371.5	500uL	1	*******		7/16/2014 11:37:40 AM
2	397.8	500uL	1	*******		7/16/2014 11:42:09 AM

Acid Add. 0.000%
Mean Area 384.6

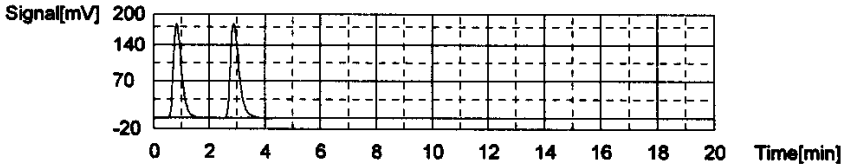

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	928.1	500uL	1	*******		7/16/2014 11:48:37 AM
2	992.4	500uL	1	*******		7/16/2014 11:53:28 AM

Acid Add. 0.000%
Mean Area 960.3

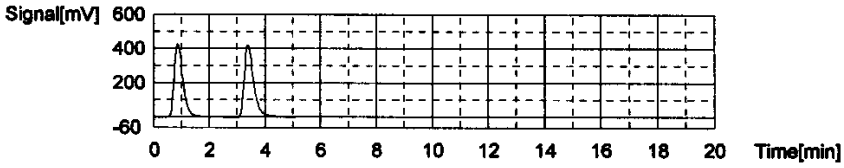

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1809	500uL	1	*******		7/16/2014 12:00:11 PM
2	2029	500uL	1	*******		7/16/2014 12:06:36 PM

Acid Add. 0.000%
Mean Area 1919

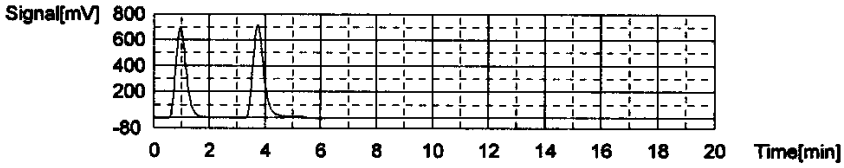

Slope: 38.27
Intercept 3.929
r^2 0.999938 ✓
Zero Shift No

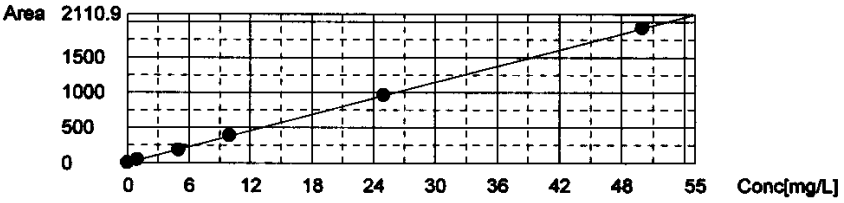

Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-07-16-2014.csl
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:24.54mg/L

= 98%

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	966.9	25.16mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/16/2014 1:28:24 PM
2	919.5	23.92mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/16/2014 1:33:15 PM

Mean Area 943.2
Mean Conc. 24.54mg/L

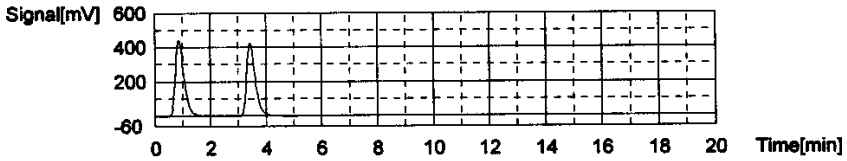

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-A-07-17-2014.2014_07_17_11_16_59.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	7.193	500uL	1	*******		7/17/2014 11:21:04 AM
2	6.644	500uL	1	*******		7/17/2014 11:25:12 AM

Acid Add. 10.00%
Mean Area 6.918

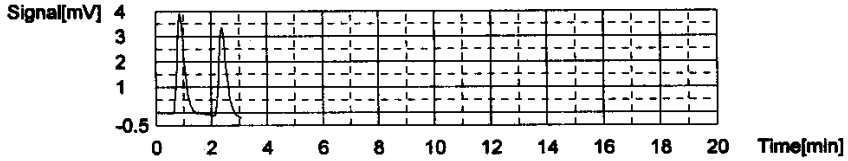

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	49.75	500uL	1	*******		7/17/2014 11:32:57 AM
2	50.58	500uL	1	*******		7/17/2014 11:37:28 AM

Acid Add. 10.00%
Mean Area 50.17

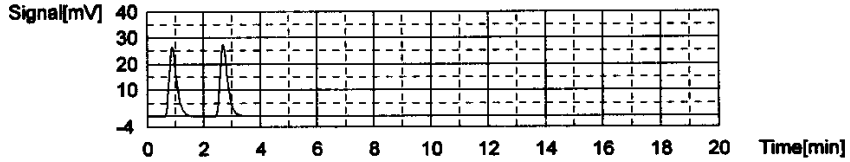

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	98.15	500uL	1	*******		7/17/2014 11:46:02 AM
2	158.0	500uL	1	*******		7/17/2014 11:50:52 AM

Acid Add. 10.00%
Mean Area 128.1

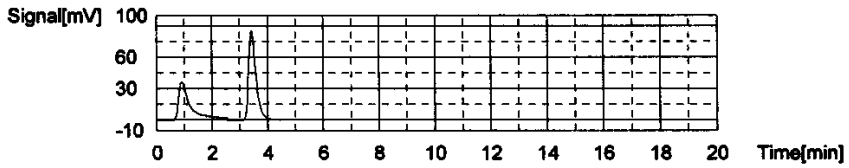

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	313.9	500uL	1	*******		7/17/2014 11:59:03 AM
2	314.5	500uL	1	*******		7/17/2014 12:04:02 PM

Acid Add. 10.00%
Mean Area 314.2

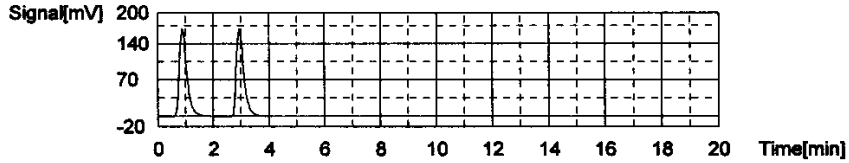

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	774.3	500uL	1	*******		7/17/2014 12:12:42 PM
2	781.8	500uL	1	*******		7/17/2014 12:17:58 PM

Acid Add. 10.00%
Mean Area 778.1

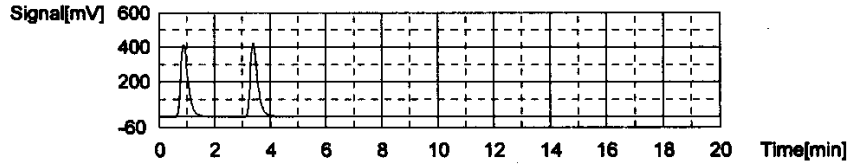

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1490	500uL	1	*******		7/17/2014 12:27:11 PM
2	1503	500uL	1	*******		7/17/2014 12:33:06 PM

Acid Add. 10.00%
Mean Area 1497

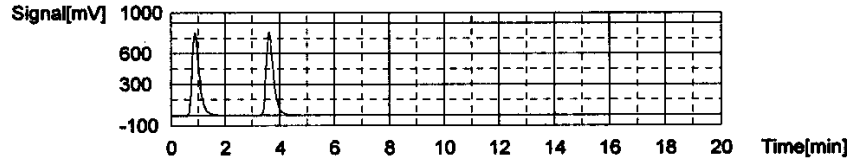

Slope: 29.95
Intercept 8.025
r^2 0.999041 ✓
Zero Shift No

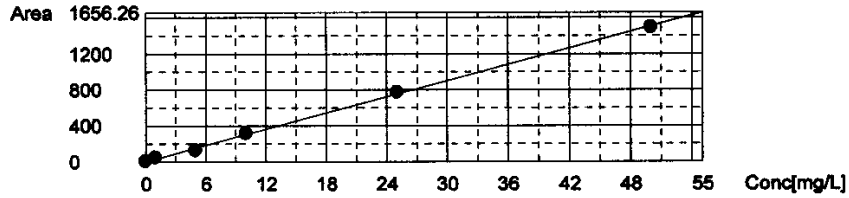

Sample

Sample Name: TIC ICV
Sample ID: Untitled
Origin: TICCURVE-A-07-17-2014.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:25.59mg/L

=102%

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	775.9	25.64mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/17/2014 12:41:44 PM
2	773.4	25.55mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/17/2014 12:47:00 PM

Mean Area 774.7
Mean Conc. 25.59mg/L

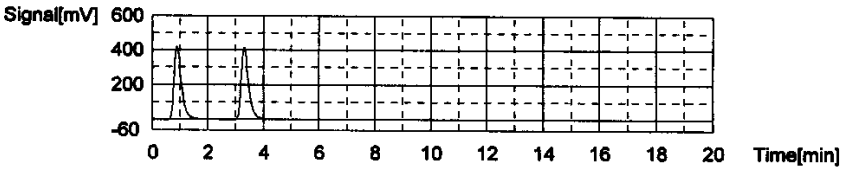

WORKGROUP: WG524525

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 65368
(5/200)(1000) = 25mg/L

LCS (TOC): Std 69935 Std 68222
(5/200)(1000) = 25mg/L

CCV (TIC): Std 68222
(5/200)(1000) = 25mg/L

MS (TOC): Std 69935
(.4)(1000)/40 = 10

Calibration Curve Date: 7/16/14

Reagent: 33399
32721

☒ SM5310-C : Matrix 2 WG 524525
☐ EPA 415.1/9060A(mod): Matrix 1 WG _____
WG _____

SOP: K 4151 Rev. 17
Instrument: Shimadza TOC-VWP/ASI

☒ drain reservoir filled
☒ ASI water bottle full
☒ dilution water bottle full

DAILY CHECK
☒ 3rd bottle full
☒ sufficient gas
☒ sufficient persulfate

☒ sufficient acid
☒ waste container

Position	Sample ID	Dilution
1	TIC	
2	CCV	
3	BLK	
4	LCS	
5	LCSDUP	
6	05-1200-09	1/3
7	05-1209-15	1/3
8	-16	1/3
9	-17	1/3
10	-27	1/10 cpt 5/21/15
11	-28	1/85
12	-29	1/3
13	05-1231-01	1/3
14	CCV	
15	CCB	
16	05-1231-04	1/3
17	-05	1/3
18	05-1267-01	
19	-02	
20	05-1268-01	
21	05-1269-01	
22	05-1303-01	1/3
23	-03	1/3
24	-05	1/3
25	-07	1/3

Position	Sample ID	Dilution
26	CCV	
27	CCB	
28	05-1303-09	1/3
29	-11	1/3
30	CCV	
31	CCB	cpt 5/21/15
32	05-1231-04	1/310
33	-05	1/3
34	05-1267-01	
35	-02	cpt 5/21/15
36	05-1268-01	1/1050
37	05-1269-01	1/3
38	05-1303-01	1/3
39	-03	1/5
40	-05	1/5
41	-07	1/3
42	CCV	
43	CCB	
44	05-1303-09	1/3
45	-11	1/85
46	DUP 1267-01	cpt 5/21/15
47	MS 1231-04	1/3
48	CCV	
49	CCB	
50		

Position	Sample ID	Dilution
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		

Analyst: Ethan Todd

Date/Time: 05/21/15 1030

DCN#110771

C:\TOC3201\Data\05-21-2015-EPT-TOC.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	TOC:1.346mg/L TC:26.10mg/L IC:24.76mg/L	Complete	5/21/2015 10:36:44 AM	1
2	TOC	CCV	!!Error!! TOC:25.15mg/L TC:25.05mg/L IC:-0.09567mg/	Complete	5/21/2015 10:49:11 AM	2
3	TOC	WG524525-01 BLK	TOC:0.1582mg/L TC:0.1621mg/L IC:0.00383mg/L	Complete	5/21/2015 11:06:00 AM	0
4	TOC	WG524525-02 LCS	TOC:26.12mg/L TC:46.89mg/L IC:20.77mg/L	Complete	5/21/2015 11:29:59 AM	4
5	TOC	WG524525-03 LCSDUP	TOC:25.20mg/L TC:45.82mg/L IC:20.62mg/L	Complete	5/21/2015 11:54:02 AM	5
6	TOC	L15051200-09 (3)	TOC:3.070mg/L TC:10.58mg/L IC:7.506mg/L	Complete	5/21/2015 12:16:02 PM	6
7	TOC	L15051209-15 (3)	TOC:3.484mg/L TC:37.89mg/L IC:34.40mg/L	Complete	5/21/2015 12:41:25 PM	7
8	TOC	L15051209-16 (3)	TOC:2.631mg/L TC:24.37mg/L IC:21.73mg/L	Complete	5/21/2015 1:05:21 PM	8
9	TOC	L15051209-17 (3)	TOC:2.690mg/L TC:37.74mg/L IC:35.05mg/L	Complete	5/21/2015 1:32:51 PM	9
10	TOC	L15051209-27 (10)	TOC:1.734mg/L TC:16.04mg/L IC:14.31mg/L	Complete	5/21/2015 1:56:03 PM	10
11	TOC	L15051209-28 (5)	TOC:7.992mg/L TC:39.51mg/L IC:31.51mg/L	Complete	5/21/2015 2:31:23 PM	11
12	TOC	L15051209-29 (3)	TOC:2.623mg/L TC:47.06mg/L IC:44.43mg/L	Complete	5/21/2015 2:57:37 PM	12
13	TOC	L15051231-01 (3)	TOC:2.772mg/L TC:21.17mg/L IC:18.39mg/L	Complete	5/21/2015 3:22:43 PM	13
14	TOC	CCV	TOC:23.78mg/L TC:23.82mg/L IC:0.03567mg/L	Complete	5/21/2015 3:35:09 PM	14
15	TOC	CCB	TOC:0.1161mg/L TC:0.1333mg/L IC:0.01717mg/L	Complete	5/21/2015 3:44:13 PM	0
16	TOC		TOC:2.629mg/L TC:30.99mg/L IC:28.36mg/L	Complete	5/21/2015 4:26:57 PM	16
17	TOC		TOC:1.355mg/L TC:11.17mg/L IC:9.818mg/L	Complete	5/21/2015 4:50:25 PM	17
18	TOC		TOC:2.702mg/L TC:5.196mg/L IC:2.494mg/L	Complete	5/21/2015 5:11:35 PM	18
19	TOC		TOC:2.776mg/L TC:4.114mg/L IC:1.338mg/L	Complete	5/21/2015 5:32:27 PM	19
20	TOC		TOC:217.9mg/L TC:228.3mg/L IC:10.43mg/L	Complete	5/21/2015 6:04:23 PM	20
21	TOC		TOC:70.51mg/L TC:71.43mg/L IC:0.9291mg/L	Complete	5/21/2015 6:28:56 PM	21
22	TOC		TOC:3.229mg/L TC:33.89mg/L IC:30.66mg/L	Complete	5/21/2015 6:55:06 PM	22
23	TOC		TOC:6.062mg/L TC:56.49mg/L IC:50.43mg/L	Complete	5/21/2015 7:23:59 PM	23
24	TOC		TOC:6.864mg/L TC:52.28mg/L IC:45.42mg/L	Complete	5/21/2015 7:52:26 PM	24
25	TOC		TOC:2.141mg/L TC:22.27mg/L IC:20.13mg/L	Complete	5/21/2015 8:17:01 PM	25
26	TOC		TOC:0.2038mg/L TC:0.3125mg/L IC:0.1087mg/L	Complete	5/21/2015 8:28:09 PM	26
27	TOC		TOC:0.1794mg/L TC:0.2004mg/L IC:0.02108mg/L	Complete	5/21/2015 8:37:20 PM	0
28	TOC		TOC:1.925mg/L TC:13.74mg/L IC:11.81mg/L	Complete	5/21/2015 9:01:07 PM	28
29	TOC		TOC:2.168mg/L TC:35.84mg/L IC:33.67mg/L	Complete	5/21/2015 9:26:53 PM	29
30	TOC	CCV	!!Error!! TOC:27.95mg/L TC:27.88mg/L IC:-0.07270mg/	Complete	5/22/2015 8:59:07 AM	30
31	TOC	CCB	TOC:0.1343mg/L TC:0.1511mg/L IC:0.01680mg/L	Complete	5/22/2015 9:08:14 AM	0
32	TOC	L15051231-04 (10)	TOC:6.241mg/L TC:28.62mg/L IC:22.38mg/L	Complete	5/22/2015 9:45:40 AM	32
33	TOC	L15051231-05 (3)	TOC:4.220mg/L TC:18.43mg/L IC:14.21mg/L	Complete	5/22/2015 10:08:43 AM	33
34	TOC	L15051267-01	TOC:2.741mg/L TC:6.668mg/L IC:3.927mg/L	Complete	5/22/2015 10:30:44 AM	34
35	TOC	L15051267-02	TOC:2.438mg/L TC:3.844mg/L IC:1.406mg/L	Complete	5/22/2015 10:51:43 AM	35
36	TOC	L15051268-01 (50)	TOC:21.54mg/L TC:21.81mg/L IC:0.2624mg/L	Complete	5/22/2015 11:26:53 AM	36
37	TOC	L15051269-01 (3)	TOC:26.78mg/L TC:27.40mg/L IC:0.6141mg/L	Complete	5/22/2015 11:50:08 AM	37
38	TOC	L15051303-01 (3)	TOC:8.548mg/L TC:40.92mg/L IC:32.37mg/L	Complete	5/22/2015 12:16:03 PM	38
39	TOC	L15051303-03 (5)	TOC:7.363mg/L TC:37.26mg/L IC:29.90mg/L	Complete	5/22/2015 12:41:40 PM	39
40	TOC	L15051303-05 (3) (5)	TOC:12.84mg/L TC:42.05mg/L IC:29.21mg/L	Complete	5/22/2015 1:09:40 PM	40
41	TOC	L15051303-07 (3)	TOC:2.503mg/L TC:25.05mg/L IC:22.55mg/L	Complete	5/22/2015 1:35:13 PM	41
42	TOC	CCV	TOC:27.75mg/L TC:27.83mg/L IC:0.07663mg/L	Complete	5/22/2015 1:49:49 PM	42
43	TOC	CCB	TOC:0.1361mg/L TC:0.1670mg/L IC:0.03086mg/L	Complete	5/22/2015 1:58:59 PM	0
44	TOC	L15051303-09 (3)	TOC:1.792mg/L TC:14.44mg/L IC:12.64mg/L	Complete	5/22/2015 2:22:21 PM	44
45	TOC	L15051303-11 (5)	TOC:4.497mg/L TC:39.17mg/L IC:34.67mg/L	Complete	5/22/2015 3:00:26 PM	45
46	TOC	WG524525-05 DUP	TOC:2.512mg/L TC:4.544mg/L IC:2.033mg/L	Complete	5/22/2015 3:21:48 PM	46
47	TOC	WG524525-07 (3) MS	TOC:6.375mg/L TC:36.08mg/L IC:29.71mg/L	Complete	5/22/2015 3:47:03 PM	47
48	TOC	CCV	TOC:26.96mg/L TC:27.07mg/L IC:0.1150mg/L	Complete	5/22/2015 4:00:53 PM	48
49	TOC	CCB	TOC:0.1783mg/L TC:0.2093mg/L IC:0.03103mg/L	Complete	5/22/2015 4:10:10 PM	0

5/22/2015 4:59:10 PM

1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.346mg/L TC:26.10mg/L IC:24.76mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1003	26.10mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 10:31:10 AM

Mean Area 1003
Mean Conc. 26.10mg/L

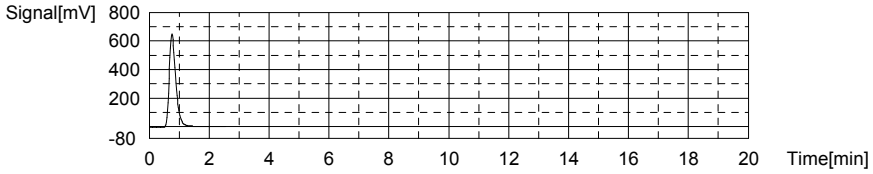

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	749.6	24.76mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 10:36:44 AM

Mean Area 749.6
Mean Conc. 24.76mg/L

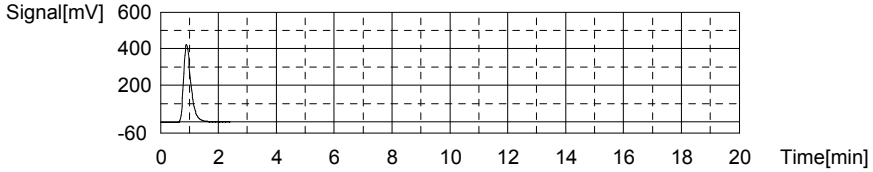

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.15mg/L TC:25.05mg/L IC:-0.09567mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	962.7	25.05mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 10:44:47 AM

Mean Area 962.7
Mean Conc. 25.05mg/L

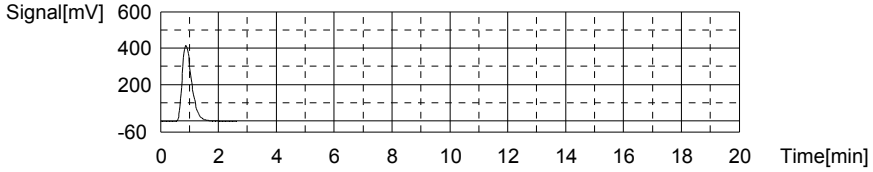

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.159	-0.09567mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 10:49:11 AM

Mean Area 5.159
Mean Conc. -0.09567mg/L

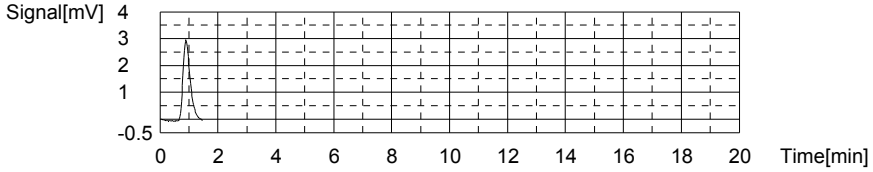

Sample

Sample Name: WG524525-01 BLK
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1582mg/L TC:0.1621mg/L IC:0.00383mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.94	0.1832mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 10:54:18 AM
2	9.324	0.1410mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 10:57:52 AM

Mean Area 10.13
Mean Conc. 0.1621mg/L

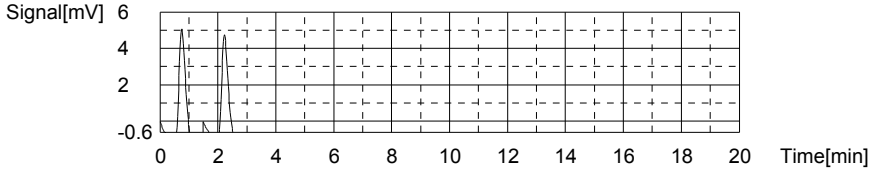

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.157	0.00442mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 11:01:57 AM
2	8.122	0.00325mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 11:06:00 AM

Mean Area 8.140
Mean Conc. 0.00383mg/L

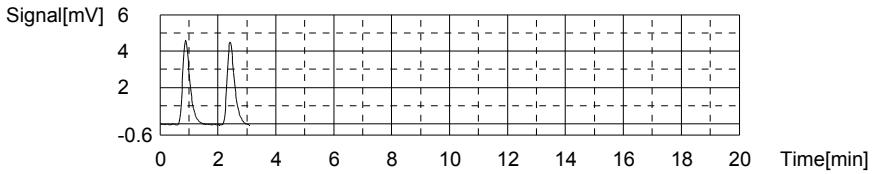

Sample

Sample Name: WG524525-02 LCS
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.12mg/L TC:46.89mg/L IC:20.77mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1793	46.74mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 11:14:14 AM
2	1804	47.03mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 11:19:11 AM

Mean Area 1799
Mean Conc. 46.89mg/L

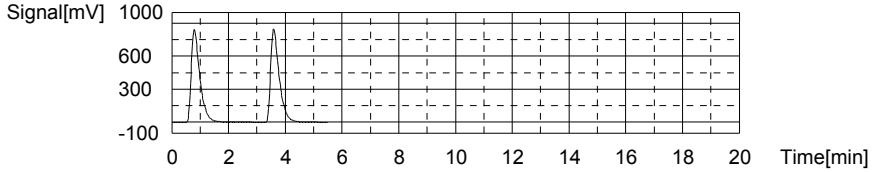

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	639.9	21.10mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 11:24:50 AM
2	620.4	20.44mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 11:29:59 AM

Mean Area 630.1
Mean Conc. 20.77mg/L

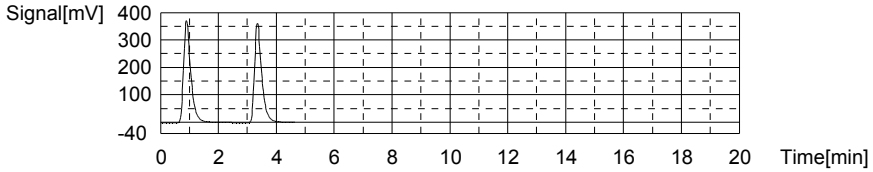

Sample

Sample Name: WG524525-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.20mg/L TC:45.82mg/L IC:20.62mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1768	46.09mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 11:38:03 AM
2	1747	45.54mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 11:43:11 AM

Mean Area 1758
Mean Conc. 45.82mg/L

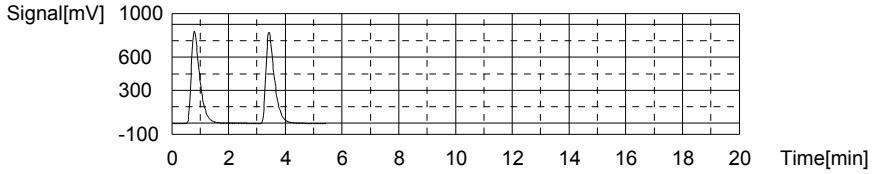

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	632.2	20.84mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 11:48:48 AM
2	619.1	20.40mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 11:54:02 AM

Mean Area 625.7
Mean Conc. 20.62mg/L

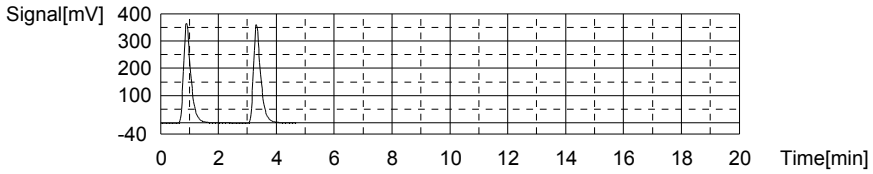

Sample

Sample Name: L15051200-09 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.070mg/L TC:10.58mg/L IC:7.506mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	400.9	10.37mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 12:01:48 PM
2	416.5	10.78mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 12:06:01 PM

Mean Area 408.7
Mean Conc. 10.58mg/L

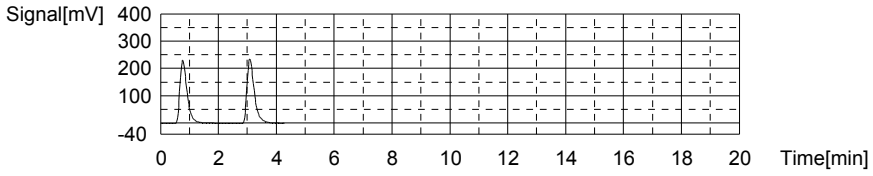

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	231.6	7.464mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 12:11:11 PM
2	234.1	7.548mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 12:16:02 PM

Mean Area 232.9
Mean Conc. 7.506mg/L

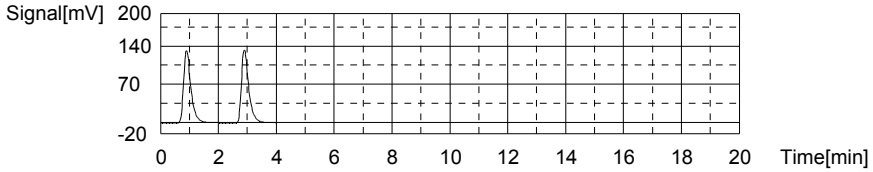

Sample

Sample Name: L15051209-15 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.484mg/L TC:37.89mg/L IC:34.40mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1469	38.28mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 12:24:44 PM
2	1439	37.49mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 12:29:55 PM

Mean Area 1454
Mean Conc. 37.89mg/L

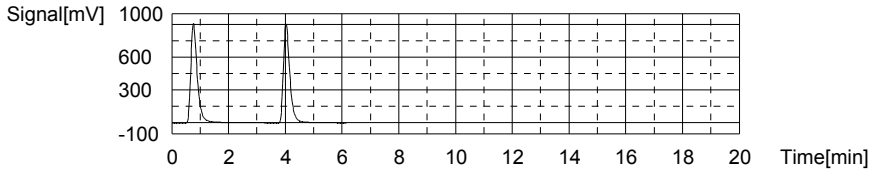

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1045	34.62mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 12:36:00 PM
2	1032	34.19mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 12:41:25 PM

Mean Area 1039
Mean Conc. 34.40mg/L

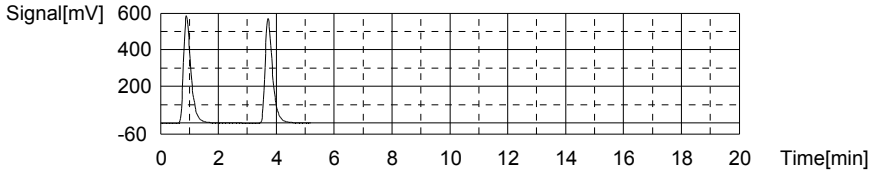

Sample

Sample Name: L15051209-16 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.631mg/L TC:24.37mg/L IC:21.73mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	936.8	24.37mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 12:49:18 PM
2	936.2	24.36mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 12:53:52 PM

Mean Area 936.5
Mean Conc. 24.37mg/L

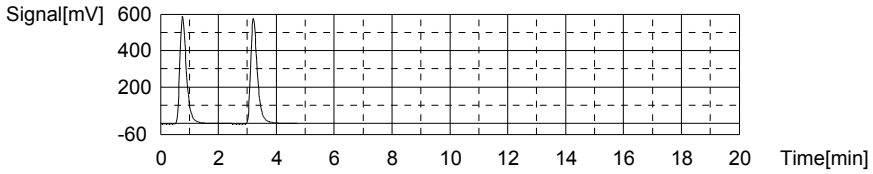

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	662.4	21.85mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 12:59:56 PM
2	655.7	21.62mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 1:05:21 PM

Mean Area 659.0
Mean Conc. 21.73mg/L

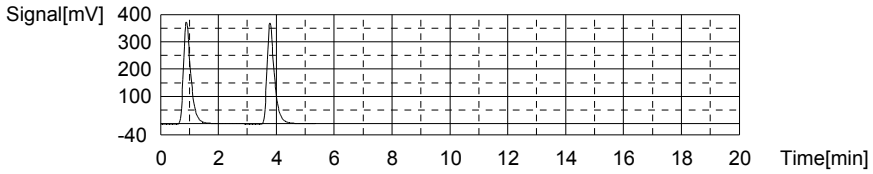

Sample

Sample Name: L15051209-17 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.690mg/L TC:37.74mg/L IC:35.05mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1459	38.02mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 1:15:26 PM
2	1438	37.47mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 1:21:22 PM

Mean Area 1449
Mean Conc. 37.74mg/L

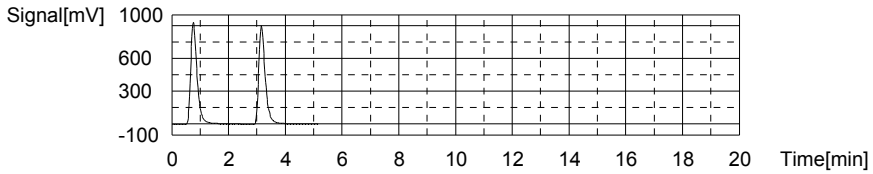

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1064	35.25mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 1:27:26 PM
2	1052	34.85mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 1:32:51 PM

Mean Area 1058
Mean Conc. 35.05mg/L

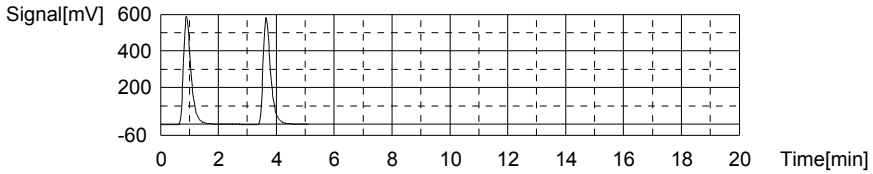

Sample

Sample Name: L15051209-27 (10)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.734mg/L TC:16.04mg/L IC:14.31mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	616.8	16.01mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 1:40:15 PM
2	619.2	16.08mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 1:45:29 PM

Mean Area 618.0
Mean Conc. 16.04mg/L

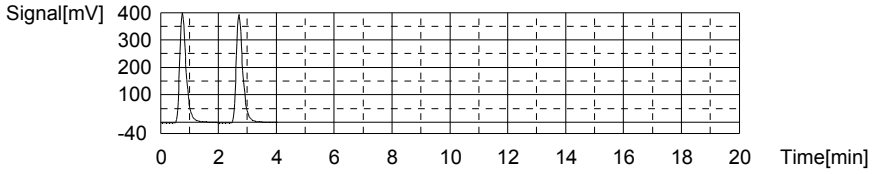

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	436.4	14.30mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 1:50:52 PM
2	436.9	14.32mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 1:56:03 PM

Mean Area 436.7
Mean Conc. 14.31mg/L

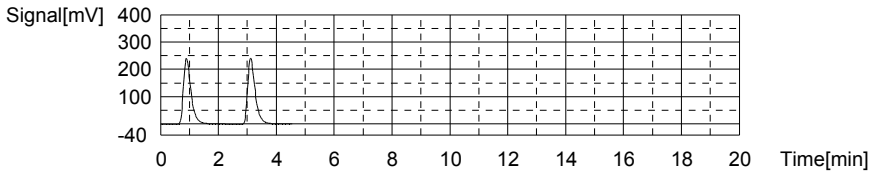

Sample

Sample Name: L15051209-28 (5)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.992mg/L TC:39.51mg/L IC:31.51mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1529	39.85mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 2:15:12 PM
2	1503	39.17mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 2:20:15 PM

Mean Area 1516
Mean Conc. 39.51mg/L

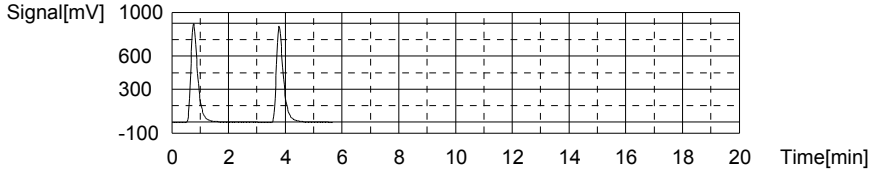

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	951.5	31.50mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 2:25:50 PM
2	952.5	31.53mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 2:31:23 PM

Mean Area 952.0
Mean Conc. 31.51mg/L

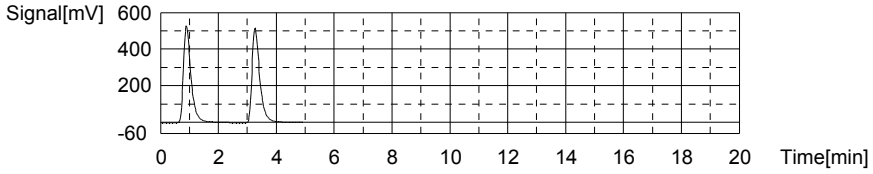

Sample

Sample Name: L15051209-29 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.623mg/L TC:47.06mg/L IC:44.43mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1814	47.29mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 2:40:29 PM
2	1796	46.82mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 2:45:55 PM

Mean Area 1805
Mean Conc. 47.06mg/L

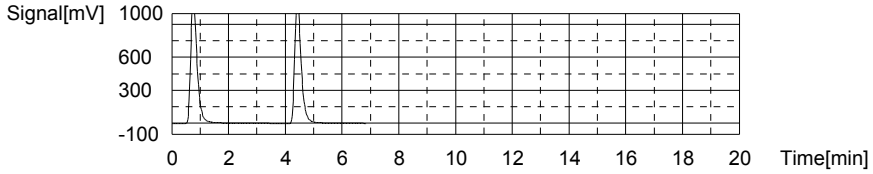

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1337	44.37mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 2:51:36 PM
2	1341	44.50mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 2:57:37 PM

Mean Area 1339
Mean Conc. 44.43mg/L

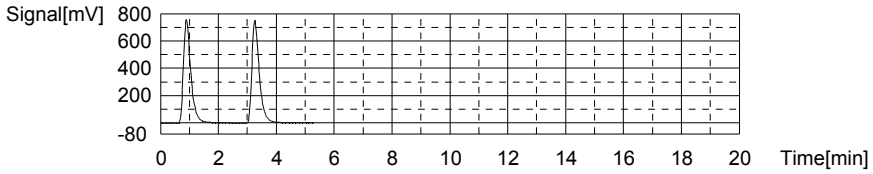

Sample

Sample Name: L15051231-01 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.772mg/L TC:21.17mg/L IC:18.39mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	804.2	20.91mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 3:05:42 PM
2	823.9	21.42mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 3:12:06 PM

Mean Area 814.1
Mean Conc. 21.17mg/L

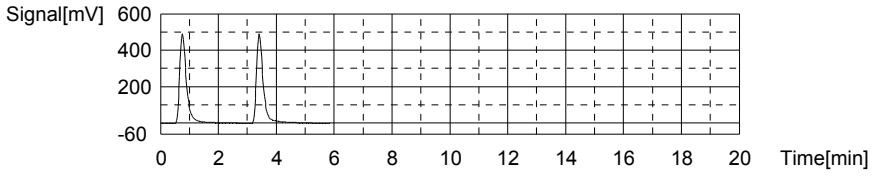

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	563.8	18.55mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 3:17:36 PM
2	554.2	18.23mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 3:22:43 PM

Mean Area 559.0
Mean Conc. 18.39mg/L

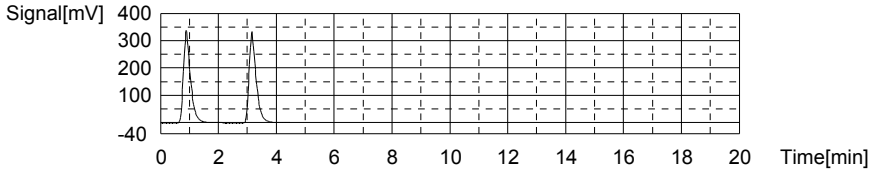

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.78mg/L TC:23.82mg/L IC:0.03567mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	915.5	23.82mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 3:30:39 PM

Mean Area 915.5
Mean Conc. 23.82mg/L

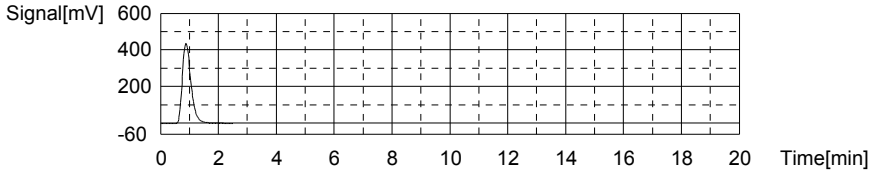

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.093	0.03567mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 3:35:09 PM

Mean Area 9.093
Mean Conc. 0.03567mg/L

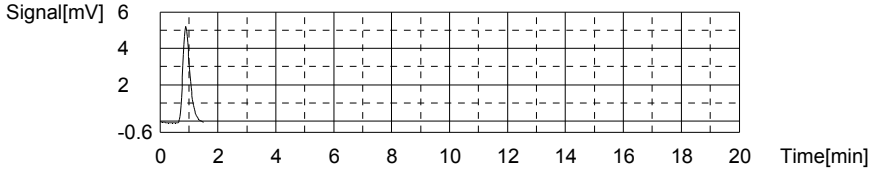

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1161mg/L TC:0.1333mg/L IC:0.01717mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.031	0.1333mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 3:40:12 PM

Mean Area 9.031
Mean Conc. 0.1333mg/L

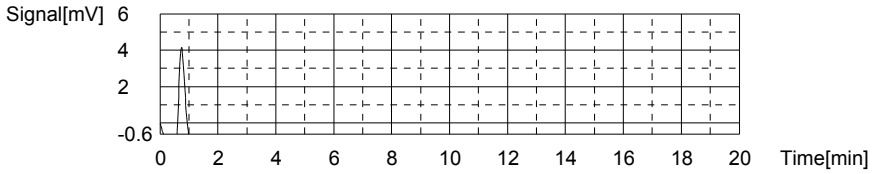

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.539	0.01717mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 3:44:13 PM

Mean Area 8.539
Mean Conc. 0.01717mg/L

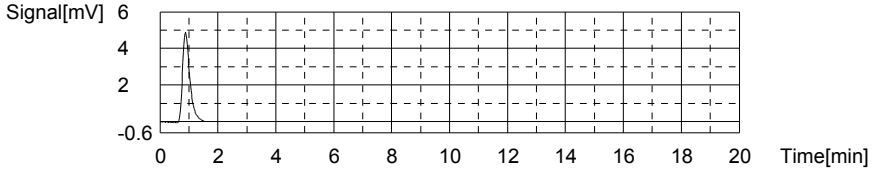

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.629mg/L TC:30.99mg/L IC:28.36mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1213	31.59mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 4:10:38 PM
2	1167	30.39mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 4:15:43 PM

Mean Area 1190
Mean Conc. 30.99mg/L

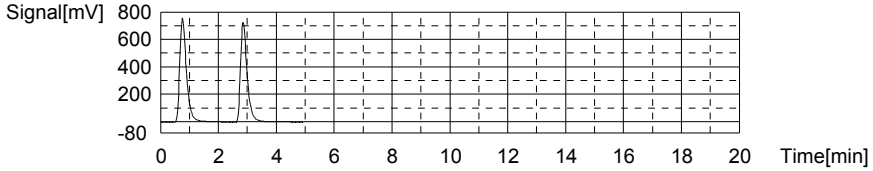

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	855.4	28.29mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 4:21:28 PM
2	859.6	28.43mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 4:26:57 PM

Mean Area 857.5
Mean Conc. 28.36mg/L

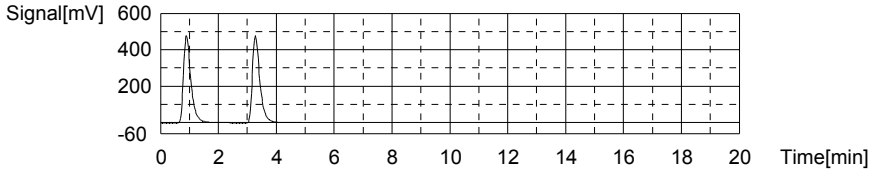

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.355mg/L TC:11.17mg/L IC:9.818mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	425.9	11.03mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 4:34:31 PM
2	437.2	11.32mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 4:40:13 PM

Mean Area 431.6
Mean Conc. 11.17mg/L

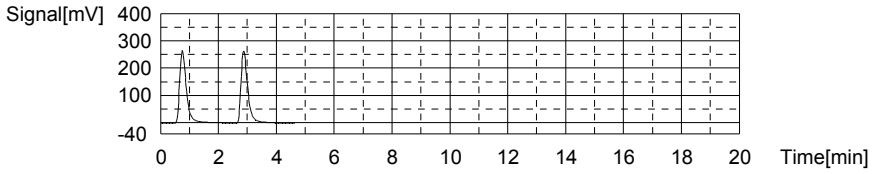

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	300.9	9.778mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 4:45:29 PM
2	303.3	9.858mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 4:50:25 PM

Mean Area 302.1
Mean Conc. 9.818mg/L

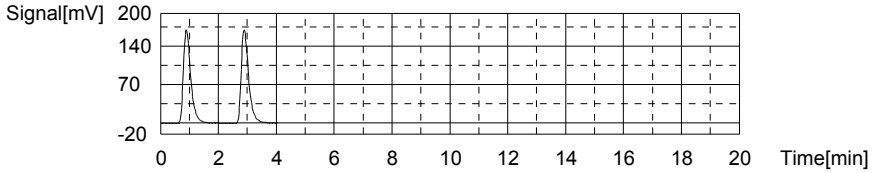

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.702mg/L TC:5.196mg/L IC:2.494mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	201.6	5.165mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 4:57:49 PM
2	204.0	5.227mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 5:02:11 PM

Mean Area 202.8
Mean Conc. 5.196mg/L

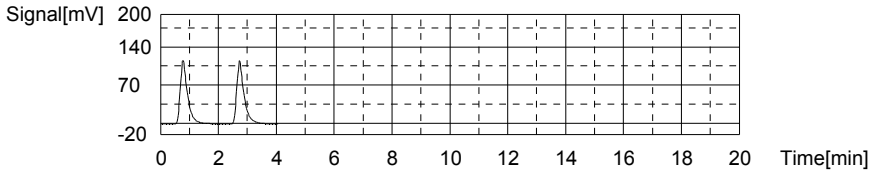

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	83.84	2.531mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 5:06:57 PM
2	81.60	2.456mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 5:11:35 PM

Mean Area 82.72
Mean Conc. 2.494mg/L

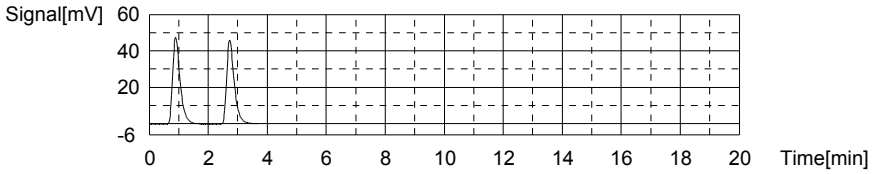

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.776mg/L TC:4.114mg/L IC:1.338mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	160.3	4.086mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 5:19:01 PM
2	162.5	4.143mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 5:23:21 PM

Mean Area 161.4
Mean Conc. 4.114mg/L

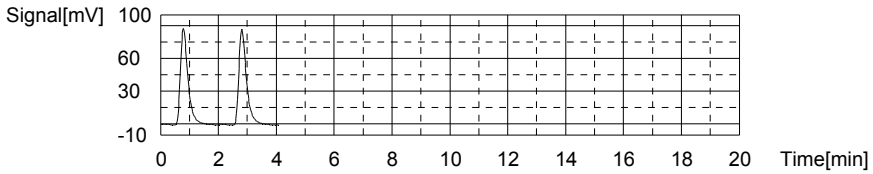

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	48.69	1.358mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 5:28:01 PM
2	47.51	1.318mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 5:32:27 PM

Mean Area 48.10
Mean Conc. 1.338mg/L

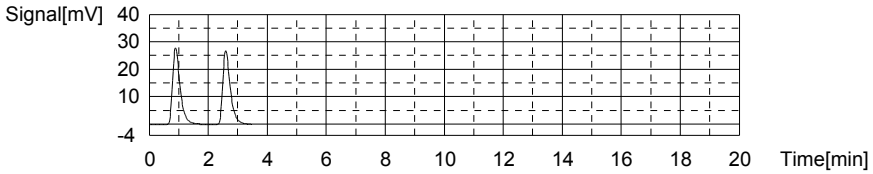

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:217.9mg/L TC:228.3mg/L IC:10.43mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9999	261.1mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 5:42:47 PM
2	7485	195.5mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 5:53:30 PM

Mean Area 8742
Mean Conc. 228.3mg/L

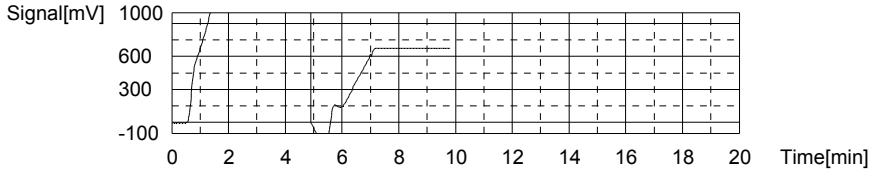

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	322.1	10.49mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 5:59:22 PM
2	318.6	10.37mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 6:04:23 PM

Mean Area 320.4
Mean Conc. 10.43mg/L

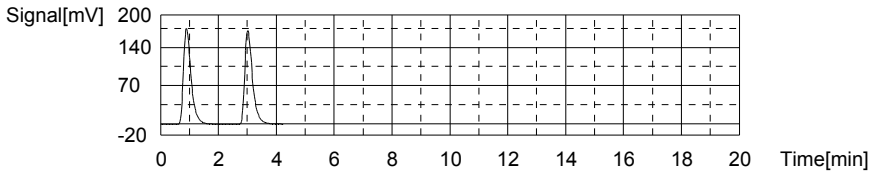

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:70.51mg/L TC:71.43mg/L IC:0.9291mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2371	61.85mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 6:12:34 PM
2	3105	81.02mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 6:19:50 PM

Mean Area 2738
Mean Conc. 71.43mg/L

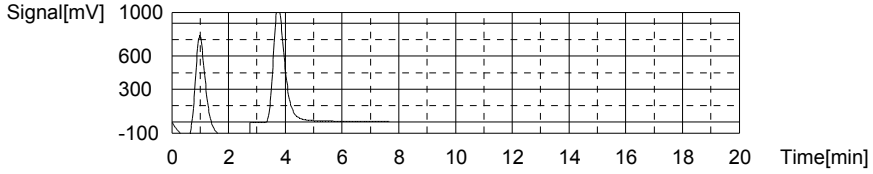

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	36.60	0.9540mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 6:24:29 PM
2	35.11	0.9042mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 6:28:56 PM

Mean Area 35.86
Mean Conc. 0.9291mg/L

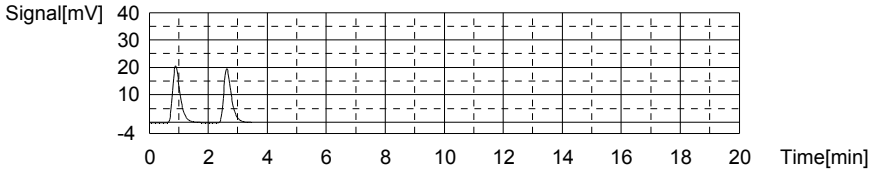

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.229mg/L TC:33.89mg/L IC:30.66mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1271	33.11mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 6:36:54 PM
2	1331	34.67mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 6:43:40 PM

Mean Area 1301
Mean Conc. 33.89mg/L

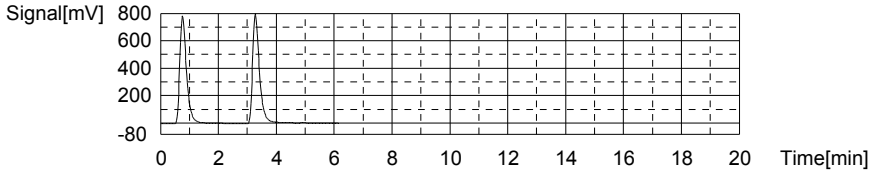

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	940.5	31.13mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 6:49:40 PM
2	912.3	30.19mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 6:55:06 PM

Mean Area 926.4
Mean Conc. 30.66mg/L

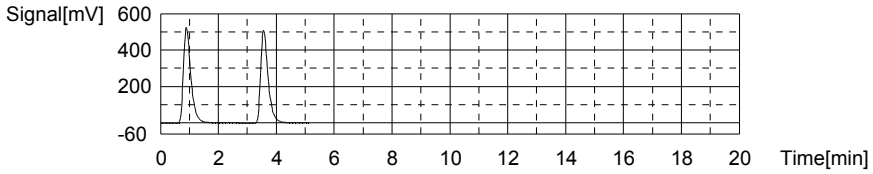

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.062mg/L TC:56.49mg/L IC:50.43mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2163	56.41mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 7:05:26 PM
2	2169	56.57mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 7:12:34 PM

Mean Area 2166
Mean Conc. 56.49mg/L

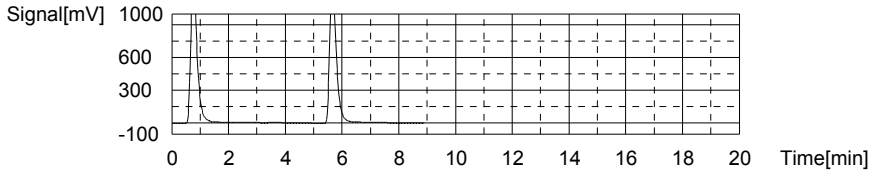

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1539	51.11mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 7:18:21 PM
2	1498	49.74mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 7:23:59 PM

Mean Area 1519
Mean Conc. 50.43mg/L

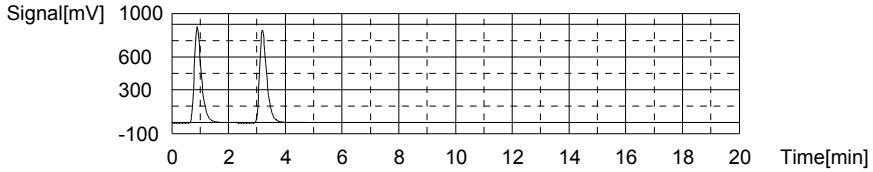

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.864mg/L TC:52.28mg/L IC:45.42mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1998	52.10mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 7:34:19 PM
2	2012	52.47mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 7:40:55 PM

Mean Area 2005
Mean Conc. 52.28mg/L

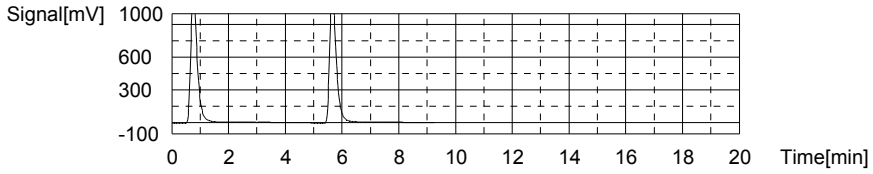

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1370	45.47mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 7:46:35 PM
2	1367	45.37mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 7:52:26 PM

Mean Area 1369
Mean Conc. 45.42mg/L

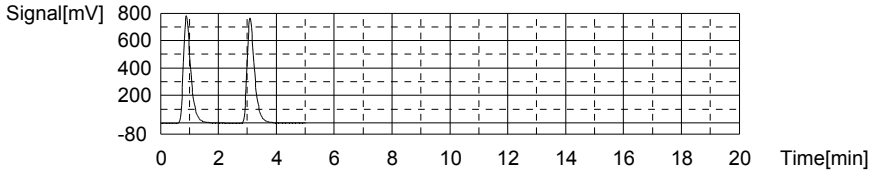

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.141mg/L TC:22.27mg/L IC:20.13mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	853.7	22.20mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 8:00:42 PM
2	859.2	22.35mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 8:06:34 PM

Mean Area 856.5
Mean Conc. 22.27mg/L

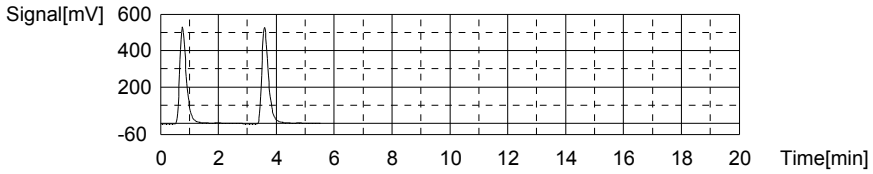

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	613.3	20.21mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 8:11:55 PM
2	608.9	20.06mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 8:17:01 PM

Mean Area 611.1
Mean Conc. 20.13mg/L

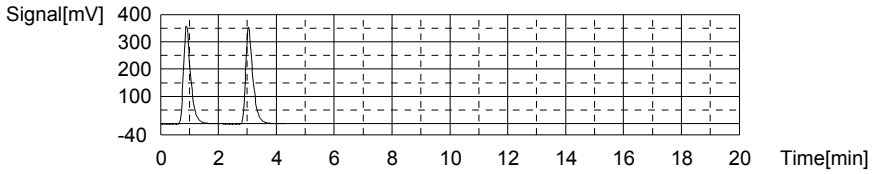

Sample

Sample Name:
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.2038mg/L TC:0.3125mg/L IC:0.1087mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.89	0.3125mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 8:23:45 PM

Mean Area 15.89
Mean Conc. 0.3125mg/L

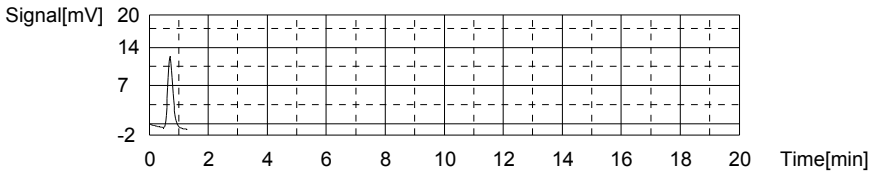

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.28	0.1087mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 8:28:09 PM

Mean Area 11.28
Mean Conc. 0.1087mg/L

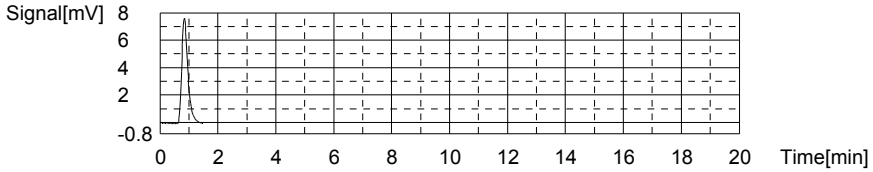

Sample

Sample Name:
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1794mg/L TC:0.2004mg/L IC:0.02108mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.60	0.2004mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 8:33:17 PM

Mean Area 11.60
Mean Conc. 0.2004mg/L

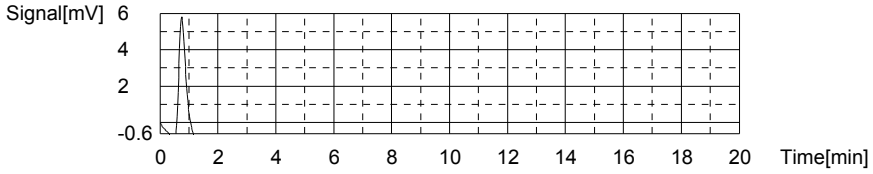

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.656	0.02108mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 8:37:20 PM

Mean Area 8.656
Mean Conc. 0.02108mg/L

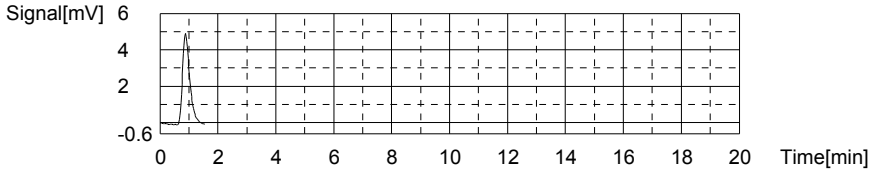

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.925mg/L TC:13.74mg/L IC:11.81mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	531.9	13.79mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 8:45:10 PM
2	527.4	13.68mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 8:51:03 PM

Mean Area 529.6
Mean Conc. 13.74mg/L

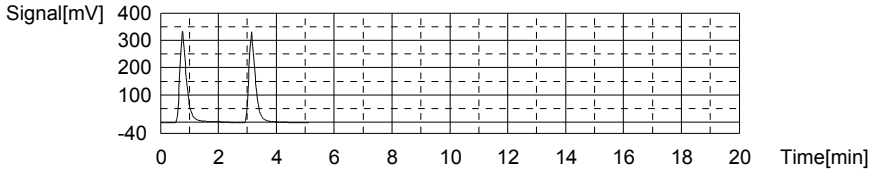

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	364.5	11.90mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 8:56:14 PM
2	359.1	11.72mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 9:01:07 PM

Mean Area 361.8
Mean Conc. 11.81mg/L

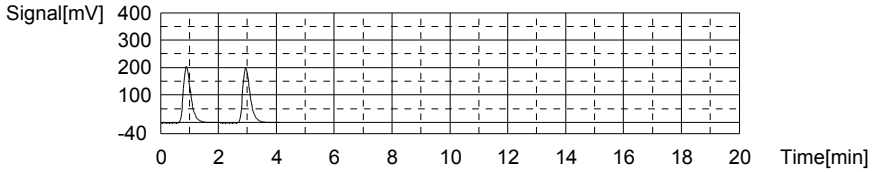

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.168mg/L TC:35.84mg/L IC:33.67mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1383	36.03mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 9:09:31 PM
2	1368	35.64mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 9:15:19 PM

Mean Area 1376
Mean Conc. 35.84mg/L

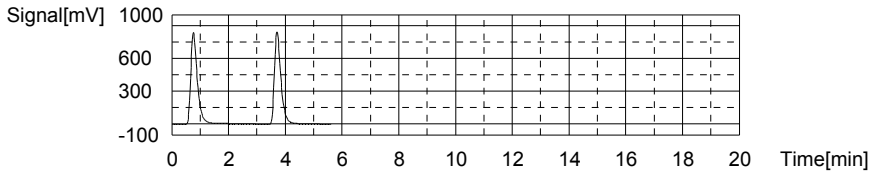

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1032	34.19mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 9:21:19 PM
2	1001	33.15mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 9:26:53 PM

Mean Area 1017
Mean Conc. 33.67mg/L

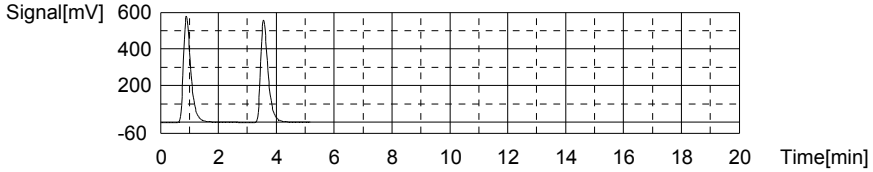

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:27.95mg/L TC:27.88mg/L IC:-0.07270mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1071	27.88mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 8:54:38 AM

Mean Area 1071
Mean Conc. 27.88mg/L

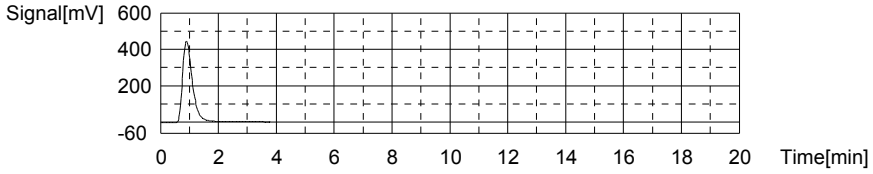

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.847	-0.07270mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 8:59:07 AM

Mean Area 5.847
Mean Conc. -0.07270mg/L

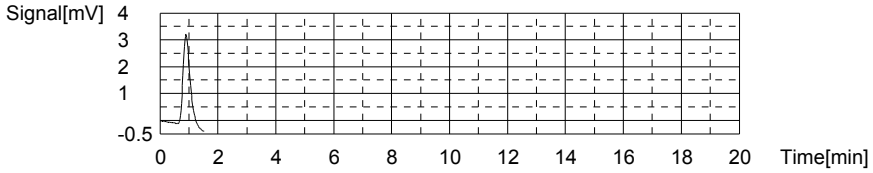

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1343mg/L TC:0.1511mg/L IC:0.01680mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.711	0.1511mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 9:04:13 AM

Mean Area 9.711
Mean Conc. 0.1511mg/L

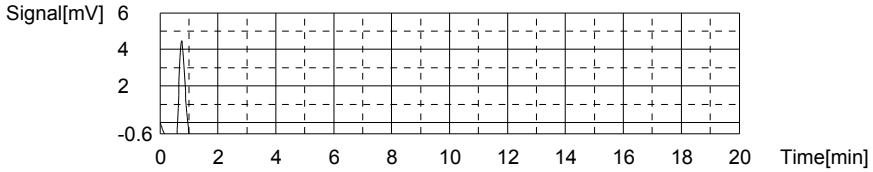

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.528	0.01680mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 9:08:14 AM

Mean Area 8.528
Mean Conc. 0.01680mg/L

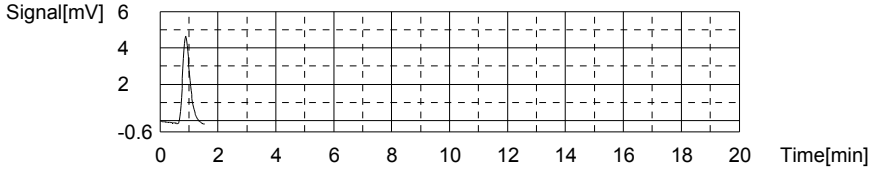

Sample

Sample Name: L15051231-04 (10)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.241mg/L TC:28.62mg/L IC:22.38mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1100	28.64mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 9:28:37 AM
2	1099	28.61mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 9:34:48 AM

Mean Area 1100
Mean Conc. 28.62mg/L

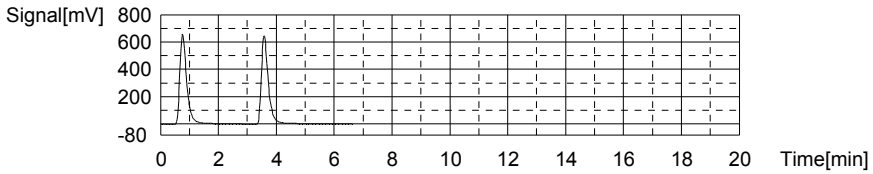

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	704.0	23.24mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 9:40:27 AM
2	653.0	21.53mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 9:45:40 AM

Mean Area 678.5
Mean Conc. 22.38mg/L

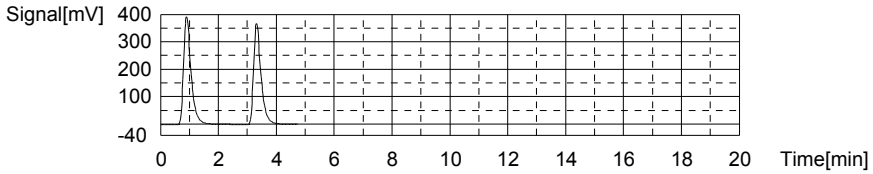

Sample

Sample Name: L15051231-05 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.220mg/L TC:18.43mg/L IC:14.21mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	704.8	18.31mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 9:53:40 AM
2	713.7	18.54mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 9:58:22 AM

Mean Area 709.3
Mean Conc. 18.43mg/L

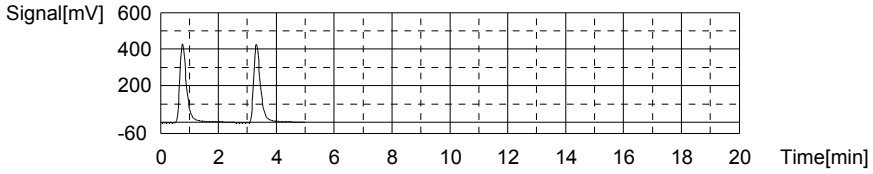

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	482.1	15.83mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 10:03:54 AM
2	385.1	12.59mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 10:08:43 AM

Mean Area 433.6
Mean Conc. 14.21mg/L

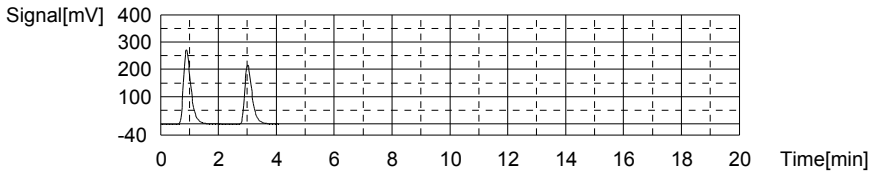

Sample

Sample Name: L15051267-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.741mg/L TC:6.668mg/L IC:3.927mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	259.6	6.680mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 10:16:34 AM
2	258.7	6.657mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 10:21:10 AM

Mean Area 259.1
Mean Conc. 6.668mg/L

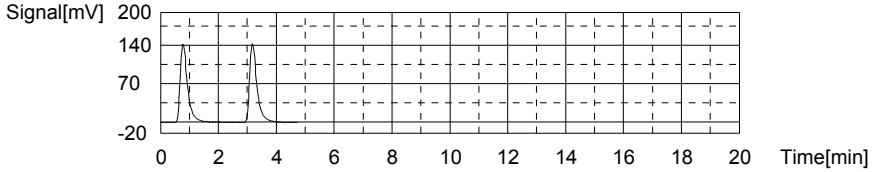

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	126.3	3.949mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 10:26:05 AM
2	125.0	3.905mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 10:30:44 AM

Mean Area 125.7
Mean Conc. 3.927mg/L

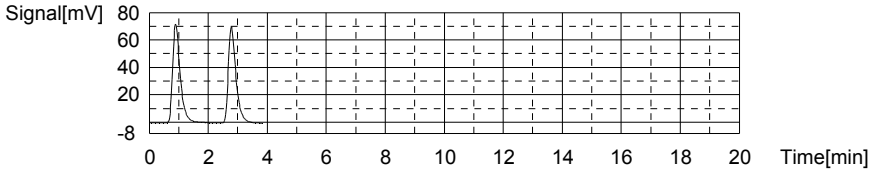

Sample

Sample Name: L15051267-02
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.438mg/L TC:3.844mg/L IC:1.406mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	149.2	3.796mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 10:38:02 AM
2	152.9	3.892mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 10:42:31 AM

Mean Area 151.1
Mean Conc. 3.844mg/L

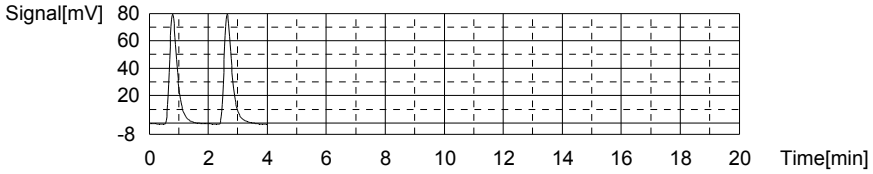

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	50.75	1.426mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 10:47:16 AM
2	49.50	1.385mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 10:51:43 AM

Mean Area 50.13
Mean Conc. 1.406mg/L

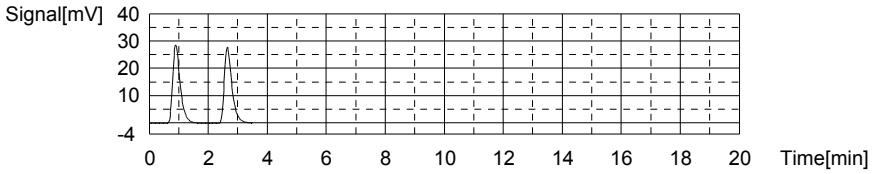

Sample

Sample Name: L15051268-01 (50)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:21.54mg/L TC:21.81mg/L IC:0.2624mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	839.1	21.82mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 11:11:42 AM
2	838.0	21.79mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 11:18:05 AM

Mean Area 838.5
Mean Conc. 21.81mg/L

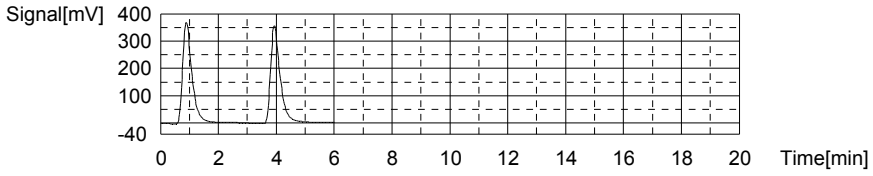

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	16.12	0.2703mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 11:22:35 AM
2	15.65	0.2546mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 11:26:53 AM

Mean Area 15.89
Mean Conc. 0.2624mg/L

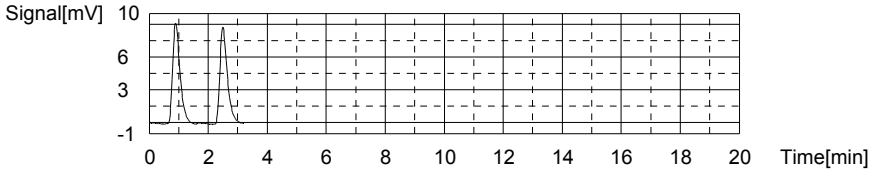

Sample

Sample Name: L15051269-01 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.78mg/L TC:27.40mg/L IC:0.6141mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1062	27.64mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 11:35:52 AM
2	1043	27.15mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 11:41:10 AM

Mean Area 1053
Mean Conc. 27.40mg/L

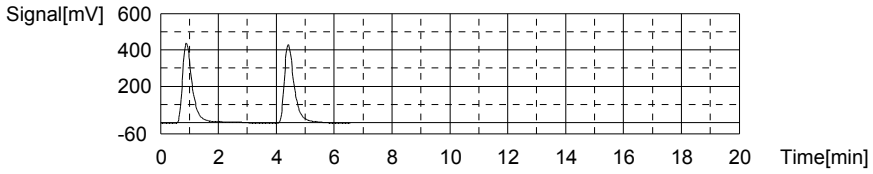

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	26.67	0.6225mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 11:45:49 AM
2	26.17	0.6058mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 11:50:08 AM

Mean Area 26.42
Mean Conc. 0.6141mg/L

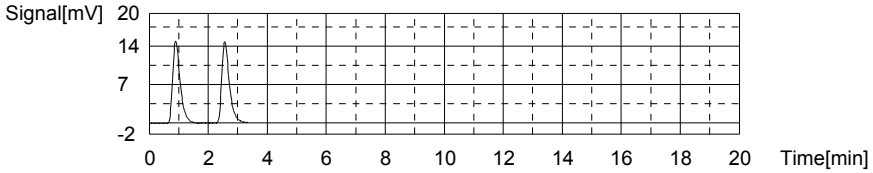

Sample

Sample Name: L15051303-01 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.548mg/L TC:40.92mg/L IC:32.37mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1533	39.95mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 11:58:10 AM
2	1607	41.88mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 12:04:48 PM

Mean Area 1570
Mean Conc. 40.92mg/L

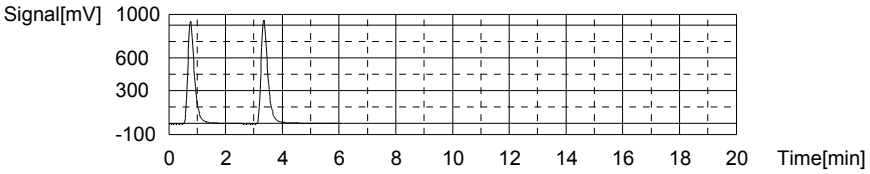

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1106	36.66mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 12:10:39 PM
2	849.2	28.08mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 12:16:03 PM

Mean Area 977.6
Mean Conc. 32.37mg/L

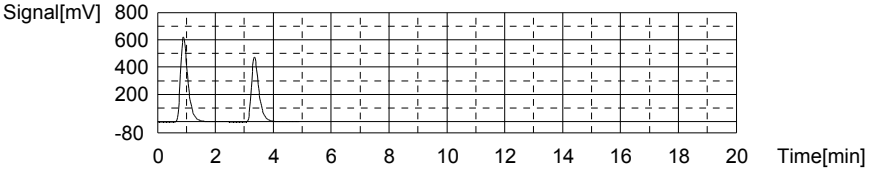

Sample

Sample Name: L15051303-03 (5)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.363mg/L TC:37.26mg/L IC:29.90mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1427	37.18mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 12:24:44 PM
2	1433	37.34mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 12:30:27 PM

Mean Area 1430
Mean Conc. 37.26mg/L

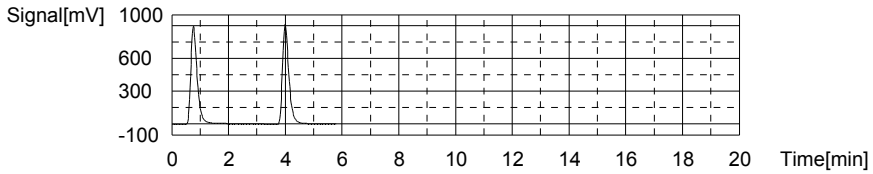

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1036	34.32mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 12:36:16 PM
2	771.1	25.48mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 12:41:40 PM

Mean Area 903.5
Mean Conc. 29.90mg/L

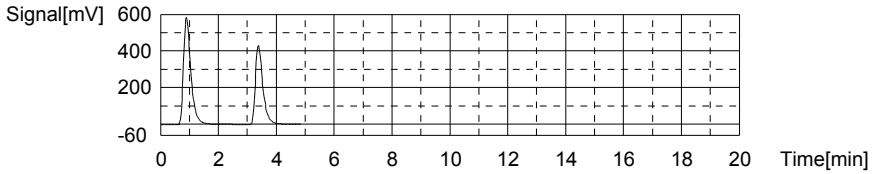

Sample

Sample Name: L15051303-05 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.84mg/L TC:42.05mg/L IC:29.21mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1598	41.65mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 12:51:09 PM
2	1629	42.46mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 12:58:16 PM

Mean Area 1614
Mean Conc. 42.05mg/L

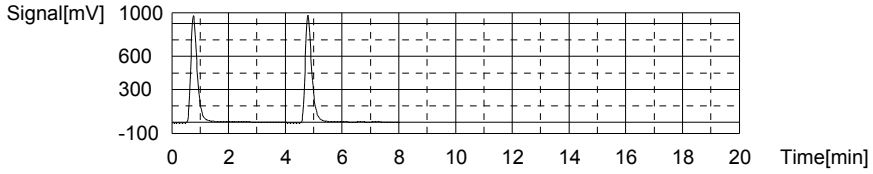

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1105	36.62mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 1:04:20 PM
2	661.2	21.81mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 1:09:40 PM

Mean Area 883.1
Mean Conc. 29.21mg/L

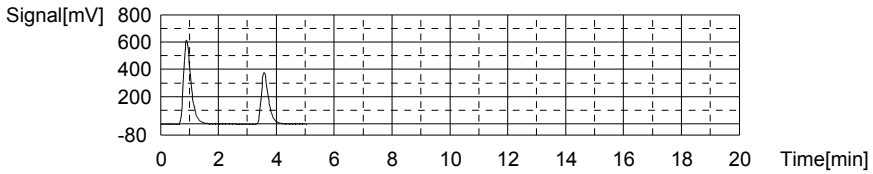

Sample

Sample Name: L15051303-07 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.503mg/L TC:25.05mg/L IC:22.55mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	951.1	24.75mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 1:18:15 PM
2	974.6	25.36mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 1:24:17 PM

Mean Area 962.9
Mean Conc. 25.05mg/L

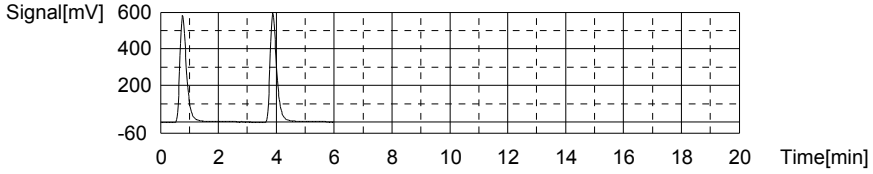

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	686.2	22.64mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 1:30:03 PM
2	680.8	22.46mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 1:35:13 PM

Mean Area 683.5
Mean Conc. 22.55mg/L

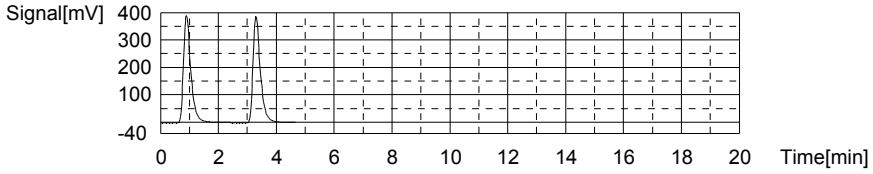

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.75mg/L TC:27.83mg/L IC:0.07663mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1069	27.83mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 1:45:13 PM

Mean Area 1069
Mean Conc. 27.83mg/L

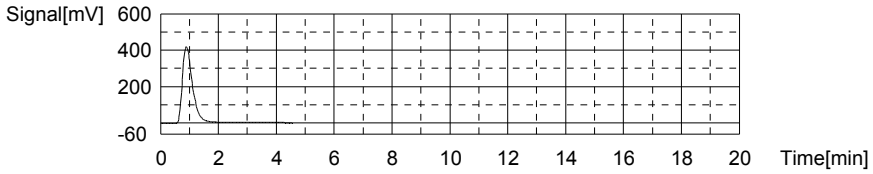

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.32	0.07663mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 1:49:49 PM

Mean Area 10.32
Mean Conc. 0.07663mg/L

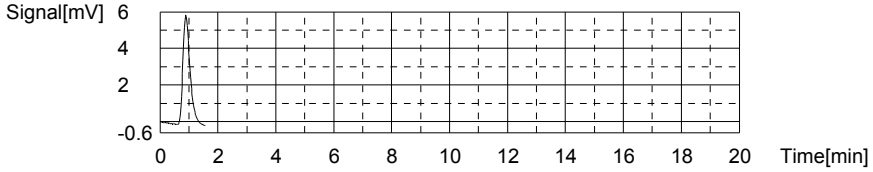

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1361mg/L TC:0.1670mg/L IC:0.03086mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.32	0.1670mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 1:54:57 PM

Mean Area 10.32
Mean Conc. 0.1670mg/L

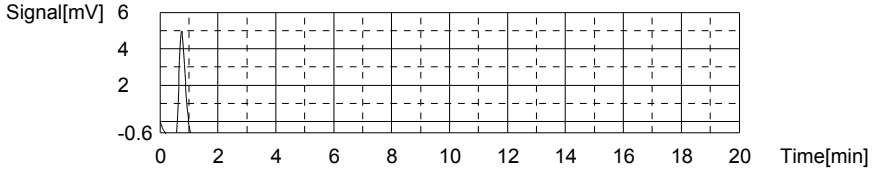

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.949	0.03086mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 1:58:59 PM

Mean Area 8.949
Mean Conc. 0.03086mg/L

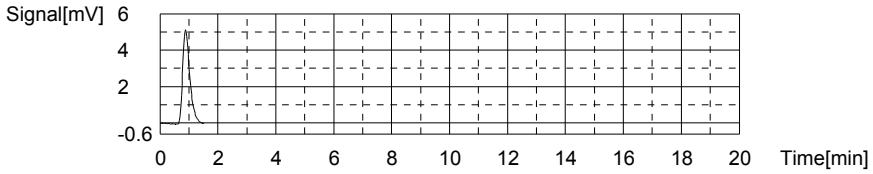

Sample

Sample Name: L15051303-09 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.792mg/L TC:14.44mg/L IC:12.64mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	556.6	14.44mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 2:06:59 PM
2	556.3	14.43mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 2:12:05 PM

Mean Area 556.5
Mean Conc. 14.44mg/L

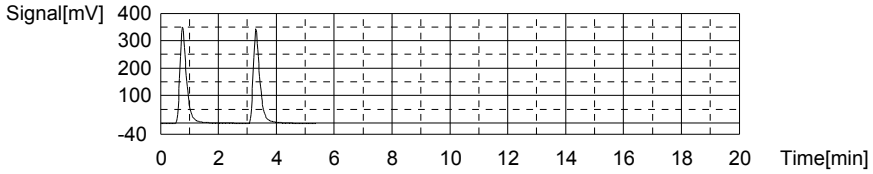

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	387.2	12.66mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 2:17:18 PM
2	386.3	12.63mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 2:22:21 PM

Mean Area 386.8
Mean Conc. 12.64mg/L

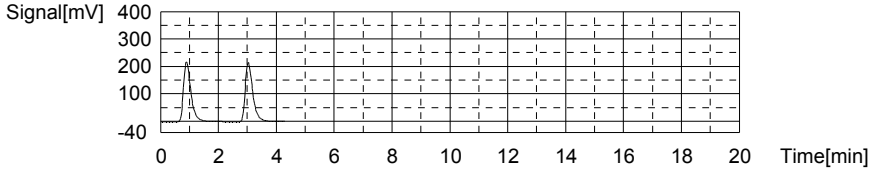

Sample

Sample Name: L15051303-11 (5)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.497mg/L TC:39.17mg/L IC:34.67mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1499	39.06mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 2:42:14 PM
2	1507	39.27mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 2:49:07 PM

Mean Area 1503
Mean Conc. 39.17mg/L

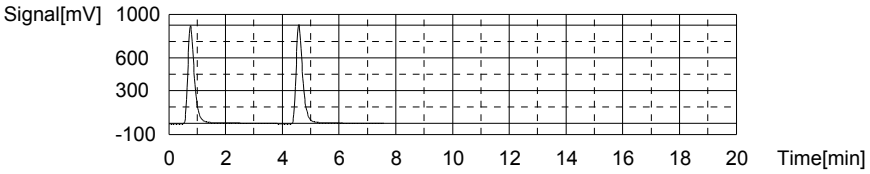

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1060	35.12mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 2:54:52 PM
2	1033	34.22mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 3:00:26 PM

Mean Area 1047
Mean Conc. 34.67mg/L

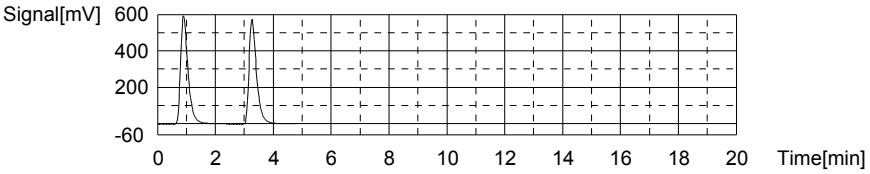

Sample

Sample Name: WG524525-05 DUP
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.512mg/L TC:4.544mg/L IC:2.033mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	180.7	4.619mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 3:08:02 PM
2	175.0	4.470mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 3:12:30 PM

Mean Area 177.9
Mean Conc. 4.544mg/L

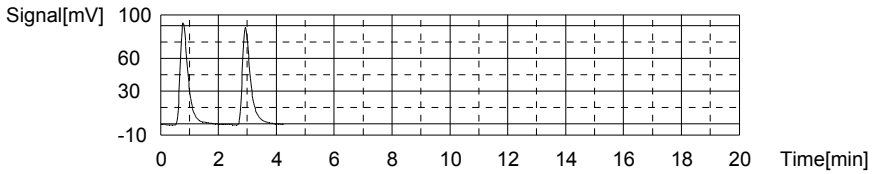

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	70.39	2.082mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 3:17:18 PM
2	67.42	1.983mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 3:21:48 PM

Mean Area 68.91
Mean Conc. 2.033mg/L

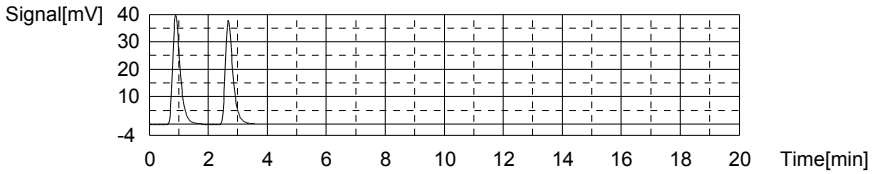

Sample

Sample Name: WG524525-07 (3) MS
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.375mg/L TC:36.08mg/L IC:29.71mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1388	36.16mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 3:30:23 PM
2	1382	36.01mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 3:35:55 PM

Mean Area 1385
Mean Conc. 36.08mg/L

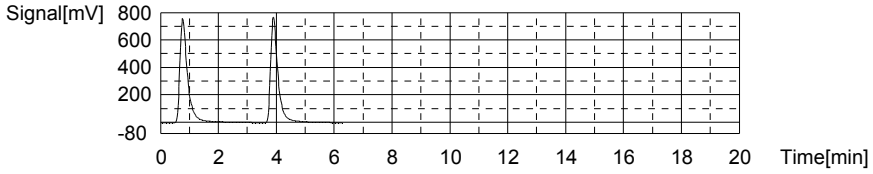

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	897.8	29.71mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 3:41:38 PM
2	898.0	29.71mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 3:47:03 PM

Mean Area 897.9
Mean Conc. 29.71mg/L

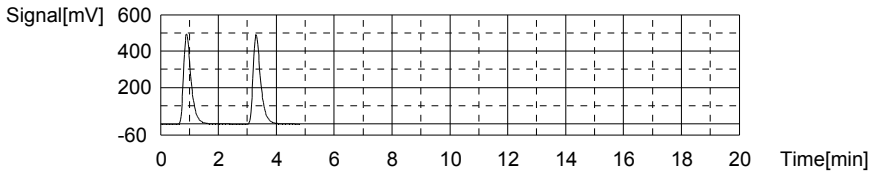

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.96mg/L TC:27.07mg/L IC:0.1150mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1040	27.07mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 3:56:23 PM

Mean Area 1040
Mean Conc. 27.07mg/L

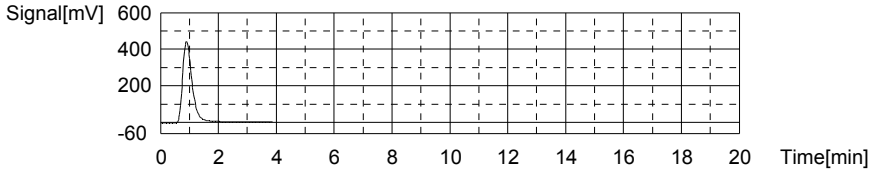

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.47	0.1150mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 4:00:53 PM

Mean Area 11.47
Mean Conc. 0.1150mg/L

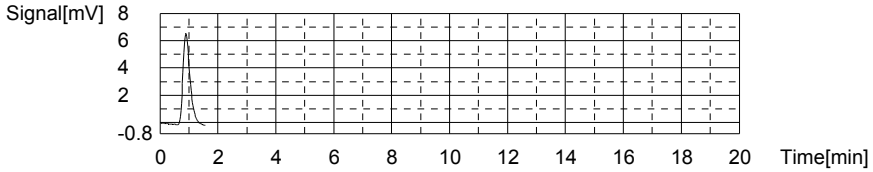

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1783mg/L TC:0.2093mg/L IC:0.03103mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.94	0.2093mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 4:06:08 PM

Mean Area 11.94
Mean Conc. 0.2093mg/L

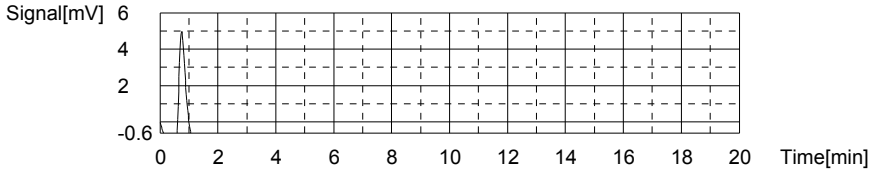

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.954	0.03103mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 4:10:10 PM

Mean Area 8.954
Mean Conc. 0.03103mg/L

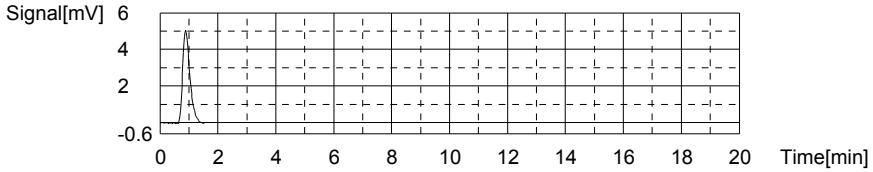

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
June 1, 2015

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG	AZH - AFTER HOURS
BJO - BRIAN J. OGDEN	BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK	EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH	JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS	JLL - JOHN L. LENT
JMW - JEANA M. WHITE	JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KKB - KERRI K. BUCK	KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER	KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER	LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS	LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS	PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB	PSW - PEGGY S. WEBB
QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN
RM - RAYMOND MALEKE	RNP - RICK N. PETTY
RST - ROBIN S. TURNER	SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN	SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE	TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS
VC - VICKI COLLIER	WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS	WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT	

Microbac Laboratories Inc.
List of Valid Qualifiers
June 01, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.

Microbac Laboratories Inc.
List of Valid Qualifiers
June 01, 2015

Qualkey: DOD

TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60256135.0002JA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Dissolved Gases	Nitrate/Nitrite Chloride/Sulfate	Ferrous Iron	Inorganic Carbon	Total Organic Carbon	Sulfide	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 67	67WW08-051915			5/19/15	0825		✓	W	11	✓	✓	✓	✓	✓	✓	✓					
	67WW11-051915			5/19/15	0940		✓	W	3	✓											
	67WW09-051915			5/19/15	1045		✓	W	3	✓											
	67WW13-051915			5/19/15	1150		✓	W	11	✓	✓	✓	✓	✓	✓	✓					
	67WW01-051915			5/19/15	1220		✓	W	11	✓	✓	✓	✓	✓	✓	✓					
	TRip BLANK			5/19/15			✓	W	2	✓											

Comments: **STANDARD TAT**

	Date	Time	Received by: (Signature)	Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	5/19/15	1600			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	me	Remarks:

Microbac OVD
Received: 05/20/2015 10:22
By: BRENDA GREGORY 221000070059
Brenda Gregory

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051231
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 29-MAY-2015

Samplenum	Container ID	Products
L15051231-01	575219	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		
2	ANALYZ	V1	ORG4	20-MAY-2015 15:00	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		
2	ANALYZ	V1	ORG4	20-MAY-2015 15:00	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		
2	ANALYZ	V1	ORG4	20-MAY-2015 15:00	DLW	CLS	

Samplenum	Container ID	Products
L15051231-01	575220	RSK175

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		<2
2	ANALYZ	V1	ORG1	20-MAY-2015 13:15	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		<2
2	ANALYZ	V1	ORG1	20-MAY-2015 13:15	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		<2
2	ANALYZ	V1	ORG1	20-MAY-2015 13:15	JDS	CLS	

Samplenum	Container ID	Products
L15051231-01	575221	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	20-MAY-2015 11:41	CLS		
2	PREP	L1	SEM	20-MAY-2015 11:49	ALS	CLS	
3	STORE	SEM	A1	22-MAY-2015 09:53	CLS	ALS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051231
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 29-MAY-2015

Samplenum	Container ID	Products
L15051231-01	575222	TIC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-MAY-2015 11:41	CLS		

Samplenum	Container ID	Products
L15051231-01	575223	FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-MAY-2015 11:41	CLS		
2	ANALYZ	W1	WET	22-MAY-2015 08:48	TMM	BRG	
3	STORE	WET	A1	27-MAY-2015 08:49	CLS	TMM	

Samplenum	Container ID	Products
L15051231-01	575224	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-MAY-2015 11:41	CLS		<2
2	ANALYZ	W1	WET	21-MAY-2015 09:51	EPT	BRG	
3	STORE	WET	A1	26-MAY-2015 09:33	CLS	EPT	

Samplenum	Container ID	Products
L15051231-01	575225	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-MAY-2015 11:41	CLS		
2	ANALYZ	W1	WET	22-MAY-2015 08:39	EPT	CLS	
3	STORE	WET	A1	22-MAY-2015 17:14	CLS	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051231
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 29-MAY-2015

Samplenum	Container ID	Products
L15051231-02	575226	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		
2	ANALYZ	V1	ORG4	20-MAY-2015 15:00	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		
2	ANALYZ	V1	ORG4	20-MAY-2015 15:00	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		
2	ANALYZ	V1	ORG4	20-MAY-2015 15:00	DLW	CLS	

Samplenum	Container ID	Products
L15051231-03	575227	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		
2	ANALYZ	V1	ORG4	20-MAY-2015 15:00	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		
2	ANALYZ	V1	ORG4	20-MAY-2015 15:00	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		
2	ANALYZ	V1	ORG4	20-MAY-2015 15:00	DLW	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051231
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 29-MAY-2015

Samplenum	Container ID	Products
L15051231-04	575228	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		
2	ANALYZ	V1	ORG4	20-MAY-2015 15:00	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		
2	ANALYZ	V1	ORG4	20-MAY-2015 15:00	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		
2	ANALYZ	V1	ORG4	20-MAY-2015 15:00	DLW	CLS	

Samplenum	Container ID	Products
L15051231-04	575229	RSK175

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		<2
2	ANALYZ	V1	ORG1	20-MAY-2015 13:15	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		<2
2	ANALYZ	V1	ORG1	20-MAY-2015 13:15	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		<2
2	ANALYZ	V1	ORG1	20-MAY-2015 13:15	JDS	CLS	

Samplenum	Container ID	Products
L15051231-04	575230	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	20-MAY-2015 11:41	CLS		
2	PREP	L1	SEM	20-MAY-2015 11:49	ALS	CLS	
3	STORE	SEM	A1	22-MAY-2015 09:53	CLS	ALS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051231
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 29-MAY-2015

Samplenum	Container ID	Products
L15051231-04	575231	TIC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-MAY-2015 11:41	CLS		

Samplenum	Container ID	Products
L15051231-04	575232	FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-MAY-2015 11:41	CLS		
2	ANALYZ	W1	WET	22-MAY-2015 08:48	TMM	BRG	
3	STORE	WET	A1	27-MAY-2015 08:49	CLS	TMM	

Samplenum	Container ID	Products
L15051231-04	575233	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-MAY-2015 11:41	CLS		<2
2	ANALYZ	W1	WET	21-MAY-2015 09:51	EPT	BRG	
3	STORE	WET	A1	26-MAY-2015 09:33	CLS	EPT	

Samplenum	Container ID	Products
L15051231-04	575234	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-MAY-2015 11:41	CLS		
2	ANALYZ	W1	WET	22-MAY-2015 08:39	EPT	CLS	
3	STORE	WET	A1	22-MAY-2015 17:14	CLS	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051231
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 29-MAY-2015

Samplenum	Container ID	Products
L15051231-05	575235	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		
2	ANALYZ	V1	ORG4	20-MAY-2015 15:00	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		
2	ANALYZ	V1	ORG4	20-MAY-2015 15:00	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		
2	ANALYZ	V1	ORG4	20-MAY-2015 15:00	DLW	CLS	

Samplenum	Container ID	Products
L15051231-05	575236	RSK175

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		<2
2	ANALYZ	V1	ORG1	20-MAY-2015 13:15	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		<2
2	ANALYZ	V1	ORG1	20-MAY-2015 13:15	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		<2
2	ANALYZ	V1	ORG1	20-MAY-2015 13:15	JDS	CLS	

Samplenum	Container ID	Products
L15051231-05	575237	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	20-MAY-2015 11:41	CLS		
2	PREP	L1	SEM	20-MAY-2015 11:49	ALS	CLS	
3	STORE	SEM	A1	22-MAY-2015 09:53	CLS	ALS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051231
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 29-MAY-2015

Samplenum	Container ID	Products
L15051231-05	575238	TIC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-MAY-2015 11:41	CLS		

Samplenum	Container ID	Products
L15051231-05	575239	FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-MAY-2015 11:41	CLS		
2	ANALYZ	W1	WET	22-MAY-2015 08:48	TMM	BRG	
3	STORE	WET	A1	27-MAY-2015 08:49	CLS	TMM	

Samplenum	Container ID	Products
L15051231-05	575240	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-MAY-2015 11:41	CLS		<2
2	ANALYZ	W1	WET	21-MAY-2015 09:51	EPT	BRG	
3	STORE	WET	A1	26-MAY-2015 09:33	CLS	EPT	

Samplenum	Container ID	Products
L15051231-05	575241	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-MAY-2015 11:41	CLS		
2	ANALYZ	W1	WET	22-MAY-2015 08:39	EPT	CLS	
3	STORE	WET	A1	22-MAY-2015 17:15	CLS	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051231
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 29-MAY-2015

Samplenum	Container ID	Products
L15051231-06	575242	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		
2	ANALYZ	V1	ORG4	20-MAY-2015 15:00	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-MAY-2015 11:41	CLS		
2	ANALYZ	V1	ORG4	20-MAY-2015 15:00	DLW	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - May 26, 2015

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Formate (HPLC-UV)
Propionaldehyde (HPLC-UV)
Fluoroborate (ISE)
n-Butane (RSK175)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Acetylene
Propane

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVL HPLC12/HPLC/UV
Acetate

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide

Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

APPENDIX E: MANN-KENDALL TREND TEST RESULTS

Mann-Kendall Trend Test - 67WW01

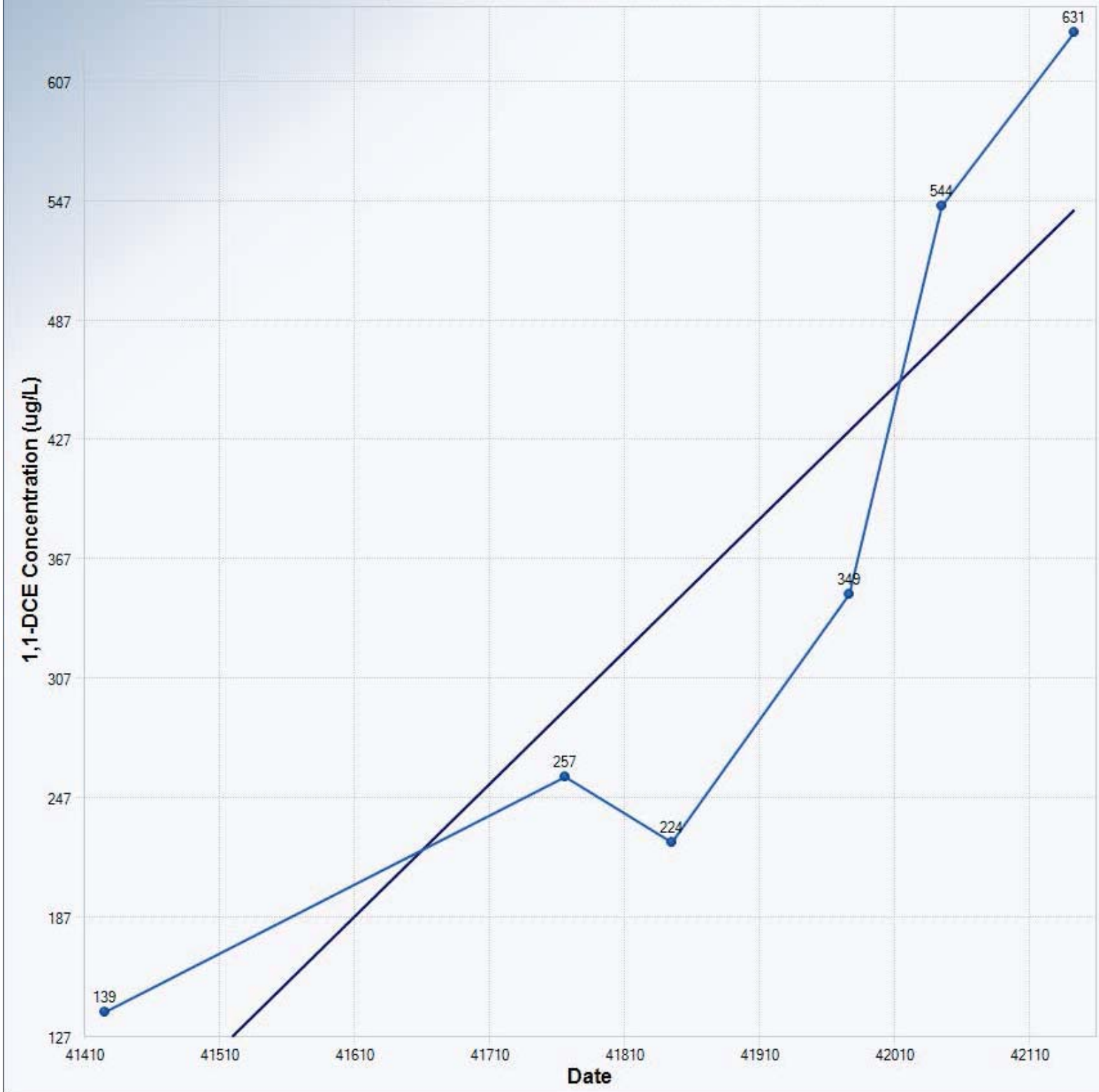

Mann-Kendall Trend Analysis

00740878

n	6
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	5.3229
Standardized Value of S	2.2544
Test Value (S)	13
Tabulated p-value	0.0080
Approximate p-value	0.0121

OLS Regression Line (Blue)

OLS Regression Slope	0.6674
OLS Regression Intercept	-27,583.0491

Statistically significant evidence of an increasing trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW01

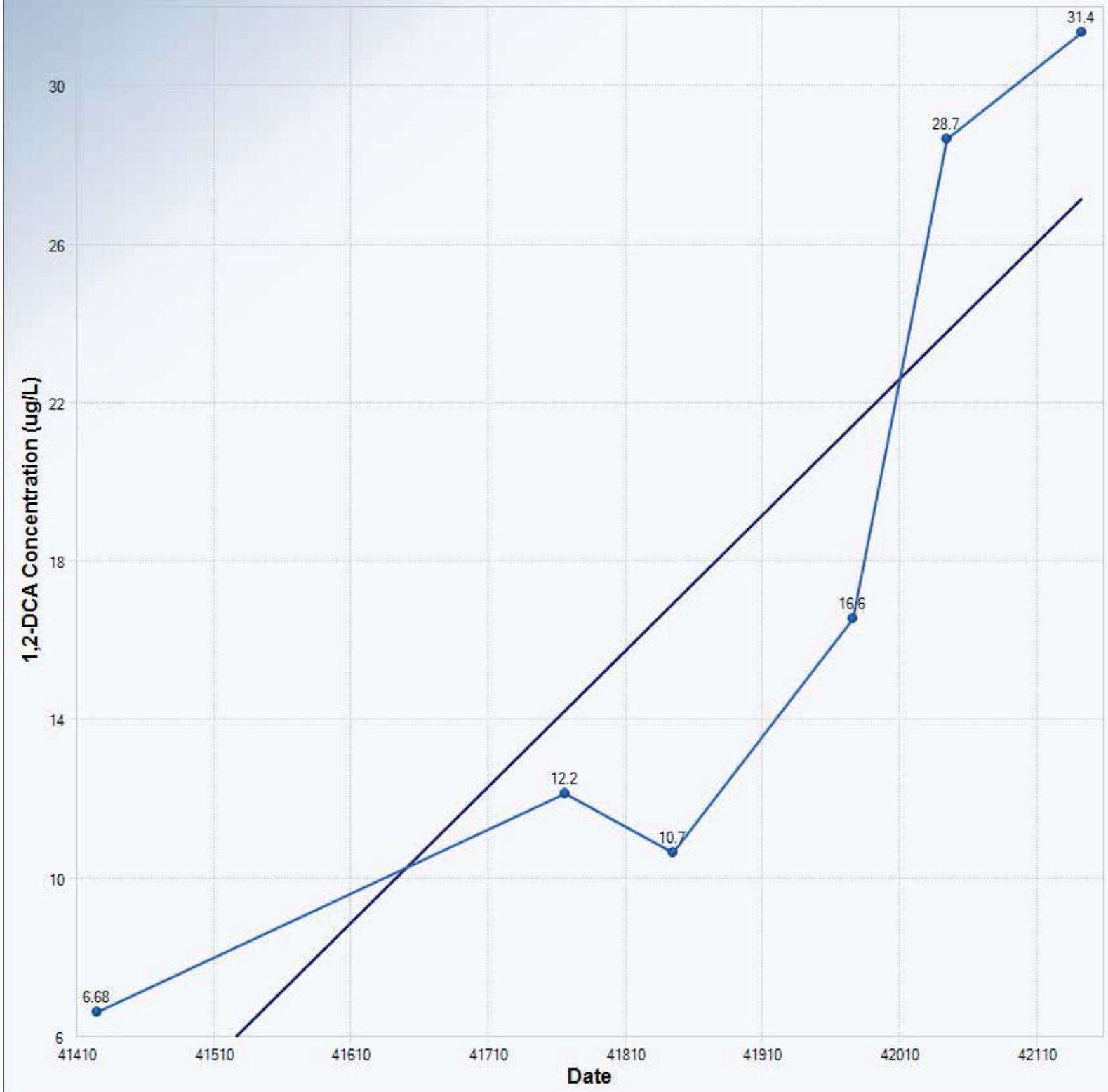

Mann-Kendall Trend Analysis

n	6
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	5.3229
Standardized Value of S	2.2544
Test Value (S)	13
Tabulated p-value	0.0080
Approximate p-value	0.0121

OLS Regression Line (Blue)

OLS Regression Slope	0.0344
OLS Regression Intercept	-1,421.5379

Statistically significant evidence of an increasing trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW01

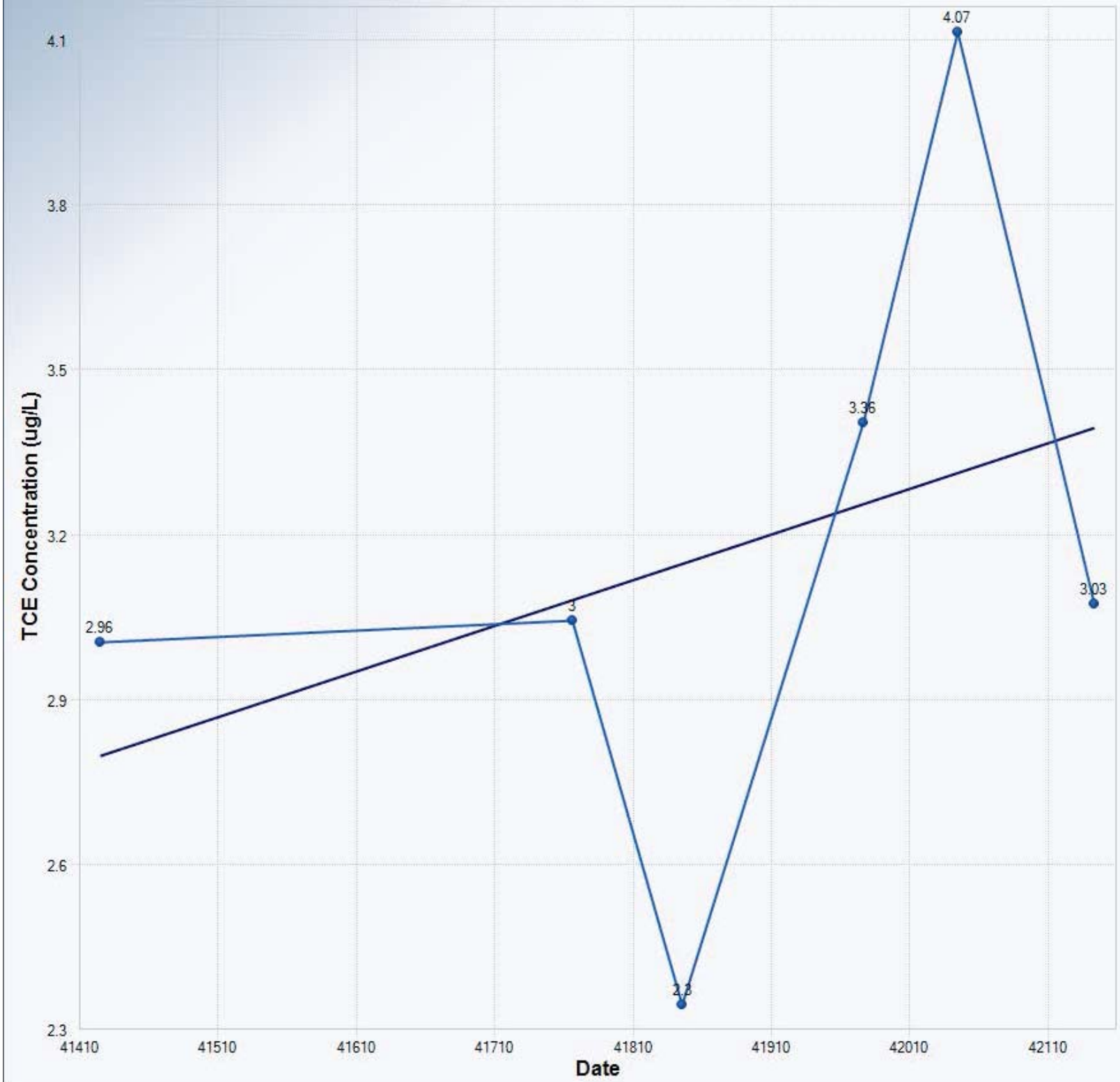

Mann-Kendall Trend Analysis

n	6
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	5.3229
Standardized Value of S	1.1272
Test Value (S)	7
Tabulated p-value	0.1360
Approximate p-value	0.1298

OLS Regression Line (Blue)

OLS Regression Slope	0.0008
OLS Regression Intercept	-31.7443

Insufficient statistical evidence of a significant trend at the specified level of significance.

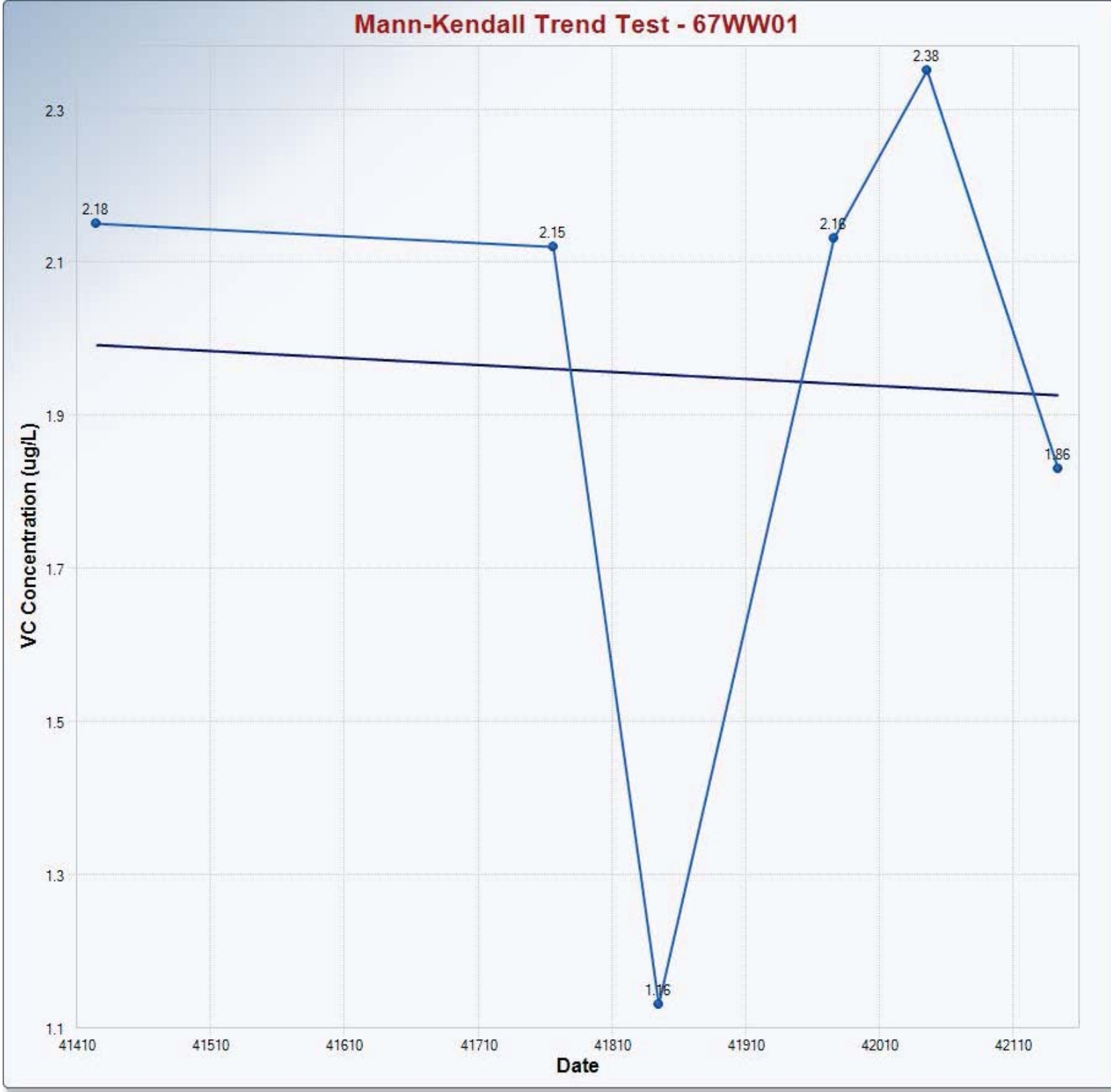

00740881

Mann-Kendall Trend Analysis

n	6
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	5.3229
Standardized Value of S	0.0000
Test Value (S)	-1
Tabulated p-value	0.5000
Approximate p-value	0.5000

OLS Regression Line (Blue)

OLS Regression Slope	-0.0001
OLS Regression Intercept	5.8146

Insufficient statistical evidence of a significant trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW02

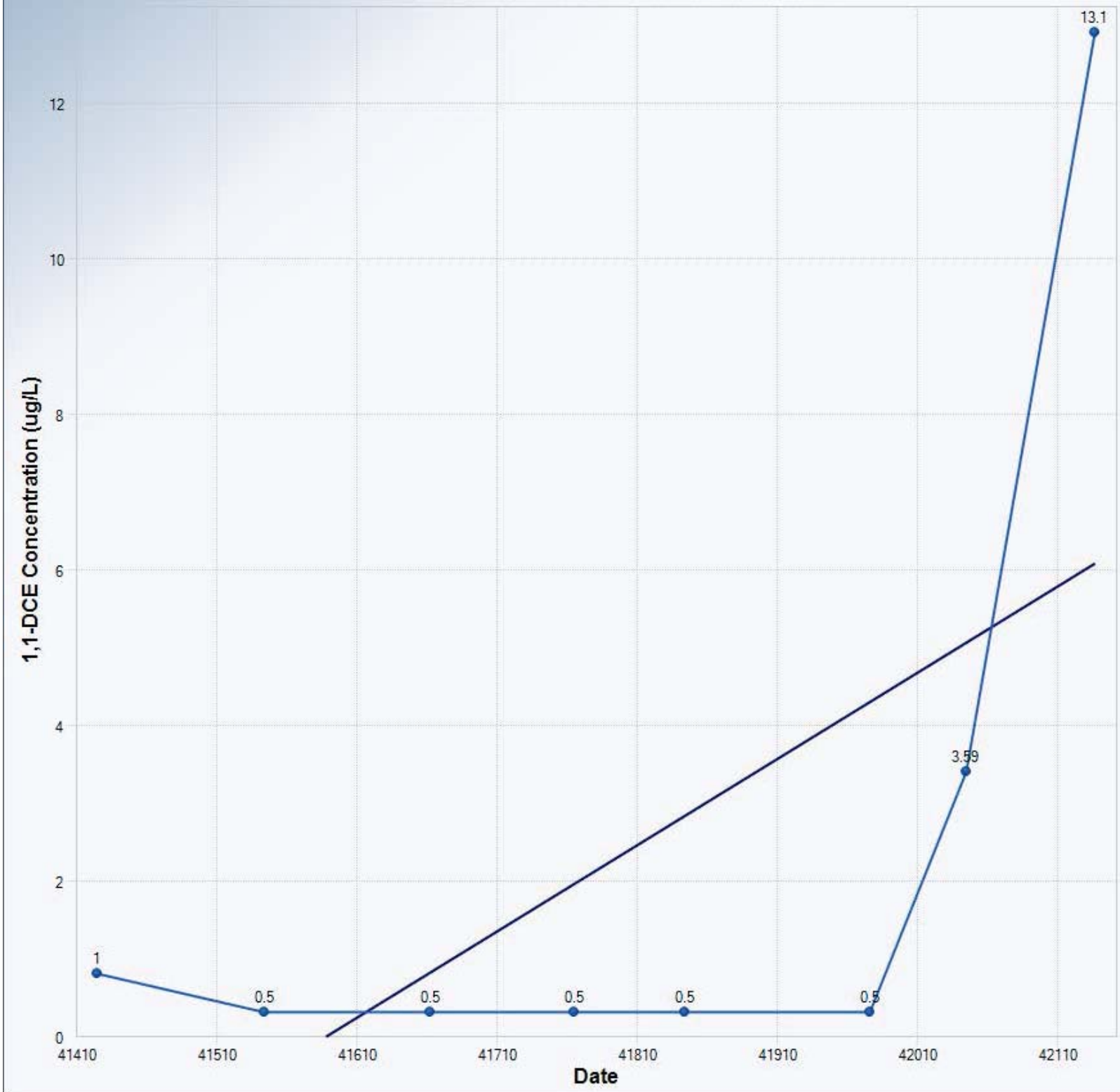

Mann-Kendall Trend Analysis

00740882

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	6.9761
Standardized Value of S	1.0034
Test Value (S)	8
Tabulated p-value	0.1190
Approximate p-value	0.1578

OLS Regression Line (Blue)

OLS Regression Slope	0.0111
OLS Regression Intercept	-462.5269

Insufficient statistical evidence of a significant trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW02

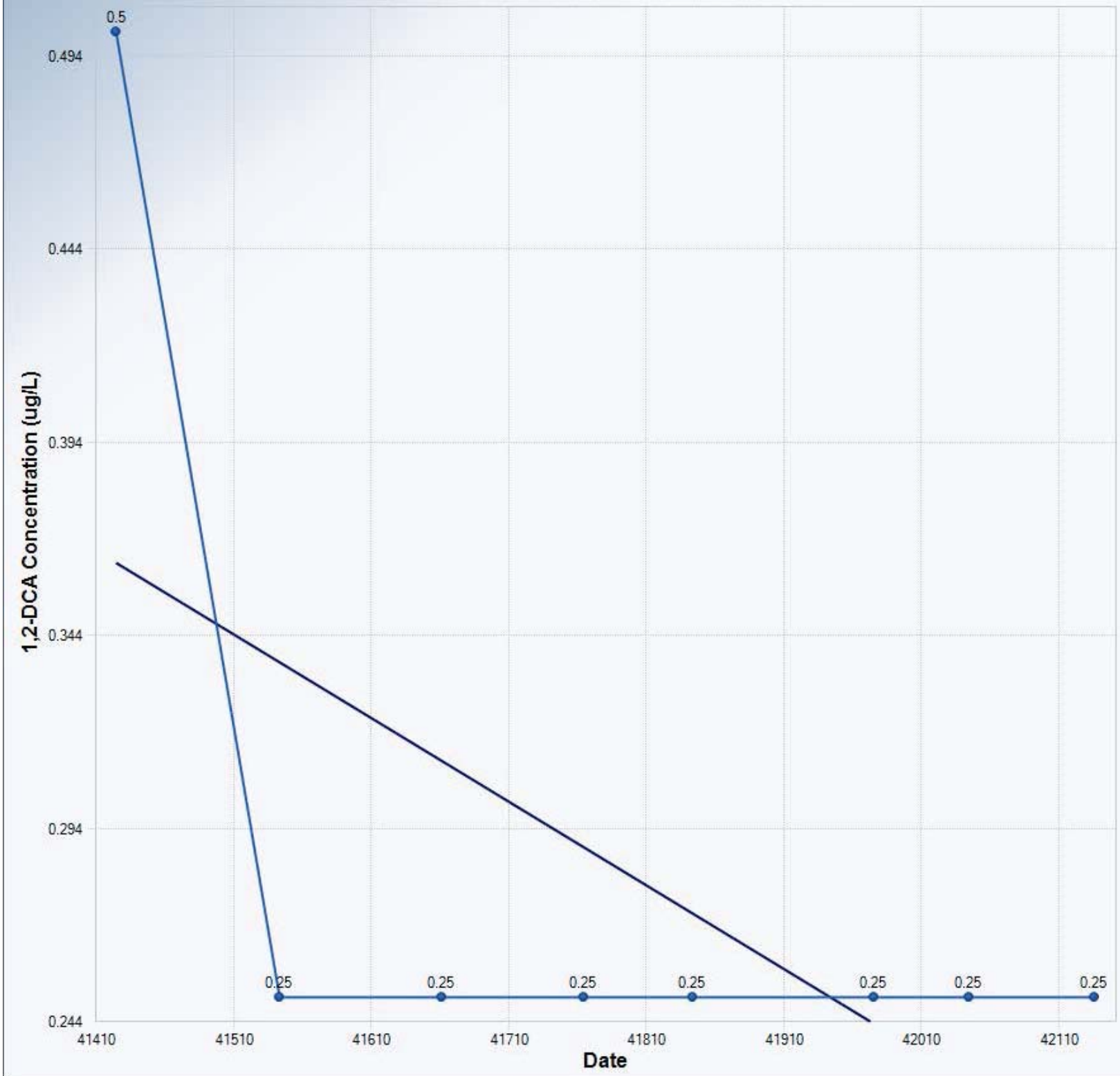

Mann-Kendall Trend Analysis

00740883

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.5826
Standardized Value of S	-1.3093
Test Value (S)	-7
Tabulated p-value	0.2740
Approximate p-value	0.0952

OLS Regression Line (Blue)

OLS Regression Slope	-0.0002
OLS Regression Intercept	9.3378

Insufficient statistical evidence of a significant trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW02

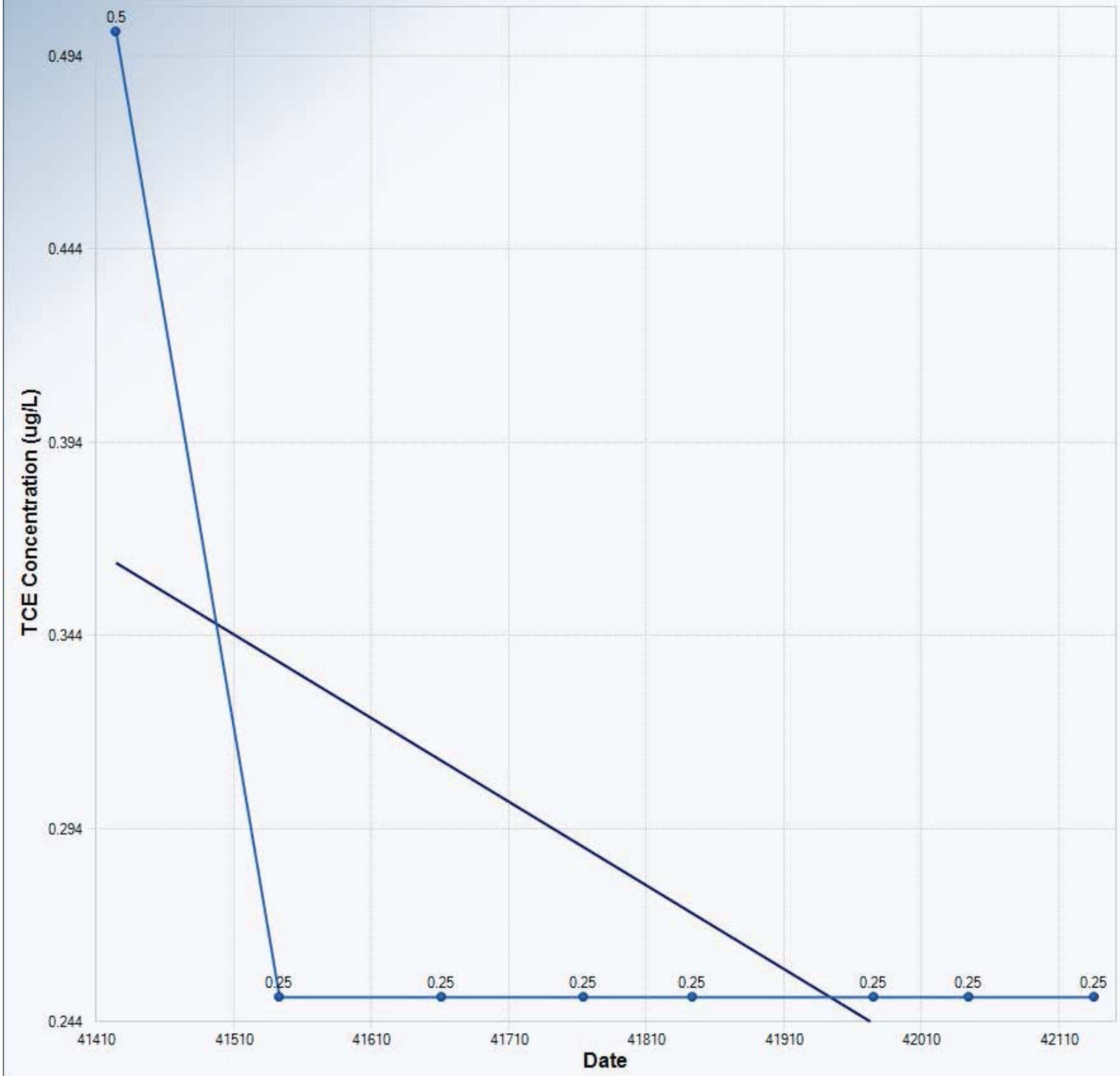

Mann-Kendall Trend Analysis

00740884

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.5826
Standardized Value of S	-1.3093
Test Value (S)	-7
Tabulated p-value	0.2740
Approximate p-value	0.0952

OLS Regression Line (Blue)

OLS Regression Slope	-0.0002
OLS Regression Intercept	9.3378

Insufficient statistical evidence of a significant trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW02

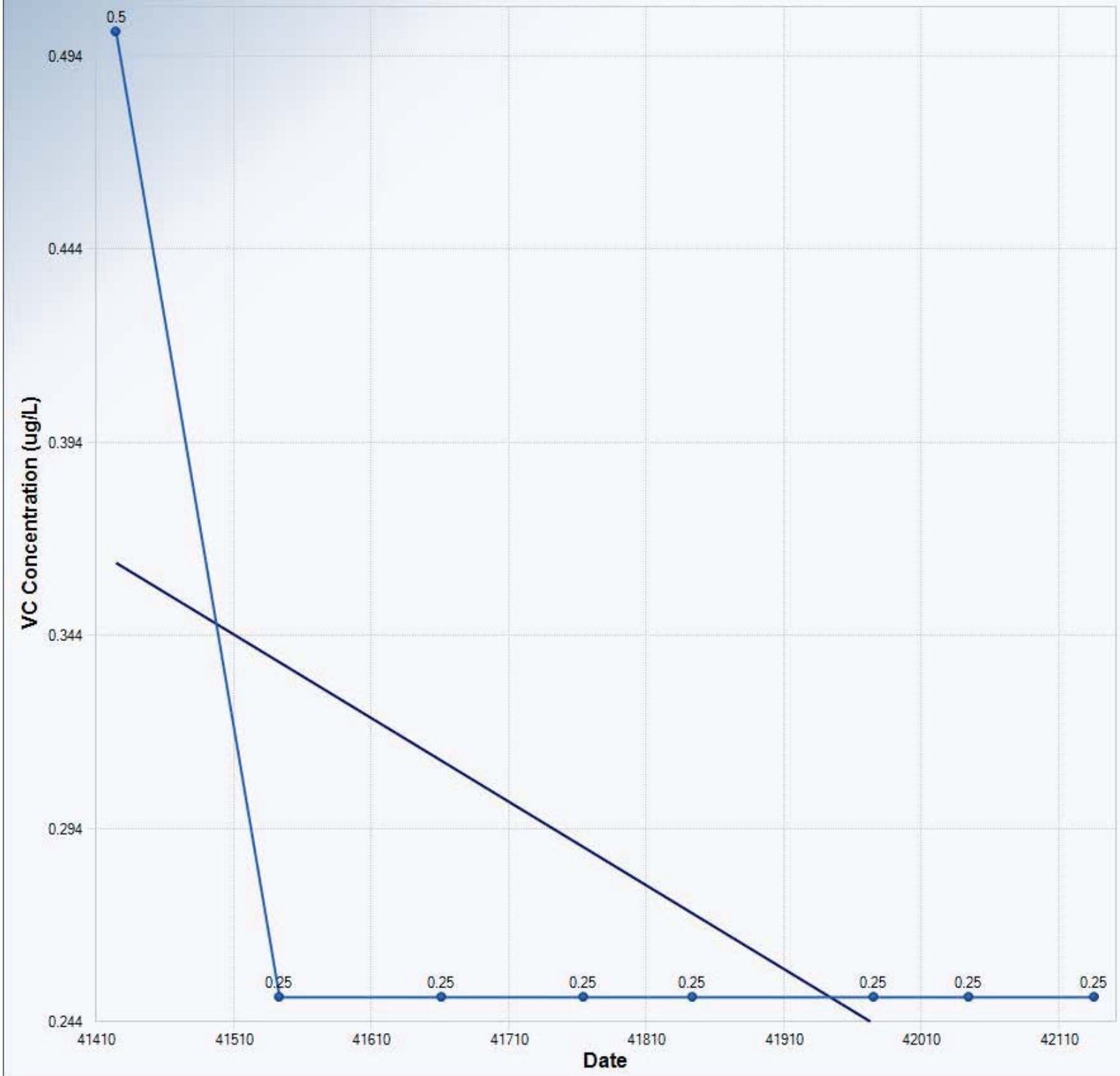

Mann-Kendall Trend Analysis

00740885

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.5826
Standardized Value of S	-1.3093
Test Value (S)	-7
Tabulated p-value	0.2740
Approximate p-value	0.0952

OLS Regression Line (Blue)

OLS Regression Slope	-0.0002
OLS Regression Intercept	9.3378

Insufficient statistical evidence of a significant trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW08

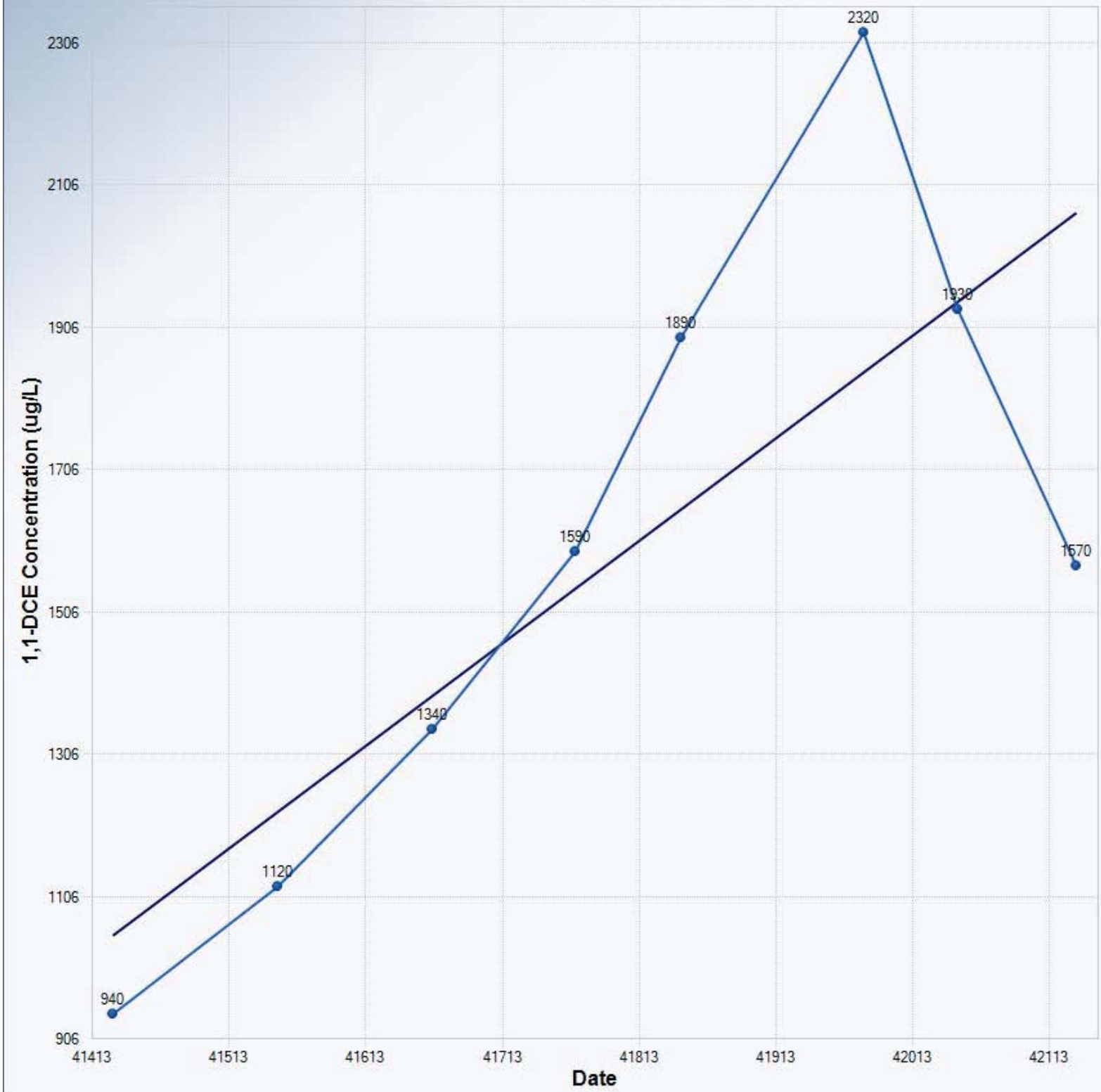

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	2.1032
Test Value (S)	18
Tabulated p-value	0.0160
Approximate p-value	0.0177

OLS Regression Line (Blue)

OLS Regression Slope	1.4397
OLS Regression Intercept	-58,592.6319

Statistically significant evidence of an increasing trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW08

Mann-Kendall Trend Analysis

00740887

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	1.1135
Test Value (S)	10
Tabulated p-value	0.1380
Approximate p-value	0.1328

OLS Regression Line (Blue)

OLS Regression Slope	0.0200
OLS Regression Intercept	-740.5388

Insufficient statistical evidence of a significant trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW08

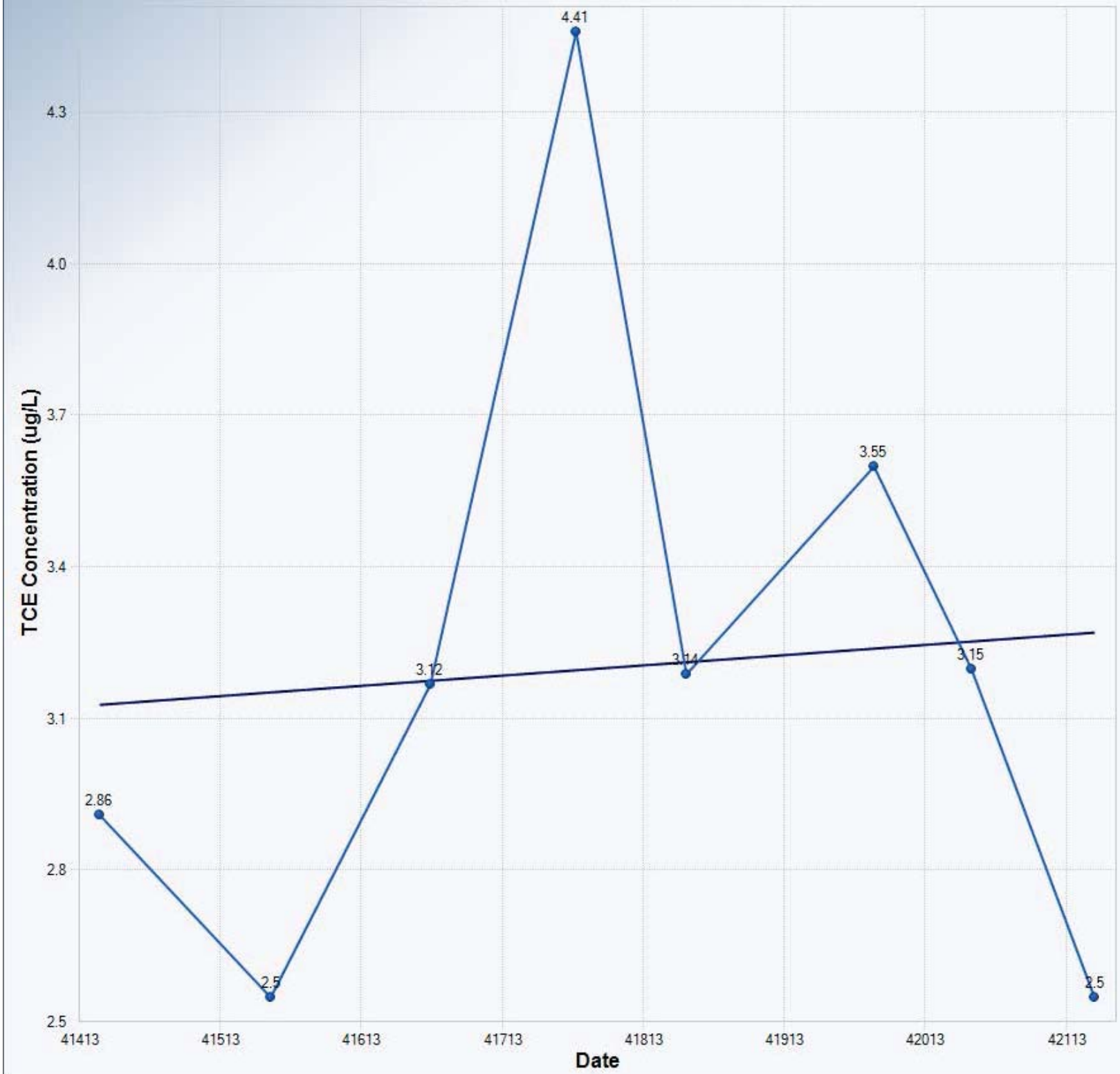

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0208
Standardized Value of S	0.4987
Test Value (S)	5
Tabulated p-value	0.3600
Approximate p-value	0.3090

OLS Regression Line (Blue)

OLS Regression Slope	0.0002
OLS Regression Intercept	-5.3016

Insufficient statistical evidence of a significant trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW08

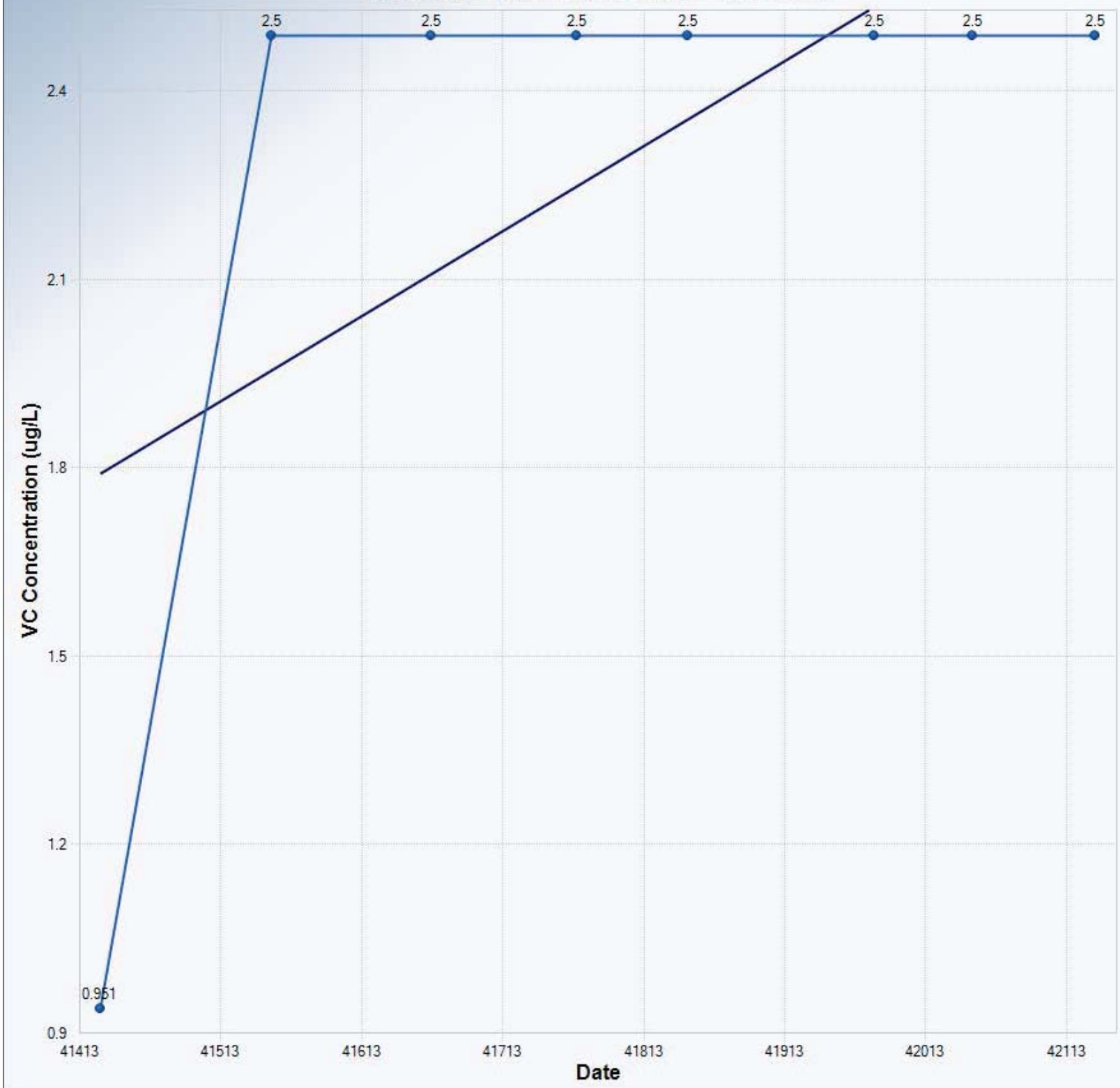

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.5826
Standardized Value of S	1.3093
Test Value (S)	7
Tabulated p-value	0.2740
Approximate p-value	0.0952

OLS Regression Line (Blue)

OLS Regression Slope	0.0014
OLS Regression Intercept	-54.2967

Insufficient statistical evidence of a significant trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW09

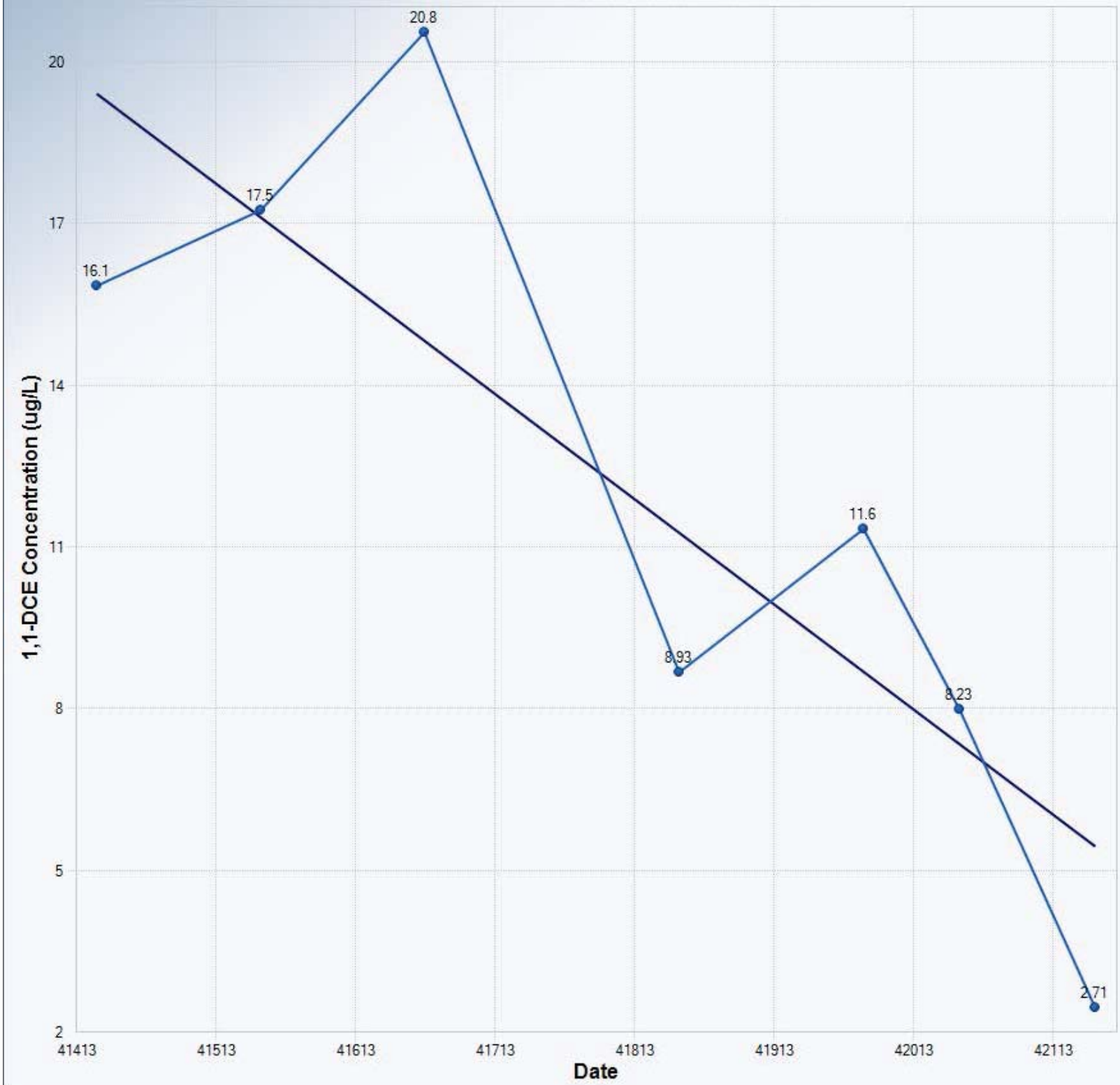

Mann-Kendall Trend Analysis

n	7
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	6.6583
Standardized Value of S	-1.8023
Test Value (S)	-13
Tabulated p-value	0.0350
Approximate p-value	0.0358

OLS Regression Line (Blue)

OLS Regression Slope	-0.0195
OLS Regression Intercept	829.2111

Statistically significant evidence of a decreasing trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW09

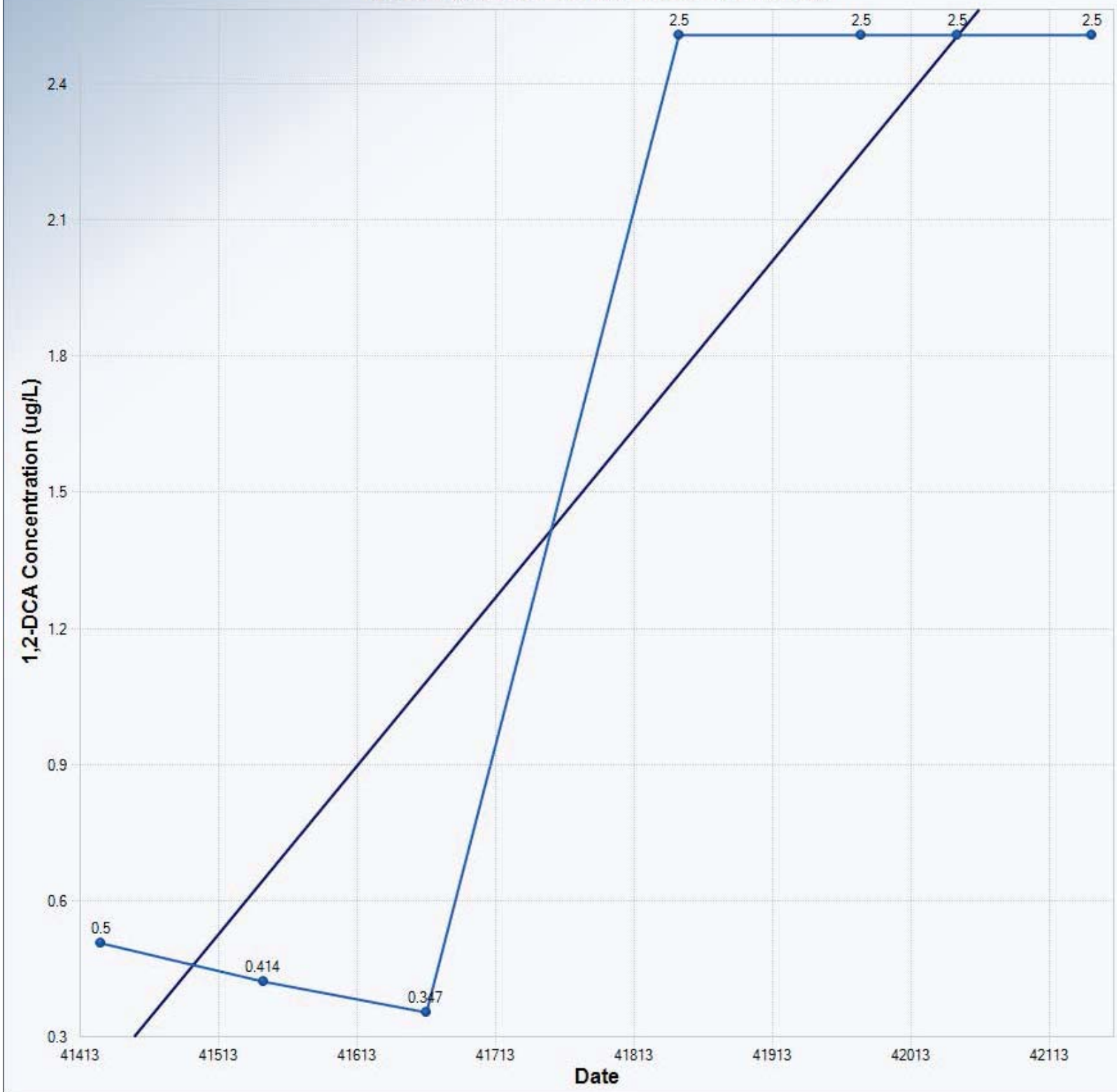

Mann-Kendall Trend Analysis

00740891

n	7
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	5.9722
Standardized Value of S	1.3395
Test Value (S)	9
Tabulated p-value	0.1190
Approximate p-value	0.0902

OLS Regression Line (Blue)

OLS Regression Slope	0.0037
OLS Regression Intercept	-153.9704

Insufficient statistical evidence of a significant trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW09

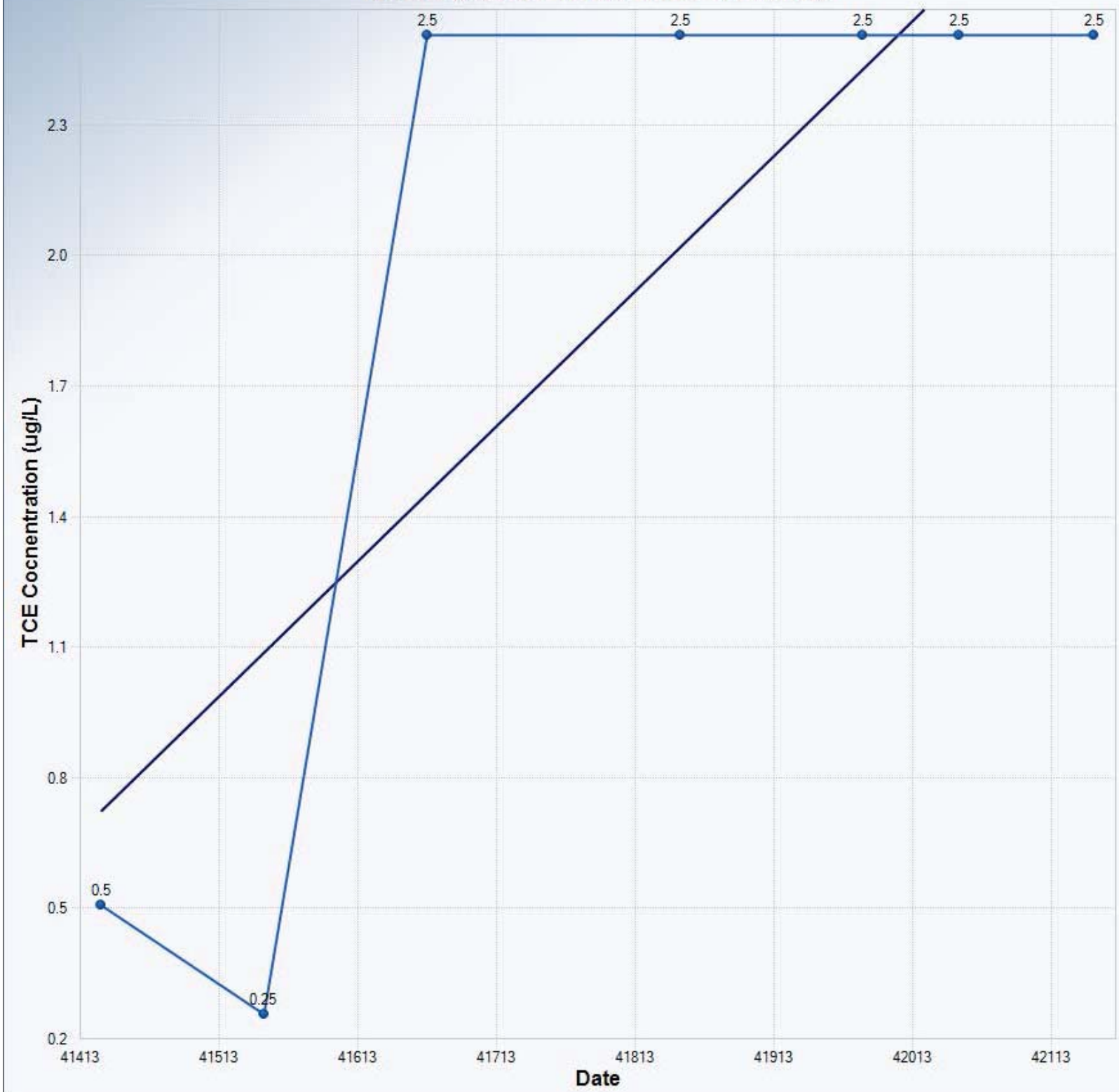

Mann-Kendall Trend Analysis

n	7
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	5.2599
Standardized Value of S	1.5209
Test Value (S)	9
Tabulated p-value	0.1190
Approximate p-value	0.0641

OLS Regression Line (Blue)

OLS Regression Slope	0.0031
OLS Regression Intercept	-127.9784

Insufficient statistical evidence of a significant trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW09

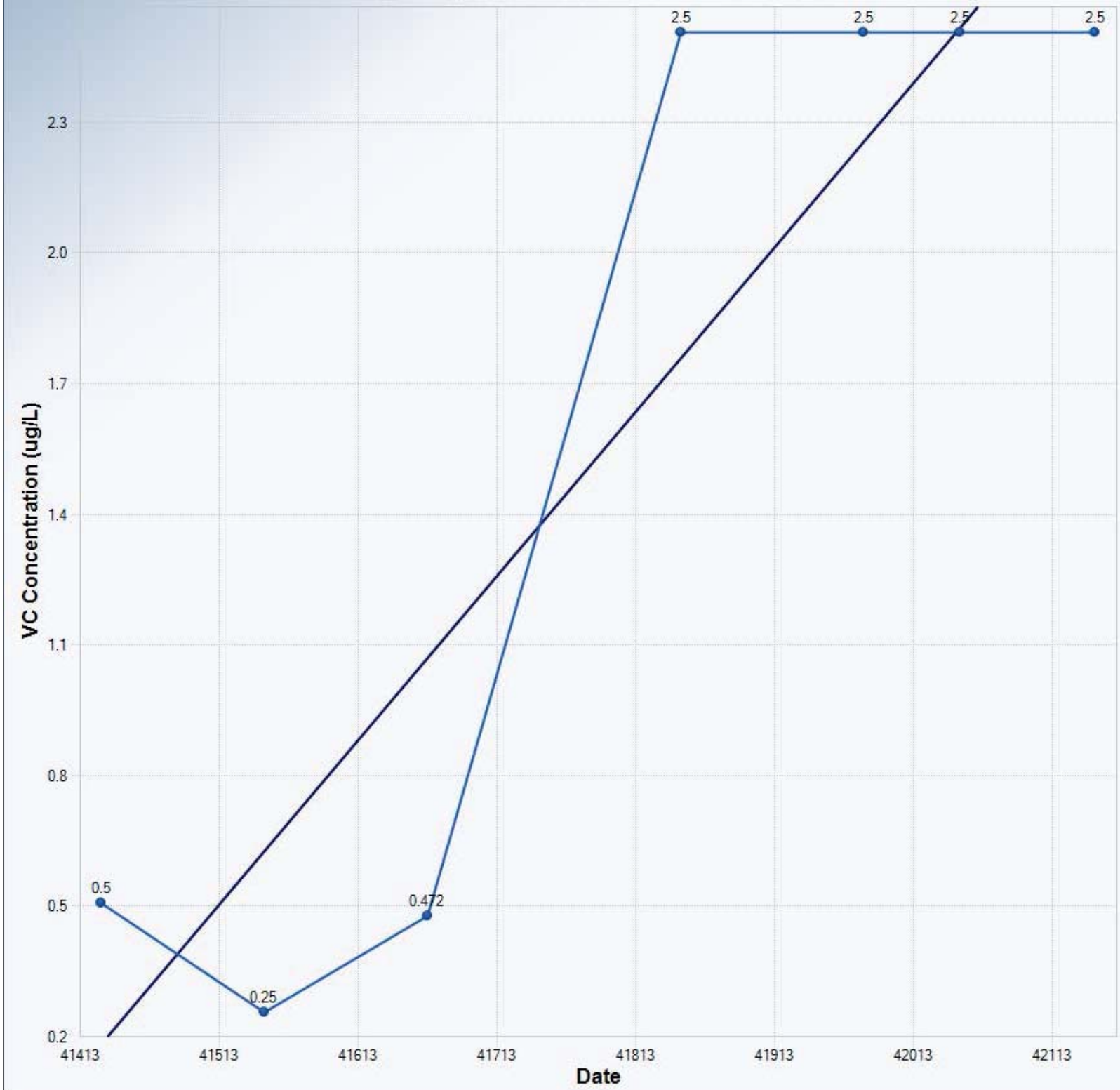

Mann-Kendall Trend Analysis

n	7
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	5.9722
Standardized Value of S	1.6744
Test Value (S)	11
Tabulated p-value	0.0680
Approximate p-value	0.0470

OLS Regression Line (Blue)

OLS Regression Slope	0.0038
OLS Regression Intercept	-156.3835

Insufficient statistical evidence of a significant trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW11

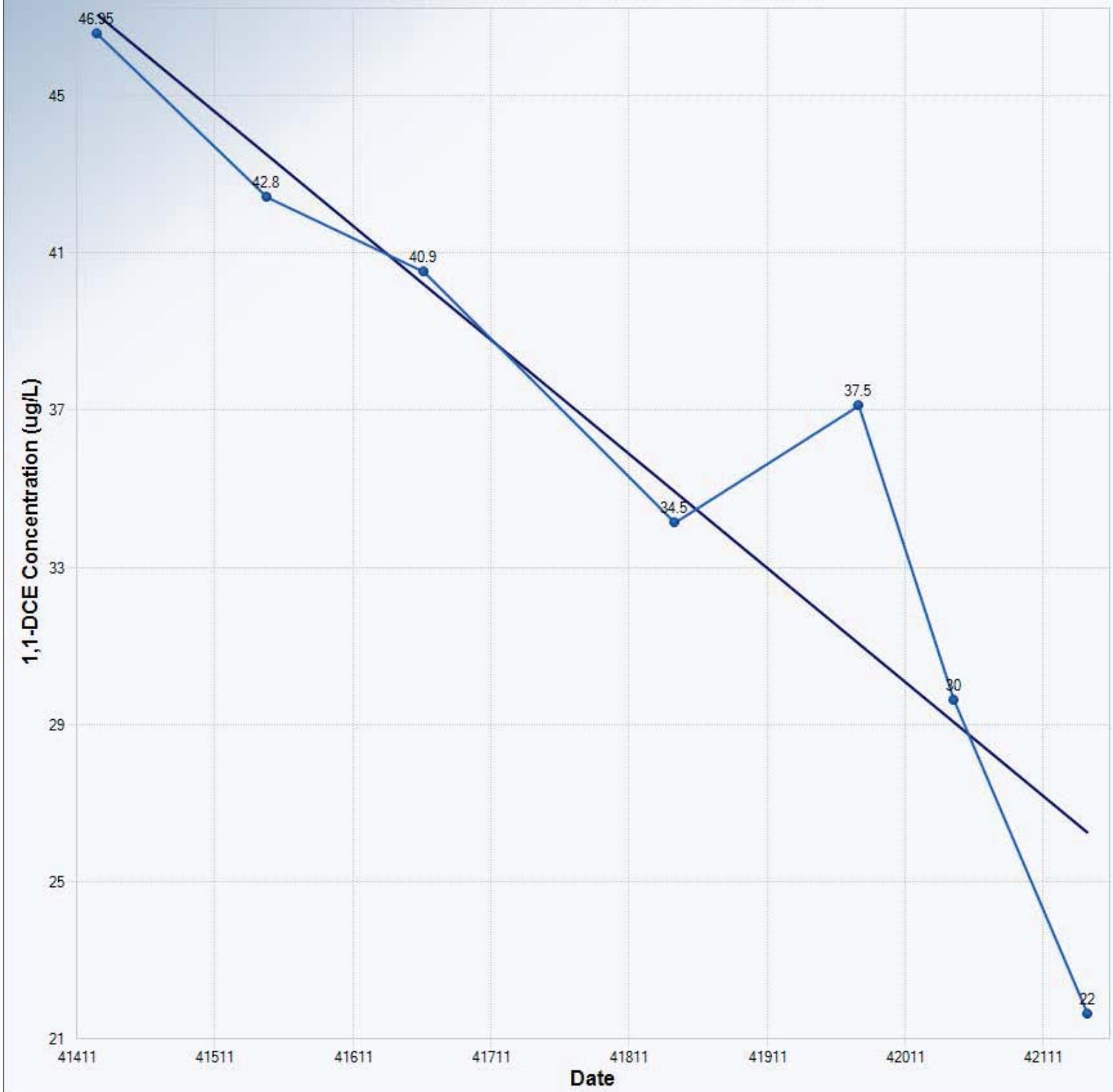

Mann-Kendall Trend Analysis

n	7
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	6.6583
Standardized Value of S	-2.7034
Test Value (S)	-19
Tabulated p-value	0.0010
Approximate p-value	0.0034

OLS Regression Line (Blue)

OLS Regression Slope	-0.0290
OLS Regression Intercept	1,250.3726

Statistically significant evidence of a decreasing trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW11

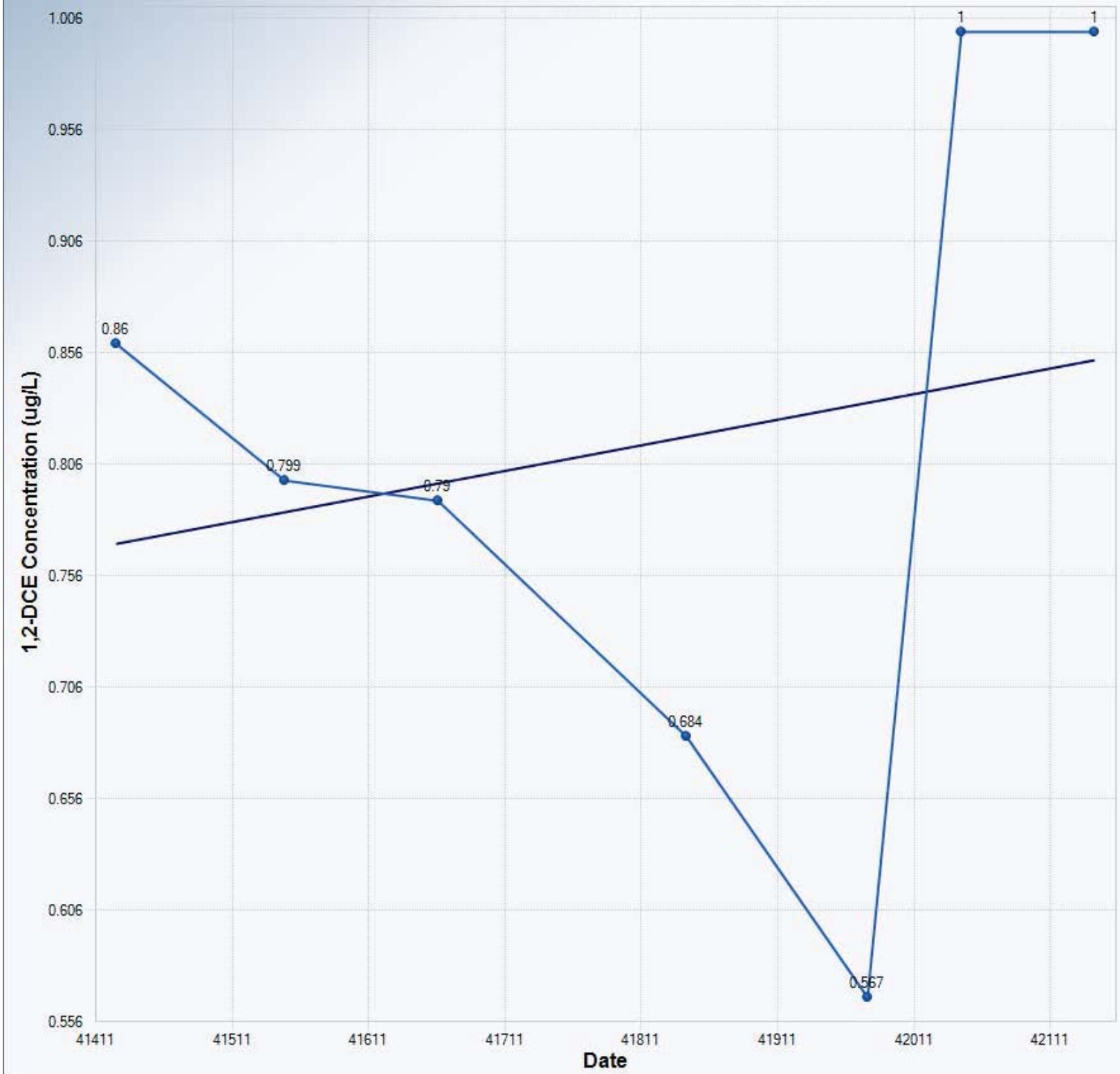

Mann-Kendall Trend Analysis

n	7
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	6.5828
Standardized Value of S	
Test Value (S)	0
Tabulated p-value	0.5000
Approximate p-value	

OLS Regression Line (Blue)

OLS Regression Slope	0.0001
OLS Regression Intercept	-4.0104

Insufficient statistical evidence of a significant trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW11

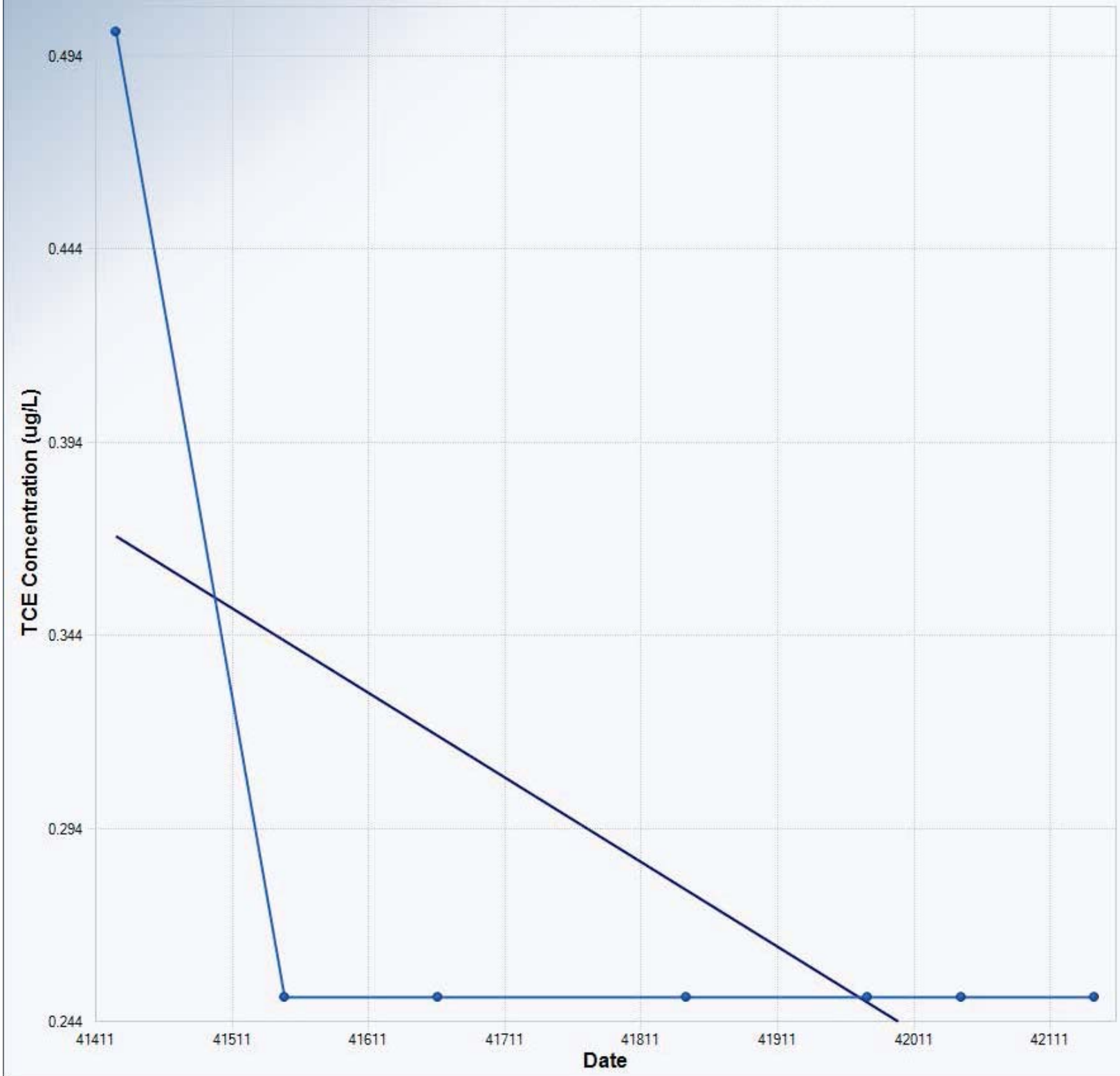

Mann-Kendall Trend Analysis

n	7
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0000
Standardized Value of S	-1.2500
Test Value (S)	-6
Tabulated p-value	0.1910
Approximate p-value	0.1056

OLS Regression Line (Blue)

OLS Regression Slope	-0.0002
OLS Regression Intercept	9.4746

Insufficient statistical evidence of a significant trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW11

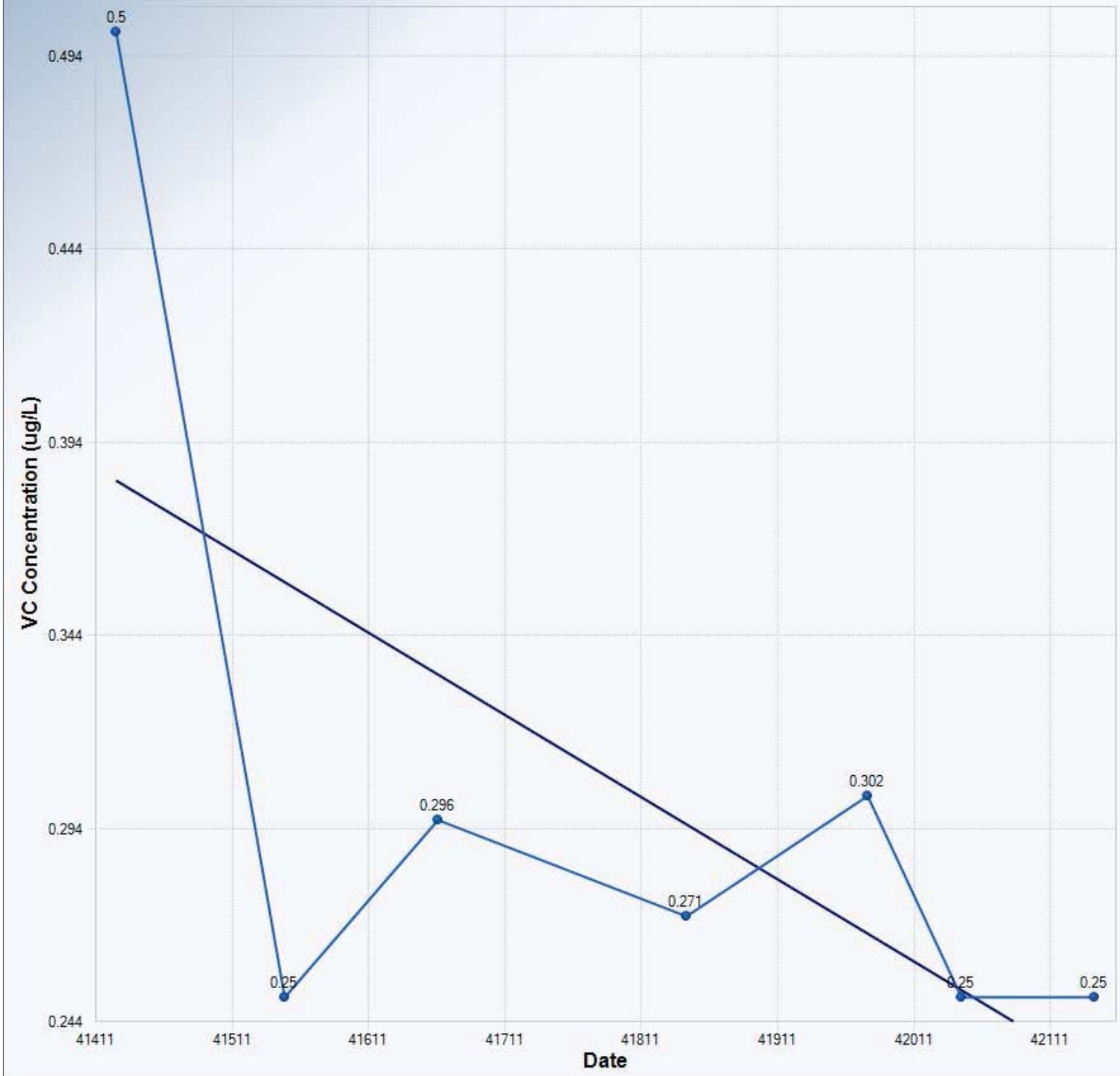

Mann-Kendall Trend Analysis

00740897

n	7
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	6.3770
Standardized Value of S	-1.0977
Test Value (S)	-8
Tabulated p-value	0.1190
Approximate p-value	0.1362

OLS Regression Line (Blue)

OLS Regression Slope	-0.0002
OLS Regression Intercept	9.2038

Insufficient statistical evidence of a significant trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW13

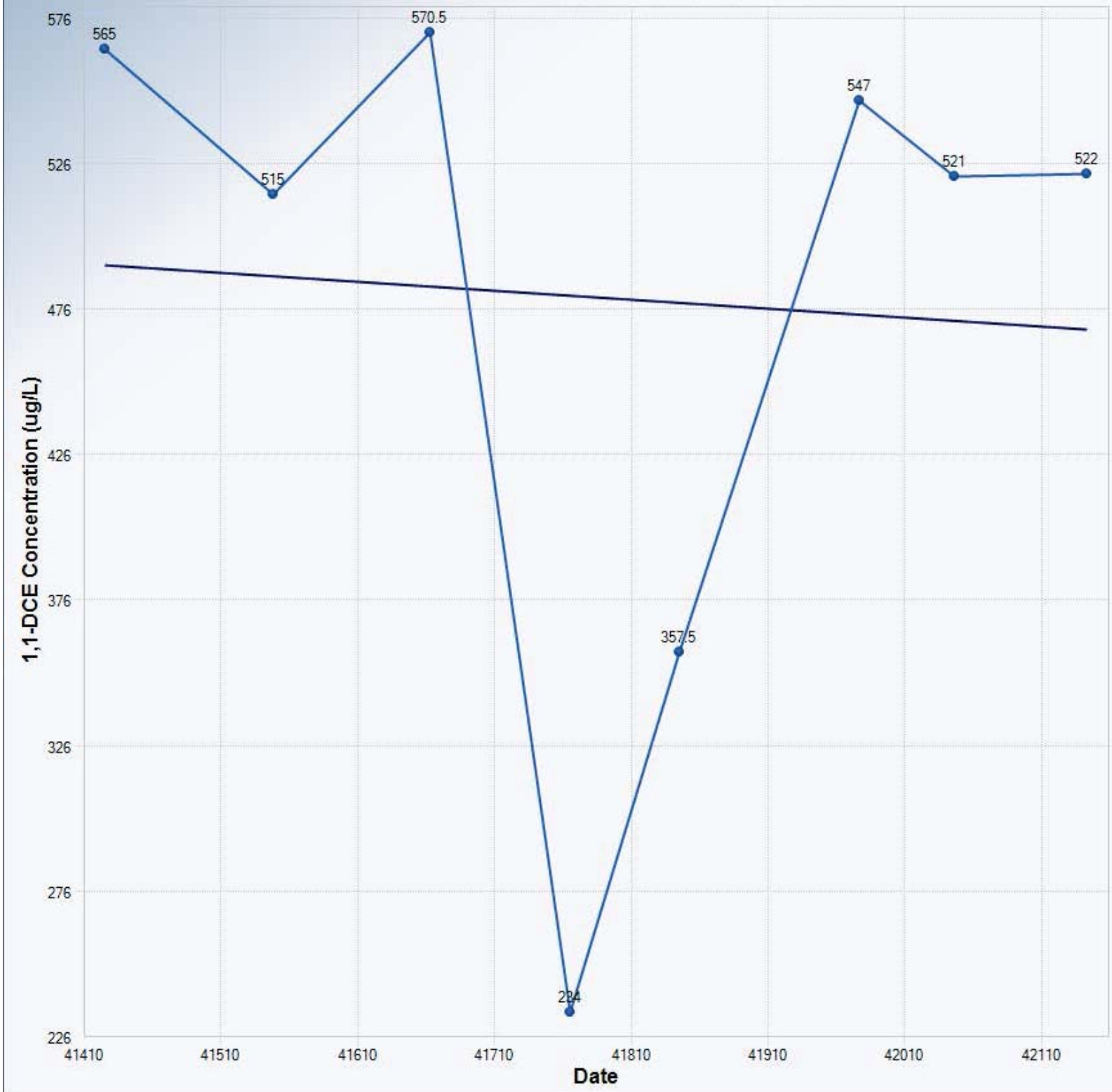

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	-0.1237
Test Value (S)	-2
Tabulated p-value	0.4520
Approximate p-value	0.4508

OLS Regression Line (Blue)

OLS Regression Slope	-0.0313
OLS Regression Intercept	1,787.1920

Insufficient statistical evidence of a significant trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW13

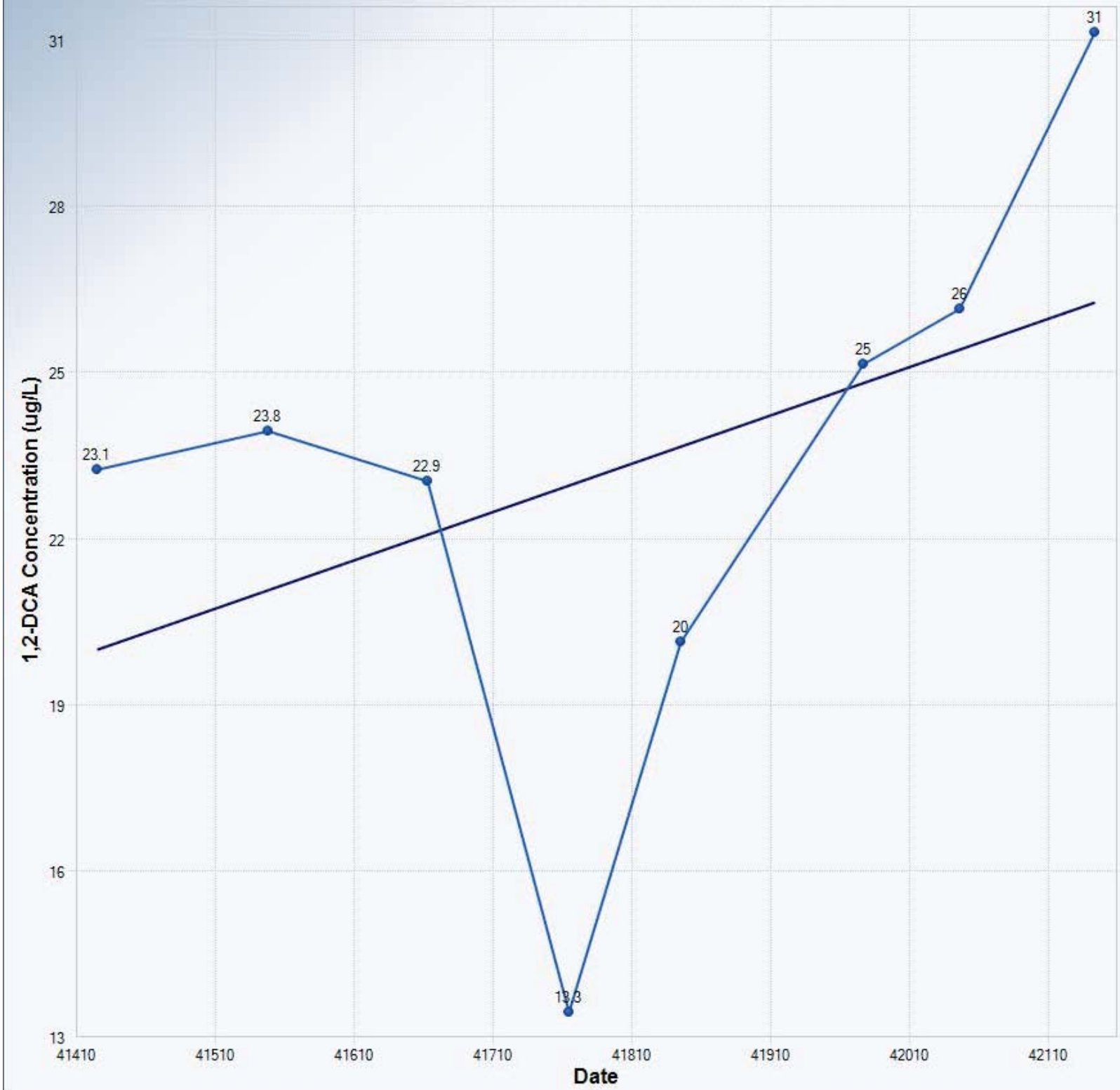

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	1.3609
Test Value (S)	12
Tabulated p-value	0.0890
Approximate p-value	0.0868

OLS Regression Line (Blue)

OLS Regression Slope	0.0088
OLS Regression Intercept	-342.7926

Insufficient statistical evidence of a significant trend at the specified level of significance.

Mann-Kendall Trend Test - 67WW13

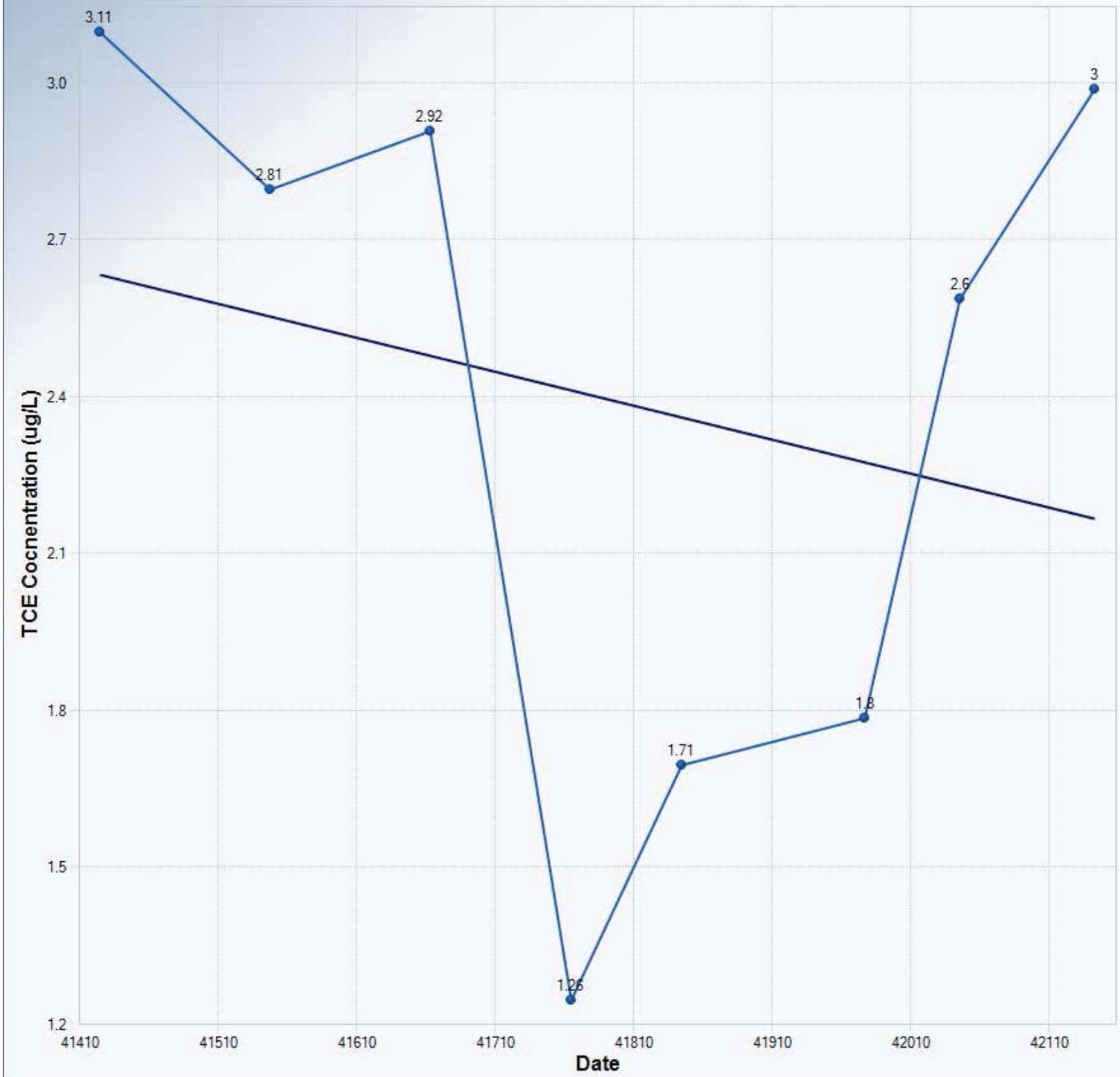

Mann-Kendall Trend Analysis

00740900

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	-0.1237
Test Value (S)	-2
Tabulated p-value	0.4520
Approximate p-value	0.4508

OLS Regression Line (Blue)

OLS Regression Slope	-0.0007
OLS Regression Intercept	29.5741

Insufficient statistical evidence of a significant trend at the specified level of significance.

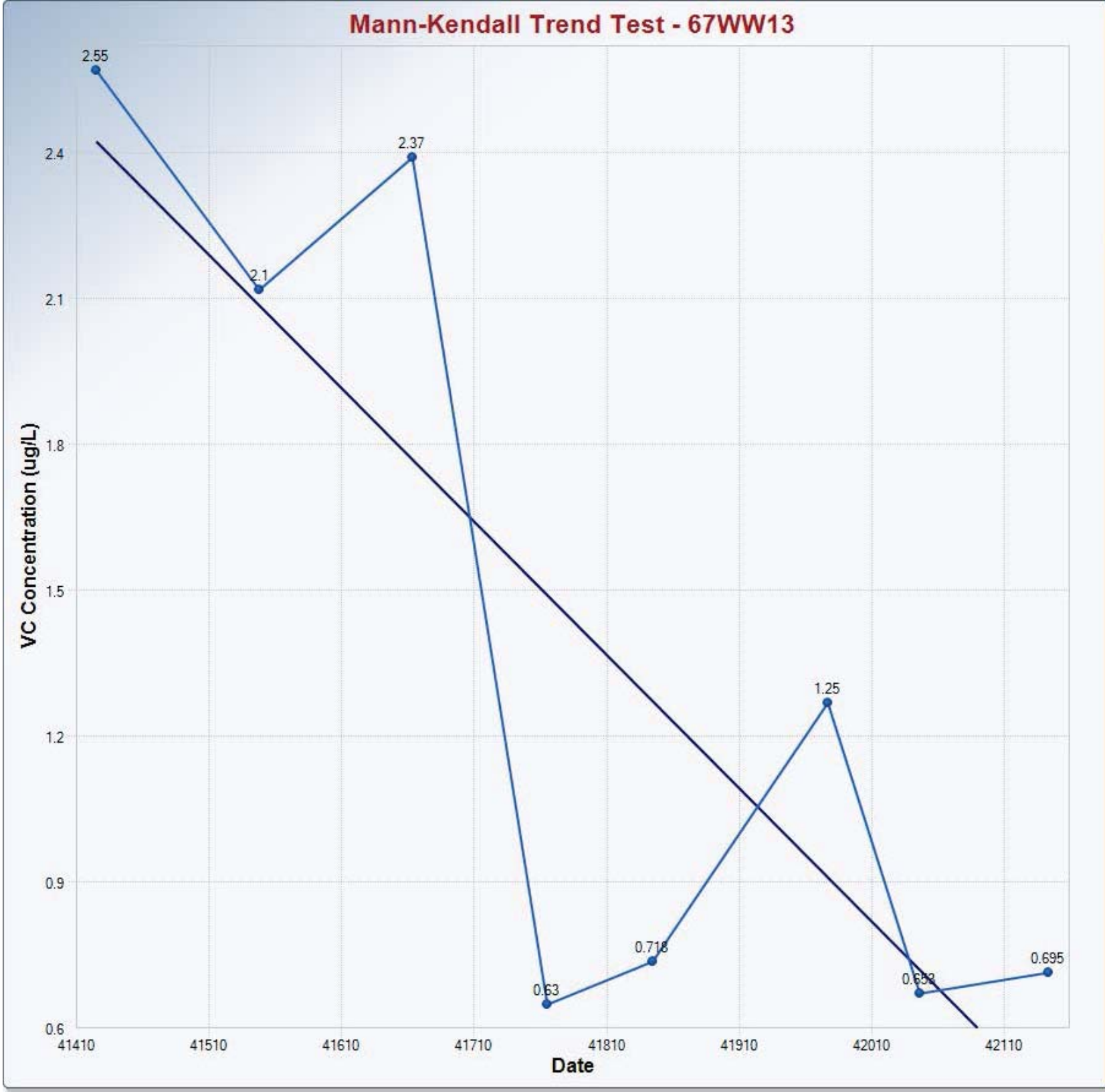

Mann-Kendall Trend Analysis

00740901

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	-1.6083
Test Value (S)	-14
Tabulated p-value	0.0540
Approximate p-value	0.0539

OLS Regression Line (Blue)

OLS Regression Slope	-0.0027
OLS Regression Intercept	116.1416

Insufficient statistical evidence of a significant trend at the specified level of significance.

APPENDIX F: CORRELATION DOCUMENTATION

Correlation Coefficient Evaluation

Evaluation of correlation between groundwater elevations and COC concentrations.

67WW01

Date	GW Level (ft MSL)	1,1-DCE
5/31/2013	175.34	139
5/7/2014	173.99	257
07/25/14	174.69	224
12/03/14	175.72	349
02/10/15	175.34	544
05/19/15	177.49	631
Correlation		71%

67WW08

Date	GW Level (ft MSL)	1,1-DCE	1,2-DCA	1,1,2-TCA
6/3/2013	175.39	940	89.2	4.25
10/2/2013	174.47	1120	76.5	5.08
1/23/2014	175.14	1340	89.9	6.7
5/7/2014	176.39	1590	101	5.01
07/24/14	176.63	1890	98.9	7.74
12/04/14	175.81	2320	106	7.36
02/11/15	176.58	1930	104	6.96
05/19/15	177.79	1570	85.6	4.5
Correlation		47%	37%	2%

67WW09

Date	GW Level (ft MSL)	1,1-DCE
6/3/2013	175.43	16.1
9/28/2013	174.55	17.5
1/24/2014	175.26	20.8
07/25/14	176.81	8.93
12/04/14	175.96	11.6
02/11/15	176.71	8.23
05/19/15	177.91	2.71
Correlation		-94%

67WW11

Date	GW Level (ft MSL)	1,1-DCE
6/1/2013	175.43	46.95
10/2/2013	174.47	42.8
1/23/2014	175.19	40.9
07/24/14	175.75	34.5
12/04/14	175.87	37.5
02/11/15	175.69	30.4
05/19/15	177.97	21.6
Correlation		-84%

67WW13

Date	GW Level (ft MSL)	1,1-DCE	1,2-DCA
5/31/2013	175.37	565	23.1
10/1/2013	174.50	515	23.8
1/24/2014	175.24	570.5	22.9
5/6/2014	176.26	234	13.3
07/25/14	176.37	357.5	20
12/04/14	175.70	547	25
02/11/15	176.31	521	26
05/19/15	177.37	522	31
Correlation		-32%	21%

Notes:
Correlation calculated using Microsoft Excel correlation function.
Average used for two samples when field duplicate sample collected.
Analytical results are in micrograms per liter (µg/L).
ft MSL - feet above mean sea level

Subject: **Final Minutes, Monthly Managers' Meeting, Longhorn Army Ammunition Plant (LHAAP)**

Location of Meeting: **Teleconference – 844-712-3247, Passcode 32317675**
Date of Meeting: **February 23, 2017 – 10:00 AM**

Attendees:

Army BRAC:	Rose Zeiler (RMZ)
EPA:	Rich Mayer (RM), Kent Becher (KB) (USGS Liaison), Barry Forsythe (BF), Dorelle Harrison (DH)
TCEQ:	April Palmie (AP)
USACE:	Aaron Williams (AW)
AECOM:	Debra Richmann (DR), Elspeth Sharp (ES), Craig Holloway (CH), JoLynn Snow (JS)
USFWS:	Paul Bruckwicki (PB)

Welcome **RMZ**

Action Items

AECOM

- Complete arrangements for removal and disposal of a roll-off box containing IDW at LHAAP-67. **Complete** – All roll offs containing IDW from LHAAP-67 (and LHAAP-37 and -18/24) were picked up and transported to the landfill on 2/16/17.
- Management of irrigation with treated GWTP effluent. **In Progress.** RMZ and AW are going to discuss further with Army team.
- Update on GWTP operations. **In Progress** - Summary of activities and progress:
    - CH discussed that the GWTP is continuing to recirculate. Approximately 14,000 gallons have been disposed of offsite, giving more room in the frac tanks to add fresh water and circulate, and enabling some extraction of groundwater. CH also discussed ORP and pH levels, which are indicator parameters. CH stated that a sample was taken yesterday (February 22) and if perchlorate levels are below 13 µg/L, discharging to Harrison Bayou will begin. If not, AECOM will continue the current process of disposing of water off site until results get to that level. There is currently flow in Harrison Bayou.
    - RM asked which ICTs were being turned on. CH said they have rotated which ICTs were extracting. ICTs in the NW corner were extracting on Monday (February 20) and Wednesday (February 22); ICTs from the NE side were extracting on February 21.
    - RM asked what the level of perchlorate was in the water that was shipped off site. RMZ and CH said it was approximately 5000 µg/L.
    - CH said there will be variations up and down from day to day for pH and ORP, but the trend is down for ORP and up for pH, and they are expected to eventually stabilize.
- PB asked about the status of the power supply switch over. He stated SWEPCO wanted to put a pole over or near a water line. During the switch over, power will be shut down. CH

confirmed this and stated this will be okay for the GWTP. CH stated SWEPCO has put this project "into construction" and will be installing three new power poles and a new meter. Then Arklatex will be doing their part of the task. CH believes the power outage will be approximately 3 to 4 hours.

Army

- Surface water and perimeter well sampling requirements were from the December 1999 Dispute Resolution Decision. There is agreement to discontinue perimeter well sampling. **Complete.**

EPA

- RM stated that EPA has funds he wants to use to perform some sampling. RMZ asked what wells EPA is planning on sampling. RM said he would send RMZ that list.

TCEQ

- No outstanding action items.

AEC

- No outstanding action items.

USFWS

- No outstanding action items.

Schedule Review **RMZ**

- Restoration
- Contract - AW said GFI will be needed by the end of March so the Year 3 RA-O reports for LHAAP-46 and LHAAP-67 and the Geochemical Rebound Tech Memo for LHAAP-37 should be going to TCEQ and EPA soon. RMZ asked for an expedited review from TCEQ and EPA.

Programmatic Issues **RMZ/RM/AP**

- RM discussed that the LHAAP-04 ROD is with the Division Director. RM indicated the delay is related to there being a new EPA administration. Many CERCLA sites are being held up. It is unknown if the LHAAP-04 ROD is on the schedule for FY17.

Defense Environmental Restoration Program (DERP) PBR Update **AECOM**

DR asked everyone to refer to the Document and Issue Tracker dated 2/23/17, which was distributed with the agenda. It includes currently projected dates for submittal of remaining project milestone deliverables to EPA and TCEQ.

- Item 1 (GWTP Quarterly Report) – DR said the draft GWTP report for Q2 2016 is currently in preparation and will incorporate responses to agency comments on the Q1 2016 report in a separate section of the report. Submittal to EPA and TCEQ is planned for the week of 3/6/17.

- The following items are complete and not discussed:

- Item 2 – Supplemental to Updated LHAAP-18/24 PSI Addendum
- Item 2-1- LHAAP-18/24 Data Gap Sampling
- Item 2-2 - Previous Regulatory Comments on LHAAP-18/24 FS
- Item 2-3 - LHAAP-18/24 Revised FS
- Item 3-1 - LHAAP-37 RACR
- Item 4 - LHAAP-46 RACR
- Item 5 - LHAAP-50 RACR
- Item 6 - LHAAP-58 RACR
- Item 7 - LHAAP-67 RACR
- Item 8 - LHAAP-12 2015 Annual Report

- Item 8-1 (LHAAP-12 2016 RA-O Report) – DR said the validated data for groundwater samples collected in December 2016 were provided to EPA and TCEQ on 2/23/17 in the January 2017 Data Validation Package attachment to the February 2017 MMM agenda.

- Item 9 (LHAAP-46 Yr. 1 and Yr. 2 RA-O Reports) is complete, so was not discussed.

- Item 9-1 (LHAAP-46 Yr. 3 RA-O Report) – The draft report is planned for submittal to TCEQ and EPA for review the week of 3/6/17.

- Item 10-1 (LHAAP-67 Yr. 1 RA-O Report) and Item 10-2 (LHAAP-67 Yr. 2. RA-O Report) are complete, so were not discussed.

- Item 10-3 (LHAAP-67 Yr. 3 RA-O Report) – The draft report is planned for submittal to TCEQ and EPA for review the week of 2/27/17.

- Item 11-1 (LHAAP-50 Yr. 1 RA-O Report) is complete, so was not discussed.

- Item 11-2 (LHAAP-50 Yr. 2 RA-O Report) – Revised Figure 2-10 using the most recent set of Year 2 RA-O sampling results was sent to EPA and TCEQ on 1/30/17. TCEQ accepted the revised figure, RTCs and Draft Final report on 1/31/17.

- Item 12-1 (LHAAP-58 Yr. 1 and Yr. 2 RA-O Reports) are complete, so were not discussed.

- Item 12-2 (LHAAP-58 Contingency Remedial Action Work Plan) is complete, so was not discussed.

- Item 13 (MMM) – Draft minutes from the January 2017 MMM planned for submittal to EPA and TCEQ by 2/24/17. The next MMM meeting will be held at 10:00 CST on Tuesday 3/28/17 by teleconference.

- Item 14-1 (LHAAP-29 RI Addendum) is complete, so was not discussed.

- Item 14-2 (LHAAP-29 FS Addendum) – DR said a determination of whether the draft FS addendum will be submitted to the regulators under the current PBR contract is pending a decision from the Army.

- Item 15-1 (LHAAP-47 PSI Work Plan) is complete, so was not discussed.
- Item 15-2 (LHAAP-16 RD) is complete, so was not discussed.
- Item 15-2a (LHAAP-16 RD Post ROD Requirements) is complete, so was not discussed.
- Items 15-3 (LHAAP-17 RD) – The Army is deferring the RD to the next PBR contract.
- Item 15-3a (LHAAP-17 PDI WP) is complete, so was not discussed.
- Item 15-3b (LHAAP-17 Post-ROD Requirements) is complete, so was not discussed.
- Item 15-4 (LHAAP-001-R-01 RD/RDWP) – The Army is deferring the LUC RD to the follow-on PBR contract, so this item was not discussed.
- Item 15-4a (LHAAP-001-R-01 Limited LTM) and Item 15-4b (LHAAP-001-R-01 Post-ROD Requirements) are complete, so were not discussed.
- Item 15-5 (LHAAP-003-R-01 RD/RDWP) – The Army is deferring the LUC RD to the follow-on PBR contract, so this item was not discussed.
- Item 15-5a (LHAAP-003-R-01 Limited LTM) – Submitted Draft Tech Memo to EPA and TCEQ on 2/8/17. Received EPA approval on 2/22/17.
- Item 15-5b (LHAAP-003-R-01 Post-ROD Requirements) is complete, so was not discussed.
- Item 15-6 (LHAAP-04 ROD) – The ROD is with EPA for signature. A preliminary public notice will be published after the ROD is signed.
- Item 15-7 (Site-wide LUC Management Plan) – The FY2016 Revision Log and signed transmittal letters will be entered into the next Admin Record update.
- Item 16 (RAB/Website) – Submitted Draft January 2017 RAB meeting minutes to EPA and TCEQ on 2/9/17. Received TCEQ concurrence on Draft January 2017 RAB meeting minutes on 2/13/17. Received EPA concurrence on Draft January 2017 RAB meeting minutes on 2/14/17. The next RAB meeting will be a site tour on 4/27/17 at 5:00 PM CST. RMZ received an email from Rick Lowerre stating George Rice would like to address the RAB at the next meeting. When informed a tour is scheduled instead of a meeting, said he would get back to Army if it will be during the tour or earlier at the community center.
- Item 17-1 (GWTP O&M – GWTP Sampling and Optimization Memo) is complete so was not discussed.
- Item 17-2 (GWTP Sampling and Analysis Plan) – is complete so was not discussed.
- Item 17-3 (GWTP Continuing O&M) – discussed earlier under AECOM Action Items.
    - CH stated that he is working on getting back to the regular sampling schedule.

- RMZ asked CH to send the graph of the pH and ORP levels to date and the list of ICTs pumped to AP and RM.

- Item 18 (Admin. Record Update) – The Q3 2016 AR update was uploaded to the LHAAP website on 12/14/16, and CDs were sent later in the week. The 2016 AR Q4 update is currently in preparation. JS said the quarterly GWTP evaluation reports are still being uploaded.

- Item 19 (LHAAP-02) is complete so was not discussed.

- Item 20 (LHAAP-37 Geochemical Rebound) – Submittal of the Draft Tech Memo to EPA and TCEQ is planned for the week of 3/6/17.

- Item 21 (Smart Map) – AECOM continues to develop the Smart Map, which will be transferred to Army at the end of the month.

- Upcoming/ongoing field work: No sampling scheduled.

- Monthly data – See attached January 2017 Validated LHAAP Data. RM noted that 18WW08 perchlorate results are high and are outside of the containment area. RMZ stated it will be closely looked at.

- Groundwater Treatment Plant Operations – Discussed earlier in meeting.

MMRP Update **Army**

- RMZ, AW, and PB discussed the possibility of transferring LHAAP-001-R and LHAAP-003-R. PB agreed that they could proceed with the transfer of LHAAP-003-R. PB and RMZ agreed that LHAAP-001-R will need to wait until more sampling is completed. RM agreed.

Other Environmental Restoration **Army**

- Quarterly Reporting and Requirements
  - GWTP Evaluation
  - Surface Water/Perimeter Well Quarterly Update
  - Administrative Record Update
  - Website Update
- Annual Reporting
  - LUC Management Plan Update - Signed Revision Log and transmittal letters will be entered into the 2016 Q4 AR update. RMZ asked PB if he had received her email. PB confirmed. PB has LUC Management Plan from 2007.
  - PB said RM had asked him what the total acreage of the transferred property is. RMZ said the transferred property is 7114.75 acres.
- CRP/CIP Revision (Biennial)
  - RM said Janetta Coats asked him for the current CRP and said he would send what he has to RMZ to make sure he has the most current version. RMZ said the most current version is 2013. Army is waiting to have the ROD for LHAAP-04 signed before updating the CRP. Army knows the ROD dates need to be updated in the CRP.

USFWS Update
PB stated there was a controlled burn of 2,200 acres. The area included LHAAP-29. RMZ/PB

PB asked RM about a person wanting to film within the LHAAP area. RM said they should be contacting RMZ and he gave the caller the Army's contact information. RMZ said she had not been contacted by anyone regarding filming at LHAAP.

Schedule Next Managers' Meeting

- March 2017 MMM will be held by teleconference, 3/28/17 at 10:00 CST.

Other Issues

- RMZ and AW discussed the PWS.
- AW said he is going through Army comments on the PWS. He said the GFI is needed by the end of March. AW, RM, and AP discussed the possibility of an expedited review of the outstanding deliverables. AW said he will get a cut-off date to TCEQ and EPA.

Adjourn

Attachments:

- **January 2017 Validated LHAAP Data:**
  - GWTP Effluent: Weekly and Monthly Sampling (December 2016)
  - GWTP Influent: Monthly (December 2016)
  - LHAAP-12: Annual MNA Sampling (December 2016)
  - LHAAP-18/24: Semi-Annual Sampling (December 2016
  - PER: Perimeter Well Sampling (December 2016)

ACRONYM LIST

AEC	United States Army Environmental Command
AECOM	AECOM Technical Services, Inc.
AP	April Palmie
AR	Administrative Record
AW	Aaron Williams
BF	Barry Forsythe
BRAC	Base Realignment and Closure
CH	Craig Holloway
CIP	Community Involvement Plan
CRP	Community Relations Plan
CST	Central Standard Time
DERP	Defense Environmental Restoration Program
DH	Dorelle Harrison
DR	Debra Richmann
EPA	United States Environmental Protection Agency
ES	Elspeth Sharp
FBR	Fluidized Bed Reactor
FS	Feasibility Study
GFI	Government Furnished Information
GWTP	Ground Water Treatment Plant
HB	Harrison Bayou
ICT	Interceptor Collection Trench
IDW	Investigation-Derived Waste
JS	JoLynn Snow
KB	Kent Becher
LHAAP	Longhorn Army Ammunition Plant
LTM	Long-Term Monitoring
LUC	Land Use Control
MMM	Monthly Managers' Meeting
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
NE	Northeast
NS	Nick Smith
NW	Northwest
O&M	Operation and Maintenance
ORP	Oxidation-Reduction Potential
PB	Paul Bruckwicki
PBR	Performance-Based Remediation
PDI	Pre-Design Investigation
PER	Perimeter Well
PSI	Post-Screening Investigation
RAB	Restoration Advisory Board
RACR	Remedial Action Completion Report
RA-O	Remedial Action Operation
RAWP	Remedial Action Work Plan

RD	Remedial Design
RFP	Request for Proposal
RI	Remedial Investigation
RM	Rich Mayer
RMZ	Rose M. Zeiler
ROD	Record of Decision
RTC	Response to Comments
SAP	Sampling and Analysis Plan
TBD	To Be Determined
TCEQ	Texas Commission on Environmental Quality
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
WP	Work Plan

LHAAP Data Validated
January 2017

GWTP Effluent *Weekly, and Monthly Sampling - December 2016*

Ammonia (350.1)
Ortho-Phosphate (365.2)
Organic Carbon (415.1)
Perchlorate (6850)
1,4-Dioxane (8270D-SIM)
Metals (6010C)
Metals (6020A)

GWTP Influent *Monthly - December 2016*

Perchlorate (6850)
VOC (8260B)

LHAAP-12 *Annual MNA Sampling - December 2016*

Metals (6010C)

LHAAP-18/24 *Semi-Annual Sampling - December 2016*

Metals (6010C)
Metals (6020A)
Perchlorate (6850)
Mercury (7470A)
VOC (8260B)

PER *Perimeter Well Sampling - December 2016*

Perchlorate (6850)

GWTP Effluent Weekly Sampling - December 2016

Location ID: Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650-6415-GRAB 12/5/2016
Location Description:			GWTP–Collected from a spigot on the discharge of effluent TK-650. Sampled Weekly.
Ammonia as N (350.1)			
AMMONIA AS N	mg/L		13.5
Ortho-Phosphate (365.2)			
ORTHO-PHOSPHATE	mg/L		3.01
Organic Carbon (415.1)			
TOTAL ORGANIC CARBON (TOC)	mg/L		80.9
Perchlorate (6850)			
PERCHLORATE	ug/L	13	<0.2 U
Semi-Volatile Organic Compounds (8270D-SIM)			
1,4-DIOXANE*	ug/L	134.2	25.6

No GWTP Effluent samples collected due to process upset on 12/12/16.

* Calculated Effluent Limit

mg/L - milligrams per liter

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

GWTP Effluent Monthly Sampling - December 2016

Location ID: Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650-6414-GRAB 12/5/2016
Location Description:			GWTP – Collected from a spigot on the discharge of effluent TK-650. Sampled Monthly.
Metals (6010C)			
ALUMINUM	mg/L	1.644	<0.2 U
IRON	mg/L	2.395	0.252
SELENIUM	mg/L	0.012	<0.02 U
Metals (6020A)			
ANTIMONY	mg/L		0.000504 J
ARSENIC	mg/L	0.722	0.00262
BARIUM	mg/L	2	0.158
CADMIUM	mg/L	0.0034	0.000301 J
CHROMIUM	mg/L	0.752	0.0106
COBALT	mg/L	11.495	0.00678
LEAD	mg/L	0.0046	<0.001 U
MANGANESE	mg/L	15.494	0.0392
NICKEL	mg/L	0.184	0.0209
SILVER	mg/L	0.003	<0.001 U
THALLIUM	mg/L		0.00104
VANADIUM	mg/L	3.592	0.00166 J
ZINC	mg/L	0.31	0.111

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

mg/L - milligrams per liter

U - Undetected: The analyte was analyzed for, but not detected.

GWTP Influent Monthly Sampling - December 2016

Location ID: / Sample Date:	Units	LH18/24-SP140-7414-GRAB 12/5/2016
Location Description:		GWTP – Collected from a spigot on the influent to TK-140. Sampled Monthly.
Perchlorate (6850)		
PERCHLORATE	ug/L	14200
8260B		
1,1,1,2-TETRACHLOROETHANE	ug/L	<25 U
1,1,1-TRICHLOROETHANE	ug/L	<25 U
1,1,2,2-TETRACHLOROETHANE	ug/L	<20 U
1,1,2-TRICHLOROETHANE	ug/L	<25 U
1,1-DICHLOROETHANE	ug/L	<12.5 U
1,1-DICHLOROETHENE	ug/L	51.9 J
1,1-DICHLOROPROPENE	ug/L	<25 U
1,2,3-TRICHLOROBENZENE	ug/L	<15 U
1,2,3-TRICHLOROPROPANE	ug/L	<50 U
1,2,4-TRICHLOROBENZENE	ug/L	<20 U
1,2,4-TRIMETHYLBENZENE	ug/L	<25 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	<100 U
1,2-DIBROMOETHANE	ug/L	<25 U
1,2-DICHLOROBENZENE	ug/L	<12.5 U
1,2-DICHLOROETHANE	ug/L	60.9
1,2-DICHLOROPROPANE	ug/L	<20 U
1,3,5-TRIMETHYLBENZENE	ug/L	<25 U
1,3-DICHLOROBENZENE	ug/L	<25 U
1,3-DICHLOROPROPANE	ug/L	<20 U
1,4-DICHLOROBENZENE	ug/L	<12.5 U
2,2-DICHLOROPROPANE	ug/L	<25 U
2-BUTANONE	ug/L	<250 U
2-CHLOROTOLUENE	ug/L	<12.5 U
2-HEXANONE	ug/L	<250 U
4-CHLOROTOLUENE	ug/L	<25 U
4-METHYL-2-PENTANONE	ug/L	<250 U
ACETONE	ug/L	<250 U
BENZENE	ug/L	<12.5 U
BROMOBENZENE	ug/L	<12.5 U
BROMOCHLOROMETHANE	ug/L	<20 U
BROMODICHLOROMETHANE	ug/L	<25 U
BROMOFORM	ug/L	<50 U
BROMOMETHANE	ug/L	<50 U
CARBON DISULFIDE	ug/L	<50 U
CARBON TETRACHLORIDE	ug/L	<25 U
CHLOROBENZENE	ug/L	<12.5 U
CHLOROETHANE	ug/L	<50 U
CHLOROFORM	ug/L	14.1 J
CHLOROMETHANE	ug/L	<50 U
CIS-1,2-DICHLOROETHENE	ug/L	2720

GWTP Influent Monthly Sampling - December 2016

Location ID: / Sample Date:	Units	LH18/24-SP140-7414-GRAB 12/5/2016
CIS-1,3-DICHLOROPROPENE	ug/L	<25 U
DIBROMOCHLOROMETHANE	ug/L	<25 U
DIBROMOMETHANE	ug/L	<25 U
DICHLORODIFLUOROMETHANE	ug/L	<25 U
ETHYLBENZENE	ug/L	<25 U
HEXACHLOROBUTADIENE	ug/L	<25 U
ISOPROPYLBENZENE	ug/L	<25 U
M,P-XYLENE	ug/L	<50 U
METHYLENE CHLORIDE	ug/L	2230
NAPHTHALENE	ug/L	<20 U
N-BUTYLBENZENE	ug/L	<25 U
N-PROPYLBENZENE	ug/L	<12.5 U
O-XYLENE	ug/L	<25 U
P-ISOPROPYLTOLUENE	ug/L	<25 U
SEC-BUTYLBENZENE	ug/L	<25 U
STYRENE	ug/L	<12.5 U
TERT-BUTYLBENZENE	ug/L	<25 U
TETRACHLOROETHENE	ug/L	18 J
TOLUENE	ug/L	<25 U
TRANS-1,2-DICHLOROETHENE	ug/L	<25 U
TRANS-1,3-DICHLOROPROPENE	ug/L	<50 U
TRICHLOROETHENE	ug/L	8530
TRICHLOROFLUOROMETHANE	ug/L	<25 U
VINYL CHLORIDE	ug/L	73.2

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

LHAAP-12 Annual MNA Sampling - December 2016

Sample ID: / Sample Date:	Units	MCL/ PCL	12WW20-120116 12/1/2016	12WW21-120116 12/1/2016	12WW21FD-120116 12/1/2016	12WW22-120116 12/1/2016	12WW23-120116 12/1/2016	12WW24-120116 12/1/2016
Location Description:			Site 12 – NW, central region	Site 12 – N, middle region	Site 12 – N, middle region Duplicate	Site 12 – NNW, outter region	Site 12 – NE, outter region	Site 12 - East of landfill
Volatile Organic Compounds (8260B)								
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	0.269 J
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	0.818 J
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	1.65
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	0.346 J
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U

LHAAP-12 Annual MNA Sampling - December 2016

Sample ID: / Sample Date:	Units	MCL/ PCL	12WW20-120116 12/1/2016	12WW21-120116 12/1/2016	12WW21FD-120116 12/1/2016	12WW22-120116 12/1/2016	12WW23-120116 12/1/2016	12WW24-120116 12/1/2016
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	2.92
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	36.7
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.252 J	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.661 J	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.668 J
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	151
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.51 J

Blue highlighting indicates concentrations above the MCL/PCL

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

LHAAP-18/24 Semi-Annual Sampling - December 2016

Location ID: / Sample Date:	Units	MCL/ PCL	102-120916 12/9/2016	109-120916 12/9/2016	120-120916 12/9/2016	120F-120916 12/9/2016	17WW08-120616 12/6/2016	18CPTMW01DW-122716 12/27/2016	18CPTMW01SW-122716 12/27/2016	18CPTMW04-122716 12/27/2016	18CPTMW04SW-122716 12/27/2016	18CPTMW06-122716 12/27/2016	18CPTMW07-121316 12/13/2016	18CPTMW08DW-122816 12/28/2016	18CPTMW08SW-122816 12/28/2016
Location Description:			Site 16 – NE, middle region	Site 18/24 – NE, just inside the fence line	Site 18/24 – W, inside the fence line, outer region	Site 18/24 – W, inside the fence line, outer region Filtered	Site 17 - SW of Site 18/24 outside the containment within Site 17.	Site 18/24 – NE, inside the fence line, middle region Deep Wilcox	Site 18/24 – NE, inside the fence line, middle region Shallow Wilcox	Site 18/24 – NW, inside the fence line, middle region	Site 18/24 – NW, inside the fence line, middle region Shallow Wilcox.	Site 18/24 – SSE, inside the fence line, middle region	Site 18/24 – NNE, inside the fence line, outter region	Site 18/24 – N, inside the fence line, outter region Deep Wilcox	Site 18/24 – N, inside the fence line, outter region. Shallow Wilcox
Metals (6010C)															
ALUMINUM	mg/L	100	NA	0.542	NA	3.1	NA	NA	<0.1 U	NA	0.27	NA	NA	NA	NA
BERYLLIUM	mg/L	0.004	NA	<0.002 U	NA	<0.002 U	NA	NA	<0.01 U	NA	<0.01 U	NA	NA	NA	NA
CALCIUM	mg/L		NA	7.75	NA	8.57	NA	NA	27.4	NA	34.2	NA	NA	NA	NA
IRON	mg/L		NA	0.559	NA	3.13	NA	NA	51	NA	6.85	NA	NA	NA	NA
MAGNESIUM	mg/L		NA	5.66	NA	9.1	NA	NA	18.8	NA	17.1	NA	NA	NA	NA
POTASSIUM	mg/L		NA	<1 U	NA	2.17	NA	NA	6.79	NA	42.6	NA	NA	NA	NA
SELENIUM	mg/L	0.05	NA	<0.02 U	NA	0.0125 J	NA	NA	<0.01 U	NA	<0.01 U	NA	NA	NA	NA
SODIUM	mg/L		NA	80.4	NA	370	NA	NA	95.5	NA	105	NA	NA	NA	NA
Metals (6020A)															
ANTIMONY	mg/L	0.006	NA	<0.001 U	NA	0.000564 J	NA	NA	<0.001 U	NA	<0.001 U	NA	NA	NA	NA
ARSENIC	mg/L	0.01	NA	0.00126 J	NA	0.0037	NA	NA	0.0176	NA	0.00432	NA	NA	NA	NA
BARIUM	mg/L	2	NA	0.532	NA	0.0625	NA	NA	1.04	NA	1.01	NA	NA	NA	NA
CADMIUM	mg/L	0.005	NA	<0.0006 U	NA	0.000364 J	NA	NA	<0.0006 U	NA	<0.0006 U	NA	NA	NA	NA
CHROMIUM	mg/L	0.1	NA	0.00181 J	NA	0.00582	NA	NA	<0.002 U	NA	0.01	NA	NA	NA	NA
COBALT	mg/L	6.1	NA	<0.001 U	NA	0.017	NA	NA	0.00156 J	NA	0.00403	NA	NA	NA	NA
COPPER	mg/L	1.3	NA	0.00122 J	NA	0.00396 J	NA	NA	<0.002 U	NA	0.00103 J	NA	NA	NA	NA
LEAD	mg/L	0.015	NA	0.00115 J	NA	0.00307	NA	NA	<0.001 U	NA	<0.001 U	NA	NA	NA	NA
MANGANESE	mg/L	1.1	NA	0.0101	NA	0.196	NA	NA	0.621	NA	0.283	NA	NA	NA	NA
NICKEL	mg/L	0.49	NA	0.00246 J	NA	0.0158	NA	NA	0.00369 J	NA	0.00758 J	NA	NA	NA	NA
SILVER	mg/L	0.51	NA	<0.001 U	NA	<0.001 U	NA	NA	<0.001 U	NA	<0.001 U	NA	NA	NA	NA
THALLIUM	mg/L	0.002	NA	0.00209	NA	0.00274	NA	NA	0.000104 J	NA	0.000111 J	NA	NA	NA	NA
VANADIUM	mg/L	0.72	NA	0.00345	NA	0.0104	NA	NA	<0.001 U	NA	0.00069 J	NA	NA	NA	NA
ZINC	mg/L	31	NA	<0.025 U	NA	0.11	NA	NA	<0.025 U	NA	0.0138 J	NA	NA	NA	NA
Perchlorate (6850)															
PERCHLORATE	ug/L	17	118	17500	61600	NA	<0.2 U	<0.2 U	<0.2 U	1230	<0.2 U	1.4	0.272 J	26.9	33300
Mercury (7470A)															
MERCURY	mg/L	0.002	NA	<0.0002 U	NA	<0.0002 U	NA	NA	<0.0002 U	NA	<0.0002 U	NA	NA	NA	NA
Volatile Organic Compounds (8260B)															
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<1 U	<40 U	NA	<0.4 U	<0.4 U	<4 U	<4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	1.7 J	35.6 J	NA	<0.25 U	<0.25 U	<2.5 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	NA	4.39
1,1-DICHLOROETHENE	ug/L	7	<1 U	4.7 J	189 J	NA	<1 U	<1 U	<10 U	<10 U	<1 U	<1 U	<1 U	NA	0.954 J
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.75 U	<30 U	NA	<0.3 U	<0.3 U	<3 U	<3 U	<0.3 U	<0.3 U	<0.3 U	NA	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<2.5 U	<100 U	NA	<1 U	<1 U	<10 U	<10 U	<1 U	<1 U	<1 U	NA	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<1 U	<40 U	NA	<0.4 U	<0.4 U	<4 U	<4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<5 U	<200 U	NA	<2 U	<2 U	<20 U	<20 U	<2 U	<2 U	<2 U	NA	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.626 U	<25 U	NA	<0.25 U	<0.25 U	<2.5 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<1.25 U	76.6 J	NA	<0.5 U	<0.5 U	<5 U	8.1 J	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<1 U	<40 U	NA	<0.4 U	<0.4 U	<4 U	<4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	0.598 J
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<1 U	<40 U	NA	<0.4 U	<0.4 U	<4 U	<4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.626 U	<25 U	NA	<0.25 U	<0.25 U	<2.5 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<12.5 U	<500 U	NA	<5 U	<5 U	<50 U	<50 U	<5 UJ	<5 U	<5 U	NA	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.626 U	<25 U	NA	<0.25 UJ	<0.25 U	<2.5 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<12.5 U	<500 U	NA	<5 U	<5 U	<50 U	<50 U	<5 UJ	<5 U	<5 U	NA	<5 U

LHAAP-18/24 Semi-Annual Sampling - December 2016

Location ID: / Sample Date:	Units	MCL/ PCL	102-120916 12/9/2016	109-120916 12/9/2016	120-120916 12/9/2016	120F-120916 12/9/2016	17WW08-120616 12/6/2016	18CPTMW01DW-122716 12/27/2016	18CPTMW01SW-122716 12/27/2016	18CPTMW04-122716 12/27/2016	18CPTMW04SW-122716 12/27/2016	18CPTMW06-122716 12/27/2016	18CPTMW07-121316 12/13/2016	18CPTMW08DW-122816 12/28/2016	18CPTMW08SW-122816 12/28/2016
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<12.5 U	<500 U	NA	<5 U	<5 U	<50 U	<50 U	<5 U	<5 U	<5 U	NA	<5 U
ACETONE	ug/L	22000	<5 U	<12.5 U	<500 U	NA	<5 UJ	3.57 J	<50 U	<50 U	<5 UJ	<5 U	<5 U	NA	<5 U
BENZENE	ug/L	5	<0.25 UJ	<0.626 U	16.2 J	NA	<0.25 U	<0.25 U	5.58 J	<2.5 U	<0.25 U	<0.25 U	<0.25 U	NA	0.142 J
BROMOBENZENE	ug/L	200	<0.25 U	<0.626 U	<25 U	NA	<0.25 U	<0.25 U	<2.5 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<1 U	<40 U	NA	<0.4 U	<0.4 U	<4 U	<4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
BROMOFORM	ug/L	120	<1 U	<2.5 U	<100 U	NA	<1 U	<1 U	<10 U	<10 U	<1 U	<1 U	<1 U	NA	<1 U
BROMOMETHANE	ug/L	34	<1 U	<2.5 U	<100 U	NA	<1 U	<1 U	<10 U	<10 U	<1 U	<1 U	<1 U	NA	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<2.5 U	<100 U	NA	<1 U	2.29	<10 U	<10 U	<1 U	<1 U	<1 U	NA	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.626 U	<25 U	NA	<0.25 U	<0.25 U	<2.5 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<2.5 U	<100 U	NA	<1 U	<1 U	<10 U	<10 U	<1 U	<1 U	<1 U	NA	<1 U
CHLOROFORM	ug/L	240	<0.25 U	2.45 J	74.1 J	NA	<0.25 U	<0.25 U	<2.5 U	3.85 J	<0.25 U	<0.25 U	<0.25 U	NA	0.493 J
CHLOROMETHANE	ug/L	70	<1 U	<2.5 U	<100 U	NA	<1 U	<1 U	<10 U	<10 U	<1 UJ	<1 U	<1 U	NA	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	195	3160	NA	<0.5 U	0.644 J	4.07 J	68.7	<0.5 U	<0.5 U	<0.5 U	NA	15.8
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<2.5 U	<100 U	NA	<1 U	<1 U	<10 U	<10 U	<1 U	<1 U	<1 U	NA	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	4.03	1590	<5 U	<0.5 U	4.73	<0.5 U	NA	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<1 U	<40 U	NA	<0.4 U	<0.4 U	<4 U	<4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.626 U	<25 U	NA	<0.25 U	<0.25 U	<2.5 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.626 U	<25 U	NA	<0.25 U	<0.25 U	<2.5 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	0.875 J	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	0.296 J
TOLUENE	ug/L	1000	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	3.72 J	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	2.26 J	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	0.269 J
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<2.5 U	<100 U	NA	<1 U	<1 U	<10 U	<10 U	<1 U	<1 U	<1 U	NA	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	771 J	24400	NA	<0.5 U	1.2	78	1360	<0.5 U	1.97	<0.5 U	NA	63.2
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<1.25 U	<50 U	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	0.948 J	176	NA	<0.5 U	<0.5 U	<5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	NA	6.84

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

LHAAP-18/24 Semi-Annual Sampling - December 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW10SW-120716 12/7/2016	18CPTMW12SW-120616 12/6/2016	18CPTMW12SW FD-120616 12/6/2016	18CPTMW14-121516 12/15/2016	18CPTMW14F-121516 12/15/2016	18CPTMW15-120716 12/7/2016	18CPTMW16-122916 12/29/2016	18CPTMW18-121516 12/15/2016	18CPTMW18F-121516 12/15/2016	18CPTMW19-121216 12/12/2016	18CPTMW19SW-121216 12/12/2016	18CPTMW22DW-120616 12/6/2016	18CPTMW22R-120616 12/6/2016
Location Description:			Site 18/24 – WSW, outside the fence line, along the outter loop road. Shallow Wilcox	Site 18/24 – SW, outside the fence line, along the road surrounding the fence line Shallow Wilcox	Site 18/24 – SW, outside the fence line, along the road surrounding the fence line Shallow Wilcox. Duplicate	Site 18/24 – SE, outside the fence line, along the road surrounding the fence line	Site 18/24 – SE, outside the fence line, along the road surrounding the fence line. Filtered	Site 18/24 – NW, outside the fence line	Site 18/24 – NW, outside the fence line, near Harrison Bayou	Site 18/24 – NE, outside the fence line, in the woods	Site 18/24 – NE, outside the fence line, in the woods. Filtered	Site 18/24 – N, outside the fence line	Site 18/24 – N, outside the fence line Shallow Wilcox	Site 18/24 - S, outside the fence line, along the outer loop road. Deep Wilcox	Site 18/24 – S, outside the fence line, along the outer loop road
Metals (6010C)															
ALUMINUM	mg/L	100	NA	<0.2 U	<0.2 U	NA	<0.1 U	NA	NA	NA	<0.1 U	NA	0.342	0.536	NA
BERYLLIUM	mg/L	0.004	NA	<0.002 U	<0.002 U	NA	<0.01 U	NA	NA	NA	<0.01 U	NA	<0.002 U	<0.002 U	NA
CALCIUM	mg/L		NA	56	55.3	NA	501	NA	NA	NA	347	NA	15.9	14.2	NA
IRON	mg/L		NA	2.55	2.53	NA	0.168 J	NA	NA	NA	1.41	NA	7.06	1.7	NA
MAGNESIUM	mg/L		NA	36.6	36.3	NA	91.8 J	NA	NA	NA	248	NA	5.41	6.2	NA
POTASSIUM	mg/L		NA	60.6	59.8	NA	28.8	NA	NA	NA	4.06	NA	4.01	3.01	NA
SELENIUM	mg/L	0.05	NA	<0.02 U	<0.02 U	NA	<0.01 UJ	NA	NA	NA	<0.01 UJ	NA	<0.02 U	<0.02 U	NA
SODIUM	mg/L		NA	242	238	NA	607	NA	NA	NA	969	NA	39.3	251	NA
Metals (6020A)															
ANTIMONY	mg/L	0.006	NA	<0.001 U	<0.001 U	NA	<0.001 U	NA	NA	NA	<0.001 U	NA	<0.001 U	<0.001 U	NA
ARSENIC	mg/L	0.01	NA	0.00426	0.00418	NA	0.0108	NA	NA	NA	0.0114	NA	0.0037	0.00516	NA
BARIUM	mg/L	2	NA	0.923	0.929	NA	4.05	NA	NA	NA	0.588	NA	0.172	0.0902	NA
CADMIUM	mg/L	0.005	NA	<0.0006 U	<0.0006 U	NA	0.000389 J	NA	NA	NA	<0.0006 U	NA	<0.0006 U	<0.0006 U	NA
CHROMIUM	mg/L	0.1	NA	0.00502	0.00531	NA	0.0202	NA	NA	NA	0.00265 J	NA	0.00711	0.00112 J	NA
COBALT	mg/L	6.1	NA	0.0165	0.0167	NA	0.00291	NA	NA	NA	0.0192	NA	0.00157 J	0.000877 J	NA
COPPER	mg/L	1.3	NA	<0.002 U	0.0011 J	NA	0.00202 J	NA	NA	NA	0.00168 J	NA	0.00287 J	<0.002 U	NA
LEAD	mg/L	0.015	NA	0.000652 J	0.000599 J	NA	<0.001 U	NA	NA	NA	<0.001 U	NA	0.000785 J	0.000879 J	NA
MANGANESE	mg/L	1.1	NA	1.35	1.36	NA	0.107	NA	NA	NA	2.71	NA	0.497	0.14	NA
NICKEL	mg/L	0.49	NA	0.00954	0.00978	NA	0.0121	NA	NA	NA	0.0211	NA	<0.004 U	<0.004 U	NA
SILVER	mg/L	0.51	NA	<0.001 U	<0.001 U	NA	<0.001 U	NA	NA	NA	<0.001 U	NA	<0.001 U	<0.001 U	NA
THALLIUM	mg/L	0.002	NA	0.0021	0.00181	NA	<0.001 U	NA	NA	NA	<0.001 U	NA	0.00103	0.00203	NA
VANADIUM	mg/L	0.72	NA	<0.001 U	<0.001 U	NA	0.00261	NA	NA	NA	0.00168 J	NA	0.000932 J	0.000728 J	NA
ZINC	mg/L	31	NA	0.0165 J	0.0156 J	NA	<0.025 U	NA	NA	NA	0.0159 J	NA	<0.025 U	<0.025 U	NA
Perchlorate (6850)															
PERCHLORATE	ug/L	17	<0.2 U	<0.2 U	<0.2 U	1150	NA	35.3	0.282 J	<0.2 U	NA	23.8	3.58	<0.2 U	<0.2 U
Mercury (7470A)															
MERCURY	mg/L	0.002	NA	<0.0002 U	<0.0002 U	NA	<0.0002 U	NA	NA	NA	<0.0002 U	NA	<0.0002 U	<0.0002 U	NA
Volatile Organic Compounds (8260B)															
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	NA	<2 UJ	NA	<2 U	NA	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	2.23	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 U	NA	<5 UJ	NA	<5 U	NA	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 UJ	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	<5 U	NA	<5 UJ	NA	<5 U	NA	<5 U	<5 U	<5 U	<5 U

LHAAP-18/24 Semi-Annual Sampling - December 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW10SW-120716 12/7/2016	18CPTMW12SW-120616 12/6/2016	18CPTMW12SW FD-120616 12/6/2016	18CPTMW14-121516 12/15/2016	18CPTMW14F-121516 12/15/2016	18CPTMW15-120716 12/7/2016	18CPTMW16-122916 12/29/2016	18CPTMW18-121516 12/15/2016	18CPTMW18F-121516 12/15/2016	18CPTMW19-121216 12/12/2016	18CPTMW19SW-121216 12/12/2016	18CPTMW22DW-120616 12/6/2016	18CPTMW22R-120616 12/6/2016
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 U	NA	<5 UJ	NA	<5 U	NA	<5 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	<5 UJ	<5 U	<5 U	<5 U	NA	<5 UJ	NA	<5 U	NA	<5 U	<5 U	4.3 J	3.22 J
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	0.579 J	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	3.94	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	11.3	NA	0.43 J	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	0.462 J	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	3.6	1.57	1.63	246	NA	2.1	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

LHAAP-18/24 Semi-Annual Sampling - December 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW22RF-120616 12/6/2016	18CPTMW23-120716 12/7/2016	18CPTMW23FD-120716 12/7/2016	18CPTMW23SW-120716 12/7/2016	18CPTMW23SWF-120716 12/7/2016	18CPTMW24-121316 12/13/2016	18CPTMW26SW-120716 12/7/2016	18WW02-121216 12/12/2016	18WW06-121216 12/12/2016	18WW08-120916 12/9/2016	18WW08FD-120916 12/9/2016	18WW09-120916 12/9/2016	18WW09F-120916 12/9/2016	18WW20-121516 12/15/2016
Location Description:			Site 18/24 – S, outside the fence line, along the outer loop road. Filtered	Site 18/24 – WNW, outside the fence line, near the road surrounding the fence line	Site 18/24 – WNW, outside the fence line, near the road surrounding the fence line. Duplicate	Site 18/24 – WNW, outside the fence line, near the road surrounding the fence line Shallow Wilcox	Site 18/24 – WNW, outside the fence line, near the road surrounding the fence line Shallow Wilcox. Filtered	Site 18/24 – E, outside the fence line, on the road surrounding the fence line	Site 18/24 – SSW, outside the fence line Shallow Wilcox	Site 18/24 – NW, outside the fence line. Wilcox well	Site 18/24 – W, just outside the fence line	Site 18/24 – NNW, outside the fence line	Site 18/24 – NNW, outside the fence line Duplicate	Site 18/24 – NW, outside the fence line, near Harrison Bayou	Site 18/24 – NW, outside the fence line, near Harrison Bayou Filtered	Site 18/24 – N, outside the fence line, near Harrison Bayou
Metals (6010C)																
ALUMINUM	mg/L	100	5.58	NA	NA	NA	<0.2 U	0.136 J	<0.2 U	0.865	NA	NA	NA	NA	0.219	<0.1 U
BERYLLIUM	mg/L	0.004	<0.002 U	NA	NA	NA	<0.002 U	<0.01 U	<0.002 U	<0.002 U	NA	NA	NA	NA	<0.002 U	<0.01 U
CALCIUM	mg/L		2.96	NA	NA	NA	23	443	56.7	7.12	NA	NA	NA	NA	9.23	2.59
IRON	mg/L		6.1	NA	NA	NA	49.4	9.44	61.4	1.95	NA	NA	NA	NA	24.7	3.73
MAGNESIUM	mg/L		2.15	NA	NA	NA	11.3	282	28.4	1.27	NA	NA	NA	NA	4.65	1.65
POTASSIUM	mg/L		0.717 J	NA	NA	NA	2.67	4.25	2.8	1.94	NA	NA	NA	NA	2.22	1.48 J
SELENIUM	mg/L	0.05	<0.02 U	NA	NA	NA	<0.02 U	<0.01 UJ	<0.02 U	<0.02 U	NA	NA	NA	NA	<0.02 U	<0.01 UJ
SODIUM	mg/L		50.4	NA	NA	NA	80.1	1090	320	13.8	NA	NA	NA	NA	8.57	22.7
Metals (6020A)																
ANTIMONY	mg/L	0.006	<0.001 U	NA	NA	NA	<0.001 U	<0.001 U	<0.001 U	<0.001 U	NA	NA	NA	NA	0.000586 J	<0.001 U
ARSENIC	mg/L	0.01	0.00314	NA	NA	NA	0.00175 J	0.017	0.0086	0.000603 J	NA	NA	NA	NA	0.00374	<0.001 U
BARIUM	mg/L	2	0.184	NA	NA	NA	0.276 J	10.2	0.716	0.047	NA	NA	NA	NA	NA	0.101
CADMIUM	mg/L	0.005	<0.0006 U	NA	NA	NA	<0.0006 U	0.000532 J	<0.0006 U	<0.0006 U	NA	NA	NA	NA	<0.0006 U	<0.0006 U
CHROMIUM	mg/L	0.1	0.00485	NA	NA	NA	<0.002 U	0.00513	0.00131 J	0.00501	NA	NA	NA	NA	0.013	<0.002 U
COBALT	mg/L	6.1	0.00965	NA	NA	NA	<0.001 U	0.00671	0.00428	<0.001 U	NA	NA	NA	NA	0.000928 J	0.00124 J
COPPER	mg/L	1.3	0.00378 J	NA	NA	NA	<0.002 U	0.00352 J	<0.002 U	0.00839	NA	NA	NA	NA	<0.002 U	<0.002 U
LEAD	mg/L	0.015	0.00272	NA	NA	NA	0.000543 J	0.000543 J	0.000665 J	0.0017 J	NA	NA	NA	NA	<0.001 U	<0.001 U
MANGANESE	mg/L	1.1	0.145	NA	NA	NA	0.649	0.549	1.36	0.0839	NA	NA	NA	NA	0.785	0.132
NICKEL	mg/L	0.49	0.00758 J	NA	NA	NA	<0.004 U	0.0165	0.00604 J	0.00434 J	NA	NA	NA	NA	0.00302 J	0.00386 J
SILVER	mg/L	0.51	<0.001 U	NA	NA	NA	<0.001 U	<0.001 U	<0.001 U	<0.001 U	NA	NA	NA	NA	<0.001 U	<0.001 U
THALLIUM	mg/L	0.002	0.00154	NA	NA	NA	0.00168	<0.001 U	0.00163	0.000451	NA	NA	NA	NA	0.000173 J	<0.001 U
VANADIUM	mg/L	0.72	0.00811	NA	NA	NA	<0.001 U	0.00281	0.000502 J	0.00233	NA	NA	NA	NA	0.00453	<0.001 U
ZINC	mg/L	31	0.618	NA	NA	NA	<0.025 U	0.0135 J	<0.025 U	<0.025 U	NA	NA	NA	NA	<0.025 U	<0.025 U
Perchlorate (6850)																
PERCHLORATE	ug/L	17	NA	91.3	112	<0.2 U	NA	79	<0.2 U	<0.2 U	<0.2 U	2390	2340	<0.2 U	NA	<0.2 U
Mercury (7470A)																
MERCURY	mg/L	0.002	<0.0002 U	NA	NA	NA	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	NA	NA	NA	NA	<0.0002 U	<0.0002 U
Volatile Organic Compounds (8260B)																
1,1,1,2-TETRACHLOROETHANE	ug/L	35	NA	<5 UJ	<5 UJ	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	NA	<4 U	<4 U	<10 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	NA	<2.5 U	<2.5 U	<6.26 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	0.416 J	0.438 J	NA	NA	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	NA	<10 U	<10 U	<25 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	NA	<3 U	<3 U	<7.5 U	NA	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	NA	NA	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	NA	<10 U	<10 U	<25 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	NA	<4 U	<4 U	<10 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	NA	<20 U	<20 U	<50 UJ	NA	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	NA	NA	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	NA	<2.5 U	<2.5 U	<6.26 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	NA	123	118	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	NA	<4 U	<4 U	<10 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	NA	<4 U	<4 U	<10 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	NA	<5 U	<2.5 U	<6.26 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
2-BUTANONE	ug/L	15000	NA	<50 U	<50 U	<125 UJ	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	NA	NA	<5 U
2-CHLOROTOLUENE	ug/L	490	NA	<2.5 U	<2.5 U	<6.26 U	NA	<0.25 U	<0.25 UJ	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U
2-HEXANONE	ug/L	120	NA	<50 U	<50 U	<125 UJ	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	NA	NA	<5 U

LHAAP-18/24 Semi-Annual Sampling - December 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW22RF-120616 12/6/2016	18CPTMW23-120716 12/7/2016	18CPTMW23FD-120716 12/7/2016	18CPTMW23SW-120716 12/7/2016	18CPTMW23SWF-120716 12/7/2016	18CPTMW24-121316 12/13/2016	18CPTMW26SW-120716 12/7/2016	18WW02-121216 12/12/2016	18WW06-121216 12/12/2016	18WW08-120916 12/9/2016	18WW08FD-120916 12/9/2016	18WW09-120916 12/9/2016	18WW09F-120916 12/9/2016	18WW20-121516 12/15/2016
4-CHLOROTOLUENE	ug/L	490	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	NA	<50 U	<50 U	<125 UJ	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	NA	NA	<5 U
ACETONE	ug/L	22000	NA	<50 U	<50 U	<125 UJ	NA	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	NA	NA	<5 U
BENZENE	ug/L	5	NA	<2.5 U	<2.5 U	<6.26 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	NA	NA	<0.25 U
BROMOBENZENE	ug/L	200	NA	<2.5 U	<2.5 U	<6.26 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	NA	<4 U	<4 U	<10 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
BROMOFORM	ug/L	120	NA	<10 U	<10 U	<25 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U
BROMOMETHANE	ug/L	34	NA	<10 U	<10 U	<25 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U
CARBON DISULFIDE	ug/L	2400	NA	<10 UJ	<10 U	65.2	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U
CARBON TETRACHLORIDE	ug/L	5	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
CHLOROBENZENE	ug/L	100	NA	<2.5 U	<2.5 U	<6.26 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U
CHLOROETHANE	ug/L	98000	NA	<10 U	<10 U	<25 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U
CHLOROFORM	ug/L	240	NA	<2.5 U	<2.5 U	<6.26 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U
CHLOROMETHANE	ug/L	70	NA	<10 U	<10 U	<25 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	167	162	<12.5 U	NA	20.7	<0.5 U	<0.5 U	<0.5 U	1.87	1.66	NA	NA	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
DIBROMOMETHANE	ug/L	120	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
ETHYLBENZENE	ug/L	700	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
M,P-XYLENE	ug/L	10000	NA	<10 U	<10 U	<25 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U
METHYLENE CHLORIDE	ug/L	5	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
NAPHTHALENE	ug/L	490	NA	<4 U	<4 U	<10 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U
N-BUTYLBENZENE	ug/L	1200	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
N-PROPYLBENZENE	ug/L	980	NA	<2.5 U	<2.5 U	<6.26 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U
O-XYLENE	ug/L	10000	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
STYRENE	ug/L	100	NA	<2.5 U	<2.5 U	<6.26 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
TETRACHLOROETHENE	ug/L	5	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
TOLUENE	ug/L	1000	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	NA	<10 U	<10 U	<25 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U
TRICHLOROETHENE	ug/L	5	NA	2400	2330	<12.5 U	NA	5.08	<0.5 U	<0.5 U	<0.5 U	3.91	3.63	NA	NA	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U
VINYL CHLORIDE	ug/L	2	NA	<5 U	<5 U	<12.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.271 J	<0.5 U	NA	NA	<0.5 U

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

LHAAP-18/24 Semi-Annual Sampling - December 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18WW25-120916 12/9/2016	18WW25F-120916 12/9/2016	AWD1-122816 12/28/2016	AWD3-122816 12/28/2016	AWD4-121316 12/13/2016	AWD4F-121316 12/13/2016	AWD4FD-121316 12/13/2016	AWD4FDF-121316 12/13/2016	C02-120916 12/9/2016	C03-122116 12/21/2016	C06-121616 12/16/2016	C06F-121616 12/16/2016	C08-121616 12/16/2016	C08F-121616 12/16/2016
Location Description:			Site 18/24 – NW, outside the fence line, near Harrison Bayou	Site 18/24 – NW, outside the fence line, near Harrison Bayou Filtered	Site 18/24 – W, just inside the fence line	Site 18/24 – NNW, outside the fence line, along the perimeter road.	Site 18/24 – NNW, outside the fence line, along the perimeter road	Site 18/24 – NNW, outside the fence line, along the perimeter road Filtered	Site 18/24 – NNW, outside the fence line, along the perimeter road. Duplicate	Site 18/24 – NNW, outside the fence line, along the perimeter road. Duplicate Filtered	Site 18/24 – W, outside the fence line, along the outer loop road	Site 18/24 – NE, outside the fence line, along the outer loop road	Site 18/24 – NE, outside the fence line, along the road heading northeast	Site 18/24 – NE, outside the fence line, along the road heading northeast Filtered	Site 18/24 – E, outside the fence line, along the road heading east-northeast	Site 18/24 – E, outside the fence line, along the road heading east-northeast Filtered
Metals (6010C)																
ALUMINUM	mg/L	100	NA	<0.2 U	NA	0.826	NA	0.818	NA	1.46	NA	NA	NA	<0.1 U	NA	<0.1 U
BERYLLIUM	mg/L	0.004	NA	<0.002 U	NA	<0.002 U	NA	<0.01 U	NA	<0.01 U	NA	NA	NA	<0.01 U	NA	<0.01 U
CALCIUM	mg/L		NA	19.4	NA	0.878	NA	7.48	NA	7.17	NA	NA	NA	22.6	NA	275
IRON	mg/L		NA	11.7	NA	1.79	NA	1.7	NA	3.03	NA	NA	NA	52.1	NA	0.158 J
MAGNESIUM	mg/L		NA	10.6	NA	0.809	NA	6.44	NA	6.06	NA	NA	NA	10.8	NA	171
POTASSIUM	mg/L		NA	1.58	NA	0.716 J	NA	0.728 J	NA	0.731 J	NA	NA	NA	3.6	NA	2.06
SELENIUM	mg/L	0.05	NA	<0.02 U	NA	0.0102 J	NA	<0.01 UJ	NA	<0.01 UJ	NA	NA	NA	<0.01 U	NA	<0.01 U
SODIUM	mg/L		NA	40	NA	27.9	NA	59.1	NA	56.1	NA	NA	NA	209	NA	914
Metals (6020A)																
ANTIMONY	mg/L	0.006	NA	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	NA	NA	<0.001 U	NA	<0.001 U
ARSENIC	mg/L	0.01	NA	0.00408	NA	0.000697 J	NA	0.000763 J	NA	0.000577 J	NA	NA	NA	0.00254	NA	0.00721
BARIUM	mg/L	2	NA	0.269	NA	0.055	NA	0.304	NA	0.317	NA	NA	NA	0.958	NA	5.64
CADMIUM	mg/L	0.005	NA	<0.0006 U	NA	<0.0006 U	NA	<0.0006 U	NA	<0.0006 U	NA	NA	NA	<0.0006 U	NA	0.000525 J
CHROMIUM	mg/L	0.1	NA	<0.002 U	NA	0.504	NA	0.136	NA	0.286	NA	NA	NA	<0.002 U	NA	0.00217 J
COBALT	mg/L	6.1	NA	0.00273	NA	0.00308	NA	0.00878	NA	0.00938	NA	NA	NA	0.00252	NA	0.00553
COPPER	mg/L	1.3	NA	<0.002 U	NA	0.00863	NA	0.00802	NA	0.00911	NA	NA	NA	0.00244 J	NA	0.00364 J
LEAD	mg/L	0.015	NA	<0.001 U	NA	<0.001 U	NA	0.00069 J	NA	0.000868 J	NA	NA	NA	0.00109 J	NA	0.000765 J
MANGANESE	mg/L	1.1	NA	2.42	NA	0.0265	NA	0.0797	NA	0.0839	NA	NA	NA	0.905	NA	2.2
NICKEL	mg/L	0.49	NA	0.00222 J	NA	0.127	NA	0.6	NA	0.645	NA	NA	NA	0.00275 J	NA	0.0126
SILVER	mg/L	0.51	NA	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	NA	NA	<0.001 UJ	NA	<0.001 UJ
THALLIUM	mg/L	0.002	NA	0.00128	NA	<0.0002 U	NA	<0.001 U	NA	<0.001 U	NA	NA	NA	<0.0002 U	NA	<0.0002 U
VANADIUM	mg/L	0.72	NA	<0.001 U	NA	0.00258	NA	0.00125 J	NA	0.00246	NA	NA	NA	<0.001 U	NA	0.000586 J
ZINC	mg/L	31	NA	<0.025 U	NA	<0.025 U	NA	<0.025 U	NA	<0.025 U	NA	NA	NA	<0.025 U	NA	0.0227 J
Perchlorate (6850)																
PERCHLORATE	ug/L	17	<0.2 U	NA	12.9	140	1520	NA	1350	NA	<0.2 U	35.6	0.176 J	NA	<0.2 U	NA
Mercury (7470A)																
MERCURY	mg/L	0.002	NA	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	NA	NA	NA	<0.0002 U	NA	<0.0002 U
Volatile Organic Compounds (8260B)																
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	NA	<40 U	<0.8 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	NA	121	<0.5 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA
1,1-DICHLOROETHENE	ug/L	7	<1 U	NA	122 J	1.32 J	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 U	NA	<1 U	NA
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	NA	<30 U	<0.6 U	<0.3 U	NA	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 U	NA	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	NA	<100 U	<2 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 U	NA	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	NA	<40 U	<0.8 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	NA	<200 U	<4 U	<2 U	NA	<2 U	NA	<2 U	<2 U	<2 U	NA	<2 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	NA	<25 U	<0.5 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	NA	179	2.58	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	NA	<40 U	<0.8 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	NA	<40 U	<0.8 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	NA	<25 U	<0.5 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
2-BUTANONE	ug/L	15000	<5 U	NA	<500 U	<10 U	<5 U	NA	<5 U	NA	<5 U	<5 U	<5 U	NA	<5 U	NA
2-CHLOROTOLUENE	ug/L	490	<0.25 U	NA	<25 U	<0.5 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA
2-HEXANONE	ug/L	120	<5 U	NA	<500 U	<10 U	<5 U	NA	<5 U	NA	<5 U	<5 U	<5 U	NA	<5 U	NA

LHAAP-18/24 Semi-Annual Sampling - December 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18WW25-120916 12/9/2016	18WW25F-120916 12/9/2016	AWD1-122816 12/28/2016	AWD3-122816 12/28/2016	AWD4-121316 12/13/2016	AWD4F-121316 12/13/2016	AWD4FD-121316 12/13/2016	AWD4FDF-121316 12/13/2016	C02-120916 12/9/2016	C03-122116 12/21/2016	C06-121616 12/16/2016	C06F-121616 12/16/2016	C08-121616 12/16/2016	C08F-121616 12/16/2016
4-CHLOROTOLUENE	ug/L	490	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	NA	<500 U	<10 U	<5 U	NA	<5 U	NA	<5 U	<5 U	<5 U	NA	<5 U	NA
ACETONE	ug/L	22000	6.45 J	NA	<500 U	<10 U	<5 U	NA	<5 U	NA	<5 U	4.51 J	<5 U	NA	<5 U	NA
BENZENE	ug/L	5	<0.25 U	NA	<25 U	<0.5 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA
BROMOBENZENE	ug/L	200	<0.25 U	NA	<25 U	<0.5 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	NA	<40 U	<0.8 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
BROMOFORM	ug/L	120	<1 U	NA	<100 U	<2 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 U	NA	<1 U	NA
BROMOMETHANE	ug/L	34	<1 U	NA	<100 U	<2 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 U	NA	<1 U	NA
CARBON DISULFIDE	ug/L	2400	<1 U	NA	<100 U	<2 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 U	NA	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	NA	<50 U	8.13	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
CHLOROBENZENE	ug/L	100	<0.25 U	NA	<25 U	<0.5 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA
CHLOROETHANE	ug/L	98000	<1 U	NA	<100 U	<2 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 U	NA	<1 U	NA
CHLOROFORM	ug/L	240	<0.25 U	NA	<25 U	1.08 J	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA
CHLOROMETHANE	ug/L	70	<1 U	NA	<100 U	<2 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 U	NA	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	NA	17200	8.43	0.648 J	NA	0.634 J	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
ETHYLBENZENE	ug/L	700	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
M,P-XYLENE	ug/L	10000	<1 U	NA	<100 U	<2 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 U	NA	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	<0.5 U	NA	55.1 J	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
NAPHTHALENE	ug/L	490	<0.4 U	NA	<40 U	<0.8 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	<0.25 U	NA	<25 U	<0.5 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA
O-XYLENE	ug/L	10000	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
STYRENE	ug/L	100	<0.25 U	NA	<25 U	<0.5 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	<0.5 U	NA	<50 U	1.05 J	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
TOLUENE	ug/L	1000	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	NA	<100 U	<2 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 U	NA	<1 U	NA
TRICHLOROETHENE	ug/L	5	<0.5 U	NA	6050	285	1.51	NA	1.49	NA	<0.5 U	<0.5 U	<0.5 U	NA	2.18	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	NA	<50 U	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	<0.5 U	NA	141	<1 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

LHAAP-18/24 Semi-Annual Sampling - December 2016

Location ID: / Sample Date:	Units	MCL/ PCL	MW1-122716 12/27/2016	MW1FD-122716 12/27/2016	MW2-122716 12/27/2016	MW3-122916 12/29/2016	MW6-122816 12/28/2016	MW7-120616 12/6/2016	MW8-121516 12/15/2016	MW8FD-121516 12/15/2016	MW9-120616 12/6/2016	MW10-120716 12/7/2016	MW12-122116 12/21/2016	MW13-120916 12/9/2016	MW14-122816 12/28/2016	MW16-121216 12/12/2016
Location Description:			Site 18/24 – N, inside the fence line	Site 18/24 – N, inside the fence line. Duplicate	Site 18/24 – NE, inside the fence line	Site 18/24 – N, inside the fence line	Site 18/24 – N, inside the fence line.	Site 18/24 – SW, outside the fence line, along the road surrounding the fence line	Site 18/24 – SW, outside the fence line	Site 18/24 – SW, outside the fence line Duplicate	Site 18/24 – WSW, outside the fence line, along the road surrounding the fence line	Site 18/24 – W, outside the fence line, along the outer loop road	Site 18/24 – W, inside the fencline, outer region	Site 18/24 – W, outside the fence line, along the outter loop road	LHAAP-18/24 - inside containment	Site 18/24 – W, outside the fence line, along the road surrounding the fence line
Metals (6010C)																
ALUMINUM	mg/L	100	0.125 J	0.146 J	<0.1 U	<0.2 U	NA	NA	<0.1 U	<0.1 U	NA	0.187 J	NA	NA	NA	0.742
BERYLLIUM	mg/L	0.004	<0.01 U	<0.01 U	<0.01 U	<0.002 U	NA	NA	<0.01 U	<0.01 U	NA	<0.002 U	NA	NA	NA	<0.002 U
CALCIUM	mg/L		60.9	58.2	82.5	30	NA	NA	5.01	5.14	NA	14.6	NA	NA	NA	19.4
IRON	mg/L		13.8	14	11.3	0.737	NA	NA	1.59	1.49	NA	40.1	NA	NA	NA	40.3
MAGNESIUM	mg/L		52.8	49.7	61.1	17	NA	NA	4.17	4.34	NA	6.76	NA	NA	NA	11.5
POTASSIUM	mg/L		3.49	3.28	3.43	1.74	NA	NA	<1 U	<1 U	NA	3.44	NA	NA	NA	3.28
SELENIUM	mg/L	0.05	<0.01 U	<0.01 U	<0.01 U	0.014 J	NA	NA	<0.01 UJ	<0.01 UJ	NA	<0.02 U	NA	NA	NA	<0.02 U
SODIUM	mg/L		341	325	254	254	NA	NA	92.9	96.4	NA	54.7	NA	NA	NA	94.9
Metals (6020A)																
ANTIMONY	mg/L	0.006	0.000622 J	<0.001 U	0.000902 J	<0.001 U	NA	NA	<0.001 U	<0.001 U	NA	<0.001 U	NA	NA	NA	<0.001 U
ARSENIC	mg/L	0.01	0.00135 J	0.00145 J	0.0103	0.000839 J	NA	NA	0.00117 J	0.00104 J	NA	0.00214	NA	NA	NA	0.0117
BARIUM	mg/L	2	2.22	2.16	3.42	0.644	NA	NA	0.09	0.0848	NA	0.388 J	NA	NA	NA	0.514
CADMIUM	mg/L	0.005	0.00111 J	0.00103 J	0.000315 J	0.000562 J	NA	NA	0.000367 J	0.000364 J	NA	0.00243	NA	NA	NA	0.000961 J
CHROMIUM	mg/L	0.1	0.646	0.739	0.016	0.00561	NA	NA	0.231	0.288	NA	0.0155	NA	NA	NA	0.0178
COBALT	mg/L	6.1	0.0629	0.0645	0.0594	0.00766	NA	NA	0.0176	0.0162	NA	0.00995	NA	NA	NA	0.0052
COPPER	mg/L	1.3	0.00462	0.00485	0.00218 J	0.00147 J	NA	NA	0.0065	0.00612	NA	0.00375 J	NA	NA	NA	0.00134 J
LEAD	mg/L	0.015	<0.001 U	<0.001 U	<0.001 U	0.000758 J	NA	NA	0.000845 J	0.000638 J	NA	0.000569 J	NA	NA	NA	0.0011 J
MANGANESE	mg/L	1.1	3.42	3.29	3.39	2.64	NA	NA	0.174	0.157	NA	0.571	NA	NA	NA	0.595
NICKEL	mg/L	0.49	2.02	1.95	0.0436	0.00745 J	NA	NA	0.182	0.149	NA	0.0335	NA	NA	NA	0.0125
SILVER	mg/L	0.51	<0.001 U	<0.001 U	<0.001 U	<0.001 U	NA	NA	<0.001 U	<0.001 U	NA	<0.001 U	NA	NA	NA	<0.001 U
THALLIUM	mg/L	0.002	0.000221 J	0.000118 J	0.000109 J	0.0293	NA	NA	<0.001 U	<0.001 U	NA	0.00166	NA	NA	NA	0.00196
VANADIUM	mg/L	0.72	0.000547 J	<0.001 U	0.00132 J	0.000552 J	NA	NA	0.00141 J	0.00112 J	NA	<0.001 U	NA	NA	NA	0.00199 J
ZINC	mg/L	31	0.0126 J	0.0136 J	0.128	<0.025 U	NA	NA	0.0171 J	0.0151 J	NA	0.0192 J	NA	NA	NA	0.0491 J
Perchlorate (6850)																
PERCHLORATE	ug/L	17	16000	15600	1290	17600	5160	12300	2160	2100	219	<0.2 U	<0.2 U	<0.2 U	84200	<0.2 U
Mercury (7470A)																
MERCURY	mg/L	0.002	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	NA	NA	<0.0002 U	<0.0002 U	NA	<0.0002 U	NA	NA	NA	<0.0002 U
Volatile Organic Compounds (8260B)																
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<20 U	<0.8 U
1,1,2-TRICHLOROETHANE	ug/L	5	0.437 J	0.474 J	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
1,1-DICHLOROETHANE	ug/L	4900	0.453 J	0.423 J	<62.6 U	5.32	2.92	<2.5 U	<0.25 U	<0.25 U	0.731 J	<0.25 U	1.42	NA	18.2 J	0.89 J
1,1-DICHLOROETHENE	ug/L	7	2.14	2.21	142 J	40	0.866 J	8.47 J	<1 U	<1 U	1.66 J	<1 U	2.43	NA	80.4 J	5.03
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<75 U	<0.75 U	<0.3 U	<3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	NA	<15 U	<0.6 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<250 U	<2.5 U	<1 U	<10 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<50 U	<2 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<20 U	<0.8 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<500 U	<5 U	<2 U	<20 U	<2 U	<2 U	<2 U	<2 UJ	<2 U	NA	<100 U	<4 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<12.5 U	<0.5 U
1,2-DICHLOROETHANE	ug/L	5	75.1	74.3	<125 U	<1.25 U	<0.5 U	17.1	1.85	1.87	0.304 J	<0.5 U	1.7	NA	51	30.8
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<20 U	<0.8 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<125 U	<1.25 U	0.863 J	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<20 U	<0.8 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<62.6 U	<0.626 U	0.144 J	<2.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<12.5 U	<0.5 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<1250 U	<12.5 U	<5 U	<50 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	NA	<250 U	<10 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<62.6 U	<0.626 U	<0.25 U	<2.5 UJ	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	<0.25 U	NA	<12.5 U	<0.5 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<1250 U	<12.5 U	<5 U	<50 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	NA	<250 U	<10 U

LHAAP-18/24 Semi-Annual Sampling - December 2016

Location ID: / Sample Date:	Units	MCL/ PCL	MW1- 122716 12/27/2016	MW1FD- 122716 12/27/2016	MW2- 122716 12/27/2016	MW3- 122916 12/29/2016	MW6- 122816 12/28/2016	MW7- 120616 12/6/2016	MW8- 121516 12/15/2016	MW8FD- 121516 12/15/2016	MW9- 120616 12/6/2016	MW10- 120716 12/7/2016	MW12- 122116 12/21/2016	MW13- 120916 12/9/2016	MW14- 122816 12/28/2016	MW16- 121216 12/12/2016
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<1250 U	<12.5 U	<5 U	<50 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	NA	<250 U	<10 U
ACETONE	ug/L	22000	<5 U	<5 U	<1250 U	<12.5 U	3.21 J	<50 UJ	<5 U	<5 U	<5 U	<5 UJ	<5 U	NA	<250 U	<10 U
BENZENE	ug/L	5	0.98 J	0.997 J	<62.6 U	0.331 J	0.162 J	1.85 J	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<12.5 U	<0.5 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<12.5 U	<0.5 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	110 J	<1 U	<0.4 U	<4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<20 U	<0.8 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
BROMOFORM	ug/L	120	<1 U	<1 U	<250 U	<2.5 U	<1 U	<10 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<50 U	<2 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	<250 U	<2.5 U	<1 U	<10 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<50 U	<2 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<250 U	<2.5 U	<1 U	7.19 J	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<50 U	<2 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	3.71 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<12.5 U	<0.5 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<250 U	<2.5 U	<1 U	<10 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<50 U	<2 U
CHLOROFORM	ug/L	240	2.75	2.73	104 J	2.02 J	<0.25 U	13.8	0.431 J	0.427 J	3.85	<0.25 U	<0.25 U	NA	<12.5 U	<0.5 U
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<250 U	<2.5 U	<1 U	<10 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<50 U	<2 U
CIS-1,2-DICHLOROETHENE	ug/L	70	297	279	31500	89.2	8.94	13.3	1.85	1.79	62.9	<0.5 U	45.7	NA	1660	16
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<250 U	<2.5 U	<1 U	<10 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<50 U	<2 U
METHYLENE CHLORIDE	ug/L	5	0.432 J	0.496 J	184000	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<20 U	<0.8 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<12.5 U	<0.5 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	34.1 J	<0.626 U	<0.25 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<12.5 U	<0.5 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<125 U	1.64 J	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	1.26	0.935 J	82.1 J	4.36	<0.5 U	<5 U	<0.5 U	<0.5 U	0.658 J	<0.5 U	0.399 J	NA	20.5 J	<1 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<250 U	<2.5 U	<1 U	<10 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<50 U	<2 U
TRICHLOROETHENE	ug/L	5	891	860	11800	523	20.2	1570	245	241	1250	0.745 J	193	NA	6630	460
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<25 U	<1 U
VINYL CHLORIDE	ug/L	2	1.89	2.06	<125 U	27.3	5.37	<5 U	<0.5 U	<0.5 U	0.383 J	<0.5 U	0.346 J	NA	<25 U	<1 U

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

LHAAP-18/24 Semi-Annual Sampling - December 2016

Location ID: / Sample Date:	Units	MCL/ PCL	MW17-120716 12/7/2016	MW18-121516 12/15/2016	MW18F-121516 12/15/2016	MW19-122116 12/21/2016	MW19F-122116 12/21/2016	MW20-120616 12/6/2016	MW22-122716 12/27/2016	MW23-122816 12/28/2016
Location Description:			Site 18/24 – W, outside the fence line, along the outer loop road	Site 18/24 – SW, outside the fence line, along the outer loop road	Site 18/24 – SW, outside the fence line, along the outer loop road Filtered	Site 18/24 – SSW, outside the fence line, along the outer loop road	Site 18/24 – SSW, outside the fence line, along the outer loop road Filtered	Site 18/24 – S, outside the fence line, along the outer loop road	Site 18/24 – ESE, inside the fence line	Site 18/24 – S, inside the fence line
Metals (6010C)										
ALUMINUM	mg/L	100	NA	NA	4.62	NA	2.12	NA	NA	NA
BERYLLIUM	mg/L	0.004	NA	NA	<0.01 U	NA	<0.002 U	NA	NA	NA
CALCIUM	mg/L		NA	NA	9.74	NA	9.99 J	NA	NA	NA
IRON	mg/L		NA	NA	7.67	NA	16.3	NA	NA	NA
MAGNESIUM	mg/L		NA	NA	5.52	NA	4.51	NA	NA	NA
POTASSIUM	mg/L		NA	NA	2.04	NA	2.1	NA	NA	NA
SELENIUM	mg/L	0.05	NA	NA	<0.01 UJ	NA	0.0145 J	NA	NA	NA
SODIUM	mg/L		NA	NA	230	NA	55.1	NA	NA	NA
Metals (6020A)										
ANTIMONY	mg/L	0.006	NA	NA	<0.001 U	NA	0.0011 J	NA	NA	NA
ARSENIC	mg/L	0.01	NA	NA	0.00438	NA	0.00729	NA	NA	NA
BARIUM	mg/L	2	NA	NA	0.155	NA	0.165	NA	NA	NA
CADMIUM	mg/L	0.005	NA	NA	0.00151	NA	0.000785 J	NA	NA	NA
CHROMIUM	mg/L	0.1	NA	NA	0.00887	NA	0.0131	NA	NA	NA
COBALT	mg/L	6.1	NA	NA	0.00502	NA	0.00911	NA	NA	NA
COPPER	mg/L	1.3	NA	NA	0.0038 J	NA	0.00932	NA	NA	NA
LEAD	mg/L	0.015	NA	NA	0.00221	NA	0.00437	NA	NA	NA
MANGANESE	mg/L	1.1	NA	NA	0.177	NA	0.857	NA	NA	NA
NICKEL	mg/L	0.49	NA	NA	0.0381	NA	0.0358	NA	NA	NA
SILVER	mg/L	0.51	NA	NA	<0.001 U	NA	<0.001 U	NA	NA	NA
THALLIUM	mg/L	0.002	NA	NA	<0.001 U	NA	0.000432	NA	NA	NA
VANADIUM	mg/L	0.72	NA	NA	0.00857	NA	0.0107	NA	NA	NA
ZINC	mg/L	31	NA	NA	0.0173 J	NA	0.0383 J	NA	NA	NA
Perchlorate (6850)										
PERCHLORATE	ug/L	17	<0.2 U	<0.2 U	NA	<0.2 U	NA	<0.2 U	363	71500
Mercury (7470A)										
MERCURY	mg/L	0.002	NA	NA	<0.0002 U	NA	<0.0002 U	NA	NA	NA
Volatile Organic Compounds (8260B)										
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<1 U	<4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.626 U	<2.5 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	NA	<1 U	NA	<1 U	<2.5 U	<10 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	NA	<0.3 U	NA	<0.3 U	<0.75 U	<3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	NA	<1 U	NA	<1 U	<2.5 U	<10 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<1 U	<4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 UJ	<2 U	NA	<2 U	NA	<2 U	<5 U	<20 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.626 U	<2.5 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	5.95	57.9
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<1 U	<4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<1 U	<4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.626 U	<2.5 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
2-BUTANONE	ug/L	15000	<5 UJ	<5 U	NA	<5 U	NA	<5 U	<12.5 UJ	<50 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 UJ	<0.626 U	<2.5 U
2-HEXANONE	ug/L	120	<5 UJ	<5 U	NA	<5 U	NA	<5 U	<12.5 UJ	<50 U

LHAAP-18/24 Semi-Annual Sampling - December 2016

Location ID: / Sample Date:	Units	MCL/ PCL	MW17-120716 12/7/2016	MW18-121516 12/15/2016	MW18F-121516 12/15/2016	MW19-122116 12/21/2016	MW19F-122116 12/21/2016	MW20-120616 12/6/2016	MW22-122716 12/27/2016	MW23-122816 12/28/2016
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 UJ	<5 U	NA	<5 U	NA	<5 U	<12.5 U	<50 U
ACETONE	ug/L	22000	<5 UJ	<5 U	NA	3.05 J	NA	2.9 J	<12.5 UJ	<50 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	3.07	<2.5 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.626 U	<2.5 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<1 U	<4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
BROMOFORM	ug/L	120	<1 U	<1 U	NA	<1 U	NA	<1 U	<2.5 U	<10 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	NA	<1 U	NA	<1 U	<2.5 U	<10 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	NA	<1 U	NA	<1 U	<2.5 U	<10 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.626 U	<2.5 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	NA	<1 U	NA	<1 U	<2.5 U	<10 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	4.91	7.32 J
CHLOROMETHANE	ug/L	70	<1 U	<1 U	NA	<1 U	NA	<1 U	<2.5 UJ	<10 U
CIS-1,2-DICHLOROETHENE	ug/L	70	0.495 J	0.909 J	NA	1.07	NA	<0.5 U	4.86	12.4
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	NA	<1 U	NA	<1 U	<2.5 U	<10 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<1 U	<4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.626 U	<2.5 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.626 U	<2.5 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	0.766 J	<5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	NA	<1 U	NA	<1 U	<2.5 U	<10 U
TRICHLOROETHENE	ug/L	5	<0.5 U	7.58	NA	2.62	NA	<0.5 U	566	2140
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<1.25 U	<5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	1.29 J	<5 U

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Perimeter Well Sampling - December 2016

Location ID: Sample Date:	Units	MCL/ PCL	PW133-120216 12/2/2016	PW133FD-120216 12/2/2016	PW134-120216 12/2/2016
Location Description:			LHAAP Perimeter - NW.	LHAAP Perimeter - NW. Duplicate	LHAAP Perimeter - NW.
Perchlorate (6850)					
PERCHLORATE	ug/L	17	0.513	0.522	0.947

MCL - Maximum Contaminant Level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

ug/L - micrograms per liter

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

February 28, 2017

DAIM-ODB-LO

Mr. Rich Mayer
US Environmental Protection Agency
Federal Facilities Section R6
1445 Ross Avenue
Dallas, TX 75202-2733

Re: Technical Memorandum for Groundwater Geochemistry Rebound Evaluation for LHAAP-35B (37) at Longhorn Army Ammunition Plant, Karnack, Texas

Dear Mr. Mayer,

The above-referenced document is being transmitted to you for review. In accordance with the Federal Facilities Agreement for Longhorn, review comments are requested by March 30, 2017.

The document was prepared by AECOM on behalf of the Army as part of AECOM's Performance Based Remediation contract for the facility. I ask that Debra Richmann, AECOM's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
A. Palmie, TCEQ, Austin, TX
P. Bruckwicki, Caddo Lake NWR, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USAEC, San Antonio, TX
D. Richmann, AECOM – San Antonio, TX (for project files)

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

February 28, 2017

DAIM-ODB-LO

Ms. April Palmie
Texas Commission on Environmental Quality Superfund Section, MC-136
12100 Park 35 Circle, Bldg D
Austin, TX 78753

Re: Technical Memorandum for Groundwater Geochemistry Rebound Evaluation for LHAAP-35B (37) at Longhorn Army Ammunition Plant, Karnack, Texas

Dear Ms. Palmie,

The above-referenced document is being transmitted to you for review. In accordance with the Federal Facilities Agreement for Longhorn, review comments are requested by March 30, 2017.

The document was prepared by AECOM on behalf of the Army as part of AECOM's Performance Based Remediation contract for the facility. I ask that Debra Richmann, AECOM's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
R. Mayer, USEPA Region 6, Dallas, TX
P. Bruckwicki, Caddo Lake NWR, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USAEC, San Antonio, TX
D. Richmann, AECOM, San Antonio, TX (for project files)

From: Mayer, Richard <mayer.richard@epa.gov>
Sent: Tuesday, March 07, 2017 4:57 PM
To: Snow, JoLynn; rose.m.zeiler.civ@mail.mil
Cc: Williams, Aaron K CIV USARMY CESWT (US); rose.m.zeiler.civ@mail.mil; 'nicholas.b.smith56.civ@mail.mil'; Smith, Richard P CIV USARMY CESWF (US); Richmann, Debra; Sharp, Elspeth; April Palmie; Becher, Kent; Harrison, Dorelle
Subject: RE: EPA approval of the Draft Longhorn AAP Site 35B(37) Groundwater Geochemistry Rebound Evaluation Tech Memo

Good Afternoon JoLynn/Rose, EPA has reviewed the Draft Longhorn AAP Site 35B(37) Groundwater Geochemistry Rebound Evaluation Tech Memo and accept the Tech Memo and the conclusions.

From: Snow, JoLynn [mailto:JoLynn.Snow@aecom.com]
Sent: Tuesday, February 28, 2017 3:49 PM
To: April Palmie <april.palmie@tceq.texas.gov>; Mayer, Richard <mayer.richard@epa.gov>
Cc: Williams, Aaron K CIV USARMY CESWT (US) <Aaron.K.Williams@usace.army.mil>; rose.m.zeiler.civ@mail.mil; 'nicholas.b.smith56.civ@mail.mil' <nicholas.b.smith56.civ@mail.mil>; Smith, Richard P CIV USARMY CESWF (US) <Richard.P.Smith@usace.army.mil>; Richmann, Debra <debra.richmann@aecom.com>; Sharp, Elspeth <elspeth.sharp@aecom.com>
Subject: Draft LHAAP-35B(37) Groundwater Geochemistry Rebound Evaluation Tech Memo

Good afternoon Rich and April,

Attached is the LHAAP-37 Geochemistry Rebound Tech Memo for your review. Please let me know if you need anything else.

Thank you,
JoLynn

JoLynn Snow
Project Administrator, AECOM Environment
Direct: 1-210-823-6710
jolynn.snow@aecom.com

AECOM
4921 Shed Road, Suite 400
Bossier City, LA, 71111
318- 742-3191
aecom.com

From: April Palmie <april.palmie@tceq.texas.gov>
Sent: Tuesday, March 07, 2017 4:09 PM
To: Snow, JoLynn; mayer.richard@epa.gov
Cc: Williams, Aaron K CIV USARMY CESWT (US); rose.m.zeiler.civ@mail.mil; 'nicholas.b.smith56.civ@mail.mil'; Smith, Richard P CIV USARMY CESWF (US); Richmann, Debra; Sharp, Elspeth; April Palmie
Subject: RE: Draft LHAAP-35B(37) Groundwater Geochemistry Rebound Evaluation Tech Memo

I've reviewed the Draft LHAAP-35B(37) Groundwater Geochemistry Rebound Evaluation Tech Memo and accept the Tech Memo and conclusions.

April Palmie
Project and Grant Manager
Superfund Section
Remediation Division
Texas Commission on Environmental Quality
Phone: (512) 239-4152
Email: April.Palmie@tceq.texas.gov

From: Snow, JoLynn [mailto:JoLynn.Snow@aecom.com]
Sent: Tuesday, February 28, 2017 3:49 PM
To: April Palmie <april.palmie@tceq.texas.gov>; mayer.richard@epa.gov
Cc: Williams, Aaron K CIV USARMY CESWT (US) <Aaron.K.Williams@usace.army.mil>; rose.m.zeiler.civ@mail.mil; 'nicholas.b.smith56.civ@mail.mil' <nicholas.b.smith56.civ@mail.mil>; Smith, Richard P CIV USARMY CESWF (US) <Richard.P.Smith@usace.army.mil>; Richmann, Debra <debra.richmann@aecom.com>; Sharp, Elspeth <elspeth.sharp@aecom.com>
Subject: Draft LHAAP-35B(37) Groundwater Geochemistry Rebound Evaluation Tech Memo

Good afternoon Rich and April,

Attached is the LHAAP-37 Geochemistry Rebound Tech Memo for your review. Please let me know if you need anything else.

Thank you,
JoLynn

JoLynn Snow
Project Administrator, AECOM Environment
Direct: 1-210-823-6710
jolynn.snow@aecom.com

AECOM
4921 Shed Road, Suite 400
Bossier City, LA, 71111
318- 742-3191
aecom.com

MEMORANDUM FOR RECORD

February 28, 2017

SUBJECT: Groundwater Geochemistry Rebound Evaluation for LHAAP-35B (37) at Longhorn Army Ammunition Plant, Karnack, Texas

Introduction

This memorandum presents an updated assessment of progress toward restoration of LHAAP-35B (37) groundwater geochemistry to conditions similar to those existing prior to the Bio plug study conducted between October 2012 and October 2014. The purpose of this assessment is to determine whether the aquifer has rebounded to its pre-Bio plug study condition. Nine monitoring wells at LHAAP-35B (37) that are screened in the Shallow Zone (35BWW04, 35BWW05, 35BWW06, 35BWW07, 35BWW08, 35BWW09, 35BWW11, 35BWW14, and LHSMW58) and one well that is screened in the Intermediate Zone (35BWW03) were sampled in February 2012 and July 2012 by Cherokee CRC, LLC (CCRC), and the U.S. Army Aberdeen Testing Center (ATC), respectively, before beginning the Bio plug study. These wells and three additional monitoring wells at the site (35BWW01, 35BWW12, and 35BWW13) were sampled after termination of the Bio plug study, in October 2015, December 2015, February 2016, and most recently in August 2016 by AECOM Technical Services, Inc., (AECOM) as part of the aquifer rebound evaluation presented in this memo. Geochemical data are available for a subset of wells from 2006. Figure 1 is a site map showing monitoring well locations, the extent of the May 2013 (baseline) VOC groundwater plumes, and the location of the Bio plug study (AECOM, 2016).

Groundwater Sampling Data Comparison

The pre-Bio plug study and post-Bio plug study groundwater geochemical sample results for pH, oxidation reduction potential (ORP), dissolved oxygen (DO), and conductivity from nine monitoring wells in the Shallow Zone (35BWW04, 35BWW05, 35BWW06, 35BWW07, 35BWW08, 35BWW09, 35BWW11, 35BWW14, and LHSMW58) and one monitoring well (35BWW03) in the Intermediate Zone were compared to evaluate aquifer rebound. Results from three additional Shallow Zone wells (35BWW01, 35BWW12, and 35BWW13) were also considered in assessing the overall rebound conditions. However, 2012 pre-Bio plug study geochemical data were not collected from these wells, except for 2006 geochemical data for 35BWW01. Results for other geochemical parameters that were measured during the rebound period were also considered. These parameters include total iron, ferrous (reduced) iron, nitrate, and sulfate. When field duplicates were analyzed, parameter-specific results for each pair of standard and duplicate samples were averaged. **Table 1** provides a summary of the February 2012 and July 2012 pre-Bio plug study data collected by CCRC/ATC and the post-Bio plug

study results collected by AECOM from October 2015 through August 2016. Available 2006 geochemical results are also included in Table 1. **Appendix A** provides the February 2012 field sampling forms generated by CCRC. **Appendix B** provides the July 2012 sampling data collected by ATC. **Appendix C** provides the October 2015, December 2015, February 2016, and August 2016 Quality Control Summary Reports and laboratory reports for samples collected by AECOM.

Geochemical Data Analysis

Non-parametric Wilcoxon rank sum (WRS) tests for independent data sets with equal variances, sometimes referred to as Mann Whitney U-tests, were used to compare the combined pre-Bio plug study and combined post-Bio plug study groundwater geochemistry rebound data for all wells sampled during each period. WRS was determined to be an appropriate method for statistical analysis of the data because it does not require similar sample sizes. F-tests were performed to ensure data sets being compared had equal variance. No comparisons violated the equal variance requirement. Accordingly, Z-statistic values were determined for an alpha value (level of significance) of 0.05. These were compared to Z-critical value(s) obtained from equations provided in Gilbert (1987) for the WRS test. One-tailed tests were used to determine if there is a significant difference between the pre-Bio plug study and post-Bio plug study rebound data sets for pH, ORP, and DO. The WRS test is based on the following hypotheses:

- Null hypothesis or H_0: The populations from which the two data sets have been drawn have the same mean.
- Alternative hypothesis or H_A: The populations have different means.

Results

pH

pH levels in the nine Shallow Zone monitoring wells and the one Intermediate Zone well sampled in 2012 before the Bio plug study ranged from 4.28 to 8.01. Post-Bio plug study pH levels for these same wells ranged from 3.30 to 8.97. The combined post-Bio plug study pH measurements collected from Shallow Zone monitoring wells and the Intermediate Zone well from October 2015 through August 2016 are not statistically significantly different from those in the pre-Bio plug study samples collected from February 2012 through July 2012, although the range of post-Bio plug study pH values is somewhat larger (**Appendix D**).

Figure 2 shows pH levels for individual wells during both the pre- and post-Bio plug study sampling events. **Figure 3** provides combined 2012 pre- and post-Bio plug study pH results. The wells have a wide range of pH values, both before and after the Bio plug study. Generally, pH appears to be decreasing and trending away from pre-Bio plug conditions (35BWW03,

35BWW05, 35WW06, 35BWW07, 35BWW08, 35BWW09, 35BWW11, and 35BWW14), but there is no significant difference in the pre- and post-Bio plug population means.

Oxidation Reduction Potential

ORP in the nine Shallow Zone monitoring wells and the one Intermediate Zone well in February 2012 and July 2012, before the Bio plug study, ranged between -145 and 251 millivolts (mV). Rebound ORP data for these wells after the Bio plug study ranged between -74 and 496 mV. The combined ORP values of the wells between October 2015 and August 2016 are significantly greater than the combined ORP values of the wells between February 2012 and July 2012 (**Appendix D**). ORP measurements from August and December 2006 are available for shallow monitoring wells 35BWW01 and LHSMW58, intermediate zone well 35BWW03, and composite upper and lower shallow well LHSMW59. December 2006 ORP measurements also available for shallow monitoring wells 35BWW04 and 35BWW05 and lower shallow well 35BWW06. 2006 ORP measurements ranged from 14.4 mV to 560 mV and are provided in Table 1 (Shaw, 2007).

ORP data are shown on **Figure 4**. **Figure 5** provides combined 2012 pre- and post-Bio plug study ORP values. The combined ORP data graph shows that the monitoring wells have a wide range of ORP values both pre- and post-Bio plug study. Post-Bio plug study ORP levels for monitoring wells 35BWW03 and LHSMW58 are within range of pre-Bio plug study levels from 2006 and 2012. Monitoring wells 35BWW04, 35BWW05, 35BWW06, and 35BWW08, located within the Bio plug study area, show generally increasing ORP concentrations. However, a similar pattern of increasing ORP measurements is observed in well 35BWW11 which is located outside of and cross-gradient to the Bio plug study area, indicating increasing ORP trends may not be related to the Bio plug study.

Dissolved Oxygen

DO levels in the nine Shallow Zone monitoring wells and the one Intermediate Zone well sampled in 2012 before the Bio plug study ranged between 0.89 and 6.97 milligrams per liter (mg/L). Post-Bio plug rebound DO results for these wells ranged between 0 and 6.41 mg/L. The combined DO levels in groundwater samples collected from the Shallow Zone monitoring wells and the Intermediate Zone well between October 2015 and August 2016 are not significantly different from DO levels in samples collected between February 2012 and July 2012 (**Appendix D**).

DO data are shown on **Figure 6**. DO measurements for wells 35BWW05 and 35BWW06 after termination of the Bio plug study suggest that DO levels in these wells are increasing over time, but remain low. DO data collected from Shallow Zone wells 35BWW05, 35BWW06, 35BWW08 and 35BWW09 appear to indicate stabilization, with DO values for these wells within a range consistently similar to pre-Bio plug conditions. Along with the apparent potential stabilization of DO levels in Shallow Zone wells 35BWW12 and 35BWW13, for which there are

no pre-Bio plug DO data, and in Shallow Zone well LHSMW58, this may suggest DO has returned to levels similar to those existing before the Bio plug study and supports aquifer rebound.

It is noted that only one pre-Bio plug study DO data point is available for some wells (35BWW05, 35BWW06, 35BWW08, 35BWW09, 35BWW11, and 35BWW14), which limits the understanding of pre-Bio plug conditions in comparison to post-Bio plug conditions.

Figure 7 provides combined 2012 pre- and post-Bio plug study DO values, which show that the monitoring wells have a wide range of DO values both pre- and post-Bio plug study; however, the graph also indicates that DO appears to be stabilizing throughout the aquifer, with the post-Bio plug data showing slightly less spread than the data collected before the Bio plug study. DO levels also appear to be lower in general than before the Bio plug study, though the statistics do not support a significant difference in the pre- and post-Bio plug population means.

Overall, DO levels appear to contradict the ORP measurements that show an increasing trend. It is noted that ORP measurements are often not as reliable as DO measurements.

Conductivity

Conductivity in the nine Shallow Zone monitoring wells and the one Intermediate Zone well sampled in 2012 before the Bio plug study ranged between 0.327 and 1.69 millisiemens per centimeter (mS/cm). Rebound conductivity data for these wells ranged between 0.111 and 1.24 mS/cm. Conductivity does not relate to aquifer rebound from pre-Bio plug conditions; therefore, pre- and post-Bio plug data were not statistically compared. However, combined 2012 pre- and post-Bio plug study conductivity values are presented in **Figure 8**. The figure in general indicates less spread and smaller median of conductivity results after the Bio plug study was concluded than before it was implemented.

Other Geochemical Parameters Influencing Aquifer Stabilization

Post-study concentrations of iron and manganese were analyzed in the past; however, these two geochemical parameters were not analyzed as part of the August 2016 sampling since no appreciable increase was noted in their concentrations prior to the August 2016 event. Total iron and manganese were historically analyzed when the sample turbidity was less than 10 nephelometric turbidity units (NTUs); however, filtered iron and manganese were analyzed when the sample turbidity was > 10 NTU. The presence of iron and manganese in unfiltered samples is typically associated with turbidity and suspended particulate matter. The presence of iron and manganese in filtered samples indicates a dissolved fraction and implies the presence of reducing conditions, as iron and manganese have higher solubility under reducing conditions than under oxidizing conditions. Therefore, concentrations of dissolved iron and manganese were expected to increase as the aquifer conditions progress toward their natural states after termination of the Bio plug study. Post-Bio plug concentrations of iron and manganese (not differentiating between

total and dissolved fractions) had increased in four wells (35BWW04, 35BWW05, 35BWW06, and LHSMW58) through February 2016; however, iron and/or manganese concentrations in most wells did not show an appreciable change or increase, an indication that aquifer conditions had not rebounded to pre-Bio plug study conditions at that time.

Several additional geochemical parameters were analyzed in the laboratory during post-Bio plug groundwater sampling, including nitrate, sulfate, and ferrous iron. These parameters were not collected prior to the Bio plug study in 2012; however, results for these parameters are available from August 2006 and December 2006 for wells 35BWW01, 35BWW03, LHSMW58 and LHSMW59 and from December 2006 for 32BWW04, 35BWW05, and 35BWW06.

Post Bio-plug study nitrate concentrations ranged between < 0.2 mg/L and 3.07 mg/L. Nitrate was not detected in the majority of the wells. Well LHSMW58 consistently had the highest nitrate concentration ranging from 1.05 mg/L in February 2016 to 3.07 mg/L in December 2015, followed by well 35BWW13, with detected nitrate concentrations ranging from 2.07 mg/L in December 2015 to 3.07 mg/L in October 2015. Most of the other wells had low to non-detectable levels of nitrate, which could potentially indicate stabilization of aquifer geochemistry and is consistent with 2006 mostly non-detect results (Table 1). Nitrate concentrations decreased steadily in wells 35BWW08 and LHSMW58 based on October 2015 through February 2016 results, which could indicate departure from the oxidative conditions of the aquifer attributable to Bio plug treatment.

Post Bio-plug sulfate concentrations ranged between 3.43 and 172 mg/L. The highest sulfate concentration was reported in well 35BWW06, ranging between 142 mg/L in February 2016 and 172 mg/L in December 2015; the December 2006 sulfate concentration was 235 mg/L. The second highest post Bio-plug sulfate concentration was reported in well 35BWW09, ranging between 148 mg/L in October 2015 and 165 mg/L in February 2016. Sulfate concentrations in well 35BWW09 were increasing slightly based on October 2015 through February 2016 data, indicating that oxidative conditions remained in the aquifer and rebound effects were not significant at that time; however 35BWW09 was located outside of the Bio plug study area. A steady decrease in sulfate concentration was observed in wells 35BWW04, 35BWW11, and LHSMW58 based on October 2015 through February 2016 data and in well 35BWW08 between October 2015 and August 2016. The decreasing trend in sulfate concentration in well 35BWW04 is no longer apparent when taking into account sulfate data collected in August 2016; rather, it appears that sulfate concentrations are potentially stabilizing in the well. August 2016 sulfate data was not collected for wells 35BWW09, 35BWW11, or LHSMW58, so there is no means of confirming at the present time whether the noted trends continued in those wells after February 2016. Potential stabilization of sulfate concentrations in wells 35BWW04 and 35BWW12 are indicated by the data, suggest potential aquifer stabilization in localized areas. However, this response is not widespread, as steady sulfate concentration decreases were noted in some of the aforementioned wells, and steady increases were observed in other wells such as

35BWW05, 35BWW09, and 35BWW13 through February 2016 and well 35BWW14 through August 2016.

Post- Bio plug study ferrous iron concentrations, a potential indicator of aquifer reducing conditions, ranged between < 0.04 mg/L and 6.55 mg/L. The highest ferrous iron concentration occurred in well 35BWW06 at 6.55 mg/L in February 2016. Ferrous iron in well 35BWW06 increased from < 0.04 mg/L in October and December 2015 to 6.55 mg/L in February 2016, indicating a likely shift toward more reducing conditions in the aquifer since the increase in ferrous iron in well 35BWW06 in February 2016 coincided with a slight decrease in sulfate concentration (and thus general increase in sulfide concentration) from 172 mg/L in December 2015 to 146 mg/L in February 2016. The second highest ferrous iron concentration was observed in well 35BWW05, with concentrations slightly increasing from 0.379 mg/L in October 2015 to 0.559 mg/L in February 2016, again supporting a shift in aquifer conditions which favors iron reduction since the slight increase in ferrous iron was accompanied by a slight increase in sulfate and nitrate concentrations and thus a decrease in sulfide and reduced nitrogen compound concentrations. The sulfate concentrations in 35BWW05 ranged between 33.4 mg/L in October 2015 and 41 mg/L in February 2016 and the nitrate concentrations ranged between 0.728 mg/L in October 2015 and 0.862 mg/L in February 2016. August 2016 ferrous iron, sulfate, and nitrate data were not collected for wells 35BWW05 or 35BWW06, so it is unclear whether these trends continued past February 2016. The majority of the wells sampled between October 2015 and February 2016 had non-detectable levels of ferrous iron, implying potential stabilization of aquifer geochemistry. Pre-Bio plug ferrous iron data was not collected for the four wells (35BWW04, 35BWW08, 35BWW12, and 35BWW14) sampled for ferrous iron during the August 2016 event; however, all four wells appear to support stabilization of post-Bio plug redox conditions with apparently stable post-study ferrous iron concentrations in each well as well as stable sulfate concentrations in wells 35BWW04 and 35BWW12 through August 2016.

Other field parameters include temperature and turbidity. These parameters are not directly related to aquifer rebound conditions, and were therefore not evaluated.

Discussion

The results indicate that there is no significant difference between pH and DO levels before the Bio plug study and current rebound conditions. This may be a function of the large data variability, but could also indicate that current aquifer conditions for pH and DO are representative of pre-Bio plug study conditions. Increasing ORP levels seen in many wells conflicts with DO levels; ORP measurements are often not as reliable as DO measurements. Analytical results for geochemical parameters in samples collected after the Bio plug study indicate localized aquifer recovery.

Conclusions and Recommendations

Based on available data, the aquifer at LHAAP-35B (37) is sufficiently recovered to its pre-Bio plug study geochemical state to begin implementation of the MNA remedy.

References

AECOM, 2013. *Final Remedial Action Work Plan for LHAAP-35B (37), Chemical Laboratory, Longhorn Army Ammunition Plant, Karnack, Texas*, June.

AECOM, 2016. *Final Remedial Action Completion Report, LHAAP-35B(37), Chemical Laboratory Longhorn Army Ammunition Plant, Karnack, Texas*, September.

U.S. Army Aberdeen Test Center (ATC), 2015. *Final Report for the In Situ Microbial Reactor Enhanced Bioremediation Field Test*, May.

Gilbert, R.O., 1987. *Statistical Methods for Environmental Pollution Monitoring*. John Wiley & Sons, Inc.

Shaw, 2007. *Final Natural Attenuation Evaluation LHAAP-12, LHAAP-35B(37), and LHAAP-67, Longhorn Army Ammunition Plant, Karnack, Texas*, June.

Table 1: LHAAP-35B (37) – Aquifer Rebound –
February 2012 through August 2016

Table 1: LHAAP-35B(37) Aquifer Rebound - August 2006 through August 2016

Location ID: / Sample Date:	Units	MCL/MSC	35BWW01 8/10/2006	35BWW01-121706 12/17/2006	35BWW01-102015 10/20/2015	35BWW01F-102015 10/20/2015	35BWW01-021716 2/17/2016	35BWW01F-021716 2/17/2016	35BWW01 081816 8/18/2016	35BWW03 8/9/2006	35BWW03-121406 12/16/2006	35BWW03-071512 7/15/2012	35BWW03-102015 10/20/2015
Water Quality Parameters													
Temperature	°C		20.79	15.54	16.79	NA	13.5	NA	20.77	24.88	21.08	20.4	21.4
pH	pH Units		5.61	5.92	6.06	NA	5.72	NA	4.53	11	11.24	7.58	6.39
Conductivity	mS/CM		0.094	0.149	0.145	NA	0.111	NA	0.21	1.196	1.432	0.825	0.675
Dissolved Oxygen	mg/L		1.48	3.15	NR	NA	NR	NA	NA	0.13	2.41	NA	0.34
Turbidity	NTU		1784	1559.4	708	NA	216	NA	316	3.2	0	NA	2.1
Oxidation Reduction Potential	mV		194.1	181.2	NR	NA	NR	NA	NA	50.3	6.6	-78	-13
Metals (6010C)													
IRON	mg/L		NA	NA	NA	16.2	NA	4.5	NA	NA	NA	NA	0.0791 J
Metals (6020A)													
MANGANESE	mg/L	14	NA	NA	NA	0.179	NA	0.0365	NA	NA	NA	NA	0.0183
Inorganic Anions (9056)													
NITRATE	mg/L	10	<6 U	<30 U	<0.4 U	NA	<0.2 U	NA	NA	<0.6 U	<0.6 U	NA	0.252 J
SULFATE	mg/L		14.6	<50 U	25.5	NA	24.7	NA	NA	4.8	5.28	NA	3.82
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		NA	NA	<0.16 U	NA	<0.2 U	NA	NA	NA	NA	NA	<0.04 U

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate field duplicate.

°C - degrees celsius

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

mg/L - milligrams per liter

mS/cm - millisiemens per centimeter

mV - millivolt

NA - not analyzed

NR – not reportable due to sample being taken from bailer

NTU - nephelometric turbidity unit

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

Table 1: LHAAP-35B(37) Aquifer Rebound - August 2006 through August 2016

Location ID: / Sample Date:	Units	MCL/MSC	35BWW03-122215 12/22/2015	35BWW03-021716 2/17/2016	35BWW03FD-021716 2/17/2016	35BWW03-081816 8/18/2016	35BWW04-121606 12/16/2006	35BWW04-020912 02/09/2012	35BWW04-071512 07/15/2012	35BWW04F-101915 10/19/2015	35BWW04-122115 12/21/2015	35BWW04-021716 2/17/2016	35BWW04-081716 8/17/2016
Water Quality Parameters													
Temperature	°C		17.35	19.9	NA	21.65	19.24	15.39	20	NA	18.84	18	19.21
pH	pH Units		6.95	6.69	NA	6.13	6.84	6.81	4.28	NA	5.3	5.57	4.17
Conductivity	mS/CM		1.07	0.971	NA	1.07	0.548	0.35	0.39	NA	0.287	0.309	0.366
Dissolved Oxygen	mg/L		0.88	0.61	NA	0.74	1.85	6.97	NA	NA	1.32	2.53	0.84
Turbidity	NTU		8.9	3.9	NA	0	16.5	NA	NA	NA	9.3	8.2	49.2
Oxidation Reduction Potential	mV		-27	-12	NA	-17	209.7	130	41	NA	233	185	449
Metals (6010C)													
IRON	mg/L		0.134 J	0.138 J	0.13 J	NA	NA	NA	NA	<0.1 U	2.14	1.65	NA
Metals (6020A)													
MANGANESE	mg/L	14	0.0496	0.0405	0.0419	NA	NA	NA	NA	0.00111 J	0.00594	0.00612	NA
Inorganic Anions (9056)													
NITRATE	mg/L	10	<0.2 U	<0.2 U	<0.2 U	NA	<0.6 U	NA	NA	NA	0.379 J	0.434	<0.2 U
SULFATE	mg/L		3.69	3.43	3.54	NA	41.7	NA	NA	NA	39.6	33.8	35.1
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		<0.04 U	0.0757	0.0808	NA	NA	NA	NA	NA	0.1	<0.04 U	<0.04 U

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate field duplicate.

°C - degrees celsius

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

mg/L - milligrams per liter

mS/cm - millisiemens per centimeter

mV - millivolt

NA - not analyzed

NR – not reportable due to sample being taken from bailer

NTU - nephelometric turbidity unit

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

Table 1: LHAAP-35B(37) Aquifer Rebound - August 2006 through August 2016

Location ID: / Sample Date:	Units	MCL/MSC	35BWW05-121406 12/14/2006	35BWW05-071512 07/15/2012	35BWW05-101915 10/19/2015	35BWW05F-101915 10/19/2015	35BWW05-122115 12/21/2015	35BWW05F-122115 12/21/2015	35BWW05-021616 2/16/2016	35BWW05F-021616 2/16/2016	35BWW05-081816 8/18/2016	35BWW06-121406 12/14/2006	35BWW06-071512 07/15/2012
Water Quality Parameters													
Temperature	°C		17.18	21	18.18	NA	19.21	NA	18.39	NA	19.46	18.34	20.5
pH	pH Units		7.45	6.95	5.69	NA	5.39	NA	5.24	NA	4.41	8.83	5.54
Conductivity	mS/CM		0.637	0.361	0.328	NA	0.368	NA	0.356	NA	0.379	1.834	1.36
Dissolved Oxygen	mg/L		0.33	NA	0.13	NA	0.36	NA	0.43	NA	0.56	0.84	NA
Turbidity	NTU		32.4	NA	118	NA	151	NA	214	NA	123	3.3	NA
Oxidation Reduction Potential	mV		-46.2	-101	75	NA	115	NA	129	NA	283	-213.8	7
Metals (6010C)													
IRON	mg/L		NA	NA	NA	0.552	NA	0.972	NA	0.773	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	14	NA	NA	NA	0.0541	NA	0.0555	NA	0.0505	NA	NA	NA
Inorganic Anions (9056)													
NITRATE	mg/L	10	<0.6 U	NA	0.728	NA	0.897 J	NA	0.862	NA	NA	0.386 J	NA
SULFATE	mg/L		47.3	NA	33.4	NA	37.8	NA	41	NA	NA	235	NA
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		NA	NA	0.379	NA	0.473	NA	0.559	NA	NA	NA	NA

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate field duplicate.

°C - degrees celsius

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

mg/L - milligrams per liter

mS/cm - millisiemens per centimeter

mV - millivolt

NA - not analyzed

NR – not reportable due to sample being taken from bailer

NTU - nephelometric turbidity unit

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

Table 1: LHAAP-35B(37) Aquifer Rebound - August 2006 through August 2016

Location ID: / Sample Date:	Units	MCL/MSC	35BWW06-101915 10/19/2015	35BWW06FD-101915 10/19/2015	35BWW06-122215 12/22/2015	35BWW06-021616 2/16/2016	35BWW06FD-021616 2/16/2016	35BWW06-081816 8/18/2016	35BWW07-071512 07/15/2012	35BWW07-102015 10/20/2015	35BWW07-122215 12/22/2015	35BWW07-021716 2/17/2016	35BWW07-081816 8/18/2016
Water Quality Parameters													
Temperature	°C		18.93	NA	23.6	19.28	NA	20.45	25.2	17.06	14.93	14.94	20.47
pH	pH Units		7.15	NA	6.93	6.45	NA	4.87	5.86	6.25	6.05	6.04	5.22
Conductivity	mS/CM		1.16	NA	1.24	1.04	NA	1.06	1.06	0.918	1.02	0.952	0.974
Dissolved Oxygen	mg/L		0	NA	0.51	0.71	NA	0.69	NA	NR	NR	NR	NR
Turbidity	NTU		7.9	NA	0	0	NA	6	NA	9.5	9.4	9.7	9.6
Oxidation Reduction Potential	mV		-50	NA	-74	-58	NA	215	13	NR	NR	NR	NR
Metals (6010C)													
IRON	mg/L		2.57	2.57	2.23	7.86	9.17	NA	NA	2.15	0.854	0.236	NA
Metals (6020A)													
MANGANESE	mg/L	14	0.147	0.148	0.134	0.176	0.187	NA	NA	0.0672	0.0232	0.0641	NA
Inorganic Anions (9056)													
NITRATE	mg/L	10	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	NA	NA	<0.2 U	<0.2 U	<0.2 U	NA
SULFATE	mg/L		168	161	172	146 J	142 J	NA	NA	94.5	93.1	86.1	NA
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		<0.04 U	<0.04 U	<0.04 U	6.55	6.24	NA	NA	<0.04 U	0.0212 J	<0.04 U	NA

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate field duplicate.

°C - degrees celsius

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

mg/L - milligrams per liter

mS/cm - millisiemens per centimeter

mV - millivolt

NA - not analyzed

NR – not reportable due to sample being taken from bailer

NTU - nephelometric turbidity unit

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

Table 1: LHAAP-35B(37) Aquifer Rebound - August 2006 through August 2016

Location ID: / Sample Date:	Units	MCL/MSC	35BWW08-020912 02/09/2012	35BWW08-071512 07/15/2012	35BWW08-102015 10/20/2015	35BWW08-122115 12/21/2015	35BWW08-021616 2/16/2016	35BWW08-081716 8/17/2016	35BWW09-020912 02/09/2012	35BWW09-071512 07/15/2012	35BWW09-101915 10/19/2015	35BWW09-122215 12/22/2015	35BWW09-021716 2/17/2016
Water Quality Parameters													
Temperature	°C		16.1	22.2	25.04	20.31	18.31	19.79	13.05	21.6	21.49	21.55	18.75
pH	pH Units		6.7	5.45	8.97	8.64	5.43	4.6	6.99	5.38	7.01	5.59	5.39
Conductivity	mS/CM		0.837	1.01	0.56	0.512	0.594	0.583	1.42	1.59	0.779	0.841	0.861
Dissolved Oxygen	mg/L		1.3	NA	4.05	4.35	1.85	1.81	0.89	NA	0.23	0.33	0.44
Turbidity	NTU		NA	NA	8.1	8.4	3.3	2.5	NA	NA	8.5	0	0
Oxidation Reduction Potential	mV		251	10	71	57	258	413	60	14	172	184	135
Metals (6010C)													
IRON	mg/L		NA	NA	0.224	0.221	0.181 J	NA	NA	NA	0.184 J	0.261	0.231
Metals (6020A)													
MANGANESE	mg/L	14	NA	NA	0.00292 J	0.00277 J	0.00718	NA	NA	NA	0.146	0.0558	0.0548
Inorganic Anions (9056)													
NITRATE	mg/L	10	NA	NA	1.22	0.828 J	0.583	<0.2 U	NA	NA	<0.2 U	<0.2 U	<0.2 U
SULFATE	mg/L		NA	NA	118	84.1	92.7	73.2	NA	NA	148	153 J	165
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		NA	NA	<0.04 U	<0.04 U	<0.04 U	<0.04 U	NA	NA	<0.04 U	0.0222 J	0.116

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate field duplicate.

°C - degrees celsius

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

mg/L - milligrams per liter

mS/cm - millisiemens per centimeter

mV - millivolt

NA - not analyzed

NR – not reportable due to sample being taken from bailer

NTU - nephelometric turbidity unit

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

Table 1: LHAAP-35B(37) Aquifer Rebound - August 2006 through August 2016

Location ID: / Sample Date:	Units	MCL/MSC	35BWW09-081616 8/16/2016	35BWW10-081816 8/18/2016	35BWW11-020912 02/09/2012	35BWW11-071512 07/15/2012	35BWW11-101915 10/19/2015	35BWW11-122215 12/22/2015	35BWW11-021616 2/16/2016	35BWW11-081816 8/18/2016	35BWW12-101915 10/19/2015	35BWW12F-101915 10/19/2015	35BWW12-122215 12/22/2015
Water Quality Parameters													
Temperature	°C		20.59	23.33	11.15	25.8	21.53	14.93	20.42	21.93	21.99	NA	15.3
pH	pH Units		4.6	4.59	6.7	6.57	6.61	5.66	5.28	4.53	6.3	NA	6.16
Conductivity	mS/CM		0.927	0.399	0.569	1.69	0.467	0.384	0.35	0.477	0.349	NA	0.392
Dissolved Oxygen	mg/L		0.62	0.52	5.65	NA	0.12	1.01	1.17	0.58	0.28	NA	2.65
Turbidity	NTU		4.1	371	NA	NA	8.2	9.2	0	0	164	NA	184
Oxidation Reduction Potential	mV		365	328	43	-114	41	197	204	388	175	NA	202
Metals (6010C)													
IRON	mg/L		NA	NA	NA	NA	0.512	0.271	0.249	NA	NA	<0.1 U	NA
Metals (6020A)													
MANGANESE	mg/L	14	NA	NA	NA	NA	0.226 J	0.0214	0.0148	NA	NA	0.0054	NA
Inorganic Anions (9056)													
NITRATE	mg/L	10	NA	NA	NA	NA	<0.2 U	<0.2 U	<0.2 U	NA	<0.2 U	NA	<0.2 U
SULFATE	mg/L		NA	NA	NA	NA	62.7 J	36.1	37.6	NA	37.5	NA	38.9
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		NA	NA	NA	NA	0.0346 J	<0.04 UJ	<0.04 U	NA	<0.04 U	NA	0.149

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate field duplicate.

°C - degrees celsius

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

mg/L - milligrams per liter

mS/cm - millisiemens per centimeter

mV - millivolt

NA - not analyzed

NR – not reportable due to sample being taken from bailer

NTU - nephelometric turbidity unit

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

Table 1: LHAAP-35B(37) Aquifer Rebound - August 2006 through August 2016

Location ID: / Sample Date:	Units	MCL/MSC	35BWW12F-122215 12/22/2015	35BWW12-021716 2/17/2016	35BWW12F-021716 2/17/2016	35BWW12-081716 8/17/2016	35BWW13-102015 10/20/2015	35BWW13F-102015 10/20/2015	35BWW13-122115 12/21/2015	35BWW13F-122115 12/21/2015	35BWW13-021616 2/16/2016	35BWW13F-021616 2/16/2016	35BWW13-091916 8/19/2016
Water Quality Parameters													
Temperature	°C		NA	19.22	NA	18.85	23.62	NA	18.45	NA	18.68	NA	19.49
pH	pH Units		NA	5.51	NA	4.42	4	NA	4.71	NA	4.17	NA	3.3
Conductivity	mS/CM		NA	0.363	NA	0.458	0.112	NA	0.132	NA	0.251	NA	0.306
Dissolved Oxygen	mg/L		NA	0.41	NA	0.44	1.95	NA	4.98	NA	2.42	NA	2.55
Turbidity	NTU		NA	161	NA	829	718	NA	474	NA	123	NA	77.3
Oxidation Reduction Potential	mV		NA	231	NA	439	349	NA	312	NA	376	NA	496
Metals (6010C)													
IRON	mg/L		0.0675 J	NA	<0.1 U	NA	NA	0.457	NA	7.23	NA	0.0553 J	NA
Metals (6020A)													
MANGANESE	mg/L	14	0.0219	NA	0.00552	NA	NA	0.0368	NA	0.0895	NA	0.0938	NA
Inorganic Anions (9056)													
NITRATE	mg/L	10	NA	<0.2 U	NA	<0.2 U	3.07	NA	2.07 J	NA	2.72	NA	NA
SULFATE	mg/L		NA	37.4	NA	42	33.3	NA	40.6	NA	103	NA	NA
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		NA	<0.04 U	NA	0.0652	<0.16 U	NA	0.462	NA	<0.04 U	NA	NA

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate field duplicate.

°C - degrees celsius

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

mg/L - milligrams per liter

mS/cm - millisiemens per centimeter

mV - millivolt

NA - not analyzed

NR – not reportable due to sample being taken from bailer

NTU - nephelometric turbidity unit

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

Table 1: LHAAP-35B(37) Aquifer Rebound - August 2006 through August 2016

Location ID: / Sample Date:	Units	MCL/MSC	35BWW14-020912 02/09/2012	35BWW14-071512 07/15/2012	35BWW14-102015 10/20/2015	35BWW14-122115 12/21/2015	35BWW14FD-122115 12/21/2015	35BWW14-021616 2/16/2016	35BWW14-081716 8/17/2016	35BWW15-081916 8/19/2016	35BWW16-081916 8/19/2016	35BWW17-081916 8/19/2016	35BWW18-081616 8/16/2016
Water Quality Parameters													
Temperature	°C		12.28	22.8	22.6	20.05	NA	20.32	19.78	19.11	18.23	19.29	19.94
pH	pH Units		7.43	8.01	6.64	5.8	NA	5.47	4.41	4.63	4.11	3.4	4.64
Conductivity	mS/CM		0.579	0.576	0.446	0.522	NA	0.51	0.647	0.534	0.353	3.4	1.12
Dissolved Oxygen	mg/L		2.52	NA	0	0.65	NA	1.34	0.47	0.5	0.44	0.097	0.84
Turbidity	NTU		NA	NA	0	0	NA	0	0	21.9	710	706	21.8
Oxidation Reduction Potential	mV		173	-145	187	186	NA	254	444	455	467	505	300
Metals (6010C)													
IRON	mg/L		NA	NA	<0.1 U	<0.1 U	0.0677 J	0.0504 J	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	14	NA	NA	0.0276	0.0275	0.0298	0.0211	NA	NA	NA	NA	NA
Inorganic Anions (9056)													
NITRATE	mg/L	10	NA	NA	0.161 J	<0.2 U	<0.2 U	<0.2 U	<0.2 U	NA	NA	NA	NA
SULFATE	mg/L		NA	NA	73.4	71.1	71.4	75.5	91.9	NA	NA	NA	NA
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		NA	NA	<0.04 U	<0.04 U	<0.04 U	<0.04 U	<0.04 U	NA	NA	NA	NA

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate field duplicate.

°C - degrees celsius

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

mg/L - milligrams per liter

mS/cm - millisiemens per centimeter

mV - millivolt

NA - not analyzed

NR – not reportable due to sample being taken from bailer

NTU - nephelometric turbidity unit

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

Table 1: LHAAP-35B(37) Aquifer Rebound - August 2006 through August 2016

Location ID: / Sample Date:	Units	MCL/MSC	35BWW19-081616 8/16/2016	35BWW20-081816 8/18/2016	35BWW23-081716 8/17/2016	35BWW24-081916 8/19/2016	35BWW25-081916 8/19/2016	35BWW26-081716 8/17/2016	LHSMW58 8/9/2006	LHSMW58-121606 12/16/2006	LHSMW58-071512 07/15/2012	LHSMW58-102015 10/20/2015	LHSMW58FD-102015 10/20/2015
Water Quality Parameters													
Temperature	°C		20.93	22.92	20.87	20.53	21.77	22.54	21	19.5	22	19.23	NA
pH	pH Units		5.24	5.65	4.38	5.3	4.81	4.47	4.61	5.61	6.08	6.67	NA
Conductivity	mS/CM		2.64	0.352	0.961	1.59	1.03	0.354	0.285	0.314	0.327	0.23	NA
Dissolved Oxygen	mg/L		0.76	2	0.64	0.58	0.51	1.2	0.63	0.96	NA	2.71	NA
Turbidity	NTU		44.5	259	13.5	9.1	20.7	0	3.3	0	NA	8.3	NA
Oxidation Reduction Potential	mV		332	376	441	335	439	444	560	231.8	23	159	NA
Metals (6010C)													
IRON	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	0.511	0.538
Metals (6020A)													
MANGANESE	mg/L	14	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00672	0.00702
Inorganic Anions (9056)													
NITRATE	mg/L	10	NA	NA	0.187 J	NA	NA	<0.2 U	<0.6 U	<0.6 U	NA	3.06	3.04
SULFATE	mg/L		NA	NA	127	NA	NA	28.7	76.5	48.6	NA	36.4	36
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		NA	NA	<0.04 U	NA	NA	<0.04 U	NA	NA	NA	<0.04 U	<0.04 U

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate field duplicate.

°C - degrees celsius

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

mg/L - milligrams per liter

mS/cm - millisiemens per centimeter

mV - millivolt

NA - not analyzed

NR – not reportable due to sample being taken from bailer

NTU - nephelometric turbidity unit

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

Table 1: LHAAP-35B(37) Aquifer Rebound - August 2006 through August 2016

Location ID: / Sample Date:	Units	MCL/MSC	LHSMW58-122215 12/22/2015	LHSMW58-021716 2/17/2016	LHSMW58-081816 8/18/2016	LHSMW59- 8/10/2006	LHSMW59-121306 12/13/2006
Water Quality Parameters							
Temperature	°C		21.15	17.82	20.43	20.45	19.31
pH	pH Units		6.5	4.96	4.14	7.06	7.16
Conductivity	mS/CM		0.244	0.189	0.289	1.021	1.492
Dissolved Oxygen	mg/L		6.41	3.11	2.48	0.29	2.12
Turbidity	NTU		0	6.5	0.8	33.3	0
Oxidation Reduction Potential	mV		143	306	440	209.3	154.1
Metals (6010C)							
IRON	mg/L		0.221	0.641	NA	NA	NA
Metals (6020A)							
MANGANESE	mg/L	14	0.00822	0.016	NA	NA	NA
Inorganic Anions (9056)							
NITRATE	mg/L	10	3.07	1.05	NA	<2.4 U	0.218 J
SULFATE	mg/L		17.5	12.4	NA	143	144
Ferrous Iron (SM3500FE)							
FERROUS IRON	mg/L		<0.04 U	<0.04 U	NA	NA	NA

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.
Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate field duplicate.

°C - degrees celsius

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

mg/L - milligrams per liter

mS/cm - millisiemens per centimeter

mV - millivolt

NA - not analyzed

NR – not reportable due to sample being taken from bailer

NTU - nephelometric turbidity unit

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

Figures: LHAAP-35B (37) Comparison of Pre-Bio Plug Installation and Rebound Sampling Data

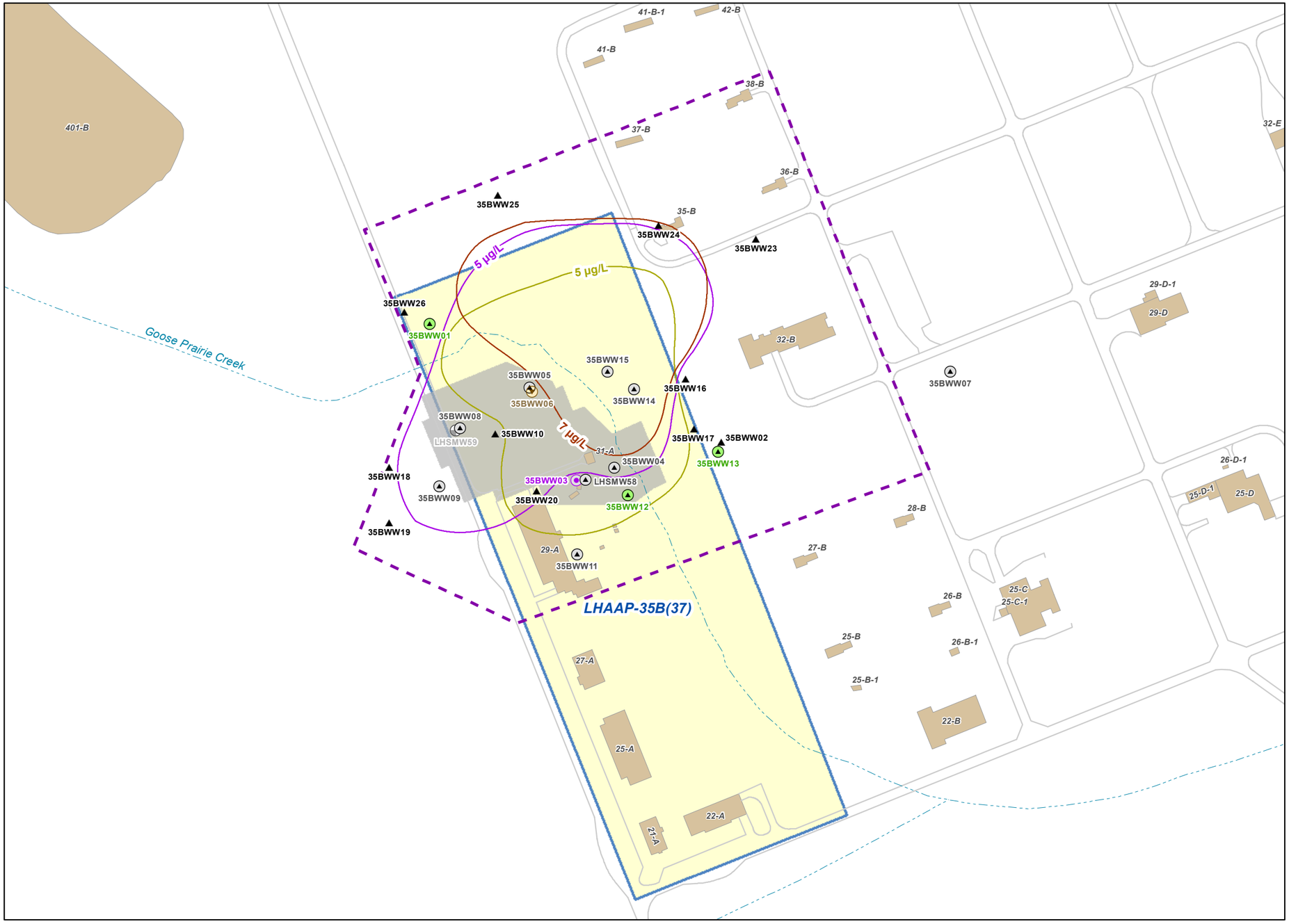

Legend

- LHAAP-35B(37) Site
- Bio Plug Study Area
- LHAAP-35B (37) Land Use Control Boundary
- Building
- Road
- Goose Prairie Creek
- 1,1-DCE Concentration Contour (7 µg/L) (Dashed Where Inferred)
- TCE Concentration Contour (5 µg/L) (Dashed Where Inferred)
- PCE Concentration Contour (5 µg/L) (Dashed Where Inferred)
- Shallow Monitoring Well Location
- Shallow Monitoring Well Location (No Geochemical Analysis Prior to Bio Slug Study)
- Shallow Monitoring Well Location (No Geochemical Analysis)
- Lower Shallow Monitoring Well Location
- Intermediate Monitoring Well Location
- Abandoned Monitoring Well Location

0 100 200 400 Feet

Notes:
1. 1,1-DCE = 1,1-Dichloroethene.
2. TCE = Trichloroethene.
3. PCE = Tetrachloroethene.
4. Extent of COC plumes is delineated by the Maximum Concentration Level (MCL) isoconcentration contours for 1,1 - DCE and TCE; and the TRRP Tier 1 Groundwater Protective Concentration Level (PCL) isoconcentration contour for perchlorate.
COC concentrations are from the October 2013 baseline event, except for 35BWW23, which was sampled July 2014 (AECOM, 2016).
5. Wells 35BWW24, 35BWW25, and 35BWW26 installed in May 2016 and not sampled.

AECOM

Figure 1
LHAAP-35B (37)
Site Map

Longhorn Army Ammunition Plant
Karnack, Texas

60256135

February 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-37\GeoChem_Memo\Figure 1 LHAAP37 Site Map.mxd

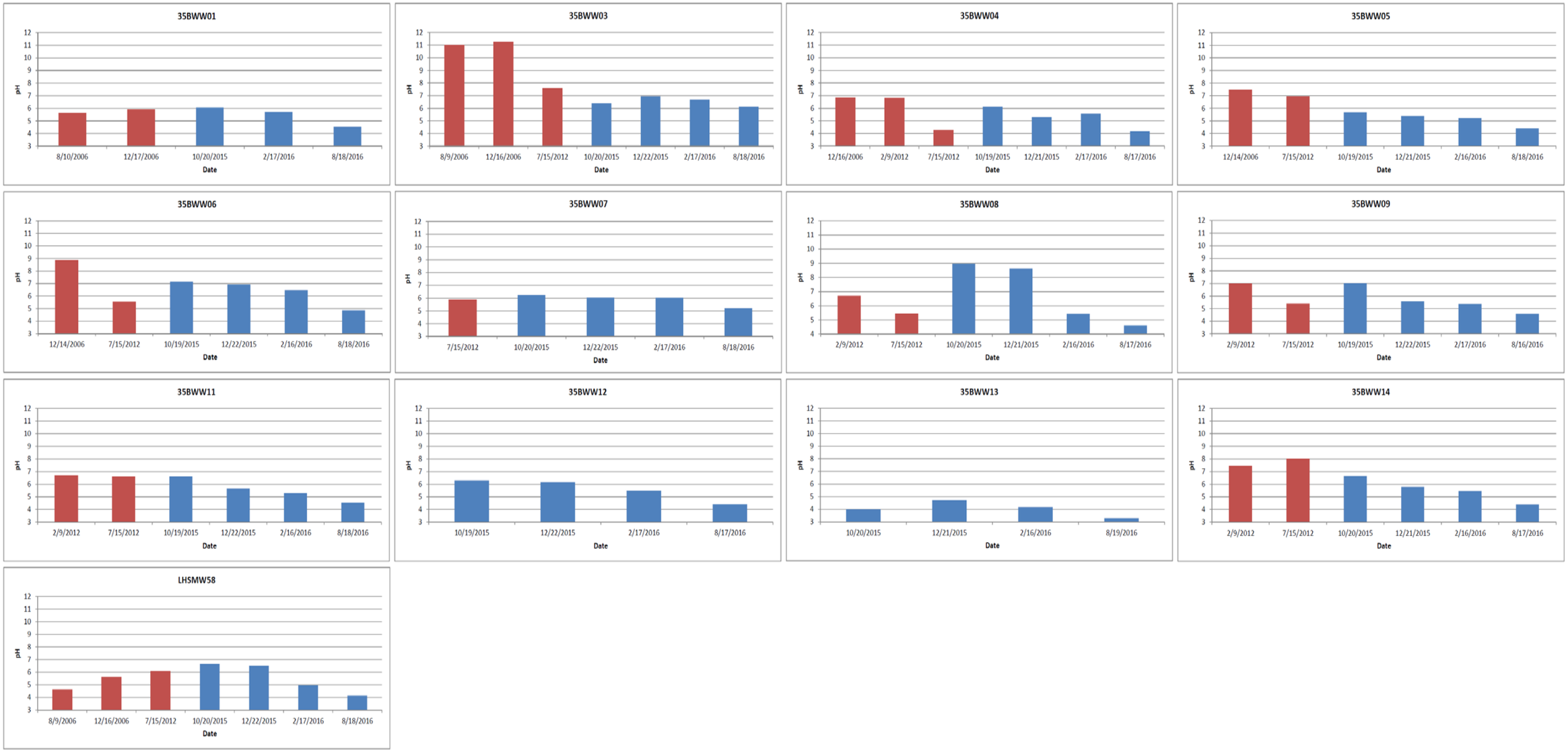

Notes:
1. February 9, 2012 data collected by Cherokee CRC, LLC (CCRC); analyzed by Test America Laboratories; provided in June 2013 Final Remedial ActionWork Plan for LHAAP-35B(37), Chemical Laboratory, Longhorn Army Ammunition Plant, Karnack, Texas, prepared by AECOM Technical Services, Inc.
2. July 2012 data collected no earlier than July 12, 2012, by U.S. Army Aberdeen Test Center (ATC), Aberdeen Proving Ground (APG), Maryland; analyzed by Microbac Laboratories, Inc.; provided in May 2015 Final Report for the In Situ Microbial Reactor Enhanced Bioremediation Field Test (ATC-11731), Appendix B, Tables, prepared by ATC.
3. Red bars indicate data was collected prior to Bio plug implementation.
4. Blue bars indicate data was collected after operation of the Bio plug system was terminated.

AECOM

Figure 2
Comparison of Pre-Bio plug Installation and Rebound Sampling Data for pH
LHAAP 35B (37)
Longhorn Army Ammunition Plant
Karnack, Texas

60274185 February 2017

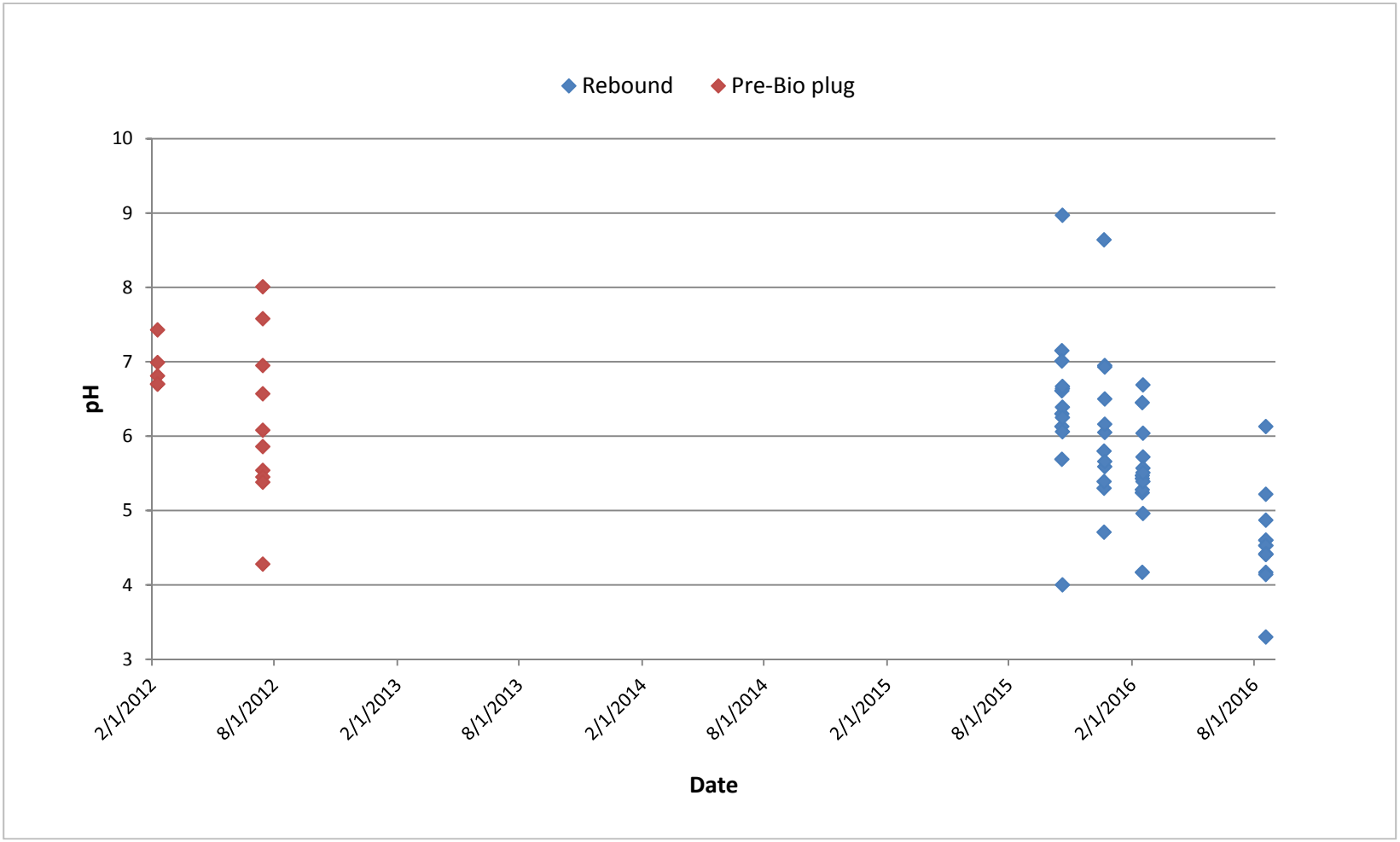

Notes:
*All sampled wells refers to the wells sampled during a specific sampling event.

AECOM

Figure 3
Comparison of All Sampled Wells* Rebound vs. Pre-Bio Plug
February 2012 – August 2016 for pH
LHAAP 35B (37)

Longhorn Army Ammunition Plant
Karnack, Texas

60274185 February 2017

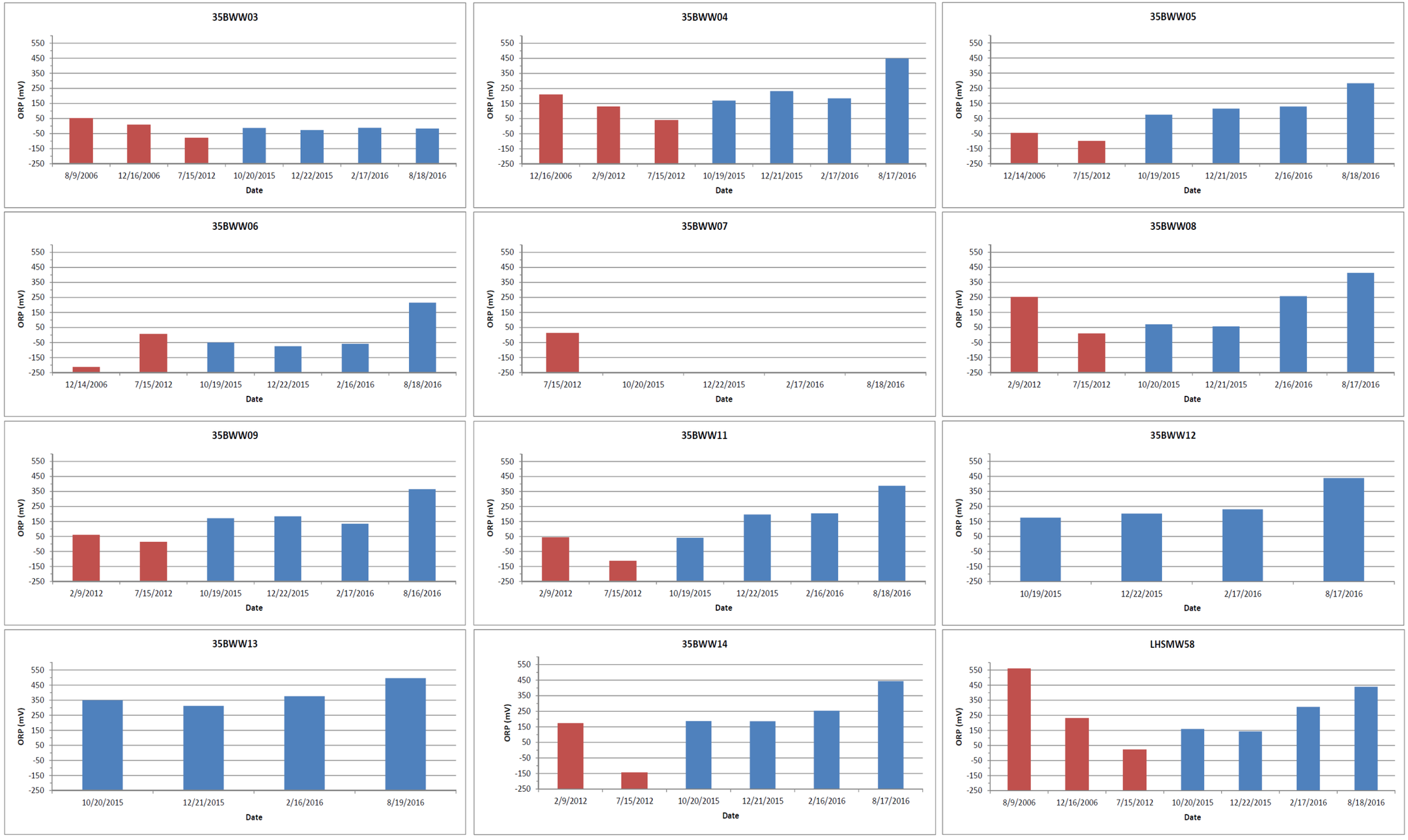

Notes:
1. February 9, 2012 data collected by Cherokee CRC, LLC (CCRC); analyzed by Test America Laboratories; provided in June 2013 Final Remedial ActionWork Plan for LHAAP-35B(37), Chemical Laboratory, Longhorn Army Ammunition Plant, Karnack, Texas, prepared by AECOM Technical Services, Inc.
2. July 2012 data collected no earlier than July 12, 2012, by U.S. Army Aberdeen Test Center (ATC), Aberdeen Proving Ground (APG), Maryland; analyzed by Microbac Laboratories, Inc.; provided in May 2015 Final Report for the In Situ Microbial Reactor Enhanced Bioremediation Field Test (ATC-11731), Appendix B, Tables, prepared by ATC.
3. Red bars indicate data was collected prior to Bio plug implementation.
4. Blue bars indicate data was collected after operation of the Bio plug system was terminated.

AECOM

Figure 4
Comparison of Pre-Bio plug Installation and Rebound Sampling Data for ORP
LHAAP 35B (37)
Longhorn Army Ammunition Plant
Karnack, Texas

60274185 February 2017

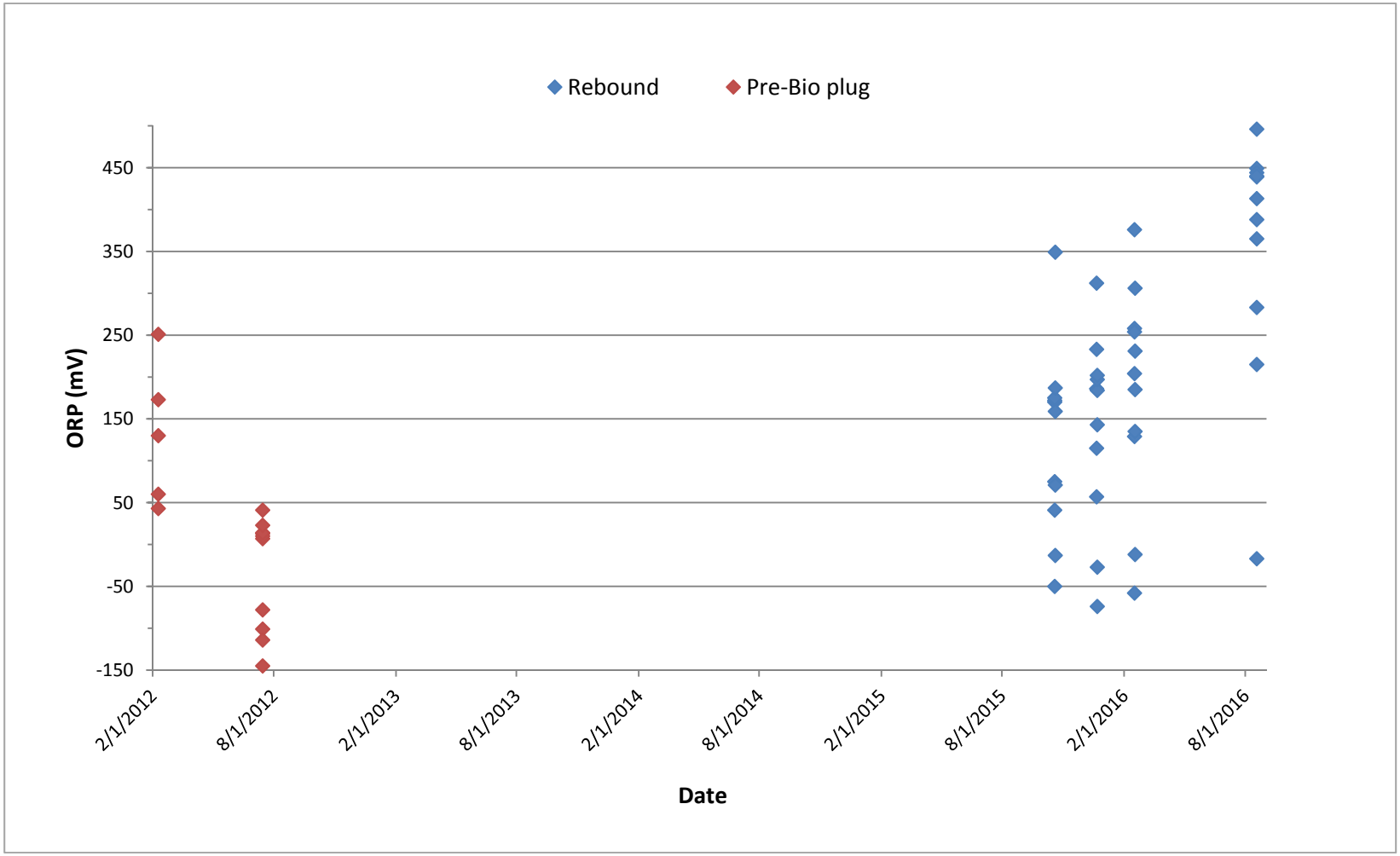

Notes:
*All sampled wells refers to the wells sampled during a specific sampling event.

AECOM

Figure 5
Comparison of All Sampled Wells* Rebound vs. Pre-Bio Plug
February 2012 – August 2016 for ORP
LHAAP 35B (37)

Longhorn Army Ammunition Plant
Karnack, Texas

60274185 February 2017

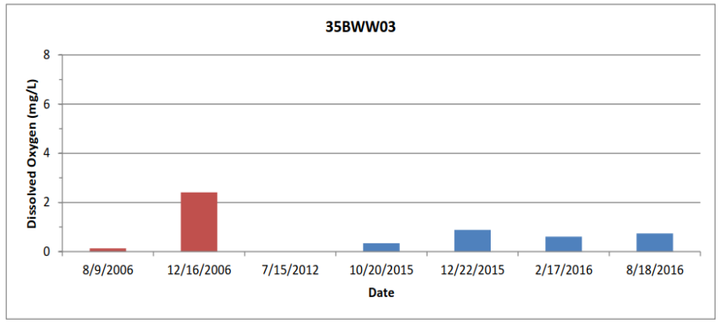

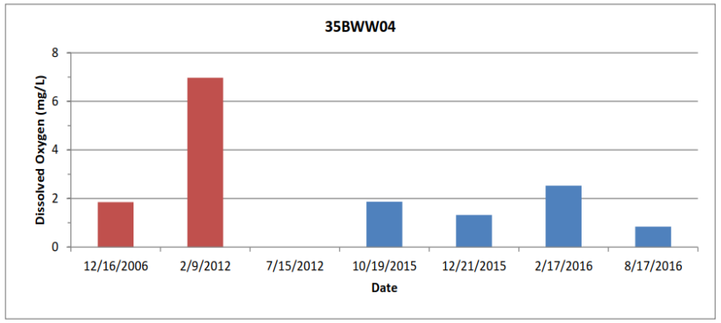

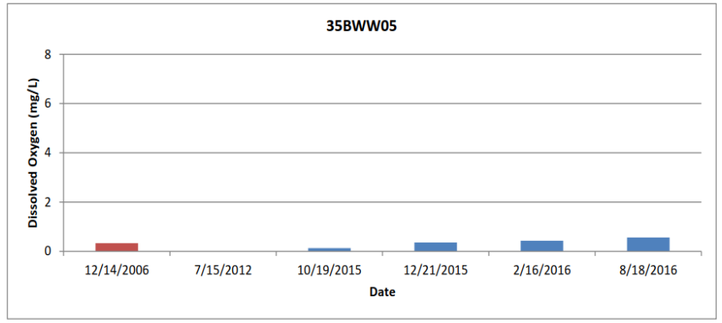

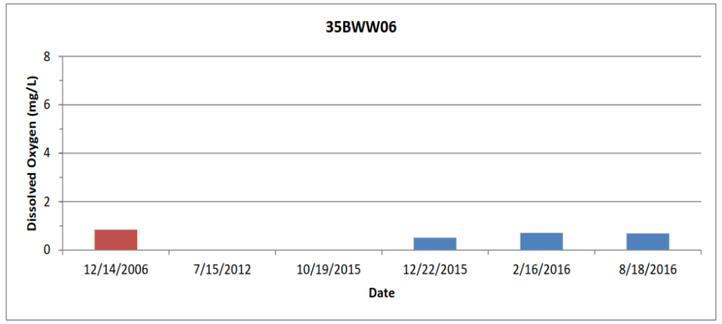

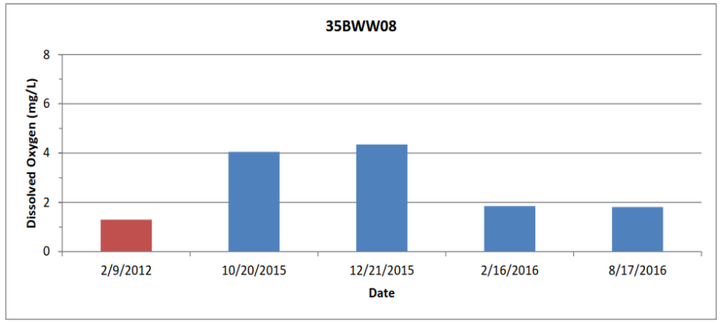

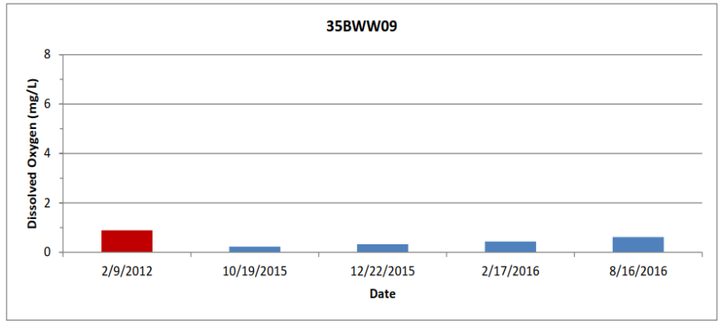

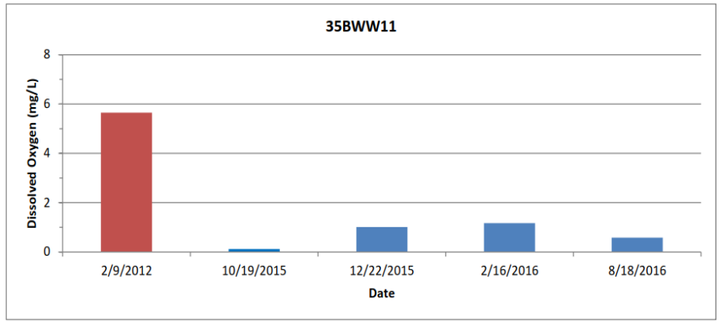

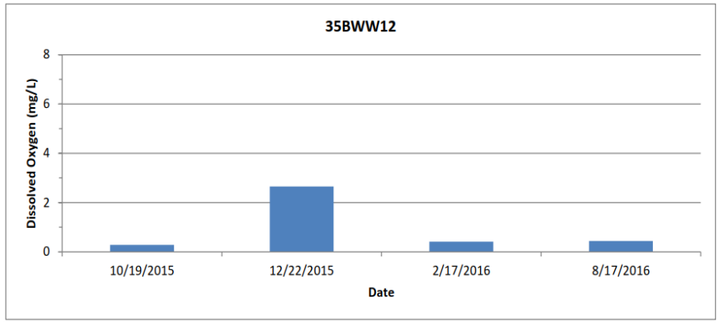

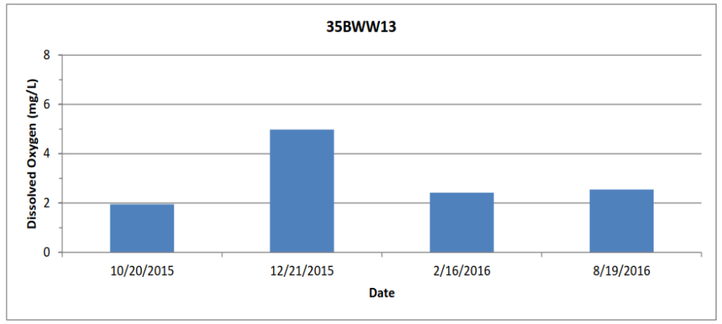

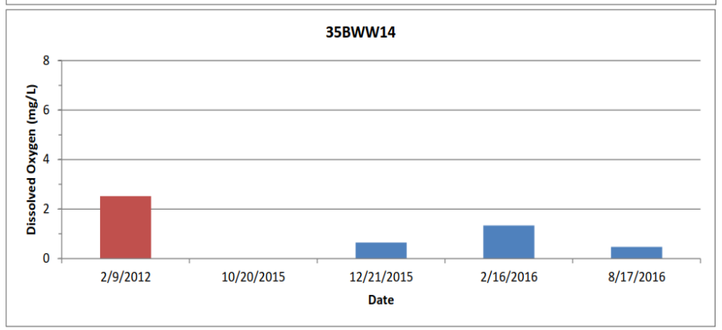

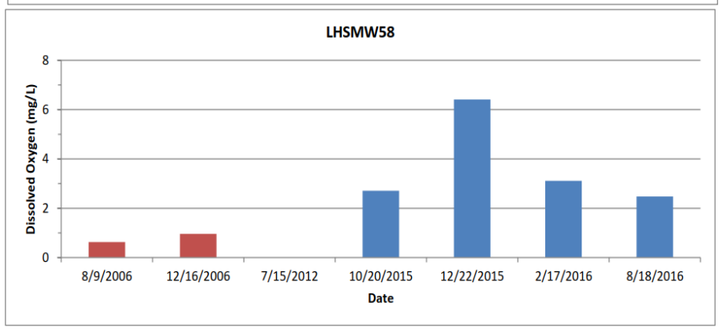

Notes:
1. February 9, 2012 data collected by Cherokee CRC, LLC (CCRC); analyzed by Test America Laboratories; provided in June 2013 Final Remedial ActionWork Plan for LHAAP-35B(37), Chemical Laboratory, Longhorn Army Ammunition Plant, Karnack, Texas, prepared by AECOM Technical Services, Inc.
2. July 2012 data collected no earlier than July 12, 2012, by U.S. Army Aberdeen Test Center (ATC), Aberdeen Proving Ground (APG), Maryland; analyzed by Microbac Laboratories, Inc.; provided in May 2015 Final Report for the In Situ Microbial Reactor Enhanced Bioremediation Field Test (ATC-11731), Appendix B, Tables, prepared by ATC.
3. Red bars indicate data was collected prior to Bio plug implementation.
4. Blue bars indicate data was collected after operation of the Bio plug system was terminated.

AECOM

Figure 6
Comparison of Pre-Bio plug Installation and Rebound Sampling Data for DO
LHAAP 35B (37)
Longhorn Army Ammunition Plant
Karnack, Texas

60274185 February 2017

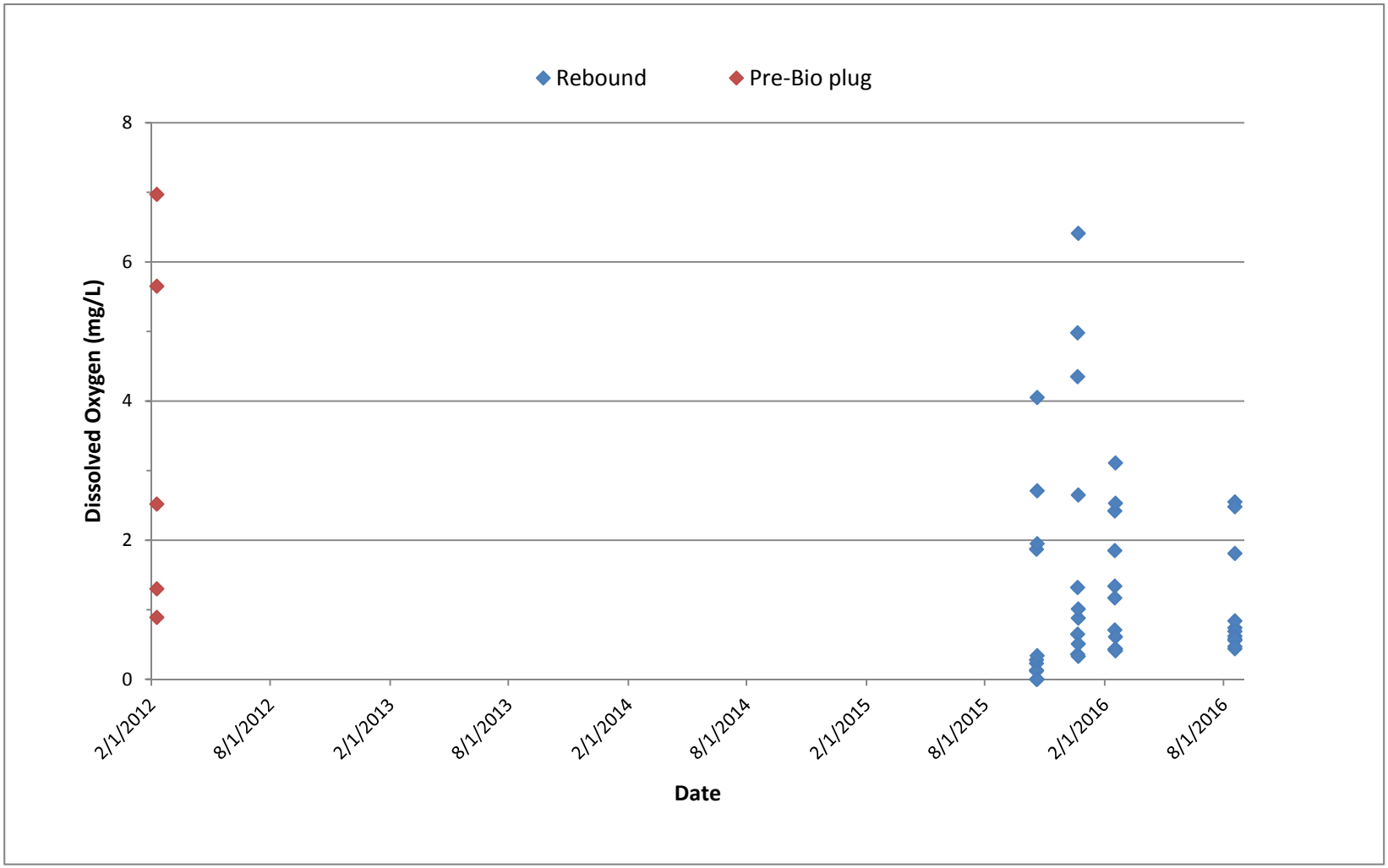

Notes:
*All sampled wells refers to the wells sampled during a specific sampling event.

AECOM

Figure 7
Comparison of All Sampled Wells* Rebound vs. Pre-Bio Plug
February 2012 – August 2016 for DO
LHAAP 35B (37)

Longhorn Army Ammunition Plant
Karnack, Texas

60274185

February 2017

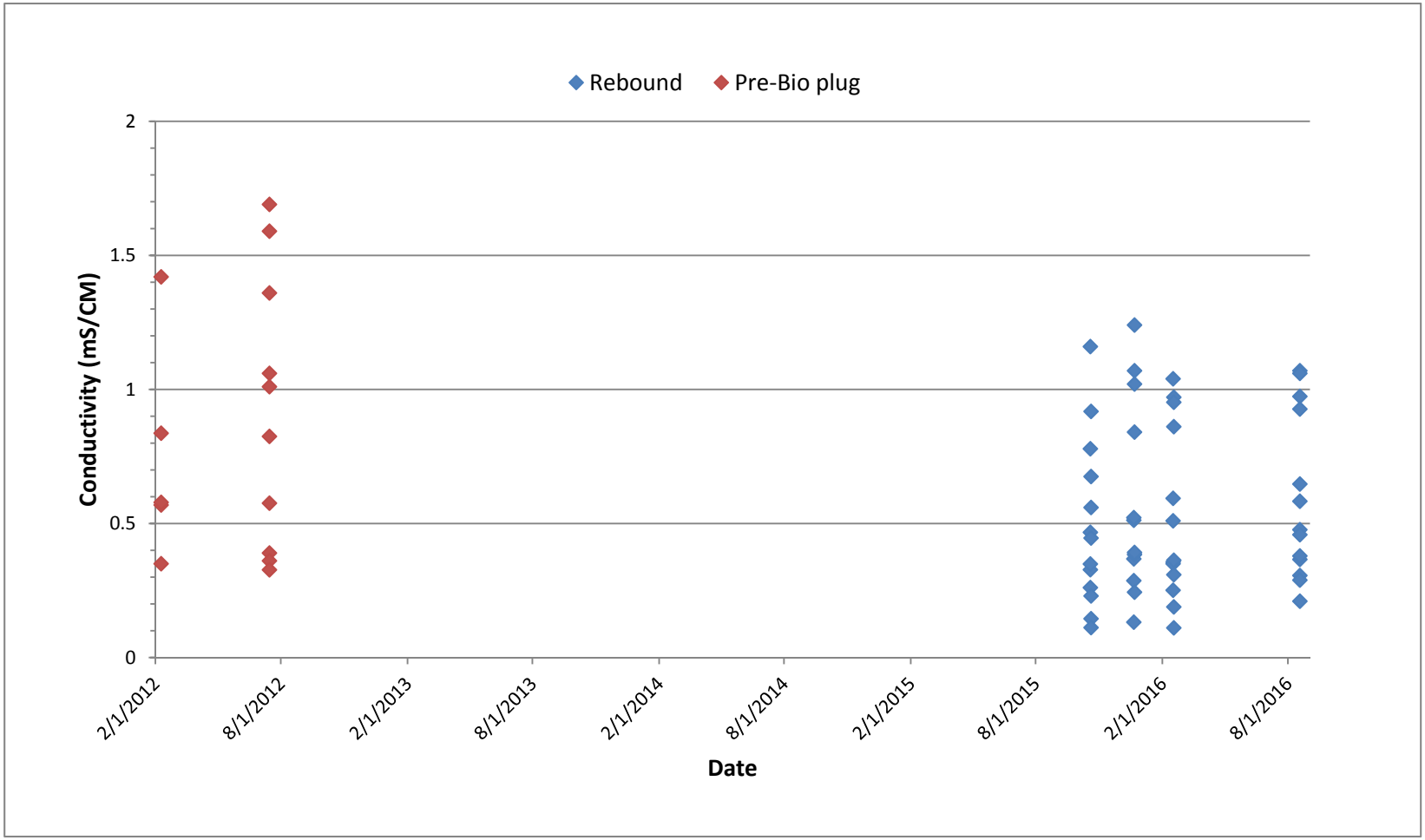

Notes:
*All sampled wells refers to the wells sampled during a specific sampling event.

AECOM

Figure 8
Comparison of All Sampled Wells* Rebound vs. Pre-Bio Plug
February 2012 – August 2016 for Conductivity
LHAAP 35B (37)

Longhorn Army Ammunition Plant
Karnack, Texas

60274185

February 2017

Appendix A: LHAAP-35B (37) CCRC Sampling Forms – February 2012

2/9/12

Sampling B5BMW14
Ovowell @ 0820, began low flow
sampling @ 0822,
DTW 22.25' TD 38.3, Flow rate 150mL/min

Temp	Time	DTW	PH	SPCond	ORP	DO	Turb
10.23	0829	22.25	6.79	0.541	168	3.06	131
11.08	0831	22.25	7.03	0.528	151	3.04	127
11.34	0834	22.23	6.80	0.502	167	2.96	121
11.75	0837	22.25	7.12	0.569	157	2.92	107
11.77	0840	22.25	7.29	0.524	175	2.76	102
12.03	0843	22.25	7.40	0.573	157	2.71	96
12.11	0846	22.21	7.45	0.594	159	2.63	91
12.23	0849	22.24	7.40	0.584	163	2.71	89
12.28	0851	22.24	7.43	0.579	173	2.52	87
	0854						
	0857						

Sampled @ 0900
Total purged 1.8 gal.
Final DTW 22.25'

2/9/12

Final Depth 23.75

Sampling Well 35BWW11, over well @ 0920, low flow ~~Sampling~~ pumping 1st 0930

DTW 23.50 TD 39.1 Initial Flow Rate 130 ml/min

*decreased flow Rate to 80 ml/min

Sampled @ 1027 purged 0.6 gal

Temp °C	Time	DTW	pH	Cond mS/cm	ORP	DO	Turb
13.38	0934	23.64	6.28	1.13	35	3.25	283
12.73	0937	23.68	6.32	1.21	33	2.11	>1000
11.64	0940	23.70	6.31	1.29	24	1.24	>1000
12.54	0943	23.72	6.31	1.27	22	1.52	231
11.82	0946	23.75	6.37	1.20	21	2.36	275
12.00	0949	23.80*	6.55	0.971	21	2.92	290
12.23	0951	23.78	6.53	0.875	22	3.46	262
12.13	0954	23.78	6.56	0.752	22	3.33	260
12.17	0957	23.78	6.59	0.674	22	3.67	245
12.05	1000	23.78	6.59	0.641	24	3.58	243
12.22	1003	23.78	6.59	0.625	26	3.62	239
12.36	1006	23.78	6.54	0.600	35	3.87	270
12.25	1009	23.78	6.61	0.584	39	4.47	>1000
11.54	1012	23.78	6.91	0.381	25	7.57	>1000
11.41	1015	23.78	6.77	0.579	39	5.77	>1000
11.23	1018	23.75	6.70	0.573	41	5.63	>1000
11.16	1021	23.75	6.72	0.570	43	5.45	>1000
11.15	1024	23.75	6.70	0.569	43	5.65	>1000

2/9/12

Sampling 35BRW09, Overwell @ 1040
Low flow pumping @ 1044,
DTW 25.5 TD 38.5 Flow Rate 120 ml/min
Sampled @ ~~[illegible]~~ 1123 Volume purged 1.0 gal
Dup-1 collected @ 1128 from 35BRW09

time	DTW	Temp	pH	SCond	ORP	DO	Turb
1050	25.70	10.33	6.89	1.48	104	1.60	66.0
1053	25.68	10.82	6.94	1.47	93	1.54	56.4
1056	25.65	11.55	6.96	1.47	84	1.34	47.4
1059	25.65	12.02	6.97	1.47	79	1.15	34.1
1102	25.65	12.41	6.98	1.46	76	1.12	27.0
1105	25.65	12.49	6.99	1.46	73	1.08	19.3
1108	25.65	12.66	6.99	1.45	70	1.04	17.5
1111	25.65	12.97	6.99	1.46	65	0.93	7.1
1114	25.65	13.01	6.99	1.45	62	0.91	6.0
1117	25.65	13.07	6.99	1.44	60	0.90	5.7
1120	25.65	13.05	6.99	1.42	60	0.89	5.9

2/9/12

Sampling 35BWW04, overwell @ 1140;
low-flow pumping @ 1144, Flow Rate 130 mL/min
DTW 22.85 TD 35.8
Sample time 1225 Volume Purged .5 gal

* slowed Rate to 80 mL/min @ 1157

Time	DTW	Temp °C	pH	SCond	ORP	DO	Turb
1151	23.04	15.18	6.87	0.347	133	5.13	77.3
1154	23.09	15.57	6.81	0.349	130	7.14	70.0
1157	23.10*	15.48	6.82	0.351	130	7.46	62.2
1200	23.10	15.57	6.82	0.350	130	6.99	52.2
1203	23.10	15.50	6.81	0.349	129	6.98	55.6
1206	23.10	15.48	6.82	0.351	129	6.97	45.9
1209	23.10	15.43	6.81	0.349	130	6.90	45.8
1212	23.10	15.41	6.81	0.348	131	6.93	42.4
1215	23.10	15.40	6.81	0.349	131	6.92	41.2
1218	23.10	15.39	6.81	0.348	130	6.99	41.5
1221	23.10	15.39	6.81	0.350	130	6.97	41.4

2/9/12

Sampling 35BMW02, over well @ 1225

low flow pumping @ 1227, Flow Rate 160 ml/min

DTW 24.50 TD 34.6

Sampled @ 1308

Total Volume purged 0.75 gal

time	DTW	Temp°C	pH	Scond	ORP	DO	Turb
1238	24.50	14.86	7.58	0.819	168	2.94	0.0
1241	24.55	15.08	6.71	0.818	215	2.38	0.0
1244	24.50	15.18	6.75	0.808	229	2.29	0.0
1247	24.50	15.30	6.73	0.811	232	2.08	0.0
1250	24.50	15.45	6.75	0.810	247	1.77	0.0
1253	24.50	15.52	6.73	0.838	234	1.61	0.0
1256	24.50	15.55	6.79	0.811	246	1.35	0.0
1259	24.50	15.74	6.70	0.838	253	1.35	0.0
1302	24.50	15.81	6.70	0.829	253	1.31	0.0
1305	24.50	16.10	6.70	0.837	251	1.30	0.0

Samples Shipped Fed EX

on 2/9/12 @

Tracking # 8757 0826 0722

Shaw®

Figure 1

WELL DEVELOPMENT RECORD

WELL/PIEZOMETER ID 35BWW09
SHEET 1 OF 1

PROJECT NAME: LHAAP PROJECT NO.: DATE: 1/27/12
LOCATION: Karnack, TX DATE INSTALLED: 1/26/12
TOTAL DEPTH (FTOC) 38.5' CASING DIAMETER 4"

METHODS OF DEVELOPMENT

☐ Swabbing ☐ Bailing ☐ Pumping ☒ Surge & Pump

Describe

Equipment decontaminated prior to development ☐ Yes ☐ No

Describe Alconox rinse then 2X De-Ionized H_2O rinse

EQUIPMENT NUMBERS Horiba U-52 multi-meter

pH Meter EC Meter Turbidity Meter Thermometer

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 38.5 ft.

Measured Water Level Depth (C) 25.7 ft.

Length of Static Water Column (D) 38.5 (B) - 25.7 (C) = 12.8

Casing Water Volume (E) 0.65 (A) x 12.8 (D) = 8.32

Total Purge Volume = 8.32 gal

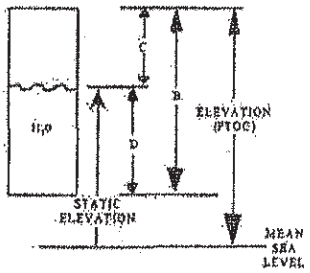

Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature F or C	Turbidity/ Sand (ppm)	Comments
1/27	0802	25.7	1 bailer	6.69	1.39	16.61	Overrange	Very Dirty Sandy
1/27	0915	26.8	8.5	7.12	1.17	15.73	Overrange	>1000 NTU
1/27	1005	26.3	8.5	7.08	1.13	17.76	Overrange	>1000 NTU
1/27	1045	26.05	8.5	7.12	1.11	17.52	Overrange	>1000 NTU
1/27	1115	26.05	8.5	7.13	1.10	17.75	Overrange	>1000 NTU
1/27	1145	26.00	8.5	7.11	1.12	17.48	Overrange	>1000 NTU
1/27	1200	26.80	8.5	7.17	1.14	17.47	Overrange	>1000 NTU
1/27	1215	27.52	17	7.16	1.12	17.44	1000 NTU	

Stabilized

Shaw®

Document:	Well Development
Revision Date:	11/01/05
Revision No.:	0
Page:	10 of 10

Figure 1

WELL DEVELOPMENT RECORD

WELL/PIEZOMETER ID 35BMW11
SHEET _____ OF _____

PROJECT NAME: LHAAP PROJECT NO.: _____ DATE: 2/8/12

LOCATION: 35BMW11 DATE INSTALLED: 01/26/12

TOTAL DEPTH (FTOC) 39.1 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

☐ Swabbing ☐ Bailing ☐ Pumping ☑

Describe Pump & Surge

Equipment decontaminated prior to development ☑ Yes ☐ No

Describe Wash in Alconox then double rinse in DI water

EQUIPMENT NUMBERS U-52

pH Meter _____ EC Meter _____ Turbidity Meter _____ Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 39.1 ft.

Measured Water Level Depth (C) 23.4 ft.

Length of Static Water Column (D) 39.1 (B) - 23.4 (C) = 15.7

Casing Water Volume (E) 0.65 (A) x 15.7 (D) = 10.2

Total Purge Volume = 5x 10.2 gal

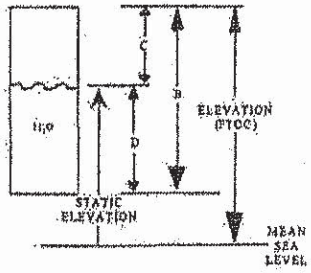

Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/ Sand (ppm)	Comments
2/8	1544	23.4	3 bailers	6.21	1.26	18.53	>1000	Cloudy, full of sediment
2/8	1602	29.33	10 gal	6.41	1.13	18.03	>1000	Cloudy full of sediment
2/8	1613	29.54	2.5	6.42	1.08	19.52	>1000	" " "
2/8	1630	30.10	5	6.40	1.11	18.54	>1000	" " " "
2/8	1640	31.2	5	6.49	1.09	19.51	>1000	" " " "
2/8	1653	29.0	2.5	6.47	1.10	19.00	>1000	" " " "
2/8	1705	29.45	7.5	6.42	1.14	19.36	>1000	clearing a little
2/8	1718	29.80	8	6.43	1.11	19.30	>1000	" "
2/8	1735	30.3	1	6.49	1.09	19.65	586	clearing
2/8	1743	31.1	1	6.49	1.01	19.01	460	clearing
2/8	1748	31.4	1	6.48	1.16	19.16	428	clearing
2/8	1753	31.8	1	6.47	1.12	19.23	416	clearing
2/8	1758	32.3	1	6.48	1.17	19.17	420	clearing

Stabilized

Stabilized including turb.

Shaw®

Figure 1

WELL DEVELOPMENT RECORD

WELL/PIEZOMETER ID _____
SHEET _____ OF _____

PROJECT NAME: LHAAP PROJECT NO.: _____ DATE: 2/8/12

LOCATION: 35BUW14 DATE INSTALLED: 1/26/12

TOTAL DEPTH (FTOC) 38.7 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

☐ Swabbing ☐ Bailing ☐ Pumping ☑

Describe Pump & Surge

Equipment decontaminated prior to development ☐ Yes ☐ No

Describe Alcono + wash and double rinse in DI water

EQUIPMENT NUMBERS Horiba U52

pH Meter _____ EC Meter _____ Turbidity Meter _____ Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 38.7 ft.

Measured Water Level Depth (C) 22.15 ft.

Length of Static Water Column (D) 38.7 (B) - 22.15 (C) = 16.55

Casing Water Volume (E) 0.65 (A) x 16.55 (D) = _____

Total Purge Volume = 10.75 gal

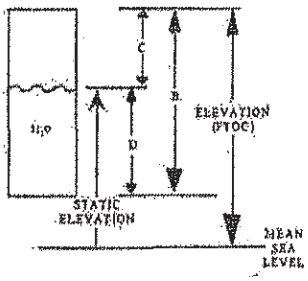

Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature F or C	Turbidity/ Sand (ppm)	Comments
2/8	1305	22.15	3 bailers	7.75	0.944	16.79	>1000	full of sediment
2/8	1330	25.25	15 gal	7.44	0.793	17.38	>1000	full of sediment
2/8	1353	25.00	11 gal	7.10	0.729	18.09	>1000	full of sediment
2/8	1358	25.40	5 gal	7.05	0.666	18.30	>1000	full of sediment
2/8	1410	24.85	5 gal	6.86	0.748	18.03	>1000	starting to clear
2/8	1420	25.64	10 gal	6.86	0.530	18.14	>1000	cloudy
2/8	1427	25.88	5 gal	6.81	0.545	18.25	271	clearing
2/8	1433	26.08	5 gal	6.83	0.515	18.21	255	clearing
2/8	1438	25.14	5 gal	6.85	0.565	18.17	250	clearing
2/8	1444	~~26~~ 26.40	2.5 gal	6.83	0.545	18.01	245	clearing

stabilized

Figure 1

Water Level Measurement/Groundwater Sampling Log Form

Well No. 35BWW 11 Date 2/9/12
Sample ID No. 35BWW 11
Project ID LHAAP Measured/Sampled By: John Freise
Time: Start 0920 End: 1027

Measuring Point Elevation: Ft. Well Construction Material: 4" PVC
Well Depth Ft: 1) 39.1' 2) 3) 4)
Avg. (of valid measurements*)

Water Depth Ft: 1) 23.50' 2) 3) 4)
Avg. (of valid measurements*)
(*Minimum of three measurements, last two within 0.01 feet.)

Well Internal Diameter: 4 ~~ft~~ in
Riser Above/Below Pad Elevation Marker: Ft.

Pad Elevation: Ft.
Sampling Equipment Used:
Horiba U52, Cole-Parmer Peristaltic Pump, Teflon tubing

Equipment Numbers: U52 # B32C3AVR
pH Meter EC Meter Turbidity Meter Thermometer

Casing Volume Information:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Purging Information:
Measured Well Depth (B): 39.1 Ft.
Measured Water Level Depth (C): 23.5 Ft.
Length of Static Water Column (D): 39.1 (B) - 23.5 (C) = 15.6 ft.
Casing Water Volume (E): 0.65 (A) x 15.6 (D) = 10.14 gal.
Total Purge Volume = 0.6 (gal) (minimum of three casing volumes)

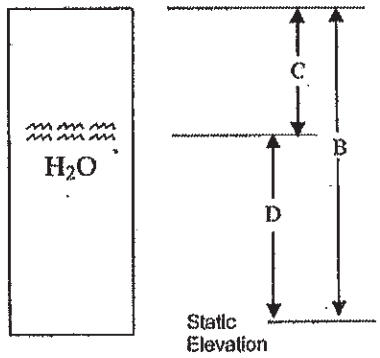

Figure 1 (*continued*)

Water Level Measurement/Groundwater Sampling Log Form (Continued)

Field Indicator Parameter Measurements During Purging:

pH	6.77	6.70	6.72	6.70	
Temp.°C	~~[illegible]~~ 11.41	11.23	11.16	11.15	
Specific Conductance: ~~µmhos~~ mS/cm		0.579	0.573	0.570	0.569
Turbidity: NTU		>1000	>1000	>1000	>1000
Visual Appearance of Water:		Cloudy	Cloudy	Cloudy	Cloudy

Comments:

Field Indicator Parameter Measurements After Sampling:

pH	6.71			
Temp.°C	11.28			
Specific Conductance: ~~µmhos~~ mS/cm	0.571			
Turbidity: NTU	>1000			
Visual Appearance of Water:	Cloudy			

Comments:

Laboratory Analysis Requested:

Sample ID No.	Parameter	Method	Preservation	Duplicate	No. of Containers
35BWW11	VOC	8260B	HCl	N	3

Page 2 of 2

Figure 2

Shaw Environmental & Infrastructure, Inc.	WATER SAMPLE FIELD COLLECTION REPORT	Project Number: ____ Project Name: ____ Site Location: LHAAP

Sample ID Number	35BWW11	Date Collected	2/9/12
Sample Location(7)	35BWW11	Time Collected	1027
Diameter of Well	4 (in.)	Sampler	I.D. # JF
Depth to Bottom of Well	39.1 (ft.)	Casing Stick Up	4.1'
Static Water Level	23.50 (ft.)	Measured From(1)	TOC (ft.)
Well Volumes Purged		Purging Method(2)	Pumped
Type of Sample(3)	Well	Sampling Method(4)	Low-flow Pumping
Depth of Sample	34. (ft.)	Measured From(1)	TOC
Sample Collection Order			

FIELD SCREENING AND TEST RESULTS

Water Temperature 11.15 °C pH 6.70 Units

Specific Conductance 0.569 ~~umho~~ mS/cm at 11.15 °C

OVA ☐ HNU PID ☐ Reading ____ PPM

Photovac GC (P/GC) Probable Compound ____ Reading ____ PPM

METER CALIBRATION

pH STD	METER READING	SP. COND. STD	METER READING	____/STD (8)	METER READING

SAMPLE TYPES COLLECTED

CONTAINER #	TYPE (5)	CONTAINER TYPE	VOLUME	FILTERED	
	VOA	P ☐ G ☑	40 mL	Y ☐ N ☑	Y N ☐
		P ☐ G ☐		Y ☐ N ☐	Y N ☐
		P ☐ G ☐		Y ☐ N ☐	Y N ☐
		P ☐ G ☐		Y ☐ N ☐	Y N ☐
		P ☐ G ☐		Y ☐ N ☐	Y N ☐

WEATHER CONDITIONS: TEMP. 50 °F CLEAR ☑ CLOUDY ☐ RAIN ☐ SNOW ☐ WINDY ☐

(1) T.O.C. = Top of Protective Casing; T.O.W. = Top of Well Casing; G.S. = Ground Surface
(2) Bailed, Pumped, Air Lift, Etc.
(3) Stream, Pond, Spring, Well, Seep, Supply, Etc.
(4) Bailer, Kemmerer, Grab, Pump, Etc.
(5) General Chem., Metal, VOA, Organics, Etc.
(6) HNO^3, NaOH, H^2SO^4, $Na^2O^3S^2$, Etc.
(7) If Well, give Well I.D. Number.
(8) OVA, PID, P/GC or Other.

Figure 1

Water Level Measurement/Groundwater Sampling Log Form

Well No. 35BWW09 Date 2/9/12
Sample ID No. 35BWW09
Project ID LHAAP Measured/Sampled By: John Freise
Time: Start 1040 End: 1128

Measuring Point Elevation: Ft. Well Construction Material: 4" PVC
Well Depth Ft: 1) 38.5 2) 3) 4)
Avg. (of valid measurements*)

Water Depth Ft: 1) 25.5 2) 3) 4)
Avg. (of valid measurements*)
(*Minimum of three measurements, last two within 0.01 feet.)

Well Internal Diameter: 4 ~~Ft~~ In.
Riser Above/Below Pad Elevation Marker: Ft.

Pad Elevation: Ft.
Sampling Equipment Used:
Horiba U-52, Cole-Parmer Peristaltic Pump, Teflon Tubing

Equipment Numbers: U-52 HBJ2C3AVR
pH Meter EC Meter Turbidity Meter Thermometer

Casing Volume Information:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Purging Information:
Measured Well Depth (B): 38.5 Ft.
Measured Water Level Depth (C): 25.5 Ft.
Length of Static Water Column (D) 38.5 : (B) - 25.5 (C) = 13 ft.
Casing Water Volume (E): 0.65 (A) x 13 (D) = 8.45 gal.
Total Purge Volume = 1.0 (gal) (minimum of three casing volumes)

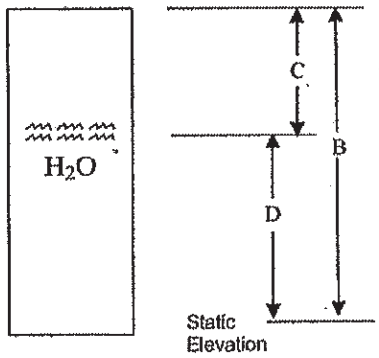

These standard project procedures are applicable to all members of Shaw Environmental, Inc.

Figure 1 (*continued*)

Water Level Measurement/Groundwater Sampling Log Form (Continued)

Field Indicator Parameter Measurements During Purging:

pH	6.99	6.99	6.99	6.99	
Temp.°C	12.97	13.01	13.07	13.05	
Specific Conductance: ~~µmhos~~ mS/cm		1.46	1.45	1.44	1.42
Turbidity: NTU		7.1	6.0	5.7	5.9
Visual Appearance of Water:		Clear	Clear	Clear	Clear

Comments:

Field Indicator Parameter Measurements After Sampling:

pH	6.99			
Temp.°C	13.01			
Specific Conductance: ~~µmhos~~ mS/cm	1.44			
Turbidity: NTU	5.5			
Visual Appearance of Water:	Clear			

Comments:

Laboratory Analysis Requested:

Sample ID No.	Parameter	Method	Preservation	Duplicate	No. of Containers
35BWW09	VOC	8260B	HCl	Y	6*

*3 for Sample
3 for Dup

Page 2 of 2

Figure 2

Shaw Environmental & Infrastructure, Inc.	WATER SAMPLE FIELD COLLECTION REPORT	Project Number: ____ Project Name: ____ Site Location: LHAAP

Sample ID Number	35BWW09	Date Collected	2/9/12
Sample Location(7)	35BWW09	Time Collected	1123 ; 1128
Diameter of Well	4 (in.)	Sampler	I.D. # JR
Depth to Bottom of Well	38.5 (ft.)	Casing Stick Up	3
Static Water Level	25.5 (ft.)	Measured From(1)	TOC (ft.)
Well Volumes Purged		Purging Method(2)	Pump
Type of Sample(3)		Sampling Method(4)	Low flow Pumping
Depth of Sample	33 (ft.)	Measured From(1)	TOC
Sample Collection Order			

FIELD SCREENING AND TEST RESULTS

Water Temperature 13.05 °C pH 6.99 Units

Specific Conductance 1.42 ~~umhos~~ mS/cm at 13.05 °C

OVA ☐ HNU PID ☐ Reading ____ PPM

Photovac GC (P/GC) Probable Compound ____ Reading ____ PPM

METER CALIBRATION

pH STD	METER READING	SP. COND. STD	METER READING	____/STD (8)	METER READING

SAMPLE TYPES COLLECTED

CONTAINER #	TYPE (5)	CONTAINER TYPE		VOLUME	FILTERED			
		P ☐	G ☑		Y ☐	N ☑	Y	N ☐
	VOA	P ☐	G ☑	40 mL	Y ☐	N ☑	Y	N ☐
Dup-1	VOA	P ☐	G ☐	40 mL	Y ☐	N ☐	Y	N ☐
		P ☐	G ☐		Y ☐	N ☐	Y	N ☐
		P ☐	G ☐		Y ☐	N ☐	Y	N ☐

WEATHER CONDITIONS: TEMP. 50 °F CLEAR ☑ CLOUDY ☐ RAIN ☐ SNOW ☐ WINDY ☐

(1) T.O.C. = Top of Protective Casing; T.O.W. = Top of Well Casing; G.S. = Ground Surface
(2) Bailed, Pumped, Air Lift, Etc.
(3) Stream, Pond, Spring, Well, Seep, Supply, Etc.
(4) Bailer, Kemmerer, Grab, Pump, Etc.
(5) General Chem., Metal, VOA, Organics, Etc.
(6) HNO^3, NaOH, H^2SO^4, $Na^2O^3S^2$, Etc.
(7) If Well, give Well I.D. Number.
(8) OVA, PID, P/GC or Other.

Figure 1

Water Level Measurement/Groundwater Sampling Log Form

Well No. 35BWW08 Date 2/9/12
Sample ID No. 35BWW08
Project ID LHAAP Measured/Sampled By: John Freise
Time: Start 1225 End: 1308

Measuring Point Elevation: Ft. Well Construction Material: 2" PVC
Well Depth Ft: 1) 34.6 2) 3) 4)
Avg. (of valid measurements*)

Water Depth Ft: 1) 24.5 2) 3) 4)
Avg. (of valid measurements*)
(*Minimum of three measurements, last two within 0.01 feet.)

Well Internal Diameter: 2 ~~Ft.~~ In
Riser Above/Below Pad Elevation Marker: Ft.

Pad Elevation: Ft.
Sampling Equipment Used:
Horiba U-52 Multi-Meter, Cole-Parmer Peristaltic Pump, Teflon tubing

Equipment Numbers: U-52 #B52C3AVR
pH Meter EC Meter Turbidity Meter Thermometer

Casing Volume Information:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Purging Information:
Measured Well Depth (B): 34.6 Ft.
Measured Water Level Depth (C): 24.5 Ft.
Length of Static Water Column (D): 34.6 : (B) - 24.5 (C) = 10.1 ft.
Casing Water Volume (E): 0.16 (A) x 10.1 (D) = 1.6 gal.
Total Purge Volume = 0.75 (gal) (minimum of three casing volumes)

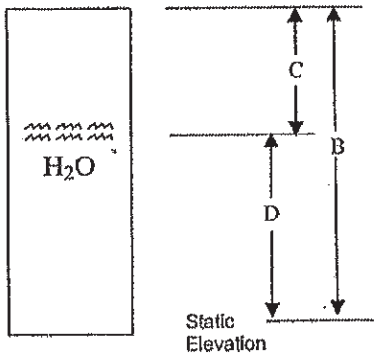

These standard project procedures are applicable to all members of Shaw Environmental, Inc.

Figure 1 (*continued*)

Water Level Measurement/Groundwater Sampling Log Form (Continued)

Field Indicator Parameter Measurements During Purging:

pH	6.79	6.70	6.70	6.70	
Temp.°C	15.55	15.74	15.81	16.10	
Specific Conductance: ~~µmhos~~ mS/cm		0.811	0.838	0.839	0.837
Turbidity: NTU		0	0	0	0
Visual Appearance of Water:		clear	clear	clear	clear

Comments:

Field Indicator Parameter Measurements After Sampling:

pH	6.70			
Temp.°C	16.11			
Specific Conductance: µmhos/cm	0.830			
Turbidity: NTU	0			
Visual Appearance of Water:	Clear			

Comments:

Laboratory Analysis Requested:

Sample ID No.	Parameter	Method	Preservation	Duplicate	No. of Containers
35BWW08	VOC	8260B	HCl	N	3

Page 2 of 2

Figure 2

Shaw Environmental & Infrastructure, Inc.	WATER SAMPLE FIELD COLLECTION REPORT	Project Number: ____ Project Name: ____ Site Location: LHAAP

Sample ID Number	35BWW08	Date Collected	2/9/12
Sample Location(7)	35BWW08	Time Collected	1308
Diameter of Well	2 (in.)	Sampler	I.D. # JF
Depth to Bottom of Well	34.6 (ft.)	Casing Stick Up	3
Static Water Level	24.5 (ft.)	Measured From(1)	TOC (ft.)
Well Volumes Purged		Purging Method(2)	Pump
Type of Sample(3)	Well	Sampling Method(4)	Low-flow Pumping
Depth of Sample	29. (ft.)	Measured From(1)	TOC
Sample Collection Order			

FIELD SCREENING AND TEST RESULTS

Water Temperature 16.10 °C pH 6.70 Units

Specific Conductance 0.837 ~~umho~~ mS/cm at 16.10 °C

OVA ☐ HNU PID ☐ Reading ____ PPM

Photovac GC (P/GC) Probable Compound ____ Reading ____ PPM

METER CALIBRATION

pH STD	METER READING	SP. COND. STD	METER READING	____/STD (8)	METER READING

SAMPLE TYPES COLLECTED

CONTAINER #	TYPE (5)	CONTAINER TYPE		VOLUME	FILTERED			
	VOA	P ☐	G ☑	40 mL	Y ☐	N ☐	Y	N ☐
		P ☐	G ☐		Y ☐	N ☐	Y	N ☐
		P ☐	G ☐		Y ☐	N ☐	Y	N ☐
		P ☐	G ☐		Y ☐	N ☐	Y	N ☐
		P ☐	G ☐		Y ☐	N ☐	Y	N ☐

WEATHER CONDITIONS: TEMP. 50 °F CLEAR ☑ CLOUDY ☐ RAIN ☐ SNOW ☐ WINDY ☐

(1) T.O.C. = Top of Protective Casing; T.O.W. = Top of Well Casing; G.S. = Ground Surface
(2) Bailed, Pumped, Air Lift, Etc.
(3) Stream, Pond, Spring, Well, Seep, Supply, Etc.
(4) Bailer, Kemmerer, Grab, Pump, Etc.
(5) General Chem., Metal, VOA, Organics, Etc.
(6) HNO^3, NaOH, H^2SO^4, $Na^2O^3S^2$, Etc.
(7) If Well, give Well I.D. Number.
(8) OVA, PID, P/GC or Other.

Figure 1

Water Level Measurement/Groundwater Sampling Log Form

Well No. 35BWW04 Date 2/9/12
Sample ID No. 35BWW04
Project ID LHAAP Measured/Sampled By: John Freise
Time: Start 1140 End: 1221

Measuring Point Elevation: _____ Ft. Well Construction Material: 4" PVC
Well Depth Ft: 1) 35.8 2) _____ 3) _____ 4) _____
Avg. _____ (of valid measurements*)

Water Depth Ft: 1) 22.85 2) _____ 3) _____ 4) _____
Avg. _____ (of valid measurements*)
(*Minimum of three measurements, last two within 0.01 feet.)

Well Internal Diameter: 4 ~~Ft.~~ In.
Riser Above/Below Pad Elevation Marker: _____ Ft.

Pad Elevation: _____ Ft.
Sampling Equipment Used:
Horiba U-52 multimeter, Cole-Parmer Peristaltic Pump, Teflon Tubing

Equipment Numbers: U-52 #BJ2C3AVR
pH Meter _____ EC Meter _____ Turbidity Meter _____ Thermometer _____

Casing Volume Information:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Purging Information:
Measured Well Depth (B): 35.8 Ft.
Measured Water Level Depth (C): 22.85 Ft.
Length of Static Water Column (D): 35.8 : (B) - 22.85 (C) = 12.95 ft.
Casing Water Volume (E): 0.65 (A) x 12.95 (D) = 8.4 gal.
Total Purge Volume = 0.5 (gal) (minimum of three casing volumes)

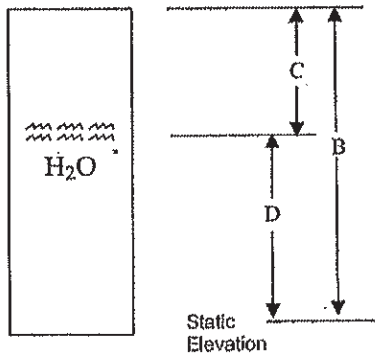

These standard project procedures are applicable to all members of Shaw Environmental, Inc.

Figure 1 (*continued*)

Water Level Measurement/Groundwater Sampling Log Form (Continued)

Field Indicator Parameter Measurements During Purging:

pH	6.81	6.81	6.81	6.81	
Temp.°C	15.41	15.40	15.39	15.39	
Specific Conductance: ~~µmhos~~ mS/cm		0.348	0.349	0.348	0.350
Turbidity: NTU		42.4	41.2	41.5	41.4
Visual Appearance of Water:		Clear	Clear	Clear	Clear

Comments:

Field Indicator Parameter Measurements After Sampling:

pH	6.81			
Temp.°C	15.37			
Specific Conductance: ~~µmhos~~ mS/cm	0.351			
Turbidity: NTU	40.7			
Visual Appearance of Water:	Clear			

Comments:

Laboratory Analysis Requested:

Sample ID No.	Parameter	Method	Preservation	Duplicate	No. of Containers
35BWW04	VOC	8260B	HCl	N	3

These standard project procedures are applicable to all members of Shaw Environmental, Inc.

Figure 2

Shaw Environmental & Infrastructure, Inc.	WATER SAMPLE FIELD COLLECTION REPORT	Project Number: ____ Project Name: ____ Site Location: LHAAP

Sample ID Number	35BWW04	Date Collected	2/9/12
Sample Location(7)	35BWW04	Time Collected	1221
Diameter of Well	4 (in.)	Sampler	I.D. # JF
Depth to Bottom of Well	35.8 (ft.)	Casing Stick Up	3
Static Water Level	22.85 (ft.)	Measured From(1)	TOC (ft.)
Well Volumes Purged		Purging Method(2)	Pump
Type of Sample(3)	Well	Sampling Method(4)	Low-Flow Pumping
Depth of Sample	30. (ft.)	Measured From(1)	TOC
Sample Collection Order			

FIELD SCREENING AND TEST RESULTS

Water Temperature 15.39 °C pH 6.81 Units

Specific Conductance 0.350 ~~umho~~ mS/cm at 15.39 °C

OVA ☐ HNU PID ☐ Reading ____ PPM

Photovac GC (P/GC) Probable Compound ____ Reading ____ PPM

METER CALIBRATION

pH STD	METER READING	SP. COND. STD	METER READING	____/STD (8)	METER READING

SAMPLE TYPES COLLECTED

CONTAINER #	TYPE (5)	CONTAINER TYPE	VOLUME	FILTERED			
	VOA	P ☐ G ☑	40 mL	Y ☐ N ☑	Y		N ☐
		P ☐ G ☐		Y ☐ N ☐	Y		N ☐
		P ☐ G ☐		Y ☐ N ☐	Y		N ☐
		P ☐ G ☐		Y ☐ N ☐	Y		N ☐
		P ☐ G ☐		Y ☐ N ☐	Y		N ☐

WEATHER CONDITIONS: TEMP. 50 °F CLEAR ☑ CLOUDY ☐ RAIN ☐ SNOW ☐ WINDY ☐

(1) T.O.C. = Top of Protective Casing; T.O.W. = Top of Well Casing; G.S. = Ground Surface
(2) Bailed, Pumped, Air Lift, Etc.
(3) Stream, Pond, Spring, Well, Seep, Supply, Etc.
(4) Bailer, Kemmerer, Grab, Pump, Etc.
(5) General Chem., Metal, VOA, Organics, Etc.
(6) HNO^3, NaOH, H^2SO^4, $Na^2O^3S^2$, Etc.
(7) If Well, give Well I.D. Number.
(8) OVA, PID, P/GC or Other.

Figure 1

Water Level Measurement/Groundwater Sampling Log Form

Well No. 35BWW14 Date 2/9/12
Sample ID No. 35BWW14
Project ID LHAAP Measured/Sampled By: John Freise
Time: Start 0820 End: 0900

Measuring Point Elevation: Ft. Well Construction Material: 4" PVC
Well Depth Ft: 1) 38.3' 2) 3) 4)
Avg. (of valid measurements*)

Water Depth Ft: 1) 22.25' 2) 3) 4)
Avg. (of valid measurements*)
(*Minimum of three measurements, last two within 0.01 feet.)

Well Internal Diameter: 4 ~~Ft~~ in
Riser Above/Below Pad Elevation Marker: Ft.

Pad Elevation: Ft.
Sampling Equipment Used:
Horiba U-52 Multimeter, Cole-Parmer Peristaltic Pump, teflon tubing

Equipment Numbers: U-52 #BJ2C3AVR
pH Meter EC Meter Turbidity Meter Thermometer

Casing Volume Information:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Purging Information:
Measured Well Depth (B): 38.3 Ft.
Measured Water Level Depth (C): 22.25 Ft.
Length of Static Water Column (D): 38.3 : (B) - 22.25 (C) = 16.05 ft.
Casing Water Volume (E): 0.65 (A) x 16.05 (D) = 10.4 gal.
Total Purge Volume = 1.8 (gal) (minimum of three casing volumes)

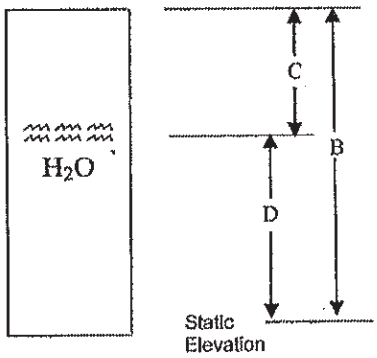

Figure 1 (*continued*)

Water Level Measurement/Groundwater Sampling Log Form (Continued)

Field Indicator Parameter Measurements During Purging:

pH	7.40	7.45	7.40	7.43	
Temp.°C	~~22.9~~ 12.03	12.11	12.23	12.28	
Specific Conductance: ~~µmhos~~ mS/cm		0.573	0.594	0.584	0.579
Turbidity: NTU		96	91	89	87
Visual Appearance of Water:					

Comments:

Field Indicator Parameter Measurements After Sampling:

pH	7.43			
Temp.°C	12.30			
Specific Conductance: ~~µmhos~~ mS/cm	0.581			
Turbidity: NTU	80			
Visual Appearance of Water:				

Comments:

Laboratory Analysis Requested:

Sample ID No.	Parameter	Method	Preservation	Duplicate	No. of Containers
35BWW14	VOC	8260B	HCl	N	3

These standard project procedures are applicable to all members of Shaw Environmental, Inc.

Figure 2

Shaw Environmental & Infrastructure, Inc.	WATER SAMPLE FIELD COLLECTION REPORT	Project Number: ____ Project Name: ____ Site Location: LHAAP

Sample ID Number	35BWW14	Date Collected	2/9/12
Sample Location(7)	35BWW14	Time Collected	0900
Diameter of Well	4 (in.)	Sampler	I.D. # SF
Depth to Bottom of Well	38.3 (ft.)	Casing Stick Up	3'
Static Water Level	22.25 (ft.)	Measured From(1)	(ft.)
Well Volumes Purged		Purging Method(2)	Pumped
Type of Sample(3)	Well	Sampling Method(4)	Low Flow Pump
Depth of Sample	33 (ft.)	Measured From(1)	TOC
Sample Collection Order			

FIELD SCREENING AND TEST RESULTS

Water Temperature 12.28 °C pH 7.43 Units

Specific Conductance 0.579 ~~umho~~ mS/cm at 12.28 °C

OVA ☐ HNU PID ☐ Reading ____ PPM

Photovac GC (P/GC) Probable Compound ____ Reading ____ PPM

METER CALIBRATION

pH STD	METER READING	SP. COND. STD	METER READING	____/STD (8)	METER READING

SAMPLE TYPES COLLECTED

CONTAINER #	TYPE (5)	CONTAINER TYPE	VOLUME	FILTERED	
	VOA	P ☐ G ☑	40 mL	Y ☐ N ☑	Y N ☐
		P ☐ G ☐		Y ☐ N ☐	Y N ☐
		P ☐ G ☐		Y ☐ N ☐	Y N ☐
		P ☐ G ☐		Y ☐ N ☐	Y N ☐
		P ☐ G ☐		Y ☐ N ☐	Y N ☐

WEATHER CONDITIONS: TEMP. 40 °F CLEAR ☑ CLOUDY ☐ RAIN ☐ SNOW ☐ WINDY ☐

(1) T.O.C. = Top of Protective Casing; T.O.W. = Top of Well Casing; G.S. = Ground Surface
(2) Bailed, Pumped, Air Lift, Etc.
(3) Stream, Pond, Spring, Well, Seep, Supply, Etc.
(4) Bailer, Kemmerer, Grab, Pump, Etc.
(5) General Chem., Metal, VOA, Organics, Etc.
(6) HNO^3, NaOH, H^2SO^4, $Na^2O^3S^2$, Etc.
(7) If Well, give Well I.D. Number.
(8) OVA, PID, P/GC or Other.

Appendix B: LHAAP-35B (37) ATC Sampling Results – July 2012

TABLE B-16. DISSOLVED OXYGEN (mg/L)

Well Identification	Jul 12	Dec 12	Mar 13	Jun 13	Sep 13	Dec 13	Mar 14	Jul 14	Oct 14
35BWW01	19.99	NS	NS	NS	NS	NS	NS	NS	NS
35BWW02	NS	NS	NS	NS	NS	NS	NS	NS	NS
35BWW03	19.99	6.08	NS	1.06	NS	1.13	1.08	1.24	1.07
35BWW04	19.99	NS	5.61	6.13	3.07	1.08	8.93	6.17	3.18
35BWW05	16.78	15.18	0.70	1.05	0.22	0.89	1.18	1.03	0.66
35BWW06	19.99	16.88	1.18	NS	NS	0.91	1.10	1.88	0.88
35BWW07	19.99	NS	NS	NS	1.95	NS	NS	NS	NS
35BWW08	19.99	5.00	1.40	1.30	0.27	1.05	1.62	3.04	3.12
35BWW09	19.99	NS	2.49	4.13	1.33	0.78	6.30	3.35	0.99
35BWW10						0.86	0.37	0.69	1.80
35BWW11	19.99	NS	NS	NS	3.36	NS	NS	NS	NS
35BWW12						1.71	NS	NS	NS
35BWW14	19.99	5.67	2.39	2.87	0.79	0.86	NS	NS	0.93
35BWW17						1.23	4.63	9.10	7.04
35BWW20						2.37	NS	NS	1.96
LHS-MW-58	19.99	5.02	5.98	4.61	0.66	7.07	10.86	7.73	5.05
MW 1-1	16.49	8.56	0.69	1.21	0.38	2.27	5.04	5.60	3.53
MW 1-2	18.13	10.12	0.94	1.68	0.46	0.95	0.82	5.76	2.07
MW 1-3	15.23	NS	NS	NS	NS	NS	4.30	4.23	NS
MW 2-1	16.91	8.14	0.42	0.84	0.66	0.60	1.45	1.02	1.23
MW 2-2	19.38	6.79	1.41	1.58	2.02	6.99	8.96	5.71	7.69
MW 2-3	19.99	3.98	0.77	1.73	1.70	6.05	8.31	7.27	7.37
MW 3-1	19.06	6.01	0.51	0.77	0.61	0.76	3.94	0.59	1.28
MW 3-2	19.99	5.43	1.07	0.74	0.74	1.81	1.57	1.72	1.23
MW 3-3	19.99	5.98	2.48	3.48	1.43	1.52	3.12	1.10	1.14
MW 4-1	19.99	NM	1.28	1.12	1.02	1.04	1.72	1.58	0.84
MW 4-2	17.95	NM	0.53	0.79	0.82	0.91	0.98	1.97	5.27
MW 4-3	NM	NM	3.16	7.97	4.71	NS	6.78	9.21	8.33

NM = Not measured.
NS = Not sampled.

FOR OFFICIAL USE ONLY

TABLE B-17. ORP (mV)

Well Identification	Jul 12	Dec 12	Mar 13	Jun 13	Sep 13	Dec 13	Mar 14[a]	Jul 14[a]	Oct 14
35BWW01	84	NS	NS	NS	NS	NS	NS	NS	NS
35BWW02	NS	NS	NS	NS	NS	NS	NS	NS	NS
35BWW03	-78	19	NS	139.3	NS	-155.2	-199.7	-333.9	-40.3
35BWW04	41	NS	81.3	130.7	198.4	130.8	-202.3	-325.7	245.0
35BWW05	-101	-51	-69.7	-39.0	-54.6	-73.6	-177.1	-291.1	-52.9
35BWW06	7	-38	-61.1	NS	NS	-66.2	-185.0	-284.0	-62.3
35BWW07	13	NS	NS	NS	228	NS	NS	NS	NS
35BWW08	10	155	101.3	192.3	212.8	99.5	-223.1	-283.6	247.7
35BWW09	14	NS	-10.6	127.5	144.5	-44.7	-219.6	-284.7	11.8
35BWW10						137.5	-225.2	-344.7	224.6
35BWW11	-114	NS	NS	NS	41.5	NS	NS	NS	NS
35BWW12						127.7	NS	NS	NS
35BWW14	-145	50	76.1	74.6	157.9	-64.3	NS	NS	38.0
35BWW17						135.1	-173.7	-286.4	344.6
35BWW20						132.2	NS	NS	181.0
LHS-MW-58	23	163	67.1	159.4	165.8	136.3	-199.8	-321.0	264.6
MW 1-1	31	78	60.8	177.4	243.6	102.8	-224.2	-279.4	173.3
MW 1-2	13	122	78.8	115.6	289.2	174.0	-221.3	-282.0	199.7
MW 1-3	8	NS	NS	NS	NS	NS	-173.4	-254.6	NS
MW 2-1	-103	-9	38.8	146.3	170.9	105.5	-208.4	-336.3	205.5
MW 2-2	26	107	116.2	174.7	278.4	187.8	-190.6	-325.5	266.3
MW 2-3	68	102	90.1	174.1	275.9	127.1	-209.3	-322.0	296.8
MW 3-1	-87	-30	-64.1	140.8	197.1	-138.5	-216.7	-326.4	-43.7
MW 3-2	66	108	116.8	145.1	273.1	144.6	-216.7	-324.1	207.0
MW 3-3	-164	-68	15.9	126.6	283.0	159.4	-206.0	-331.2	235.7
MW 4-1	-46	-49	12.2	45.8	8.7	-99.1	-195.6	-297.5	27.0
MW 4-2	-43	25	29.3	131.7	74.8	-12.5	-193.1	-294.9	203.4
MW 4-3	NM	140	177.7	160.2	237.2	NS	-177.0	-248.5	295.9

[a] ORP measurements taken on these dates are suspect. The ORP probe may have been defective.

NM = Not measured.
NS = Not sampled.

FOR OFFICIAL USE ONLY

TABLE B-18. pH

Well Identification	Jul 12	Dec 12	Mar 13	Jun 13	Sep 13	Dec 13	Mar 14	Jul 14	Oct 14
35BWW01	3.60	NS	NS	NS	NS	NS	NS	NS	NS
35BWW02	NS	NS	NS	NS	NS	NS	NS	NS	NS
35BWW03	7.58	10.71	NS	9.04	NS	9.29	9.18	8.84	8.84
35BWW04	4.28	NS	6.51	6.46	6.56	6.44	6.86	7.04	6.43
35BWW05	6.95	7.13	6.96	6.83	7.08	6.91	6.88	6.54	6.88
35BWW06	5.54	7.22	6.81	NS	NS	6.83	6.88	6.60	6.88
35BWW07	5.86	NS	NS	NS	6.86	NS	NS	NS	NS
35BWW08	5.45	6.94	6.86	6.74	6.86	6.73	6.89	6.60	7.29
35BWW09	5.38	NS	6.98	6.95	7.13	6.83	7.29	6.90	6.84
35BWW10						7.02	7.27	6.77	7.10
35BWW11	6.57	NS	NS	NS	6.26	NS	NS	NS	NS
35BWW12						6.42	NS	NS	NS
35BWW14	8.01	6.93	6.88	6.69	6.57	6.57	NS	NS	6.69
35BWW17						5.53	5.22	4.70	4.83
35BWW20						7.45	NS	NS	6.79
LHS-MW-58	6.08	6.54	6.84	6.24	6.47	7.07	7.45	7.04	6.63
MW 1-1	5.15	7.22	6.96	6.75	6.97	6.92	6.88	6.90	7.06
MW 1-2	5.39	7.76	7.55	6.99	7.01	7.98	10.23	9.74	7.89
MW 1-3	5.53	NS	NS	NS	NS	NS	7.66	6.83	NS
MW 2-1	6.38	6.39	5.98	5.76	5.99	5.84	5.84	5.55	5.81
MW 2-2	4.50	5.95	5.56	5.16	5.23	5.55	5.32	5.09	5.66
MW 2-3	3.86	5.67	5.26	4.91	5.36	5.56	6.07	5.50	5.53
MW 3-1	7.65	8.85	9.30	8.43	8.76	10.36	12.12	10.63	9.60
MW 3-2	5.09	5.98	6.11	5.87	5.65	6.22	7.00	7.12	7.02
MW 3-3	8.76	6.47	6.30	6.40	5.71	6.27	6.34	6.78	7.26
MW 4-1	7.22	6.62	6.53	6.35	6.57	6.40	6.55	6.38	6.45
MW 4-2	6.79	6.32	6.17	5.88	6.27	6.17	6.18	5.98	6.33
MW 4-3	6.00	5.42	5.23	5.23	5.35	NS	5.40	5.15	5.40

NS = Not sampled.

FOR OFFICIAL USE ONLY

TABLE B-19. CONDUCTIVITY (mS/CM)

Well Identification	Jul 12	Dec 12	Mar 13	Jun 13	Sep 13	Dec 13	Mar 14	Jul 14	Oct 14
35BWW01	0.172	NS	NS	NS	NS	NS	NS	NS	NS
35BWW02	NS	NS	NS	NS	NS	NS	NS	NS	NS
35BWW03	0.825	0.748	NS	0.692	NS	0.737	0.773	0.815	0.737
35BWW04	0.390	NS	0.350	0.336	0.335	0.319	0.327	0.338	0.273
35BWW05	0.361	0.348	0.326	0.384	0.366	0.395	0.404	0.429	0.355
35BWW06	1.360	1.460	1.103	NS	NS	1.284	1.225	1.257	1.061
35BWW07	1.060	NS	NS	NS	1.13	NS	NS	NS	NS
35BWW08	1.010	0.935	0.892	0.862	0.820	0.776	0.767	0.758	0.651
35BWW09	1.590	NS	1.346	1.313	1.316	1.288	1.090	0.952	0.904
35BWW10						0.409	0.420	0.463	0.422
35BWW11	1.690	NS	NS	NS	0.782	NS	NS	NS	NS
35BWW12						0.398	NS	NS	NS
35BWW14	0.576	0.524	0.455	0.471	0.462	0.485	NS	NS	0.445
35BWW17						0.395	0.111	0.089	0.069
35BWW20						1.092	NS	NS	0.359
LHS-MW-58	0.327	0.295	0.428	0.334	0.281	0.419	0.301	0.343	0.311
MW 1-1	0.569	0.606	0.650	0.618	0.554	0.588	0.509	0.498	0.416
MW 1-2	0.570	0.555	0.472	0.549	0.561	0.544	0.559	0.585	0.505
MW 1-3	0.475	NS	NS	NS	NS	NS	0.518	0.450	NS
MW 2-1	0.370	0.221	0.183	0.189	0.190	0.195	0.191	0.187	0.157
MW 2-2	0.313	0.197	0.154	0.145	0.114	0.102	0.107	0.152	0.147
MW 2-3	0.156	0.172	0.151	0.140	0.109	0.127	0.206	0.167	0.120
MW 3-1	0.719	0.593	0.494	0.519	0.488	0.528	1.507	0.473	0.398
MW 3-2	0.356	0.233	0.194	0.194	0.190	0.188	0.299	0.313	0.259
MW 3-3	0.547	0.322	0.302	0.343	0.282	0.305	0.354	0.374	0.292
MW 4-1	1.210	1.620	0.926	0.710	0.634	0.618	0.563	0.576	0.499
MW 4-2	0.479	0.493	0.434	0.434	0.454	0.479	0.479	0.447	0.384
MW 4-3	0.484	0.462	0.392	0.408	0.402	NS	0.393	0.394	0.367

NS = Not sampled.

FOR OFFICIAL USE ONLY

TABLE B-20. TEMPERATURE (°C)

Well Identification	Jul 12	Dec 12	Mar 13	Jun 13	Sep 13	Dec 13	Mar 14	Jul 14	Oct 14
35BWW01	20.6	NS	NS	NS	NS	NS	NS	NS	NS
35BWW02	NS	NS	NS	NS	NS	NS	NS	NS	NS
35BWW03	20.4	18.3	NS	23.38	NS	15.46	19.66	18.97	21.03
35BWW04	20.0	NS	19.31	21.87	19.29	15.28	16.82	17.18	18.26
35BWW05	21.0	18.5	18.61	21.04	19.89	16.42	15.83	18.82	19.23
35BWW06	20.5	17.6	13.95	NS	NS	16.34	18.72	20.07	19.48
35BWW07	25.2	NS	NS	NS	24.51	NS	NS	NS	NS
35BWW08	22.2	18.0	19.89	20.56	22.56	21.28	20.29	19.59	22.00
35BWW09	21.6	NS	18.62	20.08	20.94	18.87	16.51	18.55	18.82
35BWW10						21.02	18.99	20.85	21.83
35BWW11	25.8	NS	NS	NS	21.11	NS	NS	NS	NS
35BWW12						15.72	NS	NS	NS
35BWW14	22.8	17.8	18.54	20.02	22.54	17.04	NS	NS	18.99
35BWW17						16.72	17.09	19.69	19.38
35BWW20						17.28	NS	NS	22.23
LHS-MW-58	22.0	19.4	20.14	22.95	21.52	16.00	18.50	18.47	20.46
MW 1-1	24.5	18.6	19.57	20.54	23.72	21.66	20.79	21.34	20.30
MW 1-2	22.6	15.8	16.18	20.61	30.89	22.62	21.14	23.74	21.70
MW 1-3	28.1	NS	NS	NS	NS	NS	26.10	30.60	NS
MW 2-1	21.4	19.0	18.81	20.82	21.30	20.39	19.03	19.60	19.27
MW 2-2	23.6	18.8	19.08	21.27	23.14	18.57	19.69	20.50	20.98
MW 2-3	23.8	19.0	19.02	21.60	23.54	18.11	20.07	20.36	21.60
MW 3-1	21.2	17.6	17.88	21.73	22.33	16.76	20.18	18.42	19.13
MW 3-2	20.5	18.2	19.09	20.52	22.69	17.29	20.81	18.42	19.83
MW 3-3	22.0	17.9	19.42	23.18	26.88	16.46	16.73	18.20	21.31
MW 4-1	21.1	17.4	18.25	19.23	19.87	15.80	15.66	17.71	18.71
MW 4-2	21.9	17.8	18.66	19.44	20.84	14.74	16.43	18.32	19.40
MW 4-3	26.6	13.5	18.32	22.37	27.01	NS	16.47	21.57	22.72

NS = Not sampled.

FOR OFFICIAL USE ONLY

Appendix C: LHAAP-35B (37) AECOM Quality Control Summary Report and Analytical Reports – October 2015, December 2015, February 2016, and August 2016

QUALITY CONTROL SUMMARY REPORT

LHAAP-35B (37), CHEMICAL LABORATORY

FOR

LONGHORN ARMY AMMUNITION PLANT

KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers

Prepared By:

AECOM Technical Services

Janurary 2017

Table of Contents

1 INTRODUCTION ***1***
1.1 Intended Use of Data **1**
1.2 Preservation and Holding Times **1**
1.3 Calibrations **1**
1.3.1 Continuing Calibration Verifications (CCV) **2**
1.4 Blanks **2**
1.5 Surrogates **2**
1.6 Laboratory Control Sample (LCS) **2**
1.7 Matrix Spike/Matrix Spike Duplicate (MS/MSD) **2**
1.8 Field Duplicate Precision **2**
2 DATA USABILITY SUMMARY ***2***

List of Tables

Table 1: Completeness by Method
Table 2: Field Sample Identification and Laboratory Identification
Table 3: Qualified Analytical Data

1 INTRODUCTION

AECOM reviewed eight (8) data packages from Microbac Laboratory Services, Marietta, OH. Groundwater samples were collected in October 2015, December 2015, February 2016 and August 2016 at Site 37 Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas. Data were reviewed for conformance to the requirements of the following guidance documents: Automated Data Review by Laboratory Data Consultants (ADR.net), United States Environmental Protection Agency (EPA) Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, (EPA, July 2002), and EPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review, (EPA, June 2001).

1.1 Intended Use of Data

Groundwater sampling was implemented at the LHAAP-35B (37) site to determine aquifer rebound. Analyses requested included:

- SW6010 – Total Iron
- SW6020 - Total Manganese
- SW9056 – Common Anions (sulfate, nitrate)
- SM3500 Fe – Ferrous Iron
- SM4500-S-(-2)-F-2000 – Sulfide
- EPA415.1 – Total Organic/Inorganic Carbon
- SW8260B – Volatile Organic Compounds
- RSK175 – Dissolved Gases

Table 2 lists the sample identifications and their associated laboratory identifications. **Table 3** lists qualified results with the associated quality control parameter that was exceeded.

1.2 Preservation and Holding Times

Sample identification data were evaluated for agreement with the chain-of-custody (COC). All samples were received in appropriate containers, within the proper temperature range, in good condition, and with the required signatures.

All samples submitted in SDG L15121375 for nitrate analysis exceeded the holding time of 48 hours. Sample concentrations for nitrate are estimated (J/UJ).

Due to sulfate results outside of the calibration range for sulfate, samples L15121373-10, L16020861-04 and L16020861-05 were re-extracted and analyzed outside of the required holding time. The samples have detections for sulfate and the concentrations are estimated (J).

Table 3 shows qualified analytical data.

1.3 Calibrations

Initial calibration criteria modification includes RSD< or = to 30%, two compounds allowed up to 40%. If the continuing calibration verification (CCV) compound exceeds 30% drift, the compound is checked in the LCS, if both are outside recovery limits, the compound is rejected,

R. If only the CCV exceeds recovery criteria and is less than ± 40% drift, then the compound is qualified J or UJ.

1.3.1 Continuing Calibration Verifications (CCV)

All CCVs are within criteria.

1.4 Blanks

Where contamination by a target analyte of one of the various blanks was found, if the sample result for an associated sample was non-detect or less than 5X (10X for common laboratory contaminants) the analyte concentration in the blank, the corresponding sample result for the analyte was qualified B. Where the sample result for the affected analyte was greater than 5X the amount in the blank, no qualifier was applied.

All blanks were free of target analytes.

1.5 Surrogates

All Surrogates are within criteria.

1.6 Laboratory Control Sample (LCS)

All LCS/LCSDs are within criteria.

1.7 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

The matrix spike for sample L15101148-05 yielded a recovery of 78.5% for total manganese in SDG L15101148. This is below the lower control limit of 80%. The parent sample has a detection of total manganese and is estimated (J).

The matrix spike duplicate for sample L15101148-05 yielded a recovery of 111% for sulfate in SDG L15101148. This is greater than the upper control limit of 110%. The parent sample has a detection of sulfate and is estimated (J).

Table 3 shows qualified analytical data.

1.8 Field Duplicate Precision

Precision is the measure of variability of individual sample measurements. Evaluation of field duplicates for precision was done using the Relative Percent Difference (RPD). The RPD is defined as the difference between two duplicate samples divided by the mean and expressed as a percent. Field duplicate RPD limits were set at 0-30% for groundwater matrices. No data required qualification based field duplicate RPD outliers. Overall field precision was acceptable.

2 DATA USABILITY SUMMARY

The data are usable for the intended purposes of the project. The data quality objectives have been met for the project.

Table 1: Completeness by Method

Method	No. of Rejected Results	% Completeness
SW6010	0	100
SW6020	0	100
SW9056	0	100
SM3500Fe	0	100
SM4500-S-(-2)-F-2000	0	100
EPA415.1	0	100
SW8260B	0	100
RSK175	0	100

Table 2: Field Sample Identification and Laboratory Identification

ClientSampleID	LabSampleID	SW6010	SW6020	SW9056	SM3500Fe Ferrous iron	SM4500-S-(-2)-F-2000	EPA415.1	RSK175	SW8260
35BWW07-102015	L15101215-01	X	X	X	X				
35BWW01-102015	L15101215-02			X	X				
35BWW01F-102015	L15101215-03	X	X						
LHSMW58-102015	L15101215-04	X	X	X	X				
LHSMW58FD-102015	L15101215-05	X	X	X	X				
35BWW03-102015	L15101215-06	X	X	X	X				
35BWW08-102015	L15101215-07	X	X	X	X				
35BWW13-102015	L15101215-08			X	X				
35BWW13F-102015	L15101215-09	X	X						
35BWW14-102015	L15101215-10	X	X	X	X				
35BWW05-101915	L15101148-01			X	X				
35BWW05F-101915	L15101148-02	X	X						
35BWW06-101915	L15101148-03	X	X	X	X				
35BWW06FD-101915	L15101148-04	X	X	X	X				
35BWW11-101915	L15101148-05	X	X	X	X				
35BWW11MS-101915	L15101148-06	X	X	X	X				
35BWW11MSD-101915	L15101148-07	X	X	X	X				
35BWW04-101915	L15101148-08			X	X				
35BWW04F-101915	L15101148-09	X	X						
35BWW12-101915	L15101148-10			X	X				
35BWW12F-101915	L15101148-11	X	X						
35BWW09-101915	L15101148-12	X	X	X	X				
35BWW04-122115	L15121375-01	X	X	X	X				
35BWW05-122115	L15121375-02			X	X				

ClientSampleID	LabSampleID	SW6010	SW6020	SW9056	SM3500Fe Ferrous iron	SM4500-S-(-2)-F-2000	EPA415.1	RSK175	SW8260
35BWW05F-122115	L15121375-03	X	X						
35BWW08-122115	L15121375-04	X	X	X	X				
35BWW14-122115	L15121375-05	X	X	X	X				
35BWW14FD-122115	L15121375-06	X	X	X	X				
35BWW13-122115	L15121375-07			X	X				
35BWW13F-122115	L15121375-08	X	X						
35BWW07-122215	L15121373-01	X	X	X	X				
35BWW12-122215	L15121373-02			X	X				
35BWW12F-122215	L15121373-03	X	X						
35BWW11-122215	L15121373-04	X	X	X	X				
35BWW11MS-122215	L15121373-05	X	X	X	X				
35BWW11MSD-122215	L15121373-06	X	X	X	X				
35BWW03-122215	L15121373-07	X	X	X	X				
LHSMW58-122215	L15121373-08	X	X	X	X				
35BWW06-122215	L15121373-09	X	X	X	X				
35BWW09-122215	L15121373-10	X	X	X	X				
35BWW08-021616	L16020861-01	X	X	X	X				
35BWW05-021616	L16020861-02			X	X				
35BWW05F-021616	L16020861-03	X	X						
35BWW06-021616	L16020861-04	X	X	X	X				
35BWW06FD-021616	L16020861-05	X	X	X	X				
35BWW11-021616	L16020861-06	X	X	X	X				
35BWW13-021616	L16020861-07			X	X				
35BWW13F-021616	L16020861-08	X	X						
35BWW14-021616	L16020861-09	X	X	X	X				

ClientSampleID	LabSampleID	SW6010	SW6020	SW9056	SM3500Fe Ferrous iron	SM4500-S-(-2)-F-2000	EPA415.1	RSK175	SW8260
35BWW14MS-021616	L16020861-10	X	X	X	X				
35BWW14MSD-021616	L16020861-11	X	X	X	X				
35BWW07-021716	L16020917-01	X	X	X	X				
35BWW01-021716	L16020917-02			X	X				
35BWW01F-021716	L16020917-03	X	X						
LHSMW28-021716	L16020917-04	X	X	X	X				
35BWW03-021716	L16020917-05	X	X	X	X				
35BWW03FD-021716	L16020917-06	X	X	X	X				
35BWW04-021716	L16020917-07	X	X	X	X				
35BWW12-021716	L16020917-08			X	X				
35BWW12F-021716	L16020917-09	X	X						
35BWW09-021716	L16020917-10	X	X	X	X				
35BWW18-081616	L16080952-01								X
35BWW19-081616	L16080952-02								X
35BWW09-081616	L16080952-03								X
35BWW09MS-081616	L16080952-04								X
35BWW09MSD-081616	L16080952-05								X
35BWW08-081716	L16080952-06			X	X	X	X	X	X
35BWW04-081716	L16080952-07			X	X	X	X	X	X
35BWW12-081716	L16080952-08			X	X	X	X	X	X
35BWW14-081716	L16080952-09			X	X	X	X	X	X
35BWW23-081716	L16080952-10			X	X	X	X	X	X
35BWW26-081716	L16080952-11			X	X	X	X	X	X
TRIP BLANK	L16080952-12								X
35BWW05-081816	L16081119-01								X

ClientSampleID	LabSampleID	SW6010	SW6020	SW9056	SM3500Fe Ferrous iron	SM4500-S-(-2)-F-2000	EPA415.1	RSK175	SW8260
35BWW06-081816	L16081119-02								X
35BWW06FD-081816	L16081119-03								X
LHSMW58-081816	L16081119-04								X
LHSMW58MS-081816	L16081119-05								X
LHSMW58MSD-081816	L16081119-06								X
35BWW03-081816	L16081119-07								X
35BWW03FD-081816	L16081119-08								X
35BWW10-081816	L16081119-09								X
35BWW20-081816	L16081119-10								X
35BWW11-081816	L16081119-11								X
35BWW01-081916	L16081119-12								X
35BWW07-081916	L16081119-13								X
35BWW13-081916	L16081119-14								X
35BWW16-081916	L16081119-15								X
35BWW17-081916	L16081119-16								X
35BWW15-081916	L16081119-17								X
35BWW25-081916	L16081119-18								X
35BWW25FD-081916	L16081119-19								X
35BWW24-081916	L16081119-20								X
TRIP BLANK	L16081119-21								X

Table 3: Qualified Analytical Data

ClientSampleID	LabSampleID	AnalyteName	DVQualOverall	Reason
35BWW11-101915	L15101148-05	Total Manganese	J	MS/MSD %R Failure
		Sulfate	J	MS/MSD %R Failure
35BWW04-122115	L15121375-01	Nitrate	J	Hold Time Exceedance
35BWW05-122115	L15121375-02	Nitrate	J	Hold Time Exceedance
35BWW08-122115	L15121375-04	Nitrate	J	Hold Time Exceedance
35BWW14-122115	L15121375-05	Nitrate	UJ	Hold Time Exceedance
35BWW14FD-122115	L15121375-06	Nitrate	UJ	Hold Time Exceedance
35BWW13-122115	L15121375-07	Nitrate	J	Hold Time Exceedance
35BWW09-122215	L15121373-10	Sulfate	J	Hold Time Exceedance
35BWW06-021616	L16020861-04	Sulfate	J	Hold Time Exceedance
35BWW06FD-021616	L16020861-05	Sulfate	J	Hold Time Exceedance

Laboratory data packages will be included in a separate file.

Appendix D: LHAAP-35B (37) Wilcoxon Rank Sum Test Results for pH, ORP, and DO

Appendix D: LHAAP-35B (37) Wilcoxon Rank Sum Test Results for pH

Pre-Bio Plug pH	Rank	Rebound pH	Rank
4.28	6	**3.3**	1
5.38	19	**4**	2
5.45	23	**4.14**	3
5.54	26	**4.17**	4.5
5.86	33	**4.17**	4.5
6.08	37	**4.41**	7.5
6.57	46	**4.41**	7.5
6.7	51.5	**4.42**	9
6.7	51.5	**4.53**	10
6.81	53	**4.6**	11
6.95	55.5	**4.6**	11.5
6.99	57	**4.71**	11.5
7.43	60	**4.87**	13
7.58	61	**4.96**	14
8.01	62	**5.22**	15
n2 rank SUM	641.5	**5.24**	16
n2	15	**5.28**	17
		5.3	18
		5.39	20.5
		5.39	20.5
		5.43	22
		5.47	24
		5.51	25
		5.57	27
		5.59	28
		5.66	29
		5.69	30
		5.72	31
		5.8	32
		6.04	34
		6.05	35
		6.06	36
		6.13	38.5
		6.13	38.5
		6.16	40
		6.25	41
		6.3	42
		6.39	43
		6.45	44
		6.5	45
		6.61	47
		6.64	48
		6.67	49
		6.69	50
		6.93	54
		6.95	55.5
		7.01	58
		7.15	59
		8.64	63
		8.97	64
		n1 rank SUM	1449.5
		Wrs	1449.5
		n1	50

Alpha = 0.05	
Z-crit = Z1-alpha	p = 0.05
Z-crit	95%
one-tailed z-crit	1.645
Zrs	-3.122
Since Zrs is not ≥ Z1-alpha, accept H0	
The populations have same means	
H_A: The populations have different means	

	Pre-Bio Plug pH	Rebound pH
Variance	0.974045714	1.245996776
*equal var. based on f-test		
F-crit		
two-tailed	2.641374038	
F-stat	1.279197431	

General Population Satistics

Pre Bio Plug pH

General Statistics for Uncensored Dataset

Variable	NumObs	# Missing	Minimum	Maximum	Mean	SD	SEM	MAD/0.675	Skewness	Kurtosis	CV
C0	15	0	4.28	8.01	6.422	0.987	0.255	1.082	-0.494	0.0817	0.154

Percentiles for Uncensored Dataset

Variable	NumObs	# Missing	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C0	15	0	5.408	5.522	5.7	6.7	6.97	7.078	7.52	7.709	7.95

Rebound pH

General Statistics for Uncensored Dataset

Variable	NumObs	# Missing	Minimum	Maximum	Mean	SD	SEM	MAD/0.675	Skewness	Kurtosis	CV
C0	50	0	3.3	8.97	5.6854	1.116	0.161	0.867	0.534	0.984	0.196

Percentiles for Uncensored Dataset

Variable	NumObs	# Missing	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C0	50	0	4.17	4.53	4.87	5.51	6.1	6.16	6.5	6.61	8.805

Appendix D: LHAAP-35B (37) Wilcoxon Rank Sum Test Results for ORP

Population 2		Population 1	
Pre- Bio plug ORP	**Rank**	**Rebound ORP**	**Rank**
-145	1	-74	5
-114	2	-58	6
-101	3	-50	7
-78	4	-27	8
7	12	-17	9
10	13	-13	10
13	14	-12	11
14	15	41	17.5
23	16	57	20
41	17.5	71	22
43	19	75	23
60	21	115	24
130	26	129	25
173	32	135	27
251	44	143	28
n2 rank SUM	239.5	159	29
n2	15	170	30
		172	31
		175	33
		184	34
		185	35
		186	36
		187	37
		197	38
		202	39
		204	40
		215	41
		231	42
		233	43
		254	45
		258	46
		283	47
		306	48
		312	49
		349	50
		376	51
		365	52
		388	53
		413	54
		439	55
		440	56
		444	57
		449	58
		496	59
		n1 rank SUM	1530.5
		Wrs	1530.5
		n1	44

	Pre- Bio Plug ORP	**Rebound ORP**
Variance	11512.88571	23718.16649
F-crit		
two-tailed	2.148567744	
F-stat	0.485403698	
*equal var. based on f-test		

General Population Satistics

Pre Bio Plug ORP

General Statistics for Uncensored Dataset

Variable	NumObs	# Missing	Minimum	Maximum	Mean	SD	SEM	MAD/0.675	Skewness	Kurtosis	CV
C0	15	0	-145	251	21.8	107.3	27.7	68.2	0.456	0.262	4.922

Percentiles for Uncensored Dataset

Variable	NumObs	# Missing	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C0	15	0	-108.8	-82.6	-35.5	14	51.5	74	155.8	196.4	240.1

Rebound ORP

General Statistics for Uncensored Dataset

Variable	NumObs	# Missing	Minimum	Maximum	Mean	SD	SEM	MAD/0.675	Skewness	Kurtosis	CV
C0	44	0	-74	496	199.7	154	23.2	90.44	0.069	-0.74	0.797

Percentiles for Uncensored Dataset

Variable	NumObs	# Missing	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C0	44	0	-24.2	47.4	71	172	204	232.2	296.4	326.8	367.4

Alpha = 0.05	
Z-crit = Z1-alpha	p = 0.05
Z-crit	95%
one-tailed z-crit	1.645
Zrs	3.664
Since Zrs is ≥ Z1-alpha, reject H0	
The populations have different means	

H_0: The populations from which the two data sets have been drawn have the same mean

H_A: The populations have different means

Appendix D: LHAAP-35B (37) Wilcoxon Rank Sum Test Results for DO

Pre-Bio Plug DO	Rank	Rebound DO	Rank
0.89	26	0	1.5
1.3	29	0	1.5
2.52	38	0.12	3
5.65	47	0.13	4
6.97	49	0.23	5
n2 rank SUM	189	0.28	6
n2	5	0.33	7
		0.34	8
		0.36	9
		0.41	10
		0.43	11
		0.44	12.5
		0.44	12.5
		0.47	14
		0.51	15
		0.56	16
		0.58	17
		0.61	18
		0.62	19
		0.65	20
		0.69	21
		0.71	22
		0.74	23
		0.84	24
		0.88	25
		1.01	27
		1.17	28
		1.32	30
		1.34	31
		1.81	32
		1.85	33
		1.87	34
		1.95	35
		2.42	36
		2.48	37
		2.53	39
		2.55	40
		2.65	41
		2.71	42
		3.11	43
		4.05	44
		4.35	45
		4.98	46
		6.41	48
		n1 rank SUM	1036
		Wrs	1036
		n1	44

	Pre-Bio Plug ORP	Rebound ORP
Variance	7.31753	2.081293605
*equal var. based on f-test		
F-crit		
two-tailed	6.160795531	
F-stat	3.515856669	

General Population Satistics

Pre Bio Plug DO

General Statistics for Uncensored Dataset

Variable	NumObs	# Missing	Minimum	Maximum	Mean	SD	SEM	MAD/0.675	Skewness	Kurtosis	CV
C0	5	0	0.89	6.97	3.466	2.705	1.21	2.417	0.533	-2.389	0.78

Percentiles for Uncensored Dataset

Variable	NumObs	# Missing	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C0	5	0	1.054	1.218	1.3	2.52	5.65	5.914	6.442	6.706	6.917

Rebound DO

General Statistics for Uncensored Dataset

Variable	NumObs	# Missing	Minimum	Maximum	Mean	SD	SEM	MAD/0.675	Skewness	Kurtosis	CV
C0	44	0	0	6.41	1.41	1.443	0.217	0.964	1.652	2.712	1.049

Percentiles for Uncensored Dataset

Variable	NumObs	# Missing	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C0	44	0	0.15	0.334	0.36	0.88	2.42	2.602	3.862	4.602	5.952

Alpha = 0.05	
Z-crit = Z1-alpha	p = 0.05
one-tailed z-crit	1.645
Zrs (for pop 1)	-2.114
Since Zrs is not ≥ Z1-alpha, accept H0	
The populations have same means	

H_0: The populations from which the two data sets have been drawn have the same mean

H_A: The populations have different means

From: Mayer, Richard <mayer.richard@epa.gov>
Sent: Wednesday, March 15, 2017 4:05 PM
To: Snow, JoLynn; April Palmie
Cc: Williams, Aaron K CIV USARMY CESWT (US); Zeiler, Rose M CIV USARMY HQDA ACSIM (US) (rose.m.zeiler.civ@mail.mil); Smith, Nicholas B CIV USARMY IMCOM (US) (nicholas.b.smith56.civ@mail.mil); Smith, Richard P CIV USARMY CESWF (US); Sharp, Elspeth; Becher, Kent; Harrison, Dorelle; Tzhone, Stephen; April Palmie; paul_bruckwicki@fws.gov
Subject: RE: EPA Approval of the Longhorn AAP Site 46 Draft Year 3 RAO

Good Afternoon Rose/JoLynn, EPA has completed the review of the Draft Longhorn AAP Site 46 Year 3 RAO Report and have no questions or comments. EPA agrees that monitoring well 46WW09 needs to be redeveloped before the next sampling event and that a camera survey be performed on monitoring well LHSMW23 before sampling. As far as the dry wells, EPA agrees with the approach to gauge the wells after a rain event greater than 2 inches.

From: Snow, JoLynn [mailto:JoLynn.Snow@aecom.com]
Sent: Friday, March 10, 2017 9:53 AM
To: April Palmie <april.palmie@tceq.texas.gov>; Mayer, Richard <mayer.richard@epa.gov>
Cc: Williams, Aaron K CIV USARMY CESWT (US) <Aaron.K.Williams@usace.army.mil>; Zeiler, Rose M CIV USARMY HQDA ACSIM (US) (rose.m.zeiler.civ@mail.mil) <rose.m.zeiler.civ@mail.mil>; Smith, Nicholas B CIV USARMY IMCOM (US) (nicholas.b.smith56.civ@mail.mil) <nicholas.b.smith56.civ@mail.mil>; Smith, Richard P CIV USARMY CESWF (US) <Richard.P.Smith@usace.army.mil>; Sharp, Elspeth <elspeth.sharp@aecom.com>
Subject: FOR AGENCY REVIEW - LHAAP-46 Draft Year 3 RA(O)

Good morning,

Please see the link below to the full PDF of the LHAAP-46 Draft Year 3 RA(O) for your review. You should have received the hard copies yesterday or today. I have also attached the Word document. Please let me know if you need anything else.

JoLynn Snow has sent you 1 file using AECOM's File Transfer System.

This file will be available for download until 3/17/2017

File	Description	Size
LHAAP-46 Draft 3rd Year RAO_030717_w-lab data.pdf		118,163KB

Download all files (.zip)

If you are having trouble accessing the links in this email, you can view this message as a web page by copying the following link and pasting it into your browser:

https://sendfiles.aecom.com/message.aspx?msgId=82bd3563-ff7a-41b8-97e1-ea1c0342bc06

Thank you,
JoLynn

JoLynn Snow
Project Administrator, AECOM Environment
Direct: 1-210-823-6710
jolynn.snow@aecom.com

AECOM
4921 Shed Road, Suite 400
Bossier City, LA, 71111
318- 742-3191
aecom.com

From: April Palmie <april.palmie@tceq.texas.gov>
Sent: Tuesday, March 14, 2017 4:56 PM
To: Snow, JoLynn; Zeiler, Rose M CIV USARMY HQDA ACSIM (US) (rose.m.zeiler.civ@mail.mil)
Cc: Williams, Aaron K CIV USARMY CESWT (US); Smith, Nicholas B CIV USARMY IMCOM (US) (nicholas.b.smith56.civ@mail.mil); Smith, Richard P CIV USARMY CESWF (US); Sharp, Elspeth; Rich Mayer (mayer.richard@epa.gov); April Palmie
Subject: RE: FOR AGENCY REVIEW - LHAAP-46 Draft Year 3 RA(O)

Hello! I've completed review of the Draft LHAAP-46 Year 3 RAO Report and have no questions or comments.

Sincerely,

April Palmie
Project and Grant Manager
Superfund Section
Remediation Division
Texas Commission on Environmental Quality
Phone: (512) 239-4152
Email: April.Palmie@tceq.texas.gov

From: Snow, JoLynn [mailto:JoLynn.Snow@aecom.com]
Sent: Friday, March 10, 2017 9:53 AM
To: April Palmie <april.palmie@tceq.texas.gov>; Rich Mayer (mayer.richard@epa.gov) <mayer.richard@epa.gov>
Cc: Williams, Aaron K CIV USARMY CESWT (US) <Aaron.K.Williams@usace.army.mil>; Zeiler, Rose M CIV USARMY HQDA ACSIM (US) (rose.m.zeiler.civ@mail.mil) <rose.m.zeiler.civ@mail.mil>; Smith, Nicholas B CIV USARMY IMCOM (US) (nicholas.b.smith56.civ@mail.mil) <nicholas.b.smith56.civ@mail.mil>; Smith, Richard P CIV USARMY CESWF (US) <Richard.P.Smith@usace.army.mil>; Sharp, Elspeth <elspeth.sharp@aecom.com>
Subject: FOR AGENCY REVIEW - LHAAP-46 Draft Year 3 RA(O)

Good morning,

Please see the link below to the full PDF of the LHAAP-46 Draft Year 3 RA(O) for your review. You should have received the hard copies yesterday or today. I have also attached the Word document. Please let me know if you need anything else.

JoLynn Snow has sent you 1 file using AECOM's File Transfer System.

This file will be available for download until 3/17/2017

File	Description	Size
LHAAP-46 Draft 3rd Year RAO_030717_w-lab data.pdf		118,163KB

Download all files (.zip)

If you are having trouble accessing the links in this email, you can view this message as a web page by copying the following link and pasting it into your browser:

https://sendfiles.aecom.com/message.aspx?msgId=82bd3563-ff7a-41b8-97e1-ea1c0342bc06

Thank you,
JoLynn

JoLynn Snow
Project Administrator, AECOM Environment
Direct: 1-210-823-6710
jolynn.snow@aecom.com

AECOM
4921 Shed Road, Suite 400
Bossier City, LA, 71111
318- 742-3191
aecom.com

FINAL
3rd ANNUAL REMEDIAL ACTION OPERATION REPORT
LHAAP-46 (PLANT 2 AREA)
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers
Tulsa District

Prepared By:

AECOM Technical Services, Inc.

MARCH 2017

FINAL
3RD ANNUAL REMEDIAL ACTION OPERATION REPORT
LHAAP-46 (PLANT 2 AREA)
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers

Tulsa District

Prepared By:

AECOM Technical Services, Inc.

Contract No. W912DY-09-D-0059

Task Order No. DS01

March 2017

Table of Contents

1 INTRODUCTION 1-1

1.1 Remedial Action Objectives 1-1

1.2 Performance Objectives 1-1

1.3 Site Description 1-2

1.4 Conceptual Site Model 1-3

2 SITE ACTIVITIES AT LHAAP-46 2-1

2.1 Annual LUC Compliance Inspection, Monitoring, and Repairs 2-1

2.1.1 Annual LUC Compliance Inspection 2-1

2.1.2 Well Field Operation and Maintenance 2-1

2.2 Groundwater Monitoring 2-2

2.2.1 Groundwater Elevations and Flow Direction 2-2

2.2.1.1 Shallow Groundwater Zone 2-3

2.2.1.2 Intermediate Groundwater Zone 2-3

2.2.1.3 Deep Groundwater Zone 2-4

2.2.2 Vertical Gradients 2-4

2.3 Groundwater Analytical Results 2-4

2.4 Surface Water Sample Results 2-5

3 NATURAL ATTENUATION EVALUATION 3-1

3.1 First Line of Evidence: Change in COC Concentrations over Time and with Distance 3-1

3.1.1 Shallow Zone 3-1

3.1.2 Intermediate Zone 3-3

3.1.3 Deep Zone 3-4

3.1.4 Plume Stability 3-4

4 CONCLUSIONS AND RECOMMENDATIONS 4-1

5 REFERENCES 5-1

List of Figures

Figure 1-1: LHAAP Site Location Map

Figure 1-2: LHAAP-46 Site Location Map

Figure 2-1: LHAAP-46 Groundwater Monitoring Well and Surface Water Locations

Figure 2-2: LHAAP-46 February 2016 Shallow Zone Groundwater Potentiometric Map

Figure 2-3: LHAAP-46 August 2016 Shallow Zone Groundwater Potentiometric Map

Figure 2-4: LHAAP-46 2011 Shallow Zone Groundwater Potentiometric Map

Figure 2-5: LHAAP-46 February 2016 Intermediate Zone Groundwater Potentiometric Map

Figure 2-6: LHAAP-46 August 2016 Intermediate Zone Groundwater Potentiometric Map

Figure 2-7: LHAAP-46 2011 Intermediate Zone Groundwater Potentiometric Map

Figure 2-8: LHAAP-46 February 2016 TCE in Shallow Zone Groundwater

Figure 2-9: LHAAP-46 August 2016 TCE in Shallow Zone Groundwater

Figure 2-10: LHAAP-46 February 2016 TCE in Intermediate Zone Groundwater

Figure 2-11: LHAAP-46 August 2016 TCE in Intermediate Zone Groundwater

Figure 2-12: LHAAP-46 Shallow Zone COC Concentrations

Figure 2-13: LHAAP-46 Intermediate Zone COC Concentrations

List of Tables

Table 2-1: Groundwater Elevation Data, 3-Year RA(O) – LHAAP-46

Table 2-2: Groundwater Analytical Results, 3 Year RA(O) – LHAAP-46

Table 2-3: Historical COC Concentrations – LHAAP-46

Table 2-4: Well Maintenance Activities Year 3 RA(O) – LHAAP-46

Table 3-1: Mann-Kendall Trend Summary

List of Appendices

APPENDIX A: ANNUAL LUC COMPLIANCE CERTIFICATION DOCUMENTATION

APPENDIX B: PHOTO LOG

APPENDIX C: MONITORING WELL SAMPLING FORMS

APPENDIX D: LABORATORY ANALYTICAL RESULTS

APPENDIX E: MANN-KENDALL TREND TEST RESULTS

Acronyms and Abbreviations

mg/L	microgram per liter
AECOM	AECOM Technical Services, Inc.
ARAR	Applicable or Relevant and Appropriate Requirement
bgs	below ground surface
COC	contaminant of concern
CSM	Conceptual Site Model
DCE	dichloroethylene
DO	dissolved oxygen
EPA	Environmental Protection Agency
ft	Feet, foot
GWTP	Groundwater Treatment Plant
ferrous iron	iron (II)
ferric iron	iron (III)
IWWP	Installation-Wide Work Plan
LHAAP	Longhorn Army Ammunition Plant
LUC	Land Use Control
MCL	maximum contaminant level
mg/L	milligram per liter
MNA	Monitored Natural Attenuation
msl	mean sea level
mV	milli-volts
No.	number
ORP	oxidation-reduction potential
RACR	Remedial Action Completion Report
RA(O)	Remedial Action Operation
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RD	Remedial Design
ROD	Record of Decision
TCE	trichloroethylene
TOC	total organic carbon
U.S.	United States
USACE	U.S. Army Corps of Engineers
VC	vinyl chloride
VOC	volatile organic compound

1 INTRODUCTION

The United States (U.S.) Army Corps of Engineers (USACE), Tulsa District, contracted AECOM Technical Services, Inc. (AECOM), to perform remedial actions at multiple sites at the former Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas, under the Huntsville District's Worldwide Environmental Restoration Services Contract Number (No.) W912DY-09-D-0059, Task Order No. DS01. AECOM is performing groundwater monitoring as part of Remedial Action Operations (RA[O]s) for the Monitored Natural Attenuation (MNA) groundwater remedy at site LHAAP-46. A Final Record of Decision (ROD) was executed for LHAAP-46 in September 2010 (USACE, 2010). Groundwater monitoring activities at LHAAP-46 are ongoing, as described in the Draft Final Remedial Action Completion Report (RACR) (AECOM, 2015a). This RA(O) report documents the third year of RA(O) implementation and summarizes the results of inspections and sampling activities completed between February 2016 and August 2016.

LHAAP is located in northeast Texas in the northeastern corner of Harrison County between State Highway 43 in Karnack, Texas, and the western shore of Caddo Lake (see **Figure 1-1**). The nearest cities are Marshall, Texas, approximately 14 miles to the southwest, and Shreveport, Louisiana, approximately 40 miles to the east. Caddo Lake is a large freshwater lake that bounds LHAAP to the north and east. The eastern fence of the LHAAP installation is 3.5 miles from the Texas-Louisiana border.

1.1 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the LHAAP-46 site are to protect human health and meet applicable or relevant and appropriate requirements (ARARs). There are no unacceptable ecological risks posed by the LHAAP-46 site (USACE, 2010).

The RAOs for LHAAP-46, consistent with the reasonably anticipated future use of the site as a national wildlife refuge, are:

- Protection of human health by preventing human exposure to the contaminated groundwater;
- Protection of human health and the environment by preventing contaminated groundwater from migrating into nearby surface water; and,
- Returning groundwater to its potential beneficial use as a drinking water source, wherever practicable.

1.2 Performance Objectives

The remedy selected for LHAAP-46 is Land Use Control (LUC) and MNA. The performance objectives at LHAAP-46 consist of two components: physical inspections and groundwater/surface water monitoring. As a component of the LUC implementation, the civil survey of the LUC boundary was conducted in November 2014 and recorded in the Harrison County Courthouse in December 2014. Physical inspections are conducted annually to confirm compliance with the LUC objectives, which consist of preventing human exposure to groundwater contamination at levels that pose an unacceptable risk to a future maintenance worker; and ensuring that there is no withdrawal or use of groundwater from the site for anything

other than environmental monitoring and testing until the cleanup levels – maximum contaminant levels (MCLs) – are attained. Groundwater monitoring has been conducted at the site since May 2013, and LHAAP-46 will be included in the facility-wide Longhorn Five-Year Review.

Groundwater and surface water monitoring are being performed to demonstrate that natural attenuation is an effective remedy to:

- Detect changes in environmental conditions that may reduce the efficacy of natural attenuation processes;
- Identify potentially toxic and/or mobile transformation products;
- Verify that the plume is not expanding;
- Verify no unacceptable impact to downgradient receptors, such as discharge to surface water;
- Detect new releases of contaminants to the environment that could impact effectiveness of the natural attenuation remedy; and
- Verify attainment of the remediation objectives.

LHAAP-46 RA(O) monitoring began in May 2013. Monitoring during the first two years was performed on a quarterly basis and documented in annual reports (AECOM, 2015b; AECOM 2016). In accordance with the Remedial Design (RD) (Shaw, 2011), the Year 3 RA(O) monitoring was reduced to semi-annual. The Remedial Action Work Plan (AECOM, 2013) clarified that the suite of analyses for the semiannual events performed starting with the third year of semi-annual monitoring is limited to VOCs for ongoing confirmation of declining concentration trends. The Year 3 semi-annual events were performed in February 2016 and August 2016. An additional event was performed during March 2016 after a significant rain event to attempt to sample wells that had been dry during the February 2016 event.

Groundwater monitoring completed as part of the Year 3 RA(O) consisted of groundwater sampling events at five wells in the shallow zone, nine wells in the intermediate zone, and one well in the deep zone. Surface water sampling of a Goose Prairie Creek tributary, adjacent to LHAAP-46, was conducted in February 2016. This report summarizes the LUC compliance inspection, monitoring well inspection, and results of groundwater and surface water sampling.

1.3 Site Description

The LHAAP-46 site (Plant 2 Area) is located in the north-central portion of LHAAP, in a formerly industrial area where pyrotechnic and illumination devices were produced until 1997 (see **Figure 1-2**). The LHAAP-46 site occupies approximately 190 acres within a triangular area, bounded by Avenue 'P' to the southwest, the LHAAP property boundary fence to the north, and the LHAAP-47 site to the southeast. The surface features at LHAAP-46 include asphalt-paved roads, parking areas, building foundation remnants, abandoned buildings, areas that are wooded, and overgrown grasses and other vegetation. The topography is relatively flat, sloping slightly to the east, with the surface water drainage flowing to the east into tributaries of Goose Prairie Creek, which eventually discharge into Caddo Lake. LHAAP-46 has no known areas of archaeological or historical importance.

1.4 Conceptual Site Model

A detailed Conceptual Site Model (CSM) for LHAAP-46 was previously developed and is presented in the ROD (USACE, 2010). Based on additional data collected as part of final remedy implementation and presented in the LHAAP-46 Draft Final RACR (AECOM, 2015a), the lithologic units at the site have been characterized.

Three water-bearing zones, identified as the shallow, intermediate, and deep zones, are present beneath LHAAP-46. The shallow groundwater zone is encountered at approximately 10 to 28 feet (ft) below ground surface (bgs) and extends to approximately 30 ft beneath LHAAP-46. The lithology of the shallow zone consists mostly of clay with relatively thin discontinuous sand layers. Groundwater tends to occur preferentially in the more permeable thin sand layers. The groundwater is typically unconfined.

The intermediate groundwater zone is generally sandier than the shallow groundwater zone. A relatively thick sand layer was identified in the intermediate groundwater zone in three of the five monitoring wells installed during remedy implementation, but it was not present in the boreholes for monitoring wells 46WW08 and 46WW16, in the northern part of the site. Clay that overlies the sand acts as a leaky aquitard to the shallow groundwater zone. The difference in groundwater elevations seen in shallow and intermediate groundwater zone wells supports some degree of hydraulic separation of those zones, although contaminants of concern (COCs) in the shallow groundwater zone are also present in groundwater in the intermediate zone. Depth to groundwater was observed to range from approximately 19 ft bgs to 37 ft bgs in the intermediate zone wells. The sand interval representing the intermediate zone is at a depth between 36 and 43 ft bgs.

Only one groundwater monitoring well (46WW03) is completed in the deep groundwater zone. Based on previous investigations, the deep groundwater-bearing zone consists primarily of clay, with occasional fine sand and silt layers. However, a thick fine-grained sand bed occurs approximately 88 ft bgs and extends to approximately 101.5 ft bgs. The upper surface of the sand is gradational with an increase in the proportion of sand beginning at about 80 ft bgs. The basal contact of the sand with the underlying shale and clay units is sharp. Monitoring well 46WW03 is screened in this deep sand bed between 90 ft and 100 ft bgs.

The clayey section above the deep sand layer is interpreted as an aquitard separating the intermediate groundwater zone from the deep groundwater zone. A very hard layer identified at 82 ft bgs may represent the upper boundary of the deep groundwater zone where possible mineralization (cementation) has occurred. Based on the depth to groundwater in well 46WW03, it appears that the water-bearing sand in the deep zone is under confined to semi-confined conditions.

Communication between the intermediate groundwater zone and the deep groundwater zone is limited because the difference in groundwater elevations in co-located wells 46WW02 and 46WW03 have stayed near 3.5 ft during the 2nd and 3rd year RA(O) periods. Additionally, the groundwater analytical results corroborate the lack of communication between the intermediate and deep zones as the COCs in the intermediate zone have not migrated downward in this vicinity to impact the deep groundwater zone.

The groundwater COCs in the shallow and intermediate zones at LHAAP-46 are trichloroethylene (TCE) and its daughter products cis-1,2-dichloroethylene (DCE) and vinyl

chloride (VC). Human health risks associated with these COCs are the primary driver for remedial action, as the site poses no unacceptable ecological risks (USACE, 2010).

Previous investigations conducted at the Plant 2 Area between 1991 and 2008 determined the nature and extent of contamination in the soil, groundwater, surface water, and sediments at LHAAP-46. The most likely sources of contamination were spills resulting from a variety of support services that occurred in the area (USACE, 2009 and USACE, 2010). The spills resulted in soil contamination and the COCs released to the surface soil subsequently migrated, either entrained in surface runoff or through leaching, to the groundwater. The previous investigations and the risk assessments concluded that the soil, sediment, and surface water at LHAAP-46 do not pose a risk to the environment or to human health under an industrial exposure scenario for a future maintenance worker (USACE, 2010). The nearest significant surface water body to LHAAP-46 is Goose Prairie Creek, which is located approximately 1,500 ft east of the site. Minor drainages are located north of the site and within the south-central portion of the site where they feed into Goose Prairie Creek. The potentially complete exposure pathways are groundwater used as drinking water and migration of impacted groundwater into surface water. Shallow groundwater is not used as drinking water at the refuge and this potential exposure pathway is eliminated from any hypothetical future receptor because LUCs are in place that prohibit the use of groundwater for any purpose other than for environmental monitoring and testing.

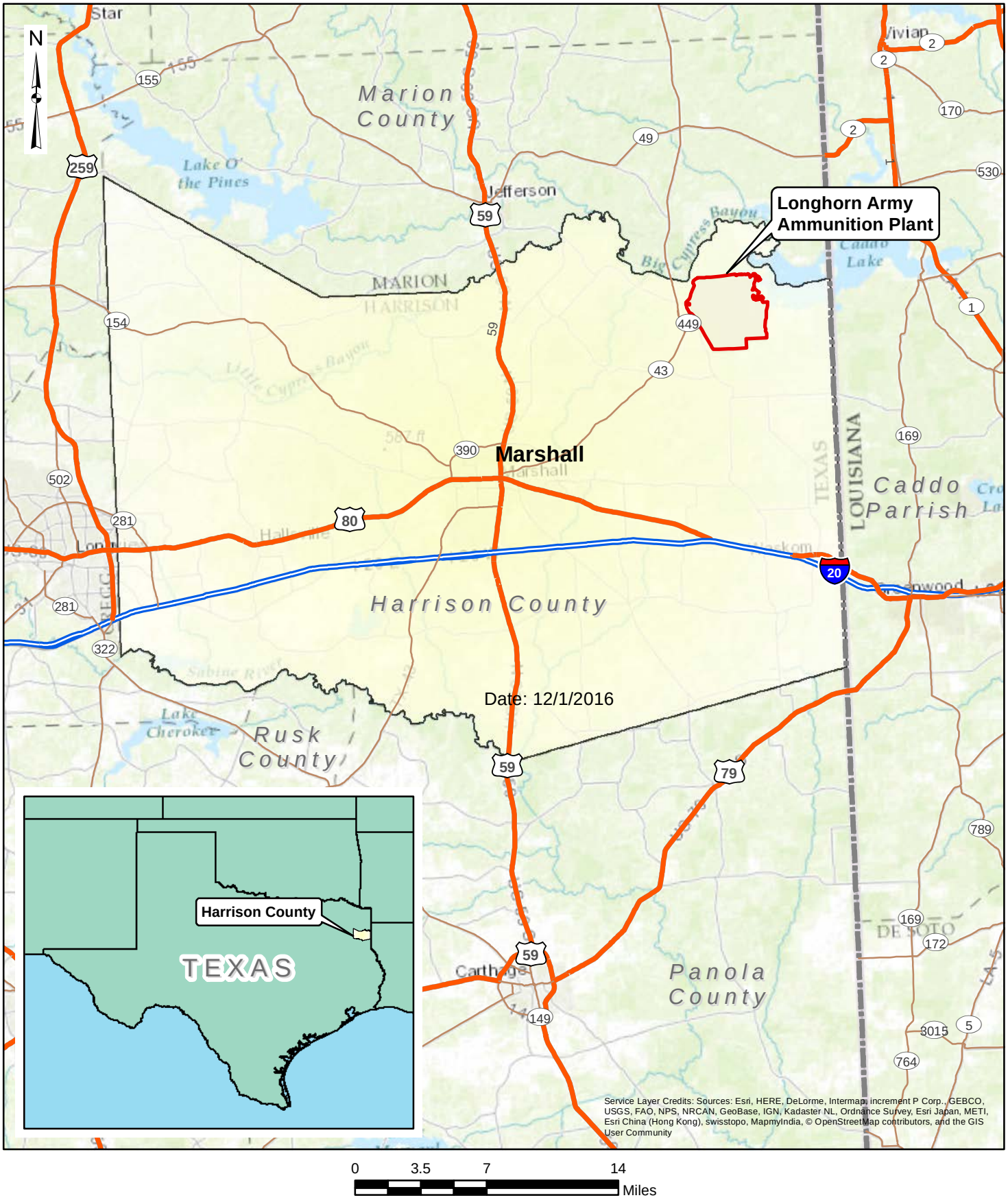

AECOM

Figure 1-1
LHAAP Site Location Map
Remedial Action Operation Report (Year 3)
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

March 2017

Document Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-46\RAO_Report\RAO\RAO_Y3\Fig 1-1 LHAAP Site Location Map.mxd

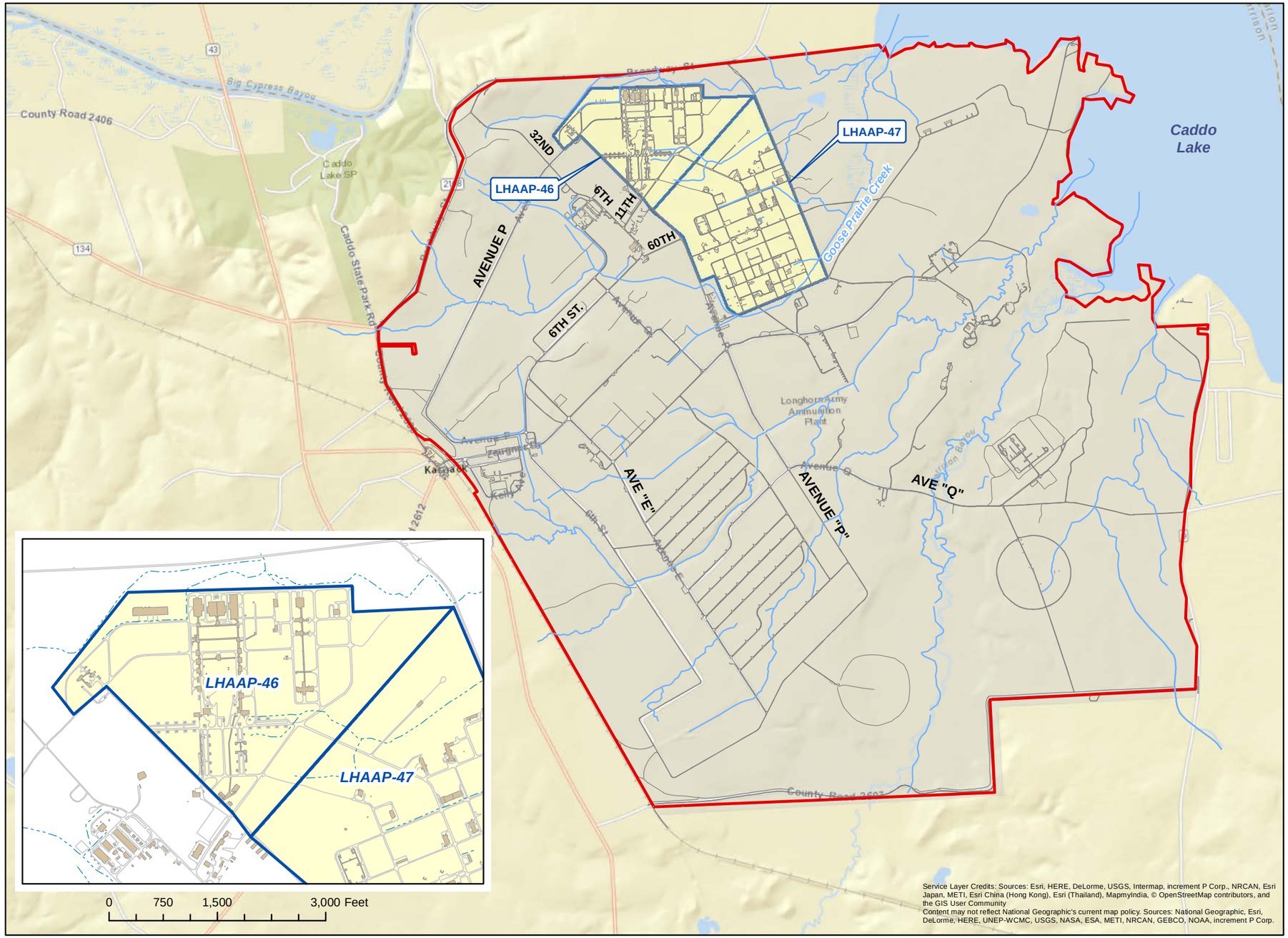

N

Legend

- Streams
- Roads
- LHAAP Boundary
- LHAAP-46 and LHAAP-47 Site Boundaries
- Lake/Pond

Source: September 2011 Final Remedial Design for LHAAP-46, Plant 2 Area, Group 4, Longhorn Army Ammunition Plant, Karnack, Texas (Shaw, 2011).

AECOM

Figure 1-2
LHAAP-46 Site Location Map
Remedial Action Operation Report (Year 3)
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

March 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-46\RAO_Report\RAO\RAO_Yr3\Fig 1-2 LHAAP46 Site Vicinity.mxd

2 SITE ACTIVITIES AT LHAAP-46

2.1 Annual LUC Compliance Inspection, Monitoring, and Repairs

2.1.1 Annual LUC Compliance Inspection

The LUC for LHAAP-46 is groundwater restriction. Groundwater use at LHAAP-46 is restricted to environmental monitoring and testing until levels of COCs in groundwater and soil allow unrestricted use and unlimited exposure (UUUE). The restriction applies to groundwater underlying a 63.772-acre tract defined by the surveyed LUC boundary (AECOM, 2015a). AECOM performed the annual LUC compliance inspection for LHAAP-46 on July 29, 2016. The Annual LUC Compliance Certification Documentation Form for the third year RA(O) period is included in **Appendix A**. No use of groundwater, installation of new groundwater wells, or tampering with existing wells at LHAAP-46 was observed during the inspection.

2.1.2 Well Field Operation and Maintenance

Inspections of the conditions/integrity of monitoring wells are conducted during each sampling event and the information is recorded on the field sampling forms. Maintenance or repairs are performed as needed, based on observed conditions. For the 3rd annual RA(O) reporting period, no damage to bollards, well pads, or protective well casings was observed. Photographs from February 2016 sampled monitoring wells are provided in **Appendix B**. **Appendix C** provides information about the individual well surface conditions observed during well monitoring events.

Silting has occurred in monitoring wells 46WW09, based on the measured total well depth at the time of sampling compared to the total completion depth or historical total depth measurements. Monitoring well 46WW09 contains approximately 0.7 ft of silt in the screen. Well 46WW09 will be redeveloped prior to the next sampling event.

Based on the measured total well depth (approximately 31 ft below top of casing) at the time of sampling compared to the total completion depth (approximately 42 ft below top of casing), LHSMW23 contains an obstruction at approximately 10 ft above the total depth of the well. The well bottom was noted to be “firm” instead of “soft” during collection of the total depth measurement and since a significant portion (11 feet) of the 20-foot screen is obstructed, the cause of the obstruction is unlikely to be silting. A camera survey will be performed prior to the next sampling event to determine the cause of the obstruction.

Mowing the well areas is conducted as part of routine maintenance at the site. A brush hog was used to remove vegetation around all wells at LHAAP-46 on August 3, 2015 and July 28, 2016. **Table 2-4** provides a summary of the maintenance and repairs that were performed at the site in RA-O Year 3. Bollards and well casings were power washed and painted for several wells in August 2015: 46WW01, 46WW02, 46WW03, 46WW04, 46WW05, 46WW06, 46WW11, LHSMW18, LHSMW19, LHSMW20, LHSMW22, LHSMW23, and LHSMW25. Several additional wells that are not sampled as part of the RA(O) monitoring are noted as needing paint: LHSMW08, LHSMW11, LHSMW12, LHSMW14, LHSMW15, LHSMW16, LHSMW21, LHSMW24, LHSMW27. These wells will be painted during 2017 maintenance activities.

2.2 Groundwater Monitoring

All LHAAP-46 monitoring wells are depicted on **Figure 2-1.** The RAWP (AECOM, 2013) proposed inclusion of 20 wells in the MNA program (10 shallow groundwater zone wells, nine intermediate groundwater zone wells, and one deep groundwater zone well). The RACR (AECOM, 2015a) proposed inclusion of 21 wells in the monitoring program, which included one additional intermediate groundwater zone monitoring well that was installed in May 2014 (46WW16). The shallow and intermediate zone wells that are monitored are identified by unique symbols in Figure 2-1. Monitoring wells LHSMW08, LHSMW09, LHSMW10, LHSMW11, LHSMW12, LHSMW13, LHSMW14, LHSMW15, LHSMW16, LHSMW21, LHSMW24, and LHSMW27 are not included in the monitoring program per the RAWP (AECOM, 2013).

During the February and August 2016 events, some of the wells were dry or had insufficient water for a sample to be collected. Additional sampling was conducted in late March 2016 after a major rainfall event (7.55 inches one day followed by 2.49 inches the next day) to attempt to sample wells that were dry during the February 2016 event in accordance with the dry well sampling protocol that requires wells observed to be dry during the preceding scheduled monitoring event to be regauged after any rainfall event exceeding two inches. Two of the previously dry wells produced sufficient groundwater after the major rain fall event in March 2016 (46WW01 and LHSMW18) and samples were collected.

Before collecting groundwater samples, the wells were gauged using a water level probe and the depth to water was recorded to the nearest 0.01 ft from the top of casing. Groundwater samples were collected using the low-flow sampling procedures described in the Groundwater Sampling Procedures found in the Installation-Wide Work Plan (IWWP) (AECOM, 2014). The low flow method allows representative samples of groundwater in the formation adjacent to the well screen to be collected, eliminating mixing of stagnant water above and below the well screen. After water quality parameters stabilized and were within acceptable ranges, samples were collected at the same low flow rate. However, some wells went dry, even when pumping at the lowest possible flow rate. For these wells, the well was allowed to recharge and then a sample was collected using a bailer. Samples from LHSMW18 and 46WW01 were collected using a bailer in March 2016 and samples from 46WW01 and 46WW10 were collected using a bailer in August 2016.

All groundwater samples were analyzed for volatile organic compounds (VOCs) according to SW-846 Method 8260b. Thallium is no longer considered a COC based on 1st year RA(O) monitoring results; therefore, thallium is not included in the monitoring program. Samples from a subset of wells were also analyzed for geochemical indicators, which is further discussed in Section 3.

Sample collection field forms are provided in **Appendix C**.

2.2.1 Groundwater Elevations and Flow Direction

Synoptic water level measurements were performed on 20 wells in February 2016 and 21 wells in August 2016. Twelve wells were dry in February 2016 and 11 wells were dry in August 2016, so they could not be gauged. Groundwater elevations are summarized in **Table 2-1**.

After the February 2016 RA-O event, >2-inch rainfall events occurred in March 2016. The March 2016 rain events were significant (7.55 inches in March 9, 2016, followed by 2.49 inches on March 10, 2016 with <1 inch rainfall events continuing for several subsequent days). On March 28, 2016, following the rain events, a water level survey was performed for the following wells that had been dry in February 2016 and were located in the vicinity of the TCE plume: 46WW01, 46WW12, 46WW13, 46WW15, LHSMW18, LHSMW20, LHSMW22, and LHSMW23. Groundwater was present in monitoring wells 46WW01 and LHSMW18, which were subsequently sampled; the remaining wells were dry. Between March 2016 and August 2016 (the second Year 3 event); there were two rainfall events that exceeded two inches (4.53 inches on April 18, 2016 and 4.84 inches on May 27, 2016).

After several rain events (4.53 inches April 18, 1.43 inches April 20, 0.92 inches April 27, 0.12 inches April 29, and 0.36 inches May 1, 2016), an additional gauging event was performed on 9 May 2016 for previously dry wells: 46WW12, 46WW13, 46WW15, LHSMW20, LHSMW22, and LHSMW23. Each of these wells was dry.

In the future, any wells that were dry during the previous sampling event will be gauged after 2 inches of rain is received in accordance with the RACR (AECOM, 2015a). Additionally, previously dry wells that had water after >2 inches of rainfall (i.e., 46WW01 and LHSMW18) will be gauged after 1-inch rainfall events to determine if a new baseline should be set for those well.

2.2.1.1 Shallow Groundwater Zone

During the February 2016 monitoring event, shallow wells 46WW01, 46WW12, 46WW13, 46WW15, LHSMW11, LHSMW12, LHSMW15, LHSMW17, LHSMW18, LHSMW20, and LHSMW22 were dry. Based on the gauging data collected during this event from the remainder of the shallow wells, the groundwater flow direction is interpreted to be to the east (**Figure 2-2**).

During the August 2016 event, shallow wells 46WW12, 46WW13, 46WW15, LHSMW12, LHSMW15, LHSMW17, LHSMW20, LHSMW22, LHSMW24, and LHSMW27 were dry. Based on the gauging data collected during this event from the remainder of the shallow wells, the groundwater flow direction is interpreted to be to the east (**Figure 2-3**).

The interpretation of shallow groundwater flow direction is consistent with what was presented previously in the RD document (Shaw, 2011) (see **Figure 2-4**) as well as the 1st year RA(O) report (AECOM, 2015b), and 2nd year RA(O) report (AECOM, 2016).

From February 2016 to August 2016, shallow zone groundwater elevations increased an average of 0.33 ft across the site. Groundwater elevations increased for seven shallow monitoring wells; the increase ranged from 0.07 ft to 2.97 ft. Groundwater elevations decreased in shallow monitoring wells 46WW01, 46WW10, LHSMW14 (0.6 ft, 0.09 ft and 1.45 ft, respectively). Water levels also decreased in LHSMW24 and LHSMW27 between February 2016 (when groundwater elevations could be measured in these wells) and August 2016 (when these wells were dry).

2.2.1.2 Intermediate Groundwater Zone

The intermediate zone wells, except for well LHSMW23, contained water during the two gauging events. (As noted in Section 2.1.2, there appears to be an obstruction in LHSMW23 11

feet from the total depth of the well.) **Figures 2-5 and 2-6** represent the groundwater potentiometric surface for the intermediate groundwater zone, as interpreted during the February 2016 and August 2016 monitoring events, respectively. The groundwater elevation data in 46WW08 is anomalous and was not used in developing the contour maps. The groundwater elevation in 46WW08 is similar to the shallow zone elevations, despite the well being screened in the intermediate zone. It is possible that there is leakage from the shallow zone to the intermediate zone in this area of the site such that the well reflects shallow zone conditions. The boring log identifies the saturated zone beginning at 20 ft bgs. The depth to groundwater in the well is also at approximately 20 ft bgs. The measuring point elevation is well within the elevations for nearby wells (e.g., top of casing elevation at LHSMW19 is 212.96 ft above mean sea level (msl) and the top of casing elevation at 46WW08 is 211.73 ft above msl). Therefore, the measuring point elevation does not appear to be in error. The anomalous depth to groundwater measurements have been observed consistently since RA(O) monitoring began in May 2013; therefore, these measurements are not due to field error.

The groundwater flow direction in the intermediate groundwater zone is generally interpreted to be to the north, consistent with the flow direction presented in the RD document (Shaw, 2011) (**Figure 2-7**), the 1st year RA(O) report (AECOM, 2015), and the 2nd year RA(O) report (AECOM, 2016).

2.2.1.3 Deep Groundwater Zone

Because well 46WW03 is the only well screened in the deep groundwater zone, a potentiometric surface map for the deep zone cannot be constructed.

2.2.2 Vertical Gradients

The only shallow and intermediate zone co-located wells with available water level data are monitoring wells 46WW04 and 46WW06, respectively. The elevation difference between these wells ranged between 15.6 ft to 16.7 ft with a downward vertical gradient. This indicates that there is hydraulic separation between the shallow and intermediate zones at that location. The perpendicular direction of horizontal groundwater gradients between these two zones also indicates that these zones are discrete water-bearing units. However, as discussed above, it is believed that the clay that overlies the intermediate zone sand acts as a leaky aquitard to the shallow groundwater zone.

A similar analysis between co-located intermediate and deep zone wells 46WW02 and 46WW03, respectively, indicates an elevation difference of approximately 3.3 ft between these two zones with a downward vertical gradient. This information indicates that there is hydraulic separation between these two units.

2.3 Groundwater Analytical Results

VOC analytical results for the 2016 semiannual samples are presented in **Table 2-2**. **Table 2-3** provides historical results for COCs. Laboratory reports are provided in **Appendix D**. **Figures 2-8** and **2-9** depict the shallow zone TCE results for wells sampled in February 2016 and August 2016, respectively.

During the 3rd year RA(O) monitoring events, one COC, TCE, was detected above the MCL (5 µg/L). TCE was detected above the MCL in two shallow wells during both the February 2016

and August 2016 events: 46WW11 (20.5 micrograms per liter [µg/L] and 21.2 µg/L, respectively) and LHSMW19 (24.2 µg/L and 8.53 µg/L, respectively).

Well LHSMW18 was sampled in March 2016, and the TCE concentration (3.35 µg/L) was below the MCL. TCE sample results from LHSMW18 were above the MCL between December 1994 and May 1998; however, the TCE concentration (4.8 µg/L) was just below the MCL in the last historical sampling event (February 2007). LHSMW18 was not sampled during Year 1 or Year 2 RA(O) monitoring because the well was dry.

Figures 2-10 through **2-11** depict the intermediate zone TCE data for wells sampled in February 2016 and August 2016, respectively. TCE was detected above the MCL in intermediate wells 46WW02 and 46WW05 during both events. Samples from 46WW05 had concentrations of 1,1-DCE above the MCL (7 µg/L) between May 2013 and February 2015; however, the February 2016 (3.29 µg/L) and August 2016 (1.84 J µg/L) results were below the MCL.

No COCs were detected above the laboratory reporting limit in any samples from the only deep zone well at the site, 46WW03.

Additional discussion on the COCs and their distribution, including concentration trends, is included in **Section 3.1**.

2.4 Surface Water Sample Results

Figure 2-1 shows surface water sample locations associated with LHAAP-46. Surface water sample location 46SW09 is located in Goose Prairie Creek adjacent to the LHAAP-46 site. For the baseline event, a surface water sample from 46SW09 was collected in September 2013 (the tributary was dry in May and August 2013) and analyzed for VOCs. COCs were not detected in the surface water sample at concentrations exceeding laboratory reporting limits. In response to U.S. Environmental Protection Agency (EPA) comments on the LHAAP-46 draft RACR report, the surface water sample location was subsequently relocated from 46SW09 to 46SW10. Surface water sample location 46SW10 is located in the tributary to Goose Prairie Creek. Sample location 46SW10 is downgradient of the intermediate zone groundwater plume but is cross-gradient from the shallow zone groundwater plume. During the 3rd year RA(O) monitoring period, a surface water sample was collected from 46SW10 on February 3, 2016 and analyzed for VOCs. Analytical results are provided in **Table 2-2**. No VOCs were detected in the surface water sample.

LHSMW21 is the nearest cross-gradient shallow zone well and 46WW16 is the nearest upgradient intermediate zone well to surface water sampling location 46SW10. During the 3rd year RA(O) sampling period, the groundwater elevations in LSHMW21 were 185.52 ft above msl and 186.55 ft above msl. Groundwater elevations at 46WW16 were 170.56 ft above msl and 170.93 ft above msl. The bottom of the ditch at surface water sampling location 46SW10 is 197.27 ft above msl. Therefore, during the 3rd RA(O) sampling period, the groundwater elevation was much lower (by more than 10 - 25 ft) than the bottom of the ditch, and there was no potential for groundwater to discharge to surface water.

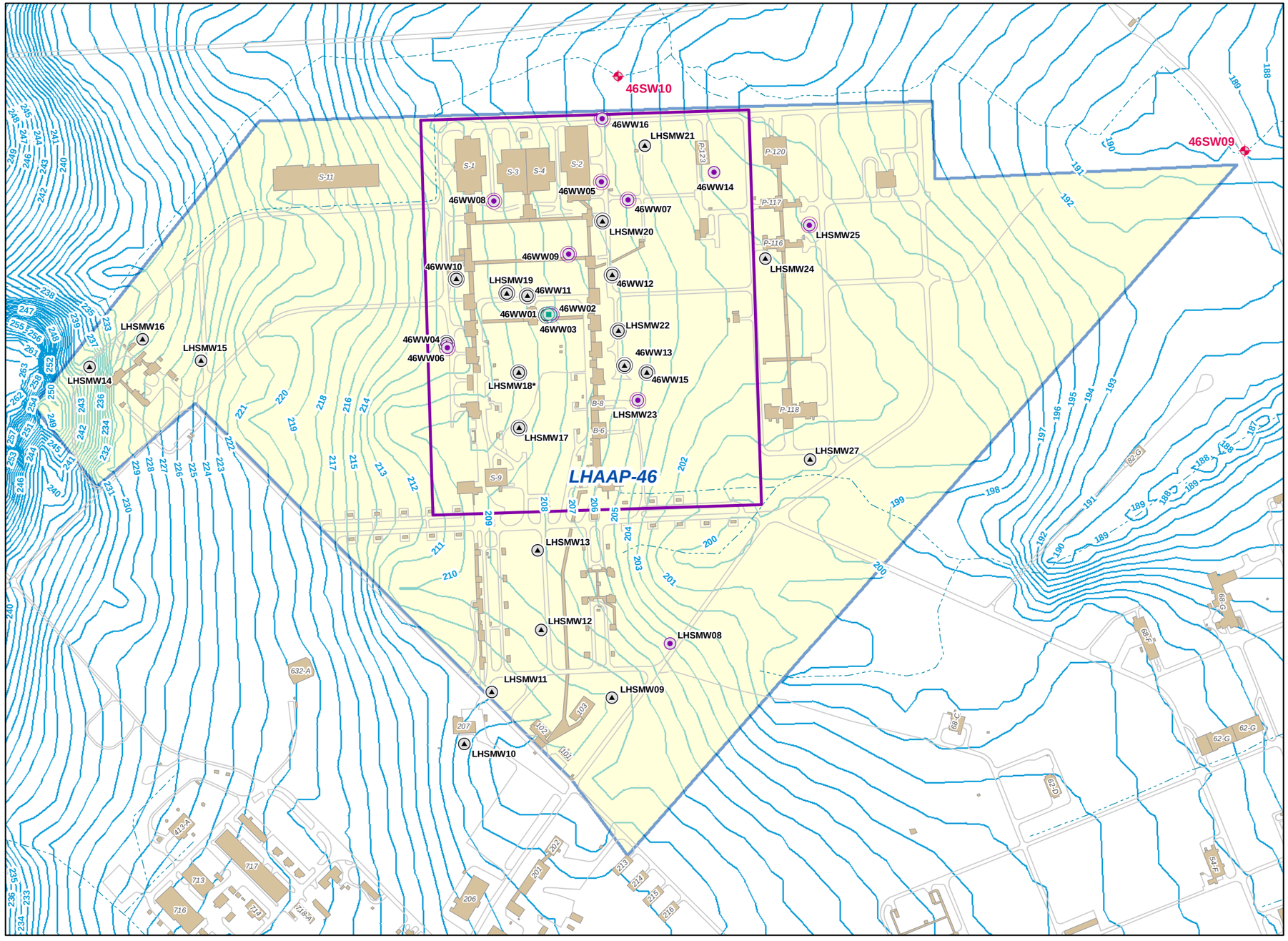

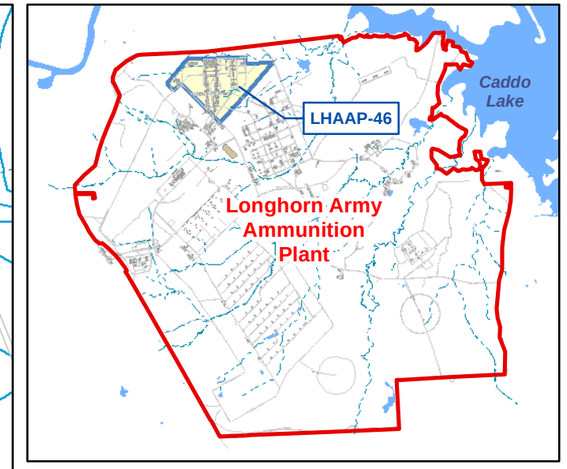

Legend

- Surface Water Sample Location
- Shallow Monitoring Well Location
- Shallow Monitoring Well Location Included in MNA Monitoring
- Intermediate Monitoring Well Location
- Intermediate Monitoring Well Location Included in MNA Monitoring
- Deep Monitoring Well Location Included in MNA Monitoring
- Surface Elevation Lines (in feet above mean sea level)
- Stream
- Road
- Surveyed Land Use Control Boundary
- LHAAP-46 Site Boundary

MNA - Monitored Natural Attenuation
*LHSMW18 will be sampled when LHSMW17 is dry.

Source: September 2011 Final Remedial Design for LHAAP-46, Plant 2 Area, Group 4, Longhorn Army Ammunition Plant, Karnack, Texas (Shaw, 2011).
Location of well 46WW11 is adopted from a map dated 4/26/11 provided by the U.S. Army.

N

0 250 500 1,000 Feet

AECOM

Figure 2-1
Groundwater Monitoring Well and Surface Water Locations
Remedial Action Operation Report (Year 3)
LHAAP-46
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 March 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-46\RAO_Report\RAO\RAO_Y3\Fig 2-1 LHAAP46 GW & MW and SW Locs.mxd

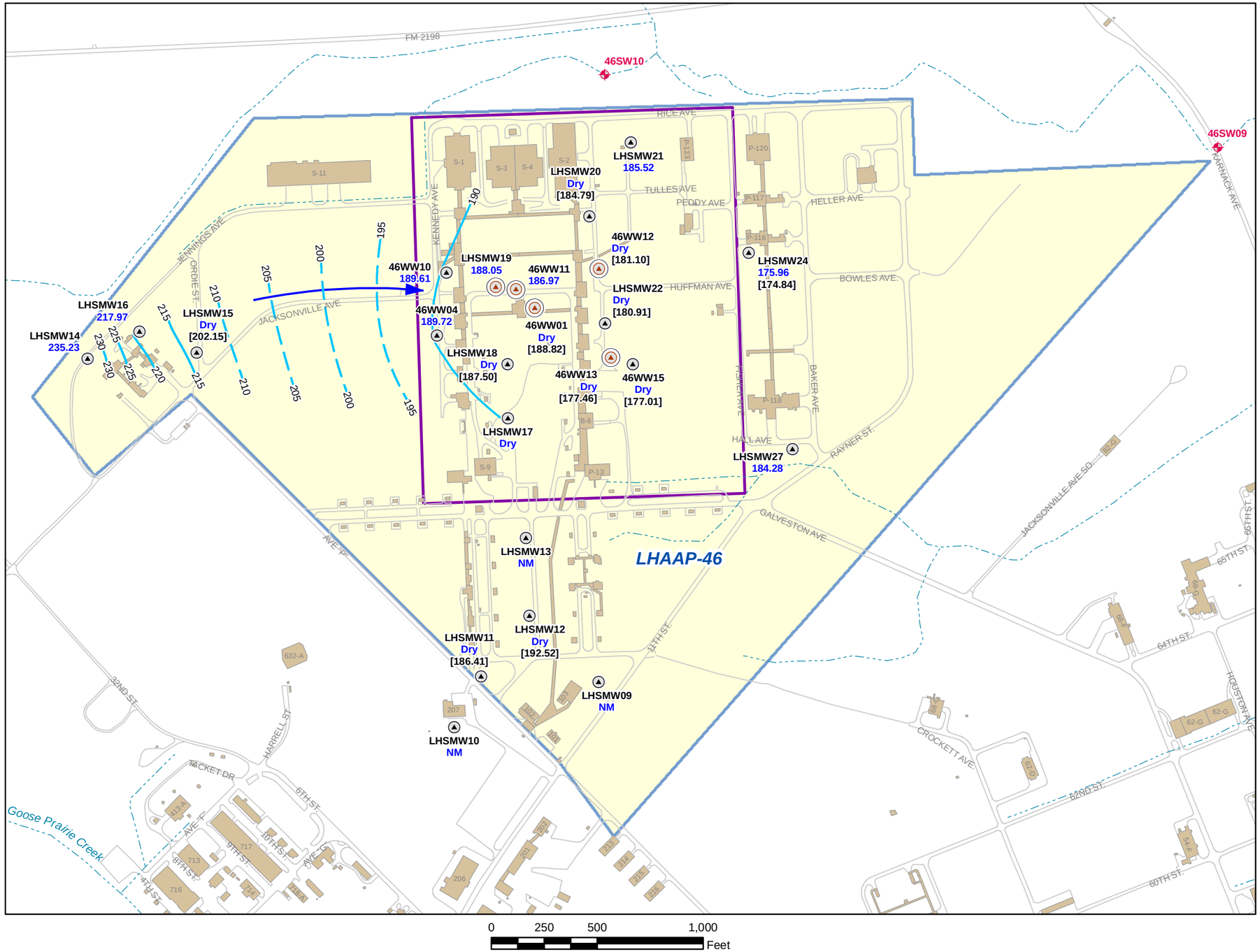

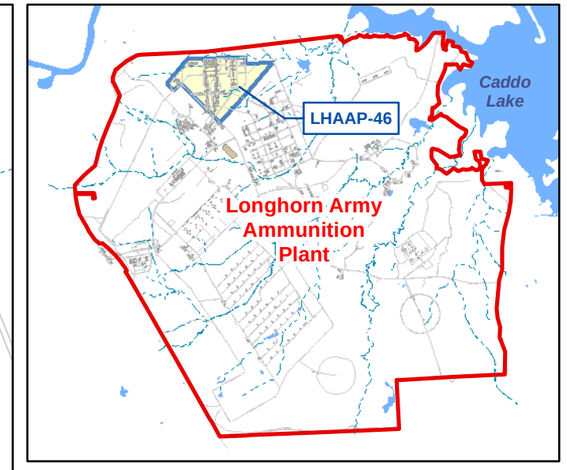

Legend

- Surface Water Sample Location
- Shallow Monitoring Well Location
- MNA Parameter Analysis Well
- Stream
- Groundwater Contour (Dashed Where Inferred)
- Groundwater Flow Direction
- Road
- Surveyed Land Use Control Boundary
- LHAAP-46 Site Boundary
- 171.91 Groundwater Elevation (ft msl)
- [180.91] Elevation of Well Screen Bottom for Dry Well

Notes:
1. Groundwater Elevations presented are feet mean sea level (ft MSL).
2. NM - Not Measured
3. Dry wells based on gauging data for sampling episode.

AECOM

Figure 2-2
February 2016
Shallow Zone Groundwater Potentiometric Map
Remedial Action Operation Report (Year 3)
LHAAP-46
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 March 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-46\RAO_Report\RAO\RAO_Yr3\Fig 2-2 LHAAP46 Shallow GWE2016_Feb.mxd

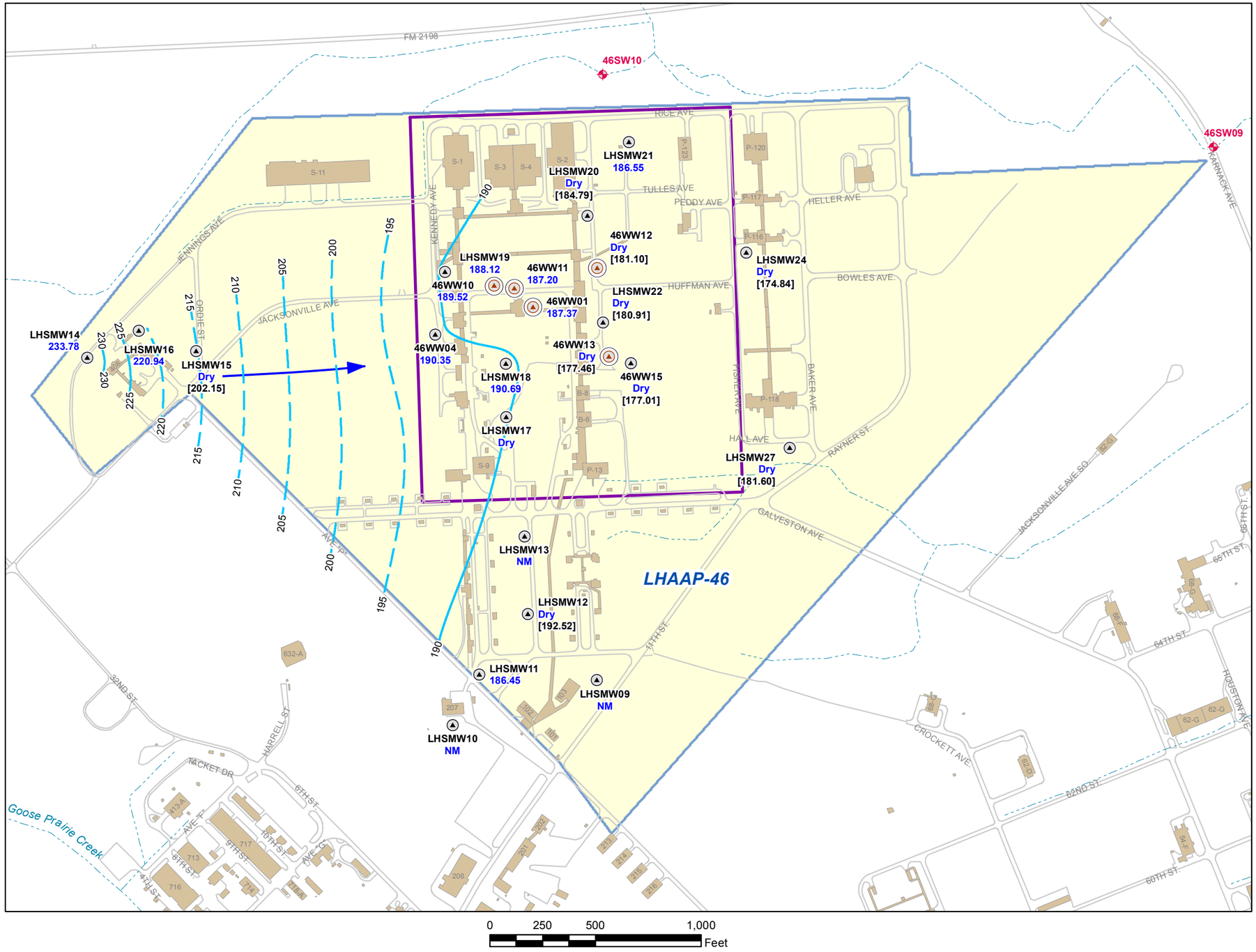

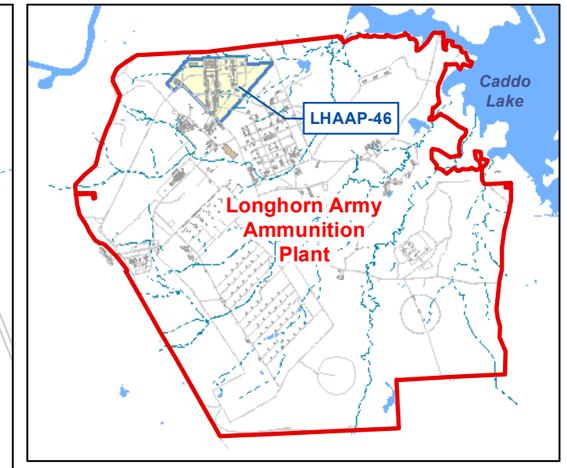

Legend

- Surface Water Sample Location
- Shallow Monitoring Well Location
- MNA Parameter Analysis Well
- Groundwater Contour (Dashed Where Inferred)
- Groundwater Flow Direction
- Stream
- Road
- Surveyed Land Use Control Boundary
- LHAAP-46 Site Boundary
- 171.91 Groundwater Elevation (ft msl)
- [180.91] Elevation of Well Screen Bottom for Dry Well

Notes:
1. Groundwater Elevations presented are feet mean sea level (ft MSL).
2. NM - Not Measured
3. Dry wells based on gauging data for sampling episode.

AECOM

Figure 2-3
August 2016
Shallow Zone Groundwater Potentiometric Map
Remedial Action Operation Report (Year 3)
LHAAP-46
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 March 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-46\RAO_Report\RAO\RAO_Yr3\Fig 2-3 LHAAP46 Shallow GWE2016_Aug.mxd

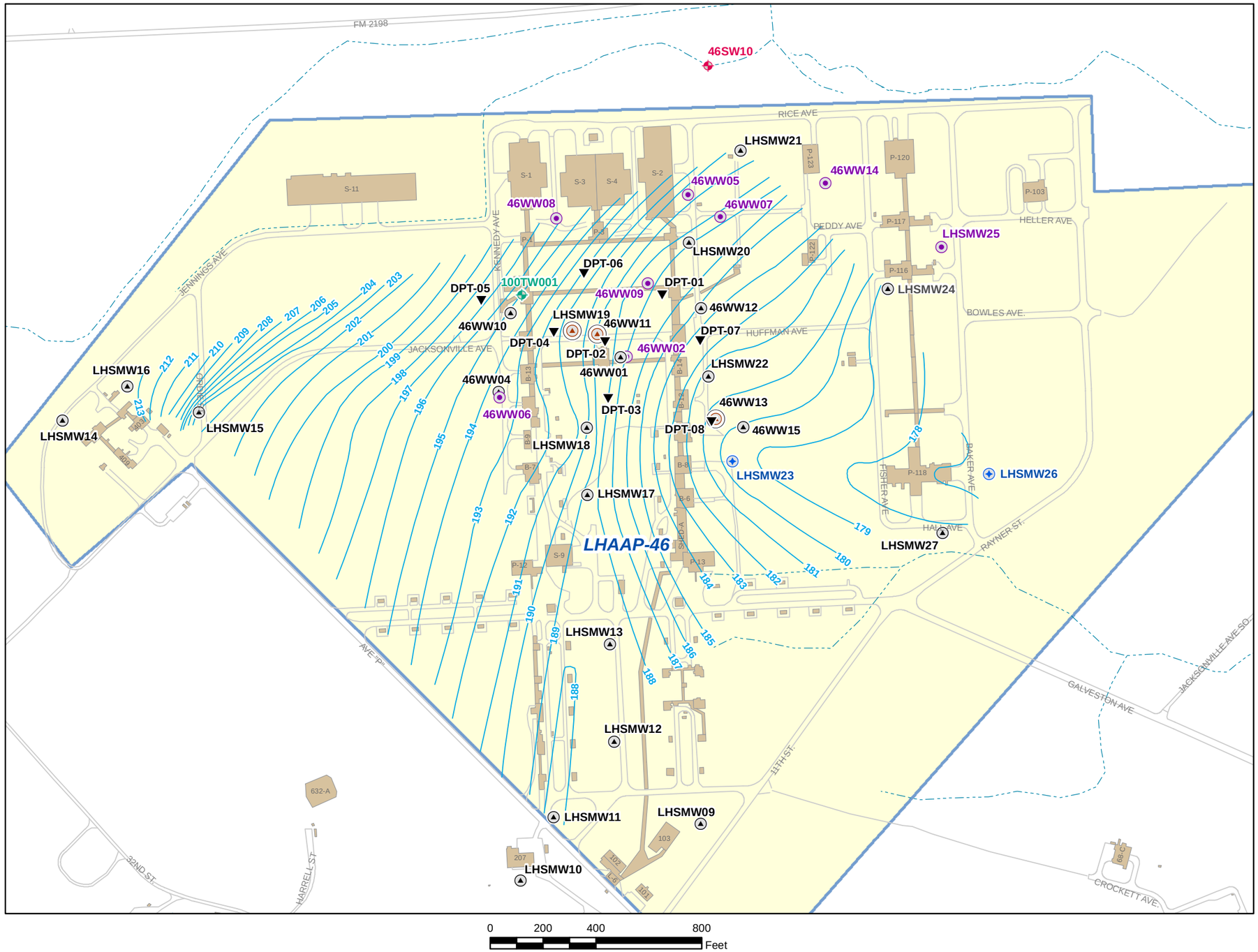

0 200 400 800 Feet

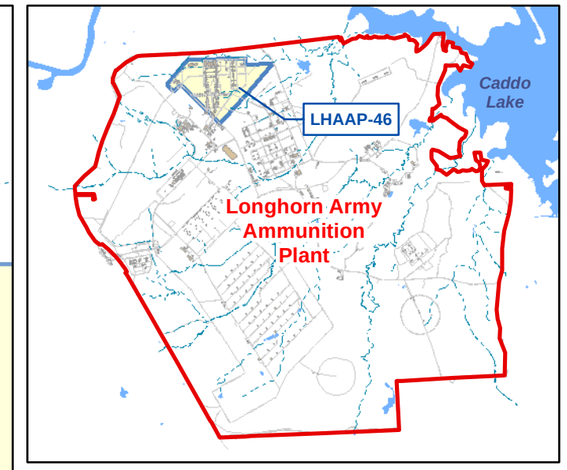

Legend

- Surface Water Sample Location
- MNA Parameter Analysis Well
- Shallow Direct Push Technology (DPT) Points - June 2011
- Shallow Monitoring Well
- Shallow/Intermediate Monitoring Well
- Intermediate Monitoring Well
- Temporary Monitoring Well
- Groundwater Elevation Contour
- Stream
- Road
- Former Buildings or Concrete Slab
- LHAAP-46 Site Boundary

Notes:
1. Locations of DPT points and well 46MW11 are from a map dated 4/26/11 provided by the U.S. Army.
2. The groundwater potentiometric map is based on April 15, 2011 water level gauging data (Remedial Design document, Shaw, 2011).

Source:
September 2011 Final Remedial Design for LHAAP-46, Plant 2 Area, Group 4, Longhorn Army Ammunition Plant, Karnack, Texas (Shaw, 2011).

AECOM

Figure 2-4
2011
Shallow Zone Groundwater Potentiometric Map
Remedial Action Operation Report (Year 3)
LHAAP-46
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 March 2017

L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-46\RAO_Report\RAO\RAO_Yr3\Fig 2-4 LHAAP46 Shallow GWE2011.mxd

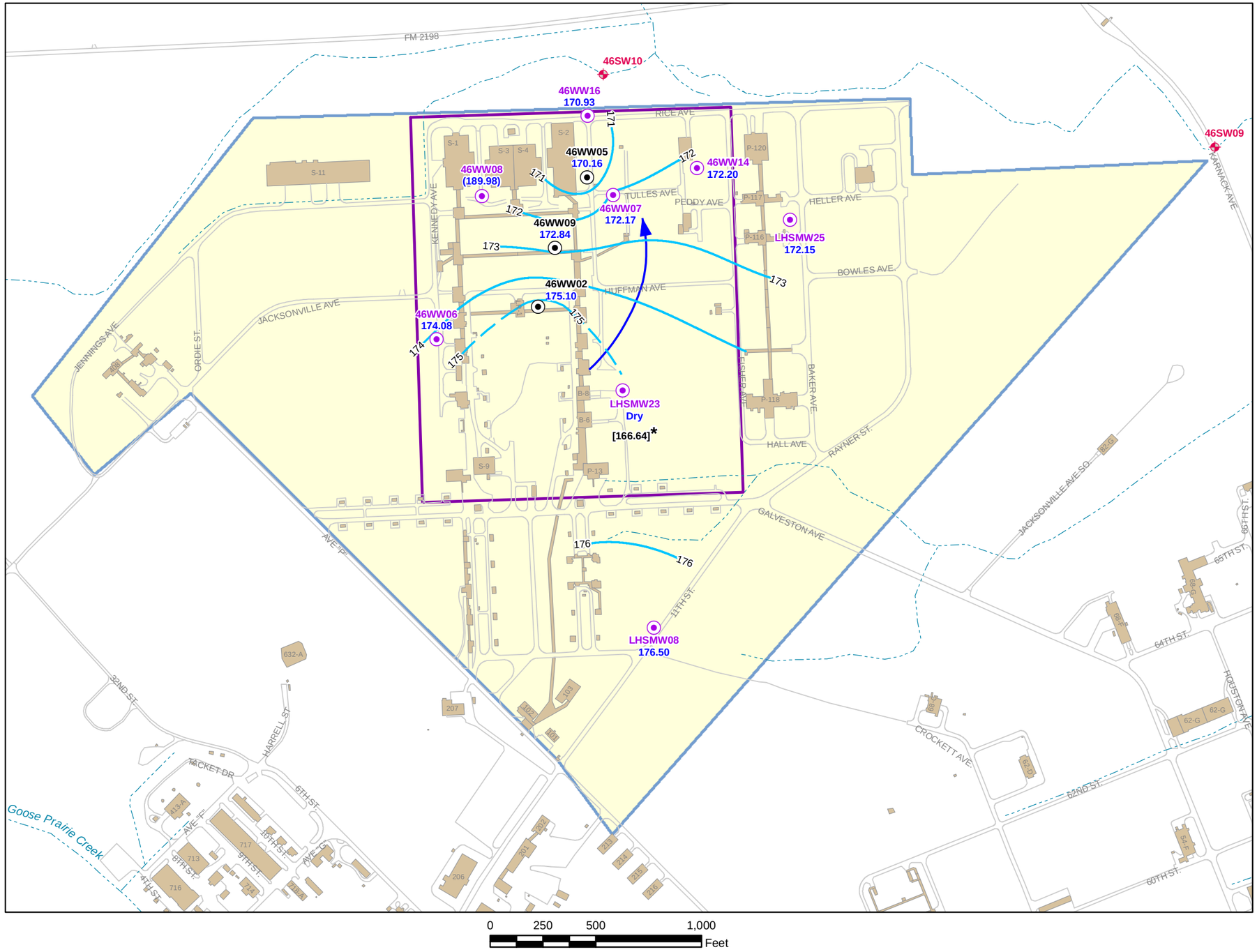

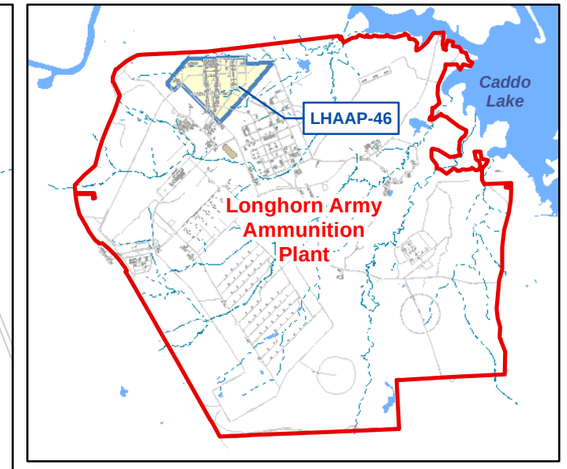

Legend

- Surface Water Sample Location
- Intermediate Monitoring Well
- MNA Paramater Analysis Well
- Groundwater Contour (Dashed Where Inferred)
- Groundwater Flow Direction
- Road
- Stream
- Surveyed Land Use Control Boundary
- LHAAP-46 Site Boundary
- 171.91 Groundwater Elevation (ft msl)
- (190.36) Groundwater Elevation (ft msl) Not Used for Contouring

Notes:
1. Groundwater Elevations presented are feet mean sea level (ft MSL).
2. NM - Not Measured
3. * Well screen bottom not used in contours.

AECOM

Figure 2-5
February 2016
Intermediate Zone Groundwater Potentiometric Map
Remedial Action Operation Report (Year 3)
LHAAP-46
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 March 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-46\RAO_Report\RAO\RAO_Yr3\Fig 2-5 LHAAP46 Int GWE2016_Feb.mxd

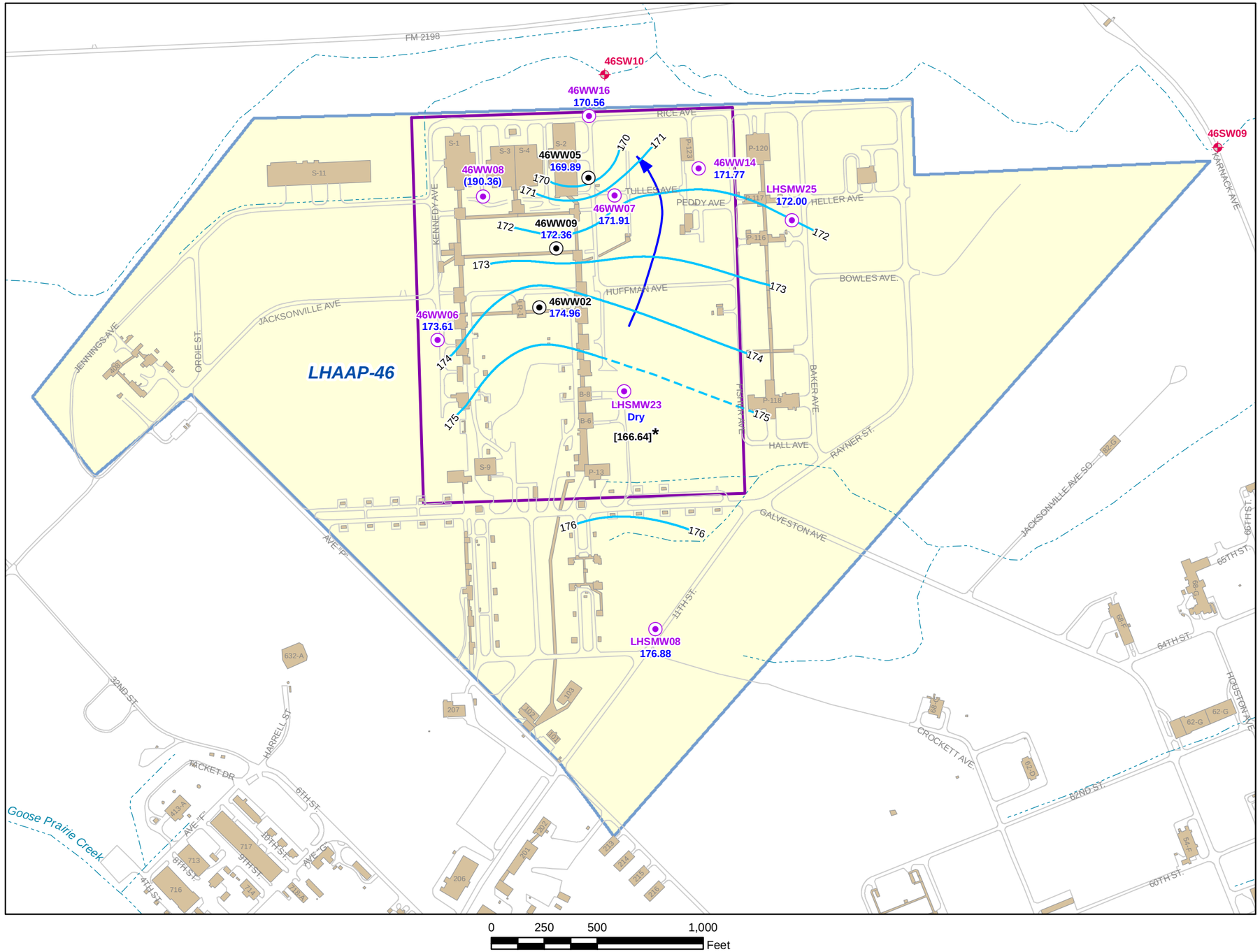

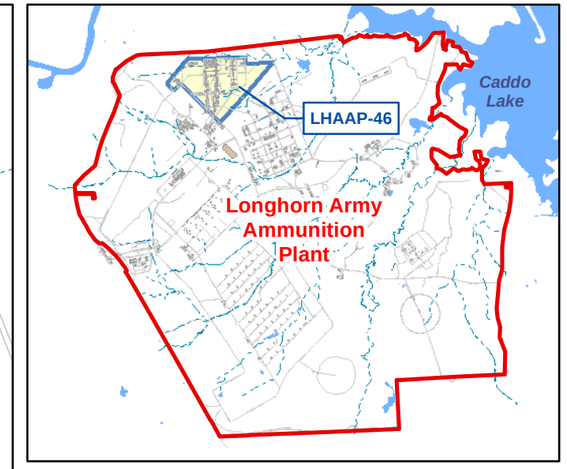

0 250 500 1,000 Feet

Legend

- Surface Water Sample Location
- Intermediate Monitoring Well
- MNA Paramater Analysis Well
- Groundwater Contour (Dashed Where Inferred)
- Groundwater Flow Direction
- Stream
- Road
- Surveyed Land Use Control Boundary
- LHAAP-46 Site Boundary
- 171.91 Groundwater Elevation (ft msl)
- (190.36) Groundwater Elevation (ft msl) Not Used for Contouring
- [166.64] Elevation of Well Screen Bottom for Dry Well

Notes:
1. Groundwater Elevations presented are feet mean sea level (ft MSL).
2. NM - Not Measured
3. * Well screen bottom not used in contours.

AECOM

Figure 2-6
August 2016
Intermediate Zone Groundwater Potentiometric Map
Remedial Action Operation Report (Year 3)
LHAAP-46
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 March 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-46\RAO_Report\RAO\RAO_Yr3\Fig 2-6 LHAAP46 Int GWE2016_Aug.mxd

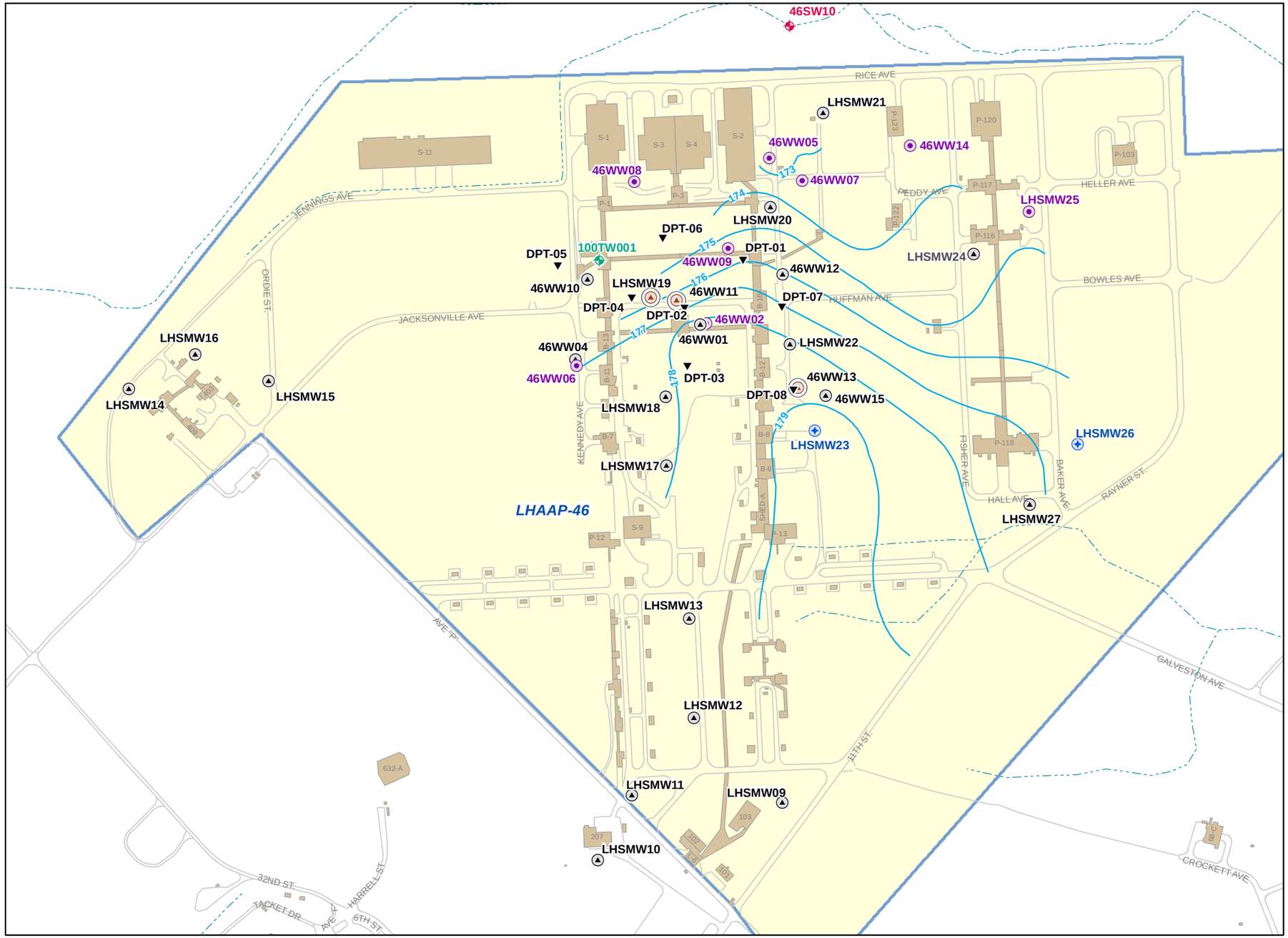

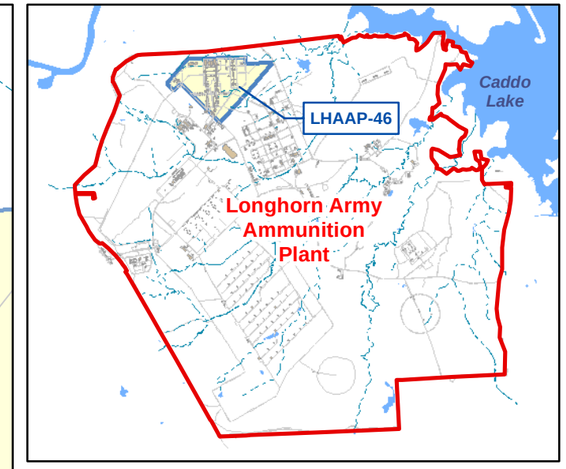

0 175 350 700 Feet

Legend

- Surface Water Sample Location
- MNA Parameter Analysis Well
- Shallow Direct Push Technology (DPT) Points - June 2011
- Shallow Monitoring Well
- Shallow/Intermediate Monitoring Well
- Intermediate Monitoring Well
- Temporary Monitoring Well
- Groundwater Elevation Contour
- Stream
- Road
- Former Buildings or Concrete Slab
- LHAAP-46 Site Boundary

Source:
September 2011 Final Remedial Design for LHAAP-46, Plant 2 Area, Group 4, Longhorn Army Ammunition Plant, Karnack, Texas (Shaw, 2011).
Locations of DPT points and well 46MW11 are from a map dated 4/26/11 provided by the U.S. Army.

AECOM

Figure 2-7
2011
Intermediate Zone Groundwater Potentiometric Map
Remedial Action Operation Report (Year 3)
LHAAP-46
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 March 2017

L:\AGE\GIS\AUS GIS\GIS Projects\Longhorn AAP\01 Reports\LHAAP-46\RAO Report\RAO\RAO Yr3\Fig 2-7 LHAAP46 Int GWE 2011.mxd

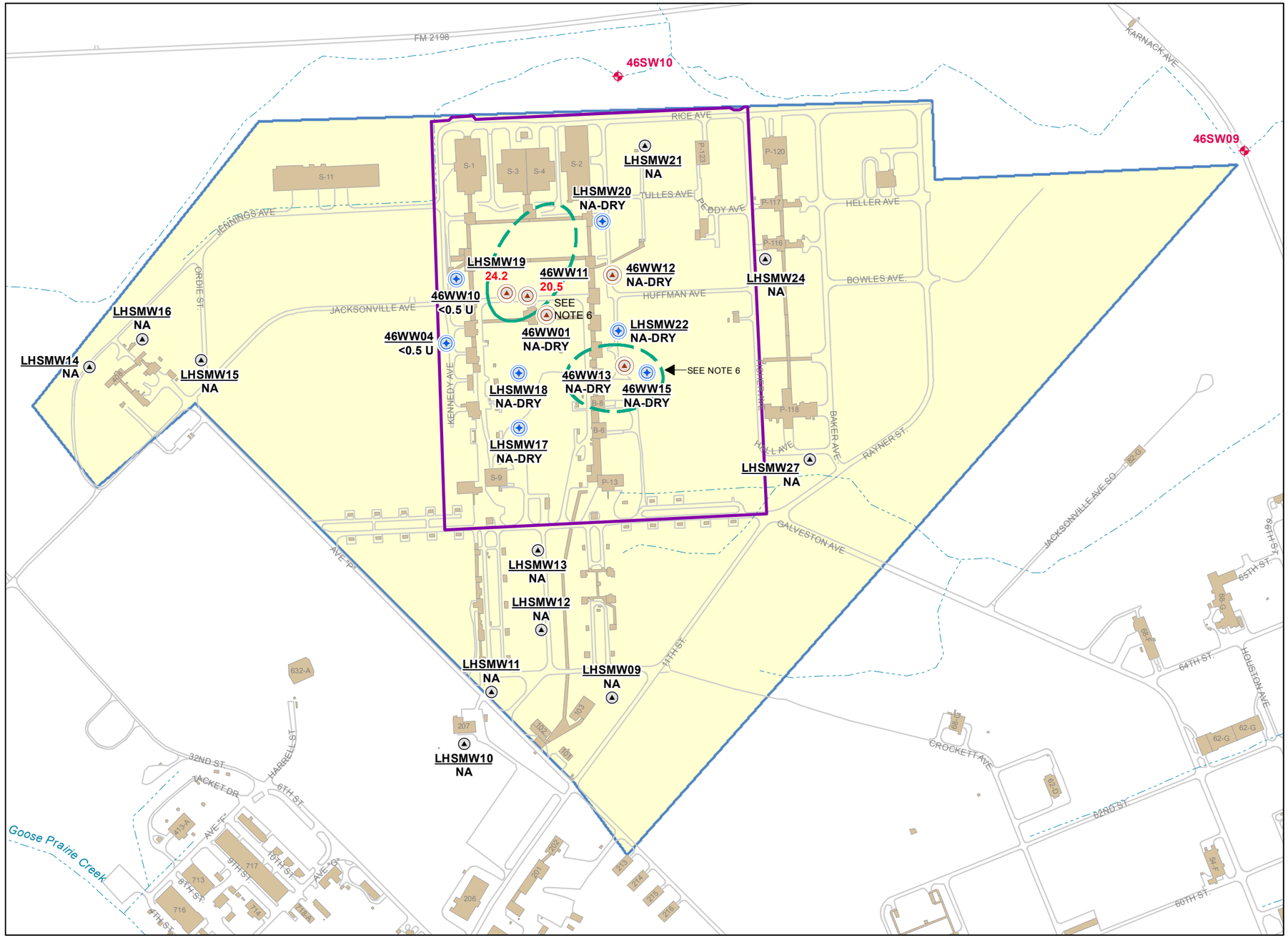

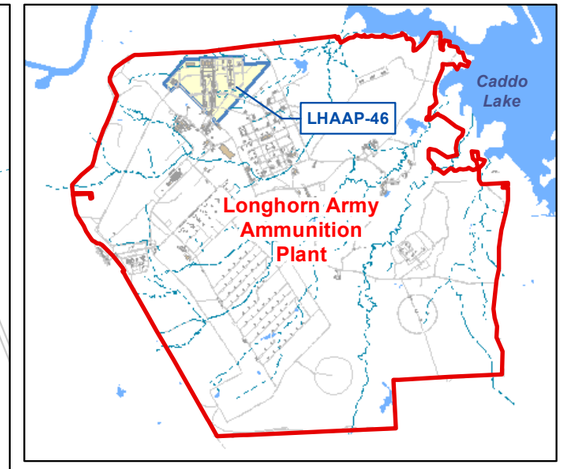

Legend

- Surface Water Sample Location
- Shallow Monitoring Well Location
- MNA Well Location
- MNA Parameter Analysis Well Location
- 20.5 — Indicates TCE concentration exceeding its maximum contaminant level (5 micrograms per liter)
- Shallow Zone TCE Plume (5 µg/L) (Dashed Where Inferred)
- Streams
- Roads
- Surveyed Land Use Control Boundary
- Buildings or Concrete Slab
- LHAAP-46 Site Boundary

Notes:
1. Sampling results reported in micrograms per liter (µg/L).
2. TCE - Trichloroethylene.
3. U - Result below laboratory reporting limit.
4. NA - No Sample Collected for Analysis.
5. NA-DRY - Well not sampled because well was dry.
6. 46WW13 has been dry since the last time it was sampled in September 2013. The September 2013 TCE result was 103 (µg/L).

N

0 250 500 1,000 Feet

AECOM

Figure 2-8
February 2016
TCE in Shallow Zone Groundwater
Remedial Action Operation Report (Year 3)
LHAAP-46
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

March 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-46\RAO_Report\RAO\RAO_Yr3\Fig 2-8 LHAAP46 TCE Shallow GW 2016_Feb.mxd

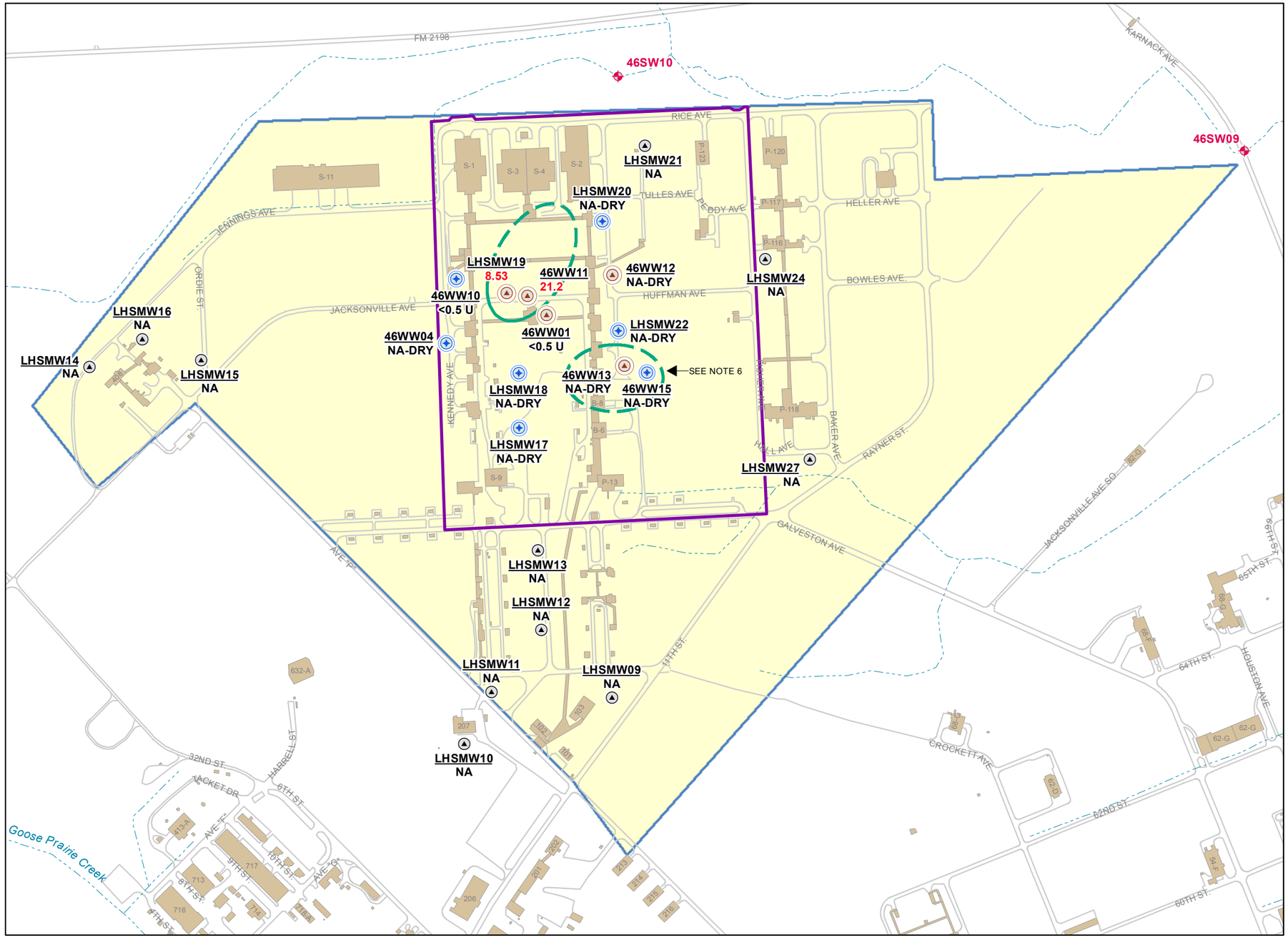

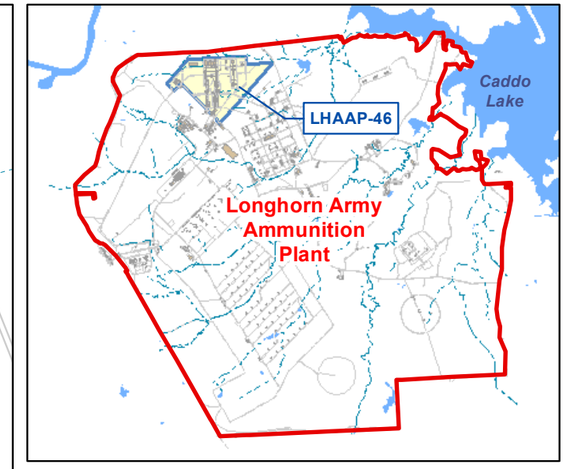

Legend

- Surface Water Sample Location
- Shallow Monitoring Well Location
- MNA Well Location
- MNA Parameter Analysis Well Location
- 21.2 Indicates TCE concentration exceeding its maximum contaminant level (5 micrograms per liter)
- Shallow Zone TCE Plume (5 µg/L) (Dashed Where Inferred)
- Streams
- Roads
- Surveyed Land Use Control Boundary
- Buildings or Concrete Slab
- LHAAP-46 Site Boundary

Notes:
1. Sampling results reported in micrograms per liter (µg/L).
2. TCE - Trichloroethylene.
3. U - Result below laboratory reporting limit.
4. NA - No Sample Collected for Analysis.
5. NA-DRY - Well not sampled because well was dry.
6. 46WW13 has been dry since the last time it was sampled in September 2013. The September 2013 TCE result was 103 (µg/L).

N

0 250 500 1,000 Feet

AECOM

Figure 2-9
August 2016
TCE in Shallow Zone Groundwater
Remedial Action Operation Report (Year 3)
LHAAP-46
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 March 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-46\RAO_Report\RAO\RAO_Yr3\Fig 2-9 LHAAP46 TCE Shallow GW 2016_Aug.mxd

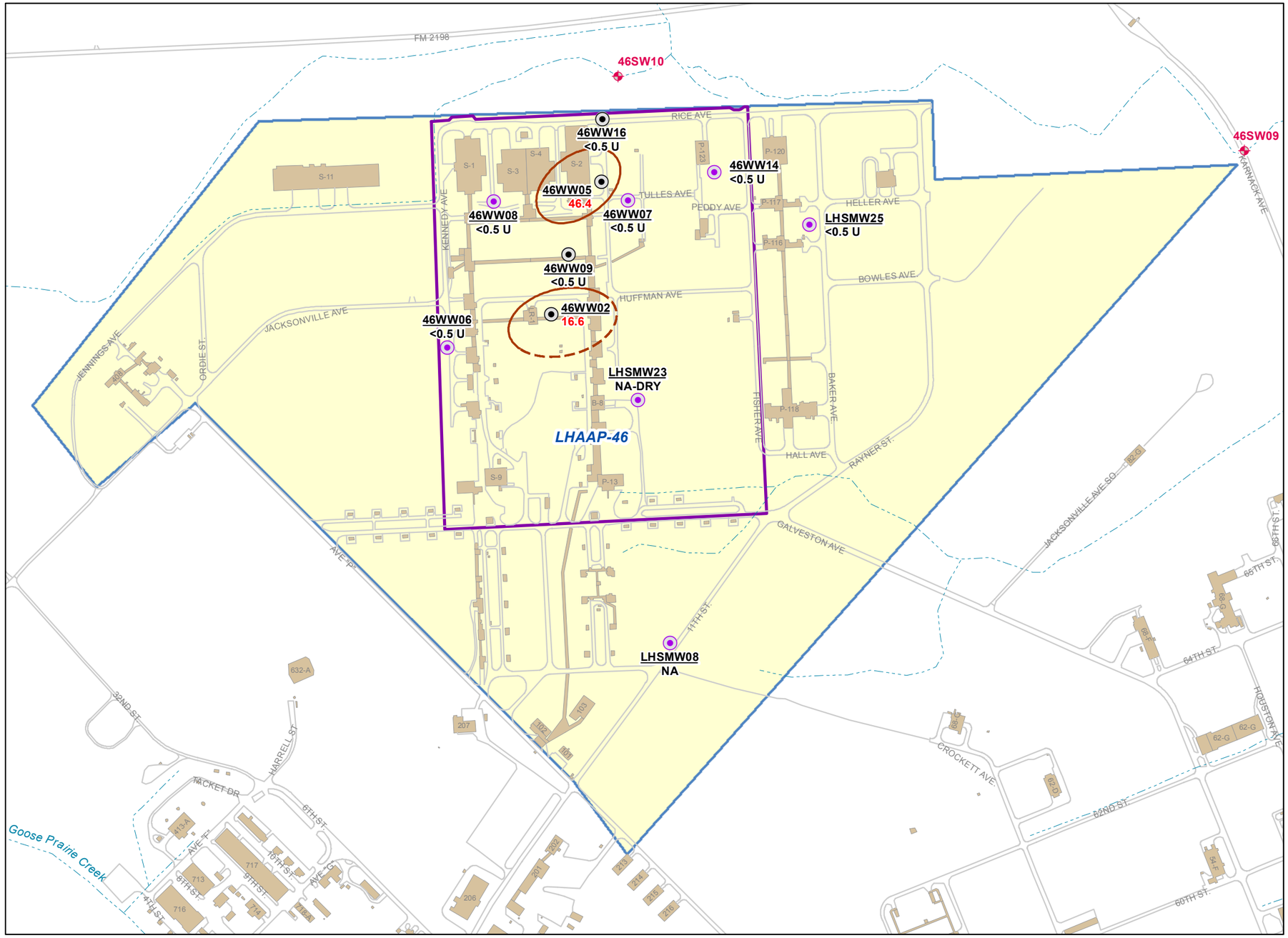

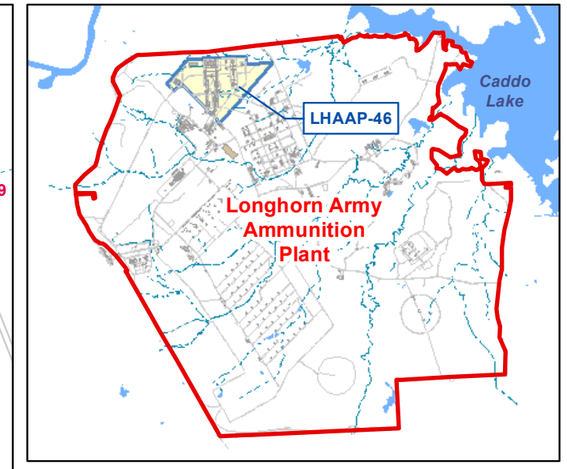

Legend

- Surface Water Sample Location
- 46.4 — Indicates TCE concentration exceeding its maximum contaminant level (5 micrograms per liter)
- MNA Parameter Analysis Well
- Intermediate Monitoring Well Location
- Intermediate Zone TCE Plume (5 µg/L) (Dashed Where Inferred)
- Streams
- Roads
- Surveyed Land Use Control Boundary
- Buildings or Concrete Slab
- LHAAP-46 Site Boundary

Notes:
1. Sampling results reported in micrograms per liter (µg/L).
2. TCE - Trichloroethylene.
3. U - Result below laboratory reporting limit.
4. NA - No Sample Collected for Analysis.
5. NA-DRY - Well not sampled because well was dry.

N

0 250 500 1,000 Feet

AECOM

Figure 2-10
February 2016
TCE in Intermediate Zone Groundwater
Remedial Action Operation Report (Year 3)
LHAAP-46
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

March 2017

Path: L:\AGE\GIS\4\US GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-46\RAO_Report\RAO\RAO_Yr3\Fig 2-10 LHAAP46 TCE Int GW 2016_Feb.mxd

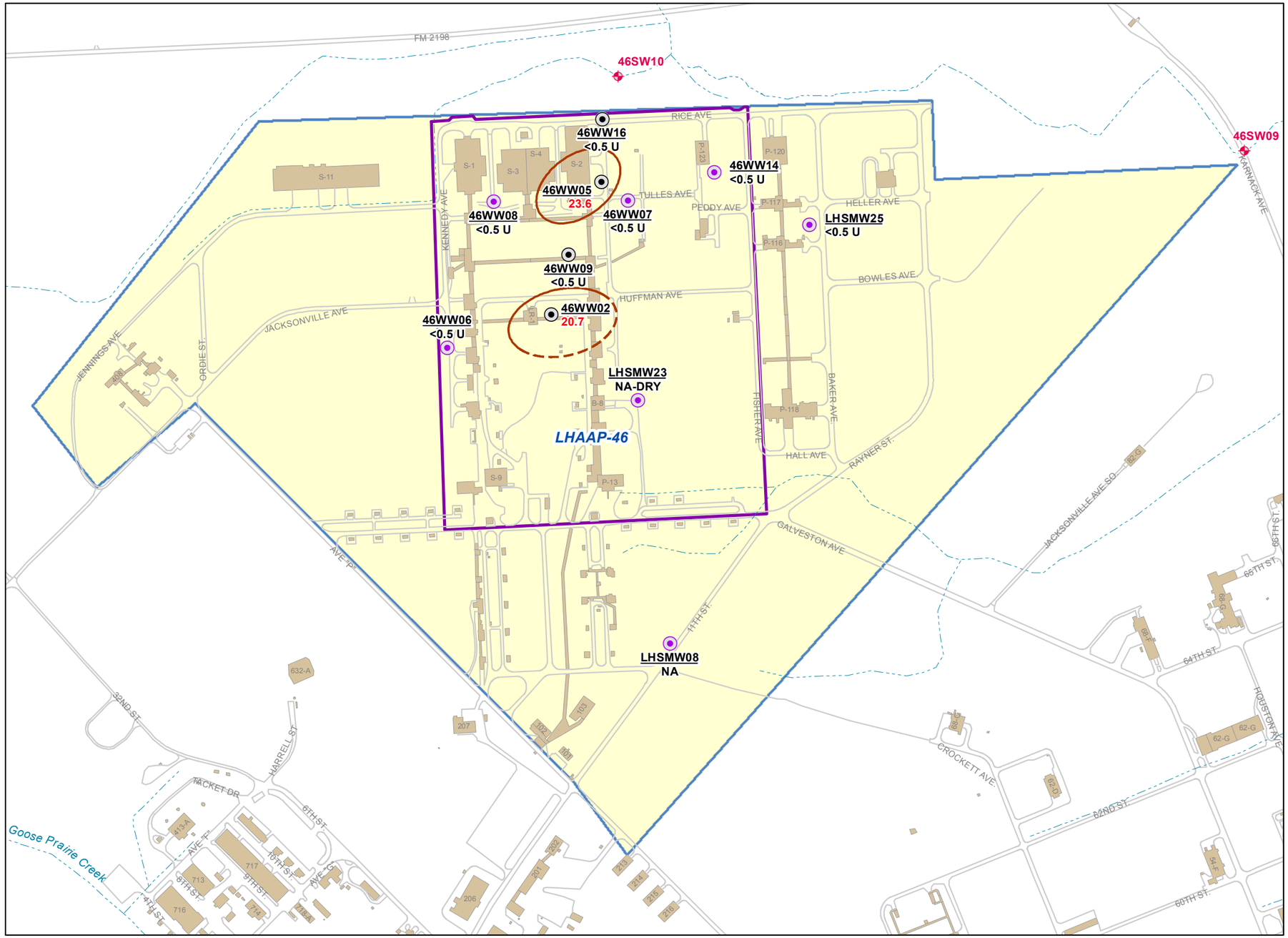

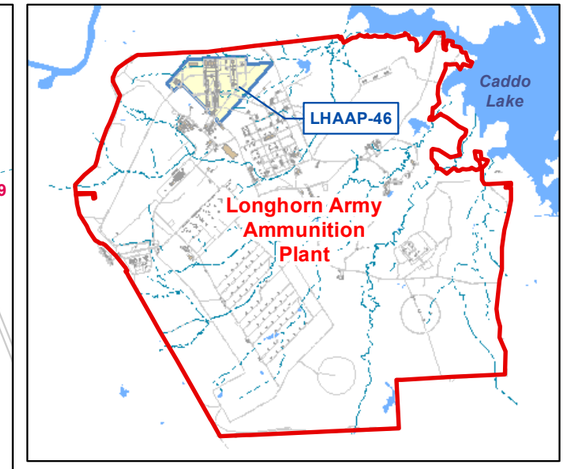

Legend

- Surface Water Sample Location
- 20.7 — Indicates TCE concentration exceeding its maximum contaminant level (5 micrograms per liter)
- MNA Parameter Analysis Well
- Intermediate Monitoring Well Location
- Intermediate Zone TCE Plume (5 µg/L) (Dashed Where Inferred)
- Streams
- Roads
- Surveyed Land Use Control Boundary
- Buildings or Concrete Slab
- LHAAP-46 Site Boundary

Notes:
1. Sampling results reported in micrograms per liter (µg/L).
2. TCE - Trichloroethylene.
3. U - Result below laboratory reporting limit.
4. NA - No Sample Collected for Analysis.
5. NA-DRY - Well not sampled because well was dry.

N

0 250 500 1,000 Feet

AECOM

Figure 2-11
August 2016
TCE in Intermediate Zone Groundwater
Remedial Action Operation Report (Year 3)
LHAAP-46
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 March 2017

Path: L:\AGE\GIS\4\US GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-46\RAO_Report\RAO\RAO_Yr3\Fig 2-11 LHAAP46 TCE Int GW 2016_Aug.mxd

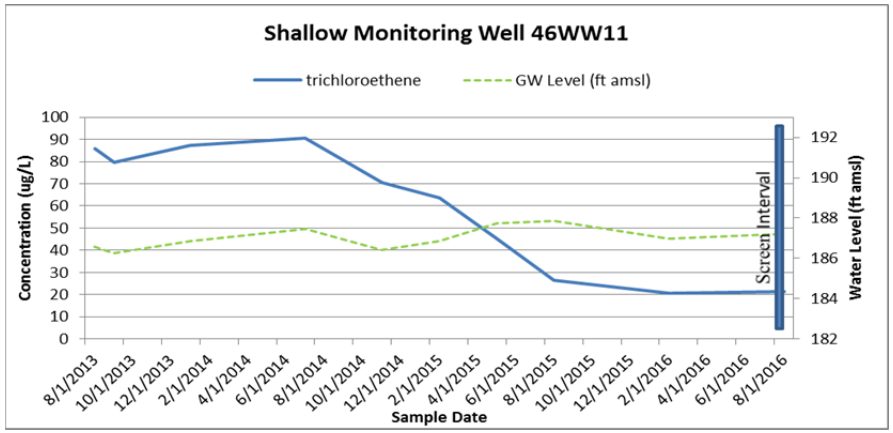

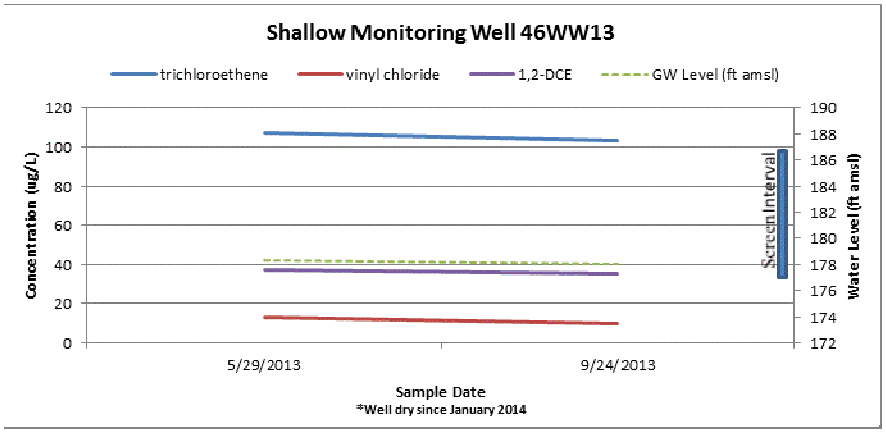

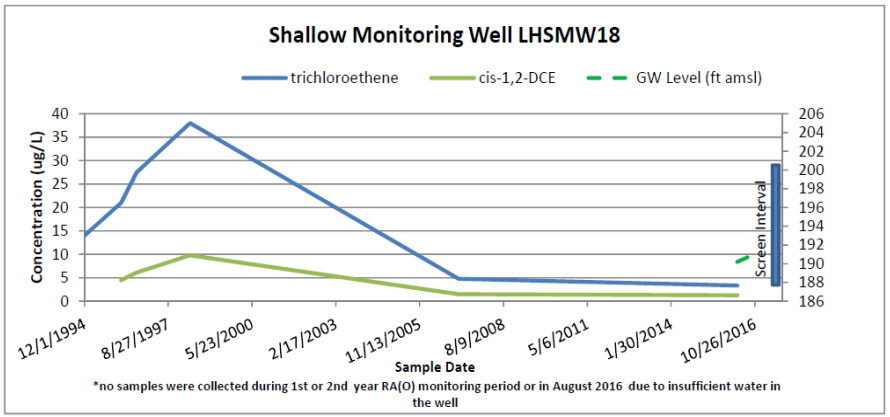

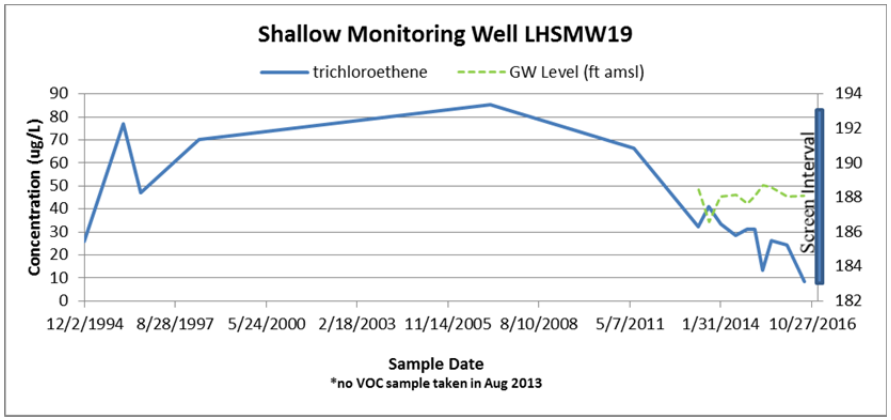

MCLs: TCE = 5 µg/L cis-1,2-DCE = 70 µg/L VC = 2 µg/L

AECOM

Figure 2-12
Shallow Zone COC Concentrations
Remedial Action Operation (Year 3)
LHAAP-46

60256135

Longhorn Army Ammunition Plant
Karnack, Texas

March 2017

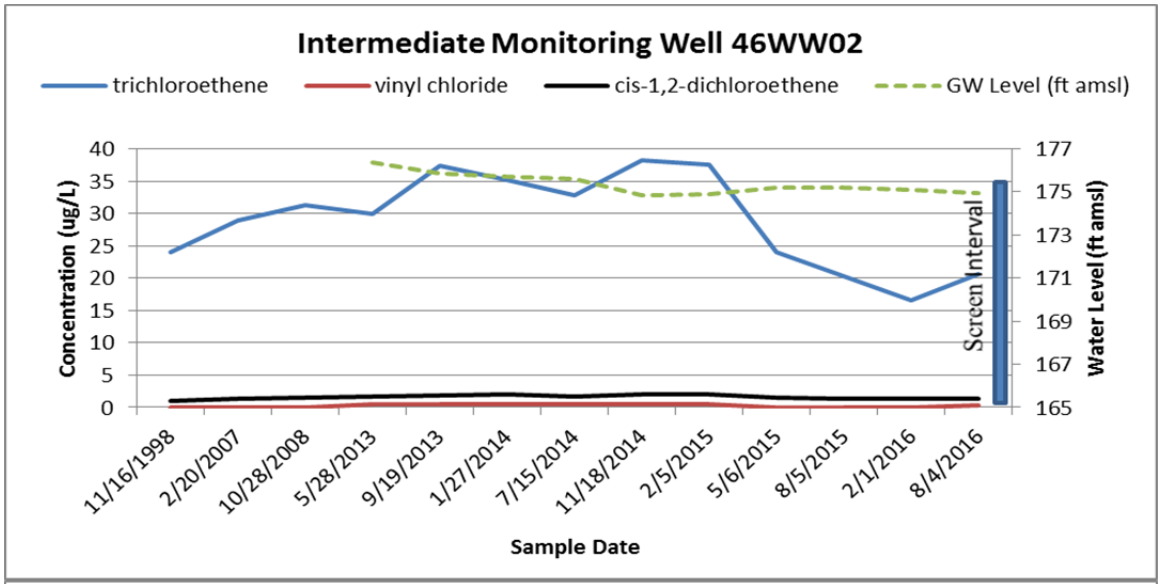

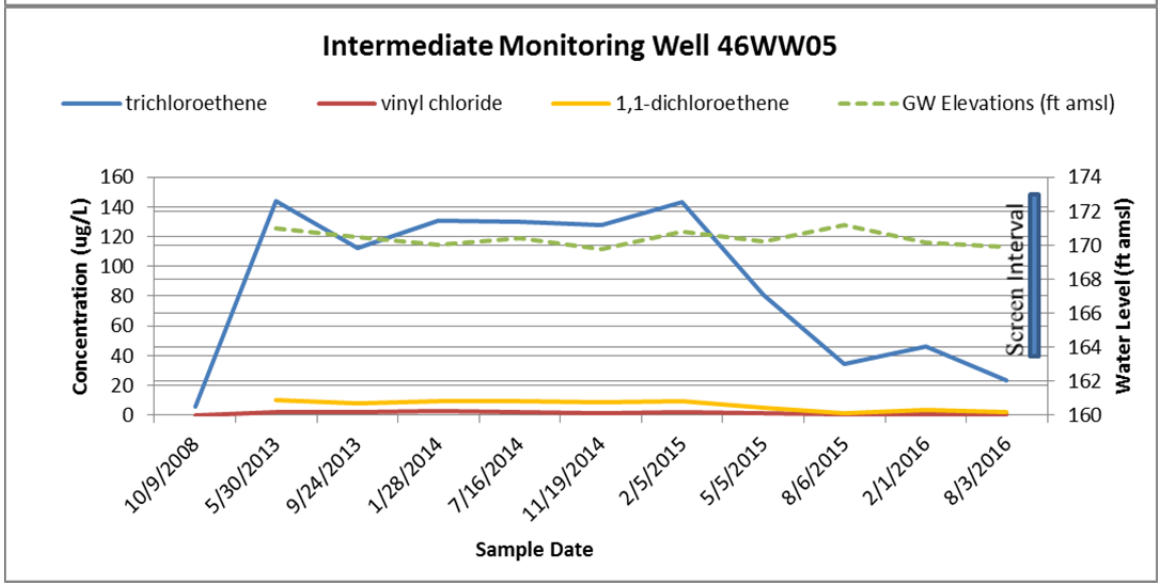

MCLs: TCE = 5 ug/L VC = 2 ug/L cis-1,2-DCE = 70 1,1-DCE = 7

AECOM

Figure 2-13
Intermediate Zone COC Concentrations
Remedial Action Operation (Year 3)
LHAAP-46

60256135

Longhorn Army Ammunition Plant
Karnack, Texas

March 2017

Table 2-1: Groundwater Elevation Data, 3-Year RA(O) - LHAAP-46

Well ID	Shallow (S) Intermediate (I) Deep (D)	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from TOC)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)
						Top	Bottom	Top	Bottom	
46WW01	S	05/02/13	212.82	209.75	26	14	24	198.82	188.82	186.82
		05/28/13	212.82	209.75	Dry	14	24	198.82	188.82	Dry
		08/10/13	212.82	209.75	Dry	14	24	198.82	188.82	Dry
		09/20/13	212.82	209.75	Dry	14	24	198.82	188.82	Dry
		01/25/14	212.82	209.75	Dry	14	24	198.82	188.82	Dry
		07/15/14	212.82	209.75	Dry	14	24	198.82	188.82	Dry
		11/18/14	212.82	209.75	Dry	14	24	198.82	188.82	Dry
		02/03/15	212.82	209.75	Dry	14	24	198.82	188.82	Dry
		05/05/15	212.82	209.75	Dry	14	24	198.82	188.82	Dry
		08/05/15	212.82	209.75	Dry	14	24	198.82	188.82	Dry
		02/01/16	212.82	209.75	Dry	14	24	198.82	188.82	Dry
		03/28/16	212.82	209.75	24.85	14	24	198.82	188.82	187.97
		08/03/16	212.82	209.75	25.45	14	24	198.82	188.82	187.37
46WW02	I	05/02/13	212.21	209.16	35.9	37	47	175.21	165.21	176.31
		05/28/13	212.21	209.16	35.85	37	47	175.21	165.21	176.36
		08/14/13	212.21	209.16	36.15	37	47	175.21	165.21	176.06
		08/17/13	212.21	209.16	36.2	37	47	175.21	165.21	176.01
		09/19/13	212.21	209.16	36.33	37	47	175.21	165.21	175.88
		01/27/14	212.21	209.16	36.52	37	47	175.21	165.21	175.69
		07/15/14	212.21	209.16	36.63	37	47	175.21	165.21	175.58
		11/18/14	212.21	209.16	37.37	37	47	175.21	165.21	174.84
		02/05/15	212.21	209.16	37.3	37	47	175.21	165.21	174.91
		05/06/15	212.21	209.16	37	37	47	175.21	165.21	175.21
		08/05/15	212.21	209.16	37.03	37	47	175.21	165.21	175.18
		02/01/16	212.21	209.16	37.11	37	47	175.21	165.21	175.10
		08/04/16	212.21	209.16	37.25	37	47	175.21	165.21	174.96
46WW03	D	05/30/13	212.47	209.8	39.81	92.67	102.67	119.8	109.8	172.66
		08/17/13	212.47	209.8	40.34	92.67	102.67	119.8	109.8	172.13
		09/26/13	212.47	209.8	46.48	92.67	102.67	119.8	109.8	165.99
		01/25/14	212.47	209.8	40.61	92.67	102.67	119.8	109.8	171.86
		07/17/14	212.47	209.8	40.47	92.67	102.67	119.8	109.8	172
		11/20/14	212.47	209.8	41	92.67	102.67	119.8	109.8	171.47
		02/05/15	212.47	209.8	40.6	92.67	102.67	119.8	109.8	171.87
		05/06/15	212.47	209.8	40.32	92.67	102.67	119.8	109.8	172.15
		08/05/15	212.47	209.8	40.71	92.67	102.67	119.8	109.8	171.76
		02/03/16	212.47	209.8	40.69	92.67	102.67	119.8	109.8	171.78
		08/04/16	212.47	209.8	40.77	92.67	102.67	119.8	109.8	171.70

Table 2-1: Groundwater Elevation Data, 3-Year RA(O) - LHAAP-46

Well ID	Shallow (S) Intermediate (I) Deep (D)	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from TOC)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)
						Top	Bottom	Top	Bottom	
46WW04	S	05/02/13	215.39	212.47	24.86	17	27	198.39	188.39	190.53
		05/24/13	215.39	212.47	24.9	17	27	198.39	188.39	190.49
		08/09/13	215.39	212.47	25.48	17	27	198.39	188.39	189.91
		09/20/13	215.39	212.47	26	17	27	198.39	188.39	189.39
		01/25/14	215.39	212.47	25.9	17	27	198.39	188.39	189.49
		07/17/14	215.39	212.47	24.68	17	27	198.39	188.39	190.71
		11/19/14	215.39	212.47	26	17	27	198.39	188.39	189.39
		02/03/15	215.39	212.47	Dry	17	27	198.39	188.39	Dry
		05/05/15	215.39	212.47	24.48	17	27	198.39	188.39	190.91
		08/04/15	215.39	212.47	24.13	17	27	198.39	188.39	191.26
		02/02/16	215.39	212.47	25.67	17	27	198.39	188.39	189.72
		08/03/16	215.39	212.47	25.04	17	27	198.39	188.39	190.35
46WW05	I	05/30/13	208.24	205.59	37.25	36.65	46.35	171.59	161.89	170.99
		08/14/13	208.24	205.59	37.65	36.65	46.35	171.59	161.89	170.59
		08/17/13	208.24	205.59	37.73	36.65	46.35	171.59	161.89	170.51
		09/24/13	208.24	205.59	37.75	36.65	46.35	171.59	161.89	170.49
		01/28/14	208.24	205.59	38.2	36.65	46.35	171.59	161.89	170.04
		07/16/14	208.24	205.59	37.83	36.65	46.35	171.59	161.89	170.41
		11/19/14	208.24	205.59	38.48	36.65	46.35	171.59	161.89	169.76
		02/05/15	208.24	205.59	37.45	36.65	46.35	171.59	161.89	170.79
		05/05/15	208.24	205.59	38.03	36.65	46.35	171.59	161.89	170.21
		08/06/15	208.24	205.59	37.05	36.65	46.35	171.59	161.89	171.19
		02/01/16	208.24	205.59	38.08	36.65	46.35	171.59	161.89	170.16
		08/03/16	208.24	205.59	38.35	36.65	46.35	171.59	161.89	169.89
46WW06	I	05/24/13	213.84	211.24	38.98	40.6	50.6	173.24	163.24	174.86
		08/16/13	213.84	211.24	39.12	40.6	50.6	173.24	163.24	174.72
		09/25/13	213.84	211.24	39.1	40.6	50.6	173.24	163.24	174.74
		01/25/14	213.84	211.24	39.28	40.6	50.6	173.24	163.24	174.56
		07/17/14	213.84	211.24	39.55	40.6	50.6	173.24	163.24	174.29
		11/19/14	213.84	211.24	39.91	40.6	50.6	173.24	163.24	173.93
		02/06/15	213.84	211.24	39.93	40.6	50.6	173.24	163.24	173.91
		05/01/15	213.84	211.24	39.91	40.6	50.6	173.24	163.24	173.93
		08/04/15	213.84	211.24	39.9	40.6	50.6	173.24	163.24	173.94
		02/02/16	213.84	211.24	39.76	40.6	50.6	173.24	163.24	174.08
		08/04/16	213.84	211.24	40.23	40.6	50.6	173.24	163.24	173.61

Table 2-1: Groundwater Elevation Data, 3-Year RA(O) - LHAAP-46

Well ID	Shallow (S) Intermediate (I) Deep (D)	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from TOC)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)
						Top	Bottom	Top	Bottom	
46WW07	I	05/25/13	207.87	205.37	35.28	41.5	51	166.37	156.87	172.59
		08/16/13	207.87	205.37	35.6	41.5	51	166.37	156.87	172.27
		09/19/13	207.87	205.37	35.7	41.5	51	166.37	156.87	172.17
		01/27/14	207.87	205.37	36.72	41.5	51	166.37	156.87	171.15
		07/18/14	207.87	205.37	35.47	41.5	51	166.37	156.87	172.4
		11/19/14	207.87	205.37	36.25	41.5	51	166.37	156.87	171.62
		02/03/15	207.87	205.37	35.95	41.5	51	166.37	156.87	171.92
		05/01/15	207.87	205.37	35.62	41.5	51	166.37	156.87	172.25
		08/04/15	207.87	205.37	35.68	41.5	51	166.37	156.87	172.19
		02/02/16	207.87	205.37	35.70	41.5	51	166.37	156.87	172.17
		08/02/16	207.87	205.37	35.96	41.5	51	166.37	156.87	171.91
46WW08	I	05/25/13	211.73	209.51	21.35	35.72	45.22	176.01	166.51	190.38
		08/16/13	211.73	209.51	21.55	35.72	45.22	176.01	166.51	190.18
		09/21/13	211.73	209.51	21.75	35.72	45.22	176.01	166.51	189.98
		01/28/14	211.73	209.51	21.85	35.72	45.22	176.01	166.51	189.88
		07/18/14	211.73	209.51	21.3	35.72	45.22	176.01	166.51	190.43
		11/20/14	211.73	209.51	22.06	35.72	45.22	176.01	166.51	189.67
		02/03/15	211.73	209.51	21.85	35.72	45.22	176.01	166.51	189.88
		05/01/15	211.73	209.51	20.94	35.72	45.22	176.01	166.51	190.79
		08/04/15	211.73	209.51	21.02	35.72	45.22	176.01	166.51	190.71
		02/03/16	211.73	209.51	21.75	35.72	45.22	176.01	166.51	189.98
		08/02/16	211.73	209.51	21.37	35.72	45.22	176.01	166.51	190.36
46WW09	I	05/30/13	210.19	207.71	34.5	31.48	40.98	178.71	169.21	175.69
		08/13/13	210.19	207.71	36.95	31.48	40.98	178.71	169.21	173.24
		08/17/13	210.19	207.71	36.03	31.48	40.98	178.71	169.21	174.16
		09/24/13	210.19	207.71	32.5	31.48	40.98	178.71	169.21	177.69
		01/27/14	210.19	207.71	33.05	31.48	40.98	178.71	169.21	177.14
		07/15/14	210.19	207.71	38.18	31.48	40.98	178.71	169.21	172.01
		11/19/14	210.19	207.71	36.99	31.48	40.98	178.71	169.21	173.2
		02/05/15	210.19	207.71	35.9	31.48	40.98	178.71	169.21	174.29
		05/05/15	210.19	207.71	36.55	31.48	40.98	178.71	169.21	173.64
		08/06/15	210.19	207.71	37.47	31.48	40.98	178.71	169.21	172.72
		02/02/16	210.19	207.71	37.35	31.48	40.98	178.71	169.21	172.84
		08/03/16	210.19	207.71	37.83	31.48	40.98	178.71	169.21	172.36

Table 2-1: Groundwater Elevation Data, 3-Year RA(O) - LHAAP-46

Well ID	Shallow (S) Intermediate (I) Deep (D)	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from TOC)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)
						Top	Bottom	Top	Bottom	
46WW10	S	05/24/13	213.69	211.40	23.2	14.19	23.69	199.5	190	190.49
		08/09/13	213.69	211.40	22	14.19	23.69	199.5	190	191.69
		09/20/13	213.69	211.40	23.42	14.19	23.69	199.5	190	190.27
		01/25/14	213.69	211.40	23.61	14.19	23.69	199.5	190	190.08
		07/17/14	213.69	211.4	23.57	14.19	23.69	199.5	190	190.12
		11/19/14	213.69	211.4	23.83	14.19	23.69	199.5	190	189.86
		02/03/15	213.69	211.40	23.95	14.19	23.69	199.5	190	189.74
		05/05/15	213.69	211.40	23.8	14.19	23.69	199.5	190	189.89
		08/04/15	213.69	211.40	23.57	14.19	23.69	199.5	190	190.12
		02/02/16	213.69	211.40	24.08	14.19	23.69	199.5	190	189.61
		08/03/16	213.69	211.40	24.17	14.19	23.69	199.5	190	189.52
46WW11	S	05/25/13	212.22	209.97	Dry	23	33	189.22	179.22	Dry
		08/14/13	212.22	209.97	25.63	23	33	189.22	179.22	186.59
		09/19/13	212.22	209.97	25.98	23	33	189.22	179.22	186.24
		01/28/14	212.22	209.97	25.35	23	33	189.22	179.22	186.87
		07/16/14	212.22	209.97	24.76	23	33	189.22	179.22	187.46
		11/18/14	212.22	209.97	25.8	23	33	189.22	179.22	186.42
		02/04/15	212.22	209.97	25.37	23	33	189.22	179.22	186.85
		05/06/15	212.22	209.97	24.48	23	33	189.22	179.22	187.74
		08/05/15	212.22	209.97	24.37	23	33	189.22	179.22	187.85
		02/01/16	212.22	209.97	25.25	23	33	189.22	179.22	186.97
		08/03/16	212.22	209.97	25.02	23	33	189.22	179.22	187.20
46WW12	S	05/28/13	209.57	207.10	Dry	18.97	28.47	190.6	181.1	Dry
		08/10/13	209.57	207.10	Dry	18.97	28.47	190.6	181.1	Dry
		09/20/13	209.57	207.10	Dry	18.97	28.47	190.6	181.1	Dry
		01/25/14	209.57	207.10	Dry	18.97	28.47	190.6	181.1	Dry
		07/15/14	209.57	207.1	Dry	18.97	28.47	190.6	181.1	Dry
		11/19/14	209.57	207.1	Dry	18.97	28.47	190.6	181.1	Dry
		02/03/15	209.57	207.10	Dry	18.97	28.47	190.6	181.1	Dry
		05/05/15	209.57	207.10	Dry	18.97	28.47	190.6	181.1	Dry
		08/04/15	209.57	207.10	Dry	18.97	28.47	190.6	181.1	Dry
		02/01/16	209.57	207.10	Dry	18.97	28.47	190.6	181.1	Dry
		08/04/16	209.57	207.10	Dry	18.97	28.47	190.6	181.1	Dry

Table 2-1: Groundwater Elevation Data, 3-Year RA(O) - LHAAP-46

Well ID	Shallow (S) Intermediate (I) Deep (D)	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from TOC)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)
						Top	Bottom	Top	Bottom	
46WW13	S	05/28/13	208.38	205.96	30.05	21.42	30.92	186.96	177.46	178.33
		08/13/13	208.38	205.96	30.2	21.42	30.92	186.96	177.46	178.18
		09/23/13	208.38	205.96	30.35	21.42	30.92	186.96	177.46	178.03
		01/27/14	208.38	205.96	Dry	21.42	30.92	186.96	177.46	Dry
		07/15/14	208.38	205.96	Dry	21.42	30.92	186.96	177.46	Dry
		11/19/14	208.38	205.96	Dry	21.42	30.92	186.96	177.46	Dry
		02/03/15	208.38	205.96	Dry	21.42	30.92	186.96	177.46	Dry
		05/05/15	208.38	205.96	Dry	21.42	30.92	186.96	177.46	Dry
		08/05/15	208.38	205.96	Dry	21.42	30.92	186.96	177.46	Dry
		02/01/16	208.38	205.96	Dry	21.42	30.92	186.96	177.46	Dry
		08/04/16	208.38	205.96	Dry	21.42	30.92	186.96	177.46	Dry
46WW15	S	05/29/13	206.96	205.01	Dry	20.45	29.95	186.51	177.01	Dry
		08/10/13	206.96	205.01	Dry	20.45	29.95	186.51	177.01	Dry
		09/24/13	206.96	205.01	Dry	20.45	29.95	186.51	177.01	Dry
		01/25/14	206.96	205.01	Dry	20.45	29.95	186.51	177.01	Dry
		07/15/14	206.96	205.01	Dry	20.45	29.95	186.51	177.01	Dry
		11/19/14	206.96	205.01	Dry	20.45	29.95	186.51	177.01	Dry
		02/03/15	206.96	205.01	Dry	20.45	29.95	186.51	177.01	Dry
		05/05/15	206.96	205.01	Dry	20.45	29.95	186.51	177.01	Dry
		08/04/15	206.96	205.01	Dry	20.45	29.95	186.51	177.01	Dry
		02/01/16	206.96	205.01	Dry	20.45	29.95	186.51	177.01	Dry
		08/04/16	206.96	205.01	Dry	20.45	29.95	186.51	177.01	Dry
LHSMW11	S	05/24/13	212.91	209.89	Dry	16.5	26.5	196.41	186.41	Dry
		08/10/13	212.91	209.89	Dry	16.5	26.5	196.41	186.41	Dry
		09/20/13	212.91	209.89	Dry	16.5	26.5	196.41	186.41	Dry
		01/25/14	212.91	209.89	Dry	16.5	26.5	196.41	186.41	Dry
		02/03/16	212.91	209.89	Dry	16.5	26.5	196.41	186.41	Dry
		08/05/16	212.91	209.89	26.46	16.5	26.5	196.41	186.41	186.45
LHSMW12	S	05/24/13	209.02	205.98	Dry	6.5	16.5	202.52	192.52	Dry
		08/10/13	209.02	205.98	Dry	6.5	16.5	202.52	192.52	Dry
		09/20/13	209.02	205.98	Dry	6.5	16.5	202.52	192.52	Dry
		01/25/14	209.02	205.98	Dry	6.5	16.5	202.52	192.52	Dry
		02/03/16	209.02	205.98	Dry	6.5	16.5	202.52	192.52	Dry
		08/05/16	209.02	205.98	Dry	6.5	16.5	202.52	192.52	Dry

Table 2-1: Groundwater Elevation Data, 3-Year RA(O) - LHAAP-46

Well ID	Shallow (S) Intermediate (I) Deep (D)	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from TOC)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)
						Top	Bottom	Top	Bottom	
LHSMW14	S	05/24/13	244.78	241.67	12.81	10.39	20.39	234.39	224.39	231.97
		08/09/13	244.78	241.67	14.92	10.39	20.39	234.39	224.39	229.86
		09/24/13	244.78	241.67	15.5	10.39	20.39	234.39	224.39	229.28
		02/03/16	244.78	241.67	9.55	10.39	20.39	234.39	224.39	235.23
		08/05/16	244.78	241.67	11.00	10.39	20.39	234.39	224.39	233.78
LHSMW15	S	05/25/13	226.65	223.68	Dry	14.5	24.5	212.15	202.15	Dry
		08/10/13	226.65	223.68	Dry	14.5	24.5	212.15	202.15	Dry
		09/20/13	226.65	223.68	Dry	14.5	24.5	212.15	202.15	Dry
		01/25/14	226.65	223.68	Dry	14.5	24.5	212.15	202.15	Dry
		02/03/16	226.65	223.68	Dry	14.5	24.5	212.15	202.15	Dry
		08/05/16	226.65	223.68	Dry	14.5	24.5	212.15	202.15	Dry
LHSMW16	S	05/29/13	232.19	229.3	16.7	14.49	24.49	217.7	207.7	215.49
		08/10/13	232.19	229.3	18.8	14.49	24.49	217.7	207.7	213.39
		09/25/13	232.19	229.3	20.95	14.49	24.49	217.7	207.7	211.24
		01/29/14	232.19	229.3	20.54	14.49	24.49	217.7	207.7	211.65
		11/19/14	232.19	229.3	21.26	14.49	24.49	217.7	207.7	210.93
		02/04/15	232.19	229.3	NM	14.49	24.49	217.7	207.7	NM
		05/05/15	232.19	229.3	NM	14.49	24.49	217.7	207.7	NM
		08/05/15	232.19	229.3	NM	14.49	24.49	217.7	207.7	NM
		02/03/16	232.19	229.3	14.22	14.49	24.49	217.7	207.7	217.97
		08/05/16	232.19	229.3	11.25	14.49	24.49	217.7	207.7	220.94
LHSMW17	S	11/18/14	214.58	NA	Dry	NA	NA	NA	NA	Dry
		02/03/15	214.58	NA	Dry	NA	NA	NA	NA	Dry
		05/05/15	214.58	NA	NM	NA	NA	NA	NA	NM
		08/05/15	214.58	NA	Dry	NA	NA	NA	NA	Dry
		02/02/16	214.58	NA	Dry	NA	NA	NA	NA	Dry
		08/03/16	214.58	NA	Dry	NA	NA	NA	NA	Dry
LHSMW18	S	05/28/13	215.35	212.38	25.62	14.85	27.85	200.5	187.5	189.73
		08/10/13	215.35	212.38	Dry	14.85	27.85	200.5	187.5	Dry
		09/20/13	215.35	212.38	Dry	14.85	27.85	200.5	187.5	Dry
		01/25/14	215.35	212.38	Dry	14.85	27.85	200.5	187.5	Dry
		07/17/14	215.35	212.38	Dry	14.85	27.85	200.5	187.5	Dry
		11/20/14	215.35	212.38	NM	14.85	27.85	200.5	187.5	NM
		02/03/15	215.35	212.38	Dry	14.85	27.85	200.5	187.5	Dry
		05/05/15	215.35	212.38	Dry	14.85	27.85	200.5	187.5	Dry
		08/05/15	215.35	212.38	Dry	14.85	27.85	200.5	187.5	Dry
		02/02/16	215.35	212.38	Dry	14.85	27.85	200.5	187.5	Dry
		03/28/16	215.35	212.38	25.15	14.85	27.85	200.5	187.5	190.2
		08/03/16	215.35	212.38	24.66	14.85	27.85	200.5	187.5	190.69

Table 2-1: Groundwater Elevation Data, 3-Year RA(O) - LHAAP-46

Well ID	Shallow (S) Intermediate (I) Deep (D)	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from TOC)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)
						Top	Bottom	Top	Bottom	
LHSMW19	S	05/28/13	212.96	209.8	24.5	20	30	192.96	182.96	188.46
		08/13/13	212.96	209.8	25.13	20	30	192.96	182.96	187.83
		09/23/13	212.96	209.8	26.38	20	30	192.96	182.96	186.58
		01/28/14	212.96	209.8	24.9	20	30	192.96	182.96	188.06
		07/16/14	212.96	209.8	24.55	20	30	192.96	182.96	188.41
		11/18/14	212.96	209.8	25.33	20	30	192.96	182.96	187.63
		02/04/15	212.96	209.8	24.9	20	30	192.96	182.96	188.06
		05/06/15	212.96	209.8	24.25	20	30	192.96	182.96	188.71
		08/05/15	212.96	209.8	24.36	20	30	192.96	182.96	188.60
		02/01/16	212.96	209.8	24.91	20	30	192.96	182.96	188.05
		08/03/16	212.96	209.8	24.84	20	30	192.96	182.96	188.12
LHSMW20	S	05/28/13	209.29	206.21	24.2	14.5	24.5	194.79	184.79	185.09
		08/10/13	209.29	206.21	Dry	14.5	24.5	194.79	184.79	Dry
		09/20/13	209.29	206.21	Dry	14.5	24.5	194.79	184.79	Dry
		01/25/14	209.29	206.21	Dry	14.5	24.5	194.79	184.79	Dry
		07/17/14	209.29	206.21	Dry	14.5	24.5	194.79	184.79	Dry
		11/20/14	209.29	206.21	Dry	14.5	24.5	194.79	184.79	Dry
		02/03/15	209.29	206.21	Dry	14.5	24.5	194.79	184.79	Dry
		05/05/15	209.29	206.21	Dry	14.5	24.5	194.79	184.79	Dry
		08/04/15	209.29	206.21	Dry	14.5	24.5	194.79	184.79	Dry
		02/01/16	209.29	206.21	Dry	14.5	24.5	194.79	184.79	Dry
		08/04/16	209.29	206.21	Dry	14.5	24.5	194.79	184.79	Dry
LHSMW21	S	05/28/13	207.67	204.66	19.87	19.61	29.61	188.06	178.06	187.8
		08/10/13	207.67	204.66	22.4	19.61	29.61	188.06	178.06	185.27
		09/25/13	207.67	204.66	23.6	19.61	29.61	188.06	178.06	184.07
		02/02/16	207.67	204.66	22.15	19.61	29.61	188.06	178.06	185.52
		08/05/16	207.67	204.66	21.12	19.61	29.61	188.06	178.06	186.55
LHSMW22	S	05/28/13	209.6	206.41	Dry	18.94	28.69	190.66	180.91	Dry
		08/10/13	209.6	206.41	Dry	18.94	28.69	190.66	180.91	Dry
		09/20/13	209.6	206.41	Dry	18.94	28.69	190.66	180.91	Dry
		01/25/14	209.6	206.41	Dry	18.94	28.69	190.66	180.91	Dry
		07/17/14	209.6	206.41	Dry	18.94	28.69	190.66	180.91	Dry
		11/20/14	209.6	206.41	Dry	18.94	28.69	190.66	180.91	Dry
		02/03/15	209.6	206.41	Dry	18.94	28.69	190.66	180.91	Dry
		05/05/15	209.6	206.41	Dry	18.94	28.69	190.66	180.91	Dry
		08/04/15	209.6	206.41	Dry	18.94	28.69	190.66	180.91	Dry
		02/01/16	209.6	206.41	Dry	18.94	28.69	190.66	180.91	Dry
		08/04/16	209.6	206.41	Dry	18.94	28.69	190.66	180.91	Dry

Table 2-1: Groundwater Elevation Data, 3-Year RA(O) - LHAAP-46

Well ID	Shallow (S) Intermediate (I) Deep (D)	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from TOC)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)
						Top	Bottom	Top	Bottom	
LHSMW23	I	05/25/13	208.82	205.8	Dry	22.18	42.18	176.64	166.64	Dry
		08/10/13	208.82	205.8	Dry	22.18	42.18	176.64	166.64	Dry
		09/20/13	208.82	205.8	Dry	22.18	42.18	176.64	166.64	Dry
		01/25/14	208.82	205.8	Dry	22.18	42.18	176.64	166.64	Dry
		07/17/14	208.82	205.8	Dry	22.18	42.18	176.64	166.64	Dry
		11/20/14	208.82	205.8	Dry	22.18	42.18	176.64	166.64	Dry
		02/03/15	208.82	205.8	Dry	22.18	42.18	176.64	166.64	Dry
		05/05/15	208.82	205.8	Dry	22.18	42.18	176.64	166.64	Dry
		08/04/15	208.82	205.8	Dry	22.18	42.18	176.64	166.64	Dry
		02/01/16	208.82	205.8	Dry	22.18	42.18	176.64	166.64	Dry
		03/28/16	208.82	205.8	Dry	22.18	42.18	176.64	166.64	Dry
		08/04/16	208.82	205.8	Dry	22.18	42.18	176.64	166.64	Dry
LHSMW24	S	05/28/13	203.84	200.52	Dry	19	29	184.84	174.84	Dry
		08/10/13	203.84	200.52	Dry	19	29	184.84	174.84	Dry
		09/20/13	203.84	200.52	Dry	19	29	184.84	174.84	Dry
		01/25/14	203.84	200.52	Dry	19	29	184.84	174.84	Dry
		07/17/14	203.84	200.52	Dry	19	29	184.84	174.84	Dry
		02/02/16	203.84	200.52	27.88	19	29	184.84	174.84	175.96
		08/05/16	203.84	200.52	Dry	19	29	184.84	174.84	Dry
LHSMW27	S	05/28/13	202.1	199.2	Dry	10.5	20.5	191.6	181.6	Dry
		08/10/13	202.1	199.2	Dry	10.5	20.5	191.6	181.6	Dry
		09/20/13	202.1	199.2	Dry	10.5	20.5	191.6	181.6	Dry
		01/25/14	202.1	199.2	Dry	10.5	20.5	191.6	181.6	Dry
		07/18/14	202.1	199.2	Dry	10.5	20.5	191.6	181.6	Dry
		02/02/16	202.1	199.2	17.82	10.5	20.5	191.6	181.6	184.28
		08/05/16	202.1	199.2	Dry	10.5	20.5	191.6	181.6	Dry

ft - feet
NM - not measured
TOC - top of casing
msl - mean seal level

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46SW09-053013 5/30/2013	46SW09-093013 9/30/2013	46SW09-071814 7/18/2014	46SW10-020316 2/3/2016	46WW01-032916 3/29/2016	46WW01-080416 8/4/2016	46WW02-052813 5/28/2013	46WW02F-052813 5/28/2013	46WW02-081413 8/14/2013	46WW02-091913 9/19/2013	46WW02F-091913 9/19/2013
			Surface Water			Surface Water	Shallow		Intermediate				
Water Quality Parameters													
Temperature	°C		NA	NA	NA	NA	16.34	22.96	27.52	NA	22.57	21.92	NA
pH	pH Units		NA	NA	NA	NA	6.17	6.86	4.95	NA	4.99	4.18	NA
Conductivity	mS/cm		NA	NA	NA	NA	0.199	0.317	0.437	NA	0.366	0.387	NA
Dissolved Oxygen	mg/L		NA	NA	NA	NA	NR	NR	0	NA	2.23	1.13	NA
Turbidity	NTU		NA	NA	NA	NA	86.3	79.1	1.8	NA	0.2	1.8	NA
Oxidation Reduction Potential	mV		NA	NA	NA	NA	NR	NR	270	NA	319	270	NA
Total Iron	mg/L		NA	NA	NA	NA	NA	7.6	NA	NA	NA	1.32	NA
Ferrous Iron	mg/L		NA	NA	NA	NA	NA	0.2	NA	NA	NA	0.45	NA
Ferric Iron	mg/L		NA	NA	NA	NA	NA	7.4	NA	NA	NA	0.87	NA
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	18.9 J	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		0.153 J	NA	NA	NA	NA	NA	<0.4 U	NA	NA	0.131 J	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		4.64	NA	NA	NA	NA	NA	7.94	NA	NA	8.74	NA
Metals (6010C)													
IRON, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	1.32	0.442	0.408	NA	0.753
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	NA	NA	NA	NA	NA	NA	0.193	NA	NA	0.254
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA	NA	0.000276 J	NA	NA	0.000239 J	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<1 UJ	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	NA	NA	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	NA	NA	<0.25 U	NA
1,1-DICHLOROETHENE	ug/L	7	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	1.88 J	NA	NA	1.94 J	NA
1,1-DICHLOROPROPENE	ug/L	9.1	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	<1 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<1 U	NA	NA	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<2 UJ	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	NA	NA	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	NA	NA	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<5 UJ	<2 U	<2 U	<2 U	<2 U	<2 U	<5 UJ	NA	NA	<2 UJ	NA
1,2-DIBROMOETHANE	ug/L	0.05	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	NA	NA	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	NA	NA	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	NA	NA	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	NA	NA	<0.25 U	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46SW09-053013 5/30/2013	46SW09-093013 9/30/2013	46SW09-071814 7/18/2014	46SW10-020316 2/3/2016	46WW01-032916 3/29/2016	46WW01-080416 8/4/2016	46WW02-052813 5/28/2013	46WW02F-052813 5/28/2013	46WW02-081413 8/14/2013	46WW02-091913 9/19/2013	46WW02F-091913 9/19/2013
2,2-DICHLOROPROPANE	ug/L	13	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
2-BUTANONE	ug/L	15000	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U	<10 U	NA	NA	<5 UJ	NA
2-CHLOROTOLUENE	ug/L	490	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	NA	NA	<0.25 U	NA
2-HEXANONE	ug/L	120	<10 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<10 U	NA	NA	<5 UJ	NA
4-CHLOROTOLUENE	ug/L	490	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	<10 U	<5 U	<5 U	<5 U	<5 U	<5 U	<10 U	NA	NA	<5 U	NA
ACETONE	ug/L	22000	<10 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<10 UJ	NA	NA	<5 UJ	NA
BENZENE	ug/L	5	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	NA	NA	<0.25 U	NA
BROMOBENZENE	ug/L	200	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	NA	NA	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	NA	NA	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
BROMOFORM	ug/L	120	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	NA	NA	<1 U	NA
BROMOMETHANE	ug/L	34	<2 UJ	<1 UJ	<1 U	<1 U	<1 U	<1 UJ	<2 U	NA	NA	<1 U	NA
CARBON DISULFIDE	ug/L	2400	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	NA	NA	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
CHLOROBENZENE	ug/L	100	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	NA	NA	<0.25 U	NA
CHLOROETHANE	ug/L	98000	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	NA	NA	<1 U	NA
CHLOROFORM	ug/L	240	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	0.231 J	NA	NA	<0.25 U	NA
CHLOROMETHANE	ug/L	70	<2 UJ	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	NA	NA	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	1.76	NA	NA	1.91	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	NA	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 UJ	NA	NA	<0.5 U	NA
ETHYLBENZENE	ug/L	700	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
M,P-XYLENE	ug/L	10000	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	NA	NA	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
NAPHTHALENE	ug/L	490	<1 UJ	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	NA	NA	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	NA	NA	<0.25 U	NA
O-XYLENE	ug/L	10000	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
STYRENE	ug/L	100	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	NA	NA	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
TOLUENE	ug/L	1000	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	NA	NA	<1 U	NA
TRICHLOROETHENE	ug/L	5	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	30	NA	NA	37.4	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.495 J	NA	NA	0.465 J	NA
Anions (9056)													
CHLORIDE	mg/L		465	NA	NA	NA	NA	NA	20.2	NA	NA	32.6	NA
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	NA	NA	<0.4 U	<1 U	NA
NITRITE*	mg/L	1	NA	NA	NA	NA	NA	NA	NA	NA	<0.4 U	<1 U	NA
SULFATE	mg/L		2360	NA	NA	NA	NA	NA	190	NA	NA	193	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46SW09-053013 5/30/2013	46SW09-093013 9/30/2013	46SW09-071814 7/18/2014	46SW10-020316 2/3/2016	46WW01-032916 3/29/2016	46WW01-080416 8/4/2016	46WW02-052813 5/28/2013	46WW02F-052813 5/28/2013	46WW02-081413 8/14/2013	46WW02-091913 9/19/2013	46WW02F-091913 9/19/2013
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		115000 J	NA	NA	NA	NA	NA	136000	NA	NA	118000	NA
ETHANE	ug/L		<5 U	NA	NA	NA	NA	NA	<5 U	NA	NA	<2 U	NA
ETHENE	ug/L		<5 U	NA	NA	NA	NA	NA	<5 U	NA	NA	<2 U	NA
METHANE	ug/L		3.08 J	NA	NA	NA	NA	NA	3.19 J	NA	NA	4.11 J	NA
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		134	NA	NA	NA	NA	NA	35.8	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	<2 U	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW02-012714 1/27/2014	46WW02F-012714 1/27/2014	46WW02-071514 7/15/2014	46WW02F-071514 7/15/2014	46WW02-111814 11/18/2014	46WW02FF-111814 11/18/2014	46WW02-020515 2/5/2015	46WW02FF-020515 2/5/2015	46WW02-050615 5/6/2015	46WW02FF-050615 5/6/2015	46WW02-080515 8/5/2015
			Intermediate										
Water Quality Parameters													
Temperature	°C		15.98	NA	22.34	NA	16.59	NA	15.5	NA	22.8	NA	27.09
pH	pH Units		4.9	NA	4.35	NA	4.83	NA	4.67	NA	4.62	NA	4.02
Conductivity	mS/cm		0.325	NA	0.471	NA	0.446	NA	0.489	NA	0.393	NA	0.4
Dissolved Oxygen	mg/L		0.48	NA	0.04	NA	0	NA	0	NA	0.88	NA	0.09
Turbidity	NTU		0	NA	6.8	NA	0.6	NA	6.3	NA	3.1	NA	7.7
Oxidation Reduction Potential	mV		227	NA	347	NA	190	NA	170	NA	231	NA	347
Total Iron	mg/L		1.53	NA	1.24	NA	NA	NA	2.26	NA	1.07	NA	1.15
Ferrous Iron	mg/L		0.94	NA	0.23	NA	NA	NA	1.49	NA	0.54	NA	0.44
Ferric Iron	mg/L		0.59	NA	1.01	NA	NA	NA	0.77	NA	0.53	NA	0.81
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		29.1	NA	45.6	NA	28.6 J	NA	<20 U	NA	24.3 J	NA	24.8 J
Phosphorus (365.4)													
PHOSPHORUS	mg/L		0.114 J	NA	0.457	NA	0.218 J	NA	0.739	NA	1.23	NA	<0.2 U
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		9.37	NA	7.86	NA	8.02	NA	10.5	NA	12.1	NA	11.3
Metals (6010C)													
IRON, TOTAL	mg/L		NA	1.46	NA	0.631	1.79	1.48	2.2	1.73	1.43	0.881	1.32
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	0.192	NA	0.236	NA	0.259	NA	0.29	NA	0.214	NA
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	2.18	NA	1.79 J	NA	2.28	NA	2.03	NA	1.34 J	NA	1.02 J
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 UJ	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 UJ	NA	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW02-012714 1/27/2014	46WW02F-012714 1/27/2014	46WW02-071514 7/15/2014	46WW02F-071514 7/15/2014	46WW02-111814 11/18/2014	46WW02FF-111814 11/18/2014	46WW02-020515 2/5/2015	46WW02FF-020515 2/5/2015	46WW02-050615 5/6/2015	46WW02FF-050615 5/6/2015	46WW02-080515 8/5/2015
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 UJ	NA	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
2-HEXANONE	ug/L	120	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 UJ	NA	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 UJ	NA	<5 U
ACETONE	ug/L	22000	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
BENZENE	ug/L	5	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
BROMOFORM	ug/L	120	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
BROMOMETHANE	ug/L	34	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
CHLOROFORM	ug/L	240	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	2.09	NA	1.72	NA	1.97	NA	2.08	NA	1.44	NA	1.37
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
STYRENE	ug/L	100	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
TRICHLOROETHENE	ug/L	5	35.2	NA	32.8	NA	38.2	NA	37.6	NA	24	NA	20.3
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
VINYL CHLORIDE	ug/L	2	0.556 J	NA	0.493 J	NA	0.501 J	NA	0.432 J	NA	<0.5 U	NA	<0.5 U
Anions (9056)													
CHLORIDE	mg/L		21.8	NA	27.1	NA	38.8	NA	38.7	NA	24.5	NA	27.1
NITRATE	mg/L	10	<0.4 U	NA	<2 U	NA	<0.4 U	NA	<1 U	NA	<0.4 U	NA	<0.4 U
NITRITE*	mg/L	1	<0.4 U	NA	<2 U	NA	<0.4 U	NA	<1 U	NA	<0.4 U	NA	<0.4 U
SULFATE	mg/L		173	NA	172	NA	226	NA	195	NA	217	NA	227

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW02-012714 1/27/2014	46WW02F-012714 1/27/2014	46WW02-071514 7/15/2014	46WW02F-071514 7/15/2014	46WW02-111814 11/18/2014	46WW02FF-111814 11/18/2014	46WW02-020515 2/5/2015	46WW02FF-020515 2/5/2015	46WW02-050615 5/6/2015	46WW02FF-050615 5/6/2015	46WW02-080515 8/5/2015
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		81800	NA	75100	NA	121000 J	NA	65100 J	NA	369000	NA	806000
ETHANE	ug/L		<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
ETHENE	ug/L		<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
METHANE	ug/L		<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		<1 U	NA	NA	NA	0.5	NA	<1 U	NA	<1 U	NA	<1 U

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW02FF-080515 8/5/2015	46WW02-020116 2/1/2016	46WW02FF-020116 2/1/2016	46WW02-080416 8/4/2016	46WW02FF-080416 8/4/2016	46WW03-053013 5/30/2013	46WW03-053013-FD 5/30/2013	46WW03-092613 9/26/2013	46WW03-012514 1/25/2014	46WW03FD-012514 1/25/2014	46WW03-071714 7/17/2014
			Intermediate					Deep					
Water Quality Parameters													
Temperature	°C		NA	17.25	NA	22.04	NA	21.73	NA	19.77	17.32	NA	21.68
pH	pH Units		NA	4.07	NA	3.79	NA	6.78	NA	7.34	7.81	NA	7.21
Conductivity	mS/cm		NA	0.45	NA	0.423	NA	0.736	NA	0.58	0.643	NA	0.728
Dissolved Oxygen	mg/L		NA	0.39	NA	0.55	NA	0	NA	0.83	0.72	NA	0.15
Turbidity	NTU		NA	5.6	NA	0	NA	7.9	NA	3.3	4.2	NA	4
Oxidation Reduction Potential	mV		NA	312	NA	401	NA	137	NA	55	22	NA	49
Total Iron	mg/L		NA	1.38	NA	4.1	NA	NA	NA	0.95	0.6	NA	0.95
Ferrous Iron	mg/L		NA	0.87	NA	0.54	NA	NA	NA	0	0.05	NA	0.05
Ferric Iron	mg/L		NA	0.51	NA	3.56	NA	NA	NA	0.95	0.55	NA	0.9
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	37.6 J	NA	26.3 J	NA	NA	NA	NA	NA	NA	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		NA	0.32 J	NA	0.14 J	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	46.3	NA	41.3	NA	NA	NA	NA	NA	NA	NA
Metals (6010C)													
IRON, TOTAL	mg/L		0.783	2.03	1.98	2.04	1.66	NA	NA	NA	NA	NA	NA
MAGNESIUM	mg/L		NA	NA	NA	NA	11.9	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	0.219	NA	0.207	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA	<0.0004 U	<0.0004 U	<0.0002 U	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	NA	<0.4 U	NA	<0.4 U	NA	<1 UJ	<1 UJ	<0.4 UJ	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	NA	<0.25 U	NA	<0.25 U	NA	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	NA	0.842 J	NA	1.4 J	NA	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	NA	<0.3 U	NA	<0.3 U	NA	<1 U	<1 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	NA	<1 U	NA	<1 U	NA	<2 UJ	<2 UJ	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	NA	<0.4 U	NA	<0.4 U	NA	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	NA	<2 U	NA	<2 U	NA	<5 UJ	<5 UJ	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	NA	<0.25 U	NA	<0.25 U	NA	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	NA	<0.4 U	NA	<0.4 U	NA	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	NA	<0.4 U	NA	<0.4 U	NA	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	NA	<0.25 U	NA	<0.25 U	NA	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW02FF-080515 8/5/2015	46WW02-020116 2/1/2016	46WW02FF-020116 2/1/2016	46WW02-080416 8/4/2016	46WW02FF-080416 8/4/2016	46WW03-053013 5/30/2013	46WW03-053013-FD 5/30/2013	46WW03-092613 9/26/2013	46WW03-012514 1/25/2014	46WW03FD-012514 1/25/2014	46WW03-071714 7/17/2014
2,2-DICHLOROPROPANE	ug/L	13	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	NA	<5 U	NA	<5 U	NA	<10 U	<10 U	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	NA	<0.25 U	NA	<0.25 U	NA	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	NA	3.58 J	NA	<5 U	NA	<10 UJ	<10 UJ	<5 UJ	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	NA	<5 U	NA	<5 U	NA	<10 U	<10 U	<5 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	NA	<5 U	NA	<5 U	NA	<10 U	<10 U	<5 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	NA	0.247 J	NA	<0.25 U	NA	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	NA	<0.25 U	NA	<0.25 U	NA	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	NA	<0.4 U	NA	<0.4 U	NA	<1 U	<1 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	NA	<1 U	NA	<1 U	NA	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	NA	<1 U	NA	<1 UJ	NA	<2 UJ	<2 UJ	<1 UJ	<1 U	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	NA	<1 U	NA	<1 U	NA	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	NA	<0.25 U	NA	<0.25 U	NA	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	NA	<1 U	NA	<1 U	NA	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	NA	<0.25 U	NA	<0.25 U	NA	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	NA	<1 U	NA	<1 U	NA	<2 UJ	<2 UJ	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	1.28	NA	1.31	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	NA	<0.5 U	NA	<0.5 U	NA	NA	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	NA	<1 U	NA	<1 U	NA	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	NA	<0.4 U	NA	<0.4 U	NA	<1 UJ	<1 UJ	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	NA	<0.25 U	NA	<0.25 U	NA	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	NA	<0.25 U	NA	<0.25 U	NA	<1 U	<1 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	NA	<1 U	NA	<1 U	NA	<2 U	<2 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	NA	16.6	NA	20.7	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	NA	<0.5 U	NA	<0.5 U	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	NA	<0.5 U	NA	0.259 J	NA	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Anions (9056)													
CHLORIDE	mg/L		NA	<0.4 U	NA	17.8	NA	NA	NA	NA	NA	NA	NA
NITRATE	mg/L	10	NA	<0.4 U	NA	<0.2 U	NA	NA	NA	NA	NA	NA	NA
NITRITE*	mg/L	1	NA	<0.4 U	NA	<0.2 U	NA	NA	NA	NA	NA	NA	NA
SULFATE	mg/L		NA	164	NA	158	NA	NA	NA	NA	NA	NA	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW02FF-080515 8/5/2015	46WW02-020116 2/1/2016	46WW02FF-020116 2/1/2016	46WW02-080416 8/4/2016	46WW02FF-080416 8/4/2016	46WW03-053013 5/30/2013	46WW03-053013-FD 5/30/2013	46WW03-092613 9/26/2013	46WW03-012514 1/25/2014	46WW03FD-012514 1/25/2014	46WW03-071714 7/17/2014
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	460000	NA	528000	NA	NA	NA	NA	NA	NA	NA
ETHANE	ug/L		NA	<2 U	NA	<2 U	NA	NA	NA	NA	NA	NA	NA
ETHENE	ug/L		NA	<2 U	NA	<2 U	NA	NA	NA	NA	NA	NA	NA
METHANE	ug/L		NA	<2 U	NA	<2 U	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		NA	<1 U	NA	<1 U	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW03-112014 11/20/2014	46WW03FD-112014 11/20/2014	46WW03-020515 2/5/2015	46WW03-050615 5/6/2015	46WW03-080515 8/5/2015	46WW03FD-080515 8/5/2015	46WW03-020316 2/3/2016	46WW03-080416 8/4/2016	46WW04F-052413 5/24/2013	46WW04-092113 9/21/2013	46WW04F-092113 9/21/2013
			Deep								Shallow		
Water Quality Parameters													
Temperature	°C		19.95	NA	16.75	22.23	22.9	NA	16.5	20.46	26.23	20.71	NA
pH	pH Units		7.53	NA	6.21	6.75	6.8	NA	7.15	4.98	6.14	6.17	NA
Conductivity	mS/cm		0.667	NA	0.672	0.633	0.652	NA	0.724	0.837	5.56	5.96	NA
Dissolved Oxygen	mg/L		0	NA	0	0.88	0.65	NA	0.61	0.73	NR	NR	NA
Turbidity	NTU		0.2	NA	3.5	2.1	4.4	NA	0.4	0	44.9	170	NA
Oxidation Reduction Potential	mV		52	NA	112	96	120	NA	3	338	NR	NR	NA
Total Iron	mg/L		NA	NA	0.59	0.48	0.26	NA	0.65	0.41	NA	15.4	NA
Ferrous Iron	mg/L		NA	NA	0.04	0.04	0	NA	0.29	0	NA	2.3	NA
Ferric Iron	mg/L		NA	NA	0.55	0.44	0.26	NA	0.36	0.41	NA	13.1	NA
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6010C)													
IRON, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA	NA	NA	NA	<0.0002 U	NA	<0.0002 U
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 UJ	<2 U	<2 U	<2 U	<2 U	<2 U	<2 UJ	NA
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW03-112014 11/20/2014	46WW03FD-112014 11/20/2014	46WW03-020515 2/5/2015	46WW03-050615 5/6/2015	46WW03-080515 8/5/2015	46WW03FD-080515 8/5/2015	46WW03-020316 2/3/2016	46WW03-080416 8/4/2016	46WW04F-052413 5/24/2013	46WW04-092113 9/21/2013	46WW04F-092113 9/21/2013
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	NA
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	NA
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	NA
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	NA
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA
BROMOMETHANE	ug/L	34	<1 UJ	<1 UJ	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 UJ	<1 UJ	NA
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
Anions (9056)													
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE*	mg/L	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW03-112014 11/20/2014	46WW03FD-112014 11/20/2014	46WW03-020515 2/5/2015	46WW03-050615 5/6/2015	46WW03-080515 8/5/2015	46WW03FD-080515 8/5/2015	46WW03-020316 2/3/2016	46WW03-080416 8/4/2016	46WW04F-052413 5/24/2013	46WW04-092113 9/21/2013	46WW04F-092113 9/21/2013
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW04-012514 1/25/2014	46WW04-071814 7/18/2014	46WW04-050615 5/6/2015	46WW04-080515 8/5/2015	46WW04-020316 2/3/2016	46WW05-053013 5/30/2013	46WW05F-053013 5/30/2013	46WW05-081413 8/14/2013	46WW05-092413 9/24/2013	46WW05F-092413 9/24/2013	46WW05-012814 1/28/2014
			Shallow					Intermediate					
Water Quality Parameters													
Temperature	°C		17.85	22.34	22.74	23.84	15.72	25.57	NA	22.52	21.71	NA	16.1
pH	pH Units		6.53	7	6.73	6.5	5.12	4.12	NA	4.87	4.57	NA	4.67
Conductivity	mS/cm		5.95	5.77	5.35	6.24	6.1	6.26	NA	6.73	6.75	NA	6.69
Dissolved Oxygen	mg/L		NR	NR	NR	NR	NR	0	NA	1.25	0.74	NA	0.25
Turbidity	NTU		79.2	77.3	8.9	16.6	300	74.6	NA	34	8.4	NA	40
Oxidation Reduction Potential	mV		NR	NR	NR	NR	NR	241	NA	177	167	NA	239
Total Iron	mg/L		6	71.4	3.2	2.2	23.8	NA	NA	NA	28.35	NA	9.15
Ferrous Iron	mg/L		1.8	4	3.1	0.5	13.6	NA	NA	NA	1.27	NA	7.85
Ferric Iron	mg/L		4.2	67.4	0.1	1.7	10.2	NA	NA	NA	27.08	NA	1.3
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	69.5	NA	<20 UJ
Phosphorus (365.4)													
PHOSPHORUS	mg/L		NA	NA	NA	NA	NA	<0.4 U	NA	NA	0.171 J	NA	<0.2 U
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	9.95	NA	NA	12.3	NA	15.4
Metals (6010C)													
IRON, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	33.7	29	NA	27.6 J	NA
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	NA	NA	NA	NA	NA	21	NA	NA	13.4	NA
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA	NA	0.000817	NA	0.000714	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	NA	NA	<0.4 U	NA	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	1.24	NA	NA	0.973 J	NA	1.25
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	10.4	NA	NA	7.81	NA	9.57
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<1 U	NA	NA	<0.3 U	NA	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	<2 UJ	NA	NA	<1 U	NA	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	NA	NA	<0.4 U	NA	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 UJ	<2 U	<2 U	<5 UJ	NA	NA	<2 U	NA	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	NA	NA	<0.25 U	NA	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	NA	NA	<0.4 U	NA	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	NA	NA	<0.4 U	NA	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	NA	NA	<0.25 U	NA	<0.25 U

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW04-012514 1/25/2014	46WW04-071814 7/18/2014	46WW04-050615 5/6/2015	46WW04-080515 8/5/2015	46WW04-020316 2/3/2016	46WW05-053013 5/30/2013	46WW05F-053013 5/30/2013	46WW05-081413 8/14/2013	46WW05-092413 9/24/2013	46WW05F-092413 9/24/2013	46WW05-012814 1/28/2014
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 UJ	<5 U	<5 U	<10 U	NA	NA	<5 U	NA	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	NA	NA	<0.25 U	NA	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 UJ	<5 U	<5 U	<10 UJ	NA	NA	<5 U	NA	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 UJ	<5 U	<5 U	<10 U	NA	NA	<5 U	NA	<5 U
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	<5 U	<5 U	<10 U	NA	NA	<5 U	NA	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	NA	NA	<0.25 U	NA	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	NA	NA	<0.25 U	NA	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 U	NA	NA	<0.4 U	NA	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	NA	NA	<1 U	NA	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 U	<1 U	<1 U	<2 UJ	NA	NA	<1 U	NA	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	NA	NA	<1 U	NA	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	NA	NA	<0.25 U	NA	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	NA	NA	<1 U	NA	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	NA	NA	<0.25 U	NA	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<1 U	<2 UJ	NA	NA	<1 U	NA	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	10.2	NA	NA	8.12	NA	10.3
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	NA	<0.5 U	NA	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	NA	NA	<1 U	NA	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<1 UJ	NA	NA	<0.4 U	NA	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	NA	NA	<0.25 U	NA	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<1 U	NA	NA	<0.25 U	NA	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 UJ	NA	NA	<0.5 U	NA	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.313 J	NA	NA	0.274 J	NA	0.415 J
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<2 U	NA	NA	<1 U	NA	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	144	NA	NA	112	NA	131
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	NA	NA	<0.5 U	NA	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	2.14	NA	NA	1.79	NA	2.53
Anions (9056)													
CHLORIDE	mg/L		NA	NA	NA	NA	NA	291	NA	NA	343	NA	314
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	NA	<0.6 U	<4 UJ	NA	<5 U
NITRITE*	mg/L	1	NA	NA	NA	NA	NA	NA	NA	<0.6 U	<4 UJ	NA	<5 U
SULFATE	mg/L		NA	NA	NA	NA	NA	3850	NA	NA	4090	NA	4010

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW04-012514 1/25/2014	46WW04-071814 7/18/2014	46WW04-050615 5/6/2015	46WW04-080515 8/5/2015	46WW04-020316 2/3/2016	46WW05-053013 5/30/2013	46WW05F-053013 5/30/2013	46WW05-081413 8/14/2013	46WW05-092413 9/24/2013	46WW05F-092413 9/24/2013	46WW05-012814 1/28/2014
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	NA	NA	NA	NA	330000 J	NA	NA	210000	NA	208000
ETHANE	ug/L		NA	NA	NA	NA	NA	<5 U	NA	NA	<2 U	NA	<2 U
ETHENE	ug/L		NA	NA	NA	NA	NA	<5 U	NA	NA	<2 U	NA	<2 U
METHANE	ug/L		NA	NA	NA	NA	NA	37.9	NA	NA	39.4	NA	34.1
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	39.4	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		NA	NA	NA	NA	NA	<2 U	NA	NA	<1 U	NA	<1 U

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW05F-012814 1/28/2014	46WW05-071614 7/16/2014	46WW05F-071614 7/16/2014	46WW05-111914 11/19/2014	46WW05F-111914 11/19/2014	46WW05FF-111914 11/19/2014	46WW05-020515 2/5/2015	46WW05F-020515 2/5/2015	46WW05FF-020515 2/5/2015	46WW05-050515 5/5/2015	46WW05F-050515 5/5/2015
			Intermediate										
Water Quality Parameters													
Temperature	°C		NA	28.3	NA	20.72	NA	NA	15.29	NA	NA	20.74	NA
pH	pH Units		NA	4.56	NA	4.3	NA	NA	4.17	NA	NA	3.71	NA
Conductivity	mS/cm		NA	5.91	NA	0.667	NA	NA	5.86	NA	NA	5.72	NA
Dissolved Oxygen	mg/L		NA	0.2	NA	0	NA	NA	0	NA	NA	0.57	NA
Turbidity	NTU		NA	78.5	NA	72	NA	NA	36.1	NA	NA	97.3	NA
Oxidation Reduction Potential	mV		NA	222	NA	273	NA	NA	229	NA	NA	224	NA
Total Iron	mg/L		NA	17.65	NA	NA	NA	NA	29.75	NA	NA	17.2	NA
Ferrous Iron	mg/L		NA	7.35	NA	NA	NA	NA	28.25	NA	NA	16	NA
Ferric Iron	mg/L		NA	10.35	NA	NA	NA	NA	1.5	NA	NA	1.2	NA
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	70.4	NA	37.2 J	NA	NA	16.1 J	NA	NA	50.9	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		NA	0.164 J	NA	<0.2 UJ	NA	NA	1.51	NA	NA	NA	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	11.7	NA	31.6	NA	NA	14.3	NA	NA	29.1	NA
Metals (6010C)													
IRON, TOTAL	mg/L		27	NA	30.8	NA	27.1	27.6	NA	34.5	33.9	NA	28.1
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	16.2	NA	14.7	NA	NA	15.9	NA	NA	17.5	NA	NA
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	NA	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	NA	1.09	NA	1.05	NA	NA	1.08	NA	NA	0.687 J	NA
1,1-DICHLOROETHENE	ug/L	7	NA	9.58	NA	8.33	NA	NA	9.35	NA	NA	4.8	NA
1,1-DICHLOROPROPENE	ug/L	9.1	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	NA	<0.3 U	NA	<0.3 U	NA	NA	<0.3 U	NA	NA	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	NA	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	NA	<2 U	NA	<2 U	NA	NA	<2 U	NA	NA	<2 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	NA	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	NA	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW05F-012814 1/28/2014	46WW05-071614 7/16/2014	46WW05F-071614 7/16/2014	46WW05-111914 11/19/2014	46WW05F-111914 11/19/2014	46WW05FF-111914 11/19/2014	46WW05-020515 2/5/2015	46WW05F-020515 2/5/2015	46WW05FF-020515 2/5/2015	46WW05-050515 5/5/2015	46WW05F-050515 5/5/2015
2,2-DICHLOROPROPANE	ug/L	13	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
2-BUTANONE	ug/L	15000	NA	<5 U	NA	<5 U	NA	NA	<5 U	NA	NA	<5 U	NA
2-CHLOROTOLUENE	ug/L	490	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	NA
2-HEXANONE	ug/L	120	NA	<5 U	NA	<5 U	NA	NA	<5 U	NA	NA	<5 U	NA
4-CHLOROTOLUENE	ug/L	490	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	NA	<5 U	NA	<5 U	NA	NA	<5 U	NA	NA	<5 U	NA
ACETONE	ug/L	22000	NA	<5 U	NA	<5 U	NA	NA	<5 U	NA	NA	<5 U	NA
BENZENE	ug/L	5	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	0.144 J	NA
BROMOBENZENE	ug/L	200	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	NA	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
BROMOFORM	ug/L	120	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	NA
BROMOMETHANE	ug/L	34	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA	NA	<1 UJ	NA
CARBON DISULFIDE	ug/L	2400	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
CHLOROBENZENE	ug/L	100	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	NA
CHLOROETHANE	ug/L	98000	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	NA
CHLOROFORM	ug/L	240	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	NA
CHLOROMETHANE	ug/L	70	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	9.74	NA	9.55	NA	NA	10.9	NA	NA	7	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
ETHYLBENZENE	ug/L	700	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
M,P-XYLENE	ug/L	10000	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
NAPHTHALENE	ug/L	490	NA	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	NA
O-XYLENE	ug/L	10000	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
STYRENE	ug/L	100	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
TOLUENE	ug/L	1000	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	NA	0.39 J	NA	0.325 J	NA	NA	0.404 J	NA	NA	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	NA
TRICHLOROETHENE	ug/L	5	NA	130	NA	128	NA	NA	143	NA	NA	80.5	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	NA	2.09	NA	1.59	NA	NA	1.72	NA	NA	0.956 J	NA
Anions (9056)													
CHLORIDE	mg/L		NA	298	NA	324	NA	NA	323	NA	NA	293	NA
NITRATE	mg/L	10	NA	<10 U	NA	4	NA	NA	<10 U	NA	NA	<10 U	NA
NITRITE*	mg/L	1	NA	<10 U	NA	<4 U	NA	NA	<10 U	NA	NA	<10 U	NA
SULFATE	mg/L		NA	3950	NA	4180	NA	NA	4010	NA	NA	4240	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW05F-012814 1/28/2014	46WW05-071614 7/16/2014	46WW05F-071614 7/16/2014	46WW05-111914 11/19/2014	46WW05F-111914 11/19/2014	46WW05FF-111914 11/19/2014	46WW05-020515 2/5/2015	46WW05F-020515 2/5/2015	46WW05FF-020515 2/5/2015	46WW05-050515 5/5/2015	46WW05F-050515 5/5/2015
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	221000	NA	423000	NA	NA	142000 J	NA	NA	705000	NA
ETHANE	ug/L		NA	<2 U	NA	<2 U	NA	NA	<2 U	NA	NA	<2 U	NA
ETHENE	ug/L		NA	<2 U	NA	<2 U	NA	NA	<2 U	NA	NA	<2 U	NA
METHANE	ug/L		NA	23.5	NA	13.1	NA	NA	7.91	NA	NA	12	NA
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		NA	NA	NA	<2 U	NA	NA	<1 U	NA	NA	<1 U	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW05FF-050515 5/5/2015	46WW05-080615 8/6/2015	46WW05F-080615 8/6/2015	46WW05FF-080615 8/6/2015	46WW05-020116 2/1/2016	46WW05FF-020116 2/1/2016	46WW05-080316 8/3/2016	46WW05F-080316 8/3/2016	46WW05FF-080316 8/3/2016	46WW06-052413 5/24/2013	46WW06F-052413 5/24/2013
			Intermediate									Intermediate	
Water Quality Parameters													
Temperature	°C		NA	22.82	NA	NA	20.35	NA	20.67	NA	NA	22.07	NA
pH	pH Units		NA	3.97	NA	NA	4.37	NA	4.13	NA	NA	5.89	NA
Conductivity	mS/cm		NA	6.54	NA	NA	7.1	NA	6.6	NA	NA	2.56	NA
Dissolved Oxygen	mg/L		NA	0.1	NA	NA	0.41	NA	0.65	NA	NA	0	NA
Turbidity	NTU		NA	311	NA	NA	0.5	NA	35	NA	NA	9.9	NA
Oxidation Reduction Potential	mV		NA	297	NA	NA	294	NA	373	NA	NA	-7	NA
Total Iron	mg/L		NA	24.5	NA	NA	15.1	NA	13.2	NA	NA	NA	NA
Ferrous Iron	mg/L		NA	16.3	NA	NA	10.5	NA	3.4	NA	NA	NA	NA
Ferric Iron	mg/L		NA	8.2	NA	NA	4.6	NA	9.8	NA	NA	NA	NA
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	35.1 J	NA	NA	78.2	NA	58.6	NA	NA	NA	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		NA	<0.2 U	NA	NA	0.31 J	NA	0.204 J	NA	NA	NA	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	<5 U	NA	NA	20.7	NA	33.9	NA	NA	NA	NA
Metals (6010C)													
IRON, TOTAL	mg/L		27.5	NA	33.2	32.6	13.6	12.2	NA	6.04	6.19	NA	NA
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	17.1	NA	NA	15.6	NA	15.2	NA	NA	15.2	NA	NA
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0002 U
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	NA	0.332 J	NA	NA	0.902 J	NA	0.843 J	NA	NA	<0.25 U	NA
1,1-DICHLOROETHENE	ug/L	7	NA	1.5 J	NA	NA	3.29	NA	1.84 J	NA	NA	<1 U	NA
1,1-DICHLOROPROPENE	ug/L	9.1	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	NA	<0.3 U	NA	NA	<0.3 U	NA	<0.3 U	NA	NA	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA	NA	<2 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW05FF-050515 5/5/2015	46WW05-080615 8/6/2015	46WW05F-080615 8/6/2015	46WW05FF-080615 8/6/2015	46WW05-020116 2/1/2016	46WW05FF-020116 2/1/2016	46WW05-080316 8/3/2016	46WW05F-080316 8/3/2016	46WW05FF-080316 8/3/2016	46WW06-052413 5/24/2013	46WW06F-052413 5/24/2013
2,2-DICHLOROPROPANE	ug/L	13	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
2-BUTANONE	ug/L	15000	NA	<5 U	NA	NA	<5 U	NA	<5 U	NA	NA	<5 U	NA
2-CHLOROTOLUENE	ug/L	490	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA
2-HEXANONE	ug/L	120	NA	<5 U	NA	NA	<5 U	NA	<5 UJ	NA	NA	<5 U	NA
4-CHLOROTOLUENE	ug/L	490	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	NA	<5 U	NA	NA	<5 U	NA	<5 U	NA	NA	<5 U	NA
ACETONE	ug/L	22000	NA	<5 U	NA	NA	<5 U	NA	2.67 J	NA	NA	<5 U	NA
BENZENE	ug/L	5	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA
BROMOBENZENE	ug/L	200	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
BROMOFORM	ug/L	120	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA
BROMOMETHANE	ug/L	34	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	NA	<1 UJ	NA
CARBON DISULFIDE	ug/L	2400	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
CHLOROBENZENE	ug/L	100	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA
CHLOROETHANE	ug/L	98000	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA
CHLOROFORM	ug/L	240	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA
CHLOROMETHANE	ug/L	70	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	NA	<1 UJ	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	3.87	NA	NA	3.12	NA	1.86	NA	NA	<0.5 U	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 UJ	NA
ETHYLBENZENE	ug/L	700	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
M,P-XYLENE	ug/L	10000	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
NAPHTHALENE	ug/L	490	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA
O-XYLENE	ug/L	10000	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
STYRENE	ug/L	100	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
TOLUENE	ug/L	1000	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA
TRICHLOROETHENE	ug/L	5	NA	34	NA	NA	46.4	NA	23.6	NA	NA	<0.5 U	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	NA	0.274 J	NA	NA	0.832 J	NA	0.522 J	NA	NA	<0.5 U	NA
Anions (9056)													
CHLORIDE	mg/L		NA	338	NA	NA	245	NA	236	NA	NA	NA	NA
NITRATE	mg/L	10	NA	<4 U	NA	NA	<10 U	NA	<2 U	NA	NA	NA	NA
NITRITE*	mg/L	1	NA	<4 U	NA	NA	<10 U	NA	<2 UJ	NA	NA	NA	NA
SULFATE	mg/L		NA	4340	NA	NA	4350	NA	4060	NA	NA	NA	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW05FF-050515 5/5/2015	46WW05-080615 8/6/2015	46WW05F-080615 8/6/2015	46WW05FF-080615 8/6/2015	46WW05-020116 2/1/2016	46WW05FF-020116 2/1/2016	46WW05-080316 8/3/2016	46WW05F-080316 8/3/2016	46WW05FF-080316 8/3/2016	46WW06-052413 5/24/2013	46WW06F-052413 5/24/2013
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	1100000	NA	NA	228000	NA	668000 J	NA	NA	NA	NA
ETHANE	ug/L		NA	<20 U	NA	NA	<2 U	NA	<20 U	NA	NA	NA	NA
ETHENE	ug/L		NA	<20 U	NA	NA	<2 U	NA	<20 U	NA	NA	NA	NA
METHANE	ug/L		NA	3.48 J	NA	NA	32.2	NA	15	NA	NA	NA	NA
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		NA	<1 U	NA	NA	<1 U	NA	1.39 J	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW06-092513 9/25/2013	46WW06F-092513 9/25/2013	46WW06-012514 1/25/2014	46WW06-071714 7/17/2014	46WW06FD-071714 7/17/2014	46WW06-111914 11/19/2014	46WW06FD-111914 11/19/2014	46WW06-020615 2/6/2015	46WW06-050115 5/1/2015	46WW06-080415 8/4/2015	46WW06-020216 2/2/2016
			Intermediate										
Water Quality Parameters													
Temperature	°C		24.75	NA	16.99	23.7	NA	20	NA	18.58	24.55	28.6	19.26
pH	pH Units		6.29	NA	7.22	5.8	NA	6.05	NA	5.56	6.69	5.98	5.95
Conductivity	mS/cm		2.39	NA	0.706	2.08	NA	2.53	NA	1.81	1.59	2.18	2.82
Dissolved Oxygen	mg/L		1.17	NA	0.61	0.34	NA	0	NA	0	0.48	0.17	0.4
Turbidity	NTU		15.3	NA	41	32.5	NA	26.3	NA	38.3	99.4	167	58.7
Oxidation Reduction Potential	mV		-39	NA	120	27	NA	-18	NA	81	-22	13	1
Total Iron	mg/L		24.54	NA	20	22.8	NA	NA	NA	4.65	4.1	35.3	20.9
Ferrous Iron	mg/L		1.13	NA	4.35	8.5	NA	NA	NA	2.46	1.6	15.1	14
Ferric Iron	mg/L		23.51	NA	15.65	14.3	NA	NA	NA	2.19	2.5	19.8	6.9
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6010C)													
IRON, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	mg/L	0.002	NA	0.000115 J	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 UJ	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	NA	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW06-092513 9/25/2013	46WW06F-092513 9/25/2013	46WW06-012514 1/25/2014	46WW06-071714 7/17/2014	46WW06FD-071714 7/17/2014	46WW06-111914 11/19/2014	46WW06FD-111914 11/19/2014	46WW06-020615 2/6/2015	46WW06-050115 5/1/2015	46WW06-080415 8/4/2015	46WW06-020216 2/2/2016
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 UJ	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ
ACETONE	ug/L	22000	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 UJ	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	0.545 J
CHLOROFORM	ug/L	240	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Anions (9056)													
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE*	mg/L	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW06-092513 9/25/2013	46WW06F-092513 9/25/2013	46WW06-012514 1/25/2014	46WW06-071714 7/17/2014	46WW06FD-071714 7/17/2014	46WW06-111914 11/19/2014	46WW06FD-111914 11/19/2014	46WW06-020615 2/6/2015	46WW06-050115 5/1/2015	46WW06-080415 8/4/2015	46WW06-020216 2/2/2016
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW06-080416 8/4/2016	46WW06FD-080416 8/4/2016	46WW07-052513 5/25/2013	46WW07-052513-FD 5/25/2013	46WW07-091913 9/21/2013	46WW07-012714 1/27/2014	46WW07-071814 7/18/2014	46WW07FD-071814 7/18/2014	46WW07-112014 11/20/2014	46WW07-020315 2/3/2015	46WW07-050115 5/1/2015
			Intermediate		Intermediate								
Water Quality Parameters													
Temperature	°C		21.63	NA	23.56	NA	28.57	17.08	20.54	NA	19.33	17.53	18.81
pH	pH Units		6	NA	6.49	NA	6.67	6.82	6.41	NA	6.29	6.28	5.79
Conductivity	mS/cm		2	NA	1.42	NA	1.1	1.09	1.25	NA	1.15	1.14	1.04
Dissolved Oxygen	mg/L		0.49	NA	0	NA	0.61	0.66	0.42	NA	0	0	0.54
Turbidity	NTU		17	NA	7.1	NA	0.7	8.1	5.5	NA	0	3.3	0
Oxidation Reduction Potential	mV		43	NA	-57	NA	-115	43	102	NA	131	53	87
Total Iron	mg/L		11.3	NA	NA	NA	2.02	1.12	1.55	NA	NA	1.16	1.17
Ferrous Iron	mg/L		7.9	NA	NA	NA	1.38	0.32	0.11	NA	NA	0.21	0.21
Ferric Iron	mg/L		3.4	NA	NA	NA	0.64	0.8	1.44	NA	NA	0.95	0.96
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6010C)													
IRON, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	mg/L	0.002	NA	NA	<0.0002 U	<0.0002 U	<0.0002 U	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	<2 UJ	<2 UJ	<2 U	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW06-080416 8/4/2016	46WW06FD-080416 8/4/2016	46WW07-052513 5/25/2013	46WW07-052513-FD 5/25/2013	46WW07-091913 9/21/2013	46WW07-012714 1/27/2014	46WW07-071814 7/18/2014	46WW07FD-071814 7/18/2014	46WW07-112014 11/20/2014	46WW07-020315 2/3/2015	46WW07-050115 5/1/2015
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	<5 U	2.95 J	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Anions (9056)													
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE*	mg/L	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW06-080416 8/4/2016	46WW06FD-080416 8/4/2016	46WW07-052513 5/25/2013	46WW07-052513-FD 5/25/2013	46WW07-091913 9/21/2013	46WW07-012714 1/27/2014	46WW07-071814 7/18/2014	46WW07FD-071814 7/18/2014	46WW07-112014 11/20/2014	46WW07-020315 2/3/2015	46WW07-050115 5/1/2015
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW07-080415 8/4/2015	46WW07-020216 2/2/2016	46WW07-080216 8/2/2016	46WW08-052513 5/25/2013	46WW08F-052513 5/25/2013	46WW08-092113 9/21/2013	46WW08-092113-FD 9/21/2013	46WW08-012814 1/28/2014	46WW08FD-012814 1/28/2014	46WW08-071814 7/18/2014	46WW08-112014 11/20/2014
			Intermediate			Intermediate							
Water Quality Parameters													
Temperature	°C		21.74	18.65	21.1	25.6	NA	21.47	NA	16.29	NA	21.45	19.86
pH	pH Units		5.71	5.55	5.08	6.11	NA	6.41	NA	6.68	NA	6.37	6.38
Conductivity	mS/cm		1.22	1.19	1.3	5.19	NA	5.29	NA	4.65	NA	4.76	5.04
Dissolved Oxygen	mg/L		0.09	0.36	0.72	0	NA	0.82	NA	0.58	NA	0.32	0
Turbidity	NTU		5.5	3.4	17.4	12	NA	0.9	NA	0	NA	8.3	2.6
Oxidation Reduction Potential	mV		152	159	305	55	NA	-39	NA	40	NA	-14	-33
Total Iron	mg/L		1.29	2.38	3.92	NA	NA	9.54	NA	1.71	NA	7.5	NA
Ferrous Iron	mg/L		0.21	0.45	0.89	NA	NA	1.71	NA	1.34	NA	5.63	NA
Ferric Iron	mg/L		1.28	1.93	3.03	NA	NA	7.83	NA	0.37	NA	1.87	NA
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6010C)													
IRON, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	mg/L	0.002	NA	NA	NA	NA	<0.0002 U	<0.0002 U	<0.0002 U	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	NA	<2 UJ	<2 UJ	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW07-080415 8/4/2015	46WW07-020216 2/2/2016	46WW07-080216 8/2/2016	46WW08-052513 5/25/2013	46WW08F-052513 5/25/2013	46WW08-092113 9/21/2013	46WW08-092113-FD 9/21/2013	46WW08-012814 1/28/2014	46WW08FD-012814 1/28/2014	46WW08-071814 7/18/2014	46WW08-112014 11/20/2014
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 U	NA	<5 UJ	<5 UJ	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 UJ	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	<5 U	<5 U	3.3 J	<5 U	NA	<5 UJ	<5 UJ	<5 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 U	<1 UJ	NA	<1 UJ	<1 UJ	<1 U	<1 U	<1 U	<1 UJ
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	0.52 J	<1 U	<1 U	<1 UJ	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Anions (9056)													
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE*	mg/L	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW07-080415 8/4/2015	46WW07-020216 2/2/2016	46WW07-080216 8/2/2016	46WW08-052513 5/25/2013	46WW08F-052513 5/25/2013	46WW08-092113 9/21/2013	46WW08-092113-FD 9/21/2013	46WW08-012814 1/28/2014	46WW08FD-012814 1/28/2014	46WW08-071814 7/18/2014	46WW08-112014 11/20/2014
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW08-020315 2/3/2015	46WW08FD-020315 2/3/2015	46WW08-050115 5/1/2015	46WW08FD-050115 5/1/2015	46WW08-080415 8/4/2015	46WW08-020316 2/3/2016	46WW08-080216 8/2/2016	46WW09F-053013 5/30/2013	46WW09-081313 8/13/2013	46WW09-092413 9/24/2013	46WW09F-092413 9/24/2013
			Intermediate							Intermediate			
Water Quality Parameters													
Temperature	°C		18.3	NA	21.03	NA	23.12	18.23	22.36	27.12	23.27	28.71	NA
pH	pH Units		6.36	NA	6.88	NA	5.93	5.5	5.03	5.7	6.4	6.02	NA
Conductivity	mS/cm		4.73	NA	2.6	NA	3.67	3.4	3.1	4.61	5	4.82	NA
Dissolved Oxygen	mg/L		0	NA	2.07	NA	2.4	1.15	1.72	0.98	4.35	2.16	NA
Turbidity	NTU		0	NA	79.2	NA	21.2	1.5	0.2	13.1	9.4	4.3	NA
Oxidation Reduction Potential	mV		-60	NA	-55	NA	73	98	259	162	151	165	NA
Total Iron	mg/L		13	NA	1.25	NA	2.89	4.1	17.8	NA	NA	0.15	NA
Ferrous Iron	mg/L		10.5	NA	0.95	NA	1.5	3.26	1.4	NA	NA	0.12	NA
Ferric Iron	mg/L		2.5	NA	0.3	NA	1.39	0.84	16.4	NA	NA	0.03	NA
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	160	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.2 U	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	6.94	NA
Metals (6010C)													
IRON, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	<0.2 U	<0.1 U	NA	NA
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	NA	NA	NA	NA	NA	NA	2.62	NA	NA	2.34
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA	NA	NA	<0.0004 U	NA	<0.0002 U	<0.0002 U
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U	NA
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	NA	NA	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	NA	NA	<2 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW08-020315 2/3/2015	46WW08FD-020315 2/3/2015	46WW08-050115 5/1/2015	46WW08FD-050115 5/1/2015	46WW08-080415 8/4/2015	46WW08-020316 2/3/2016	46WW08-080216 8/2/2016	46WW09F-053013 5/30/2013	46WW09-081313 8/13/2013	46WW09-092413 9/24/2013	46WW09F-092413 9/24/2013
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	NA	NA	<5 UJ	NA
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	NA	NA	<5 UJ	NA
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	NA	NA	<5 U	NA
ACETONE	ug/L	22000	<5 U	<5 U	4.11 J	4.1 J	3.37 J	<5 U	11.3	NA	NA	<5 UJ	NA
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U	NA
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U	NA
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U	NA
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U	NA
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA
Anions (9056)													
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	465	NA
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	NA	NA	<1 U	<10 UJ	NA
NITRITE*	mg/L	1	NA	NA	NA	NA	NA	NA	NA	NA	<1 U	<10 UJ	NA
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	2340	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW08-020315 2/3/2015	46WW08FD-020315 2/3/2015	46WW08-050115 5/1/2015	46WW08FD-050115 5/1/2015	46WW08-080415 8/4/2015	46WW08-020316 2/3/2016	46WW08-080216 8/2/2016	46WW09F-053013 5/30/2013	46WW09-081313 8/13/2013	46WW09-092413 9/24/2013	46WW09F-092413 9/24/2013
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	58400	NA
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	<2 U	NA
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	<2 U	NA
METHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	3.37 J	NA
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	0.533 J	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW09-012714 1/27/2014	46WW09F-012714 1/27/2014	46WW09-071514 7/15/2014	46WW09F-071514 7/15/2014	46WW09-111914 11/19/2014	46WW09FF-111914 11/19/2014	46WW09-020515 2/5/2015	46WW09FF-020515 2/5/2015	46WW09-050515 5/5/2015	46WW09F-050515 5/5/2015	46WW09FF-050515 5/5/2015
			Intermediate										
Water Quality Parameters													
Temperature	°C		17.27	NA	24.25	NA	18.05	NA	17.15	NA	24.87	NA	NA
pH	pH Units		6.07	NA	6.21	NA	6.13	NA	6.01	NA	6.3	NA	NA
Conductivity	mS/cm		4.69	NA	0.465	NA	4.98	NA	4.34	NA	4.09	NA	NA
Dissolved Oxygen	mg/L		2.01	NA	NR	NA	1.44	NA	2.74	NA	2.86	NA	NA
Turbidity	NTU		14.2	NA	41.2	NA	9.1	NA	8	NA	12.3	NA	NA
Oxidation Reduction Potential	mV		216	NA	NR	NA	197	NA	172	NA	103	NA	NA
Total Iron	mg/L		0.17	NA	0.08	NA	NA	NA	0.48	NA	0.41	NA	NA
Ferrous Iron	mg/L		0.16	NA	0.03	NA	NA	NA	0.28	NA	0.36	NA	NA
Ferric Iron	mg/L		0.01	NA	0.05	NA	NA	NA	0.2	NA	0.05	NA	NA
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		158	NA	176	NA	183	NA	162	NA	170	NA	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		0.409	NA	1.14	NA	<0.2 UJ	NA	<0.2 U	NA	0.772	NA	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		6.27	NA	7.06	NA	6.61	NA	7.31	NA	5.84	NA	NA
Metals (6010C)													
IRON, TOTAL	mg/L		NA	0.0557 J	NA	0.301	0.361	0.0904 J	0.273	<0.1 U	NA	0.617	<0.1 U
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	1.86	NA	1.72	NA	2	NA	1.64	NA	NA	1.7
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	NA
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	NA
1,1-DICHLOROETHENE	ug/L	7	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	NA
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	NA
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	NA
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	NA
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW09-012714 1/27/2014	46WW09F-012714 1/27/2014	46WW09-071514 7/15/2014	46WW09F-071514 7/15/2014	46WW09-111914 11/19/2014	46WW09FF-111914 11/19/2014	46WW09-020515 2/5/2015	46WW09FF-020515 2/5/2015	46WW09-050515 5/5/2015	46WW09F-050515 5/5/2015	46WW09FF-050515 5/5/2015
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
2-BUTANONE	ug/L	15000	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	NA
2-CHLOROTOLUENE	ug/L	490	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	NA
2-HEXANONE	ug/L	120	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	NA
4-CHLOROTOLUENE	ug/L	490	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	NA
ACETONE	ug/L	22000	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	NA
BENZENE	ug/L	5	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	NA
BROMOBENZENE	ug/L	200	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	NA
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	NA
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
BROMOFORM	ug/L	120	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	NA
BROMOMETHANE	ug/L	34	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 UJ	NA	NA
CARBON DISULFIDE	ug/L	2400	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	NA
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
CHLOROBENZENE	ug/L	100	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	NA
CHLOROETHANE	ug/L	98000	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	NA
CHLOROFORM	ug/L	240	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	NA
CHLOROMETHANE	ug/L	70	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
DIBROMOMETHANE	ug/L	120	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
ETHYLBENZENE	ug/L	700	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
M,P-XYLENE	ug/L	10000	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	NA
METHYLENE CHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
NAPHTHALENE	ug/L	490	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	NA
N-BUTYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
N-PROPYLBENZENE	ug/L	980	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	NA
O-XYLENE	ug/L	10000	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
STYRENE	ug/L	100	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	NA
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
TETRACHLOROETHENE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
TOLUENE	ug/L	1000	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	NA
TRICHLOROETHENE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
VINYL CHLORIDE	ug/L	2	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA
Anions (9056)													
CHLORIDE	mg/L		475	NA	394	NA	452	NA	476	NA	424	NA	NA
NITRATE	mg/L	10	<5 U	NA	<20 U	NA	3	NA	<10 U	NA	<10 U	NA	NA
NITRITE*	mg/L	1	<5 U	NA	<20 U	NA	<3 U	NA	<10 U	NA	<10 U	NA	NA
SULFATE	mg/L		2410	NA	1980	NA	2210	NA	2210	NA	2140	NA	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW09-012714 1/27/2014	46WW09F-012714 1/27/2014	46WW09-071514 7/15/2014	46WW09F-071514 7/15/2014	46WW09-111914 11/19/2014	46WW09FF-111914 11/19/2014	46WW09-020515 2/5/2015	46WW09FF-020515 2/5/2015	46WW09-050515 5/5/2015	46WW09F-050515 5/5/2015	46WW09FF-050515 5/5/2015
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		81200	NA	94900	NA	87800	NA	112000	NA	98500	NA	NA
ETHANE	ug/L		<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	NA
ETHENE	ug/L		<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	NA
METHANE	ug/L		<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	NA
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		0.574 J	NA	NA	NA	<2 U	NA	<1 U	NA	<1 U	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW09-080615 8/6/2015	46WW09F-080615 8/6/2015	46WW09FF-080615 8/6/2015	46WW09-020216 2/2/2016	46WW09F-020216 2/2/2016	46WW09FF-020216 2/2/2016	46WW09-080316 8/3/2016	46WW09F-080316 8/3/2016	46WW09FF-080316 8/3/2016	46WW10-052513 5/25/2013	46WW10-092113 9/21/2013
			Intermediate									Shallow	
Water Quality Parameters													
Temperature	°C		27.54	NA	NA	18.49	NA	NA	21.99	NA	NA	22.49	20.58
pH	pH Units		5.87	NA	NA	5.22	NA	NA	5.28	NA	NA	6.22	6.51
Conductivity	mS/cm		4.6	NA	NA	4.66	NA	NA	4.57	NA	NA	6.41	7
Dissolved Oxygen	mg/L		0.84	NA	NA	0.8	NA	NA	1.18	NA	NA	NR	NR
Turbidity	NTU		21.3	NA	NA	16.8	NA	NA	19.2	NA	NA	6.41	7.9
Oxidation Reduction Potential	mV		187	NA	NA	274	NA	NA	324	NA	NA	NR	NR
Total Iron	mg/L		0.8	NA	NA	0.58	NA	NA	0	NA	NA	NA	1.09
Ferrous Iron	mg/L		0.03	NA	NA	0.17	NA	NA	0	NA	NA	NA	0.61
Ferric Iron	mg/L		0.77	NA	NA	0.41	NA	NA	0	NA	NA	NA	0.48
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		162	NA	NA	183	NA	NA	177	NA	NA	NA	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		0.402	NA	NA	0.641	NA	NA	<0.2 U	NA	NA	NA	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		15.5	NA	NA	24.6	NA	NA	31.2	NA	NA	NA	NA
Metals (6010C)													
IRON, TOTAL	mg/L		NA	<0.1 U	<0.1 U	NA	<0.1 U	<0.1 U	NA	<0.1 U	<0.1 U	NA	NA
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	NA	1.58	NA	NA	1.67	NA	NA	1.82	NA	NA
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0002 U	<0.0002 U
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	NA	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	NA	NA	<0.3 U	NA	NA	<0.3 U	NA	NA	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	NA	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	NA	NA	<2 U	NA	NA	<2 U	NA	NA	<2 U	<2 UJ
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW09-080615 8/6/2015	46WW09F-080615 8/6/2015	46WW09FF-080615 8/6/2015	46WW09-020216 2/2/2016	46WW09F-020216 2/2/2016	46WW09FF-020216 2/2/2016	46WW09-080316 8/3/2016	46WW09F-080316 8/3/2016	46WW09FF-080316 8/3/2016	46WW10-052513 5/25/2013	46WW10-092113 9/21/2013
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	NA	NA	<5 U	NA	NA	<5 U	NA	NA	<5 U	<5 UJ
2-CHLOROTOLUENE	ug/L	490	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	NA	NA	<5 U	NA	NA	<5 UJ	NA	NA	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	NA	NA	<5 U	NA	NA	<5 U	NA	NA	<5 U	<5 U
ACETONE	ug/L	22000	3.06 J	NA	NA	<5 U	NA	NA	<5 U	NA	NA	<5 U	<5 UJ
BENZENE	ug/L	5	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	NA	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	NA	NA	<1 U	NA	NA	<1 U	NA	NA	<1 UJ	<1 UJ
CARBON DISULFIDE	ug/L	2400	<1 U	NA	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	NA	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	NA	NA	<1 U	NA	NA	<1 U	NA	NA	<1 UJ	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 UJ	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	NA	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	NA	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U
Anions (9056)													
CHLORIDE	mg/L		474	NA	NA	478	NA	NA	466	NA	NA	NA	NA
NITRATE	mg/L	10	<4 U	NA	NA	<4 U	NA	NA	<2 U	NA	NA	NA	NA
NITRITE*	mg/L	1	<4 U	NA	NA	2.32 J	NA	NA	<2 UJ	NA	NA	NA	NA
SULFATE	mg/L		2150	NA	NA	2160	NA	NA	2040	NA	NA	NA	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW09-080615 8/6/2015	46WW09F-080615 8/6/2015	46WW09FF-080615 8/6/2015	46WW09-020216 2/2/2016	46WW09F-020216 2/2/2016	46WW09FF-020216 2/2/2016	46WW09-080316 8/3/2016	46WW09F-080316 8/3/2016	46WW09FF-080316 8/3/2016	46WW10-052513 5/25/2013	46WW10-092113 9/21/2013
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		214000	NA	NA	567000	NA	NA	603000 J	NA	NA	NA	NA
ETHANE	ug/L		<2 U	NA	NA	<2 U	NA	NA	<20 U	NA	NA	NA	NA
ETHENE	ug/L		<2 U	NA	NA	<2 U	NA	NA	<20 U	NA	NA	NA	NA
METHANE	ug/L		<2 U	NA	NA	<2 U	NA	NA	<20 U	NA	NA	NA	NA
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		<1 U	NA	NA	<1 U	NA	NA	<1 U	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW10-012514 1/25/2014	46WW10-071714 7/17/2014	46WW10-112014 11/20/2014	46WW10-020415 2/4/2015	46WW10-050615 5/6/2015	46WW10FD-050615 5/6/2015	46WW10-080515 8/5/2015	46WW10-020316 2/3/2016	46WW10-080416 8/4/2016	46WW11-081413 8/14/2013	46WW11-091913 9/19/2013
			Shallow									Shallow	
Water Quality Parameters													
Temperature	°C		18.62	21.81	21.95	18.77	22.48	NA	24.05	15.25	23.31	24.38	29.91
pH	pH Units		6.75	6.64	6.79	6.27	6.75	NA	6.62	5.96	6.52	5.69	5.16
Conductivity	mS/cm		6.96	6.36	7.05	5.92	6.01	NA	7.01	7.15	6.011	1.38	1.36
Dissolved Oxygen	mg/L		NR	NR	NR	NR	NR	NA	NR	NR	NR	1.68	3.07
Turbidity	NTU		12.4	12.1	1.5	7.3	4.9	NA	0	2.5	0	2.5	1.9
Oxidation Reduction Potential	mV		NR	NR	NR	NR	NR	NA	NR	NR	NR	231	242
Total Iron	mg/L		1.82	0.74	NA	0.74	0.22	NA	0.12	3.03	0.33	0.14	0.06
Ferrous Iron	mg/L		0.9	0.45	NA	0.31	0	NA	0.02	1.91	0.08	0.07	0
Ferric Iron	mg/L		0.92	0.29	NA	0.43	0.22	NA	0.1	1.12	0.25	0.07	0.06
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<20 U
Phosphorus (365.4)													
PHOSPHORUS	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.2 U
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.81
Metals (6010C)													
IRON, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1 U	NA
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0002 U
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	<2 UJ	<2 UJ	<2 U	<2 U	<2 U	<2 U	<2 UJ
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW10-012514 1/25/2014	46WW10-071714 7/17/2014	46WW10-112014 11/20/2014	46WW10-020415 2/4/2015	46WW10-050615 5/6/2015	46WW10FD-050615 5/6/2015	46WW10-080515 8/5/2015	46WW10-020316 2/3/2016	46WW10-080416 8/4/2016	46WW11-081413 8/14/2013	46WW11-091913 9/19/2013
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 UJ
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 UJ
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 UJ
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 UJ	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	1.56	1.11
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.506 J	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	85.9	79.8
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Anions (9056)													
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	225
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.4 U	<3 U
NITRITE*	mg/L	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.4 U	<3 U
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	613

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW10-012514 1/25/2014	46WW10-071714 7/17/2014	46WW10-112014 11/20/2014	46WW10-020415 2/4/2015	46WW10-050615 5/6/2015	46WW10FD-050615 5/6/2015	46WW10-080515 8/5/2015	46WW10-020316 2/3/2016	46WW10-080416 8/4/2016	46WW11-081413 8/14/2013	46WW11-091913 9/19/2013
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	113000
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2 U
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2 U
METHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.4
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW11F-091913 9/19/2013	46WW11-012814 1/28/2014	46WW11F-012814 1/28/2014	46WW11-071614 7/16/2014	46WW11F-071614 7/16/2014	46WW11-111814 11/18/2014	46WW11FF-111814 11/18/2014	46WW11-020415 2/4/2015	46WW11FF-020415 2/4/2015	46WW11-050615 5/6/2015	46WW11FF-050615 5/6/2015
			Shallow										
Water Quality Parameters													
Temperature	°C		NA	17.26	NA	21.61	NA	18.4	NA	16.5	NA	19.59	NA
pH	pH Units		NA	5.41	NA	4.99	NA	4.9	NA	4.52	NA	4.24	NA
Conductivity	mS/cm		NA	1.25	NA	1.5	NA	1.42	NA	1.31	NA	1.33	NA
Dissolved Oxygen	mg/L		NA	1.5	NA	0.8	NA	1.13	NA	7.07	NA	1.18	NA
Turbidity	NTU		NA	0.2	NA	7.5	NA	0.1	NA	4.3	NA	0.8	NA
Oxidation Reduction Potential	mV		NA	258	NA	279	NA	285	NA	264	NA	304	NA
Total Iron	mg/L		NA	0.81	NA	0.01	NA	NA	NA	0.19	NA	0.07	NA
Ferrous Iron	mg/L		NA	0.42	NA	0	NA	NA	NA	0.1	NA	0.02	NA
Ferric Iron	mg/L		NA	0.39	NA	0.01	NA	NA	NA	0.09	NA	0.05	NA
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	<20 UJ	NA	39.5	NA	35.4 J	NA	38.2 J	NA	41.8	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		NA	<0.2 U	NA	0.391 J	NA	<0.2 U	NA	<0.2 U	NA	1.2	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	3.11	NA	3.75	NA	2.94	NA	2.81 J	NA	4.93 J	NA
Metals (6010C)													
IRON, TOTAL	mg/L		<0.1 U	NA	0.397	NA	<0.1 U	0.161 J	0.0538 J	0.177 J	0.0527 J	0.0691 J	<0.1 U
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	0.0983	NA	0.0571	NA	0.0492	NA	0.0619	NA	0.0476	NA	0.0586
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	NA	0.136 J	NA	0.141 J	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
1,1-DICHLOROETHENE	ug/L	7	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
1,1-DICHLOROPROPENE	ug/L	9.1	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 UJ	NA
1,2-DIBROMOETHANE	ug/L	0.05	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW11F-091913 9/19/2013	46WW11-012814 1/28/2014	46WW11F-012814 1/28/2014	46WW11-071614 7/16/2014	46WW11F-071614 7/16/2014	46WW11-111814 11/18/2014	46WW11FF-111814 11/18/2014	46WW11-020415 2/4/2015	46WW11FF-020415 2/4/2015	46WW11-050615 5/6/2015	46WW11FF-050615 5/6/2015
2,2-DICHLOROPROPANE	ug/L	13	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
2-BUTANONE	ug/L	15000	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 UJ	NA
2-CHLOROTOLUENE	ug/L	490	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
2-HEXANONE	ug/L	120	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 UJ	NA
4-CHLOROTOLUENE	ug/L	490	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 UJ	NA
ACETONE	ug/L	22000	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA
BENZENE	ug/L	5	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
BROMOBENZENE	ug/L	200	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
BROMOFORM	ug/L	120	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
BROMOMETHANE	ug/L	34	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
CARBON DISULFIDE	ug/L	2400	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
CHLOROBENZENE	ug/L	100	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
CHLOROETHANE	ug/L	98000	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
CHLOROFORM	ug/L	240	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
CHLOROMETHANE	ug/L	70	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	2.04	NA	2.12	NA	1.28	NA	1.99	NA	1.4	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
ETHYLBENZENE	ug/L	700	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
M,P-XYLENE	ug/L	10000	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
NAPHTHALENE	ug/L	490	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
O-XYLENE	ug/L	10000	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
STYRENE	ug/L	100	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
TOLUENE	ug/L	1000	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	NA	0.575 J	NA	0.734 J	NA	<0.5 U	NA	0.429 J	NA	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
TRICHLOROETHENE	ug/L	5	NA	87.5	NA	90.6	NA	70.7	NA	63.6	NA	45.3	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
Anions (9056)													
CHLORIDE	mg/L		NA	208	NA	212	NA	229	NA	189	NA	210	NA
NITRATE	mg/L	10	NA	<2 U	NA	<2 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
NITRITE*	mg/L	1	NA	<2 U	NA	<2 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
SULFATE	mg/L		NA	449	NA	378	NA	445	NA	481	NA	517	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW11F-091913 9/19/2013	46WW11-012814 1/28/2014	46WW11F-012814 1/28/2014	46WW11-071614 7/16/2014	46WW11F-071614 7/16/2014	46WW11-111814 11/18/2014	46WW11FF-111814 11/18/2014	46WW11-020415 2/4/2015	46WW11FF-020415 2/4/2015	46WW11-050615 5/6/2015	46WW11FF-050615 5/6/2015
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	97900	NA	73900	NA	192000 J	NA	241000 J	NA	670000	NA
ETHANE	ug/L		NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA
ETHENE	ug/L		NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA
METHANE	ug/L		NA	<2 UJ	NA	6.29	NA	1.42 J	NA	1.59 J	NA	3.89 J	NA
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		NA	<1 U	NA	NA	NA	0.5	NA	<1 U	NA	<1 U	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW11-080515 8/5/2015	46WW11FF-080515 8/5/2015	46WW11-020116 2/1/2016	46WW11FF-020116 2/1/2016	46WW11-080316 8/3/2016	46WW11FF-080316 8/3/2016	46WW13-052913 5/29/2013	46WW13F-052913 5/29/2013	46WW13-081313 8/13/2013	46WW13-092413 9/24/2013	46WW13F-092413 9/24/2013
			Shallow						Shallow				
Water Quality Parameters													
Temperature	°C		31.87	NA	18.67	NA	21.8	NA	25.81	NA	23.34	20.07	NA
pH	pH Units		4.45	NA	4.67	NA	4.5	NA	6.27	NA	6.75	6.3	NA
Conductivity	mS/cm		1.37	NA	1.38	NA	1.33	NA	1.22	NA	0.993	0.701	NA
Dissolved Oxygen	mg/L		0.41	NA	1.39	NA	0.47	NA	NR	NA	NR	NR	NA
Turbidity	NTU		5	NA	4	NA	0	NA	9.5	NA	5.2	14.4	NA
Oxidation Reduction Potential	mV		284	NA	234	NA	286	NA	NR	NA	NR	NR	NA
Total Iron	mg/L		0.2	NA	0.1	NA	0.1	NA	NA	NA	0.3	0.46	NA
Ferrous Iron	mg/L		0.03	NA	0.03	NA	0	NA	NA	NA	0.18	0.25	NA
Ferric Iron	mg/L		0.17	NA	0.07	NA	0.1	NA	NA	NA	0.12	0.21	NA
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		45.5	NA	63.7	NA	45.1	NA	NA	NA	NA	NA	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		<0.2 U	NA	0.273 J	NA	<0.2 U	NA	<0.4 U	NA	NA	NA	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		15.2	NA	44	NA	39.3	NA	9.33	NA	NA	NA	NA
Metals (6010C)													
IRON, TOTAL	mg/L		0.306	0.0856 J	1.07	0.745	0.188 J	0.0675 J	1.36	0.151 J	0.153 J	NA	NA
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	0.117	NA	0.103	NA	0.0616	NA	2.18	NA	NA	NA
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA	NA	<0.0004 U	NA	NA	NA	<0.0002 U
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<1 U	NA	NA	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<1 U	NA	NA	<0.25 U	NA
1,1-DICHLOROETHENE	ug/L	7	<1 U	NA	<1 U	NA	<1 U	NA	4.12	NA	NA	3.76	NA
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<1 U	NA	NA	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	NA	<1 U	NA	<1 U	NA	<2 U	NA	NA	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<1 U	NA	NA	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	NA	<2 U	NA	<2 U	NA	<5 UJ	NA	NA	<2 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<1 U	NA	NA	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<1 U	NA	NA	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<1 U	NA	NA	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<1 U	NA	NA	<0.25 U	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW11-080515 8/5/2015	46WW11FF-080515 8/5/2015	46WW11-020116 2/1/2016	46WW11FF-020116 2/1/2016	46WW11-080316 8/3/2016	46WW11FF-080316 8/3/2016	46WW13-052913 5/29/2013	46WW13F-052913 5/29/2013	46WW13-081313 8/13/2013	46WW13-092413 9/24/2013	46WW13F-092413 9/24/2013
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
2-BUTANONE	ug/L	15000	<5 U	NA	<5 U	NA	<5 U	NA	<10 U	NA	NA	<5 U	NA
2-CHLOROTOLUENE	ug/L	490	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<1 U	NA	NA	<0.25 U	NA
2-HEXANONE	ug/L	120	<5 U	NA	5.44 J	NA	<5 UJ	NA	<10 U	NA	NA	<5 U	NA
4-CHLOROTOLUENE	ug/L	490	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	NA	<5 U	NA	<5 U	NA	<10 U	NA	NA	<5 U	NA
ACETONE	ug/L	22000	<5 U	NA	<5 U	NA	<5 U	NA	<10 UJ	NA	NA	<5 U	NA
BENZENE	ug/L	5	<0.25 U	NA	0.3 J	NA	<0.25 U	NA	<1 U	NA	NA	<0.25 U	NA
BROMOBENZENE	ug/L	200	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<1 U	NA	NA	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<1 U	NA	NA	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
BROMOFORM	ug/L	120	<1 U	NA	<1 U	NA	<1 U	NA	<2 U	NA	NA	<1 U	NA
BROMOMETHANE	ug/L	34	<1 U	NA	<1 U	NA	<1 U	NA	<2 U	NA	NA	<1 U	NA
CARBON DISULFIDE	ug/L	2400	<1 U	NA	<1 U	NA	<1 U	NA	<2 U	NA	NA	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
CHLOROBENZENE	ug/L	100	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	0.158 J	NA	NA	0.143 J	NA
CHLOROETHANE	ug/L	98000	<1 U	NA	<1 U	NA	<1 U	NA	<2 U	NA	NA	<1 U	NA
CHLOROFORM	ug/L	240	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	0.19 J	NA	NA	<0.25 U	NA
CHLOROMETHANE	ug/L	70	<1 U	NA	<1 U	NA	<1 U	NA	<2 U	NA	NA	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	0.749 J	NA	0.578 J	NA	0.325 J	NA	37.3	NA	NA	35.5	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	NA	NA	NA	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 UJ	NA	NA	<0.5 U	NA
ETHYLBENZENE	ug/L	700	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
M,P-XYLENE	ug/L	10000	<1 U	NA	<1 U	NA	<1 U	NA	<2 U	NA	NA	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
NAPHTHALENE	ug/L	490	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<1 U	NA	NA	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<1 U	NA	NA	<0.25 U	NA
O-XYLENE	ug/L	10000	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
STYRENE	ug/L	100	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<1 U	NA	NA	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	0.317 J	NA	NA	0.386 J	NA
TOLUENE	ug/L	1000	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	3.15	NA	NA	3.05	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	NA	<1 U	NA	<1 U	NA	<2 U	NA	NA	<1 U	NA
TRICHLOROETHENE	ug/L	5	26.3	NA	20.5	NA	21.2	NA	107	NA	NA	103	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<1 U	NA	NA	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	13.1	NA	NA	9.83	NA
Anions (9056)													
CHLORIDE	mg/L		225	NA	196	NA	229	NA	141	NA	NA	NA	NA
NITRATE	mg/L	10	<0.4 U	NA	<2 U	NA	<2 U	NA	NA	NA	0.352 J	NA	NA
NITRITE*	mg/L	1	<0.4 U	NA	<2 U	NA	<2 UJ	NA	NA	NA	<0.4 U	NA	NA
SULFATE	mg/L		392	NA	343	NA	253	NA	229	NA	NA	NA	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW11-080515 8/5/2015	46WW11FF-080515 8/5/2015	46WW11-020116 2/1/2016	46WW11FF-020116 2/1/2016	46WW11-080316 8/3/2016	46WW11FF-080316 8/3/2016	46WW13-052913 5/29/2013	46WW13F-052913 5/29/2013	46WW13-081313 8/13/2013	46WW13-092413 9/24/2013	46WW13F-092413 9/24/2013
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		845000	NA	503000	NA	682000 J	NA	172000	NA	NA	NA	NA
ETHANE	ug/L		<2 U	NA	<2 U	NA	<20 U	NA	<5 U	NA	NA	NA	NA
ETHENE	ug/L		<2 U	NA	<2 U	NA	<20 U	NA	<5 U	NA	NA	NA	NA
METHANE	ug/L		70.8	NA	163	NA	45.9	NA	18	NA	NA	NA	NA
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	99.1	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		<1 U	NA	<1 U	NA	<1 U	NA	<2 U	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW14-052913 5/29/2013	46WW14F-052913 5/29/2013	46WW14-081313 8/13/2013	46WW14-091913 9/19/2013	46WW14F-091913 9/19/2013	46WW14-012714 1/27/2014	46WW14F-012714 1/27/2014	46WW14-071514 7/15/2014	46WW14F-071514 7/15/2014	46WW14-111914 11/19/2014	46WW14FF-111914 11/19/2014
			Intermediate										
Water Quality Parameters													
Temperature	°C		29.88	NA	24.27	33.01	NA	16.09	NA	21.63	NA	17.63	NA
pH	pH Units		7.3	NA	7.54	7.12	NA	9.2	NA	5.59	NA	6.14	NA
Conductivity	mS/cm		0.829	NA	0.713	0.553	NA	0.59	NA	0.655	NA	0.668	NA
Dissolved Oxygen	mg/L		0	NA	2.93	0.79	NA	0.35	NA	1.32	NA	0.27	NA
Turbidity	NTU		4.3	NA	1.7	1.3	NA	0	NA	2.8	NA	2.9	NA
Oxidation Reduction Potential	mV		-122	NA	-175	-152	NA	12	NA	119	NA	145	NA
Total Iron	mg/L		NA	NA	2.21	1.58	NA	0.07	NA	1.48	NA	NA	NA
Ferrous Iron	mg/L		NA	NA	1.56	1.05	NA	0.05	NA	1.31	NA	NA	NA
Ferric Iron	mg/L		NA	NA	0.65	0.53	NA	0.02	NA	0.17	NA	NA	NA
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	NA	NA	280	NA	214	NA	266	NA	242	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		<0.4 U	NA	NA	<0.2 U	NA	0.109 J	NA	<0.2 U	NA	<0.2 U	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		2.12	NA	NA	1.69 J	NA	1.99 J	NA	2.42 J	NA	4.89 J	NA
Metals (6010C)													
IRON, TOTAL	mg/L		1.72	1.4	1.39	NA	1.49	NA	<0.1 U	NA	1.51	0.302	0.101 J
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	0.3	NA	NA	0.382	NA	0.0538	NA	0.348	NA	0.0505
THALLIUM	mg/L	0.002	<0.0004 U	NA	NA	<0.0002 U	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<1 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	<1 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
1,1-DICHLOROETHENE	ug/L	7	<2 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
1,1-DICHLOROPROPENE	ug/L	9.1	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	<1 U	NA	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<2 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	<1 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<5 UJ	NA	NA	<2 UJ	NA	<2 U	NA	<2 U	NA	<2 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	<1 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	<1 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	<1 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	<1 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW14-052913 5/29/2013	46WW14F-052913 5/29/2013	46WW14-081313 8/13/2013	46WW14-091913 9/19/2013	46WW14F-091913 9/19/2013	46WW14-012714 1/27/2014	46WW14F-012714 1/27/2014	46WW14-071514 7/15/2014	46WW14F-071514 7/15/2014	46WW14-111914 11/19/2014	46WW14FF-111914 11/19/2014
2,2-DICHLOROPROPANE	ug/L	13	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
2-BUTANONE	ug/L	15000	<10 U	NA	NA	<5 UJ	NA	<5 U	NA	<5 U	NA	<5 U	NA
2-CHLOROTOLUENE	ug/L	490	<1 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
2-HEXANONE	ug/L	120	<10 U	NA	NA	<5 UJ	NA	<5 U	NA	<5 U	NA	<5 U	NA
4-CHLOROTOLUENE	ug/L	490	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	<10 U	NA	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA
ACETONE	ug/L	22000	<10 UJ	NA	NA	<5 UJ	NA	<5 U	NA	<5 U	NA	<5 U	NA
BENZENE	ug/L	5	<1 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
BROMOBENZENE	ug/L	200	<1 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	<1 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
BROMOFORM	ug/L	120	<2 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
BROMOMETHANE	ug/L	34	<2 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
CARBON DISULFIDE	ug/L	2400	<2 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
CHLOROBENZENE	ug/L	100	<1 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
CHLOROETHANE	ug/L	98000	<2 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
CHLOROFORM	ug/L	240	0.184 J	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
CHLOROMETHANE	ug/L	70	<2 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	NA	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	<1 UJ	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
ETHYLBENZENE	ug/L	700	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
M,P-XYLENE	ug/L	10000	<2 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
NAPHTHALENE	ug/L	490	<1 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	<1 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
O-XYLENE	ug/L	10000	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
STYRENE	ug/L	100	<1 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
TOLUENE	ug/L	1000	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<2 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
TRICHLOROETHENE	ug/L	5	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	<1 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
Anions (9056)													
CHLORIDE	mg/L		131 J	NA	NA	115	NA	100	NA	118	NA	103	NA
NITRATE	mg/L	10	NA	NA	<0.2 U	0.102 J	NA	<0.2 U	NA	<1 U	NA	0.143 J	NA
NITRITE*	mg/L	1	NA	NA	<0.2 U	<0.2 U	NA	<0.2 U	NA	<1 U	NA	<0.2 U	NA
SULFATE	mg/L		29.2	NA	NA	30.3	NA	27.6	NA	23.9	NA	26.7	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW14-052913 5/29/2013	46WW14F-052913 5/29/2013	46WW14-081313 8/13/2013	46WW14-091913 9/19/2013	46WW14F-091913 9/19/2013	46WW14-012714 1/27/2014	46WW14F-012714 1/27/2014	46WW14-071514 7/15/2014	46WW14F-071514 7/15/2014	46WW14-111914 11/19/2014	46WW14FF-111914 11/19/2014
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		36900	NA	NA	36500	NA	<5000 U	NA	44800	NA	138000	NA
ETHANE	ug/L		<5 U	NA	NA	1.16 J	NA	<2 U	NA	<2 U	NA	<2 U	NA
ETHENE	ug/L		<5 U	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA
METHANE	ug/L		9.06	NA	NA	738	NA	80.5	NA	1260	NA	20.2	NA
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		282	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		<2 U	NA	NA	NA	NA	<1 U	NA	NA	NA	<2 U	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW14-020615 2/6/2015	46WW14FD-020615 2/6/2015	46WW14-050515 5/5/2015	46WW14FF-050515 5/5/2015	46WW14-020216 2/2/2016	46WW14FD-020216 2/2/2016	46WW14-080216 8/2/2016	46WW14FD-080216 8/2/2016	46WW16-070114 7/01/2014	46WW16-071614 7/16/2014	46WW16F-071614 7/16/2014
			Intermediate								Intermediate		
Water Quality Parameters													
Temperature	°C		18.83	NA	19.18	NA	19.19	NA	20.72	NA	22.38	29.18	NA
pH	pH Units		6.09	NA	5.48	NA	5.79	NA	4.87	NA	6.26	6.03	NA
Conductivity	mS/cm		0.783	NA	0.744	NA	0.837	NA	0.935	NA	1.87	2.02	NA
Dissolved Oxygen	mg/L		0	NA	0.48	NA	0.36	NA	0.7	NA	0.41	0.28	NA
Turbidity	NTU		3.9	NA	0.4	NA	1.2	NA	1.3	NA	6.2	5.7	NA
Oxidation Reduction Potential	mV		-1	NA	55	NA	62	NA	267	NA	-148	-117	NA
Total Iron	mg/L		1.12	NA	1.08	NA	2	NA	1.81	NA	NA	14.32	NA
Ferrous Iron	mg/L		1.07	NA	0.61	NA	1.91	NA	0.16	NA	NA	1.57	NA
Ferric Iron	mg/L		0.05	NA	0.44	NA	0.09	NA	1.65	NA	NA	12.75	NA
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	NA	290	NA	NA	NA	NA	NA	NA	189	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		NA	NA	0.3 J	NA	NA	NA	NA	NA	NA	<0.2 U	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	25.3	NA	NA	NA	NA	NA	NA	5.94	NA
Metals (6010C)													
IRON, TOTAL	mg/L		NA	NA	1.5	1.12	NA	NA	NA	NA	NA	NA	28
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	NA	NA	0.45	NA	NA	NA	NA	NA	NA	1.94
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	NA	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW14-020615 2/6/2015	46WW14FD-020615 2/6/2015	46WW14-050515 5/5/2015	46WW14FF-050515 5/5/2015	46WW14-020216 2/2/2016	46WW14FD-020216 2/2/2016	46WW14-080216 8/2/2016	46WW14FD-080216 8/2/2016	46WW16-070114 7/01/2014	46WW16-071614 7/16/2014	46WW16F-071614 7/16/2014
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	NA
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	NA	<5 U	<5 U	<5 UJ	<5 UJ	<5 U	<5 U	NA
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	NA	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	NA
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U	6.92 J	2.87 J	NA
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA
BROMOMETHANE	ug/L	34	<1 UJ	<1 UJ	<1 UJ	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	0.694 J	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
Anions (9056)													
CHLORIDE	mg/L		NA	NA	111	NA	NA	NA	NA	NA	NA	229	NA
NITRATE	mg/L	10	NA	NA	0.27 J	NA	NA	NA	NA	NA	NA	<4 U	NA
NITRITE*	mg/L	1	NA	NA	<0.2 U	NA	NA	NA	NA	NA	NA	<4 U	NA
SULFATE	mg/L		NA	NA	26.6	NA	NA	NA	NA	NA	NA	678	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW14-020615 2/6/2015	46WW14FD-020615 2/6/2015	46WW14-050515 5/5/2015	46WW14FF-050515 5/5/2015	46WW14-020216 2/2/2016	46WW14FD-020216 2/2/2016	46WW14-080216 8/2/2016	46WW14FD-080216 8/2/2016	46WW16-070114 7/01/2014	46WW16-071614 7/16/2014	46WW16F-071614 7/16/2014
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	NA	711000	NA	NA	NA	NA	NA	NA	72800	NA
ETHANE	ug/L		NA	NA	<2 U	NA	NA	NA	NA	NA	NA	<2 U	NA
ETHENE	ug/L		NA	NA	<2 U	NA	NA	NA	NA	NA	NA	<2 U	NA
METHANE	ug/L		NA	NA	795	NA	NA	NA	NA	NA	NA	6.82	NA
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		NA	NA	<1 U	NA	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW16-111814 11/18/2014	46WW16FF-111814 11/18/2014	46WW16-020415 2/4/2015	46WW16FF-020415 2/4/2015	46WW16-050515 5/5/2015	46WW16F-050515 5/5/2015	46WW16FF-050515 5/5/2015	46WW16-080615 8/6/2015	46WW16FF-080615 8/6/2015	46WW16-020116 2/1/2016	46WW16FF-020116 2/1/2016
			Intermediate										
Water Quality Parameters													
Temperature	°C		18.27	NA	18.64	NA	21.3	NA	NA	23.2	NA	20.09	NA
pH	pH Units		6.19	NA	6.17	NA	5.96	NA	NA	5.69	NA	5.77	NA
Conductivity	mS/cm		2.75	NA	2.27	NA	3.11	NA	NA	2.53	NA	3.4	NA
Dissolved Oxygen	mg/L		0	NA	0	NA	0.35	NA	NA	0.07	NA	0.29	NA
Turbidity	NTU		8.5	NA	3.8	NA	71.5	NA	NA	8.2	NA	1.5	NA
Oxidation Reduction Potential	mV		-61	NA	-108	NA	-82	NA	NA	8	NA	31	NA
Total Iron	mg/L		NA	NA	16.5	NA	12.5	NA	NA	5.89	NA	13.3	NA
Ferrous Iron	mg/L		NA	NA	13.15	NA	12.25	NA	NA	3.26	NA	1.43	NA
Ferric Iron	mg/L		NA	NA	3.35	NA	0.25	NA	NA	2.63	NA	11.87	NA
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		216	NA	275	NA	614	NA	NA	280	NA	586	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		<0.2 U	NA	<0.2 U	NA	0.555	NA	NA	0.193 J	NA	<0.2 U	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		4.03	NA	30.8	NA	28.6	NA	NA	8.22 J	NA	82.4	NA
Metals (6010C)													
IRON, TOTAL	mg/L		30.1	28.4	25.5	22.5	NA	16	15.2	32.4	26.7	24.9	18.6
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	1.87	NA	1.54	NA	NA	1.58	NA	1.67	NA	1.52
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	NA	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA
1,1-DICHLOROETHENE	ug/L	7	<1 U	NA	NA	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	NA	NA	NA	<0.3 U	NA	NA	<0.3 U	NA	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	NA	NA	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	NA	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	NA	NA	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	NA	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	NA	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW16-111814 11/18/2014	46WW16FF-111814 11/18/2014	46WW16-020415 2/4/2015	46WW16FF-020415 2/4/2015	46WW16-050515 5/5/2015	46WW16F-050515 5/5/2015	46WW16FF-050515 5/5/2015	46WW16-080615 8/6/2015	46WW16FF-080615 8/6/2015	46WW16-020116 2/1/2016	46WW16FF-020116 2/1/2016
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
2-BUTANONE	ug/L	15000	<5 U	NA	NA	NA	4.96 J	NA	NA	<5 U	NA	<5 U	NA
2-CHLOROTOLUENE	ug/L	490	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA
2-HEXANONE	ug/L	120	<5 U	NA	NA	NA	<5 U	NA	NA	<5 U	NA	<5 U	NA
4-CHLOROTOLUENE	ug/L	490	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	NA	NA	NA	<5 U	NA	NA	<5 U	NA	<5 U	NA
ACETONE	ug/L	22000	<5 U	NA	NA	NA	3.86 J	NA	NA	<5 U	NA	<5 U	NA
BENZENE	ug/L	5	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	0.296 J	NA
BROMOBENZENE	ug/L	200	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	NA	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
BROMOFORM	ug/L	120	<1 U	NA	NA	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA
BROMOMETHANE	ug/L	34	<1 U	NA	NA	NA	<1 UJ	NA	NA	<1 U	NA	<1 U	NA
CARBON DISULFIDE	ug/L	2400	<1 U	NA	NA	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
CHLOROBENZENE	ug/L	100	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA
CHLOROETHANE	ug/L	98000	<1 U	NA	NA	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA
CHLOROFORM	ug/L	240	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA
CHLOROMETHANE	ug/L	70	<1 U	NA	NA	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
ETHYLBENZENE	ug/L	700	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
M,P-XYLENE	ug/L	10000	<1 U	NA	NA	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
NAPHTHALENE	ug/L	490	<0.4 U	NA	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA
O-XYLENE	ug/L	10000	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
STYRENE	ug/L	100	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
TOLUENE	ug/L	1000	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	NA	NA	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA
TRICHLOROETHENE	ug/L	5	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
Anions (9056)													
CHLORIDE	mg/L		271	NA	275	NA	302	NA	NA	305	NA	299	NA
NITRATE	mg/L	10	<2 U	NA	<2 U	NA	<2 U	NA	NA	<1 U	NA	<4 U	NA
NITRITE*	mg/L	1	<2 U	NA	<2 U	NA	<2 U	NA	NA	<1 U	NA	<4 U	NA
SULFATE	mg/L		914	NA	747	NA	914	NA	NA	782	NA	690	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW16-111814 11/18/2014	46WW16FF-111814 11/18/2014	46WW16-020415 2/4/2015	46WW16FF-020415 2/4/2015	46WW16-050515 5/5/2015	46WW16F-050515 5/5/2015	46WW16FF-050515 5/5/2015	46WW16-080615 8/6/2015	46WW16FF-080615 8/6/2015	46WW16-020116 2/1/2016	46WW16FF-020116 2/1/2016
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		171000	NA	101000 J	NA	731000	NA	NA	810000	NA	577000	NA
ETHANE	ug/L		<2 U	NA	<2 U	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA
ETHENE	ug/L		<2 U	NA	<2 U	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA
METHANE	ug/L		1.68 J	NA	<2 U	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		0.5	NA	<1 U	NA	0.596 J	NA	NA	<1 U	NA	<1 U	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW16-080316 8/3/2016	46WW16F-080316 8/3/2016	46WW16FF-080316 8/3/2016	LHSMW08F-052913 5/30/2013	LHSMW08-092113 9/21/2013	LHSMW08F-092113 9/21/2013	LHSMW14F-052413 5/24/2013	LHSMW14-092413 9/24/2013	LHSMW16-052913 5/29/2013	LHSMW18-032916 3/29/2016	LHSMW19-052813 5/28/2013
			Intermediate			Intermediate			Shallow		Shallow	Shallow	Shallow
Water Quality Parameters													
Temperature	°C		22.42	NA	NA	31.09	24.17	NA	23.46	26.51	23.02	16.55	23.09
pH	pH Units		5.8	NA	NA	6.95	6.85	NA	4.94	5.22	5.93	5.53	7.02
Conductivity	mS/cm		3.06	NA	NA	1.26	1.17	NA	0.96	0.1	1.48	5.16	2.02
Dissolved Oxygen	mg/L		0.5	NA	NA	NR	NR	NA	0	1.25	0	NR	0
Turbidity	NTU		19	NA	NA	60	25.9	NA	15.2	1.4	1.8	2.9	1.2
Oxidation Reduction Potential	mV		12	NA	NA	NR	NR	NA	217	154	223	NR	150
Total Iron	mg/L		16.5	NA	NA	NA	1.76	NA	NA	2	NA	NA	NA
Ferrous Iron	mg/L		1.46	NA	NA	NA	0.85	NA	NA	0.68	NA	NA	NA
Ferric Iron	mg/L		15.04	NA	NA	NA	0.91	NA	NA	1.32	NA	NA	NA
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		<0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.4 U
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		47.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.18
Metals (6010C)													
IRON, TOTAL	mg/L		NA	21	20.9	NA	NA	NA	NA	NA	NA	NA	0.118 J
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	NA	1.71	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	mg/L	0.002	NA	NA	NA	<0.0004 U	NA	0.000112 J	<0.0002 U	<0.0002 U	<0.0004 U	NA	<0.0004 U
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	NA	NA	NA	<0.4 U	NA	NA	<0.4 UJ	NA	<0.4 U	<1 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	<1 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	NA	NA	NA	<1 U	NA	NA	<1 U	NA	<1 U	<2 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	NA	NA	NA	<0.3 U	NA	NA	<0.3 U	NA	<0.3 U	<1 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	NA	NA	NA	<1 U	NA	NA	<1 U	NA	<1 U	<2 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	NA	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	<1 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	NA	NA	NA	<2 UJ	NA	NA	<2 U	NA	<2 U	<5 UJ
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	<1 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	NA	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	<1 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	NA	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	<1 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	<1 U

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW16-080316 8/3/2016	46WW16F-080316 8/3/2016	46WW16FF-080316 8/3/2016	LHSMW08F-052913 5/30/2013	LHSMW08-092113 9/21/2013	LHSMW08F-092113 9/21/2013	LHSMW14F-052413 5/24/2013	LHSMW14-092413 9/24/2013	LHSMW16-052913 5/29/2013	LHSMW18-032916 3/29/2016	LHSMW19-052813 5/28/2013
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
2-BUTANONE	ug/L	15000	<5 U	NA	NA	NA	<5 UJ	NA	NA	<5 U	NA	<5 U	<10 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	<1 U
2-HEXANONE	ug/L	120	<5 UJ	NA	NA	NA	<5 U	NA	NA	<5 UJ	NA	<5 U	<10 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	NA	NA	NA	<5 U	NA	NA	<5 U	NA	<5 U	<10 U
ACETONE	ug/L	22000	3.47 J	NA	NA	NA	<5 UJ	NA	NA	<5 U	NA	<5 U	<10 UJ
BENZENE	ug/L	5	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	<1 U
BROMOBENZENE	ug/L	200	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	<1 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	NA	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	<1 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
BROMOFORM	ug/L	120	<1 U	NA	NA	NA	<1 U	NA	NA	<1 U	NA	<1 U	<2 U
BROMOMETHANE	ug/L	34	<1 U	NA	NA	NA	<1 UJ	NA	NA	<1 UJ	NA	<1 U	<2 U
CARBON DISULFIDE	ug/L	2400	<1 U	NA	NA	NA	<1 U	NA	NA	<1 U	NA	<1 U	<2 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
CHLOROBENZENE	ug/L	100	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	<1 U
CHLOROETHANE	ug/L	98000	<1 U	NA	NA	NA	<1 U	NA	NA	<1 U	NA	<1 U	<2 U
CHLOROFORM	ug/L	240	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	0.327 J
CHLOROMETHANE	ug/L	70	<1 U	NA	NA	NA	<1 U	NA	NA	<1 U	NA	<1 U	<2 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	1.28	1.45
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	NA	NA	NA	2.43	NA	NA	<0.5 U	NA	<0.5 UJ	<1 UJ
ETHYLBENZENE	ug/L	700	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
M,P-XYLENE	ug/L	10000	<1 U	NA	NA	NA	<1 U	NA	NA	<1 U	NA	<1 U	<2 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
NAPHTHALENE	ug/L	490	<0.4 U	NA	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	<1 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	<1 U
O-XYLENE	ug/L	10000	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	0.26 J
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
STYRENE	ug/L	100	<0.25 U	NA	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	<1 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
TOLUENE	ug/L	1000	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	0.469 J	0.252 J
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	NA	NA	NA	<1 U	NA	NA	<1 U	NA	<1 U	<2 U
TRICHLOROETHENE	ug/L	5	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	3.35	32.3
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
VINYL CHLORIDE	ug/L	2	<0.5 U	NA	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	<1 U
Anions (9056)													
CHLORIDE	mg/L		302	NA	NA	NA	NA	NA	NA	NA	NA	NA	201
NITRATE	mg/L	10	<2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE*	mg/L	1	<2 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	mg/L		723	NA	NA	NA	NA	NA	NA	NA	NA	NA	418

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	46WW16-080316 8/3/2016	46WW16F-080316 8/3/2016	46WW16FF-080316 8/3/2016	LHSMW08F-052913 5/30/2013	LHSMW08-092113 9/21/2013	LHSMW08F-092113 9/21/2013	LHSMW14F-052413 5/24/2013	LHSMW14-092413 9/24/2013	LHSMW16-052913 5/29/2013	LHSMW18-032916 3/29/2016	LHSMW19-052813 5/28/2013
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		739000 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	98300
ETHANE	ug/L		<20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5 U
ETHENE	ug/L		<20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5 U
METHANE	ug/L		<20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.13 J
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	403
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		<1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2 U

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	LHSMW19F-052813 5/28/2013	LHSMW19-081313 8/13/2013	LHSMW19-092413 9/24/2013	LHSMW19F-092413 9/24/2013	LHSMW19-012814 1/28/2014	LHSMW19F-012814 1/28/2014	LHSMW19-071614 7/16/2014	LHSMW19F-071614 7/16/2014	LHSMW19-111814 11/18/2014	LHSMW19FF-111814 11/18/2014	LHSMW19-020415 2/4/2015
			Shallow										
Water Quality Parameters													
Temperature	°C		NA	23.45	20.48	NA	15.71	NA	21.46	NA	18.74	NA	16.81
pH	pH Units		NA	7	6.55	NA	6.87	NA	6.36	NA	5.85	NA	6.34
Conductivity	mS/cm		NA	1.83	1.48	NA	1.85	NA	2.25	NA	2.08	NA	1.81
Dissolved Oxygen	mg/L		NA	0.79	NR	NA	0.71	NA	0.22	NA	0	NA	0
Turbidity	NTU		NA	0	0.2	NA	0	NA	0	NA	0	NA	4
Oxidation Reduction Potential	mV		NA	118	NR	NA	-1	NA	155	NA	130	NA	81
Total Iron	mg/L		NA	0.13	0.12	NA	0.34	NA	0	NA	NA	NA	0.06
Ferrous Iron	mg/L		NA	0.04	0	NA	0.26	NA	0	NA	NA	NA	0
Ferric Iron	mg/L		NA	0.09	0.12	NA	0.08	NA	0	NA	NA	NA	0.06
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	NA	191	NA	279	NA	NA	NA	288	NA	289
Phosphorus (365.4)													
PHOSPHORUS	mg/L		NA	NA	0.447	NA	<0.2 U	NA	0.134 J	NA	<0.2 U	NA	0.398 J
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	4.18	NA	5.07	NA	4.68	NA	14.7	NA	5.5 J
Metals (6010C)													
IRON, TOTAL	mg/L		<0.2 U	<0.1 U	NA	<0.1 U	NA	0.12 J	NA	<0.1 U	0.398	0.495	<0.1 U
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	0.0629	NA	NA	0.0765	NA	0.075	NA	0.0565	NA	0.106	NA
THALLIUM	mg/L	0.002	NA	NA	<0.0002 U	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	NA	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	LHSMW19F-052813 5/28/2013	LHSMW19-081313 8/13/2013	LHSMW19-092413 9/24/2013	LHSMW19F-092413 9/24/2013	LHSMW19-012814 1/28/2014	LHSMW19F-012814 1/28/2014	LHSMW19-071614 7/16/2014	LHSMW19F-071614 7/16/2014	LHSMW19-111814 11/18/2014	LHSMW19FF-111814 11/18/2014	LHSMW19-020415 2/4/2015
2,2-DICHLOROPROPANE	ug/L	13	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
2-BUTANONE	ug/L	15000	NA	NA	<5 UJ	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
2-CHLOROTOLUENE	ug/L	490	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
2-HEXANONE	ug/L	120	NA	NA	<5 UJ	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
4-CHLOROTOLUENE	ug/L	490	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	NA	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
ACETONE	ug/L	22000	NA	NA	<5 UJ	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
BENZENE	ug/L	5	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
BROMOBENZENE	ug/L	200	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
BROMOFORM	ug/L	120	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
BROMOMETHANE	ug/L	34	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
CARBON DISULFIDE	ug/L	2400	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
CARBON TETRACHLORIDE	ug/L	5	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
CHLOROBENZENE	ug/L	100	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
CHLOROETHANE	ug/L	98000	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
CHLOROFORM	ug/L	240	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
CHLOROMETHANE	ug/L	70	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	NA	2.44	NA	2.15	NA	1.52	NA	1.59	NA	1.9
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DIBROMOMETHANE	ug/L	120	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
ETHYLBENZENE	ug/L	700	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
M,P-XYLENE	ug/L	10000	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
METHYLENE CHLORIDE	ug/L	5	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
NAPHTHALENE	ug/L	490	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
N-BUTYLBENZENE	ug/L	1200	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
N-PROPYLBENZENE	ug/L	980	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
O-XYLENE	ug/L	10000	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
STYRENE	ug/L	100	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TETRACHLOROETHENE	ug/L	5	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TOLUENE	ug/L	1000	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	NA	NA	0.4 J	NA	0.295 J	NA	<0.5 U	NA	0.271 J	NA	0.281 J
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
TRICHLOROETHENE	ug/L	5	NA	NA	40.9	NA	33.5	NA	28.6	NA	31.2	NA	31.3
TRICHLOROFLUOROMETHANE	ug/L	7300	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
VINYL CHLORIDE	ug/L	2	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
Anions (9056)													
CHLORIDE	mg/L		NA	NA	211	NA	226	NA	271	NA	230	NA	223
NITRATE	mg/L	10	NA	<0.4 U	<2 U	NA	<2 U	NA	<4 U	NA	<1 U	NA	<1 U
NITRITE*	mg/L	1	NA	<0.4 U	<2 U	NA	<2 U	NA	<4 U	NA	<1 U	NA	<1 U
SULFATE	mg/L		NA	NA	454	NA	435	NA	555	NA	563	NA	536

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	LHSMW19F-052813 5/28/2013	LHSMW19-081313 8/13/2013	LHSMW19-092413 9/24/2013	LHSMW19F-092413 9/24/2013	LHSMW19-012814 1/28/2014	LHSMW19F-012814 1/28/2014	LHSMW19-071614 7/16/2014	LHSMW19F-071614 7/16/2014	LHSMW19-111814 11/18/2014	LHSMW19FF-111814 11/18/2014	LHSMW19-020415 2/4/2015
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	NA	40400	NA	61400	NA	62800	NA	473000	NA	104000
ETHANE	ug/L		NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
ETHENE	ug/L		NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
METHANE	ug/L		NA	NA	3.46 J	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		NA	NA	<1 U	NA	<1 U	NA	NA	NA	0.5	NA	<1 U

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	LHSMW19FF-020415 2/4/2015	LHSMW19-050615 5/6/2015	LHSMW19FF-050615 5/6/2015	LHSMW19-080515 8/5/2015	LHSMW19F-080515 8/5/2015	LHSMW19FF-080515 8/5/2015	LHSMW19-020116 2/1/2016	LHSMW19FF-020116 2/1/2016	LHSMW19-080316 8/3/2016	LHSMW19FF-080316 8/3/2016
			Shallow									
Water Quality Parameters												
Temperature	°C		NA	19	NA	28.12	NA	NA	18.56	NA	22.19	NA
pH	pH Units		NA	5.93	NA	5.72	NA	NA	6.43	NA	5.6	NA
Conductivity	mS/cm		NA	2.15	NA	2.74	NA	NA	2.43	NA	2.94	NA
Dissolved Oxygen	mg/L		NA	1.08	NA	0.2	NA	NA	0.38	NA	0.49	NA
Turbidity	NTU		NA	0.4	NA	120	NA	NA	3.5	NA	0	NA
Oxidation Reduction Potential	mV		NA	166	NA	192	NA	NA	64	NA	123	NA
Total Iron	mg/L		NA	0.12	NA	0.07	NA	NA	0	NA	0	NA
Ferrous Iron	mg/L		NA	0.08	NA	0.07	NA	NA	0	NA	0	NA
Ferric Iron	mg/L		NA	0.04	NA	0	NA	NA	0	NA	0	NA
Alkalinity (310.2)												
ALKALINITY, TOTAL	mg/L		NA	381	NA	384	NA	NA	319	NA	438	NA
Phosphorus (365.4)												
PHOSPHORUS	mg/L		NA	1.99	NA	<0.2 U	NA	NA	<0.2 U	NA	0.11 J	NA
Total Organic Carbon (415.1)												
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	7.47 J	NA	8.54 J	NA	NA	11.7	NA	90	NA
Metals (6010C)												
IRON, TOTAL	mg/L		<0.1 U	0.143 J	<0.1 U	NA	<0.1 U	<0.1 U	0.112 J	0.0879 J	0.125 J	<0.1 U
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)												
MANGANESE	mg/L	1.1	0.102	NA	0.0282	NA	NA	0.0991	NA	0.0823	NA	0.0574
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)												
1,1,1,2-TETRACHLOROETHANE	ug/L	35	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	NA	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA
1,1-DICHLOROETHENE	ug/L	7	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA
1,1-DICHLOROPROPENE	ug/L	9.1	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	NA	<0.3 U	NA	<0.3 U	NA	NA	<0.3 U	NA	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	NA	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	NA	<2 UJ	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	NA	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	NA	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	LHSMW19FF-020415 2/4/2015	LHSMW19-050615 5/6/2015	LHSMW19FF-050615 5/6/2015	LHSMW19-080515 8/5/2015	LHSMW19F-080515 8/5/2015	LHSMW19FF-080515 8/5/2015	LHSMW19-020116 2/1/2016	LHSMW19FF-020116 2/1/2016	LHSMW19-080316 8/3/2016	LHSMW19FF-080316 8/3/2016
2,2-DICHLOROPROPANE	ug/L	13	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
2-BUTANONE	ug/L	15000	NA	<5 UJ	NA	<5 U	NA	NA	<5 U	NA	<5 U	NA
2-CHLOROTOLUENE	ug/L	490	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA
2-HEXANONE	ug/L	120	NA	<5 UJ	NA	<5 U	NA	NA	<5 U	NA	<5 UJ	NA
4-CHLOROTOLUENE	ug/L	490	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	NA	<5 UJ	NA	<5 U	NA	NA	<5 U	NA	<5 U	NA
ACETONE	ug/L	22000	NA	<5 U	NA	<5 U	NA	NA	<5 U	NA	<5 U	NA
BENZENE	ug/L	5	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA
BROMOBENZENE	ug/L	200	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	NA	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
BROMOFORM	ug/L	120	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA
BROMOMETHANE	ug/L	34	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA
CARBON DISULFIDE	ug/L	2400	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
CHLOROBENZENE	ug/L	100	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA
CHLOROETHANE	ug/L	98000	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA
CHLOROFORM	ug/L	240	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA
CHLOROMETHANE	ug/L	70	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	0.944 J	NA	2.3	NA	NA	1.92	NA	0.967 J	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
ETHYLBENZENE	ug/L	700	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
M,P-XYLENE	ug/L	10000	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
NAPHTHALENE	ug/L	490	NA	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA
O-XYLENE	ug/L	10000	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
STYRENE	ug/L	100	NA	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
TOLUENE	ug/L	1000	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	NA	<0.5 U	NA	<0.5 U	NA	NA	0.252 J	NA	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	NA	<1 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA
TRICHLOROETHENE	ug/L	5	NA	13.4	NA	26.2	NA	NA	24.2	NA	8.53	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	NA	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA
Anions (9056)												
CHLORIDE	mg/L		NA	237	NA	342	NA	NA	296	NA	365	NA
NITRATE	mg/L	10	NA	<0.2 U	NA	<1 U	NA	NA	<4 U	NA	<2 U	NA
NITRITE*	mg/L	1	NA	<0.2 U	NA	<1 U	NA	NA	<4 U	NA	<2 UJ	NA
SULFATE	mg/L		NA	1190	NA	723	NA	NA	531	NA	733	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	LHSMW19FF-020415 2/4/2015	LHSMW19-050615 5/6/2015	LHSMW19FF-050615 5/6/2015	LHSMW19-080515 8/5/2015	LHSMW19F-080515 8/5/2015	LHSMW19FF-080515 8/5/2015	LHSMW19-020116 2/1/2016	LHSMW19FF-020116 2/1/2016	LHSMW19-080316 8/3/2016	LHSMW19FF-080316 8/3/2016
Dissolved Gases (RSK-175)												
CARBON DIOXIDE	ug/L		NA	453000	NA	502000	NA	NA	95800	NA	854000 J	NA
ETHANE	ug/L		NA	<2 U	NA	<2 U	NA	NA	<2 U	NA	<20 U	NA
ETHENE	ug/L		NA	<2 U	NA	<2 U	NA	NA	<2 U	NA	<20 U	NA
METHANE	ug/L		NA	<2 U	NA	<2 U	NA	NA	<2 U	NA	<20 U	NA
Total Alkalinity (SM2320B-1997)												
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)												
SULFIDE	mg/L		NA	<1 U	NA	<1 U	NA	NA	<1 U	NA	0.519 J	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	LHSMW21-052813 5/28/2013	LHSMW21-092513 9/25/2013	LHSMW25-052513 5/25/2013	LHSMW25F-052513 5/25/2013	LHSMW25-092513 9/25/2013	LHSMW25-092513-FD 9/25/2013	LHSMW25-012514 1/25/2014	LHSMW25-071814 7/18/2014	LHSMW25-112014 11/20/2014	LHSMW25-020615 2/6/2015	LHSMW25-050115 5/1/2015
			Shallow		Intermediate								
Water Quality Parameters													
Temperature	°C		21.13	25.44	24.81	NA	31	NA	19.23	20.82	20.69	17.45	24.28
pH	pH Units		7.03	7.1	6.31	NA	6.92	NA	6.73	6.28	6.64	5.9	6.54
Conductivity	mS/cm		3.09	3.19	2.54	NA	1.76	NA	2.37	2.48	2.31	2.04	1.93
Dissolved Oxygen	mg/L		0	0.63	0	NA	0.48	NA	0.32	0.46	0	0	0.57
Turbidity	NTU		6.5	2.7	19.3	NA	8.4	NA	8.7	4.3	0	3.3	0
Oxidation Reduction Potential	mV		148	85	-17	NA	39	NA	28	15	82	65	-4
Total Iron	mg/L		NA	0.2	NA	NA	1	NA	2.21	2.99	NA	0.85	1.13
Ferrous Iron	mg/L		NA	0.04	NA	NA	0.09	NA	0.68	1.93	NA	0.64	0.77
Ferric Iron	mg/L		NA	0.16	NA	NA	0.91	NA	1.53	1.06	NA	0.21	0.36
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6010C)													
IRON, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	mg/L	0.002	<0.0004 U	<0.0002 U	NA	<0.0002 U	<0.0002 U	<0.0002 U	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	NA	<0.4 UJ	<0.4 U	NA	<0.4 UJ	<0.4 UJ	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	NA	<0.3 U	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	NA	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	NA	<2 U	<2 U	NA	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	NA	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	NA	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	LHSMW21-052813 5/28/2013	LHSMW21-092513 9/25/2013	LHSMW25-052513 5/25/2013	LHSMW25F-052513 5/25/2013	LHSMW25-092513 9/25/2013	LHSMW25-092513-FD 9/25/2013	LHSMW25-012514 1/25/2014	LHSMW25-071814 7/18/2014	LHSMW25-112014 11/20/2014	LHSMW25-020615 2/6/2015	LHSMW25-050115 5/1/2015
2,2-DICHLOROPROPANE	ug/L	13	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	NA	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	NA	<5 UJ	<5 U	NA	<5 UJ	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ
4-METHYL-2-PENTANONE	ug/L	2000	NA	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	NA	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	NA	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	NA	<1 UJ	<1 UJ	NA	<1 UJ	<1 UJ	<1 U	<1 U	<1 UJ	<1 UJ	<1 U
CARBON DISULFIDE	ug/L	2400	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	NA	<1 U	<1 UJ	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	30.6	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	NA	<0.5 U	<0.5 UJ	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ
ISOPROPYLBENZENE	ug/L	2400	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	NA	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	NA	0.596 J	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	NA	1.64	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	NA	1.44	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Anions (9056)													
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE*	mg/L	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	LHSMW21-052813 5/28/2013	LHSMW21-092513 9/25/2013	LHSMW25-052513 5/25/2013	LHSMW25F-052513 5/25/2013	LHSMW25-092513 9/25/2013	LHSMW25-092513-FD 9/25/2013	LHSMW25-012514 1/25/2014	LHSMW25-071814 7/18/2014	LHSMW25-112014 11/20/2014	LHSMW25-020615 2/6/2015	LHSMW25-050115 5/1/2015
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity (SM2320B-1997)													
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	LHSMW25-080415 8/4/2015	LHSMW25FD-080415 8/4/2015	LHSMW25-020216 2/2/2016	LHSMW25FD-020216 2/2/2016	LHSMW25-080416 8/4/2016
			Intermediate				
Water Quality Parameters							
Temperature	°C		21.19	NA	19.93	NA	22.78
pH	pH Units		5.58	NA	5.71	NA	5.54
Conductivity	mS/cm		2.3	NA	2.11	NA	2.18
Dissolved Oxygen	mg/L		0.05	NA	0.55	NA	0.54
Turbidity	NTU		4.6	NA	1.7	NA	0
Oxidation Reduction Potential	mV		129	NA	195	NA	219
Total Iron	mg/L		1.39	NA	1.02	NA	2.21
Ferrous Iron	mg/L		0.56	NA	0.06	NA	0
Ferric Iron	mg/L		0.88	NA	0.96	NA	2.21
Alkalinity (310.2)							
ALKALINITY, TOTAL	mg/L		NA	NA	NA	NA	NA
Phosphorus (365.4)							
PHOSPHORUS	mg/L		NA	NA	NA	NA	NA
Total Organic Carbon (415.1)							
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA
Metals (6010C)							
IRON, TOTAL	mg/L		NA	NA	NA	NA	NA
MAGNESIUM	mg/L		NA	NA	NA	NA	NA
Metals (6020A)							
MANGANESE	mg/L	1.1	NA	NA	NA	NA	NA
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA
Volatile Organic Compounds (8260B)							
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	LHSMW25-080415 8/4/2015	LHSMW25FD-080415 8/4/2015	LHSMW25-020216 2/2/2016	LHSMW25FD-020216 2/2/2016	LHSMW25-080416 8/4/2016
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 UJ	<5 UJ	<5 U
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 U	<1 U	<1 UJ
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Anions (9056)							
CHLORIDE	mg/L		NA	NA	NA	NA	NA
NITRATE	mg/L	10	NA	NA	NA	NA	NA
NITRITE*	mg/L	1	NA	NA	NA	NA	NA
SULFATE	mg/L		NA	NA	NA	NA	NA

Table 2-2: Groundwater Analytical Results, 3 Years RA(O) - LHAAP-46

Location ID: / Sample Date:	Units	MCL/ PCL	LHSMW25-080415 8/4/2015	LHSMW25FD-080415 8/4/2015	LHSMW25-020216 2/2/2016	LHSMW25FD-020216 2/2/2016	LHSMW25-080416 8/4/2016
Dissolved Gases (RSK-175)							
CARBON DIOXIDE	ug/L		NA	NA	NA	NA	NA
ETHANE	ug/L		NA	NA	NA	NA	NA
ETHENE	ug/L		NA	NA	NA	NA	NA
METHANE	ug/L		NA	NA	NA	NA	NA
Total Alkalinity (SM2320B-1997)							
ALKALINITY, TOTAL (as CaCO3)	mg/L		NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)							
SULFIDE	mg/L		NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

* Some of the samples were diluted to the point that the RLs for Nitrate were elevated above the MCL.

"F" in Sample ID indicates a field filtered sample with 10 micron filter.

"FF" in Sample ID indicates a field filtered sample with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - maximum contaminant level

mg/L - milligrams per liter

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-3: Historical COC Concentrations - LHAAP-46

Sample ID: / Sample Date:	Units	MCL	46WW01-981001 10/1/1998	46WW01-981107 11/7/1998	46WW01-981107FD 11/7/1998	46WW01-FEB2007 2/19/2007	46WW01-032916 3/29/2016	46WW01-080416 8/4/2016	46WW02-981106 11/6/1998	46WW02-FEB2007 2/20/2007	46WW02-102808 10/28/2008	46WW02-052813 5/28/2013	46WW02-091913 9/19/2013	46WW02-012714 1/27/2014	46WW02-071514 7/15/2014
Well Designation:			**Shallow**						**Intermediate**						
CIS-1,2-DICHLOROETHENE	ug/L	70	1.2	<1 U	<1 U	<2 U	<0.5 U	<0.5 U	1	1.4 J	1.45	1.76	1.91	2.09	1.72
TRICHLOROETHENE	ug/L	5	6.6	<1 U	<1 U	<2 U	<0.5 U	<0.5 U	24	28.9	31.2	30	37.4	35.2	32.8
VINYL CHLORIDE	ug/L	2	<1 U	<1 U	<1 U	<2 U	<0.5 U	<0.5 U	<1 U	<2 U	<1 U	0.495 J	0.465 J	0.556 J	0.493 J

Blue Highlighting Indicates Analyte Detected Above MCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

NA - not analyzed

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical COC Concentrations - LHAAP-46

Sample ID: / Sample Date:	Units	MCL	46WW02-111814 11/18/2014	46WW02-020515 2/5/2015	46WW02-050615 5/6/2015	46WW02-080515 8/5/2015	46WW02-020116 2/1/2016	46WW02-080416 8/4/2016	46WW03-981106 11/6/1998	46WW03-053013 5/30/2013	46WW03-053013-FD 5/30/2013	46WW03-092613 9/26/2013	46WW03-012514 1/25/2014	46WW03FD-012514 1/25/2014	46WW03-071714 7/17/2014	46WW03-112014 11/20/2014	46WW03FD-112014 11/20/2014
Well Designation:			**Intermediate**						**Deep**								
CIS-1,2-DICHLOROETHENE	ug/L	70	1.97	2.08	1.44	1.37	1.28	1.31	<1 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	38.2	37.6	24	20.3	16.6	20.7	<1 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	0.501 J	0.432 J	<0.5 U	<0.5 U	<0.5 U	0.259 J	<1 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

NA - not analyzed

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical COC Concentrations - LHAAP-46

Sample ID: / Sample Date:	Units	MCL	46WW03-020515 2/5/2015	46WW03-050615 5/6/2015	46WW03-080515 8/5/2015	46WW03FD-080515 8/5/2015	46WW03-020316 2/3/2016	46WW03-080416 8/4/2016	46WW04-981107 11/7/1998	46WW04-FEB2007 2/19/2007	46WW04F-052413 5/24/2013	46WW04-092113 9/21/2013	46WW04-012514 1/25/2014	46WW04-071814 7/18/2014	46WW04-050615 5/6/2015	46WW04-080515 8/5/2015	46WW04-020316 2/3/2016
Well Designation:			**Deep**						**Shallow**								
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<2 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.71	<2 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<2 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

NA - not analyzed

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical COC Concentrations - LHAAP-46

Sample ID: / Sample Date:	Units	MCL	46WW05-100908 10/9/2008	46WW05-053013 5/30/2013	46WW05-092413 9/24/2013	46WW05-012814 1/28/2014	46WW05-071614 7/16/2014	46WW05-111914 11/19/2014	46WW05-020515 2/5/2015	46WW05-050515 5/5/2015	46WW05-080615 8/6/2015	46WW05-020116 2/1/2016	46WW05-080316 8/3/2016	46WW06-100908 10/9/2008	46WW06-052413 5/24/2013	46WW06-092513 9/25/2013	46WW06-012514 1/25/2014
Well Designation:			**Intermediate**											**Intermediate**			
CIS-1,2-DICHLOROETHENE	ug/L	70	1.72	10.2	8.12	10.3	9.74	9.55	10.9	7	3.87	3.12	1.86	<1 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	5.9	144	112	131	130	128	143	80.5	34	46.4	23.6	<1 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<1 U	2.14	1.79	2.53	2.09	1.59	1.72	0.956 J	0.274 J	0.832 J	0.522 J	<1 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

NA - not analyzed

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical COC Concentrations - LHAAP-46

Sample ID: / Sample Date:	Units	MCL	46WW06-071714 7/17/2014	46WW06FD-071714 7/17/2014	46WW06-111914 11/19/2014	46WW06FD-111914 11/19/2014	46WW06-020615 2/6/2015	46WW06-050115 5/1/2015	46WW06-080415 8/4/2015	46WW06-020216 2/2/2016	46WW06-080416 8/4/2016	46WW06FD-080416 8/4/2016	46WW07-052513 5/25/2013	46WW07-052513-FD 5/25/2013	46WW07-091913 9/21/2013	46WW07-012714 1/27/2014	46WW07-071814 7/18/2014
Well Designation:			**Intermediate**										**Intermediate**				
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

NA - not analyzed

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical COC Concentrations - LHAAP-46

Sample ID: / Sample Date:	Units	MCL	46WW07FD-071814 7/18/2014	46WW07-112014 11/20/2014	46WW07-020315 2/3/2015	46WW07-050115 5/1/2015	46WW07-080415 8/4/2015	46WW07-020216 2/2/2016	46WW07-080216 8/2/2016	46WW08-052513 5/25/2013	46WW08-092113 9/21/2013	46WW08-092113-FD 9/21/2013	46WW08-012814 1/28/2014	46WW08FD-012814 1/28/2014	46WW08-071814 7/18/2014	46WW08-112014 11/20/2014	46WW08-020315 2/3/2015
Well Designation:			**Intermediate**							**Intermediate**							
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

NA - not analyzed

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical COC Concentrations - LHAAP-46

Sample ID: / Sample Date:	Units	MCL	46WW08FD-020315 2/3/2015	46WW08-050115 5/1/2015	46WW08FD-050115 5/1/2015	46WW08-080415 8/4/2015	46WW08-020316 2/3/2016	46WW08-080216 8/2/2016	46WW09-053013 5/30/2013	46WW09-092413 9/24/2013	46WW09-012714 1/27/2014	46WW09-071514 7/15/2014	46WW09-111914 11/19/2014	46WW09-020515 2/5/2015	46WW09-050515 5/5/2015	46WW09-080615 8/6/2015	46WW09-020216 2/2/2016
Well Designation:			**Intermediate**						**Intermediate**								
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

NA - not analyzed

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical COC Concentrations - LHAAP-46

Sample ID: / Sample Date:	Units	MCL	46WW09-080316 8/3/2016	46WW10-052513 5/25/2013	46WW10-092113 9/21/2013	46WW10-012514 1/25/2014	46WW10-071714 7/17/2014	46WW10-112014 11/20/2014	46WW10-020415 2/4/2015	46WW10-050615 5/6/2015	46WW10FD-050615 5/6/2015	46WW10-080515 8/5/2015	46WW10-020316 2/3/2016	46WW10-080416 8/4/2016	46WW11-081413 8/14/2013	46WW11-091913 9/19/2013	46WW11-012814 1/28/2014
Well Designation:			**Intermediate**	**Shallow**											**Shallow**		
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	1.56	1.11	2.04
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	85.9	79.8	87.5
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

NA - not analyzed

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical COC Concentrations - LHAAP-46

Sample ID: / Sample Date:	Units	MCL	46WW11-071614 7/16/2014	46WW11-111814 11/18/2014	46WW11-020415 2/4/2015	46WW11-050615 5/6/2015	46WW11-080515 8/5/2015	46WW11-020116 2/1/2016	46WW11-080316 8/3/2016	46WW13-052913 5/29/2013	46WW13-092413 9/24/2013	46WW14-052913 5/29/2013	46WW14-091913 9/19/2013	46WW14-012714 1/27/2014	46WW14-071514 7/15/2014	46WW14-111914 11/19/2014	46WW14-020615 2/6/2015
Well Designation:			**Shallow**							**Shallow**		**Intermediate**					
CIS-1,2-DICHLOROETHENE	ug/L	70	2.12	1.28	1.99	1.4	0.749 J	0.578 J	0.325 J	37.3	35.5	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	90.6	70.7	63.6	45.3	26.3	20.5	21.2	107	103	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	13.1	9.83	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

NA - not analyzed

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical COC Concentrations - LHAAP-46

Sample ID: / Sample Date:	Units	MCL	46WW14FD-020615 2/6/2015	46WW14-050515 5/5/2015	46WW14-020216 2/2/2016	46WW14FD-020216 2/2/2016	46WW14-080216 8/2/2016	46WW14FD-080216 8/2/2016	46WW16-070114 7/1/2014	46WW16-071614 7/16/2014	46WW16-111814 11/18/2014	46WW16-050515 5/5/2015	46WW16-080615 8/6/2015	46WW16-020116 2/1/2016	46WW16-080316 8/3/2016	LHSMW08-960813 8/13/1996	LHSMW08-960813FD 8/13/1996
Well Designation:			**Intermediate**						**Intermediate**							**Intermediate**	
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.2 U	<0.2 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.25 U	<0.25 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.24 U	<0.24 U

Blue Highlighting Indicates Analyte Detected Above MCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

NA - not analyzed

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical COC Concentrations - LHAAP-46

Sample ID: / Sample Date:	Units	MCL	LHSMW08-980513 5/13/1998	LHSMW11-960813 8/13/1996	LHSMW11-980514 5/14/1998	LHSMW11-980514FD 5/14/1998	LHSMW11-031508 3/15/2008	LHSMW12-960813 8/13/1996	LHSMW12-980514 5/14/1998	LHSMW14-941129 11/29/1994	LHSMW14-960814 8/14/1996	LHSMW14-960814FD 8/14/1996	LHSMW14-980514 5/14/1998	LHSMW14-092413 9/24/2013	LHSMW15-960815 8/15/1996	LHSMW15-980514 5/14/1998	LHSMW15-102708 10/27/2008
Well Designation:			**Intermediate**	**Shallow**				**Shallow**		**Shallow**					**Shallow**		
CIS-1,2-DICHLOROETHENE	ug/L	70	<1 U	<0.2 U	<1 U	<1 U	<1 U	<0.2 U	<1 U	NA	<0.2 U	<0.2 U	<1 U	<0.5 U	<0.2 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<1 U	<0.25 U	<1 U	<1 U	<1 U	<0.25 U	<1 U	<5 U	<0.25 U	<0.25 U	<1 U	<0.5 U	<0.25 U	<1 U	<1 U
VINYL CHLORIDE	ug/L	2	<1 U	<0.24 U	<1 U	<1 U	<1 U	<0.24 U	<1 U	NA	<0.24 U	<0.24 U	<1 U	<0.5 U	<0.24 U	<1 U	<1 U

Blue Highlighting Indicates Analyte Detected Above MCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

NA - not analyzed

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical COC Concentrations - LHAAP-46

Sample ID: / Sample Date:	Units	MCL	LHSMW16-941129 11/29/1994	LHSMW16-960815 8/15/1996	LHSMW16-980514 5/14/1998	LHSMW17-960815 8/15/1996	LHSMW17-980514 5/14/1998	LHSMW17-000524 5/24/2000	LHSMW17-000524FD 5/24/2000	LHSMW17-001002FD 10/2/2000	LHSMW17-001003 10/3/2000	LHSMW18-941202 12/2/1994	LHSMW18-960212 2/12/1996	LHSMW18-960815 8/15/1996	LHSMW18-980514 5/14/1998	LHSMW18-FEB2007 2/20/2007	LHSMW18-032916 3/29/2016
Well Designation:			**Shallow**			**Shallow**						**Shallow**					
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	<0.2 U	<1 U	<0.2 U	<1 U	<1 U	9.6	<1 U	<1 U	NA	4.5	6.1	9.8	1.5 J	1.28
TRICHLOROETHENE	ug/L	5	<5 U	<0.25 U	<1 U	<0.25 U	<1 U	<1 U	1	<1 U	<1 U	14	21	27.5	38	4.8	3.35
VINYL CHLORIDE	ug/L	2	NA	<0.24 U	<1 U	<0.24 U	<1 U	<1 U	<100 U	<1 U	<1 U	NA	<1	0.68	0.71	<2 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

NA - not analyzed

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical COC Concentrations - LHAAP-46

Sample ID: / Sample Date:	Units	MCL	LHSMW19-941202 12/2/1994	LHSMW19-960206 2/6/1996	LHSMW19-960815 8/15/1996	LHSMW19-980515 5/15/1998	LHSMW19-FEB2007 2/20/2007	LHSMW19-110620 6/20/2011	LHSMW19-052813 5/28/2013	LHSMW19-092413 9/24/2013	LHSMW19-012814 1/28/2014	LHSMW19-071614 7/16/2014	LHSMW19-111814 11/18/2014	LHSMW19-020415 2/4/2015	LHSMW19-050615 5/6/2015	LHSMW19-080515 8/5/2015	LHSMW19-020116 2/1/2016	LHSMW19-080316 8/3/2016
Well Designation:			**Shallow**															
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	NA	<0.2 U	<1 U	<2 U	2.98	1.45	2.44	2.15	1.52	1.59	1.9	0.944 J	2.3	1.92	0.967 J
TRICHLOROETHENE	ug/L	5	26	77	47.1	70	85.5	66.4	32.3	40.9	33.5	28.6	31.2	31.3	13.4	26.2	24.2	8.53
VINYL CHLORIDE	ug/L	2	NA	NA	<0.24 U	<1 U	<2 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

NA - not analyzed

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical COC Concentrations - LHAAP-46

Sample ID: / Sample Date:	Units	MCL	LHSMW20-960815 8/15/1996	LHSMW20-980515 5/15/1998	LHSMW20-102708 10/27/2008	LHSMW21-960815 8/15/1996	LHSMW21-980515 5/15/1998	LHSMW21-092513 9/25/2013	LHSMW22-960207 2/7/1996	LHSMW22-960815 8/15/1996	LHSMW22-980515 5/15/1998	LHSMW22-FEB2007 2/19/2007	LHSMW23-941204 12/4/1994	LHSMW23-941204FD 12/4/1994	LHSMW23-960815 8/15/1996	LHSMW23-980515 5/15/1998
Well Designation:			**Shallow**			**Shallow**			**Shallow**				**Intermediate**			
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.2 U	<1 U	<1 U	<0.2 U	<1 U	30.6	NA	0.54	1.1	<2 U	NA	NA	<0.2 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.25 U	<1 U	<1 U	<0.25 U	<1 U	1.64	1	1.7	3.1	<2 U	<5 U	<5 U	<0.25 U	1.3
VINYL CHLORIDE	ug/L	2	<0.24 U	<1 U	<1 U	<0.24 U	<1 U	1.44	NA	<0.24 U	<1 U	<2 U	NA	NA	<0.24 U	<1 U

Blue Highlighting Indicates Analyte Detected Above MCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

NA - not analyzed

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical COC Concentrations - LHAAP-46

Sample ID: / Sample Date:	Units	MCL	LHSMW23-FEB2007 2/19/2007	LHSMW23-102808 10/28/2008	LHSMW24-941204 12/4/1994	LHSMW24-960820 8/20/1996	LHSMW24-980515 5/15/1998	LHSMW25-941204 12/4/1994	LHSMW25-960820 8/20/1996	LHSMW25-980515 5/15/1998	LHSMW25-102808 10/28/2008	LHSMW25-102808-QA 10/28/2008	LHSMW25-052513 5/25/2013	LHSMW25-092513 9/25/2013	LHSMW25-092513-FD 9/25/2013	LHSMW25-012514 1/25/2014	LHSMW25-071814 7/18/2014
Well Designation:			**Intermediate**		**Shallow**			**Intermediate**									
CIS-1,2-DICHLOROETHENE	ug/L	70	<2 U	0.614 J	NA	<0.2 U	<1 U	NA	<0.2 U	<1 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	1.4 J	2.51	<5 U	<0.25 U	<1 U	<5 U	<0.25 U	<1 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<2 U	0.412 J	NA	<0.24 U	<1 U	NA	<0.24 U	<1 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

NA - not analyzed

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-3: Historical COC Concentrations - LHAAP-46

Sample ID: / Sample Date:	Units	MCL	LHSMW25-112014 11/20/2014	LHSMW25-020615 2/6/2015	LHSMW25-050115 5/1/2015	LHSMW25-080415 8/4/2015	LHSMW25FD-080415 8/4/2015	LHSMW25-020216 2/2/2016	LHSMW25FD-020216 2/2/2016	LHSMW25-080416 8/4/2016	LHSMW27-960820 8/20/1996	LHSMW27-980515 5/15/1998
Well Designation:			**Intermediate**								**Shallow**	
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.2 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.25 U	<1 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.24 U	<1 U

Blue Highlighting Indicates Analyte Detected Above MCL

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

NA - not analyzed

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Well Maintenance Activities Year 3 RA(O) - LHAAP-46

Well ID	Date Inspected	Pads	Bollards	Protective Casings	Locks	Date Mowed	Photos	Comments
46WW01	02/01/16	Good	Good	Good	In Place	8/3/2015	Yes	Painted in August 2015
	03/28/16					7/28/2016	No	
	08/03/16						No	
46WW02	02/01/16	Good	Good	Good	In Place	8/3/2015	Yes	Painted in August 2015
	08/04/16					7/28/2016	No	
46WW03	02/03/16	Good	Good	Good	In Place	8/3/2015	Yes	Painted in August 2015
	08/04/16					7/28/2016	No	
46WW04	02/02/16	Good	Good	Good	In Place	8/3/2015	No	Painted in August 2015
	08/03/16					7/28/2016	No	
46WW05	02/01/16	Good	Good	Good	In Place	8/3/2015	Yes	Painted in August 2015
	08/03/16					7/28/2016	No	
46WW06	02/02/16	Good	Good	Good	In Place	8/3/2015	No	Painted in August 2015
	08/04/16					7/28/2016	No	
46WW07	02/02/16	Good	Good	Good	In Place	8/3/2015	No	
	08/02/16					7/28/2016	No	
46WW08	02/03/16	Good	Good	Good	In Place	8/3/2015	No	
	08/02/16					7/28/2016	No	
46WW09	02/02/16	Good	Good	Good	In Place	8/3/2015	No	
	08/03/16					7/28/2016	No	
46WW10	02/02/16	Good	Good	Good	In Place	8/3/2015	No	
	08/03/16					7/28/2016	No	
46WW11	02/01/16	Good	Good	Good	In Place	8/3/2015	Yes	Painted in August 2015
	08/03/16					7/28/2016	No	
46WW12	02/01/16	Good	Good	Good	In Place	8/3/2015	No	
	08/04/16					7/28/2016	No	
46WW13	02/01/16	Good	Good	Good	In Place	8/3/2015	No	
	08/04/16					7/28/2016	No	
46WW15	02/01/16	Good	Good	Good	In Place	8/3/2015	No	
	08/04/16					7/28/2016	No	
46WW16	02/01/16	Good	Good	Good	In Place	8/3/2015	Yes	
	08/03/16					7/28/2016	No	
LHSMW08	02/03/16	Good	Needs Paint	Needs Paint	In Place	8/3/2015	No	
	08/05/16					7/28/2016	No	
LHSMW11	02/03/16	Good	Needs Paint	Needs Paint	In Place	8/3/2015	No	
	08/05/16					7/28/2016	No	
LHSMW12	02/03/16	Good	Needs Paint	Needs Paint	In Place	8/3/2015	No	
	08/05/16					7/28/2016	No	
LHSMW14	02/03/16	Good	Needs Paint	Needs Paint	In Place	8/3/2015	No	
	08/05/16					7/28/2016	No	

Table 2-4: Well Maintenance Activities Year 3 RA(O) - LHAAP-46

Well ID	Date Inspected	Pads	Bollards	Protective Casings	Locks	Date Mowed	Photos	Comments
LHSMW15	02/03/16	Good	Needs Paint	Needs Paint	In Place	8/3/2015	No	
	08/05/16					7/28/2016	No	
LHSMW16	02/03/16	Good	Needs Paint	Needs Paint	In Place	8/3/2015	No	
	08/05/16					7/28/2016	No	
LHSMW17	02/02/16	Good	Good	Good	In Place	8/3/2015	No	
	08/03/16					7/28/2016	No	
LHSMW18	02/02/16	Good	Good	Good	In Place	8/3/2015	No	Painted in August 2015
	03/28/16					7/28/2016	No	
	08/03/16						No	
LHSMW19	02/01/16	Good	Good	Good	In Place	8/3/2015	Yes	Painted in August 2015
	08/03/16					7/28/2016	No	
LHSMW20	02/01/16	Good	Good	Good	In Place	8/3/2015	Yes	Painted in August 2015
	08/04/16					7/28/2016	No	
LHSMW21	02/02/16	Good	Needs Paint	Needs Paint	In Place	8/3/2015	No	
	08/05/16					7/28/2016	No	
LHSMW22	02/01/16	Good	Good	Good	In Place	8/3/2015	No	Painted in August 2015
	08/04/16					7/28/2016	No	
LHSMW23	02/01/16	Good	Good	Good	In Place	8/3/2015	No	Painted in August 2015
	03/28/16					7/28/2016	No	
	08/04/16						No	
LHSMW24	02/02/16	Good	Needs Paint	Needs Paint	In Place	8/3/2015	No	
	08/05/16					7/28/2016	No	
LHSMW25	02/02/16	Good	Good	Good	In Place	8/3/2015	No	Painted in August 2015
	08/04/16					7/28/2016	No	
LHSMW27	02/02/16	Good	Needs Paint	Needs Paint	In Place	8/3/2015	No	
	08/05/16					7/28/2016	No	

3 NATURAL ATTENUATION EVALUATION

The following sections present the results of the natural attenuation evaluation in accordance with the first line of evidence described in the Final RD (Shaw, 2011) for LHAAP-46 groundwater COCs. Five shallow zone wells, nine intermediate zone wells, and one deep zone well were sampled. Analytical results are summarized in **Table 2-2**.

The second and third lines of evidence (geochemical indicators and predictive modeling and microbial analysis) described in the Final RD (Shaw, 2011) and discussed in the Year 1 RA(O) (AECOM, 2015b) and Year 2 RA(O) (AECOM, 2016) reports were not evaluated in Year 3. In accordance with the RAWP (AECOM, 2013), long-term monitoring frequency was reduced to semi-annual and the evaluation was limited to VOC concentrations. Furthermore, a full MNA performance evaluation cannot be applied because some MNA parameter wells continue to be dry.

Analytical results for geochemical parameters analyzed for in Year 3 are summarized in Table 2-2; however, as noted above, an evaluation of these parameters as the second line of evidence was not conducted.

3.1 First Line of Evidence: Change in COC Concentrations over Time and with Distance

Natural attenuation is the combination of multiple mechanisms, including biodegradation, volatilization, dilution, advection, and absorption that reduce contaminant concentrations. The decrease of COC concentrations over time and distance is evidence of natural attenuation. The change in groundwater COC concentrations over time and with distance was evaluated at LHAAP-46. **Table 2-3** provides historical results for COCs.

3.1.1 Shallow Zone

The shallow zone TCE plume is centered around wells 46WW11 and LHSMW19 (**Figure 2-8** and **Figure 2-9**). Concentration trends for these wells are discussed below, followed by discussion of trends observed at additional shallow zone wells.

<u>Well LHSMW19</u>

LHSMW19 was installed during the investigation phase at LHAAP-46. A total of 16 data sets for VOCs are available for this well. **Figure 2-12** includes a graph of TCE concentrations over time for LHSMW19. TCE was detected above the MCL in 1994 at 26 mg/L and increased to a maximum concentration of 85.5 mg/L in February 2007 followed by a gradual decrease to a minimum concentration of 8.53 mg/L in August 2016.

cis-1,2-DCE (degradation product of TCE) concentrations were 1.92 µg/L (February 2016) and 0.967 µg/L (August 2016) in the 3rd year RA(O) monitoring period, which are generally consistent with historical concentrations detected in this well. VC (degradation product of cis-1,2-DCE) has remained below laboratory reporting limits (generally <0.5 mg/L).

Mann-Kendall analysis for the data collected during the 3-year RA(O) monitoring period was completed for TCE and cis-1,2-DCE. The results are presented in **Appendix E** and are summarized in **Table 3-1**. The Mann-Kendall trend analysis for LHSMW19 during the past three

years indicates a statistically significant decrease in TCE concentrations over time, but no significant trend for cis-1,2-DCE. This longer term decreasing trend for TCE, combined with the presence of cis-1,2-DCE, suggests that natural attenuation could be occurring.

Well 46WW11

Well 46WW11 was installed during the remedy implementation phase. 46WW11 was dry in May 2013 but has been sampled since, with 10 data points generated during the 3-year RA(O) period. A graph of TCE concentrations over time at 46WW11 are included in **Figure 2-12**. TCE sample results from well 46WW11 were 20.5 µg/L in February 2016 and 21.2 µg/L in August 2016; which were lower than TCE concentrations from previous sample events for this well. cis-1,2-DCE concentrations were 0.578 mg/L in February 2016 and 0.325 µg/L in August 2016, which were also less than concentrations in previous years. VC was not detected during the 2016 events, consistent with past results at 46WW11.

Mann-Kendall trend analysis for the data collected during the 3-year RA(O) period was completed for TCE, and cis-1,2-DCE. The results are presented in **Appendix E** and summarized in **Table 3-1.** The trend analysis for 46WW11 for the past three years indicates a statistically significant decrease in TCE concentrations and cis-1,2-DCE. The longer term decreasing trend for TCE, combined with the presence of cis-1,2-DCE, suggests that natural attenuation could be occurring.

Table 3-1: Mann-Kendall Trend Summary

Monitoring Well	1,1-DCE*	cis-1,2-DCE*	TCE	VC*
Shallow Zone Wells				
46WW11	--	**Significant Decrease**	**Significant Decrease**	--
LHSMW19	--	No significant trend	**Significant Decrease**	--
Intermediate Zone Wells				
46WW02	--	**Significant Decrease**	No significant trend	--
46WW05	**Significant Decrease**	**Significant Decrease**	**Significant Decrease**	**Significant Decrease**

* Most recent concentrations already achieve MCLs.

46WW13

TCE and VC concentrations in shallow monitoring well 46WW13 were above their respective MCLs in May 2013 and September 2013 samples, but the well has not been sampled since September 2013 because it has been dry. TCE levels detected in well 46WW13 samples were 107 µg/L (May 2013) and 103 µg/L (September 2013), exceeding the MCL. cis-1,2-DCE was detected below the MCL in May 2013 (37.3 µg/L) and in September 2013 (35.5 µg/L). VC was detected above the MCL in May 2013 (13.1 µg/L) and September 2013 (9.83 µg/L). The presence of cis-1,2-DCE and VC, which are degradation products of TCE indicate biodegradation has occurred, but due to the short period for which data are available, further analysis cannot be conducted. **Figure 2-12** includes graphs of concentrations of TCE, cis-1,2-DCE, and VC in 46WW13 over time.

Other Shallow Zone Wells

TCE was historically detected above the MCL in samples from wells 46WW01 and LHSMW18. Samples could not be collected from 46WW01 and LHSMW18 during the first two years of RA(O) because the wells were dry. However, well 46WW01 was sampled in March and August 2016 and well LHSMW18 was sampled in March 2016.

TCE was not detected (<0.5 µg/L) in 46WW01 in the March 2016 or August 2016 samples. Historically, TCE was not detected in well 46WW01 from November 1998 through February 2007.

The March 2016 LHSMW18 TCE result was 3.35 mg/L, which is below the MCL. Historically, TCE in LHSMW18 was above the MCL in 1998 (38 mg/L) and decreased to 4.8 mg/L in February 2007. Samples from LHSMW18 have also historically contained cis-1,2-DCE and VC. cis-1,2-DCE concentrations decreased in samples from LHSMW18 from 1998 (10 mg/L) to 2007 (1.5 J mg/L); the March 2016 result was 1.28 mg/L. Vinyl chloride was not detected (<0.5 mg/L) at LHSMW18 in March 2016. **Figure 2-12** includes graphs of concentrations of TCE and cis-1,2-DCE at LHSMW18 over time.

Although correlation calculations evaluating groundwater levels and COC concentrations were performed in Year 1 and Year 2 of RA(O), correlation calculations are not considered warranted for the Year 3 evaluation.

3.1.2 Intermediate Zone

Two separate VOC plumes are located within the intermediate zone. Wells 46WW02 and 46WW05 are located within the plumes (**Figure 2-10** and **Figure 2-11**). Concentration trends for these wells are discussed below.

Well 46WW02

46WW02 was installed during the investigation phase and has COC data from November 1998, February 2007, October 2008, and for the 3-year RA(O) monitoring period. The TCE concentrations in this well exceed the MCL, but have remained fairly steady, generally ranging from 24 µg/L to 38.2 µg/L, with some recent concentrations as low as 16.6 ug/L. Concentrations during the 2nd and 3rd year RA(O) monitoring periods were 24 µg/L in May 2015, 20.3 µg/L in August 2015, 16.6 µg/L in February 2016, and 20.7 µg/L in August 2016. cis-1,2-DCE concentrations have remained below the MCL at 1.28 µg/L and 1.31 µg/L during the 3rd year RA(O) monitoring period, and for all sampling events, ranged between 1 mg/L and 2.09 mg/L. VC has been detected, but only as estimated (J-flagged) concentrations below the quantitation limit (0.5 µg/L) in 2013, 2014, and February 2015 sampling events. VC was not detected (<0.5 mg/L) during May 2015, August 2015, and February 2016 sampling events, but it was detected as an estimated concentration (0.259 J mg/L) during the August 2016 event. **Figure 2-13** includes a graph of TCE, cis-1,2-DCE, and VC concentrations in 46WW02 over time.

Mann-Kendall trend analysis for the data collected during the 3-year RA(O) period was completed for TCE, and cis-1,2-DCE. The results are presented in **Appendix E.** The trend analysis in 46WW02 during the past three years indicates insufficient statistical evidence of a significant trend in TCE and a statistical decreasing trend for cis-1,2-DCE.

Although TCE concentrations are not increasing in well 46WW02, the overall constant concentrations combined with the limited presence of daughter products, suggests only very limited natural attenuation may be occurring in the vicinity well 46WW02.

Well 46WW05

46WW05 was installed during the investigation phase. VOC groundwater results are available for 46WW05 from October 2008 and for the 3-year RA(O) monitoring period. TCE, VC, cis-1,2-DCE and 1,1-DCE have historically been detected in 46WW05. TCE has remained above its MCL in this well throughout its monitored history. In October 2008, the TCE concentration was 5.9 µg/L; however, the TCE concentrations were generally more than an order of magnitude higher during the majority of the 2-year RA(O) period. The highest TCE concentration was reported in May 2013 at 144 µg/L and fluctuated near this level through February 2015. TCE concentrations decreased in May 2015 (80.5 µg/L) and again in August 2015 (34 µg/L). TCE concentrations increased to 46.4 µg/L in February 2016 and then decreased again to 23.6 µg/L in August 2016. Concentrations of 1,1-DCE were reported above the MCL of 7 µg/L between May 2013 and February 2015 but decreased to below the MCL in May and August 2015. Concentrations of 1,1-DCE have remained below the MCL for the 3rd year RA(O) period (3.29 µg/L and 1.84J µg/L).

cis-1,2-DCE and VC concentrations are below MCLs. cis-1,2-DCE levels steadily decreased from 10.9 µg/L (February 2015) to 1.86 µg/L (August 2016). VC concentrations during the 3-year RA(O) period range from 2.53 µg/L (January 2014) to 0.274 J µg/L (August 2015). February and August 2016 VC results were 0.832 J µg/L and 0.522 J µg/L, respectively. **Figure 2-13** includes a graph of concentrations of TCE, cis-1,2-DCE, and VC in 46WW02 over time.

Mann-Kendall trend analysis for the data collected during the 3-year RA(O) period was completed for TCE, cis-1,2-DCE, VC, and 1,1-DCE. The results are presented in **Appendix E**. The trend analysis in 46WW05 during the past three years indicates a statistically significant decrease in TCE, cis-1,2-DCE, VC, and 1,1-DCE concentrations over time.

The overall decreasing level of TCE and the presence of daughter products, although also at decreasing levels, indicate that limited natural attenuation is occurring in the vicinity of well 46WW05.

3.1.3 Deep Zone

The single deep zone well at LHAAP-46, 46WW03, was installed during the investigation phase. No COCs were detected in the past or during the 3rd year RA(O) monitoring period.

3.1.4 Plume Stability

COC plume maps completed for each sampling event are presented for the shallow zone in **Figures 2-8** and **2-9** and for the intermediate zone in **Figures 2-10** and **2-11**.

The COC data over the monitoring period indicate that the shallow zone plume is generally stable with decreasing concentrations observed over the last two years.

Based on the direction of shallow groundwater flow (towards the east), the following wells are considered to be along the following groundwater flow paths:

- 46WW10, LHSMW19, 46WW11, 46WW12, and LHSMW24; and
- 46WW04, LHSMW18, 46WW13, and 46WW15.

Based on the eastward direction of groundwater flow, monitoring well 46WW10 is considered a background well for the shallow zone. The COCs in upgradient well 46WW10 have remained below the MCLs throughout its monitoring history. The in-plume wells (LHSMW19 and 46WW11) exhibit the highest levels of COCs along this plume path, which have generally remained stable, with a recent decreasing trend. The downgradient well 46WW12 remained dry during the monitoring period. Monitoring well LHSMW24 was dry during the 1st year RA(O) period and is no longer included in the monitoring program. However, historical results for the period between 1994 and 1998 for LHSMW24 were below the detection limits for TCE, cis-1,2-DCE, and VC, with the reporting limits below the MCLs. Therefore, from a historical perspective, the extent of contamination in the shallow zone along this flow path has been defined. The dry wells along the eastern and downgradient plume boundary demonstrate that dry conditions limit the potential for plume migration.

Along the flow path of 46WW04, LHSMW18, 46WW13, and 46WW15, well 46WW04 is an upgradient, clean well. Historically, TCE was detected above the MCL in LHSMW18, but concentrations decreased below the MCL in February 2007 and remained below the MCL in March 2016. Samples from monitoring well 46WW13 exceeded the MCL for TCE and VC in May 2013 and September 2013, but the well was dry in 2014, 2015, and 2016. Monitoring well 46WW15 was installed approximately 150 ft east (downgradient) of well 46WW13 to bound the plume to the east in a downgradient direction, but well 46WW15 was dry and could not be sampled for the entire 3-year RA(O) period. Although data from LHSMW18 are minimal, the available data indicate TCE concentrations are not increasing along this inferred flow path. The dry wells along the eastern and downgradient plume boundary demonstrate that dry conditions limit the potential for plume migration.

For the intermediate zone, only two wells, 46WW02 and 46WW05, have COCs above the MCLs. Based on the general direction of intermediate groundwater flow (generally to the north), the following wells are considered to be along the groundwater flow path: 46WW02, 46WW09, 46WW05, and 46WW16. Additionally, well LHSMW23 is considered a background well for the intermediate zone, although it was not sampled during the monitoring period.. Contaminated groundwater in the vicinity of wells 46WW02 and 46WW05 occurs in two separate, isolated plumes. During the monitoring period, no COCs have been detected above MCLs at well 46WW09, which is located between impacted wells 46WW02 and 46WW05. In addition, no COCs above the MCL have been detected in downgradient well 46WW16. Therefore, based on the inferred flow path (using the groundwater flow direction), COC levels are not increasing with distance from the source area, as evidenced by non-detection of COCs in downgradient wells (46WW09 downgradient of 46WW02, and 46WW16 downgradient of 46WW05). Concentrations of COCs in wells surrounding the most impacted wells (46WW02 and 46WW05) have not increased and no new COCs have been detected at boundary area wells, indicating no plume migration.

4 CONCLUSIONS AND RECOMMENDATIONS

During the 3rd year RA(O) monitoring at LHAAP-46, samples were collected from shallow, intermediate, and deep zone wells during February 2016 and August 2016. Samples were also collected from two wells in March 2016 that had been dry in February 2016. Samples were analyzed for VOCs to evaluate effectiveness of MNA as a site remedy.

Reductions in COC concentrations over time and with distance were evaluated. The results of the evaluation and the conclusions are summarized below.

- Consistent with previous years, groundwater flow direction is to the east in the shallow zone and generally to the north in the intermediate zone.
- TCE is the only COC detected in groundwater at concentrations exceeding the MCL.
- The in-plume wells (46WW11 and LHSMW19) exhibit the highest levels of TCE in the shallow zone, and demonstrate a decreasing trend based on Mann-Kendall trend analysis.
- Monitoring wells east (downgradient) of the shallow zone plume are dry. Monitoring wells 46WW15, LHSMW22, and 46WW12, located east of 46WW13, 46WW01, and 46WW11, respectively, have been dry since May 2013 and have not been sampled. Therefore, these wells bound the plume to the east; however, the currently approximated plume configuration may change if water table elevations increase sufficiently to allow sample collection from these wells in the future.
- For the intermediate zone, concentrations of COCs have not increased with distance from the most impacted wells, 46WW02 and 46WW05, and no new detections of COCs at boundary area wells have been reported, indicating no plume migration.
- No VOCs were detected in the one deep well, 46WW03.
- Review of concentration trends indicates that plumes in the shallow and intermediate zones are stable or decreasing, and the plumes are not expanding or migrating. However, it is noted that significant increases in rainfall could change groundwater levels, and potentially impact the size of the plumes or concentrations.

A surface water sample was collected at location 46SW10, which is located in the tributary to Goose Prairie Creek, in February 2016 and analyzed for VOCs. Sample location 46SW10 is downgradient of the intermediate zone groundwater plume but is cross-gradient from the shallow zone groundwater plume. No VOCs were detected in the surface water sample. Additionally, based on comparison of groundwater elevations from nearby wells LHSMW21 (cross-gradient shallow zone well) and 46WW16 (upgradient intermediate zone well), the groundwater elevations were much lower than the bottom of the ditch during the 3rd year monitoring period, so there was no potential for groundwater to discharge to surface water.

No compliance issues or concerns were noted during the annual LUC inspection for LHAAP-46 conducted on July 29, 2016. Approximately 0.7 ft of silting in the well screen was observed in one well, 46WW09. Wells 46WW09 will be redeveloped prior to the next sampling event. LHSMW23 contains an obstruction at approximately 11 ft above the total depth of the well. A camera survey will be performed prior to the next sampling event to determine the cause of the obstruction.

Because the COC plumes at LHAAP-46 are stable or decreasing and are not migrating, MNA with LUCs is still considered an appropriate remedy. It is recommended that MNA monitoring continue in accordance with the RD (Shaw, 2011) and RAWP (AECOM, 2013). However, increased rain events may change plume characteristics if wells that have been dry are able to be sampled in the future, and it is acknowledged that trends that are currently being observed may change. It is recommended that semi-annual long-term monitoring continue until conditions allow for a complete MNA performance evaluation.

5 REFERENCES

AECOM, 2013. *Final Remedial Action Work Plan for LHAAP-46, Plant 2 Area,* Longhorn Army Ammunition Plant, Karnack, Texas, March.

AECOM, 2014. *Final Installation-Wide Work Plan* for Longhorn Army Ammunition Plant, Karnack, Texas, July.

AECOM, 2015a. *Draft Final Remedial Action Completion Report, LHAAP-46, Plant 2 Area*, Longhorn Army Ammunition Plant, Karnack Texas, August.

AECOM, 2015b. *Draft Final 1st Annual Remedial Action Operation Report LHAAP-46 Plant 2 Area Longhorn Army Ammunition Plant, Karnack, Texas.* November.

AECOM, 2016. *Draft Final 2nd Annual Remedial Action Operation Report LHAAP-46 (Plant 2 Area) Longhorn Army Ammunition Plant, Karnack, Texas.* May.

EPA, 1998. *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water*, U.S. EPA/600/R-98/128, September.

Shaw, 2011. *Final Remedial Design, LHAAP-46, Plant 2 Area, Group 4*, Longhorn Army Ammunition Plant, Karnack, Texas, September.

USACE, 2009. *Final Feasibility Study, LHAAP-46, Plant 2 Area, Group 4, Karnack, Texas,* October.

USACE, 2010. *Final Record of Decision, LHAAP-46, Plant 2 Area, Group 4*, Longhorn Army Ammunition Plant, Karnack, Texas, September.

APPENDIX A: ANNUAL LUC COMPLIANCE CERTIFICATION DOCUMENTATION

Annual Land Use Control Compliance Certification Documentation

In accordance with the Remedial Design dated September 2011, for LHAAP-46 a certification of site was conducted by AECOM Technical Services, Inc. on 7/29/16.

A summary of land use control mechanism is as follows:

- Groundwater restriction – restriction of the use of groundwater to environmental monitoring and testing until cleanup levels are met.

A summary of compliance with land use and restriction covenants is as follows:

- No use of groundwater, installation of new groundwater wells, or tampering with existing wells at LHAAP-46.

I, the undersigned, do document that the certification was performed as indicated above, and that the above information is true and correct to the best of my knowledge, information, and belief

Date: 7/29/16

Name/Title: Scott Beesinger / Senior Technician

Signature: Scott Beesinger

APPENDIX B: PHOTO LOG

Well ID: 46SW10 (February 2016)	
Well ID: 46WW01 (February 2016)	

Well ID: 46WW02 (February 2016)	
Well ID: 46WW03 (February 2016)	

Well ID: 46WW05 (February 2016)	
Well ID: 46WW11 (February 2016)	

Well ID: 46WW16 (February 2016)	
Well ID: LHSMW19 (February 2016)	

Well ID: LHSMW20 (February 2016)	

APPENDIX C: MONITORING WELL SAMPLING FORMS

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW01	Date: 2/1/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: Clear/cool
	Total Well Depth (ft) from TOC: 27.00	Screen Interval (ft) from TOC: 14-27	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW02	Date: 2/1/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.60)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 37.11	Weather Conditions: CLEAR / COOL
	Total Well Depth (ft) from TOC: 47.23	Screen Interval (ft) from TOC: 37-47	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 42.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/1/16	0735	37.13	100	14.07	5.15	0.396	4.27	8.7	258				
	0740	37.17	100	15.90	4.22	0.368	1.25	8.0	290				
	0745	37.21	100	16.43	4.10	0.382	0.89	7.1	306				
	0750	37.24	100	16.84	4.08	0.430	0.62	6.9	309				
	0755	37.26	100	17.29	4.07	0.448	0.41	6.5	315				
	0800	37.27	100	17.22	4.08	0.449	0.40	6.1	313				
	0805	37.28	100	17.26	4.07	0.450	0.39	5.8	313				
	0810	37.28	100	17.25	4.07	0.450	0.39	5.6	312	1.38	0.87	0.51	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW02-020116 TIME: 0810

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	GASES / CO2
1-500 ml plastic	ZNACETATE NAOH	N	"	Sulfide
1-500 ml plastic	NA	N	"	ALKALINITY
1-250 ml plastic	NA	N	"	ANIONS
1-250 ml plastic	H2SO4	N	"	TOC / TOTAL phosphorous
1-250 ml plastic	HNO3	N	"	TOTAL IRON

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW03	Date: 2/3/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 40.69	Weather Conditions: CLEAR/COLD
	Total Well Depth (ft) from TOC: 103.29	Screen Interval (ft) from TOC: 93-103	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 98.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/3/16	0945	40.70	100	14.77	6.74	0.762	1.59	4.5	-3				
	0950	40.72	100	15.77	7.00	0.731	0.88	2.2	-9				
	0955	40.75	100	16.20	7.12	0.726	0.65	1.4	-9				
	1000	40.77	100	16.49	7.17	0.724	0.60	1.1	0				
	1005	40.78	100	16.42	7.17	0.724	0.58	0.9	1				
	1010	40.79	100	16.46	7.16	0.725	0.60	0.7	2				
	1015	40.79	100	16.50	7.15	0.724	0.61	0.4	3	0.65	0.29	0.36	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 46WW03-020316 TIME: 1015

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO YES
MATRIX DUPLICATE (MD): YES/NO YES

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9- 40ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW04	Date: 2/2/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4 11	Static Water Level Reading (ft) from TOC: 25.67	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 27.00	Screen Interval (ft) from TOC: 17-27	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/2/16	0905	25.67	NA										Bailing well
2/2/16	0910	26.95	NA										Bailed 1.25 gallons
													Raw Data
2/3/16	0735	25.70	NA	15.72	5.12	6.10	NA	300	157	23.80	13.60	10.20	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW04-020316 TIME: 0735	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
	3 - 40 ml glass	HCL	N	Pump	VOC

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW05	Date: 2/1/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 38.08	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 45.56	Screen Interval (ft) from TOC: 36.65-46.35	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 41.05	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/1/16	1240	38.09	100	21.28	5.06	6.82	3.88	16.4	248				
	1245	38.15	100	20.29	4.46	7.05	1.38	5.1	279				
	1250	38.20	100	20.14	4.41	7.08	0.71	2.4	288				
	1255	38.24	100	20.17	4.40	7.10	0.58	1.7	290				
	1300	38.27	100	20.29	4.40	7.10	0.43	1.3	291				
	1305	38.30	100	20.38	4.39	7.11	0.42	1.0	291				
	1310	38.31	100	20.36	4.38	7.11	0.41	0.8	292				
	1315	38.32	100	20.35	4.37	7.10	0.41	0.5	294	15.10	10.50	4.60	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW05-020116 TIME: 1315

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N		Gases/CO2
1-500 ml plastic	ZnAc/NaOH	N		Sulfide
1-250 ml plastic	HNO3	Y		Dissolved metals
1-250 ml plastic	HNO3	N		TOTAL IRON
1-250 ml plastic	H2SO4	N		TOC/TOTAL phosphorous
1-250 ml plastic	NA	N		Anions

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW06	Date: 2/2/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 39.76	Weather Conditions: Clear
	Total Well Depth (ft) from TOC: 52.38	Screen Interval (ft) from TOC: 42.68 - 52.38	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 47.53	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/2/16	0930	39.77	100	18.11	5.91	2.74	2.93	111	34				
	0935	39.82	100	19.10	6.02	2.62	0.92	67.4	3				
	0940	39.85	100	19.12	6.02	2.56	0.71	54.6	0				
	0945	39.87	100	19.19	6.01	2.60	0.62	58.9	0				
	0950	39.90	100	19.20	6.01	2.79	0.41	58.1	-1				
	0955	39.92	100	19.21	5.98	2.81	0.40	57.9	1				
	1000	39.94	100	19.25	5.96	2.82	0.39	58.5	1				
	1005	39.96	100	19.26	5.95	2.82	0.40	58.7	1	20.90	14.00	6.90	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW06-020216 TIME: 1005

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW07	Date: 2/2/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 35.70	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 51.78	Screen Interval (ft) from TOC: 41.5 - 51.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 46.25	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/2/16	1040	35.72	100	18.61	6.25	1.28	1.32	9.9	38				
	1045	35.77	100	18.54	5.97	1.22	0.75	4.9	82				
	1050	35.82	100	18.59	5.75	1.20	0.50	4.1	123				
	1055	35.86	100	18.64	5.59	1.20	0.39	2.9	155				
	1100	35.90	100	18.66	5.57	1.19	0.37	3.4	156				
	1105	35.92	100	18.65	5.55	1.19	0.37	3.5	158				
	1110	35.94	100	18.65	5.55	1.19	0.36	3.4	159	2.38	0.45	1.93	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW07-020216 TIME: 1110

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW08	Date: 2/3/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4	Static Water Level Reading (ft) from TOC: 21.75	Weather Conditions: CLEAR/COLD
	Total Well Depth (ft) from TOC: 45.40	Screen Interval (ft) from TOC: 35.72-45.22	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 40.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/3/16	0820	21.77	100	17.03	6.73	3.85	3.83	38.3	-12				
	0825	21.82	100	17.03	6.06	4.37	1.07	39.4	18				
	0830	21.86	100	17.55	5.92	4.15	0.90	39.2	35				
	0835	21.90	100	18.00	5.79	3.91	1.09	25.0	53				
	0840	21.93	100	18.04	5.69	3.74	1.10	12.6	87				
	0845	21.95	100	18.12	5.54	3.42	1.13	3.0	95				
	0850	21.97	100	18.15	5.52	3.41	1.14	2.1	96				
	0855	21.98	100	18.21	5.51	3.40	1.15	1.9	97				
	0900	21.99	100	18.23	5.50	3.40	1.15	1.5	98	4.10	3.26	0.84	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW08-020316 TIME: 0900	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
	3-40 ml glass	HCL	N	Pump	VOC

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46 WW09	Date: 2/2/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4 11	Static Water Level Reading (ft) from TOC: 37.35	Weather Conditions: Cloudy / misting
	Total Well Depth (ft) from TOC: 42.23	Screen Interval (ft) from TOC: 32.48 - 42.98	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 39.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/2/16	0730	37.37	100	18.18	5.57	4.58	2.23	31.4	234				
	0735	37.45	100	18.24	5.53	4.60	1.66	26.6	238				
	0740	37.50	100	18.36	5.38	4.61	1.38	21.3	248				
	0745	37.54	100	18.37	5.31	4.62	1.20	17.7	257				
	0750	37.57	100	18.39	5.28	4.63	0.89	18.7	262				
	0755	37.59	100	18.45	5.24	4.64	0.84	17.6	269				
	0800	37.61	100	18.47	5.23	4.65	0.82	17.4	271				
	0805	37.62	100	18.47	5.23	4.66	0.80	17.0	273				
	0810	37.62	100	18.49	5.22	4.66	0.80	16.8	274	0.58	0.17	0.41	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW09-020216 TIME: 0810

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N		GASES. / CO2
1-500 ml plastic	2 NaOH	N		Sulfide
1-250 ml plastic	HNO3	Y		Dissolved metals
1-250 ml plastic	HNO3	Y		TOTAL IRON
1-250 ml plastic	H2SO4	N		TOC / TOTAL phosphorous
1-250 ml plastic	NA	N		ANIONS

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW10	Date: 2/2/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 24.08	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 25.38	Screen Interval (ft) from TOC: 15.88-25.38	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/2/16	0855	24.08	NA										Bailing well
2/2/16	0900	25.30	NA										Bailed 1.25 gallons
													RANDRY
2/3/16	0750	24.10	NA	15.25	5.46	7.15	NA	2.5	7	3.03	1.91	1.12	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW10-020315 TIME:

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW11	Date: 2/1/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 25.25	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 33.00	Screen Interval (ft) from TOC: 28.00 - 38.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 28.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/1/16	0855	25.20	100	17.26	4.92	1.31	2.84	6.8	204				
	0900	25.28	100	18.04	4.73	1.35	1.99	6.0	226				
	0905	25.33	100	18.44	4.68	1.38	1.41	5.3	225				
	0910	25.38	100	18.54	4.71	1.38	1.44	5.0	229				
	0915	25.41	100	18.58	4.68	1.38	1.42	4.4	231				
	0920	25.44	100	18.63	4.68	1.39	1.40	4.1	233				
	0925	25.45	100	18.67	4.67	1.38	1.39	4.0	234	0.10	0.03	0.07	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW11-020116 TIME: 0925

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
3-20ml glass	NA	N		GASES/CO2
1-500 ml plastic	ZnAc/NaOH	N		Sulfide
1-250 ml plastic	HNO3	Y		Dissolved metals
1-250 ml plastic	HNO3	N		TOTAL IRON
1-250 ml plastic	H2SO4	N		TOC/TOTAL phosphorous
1-250 ml plastic	NA	N		Anions

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46 WW12	Date: 2/1/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 29.53	Screen Interval (ft) from TOC: 18.47-28.47	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Dry Well

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW13	Date: 2/1/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 31.62	Screen Intverval (ft) from TOC: 21.42 - 30.92	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Dry Well

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW14	Date: 2/2/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 32.20	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 54.73	Screen Interval (ft) from TOC: 44.60-54.10	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 49.35	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/2/16	1410	32.20	100	20.05	6.56	0.840	1.70	9.4	-3				
	1415	32.25	100	19.33	6.22	0.847	0.82	3.3	27				
	1420	32.28	100	19.13	5.98	0.840	0.58	2.5	43				
	1425	32.30	100	19.12	5.94	0.839	0.40	2.0	48				
	1430	32.32	100	19.10	5.92	0.838	0.38	1.8	58				
	1435	32.32	100	19.14	5.82	0.838	0.36	1.5	59				
	1440	32.32	100	19.19	5.81	0.838	0.37	1.0	61				
	1445	32.32	100	19.19	5.79	0.837	0.36	1.2	62	2.00	1.91	0.09	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 46WW14-020216 TIME: 1445

DUPLICATE (D): YES/NO Yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW15	Date: 2/1/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 30.28	Screen Interval (ft) from TOC: 20.45 - 29.95	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW16	Date: 2/1/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 37.30	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 51.58	Screen Interval (ft) from TOC: 42-51.50	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 46.75	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/1/16	1355	37.32	100	21.00	6.17	4.48	1.33	37.0	4				
	1400	37.36	100	20.44	6.04	3.65	0.58	15.7	17				
	1405	37.40	100	20.16	5.86	3.42	0.44	8.5	34				
	1410	37.42	100	20.07	5.79	3.38	0.30	2.0	37				
	1415	37.43	100	20.15	5.78	3.38	0.32	3.2	34				
	1420	37.44	100	20.04	5.78	3.39	0.30	2.1	32				
	1425	37.44	100	20.04	5.77	3.40	0.30	1.8	31				
	1430	37.44	100	20.09	5.77	3.40	0.29	1.5	31	13.30	1.43	11.87	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW16-020116 TIME: 1430

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N		Gases/CO2
1-500 ml plastic	2mL NaOH	N		Sulfide
1-250 ml plastic	HNO3	Y		Dissolved metals
1-250 ml plastic	HNO3	N		TOTAL IRON
1-250 ml plastic	H2SO4	N		TOC/TOTAL phosphorous
1-250 ml plastic	NA	N		Anions

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: ~~46WW25~~ LHSMW25	Date: 2/2/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 29.82	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 42.70	Screen Interval (ft) from TOC: 32-42	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 37.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/2/16	1300	29.84	100	21.36	6.39	2.09	1.78	4.4	139				
	1305	29.90	100	20.36	6.06	2.04	1.38	3.1	152				
	1310	29.94	100	20.17	5.93	2.02	1.14	2.9	163				
	1315	29.97	100	20.08	5.80	2.03	0.79	2.5	177				
	1320	29.99	100	20.07	5.76	2.06	0.71	2.1	184				
	1325	30.00	100	19.96	5.73	2.09	0.59	2.9	189				
	1330	30.00	100	19.98	5.72	2.09	0.57	1.8	191				
	1335	30.00	100	19.93	5.71	2.10	0.56	1.5	193				
	1340	30.00	100	19.93	5.71	2.11	0.55	1.7	195	1.02	0.06	0.96	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: ~~46WW25~~ LHSMW25 - 020216 TIME: 1340

DUPLICATE (D): YES/NO yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSMW08	Date: 2/3/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 31.35	Weather Conditions: CLEAR/COLD
	Total Well Depth (ft) from TOC: 35.73	Screen Interval (ft) from TOC: 23.80-33.80	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

WATER LEVEL ONLY
NO SAMPLES REQUIRED

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO						
MATRIX SPIKE (MS): YES/NO						
MATRIX DUPLICATE (MD): YES/NO						
CO= LEL= OXY= H2S=						

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSMW11	Date: 2/3/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR/COLD
	Total Well Depth (ft) from TOC: 27.23	Screen Interval (ft) from TOC: 16.5 - 26.5	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Water Level Only

No Samples Required

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSMW12	Date: 2/3/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR/COLD
	Total Well Depth (ft) from TOC: 17.04	Screen Interval (ft) from TOC: 6.5 - 16.5	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Water Level only
No Samples Required

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSMW14	Date: 2/3/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 9.55	Weather Conditions: Clear/COLD
	Total Well Depth (ft) from TOC: 20.38	Screen Intverval (ft) from TOC: 10.39 - 20.39	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Water Level only

No Samples Required

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSMW15	Date: 2/3/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR / COLD
	Total Well Depth (ft) from TOC: 25.23	Screen Intverval (ft) from TOC: 14.5 - 24.5	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Water Level ONLY

No Samples Required

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSMW16	Date: 2/3/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 14.22	Weather Conditions: CLEAR/COLD
	Total Well Depth (ft) from TOC: 24.90	Screen Intverval (ft) from TOC: 11.6-21.6	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Water Level ONLY

No Samples Required

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHS MW17	Date: 2/2/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 27.04	Screen Interval (ft) from TOC: 17-27	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Dry Well

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSMW18	Date: 2/2/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 27.95	Screen Interval (ft) from TOC: 17.85 - 27.85	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Dry Well

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO						
MATRIX SPIKE (MS): YES/NO						
MATRIX DUPLICATE (MD): YES/NO						
CO= LEL= OXY= H2S=						

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSmw19	Date: 2/1/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 24.91	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 30.08	Screen Interval (ft) from TOC: 20-30	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 27.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/1/16	1000	24.86	100	17.29	6.12	2.38	2.15	5.5	70				
	1005	24.95	100	17.90	6.34	2.42	0.69	4.9	40				
	1010	25.01	100	18.12	6.39	2.42	0.54	4.5	48				
	1015	25.07	100	18.42	6.46	2.43	0.41	4.2	60				
	1020	25.10	100	18.43	6.46	2.43	0.40	4.1	62				
	1025	25.12	100	18.51	6.44	2.43	0.39	3.9	63				
	1030	25.14	100	18.56	6.43	2.43	0.38	3.5	64	0.00	0.00	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: LHSmw19-020116 TIME: 1030

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N		GASES/CO2
1-500 ml plastic	2N NAOH	N		Sulfide
1-250 ml plastic	HNO3	Y		Dissolved metals
1-250 ml plastic	HNO3	N		TOTAL IRON
1-250 ml plastic	H2SO4	N		TOC/TOTAL phosphorous
1-250 ml plastic	NA	N		ANIONS

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSDGW20	Date: 2/1/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 25.13	Screen Interval (ft) from TOC: 14.5-24.5	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Dry well

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHS MW21	Date: 2/2/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 22.15	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 29.83	Screen Interval (ft) from TOC: 16.6 - 26.6	Condition of Well/Remarks: NEEDS paint
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

WATER LEVEL ONLY
NO SAMPLES REQUIRED

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSMW22	Date: 2/1/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 29.00	Screen Interval (ft) from TOC: 18.94-28.94	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHS MW 23	Date: 2/1/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 31.78	Screen Interval (ft) from TOC: 21 - 31	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
			DRY WELL										

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHS MW 24	Date: 2/2/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.88	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 28.88	Screen Interval (ft) from TOC: 19.00 - 29.00	Condition of Well/Remarks: NEEDS paint
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

WATER LEVEL only

No SAmples REQUIRED

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSmw27	Date: 2/2/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 17.82	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 20.18	Screen Interval (ft) from TOC: 7.60 - 17.60	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

WATER LEVEL ONLY
NO SAMPLES REQUIRED

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW01	Date: 3/28/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 24.85	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 27.00	Screen Interval (ft) from TOC: 17.00 - 27.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
3/28/16	0946	24.85	NA							Bailing well
3/28/16	0951	26.92	NA							Bailed 1.5 gallon RAN DRY
3/29/16	0910	24.76	NA	16.34	6.17	0.199	NA	86.3	89	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW01-032916 TIME: 0910

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW12	Date: 3/28/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 28.47	Screen Interval (ft) from TOC: 18.47-28.47	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO						
MATRIX SPIKE (MS): YES/NO						
MATRIX DUPLICATE (MD): YES/NO						
CO= LEL= OXY= H2S=						

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW13	Date: 3/28/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 30.92	Screen Interval (ft) from TOC: 21.42-30.92	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

Dry well

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW15	Date: 3/28/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 30.92	Screen Intverval (ft) from TOC: 20.45-29.95	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO						
MATRIX SPIKE (MS): YES/NO						
MATRIX DUPLICATE (MD): YES/NO						
CO= LEL= OXY= H2S=						

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSMW18	Date: 3/28/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 4 11	Static Water Level Reading (ft) from TOC: 25.15	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 27.85	Screen Intverval (ft) from TOC: 17.85 - 27.85	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
3/28/16	0930	25.15	NA							Bailing well
3/28/16	0935	27.80	NA							Bailed 2 gallon RAN DRY
3/29/16	0855	25.22	NA	16.55	5.53	5.16	N	2.9	76	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: LHSMW18-032916 TIME: 0855

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: L45MW20	Date: 3/28/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21049	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 24.50	Screen Interval (ft) from TOC: 14.5-24.50	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

Dry Well

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO						
MATRIX SPIKE (MS): YES/NO						
MATRIX DUPLICATE (MD): YES/NO						
CO= LEL= OXY= H2S=						

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSmw22	Date: 3/28/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 28.94	Screen Intverval (ft) from TOC: 18.94 - 28.94	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

Dry Well

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSMW23	Date: 3/28/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21099	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 31.00	Screen Interval (ft) from TOC: 21.00 - 31.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO						
MATRIX SPIKE (MS): YES/NO						
MATRIX DUPLICATE (MD): YES/NO						
CO= LEL= OXY= H2S=						

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW01	Date: 8/3/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 25.45	Weather Conditions: CLEAR Brutally Hot
	Total Well Depth (ft) from TOC: 26.97	Screen Intverval (ft) from TOC: 17.00-27.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/3/16	1433	25.45	NA										Bailing well
8/3/16	1438	26.90	NA										Bailed 1 gallons Random
8/4/16	1330	25.48	NA	22.96	6.86	0.317	NA	79.1	NA	7.60	0.20	7.40	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW01-080316 TIME: 1330

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW02	Date: 8/4/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 37.25	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 47.70	Screen Intverval (ft) from TOC: 37.00 - 47.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 42.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/4/16	0825	37.27	100	22.77	4.71	0.404	1.60	5.5	427				
	0830	37.33	100	22.02	4.08	0.376	0.91	3.0	438				
	0835	37.38	100	21.61	3.89	0.389	0.69	1.1	422				
	0840	37.41	100	22.10	3.81	0.421	0.57	0.9	405				
	0845	37.45	100	22.08	3.80	0.422	0.56	0.2	403				
	0850	37.47	100	22.05	3.79	0.423	0.55	0.0	402				
	0855	37.48	100	22.04	3.79	0.423	0.55	0.0	401	4.10	0.54	3.56	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW02-080416 TIME: 0855

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40ml glass	HCL	N	Pump	VOC
3 - 20ml glass	NA	N		GASES/CO2
1 - 500 ml plastic	ZnAcetate	N		Sulfide
1 - 250 ml plastic	HNO3	Y		Dissolved metals
1 - 250 ml plastic	HNO3	N		TOTAL metals
1 - 250 ml plastic	H2SO4	N		TOC/TOTAL phosphorous
1 - 250 ml plastic	NA	N		Anions
1 - 250 ml plastic	NA	N		ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW03	Date: 8/4/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 40.77	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 103.35	Screen Intverval (ft) from TOC: 93.00-103.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 98.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/4/16	0725	40.78	100	22.33	6.11	0.896	1.76	0.0	306				
	0730	40.82	100	21.18	5.55	0.853	0.98	0.0	304				
	0735	40.85	100	20.73	5.21	0.840	0.85	0.0	316				
	0740	40.87	100	20.50	5.01	0.838	0.74	0.0	335				
	0745	40.89	100	20.47	5.00	0.838	0.74	0.0	336				
	0750	40.90	100	20.46	4.99	0.837	0.73	0.0	337				
	0755	40.90	100	20.46	4.98	0.837	0.73	0.0	338	0.41	0.00	0.41	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW03-080416 TIME: 0755

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO Yes
MATRIX DUPLICATE (MD): YES/NO Yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW04	Date: 8/3/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: ~~Peristaltic/Bladder~~/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 25.04	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 26.97	Screen Intverval (ft) from TOC: 17.00-27.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/3/16	1421	25.04	NA										Bailing well
8/3/16	1425	26.88	NA										Bailed 1.25 gallons RAN DL

Only Recharged 0.96', NOT within 80% of original DTW

Well is Considered Dry

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO						
MATRIX SPIKE (MS): YES/NO						
MATRIX DUPLICATE (MD): YES/NO						
CO= LEL= OXY= H2S=						

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW05	Date: 8/3/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 38.35	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 45.53	Screen Intverval (ft) from TOC: 35.65-45.35	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 40.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/3/16	0725	38.37	100	23.07	4.46	6.41	2.45	51.0	380				
	0730	38.43	100	21.80	4.25	6.50	1.40	39.8	379				
	0735	38.48	100	20.95	4.16	6.58	0.92	42.4	380				
	0740	38.52	100	20.57	4.10	6.63	0.67	36.2	378				
	0745	38.55	100	20.60	4.11	6.61	0.66	36.0	377				
	0750	38.57	100	20.65	4.12	6.60	0.65	35.5	375				
	0755	38.57	100	20.67	4.13	6.60	0.65	35.0	373	13.20	3.40	9.80	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW05-080316 TIME: 0755

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N		GASES/CO2
1-500ml plastic	NaOH	N		Sulfide
1-250 ml plastic	HNO3	Y		Dissolved metals
1-250 ml plastic	HNO3	Y		TOTAL IRON
1-250 ml plastic	H2SO4	N		TOC/TOTAL phosphorous
1-250 ml plastic	NA	N		ANIONS
1-250 ml plastic	NA	N		ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW06	Date: 8/4/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 40.23	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 52.34	Screen Intverval (ft) from TOC: 42.68-52.38	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 45.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/4/16	0945	40.25	100	24.70	5.85	1.88	1.24	31.5	329				
	0950	40.31	100	22.90	5.96	1.88	0.74	27.4	214				
	0955	40.36	100	22.10	5.99	1.88	0.58	24.8	164				
	1000	40.40	100	21.59	6.00	1.90	0.47	28.2	88				
	1005	40.42	100	21.58	6.00	1.98	0.48	17.9	46				
	1010	40.43	100	21.60	6.00	1.99	0.48	17.5	45				
	1015	40.44	100	21.61	6.00	2.00	0.48	17.2	44				
	1020	40.45	100	21.63	6.00	2.00	0.49	17.0	43	11.30	7.90	3.40	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 46WW06-080416 TIME: 1020

DUPLICATE (D): YES/NO YES
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6- 40ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW07	Date: 8/2/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 35.96	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 51.80	Screen Intverval (ft) from TOC: 41.50 - 51.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 46.25	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/2/16	1035	35.98	100	22.65	5.41	1.31	2.00	13.6	328				
	1040	36.05	100	21.10	5.19	1.32	1.10	15.6	330				
	1045	36.10	100	20.90	5.05	1.31	0.79	17.7	320				
	1050	36.15	100	21.02	5.07	1.31	0.73	17.9	307				
	1055	36.18	100	21.05	5.08	1.31	0.73	17.8	306				
	1100	36.20	100	21.08	5.08	1.30	0.72	17.5	305				
	1105	36.21	100	21.10	5.08	1.30	0.72	17.4	305	3.92	0.89	3.03	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW07-080216 TIME: 1105

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW08	Date: 8/2/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 21.37	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 45.43	Screen Intverval (ft) from TOC: 35.72 - 45.22	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 40.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/2/16	0825	21.39	100	22.78	5.26	4.24	2.44	7.6	306				
	0830	21.45	100	22.62	5.23	3.84	2.01	3.1	269				
	0835	21.50	100	22.60	5.18	3.56	1.77	4.3	264				
	0840	21.54	100	22.40	5.06	3.12	1.75	2.1	262				
	0845	21.57	100	22.39	5.05	3.12	1.74	1.0	261				
	0850	21.58	100	22.37	5.04	3.11	1.73	0.5	260				
	0855	21.59	100	22.36	5.03	3.10	1.72	0.2	259	17.80	1.40	16.40	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW08-080216 TIME: 0855

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW09	Date: 8/3/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4	Static Water Level Reading (ft) from TOC: 37.83	Weather Conditions: CLEAR/Smokin' Hot
	Total Well Depth (ft) from TOC: 42.30	Screen Intverval (ft) from TOC: 33.48 - 42.98	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 39.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/3/16	1310	37.85	100	25.22	6.11	4.29	3.74	31.2	340				
	1315	37.91	100	22.91	5.87	4.38	2.81	25.3	349				
	1320	37.96	100	22.32	5.48	4.44	1.75	19.5	352				
	1325	38.00	100	22.17	5.37	4.50	1.31	20.7	347				
	1330	38.03	100	22.00	5.31	4.56	1.19	19.4	329				
	1335	38.05	100	21.95	5.28	4.55	1.17	19.0	327				
	1340	38.06	100	21.97	5.28	4.56	1.16	18.9	325				
	1345	38.07	100	21.99	5.28	4.57	1.18	19.2	324	0.00	0.00	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 46WW09-080316 TIME: 1345

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N		BASES/CO2
1-500 ml plastic	ZnAcNaOH	N		sulfide
1-250 ml plastic	HNO3	Y		Dissolved metals
1-250 ml plastic	HNO3	Y		TOTAL IRON
1-250 ml plastic	H2SO4	N		TOC/TOTAL phosphorous
1-250 ml plastic	NA	N		Anions
1-250 ml plastic	NA	N		ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW10	Date: 8/3/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: ~~Peristaltic/Bladder~~/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 24.17	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 25.36	Screen Intverval (ft) from TOC: 15.88 - 25.38	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/3/16	1412	24.17	NA										Bailing well
8/3/16	1415	25.25	NA										Bailed .75 gallons Ran Dry
8/4/16	1240	24.20	NA	23.31	6.52	6.01	NA	0.0	NA	0.33	0.08	0.25	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW10-080416 TIME: 1240

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Bailer	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW11	Date: 8/3/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 25.02	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 32.96	Screen Intverval (ft) from TOC: 23.00 - 33.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 28.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/3/16	1050	25.00	100	24.32	5.27	1.41	1.74	11.3	353				
	1055	25.08	100	22.92	4.63	1.32	0.84	7.6	341				
	1100	25.15	100	22.18	4.55	1.31	0.70	4.3	329				
	1105	25.20	100	21.80	4.52	1.32	0.60	0.6	313				
	1110	25.23	100	21.71	4.50	1.32	0.50	0.0	292				
	1115	25.25	100	21.74	4.50	1.33	0.49	0.0	290				
	1120	25.26	100	21.77	4.49	1.32	0.48	0.0	288				
	1125	25.27	100	21.80	4.50	1.33	0.47	0.0	286	0.10	0.00	0.10	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW11-080316 TIME: 1125

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N		Gases / CO2
1-500 ml plastic	ZnACENAOH	N		Sulfide
1-250 ml plastic	HNO3	Y		Dissolved metals
1-250 ml plastic	HNO3	N		TOTAL IRON
1-250 ml plastic	H2SO4	N		TOC / TOTAL phosphorous
1-250 ml plastic	NA	N		Anions
1-250 ml plastic	NA	N		ALKALinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW12	Date: 8/4/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 29.50	Screen Intverval (ft) from TOC: 18.97 - 28.47	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW13	Date: 8/4/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 31.72	Screen Intverval (ft) from TOC: 21.42-30.92	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW14	Date: 8/2/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 32.63	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 54.78	Screen Intverval (ft) from TOC: 44.60 - 54.10	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 49.35	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/2/16	0930	32.65	100	22.90	5.61	0.968	2.44	2.1	255				
	0935	32.72	100	21.00	5.23	0.938	1.11	1.5	269				
	0940	32.78	100	20.78	5.00	0.938	0.88	0.7	268				
	0945	32.82	100	20.77	4.87	0.936	0.72	0.3	269				
	0950	32.85	100	20.76	4.87	0.935	0.71	1.0	268				
	0955	32.87	100	20.76	4.88	0.934	0.70	2.1	267				
	1000	32.88	100	20.72	4.87	0.935	0.70	1.3	267	1.81	0.16	1.65	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW14-080216 TIME: 1000

DUPLICATE (D): YES/NO yes
MATRIX SPIKE (MS): YES/NO No
MATRIX DUPLICATE (MD): YES/NO No

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6- 40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW15	Date: 8/4/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4 11	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 30.28	Screen Intverval (ft) from TOC: 20.45 - 29.95	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: 46WW16	Date: 8/3/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 37.67	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 51.58	Screen Intverval (ft) from TOC: 42.00 - 51.50	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 46.75	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/3/16	0835	37.69	100	23.00	6.41	3.16	0.73	55.7	29				
	0840	37.46	100	22.71	6.16	3.08	0.62	34.5	19				
	0845	37.50	100	22.48	5.96	3.06	0.57	23.1	18				
	0850	37.53	100	22.40	5.88	3.04	0.54	25.3	19				
	0855	37.55	100	22.29	5.80	3.06	0.51	20.0	15				
	0900	37.56	100	22.35	5.81	3.06	0.50	19.9	14				
	0905	37.57	100	22.40	5.80	3.06	0.49	19.6	13				
	0910	37.57	100	22.42	5.80	3.06	0.50	19.0	12	16.50	1.46	15.04	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 46WW16-080316 TIME: 0910

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N		Gases / CO2
1-500ml plastic	ZnAcNaOH	N		Sulfide
1-250 ml plastic	HNO3	Y		Dissolved metals
1-250 ml plastic	HNO3	Y		TOTAL IRON
1-250 ml plastic	H2SO4	N		TOC / TOTAL phosphorous
1-250 ml plastic	NA	N		Anions
1-250 ml plastic	NA	N		ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LAS MW 08	Date: 8/5/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 30.97	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 35.74	Screen Intverval (ft) from TOC: 25.80 - 35.80	Condition of Well/Remarks: NEEDS paint
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

WATER LEVEL ONLY
NO SAMPLE REQUIRED

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSmw11	Date: 8/5/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 26.46	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 27.23	Screen Interval (ft) from TOC: 16.50-26.50	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Water Level only
No Sample Required

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSmw 12	Date: 8/5/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 17.05	Screen Intverval (ft) from TOC: 6.50 - 16.50	Condition of Well/Remarks: needs paint
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

DRY WELL

WATER LEVEL ONLY

NO SAMPLE REQUIRED

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:

DUPLICATE (D): YES/NO

MATRIX SPIKE (MS): YES/NO

MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSmw14	Date: 8/5/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 11.00	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 19.93	Screen Intverval (ft) from TOC: 10.39 - 20.39	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Water Level only
No Sample Required

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=14 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSmw15	Date: 8/5/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 25.22	Screen Intverval (ft) from TOC: 14.50 - 24.50	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

DRY WELL

Water level only

No Sample Required

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSmw16	Date: 8/5/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 11.25	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 24.93	Screen Interval (ft) from TOC: 14.60 - 24.60	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

WATER LEVEL ONLY
NO SAMPLE REQUIRED

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LAsmw17	Date: 8/3/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR / HOT
	Total Well Depth (ft) from TOC: 27.04	Screen Intverval (ft) from TOC: 17.00 - 27.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHS mw 18	Date: 8/3/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 24.66	Weather Conditions: CLEAR / HOT
	Total Well Depth (ft) from TOC: 27.92	Screen Intverval (ft) from TOC: 17.85 - 28.85	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/3/16	1451	24.66	NA										Bailing well
8/3/16	1456	27.85	NA										Bailed 2.25 gallons RAPID

Only Recharged 0.8' NOT within 80% of original DTW

well is Considered Dry

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSMW19	Date: 8/3/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4/11	Static Water Level Reading (ft) from TOC: 24.84	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 30.06	Screen Intverval (ft) from TOC: 20.00 - 30.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 27.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/3/16	0950	24.87	100	25.05	6.36	2.98	1.19	0.0	153				
	0955	24.95	100	23.26	5.88	2.92	0.81	0.0	138				
	1000	24.99	100	22.54	5.74	2.92	0.65	0.0	132				
	1005	25.03	100	22.23	5.60	2.93	0.49	0.0	120				
	1010	25.05	100	22.23	5.60	2.92	0.48	0.0	120				
	1015	25.07	100	22.20	5.60	2.93	0.49	0.0	122				
	1020	25.09	100	22.19	5.60	2.94	0.49	0.0	123	0.00	0.00	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: LHSMW19-080316 TIME: 1020

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N		Gases/CO2
1-500 ml plastic	ZNAC,NAOH	N		Sulfide
1-250 ml plastic	HNO3	Y		Dissolved metals
1-250 ml plastic	HNO3	N		TOTAL IRON
1-250 ml plastic	H2SO4	N		TOC/TOTAL phosphorous
1-250 ml plastic	NA	N		Anions
1-250 ml plastic	NA	N		ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSMW20	Date: 8/4/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 25.08	Screen Interval (ft) from TOC: 14.50 - 24.50	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Dry Well

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSmw21	Date: 8/5/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 21.12	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 29.80	Screen Interval (ft) from TOC: 19.60 - 29.60	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Water level only
No Sample Required

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSmw22	Date: 8/4/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4 in	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 29.00	Screen Intverval (ft) from TOC: 18.94-28.94	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSmw23	Date: 8/4/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 31.36	Screen Intverval (ft) from TOC: 21.00-31.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHS mw24	Date: 8/5/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 28.92	Screen Intverval (ft) from TOC: 19.00 - 29.00	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Dry Well

Water level only

No Samples Required

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSmw25	Date: 8/4/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 29.97	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 42.63	Screen Interval (ft) from TOC: 32.00 - 42.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 37.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/4/16	1055	29.99	100	24.40	6.91	2.23	1.23	2.6	248				
	1100	30.06	100	23.51	6.44	2.18	0.85	0.0	235				
	1105	30.11	100	23.00	5.78	2.18	0.65	0.0	220				
	1110	30.15	100	22.90	5.57	2.18	0.56	0.0	220				
	1115	30.18	100	22.85	5.56	2.18	0.56	0.0	220				
	1120	30.20	100	22.81	5.55	2.18	0.55	0.0	219				
	1125	30.21	100	22.78	5.54	2.18	0.54	0.0	219	2.21	0.00	2.21	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: LHSmw25-080416 TIME: 1125

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 46	LocID: LHSmw27	Date: 8/5/16
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002FA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: ID#:	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 20.10	Screen Intverval (ft) from TOC: 9.6-19.6	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
					Dry Well								
			Water Level only										
			NO Samples Required										

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

APPENDIX D: LABORATORY ANALYTICAL RESULTS

Microbac

Laboratory Report Number: L16020058

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on February 16 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
Sample ID: 46WW02-020116 (2/1 @ 08:10). 1 of 3 voa vials received w/headspace. BRG Sample ID: 46WW11-020116 (2/1 @ 09:25). 1 of 3 voa vials received w/headspace. BRG Sample ID: LHSMW19-020116 (2/1 @ 10:30). 1 of 3 RSK vials received w/headspace. BRG	Please log the vials with the headspace as the "C" vials

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113093	I	5.0		J4599414205	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	No

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
46WW02-020116	L16020058-01	02/01/2016 08:10	02/02/2016 09:55
46WW02FF-020116	L16020058-02	02/01/2016 08:10	02/02/2016 09:55
46WW11-020116	L16020058-03	02/01/2016 09:25	02/02/2016 09:55
46WW11FF-020116	L16020058-04	02/01/2016 09:25	02/02/2016 09:55
LHSMW19-020116	L16020058-05	02/01/2016 10:30	02/02/2016 09:55
LHSMW19FF-020116	L16020058-06	02/01/2016 10:30	02/02/2016 09:55
46WW05-020116	L16020058-07	02/01/2016 13:15	02/02/2016 09:55
46WW05FF-020116	L16020058-08	02/01/2016 13:15	02/02/2016 09:55
46WW16-020116	L16020058-09	02/01/2016 14:30	02/02/2016 09:55
46WW16FF-020116	L16020058-10	02/01/2016 14:30	02/02/2016 09:55
TRIP BLANK	L16020058-11	02/01/2016 00:01	02/02/2016 09:55

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16020058
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 61
2.0 Full Sample Data Package 107
2.1 Volatiles Data 108
2.1.1 Volatiles GCMS Data (8260) 109
2.1.1.1 Summary Data 110
2.1.1.2 QC Summary Data 128
2.1.1.3 Sample Data 154
2.1.1.4 Standards Data 195
2.1.1.5 Raw QC Data 257
2.1.2 RSK 175 273
2.1.2.1 Summary Data 274
2.1.2.2 QC Summary Data 285
2.1.2.3 Sample Data 305
2.1.2.4 Standards Data 324
2.1.2.5 Raw QC Data 361
2.2 Metals Data 368
2.2.1 Metals I C P Data 369
2.2.1.1 Summary Data 370
2.2.1.2 QC Summary Data 376
2.2.1.3 Raw Data 424
2.2.2 Metals ICP-MS Data 714
2.2.2.1 Summary Data 715
2.2.2.2 QC Summary Data 718
2.2.2.3 Raw Data 749
2.3 General Chemistry Data 965
2.3.1 Method 9056 966
2.3.1.1 Summary Data 967
2.3.1.2 QC Summary Data 974
2.3.1.3 Sample Data 995
2.3.1.4 Standards Data 1001
2.3.1.5 Raw QC Data 1026
2.3.2 Alkalinity Data 1029
2.3.2.1 Summary Data 1030
2.3.2.2 QC Summary Data 1034
2.3.2.3 Raw Data 1044
2.3.3 Phosphorus Data 1053
2.3.3.1 Summary Data 1054
2.3.3.2 QC Summary Data 1061
2.3.3.3 Raw Data 1068
2.3.4 Sulfide Data 1074
2.3.4.1 Summary Data 1075
2.3.4.2 QC Summary Data 1082
2.3.4.3 Raw Data 1089
2.3.5 Total Organic Carbon Data 1092
2.3.5.1 Summary Data 1093
2.3.5.2 QC Summary Data 1096
2.3.5.3 Raw Data 1103
3.0 Attachments 1128

1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	8260
Prep Batch Number(s):	556408	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-10 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-02-10 15:37:40

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	8260
Prep Batch Number(s):	556408	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	8260
Prep Batch Number(s):	556408	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-10 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	8260
Prep Batch Number(s):	556408	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-10 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	8260
Prep Batch Number(s):	556408	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-10 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	8260
Prep Batch Number(s):	556408	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-10 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Dichlorodifluoromethane and trichlorofluoromethane exceeded the UCL in the ICV.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG556003	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-05 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-02-05 15:44:42

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG556003	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-05 00:00:00		

Description	**Yes**	**No**	**NA**	**NR**	**ER#**
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG556003	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-05 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG556003	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-05 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG556003	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-05 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG556003	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-05 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There were no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG556359	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-02-16 20:10:39

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG556359	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG556359	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG556359	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG556359	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG556359	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client samples 07 through 10 required dilution analyses in order to obtain results for iron within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG556014	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-02-16 20:04:24

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG556014	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG556014	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG556014	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG556014	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG556014	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client samples 08 and 10 required dilution analyses in order to obtain results for manganese within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG555960	**Reviewer Name:**	Adriane Steed
LRC Date:	2016-02-04 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Adriane Steed	Adriane Steed		2016-02-04 14:48:11

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG555960	**Reviewer Name:**	Adriane Steed
LRC Date:	2016-02-04 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG555960	**Reviewer Name:**	Adriane Steed
LRC Date:	2016-02-04 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					1
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG555960	**Reviewer Name:**	Adriane Steed
LRC Date:	2016-02-04 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG555960	**Reviewer Name:**	Adriane Steed
LRC Date:	2016-02-04 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG555960	**Reviewer Name:**	Adriane Steed
LRC Date:	2016-02-04 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -01,-03,-05,-07,-09 were analyzed at dilutions only due to their high analyte concentrations (Cl and/or SO4) which were over 200 ppm. Any sample that has a single anion load greater than 200 ppm (or a total anion load greater than 400 ppm) will be diluted in order to prevent damage to the IC from repeated overloading of the analytical column and oversaturation of the suppressor membranes.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG556354, WG556396	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-02-12 18:27:35

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG556354, WG556396	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG556354, WG556396	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG556354, WG556396	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG556354, WG556396	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG556354, WG556396	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG556739	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-02-12 18:29:39

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG556739	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG556739	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG556739	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG556739	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG556739	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	S
Prep Batch Number(s):	WG556327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-02-12 18:26:58

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	S
Prep Batch Number(s):	WG556327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	S
Prep Batch Number(s):	WG556327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	S
Prep Batch Number(s):	WG556327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	S
Prep Batch Number(s):	WG556327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	S
Prep Batch Number(s):	WG556327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG556095	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-02-12 18:30:13

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG556095	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG556095	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG556095	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG556095	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020058
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG556095	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	46WW02-020116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556408	**Analyst:**	ADC	**Run Date:**	02/05/2016 16:59
Collect Date:	02/01/2016 08:10	**Dilution:**	1	**File ID:**	17M017588
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.247	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	0.842	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.28		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	3.58	J	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	16.6		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW02-020116	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 12:01
Collect Date:	02/01/2016 08:10	**Dilution:**	1	**File ID:**	16G49339
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW02-020116	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 14:28
Collect Date:	02/01/2016 08:10	**Dilution:**	10	**File ID:**	16G49346
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	460000		100000	50000	25000

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW02-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 13:10
Collect Date:	02/01/2016 08:10	**Dilution:**	1	**File ID:**	T3.021116.131020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	2.03		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L16020058-01	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW02-020116	**Prep Method:**	9056	**Prep Date:**	02/02/2016 14:03
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	01/20/2016 12:54
Workgroup #:	WG555960	**Analyst:**	AED	**Run Date:**	02/02/2016 17:08
Collect Date:	02/01/2016 08:10	**Dilution:**	2	**File ID:**	I3_020216-12
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	0.400	U	0.800	0.400	0.200
Nitrate	14797-55-8	0.400	U	0.800	0.400	0.200
Nitrite	14797-65-0	0.400	U	0.800	0.400	0.200
Sulfate	14808-79-8	164		4.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	46WW02-020116	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/05/2016 09:51
Workgroup #:	WG556354	**Analyst:**	DCM	**Run Date:**	02/05/2016 09:59
Collect Date:	02/01/2016 08:10	**Dilution:**	1	**File ID:**	S2160205002.020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	37.6	J	40.0	20.0	10.0

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW02-020116	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/04/2016 11:28
Workgroup #:	WG556212	**Analyst:**	DCM	**Run Date:**	02/04/2016 11:31
Collect Date:	02/01/2016 08:10	**Dilution:**	1	**File ID:**	SC160204002.013
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.320	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW02-020116	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG556327	**Analyst:**	EPT	**Run Date:**	02/04/2016 17:00
Collect Date:	02/01/2016 08:10	**Dilution:**	1	**File ID:**	ET.1602041700-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW02-020116	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG556095	**Analyst:**	EPT	**Run Date:**	02/03/2016 15:42
Collect Date:	02/01/2016 08:10	**Dilution:**	10	**File ID:**	TC02032016.009
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	46.3		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16020058-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW02FF-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 13:14
Collect Date:	02/01/2016 08:10	**Dilution:**	1	**File ID:**	T3.021116.131422
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	1.98		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L16020058-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	46WW02FF-020116	**Prep Method:**	3015	**Prep Date:**	02/03/2016 07:59
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/03/2016 13:56
Workgroup #:	WG556102	**Analyst:**	BKT	**Run Date:**	02/03/2016 15:06
Collect Date:	02/01/2016 08:10	**Dilution:**	1	**File ID:**	NI.020316.150659
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.207		0.00400	0.00200	0.00100

Certificate of Analysis

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16020058-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	46WW11-020116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556408	**Analyst:**	ADC	**Run Date:**	02/05/2016 17:19
Collect Date:	02/01/2016 09:25	**Dilution:**	1	**File ID:**	17M017589
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.300	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.578	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.44	J	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	20.5		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.2	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW11-020116	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 12:13
Collect Date:	02/01/2016 09:25	**Dilution:**	1	**File ID:**	16G49340
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	163		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW11-020116	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 14:41
Collect Date:	02/01/2016 09:25	**Dilution:**	10	**File ID:**	16G49347
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	503000		100000	50000	25000

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW11-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 13:18
Collect Date:	02/01/2016 09:25	**Dilution:**	1	**File ID:**	T3.021116.131824
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	1.07		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L16020058-03	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW11-020116	**Prep Method:**	9056	**Prep Date:**	02/02/2016 14:03
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	01/20/2016 12:54
Workgroup #:	WG555960	**Analyst:**	AED	**Run Date:**	02/02/2016 17:29
Collect Date:	02/01/2016 09:25	**Dilution:**	10	**File ID:**	I3_020216-13
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	196		4.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00
Sulfate	14808-79-8	343		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	46WW11-020116	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/05/2016 09:51
Workgroup #:	WG556354	**Analyst:**	DCM	**Run Date:**	02/05/2016 10:00
Collect Date:	02/01/2016 09:25	**Dilution:**	1	**File ID:**	S2160205002.023
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	63.7		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16020058-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW11-020116	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/04/2016 11:28
Workgroup #:	WG556212	**Analyst:**	DCM	**Run Date:**	02/04/2016 11:32
Collect Date:	02/01/2016 09:25	**Dilution:**	1	**File ID:**	SC160204002.014
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.273	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-03	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW11-020116	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG556327	**Analyst:**	EPT	**Run Date:**	02/04/2016 17:00
Collect Date:	02/01/2016 09:25	**Dilution:**	1	**File ID:**	ET.1602041700-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW11-020116	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG556095	**Analyst:**	EPT	**Run Date:**	02/03/2016 16:15
Collect Date:	02/01/2016 09:25	**Dilution:**	10	**File ID:**	TC02032016.010
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	44.0		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16020058-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW11FF-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 13:38
Collect Date:	02/01/2016 09:25	**Dilution:**	1	**File ID:**	T3.021116.133800
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.745		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L16020058-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	46WW11FF-020116	**Prep Method:**	3015	**Prep Date:**	02/03/2016 07:59
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/03/2016 13:56
Workgroup #:	WG556102	**Analyst:**	BKT	**Run Date:**	02/03/2016 15:10
Collect Date:	02/01/2016 09:25	**Dilution:**	1	**File ID:**	NI.020316.151011
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.103		0.00400	0.00200	0.00100

Certificate of Analysis

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16020058-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	LHSMW19-020116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556408	**Analyst:**	ADC	**Run Date:**	02/05/2016 17:50
Collect Date:	02/01/2016 10:30	**Dilution:**	1	**File ID:**	17M017590
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.92		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.252	J	1.00	0.500	0.250

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	24.2		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.5	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	LHSMW19-020116	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 12:26
Collect Date:	02/01/2016 10:30	**Dilution:**	1	**File ID:**	16G49341
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	95800		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	LHSMW19-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 13:42
Collect Date:	02/01/2016 10:30	**Dilution:**	1	**File ID:**	T3.021116.134204
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	0.112	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-05	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	LHSMW19-020116	**Prep Method:**	9056	**Prep Date:**	02/02/2016 14:03
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	01/20/2016 12:54
Workgroup #:	WG555960	**Analyst:**	AED	**Run Date:**	02/02/2016 17:49
Collect Date:	02/01/2016 10:30	**Dilution:**	20	**File ID:**	I3_020216-14
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	296		8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	531		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	LHSMW19-020116	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/05/2016 09:51
Workgroup #:	WG556354	**Analyst:**	DCM	**Run Date:**	02/05/2016 10:01
Collect Date:	02/01/2016 10:30	**Dilution:**	2	**File ID:**	S2160205002.024
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	319		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L16020058-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	LHSMW19-020116	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/04/2016 11:28
Workgroup #:	WG556212	**Analyst:**	DCM	**Run Date:**	02/04/2016 11:33
Collect Date:	02/01/2016 10:30	**Dilution:**	1	**File ID:**	SC160204002.015
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-05	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	LHSMW19-020116	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG556327	**Analyst:**	EPT	**Run Date:**	02/04/2016 17:00
Collect Date:	02/01/2016 10:30	**Dilution:**	1	**File ID:**	ET.1602041700-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	LHSMW19-020116	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG556095	**Analyst:**	EPT	**Run Date:**	02/03/2016 16:37
Collect Date:	02/01/2016 10:30	**Dilution:**	3	**File ID:**	TC02032016.011
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	11.7		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L16020058-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	LHSMW19FF-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 13:46
Collect Date:	02/01/2016 10:30	**Dilution:**	1	**File ID:**	T3.021116.134605
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0879	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	LHSMW19FF-020116	**Prep Method:**	3015	**Prep Date:**	02/03/2016 07:59
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/03/2016 13:56
Workgroup #:	WG556102	**Analyst:**	BKT	**Run Date:**	02/03/2016 15:13
Collect Date:	02/01/2016 10:30	**Dilution:**	1	**File ID:**	NI.020316.151323
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0823		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L16020058-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	46WW05-020116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556408	**Analyst:**	ADC	**Run Date:**	02/05/2016 18:09
Collect Date:	02/01/2016 13:15	**Dilution:**	1	**File ID:**	17M017591
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.902	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	3.29		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	3.12		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	46.4		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.832	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.2	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW05-020116	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 12:38
Collect Date:	02/01/2016 13:15	**Dilution:**	1	**File ID:**	16G49342
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	32.2		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW05-020116	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 14:54
Collect Date:	02/01/2016 13:15	**Dilution:**	5	**File ID:**	16G49348
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	228000		50000	25000	12500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW05-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 14:29
Collect Date:	02/01/2016 13:15	**Dilution:**	5	**File ID:**	T3.021116.142952
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	13.6		1.00	0.500	0.250

Certificate of Analysis

Sample #:	L16020058-07	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW05-020116	**Prep Method:**	9056	**Prep Date:**	02/02/2016 14:03
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	01/20/2016 12:54
Workgroup #:	WG555960	**Analyst:**	AED	**Run Date:**	02/02/2016 18:50
Collect Date:	02/01/2016 13:15	**Dilution:**	50	**File ID:**	I3_020216-17
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	245		20.0	10.0	5.00
Nitrate	14797-55-8	10.0	U	20.0	10.0	5.00
Nitrite	14797-65-0	10.0	U	20.0	10.0	5.00
Sulfate	14808-79-8	4350		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	46WW05-020116	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/05/2016 09:51
Workgroup #:	WG556354	**Analyst:**	DCM	**Run Date:**	02/05/2016 10:02
Collect Date:	02/01/2016 13:15	**Dilution:**	1	**File ID:**	S2160205002.025
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	78.2		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16020058-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW05-020116	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/04/2016 11:28
Workgroup #:	WG556212	**Analyst:**	DCM	**Run Date:**	02/04/2016 11:34
Collect Date:	02/01/2016 13:15	**Dilution:**	1	**File ID:**	SC160204002.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.310	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-07	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW05-020116	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG556327	**Analyst:**	EPT	**Run Date:**	02/04/2016 17:00
Collect Date:	02/01/2016 13:15	**Dilution:**	1	**File ID:**	ET.1602041700-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW05-020116	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG556095	**Analyst:**	EPT	**Run Date:**	02/03/2016 16:59
Collect Date:	02/01/2016 13:15	**Dilution:**	3	**File ID:**	TC02032016.012
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	20.7		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L16020058-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW05FF-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 14:33
Collect Date:	02/01/2016 13:15	**Dilution:**	5	**File ID:**	T3.021116.143348
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	12.2		1.00	0.500	0.250

Certificate of Analysis

Sample #:	L16020058-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	46WW05FF-020116	**Prep Method:**	3015	**Prep Date:**	02/03/2016 07:59
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/03/2016 13:56
Workgroup #:	WG556102	**Analyst:**	BKT	**Run Date:**	02/03/2016 16:04
Collect Date:	02/01/2016 13:15	**Dilution:**	100	**File ID:**	NI.020316.160438
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	15.2		0.400	0.200	0.100

Certificate of Analysis

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16020058-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	46WW16-020116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556408	**Analyst:**	ADC	**Run Date:**	02/05/2016 18:29
Collect Date:	02/01/2016 14:30	**Dilution:**	1	**File ID:**	17M017592
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.296	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	117	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	107	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW16-020116	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 12:50
Collect Date:	02/01/2016 14:30	**Dilution:**	1	**File ID:**	16G49343
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW16-020116	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 15:06
Collect Date:	02/01/2016 14:30	**Dilution:**	10	**File ID:**	16G49349
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	577000		100000	50000	25000

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW16-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 14:37
Collect Date:	02/01/2016 14:30	**Dilution:**	5	**File ID:**	T3.021116.143743
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	24.9		1.00	0.500	0.250

Certificate of Analysis

Sample #:	L16020058-09	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW16-020116	**Prep Method:**	9056	**Prep Date:**	02/02/2016 14:03
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	01/20/2016 12:54
Workgroup #:	WG555960	**Analyst:**	AED	**Run Date:**	02/02/2016 19:11
Collect Date:	02/01/2016 14:30	**Dilution:**	20	**File ID:**	I3_020216-18
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	299		8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	690		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	46WW16-020116	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/05/2016 11:12
Workgroup #:	WG556396	**Analyst:**	DCM	**Run Date:**	02/05/2016 11:16
Collect Date:	02/01/2016 14:30	**Dilution:**	5	**File ID:**	S2160205003.015
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	586		200	100	50.0

Certificate of Analysis

Sample #:	L16020058-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW16-020116	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/04/2016 11:28
Workgroup #:	WG556212	**Analyst:**	DCM	**Run Date:**	02/04/2016 11:34
Collect Date:	02/01/2016 14:30	**Dilution:**	1	**File ID:**	SC160204002.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-09	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW16-020116	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG556327	**Analyst:**	EPT	**Run Date:**	02/04/2016 17:00
Collect Date:	02/01/2016 14:30	**Dilution:**	1	**File ID:**	ET.1602041700-08
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-09	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW16-020116	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG556095	**Analyst:**	EPT	**Run Date:**	02/03/2016 17:34
Collect Date:	02/01/2016 14:30	**Dilution:**	10	**File ID:**	TC02032016.013
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	82.4		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16020058-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW16FF-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 14:41
Collect Date:	02/01/2016 14:30	**Dilution:**	5	**File ID:**	T3.021116.144146
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	18.6		1.00	0.500	0.250

Certificate of Analysis

Sample #:	L16020058-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	46WW16FF-020116	**Prep Method:**	3015	**Prep Date:**	02/03/2016 07:59
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/03/2016 13:56
Workgroup #:	WG556102	**Analyst:**	BKT	**Run Date:**	02/03/2016 16:07
Collect Date:	02/01/2016 14:30	**Dilution:**	50	**File ID:**	NI.020316.160749
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	1.52		0.200	0.100	0.0500

Certificate of Analysis

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16020058-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556408	**Analyst:**	ADC	**Run Date:**	02/05/2016 15:38
Collect Date:	02/01/2016 00:01	**Dilution:**	1	**File ID:**	17M017585
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.3	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	107	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	46WW02-020116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556408	**Analyst:**	ADC	**Run Date:**	02/05/2016 16:59
Collect Date:	02/01/2016 08:10	**Dilution:**	1	**File ID:**	17M017588
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.247	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	0.842	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.28		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	3.58	J	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	16.6		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	46WW11-020116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556408	**Analyst:**	ADC	**Run Date:**	02/05/2016 17:19
Collect Date:	02/01/2016 09:25	**Dilution:**	1	**File ID:**	17M017589
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.300	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.578	J	1.00	0.500	0.250

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.44	J	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	20.5		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.2	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	LHSMW19-020116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556408	**Analyst:**	ADC	**Run Date:**	02/05/2016 17:50
Collect Date:	02/01/2016 10:30	**Dilution:**	1	**File ID:**	17M017590
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.92		1.00	0.500	0.250

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.252	J	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	24.2		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.5	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	46WW05-020116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556408	**Analyst:**	ADC	**Run Date:**	02/05/2016 18:09
Collect Date:	02/01/2016 13:15	**Dilution:**	1	**File ID:**	17M017591
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.902	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	3.29		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	3.12		1.00	0.500	0.250

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	46.4		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.832	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.2	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	46WW16-020116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556408	**Analyst:**	ADC	**Run Date:**	02/05/2016 18:29
Collect Date:	02/01/2016 14:30	**Dilution:**	1	**File ID:**	17M017592
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.296	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	117	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	107	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556408	**Analyst:**	ADC	**Run Date:**	02/05/2016 15:38
Collect Date:	02/01/2016 00:01	**Dilution:**	1	**File ID:**	17M017585
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.3	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	107	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 012116
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74413
CCV: STD74444 LCS: STD74446 MS/MSD: NA

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG554589 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M017419	WG554589-01 50ng BFB STD 8260	NA	1	1	STD73676	01/21/16 15:25
17M017420	WG554589-02 50ug/L CCV STD 8260	NA	1	1	STD74444	01/21/16 15:45
17M017421	RINSE	NA	1	1		01/21/16 16:06
17M017422	WG554589-03 0.3ug/L STD 8260	NA	1	1	STD74444	01/21/16 16:26
17M017423	WG554589-04 0.4ug/L STD 8260	NA	1	1	STD74444	01/21/16 16:47
17M017424	WG554589-05 1.0ug/L STD 8260	NA	1	1	STD74444	01/21/16 17:07
17M017425	WG554589-06 2.0ug/L STD 8260	NA	1	1	STD74444	01/21/16 17:28
17M017426	WG554589-07 5.0ug/L STD 8260	NA	1	1	STD74444	01/21/16 17:48
17M017427	WG554589-08 20.0ug/L STD 8260	NA	1	1	STD74444	01/21/16 18:09
17M017428	WG554589-09 100.0ug/L STD 8260	NA	1	1	STD74444	01/21/16 18:29
17M017429	WG554589-10 200.0ug/L STD 8260	NA	1	1	STD74444	01/21/16 18:50
17M017430	WG554589-11 300.0ug/L STD 8260	NA	1	1	STD74444	01/21/16 19:10
17M017431	RINSE	NA	1	1		01/21/16 19:31
17M017432	WG554589-12 50.0ug/L ALTSRC 8260	NA	1	1	STD74446	01/21/16 19:51

Approved: February 03, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 020516
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74413 Surrogate Standard: STD74414
CCV: STD74444 LCS: STD74621 MS/MSD: STD74621

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG556539, WG556408

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M017573	WG556406-01 50ng BFB	NA	1	1	STD73676	02/05/16 11:30
17M017574	WG556406-02 50ug/L CCV	NA	1	1	STD74444	02/05/16 11:48
17M017575	RINSE	NA	1	1		02/05/16 12:12
17M017576	WG556408-01 BLK 8260	NA	1	1		02/05/16 12:31
17M017577	WG556408-02 20ug/L LCS	NA	1	1	STD74621	02/05/16 12:51
17M017578	WG556408-03 20ug/L LCSDUP	NA	1	1	STD74621	02/05/16 13:11
17M017579	L16011371-02 B 10X 826-TC	NA	17	10		02/05/16 13:30
17M017580	L16011401-01 B 500X 826-TC	NA	17	500		02/05/16 13:50
17M017581	L16011401-04 B 500X 826-TC	NA	17	500		02/05/16 14:10
17M017582	WG556408-04 20ug/L ACRYLONITRILE LC	NA	1	1	STD74618	02/05/16 14:30
17M017583	WG556408-05 20ug/L ACRYLONITRILE LC	NA	1	1	STD74618	02/05/16 14:49
17M017584	L16020055-03 B 826-LOW	<2	1	1		02/05/16 15:19
17M017585	L16020058-11 B 826-LOW	<2	1	1		02/05/16 15:38
17M017586	L16020141-10 A 826-LOW	<2	1	1		02/05/16 16:08
17M017587	L16020248-06 A 826-SPE	<2	1	1		02/05/16 16:28
17M017588	L16020058-01 B 826-LOW	<2	1	1		02/05/16 16:59
17M017589	L16020058-03 B 826-LOW	<2	1	1		02/05/16 17:19
17M017590	L16020058-05 B 826-LOW	<2	1	1		02/05/16 17:50
17M017591	L16020058-07 B 826-LOW	<2	1	1		02/05/16 18:09
17M017592	L16020058-09 B 826-LOW	<2	1	1		02/05/16 18:29
17M017593	L16020141-05 B 826-LOW	<2	1	1		02/05/16 18:49
17M017594	L16020141-09 A 826-LOW	<2	1	1		02/05/16 19:09
17M017595	L16020248-01 A 826-SPE	<2	1	1		02/05/16 19:28
17M017596	L16020248-02 A 826-SPE	<2	1	1		02/05/16 19:48
17M017597	L16020248-03 A 826-SPE	<2	1	1		02/05/16 20:08
17M017598	L16020248-04 A 826-SPE	<2	1	1		02/05/16 20:28
17M017599	L16020248-05 A 826-SPE	<2	1	1		02/05/16 20:47
17M017600	WG556539-01 20ug/L LCS 624	NA	2	1	STD74621	02/05/16 21:07
17M017601	WG556539-02 20ug/L LCSDUP 624	NA	2	1	STD74621	02/05/16 21:27
17M017602	RINSE	NA	2	1		02/05/16 21:46
17M017603	WG556539-03 624-BLK	NA	2	1		02/05/16 22:06
17M017604	L16020202-01 A 624-SPE2	5	2	1		02/05/16 22:26
17M017605	L16020326-13 A 624-SPE1	5	2	1		02/05/16 22:46
17M017606	L16020326-15 A 624-SPE1	5	2	1		02/05/16 23:06

Approved: February 08, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 020516
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74413 Surrogate Standard: STD74414
CCV: STD74444 LCS: STD74621 MS/MSD: STD74621

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG556539, WG556408

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M017607	L16020102-03 B 10X 624-SPE	7	2	10		02/05/16 23:26
17M017608	L16020160-02 A 10X 624	<2	2	10		02/05/16 23:45
17M017609	L16020183-02 A 624-SPE	6	2	1		02/06/16 00:05
17M017610	L16020185-01 A 624-SPE	6	2	1		02/06/16 00:25
17M017611	L16020202-02 A 624-SPE2	6	2	1		02/06/16 00:45
17M017612	L16020326-01 A 624-SPE1	7	2	1		02/06/16 01:05
17M017613	L16020326-03 A 624-SPE1	7	2	1		02/06/16 01:25
17M017614	L16020326-05 A 624-SPE1	7	2	1		02/06/16 01:45
17M017615	L16020302-01 A 624-SPE	6	2	1		02/06/16 02:04
17M017616	L16020371-03 A 624-SPE	6	2	1		02/06/16 02:24
17M017617	L16020376-01 A 624-SPE	6	2	1		02/06/16 02:44
17M017618	L16020376-03 A 624-SPE	6	2	1		02/06/16 03:04
17M017619	L16020228-01 A 624-SPE	<2	2	1		02/06/16 03:24
17M017620	L16020351-02 A 624-SPE1	<2	2	1		02/06/16 03:43
17M017621	L16020351-03 A 624-SPE1	<2	2	1		02/06/16 04:03
17M017622	L16020351-04 A 624-SPE1	<2	2	1		02/06/16 04:23
17M017623	L16020345-02 A 624-SPE	<2	2	1		02/06/16 04:43
17M017624	RINSE	NA	2	1		02/06/16 05:03
17M017625	RINSE	NA	2	1		02/06/16 05:22
17M017626	RINSE	NA	2	1		02/06/16 05:42

Comments

Seq.	Rerun	Dil.	Reason	Analytes
43	X	10	Over Calibration Range	
File ID: 17M017615				
L16020302-01				

Approved: February 08, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 21-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 73041
Analytical Workgroups: WG554589

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-FEB-2016

Secondary Reviewer:
03-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-03-2016 11:42:23

Microbac Laboratories Inc.

Data Checklist

Date: 05-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 73151
Analytical Workgroups: WG556408

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
08-FEB-2016

Secondary Reviewer:
08-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-08-2016 14:35:54

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG556408

Login Number: L16020058

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW02-020116	01	02/01/16					02/05/2016	4.4	14		02/05/16	4.4	14	
46WW11-020116	03	02/01/16					02/05/2016	4.3	14		02/05/16	4.3	14	
LHSMW19-020116	05	02/01/16					02/05/2016	4.3	14		02/05/16	4.3	14	
46WW05-020116	07	02/01/16					02/05/2016	4.2	14		02/05/16	4.2	14	
46WW16-020116	09	02/01/16					02/05/2016	4.2	14		02/05/16	4.2	14	
TRIP BLANK	11	02/01/16					02/05/2016	4.7	14		02/05/16	4.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4622085
Report generated 02/10/2016 10:09

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16020058
Instrument Id: HPMS17
Workgroup (AAB#): WG556408

Method: 8260
CAL ID: HPMS17-21-JAN-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16020058-01	1.00	01	106	94.6	106	102
L16020058-03	1.00	01	107	97.2	108	102
L16020058-05	1.00	01	107	96.5	108	103
L16020058-07	1.00	01	109	96.2	106	103
L16020058-09	1.00	01	117	103	107	105
L16020058-11	1.00	01	108	97.3	107	103
WG556408-01	1.00	01	108	95.6	109	105
WG556408-02	1.00	01	107	103	110	105
WG556408-03	1.00	01	108	103	107	103
WG556408-04	1.00	02	107	99.6	108	105
WG556408-05	1.00	02	106	100	105	104

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4622093
Report generated: 02/10/2016 10:09

METHOD BLANK SUMMARY

Login Number: L16020058
Blank File ID: 17M017576
Prep Date: 02/05/16 12:31
Analyzed Date: 02/05/16 12:31
Analyst: ADC

Work Group: WG556408
Blank Sample ID: WG556408-01
Instrument ID: HPMS17
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556408-02	17M017577	02/05/16 12:51	01
LCS2	WG556408-03	17M017578	02/05/16 13:11	01
LCS	WG556408-04	17M017582	02/05/16 14:30	02
LCS2	WG556408-05	17M017583	02/05/16 14:49	02
TRIP BLANK	L16020058-11	17M017585	02/05/16 15:38	01
46WW02-020116	L16020058-01	17M017588	02/05/16 16:59	01
46WW11-020116	L16020058-03	17M017589	02/05/16 17:19	01
LHSMW19-020116	L16020058-05	17M017590	02/05/16 17:50	01
46WW05-020116	L16020058-07	17M017591	02/05/16 18:09	01
46WW16-020116	L16020058-09	17M017592	02/05/16 18:29	01

Report Name: BLANK_SUMMARY
PDF File ID: 4622086
Report generated 02/10/2016 10:09

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16020058 Prep Date: 02/05/16 12:31 Sample ID: WG556408-01
Instrument ID: HPMS17 Run Date: 02/05/16 12:31 Prep Method: 5030B/5030C/503
File ID: 17M017576 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG556408 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-21-JAN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4622087
10-FEB-2016 10:09

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020058 Prep Date: 02/05/16 12:31 Sample ID: WG556408-01
Instrument ID: HPMS17 Run Date: 02/05/16 12:31 Prep Method: 5030B/5030C/503
File ID: 17M017576 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG556408 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-21-JAN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	95.6	85 - 115	PASS
1,2-Dichloroethane-d4	108	70 - 120	PASS
Toluene-d8	105	85 - 120	PASS
4-Bromofluorobenzene	109	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4622087
10-FEB-2016 10:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020058 Analyst: ADC Prep Method: 5030B/5030C/503
Instrument ID: HPMS17 Matrix: Water Method: 8260B
Workgroup (AAB#): WG556408 Units: ug/L
QC Key: DOD4 Lot #: STD74621

Sample ID: WG556408-02 LCS File ID: 17M017577 Run Date: 02/05/2016 12:51
Sample ID: WG556408-03 LCS2 File ID: 17M017578 Run Date: 02/05/2016 13:11

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.2	101	20.0	19.6	98.1	2.93	80 - 130	30	
1,1,1-Trichloroethane	20.0	19.8	99.1	20.0	19.2	96.1	3.04	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	20.5	102	20.0	20.0	100	2.13	65 - 130	30	
1,1,2-Trichloroethane	20.0	21.0	105	20.0	20.8	104	0.864	75 - 125	30	
1,1-Dichloroethane	20.0	19.2	95.8	20.0	18.5	92.3	3.66	70 - 135	30	
1,1-Dichloroethene	20.0	19.1	95.6	20.0	18.8	93.8	1.92	70 - 130	30	
1,1-Dichloropropene	20.0	18.7	93.5	20.0	18.1	90.3	3.48	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	21.2	106	20.0	20.8	104	2.29	55 - 140	30	
1,2,3-Trichloropropane	20.0	22.6	113	20.0	22.0	110	2.80	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	20.7	103	20.0	20.0	99.9	3.34	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	21.0	105	20.0	20.1	100	4.62	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	20.7	103	20.0	21.0	105	1.42	50 - 130	30	
1,2-Dibromoethane	20.0	20.8	104	20.0	20.7	103	0.423	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.9	105	20.0	20.3	102	3.12	70 - 120	30	
1,2-Dichloroethane	20.0	21.1	106	20.0	21.0	105	0.428	70 - 130	30	
1,2-Dichloropropane	20.0	20.6	103	20.0	20.3	101	1.48	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	21.4	107	20.0	20.3	102	5.03	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.8	104	20.0	20.0	99.8	3.92	75 - 125	30	
1,3-Dichloropropane	20.0	21.9	110	20.0	21.7	108	1.35	75 - 125	30	
1,4-Dichlorobenzene	20.0	20.2	101	20.0	19.5	97.3	3.79	75 - 125	30	
2,2-Dichloropropane	20.0	18.3	91.4	20.0	17.2	86.0	6.05	70 - 135	30	
2-Butanone	20.0	24.1	121	20.0	24.2	121	0.142	30 - 150	30	
2-Chlorotoluene	20.0	21.0	105	20.0	20.1	101	4.21	75 - 125	30	
2-Hexanone	20.0	22.6	113	20.0	22.9	114	1.41	55 - 130	30	
4-Chlorotoluene	20.0	21.3	106	20.0	20.6	103	3.55	75 - 130	30	
4-Methyl-2-pentanone	20.0	21.7	109	20.0	22.2	111	2.26	60 - 135	30	
Acetone	20.0	27.2	136	20.0	27.7	138	1.62	40 - 140	30	
Benzene	20.0	19.8	99.2	20.0	19.4	96.8	2.40	80 - 120	30	
Bromobenzene	20.0	19.9	99.5	20.0	19.0	95.1	4.53	75 - 125	30	
Bromochloromethane	20.0	20.4	102	20.0	20.0	99.8	2.08	65 - 130	30	
Bromodichloromethane	20.0	20.1	101	20.0	19.9	99.7	0.942	75 - 120	30	
Bromoform	20.0	19.5	97.5	20.0	19.5	97.5	0.0406	70 - 130	30	
Bromomethane	20.0	20.2	101	20.0	18.5	92.7	8.57	30 - 145	30	
Carbon disulfide	20.0	19.0	95.1	20.0	18.4	91.9	3.39	35 - 160	30	
Carbon tetrachloride	20.0	19.1	95.6	20.0	18.5	92.3	3.55	65 - 140	30	
Chlorobenzene	20.0	20.3	102	20.0	19.8	99.0	2.69	80 - 120	30	
Chloroethane	20.0	16.9	84.3	20.0	16.4	82.1	2.62	60 - 135	30	
Chloroform	20.0	20.4	102	20.0	19.8	98.8	3.14	65 - 135	30	
Chloromethane	20.0	20.9	105	20.0	20.0	100	4.54	40 - 125	30	
cis-1,2-Dichloroethene	20.0	19.9	99.6	20.0	19.4	97.1	2.56	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4622088
Report generated: 02/10/2016 10:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020058 Analyst: ADC Prep Method: 5030B/5030C/503
Instrument ID: HPMS17 Matrix: Water Method: 8260B
Workgroup (AAB#): WG556408 Units: ug/L
QC Key: DOD4 Lot #: STD74621

Sample ID: WG556408-02 LCS File ID: 17M017577 Run Date: 02/05/2016 12:51
Sample ID: WG556408-03 LCS2 File ID: 17M017578 Run Date: 02/05/2016 13:11

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.0	110	20.0	21.6	108	1.62	70 - 130	30	
Chlorodibromomethane	20.0	20.2	101	20.0	20.0	100	0.992	60 - 135	30	
Dibromomethane	20.0	20.6	103	20.0	20.6	103	0.204	75 - 125	30	
Dichlorodifluoromethane	20.0	21.3	106	20.0	20.3	101	4.81	30 - 155	30	
Ethylbenzene	20.0	20.0	100	20.0	19.4	97.2	2.97	75 - 125	30	
Hexachlorobutadiene	20.0	21.4	107	20.0	20.3	102	5.12	50 - 140	30	
Isopropylbenzene	20.0	20.8	104	20.0	20.0	100	3.63	75 - 125	30	
m-,p-Xylene	40.0	40.7	102	40.0	39.3	98.3	3.46	75 - 130	30	
Methylene chloride	20.0	19.9	99.3	20.0	19.2	96.2	3.14	55 - 140	30	
n-Butylbenzene	20.0	21.6	108	20.0	20.5	103	5.19	70 - 135	30	
n-Propylbenzene	20.0	21.8	109	20.0	20.7	104	5.23	70 - 130	30	
Naphthalene	20.0	20.6	103	20.0	20.4	102	0.983	55 - 140	30	
o-Xylene	20.0	21.0	105	20.0	20.2	101	3.86	80 - 120	30	
p-Isopropyltoluene	20.0	20.9	104	20.0	20.0	99.8	4.57	75 - 130	30	
sec-Butylbenzene	20.0	21.8	109	20.0	20.7	104	5.25	70 - 125	30	
Styrene	20.0	20.4	102	20.0	19.8	99.2	3.04	65 - 135	30	
tert-Butylbenzene	20.0	21.1	106	20.0	19.9	99.4	6.02	70 - 130	30	
Tetrachloroethene	20.0	18.9	94.4	20.0	18.1	90.5	4.22	45 - 150	30	
Toluene	20.0	20.0	100	20.0	19.2	95.9	4.10	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.7	98.3	20.0	18.9	94.3	4.12	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.2	106	20.0	20.9	105	1.20	55 - 140	30	
Trichloroethene	20.0	20.6	103	20.0	20.1	101	2.45	70 - 125	30	
Trichlorofluoromethane	20.0	15.0	74.8	20.0	14.2	70.8	5.44	60 - 145	30	
Vinyl chloride	20.0	20.6	103	20.0	19.5	97.4	5.64	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	107	108	70 - 120	PASS
Dibromofluoromethane	103	103	85 - 115	PASS
4-Bromofluorobenzene	110	107	75 - 120	PASS
Toluene-d8	105	103	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4622088
Report generated: 02/10/2016 10:09

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16020058
Instrument: HPMS17
Analyst: ADC
Workgroup: WG554589

Tune ID: WG554589-01
Run Date: 01/21/2016
Run Time: 15:25
File ID: 17M017419
Cal ID: HPMS17 - 21-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.3	9806	PASS
75.0	95.0	30.0	60.0	50.5	27128	PASS
95.0	95.0	100	100	100	53731	PASS
96.0	95.0	5.00	9.00	6.43	3455	PASS
173	174	0	2.00	1.16	576	PASS
174	95.0	50.0	100	92.4	49645	PASS
175	174	5.00	9.00	7.86	3904	PASS
176	174	95.0	101	96.3	47824	PASS
177	176	5.00	9.00	6.48	3098	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG554589-02	STD-CCV	01	01/21/2016 15:45	
WG554589-03	STD	01	01/21/2016 16:26	
WG554589-04	STD	01	01/21/2016 16:47	
WG554589-05	STD	01	01/21/2016 17:07	
WG554589-06	STD	01	01/21/2016 17:28	
WG554589-07	STD	01	01/21/2016 17:48	
WG554589-08	STD	01	01/21/2016 18:09	
WG554589-09	STD	01	01/21/2016 18:29	
WG554589-10	STD	01	01/21/2016 18:50	
WG554589-11	STD	01	01/21/2016 19:10	
WG554589-12	SSCV	01	01/21/2016 19:51	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4622090
Report generated 02/10/2016 10:09

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16020058
Instrument: HPMS17
Analyst: ADC
Workgroup: WG555684

Tune ID: WG555684-01
Run Date: 01/29/2016
Run Time: 15:48
File ID: 17M017437
Cal ID: HPMS17 - 21-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.3	10633	PASS
75.0	95.0	30.0	60.0	50.0	29120	PASS
95.0	95.0	100	100	100	58189	PASS
96.0	95.0	5.00	9.00	6.43	3742	PASS
173	174	0	2.00	0.409	217	PASS
174	95.0	50.0	100	91.3	53107	PASS
175	174	5.00	9.00	7.70	4087	PASS
176	174	95.0	101	96.0	51005	PASS
177	176	5.00	9.00	6.93	3537	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG554589-13	SSCV	01	01/29/2016 16:33	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4622090
Report generated 02/10/2016 10:09

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16020058
Instrument: HPMS17
Analyst: ADC
Workgroup: WG556406

Tune ID: WG556406-01
Run Date: 02/05/2016
Run Time: 11:30
File ID: 17M017573
Cal ID: HPMS17 - 21-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.7	8759	PASS
75.0	95.0	30.0	60.0	49.6	22075	PASS
95.0	95.0	100	100	100	44525	PASS
96.0	95.0	5.00	9.00	6.47	2879	PASS
173	174	0	2.00	0.830	313	PASS
174	95.0	50.0	100	84.7	37725	PASS
175	174	5.00	9.00	8.04	3032	PASS
176	174	95.0	101	99.3	37453	PASS
177	176	5.00	9.00	7.20	2697	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG556406-02	CCV	01	02/05/2016 11:48	
WG556408-01	BLANK	01	02/05/2016 12:31	
WG556408-02	LCS	01	02/05/2016 12:51	
WG556408-03	LCS2	01	02/05/2016 13:11	
WG556408-04	LCS	02	02/05/2016 14:30	
WG556408-05	LCS2	02	02/05/2016 14:49	
L16020058-11	TRIP BLANK	01	02/05/2016 15:38	
L16020058-01	46WW02-020116	01	02/05/2016 16:59	
L16020058-03	46WW11-020116	01	02/05/2016 17:19	
L16020058-05	LHSMW19-020116	01	02/05/2016 17:50	
L16020058-07	46WW05-020116	01	02/05/2016 18:09	
L16020058-09	46WW16-020116	01	02/05/2016 18:29	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4622090
Report generated 02/10/2016 10:09

Response Factor Report HPMS17

Method Path : D:\MassHunter\GCMS\1\methods\
Method File : 8260VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
Last Update : Wed Jan 27 12:15:43 2016
Response Via : Initial Calibration
Curve: WG554589
Calibration Files
0.3 =17M017422.D 0.4 =17M017423.D 1 =17M017424.D 2 =17M017425.D 5 =17M017426.D 20 =17M017427.D
50 =17M017420.D 100 =17M017428.D 200 =17M017429.D 300 =17M017430.D

		Compound	0.3	0.4	1	2	5	20	50	100	200	300	Avg	%RSD	Linear
1)	I	Fluorobenzene	----------ISTD----------												
2)	T	Dichlorodifluo...			0.349	0.319	0.318	0.394	0.410	0.404	0.413	0.426	0.379	11.51	
3)	P	Chloromethane			0.386	0.337	0.337	0.364	0.378	0.380	0.386	0.393	0.370	6.02	
4)	C	Vinyl Chloride		0.341	0.354	0.332	0.329	0.360	0.369	0.369	0.376	0.389	0.358	5.71#	
5)	T	1,3-Butadiene			0.299	0.273	0.272	0.276	0.320	0.315	0.323	0.332	0.301	8.25	
6)	T	Bromomethane			0.298	0.277	0.265	0.223	0.208	0.188	0.191	0.205	0.232	18.22	0.998
7)	T	Chloroethane			0.179	0.166	0.162	0.168	0.147	0.144	0.144	0.153	0.158	8.08	
8)	T	Trichlorofluor...		0.462	0.460	0.430	0.414	0.447	0.450	0.437	0.344	0.367	0.423	9.84	
9)	T	Diethyl ether			0.205	0.193	0.200	0.194	0.197	0.207	0.210	0.214	0.202	3.76	
10)	C	1,1-Dichloroet...		0.443	0.412	0.392	0.389	0.413	0.416	0.416	0.433	0.463	0.420	5.57#	
11)	T	Carbon Disulfide		1.126	0.902	0.807	0.764	0.761	0.851	0.837	0.856	0.883	0.865	12.62	
12)	T	1,1,2-Trichlor...		0.269	0.258	0.233	0.230	0.245	0.252	0.244	0.252	0.268	0.250	5.45	
13)	T	Iodomethane			0.088	0.097	0.164	0.345	0.441	0.486	0.460	0.474	0.319	54.76	0.997
14)	T	Acrolein					0.029	0.030	0.030	0.033	0.035	0.035	0.032	8.38	
15)	T	Methylene Chlo...			0.319	0.291	0.277	0.284	0.277	0.284	0.291	0.310	0.292	5.21	
16)	T	Acetone					0.074	0.060	0.045	0.053	0.053	0.052	0.056	17.32	0.997
17)	T	trans-1,2-Dich...		0.277	0.275	0.251	0.251	0.262	0.265	0.266	0.276	0.295	0.269	5.22	
18)	T	Methyl acetate		0.130	0.137	0.136	0.160	0.168	0.162	0.185	0.190	0.189	0.162	14.48	
19)	T	Methyl Tert Bu...		0.718	0.720	0.650	0.673	0.684	0.641	0.695	0.720	0.749	0.694	5.14	
20)	P	1,1-Dichloroet...		0.539	0.542	0.500	0.501	0.522	0.516	0.526	0.544	0.579	0.530	4.63	
21)	T	Acrylonitrile				0.066	0.068	0.066	0.064	0.072	0.073	0.072	0.068	5.27	
22)	T	Vinyl Acetate					0.012	0.020	0.022	0.027	0.029	0.029	0.023	28.80	0.996
23)	T	cis-1,2-Dichlo...		0.316	0.310	0.281	0.285	0.295	0.295	0.299	0.310	0.332	0.302	5.28	
24)	T	2,2-Dichloropr...			0.169	0.217	0.258	0.346	0.415	0.400	0.412	0.437	0.332	31.10	0.998
25)	T	Cyclohexane		0.496	0.499	0.463	0.459	0.445	0.491	0.494	0.508	0.522	0.486	5.15	
26)	T	Bromochloromet...			0.161	0.157	0.168	0.180	0.177	0.186	0.192	0.203	0.178	8.77	
27)	C	Chloroform	0.494	0.471	0.500	0.464	0.482	0.501	0.498	0.507	0.521	0.551	0.499	4.99#	
28)	T	Carbon Tetrach...		0.361	0.391	0.372	0.378	0.408	0.415	0.418	0.438	0.467	0.405	8.34	
29)	S	Dibromofluorom...					0.273	0.253	0.277	0.277	0.272		0.271	3.65	
30)	T	1,1,1-Trichlor...		0.414	0.449	0.408	0.422	0.450	0.447	0.457	0.475	0.504	0.447	6.78	
31)	T	1,1-Dichloropr...		0.395	0.386	0.349	0.353	0.370	0.378	0.381	0.399	0.425	0.382	6.11	
32)	T	2-Butanone					0.085	0.087	0.075	0.091	0.092	0.087	0.086	7.13	
33)	T	Benzene		1.186	1.174	1.069	1.067	1.121	1.102	1.125	1.160	1.227	1.137	4.76	
34)	S	1,2-Dichloroet...					0.292	0.256	0.268	0.274	0.267		0.271	4.84	
35)	T	1,2-Dichloroet...		0.361	0.362	0.334	0.336	0.347	0.334	0.352	0.364	0.381	0.352	4.62	
36)	T	Methylcyclohexane	0.521	0.468	0.475	0.435	0.437	0.416	0.474	0.469	0.485	0.499	0.468	6.69	
37)	T	Trichloroethene		0.338	0.319	0.291	0.292	0.300	0.299	0.303	0.316	0.336	0.310	5.71	
38)	T	Dibromomethane		0.118	0.140	0.138	0.145	0.154	0.149	0.162	0.169	0.179	0.150	12.14	
39)	C	1,2-Dichloropr...		0.313	0.315	0.303	0.295	0.307	0.300	0.312	0.323	0.341	0.312	4.37#	

40)	T	Bromodichlorom...		0.332	0.361	0.347	0.363	0.381	0.379	0.399	0.415	0.438	0.379	8.82
41)	T	1,4-Dioxane						0.002	0.002	0.002	0.002	0.002	0.002	8.13
42)	T	2-Chloroethyl ...			0.136	0.126	0.133	0.144	0.133	0.148	0.151	0.147	0.140	6.55
43)	T	cis-1,3-Dichlo...		0.414	0.399	0.387	0.405	0.435	0.436	0.454	0.474	0.496	0.433	8.37
44)	T	4-Methyl-2-Pen...					0.069	0.073	0.064	0.080	0.082	0.076	0.074	9.12
45)	T	trans-1,3-Dich...		0.315	0.340	0.317	0.335	0.367	0.366	0.391	0.403	0.419	0.361	10.40
46)	I	Chlorobenzene-d5	----------ISTD----------											
47)	S	Toluene-d8					1.464	1.330	1.451	1.415	1.377		1.407	3.91
48)	C	Toluene		1.850	1.773	1.630	1.640	1.726	1.705	1.689	1.728	1.844	1.732	4.55#
49)	T	Tetrachloroethene		0.508	0.481	0.434	0.428	0.452	0.461	0.453	0.472	0.520	0.468	6.65
50)	T	1,1,2-Trichlor...		0.290	0.318	0.301	0.300	0.308	0.291	0.307	0.317	0.335	0.308	4.64
51)	T	Dibromochlorom...		0.368	0.376	0.355	0.378	0.409	0.400	0.430	0.446	0.478	0.404	10.01
52)	T	1,3-Dichloropr...		0.537	0.537	0.494	0.491	0.504	0.477	0.506	0.515	0.545	0.512	4.62
53)	T	1,2-Dibromoethane		0.288	0.307	0.296	0.290	0.305	0.290	0.313	0.321	0.342	0.306	5.78
54)	T	2-Hexanone				0.189	0.201	0.207	0.180	0.218	0.224	0.216	0.205	7.82
55)	P	Chlorobenzene		1.163	1.161	1.034	1.033	1.068	1.076	1.083	1.101	1.154	1.097	4.69
56)	T	1-Chlorohexane			0.100	0.090	0.095	0.094	0.106	0.104	0.106	0.112	0.101	7.35
57)	C	Ethylbenzene		0.608	0.595	0.556	0.552	0.587	0.584	0.590	0.603	0.639	0.590	4.47#
58)	T	1,1,1,2-Tetrac...		0.395	0.412	0.380	0.389	0.410	0.400	0.413	0.425	0.449	0.408	5.03
59)	T	m-,p-Xylene		0.739	0.732	0.655	0.672	0.712	0.718	0.725	0.720	0.729	0.711	4.00
60)	T	o-Xylene		0.684	0.719	0.643	0.657	0.699	0.687	0.703	0.712	0.754	0.695	4.73
61)	T	Styrene		1.120	1.085	1.022	1.049	1.137	1.139	1.175	1.198	1.227	1.128	5.98
62)	P	Bromoform		0.224	0.244	0.236	0.245	0.264	0.255	0.286	0.300	0.311	0.263	11.37
63)	T	Isopropylbenzene		1.843	1.865	1.754	1.742	1.839	1.842	1.850	1.818	1.798	1.817	2.39
64)	I	1,4-Dichlorobenzen...	----------ISTD----------											
65)	T	1,3,5-Trimethy...		3.024	3.105	2.809	2.856	3.036	3.043	3.011	2.996	2.967	2.983	3.15
66)	S	p-Bromofluorob...					0.872	0.913	0.976	0.969	0.954		0.937	4.68
67)	T	Bromobenzene	1.091	0.977	0.948	0.879	0.868	0.930	0.922	0.933	0.961	1.021	0.953	6.91
68)	T	n-Propylbenzene		4.048	4.048	3.704	3.776	4.110	4.132	3.999	3.928	3.854	3.955	3.80
69)	P	1,1,2,2-Tetrac...		0.694	0.713	0.670	0.674	0.704	0.640	0.702	0.724	0.744	0.696	4.47
70)	T	2-Chlorotoluene		2.549	2.528	2.337	2.329	2.460	2.446	2.432	2.460	2.532	2.453	3.24
71)	T	1,2,3-Trichlor...			0.194	0.183	0.181	0.188	0.169	0.187	0.194	0.198	0.187	5.01
72)	T	trans-1,4-Dich...			0.152	0.129	0.133	0.142	0.145	0.157	0.159	0.163	0.147	8.27
73)	T	1,2,4-Trimethy...		3.070	3.095	2.744	2.850	3.044	3.058	2.998	2.993	2.932	2.976	3.88
74)	T	4-Chlorotoluene		2.707	2.492	2.291	2.312	2.469	2.493	2.458	2.558	2.571	2.484	5.15
75)	T	tert-Butylbenzene		0.623	0.561	0.519	0.526	0.554	0.551	0.546	0.567	0.590	0.560	5.66
76)	T	sec-Butylbenzene		3.781	3.738	3.458	3.496	3.756	3.779	3.667	3.598	3.455	3.636	3.80
77)	T	p-Isopropyltol...		3.241	3.151	2.872	2.958	3.247	3.280	3.183	3.130	3.043	3.123	4.45
78)	T	1,3-Dichlorobe...		1.923	1.741	1.597	1.620	1.693	1.736	1.717	1.750	1.790	1.730	5.52
79)	T	1,4-Dichlorobe...	2.224	2.055	1.774	1.587	1.574	1.680	1.708	1.703	1.735	1.780	1.782	11.47
80)	T	n-Butylbenzene		2.812	2.718	2.499	2.516	2.851	3.010	2.900	2.901	2.828	2.782	6.26
81)	T	1,2-Dichlorobe...	1.935	1.805	1.735	1.554	1.562	1.642	1.619	1.636	1.656	1.698	1.684	6.89
82)	T	1,2-Dibromo-3-...				0.117	0.118	0.126	0.114	0.131	0.133	0.138	0.125	7.42
83)	T	Hexachlorobuta...		0.699	0.728	0.623	0.622	0.686	0.705	0.670	0.714	0.753	0.689	6.45
84)	T	1,2,4-Trichlor...		1.441	1.293	1.117	1.136	1.245	1.250	1.253	1.320	1.389	1.272	8.31
85)	T	Naphthalene		2.527	2.380	2.151	2.252	2.427	2.194	2.366	2.402	2.405	2.345	5.17
86)	T	1,2,3-Trichlor...		1.297	1.203	1.057	1.095	1.186	1.124	1.146	1.209	1.271	1.177	6.72

(#) = Out of Range

8260VMS.M Mon Feb 01 12:22:22 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16020058 Run Date: 01/21/2016 Sample ID: WG554589-12
Instrument ID: HPMS17 Run Time: 19:51 Method: 8260B
File ID: 17M017432 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG554589 Cal ID: HPMS17 - 21-JAN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.6	ug/L	0.495	0.800	20	
1,1-Dichloroethene	CCC	50.0	44.4	ug/L	0.373	11.2	20	
1,2-Dichloropropane	CCC	50.0	50.7	ug/L	0.316	1.40	20	
Ethylbenzene	CCC	50.0	50.3	ug/L	0.594	0.500	20	
Toluene	CCC	50.0	50.1	ug/L	1.74	0.200	20	
Vinyl Chloride	CCC	50.0	45.0	ug/L	0.322	9.90	20	
Bromoform	SPCC	50.0	48.5	ug/L	0.255	3.00	20	
Chlorobenzene	SPCC	50.0	50.6	ug/L	1.11	1.20	20	
Chloromethane	SPCC	50.0	41.5	ug/L	0.307	16.9	20	
1,1-Dichloroethane	SPCC	50.0	46.2	ug/L	0.490	7.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.8	ug/L	0.721	3.60	20	
Acetone		50.0	55.8	ug/L	0.0592	11.6	20	
Benzene		50.0	48.6	ug/L	1.11	2.80	20	
Bromobenzene		50.0	49.3	ug/L	0.940	1.40	20	
Bromochloromethane		50.0	50.1	ug/L	0.178	0.100	20	
Bromodichloromethane		50.0	50.4	ug/L	0.382	0.800	20	
Bromomethane		50.0	51.2	ug/L	0.206	2.40	20	
2-Butanone		50.0	53.6	ug/L	0.0923	7.20	20	
n-Butylbenzene		50.0	53.5	ug/L	2.98	7.00	20	
sec-Butylbenzene		50.0	53.6	ug/L	3.90	7.20	20	
tert-Butylbenzene		50.0	52.3	ug/L	0.585	4.60	20	
Carbon Disulfide		50.0	48.9	ug/L	0.846	2.30	20	
Carbon Tetrachloride		50.0	48.4	ug/L	0.392	3.20	20	
Dibromochloromethane		50.0	50.7	ug/L	0.410	1.40	20	
Chloroethane		50.0	41.1	ug/L	0.130	17.7	20	
2-Chlorotoluene		50.0	51.8	ug/L	2.54	3.60	20	
4-Chlorotoluene		50.0	54.0	ug/L	2.68	8.00	20	
1,2-Dibromo-3-Chloropropane		50.0	52.4	ug/L	0.131	4.80	20	
1,2-Dibromoethane		50.0	50.6	ug/L	0.310	1.30	20	
Dibromomethane		50.0	50.5	ug/L	0.152	1.00	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.70	1.10	20	
1,3-Dichlorobenzene		50.0	51.1	ug/L	1.77	2.20	20	
1,4-Dichlorobenzene		50.0	50.1	ug/L	1.79	0.200	20	
Dichlorodifluoromethane		50.0	37.5	ug/L	0.285	24.9	20	*
1,2-Dichloroethane		50.0	50.1	ug/L	0.353	0.300	20	
cis-1,2-Dichloroethene		50.0	49.5	ug/L	0.300	0.900	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.259	3.80	20	
1,3-Dichloropropane		50.0	52.9	ug/L	0.541	5.70	20	
2,2-Dichloropropane		50.0	46.5	ug/L	0.385	7.00	20	
cis-1,3-Dichloropropene		50.0	55.1	ug/L	0.478	10.2	20	
trans-1,3-Dichloropropene		50.0	52.5	ug/L	0.379	5.00	20	
1,1-Dichloropropene		50.0	46.8	ug/L	0.357	6.40	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4622089
Report generated 02/10/2016 10:09

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16020058 Run Date: 01/21/2016 Sample ID: WG554589-12
Instrument ID: HPMS17 Run Time: 19:51 Method: 8260B
File ID: 17M017432 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG554589 Cal ID: HPMS17 - 21-JAN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	50.1	ug/L	0.205	0.200	20	
Hexachlorobutadiene		50.0	52.7	ug/L	0.726	5.40	20	
Isopropylbenzene		50.0	51.3	ug/L	1.87	2.70	20	
p-Isopropyltoluene		50.0	51.7	ug/L	3.23	3.30	20	
4-Methyl-2-Pentanone		50.0	48.9	ug/L	0.0723	2.20	20	
Methylene Chloride		50.0	47.8	ug/L	0.279	4.40	20	
Naphthalene		50.0	46.8	ug/L	2.20	6.30	20	
n-Propylbenzene		50.0	54.3	ug/L	4.30	8.60	20	
Styrene		50.0	50.6	ug/L	1.14	1.10	20	
1,1,1,2-Tetrachloroethane		50.0	50.1	ug/L	0.409	0.200	20	
Tetrachloroethene		50.0	48.3	ug/L	0.452	3.30	20	
1,2,3-Trichlorobenzene		50.0	49.5	ug/L	1.16	1.00	20	
1,2,4-Trichlorobenzene		50.0	50.3	ug/L	1.28	0.600	20	
1,1,1-Trichloroethane		50.0	49.5	ug/L	0.443	1.00	20	
1,1,2-Trichloroethane		50.0	50.1	ug/L	0.308	0.100	20	
Trichloroethene		50.0	49.4	ug/L	0.306	1.20	20	
Trichlorofluoromethane		50.0	33.5	ug/L	0.284	33.0	20	*
1,2,3-Trichloropropane		50.0	52.5	ug/L	0.196	4.90	20	
1,2,4-Trimethylbenzene		50.0	51.3	ug/L	3.05	2.60	20	
1,3,5-Trimethylbenzene		50.0	53.0	ug/L	3.16	6.00	20	
o-Xylene		50.0	52.1	ug/L	0.724	4.10	20	
m-,p-Xylene		100	103	ug/L	0.734	3.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4622089
Report generated 02/10/2016 10:09

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058 Run Date: 02/05/2016 Sample ID: WG556406-02
Instrument ID: HPMS17 Run Time: 11:48 Method: 8260B
File ID: 17M017574 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG556408 Cal ID: HPMS17 - 21-JAN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.1	ug/L	0.500	0.244	20	
1,1-Dichloroethene	CCC	50.0	52.4	ug/L	0.440	4.80	20	
1,2-Dichloropropane	CCC	50.0	48.7	ug/L	0.304	2.62	20	
Ethylbenzene	CCC	50.0	49.1	ug/L	0.580	1.71	20	
Toluene	CCC	50.0	48.9	ug/L	1.69	2.13	20	
Vinyl Chloride	CCC	50.0	50.7	ug/L	0.363	1.39	20	
Bromoform	SPCC	50.0	47.3	ug/L	0.248	5.45	20	
Chlorobenzene	SPCC	50.0	48.0	ug/L	1.05	4.02	20	
Chloromethane	SPCC	50.0	51.7	ug/L	0.383	3.36	20	
1,1-Dichloroethane	SPCC	50.0	49.5	ug/L	0.525	0.908	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	44.4	ug/L	0.618	11.2	20	
Xylenes		150	149	ug/L	0.699	0.408	20	
Acetone		50.0	50.2	ug/L	0.0535	0.327	20	
Benzene		50.0	48.7	ug/L	1.11	2.56	20	
Bromobenzene		50.0	47.6	ug/L	0.908	4.76	20	
Bromochloromethane		50.0	49.6	ug/L	0.177	0.755	20	
Bromodichloromethane		50.0	50.5	ug/L	0.384	1.08	20	
Bromomethane		50.0	44.8	ug/L	0.181	10.3	20	
2-Butanone		50.0	46.9	ug/L	0.0807	6.29	20	
n-Butylbenzene		50.0	53.6	ug/L	2.98	7.30	20	
sec-Butylbenzene		50.0	51.8	ug/L	3.77	3.59	20	
tert-Butylbenzene		50.0	48.8	ug/L	0.546	2.40	20	
Carbon Disulfide		50.0	41.8	ug/L	0.724	16.3	20	
Carbon Tetrachloride		50.0	50.9	ug/L	0.413	1.78	20	
Dibromochloromethane		50.0	49.0	ug/L	0.396	2.05	20	
Chloroethane		50.0	44.4	ug/L	0.140	11.2	20	
2-Chlorotoluene		50.0	50.3	ug/L	2.47	0.619	20	
4-Chlorotoluene		50.0	49.9	ug/L	2.48	0.206	20	
1,2-Dibromo-3-Chloropropane		50.0	44.6	ug/L	0.112	10.8	20	
1,2-Dibromoethane		50.0	47.4	ug/L	0.290	5.26	20	
Dibromomethane		50.0	50.8	ug/L	0.153	1.65	20	
1,2-Dichlorobenzene		50.0	47.4	ug/L	1.60	5.15	20	
1,3-Dichlorobenzene		50.0	49.1	ug/L	1.70	1.74	20	
1,4-Dichlorobenzene		50.0	47.0	ug/L	1.67	6.01	20	
Dichlorodifluoromethane		50.0	54.3	ug/L	0.412	8.55	20	
1,2-Dichloroethane		50.0	48.8	ug/L	0.344	2.37	20	
cis-1,2-Dichloroethene		50.0	48.4	ug/L	0.293	3.17	20	
trans-1,2-Dichloroethene		50.0	49.0	ug/L	0.264	1.92	20	
1,3-Dichloropropane		50.0	47.2	ug/L	0.483	5.60	20	
2,2-Dichloropropane		50.0	47.8	ug/L	0.395	4.44	20	
cis-1,3-Dichloropropene		50.0	50.2	ug/L	0.435	0.494	20	
trans-1,3-Dichloropropene		50.0	50.6	ug/L	0.366	1.17	20	

CCV - Modified 03/05/2008
PDF File ID: 4622091
Report generated 02/10/2016 10:09

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058 Run Date: 02/05/2016 Sample ID: WG556406-02
Instrument ID: HPMS17 Run Time: 11:48 Method: 8260B
File ID: 17M017574 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG556408 Cal ID: HPMS17 - 21-JAN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	49.9	ug/L	0.381	0.215	20	
2-Hexanone		50.0	43.0	ug/L	0.176	14.0	20	
Hexachlorobutadiene		50.0	47.9	ug/L	0.660	4.18	20	
Isopropylbenzene		50.0	50.2	ug/L	1.82	0.448	20	
p-Isopropyltoluene		50.0	52.2	ug/L	3.26	4.40	20	
4-Methyl-2-Pentanone		50.0	41.9	ug/L	0.0619	16.2	20	
Methylene Chloride		50.0	47.8	ug/L	0.279	4.34	20	
Naphthalene		50.0	47.3	ug/L	2.22	5.46	20	
n-Propylbenzene		50.0	52.5	ug/L	4.15	5.02	20	
Styrene		50.0	49.6	ug/L	1.12	0.796	20	
1,1,1,2-Tetrachloroethane		50.0	48.6	ug/L	0.397	2.75	20	
Tetrachloroethene		50.0	48.2	ug/L	0.451	3.63	20	
1,2,3-Trichlorobenzene		50.0	46.8	ug/L	1.10	6.47	20	
1,2,4-Trichlorobenzene		50.0	48.0	ug/L	1.22	3.96	20	
1,1,1-Trichloroethane		50.0	50.2	ug/L	0.449	0.412	20	
1,1,2-Trichloroethane		50.0	47.4	ug/L	0.292	5.28	20	
Trichloroethene		50.0	49.0	ug/L	0.304	1.95	20	
Trichlorofluoromethane		50.0	52.7	ug/L	0.447	5.43	20	
1,2,3-Trichloropropane		50.0	46.6	ug/L	0.174	6.72	20	
1,2,4-Trimethylbenzene		50.0	51.2	ug/L	3.05	2.32	20	
1,3,5-Trimethylbenzene		50.0	51.1	ug/L	3.05	2.14	20	
o-Xylene		50.0	49.3	ug/L	0.685	1.42	20	
m-,p-Xylene		100	100	ug/L	0.712	0.0988	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4622091
Report generated 02/10/2016 10:09

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16020058
Instrument ID: HPMS17
Workgroup (AAB#): WG556408

ICAL CCV Number: WG554589-02
CAL ID: HPMS17-21-JAN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG554589-02	NA	NA	174141	332552	467028
Upper Limit	NA	NA	348282	665104	934056
Lower Limit	NA	NA	87071	166276	233514
L16020058-01	1.00	01	139296	273058	383137
L16020058-03	1.00	01	136692	270215	372952
L16020058-05	1.00	01	137624	269194	376123
L16020058-07	1.00	01	135605	263560	369659
L16020058-09	1.00	01	134340	262339	373957
L16020058-11	1.00	01	138610	269001	377075
WG556408-01	1.00	01	136621	268707	379280
WG556408-02	1.00	01	135568	265086	373520
WG556408-03	1.00	01	137453	265154	369126
WG556408-04	1.00	02	135495	260915	366761
WG556408-05	1.00	02	139642	264551	368722

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4622092
Report generated 02/10/2016 10:09

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16020058
Instrument ID: HPMS17
Workgroup (AAB#): WG556408

ICAL CCV Number: WG554589-02
CAL ID: HPMS17-21-JAN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG554589-02	NA	NA	9.293	7.961	5.121
Upper Limit	NA	NA	9.793	8.461	5.621
Lower Limit	NA	NA	8.793	7.461	4.621
L16020058-01	1.00	01	9.29	7.96	5.12
L16020058-03	1.00	01	9.29	7.96	5.12
L16020058-05	1.00	01	9.29	7.96	5.12
L16020058-07	1.00	01	9.29	7.96	5.12
L16020058-09	1.00	01	9.29	7.96	5.12
L16020058-11	1.00	01	9.29	7.96	5.12
WG556408-01	1.00	01	9.29	7.96	5.12
WG556408-02	1.00	01	9.29	7.96	5.12
WG556408-03	1.00	01	9.29	7.96	5.12
WG556408-04	1.00	02	9.29	7.96	5.12
WG556408-05	1.00	02	9.29	7.96	5.12

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4622094
Report generated: 02/10/2016 10:09

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017588.D
Acq On : 05 Feb 2016 16:59
Operator : ADC
Sample : L16020058-01 B 826-LOW
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Feb 08 09:26:11 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.121	96	383137	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	273058	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	139296	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	98094	23.6596 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.638%		
34) 1,2-Dichloroethane-d4	4.791	65	110499	26.5793 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.317%		
47) Toluene-d8	6.693	98	391482	25.4694 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.878%		
66) p-Bromofluorobenzene	8.711	95	138567	26.5454 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.182%		
Target Compounds					Qvalue
4) Vinyl Chloride	1.189	62	719	0.1312 ug/L	88
6) Bromomethane	1.374	94	271	Below Cal	73
10) 1,1-Dichloroethene	1.855	61	5415	0.8419 ug/L	98
16) Acetone	2.333	43	799	Below Cal #	45
18) Methyl acetate	2.333	43	799	0.3218 ug/L #	48
23) cis-1,2-Dichloroethene	3.546	96	5926	1.2783 ug/L	100
32) 2-Butanone	4.250	43	244	0.1848 ug/L #	39
33) Benzene	4.626	78	4308	0.2473 ug/L	96
36) Methylcyclohexane	5.306	83	961	0.1340 ug/L #	1
37) Trichloroethene	5.301	130	79095	16.6319 ug/L	95
44) 4-Methyl-2-Pentanone	7.796	58	1170	1.0329 ug/L #	62
54) 2-Hexanone	7.796	43	8013	3.5802 ug/L #	49

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017588.D
Acq On : 05 Feb 2016 16:59
Operator : ADC
Sample : L16020058-01 B 826-LOW
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Feb 08 09:26:11 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

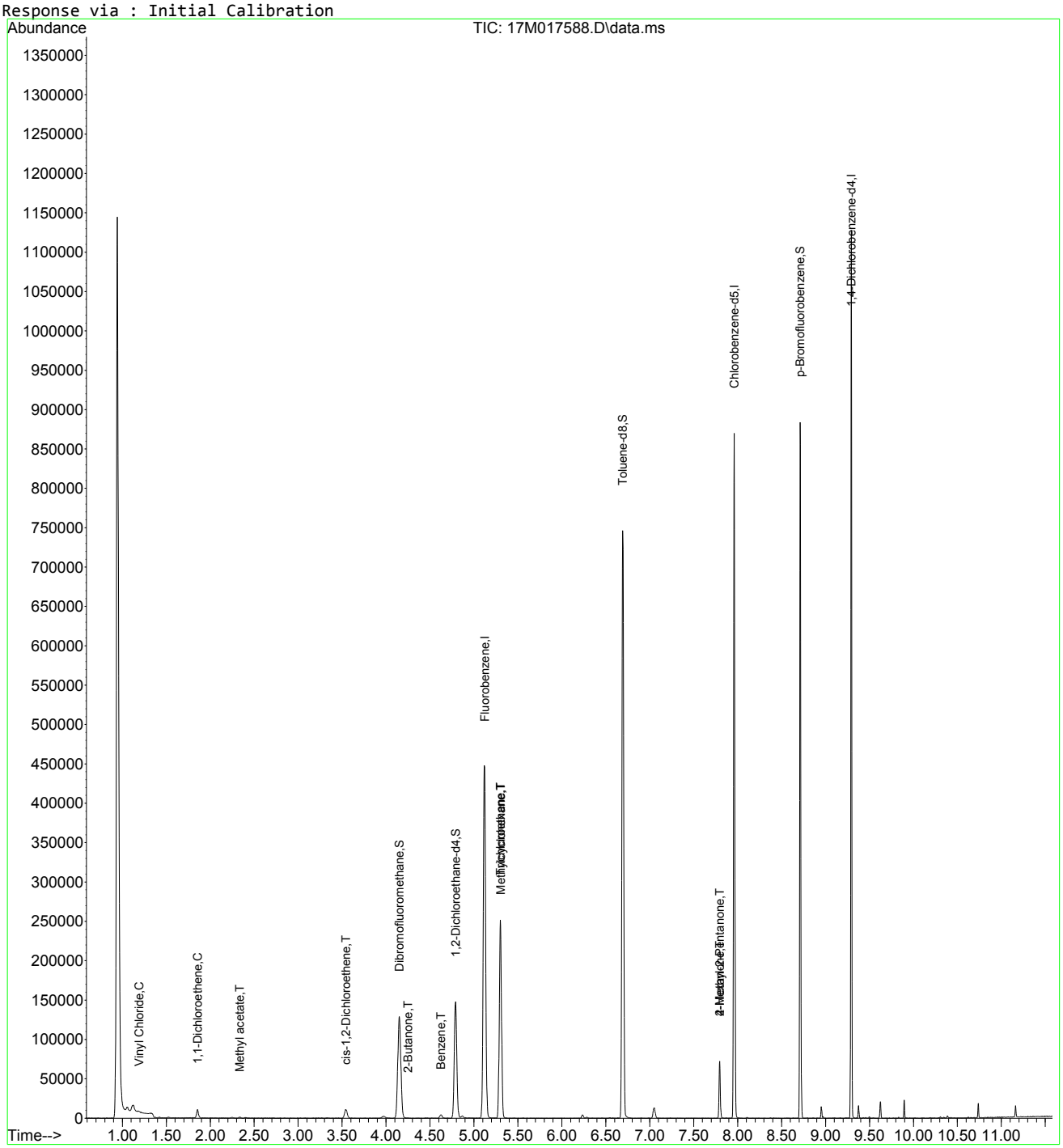

8260VMS.M Mon Feb 08 09:26:12 2016 Page: 2

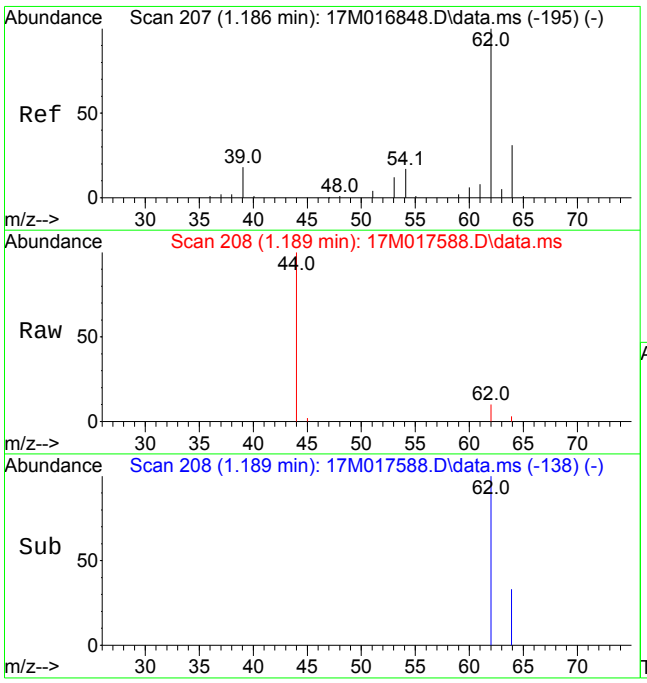

#4
Vinyl Chloride
Concen: 0.1312 ug/L
RT: 1.189 min Scan# 208
Delta R.T. 0.003 min
Lab File: 17M017588.D
Acq: 05 Feb 2016 16:59

Tgt Ion: 62 Resp: 719

Ion	Ratio	Lower	Upper
62	100		
64	25.2	19.1	44.5

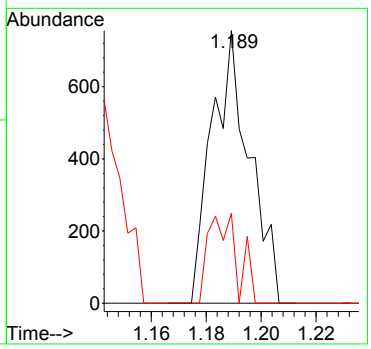

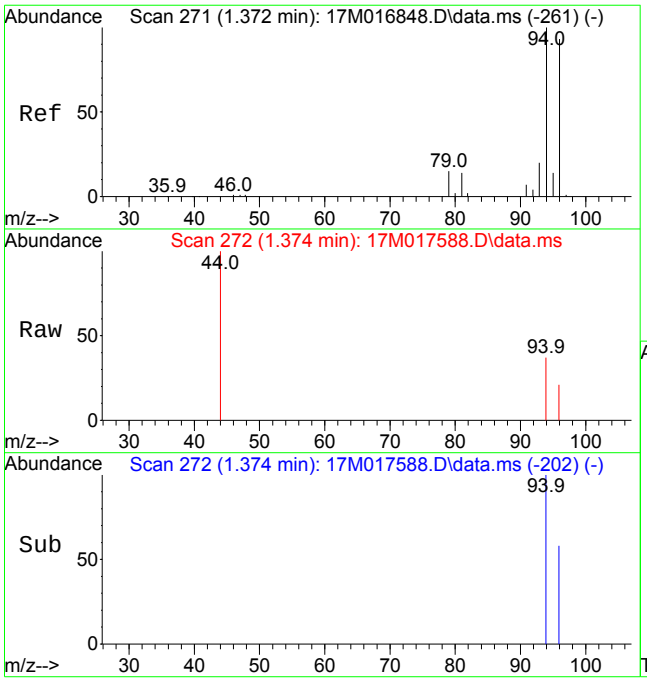

#6
Bromomethane
Concen: Below Cal
RT: 1.374 min Scan# 272
Delta R.T. 0.003 min
Lab File: 17M017588.D
Acq: 05 Feb 2016 16:59

Tgt Ion: 94 Resp: 271

Ion	Ratio	Lower	Upper
94	100		
96	67.5	56.0	130.6

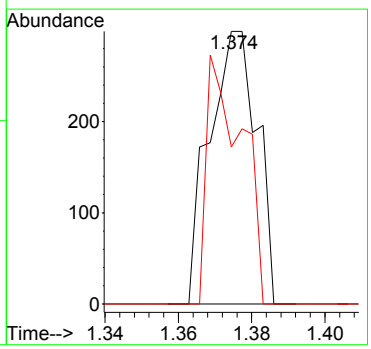

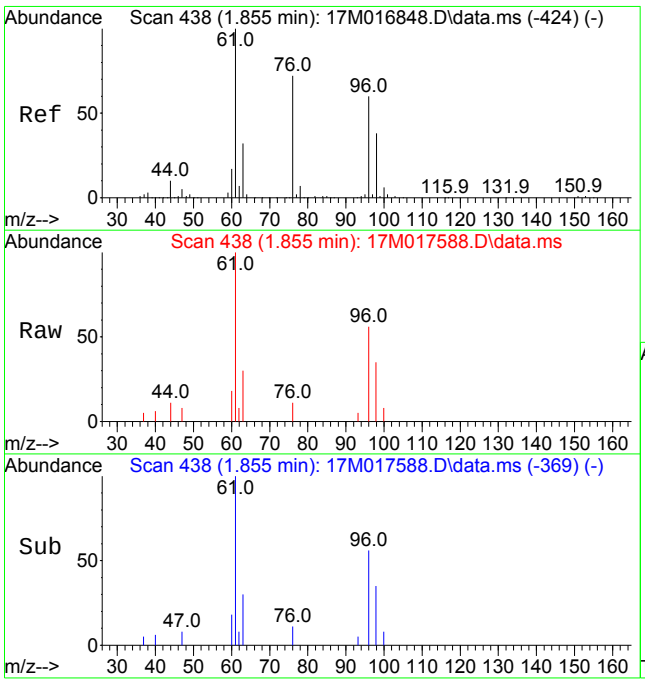

#10
1,1-Dichloroethene
Concen: 0.8419 ug/L
RT: 1.855 min Scan# 438
Delta R.T. 0.000 min
Lab File: 17M017588.D
Acq: 05 Feb 2016 16:59

Tgt Ion: 61 Resp: 5415

Ion	Ratio	Lower	Upper
61	100		
96	56.9	46.7	70.1

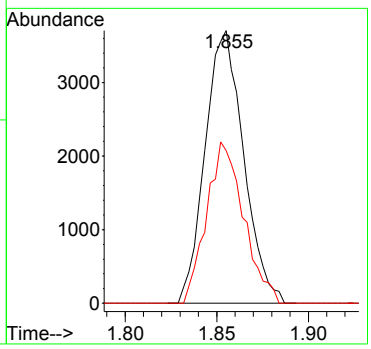

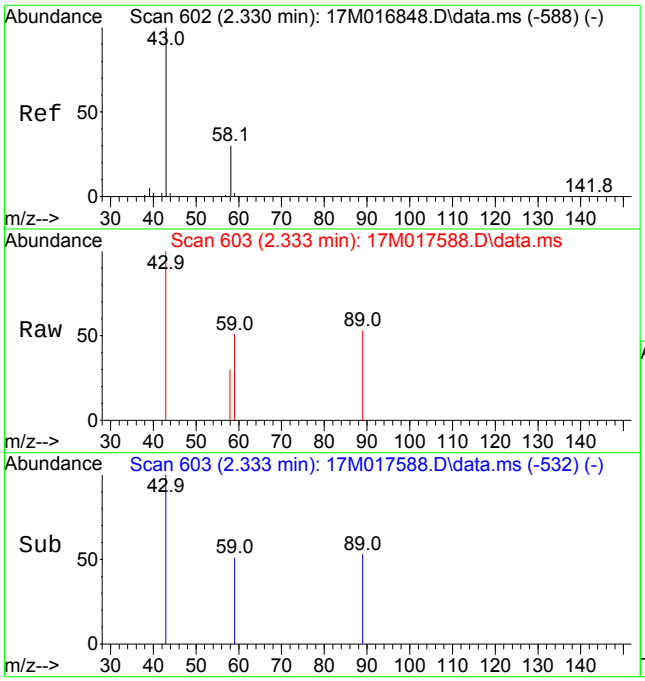

#16
Acetone
Concen: Below Cal
RT: 2.333 min Scan# 603
Delta R.T. 0.006 min
Lab File: 17M017588.D
Acq: 05 Feb 2016 16:59

Tgt Ion: 43 Resp: 799

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.1#

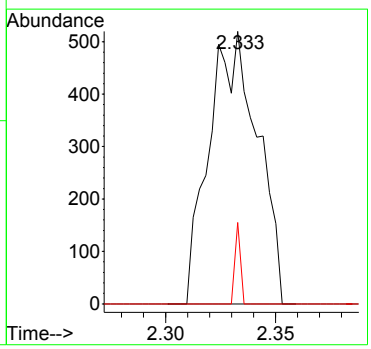

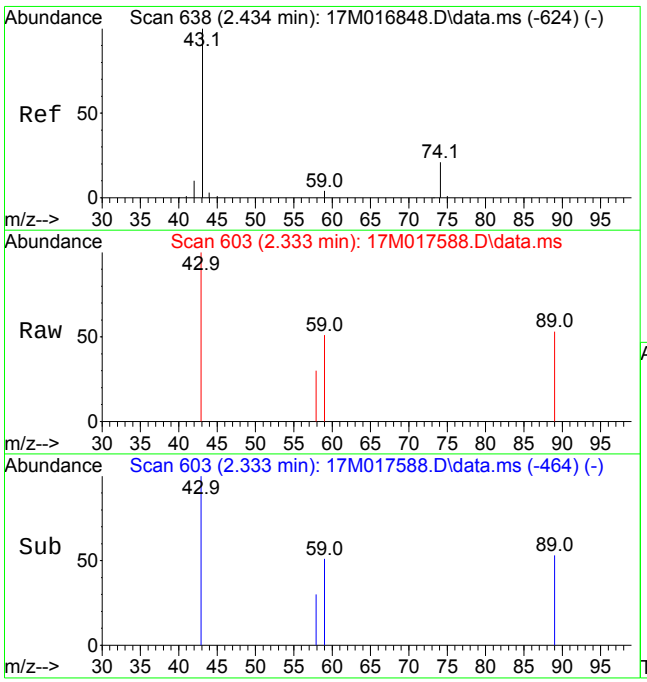

#18
Methyl acetate
Concen: 0.3218 ug/L
RT: 2.333 min Scan# 603
Delta R.T. -0.098 min
Lab File: 17M017588.D
Acq: 05 Feb 2016 16:59

Tgt Ion: 43 Resp: 799

Ion	Ratio	Lower	Upper
43	100		
74	0.0	20.2	20.2#
59	33.8	6.6	10.0#

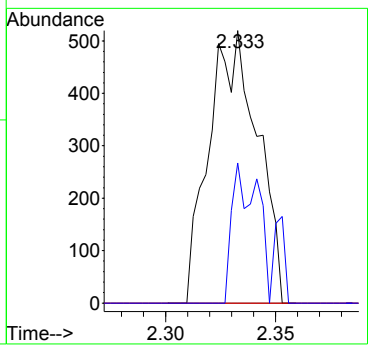

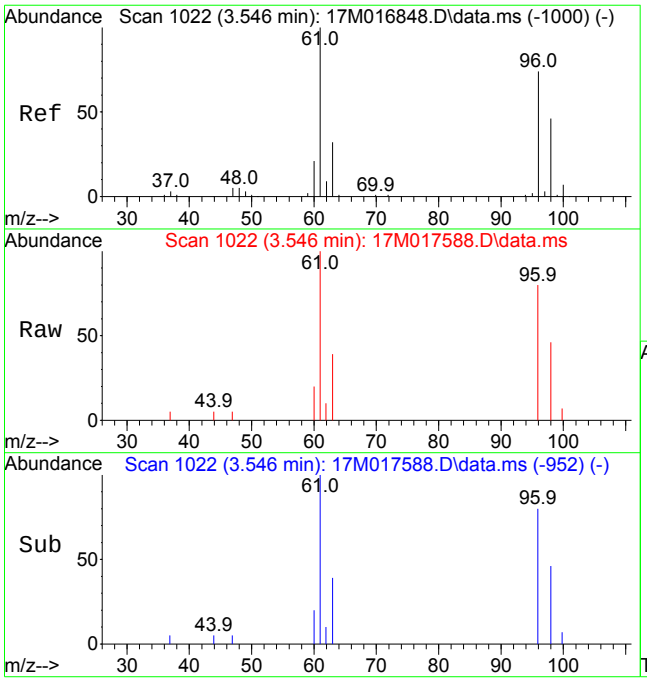

#23
cis-1,2-Dichloroethene
Concen: 1.2783 ug/L
RT: 3.546 min Scan# 1022
Delta R.T. 0.003 min
Lab File: 17M017588.D
Acq: 05 Feb 2016 16:59

Tgt Ion: 96 Resp: 5926

Ion	Ratio	Lower	Upper
96	100		
61	135.8	109.0	163.4

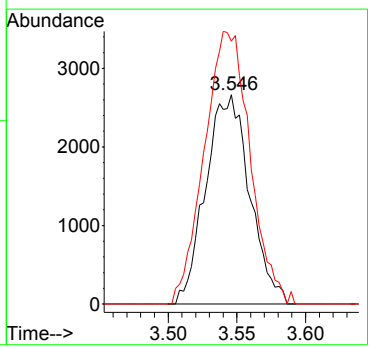

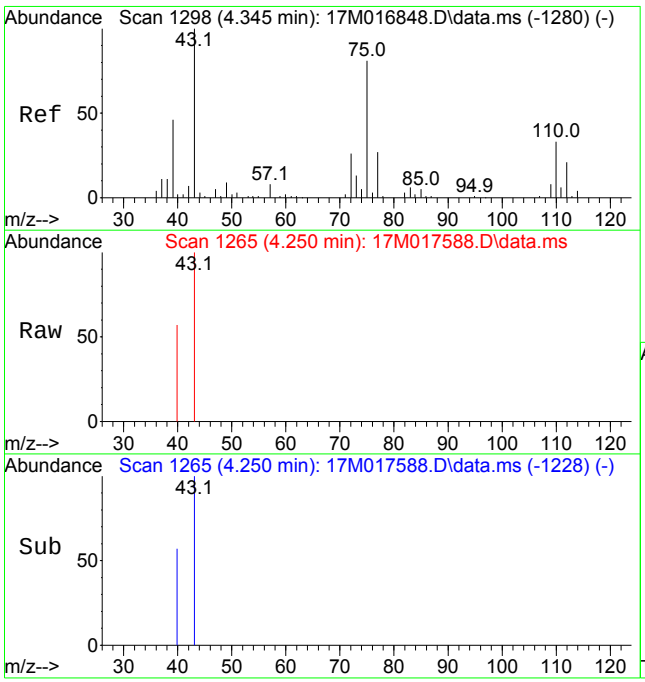

#32
2-Butanone
Concen: 0.1848 ug/L
RT: 4.250 min Scan# 1265
Delta R.T. -0.092 min
Lab File: 17M017588.D
Acq: 05 Feb 2016 16:59

Tgt Ion: 43 Resp: 244

Ion	Ratio	Lower	Upper
43	100		
72	0.0	35.4	53.2#
57	0.0	6.5	9.7#

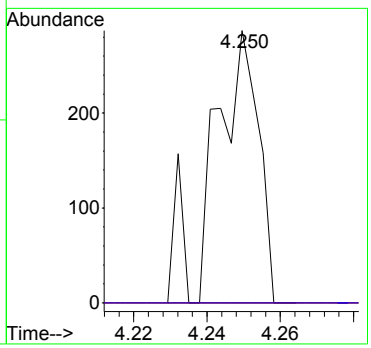

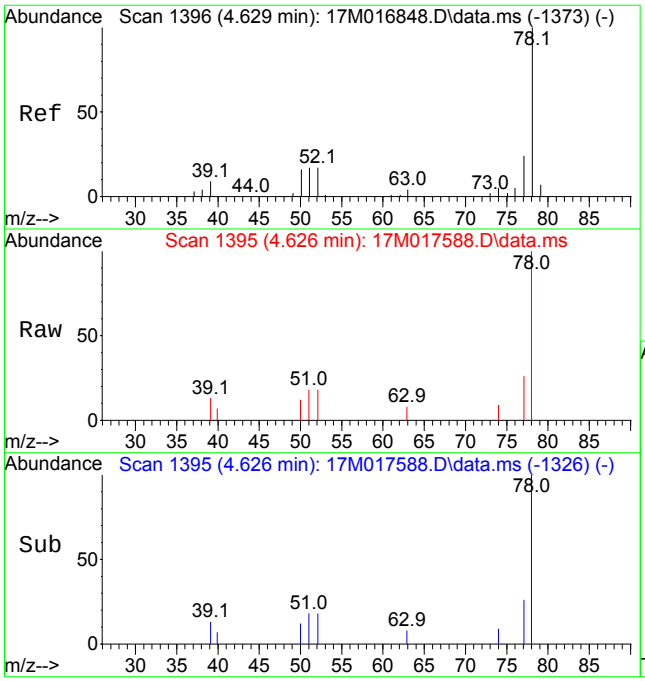

#33
Benzene
Concen: 0.2473 ug/L
RT: 4.626 min Scan# 1395
Delta R.T. -0.000 min
Lab File: 17M017588.D
Acq: 05 Feb 2016 16:59

Tgt Ion: 78 Resp: 4308

Ion	Ratio	Lower	Upper
78	100		
52	15.4	13.8	20.6

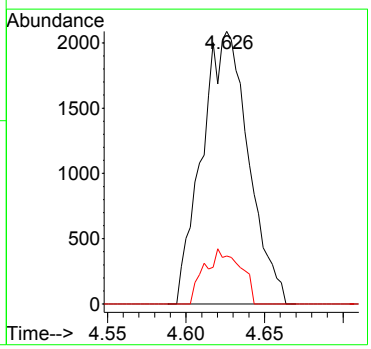

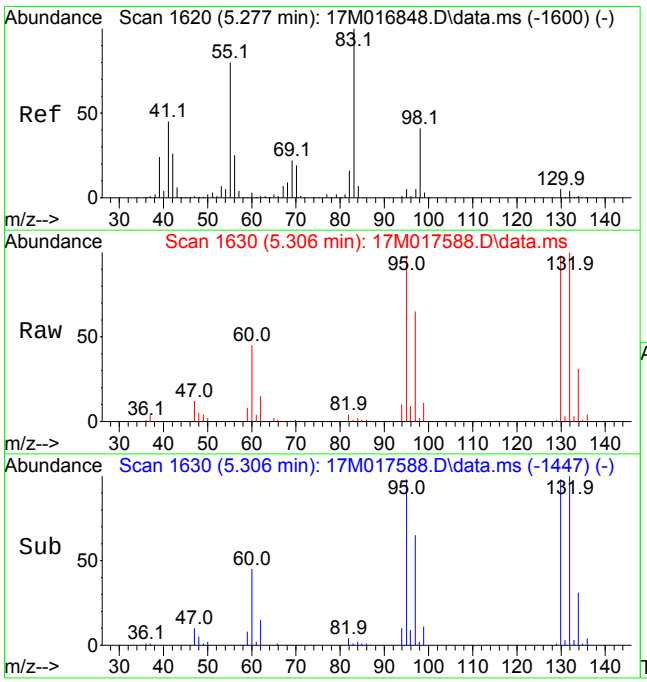

#36
Methylcyclohexane
Concen: 0.1340 ug/L
RT: 5.306 min Scan# 1630
Delta R.T. 0.029 min
Lab File: 17M017588.D
Acq: 05 Feb 2016 16:59

Tgt Ion: 83 Resp: 961

Ion	Ratio	Lower	Upper
83	100		
55	0.0	63.9	95.9#
98	216.2	32.3	48.5#

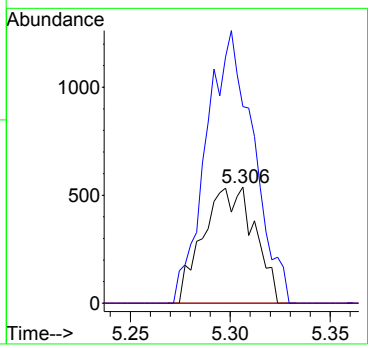

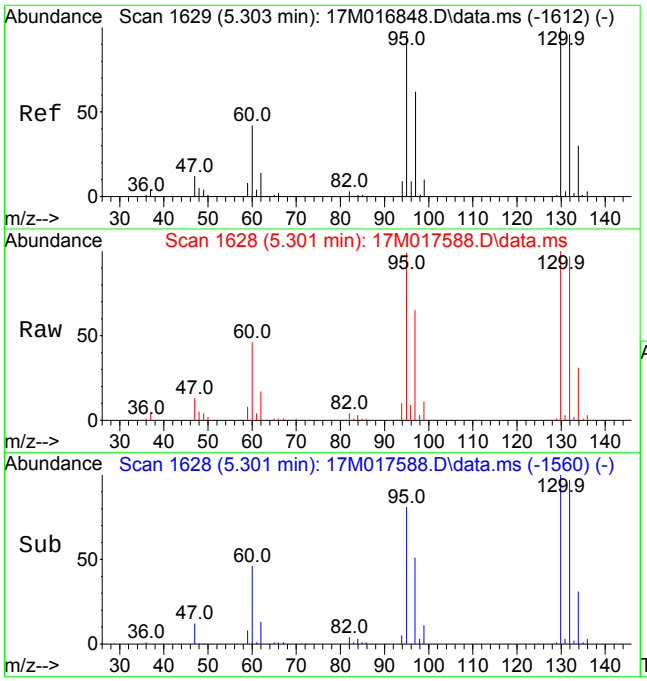

#37
Trichloroethene
Concen: 16.6319 ug/L
RT: 5.301 min Scan# 1628
Delta R.T. -0.002 min
Lab File: 17M017588.D
Acq: 05 Feb 2016 16:59

Tgt Ion:130 Resp: 79095

Ion	Ratio	Lower	Upper
130	100		
60	47.4	26.4	61.6

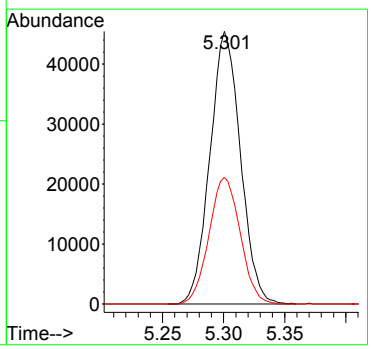

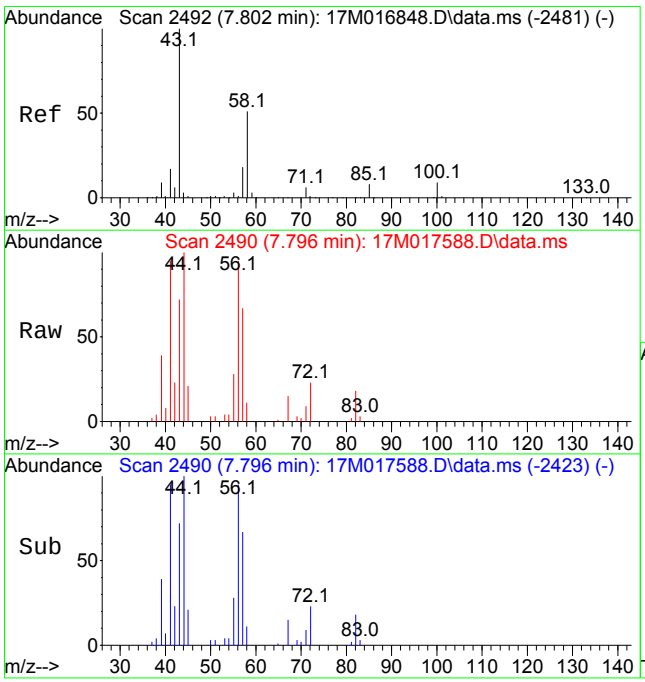

#44
4-Methyl-2-Pentanone
Concen: 1.0329 ug/L
RT: 7.796 min Scan# 2490
Delta R.T. -0.006 min
Lab File: 17M017588.D
Acq: 05 Feb 2016 16:59

Tgt Ion: 58 Resp: 1170

Ion	Ratio	Lower	Upper
58	100		
85	0.0	9.7	22.5#

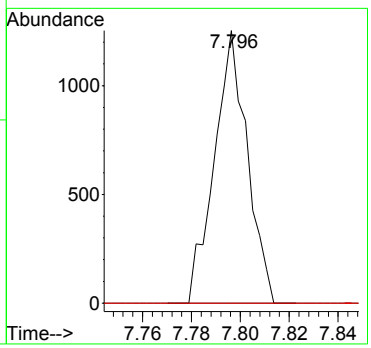

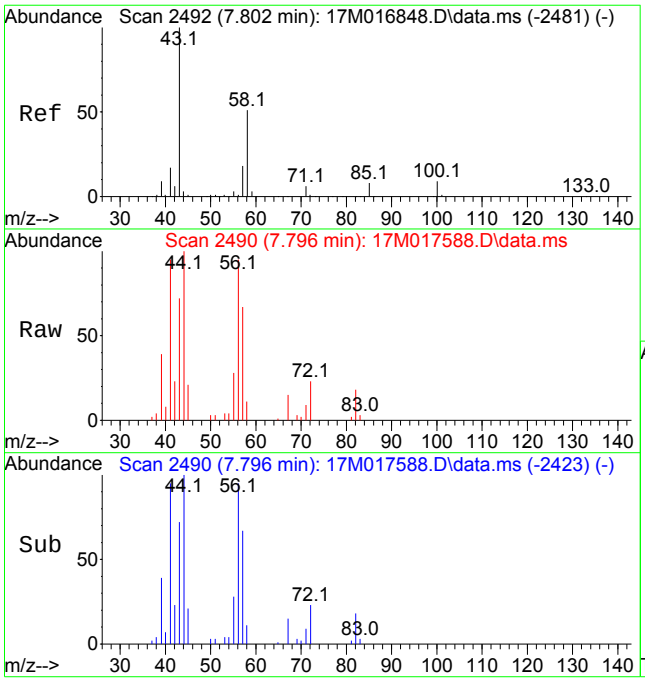

#54
2-Hexanone
Concen: 3.5802 ug/L
RT: 7.796 min Scan# 2490
Delta R.T. -0.006 min
Lab File: 17M017588.D
Acq: 05 Feb 2016 16:59

Tgt Ion: 43 Resp: 8013

Ion	Ratio	Lower	Upper
43	100		
58	14.6	39.9	59.9#

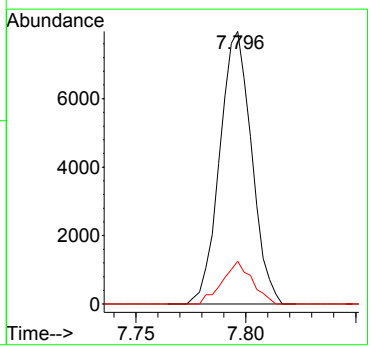

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017589.D
Acq On : 05 Feb 2016 17:19
Operator : ADC
Sample : L16020058-03 B 826-LOW
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Feb 08 09:26:15 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	372952	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	270215	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	136692	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	98037	24.2916 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.166%		
34) 1,2-Dichloroethane-d4	4.791	65	108642	26.8463 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.385%		
47) Toluene-d8	6.693	98	387457	25.4727 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.891%		
66) p-Bromofluorobenzene	8.711	95	138087	26.9574 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.830%		
Target Compounds					Qvalue
6) Bromomethane	1.372	94	165	Below Cal	94
16) Acetone	2.330	43	893	Below Cal #	68
23) cis-1,2-Dichloroethene	3.540	96	2608	0.5779 ug/L	99
32) 2-Butanone	4.255	43	226	0.1758 ug/L #	39
33) Benzene	4.623	78	5094	0.3004 ug/L	100
36) Methylcyclohexane	5.301	83	1007	0.1442 ug/L #	1
37) Trichloroethene	5.301	130	94865	20.4927 ug/L	96
44) 4-Methyl-2-Pentanone	7.796	58	1561	1.4157 ug/L #	62
54) 2-Hexanone	7.796	43	12055	5.4428 ug/L #	46

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017589.D
Acq On : 05 Feb 2016 17:19
Operator : ADC
Sample : L16020058-03 B 826-LOW
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Feb 08 09:26:15 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

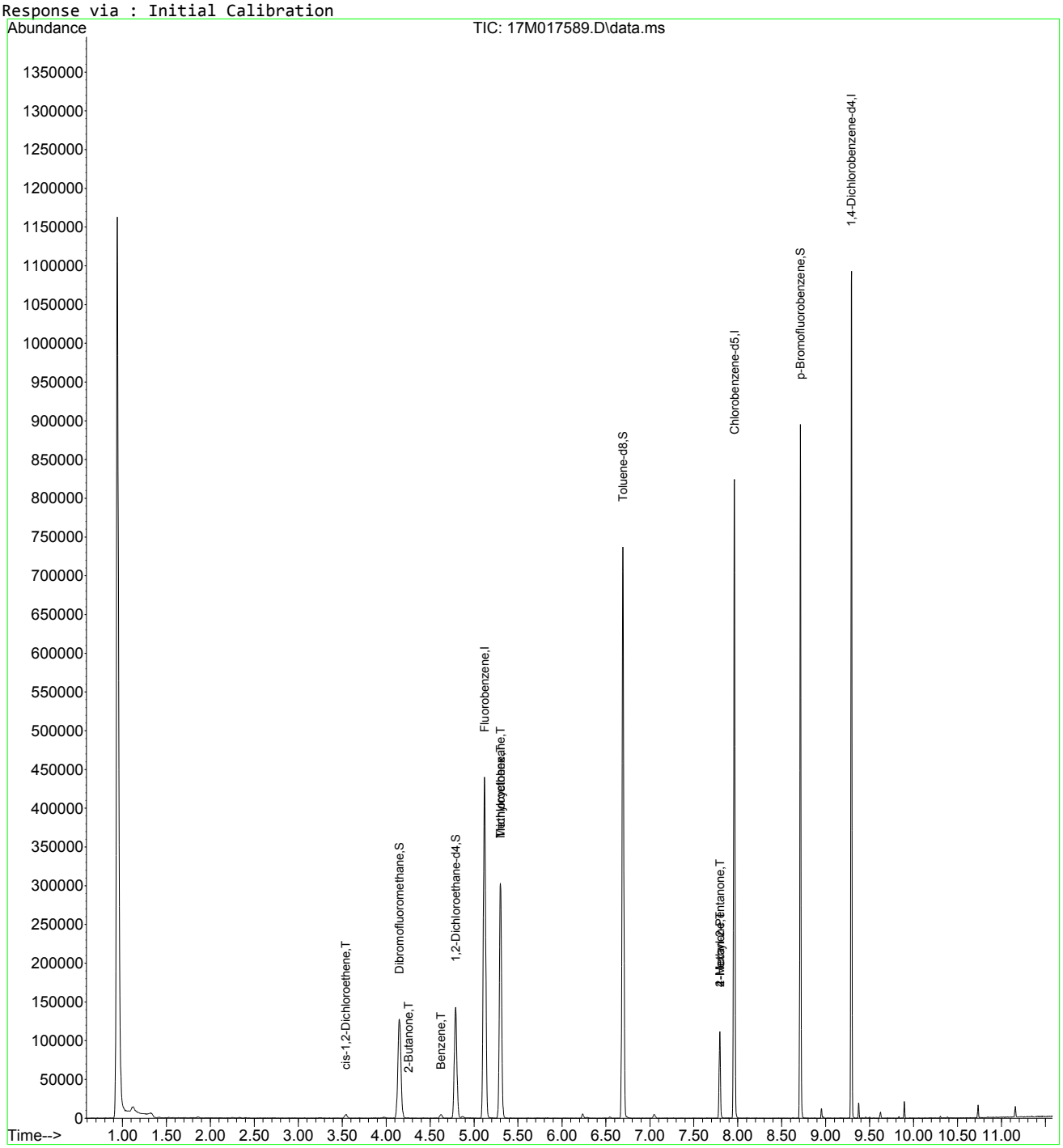

8260VMS.M Mon Feb 08 09:26:16 2016 Page: 2

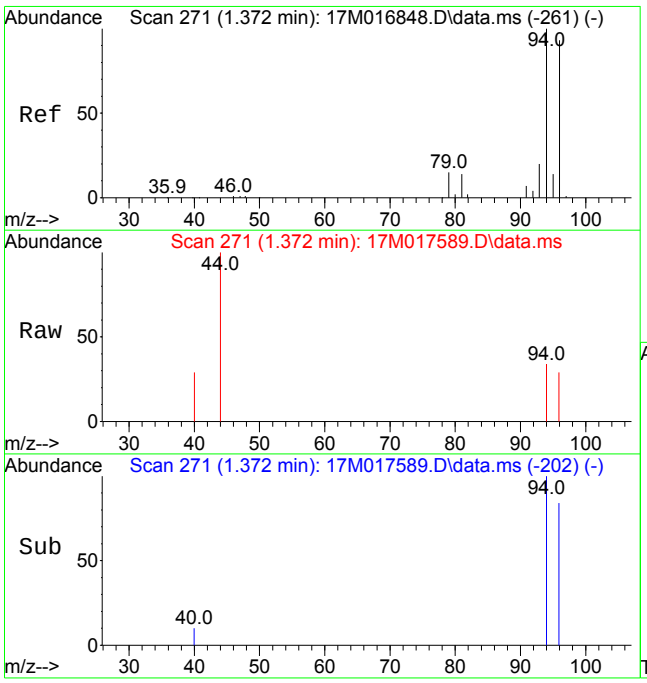

#6
Bromomethane
Concen: Below Cal
RT: 1.372 min Scan# 271
Delta R.T. 0.001 min
Lab File: 17M017589.D
Acq: 05 Feb 2016 17:19

Tgt Ion: 94 Resp: 165

Ion	Ratio	Lower	Upper
94	100		
96	98.8	56.0	130.6

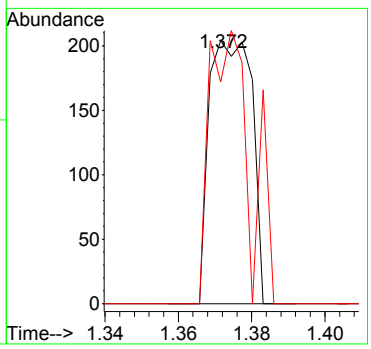

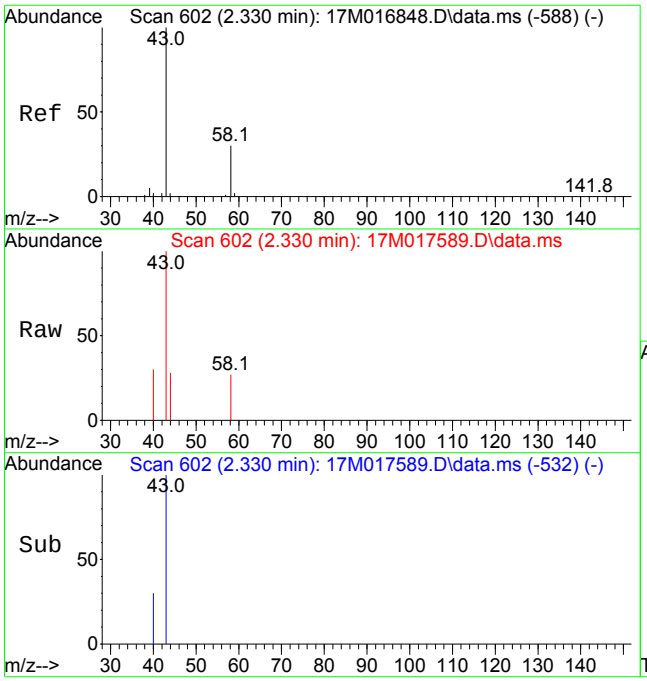

#16
Acetone
Concen: Below Cal
RT: 2.330 min Scan# 602
Delta R.T. 0.003 min
Lab File: 17M017589.D
Acq: 05 Feb 2016 17:19

Tgt Ion: 43 Resp: 893

Ion	Ratio	Lower	Upper
43	100		
58	12.9	18.1	42.1#

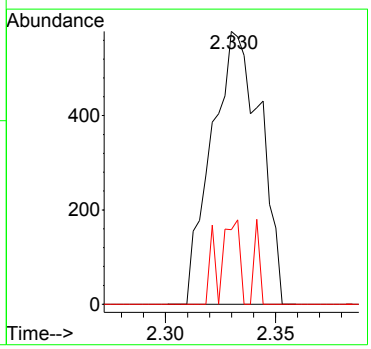

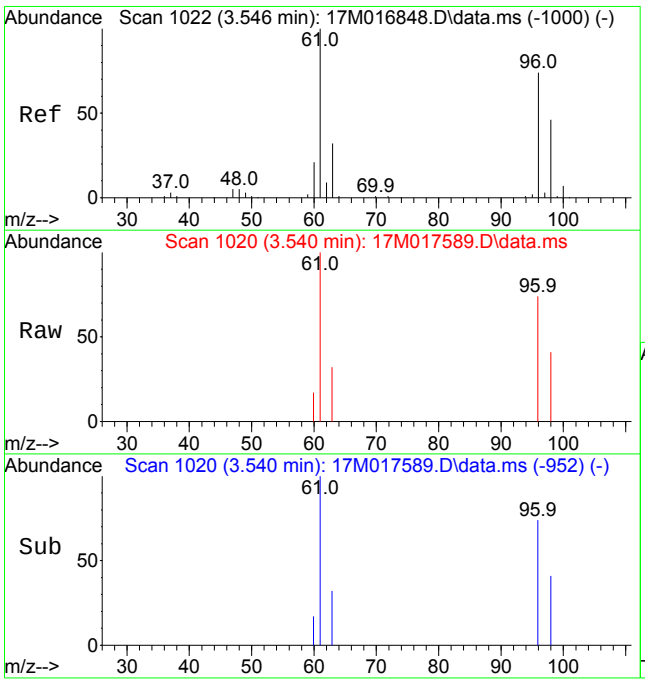

#23
cis-1,2-Dichloroethene
Concen: 0.5779 ug/L
RT: 3.540 min Scan# 1020
Delta R.T. -0.003 min
Lab File: 17M017589.D
Acq: 05 Feb 2016 17:19

Tgt Ion: 96 Resp: 2608

Ion	Ratio	Lower	Upper
96	100		
61	134.7	109.0	163.4

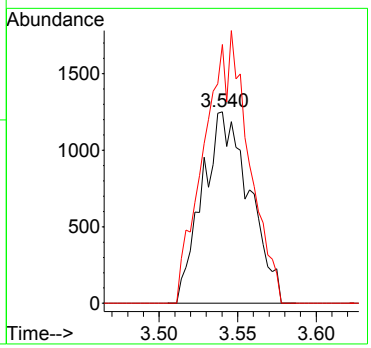

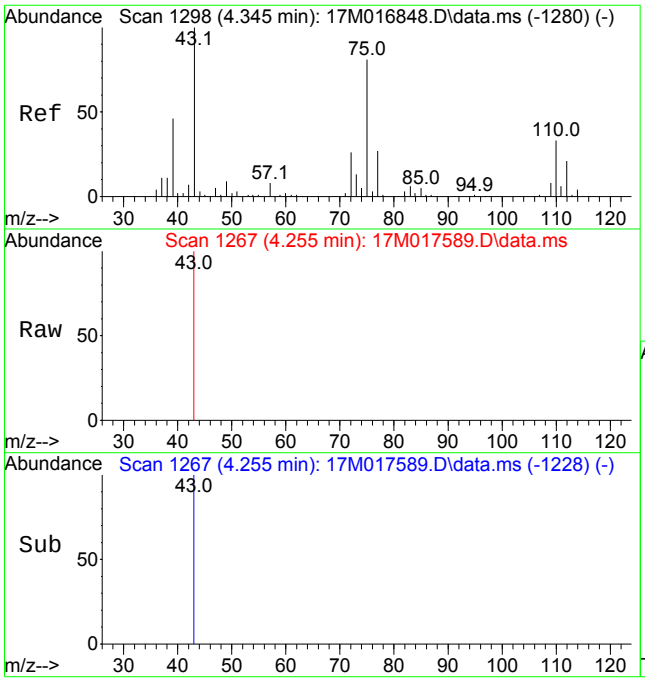

#32
2-Butanone
Concen: 0.1758 ug/L
RT: 4.255 min Scan# 1267
Delta R.T. -0.087 min
Lab File: 17M017589.D
Acq: 05 Feb 2016 17:19

Tgt Ion: 43 Resp: 226

Ion	Ratio	Lower	Upper
43	100		
72	0.0	35.4	53.2#
57	0.0	6.5	9.7#

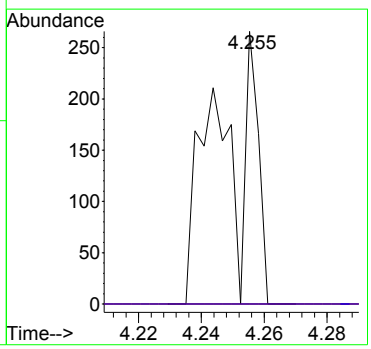

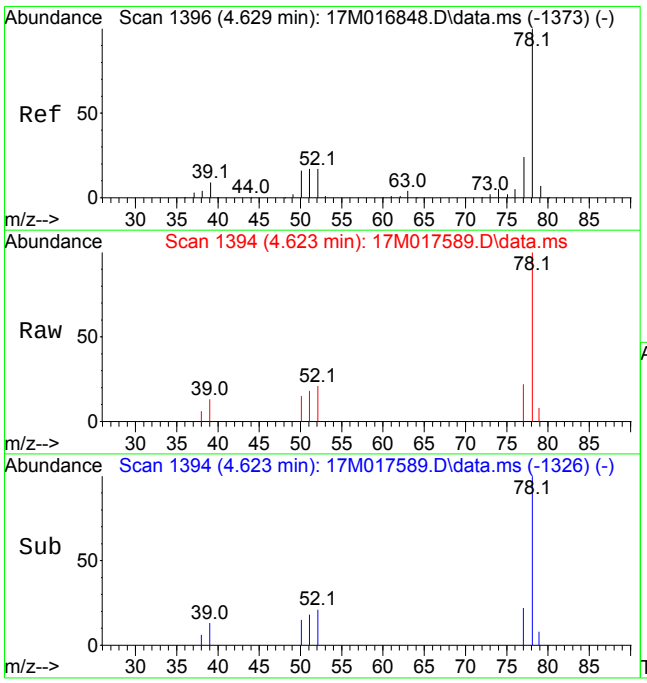

#33
Benzene
Concen: 0.3004 ug/L
RT: 4.623 min Scan# 1394
Delta R.T. -0.003 min
Lab File: 17M017589.D
Acq: 05 Feb 2016 17:19

Tgt Ion: 78 Resp: 5094

Ion	Ratio	Lower	Upper
78	100		
52	17.1	13.8	20.6

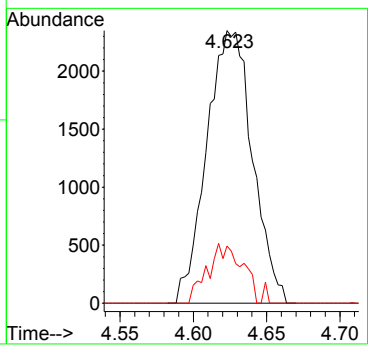

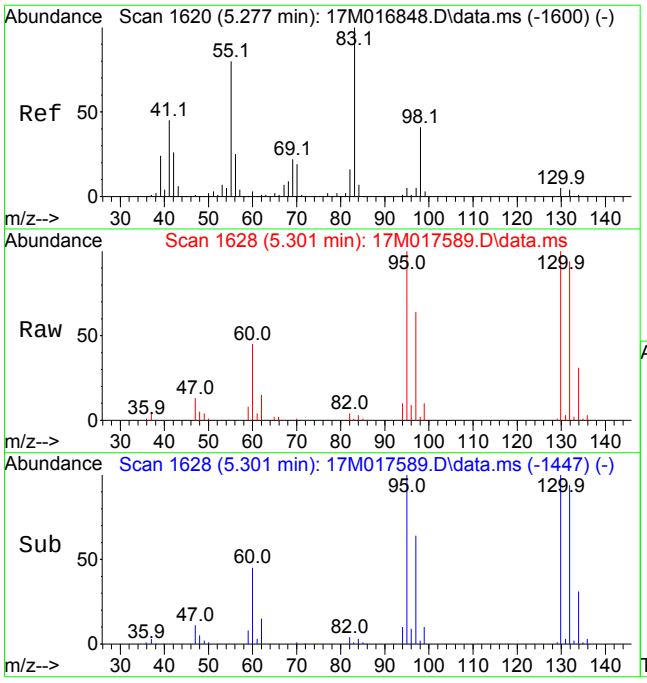

#36
Methylcyclohexane
Concen: 0.1442 ug/L
RT: 5.301 min Scan# 1628
Delta R.T. 0.024 min
Lab File: 17M017589.D
Acq: 05 Feb 2016 17:19

Tgt Ion: 83 Resp: 1007

Ion	Ratio	Lower	Upper
83	100		
55	0.0	63.9	95.9#
98	230.4	32.3	48.5#

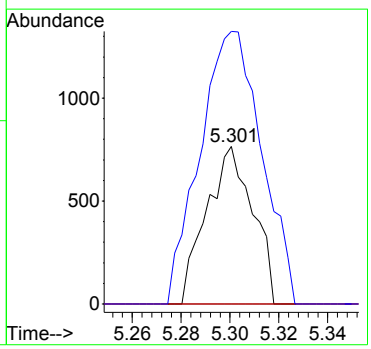

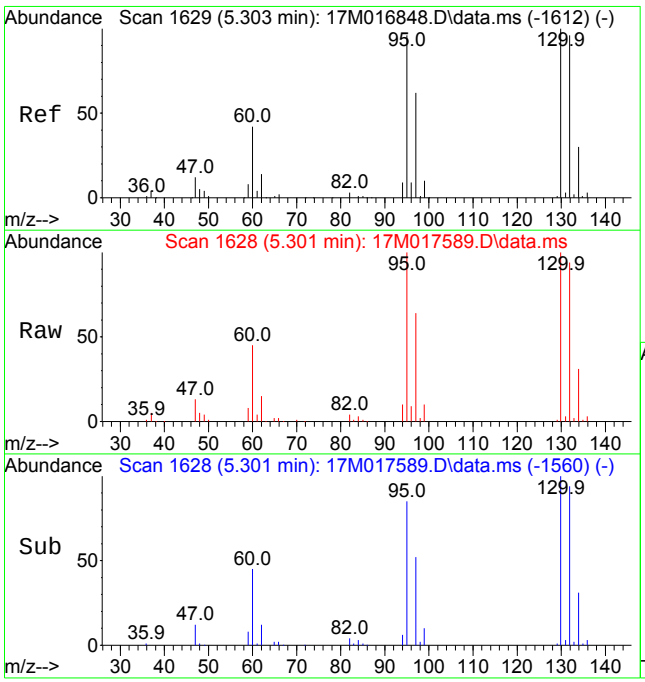

#37
Trichloroethene
Concen: 20.4927 ug/L
RT: 5.301 min Scan# 1628
Delta R.T. -0.002 min
Lab File: 17M017589.D
Acq: 05 Feb 2016 17:19

Tgt Ion:130 Resp: 94865

Ion	Ratio	Lower	Upper
130	100		
60	46.3	26.4	61.6

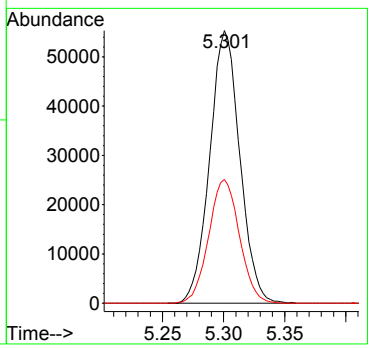

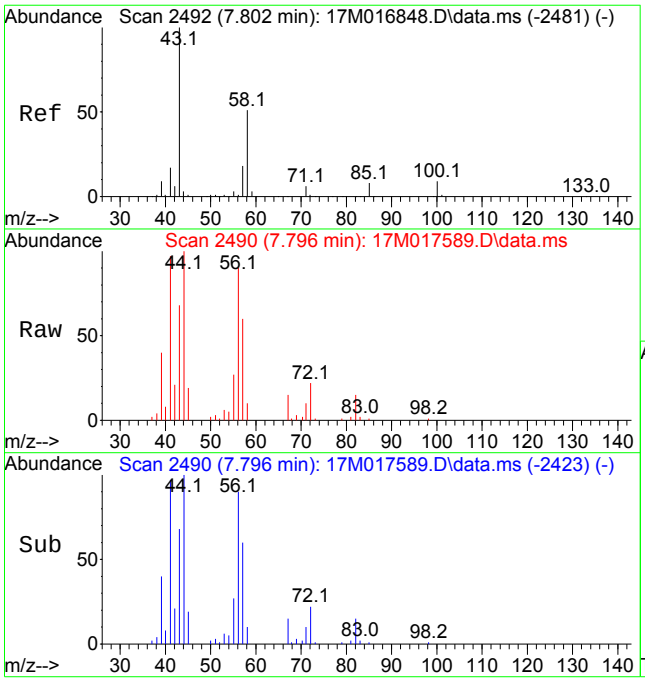

#44
4-Methyl-2-Pentanone
Concen: 1.4157 ug/L
RT: 7.796 min Scan# 2490
Delta R.T. -0.006 min
Lab File: 17M017589.D
Acq: 05 Feb 2016 17:19

Tgt Ion: 58 Resp: 1561

Ion	Ratio	Lower	Upper
58	100		
85	0.0	9.7	22.5#

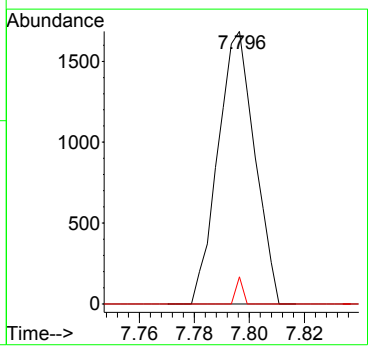

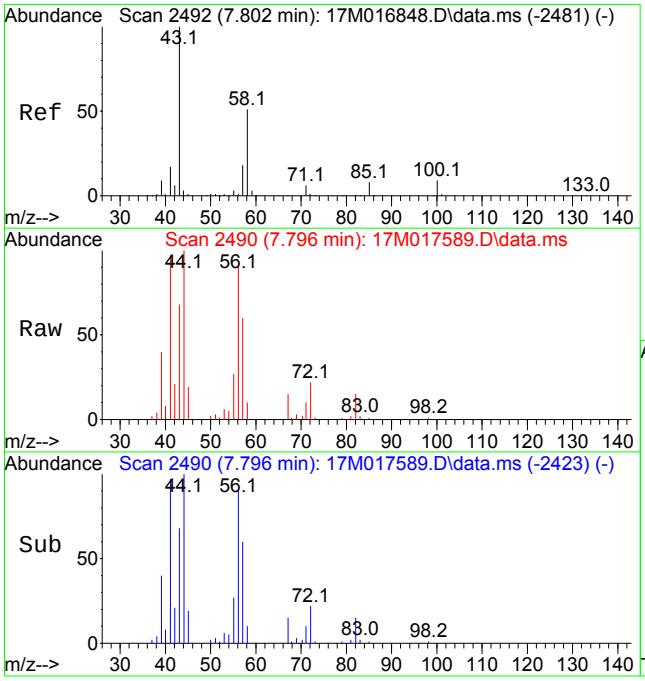

#54
2-Hexanone
Concen: 5.4428 ug/L
RT: 7.796 min Scan# 2490
Delta R.T. -0.006 min
Lab File: 17M017589.D
Acq: 05 Feb 2016 17:19

Tgt Ion: 43 Resp: 12055

Ion	Ratio	Lower	Upper
43	100		
58	12.9	39.9	59.9#

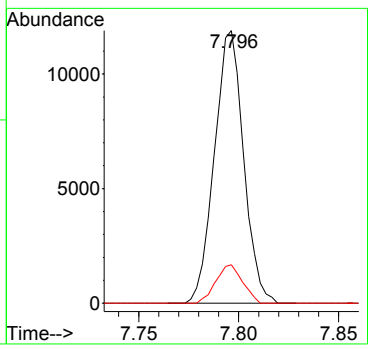

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017590.D
Acq On : 05 Feb 2016 17:50
Operator : ADC
Sample : L16020058-05 B 826-LOW
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Feb 08 09:26:19 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.121	96	376123	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	269194	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	137624	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	98179	24.1217 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.487%		
34) 1,2-Dichloroethane-d4	4.791	65	109059	26.7221 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.888%		
47) Toluene-d8	6.693	98	390119	25.7450 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.980%		
66) p-Bromofluorobenzene	8.711	95	138997	26.9512 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.805%		
Target Compounds					Qvalue
6) Bromomethane	1.369	94	156	Below Cal	90
10) 1,1-Dichloroethene	1.855	61	952	0.1508 ug/L	90
16) Acetone	2.330	43	581	Below Cal #	45
17) trans-1,2-Dichloroethene	2.405	96	1017	0.2516 ug/L	97
23) cis-1,2-Dichloroethene	3.543	96	8739	1.9202 ug/L	97
36) Methylcyclohexane	5.300	83	1320	0.1874 ug/L #	1
37) Trichloroethene	5.303	130	113047	24.2145 ug/L	97
44) 4-Methyl-2-Pentanone	7.793	58	214	0.1924 ug/L #	62
54) 2-Hexanone	7.793	43	1937	0.8779 ug/L #	44

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017590.D
Acq On : 05 Feb 2016 17:50
Operator : ADC
Sample : L16020058-05 B 826-LOW
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Feb 08 09:26:19 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

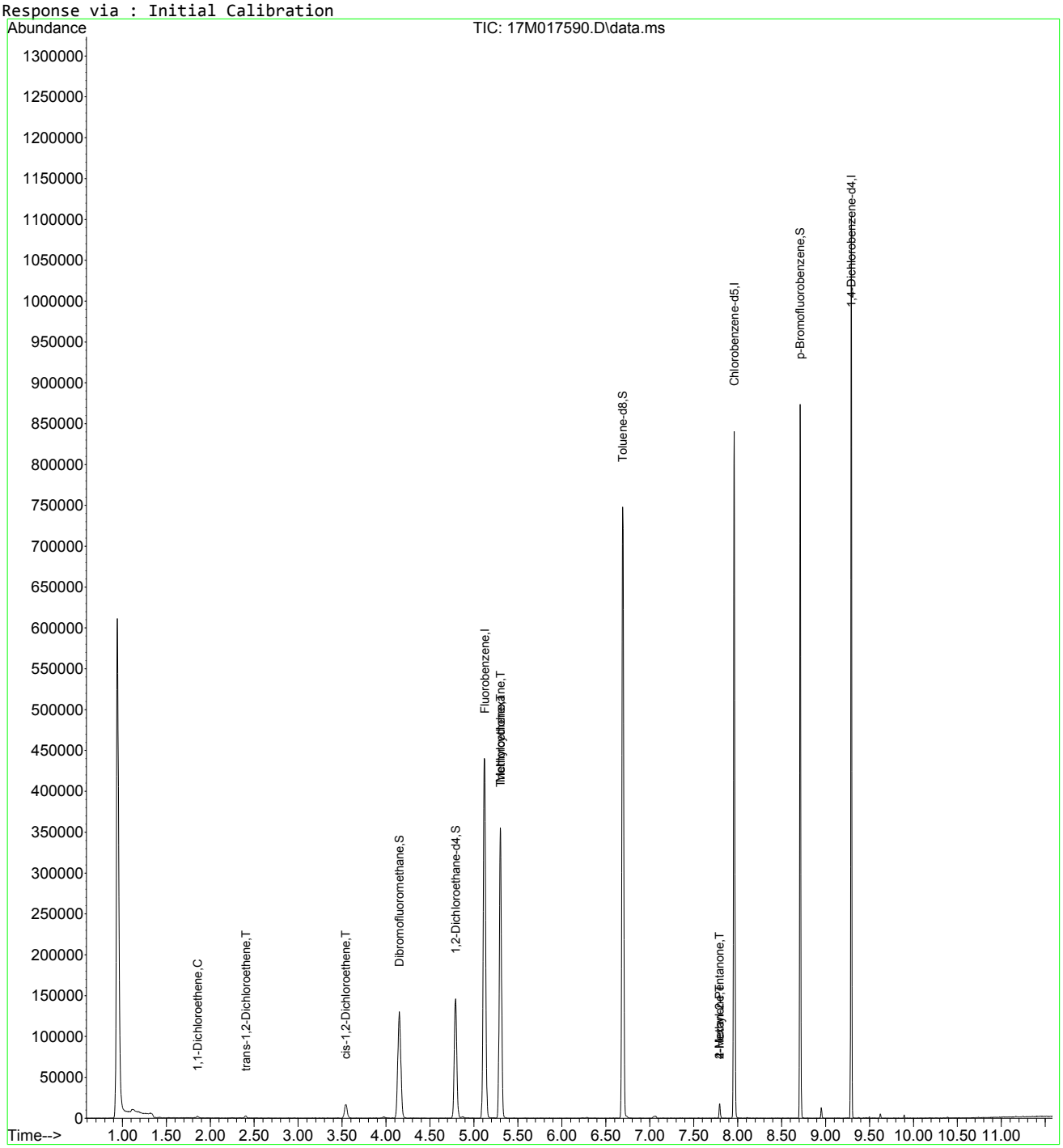

8260VMS.M Mon Feb 08 09:26:20 2016 Page: 2

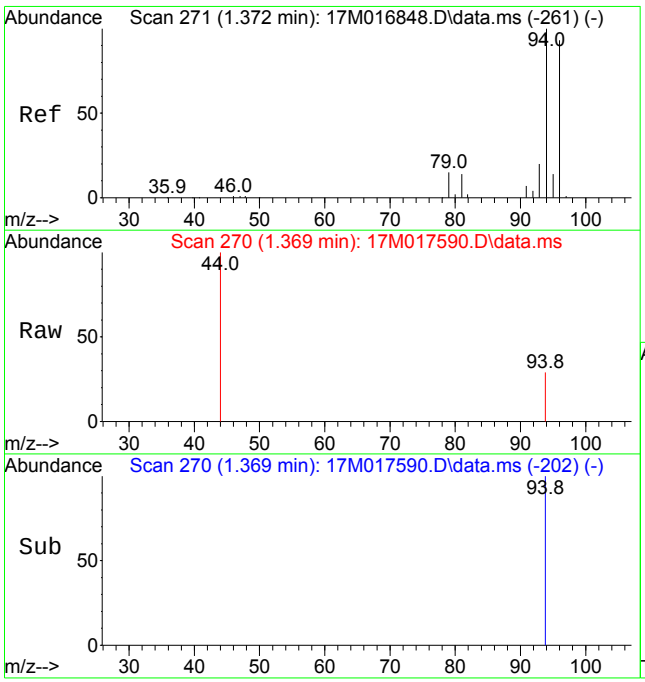

#6
Bromomethane
Concen: Below Cal
RT: 1.369 min Scan# 270
Delta R.T. -0.002 min
Lab File: 17M017590.D
Acq: 05 Feb 2016 17:50

Tgt Ion: 94 Resp: 156

Ion	Ratio	Lower	Upper
94	100		
96	83.3	56.0	130.6

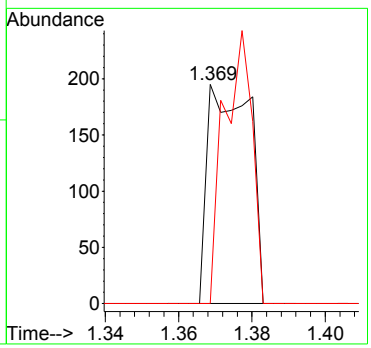

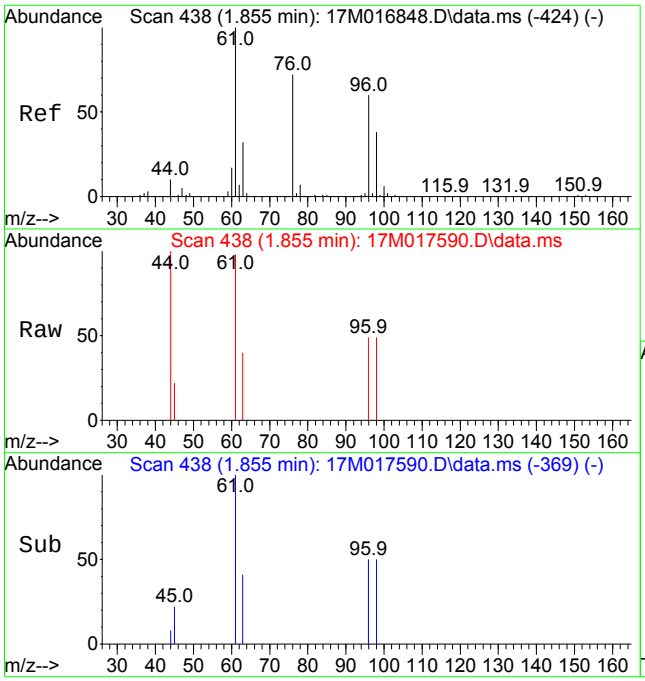

#10
1,1-Dichloroethene
Concen: 0.1508 ug/L
RT: 1.855 min Scan# 438
Delta R.T. 0.000 min
Lab File: 17M017590.D
Acq: 05 Feb 2016 17:50

Tgt Ion: 61 Resp: 952

Ion	Ratio	Lower	Upper
61	100		
96	51.2	46.7	70.1

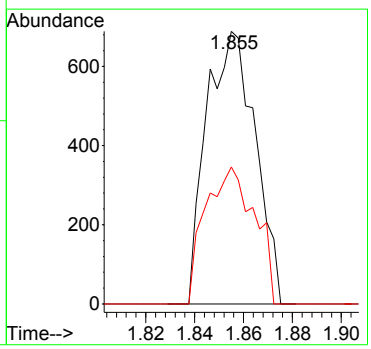

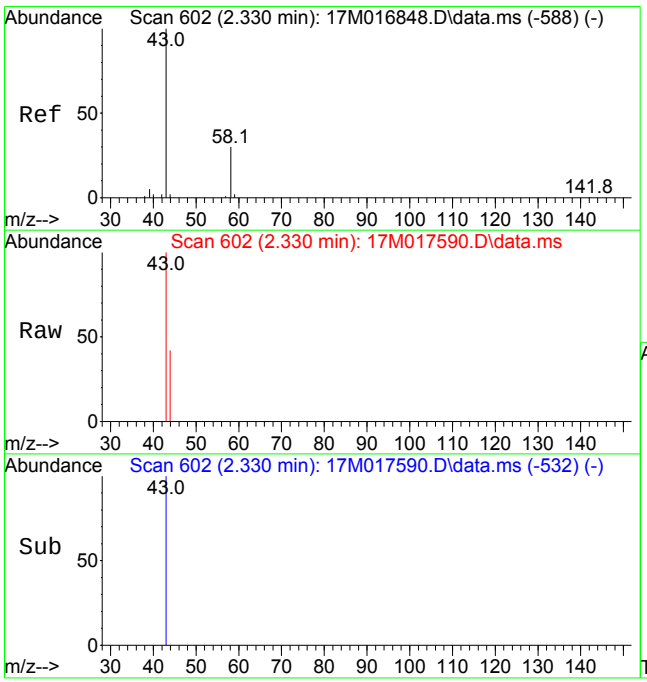

#16
Acetone
Concen: Below Cal
RT: 2.330 min Scan# 602
Delta R.T. 0.003 min
Lab File: 17M017590.D
Acq: 05 Feb 2016 17:50

Tgt Ion: 43 Resp: 581

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.1#

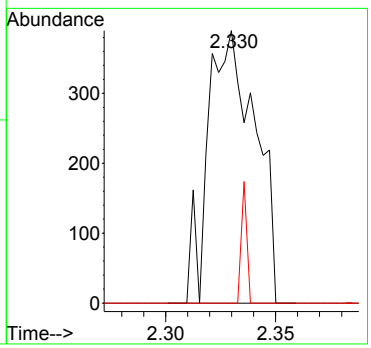

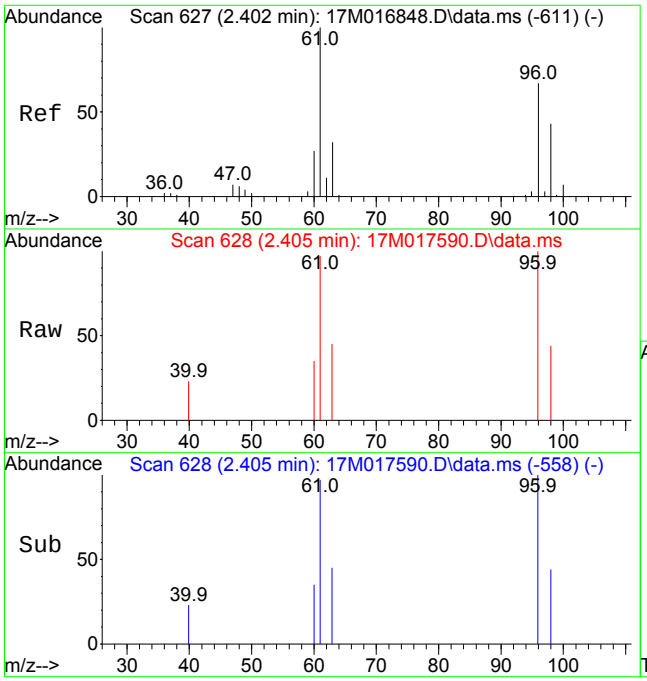

#17
trans-1,2-Dichloroethene
Concen: 0.2516 ug/L
RT: 2.405 min Scan# 628
Delta R.T. 0.003 min
Lab File: 17M017590.D
Acq: 05 Feb 2016 17:50

Tgt Ion: 96 Resp: 1017

Ion	Ratio	Lower	Upper
96	100		
61	155.9	121.6	182.4

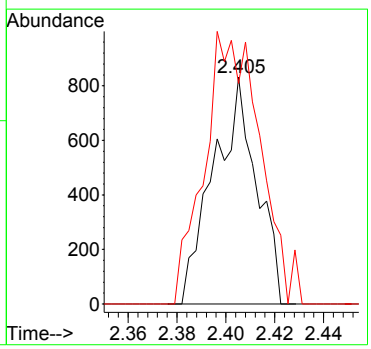

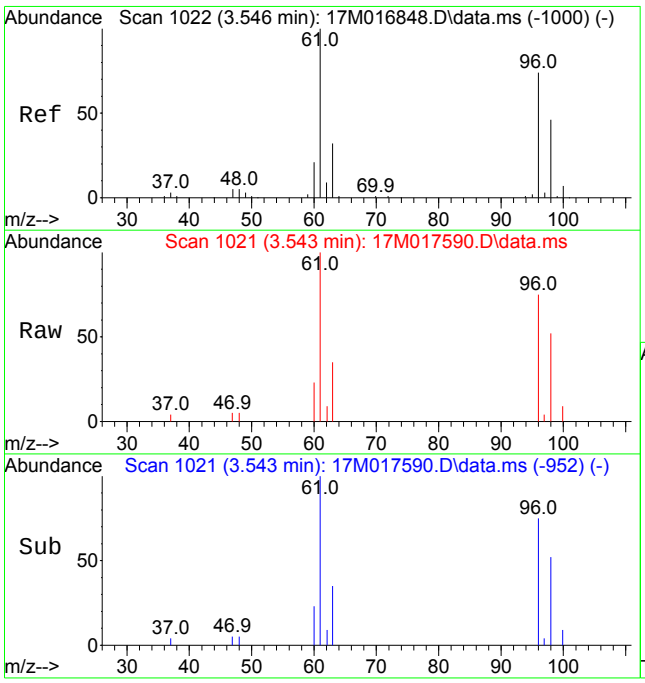

#23
cis-1,2-Dichloroethene
Concen: 1.9202 ug/L
RT: 3.543 min Scan# 1021
Delta R.T. 0.000 min
Lab File: 17M017590.D
Acq: 05 Feb 2016 17:50

Tgt Ion: 96 Resp: 8739

Ion	Ratio	Lower	Upper
96	100		
61	140.2	109.0	163.4

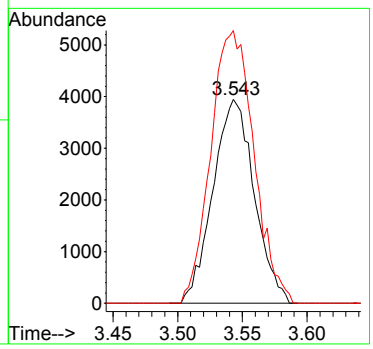

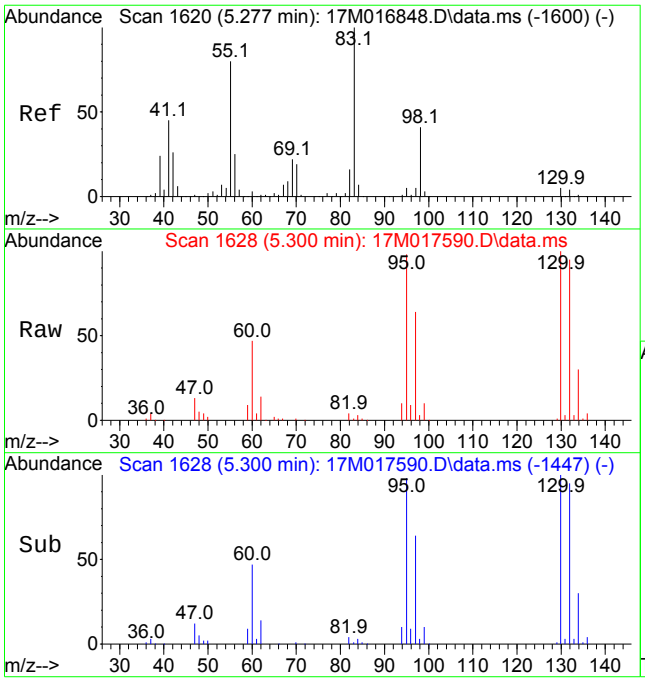

#36
Methylcyclohexane
Concen: 0.1874 ug/L
RT: 5.300 min Scan# 1628
Delta R.T. 0.023 min
Lab File: 17M017590.D
Acq: 05 Feb 2016 17:50

Tgt Ion: 83 Resp: 1320

Ion	Ratio	Lower	Upper
83	100		
55	0.0	63.9	95.9#
98	216.8	32.3	48.5#

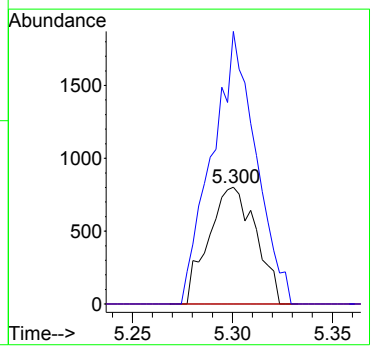

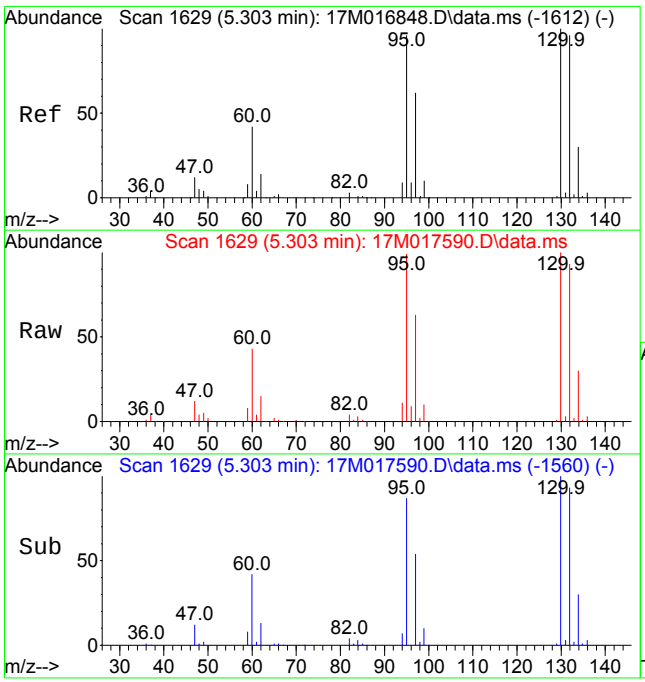

#37
Trichloroethene
Concen: 24.2145 ug/L
RT: 5.303 min Scan# 1629
Delta R.T. 0.000 min
Lab File: 17M017590.D
Acq: 05 Feb 2016 17:50

Tgt Ion:130 Resp: 113047

Ion	Ratio	Lower	Upper
130	100		
60	46.1	26.4	61.6

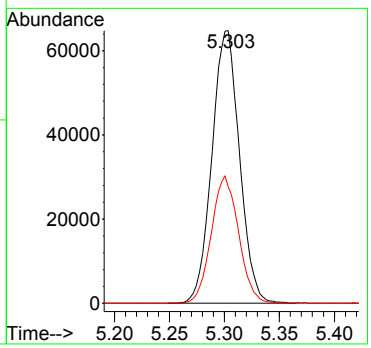

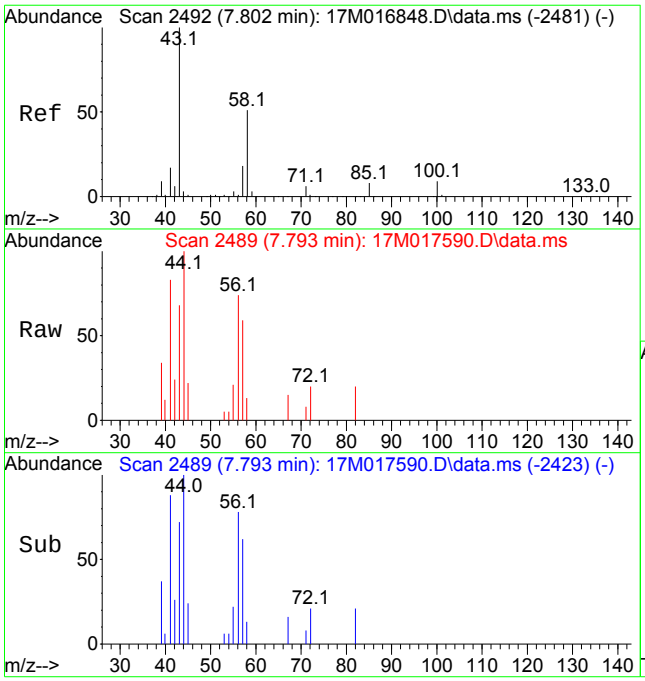

#44
4-Methyl-2-Pentanone
Concen: 0.1924 ug/L
RT: 7.793 min Scan# 2489
Delta R.T. -0.009 min
Lab File: 17M017590.D
Acq: 05 Feb 2016 17:50

Tgt Ion: 58 Resp: 214

Ion	Ratio	Lower	Upper
58	100		
85	0.0	9.7	22.5#

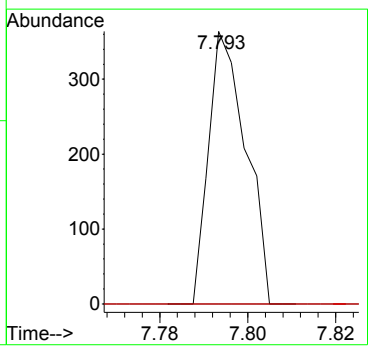

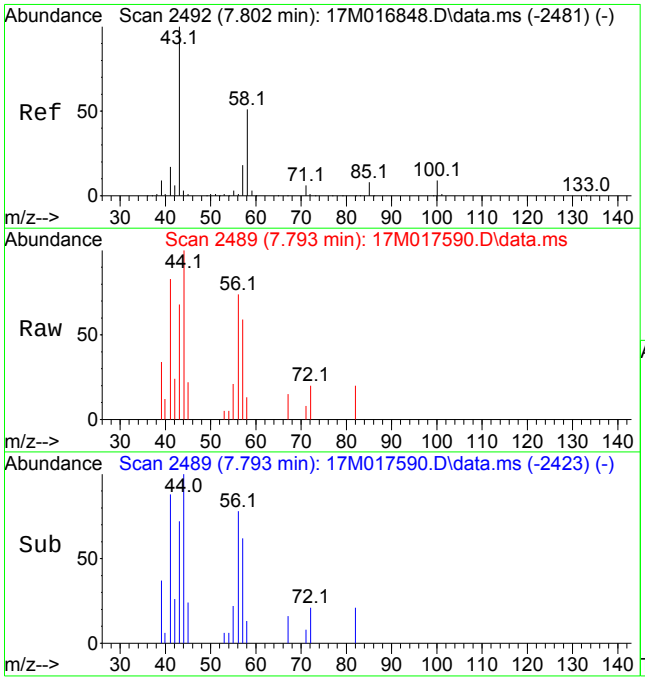

#54
2-Hexanone
Concen: 0.8779 ug/L
RT: 7.793 min Scan# 2489
Delta R.T. -0.009 min
Lab File: 17M017590.D
Acq: 05 Feb 2016 17:50

Tgt Ion: 43 Resp: 1937

Ion	Ratio	Lower	Upper
43	100		
58	11.0	39.9	59.9#

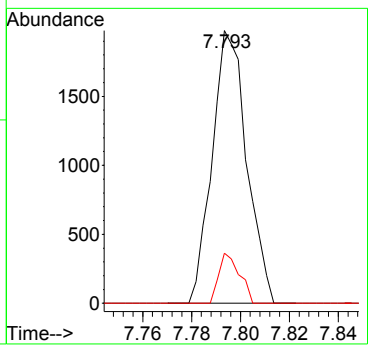

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017591.D
Acq On : 05 Feb 2016 18:09
Operator : ADC
Sample : L16020058-07 B 826-LOW
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Feb 08 09:26:23 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.121	96	369659	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	263560	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	135605	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	96227	24.0555 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.222%		
34) 1,2-Dichloroethane-d4	4.788	65	109066	27.1912 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.765%		
47) Toluene-d8	6.693	98	383758	25.8666 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.466%		
66) p-Bromofluorobenzene	8.711	95	135127	26.5910 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.364%		
Target Compounds					Qvalue
4) Vinyl Chloride	1.186	62	4398	0.8315 ug/L	100
6) Bromomethane	1.380	94	253	Below Cal	75
10) 1,1-Dichloroethene	1.855	61	20428	3.2919 ug/L	97
16) Acetone	2.327	43	655	Below Cal #	45
20) 1,1-Dichloroethane	2.952	63	7065	0.9018 ug/L	100
23) cis-1,2-Dichloroethene	3.546	96	13963	3.1217 ug/L	98
36) Methylcyclohexane	5.300	83	2583	0.3732 ug/L #	1
37) Trichloroethene	5.303	130	212819	46.3826 ug/L	96
54) 2-Hexanone	7.796	43	576	0.2666 ug/L #	27

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017591.D
Acq On : 05 Feb 2016 18:09
Operator : ADC
Sample : L16020058-07 B 826-LOW
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Feb 08 09:26:23 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

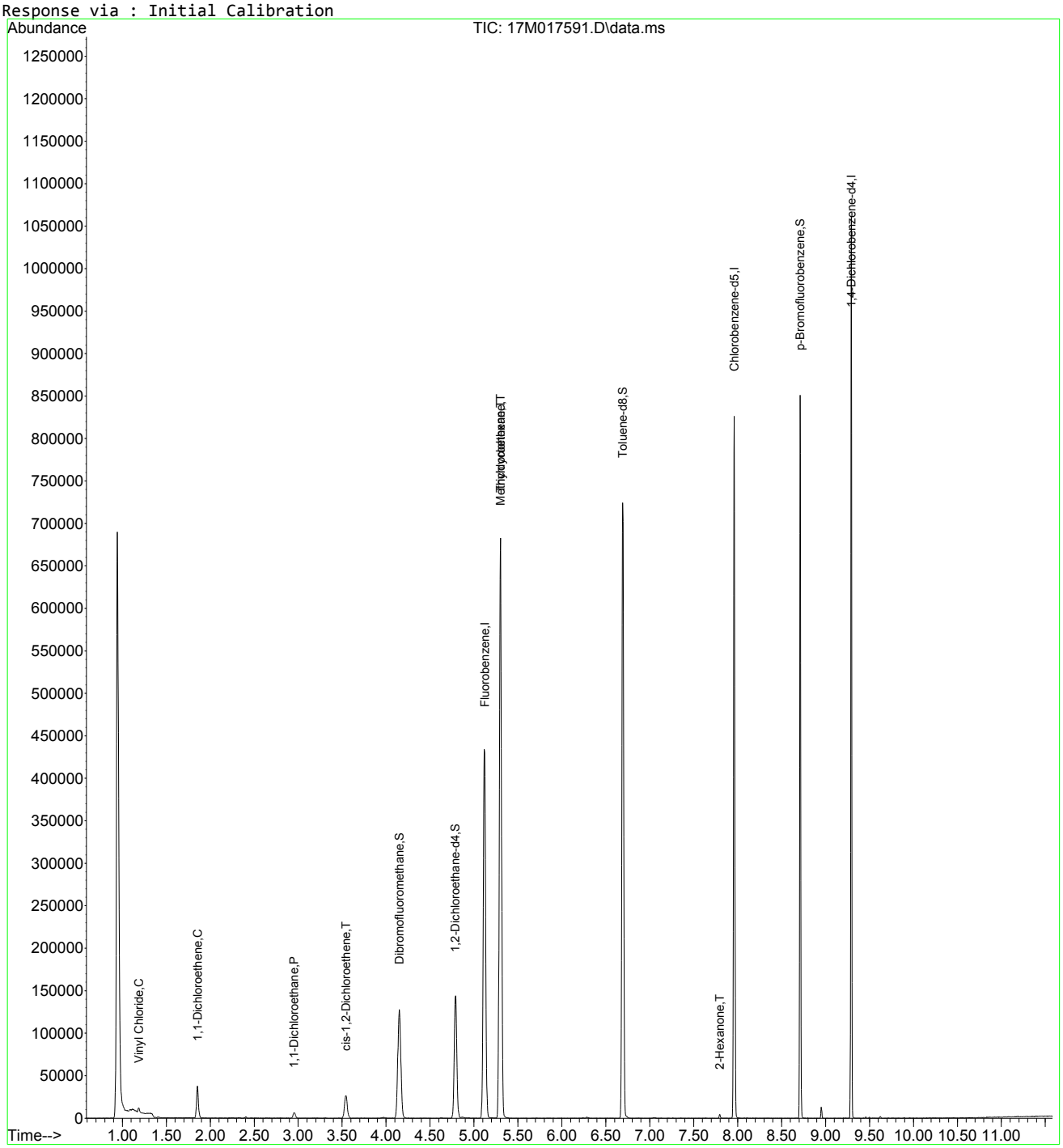

8260VMS.M Mon Feb 08 09:26:24 2016 Page: 2

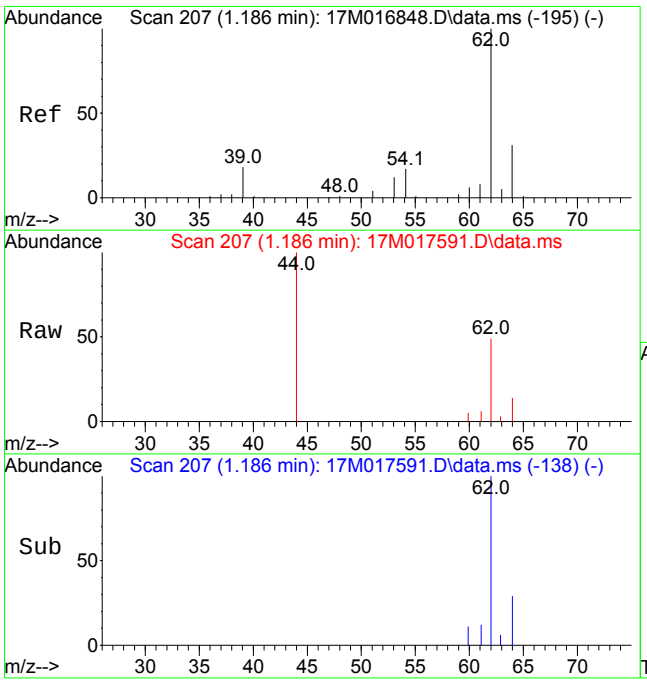

#4
Vinyl Chloride
Concen: 0.8315 ug/L
RT: 1.186 min Scan# 207
Delta R.T. 0.000 min
Lab File: 17M017591.D
Acq: 05 Feb 2016 18:09

Tgt Ion: 62 Resp: 4398

Ion	Ratio	Lower	Upper
62	100		
64	31.7	19.1	44.5

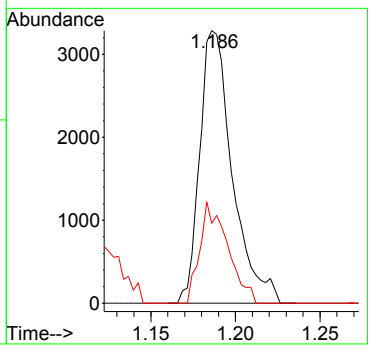

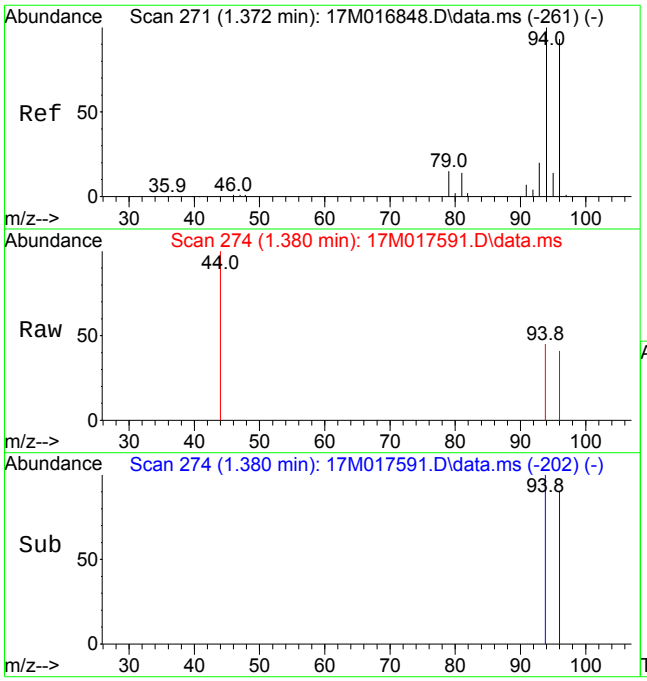

#6
Bromomethane
Concen: Below Cal
RT: 1.380 min Scan# 274
Delta R.T. 0.009 min
Lab File: 17M017591.D
Acq: 05 Feb 2016 18:09

Tgt Ion: 94 Resp: 253

Ion	Ratio	Lower	Upper
94	100		
96	69.2	56.0	130.6

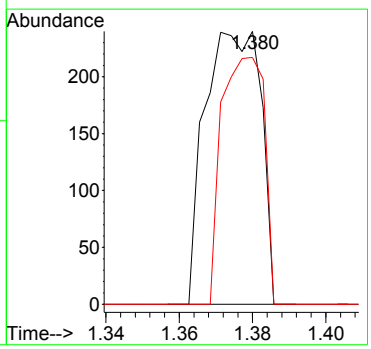

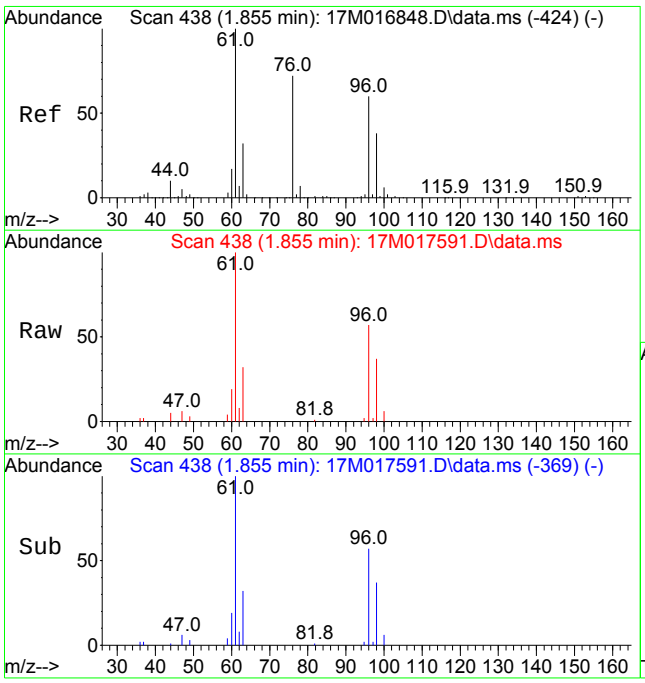

#10
1,1-Dichloroethene
Concen: 3.2919 ug/L
RT: 1.855 min Scan# 438
Delta R.T. -0.000 min
Lab File: 17M017591.D
Acq: 05 Feb 2016 18:09

Tgt Ion: 61 Resp: 20428

Ion	Ratio	Lower	Upper
61	100		
96	56.1	46.7	70.1

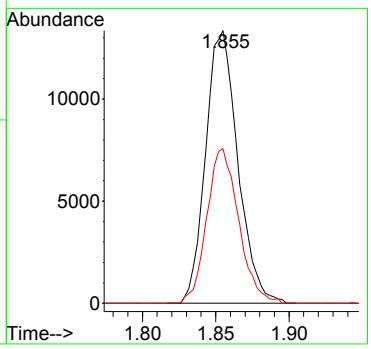

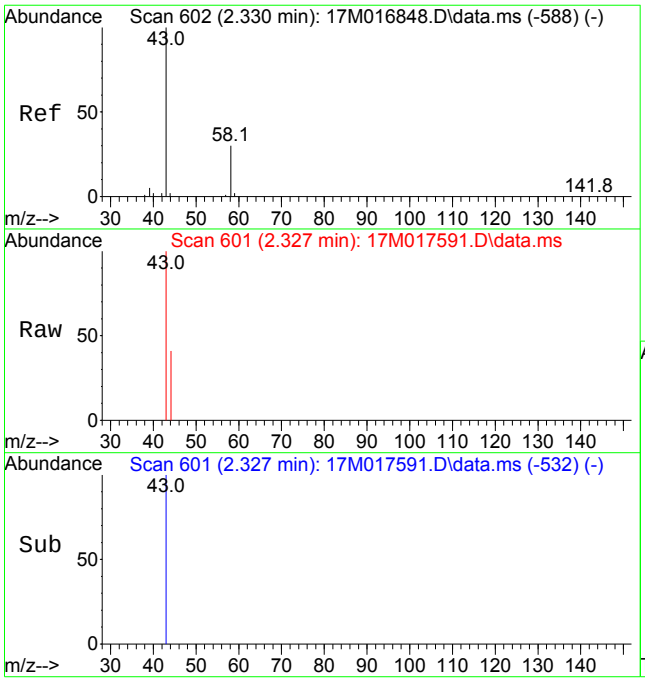

#16
Acetone
Concen: Below Cal
RT: 2.327 min Scan# 601
Delta R.T. -0.000 min
Lab File: 17M017591.D
Acq: 05 Feb 2016 18:09

Tgt Ion: 43 Resp: 655

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.1#

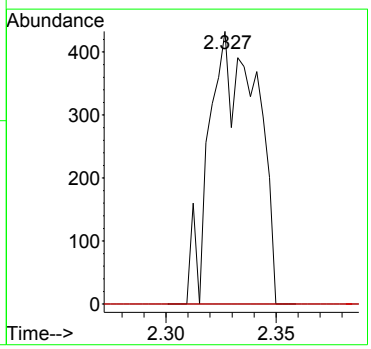

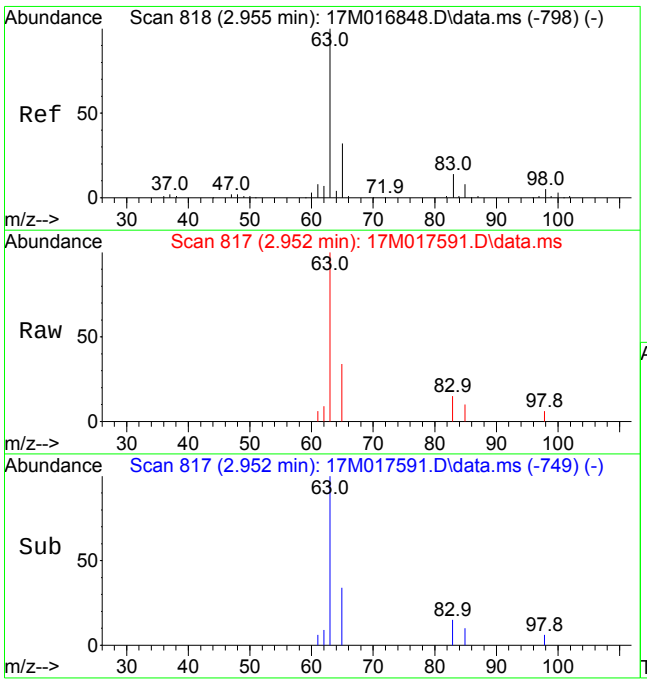

#20
1,1-Dichloroethane
Concen: 0.9018 ug/L
RT: 2.952 min Scan# 817
Delta R.T. -0.003 min
Lab File: 17M017591.D
Acq: 05 Feb 2016 18:09

Tgt Ion: 63 Resp: 7065

Ion	Ratio	Lower	Upper
63	100		
65	31.5	25.0	37.6

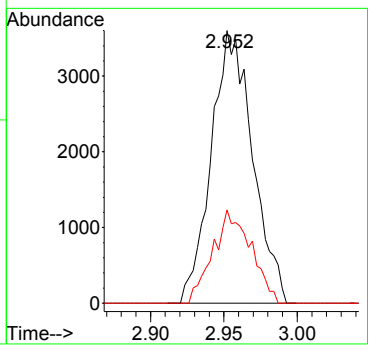

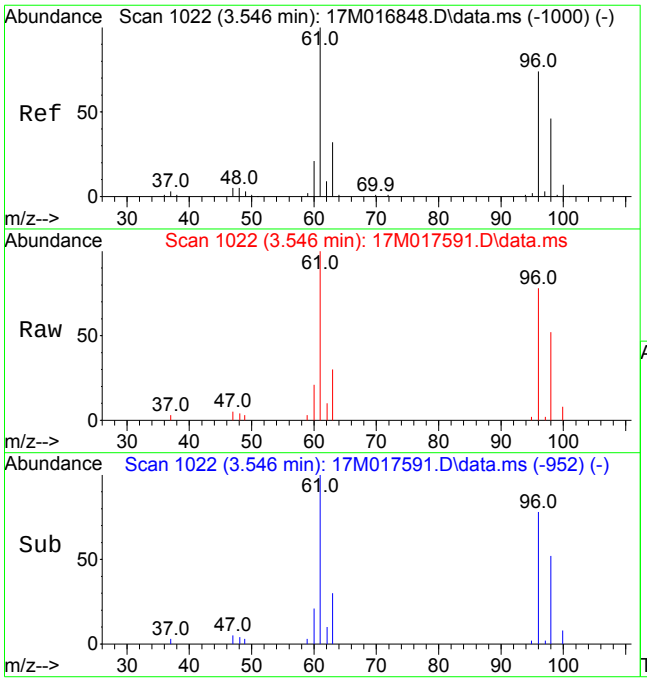

#23
cis-1,2-Dichloroethene
Concen: 3.1217 ug/L
RT: 3.546 min Scan# 1022
Delta R.T. 0.003 min
Lab File: 17M017591.D
Acq: 05 Feb 2016 18:09

Tgt Ion: 96 Resp: 13963

Ion	Ratio	Lower	Upper
96	100		
61	138.2	109.0	163.4

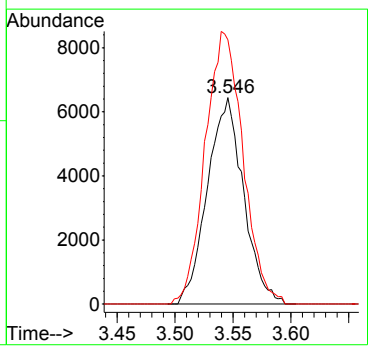

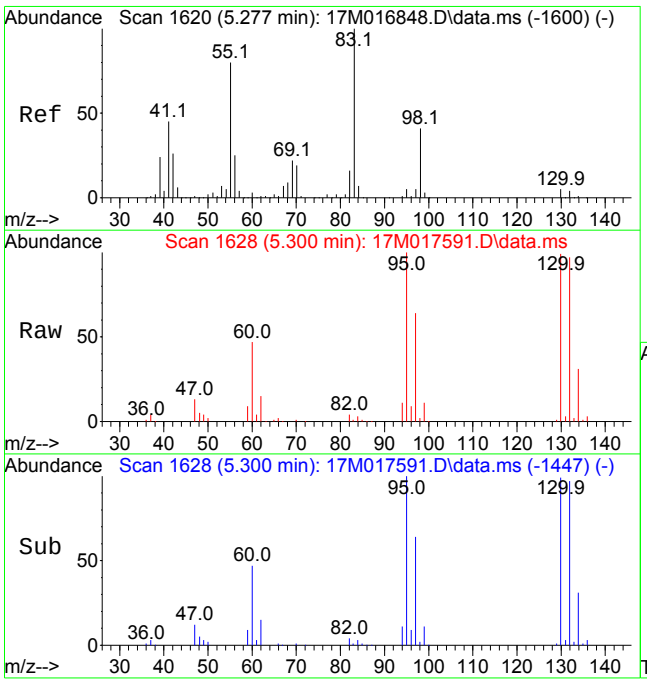

#36
Methylcyclohexane
Concen: 0.3732 ug/L
RT: 5.300 min Scan# 1628
Delta R.T. 0.023 min
Lab File: 17M017591.D
Acq: 05 Feb 2016 18:09

Tgt Ion: 83 Resp: 2583

Ion	Ratio	Lower	Upper
83	100		
55	0.0	63.9	95.9#
98	211.5	32.3	48.5#

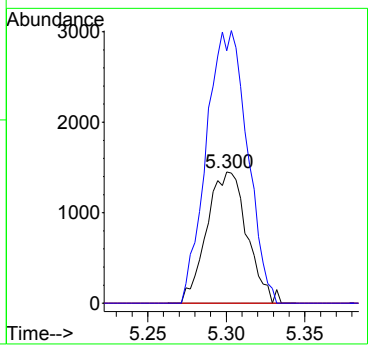

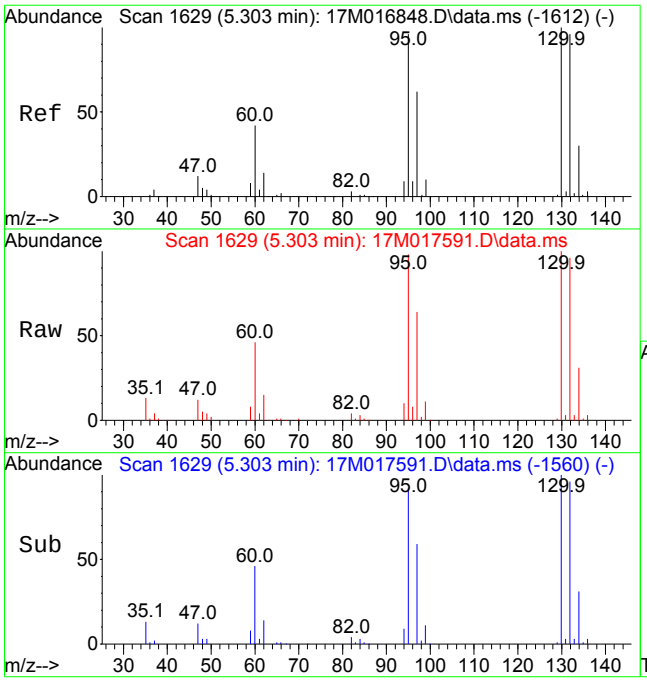

#37
Trichloroethene
Concen: 46.3826 ug/L
RT: 5.303 min Scan# 1629
Delta R.T. 0.000 min
Lab File: 17M017591.D
Acq: 05 Feb 2016 18:09

Tgt Ion:130 Resp: 212819

Ion	Ratio	Lower	Upper
130	100		
60	46.3	26.4	61.6

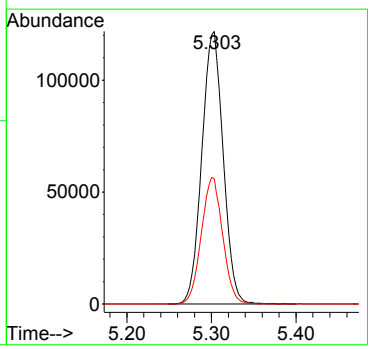

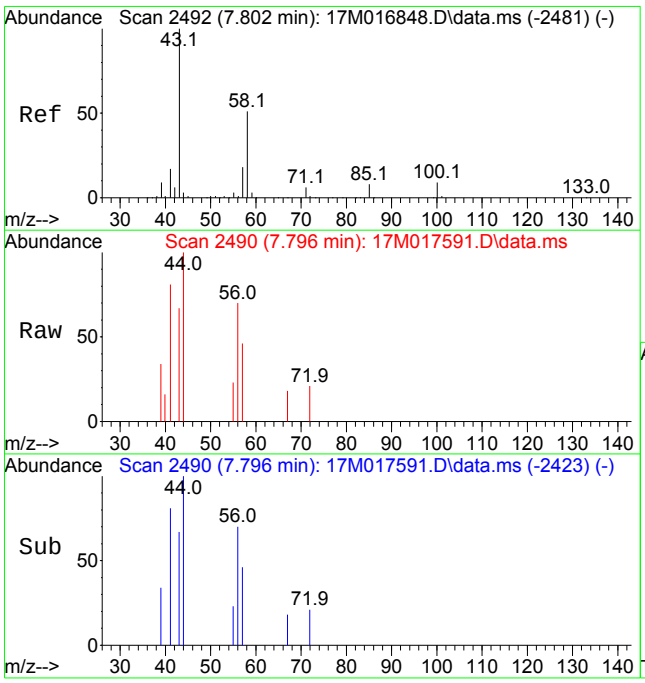

#54
2-Hexanone
Concen: 0.2666 ug/L
RT: 7.796 min Scan# 2490
Delta R.T. -0.006 min
Lab File: 17M017591.D
Acq: 05 Feb 2016 18:09

Tgt Ion: 43 Resp: 576

Ion	Ratio	Lower	Upper
43	100		
58	0.0	39.9	59.9#

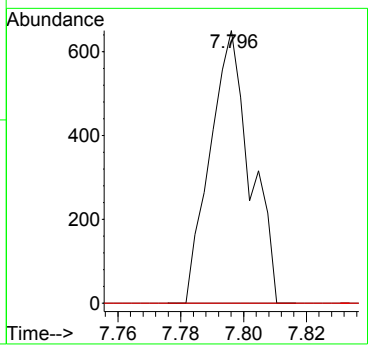

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017592.D
Acq On : 05 Feb 2016 18:29
Operator : ADC
Sample : L16020058-09 B 826-LOW
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Feb 08 09:26:27 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	373957	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	262339	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	134340	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	103896	25.6741 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.696%		
34) 1,2-Dichloroethane-d4	4.791	65	118422	29.1844 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 116.738%		
47) Toluene-d8	6.693	98	388513	26.3090 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.236%		
66) p-Bromofluorobenzene	8.711	95	134914	26.7990 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.196%		
Target Compounds					Qvalue
3) Chloromethane	1.169	50	5829	1.0529 ug/L #	42
11) Carbon Disulfide	1.869	76	1864	0.1440 ug/L #	73
13) Iodomethane	1.953	142	100	1.4434 ug/L #	33
16) Acetone	2.327	43	3006	1.9777 ug/L	94
18) Methyl acetate	2.327	43	3006	1.2405 ug/L #	66
32) 2-Butanone	4.357	43	1436	1.1142 ug/L #	57
33) Benzene	4.626	78	5038	0.2963 ug/L	98
37) Trichloroethene	5.298	130	781	0.1683 ug/L	74
54) 2-Hexanone	7.799	43	432	0.2009 ug/L #	27

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017592.D
Acq On : 05 Feb 2016 18:29
Operator : ADC
Sample : L16020058-09 B 826-LOW
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Feb 08 09:26:27 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

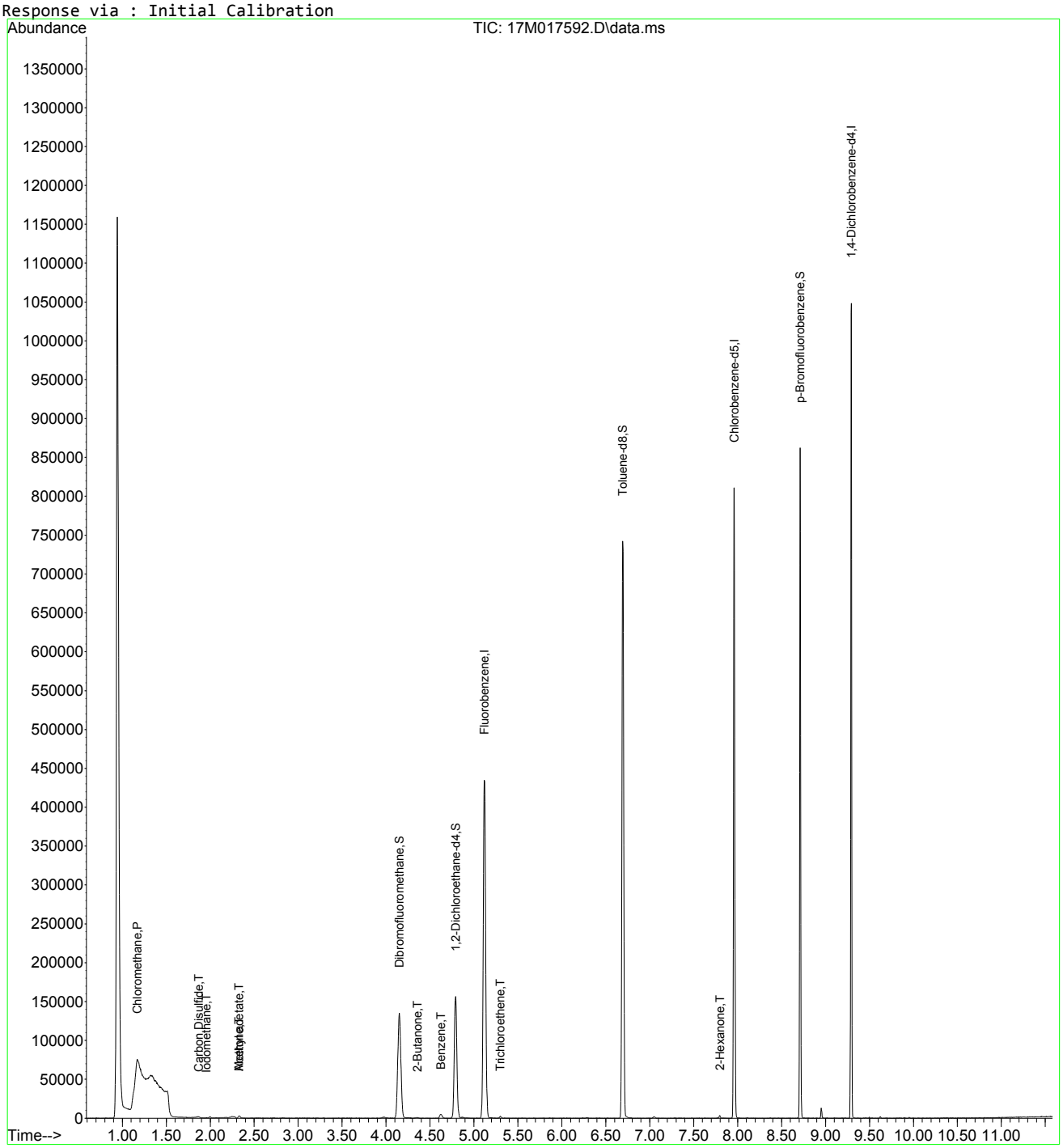

8260VMS.M Mon Feb 08 09:26:28 2016 Page: 2

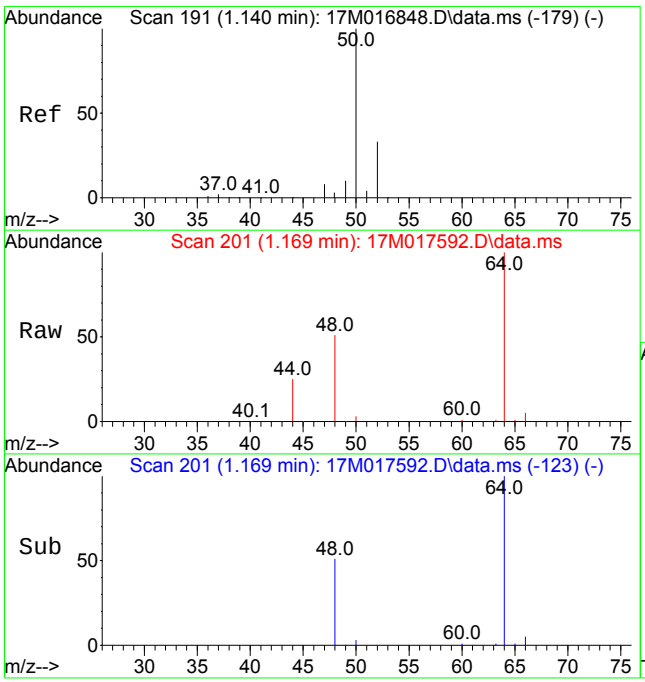

#3
Chloromethane
Concen: 1.0529 ug/L
RT: 1.169 min Scan# 201
Delta R.T. 0.026 min
Lab File: 17M017592.D
Acq: 05 Feb 2016 18:29

Tgt Ion: 50 Resp: 5829

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.6	45.6#

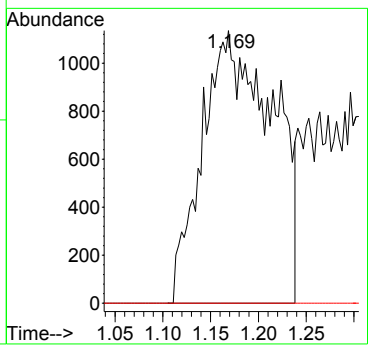

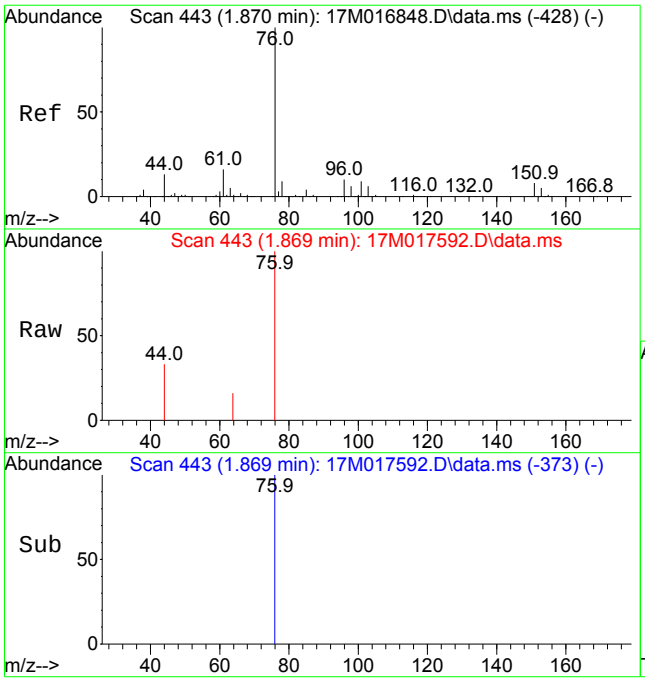

#11
Carbon Disulfide
Concen: 0.1440 ug/L
RT: 1.869 min Scan# 443
Delta R.T. 0.002 min
Lab File: 17M017592.D
Acq: 05 Feb 2016 18:29

Tgt Ion: 76 Resp: 1864

Ion	Ratio	Lower	Upper
76	100		
78	0.0	7.9	11.9#

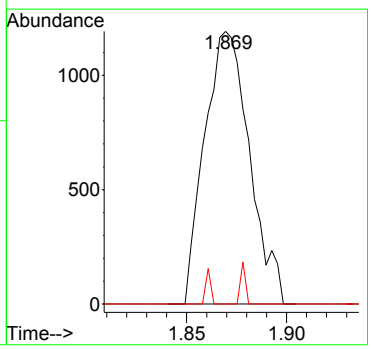

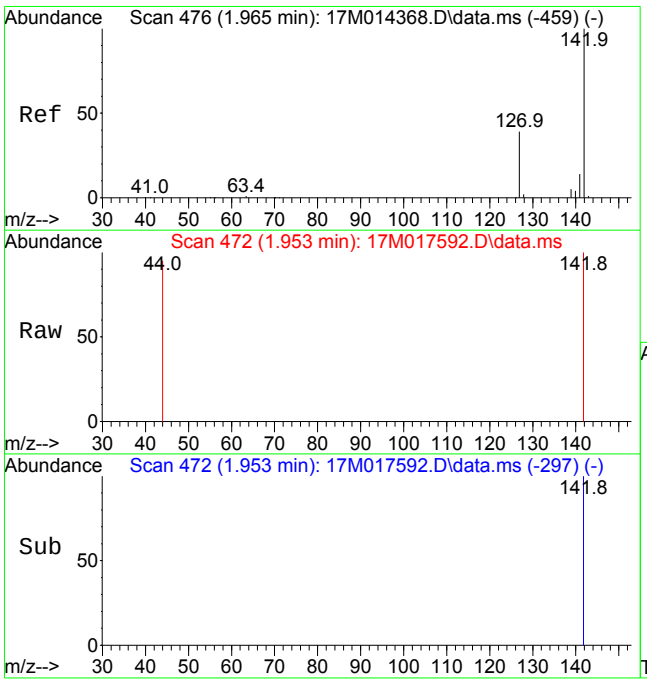

#13
Iodomethane
Concen: 1.4434 ug/L
RT: 1.953 min Scan# 472
Delta R.T. 0.005 min
Lab File: 17M017592.D
Acq: 05 Feb 2016 18:29

Tgt Ion:142 Resp: 100

Ion	Ratio	Lower	Upper
142	100		
127	0.0	34.2	51.4#

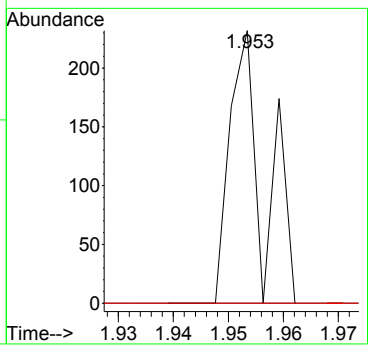

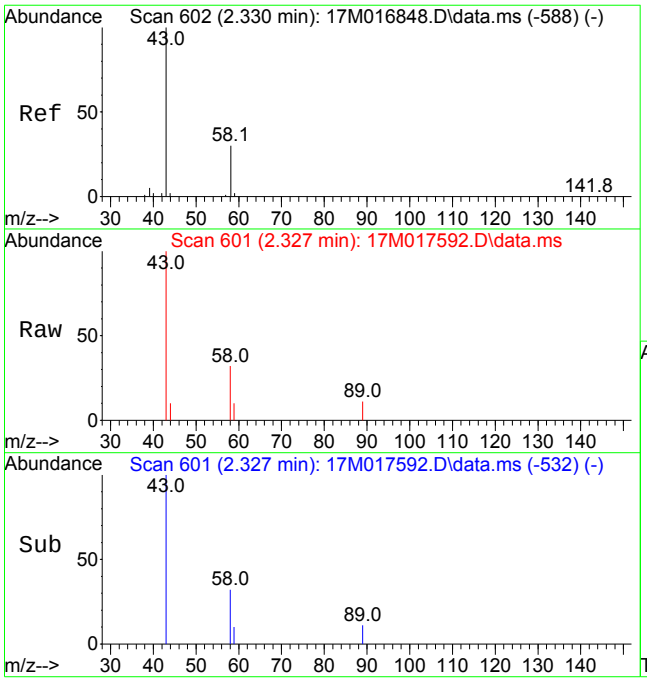

#16
Acetone
Concen: 1.9777 ug/L
RT: 2.327 min Scan# 601
Delta R.T. -0.000 min
Lab File: 17M017592.D
Acq: 05 Feb 2016 18:29

Tgt Ion: 43 Resp: 3006

Ion	Ratio	Lower	Upper
43	100		
58	27.1	18.1	42.1

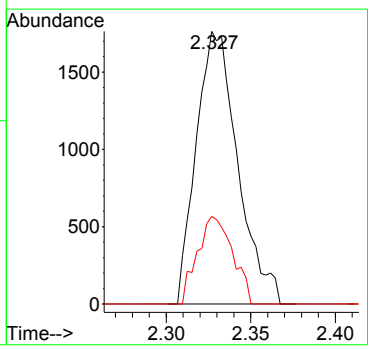

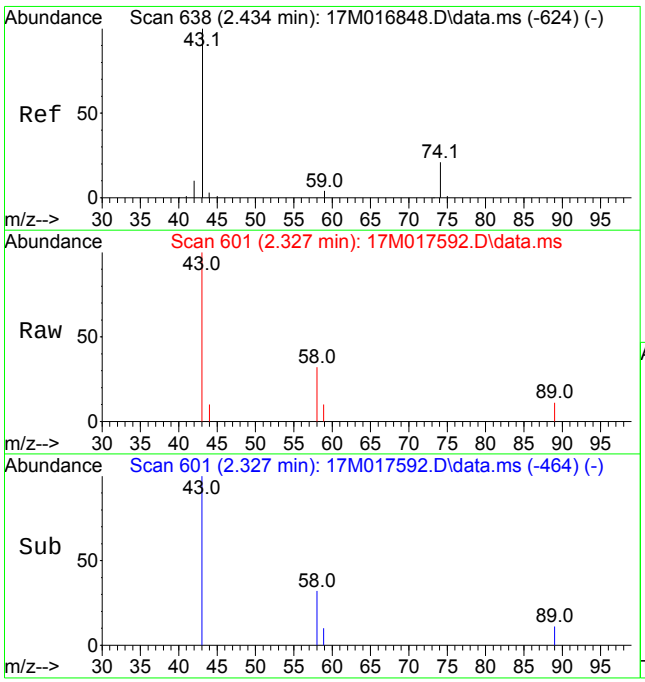

#18
Methyl acetate
Concen: 1.2405 ug/L
RT: 2.327 min Scan# 601
Delta R.T. -0.104 min
Lab File: 17M017592.D
Acq: 05 Feb 2016 18:29

Tgt Ion: 43 Resp: 3006

Ion	Ratio	Lower	Upper
43	100		
74	0.0	20.2	20.2#
59	4.2	6.6	10.0#

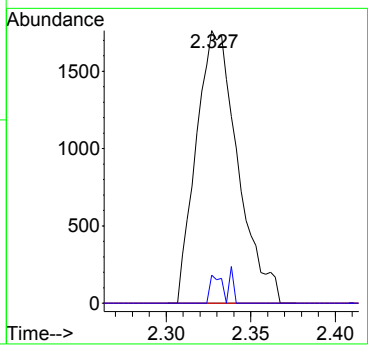

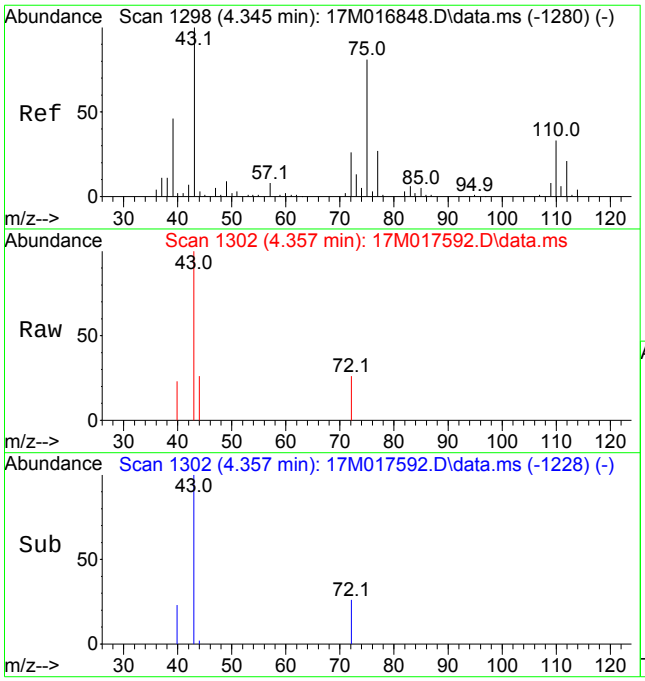

#32
2-Butanone
Concen: 1.1142 ug/L
RT: 4.357 min Scan# 1302
Delta R.T. 0.015 min
Lab File: 17M017592.D
Acq: 05 Feb 2016 18:29

Tgt Ion: 43 Resp: 1436

Ion	Ratio	Lower	Upper
43	100		
72	14.1	35.4	53.2#
57	0.0	6.5	9.7#

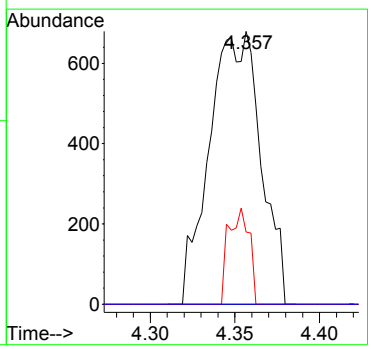

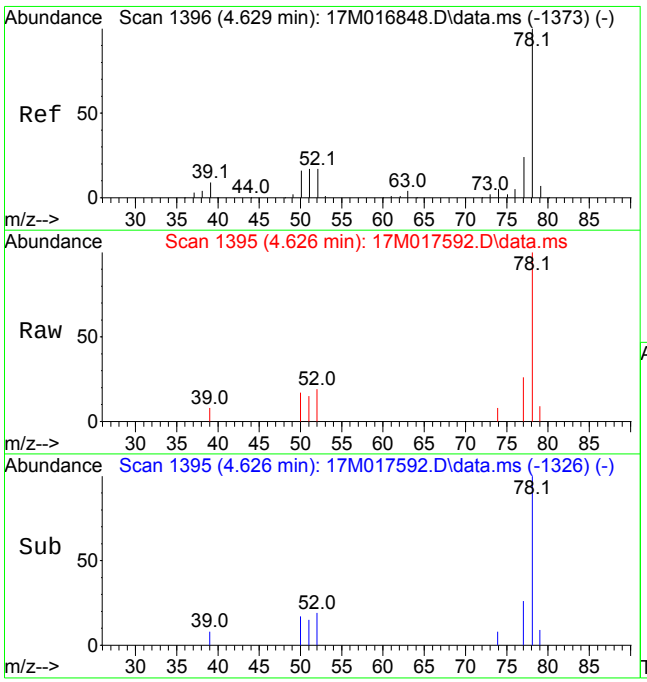

#33
Benzene
Concen: 0.2963 ug/L
RT: 4.626 min Scan# 1395
Delta R.T. -0.000 min
Lab File: 17M017592.D
Acq: 05 Feb 2016 18:29

Tgt Ion: 78 Resp: 5038

Ion	Ratio	Lower	Upper
78	100		
52	16.2	13.8	20.6

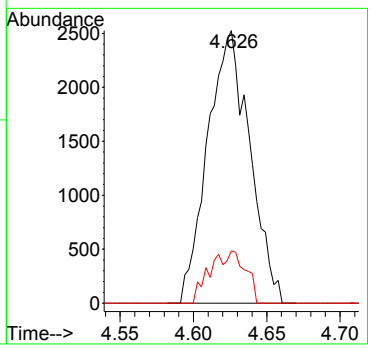

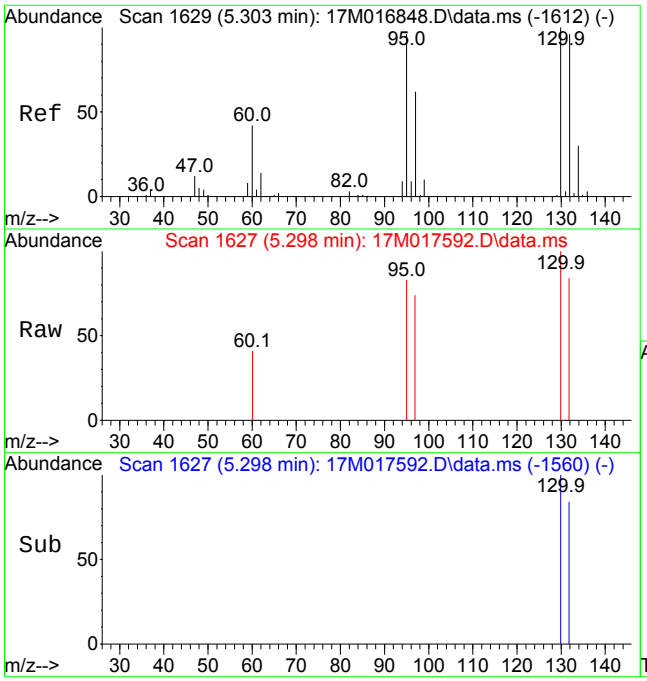

#37
Trichloroethene
Concen: 0.1683 ug/L
RT: 5.298 min Scan# 1627
Delta R.T. -0.005 min
Lab File: 17M017592.D
Acq: 05 Feb 2016 18:29

Tgt Ion:130 Resp: 781

Ion	Ratio	Lower	Upper
130	100		
60	27.3	26.4	61.6

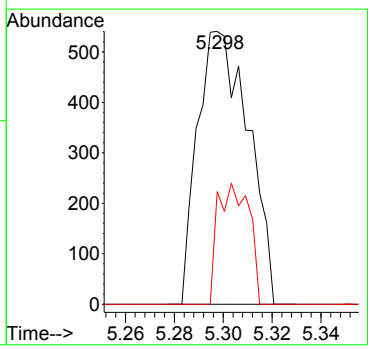

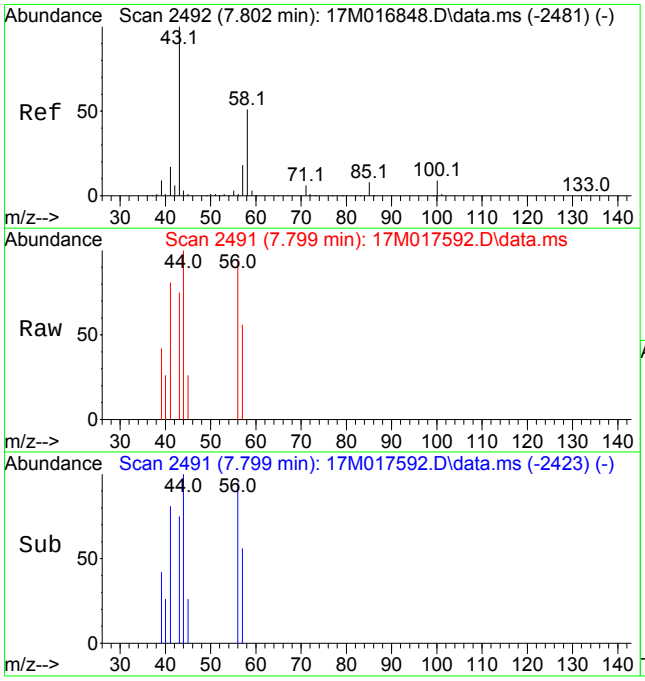

#54
2-Hexanone
Concen: 0.2009 ug/L
RT: 7.799 min Scan# 2491
Delta R.T. -0.003 min
Lab File: 17M017592.D
Acq: 05 Feb 2016 18:29

Tgt Ion: 43 Resp: 432

Ion	Ratio	Lower	Upper
43	100		
58	0.0	39.9	59.9#

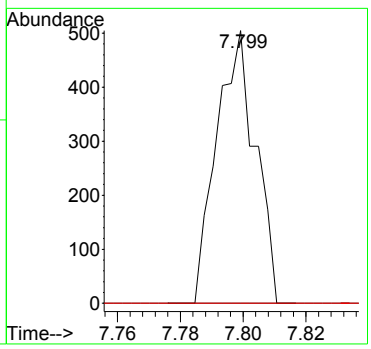

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017585.D
Acq On : 05 Feb 2016 15:38
Operator : ADC
Sample : L16020058-11 B 826-LOW
Misc : 1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Feb 08 09:26:02 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	377075	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	269001	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	138610	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.154	111	99259	24.3254 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.302%		
34) 1,2-Dichloroethane-d4	4.791	65	109979	26.8795 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.518%		
47) Toluene-d8	6.693	98	391705	25.8682 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.473%		
66) p-Bromofluorobenzene	8.711	95	139234	26.8052 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.221%		
Target Compounds					Qvalue
6) Bromomethane	1.374	94	324	Below Cal	87
13) Iodomethane	1.950	142	227	1.4612 ug/L #	33
16) Acetone	2.330	43	688	Below Cal #	45
18) Methyl acetate	2.330	43	688	0.2816 ug/L #	23

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017585.D
Acq On : 05 Feb 2016 15:38
Operator : ADC
Sample : L16020058-11 B 826-LOW
Misc : 1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Feb 08 09:26:02 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

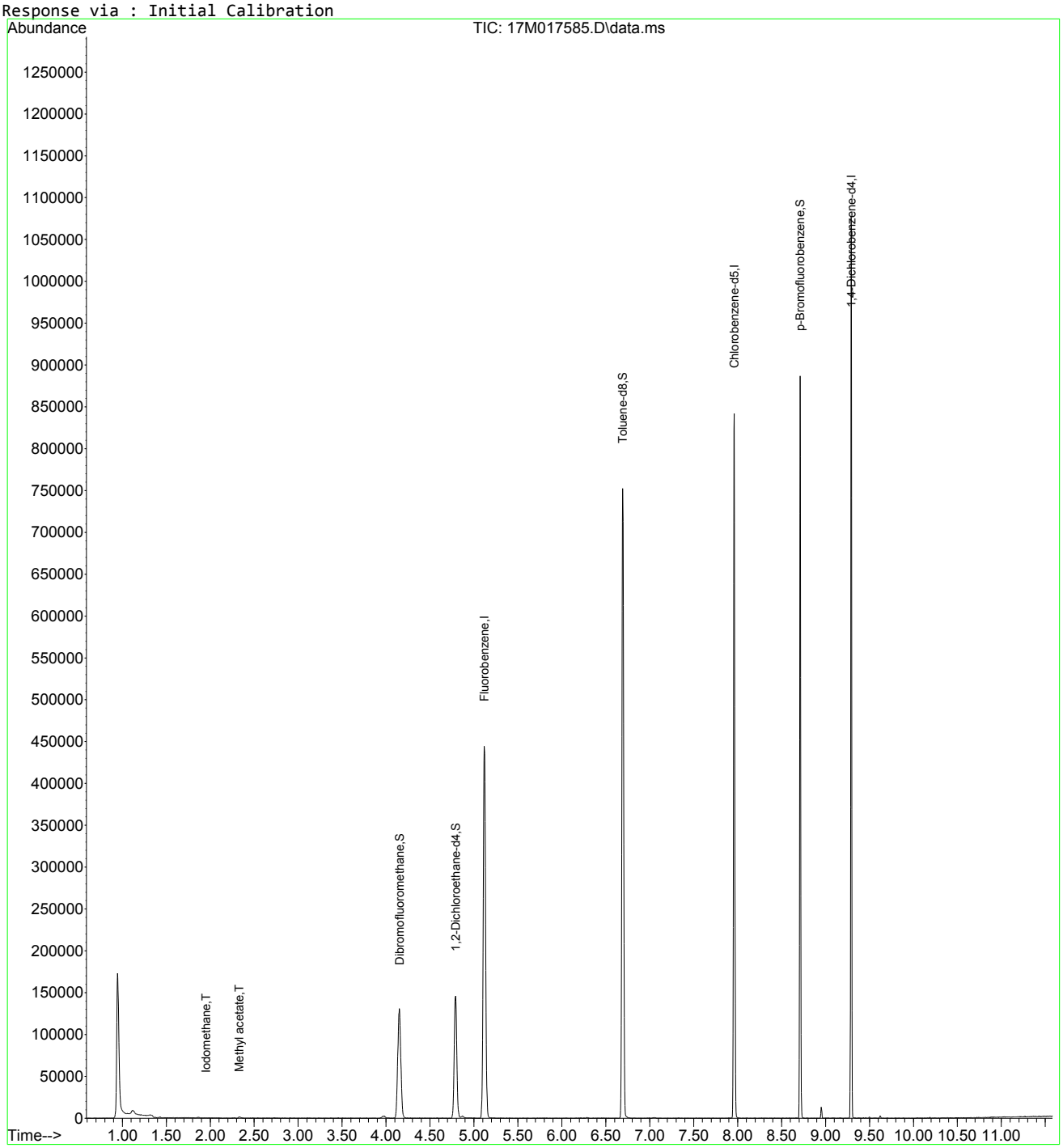

8260VMS.M Mon Feb 08 09:26:03 2016 Page: 2

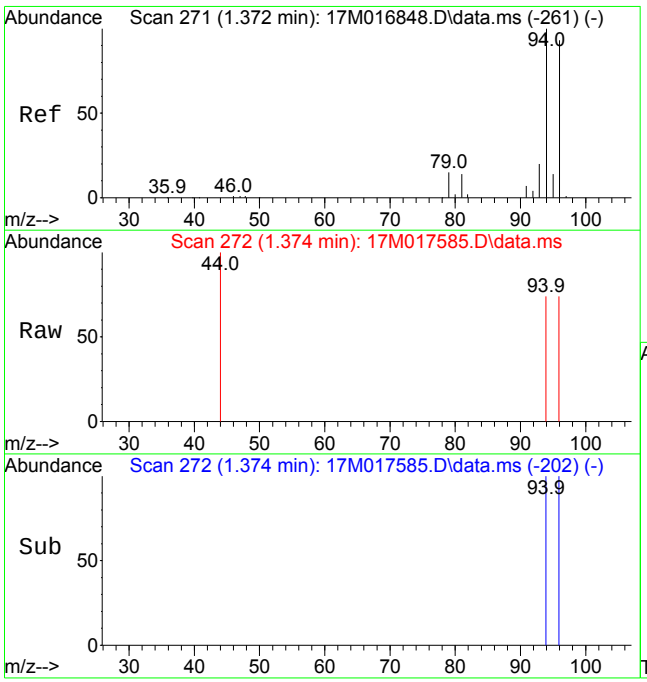

#6
Bromomethane
Concen: Below Cal
RT: 1.374 min Scan# 272
Delta R.T. 0.003 min
Lab File: 17M017585.D
Acq: 05 Feb 2016 15:38

Tgt Ion: 94 Resp: 324

Ion	Ratio	Lower	Upper
94	100		
96	80.9	56.0	130.6

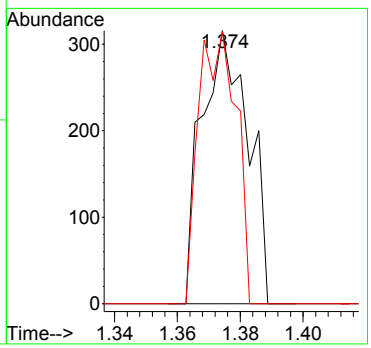

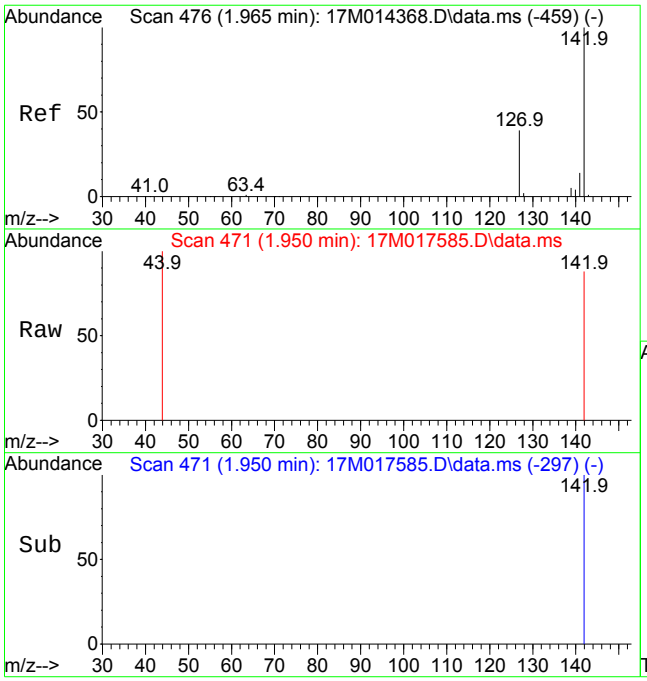

#13
Iodomethane
Concen: 1.4612 ug/L
RT: 1.950 min Scan# 471
Delta R.T. 0.002 min
Lab File: 17M017585.D
Acq: 05 Feb 2016 15:38

Tgt Ion:142 Resp: 227

Ion	Ratio	Lower	Upper
142	100		
127	0.0	34.2	51.4#

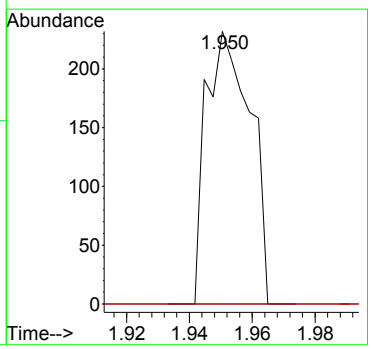

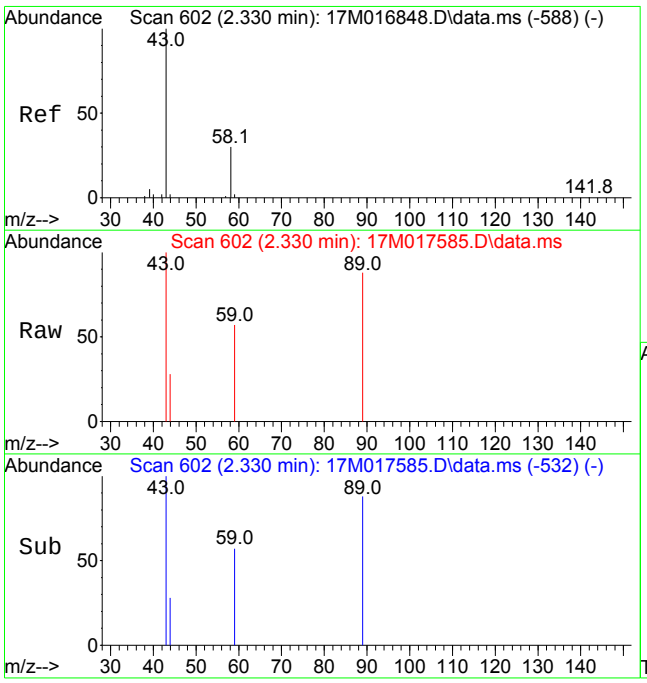

#16
Acetone
Concen: Below Cal
RT: 2.330 min Scan# 602
Delta R.T. 0.003 min
Lab File: 17M017585.D
Acq: 05 Feb 2016 15:38

Tgt Ion: 43 Resp: 688

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.1#

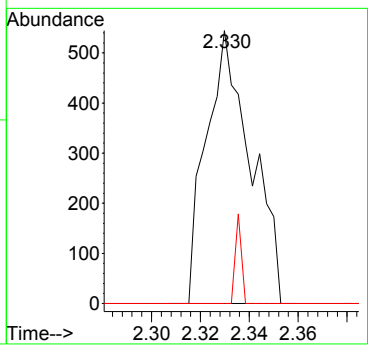

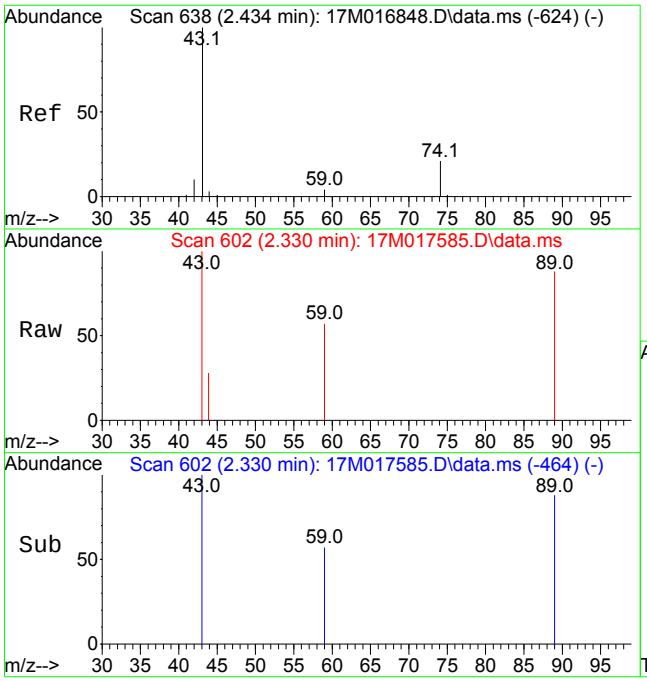

#18
Methyl acetate
Concen: 0.2816 ug/L
RT: 2.330 min Scan# 602
Delta R.T. -0.101 min
Lab File: 17M017585.D
Acq: 05 Feb 2016 15:38

Tgt Ion: 43 Resp: 688

Ion	Ratio	Lower	Upper
43	100		
74	0.0	20.2	20.2#
59	64.7	6.6	10.0#

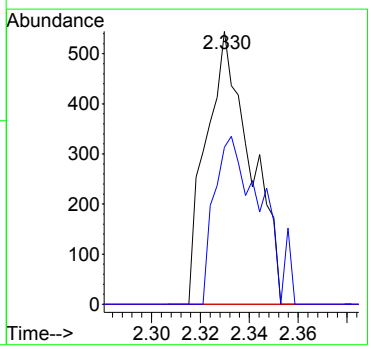

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017420.D
Acq On : 21 Jan 2016 15:45
Operator : ADC
Sample : WG554589-02 50ug/L CCV STD 8260
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 27 12:19:11 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.121	96	467028	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	332552	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	174141	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	129189	25.5624 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.250%		
34) 1,2-Dichloroethane-d4	4.791	65	124937	24.6540 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.616%		
47) Toluene-d8	6.696	98	482594	25.7801 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.120%		
66) p-Bromofluorobenzene	8.711	95	169959	26.0442 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.177%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.030	85	382865	54.0340 ug/L	100
3) Chloromethane	1.143	50	352610	51.0004 ug/L	100
4) Vinyl Chloride	1.186	62	344218	51.5125 ug/L	100
5) 1,3-Butadiene	1.198	54	298898	53.1029 ug/L	100
6) Bromomethane	1.371	94	194195	51.6918 ug/L	100
7) Chloroethane	1.441	64	137005	46.4855 ug/L	100
8) Trichlorofluoromethane	1.525	101	421164	53.2364 ug/L	100
9) Diethyl ether	1.736	59	184284	48.7158 ug/L	100
10) 1,1-Dichloroethene	1.855	61	388527	49.5567 ug/L	100
11) Carbon Disulfide	1.867	76	794364	49.1446 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.884	101	235886	50.4567 ug/L	100
13) Iodomethane	1.948	142	411734	48.4056 ug/L	100
14) Acrolein	2.095	56	27960	46.6814 ug/L	100
15) Methylene Chloride	2.275	84	259189	47.5563 ug/L	100
16) Acetone	2.327	43	42469	42.3599 ug/L	100
17) trans-1,2-Dichloroethene	2.402	96	247511	49.3158 ug/L	100
18) Methyl acetate	2.431	43	151558	50.0812 ug/L #	99
19) Methyl Tert Butyl Ether	2.509	73	598813	46.1560 ug/L	100
20) 1,1-Dichloroethane	2.955	63	481701	48.6682 ug/L	100
21) Acrylonitrile	3.013	53	59479	46.5216 ug/L	100
22) Vinyl Acetate	3.253	86	20288	41.5716 ug/L	100
23) cis-1,2-Dichloroethene	3.543	96	275500	48.7521 ug/L	100
24) 2,2-Dichloropropane	3.670	77	388250	50.1827 ug/L	100
25) Cyclohexane	3.769	56	458205	50.4291 ug/L	100
26) Bromochloromethane	3.780	130	165354	49.7381 ug/L	100
27) Chloroform	3.911	83	465094	49.9116 ug/L	100
28) Carbon Tetrachloride	4.055	117	386490	51.0416 ug/L	100
30) 1,1,1-Trichloroethane	4.151	97	417844	49.9919 ug/L	100
31) 1,1-Dichloropropene	4.322	75	352978	49.4901 ug/L	100
32) 2-Butanone	4.342	43	70102	43.5517 ug/L	100
33) Benzene	4.626	78	1029507	48.4784 ug/L	100
35) 1,2-Dichloroethane	4.869	62	311887	47.3812 ug/L	100
36) Methylcyclohexane	5.277	83	442363	50.5853 ug/L	100
37) Trichloroethene	5.303	130	279356	48.1905 ug/L	100
38) Dibromomethane	5.723	93	138718	49.4457 ug/L	100
39) 1,2-Dichloropropane	5.830	63	279770	48.0046 ug/L	100
40) Bromodichloromethane	5.920	83	354402	50.0011 ug/L	100
41) 1,4-Dioxane	6.134	88	3434	96.4493 ug/L	100
42) 2-Chloroethyl Vinyl Ether	6.511	63	124201	47.5607 ug/L	100
43) cis-1,3-Dichloropropene	6.528	75	406950	50.2817 ug/L	100
44) 4-Methyl-2-Pentanone	7.802	58	59690	43.2301 ug/L	100
45) trans-1,3-Dichloropropene	7.130	75	341451	50.5673 ug/L	100
48) Toluene	6.739	91	1134004	49.2287 ug/L	100
49) Tetrachloroethene	7.070	166	306680	49.2936 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017420.D
Acq On : 21 Jan 2016 15:45
Operator : ADC
Sample : WG554589-02 50ug/L CCV STD 8260
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 27 12:19:11 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50)	1,1,2-Trichloroethane	7.261	97	193754	47.3258 ug/L	100
51)	Dibromochloromethane	7.400	129	266030	49.4487 ug/L	100
52)	1,3-Dichloropropane	7.484	76	317043	46.5706 ug/L	100
53)	1,2-Dibromoethane	7.570	107	192976	47.4671 ug/L	100
54)	2-Hexanone	7.802	43	119515	43.8461 ug/L	100
55)	Chlorobenzene	7.973	112	715875	49.0523 ug/L	100
56)	1-Chlorohexane	7.987	69	70412	52.4612 ug/L	100
57)	Ethylbenzene	8.011	106	388369	49.4628 ug/L	100
58)	1,1,1,2-Tetrachloroethane	8.028	131	265991	49.0077 ug/L	100
59)	m-,p-Xylene	8.112	106	955217	100.9715 ug/L	100
60)	o-Xylene	8.375	106	457143	49.4260 ug/L	100
61)	Styrene	8.407	104	757403	50.4774 ug/L	100
62)	Bromoform	8.410	173	169686	48.5490 ug/L	100
63)	Isopropylbenzene	8.564	105	1225228	50.7013 ug/L	100
65)	1,3,5-Trimethylbenzene	8.902	105	1059742	51.0021 ug/L	100
67)	Bromobenzene	8.763	156	321121	48.3695 ug/L	100
68)	n-Propylbenzene	8.795	91	1439020	52.2293 ug/L	100
69)	1,1,2,2-Tetrachloroethane	8.836	83	222891	45.9754 ug/L	100
70)	2-Chlorotoluene	8.868	91	853476	49.9593 ug/L	100
71)	1,2,3-Trichloropropane	8.899	110	58771	45.1666 ug/L	100
72)	trans-1,4-Dichloro-2-B...	8.928	53	50423	49.1286 ug/L #	100
73)	1,2,4-Trimethylbenzene	9.099	105	1065226	51.3852 ug/L	100
74)	4-Chlorotoluene	8.957	91	868333	50.1938 ug/L	100
75)	tert-Butylbenzene	9.064	134	191900	49.2289 ug/L	100
76)	sec-Butylbenzene	9.154	105	1316314	51.9674 ug/L	100
77)	p-Isopropyltoluene	9.229	119	1142508	52.5223 ug/L	100
78)	1,3-Dichlorobenzene	9.255	146	604477	50.1740 ug/L	100
79)	1,4-Dichlorobenzene	9.302	146	594933	47.9270 ug/L	100
80)	n-Butylbenzene	9.432	91	1048360	54.1070 ug/L	100
81)	1,2-Dichlorobenzene	9.505	146	563817	48.0588 ug/L	100
82)	1,2-Dibromo-3-Chloropr...	9.881	75	39563	45.3363 ug/L	100
83)	Hexachlorobutadiene	10.179	225	245538	51.1667 ug/L	100
84)	1,2,4-Trichlorobenzene	10.194	180	435445	49.1611 ug/L	100
85)	Naphthalene	10.344	128	764043	46.7791 ug/L	100
86)	1,2,3-Trichlorobenzene	10.428	180	391436	47.7632 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017420.D
Acq On : 21 Jan 2016 15:45
Operator : ADC
Sample : WG554589-02 50ug/L CCV STD 8260
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 27 12:19:11 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

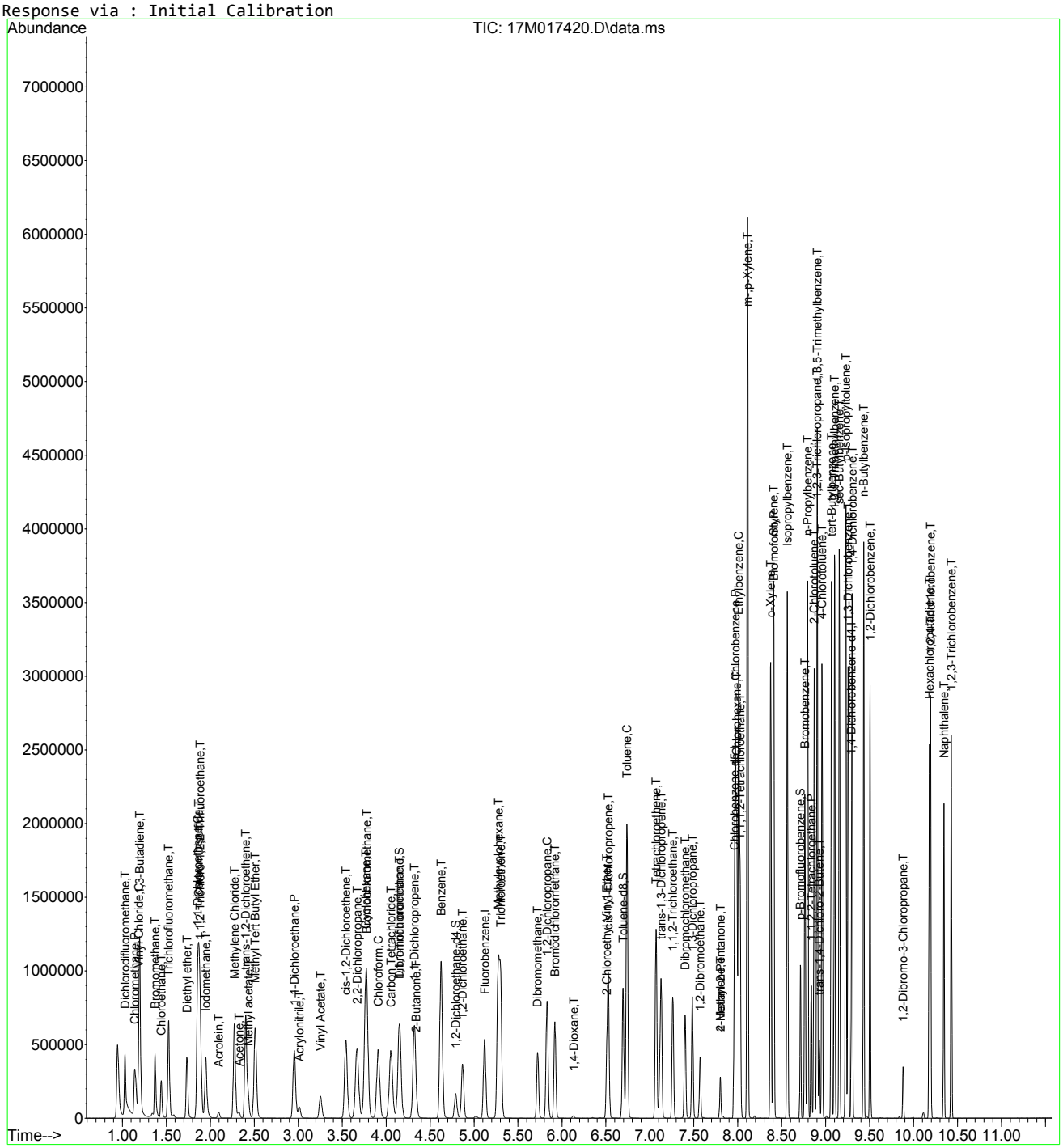

8260VMS.M Wed Jan 27 12:32:36 2016 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017422.D
Acq On : 21 Jan 2016 16:26
Operator : ADC
Sample : WG554589-03 0.3ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 27 12:10:37 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:09:57 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.121	96	466174	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	332953	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	173734	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	0.000	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.000%#	
34) 1,2-Dichloroethane-d4	0.000	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.000%#	
47) Toluene-d8	6.693	98	437	0.0233 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.093%#	
66) p-Bromofluorobenzene	8.711	95	221	0.0339 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.136%#	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.030	85	1766	0.2497 ug/L #	85
3) Chloromethane	1.140	50	2564	0.3715 ug/L	89
4) Vinyl Chloride	1.189	62	1995	0.2991 ug/L	96
5) 1,3-Butadiene	1.198	54	1825	0.3248 ug/L	96
6) Bromomethane	1.374	94	1878	Below Cal	100
7) Chloroethane	1.452	64	982	0.3338 ug/L	94
8) Trichlorofluoromethane	1.536	101	2809	0.3557 ug/L	97
9) Diethyl ether	1.736	59	1140	0.3019 ug/L	86
10) 1,1-Dichloroethene	1.858	61	2539	0.3244 ug/L	96
11) Carbon Disulfide	1.872	76	7090	0.4394 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.887	101	1661	0.3559 ug/L	95
13) Iodomethane	1.959	142	672	1.5060 ug/L #	70
14) Acrolein	2.095	56	127	0.2124 ug/L #	13
15) Methylene Chloride	2.275	84	2153	0.3958 ug/L	100
16) Acetone	2.333	43	833	Below Cal #	45
17) trans-1,2-Dichloroethene	2.399	96	1759	0.3511 ug/L	98
18) Methyl acetate	2.431	43	640	0.2119 ug/L #	62
19) Methyl Tert Butyl Ether	2.512	73	3889	0.3003 ug/L	95
20) 1,1-Dichloroethane	2.964	63	2987	0.3023 ug/L	92
21) Acrylonitrile	3.016	53	237	0.1857 ug/L #	56
23) cis-1,2-Dichloroethene	3.552	96	1777	0.3150 ug/L	98
24) 2,2-Dichloropropane	3.679	77	746	0.6638 ug/L	89
25) Cyclohexane	3.769	56	2874	0.3169 ug/L	99
26) Bromochloromethane	3.780	130	793	0.2390 ug/L	88
27) Chloroform	3.913	83	2765	0.2973 ug/L	98
28) Carbon Tetrachloride	4.050	117	2096	0.2773 ug/L #	97
30) 1,1,1-Trichloroethane	4.151	97	2446	0.2932 ug/L	96
31) 1,1-Dichloropropene	4.322	75	2267	0.3184 ug/L	98
32) 2-Butanone	4.348	43	364	0.2266 ug/L #	39
33) Benzene	4.632	78	6836	0.3225 ug/L	98
35) 1,2-Dichloroethane	4.875	62	1996	0.3038 ug/L #	82
36) Methylcyclohexane	5.274	83	2915	0.3339 ug/L	97
37) Trichloroethene	5.303	130	2073	0.3583 ug/L	99
38) Dibromomethane	5.723	93	753	0.2689 ug/L	89
39) 1,2-Dichloropropane	5.827	63	1770	0.3043 ug/L	96
40) Bromodichloromethane	5.917	83	1906	0.2694 ug/L	89
42) 2-Chloroethyl Vinyl Ether	6.511	63	741	0.2843 ug/L #	68
43) cis-1,3-Dichloropropene	6.531	75	2399	0.2970 ug/L	96
44) 4-Methyl-2-Pentanone	7.805	58	314	0.2278 ug/L #	62
45) trans-1,3-Dichloropropene	7.130	75	2025	0.3004 ug/L	92
48) Toluene	6.742	91	7701	0.3339 ug/L	98
49) Tetrachloroethene	7.066	166	2241	0.3598 ug/L	99
50) 1,1,2-Trichloroethane	7.260	97	1176	0.2869 ug/L	97
51) Dibromochloromethane	7.402	129	1444	0.2681 ug/L	97

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017422.D
Acq On : 21 Jan 2016 16:26
Operator : ADC
Sample : WG554589-03 0.3ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 27 12:10:37 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:09:57 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52) 1,3-Dichloropropane	7.481	76	2043	0.2997 ug/L	97
53) 1,2-Dibromoethane	7.570	107	1217	0.2990 ug/L	96
54) 2-Hexanone	7.802	43	836	0.3063 ug/L #	82
55) Chlorobenzene	7.973	112	5017	0.3434 ug/L #	10
56) 1-Chlorohexane	7.984	69	459	0.3416 ug/L #	60
57) Ethylbenzene	8.007	106	2523	0.3209 ug/L	87
58) 1,1,1,2-Tetrachloroethane	8.025	131	1499	0.2759 ug/L	87
59) m-,p-Xylene	8.109	106	6119	0.6460 ug/L	95
60) o-Xylene	8.372	106	2940	0.3175 ug/L	98
61) Styrene	8.404	104	4473	0.2977 ug/L	98
62) Bromoform	8.410	173	936	0.2675 ug/L #	89
63) Isopropylbenzene	8.563	105	7651	0.3162 ug/L	98
65) 1,3,5-Trimethylbenzene	8.902	105	6526	0.3148 ug/L	99
67) Bromobenzene	8.763	156	2275	0.3435 ug/L	96
68) n-Propylbenzene	8.795	91	9162	0.3333 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.836	83	1369	0.2830 ug/L	98
70) 2-Chlorotoluene	8.867	91	5677	0.3331 ug/L	98
71) 1,2,3-Trichloropropane	8.902	110	386	0.2973 ug/L	86
72) trans-1,4-Dichloro-2-B...	8.928	53	316	0.3086 ug/L #	78
73) 1,2,4-Trimethylbenzene	9.099	105	7009	0.3389 ug/L	97
74) 4-Chlorotoluene	8.957	91	5924	0.3432 ug/L	99
75) tert-Butylbenzene	9.064	134	1167	0.3001 ug/L	88
76) sec-Butylbenzene	9.154	105	8183	0.3238 ug/L	96
77) p-Isopropyltoluene	9.226	119	6898	0.3179 ug/L	98
78) 1,3-Dichlorobenzene	9.255	146	4234	0.3523 ug/L	97
79) 1,4-Dichlorobenzene	9.299	146	4637	0.3744 ug/L	85
80) n-Butylbenzene	9.432	91	6537	0.3382 ug/L	99
81) 1,2-Dichlorobenzene	9.501	146	4034	0.3447 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.881	75	269	0.3090 ug/L	87
83) Hexachlorobutadiene	10.179	225	1707	0.3565 ug/L	92
84) 1,2,4-Trichlorobenzene	10.191	180	3624	0.4101 ug/L	98
85) Naphthalene	10.344	128	5986	0.3674 ug/L	98
86) 1,2,3-Trichlorobenzene	10.428	180	3129	0.3827 ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017422.D
Acq On : 21 Jan 2016 16:26
Operator : ADC
Sample : WG554589-03 0.3ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 27 12:10:37 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:09:57 2016
Response via : Initial Calibration

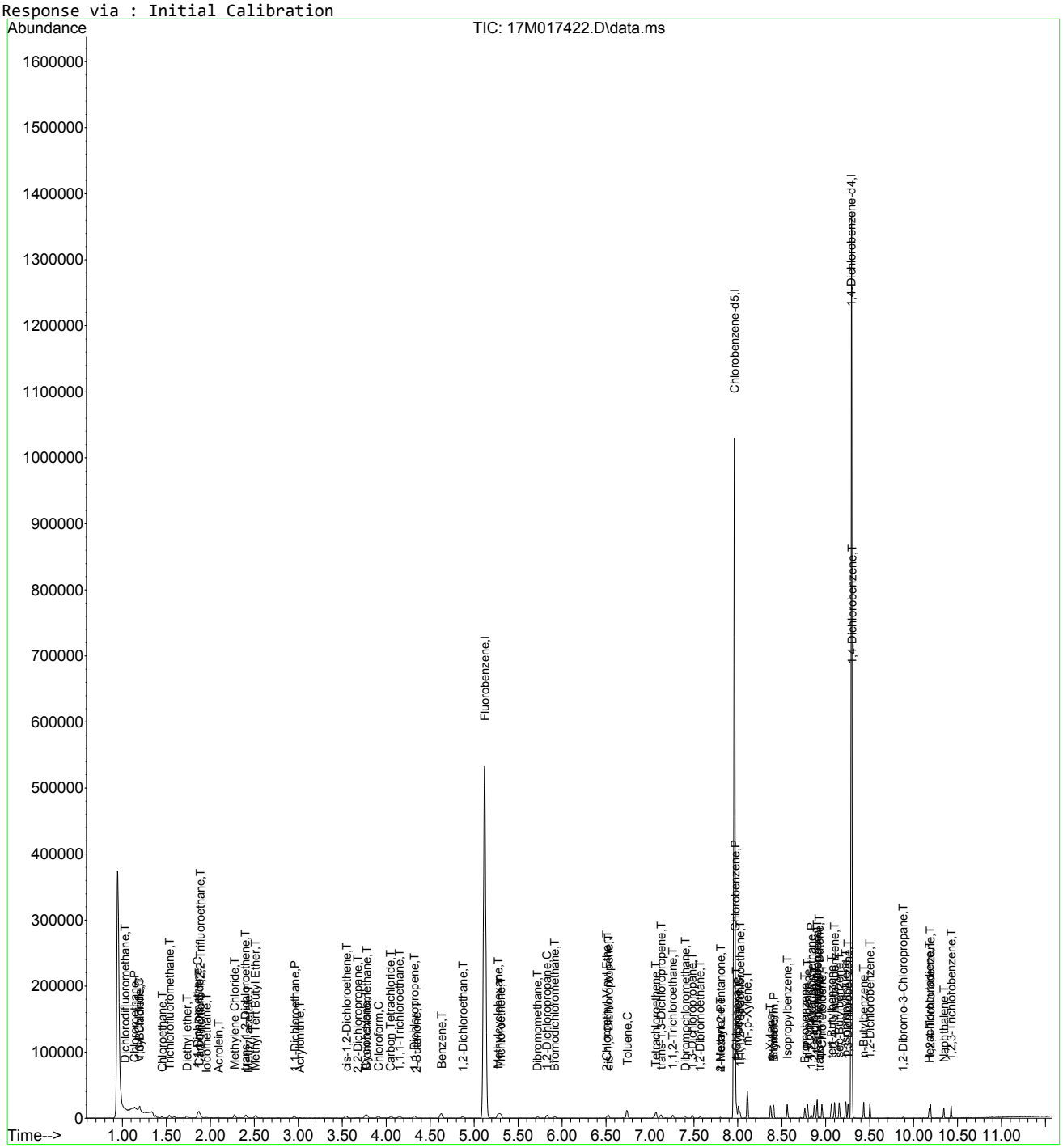

8260VMS.M Wed Jan 27 12:14:33 2016 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017422.D
Acq On : 21 Jan 2016 16:26
Operator : ADC
Sample : WG554589-03 0.3ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 27 12:10:37 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:09:57 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	-1.000	0.250	0.0	0	0.000
3	P	Chloromethane	-1.000	0.372	0.0	0	0.000
4	C	Vinyl Chloride	-1.000	0.299	0.0	0	0.000
5	T	1,3-Butadiene	-1.000	0.325	0.0	0	0.000
6	T	Bromomethane	-1.000	-0.253	0.0	0	0.000
7	T	Chloroethane	-1.000	0.334	0.0	0	0.011
8	T	Trichlorofluoromethane	-1.000	0.356	0.0	0	0.011
9	T	Diethyl ether	-1.000	0.302	0.0	0	0.000
10	C	1,1-Dichloroethene	-1.000	0.324	0.0	0	0.000
11	T	Carbon Disulfide	-1.000	0.439	0.0	0	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.000	0.356	0.0	0	0.000
13	T	Iodomethane	-1.000	1.506	0.0	100	0.011
14	T	Acrolein	-1.000	0.212	0.0	0	0.000
15	T	Methylene Chloride	-1.000	0.396	0.0	0	0.000
16	T	Acetone	-1.000	-1.068	0.0	0	0.000
17	T	trans-1,2-Dichloroethene	-1.000	0.351	0.0	0	0.000
18	T	Methyl acetate	-1.000	0.212	0.0	100	0.000
19	T	Methyl Tert Butyl Ether	-1.000	0.300	0.0	0	0.000
20	P	1,1-Dichloroethane	-1.000	0.302	0.0	0	0.000
21	T	Acrylonitrile	-1.000	0.186	0.0	0	0.000
22	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.253#
23	T	cis-1,2-Dichloroethene	-1.000	0.315	0.0	0	0.000
24	T	2,2-Dichloropropane	-1.000	0.664	0.0	0	0.000
25	T	Cyclohexane	-1.000	0.317	0.0	0	0.000
26	T	Bromochloromethane	-1.000	0.239	0.0	0	0.000
27	C	Chloroform	0.300	0.297	1.0#	100	0.000
28	T	Carbon Tetrachloride	-1.000	0.277	0.0	0	0.000
29	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.151#
30	T	1,1,1-Trichloroethane	-1.000	0.293	0.0	0	0.000
31	T	1,1-Dichloropropene	-1.000	0.318	0.0	0	0.000
32	T	2-Butanone	-1.000	0.227	0.0	0	0.000
33	T	Benzene	-1.000	0.322	0.0	0	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.000	0.0	0	-4.791#
35	T	1,2-Dichloroethane	-1.000	0.304	0.0	0	0.000
36	T	Methylcyclohexane	0.300	0.334	-11.3	100	0.000
37	T	Trichloroethene	-1.000	0.358	0.0	0	0.000
38	T	Dibromomethane	-1.000	0.269	0.0	0	0.000
39	C	1,2-Dichloropropane	-1.000	0.304	0.0	0	0.000
40	T	Bromodichloromethane	-1.000	0.269	0.0	0	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.134#
42	T	2-Chloroethyl Vinyl Ether	-1.000	0.284	0.0	0	0.000
43	T	cis-1,3-Dichloropropene	-1.000	0.297	0.0	0	0.000
44	T	4-Methyl-2-Pentanone	-1.000	0.228	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	-1.000	0.300	0.0	0	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.023	0.0	0	0.000
48	C	Toluene	-1.000	0.334	0.0	0	0.000
49	T	Tetrachloroethene	-1.000	0.360	0.0	0	0.000
50	T	1,1,2-Trichloroethane	-1.000	0.287	0.0	0	0.000
51	T	Dibromochloromethane	-1.000	0.268	0.0	0	0.000
52	T	1,3-Dichloropropane	-1.000	0.300	0.0	0	0.000
53	T	1,2-Dibromoethane	-1.000	0.299	0.0	0	0.000
54	T	2-Hexanone	-1.000	0.306	0.0	0	0.000
55	P	Chlorobenzene	-1.000	0.343	0.0	0	0.000

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017422.D
Acq On : 21 Jan 2016 16:26
Operator : ADC
Sample : WG554589-03 0.3ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 27 12:10:37 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:09:57 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	-1.000	0.342	0.0	0	0.000
57	C	Ethylbenzene	-1.000	0.321	0.0	0	0.000
58	T	1,1,1,2-Tetrachloroethane	-1.000	0.276	0.0	0	0.000
59	T	m-,p-Xylene	-1.000	0.646	0.0	0	0.000
60	T	o-Xylene	-1.000	0.317	0.0	0	0.000
61	T	Styrene	-1.000	0.298	0.0	0	0.000
62	P	Bromoform	-1.000	0.267	0.0	0	0.000
63	T	Isopropylbenzene	-1.000	0.316	0.0	0	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	-1.000	0.315	0.0	0	0.000
66	S	p-Bromofluorobenzene	-1.000	0.034	0.0	0	0.000
67	T	Bromobenzene	0.300	0.343	-14.3	100	0.000
68	T	n-Propylbenzene	-1.000	0.333	0.0	0	0.000
69	P	1,1,2,2-Tetrachloroethane	-1.000	0.283	0.0	0	0.000
70	T	2-Chlorotoluene	-1.000	0.333	0.0	0	0.000
71	T	1,2,3-Trichloropropane	-1.000	0.297	0.0	0	0.000
72	T	trans-1,4-Dichloro-2-Butene	-1.000	0.309	0.0	0	0.000
73	T	1,2,4-Trimethylbenzene	-1.000	0.339	0.0	0	0.000
74	T	4-Chlorotoluene	-1.000	0.343	0.0	0	0.000
75	T	tert-Butylbenzene	-1.000	0.300	0.0	0	0.000
76	T	sec-Butylbenzene	-1.000	0.324	0.0	0	0.000
77	T	p-Isopropyltoluene	-1.000	0.318	0.0	0	0.000
78	T	1,3-Dichlorobenzene	-1.000	0.352	0.0	0	0.000
79	T	1,4-Dichlorobenzene	0.300	0.374	-24.7	100	0.000
80	T	n-Butylbenzene	-1.000	0.338	0.0	0	0.000
81	T	1,2-Dichlorobenzene	0.300	0.345	-15.0	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	-1.000	0.309	0.0	0	0.000
83	T	Hexachlorobutadiene	-1.000	0.357	0.0	0	0.000
84	T	1,2,4-Trichlorobenzene	-1.000	0.410	0.0	0	0.000
85	T	Naphthalene	-1.000	0.367	0.0	0	0.000
86	T	1,2,3-Trichlorobenzene	-1.000	0.383	0.0	0	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 1

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017423.D
Acq On : 21 Jan 2016 16:47
Operator : ADC
Sample : WG554589-04 0.4ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 27 12:15:46 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.121	96	457067	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	324162	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	168503	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	0.000	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.000%#	
34) 1,2-Dichloroethane-d4	0.000	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.000%#	
47) Toluene-d8	6.693	98	426	0.0233 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.093%#	
66) p-Bromofluorobenzene	8.711	95	155	0.0245 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.098%#	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.030	85	2561	0.3693 ug/L #	82
3) Chloromethane	1.143	50	3254	0.4809 ug/L	93
4) Vinyl Chloride	1.186	62	2495	0.3815 ug/L	96
5) 1,3-Butadiene	1.198	54	2297	0.4170 ug/L	97
6) Bromomethane	1.374	94	2158	Below Cal	93
7) Chloroethane	1.450	64	1273	0.4413 ug/L	93
8) Trichlorofluoromethane	1.534	101	3377	0.4362 ug/L	98
9) Diethyl ether	1.733	59	1483	0.4006 ug/L	89
10) 1,1-Dichloroethene	1.858	61	3238	0.4220 ug/L	92
11) Carbon Disulfide	1.870	76	8237	0.5207 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.887	101	1965	0.4295 ug/L	96
13) Iodomethane	1.951	142	669	1.5071 ug/L #	76
14) Acrolein	2.095	56	149	0.2542 ug/L #	13
15) Methylene Chloride	2.278	84	2605	0.4884 ug/L	98
16) Acetone	2.324	43	1025	Below Cal #	45
17) trans-1,2-Dichloroethene	2.405	96	2024	0.4121 ug/L	93
18) Methyl acetate	2.434	43	954	0.3221 ug/L #	62
19) Methyl Tert Butyl Ether	2.515	73	5253	0.4137 ug/L	99
20) 1,1-Dichloroethane	2.958	63	3944	0.4072 ug/L	94
21) Acrylonitrile	3.016	53	352	0.2813 ug/L	85
23) cis-1,2-Dichloroethene	3.549	96	2308	0.4173 ug/L	98
24) 2,2-Dichloropropane	3.662	77	761	1.0564 ug/L	99
25) Cyclohexane	3.772	56	3630	0.4082 ug/L	95
26) Bromochloromethane	3.780	130	1026	0.3153 ug/L	88
27) Chloroform	3.911	83	3441	0.3773 ug/L	96
28) Carbon Tetrachloride	4.058	117	2643	0.3567 ug/L #	95
30) 1,1,1-Trichloroethane	4.145	97	3029	0.3703 ug/L	95
31) 1,1-Dichloropropene	4.319	75	2888	0.4137 ug/L	99
32) 2-Butanone	4.360	43	514	0.3263 ug/L #	39
33) Benzene	4.629	78	8670	0.4172 ug/L	96
35) 1,2-Dichloroethane	4.863	62	2642	0.4101 ug/L #	89
36) Methylcyclohexane	5.280	83	3426	0.4003 ug/L	96
37) Trichloroethene	5.301	130	2470	0.4354 ug/L	98
38) Dibromomethane	5.720	93	860	0.3132 ug/L	95
39) 1,2-Dichloropropane	5.833	63	2287	0.4010 ug/L	91
40) Bromodichloromethane	5.923	83	2427	0.3499 ug/L	100
42) 2-Chloroethyl Vinyl Ether	6.514	63	858	0.3357 ug/L	83
43) cis-1,3-Dichloropropene	6.528	75	3027	0.3822 ug/L	91
44) 4-Methyl-2-Pentanone	7.799	58	482	0.3567 ug/L #	62
45) trans-1,3-Dichloropropene	7.130	75	2305	0.3488 ug/L	98
48) Toluene	6.737	91	9597	0.4274 ug/L	99
49) Tetrachloroethene	7.070	166	2634	0.4343 ug/L	100
50) 1,1,2-Trichloroethane	7.261	97	1506	0.3774 ug/L	93
51) Dibromochloromethane	7.403	129	1907	0.3636 ug/L	95

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017423.D
Acq On : 21 Jan 2016 16:47
Operator : ADC
Sample : WG554589-04 0.4ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 27 12:15:46 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52) 1,3-Dichloropropane	7.484	76	2786	0.4198 ug/L	100
53) 1,2-Dibromoethane	7.570	107	1493	0.3767 ug/L	98
54) 2-Hexanone	7.802	43	1111	0.4181 ug/L	91
55) Chlorobenzene	7.973	112	6034	0.4242 ug/L #	30
56) 1-Chlorohexane	7.990	69	578	0.4418 ug/L	90
57) Ethylbenzene	8.011	106	3151	0.4117 ug/L	91
58) 1,1,1,2-Tetrachloroethane	8.025	131	2049	0.3873 ug/L	85
59) m-,p-Xylene	8.109	106	7661	0.8308 ug/L	99
60) o-Xylene	8.372	106	3547	0.3934 ug/L	94
61) Styrene	8.407	104	5809	0.3972 ug/L	94
62) Bromoform	8.410	173	1164	0.3417 ug/L	97
63) Isopropylbenzene	8.564	105	9560	0.4058 ug/L	99
65) 1,3,5-Trimethylbenzene	8.902	105	8152	0.4055 ug/L	99
67) Bromobenzene	8.763	156	2635	0.4102 ug/L	94
68) n-Propylbenzene	8.792	91	10914	0.4094 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.833	83	1870	0.3986 ug/L	94
70) 2-Chlorotoluene	8.868	91	6870	0.4156 ug/L	97
71) 1,2,3-Trichloropropane	8.899	110	446	0.3542 ug/L #	70
72) trans-1,4-Dichloro-2-B...	8.928	53	408	0.4108 ug/L #	80
73) 1,2,4-Trimethylbenzene	9.099	105	8278	0.4127 ug/L	99
74) 4-Chlorotoluene	8.957	91	7299	0.4360 ug/L	97
75) tert-Butylbenzene	9.064	134	1679	0.4451 ug/L	83
76) sec-Butylbenzene	9.154	105	10193	0.4159 ug/L	100
77) p-Isopropyltoluene	9.230	119	8737	0.4151 ug/L	97
78) 1,3-Dichlorobenzene	9.256	146	5185	0.4448 ug/L	99
79) 1,4-Dichlorobenzene	9.299	146	5541	0.4613 ug/L	89
80) n-Butylbenzene	9.432	91	7580	0.4043 ug/L	99
81) 1,2-Dichlorobenzene	9.505	146	4866	0.4286 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.881	75	304	0.3600 ug/L	95
83) Hexachlorobutadiene	10.176	225	1885	0.4060 ug/L	97
84) 1,2,4-Trichlorobenzene	10.191	180	3886	0.4534 ug/L	99
85) Naphthalene	10.341	128	6810	0.4309 ug/L	98
86) 1,2,3-Trichlorobenzene	10.428	180	3498	0.4411 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017423.D
Acq On : 21 Jan 2016 16:47
Operator : ADC
Sample : WG554589-04 0.4ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 27 12:15:46 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

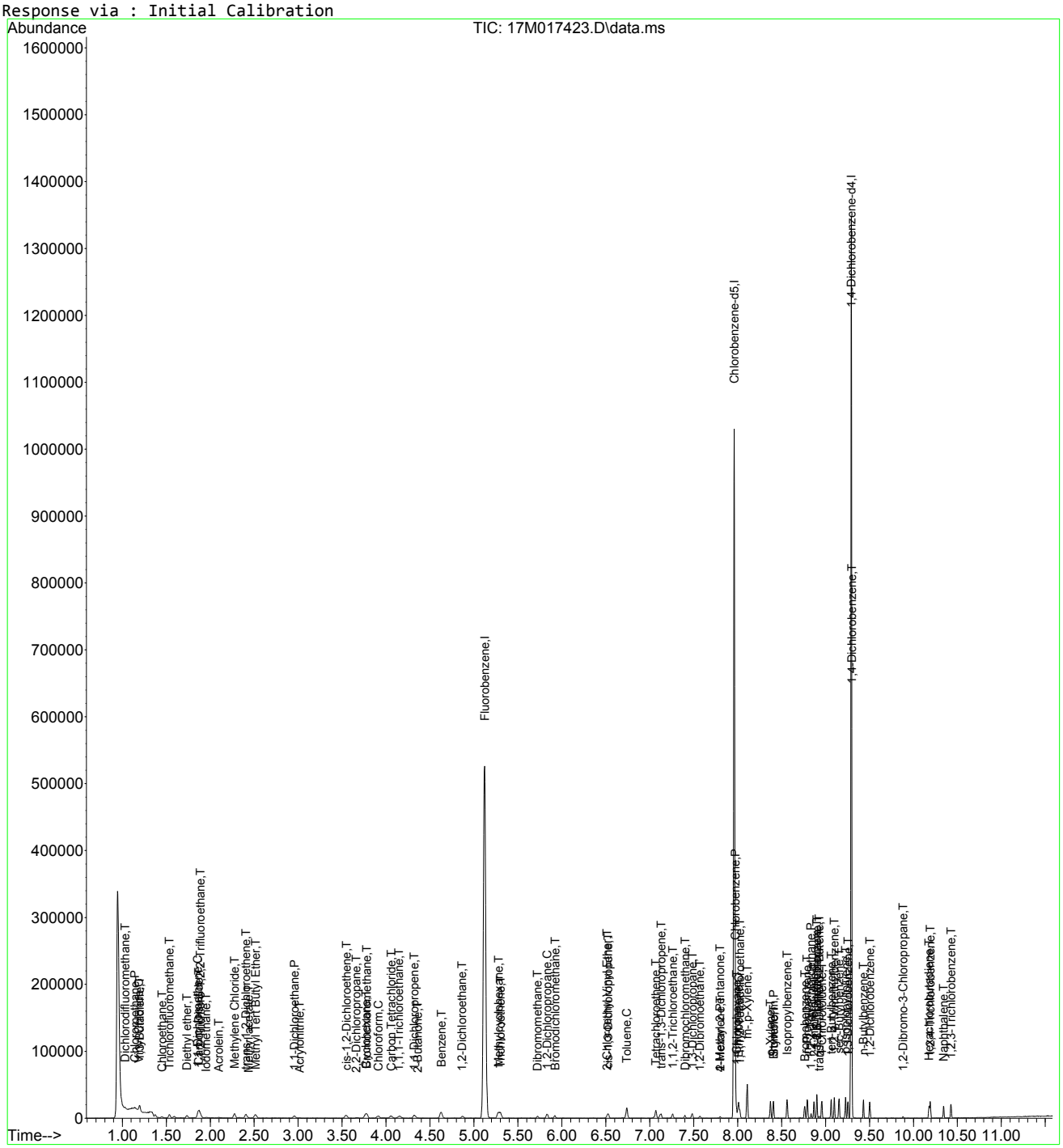

8260VMS.M Wed Jan 27 12:16:03 2016 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017423.D
Acq On : 21 Jan 2016 16:47
Operator : ADC
Sample : WG554589-04 0.4ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 27 12:15:46 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	-1.000	0.369	0.0	0	0.000
3	P	Chloromethane	-1.000	0.481	0.0	0	0.000
4	C	Vinyl Chloride	0.400	0.382	4.5#	100	0.000
5	T	1,3-Butadiene	-1.000	0.417	0.0	0	0.000
6	T	Bromomethane	-1.000	-0.165	0.0	0	0.000
7	T	Chloroethane	-1.000	0.441	0.0	0	0.000
8	T	Trichlorofluoromethane	0.400	0.436	-9.0	100	0.000
9	T	Diethyl ether	-1.000	0.401	0.0	0	0.000
10	C	1,1-Dichloroethene	0.400	0.422	-5.5#	100	0.000
11	T	Carbon Disulfide	0.400	0.521	-30.3#	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.400	0.429	-7.2	100	0.000
13	T	Iodomethane	-1.000	1.507	0.0	100	0.000
14	T	Acrolein	-1.000	0.254	0.0	0	0.000
15	T	Methylene Chloride	-1.000	0.488	0.0	0	0.000
16	T	Acetone	-1.000	-0.846	0.0	0	0.000
17	T	trans-1,2-Dichloroethene	0.400	0.412	-3.0	100	0.000
18	T	Methyl acetate	0.400	0.322	19.5	100	0.000
19	T	Methyl Tert Butyl Ether	0.400	0.414	-3.5	100	0.000
20	P	1,1-Dichloroethane	0.400	0.407	-1.7	100	0.000
21	T	Acrylonitrile	-1.000	0.281	0.0	0	0.000
22	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.253#
23	T	cis-1,2-Dichloroethene	0.400	0.417	-4.2	100	0.000
24	T	2,2-Dichloropropane	-1.000	1.056	0.0	100	0.000
25	T	Cyclohexane	0.400	0.408	-2.0	100	0.000
26	T	Bromochloromethane	-1.000	0.315	0.0	0	0.000
27	C	Chloroform	0.400	0.377	5.8#	100	0.000
28	T	Carbon Tetrachloride	0.400	0.357	10.8	100	0.000
29	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.151#
30	T	1,1,1-Trichloroethane	0.400	0.370	7.5	100	0.000
31	T	1,1-Dichloropropene	0.400	0.414	-3.5	100	0.000
32	T	2-Butanone	-1.000	0.326	0.0	0	0.018
33	T	Benzene	0.400	0.417	-4.2	100	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.000	0.0	0	-4.791#
35	T	1,2-Dichloroethane	0.400	0.410	-2.5	100	0.000
36	T	Methylcyclohexane	0.400	0.400	0.0	100	0.000
37	T	Trichloroethene	0.400	0.435	-8.7	100	0.000
38	T	Dibromomethane	0.400	0.313	21.8	100	0.000
39	C	1,2-Dichloropropane	0.400	0.401	-0.3#	100	0.000
40	T	Bromodichloromethane	0.400	0.350	12.5	100	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.134#
42	T	2-Chloroethyl Vinyl Ether	-1.000	0.336	0.0	0	0.000
43	T	cis-1,3-Dichloropropene	0.400	0.382	4.5	100	0.000
44	T	4-Methyl-2-Pentanone	-1.000	0.357	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	0.400	0.349	12.8	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.023	0.0	0	0.000
48	C	Toluene	0.400	0.427	-6.7#	100	0.000
49	T	Tetrachloroethene	0.400	0.434	-8.5	100	0.000
50	T	1,1,2-Trichloroethane	0.400	0.377	5.8	100	0.000
51	T	Dibromochloromethane	0.400	0.364	9.0	100	0.000
52	T	1,3-Dichloropropane	0.400	0.420	-5.0	100	0.000
53	T	1,2-Dibromoethane	0.400	0.377	5.8	100	0.000
54	T	2-Hexanone	-1.000	0.418	0.0	0	0.000
55	P	Chlorobenzene	0.400	0.424	-6.0	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017423.D
Acq On : 21 Jan 2016 16:47
Operator : ADC
Sample : WG554589-04 0.4ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 27 12:15:46 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	-1.000	0.442	0.0	0	0.000
57	C	Ethylbenzene	0.400	0.412	-3.0#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	0.400	0.387	3.3	100	0.000
59	T	m-,p-Xylene	0.800	0.831	-3.9	100	0.000
60	T	o-Xylene	0.400	0.393	1.8	100	0.000
61	T	Styrene	0.400	0.397	0.8	100	0.000
62	P	Bromoform	0.400	0.342	14.5	100	0.000
63	T	Isopropylbenzene	0.400	0.406	-1.5	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	0.400	0.405	-1.3	100	0.000
66	S	p-Bromofluorobenzene	-1.000	0.025	0.0	0	0.000
67	T	Bromobenzene	0.400	0.410	-2.5	100	0.000
68	T	n-Propylbenzene	0.400	0.409	-2.2	100	0.000
69	P	1,1,2,2-Tetrachloroethane	0.400	0.399	0.3	100	0.000
70	T	2-Chlorotoluene	0.400	0.416	-4.0	100	0.000
71	T	1,2,3-Trichloropropane	-1.000	0.354	0.0	0	0.000
72	T	trans-1,4-Dichloro-2-Butene	-1.000	0.411	0.0	0	0.000
73	T	1,2,4-Trimethylbenzene	0.400	0.413	-3.2	100	0.000
74	T	4-Chlorotoluene	0.400	0.436	-9.0	100	0.000
75	T	tert-Butylbenzene	0.400	0.445	-11.2	100	0.000
76	T	sec-Butylbenzene	0.400	0.416	-4.0	100	0.000
77	T	p-Isopropyltoluene	0.400	0.415	-3.7	100	0.000
78	T	1,3-Dichlorobenzene	0.400	0.445	-11.2	100	0.000
79	T	1,4-Dichlorobenzene	0.400	0.461	-15.3	100	0.000
80	T	n-Butylbenzene	0.400	0.404	-1.0	100	0.000
81	T	1,2-Dichlorobenzene	0.400	0.429	-7.2	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	-1.000	0.360	0.0	0	0.000
83	T	Hexachlorobutadiene	0.400	0.406	-1.5	100	0.000
84	T	1,2,4-Trichlorobenzene	0.400	0.453	-13.2	100	0.000
85	T	Naphthalene	0.400	0.431	-7.7	100	0.000
86	T	1,2,3-Trichlorobenzene	0.400	0.441	-10.2	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017424.D
Acq On : 21 Jan 2016 17:07
Operator : ADC
Sample : WG554589-05 1.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 27 12:16:18 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.121	96	448805	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	317030	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	165563	25.00000	ug/L	0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	0.000	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.000%#	
34) 1,2-Dichloroethane-d4	4.860	65	119	0.0244	ug/L	0.0692
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.098%#	
47) Toluene-d8	6.693	98	204	0.0114	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.046%#	
66) p-Bromofluorobenzene	8.714	95	161	0.0259	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.104%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.033	85	6272	0.9211	ug/L	92
3) Chloromethane	1.143	50	6936	1.0439	ug/L	100
4) Vinyl Chloride	1.186	62	6362	0.9907	ug/L	100
5) 1,3-Butadiene	1.198	54	5375	0.9937	ug/L	98
6) Bromomethane	1.377	94	5354	0.7439	ug/L	99
7) Chloroethane	1.447	64	3205	1.1316	ug/L	94
8) Trichlorofluoromethane	1.536	101	8255	1.0858	ug/L	99
9) Diethyl ether	1.733	59	3688	1.0145	ug/L	94
10) 1,1-Dichloroethene	1.855	61	7396	0.9817	ug/L	95
11) Carbon Disulfide	1.872	76	16194	1.0425	ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.890	101	4640	1.0328	ug/L	99
13) Iodomethane	1.950	142	1574	1.6160	ug/L	90
14) Acrolein	2.101	56	569	0.9886	ug/L	89
15) Methylene Chloride	2.272	84	5732	1.0944	ug/L	98
16) Acetone	2.333	43	1978	0.2088	ug/L	91
17) trans-1,2-Dichloroethene	2.408	96	4943	1.0249	ug/L	98
18) Methyl acetate	2.434	43	2458	0.8452	ug/L #	87
19) Methyl Tert Butyl Ether	2.515	73	12926	1.0368	ug/L	100
20) 1,1-Dichloroethane	2.958	63	9735	1.0235	ug/L	98
21) Acrylonitrile	3.013	53	1268	1.0320	ug/L	90
23) cis-1,2-Dichloroethene	3.543	96	5564	1.0246	ug/L	99
24) 2,2-Dichloropropane	3.667	77	3031	1.3577	ug/L	92
25) Cyclohexane	3.775	56	8967	1.0270	ug/L	97
26) Bromochloromethane	3.780	130	2891	0.9049	ug/L	97
27) Chloroform	3.916	83	8970	1.0017	ug/L	99
28) Carbon Tetrachloride	4.055	117	7011	0.9635	ug/L	98
30) 1,1,1-Trichloroethane	4.160	97	8058	1.0032	ug/L	98
31) 1,1-Dichloropropene	4.322	75	6925	1.0104	ug/L	99
32) 2-Butanone	4.345	43	1546	0.9995	ug/L #	49
33) Benzene	4.629	78	21070	1.0324	ug/L	99
35) 1,2-Dichloroethane	4.869	62	6503	1.0280	ug/L	97
36) Methylcyclohexane	5.274	83	8527	1.0147	ug/L	96
37) Trichloroethene	5.303	130	5718	1.0264	ug/L	99
38) Dibromomethane	5.723	93	2511	0.9314	ug/L	99
39) 1,2-Dichloropropane	5.830	63	5648	1.0085	ug/L	99
40) Bromodichloromethane	5.920	83	6483	0.9518	ug/L	100
42) 2-Chloroethyl Vinyl Ether	6.508	63	2449	0.9759	ug/L	96
43) cis-1,3-Dichloropropene	6.525	75	7161	0.9207	ug/L	98
44) 4-Methyl-2-Pentanone	7.799	58	1256	0.9466	ug/L #	62
45) trans-1,3-Dichloropropene	7.124	75	6106	0.9410	ug/L	98
48) Toluene	6.739	91	22480	1.0237	ug/L	98
49) Tetrachloroethene	7.069	166	6096	1.0278	ug/L	99
50) 1,1,2-Trichloroethane	7.260	97	4038	1.0346	ug/L	97
51) Dibromochloromethane	7.399	129	4768	0.9297	ug/L	97

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017424.D
Acq On : 21 Jan 2016 17:07
Operator : ADC
Sample : WG554589-05 1.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 27 12:16:18 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52) 1,3-Dichloropropane	7.481	76	6812	1.0496 ug/L	96
53) 1,2-Dibromoethane	7.570	107	3895	1.0050 ug/L	94
54) 2-Hexanone	7.802	43	2525	0.9717 ug/L	100
55) Chlorobenzene	7.973	112	14721	1.0581 ug/L	71
56) 1-Chlorohexane	7.984	69	1273	0.9949 ug/L	76
57) Ethylbenzene	8.007	106	7541	1.0074 ug/L	96
58) 1,1,1,2-Tetrachloroethane	8.025	131	5221	1.0090 ug/L	97
59) m-,p-Xylene	8.109	106	18559	2.0578 ug/L	99
60) o-Xylene	8.372	106	9112	1.0334 ug/L	98
61) Styrene	8.407	104	13761	0.9620 ug/L	98
62) Bromoform	8.410	173	3093	0.9283 ug/L	98
63) Isopropylbenzene	8.563	105	23645	1.0264 ug/L	99
65) 1,3,5-Trimethylbenzene	8.902	105	20566	1.0411 ug/L	98
67) Bromobenzene	8.763	156	6279	0.9948 ug/L	97
68) n-Propylbenzene	8.795	91	26806	1.0233 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.836	83	4720	1.0240 ug/L	97
70) 2-Chlorotoluene	8.867	91	16708	1.0287 ug/L	98
71) 1,2,3-Trichloropropane	8.899	110	1287	1.0403 ug/L	93
72) trans-1,4-Dichloro-2-B...	8.925	53	1004	1.0289 ug/L #	80
73) 1,2,4-Trimethylbenzene	9.099	105	20495	1.0399 ug/L	99
74) 4-Chlorotoluene	8.957	91	16502	1.0033 ug/L	99
75) tert-Butylbenzene	9.064	134	3716	1.0027 ug/L	93
76) sec-Butylbenzene	9.154	105	24753	1.0279 ug/L	100
77) p-Isopropyltoluene	9.226	119	20867	1.0090 ug/L	99
78) 1,3-Dichlorobenzene	9.255	146	11527	1.0064 ug/L	99
79) 1,4-Dichlorobenzene	9.299	146	11751	0.9957 ug/L	93
80) n-Butylbenzene	9.432	91	17997	0.9770 ug/L	100
81) 1,2-Dichlorobenzene	9.504	146	11491	1.0302 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.881	75	838	1.0100 ug/L	98
83) Hexachlorobutadiene	10.176	225	4822	1.0569 ug/L	96
84) 1,2,4-Trichlorobenzene	10.191	180	8561	1.0166 ug/L	97
85) Naphthalene	10.344	128	15766	1.0153 ug/L	100
86) 1,2,3-Trichlorobenzene	10.428	180	7968	1.0226 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017424.D
Acq On : 21 Jan 2016 17:07
Operator : ADC
Sample : WG554589-05 1.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 27 12:16:18 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

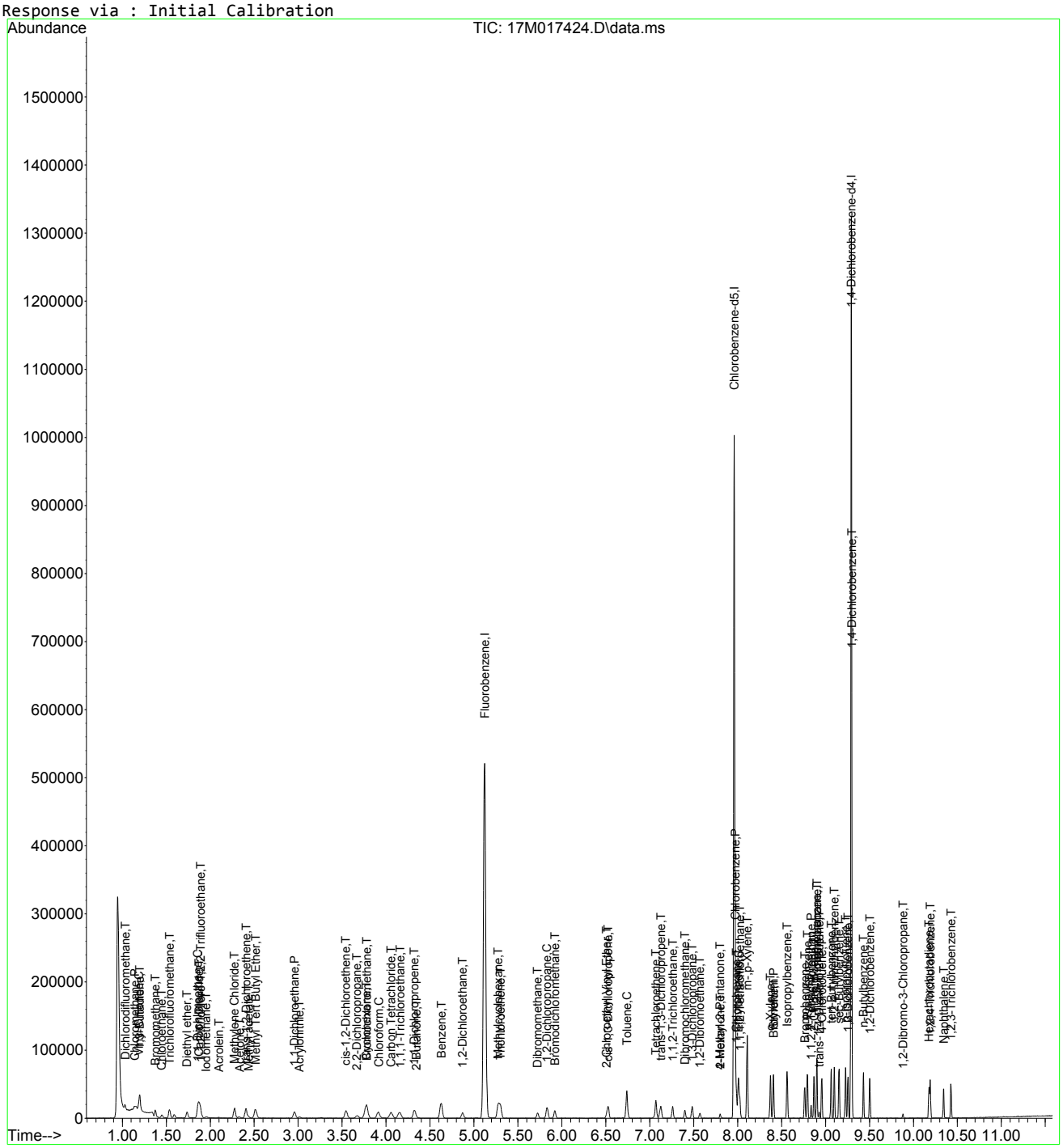

8260VMS.M Wed Jan 27 12:16:51 2016 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017424.D
Acq On : 21 Jan 2016 17:07
Operator : ADC
Sample : WG554589-05 1.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 27 12:16:18 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	1.000	0.921	7.9	100	0.000
3	P	Chloromethane	1.000	1.044	-4.4	100	0.000
4	C	Vinyl Chloride	1.000	0.991	0.9#	100	0.000
5	T	1,3-Butadiene	1.000	0.994	0.6	100	0.000
6	T	Bromomethane	1.000	0.744	25.6#	100	0.000
7	T	Chloroethane	1.000	1.132	-13.2	100	0.000
8	T	Trichlorofluoromethane	1.000	1.086	-8.6	100	0.011
9	T	Diethyl ether	1.000	1.015	-1.5	100	0.000
10	C	1,1-Dichloroethene	1.000	0.982	1.8#	100	0.000
11	T	Carbon Disulfide	1.000	1.043	-4.3	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.000	1.033	-3.3	100	0.000
13	T	Iodomethane	1.000	1.616	-61.6#	100	0.000
14	T	Acrolein	-1.000	0.989	0.0	0	0.000
15	T	Methylene Chloride	1.000	1.094	-9.4	100	0.000
16	T	Acetone	-1.000	0.209	0.0	0	0.000
17	T	trans-1,2-Dichloroethene	1.000	1.025	-2.5	100	0.000
18	T	Methyl acetate	1.000	0.845	15.5	100	0.000
19	T	Methyl Tert Butyl Ether	1.000	1.037	-3.7	100	0.000
20	P	1,1-Dichloroethane	1.000	1.024	-2.4	100	0.000
21	T	Acrylonitrile	-1.000	1.032	0.0	0	0.000
22	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.253#
23	T	cis-1,2-Dichloroethene	1.000	1.025	-2.5	100	0.000
24	T	2,2-Dichloropropane	1.000	1.358	-35.8#	100	0.000
25	T	Cyclohexane	1.000	1.027	-2.7	100	0.000
26	T	Bromochloromethane	1.000	0.905	9.5	100	0.000
27	C	Chloroform	1.000	1.002	-0.2#	100	0.000
28	T	Carbon Tetrachloride	1.000	0.963	3.7	100	0.000
29	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.151#
30	T	1,1,1-Trichloroethane	1.000	1.003	-0.3	100	0.000
31	T	1,1-Dichloropropene	1.000	1.010	-1.0	100	0.000
32	T	2-Butanone	-1.000	0.999	0.0	0	0.000
33	T	Benzene	1.000	1.032	-3.2	100	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.024	0.0	0	0.069
35	T	1,2-Dichloroethane	1.000	1.028	-2.8	100	0.000
36	T	Methylcyclohexane	1.000	1.015	-1.5	100	0.000
37	T	Trichloroethene	1.000	1.026	-2.6	100	0.000
38	T	Dibromomethane	1.000	0.931	6.9	100	0.000
39	C	1,2-Dichloropropane	1.000	1.008	-0.8#	100	0.000
40	T	Bromodichloromethane	1.000	0.952	4.8	100	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.134#
42	T	2-Chloroethyl Vinyl Ether	1.000	0.976	2.4	100	0.000
43	T	cis-1,3-Dichloropropene	1.000	0.921	7.9	100	0.000
44	T	4-Methyl-2-Pentanone	-1.000	0.947	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	1.000	0.941	5.9	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.011	0.0	0	0.000
48	C	Toluene	1.000	1.024	-2.4#	100	0.000
49	T	Tetrachloroethene	1.000	1.028	-2.8	100	0.000
50	T	1,1,2-Trichloroethane	1.000	1.035	-3.5	100	0.000
51	T	Dibromochloromethane	1.000	0.930	7.0	100	0.000
52	T	1,3-Dichloropropane	1.000	1.050	-5.0	100	0.000
53	T	1,2-Dibromoethane	1.000	1.005	-0.5	100	0.000
54	T	2-Hexanone	-1.000	0.972	0.0	0	0.000
55	P	Chlorobenzene	1.000	1.058	-5.8	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017424.D
Acq On : 21 Jan 2016 17:07
Operator : ADC
Sample : WG554589-05 1.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 27 12:16:18 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	1.000	0.995	0.5	100	0.000
57	C	Ethylbenzene	1.000	1.007	-0.7#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	1.000	1.009	-0.9	100	0.000
59	T	m-,p-Xylene	2.000	2.058	-2.9	100	0.000
60	T	o-Xylene	1.000	1.033	-3.3	100	0.000
61	T	Styrene	1.000	0.962	3.8	100	0.000
62	P	Bromoform	1.000	0.928	7.2	100	0.000
63	T	Isopropylbenzene	1.000	1.026	-2.6	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	1.000	1.041	-4.1	100	0.000
66	S	p-Bromofluorobenzene	-1.000	0.026	0.0	0	0.000
67	T	Bromobenzene	1.000	0.995	0.5	100	0.000
68	T	n-Propylbenzene	1.000	1.023	-2.3	100	0.000
69	P	1,1,2,2-Tetrachloroethane	1.000	1.024	-2.4	100	0.000
70	T	2-Chlorotoluene	1.000	1.029	-2.9	100	0.000
71	T	1,2,3-Trichloropropane	1.000	1.040	-4.0	100	0.000
72	T	trans-1,4-Dichloro-2-Butene	1.000	1.029	-2.9	100	0.000
73	T	1,2,4-Trimethylbenzene	1.000	1.040	-4.0	100	0.000
74	T	4-Chlorotoluene	1.000	1.003	-0.3	100	0.000
75	T	tert-Butylbenzene	1.000	1.003	-0.3	100	0.000
76	T	sec-Butylbenzene	1.000	1.028	-2.8	100	0.000
77	T	p-Isopropyltoluene	1.000	1.009	-0.9	100	0.000
78	T	1,3-Dichlorobenzene	1.000	1.006	-0.6	100	0.000
79	T	1,4-Dichlorobenzene	1.000	0.996	0.4	100	0.000
80	T	n-Butylbenzene	1.000	0.977	2.3	100	0.000
81	T	1,2-Dichlorobenzene	1.000	1.030	-3.0	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	-1.000	1.010	0.0	0	0.000
83	T	Hexachlorobutadiene	1.000	1.057	-5.7	100	0.000
84	T	1,2,4-Trichlorobenzene	1.000	1.017	-1.7	100	0.000
85	T	Naphthalene	1.000	1.015	-1.5	100	0.000
86	T	1,2,3-Trichlorobenzene	1.000	1.023	-2.3	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017425.D
Acq On : 21 Jan 2016 17:28
Operator : ADC
Sample : WG554589-06 2.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 27 12:16:55 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.121	96	452606	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	320670	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	169473	25.00000	ug/L	0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	0.000	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.000%#	
34) 1,2-Dichloroethane-d4	4.875	65	351	0.0715	ug/L	0.0836
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.286%#	
47) Toluene-d8	6.702	98	250	0.0138	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.055%#	
66) p-Bromofluorobenzene	0.000	95	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.000%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.030	85	11565	1.6842	ug/L	92
3) Chloromethane	1.145	50	12198	1.8205	ug/L	96
4) Vinyl Chloride	1.189	62	12028	1.8574	ug/L	98
5) 1,3-Butadiene	1.200	54	9883	1.8118	ug/L	98
6) Bromomethane	1.374	94	10038	2.0368	ug/L	98
7) Chloroethane	1.449	64	6013	2.1052	ug/L	99
8) Trichlorofluoromethane	1.536	101	15571	2.0309	ug/L	99
9) Diethyl ether	1.739	59	7003	1.9102	ug/L	98
10) 1,1-Dichloroethene	1.858	61	14197	1.8685	ug/L	98
11) Carbon Disulfide	1.872	76	29229	1.8659	ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.892	101	8449	1.8649	ug/L	99
13) Iodomethane	1.950	142	3509	1.8423	ug/L	94
14) Acrolein	2.098	56	1090	1.8778	ug/L	98
15) Methylene Chloride	2.280	84	10535	1.9946	ug/L	100
16) Acetone	2.330	43	2954	1.2413	ug/L	94
17) trans-1,2-Dichloroethene	2.402	96	9094	1.8697	ug/L	100
18) Methyl acetate	2.428	43	4908	1.6735	ug/L #	95
19) Methyl Tert Butyl Ether	2.512	73	23536	1.8719	ug/L	98
20) 1,1-Dichloroethane	2.958	63	18111	1.8881	ug/L	100
21) Acrylonitrile	3.022	53	2375	1.9168	ug/L	99
23) cis-1,2-Dichloroethene	3.543	96	10181	1.8590	ug/L	97
24) 2,2-Dichloropropane	3.670	77	7847	1.9844	ug/L	95
25) Cyclohexane	3.769	56	16776	1.9052	ug/L	99
26) Bromochloromethane	3.783	130	5690	1.7661	ug/L	97
27) Chloroform	3.910	83	16814	1.8619	ug/L	98
28) Carbon Tetrachloride	4.055	117	13457	1.8338	ug/L	99
30) 1,1,1-Trichloroethane	4.154	97	14768	1.8232	ug/L	98
31) 1,1-Dichloropropene	4.322	75	12652	1.8304	ug/L	99
32) 2-Butanone	4.345	43	2801	1.7956	ug/L #	53
33) Benzene	4.626	78	38719	1.8813	ug/L	99
35) 1,2-Dichloroethane	4.872	62	12110	1.8983	ug/L	100
36) Methylcyclohexane	5.274	83	15766	1.8603	ug/L	99
37) Trichloroethene	5.303	130	10540	1.8761	ug/L	100
38) Dibromomethane	5.726	93	4993	1.8365	ug/L	98
39) 1,2-Dichloropropane	5.833	63	10955	1.9396	ug/L	100
40) Bromodichloromethane	5.920	83	12579	1.8313	ug/L	99
42) 2-Chloroethyl Vinyl Ether	6.508	63	4548	1.7971	ug/L	97
43) cis-1,3-Dichloropropene	6.528	75	14010	1.7862	ug/L	99
44) 4-Methyl-2-Pentanone	7.805	58	2477	1.8511	ug/L	94
45) trans-1,3-Dichloropropene	7.127	75	11466	1.7522	ug/L	98
48) Toluene	6.739	91	41812	1.8824	ug/L	100
49) Tetrachloroethene	7.072	166	11134	1.8559	ug/L	99
50) 1,1,2-Trichloroethane	7.260	97	7730	1.9581	ug/L	97
51) Dibromochloromethane	7.399	129	9116	1.7572	ug/L	98

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017425.D
Acq On : 21 Jan 2016 17:28
Operator : ADC
Sample : WG554589-06 2.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 27 12:16:55 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52)	1,3-Dichloropropane	7.483	76	12666	1.9295 ug/L	99
53)	1,2-Dibromoethane	7.567	107	7592	1.9366 ug/L	95
54)	2-Hexanone	7.799	43	4860	1.8490 ug/L	98
55)	Chlorobenzene	7.973	112	26536	1.8856 ug/L	82
56)	1-Chlorohexane	7.984	69	2314	1.7880 ug/L #	66
57)	Ethylbenzene	8.007	106	14255	1.8828 ug/L	98
58)	1,1,1,2-Tetrachloroethane	8.025	131	9741	1.8612 ug/L	98
59)	m-,p-Xylene	8.109	106	33615	3.6849 ug/L	97
60)	o-Xylene	8.372	106	16498	1.8498 ug/L	98
61)	Styrene	8.407	104	26227	1.8127 ug/L	100
62)	Bromoform	8.407	173	6056	1.7969 ug/L	99
63)	Isopropylbenzene	8.563	105	44997	1.9310 ug/L	99
65)	1,3,5-Trimethylbenzene	8.902	105	38085	1.8834 ug/L	99
67)	Bromobenzene	8.763	156	11918	1.8446 ug/L	99
68)	n-Propylbenzene	8.792	91	50220	1.8729 ug/L	99
69)	1,1,2,2-Tetrachloroethane	8.835	83	9085	1.9256 ug/L	98
70)	2-Chlorotoluene	8.867	91	31644	1.9033 ug/L	100
71)	1,2,3-Trichloropropane	8.899	110	2487	1.9640 ug/L	99
72)	trans-1,4-Dichloro-2-B...	8.925	53	1752	1.7540 ug/L #	92
73)	1,2,4-Trimethylbenzene	9.099	105	37191	1.8435 ug/L	98
74)	4-Chlorotoluene	8.957	91	31060	1.8449 ug/L	99
75)	tert-Butylbenzene	9.064	134	7030	1.8531 ug/L	100
76)	sec-Butylbenzene	9.154	105	46877	1.9017 ug/L	100
77)	p-Isopropyltoluene	9.226	119	38942	1.8395 ug/L	99
78)	1,3-Dichlorobenzene	9.255	146	21647	1.8463 ug/L	98
79)	1,4-Dichlorobenzene	9.302	146	21513	1.7808 ug/L	96
80)	n-Butylbenzene	9.432	91	33887	1.7971 ug/L	98
81)	1,2-Dichlorobenzene	9.504	146	21075	1.8459 ug/L	98
82)	1,2-Dibromo-3-Chloropr...	9.881	75	1585	1.8663 ug/L	93
83)	Hexachlorobutadiene	10.176	225	8445	1.8083 ug/L	99
84)	1,2,4-Trichlorobenzene	10.190	180	15139	1.7562 ug/L	98
85)	Naphthalene	10.344	128	29165	1.8348 ug/L	98
86)	1,2,3-Trichlorobenzene	10.428	180	14333	1.7971 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017425.D
Acq On : 21 Jan 2016 17:28
Operator : ADC
Sample : WG554589-06 2.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 27 12:16:55 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

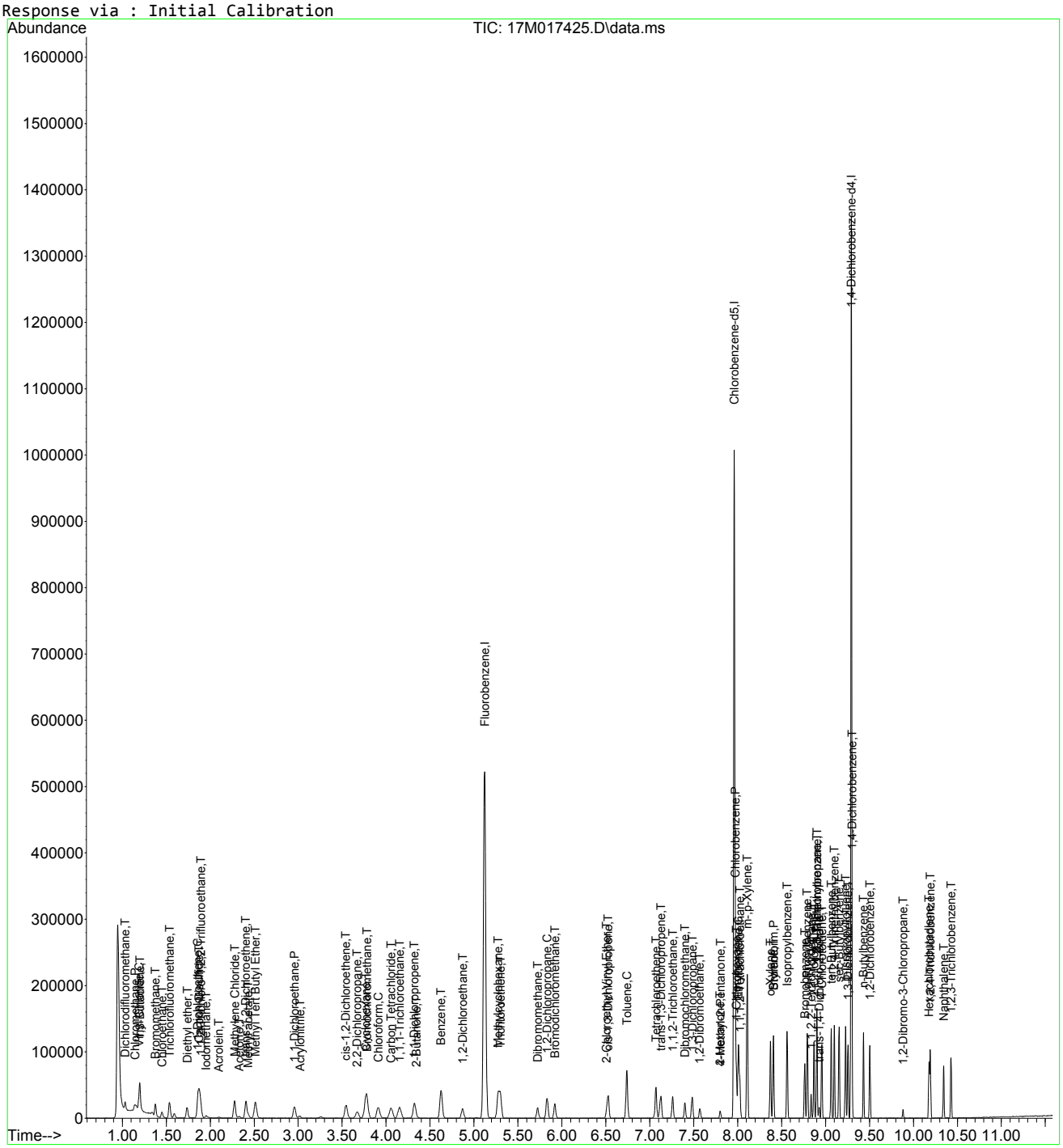

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017425.D
Acq On : 21 Jan 2016 17:28
Operator : ADC
Sample : WG554589-06 2.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 27 12:16:55 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	2.000	1.684	15.8	100	0.000
3	P	Chloromethane	2.000	1.820	9.0	100	0.000
4	C	Vinyl Chloride	2.000	1.857	7.2#	100	0.000
5	T	1,3-Butadiene	2.000	1.812	9.4	100	0.000
6	T	Bromomethane	2.000	2.037	-1.8	100	0.000
7	T	Chloroethane	2.000	2.105	-5.2	100	0.000
8	T	Trichlorofluoromethane	2.000	2.031	-1.6	100	0.011
9	T	Diethyl ether	2.000	1.910	4.5	100	0.000
10	C	1,1-Dichloroethene	2.000	1.869	6.6#	100	0.000
11	T	Carbon Disulfide	2.000	1.866	6.7	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.000	1.865	6.8	100	0.000
13	T	Iodomethane	2.000	1.842	7.9	100	0.000
14	T	Acrolein	-1.000	1.878	0.0	0	0.000
15	T	Methylene Chloride	2.000	1.995	0.2	100	0.000
16	T	Acetone	-1.000	1.241	0.0	0	0.000
17	T	trans-1,2-Dichloroethene	2.000	1.870	6.5	100	0.000
18	T	Methyl acetate	2.000	1.673	16.3	99	0.000
19	T	Methyl Tert Butyl Ether	2.000	1.872	6.4	100	0.000
20	P	1,1-Dichloroethane	2.000	1.888	5.6	100	0.000
21	T	Acrylonitrile	2.000	1.917	4.1	100	0.000
22	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.253#
23	T	cis-1,2-Dichloroethene	2.000	1.859	7.1	100	0.000
24	T	2,2-Dichloropropane	2.000	1.984	0.8	100	0.000
25	T	Cyclohexane	2.000	1.905	4.7	100	0.000
26	T	Bromochloromethane	2.000	1.766	11.7	100	0.000
27	C	Chloroform	2.000	1.862	6.9#	100	0.000
28	T	Carbon Tetrachloride	2.000	1.834	8.3	100	0.000
29	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.151#
30	T	1,1,1-Trichloroethane	2.000	1.823	8.9	100	0.000
31	T	1,1-Dichloropropene	2.000	1.830	8.5	100	0.000
32	T	2-Butanone	-1.000	1.796	0.0	0	0.000
33	T	Benzene	2.000	1.881	5.9	100	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.071	0.0	0	0.084
35	T	1,2-Dichloroethane	2.000	1.898	5.1	100	0.000
36	T	Methylcyclohexane	2.000	1.860	7.0	100	0.000
37	T	Trichloroethene	2.000	1.876	6.2	100	0.000
38	T	Dibromomethane	2.000	1.836	8.2	100	0.000
39	C	1,2-Dichloropropane	2.000	1.940	3.0#	100	0.000
40	T	Bromodichloromethane	2.000	1.831	8.5	100	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.134#
42	T	2-Chloroethyl Vinyl Ether	2.000	1.797	10.2	100	0.000
43	T	cis-1,3-Dichloropropene	2.000	1.786	10.7	100	0.000
44	T	4-Methyl-2-Pentanone	-1.000	1.851	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	2.000	1.752	12.4	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.014	0.0	0	0.000
48	C	Toluene	2.000	1.882	5.9#	100	0.000
49	T	Tetrachloroethene	2.000	1.856	7.2	100	0.000
50	T	1,1,2-Trichloroethane	2.000	1.958	2.1	100	0.000
51	T	Dibromochloromethane	2.000	1.757	12.2	100	0.000
52	T	1,3-Dichloropropane	2.000	1.929	3.5	100	0.000
53	T	1,2-Dibromoethane	2.000	1.937	3.1	100	0.000
54	T	2-Hexanone	2.000	1.849	7.6	100	0.000
55	P	Chlorobenzene	2.000	1.886	5.7	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017425.D
Acq On : 21 Jan 2016 17:28
Operator : ADC
Sample : WG554589-06 2.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 27 12:16:55 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	2.000	1.788	10.6	100	0.000
57	C	Ethylbenzene	2.000	1.883	5.8#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	2.000	1.861	7.0	100	0.000
59	T	m-,p-Xylene	4.000	3.685	7.9	100	0.000
60	T	o-Xylene	2.000	1.850	7.5	100	0.000
61	T	Styrene	2.000	1.813	9.4	100	0.000
62	P	Bromoform	2.000	1.797	10.2	100	0.000
63	T	Isopropylbenzene	2.000	1.931	3.4	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	2.000	1.883	5.8	100	0.000
66	S	p-Bromofluorobenzene	-1.000	0.000	0.0	0	-8.711#
67	T	Bromobenzene	2.000	1.845	7.8	100	0.000
68	T	n-Propylbenzene	2.000	1.873	6.3	100	0.000
69	P	1,1,2,2-Tetrachloroethane	2.000	1.926	3.7	100	0.000
70	T	2-Chlorotoluene	2.000	1.903	4.8	100	0.000
71	T	1,2,3-Trichloropropane	2.000	1.964	1.8	100	0.000
72	T	trans-1,4-Dichloro-2-Butene	2.000	1.754	12.3	100	0.000
73	T	1,2,4-Trimethylbenzene	2.000	1.843	7.9	100	0.000
74	T	4-Chlorotoluene	2.000	1.845	7.8	100	0.000
75	T	tert-Butylbenzene	2.000	1.853	7.4	100	0.000
76	T	sec-Butylbenzene	2.000	1.902	4.9	100	0.000
77	T	p-Isopropyltoluene	2.000	1.840	8.0	100	0.000
78	T	1,3-Dichlorobenzene	2.000	1.846	7.7	100	0.000
79	T	1,4-Dichlorobenzene	2.000	1.781	11.0	100	0.000
80	T	n-Butylbenzene	2.000	1.797	10.2	100	0.000
81	T	1,2-Dichlorobenzene	2.000	1.846	7.7	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	2.000	1.866	6.7	100	0.000
83	T	Hexachlorobutadiene	2.000	1.808	9.6	100	0.000
84	T	1,2,4-Trichlorobenzene	2.000	1.756	12.2	100	0.000
85	T	Naphthalene	2.000	1.835	8.3	100	0.000
86	T	1,2,3-Trichlorobenzene	2.000	1.797	10.2	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017426.D
Acq On : 21 Jan 2016 17:48
Operator : ADC
Sample : WG554589-07 5.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 27 12:17:22 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.121	96	462597	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	329325	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	173554	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.154	111	25240	5.0420 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 20.168%#		
34) 1,2-Dichloroethane-d4	4.791	65	26993	5.3776 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 21.510%#		
47) Toluene-d8	6.693	98	96406	5.2004 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 20.802%#		
66) p-Bromofluorobenzene	8.711	95	30274	4.6548 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 18.619%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.030	85	29431	4.1934 ug/L	100
3) Chloromethane	1.143	50	31139	4.5470 ug/L	99
4) Vinyl Chloride	1.186	62	30423	4.5964 ug/L	99
5) 1,3-Butadiene	1.198	54	25132	4.5078 ug/L	99
6) Bromomethane	1.371	94	24492	5.9178 ug/L	99
7) Chloroethane	1.444	64	14951	5.1214 ug/L	93
8) Trichlorofluoromethane	1.534	101	38351	4.8941 ug/L	99
9) Diethyl ether	1.733	59	18466	4.9283 ug/L	98
10) 1,1-Dichloroethene	1.855	61	36023	4.6388 ug/L	98
11) Carbon Disulfide	1.872	76	70705	4.4162 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.884	101	21275	4.5944 ug/L	98
13) Iodomethane	1.953	142	15187	3.1785 ug/L	99
14) Acrolein	2.098	56	2729	4.5999 ug/L	98
15) Methylene Chloride	2.275	84	25659	4.7530 ug/L	98
16) Acetone	2.333	43	6801	5.2237 ug/L	95
17) trans-1,2-Dichloroethene	2.405	96	23184	4.6636 ug/L	100
18) Methyl acetate	2.431	43	14883	4.9651 ug/L #	99
19) Methyl Tert Butyl Ether	2.515	73	62262	4.8451 ug/L	99
20) 1,1-Dichloroethane	2.955	63	46329	4.7256 ug/L	99
21) Acrylonitrile	3.019	53	6264	4.9463 ug/L	100
22) Vinyl Acetate	3.259	86	1115	6.2606 ug/L	89
23) cis-1,2-Dichloroethene	3.543	96	26375	4.7120 ug/L	100
24) 2,2-Dichloropropane	3.667	77	23887	4.0154 ug/L	99
25) Cyclohexane	3.769	56	42484	4.7205 ug/L	99
26) Bromochloromethane	3.780	130	15538	4.7186 ug/L	99
27) Chloroform	3.908	83	44625	4.8348 ug/L	100
28) Carbon Tetrachloride	4.058	117	34944	4.6591 ug/L	100
30) 1,1,1-Trichloroethane	4.151	97	39072	4.7194 ug/L	99
31) 1,1-Dichloropropene	4.322	75	32702	4.6290 ug/L	100
32) 2-Butanone	4.345	43	7839	4.9167 ug/L #	94
33) Benzene	4.623	78	98741	4.6941 ug/L	100
35) 1,2-Dichloroethane	4.872	62	31050	4.7622 ug/L	98
36) Methylcyclohexane	5.274	83	40476	4.6729 ug/L	100
37) Trichloroethene	5.303	130	26971	4.6972 ug/L	99
38) Dibromomethane	5.720	93	13382	4.8157 ug/L	100
39) 1,2-Dichloropropane	5.833	63	27339	4.7359 ug/L	100
40) Bromodichloromethane	5.917	83	33554	4.7793 ug/L	100
41) 1,4-Dioxane	6.134	88	126	3.5728 ug/L #	15
42) 2-Chloroethyl Vinyl Ether	6.508	63	12263	4.7409 ug/L	100
43) cis-1,3-Dichloropropene	6.525	75	37437	4.6699 ug/L	99
44) 4-Methyl-2-Pentanone	7.802	58	6395	4.6759 ug/L	100
45) trans-1,3-Dichloropropene	7.127	75	31004	4.6355 ug/L	100
48) Toluene	6.737	91	108030	4.7357 ug/L	100
49) Tetrachloroethene	7.072	166	28207	4.5782 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017426.D
Acq On : 21 Jan 2016 17:48
Operator : ADC
Sample : WG554589-07 5.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 27 12:17:22 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,1,2-Trichloroethane	7.258	97	19789	4.8810 ug/L	99
51) Dibromochloromethane	7.400	129	24891	4.6720 ug/L	98
52) 1,3-Dichloropropane	7.481	76	32368	4.8011 ug/L	97
53) 1,2-Dibromoethane	7.570	107	19069	4.7364 ug/L	97
54) 2-Hexanone	7.799	43	13213	4.8949 ug/L	98
55) Chlorobenzene	7.970	112	68057	4.7090 ug/L	94
56) 1-Chlorohexane	7.984	69	6230	4.6872 ug/L	85
57) Ethylbenzene	8.008	106	36341	4.6738 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.025	131	25644	4.7711 ug/L	99
59) m-,p-Xylene	8.109	106	88513	9.4480 ug/L	99
60) o-Xylene	8.372	106	43298	4.7272 ug/L	100
61) Styrene	8.404	104	69091	4.6497 ug/L	99
62) Bromoform	8.407	173	16124	4.6585 ug/L	99
63) Isopropylbenzene	8.563	105	114717	4.7936 ug/L	100
65) 1,3,5-Trimethylbenzene	8.902	105	99125	4.7867 ug/L	99
67) Bromobenzene	8.763	156	30137	4.5548 ug/L	97
68) n-Propylbenzene	8.792	91	131074	4.7734 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.836	83	23379	4.8387 ug/L	100
70) 2-Chlorotoluene	8.868	91	80679	4.7386 ug/L	98
71) 1,2,3-Trichloropropane	8.899	110	6274	4.8380 ug/L	97
72) trans-1,4-Dichloro-2-B...	8.925	53	4616	4.5127 ug/L #	95
73) 1,2,4-Trimethylbenzene	9.099	105	98945	4.7891 ug/L	100
74) 4-Chlorotoluene	8.957	91	80240	4.6539 ug/L	100
75) tert-Butylbenzene	9.064	134	18271	4.7030 ug/L	100
76) sec-Butylbenzene	9.154	105	121345	4.8068 ug/L	99
77) p-Isopropyltoluene	9.227	119	102689	4.7367 ug/L	100
78) 1,3-Dichlorobenzene	9.255	146	56232	4.6833 ug/L	100
79) 1,4-Dichlorobenzene	9.299	146	54631	4.4159 ug/L	99
80) n-Butylbenzene	9.432	91	87323	4.5221 ug/L	100
81) 1,2-Dichlorobenzene	9.502	146	54231	4.6382 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.881	75	4103	4.7176 ug/L	97
83) Hexachlorobutadiene	10.176	225	21598	4.5159 ug/L	99
84) 1,2,4-Trichlorobenzene	10.191	180	39436	4.4673 ug/L	99
85) Naphthalene	10.341	128	78155	4.8013 ug/L	100
86) 1,2,3-Trichlorobenzene	10.425	180	38016	4.6544 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017426.D
Acq On : 21 Jan 2016 17:48
Operator : ADC
Sample : WG554589-07 5.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 27 12:17:22 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

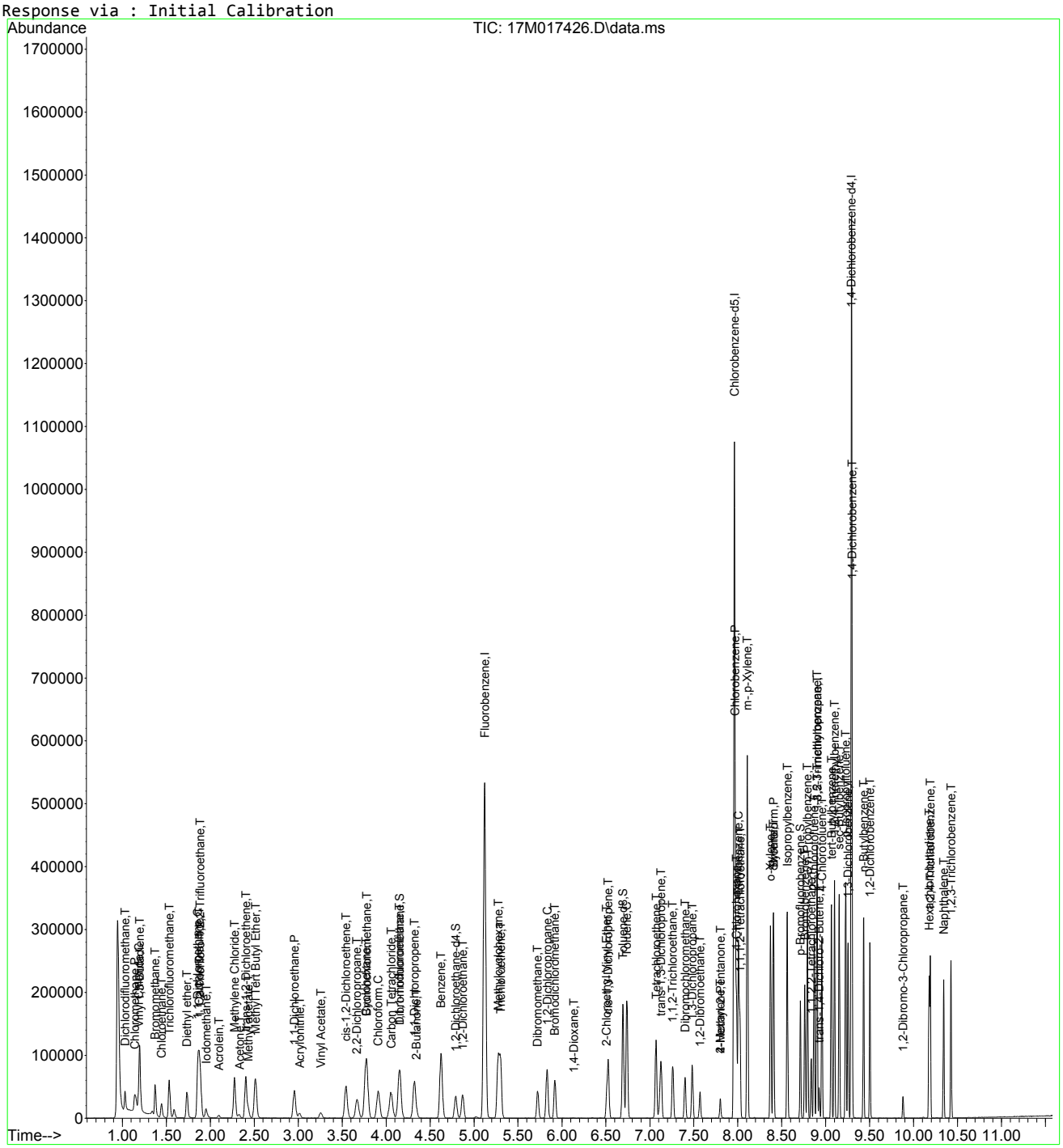

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017426.D
Acq On : 21 Jan 2016 17:48
Operator : ADC
Sample : WG554589-07 5.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 27 12:17:22 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	5.000	4.193	16.1	100	0.000
3	P	Chloromethane	5.000	4.547	9.1	100	0.000
4	C	Vinyl Chloride	5.000	4.596	8.1#	100	0.000
5	T	1,3-Butadiene	5.000	4.508	9.8	100	0.000
6	T	Bromomethane	5.000	5.918	-18.4	100	0.000
7	T	Chloroethane	5.000	5.121	-2.4	100	0.000
8	T	Trichlorofluoromethane	5.000	4.894	2.1	100	0.000
9	T	Diethyl ether	5.000	4.928	1.4	100	0.000
10	C	1,1-Dichloroethene	5.000	4.639	7.2#	100	0.000
11	T	Carbon Disulfide	5.000	4.416	11.7	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.000	4.594	8.1	100	0.000
13	T	Iodomethane	5.000	3.178	36.4#	100	0.000
14	T	Acrolein	5.000	4.600	8.0	100	0.000
15	T	Methylene Chloride	5.000	4.753	4.9	100	0.000
16	T	Acetone	5.000	5.224	-4.5	100	0.000
17	T	trans-1,2-Dichloroethene	5.000	4.664	6.7	100	0.000
18	T	Methyl acetate	5.000	4.965	0.7	100	0.000
19	T	Methyl Tert Butyl Ether	5.000	4.845	3.1	100	0.000
20	P	1,1-Dichloroethane	5.000	4.726	5.5	100	0.000
21	T	Acrylonitrile	5.000	4.946	1.1	100	0.000
22	T	Vinyl Acetate	5.000	6.261	-25.2#	100	0.000
23	T	cis-1,2-Dichloroethene	5.000	4.712	5.8	100	0.000
24	T	2,2-Dichloropropane	5.000	4.015	19.7	100	0.000
25	T	Cyclohexane	5.000	4.720	5.6	100	0.000
26	T	Bromochloromethane	5.000	4.719	5.6	100	0.000
27	C	Chloroform	5.000	4.835	3.3#	100	0.000
28	T	Carbon Tetrachloride	5.000	4.659	6.8	100	0.000
29	S	Dibromofluoromethane	5.000	5.042	-0.8	100	0.000
30	T	1,1,1-Trichloroethane	5.000	4.719	5.6	100	0.000
31	T	1,1-Dichloropropene	5.000	4.629	7.4	100	0.000
32	T	2-Butanone	5.000	4.917	1.7	100	0.000
33	T	Benzene	5.000	4.694	6.1	100	0.000
34	S	1,2-Dichloroethane-d4	5.000	5.378	-7.6	100	0.000
35	T	1,2-Dichloroethane	5.000	4.762	4.8	100	0.000
36	T	Methylcyclohexane	5.000	4.673	6.5	100	0.000
37	T	Trichloroethene	5.000	4.697	6.1	100	0.000
38	T	Dibromomethane	5.000	4.816	3.7	100	0.000
39	C	1,2-Dichloropropane	5.000	4.736	5.3#	100	0.000
40	T	Bromodichloromethane	5.000	4.779	4.4	100	0.000
41	T	1,4-Dioxane	-1.000	3.573	0.0	0	0.000
42	T	2-Chloroethyl Vinyl Ether	5.000	4.741	5.2	100	0.000
43	T	cis-1,3-Dichloropropene	5.000	4.670	6.6	100	0.000
44	T	4-Methyl-2-Pentanone	5.000	4.676	6.5	100	0.000
45	T	trans-1,3-Dichloropropene	5.000	4.636	7.3	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	5.000	5.200	-4.0	100	0.000
48	C	Toluene	5.000	4.736	5.3#	100	0.000
49	T	Tetrachloroethene	5.000	4.578	8.4	100	0.000
50	T	1,1,2-Trichloroethane	5.000	4.881	2.4	100	0.000
51	T	Dibromochloromethane	5.000	4.672	6.6	100	0.000
52	T	1,3-Dichloropropane	5.000	4.801	4.0	100	0.000
53	T	1,2-Dibromoethane	5.000	4.736	5.3	100	0.000
54	T	2-Hexanone	5.000	4.895	2.1	100	0.000
55	P	Chlorobenzene	5.000	4.709	5.8	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017426.D
Acq On : 21 Jan 2016 17:48
Operator : ADC
Sample : WG554589-07 5.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 27 12:17:22 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	5.000	4.687	6.3	100	0.000
57	C	Ethylbenzene	5.000	4.674	6.5#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	5.000	4.771	4.6	100	0.000
59	T	m-,p-Xylene	10.000	9.448	5.5	100	0.000
60	T	o-Xylene	5.000	4.727	5.5	100	0.000
61	T	Styrene	5.000	4.650	7.0	100	0.000
62	P	Bromoform	5.000	4.658	6.8	100	0.000
63	T	Isopropylbenzene	5.000	4.794	4.1	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	5.000	4.787	4.3	100	0.000
66	S	p-Bromofluorobenzene	5.000	4.655	6.9	100	0.000
67	T	Bromobenzene	5.000	4.555	8.9	100	0.000
68	T	n-Propylbenzene	5.000	4.773	4.5	100	0.000
69	P	1,1,2,2-Tetrachloroethane	5.000	4.839	3.2	100	0.000
70	T	2-Chlorotoluene	5.000	4.739	5.2	100	0.000
71	T	1,2,3-Trichloropropane	5.000	4.838	3.2	100	0.000
72	T	trans-1,4-Dichloro-2-Butene	5.000	4.513	9.7	100	0.000
73	T	1,2,4-Trimethylbenzene	5.000	4.789	4.2	100	0.000
74	T	4-Chlorotoluene	5.000	4.654	6.9	100	0.000
75	T	tert-Butylbenzene	5.000	4.703	5.9	100	0.000
76	T	sec-Butylbenzene	5.000	4.807	3.9	100	0.000
77	T	p-Isopropyltoluene	5.000	4.737	5.3	100	0.000
78	T	1,3-Dichlorobenzene	5.000	4.683	6.3	100	0.000
79	T	1,4-Dichlorobenzene	5.000	4.416	11.7	100	0.000
80	T	n-Butylbenzene	5.000	4.522	9.6	100	0.000
81	T	1,2-Dichlorobenzene	5.000	4.638	7.2	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	5.000	4.718	5.6	100	0.000
83	T	Hexachlorobutadiene	5.000	4.516	9.7	100	0.000
84	T	1,2,4-Trichlorobenzene	5.000	4.467	10.7	100	0.000
85	T	Naphthalene	5.000	4.801	4.0	100	0.000
86	T	1,2,3-Trichlorobenzene	5.000	4.654	6.9	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017427.D
Acq On : 21 Jan 2016 18:09
Operator : ADC
Sample : WG554589-08 20.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 27 12:17:57 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.121	96	452572	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	322471	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	167877	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	45864	9.3649 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 37.460%#		
34) 1,2-Dichloroethane-d4	4.791	65	46385	9.4456 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 37.782%#		
47) Toluene-d8	6.693	98	171517	9.4488 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 37.795%#		
66) p-Bromofluorobenzene	8.711	95	61308	9.7453 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 38.981%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.030	85	142705	20.7834 ug/L	100
3) Chloromethane	1.143	50	131772	19.6679 ug/L	100
4) Vinyl Chloride	1.186	62	130303	20.1228 ug/L	100
5) 1,3-Butadiene	1.198	54	99853	18.3068 ug/L	99
6) Bromomethane	1.371	94	80644	21.7171 ug/L	99
7) Chloroethane	1.444	64	60759	21.2739 ug/L	99
8) Trichlorofluoromethane	1.531	101	161684	21.0902 ug/L	99
9) Diethyl ether	1.733	59	70124	19.1295 ug/L	99
10) 1,1-Dichloroethene	1.855	61	149674	19.7007 ug/L	100
11) Carbon Disulfide	1.869	76	275461	17.5862 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.887	101	88728	19.5854 ug/L	99
13) Iodomethane	1.950	142	125033	16.1504 ug/L	100
14) Acrolein	2.095	56	10838	18.6729 ug/L	100
15) Methylene Chloride	2.275	84	102659	19.4377 ug/L	100
16) Acetone	2.327	43	21748	21.4711 ug/L	98
17) trans-1,2-Dichloroethene	2.402	96	94724	19.4763 ug/L	99
18) Methyl acetate	2.431	43	60864	20.7545 ug/L #	99
19) Methyl Tert Butyl Ether	2.509	73	247579	19.6927 ug/L	100
20) 1,1-Dichloroethane	2.955	63	188984	19.7037 ug/L	99
21) Acrylonitrile	3.016	53	23847	19.2478 ug/L	100
22) Vinyl Acetate	3.253	86	7286	18.0412 ug/L	90
23) cis-1,2-Dichloroethene	3.543	96	106652	19.4758 ug/L	99
24) 2,2-Dichloropropane	3.673	77	125095	17.3248 ug/L	99
25) Cyclohexane	3.769	56	161135	18.3007 ug/L	99
26) Bromochloromethane	3.777	130	65080	20.2012 ug/L	100
27) Chloroform	3.908	83	181214	20.0682 ug/L	99
28) Carbon Tetrachloride	4.055	117	147548	20.1083 ug/L	100
30) 1,1,1-Trichloroethane	4.151	97	163037	20.1292 ug/L	100
31) 1,1-Dichloropropene	4.322	75	133857	19.3672 ug/L	99
32) 2-Butanone	4.342	43	31334	20.0884 ug/L	96
33) Benzene	4.623	78	405794	19.7188 ug/L	100
35) 1,2-Dichloroethane	4.869	62	125541	19.6811 ug/L	99
36) Methylcyclohexane	5.277	83	150727	17.7866 ug/L	99
37) Trichloroethene	5.300	130	108516	19.3176 ug/L	99
38) Dibromomethane	5.723	93	55685	20.4828 ug/L	100
39) 1,2-Dichloropropane	5.830	63	111229	19.6950 ug/L	100
40) Bromodichloromethane	5.917	83	137777	20.0593 ug/L	99
41) 1,4-Dioxane	6.134	88	1205	34.9254 ug/L	93
42) 2-Chloroethyl Vinyl Ether	6.511	63	52207	20.6304 ug/L	100
43) cis-1,3-Dichloropropene	6.525	75	157531	20.0858 ug/L	99
44) 4-Methyl-2-Pentanone	7.799	58	26349	19.6927 ug/L	99
45) trans-1,3-Dichloropropene	7.127	75	132944	20.3173 ug/L	99
48) Toluene	6.739	91	445348	19.9376 ug/L	100
49) Tetrachloroethene	7.069	166	116568	19.3220 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017427.D
Acq On : 21 Jan 2016 18:09
Operator : ADC
Sample : WG554589-08 20.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 27 12:17:57 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,1,2-Trichloroethane	7.261	97	79561	20.0409 ug/L	100
51) Dibromochloromethane	7.400	129	105493	20.2217 ug/L	100
52) 1,3-Dichloropropane	7.481	76	129902	19.6779 ug/L	98
53) 1,2-Dibromoethane	7.570	107	78592	19.9359 ug/L	100
54) 2-Hexanone	7.802	43	53441	20.2187 ug/L	99
55) Chlorobenzene	7.973	112	275566	19.4723 ug/L	98
56) 1-Chlorohexane	7.987	69	24215	18.6057 ug/L	76
57) Ethylbenzene	8.010	106	151537	19.9032 ug/L	95
58) 1,1,1,2-Tetrachloroethane	8.025	131	105710	20.0855 ug/L	100
59) m-,p-Xylene	8.109	106	367163	40.0244 ug/L	100
60) o-Xylene	8.372	106	180230	20.0955 ug/L	98
61) Styrene	8.407	104	293194	20.1509 ug/L	100
62) Bromoform	8.410	173	68045	20.0770 ug/L	100
63) Isopropylbenzene	8.563	105	474401	20.2450 ug/L	100
65) 1,3,5-Trimethylbenzene	8.902	105	407772	20.3571 ug/L	100
67) Bromobenzene	8.763	156	124930	19.5200 ug/L	99
68) n-Propylbenzene	8.792	91	552015	20.7830 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.836	83	94593	20.2396 ug/L	100
70) 2-Chlorotoluene	8.867	91	330201	20.0500 ug/L	100
71) 1,2,3-Trichloropropane	8.899	110	25248	20.1276 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.925	53	19083	19.2869 ug/L #	98
73) 1,2,4-Trimethylbenzene	9.099	105	408842	20.4579 ug/L	100
74) 4-Chlorotoluene	8.957	91	331630	19.8851 ug/L	100
75) tert-Butylbenzene	9.064	134	74352	19.7855 ug/L	99
76) sec-Butylbenzene	9.154	105	504384	20.6558 ug/L	100
77) p-Isopropyltoluene	9.226	119	436059	20.7941 ug/L	99
78) 1,3-Dichlorobenzene	9.255	146	227381	19.5778 ug/L	99
79) 1,4-Dichlorobenzene	9.299	146	225653	18.8566 ug/L	100
80) n-Butylbenzene	9.432	91	382863	20.4973 ug/L	100
81) 1,2-Dichlorobenzene	9.504	146	220525	19.4985 ug/L	100
82) 1,2-Dibromo-3-Chloropr...	9.878	75	16945	20.1423 ug/L	98
83) Hexachlorobutadiene	10.176	225	92131	19.9152 ug/L	100
84) 1,2,4-Trichlorobenzene	10.191	180	167208	19.5819 ug/L	99
85) Naphthalene	10.341	128	325933	20.7001 ug/L	100
86) 1,2,3-Trichlorobenzene	10.425	180	159311	20.1645 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017427.D
Acq On : 21 Jan 2016 18:09
Operator : ADC
Sample : WG554589-08 20.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 27 12:17:57 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

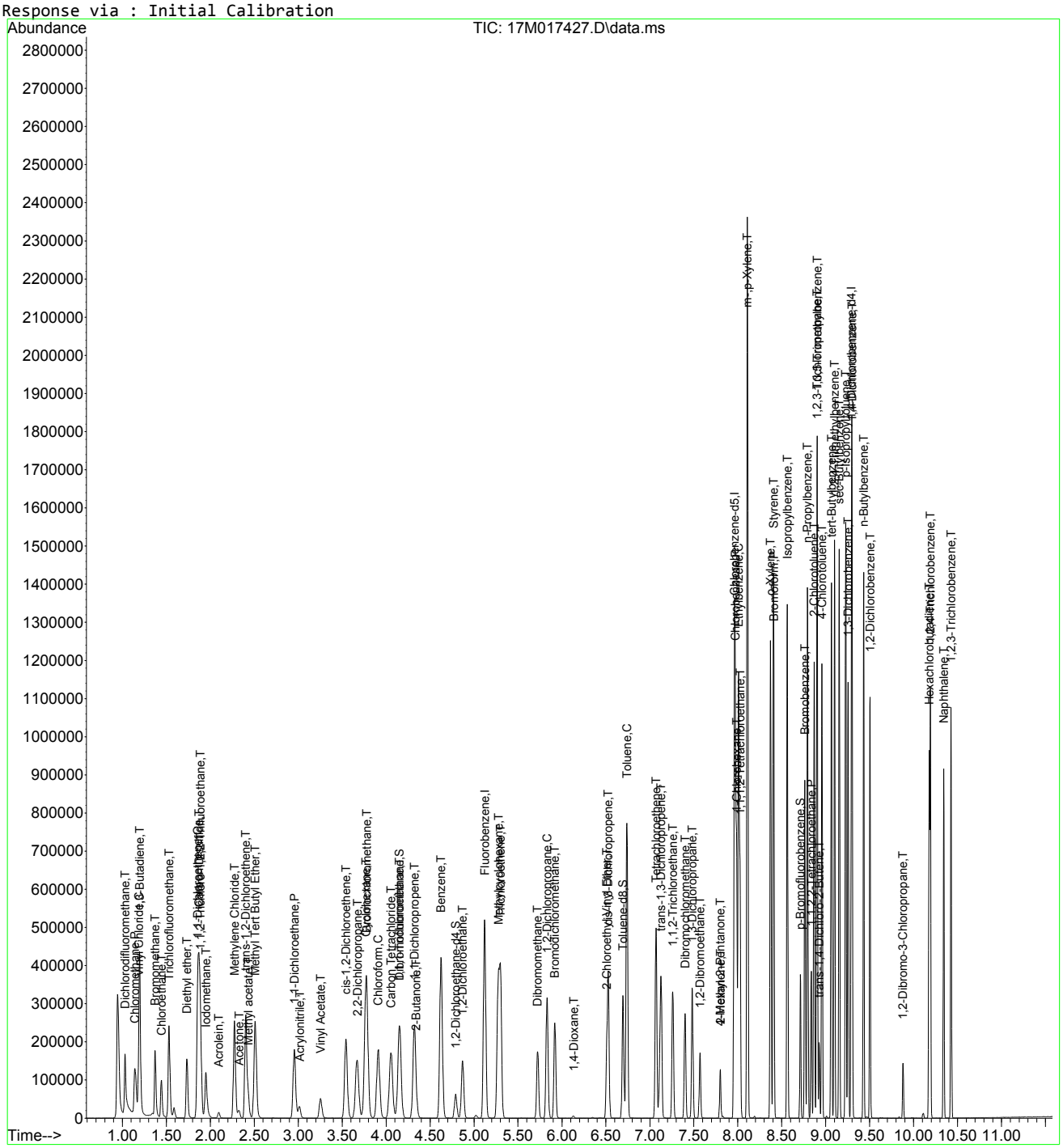

8260VMS.M Wed Jan 27 12:17:59 2016 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017428.D
Acq On : 21 Jan 2016 18:29
Operator : ADC
Sample : WG554589-09 100.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 27 12:18:01 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	424688	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	310320	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.296	152	167578	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	235666	51.2797 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 205.119%#		
34) 1,2-Dichloroethane-d4	4.791	65	232851	50.5298 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 202.119%#		
47) Toluene-d8	6.696	98	877967	50.2609 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 201.044%#		
66) p-Bromofluorobenzene	8.714	95	324844	51.7280 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 206.912%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.030	85	686741	106.5828 ug/L	100
3) Chloromethane	1.143	50	646370	102.8095 ug/L	100
4) Vinyl Chloride	1.186	62	627416	103.2542 ug/L	100
5) 1,3-Butadiene	1.198	54	535040	104.5333 ug/L	100
6) Bromomethane	1.372	94	319750	94.2150 ug/L	99
7) Chloroethane	1.441	64	244112	91.0843 ug/L	99
8) Trichlorofluoromethane	1.516	101	742947	103.2734 ug/L	100
9) Diethyl ether	1.736	59	351610	102.2155 ug/L	100
10) 1,1-Dichloroethene	1.849	61	706409	99.0855 ug/L	100
11) Carbon Disulfide	1.864	76	1421413	96.7050 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.881	101	414508	97.5040 ug/L	100
13) Iodomethane	1.945	142	825278	104.9759 ug/L	100
14) Acrolein	2.095	56	55432	101.7748 ug/L	100
15) Methylene Chloride	2.272	84	482934	97.4434 ug/L	99
16) Acetone	2.330	43	89541	100.7706 ug/L	100
17) trans-1,2-Dichloroethene	2.402	96	452131	99.0670 ug/L	100
18) Methyl acetate	2.434	43	314035	114.1161 ug/L #	100
19) Methyl Tert Butyl Ether	2.512	73	1181764	100.1707 ug/L	100
20) 1,1-Dichloroethane	2.955	63	893109	99.2306 ug/L	99
21) Acrylonitrile	3.016	53	122020	104.9531 ug/L	99
22) Vinyl Acetate	3.254	86	45376	96.1383 ug/L	98
23) cis-1,2-Dichloroethene	3.543	96	507411	98.7427 ug/L	99
24) 2,2-Dichloropropane	3.668	77	679932	95.7586 ug/L	99
25) Cyclohexane	3.769	56	838969	101.5408 ug/L	99
26) Bromochloromethane	3.780	130	315231	104.2741 ug/L	100
27) Chloroform	3.911	83	860523	101.5538 ug/L	100
28) Carbon Tetrachloride	4.053	117	709144	102.9896 ug/L	99
30) 1,1,1-Trichloroethane	4.151	97	776788	102.2024 ug/L	100
31) 1,1-Dichloropropene	4.319	75	647655	99.8591 ug/L	100
32) 2-Butanone	4.342	43	155127	105.9827 ug/L	95
33) Benzene	4.626	78	1911316	98.9748 ug/L	100
35) 1,2-Dichloroethane	4.869	62	597732	99.8592 ug/L	99
36) Methylcyclohexane	5.274	83	797322	100.2657 ug/L	99
37) Trichloroethene	5.303	130	515216	97.7385 ug/L	100
38) Dibromomethane	5.723	93	275108	107.8381 ug/L	100
39) 1,2-Dichloropropane	5.830	63	530199	100.0446 ug/L	99
40) Bromodichloromethane	5.920	83	677674	105.1423 ug/L	100
41) 1,4-Dioxane	6.134	88	6750	208.4853 ug/L	96
42) 2-Chloroethyl Vinyl Ether	6.511	63	251500	105.9092 ug/L	100
43) cis-1,3-Dichloropropene	6.528	75	772078	104.9066 ug/L	99
44) 4-Methyl-2-Pentanone	7.802	58	135816	108.1705 ug/L	100
45) trans-1,3-Dichloropropene	7.130	75	664578	108.2332 ug/L	100
48) Toluene	6.739	91	2097057	97.5582 ug/L	100
49) Tetrachloroethene	7.070	166	562837	96.9476 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017428.D
Acq On : 21 Jan 2016 18:29
Operator : ADC
Sample : WG554589-09 100.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 27 12:18:01 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50)	1,1,2-Trichloroethane	7.261	97	381575	99.8797 ug/L	99
51)	Dibromochloromethane	7.403	129	534366	106.4420 ug/L	99
52)	1,3-Dichloropropane	7.484	76	628285	98.9008 ug/L	99
53)	1,2-Dibromoethane	7.570	107	388228	102.3354 ug/L	100
54)	2-Hexanone	7.802	43	270349	106.2878 ug/L	100
55)	Chlorobenzene	7.973	112	1344278	98.7100 ug/L	100
56)	1-Chlorohexane	7.990	69	129641	103.5103 ug/L	98
57)	Ethylbenzene	8.013	106	731940	99.8987 ug/L	98
58)	1,1,1,2-Tetrachloroethane	8.028	131	512468	101.1844 ug/L	100
59)	m-,p-Xylene	8.112	106	1799659	203.8622 ug/L	98
60)	o-Xylene	8.375	106	872688	101.1142 ug/L	99
61)	Styrene	8.407	104	1458913	104.1956 ug/L	99
62)	Bromoform	8.410	173	354904	108.8165 ug/L	100
63)	Isopropylbenzene	8.564	105	2295986	101.8173 ug/L	100
65)	1,3,5-Trimethylbenzene	8.905	105	2018301	100.9388 ug/L	100
67)	Bromobenzene	8.763	156	625094	97.8436 ug/L	100
68)	n-Propylbenzene	8.795	91	2680813	101.1109 ug/L	100
69)	1,1,2,2-Tetrachloroethane	8.836	83	470653	100.8829 ug/L	100
70)	2-Chlorotoluene	8.870	91	1632105	99.2790 ug/L	100
71)	1,2,3-Trichloropropane	8.899	110	125273	100.0452 ug/L	99
72)	trans-1,4-Dichloro-2-B...	8.928	53	104992	106.3031 ug/L #	99
73)	1,2,4-Trimethylbenzene	9.102	105	2009823	100.7483 ug/L	99
74)	4-Chlorotoluene	8.960	91	1647625	98.9707 ug/L	100
75)	tert-Butylbenzene	9.064	134	366254	97.6363 ug/L	100
76)	sec-Butylbenzene	9.157	105	2458326	100.8545 ug/L	100
77)	p-Isopropyltoluene	9.229	119	2133544	101.9225 ug/L	99
78)	1,3-Dichlorobenzene	9.258	146	1150972	99.2768 ug/L	100
79)	1,4-Dichlorobenzene	9.302	146	1141435	95.5536 ug/L	100
80)	n-Butylbenzene	9.432	91	1943877	104.2548 ug/L	100
81)	1,2-Dichlorobenzene	9.505	146	1096852	97.1553 ug/L	99
82)	1,2-Dibromo-3-Chloropr...	9.881	75	87697	104.4302 ug/L	99
83)	Hexachlorobutadiene	10.179	225	449235	97.2805 ug/L	100
84)	1,2,4-Trichlorobenzene	10.194	180	840010	98.5500 ug/L	100
85)	Naphthalene	10.341	128	1585396	100.8686 ug/L	100
86)	1,2,3-Trichlorobenzene	10.428	180	768151	97.4010 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017428.D
Acq On : 21 Jan 2016 18:29
Operator : ADC
Sample : WG554589-09 100.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 27 12:18:01 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

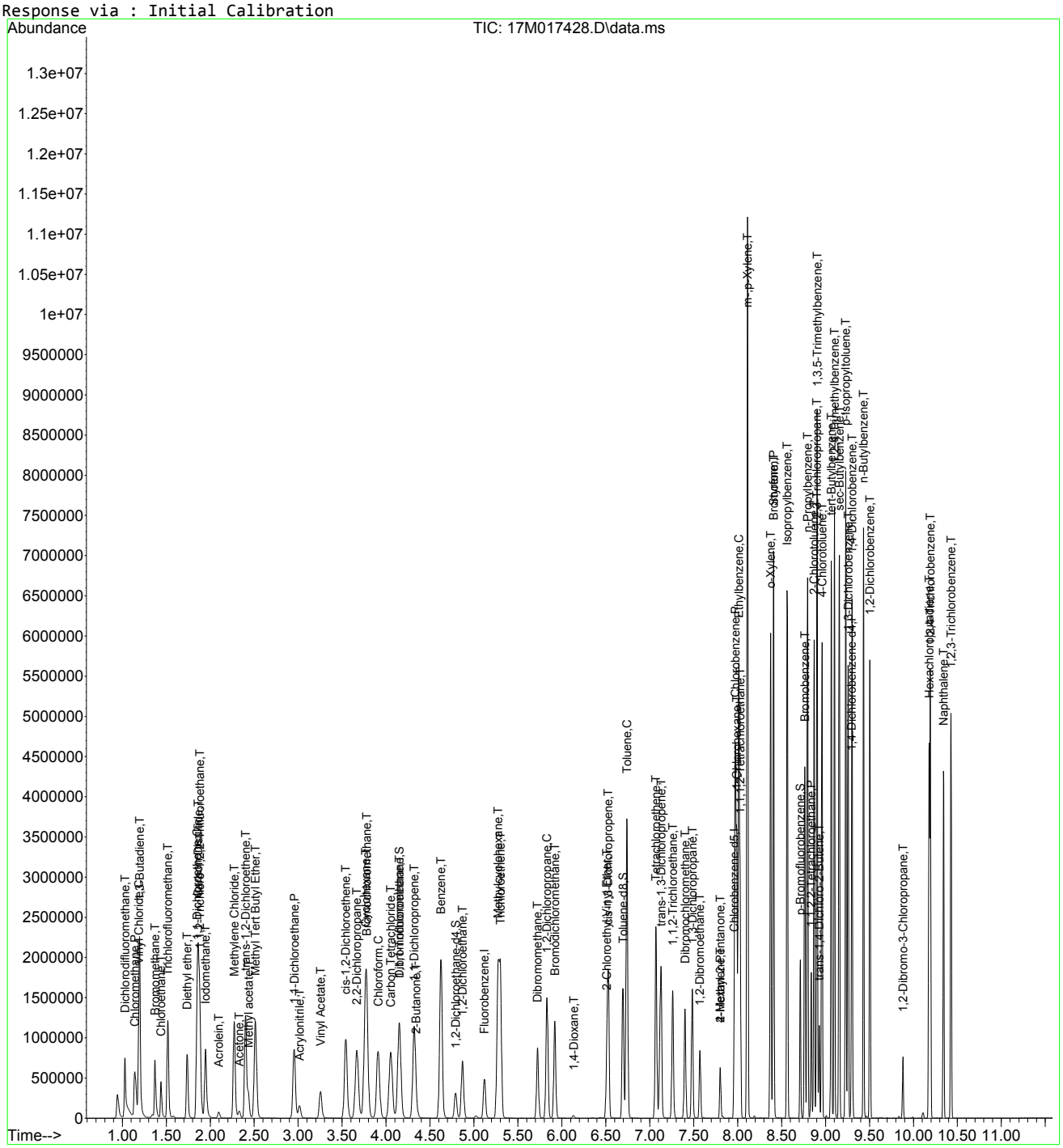

8260VMS.M Wed Jan 27 12:32:51 2016 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017429.D
Acq On : 21 Jan 2016 18:50
Operator : ADC
Sample : WG554589-10 200.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 27 12:18:04 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	416490	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.964	117	303191	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.296	152	162386	25.00000 ug/L	# 0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	453862	100.7019 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 402.808%#		
34) 1,2-Dichloroethane-d4	4.791	65	444315	98.3164 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 393.266%#		
47) Toluene-d8	6.696	98	1670182	97.8608 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.443%#		
66) p-Bromofluorobenzene	8.714	95	619583	101.8166 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 407.266%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.027	85	1375024	217.6055 ug/L	99
3) Chloromethane	1.140	50	1286397	208.6376 ug/L	100
4) Vinyl Chloride	1.186	62	1252712	210.2175 ug/L	100
5) 1,3-Butadiene	1.195	54	1077495	214.6590 ug/L	100
6) Bromomethane	1.371	94	636482	192.0157 ug/L	99
7) Chloroethane	1.438	64	480795	182.9278 ug/L	99
8) Trichlorofluoromethane	1.513	101	1145376	162.3469 ug/L	100
9) Diethyl ether	1.742	59	698504	207.0569 ug/L	100
10) 1,1-Dichloroethene	1.843	61	1444334	206.5794 ug/L	100
11) Carbon Disulfide	1.858	76	2853015	197.9239 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.875	101	841248	201.7804 ug/L	99
13) Iodomethane	1.942	142	1531657	197.3873 ug/L	100
14) Acrolein	2.098	56	117130	219.2871 ug/L	100
15) Methylene Chloride	2.272	84	970483	199.6724 ug/L	99
16) Acetone	2.338	43	177550	205.7309 ug/L	100
17) trans-1,2-Dichloroethene	2.399	96	919807	205.5072 ug/L	100
18) Methyl acetate	2.437	43	635463	235.4639 ug/L #	100
19) Methyl Tert Butyl Ether	2.518	73	2396946	207.1733 ug/L	100
20) 1,1-Dichloroethane	2.952	63	1812340	205.3270 ug/L	99
21) Acrylonitrile	3.019	53	242094	212.3311 ug/L	99
22) Vinyl Acetate	3.253	86	97653	205.9701 ug/L	98
23) cis-1,2-Dichloroethene	3.540	96	1033842	205.1467 ug/L	99
24) 2,2-Dichloropropane	3.667	77	1371994	196.0160 ug/L	99
25) Cyclohexane	3.766	56	1692765	208.9088 ug/L	99
26) Bromochloromethane	3.780	130	641560	216.3965 ug/L	100
27) Chloroform	3.908	83	1735651	208.8630 ug/L	100
28) Carbon Tetrachloride	4.053	117	1457223	215.7996 ug/L	99
30) 1,1,1-Trichloroethane	4.151	97	1581090	212.1194 ug/L	100
31) 1,1-Dichloropropene	4.319	75	1328660	208.8927 ug/L	100
32) 2-Butanone	4.348	43	306910	213.8081 ug/L	96
33) Benzene	4.626	78	3865640	204.1169 ug/L	100
35) 1,2-Dichloroethane	4.872	62	1212086	206.4811 ug/L	99
36) Methylcyclohexane	5.277	83	1616830	207.3234 ug/L	99
37) Trichloroethene	5.303	130	1053131	203.7154 ug/L	100
38) Dibromomethane	5.726	93	561730	224.5236 ug/L	100
39) 1,2-Dichloropropane	5.833	63	1075338	206.9023 ug/L	100
40) Bromodichloromethane	5.920	83	1382824	218.7706 ug/L	100
41) 1,4-Dioxane	6.143	88	13559	427.0363 ug/L	98
42) 2-Chloroethyl Vinyl Ether	6.514	63	503671	216.2759 ug/L	100
43) cis-1,3-Dichloropropene	6.531	75	1578857	218.7510 ug/L	100
44) 4-Methyl-2-Pentanone	7.805	58	272596	221.3823 ug/L	100
45) trans-1,3-Dichloropropene	7.133	75	1342960	223.0195 ug/L	100
48) Toluene	6.742	91	4190231	199.5194 ug/L	98
49) Tetrachloroethene	7.072	166	1144746	201.8167 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017429.D
Acq On : 21 Jan 2016 18:50
Operator : ADC
Sample : WG554589-10 200.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 27 12:18:04 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50)	1,1,2-Trichloroethane	7.263	97	768565	205.9072 ug/L	99
51)	Dibromochloromethane	7.402	129	1080593	220.3077 ug/L	100
52)	1,3-Dichloropropane	7.486	76	1249773	201.3574 ug/L	98
53)	1,2-Dibromoethane	7.573	107	778282	209.9760 ug/L	99
54)	2-Hexanone	7.805	43	542613	218.3445 ug/L	100
55)	Chlorobenzene	7.976	112	2669322	200.6163 ug/L	98
56)	1-Chlorohexane	7.993	69	257687	210.5849 ug/L	99
57)	Ethylbenzene	8.016	106	1462533	204.3070 ug/L	95
58)	1,1,1,2-Tetrachloroethane	8.034	131	1031052	208.3632 ug/L	100
59)	m-,p-Xylene	8.118	106	3491452	404.8051 ug/L	92
60)	o-Xylene	8.378	106	1727269	204.8361 ug/L	98
61)	Styrene	8.410	104	2905110	212.3616 ug/L	98
62)	Bromoform	8.413	173	727675	228.3572 ug/L	100
63)	Isopropylbenzene	8.566	105	4409473	200.1393 ug/L	98
65)	1,3,5-Trimethylbenzene	8.908	105	3891584	200.8477 ug/L	98
67)	Bromobenzene	8.766	156	1248486	201.6691 ug/L	99
68)	n-Propylbenzene	8.798	91	5102288	198.5934 ug/L	98
69)	1,1,2,2-Tetrachloroethane	8.839	83	940428	208.0227 ug/L	100
70)	2-Chlorotoluene	8.873	91	3191136	200.3195 ug/L	99
71)	1,2,3-Trichloropropane	8.902	110	252367	207.9887 ug/L	97
72)	trans-1,4-Dichloro-2-B...	8.931	53	206340	215.5965 ug/L #	98
73)	1,2,4-Trimethylbenzene	9.105	105	3888146	201.1365 ug/L	97
74)	4-Chlorotoluene	8.963	91	3323709	206.0343 ug/L	100
75)	tert-Butylbenzene	9.067	134	736751	202.6834 ug/L	96
76)	sec-Butylbenzene	9.157	105	4674428	197.9031 ug/L	98
77)	p-Isopropyltoluene	9.232	119	4066503	200.4741 ug/L	97
78)	1,3-Dichlorobenzene	9.261	146	2273286	202.3510 ug/L	98
79)	1,4-Dichlorobenzene	9.305	146	2253619	194.6906 ug/L	99
80)	n-Butylbenzene	9.435	91	3768776	208.5913 ug/L	98
81)	1,2-Dichlorobenzene	9.507	146	2151136	196.6323 ug/L	98
82)	1,2-Dibromo-3-Chloropr...	9.881	75	172511	211.9955 ug/L	100
83)	Hexachlorobutadiene	10.179	225	927446	207.2571 ug/L	100
84)	1,2,4-Trichlorobenzene	10.194	180	1715247	207.6668 ug/L	99
85)	Naphthalene	10.344	128	3119844	204.8423 ug/L	99
86)	1,2,3-Trichlorobenzene	10.428	180	1571267	205.6056 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017429.D
Acq On : 21 Jan 2016 18:50
Operator : ADC
Sample : WG554589-10 200.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 27 12:18:04 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

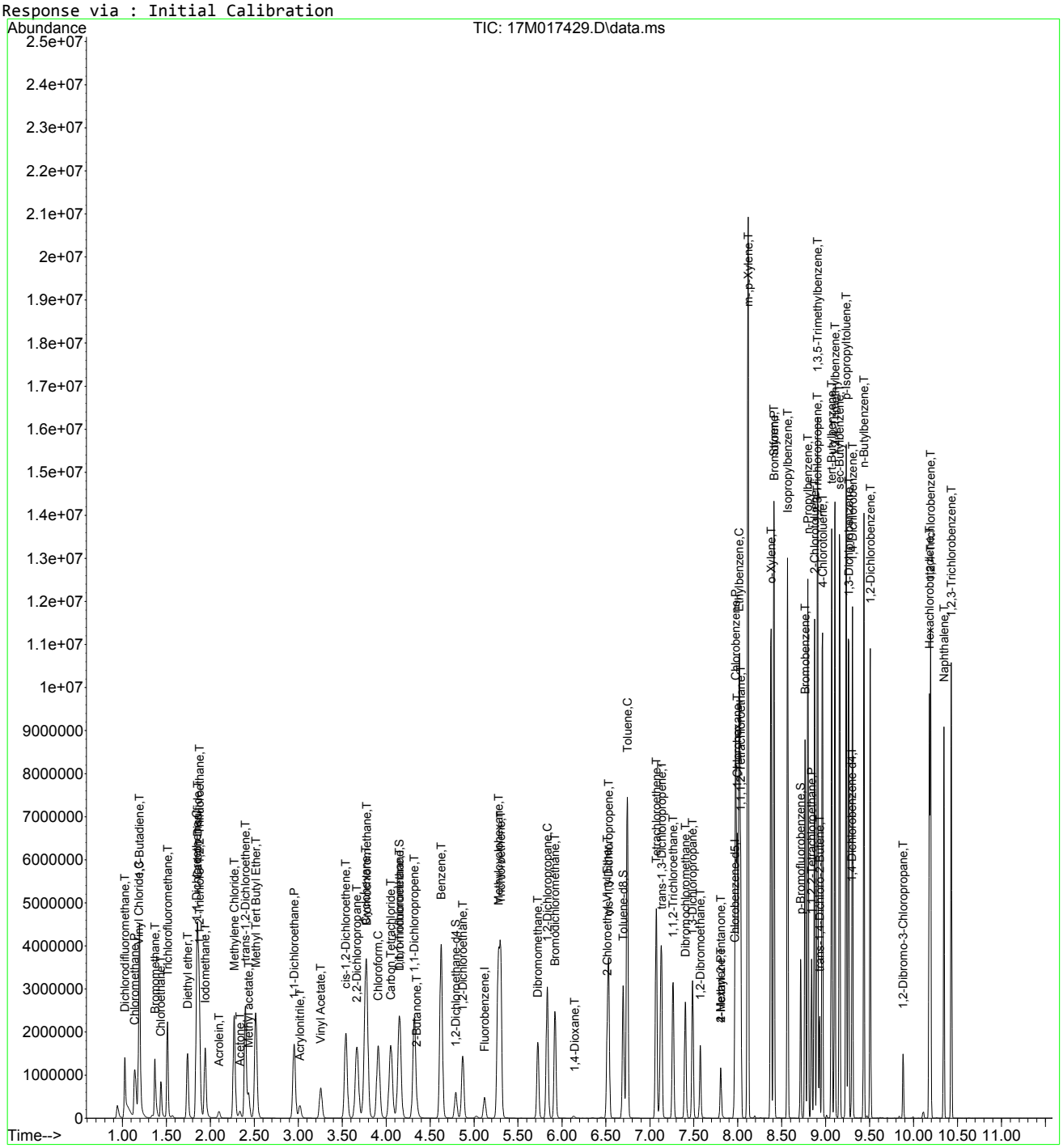

8260VMS.M Wed Jan 27 12:18:05 2016 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017430.D
Acq On : 21 Jan 2016 19:10
Operator : ADC
Sample : WG554589-11 300.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 27 12:33:35 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.121	96	432443	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.967	117	303465	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.299	152	160713	25.00000	ug/L	# 0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	4.163	111	293	0.0626	ug/L	0.0116
Spiked Amount 25.000	Range 86 - 118		Recovery = 0.250%#			
34) 1,2-Dichloroethane-d4	4.872	65	86243	18.3795	ug/L	0.0809
Spiked Amount 25.000	Range 80 - 120		Recovery = 73.518%#			
47) Toluene-d8	6.696	98	2476	0.1449	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 0.580%#			
66) p-Bromofluorobenzene	8.717	95	1814	0.3012	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 1.205%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.027	85	2213156	337.3240	ug/L	100
3) Chloromethane	1.140	50	2039118	318.5192	ug/L	100
4) Vinyl Chloride	1.186	62	2018606	326.2458	ug/L	100
5) 1,3-Butadiene	1.195	54	1724306	330.8445	ug/L	100
6) Bromomethane	1.371	94	1064167	309.6620	ug/L	100
7) Chloroethane	1.438	64	796283	291.7849	ug/L	98
8) Trichlorofluoromethane	1.513	101	1905296	260.0962	ug/L	99
9) Diethyl ether	1.742	59	1110155	316.9422	ug/L	100
10) 1,1-Dichloroethene	1.843	61	2400925	330.7301	ug/L	100
11) Carbon Disulfide	1.855	76	4582003	306.1437	ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.872	101	1391340	321.4134	ug/L	99
13) Iodomethane	1.942	142	2459158	304.4440	ug/L	100
14) Acrolein	2.101	56	183036	330.0329	ug/L	100
15) Methylene Chloride	2.272	84	1607656	318.5656	ug/L	99
16) Acetone	2.339	43	267541	299.4437	ug/L	99
17) trans-1,2-Dichloroethene	2.399	96	1532285	329.7202	ug/L	100
18) Methyl acetate	2.437	43	984061	351.1817	ug/L #	100
19) Methyl Tert Butyl Ether	2.518	73	3884022	323.3202	ug/L	99
20) 1,1-Dichloroethane	2.955	63	3002078	327.5700	ug/L	99
21) Acrylonitrile	3.022	53	372316	314.4974	ug/L	100
22) Vinyl Acetate	3.259	86	152079	306.8398	ug/L	98
23) cis-1,2-Dichloroethene	3.543	96	1721842	329.0633	ug/L	100
24) 2,2-Dichloropropane	3.670	77	2267067	311.3794	ug/L	99
25) Cyclohexane	3.772	56	2706330	321.6744	ug/L	99
26) Bromochloromethane	3.783	130	1052168	341.8013	ug/L	100
27) Chloroform	3.914	83	2860502	331.5257	ug/L	99
28) Carbon Tetrachloride	4.055	117	2419021	345.0165	ug/L	99
30) 1,1,1-Trichloroethane	4.151	97	2615808	337.9913	ug/L	100
31) 1,1-Dichloropropene	4.322	75	2205218	333.9155	ug/L	100
32) 2-Butanone	4.354	43	452643	303.6999	ug/L	99
33) Benzene	4.629	78	6367023	323.7947	ug/L	99
35) 1,2-Dichloroethane	4.875	62	1979163	324.7163	ug/L	99
36) Methylcyclohexane	5.280	83	2590355	319.9035	ug/L	99
37) Trichloroethene	5.306	130	1742270	324.5882	ug/L	100
38) Dibromomethane	5.726	93	927489	357.0415	ug/L	99
39) 1,2-Dichloropropane	5.836	63	1767717	327.5735	ug/L	100
40) Bromodichloromethane	5.923	83	2271594	346.1215	ug/L	99
41) 1,4-Dioxane	6.149	88	20806	631.1047	ug/L	99
42) 2-Chloroethyl Vinyl Ether	6.519	63	764729	316.2602	ug/L	100
43) cis-1,3-Dichloropropene	6.534	75	2572074	343.2151	ug/L	100
44) 4-Methyl-2-Pentanone	7.808	58	393893	308.0898	ug/L	100
45) trans-1,3-Dichloropropene	7.136	75	2174081	347.7213	ug/L	100
48) Toluene	6.745	91	6715247	319.4603	ug/L	97
49) Tetrachloroethene	7.075	166	1894376	333.6737	ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017430.D
Acq On : 21 Jan 2016 19:10
Operator : ADC
Sample : WG554589-11 300.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 27 12:33:35 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50)	1,1,2-Trichloroethane	7.266	97	1221482	326.9532 ug/L	99
51)	Dibromochloromethane	7.405	129	1741178	354.6651 ug/L	99
52)	1,3-Dichloropropane	7.489	76	1984414	319.4306 ug/L	98
53)	1,2-Dibromoethane	7.576	107	1244501	335.4560 ug/L	99
54)	2-Hexanone	7.808	43	786536	316.2121 ug/L	100
55)	Chlorobenzene	7.979	112	4203318	315.6206 ug/L	96
56)	1-Chlorohexane	7.999	69	406436	331.8445 ug/L	93
57)	Ethylbenzene	8.022	106	2326222	324.6658 ug/L	89
58)	1,1,1,2-Tetrachloroethane	8.037	131	1634138	329.9414 ug/L	100
59)	m-,p-Xylene	8.121	106	5308884	614.9656 ug/L	85
60)	o-Xylene	8.381	106	2744790	325.2096 ug/L	93
61)	Styrene	8.413	104	4468963	326.3833 ug/L	96
62)	Bromoform	8.416	173	1131633	354.8057 ug/L	100
63)	Isopropylbenzene	8.569	105	6547094	296.8944 ug/L	95
65)	1,3,5-Trimethylbenzene	8.911	105	5722543	298.4194 ug/L	95
67)	Bromobenzene	8.769	156	1969298	321.4139 ug/L	99
68)	n-Propylbenzene	8.801	91	7431828	292.2759 ug/L	94
69)	1,1,2,2-Tetrachloroethane	8.841	83	1434152	320.5369 ug/L	100
70)	2-Chlorotoluene	8.876	91	4895057	310.4797 ug/L	98
71)	1,2,3-Trichloropropane	8.905	110	381871	317.9959 ug/L	97
72)	trans-1,4-Dichloro-2-B...	8.934	53	313599	331.0782 ug/L #	98
73)	1,2,4-Trimethylbenzene	9.108	105	5653688	295.5138 ug/L	94
74)	4-Chlorotoluene	8.966	91	4959063	310.6087 ug/L	98
75)	tert-Butylbenzene	9.070	134	1137231	316.1140 ug/L	90
76)	sec-Butylbenzene	9.160	105	6662551	285.0114 ug/L	94
77)	p-Isopropyltoluene	9.235	119	5868807	292.3375 ug/L	94
78)	1,3-Dichlorobenzene	9.264	146	3452397	310.5057 ug/L	97
79)	1,4-Dichlorobenzene	9.308	146	3433462	299.7052 ug/L	98
80)	n-Butylbenzene	9.438	91	5454545	305.0366 ug/L	95
81)	1,2-Dichlorobenzene	9.507	146	3273861	302.3742 ug/L	97
82)	1,2-Dibromo-3-Chloropr...	9.881	75	267024	331.5566 ug/L	100
83)	Hexachlorobutadiene	10.182	225	1451803	327.8129 ug/L	99
84)	1,2,4-Trichlorobenzene	10.196	180	2678349	327.6462 ug/L	99
85)	Naphthalene	10.347	128	4637851	307.6813 ug/L	97
86)	1,2,3-Trichlorobenzene	10.431	180	2451798	324.1659 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017430.D
Acq On : 21 Jan 2016 19:10
Operator : ADC
Sample : WG554589-11 300.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 27 12:33:35 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

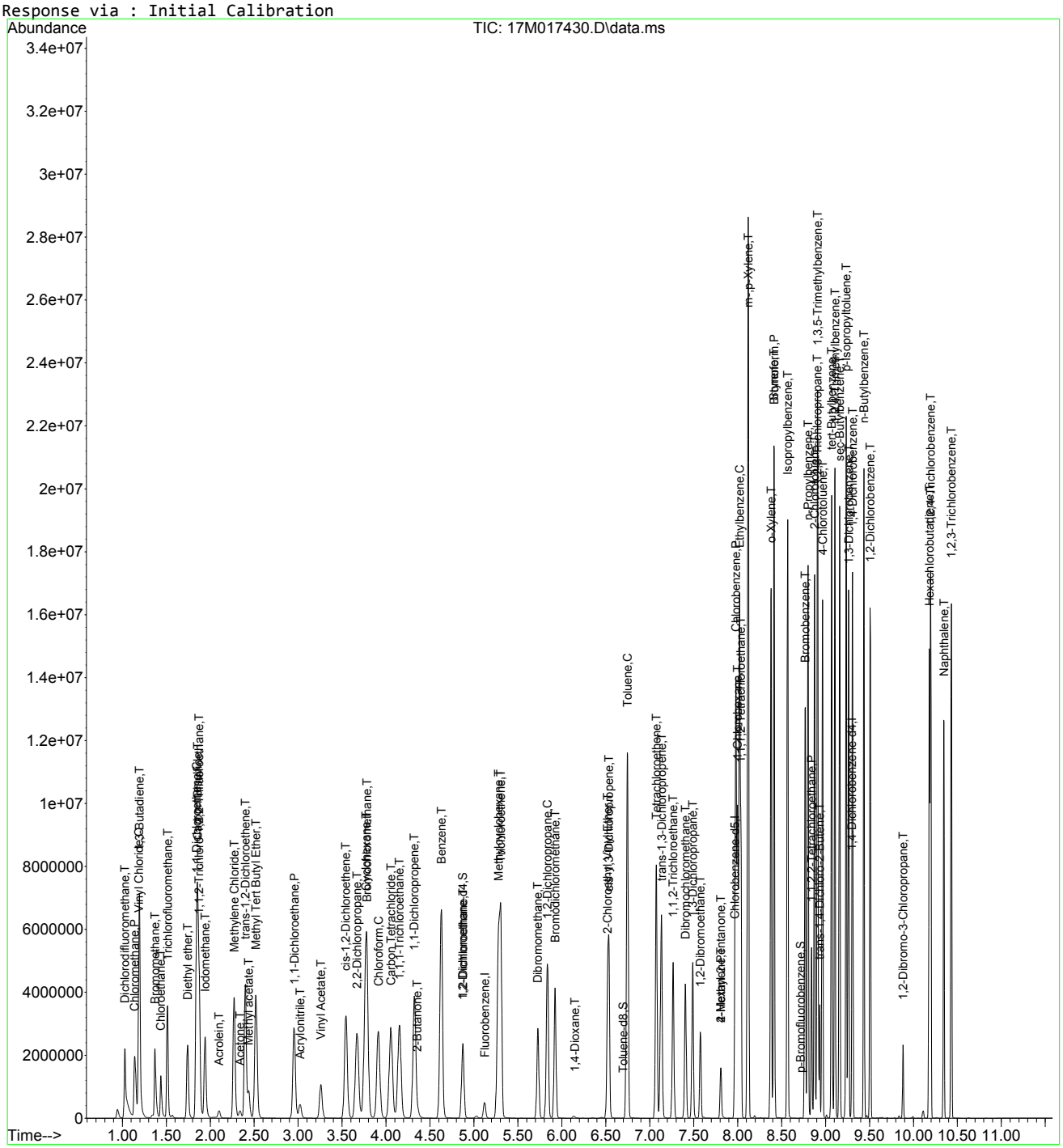

8260VMS.M Wed Jan 27 12:33:36 2016 Page: 3

Bromomethane

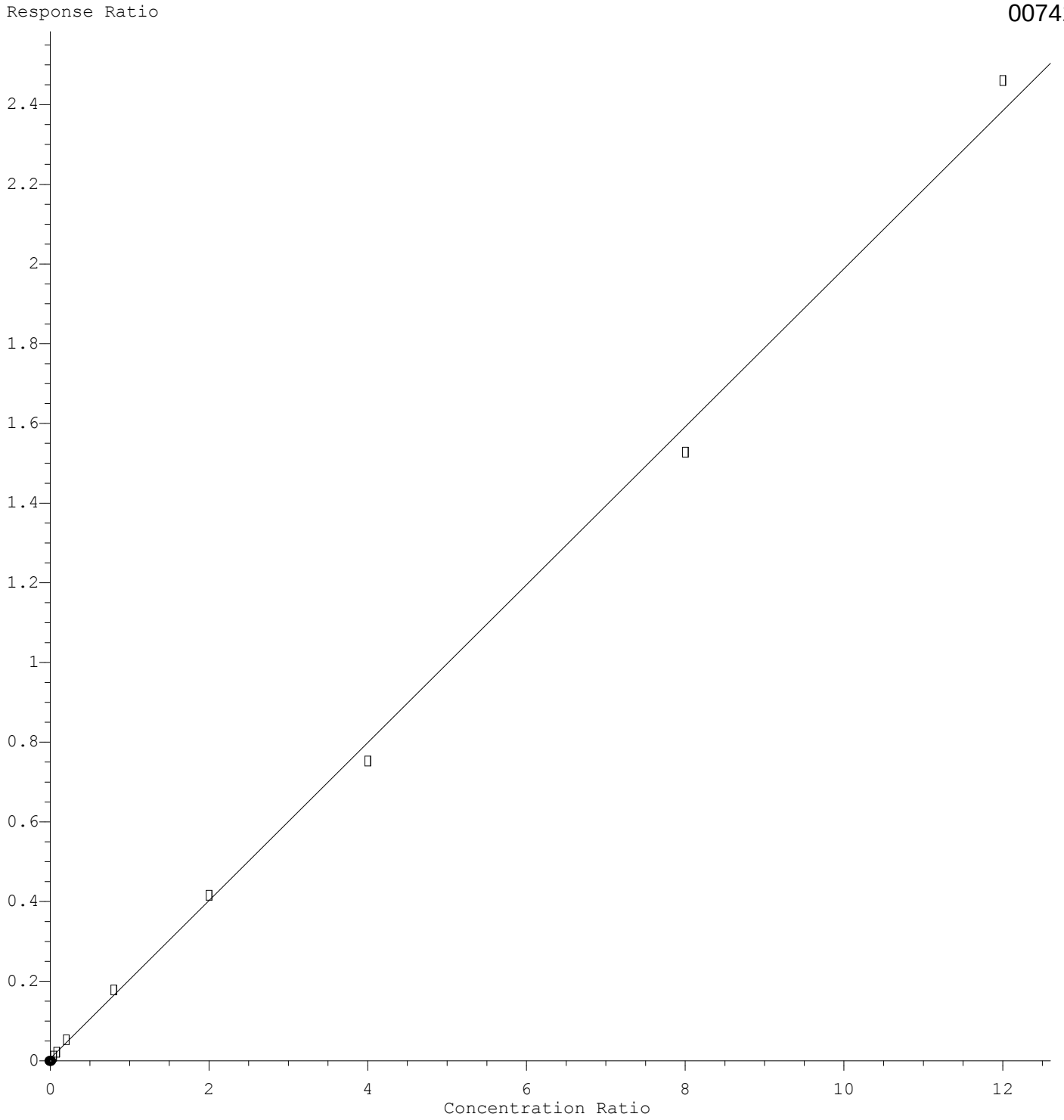

Response = 1.982e-001 * Amt + 6.032e-003
Coef of Det (r^2) = 0.997819 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Wed Jan 27 12:15:43 2016

Iodomethane

00741466

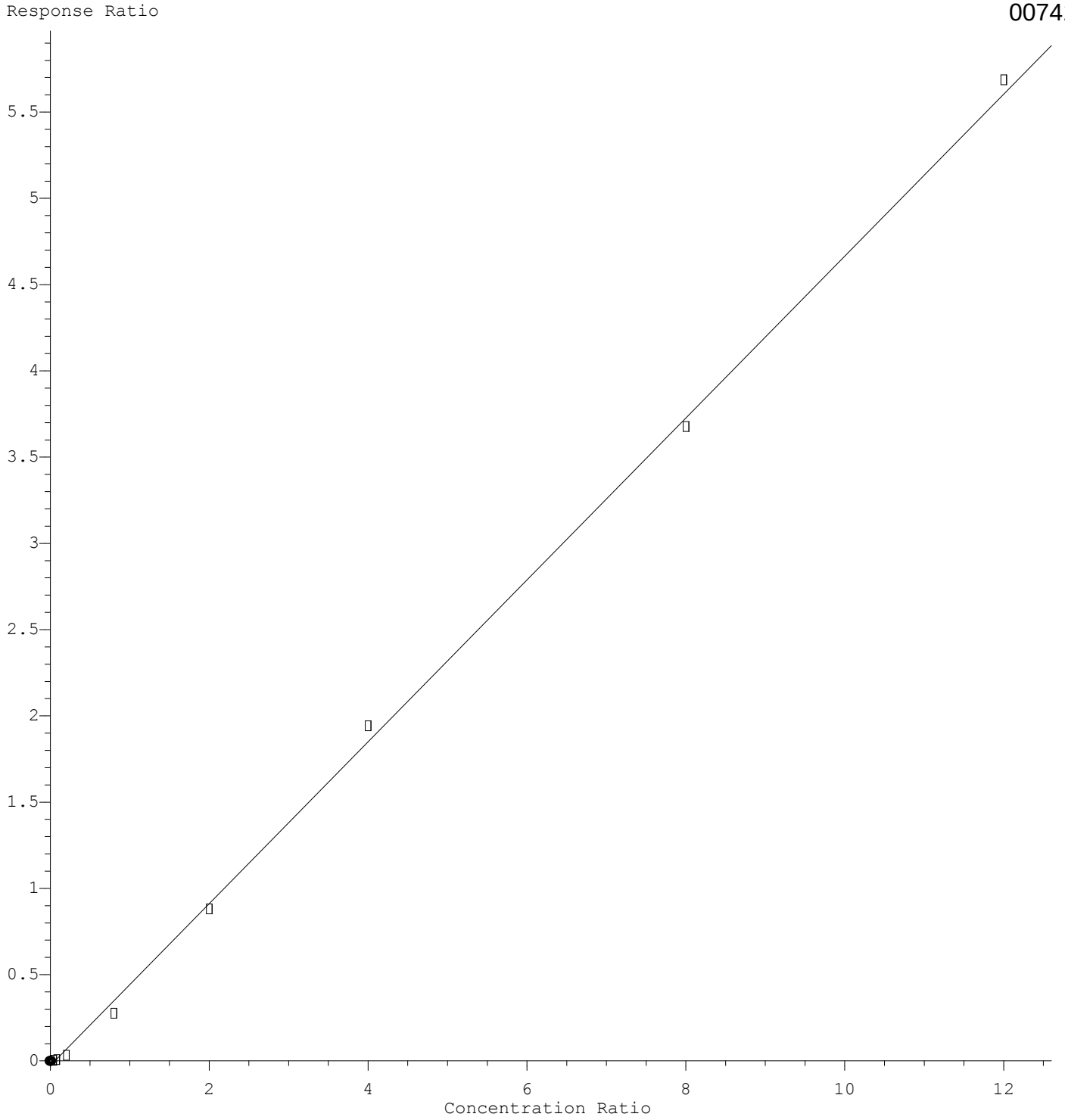

Response = 4.692e-001 * Amt - 2.682e-002
Coef of Det (r^2) = 0.996594 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Wed Jan 27 12:15:43 2016

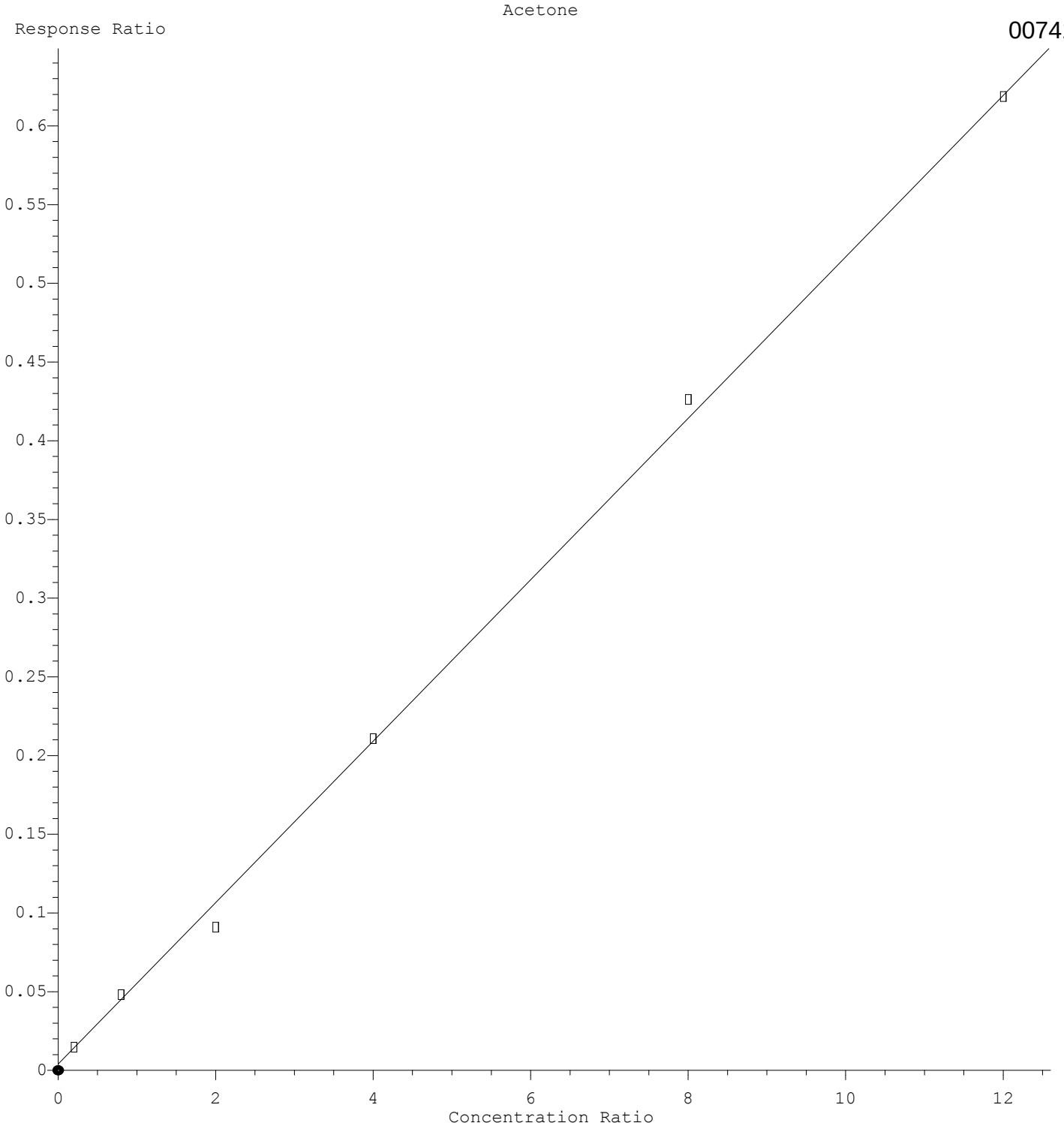

Response = 5.132e-002 * Amt + 3.979e-003
Coef of Det (r^2) = 0.997359 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Wed Jan 27 12:15:43 2016

Vinyl Acetate

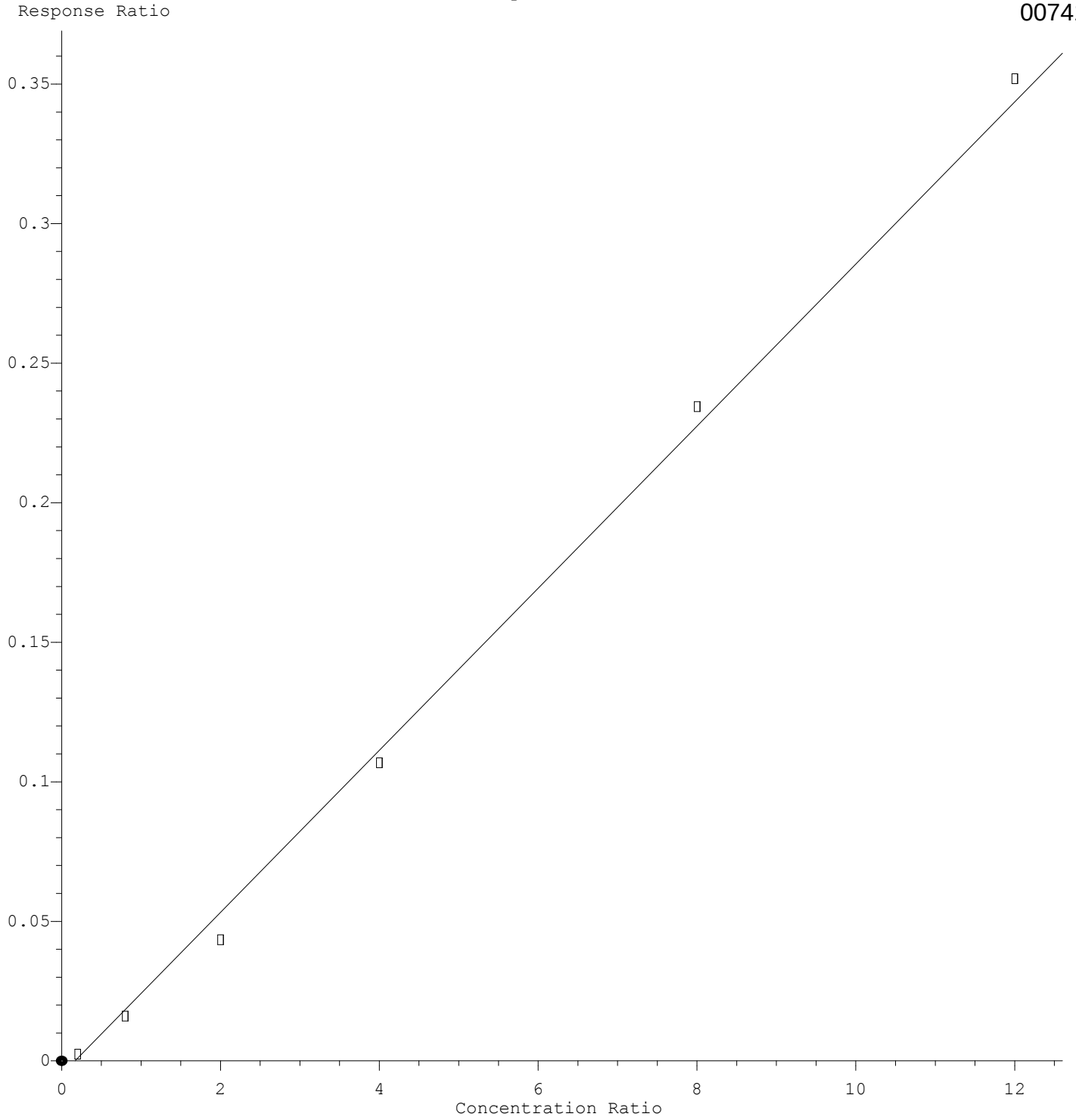

Response = 2.905e-002 * Amt - 4.864e-003
Coef of Det (r^2) = 0.995622 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Wed Jan 27 12:15:43 2016

2,2-Dichloropropane

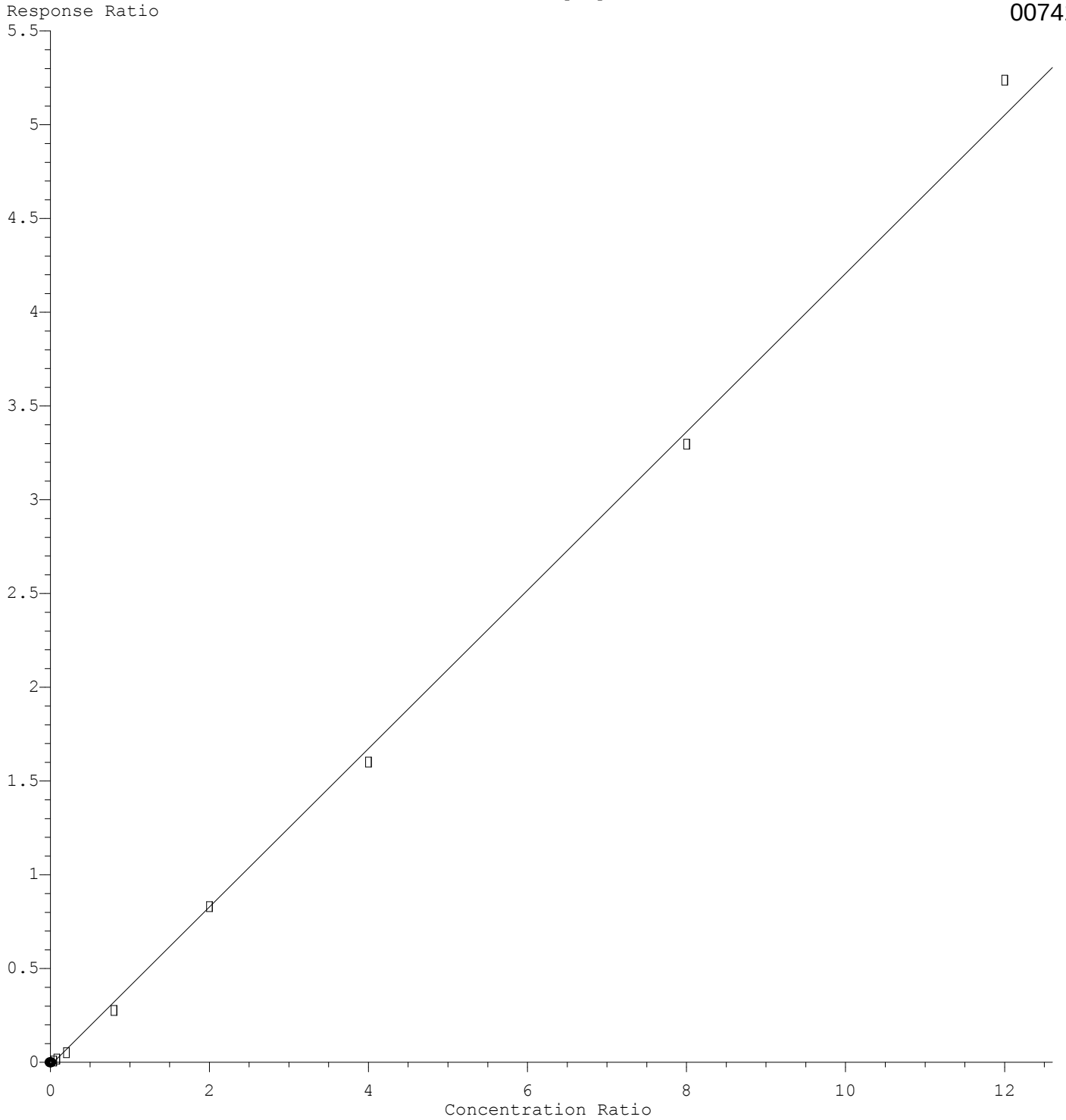

Response = 4.222e-001 * Amt - 1.618e-002
Coef of Det (r^2) = 0.997923 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Wed Jan 27 12:15:43 2016

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017432.D
Acq On : 21 Jan 2016 19:51
Operator : ADC
Sample : WG554589-12 50.0ug/L ALTSRC 8260
Misc : 1,1 STD74446
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 27 12:18:13 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	455892	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	321888	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	161364	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	128180	25.9822 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.929%		
34) 1,2-Dichloroethane-d4	4.791	65	127535	25.7814 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.126%		
47) Toluene-d8	6.693	98	473089	26.1096 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.438%		
66) p-Bromofluorobenzene	8.714	95	162974	26.9513 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.805%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.027	85	259640	37.5382 ug/L	100
3) Chloromethane	1.140	50	280282	41.5294 ug/L	100
4) Vinyl Chloride	1.183	62	293740	45.0322 ug/L	100
5) 1,3-Butadiene	1.195	54	230333	41.9211 ug/L	99
6) Bromomethane	1.369	94	187870	51.2229 ug/L	100
7) Chloroethane	1.435	64	118373	41.1448 ug/L	98
8) Trichlorofluoromethane	1.508	101	258858	33.5197 ug/L	99
9) Diethyl ether	1.742	59	942196	255.1553 ug/L	100
10) 1,1-Dichloroethene	1.835	61	339940	44.4185 ug/L	100
11) Carbon Disulfide	1.846	76	770965	48.8620 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.864	101	213600	46.8057 ug/L	99
13) Iodomethane	1.936	142	310778	37.7532 ug/L	100
14) Acrolein	2.104	56	46645	79.7797 ug/L	99
15) Methylene Chloride	2.269	84	254433	47.8240 ug/L	99
16) Acetone	2.347	43	54014	55.7784 ug/L	100
17) trans-1,2-Dichloroethene	2.394	96	235769	48.1238 ug/L	99
18) Methyl acetate	2.440	43	149439	50.5872 ug/L #	99
19) Methyl Tert Butyl Ether	2.521	73	663407	52.3839 ug/L	99
20) 1,1-Dichloroethane	2.949	63	446369	46.2001 ug/L	99
21) Acrylonitrile	3.022	53	14455	11.5822 ug/L	98
22) Vinyl Acetate	3.256	86	26959	55.0780 ug/L	97
23) cis-1,2-Dichloroethene	3.537	96	273246	49.5344 ug/L	99
24) 2,2-Dichloropropane	3.662	77	350621	46.4978 ug/L	100
25) Cyclohexane	3.757	56	452442	51.0112 ug/L	99
26) Bromochloromethane	3.777	130	162457	50.0604 ug/L	100
27) Chloroform	3.908	83	451290	49.6132 ug/L	100
28) Carbon Tetrachloride	4.047	117	357651	48.3868 ug/L	100
30) 1,1,1-Trichloroethane	4.145	97	404052	49.5226 ug/L	100
31) 1,1-Dichloropropene	4.313	75	325834	46.8003 ug/L	99
32) 2-Butanone	4.354	43	84180	53.5753 ug/L #	72
33) Benzene	4.620	78	1007592	48.6054 ug/L	100
35) 1,2-Dichloroethane	4.869	62	322137	50.1337 ug/L	100
36) Methylcyclohexane	5.271	83	431778	50.5810 ug/L	99
37) Trichloroethene	5.300	130	279407	49.3766 ug/L	100
38) Dibromomethane	5.723	93	138275	50.4918 ug/L	99
39) 1,2-Dichloropropane	5.830	63	288384	50.6914 ug/L	100
40) Bromodichloromethane	5.920	83	348705	50.3991 ug/L	100
41) 1,4-Dioxane	6.143	88	17832	513.0737 ug/L	100
42) 2-Chloroethyl Vinyl Ether	6.511	63	139718	54.8095 ug/L	100
43) cis-1,3-Dichloropropene	6.525	75	435364	55.1064 ug/L	100
44) 4-Methyl-2-Pentanone	7.805	58	65896	48.8906 ug/L	99
45) trans-1,3-Dichloropropene	7.127	75	345932	52.4823 ug/L	100
48) Toluene	6.737	91	1117433	50.1164 ug/L	100
49) Tetrachloroethene	7.069	166	291063	48.3333 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017432.D
Acq On : 21 Jan 2016 19:51
Operator : ADC
Sample : WG554589-12 50.0ug/L ALTSRC 8260
Misc : 1,1 STD74446
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 27 12:18:13 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50)	1,1,2-Trichloroethane	7.261	97	198363	50.0568 ug/L	100
51)	Dibromochloromethane	7.402	129	264019	50.7007 ug/L	100
52)	1,3-Dichloropropane	7.484	76	348271	52.8525 ug/L	99
53)	1,2-Dibromoethane	7.570	107	199221	50.6267 ug/L	99
54)	2-Hexanone	7.805	43	132225	50.1161 ug/L	100
55)	Chlorobenzene	7.973	112	714609	50.5877 ug/L	99
56)	1-Chlorohexane	7.987	69	69861	53.7751 ug/L	99
57)	Ethylbenzene	8.010	106	382075	50.2733 ug/L	99
58)	1,1,1,2-Tetrachloroethane	8.028	131	263189	50.0979 ug/L	99
59)	m-,p-Xylene	8.109	106	944699	103.1680 ug/L	100
60)	o-Xylene	8.372	106	466094	52.0633 ug/L	99
61)	Styrene	8.407	104	734471	50.5708 ug/L	100
62)	Bromoform	8.410	173	164051	48.4917 ug/L	100
63)	Isopropylbenzene	8.563	105	1200669	51.3311 ug/L	100
65)	1,3,5-Trimethylbenzene	8.902	105	1020727	53.0142 ug/L	100
67)	Bromobenzene	8.763	156	303361	49.3125 ug/L	99
68)	n-Propylbenzene	8.795	91	1386221	54.2968 ug/L	100
69)	1,1,2,2-Tetrachloroethane	8.839	83	232711	51.8017 ug/L	100
70)	2-Chlorotoluene	8.867	91	819713	51.7823 ug/L	100
71)	1,2,3-Trichloropropane	8.902	110	63246	52.4544 ug/L	98
72)	trans-1,4-Dichloro-2-B...	8.928	53	55946	58.8260 ug/L #	98
73)	1,2,4-Trimethylbenzene	9.102	105	985113	51.2833 ug/L	100
74)	4-Chlorotoluene	8.957	91	865996	54.0225 ug/L	99
75)	tert-Butylbenzene	9.064	134	188895	52.2950 ug/L	99
76)	sec-Butylbenzene	9.154	105	1257995	53.5975 ug/L	100
77)	p-Isopropyltoluene	9.229	119	1041453	51.6676 ug/L	100
78)	1,3-Dichlorobenzene	9.255	146	570186	51.0752 ug/L	100
79)	1,4-Dichlorobenzene	9.302	146	576187	50.0922 ug/L	100
80)	n-Butylbenzene	9.432	91	960414	53.4929 ug/L	99
81)	1,2-Dichlorobenzene	9.504	146	549315	50.5301 ug/L	99
82)	1,2-Dibromo-3-Chloropr...	9.881	75	42370	52.3975 ug/L	98
83)	Hexachlorobutadiene	10.179	225	234430	52.7201 ug/L	100
84)	1,2,4-Trichlorobenzene	10.194	180	412779	50.2921 ug/L	100
85)	Naphthalene	10.344	128	708864	46.8373 ug/L	100
86)	1,2,3-Trichlorobenzene	10.428	180	375721	49.4758 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017432.D
Acq On : 21 Jan 2016 19:51
Operator : ADC
Sample : WG554589-12 50.0ug/L ALTSRC 8260
Misc : 1,1 STD74446
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 27 12:18:13 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

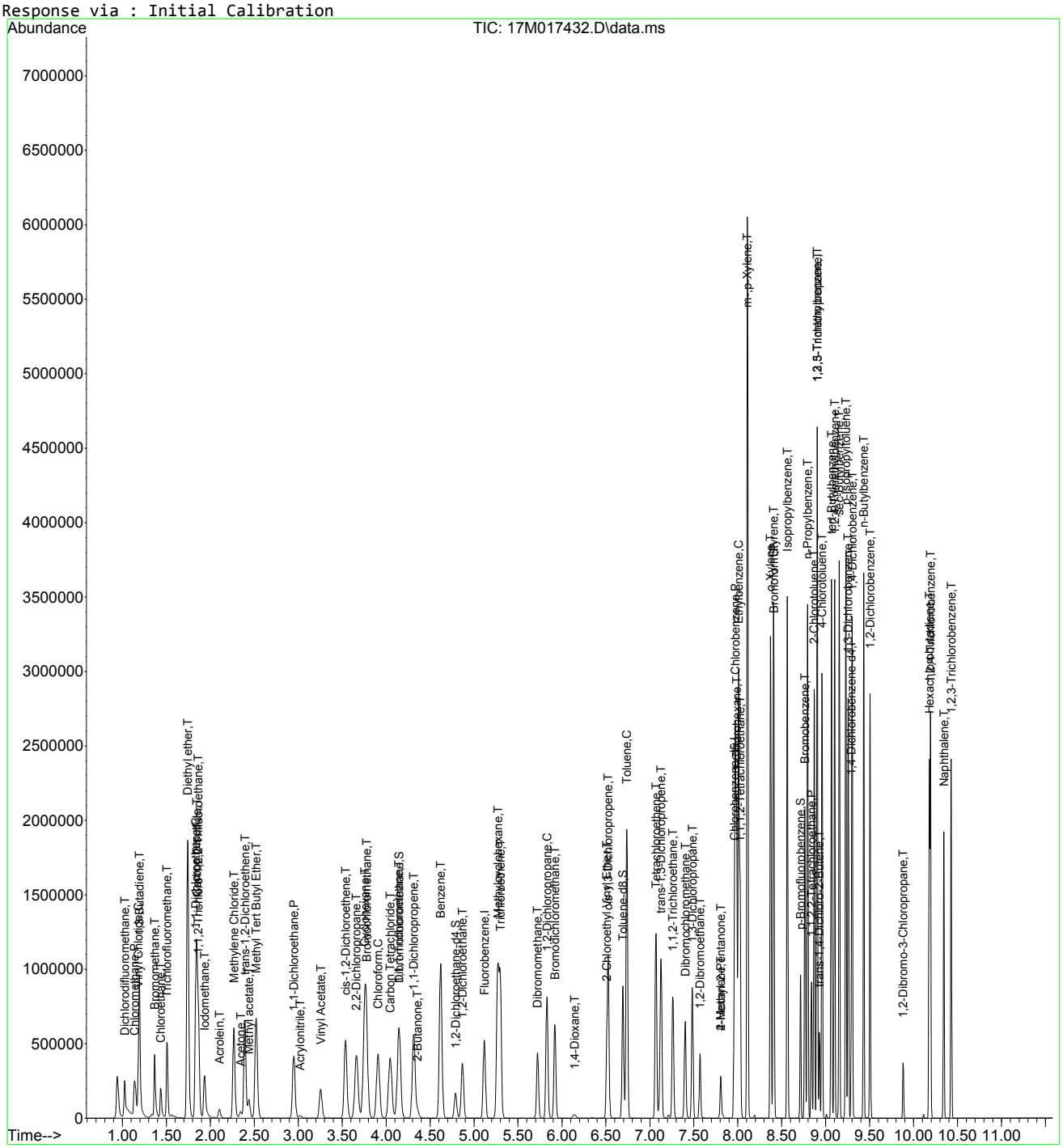

8260VMS.M Wed Jan 27 12:18:14 2016 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017432.D
Acq On : 21 Jan 2016 19:51
Operator : ADC
Sample : WG554589-12 50.0ug/L ALTSRC 8260
Misc : 1,1 STD74446
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 27 12:18:13 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	98	0.000
2	T	Dichlorodifluoromethane	50.000	37.538	24.9	68	0.000
3	P	Chloromethane	50.000	41.529	16.9	79	0.000
4	C	Vinyl Chloride	50.000	45.032	9.9#	85	0.000
5	T	1,3-Butadiene	50.000	41.921	16.2	77	0.000
6	T	Bromomethane	50.000	51.223	-2.4	97	0.000
7	T	Chloroethane	50.000	41.145	17.7	86	0.000
8	T	Trichlorofluoromethane	50.000	33.520	33.0#	62	-0.017
9	T	Diethyl ether	50.000	255.155	-410.3#	511	0.000
10	C	1,1-Dichloroethene	50.000	44.419	11.2#	88	-0.020
11	T	Carbon Disulfide	50.000	48.862	2.3	97	-0.021
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	46.806	6.4	91	-0.020
13	T	Iodomethane	50.000	37.753	24.5	75	-0.012
14	T	Acrolein	50.000	79.780	-59.6#	167	0.000
15	T	Methylene Chloride	50.000	47.824	4.4	98	0.000
16	T	Acetone	50.000	55.778	-11.6	127	0.020
17	T	trans-1,2-Dichloroethene	50.000	48.124	3.8	95	0.000
18	T	Methyl acetate	50.000	50.587	-1.2	99	0.000
19	T	Methyl Tert Butyl Ether	50.000	52.384	-4.8	111	0.012
20	P	1,1-Dichloroethane	50.000	46.200	7.6	93	0.000
21	T	Acrylonitrile	50.000	11.582	76.8#	24	0.000
22	T	Vinyl Acetate	50.000	55.078	-10.2	133	0.000
23	T	cis-1,2-Dichloroethene	50.000	49.534	0.9	99	0.000
24	T	2,2-Dichloropropane	50.000	46.498	7.0	90	0.000
25	T	Cyclohexane	50.000	51.011	-2.0	99	-0.012
26	T	Bromochloromethane	50.000	50.060	-0.1	98	0.000
27	C	Chloroform	50.000	49.613	0.8#	97	0.000
28	T	Carbon Tetrachloride	50.000	48.387	3.2	92	0.000
29	S	Dibromofluoromethane	25.000	25.982	-3.9	99	0.000
30	T	1,1,1-Trichloroethane	50.000	49.523	1.0	97	0.000
31	T	1,1-Dichloropropene	50.000	46.800	6.4	92	0.000
32	T	2-Butanone	50.000	53.575	-7.2	120	0.012
33	T	Benzene	50.000	48.605	2.8	98	0.000
34	S	1,2-Dichloroethane-d4	25.000	25.781	-3.1	102	0.000
35	T	1,2-Dichloroethane	50.000	50.134	-0.3	103	0.000
36	T	Methylcyclohexane	50.000	50.581	-1.2	98	0.000
37	T	Trichloroethene	50.000	49.377	1.2	100	0.000
38	T	Dibromomethane	50.000	50.492	-1.0	100	0.000
39	C	1,2-Dichloropropane	50.000	50.691	-1.4#	103	0.000
40	T	Bromodichloromethane	50.000	50.399	-0.8	98	0.000
41	T	1,4-Dioxane	100.000	513.074	-413.1#	519	0.000
42	T	2-Chloroethyl Vinyl Ether	50.000	54.810	-9.6	112	0.000
43	T	cis-1,3-Dichloropropene	50.000	55.106	-10.2	107	0.000
44	T	4-Methyl-2-Pentanone	50.000	48.891	2.2	110	0.000
45	T	trans-1,3-Dichloropropene	50.000	52.482	-5.0	101	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	97	0.000
47	S	Toluene-d8	25.000	26.110	-4.4	98	0.000
48	C	Toluene	50.000	50.116	-0.2#	99	0.000
49	T	Tetrachloroethene	50.000	48.333	3.3	95	0.000
50	T	1,1,2-Trichloroethane	50.000	50.057	-0.1	102	0.000
51	T	Dibromochloromethane	50.000	50.701	-1.4	99	0.000
52	T	1,3-Dichloropropane	50.000	52.852	-5.7	110	0.000
53	T	1,2-Dibromoethane	50.000	50.627	-1.3	103	0.000
54	T	2-Hexanone	50.000	50.116	-0.2	111	0.000
55	P	Chlorobenzene	50.000	50.588	-1.2	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017432.D
Acq On : 21 Jan 2016 19:51
Operator : ADC
Sample : WG554589-12 50.0ug/L ALTSRC 8260
Misc : 1,1 STD74446
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 27 12:18:13 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	50.000	53.775	-7.5	99	0.000
57	C	Ethylbenzene	50.000	50.273	-0.5#	98	0.000
58	T	1,1,1,2-Tetrachloroethane	50.000	50.098	-0.2	99	0.000
59	T	m-,p-Xylene	100.000	103.168	-3.2	99	0.000
60	T	o-Xylene	50.000	52.063	-4.1	102	0.000
61	T	Styrene	50.000	50.571	-1.1	97	0.000
62	P	Bromoform	50.000	48.492	3.0	97	0.000
63	T	Isopropylbenzene	50.000	51.331	-2.7	98	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	93	0.000
65	T	1,3,5-Trimethylbenzene	50.000	53.014	-6.0	96	0.000
66	S	p-Bromofluorobenzene	25.000	26.951	-7.8	96	0.000
67	T	Bromobenzene	50.000	49.313	1.4	94	0.000
68	T	n-Propylbenzene	50.000	54.297	-8.6	96	0.000
69	P	1,1,2,2-Tetrachloroethane	50.000	51.802	-3.6	104	0.000
70	T	2-Chlorotoluene	50.000	51.782	-3.6	96	0.000
71	T	1,2,3-Trichloropropane	50.000	52.454	-4.9	108	0.000
72	T	trans-1,4-Dichloro-2-Butene	50.000	58.826	-17.7	111	0.000
73	T	1,2,4-Trimethylbenzene	50.000	51.283	-2.6	92	0.000
74	T	4-Chlorotoluene	50.000	54.022	-8.0	100	0.000
75	T	tert-Butylbenzene	50.000	52.295	-4.6	98	0.000
76	T	sec-Butylbenzene	50.000	53.598	-7.2	96	0.000
77	T	p-Isopropyltoluene	50.000	51.668	-3.3	91	0.000
78	T	1,3-Dichlorobenzene	50.000	51.075	-2.2	94	0.000
79	T	1,4-Dichlorobenzene	50.000	50.092	-0.2	97	0.000
80	T	n-Butylbenzene	50.000	53.493	-7.0	92	0.000
81	T	1,2-Dichlorobenzene	50.000	50.530	-1.1	97	0.000
82	T	1,2-Dibromo-3-Chloropropane	50.000	52.397	-4.8	107	0.000
83	T	Hexachlorobutadiene	50.000	52.720	-5.4	95	0.000
84	T	1,2,4-Trichlorobenzene	50.000	50.292	-0.6	95	0.000
85	T	Naphthalene	50.000	46.837	6.3	93	0.000
86	T	1,2,3-Trichlorobenzene	50.000	49.476	1.0	96	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012916\
Data File : 17M017439.D
Acq On : 29 Jan 2016 16:33
Operator : ADC
Sample : WG554589-13 50ug/L Acrylonitrile
Misc : 1,1 STD74319
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 29 16:45:17 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	460591	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	328891	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	177233	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.154	111	125249	25.1291 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.516%		
34) 1,2-Dichloroethane-d4	4.791	65	126275	25.2663 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.065%		
47) Toluene-d8	6.693	98	475755	25.6976 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.790%		
66) p-Bromofluorobenzene	8.711	95	172941	26.0388 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.155%		
Target Compounds					Qvalue
3) Chloromethane	1.137	50	3322	0.4872 ug/L	98
5) 1,3-Butadiene	1.195	54	1168	0.2104 ug/L	90
6) Bromomethane	1.368	94	34993	8.8229 ug/L	100
11) Carbon Disulfide	1.861	76	489572	30.7114 ug/L	98
13) Iodomethane	1.942	142	123176	15.6792 ug/L	100
16) Acetone	2.333	43	43707	44.2884 ug/L	100
18) Methyl acetate	2.434	43	118526	39.7134 ug/L #	99
19) Methyl Tert Butyl Ether	2.512	73	589680	46.0873 ug/L	99
21) Acrylonitrile	3.016	53	59145	46.9069 ug/L	98
24) 2,2-Dichloropropane	3.763	77	4584	1.5471 ug/L #	1
25) Cyclohexane	3.766	56	386627	43.1461 ug/L	100
32) 2-Butanone	4.345	43	72388	45.6004 ug/L #	73
36) Methylcyclohexane	5.274	83	394981	45.7983 ug/L	99
42) 2-Chloroethyl Vinyl Ether	6.511	63	132439	51.4240 ug/L	98
44) 4-Methyl-2-Pentanone	7.802	58	63588	46.6969 ug/L	100
50) 1,1,2-Trichloroethane	7.313	97	1174	0.2900 ug/L #	1
54) 2-Hexanone	7.802	43	125950	46.7213 ug/L	99
56) 1-Chlorohexane	7.987	69	66037	49.7492 ug/L #	1
59) m-,p-Xylene	8.112	106	1261	0.1348 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.925	53	53956	51.6538 ug/L #	98
75) tert-Butylbenzene	9.064	134	514	0.1296 ug/L	76
78) 1,3-Dichlorobenzene	9.255	146	1615	0.1317 ug/L	95
79) 1,4-Dichlorobenzene	9.299	146	1976	0.1564 ug/L #	60
80) n-Butylbenzene	9.432	91	2453	0.1244 ug/L	93
83) Hexachlorobutadiene	10.176	225	615	0.1259 ug/L	95
84) 1,2,4-Trichlorobenzene	10.190	180	2114	0.2345 ug/L	90
85) Naphthalene	10.341	128	3495	0.2103 ug/L	99
86) 1,2,3-Trichlorobenzene	10.425	180	1575	0.1888 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012916\
Data File : 17M017439.D
Acq On : 29 Jan 2016 16:33
Operator : ADC
Sample : WG554589-13 50ug/L Acrylonitrile
Misc : 1,1 STD74319
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 29 16:45:17 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

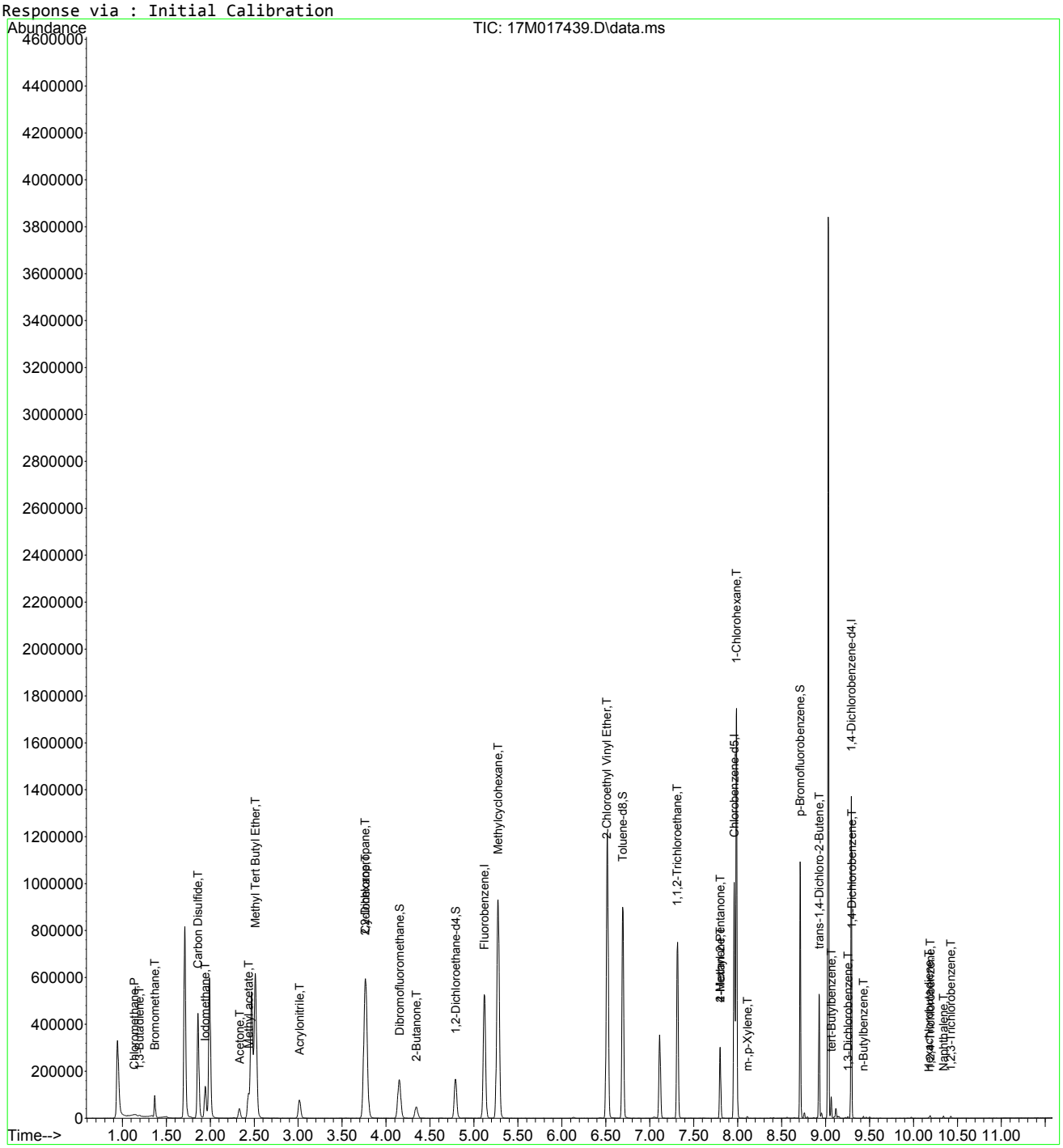

8260VMS.M Fri Jan 29 16:45:18 2016 Page: 2

Data Path : D:\MassHunter\GCMS\1\data\012916\
Data File : 17M017439.D
Acq On : 29 Jan 2016 16:33
Operator : ADC
Sample : WG554589-13 50ug/L Acrylonitrile
Misc : 1,1 STD74319
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 29 16:45:17 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	99	0.000
2	T	Dichlorodifluoromethane	50.000	0.000	100.0#	0	-1.030#
3	P	Chloromethane	50.000	0.487	99.0#	1	0.000
4	C	Vinyl Chloride	50.000	0.033	99.9#	0	0.000
5	T	1,3-Butadiene	50.000	0.210	99.6#	0	0.000
6	T	Bromomethane	50.000	8.823	82.4#	18	0.000
7	T	Chloroethane	50.000	0.000	100.0#	0	-1.441#
8	T	Trichlorofluoromethane	50.000	0.018	100.0#	0	-0.015
9	T	Diethyl ether	50.000	0.035	99.9#	0	0.000
10	C	1,1-Dichloroethene	50.000	0.045	99.9#	0	-0.012
11	T	Carbon Disulfide	50.000	30.711	38.6#	62	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	0.000	100.0#	0	-1.884#
13	T	Iodomethane	50.000	15.679	68.6#	30	0.000
14	T	Acrolein	50.000	0.000	100.0#	0	-2.095#
15	T	Methylene Chloride	50.000	0.082	99.8#	0	0.000
16	T	Acetone	50.000	44.288	11.4	103	0.000
17	T	trans-1,2-Dichloroethene	50.000	0.086	99.8#	0	0.000
18	T	Methyl acetate	50.000	39.713	20.6	78	0.000
19	T	Methyl Tert Butyl Ether	50.000	46.087	7.8	98	0.000
20	P	1,1-Dichloroethane	50.000	0.000	100.0#	0	-2.955#
21	T	Acrylonitrile	50.000	46.907	6.2	99	0.000
22	T	Vinyl Acetate	50.000	0.000	100.0#	0	-3.253#
23	T	cis-1,2-Dichloroethene	50.000	0.038	99.9#	0	0.000
24	T	2,2-Dichloropropane	50.000	1.547	96.9#	1	0.093
25	T	Cyclohexane	50.000	43.146	13.7	84	0.000
26	T	Bromochloromethane	50.000	0.000	100.0#	0	-3.780#
27	C	Chloroform	50.000	0.018	100.0#	0	0.000
28	T	Carbon Tetrachloride	50.000	0.000	100.0#	0	-4.055#
29	S	Dibromofluoromethane	25.000	25.129	-0.5	97	0.000
30	T	1,1,1-Trichloroethane	50.000	0.000	100.0#	0	-4.151#
31	T	1,1-Dichloropropene	50.000	0.043	99.9#	0	0.000
32	T	2-Butanone	50.000	45.600	8.8	103	0.000
33	T	Benzene	50.000	0.035	99.9#	0	0.000
34	S	1,2-Dichloroethane-d4	25.000	25.266	-1.1	101	0.000
35	T	1,2-Dichloroethane	50.000	0.000	100.0#	0	-4.869#
36	T	Methylcyclohexane	50.000	45.798	8.4	89	0.000
37	T	Trichloroethene	50.000	0.077	99.8#	0	0.000
38	T	Dibromomethane	50.000	0.000	100.0#	0	-5.723#
39	C	1,2-Dichloropropane	50.000	0.000	100.0#	0	-5.830#
40	T	Bromodichloromethane	50.000	0.000	100.0#	0	-5.920#
41	T	1,4-Dioxane	100.000	0.000	100.0#	0	-6.134#
42	T	2-Chloroethyl Vinyl Ether	50.000	51.424	-2.8	107	0.000
43	T	cis-1,3-Dichloropropene	50.000	0.056	99.9#	0	0.000
44	T	4-Methyl-2-Pentanone	50.000	46.697	6.6	107	0.000
45	T	trans-1,3-Dichloropropene	50.000	0.065	99.9#	0	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	99	0.000
47	S	Toluene-d8	25.000	25.698	-2.8	99	0.000
48	C	Toluene	50.000	0.072	99.9#	0	0.000
49	T	Tetrachloroethene	50.000	0.060	99.9#	0	0.000
50	T	1,1,2-Trichloroethane	50.000	0.290	99.4#	1	0.051
51	T	Dibromochloromethane	50.000	0.000	100.0#	0	-7.400#
52	T	1,3-Dichloropropane	50.000	0.000	100.0#	0	-7.484#
53	T	1,2-Dibromoethane	50.000	0.000	100.0#	0	-7.570#
54	T	2-Hexanone	50.000	46.721	6.6	105	0.000
55	P	Chlorobenzene	50.000	0.066	99.9#	0	0.000

Data Path : D:\MassHunter\GCMS\1\data\012916\
Data File : 17M017439.D
Acq On : 29 Jan 2016 16:33
Operator : ADC
Sample : WG554589-13 50ug/L Acrylonitrile
Misc : 1,1 STD74319
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 29 16:45:17 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	50.000	49.749	0.5	94	0.000
57	C	Ethylbenzene	50.000	0.054	99.9#	0	0.000
58	T	1,1,1,2-Tetrachloroethane	50.000	0.000	100.0#	0	-8.028#
59	T	m-,p-Xylene	100.000	0.135	99.9#	0	0.000
60	T	o-Xylene	50.000	0.042	99.9#	0	0.000
61	T	Styrene	50.000	0.070	99.9#	0	0.000
62	P	Bromoform	50.000	0.000	100.0#	0	-8.410#
63	T	Isopropylbenzene	50.000	0.044	99.9#	0	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	102	0.000
65	T	1,3,5-Trimethylbenzene	50.000	0.055	99.9#	0	0.000
66	S	p-Bromofluorobenzene	25.000	26.039	-4.2	102	0.000
67	T	Bromobenzene	50.000	0.078	99.8#	0	0.000
68	T	n-Propylbenzene	50.000	0.087	99.8#	0	0.000
69	P	1,1,2,2-Tetrachloroethane	50.000	0.000	100.0#	0	-8.836#
70	T	2-Chlorotoluene	50.000	0.054	99.9#	0	0.000
71	T	1,2,3-Trichloropropane	50.000	0.000	100.0#	0	-8.899#
72	T	trans-1,4-Dichloro-2-Butene	50.000	51.654	-3.3	107	0.000
73	T	1,2,4-Trimethylbenzene	50.000	0.094	99.8#	0	0.000
74	T	4-Chlorotoluene	50.000	0.105	99.8#	0	0.000
75	T	tert-Butylbenzene	50.000	0.130	99.7#	0	0.000
76	T	sec-Butylbenzene	50.000	0.098	99.8#	0	0.000
77	T	p-Isopropyltoluene	50.000	0.064	99.9#	0	0.000
78	T	1,3-Dichlorobenzene	50.000	0.132	99.7#	0	0.000
79	T	1,4-Dichlorobenzene	50.000	0.156	99.7#	0	0.000
80	T	n-Butylbenzene	50.000	0.124	99.8#	0	0.000
81	T	1,2-Dichlorobenzene	50.000	0.079	99.8#	0	0.000
82	T	1,2-Dibromo-3-Chloropropane	50.000	0.000	100.0#	0	-9.881#
83	T	Hexachlorobutadiene	50.000	0.126	99.7#	0	0.000
84	T	1,2,4-Trichlorobenzene	50.000	0.235	99.5#	0	0.000
85	T	Naphthalene	50.000	0.210	99.6#	0	0.000
86	T	1,2,3-Trichlorobenzene	50.000	0.189	99.6#	0	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017574.D
Acq On : 05 Feb 2016 11:48
Operator : ADC
Sample : WG556406-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 05 12:00:23 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.121	96	398079	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	284511	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	147016	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.154	111	111392	25.8585 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.434%		
34) 1,2-Dichloroethane-d4	4.791	65	112131	25.9595 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.838%		
47) Toluene-d8	6.693	98	419330	26.1829 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.732%		
66) p-Bromofluorobenzene	8.711	95	147038	26.6890 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.756%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.030	85	327793	54.2743 ug/L	99
3) Chloromethane	1.143	50	304544	51.6777 ug/L	100
4) Vinyl Chloride	1.186	62	288756	50.6972 ug/L	100
5) 1,3-Butadiene	1.198	54	158921	33.1246 ug/L	98
6) Bromomethane	1.371	94	143895	44.8374 ug/L	99
7) Chloroethane	1.441	64	111573	44.4134 ug/L	95
8) Trichlorofluoromethane	1.525	101	355460	52.7135 ug/L	100
9) Diethyl ether	1.736	59	144753	44.8935 ug/L	99
10) 1,1-Dichloroethene	1.852	61	350180	52.4018 ug/L	98
11) Carbon Disulfide	1.866	76	576451	41.8400 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.881	101	207763	52.1385 ug/L	99
13) Iodomethane	1.947	142	314556	43.5343 ug/L	99
14) Acrolein	2.095	56	23995	47.0003 ug/L	99
15) Methylene Chloride	2.275	84	222202	47.8314 ug/L	98
16) Acetone	2.327	43	42576	50.1635 ug/L	100
17) trans-1,2-Dichloroethene	2.402	96	209790	49.0400 ug/L	99
18) Methyl acetate	2.434	43	124385	48.2211 ug/L #	99
19) Methyl Tert Butyl Ether	2.512	73	520167	47.0385 ug/L	99
20) 1,1-Dichloroethane	2.955	63	417990	49.5459 ug/L	99
21) Acrylonitrile	3.013	53	51499	47.2567 ug/L	100
22) Vinyl Acetate	3.256	86	18510	44.2030 ug/L	98
23) cis-1,2-Dichloroethene	3.543	96	233197	48.4137 ug/L	98
24) 2,2-Dichloropropane	3.670	77	314791	47.7819 ug/L	95
25) Cyclohexane	3.769	56	364282	47.0363 ug/L	98
26) Bromochloromethane	3.777	130	140614	49.6223 ug/L	100
27) Chloroform	3.908	83	398101	50.1219 ug/L	99
28) Carbon Tetrachloride	4.052	117	328453	50.8901 ug/L	99
30) 1,1,1-Trichloroethane	4.151	97	357681	50.2059 ug/L	99
31) 1,1-Dichloropropene	4.319	75	303312	49.8924 ug/L	98
32) 2-Butanone	4.339	43	64286	46.8560 ug/L	98
33) Benzene	4.626	78	881897	48.7204 ug/L	100
35) 1,2-Dichloroethane	4.869	62	273876	48.8131 ug/L	99
36) Methylcyclohexane	5.277	83	350592	47.0350 ug/L	98
37) Trichloroethene	5.303	130	242227	49.0229 ug/L	98
38) Dibromomethane	5.723	93	121537	50.8251 ug/L	99
39) 1,2-Dichloropropane	5.830	63	241871	48.6900 ug/L	100
40) Bromodichloromethane	5.920	83	305339	50.5405 ug/L	100
41) 1,4-Dioxane	6.131	88	2754	90.7479 ug/L	94
42) 2-Chloroethyl Vinyl Ether	6.511	63	98608	44.3005 ug/L	99
43) cis-1,3-Dichloropropene	6.528	75	346630	50.2468 ug/L	99
44) 4-Methyl-2-Pentanone	7.799	58	49316	41.9031 ug/L	99
45) trans-1,3-Dichloropropene	7.127	75	291152	50.5865 ug/L	100
48) Toluene	6.739	91	964440	48.9373 ug/L	100
49) Tetrachloroethene	7.069	166	256481	48.1860 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017574.D
Acq On : 05 Feb 2016 11:48
Operator : ADC
Sample : WG556406-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 05 12:00:23 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,1,2-Trichloroethane	7.260	97	165892	47.3624 ug/L	99
51) Dibromochloromethane	7.399	129	225424	48.9762 ug/L	100
52) 1,3-Dichloropropane	7.483	76	274908	47.1999 ug/L	97
53) 1,2-Dibromoethane	7.570	107	164766	47.3715 ug/L	100
54) 2-Hexanone	7.799	43	100241	42.9848 ug/L	99
55) Chlorobenzene	7.973	112	599215	47.9916 ug/L	99
56) 1-Chlorohexane	7.987	69	57851	50.3805 ug/L	94
57) Ethylbenzene	8.010	106	330127	49.1446 ug/L	98
58) 1,1,1,2-Tetrachloroethane	8.025	131	225793	48.6260 ug/L	99
59) m-,p-Xylene	8.112	106	810162	100.0988 ug/L	99
60) o-Xylene	8.375	106	390022	49.2893 ug/L	99
61) Styrene	8.407	104	636749	49.6020 ug/L	99
62) Bromoform	8.410	173	141362	47.2745 ug/L	99
63) Isopropylbenzene	8.563	105	1038358	50.2239 ug/L	99
65) 1,3,5-Trimethylbenzene	8.902	105	895891	51.0716 ug/L	100
67) Bromobenzene	8.763	156	266906	47.6209 ug/L	99
68) n-Propylbenzene	8.795	91	1221456	52.5124 ug/L	100
69) 1,1,2,2-Tetrachloroethane	8.835	83	181755	44.4074 ug/L	100
70) 2-Chlorotoluene	8.870	91	725587	50.3096 ug/L	99
71) 1,2,3-Trichloropropane	8.899	110	51237	46.6418 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.928	53	38365	44.2769 ug/L #	94
73) 1,2,4-Trimethylbenzene	9.102	105	895357	51.1598 ug/L	100
74) 4-Chlorotoluene	8.957	91	728739	49.8968 ug/L	99
75) tert-Butylbenzene	9.064	134	160593	48.7987 ug/L	98
76) sec-Butylbenzene	9.154	105	1107605	51.7956 ug/L	100
77) p-Isopropyltoluene	9.229	119	958623	52.1998 ug/L	100
78) 1,3-Dichlorobenzene	9.255	146	499725	49.1322 ug/L	100
79) 1,4-Dichlorobenzene	9.302	146	492479	46.9933 ug/L	100
80) n-Butylbenzene	9.432	91	877574	53.6492 ug/L	99
81) 1,2-Dichlorobenzene	9.504	146	469741	47.4274 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.881	75	32866	44.6109 ug/L	97
83) Hexachlorobutadiene	10.179	225	194104	47.9114 ug/L	100
84) 1,2,4-Trichlorobenzene	10.193	180	359080	48.0193 ug/L	99
85) Naphthalene	10.344	128	651779	47.2684 ug/L	100
86) 1,2,3-Trichlorobenzene	10.428	180	323542	46.7627 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017574.D
Acq On : 05 Feb 2016 11:48
Operator : ADC
Sample : WG556406-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 05 12:00:23 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

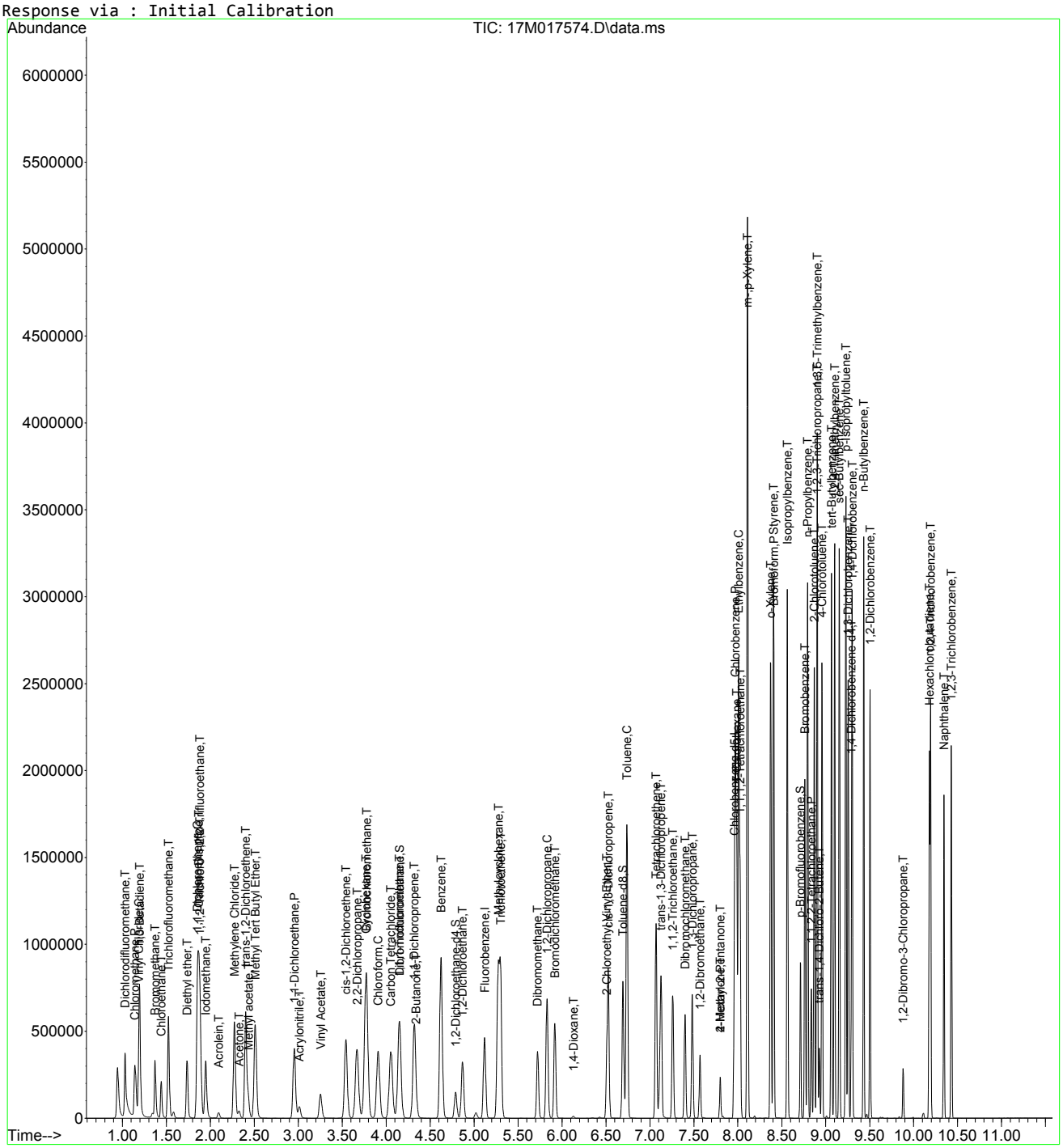

8260VMS.M Fri Feb 05 12:00:24 2016 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017574.D
Acq On : 05 Feb 2016 11:48
Operator : ADC
Sample : WG556406-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 05 12:00:23 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	85	0.000
2	T	Dichlorodifluoromethane	0.379	0.412	-8.7	86	0.000
3	P	Chloromethane	0.370	0.383	-3.5	86	0.000
4	C	Vinyl Chloride	0.358	0.363	-1.4#	84	0.000
5	T	1,3-Butadiene	0.301	0.200	33.6#	53	0.000
6	T	Bromomethane	0.232	0.181	22.0	74	0.000
7	T	Chloroethane	0.158	0.140	11.4	81	0.000
8	T	Trichlorofluoromethane	0.423	0.446	-5.4	84	0.000
9	T	Diethyl ether	0.202	0.182	9.9	79	0.000
10	C	1,1-Dichloroethene	0.420	0.440	-4.8#	90	0.000
11	T	Carbon Disulfide	0.865	0.724	16.3	73	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.250	0.261	-4.4	88	0.000
13	T	Iodomethane	0.319	0.395	-23.8	76	0.000
14	T	Acrolein	0.032	0.030	6.3	86	0.000
15	T	Methylene Chloride	0.292	0.279	4.5	86	0.000
16	T	Acetone	0.056	0.053	5.4	100	0.000
17	T	trans-1,2-Dichloroethene	0.269	0.264	1.9	85	0.000
18	T	Methyl acetate	0.162	0.156	3.7	82	0.000
19	T	Methyl Tert Butyl Ether	0.694	0.653	5.9	87	0.000
20	P	1,1-Dichloroethane	0.530	0.525	0.9	87	0.000
21	T	Acrylonitrile	0.068	0.065	4.4	87	0.000
22	T	Vinyl Acetate	0.023	0.023	0.0	91	0.000
23	T	cis-1,2-Dichloroethene	0.302	0.293	3.0	85	0.000
24	T	2,2-Dichloropropane	0.332	0.395	-19.0	81	0.000
25	T	Cyclohexane	0.486	0.458	5.8	80	0.000
26	T	Bromochloromethane	0.178	0.177	0.6	85	0.000
27	C	Chloroform	0.499	0.500	-0.2#	86	0.000
28	T	Carbon Tetrachloride	0.405	0.413	-2.0	85	0.000
29	S	Dibromofluoromethane	0.271	0.280	-3.3	86	0.000
30	T	1,1,1-Trichloroethane	0.447	0.449	-0.4	86	0.000
31	T	1,1-Dichloropropene	0.382	0.381	0.3	86	0.000
32	T	2-Butanone	0.086	0.081	5.8	92	0.000
33	T	Benzene	1.137	1.108	2.6	86	0.000
34	S	1,2-Dichloroethane-d4	0.271	0.282	-4.1	90	0.000
35	T	1,2-Dichloroethane	0.352	0.344	2.3	88	0.000
36	T	Methylcyclohexane	0.468	0.440	6.0	79	0.000
37	T	Trichloroethene	0.310	0.304	1.9	87	0.000
38	T	Dibromomethane	0.150	0.153	-2.0	88	0.000
39	C	1,2-Dichloropropane	0.312	0.304	2.6#	86	0.000
40	T	Bromodichloromethane	0.379	0.384	-1.3	86	0.000
41	T	1,4-Dioxane	0.002	0.002	0.0	80	0.000
42	T	2-Chloroethyl Vinyl Ether	0.140	0.124	11.4	79	0.000
43	T	cis-1,3-Dichloropropene	0.433	0.435	-0.5	85	0.000
44	T	4-Methyl-2-Pentanone	0.074	0.062	16.2	83	0.000
45	T	trans-1,3-Dichloropropene	0.361	0.366	-1.4	85	0.000
46	I	Chlorobenzene-d5	1.000	1.000	0.0	86	0.000
47	S	Toluene-d8	1.407	1.474	-4.8	87	0.000
48	C	Toluene	1.732	1.695	2.1#	85	0.000
49	T	Tetrachloroethene	0.468	0.451	3.6	84	0.000
50	T	1,1,2-Trichloroethane	0.308	0.292	5.2	86	0.000
51	T	Dibromochloromethane	0.404	0.396	2.0	85	0.000
52	T	1,3-Dichloropropane	0.512	0.483	5.7	87	0.000
53	T	1,2-Dibromoethane	0.306	0.290	5.2	85	0.000
54	T	2-Hexanone	0.205	0.176	14.1	84	0.000
55	P	Chlorobenzene	1.097	1.053	4.0	84	0.000

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017574.D
Acq On : 05 Feb 2016 11:48
Operator : ADC
Sample : WG556406-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 05 12:00:23 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	0.101	0.102	-1.0	82	0.000
57	C	Ethylbenzene	0.590	0.580	1.7#	85	0.000
58	T	1,1,1,2-Tetrachloroethane	0.408	0.397	2.7	85	0.000
59	T	m-,p-Xylene	0.711	0.712	-0.1	85	0.000
60	T	o-Xylene	0.695	0.685	1.4	85	0.000
61	T	Styrene	1.128	1.119	0.8	84	0.000
62	P	Bromoform	0.263	0.248	5.7	83	0.000
63	T	Isopropylbenzene	1.817	1.825	-0.4	85	0.000
64	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	84	0.000
65	T	1,3,5-Trimethylbenzene	2.983	3.047	-2.1	85	0.000
66	S	p-Bromofluorobenzene	0.937	1.000	-6.7	86	0.000
67	T	Bromobenzene	0.953	0.908	4.7	83	0.000
68	T	n-Propylbenzene	3.955	4.154	-5.0	85	0.000
69	P	1,1,2,2-Tetrachloroethane	0.696	0.618	11.2	82	0.000
70	T	2-Chlorotoluene	2.453	2.468	-0.6	85	0.000
71	T	1,2,3-Trichloropropane	0.187	0.174	7.0	87	0.000
72	T	trans-1,4-Dichloro-2-Butene	0.147	0.130	11.6	76	0.000
73	T	1,2,4-Trimethylbenzene	2.976	3.045	-2.3	84	0.000
74	T	4-Chlorotoluene	2.484	2.478	0.2	84	0.000
75	T	tert-Butylbenzene	0.560	0.546	2.5	84	0.000
76	T	sec-Butylbenzene	3.636	3.767	-3.6	84	0.000
77	T	p-Isopropyltoluene	3.123	3.260	-4.4	84	0.000
78	T	1,3-Dichlorobenzene	1.730	1.700	1.7	83	0.000
79	T	1,4-Dichlorobenzene	1.782	1.675	6.0	83	0.000
80	T	n-Butylbenzene	2.782	2.985	-7.3	84	0.000
81	T	1,2-Dichlorobenzene	1.684	1.598	5.1	83	0.000
82	T	1,2-Dibromo-3-Chloropropane	0.125	0.112	10.4	83	0.000
83	T	Hexachlorobutadiene	0.689	0.660	4.2	79	0.000
84	T	1,2,4-Trichlorobenzene	1.272	1.221	4.0	82	0.000
85	T	Naphthalene	2.345	2.217	5.5	85	0.000
86	T	1,2,3-Trichlorobenzene	1.177	1.100	6.5	83	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017574.D
Acq On : 05 Feb 2016 11:48
Operator : ADC
Sample : WG556406-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 05 12:00:23 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	85	0.000
2	T	Dichlorodifluoromethane	50.000	54.274	-8.5	86	0.000
3	P	Chloromethane	50.000	51.678	-3.4	86	0.000
4	C	Vinyl Chloride	50.000	50.697	-1.4#	84	0.000
5	T	1,3-Butadiene	50.000	33.125	33.8#	53	0.000
6	T	Bromomethane	50.000	44.837	10.3	74	0.000
7	T	Chloroethane	50.000	44.413	11.2	81	0.000
8	T	Trichlorofluoromethane	50.000	52.714	-5.4	84	0.000
9	T	Diethyl ether	50.000	44.894	10.2	79	0.000
10	C	1,1-Dichloroethene	50.000	52.402	-4.8#	90	0.000
11	T	Carbon Disulfide	50.000	41.840	16.3	73	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	52.138	-4.3	88	0.000
13	T	Iodomethane	50.000	43.534	12.9	76	0.000
14	T	Acrolein	50.000	47.000	6.0	86	0.000
15	T	Methylene Chloride	50.000	47.831	4.3	86	0.000
16	T	Acetone	50.000	50.163	-0.3	100	0.000
17	T	trans-1,2-Dichloroethene	50.000	49.040	1.9	85	0.000
18	T	Methyl acetate	50.000	48.221	3.6	82	0.000
19	T	Methyl Tert Butyl Ether	50.000	47.039	5.9	87	0.000
20	P	1,1-Dichloroethane	50.000	49.546	0.9	87	0.000
21	T	Acrylonitrile	50.000	47.257	5.5	87	0.000
22	T	Vinyl Acetate	50.000	44.203	11.6	91	0.000
23	T	cis-1,2-Dichloroethene	50.000	48.414	3.2	85	0.000
24	T	2,2-Dichloropropane	50.000	47.782	4.4	81	0.000
25	T	Cyclohexane	50.000	47.036	5.9	80	0.000
26	T	Bromochloromethane	50.000	49.622	0.8	85	0.000
27	C	Chloroform	50.000	50.122	-0.2#	86	0.000
28	T	Carbon Tetrachloride	50.000	50.890	-1.8	85	0.000
29	S	Dibromofluoromethane	25.000	25.858	-3.4	86	0.000
30	T	1,1,1-Trichloroethane	50.000	50.206	-0.4	86	0.000
31	T	1,1-Dichloropropene	50.000	49.892	0.2	86	0.000
32	T	2-Butanone	50.000	46.856	6.3	92	0.000
33	T	Benzene	50.000	48.720	2.6	86	0.000
34	S	1,2-Dichloroethane-d4	25.000	25.959	-3.8	90	0.000
35	T	1,2-Dichloroethane	50.000	48.813	2.4	88	0.000
36	T	Methylcyclohexane	50.000	47.035	5.9	79	0.000
37	T	Trichloroethene	50.000	49.023	2.0	87	0.000
38	T	Dibromomethane	50.000	50.825	-1.7	88	0.000
39	C	1,2-Dichloropropane	50.000	48.690	2.6#	86	0.000
40	T	Bromodichloromethane	50.000	50.541	-1.1	86	0.000
41	T	1,4-Dioxane	100.000	90.748	9.3	80	0.000
42	T	2-Chloroethyl Vinyl Ether	50.000	44.301	11.4	79	0.000
43	T	cis-1,3-Dichloropropene	50.000	50.247	-0.5	85	0.000
44	T	4-Methyl-2-Pentanone	50.000	41.903	16.2	83	0.000
45	T	trans-1,3-Dichloropropene	50.000	50.587	-1.2	85	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	86	0.000
47	S	Toluene-d8	25.000	26.183	-4.7	87	0.000
48	C	Toluene	50.000	48.937	2.1#	85	0.000
49	T	Tetrachloroethene	50.000	48.186	3.6	84	0.000
50	T	1,1,2-Trichloroethane	50.000	47.362	5.3	86	0.000
51	T	Dibromochloromethane	50.000	48.976	2.0	85	0.000
52	T	1,3-Dichloropropane	50.000	47.200	5.6	87	0.000
53	T	1,2-Dibromoethane	50.000	47.372	5.3	85	0.000
54	T	2-Hexanone	50.000	42.985	14.0	84	0.000
55	P	Chlorobenzene	50.000	47.992	4.0	84	0.000

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017574.D
Acq On : 05 Feb 2016 11:48
Operator : ADC
Sample : WG556406-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 05 12:00:23 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	50.000	50.381	-0.8	82	0.000
57	C	Ethylbenzene	50.000	49.145	1.7#	85	0.000
58	T	1,1,1,2-Tetrachloroethane	50.000	48.626	2.7	85	0.000
59	T	m-,p-Xylene	100.000	100.099	-0.1	85	0.000
60	T	o-Xylene	50.000	49.289	1.4	85	0.000
61	T	Styrene	50.000	49.602	0.8	84	0.000
62	P	Bromoform	50.000	47.275	5.5	83	0.000
63	T	Isopropylbenzene	50.000	50.224	-0.4	85	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	84	0.000
65	T	1,3,5-Trimethylbenzene	50.000	51.072	-2.1	85	0.000
66	S	p-Bromofluorobenzene	25.000	26.689	-6.8	86	0.000
67	T	Bromobenzene	50.000	47.621	4.8	83	0.000
68	T	n-Propylbenzene	50.000	52.512	-5.0	85	0.000
69	P	1,1,2,2-Tetrachloroethane	50.000	44.407	11.2	82	0.000
70	T	2-Chlorotoluene	50.000	50.310	-0.6	85	0.000
71	T	1,2,3-Trichloropropane	50.000	46.642	6.7	87	0.000
72	T	trans-1,4-Dichloro-2-Butene	50.000	44.277	11.4	76	0.000
73	T	1,2,4-Trimethylbenzene	50.000	51.160	-2.3	84	0.000
74	T	4-Chlorotoluene	50.000	49.897	0.2	84	0.000
75	T	tert-Butylbenzene	50.000	48.799	2.4	84	0.000
76	T	sec-Butylbenzene	50.000	51.796	-3.6	84	0.000
77	T	p-Isopropyltoluene	50.000	52.200	-4.4	84	0.000
78	T	1,3-Dichlorobenzene	50.000	49.132	1.7	83	0.000
79	T	1,4-Dichlorobenzene	50.000	46.993	6.0	83	0.000
80	T	n-Butylbenzene	50.000	53.649	-7.3	84	0.000
81	T	1,2-Dichlorobenzene	50.000	47.427	5.1	83	0.000
82	T	1,2-Dibromo-3-Chloropropane	50.000	44.611	10.8	83	0.000
83	T	Hexachlorobutadiene	50.000	47.911	4.2	79	0.000
84	T	1,2,4-Trichlorobenzene	50.000	48.019	4.0	82	0.000
85	T	Naphthalene	50.000	47.268	5.5	85	0.000
86	T	1,2,3-Trichlorobenzene	50.000	46.763	6.5	83	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

2.1.1.5 Raw QC Data

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017419.D
Acq On : 21 Jan 2016 15:25
Operator : ADC
Sample : WG554589-01 50ng BFB STD 8260
Misc : 1,1 STD73676
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
Last Update : Wed Jan 27 12:15:43 2016

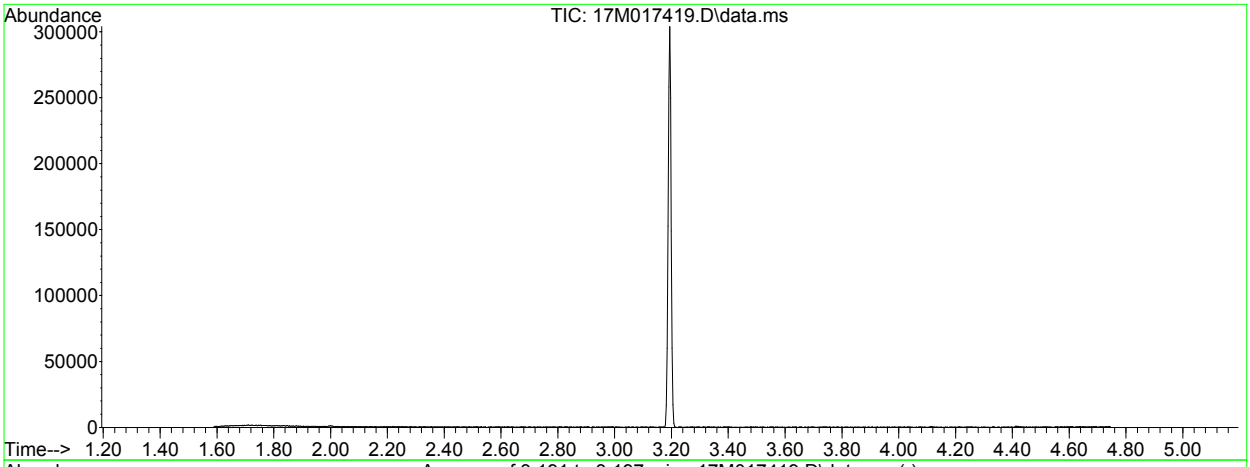

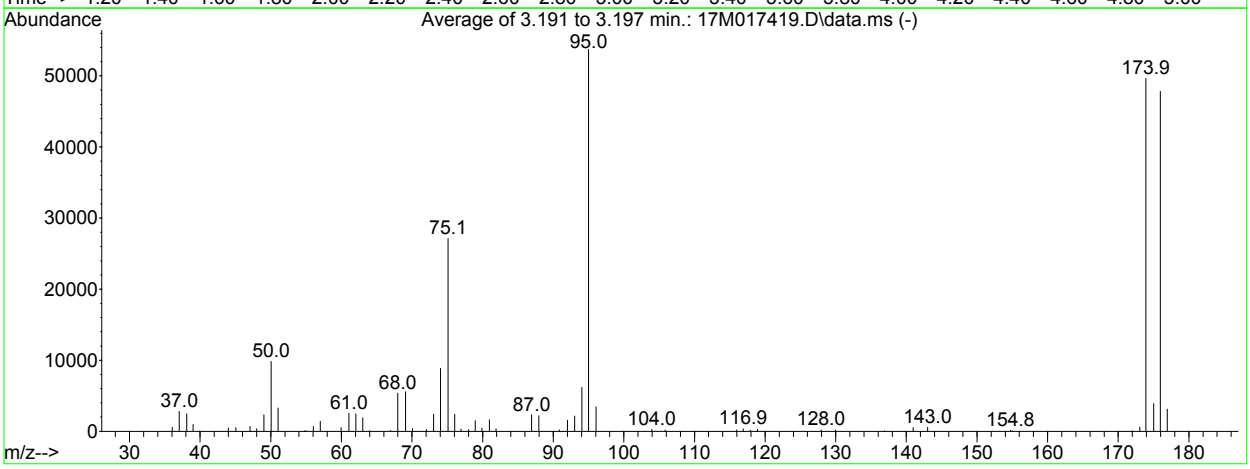

AutoFind: Scans 554, 555, 556; Background Corrected with Scan 546

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.3	9806	PASS
75	95	30	60	50.5	27128	PASS
95	95	100	100	100.0	53731	PASS
96	95	5	9	6.4	3455	PASS
173	174	0.00	2	1.2	576	PASS
174	95	50	100	92.4	49645	PASS
175	174	5	9	7.9	3904	PASS
176	174	95	101	96.3	47824	PASS
177	176	5	9	6.5	3098	PASS

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017573.D
Acq On : 05 Feb 2016 11:30
Operator : ADC
Sample : WG556406-01 50ng BFB
Misc : 1,1 STD73676
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
Last Update : Wed Jan 27 12:15:43 2016

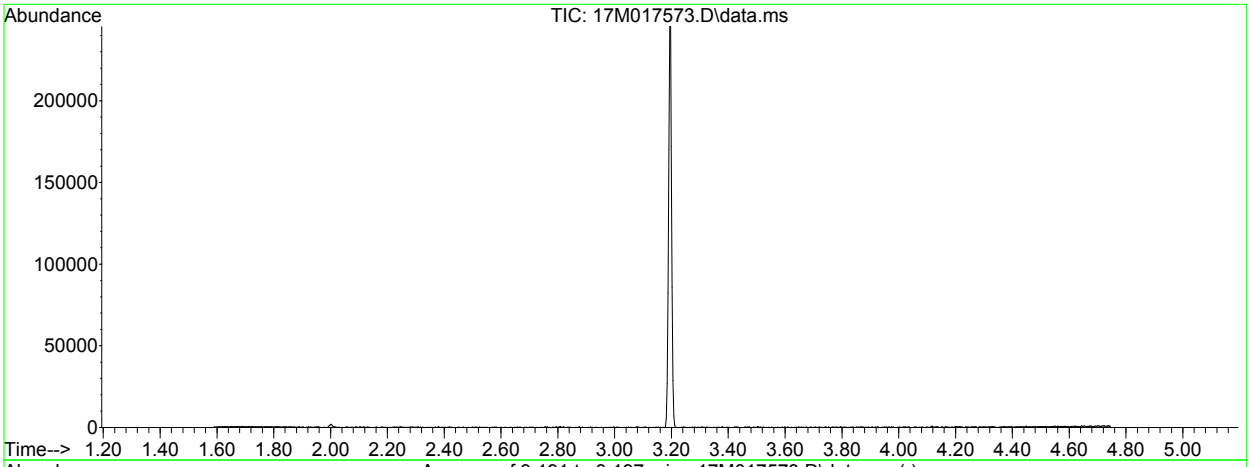

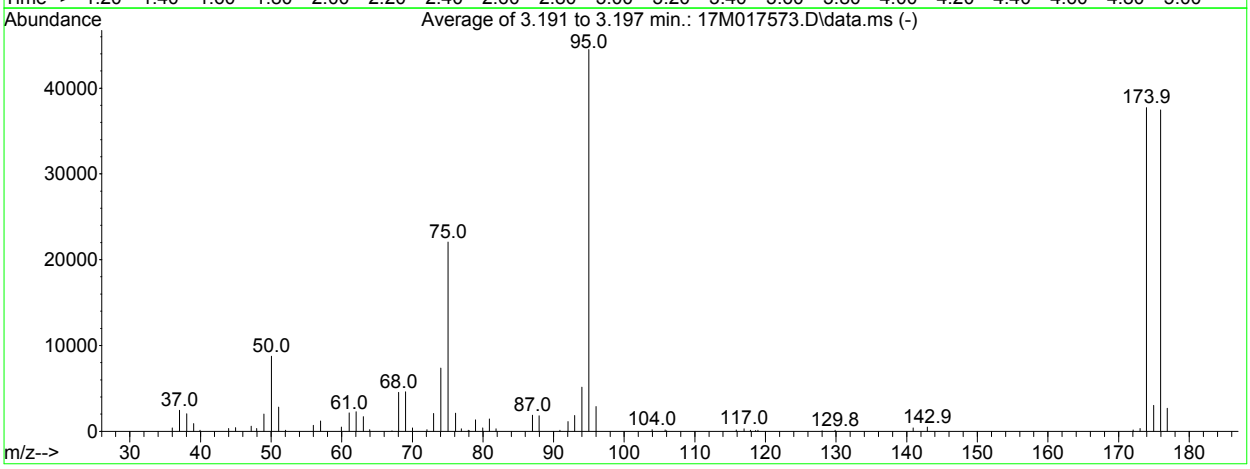

AutoFind: Scans 554, 555, 556; Background Corrected with Scan 546

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.7	8759	PASS
75	95	30	60	49.6	22075	PASS
95	95	100	100	100.0	44525	PASS
96	95	5	9	6.5	2879	PASS
173	174	0.00	2	0.8	313	PASS
174	95	50	100	84.7	37725	PASS
175	174	5	9	8.0	3032	PASS
176	174	95	101	99.3	37453	PASS
177	176	5	9	7.2	2697	PASS

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017576.D
Acq On : 05 Feb 2016 12:31
Operator : ADC
Sample : WG556408-01 BLK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 08 09:25:44 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	379280	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	268707	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	136621	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	98055	23.8907 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.563%		
34) 1,2-Dichloroethane-d4	4.788	65	111433	27.0766 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.306%		
47) Toluene-d8	6.693	98	396043	26.1833 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.733%		
66) p-Bromofluorobenzene	8.711	95	139503	27.2479 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.992%		
Target Compounds					Qvalue
6) Bromomethane	1.374	94	227	Below Cal	90
16) Acetone	2.333	43	1475	Below Cal	86
18) Methyl acetate	2.333	43	1475	0.6002 ug/L #	62

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017576.D
Acq On : 05 Feb 2016 12:31
Operator : ADC
Sample : WG556408-01 BLK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 08 09:25:44 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

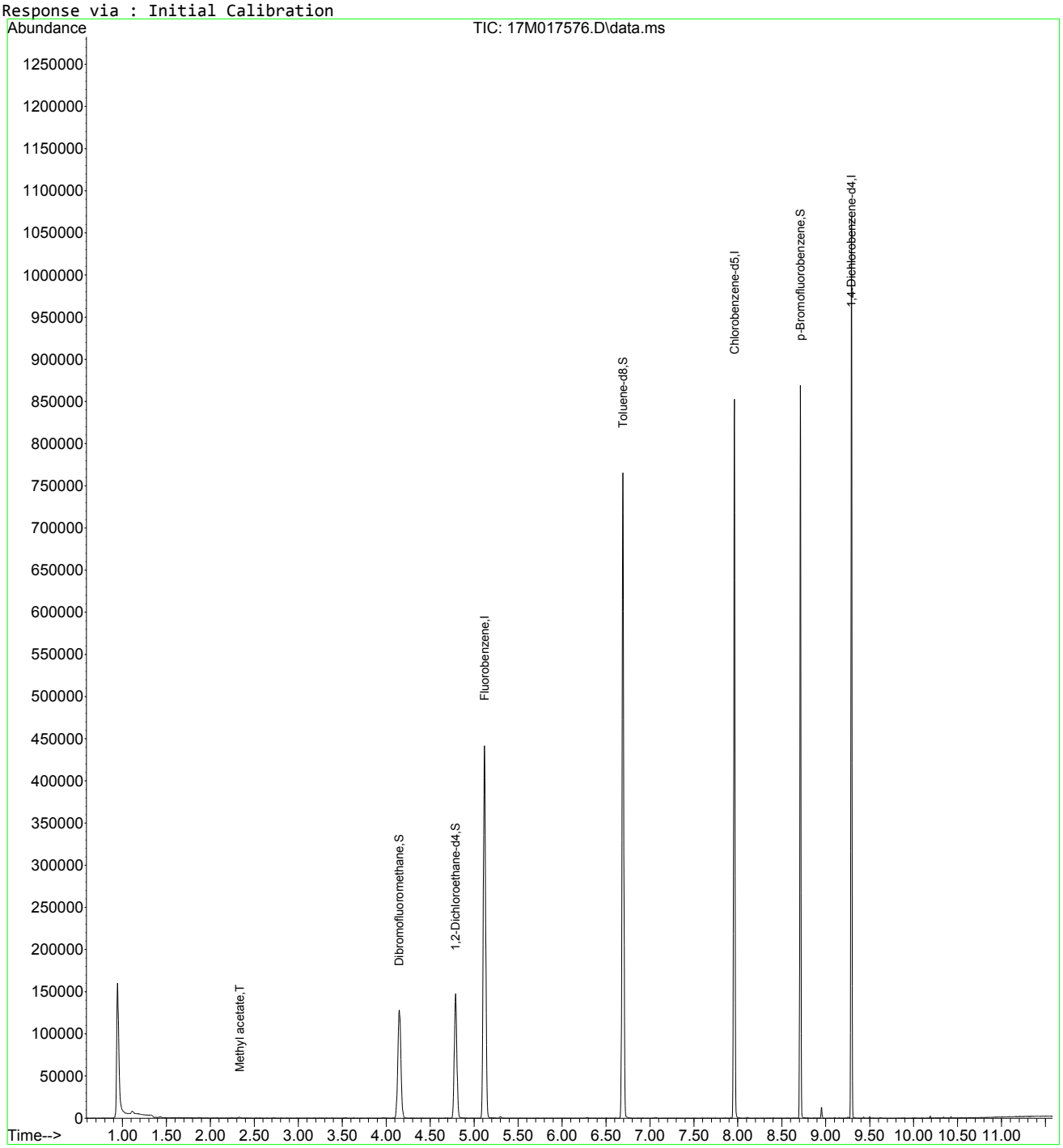

8260VMS.M Mon Feb 08 09:25:45 2016 Page: 2

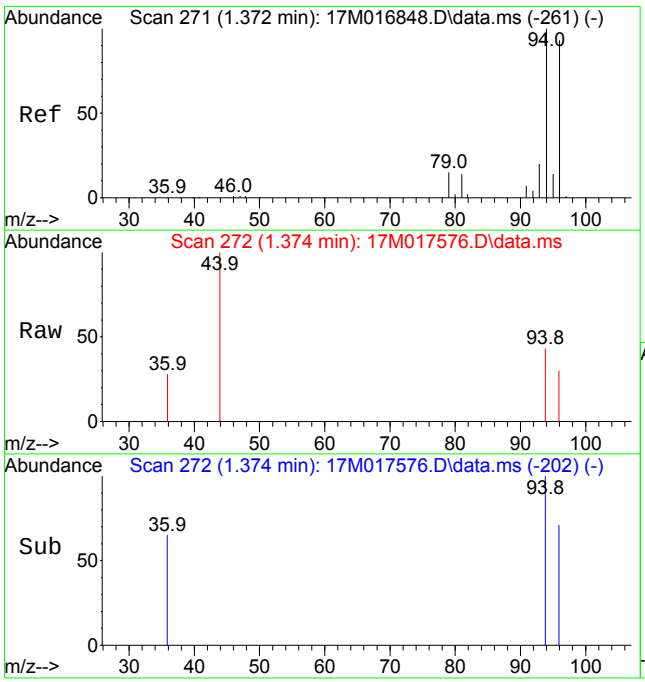

#6
Bromomethane
Concen: Below Cal
RT: 1.374 min Scan# 272
Delta R.T. 0.003 min
Lab File: 17M017576.D
Acq: 05 Feb 2016 12:31

Tgt Ion: 94 Resp: 227

Ion	Ratio	Lower	Upper
94	100		
96	84.1	56.0	130.6

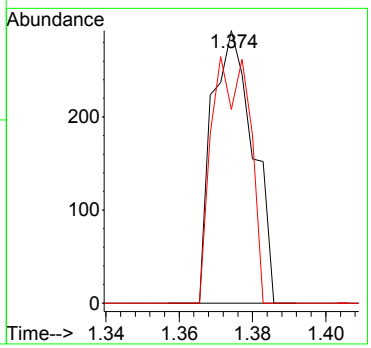

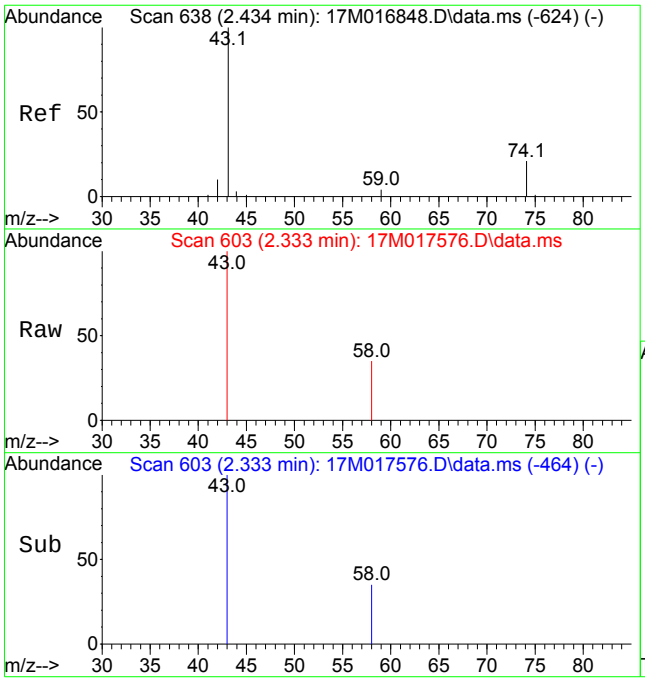

#18
Methyl acetate
Concen: 0.6002 ug/L
RT: 2.333 min Scan# 603
Delta R.T. -0.098 min
Lab File: 17M017576.D
Acq: 05 Feb 2016 12:31

Tgt Ion: 43 Resp: 1475

Ion	Ratio	Lower	Upper
43	100		
74	0.0	20.2	20.2#
59	0.0	6.6	10.0#

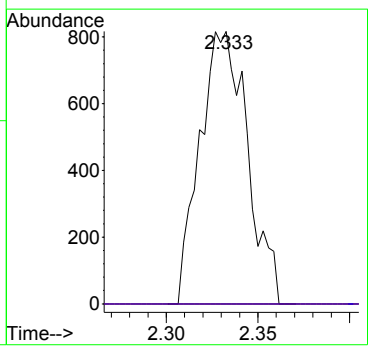

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017577.D
Acq On : 05 Feb 2016 12:51
Operator : ADC
Sample : WG556408-02 20ug/L LCS
Misc : 1,1 STD74621
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 05 13:03:16 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	373520	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	265086	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	135568	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	104297	25.8034 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.214%		
34) 1,2-Dichloroethane-d4	4.788	65	108211	26.6991 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.796%		
47) Toluene-d8	6.693	98	393390	26.3632 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.453%		
66) p-Bromofluorobenzene	8.711	95	139697	27.4978 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.991%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.027	85	120564	21.2749 ug/L	99
3) Chloromethane	1.140	50	115748	20.9325 ug/L	99
4) Vinyl Chloride	1.183	62	110100	20.6013 ug/L	100
5) 1,3-Butadiene	1.195	54	82133	18.2449 ug/L	99
6) Bromomethane	1.369	94	62074	20.2028 ug/L	100
7) Chloroethane	1.438	64	39754	16.8652 ug/L	87
8) Trichlorofluoromethane	1.508	101	94666	14.9617 ug/L	100
9) Diethyl ether	1.739	59	311731	103.0366 ug/L	98
10) 1,1-Dichloroethene	1.841	61	119916	19.1244 ug/L	98
11) Carbon Disulfide	1.852	76	245818	19.0151 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.867	101	75398	20.1653 ug/L	98
13) Iodomethane	1.939	142	93269	14.7346 ug/L	99
14) Acrolein	2.101	56	55075	114.9715 ug/L	99
15) Methylene Chloride	2.269	84	86576	19.8618 ug/L	98
16) Acetone	2.339	43	22363	27.2275 ug/L	96
17) trans-1,2-Dichloroethene	2.394	96	78904	19.6571 ug/L	99
18) Methyl acetate	2.437	43	52309	21.6123 ug/L #	99
19) Methyl Tert Butyl Ether	2.515	73	231129	22.2751 ug/L	100
20) 1,1-Dichloroethane	2.949	63	151642	19.1565 ug/L	99
21) Acrylonitrile	3.022	53	5004	4.8937 ug/L	97
22) Vinyl Acetate	3.253	86	7106	20.5588 ug/L	98
23) cis-1,2-Dichloroethene	3.540	96	90064	19.9275 ug/L	97
24) 2,2-Dichloropropane	3.662	77	109230	18.2737 ug/L	95
25) Cyclohexane	3.760	56	150582	20.7216 ug/L	98
26) Bromochloromethane	3.777	130	54191	20.3813 ug/L	99
27) Chloroform	3.905	83	152001	20.3956 ug/L	99
28) Carbon Tetrachloride	4.047	117	115789	19.1198 ug/L	99
30) 1,1,1-Trichloroethane	4.148	97	132456	19.8146 ug/L	99
31) 1,1-Dichloropropene	4.316	75	106618	18.6909 ug/L	98
32) 2-Butanone	4.348	43	31081	24.1434 ug/L	89
33) Benzene	4.623	78	336843	19.8324 ug/L	100
35) 1,2-Dichloroethane	4.866	62	111185	21.1195 ug/L	98
36) Methylcyclohexane	5.271	83	142829	20.4217 ug/L	98
37) Trichloroethene	5.300	130	95646	20.6300 ug/L	97
38) Dibromomethane	5.720	93	46303	20.6364 ug/L	99
39) 1,2-Dichloropropane	5.830	63	95999	20.5958 ug/L	99
40) Bromodichloromethane	5.917	83	114140	20.1350 ug/L	100
41) 1,4-Dioxane	6.134	88	5906	207.4060 ug/L	94
42) 2-Chloroethyl Vinyl Ether	6.511	63	40338	19.3137 ug/L	100
43) cis-1,3-Dichloropropene	6.525	75	142365	21.9938 ug/L	99
44) 4-Methyl-2-Pentanone	7.802	58	24014	21.7460 ug/L	99
45) trans-1,3-Dichloropropene	7.127	75	114270	21.1594 ug/L	99
48) Toluene	6.737	91	367080	19.9911 ug/L	100
49) Tetrachloroethene	7.069	166	93602	18.8739 ug/L	98

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017577.D
Acq On : 05 Feb 2016 12:51
Operator : ADC
Sample : WG556408-02 20ug/L LCS
Misc : 1,1 STD74621
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 05 13:03:16 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,1,2-Trichloroethane	7.258	97	68515	20.9945 ug/L	99
51) Dibromochloromethane	7.400	129	86620	20.1983 ug/L	100
52) 1,3-Dichloropropane	7.481	76	119086	21.9446 ug/L	97
53) 1,2-Dibromoethane	7.570	107	67259	20.7545 ug/L	100
54) 2-Hexanone	7.802	43	49048	22.5737 ug/L	99
55) Chlorobenzene	7.970	112	236637	20.3412 ug/L	98
56) 1-Chlorohexane	7.984	69	23268	21.7482 ug/L	95
57) Ethylbenzene	8.008	106	125326	20.0239 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.025	131	87413	20.2044 ug/L	100
59) m-,p-Xylene	8.109	106	306877	40.6943 ug/L	98
60) o-Xylene	8.372	106	154721	20.9858 ug/L	99
61) Styrene	8.404	104	244541	20.4454 ug/L	99
62) Bromoform	8.407	173	54325	19.4987 ug/L	99
63) Isopropylbenzene	8.563	105	400120	20.7714 ug/L	100
65) 1,3,5-Trimethylbenzene	8.902	105	345839	21.3799 ug/L	99
67) Bromobenzene	8.763	156	102893	19.9082 ug/L	98
68) n-Propylbenzene	8.792	91	467904	21.8146 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.836	83	77290	20.4786 ug/L	99
70) 2-Chlorotoluene	8.868	91	279205	20.9939 ug/L	99
71) 1,2,3-Trichloropropane	8.899	110	22890	22.5967 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.925	53	16020	20.0499 ug/L #	92
73) 1,2,4-Trimethylbenzene	9.099	105	339378	21.0292 ug/L	100
74) 4-Chlorotoluene	8.957	91	286806	21.2959 ug/L	100
75) tert-Butylbenzene	9.064	134	64047	21.1051 ug/L	99
76) sec-Butylbenzene	9.154	105	430244	21.8188 ug/L	100
77) p-Isopropyltoluene	9.227	119	353758	20.8898 ug/L	100
78) 1,3-Dichlorobenzene	9.255	146	194776	20.7672 ug/L	99
79) 1,4-Dichlorobenzene	9.299	146	195281	20.2076 ug/L	100
80) n-Butylbenzene	9.432	91	326068	21.6170 ug/L	98
81) 1,2-Dichlorobenzene	9.504	146	191306	20.9463 ug/L	100
82) 1,2-Dibromo-3-Chloropr...	9.881	75	14033	20.6563 ug/L	98
83) Hexachlorobutadiene	10.179	225	79855	21.3754 ug/L	100
84) 1,2,4-Trichlorobenzene	10.191	180	142449	20.6581 ug/L	100
85) Naphthalene	10.341	128	261507	20.5665 ug/L	99
86) 1,2,3-Trichlorobenzene	10.425	180	135534	21.2434 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017577.D
Acq On : 05 Feb 2016 12:51
Operator : ADC
Sample : WG556408-02 20ug/L LCS
Misc : 1,1 STD74621
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 05 13:03:16 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

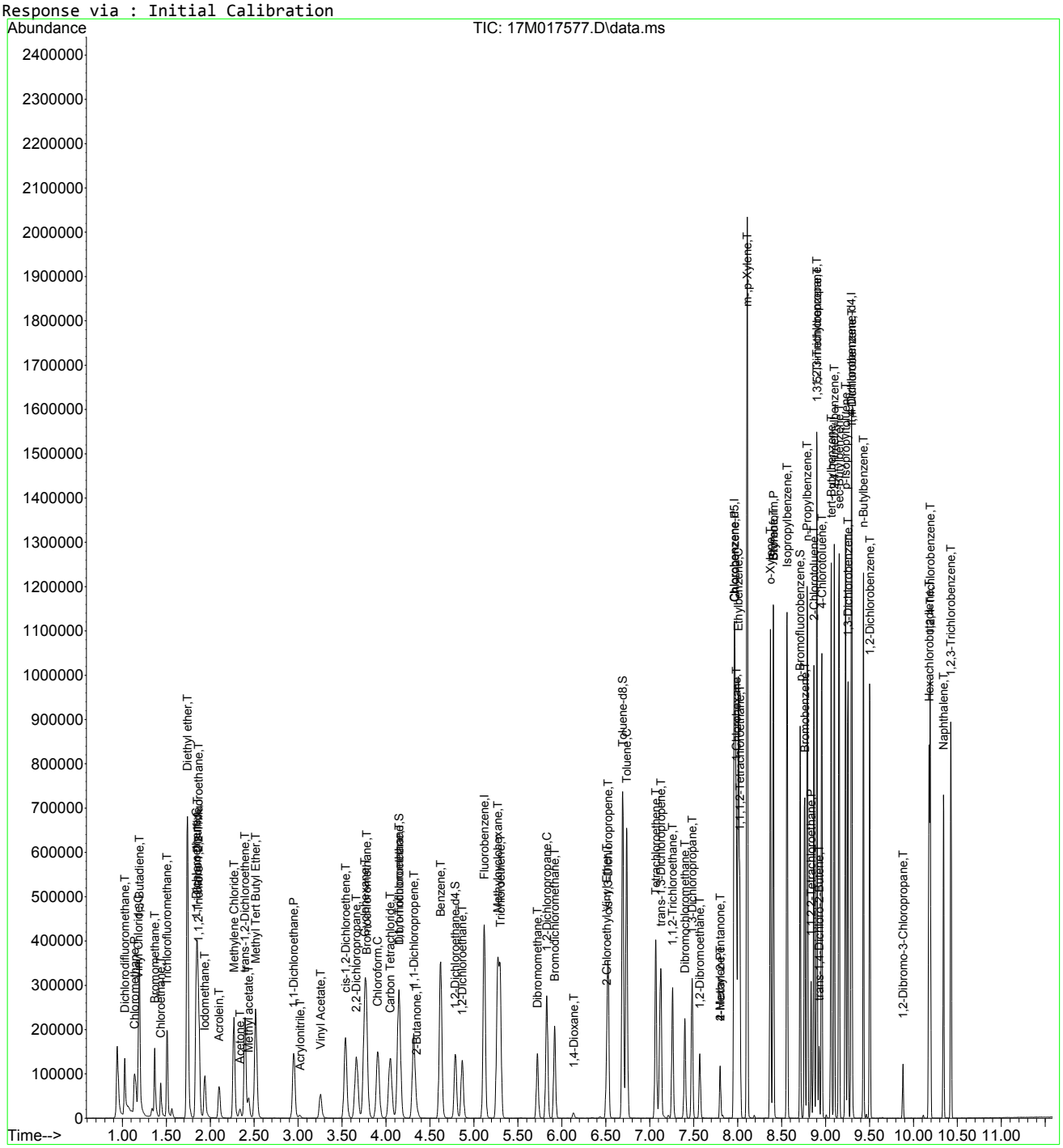

8260VMS.M Fri Feb 05 13:03:18 2016 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017582.D
Acq On : 05 Feb 2016 14:30
Operator : ADC
Sample : WG556408-04 20ug/L ACRYLONITRILE LCS
Misc : 1,1 STD74618
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 08 09:48:55 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	366761	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	260915	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	135495	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	98865	24.9102 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.641%		
34) 1,2-Dichloroethane-d4	4.788	65	106023	26.6414 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.566%		
47) Toluene-d8	6.693	98	387201	26.3632 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.453%		
66) p-Bromofluorobenzene	8.711	95	137213	27.0234 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.094%		
Target Compounds					Qvalue
3) Chloromethane	1.131	50	1366	0.2516 ug/L	94
5) 1,3-Butadiene	1.195	54	2655	0.6006 ug/L	92
6) Bromomethane	1.368	94	13367	3.8366 ug/L	99
11) Carbon Disulfide	1.864	76	215777	16.9989 ug/L	98
13) Iodomethane	1.948	142	38893	7.0798 ug/L	100
14) Acrolein	1.997	56	637	1.3543 ug/L #	13
16) Acetone	2.327	43	21465	26.5723 ug/L	98
18) Methyl acetate	2.431	43	46906	19.7371 ug/L #	99
19) Methyl Tert Butyl Ether	2.509	73	225026	22.0866 ug/L #	63
21) Acrylonitrile	3.013	53	23619	23.5241 ug/L	98
24) 2,2-Dichloropropane	3.766	77	1800	1.2484 ug/L #	1
25) Cyclohexane	3.766	56	143644	20.1312 ug/L #	68
32) 2-Butanone	4.342	43	29799	23.5742 ug/L #	72
36) Methylcyclohexane	5.274	83	132878	19.3490 ug/L	97
42) 2-Chloroethyl Vinyl Ether	6.511	63	33819	16.4909 ug/L	98
44) 4-Methyl-2-Pentanone	7.799	58	23966	22.1024 ug/L	98
49) Tetrachloroethene	7.069	166	596	0.1221 ug/L #	83
54) 2-Hexanone	7.799	43	50132	23.4414 ug/L	97
56) 1-Chlorohexane	7.984	69	21668	20.5765 ug/L #	1
72) trans-1,4-Dichloro-2-B...	8.925	53	13309	16.6659 ug/L #	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017582.D
Acq On : 05 Feb 2016 14:30
Operator : ADC
Sample : WG556408-04 20ug/L ACRYLONITRILE LCS
Misc : 1,1 STD74618
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 08 09:48:55 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

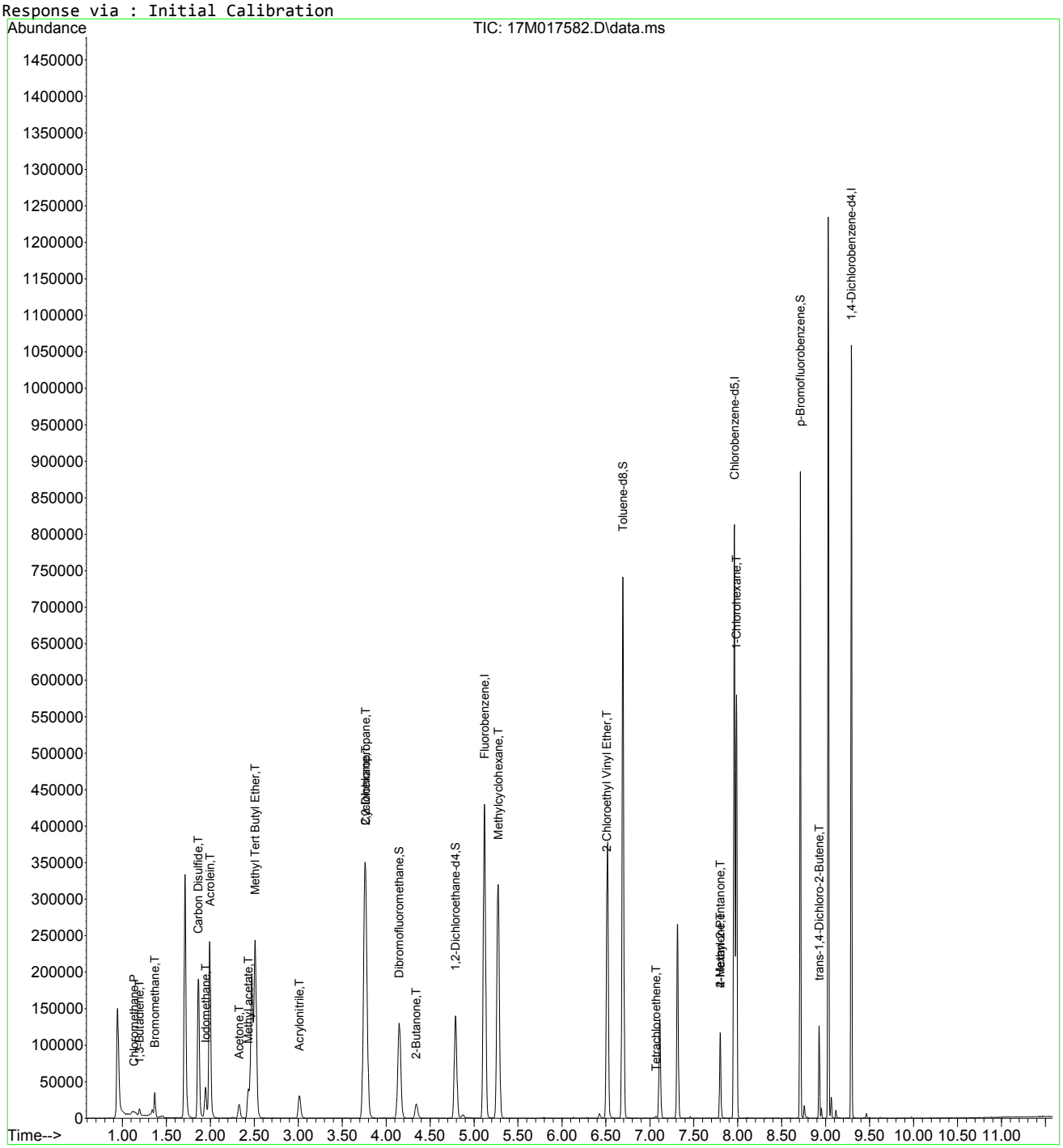

8260VMS.M Mon Feb 08 09:48:56 2016 Page: 2

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017578.D
Acq On : 05 Feb 2016 13:11
Operator : ADC
Sample : WG556408-03 20ug/L LCSDUP
Misc : 1,1 STD74621
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 05 13:22:53 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	369126	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	265154	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	137453	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	102764	25.7267 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.907%		
34) 1,2-Dichloroethane-d4	4.788	65	108256	27.0282 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.113%		
47) Toluene-d8	6.693	98	386004	25.8616 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.446%		
66) p-Bromofluorobenzene	8.711	95	137199	26.6357 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.543%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.027	85	113544	20.2747 ug/L	99
3) Chloromethane	1.140	50	109305	20.0027 ug/L	99
4) Vinyl Chloride	1.183	62	102834	19.4708 ug/L	100
5) 1,3-Butadiene	1.195	54	75860	17.0521 ug/L	98
6) Bromomethane	1.368	94	56484	18.5420 ug/L	99
7) Chloroethane	1.438	64	38272	16.4297 ug/L	88
8) Trichlorofluoromethane	1.510	101	88597	14.1692 ug/L	99
9) Diethyl ether	1.739	59	308678	103.2420 ug/L	99
10) 1,1-Dichloroethene	1.840	61	116246	18.7598 ug/L	99
11) Carbon Disulfide	1.852	76	234819	18.3805 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.869	101	71863	19.4487 ug/L	99
13) Iodomethane	1.939	142	105504	16.6592 ug/L	100
14) Acrolein	2.101	56	54958	116.0929 ug/L	99
15) Methylene Chloride	2.269	84	82916	19.2486 ug/L	97
16) Acetone	2.338	43	22437	27.6724 ug/L	97
17) trans-1,2-Dichloroethene	2.396	96	74828	18.8636 ug/L	98
18) Methyl acetate	2.437	43	51792	21.6534 ug/L #	98
19) Methyl Tert Butyl Ether	2.515	73	227762	22.2119 ug/L	99
20) 1,1-Dichloroethane	2.949	63	144466	18.4672 ug/L	99
21) Acrylonitrile	3.016	53	4840	4.7897 ug/L	96
22) Vinyl Acetate	3.256	86	6830	20.1102 ug/L	91
23) cis-1,2-Dichloroethene	3.540	96	86758	19.4245 ug/L	97
24) 2,2-Dichloropropane	3.664	77	101256	17.2007 ug/L	96
25) Cyclohexane	3.760	56	144039	20.0572 ug/L	97
26) Bromochloromethane	3.777	130	52453	19.9624 ug/L	99
27) Chloroform	3.905	83	145566	19.7646 ug/L	99
28) Carbon Tetrachloride	4.049	117	110437	18.4531 ug/L	99
30) 1,1,1-Trichloroethane	4.148	97	126980	19.2216 ug/L	99
31) 1,1-Dichloropropene	4.313	75	101756	18.0509 ug/L	98
32) 2-Butanone	4.345	43	30759	24.1777 ug/L	89
33) Benzene	4.620	78	325001	19.3630 ug/L	100
35) 1,2-Dichloroethane	4.866	62	109408	21.0294 ug/L	99
36) Methylcyclohexane	5.271	83	137114	19.8379 ug/L	99
37) Trichloroethene	5.300	130	92229	20.1298 ug/L	97
38) Dibromomethane	5.720	93	45665	20.5943 ug/L	100
39) 1,2-Dichloropropane	5.827	63	93476	20.2932 ug/L	99
40) Bromodichloromethane	5.920	83	111740	19.9462 ug/L	100
41) 1,4-Dioxane	6.131	88	6006	213.4285 ug/L	97
42) 2-Chloroethyl Vinyl Ether	6.511	63	39935	19.3484 ug/L	99
43) cis-1,3-Dichloropropene	6.525	75	138434	21.6411 ug/L	99
44) 4-Methyl-2-Pentanone	7.802	58	24273	22.2422 ug/L	98
45) trans-1,3-Dichloropropene	7.127	75	111574	20.9061 ug/L	99
48) Toluene	6.736	91	352417	19.1877 ug/L	100
49) Tetrachloroethene	7.066	166	89753	18.0932 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017578.D
Acq On : 05 Feb 2016 13:11
Operator : ADC
Sample : WG556408-03 20ug/L LCSDUP
Misc : 1,1 STD74621
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 05 13:22:53 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,1,2-Trichloroethane	7.258	97	67943	20.8139 ug/L	99
51) Dibromochloromethane	7.399	129	85787	19.9989 ug/L	100
52) 1,3-Dichloropropane	7.480	76	117522	21.6508 ug/L	97
53) 1,2-Dibromoethane	7.567	107	66992	20.6668 ug/L	99
54) 2-Hexanone	7.802	43	49756	22.8937 ug/L	98
55) Chlorobenzene	7.970	112	230419	19.8017 ug/L	98
56) 1-Chlorohexane	7.984	69	22183	20.7288 ug/L	99
57) Ethylbenzene	8.007	106	121686	19.4373 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.025	131	84907	19.6201 ug/L	99
59) m-,p-Xylene	8.109	106	296524	39.3113 ug/L	98
60) o-Xylene	8.372	106	148898	20.1908 ug/L	100
61) Styrene	8.404	104	237280	19.8332 ug/L	99
62) Bromoform	8.407	173	54361	19.5067 ug/L	99
63) Isopropylbenzene	8.563	105	385945	20.0304 ug/L	99
65) 1,3,5-Trimethylbenzene	8.902	105	333431	20.3302 ug/L	99
67) Bromobenzene	8.763	156	99703	19.0265 ug/L	98
68) n-Propylbenzene	8.792	91	450238	20.7031 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.835	83	76712	20.0467 ug/L	100
70) 2-Chlorotoluene	8.867	91	271415	20.1283 ug/L	99
71) 1,2,3-Trichloropropane	8.899	110	22567	21.9723 ug/L	98
72) trans-1,4-Dichloro-2-B...	8.925	53	16111	19.8873 ug/L #	91
73) 1,2,4-Trimethylbenzene	9.099	105	328565	20.0800 ug/L	100
74) 4-Chlorotoluene	8.957	91	280660	20.5538 ug/L	100
75) tert-Butylbenzene	9.064	134	61140	19.8709 ug/L	97
76) sec-Butylbenzene	9.154	105	413891	20.7016 ug/L	99
77) p-Isopropyltoluene	9.226	119	342659	19.9569 ug/L	99
78) 1,3-Dichlorobenzene	9.255	146	189899	19.9696 ug/L	100
79) 1,4-Dichlorobenzene	9.299	146	190640	19.4569 ug/L	99
80) n-Butylbenzene	9.432	91	313879	20.5235 ug/L	98
81) 1,2-Dichlorobenzene	9.504	146	188013	20.3034 ug/L	100
82) 1,2-Dibromo-3-Chloropr...	9.878	75	14431	20.9508 ug/L	94
83) Hexachlorobutadiene	10.176	225	76927	20.3093 ug/L	99
84) 1,2,4-Trichlorobenzene	10.191	180	139685	19.9795 ug/L	100
85) Naphthalene	10.341	128	262549	20.3653 ug/L	100
86) 1,2,3-Trichlorobenzene	10.425	180	134309	20.7627 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017578.D
Acq On : 05 Feb 2016 13:11
Operator : ADC
Sample : WG556408-03 20ug/L LCSDUP
Misc : 1,1 STD74621
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 05 13:22:53 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

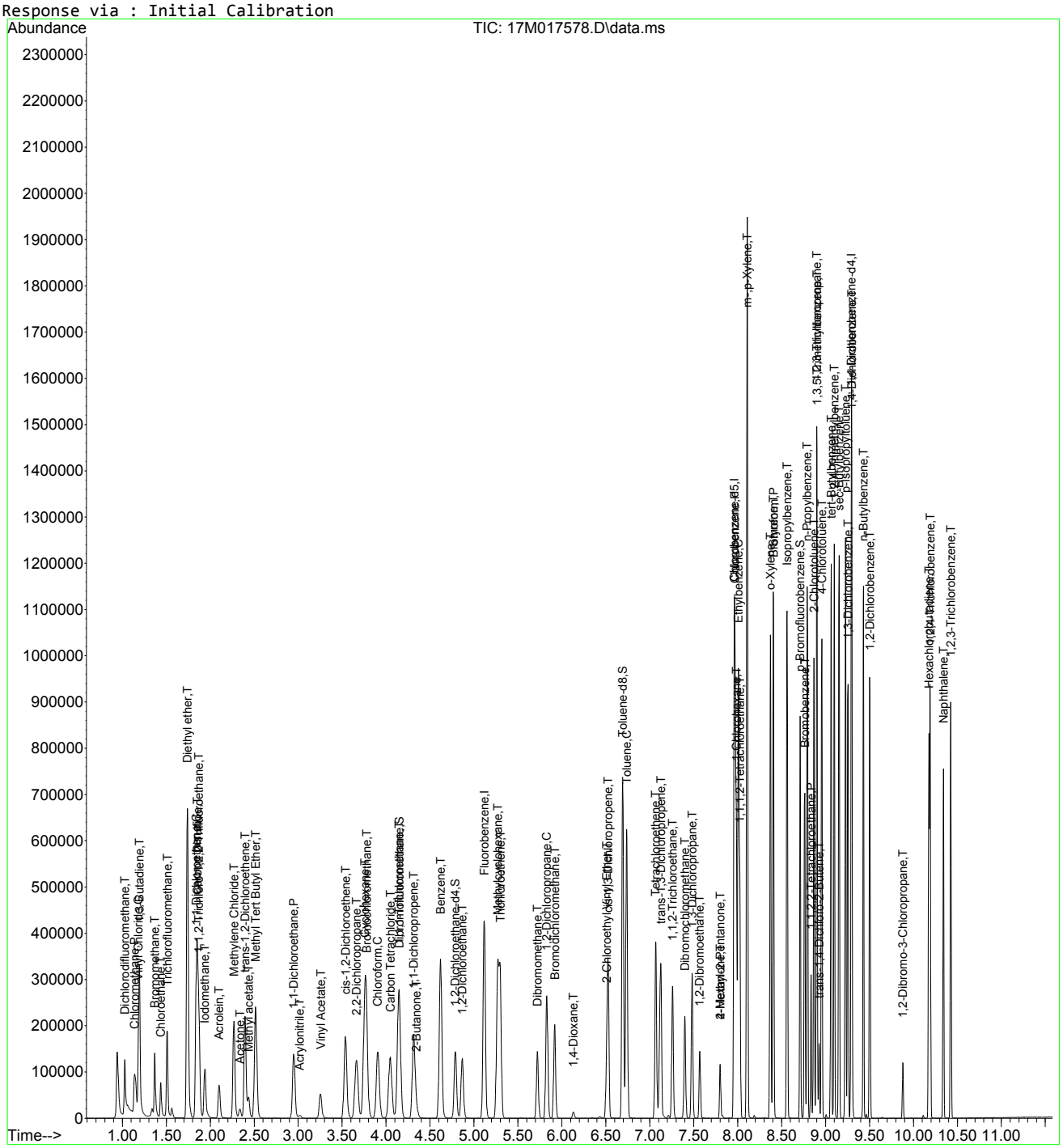

8260VMS.M Fri Feb 05 13:22:55 2016 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017583.D
Acq On : 05 Feb 2016 14:49
Operator : ADC
Sample : WG556408-05 20ug/L ACRYLONITRILE LCSDUP
Misc : 1,1 STD74618
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Feb 08 09:47:54 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	368722	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	264551	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	139642	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	100119	25.0920 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.368%		
34) 1,2-Dichloroethane-d4	4.788	65	106437	26.6032 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.413%		
47) Toluene-d8	6.693	98	386466	25.9516 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.806%		
66) p-Bromofluorobenzene	8.711	95	136958	26.1721 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.688%		
Target Compounds					Qvalue
3) Chloromethane	1.134	50	1333	0.2442 ug/L	90
5) 1,3-Butadiene	1.195	54	2749	0.6186 ug/L	95
6) Bromomethane	1.368	94	10427	2.8063 ug/L	98
11) Carbon Disulfide	1.864	76	226818	17.7737 ug/L	97
13) Iodomethane	1.945	142	51066	8.8089 ug/L	100
14) Acrolein	1.997	56	626	1.3238 ug/L #	13
16) Acetone	2.333	43	21120	25.9648 ug/L	98
18) Methyl acetate	2.437	43	48924	20.4768 ug/L #	98
19) Methyl Tert Butyl Ether	2.509	73	229969	22.4518 ug/L #	61
21) Acrylonitrile	3.016	53	23980	23.7566 ug/L	99
24) 2,2-Dichloropropane	3.766	77	1689	1.2291 ug/L #	1
25) Cyclohexane	3.766	56	148604	20.7155 ug/L #	68
32) 2-Butanone	4.342	43	31213	24.5615 ug/L #	70
36) Methylcyclohexane	5.274	83	138216	20.0192 ug/L	98
42) 2-Chloroethyl Vinyl Ether	6.511	63	34513	16.7398 ug/L	97
44) 4-Methyl-2-Pentanone	7.799	58	24328	22.3170 ug/L	99
54) 2-Hexanone	7.799	43	50561	23.3171 ug/L	97
56) 1-Chlorohexane	7.984	69	22412	20.9905 ug/L #	1
72) trans-1,4-Dichloro-2-B...	8.925	53	13360	16.2329 ug/L #	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017583.D
Acq On : 05 Feb 2016 14:49
Operator : ADC
Sample : WG556408-05 20ug/L ACRYLONITRILE LCSDUP
Misc : 1,1 STD74618
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Feb 08 09:47:54 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

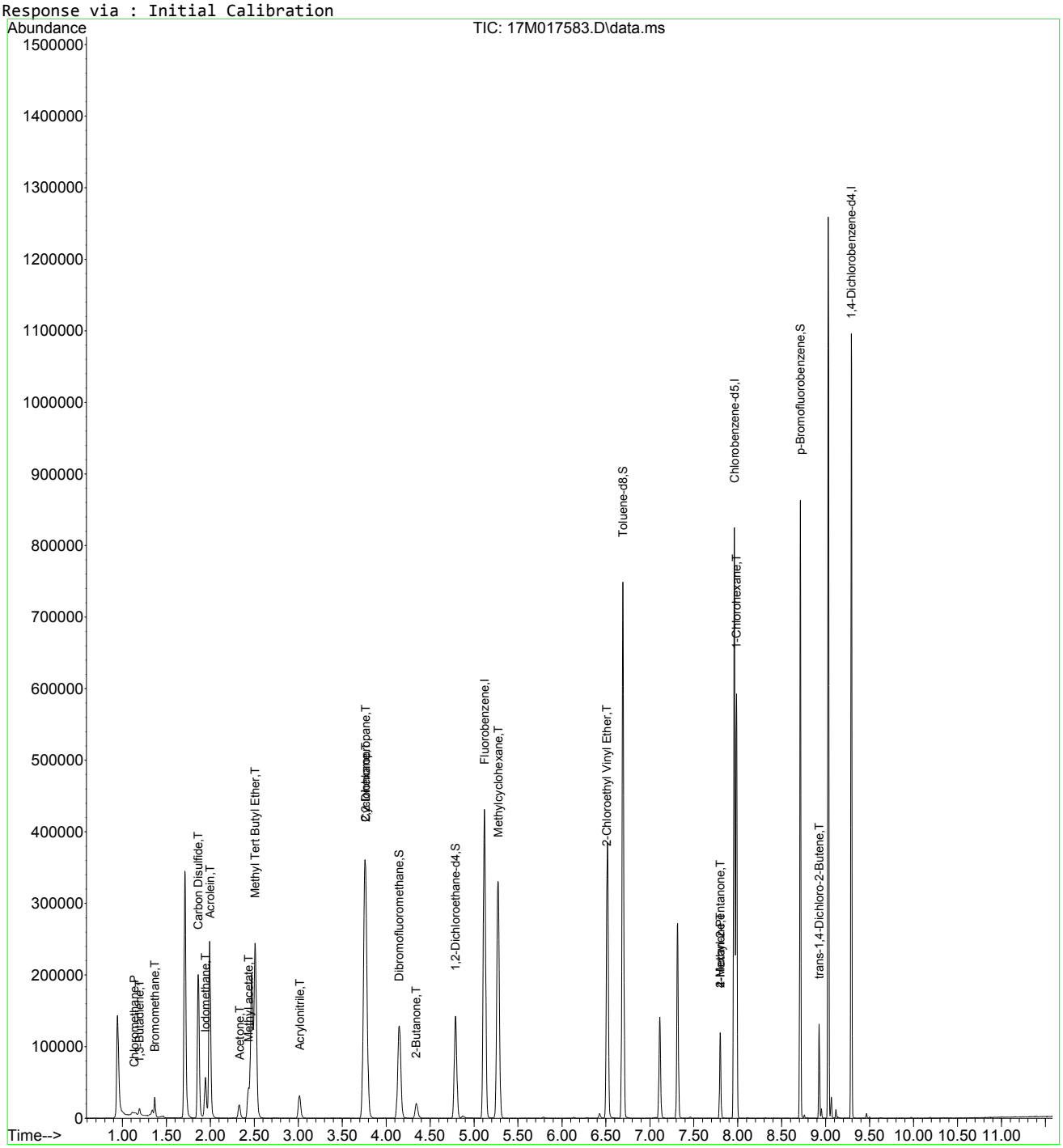

8260VMS.M Mon Feb 08 09:48:48 2016 Page: 2

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW02-020116	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 12:01
Collect Date:	02/01/2016 08:10	**Dilution:**	1	**File ID:**	16G49339
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	846000	J	10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW02-020116	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 14:28
Collect Date:	02/01/2016 08:10	**Dilution:**	10	**File ID:**	16G49346
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	460000		100000	50000	25000
Methane	74-82-8	20.0	U	50.0	20.0	10.0
ethene	74-85-1	20.0	U	50.0	20.0	10.0
ethane	74-84-0	20.0	U	50.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW11-020116	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 12:13
Collect Date:	02/01/2016 09:25	**Dilution:**	1	**File ID:**	16G49340
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	899000	J	10000	5000	2500
Methane	74-82-8	163		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW11-020116	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 14:41
Collect Date:	02/01/2016 09:25	**Dilution:**	10	**File ID:**	16G49347
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	503000		100000	50000	25000
Methane	74-82-8	67.5		50.0	20.0	10.0
ethene	74-85-1	20.0	U	50.0	20.0	10.0
ethane	74-84-0	20.0	U	50.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	LHSMW19-020116	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 12:26
Collect Date:	02/01/2016 10:30	**Dilution:**	1	**File ID:**	16G49341
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	95800		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW05-020116	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 12:38
Collect Date:	02/01/2016 13:15	**Dilution:**	1	**File ID:**	16G49342
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	357000	J	10000	5000	2500
Methane	74-82-8	32.2		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW05-020116	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 14:54
Collect Date:	02/01/2016 13:15	**Dilution:**	5	**File ID:**	16G49348
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	228000		50000	25000	12500
Methane	74-82-8	9.42	J	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW16-020116	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 12:50
Collect Date:	02/01/2016 14:30	**Dilution:**	1	**File ID:**	16G49343
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	1020000	J	10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW16-020116	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 15:06
Collect Date:	02/01/2016 14:30	**Dilution:**	10	**File ID:**	16G49349
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	577000		100000	50000	25000
Methane	74-82-8	20.0	U	50.0	20.0	10.0
ethene	74-85-1	20.0	U	50.0	20.0	10.0
ethane	74-84-0	20.0	U	50.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:

y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 030315
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG514119

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46874	RINSE	NA	1	1		03/03/15 14:05
16G46875	WG514119-01 0.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:17
16G46876	WG514119-02 1.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:30
16G46877	WG514119-03 33.3umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:42
16G46878	WG514119-04 66.7umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 14:53
16G46879	WG514119-05 133umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:05
16G46880	WG514119-06 333umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:17
16G46881	WG514119-07 533umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:29
16G46882	RINSE	NA	1	1		03/03/15 15:41
16G46883	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 16:14
16G46884	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 17:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X			
File ID: 16G46883				
	Wrong vial taken up by HT3 autosampler			

Approved: March 11, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 020316
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD72628 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG556003

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G49333	WG556002-01 133umol/mol CCV STD RSK	NA	1	1	STD72628	02/03/16 09:12
16G49334	WG556003-01 BLANK RSK175	NA	1	1		02/03/16 11:00
16G49335	WG556003-02 67umol/mol LCS RSK175	NA	1	1	STD68250	02/03/16 11:13
16G49336	WG556003-03 67umol/mol LCS2 RSK175	NA	1	1	STD68250	02/03/16 11:25
16G49337	L16011283-01 A RSK175	<2	1	1		02/03/16 11:37
16G49338	L16020072-02 A RSK175	4	1	1		02/03/16 11:49
16G49339	L16020058-01 A RSK175	5	1	1		02/03/16 12:01
16G49340	L16020058-03 A RSK175	5	1	1		02/03/16 12:13
16G49341	L16020058-05 A RSK175	7	1	1		02/03/16 12:26
16G49342	L16020058-07 A RSK175	5	1	1		02/03/16 12:38
16G49343	L16020058-09 A RSK175	7	1	1		02/03/16 12:50
16G49344	WG556002-02 133umol/mol CCV STD RSK	NA	1	1	STD72628	02/03/16 13:14
16G49345	L16020141-01 A RSK175	7	1	1		02/03/16 13:25
16G49346	L16020058-01 B D1 10X RSK175	5	1	10		02/03/16 14:28
16G49347	L16020058-03 B D1 10X RSK175	5	1	10		02/03/16 14:41
16G49348	L16020058-07 B D1 5X RSK175	4	1	5		02/03/16 14:54
16G49349	L16020058-09 B D1 10X RSK175	7	1	10		02/03/16 15:06
16G49350	L16020141-01 B D1 10X RSK175	7	1	10		02/03/16 15:18
16G49351	L16020163-01 A RSK175	<2	1	1		02/03/16 15:30
16G49352	L16020164-01 A RSK175	<2	1	1		02/03/16 15:42
16G49353	WG556002-03 133umol/mol CCV STD RSK	NA	1	1	STD72628	02/03/16 15:55

Comments

Seq.	Rerun	Dil.	Reason	Analytes
6	X	10	Over Calibration Range	CO2
File ID: 16G49339				
	L16020058-01			
7	X	10	Over Calibration Range	CO2
File ID: 16G49340				
	L16020058-03			
9	X	5	Over Calibration Range	CO2
File ID: 16G49342				
	L16020058-07			
10	X	10	Over Calibration Range	CO2

Approved: February 05, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 020316
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD72628 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG556003

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 16G49343				
	L16020058-09			
12	X	10	Over Calibration Range	CO2
File ID: 16G49345				
	L16020141-01			

Approved: February 05, 2016

Page: 2

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B202656

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG514119-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B218122

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG556002-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG556002-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG556002-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L16020058-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L16020058-09	15	mL	15	mL					5.47	mL	5.47	mL	40
L16020163-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L16020072-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L16020058-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L16020141-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L16011283-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L16020058-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG556003-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16020164-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG556003-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16020058-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B218125

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG556003-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAR-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 66688
Analytical Workgroups: WG514119

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	NA
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
06-MAR-2015

Secondary Reviewer:
11-MAR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-11-2015 12:34:12

Microbac Laboratories Inc.

Data Checklist

Date: 03-FEB-2016
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 73121
Analytical Workgroups: WG556003

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
04-FEB-2016

Secondary Reviewer:
05-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-05-2016 09:18:25

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG556003

Login Number: L16020058

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW02-020116	01	02/01/16					02/03/2016	2.3	7		02/03/16	2.3	7	
46WW02-020116	01	02/01/16					02/03/2016	2.2	7		02/03/16	2.2	7	
46WW11-020116	03	02/01/16					02/03/2016	2.2	7		02/03/16	2.2	7	
46WW11-020116	03	02/01/16					02/03/2016	2.1	7		02/03/16	2.1	7	
LHSMW19-020116	05	02/01/16					02/03/2016	2.1	7		02/03/16	2.1	7	
46WW05-020116	07	02/01/16					02/03/2016	2	7		02/03/16	2	7	
46WW05-020116	07	02/01/16					02/03/2016	2.1	7		02/03/16	2.1	7	
46WW16-020116	09	02/01/16					02/03/2016	2	7		02/03/16	2	7	
46WW16-020116	09	02/01/16					02/03/2016	1.9	7		02/03/16	1.9	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4617340
Report generated 02/05/2016 09:15

METHOD BLANK SUMMARY

Login Number: L16020058
Blank File ID: 16G49334
Prep Date: 02/03/16 11:00
Analyzed Date: 02/03/16 11:00
Analyst: JDS

Work Group: WG556003
Blank Sample ID: WG556003-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556003-02	16G49335	02/03/16 11:13	01
LCS2	WG556003-03	16G49336	02/03/16 11:25	01
46WW02-020116	L16020058-01	16G49339	02/03/16 12:01	01
46WW11-020116	L16020058-03	16G49340	02/03/16 12:13	01
LHSMW19-020116	L16020058-05	16G49341	02/03/16 12:26	01
46WW05-020116	L16020058-07	16G49342	02/03/16 12:38	01
46WW16-020116	L16020058-09	16G49343	02/03/16 12:50	01
46WW02-020116	L16020058-01	16G49346	02/03/16 14:28	DL01
46WW11-020116	L16020058-03	16G49347	02/03/16 14:41	DL01
46WW05-020116	L16020058-07	16G49348	02/03/16 14:54	DL01
46WW16-020116	L16020058-09	16G49349	02/03/16 15:06	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4617341
Report generated 02/05/2016 09:15

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020058 Prep Date: 02/03/16 11:00 Sample ID: WG556003-01
Instrument ID: HP16 Run Date: 02/03/16 11:00 Prep Method: 5021
File ID: 16G49334 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG556003 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4617342
05-FEB-2016 09:15

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020058 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG556003 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG556003-02 LCS File ID: 16G49335 Run Date: 02/03/2016 11:13
Sample ID: WG556003-03 LCS2 File ID: 16G49336 Run Date: 02/03/2016 11:25

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	107	94.1	114	108	94.7	0.572	86.5 - 109	20	
ethene	200	187	93.8	200	187	93.9	0.112	84.4 - 111	20	
ethane	214	194	90.9	214	195	91.1	0.231	80.4 - 109	20	
Carbon Dioxide	31300	26700	85.2	31300	27200	86.9	1.97	53.1 - 130	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4617343
Report generated: 02/05/2016 09:15

Calibration Table Report
Method: RSKEXT1.M
Title: RSK175 HP16 (SOP: OVL RSK01) 030315
Last Calibration: Fri Mar 06 11:52:33 2015
Curve:WG514119
Calibration Files

		0.67	1.67	33.3	66.7	133	333	533			
		16G46875.	16G46876.	16G46877.	16G46878.	16G46879.	16G46880.	16G46881.D			
	Compound								Avg	%RSD	Linear
T	methane		442542.3	201716.7	175611.6	187516.9	186065.3	188702.9	230359.0	45.3	0.999
T	ethene		322209.5	334124.6	295911.1	313430.8	319356.4	318282.1	317219.0	3.9	
T	acetylene		316851.9	343603.6	313507.6	354933.8	357109.5	344601.6	338435.0	5.6	
T	ethane	381661.4	339569.9	346403.4	312338.4	328333.4	335709.7	335266.3	339897.0	6.3	
T	propane	528069.3	481580.8	518227.1	469331.7	483950.9	500133.6	493547.4	496406.0	4.2	
T	n-butane	686564.3	616037.4	680754.9	613926.5	634552.4	659898.4	646188.9	648275.0	4.5	
	Signal #2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T	carbon dioxide		3977.4	5604.2	5581.8	6054.5	6060.7	5810.7	5514.9	14.2	

Fri Mar 06 11:59:12 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16020058 Run Date: 03/03/2015 Sample ID: WG514119-08
Instrument ID: HP16 Run Time: 17:10 Method: RSK175
File ID: 16G46884 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG514119 Cal ID: HP16 - 03-MAR-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
carbon dioxide		62500	65100	ug/L	5740	4.10	15	
methane		228	236	ug/L	195000	3.50	15	
ethene		398	407	ug/L	324000	2.20	15	
ethane		427	423	ug/L	337000	0.900	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4617344
Report generated 02/05/2016 09:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058 Run Date: 02/03/2016 Sample ID: WG556002-01
Instrument ID: HP16 Run Time: 09:12 Method: RSK175
File ID: 16G49333 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG556003 Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	63700	ug/L	5620	1.84	15	
methane		228	215	ug/L	178000	5.66	15	
ethene		398	377	ug/L	300000	5.40	15	
ethane		427	394	ug/L	314000	7.62	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4617345
Report generated 02/05/2016 09:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058
Run Date: 02/03/2016
Sample ID: WG556002-02
Instrument ID: HP16
Run Time: 13:14
Method: RSK175
File ID: 16G49344
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG556003
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	62400	ug/L	5500	0.228	15	
methane		228	208	ug/L	172000	8.72	15	
ethene		398	364	ug/L	290000	8.68	15	
ethane		427	382	ug/L	304000	10.5	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4617345
Report generated 02/05/2016 09:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058 Run Date: 02/03/2016 Sample ID: WG556002-03
Instrument ID: HP16 Run Time: 15:55 Method: RSK175
File ID: 16G49353 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG556003 Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	57100	ug/L	5040	8.56	15	
methane		228	209	ug/L	173000	8.21	15	
ethene		398	363	ug/L	289000	8.84	15	
ethane		427	382	ug/L	304000	10.5	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4617345
Report generated 02/05/2016 09:15

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49339.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDchem\1\DATA\020316\16G49339.D\TCD2B.CH
Acq On : 03 Feb 2016 12:01 Operator: JDS
Sample : L16020058-01 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 12:07:56 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	250789	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	1.14	19026	0.056	umol/
4) T	ethane	1.39	9867	0.029	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.19	993151067	180085.838	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49339.D RSKEXT1.M Wed Feb 03 12:07:56 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49339.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDchem\1\DATA\020316\16G49339.D\TCD2B.CH
Acq On : 03 Feb 2016 12:01 Operator: JDS
Sample : L16020058-01 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 3 12:07 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

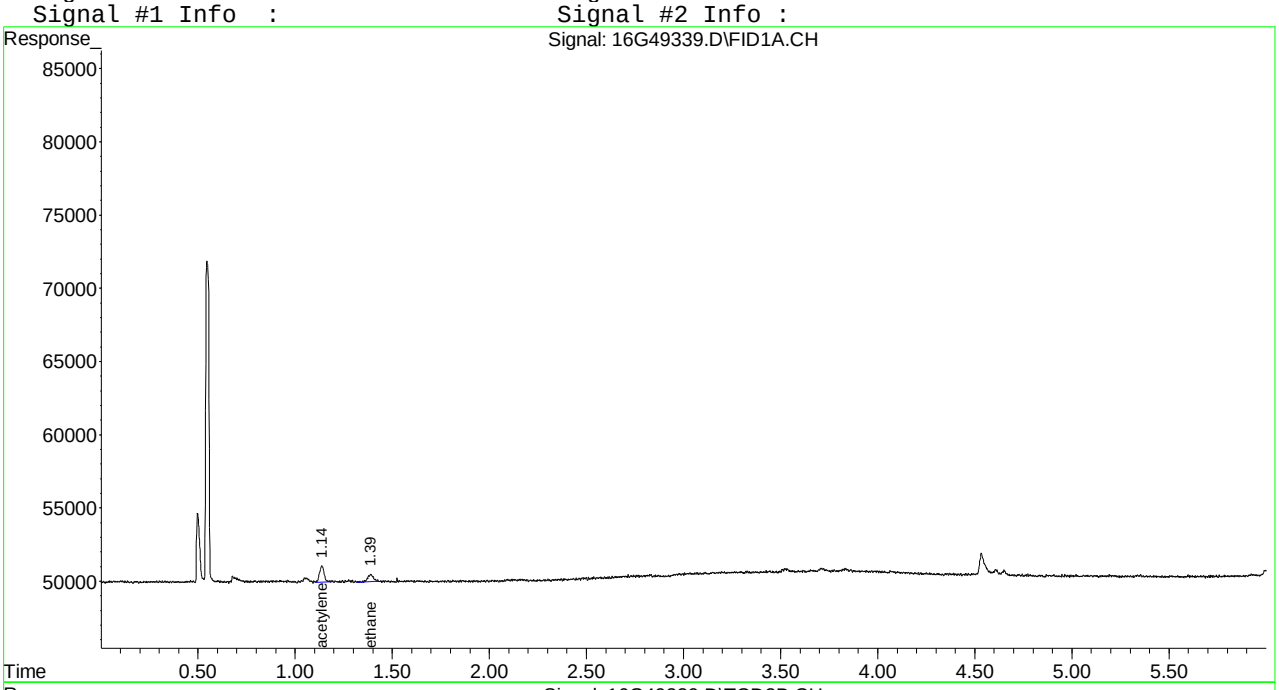

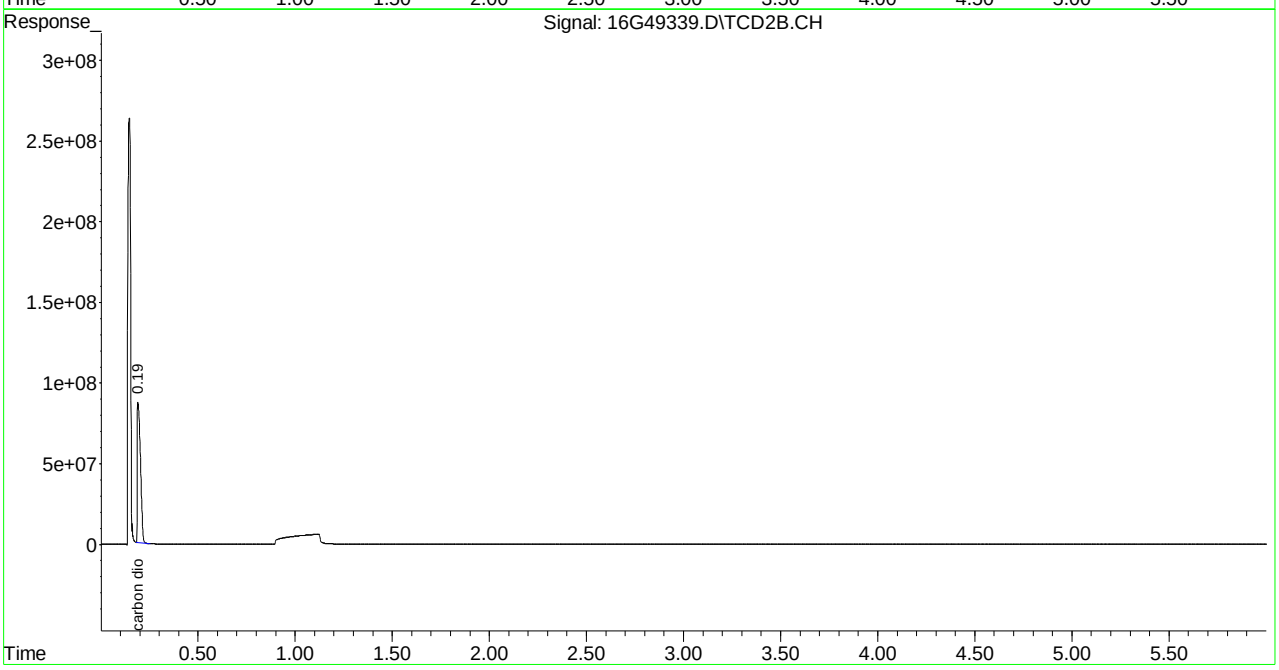

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49346.D\FID1A.CH Vial: 14
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49346.D\TCD2B.CH
Acq On : 03 Feb 2016 14:28 Operator: JDS
Sample : L16020058-01 B D1 10X RSK175 Inst : HP16
Misc : 1,10 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 14:35:04 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	264983	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	54040666	9799.072	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49346.D RSKEXT1.M Wed Feb 03 14:43:38 2016 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49346.D\FID1A.CH Vial: 14
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49346.D\TCD2B.CH
Acq On    : 03 Feb 2016  14:28                        Operator: JDS
Sample    : L16020058-01 B D1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb  3 14:35 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

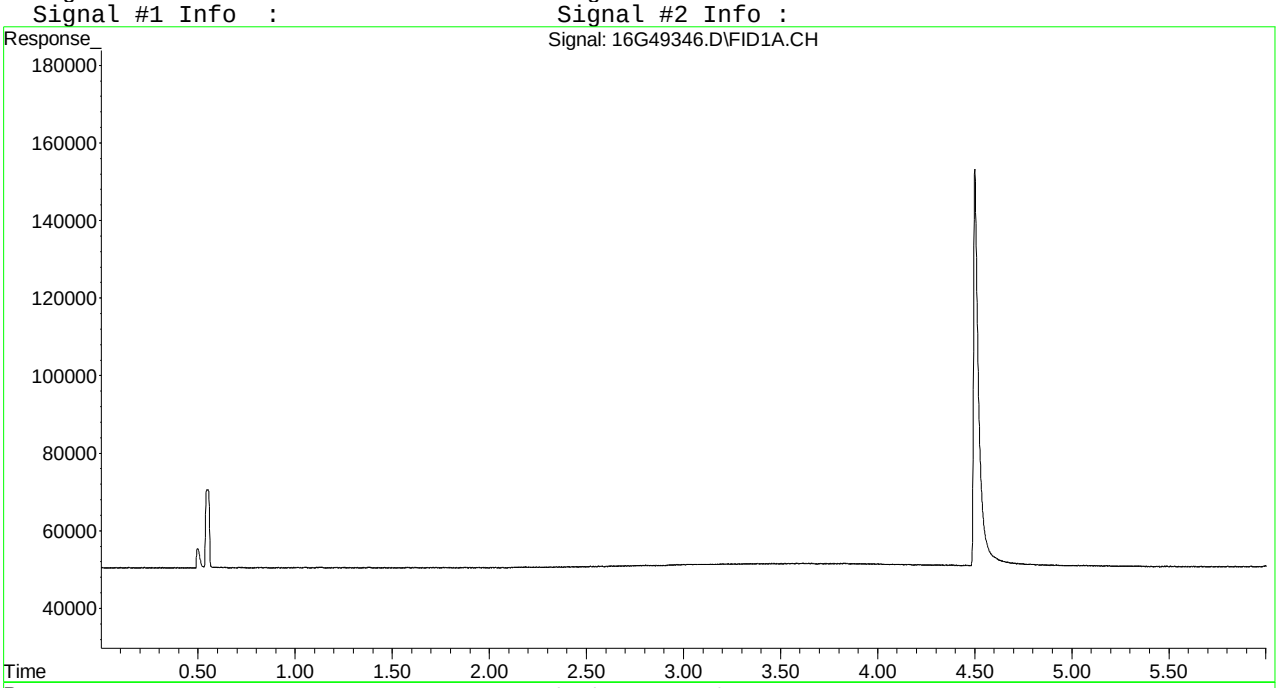

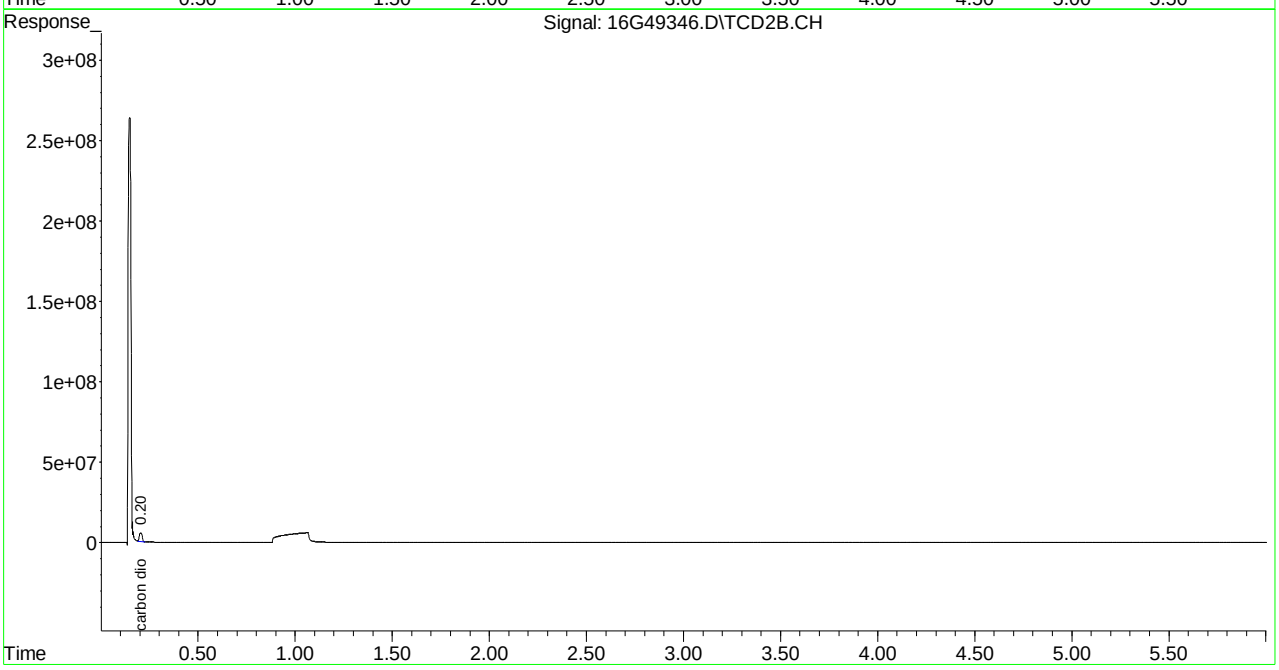

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49340.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDchem\1\DATA\020316\16G49340.D\TCD2B.CH
Acq On : 03 Feb 2016 12:13 Operator: JDS
Sample : L16020058-03 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 12:19:47 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	18039410	95.031	umol/
2) T	ethene	1.06	9057	0.029	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	12426	0.037	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.19	1054809743	191266.266	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49340.D RSKEXT1.M Wed Feb 03 12:19:48 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49340.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDchem\1\DATA\020316\16G49340.D\TCD2B.CH
Acq On : 03 Feb 2016 12:13 Operator: JDS
Sample : L16020058-03 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 3 12:19 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

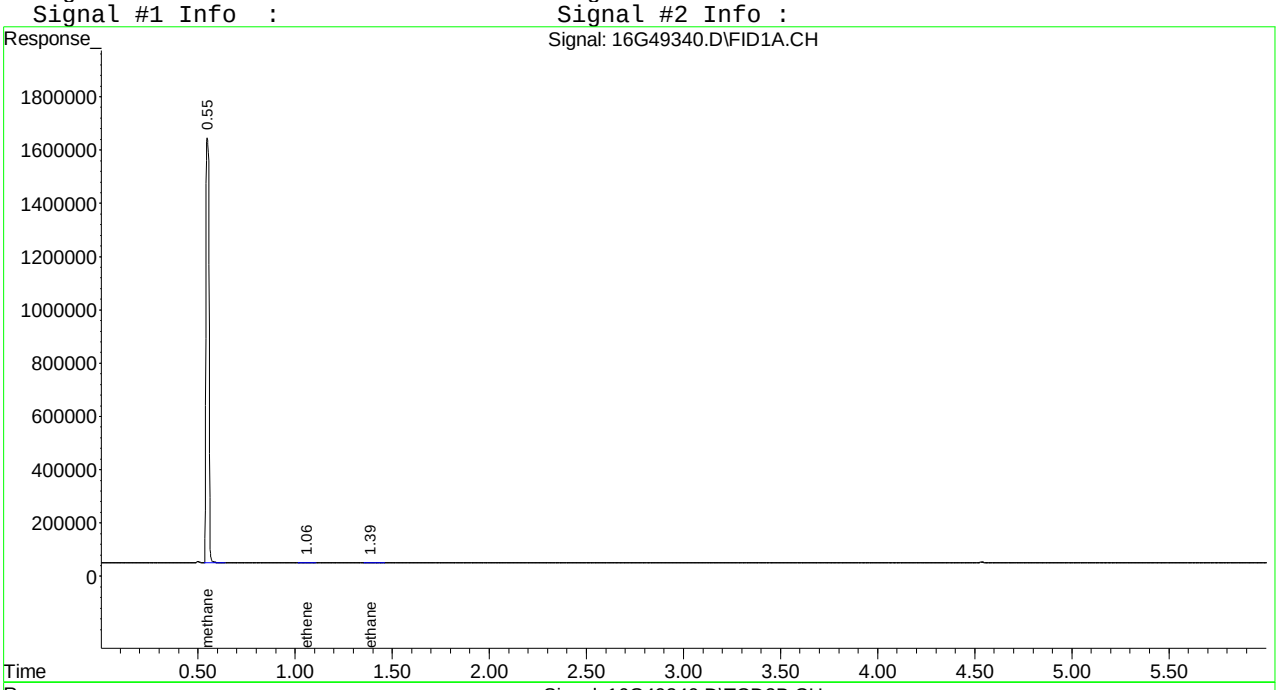

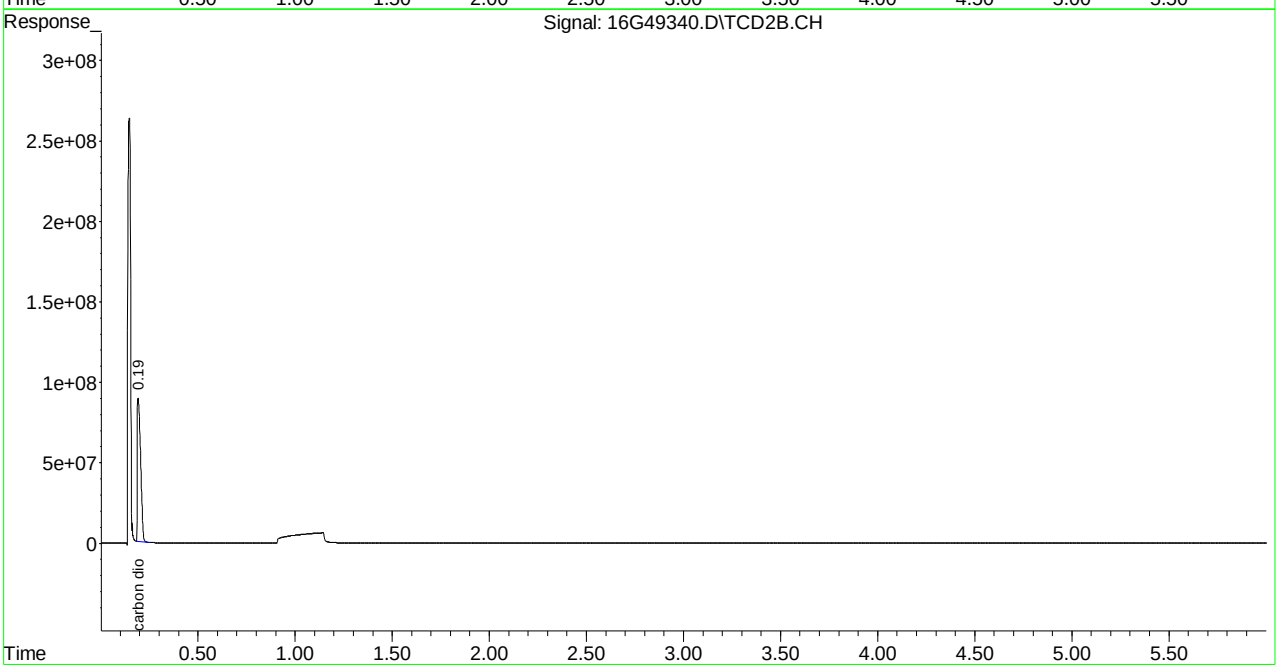

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\020316\16G49347.D\FID1A.CH Vial: 15
Signal #2 : C:\MSDchem\1\DATA\020316\16G49347.D\TCD2B.CH
Acq On    : 03 Feb 2016  14:41                        Operator: JDS
Sample    : L16020058-03 B D1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 14:47:04 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	1140698	3.939	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.21	59054323	10708.187	umol/

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\020316\16G49347.D\FID1A.CH Vial: 15
Signal #2 : C:\MSDchem\1\DATA\020316\16G49347.D\TCD2B.CH
Acq On    : 03 Feb 2016  14:41                        Operator: JDS
Sample    : L16020058-03 B D1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb  3 14:47 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

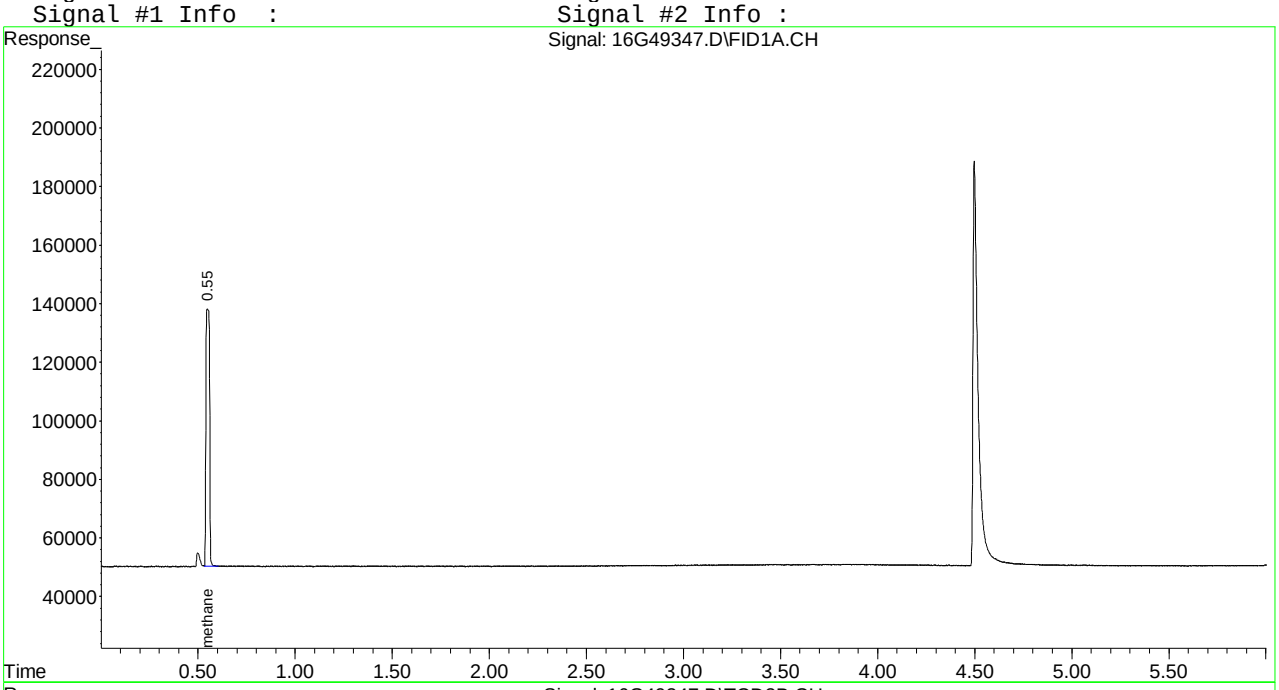

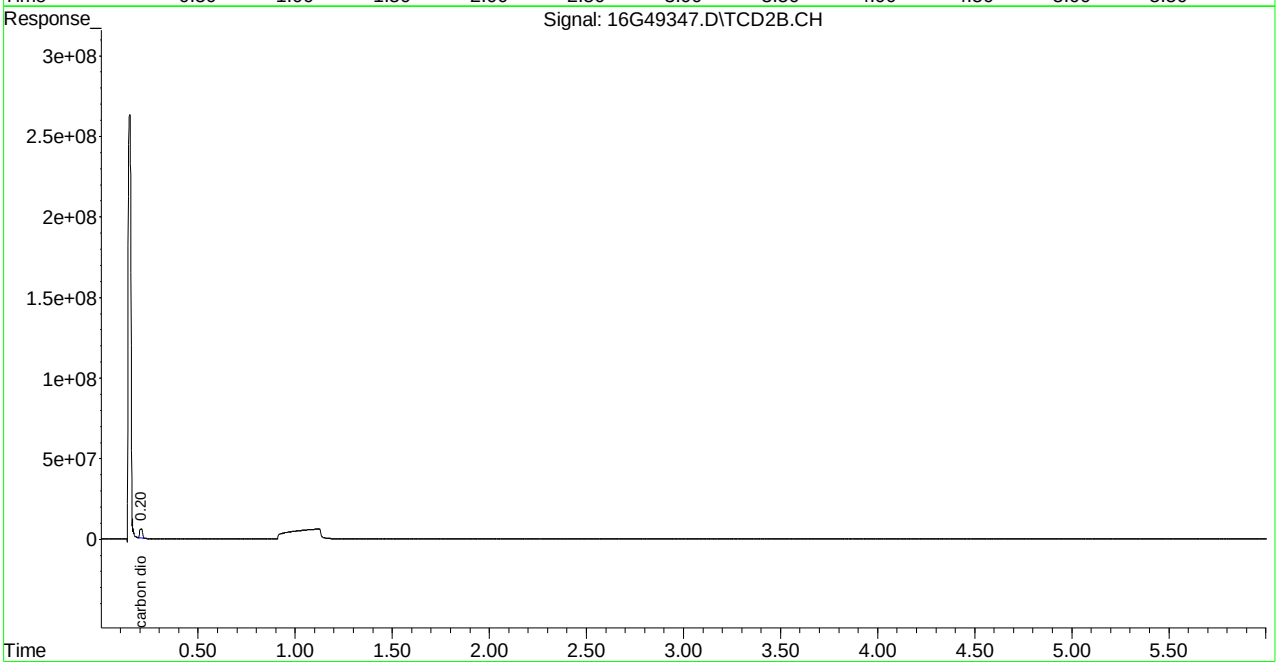

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49341.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49341.D\TCD2B.CH
Acq On    : 03 Feb 2016  12:26                        Operator: JDS
Sample    : L16020058-05 A RSK175                     Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 12:32:24 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	284406	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	112399298	20381.111	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G49341.D RSKEXT1.M Wed Feb 03 13:17:11 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49341.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49341.D\TCD2B.CH
Acq On    : 03 Feb 2016  12:26                        Operator: JDS
Sample    : L16020058-05 A RSK175                     Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb  3 12:32 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

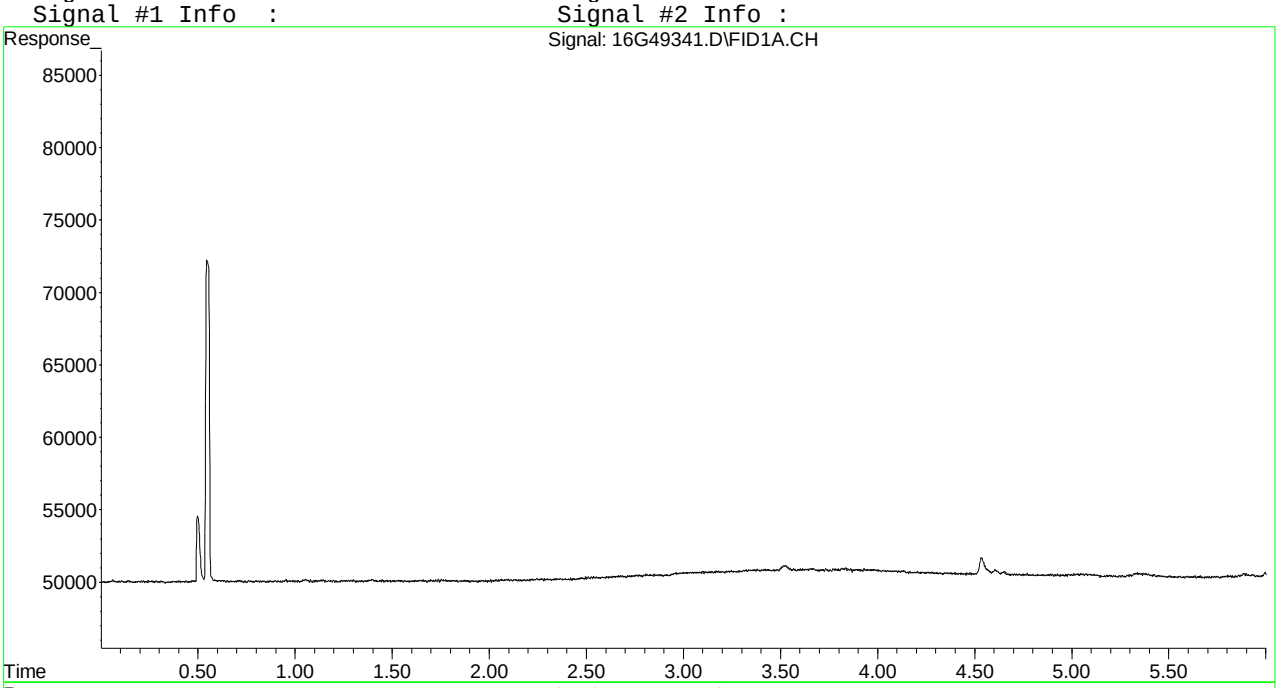

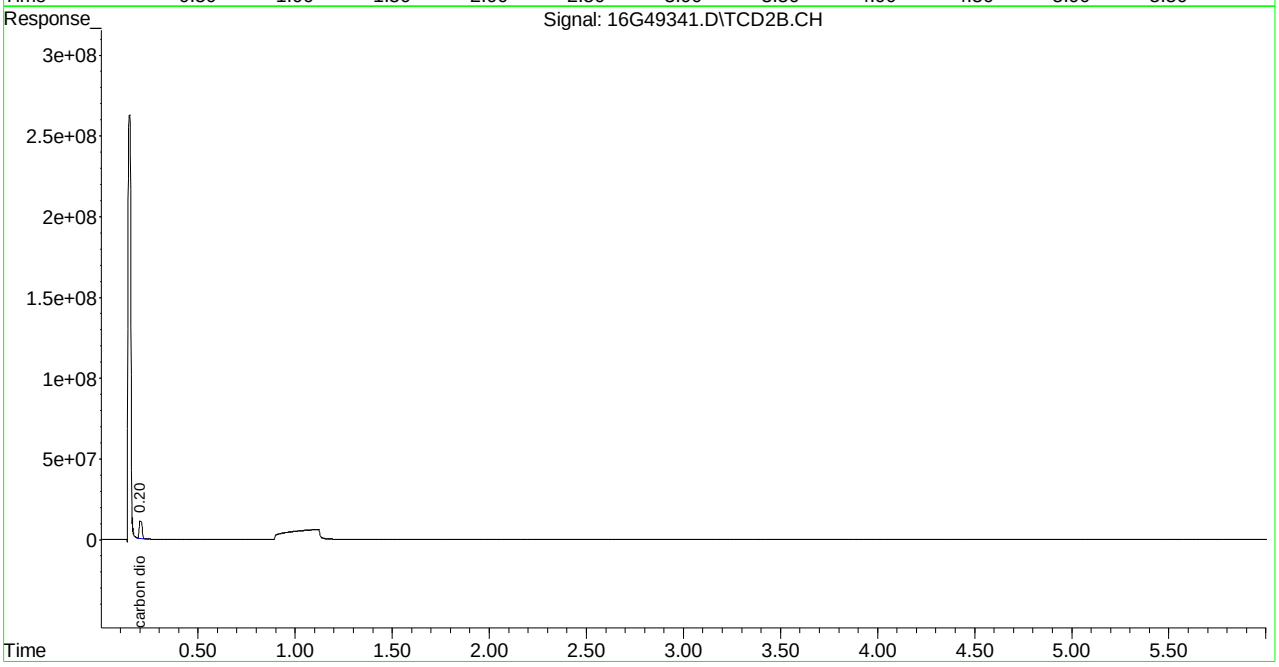

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49342.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDchem\1\DATA\020316\16G49342.D\TCD2B.CH
Acq On : 03 Feb 2016 12:38 Operator: JDS
Sample : L16020058-07 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 12:44:07 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	3894821	18.785	umol/
2) T	ethene	1.06	24936	0.079	umol/
3) T	acetylene	1.14	63041	0.186	umol/
4) T	ethane	1.39	9556	0.028	umol/
5) T	propane	3.83	22426	0.045	umol/
6) T	n-butane	5.35	6222	0.010	umol/
8) T	carbon dioxide	0.20	419014635	75978.976	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49342.D RSKEXT1.M Wed Feb 03 12:44:08 2016 Page 1

Signal #1 : C:\MSDchem\1\DATA\020316\16G49342.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDchem\1\DATA\020316\16G49342.D\TCD2B.CH
Acq On : 03 Feb 2016 12:38 Operator: JDS
Sample : L16020058-07 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 3 12:44 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

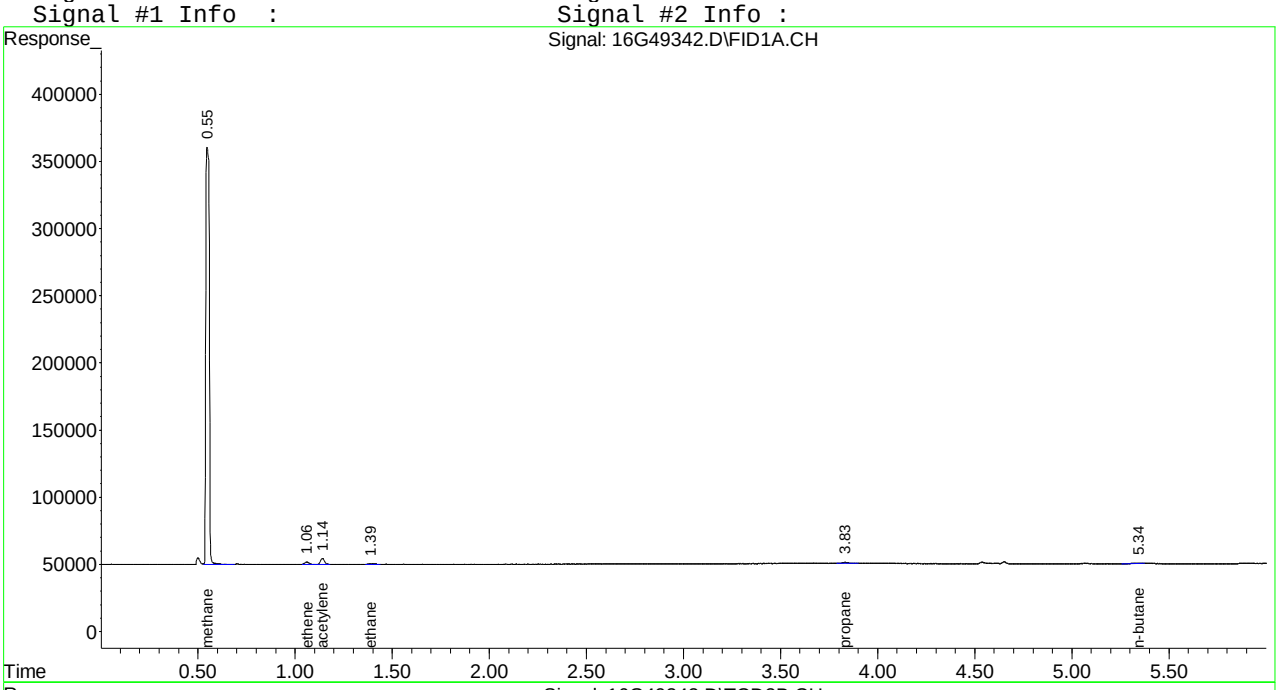

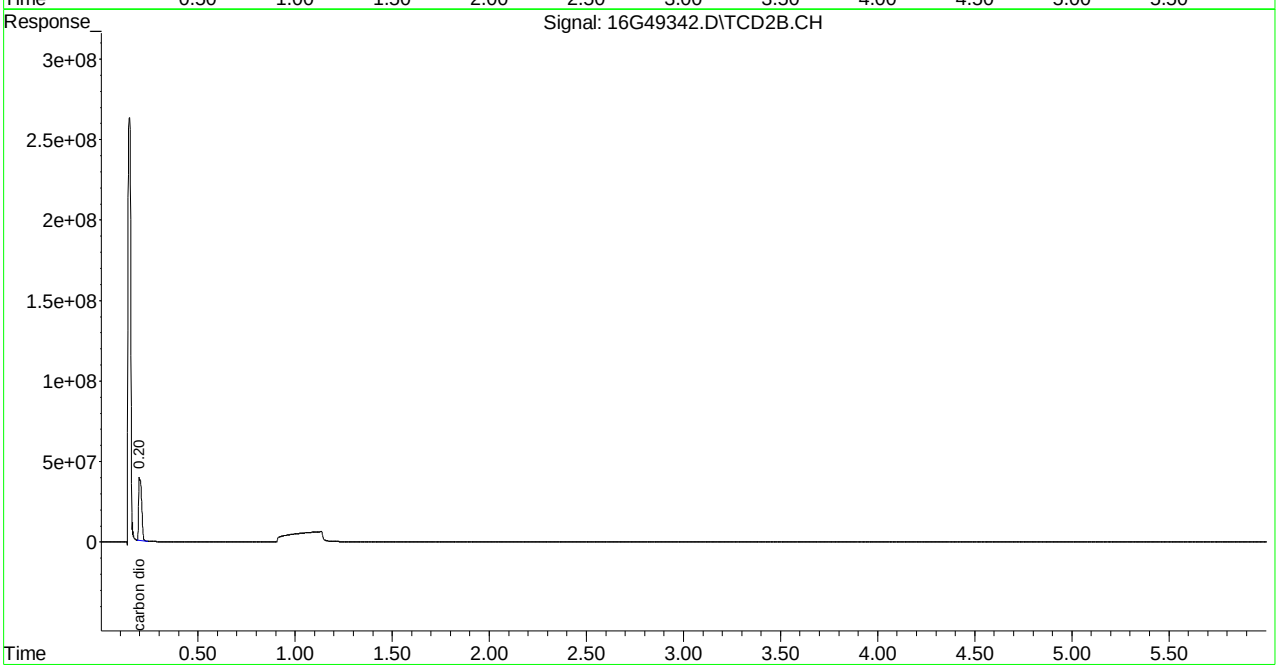

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49348.D\FID1A.CH Vial: 16
Signal #2 : C:\MSDchem\1\DATA\020316\16G49348.D\TCD2B.CH
Acq On : 03 Feb 2016 14:54 Operator: JDS
Sample : L16020058-07 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 15:00:16 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	613392	1.096	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	1.14	10270	0.030	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	53459766	9693.738	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49348.D RSKEXT1.M Wed Feb 03 15:00:16 2016 Page 1

Signal #1 : C:\MSDchem\1\DATA\020316\16G49348.D\FID1A.CH Vial: 16
Signal #2 : C:\MSDchem\1\DATA\020316\16G49348.D\TCD2B.CH
Acq On : 03 Feb 2016 14:54 Operator: JDS
Sample : L16020058-07 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 3 15:00 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

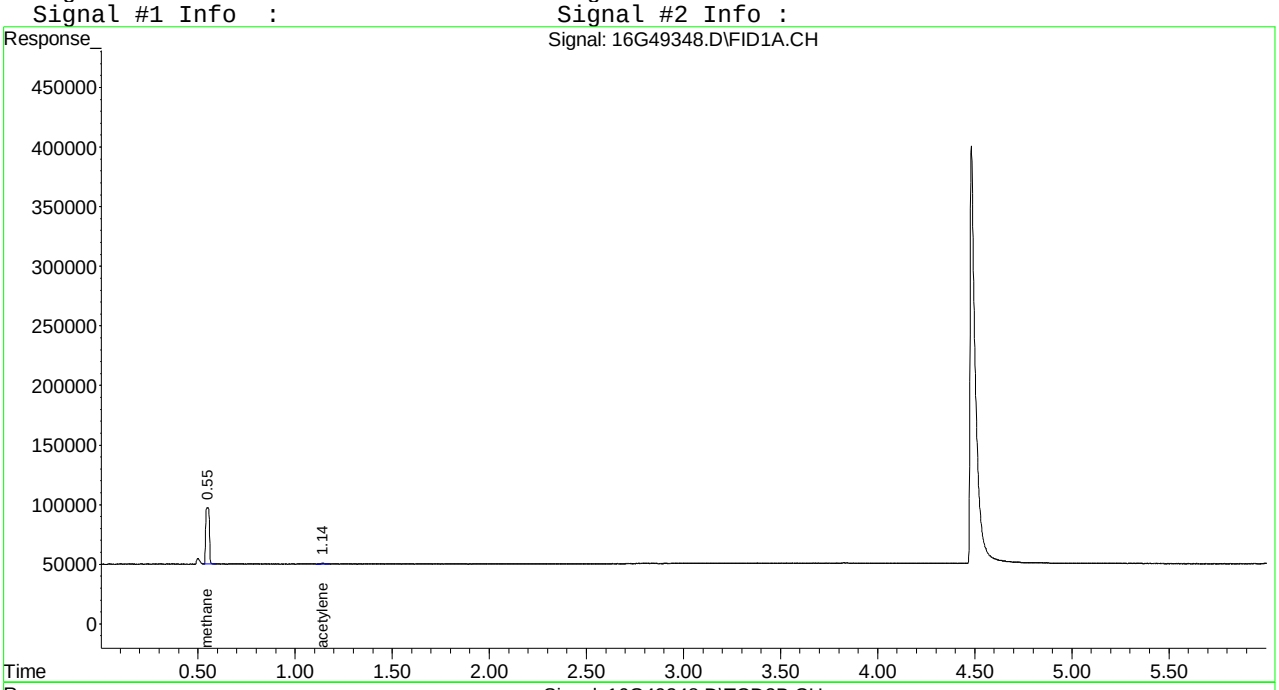

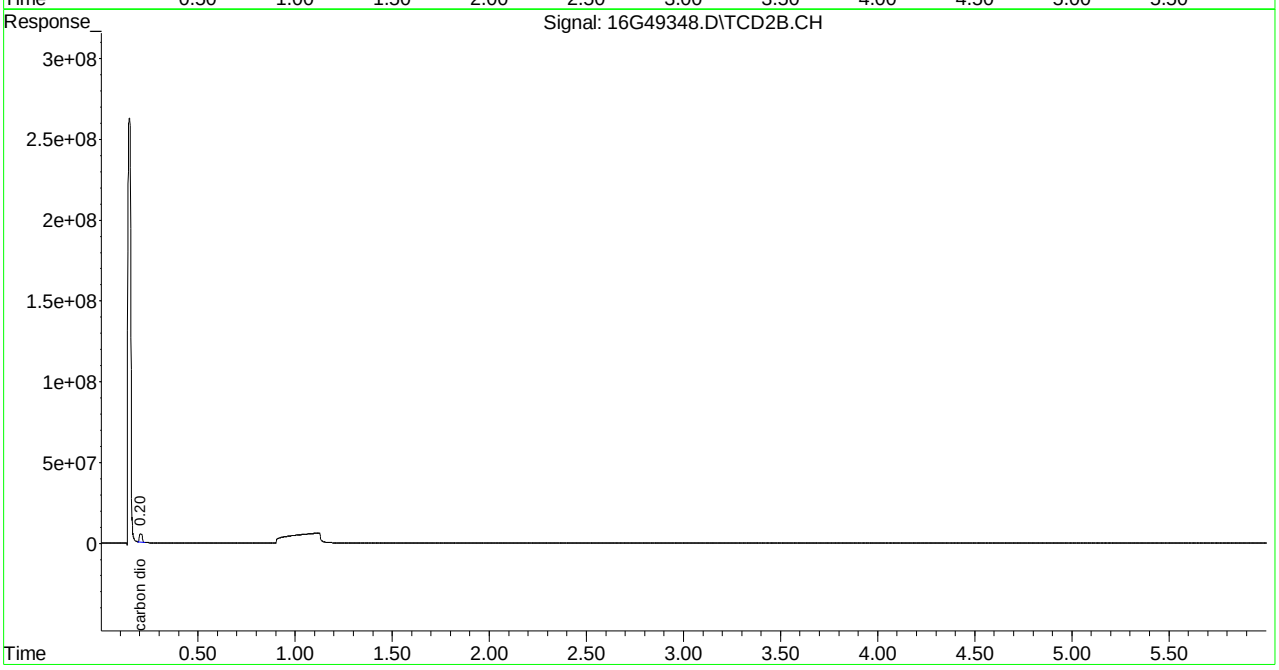

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49343.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDchem\1\DATA\020316\16G49343.D\TCD2B.CH
Acq On : 03 Feb 2016 12:50 Operator: JDS
Sample : L16020058-09 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 12:56:53 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	389075	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.38	20500	0.060	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.19	1200179069	217625.757	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49343.D RSKEXT1.M Wed Feb 03 12:56:53 2016 Page 1

Signal #1 : C:\MSDchem\1\DATA\020316\16G49343.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDchem\1\DATA\020316\16G49343.D\TCD2B.CH
Acq On : 03 Feb 2016 12:50 Operator: JDS
Sample : L16020058-09 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 3 12:56 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

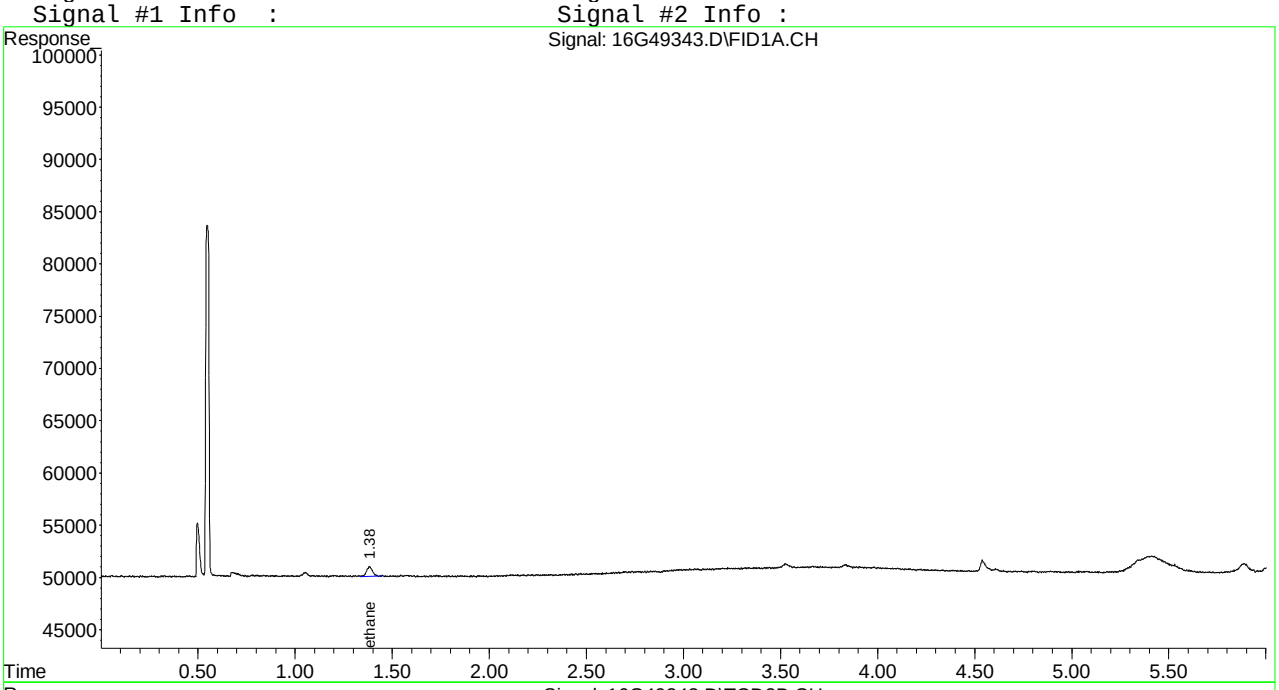

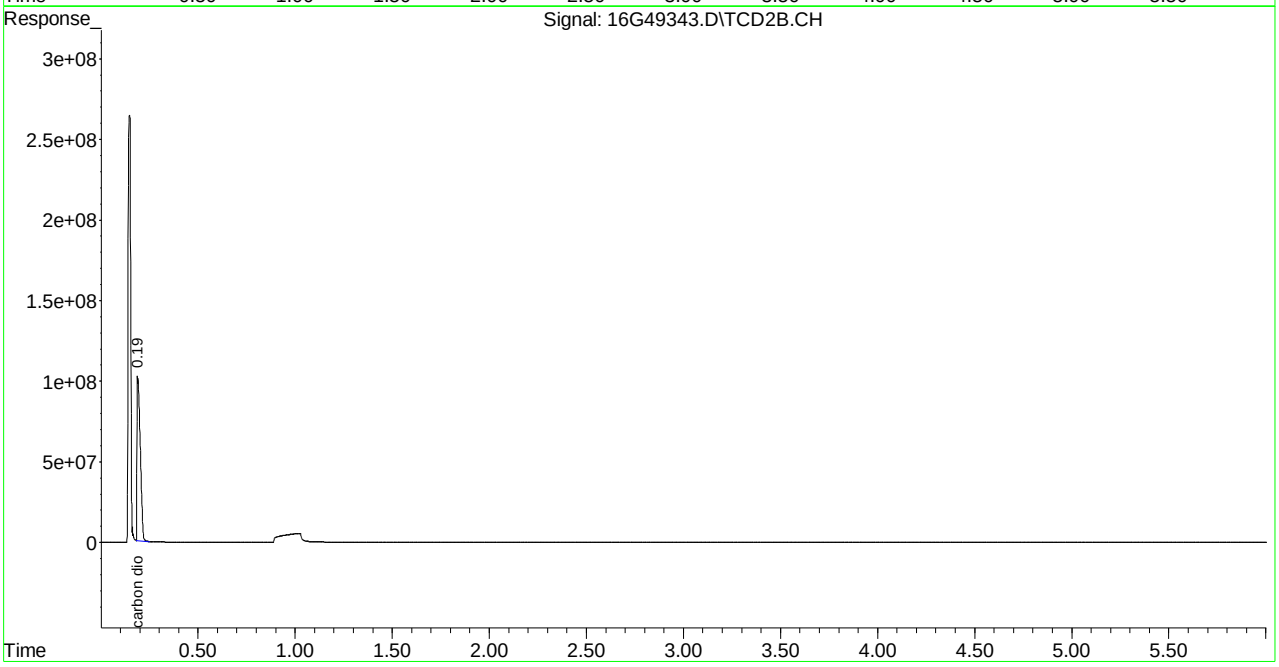

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49349.D\FID1A.CH Vial: 17
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49349.D\TCD2B.CH
Acq On    : 03 Feb 2016  15:06                        Operator: JDS
Sample    : L16020058-09 B D1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 04 13:18:07 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	260112	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	67749042	12284.781	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G49349.D RSKEXT1.M Thu Feb 04 13:19:23 2016 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49349.D\FID1A.CH Vial: 17
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49349.D\TCD2B.CH
Acq On    : 03 Feb 2016  15:06                        Operator: JDS
Sample    : L16020058-09 B D1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb  4 13:18 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

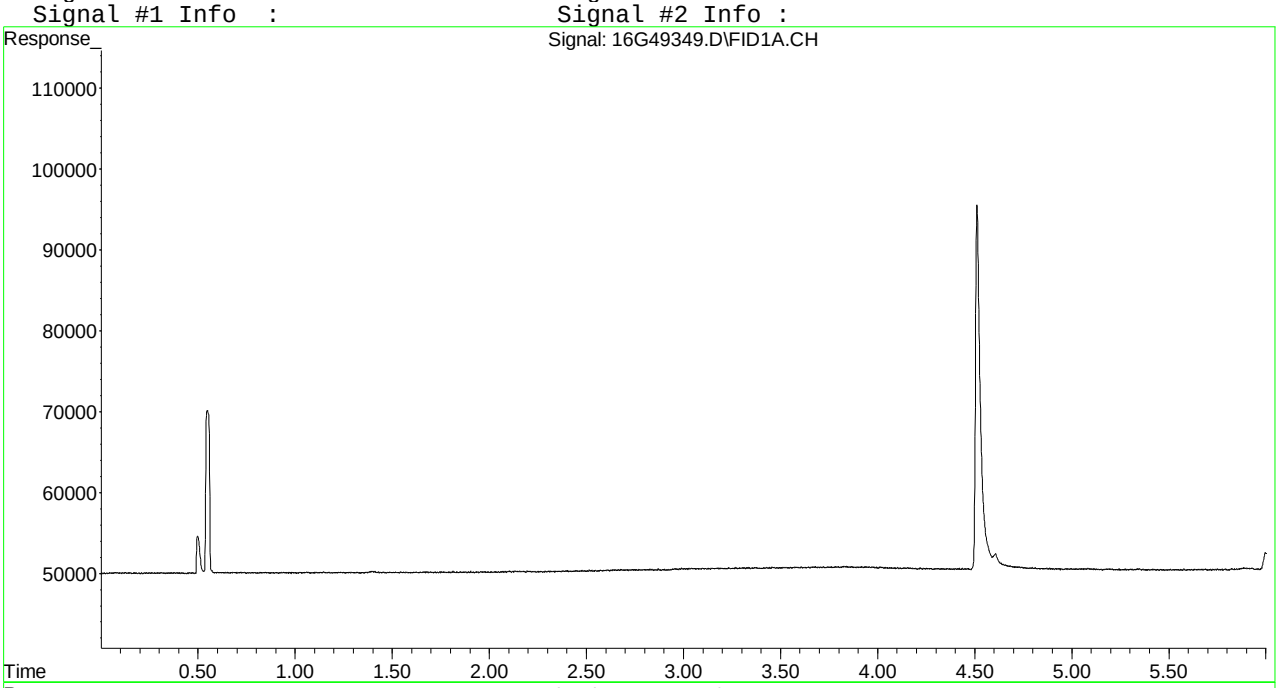

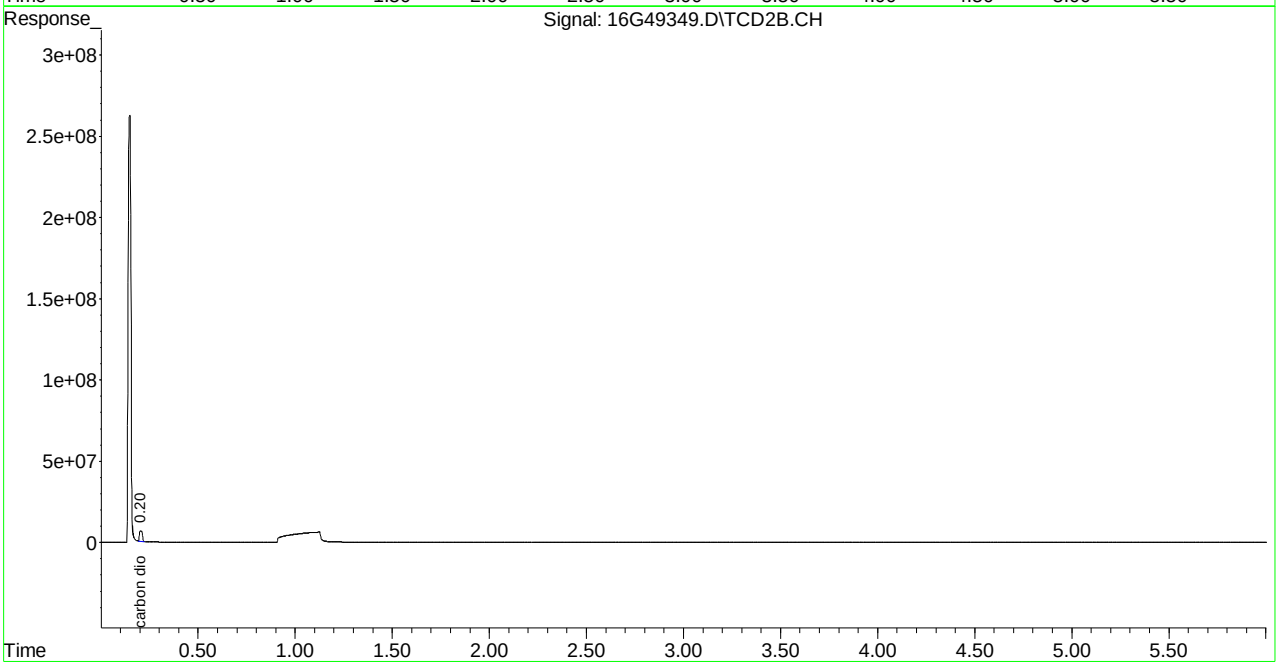

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:54:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	566979	0.846	umol/
2) T	ethene	1.06	233416	0.736	umol/
3) T	acetylene	1.14	213812	0.632	umol/
4) T	ethane	1.39	254568	0.749	umol/
5) T	propane	3.83	352222	0.710	umol/
6) T	n-butane	5.34	457938	0.706	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46875.D RSKEXT1.M Fri Mar 06 11:56:43 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:54 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

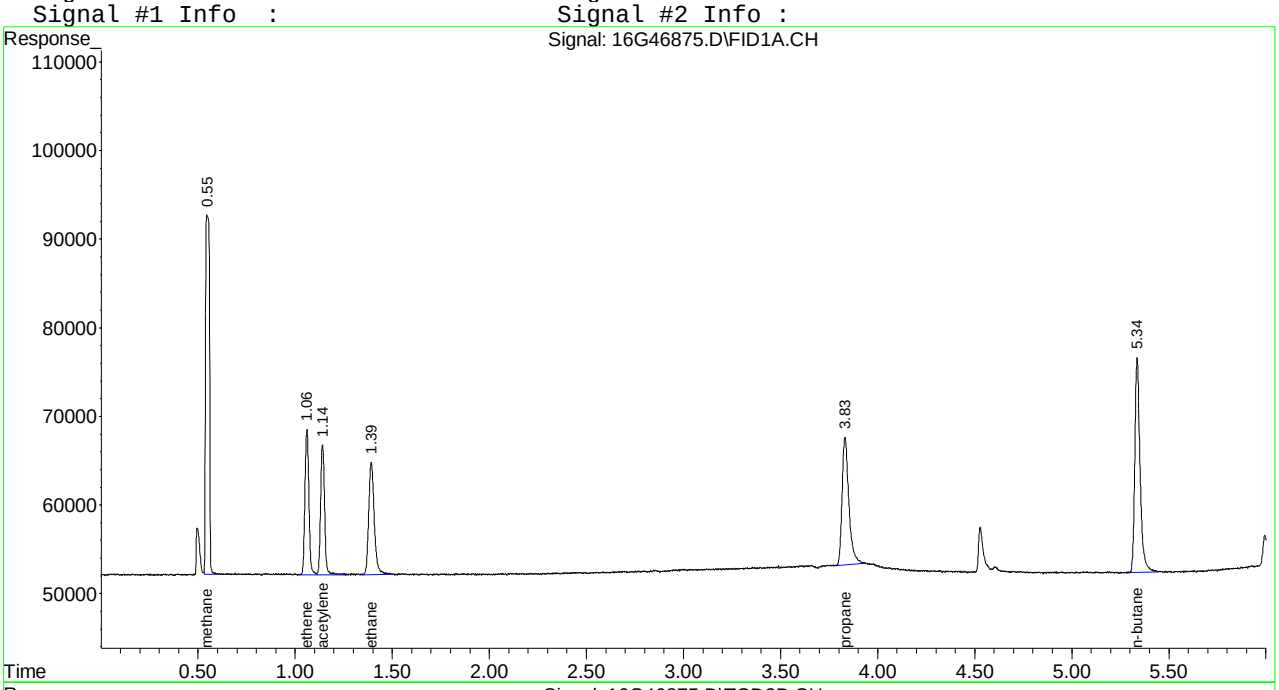

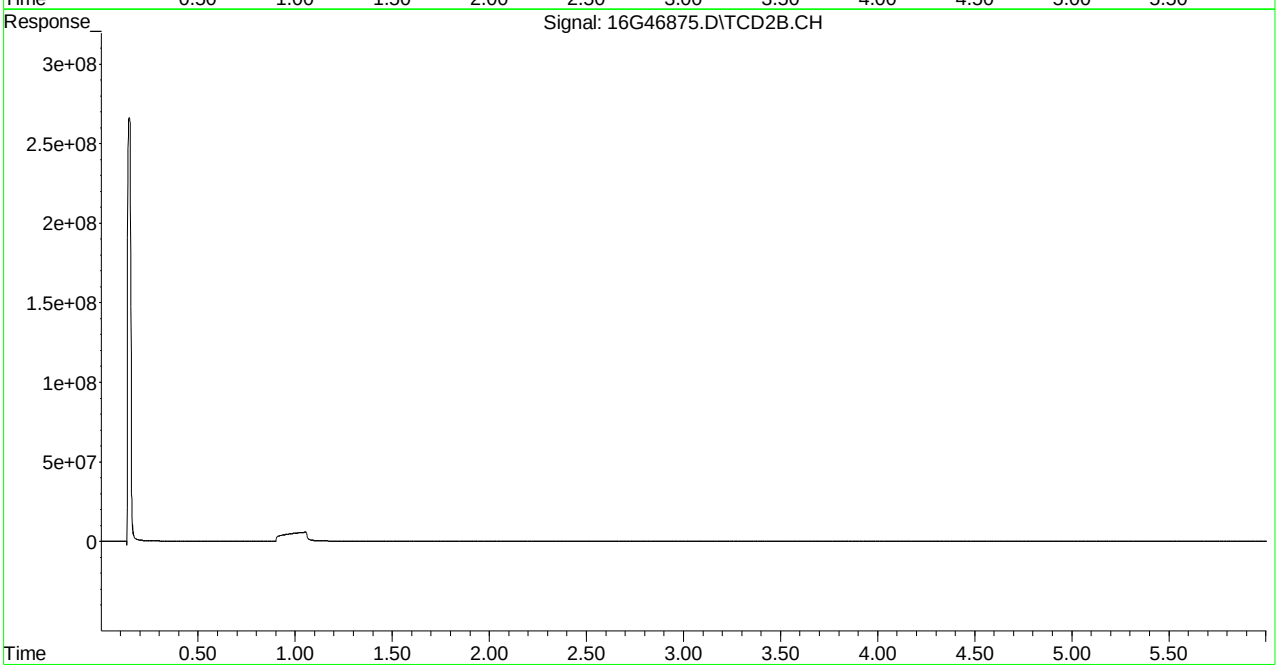

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	-1.000	0.846	0.0	0	0.00
2	T	ethene	-1.000	0.736	0.0	100	0.00
3	T	acetylene	-1.000	0.632	0.0	100	0.00
4	T	ethane	0.667	0.749	-12.3	100	0.00
5	T	propane	0.667	0.710	-6.4	100	0.00
6	T	n-butane	0.667	0.706	-5.8	100	0.00

Signal #2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46875.D RSKEXT1.M Fri Mar 06 11:55:53 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:17                        Operator: JDS
Sample    : WG514119-01 0.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
 ---------------------------------------------------------------------------


Signal #2
8 T   carbon dioxide               -1.000   0.000       0.0     0  -0.21
```

```
---------------------------------------------------------------------------
 (#) = Out of Range             SPCC's out = 0  CCC's out = 0
 16G46875.D  RSKEXT1.M      Fri Mar 06 11:55:53 2015                    Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	739046	1.773	umol/
2) T	ethene	1.06	538090	1.696	umol/
3) T	acetylene	1.14	529143	1.564	umol/
4) T	ethane	1.39	567082	1.668	umol/
5) T	propane	3.83	804240	1.620	umol/
6) T	n-butane	5.34	1028782	1.587	umol/
8) T	carbon dioxide	0.20	7954783	1442.423	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46876.D RSKEXT1.M Fri Mar 06 11:57:08 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

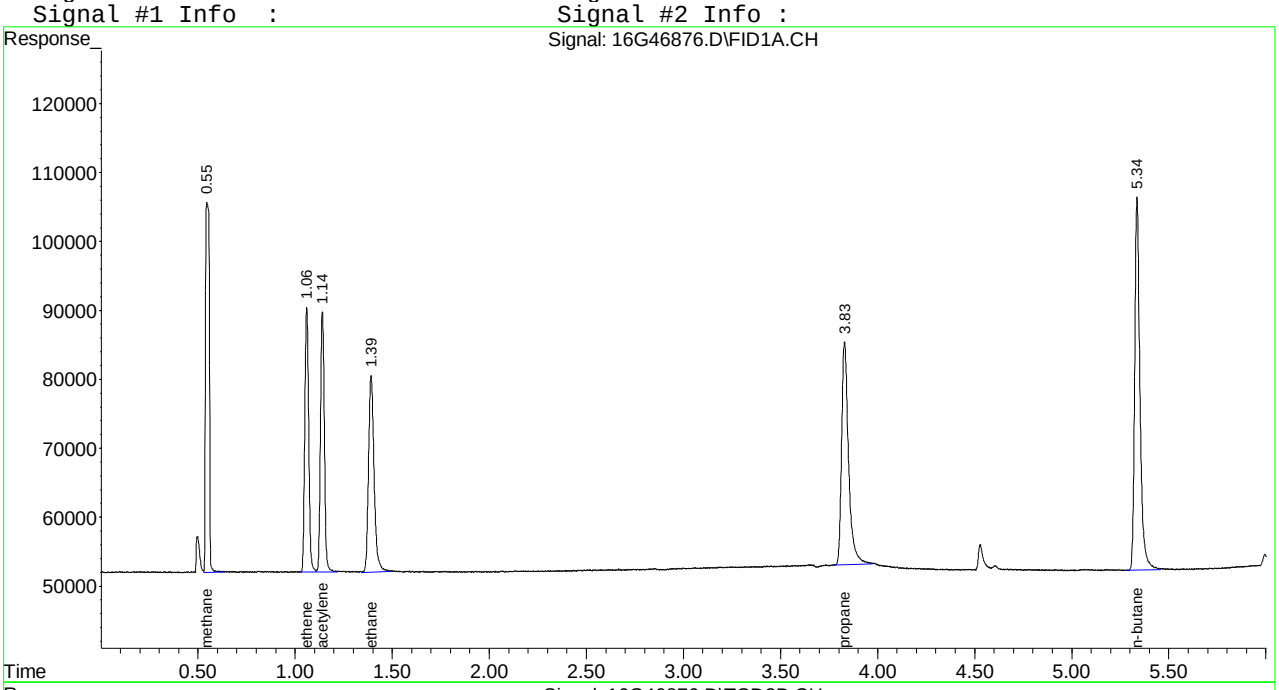

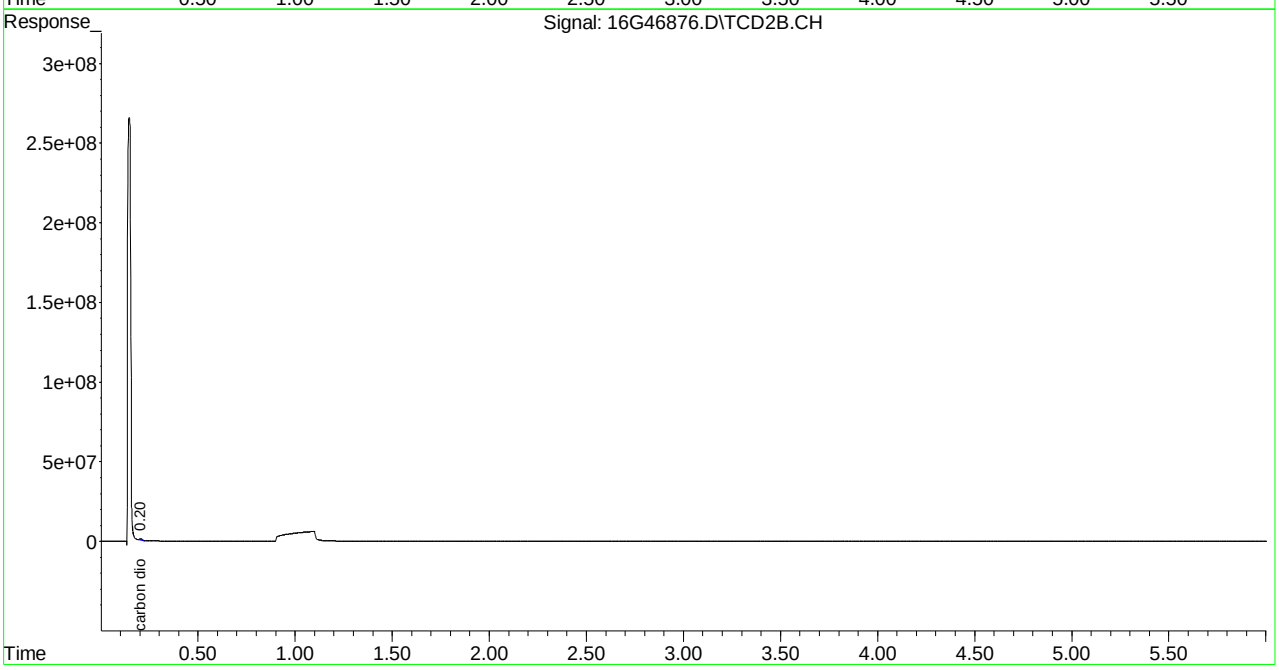

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	1.670	1.773	-6.2	100	0.00
2	T	ethene	1.670	1.696	-1.6	100	0.00
3	T	acetylene	1.670	1.564	6.3	100	0.00
4	T	ethane	1.670	1.668	0.1	100	0.00
5	T	propane	1.670	1.620	3.0	100	0.00
6	T	n-butane	1.670	1.587	5.0	100	0.00
		Signal #2					
8	T	carbon dioxide	2000.000	1442.423	27.9#	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46876.D RSKEXT1.M Fri Mar 06 11:52:49 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:30                        Operator: JDS
Sample    : WG514119-02 1.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:10 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	6717167	33.998	umol/
2) T	ethene	1.06	11126351	35.075	umol/
3) T	acetylene	1.14	11442001	33.809	umol/
4) T	ethane	1.39	11535235	33.937	umol/
5) T	propane	3.83	17256964	34.764	umol/
6) T	n-butane	5.34	22669140	34.968	umol/
8) T	carbon dioxide	0.20	18661832	3383.908	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46877.D RSKEXT1.M Fri Mar 06 11:57:10 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

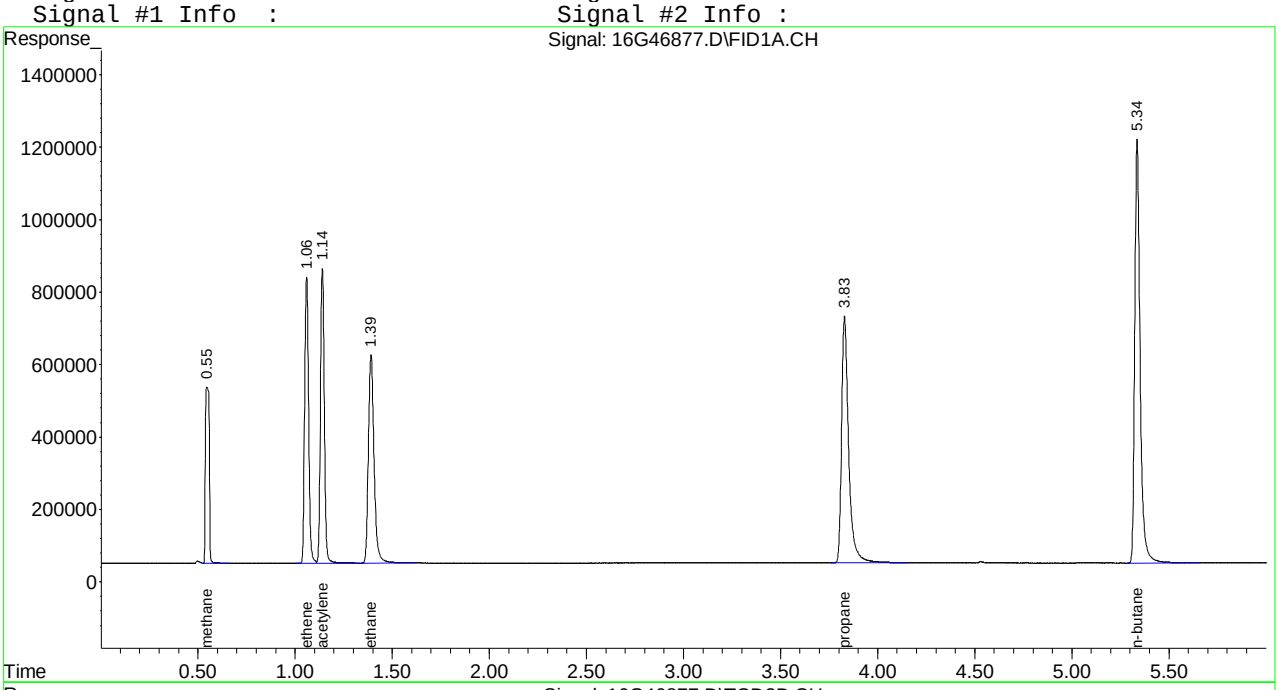

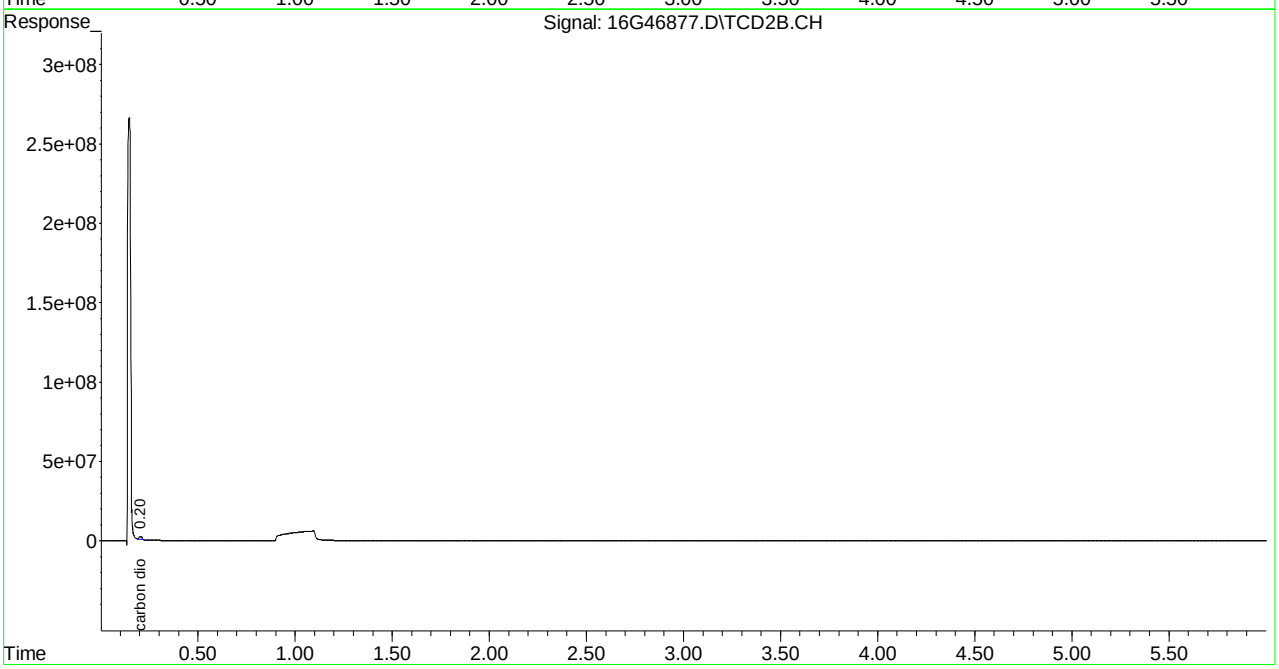

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11713293	60.930	umol/
2) T	ethene	1.06	19737271	62.220	umol/
3) T	acetylene	1.14	20910957	61.787	umol/
4) T	ethane	1.39	20832969	61.292	umol/
5) T	propane	3.83	31304425	63.062	umol/
6) T	n-butane	5.33	40948894	63.166	umol/
8) T	carbon dioxide	0.20	37230879	6750.991	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46878.D RSKEXT1.M Fri Mar 06 11:57:11 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

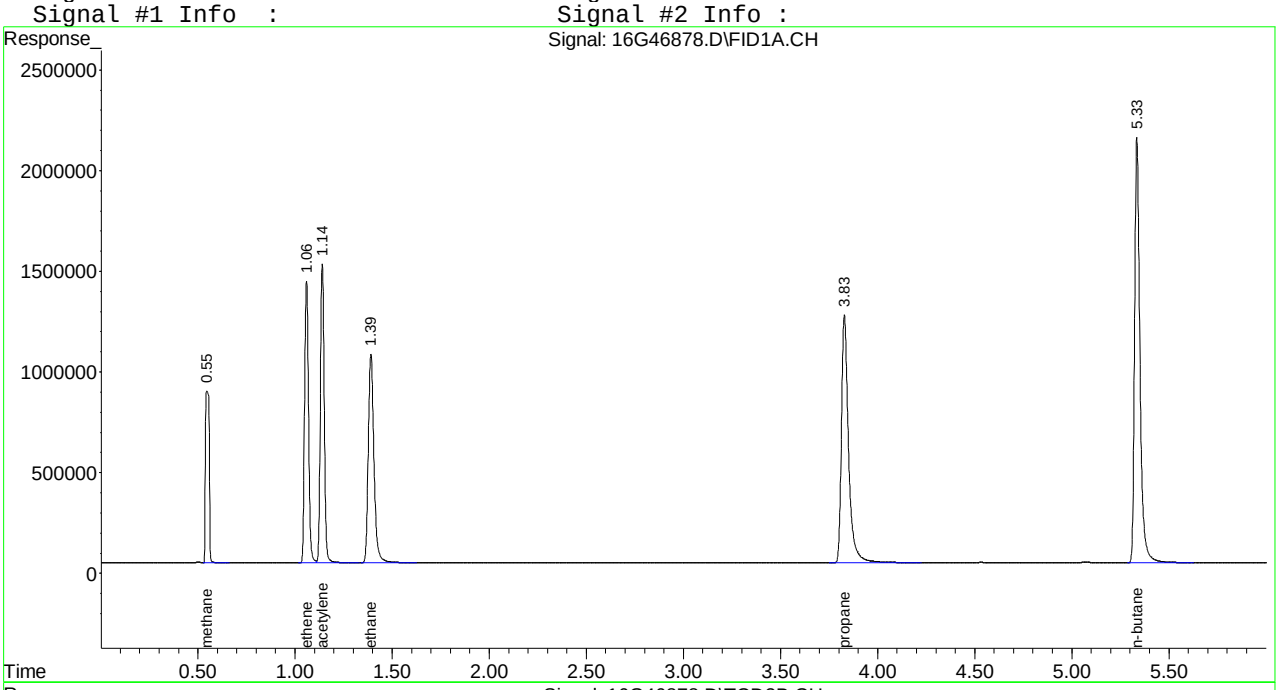

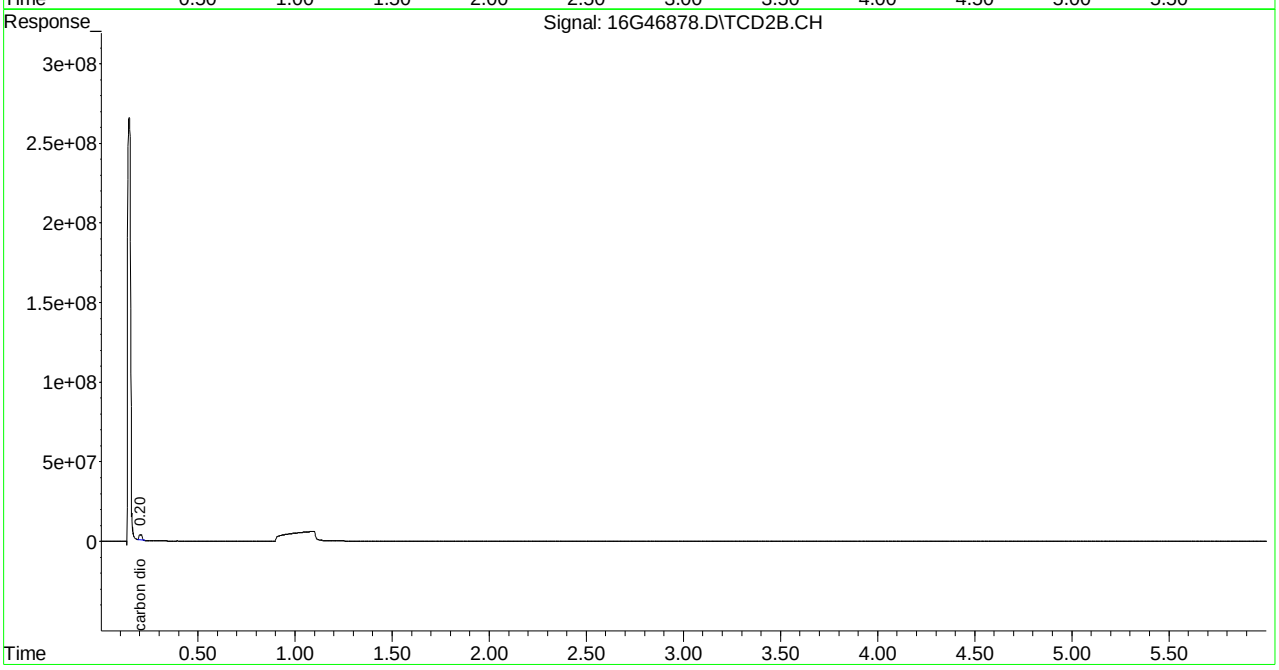

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24939741	132.227	umol/
2) T	ethene	1.06	41686300	131.412	umol/
3) T	acetylene	1.14	47206199	139.484	umol/
4) T	ethane	1.39	43668346	128.475	umol/
5) T	propane	3.83	64365472	129.663	umol/
6) T	n-butane	5.33	84395468	130.185	umol/
8) T	carbon dioxide	0.20	80524699	14601.362	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46879.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

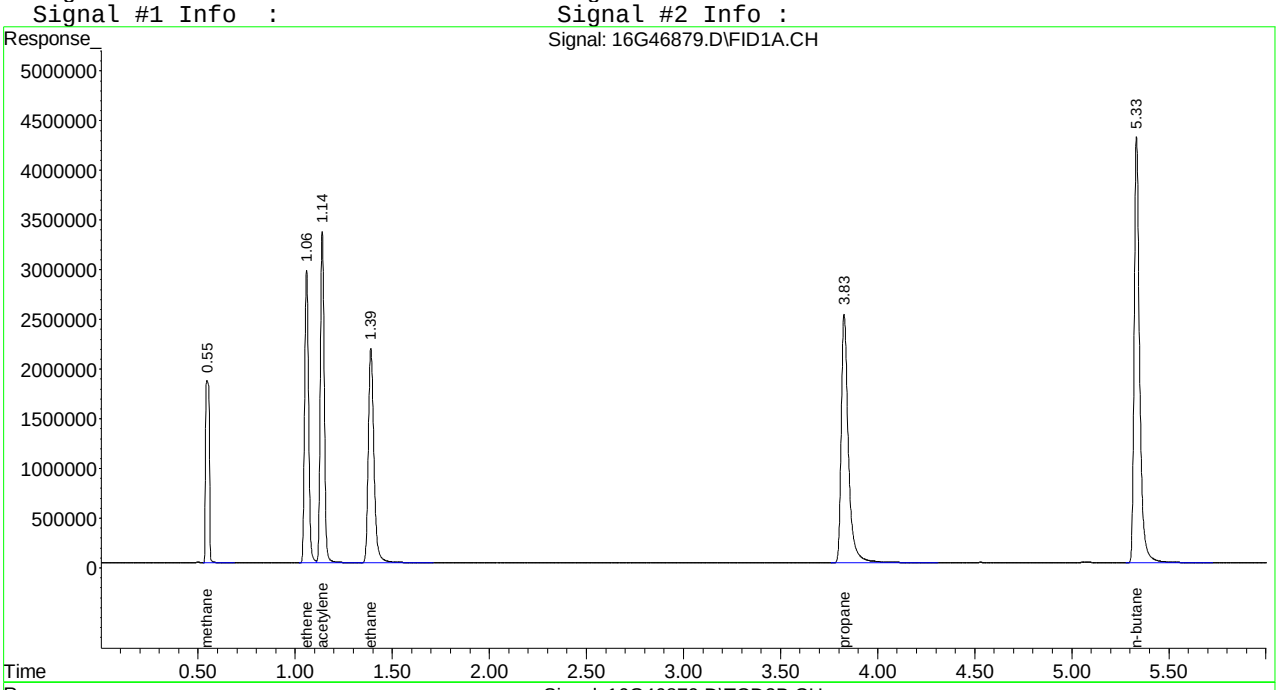

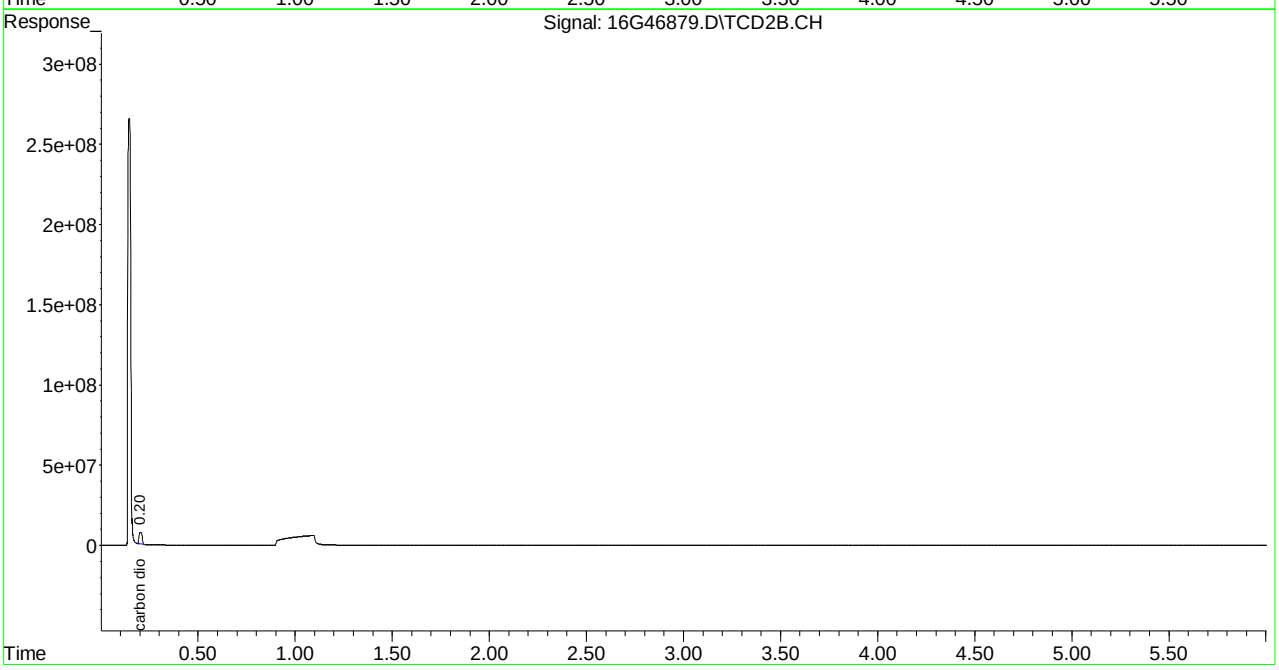

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:12 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	61959752	331.783	umol/
2) T	ethene	1.06	106345688	335.244	umol/
3) T	acetylene	1.14	118917475	351.375	umol/
4) T	ethane	1.39	111791323	328.897	umol/
5) T	propane	3.83	166544491	335.501	umol/
6) T	n-butane	5.33	219746160	338.971	umol/
8) T	carbon dioxide	0.20	201820251	36595.610	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46880.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

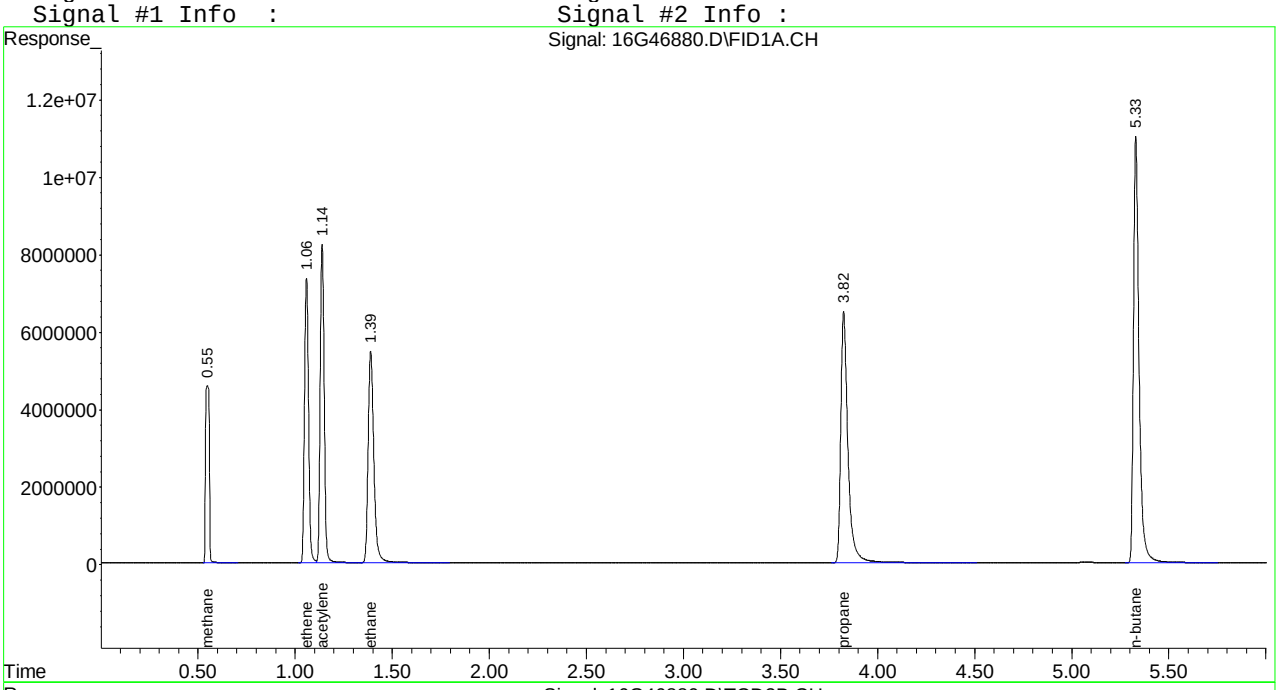

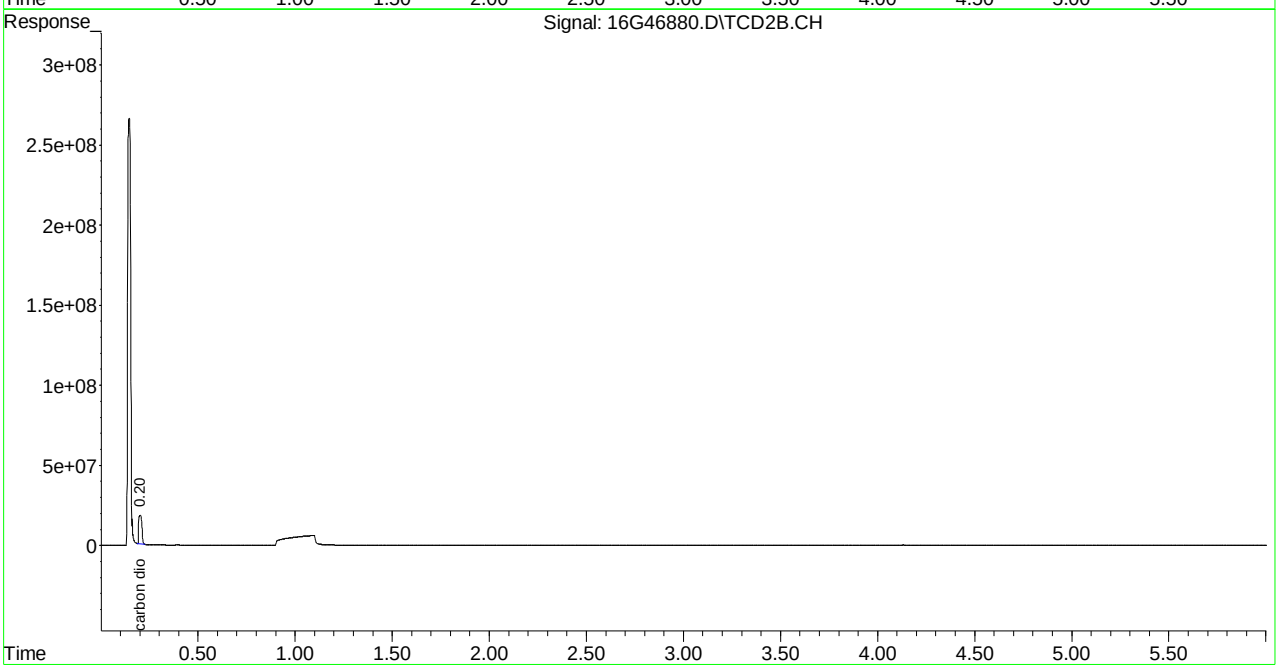

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On    : 03 Mar 2015  15:29                        Operator: JDS
Sample    : WG514119-07 533umol/mol STD RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:13 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	100578633	539.958	umol/
2) T	ethene	1.06	169644372	534.786	umol/
3) T	acetylene	1.14	183672662	542.712	umol/
4) T	ethane	1.39	178696917	525.738	umol/
5) T	propane	3.82	263060772	529.931	umol/
6) T	n-butane	5.33	344418707	531.285	umol/
8) T	carbon dioxide	0.20	309711021	56159.199	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On : 03 Mar 2015 15:29 Operator: JDS
Sample : WG514119-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

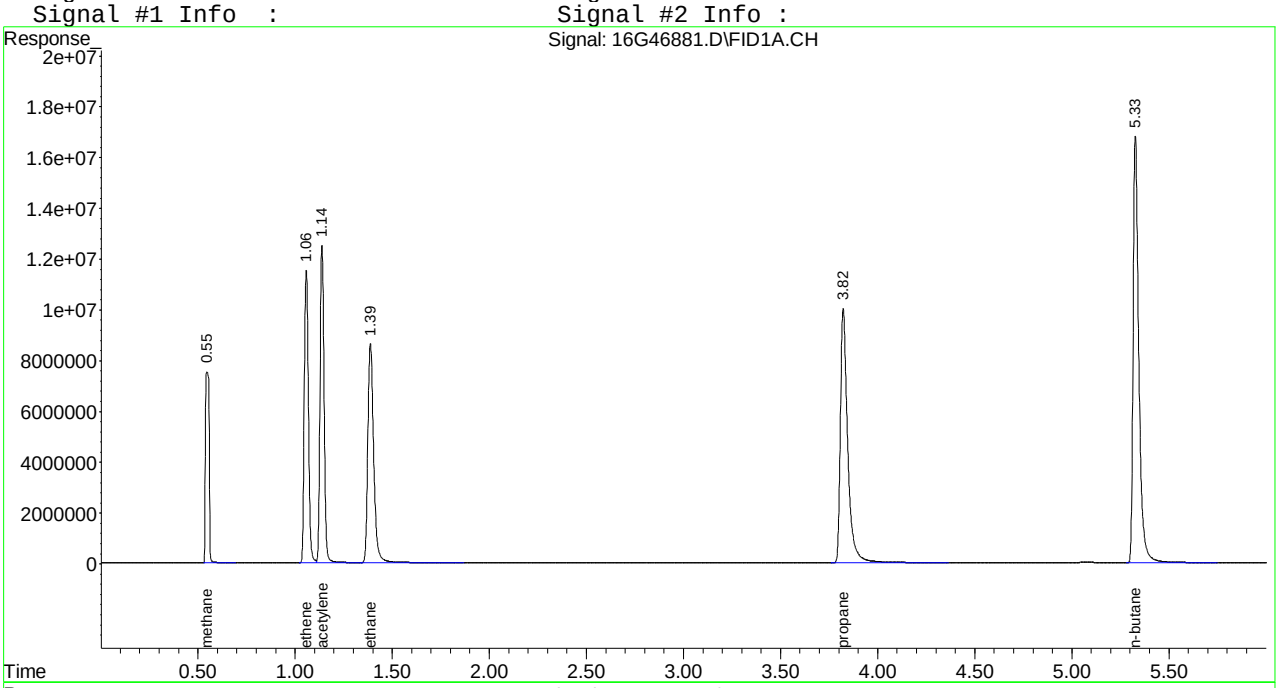

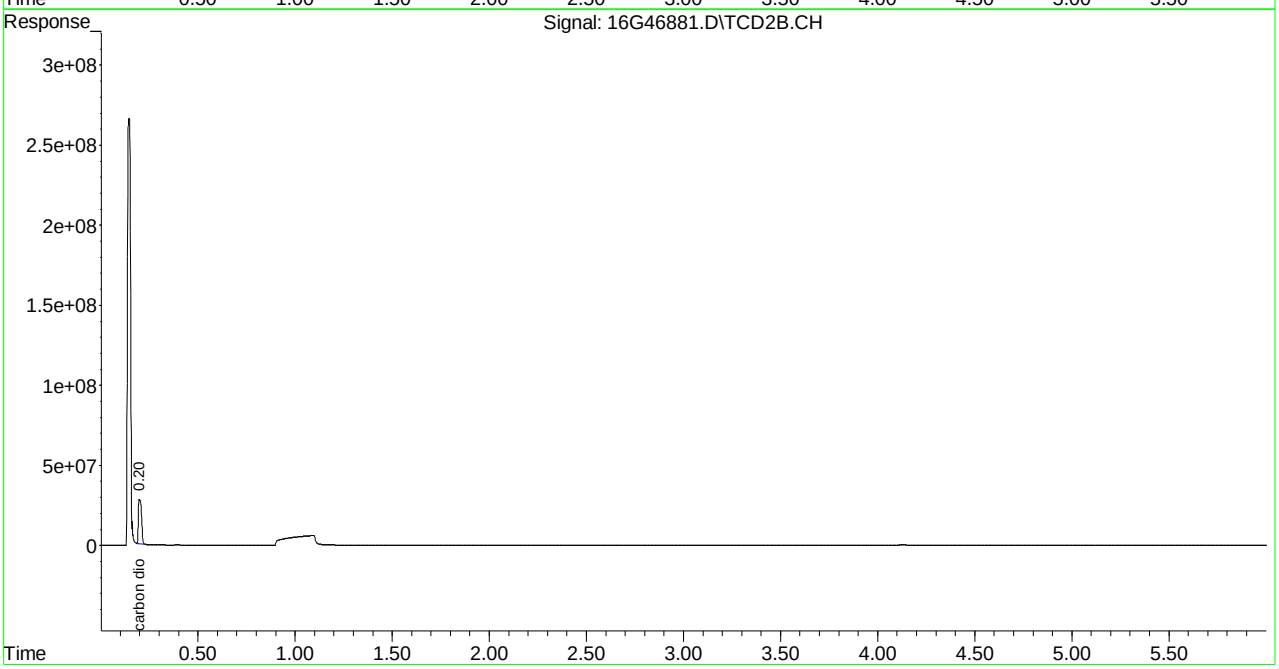

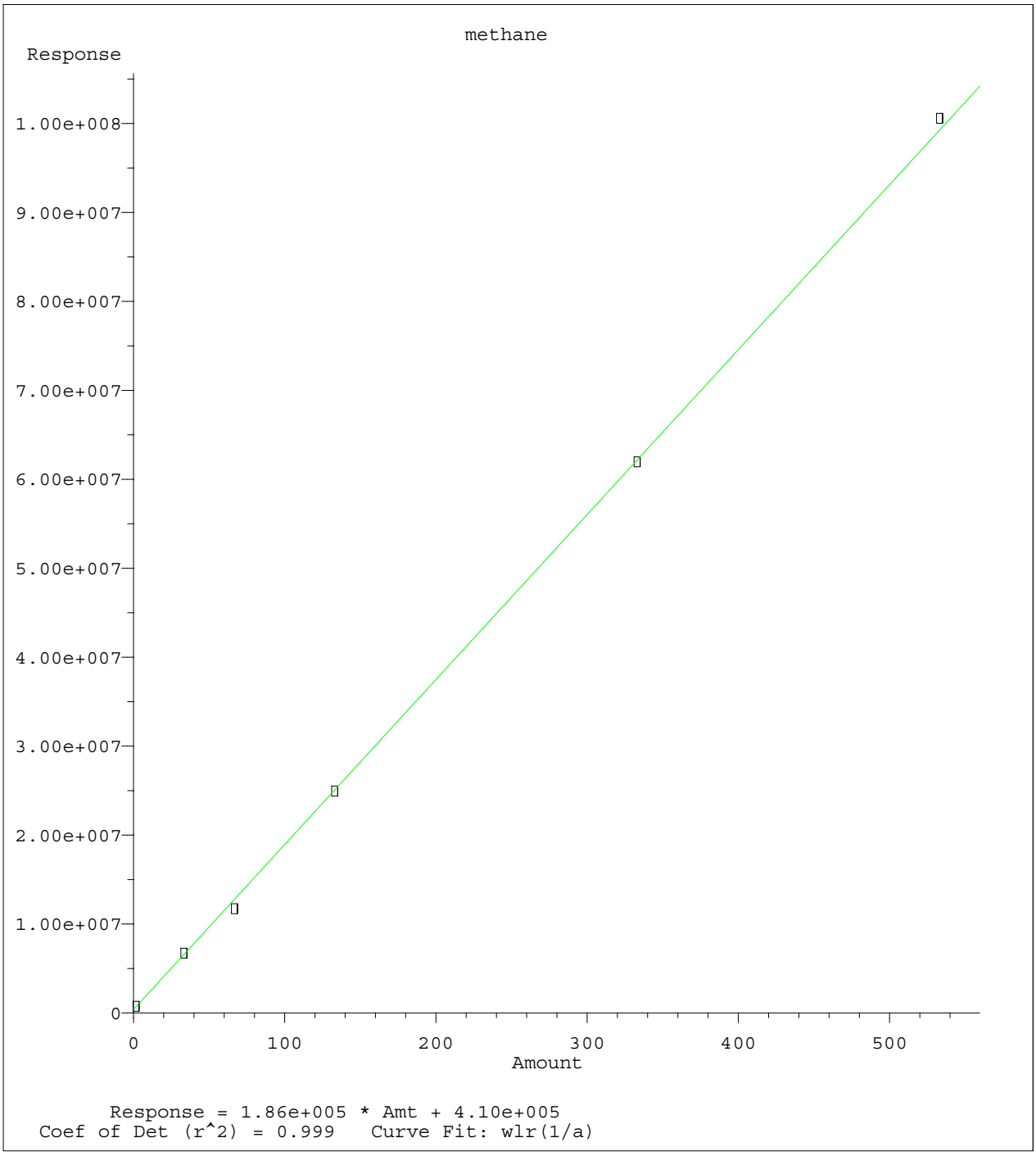

Method Name: C:\MSDCHEM\1\METHODS\RSKEXT1.M
Calibration Table Last Updated: Fri Mar 06 11:52:33 2015

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:58:49 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	25936090	137.598	umol/
2) T	ethene	1.06	43111404	135.904	umol/
3) T	acetylene	1.14	47098795	139.167	umol/
4) T	ethane	1.39	44778091	131.740	umol/
5) T	propane	3.83	64822008	130.583	umol/
6) T	n-butane	5.33	82856392	127.811	umol/
8) T	carbon dioxide	0.20	76359751	13846.141	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46884.D RSKEXT1.M Fri Mar 06 11:58:49 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:58 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

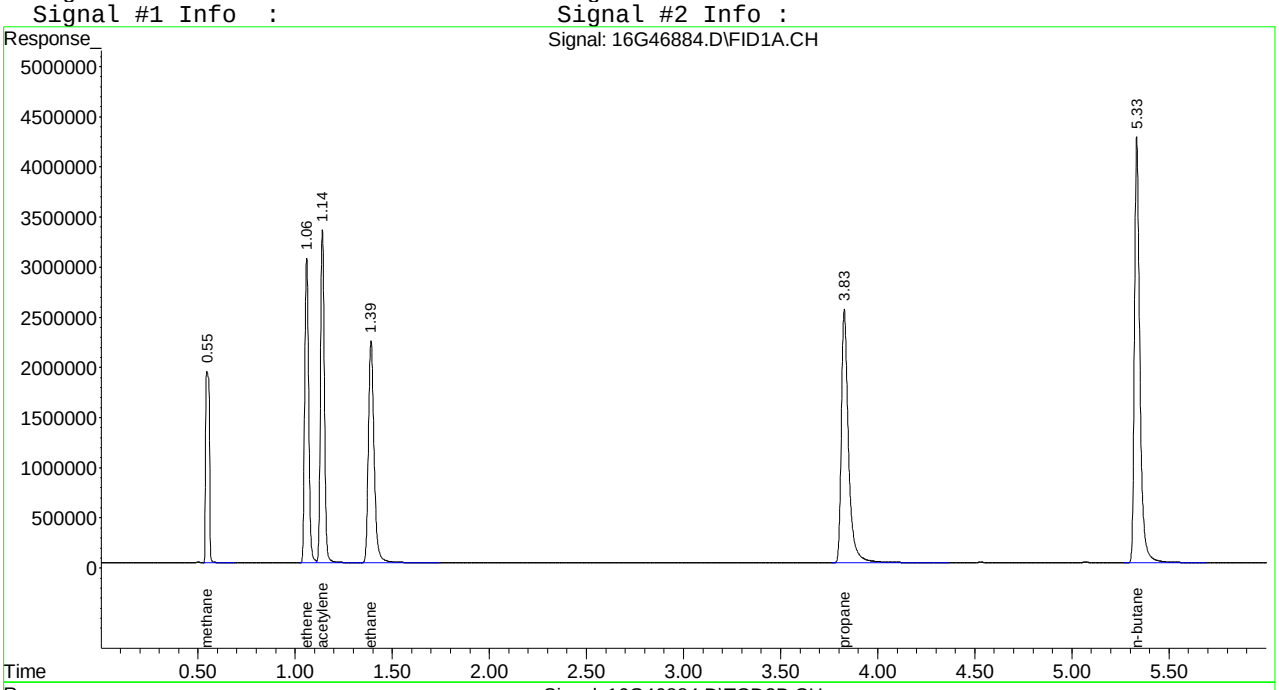

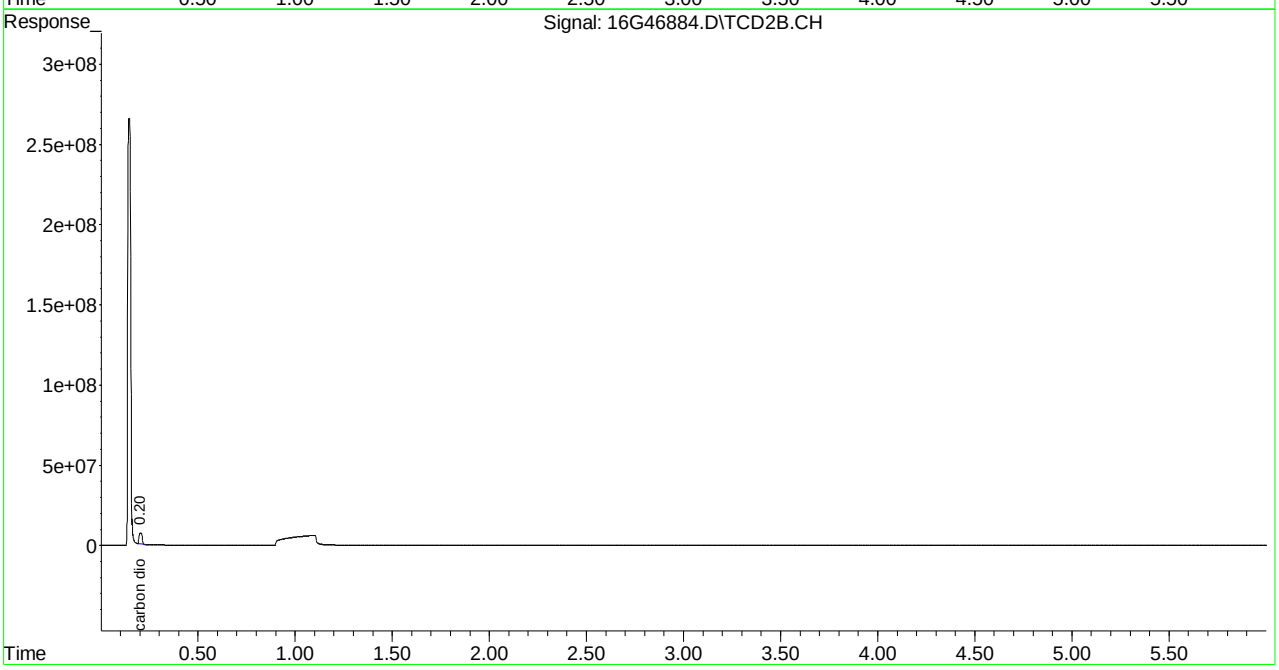

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	137.598	-3.5	104	0.00
2	T	ethene	133.000	135.904	-2.2	103	0.00
3	T	acetylene	133.000	139.167	-4.6	100	0.00
4	T	ethane	133.000	131.740	0.9	103	0.00
5	T	propane	133.000	130.583	1.8	101	0.00
6	T	n-butane	133.000	127.811	3.9	98	0.00
		Signal #2					
8	T	carbon dioxide	13300.000	13846.141	-4.1	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46884.D RSKEXT1.M Fri Mar 06 11:59:02 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On    : 03 Mar 2015  17:10                        Operator: JDS
Sample    : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49333.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\020316\16G49333.D\TCD2B.CH
Acq On : 03 Feb 2016 9:12 Operator: JDS
Sample : WG556002-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 09:18:06 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23685466	125.466	umol/
2) T	ethene	1.06	39912293	125.819	umol/
3) T	acetylene	1.14	43836979	129.529	umol/
4) T	ethane	1.39	41762163	122.867	umol/
5) T	propane	3.83	60450719	121.777	umol/
6) T	n-butane	5.34	77290542	119.225	umol/
8) T	carbon dioxide	0.20	74700498	13545.272	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49333.D RSKEXT1.M Wed Feb 03 09:18:07 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49333.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\020316\16G49333.D\TCD2B.CH
Acq On : 03 Feb 2016 9:12 Operator: JDS
Sample : WG556002-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 3 9:18 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

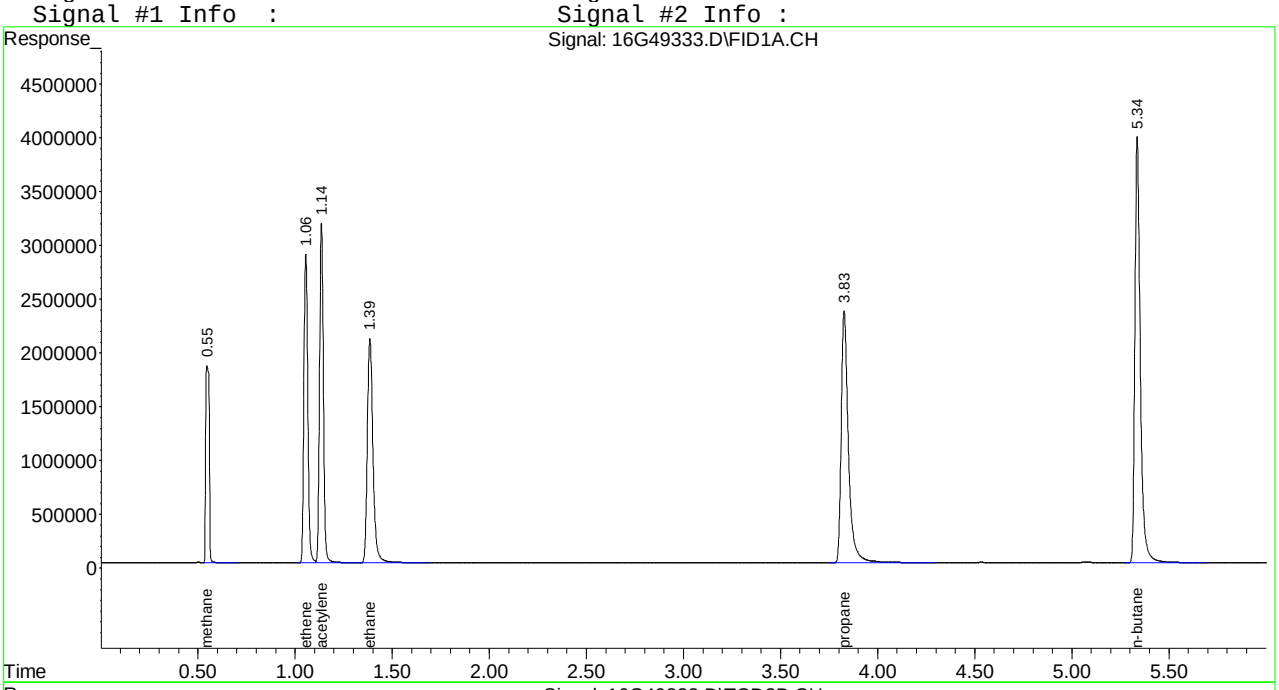

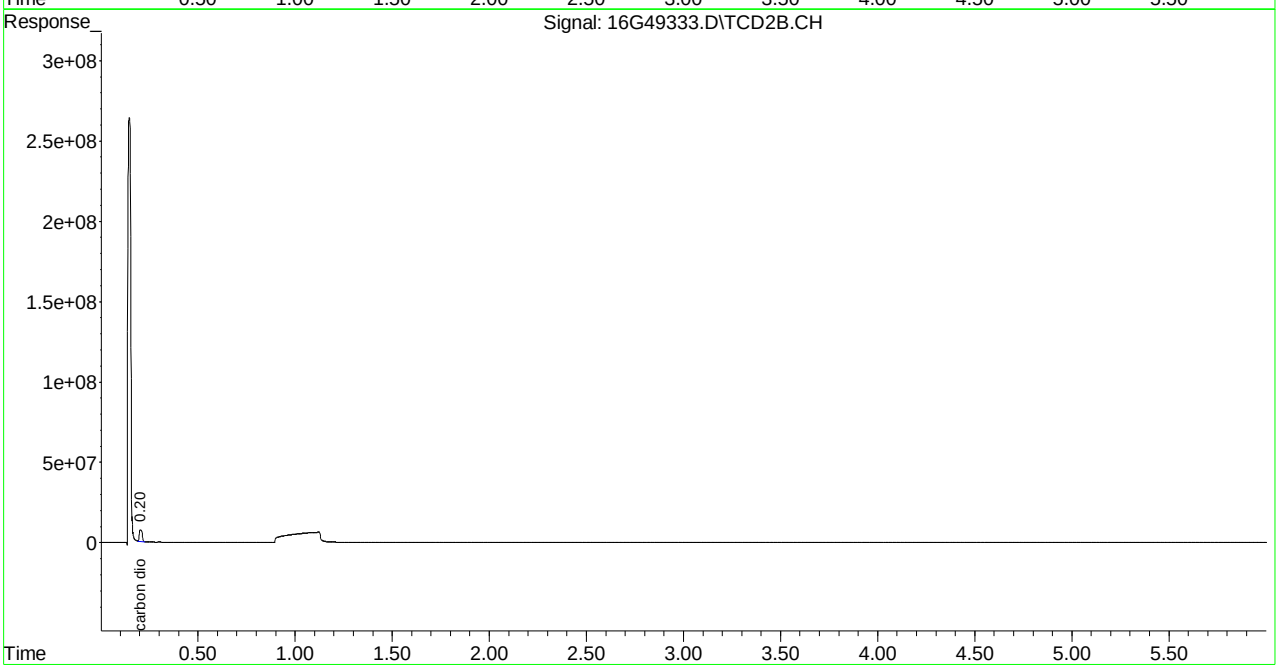

Evaluate Continuing Calibration Report

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49333.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49333.D\TCD2B.CH
Acq On    : 03 Feb 2016   9:12                        Operator: JDS
Sample    : WG556002-01 133umol/mol CCV STD RSK175    Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	125.466	5.7	95	0.00
2	T	ethene	133.000	125.819	5.4	96	0.00
3	T	acetylene	133.000	129.529	2.6	93	0.00
4	T	ethane	133.000	122.867	7.6	96	0.00
5	T	propane	133.000	121.777	8.4	94	0.00
6	T	n-butane	133.000	119.225	10.4	92	0.00
		Signal #2					
8	T	carbon dioxide	13300.000	13545.272	-1.8	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G49333.D RSKEXT1.M Wed Feb 03 11:33:54 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49333.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49333.D\TCD2B.CH
Acq On    : 03 Feb 2016   9:12                        Operator: JDS
Sample    : WG556002-01 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49344.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\020316\16G49344.D\TCD2B.CH
Acq On : 03 Feb 2016 13:14 Operator: JDS
Sample : WG556002-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 13:20:24 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	22930869	121.398	umol/
2) T	ethene	1.06	38528148	121.456	umol/
3) T	acetylene	1.14	42066709	124.298	umol/
4) T	ethane	1.39	40451959	119.012	umol/
5) T	propane	3.83	58372946	117.591	umol/
6) T	n-butane	5.34	74990199	115.677	umol/
8) T	carbon dioxide	0.20	73180331	13269.624	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49344.D RSKEXT1.M Wed Feb 03 13:20:24 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49344.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\020316\16G49344.D\TCD2B.CH
Acq On : 03 Feb 2016 13:14 Operator: JDS
Sample : WG556002-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 3 13:20 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

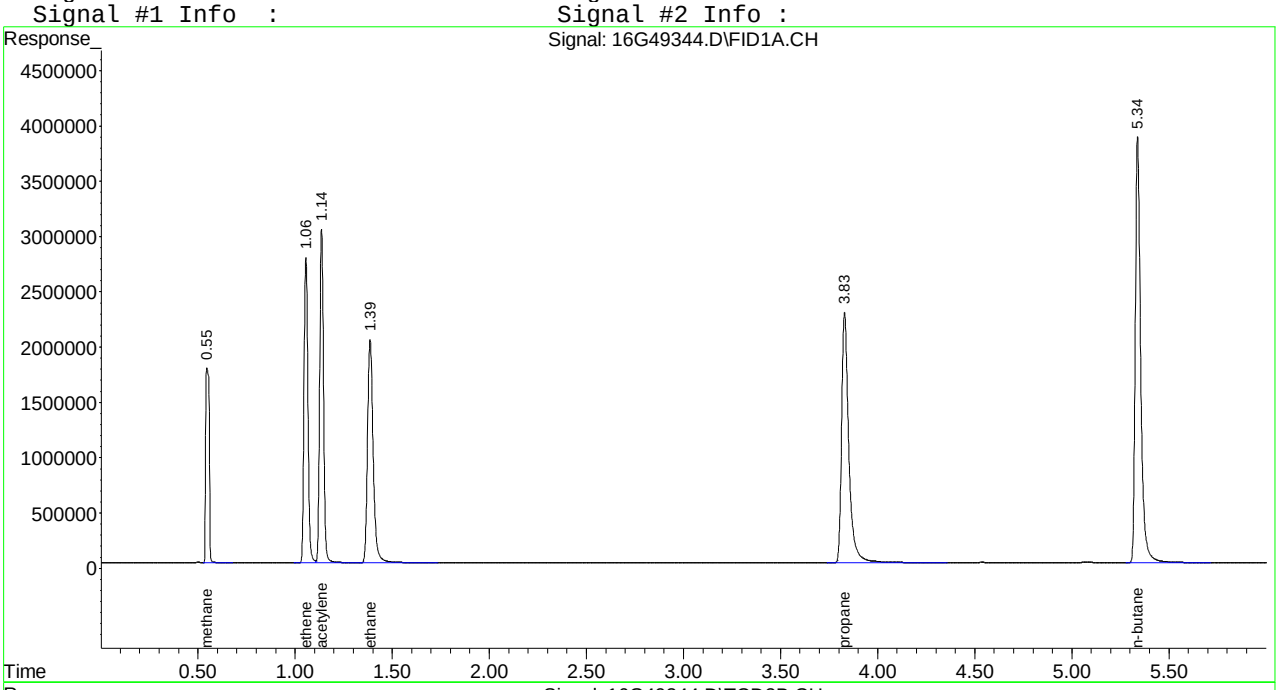

Evaluate Continuing Calibration Report

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49344.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49344.D\TCD2B.CH
Acq On    : 03 Feb 2016  13:14                        Operator: JDS
Sample    : WG556002-02 133umol/mol CCV STD RSK175    Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	121.398	8.7	92	0.00
2	T	ethene	133.000	121.456	8.7	92	0.00
3	T	acetylene	133.000	124.298	6.5	89	0.00
4	T	ethane	133.000	119.012	10.5	93	0.00
5	T	propane	133.000	117.591	11.6	91	0.00
6	T	n-butane	133.000	115.677	13.0	89	0.00
		Signal #2					
8	T	carbon dioxide	13300.000	13269.624	0.2	91	0.00

```
---------------------------------------------------------------------------
(#) = Out of Range            SPCC's out = 0  CCC's out = 0
16G49344.D  RSKEXT1.M      Wed Feb 03 13:25:08 2016                          Page 1
```

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49344.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49344.D\TCD2B.CH
Acq On    : 03 Feb 2016  13:14                        Operator: JDS
Sample    : WG556002-02 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49353.D\FID1A.CH Vial: 21
Signal #2 : C:\MSDchem\1\DATA\020316\16G49353.D\TCD2B.CH
Acq On : 03 Feb 2016 15:55 Operator: JDS
Sample : WG556002-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 16:01:55 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23057244	122.079	umol/
2) T	ethene	1.05	38462406	121.249	umol/
3) T	acetylene	1.13	40181808	118.728	umol/
4) T	ethane	1.38	40461048	119.039	umol/
5) T	propane	3.83	58221514	117.286	umol/
6) T	n-butane	5.34	74413349	114.787	umol/
8) T	carbon dioxide	0.20	67067139	12161.133	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49353.D RSKEXT1.M Wed Feb 03 16:01:55 2016 Page 1

Signal #1 : C:\MSDchem\1\DATA\020316\16G49353.D\FID1A.CH Vial: 21
Signal #2 : C:\MSDchem\1\DATA\020316\16G49353.D\TCD2B.CH
Acq On : 03 Feb 2016 15:55 Operator: JDS
Sample : WG556002-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 3 16:01 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

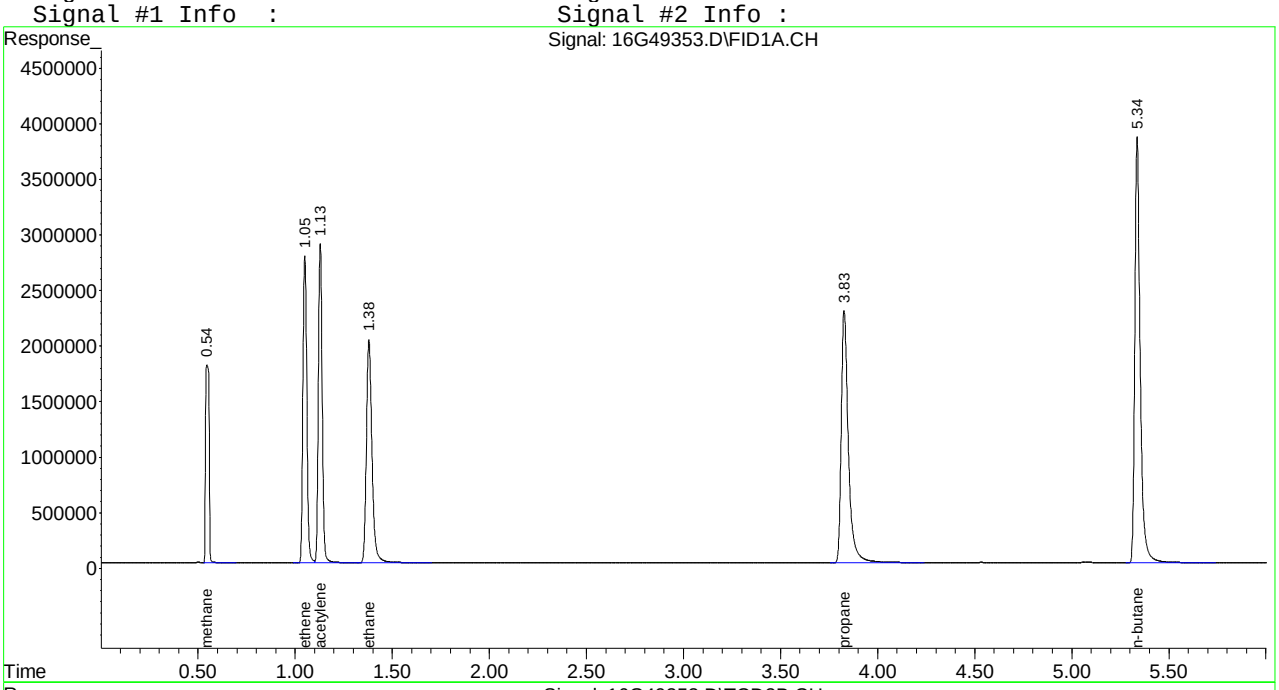

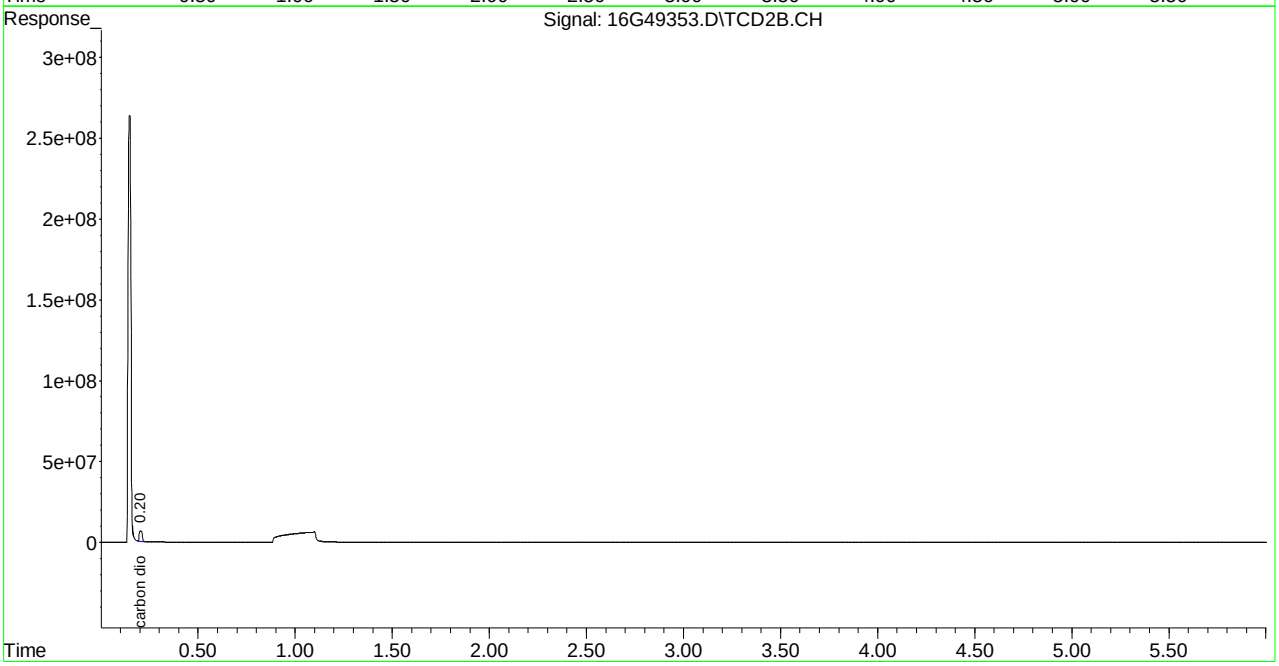

Evaluate Continuing Calibration Report

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49353.D\FID1A.CH Vial: 21
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49353.D\TCD2B.CH
Acq On    : 03 Feb 2016  15:55                        Operator: JDS
Sample    : WG556002-03 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	122.079	8.2	92	0.00
2	T	ethene	133.000	121.249	8.8	92	-0.01
3	T	acetylene	133.000	118.728	10.7	85	-0.01
4	T	ethane	133.000	119.039	10.5	93	-0.01
5	T	propane	133.000	117.286	11.8	90	0.00
6	T	n-butane	133.000	114.787	13.7	88	0.00
		Signal #2					
8	T	carbon dioxide	13300.000	12161.133	8.6	83	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G49353.D RSKEXT1.M Wed Feb 03 16:18:01 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49353.D\FID1A.CH Vial: 21
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49353.D\TCD2B.CH
Acq On    : 03 Feb 2016  15:55                        Operator: JDS
Sample    : WG556002-03 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L16020058 **Run Date:** 02/03/2016 **Sample ID:** WG556002-01
Instrument: HP16 **Run Time:** 09:12 **Method:** RSK175
Workgroup (AAB#): WG556003 **File ID:** 16G49333

RT Standard	Analysis Date	File ID	Analyst
WG547709-01	11/19/2015	16G49048	JDS
WG547424-01	11/18/2015	16G49025	JDS
WG547084-01	11/16/2015	16G49008	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.55	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.39	1.360	1.420
PROPANE	3.83	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.34	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4618386
Report generated 02/05/2016 09:15

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49334.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49334.D\TCD2B.CH
Acq On    : 03 Feb 2016  11:00                        Operator: JDS
Sample    : WG556003-01 BLANK RSK175                  Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 11:06:57 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	306772	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49334.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49334.D\TCD2B.CH
Acq On    : 03 Feb 2016  11:00                        Operator: JDS
Sample    : WG556003-01 BLANK RSK175                  Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb  3 11:06 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

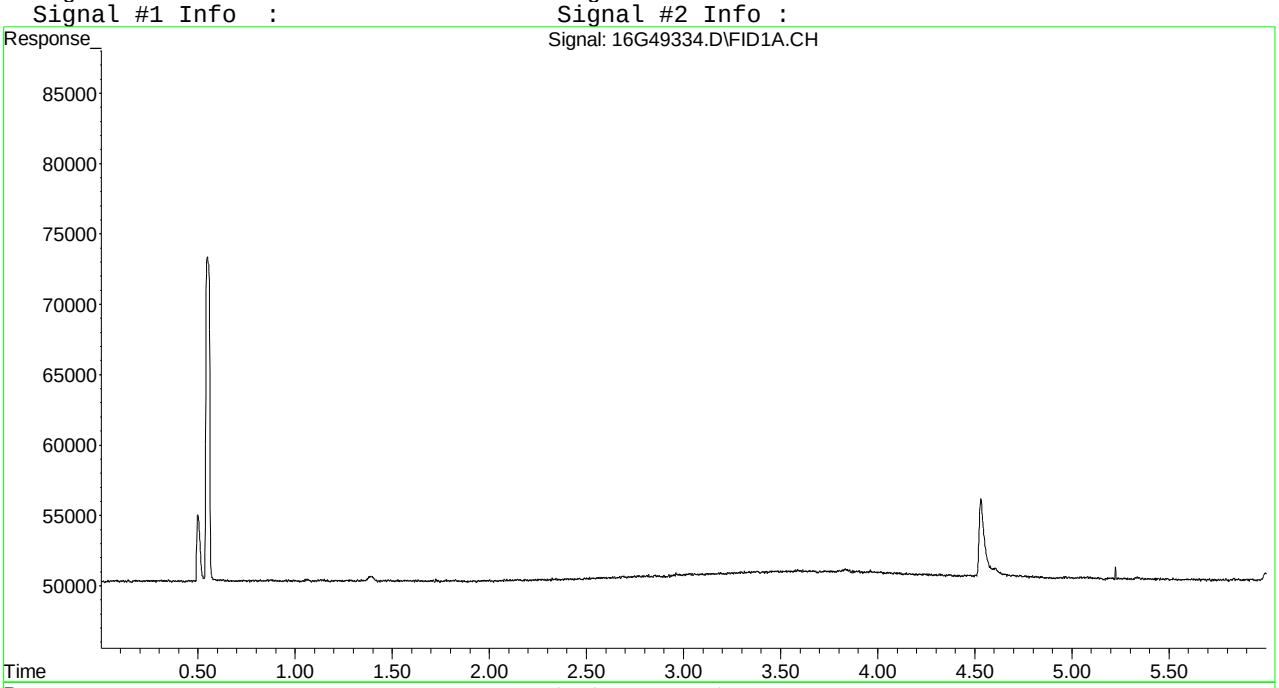

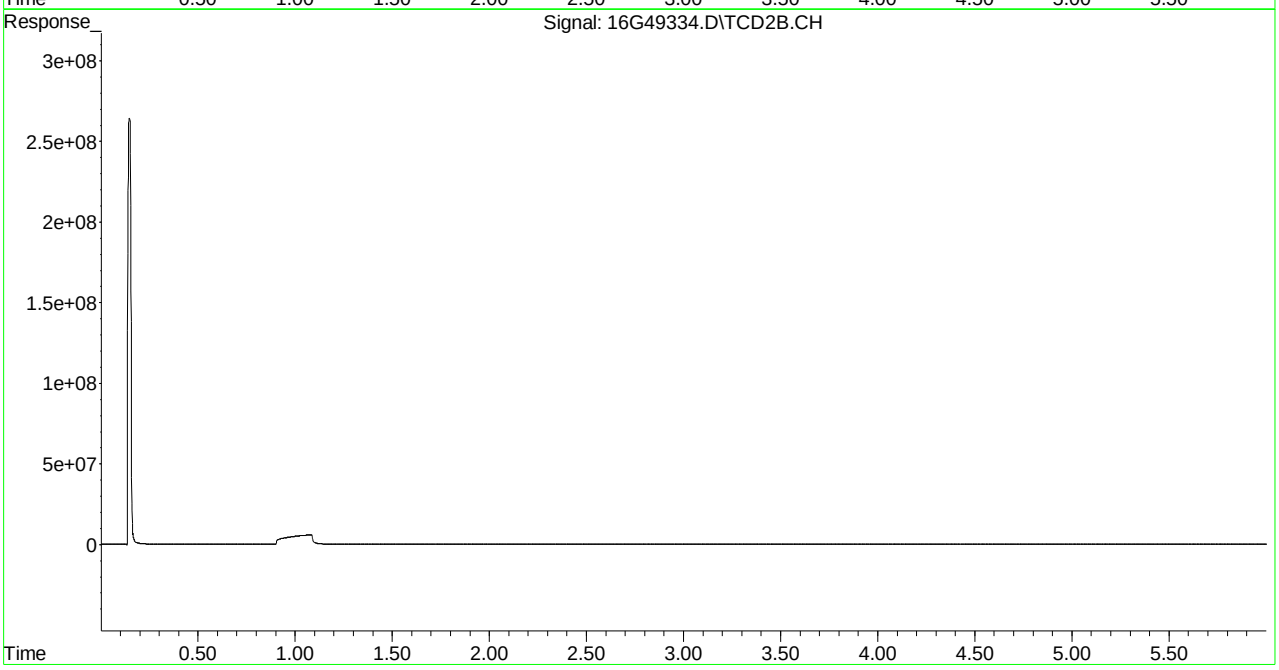

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49335.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\020316\16G49335.D\TCD2B.CH
Acq On : 03 Feb 2016 11:13 Operator: JDS
Sample : WG556003-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 11:19:22 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12053401	62.763	umol/
2) T	ethene	1.06	19827507	62.504	umol/
3) T	acetylene	1.14	20940517	61.875	umol/
4) T	ethane	1.39	20593017	60.586	umol/
5) T	propane	3.83	29754638	59.940	umol/
6) T	n-butane	5.34	38266369	59.028	umol/
8) T	carbon dioxide	0.20	31341370	5683.060	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49335.D RSKEXT1.M Wed Feb 03 11:19:22 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49335.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\020316\16G49335.D\TCD2B.CH
Acq On : 03 Feb 2016 11:13 Operator: JDS
Sample : WG556003-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 3 11:19 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

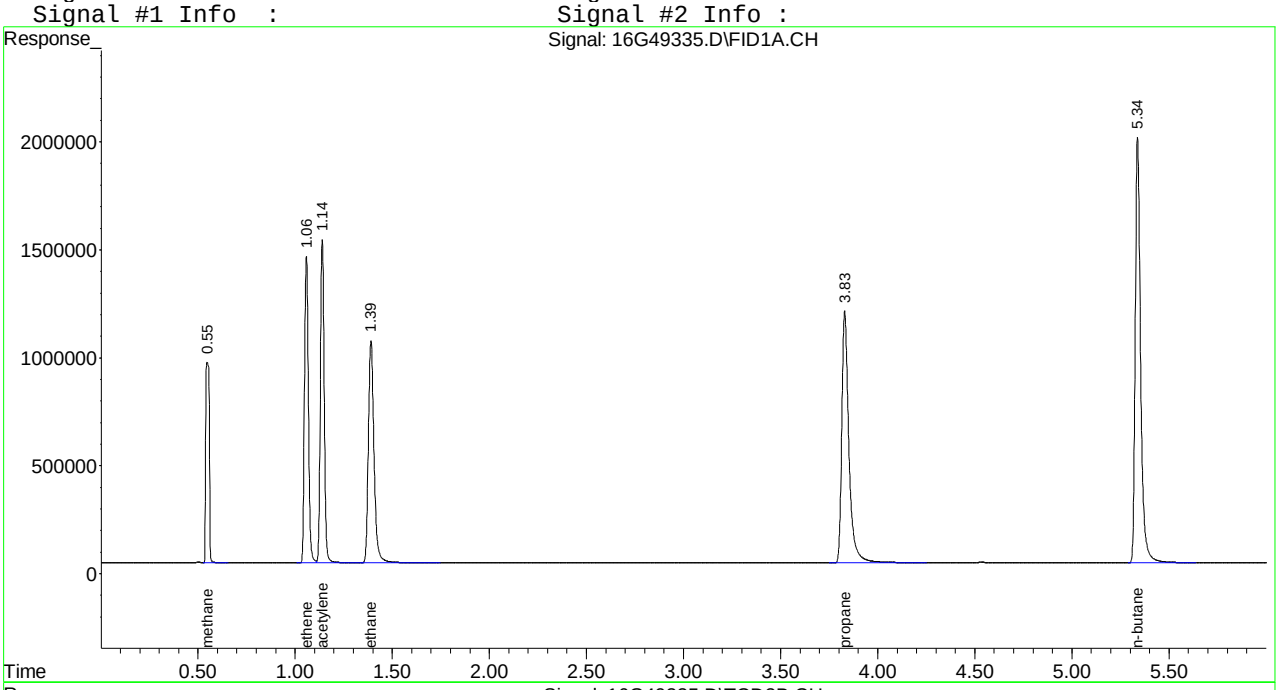

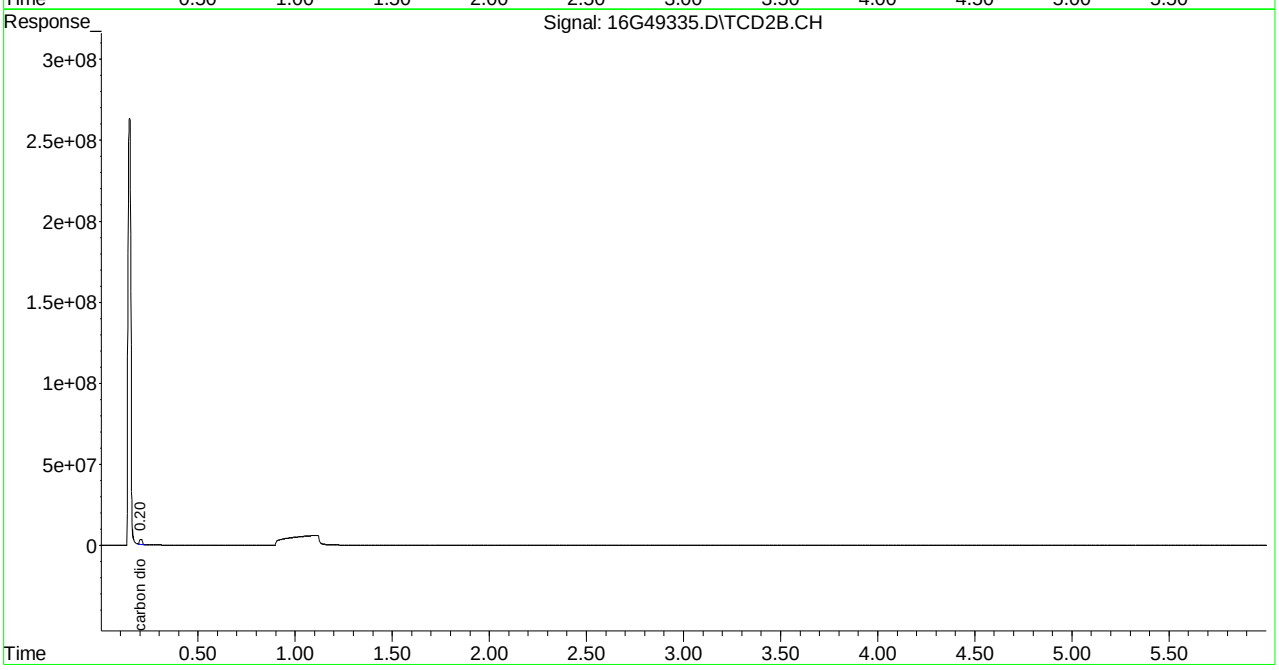

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49336.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\020316\16G49336.D\TCD2B.CH
Acq On : 03 Feb 2016 11:25 Operator: JDS
Sample : WG556003-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 11:31:27 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12118969	63.117	umol/
2) T	ethene	1.06	19849715	62.574	umol/
3) T	acetylene	1.14	20289427	59.951	umol/
4) T	ethane	1.39	20643356	60.734	umol/
5) T	propane	3.83	29815281	60.062	umol/
6) T	n-butane	5.34	38360544	59.173	umol/
8) T	carbon dioxide	0.20	31964569	5796.063	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49336.D RSKEXT1.M Wed Feb 03 11:31:27 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49336.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\020316\16G49336.D\TCD2B.CH
Acq On : 03 Feb 2016 11:25 Operator: JDS
Sample : WG556003-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 3 11:31 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

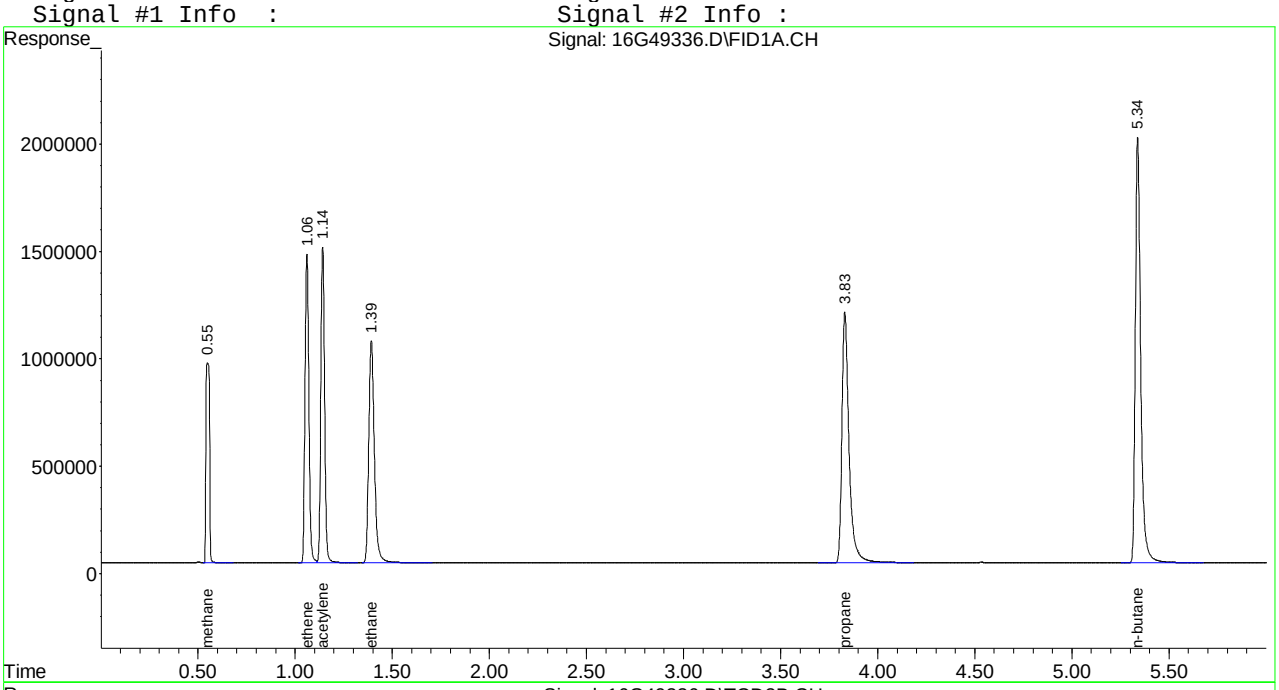

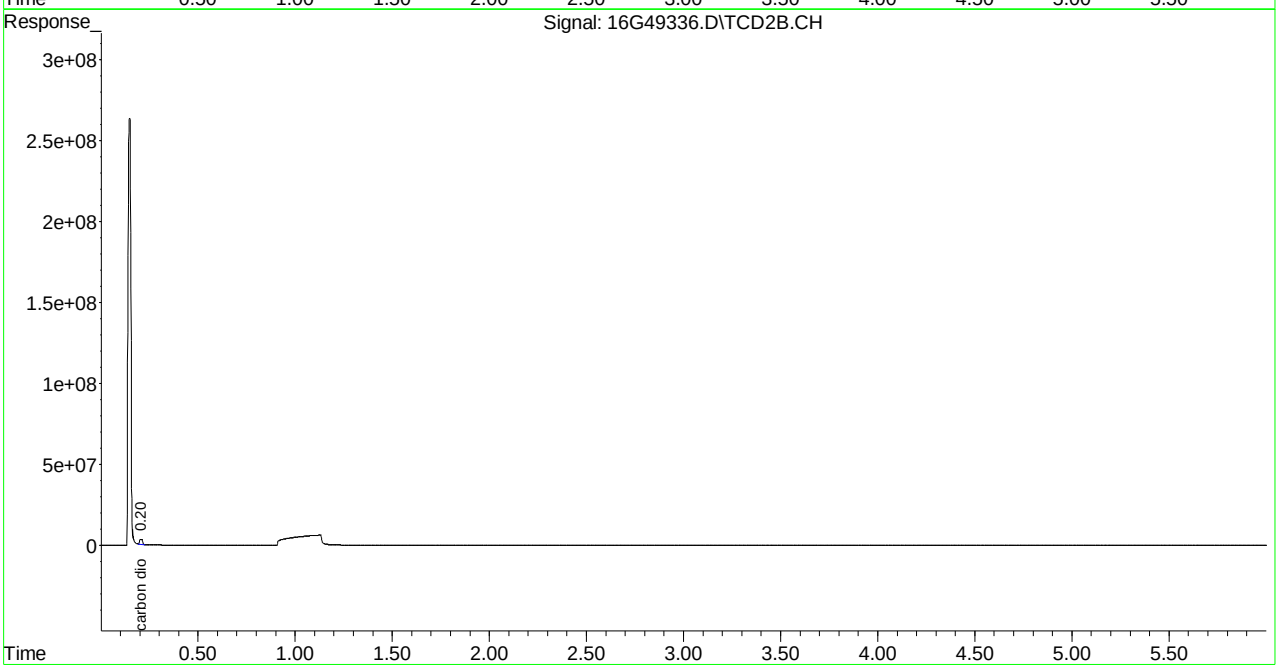

2.2 Metals Data

2.2.1 Metals I C P Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW02-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 13:10
Collect Date:	02/01/2016 08:10	**Dilution:**	1	**File ID:**	T3.021116.131020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	2.03		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L16020058-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW02FF-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 13:14
Collect Date:	02/01/2016 08:10	**Dilution:**	1	**File ID:**	T3.021116.131422
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	1.98		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L16020058-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW11-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 13:18
Collect Date:	02/01/2016 09:25	**Dilution:**	1	**File ID:**	T3.021116.131824
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	1.07		0.200	0.100	0.0500

Certificate of Analysis

Microbac

Lab Report #:	L16020058
Lab Project #:	2551.096
Project Name:	Longhorn Army Ammunition
Lab Contact:	Stephanie Mossburg

Sample #:	L16020058-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW11FF-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 13:38
Collect Date:	02/01/2016 09:25	**Dilution:**	1	**File ID:**	T3.021116.133800
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.745		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L16020058-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	LHSMW19-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 13:42
Collect Date:	02/01/2016 10:30	**Dilution:**	1	**File ID:**	T3.021116.134204
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	0.112	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	LHSMW19FF-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 13:46
Collect Date:	02/01/2016 10:30	**Dilution:**	1	**File ID:**	T3.021116.134605
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0879	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW05-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 14:29
Collect Date:	02/01/2016 13:15	**Dilution:**	5	**File ID:**	T3.021116.142952
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	13.6		1.00	0.500	0.250

Certificate of Analysis

Sample #:	L16020058-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW05FF-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 14:33
Collect Date:	02/01/2016 13:15	**Dilution:**	5	**File ID:**	T3.021116.143348
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	12.2		1.00	0.500	0.250

Certificate of Analysis

Sample #:	L16020058-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW16-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 14:37
Collect Date:	02/01/2016 14:30	**Dilution:**	5	**File ID:**	T3.021116.143743
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	24.9		1.00	0.500	0.250

Certificate of Analysis

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16020058-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW16FF-020116	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 14:41
Collect Date:	02/01/2016 14:30	**Dilution:**	5	**File ID:**	T3.021116.144146
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	18.6		1.00	0.500	0.250

2.2.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG556359
Analyst: ERP
Spike Analyst: ERP
Run Date: 02/05/2016 08:41
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 02/05/2016 08:59

SOP: ME407 Revison 19
Spike Solution: STD74526
Spike Witness: VC
HNO3 Lot #: COA18708
HCL Lot #: COA18695
40 & 50 ML. DIGESTION TU COA18558
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG556359-02	BLANK	1	40 mL	50 mL	204.52 g	204.51 g		
2	WG556359-03	LCS	1	40 mL	50 mL	210.065 g	210.057 g	5 mL	
3	L16020058-01	SAMP	1	40 mL	50 mL	206.421 g	206.389 g		02/12/16
4	L16020058-02	SAMP	1	40 mL	50 mL	205.738 g	205.725 g		02/12/16
5	L16020058-03	SAMP	1	40 mL	50 mL	206.958 g	206.952 g		02/12/16
6	L16020058-04	SAMP	1	40 mL	50 mL	205.226 g	205.205 g		02/12/16
7	L16020058-05	SAMP	1	40 mL	50 mL	206.338 g	206.308 g		02/12/16
8	L16020058-06	SAMP	1	40 mL	50 mL	206.448 g	206.428 g		02/12/16
9	L16020058-07	SAMP	1	40 mL	50 mL	206.629 g	206.607 g		02/12/16
10	L16020058-08	SAMP	1	40 mL	50 mL	205.686 g	205.658 g		02/12/16
11	L16020058-09	SAMP	1	40 mL	50 mL	207.674 g	207.644 g		02/12/16
12	L16020058-10	SAMP	1	40 mL	50 mL	207.492 g	207.47 g		02/12/16
13	L16020141-02	SAMP	1	40 mL	50 mL	206.08 g	206.051 g		02/12/16
14	L16020141-03	SAMP	1	40 mL	50 mL	205.355 g	205.336 g		02/12/16
15	L16020222-01	SAMP	1	40 mL	50 mL	204.721 g	204.702 g		02/11/16
16	L16020222-02	SAMP	1	40 mL	50 mL	205.563 g	205.534 g		02/11/16
17	L16020222-03	SAMP	1	40 mL	50 mL	203.744 g	203.713 g		02/11/16
18	L16020222-04	SAMP	1	40 mL	50 mL	203.88 g	203.853 g		02/11/16
19	L16020222-05	SAMP	1	40 mL	50 mL	205.382 g	205.365 g		02/11/16
20	WG556359-01	REF	1	40 mL	50 mL	204.479 g	204.453 g		
21	L16020222-06	SAMP	1	40 mL	50 mL	204.479 g	204.453 g		02/11/16
22	L16020222-07	SAMP	1	40 mL	50 mL	205.993 g	205.98 g		02/11/16
23	L16020222-08	SAMP	1	40 mL	50 mL	206.824 g	206.811 g		02/11/16
24	WG556359-04	MS	1	40 mL	50 mL	212.504 g	212.487 g	5 mL	
25	WG556359-05	MSD	1	40 mL	50 mL	212.777 g	212.76 g	5 mL	

Analyst: Erin Potter

Reviewer: Vicki Collins

MW_DIG - Modified 09/30/2009
PDF ID: 4618607
Report generated: 02/05/2016 10:15

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 021116T3.1

Analyst1: BKT Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 7

Maintenance Log ID:

Calibration Std: STD74152 ICV Std: STD74313 Post Spike: STD74298

ICSA: STD74299 ICSAB: STD74298 Int. Std: RGT35157

CCV: STD74316 LLCCV: STD74540 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 556969,556970,556971,557159

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.021116.091642	WG557147-01	Calibration Point		1		02/11/16 09:16
2	T3.021116.092046	WG557147-02	Calibration Point		1		02/11/16 09:20
3	T3.021116.092453	WG557147-03	Calibration Point		1		02/11/16 09:24
4	T3.021116.092859	WG557147-04	Calibration Point		1		02/11/16 09:28
5	T3.021116.093243	WG557147-05	Calibration Point		1		02/11/16 09:32
6	T3.021116.093627	WG557147-06	Initial Calibration Verification		1		02/11/16 09:36
7	T3.021116.094012	WG557147-07	Initial Calib Blank		1		02/11/16 09:40
8	T3.021116.094418	WG557147-08	Low Level Initial Calibration V		1		02/11/16 09:44
9	T3.021116.094822	WG557147-09	Interference Check		1		02/11/16 09:48
10	T3.021116.095221	WG557147-10	Interference Check		1		02/11/16 09:52
11	T3.021116.095612	WG557147-11	CCV		1		02/11/16 09:56
12	T3.021116.095956	WG557147-12	CCB		1		02/11/16 09:59
13	T3.021116.100403	WG556579-02	Method/Prep Blank	40/50	1		02/11/16 10:04
14	T3.021116.100809	WG556579-03	Laboratory Control S	40/50	1		02/11/16 10:08
15	T3.021116.101157	L16020259-01	KFF-WL01-020216	40/50	10		02/11/16 10:11
16	T3.021116.101600	L16020262-11	KFF-EB01-020216	40/50	1		02/11/16 10:16
17	T3.021116.102005	L16020273-01	6-10-27.06 W1	40/50	1		02/11/16 10:20
18	T3.021116.102405	L16020277-01	59-11-23 P1	40/50	1		02/11/16 10:24
19	T3.021116.102807	L16020277-02	59-11-23 S1	40/50	1		02/11/16 10:28
20	T3.021116.103208	WG556969-01	Post Digestion Spike		1	L16020277-02	02/11/16 10:32
21	T3.021116.103555	WG556969-02	Serial Dilution		5	L16020277-02	02/11/16 10:35
22	T3.021116.103959	WG557147-13	CCV		1		02/11/16 10:39
23	T3.021116.104342	WG557147-14	CCB		1		02/11/16 10:43
24	T3.021116.104751	L16020277-03	59-11-23 W1	40/50	1		02/11/16 10:47
25	T3.021116.105154	L16020281-01	59-11-11.11 W1	40/50	1		02/11/16 10:51
26	T3.021116.105556	L16020283-01	59-8-6.08 S1	40/50	1		02/11/16 10:55
27	T3.021116.105958	L16020288-01	1801-148-S1	40/50	1		02/11/16 10:59
28	T3.021116.110401	L16020288-02	1801-148-S2	40/50	1		02/11/16 11:04
29	T3.021116.110804	L16020290-01	1804-105-S1	40/50	1		02/11/16 11:08
30	T3.021116.111205	L16020292-01	01-01-140-W1	40/50	1		02/11/16 11:12
31	T3.021116.111608	WG556579-01	Reference Sample		1	L16020292-02	02/11/16 11:16
32	T3.021116.112011	WG556579-04	Matrix Spike	40/50	1	L16020292-02	02/11/16 11:20
33	T3.021116.112357	WG556579-05	Matrix Spike Duplica	40/50	1	L16020292-02	02/11/16 11:23
34	T3.021116.112744	WG557147-15	CCV		1		02/11/16 11:27

Page: 1 Approved: February 12, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 021116T3.1
Analyst1: BKT Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 7
Maintenance Log ID:

Calibration Std: STD74152 ICV Std: STD74313 Post Spike: STD74298
ICSA: STD74299 ICSAB: STD74298 Int. Std: RGT35157
CCV: STD74316 LLCCV: STD74540 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 556969,556970,556971,557159

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.021116.113129	WG557147-16	CCB		1		02/11/16 11:31
36	T3.021116.113536	L16020373-03	OUTFALL 901	40/50	1		02/11/16 11:35
37	T3.021116.113938	L16020374-01	WVOG	40/50	100		02/11/16 11:39
38	T3.021116.114348	L16020387-01	0101-151 W1	40/50	1		02/11/16 11:43
39	T3.021116.114750	L16020387-02	0101-151 S1	40/50	1		02/11/16 11:47
40	T3.021116.115152	L16020391-01	27-2-3 P1	40/50	1		02/11/16 11:51
41	T3.021116.115552	L16020391-02	27-2-3 W1	40/50	1		02/11/16 11:55
42	T3.021116.115955	L16020391-03	27-2-3 S1	40/50	1		02/11/16 11:59
43	T3.021116.120355	L16020374-01	WVOG	40/50	5000		02/11/16 12:03
44	T3.021116.120801	WG557147-17	CCV		1		02/11/16 12:08
45	T3.021116.121145	WG557147-18	CCB		1		02/11/16 12:11
46	T3.021116.123509	WG557147-19	Interference Check		1		02/11/16 12:35
47	T3.021116.123909	WG557147-20	Interference Check		1		02/11/16 12:39
48	T3.021116.124301	WG557147-21	CCV		1		02/11/16 12:43
49	T3.021116.124644	WG557147-22	CCB		1		02/11/16 12:46
50	T3.021116.125051	WG556359-02	Method/Prep Blank	40/50	1		02/11/16 12:50
51	T3.021116.125456	WG556359-03	Laboratory Control S	40/50	1		02/11/16 12:54
52	T3.021116.125843	WG556359-01	Reference Sample		1	L16020222-06	02/11/16 12:58
53	T3.021116.130245	WG556359-04	Matrix Spike	40/50	1	L16020222-06	02/11/16 13:02
54	T3.021116.130631	WG556359-05	Matrix Spike Duplica	40/50	1	L16020222-06	02/11/16 13:06
55	T3.021116.131020	L16020058-01	46WW02-020116	40/50	1		02/11/16 13:10
56	T3.021116.131422	L16020058-02	46WW02FF-020116	40/50	1		02/11/16 13:14
57	T3.021116.131824	L16020058-03	46WW11-020116	40/50	1		02/11/16 13:18
58	T3.021116.132227	WG556970-03	Post Digestion Spike		1	L16020058-03	02/11/16 13:22
59	T3.021116.132614	WG556970-04	Serial Dilution		5	L16020058-03	02/11/16 13:26
60	T3.021116.133008	WG557147-23	CCV		1		02/11/16 13:30
61	T3.021116.133353	WG557147-24	CCB		1		02/11/16 13:33
62	T3.021116.133800	L16020058-04	46WW11FF-020116	40/50	1		02/11/16 13:38
63	T3.021116.134204	L16020058-05	LHSMW19-020116	40/50	1		02/11/16 13:42
64	T3.021116.134605	L16020058-06	LHSMW19FF-020116	40/50	1		02/11/16 13:46
65	T3.021116.135007	L16020058-07	46WW05-020116	40/50	1		02/11/16 13:50
66	T3.021116.135410	L16020058-08	46WW05FF-020116	40/50	1		02/11/16 13:54
67	T3.021116.135812	L16020058-09	46WW16-020116	40/50	1		02/11/16 13:58
68	T3.021116.140211	L16020058-10	46WW16FF-020116	40/50	1		02/11/16 14:02

Page: 2 Approved: February 12, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 021116T3.1
Analyst1: BKT Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 7
Maintenance Log ID:

Calibration Std: STD74152 ICV Std: STD74313 Post Spike: STD74298
ICSA: STD74299 ICSAB: STD74298 Int. Std: RGT35157
CCV: STD74316 LLCCV: STD74540 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 556969,556970,556971,557159

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.021116.140611	L16020141-02	46WW09F-020216	40/50	1		02/11/16 14:06
70	T3.021116.141014	L16020141-03	46WW09FF-020216	40/50	1		02/11/16 14:10
71	T3.021116.141417	WG557147-25	CCV		1		02/11/16 14:14
72	T3.021116.141800	WG557147-26	CCB		1		02/11/16 14:18
73	T3.021116.142952	L16020058-07	46WW05-020116	40/50	5		02/11/16 14:29
74	T3.021116.143348	L16020058-08	46WW05FF-020116	40/50	5		02/11/16 14:33
75	T3.021116.143743	L16020058-09	46WW16-020116	40/50	5		02/11/16 14:37
76	T3.021116.144146	L16020058-10	46WW16FF-020116	40/50	5		02/11/16 14:41
77	T3.021116.144550	WG557147-27	CCV		1		02/11/16 14:45
78	T3.021116.144934	WG557147-28	CCB		1		02/11/16 14:49
79	T3.021116.145342	WG557147-29	Low Level Continuing Calibra		1		02/11/16 14:53
80	T3.021116.161325	WG556761-02	Method/Prep Blank	40/50	1		02/11/16 16:13
81	T3.021116.161730	WG556761-03	Laboratory Control S	40/50	1		02/11/16 16:17
82	T3.021116.162117	WG556761-01	Reference Sample		1	L16020406-01	02/11/16 16:21
83	T3.021116.162519	WG556761-04	Matrix Spike	5/50	1	L16020406-01	02/11/16 16:25
84	T3.021116.162905	WG556761-05	Matrix Spike Duplica	5/50	1	L16020406-01	02/11/16 16:29
85	T3.021116.163253	L16020227-02	S6B0219-01	5/50	1		02/11/16 16:32
86	T3.021116.163656	L16020382-01	J6B0230-01	5/50	1		02/11/16 16:36
87	T3.021116.164053	L16020384-01	S6B0280-01	5/50	1		02/11/16 16:40
88	T3.021116.164450	WG556971-03	Post Digestion Spike		1	L16020384-01	02/11/16 16:44
89	T3.021116.164835	WG556971-04	Serial Dilution		5	L16020384-01	02/11/16 16:48
90	T3.021116.165238	WG557147-30	CCV		1		02/11/16 16:52
91	T3.021116.165627	WG557147-31	CCB		1		02/11/16 16:56
92	T3.021116.170033	L16020384-02	S6B0280-02	5/50	1		02/11/16 17:00
93	T3.021116.170430	L16020389-01	0101-129 W1	40/50	1		02/11/16 17:04
94	T3.021116.170831	L16020389-02	0101-129 S1	40/50	1		02/11/16 17:08
95	T3.021116.171233	L16020392-01	6-10-7 W1	40/50	1		02/11/16 17:12
96	T3.021116.171634	L16020395-01	6-11-6.02 W1	40/50	1		02/11/16 17:16
97	T3.021116.172034	L16020415-03	MW4D-GW-020616	40/50	1		02/11/16 17:20
98	T3.021116.172435	L16020415-05	MW2S-GW-020616	40/50	1		02/11/16 17:24
99	T3.021116.172836	L16020415-07	MW5S-GW-020616	40/50	1		02/11/16 17:28
100	T3.021116.173225	L16020443-01	01-01-0173-S1	40/50	1		02/11/16 17:32
101	T3.021116.173627	L16020443-02	01-01-0173-S2	40/50	1		02/11/16 17:36
102	T3.021116.174031	WG557147-32	CCV		1		02/11/16 17:40

Page: 3 Approved: February 12, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 021116T3.1
Analyst1: BKT Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 7
Maintenance Log ID:

Calibration Std: STD74152 ICV Std: STD74313 Post Spike: STD74298
ICSA: STD74299 ICSAB: STD74298 Int. Std: RGT35157
CCV: STD74316 LLCCV: STD74540 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 556969,556970,556971,557159

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.021116.174415	WG557147-33	CCB		1		02/11/16 17:44
104	T3.021116.174822	L16020443-03	01-01-0173-S3	40/50	1		02/11/16 17:48
105	T3.021116.175226	WG557147-34	CCV		1		02/11/16 17:52
106	T3.021116.175609	WG557147-35	CCB		1		02/11/16 17:56
107	T3.021116.180015	WG557147-36	Low Level Continuing Calibra		1		02/11/16 18:00
108	T3.021116.180418	WG557147-37	Interference Check		1		02/11/16 18:04
109	T3.021116.180818	WG557147-38	Interference Check		1		02/11/16 18:08
110	T3.021116.181209	WG557147-39	CCV		1		02/11/16 18:12
111	T3.021116.181553	WG557147-40	CCB		1		02/11/16 18:15
112	T3.021116.182001	WG557081-02	Method/Prep Blank	40/50	1		02/11/16 18:20
113	T3.021116.182407	WG557081-03	Laboratory Control S	40/50	1		02/11/16 18:24
114	T3.021116.182754	WG556947-01	Fluid Blank 1		1		02/11/16 18:27
115	T3.021116.183201	L16020524-01	16974-B01-WQ-W0002	40/50	1		02/11/16 18:32
116	T3.021116.183606	L16020461-02	S6B0345-02		1	WG557081-01	02/11/16 18:36
117	T3.021116.184009	WG557081-04	Matrix Spike	5/50	1	L16020461-02	02/11/16 18:40
118	T3.021116.184356	WG557081-05	Matrix Spike Duplica	5/50	1	L16020461-02	02/11/16 18:43
119	T3.021116.184743	L16020444-01	1804-105 W1	40/50	1		02/11/16 18:47
120	T3.021116.185145	WG557159-01	Post Digestion Spike		1	L16020444-01	02/11/16 18:51
121	T3.021116.185531	WG557159-02	Serial Dilution		5	L16020444-01	02/11/16 18:55
122	T3.021116.185936	WG557147-41	CCV		1		02/11/16 18:59
123	T3.021116.190320	WG557147-42	CCB		1		02/11/16 19:03
124	T3.021116.190729	L16020444-02	1804-105-A W1/S1	40/50	1		02/11/16 19:07
125	T3.021116.191131	L16020454-01	LH18/24-SP650-6334-GRAB	40/50	1		02/11/16 19:11
126	T3.021116.191532	L16020454-02	LH18/24-SP650-6334-COMP	40/50	1		02/11/16 19:15
127	T3.021116.191934	L16020460-01	S6B0344-01	5/50	1		02/11/16 19:19
128	T3.021116.192335	L16020471-01	6-10-10 W1	40/50	1		02/11/16 19:23
129	T3.021116.192736	L16020472-01	0101-148 W2	40/50	1		02/11/16 19:27
130	T3.021116.193140	L16020472-02	0101-148 S1	40/50	1		02/11/16 19:31
131	T3.021116.193541	L16020474-01	0101-144A W1	40/50	1		02/11/16 19:35
132	T3.021116.193943	L16020475-01	0101-144 S1	40/50	1		02/11/16 19:39
133	T3.021116.194346	L16020516-01	GLASS VESSEL \#2	5/50	1		02/11/16 19:43
134	T3.021116.194754	WG557147-43	CCV		1		02/11/16 19:47
135	T3.021116.195138	WG557147-44	CCB		1		02/11/16 19:51
136	T3.021116.195546	L16020516-02	GLASS VESSEL \#3	5/50	1		02/11/16 19:55

Page: 4 Approved: February 12, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 021116T3.1

Analyst1: BKT Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 7

Maintenance Log ID:

Calibration Std: STD74152 ICV Std: STD74313 Post Spike: STD74298

ICSA: STD74299 ICSAB: STD74298 Int. Std: RGT35157

CCV: STD74316 LLCCV: STD74540 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 556969,556970,556971,557159

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.021116.195951	L16020516-03	GLASS VESSEL \#4	5/50	1		02/11/16 19:59
138	T3.021116.200357	L16020520-02	PERMEATE	1/50	1		02/11/16 20:03
139	T3.021116.200804	L16020520-04	BLEED	1/50	1		02/11/16 20:08
140	T3.021116.201205	L16020520-06	N. DOCK FLUME	1/50	1		02/11/16 20:12
141	T3.021116.201611	L16020563-01	59-10-1.03 W1	40/50	1		02/11/16 20:16
142	T3.021116.202015	WG557147-45	CCV		1		02/11/16 20:20
143	T3.021116.202359	WG557147-46	CCB		1		02/11/16 20:23
144	T3.021116.202806	WG557147-47	Low Level Continuing Calibra		1		02/11/16 20:28

Page: 5 Approved: February 12, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 11-FEB-2016
Analyst: BKT
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 557147
Runlog ID: 73229
Analytical Workgroups: 556969,556970,556971,557159

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	259,262,415
Level 4	58,141
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
12-FEB-2016

Secondary Reviewer:
12-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-12-2016 13:44:33

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG556970

Login Number: L16020058

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW02-020116	01	02/01/16					02/05/2016	4	180		02/11/16	10.2	180	
46WW02FF-020116	02	02/01/16					02/05/2016	4	180		02/11/16	10.2	180	
46WW11-020116	03	02/01/16					02/05/2016	4	180		02/11/16	10.2	180	
46WW11FF-020116	04	02/01/16					02/05/2016	4	180		02/11/16	10.2	180	
LHSMW19-020116	05	02/01/16					02/05/2016	3.9	180		02/11/16	10.1	180	
LHSMW19FF-020116	06	02/01/16					02/05/2016	3.9	180		02/11/16	10.1	180	
46WW05-020116	07	02/01/16					02/05/2016	3.8	180		02/11/16	10.1	180	
46WW05FF-020116	08	02/01/16					02/05/2016	3.8	180		02/11/16	10.1	180	
46WW16-020116	09	02/01/16					02/05/2016	3.8	180		02/11/16	10	180	
46WW16FF-020116	10	02/01/16					02/05/2016	3.8	180		02/11/16	10	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4628634
Report generated 02/12/2016 11:25

METHOD BLANK SUMMARY

Login Number: L16020058
Blank File ID: T3.021116.125051
Prep Date: 02/05/16 08:41
Analyzed Date: 02/11/16 12:50
Analyst: BKT

Work Group: WG556970
Blank Sample ID: WG556359-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556359-03	T3.021016.185231	02/10/16 18:52	01
LCS	WG556359-03	T3.021116.125456	02/11/16 12:54	02
46WW02-020116	L16020058-01	T3.021116.131020	02/11/16 13:10	01
46WW02FF-020116	L16020058-02	T3.021116.131422	02/11/16 13:14	01
46WW11-020116	L16020058-03	T3.021116.131824	02/11/16 13:18	01
46WW11FF-020116	L16020058-04	T3.021116.133800	02/11/16 13:38	01
LHSMW19-020116	L16020058-05	T3.021116.134204	02/11/16 13:42	01
LHSMW19FF-020116	L16020058-06	T3.021116.134605	02/11/16 13:46	01
46WW05-020116	L16020058-07	T3.021116.142952	02/11/16 14:29	DL01
46WW05FF-020116	L16020058-08	T3.021116.143348	02/11/16 14:33	DL01
46WW16-020116	L16020058-09	T3.021116.143743	02/11/16 14:37	DL01
46WW16FF-020116	L16020058-10	T3.021116.144146	02/11/16 14:41	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4628635
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020058 Prep Date: 02/05/16 08:41 Sample ID: WG556359-02
Instrument ID: ICP-THERMO3 Run Date: 02/11/16 12:50 Prep Method: 3015
File ID: T3.021116.125051 Analyst: BKT Method: 6010C
Workgroup (AAB#): WG556970 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-11-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Total	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4628636
12-FEB-2016 11:25

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020058 Run Date: 02/11/2016 Sample ID: WG556359-03
Instrument ID: ICP-THERMO3 Run Time: 12:54 Prep Method: 3015
File ID: T3.021116.125456 Analyst: BKT Method: 6010C
Workgroup (AAB#): WG556970 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD74526 Cal ID: ICP-TH-11-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Total	2.50	2.46	98.5	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4628637
Report generated: 02/12/2016 11:25

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16020058 Cal ID: ICP-THERMO3 - Worknum: WG556970
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG556359-01 File ID: T3.021116.125843 Dil: 1 Matrix: WATER
Sample ID: WG556359-04 MS File ID: T3.021116.130245 Dil: 1 Units: mg/L
Sample ID: WG556359-05 MSD File ID: T3.021116.130631 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron	ND	2.50	2.52	101	2.50	2.50	99.9	0.882	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4628638
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16020058 **Worknum:** WG556970
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG556970-04 **File ID:** T3.021116.132614 **Dil:** 5 **Units:** ug/L
Sample: L16020058-03 **File ID:** T3.021116.131824 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Iron	855		829		3.04	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4628632
02/12/2016 11:25

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16020058 **Worknum:** WG556970
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG556970-03 **File ID:** T3.021116.132227 **Dil:** 1 **Units:** ug/L
Sample ID: L16020058-03 **File ID:** T3.021116.131824 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
IRON	2720		855		2000	97.6	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4628633
Report generated: 02/12/2016 11:25

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16020058	Workgroup (AAB#):	WG556970
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG557147	Initial Calibration Date:	11-FEB-2016 09:32

	WG557147-01		WG557147-02		WG557147-03		WG557147-04		WG557147-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
IRON	0	-0.0000500	.04	0.000560	.08	0.00128	4	0.0696	8	0.140	.999892	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4628641
Report generated: 12-FEB-2016 11:25

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16020058
Instrument ID: ICP-THERMO3
File ID: T3.021116.094012
Workgroup (AAB#): WG556970
Matrix: WATER

Run Date: 02/11/2016
Run Time: 09:40
Analyst: BKT
Cal ID: ICP-THERI - 11-FEB-16

Sample ID: WG557147-07
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
IRON	.04	.16	.04	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4628643
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020058
Run Date: 02/11/2016
Sample ID: WG557147-12
Instrument ID: ICP-THERMO3
Run Time: 09:59
Method: 6010C
File ID: T3.021116.095956
Analyst: BKT
Units: mg/L
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4628646
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020058
Run Date: 02/11/2016
Sample ID: WG557147-18
Instrument ID: ICP-THERMO3
Run Time: 12:11
Method: 6010C
File ID: T3.021116.121145
Analyst: BKT
Units: mg/L
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4628646
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020058
Run Date: 02/11/2016
Sample ID: WG557147-22
Instrument ID: ICP-THERMO3
Run Time: 12:46
Method: 6010C
File ID: T3.021116.124644
Analyst: BKT
Units: mg/L
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4628646
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020058
Run Date: 02/11/2016
Sample ID: WG557147-24
Instrument ID: ICP-THERMO3
Run Time: 13:33
Method: 6010C
File ID: T3.021116.133353
Analyst: BKT
Units: mg/L
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4628646
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020058
Run Date: 02/11/2016
Sample ID: WG557147-26
Instrument ID: ICP-THERMO3
Run Time: 14:18
Method: 6010C
File ID: T3.021116.141800
Analyst: BKT
Units: mg/L
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4628646
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020058
Run Date: 02/11/2016
Sample ID: WG557147-28
Instrument ID: ICP-THERMO3
Run Time: 14:49
Method: 6010C
File ID: T3.021116.144934
Analyst: BKT
Units: mg/L
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4628646
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020058
Run Date: 02/11/2016
Sample ID: WG557147-35
Instrument ID: ICP-THERMO3
Run Time: 17:56
Method: 6010C
File ID: T3.021116.175609
Analyst: BKT
Units: mg/L
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4628646
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020058
Run Date: 02/11/2016
Sample ID: WG557147-40
Instrument ID: ICP-THERMO3
Run Time: 18:15
Method: 6010C
File ID: T3.021116.181553
Analyst: BKT
Units: mg/L
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4628646
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16020058 Run Date: 02/11/2016 Sample ID: WG557147-06
Instrument ID: ICP-THERMO3 Run Time: 09:36 Method: 6010C
File ID: T3.021116.093627 Analyst: BKT Units: mg/L
Workgroup (AAB#): WG556970 Cal ID: ICP-TH - 11-FEB-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Iron		4	4.04	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4628642
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058
Run Date: 02/11/2016
Sample ID: WG557147-11
Instrument ID: ICP-THERMO3
Run Time: 09:56
Method: 6010C
File ID: T3.021116.095612
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.09	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4628645
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058
Run Date: 02/11/2016
Sample ID: WG557147-17
Instrument ID: ICP-THERMO3
Run Time: 12:08
Method: 6010C
File ID: T3.021116.120801
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.17	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4628645
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058
Run Date: 02/11/2016
Sample ID: WG557147-21
Instrument ID: ICP-THERMO3
Run Time: 12:43
Method: 6010C
File ID: T3.021116.124301
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.15	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4628645
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058
Run Date: 02/11/2016
Sample ID: WG557147-23
Instrument ID: ICP-THERMO3
Run Time: 13:30
Method: 6010C
File ID: T3.021116.133008
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.15	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4628645
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058
Run Date: 02/11/2016
Sample ID: WG557147-25
Instrument ID: ICP-THERMO3
Run Time: 14:14
Method: 6010C
File ID: T3.021116.141417
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.30	mg/L	107	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4628645
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058
Run Date: 02/11/2016
Sample ID: WG557147-27
Instrument ID: ICP-THERMO3
Run Time: 14:45
Method: 6010C
File ID: T3.021116.144550
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.23	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4628645
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058
Run Date: 02/11/2016
Sample ID: WG557147-34
Instrument ID: ICP-THERMO3
Run Time: 17:52
Method: 6010C
File ID: T3.021116.175226
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.37	mg/L	109	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4628645
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058
Run Date: 02/11/2016
Sample ID: WG557147-39
Instrument ID: ICP-THERMO3
Run Time: 18:12
Method: 6010C
File ID: T3.021116.181209
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.39	mg/L	110	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4628645
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16020058
Run Date: 02/11/2016
Sample ID: WG557147-08
Instrument ID: ICP-THERMO3
Run Time: 09:44
Method: 6010C
File ID: T3.021116.094418
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.0786	mg/L	98.2	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4628647
Report generated 02/12/2016 11:30

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16020058
Run Date: 02/11/2016
Sample ID: WG557147-29
Instrument ID: ICP-THERMO3
Run Time: 14:53
Method: 6010C
File ID: T3.021116.145342
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.0735	mg/L	91.8	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4628647
Report generated 02/12/2016 11:30

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16020058
Instrument ID: ICP-THERMO3
Sol. A : WG557147-09 **File ID:** T3.021116.094822
Sol. AB : WG557147-10 **File ID:** T3.021116.095221

Workgroup (AAB#): WG556970
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	97.3	97.3	100	96.9	96.9	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4628644
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16020058
Instrument ID: ICP-THERMO3
Sol. A : WG557147-19 **File ID:** T3.021116.123509
Sol. AB : WG557147-20 **File ID:** T3.021116.123909

Workgroup (AAB#): WG556970
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	99.2	99.2	100	98.5	98.5	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4628644
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16020058
Instrument ID: ICP-THERMO3
Sol. A : WG557147-37 **File ID:** T3.021116.180418
Sol. AB : WG557147-38 **File ID:** T3.021116.180818

Workgroup (AAB#): WG556970
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	106	106	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4628644
Report generated 02/12/2016 11:25

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16020058 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4628640
Report generated: 02/12/2016 11:25

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16020058 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4628640
Report generated: 02/12/2016 11:25

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16020058 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4628640
Report generated: 02/12/2016 11:25

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16020058 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4628640
Report generated: 02/12/2016 11:25

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16020058 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4628640
Report generated: 02/12/2016 11:25

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16020058 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4628640
Report generated: 02/12/2016 11:25

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16020058 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4628640
Report generated: 02/12/2016 11:25

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16020058 **Date:** 01/07/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4628639
Report generated: 02/12/2016 11:25

2.2.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	2/11/2016 9:36:22	2/11/2016 9:36:22	Linear	1/Conc	-0.000092	0.039966	0.000000	1.000000
Al 308.215 {109}	2/11/2016 9:36:22	2/11/2016 9:36:22	Linear	1/Conc	0.000782	0.006417	0.000000	1.000000
As 189.042 {478}	2/11/2016 9:36:22	2/11/2016 9:36:22	Linear	1/Conc	-0.000000	0.017989	0.000000	1.000000
B 249.678 {135}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000070	0.016745	0.000000	1.000000
Ba 455.403 { 74}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.009382	1.980026	0.000000	1.000000
Be 313.107 {108}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000548	0.669046	0.000000	1.000000
Ca 422.673 { 80}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000599	0.043662	0.000000	1.000000
Cd 228.802 {447}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000007	0.388236	0.000000	1.000000
Co 228.616 {447}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000007	0.295712	0.000000	1.000000
Cr 267.716 {126}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000187	0.043286	0.000000	1.000000
Cu 224.700 {450}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000135	0.100019	0.000000	1.000000
Fe 261.187 {129}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000050	0.017485	0.000000	1.000000
K 766.490 { 44}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.019676	0.047830	0.000000	1.000000
Li 670.784 { 50}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.016578	1.056564	0.000000	1.000000
Mg 279.079 {121}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000676	0.004484	0.000000	1.000000
Mn 257.610 {131}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000128	0.224923	0.000000	1.000000
Mo 202.030 {467}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000030	0.150464	0.000000	1.000000
Na 589.592 { 57}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.015363	0.145154	0.000000	1.000000
Ni 231.604 {446}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000474	0.111969	0.000000	1.000000
P 214.914 {457}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000133	0.010063	0.000000	1.000000
Pb 220.353 {453}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000291	0.049902	0.000000	1.000000
Sb 206.833 {463}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000359	0.023265	0.000000	1.000000
Se 196.090 {472}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000115	0.011936	0.000000	1.000000
Si 212.412 {459}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000277	0.029628	0.000000	1.000000
Sn 189.989 {477}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000020	0.052860	0.000000	1.000000
Sr 407.771 { 83}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.001323	3.335624	0.000000	1.000000
Ti 337.280 {100}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.001447	0.100540	0.000000	1.000000
Tl 190.856 {477}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000196	0.022886	0.000000	1.000000
V 292.402 {115}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000050	0.039589	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000058	0.286087	0.000000	1.000000
Zr 339.198 { 99}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.008723	0.000392	0.000000	1.000000

Approved: February 12, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999994	0.000000	0.001784	0.005946	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999997	0.000001	0.007535	0.025117	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999780	0.000001	0.003213	0.010711	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999936	0.000001	0.002469	0.008231	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999984	0.000070	0.000792	0.002641	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999958	0.000002	0.000066	0.000220	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999973	0.000020	0.027046	0.090153	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999878	0.000002	0.000256	0.000852	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999728	0.000009	0.000384	0.001280	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999967	0.000001	0.001020	0.003399	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999862	0.000005	0.001329	0.004429	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999892	0.000007	0.021110	0.070365	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999986	0.000080	0.087007	0.290024	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999984	0.000059	0.003910	0.013033	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999543	0.000013	0.090456	0.301521	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999842	0.000013	0.002325	0.007749	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	1.000000	0.000001	0.000400	0.001332	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999986	0.000244	0.026601	0.088670	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999982	0.000002	0.001085	0.003618	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999958	0.000006	0.007441	0.024802	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999942	0.000002	0.003480	0.011601	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999964	0.000001	0.004249	0.014163	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999595	0.000001	0.007032	0.023440	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999998	0.000002	0.002325	0.007749	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999974	0.000002	0.000905	0.003016	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999998	0.000037	0.000351	0.001170	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999952	0.000006	0.006150	0.020501	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999888	0.000002	0.003025	0.010085	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999968	0.000002	0.001019	0.003397	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999999	0.000002	0.000219	0.000731	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.302331	0.000008	3.277552	10.925173	OK.	1.000000	0.000000	1	0

Approved: February 12, 2016

Sample Name: S0 Acquired: 2/11/2016 9:16:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00009	.00078	-.00000	.00007	.00938	.00055	-.00060
Stddev	.00004	.00000	.00002	.00004	.00131	.00002	.00111
%RSD	46.424	.38879	5103.1	51.120	13.917	4.2003	185.08
#1	-.00012	.00078	.00001	.00003	.00866	.00052	.00047
#2	-.00012	.00078	.00001	.00011	.00859	.00056	-.00053
#3	-.00004	.00078	-.00002	.00007	.01089	.00056	-.00174

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00001	.00001	.00019	-.00014	-.00005	-.01967	-.01658
Stddev	.00004	.00015	.00002	.00012	.00036	.00222	.00229
%RSD	547.48	1891.0	10.950	90.047	712.42	11.287	13.801
#1	.00004	.00005	.00020	-.00026	.00007	-.01726	-.01584
#2	-.00004	.00013	.00016	-.00013	-.00045	-.02164	-.01914
#3	.00002	-.00015	.00020	-.00002	.00023	-.02012	-.01475

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00068	-.00013	.00003	-.01537	-.00047	-.00013	-.00029
Stddev	.00027	.00027	.00003	.00287	.00006	.00006	.00014
%RSD	39.313	206.93	96.843	18.647	12.015	45.663	48.983
#1	-.00095	-.00009	.00003	-.01207	-.00042	-.00008	-.00037
#2	-.00065	.00012	.00006	-.01722	-.00047	-.00020	-.00038
#3	-.00042	-.00041	.00000	-.01682	-.00053	-.00012	-.00013

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00036	-.00011	.00028	-.00002	.00132	-.00145	-.00020
Stddev	.00003	.00010	.00001	.00007	.00066	.00056	.00007
%RSD	7.2801	85.523	3.6769	337.94	49.650	38.930	35.837
#1	.00033	-.00002	.00029	-.00007	.00197	-.00089	-.00014
#2	.00037	-.00021	.00027	-.00005	.00066	-.00144	-.00017
#3	.00038	-.00011	.00027	.00006	.00133	-.00202	-.00028

Approved: February 12, 2016

Sample Name: S0 Acquired: 2/11/2016 9:16:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00005	.00006	-.00872
Stddev	.00001	.00005	.00056
%RSD	16.400	89.508	6.3652
#1	.00006	-.00000	-.00888
#2	.00005	.00010	-.00918
#3	.00004	.00008	-.00811
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12036.	88304.	3520.8
Stddev	37.	42.	13.8
%RSD	.31138	.04756	.39073
#1	12078.	88293.	3518.0
#2	12006.	88351.	3508.6
#3	12022.	88269.	3535.7

Approved: February 12, 2016

Sample Name: S1 Acquired: 2/11/2016 9:20:46 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00004	.00130	.02606	.00079	.00239	.00021	.00029
Stddev	.00003	.00003	.00114	.00001	.00065	.00002	.00005
%RSD	69.556	2.6430	4.3846	1.3319	27.115	9.9381	18.204
#1	.00006	.00133	.02616	.00078	.00255	.00022	.00027
#2	.00001	.00126	.02715	.00080	.00168	.00018	.00036
#3	.00005	.00132	.02488	.00080	.00295	.00021	.00026

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00035	.00038	.00056	-.00188	.00101	.00123	.04753
Stddev	.00003	.00014	.00013	.00431	.00020	.00003	.00039
%RSD	7.2026	37.827	22.417	229.56	19.540	2.8302	.81698
#1	.00035	.00022	.00046	-.00193	.00124	.00126	.04730
#2	.00037	.00048	.00070	.00246	.00090	.00124	.04797
#3	.00032	.00044	.00052	-.00616	.00090	.00119	.04731

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00001	.00064	-.00012	.00058	.00146	.00046	.02856
Stddev	.00001	.00004	.00005	.00003	.00004	.00004	.00115
%RSD	56.917	5.5636	38.647	5.5999	2.9741	8.8079	4.0340
#1	.00001	.00062	-.00012	.00059	.00149	.00043	.02834
#2	.00001	.00068	-.00017	.00060	.00149	.00044	.02753
#3	.00002	.00063	-.00007	.00054	.00141	.00050	.02980

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00058	.00033	.00237	-.00883
Stddev	.00028	.00001	.00004	.00031
%RSD	47.232	2.5956	1.8587	3.5377
#1	-.00042	.00033	.00232	-.00847
#2	-.00090	.00034	.00238	-.00902
#3	-.00043	.00033	.00241	-.00901

Approved: February 12, 2016

Sample Name: S1 Acquired: 2/11/2016 9:20:46 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12029.	88503.	3524.6
Stddev	9.	153.	22.8
%RSD	.07166	.17329	.64642
#1	12032.	88629.	3542.6
#2	12035.	88332.	3499.0
#3	12019.	88549.	3532.3

Approved: February 12, 2016

Sample Name: S2 Acquired: 2/11/2016 9:24:53 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00016**	**.00180**	**.00008**	**.00020**	**.04313**	**.00104**	**.00635**
Stddev	.00001	.00001	.00003	.00002	.00158	.00002	.00069
%RSD	3.2125	.40186	39.322	9.5206	3.6538	1.9056	10.946
#1	.00016	.00180	.00009	.00018	.04239	.00104	.00707
#2	.00016	.00181	.00005	.00022	.04493	.00106	.00628
#3	.00017	.00179	.00012	.00020	.04205	.00102	.00569

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00032**	**.00080**	**.00050**	**.00074**	**.00128**	**.01657**	**-.00050**
Stddev	.00002	.00005	.00002	.00003	.00027	.00059	.00251
%RSD	5.7651	6.0913	3.2865	4.0340	21.437	3.5543	502.95
#1	.00030	.00084	.00050	.00071	.00097	.01618	-.00048
#2	.00034	.00083	.00051	.00075	.00147	.01724	.00200
#3	.00033	.00075	.00048	.00076	.00140	.01627	-.00303

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00033**	**.00194**	**.00243**	**.10384**	**.00045**	**.00145**	**.00008**
Stddev	.00028	.00039	.00005	.00259	.00011	.00002	.00034
%RSD	85.223	20.233	2.1977	2.4940	24.972	1.1525	411.65
#1	.00006	.00218	.00244	.10142	.00050	.00147	.00006
#2	.00030	.00149	.00247	.10351	.00032	.00145	.00043
#3	.00063	.00215	.00237	.10657	.00053	.00144	-.00024

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00075**	**-.00007**	**.00265**	**.00085**	**.05572**	**.00035**	**-.00006**
Stddev	.00009	.00002	.00005	.00005	.00093	.00026	.00006
%RSD	12.221	32.448	1.9141	5.3078	1.6614	75.506	100.88
#1	.00082	-.00005	.00269	.00086	.05593	.00012	-.00007
#2	.00079	-.00009	.00268	.00089	.05652	.00028	-.00011
#3	.00065	-.00006	.00259	.00080	.05471	.00064	.00001

Approved: February 12, 2016

Sample Name: S2 Acquired: 2/11/2016 9:24:53 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00065	.00462	-.00851
Stddev	.00003	.00003	.00099
%RSD	4.1596	.68017	11.599
#1	.00062	.00465	-.00741
#2	.00065	.00462	-.00931
#3	.00068	.00458	-.00881

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12073.	89103.	3541.2
Stddev	15.	113.	18.8
%RSD	.12103	.12662	.53098
#1	12087.	88973.	3562.9
#2	12074.	89170.	3531.2
#3	12058.	89166.	3529.5

Approved: February 12, 2016

Sample Name: S3 Acquired: 2/11/2016 9:28:59 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01579	.06534	.00707	.00831	1.9853	.03452	.43615
Stddev	.00003	.00012	.00008	.00002	.0179	.00004	.00224
%RSD	.18345	.18227	1.1894	.28709	.90088	.11222	.51329
#1	.01577	.06548	.00699	.00834	1.9687	.03453	.43528
#2	.01582	.06528	.00716	.00831	2.0043	.03455	.43870
#3	.01576	.06526	.00706	.00829	1.9830	.03447	.43449

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02110	.05932	.02184	.05014	.06963	2.3717	1.0470
Stddev	.00002	.00035	.00000	.00019	.00082	.0183	.0073
%RSD	.09611	.58676	.00760	.38079	1.1762	.77198	.69627
#1	.02110	.05944	.02184	.05023	.06922	2.3587	1.0419
#2	.02112	.05960	.02184	.05028	.07057	2.3927	1.0553
#3	.02108	.05893	.02184	.04993	.06910	2.3639	1.0437

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04427	.11271	.15062	7.2646	.05576	.09765	.02501
Stddev	.00073	.00158	.00070	.0532	.00021	.00023	.00022
%RSD	1.6405	1.3990	.46565	.73295	.36986	.23470	.88626
#1	.04344	.11099	.15121	7.2186	.05597	.09772	.02511
#2	.04455	.11408	.15080	7.3229	.05574	.09784	.02517
#3	.04481	.11307	.14984	7.2522	.05556	.09740	.02476

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02763	.00465	.14851	.05278	3.3367	.09846	.01042
Stddev	.00002	.00003	.00025	.00011	.0300	.00067	.00002
%RSD	.06845	.72971	.16903	.20369	.89974	.67803	.14526
#1	.02762	.00467	.14873	.05288	3.3124	.09784	.01040
#2	.02761	.00468	.14855	.05281	3.3703	.09916	.01041
#3	.02765	.00461	.14824	.05267	3.3275	.09838	.01043

Approved: February 12, 2016

Sample Name: S3 Acquired: 2/11/2016 9:28:59 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.03932	.28637	-.00887
Stddev	.00004	.00059	.00089
%RSD	.10874	.20574	10.034
#1	.03934	.28675	-.00985
#2	.03927	.28668	-.00811
#3	.03935	.28569	-.00865

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11838.	86054.	3505.8
Stddev	26.	162.	8.9
%RSD	.21849	.18857	.25339
#1	11808.	86232.	3515.8
#2	11853.	85915.	3502.8
#3	11852.	86013.	3498.8

Approved: February 12, 2016

Sample Name: S4 Acquired: 2/11/2016 9:32:43 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03184	.13046	.01441	.01695	3.9706	.06899	.87305
Stddev	.00007	.00010	.00006	.00008	.0275	.00014	.00710
%RSD	.23303	.07688	.43113	.46220	.69340	.20820	.81358
#1	.03188	.13052	.01440	.01687	3.9700	.06908	.87050
#2	.03189	.13052	.01447	.01702	3.9984	.06905	.88108
#3	.03176	.13034	.01435	.01695	3.9434	.06882	.86758

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04252	.11816	.04356	.09965	.13980	4.7667	2.0904
Stddev	.00023	.00034	.00009	.00027	.00157	.0340	.0144
%RSD	.53017	.28463	.21571	.27544	1.1206	.71214	.68995
#1	.04277	.11848	.04362	.09995	.13980	4.7599	2.0873
#2	.04234	.11820	.04361	.09959	.14137	4.8036	2.1061
#3	.04244	.11781	.04345	.09942	.13823	4.7367	2.0778

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.08823	.22397	.30080	14.470	.11118	.19930	.04972
Stddev	.00091	.00234	.00146	.106	.00008	.00039	.00025
%RSD	1.0301	1.0462	.48397	.73409	.07608	.19775	.51193
#1	.08830	.22369	.30233	14.459	.11120	.19967	.04998
#2	.08911	.22644	.30064	14.581	.11126	.19935	.04947
#3	.08729	.22178	.29943	14.369	.11109	.19889	.04970

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.05539	.00949	.29813	.10537	6.6717	.19948	.02067
Stddev	.00024	.00007	.00062	.00047	.0558	.00217	.00013
%RSD	.43193	.75906	.20672	.44237	.83623	1.0856	.61279
#1	.05551	.00947	.29883	.10587	6.6616	.19962	.02081
#2	.05554	.00957	.29790	.10530	6.7319	.20158	.02060
#3	.05511	.00943	.29767	.10495	6.6217	.19725	.02058

Approved: February 12, 2016

Sample Name: S4 Acquired: 2/11/2016 9:32:43 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.07930	.57148	-.00749
Stddev	.00019	.00153	.00131
%RSD	.23838	.26743	17.472
#1	.07943	.57297	-.00599
#2	.07939	.57155	-.00814
#3	.07909	.56991	-.00836

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11751.	84755.	3537.7
Stddev	6.	79.	21.3
%RSD	.04876	.09309	.60272
#1	11756.	84671.	3534.3
#2	11752.	84828.	3518.3
#3	11744.	84767.	3560.5

Approved: February 12, 2016

Sample Name: ICV Acquired: 2/11/2016 9:36:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40093	10.202	.39844	.49954	1.0301	.04974	10.101
Stddev	.00242	.025	.00299	.00271	.0044	.00011	.041
%RSD	.60237	.24034	.75095	.54291	.42403	.21814	.40441
#1	.40365	10.225	.39803	.50082	1.0291	.04981	10.081
#2	.40009	10.176	.40161	.49642	1.0348	.04961	10.148
#3	.39904	10.206	.39567	.50138	1.0262	.04980	10.074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04983	.20125	.50291	.50648	4.0375	50.178	1.0096
Stddev	.00017	.00037	.00144	.00094	.0155	.214	.0042
%RSD	.34279	.18361	.28543	.18471	.38487	.42571	.41235
#1	.04971	.20159	.50318	.50723	4.0426	50.006	1.0106
#2	.04976	.20130	.50420	.50678	4.0499	50.417	1.0131
#3	.05002	.20086	.50136	.50543	4.0201	50.111	1.0050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.265	.50494	.95984	50.049	.50660	9.8964	.51150
Stddev	.077	.00151	.00317	.212	.00101	.0051	.00258
%RSD	.75459	.29908	.33072	.42449	.19988	.05146	.50363
#1	10.240	.50385	.96261	49.927	.50616	9.9002	.51072
#2	10.204	.50666	.96053	50.294	.50776	9.8984	.51438
#3	10.352	.50431	.95638	49.925	.50588	9.8907	.50941
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: ICV Acquired: 2/11/2016 9:36:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2139	.40428	5.0707	1.0338	1.0039	1.0079	.51352
Stddev	.0041	.00594	.0137	.0012	.0040	.0074	.00395
%RSD	.33915	1.4696	.26990	.11874	.40220	.73795	.76830
#1	1.2150	.39897	5.0771	1.0351	1.0029	1.0003	.51266
#2	1.2174	.40317	5.0801	1.0338	1.0084	1.0083	.51783
#3	1.2094	.41070	5.0550	1.0326	1.0005	1.0152	.51008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.99667	1.0087	F .61141
Stddev	.00010	.0011	1.6994
%RSD	.01050	.10557	277.95
#1	.99655	1.0095	-.60101
#2	.99671	1.0091	2.5538
#3	.99675	1.0075	-.11862
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11847.	86073.	3534.5
Stddev	19.	188.	10.4
%RSD	.15881	.21894	.29427
#1	11827.	85861.	3543.7
#2	11864.	86136.	3536.5
#3	11849.	86222.	3523.2

Approved: February 12, 2016

Sample Name: ICB Acquired: 2/11/2016 9:40:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00678	-.00207	.00274	.00022	-.00000	.00811
Stddev	.00115	.00042	.00377	.00115	.00034	.00002	.02801
%RSD	482.97	6.2480	182.30	42.179	156.55	467.07	345.26
#1	-.00156	.00637	-.00615	.00146	.00049	.00001	-.00776
#2	.00048	.00676	-.00135	.00370	-.00016	.00000	-.00835
#3	.00036	.00722	.00129	.00305	.00032	-.00002	.04045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	-.00071	-.00020	.00054	.01078	.07849	-.00003
Stddev	.00006	.00043	.00064	.00115	.02024	.06918	.00473
%RSD	113.91	60.179	316.71	213.50	187.77	88.132	14006.
#1	-.00006	-.00082	-.00083	.00048	.02455	.13465	.00489
#2	-.00011	-.00024	-.00024	-.00058	-.01246	.09960	-.00044
#3	.00001	-.00106	.00046	.00172	.02026	.00122	-.00455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.12770	.00238	.00123	.03952	-.00053	-.00274	.00018
Stddev	.02048	.00066	.00005	.01732	.00029	.00830	.00196
%RSD	16.036	27.669	4.1876	43.819	53.793	303.09	1096.8
#1	.11549	.00208	.00128	.05457	-.00035	.00485	.00072
#2	.15134	.00192	.00122	.02059	-.00038	-.00147	.00181
#3	.11627	.00314	.00118	.04340	-.00086	-.01160	-.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: ICB Acquired: 2/11/2016 9:40:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00329	-.00412	.00295	.00099	.00035	.00199	-.00148
Stddev	.00092	.00794	.00117	.00062	.00026	.00567	.00114
%RSD	27.884	192.74	39.551	62.631	73.975	285.09	76.691
#1	-.00223	.00399	.00381	.00063	.00062	.00588	-.00172
#2	-.00390	-.01187	.00342	.00170	.00011	-.00451	-.00024
#3	-.00373	-.00448	.00162	.00063	.00032	.00460	-.00248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00027	.00075	F .11517
Stddev	.00075	.00011	.77587
%RSD	280.89	14.561	673.67
#1	-.00108	.00082	-.77372
#2	-.00010	.00063	.46278
#3	.00039	.00081	.65646
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12111.	89109.	3582.4
Stddev	19.	528.	28.4
%RSD	.15580	.59259	.79372
#1	12133.	88689.	3588.7
#2	12105.	88937.	3551.3
#3	12096.	89702.	3607.1

Approved: February 12, 2016

Sample Name: LLICV Acquired: 2/11/2016 9:44:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00832	.16816	.00764	.07524	.00850	.00143	.41200
Stddev	.00140	.00523	.00158	.00172	.00027	.00007	.02066
%RSD	16.828	3.1106	20.634	2.2813	3.1693	4.9642	5.0153
#1	.00870	.16466	.00800	.07566	.00875	.00144	.39270
#2	.00949	.16565	.00901	.07672	.00852	.00150	.40949
#3	.00677	.17417	.00592	.07336	.00822	.00135	.43380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.00382	.00404	.00436	.07857	.75310	.07842
Stddev	.00006	.00016	.00065	.00008	.01080	.04992	.00162
%RSD	6.3970	4.0595	15.977	1.8243	13.750	6.6286	2.0720
#1	.00102	.00392	.00450	.00438	.08248	.79142	.07922
#2	.00090	.00390	.00433	.00427	.06636	.77123	.07948
#3	.00098	.00364	.00330	.00442	.08688	.69665	.07655
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47002	.01023	.00761	.42688	.01614	.77566	.00575
Stddev	.01762	.00082	.00024	.02611	.00055	.01160	.00021
%RSD	3.7489	8.0168	3.1026	6.1161	3.3903	1.4956	3.6005
#1	.48599	.00929	.00763	.39688	.01587	.77838	.00593
#2	.45112	.01079	.00737	.44444	.01578	.78566	.00578
#3	.47295	.01061	.00784	.43933	.01677	.76294	.00553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: LLICV Acquired: 2/11/2016 9:44:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08625	.01178	.77817	.40161	.03924	.02624	.15568
Stddev	.00219	.00297	.00274	.00378	.00066	.00252	.00391
%RSD	2.5377	25.220	.35240	.94032	1.6730	9.5969	2.5086
#1	.08415	.01433	.77770	.40250	.03892	.02912	.15994
#2	.08852	.00852	.78112	.40486	.04000	.02517	.15485
#3	.08609	.01249	.77570	.39747	.03881	.02443	.15226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00797	.01776	F 317.10
Stddev	.00042	.00008	7.10
%RSD	5.3015	.45557	2.2376
#1	.00816	.01782	320.09
#2	.00748	.01781	322.21
#3	.00826	.01767	309.00
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12167.	90175.	3601.7
Stddev	9.	82.	44.5
%RSD	.07401	.09099	1.2342
#1	12159.	90155.	3611.9
#2	12177.	90266.	3553.0
#3	12165.	90106.	3640.2

Approved: February 12, 2016

Sample Name: ICSA Acquired: 2/11/2016 9:48:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00164	264.92	-.00009	.03919	.00010	-.00006	240.85
Stddev	.00111	.26	.00036	.00141	.00052	.00003	2.37
%RSD	67.685	.09826	407.48	3.5921	506.04	46.269	.98411
#1	.00166	264.71	-.00014	.03761	-.00015	-.00009	238.38
#2	.00052	265.21	.00030	.04031	-.00025	-.00006	243.11
#3	.00274	264.84	-.00042	.03966	.00070	-.00003	241.07
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	-.00139	-.00265	F -.00727	97.342	.00480	.00636
Stddev	.00017	.00035	.00060	.00209	.984	.08055	.00367
%RSD	55.637	25.386	22.742	28.757	1.0110	1676.7	57.726
#1	.00049	-.00099	-.00210	-.00486	96.380	.08700	.00405
#2	.00022	-.00152	-.00255	-.00852	98.347	-.07399	.00445
#3	.00019	-.00166	-.00329	-.00844	97.299	.00140	.01060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	247.11	.00109	-.00073	.08885	-.00170	.04540	-.00313
Stddev	2.39	.00086	.00019	.04230	.00110	.01318	.00241
%RSD	.96755	78.432	25.556	47.604	64.679	29.039	76.866
#1	244.71	.00012	-.00093	.13668	-.00115	.04368	-.00211
#2	249.49	.00143	-.00069	.05639	-.00098	.03317	-.00588
#3	247.12	.00173	-.00056	.07347	-.00296	.05937	-.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: ICSA Acquired: 2/11/2016 9:48:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00361	-.00274	.66164	.00071	.00042	-.00201	.00028
Stddev	.00266	.00770	.00050	.00074	.00034	.00537	.00170
%RSD	73.765	280.95	.07498	104.17	80.939	266.90	607.49
#1	.00648	.00615	.66204	.00157	.00066	.00312	-.00141
#2	.00312	-.00740	.66108	.00032	.00003	-.00156	.00198
#3	.00123	-.00697	.66179	.00025	.00056	-.00760	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00155	-.00533	F -28.531
Stddev	.00084	.00006	2.889
%RSD	53.861	1.1056	10.125
#1	-.00116	-.00539	-26.037
#2	-.00099	-.00532	-27.861
#3	-.00251	-.00527	-31.697
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11193.	81628.	3455.0
Stddev	19.	99.	14.8
%RSD	.16708	.12119	.42959
#1	11211.	81518.	3471.4
#2	11173.	81708.	3451.1
#3	11194.	81659.	3442.5

Approved: February 12, 2016

Sample Name: ICSAB Acquired: 2/11/2016 9:52:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52017	264.35	.24184	-.02959	.25308	.23475	241.71
Stddev	.00088	.64	.00395	.00169	.00124	.00060	1.04
%RSD	.16962	.24249	1.6317	5.7265	.49123	.25349	.43115
#1	.51915	263.70	.23732	-.03078	.25232	.23407	241.19
#2	.52071	264.98	.24358	-.03033	.25451	.23520	242.91
#3	.52064	264.39	.24461	-.02765	.25240	.23497	241.04
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.45714	.23618	.24266	.23804	96.876	5.2411	.00524
Stddev	.00224	.00041	.00073	.00079	.256	.0514	.00216
%RSD	.48983	.17496	.30195	.33155	.26470	.98112	41.212
#1	.45901	.23580	.24325	.23882	96.781	5.2172	.00432
#2	.45775	.23662	.24289	.23805	97.166	5.2060	.00771
#3	.45466	.23613	.24184	.23724	96.681	5.3002	.00369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	247.12	.24876	-.00106	5.2664	.47071	.04690	.48447
Stddev	.60	.00212	.00018	.0230	.00226	.00593	.00420
%RSD	.24124	.85131	16.886	.43671	.48103	12.643	.86677
#1	246.97	.24639	-.00093	5.2398	.47116	.04717	.48479
#2	247.78	.25046	-.00099	5.2798	.47271	.04084	.48850
#3	246.62	.24942	-.00127	5.2795	.46825	.05269	.48012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: ICSAB Acquired: 2/11/2016 9:52:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50670	.24922	.00945	.00159	.00026	.00311	.45356
Stddev	.00214	.00530	.00262	.00078	.00018	.00538	.00742
%RSD	.42328	2.1252	27.742	49.170	69.357	173.17	1.6363
#1	.50472	.25265	.01189	.00243	.00005	-.00300	.46114
#2	.50898	.24312	.00668	.00089	.00034	.00516	.45323
#3	.50641	.25189	.00976	.00146	.00039	.00715	.44631
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.24720	.46857	F -28.820
Stddev	.00047	.00179	2.873
%RSD	.19154	.38256	9.9688
#1	.24667	.47028	-31.117
#2	.24758	.46871	-25.599
#3	.24736	.46671	-29.745
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11155.	81506.	3446.1
Stddev	10.	113.	5.9
%RSD	.09326	.13841	.16988
#1	11164.	81469.	3450.4
#2	11144.	81416.	3439.4
#3	11157.	81632.	3448.4

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 9:56:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39922	10.141	.39897	.50235	1.0184	.05019	10.226
Stddev	.00317	.035	.00194	.00470	.0069	.00012	.083
%RSD	.79506	.34975	.48540	.93465	.67538	.24534	.81461
#1	.39596	10.105	.39863	.49693	1.0130	.05005	10.144
#2	.40230	10.176	.39723	.50489	1.0261	.05029	10.310
#3	.39939	10.143	.40106	.50522	1.0161	.05023	10.225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05063	.20362	.50414	.51221	4.0870	50.999	1.0241
Stddev	.00038	.00034	.00196	.00241	.0353	.355	.0076
%RSD	.75040	.16884	.38864	.47052	.86437	.69601	.73947
#1	.05089	.20377	.50221	.51315	4.0724	50.630	1.0157
#2	.05080	.20387	.50613	.51401	4.0613	51.338	1.0304
#3	.05019	.20323	.50407	.50948	4.1273	51.028	1.0261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.131	.50857	1.0204	51.140	.51098	10.022	.51091
Stddev	.154	.00517	.0036	.344	.00231	.023	.00280
%RSD	1.5183	1.0164	.35589	.67205	.45127	.23005	.54876
#1	9.9618	.50340	1.0230	50.817	.51081	10.007	.51079
#2	10.263	.50857	1.0220	51.501	.51336	10.049	.51377
#3	10.168	.51374	1.0163	51.101	.50876	10.011	.50816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 9:56:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2133	.40411	5.1049	1.0179	1.0199	1.0203	.51608
Stddev	.0053	.00243	.0098	.0037	.0067	.0095	.00227
%RSD	.44095	.60054	.19139	.36050	.65780	.93332	.43915
#1	1.2107	.40619	5.1079	1.0181	1.0133	1.0116	.51715
#2	1.2195	.40144	5.1129	1.0214	1.0267	1.0304	.51762
#3	1.2098	.40469	5.0940	1.0141	1.0197	1.0188	.51348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0087	1.0184	F 14.039
Stddev	.0035	.0026	1.058
%RSD	.34318	.25862	7.5363
#1	1.0047	1.0168	13.400
#2	1.0106	1.0215	13.456
#3	1.0108	1.0170	15.260
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11845.	86294.	3500.6
Stddev	21.	158.	18.0
%RSD	.17848	.18298	.51278
#1	11869.	86475.	3507.4
#2	11832.	86221.	3480.3
#3	11834.	86185.	3514.2

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 9:59:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00073	.01521	-.00149	.00028	.00119	-.00002	.00604
Stddev	.00125	.00530	.00222	.00171	.00019	.00002	.01739
%RSD	170.16	34.836	148.44	606.64	15.876	110.87	288.01
#1	-.00116	.01478	-.00150	.00063	.00097	-.00000	.02151
#2	.00067	.01014	-.00371	-.00157	.00126	-.00004	.00939
#3	-.00171	.02071	.00073	.00179	.00133	-.00001	-.01278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	-.00051	.00025	.00003	-.01029	.10412	-.00184
Stddev	.00007	.00009	.00030	.00033	.01445	.01344	.00173
%RSD	177.85	17.134	117.99	1034.1	140.41	12.907	93.932
#1	-.00002	-.00045	.00008	.00020	.00554	.09302	.00016
#2	.00002	-.00061	.00060	-.00035	-.02277	.10029	-.00282
#3	.00011	-.00048	.00008	.00024	-.01364	.11906	-.00286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07005	.00318	.00109	.01129	-.00052	.00544	-.00278
Stddev	.02386	.00194	.00030	.01792	.00033	.00546	.00060
%RSD	34.056	60.890	27.639	158.70	62.566	100.42	21.610
#1	.09755	.00130	.00144	.01080	-.00017	.00669	-.00261
#2	.05481	.00517	.00088	-.00638	-.00058	-.00054	-.00345
#3	.05781	.00308	.00096	.02944	-.00081	.01017	-.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 9:59:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	.00041	.00321	.00094	.00050	-.00235	-.00157
Stddev	.00315	.00433	.00085	.00100	.00055	.00329	.00104
%RSD	274.36	1056.5	26.543	106.03	111.76	140.10	66.234
#1	.00250	.00533	.00246	.00013	.00048	.00068	-.00257
#2	.00340	-.00283	.00414	.00064	-.00005	-.00187	-.00164
#3	-.00245	-.00127	.00303	.00206	.00106	-.00585	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00008	.00013	F 1.0719
Stddev	.00058	.00016	3.8575
%RSD	708.04	121.99	359.87
#1	-.00012	.00030	4.7634
#2	.00052	.00012	1.3849
#3	-.00065	-.00002	-2.9325
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11946.	88046.	3538.8
Stddev	15.	81.	20.5
%RSD	.12812	.09167	.57908
#1	11944.	87966.	3559.0
#2	11963.	88127.	3518.0
#3	11932.	88045.	3539.3

Approved: February 12, 2016

Sample Name: PBW 21 Acquired: 2/11/2016 10:04:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00076	.00711	-.00159	.00023	-.00006	-.00006	-.00578
Stddev	.00118	.00345	.00150	.00056	.00070	.00001	.02769
%RSD	155.33	48.438	93.986	242.81	1112.2	17.952	479.43
#1	.00052	.00767	-.00288	.00052	-.00004	-.00005	-.02433
#2	-.00181	.00342	-.00196	-.00042	.00062	-.00007	.02605
#3	-.00098	.01025	.00005	.00059	-.00077	-.00005	-.01904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	-.00038	.00006	.00148	F -.02337	.07113	-.00079
Stddev	.00029	.00021	.00072	.00053	.00959	.06986	.00481
%RSD	218.05	56.005	1259.2	35.719	41.062	98.214	607.26
#1	.00046	-.00062	-.00076	.00151	-.01526	.14985	.00384
#2	.00001	-.00031	.00058	.00094	-.02088	.04700	-.00577
#3	-.00008	-.00021	.00035	.00200	-.03396	.01653	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09740	.00042	.00001	.01883	.00067	-.00313	-.00207
Stddev	.09251	.00011	.00022	.01024	.00052	.00223	.00077
%RSD	94.979	26.722	1730.2	54.390	77.644	71.292	37.319
#1	-.00938	.00050	-.00020	.02990	.00034	-.00440	-.00288
#2	.14815	.00029	-.00000	.00970	.00128	-.00443	-.00201
#3	.15343	.00046	.00024	.01688	.00041	-.00055	-.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: PBW 21 Acquired: 2/11/2016 10:04:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00089	.00147	.00405	.00111	.00030	.00035	-.00292
Stddev	.00338	.00469	.00198	.00039	.00039	.00046	.00018
%RSD	378.63	320.03	48.991	34.835	131.93	129.96	6.2866
#1	-.00346	-.00270	.00611	.00141	.00015	.00010	-.00271
#2	.00294	.00655	.00216	.00126	.00000	.00008	-.00306
#3	-.00215	.00055	.00386	.00067	.00074	.00088	-.00298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00002	.00160	.17613
Stddev	.00046	.00012	1.0656
%RSD	2000.2	7.4649	605.01
#1	.00049	.00173	.94653
#2	-.00017	.00158	.62182
#3	-.00039	.00150	-1.0400
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12133.	90102.	3565.4
Stddev	34.	326.	15.0
%RSD	.28110	.36143	.42035
#1	12105.	89794.	3551.8
#2	12122.	90067.	3563.0
#3	12171.	90443.	3581.5

Approved: February 12, 2016

Sample Name: LCSW 21 Acquired: 2/11/2016 10:08:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19437	4.8532	.19202	.95256	.50180	.02364	4.9825	.02436
Stddev	.00158	.0164	.00244	.00125	.00159	.00012	.0272	.00023
%RSD	.81266	.33711	1.2726	.13135	.31751	.50160	.54677	.92975
#1	.19618	4.8462	.19409	.95219	.50095	.02355	4.9764	.02411
#2	.19326	4.8719	.19264	.95395	.50363	.02377	4.9588	.02456
#3	.19367	4.8415	.18932	.95154	.50080	.02359	5.0123	.02440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09993	.24446	.25286	2.0082	25.113	.49560	5.0009	.25025
Stddev	.00098	.00151	.00087	.0246	.086	.00250	.1768	.00170
%RSD	.98114	.61955	.34256	1.2263	.34359	.50529	3.5362	.68017
#1	.09941	.24579	.25363	1.9874	25.048	.49626	4.8575	.25205
#2	.10106	.24477	.25192	2.0017	25.211	.49772	5.1985	.25003
#3	.09931	.24281	.25304	2.0354	25.080	.49284	4.9469	.24867
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50813	25.095	.25178	4.8012	.25234	.59089	.18950	2.4935
Stddev	.00325	.119	.00070	.0170	.00258	.00280	.00325	.0157
%RSD	.64021	.47547	.27915	.35302	1.0240	.47468	1.7129	.63056
#1	.50629	25.079	.25100	4.8022	.24936	.58856	.19187	2.4774
#2	.51189	25.221	.25237	4.8176	.25375	.59400	.19083	2.5089
#3	.50621	24.984	.25195	4.7838	.25392	.59010	.18580	2.4942
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: LCSW 21 Acquired: 2/11/2016 10:08:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50512	.50105	.49898	.25228	.48738	.50538	2.6085
Stddev	.00195	.00125	.00147	.00205	.00059	.00227	1.7509
%RSD	.38536	.24853	.29490	.81223	.12079	.44888	67.124
#1	.50401	.50002	.49932	.25457	.48738	.50505	.60327
#2	.50737	.50243	.50025	.25064	.48679	.50779	3.8347
#3	.50398	.50071	.49737	.25163	.48796	.50329	3.3874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11869.	87851.	3548.0
Stddev	42.	293.	7.1
%RSD	.35392	.33400	.20074
#1	11899.	88016.	3544.0
#2	11821.	87512.	3543.8
#3	11887.	88026.	3556.2

Approved: February 12, 2016

Sample Name: L1602025901 0.1 Acquired: 2/11/2016 10:11:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.11144	.00186	.01000	.02063	.00001	4.1951	.00004
Stddev	.00041	.00330	.00080	.00275	.00075	.00004	.0331	.00008
%RSD	150.90	2.9607	43.161	27.549	3.6582	432.62	.78934	179.81
#1	-.00006	.11524	.00108	.00911	.01989	-.00003	4.1569	-.00001
#2	.00014	.10924	.00181	.01309	.02140	.00005	4.2163	.00001
#3	.00073	.10985	.00268	.00779	.02059	.00001	4.2121	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00045	.00101	1.4429	1.8612	.00074	.60257	.15635
Stddev	.00020	.00062	.00061	.0149	.0370	.00285	.02704	.00128
%RSD	111.84	137.10	60.471	1.0334	1.9865	385.71	4.4878	.81574
#1	-.00042	.00117	.00102	1.4298	1.8205	-.00175	.63363	.15489
#2	-.00006	.00013	.00161	1.4398	1.8705	.00384	.58429	.15688
#3	-.00007	.00006	.00039	1.4591	1.8927	.00012	.58978	.15727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	4.2613	.00183	.09793	-.00065	-.00195	.00200	.66529
Stddev	.00014	.0512	.00041	.00772	.00128	.00478	.00128	.00447
%RSD	110.99	1.2016	22.241	7.8816	196.69	244.49	64.303	.67172
#1	.00006	4.2073	.00230	.08986	-.00116	-.00652	.00057	.66257
#2	.00004	4.3091	.00157	.09868	.00080	-.00236	.00306	.67045
#3	.00029	4.2674	.00162	.10524	-.00160	.00301	.00235	.66286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602025901 0.1 Acquired: 2/11/2016 10:11:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	.01862	.00496	-.00196	-.00001	.04833	4.9862
Stddev	.00114	.00009	.00430	.00087	.00086	.00036	1.4279
%RSD	91.191	.45830	86.763	44.485	7533.6	.73608	28.638
#1	-.00002	.01854	.00782	-.00134	-.00081	.04816	4.3125
#2	.00159	.01871	.00705	-.00296	-.00012	.04873	4.0197
#3	.00218	.01860	.00001	-.00159	.00090	.04808	6.6263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12234.	89453.	3590.0
Stddev	45.	172.	17.6
%RSD	.36735	.19265	.48902
#1	12252.	89276.	3606.7
#2	12183.	89462.	3591.6
#3	12268.	89621.	3571.7

Approved: February 12, 2016

Sample Name: L1602026211 Acquired: 2/11/2016 10:16:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00526	-.00155	.00154	.00124	-.00004	.03610
Stddev	.00135	.00457	.00109	.00048	.00046	.00006	.02017
%RSD	1373.4	86.955	69.997	30.933	36.787	162.92	55.874
#1	-.00106	.00355	-.00259	.00208	.00175	-.00002	.01333
#2	-.00068	.00179	-.00042	.00134	.00112	-.00010	.04327
#3	.00144	.01044	-.00164	.00119	.00086	.00001	.05171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	-.00043	.00003	.00092	.01372	.00069	-.00013
Stddev	.00009	.00009	.00031	.00145	.00052	.03407	.00316
%RSD	70.865	21.757	968.68	157.87	3.8109	4925.8	2433.0
#1	.00023	-.00053	-.00015	-.00014	.01409	-.02658	.00175
#2	.00013	-.00044	.00039	.00258	.01312	-.01022	.00163
#3	.00004	-.00034	-.00015	.00033	.01394	.03888	-.00378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08276	.00202	.00002	.11419	.00050	-.00331	-.00039
Stddev	.06227	.00041	.00015	.02670	.00077	.00520	.00025
%RSD	75.246	20.264	812.90	23.380	155.66	157.21	65.116
#1	.03202	.00183	-.00011	.08741	.00082	-.00819	-.00058
#2	.15225	.00250	.00018	.11435	-.00039	-.00391	-.00049
#3	.06400	.00175	-.00002	.14080	.00105	.00217	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602026211 Acquired: 2/11/2016 10:16:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00152	.00039	.00870	.00082	.00055	.00174	-.00255
Stddev	.00163	.00345	.00085	.00074	.00010	.00193	.00071
%RSD	106.80	886.21	9.7343	90.812	17.418	110.95	27.927
#1	-.00265	-.00079	.00820	.00073	.00046	.00371	-.00242
#2	.00034	.00427	.00822	.00012	.00054	-.00013	-.00331
#3	-.00226	-.00231	.00968	.00160	.00065	.00163	-.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00067	.00152	F -.24794
Stddev	.00058	.00011	.91695
%RSD	86.968	7.4482	369.83
#1	-.00069	.00165	.45473
#2	-.00124	.00147	-1.2852
#3	-.00007	.00144	.08664
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12262.	90637.	3534.6
Stddev	39.	282.	12.7
%RSD	.31538	.31070	.35951
#1	12279.	90344.	3535.2
#2	12290.	90662.	3521.6
#3	12218.	90905.	3547.0

Approved: February 12, 2016

Sample Name: L1602027301 Acquired: 2/11/2016 10:20:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00100	.10872	-.00042	.01970	.20213	-.00009	20.930	.00056
Stddev	.00105	.00174	.00142	.00130	.00114	.00006	.135	.00014
%RSD	104.81	1.5991	335.69	6.5868	.56392	69.488	.64324	25.608
#1	-.00216	.10706	.00084	.02089	.20335	-.00009	21.062	.00065
#2	-.00013	.11053	-.00195	.01831	.20194	-.00015	20.934	.00039
#3	-.00070	.10857	-.00015	.01990	.20110	-.00003	20.793	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00039	.01995	.57257	1.4962	.00026	5.3346	.04440
Stddev	.00009	.00073	.00015	.02179	.0702	.00158	.0815	.00107
%RSD	24.144	184.81	.74600	3.8064	4.6884	617.15	1.5284	2.4094
#1	-.00028	-.00039	.01978	.54861	1.4678	.00137	5.4028	.04318
#2	-.00046	.00104	.02007	.59123	1.5761	-.00155	5.3568	.04488
#3	-.00042	.00053	.01999	.57787	1.4447	.00096	5.2443	.04515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	8.8698	-.00007	.01048	.00625	-.00030	-.00063	1.1235
Stddev	.00027	.0631	.00086	.00097	.00207	.00246	.00252	.0103
%RSD	98.049	.71183	1309.3	9.2182	33.215	821.64	402.85	.91287
#1	.00001	8.9208	-.00000	.01015	.00688	-.00042	.00018	1.1291
#2	.00054	8.8894	.00076	.01157	.00393	-.00269	-.00345	1.1297
#3	.00026	8.7992	-.00096	.00973	.00793	.00222	.00140	1.1116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602027301 Acquired: 2/11/2016 10:20:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	.25343	-.00779	-.00341	-.00072	1.1154	.22347
Stddev	.00010	.00125	.00161	.00194	.00067	.0129	1.2142
%RSD	8.0571	.49355	20.709	56.843	93.696	1.1595	543.33
#1	.00110	.25433	-.00666	-.00233	-.00143	1.1259	.08568
#2	.00122	.25395	-.00964	-.00225	-.00009	1.1195	1.5007
#3	.00129	.25200	-.00708	-.00564	-.00063	1.1010	-.91593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12099.	88856.	3565.7
Stddev	24.	173.	19.6
%RSD	.19724	.19479	.54834
#1	12074.	88952.	3545.1
#2	12121.	88959.	3567.9
#3	12103.	88656.	3584.0

Approved: February 12, 2016

Sample Name: L1602027701 Acquired: 2/11/2016 10:24:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.16600	-.00146	.00926	.05218	-.00001	35.842	.00013
Stddev	.00185	.00499	.00262	.00197	.00118	.00005	.316	.00012
%RSD	464.10	3.0032	178.64	21.315	2.2679	537.47	.88071	93.811
#1	.00121	.16309	.00094	.01080	.05297	-.00001	35.775	.00010
#2	.00000	.17176	-.00425	.00994	.05276	.00004	36.185	.00003
#3	-.00241	.16315	-.00108	.00703	.05082	-.00006	35.564	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.00043	.00187	.23728	.67675	.00078	3.6565	.07607
Stddev	.00025	.00059	.00151	.01119	.03987	.00314	.1388	.00109
%RSD	54.519	138.31	80.810	4.7176	5.8914	402.02	3.7957	1.4388
#1	-.00021	.00005	.00212	.22760	.64896	.00313	3.6087	.07534
#2	-.00048	.00012	.00025	.24954	.72243	.00200	3.8129	.07733
#3	-.00072	.00111	.00323	.23472	.65885	-.00279	3.5480	.07555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	2.0588	.00025	.01358	-.00211	-.00113	-.00363	2.9742
Stddev	.00038	.0381	.00036	.00210	.00078	.00167	.00963	.0271
%RSD	121.68	1.8483	144.43	15.468	37.092	148.44	265.23	.91132
#1	.00019	2.0543	-.00004	.01492	-.00204	-.00142	-.00133	2.9915
#2	.00074	2.0990	.00014	.01116	-.00293	-.00263	-.01420	2.9882
#3	.00001	2.0233	.00064	.01466	-.00137	.00067	.00464	2.9430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602027701 Acquired: 2/11/2016 10:24:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.10138	-.00572	-.00395	-.00015	.00267	5.0758
Stddev	.00081	.00106	.00834	.00335	.00092	.00024	.4783
%RSD	190.89	1.0448	145.72	84.723	631.83	8.8461	9.4225
#1	-.00018	.10134	-.01321	-.00041	.00077	.00292	5.1627
#2	.00011	.10246	.00327	-.00707	-.00108	.00266	5.5046
#3	.00134	.10035	-.00723	-.00439	-.00012	.00245	4.5600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11990.	88704.	3568.7
Stddev	27.	257.	21.7
%RSD	.22520	.28916	.60853
#1	11966.	88969.	3578.8
#2	12019.	88688.	3543.8
#3	11984.	88457.	3583.6

Approved: February 12, 2016

Sample Name: L1602027702 Acquired: 2/11/2016 10:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.06910	.00052	.01068	.07992	-.00002	48.410	.00001
Stddev	.00104	.00275	.00093	.00288	.00105	.00003	.272	.00016
%RSD	2425.0	3.9747	181.27	26.932	1.3115	151.19	.56288	2503.4
#1	.00085	.06757	.00000	.01219	.08099	-.00002	48.720	-.00016
#2	-.00118	.07227	-.00005	.01247	.07889	-.00005	48.208	.00003
#3	.00021	.06746	.00159	.00736	.07987	.00001	48.302	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00086	.00136	.03821	.44522	.00428	3.7186	-.00014
Stddev	.00046	.00048	.00121	.00994	.06193	.00388	.0750	.00141
%RSD	2207.4	55.300	89.109	26.017	13.909	90.767	2.0169	982.82
#1	.00008	.00113	.00275	.03078	.38632	.00226	3.6760	.00108
#2	.00038	.00114	.00078	.04950	.43956	.00876	3.6745	-.00169
#3	-.00053	.00031	.00055	.03435	.50978	.00182	3.8052	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	2.4639	-.00064	.01338	-.00221	-.00135	.00121	3.8642
Stddev	.00013	.0250	.00029	.00532	.00093	.00110	.00194	.0408
%RSD	1380.2	1.0150	45.719	39.728	41.978	81.507	159.92	1.0557
#1	.00000	2.4762	-.00031	.01787	-.00152	-.00262	.00303	3.8964
#2	-.00015	2.4351	-.00087	.01475	-.00185	-.00061	.00143	3.8779
#3	.00012	2.4804	-.00074	.00751	-.00326	-.00083	-.00083	3.8184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602027702 Acquired: 2/11/2016 10:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.11665	-.00120	-.00076	-.00087	.00163	2.4197
Stddev	.00046	.00050	.00387	.00176	.00053	.00011	.4663
%RSD	84.468	.42985	323.90	230.63	61.252	6.9581	19.270
#1	.00002	.11721	.00229	-.00271	-.00046	.00165	1.9697
#2	.00089	.11624	-.00051	.00072	-.00147	.00174	2.3888
#3	.00073	.11652	-.00536	-.00030	-.00068	.00151	2.9007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11919.	87947.	3574.6
Stddev	34.	180.	16.7
%RSD	.28724	.20503	.46634
#1	11949.	87749.	3557.0
#2	11882.	87990.	3576.6
#3	11927.	88102.	3590.2

Approved: February 12, 2016

Sample Name: L1602027702PS Acquired: 2/11/2016 10:32:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556969-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19744	4.9329	.18893	.97091	.57195	.02364	48.827	.02449
Stddev	.00126	.0169	.00369	.00411	.00217	.00007	.098	.00024
%RSD	.64027	.34314	1.9551	.42295	.37853	.29905	.20074	.97905
#1	.19879	4.9499	.19263	.97261	.56946	.02370	48.714	.02422
#2	.19723	4.9329	.18893	.97390	.57338	.02366	48.878	.02459
#3	.19629	4.9160	.18524	.96623	.57300	.02357	48.889	.02466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09805	.24403	.24744	2.0411	25.539	.49702	8.2138	.24945
Stddev	.00068	.00163	.00210	.0257	.126	.00355	.0679	.00116
%RSD	.69513	.66998	.85023	1.2599	.49267	.71364	.82687	.46429
#1	.09830	.24582	.24973	2.0130	25.429	.49644	8.1689	.25059
#2	.09857	.24261	.24700	2.0469	25.676	.49380	8.2919	.24948
#3	.09728	.24367	.24559	2.0634	25.513	.50082	8.1805	.24828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50624	27.426	.24667	4.8649	.24808	.59374	.19342	6.0298
Stddev	.00253	.079	.00218	.0349	.00198	.00680	.00197	.0319
%RSD	.49953	.28916	.88227	.71722	.79785	1.1456	1.0184	.52904
#1	.50778	27.365	.24841	4.8919	.24877	.59071	.19312	6.0520
#2	.50762	27.516	.24738	4.8772	.24963	.60152	.19552	6.0442
#3	.50332	27.398	.24423	4.8255	.24585	.58897	.19161	5.9933
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602027702PS Acquired: 2/11/2016 10:32:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556969-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50119	.60185	.50225	.25066	.48794	.48913	2.0574
Stddev	.00265	.00093	.00886	.00276	.00098	.00293	1.9216
%RSD	.52915	.15395	1.7649	1.1024	.20156	.59975	93.401
#1	.50313	.60078	.49203	.24809	.48869	.49054	2.2859
#2	.50228	.60234	.50779	.25358	.48683	.49109	3.8546
#3	.49817	.60243	.50693	.25031	.48831	.48576	.03175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11788.	86719.	3515.2
Stddev	27.	254.	10.4
%RSD	.22944	.29318	.29443
#1	11781.	86474.	3526.8
#2	11766.	86982.	3512.1
#3	11819.	86701.	3506.8

Approved: February 12, 2016

Sample Name: L1602027702SDL Acquired: 2/11/2016 10:35:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG556969-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	.00686	-.00107	.00362	.01538	-.00001	8.9494	-.00007
Stddev	.00151	.00512	.00135	.00166	.00158	.00003	.3371	.00014
%RSD	221.20	74.691	125.56	45.979	10.243	431.39	3.7669	196.57
#1	-.00154	.00795	-.00227	.00532	.01504	-.00004	8.8025	-.00005
#2	.00106	.00128	.00039	.00353	.01710	.00002	9.3350	-.00023
#3	-.00156	.01135	-.00134	.00200	.01400	.00000	8.7106	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00058	-.00029	.00154	-.00631	.03928	.00054	.74223	.00063
Stddev	.00016	.00027	.00047	.00786	.09520	.00278	.04233	.00074
%RSD	27.728	94.258	30.230	124.53	242.37	514.48	5.7027	117.19
#1	-.00073	-.00043	.00119	-.00089	-.02053	.00142	.77100	.00040
#2	-.00041	-.00047	.00136	-.00272	-.01069	-.00257	.76206	.00147
#3	-.00058	.00002	.00207	-.01532	.14907	.00278	.69363	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.49054	-.00044	.00713	.00147	-.00096	-.00372	.71401
Stddev	.00017	.01743	.00040	.00850	.00150	.00279	.00559	.00498
%RSD	186.43	3.5524	90.780	119.19	102.23	289.47	149.99	.69738
#1	.00026	.49512	-.00089	.00447	.00319	.00217	-.00877	.71303
#2	-.00007	.50523	-.00020	.00028	.00055	-.00316	.00228	.71941
#3	.00008	.47129	-.00021	.01664	.00065	-.00189	-.00469	.70959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602027702SDL Acquired: 2/11/2016 10:35:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG556969-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.02124	-.00195	.00098	-.00040	.00113	.88225
Stddev	.00074	.00128	.00726	.00114	.00061	.00011	.57897
%RSD	58.532	6.0216	371.70	116.44	152.46	9.2930	65.625
#1	.00072	.02022	.00067	-.00030	.00017	.00120	.40330
#2	.00211	.02268	-.01016	.00189	-.00032	.00101	1.5257
#3	.00097	.02082	.00363	.00134	-.00105	.00119	.71778
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12632.	93320.	3667.9
Stddev	34.	682.	95.2
%RSD	.26799	.73069	2.5956
#1	12665.	94103.	3709.8
#2	12632.	92856.	3558.9
#3	12598.	93001.	3735.0

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 10:39:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42507	10.814	.42575	.54003	1.0742	.05379	10.725	.05361
Stddev	.00128	.023	.00326	.00495	.0053	.00004	.072	.00047
%RSD	.30082	.21581	.76584	.91638	.49607	.07612	.66968	.87247
#1	.42503	10.838	.42398	.53439	1.0682	.05374	10.643	.05415
#2	.42636	10.813	.42376	.54208	1.0761	.05381	10.751	.05332
#3	.42381	10.792	.42951	.54362	1.0784	.05382	10.779	.05336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21626	.54333	.54144	4.3470	53.466	1.0729	10.806	.53717
Stddev	.00125	.00140	.00340	.0371	.137	.0036	.060	.00447
%RSD	.57753	.25799	.62840	.85320	.25577	.33728	.55471	.83184
#1	.21759	.54299	.54533	4.3042	53.309	1.0690	10.812	.53277
#2	.21608	.54214	.53996	4.3709	53.535	1.0762	10.744	.53704
#3	.21511	.54487	.53903	4.3658	53.556	1.0735	10.863	.54170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0760	53.780	.54291	10.691	.54334	1.2932	.42357	5.4192
Stddev	.0065	.179	.00270	.043	.00386	.0015	.00990	.0189
%RSD	.59965	.33242	.49698	.40673	.71087	.11403	2.3362	.34801
#1	1.0828	53.581	.54545	10.737	.54415	1.2915	.43006	5.4402
#2	1.0755	53.830	.54321	10.687	.54673	1.2942	.42846	5.4137
#3	1.0699	53.928	.54008	10.650	.53914	1.2938	.41218	5.4037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 10:39:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0798	1.0745	1.0696	.54225	1.0840	1.0858	1.0796
Stddev	.0052	.0042	.0006	.00734	.0017	.0038	4.3924
%RSD	.47901	.39025	.05798	1.3543	.15737	.34943	406.86
#1	1.0848	1.0703	1.0703	.54965	1.0857	1.0897	-2.0385
#2	1.0802	1.0746	1.0691	.54215	1.0823	1.0855	6.1029
#3	1.0744	1.0787	1.0694	.53496	1.0840	1.0821	-.82562
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11360.	82063.	3356.2
Stddev	40.	14.	10.0
%RSD	.35179	.01765	.29755
#1	11346.	82080.	3367.1
#2	11329.	82057.	3354.0
#3	11405.	82052.	3347.5

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 10:43:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00099	.00948	.00052	.00089	.00062	.00002	.00587
Stddev	.00154	.00891	.00250	.00189	.00045	.00003	.01430
%RSD	155.03	94.042	480.95	211.90	72.491	112.16	243.62
#1	-.00081	.01622	.00273	.00181	.00084	.00004	.01622
#2	.00045	-.00063	-.00219	-.00128	.00092	.00003	-.01045
#3	-.00262	.01284	.00102	.00214	.00010	-.00001	.01184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00041	-.00020	.00048	-.00814	-.00077	-.00111
Stddev	.00037	.00011	.00029	.00046	.00943	.06472	.00467
%RSD	239.16	28.056	140.92	97.836	115.90	8386.1	420.70
#1	-.00059	-.00048	.00008	.00067	.00021	-.02269	.00427
#2	.00002	-.00027	-.00020	-.00006	-.01838	-.05168	-.00402
#3	.00010	-.00047	-.00049	.00081	-.00626	.07206	-.00358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07721	.00203	.00101	.02469	-.00024	.00369	-.00122
Stddev	.09201	.00171	.00037	.02896	.00016	.00303	.00112
%RSD	119.18	84.206	36.509	117.31	65.724	82.155	91.374
#1	.18320	.00336	.00132	.04919	-.00042	.00668	-.00236
#2	.01778	.00010	.00109	.03215	-.00010	.00063	-.00013
#3	.03065	.00261	.00060	-.00727	-.00021	.00375	-.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 10:43:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	.00112	.00496	.00067	.00017	.00328	-.00046
Stddev	.00139	.00359	.00266	.00023	.00024	.00302	.00133
%RSD	105.73	319.82	53.568	34.787	137.87	91.792	290.30
#1	-.00146	.00426	.00403	.00064	.00042	.00622	-.00161
#2	-.00262	-.00280	.00796	.00046	-.00006	.00020	-.00076
#3	.00014	.00191	.00289	.00092	.00016	.00344	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00094	.00010	F -.61363
Stddev	.00023	.00013	3.8589
%RSD	24.814	129.50	628.87
#1	-.00115	.00016	-1.9206
#2	-.00069	.00018	3.7291
#3	-.00097	-.00005	-3.6493
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11686.	85751.	3450.1
Stddev	18.	141.	9.1
%RSD	.15808	.16394	.26373
#1	11686.	85603.	3447.2
#2	11668.	85769.	3460.3
#3	11705.	85882.	3442.8

Approved: February 12, 2016

Sample Name: L1602027703 Acquired: 2/11/2016 10:47:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.02277	-.00036	.01724	.11162	.00003	56.190	-.00007
Stddev	.00039	.00282	.00039	.00210	.00030	.00000	.234	.00026
%RSD	555.62	12.376	107.64	12.161	.26943	9.5289	.41675	348.80
#1	.00035	.02005	-.00056	.01959	.11197	.00002	56.002	-.00014
#2	.00023	.02257	.00009	.01656	.11143	.00003	56.453	.00021
#3	-.00038	.02568	-.00061	.01557	.11147	.00002	56.116	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	.00110	.00355	.87616	.80502	.01019	12.311	.16786
Stddev	.00005	.00026	.00124	.01969	.04945	.00293	.110	.00150
%RSD	11.131	23.949	34.885	2.2477	6.1423	28.806	.89650	.89435
#1	-.00055	.00082	.00352	.89574	.80519	.00772	12.348	.16764
#2	-.00046	.00135	.00233	.85635	.85437	.00941	12.397	.16648
#3	-.00045	.00112	.00480	.87640	.75548	.01343	12.186	.16946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	9.6487	-.00072	.04662	-.00136	-.00195	.00269	7.0305
Stddev	.00008	.0365	.00094	.00171	.00245	.00359	.00340	.0454
%RSD	111.19	.37826	129.61	3.6685	179.59	184.18	126.21	.64635
#1	.00006	9.6096	-.00060	.04597	-.00303	-.00289	.00172	7.0600
#2	-.00000	9.6818	-.00171	.04856	-.00251	.00202	-.00012	7.0532
#3	.00016	9.6548	.00015	.04534	.00145	-.00499	.00647	6.9781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602027703 Acquired: 2/11/2016 10:47:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.21494	-.00422	-.00141	.00007	.00323	1.3087
Stddev	.00047	.00089	.00362	.00212	.00048	.00013	2.4609
%RSD	287.34	.41626	85.870	150.53	662.38	4.0890	188.04
#1	-.00030	.21469	-.00181	-.00373	.00032	.00312	.21601
#2	.00065	.21594	-.00838	-.00092	.00037	.00338	-.41657
#3	.00014	.21421	-.00246	.00043	-.00048	.00321	4.1268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11875.	87474.	3567.6
Stddev	26.	198.	6.3
%RSD	.22263	.22650	.17705
#1	11851.	87661.	3564.1
#2	11872.	87495.	3563.9
#3	11903.	87267.	3574.9

Approved: February 12, 2016

Sample Name: L1602028101 Acquired: 2/11/2016 10:51:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00100	.05032	.00003	.02719	.15975	-.00001	48.890	-.00007
Stddev	.00022	.00953	.00194	.00157	.00141	.00004	.117	.00021
%RSD	21.541	18.944	6647.6	5.7845	.88177	301.44	.24003	291.02
#1	-.00084	.06132	.00004	.02782	.15991	.00003	48.784	-.00032
#2	-.00092	.04516	.00196	.02540	.16107	-.00004	48.868	.00002
#3	-.00125	.04448	-.00191	.02835	.15827	-.00003	49.016	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00021	.00124	.17533	1.0275	.00644	13.779	.03064
Stddev	.00031	.00022	.00044	.01581	.0652	.00355	.118	.00117
%RSD	282.42	106.66	35.150	9.0153	6.3412	55.193	.85845	3.8336
#1	.00021	.00029	.00174	.18255	1.0986	.00247	13.642	.03065
#2	.00035	.00038	.00094	.15720	1.0132	.00932	13.849	.02945
#3	-.00024	-.00004	.00104	.18623	.97071	.00752	13.845	.03180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	5.2436	.00051	.00664	.00089	-.00285	.00274	5.3892
Stddev	.00013	.0317	.00081	.00461	.00314	.00629	.00220	.0320
%RSD	57.685	.60433	158.92	69.416	354.17	220.89	80.499	.59406
#1	.00007	5.2761	.00094	.00784	.00448	.00392	.00107	5.4148
#2	.00028	5.2127	.00101	.00155	-.00134	-.00394	.00523	5.3994
#3	.00030	5.2420	-.00043	.01052	-.00048	-.00852	.00190	5.3533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602028101 Acquired: 2/11/2016 10:51:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.43207	-.00661	-.00162	-.00068	.01573	.46463
Stddev	.00015	.00070	.00324	.00070	.00052	.00027	.49202
%RSD	26.991	.16147	48.964	43.460	77.117	1.6917	105.90
#1	.00067	.43127	-.00477	-.00081	-.00043	.01589	.95484
#2	.00060	.43255	-.00471	-.00206	-.00032	.01588	.46823
#3	.00038	.43238	-.01035	-.00198	-.00127	.01542	-.02918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11911.	88029.	3522.2
Stddev	53.	206.	3.5
%RSD	.44752	.23413	.10000
#1	11854.	88249.	3525.5
#2	11918.	87999.	3522.4
#3	11960.	87840.	3518.5

Approved: February 12, 2016

Sample Name: L1602028301 Acquired: 2/11/2016 10:55:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.13476	-.00211	.01644	.11816	-.00004	86.933	.00002
Stddev	.00112	.01035	.00292	.00053	.00087	.00005	.538	.00026
%RSD	126.51	7.6815	138.70	3.2167	.73942	143.85	.61877	1085.9
#1	.00186	.13337	-.00304	.01634	.11829	-.00009	87.224	.00017
#2	-.00033	.14574	.00117	.01701	.11896	.00000	87.263	-.00028
#3	.00112	.12518	-.00445	.01597	.11723	-.00001	86.312	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00098	.00197	.16123	.89298	.00723	11.807	.00785
Stddev	.00008	.00115	.00110	.01199	.06886	.00115	.146	.00220
%RSD	21.826	116.79	55.896	7.4391	7.7108	15.968	1.2406	28.070
#1	-.00044	.00210	.00324	.17449	.96301	.00620	11.915	.00988
#2	-.00042	-.00019	.00130	.15804	.82536	.00848	11.866	.00551
#3	-.00029	.00104	.00137	.15115	.89058	.00702	11.640	.00815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	14.022	.00002	.01241	-.00082	-.00043	.00258	4.0844
Stddev	.00022	.073	.00037	.01016	.00196	.00225	.00395	.0277
%RSD	45.344	.52011	1711.9	81.872	237.98	519.59	153.12	.67870
#1	.00023	14.068	.00042	.02383	-.00182	.00201	.00554	4.1051
#2	.00059	14.061	-.00031	.00441	.00143	-.00090	.00411	4.0953
#3	.00061	13.938	-.00005	.00897	-.00209	-.00241	-.00191	4.0529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602028301 Acquired: 2/11/2016 10:55:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.40389	-.00932	-.00059	-.00098	.00235	1.6940
Stddev	.00061	.00217	.00825	.00471	.00121	.00015	4.5053
%RSD	233.60	.53668	88.510	800.98	123.00	6.2484	265.95
#1	-.00037	.40505	.00020	.00373	-.00121	.00237	-.39538
#2	.00031	.40522	-.01399	.00011	.00032	.00220	-1.3872
#3	.00084	.40139	-.01418	-.00560	-.00206	.00249	6.8647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11821.	87292.	3551.0
Stddev	25.	419.	19.6
%RSD	.20814	.47981	.55073
#1	11849.	87220.	3539.4
#2	11810.	87742.	3540.0
#3	11805.	86914.	3573.6

Approved: February 12, 2016

Sample Name: L1602028801 Acquired: 2/11/2016 10:59:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.14584	-.00166	.01268	.01763	-.00004	18.834	-.00007
Stddev	.00084	.00222	.00352	.00041	.00034	.00003	.122	.00018
%RSD	450.31	1.5199	212.29	3.2633	1.9206	74.645	.64970	270.71
#1	-.00031	.14427	-.00261	.01259	.01796	-.00002	18.968	-.00027
#2	.00115	.14837	-.00461	.01232	.01764	-.00007	18.807	.00003
#3	-.00029	.14487	.00224	.01313	.01728	-.00002	18.728	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00064	.00184	.11966	1.4714	.00244	3.4039	.00455
Stddev	.00034	.00057	.00049	.00870	.0195	.00382	.0814	.00103
%RSD	132.99	89.128	26.711	7.2687	1.3246	156.44	2.3927	22.615
#1	.00011	.00067	.00150	.10964	1.4563	-.00125	3.4669	.00549
#2	-.00057	.00006	.00161	.12522	1.4646	.00639	3.4329	.00345
#3	-.00030	.00119	.00241	.12412	1.4934	.00220	3.3119	.00472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	1.6861	.00023	.03729	-.00123	-.00087	.00048	3.7617
Stddev	.00028	.0279	.00161	.00507	.00414	.00312	.00928	.0327
%RSD	161.28	1.6536	683.99	13.596	335.53	360.59	1937.5	.87035
#1	.00009	1.7183	-.00162	.03421	-.00576	-.00248	-.00115	3.7825
#2	-.00046	1.6709	.00127	.04314	-.00030	-.00285	-.00787	3.7787
#3	-.00014	1.6691	.00105	.03451	.00236	.00273	.01046	3.7240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602028801 Acquired: 2/11/2016 10:59:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.05010	.00180	-.00136	-.00037	.00217	.21470
Stddev	.00057	.00067	.00343	.00344	.00013	.00008	1.8474
%RSD	142.21	1.3310	190.42	253.85	36.296	3.7278	860.45
#1	.00101	.05084	-.00015	.00100	-.00044	.00208	-1.1626
#2	.00031	.04994	-.00021	.00023	-.00021	.00223	-.50733
#3	-.00012	.04953	.00576	-.00530	-.00045	.00221	2.3141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12138.	88848.	3587.4
Stddev	27.	74.	31.7
%RSD	.22649	.08328	.88355
#1	12121.	88840.	3556.0
#2	12122.	88926.	3586.7
#3	12169.	88779.	3619.4

Approved: February 12, 2016

Sample Name: L1602028802 Acquired: 2/11/2016 11:04:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00102	.14156	-.00228	.01064	.02200	-.00004	14.028	.00009
Stddev	.00097	.00552	.00173	.00131	.00087	.00002	.033	.00022
%RSD	94.760	3.8977	75.660	12.266	3.9477	47.858	.23385	261.04
#1	-.00002	.14551	-.00409	.00946	.02139	-.00006	13.998	.00019
#2	-.00109	.13525	-.00064	.01043	.02162	-.00003	14.023	.00024
#3	-.00196	.14391	-.00213	.01204	.02299	-.00002	14.063	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00019	.00191	.15462	.82770	.00304	2.2128	.00624
Stddev	.00025	.00074	.00162	.01197	.01838	.00368	.0616	.00091
%RSD	77.434	393.99	84.889	7.7442	2.2206	121.06	2.7851	14.581
#1	-.00011	.00086	.00332	.14080	.84851	.00663	2.2838	.00718
#2	-.00059	-.00060	.00227	.16115	.82091	-.00073	2.1824	.00537
#3	-.00026	.00030	.00014	.16191	.81368	.00323	2.1724	.00617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	1.3496	.00074	.04548	-.00025	-.00074	.00443	3.9491
Stddev	.00013	.0186	.00058	.00468	.00399	.00299	.00070	.0216
%RSD	69.831	1.3774	77.515	10.282	1577.0	403.31	15.703	.54668
#1	.00029	1.3596	.00118	.05018	-.00325	.00209	.00428	3.9695
#2	.00004	1.3281	.00095	.04542	-.00178	-.00045	.00519	3.9511
#3	.00024	1.3610	.00009	.04083	.00427	-.00387	.00383	3.9265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602028802 Acquired: 2/11/2016 11:04:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.03106	.00071	.00020	.00009	.00293	2.6124
Stddev	.00064	.00015	.00476	.00187	.00072	.00007	1.0066
%RSD	85.075	.48994	667.26	925.36	810.38	2.3091	38.533
#1	.00142	.03118	-.00387	-.00045	.00030	.00294	3.4143
#2	.00013	.03089	.00563	.00231	-.00071	.00299	2.9400
#3	.00072	.03112	.00038	-.00125	.00067	.00285	1.4827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12096.	89118.	3581.9
Stddev	10.	169.	9.0
%RSD	.08546	.18914	.25145
#1	12088.	89170.	3581.9
#2	12108.	89254.	3573.0
#3	12092.	88929.	3591.0

Approved: February 12, 2016

Sample Name: L1602029001 Acquired: 2/11/2016 11:08:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00059	.01611	.00049	.03841	.93758	.00002	67.953	-.00003
Stddev	.00072	.00714	.00120	.00094	.00727	.00001	.557	.00022
%RSD	121.72	44.318	245.78	2.4485	.77521	40.951	.82008	655.40
#1	-.00001	.01159	.00176	.03946	.94562	.00002	68.584	.00005
#2	-.00140	.01240	.00034	.03765	.93561	.00002	67.749	-.00028
#3	-.00036	.02434	-.00063	.03813	.93149	.00001	67.527	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.00001	.00938	.55916	1.7990	.00542	11.214	.20246
Stddev	.00006	.00060	.00104	.02087	.0514	.00266	.101	.00145
%RSD	14.441	10324.	11.091	3.7329	2.8555	49.090	.89815	.71449
#1	-.00047	-.00047	.00893	.56139	1.7836	.00260	11.329	.20412
#2	-.00036	-.00019	.00865	.57883	1.7571	.00788	11.167	.20148
#3	-.00047	.00068	.01057	.53726	1.8564	.00576	11.145	.20177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	27.485	-.00031	-.00013	.00161	.00038	-.00626	6.4750
Stddev	.00020	.221	.00155	.00415	.00261	.00315	.00685	.0377
%RSD	72.731	.80340	501.05	3217.2	161.73	829.90	109.42	.58244
#1	.00013	27.736	-.00083	.00457	.00314	-.00099	.00127	6.5083
#2	.00020	27.398	-.00153	-.00330	.00310	.00398	-.01213	6.4826
#3	.00050	27.320	.00143	-.00166	-.00140	-.00185	-.00793	6.4341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602029001 Acquired: 2/11/2016 11:08:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	1.0631	-.00451	-.00149	-.00141	.03599	1.8020
Stddev	.00090	.0075	.00451	.00039	.00038	.00029	3.3433
%RSD	110.15	.70514	99.984	26.259	27.310	.80697	185.53
#1	.00049	1.0715	-.00043	-.00194	-.00161	.03609	5.3893
#2	.00184	1.0606	-.00375	-.00129	-.00096	.03622	-1.2269
#3	.00012	1.0571	-.00936	-.00123	-.00164	.03566	1.2437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11844.	87224.	3517.0
Stddev	14.	178.	17.8
%RSD	.11523	.20413	.50502
#1	11828.	87294.	3498.0
#2	11853.	87021.	3519.9
#3	11851.	87356.	3533.1

Approved: February 12, 2016

Sample Name: L1602029201 Acquired: 2/11/2016 11:12:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.01447	-.00018	.01705	.09050	-.00003	37.648	.00015
Stddev	.00166	.00039	.00170	.00159	.00074	.00001	.153	.00018
%RSD	2917.8	2.6997	942.00	9.2991	.81546	22.541	.40506	118.49
#1	-.00186	.01491	.00177	.01579	.09088	-.00003	37.757	.00005
#2	.00095	.01420	-.00093	.01883	.09098	-.00003	37.713	.00004
#3	.00108	.01429	-.00138	.01653	.08965	-.00004	37.474	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00069	.00146	-.00382	1.0074	.00173	8.7728	.00033
Stddev	.00028	.00029	.00067	.04058	.0760	.00132	.0798	.00180
%RSD	71.833	42.158	46.156	1061.3	7.5432	76.474	.90901	539.02
#1	-.00023	.00037	.00192	-.00387	1.0387	.00162	8.8635	-.00159
#2	-.00071	.00094	.00069	-.04438	1.0627	.00310	8.7135	.00198
#3	-.00022	.00077	.00176	.03678	.92074	.00046	8.7415	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	7.7757	-.00078	.00283	-.00098	-.00124	-.00398	3.3918
Stddev	.00012	.0186	.00112	.00563	.00281	.00419	.00149	.0113
%RSD	31.308	.23882	142.96	198.92	286.01	339.24	37.364	.33292
#1	.00029	7.7824	.00001	.00912	.00224	-.00135	-.00481	3.3939
#2	.00053	7.7900	-.00207	.00111	-.00289	-.00537	-.00488	3.4020
#3	.00036	7.7548	-.00030	-.00174	-.00231	.00301	-.00227	3.3797
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602029201 Acquired: 2/11/2016 11:12:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.20137	-.00680	-.00099	-.00065	.00940	2.2598
Stddev	.00060	.00081	.00107	.00036	.00084	.00012	1.4488
%RSD	103.00	.40090	15.807	36.300	127.78	1.3115	64.111
#1	-.00005	.20108	-.00678	-.00080	-.00007	.00948	1.5216
#2	.00066	.20228	-.00788	-.00077	-.00028	.00946	3.9290
#3	.00115	.20075	-.00573	-.00141	-.00161	.00926	1.3288
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12037.	88715.	3541.4
Stddev	18.	157.	16.8
%RSD	.14824	.17691	.47479
#1	12016.	88802.	3539.4
#2	12045.	88810.	3525.7
#3	12049.	88534.	3559.1

Approved: February 12, 2016

Sample Name: L1602029202 Acquired: 2/11/2016 11:16:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.26710	-.00217	.00772	.01238	-.00002	8.5421	.00003
Stddev	.00281	.00216	.00054	.00142	.00048	.00005	.0713	.00015
%RSD	1465.6	.80691	25.120	18.357	3.8754	222.04	.83498	454.51
#1	.00073	.26467	-.00166	.00931	.01183	-.00005	8.5412	-.00009
#2	-.00334	.26878	-.00275	.00661	.01263	.00004	8.6139	.00020
#3	.00203	.26784	-.00209	.00723	.01269	-.00005	8.4712	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.00004	.00095	.29045	.62331	.00059	1.4268	.00824
Stddev	.00036	.00035	.00069	.01352	.05448	.00169	.0497	.00057
%RSD	131.14	952.60	72.834	4.6540	8.7409	288.12	3.4858	6.8944
#1	-.00066	.00032	.00143	.29690	.68620	-.00130	1.4406	.00845
#2	-.00023	-.00035	.00016	.29954	.59307	.00109	1.3716	.00760
#3	.00006	.00014	.00127	.27492	.59064	.00197	1.4682	.00868
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	1.2298	-.00032	.02107	.00331	-.00191	-.00180	3.7399
Stddev	.00029	.0180	.00079	.00170	.00098	.00198	.00782	.0619
%RSD	603.44	1.4592	251.33	8.0879	29.521	103.61	433.51	1.6539
#1	.00033	1.2505	-.00088	.01948	.00443	-.00390	.00183	3.7840
#2	-.00025	1.2181	-.00066	.02085	.00270	-.00186	.00354	3.7665
#3	.00007	1.2209	.00059	.02287	.00279	.00005	-.01078	3.6692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602029202 Acquired: 2/11/2016 11:16:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.02166	.00449	-.00333	-.00047	.00195	5.2964
Stddev	.00019	.00027	.00243	.00203	.00044	.00026	2.7231
%RSD	55.585	1.2619	54.143	60.999	92.856	13.249	51.414
#1	.00041	.02135	.00640	-.00369	.00000	.00219	2.1848
#2	.00012	.02185	.00534	-.00115	-.00056	.00198	6.4603
#3	.00047	.02178	.00175	-.00517	-.00087	.00168	7.2441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12098.	88900.	3533.1
Stddev	28.	83.	12.9
%RSD	.23079	.09326	.36482
#1	12130.	88837.	3522.8
#2	12081.	88871.	3528.9
#3	12083.	88994.	3547.5

Approved: February 12, 2016

Sample Name: L1602029202MS Acquired: 2/11/2016 11:20:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19604	5.2308	.19051	.97535	.50957	.02389	13.580	.02424
Stddev	.00065	.0159	.00413	.00307	.00118	.00009	.041	.00014
%RSD	.33234	.30461	2.1676	.31473	.23219	.38987	.29998	.56360
#1	.19666	5.2479	.19072	.97459	.51024	.02395	13.551	.02411
#2	.19610	5.2282	.19454	.97873	.51027	.02394	13.627	.02423
#3	.19536	5.2164	.18628	.97273	.50820	.02378	13.563	.02438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09949	.25066	.24960	2.3305	25.287	.49071	6.3234	.25541
Stddev	.00036	.00006	.00078	.0158	.133	.00063	.1268	.00024
%RSD	.36152	.02360	.31313	.67936	.52701	.12898	2.0055	.09537
#1	.09991	.25070	.24980	2.3320	25.296	.48998	6.3362	.25558
#2	.09932	.25069	.25026	2.3455	25.416	.49104	6.1907	.25513
#3	.09926	.25059	.24873	2.3140	25.150	.49111	6.4433	.25552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49828	26.221	.25218	4.8445	.25047	.59002	.18981	6.5033
Stddev	.00352	.090	.00205	.0280	.00391	.00151	.00377	.0400
%RSD	.70590	.34387	.81415	.57713	1.5599	.25636	1.9852	.61444
#1	.50049	26.270	.25342	4.8582	.25066	.58889	.18703	6.5235
#2	.50014	26.276	.25332	4.8630	.25428	.59174	.19410	6.5291
#3	.49423	26.117	.24981	4.8124	.24647	.58944	.18830	6.4572
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602029202MS Acquired: 2/11/2016 11:20:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50460	.51744	.50410	.24763	.50119	.49959	5.1154
Stddev	.00264	.00244	.00097	.00399	.00225	.00254	1.0686
%RSD	.52390	.47095	.19303	1.6118	.44805	.50938	20.890
#1	.50634	.51888	.50298	.24632	.50229	.50122	4.4290
#2	.50590	.51881	.50472	.25211	.50267	.50089	4.5706
#3	.50156	.51462	.50460	.24446	.49861	.49666	6.3466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11867.	86710.	3523.1
Stddev	10.	287.	24.8
%RSD	.08033	.33068	.70334
#1	11876.	86500.	3530.8
#2	11866.	86594.	3495.4
#3	11857.	87037.	3543.1

Approved: February 12, 2016

Sample Name: L1602029202MSD Acquired: 2/11/2016 11:23:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19307	5.2775	.18963	.97432	.51060	.02359	13.606	.02430
Stddev	.00457	.0150	.00117	.00189	.00366	.00008	.089	.00019
%RSD	2.3650	.28480	.61941	.19358	.71656	.35981	.65554	.79881
#1	.18908	5.2661	.18934	.97564	.50792	.02367	13.563	.02452
#2	.19207	5.2945	.18863	.97216	.51477	.02350	13.709	.02425
#3	.19805	5.2719	.19092	.97516	.50910	.02359	13.547	.02414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10031	.24455	.25100	2.3708	25.411	.49007	6.3505	.25283
Stddev	.00055	.00141	.00158	.0219	.166	.00504	.0306	.00362
%RSD	.54962	.57702	.62938	.92426	.65361	1.0291	.48211	1.4324
#1	.10009	.24602	.25052	2.3474	25.258	.48891	6.3453	.25065
#2	.09990	.24321	.24971	2.3908	25.587	.49559	6.3228	.25701
#3	.10093	.24443	.25276	2.3741	25.387	.48571	6.3833	.25083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50293	26.281	.25224	4.8662	.25619	.59085	.18948	6.6765
Stddev	.00165	.245	.00053	.0064	.00431	.00118	.00148	.0100
%RSD	.32845	.93043	.21029	.13092	1.6813	.19972	.77901	.14936
#1	.50198	26.147	.25175	4.8731	.25169	.58987	.18892	6.6872
#2	.50197	26.564	.25280	4.8606	.25659	.59051	.19115	6.6674
#3	.50483	26.133	.25216	4.8649	.26028	.59216	.18836	6.6750
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602029202MSD Acquired: 2/11/2016 11:23:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50424	.51882	.50426	.25190	.49009	.49850	5.2401
Stddev	.00060	.00433	.00992	.00103	.00085	.00065	1.0015
%RSD	.11831	.83436	1.9679	.40799	.17297	.12954	19.111
#1	.50363	.51609	.49763	.25075	.49014	.49804	4.4592
#2	.50427	.52381	.51567	.25272	.48922	.49823	4.8919
#3	.50482	.51656	.49948	.25222	.49091	.49924	6.3692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11877.	87305.	3529.6
Stddev	24.	159.	17.3
%RSD	.20436	.18231	.49098
#1	11896.	87163.	3542.7
#2	11886.	87477.	3510.0
#3	11850.	87275.	3536.1

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 11:27:44 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39098	9.9054	.39240	.50300	1.0031	.04872	9.9489
Stddev	.00362	.0302	.00399	.00113	.0200	.00010	.2195
%RSD	.92675	.30441	1.0157	.22504	1.9894	.20788	2.2064
#1	.38817	9.8746	.39334	.50169	.99029	.04860	9.7931
#2	.38969	9.9349	.39583	.50360	1.0261	.04879	10.200
#3	.39507	9.9068	.38802	.50370	.99297	.04876	9.8537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04987	.20102	.49562	.50525	4.0513	50.701	.99766
Stddev	.00007	.00046	.00014	.00162	.0719	1.015	.01720
%RSD	.13304	.23057	.02898	.32052	1.7742	2.0009	1.7237
#1	.04984	.20143	.49552	.50699	3.9932	50.086	.98328
#2	.04982	.20112	.49555	.50497	4.1316	51.872	1.0167
#3	.04995	.20052	.49579	.50379	4.0290	50.145	.99300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9879	.50309	.99436	50.920	.50725	9.9209	.50838
Stddev	.2080	.01288	.00215	.987	.00110	.0158	.00091
%RSD	2.0829	2.5606	.21658	1.9374	.21694	.15971	.17840
#1	9.8535	.49247	.99441	50.281	.50717	9.9183	.50756
#2	10.228	.51742	.99649	52.056	.50839	9.9378	.50822
#3	9.8826	.49939	.99218	50.422	.50620	9.9065	.50936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 11:27:44 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1983	.39610	5.0154	.99952	1.0040	1.0093	.50271
Stddev	.0057	.00168	.0087	.00168	.0212	.0148	.00104
%RSD	.47329	.42339	.17269	.16760	2.1084	1.4689	.20651
#1	1.1933	.39658	5.0054	.99783	.99040	1.0007	.50391
#2	1.2045	.39424	5.0203	1.0012	1.0284	1.0264	.50200
#3	1.1972	.39749	5.0204	.99956	.99318	1.0008	.50224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.98791	1.0104	F 1.8685
Stddev	.00183	.0015	1.8811
%RSD	.18575	.15118	100.68
#1	.98618	1.0098	-.30040
#2	.98772	1.0122	2.8504
#3	.98983	1.0093	3.0556
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12052.	88122.	3525.9
Stddev	25.	317.	55.0
%RSD	.20646	.35944	1.5611
#1	12078.	88450.	3577.1
#2	12050.	87818.	3467.7
#3	12028.	88099.	3532.9

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 11:31:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00587	-.00222	.00352	.00114	-.00000	.01373
Stddev	.00087	.00855	.00040	.00252	.00021	.00002	.01296
%RSD	628.58	145.58	18.133	71.543	18.745	443.77	94.356
#1	.00000	.01545	-.00267	.00626	.00112	.00002	.02859
#2	-.00066	-.00098	-.00189	.00131	.00136	-.00001	.00787
#3	.00107	.00314	-.00210	.00298	.00093	-.00002	.00474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	-.00023	.00004	.00020	-.00547	.00007	-.00173
Stddev	.00016	.00014	.00113	.00105	.02291	.07126	.00158
%RSD	191.41	60.765	2588.6	537.65	418.79	102020.	90.924
#1	-.00026	-.00024	.00004	.00111	.01289	-.06269	-.00306
#2	-.00003	-.00008	.00117	-.00095	-.03115	.07754	-.00214
#3	.00004	-.00036	-.00108	.00043	.00185	-.01463	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03700	.00371	.00105	.01837	.00036	.00143	-.00069
Stddev	.08354	.00112	.00009	.01564	.00022	.00358	.00086
%RSD	225.77	30.080	8.1692	85.141	62.424	249.68	125.21
#1	.12732	.00479	.00101	.01748	.00010	.00511	.00010
#2	-.03751	.00256	.00115	.03444	.00052	-.00205	-.00056
#3	.02120	.00378	.00099	.00319	.00045	.00125	-.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 11:31:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	-.00521	.00100	.00064	.00020	-.00033	-.00090
Stddev	.00203	.00559	.00276	.00033	.00005	.00646	.00395
%RSD	319.55	107.27	275.85	52.598	23.158	1976.6	436.60
#1	.00130	.00011	.00040	.00089	.00016	-.00492	-.00195
#2	-.00046	-.00471	-.00141	.00076	.00025	-.00312	-.00423
#3	-.00275	-.01104	.00401	.00026	.00021	.00706	.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00070	.00008	F 1.8443
Stddev	.00073	.00006	1.3943
%RSD	105.10	81.872	75.601
#1	.00002	.00013	1.7669
#2	-.00144	.00001	.49025
#3	-.00067	.00009	3.2756
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12290.	89976.	3544.1
Stddev	24.	270.	19.2
%RSD	.19861	.29953	.54150
#1	12270.	90111.	3564.9
#2	12317.	89666.	3527.1
#3	12283.	90153.	3540.3

Approved: February 12, 2016

Sample Name: L1602037303 Acquired: 2/11/2016 11:35:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.73895	-.00159	.02301	.03603	.00012	33.859	.00005
Stddev	.00115	.01190	.00160	.00225	.00047	.00006	.124	.00004
%RSD	146.70	1.6105	100.30	9.7999	1.3042	47.337	.36562	76.739
#1	.00038	.75202	-.00179	.02232	.03573	.00013	33.932	.00001
#2	-.00192	.72875	.00010	.02552	.03657	.00006	33.929	.00007
#3	-.00082	.73607	-.00308	.02117	.03578	.00017	33.716	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.00102	.00343	1.8924	1.7249	.00166	10.198	.22114
Stddev	.00044	.00025	.00080	.0086	.0887	.00069	.091	.00338
%RSD	72.546	24.622	23.366	.45346	5.1424	41.315	.88950	1.5302
#1	.00022	.00074	.00312	1.8826	1.7105	.00116	10.213	.21973
#2	.00108	.00123	.00282	1.8958	1.8199	.00138	10.280	.22500
#3	.00051	.00110	.00434	1.8987	1.6443	.00244	10.100	.21869
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00846	25.866	.00390	.07128	.00293	-.00011	-.00294	2.9477
Stddev	.00037	.132	.00063	.00547	.00276	.00089	.00545	.0023
%RSD	4.4008	.51118	16.080	7.6674	94.344	819.77	185.31	.07945
#1	.00886	25.968	.00323	.07759	.00189	-.00069	.00330	2.9450
#2	.00841	25.912	.00401	.06801	.00606	.00091	-.00538	2.9494
#3	.00812	25.716	.00447	.06824	.00083	-.00055	-.00674	2.9485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602037303 Acquired: 2/11/2016 11:35:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.17873	.00524	-.00137	.03933	.01676	3.8812
Stddev	.00044	.00109	.00521	.00077	.00051	.00022	.3513
%RSD	27.604	.61122	99.439	56.296	1.2894	1.3000	9.0521
#1	.00116	.17951	-.00066	-.00082	.03943	.01672	3.7961
#2	.00204	.17920	.00715	-.00225	.03879	.01699	4.2672
#3	.00157	.17748	.00924	-.00104	.03979	.01656	3.5802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12257.	89966.	3624.2
Stddev	22.	330.	18.0
%RSD	.17888	.36729	.49583
#1	12281.	89607.	3636.3
#2	12250.	90257.	3603.5
#3	12239.	90036.	3632.7

Approved: February 12, 2016

Sample Name: L1602037401 0.01 Acquired: 2/11/2016 11:39:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	.03162	.00439	.47359	6.6443	.00004	141.40
Stddev	.00010	.00214	.00229	.00229	.1105	.00006	2.22
%RSD	23.007	6.7597	52.237	.48266	1.6623	155.65	1.5719
#1	-.00034	.03126	.00317	.47361	6.6059	.00008	140.79
#2	-.00055	.03391	.00296	.47129	6.7688	.00007	143.87
#3	-.00046	.02968	.00703	.47586	6.5582	-.00003	139.55
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00098	.00039	.00217	.73691	9.5023	.64855
Stddev	.00005	.00020	.00059	.00075	.01690	.0852	.00758
%RSD	87.073	20.356	149.73	34.671	2.2929	.89709	1.1686
#1	.00010	.00080	.00023	.00303	.71834	9.4359	.64797
#2	.00007	.00094	-.00010	.00163	.75137	9.5984	.65640
#3	.00000	.00119	.00105	.00186	.74103	9.4725	.64127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.102	.07822	-.00011	F 378.81	-.00076	.00769	.00135
Stddev	.255	.00084	.00010	6.46	.00169	.00617	.00196
%RSD	1.6878	1.0760	93.018	1.7066	222.37	80.171	144.89
#1	14.945	.07792	-.00021	377.99	.00118	.00115	.00177
#2	15.396	.07916	-.00009	385.65	-.00189	.01340	-.00078
#3	14.965	.07756	-.00002	372.80	-.00156	.00852	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: February 12, 2016

Sample Name: L1602037401 0.01 Acquired: 2/11/2016 11:39:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00254	-.00147	.04567	-.00019	F 27.459	-.01869	-.00210
Stddev	.00262	.00689	.00294	.00055	.525	.00358	.00125
%RSD	103.21	468.70	6.4350	291.99	1.9136	19.151	59.261
#1	.00553	.00031	.04816	-.00077	27.668	-.02076	-.00086
#2	.00140	-.00908	.04642	-.00012	27.849	-.01456	-.00209
#3	.00067	.00436	.04243	.00032	26.862	-.02076	-.00336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00048	.00761	1.3266
Stddev	.00057	.00010	2.0230
%RSD	119.74	1.3741	152.49
#1	-.00015	.00770	-.96088
#2	-.00113	.00750	2.0608
#3	-.00015	.00762	2.8800
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11438.	81776.	3481.6
Stddev	31.	98.	34.4
%RSD	.27512	.11959	.98896
#1	11408.	81888.	3492.1
#2	11436.	81732.	3443.1
#3	11471.	81708.	3509.5

Approved: February 12, 2016

Sample Name: L1602038701 Acquired: 2/11/2016 11:43:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00085	.02395	.00072	.03523	.33200	.00002	17.026	.00002
Stddev	.00162	.00630	.00297	.00041	.00074	.00003	.065	.00012
%RSD	190.30	26.311	411.36	1.1659	.22385	200.23	.38027	547.62
#1	-.00237	.01720	-.00084	.03551	.33257	.00000	16.974	.00014
#2	.00085	.02968	-.00114	.03476	.33227	-.00001	17.098	-.00010
#3	-.00102	.02496	.00415	.03542	.33116	.00005	17.004	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00042	.00040	.00617	.24570	1.1683	.00598	4.1984	.04205
Stddev	.00043	.00022	.00148	.03512	.0928	.00195	.0468	.00082
%RSD	103.53	55.744	23.911	14.293	7.9443	32.606	1.1147	1.9537
#1	-.00062	.00015	.00761	.20803	1.0646	.00436	4.1459	.04299
#2	-.00071	.00048	.00466	.27754	1.2437	.00544	4.2357	.04161
#3	.00008	.00058	.00625	.25154	1.1965	.00814	4.2135	.04154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	41.291	-.00020	.00544	.00224	.00043	-.00367	6.4398
Stddev	.00036	.186	.00049	.00141	.00311	.00338	.00341	.0612
%RSD	130.49	.44997	243.50	26.014	139.24	786.96	92.987	.95091
#1	.00063	41.088	-.00056	.00384	.00557	.00349	-.00091	6.4732
#2	.00030	41.453	-.00041	.00654	-.00060	-.00319	-.00262	6.4771
#3	-.00010	41.332	.00036	.00594	.00174	.00100	-.00748	6.3691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602038701 Acquired: 2/11/2016 11:43:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.66247	.00069	-.00535	-.00040	.00478	3.7159
Stddev	.00014	.00336	.00302	.00294	.00071	.00024	1.5760
%RSD	12.491	.50662	436.64	54.969	179.70	4.9900	42.413
#1	.00101	.65966	.00029	-.00562	-.00095	.00461	4.9335
#2	.00129	.66619	-.00210	-.00815	.00041	.00468	1.9358
#3	.00113	.66157	.00389	-.00228	-.00065	.00505	4.2784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12023.	88270.	3513.1
Stddev	52.	247.	22.5
%RSD	.43358	.27931	.63947
#1	12045.	88554.	3496.8
#2	11964.	88111.	3503.8
#3	12061.	88145.	3538.7

Approved: February 12, 2016

Sample Name: L1602038702 Acquired: 2/11/2016 11:47:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.75640	.00186	.00847	.07526	.00013	17.674	.00002
Stddev	.00062	.00513	.00271	.00172	.00040	.00006	.044	.00013
%RSD	114.56	.67858	145.64	20.351	.52656	44.580	.25019	616.76
#1	.00125	.75097	.00281	.00769	.07546	.00019	17.719	.00017
#2	.00014	.75706	-.00120	.01045	.07480	.00008	17.630	-.00007
#3	.00023	.76117	.00397	.00728	.07552	.00010	17.674	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00101	.00179	.77066	.64069	.00193	3.4329	.06355
Stddev	.00031	.00095	.00049	.02722	.06808	.00143	.0560	.00143
%RSD	72.533	94.043	27.314	3.5319	10.626	74.202	1.6303	2.2489
#1	.00076	-.00008	.00197	.73993	.62019	.00141	3.4057	.06207
#2	.00017	.00170	.00215	.78029	.58522	.00355	3.4973	.06366
#3	.00034	.00142	.00123	.79175	.71667	.00083	3.3957	.06492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	2.2163	.00085	.02124	-.00044	-.00236	-.00012	3.7998
Stddev	.00026	.0155	.00026	.00309	.00110	.00299	.00145	.0394
%RSD	141.24	.70104	30.205	14.556	246.79	126.99	1188.7	1.0355
#1	.00039	2.2325	.00055	.01781	.00017	-.00317	-.00164	3.8257
#2	-.00010	2.2148	.00103	.02211	.00020	-.00485	.00004	3.8191
#3	.00025	2.2016	.00095	.02381	-.00171	.00096	.00124	3.7545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602038702 Acquired: 2/11/2016 11:47:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.05119	.00070	-.00369	.00034	.00552	3.7542
Stddev	.00077	.00032	.00177	.00102	.00055	.00025	2.4858
%RSD	71.307	.63318	253.30	27.550	162.28	4.5597	66.212
#1	.00103	.05093	-.00126	-.00326	.00075	.00540	.88660
#2	.00188	.05109	.00218	-.00295	-.00028	.00534	5.2955
#3	.00034	.05156	.00118	-.00484	.00055	.00580	5.0806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12184.	89604.	3521.9
Stddev	37.	317.	2.4
%RSD	.30498	.35414	.06956
#1	12150.	89690.	3519.8
#2	12179.	89869.	3524.6
#3	12224.	89253.	3521.2

Approved: February 12, 2016

Sample Name: L1602039101 Acquired: 2/11/2016 11:51:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.16313	.00034	.01040	.03877	-.00003	24.434	-.00009
Stddev	.00056	.00896	.00418	.00285	.00046	.00003	.202	.00021
%RSD	10946.	5.4954	1229.6	27.436	1.1820	95.953	.82677	237.17
#1	.00063	.16381	.00499	.01211	.03929	-.00007	24.267	.00001
#2	-.00020	.15384	-.00086	.00711	.03850	-.00002	24.376	-.00032
#3	-.00045	.17173	-.00311	.01199	.03851	-.00001	24.659	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00065	.00150	.18775	.85665	-.00006	3.9316	.02052
Stddev	.00009	.00025	.00099	.00272	.06281	.00240	.1286	.00045
%RSD	23.015	37.456	65.797	1.4485	7.3316	3758.2	3.2718	2.1689
#1	-.00030	.00064	.00180	.18572	.88762	-.00162	3.9507	.02001
#2	-.00043	.00042	.00040	.18669	.78437	.00270	3.7945	.02075
#3	-.00047	.00091	.00232	.19084	.89795	-.00126	4.0496	.02081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	2.1700	-.00023	.01204	.00040	-.00264	-.00086	3.3341
Stddev	.00015	.0055	.00081	.00468	.00332	.00071	.00617	.0312
%RSD	1419.6	.25157	358.12	38.876	823.85	26.989	719.61	.93706
#1	.00017	2.1642	.00040	.01733	.00322	-.00329	.00595	3.3620
#2	-.00000	2.1750	.00006	.01032	-.00326	-.00188	-.00609	3.3399
#3	-.00014	2.1709	-.00114	.00846	.00126	-.00276	-.00244	3.3004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602039101 Acquired: 2/11/2016 11:51:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.08121	.00241	-.00274	-.00013	.00228	4.1810
Stddev	.00045	.00083	.00506	.00050	.00113	.00012	2.2316
%RSD	112.38	1.0206	209.73	18.123	896.65	5.2709	53.374
#1	.00011	.08170	.00819	-.00218	-.00143	.00242	1.7082
#2	.00092	.08026	.00022	-.00295	.00063	.00219	6.0450
#3	.00017	.08169	-.00118	-.00310	.00042	.00223	4.7899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12201.	89100.	3540.3
Stddev	36.	131.	8.8
%RSD	.29695	.14711	.24763
#1	12201.	89251.	3542.6
#2	12238.	89035.	3547.7
#3	12165.	89014.	3530.6

Approved: February 12, 2016

Sample Name: L1602039102 Acquired: 2/11/2016 11:55:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	.01829	-.00190	.13424	.30779	-.00002	33.457	.00005
Stddev	.00057	.01139	.00367	.00150	.00282	.00006	.242	.00019
%RSD	110.59	62.267	193.12	1.1169	.91717	387.70	.72458	356.93
#1	-.00092	.02255	-.00237	.13595	.30644	.00006	33.443	.00024
#2	-.00075	.02695	-.00531	.13315	.30590	-.00005	33.222	.00007
#3	.00013	.00539	.00198	.13361	.31103	-.00005	33.706	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00072	.00009	.00892	.06353	1.6046	.00911	15.771	.01470
Stddev	.00026	.00033	.00017	.00634	.0590	.00183	.127	.00238
%RSD	36.962	364.14	1.8844	9.9777	3.6779	20.131	.80774	16.175
#1	-.00094	.00025	.00875	.05861	1.6694	.01113	15.704	.01303
#2	-.00043	.00031	.00908	.06131	1.5539	.00866	15.690	.01364
#3	-.00078	-.00029	.00894	.07068	1.5906	.00755	15.917	.01742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	75.475	-.00048	.01378	-.00432	-.00023	-.00246	5.2480
Stddev	.00013	.551	.00060	.00378	.00229	.00205	.00199	.0259
%RSD	936.28	.73069	124.41	27.441	53.100	909.61	80.792	.49349
#1	.00013	75.408	-.00029	.01798	-.00203	-.00004	-.00055	5.2654
#2	-.00011	74.961	-.00116	.01272	-.00661	-.00236	-.00233	5.2604
#3	-.00006	76.058	.00000	.01064	-.00430	.00173	-.00452	5.2183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602039102 Acquired: 2/11/2016 11:55:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	1.2056	-.00417	-.00204	-.00003	.01445	1.4236
Stddev	.00061	.0096	.00147	.00058	.00131	.00019	2.4455
%RSD	62.210	.79977	35.335	28.694	4156.5	1.2853	171.78
#1	.00050	1.2046	-.00579	-.00153	.00066	.01461	-.05327
#2	.00166	1.1965	-.00378	-.00268	-.00154	.01425	.07770
#3	.00077	1.2157	-.00292	-.00191	.00079	.01450	4.2464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11940.	87068.	3529.7
Stddev	23.	277.	27.6
%RSD	.19572	.31773	.78078
#1	11940.	87371.	3531.5
#2	11916.	87005.	3556.3
#3	11963.	86828.	3501.3

Approved: February 12, 2016

Sample Name: L1602039103 Acquired: 2/11/2016 11:59:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00058	.80705	-.00110	.00856	.04418	.00008	17.632	.00011
Stddev	.00062	.00473	.00115	.00138	.00020	.00010	.026	.00023
%RSD	107.53	.58599	104.29	16.162	.45708	129.49	.14878	217.26
#1	-.00056	.80199	.00022	.01014	.04442	-.00004	17.638	.00037
#2	.00003	.81136	-.00164	.00799	.04404	.00013	17.603	-.00007
#3	-.00122	.80780	-.00188	.00756	.04410	.00014	17.654	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00124	.00263	1.4469	.68038	.00112	2.8101	.01658
Stddev	.00014	.00051	.00062	.0409	.06216	.00281	.0377	.00139
%RSD	107.99	41.027	23.535	2.8298	9.1353	250.80	1.3402	8.3874
#1	-.00027	.00070	.00255	1.4195	.63293	-.00035	2.8192	.01704
#2	.00001	.00171	.00206	1.4273	.75074	-.00065	2.8423	.01502
#3	-.00013	.00130	.00329	1.4940	.65748	.00436	2.7686	.01769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	1.2802	.00184	.05244	.00047	-.00313	-.00303	3.3188
Stddev	.00013	.0037	.00063	.00088	.00022	.00199	.00084	.0203
%RSD	164.33	.28918	34.002	1.6850	45.994	63.593	27.749	.61114
#1	-.00023	1.2835	.00140	.05149	.00024	-.00489	-.00384	3.3331
#2	.00003	1.2762	.00256	.05323	.00053	-.00097	-.00216	3.3278
#3	-.00004	1.2809	.00157	.05261	.00066	-.00352	-.00309	3.2956
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602039103 Acquired: 2/11/2016 11:59:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.04831	.00796	-.00125	.00113	.02243	1.3834
Stddev	.00043	.00047	.00246	.00194	.00019	.00020	1.8711
%RSD	59.410	.96722	30.860	154.95	17.066	.91091	135.26
#1	.00111	.04827	.00714	.00091	.00129	.02260	3.5166
#2	.00082	.04787	.01072	-.00282	.00092	.02248	.61328
#3	.00026	.04880	.00601	-.00184	.00117	.02220	.02017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12226.	90150.	3563.5
Stddev	19.	146.	5.1
%RSD	.15852	.16241	.14229
#1	12216.	90075.	3559.9
#2	12213.	90057.	3561.3
#3	12248.	90319.	3569.3

Approved: February 12, 2016

Sample Name: L1602037401 Acquired: 2/11/2016 12:03:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	-.00047	-.00233	.00818	.13160	-.00003	2.9260
Stddev	.00260	.00178	.00174	.00065	.00150	.00003	.0748
%RSD	488.55	378.41	74.955	7.9845	1.1405	109.41	2.5556
#1	-.00353	-.00029	-.00177	.00862	.12988	-.00006	2.8768
#2	.00122	.00121	-.00093	.00849	.13266	-.00003	3.0120
#3	.00071	-.00233	-.00428	.00743	.13226	.00000	2.8891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	-.00052	-.00092	.00002	-.00579	.13648	.01182
Stddev	.00026	.00021	.00012	.00054	.01463	.03302	.00216
%RSD	902.63	39.954	13.058	3067.8	252.42	24.192	18.299
#1	.00018	-.00043	-.00089	-.00043	-.02266	.16740	.01419
#2	-.00032	-.00038	-.00105	-.00014	.00187	.14035	.00996
#3	.00006	-.00076	-.00081	.00062	.00341	.10170	.01130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38852	.00246	.00033	7.9031	-.00034	.00363	.00067
Stddev	.06431	.00038	.00002	.0866	.00041	.00432	.00064
%RSD	16.552	15.419	6.1149	1.0958	117.95	118.95	95.630
#1	.39723	.00232	.00035	7.8939	-.00053	.00570	.00000
#2	.32030	.00289	.00031	7.9939	.00012	-.00133	.00129
#3	.44803	.00217	.00033	7.8214	-.00062	.00652	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602037401 Acquired: 2/11/2016 12:03:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5000 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00102	-.00027	.00114	-.00024	.55868	.00158	-.00172
Stddev	.00496	.00564	.00204	.00047	.00532	.00199	.00164
%RSD	485.21	2100.8	178.71	196.95	.95227	125.84	95.320
#1	-.00164	.00016	.00238	-.00036	.55319	.00265	-.00012
#2	.00422	.00515	.00225	.00028	.56381	.00280	-.00165
#3	-.00565	-.00611	-.00121	-.00064	.55905	-.00071	-.00340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00097	.00064	F -.57016
Stddev	.00033	.00021	1.2649
%RSD	33.443	32.945	221.86
#1	-.00117	.00054	.70064
#2	-.00060	.00049	-1.8292
#3	-.00115	.00088	-.58196
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12752.	92822.	3632.1
Stddev	14.	92.	26.2
%RSD	.10766	.09909	.72259
#1	12746.	92909.	3662.4
#2	12768.	92726.	3617.2
#3	12742.	92830.	3616.7

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 12:08:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40439	10.216	.40868	.50935	1.0273	.05093	10.237
Stddev	.00246	.030	.00116	.00225	.0254	.00027	.248
%RSD	.60752	.29024	.28297	.44094	2.4759	.53222	2.4209
#1	.40187	10.183	.40735	.50982	1.0214	.05062	10.154
#2	.40454	10.226	.40924	.51133	1.0551	.05108	10.516
#3	.40677	10.239	.40946	.50691	1.0053	.05110	10.041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05102	.20663	.51119	.51774	4.1747	51.410	1.0261
Stddev	.00018	.00064	.00243	.00041	.0771	1.212	.0235
%RSD	.35834	.30798	.47593	.08005	1.8464	2.3580	2.2937
#1	.05117	.20736	.50879	.51770	4.1561	51.057	1.0226
#2	.05106	.20634	.51366	.51735	4.2594	52.760	1.0511
#3	.05081	.20620	.51113	.51818	4.1086	50.414	1.0045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.392	.51743	1.0286	51.442	.51749	10.204	.51953
Stddev	.226	.01469	.0041	1.216	.00174	.017	.00190
%RSD	2.1758	2.8388	.39713	2.3634	.33653	.16778	.36568
#1	10.384	.51641	1.0318	51.146	.51934	10.219	.52149
#2	10.622	.53260	1.0301	52.778	.51725	10.208	.51938
#3	10.170	.50328	1.0240	50.401	.51588	10.185	.51770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 12:08:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2301	.41382	5.1440	1.0327	1.0278	1.0297	.52017
Stddev	.0016	.00375	.0082	.0035	.0240	.0240	.00106
%RSD	.13363	.90686	.15902	.34131	2.3353	2.3339	.20285
#1	1.2315	.41053	5.1529	1.0342	1.0239	1.0216	.52130
#2	1.2306	.41791	5.1420	1.0353	1.0535	1.0567	.52000
#3	1.2283	.41301	5.1369	1.0287	1.0060	1.0107	.51921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0236	1.0401	F 1.4986
Stddev	.0039	.0030	1.1536
%RSD	.38354	.28568	76.980
#1	1.0191	1.0435	1.2214
#2	1.0261	1.0390	2.7656
#3	1.0257	1.0379	.50884
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11838.	85667.	3493.1
Stddev	20.	347.	59.9
%RSD	.16998	.40512	1.7135
#1	11816.	86067.	3489.6
#2	11844.	85467.	3435.1
#3	11855.	85466.	3554.7

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 12:11:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00506	-.00014	.00214	.00105	.00005	-.00073
Stddev	.00089	.00658	.00159	.00189	.00058	.00004	.02867
%RSD	5425.8	130.10	1109.9	88.329	55.593	80.018	3912.9
#1	.00004	.00049	-.00020	.00392	.00169	.00001	-.01582
#2	-.00089	.00209	-.00171	.00016	.00055	.00005	-.01872
#3	.00089	.01261	.00147	.00234	.00091	.00009	.03234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	-.00020	.00018	.00099	-.00797	.03323	-.00022
Stddev	.00023	.00014	.00110	.00155	.03405	.03371	.00251
%RSD	1093.4	68.931	611.10	156.38	427.27	101.44	1156.6
#1	.00013	-.00024	-.00081	-.00075	-.02226	.02634	-.00304
#2	-.00029	-.00005	-.00000	.00222	-.03254	.00350	.00174
#3	.00009	-.00031	.00135	.00150	.03090	.06986	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02716	.00230	.00105	.03213	-.00077	.00088	-.00010
Stddev	.09359	.00129	.00021	.00915	.00043	.00386	.00202
%RSD	344.54	56.072	20.359	28.484	55.894	440.49	1954.7
#1	-.05506	.00377	.00120	.03098	-.00124	-.00173	.00028
#2	.00754	.00178	.00115	.02361	-.00063	.00531	.00169
#3	.12901	.00135	.00081	.04180	-.00042	-.00095	-.00228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 12:11:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00213	.00255	.00057	.00090	.00028	.00066	.00042
Stddev	.00100	.00569	.00420	.00079	.00029	.00478	.00144
%RSD	46.890	222.73	737.48	87.249	102.24	724.32	340.49
#1	.00292	.00691	-.00360	.00046	.00009	.00372	.00209
#2	.00247	-.00388	.00479	.00044	.00014	-.00485	-.00035
#3	.00101	.00463	.00052	.00182	.00062	.00310	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00013	.00003	F -.35388
Stddev	.00059	.00006	2.4199
%RSD	446.51	184.99	683.81
#1	-.00069	-.00001	1.7903
#2	.00048	.00000	.12568
#3	-.00018	.00010	-2.9776
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12045.	88344.	3478.8
Stddev	29.	60.	28.0
%RSD	.24077	.06798	.80400
#1	12012.	88376.	3509.9
#2	12057.	88275.	3455.7
#3	12066.	88381.	3470.8

Approved: February 12, 2016

Sample Name: ICSA Acquired: 2/11/2016 12:35:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	270.95	-.00285	.03811	-.00018	-.00004	243.89
Stddev	.00145	.12	.00275	.00025	.00088	.00008	1.00
%RSD	86.666	.04396	96.404	.65588	480.95	216.12	.40974
#1	.00039	270.81	-.00600	.03793	-.00120	.00004	243.21
#2	.00323	270.98	-.00094	.03799	.00038	-.00012	245.03
#3	.00138	271.04	-.00162	.03839	.00028	-.00004	243.42
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	-.00166	-.00286	F -.00816	99.207	.00049	.00508
Stddev	.00035	.00029	.00090	.00095	.449	.05543	.00200
%RSD	142.86	17.629	31.654	11.602	.45247	11256.	39.431
#1	-.00006	-.00169	-.00267	-.00796	98.888	.03598	.00375
#2	.00017	-.00135	-.00384	-.00919	99.720	-.06338	.00738
#3	.00063	-.00193	-.00206	-.00733	99.012	.02888	.00410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	254.19	.00247	-.00094	.06019	-.00230	.05376	-.00304
Stddev	1.33	.00232	.00031	.03079	.00062	.00912	.00066
%RSD	.52311	93.876	33.145	51.156	26.803	16.962	21.752
#1	252.95	.00422	-.00124	.09567	-.00176	.06269	-.00295
#2	255.59	-.00016	-.00062	.04450	-.00297	.04446	-.00374
#3	254.05	.00337	-.00096	.04041	-.00217	.05411	-.00242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: ICSA Acquired: 2/11/2016 12:35:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00431	.00439	.68140	.00080	.00047	.00692	-.00304
Stddev	.00782	.00901	.00395	.00111	.00013	.00210	.00221
%RSD	181.51	205.42	.57945	139.87	28.681	30.314	72.748
#1	.00009	.01439	.68585	.00038	.00059	.00897	-.00362
#2	-.00050	-.00310	.68002	-.00005	.00049	.00701	-.00489
#3	.01333	.00188	.67832	.00206	.00032	.00478	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00179	-.00520	F -29.577
Stddev	.00067	.00017	1.743
%RSD	37.299	3.3137	5.8937
#1	-.00159	-.00500	-27.663
#2	-.00253	-.00528	-31.073
#3	-.00125	-.00531	-29.996
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11109.	80103.	3409.0
Stddev	20.	214.	19.3
%RSD	.18026	.26668	.56590
#1	11106.	79951.	3408.9
#2	11091.	80347.	3389.8
#3	11131.	80010.	3428.3

Approved: February 12, 2016

Sample Name: ICSAB Acquired: 2/11/2016 12:39:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53385	270.94	.24686	-.03019	.25449	.24756	242.83
Stddev	.00021	.14	.00153	.00146	.00180	.00027	.90
%RSD	.03971	.05298	.62141	4.8218	.70716	.11058	.37155
#1	.53400	270.80	.24540	-.02855	.25254	.24744	241.82
#2	.53361	271.08	.24846	-.03134	.25608	.24736	243.56
#3	.53395	270.93	.24673	-.03068	.25486	.24787	243.10
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.46008	.23873	.25251	.23964	98.504	5.2775	.00494
Stddev	.00122	.00077	.00111	.00237	.443	.0579	.00451
%RSD	.26436	.32168	.43762	.98956	.44993	1.0968	91.262
#1	.46079	.23849	.25132	.24163	98.001	5.2854	.00532
#2	.46077	.23959	.25272	.24026	98.674	5.3310	.00025
#3	.45867	.23811	.25350	.23702	98.837	5.2161	.00925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	253.77	.25060	-.00111	5.2227	.47677	.04643	.48729
Stddev	.82	.00386	.00027	.0573	.00104	.00142	.00124
%RSD	.32426	1.5389	24.259	1.0974	.21873	3.0604	.25430
#1	252.93	.24663	-.00091	5.1565	.47628	.04722	.48828
#2	254.58	.25084	-.00142	5.2536	.47796	.04479	.48770
#3	253.80	.25434	-.00101	5.2579	.47606	.04728	.48590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: ICSAB Acquired: 2/11/2016 12:39:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50608	.24805	.01041	.00111	.00047	.00333	.46314
Stddev	.00210	.00430	.00383	.00093	.00025	.00346	.00255
%RSD	.41431	1.7354	36.832	84.081	52.898	103.84	.55065
#1	.50798	.24419	.01474	.00198	.00029	.00536	.46606
#2	.50642	.24726	.00746	.00123	.00037	.00529	.46201
#3	.50383	.25269	.00902	.00012	.00075	-.00066	.46134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.25709	.47931	F -31.542
Stddev	.00092	.00093	.717
%RSD	.35780	.19477	2.2725
#1	.25632	.48021	-30.844
#2	.25685	.47935	-32.276
#3	.25811	.47835	-31.507
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11113.	79802.	3421.8
Stddev	16.	52.	6.8
%RSD	.14517	.06468	.19967
#1	11132.	79845.	3425.5
#2	11102.	79745.	3413.9
#3	11106.	79818.	3425.9

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 12:43:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40545	10.279	.40686	.50274	1.0236	.05196	10.317
Stddev	.00112	.022	.00303	.00346	.0109	.00013	.139
%RSD	.27708	.21800	.74505	.68905	1.0643	.25208	1.3471
#1	.40437	10.272	.40418	.49881	1.0116	.05182	10.162
#2	.40537	10.261	.40625	.50536	1.0328	.05207	10.431
#3	.40661	10.304	.41015	.50405	1.0265	.05201	10.358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05091	.20526	.51755	.51380	4.1490	50.992	1.0340
Stddev	.00018	.00067	.00051	.00170	.0385	.590	.0120
%RSD	.35444	.32838	.09943	.33068	.92832	1.1579	1.1578
#1	.05110	.20592	.51799	.51459	4.1254	50.352	1.0202
#2	.05086	.20529	.51767	.51497	4.1935	51.515	1.0416
#3	.05075	.20457	.51698	.51186	4.1282	51.110	1.0402
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.479	.51464	1.0346	50.740	.51283	10.098	.51240
Stddev	.044	.00776	.0035	.519	.00173	.020	.00115
%RSD	.41811	1.5072	.33717	1.0232	.33766	.19900	.22378
#1	10.429	.50736	1.0368	50.171	.51403	10.119	.51268
#2	10.507	.52280	1.0365	51.188	.51362	10.094	.51338
#3	10.502	.51376	1.0306	50.860	.51085	10.080	.51114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 12:43:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2198	.40891	5.1412	1.0294	1.0242	1.0194	.52474
Stddev	.0026	.00217	.0130	.0040	.0115	.0095	.00208
%RSD	.21403	.53117	.25246	.38757	1.1252	.93429	.39630
#1	1.2191	.41026	5.1487	1.0320	1.0117	1.0090	.52433
#2	1.2227	.41006	5.1486	1.0314	1.0344	1.0277	.52699
#3	1.2177	.40640	5.1262	1.0248	1.0265	1.0217	.52289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0273	1.0312	F 4.0456
Stddev	.0028	.0031	1.9787
%RSD	.27445	.29589	48.910
#1	1.0259	1.0339	3.9252
#2	1.0255	1.0320	6.0819
#3	1.0306	1.0279	2.1299
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11824.	85336.	3514.5
Stddev	17.	219.	19.3
%RSD	.14297	.25662	.55004
#1	11809.	85492.	3535.4
#2	11821.	85430.	3510.8
#3	11843.	85086.	3497.2

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 12:46:44 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.01060	.00042	.00068	.00056	-.00001	.00061
Stddev	.00121	.00473	.00217	.00134	.00036	.00003	.01135
%RSD	152.17	44.632	514.25	197.69	64.556	186.92	1873.8
#1	-.00108	.00516	.00183	.00060	.00019	.00000	.00869
#2	.00053	.01288	.00151	-.00062	.00091	.00000	-.01237
#3	-.00183	.01377	-.00208	.00205	.00058	-.00004	.00549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	-.00059	-.00028	.00065	-.01413	.06018	-.00260
Stddev	.00017	.00023	.00049	.00079	.00090	.08916	.00095
%RSD	118.72	38.202	175.13	122.52	6.3499	148.16	36.491
#1	-.00004	-.00034	-.00075	-.00017	-.01418	.07519	-.00242
#2	.00018	-.00066	-.00031	.00069	-.01321	.14089	-.00362
#3	.00028	-.00077	.00022	.00142	-.01500	-.03553	-.00175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10174	.00135	.00110	.02279	.00002	.00102	-.00104
Stddev	.02175	.00376	.00048	.01847	.00026	.00161	.00271
%RSD	21.379	279.05	43.445	81.055	1317.6	158.05	259.61
#1	.10767	.00544	.00127	.03300	.00024	.00225	-.00411
#2	.07764	.00057	.00146	.03391	.00008	.00162	.00100
#3	.11990	-.00196	.00056	.00147	-.00027	-.00081	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 12:46:44 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00336	-.00282	.00225	.00113	.00038	.00496	.00097
Stddev	.00246	.00459	.00205	.00050	.00021	.00548	.00120
%RSD	73.183	162.54	91.201	43.977	54.332	110.47	123.99
#1	-.00615	-.00448	.00410	.00162	.00039	.01085	.00069
#2	-.00147	.00236	.00004	.00112	.00057	.00404	.00229
#3	-.00248	-.00634	.00262	.00063	.00016	.00000	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00058	.00018	F -1.0763
Stddev	.00126	.00007	3.5036
%RSD	217.24	36.759	325.53
#1	.00043	.00023	-3.0852
#2	-.00017	.00011	2.9693
#3	-.00199	.00020	-3.1128
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12021.	87559.	3499.1
Stddev	24.	324.	22.6
%RSD	.20298	.36997	.64633
#1	12007.	87186.	3473.0
#2	12049.	87728.	3510.4
#3	12007.	87764.	3513.8

Approved: February 12, 2016

Sample Name: PBW C6 Acquired: 2/11/2016 12:50:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00803	-.00087	-.00092	-.00037	-.00004	.01961	-.00001
Stddev	.00027	.00349	.00215	.00150	.00047	.00003	.01568	.00021
%RSD	132.29	43.432	247.76	162.61	126.38	74.137	79.989	1888.6
#1	.00029	.00704	.00101	-.00015	-.00008	-.00007	.03351	-.00026
#2	-.00010	.00514	-.00321	-.00266	-.00092	-.00001	.02271	.00009
#3	.00043	.01190	-.00041	.00003	-.00012	-.00006	.00260	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00048	-.00046	.00072	-.01040	.00461	-.00122	.08943	.00147
Stddev	.00036	.00057	.00044	.00087	.00611	.00440	.05098	.00037
%RSD	74.909	122.82	60.985	8.3889	132.72	359.66	56.998	24.993
#1	-.00060	-.00100	.00115	-.00957	.00860	-.00427	.07052	.00182
#2	-.00008	-.00053	.00072	-.01030	.00765	-.00322	.14716	.00150
#3	-.00076	.00013	.00028	-.01131	-.00243	.00382	.05062	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.04694	.00053	-.00488	.00016	-.00240	-.00225	.00458
Stddev	.00021	.02010	.00064	.00675	.00220	.00176	.00330	.00064
%RSD	213.14	42.823	119.10	138.35	1378.6	73.019	146.88	14.067
#1	.00003	.02670	.00125	.00185	-.00051	-.00352	-.00443	.00447
#2	-.00007	.06691	.00003	-.01164	.00262	-.00331	-.00386	.00527
#3	.00034	.04722	.00032	-.00484	-.00163	-.00038	.00155	.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: PBW C6 Acquired: 2/11/2016 12:50:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.00009	.00076	-.00296	-.00075	.00145	1.0453
Stddev	.00058	.00010	.00308	.00114	.00014	.00014	.5558
%RSD	51.164	109.28	406.25	38.408	17.939	9.9952	53.176
#1	.00159	.00014	.00419	-.00371	-.00060	.00154	.48979
#2	.00135	-.00002	-.00012	-.00351	-.00079	.00152	1.0446
#3	.00048	.00017	-.00179	-.00165	-.00086	.00128	1.6015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12192.	89430.	3555.7
Stddev	27.	143.	8.2
%RSD	.22405	.15984	.23037
#1	12223.	89576.	3546.3
#2	12173.	89290.	3561.0
#3	12179.	89424.	3559.8

Approved: February 12, 2016

Sample Name: LCSW C6 Acquired: 2/11/2016 12:54:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19353	4.8440	.18545	.93944	.48976	.02401	4.9088	.02388
Stddev	.00257	.0076	.00302	.00111	.00125	.00005	.0292	.00014
%RSD	1.3280	.15624	1.6298	.11801	.25449	.22453	.59510	.56729
#1	.19646	4.8389	.18271	.93922	.48833	.02397	4.8789	.02400
#2	.19164	4.8527	.18869	.93846	.49036	.02399	4.9372	.02391
#3	.19251	4.8405	.18496	.94064	.49060	.02407	4.9102	.02373
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09847	.24709	.24651	1.9708	24.346	.49616	5.0134	.24899
Stddev	.00091	.00138	.00026	.0120	.018	.00452	.0678	.00160
%RSD	.92616	.55903	.10347	.60814	.07269	.91168	1.3519	.64302
#1	.09922	.24550	.24676	1.9828	24.341	.49198	5.0717	.24820
#2	.09875	.24802	.24654	1.9588	24.332	.50096	5.0296	.24793
#3	.09745	.24774	.24625	1.9708	24.366	.49555	4.9390	.25083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50198	24.294	.24720	4.6713	.24541	.58014	.18717	2.4588
Stddev	.00390	.042	.00096	.0077	.00042	.00163	.00238	.0109
%RSD	.77696	.17428	.38699	.16392	.17208	.28136	1.2704	.44217
#1	.50558	24.253	.24823	4.6788	.24576	.58047	.18791	2.4612
#2	.50252	24.291	.24702	4.6717	.24494	.58159	.18452	2.4683
#3	.49784	24.338	.24635	4.6635	.24553	.57837	.18910	2.4469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: LCSW C6 Acquired: 2/11/2016 12:54:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49745	.48916	.49213	.24999	.49370	.48598	3.6545
Stddev	.00266	.00182	.00352	.00138	.00074	.00199	2.3200
%RSD	.53409	.37154	.71488	.55110	.15046	.40931	63.483
#1	.49858	.48860	.49552	.24896	.49298	.48718	1.0505
#2	.49935	.48768	.49239	.24944	.49364	.48708	4.4119
#3	.49441	.49119	.48849	.25155	.49447	.48369	5.5011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11965.	87147.	3551.4
Stddev	21.	60.	21.6
%RSD	.17830	.06927	.60950
#1	11942.	87208.	3564.3
#2	11984.	87087.	3526.5
#3	11968.	87146.	3563.6

Approved: February 12, 2016

Sample Name: L1602022206 Acquired: 2/11/2016 12:58:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.01676	-.00085	.04683	.04130	-.00002	72.095	-.00001
Stddev	.00016	.00364	.00176	.00275	.00071	.00003	.186	.00029
%RSD	23.853	21.742	206.78	5.8793	1.7289	172.78	.25861	3087.5
#1	.00073	.02092	-.00159	.04952	.04212	.00001	72.299	-.00016
#2	.00050	.01523	-.00212	.04402	.04095	-.00001	71.935	.00032
#3	.00081	.01412	.00116	.04695	.04082	-.00006	72.050	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00030	.00154	.01249	1.9797	.00247	11.543	-.00013
Stddev	.00009	.00065	.00020	.01868	.0566	.00214	.109	.00340
%RSD	22.517	218.59	12.756	149.55	2.8617	86.755	.94363	2710.3
#1	-.00038	.00088	.00136	-.00893	2.0237	.00488	11.604	.00333
#2	-.00030	.00041	.00175	.02101	1.9997	.00176	11.417	-.00023
#3	-.00047	-.00040	.00151	.02539	1.9158	.00077	11.607	-.00348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	28.475	-.00100	.00249	.00117	-.00100	-.00027	3.7339
Stddev	.00029	.014	.00070	.00375	.00163	.00358	.00547	.0334
%RSD	32.895	.04824	69.535	150.75	138.74	358.09	2049.8	.89556
#1	.00057	28.490	-.00179	.00381	-.00018	-.00112	-.00014	3.7507
#2	.00094	28.465	-.00075	.00540	.00298	-.00452	.00513	3.7556
#3	.00114	28.468	-.00047	-.00175	.00072	.00264	-.00580	3.6954
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602022206 Acquired: 2/11/2016 12:58:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	.21205	-.01175	-.00358	-.00071	.00179	.15011
Stddev	.00042	.00025	.00785	.00088	.00132	.00012	1.6594
%RSD	30.995	.11931	66.781	24.641	185.74	6.6022	1105.4
#1	.00104	.21177	-.00533	-.00375	.00075	.00184	-1.6852
#2	.00121	.21226	-.02050	-.00262	-.00107	.00165	.59116
#3	.00185	.21211	-.00942	-.00436	-.00181	.00187	1.5444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11884.	86050.	3540.7
Stddev	22.	197.	16.0
%RSD	.18337	.22880	.45237
#1	11863.	86260.	3528.1
#2	11882.	85870.	3558.7
#3	11907.	86019.	3535.2

Approved: February 12, 2016

Sample Name: L1602022206S Acquired: 2/11/2016 13:02:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20037	4.9898	.19202	1.0269	.54790	.02474	80.678	.02451
Stddev	.00152	.0129	.00407	.0010	.00133	.00010	.233	.00013
%RSD	.75757	.25855	2.1189	.09841	.24222	.41194	.28916	.51651
#1	.20120	5.0046	.18803	1.0264	.54942	.02467	80.947	.02466
#2	.19862	4.9836	.19188	1.0281	.54727	.02470	80.555	.02446
#3	.20128	4.9812	.19616	1.0262	.54701	.02486	80.532	.02442
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09887	.25241	.24712	2.0166	27.166	.50757	16.861	.25312
Stddev	.00031	.00199	.00242	.0258	.089	.00292	.015	.00308
%RSD	.31178	.78676	.97752	1.2788	.32864	.57626	.09182	1.2167
#1	.09878	.25317	.24789	2.0458	27.206	.51046	16.878	.25261
#2	.09921	.25390	.24906	1.9970	27.064	.50461	16.854	.25033
#3	.09861	.25016	.24441	2.0071	27.229	.50763	16.850	.25643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51808	54.598	.24548	4.9268	.24834	.60492	.19313	6.5118
Stddev	.00239	.257	.00060	.0100	.00276	.00266	.00896	.0205
%RSD	.46102	.47087	.24471	.20190	1.1111	.43894	4.6391	.31565
#1	.51998	54.894	.24575	4.9351	.24622	.60710	.20201	6.5354
#2	.51886	54.432	.24591	4.9296	.25146	.60569	.18409	6.4986
#3	.51540	54.468	.24480	4.9158	.24734	.60196	.19331	6.5013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602022206S Acquired: 2/11/2016 13:02:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50861	.72171	.49607	.24957	.50803	.49139	3.3300
Stddev	.00349	.00292	.00337	.00117	.00089	.00161	1.7854
%RSD	.68669	.40449	.67855	.47020	.17456	.32741	53.616
#1	.51203	.72496	.49588	.24904	.50707	.49280	4.8174
#2	.50875	.72082	.49953	.25091	.50820	.49173	3.8226
#3	.50505	.71933	.49280	.24875	.50882	.48964	1.3500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11582.	84642.	3497.6
Stddev	9.	119.	15.6
%RSD	.07831	.14074	.44477
#1	11591.	84505.	3485.1
#2	11583.	84724.	3492.8
#3	11573.	84696.	3515.0

Approved: February 12, 2016

Sample Name: L1602022206SD Acquired: 2/11/2016 13:06:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19758	4.9134	.19024	1.0117	.53768	.02436	79.519	.02443
Stddev	.00261	.0066	.00278	.0041	.00045	.00005	.073	.00022
%RSD	1.3194	.13484	1.4614	.40311	.08428	.20994	.09221	.88157
#1	.20055	4.9205	.18851	1.0153	.53739	.02436	79.436	.02468
#2	.19567	4.9125	.18876	1.0072	.53821	.02431	79.547	.02432
#3	.19652	4.9073	.19344	1.0126	.53746	.02441	79.575	.02430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09713	.24636	.24362	1.9989	26.728	.50127	16.674	.24690
Stddev	.00062	.00134	.00182	.0152	.076	.00294	.029	.00508
%RSD	.63714	.54521	.74645	.75804	.28330	.58723	.17400	2.0569
#1	.09743	.24655	.24570	1.9865	26.675	.49791	16.668	.24827
#2	.09753	.24493	.24234	2.0158	26.815	.50250	16.649	.25115
#3	.09641	.24760	.24282	1.9945	26.694	.50340	16.706	.24128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51001	53.826	.24351	4.8505	.24407	.59235	.19157	6.4218
Stddev	.00250	.039	.00128	.0087	.00352	.00441	.00466	.0223
%RSD	.48968	.07324	.52689	.18006	1.4406	.74499	2.4334	.34796
#1	.51103	53.844	.24420	4.8469	.24054	.59394	.19170	6.4372
#2	.51182	53.853	.24429	4.8605	.24411	.59574	.19616	6.4320
#3	.50716	53.781	.24203	4.8442	.24757	.58736	.18684	6.3962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602022206SD Acquired: 2/11/2016 13:06:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50152	.71058	.49156	.24684	.49859	.48314	4.5817
Stddev	.00327	.00163	.00599	.00170	.00104	.00190	2.4719
%RSD	.65104	.22909	1.2190	.68740	.20806	.39393	53.952
#1	.50173	.71007	.49288	.24649	.49978	.48391	6.7653
#2	.50468	.71241	.49679	.24868	.49793	.48454	1.8980
#3	.49816	.70927	.48502	.24534	.49804	.48097	5.0818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11624.	84550.	3484.6
Stddev	14.	127.	10.3
%RSD	.12109	.14979	.29442
#1	11615.	84675.	3474.6
#2	11616.	84422.	3495.1
#3	11640.	84552.	3484.1

Approved: February 12, 2016

Sample Name: L1602005801 Acquired: 2/11/2016 13:10:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.22508	.00028	.04217	.01860	.00036	12.930	.00094
Stddev	.00096	.00190	.00109	.00287	.00034	.00002	.046	.00013
%RSD	295.92	.84303	382.52	6.8030	1.8141	5.7435	.35599	13.666
#1	.00031	.22688	-.00082	.03951	.01832	.00035	12.918	.00086
#2	-.00063	.22310	.00033	.04521	.01852	.00035	12.891	.00088
#3	.00129	.22525	.00135	.04180	.01898	.00039	12.981	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01723	.00176	.00412	1.6266	1.8398	.07243	12.378	.17685
Stddev	.00001	.00008	.00032	.0101	.0333	.00358	.074	.00241
%RSD	.08589	4.6395	7.7392	.62366	1.8127	4.9456	.60131	1.3645
#1	.01722	.00179	.00397	1.6374	1.8127	.07336	12.453	.17843
#2	.01725	.00167	.00390	1.6251	1.8770	.07546	12.304	.17407
#3	.01722	.00182	.00449	1.6172	1.8298	.06848	12.377	.17805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	39.895	.04901	.20503	.00447	-.00143	.00219	20.800
Stddev	.00027	.252	.00045	.00377	.00082	.00427	.00618	.190
%RSD	128.92	.63130	.92177	1.8376	18.389	298.55	282.78	.91330
#1	-.00008	40.061	.04857	.20365	.00365	-.00538	-.00080	20.950
#2	.00046	39.605	.04898	.20215	.00446	.00311	-.00193	20.863
#3	.00026	40.018	.04948	.20929	.00529	-.00202	.00929	20.586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602005801 Acquired: 2/11/2016 13:10:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00163	.15209	.00158	-.00153	-.00059	.06966	5.6054
Stddev	.00076	.00026	.00316	.00066	.00046	.00086	1.9512
%RSD	46.742	.16864	199.96	43.463	77.397	1.2374	34.809
#1	.00142	.15202	-.00207	-.00077	-.00098	.07043	3.5075
#2	.00099	.15187	.00351	-.00201	-.00009	.06982	7.3659
#3	.00247	.15237	.00330	-.00180	-.00070	.06873	5.9427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12039.	87834.	3595.8
Stddev	20.	150.	23.2
%RSD	.16951	.17081	.64504
#1	12048.	87705.	3586.4
#2	12016.	87999.	3622.2
#3	12054.	87799.	3578.7

Approved: February 12, 2016

Sample Name: L1602005802 Acquired: 2/11/2016 13:14:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.23388	.00120	.03861	.01932	.00033	12.846	.00093
Stddev	.00238	.00431	.00188	.00148	.00094	.00008	.030	.00042
%RSD	810.16	1.8419	156.51	3.8460	4.8648	24.038	.23182	44.818
#1	-.00044	.23851	.00247	.03692	.01890	.00024	12.816	.00105
#2	-.00163	.23314	-.00096	.03921	.02039	.00040	12.847	.00128
#3	.00296	.22999	.00210	.03970	.01866	.00034	12.875	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01707	.00155	.00332	1.5844	1.8032	.07323	12.311	.17692
Stddev	.00034	.00077	.00020	.0159	.0534	.00361	.154	.00195
%RSD	2.0029	49.772	6.0254	1.0063	2.9633	4.9340	1.2534	1.1049
#1	.01735	.00075	.00355	1.5992	1.7973	.06939	12.138	.17912
#2	.01669	.00229	.00323	1.5675	1.7530	.07373	12.434	.17537
#3	.01717	.00161	.00318	1.5866	1.8594	.07657	12.362	.17629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	39.716	.04853	.20478	.00312	-.00136	-.00479	20.662
Stddev	.00025	.109	.00081	.00694	.00189	.00523	.00463	.092
%RSD	320.93	.27561	1.6726	3.3878	60.422	384.40	96.577	.44562
#1	-.00030	39.632	.04925	.20620	.00205	-.00722	-.00760	20.737
#2	-.00013	39.676	.04868	.21090	.00202	.00031	-.00734	20.690
#3	.00019	39.840	.04765	.19724	.00530	.00283	.00055	20.559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602005802 Acquired: 2/11/2016 13:14:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.15143	.00345	-.00367	.00015	.06705	3.7949
Stddev	.00051	.00047	.00452	.00074	.00037	.00070	2.3966
%RSD	54.618	.31045	130.92	20.211	243.79	1.0446	63.151
#1	.00128	.15101	.00327	-.00310	.00004	.06754	6.2988
#2	.00116	.15194	.00806	-.00451	-.00015	.06735	1.5225
#3	.00035	.15134	-.00098	-.00340	.00056	.06624	3.5635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12061.	88179.	3571.8
Stddev	25.	233.	7.1
%RSD	.20897	.26438	.19842
#1	12084.	88321.	3567.7
#2	12034.	88305.	3580.0
#3	12065.	87910.	3567.7

Approved: February 12, 2016

Sample Name: L1602005803 Acquired: 2/11/2016 13:18:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00097	.07335	-.00091	.01609	.02054	.00011	43.630	.00057
Stddev	.00042	.00527	.00313	.00192	.00063	.00002	.179	.00028
%RSD	43.085	7.1841	343.20	11.906	3.0651	14.165	.41004	48.735
#1	-.00071	.07020	-.00355	.01592	.01995	.00011	43.673	.00070
#2	-.00075	.07043	.00254	.01427	.02120	.00013	43.434	.00025
#3	-.00146	.07944	-.00172	.01809	.02047	.00010	43.784	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.00054	.00108	.85466	1.9327	.09798	32.975	.09643
Stddev	.00044	.00053	.00093	.02644	.0447	.00367	.149	.00101
%RSD	58.558	99.588	86.593	3.0933	2.3110	3.7435	.45100	1.0455
#1	.00113	.00023	.00211	.87819	1.9024	.09399	32.984	.09594
#2	.00027	.00022	.00082	.85975	1.9840	.09874	32.822	.09759
#3	.00083	.00115	.00030	.82605	1.9116	.10120	33.119	.09575
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	116.09	.02551	.10154	.00095	-.00200	.00706	21.637
Stddev	.00012	.30	.00136	.00805	.00196	.00146	.00409	.141
%RSD	252.83	.26032	5.3198	7.9250	205.21	72.881	58.028	.65334
#1	.00019	116.32	.02478	.11080	.00018	-.00126	.01178	21.740
#2	-.00002	115.75	.02707	.09622	.00318	-.00367	.00482	21.696
#3	-.00002	116.19	.02467	.09760	-.00050	-.00106	.00457	21.476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602005803 Acquired: 2/11/2016 13:18:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00130	.70697	-.00037	.00040	-.00043	.03568	2.5079
Stddev	.00032	.00156	.00257	.00245	.00032	.00031	2.2411
%RSD	24.725	.22026	698.35	610.90	74.454	.87212	89.362
#1	.00145	.70519	.00107	.00283	-.00008	.03595	1.6140
#2	.00093	.70767	.00116	.00045	-.00052	.03576	5.0581
#3	.00151	.70806	-.00334	-.00207	-.00070	.03534	.85166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11769.	85399.	3524.7
Stddev	14.	14.	14.8
%RSD	.11989	.01670	.42099
#1	11755.	85415.	3508.3
#2	11768.	85394.	3537.1
#3	11783.	85389.	3528.8

Approved: February 12, 2016

Sample Name: L1602005803PS Acquired: 2/11/2016 13:22:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556970-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19449	4.9198	.19358	.97786	.50730	.02459	43.884	.02451
Stddev	.00006	.0053	.00168	.00250	.00117	.00007	.035	.00035
%RSD	.03292	.10687	.86650	.25563	.23092	.27727	.07913	1.4181
#1	.19444	4.9205	.19515	.97546	.50819	.02466	43.883	.02456
#2	.19447	4.9247	.19182	.97766	.50774	.02452	43.919	.02483
#3	.19457	4.9142	.19379	.98045	.50597	.02460	43.849	.02414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09773	.24498	.24361	2.7217	26.212	.57854	34.425	.32950
Stddev	.00053	.00036	.00015	.0254	.085	.00134	.083	.00229
%RSD	.54527	.14595	.06138	.93443	.32519	.23085	.24157	.69606
#1	.09827	.24514	.24344	2.7036	26.199	.57722	34.389	.32969
#2	.09771	.24524	.24367	2.7108	26.303	.57989	34.367	.33169
#3	.09721	.24457	.24371	2.7508	26.134	.57851	34.520	.32712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50244	128.04	.26352	4.9281	.24014	.58738	.19543	22.107
Stddev	.00170	.14	.00109	.0144	.00273	.00424	.00547	.090
%RSD	.33924	.10695	.41263	.29196	1.1387	.72154	2.8014	.40633
#1	.50368	128.09	.26328	4.9376	.24132	.58687	.19053	22.166
#2	.50315	128.14	.26471	4.9351	.24208	.59185	.20134	22.152
#3	.50050	127.88	.26258	4.9115	.23701	.58342	.19441	22.004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602005803PS Acquired: 2/11/2016 13:22:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556970-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49727	1.1187	.49430	.24013	.49574	.51677	1.3624
Stddev	.00394	.0017	.00371	.00172	.00293	.00267	3.3244
%RSD	.79307	.14993	.75112	.71831	.59019	.51678	244.02
#1	.50087	1.1186	.49599	.24123	.49357	.51831	-.26183
#2	.49788	1.1170	.49687	.23814	.49907	.51831	-.83769
#3	.49306	1.1204	.49004	.24102	.49457	.51368	5.1866
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11690.	84885.	3528.5
Stddev	9.	189.	10.9
%RSD	.08117	.22234	.30873
#1	11681.	84772.	3527.1
#2	11690.	85103.	3518.4
#3	11700.	84780.	3540.1

Approved: February 12, 2016

Sample Name: L1602005803SDL Acquired: 2/11/2016 13:26:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG556970-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	.01426	.00108	.00508	.00470	.00001	8.6736	.00017
Stddev	.00044	.00406	.00161	.00086	.00027	.00004	.0595	.00017
%RSD	64.756	28.494	148.38	16.919	5.6681	515.12	.68627	100.47
#1	-.00102	.01339	.00224	.00500	.00440	.00004	8.6278	.00008
#2	-.00018	.01869	.00176	.00426	.00490	-.00003	8.7409	.00007
#3	-.00083	.01070	-.00075	.00597	.00480	.00001	8.6520	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	-.00019	.00018	.16573	.38986	.01947	6.7361	.02188
Stddev	.00022	.00019	.00064	.01239	.02731	.00211	.0645	.00127
%RSD	120.36	100.10	360.86	7.4740	7.0058	10.819	.95802	5.7890
#1	-.00028	-.00036	.00031	.15402	.40703	.01994	6.6832	.02055
#2	.00007	.00002	.00073	.16448	.35836	.02130	6.8080	.02202
#3	-.00034	-.00023	-.00052	.17869	.40419	.01717	6.7171	.02307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	23.363	.00430	.02216	-.00228	-.00218	-.00156	4.2811
Stddev	.00033	.201	.00059	.00500	.00137	.00524	.00395	.0177
%RSD	124.10	.85976	13.603	22.560	59.971	240.50	252.93	.41397
#1	-.00011	23.154	.00438	.01735	-.00214	-.00569	-.00533	4.2973
#2	.00051	23.554	.00368	.02179	-.00099	-.00469	-.00190	4.2838
#3	.00040	23.382	.00485	.02733	-.00371	.00385	.00255	4.2622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602005803SDL Acquired: 2/11/2016 13:26:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG556970-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.14089	-.00208	-.00013	-.00077	.00785	1.6414
Stddev	.00066	.00113	.00340	.00235	.00041	.00030	4.8100
%RSD	182.79	.80369	163.25	1811.4	53.211	3.7700	293.05
#1	-.00017	.13978	.00110	.00224	-.00108	.00786	6.7294
#2	.00015	.14205	-.00565	-.00245	-.00092	.00814	1.0262
#3	.00111	.14085	-.00169	-.00017	-.00031	.00754	-2.8315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12318.	89311.	3559.6
Stddev	22.	391.	32.6
%RSD	.17465	.43789	.91563
#1	12315.	89739.	3596.8
#2	12341.	88972.	3536.0
#3	12298.	89223.	3546.0

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 13:30:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40378	10.218	.40666	.50495	1.0302	.05114	10.315
Stddev	.00211	.036	.00284	.00296	.0100	.00016	.159
%RSD	.52137	.35413	.69741	.58632	.96720	.31198	1.5441
#1	.40213	10.190	.40419	.50159	1.0206	.05098	10.142
#2	.40615	10.259	.40602	.50612	1.0405	.05130	10.457
#3	.40305	10.206	.40976	.50716	1.0296	.05116	10.346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05107	.20648	.51225	.51525	4.1450	51.323	1.0345
Stddev	.00022	.00047	.00126	.00036	.0884	.543	.0110
%RSD	.43265	.22815	.24672	.06967	2.1333	1.0588	1.0644
#1	.05117	.20700	.51109	.51559	4.0570	50.745	1.0231
#2	.05123	.20636	.51359	.51487	4.2338	51.824	1.0450
#3	.05082	.20608	.51206	.51527	4.1443	51.400	1.0353
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.448	.52103	1.0362	51.206	.51497	10.096	.51615
Stddev	.111	.00402	.0033	.518	.00061	.018	.00488
%RSD	1.0638	.77209	.32025	1.0108	.11812	.17768	.94558
#1	10.353	.51685	1.0386	50.656	.51543	10.109	.51680
#2	10.422	.52488	1.0377	51.684	.51428	10.102	.52067
#3	10.571	.52136	1.0324	51.277	.51521	10.075	.51097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 13:30:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2210	.40745	5.1430	1.0309	1.0322	1.0319	.52171
Stddev	.0043	.00084	.0066	.0020	.0107	.0147	.00366
%RSD	.34855	.20670	.12918	.19586	1.0404	1.4271	.70139
#1	1.2189	.40835	5.1470	1.0325	1.0208	1.0149	.51978
#2	1.2259	.40731	5.1467	1.0315	1.0421	1.0413	.52593
#3	1.2182	.40668	5.1354	1.0286	1.0338	1.0394	.51942
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0171	1.0308	F -.07237
Stddev	.0035	.0017	3.2498
%RSD	.34683	.16540	4490.4
#1	1.0137	1.0317	-.61631
#2	1.0208	1.0319	3.4151
#3	1.0169	1.0288	-3.0159
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11825.	85945.	3505.8
Stddev	37.	122.	39.1
%RSD	.31145	.14144	1.1158
#1	11823.	86083.	3546.9
#2	11789.	85851.	3501.6
#3	11863.	85902.	3469.0

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 13:33:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00180	.00008	.00247	.00051	-.00003	-.00053
Stddev	.00211	.00602	.00018	.00217	.00041	.00001	.01421
%RSD	309.61	334.49	229.84	87.616	80.181	26.984	2684.9
#1	.00098	-.00515	.00026	-.00002	.00098	-.00004	-.00526
#2	-.00156	.00518	.00009	.00385	.00031	-.00003	.01545
#3	.00262	.00537	-.00011	.00359	.00024	-.00003	-.01177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	-.00043	-.00054	.00030	-.00966	.00255	-.00200
Stddev	.00004	.00010	.00082	.00184	.01312	.00566	.00120
%RSD	70.890	22.273	151.98	608.37	135.79	222.10	60.133
#1	.00002	-.00049	.00035	-.00156	.00219	-.00389	-.00077
#2	.00007	-.00032	-.00070	.00035	-.00741	.00674	-.00318
#3	.00011	-.00048	-.00128	.00212	-.02376	.00479	-.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09720	.00059	.00099	.03505	.00006	.00542	-.00132
Stddev	.03735	.00186	.00019	.00900	.00066	.00913	.00201
%RSD	38.428	316.80	19.470	25.668	1064.6	168.32	152.38
#1	.08352	.00272	.00119	.04532	.00077	-.00353	-.00362
#2	.13946	-.00063	.00081	.02858	-.00055	.00508	.00011
#3	.06861	-.00034	.00097	.03124	-.00003	.01472	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 13:33:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00245	.00136	.00236	.00069	.00030	-.00522	.00060
Stddev	.00140	.00204	.00253	.00052	.00025	.00409	.00018
%RSD	57.079	149.39	107.21	75.665	83.527	78.275	30.894
#1	-.00089	-.00096	.00466	.00053	.00047	-.00881	.00065
#2	-.00286	.00283	-.00035	.00128	.00001	-.00608	.00075
#3	-.00361	.00221	.00277	.00027	.00042	-.00077	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00078	.00012	F 1.5025
Stddev	.00066	.00010	3.0510
%RSD	84.752	81.530	203.06
#1	-.00026	.00006	4.2666
#2	-.00055	.00006	2.0122
#3	-.00152	.00023	-1.7712
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12069.	88723.	3535.1
Stddev	11.	229.	16.2
%RSD	.08936	.25807	.45813
#1	12081.	88984.	3550.8
#2	12061.	88555.	3518.5
#3	12065.	88630.	3535.9

Approved: February 12, 2016

Sample Name: L1602005804 Acquired: 2/11/2016 13:38:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.06295	-.00022	.01731	.02098	.00017	45.257	.00053
Stddev	.00078	.00455	.00083	.00059	.00036	.00005	.141	.00018
%RSD	197.09	7.2331	368.61	3.4135	1.7056	31.018	.31159	34.957
#1	.00064	.05790	-.00086	.01742	.02139	.00014	45.368	.00074
#2	.00102	.06421	.00071	.01668	.02076	.00014	45.303	.00041
#3	-.00048	.06674	-.00052	.01784	.02079	.00022	45.098	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00063	.00253	.59610	2.0525	.10049	34.072	.08893
Stddev	.00009	.00061	.00061	.03483	.0656	.00281	.194	.00144
%RSD	16.972	96.240	23.957	5.8437	3.1980	2.7928	.56830	1.6191
#1	.00059	.00008	.00286	.62961	1.9773	.10085	33.891	.08861
#2	.00056	.00128	.00183	.59860	2.0982	.10309	34.050	.08767
#3	.00042	.00054	.00289	.56008	2.0820	.09752	34.276	.09050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	121.05	.02593	.08577	-.00129	-.00193	-.00059	22.716
Stddev	.00021	.32	.00062	.00311	.00248	.00404	.00371	.134
%RSD	72.724	.26541	2.3903	3.6264	192.36	209.65	623.94	.58908
#1	.00034	121.33	.02536	.08259	-.00180	.00103	-.00462	22.816
#2	.00048	120.70	.02583	.08880	-.00347	-.00653	.00269	22.768
#3	.00006	121.12	.02659	.08591	.00141	-.00028	.00014	22.564
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602005804 Acquired: 2/11/2016 13:38:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.73548	-.00863	-.00274	-.00051	.01818	2.2679
Stddev	.00083	.00125	.00580	.00270	.00053	.00020	1.5679
%RSD	71.695	.16934	67.179	98.618	104.79	1.1010	69.134
#1	.00045	.73677	-.00455	.00037	-.00067	.01826	3.0308
#2	.00207	.73429	-.00607	-.00450	.00009	.01833	3.3085
#3	.00095	.73536	-.01526	-.00409	-.00094	.01795	.46459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11744.	85277.	3560.5
Stddev	19.	184.	13.2
%RSD	.16066	.21579	.37031
#1	11760.	85453.	3558.7
#2	11724.	85291.	3574.5
#3	11749.	85086.	3548.3

Approved: February 12, 2016

Sample Name: L1602005805 Acquired: 2/11/2016 13:42:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00135	.02771	-.00317	.02693	.02410	-.00002	113.39	.00048
Stddev	.00199	.00167	.00101	.00157	.00040	.00004	.18	.00021
%RSD	148.07	6.0341	31.752	5.8201	1.6488	223.15	.16242	43.511
#1	.00094	.02932	-.00425	.02601	.02436	.00001	113.60	.00049
#2	-.00269	.02598	-.00300	.02873	.02430	-.00001	113.31	.00027
#3	-.00230	.02784	-.00226	.02603	.02365	-.00006	113.26	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00149	.00239	.08970	2.7468	.10661	76.941	.07465
Stddev	.00046	.00041	.00093	.00458	.0207	.00257	.158	.00210
%RSD	249.09	27.750	38.910	5.1085	.75474	2.4066	.20479	2.8073
#1	.00034	.00127	.00217	.09075	2.7653	.10929	76.853	.07597
#2	-.00037	.00196	.00341	.08468	2.7507	.10418	77.123	.07575
#3	-.00052	.00123	.00159	.09366	2.7244	.10636	76.847	.07224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00183	171.65	.05922	.03680	.00171	.00203	.00108	18.163
Stddev	.00019	.27	.00151	.00234	.00040	.00365	.00260	.065
%RSD	10.339	.15816	2.5495	6.3585	23.351	179.70	241.13	.35646
#1	.00205	171.95	.06071	.03864	.00206	.00530	.00030	18.205
#2	.00173	171.55	.05769	.03417	.00179	-.00191	-.00105	18.195
#3	.00171	171.44	.05925	.03760	.00127	.00271	.00397	18.088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602005805 Acquired: 2/11/2016 13:42:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	1.8703	-.01922	-.00125	-.00034	.00463	2.7711
Stddev	.00078	.0028	.00223	.00199	.00143	.00005	2.8324
%RSD	196.84	.15013	11.610	159.87	424.62	.97719	102.21
#1	-.00004	1.8732	-.02161	.00104	-.00164	.00462	5.8768
#2	-.00007	1.8701	-.01719	-.00260	-.00056	.00468	2.1060
#3	.00129	1.8676	-.01887	-.00219	.00119	.00459	.33047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11539.	83572.	3537.4
Stddev	28.	205.	19.6
%RSD	.24084	.24589	.55502
#1	11542.	83764.	3518.5
#2	11509.	83355.	3536.0
#3	11565.	83598.	3557.7

Approved: February 12, 2016

Sample Name: L1602005806 Acquired: 2/11/2016 13:46:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.02606	-.00033	.02785	.02268	-.00003	112.36	.00059
Stddev	.00025	.00507	.00130	.00224	.00100	.00003	.19	.00017
%RSD	225.72	19.454	387.78	8.0504	4.4149	107.91	.16529	28.793
#1	.00000	.02240	.00088	.02788	.02361	-.00003	112.55	.00058
#2	.00006	.02394	-.00018	.02560	.02280	.00000	112.36	.00077
#3	-.00040	.03185	-.00170	.03008	.02162	-.00006	112.18	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00060	.00181	.07035	2.8100	.10671	76.274	.07247
Stddev	.00012	.00012	.00093	.01190	.0355	.00359	.169	.00203
%RSD	167.44	19.444	51.497	16.913	1.2639	3.3598	.22204	2.8073
#1	-.00005	.00053	.00167	.08180	2.7704	.11038	76.270	.07461
#2	.00004	.00074	.00281	.07121	2.8391	.10652	76.445	.07056
#3	-.00021	.00054	.00096	.05805	2.8205	.10322	76.107	.07224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00197	170.22	.05804	.03661	.00071	-.00428	.00241	17.993
Stddev	.00024	.43	.00117	.00742	.00200	.00421	.00385	.125
%RSD	12.413	.25203	2.0224	20.258	283.40	98.382	159.57	.69704
#1	.00179	170.70	.05816	.04336	.00051	-.00464	.00664	18.099
#2	.00225	170.06	.05915	.02867	.00280	-.00830	-.00088	18.025
#3	.00187	169.88	.05681	.03779	-.00119	.00010	.00147	17.854
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602005806 Acquired: 2/11/2016 13:46:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	1.8531	-.01603	-.00524	-.00026	.00431	2.1534
Stddev	.00012	.0020	.00239	.00104	.00022	.00019	3.3249
%RSD	85.390	.10566	14.912	19.914	85.197	4.4341	154.41
#1	.00017	1.8551	-.01844	-.00644	-.00049	.00443	-.49124
#2	.00026	1.8529	-.01366	-.00456	-.00006	.00440	5.8860
#3	.00001	1.8512	-.01598	-.00472	-.00022	.00409	1.0653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11536.	84088.	3544.7
Stddev	21.	241.	21.3
%RSD	.18599	.28659	.60062
#1	11515.	84346.	3520.2
#2	11534.	83868.	3555.0
#3	11558.	84051.	3558.8

Approved: February 12, 2016

Sample Name: L1602005807 Acquired: 2/11/2016 13:50:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	3.9243	.00098	.24621	.01111	.00313	F 347.09
Stddev	.00195	.0124	.00083	.00335	.00085	.00008	.82
%RSD	197.20	.31529	84.143	1.3594	7.6661	2.4957	.23492
#1	-.00102	3.9367	.00035	.24734	.01013	.00304	347.95
#2	.00287	3.9240	.00068	.24885	.01158	.00319	346.33
#3	.00112	3.9120	.00192	.24245	.01162	.00316	346.99
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03302	.34506	.00726	.03770	11.161	11.733	.61154
Stddev	.00054	.00384	.00193	.00105	.034	.103	.00312
%RSD	1.6338	1.1126	26.651	2.7917	.30409	.87680	.51065
#1	.03333	.34884	.00856	.03862	11.191	11.852	.61406
#2	.03333	.34516	.00504	.03655	11.124	11.668	.61252
#3	.03240	.34116	.00819	.03792	11.168	11.680	.60805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	350.26	12.801	-.00041	F 581.90	.97671	.02364	.00428
Stddev	1.35	.034	.00032	3.94	.00914	.00317	.00231
%RSD	.38660	.26169	76.909	.67642	.93596	13.425	53.973
#1	351.37	12.833	-.00060	583.24	.98598	.02448	.00592
#2	348.75	12.766	-.00005	577.47	.97645	.02631	.00164
#3	350.65	12.803	-.00060	584.99	.96770	.02013	.00528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: February 12, 2016

Sample Name: L1602005807 Acquired: 2/11/2016 13:50:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00113	-.00672	22.101	.00043	3.9574	F -.04171	-.00478
Stddev	.00802	.00339	.210	.00190	.0156	.00575	.00088
%RSD	712.51	50.434	.94839	441.26	.39355	13.796	18.449
#1	-.01012	-.00287	22.316	.00256	3.9749	-.03606	-.00553
#2	.00525	-.00925	22.091	-.00022	3.9453	-.04756	-.00501
#3	.00150	-.00804	21.897	-.00106	3.9519	-.04151	-.00381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00104	1.3498	4.5363
Stddev	.00058	.0127	3.4394
%RSD	56.358	.93736	75.819
#1	.00170	1.3610	2.1139
#2	.00078	1.3523	3.0221
#3	.00062	1.3361	8.4730
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10715.	77020.	3419.8
Stddev	78.	756.	14.8
%RSD	.72941	.98114	.43192
#1	10805.	76383.	3436.2
#2	10675.	76822.	3415.7
#3	10666.	77855.	3407.5

Approved: February 12, 2016

Sample Name: L1602005808 Acquired: 2/11/2016 13:54:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00188	3.7844	.00010	.24159	.00970	.00305	F 342.11
Stddev	.00118	.0100	.00199	.00127	.00042	.00002	1.30
%RSD	62.772	.26447	1917.7	.52747	4.3121	.68679	.38006
#1	.00165	3.7931	-.00043	.24107	.00968	.00306	343.08
#2	.00317	3.7865	-.00156	.24304	.01013	.00303	340.63
#3	.00083	3.7734	.00230	.24066	.00930	.00307	342.61
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03273	.33940	.00212	.03687	9.6161	11.437	.60110
Stddev	.00041	.00340	.00089	.00170	.0176	.113	.00059
%RSD	1.2391	1.0017	42.201	4.5981	.18294	.98879	.09767
#1	.03294	.34155	.00148	.03673	9.6345	11.383	.60137
#2	.03299	.34117	.00314	.03864	9.5995	11.362	.60042
#3	.03226	.33548	.00173	.03525	9.6142	11.567	.60150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	345.54	12.593	-.00068	F 562.40	.95909	.00206	.00314
Stddev	.64	.077	.00019	3.62	.00909	.00453	.00185
%RSD	.18589	.61300	28.201	.64326	.94794	219.51	58.973
#1	346.24	12.650	-.00088	560.39	.96710	.00008	.00221
#2	344.98	12.505	-.00049	566.58	.96096	-.00114	.00195
#3	345.39	12.624	-.00068	560.24	.94921	.00724	.00528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: February 12, 2016

Sample Name: L1602005808 Acquired: 2/11/2016 13:54:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00267	-.00484	21.621	.00018	3.8900	F -.04411	-.00212
Stddev	.00415	.00162	.160	.00123	.0214	.00884	.00020
%RSD	155.35	33.492	.73780	681.10	.54916	20.035	9.2861
#1	.00143	-.00672	21.752	-.00090	3.9093	-.05407	-.00202
#2	-.00257	-.00389	21.668	.00151	3.8670	-.04107	-.00198
#3	-.00688	-.00393	21.443	-.00007	3.8937	-.03720	-.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00033	1.3268	5.2258
Stddev	.00061	.0142	4.0069
%RSD	186.91	1.0711	76.674
#1	-.00038	1.3387	.71487
#2	.00062	1.3306	6.5905
#3	.00074	1.3111	8.3721
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10894.	77121.	3410.0
Stddev	73.	1036.	22.2
%RSD	.66853	1.3439	.65174
#1	10815.	78056.	3408.1
#2	10907.	77302.	3388.9
#3	10959.	76007.	3433.2

Approved: February 12, 2016

Sample Name: L1602005809 Acquired: 2/11/2016 13:58:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.09058	.00035	.06899	.05041	-.00000	112.62
Stddev	.00044	.00381	.00235	.00239	.00074	.00001	.50
%RSD	128.54	4.2049	675.49	3.4698	1.4688	452.93	.44699
#1	-.00017	.08618	.00298	.06630	.04957	-.00002	112.11
#2	.00059	.09279	-.00042	.07088	.05067	.00000	113.12
#3	.00060	.09276	-.00152	.06979	.05098	.00001	112.64
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	-.00040	.08035	.00187	19.451	222.24	.39238
Stddev	.00018	.00007	.00028	.00152	.140	.75	.00419
%RSD	102.28	18.853	.34718	81.259	.71839	.33792	1.0681
#1	-.00003	-.00037	.08056	.00211	19.313	221.46	.38940
#2	.00032	-.00048	.08045	.00326	19.592	222.95	.39717
#3	.00024	-.00034	.08003	.00025	19.448	222.30	.39056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	103.76	1.3951	.00054	177.10	.00132	.10768	-.00113
Stddev	.83	.0036	.00036	.81	.00079	.00287	.00229
%RSD	.80241	.25432	67.398	.45471	60.290	2.6674	202.92
#1	102.83	1.3910	.00039	176.20	.00215	.11086	-.00377
#2	104.42	1.3975	.00027	177.73	.00057	.10689	.00030
#3	104.04	1.3968	.00095	177.39	.00123	.10529	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602005809 Acquired: 2/11/2016 13:58:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	-.00320	15.651	.00013	2.2711	-.00802	-.00175
Stddev	.00533	.00176	.030	.00089	.0144	.00597	.00192
%RSD	826.56	55.139	.19313	687.98	.63196	74.418	109.82
#1	.00235	-.00492	15.668	-.00014	2.2549	-.01359	.00047
#2	.00492	-.00326	15.669	-.00059	2.2822	-.00172	-.00285
#3	-.00533	-.00140	15.616	.00113	2.2762	-.00874	-.00286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00081	.00416	F -4.8835
Stddev	.00069	.00008	3.0435
%RSD	84.951	1.8757	62.322
#1	-.00146	.00416	-4.1596
#2	-.00087	.00424	-2.2672
#3	-.00009	.00408	-8.2237
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11391.	82825.	3641.0
Stddev	23.	942.	22.8
%RSD	.19788	1.1374	.62574
#1	11417.	83907.	3652.7
#2	11374.	82385.	3614.7
#3	11383.	82184.	3655.5

Approved: February 12, 2016

Sample Name: L1602005810 Acquired: 2/11/2016 14:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.02574	.00094	.06533	.03536	.00002	103.03
Stddev	.00100	.00459	.00426	.00312	.00095	.00007	.25
%RSD	524.54	17.841	452.29	4.7820	2.6880	335.53	.24101
#1	.00005	.02601	-.00392	.06390	.03544	-.00005	102.91
#2	.00067	.03019	.00401	.06318	.03437	.00009	103.32
#3	-.00129	.02102	.00274	.06892	.03627	.00003	102.87
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00054	.01640	-.00033	14.610	211.77	.37453
Stddev	.00011	.00013	.00072	.00072	.078	.45	.00263
%RSD	1163.3	24.346	4.3729	217.96	.53617	.21218	.70096
#1	-.00013	-.00069	.01669	-.00032	14.652	211.67	.37164
#2	.00004	-.00050	.01693	.00038	14.519	212.25	.37677
#3	.00006	-.00044	.01559	-.00105	14.658	211.37	.37519
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	100.05	1.2870	.00009	172.85	.00070	.04497	-.00119
Stddev	.38	.0058	.00041	.28	.00018	.00406	.00203
%RSD	.38242	.45318	461.95	.16430	25.624	9.0280	170.79
#1	99.729	1.2885	.00051	172.65	.00052	.04695	-.00217
#2	100.47	1.2919	-.00032	173.18	.00088	.04030	.00115
#3	99.938	1.2805	.00007	172.73	.00071	.04765	-.00255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602005810 Acquired: 2/11/2016 14:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	-.00517	10.873	.00045	1.9423	-.00996	-.00304
Stddev	.00268	.00424	.066	.00037	.0053	.00555	.00155
%RSD	258.57	82.013	.60390	80.674	.27494	55.698	50.970
#1	-.00401	-.00957	10.925	.00014	1.9379	-.01139	-.00362
#2	-.00030	-.00486	10.895	.00037	1.9483	-.00384	-.00128
#3	.00120	-.00110	10.799	.00085	1.9408	-.01465	-.00420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00044	.00283	F -2.9721
Stddev	.00018	.00018	2.3330
%RSD	40.937	6.2829	78.496
#1	-.00023	.00303	-3.5390
#2	-.00053	.00269	-.40788
#3	-.00055	.00277	-4.9693
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11450.	82669.	3520.1
Stddev	32.	205.	16.3
%RSD	.27760	.24787	.46310
#1	11414.	82702.	3502.6
#2	11471.	82450.	3523.0
#3	11466.	82856.	3534.8

Approved: February 12, 2016

Sample Name: L1602014102 Acquired: 2/11/2016 14:06:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.06529	-.00207	.14842	.01964	.00006	232.37
Stddev	.00039	.00433	.00117	.00233	.00038	.00006	1.03
%RSD	158.57	6.6252	56.612	1.5706	1.9406	97.925	.44485
#1	.00005	.06829	-.00333	.14884	.01946	.00007	233.54
#2	-.00069	.06724	-.00189	.15052	.01937	.00011	231.93
#3	-.00009	.06033	-.00100	.14591	.02007	-.00000	231.62
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00260	.01426	.00332	.00543	.02908	7.4808	.41168
Stddev	.00015	.00053	.00047	.00073	.01004	.0640	.00379
%RSD	5.8993	3.7393	14.212	13.468	34.512	.85569	.92147
#1	.00277	.01462	.00289	.00594	.02151	7.5462	.41602
#2	.00259	.01450	.00383	.00577	.04047	7.4182	.40897
#3	.00246	.01364	.00325	.00459	.02528	7.4779	.41006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	258.48	1.3201	-.00005	F 281.06	.04268	.00853	-.00095
Stddev	.85	.0056	.00041	1.43	.00051	.00946	.00576
%RSD	.32782	.42484	740.11	.50970	1.2019	110.95	605.72
#1	259.45	1.3219	.00012	282.69	.04235	.01010	-.00077
#2	257.85	1.3245	.00024	280.50	.04327	.01710	-.00680
#3	258.15	1.3138	-.00052	279.99	.04241	-.00162	.00472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: February 12, 2016

Sample Name: L1602014102 Acquired: 2/11/2016 14:06:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00365	-.00466	13.083	.00032	4.0744	F -.03273	-.00141
Stddev	.00200	.00267	.096	.00008	.0191	.00456	.00588
%RSD	54.933	57.182	.73159	26.304	.46981	13.933	417.50
#1	.00139	-.00165	13.141	.00041	4.0954	-.02769	-.00813
#2	.00435	-.00561	13.137	.00027	4.0699	-.03394	.00112
#3	.00521	-.00673	12.973	.00026	4.0579	-.03656	.00279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00109	.04379	1.9782
Stddev	.00090	.00035	2.6342
%RSD	82.596	.79948	133.16
#1	-.00135	.04391	3.0687
#2	-.00009	.04407	-1.0261
#3	-.00183	.04340	3.8919
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11010.	79587.	3466.6
Stddev	44.	463.	7.9
%RSD	.39968	.58203	.22920
#1	11035.	79407.	3460.8
#2	10959.	79240.	3475.7
#3	11036.	80113.	3463.4

Approved: February 12, 2016

Sample Name: L1602014103 Acquired: 2/11/2016 14:10:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	.04286	.00125	.14892	.01925	.00004	235.55
Stddev	.00053	.01119	.00162	.00087	.00014	.00005	.74
%RSD	78.450	26.104	129.76	.58572	.74936	106.53	.31221
#1	-.00125	.04999	-.00021	.14925	.01909	.00003	236.39
#2	-.00023	.02996	.00299	.14958	.01934	.00001	235.12
#3	-.00053	.04861	.00097	.14793	.01933	.00010	235.12
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00287	.01473	.00246	.00415	.00294	7.3842	.41783
Stddev	.00019	.00021	.00059	.00170	.01363	.0372	.00284
%RSD	6.5316	1.4173	23.816	40.904	464.00	.50413	.68043
#1	.00307	.01454	.00304	.00485	.00511	7.3772	.41849
#2	.00282	.01470	.00248	.00539	-.01165	7.4245	.41471
#3	.00270	.01495	.00187	.00221	.01535	7.3510	.42029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	263.29	1.3321	-.00015	F 284.44	.04391	.00358	-.00234
Stddev	.56	.0040	.00026	1.04	.00121	.00999	.00208
%RSD	.21323	.29653	170.97	.36526	2.7473	278.66	88.893
#1	263.26	1.3288	-.00011	285.63	.04448	.00344	-.00419
#2	262.74	1.3365	-.00043	283.93	.04474	-.00633	-.00274
#3	263.86	1.3311	.00008	283.75	.04253	.01364	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: February 12, 2016

Sample Name: L1602014103 Acquired: 2/11/2016 14:10:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00090	-.00483	13.313	-.00020	4.1424	F -.03294	-.00088
Stddev	.00384	.00326	.155	.00102	.0106	.00473	.00226
%RSD	425.05	67.500	1.1659	513.19	.25601	14.351	257.83
#1	.00220	-.00218	13.383	.00051	4.1538	-.02810	-.00320
#2	-.00519	-.00847	13.421	-.00137	4.1329	-.03316	.00131
#3	.00028	-.00384	13.135	.00027	4.1404	-.03755	-.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00060	.04453	4.4661
Stddev	.00042	.00048	.6331
%RSD	69.639	1.0719	14.177
#1	-.00087	.04475	3.7373
#2	-.00012	.04485	4.8804
#3	-.00081	.04398	4.7806
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11016.	80628.	3512.0
Stddev	161.	178.	13.1
%RSD	1.4595	.22075	.37288
#1	11016.	80441.	3518.9
#2	11176.	80796.	3520.1
#3	10855.	80647.	3496.9

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 14:14:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41607	10.581	.41519	.52427	1.0551	.05308	10.605
Stddev	.00021	.040	.00475	.00197	.0120	.00033	.108
%RSD	.05100	.38080	1.1432	.37506	1.1359	.61419	1.0167
#1	.41629	10.538	.40977	.52421	1.0428	.05271	10.484
#2	.41606	10.617	.41862	.52627	1.0557	.05329	10.639
#3	.41586	10.589	.41718	.52234	1.0668	.05325	10.691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05248	.21275	.53450	.53142	4.2981	52.496	1.0595
Stddev	.00040	.00065	.00214	.00071	.0788	.639	.0132
%RSD	.76663	.30748	.40077	.13307	1.8336	1.2164	1.2421
#1	.05272	.21312	.53203	.53115	4.2089	51.840	1.0443
#2	.05270	.21314	.53569	.53222	4.3268	52.531	1.0673
#3	.05201	.21200	.53578	.53089	4.3585	53.116	1.0668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.831	.53299	1.0600	52.441	.53161	10.393	.52981
Stddev	.174	.00933	.0030	.645	.00184	.026	.00523
%RSD	1.6082	1.7498	.28484	1.2295	.34658	.24841	.98692
#1	10.879	.52277	1.0615	51.741	.53183	10.406	.52377
#2	10.638	.53514	1.0621	52.570	.53333	10.409	.53306
#3	10.976	.54105	1.0566	53.011	.52966	10.363	.53258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 14:14:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2597	.40577	5.2704	1.0615	1.0552	1.0602	.53678
Stddev	.0027	.00165	.0074	.0030	.0137	.0138	.00333
%RSD	.21868	.40713	.14044	.28672	1.3012	1.2981	.62075
#1	1.2590	.40766	5.2721	1.0623	1.0399	1.0494	.54062
#2	1.2627	.40504	5.2768	1.0642	1.0591	1.0555	.53504
#3	1.2574	.40461	5.2623	1.0582	1.0665	1.0757	.53468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0616	1.0695	F 3.5057
Stddev	.0046	.0008	2.8061
%RSD	.43278	.07733	80.044
#1	1.0566	1.0697	6.5962
#2	1.0625	1.0703	1.1172
#3	1.0657	1.0686	2.8038
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11350.	82244.	3387.2
Stddev	65.	673.	42.3
%RSD	.57286	.81780	1.2475
#1	11379.	83000.	3434.8
#2	11396.	81714.	3372.6
#3	11276.	82017.	3354.2

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 14:18:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00324	.00077	-.00054	.00022	.00002	.00603
Stddev	.00146	.00753	.00216	.00080	.00033	.00002	.02147
%RSD	507.79	232.26	282.16	147.38	150.31	121.44	356.17
#1	.00101	-.00321	-.00158	.00025	.00059	.00004	.01515
#2	-.00000	.01152	.00119	-.00135	.00005	-.00001	.02142
#3	-.00187	.00142	.00269	-.00052	.00001	.00002	-.01849
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	-.00036	-.00004	.00059	.01153	.11827	.00000
Stddev	.00005	.00040	.00018	.00059	.00606	.07636	.00377
%RSD	24.350	110.91	424.07	100.26	52.608	64.565	161820.
#1	-.00016	.00006	-.00019	.00076	.01798	.16650	.00341
#2	-.00017	-.00041	-.00010	.00108	.00595	.15808	-.00404
#3	-.00025	-.00073	.00016	-.00007	.01065	.03023	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.13128	.00344	.00105	.05433	.00005	.00308	.00011
Stddev	.01398	.00107	.00024	.01732	.00095	.00585	.00264
%RSD	10.647	30.974	23.215	31.871	1799.4	190.00	2356.7
#1	.12376	.00349	.00080	.04803	-.00102	.00309	.00059
#2	.14741	.00448	.00107	.04105	.00077	.00893	-.00274
#3	.12267	.00235	.00129	.07392	.00041	-.00278	.00249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 14:18:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00263	-.00159	.00471	.00090	.00055	-.00459	-.00211
Stddev	.00231	.00739	.00175	.00036	.00014	.00196	.00259
%RSD	87.841	463.30	37.193	40.388	25.463	42.771	122.67
#1	-.00381	.00132	.00418	.00048	.00039	-.00608	-.00438
#2	-.00412	-.00999	.00666	.00107	.00062	-.00236	.00071
#3	.00003	.00389	.00328	.00114	.00064	-.00534	-.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00060	.00009	F -.76711
Stddev	.00072	.00020	2.9392
%RSD	120.09	231.92	383.16
#1	.00007	-.00012	2.4412
#2	-.00050	.00010	-3.3300
#3	-.00137	.00029	-1.4125
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11782.	86323.	3468.6
Stddev	74.	913.	4.5
%RSD	.62495	1.0579	.12969
#1	11727.	87369.	3467.2
#2	11753.	85916.	3473.6
#3	11865.	85684.	3464.9

Approved: February 12, 2016

Sample Name: L1602005807 Acquired: 2/11/2016 14:29:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00099	.74838	.00030	.04624	.00298	.00063	71.482
Stddev	.00071	.00587	.00236	.00087	.00011	.00004	1.266
%RSD	72.129	.78503	783.16	1.8855	3.7823	6.7834	1.7707
#1	-.00057	.75458	.00003	.04625	.00309	.00063	70.677
#2	-.00059	.74766	.00279	.04711	.00287	.00059	72.941
#3	-.00182	.74290	-.00191	.04537	.00297	.00067	70.828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00619	.06875	.00168	.00743	2.1791	2.1896	.11514
Stddev	.00007	.00014	.00079	.00030	.0212	.1070	.00241
%RSD	1.1088	.20129	46.773	4.0342	.97132	4.8871	2.0925
#1	.00621	.06864	.00091	.00710	2.1655	2.0714	.11464
#2	.00611	.06871	.00165	.00767	2.2035	2.2799	.11776
#3	.00624	.06890	.00249	.00754	2.1684	2.2174	.11302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	68.282	2.5419	-.00032	116.76	.19798	.00745	.00025
Stddev	1.216	.0435	.00011	1.94	.00165	.00244	.00293
%RSD	1.7801	1.7098	34.934	1.6643	.83237	32.742	1159.3
#1	67.412	2.5104	-.00030	115.63	.19684	.00921	-.00064
#2	69.671	2.5915	-.00044	119.00	.19987	.00847	-.00212
#3	67.763	2.5238	-.00022	115.64	.19723	.00466	.00352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602005807 Acquired: 2/11/2016 14:29:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00217	-.00325	4.1638	-.00024	.76154	-.00511	.00005
Stddev	.00313	.00259	.0137	.00127	.01356	.00187	.00142
%RSD	144.12	79.720	.32834	533.67	1.7812	36.527	2666.2
#1	.00183	-.00259	4.1484	-.00041	.75201	-.00523	.00092
#2	.00546	-.00106	4.1685	.00111	.77707	-.00319	.00082
#3	-.00077	-.00612	4.1744	-.00141	.75554	-.00691	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00113	.27881	F -1.4580
Stddev	.00068	.00149	1.9279
%RSD	60.457	.53301	132.23
#1	-.00086	.27723	-1.0379
#2	-.00191	.28018	.22515
#3	-.00062	.27903	-3.5614
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11904.	86562.	3545.5
Stddev	56.	107.	40.6
%RSD	.46940	.12312	1.1437
#1	11905.	86504.	3555.8
#2	11848.	86685.	3500.7
#3	11960.	86496.	3579.9

Approved: February 12, 2016

Sample Name: L1602005808 Acquired: 2/11/2016 14:33:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.74864	.00066	.04616	.00254	.00062	72.928	.00631
Stddev	.00105	.00259	.00344	.00117	.00056	.00002	.259	.00012
%RSD	255.58	.34588	519.38	2.5377	22.086	3.5312	.35582	1.9061
#1	-.00112	.74890	-.00331	.04574	.00232	.00059	72.840	.00619
#2	-.00091	.74592	.00264	.04526	.00212	.00063	72.723	.00643
#3	.00080	.75108	.00266	.04749	.00317	.00063	73.220	.00632
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07032	-.00038	.00835	1.9557	2.2054	.11579	69.479	2.5851
Stddev	.00037	.00129	.00037	.0035	.0507	.00139	.242	.0025
%RSD	.52572	338.57	4.3985	.18027	2.3000	1.2015	.34864	.09580
#1	.07014	-.00133	.00862	1.9591	2.1678	.11569	69.372	2.5826
#2	.07074	.00109	.00793	1.9560	2.2631	.11723	69.309	2.5853
#3	.07007	-.00090	.00849	1.9521	2.1854	.11445	69.756	2.5875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	119.08	.20176	.00632	-.00012	-.00025	-.00132	4.2400
Stddev	.00015	.42	.00061	.00243	.00073	.00065	.00426	.0039
%RSD	115.81	.35206	.30308	38.414	616.49	255.10	323.79	.09253
#1	-.00030	119.05	.20106	.00603	.00053	-.00099	.00307	4.2421
#2	-.00009	118.67	.20203	.00405	-.00091	.00023	-.00543	4.2425
#3	-.00001	119.51	.20219	.00888	.00003	-.00001	-.00159	4.2355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602005808 Acquired: 2/11/2016 14:33:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.77798	-.01319	-.00163	.00004	.28500	.89367
Stddev	.00085	.00321	.00432	.00120	.00053	.00077	2.5761
%RSD	656.73	.41273	32.712	73.827	1314.7	.27034	288.27
#1	.00027	.77880	-.01012	-.00292	.00050	.28437	.99574
#2	-.00110	.77445	-.01134	-.00145	-.00054	.28586	3.4173
#3	.00044	.78071	-.01813	-.00053	.00016	.28478	-1.7320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12008.	85893.	3562.9
Stddev	68.	559.	30.7
%RSD	.56494	.65098	.86111
#1	12021.	85839.	3594.9
#2	11935.	85363.	3560.1
#3	12069.	86477.	3533.7

Approved: February 12, 2016

Sample Name: L1602005809 Acquired: 2/11/2016 14:37:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.01994	.00040	.01095	.01054	-.00004	23.251
Stddev	.00069	.00549	.00297	.00167	.00048	.00005	.593
%RSD	1610.6	27.555	743.14	15.290	4.5335	127.90	2.5485
#1	.00075	.01600	-.00300	.01088	.01045	-.00005	22.701
#2	-.00047	.01760	.00168	.00932	.01105	.00002	23.879
#3	-.00041	.02621	.00252	.01266	.01011	-.00009	23.174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	-.00030	.01531	-.00060	3.9818	45.363	.07574
Stddev	.00011	.00026	.00102	.00096	.0955	1.285	.00462
%RSD	269.19	84.305	6.6796	161.04	2.3987	2.8329	6.0990
#1	-.00001	-.00046	.01627	-.00112	3.8874	44.224	.07347
#2	-.00017	-.00001	.01424	.00051	4.0784	46.756	.08105
#3	.00005	-.00044	.01543	-.00119	3.9795	45.109	.07269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	21.341	.28694	-.00026	36.580	.00034	.02619	.00033
Stddev	.516	.00681	.00041	.897	.00030	.00661	.00329
%RSD	2.4171	2.3749	157.86	2.4535	85.619	25.228	1005.2
#1	20.901	.28008	-.00027	35.795	.00033	.01860	-.00149
#2	21.909	.29371	-.00066	37.559	.00006	.02931	.00412
#3	21.214	.28703	.00016	36.385	.00065	.03066	-.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602005809 Acquired: 2/11/2016 14:37:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00259	-.00683	3.1043	.00119	.45910	.00271	.00072
Stddev	.00478	.00735	.0102	.00079	.01198	.00209	.00209
%RSD	184.94	107.67	.32980	66.198	2.6085	76.996	290.58
#1	-.00796	-.00393	3.1057	.00145	.44807	.00489	.00279
#2	-.00100	-.00137	3.1138	.00182	.47184	.00253	.00076
#3	.00120	-.01519	3.0935	.00031	.45739	.00072	-.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00018	.00154	F -.21469
Stddev	.00038	.00013	.29923
%RSD	209.01	8.1106	139.38
#1	.00017	.00165	.10436
#2	-.00013	.00157	-.48909
#3	-.00059	.00141	-.25934
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11993.	87194.	3577.5
Stddev	29.	1156.	76.3
%RSD	.24232	1.3259	2.1315
#1	12010.	88468.	3656.2
#2	12010.	86903.	3504.0
#3	11960.	86211.	3572.2

Approved: February 12, 2016

Sample Name: L1602005810 Acquired: 2/11/2016 14:41:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.01086	.00031	.01175	.00739	.00002	21.005
Stddev	.00068	.00280	.00148	.00107	.00096	.00002	.420
%RSD	165.90	25.827	472.08	9.1315	12.972	116.32	1.9994
#1	-.00033	.00763	.00120	.01130	.00820	.00005	20.947
#2	-.00113	.01265	-.00139	.01297	.00633	.00000	21.452
#3	.00023	.01230	.00113	.01097	.00765	.00001	20.618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	-.00021	.00284	.00088	2.9828	43.162	.07591
Stddev	.00023	.00024	.00037	.00066	.0593	.813	.00419
%RSD	165.64	110.82	13.035	75.284	1.9866	1.8827	5.5159
#1	.00012	.00004	.00314	.00125	2.9582	43.002	.07846
#2	-.00031	-.00044	.00243	.00127	3.0504	44.043	.07819
#3	-.00022	-.00024	.00294	.00011	2.9399	42.442	.07107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.379	.26052	.00000	35.265	-.00141	.01412	-.00057
Stddev	.406	.00270	.00011	.679	.00082	.01028	.00080
%RSD	1.9924	1.0347	2119.9	1.9249	57.796	72.793	140.54
#1	20.244	.25803	.00011	35.156	-.00047	.02444	-.00039
#2	20.836	.26338	-.00010	35.992	-.00184	.00389	-.00144
#3	20.059	.26014	-.00000	34.648	-.00192	.01402	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602005810 Acquired: 2/11/2016 14:41:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00130	-.00118	2.1861	.00090	.39086	-.00572	.00012
Stddev	.00045	.00566	.0033	.00074	.00865	.00651	.00191
%RSD	34.229	477.56	.14963	82.371	2.2143	113.87	1607.6
#1	-.00176	.00247	2.1830	.00051	.38804	.00012	.00074
#2	-.00087	.00168	2.1895	.00176	.40058	-.00454	.00164
#3	-.00129	-.00770	2.1858	.00044	.38397	-.01274	-.00203
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00103	.00137	F -1.7370
Stddev	.00053	.00001	3.6404
%RSD	51.272	.99616	209.58
#1	-.00160	.00138	-5.6412
#2	-.00090	.00136	1.5643
#3	-.00057	.00135	-1.1341
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12174.	87501.	3572.9
Stddev	55.	261.	58.9
%RSD	.45220	.29863	1.6496
#1	12138.	87744.	3546.6
#2	12238.	87534.	3531.7
#3	12147.	87224.	3640.4

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 14:45:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40725	10.336	.41412	.51519	1.0460	.05161	10.427
Stddev	.00093	.026	.00162	.00407	.0220	.00005	.210
%RSD	.22817	.24806	.39226	.78906	2.1045	.10200	2.0152
#1	.40623	10.307	.41598	.51162	1.0253	.05162	10.193
#2	.40806	10.344	.41342	.51432	1.0691	.05165	10.599
#3	.40747	10.357	.41296	.51961	1.0436	.05155	10.490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05162	.20852	.51865	.52250	4.2305	51.916	1.0482
Stddev	.00012	.00060	.00284	.00056	.0860	.933	.0209
%RSD	.23156	.28911	.54731	.10779	2.0338	1.7979	1.9911
#1	.05173	.20913	.51647	.52261	4.1461	51.056	1.0290
#2	.05164	.20852	.52186	.52301	4.3181	52.909	1.0704
#3	.05149	.20792	.51763	.52189	4.2274	51.784	1.0451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.532	.53132	1.0429	51.972	.52245	10.292	.52257
Stddev	.229	.01156	.0044	1.042	.00114	.023	.00461
%RSD	2.1781	2.1749	.42215	2.0046	.21802	.22264	.88296
#1	10.277	.51850	1.0475	50.966	.52368	10.315	.52741
#2	10.721	.54093	1.0424	53.046	.52225	10.292	.51822
#3	10.598	.53454	1.0387	51.903	.52143	10.269	.52207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 14:45:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2409	.41252	5.2199	1.0440	1.0467	1.0544	.52363
Stddev	.0066	.00281	.0146	.0022	.0212	.0321	.00229
%RSD	.53016	.68124	.27981	.20893	2.0218	3.0485	.43802
#1	1.2469	.40944	5.2351	1.0462	1.0267	1.0299	.52514
#2	1.2418	.41495	5.2187	1.0419	1.0689	1.0908	.52475
#3	1.2339	.41316	5.2059	1.0438	1.0447	1.0424	.52099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0382	1.0453	F 2.2759
Stddev	.0042	.0030	1.2744
%RSD	.40543	.28564	55.994
#1	1.0341	1.0484	1.7261
#2	1.0425	1.0450	1.3688
#3	1.0381	1.0425	3.7329
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11898.	86389.	3470.7
Stddev	44.	376.	14.3
%RSD	.37137	.43554	.41136
#1	11848.	85969.	3482.5
#2	11929.	86696.	3454.8
#3	11918.	86503.	3474.7

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 14:49:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00512	.00149	.00044	.00030	-.00003	-.00659
Stddev	.00075	.00249	.00106	.00151	.00012	.00004	.00533
%RSD	2210.2	48.577	71.325	341.39	41.782	127.13	80.887
#1	-.00027	.00226	.00065	-.00060	.00026	-.00003	-.01189
#2	.00089	.00675	.00268	.00218	.00019	.00001	-.00123
#3	-.00052	.00636	.00113	-.00025	.00044	-.00007	-.00664
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	-.00026	-.00057	.00008	-.00145	.05403	-.00125
Stddev	.00027	.00010	.00048	.00111	.01317	.03023	.00344
%RSD	177.76	40.095	83.969	1462.8	906.70	55.961	273.94
#1	-.00045	-.00020	-.00087	-.00040	-.00545	.07120	.00268
#2	.00009	-.00019	-.00082	-.00072	-.01215	.07177	-.00366
#3	-.00010	-.00037	-.00002	.00135	.01325	.01912	-.00278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01346	.00218	.00124	.02057	.00042	.00160	.00025
Stddev	.02677	.00113	.00034	.01246	.00050	.00322	.00131
%RSD	198.90	51.856	27.136	60.549	118.75	201.64	519.88
#1	.04434	.00285	.00149	.03274	-.00015	.00517	-.00118
#2	-.00093	.00282	.00086	.00784	.00063	-.00107	.00054
#3	-.00304	.00087	.00137	.02115	.00077	.00069	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: LLCCV Acquired: 2/11/2016 14:53:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00901	.16577	.00727	.07686	.00842	.00150	.40482
Stddev	.00205	.00547	.00145	.00196	.00096	.00003	.01854
%RSD	22.778	3.3024	19.906	2.5475	11.404	1.7538	4.5796
#1	.00819	.16029	.00608	.07847	.00773	.00147	.41278
#2	.01135	.16578	.00888	.07468	.00952	.00153	.38363
#3	.00750	.17124	.00686	.07741	.00802	.00149	.41805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.00368	.00340	.00440	.07345	.80723	.07588
Stddev	.00019	.00027	.00085	.00023	.01255	.03221	.00121
%RSD	24.052	7.2663	25.073	5.2245	17.088	3.9899	1.5900
#1	.00098	.00343	.00382	.00420	.08789	.84398	.07472
#2	.00060	.00396	.00242	.00465	.06727	.79380	.07581
#3	.00083	.00365	.00397	.00435	.06519	.78391	.07713
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.45393	.01040	.00760	.43451	.01677	.78565	.00648
Stddev	.06325	.00123	.00014	.00814	.00034	.00306	.00472
%RSD	13.934	11.870	1.8180	1.8735	2.0065	.38956	72.847
#1	.40550	.01151	.00746	.44359	.01650	.78689	.00633
#2	.43079	.00907	.00773	.43207	.01666	.78790	.01127
#3	.52549	.01063	.00762	.42787	.01715	.78217	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: LLCCV Acquired: 2/11/2016 14:53:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08128	.01815	.79079	.40875	.03980	.02610	.15555
Stddev	.00239	.00409	.00280	.00287	.00013	.00507	.00179
%RSD	2.9415	22.535	.35370	.70289	.32188	19.405	1.1536
#1	.08119	.02130	.79313	.41087	.03977	.02080	.15656
#2	.08372	.01353	.79153	.40991	.03994	.02662	.15661
#3	.07894	.01962	.78769	.40548	.03969	.03089	.15348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00806	.01746	F 326.96
Stddev	.00056	.00023	4.18
%RSD	6.9269	1.3392	1.2799
#1	.00840	.01760	327.49
#2	.00742	.01759	330.86
#3	.00836	.01719	322.54
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12356.	90301.	3622.7
Stddev	20.	119.	18.4
%RSD	.16556	.13203	.50714
#1	12332.	90180.	3634.1
#2	12370.	90304.	3601.5
#3	12365.	90419.	3632.4

Approved: February 12, 2016

Sample Name: PBW YZ Acquired: 2/11/2016 16:13:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00290	-.00030	-.00291	.00081	-.00001	-.01958	.00008
Stddev	.00132	.00124	.00054	.00216	.00035	.00005	.00147	.00011
%RSD	871.46	42.823	176.47	74.326	43.724	389.09	7.5239	140.61
#1	.00087	.00388	-.00063	-.00414	.00120	.00001	-.02118	-.00002
#2	.00096	.00150	.00032	-.00041	.00052	.00002	-.01828	.00019
#3	-.00138	.00333	-.00059	-.00417	.00071	-.00007	-.01929	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	-.00020	.00139	.01257	.01412	-.00407	.11741	.00168
Stddev	.00007	.00117	.00153	.00390	.04882	.00244	.04976	.00103
%RSD	16.094	574.82	110.28	31.004	345.70	59.863	42.384	61.107
#1	-.00050	-.00027	-.00028	.01178	.07037	-.00136	.07787	.00050
#2	-.00036	-.00134	.00170	.00912	-.01724	-.00609	.17329	.00234
#3	-.00043	.00100	.00273	.01679	-.01076	-.00475	.10107	.00220
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00163	.00038	-.00698	.00078	-.00192	-.00480	.00477
Stddev	.00017	.01858	.00009	.00436	.00202	.00220	.00385	.00219
%RSD	42.319	1140.3	23.660	62.538	259.19	114.44	80.166	45.994
#1	.00023	.02217	.00048	-.00353	.00179	.00006	-.00281	.00482
#2	.00056	-.00325	.00031	-.01188	.00209	-.00428	-.00923	.00255
#3	.00038	-.01403	.00035	-.00552	-.00155	-.00154	-.00235	.00693
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: PBW YZ Acquired: 2/11/2016 16:13:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.00026	.00009	-.00171	-.00059	.00122	1.6117
Stddev	.00037	.00019	.00306	.00299	.00047	.00008	2.0609
%RSD	45.795	71.334	3320.2	175.02	79.704	6.9073	127.87
#1	.00109	.00019	.00143	-.00310	-.00009	.00117	3.9792
#2	.00039	.00012	.00226	.00172	-.00064	.00132	.63623
#3	.00092	.00047	-.00341	-.00375	-.00102	.00117	.21964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12158.	88705.	3479.3
Stddev	18.	231.	8.4
%RSD	.14817	.26093	.24207
#1	12178.	88970.	3471.7
#2	12147.	88542.	3488.3
#3	12148.	88603.	3477.9

Approved: February 12, 2016

Sample Name: LCSW YZ Acquired: 2/11/2016 16:17:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19936	4.9589	.18844	.96303	.50398	.02474	5.0271	.02452
Stddev	.00085	.0119	.00153	.00271	.00210	.00002	.0353	.00020
%RSD	.42715	.24045	.80964	.28185	.41633	.09196	.70273	.82721
#1	.20028	4.9641	.18869	.96032	.50505	.02474	5.0644	.02450
#2	.19918	4.9453	.18983	.96302	.50156	.02477	5.0226	.02473
#3	.19861	4.9674	.18681	.96575	.50533	.02472	4.9942	.02433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10066	.25557	.25234	2.0414	24.987	.50545	5.2097	.25802
Stddev	.00117	.00039	.00163	.0314	.171	.00309	.0982	.00132
%RSD	1.1665	.15311	.64657	1.5378	.68444	.61134	1.8849	.51001
#1	.10162	.25525	.25416	2.0776	24.992	.50490	5.2705	.25706
#2	.10101	.25546	.25182	2.0250	24.813	.50267	5.0964	.25952
#3	.09935	.25601	.25102	2.0216	25.155	.50878	5.2623	.25749
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50950	25.096	.25367	4.7659	.25419	.58732	.18763	2.4947
Stddev	.00584	.095	.00292	.0458	.00274	.00460	.00699	.0161
%RSD	1.1464	.37698	1.1513	.96180	1.0783	.78262	3.7251	.64442
#1	.51460	25.111	.25663	4.8048	.25704	.59036	.18660	2.5064
#2	.51079	24.994	.25357	4.7775	.25157	.58957	.19508	2.5013
#3	.50313	25.182	.25080	4.7154	.25394	.58203	.18122	2.4764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: LCSW YZ Acquired: 2/11/2016 16:17:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51037	.50211	.50054	.25491	.50615	.49985	14.965
Stddev	.00580	.00173	.00342	.00301	.00089	.00482	5.479
%RSD	1.1355	.34452	.68301	1.1803	.17662	.96406	36.612
#1	.51440	.50269	.50325	.25730	.50577	.50338	9.1359
#2	.51298	.50016	.49670	.25590	.50717	.50182	15.751
#3	.50373	.50347	.50168	.25153	.50550	.49436	20.009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11864.	85863.	3437.1
Stddev	22.	237.	20.2
%RSD	.18372	.27659	.58899
#1	11889.	85714.	3419.7
#2	11853.	85739.	3459.3
#3	11850.	86137.	3432.4

Approved: February 12, 2016

Sample Name: L1602040601 Acquired: 2/11/2016 16:21:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.01597	.00021	.00468	.01827	.00001	60.449	.00004
Stddev	.00111	.00328	.00151	.00137	.00067	.00003	.123	.00019
%RSD	996.13	20.533	719.05	29.332	3.6856	315.94	.20290	494.62
#1	.00007	.01225	.00022	.00404	.01815	.00004	60.485	.00023
#2	.00090	.01846	.00172	.00625	.01900	-.00002	60.550	.00005
#3	-.00130	.01719	-.00130	.00375	.01767	.00001	60.312	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00160	.00118	-.01134	2.7755	.00229	.31257	-.00064
Stddev	.00006	.00097	.00136	.01623	.0673	.00160	.04977	.00087
%RSD	27.979	60.556	115.26	143.09	2.4233	69.742	15.923	135.85
#1	-.00023	.00270	.00056	-.00948	2.8416	.00330	.26965	.00032
#2	-.00014	.00087	.00024	-.02843	2.7072	.00313	.30094	-.00136
#3	-.00023	.00123	.00275	.00387	2.7777	.00045	.36713	-.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00151	122.26	-.00062	.00278	.00065	-.00183	-.00068	3.3247
Stddev	.00030	.16	.00118	.01028	.00067	.00245	.00274	.0621
%RSD	19.693	.13400	189.87	369.33	103.04	134.00	403.92	1.8694
#1	.00171	122.29	-.00164	-.00754	.00140	.00025	-.00380	3.3719
#2	.00117	122.41	-.00089	.01302	.00040	-.00121	.00135	3.3479
#3	.00165	122.09	.00067	.00287	.00014	-.00452	.00041	3.2543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602040601 Acquired: 2/11/2016 16:21:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.09389	-.01141	-.00042	.00464	.00174	1.9835
Stddev	.00018	.00052	.00697	.00124	.00099	.00011	4.7174
%RSD	22.322	.55639	61.121	296.42	21.265	6.5101	237.83
#1	.00073	.09388	-.00742	-.00107	.00504	.00182	2.1849
#2	.00101	.09441	-.00734	.00101	.00352	.00179	-2.8313
#3	.00067	.09337	-.01946	-.00119	.00537	.00161	6.5970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11921.	85314.	3507.1
Stddev	3.	324.	7.4
%RSD	.02377	.38010	.21187
#1	11924.	85109.	3500.4
#2	11922.	85144.	3505.7
#3	11918.	85687.	3515.1

Approved: February 12, 2016

Sample Name: L1602040601S Acquired: 2/11/2016 16:25:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19957	5.0013	.19573	.98672	.51084	.02535	66.869	.02445
Stddev	.00130	.0127	.00534	.00361	.00240	.00009	.291	.00013
%RSD	.65211	.25424	2.7266	.36624	.47049	.35011	.43457	.54572
#1	.20016	5.0157	.19956	.98979	.51348	.02538	67.187	.02456
#2	.19808	4.9917	.19800	.98274	.50879	.02526	66.617	.02430
#3	.20047	4.9966	.18963	.98763	.51025	.02543	66.803	.02449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09872	.25730	.24911	2.0108	27.590	.49671	5.1729	.25056
Stddev	.00037	.00040	.00170	.0297	.155	.00329	.1127	.00046
%RSD	.37292	.15460	.68222	1.4761	.56128	.66266	2.1778	.18377
#1	.09877	.25773	.24951	2.0238	27.767	.49858	5.1124	.25092
#2	.09905	.25695	.25057	1.9768	27.482	.49291	5.1034	.25071
#3	.09832	.25722	.24724	2.0317	27.520	.49864	5.3029	.25004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51400	148.74	.24712	4.9655	.24817	.59902	.19200	6.0849
Stddev	.00221	.72	.00090	.0240	.00264	.00228	.00428	.0170
%RSD	.43035	.48259	.36592	.48361	1.0641	.37995	2.2289	.27882
#1	.51537	149.44	.24609	4.9838	.24672	.60050	.19641	6.0974
#2	.51519	148.00	.24743	4.9744	.25122	.59639	.18786	6.0918
#3	.51145	148.77	.24782	4.9383	.24657	.60015	.19172	6.0656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602040601S Acquired: 2/11/2016 16:25:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50581	.58649	.49108	.24530	.52191	.50361	6.1000
Stddev	.00320	.00263	.00651	.00149	.00114	.00192	3.4777
%RSD	.63361	.44888	1.3250	.60608	.21776	.38165	57.012
#1	.50833	.58921	.49277	.24529	.52321	.50490	2.1960
#2	.50690	.58396	.48390	.24382	.52133	.50453	7.2371
#3	.50220	.58630	.49658	.24680	.52117	.50140	8.8668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11572.	83523.	3489.9
Stddev	19.	57.	27.3
%RSD	.16848	.06866	.78330
#1	11587.	83461.	3475.1
#2	11580.	83533.	3521.5
#3	11550.	83575.	3473.2

Approved: February 12, 2016

Sample Name: L1602040601SD Acquired: 2/11/2016 16:29:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19824	5.0141	.19440	.99163	.51105	.02549	66.351	.02463
Stddev	.00218	.0018	.00224	.00253	.00152	.00004	.188	.00023
%RSD	1.1018	.03598	1.1505	.25470	.29659	.17355	.28330	.93428
#1	.19577	5.0122	.19643	.98903	.51277	.02545	66.564	.02489
#2	.19905	5.0157	.19477	.99408	.51049	.02547	66.285	.02446
#3	.19990	5.0143	.19201	.99177	.50990	.02554	66.206	.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09884	.25734	.24922	1.9789	27.576	.49554	5.1929	.25082
Stddev	.00043	.00030	.00178	.0063	.121	.00155	.1150	.00155
%RSD	.43951	.11607	.71585	.31696	.43707	.31184	2.2154	.61830
#1	.09932	.25738	.24890	1.9785	27.634	.49728	5.3110	.24940
#2	.09846	.25702	.25114	1.9728	27.438	.49432	5.1866	.25060
#3	.09874	.25761	.24762	1.9854	27.657	.49503	5.0811	.25247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51472	147.63	.24713	4.9681	.24951	.60195	.19721	6.0692
Stddev	.00338	.32	.00133	.0319	.00472	.00296	.00617	.0314
%RSD	.65723	.21874	.53789	.64296	1.8924	.49158	3.1291	.51718
#1	.51737	148.00	.24722	4.9814	.25173	.60439	.19767	6.0972
#2	.51588	147.47	.24841	4.9912	.25271	.60279	.20314	6.0751
#3	.51091	147.41	.24576	4.9317	.24409	.59866	.19082	6.0353
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602040601SD Acquired: 2/11/2016 16:29:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50710	.58611	.48651	.24483	.52436	.50725	2.2362
Stddev	.00571	.00280	.00487	.00160	.00059	.00258	2.6613
%RSD	1.1261	.47699	1.0010	.65339	.11232	.50914	119.01
#1	.51192	.58927	.49095	.24330	.52404	.50926	1.9059
#2	.50858	.58513	.48130	.24649	.52400	.50815	-.24453
#3	.50079	.58394	.48729	.24468	.52504	.50433	5.0473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11508.	82603.	3442.5
Stddev	15.	223.	15.8
%RSD	.12794	.26968	.45964
#1	11522.	82511.	3432.1
#2	11510.	82857.	3434.7
#3	11493.	82441.	3460.7

Approved: February 12, 2016

Sample Name: L1602022702 Acquired: 2/11/2016 16:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00098	.03270	.00064	.01799	8.9433	-.00001	12.643
Stddev	.00038	.00496	.00161	.00156	.0511	.00004	.096
%RSD	38.275	15.160	251.97	8.6829	.57141	333.33	.75728
#1	-.00108	.03650	.00246	.01697	9.0020	-.00006	12.751
#2	-.00057	.02709	-.00058	.01979	8.9182	-.00001	12.611
#3	-.00130	.03451	.00004	.01721	8.9095	.00002	12.567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00043	.00291	.02279	1.8026	.09365	.10614
Stddev	.00018	.00012	.00157	.00101	.0368	.05538	.00350
%RSD	236.01	27.267	54.176	4.4100	2.0420	59.140	3.3017
#1	-.00007	.00045	.00126	.02195	1.8437	.03537	.10848
#2	.00028	.00030	.00305	.02390	1.7913	.14559	.10211
#3	.00002	.00053	.00440	.02253	1.7728	.09998	.10784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1268	.04792	.00066	146.87	.00088	.00658	-.00129
Stddev	.0233	.00120	.00007	1.07	.00087	.00381	.00159
%RSD	2.0665	2.5001	11.048	.72570	98.701	57.873	122.49
#1	1.1213	.04880	.00062	148.08	.00117	.01089	.00001
#2	1.1524	.04841	.00062	146.45	.00158	.00367	-.00084
#3	1.1068	.04655	.00075	146.08	-.00009	.00518	-.00306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602022702 Acquired: 2/11/2016 16:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00098	.00412	.11861	.00088	3.2906	-.00436	-.00224
Stddev	.00153	.00500	.00078	.00101	.0202	.00171	.00151
%RSD	156.39	121.43	.65616	114.89	.61435	39.147	67.306
#1	-.00143	.00750	.11782	.00204	3.3140	-.00290	-.00057
#2	.00073	-.00162	.11937	.00045	3.2794	-.00624	-.00267
#3	-.00224	.00647	.11863	.00016	3.2786	-.00394	-.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00006	.01359	F -.04540
Stddev	.00090	.00029	1.2619
%RSD	1468.3	2.1221	2779.7
#1	-.00014	.01360	-.97093
#2	.00105	.01387	1.3920
#3	-.00072	.01330	-.55725
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11653.	84597.	3461.3
Stddev	35.	154.	62.1
%RSD	.30139	.18217	1.7930
#1	11694.	84770.	3405.2
#2	11636.	84474.	3450.7
#3	11630.	84547.	3527.9

Approved: February 12, 2016

Sample Name: L1602038201 Acquired: 2/11/2016 16:36:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.28224	.00263	.68825	.00537	.00016	41.084	.00197
Stddev	.00087	.01237	.00130	.00327	.00105	.00006	.144	.00022
%RSD	240.28	4.3833	49.526	.47450	19.585	35.690	.34942	11.142
#1	-.00137	.28751	.00346	.69118	.00658	.00018	41.248	.00196
#2	.00009	.29109	.00330	.68473	.00478	.00010	41.025	.00175
#3	.00019	.26810	.00113	.68884	.00474	.00021	40.980	.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.00123	2.3709	-.00818	.35332	-.00212	2.7775	.09598
Stddev	.00025	.00084	.0238	.00925	.09059	.00177	.0964	.00185
%RSD	19.116	67.728	1.0026	113.08	25.641	83.771	3.4693	1.9250
#1	.00162	.00031	2.3855	-.01733	.40970	-.00416	2.7301	.09790
#2	.00121	.00145	2.3837	.00116	.40143	-.00098	2.8884	.09581
#3	.00116	.00194	2.3434	-.00836	.24882	-.00121	2.7140	.09422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19163	115.87	.00888	55.863	.00143	.05066	-.00114	.52895
Stddev	.00213	.57	.00013	.497	.00229	.00182	.00536	.00503
%RSD	1.1132	.49566	1.4660	.89037	159.56	3.5921	469.90	.95000
#1	.19345	116.50	.00881	56.165	.00208	.05141	.00483	.53407
#2	.19215	115.75	.00903	56.135	.00333	.04858	-.00270	.52875
#3	.18928	115.37	.00880	55.289	-.00111	.05198	-.00555	.52402
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602038201 Acquired: 2/11/2016 16:36:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	.16239	-.00454	-.00318	.00042	1.5179	1.3405
Stddev	.00021	.00112	.00396	.00026	.00035	.0139	.3901
%RSD	19.232	.68745	87.227	8.1067	83.175	.91589	29.103
#1	.00099	.16311	-.00096	-.00338	.00081	1.5272	1.7441
#2	.00133	.16296	-.00386	-.00326	.00030	1.5247	.96543
#3	.00096	.16110	-.00880	-.00289	.00015	1.5019	1.3121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11817.	85215.	3480.4
Stddev	39.	247.	24.4
%RSD	.32758	.28931	.70018
#1	11844.	84933.	3452.3
#2	11834.	85392.	3493.6
#3	11772.	85319.	3495.3

Approved: February 12, 2016

Sample Name: L1602038401 Acquired: 2/11/2016 16:40:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00064	.02396	-.00179	.03048	.00800	-.00000	69.560	.00016
Stddev	.00251	.00642	.00261	.00165	.00044	.00001	.390	.00026
%RSD	394.80	26.787	146.11	5.4096	5.5413	427.18	.56015	159.34
#1	-.00222	.02507	-.00455	.03178	.00787	-.00001	69.872	.00005
#2	-.00196	.02974	.00063	.02862	.00763	-.00000	69.124	-.00002
#3	.00226	.01706	-.00143	.03104	.00849	.00001	69.685	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02564	.03859	.15469	.18471	16.258	.00100	2.5671	1.8610
Stddev	.00045	.00085	.00172	.02322	.108	.00180	.0554	.0134
%RSD	1.7604	2.2075	1.1099	12.570	.66611	180.84	2.1584	.71734
#1	.02591	.03827	.15492	.21142	16.282	.00300	2.5033	1.8690
#2	.02588	.03794	.15628	.17326	16.140	-.00051	2.5940	1.8456
#3	.02511	.03955	.15287	.16943	16.352	.00051	2.6038	1.8684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	162.48	.18066	-.00206	-.00167	.00333	-.00302	1.4201
Stddev	.00053	1.05	.00150	.00285	.00165	.00226	.00243	.0142
%RSD	228.41	.64604	.83268	138.66	98.806	67.896	80.330	.99869
#1	-.00034	163.35	.18198	-.00533	-.00137	.00139	-.00299	1.4275
#2	.00032	161.31	.18099	-.00014	-.00345	.00581	-.00546	1.4291
#3	.00072	162.76	.17903	-.00069	-.00019	.00279	-.00061	1.4038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602038401 Acquired: 2/11/2016 16:40:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.33549	-.00982	-.00248	-.00103	8.6565	.23792
Stddev	.00072	.00213	.00086	.00326	.00083	.0950	1.2267
%RSD	91.660	.63630	8.7913	131.31	80.806	1.0972	515.60
#1	.00115	.33675	-.01074	-.00602	-.00040	8.7261	1.5070
#2	.00125	.33302	-.00903	-.00183	-.00198	8.6950	-.94153
#3	-.00004	.33669	-.00967	.00040	-.00072	8.5483	.14828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11802.	83873.	3462.9
Stddev	20.	266.	15.0
%RSD	.17340	.31658	.43186
#1	11816.	83580.	3447.4
#2	11778.	83939.	3477.3
#3	11811.	84099.	3464.1

Approved: February 12, 2016

Sample Name: L1602038401PS Acquired: 2/11/2016 16:44:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556971-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19721	4.9180	.19551	.99686	.49377	.02488	67.792	.02457
Stddev	.00096	.0131	.00137	.00232	.00191	.00012	.268	.00018
%RSD	.48659	.26677	.70272	.23262	.38581	.48980	.39595	.73061
#1	.19830	4.9166	.19643	.99562	.49519	.02493	67.991	.02478
#2	.19649	4.9055	.19616	.99542	.49161	.02474	67.487	.02445
#3	.19683	4.9317	.19393	.99953	.49452	.02497	67.898	.02448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.12083	.28367	.38274	2.1770	38.999	.49297	7.1560	1.9265
Stddev	.00113	.00123	.00282	.0318	.160	.00130	.1760	.0091
%RSD	.93456	.43210	.73572	1.4613	.40916	.26411	2.4592	.47049
#1	.12175	.28309	.38493	2.1949	39.033	.49147	7.2812	1.9297
#2	.12118	.28284	.38372	2.1402	38.825	.49382	6.9548	1.9163
#3	.11957	.28508	.37956	2.1957	39.139	.49362	7.2321	1.9336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50302	170.36	.40748	4.9430	.24125	.59727	.18938	3.8035
Stddev	.00341	.59	.00163	.0311	.00183	.00179	.00785	.0115
%RSD	.67850	.34754	.40029	.62823	.75696	.29959	4.1441	.30226
#1	.50643	170.78	.40899	4.9669	.24281	.59877	.19631	3.8151
#2	.50303	169.68	.40771	4.9541	.24171	.59774	.19097	3.8033
#3	.49961	170.62	.40575	4.9079	.23924	.59529	.18086	3.7921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602038401PS Acquired: 2/11/2016 16:44:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556971-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50025	.78369	.47678	.23869	.50813	8.2835	4.2572
Stddev	.00409	.00355	.00313	.00217	.00126	.0549	2.5152
%RSD	.81791	.45295	.65648	.90807	.24706	.66288	59.080
#1	.50452	.78447	.47324	.24117	.50951	8.3352	2.0008
#2	.49985	.77981	.47916	.23714	.50781	8.2895	6.9689
#3	.49637	.78678	.47795	.23776	.50706	8.2258	3.8019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11702.	84100.	3485.7
Stddev	17.	159.	25.7
%RSD	.14791	.18903	.73710
#1	11688.	83967.	3456.7
#2	11722.	84058.	3505.8
#3	11697.	84276.	3494.4

Approved: February 12, 2016

Sample Name: L1602038401SDL Acquired: 2/11/2016 16:48:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG556971-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00088	-.00390	.00261	.00866	.00207	-.00002	13.339	-.00013
Stddev	.00097	.00106	.00288	.00144	.00038	.00004	.157	.00007
%RSD	110.30	27.252	110.32	16.595	18.559	200.85	1.1797	52.340
#1	-.00021	-.00456	.00562	.00930	.00174	.00002	13.170	-.00011
#2	-.00044	-.00267	-.00012	.00968	.00249	-.00005	13.482	-.00008
#3	-.00198	-.00446	.00233	.00702	.00197	-.00002	13.363	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00492	.00660	.02980	.02297	3.1701	.00124	.58546	.35477
Stddev	.00019	.00116	.00092	.02183	.0932	.00137	.03784	.00790
%RSD	3.8313	17.527	3.0890	95.037	2.9391	110.61	6.4627	2.2257
#1	.00512	.00527	.02914	-.00199	3.1113	.00028	.57763	.34569
#2	.00490	.00720	.03085	.03241	3.2775	.00280	.62661	.35862
#3	.00474	.00734	.02941	.03850	3.1214	.00063	.55216	.36000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	31.249	.03602	.00411	-.00059	-.00152	.00081	.27423
Stddev	.00015	.389	.00063	.00194	.00065	.00543	.00525	.00163
%RSD	182.81	1.2434	1.7421	47.185	110.79	358.40	646.88	.59516
#1	-.00009	30.805	.03669	.00239	-.00022	-.00442	.00668	.27330
#2	.00017	31.527	.03545	.00373	-.00135	-.00488	-.00344	.27611
#3	.00018	31.415	.03592	.00621	-.00021	.00475	-.00081	.27327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602038401SDL Acquired: 2/11/2016 16:48:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG556971-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.06365	-.00555	.00090	-.00014	1.7037	3.2582
Stddev	.00076	.00095	.00257	.00147	.00052	.0059	.7837
%RSD	302.66	1.4984	46.252	163.46	373.58	.34530	24.053
#1	.00111	.06265	-.00804	.00251	-.00074	1.7030	2.3697
#2	-.00004	.06455	-.00572	.00054	.00021	1.7098	3.5534
#3	-.00032	.06375	-.00291	-.00036	.00011	1.6981	3.8513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12916.	92490.	3715.4
Stddev	124.	547.	41.6
%RSD	.96088	.59134	1.1186
#1	12841.	93012.	3760.9
#2	12847.	91921.	3705.9
#3	13059.	92536.	3679.4

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 16:52:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42321	10.760	.42513	.53320	1.0551	.05439	10.519
Stddev	.00026	.031	.00053	.00299	.0169	.00013	.138
%RSD	.06185	.29075	.12503	.56010	1.6012	.24475	1.3084
#1	.42313	10.726	.42527	.53193	1.0399	.05434	10.402
#2	.42300	10.768	.42454	.53106	1.0733	.05429	10.671
#3	.42351	10.787	.42557	.53661	1.0522	.05454	10.484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05331	.21565	.54485	.54239	4.3149	52.287	1.0668
Stddev	.00012	.00092	.00303	.00092	.0537	.744	.0170
%RSD	.23348	.42871	.55539	.17010	1.2455	1.4228	1.5937
#1	.05317	.21469	.54222	.54277	4.2610	51.631	1.0496
#2	.05335	.21654	.54417	.54134	4.3685	53.095	1.0836
#3	.05341	.21571	.54815	.54307	4.3151	52.134	1.0672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.880	.53583	1.0831	52.286	.54257	10.653	.53987
Stddev	.108	.00684	.0025	.756	.00075	.015	.00189
%RSD	.99015	1.2765	.23468	1.4454	.13880	.13762	.34968
#1	10.761	.52907	1.0852	51.628	.54271	10.664	.54199
#2	10.971	.54275	1.0840	53.111	.54176	10.658	.53925
#3	10.908	.53566	1.0803	52.117	.54324	10.636	.53837
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 16:52:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2886	.42757	5.3974	1.0878	1.0574	1.0525	.54431
Stddev	.0006	.00478	.0090	.0031	.0151	.0143	.00176
%RSD	.05001	1.1170	.16605	.28338	1.4307	1.3620	.32293
#1	1.2883	.42627	5.4045	1.0910	1.0432	1.0451	.54433
#2	1.2894	.42358	5.4004	1.0849	1.0733	1.0691	.54254
#3	1.2882	.43286	5.3873	1.0873	1.0558	1.0435	.54605
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0871	1.0882	F .36951
Stddev	.0034	.0009	1.9979
%RSD	.31453	.08658	540.69
#1	1.0845	1.0892	-.41267
#2	1.0858	1.0874	2.6402
#3	1.0910	1.0880	-1.1190
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11870.	85834.	3594.4
Stddev	23.	243.	34.2
%RSD	.19576	.28300	.95199
#1	11897.	85951.	3623.8
#2	11860.	85997.	3556.8
#3	11854.	85555.	3602.5

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 16:56:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00109	.00437	.00019	.00102	.00121	-.00001	.01392
Stddev	.00174	.00975	.00192	.00117	.00074	.00006	.03123
%RSD	159.71	223.35	1019.1	114.64	61.085	431.08	224.28
#1	-.00309	.01433	-.00202	.00219	.00051	.00002	-.02213
#2	.00007	.00394	.00114	.00104	.00114	.00002	.03235
#3	-.00025	-.00517	.00144	-.00016	.00198	-.00008	.03155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	-.00053	-.00076	.00091	-.01883	.05698	-.00056
Stddev	.00019	.00023	.00026	.00080	.01617	.08045	.00190
%RSD	221.30	43.284	34.406	88.328	85.861	141.19	341.26
#1	.00014	-.00076	-.00047	-.00002	-.01719	.00648	-.00085
#2	-.00020	-.00054	-.00098	.00133	-.00354	.14976	.00148
#3	-.00020	-.00030	-.00082	.00140	-.03575	.01471	-.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.12527	.00153	.00079	.02827	-.00007	.00266	-.00062
Stddev	.06414	.00207	.00006	.01430	.00075	.00517	.00128
%RSD	51.199	135.64	7.6395	50.596	1056.6	194.17	206.83
#1	.06116	.00389	.00072	.03927	.00033	.00025	.00085
#2	.12522	.00064	.00082	.03343	-.00094	-.00086	-.00124
#3	.18943	.00005	.00082	.01210	.00039	.00860	-.00147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 16:56:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	-.00546	.00306	.00085	-.00000	-.00013	-.00153
Stddev	.00264	.00278	.00135	.00058	.00031	.00389	.00121
%RSD	5198.3	50.896	44.053	68.000	45500.	3041.0	79.243
#1	.00069	-.00241	.00461	.00135	-.00032	.00178	-.00026
#2	.00232	-.00785	.00225	.00022	.00030	.00244	-.00165
#3	-.00286	-.00612	.00231	.00098	.00002	-.00460	-.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00014	.00025	F 3.4615
Stddev	.00023	.00006	3.4662
%RSD	164.27	25.586	100.14
#1	.00014	.00032	6.9965
#2	.00036	.00019	3.3196
#3	-.00009	.00024	.06836
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12278.	88936.	3557.1
Stddev	30.	142.	18.2
%RSD	.24314	.15971	.51133
#1	12248.	89007.	3565.7
#2	12279.	89029.	3536.2
#3	12308.	88773.	3569.4

Approved: February 12, 2016

Sample Name: L1602038402 Acquired: 2/11/2016 17:00:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.02587	.00223	.02596	.00807	.00000	74.301	.00007
Stddev	.00103	.00287	.00460	.00190	.00067	.00002	.240	.00007
%RSD	107.67	11.113	206.03	7.3278	8.3196	640.02	.32263	102.55
#1	.00184	.02592	-.00306	.02477	.00878	-.00001	74.070	.00002
#2	-.00018	.02871	.00443	.02495	.00745	-.00001	74.549	.00004
#3	.00121	.02297	.00532	.02815	.00798	.00003	74.284	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02482	.04710	.18204	.26954	11.050	.00208	1.9605	1.5486
Stddev	.00037	.00032	.00066	.00890	.063	.00251	.1016	.0064
%RSD	1.5030	.67582	.36138	3.3030	.57443	121.03	5.1803	.41064
#1	.02508	.04700	.18236	.27973	11.022	-.00047	1.9274	1.5451
#2	.02500	.04684	.18248	.26326	11.123	.00456	2.0745	1.5560
#3	.02440	.04745	.18128	.26563	11.005	.00214	1.8797	1.5448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	143.34	.18316	-.00507	-.00200	.00067	-.00020	1.4591
Stddev	.00018	.33	.00063	.00643	.00243	.00095	.00378	.0067
%RSD	27.857	.22684	.34147	126.94	121.15	142.61	1849.7	.46280
#1	.00044	143.06	.18369	-.00987	-.00463	.00170	-.00061	1.4667
#2	.00078	143.70	.18333	-.00758	-.00155	-.00017	-.00376	1.4565
#3	.00067	143.27	.18247	.00224	.00016	.00047	.00376	1.4540
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602038402 Acquired: 2/11/2016 17:00:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.33281	-.00915	-.00344	-.00023	9.2838	1.8479
Stddev	.00059	.00114	.00765	.00157	.00064	.0525	1.5392
%RSD	397.25	.34356	83.598	45.495	283.12	.56601	83.293
#1	.00072	.33159	-.01731	-.00485	-.00033	9.3139	.07064
#2	.00020	.33385	-.00801	-.00372	-.00081	9.3144	2.7303
#3	-.00047	.33299	-.00214	-.00176	.00046	9.2231	2.7429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12012.	87008.	3695.6
Stddev	55.	190.	9.2
%RSD	.46146	.21843	.24769
#1	12068.	86852.	3686.9
#2	11957.	86953.	3694.7
#3	12010.	87220.	3705.2

Approved: February 12, 2016

Sample Name: L1602038901 Acquired: 2/11/2016 17:04:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	.02487	-.00359	.05864	.26531	-.00004	12.979	.00003
Stddev	.00029	.00178	.00238	.00075	.00184	.00004	.053	.00009
%RSD	22.879	7.1390	66.288	1.2805	.69247	94.759	.40500	332.28
#1	.00095	.02322	-.00119	.05805	.26480	-.00001	12.968	.00013
#2	.00136	.02675	-.00361	.05839	.26734	-.00008	13.036	-.00005
#3	.00151	.02466	-.00595	.05948	.26377	-.00002	12.932	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	-.00041	.00199	.08317	.83581	.00520	2.6998	.03873
Stddev	.00020	.00074	.00068	.01855	.10810	.00385	.0747	.00136
%RSD	62.037	182.22	33.980	22.309	12.934	73.959	2.7659	3.5137
#1	-.00019	.00041	.00271	.09929	.81943	.00158	2.7806	.04020
#2	-.00023	-.00061	.00191	.06289	.73683	.00479	2.6334	.03751
#3	-.00056	-.00103	.00136	.08733	.95116	.00924	2.6854	.03846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	46.673	-.00086	-.00099	.00188	-.00256	.00107	3.8650
Stddev	.00018	.230	.00051	.00339	.00092	.00208	.00571	.0126
%RSD	13.391	.49228	59.272	341.27	48.990	81.426	533.13	.32697
#1	.00144	46.668	-.00049	-.00409	.00281	-.00485	.00063	3.8740
#2	.00116	46.905	-.00066	-.00152	.00185	-.00206	-.00441	3.8704
#3	.00150	46.445	-.00145	.00263	.00097	-.00077	.00699	3.8506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602038901 Acquired: 2/11/2016 17:04:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.36466	.00049	-.00086	-.00016	.00385	3.0163
Stddev	.00027	.00139	.00338	.00184	.00134	.00014	2.2614
%RSD	27.268	.38052	685.28	215.20	819.87	3.7493	74.974
#1	.00075	.36483	.00437	.00116	.00117	.00382	1.8682
#2	.00128	.36596	-.00103	-.00126	-.00151	.00400	5.6215
#3	.00095	.36320	-.00186	-.00246	-.00015	.00372	1.5592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12122.	87990.	3601.5
Stddev	7.	235.	22.1
%RSD	.05966	.26688	.61414
#1	12114.	88261.	3602.6
#2	12128.	87839.	3578.8
#3	12124.	87871.	3623.0

Approved: February 12, 2016

Sample Name: L1602038902 Acquired: 2/11/2016 17:08:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	.28455	.00257	.00935	.02316	-.00006	23.167	-.00015
Stddev	.00211	.00347	.00166	.00229	.00031	.00003	.143	.00002
%RSD	168.85	1.2181	64.345	24.463	1.3366	53.671	.61576	12.986
#1	.00229	.28055	.00154	.00840	.02290	-.00007	23.245	-.00014
#2	.00265	.28650	.00169	.01196	.02308	-.00002	23.253	-.00017
#3	-.00118	.28661	.00448	.00769	.02350	-.00008	23.002	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	-.00021	.00089	.19307	.63288	-.00086	3.5850	.00433
Stddev	.00010	.00038	.00179	.01066	.02650	.00504	.0859	.00121
%RSD	59.613	176.55	201.80	5.5223	4.1875	588.57	2.3970	28.029
#1	-.00019	-.00005	.00270	.20218	.62023	.00404	3.6341	.00537
#2	-.00027	.00006	.00084	.18134	.61507	-.00602	3.4857	.00299
#3	-.00006	-.00064	-.00088	.19568	.66333	-.00058	3.6350	.00462
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	2.0695	.00063	.00876	-.00014	-.00526	-.00116	3.2990
Stddev	.00006	.0287	.00060	.00297	.00101	.00345	.00551	.0374
%RSD	33.440	1.3880	95.210	33.892	728.34	65.588	474.89	1.1346
#1	.00014	2.0856	.00085	.01102	.00043	-.00697	.00494	3.3187
#2	.00015	2.0865	.00109	.00985	-.00130	-.00752	-.00267	3.3224
#3	.00025	2.0363	-.00005	.00540	.00045	-.00129	-.00576	3.2558
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602038902 Acquired: 2/11/2016 17:08:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.10739	.00315	.00012	-.00000	.00229	2.0142
Stddev	.00088	.00014	.00210	.00100	.00039	.00006	1.7828
%RSD	98.641	.13276	66.746	801.85	246820.	2.6971	88.512
#1	.00054	.10739	.00458	-.00097	.00031	.00228	.51145
#2	.00190	.10725	.00414	.00035	.00013	.00236	1.5471
#3	.00025	.10754	.00074	.00099	-.00044	.00224	3.9840
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12312.	89570.	3623.0
Stddev	4.	215.	26.0
%RSD	.03493	.24023	.71689
#1	12310.	89391.	3620.6
#2	12309.	89512.	3598.3
#3	12317.	89809.	3650.1

Approved: February 12, 2016

Sample Name: L1602039201 Acquired: 2/11/2016 17:12:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.01624	-.00170	.01984	.13974	-.00010	40.473	.00008
Stddev	.00139	.00481	.00210	.00118	.00087	.00005	.169	.00005
%RSD	295.42	29.622	123.97	5.9381	.62276	46.396	.41785	69.849
#1	.00015	.01087	-.00014	.01880	.13961	-.00013	40.494	.00010
#2	.00199	.01768	-.00409	.02112	.14067	-.00005	40.630	.00012
#3	-.00073	.02016	-.00086	.01960	.13894	-.00013	40.294	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.00036	.00990	.01141	.77371	.00829	9.5764	.00116
Stddev	.00015	.00066	.00058	.01417	.05714	.00316	.1274	.00203
%RSD	34.301	184.59	5.9073	124.20	7.3846	38.044	1.3305	174.54
#1	-.00033	.00066	.01056	.02560	.76508	.00635	9.4684	-.00001
#2	-.00036	-.00040	.00944	.01138	.83467	.01193	9.7169	-.00001
#3	-.00060	.00081	.00969	-.00274	.72138	.00659	9.5439	.00351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	6.4330	-.00056	.00009	-.00019	-.00168	-.00305	6.2547
Stddev	.00021	.0469	.00042	.00778	.00103	.00250	.00147	.0652
%RSD	206.45	.72933	73.656	9126.7	553.13	149.39	48.186	1.0428
#1	.00006	6.4454	-.00056	.00720	.00044	-.00088	-.00452	6.2970
#2	-.00008	6.4725	-.00098	.00128	-.00137	.00033	-.00303	6.2874
#3	.00034	6.3812	-.00015	-.00822	.00038	-.00448	-.00159	6.1796
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602039201 Acquired: 2/11/2016 17:12:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.20770	-.00552	-.00153	-.00058	.02675	2.6038
Stddev	.00073	.00128	.00612	.00113	.00017	.00012	.7732
%RSD	1053.8	.61813	110.80	73.673	29.536	.46159	29.695
#1	.00051	.20830	-.00283	-.00087	-.00077	.02685	2.1128
#2	.00047	.20858	-.01253	-.00283	-.00051	.02678	2.2035
#3	-.00077	.20623	-.00122	-.00089	-.00045	.02661	3.4950
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12126.	88661.	3607.0
Stddev	35.	71.	14.2
%RSD	.28890	.08042	.39400
#1	12143.	88740.	3615.6
#2	12086.	88601.	3590.6
#3	12149.	88642.	3614.8

Approved: February 12, 2016

Sample Name: L1602039501 Acquired: 2/11/2016 17:16:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00050	.95401	.00306	.02604	.05647	-.00000	72.717	.00019
Stddev	.00094	.00240	.00145	.00291	.00022	.00003	.412	.00009
%RSD	187.54	.25181	47.502	11.178	.39484	834.01	.56609	49.213
#1	.00024	.95155	.00269	.02936	.05629	.00003	72.945	.00027
#2	-.00156	.95413	.00466	.02390	.05640	-.00003	72.965	.00009
#3	-.00018	.95635	.00183	.02487	.05672	-.00001	72.242	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00214	.00980	1.2109	3.9006	.00676	2.2399	.04541
Stddev	.00005	.00042	.00020	.0248	.0180	.00255	.1384	.00134
%RSD	42.395	19.867	2.0248	2.0492	.46101	37.717	6.1794	2.9562
#1	-.00006	.00236	.00977	1.2123	3.8877	.00970	2.3004	.04582
#2	-.00016	.00240	.01001	1.2349	3.8930	.00535	2.3378	.04391
#3	-.00012	.00165	.00962	1.1853	3.9211	.00522	2.0815	.04651
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00194	1.9826	.00135	.23045	.00262	-.00071	.00085	7.2187
Stddev	.00043	.0447	.00007	.00432	.00200	.00176	.00323	.0309
%RSD	22.343	2.2564	4.9177	1.8755	76.556	247.22	378.21	.42859
#1	.00217	2.0248	.00131	.22890	.00195	.00040	.00458	7.2419
#2	.00221	1.9873	.00131	.23534	.00104	.00021	-.00113	7.2305
#3	.00144	1.9357	.00142	.22712	.00487	-.00275	-.00088	7.1836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602039501 Acquired: 2/11/2016 17:16:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.29936	.01171	-.00118	.01130	.06965	7.0398
Stddev	.00040	.00208	.00054	.00125	.00043	.00053	.4567
%RSD	40.623	.69462	4.6382	106.39	3.8249	.75979	6.4881
#1	.00096	.30022	.01126	-.00167	.01105	.06991	7.5229
#2	.00139	.30087	.01231	-.00211	.01180	.07000	6.6150
#3	.00059	.29699	.01154	.00025	.01105	.06904	6.9815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12234.	89480.	3648.3
Stddev	46.	133.	8.6
%RSD	.37986	.14881	.23573
#1	12274.	89379.	3658.0
#2	12183.	89631.	3641.5
#3	12244.	89430.	3645.4

Approved: February 12, 2016

Sample Name: L1602041503 Acquired: 2/11/2016 17:20:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.20511	.00553	.14312	.09669	-.00000	4.1881
Stddev	.00037	.00291	.00302	.00144	.00143	.00009	.0101
%RSD	97.816	1.4200	54.561	1.0042	1.4778	5600.2	.24143
#1	.00079	.20438	.00756	.14386	.09725	-.00010	4.1998
#2	.00027	.20262	.00206	.14403	.09775	.00006	4.1824
#3	.00008	.20831	.00697	.14146	.09507	.00003	4.1821
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00077	.00148	.00262	.17534	1.4733	.01627
Stddev	.00037	.00018	.00046	.00064	.00666	.0505	.00202
%RSD	316.71	22.918	31.219	24.229	3.7977	3.4241	12.433
#1	-.00022	.00059	.00183	.00317	.17941	1.4240	.01817
#2	.00007	.00077	.00165	.00276	.16766	1.5248	.01414
#3	.00050	.00094	.00095	.00193	.17896	1.4712	.01649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.64884	.00730	.13882	F 400.08	.00124	.09078	-.00342
Stddev	.03105	.00206	.00113	.88	.00113	.00798	.00289
%RSD	4.7855	28.226	.81732	.21899	91.463	8.7933	84.697
#1	.65079	.00952	.13968	399.30	.00188	.09271	-.00655
#2	.67888	.00545	.13924	401.03	.00192	.08201	-.00084
#3	.61687	.00693	.13753	399.91	-.00007	.09763	-.00286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: February 12, 2016

Sample Name: L1602041503 Acquired: 2/11/2016 17:20:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00226	.00113	2.3371	.00150	.20495	.00434	-.00084
Stddev	.00055	.00597	.0141	.00130	.00102	.00441	.00165
%RSD	24.285	529.20	.60559	86.517	.49926	101.56	195.28
#1	.00285	-.00526	2.3477	.00111	.20394	.00556	-.00243
#2	.00176	.00207	2.3426	.00295	.20599	-.00055	-.00095
#3	.00218	.00657	2.3210	.00044	.20492	.00802	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00067	.00659	6.9819
Stddev	.00079	.00018	3.5834
%RSD	116.94	2.7791	51.325
#1	.00059	.00678	3.4063
#2	-.00007	.00657	6.9664
#3	.00150	.00642	10.573
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11784.	85208.	3699.6
Stddev	33.	59.	22.4
%RSD	.27912	.06891	.60620
#1	11809.	85232.	3725.4
#2	11747.	85141.	3688.0
#3	11795.	85251.	3685.3

Approved: February 12, 2016

Sample Name: L1602041505 Acquired: 2/11/2016 17:24:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00146	.02778	.02216	.01892	.19812	.00002	49.873	.00039
Stddev	.00139	.00529	.00048	.00141	.00259	.00004	.538	.00009
%RSD	95.693	19.034	2.1824	7.4385	1.3077	173.91	1.0781	22.075
#1	-.00007	.03389	.02163	.01958	.19937	.00005	50.224	.00044
#2	.00179	.02467	.02257	.01730	.19985	.00005	50.142	.00045
#3	.00265	.02479	.02229	.01986	.19514	-.00002	49.254	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	-.00106	.00046	15.171	3.0926	.00014	22.641	2.1884
Stddev	.00016	.00053	.00128	.160	.0926	.00157	.261	.0220
%RSD	28.889	49.952	279.39	1.0527	2.9930	1130.9	1.1536	1.0059
#1	.00074	-.00073	-.00071	15.288	3.1189	.00188	22.687	2.2008
#2	.00057	-.00078	.00025	15.236	2.9897	-.00117	22.876	2.2015
#3	.00041	-.00167	.00183	14.989	3.1691	-.00030	22.360	2.1630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	154.13	.00023	.18542	.00050	-.00145	-.00091	5.7281
Stddev	.00019	1.71	.00134	.00448	.00131	.00269	.00428	.0264
%RSD	528.98	1.1084	579.12	2.4164	260.98	186.01	471.68	.46030
#1	.00018	155.11	-.00084	.18754	-.00093	.00074	-.00571	5.7423
#2	-.00018	155.13	-.00020	.18844	.00079	-.00064	.00249	5.7443
#3	.00011	152.16	.00173	.18027	.00164	-.00445	.00050	5.6977
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602041505 Acquired: 2/11/2016 17:24:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.38781	-.00243	-.00343	.00026	.00505	.94390
Stddev	.00057	.00423	.00110	.00318	.00036	.00013	3.1884
%RSD	136.75	1.0896	45.054	92.852	135.84	2.6203	337.79
#1	.00068	.39034	-.00305	-.00710	-.00009	.00490	2.8400
#2	-.00024	.39017	-.00308	-.00155	.00026	.00515	-2.7372
#3	.00080	.38294	-.00117	-.00163	.00062	.00509	2.7289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11723.	85198.	3618.4
Stddev	63.	870.	53.0
%RSD	.53513	1.0214	1.4638
#1	11779.	84217.	3587.2
#2	11734.	85499.	3588.4
#3	11655.	85878.	3679.5

Approved: February 12, 2016

Sample Name: L1602041507 Acquired: 2/11/2016 17:28:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.81622	-.00002	.03672	.19327	.00007	92.196
Stddev	.00061	.00131	.00581	.00039	.00095	.00007	.369
%RSD	1634.0	.16105	28157.	1.0617	.48998	103.50	.40067
#1	-.00009	.81477	-.00045	.03677	.19335	-.00001	92.049
#2	-.00061	.81655	.00599	.03631	.19418	.00013	92.616
#3	.00059	.81733	-.00560	.03708	.19229	.00008	91.923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00083	.00820	.00431	1.5105	8.3086	.05627
Stddev	.00025	.00025	.00067	.00059	.0230	.0359	.00120
%RSD	524.70	30.223	8.2239	13.747	1.5222	.43223	2.1351
#1	.00011	.00054	.00757	.00374	1.5092	8.2738	.05748
#2	-.00033	.00094	.00891	.00492	1.4882	8.3456	.05508
#3	.00008	.00101	.00812	.00426	1.5341	8.3063	.05625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	68.410	.07096	.00168	F 307.90	.00519	.01666	.00094
Stddev	.178	.00195	.00038	1.39	.00055	.00211	.00167
%RSD	.26067	2.7548	22.873	.45299	10.536	12.657	176.91
#1	68.593	.07319	.00208	307.67	.00582	.01516	.00154
#2	68.398	.06951	.00164	309.39	.00484	.01908	-.00094
#3	68.237	.07020	.00132	306.63	.00491	.01576	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: February 12, 2016

Sample Name: L1602041507 Acquired: 2/11/2016 17:28:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00242	-.00196	4.5847	.00063	3.6919	.01095	-.00106
Stddev	.00264	.00221	.0277	.00082	.0140	.00528	.00212
%RSD	109.09	112.89	.60314	130.69	.37866	48.194	200.92
#1	-.00089	-.00360	4.6033	-.00024	3.6858	.01658	-.00109
#2	-.00547	.00055	4.5980	.00140	3.7079	.00612	.00108
#3	-.00091	-.00282	4.5530	.00073	3.6821	.01014	-.00316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00008	.03485	3.2356
Stddev	.00027	.00017	1.8440
%RSD	327.81	.50206	56.990
#1	-.00019	.03495	2.2545
#2	.00007	.03495	5.3628
#3	.00036	.03465	2.0897
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11225.	80279.	3454.8
Stddev	3.	190.	20.3
%RSD	.02976	.23668	.58890
#1	11227.	80084.	3451.0
#2	11227.	80289.	3436.6
#3	11221.	80463.	3476.7

Approved: February 12, 2016

Sample Name: L1602044301 Acquired: 2/11/2016 17:32:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	.58505	-.00001	.00670	.02397	-.00001	12.810	.00004
Stddev	.00054	.00470	.00381	.00153	.00076	.00001	.087	.00017
%RSD	45.086	.80384	64886.	22.880	3.1726	80.309	.68311	429.46
#1	.00102	.58744	.00120	.00599	.02340	-.00002	12.812	-.00016
#2	.00179	.57963	-.00428	.00565	.02368	-.00000	12.896	.00015
#3	.00076	.58808	.00306	.00846	.02484	-.00002	12.721	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00098	.00046	.43324	.55148	-.00111	2.8800	.01538
Stddev	.00043	.00033	.00046	.00529	.07401	.00087	.0818	.00153
%RSD	1019.0	34.167	100.08	1.2201	13.420	78.849	2.8393	9.9715
#1	.00002	.00099	-.00004	.42851	.63671	-.00196	2.9669	.01434
#2	-.00050	.00064	.00086	.43226	.51437	-.00113	2.8046	.01714
#3	.00035	.00131	.00056	.43895	.50337	-.00022	2.8685	.01467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	1.6791	.00037	.02027	-.00197	.00060	.00473	3.6724
Stddev	.00040	.0200	.00021	.00552	.00051	.00347	.00596	.0527
%RSD	343.55	1.1921	56.273	27.217	25.937	576.63	125.87	1.4353
#1	.00043	1.6946	.00015	.02624	-.00240	-.00249	.01119	3.7089
#2	.00024	1.6862	.00056	.01921	-.00141	-.00006	-.00056	3.6964
#3	-.00033	1.6565	.00039	.01536	-.00209	.00436	.00357	3.6120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602044301 Acquired: 2/11/2016 17:32:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.05203	.00599	-.00244	.00058	.00370	7.2514
Stddev	.00028	.00060	.00257	.00112	.00075	.00009	2.1943
%RSD	28.595	1.1535	42.984	45.848	129.58	2.4367	30.261
#1	.00071	.05232	.00483	-.00135	.00083	.00377	5.5760
#2	.00128	.05244	.00894	-.00359	.00116	.00373	6.4429
#3	.00100	.05135	.00420	-.00238	-.00026	.00360	9.7353
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11987.	87384.	3513.1
Stddev	21.	247.	20.3
%RSD	.17382	.28263	.57667
#1	11978.	87535.	3496.3
#2	12010.	87099.	3507.4
#3	11972.	87517.	3535.6

Approved: February 12, 2016

Sample Name: L1602044302 Acquired: 2/11/2016 17:36:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	.15266	-.00160	.00737	.01870	.00000	11.616	-.00001
Stddev	.00145	.00380	.00215	.00039	.00083	.00005	.107	.00031
%RSD	116.52	2.4867	134.49	5.2547	4.4430	1123.5	.92446	4623.0
#1	-.00021	.15293	-.00400	.00717	.01952	.00003	11.654	.00033
#2	.00125	.14874	.00013	.00781	.01872	.00004	11.698	-.00027
#3	.00270	.15632	-.00091	.00712	.01786	-.00006	11.494	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	-.00041	.00013	.12636	.71116	-.00431	3.0564	.01138
Stddev	.00008	.00075	.00058	.00919	.04994	.00275	.0881	.00120
%RSD	28.611	183.72	433.85	7.2693	7.0218	63.681	2.8807	10.558
#1	-.00022	-.00116	-.00051	.11948	.70222	-.00530	2.9773	.01220
#2	-.00026	-.00041	.00061	.13679	.76495	-.00644	3.1513	.01000
#3	-.00039	.00035	.00030	.12281	.66629	-.00121	3.0407	.01194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	1.9553	.00002	-.00002	-.00073	-.00465	.00141	3.5186
Stddev	.00036	.0238	.00122	.00584	.00183	.00466	.00049	.0227
%RSD	654.51	1.2154	5184.8	25049.	251.07	100.11	34.998	.64531
#1	-.00012	1.9827	.00078	.00512	-.00214	-.00265	.00163	3.5332
#2	-.00019	1.9425	-.00139	.00119	-.00137	-.00133	.00085	3.5302
#3	.00047	1.9406	.00068	-.00638	.00133	-.00998	.00176	3.4925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602044302 Acquired: 2/11/2016 17:36:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.04026	.00111	-.00076	-.00048	.00356	2.4813
Stddev	.00063	.00049	.00352	.00250	.00035	.00007	2.9044
%RSD	122.41	1.2228	317.30	330.25	73.278	2.0987	117.05
#1	.00047	.04042	-.00266	-.00276	-.00051	.00364	.24521
#2	.00117	.04066	.00168	-.00156	-.00012	.00356	1.4349
#3	-.00009	.03971	.00431	.00205	-.00082	.00349	5.7639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12030.	87888.	3525.4
Stddev	14.	338.	22.5
%RSD	.11399	.38435	.63786
#1	12045.	87498.	3521.4
#2	12018.	88083.	3505.2
#3	12026.	88084.	3549.7

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 17:40:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42672	10.829	.42569	.53030	1.0731	.05478	10.816
Stddev	.00215	.036	.00280	.00304	.0078	.00034	.053
%RSD	.50427	.33156	.65802	.57236	.73149	.62894	.48681
#1	.42490	10.790	.42893	.52822	1.0651	.05438	10.757
#2	.42615	10.861	.42405	.52889	1.0807	.05496	10.834
#3	.42909	10.835	.42410	.53378	1.0735	.05500	10.857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05375	.21693	.54761	.54391	4.3794	53.333	1.0836
Stddev	.00034	.00076	.00306	.00219	.0219	.430	.0105
%RSD	.63414	.34919	.55944	.40224	.49990	.80713	.96657
#1	.05351	.21742	.54428	.54643	4.3543	52.902	1.0761
#2	.05359	.21730	.55030	.54244	4.3891	53.763	1.0955
#3	.05414	.21605	.54825	.54286	4.3947	53.335	1.0791
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.956	F .55011	1.0956	53.079	.54170	10.639	.53898
Stddev	.212	.00630	.0035	.434	.00063	.025	.00295
%RSD	1.9325	1.1450	.32288	.81844	.11569	.23842	.54705
#1	10.756	.54862	1.0994	52.686	.54228	10.668	.53974
#2	11.178	.55702	1.0949	53.545	.54179	10.632	.54146
#3	10.935	.54469	1.0925	53.006	.54103	10.619	.53572
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000					
Range		10.000%					

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 17:40:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2881	.42285	5.3867	1.0932	1.0778	1.0781	.54945
Stddev	.0036	.00539	.0080	.0008	.0084	.0075	.00339
%RSD	.27935	1.2748	.14890	.07581	.77918	.69265	.61610
#1	1.2884	.42747	5.3904	1.0937	1.0693	1.0743	.55132
#2	1.2843	.41693	5.3921	1.0936	1.0861	1.0867	.54554
#3	1.2915	.42414	5.3775	1.0922	1.0779	1.0733	.55149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0832	1.0890	F 3.2486
Stddev	.0048	.0017	3.3473
%RSD	.44036	.15325	103.04
#1	1.0788	1.0909	.12973
#2	1.0883	1.0884	2.8309
#3	1.0825	1.0878	6.7852
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11276.	81276.	3329.0
Stddev	11.	591.	17.5
%RSD	.09726	.72679	.52669
#1	11267.	81953.	3347.1
#2	11288.	80863.	3312.1
#3	11274.	81013.	3327.7

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 17:44:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00405	-.00050	.00059	.00081	.00004	-.00417
Stddev	.00059	.00437	.00071	.00137	.00066	.00002	.01697
%RSD	3126.8	107.85	140.16	232.33	80.692	53.381	406.99
#1	.00020	.00084	-.00096	.00214	.00028	.00004	-.01942
#2	.00043	.00229	-.00086	.00009	.00062	.00006	.01411
#3	-.00068	.00902	.00031	-.00046	.00155	.00002	-.00720
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00013	.00018	-.00113	-.01619	-.03353	-.00520
Stddev	.00014	.00034	.00067	.00063	.02025	.11692	.00160
%RSD	181.14	263.01	372.84	56.257	125.08	348.68	30.725
#1	-.00008	-.00051	-.00058	-.00171	-.02540	-.13890	-.00641
#2	.00013	-.00001	.00044	-.00122	.00703	-.05394	-.00580
#3	.00018	.00013	.00068	-.00045	-.03019	.09225	-.00339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10769	-.00044	.00111	.02668	-.00062	-.00037	.00113
Stddev	.03963	.00122	.00026	.01520	.00097	.00459	.00166
%RSD	36.804	276.54	23.348	56.968	156.20	1239.1	146.49
#1	.08453	.00013	.00116	.03473	-.00152	.00462	.00280
#2	.15345	-.00184	.00083	.00915	.00041	-.00134	-.00051
#3	.08508	.00039	.00135	.03617	-.00075	-.00440	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 17:44:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00201	-.00063	.00258	.00127	.00040	-.00452	-.00204
Stddev	.00286	.00465	.00186	.00029	.00029	.00194	.00148
%RSD	142.09	738.64	71.889	22.829	72.466	42.827	72.563
#1	-.00083	-.00438	.00463	.00148	.00018	-.00229	-.00036
#2	.00198	.00457	.00209	.00139	.00073	-.00567	-.00258
#3	.00488	-.00208	.00102	.00094	.00029	-.00561	-.00317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00051	.00041	F -2.1139
Stddev	.00103	.00027	1.8078
%RSD	202.76	65.783	85.522
#1	-.00059	.00053	-2.7054
#2	-.00150	.00010	-3.5518
#3	.00056	.00059	-.08438
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11605.	85136.	3375.3
Stddev	28.	417.	35.5
%RSD	.24472	.48946	1.0512
#1	11580.	85596.	3401.5
#2	11599.	85027.	3334.9
#3	11636.	84784.	3389.4

Approved: February 12, 2016

Sample Name: L1602044303 Acquired: 2/11/2016 17:48:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	1.3007	-.00001	.00725	.04527	.00002	12.157	-.00008
Stddev	.00068	.0081	.00150	.00085	.00019	.00001	.055	.00006
%RSD	139.61	.62373	17494.	11.726	.42461	69.786	.44973	77.748
#1	-.00001	1.2975	-.00088	.00635	.04509	.00003	12.218	-.00008
#2	-.00018	1.2947	.00173	.00736	.04547	.00002	12.141	-.00014
#3	-.00127	1.3099	-.00087	.00804	.04526	.00001	12.112	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	.00178	.00281	1.9082	.77146	-.00200	2.0294	.08891
Stddev	.00006	.00007	.00073	.0079	.01837	.00521	.0413	.00092
%RSD	8.2280	4.0124	26.097	.41228	2.3809	260.08	2.0330	1.0367
#1	.00076	.00181	.00244	1.9122	.78153	.00340	2.0162	.08946
#2	.00075	.00183	.00365	1.9132	.75026	-.00241	1.9962	.08785
#3	.00066	.00169	.00233	1.8991	.78258	-.00700	2.0756	.08942
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	1.0409	.00164	.09272	.00148	-.00156	-.00544	3.8419
Stddev	.00029	.0208	.00058	.00780	.00346	.00222	.00377	.0108
%RSD	110.61	1.9951	35.185	8.4142	234.14	142.13	69.381	.28086
#1	.00014	1.0307	.00137	.10004	.00022	-.00262	-.00919	3.8533
#2	.00059	1.0273	.00124	.08451	-.00118	-.00305	-.00548	3.8405
#3	.00005	1.0648	.00230	.09361	.00539	.00099	-.00165	3.8318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602044303 Acquired: 2/11/2016 17:48:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.03285	.02152	-.00218	.00099	.04354	1.7010
Stddev	.00115	.00035	.00354	.00165	.00079	.00025	2.3589
%RSD	156.19	1.0781	16.440	75.677	79.939	.56274	138.68
#1	.00206	.03302	.02310	-.00140	.00008	.04382	4.0985
#2	-.00004	.03309	.02399	-.00107	.00149	.04342	-.61745
#3	.00019	.03245	.01746	-.00408	.00140	.04338	1.6221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12076.	88557.	3526.9
Stddev	42.	171.	11.5
%RSD	.34497	.19296	.32633
#1	12088.	88553.	3514.5
#2	12030.	88730.	3537.3
#3	12111.	88388.	3528.9

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 17:52:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42750	10.800	.42728	.52796	1.0794	.05441	10.872
Stddev	.00139	.047	.00275	.00235	.0092	.00020	.056
%RSD	.32610	.43934	.64361	.44530	.85237	.37562	.51945
#1	.42590	10.749	.42876	.52568	1.0715	.05424	10.826
#2	.42819	10.809	.42897	.52783	1.0895	.05434	10.935
#3	.42842	10.843	.42411	.53038	1.0771	.05464	10.855
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05422	.21809	.54313	.54602	4.3731	53.753	1.0935
Stddev	.00029	.00054	.00283	.00246	.0863	.540	.0066
%RSD	.54259	.24537	.52040	.45039	1.9741	1.0042	.60646
#1	.05446	.21766	.53989	.54620	4.3357	53.352	1.0867
#2	.05431	.21869	.54446	.54838	4.4719	54.366	1.0999
#3	.05389	.21793	.54505	.54348	4.3119	53.539	1.0940
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.988	.54895	F 1.1012	53.616	.54532	10.626	.54429
Stddev	.089	.00458	.0033	.452	.00235	.029	.00454
%RSD	.81384	.83444	.29837	.84266	.43071	.27161	.83336
#1	10.912	.54416	1.1023	53.309	.54315	10.612	.53923
#2	10.966	.55329	1.1038	54.135	.54781	10.659	.54797
#3	11.086	.54942	1.0975	53.404	.54499	10.606	.54568
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			1.0000				
Range			10.000%				

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 17:52:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2896	.42525	5.4152	1.0937	1.0837	1.0860	.54915
Stddev	.0047	.00533	.0064	.0030	.0095	.0078	.00331
%RSD	.36373	1.2530	.11814	.27196	.87403	.71680	.60204
#1	1.2852	.43041	5.4180	1.0922	1.0764	1.0785	.54730
#2	1.2945	.42556	5.4198	1.0972	1.0944	1.0941	.55297
#3	1.2890	.41977	5.4079	1.0918	1.0802	1.0854	.54718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0795	1.0895	F -2.0283
Stddev	.0026	.0025	1.4932
%RSD	.23994	.23182	73.622
#1	1.0770	1.0870	-3.0625
#2	1.0793	1.0921	-.31634
#3	1.0822	1.0894	-2.7060
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11271.	82057.	3318.5
Stddev	20.	530.	23.3
%RSD	.17368	.64553	.70100
#1	11293.	82663.	3330.3
#2	11260.	81685.	3291.7
#3	11258.	81822.	3333.5

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 17:56:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	.00980	-.00280	.00072	.00109	.00001	.01394
Stddev	.00043	.00566	.00164	.00285	.00046	.00005	.01737
%RSD	41.752	57.752	58.536	396.55	41.622	364.22	124.61
#1	-.00089	.01463	-.00243	-.00161	.00060	.00002	-.00611
#2	-.00070	.00357	-.00459	.00389	.00150	-.00004	.02362
#3	-.00153	.01119	-.00138	-.00013	.00119	.00005	.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.00064	-.00016	.00001	-.01006	-.00691	.00176
Stddev	.00026	.00022	.00087	.00101	.00582	.13246	.00274
%RSD	222.37	34.456	549.71	11347.	57.785	1918.3	155.64
#1	-.00018	-.00077	.00054	-.00028	-.01291	-.12124	.00003
#2	.00025	-.00077	.00013	-.00083	-.00337	.13825	.00034
#3	.00029	-.00039	-.00114	.00113	-.01390	-.03772	.00493
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10540	.00108	.00107	.02200	-.00039	.00573	-.00048
Stddev	.01062	.00183	.00028	.00344	.00041	.00474	.00214
%RSD	10.076	170.08	25.954	15.656	105.89	82.786	446.21
#1	.09678	.00075	.00091	.02400	-.00042	.00498	-.00208
#2	.10216	.00305	.00140	.01802	.00004	.01079	.00195
#3	.11726	-.00057	.00092	.02397	-.00079	.00140	-.00131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 17:56:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00175	.00123	.00398	.00070	.00035	-.00127	-.00225
Stddev	.00165	.00822	.00017	.00095	.00026	.00660	.00211
%RSD	94.528	665.93	4.3588	134.38	72.867	517.95	93.955
#1	-.00152	-.00731	.00393	-.00021	.00016	.00469	-.00213
#2	-.00350	.00908	.00417	.00064	.00064	-.00837	-.00020
#3	-.00022	.00193	.00383	.00168	.00025	-.00014	-.00441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00014	.00038	F -1.6421
Stddev	.00052	.00015	1.3533
%RSD	386.94	38.823	82.417
#1	.00070	.00051	-1.2241
#2	-.00033	.00041	-.54701
#3	.00003	.00022	-3.1551
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11640.	85119.	3372.2
Stddev	17.	279.	6.6
%RSD	.14471	.32783	.19603
#1	11643.	85407.	3374.2
#2	11622.	84850.	3377.6
#3	11655.	85101.	3364.8

Approved: February 12, 2016

Sample Name: LLCCV Acquired: 2/11/2016 18:00:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00905	.16880	.00621	.07714	.00900	.00156	.39573
Stddev	.00048	.00263	.00256	.00182	.00052	.00008	.01449
%RSD	5.3010	1.5603	41.164	2.3534	5.8222	5.4169	3.6608
#1	.00916	.16987	.00377	.07896	.00960	.00150	.41232
#2	.00853	.16580	.00599	.07713	.00876	.00165	.38926
#3	.00947	.17073	.00887	.07533	.00864	.00151	.38560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.00388	.00367	.00386	.05614	.78930	.07989
Stddev	.00012	.00032	.00087	.00023	.01133	.08766	.00208
%RSD	17.321	8.2348	23.560	5.8887	20.176	11.106	2.5976
#1	.00076	.00352	.00421	.00360	.05362	.76645	.08177
#2	.00075	.00414	.00413	.00396	.04628	.88613	.08022
#3	.00055	.00397	.00267	.00402	.06851	.71534	.07766
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55079	.00958	.00791	.39658	.01655	.77923	.00769
Stddev	.01933	.00260	.00054	.03031	.00072	.00694	.00167
%RSD	3.5094	27.180	6.8644	7.6442	4.3810	.89002	21.753
#1	.56979	.01098	.00757	.39853	.01737	.77816	.00758
#2	.55142	.01117	.00854	.36533	.01625	.78664	.00942
#3	.53115	.00657	.00763	.42586	.01601	.77289	.00608
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: LLCCV Acquired: 2/11/2016 18:00:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08293	.01102	.79533	.41373	.03952	.02346	.15991
Stddev	.00387	.00524	.00495	.00431	.00019	.00410	.00326
%RSD	4.6693	47.600	.62197	1.0412	.47400	17.480	2.0413
#1	.08588	.01385	.79884	.41528	.03932	.02527	.16155
#2	.08437	.00497	.79748	.41704	.03954	.02634	.16203
#3	.07855	.01424	.78967	.40886	.03969	.01876	.15615
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00670	.01790	F 328.16
Stddev	.00035	.00016	.62
%RSD	5.2818	.88194	.18912
#1	.00641	.01791	327.47
#2	.00660	.01806	328.68
#3	.00709	.01774	328.33
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11760.	85946.	3454.5
Stddev	26.	137.	3.3
%RSD	.22524	.15889	.09412
#1	11790.	86093.	3451.2
#2	11739.	85924.	3457.7
#3	11752.	85822.	3454.5

Approved: February 12, 2016

Sample Name: ICSA Acquired: 2/11/2016 18:04:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00307	F 288.54	F -.00171	F .03970	F .00149	F -.00002	F 258.32
Stddev	.00011	2.04	.00601	.00148	.00063	.00009	1.22
%RSD	3.6626	.70791	350.57	3.7392	42.316	506.76	.47210
#1	.00308	289.84	-.00861	.03948	.00206	.00007	256.92
#2	.00318	289.60	.00245	.04128	.00160	-.00011	259.13
#3	.00296	286.19	.00101	.03833	.00081	-.00001	258.91
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.40000	10.000	.40000	.50000	1.0000	.05000	10.000
Range	-10.000%	10.000%	-10.000%	-10.000%	-10.000%	-10.000%	10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00033	F -.00163	F -.00128	F -.01088	F 106.01	F -.05219	F .00619
Stddev	.00027	.00028	.00045	.00064	.57	.05598	.00371
%RSD	80.373	17.081	35.162	5.9158	.54077	107.26	59.926
#1	.00065	-.00195	-.00177	-.01021	105.35	-.04669	.00959
#2	.00018	-.00151	-.00121	-.01150	106.34	-.11071	.00223
#3	.00018	-.00144	-.00088	-.01092	106.34	.00084	.00674
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	-10.000%	-10.000%	-10.000%	-10.000%	10.000%	-10.000%	-10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 272.15	F .00357	F -.00102	F .06216	F -.00201	F .03959	F -.00667
Stddev	1.23	.00097	.00010	.00920	.00053	.00988	.00452
%RSD	.45338	27.261	9.6774	14.798	26.268	24.958	67.817
#1	270.85	.00469	-.00092	.06623	-.00260	.03305	-.00926
#2	272.30	.00287	-.00112	.06862	-.00183	.03476	-.00930
#3	273.30	.00316	-.00102	.05163	-.00159	.05095	-.00145
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Approved: February 12, 2016

Sample Name: ICSA Acquired: 2/11/2016 18:04:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00308	F .00098	F .73093	F .00098	F .00057	F .00396	F -.00370
Stddev	.00181	.00581	.00508	.00110	.00022	.00476	.00258
%RSD	58.628	594.09	.69567	111.86	39.144	120.19	69.572
#1	.00193	.00755	.73233	-.00027	.00075	.00567	-.00603
#2	.00215	-.00111	.73517	.00176	.00064	.00762	-.00414
#3	.00517	-.00350	.72530	.00145	.00032	-.00142	-.00094
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F -.00138	F -.00581	F -29.187
Stddev	.00064	.00035	2.643
%RSD	46.089	5.9625	9.0557
#1	-.00180	-.00585	-31.846
#2	-.00065	-.00614	-29.154
#3	-.00170	-.00545	-26.560
Check ?	Chk Fail	Chk Fail	Chk Fail
Value	1.0000	1.0000	1.0000
Range	-10.000%	-10.000%	-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10678.	76209.	3245.7
Stddev	31.	585.	6.9
%RSD	.29031	.76781	.21380
#1	10664.	75762.	3250.5
#2	10713.	75994.	3237.8
#3	10656.	76871.	3248.9

Approved: February 12, 2016

Sample Name: ICSAB Acquired: 2/11/2016 18:08:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .55149	F 281.14	F .25384	F -.03448	F .26478	F .25541	F 253.58
Stddev	.00225	.32	.00067	.00144	.00120	.00023	.94
%RSD	.40775	.11483	.26377	4.1739	.45293	.09129	.37179
#1	.55139	281.12	.25355	-.03597	.26530	.25524	252.56
#2	.55379	281.48	.25336	-.03310	.26340	.25568	253.76
#3	.54930	280.83	.25460	-.03435	.26562	.25532	254.42
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.40000	10.000	.40000	.50000	1.0000	.05000	10.000
Range	10.000%	10.000%	-10.000%	-10.000%	-10.000%	10.000%	10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .48004	F .24918	F .26036	F .24705	F 103.29	F 5.3805	F .00596
Stddev	.00102	.00089	.00065	.00102	.52	.0319	.00150
%RSD	.21313	.35750	.24921	.41356	.50204	.59357	25.099
#1	.48088	.24958	.26037	.24822	102.76	5.3449	.00674
#2	.48034	.24980	.26100	.24656	103.33	5.4068	.00690
#3	.47890	.24816	.25970	.24636	103.79	5.3897	.00423
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	10.000%	10.000%	-10.000%	-10.000%	10.000%	-10.000%	-10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 265.12	F .26547	F -.00091	F 5.4339	.49728	F .04399	.50938
Stddev	.69	.00028	.00046	.0316	.00230	.00721	.00586
%RSD	.25910	.10709	50.548	.58112	.46340	16.399	1.1497
#1	264.39	.26577	-.00084	5.3992	.49643	.03790	.51124
#2	265.22	.26521	-.00140	5.4610	.49988	.04211	.51407
#3	265.75	.26543	-.00049	5.4415	.49552	.05196	.50281
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Pass
Value	10.000	.50000	1.0000	50.000		10.000	
Range	10.000%	-10.000%	-10.000%	-10.000%		-10.000%	

Approved: February 12, 2016

Sample Name: ICSAB Acquired: 2/11/2016 18:08:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .52864	F .26410	F .01249	F .00040	F .00024	F .00811	.48019
Stddev	.00450	.00739	.00086	.00100	.00016	.00386	.00242
%RSD	.85067	2.7974	6.9208	250.93	68.204	47.639	.50333
#1	.53383	.26228	.01261	.00144	.00011	.00528	.48165
#2	.52609	.25778	.01156	.00030	.00043	.00653	.48152
#3	.52600	.27222	.01328	-.00055	.00018	.01251	.47740
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F .26621	F .50017	F -30.141
Stddev	.00094	.00132	3.027
%RSD	.35140	.26387	10.042
#1	.26691	.50153	-27.855
#2	.26515	.50008	-28.995
#3	.26659	.49890	-33.574
Check ?	Chk Fail	Chk Fail	Chk Fail
Value	1.0000	1.0000	1.0000
Range	-10.000%	-10.000%	-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10665.	77174.	3307.6
Stddev	12.	435.	19.9
%RSD	.11669	.56393	.60151
#1	10661.	77651.	3330.5
#2	10655.	77074.	3298.3
#3	10679.	76797.	3294.1

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 18:12:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42134	10.740	.42403	.52610	1.0780	.05377	10.911
Stddev	.00254	.022	.00692	.00454	.0089	.00009	.052
%RSD	.60371	.20100	1.6316	.86279	.82841	.17209	.47679
#1	.41945	10.723	.43181	.52145	1.0694	.05371	10.851
#2	.42034	10.764	.42169	.52634	1.0773	.05372	10.939
#3	.42423	10.733	.41858	.53052	1.0872	.05388	10.943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05379	.21574	.53793	.54053	4.3886	53.717	1.0896
Stddev	.00022	.00052	.00238	.00273	.0282	.441	.0107
%RSD	.40724	.24261	.44196	.50582	.64356	.82090	.98167
#1	.05385	.21634	.53519	.54317	4.3587	53.260	1.0809
#2	.05355	.21535	.53922	.54071	4.3921	53.752	1.0863
#3	.05397	.21555	.53939	.53771	4.4149	54.140	1.1015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 11.167	F .55338	1.0931	53.441	.53775	10.571	.53897
Stddev	.128	.00501	.0020	.450	.00107	.014	.00220
%RSD	1.1420	.90464	.18243	.84165	.19849	.13481	.40747
#1	11.106	.54889	1.0952	53.019	.53882	10.583	.53756
#2	11.082	.55248	1.0929	53.388	.53774	10.556	.54150
#3	11.314	.55878	1.0913	53.914	.53669	10.576	.53784
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	10.000	.50000					
Range	10.000%	10.000%					

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 18:12:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2757	.42394	5.3407	1.0848	1.0849	1.0803	.54690
Stddev	.0026	.00612	.0034	.0024	.0098	.0158	.00262
%RSD	.20487	1.4441	.06354	.22434	.90320	1.4630	.47910
#1	1.2783	.41755	5.3436	1.0875	1.0766	1.0627	.54828
#2	1.2758	.42976	5.3370	1.0838	1.0825	1.0932	.54854
#3	1.2730	.42451	5.3415	1.0830	1.0957	1.0851	.54387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0629	1.0784	F 14.048
Stddev	.0020	.0019	.907
%RSD	.19188	.17739	6.4540
#1	1.0606	1.0805	14.919
#2	1.0644	1.0779	13.109
#3	1.0637	1.0768	14.117
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11273.	81763.	3303.5
Stddev	26.	339.	8.3
%RSD	.23104	.41422	.25253
#1	11266.	81909.	3307.4
#2	11302.	82003.	3309.3
#3	11252.	81375.	3294.0

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 18:15:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00218	.00565	.00207	.00147	.00072	-.00005	.02977
Stddev	.00174	.00636	.00172	.00186	.00048	.00007	.01587
%RSD	79.578	112.40	83.215	126.85	66.913	148.20	53.302
#1	.00378	.01273	.00406	-.00067	.00022	-.00010	.04060
#2	.00033	.00379	.00122	.00272	.00077	-.00008	.01156
#3	.00244	.00044	.00094	.00236	.00119	.00003	.03716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00006	-.00024	-.00008	.00021	.03310	-.00230
Stddev	.00015	.00017	.00014	.00100	.01134	.05811	.00397
%RSD	90.994	303.77	56.280	1213.3	5310.3	175.56	172.44
#1	-.00004	-.00025	-.00011	-.00031	-.01288	.09731	-.00650
#2	-.00033	.00007	-.00024	-.00095	.00664	-.01589	.00138
#3	-.00012	.00001	-.00038	.00101	.00688	.01789	-.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07833	.00194	.00126	.00551	-.00030	-.00018	-.00113
Stddev	.04728	.00114	.00038	.02400	.00116	.00606	.00181
%RSD	60.368	58.773	30.132	435.71	380.28	3357.5	160.66
#1	.07399	.00141	.00082	.02388	-.00130	-.00141	.00021
#2	.03336	.00325	.00149	.01430	-.00058	.00640	-.00040
#3	.12763	.00116	.00148	-.02165	.00096	-.00553	-.00319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 18:15:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00223	-.00489	.00382	.00037	.00031	-.00356	-.00180
Stddev	.00263	.00667	.00094	.00071	.00041	.00885	.00101
%RSD	118.24	136.51	24.628	192.71	134.38	248.80	56.344
#1	.00037	.00245	.00319	-.00021	.00079	-.00275	-.00195
#2	-.00216	-.01060	.00336	.00117	.00007	-.01278	-.00272
#3	-.00490	-.00651	.00490	.00015	.00007	.00486	-.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00007	.00045	F -1.1009
Stddev	.00033	.00015	3.3434
%RSD	474.60	32.312	303.69
#1	-.00021	.00032	-.92318
#2	-.00002	.00042	2.1501
#3	.00043	.00061	-4.5297
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11570.	84865.	3358.3
Stddev	27.	92.	5.7
%RSD	.22963	.10830	.16948
#1	11544.	84760.	3356.1
#2	11569.	84902.	3364.8
#3	11597.	84932.	3354.0

Approved: February 12, 2016

Sample Name: PBW 78 Acquired: 2/11/2016 18:20:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	-.00207	.00076	-.00217	.00029	-.00003	.01640	-.00003
Stddev	.00022	.00078	.00273	.00100	.00053	.00003	.03090	.00012
%RSD	97.284	37.836	358.28	45.936	185.37	94.212	188.40	356.03
#1	-.00009	-.00296	.00279	-.00305	-.00028	.00000	.02831	-.00010
#2	-.00047	-.00150	-.00235	-.00236	.00037	-.00004	.03957	.00010
#3	-.00011	-.00174	.00184	-.00109	.00077	-.00006	-.01868	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00014	-.00087	-.00235	.05145	-.00046	.06421	.00245
Stddev	.00038	.00053	.00021	.00702	.04631	.00112	.07567	.00123
%RSD	99.062	391.17	23.657	298.74	90.012	242.23	117.86	50.335
#1	-.00026	.00075	-.00110	-.00845	.06726	-.00149	.05209	.00317
#2	-.00082	-.00019	-.00070	-.00392	-.00070	.00074	.14521	.00102
#3	-.00008	-.00015	-.00081	.00532	.08777	-.00064	-.00468	.00314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.03523	.00100	-.00926	-.00146	-.00253	-.00009	.00948
Stddev	.00014	.01389	.00085	.00830	.00306	.00275	.00211	.00169
%RSD	30.458	39.430	84.690	89.641	209.56	108.73	2427.5	17.802
#1	.00045	.05092	.00116	-.01885	-.00177	-.00186	-.00148	.00753
#2	.00060	.03030	.00009	-.00445	.00175	-.00018	-.00112	.01032
#3	.00032	.02448	.00176	-.00449	-.00436	-.00556	.00234	.01057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: PBW 78 Acquired: 2/11/2016 18:20:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.00024	-.00177	-.00289	-.00120	.00269	2.9507
Stddev	.00087	.00007	.00170	.00433	.00040	.00020	.8076
%RSD	94.810	31.147	95.912	149.53	33.380	7.3430	27.371
#1	-.00005	.00026	-.00366	.00104	-.00156	.00274	2.3329
#2	.00115	.00015	-.00036	-.00219	-.00077	.00286	2.6546
#3	.00163	.00029	-.00129	-.00753	-.00126	.00247	3.8645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12075.	88975.	3525.0
Stddev	19.	274.	20.0
%RSD	.15916	.30826	.56734
#1	12077.	88802.	3512.0
#2	12093.	89291.	3514.9
#3	12055.	88831.	3548.0

Approved: February 12, 2016

Sample Name: LCSW 78 Acquired: 2/11/2016 18:24:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19417	4.8763	.18820	.94100	.49703	.02404	4.9774	.02406
Stddev	.00089	.0210	.00113	.00227	.00064	.00002	.0179	.00007
%RSD	.45911	.42981	.59849	.24111	.12973	.09976	.35965	.28881
#1	.19458	4.8953	.18800	.93839	.49768	.02403	4.9767	.02406
#2	.19315	4.8538	.18942	.94248	.49639	.02402	4.9598	.02413
#3	.19479	4.8798	.18719	.94213	.49701	.02407	4.9956	.02399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09979	.24872	.24903	1.9988	24.604	.49827	4.9761	.25130
Stddev	.00062	.00079	.00219	.0143	.035	.00109	.0740	.00199
%RSD	.62111	.31705	.87962	.71380	.14175	.21779	1.4880	.79051
#1	.09990	.24960	.24926	1.9825	24.635	.49947	4.8931	.25291
#2	.10035	.24809	.25110	2.0090	24.610	.49736	4.9999	.24908
#3	.09913	.24846	.24674	2.0049	24.566	.49796	5.0354	.25192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51041	24.659	.24868	4.6934	.24760	.58211	.19054	2.4602
Stddev	.00189	.042	.00095	.0062	.00240	.00289	.00264	.0030
%RSD	.37073	.16970	.38319	.13298	.96871	.49731	1.3876	.12228
#1	.51245	24.691	.24926	4.6993	.24875	.58527	.19142	2.4630
#2	.51006	24.673	.24919	4.6941	.24921	.58149	.18756	2.4605
#3	.50871	24.611	.24758	4.6868	.24484	.57958	.19262	2.4570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: LCSW 78 Acquired: 2/11/2016 18:24:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50183	.49815	.49482	.25168	.49068	.49233	1.5298
Stddev	.00151	.00084	.00814	.00233	.00011	.00105	.8403
%RSD	.30189	.16888	1.6444	.92668	.02276	.21395	54.928
#1	.50354	.49881	.49473	.25158	.49080	.49281	1.1554
#2	.50130	.49720	.48673	.25406	.49062	.49306	.94179
#3	.50065	.49845	.50301	.24940	.49060	.49112	2.4922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11737.	85953.	3490.8
Stddev	46.	139.	19.3
%RSD	.39221	.16122	.55363
#1	11754.	86102.	3472.4
#2	11772.	85828.	3488.9
#3	11685.	85929.	3510.9

Approved: February 12, 2016

Sample Name: FBLANK 78 Acquired: 2/11/2016 18:27:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556947-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00810	-.00183	.00242	.00087	-.00002	.00210	-.00009
Stddev	.00041	.00401	.00298	.00166	.00078	.00008	.00641	.00013
%RSD	441.70	49.479	162.65	68.526	89.655	419.72	305.54	140.81
#1	.00037	.00513	-.00396	.00051	.00068	-.00008	.00313	-.00024
#2	-.00025	.01266	.00158	.00320	.00174	.00007	-.00476	-.00003
#3	-.00039	.00651	-.00312	.00354	.00021	-.00005	.00793	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	-.00037	.00001	-.00654	.07786	-.00472	.06339	.00231
Stddev	.00014	.00022	.00101	.01252	.04265	.00354	.03127	.00221
%RSD	30.610	59.829	20089.	191.41	54.769	75.016	49.327	95.486
#1	.00061	-.00059	.00082	-.01390	.09531	-.00702	.08077	-.00023
#2	.00047	-.00039	.00033	-.01363	.02926	-.00650	.08211	.00373
#3	.00032	-.00014	-.00113	.00791	.10902	-.00064	.02729	.00343
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	118.97	.00043	-.00601	-.00008	-.00241	-.00220	.00543
Stddev	.00012	.27	.00118	.00165	.00027	.00087	.00162	.00128
%RSD	52.692	.22522	274.42	27.495	325.99	36.129	73.552	23.635
#1	.00035	118.75	.00165	-.00503	-.00026	-.00169	-.00403	.00665
#2	.00010	119.27	.00036	-.00792	-.00021	-.00338	-.00093	.00555
#3	.00026	118.89	-.00071	-.00509	.00022	-.00217	-.00166	.00409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: FBLANK 78 Acquired: 2/11/2016 18:27:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556947-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00020	-.00171	-.00404	-.00014	.00546	1.7874
Stddev	.00035	.00009	.00305	.00139	.00012	.00008	2.0039
%RSD	40.682	43.453	178.49	34.507	87.452	1.4137	112.11
#1	.00081	.00026	-.00393	-.00480	.00000	.00552	1.3825
#2	.00053	.00010	-.00295	-.00243	-.00022	.00537	.01698
#3	.00122	.00022	.00176	-.00489	-.00021	.00547	3.9629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11905.	86039.	3531.1
Stddev	24.	428.	14.0
%RSD	.19809	.49755	.39750
#1	11925.	85880.	3545.7
#2	11879.	85713.	3517.7
#3	11910.	86524.	3530.0

Approved: February 12, 2016

Sample Name: L1602052401 Acquired: 2/11/2016 18:32:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.08463	-.00049	.00094	.00180	.00000	.50613	-.00002
Stddev	.00089	.00553	.00231	.00096	.00053	.00002	.02687	.00026
%RSD	256.35	6.5380	472.11	102.73	29.393	564.83	5.3097	1186.3
#1	-.00121	.08827	-.00316	.00205	.00146	.00002	.52926	-.00017
#2	-.00042	.07827	.00071	.00039	.00241	-.00002	.47665	-.00017
#3	.00058	.08736	.00098	.00038	.00152	.00001	.51247	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00062	.02253	.20420	.15256	-.00130	.11944	.00523
Stddev	.00032	.00118	.00125	.02624	.04305	.00257	.06547	.00248
%RSD	79.790	189.39	5.5363	12.849	28.220	198.09	54.818	47.324
#1	-.00050	.00007	.02386	.20603	.14449	-.00244	.10469	.00692
#2	-.00066	.00198	.02235	.17709	.19908	-.00309	.19103	.00639
#3	-.00004	-.00018	.02138	.22947	.11412	.00165	.06260	.00239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.22702	.00107	.00157	.00326	-.00085	-.00148	.17774
Stddev	.00031	.00392	.00038	.00163	.00403	.00239	.00162	.01312
%RSD	222.16	1.7246	35.485	104.18	123.67	282.08	109.68	7.3841
#1	-.00048	.23006	.00145	-.00021	.00792	-.00070	-.00006	.18088
#2	-.00006	.22261	.00070	.00192	.00092	.00146	-.00112	.18901
#3	.00012	.22840	.00104	.00300	.00095	-.00330	-.00325	.16333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602052401 Acquired: 2/11/2016 18:32:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00153	.00176	.00211	-.00151	-.00030	.01363	1.3015
Stddev	.00088	.00030	.00415	.00509	.00068	.00025	4.3512
%RSD	57.593	17.150	197.19	337.10	227.00	1.8594	334.31
#1	.00165	.00165	.00073	-.00334	.00045	.01373	6.2448
#2	.00234	.00210	-.00118	.00424	-.00047	.01381	-1.9483
#3	.00059	.00153	.00677	-.00544	-.00088	.01334	-.39199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12016.	87823.	3510.0
Stddev	23.	291.	24.7
%RSD	.18886	.33105	.70380
#1	12004.	87867.	3481.6
#2	12042.	88088.	3522.0
#3	12002.	87512.	3526.4

Approved: February 12, 2016

Sample Name: L1602046102 Acquired: 2/11/2016 18:36:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.02686	.00208	.01011	2.6161	.00001	3.5875
Stddev	.00125	.00297	.00055	.00057	.0197	.00001	.0359
%RSD	137.88	11.049	26.449	5.6128	.75421	89.056	1.0012
#1	.00233	.02348	.00227	.00957	2.6235	.00001	3.5858
#2	-.00001	.02902	.00251	.01070	2.6310	.00001	3.6242
#3	.00040	.02809	.00146	.01005	2.5937	-.00000	3.5524
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00040	.01746	.00644	5.8251	.01817	.04170
Stddev	.00026	.00011	.00058	.00062	.0303	.01438	.00170
%RSD	395.13	26.785	3.3481	9.6840	.52098	79.104	4.0665
#1	-.00036	.00043	.01760	.00716	5.8454	.03071	.04214
#2	.00002	.00028	.01682	.00613	5.8398	.00248	.04314
#3	.00014	.00049	.01797	.00603	5.7902	.02133	.03983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43265	.08754	.00063	127.06	.00357	-.00191	-.00040
Stddev	.06231	.00245	.00015	1.04	.00063	.00172	.00115
%RSD	14.402	2.8004	24.621	.82123	17.609	90.013	287.70
#1	.39829	.08968	.00045	127.64	.00404	-.00117	-.00053
#2	.39509	.08808	.00075	127.68	.00381	-.00068	-.00149
#3	.50458	.08487	.00069	125.85	.00285	-.00388	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602046102 Acquired: 2/11/2016 18:36:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00112	.00089	.06042	.00057	1.0059	.00429	-.00336
Stddev	.00081	.00344	.00010	.00010	.0078	.00661	.00200
%RSD	72.037	388.29	.16309	16.950	.77764	154.07	59.557
#1	-.00064	-.00179	.06046	.00046	1.0090	.01108	-.00537
#2	-.00067	-.00032	.06050	.00065	1.0118	.00390	-.00137
#3	-.00206	.00476	.06031	.00059	.99704	-.00212	-.00334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00057	.00709	F -.96899
Stddev	.00068	.00025	2.4604
%RSD	119.12	3.4595	253.92
#1	-.00017	.00715	1.3126
#2	-.00135	.00731	-.64368
#3	-.00019	.00682	-3.5759
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11839.	85461.	3532.4
Stddev	35.	445.	18.9
%RSD	.29269	.52123	.53481
#1	11799.	85903.	3512.0
#2	11855.	85013.	3535.7
#3	11862.	85466.	3549.4

Approved: February 12, 2016

Sample Name: L1602046102S Acquired: 2/11/2016 18:40:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19330	4.8262	.18869	.95554	3.1621	.02405	8.5357	.02383
Stddev	.00193	.0060	.00335	.00250	.0090	.00008	.0656	.00016
%RSD	1.0009	.12349	1.7755	.26207	.28337	.34449	.76867	.65770
#1	.19348	4.8228	.19024	.95770	3.1577	.02398	8.4892	.02367
#2	.19514	4.8331	.19098	.95280	3.1724	.02414	8.6107	.02398
#3	.19128	4.8227	.18484	.95612	3.1562	.02403	8.5071	.02383
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09772	.26169	.24920	7.9135	24.440	.53542	5.3860	.33626
Stddev	.00047	.00066	.00193	.0289	.046	.00407	.1557	.00185
%RSD	.48436	.25030	.77473	.36465	.18659	.76079	2.8902	.55049
#1	.09774	.26241	.24939	7.9218	24.443	.53423	5.3148	.33757
#2	.09818	.26112	.25104	7.9372	24.392	.53995	5.2787	.33414
#3	.09723	.26156	.24719	7.8814	24.483	.53207	5.5645	.33706
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50362	151.88	.24530	4.7654	.24222	.57442	.18968	2.4973
Stddev	.00295	.49	.00244	.0255	.00142	.00150	.00600	.0060
%RSD	.58657	.31945	.99546	.53561	.58640	.26039	3.1610	.23941
#1	.50606	151.88	.24684	4.7784	.24080	.57584	.19541	2.5001
#2	.50446	152.37	.24658	4.7818	.24224	.57286	.19017	2.5013
#3	.50033	151.40	.24249	4.7360	.24364	.57456	.18345	2.4904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602046102S Acquired: 2/11/2016 18:40:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49424	1.5138	.49344	.23960	.48922	.49428	.97340
Stddev	.00156	.0041	.00659	.00236	.00093	.00235	3.3220
%RSD	.31485	.27298	1.3352	.98318	.18947	.47587	341.28
#1	.49564	1.5117	.50070	.24095	.48971	.49586	3.8903
#2	.49450	1.5185	.49177	.23688	.48816	.49539	1.6724
#3	.49257	1.5111	.48784	.24097	.48981	.49157	-2.6425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11617.	84140.	3471.0
Stddev	18.	121.	9.9
%RSD	.15816	.14377	.28500
#1	11601.	84209.	3481.9
#2	11612.	84000.	3462.5
#3	11637.	84210.	3468.6

Approved: February 12, 2016

Sample Name: L1602046102SD Acquired: 2/11/2016 18:43:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19876	4.9381	.19180	.98193	3.2372	.02463	8.8056	.02475
Stddev	.00079	.0031	.00221	.00084	.0117	.00007	.0697	.00017
%RSD	.39847	.06198	1.1520	.08597	.36199	.27816	.79127	.70452
#1	.19930	4.9411	.19326	.98191	3.2373	.02466	8.7634	.02461
#2	.19785	4.9350	.19288	.98110	3.2488	.02467	8.8860	.02469
#3	.19914	4.9382	.18926	.98279	3.2254	.02455	8.7673	.02494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10021	.26863	.25578	8.0654	25.101	.54436	5.4322	.34667
Stddev	.00020	.00120	.00045	.0345	.073	.00343	.0221	.00271
%RSD	.19481	.44774	.17697	.42764	.28927	.63078	.40616	.78180
#1	.10042	.26777	.25542	8.1045	25.132	.54689	5.4114	.34744
#2	.10019	.26812	.25564	8.0525	25.153	.54574	5.4554	.34366
#3	.10003	.27001	.25629	8.0393	25.018	.54045	5.4298	.34892
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51825	155.35	.25191	4.8839	.24989	.59320	.19083	2.5671
Stddev	.00182	.57	.00038	.0142	.00084	.00182	.00575	.0035
%RSD	.35176	.36481	.14944	.29084	.33513	.30692	3.0138	.13696
#1	.51886	155.31	.25231	4.8832	.24893	.59386	.18621	2.5655
#2	.51969	155.93	.25186	4.8984	.25034	.59459	.19727	2.5711
#3	.51620	154.80	.25157	4.8700	.25041	.59114	.18900	2.5646
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602046102SD Acquired: 2/11/2016 18:43:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50761	1.5531	.51055	.24540	.50183	.50718	.26593
Stddev	.00305	.0057	.01179	.00154	.00188	.00217	3.8958
%RSD	.60008	.36710	2.3095	.62580	.37483	.42882	1465.0
#1	.50974	1.5519	.50471	.24717	.50392	.50891	-3.9803
#2	.50896	1.5594	.52412	.24445	.50129	.50789	1.1029
#3	.50412	1.5481	.50282	.24458	.50027	.50474	3.6752
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11592.	84226.	3476.3
Stddev	16.	55.	15.1
%RSD	.13488	.06559	.43417
#1	11575.	84290.	3478.3
#2	11606.	84190.	3460.3
#3	11594.	84199.	3490.3

Approved: February 12, 2016

Sample Name: L1602044401 Acquired: 2/11/2016 18:47:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.01554	-.00064	.04405	.97322	-.00005	70.806	.00005
Stddev	.00095	.00788	.00305	.00050	.00593	.00003	.438	.00016
%RSD	98.106	50.715	473.99	1.1439	.60904	71.018	.61886	353.68
#1	.00115	.00971	.00072	.04382	.97350	-.00003	70.866	-.00009
#2	.00181	.02450	.00149	.04370	.97901	-.00009	71.212	.00023
#3	-.00006	.01241	-.00414	.04463	.96716	-.00003	70.341	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.00060	.00914	.33432	1.7972	.00916	11.802	.21021
Stddev	.00038	.00036	.00084	.01681	.0248	.00078	.055	.00178
%RSD	81.604	60.487	9.2163	5.0281	1.3792	8.4783	.46456	.84531
#1	-.00073	.00088	.01002	.31580	1.8249	.00990	11.748	.20930
#2	-.00003	.00072	.00903	.34861	1.7769	.00835	11.858	.20906
#3	-.00063	.00019	.00835	.33856	1.7899	.00923	11.800	.21226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	27.869	-.00022	.00136	-.00135	-.00037	-.00260	6.6371
Stddev	.00010	.194	.00051	.00479	.00043	.00416	.01070	.0430
%RSD	23.953	.69498	233.91	351.66	31.488	1109.9	411.88	.64816
#1	.00048	27.904	.00035	.00308	-.00125	-.00311	-.01489	6.6775
#2	.00045	28.043	-.00065	.00506	-.00182	.00441	.00247	6.6418
#3	.00030	27.660	-.00036	-.00405	-.00099	-.00243	.00462	6.5919
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602044401 Acquired: 2/11/2016 18:47:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	1.0980	-.01198	-.00251	-.00076	.01637	1.6989
Stddev	.00015	.0057	.00598	.00297	.00019	.00025	2.8985
%RSD	9.3068	.52197	49.921	118.20	25.290	1.5475	170.62
#1	.00174	1.0983	-.00613	.00090	-.00058	.01628	-1.6377
#2	.00148	1.1035	-.01172	-.00393	-.00096	.01665	3.1395
#3	.00150	1.0921	-.01808	-.00450	-.00073	.01617	3.5949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11770.	85999.	3497.3
Stddev	17.	103.	10.5
%RSD	.14584	.12010	.30092
#1	11772.	85903.	3485.5
#2	11752.	85987.	3500.7
#3	11786.	86108.	3505.7

Approved: February 12, 2016

Sample Name: L1602044401PS Acquired: 2/11/2016 18:51:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557159-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19521	4.8206	.18500	.98097	1.3748	.02405	69.542	.02405
Stddev	.00017	.0133	.00133	.00054	.0097	.00005	.583	.00019
%RSD	.08529	.27577	.72030	.05472	.70866	.21441	.83826	.78664
#1	.19530	4.8201	.18428	.98157	1.3656	.02408	69.006	.02389
#2	.19502	4.8342	.18418	.98052	1.3850	.02408	70.163	.02401
#3	.19531	4.8076	.18654	.98082	1.3739	.02399	69.458	.02426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09592	.24268	.24822	2.2584	26.237	.49870	15.787	.43580
Stddev	.00050	.00157	.00140	.0450	.119	.00292	.063	.00895
%RSD	.52432	.64867	.56245	1.9933	.45320	.58578	.39827	2.0540
#1	.09579	.24442	.24924	2.2244	26.135	.49542	15.731	.42780
#2	.09648	.24137	.24878	2.3094	26.368	.50102	15.855	.44547
#3	.09550	.24224	.24663	2.2414	26.208	.49966	15.774	.43413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50564	49.348	.23896	4.7876	.24042	.58052	.18588	8.4804
Stddev	.00085	.358	.00136	.0024	.00237	.00228	.00329	.0130
%RSD	.16840	.72540	.56706	.04964	.98462	.39290	1.7710	.15310
#1	.50662	49.033	.24002	4.7899	.24235	.58123	.18352	8.4950
#2	.50522	49.737	.23743	4.7852	.23777	.58236	.18964	8.4761
#3	.50508	49.273	.23942	4.7878	.24113	.57796	.18448	8.4702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602044401PS Acquired: 2/11/2016 18:51:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557159-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49616	1.4892	.48833	.24453	.48616	.49285	2.3926
Stddev	.00134	.0122	.00891	.00115	.00034	.00053	1.6513
%RSD	.26952	.82197	1.8239	.46893	.07011	.10663	69.015
#1	.49765	1.4783	.47806	.24583	.48585	.49342	.51818
#2	.49575	1.5024	.49397	.24366	.48652	.49274	3.0274
#3	.49507	1.4868	.49296	.24409	.48610	.49238	3.6323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11621.	84640.	3489.1
Stddev	39.	323.	4.1
%RSD	.33396	.38168	.11610
#1	11664.	84482.	3493.6
#2	11612.	84427.	3487.9
#3	11588.	85012.	3485.8

Approved: February 12, 2016

Sample Name: L1602044401SDL Acquired: 2/11/2016 18:55:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG557159-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	-.00878	-.00018	.01174	.18678	-.00007	13.708
Stddev	.00135	.00503	.00310	.00149	.00198	.00007	.152
%RSD	565.74	57.298	1713.4	12.703	1.0626	100.86	1.1088
#1	-.00123	-.01132	-.00277	.01326	.18459	-.00012	13.544
#2	.00144	-.01204	.00325	.01169	.18847	-.00010	13.845
#3	.00050	-.00299	-.00102	.01028	.18727	.00001	13.734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	-.00043	-.00085	.00185	.06570	.37165	-.00018
Stddev	.00006	.00021	.00081	.00014	.01603	.02939	.00220
%RSD	45.173	49.795	94.970	7.7322	24.401	7.9083	1254.3
#1	-.00016	-.00053	-.00079	.00175	.07066	.39489	-.00168
#2	-.00006	-.00018	-.00007	.00202	.07868	.38146	.00235
#3	-.00016	-.00058	-.00169	.00179	.04778	.33861	-.00119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.3696	.04223	-.00002	5.4370	-.00014	.00240	.00114
Stddev	.0837	.00277	.00005	.0723	.00082	.00312	.00289
%RSD	3.5322	6.5508	221.05	1.3301	594.06	129.82	253.81
#1	2.3341	.04370	-.00007	5.3627	.00064	.00598	-.00088
#2	2.4652	.04396	-.00003	5.5072	-.00007	.00029	.00444
#3	2.3095	.03904	.00003	5.4411	-.00098	.00093	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602044401SDL Acquired: 2/11/2016 18:55:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG557159-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00266	-.00235	1.2589	.00070	.21183	-.00600	-.00004
Stddev	.00234	.00476	.0015	.00030	.00237	.00139	.00077
%RSD	87.987	202.86	.11694	43.654	1.1207	23.156	1835.0
#1	.00004	-.00059	1.2582	.00094	.20912	-.00755	-.00091
#2	-.00412	-.00773	1.2606	.00080	.21352	-.00559	.00025
#3	-.00392	.00129	1.2579	.00036	.21286	-.00487	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00044	.00406	F -.82019
Stddev	.00028	.00015	1.7393
%RSD	64.345	3.7355	212.07
#1	-.00034	.00410	.73541
#2	-.00076	.00419	-2.6982
#3	-.00022	.00389	-.49779
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12627.	92100.	3629.5
Stddev	32.	123.	28.3
%RSD	.25202	.13334	.78095
#1	12599.	92241.	3661.4
#2	12620.	92037.	3619.9
#3	12661.	92021.	3607.3

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 18:59:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41602	10.534	.41486	.51722	1.0552	.05311	10.604
Stddev	.00067	.026	.00312	.00398	.0089	.00036	.135
%RSD	.15992	.24665	.75315	.77021	.84827	.67543	1.2750
#1	.41528	10.521	.41228	.51284	1.0449	.05277	10.448
#2	.41625	10.518	.41397	.51819	1.0606	.05308	10.668
#3	.41655	10.564	.41834	.52063	1.0601	.05348	10.695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05261	.21150	.52971	.53141	4.2666	52.666	1.0675
Stddev	.00046	.00080	.00282	.00094	.0245	.497	.0156
%RSD	.88021	.37772	.53300	.17709	.57386	.94299	1.4638
#1	.05310	.21190	.52733	.53246	4.2406	52.141	1.0495
#2	.05256	.21202	.52897	.53111	4.2891	53.127	1.0776
#3	.05218	.21058	.53283	.53065	4.2702	52.731	1.0755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.754	.53858	1.0729	52.358	.53050	10.348	.52841
Stddev	.104	.00603	.0035	.434	.00155	.028	.00206
%RSD	.96299	1.1188	.32244	.82842	.29223	.26663	.38942
#1	10.661	.53164	1.0761	51.864	.53220	10.366	.53068
#2	10.866	.54245	1.0733	52.677	.53014	10.362	.52790
#3	10.734	.54165	1.0692	52.533	.52916	10.316	.52666
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 18:59:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2611	.41154	5.2608	1.0648	1.0585	1.0604	.53837
Stddev	.0013	.00384	.0086	.0032	.0086	.0122	.00181
%RSD	.10127	.93292	.16271	.29653	.81162	1.1473	.33653
#1	1.2604	.40945	5.2701	1.0680	1.0486	1.0517	.54017
#2	1.2604	.41597	5.2590	1.0648	1.0634	1.0552	.53839
#3	1.2626	.40920	5.2533	1.0617	1.0636	1.0743	.53655
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0524	1.0590	F -.18556
Stddev	.0057	.0012	.34541
%RSD	.54190	.10911	186.15
#1	1.0470	1.0604	-.44764
#2	1.0518	1.0584	-.31488
#3	1.0583	1.0584	.20585
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11494.	83624.	3395.8
Stddev	17.	309.	21.9
%RSD	.14920	.36932	.64463
#1	11476.	83973.	3416.7
#2	11497.	83517.	3397.9
#3	11509.	83384.	3373.0

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 19:03:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00125	-.00237	-.00208	.00212	.00012	.00000	.00718
Stddev	.00092	.00614	.00181	.00151	.00026	.00003	.04907
%RSD	73.653	258.62	87.146	71.469	210.40	1029.6	683.43
#1	-.00042	-.00725	-.00377	.00188	-.00012	-.00001	.06370
#2	-.00224	-.00439	-.00230	.00074	.00040	.00004	-.02446
#3	-.00109	.00452	-.00017	.00374	.00010	-.00002	-.01770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00046	-.00039	-.00043	-.00017	-.01330	-.02910	-.00171
Stddev	.00021	.00040	.00050	.00053	.01788	.05951	.00373
%RSD	45.352	101.44	115.16	316.29	134.45	204.51	218.08
#1	-.00033	-.00076	-.00016	.00020	-.03178	-.09778	.00253
#2	-.00035	.00002	-.00101	.00007	-.01202	.00729	-.00320
#3	-.00070	-.00043	-.00013	-.00078	.00391	.00319	-.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10907	.00250	.00119	.01386	-.00070	.00096	-.00018
Stddev	.07860	.00272	.00029	.01780	.00016	.00463	.00393
%RSD	72.059	108.83	24.471	128.48	22.681	480.71	2140.6
#1	.07415	.00371	.00153	.01889	-.00078	-.00266	-.00266
#2	.05399	-.00062	.00107	-.00592	-.00052	-.00062	-.00224
#3	.19908	.00441	.00098	.02860	-.00080	.00617	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 19:03:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00052	.00287	.00503	.00079	.00021	.00085	.00047
Stddev	.00265	.00183	.00201	.00052	.00023	.00349	.00143
%RSD	513.96	64.000	39.883	66.643	105.69	412.64	300.64
#1	-.00078	.00298	.00612	.00057	.00011	.00441	-.00096
#2	-.00302	.00464	.00626	.00041	.00006	-.00257	.00189
#3	.00226	.00098	.00272	.00139	.00047	.00071	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00003	.00042	F .23770
Stddev	.00082	.00033	2.4012
%RSD	2869.7	78.463	1010.2
#1	-.00041	.00027	2.8802
#2	-.00059	.00019	-1.8108
#3	.00091	.00079	-.35627
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11838.	86554.	3439.2
Stddev	28.	367.	26.7
%RSD	.23560	.42394	.77537
#1	11863.	86817.	3462.9
#2	11843.	86709.	3444.3
#3	11808.	86135.	3410.3

Approved: February 12, 2016

Sample Name: L1602044402 Acquired: 2/11/2016 19:07:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.05269	-.00030	.00966	.05997	-.00007	35.950	-.00009
Stddev	.00044	.00395	.00145	.00199	.00040	.00005	.168	.00006
%RSD	1102.3	7.4897	485.55	20.598	.66491	66.446	.46802	66.937
#1	-.00026	.05123	.00056	.01091	.06025	-.00008	35.812	-.00008
#2	.00046	.04968	.00051	.01072	.06016	-.00002	36.138	-.00003
#3	-.00032	.05716	-.00197	.00737	.05952	-.00012	35.901	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00055	.00067	.02317	.04002	.83617	.00077	5.1556	.00593
Stddev	.00026	.00073	.00186	.01087	.05223	.00342	.0834	.00124
%RSD	46.921	108.54	8.0386	27.172	6.2457	442.02	1.6171	20.976
#1	-.00084	.00149	.02362	.02747	.83379	.00448	5.1162	.00578
#2	-.00036	.00009	.02112	.04597	.88955	-.00225	5.0992	.00477
#3	-.00045	.00043	.02476	.04661	.78518	.00009	5.2514	.00725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	3.1555	.00031	.02196	-.00079	-.00175	-.00218	3.7142
Stddev	.00016	.0229	.00029	.00431	.00093	.00346	.00685	.0140
%RSD	56.118	.72553	95.596	19.635	117.65	198.24	314.86	.37568
#1	.00010	3.1336	.00034	.01705	-.00186	-.00246	.00548	3.7229
#2	.00038	3.1793	-.00000	.02514	-.00013	.00202	-.00774	3.7217
#3	.00039	3.1535	.00058	.02368	-.00039	-.00480	-.00427	3.6981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602044402 Acquired: 2/11/2016 19:07:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.13793	-.00585	-.00052	-.00012	.03676	1.4887
Stddev	.00062	.00092	.00668	.00133	.00061	.00025	2.0689
%RSD	82.019	.66509	114.20	255.92	518.86	.66785	138.97
#1	.00118	.13713	-.01164	-.00030	.00021	.03705	-.69813
#2	.00105	.13893	.00146	-.00194	.00026	.03662	3.4151
#3	.00004	.13773	-.00738	.00068	-.00082	.03662	1.7492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11906.	87227.	3514.0
Stddev	6.	190.	29.7
%RSD	.04810	.21755	.84421
#1	11910.	87381.	3519.0
#2	11910.	87285.	3482.1
#3	11900.	87015.	3540.8

Approved: February 12, 2016

Sample Name: L1602045401 Acquired: 2/11/2016 19:11:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00181	.02742	-.00151	.04362	.19260	.00004	23.222
Stddev	.00267	.00501	.00043	.00105	.00099	.00001	.060
%RSD	147.21	18.273	28.239	2.4073	.51386	15.329	.26037
#1	.00077	.03321	-.00114	.04419	.19373	.00004	23.291
#2	-.00018	.02446	-.00198	.04241	.19214	.00003	23.197
#3	.00484	.02460	-.00141	.04427	.19192	.00004	23.178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00145	-.00001	.00089	.07530	1.4155	.01793
Stddev	.00026	.00026	.00040	.00081	.00742	.0360	.00257
%RSD	217.50	17.991	5758.2	91.231	9.8532	2.5405	14.358
#1	-.00000	.00173	-.00007	.00180	.07444	1.4373	.01500
#2	.00042	.00140	.00042	.00062	.06836	1.3740	.01985
#3	-.00006	.00121	-.00037	.00025	.08312	1.4351	.01893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	29.766	.11781	.00010	F 279.37	.00069	.45565	-.00015
Stddev	.139	.00165	.00019	1.18	.00062	.01316	.00250
%RSD	.46693	1.4009	199.05	.42345	90.091	2.8876	1632.6
#1	29.670	.11884	.00030	280.71	.00109	.47025	.00224
#2	29.925	.11591	.00009	278.96	-.00003	.45197	.00004
#3	29.702	.11869	-.00009	278.45	.00100	.44471	-.00274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: February 12, 2016

Sample Name: L1602045401 Acquired: 2/11/2016 19:11:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00141	.00036	14.427	.00013	.47684	-.00236	-.00161
Stddev	.00147	.00434	.115	.00016	.00177	.00651	.00092
%RSD	104.00	1222.3	.79812	123.84	.37025	275.68	57.265
#1	-.00019	.00474	14.511	.00025	.47882	.00422	-.00167
#2	-.00303	.00027	14.473	-.00005	.47543	-.00252	-.00250
#3	-.00101	-.00394	14.296	.00018	.47626	-.00879	-.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00011	.01228	2.2852
Stddev	.00062	.00023	1.9752
%RSD	540.24	1.8424	86.434
#1	.00017	.01206	4.3188
#2	.00031	.01251	2.1625
#3	-.00082	.01225	.37418
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11485.	83175.	3507.4
Stddev	17.	256.	7.6
%RSD	.14658	.30823	.21765
#1	11466.	83008.	3500.5
#2	11499.	83470.	3515.6
#3	11489.	83046.	3505.9

Approved: February 12, 2016

Sample Name: L1602045402 Acquired: 2/11/2016 19:15:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.01938	.00148	.04108	.18485	.00003	23.126	.00012
Stddev	.00171	.00605	.00109	.00101	.00137	.00002	.180	.00013
%RSD	1126.6	31.201	73.701	2.4671	.74032	73.959	.77625	104.63
#1	-.00208	.01253	.00033	.04025	.18518	.00003	23.154	.00026
#2	.00117	.02162	.00162	.04221	.18603	.00001	23.290	.00001
#3	.00046	.02399	.00249	.04078	.18335	.00005	22.934	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00128	.00080	-.00034	.06283	1.1342	.01608	29.758	.12077
Stddev	.00005	.00050	.00070	.00646	.0565	.00317	.209	.00168
%RSD	3.9354	62.929	207.73	10.285	4.9832	19.731	.70090	1.3893
#1	.00133	.00045	-.00064	.06350	1.0690	.01431	29.752	.11893
#2	.00125	.00058	-.00083	.05606	1.1660	.01975	29.970	.12221
#3	.00125	.00137	.00046	.06893	1.1678	.01420	29.553	.12116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	267.86	.00256	.51245	-.00121	-.00036	-.00428	13.483
Stddev	.00032	1.92	.00063	.00492	.00140	.00268	.00388	.056
%RSD	150.49	.71648	24.596	.96068	115.15	742.47	90.489	.41671
#1	.00006	268.40	.00255	.51340	-.00218	.00272	.00008	13.526
#2	.00057	269.44	.00193	.51683	-.00185	-.00215	-.00734	13.505
#3	-.00001	265.72	.00319	.50712	.00039	-.00165	-.00559	13.420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602045402 Acquired: 2/11/2016 19:15:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.46941	-.00841	-.00361	-.00094	.01039	2.5697
Stddev	.00085	.00254	.00042	.00225	.00022	.00014	1.4129
%RSD	177.03	.54158	5.0278	62.257	23.628	1.3249	54.983
#1	-.00050	.47038	-.00817	-.00265	-.00072	.01023	2.8743
#2	.00090	.47133	-.00890	-.00619	-.00092	.01044	1.0293
#3	.00103	.46653	-.00817	-.00201	-.00116	.01049	3.8054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11532.	83257.	3496.5
Stddev	4.	191.	28.7
%RSD	.03645	.22885	.81979
#1	11527.	83037.	3464.1
#2	11533.	83356.	3506.8
#3	11535.	83377.	3518.5

Approved: February 12, 2016

Sample Name: L1602046001 Acquired: 2/11/2016 19:19:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00059	.03525	.00229	.09157	.02089	-.00004	9.3840	.00034
Stddev	.00249	.00665	.00320	.00272	.00071	.00004	.0825	.00011
%RSD	419.19	18.869	139.56	2.9699	3.4217	111.83	.87880	32.958
#1	.00201	.04293	.00472	.08893	.02055	-.00007	9.4089	.00042
#2	-.00084	.03149	-.00133	.09437	.02171	-.00004	9.4512	.00038
#3	-.00295	.03132	.00350	.09142	.02040	.00001	9.2920	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00032	.03980	.01385	1.2803	-.00077	1.8543	1.3125
Stddev	.00028	.00052	.00036	.01718	.0677	.00225	.0696	.0122
%RSD	348.46	163.66	.89801	124.03	5.2871	293.35	3.7518	.92788
#1	.00014	-.00005	.03987	-.00262	1.3262	.00134	1.8925	1.3199
#2	-.00023	.00009	.04012	.01252	1.3122	-.00314	1.8965	1.3192
#3	.00033	.00092	.03942	.03166	1.2026	-.00050	1.7740	1.2985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	121.84	.00422	.75193	.00027	-.00155	-.00240	.30393
Stddev	.00018	.78	.00078	.00342	.00208	.00608	.00283	.00368
%RSD	91.942	.64203	18.456	.45547	780.57	391.89	117.99	1.2110
#1	-.00020	122.17	.00505	.75162	-.00111	-.00057	-.00340	.30668
#2	-.00037	122.40	.00351	.75549	-.00076	.00398	.00080	.30536
#3	-.00001	120.94	.00410	.74867	.00267	-.00806	-.00459	.29975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602046001 Acquired: 2/11/2016 19:19:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00130	.14449	-.00472	-.00213	.00038	.19932	.52661
Stddev	.00100	.00064	.00439	.00197	.00051	.00105	.63732
%RSD	76.925	.44255	93.027	92.531	134.94	.52915	121.02
#1	.00030	.14446	-.00606	-.00023	-.00009	.20011	.30977
#2	.00130	.14514	-.00828	-.00199	.00030	.19972	.02601
#3	.00230	.14386	.00019	-.00417	.00092	.19812	1.2441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11712.	85524.	3493.0
Stddev	27.	335.	29.2
%RSD	.22735	.39164	.83733
#1	11709.	85906.	3468.8
#2	11740.	85279.	3484.7
#3	11687.	85388.	3525.5

Approved: February 12, 2016

Sample Name: L1602047101 Acquired: 2/11/2016 19:23:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.03153	-.00109	.02355	.06926	-.00005	59.137	.00007
Stddev	.00124	.00356	.00148	.00046	.00067	.00004	.594	.00015
%RSD	941.45	11.285	135.40	1.9496	.96358	87.572	1.0053	203.78
#1	.00150	.02962	-.00040	.02380	.06931	-.00009	58.568	-.00000
#2	-.00020	.02933	-.00278	.02384	.06991	-.00000	59.754	-.00002
#3	-.00091	.03564	-.00009	.02302	.06858	-.00006	59.090	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00048	.00027	.46018	.02923	1.2229	.00144	9.5570	.00258
Stddev	.00046	.00014	.00180	.02422	.0406	.00305	.0531	.00094
%RSD	94.792	51.259	.39014	82.886	3.3236	212.01	.55587	36.496
#1	.00004	.00036	.46080	.00149	1.1771	.00388	9.5961	.00174
#2	-.00069	.00035	.46158	.03994	1.2373	-.00198	9.5783	.00240
#3	-.00079	.00011	.45816	.04624	1.2545	.00242	9.4965	.00360
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	36.483	-.00046	-.02872	-.00106	-.00139	-.00188	3.4786
Stddev	.00040	.290	.00001	.00680	.00076	.00207	.00461	.0166
%RSD	138.94	.79477	2.9580	23.663	71.947	148.90	245.36	.47674
#1	.00068	36.230	-.00047	-.02547	-.00024	-.00345	-.00688	3.4889
#2	.00030	36.800	-.00044	-.02416	-.00120	.00069	-.00096	3.4875
#3	-.00012	36.419	-.00046	-.03653	-.00174	-.00142	.00220	3.4595
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602047101 Acquired: 2/11/2016 19:23:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.20146	-.00492	-.00236	-.00103	.03771	1.0127
Stddev	.00037	.00258	.00231	.00242	.00083	.00028	3.4788
%RSD	57.276	1.2785	47.078	102.69	80.383	.74858	343.50
#1	.00022	.19917	-.00592	-.00515	-.00008	.03780	1.7707
#2	.00089	.20425	-.00655	-.00078	-.00156	.03794	4.0501
#3	.00083	.20095	-.00227	-.00115	-.00146	.03740	-2.7825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11726.	86152.	3468.9
Stddev	23.	166.	11.8
%RSD	.19982	.19281	.34092
#1	11739.	85967.	3481.2
#2	11699.	86198.	3457.6
#3	11740.	86290.	3468.0

Approved: February 12, 2016

Sample Name: L1602047201 Acquired: 2/11/2016 19:27:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.04247	.00053	.03741	.74335	-.00003	29.490	-.00003
Stddev	.00090	.00466	.00144	.00134	.00506	.00002	.234	.00017
%RSD	294.26	10.984	271.72	3.5933	.68093	78.159	.79244	502.19
#1	.00133	.04784	-.00108	.03863	.74098	-.00003	29.425	.00003
#2	-.00004	.03944	.00098	.03763	.74916	-.00005	29.749	-.00023
#3	-.00037	.04012	.00169	.03597	.73991	-.00000	29.295	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	-.00021	.00927	.15845	1.1007	.00105	4.8522	.05194
Stddev	.00022	.00106	.00073	.02405	.0417	.00389	.0437	.00225
%RSD	110.29	505.71	7.9172	15.176	3.7878	371.74	.89979	4.3245
#1	-.00037	-.00017	.00910	.18343	1.0543	.00390	4.8995	.05032
#2	-.00029	.00083	.01007	.15647	1.1351	-.00339	4.8436	.05450
#3	.00005	-.00129	.00863	.13546	1.1126	.00263	4.8135	.05099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	27.617	-.00009	.01703	.00379	.00130	-.00340	5.1240
Stddev	.00040	.221	.00053	.00899	.00150	.00198	.00911	.0358
%RSD	209.04	.80068	614.50	52.783	39.720	152.63	268.32	.69921
#1	.00007	27.568	.00008	.02606	.00442	.00103	-.01244	5.1543
#2	-.00013	27.858	.00034	.00809	.00207	-.00054	-.00353	5.1332
#3	.00063	27.424	-.00067	.01693	.00487	.00340	.00578	5.0845
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602047201 Acquired: 2/11/2016 19:27:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.39616	-.00260	-.00300	-.00022	.01191	1.7697
Stddev	.00037	.00325	.00258	.00062	.00055	.00026	1.1632
%RSD	42.487	.81974	99.168	20.730	244.79	2.1624	65.730
#1	.00113	.39450	.00038	-.00228	-.00086	.01217	.81833
#2	.00044	.39991	-.00399	-.00338	.00007	.01191	1.4242
#3	.00101	.39409	-.00419	-.00333	.00012	.01166	3.0665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11806.	86662.	3497.0
Stddev	8.	221.	23.5
%RSD	.06982	.25544	.67336
#1	11799.	86899.	3521.4
#2	11815.	86461.	3474.4
#3	11804.	86626.	3495.1

Approved: February 12, 2016

Sample Name: L1602047202 Acquired: 2/11/2016 19:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.93451	.00082	.00617	.03499	.00002	20.165	.00005
Stddev	.00052	.00434	.00230	.00027	.00144	.00005	.073	.00012
%RSD	94.711	.46445	281.20	4.3121	4.1023	234.39	.36177	216.85
#1	.00034	.93375	-.00184	.00609	.03441	-.00003	20.226	.00005
#2	.00114	.93918	.00224	.00647	.03662	.00003	20.185	-.00006
#3	.00016	.93060	.00205	.00596	.03393	.00006	20.084	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00172	.00297	1.0744	.79406	.00234	4.4618	.03693
Stddev	.00015	.00017	.00086	.0168	.07518	.00325	.1003	.00145
%RSD	73.373	10.090	28.919	1.5626	9.4679	139.12	2.2483	3.9398
#1	.00034	.00153	.00325	1.0699	.71346	.00546	4.3611	.03858
#2	.00022	.00188	.00367	1.0930	.86229	-.00103	4.5617	.03639
#3	.00004	.00174	.00201	1.0604	.80642	.00259	4.4627	.03582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	1.9514	.00187	.03026	.00063	-.00118	-.00414	4.1217
Stddev	.00047	.0226	.00118	.00472	.00155	.00161	.00588	.0576
%RSD	275.27	1.1596	63.303	15.594	244.21	136.06	142.04	1.3973
#1	.00007	1.9485	.00133	.02690	.00066	-.00285	-.01078	4.1570
#2	-.00071	1.9754	.00322	.03566	.00217	.00036	-.00205	4.1528
#3	.00014	1.9304	.00105	.02823	-.00093	-.00106	.00041	4.0552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602047202 Acquired: 2/11/2016 19:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.06551	.02287	-.00173	.00108	.01392	4.5467
Stddev	.00025	.00029	.00207	.00178	.00043	.00018	2.8856
%RSD	34.241	.44832	9.0593	103.18	39.978	1.3148	63.467
#1	.00071	.06560	.02526	.00019	.00075	.01388	6.6735
#2	.00049	.06574	.02162	-.00203	.00092	.01412	1.2619
#3	.00099	.06518	.02172	-.00334	.00157	.01376	5.7046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11916.	87746.	3490.4
Stddev	8.	308.	10.7
%RSD	.06850	.35071	.30566
#1	11920.	87416.	3488.4
#2	11907.	88025.	3480.8
#3	11922.	87797.	3501.9

Approved: February 12, 2016

Sample Name: L1602047401 Acquired: 2/11/2016 19:35:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.04446	-.00004	.01142	.03967	-.00003	46.850	.00001
Stddev	.00055	.01005	.00049	.00054	.00069	.00002	.178	.00014
%RSD	61.569	22.614	1233.4	4.7358	1.7389	85.960	.37999	2426.0
#1	.00152	.05605	-.00014	.01081	.04047	-.00003	46.675	-.00014
#2	.00068	.03929	-.00047	.01161	.03920	-.00004	47.031	.00002
#3	.00048	.03804	.00049	.01184	.03935	-.00000	46.845	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00063	.00646	.05974	1.1234	.00162	11.354	.00341
Stddev	.00019	.00055	.00132	.01883	.0747	.00230	.103	.00128
%RSD	83.665	88.101	20.500	31.518	6.6472	141.66	.90896	37.635
#1	-.00027	-.00001	.00603	.03937	1.2081	.00245	11.236	.00399
#2	-.00002	.00097	.00794	.06332	1.0949	.00339	11.429	.00430
#3	-.00039	.00092	.00540	.07652	1.0671	-.00097	11.396	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	3.0578	.00023	.00421	-.00165	.00063	-.00400	3.4359
Stddev	.00018	.0495	.00115	.00338	.00294	.00174	.00612	.0170
%RSD	16.780	1.6205	496.21	80.258	178.07	275.93	153.18	.49435
#1	.00127	3.0225	-.00110	.00066	-.00292	-.00021	-.01003	3.4486
#2	.00091	3.1144	.00089	.00739	.00171	-.00053	-.00416	3.4425
#3	.00108	3.0363	.00091	.00457	-.00375	.00263	.00220	3.4166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602047401 Acquired: 2/11/2016 19:35:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.18815	-.00622	-.00309	-.00077	.00566	2.8554
Stddev	.00086	.00078	.00351	.00261	.00134	.00012	.8434
%RSD	211.57	.41368	56.507	84.509	172.85	2.1288	29.539
#1	.00078	.18726	-.00941	-.00482	-.00229	.00580	3.2075
#2	.00102	.18873	-.00245	-.00009	.00024	.00557	1.8929
#3	-.00058	.18844	-.00679	-.00435	-.00027	.00562	3.4657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11832.	86966.	3494.3
Stddev	39.	99.	19.8
%RSD	.32905	.11381	.56801
#1	11792.	87073.	3502.3
#2	11836.	86878.	3471.6
#3	11869.	86945.	3508.8

Approved: February 12, 2016

Sample Name: L1602047501 Acquired: 2/11/2016 19:39:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.10041	-.00109	.00439	.03729	-.00006	35.714	.00022
Stddev	.00125	.00639	.00098	.00098	.00111	.00004	.182	.00005
%RSD	140.05	6.3589	89.930	22.380	2.9753	65.864	.50881	23.795
#1	-.00055	.10773	-.00212	.00503	.03820	-.00008	35.723	.00016
#2	.00157	.09755	-.00101	.00489	.03761	-.00001	35.892	.00026
#3	.00165	.09596	-.00016	.00326	.03606	-.00007	35.529	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00055	.00022	.00142	.05480	.68428	.00381	3.7524	.00386
Stddev	.00039	.00046	.00076	.00382	.01165	.00311	.0717	.00055
%RSD	70.753	207.56	53.717	6.9709	1.7025	81.660	1.9111	14.228
#1	-.00098	-.00022	.00211	.05461	.67473	.00706	3.6724	.00362
#2	-.00040	.00019	.00060	.05872	.69726	.00085	3.8109	.00448
#3	-.00025	.00069	.00154	.05109	.68084	.00353	3.7738	.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	1.9171	.00115	.01649	.00140	-.00368	.00099	3.2656
Stddev	.00012	.0150	.00106	.00640	.00205	.00178	.00312	.0520
%RSD	34.587	.78339	92.447	38.831	146.81	48.353	313.95	1.5939
#1	.00044	1.8998	.00236	.02353	.00368	-.00233	-.00261	3.2997
#2	.00037	1.9247	.00072	.01100	-.00028	-.00301	.00273	3.2915
#3	.00021	1.9268	.00037	.01494	.00079	-.00569	.00286	3.2057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602047501 Acquired: 2/11/2016 19:39:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.08628	.00114	-.00041	.00039	.00277	.56446
Stddev	.00018	.00040	.00429	.00103	.00025	.00016	.27970
%RSD	135.86	.46185	376.32	249.03	65.605	5.7019	49.552
#1	.00017	.08625	-.00333	-.00084	.00030	.00259	.40840
#2	.00028	.08670	.00522	-.00117	.00067	.00284	.88736
#3	-.00006	.08590	.00152	.00076	.00019	.00288	.39760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11923.	87549.	3507.9
Stddev	1.	123.	16.9
%RSD	.01225	.14026	.48121
#1	11922.	87627.	3507.6
#2	11923.	87407.	3491.2
#3	11925.	87613.	3524.9

Approved: February 12, 2016

Sample Name: L1602051601 Acquired: 2/11/2016 19:43:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00626	-.00088	.00506	.00077	.00003	.07070	-.00005
Stddev	.00105	.00247	.00077	.00179	.00016	.00004	.00530	.00022
%RSD	129.58	39.462	87.438	35.366	21.414	134.34	7.5023	459.80
#1	-.00013	.00342	-.00023	.00711	.00058	-.00001	.07591	-.00002
#2	.00062	.00745	-.00172	.00379	.00089	.00006	.07088	-.00028
#3	.00194	.00790	-.00067	.00428	.00084	.00003	.06531	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00036	.00015	.00119	.05897	-.00217	.07139	.00152
Stddev	.00007	.00036	.00062	.01309	.04484	.00543	.04843	.00044
%RSD	37.008	99.307	410.77	1098.4	76.030	250.11	67.833	29.146
#1	.00011	-.00004	.00083	-.00550	.08996	-.00605	.12310	.00166
#2	.00024	.00047	-.00039	-.00720	.00756	.00403	.02710	.00187
#3	.00024	.00066	.00001	.01628	.07941	-.00448	.06398	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	121.36	.00017	-.00103	-.00108	-.00328	-.00709	.01790
Stddev	.00012	.26	.00077	.00659	.00128	.00115	.00559	.00103
%RSD	1472.2	.21114	444.09	640.72	118.25	34.988	78.896	5.7510
#1	-.00011	121.32	.00074	-.00098	-.00127	-.00208	-.00796	.01721
#2	-.00005	121.64	-.00070	.00553	.00028	-.00437	-.01220	.01908
#3	.00013	121.13	.00048	-.00764	-.00225	-.00340	-.00111	.01740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602051601 Acquired: 2/11/2016 19:43:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	-.00004	-.00343	-.00101	-.00015	.00449	1.4130
Stddev	.00098	.00010	.00434	.00017	.00058	.00030	3.9817
%RSD	103.99	243.93	126.44	16.519	381.09	6.6200	281.79
#1	-.00009	-.00013	-.00811	-.00120	-.00076	.00432	5.1346
#2	.00106	.00006	-.00265	-.00094	-.00011	.00484	1.8903
#3	.00187	-.00004	.00046	-.00089	.00040	.00432	-2.7859
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11828.	85774.	3521.0
Stddev	19.	243.	20.2
%RSD	.16403	.28297	.57491
#1	11821.	86050.	3505.5
#2	11813.	85678.	3513.7
#3	11850.	85594.	3543.9

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 19:47:54 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41319	10.435	.41238	.50941	1.0372	.05287	10.424
Stddev	.00153	.016	.00282	.00054	.0027	.00015	.026
%RSD	.36919	.14936	.68317	.10633	.25851	.28532	.24705
#1	.41367	10.417	.41245	.50890	1.0345	.05277	10.416
#2	.41442	10.447	.41516	.50936	1.0398	.05304	10.453
#3	.41149	10.441	.40952	.50998	1.0374	.05280	10.404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05220	.20929	.52727	.52571	4.2274	51.578	1.0546
Stddev	.00038	.00114	.00220	.00249	.0477	.166	.0042
%RSD	.72414	.54453	.41747	.47390	1.1294	.32238	.39340
#1	.05218	.21033	.52536	.52598	4.2542	51.501	1.0542
#2	.05259	.20947	.52968	.52806	4.2556	51.769	1.0589
#3	.05184	.20807	.52678	.52310	4.1722	51.465	1.0506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.678	.53089	1.0609	51.277	.52218	10.226	.52124
Stddev	.093	.00204	.0060	.184	.00266	.054	.00197
%RSD	.87052	.38504	.56079	.35931	.50900	.52635	.37799
#1	10.784	.52893	1.0652	51.209	.52315	10.262	.52307
#2	10.636	.53073	1.0634	51.486	.52421	10.252	.52150
#3	10.613	.53301	1.0541	51.136	.51917	10.164	.51915
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 19:47:54 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2390	.40465	5.2026	1.0519	1.0399	1.0402	.53081
Stddev	.0064	.00298	.0203	.0052	.0061	.0012	.00195
%RSD	.51647	.73725	.38990	.49621	.58802	.11312	.36746
#1	1.2447	.40736	5.2182	1.0564	1.0365	1.0399	.53285
#2	1.2402	.40513	5.2100	1.0531	1.0469	1.0392	.52896
#3	1.2321	.40145	5.1797	1.0462	1.0362	1.0415	.53063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0458	1.0462	F -1.2395
Stddev	.0021	.0037	.6302
%RSD	.20039	.35101	50.849
#1	1.0434	1.0492	-1.9665
#2	1.0467	1.0473	-.90314
#3	1.0473	1.0421	-.84869
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11615.	83836.	3413.7
Stddev	28.	521.	21.8
%RSD	.23963	.62146	.63814
#1	11593.	84287.	3409.8
#2	11646.	83266.	3394.2
#3	11605.	83955.	3437.2

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 19:51:38 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00105	.00041	.00072	.00052	.00001	-.01703
Stddev	.00029	.00097	.00313	.00100	.00043	.00005	.01216
%RSD	187.40	93.108	756.33	139.05	82.637	1012.9	71.390
#1	.00011	.00091	.00360	.00153	.00100	.00007	-.00674
#2	.00047	.00014	.00030	.00101	.00019	-.00003	-.01390
#3	-.00011	.00208	-.00266	-.00039	.00036	-.00002	-.03044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00033	.00018	.00054	.00322	-.00299	-.00560
Stddev	.00012	.00020	.00009	.00081	.01006	.04818	.00042
%RSD	116.69	61.808	49.178	149.97	312.13	1611.1	7.5499
#1	-.00013	-.00049	.00010	.00038	.01483	-.04040	-.00608
#2	.00003	-.00010	.00016	.00141	-.00273	.05137	-.00536
#3	-.00022	-.00040	.00028	-.00018	-.00244	-.01994	-.00534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08585	.00139	.00133	.01827	-.00029	.00440	-.00155
Stddev	.00547	.00056	.00039	.02072	.00100	.00728	.00056
%RSD	6.3720	40.523	29.367	113.44	350.00	165.59	35.878
#1	.08315	.00178	.00155	.04200	.00074	.00560	-.00200
#2	.09214	.00075	.00156	.00903	-.00033	.01101	-.00173
#3	.08226	.00164	.00088	.00377	-.00127	-.00341	-.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 19:51:38 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00142	-.00228	.00244	.00113	.00002	-.00514	-.00182
Stddev	.00144	.00319	.00077	.00092	.00007	.00956	.00323
%RSD	100.92	139.87	31.749	81.030	292.19	185.97	177.58
#1	.00007	.00036	.00177	.00129	-.00001	.00143	-.00113
#2	-.00279	-.00138	.00329	.00196	.00010	-.01611	-.00534
#3	-.00155	-.00583	.00227	.00015	-.00002	-.00074	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00024	.00034	F -.49882
Stddev	.00103	.00021	2.5607
%RSD	429.44	62.406	513.34
#1	.00087	.00012	.81886
#2	-.00095	.00054	-3.4500
#3	.00080	.00035	1.1347
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11946.	87282.	3460.6
Stddev	25.	351.	18.5
%RSD	.20816	.40259	.53550
#1	11917.	86990.	3450.3
#2	11963.	87184.	3482.0
#3	11957.	87672.	3449.6

Approved: February 12, 2016

Sample Name: L1602051602 Acquired: 2/11/2016 19:55:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.00979	-.00250	.00679	.00029	-.00002	.06114	-.00011
Stddev	.00062	.00318	.00071	.00086	.00026	.00004	.03334	.00010
%RSD	183.79	32.453	28.262	12.736	89.477	168.91	54.526	89.205
#1	-.00098	.01344	-.00242	.00632	.00038	-.00002	.09938	-.00005
#2	.00026	.00829	-.00183	.00779	-.00000	-.00006	.04584	-.00022
#3	-.00030	.00764	-.00324	.00626	.00050	.00002	.03820	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	-.00030	-.00046	.00189	.05398	-.00289	.09741	.00352
Stddev	.00041	.00112	.00213	.01456	.02522	.00211	.00829	.00168
%RSD	895.75	377.81	457.98	769.77	46.731	72.981	8.5136	47.782
#1	.00052	-.00048	-.00235	-.01333	.02485	-.00177	.09998	.00378
#2	-.00012	-.00132	.00184	.01570	.06820	-.00533	.10411	.00172
#3	-.00026	.00091	-.00088	.00330	.06888	-.00158	.08813	.00506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	121.89	.00003	-.00505	-.00146	-.00161	-.00165	.01083
Stddev	.00044	.87	.00106	.00077	.00129	.00197	.00267	.00263
%RSD	97.252	.71188	3018.0	15.258	87.862	122.68	162.31	24.268
#1	.00089	121.91	.00048	-.00593	-.00005	-.00272	.00088	.01373
#2	.00001	122.75	-.00117	-.00446	-.00257	.00067	-.00444	.01018
#3	.00045	121.01	.00080	-.00478	-.00177	-.00276	-.00137	.00859
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602051602 Acquired: 2/11/2016 19:55:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.00013	-.00260	-.00225	-.00036	.00453	1.6377
Stddev	.00107	.00024	.00320	.00310	.00109	.00013	.6237
%RSD	101.63	189.61	123.29	137.53	301.45	2.8557	38.083
#1	.00075	-.00003	-.00168	-.00447	.00037	.00465	.94017
#2	.00017	.00001	-.00616	.00129	.00016	.00456	1.8314
#3	.00225	.00040	.00004	-.00358	-.00162	.00439	2.1416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11852.	85986.	3539.0
Stddev	36.	358.	24.2
%RSD	.30651	.41627	.68364
#1	11815.	85584.	3525.1
#2	11888.	86103.	3525.0
#3	11852.	86270.	3566.9

Approved: February 12, 2016

Sample Name: L1602051603 Acquired: 2/11/2016 19:59:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.00868	-.00201	.00506	.00045	-.00007	.07520	-.00001
Stddev	.00151	.00661	.00404	.00067	.00080	.00001	.00705	.00013
%RSD	232.83	76.133	200.87	13.205	180.39	11.739	9.3764	1045.6
#1	.00184	.00469	-.00044	.00543	.00049	-.00007	.07341	-.00012
#2	.00114	.00504	-.00660	.00545	-.00038	-.00008	.08298	.00013
#3	-.00104	.01631	.00100	.00429	.00123	-.00007	.06922	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	-.00030	-.00020	-.00173	-.00539	-.00147	.07546	.00316
Stddev	.00046	.00036	.00111	.02327	.04164	.00135	.09931	.00110
%RSD	154.18	122.78	564.80	1341.8	772.06	91.916	131.61	34.976
#1	.00008	.00001	-.00067	-.02796	-.05348	-.00266	.18480	.00288
#2	-.00002	-.00020	.00107	.01645	.01895	-.00000	.05070	.00222
#3	.00083	-.00070	-.00099	.00631	.01835	-.00174	-.00913	.00438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	119.48	-.00028	-.00528	-.00184	-.00158	-.00225	.01336
Stddev	.00012	.52	.00052	.00132	.00036	.00167	.00815	.00076
%RSD	36.210	.43477	186.17	25.044	19.759	105.41	363.07	5.7223
#1	.00031	120.07	.00032	-.00377	-.00212	-.00219	-.01034	.01310
#2	.00044	119.10	-.00056	-.00583	-.00198	.00030	-.00236	.01423
#3	.00021	119.27	-.00060	-.00624	-.00143	-.00287	.00597	.01277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602051603 Acquired: 2/11/2016 19:59:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00025	.00097	-.00415	.00018	.00464	.34403
Stddev	.00078	.00014	.00050	.00262	.00140	.00007	1.9619
%RSD	79.964	56.899	51.559	63.086	772.75	1.4716	570.27
#1	.00141	.00018	.00043	-.00114	.00026	.00469	-.66789
#2	.00145	.00016	.00109	-.00585	.00154	.00456	2.6053
#3	.00008	.00041	.00141	-.00548	-.00126	.00465	-.90530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11858.	86346.	3555.5
Stddev	31.	271.	37.3
%RSD	.25870	.31379	1.0480
#1	11869.	86052.	3515.2
#2	11824.	86401.	3588.7
#3	11882.	86586.	3562.6

Approved: February 12, 2016

Sample Name: L1602052002 Acquired: 2/11/2016 20:03:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00208	.00231	.00658	.00058	-.00003	2.8412	.00003
Stddev	.00118	.00322	.00309	.00077	.00045	.00003	.0248	.00018
%RSD	162.00	154.75	133.64	11.712	78.447	126.40	.87255	654.82
#1	.00189	.00231	.00457	.00746	.00100	-.00004	2.8485	-.00018
#2	.00077	.00518	.00357	.00621	.00063	.00001	2.8615	.00013
#3	-.00047	-.00125	-.00121	.00606	.00010	-.00005	2.8136	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00029	.00107	-.00156	14.140	-.00145	.64185	.00347
Stddev	.00015	.00111	.00018	.01411	.078	.00074	.03940	.00180
%RSD	162.26	379.93	17.111	905.50	.55374	50.908	6.1391	51.925
#1	-.00012	-.00010	.00089	.01454	14.084	-.00132	.59746	.00502
#2	-.00023	-.00057	.00106	-.01179	14.230	-.00079	.65540	.00388
#3	.00007	.00155	.00126	-.00743	14.107	-.00225	.67270	.00150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	25.672	.00151	1.1783	-.00171	-.00024	.00082	.20325
Stddev	.00008	.078	.00042	.0139	.00141	.00137	.00031	.00238
%RSD	8.0806	.30501	28.119	1.1832	82.822	571.03	38.308	1.1685
#1	.00090	25.747	.00187	1.1918	-.00024	-.00032	.00059	.20569
#2	.00098	25.679	.00162	1.1790	-.00181	.00117	.00069	.20095
#3	.00106	25.591	.00104	1.1640	-.00307	-.00157	.00117	.20311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602052002 Acquired: 2/11/2016 20:03:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	.00240	.00261	-.00185	.00032	.00721	2.2443
Stddev	.00063	.00051	.00076	.00117	.00054	.00025	2.4879
%RSD	49.924	21.181	29.097	63.076	168.48	3.4567	110.86
#1	.00146	.00185	.00227	-.00317	.00090	.00723	-.55477
#2	.00178	.00285	.00208	-.00140	-.00016	.00746	4.2040
#3	.00056	.00249	.00348	-.00098	.00022	.00696	3.0837
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12131.	89266.	3583.3
Stddev	16.	283.	8.7
%RSD	.13235	.31664	.24151
#1	12122.	89082.	3593.2
#2	12121.	89124.	3577.5
#3	12150.	89591.	3579.2

Approved: February 12, 2016

Sample Name: L1602052004 Acquired: 2/11/2016 20:08:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.09307	-.00088	.01037	.01167	-.00011	73.043	.00023
Stddev	.00044	.00037	.00143	.00107	.00054	.00001	.369	.00005
%RSD	99.761	.39659	163.16	10.348	4.6239	8.7563	.50467	22.752
#1	.00009	.09345	-.00017	.01070	.01223	-.00010	73.466	.00017
#2	.00093	.09306	-.00253	.01125	.01162	-.00011	72.872	.00027
#3	.00029	.09271	.00006	.00918	.01115	-.00012	72.791	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00280	.01396	.31050	16.403	.00389	3.3737	.17854
Stddev	.00021	.00008	.00099	.01570	.082	.00418	.0850	.00123
%RSD	70.567	2.8431	7.0643	5.0574	.50285	107.52	2.5201	.68688
#1	.00016	.00277	.01285	.32271	16.432	.00001	3.4410	.17996
#2	.00020	.00289	.01472	.31601	16.310	.00334	3.2781	.17782
#3	.00054	.00274	.01433	.29278	16.468	.00832	3.4019	.17785
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	29.471	.00365	40.361	.00092	-.00577	.00181	.40590
Stddev	.00027	.164	.00043	.286	.00255	.00221	.00163	.00420
%RSD	18.622	.55534	11.647	.70979	276.20	38.352	90.308	1.0342
#1	.00170	29.652	.00384	40.526	-.00040	-.00357	.00018	.40634
#2	.00155	29.426	.00317	40.528	-.00070	-.00800	.00181	.40987
#3	.00117	29.334	.00395	40.031	.00387	-.00575	.00344	.40150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602052004 Acquired: 2/11/2016 20:08:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.04959	-.00656	-.00288	.00070	.07789	1.6577
Stddev	.00033	.00044	.00385	.00136	.00025	.00053	2.1287
%RSD	68.138	.88362	58.736	47.226	35.380	.67504	128.41
#1	.00014	.05007	-.00633	-.00276	.00060	.07844	-.73853
#2	.00050	.04948	-.01053	-.00429	.00051	.07784	3.3301
#3	.00079	.04922	-.00283	-.00158	.00098	.07739	2.3816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12529.	92588.	3817.4
Stddev	21.	115.	34.1
%RSD	.17117	.12409	.89209
#1	12553.	92719.	3783.6
#2	12519.	92507.	3817.0
#3	12514.	92538.	3851.7

Approved: February 12, 2016

Sample Name: L1602052006 Acquired: 2/11/2016 20:12:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	-.00942	-.00151	.00117	.00079	-.00005	6.9553	.00000
Stddev	.00008	.00383	.00289	.00106	.00027	.00002	.0631	.00017
%RSD	16.336	40.656	191.08	90.122	33.953	45.352	.90673	6819.5
#1	.00059	-.01149	-.00304	-.00003	.00048	-.00008	6.9147	.00020
#2	.00045	-.01177	-.00332	.00160	.00092	-.00006	7.0279	-.00012
#3	.00045	-.00500	.00182	.00194	.00097	-.00003	6.9232	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00021	.00012	.00499	2.2798	.00026	.32406	.03169
Stddev	.00021	.00052	.00099	.01945	.0054	.00198	.05483	.00243
%RSD	55.138	243.97	821.42	389.88	.23771	762.16	16.921	7.6609
#1	-.00025	.00065	-.00069	-.01745	2.2773	.00140	.26204	.03449
#2	-.00062	-.00036	.00122	.01535	2.2761	-.00203	.34400	.03014
#3	-.00027	.00034	-.00017	.01706	2.2860	.00141	.36613	.03045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.74177	.00024	.18779	-.00018	-.00322	.00230	.07410
Stddev	.00022	.01031	.00064	.00801	.00058	.00258	.00308	.00108
%RSD	227.28	1.3893	261.78	4.2647	313.63	79.937	133.86	1.4521
#1	-.00001	.73342	.00079	.18437	-.00024	-.00612	.00461	.07399
#2	-.00034	.75329	.00040	.19694	-.00073	-.00119	-.00120	.07309
#3	.00007	.73859	-.00046	.18206	.00042	-.00235	.00349	.07523
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602052006 Acquired: 2/11/2016 20:12:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.01081	.00207	-.00201	-.00008	.00442	.73785
Stddev	.00054	.00016	.00394	.00219	.00028	.00020	2.5261
%RSD	87.558	1.5212	190.43	108.83	364.42	4.4829	342.36
#1	.00062	.01080	.00503	-.00007	-.00040	.00427	2.0607
#2	.00008	.01098	-.00241	-.00438	.00003	.00464	-2.1749
#3	.00117	.01065	.00359	-.00158	.00013	.00434	2.3278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12242.	90553.	3617.0
Stddev	7.	244.	8.4
%RSD	.05439	.26958	.23348
#1	12250.	90618.	3618.5
#2	12237.	90757.	3624.6
#3	12239.	90282.	3607.9

Approved: February 12, 2016

Sample Name: L1602056301 Acquired: 2/11/2016 20:16:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.02894	-.00023	.03283	.07442	-.00005	59.353	-.00010
Stddev	.00032	.00207	.00140	.00087	.00017	.00005	.365	.00006
%RSD	297.28	7.1401	613.61	2.6461	.22824	92.541	.61437	63.244
#1	-.00017	.03064	-.00028	.03182	.07423	-.00010	59.447	-.00004
#2	.00024	.02956	-.00161	.03338	.07449	-.00001	59.662	-.00017
#3	-.00040	.02664	.00120	.03328	.07454	-.00004	58.951	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00036	.00122	.25103	1.2355	.00575	10.133	.01605
Stddev	.00025	.00046	.00020	.03222	.0089	.00183	.146	.00092
%RSD	452.48	126.54	16.112	12.834	.71666	31.901	1.4440	5.7041
#1	.00033	-.00010	.00122	.21649	1.2442	.00379	10.282	.01601
#2	-.00002	.00036	.00103	.25632	1.2265	.00604	9.9899	.01515
#3	-.00015	.00082	.00142	.28027	1.2357	.00742	10.128	.01698
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	14.422	.00054	.05345	.00048	-.00147	-.00100	4.7634
Stddev	.00022	.050	.00030	.00149	.00265	.00237	.00317	.0334
%RSD	34.206	.34708	55.037	2.7799	551.83	161.04	316.55	.70160
#1	.00065	14.454	.00066	.05372	.00281	-.00421	.00086	4.7857
#2	.00086	14.449	.00020	.05478	-.00240	-.00019	.00079	4.7796
#3	.00042	14.365	.00076	.05185	.00103	-.00002	-.00466	4.7250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602056301 Acquired: 2/11/2016 20:16:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.40119	-.00928	-.00342	-.00008	.00216	.27758
Stddev	.00019	.00157	.00624	.00139	.00023	.00018	2.8470
%RSD	21.765	.39214	67.214	40.608	274.89	8.5390	1025.6
#1	.00078	.40118	-.00304	-.00423	-.00033	.00222	-2.5194
#2	.00107	.40277	-.01552	-.00181	-.00004	.00195	.18022
#3	.00072	.39963	-.00929	-.00420	.00012	.00230	3.1720
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11914.	87632.	3542.9
Stddev	8.	269.	18.1
%RSD	.06693	.30661	.50998
#1	11907.	87919.	3533.5
#2	11923.	87592.	3531.4
#3	11912.	87386.	3563.7

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 20:20:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40972	10.303	.40884	.50447	1.0378	.05179	10.439
Stddev	.00273	.011	.00061	.00123	.0048	.00011	.090
%RSD	.66611	.10293	.14819	.24306	.45847	.21816	.85813
#1	.40790	10.290	.40941	.50414	1.0373	.05168	10.428
#2	.40840	10.309	.40820	.50345	1.0428	.05191	10.534
#3	.41286	10.309	.40891	.50583	1.0333	.05179	10.356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05161	.20687	.51614	.52064	4.1892	51.906	1.0560
Stddev	.00016	.00089	.00033	.00190	.0212	.231	.0062
%RSD	.30766	.42901	.06333	.36525	.50596	.44512	.58253
#1	.05160	.20777	.51650	.52277	4.2021	51.961	1.0489
#2	.05177	.20686	.51585	.52004	4.1648	52.104	1.0600
#3	.05146	.20599	.51608	.51911	4.2009	51.652	1.0590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.635	.53251	1.0583	51.264	.51500	10.151	.51535
Stddev	.196	.00240	.0056	.171	.00183	.046	.00295
%RSD	1.8434	.45032	.52520	.33388	.35516	.45234	.57165
#1	10.847	.52975	1.0639	51.270	.51626	10.199	.51546
#2	10.598	.53403	1.0583	51.432	.51583	10.147	.51824
#3	10.460	.53376	1.0528	51.090	.51290	10.107	.51235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 20:20:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2249	.40931	5.1618	1.0429	1.0449	1.0440	.52851
Stddev	.0050	.00108	.0185	.0053	.0035	.0056	.00107
%RSD	.41140	.26314	.35758	.50708	.33215	.53395	.20332
#1	1.2303	.40913	5.1790	1.0482	1.0425	1.0472	.52969
#2	1.2203	.41047	5.1642	1.0428	1.0489	1.0473	.52758
#3	1.2242	.40834	5.1423	1.0376	1.0434	1.0376	.52826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0202	1.0280	F 1.7354
Stddev	.0008	.0034	1.1253
%RSD	.07343	.33242	64.845
#1	1.0203	1.0316	2.4731
#2	1.0209	1.0278	2.2930
#3	1.0194	1.0247	.44017
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11911.	86536.	3530.8
Stddev	37.	205.	33.7
%RSD	.30760	.23710	.95438
#1	11887.	86471.	3494.3
#2	11953.	86766.	3560.6
#3	11892.	86371.	3537.5

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 20:23:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	-.00543	.00039	.00050	.00002	-.00008	.00504
Stddev	.00142	.00542	.00141	.00260	.00039	.00001	.00863
%RSD	889.99	99.729	364.16	516.98	2536.0	7.7277	171.35
#1	.00141	.00080	.00051	.00334	.00015	-.00008	.01185
#2	.00045	-.00903	.00173	-.00176	.00032	-.00009	-.00467
#3	-.00138	-.00807	-.00108	-.00007	-.00043	-.00008	.00794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	-.00016	-.00053	-.00044	.00077	.06445	-.00145
Stddev	.00026	.00027	.00073	.00095	.03248	.05318	.00132
%RSD	431.48	164.85	136.96	215.22	4204.1	82.511	91.472
#1	-.00001	.00013	.00030	-.00078	.01978	.08051	-.00009
#2	.00017	-.00023	-.00084	-.00118	.01926	.10775	-.00151
#3	-.00034	-.00039	-.00106	.00063	-.03673	.00509	-.00274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01315	.00139	.00124	.02437	.00008	.00445	-.00167
Stddev	.04324	.00080	.00023	.01206	.00030	.00176	.00238
%RSD	328.75	57.292	18.624	49.501	388.98	39.511	142.21
#1	.02886	.00064	.00131	.03640	.00010	.00445	-.00431
#2	-.05752	.00222	.00142	.01228	.00036	.00269	.00030
#3	-.01080	.00131	.00098	.02441	-.00023	.00621	-.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 20:23:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00179	-.00108	.00339	.00072	.00009	-.00557	-.00055
Stddev	.00189	.00209	.00121	.00047	.00014	.00501	.00175
%RSD	105.62	194.20	35.646	65.936	152.91	89.917	317.74
#1	-.00101	-.00347	.00439	.00018	.00021	-.00346	.00057
#2	-.00395	.00038	.00205	.00108	.00015	-.00196	-.00257
#3	-.00042	-.00014	.00372	.00090	-.00007	-.01128	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00109	.00022	F 2.2252
Stddev	.00038	.00015	3.3717
%RSD	34.999	67.520	151.52
#1	-.00113	.00009	5.9624
#2	-.00145	.00018	-.58845
#3	-.00069	.00038	1.3016
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12394.	91483.	3648.7
Stddev	31.	373.	9.6
%RSD	.25160	.40821	.26413
#1	12394.	91483.	3637.8
#2	12425.	91110.	3656.1
#3	12363.	91857.	3652.2

Approved: February 12, 2016

Sample Name: LLCCV Acquired: 2/11/2016 20:28:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00843	.14913	.00543	.07365	.00779	.00145	.40937
Stddev	.00038	.00707	.00029	.00072	.00087	.00002	.01215
%RSD	4.5549	4.7402	5.3254	.97255	11.168	1.3332	2.9671
#1	.00844	.15207	.00548	.07418	.00686	.00145	.40664
#2	.00881	.15426	.00512	.07393	.00792	.00147	.42265
#3	.00804	.14106	.00569	.07284	.00858	.00143	.39883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00352	.00285	.00421	.08585	.85971	.07891
Stddev	.00006	.00019	.00085	.00013	.01746	.03866	.00073
%RSD	8.6867	5.3600	29.917	3.1857	20.343	4.4965	.92081
#1	.00076	.00371	.00357	.00407	.09731	.82499	.07825
#2	.00077	.00333	.00191	.00424	.06575	.90136	.07969
#3	.00066	.00353	.00306	.00433	.09448	.85278	.07877
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51350	.01024	.00777	.42138	.01545	.75643	.00893
Stddev	.00385	.00272	.00033	.03180	.00012	.00379	.00193
%RSD	.74960	26.585	4.2875	7.5463	.80201	.50143	21.658
#1	.51150	.00826	.00804	.45301	.01537	.75341	.01099
#2	.51794	.01334	.00787	.38941	.01559	.76069	.00864
#3	.51106	.00912	.00740	.42171	.01537	.75519	.00716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: LLCCV Acquired: 2/11/2016 20:28:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08140	.01130	.76443	.39798	.03933	.02483	.15346
Stddev	.00389	.00540	.00144	.00397	.00074	.00305	.00136
%RSD	4.7826	47.765	.18803	.99638	1.8730	12.273	.88575
#1	.08138	.00685	.76599	.40205	.03869	.02690	.15403
#2	.07751	.01730	.76316	.39776	.03915	.02626	.15445
#3	.08530	.00974	.76413	.39413	.04013	.02133	.15191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00765	.01736	F 310.97
Stddev	.00082	.00022	3.30
%RSD	10.713	1.2456	1.0622
#1	.00852	.01734	309.21
#2	.00690	.01759	308.93
#3	.00752	.01716	314.78
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12366.	91122.	3638.8
Stddev	15.	404.	21.2
%RSD	.12220	.44303	.58288
#1	12351.	90707.	3629.0
#2	12381.	91514.	3663.1
#3	12366.	91144.	3624.2

Approved: February 12, 2016

2.2.2 Metals ICP-MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	46WW02FF-020116	**Prep Method:**	3015	**Prep Date:**	02/03/2016 07:59
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/03/2016 13:56
Workgroup #:	WG556102	**Analyst:**	BKT	**Run Date:**	02/03/2016 15:06
Collect Date:	02/01/2016 08:10	**Dilution:**	1	**File ID:**	NI.020316.150659
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.207		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L16020058-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	46WW11FF-020116	**Prep Method:**	3015	**Prep Date:**	02/03/2016 07:59
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/03/2016 13:56
Workgroup #:	WG556102	**Analyst:**	BKT	**Run Date:**	02/03/2016 15:10
Collect Date:	02/01/2016 09:25	**Dilution:**	1	**File ID:**	NI.020316.151011
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.103		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L16020058-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	LHSMW19FF-020116	**Prep Method:**	3015	**Prep Date:**	02/03/2016 07:59
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/03/2016 13:56
Workgroup #:	WG556102	**Analyst:**	BKT	**Run Date:**	02/03/2016 15:13
Collect Date:	02/01/2016 10:30	**Dilution:**	1	**File ID:**	NI.020316.151323
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0823		0.00400	0.00200	0.00100

Certificate of Analysis

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16020058-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	46WW05FF-020116	**Prep Method:**	3015	**Prep Date:**	02/03/2016 07:59
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/03/2016 13:56
Workgroup #:	WG556102	**Analyst:**	BKT	**Run Date:**	02/03/2016 16:04
Collect Date:	02/01/2016 13:15	**Dilution:**	100	**File ID:**	NI.020316.160438
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	15.2		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16020058-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	46WW16FF-020116	**Prep Method:**	3015	**Prep Date:**	02/03/2016 07:59
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/03/2016 13:56
Workgroup #:	WG556102	**Analyst:**	BKT	**Run Date:**	02/03/2016 16:07
Collect Date:	02/01/2016 14:30	**Dilution:**	50	**File ID:**	NI.020316.160749
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	1.52		0.200	0.100	0.0500

2.2.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG556014
Analyst: VC
Spike Analyst: VC
Run Date: 02/03/2016 07:59
Method: 3015
Balance: BAL016
Instrument: MW-4
Instrument Start: 02/03/2016 08:32

SOP: ME407 Revison 19
Spike Solution: STD71855
Spike Witness: ERP
HNO3 Lot #: COA18708
40 & 50 ML. DIGESTION TU COA18558
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG556014-02	BLANK	1	20 mL	50 mL	182.526 g	182.522 g		
2	WG556014-03	LCS	1	20 mL	50 mL	181.634 g	181.629 g	.25 mL	
3	L16020046-01	SAMP	2	20 mL	50 mL	183.294 g	183.287 g		02/09/16
4	L16020046-02	SAMP	2	20 mL	50 mL	183.294 g	182.579 g		02/09/16
5	L16020055-02	SAMP	1	20 mL	50 mL	184.103 g	184.093 g		02/12/16
6	L16020058-02	SAMP	1	20 mL	50 mL	181.45 g	181.44 g		02/12/16
7	L16020058-04	SAMP	1	20 mL	50 mL	180.096 g	180.089 g		02/12/16
8	L16020058-06	SAMP	1	20 mL	50 mL	182.598 g	182.585 g		02/12/16
9	L16020058-08	SAMP	1	20 mL	50 mL	180.955 g	180.934 g		02/12/16
10	L16020058-10	SAMP	1	20 mL	50 mL	184.105 g	184.09 g		02/12/16
11	L16020075-36	SAMP	1	20 mL	50 mL	182.141 g	182.086 g		02/16/16
12	L16020075-38	SAMP	1	20 mL	50 mL	183.785 g	183.765 g		02/16/16
13	L16020086-02	SAMP	2	20 mL	50 mL	183.41 g	183.402 g		02/08/16
14	WG556014-01	REF	2	20 mL	50 mL	181.028 g	181.02 g		
15	L16020095-01	SAMP	2	20 mL	50 mL	181.028 g	181.02 g		02/04/16
16	WG556014-04	DUP	1	20 mL	50 mL	181.932 g	181.924 g		
17	WG556014-05	MS	1	20 mL	50 mL	181.983 g	181.961 g	.25 mL	
18	WG556014-06	MSD	1	20 mL	50 mL	182.361 g	182.347 g	.25 mL	

L16020046-01	ph adj

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4615334
Report generated: 02/03/2016 08:44

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 020316B.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD74378 ICV Std: STD74240 Post Spike: STD73705
ICSA: STD74498 ICSAB: STD74239 Int. Std: RGT31676
CCV: STD74377 LLCCV: STD74241 Tuning Sol : STD74379
Stannous : Hydroxylamine :

Workgroups: 556102,556009,556159

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.020316.134352	Blank	Blank		1		02/03/16 13:43
2	NI.020316.134704	WG556162-01	Calibration Point		1		02/03/16 13:47
3	NI.020316.135015	WG556162-02	Calibration Point		1		02/03/16 13:50
4	NI.020316.135327	WG556162-03	Calibration Point		1		02/03/16 13:53
5	NI.020316.135638	WG556162-04	Calibration Point		1		02/03/16 13:56
6	NI.020316.135951	WG556162-05	Initial Calibration Verification		1		02/03/16 13:59
7	NI.020316.140304	WG556162-06	Initial Calib Blank		1		02/03/16 14:03
8	NI.020316.140617	WG556162-07	Low Level Initial Calibration V		1		02/03/16 14:06
9	NI.020316.140928	WG556162-08	Interference Check		1		02/03/16 14:09
10	NI.020316.141239	WG556162-09	Interference Check		1		02/03/16 14:12
11	NI.020316.141553	WG556162-10	CCV		1		02/03/16 14:15
12	NI.020316.141904	WG556162-11	CCB		1		02/03/16 14:19
13	NI.020316.142216	WG556014-02	Method/Prep Blank	20/50	1		02/03/16 14:22
14	NI.020316.142528	WG556014-03	Laboratory Control S	20/50	1		02/03/16 14:25
15	NI.020316.142839	WG556014-01	Reference Sample		1	L16020095-01	02/03/16 14:28
16	NI.020316.143150	WG556014-04	Duplicate	20/50	1	L16020095-01	02/03/16 14:31
17	NI.020316.143502	WG556014-05	Matrix Spike	20/50	1	L16020095-01	02/03/16 14:35
18	NI.020316.143813	WG556014-06	Matrix Spike Duplica	20/50	1	L16020095-01	02/03/16 14:38
19	NI.020316.144124	L16020046-01	WMB09	20/50	1		02/03/16 14:41
20	NI.020316.144436	WG556102-01	Post Digestion Spike		1	L16020046-01	02/03/16 14:44
21	NI.020316.144747	L16020046-01	WMB09		5		02/03/16 14:47
22	NI.020316.145059	WG556102-02	Serial Dilution		25	L16020046-01	02/03/16 14:50
23	NI.020316.145412	WG556162-12	CCV		1		02/03/16 14:54
24	NI.020316.145724	WG556162-13	CCB		1		02/03/16 14:57
25	NI.020316.150037	L16020046-02	WMB09	20/50	1		02/03/16 15:00
26	NI.020316.150348	L16020055-02	LH18/24-SP650-6332-GRAB	20/50	1		02/03/16 15:03
27	NI.020316.150659	L16020058-02	46WW02FF-020116	20/50	1		02/03/16 15:06
28	NI.020316.151011	L16020058-04	46WW11FF-020116	20/50	1		02/03/16 15:10
29	NI.020316.151323	L16020058-06	LHSMW19FF-020116	20/50	1		02/03/16 15:13
30	NI.020316.151634	L16020058-08	46WW05FF-020116	20/50	1		02/03/16 15:16
31	NI.020316.151945	L16020058-10	46WW16FF-020116	20/50	1		02/03/16 15:19
32	NI.020316.152257	L16020075-36	ORG-SO1-317-14	20/50	1		02/03/16 15:22
33	NI.020316.152608	L16020075-38	ORG-SO2-317-14	20/50	1		02/03/16 15:26
34	NI.020316.152920	L16020086-02	OUTFALL 001/COMP	20/50	1		02/03/16 15:29

Page: 1 Approved: February 04, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 020316B.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD74378 ICV Std: STD74240 Post Spike: STD73705
ICSA: STD74498 ICSAB: STD74239 Int. Std: RGT31676
CCV: STD74377 LLCCV: STD74241 Tuning Sol : STD74379
Stannous : Hydroxylamine :

Workgroups: 556102,556009,556159

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.020316.153233	WG556162-14	CCV		1		02/03/16 15:32
36	NI.020316.153544	WG556162-15	CCB		1		02/03/16 15:35
37	NI.020316.160438	L16020058-08	46WW05FF-020116	20/50	100		02/03/16 16:04
38	NI.020316.160749	L16020058-10	46WW16FF-020116	20/50	50		02/03/16 16:07
39	NI.020316.161101	L16020055-02	LH18/24-SP650-6332-GRAB	20/50	10		02/03/16 16:11
40	NI.020316.161414	WG556162-16	CCV		1		02/03/16 16:14
41	NI.020316.161726	WG556162-17	CCB		1		02/03/16 16:17
42	NI.020316.162038	WG556162-18	Low Level Continuing Calibra		1		02/03/16 16:20
43	NI.020316.180012	WG555856-02	Method/Prep Blank	.25/100	1		02/03/16 18:00
44	NI.020316.180323	WG555856-03	Laboratory Control S	.25/100	1		02/03/16 18:03
45	NI.020316.180634	L16011376-08	D093-540	.258/100	10		02/03/16 18:06
46	NI.020316.180946	WG556009-04	Serial Dilution		50	L16011376-08	02/03/16 18:09
47	NI.020316.181257	L16011371-01	AG9050	.276/100	2		02/03/16 18:12
48	NI.020316.181609	WG556009-05	Post Digestion Spike		2	L16011371-01	02/03/16 18:16
49	NI.020316.181920	WG556009-06	Serial Dilution		10	L16011371-01	02/03/16 18:19
50	NI.020316.182232	WG555856-01	Reference Sample		50	L16011403-07	02/03/16 18:22
51	NI.020316.182543	WG555856-04	Matrix Spike	.252/100	50	L16011403-07	02/03/16 18:25
52	NI.020316.182854	WG555856-05	Matrix Spike Duplica	.251/100	50	L16011403-07	02/03/16 18:28
53	NI.020316.183207	WG556162-19	CCV		1		02/03/16 18:32
54	NI.020316.183518	WG556162-20	CCB		1		02/03/16 18:35
55	NI.020316.183831	WG556162-22	Low Level Continuing Calibra		1		02/03/16 18:38
56	NI.020316.184143	WG556097-02	Method/Prep Blank	40/50	50		02/03/16 18:41
57	NI.020316.184455	WG556097-03	Laboratory Control S	40/50	50		02/03/16 18:44
58	NI.020316.184806	WG556097-01	Reference Sample		50	L16020093-03	02/03/16 18:48
59	NI.020316.185118	WG556097-04	Matrix Spike	40/50	50	L16020093-03	02/03/16 18:51
60	NI.020316.185429	WG556097-05	Matrix Spike Duplica	40/50	50	L16020093-03	02/03/16 18:54
61	NI.020316.185741	L16011435-01	KAISER 10 BAGS	5/50	50		02/03/16 18:57
62	NI.020316.190052	L16011436-01	SAPA 6 BAGS	5/50	50		02/03/16 19:00
63	NI.020316.190403	WG556159-01	Post Digestion Spike		50	L16011436-01	02/03/16 19:04
64	NI.020316.190715	WG556159-02	Serial Dilution		250	L16011436-01	02/03/16 19:07
65	NI.020316.191028	WG556162-23	CCV		1		02/03/16 19:10
66	NI.020316.191339	WG556162-24	CCB		1		02/03/16 19:13

Page: 2 Approved: February 04, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 03-FEB-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 556162
Runlog ID: 73113
Analytical Workgroups: 556102,556009,556159

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	1371,55,58
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
04-FEB-2016

Secondary Reviewer:
04-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-04-2016 12:09:02

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG556102

Login Number: L16020058

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW02FF-020116	02	02/01/16					02/03/2016	2	180		02/03/16	2.3	180	
46WW11FF-020116	04	02/01/16					02/03/2016	1.9	180		02/03/16	2.2	180	
LHSMW19FF-020116	06	02/01/16					02/03/2016	1.9	180		02/03/16	2.2	180	
46WW05FF-020116	08	02/01/16					02/03/2016	1.8	180		02/03/16	2.1	180	
46WW16FF-020116	10	02/01/16					02/03/2016	1.7	180		02/03/16	2.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4616435
Report generated 02/03/2016 18:44

METHOD BLANK SUMMARY

Login Number: L16020058
Blank File ID: NI.020316.142216
Prep Date: 02/03/16 07:59
Analyzed Date: 02/03/16 14:22
Analyst: BKT

Work Group: WG556102
Blank Sample ID: WG556014-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556014-03	NI.020316.142528	02/03/16 14:25	01
DUP	WG556014-04	NI.020316.143150	02/03/16 14:31	01
46WW02FF-020116	L16020058-02	NI.020316.150659	02/03/16 15:06	01
46WW11FF-020116	L16020058-04	NI.020316.151011	02/03/16 15:10	01
LHSMW19FF-020116	L16020058-06	NI.020316.151323	02/03/16 15:13	01
46WW05FF-020116	L16020058-08	NI.020316.160438	02/03/16 16:04	DL01
46WW16FF-020116	L16020058-10	NI.020316.160749	02/03/16 16:07	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4616436
Report generated 02/03/2016 18:44

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020058 Prep Date: 02/03/16 07:59 Sample ID: WG556014-02
Instrument ID: ICP-MS2 Run Date: 02/03/16 14:22 Prep Method: 3015
File ID: NI.020316.142216 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG556102 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-03-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Manganese, Dissolved	0.00100	0.00400	0.00100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4616437
03-FEB-2016 18:44

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020058 Run Date: 02/03/2016 Sample ID: WG556014-03
Instrument ID: ICP-MS2 Run Time: 14:25 Prep Method: 3015
File ID: NI.020316.142528 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG556102 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD71855 Cal ID: ICP-MS-03-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Manganese, Dissolved	0.125	0.126	100	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4616438
Report generated: 02/03/2016 18:44

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16020058 Cal ID: ICP-MS2- Worknum: WG556102
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG556014-01 File ID: NI.020316.142839 Dil: 1 Matrix: WATER
Sample ID: WG556014-05 MS File ID: NI.020316.143502 Dil: 1 Units: mg/L
Sample ID: WG556014-06 MSD File ID: NI.020316.143813 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Manganese	0.0570	0.125	0.181	99.0	0.125	0.181	98.8	0.0925	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4616439
Report generated 02/03/2016 18:44

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16020058 **Worknum:** WG556102
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG556102-02 **File ID:** NI.020316.144747 **Dil:** 5 **Units:** ug/L
Sample: L16020046-01 **File ID:** NI.020316.144124 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Manganese	17700		18300		3.37	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4616433
02/03/2016 18:44

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16020058 **Worknum:** WG556102
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG556102-01 **File ID:** NI.020316.144436 **Dil:** 1 **Units:** ug/L
Sample ID: L16020046-01 **File ID:** NI.020316.144124 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MANGANESE	17200		17700		50	******	75 - 125	N

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4616434
Report generated: 02/03/2016 18:44

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16020058	Workgroup (AAB#):	WG556102
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG556162	Initial Calibration Date:	03-FEB-2016 13:56

	WG556162-01		WG556162-02		WG556162-03		WG556162-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
MANGANESE	0	670	.4	1410	50	490000	100	957000	.999977	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4616442
Report generated: 03-FEB-2016 18:44

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16020058
Instrument ID: ICP-MS2
File ID: NI.020316.140304
Workgroup (AAB#): WG556102
Matrix: WATER

Run Date: 02/03/2016
Run Time: 14:03
Analyst: BKT
Cal ID: ICP-MS2 - 03-FEB-16

Sample ID: WG556162-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MANGANESE	.4	1.6	.4	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4616444
Report generated 02/03/2016 18:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020058
Run Date: 02/03/2016
Sample ID: WG556162-11
Instrument ID: ICP-MS2
Run Time: 14:19
Method: 6020A
File ID: NI.020316.141904
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG556102
Cal ID: ICP-MS - 03-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4616447
Report generated 02/03/2016 18:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020058
Run Date: 02/03/2016
Sample ID: WG556162-13
Instrument ID: ICP-MS2
Run Time: 14:57
Method: 6020A
File ID: NI.020316.145724
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG556102
Cal ID: ICP-MS - 03-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4616447
Report generated 02/03/2016 18:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020058
Run Date: 02/03/2016
Sample ID: WG556162-15
Instrument ID: ICP-MS2
Run Time: 15:35
Method: 6020A
File ID: NI.020316.153544
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG556102
Cal ID: ICP-MS - 03-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4616447
Report generated 02/03/2016 18:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020058
Run Date: 02/03/2016
Sample ID: WG556162-17
Instrument ID: ICP-MS2
Run Time: 16:17
Method: 6020A
File ID: NI.020316.161726
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG556102
Cal ID: ICP-MS - 03-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4616447
Report generated 02/03/2016 18:44

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16020058 Run Date: 02/03/2016 Sample ID: WG556162-05
Instrument ID: ICP-MS2 Run Time: 13:59 Method: 6020A
File ID: NI.020316.135951 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG556102 Cal ID: ICP-MS - 03-FEB-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Manganese		50	50.2	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4616443
Report generated 02/03/2016 18:44

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058
Run Date: 02/03/2016
Sample ID: WG556162-10
Instrument ID: ICP-MS2
Run Time: 14:15
Method: 6020A
File ID: NI.020316.141553
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556102
Cal ID: ICP-MS - 03-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0503	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4616446
Report generated 02/03/2016 18:44

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058
Run Date: 02/03/2016
Sample ID: WG556162-12
Instrument ID: ICP-MS2
Run Time: 14:54
Method: 6020A
File ID: NI.020316.145412
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556102
Cal ID: ICP-MS - 03-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0498	mg/L	99.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4616446
Report generated 02/03/2016 18:44

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058
Run Date: 02/03/2016
Sample ID: WG556162-14
Instrument ID: ICP-MS2
Run Time: 15:32
Method: 6020A
File ID: NI.020316.153233
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556102
Cal ID: ICP-MS - 03-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0490	mg/L	98.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4616446
Report generated 02/03/2016 18:44

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058
Run Date: 02/03/2016
Sample ID: WG556162-16
Instrument ID: ICP-MS2
Run Time: 16:14
Method: 6020A
File ID: NI.020316.161414
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556102
Cal ID: ICP-MS - 03-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4616446
Report generated 02/03/2016 18:44

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16020058
Run Date: 02/03/2016
Sample ID: WG556162-07
Instrument ID: ICP-MS2
Run Time: 14:06
Method: 6020A
File ID: NI.020316.140617
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556102
Cal ID: ICP-MS - 03-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.479	ug/L	95.7	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4616448
Report generated 02/03/2016 18:44

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16020058
Run Date: 02/03/2016
Sample ID: WG556162-18
Instrument ID: ICP-MS2
Run Time: 16:20
Method: 6020A
File ID: NI.020316.162038
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556102
Cal ID: ICP-MS - 03-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.474	ug/L	94.7	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4616448
Report generated 02/03/2016 18:44

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16020058
Instrument ID: ICP-MS2
Sol. A : WG556162-08 **File ID:** NI.020316.140928
Sol. AB : WG556162-09 **File ID:** NI.020316.141239

Workgroup (AAB#): WG556102
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Manganese	NS	0.0211	NS	100	99.5	99.5	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4616445
Report generated 02/03/2016 18:44

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16020058 **Analytical Method:** 6020
Analytical Workgroup: WG556102 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 03-FEB-2016 13:47

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16020058-02	SAMP	03-FEB-2016 15:06	105.339	104.565	112.091
L16020058-04	SAMP	03-FEB-2016 15:10	99.954	101.525	109.575
L16020058-06	SAMP	03-FEB-2016 15:13	97.065	101.075	108.99
L16020058-08	SAMP	03-FEB-2016 16:04	101.596	105.086	101.123
L16020058-10	SAMP	03-FEB-2016 16:07	101.505	104.835	102.907
WG556014-02	BLANK	03-FEB-2016 14:22	99.042	100.868	102.321
WG556014-03	LCS	03-FEB-2016 14:25	99.495	101.596	102.488
WG556102-01	PSPK	03-FEB-2016 14:44	79.677	102.211	80.253
WG556102-02	SERIAL	03-FEB-2016 14:47	96.697	103.199	105.23
WG556162-05	ICV	03-FEB-2016 13:59	97.189	101.069	98.487
WG556162-06	ICB	03-FEB-2016 14:03	97.86	100.347	98.676
WG556162-07	LLICV	03-FEB-2016 14:06	98.122	99.827	98.733
WG556162-08	ICS	03-FEB-2016 14:09	95.62	100.228	100.179
WG556162-09	ICS	03-FEB-2016 14:12	97.873	102.926	103.823
WG556162-10	CCV	03-FEB-2016 14:15	100.749	103.766	105.412
WG556162-11	CCB	03-FEB-2016 14:19	100.012	101.359	102.504
WG556162-12	CCV	03-FEB-2016 14:54	104.377	104.697	114.824
WG556162-13	CCB	03-FEB-2016 14:57	102.135	101.297	110.958
WG556162-14	CCV	03-FEB-2016 15:32	101.286	101.269	104.035
WG556162-15	CCB	03-FEB-2016 15:35	100.801	100.961	103.933
WG556162-16	CCV	03-FEB-2016 16:14	100.477	101.959	100.191
WG556162-17	CCB	03-FEB-2016 16:17	97.816	99.504	98.399
WG556162-18	LLCCV	03-FEB-2016 16:20	98.137	100.089	97.576

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4616441
Report generated: 02/03/2016 18:44

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16020058 **Analytical Method:** 6020
Analytical Workgroup: WG556102 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 03-FEB-2016 13:47

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16020046-01	SAMP	03-FEB-2016 14:41	77.532	101.158	78.377

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4616441
Report generated: 02/03/2016 18:44

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16020058 **Date:** 01/05/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4616440
Report generated: 02/03/2016 18:44

2.2.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Wednesday, February 03, 2016 13:08:17

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	6.975	1322	2021	0.683	
Mg	23.985	23.975	4499	2019	0.695	
Co	58.933	58.925	11692	2021	0.696	
In	114.904	114.875	22859	2028	0.686	
U	238.050	238.075	47457	2043	0.681	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	14.184
5.575	7.747
5.625	4.805
5.675	4.495
5.725	5.519
5.775	3.364
5.825	2.984
5.875	3.394
5.925	1.629
5.975	3.891
6.025	3.818
6.075	3.956
6.125	2.994
6.175	3.071
6.225	6.793
6.275	37.268
6.325	59.266
6.375	61.237
6.425	58.330
6.475	33.500
6.525	2.716
6.575	5.821
6.625	3.553
6.675	1.290
6.725	4.359
6.775	4.140
6.825	3.147

Report Date/Time: Wednesday, February 03, 2016 13:11:28
Page 1

Approved: February 04, 2016

6.875	3.096
6.925	1.969
6.975	1.990
7.025	2.670
7.075	1.818
7.125	3.129
7.175	3.562
7.225	4.299
7.275	8.972
7.325	20.694
7.375	59.266
7.425	46.481
7.475	141.421
7.525	223.607
7.575	69.722
7.625	81.223
7.675	63.888
7.725	81.441
7.775	91.287
7.825	83.853
7.875	83.853
7.925	38.030
7.975	83.853
8.025	55.902
8.075	143.886
8.125	81.441
8.175	46.481
8.225	61.237
8.275	22.822
8.325	74.689
8.375	47.507
8.425	20.328
8.475	55.902
22.525	
22.575	47.507
22.625	67.420
22.675	52.705
22.725	46.566
22.775	25.913
22.825	46.481
22.875	70.711
22.925	42.592
22.975	31.044
23.025	25.573
23.075	50.990
23.125	26.503
23.175	43.370

Report Date/Time: Wednesday, February 03, 2016 13:11:28
Page 2

Approved: February 04, 2016

23.225	47.432
23.275	42.111
23.325	23.903
23.375	56.519
23.425	24.686
23.475	17.116
23.525	8.280
23.575	4.522
23.625	2.336
23.675	2.747
23.725	2.046
23.775	2.242
23.825	2.856
23.875	1.924
23.925	1.736
23.975	2.501
24.025	2.285
24.075	1.672
24.125	2.627
24.175	2.832
24.225	3.510
24.275	3.684
24.325	16.451
24.375	55.902
24.425	34.967
24.475	21.951
24.525	4.293
24.575	2.558
24.625	5.131
24.675	2.768
24.725	2.107
24.775	1.304
24.825	0.873
24.875	1.783
24.925	1.472
24.975	2.940
25.025	2.542
25.075	2.998
25.125	2.219
25.175	3.277
25.225	5.047
25.275	13.865
25.325	61.237
25.375	28.828
25.425	58.926
25.475	21.850
57.525	7.649

Report Date/Time: Wednesday, February 03, 2016 13:11:28
Page 3

Approved: February 04, 2016

57.575	4.597
57.625	2.598
57.675	1.989
57.725	0.724
57.775	1.085
57.825	0.872
57.875	1.765
57.925	1.823
57.975	1.094
58.025	0.945
58.075	1.670
58.125	1.574
58.175	1.565
58.225	4.396
58.275	12.616
58.325	50.461
58.375	32.969
58.425	14.488
58.475	4.525
58.525	3.537
58.575	0.597
58.625	1.973
58.675	1.456
58.725	1.776
58.775	2.222
58.825	0.821
58.875	1.424
58.925	1.531
58.975	1.862
59.025	1.894
59.075	2.363
59.125	1.430
59.175	2.439
59.225	5.314
59.275	28.448
59.325	66.296
59.375	36.377
59.425	33.497
59.475	18.583
59.525	5.961
59.575	5.803
59.625	2.047
59.675	2.548
59.725	1.341
59.775	3.035
59.825	2.540
59.875	2.752

Report Date/Time: Wednesday, February 03, 2016 13:11:28
Page 4

Approved: February 04, 2016

59.925	1.909
59.975	2.535
60.025	2.824
60.075	1.986
60.125	4.192
60.175	2.809
60.225	7.124
60.275	42.592
60.325	103.652
60.375	120.442
60.425	40.745
60.475	33.164
113.525	4.951
113.575	4.316
113.625	3.677
113.675	2.996
113.725	2.779
113.775	1.832
113.825	1.998
113.875	3.036
113.925	2.821
113.975	3.173
114.025	1.852
114.075	2.331
114.125	2.218
114.175	2.197
114.225	4.751
114.275	17.566
114.325	35.378
114.375	17.638
114.425	12.763
114.475	4.750
114.525	2.294
114.575	1.892
114.625	2.542
114.675	2.107
114.725	1.770
114.775	1.450
114.825	1.021
114.875	2.107
114.925	1.430
114.975	1.404
115.025	1.904
115.075	2.375
115.125	1.920
115.175	1.455
115.225	4.755

Report Date/Time: Wednesday, February 03, 2016 13:11:28
Page 5

Approved: February 04, 2016

115.275	6.376
115.325	5.705
115.375	24.845
115.425	40.905
115.475	15.800
115.525	13.812
115.575	4.550
115.625	5.082
115.675	4.645
115.725	3.718
115.775	2.727
115.825	3.201
115.875	2.005
115.925	3.038
115.975	2.630
116.025	3.544
116.075	3.929
116.125	2.624
116.175	4.846
116.225	5.343
116.275	12.248
116.325	29.166
116.375	51.349
116.425	48.990
116.475	50.146
236.525	149.071
236.575	45.453
236.625	13.608
236.675	21.320
236.725	33.503
236.775	23.407
236.825	25.476
236.875	17.138
236.925	37.134
236.975	25.713
237.025	22.874
237.075	29.235
237.125	15.590
237.175	12.130
237.225	45.291
237.275	28.748
237.325	19.325
237.375	50.437
237.425	18.976
237.475	38.034
237.525	8.333
237.575	24.087

Approved: February 04, 2016

237.625	2.732
237.675	7.272
237.725	6.225
237.775	1.923
237.825	1.941
237.875	1.417
237.925	0.962
237.975	1.948
238.025	1.354
238.075	1.933
238.125	1.597
238.175	1.799
238.225	1.866
238.275	1.079
238.325	2.637
238.375	1.960
238.425	4.279
238.475	2.759
238.525	13.446
238.575	16.383
238.625	14.678
238.675	22.720
238.725	32.810
238.775	34.617
238.825	34.922
238.875	36.364
238.925	26.751
238.975	12.073
239.025	21.246
239.075	24.996
239.125	34.903
239.175	29.881
239.225	45.003
239.275	33.912
239.325	37.180
239.375	17.321
239.425	62.828
239.475	40.144

Approved: February 04, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 2/3/2016 1:12:19 PM
End Time: 2/3/2016 1:14:31 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 2000.33
        Obtained Intensity (Mg 23.985): 124908.33
        Obtained Intensity (In 114.904): 108792.93
        Obtained Intensity (U 238.05): 103617.46
        Obtained Intensity (Bkgd 220): 2.40
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.016 (=6533.74 / 405235.76)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=2087.48 / 405235.76)
```

Report Date/Time: Wednesday, February 03, 2016 13:14:31
Page 1

Approved: February 04, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 2/3/2016 1:12:19 PM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 2000.33
                Obtained Intensity (Mg 23.985): 124908.33
                Obtained Intensity (In 114.904): 108792.93
                Obtained Intensity (U 238.05): 103617.46
                Obtained Intensity (Bkgd 220): 2.40
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.016 (=6533.74 / 405235.76)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=2087.48 / 405235.76)
[Passed]  Optimum value(s): N/A

End Time: 2/3/2016 1:14:31 PM
```


Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Wednesday, February 03, 2016 13:43:52
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50060.9	0.4				ug/L		Standard
	Be	9	5.0	100.0				ug/L		Standard
	Al	27	215.0	25.9				ug/L		Standard
	Sc	45	42885.6	1.0				ug/L		Standard
	Ti	47	87.3	12.6				ug/L		Standard
	V	51	2648.2	1.0				ug/L		Standard
	Cr	52	10137.1	2.6				ug/L		Standard
	Cr	53	288.3	4.4				ug/L		Standard
	Mn	55	688.3	1.7				ug/L		Standard
	Co	59	84.7	33.1				ug/L		Standard
	Ni	60	33.3	22.7				ug/L		Standard
	Cu	65	103.7	2.9				ug/L		Standard
	Zn	66	161.7	4.2				ug/L		Standard
>	Ge	72	610527.6	2.5				ug/L		Standard
	As	75	-114.7	10.9				ug/L		Standard
	Se	82	12.1	69.3				ug/L		Standard
	Se-1	77	63.7	9.2				ug/L		Standard
>	Ga	71	31.7	79.5				mg/L		Standard
	Rb	85	21.7	81.0				ug/L		Standard
	Y	89	547160.0	1.9				ug/L		Standard
>	Rh	103	1.7	173.2				ug/L		Standard
	Mo	98	12.2	19.9				ug/L		Standard
	Ag	107	158.7	43.3				ug/L		Standard
	Cd	111	6.6	31.4				mg/L		Standard
	Cd	114	14.1	22.9				ug/L		Standard
>	In	115	890168.6	2.8				ug/L		Standard
	Sn	118	716.7	15.1				ug/L		Standard
	Sb	123	95.7	42.6				ug/L		Standard
	Ba	135	24.3	34.5				ug/L		Standard
	Ce	140	263.3	150.2				ug/L		Standard
>	Tb	159	1497854.5	1.9				ug/L		Standard
	Ho	165	16.7	34.6				ug/L		Standard
	Tl	203	63.3	155.4				ug/L		Standard
	Tl	205	11.7	137.8				ug/L		Standard
	Pb	206	444.0	19.5				ug/L		Standard
	Pb	207	375.7	7.0				ug/L		Standard
	Pb	208	1375.4	6.0				ug/L		Standard
	U	238	8.7	113.2				ug/L		Standard
>	Bi	209	798985.9	1.7				ug/L		Standard

Sample ID: Blank
Report Date/Time: Wednesday, February 03, 2016 13:46:09
Page 1

Approved: February 04, 2016

	Na	23	1.7	173.2	mg/L	Standard
	Mg	24	10.0		mg/L	Standard
	K	39	8.3	173.2	mg/L	Standard
	Ca	43	61.7	26.1	mg/L	Standard
	Fe	54	193.8	5.2	mg/L	Standard
	Fe	57	48.3	48.9	mg/L	Standard
>	**Sc-1**	45	42885.6	1.0	mg/L	Standard
	Cl	35	30129.3	0.3	ug/L	Standard
	Kr	83	2.7	43.3	ug/L	Standard
	Br	81	1300.1	7.7	ug/L	Standard
	P	31	12219.9	0.4	ug/L	Standard
	S	34	1601.8	10.3	ug/L	Standard
	Sr	88	50.0	17.3	ug/L	Standard
	C	12	106.7	14.3	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	6.7	173.2	mg/L	Standard
	Dy	164	15.9	34.8	mg/L	Standard
	Ho-1	165	16.7	34.6	mg/L	Standard
	Er	166	16.7	69.3	mg/L	Standard
	I	127	7520.2	0.6	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Blank
Report Date/Time: Wednesday, February 03, 2016 13:46:09
Page 2

Approved: February 04, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Wednesday, February 03, 2016 13:46:09
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, February 03, 2016 13:47:04
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50465.7	4.1				ug/L	50061	Standard
	Be	9	5.0	100.0				ug/L	5	Standard
	Al	27	206.7	13.3				ug/L	215	Standard
	Sc	45	43375.4	2.3				ug/L	42886	Standard
	Ti	47	78.0	22.2				ug/L	87	Standard
	V	51	2537.9	2.3				ug/L	2648	Standard
	Cr	52	9982.0	1.7				ug/L	10137	Standard
	Cr	53	308.3	15.6				ug/L	288	Standard
	Mn	55	670.3	6.1				ug/L	688	Standard
	Co	59	64.0	18.4				ug/L	85	Standard
	Ni	60	34.0	20.4				ug/L	33	Standard
	Cu	65	115.0	16.6				ug/L	104	Standard
	Zn	66	143.7	12.5				ug/L	162	Standard
>	**Ge**	72	614552.4	2.3				ug/L	610528	Standard
	As	75	-65.0	19.6				ug/L	-115	Standard
	Se	82	30.9	18.2				ug/L	12	Standard
	Se-1	77	59.0	10.6				ug/L	64	Standard
>	**Ga**	71	15.0	88.2				mg/L	32	Standard
	Rb	85	6.7	114.6				ug/L	22	Standard
	Y	89	549830.6	5.2				ug/L	547160	Standard
>	**Rh**	103	6.7	114.6				ug/L	2	Standard
	Mo	98	10.7	14.7				ug/L	12	Standard
	Ag	107	132.7	7.7				ug/L	159	Standard
	Cd	111	5.7	27.0				mg/L	7	Standard
	Cd	114	24.1	80.8				ug/L	14	Standard
>	**In**	115	888868.9	1.8				ug/L	890169	Standard
	Sn	118	778.4	10.6				ug/L	717	Standard
	Sb	123	21.2	19.8				ug/L	96	Standard
	Ba	135	16.0	18.8				ug/L	24	Standard
	Ce	140	33.3	122.2				ug/L	263	Standard
>	**Tb**	159	1481253.8	3.0				ug/L	1497855	Standard
	Ho	165	20.0	25.0				ug/L	17	Standard
	Tl	203	6.0	33.3				ug/L	63	Standard
	Tl	205	6.7	86.6				ug/L	12	Standard
	Pb	206	433.7	3.3				ug/L	444	Standard
	Pb	207	337.7	3.8				ug/L	376	Standard
	Pb	208	1407.7	3.9				ug/L	1375	Standard
	U	238	3.3	62.4				ug/L	9	Standard
>	**Bi**	209	789101.7	2.0				ug/L	798986	Standard

Sample ID: Standard 1
Report Date/Time: Wednesday, February 03, 2016 13:49:21
Page 1

Approved: February 04, 2016

Na	23	1.7	173.2	mg/L	2	Standard
Mg	24	11.7	137.8	mg/L	10	Standard
K	39	8.3	124.9	mg/L	8	Standard
Ca	43	70.0	61.0	mg/L	62	Standard
Fe	54	242.8	10.6	mg/L	194	Standard
Fe	57	70.0	32.7	mg/L	48	Standard
Sc-1	45	43375.4	2.3	mg/L	42886	Standard
Cl	35	31010.4	1.7	ug/L	30129	Standard
Kr	83	2.7	57.3	ug/L	3	Standard
Br	81	1286.7	7.0	ug/L	1300	Standard
P	31	11954.7	5.8	ug/L	12220	Standard
S	34	1576.7	5.2	ug/L	1602	Standard
Sr	88	31.7	45.6	ug/L	50	Standard
C	12	70.0	65.5	mg/L	107	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	13.3	86.6	mg/L	7	Standard
Dy	164	18.9	90.3	mg/L	16	Standard
Ho-1	165	20.0	25.0	mg/L	17	Standard
Er	166	23.3	24.7	mg/L	17	Standard
I	127	7205.0	2.2	mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 1
Report Date/Time: Wednesday, February 03, 2016 13:49:21
Page 2

Approved: February 04, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Wednesday, February 03, 2016 13:49:21
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Wednesday, February 03, 2016 13:50:15
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49653.2	7.8				ug/L	50061	Standard
	Be	9	18.3	15.7				ug/L	5	Standard
	Al	27	6549.8	7.2				ug/L	215	Standard
	Sc	45	44241.2	2.6				ug/L	42886	Standard
	Ti	47	121.7	5.6				ug/L	87	Standard
	V	51	3034.9	1.1				ug/L	2648	Standard
	Cr	52	10767.8	2.4				ug/L	10137	Standard
	Cr	53	366.7	14.0				ug/L	288	Standard
	Mn	55	1410.4	3.0				ug/L	688	Standard
	Co	59	630.0	1.7				ug/L	85	Standard
	Ni	60	195.3	7.1				ug/L	33	Standard
	Cu	65	279.0	3.8				ug/L	104	Standard
	Zn	66	370.0	3.1				ug/L	162	Standard
>	**Ge**	72	606011.1	2.0				ug/L	610528	Standard
	As	75	-28.6	175.7				ug/L	-115	Standard
	Se	82	31.3	21.7				ug/L	12	Standard
	Se-1	77	63.0	4.8				ug/L	64	Standard
>	**Ga**	71	16.7	45.8				mg/L	32	Standard
	Rb	85	26.7	39.0				ug/L	22	Standard
	Y	89	563700.4	2.0				ug/L	547160	Standard
>	**Rh**	103	16.7	17.3				ug/L	2	Standard
	Mo	98	406.7	3.6				ug/L	12	Standard
	Ag	107	689.3	3.0				ug/L	159	Standard
	Cd	111	183.9	9.6				mg/L	7	Standard
	Cd	114	466.9	6.9				ug/L	14	Standard
>	**In**	115	883753.8	2.4				ug/L	890169	Standard
	Sn	118	1171.7	10.0				ug/L	717	Standard
	Sb	123	414.0	1.0				ug/L	96	Standard
	Ba	135	225.7	6.9				ug/L	24	Standard
	Ce	140	33.3	17.3				ug/L	263	Standard
>	**Tb**	159	1516997.9	3.1				ug/L	1497855	Standard
	Ho	165	16.7	62.4				ug/L	17	Standard
	Tl	203	697.3	10.2				ug/L	63	Standard
	Tl	205	460.0	6.1				ug/L	12	Standard
	Pb	206	1112.4	2.3				ug/L	444	Standard
	Pb	207	1002.0	8.2				ug/L	376	Standard
	Pb	208	3811.2	3.6				ug/L	1375	Standard
	U	238	493.7	3.1				ug/L	9	Standard
>	**Bi**	209	789976.8	1.6				ug/L	798986	Standard

Sample ID: Standard 2
Report Date/Time: Wednesday, February 03, 2016 13:52:32
Page 1

Approved: February 04, 2016

Na	23	0.0		mg/L	2	Standard
Mg	24	20.0	75.0	mg/L	10	Standard
K	39	15.0	66.7	mg/L	8	Standard
Ca	43	60.0	38.2	mg/L	62	Standard
Fe	54	209.0	8.5	mg/L	194	Standard
Fe	57	66.7	28.4	mg/L	48	Standard
> **Sc-1**	45	44241.2	2.6	mg/L	42886	Standard
Cl	35	31792.0	1.1	ug/L	30129	Standard
Kr	83	7.0	51.5	ug/L	3	Standard
Br	81	1186.7	20.8	ug/L	1300	Standard
P	31	12154.9	13.6	ug/L	12220	Standard
S	34	1546.7	2.6	ug/L	1602	Standard
Sr	88	25.0	72.1	ug/L	50	Standard
C	12	100.0	10.0	mg/L	107	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	10.0	100.0	mg/L	7	Standard
Dy	164	15.5	44.4	mg/L	16	Standard
Ho-1	165	16.7	62.4	mg/L	17	Standard
Er	166	23.3	107.9	mg/L	17	Standard
I	127	5419.3	6.6	mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Standard 2
Report Date/Time: Wednesday, February 03, 2016 13:52:32
Page 2

Approved: February 04, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Wednesday, February 03, 2016 13:52:32
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Wednesday, February 03, 2016 13:53:27
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49952.3	4.9				ug/L	50061	Standard
	Be	9	25858.7	3.3	**50.0000**	1.167	2.3	ug/L	5	Standard
	Al	27	5801973.3	6.0	**50.0000**	2.230	4.5	ug/L	215	Standard
	Sc	45	44303.1	3.8				ug/L	42886	Standard
	Ti	47	35855.7	2.0	**100.0000**	1.145	1.1	ug/L	87	Standard
	V	51	496221.2	2.1	**50.0000**	0.461	0.9	ug/L	2648	Standard
	Cr	52	455127.7	2.4	**50.0000**	0.586	1.2	ug/L	10137	Standard
	Cr	53	55605.2	2.0	**50.0000**	0.561	1.1	ug/L	288	Standard
	Mn	55	490016.5	1.5	**50.0000**	0.860	1.7	ug/L	688	Standard
	Co	59	531196.5	0.8	**50.0000**	0.349	0.7	ug/L	85	Standard
	Ni	60	135316.3	1.4	**50.0000**	0.467	0.9	ug/L	33	Standard
	Cu	65	137248.2	1.1	**50.0000**	0.548	1.1	ug/L	104	Standard
	Zn	66	66734.7	1.0	**50.0000**	0.697	1.4	ug/L	162	Standard
>	**Ge**	72	611385.0	1.2				ug/L	610528	Standard
	As	75	71665.9	0.4	**50.0000**	0.543	1.1	ug/L	-115	Standard
	Se	82	7361.2	1.6	**50.0000**	0.410	0.8	ug/L	12	Standard
	Se-1	77	4785.1	0.7	**50.0000**	0.417	0.8	ug/L	64	Standard
>	**Ga**	71	35.0	28.6				mg/L	32	Standard
	Rb	85	1093.4	8.1				ug/L	22	Standard
	Y	89	552682.3	2.1				ug/L	547160	Standard
>	**Rh**	103	35.0	0.0				ug/L	2	Standard
	Mo	98	383498.6	1.7	**100.0000**	2.404	2.4	ug/L	12	Standard
	Ag	107	509053.4	0.6	**50.0000**	0.597	1.2	ug/L	159	Standard
	Cd	111	157423.4	1.8	**50.0000**	1.033	2.1	mg/L	7	Standard
	Cd	114	378128.8	1.6	**50.0000**	1.348	2.7	ug/L	14	Standard
>	**In**	115	875259.6	1.8				ug/L	890169	Standard
	Sn	118	444236.6	1.9	**50.0000**	1.146	2.3	ug/L	717	Standard
	Sb	123	360770.9	1.1	**50.0000**	0.912	1.8	ug/L	96	Standard
	Ba	135	169285.5	2.6	**50.0000**	1.543	3.1	ug/L	24	Standard
	Ce	140	136.7	22.1				ug/L	263	Standard
>	**Tb**	159	1524669.2	3.7				ug/L	1497855	Standard
	Ho	165	15.0	66.7				ug/L	17	Standard
	Tl	203	650626.2	0.7	**50.0000**	0.404	0.8	ug/L	63	Standard
	Tl	205	440894.9	1.0	**50.0000**	0.852	1.7	ug/L	12	Standard
	Pb	206	422539.6	0.6	**50.0000**	0.268	0.5	ug/L	444	Standard
	Pb	207	383749.8	0.7	**50.0000**	0.350	0.7	ug/L	376	Standard
	Pb	208	1438837.9	0.6	**50.0000**	0.179	0.4	ug/L	1375	Standard
	U	238	458148.5	1.7	**50.0000**	0.424	0.8	ug/L	9	Standard
>	**Bi**	209	780767.4	0.9				ug/L	798986	Standard

Sample ID: Standard 3
Report Date/Time: Wednesday, February 03, 2016 13:55:43
Page 1

Approved: February 04, 2016

Na	23	0.0					mg/L	2	Standard
Mg	24	3477.1	3.3	**5.0000**	0.217	4.3	mg/L	10	Standard
K	39	1218.4	11.1	**5.0000**	0.507	10.1	mg/L	8	Standard
Ca	43	78.3	3.7	**5.0000**	0.324	6.5	mg/L	62	Standard
Fe	54	8364.6	1.8	**5.0000**	0.135	2.7	mg/L	194	Standard
Fe	57	2183.5	3.3	**5.0000**	0.150	3.0	mg/L	48	Standard
Sc-1	45	44303.1	3.8				mg/L	42886	Standard
Cl	35	31490.1	4.8				ug/L	30129	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1253.4	13.7				ug/L	1300	Standard
P	31	13821.3	2.6				ug/L	12220	Standard
S	34	1916.8	2.2				ug/L	1602	Standard
Sr	88	8.3	34.6				ug/L	50	Standard
C	12	70.0	24.7				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	9.2	106.3				mg/L	16	Standard
Ho-1	165	15.0	66.7				mg/L	17	Standard
Er	166	16.7	91.7				mg/L	17	Standard
I	127	4370.6	1.1				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 3
Report Date/Time: Wednesday, February 03, 2016 13:55:43
Page 2

Approved: February 04, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
Report Date/Time: Wednesday, February 03, 2016 13:55:43
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Wednesday, February 03, 2016 13:56:38
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48136.4	3.2				ug/L	50061	Standard
	Be	9	49539.3	5.4	**99.6475**	2.991	3.0	ug/L	5	Standard
	Al	27	11427429.1	3.2	**101.0775**	0.329	0.3	ug/L	215	Standard
	Sc	45	43285.1	2.4				ug/L	42886	Standard
	Ti	47	70605.5	0.9	**199.5239**	2.212	1.1	ug/L	87	Standard
	V	51	970899.0	0.6	**99.5110**	0.762	0.8	ug/L	2648	Standard
	Cr	52	906050.4	1.8	**100.8347**	1.988	2.0	ug/L	10137	Standard
	Cr	53	109989.5	1.0	**100.0684**	1.162	1.2	ug/L	288	Standard
	Mn	55	956893.0	1.2	**99.3250**	1.226	1.2	ug/L	688	Standard
	Co	59	1039171.9	2.2	**99.3744**	2.244	2.3	ug/L	85	Standard
	Ni	60	261241.9	0.4	**98.7213**	0.437	0.4	ug/L	33	Standard
	Cu	65	266877.4	1.2	**99.0922**	1.143	1.2	ug/L	104	Standard
	Zn	66	131904.8	2.0	**99.9969**	1.887	1.9	ug/L	162	Standard
>	**Ge**	72	605593.1	0.2				ug/L	610528	Standard
	As	75	142143.0	0.3	**100.0207**	0.520	0.5	ug/L	-115	Standard
	Se	82	14588.9	1.4	**100.1045**	1.461	1.5	ug/L	12	Standard
	Se-1	77	9452.6	1.4	**100.1640**	1.296	1.3	ug/L	64	Standard
>	**Ga**	71	50.0	43.6				mg/L	32	Standard
	Rb	85	2260.2	6.7				ug/L	22	Standard
	Y	89	541385.0	2.0				ug/L	547160	Standard
>	**Rh**	103	75.0	11.5				ug/L	2	Standard
	Mo	98	757585.2	1.0	**200.6950**	2.263	1.1	ug/L	12	Standard
	Ag	107	1002103.6	0.6	**100.1827**	0.479	0.5	ug/L	159	Standard
	Cd	111	305347.9	1.8	**99.4404**	2.008	2.0	mg/L	7	Standard
	Cd	114	741343.6	1.2	**99.9700**	1.163	1.2	ug/L	14	Standard
>	**In**	115	858378.1	0.2				ug/L	890169	Standard
	Sn	118	861607.9	1.6	**99.4718**	1.719	1.7	ug/L	717	Standard
	Sb	123	716085.3	1.6	**100.5882**	1.598	1.6	ug/L	96	Standard
	Ba	135	336207.3	0.5	**100.6209**	0.417	0.4	ug/L	24	Standard
	Ce	140	228.3	20.7				ug/L	263	Standard
>	**Tb**	159	1507555.8	0.7				ug/L	1497855	Standard
	Ho	165	18.3	56.8				ug/L	17	Standard
	Tl	203	1270036.0	0.9	**100.4412**	0.507	0.5	ug/L	63	Standard
	Tl	205	875685.6	0.8	**101.3038**	0.492	0.5	ug/L	12	Standard
	Pb	206	836979.6	1.9	**101.2121**	1.585	1.6	ug/L	444	Standard
	Pb	207	756659.1	0.8	**100.9831**	0.529	0.5	ug/L	376	Standard
	Pb	208	2842293.1	1.3	**101.0764**	0.959	0.9	ug/L	1375	Standard
	U	238	909593.2	1.2	**101.2915**	0.850	0.8	ug/L	9	Standard
>	**Bi**	209	755329.5	0.4				ug/L	798986	Standard

Sample ID: Standard 4
Report Date/Time: Wednesday, February 03, 2016 13:58:55
Page 1

Approved: February 04, 2016

Na	23	3.3	173.2	**19.9850**	34.606	173.2	mg/L	2	Standard
Mg	24	6889.9	4.1	**10.0803**	0.503	5.0	mg/L	10	Standard
K	39	2393.5	4.1	**10.0611**	0.638	6.3	mg/L	8	Standard
Ca	43	138.3	16.3	**13.8672**	3.949	28.5	mg/L	62	Standard
Fe	54	15755.2	2.1	**9.8725**	0.048	0.5	mg/L	194	Standard
Fe	57	4417.3	4.8	**10.2476**	0.288	2.8	mg/L	48	Standard
Sc-1	45	43285.1	2.4				mg/L	42886	Standard
Cl	35	29146.7	2.0				ug/L	30129	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	1320.1	6.2				ug/L	1300	Standard
P	31	13557.7	5.2				ug/L	12220	Standard
S	34	1816.8	4.0				ug/L	1602	Standard
Sr	88	30.0	28.9				ug/L	50	Standard
C	12	110.0	39.6				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	16.2	129.3				mg/L	16	Standard
Ho-1	165	18.3	56.8				mg/L	17	Standard
Er	166	10.0	100.0				mg/L	17	Standard
I	127	2835.3	5.7				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 4
Report Date/Time: Wednesday, February 03, 2016 13:58:55
Page 2

Approved: February 04, 2016

	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Wednesday, February 03, 2016 13:58:55
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Wednesday, February 03, 2016 13:59:51
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48812.0	5.1				ug/L	50061	Standard
	Be	9	26466.5	5.1	**52.5379**	1.600	3.0	ug/L	5	Standard
	Al	27	5812279.4	1.7	**50.7546**	1.742	3.4	ug/L	215	Standard
	Sc	45	44605.6	0.4				ug/L	42886	Standard
	Ti	47	37285.2	2.4	**103.2836**	2.120	2.1	ug/L	87	Standard
	V	51	491928.8	1.0	**49.3524**	0.601	1.2	ug/L	2648	Standard
	Cr	52	472691.9	1.7	**51.0595**	0.619	1.2	ug/L	10137	Standard
	Cr	53	57074.0	1.4	**50.8219**	0.716	1.4	ug/L	288	Standard
	Mn	55	493526.0	0.4	**50.2288**	0.104	0.2	ug/L	688	Standard
	Co	59	530223.2	1.6	**49.7549**	0.543	1.1	ug/L	85	Standard
	Ni	60	136957.2	0.2	**50.7828**	0.211	0.4	ug/L	33	Standard
	Cu	65	138240.5	1.1	**50.3483**	0.279	0.6	ug/L	104	Standard
	Zn	66	70234.1	1.1	**52.1445**	0.247	0.5	ug/L	162	Standard
>	Ge	72	617055.2	0.6				ug/L	610528	Standard
	As	75	74198.1	1.0	**51.2739**	0.325	0.6	ug/L	-115	Standard
	Se	82	7604.3	0.3	**51.1283**	0.146	0.3	ug/L	12	Standard
	Se-1	77	4962.5	1.8	**51.3094**	1.092	2.1	ug/L	64	Standard
>	Ga	71	98.3	21.2				mg/L	32	Standard
	Rb	85	1088.4	6.7				ug/L	22	Standard
	Y	89	553960.1	1.7				ug/L	547160	Standard
>	Rh	103	45.0	50.9				ug/L	2	Standard
	Mo	98	396117.9	1.1	**102.7454**	0.935	0.9	ug/L	12	Standard
	Ag	107	521409.5	2.9	**51.0283**	1.256	2.5	ug/L	159	Standard
	Cd	111	158591.3	1.3	**50.5645**	0.518	1.0	mg/L	7	Standard
	Cd	114	387891.7	2.9	**51.2019**	0.837	1.6	ug/L	14	Standard
>	In	115	876701.1	1.4				ug/L	890169	Standard
	Sn	118	474537.3	1.3	**53.6135**	1.377	2.6	ug/L	717	Standard
	Sb	123	349741.0	1.7	**48.0994**	0.666	1.4	ug/L	96	Standard
	Ba	135	174024.5	1.3	**50.9911**	0.839	1.6	ug/L	24	Standard
	Ce	140	353.3	4.5				ug/L	263	Standard
>	Tb	159	1525897.3	1.7				ug/L	1497855	Standard
	Ho	165	25.0	34.6				ug/L	17	Standard
	Tl	203	667848.2	1.7	**51.3945**	1.259	2.5	ug/L	63	Standard
	Tl	205	452583.7	2.2	**50.9382**	0.762	1.5	ug/L	12	Standard
	Pb	206	438393.9	1.1	**51.5474**	0.949	1.8	ug/L	444	Standard
	Pb	207	382561.0	1.7	**49.6350**	0.605	1.2	ug/L	376	Standard
	Pb	208	1472049.9	1.0	**50.9033**	1.220	2.4	ug/L	1375	Standard
	U	238	459914.0	1.4	**49.8348**	1.013	2.0	ug/L	9	Standard
>	Bi	209	776523.9	2.9				ug/L	798986	Standard

Sample ID: QC Std 1
Report Date/Time: Wednesday, February 03, 2016 14:02:08
Page 1

Approved: February 04, 2016

Na	23	1.7	173.2	**9.5030**	16.451	173.1	mg/L	2	Standard
Mg	24	3630.4	1.9	**5.1409**	0.118	2.3	mg/L	10	Standard
K	39	1248.4	8.6	**5.0580**	0.422	8.3	mg/L	8	Standard
Ca	43	88.3	31.2	**4.6829**	4.732	101.1	mg/L	62	Standard
Fe	54	8573.2	3.0	**5.1535**	0.141	2.7	mg/L	194	Standard
Fe	57	2291.8	3.4	**5.0872**	0.160	3.1	mg/L	48	Standard
> **Sc-1**	45	44605.6	0.4				mg/L	42886	Standard
Cl	35	28473.4	0.5				ug/L	30129	Standard
Kr	83	4.7	49.5				ug/L	3	Standard
Br	81	1233.4	5.8				ug/L	1300	Standard
P	31	13087.3	0.7				ug/L	12220	Standard
S	34	1813.4	9.7				ug/L	1602	Standard
Sr	88	28.3	27.0				ug/L	50	Standard
C	12	160.0	50.0				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	28.9	59.0				mg/L	16	Standard
Ho-1	165	25.0	34.6				mg/L	17	Standard
Er	166	23.3	49.5				mg/L	17	Standard
I	127	1875.1	10.0				mg/L	7520	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	105.076		
	Al	27	101.509		
	Sc	45			
	Ti	47	103.284		
	V	51	98.705		
	Cr	52	102.119		
	Cr	53			
	Mn	55	100.458		
	Co	59	99.510		
	Ni	60	101.566		
	Cu	65	100.697		
	Zn	66	104.289		
>	Ge	72		101.069	
	As	75	102.548		
	Se	82	102.257		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 1
Report Date/Time: Wednesday, February 03, 2016 14:02:08
Page 2

Approved: February 04, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	102.745		
Ag	107	102.057		
Cd	111	101.129		
Cd	114			
> In	115		98.487	
Sn	118	107.227		
Sb	123	96.199		
Ba	135	101.982		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.789		
Tl	205			
Pb	206	103.095		
Pb	207	99.270		
Pb	208	101.807		
U	238	99.670		
> Bi	209		97.189	
Na	23	190.059		
Mg	24	102.818		
K	39	101.159		
Ca	43	93.658		
Fe	54	103.070		
Fe	57	101.744		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
Report Date/Time: Wednesday, February 03, 2016 14:02:08
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Wednesday, February 03, 2016 14:03:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48895.6	6.3				ug/L	50061	Standard
	Be	9	6.7	43.3	**0.0273**	0.007	24.4	ug/L	5	Standard
	Al	27	798.4	24.2	**0.0008**	0.002	233.7	ug/L	215	Standard
	Sc	45	42840.5	3.1				ug/L	42886	Standard
	Ti	47	83.3	9.2	**-0.0109**	0.023	211.5	ug/L	87	Standard
	V	51	2370.1	3.6	**-0.0209**	0.012	59.5	ug/L	2648	Standard
	Cr	52	9275.5	2.6	**-0.1288**	0.043	33.2	ug/L	10137	Standard
	Cr	53	300.0	3.3	**-0.0134**	0.005	36.0	ug/L	288	Standard
	Mn	55	698.7	4.8	**-0.0247**	0.004	14.8	ug/L	688	Standard
	Co	59	149.0	40.0	**0.0039**	0.006	149.6	ug/L	85	Standard
	Ni	60	47.0	18.4	**-0.0063**	0.003	48.1	ug/L	33	Standard
	Cu	65	120.7	10.5	**-0.0093**	0.005	53.7	ug/L	104	Standard
	Zn	66	173.3	9.9	**-0.1007**	0.015	14.6	ug/L	162	Standard
>	**Ge**	72	612647.5	1.5				ug/L	610528	Standard
	As	75	-78.7	57.9	**0.0150**	0.032	209.4	ug/L	-115	Standard
	Se	82	23.0	30.4	**-0.0087**	0.050	575.0	ug/L	12	Standard
	Se-1	77	65.0	7.1	**0.0635**	0.038	59.6	ug/L	64	Standard
>	**Ga**	71	13.3	57.3				mg/L	32	Standard
	Rb	85	23.3	53.9				ug/L	22	Standard
	Y	89	547194.9	2.0				ug/L	547160	Standard
>	**Rh**	103	13.3	57.3				ug/L	2	Standard
	Mo	98	294.9	16.2	**0.0718**	0.013	18.8	ug/L	12	Standard
	Ag	107	289.0	39.6	**0.0114**	0.012	103.0	ug/L	159	Standard
	Cd	111	50.6	111.0	**0.0082**	0.018	224.6	mg/L	7	Standard
	Cd	114	161.7	134.3	**0.0105**	0.029	278.8	ug/L	14	Standard
>	**In**	115	878380.7	2.2				ug/L	890169	Standard
	Sn	118	1491.7	18.3	**0.0873**	0.034	39.4	ug/L	717	Standard
	Sb	123	1699.0	22.9	**0.2276**	0.058	25.6	ug/L	96	Standard
	Ba	135	77.7	95.2	**0.0074**	0.022	300.8	ug/L	24	Standard
	Ce	140	30.0	44.1				ug/L	263	Standard
>	**Tb**	159	1494777.8	3.0				ug/L	1497855	Standard
	Ho	165	11.7	24.7				ug/L	17	Standard
	Tl	203	202.7	105.6	**0.0129**	0.017	128.4	ug/L	63	Standard
	Tl	205	75.0	41.6	**0.0075**	0.004	47.0	ug/L	12	Standard
	Pb	206	499.0	12.1	**-0.0203**	0.007	36.6	ug/L	444	Standard
	Pb	207	426.3	13.9	**-0.0228**	0.008	35.4	ug/L	376	Standard
	Pb	208	1557.4	13.5	**-0.0261**	0.008	28.7	ug/L	1375	Standard
	U	238	71.3	34.3	**0.0051**	0.003	52.8	ug/L	9	Standard
>	**Bi**	209	781889.4	0.7				ug/L	798986	Standard

Sample ID: QC Std 2
Report Date/Time: Wednesday, February 03, 2016 14:05:21
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	18.3	87.7	**0.0035**	0.023	669.7	mg/L	10	Standard
K	39	20.0	66.1	**0.0272**	0.053	194.7	mg/L	8	Standard
Ca	43	53.3	5.4	**-0.8940**	0.456	51.0	mg/L	62	Standard
Fe	54	185.7	14.8	**-0.0059**	0.017	280.2	mg/L	194	Standard
Fe	57	51.7	73.3	**-0.0267**	0.085	318.2	mg/L	48	Standard
Sc-1	45	42840.5	3.1				mg/L	42886	Standard
Cl	35	28910.9	2.3				ug/L	30129	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	1420.1	4.6				ug/L	1300	Standard
P	31	13309.2	3.9				ug/L	12220	Standard
S	34	1665.1	2.5				ug/L	1602	Standard
Sr	88	28.3	53.9				ug/L	50	Standard
C	12	110.0	65.6				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	16.0	131.1				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	17	Standard
Er	166	13.3	43.3				mg/L	17	Standard
I	127	7153.4	3.1				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.347	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 2
Report Date/Time: Wednesday, February 03, 2016 14:05:21
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.676
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.860
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Ca	43	

Sample ID: QC Std 2
Report Date/Time: Wednesday, February 03, 2016 14:05:21
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Wednesday, February 03, 2016 14:06:17
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48965.9	6.8				ug/L	50061	Standard
	Be	9	115.0	11.5	**0.2419**	0.030	12.4	ug/L	5	Standard
	Al	27	875.0	83.7	**0.0011**	0.006	494.9	ug/L	215	Standard
	Sc	45	43958.7	4.1				ug/L	42886	Standard
	Ti	47	88.7	11.8	**0.0053**	0.030	573.9	ug/L	87	Standard
	V	51	6152.1	4.7	**0.3663**	0.027	7.3	ug/L	2648	Standard
	Cr	52	18155.9	2.0	**0.8694**	0.025	2.8	ug/L	10137	Standard
	Cr	53	1276.7	8.3	**0.8731**	0.088	10.0	ug/L	288	Standard
	Mn	55	5570.0	5.2	**0.4785**	0.027	5.6	ug/L	688	Standard
	Co	59	4298.6	3.8	**0.3982**	0.013	3.3	ug/L	85	Standard
	Ni	60	4175.2	4.4	**1.5442**	0.064	4.1	ug/L	33	Standard
	Cu	65	2333.8	4.9	**0.8078**	0.037	4.6	ug/L	104	Standard
	Zn	66	9203.5	2.4	**6.7174**	0.112	1.7	ug/L	162	Standard
>	**Ge**	72	609470.6	0.9				ug/L	610528	Standard
	As	75	454.8	6.7	**0.3875**	0.024	6.2	ug/L	-115	Standard
	Se	82	69.0	7.4	**0.3060**	0.038	12.4	ug/L	12	Standard
	Se-1	77	99.3	12.7	**0.4319**	0.142	32.9	ug/L	64	Standard
>	**Ga**	71	30.0	76.4				mg/L	32	Standard
	Rb	85	30.0	16.7				ug/L	22	Standard
	Y	89	551401.3	1.8				ug/L	547160	Standard
>	**Rh**	103	3.3	86.6				ug/L	2	Standard
	Mo	98	183.5	18.5	**0.0427**	0.008	17.8	ug/L	12	Standard
	Ag	107	4142.9	3.7	**0.3875**	0.005	1.4	ug/L	159	Standard
	Cd	111	742.4	9.4	**0.2278**	0.017	7.5	mg/L	7	Standard
	Cd	114	1812.9	2.7	**0.2278**	0.011	5.0	ug/L	14	Standard
>	**In**	115	878891.5	2.4				ug/L	890169	Standard
	Sn	118	766.7	12.1	**0.0049**	0.009	187.8	ug/L	717	Standard
	Sb	123	3170.8	4.2	**0.4290**	0.028	6.5	ug/L	96	Standard
	Ba	135	2487.9	5.5	**0.7114**	0.025	3.5	ug/L	24	Standard
	Ce	140	58.3	27.6				ug/L	263	Standard
>	**Tb**	159	1468016.7	3.1				ug/L	1497855	Standard
	Ho	165	15.0	0.0				ug/L	17	Standard
	Tl	203	1101.0	6.6	**0.0812**	0.004	4.8	ug/L	63	Standard
	Tl	205	736.7	12.6	**0.0811**	0.009	10.7	ug/L	12	Standard
	Pb	206	2160.8	5.4	**0.1731**	0.009	5.0	ug/L	444	Standard
	Pb	207	1796.4	9.5	**0.1530**	0.017	11.2	ug/L	376	Standard
	Pb	208	7180.7	4.1	**0.1665**	0.005	3.2	ug/L	1375	Standard
	U	238	3636.4	4.7	**0.3874**	0.011	2.8	ug/L	9	Standard
>	**Bi**	209	783984.5	2.0				ug/L	798986	Standard

Sample ID: QC Std 3
Report Date/Time: Wednesday, February 03, 2016 14:08:34
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11.7	24.7	**-0.0064**	0.005	77.9	mg/L	10	Standard
K	39	8.3	91.7	**-0.0217**	0.033	152.3	mg/L	8	Standard
Ca	43	80.0	18.8	**3.4774**	2.630	75.6	mg/L	62	Standard
Fe	54	205.4	28.9	**0.0031**	0.034	1111.2	mg/L	194	Standard
Fe	57	53.3	19.5	**-0.0243**	0.022	91.7	mg/L	48	Standard
> **Sc-1**	45	43958.7	4.1				mg/L	42886	Standard
Cl	35	28566.2	1.5				ug/L	30129	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	1190.0	8.8				ug/L	1300	Standard
P	31	13052.3	7.4				ug/L	12220	Standard
S	34	1658.4	4.2				ug/L	1602	Standard
Sr	88	38.3	39.8				ug/L	50	Standard
C	12	130.0	40.0				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	22.2	28.6				mg/L	16	Standard
Ho-1	165	15.0	0.0				mg/L	17	Standard
Er	166	23.3	65.5				mg/L	17	Standard
I	127	1476.7	6.6				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	120.954		
Al	27	0.114		
Sc	45			
Ti	47			
V	51	91.584		
Cr	52	108.671		
Cr	53			
Mn	55	95.709		
Co	59	99.554		
Ni	60	96.512		
Cu	65	100.971		
Zn	66	107.478		
> Ge	72		99.827	
As	75	96.883		
Se	82	76.489		
Se-1	77			
> Ga	71			

Sample ID: QC Std 3
Report Date/Time: Wednesday, February 03, 2016 14:08:34
Page 2

Approved: February 04, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.886		
Cd	111	94.897		
Cd	114			
> In	115			98.733
Sn	118			
Sb	123	107.242		
Ba	135	94.857		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.450		
Tl	205			
Pb	206			
Pb	207			
Pb	208	83.232		
U	238	96.861		
> Bi	209			98.122
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
Report Date/Time: Wednesday, February 03, 2016 14:08:34
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, February 03, 2016 14:09:28
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49191.4	2.6				ug/L	50061	Standard
	Be	9	1.7	173.2	**0.0172**	0.006	33.2	ug/L	5	Standard
	Al	27	5736049.5	5.4	**49.6437**	2.305	4.6	ug/L	215	Standard
	Sc	45	43385.5	6.1				ug/L	42886	Standard
	Ti	47	38155.3	1.5	**106.5930**	1.123	1.1	ug/L	87	Standard
	V	51	2546.0	3.8	**-0.0028**	0.010	361.8	ug/L	2648	Standard
	Cr	52	10315.8	2.2	**-0.0121**	0.022	178.5	ug/L	10137	Standard
	Cr	53	1771.8	0.4	**1.3160**	0.022	1.7	ug/L	288	Standard
	Mn	55	1143.0	3.0	**0.0211**	0.005	22.0	ug/L	688	Standard
	Co	59	219.0	19.2	**0.0105**	0.004	37.0	ug/L	85	Standard
	Ni	60	577.3	5.8	**0.1921**	0.011	5.5	ug/L	33	Standard
	Cu	65	562.0	2.9	**0.1530**	0.005	3.3	ug/L	104	Standard
	Zn	66	1634.1	1.3	**0.9980**	0.021	2.1	ug/L	162	Standard
>	**Ge**	72	611917.0	0.9				ug/L	610528	Standard
	As	75	-132.5	16.1	**-0.0225**	0.014	63.2	ug/L	-115	Standard
	Se	82	23.1	27.3	**-0.0084**	0.044	529.5	ug/L	12	Standard
	Se-1	77	246.7	4.8	**1.9825**	0.145	7.3	ug/L	64	Standard
>	**Ga**	71	155.0	47.7				mg/L	32	Standard
	Rb	85	1075.0	4.0				ug/L	22	Standard
	Y	89	558417.1	3.1				ug/L	547160	Standard
>	**Rh**	103	10.0	50.0				ug/L	2	Standard
	Mo	98	416984.1	0.9	**106.3362**	1.788	1.7	ug/L	12	Standard
	Ag	107	187.3	22.6	**0.0011**	0.004	387.6	ug/L	159	Standard
	Cd	111	-285.0	6.9	**-0.0975**	0.006	6.4	mg/L	7	Standard
	Cd	114	760.3	8.1	**0.0876**	0.009	10.1	ug/L	14	Standard
>	**In**	115	891764.1	0.8				ug/L	890169	Standard
	Sn	118	921.7	17.8	**0.0210**	0.019	88.3	ug/L	717	Standard
	Sb	123	299.7	35.8	**0.0340**	0.015	43.2	ug/L	96	Standard
	Ba	135	129.3	3.8	**0.0217**	0.002	7.0	ug/L	24	Standard
	Ce	140	110.0	19.8				ug/L	263	Standard
>	**Tb**	159	1494748.2	2.5				ug/L	1497855	Standard
	Ho	165	25.0	40.0				ug/L	17	Standard
	Tl	203	538.3	7.8	**0.0394**	0.003	7.6	ug/L	63	Standard
	Tl	205	383.3	25.2	**0.0429**	0.011	25.1	ug/L	12	Standard
	Pb	206	774.4	3.6	**0.0139**	0.003	21.6	ug/L	444	Standard
	Pb	207	670.0	5.9	**0.0106**	0.005	43.8	ug/L	376	Standard
	Pb	208	2532.4	4.7	**0.0094**	0.004	38.9	ug/L	1375	Standard
	U	238	39.0	126.6	**0.0017**	0.005	320.0	ug/L	9	Standard
>	**Bi**	209	763991.7	0.6				ug/L	798986	Standard

Sample ID: QC Std 4
Report Date/Time: Wednesday, February 03, 2016 14:11:45
Page 1

Approved: February 04, 2016

Na	23	3.3	86.6	**19.2161**	16.688	86.8	mg/L	2	Standard
Mg	24	8078.8	3.5	**11.8100**	0.578	4.9	mg/L	10	Standard
K	39	1150.0	5.3	**4.7900**	0.037	0.8	mg/L	8	Standard
Ca	43	173.3	9.3	**19.9387**	2.618	13.1	mg/L	62	Standard
Fe	54	20135.5	1.8	**12.6468**	0.645	5.1	mg/L	194	Standard
Fe	57	5499.3	4.6	**12.7763**	0.247	1.9	mg/L	48	Standard
Sc-1	45	43385.5	6.1				mg/L	42886	Standard
Cl	35	29477.3	2.9				ug/L	30129	Standard
Kr	83	4.0	25.0				ug/L	3	Standard
Br	81	1326.7	14.1				ug/L	1300	Standard
P	31	11217.5	10.1				ug/L	12220	Standard
S	34	1536.7	7.1				ug/L	1602	Standard
Sr	88	30.0	50.0				ug/L	50	Standard
C	12	183.3	15.7				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	7	Standard
Dy	164	12.4	86.7				mg/L	16	Standard
Ho-1	165	25.0	40.0				mg/L	17	Standard
Er	166	20.0	100.0				mg/L	17	Standard
I	127	18838.4	2.7				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.993		
Sc	45			
Ti	47	106.593		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.228	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 4
Report Date/Time: Wednesday, February 03, 2016 14:11:45
Page 2

Approved: February 04, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	106.336		
Ag	107			
Cd	111			
Cd	114			
> In	115		100.179	
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209		95.620	
Na	23	153.729		
Mg	24	236.201		
K	39	95.800		
Ca	43	132.925		
Fe	54	101.175		
Fe	57	102.210		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

Sample ID: QC Std 4
Report Date/Time: Wednesday, February 03, 2016 14:11:45
Page 3

Approved: February 04, 2016

QC Std 4	Ca	43

Sample ID: QC Std 4
Report Date/Time: Wednesday, February 03, 2016 14:11:45
Page 4

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, February 03, 2016 14:12:39
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52743.3	0.9				ug/L	50061	Standard
	Be	9	56163.9	0.5	**103.1424**	1.048	1.0	ug/L	5	Standard
	Al	27	6121941.9	3.1	**49.4177**	1.563	3.2	ug/L	215	Standard
	Sc	45	43288.5	3.1				ug/L	42886	Standard
	Ti	47	39553.2	1.2	**107.6042**	1.055	1.0	ug/L	87	Standard
	V	51	979455.9	0.6	**96.7377**	0.188	0.2	ug/L	2648	Standard
	Cr	52	905566.2	0.8	**97.0803**	0.611	0.6	ug/L	10137	Standard
	Cr	53	109512.8	1.8	**96.0030**	1.194	1.2	ug/L	288	Standard
	Mn	55	994834.4	1.6	**99.5133**	1.083	1.1	ug/L	688	Standard
	Co	59	1042705.4	0.8	**96.0923**	0.372	0.4	ug/L	85	Standard
	Ni	60	265833.4	1.4	**96.8096**	1.068	1.1	ug/L	33	Standard
	Cu	65	271963.1	0.6	**97.3167**	0.473	0.5	ug/L	104	Standard
	Zn	66	136646.1	0.8	**99.8347**	0.888	0.9	ug/L	162	Standard
>	Ge	72	628390.7	0.5				ug/L	610528	Standard
	As	75	150848.3	0.3	**102.2950**	0.634	0.6	ug/L	-115	Standard
	Se	82	15420.0	0.7	**101.9706**	0.236	0.2	ug/L	12	Standard
	Se-1	77	10008.0	2.6	**102.2114**	2.370	2.3	ug/L	64	Standard
>	Ga	71	156.7	9.8				mg/L	32	Standard
	Rb	85	1163.4	4.7				ug/L	22	Standard
	Y	89	559726.5	0.6				ug/L	547160	Standard
>	Rh	103	88.3	64.4				ug/L	2	Standard
	Mo	98	448833.4	0.7	**110.4327**	0.686	0.6	ug/L	12	Standard
	Ag	107	981079.7	1.8	**91.1019**	2.092	2.3	ug/L	159	Standard
	Cd	111	326111.3	0.6	**98.6435**	1.415	1.4	mg/L	7	Standard
	Cd	114	788472.4	1.4	**98.7512**	0.894	0.9	ug/L	14	Standard
>	In	115	924201.7	0.8				ug/L	890169	Standard
	Sn	118	1396.7	10.8	**0.0684**	0.017	24.5	ug/L	717	Standard
	Sb	123	753250.2	0.6	**98.2804**	1.402	1.4	ug/L	96	Standard
	Ba	135	343344.4	2.7	**95.4552**	3.282	3.4	ug/L	24	Standard
	Ce	140	155.0	27.6				ug/L	263	Standard
>	Tb	159	1531363.9	1.8				ug/L	1497855	Standard
	Ho	165	8.3	91.7				ug/L	17	Standard
	Tl	203	1334142.8	0.5	**101.9270**	1.551	1.5	ug/L	63	Standard
	Tl	205	913022.0	2.3	**102.0412**	3.147	3.1	ug/L	12	Standard
	Pb	206	878899.4	0.4	**102.6757**	1.652	1.6	ug/L	444	Standard
	Pb	207	766597.2	0.7	**98.8352**	1.850	1.9	ug/L	376	Standard
	Pb	208	2917410.5	1.6	**100.2186**	1.755	1.8	ug/L	1375	Standard
	U	238	933570.2	0.7	**100.4248**	0.929	0.9	ug/L	9	Standard
>	Bi	209	781992.0	1.2				ug/L	798986	Standard

Sample ID: QC Std 5
Report Date/Time: Wednesday, February 03, 2016 14:14:56
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8749.2	3.2	**12.8063**	0.507	4.0	mg/L	10	Standard
K	39	1045.0	7.0	**4.3528**	0.185	4.3	mg/L	8	Standard
Ca	43	178.3	21.8	**20.7544**	6.009	29.0	mg/L	62	Standard
Fe	54	21469.5	1.0	**13.5075**	0.528	3.9	mg/L	194	Standard
Fe	57	5786.1	2.5	**13.4737**	0.138	1.0	mg/L	48	Standard
> **Sc-1**	45	43288.5	3.1				mg/L	42886	Standard
Cl	35	29943.6	1.5				ug/L	30129	Standard
Kr	83	5.0	52.9				ug/L	3	Standard
Br	81	1530.1	13.1				ug/L	1300	Standard
P	31	11514.4	4.1				ug/L	12220	Standard
S	34	1463.4	1.2				ug/L	1602	Standard
Sr	88	35.0	14.3				ug/L	50	Standard
C	12	266.7	24.1				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	25.9	111.1				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	17	Standard
Er	166	16.7	34.6				mg/L	17	Standard
I	127	6361.3	3.0				mg/L	7520	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	103.142		
	Al	27	0.988		
	Sc	45			
	Ti	47	107.604		
	V	51	96.738		
	Cr	52	97.080		
	Cr	53			
	Mn	55	99.513		
	Co	59	96.092		
	Ni	60	96.810		
	Cu	65	97.317		
	Zn	66	99.835		
>	Ge	72		102.926	
	As	75	102.295		
	Se	82	101.971		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 5
Report Date/Time: Wednesday, February 03, 2016 14:14:56
Page 2

Approved: February 04, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	110.433		
Ag	107	91.102		
Cd	111	98.643		
Cd	114			
> In	115		103.823	
Sn	118			
Sb	123	98.280		
Ba	135	95.455		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.927		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.219		
U	238	100.425		
> Bi	209		97.873	
Na	23	0.040		
Mg	24	256.126		
K	39	87.056		
Ca	43	138.363		
Fe	54	108.060		
Fe	57	107.789		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
Report Date/Time: Wednesday, February 03, 2016 14:14:56
Page 3

Approved: February 04, 2016

QC Std 5	Ca	43

Sample ID: QC Std 5
Report Date/Time: Wednesday, February 03, 2016 14:14:56
Page 4

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, February 03, 2016 14:15:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52995.9	0.8				ug/L	50061	Standard
	Be	9	28343.2	3.9	**51.8048**	1.867	3.6	ug/L	5	Standard
	Al	27	5931494.0	1.7	**47.6552**	1.088	2.3	ug/L	215	Standard
	Sc	45	43209.9	3.2				ug/L	42886	Standard
	Ti	47	35841.7	1.0	**96.6934**	0.931	1.0	ug/L	87	Standard
	V	51	498438.5	1.3	**48.7004**	0.525	1.1	ug/L	2648	Standard
	Cr	52	463483.8	0.8	**48.7138**	0.434	0.9	ug/L	10137	Standard
	Cr	53	55887.9	3.0	**48.4614**	1.563	3.2	ug/L	288	Standard
	Mn	55	507843.5	2.5	**50.3410**	1.129	2.2	ug/L	688	Standard
	Co	59	547500.0	2.1	**50.0414**	0.887	1.8	ug/L	85	Standard
	Ni	60	137317.5	1.4	**49.5935**	0.840	1.7	ug/L	33	Standard
	Cu	65	139725.7	0.7	**49.5678**	0.481	1.0	ug/L	104	Standard
	Zn	66	68316.0	1.2	**49.3907**	0.521	1.1	ug/L	162	Standard
>	Ge	72	633517.6	0.3				ug/L	610528	Standard
	As	75	74552.0	1.6	**50.1803**	0.694	1.4	ug/L	-115	Standard
	Se	82	7831.3	1.6	**51.2851**	0.683	1.3	ug/L	12	Standard
	Se-1	77	5036.5	2.6	**50.7130**	1.380	2.7	ug/L	64	Standard
>	Ga	71	50.0	26.5				mg/L	32	Standard
	Rb	85	1138.4	3.0				ug/L	22	Standard
	Y	89	584038.0	1.3				ug/L	547160	Standard
>	Rh	103	40.0	37.5				ug/L	2	Standard
	Mo	98	439254.3	1.8	**106.4684**	3.088	2.9	ug/L	12	Standard
	Ag	107	530473.3	1.8	**48.5144**	1.356	2.8	ug/L	159	Standard
	Cd	111	166799.2	1.3	**49.6893**	0.775	1.6	mg/L	7	Standard
	Cd	114	403658.7	3.1	**49.8035**	2.066	4.1	ug/L	14	Standard
>	In	115	938346.0	1.2				ug/L	890169	Standard
	Sn	118	455398.8	2.6	**48.0510**	1.084	2.3	ug/L	717	Standard
	Sb	123	386347.8	1.7	**49.6526**	1.395	2.8	ug/L	96	Standard
	Ba	135	178309.6	1.8	**48.8204**	1.450	3.0	ug/L	24	Standard
	Ce	140	121.7	8.6				ug/L	263	Standard
>	Tb	159	1540624.4	1.4				ug/L	1497855	Standard
	Ho	165	28.3	20.4				ug/L	17	Standard
	Tl	203	682917.6	0.6	**50.6822**	0.729	1.4	ug/L	63	Standard
	Tl	205	459496.9	0.4	**49.8841**	0.739	1.5	ug/L	12	Standard
	Pb	206	439394.6	1.3	**49.8252**	1.030	2.1	ug/L	444	Standard
	Pb	207	397042.4	0.6	**49.6879**	0.817	1.6	ug/L	376	Standard
	Pb	208	1505008.2	0.7	**50.1842**	0.539	1.1	ug/L	1375	Standard
	U	238	474272.5	1.2	**49.5599**	0.693	1.4	ug/L	9	Standard
>	Bi	209	804968.9	1.0				ug/L	798986	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, February 03, 2016 14:18:10
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3393.7	2.6	**4.9604**	0.048	1.0	mg/L	10	Standard
K	39	1076.7	4.2	**4.5051**	0.335	7.4	mg/L	8	Standard
Ca	43	75.0	50.3	**2.7664**	6.364	230.1	mg/L	62	Standard
Fe	54	8559.3	2.4	**5.3218**	0.296	5.6	mg/L	194	Standard
Fe	57	2408.5	9.3	**5.5302**	0.478	8.6	mg/L	48	Standard
> **Sc-1**	45	43209.9	3.2				mg/L	42886	Standard
Cl	35	29034.5	2.9				ug/L	30129	Standard
Kr	83	4.0	50.0				ug/L	3	Standard
Br	81	1550.1	6.2				ug/L	1300	Standard
P	31	12006.4	7.7				ug/L	12220	Standard
S	34	1521.7	4.5				ug/L	1602	Standard
Sr	88	36.7	20.8				ug/L	50	Standard
C	12	103.3	72.6				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	25.7	24.1				mg/L	16	Standard
Ho-1	165	28.3	20.4				mg/L	17	Standard
Er	166	20.0	50.0				mg/L	17	Standard
I	127	2830.3	5.9				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.610		
Al	27	95.310		
Sc	45			
Ti	47	96.693		
V	51	97.401		
Cr	52	97.428		
Cr	53			
Mn	55	100.682		
Co	59	100.083		
Ni	60	99.187		
Cu	65	99.136		
Zn	66	98.781		
> Ge	72		103.766	
As	75	100.361		
Se	82	102.570		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, February 03, 2016 14:18:10
Page 2

Approved: February 04, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	106.468		
Ag	107	97.029		
Cd	111	99.379		
Cd	114			
> In	115			105.412
Sn	118	96.102		
Sb	123	99.305		
Ba	135	97.641		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.364		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.368		
U	238	99.120		
> Bi	209			100.749
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, February 03, 2016 14:18:10
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, February 03, 2016 14:19:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52288.6	5.3				ug/L	50061	Standard
	Be	9	5.0	173.2	**0.0227**	0.015	67.3	ug/L	5	Standard
	Al	27	1045.1	77.6	**0.0021**	0.006	287.8	ug/L	215	Standard
	Sc	45	43338.6	1.8				ug/L	42886	Standard
	Ti	47	64.3	13.2	**-0.0661**	0.021	31.7	ug/L	87	Standard
	V	51	2406.5	1.1	**-0.0195**	0.011	58.9	ug/L	2648	Standard
	Cr	52	9229.1	1.2	**-0.1436**	0.041	28.8	ug/L	10137	Standard
	Cr	53	375.0	4.0	**0.0509**	0.001	2.1	ug/L	288	Standard
	Mn	55	709.0	7.9	**-0.0244**	0.003	12.6	ug/L	688	Standard
	Co	59	131.7	22.0	**0.0020**	0.002	109.9	ug/L	85	Standard
	Ni	60	58.3	21.2	**-0.0023**	0.004	173.8	ug/L	33	Standard
	Cu	65	141.3	19.4	**-0.0024**	0.008	340.1	ug/L	104	Standard
	Zn	66	198.0	11.0	**-0.0840**	0.011	13.4	ug/L	162	Standard
>	**Ge**	72	618824.2	3.8				ug/L	610528	Standard
	As	75	-48.4	83.1	**0.0357**	0.028	78.9	ug/L	-115	Standard
	Se	82	33.6	19.6	**0.0597**	0.038	64.1	ug/L	12	Standard
	Se-1	77	62.7	6.0	**0.0324**	0.020	61.5	ug/L	64	Standard
>	**Ga**	71	16.7	86.6				mg/L	32	Standard
	Rb	85	26.7	28.6				ug/L	22	Standard
	Y	89	559733.7	4.9				ug/L	547160	Standard
>	**Rh**	103	10.0	50.0				ug/L	2	Standard
	Mo	98	263.9	10.4	**0.0610**	0.006	9.4	ug/L	12	Standard
	Ag	107	272.7	27.6	**0.0086**	0.007	76.4	ug/L	159	Standard
	Cd	111	24.2	87.5	**-0.0008**	0.006	821.1	mg/L	7	Standard
	Cd	114	78.3	44.1	**-0.0012**	0.004	359.7	ug/L	14	Standard
>	**In**	115	912460.3	2.5				ug/L	890169	Standard
	Sn	118	1181.7	14.7	**0.0472**	0.022	47.2	ug/L	717	Standard
	Sb	123	1299.1	25.2	**0.1659**	0.047	28.4	ug/L	96	Standard
	Ba	135	41.7	42.4	**-0.0039**	0.005	122.6	ug/L	24	Standard
	Ce	140	36.7	28.4				ug/L	263	Standard
>	**Tb**	159	1540385.7	5.3				ug/L	1497855	Standard
	Ho	165	18.3	95.8				ug/L	17	Standard
	Tl	203	139.0	51.7	**0.0076**	0.005	66.7	ug/L	63	Standard
	Tl	205	106.7	73.6	**0.0106**	0.008	77.4	ug/L	12	Standard
	Pb	206	502.7	8.8	**-0.0213**	0.004	16.9	ug/L	444	Standard
	Pb	207	426.7	9.8	**-0.0241**	0.004	16.6	ug/L	376	Standard
	Pb	208	1633.4	10.3	**-0.0248**	0.004	17.2	ug/L	1375	Standard
	U	238	102.7	64.4	**0.0081**	0.007	81.9	ug/L	9	Standard
>	**Bi**	209	799083.7	2.6				ug/L	798986	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, February 03, 2016 14:21:21
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	16.7	17.3	**0.0010**	0.004	394.6	mg/L	10	Standard
K	39	13.3	78.1	**-0.0012**	0.043	3566.7	mg/L	8	Standard
Ca	43	55.0	32.8	**-0.6769**	3.331	492.2	mg/L	62	Standard
Fe	54	192.3	9.8	**-0.0031**	0.010	333.3	mg/L	194	Standard
Fe	57	60.0	8.3	**-0.0067**	0.012	183.5	mg/L	48	Standard
Sc-1	45	43338.6	1.8				mg/L	42886	Standard
Cl	35	29473.3	2.5				ug/L	30129	Standard
Kr	83	3.7	68.6				ug/L	3	Standard
Br	81	1416.7	5.0				ug/L	1300	Standard
P	31	12742.0	6.1				ug/L	12220	Standard
S	34	1570.1	12.7				ug/L	1602	Standard
Sr	88	30.0	16.7				ug/L	50	Standard
C	12	96.7	15.8				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	5.7	202.3				mg/L	16	Standard
Ho-1	165	18.3	95.8				mg/L	17	Standard
Er	166	20.0	0.0				mg/L	17	Standard
I	127	7178.4	4.8				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.359	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, February 03, 2016 14:21:21
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.504
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.012
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, February 03, 2016 14:21:21
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: PBW 47 WG556014-02
Sample Date/Time: Wednesday, February 03, 2016 14:22:16
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51649.6	2.9				ug/L	50061	Standard
	Be	9	8.3	34.6	**0.0295**	0.005	18.5	ug/L	5	Standard
	Al	27	8632.5	15.4	**0.0648**	0.009	14.0	ug/L	215	Standard
	Sc	45	42624.9	3.8				ug/L	42886	Standard
	Ti	47	97.7	24.6	**0.0269**	0.061	227.8	ug/L	87	Standard
	V	51	2648.5	3.9	**0.0060**	0.014	232.9	ug/L	2648	Standard
	Cr	52	10563.7	1.8	**0.0081**	0.011	131.9	ug/L	10137	Standard
	Cr	53	340.0	2.5	**0.0211**	0.002	11.6	ug/L	288	Standard
	Mn	55	4812.4	3.1	**0.3955**	0.020	5.0	ug/L	688	Standard
	Co	59	246.0	39.4	**0.0128**	0.009	66.9	ug/L	85	Standard
	Ni	60	160.3	13.8	**0.0357**	0.007	20.1	ug/L	33	Standard
	Cu	65	458.3	4.0	**0.1138**	0.004	3.6	ug/L	104	Standard
	Zn	66	16205.3	2.6	**11.8790**	0.255	2.1	ug/L	162	Standard
>	**Ge**	72	615824.6	2.1				ug/L	610528	Standard
	As	75	-71.4	54.7	**0.0200**	0.028	140.2	ug/L	-115	Standard
	Se	82	25.8	28.8	**0.0080**	0.047	594.9	ug/L	12	Standard
	Se-1	77	57.3	12.9	**-0.0199**	0.079	394.7	ug/L	64	Standard
>	**Ga**	71	15.0	33.3				mg/L	32	Standard
	Rb	85	95.0	32.0				ug/L	22	Standard
	Y	89	574462.6	2.2				ug/L	547160	Standard
>	**Rh**	103	3.3	173.2				ug/L	2	Standard
	Mo	98	171.0	18.3	**0.0380**	0.007	18.7	ug/L	12	Standard
	Ag	107	173.3	3.8	**-0.0006**	0.001	138.7	ug/L	159	Standard
	Cd	111	25.1	29.9	**-0.0004**	0.002	536.4	mg/L	7	Standard
	Cd	114	69.2	38.7	**-0.0024**	0.003	137.6	ug/L	14	Standard
>	**In**	115	910828.2	1.6				ug/L	890169	Standard
	Sn	118	1395.1	4.1	**0.0703**	0.006	9.0	ug/L	717	Standard
	Sb	123	577.3	25.4	**0.0701**	0.020	29.0	ug/L	96	Standard
	Ba	135	264.0	10.9	**0.0588**	0.007	11.7	ug/L	24	Standard
	Ce	140	818.4	14.2				ug/L	263	Standard
>	**Tb**	159	1503490.5	2.4				ug/L	1497855	Standard
	Ho	165	16.7	34.6				ug/L	17	Standard
	Tl	203	100.3	4.7	**0.0049**	0.000	5.5	ug/L	63	Standard
	Tl	205	98.3	38.8	**0.0099**	0.004	40.4	ug/L	12	Standard
	Pb	206	581.3	3.1	**-0.0115**	0.002	20.0	ug/L	444	Standard
	Pb	207	521.3	2.5	**-0.0114**	0.001	6.6	ug/L	376	Standard
	Pb	208	2081.1	13.0	**-0.0091**	0.008	87.0	ug/L	1375	Standard
	U	238	84.3	69.5	**0.0063**	0.006	95.4	ug/L	9	Standard
>	**Bi**	209	791327.7	1.8				ug/L	798986	Standard

Sample ID: PBW 47 WG556014-02
Report Date/Time: Wednesday, February 03, 2016 14:24:33
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	21.7	58.1	**0.0093**	0.020	216.5	mg/L	10	Standard
K	39	31.7	18.2	**0.0783**	0.020	26.0	mg/L	8	Standard
Ca	43	41.7	50.0	**-2.8288**	4.029	142.4	mg/L	62	Standard
Fe	54	227.1	14.7	**0.0212**	0.019	90.5	mg/L	194	Standard
Fe	57	48.3	26.0	**-0.0323**	0.029	90.5	mg/L	48	Standard
> **Sc-1**	45	42624.9	3.8				mg/L	42886	Standard
Cl	35	28953.6	0.8				ug/L	30129	Standard
Kr	83	4.3	48.0				ug/L	3	Standard
Br	81	1293.4	15.6				ug/L	1300	Standard
P	31	12255.0	3.3				ug/L	12220	Standard
S	34	1488.4	7.1				ug/L	1602	Standard
Sr	88	35.0	85.7				ug/L	50	Standard
C	12	253.3	17.8				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	35.2	70.4				mg/L	16	Standard
Ho-1	165	16.7	34.6				mg/L	17	Standard
Er	166	30.0	88.2				mg/L	17	Standard
I	127	4157.2	6.7				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.174	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.868	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 47 WG556014-02
Report Date/Time: Wednesday, February 03, 2016 14:24:33
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.321	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.042	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 47 WG556014-02
Report Date/Time: Wednesday, February 03, 2016 14:24:33
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: LCSW 47 WG556014-03
Sample Date/Time: Wednesday, February 03, 2016 14:25:28
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52678.3	5.7				ug/L	50061	Standard
	Be	9	26458.1	4.4	**48.6779**	0.644	1.3	ug/L	5	Standard
	Al	27	6358.0	17.1	**0.0450**	0.006	13.0	ug/L	215	Standard
	Sc	45	44466.9	4.3				ug/L	42886	Standard
	Ti	47	179.7	47.9	**0.2528**	0.240	94.8	ug/L	87	Standard
	V	51	492003.1	3.6	**49.0911**	0.968	2.0	ug/L	2648	Standard
	Cr	52	464727.8	2.7	**49.9098**	0.621	1.2	ug/L	10137	Standard
	Cr	53	55441.3	1.2	**49.1165**	1.362	2.8	ug/L	288	Standard
	Mn	55	495997.6	2.6	**50.2128**	0.513	1.0	ug/L	688	Standard
	Co	59	526248.1	1.9	**49.1264**	0.287	0.6	ug/L	85	Standard
	Ni	60	137950.4	3.8	**50.8799**	1.514	3.0	ug/L	33	Standard
	Cu	65	139732.9	1.9	**50.6315**	0.785	1.6	ug/L	104	Standard
	Zn	66	106896.2	1.9	**79.0706**	0.382	0.5	ug/L	162	Standard
>	Ge	72	620269.6	1.6				ug/L	610528	Standard
	As	75	71540.0	0.4	**49.1904**	0.601	1.2	ug/L	-115	Standard
	Se	82	7445.0	1.8	**49.7927**	0.300	0.6	ug/L	12	Standard
	Se-1	77	4766.4	1.0	**49.0002**	0.315	0.6	ug/L	64	Standard
>	Ga	71	21.7	26.6				mg/L	32	Standard
	Rb	85	243.3	22.0				ug/L	22	Standard
	Y	89	565210.3	3.0				ug/L	547160	Standard
>	Rh	103	30.0	16.7				ug/L	2	Standard
	Mo	98	257.8	48.7	**0.0593**	0.030	50.6	ug/L	12	Standard
	Ag	107	525080.0	2.6	**49.3765**	0.461	0.9	ug/L	159	Standard
	Cd	111	161381.3	1.5	**49.4445**	0.142	0.3	mg/L	7	Standard
	Cd	114	386470.7	1.7	**49.0313**	0.614	1.3	ug/L	14	Standard
>	In	115	912314.8	1.7				ug/L	890169	Standard
	Sn	118	2115.1	7.7	**0.1483**	0.016	11.1	ug/L	717	Standard
	Sb	123	362915.9	3.6	**47.9516**	0.992	2.1	ug/L	96	Standard
	Ba	135	173413.2	1.5	**48.8241**	0.077	0.2	ug/L	24	Standard
	Ce	140	601.7	9.9				ug/L	263	Standard
>	Tb	159	1522765.4	2.7				ug/L	1497855	Standard
	Ho	165	31.7	32.9				ug/L	17	Standard
	Tl	203	656739.8	3.0	**49.3448**	0.436	0.9	ug/L	63	Standard
	Tl	205	450985.9	1.4	**49.5857**	1.082	2.2	ug/L	12	Standard
	Pb	206	439011.1	2.8	**50.4011**	0.381	0.8	ug/L	444	Standard
	Pb	207	382458.4	3.8	**48.4475**	0.719	1.5	ug/L	376	Standard
	Pb	208	1467435.0	1.4	**49.5516**	0.539	1.1	ug/L	1375	Standard
	U	238	451598.3	1.6	**47.7882**	0.364	0.8	ug/L	9	Standard
>	Bi	209	794950.4	2.3				ug/L	798986	Standard

Sample ID: LCSW 47 WG556014-03
Report Date/Time: Wednesday, February 03, 2016 14:27:44
Page 1

Approved: February 04, 2016

Na	23	1.7	173.2	**9.4923**	16.433	173.1	mg/L	2	Standard
Mg	24	31.7	59.8	**0.0224**	0.028	124.2	mg/L	10	Standard
K	39	16.7	69.3	**0.0105**	0.044	421.6	mg/L	8	Standard
Ca	43	46.7	16.4	**-2.3829**	1.173	49.2	mg/L	62	Standard
Fe	54	235.8	24.5	**0.0213**	0.039	182.7	mg/L	194	Standard
Fe	57	61.7	20.4	**-0.0067**	0.026	387.7	mg/L	48	Standard
> **Sc-1**	45	44466.9	4.3				mg/L	42886	Standard
Cl	35	28073.3	1.0				ug/L	30129	Standard
Kr	83	4.0	25.0				ug/L	3	Standard
Br	81	1330.1	4.5				ug/L	1300	Standard
P	31	12226.6	2.0				ug/L	12220	Standard
S	34	1470.1	4.3				ug/L	1602	Standard
Sr	88	26.7	43.3				ug/L	50	Standard
C	12	190.0	29.3				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	173.2				mg/L	7	Standard
Dy	164	17.8	3.1				mg/L	16	Standard
Ho-1	165	31.7	32.9				mg/L	17	Standard
Er	166	46.7	24.7				mg/L	17	Standard
I	127	4253.9	5.2				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.228	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.596	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 47 WG556014-03
Report Date/Time: Wednesday, February 03, 2016 14:27:44
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.488
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.495
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 47 WG556014-03
Report Date/Time: Wednesday, February 03, 2016 14:27:44
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602009501 WG556014-01
Sample Date/Time: Wednesday, February 03, 2016 14:28:39
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53686.6	1.4				ug/L	50061	Standard
	Be	9	15.0	100.0	**0.0412**	0.028	66.8	ug/L	5	Standard
	Al	27	5005042.0	1.3	**39.6986**	1.031	2.6	ug/L	215	Standard
	Sc	45	44384.9	2.1				ug/L	42886	Standard
	Ti	47	886.4	11.3	**2.1837**	0.280	12.8	ug/L	87	Standard
	V	51	4998.1	4.7	**0.2355**	0.028	11.7	ug/L	2648	Standard
	Cr	52	13070.0	5.6	**0.2632**	0.092	34.9	ug/L	10137	Standard
	Cr	53	1286.7	17.9	**0.8530**	0.208	24.3	ug/L	288	Standard
	Mn	55	227547.8	1.2	**22.7862**	0.164	0.7	ug/L	688	Standard
	Co	59	1804.8	4.5	**0.1568**	0.008	4.9	ug/L	85	Standard
	Ni	60	3245.7	2.2	**1.1638**	0.036	3.1	ug/L	33	Standard
	Cu	65	1906.5	4.0	**0.6320**	0.031	4.8	ug/L	104	Standard
	Zn	66	7306.1	0.8	**5.1427**	0.080	1.6	ug/L	162	Standard
>	**Ge**	72	625689.3	0.9				ug/L	610528	Standard
	As	75	420.2	7.0	**0.3557**	0.023	6.3	ug/L	-115	Standard
	Se	82	74.7	10.0	**0.3313**	0.054	16.2	ug/L	12	Standard
	Se-1	77	126.3	8.7	**0.6830**	0.120	17.5	ug/L	64	Standard
>	**Ga**	71	225.0	22.6				mg/L	32	Standard
	Rb	85	9663.1	0.3				ug/L	22	Standard
	Y	89	578566.2	2.2				ug/L	547160	Standard
>	**Rh**	103	55.0	41.7				ug/L	2	Standard
	Mo	98	2100.9	2.1	**0.5121**	0.013	2.6	ug/L	12	Standard
	Ag	107	295.3	11.0	**0.0105**	0.003	29.7	ug/L	159	Standard
	Cd	111	75.6	12.8	**0.0147**	0.003	19.3	mg/L	7	Standard
	Cd	114	182.7	22.3	**0.0117**	0.005	42.9	ug/L	14	Standard
>	**In**	115	924589.5	0.5				ug/L	890169	Standard
	Sn	118	1330.1	3.6	**0.0611**	0.005	8.0	ug/L	717	Standard
	Sb	123	2325.1	22.7	**0.2969**	0.070	23.6	ug/L	96	Standard
	Ba	135	53733.8	1.3	**14.9164**	0.112	0.7	ug/L	24	Standard
	Ce	140	6509.7	4.7				ug/L	263	Standard
>	**Tb**	159	1543282.9	0.9				ug/L	1497855	Standard
	Ho	165	165.0	19.9				ug/L	17	Standard
	Tl	203	893.0	7.3	**0.0641**	0.005	7.5	ug/L	63	Standard
	Tl	205	663.3	20.5	**0.0716**	0.015	20.6	ug/L	12	Standard
	Pb	206	1445.4	4.2	**0.0866**	0.007	8.3	ug/L	444	Standard
	Pb	207	1211.7	5.4	**0.0750**	0.008	11.0	ug/L	376	Standard
	Pb	208	4736.0	1.6	**0.0796**	0.003	3.2	ug/L	1375	Standard
	U	238	1336.7	11.8	**0.1381**	0.016	11.9	ug/L	9	Standard
>	**Bi**	209	799262.0	0.2				ug/L	798986	Standard

Sample ID: L1602009501 WG556014-01
Report Date/Time: Wednesday, February 03, 2016 14:30:56
Page 1

Approved: February 04, 2016

Na	23	1.7	173.2	**9.5253**	16.490	173.1	mg/L	2	Standard
Mg	24	7103.3	0.7	**10.1347**	0.290	2.9	mg/L	10	Standard
K	39	200.0	15.2	**0.7658**	0.114	14.9	mg/L	8	Standard
Ca	43	216.7	5.8	**26.6586**	2.843	10.7	mg/L	62	Standard
Fe	54	390.3	5.0	**0.1166**	0.012	9.9	mg/L	194	Standard
Fe	57	195.0	6.8	**0.3000**	0.033	10.9	mg/L	48	Standard
> **Sc-1**	45	44384.9	2.1				mg/L	42886	Standard
Cl	35	39295.0	5.1				ug/L	30129	Standard
Kr	83	4.0	43.3				ug/L	3	Standard
Br	81	4840.8	3.7				ug/L	1300	Standard
P	31	13147.4	1.7				ug/L	12220	Standard
S	34	1488.4	2.2				ug/L	1602	Standard
Sr	88	145.0	37.3				ug/L	50	Standard
C	12	240.0	16.7				mg/L	107	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	297.7	11.4				mg/L	16	Standard
Ho-1	165	165.0	19.9				mg/L	17	Standard
Er	166	186.7	27.0				mg/L	17	Standard
I	127	17673.6	1.0				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.243	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.483	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602009501 WG556014-01
Report Date/Time: Wednesday, February 03, 2016 14:30:56
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.867
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.035
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1602009501 WG556014-01
Report Date/Time: Wednesday, February 03, 2016 14:30:56
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602009501DP WG556014-04
Sample Date/Time: Wednesday, February 03, 2016 14:31:50
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57102.5	3.5				ug/L	50061	Standard
	Be	9	11.7	24.7	**0.0338**	0.006	16.4	ug/L	5	Standard
	Al	27	5252211.2	2.7	**39.1678**	0.614	1.6	ug/L	215	Standard
	Sc	45	45540.2	6.4				ug/L	42886	Standard
	Ti	47	1068.7	10.5	**2.6702**	0.355	13.3	ug/L	87	Standard
	V	51	5593.8	0.2	**0.2915**	0.010	3.6	ug/L	2648	Standard
	Cr	52	13287.8	1.8	**0.2782**	0.006	2.1	ug/L	10137	Standard
	Cr	53	1611.8	10.4	**1.1337**	0.177	15.6	ug/L	288	Standard
	Mn	55	238938.0	1.8	**23.7954**	0.186	0.8	ug/L	688	Standard
	Co	59	2067.8	5.6	**0.1803**	0.015	8.1	ug/L	85	Standard
	Ni	60	3335.0	2.2	**1.1892**	0.001	0.1	ug/L	33	Standard
	Cu	65	2037.8	2.0	**0.6750**	0.010	1.5	ug/L	104	Standard
	Zn	66	17382.3	1.8	**12.4802**	0.083	0.7	ug/L	162	Standard
>	Ge	72	629302.8	2.1				ug/L	610528	Standard
	As	75	382.4	13.4	**0.3286**	0.036	11.0	ug/L	-115	Standard
	Se	82	70.5	19.9	**0.3024**	0.102	33.7	ug/L	12	Standard
	Se-1	77	143.7	6.5	**0.8533**	0.101	11.8	ug/L	64	Standard
>	Ga	71	223.3	14.4				mg/L	32	Standard
	Rb	85	10046.7	1.8				ug/L	22	Standard
	Y	89	585728.6	0.2				ug/L	547160	Standard
>	Rh	103	48.3	29.9				ug/L	2	Standard
	Mo	98	2180.5	2.8	**0.5341**	0.016	3.0	ug/L	12	Standard
	Ag	107	314.0	78.1	**0.0122**	0.023	184.8	ug/L	159	Standard
	Cd	111	169.6	89.1	**0.0432**	0.045	105.1	mg/L	7	Standard
	Cd	114	527.7	100.1	**0.0549**	0.066	119.8	ug/L	14	Standard
>	In	115	920447.1	2.2				ug/L	890169	Standard
	Sn	118	1638.4	18.0	**0.0950**	0.031	32.9	ug/L	717	Standard
	Sb	123	964.9	25.2	**0.1202**	0.033	27.4	ug/L	96	Standard
	Ba	135	54974.2	1.8	**15.3313**	0.072	0.5	ug/L	24	Standard
	Ce	140	7281.8	11.9				ug/L	263	Standard
>	Tb	159	1551072.0	1.5				ug/L	1497855	Standard
	Ho	165	175.0	14.8				ug/L	17	Standard
	Tl	203	1041.7	38.9	**0.0751**	0.030	40.2	ug/L	63	Standard
	Tl	205	608.3	11.5	**0.0656**	0.008	11.8	ug/L	12	Standard
	Pb	206	1628.8	14.4	**0.1074**	0.026	24.6	ug/L	444	Standard
	Pb	207	1385.4	9.9	**0.0969**	0.017	17.6	ug/L	376	Standard
	Pb	208	5223.0	3.8	**0.0959**	0.007	6.9	ug/L	1375	Standard
	U	238	1331.4	1.5	**0.1375**	0.001	1.1	ug/L	9	Standard
>	Bi	209	799699.8	0.4				ug/L	798986	Standard

Sample ID: L1602009501DP WG556014-04
Report Date/Time: Wednesday, February 03, 2016 14:34:07
Page 1

Approved: February 04, 2016

Na	23	3.3	86.6	**18.3709**	15.970	86.9	mg/L	2	Standard
Mg	24	7660.3	4.8	**10.6852**	0.986	9.2	mg/L	10	Standard
K	39	201.7	2.9	**0.7555**	0.072	9.6	mg/L	8	Standard
Ca	43	201.7	14.1	**23.2197**	4.697	20.2	mg/L	62	Standard
Fe	54	412.0	1.9	**0.1240**	0.012	9.9	mg/L	194	Standard
Fe	57	190.0	12.1	**0.2801**	0.073	26.2	mg/L	48	Standard
> **Sc-1**	45	45540.2	6.4				mg/L	42886	Standard
Cl	35	42944.1	1.0				ug/L	30129	Standard
Kr	83	3.7	41.7				ug/L	3	Standard
Br	81	4960.8	0.5				ug/L	1300	Standard
P	31	13642.8	6.3				ug/L	12220	Standard
S	34	1580.1	5.5				ug/L	1602	Standard
Sr	88	163.3	14.1				ug/L	50	Standard
C	12	236.7	23.3				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	269.9	12.6				mg/L	16	Standard
Ho-1	165	175.0	14.8				mg/L	17	Standard
Er	166	280.0	68.1				mg/L	17	Standard
I	127	18920.1	3.2				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.066	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.075	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602009501DP WG556014-04
Report Date/Time: Wednesday, February 03, 2016 14:34:07
Page 2

Approved: February 04, 2016

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	103.401
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	100.089
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1602009501DP WG556014-04
Report Date/Time: Wednesday, February 03, 2016 14:34:07
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602009501S WG556014-05
Sample Date/Time: Wednesday, February 03, 2016 14:35:02
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58325.6	5.2				ug/L	50061	Standard
	Be	9	29183.1	1.6	**48.5461**	2.357	4.9	ug/L	5	Standard
	Al	27	5264635.3	3.5	**38.4572**	1.144	3.0	ug/L	215	Standard
	Sc	45	44105.8	2.6				ug/L	42886	Standard
	Ti	47	908.0	9.5	**2.2464**	0.215	9.6	ug/L	87	Standard
	V	51	505454.1	1.5	**50.1140**	0.215	0.4	ug/L	2648	Standard
	Cr	52	461041.8	2.2	**49.1711**	0.541	1.1	ug/L	10137	Standard
	Cr	53	57114.2	4.3	**50.2441**	1.602	3.2	ug/L	288	Standard
	Mn	55	718256.1	2.3	**72.2766**	0.865	1.2	ug/L	688	Standard
	Co	59	539037.6	2.6	**49.9849**	0.838	1.7	ug/L	85	Standard
	Ni	60	138494.7	2.7	**50.7439**	0.980	1.9	ug/L	33	Standard
	Cu	65	137774.7	1.4	**49.5875**	0.232	0.5	ug/L	104	Standard
	Zn	66	73450.3	2.4	**53.8986**	1.096	2.0	ug/L	162	Standard
>	**Ge**	72	624405.6	1.3				ug/L	610528	Standard
	As	75	75833.9	1.1	**51.7881**	0.299	0.6	ug/L	-115	Standard
	Se	82	7640.3	1.5	**50.7645**	0.453	0.9	ug/L	12	Standard
	Se-1	77	4927.8	0.2	**50.3414**	0.528	1.0	ug/L	64	Standard
>	**Ga**	71	228.3	4.6				mg/L	32	Standard
	Rb	85	10311.9	7.1				ug/L	22	Standard
	Y	89	587264.2	2.0				ug/L	547160	Standard
>	**Rh**	103	61.7	26.1				ug/L	2	Standard
	Mo	98	2135.0	4.3	**0.5117**	0.024	4.6	ug/L	12	Standard
	Ag	107	516360.8	1.0	**47.1107**	0.248	0.5	ug/L	159	Standard
	Cd	111	164886.9	0.3	**49.0098**	0.067	0.1	mg/L	7	Standard
	Cd	114	396133.8	1.1	**48.7566**	0.697	1.4	ug/L	14	Standard
>	**In**	115	940382.8	0.5				ug/L	890169	Standard
	Sn	118	1525.1	1.5	**0.0793**	0.003	3.4	ug/L	717	Standard
	Sb	123	371069.7	0.7	**47.5757**	0.346	0.7	ug/L	96	Standard
	Ba	135	228227.5	1.9	**62.3399**	0.939	1.5	ug/L	24	Standard
	Ce	140	6663.1	10.1				ug/L	263	Standard
>	**Tb**	159	1546991.3	2.4				ug/L	1497855	Standard
	Ho	165	185.0	11.8				ug/L	17	Standard
	Tl	203	672703.3	1.6	**49.8159**	0.595	1.2	ug/L	63	Standard
	Tl	205	468604.4	3.3	**50.7638**	1.634	3.2	ug/L	12	Standard
	Pb	206	445822.8	0.8	**50.4458**	0.253	0.5	ug/L	444	Standard
	Pb	207	388014.7	0.8	**48.4512**	0.185	0.4	ug/L	376	Standard
	Pb	208	1492765.1	1.2	**49.6696**	0.426	0.9	ug/L	1375	Standard
	U	238	474240.1	0.8	**49.4524**	0.251	0.5	ug/L	9	Standard
>	**Bi**	209	806614.6	0.5				ug/L	798986	Standard

Sample ID: L1602009501S WG556014-05
Report Date/Time: Wednesday, February 03, 2016 14:37:18
Page 1

Approved: February 04, 2016

Na	23	5.0	0.0	**28.9577**	0.752	2.6	mg/L	2	Standard
Mg	24	7543.5	4.1	**10.8298**	0.414	3.8	mg/L	10	Standard
K	39	235.0	21.6	**0.9161**	0.200	21.8	mg/L	8	Standard
Ca	43	153.3	5.0	**16.0168**	1.826	11.4	mg/L	62	Standard
Fe	54	381.5	19.1	**0.1132**	0.049	43.0	mg/L	194	Standard
Fe	57	163.3	17.4	**0.2290**	0.061	26.6	mg/L	48	Standard
> **Sc-1**	45	44105.8	2.6				mg/L	42886	Standard
Cl	35	44096.1	1.4				ug/L	30129	Standard
Kr	83	2.7	114.6				ug/L	3	Standard
Br	81	4864.1	5.9				ug/L	1300	Standard
P	31	14023.2	6.2				ug/L	12220	Standard
S	34	1588.4	4.1				ug/L	1602	Standard
Sr	88	190.0	11.5				ug/L	50	Standard
C	12	270.0	12.8				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	278.0	16.3				mg/L	16	Standard
Ho-1	165	185.0	11.8				mg/L	17	Standard
Er	166	180.0	29.4				mg/L	17	Standard
I	127	22159.5	4.0				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.509	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.273	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602009501S WG556014-05
Report Date/Time: Wednesday, February 03, 2016 14:37:18
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		105.641
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		100.955
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602009501SD WG556014-06
Sample Date/Time: Wednesday, February 03, 2016 14:38:13
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57060.6	1.2				ug/L	50061	Standard
	Be	9	30458.9	3.8	**51.6988**	1.431	2.8	ug/L	5	Standard
	Al	27	5247721.8	6.5	**39.1393**	2.142	5.5	ug/L	215	Standard
	Sc	45	43119.7	3.8				ug/L	42886	Standard
	Ti	47	1031.0	10.2	**2.5816**	0.304	11.8	ug/L	87	Standard
	V	51	506040.8	3.6	**50.0978**	2.068	4.1	ug/L	2648	Standard
	Cr	52	461526.2	1.8	**49.1483**	1.088	2.2	ug/L	10137	Standard
	Cr	53	55752.5	4.1	**48.9757**	2.236	4.6	ug/L	288	Standard
	Mn	55	718638.1	3.9	**72.2098**	3.106	4.3	ug/L	688	Standard
	Co	59	534315.7	2.9	**49.4741**	1.634	3.3	ug/L	85	Standard
	Ni	60	137248.4	2.4	**50.2122**	1.417	2.8	ug/L	33	Standard
	Cu	65	138578.5	2.9	**49.8018**	1.712	3.4	ug/L	104	Standard
	Zn	66	84422.0	2.5	**61.8892**	1.868	3.0	ug/L	162	Standard
>	**Ge**	72	625427.1	0.5				ug/L	610528	Standard
	As	75	75970.2	2.4	**51.7998**	1.487	2.9	ug/L	-115	Standard
	Se	82	7705.6	3.3	**51.1216**	1.930	3.8	ug/L	12	Standard
	Se-1	77	4934.1	1.2	**50.3202**	0.680	1.4	ug/L	64	Standard
>	**Ga**	71	260.0	6.9				mg/L	32	Standard
	Rb	85	9541.3	5.3				ug/L	22	Standard
	Y	89	577688.4	2.1				ug/L	547160	Standard
>	**Rh**	103	101.7	20.5				ug/L	2	Standard
	Mo	98	2253.0	15.1	**0.5415**	0.084	15.5	ug/L	12	Standard
	Ag	107	528592.5	2.7	**48.3392**	1.557	3.2	ug/L	159	Standard
	Cd	111	165693.3	1.5	**49.3641**	1.184	2.4	mg/L	7	Standard
	Cd	114	398004.2	2.2	**49.0960**	1.227	2.5	ug/L	14	Standard
>	**In**	115	938333.2	0.9				ug/L	890169	Standard
	Sn	118	1801.8	1.3	**0.1089**	0.004	3.7	ug/L	717	Standard
	Sb	123	380593.2	2.4	**48.9100**	1.482	3.0	ug/L	96	Standard
	Ba	135	227228.4	1.4	**62.2123**	1.331	2.1	ug/L	24	Standard
	Ce	140	6938.3	11.4				ug/L	263	Standard
>	**Tb**	159	1533544.5	0.6				ug/L	1497855	Standard
	Ho	165	201.7	27.3				ug/L	17	Standard
	Tl	203	673753.8	1.6	**49.7074**	0.896	1.8	ug/L	63	Standard
	Tl	205	471087.6	3.7	**50.8390**	1.837	3.6	ug/L	12	Standard
	Pb	206	445772.3	1.1	**50.2489**	0.554	1.1	ug/L	444	Standard
	Pb	207	387727.8	2.4	**48.2290**	0.952	2.0	ug/L	376	Standard
	Pb	208	1497340.4	2.4	**49.6345**	1.208	2.4	ug/L	1375	Standard
	U	238	475430.2	0.8	**49.3905**	0.633	1.3	ug/L	9	Standard
>	**Bi**	209	809689.3	0.5				ug/L	798986	Standard

Sample ID: L1602009501SD WG556014-06
Report Date/Time: Wednesday, February 03, 2016 14:40:30
Page 1

Approved: February 04, 2016

Na	23	1.7	173.2	**9.9133**	17.162	173.1	mg/L	2	Standard
Mg	24	7233.4	1.6	**10.6300**	0.438	4.1	mg/L	10	Standard
K	39	241.7	30.7	**0.9703**	0.331	34.1	mg/L	8	Standard
Ca	43	156.7	27.9	**17.0130**	6.560	38.6	mg/L	62	Standard
Fe	54	382.2	9.2	**0.1182**	0.016	13.2	mg/L	194	Standard
Fe	57	160.0	24.8	**0.2303**	0.094	40.8	mg/L	48	Standard
Sc-1	45	43119.7	3.8				mg/L	42886	Standard
Cl	35	45452.1	1.6				ug/L	30129	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	5861.1	5.6				ug/L	1300	Standard
P	31	14577.0	8.9				ug/L	12220	Standard
S	34	1625.1	4.3				ug/L	1602	Standard
Sr	88	151.7	11.6				ug/L	50	Standard
C	12	240.0	32.5				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	7	Standard
Dy	164	279.8	8.3				mg/L	16	Standard
Ho-1	165	201.7	27.3				mg/L	17	Standard
Er	166	213.3	31.9				mg/L	17	Standard
I	127	21209.9	4.3				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		113.982	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.440	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1602009501SD WG556014-06
Report Date/Time: Wednesday, February 03, 2016 14:40:30
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.411
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.340
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1602009501SD WG556014-06
Report Date/Time: Wednesday, February 03, 2016 14:40:30
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602004601
Sample Date/Time: Wednesday, February 03, 2016 14:41:24
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	102204.0	4.4				ug/L	50061	Standard
	Be	9	23446.5	3.8	**22.2406**	0.663	3.0	ug/L	5	Standard
	Al	27	120347803.9	2.9	**502.3915**	35.648	7.1	ug/L	215	Standard
	Sc	45	123083.2	3.0				ug/L	42886	Standard
	Ti	47	36495.3	5.8	**100.9876**	5.275	5.2	ug/L	87	Standard
	V	51	273676.5	2.2	**27.3137**	0.431	1.6	ug/L	2648	Standard
	Cr	52	440588.2	2.8	**47.4687**	1.084	2.3	ug/L	10137	Standard
	Cr	53	53807.1	1.6	**47.8521**	0.419	0.9	ug/L	288	Standard
	Mn	55	174123529.8	2.2	**17738.5323**	250.862	1.4	ug/L	688	Standard
	Co	59	5339896.3	2.4	**500.7244**	8.817	1.8	ug/L	85	Standard
	Ni	60	3467598.8	1.6	**1285.1399**	11.050	0.9	ug/L	33	Standard
	Cu	65	51312.1	0.4	**18.6389**	0.079	0.4	ug/L	104	Standard
	Zn	66	4266756.4	0.7	**3178.9725**	28.301	0.9	ug/L	162	Standard
>	**Ge**	72	617596.8	0.8				ug/L	610528	Standard
	As	75	11893.1	0.8	**8.2700**	0.040	0.5	ug/L	-115	Standard
	Se	82	915.5	3.3	**6.0046**	0.213	3.5	ug/L	12	Standard
	Se-1	77	1875.8	2.2	**18.9889**	0.309	1.6	ug/L	64	Standard
>	**Ga**	71	17845.5	2.9				mg/L	32	Standard
	Rb	85	122562.3	2.6				ug/L	22	Standard
	Y	89	10507684.3	2.5				ug/L	547160	Standard
>	**Rh**	103	181.7	8.4				ug/L	2	Standard
	Mo	98	5271.0	1.9	**1.7133**	0.010	0.6	ug/L	12	Standard
	Ag	107	1101.4	4.4	**0.1186**	0.006	5.4	ug/L	159	Standard
	Cd	111	14426.4	2.3	**5.7721**	0.069	1.2	mg/L	7	Standard
	Cd	114	39780.6	2.2	**6.5891**	0.046	0.7	ug/L	14	Standard
>	**In**	115	697687.5	1.5				ug/L	890169	Standard
	Sn	118	1988.5	8.3	**0.2010**	0.022	10.8	ug/L	717	Standard
	Sb	123	3352.8	8.7	**0.5726**	0.041	7.2	ug/L	96	Standard
	Ba	135	62460.8	2.0	**22.9865**	0.236	1.0	ug/L	24	Standard
	Ce	140	10135794.9	1.7				ug/L	263	Standard
>	**Tb**	159	1849579.5	0.3				ug/L	1497855	Standard
	Ho	165	881496.9	1.4				ug/L	17	Standard
	Tl	203	8986.0	2.0	**0.8640**	0.022	2.6	ug/L	63	Standard
	Tl	205	6841.5	2.7	**0.9643**	0.031	3.2	ug/L	12	Standard
	Pb	206	26142.2	1.6	**3.7794**	0.085	2.2	ug/L	444	Standard
	Pb	207	20764.2	0.6	**3.3037**	0.004	0.1	ug/L	376	Standard
	Pb	208	80889.5	1.1	**3.4308**	0.058	1.7	ug/L	1375	Standard
	U	238	106156.6	1.6	**14.4128**	0.256	1.8	ug/L	9	Standard
>	**Bi**	209	619469.1	0.6				ug/L	798986	Standard

Sample ID: L1602004601
Report Date/Time: Wednesday, February 03, 2016 14:43:41
Page 1

Approved: February 04, 2016

Na	23	60.0	50.7	**123.9627**	61.848	49.9	mg/L	2	Standard
Mg	24	42048.3	4.0	**21.6508**	0.542	2.5	mg/L	10	Standard
K	39	340.0	21.7	**0.4461**	0.094	21.0	mg/L	8	Standard
Ca	43	1541.7	10.7	**84.3288**	7.340	8.7	mg/L	62	Standard
Fe	54	1196391.5	3.0	**266.8577**	3.561	1.3	mg/L	194	Standard
Fe	57	350066.8	1.5	**289.7796**	7.160	2.5	mg/L	48	Standard
Sc-1	45	123083.2	3.0				mg/L	42886	Standard
Cl	35	371863.9	7.7				ug/L	30129	Standard
Kr	83	3.0	66.7				ug/L	3	Standard
Br	81	27595.2	6.0				ug/L	1300	Standard
P	31	118285.2	3.0				ug/L	12220	Standard
S	34	1801.8	8.1				ug/L	1602	Standard
Sr	88	2738.6	0.6				ug/L	50	Standard
C	12	413.3	13.8				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	43.3				mg/L	7	Standard
Dy	164	1304221.4	2.5				mg/L	16	Standard
Ho-1	165	881496.9	1.4				mg/L	17	Standard
Er	166	764264.5	0.2				mg/L	17	Standard
I	127	72619.4	8.1				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		204.159	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.158	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602004601
Report Date/Time: Wednesday, February 03, 2016 14:43:41
Page 2

Approved: February 04, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	78.377
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	77.532
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	

Sample ID: L1602004601
Report Date/Time: Wednesday, February 03, 2016 14:43:41
Page 3

Approved: February 04, 2016

Mn 55 Upper, S, EEE	Mn	55
Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602004601PS WG556102-01
Sample Date/Time: Wednesday, February 03, 2016 14:44:36
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	111314.2	2.1				ug/L	50061	Standard
	Be	9	61012.6	1.2	**53.1080**	1.144	2.2	ug/L	5	Standard
	Al	27	119371088.8	3.8	**456.6796**	17.413	3.8	ug/L	215	Standard
	Sc	45	117550.9	1.2				ug/L	42886	Standard
	Ti	47	33932.0	2.3	**92.9266**	0.507	0.5	ug/L	87	Standard
	V	51	684090.4	2.7	**67.9618**	1.045	1.5	ug/L	2648	Standard
	Cr	52	791529.6	1.6	**85.3205**	0.695	0.8	ug/L	10137	Standard
	Cr	53	96741.2	1.0	**85.4060**	2.279	2.7	ug/L	288	Standard
	Mn	55	170791348.4	1.6	**17222.9549**	126.684	0.7	ug/L	688	Standard
	Co	59	5630243.4	2.1	**522.6079**	8.472	1.6	ug/L	85	Standard
	Ni	60	3519009.2	0.4	**1291.2034**	24.968	1.9	ug/L	33	Standard
	Cu	65	155703.4	1.4	**56.0914**	0.628	1.1	ug/L	104	Standard
	Zn	66	4242983.0	1.1	**3129.3599**	54.733	1.7	ug/L	162	Standard
>	**Ge**	72	624023.5	2.3				ug/L	610528	Standard
	As	75	76280.6	1.1	**52.1341**	0.697	1.3	ug/L	-115	Standard
	Se	82	7376.1	1.6	**49.0390**	0.430	0.9	ug/L	12	Standard
	Se-1	77	6035.2	2.9	**61.8494**	2.323	3.8	ug/L	64	Standard
>	**Ga**	71	17475.1	0.3				mg/L	32	Standard
	Rb	85	123740.0	1.9				ug/L	22	Standard
	Y	89	10412156.4	2.9				ug/L	547160	Standard
>	**Rh**	103	280.0	5.4				ug/L	2	Standard
	Mo	98	5376.2	1.3	**1.7067**	0.028	1.6	ug/L	12	Standard
	Ag	107	454853.8	0.2	**54.6312**	0.230	0.4	ug/L	159	Standard
	Cd	111	115740.4	1.3	**45.2857**	0.724	1.6	mg/L	7	Standard
	Cd	114	320090.7	0.6	**51.8601**	0.456	0.9	ug/L	14	Standard
>	**In**	115	714386.9	0.4				ug/L	890169	Standard
	Sn	118	2226.8	7.3	**0.2275**	0.022	9.6	ug/L	717	Standard
	Sb	123	303603.1	1.3	**51.2411**	0.779	1.5	ug/L	96	Standard
	Ba	135	174228.4	1.1	**62.6498**	0.897	1.4	ug/L	24	Standard
	Ce	140	10329885.6	0.9				ug/L	263	Standard
>	**Tb**	159	1894571.2	0.6				ug/L	1497855	Standard
	Ho	165	896117.5	0.5				ug/L	17	Standard
	Tl	203	589939.2	0.5	**55.3561**	0.344	0.6	ug/L	63	Standard
	Tl	205	433145.8	0.5	**59.4535**	0.290	0.5	ug/L	12	Standard
	Pb	206	419002.0	1.1	**60.0871**	0.640	1.1	ug/L	444	Standard
	Pb	207	365639.2	0.2	**57.8657**	0.135	0.2	ug/L	376	Standard
	Pb	208	1373064.2	0.8	**57.9016**	0.429	0.7	ug/L	1375	Standard
	U	238	550739.5	1.3	**72.7684**	1.025	1.4	ug/L	9	Standard
>	**Bi**	209	636607.4	0.1				ug/L	798986	Standard

Sample ID: L1602004601PS WG556102-01
Report Date/Time: Wednesday, February 03, 2016 14:46:53
Page 1

Approved: February 04, 2016

Na	23	51.7	14.8	**112.2027**	16.374	14.6	mg/L	2	Standard
Mg	24	41201.0	1.9	**22.2136**	0.241	1.1	mg/L	10	Standard
K	39	266.7	9.2	**0.3580**	0.043	12.1	mg/L	8	Standard
Ca	43	1558.4	4.9	**89.9888**	4.324	4.8	mg/L	62	Standard
Fe	54	1169734.5	2.6	**273.1464**	4.199	1.5	mg/L	194	Standard
Fe	57	337003.9	3.1	**291.9291**	5.689	1.9	mg/L	48	Standard
> **Sc-1**	45	117550.9	1.2				mg/L	42886	Standard
Cl	35	404590.8	0.3				ug/L	30129	Standard
Kr	83	2.3	99.0				ug/L	3	Standard
Br	81	26820.4	2.4				ug/L	1300	Standard
P	31	118884.6	0.7				ug/L	12220	Standard
S	34	1638.4	5.1				ug/L	1602	Standard
Sr	88	3160.3	8.3				ug/L	50	Standard
C	12	463.3	23.1				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	1364083.3	2.5				mg/L	16	Standard
Ho-1	165	896117.5	0.5				mg/L	17	Standard
Er	166	794800.3	0.3				mg/L	17	Standard
I	127	75054.0	4.7				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		222.358	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.211	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602004601PS WG556102-01
Report Date/Time: Wednesday, February 03, 2016 14:46:53
Page 2

Approved: February 04, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	80.253
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	79.677
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602004601PS WG556102-01
Report Date/Time: Wednesday, February 03, 2016 14:46:53
Page 3

Approved: February 04, 2016

Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602004601SDL WG556102-02
Sample Date/Time: Wednesday, February 03, 2016 14:47:47
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78317.3	5.7				ug/L	50061	Standard
	Be	9	5624.4	5.5	**6.9691**	0.017	0.2	ug/L	5	Standard
	Al	27	27820838.1	2.8	**151.4646**	6.405	4.2	ug/L	215	Standard
	Sc	45	56791.3	1.6				ug/L	42886	Standard
	Ti	47	8042.5	2.4	**21.6253**	0.349	1.6	ug/L	87	Standard
	V	51	66139.5	2.7	**6.2703**	0.113	1.8	ug/L	2648	Standard
	Cr	52	105946.8	0.5	**10.3027**	0.121	1.2	ug/L	10137	Standard
	Cr	53	12533.5	3.5	**10.7081**	0.407	3.8	ug/L	288	Standard
	Mn	55	36722905.8	1.1	**3667.2485**	10.253	0.3	ug/L	688	Standard
	Co	59	1197975.0	2.3	**110.1032**	1.443	1.3	ug/L	85	Standard
	Ni	60	809095.9	1.0	**293.9250**	0.524	0.2	ug/L	33	Standard
	Cu	65	12678.3	2.4	**4.4734**	0.089	2.0	ug/L	104	Standard
	Zn	66	1012625.8	2.3	**739.2842**	9.719	1.3	ug/L	162	Standard
>	**Ge**	72	630055.6	0.9				ug/L	610528	Standard
	As	75	2954.7	0.5	**2.0667**	0.018	0.9	ug/L	-115	Standard
	Se	82	350.5	2.8	**2.1497**	0.068	3.2	ug/L	12	Standard
	Se-1	77	522.0	2.5	**4.7280**	0.088	1.9	ug/L	64	Standard
>	**Ga**	71	4434.0	3.8				mg/L	32	Standard
	Rb	85	30762.9	0.8				ug/L	22	Standard
	Y	89	3061992.2	0.9				ug/L	547160	Standard
>	**Rh**	103	71.7	46.5				ug/L	2	Standard
	Mo	98	1246.5	1.6	**0.2979**	0.002	0.7	ug/L	12	Standard
	Ag	107	520.3	13.3	**0.0307**	0.006	20.8	ug/L	159	Standard
	Cd	111	4574.9	3.0	**1.3571**	0.031	2.3	mg/L	7	Standard
	Cd	114	11662.0	1.2	**1.4303**	0.030	2.1	ug/L	14	Standard
>	**In**	115	936722.0	1.0				ug/L	890169	Standard
	Sn	118	1148.4	12.7	**0.0401**	0.016	40.6	ug/L	717	Standard
	Sb	123	2861.6	15.8	**0.3622**	0.061	16.9	ug/L	96	Standard
	Ba	135	18052.8	1.6	**4.9360**	0.037	0.8	ug/L	24	Standard
	Ce	140	3039346.4	2.5				ug/L	263	Standard
>	**Tb**	159	1611226.5	0.6				ug/L	1497855	Standard
	Ho	165	229562.8	1.0				ug/L	17	Standard
	Tl	203	2348.5	4.6	**0.1790**	0.010	5.7	ug/L	63	Standard
	Tl	205	1680.1	7.0	**0.1891**	0.013	6.9	ug/L	12	Standard
	Pb	206	7025.6	2.2	**0.7526**	0.012	1.5	ug/L	444	Standard
	Pb	207	5629.0	2.2	**0.6571**	0.005	0.8	ug/L	376	Standard
	Pb	208	21859.8	1.7	**0.6810**	0.012	1.7	ug/L	1375	Standard
	U	238	23943.9	0.9	**2.6046**	0.026	1.0	ug/L	9	Standard
>	**Bi**	209	772598.0	1.8				ug/L	798986	Standard

Sample ID: L1602004601SDL WG556102-02
Report Date/Time: Wednesday, February 03, 2016 14:50:04
Page 1

Approved: February 04, 2016

Na	23	21.7	26.6	**97.3935**	25.913	26.6	mg/L	2	Standard
Mg	24	9416.3	1.0	**10.4982**	0.200	1.9	mg/L	10	Standard
K	39	90.0	5.6	**0.2329**	0.021	8.8	mg/L	8	Standard
Ca	43	433.3	14.7	**47.4251**	8.454	17.8	mg/L	62	Standard
Fe	54	247230.8	0.4	**119.4566**	1.689	1.4	mg/L	194	Standard
Fe	57	69033.6	2.0	**123.7196**	2.224	1.8	mg/L	48	Standard
> **Sc-1**	45	56791.3	1.6				mg/L	42886	Standard
Cl	35	108135.4	3.2				ug/L	30129	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	6571.4	8.7				ug/L	1300	Standard
P	31	41592.1	3.4				ug/L	12220	Standard
S	34	1258.4	6.6				ug/L	1602	Standard
Sr	88	503.3	8.0				ug/L	50	Standard
C	12	243.3	18.5				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	7	Standard
Dy	164	353989.9	1.7				mg/L	16	Standard
Ho-1	165	229562.8	1.0				mg/L	17	Standard
Er	166	192677.7	2.1				mg/L	17	Standard
I	127	27077.5	1.7				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		156.444	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.199	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602004601SDL WG556102-02
Report Date/Time: Wednesday, February 03, 2016 14:50:04
Page 2

Approved: February 04, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.230
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.697
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602004601SDL WG556102-02
Report Date/Time: Wednesday, February 03, 2016 14:50:04
Page 3

Approved: February 04, 2016

Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602004601SDL WG556102-02
Sample Date/Time: Wednesday, February 03, 2016 14:50:59
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69271.4	2.8				ug/L	50061	Standard
	Be	9	1183.4	4.9	**1.6687**	0.080	4.8	ug/L	5	Standard
	Al	27	6098167.6	3.0	**37.4848**	0.964	2.6	ug/L	215	Standard
	Sc	45	43776.5	0.8				ug/L	42886	Standard
	Ti	47	1932.1	14.3	**4.8663**	0.698	14.3	ug/L	87	Standard
	V	51	16099.7	1.7	**1.2856**	0.013	1.0	ug/L	2648	Standard
	Cr	52	30741.2	1.5	**2.0755**	0.046	2.2	ug/L	10137	Standard
	Cr	53	2967.0	4.2	**2.2491**	0.140	6.2	ug/L	288	Standard
	Mn	55	7848756.9	2.5	**762.5739**	11.181	1.5	ug/L	688	Standard
	Co	59	265236.9	2.4	**23.7133**	0.264	1.1	ug/L	85	Standard
	Ni	60	178918.2	1.0	**63.2327**	0.520	0.8	ug/L	33	Standard
	Cu	65	2892.3	2.2	**0.9517**	0.036	3.8	ug/L	104	Standard
	Zn	66	227414.2	1.4	**161.3924**	0.618	0.4	ug/L	162	Standard
>	**Ge**	72	647502.3	1.7				ug/L	610528	Standard
	As	75	534.2	7.8	**0.4208**	0.024	5.7	ug/L	-115	Standard
	Se	82	94.1	14.7	**0.4387**	0.081	18.4	ug/L	12	Standard
	Se-1	77	169.0	9.4	**1.0654**	0.175	16.4	ug/L	64	Standard
>	**Ga**	71	991.7	2.1				mg/L	32	Standard
	Rb	85	6826.5	2.5				ug/L	22	Standard
	Y	89	1141129.7	2.8				ug/L	547160	Standard
>	**Rh**	103	18.3	56.8				ug/L	2	Standard
	Mo	98	280.9	6.8	**0.0582**	0.005	9.1	ug/L	12	Standard
	Ag	107	214.0	6.7	**0.0011**	0.001	101.5	ug/L	159	Standard
	Cd	111	1102.0	7.3	**0.2946**	0.018	6.1	mg/L	7	Standard
	Cd	114	2703.3	8.4	**0.2965**	0.025	8.3	ug/L	14	Standard
>	**In**	115	1017113.7	1.7				ug/L	890169	Standard
	Sn	118	1005.0	18.9	**0.0166**	0.020	117.7	ug/L	717	Standard
	Sb	123	868.8	23.9	**0.0967**	0.026	26.7	ug/L	96	Standard
	Ba	135	4169.2	2.1	**1.0377**	0.020	1.9	ug/L	24	Standard
	Ce	140	690573.5	2.6				ug/L	263	Standard
>	**Tb**	159	1580683.4	1.2				ug/L	1497855	Standard
	Ho	165	49209.8	2.3				ug/L	17	Standard
	Tl	203	550.3	5.4	**0.0366**	0.003	7.5	ug/L	63	Standard
	Tl	205	345.0	21.6	**0.0351**	0.007	20.4	ug/L	12	Standard
	Pb	206	2263.8	1.9	**0.1687**	0.007	4.4	ug/L	444	Standard
	Pb	207	1880.8	5.2	**0.1488**	0.008	5.2	ug/L	376	Standard
	Pb	208	7329.0	2.9	**0.1558**	0.005	2.9	ug/L	1375	Standard
	U	238	4983.8	1.9	**0.4984**	0.004	0.7	ug/L	9	Standard
>	**Bi**	209	836754.9	1.9				ug/L	798986	Standard

Sample ID: L1602004601SDL WG556102-02
Report Date/Time: Wednesday, February 03, 2016 14:53:16
Page 1

Approved: February 04, 2016

Na	23	5.0	100.0	**29.0852**	29.153	100.2	mg/L	2	Standard
Mg	24	2011.8	3.0	**2.8927**	0.100	3.5	mg/L	10	Standard
K	39	33.3	48.2	**0.0819**	0.067	81.3	mg/L	8	Standard
Ca	43	91.7	17.5	**5.5323**	2.793	50.5	mg/L	62	Standard
Fe	54	51613.5	2.1	**32.2574**	0.651	2.0	mg/L	194	Standard
Fe	57	14228.3	0.5	**32.9725**	0.422	1.3	mg/L	48	Standard
Sc-1	45	43776.5	0.8				mg/L	42886	Standard
Cl	35	47372.0	3.4				ug/L	30129	Standard
Kr	83	4.3	26.6				ug/L	3	Standard
Br	81	2556.9	9.8				ug/L	1300	Standard
P	31	17625.3	4.5				ug/L	12220	Standard
S	34	943.4	7.2				ug/L	1602	Standard
Sr	88	123.3	27.0				ug/L	50	Standard
C	12	150.0	24.0				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	77903.5	2.3				mg/L	16	Standard
Ho-1	165	49209.8	2.3				mg/L	17	Standard
Er	166	42452.8	3.0				mg/L	17	Standard
I	127	11250.8	2.9				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		138.374	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.056	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1602004601SDL WG556102-02
Report Date/Time: Wednesday, February 03, 2016 14:53:16
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.261
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.727
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1602004601SDL WG556102-02
Report Date/Time: Wednesday, February 03, 2016 14:53:16
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, February 03, 2016 14:54:12
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63635.2	4.0				ug/L	50061	Standard
	Be	9	36056.3	5.8	**54.8807**	1.978	3.6	ug/L	5	Standard
	Al	27	6115558.4	3.7	**40.9195**	0.417	1.0	ug/L	215	Standard
	Sc	45	41772.5	0.7				ug/L	42886	Standard
	Ti	47	34825.7	2.3	**93.1107**	1.303	1.4	ug/L	87	Standard
	V	51	508355.5	0.5	**49.2439**	0.974	2.0	ug/L	2648	Standard
	Cr	52	454858.8	1.4	**47.3541**	0.329	0.7	ug/L	10137	Standard
	Cr	53	55310.8	2.6	**47.5232**	0.432	0.9	ug/L	288	Standard
	Mn	55	507004.0	2.5	**49.8079**	0.286	0.6	ug/L	688	Standard
	Co	59	549015.6	1.1	**49.7427**	0.670	1.3	ug/L	85	Standard
	Ni	60	135726.2	1.0	**48.5911**	0.885	1.8	ug/L	33	Standard
	Cu	65	139323.7	1.6	**48.9943**	1.084	2.2	ug/L	104	Standard
	Zn	66	68898.7	1.9	**49.3705**	0.181	0.4	ug/L	162	Standard
>	Ge	72	639201.6	2.0				ug/L	610528	Standard
	As	75	76208.9	1.3	**50.8444**	0.395	0.8	ug/L	-115	Standard
	Se	82	8307.4	1.6	**53.9384**	1.069	2.0	ug/L	12	Standard
	Se-1	77	5061.8	3.9	**50.5016**	1.246	2.5	ug/L	64	Standard
>	Ga	71	35.0	49.5				mg/L	32	Standard
	Rb	85	1178.4	14.1				ug/L	22	Standard
	Y	89	615192.3	2.9				ug/L	547160	Standard
>	Rh	103	48.3	57.0				ug/L	2	Standard
	Mo	98	496048.0	1.9	**110.3683**	0.975	0.9	ug/L	12	Standard
	Ag	107	557519.0	2.0	**46.8049**	0.640	1.4	ug/L	159	Standard
	Cd	111	181019.6	2.2	**49.5049**	0.278	0.6	mg/L	7	Standard
	Cd	114	454332.3	1.3	**51.4587**	0.785	1.5	ug/L	14	Standard
>	In	115	1022124.1	2.5				ug/L	890169	Standard
	Sn	118	499253.7	1.7	**48.3683**	0.383	0.8	ug/L	717	Standard
	Sb	123	418051.3	1.1	**49.3251**	0.768	1.6	ug/L	96	Standard
	Ba	135	181265.6	1.1	**45.5611**	0.640	1.4	ug/L	24	Standard
	Ce	140	1015.1	93.0				ug/L	263	Standard
>	Tb	159	1574643.9	1.5				ug/L	1497855	Standard
	Ho	165	93.3	81.3				ug/L	17	Standard
	Tl	203	692604.7	1.6	**49.6169**	0.706	1.4	ug/L	63	Standard
	Tl	205	484624.3	3.9	**50.7731**	1.418	2.8	ug/L	12	Standard
	Pb	206	454030.0	1.8	**49.6940**	0.514	1.0	ug/L	444	Standard
	Pb	207	409997.0	1.2	**49.5289**	0.705	1.4	ug/L	376	Standard
	Pb	208	1548938.6	1.2	**49.8576**	0.523	1.0	ug/L	1375	Standard
	U	238	500046.8	1.7	**50.4413**	0.738	1.5	ug/L	9	Standard
>	Bi	209	833959.9	2.3				ug/L	798986	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, February 03, 2016 14:56:29
Page 1

Approved: February 04, 2016

Na	23	3.3	173.2	**20.2520**	35.069	173.2	mg/L	2	Standard
Mg	24	3535.4	3.0	**5.3469**	0.174	3.3	mg/L	10	Standard
K	39	855.0	7.0	**3.6851**	0.271	7.4	mg/L	8	Standard
Ca	43	101.7	15.0	**8.1083**	2.822	34.8	mg/L	62	Standard
Fe	54	8539.8	6.6	**5.4899**	0.363	6.6	mg/L	194	Standard
Fe	57	2313.5	9.2	**5.4937**	0.490	8.9	mg/L	48	Standard
Sc-1	45	41772.5	0.7				mg/L	42886	Standard
Cl	35	35567.1	5.4				ug/L	30129	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	1576.7	13.0				ug/L	1300	Standard
P	31	12256.6	2.7				ug/L	12220	Standard
S	34	1395.1	7.2				ug/L	1602	Standard
Sr	88	35.0	51.5				ug/L	50	Standard
C	12	113.3	27.0				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	113.3	78.5				mg/L	16	Standard
Ho-1	165	93.3	81.3				mg/L	17	Standard
Er	166	70.0	57.1				mg/L	17	Standard
I	127	3540.4	6.6				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.761		
Al	27	81.839		
Sc	45			
Ti	47	93.111		
V	51	98.488		
Cr	52	94.708		
Cr	53			
Mn	55	99.616		
Co	59	99.485		
Ni	60	97.182		
Cu	65	97.989		
Zn	66	98.741		
Ge	72		104.697	
As	75	101.689		
Se	82	107.877		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, February 03, 2016 14:56:29
Page 2

Approved: February 04, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	110.368		
Ag	107	93.610		
Cd	111	99.010		
Cd	114			
In	115		114.824	
Sn	118	96.737		
Sb	123	98.650		
Ba	135	91.122		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.234		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.715		
U	238	100.883		
Bi	209		104.377	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Mo	98	

Sample ID: QC Std 6
Report Date/Time: Wednesday, February 03, 2016 14:56:29
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, February 03, 2016 14:57:24
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58867.7	5.1				ug/L	50061	Standard
	Be	9	11.7	65.5	**0.0327**	0.011	34.9	ug/L	5	Standard
	Al	27	1638.4	44.1	**0.0056**	0.005	94.5	ug/L	215	Standard
	Sc	45	41516.9	4.2				ug/L	42886	Standard
	Ti	47	54.3	3.8	**-0.0934**	0.007	7.0	ug/L	87	Standard
	V	51	2455.0	2.4	**-0.0144**	0.015	102.0	ug/L	2648	Standard
	Cr	52	9165.8	2.0	**-0.1501**	0.036	23.9	ug/L	10137	Standard
	Cr	53	295.0	16.3	**-0.0208**	0.038	182.1	ug/L	288	Standard
	Mn	55	1716.4	31.1	**0.0791**	0.059	74.9	ug/L	688	Standard
	Co	59	182.3	25.7	**0.0069**	0.005	67.5	ug/L	85	Standard
	Ni	60	68.7	20.2	**0.0017**	0.006	348.4	ug/L	33	Standard
	Cu	65	149.3	14.6	**0.0008**	0.009	1098.4	ug/L	104	Standard
	Zn	66	273.3	11.2	**-0.0272**	0.027	97.8	ug/L	162	Standard
>	**Ge**	72	618448.1	4.1				ug/L	610528	Standard
	As	75	-82.8	11.3	**0.0124**	0.009	69.6	ug/L	-115	Standard
	Se	82	24.5	21.9	**-0.0014**	0.034	2443.4	ug/L	12	Standard
	Se-1	77	64.7	21.9	**0.0577**	0.172	297.9	ug/L	64	Standard
>	**Ga**	71	26.7	39.0				mg/L	32	Standard
	Rb	85	30.0	16.7				ug/L	22	Standard
	Y	89	573114.4	5.8				ug/L	547160	Standard
>	**Rh**	103	20.0	66.1				ug/L	2	Standard
	Mo	98	231.4	7.0	**0.0486**	0.003	6.8	ug/L	12	Standard
	Ag	107	241.7	11.3	**0.0041**	0.003	73.1	ug/L	159	Standard
	Cd	111	23.6	8.5	**-0.0015**	0.000	24.6	mg/L	7	Standard
	Cd	114	46.1	49.6	**-0.0057**	0.003	47.9	ug/L	14	Standard
>	**In**	115	987712.5	3.3				ug/L	890169	Standard
	Sn	118	1203.4	9.6	**0.0396**	0.015	38.4	ug/L	717	Standard
	Sb	123	843.0	25.8	**0.0970**	0.030	30.5	ug/L	96	Standard
	Ba	135	46.0	24.7	**-0.0036**	0.003	92.0	ug/L	24	Standard
	Ce	140	118.3	52.8				ug/L	263	Standard
>	**Tb**	159	1553599.0	4.7				ug/L	1497855	Standard
	Ho	165	31.7	50.8				ug/L	17	Standard
	Tl	203	103.3	18.5	**0.0049**	0.001	27.7	ug/L	63	Standard
	Tl	205	88.3	48.1	**0.0085**	0.004	50.2	ug/L	12	Standard
	Pb	206	456.7	9.5	**-0.0276**	0.003	12.5	ug/L	444	Standard
	Pb	207	400.0	3.7	**-0.0284**	0.003	11.2	ug/L	376	Standard
	Pb	208	1618.0	9.1	**-0.0265**	0.003	9.8	ug/L	1375	Standard
	U	238	69.3	37.5	**0.0045**	0.002	54.9	ug/L	9	Standard
>	**Bi**	209	816045.9	4.7				ug/L	798986	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, February 03, 2016 14:59:40
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	13.3	57.3	**-0.0033**	0.011	332.9	mg/L	10	Standard
K	39	5.0	100.0	**-0.0347**	0.022	63.7	mg/L	8	Standard
Ca	43	40.0	25.0	**-2.9656**	2.127	71.7	mg/L	62	Standard
Fe	54	217.6	3.5	**0.0193**	0.010	52.2	mg/L	194	Standard
Fe	57	65.0	38.5	**0.0110**	0.057	520.4	mg/L	48	Standard
Sc-1	45	41516.9	4.2				mg/L	42886	Standard
Cl	35	32701.9	3.0				ug/L	30129	Standard
Kr	83	3.0	88.2				ug/L	3	Standard
Br	81	1600.1	13.4				ug/L	1300	Standard
P	31	12099.8	5.8				ug/L	12220	Standard
S	34	1253.4	6.9				ug/L	1602	Standard
Sr	88	38.3	15.1				ug/L	50	Standard
C	12	96.7	15.8				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	31.7	65.8				mg/L	16	Standard
Ho-1	165	31.7	50.8				mg/L	17	Standard
Er	166	33.3	62.5				mg/L	17	Standard
I	127	7453.5	2.1				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.297	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, February 03, 2016 14:59:40
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.958
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.135
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, February 03, 2016 14:59:40
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602004602
Sample Date/Time: Wednesday, February 03, 2016 15:00:37
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96919.1	2.3				ug/L	50061	Standard
	Be	9	48.3	23.9	**0.0621**	0.011	17.4	ug/L	5	Standard
	Al	27	36049147.2	5.6	**158.4532**	10.252	6.5	ug/L	215	Standard
	Sc	45	37758.7	2.6				ug/L	42886	Standard
	Ti	47	269.3	7.4	**0.5406**	0.076	14.0	ug/L	87	Standard
	V	51	3645.7	5.0	**0.1233**	0.011	9.2	ug/L	2648	Standard
	Cr	52	12745.4	3.7	**0.3137**	0.022	6.9	ug/L	10137	Standard
	Cr	53	1001.7	2.0	**0.6559**	0.010	1.5	ug/L	288	Standard
	Mn	55	2309912.9	3.8	**246.6687**	5.842	2.4	ug/L	688	Standard
	Co	59	7204.7	4.3	**0.6983**	0.025	3.6	ug/L	85	Standard
	Ni	60	11737.5	2.5	**4.5384**	0.056	1.2	ug/L	33	Standard
	Cu	65	3031.0	1.1	**1.1046**	0.023	2.1	ug/L	104	Standard
	Zn	66	11175.8	3.2	**8.5022**	0.242	2.9	ug/L	162	Standard
>	**Ge**	72	588921.7	2.2				ug/L	610528	Standard
	As	75	402.8	18.9	**0.3616**	0.061	16.7	ug/L	-115	Standard
	Se	82	197.2	8.5	**1.2300**	0.149	12.1	ug/L	12	Standard
	Se-1	77	99.0	16.5	**0.4673**	0.205	43.9	ug/L	64	Standard
>	**Ga**	71	140.0	3.6				mg/L	32	Standard
	Rb	85	152926.8	3.5				ug/L	22	Standard
	Y	89	575805.4	3.1				ug/L	547160	Standard
>	**Rh**	103	178.3	18.7				ug/L	2	Standard
	Mo	98	714.3	3.4	**0.1660**	0.008	5.0	ug/L	12	Standard
	Ag	107	207.3	5.3	**0.0017**	0.001	47.0	ug/L	159	Standard
	Cd	111	281.3	2.7	**0.0745**	0.003	3.6	mg/L	7	Standard
	Cd	114	688.6	16.4	**0.0725**	0.012	17.2	ug/L	14	Standard
>	**In**	115	952241.7	1.5				ug/L	890169	Standard
	Sn	118	1480.1	4.1	**0.0727**	0.009	11.7	ug/L	717	Standard
	Sb	123	555.9	23.0	**0.0640**	0.017	26.5	ug/L	96	Standard
	Ba	135	8162.9	0.9	**2.1871**	0.020	0.9	ug/L	24	Standard
	Ce	140	7525.2	7.6				ug/L	263	Standard
>	**Tb**	159	1472340.7	1.7				ug/L	1497855	Standard
	Ho	165	401.7	22.0				ug/L	17	Standard
	Tl	203	2185.2	2.6	**0.1755**	0.003	1.9	ug/L	63	Standard
	Tl	205	1585.1	3.9	**0.1881**	0.005	2.9	ug/L	12	Standard
	Pb	206	1223.4	3.2	**0.0739**	0.003	4.4	ug/L	444	Standard
	Pb	207	1056.0	1.4	**0.0675**	0.002	2.6	ug/L	376	Standard
	Pb	208	3978.9	2.0	**0.0663**	0.002	2.4	ug/L	1375	Standard
	U	238	942.0	4.4	**0.1056**	0.004	3.8	ug/L	9	Standard
>	**Bi**	209	732569.2	1.2				ug/L	798986	Standard

Sample ID: L1602004602
Report Date/Time: Wednesday, February 03, 2016 15:02:53
Page 1

Approved: February 04, 2016

Na	23	51.7	49.7	**351.9185**	183.596	52.2	mg/L	2	Standard
Mg	24	52711.5	0.5	**88.5828**	1.917	2.2	mg/L	10	Standard
K	39	435.0	14.0	**2.0495**	0.293	14.3	mg/L	8	Standard
Ca	43	1301.7	7.2	**250.6055**	18.603	7.4	mg/L	62	Standard
Fe	54	600.4	13.8	**0.3125**	0.065	20.9	mg/L	194	Standard
Fe	57	756.7	2.7	**1.8960**	0.107	5.7	mg/L	48	Standard
> **Sc-1**	45	37758.7	2.6				mg/L	42886	Standard
Cl	35	332068.0	2.8				ug/L	30129	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	11707.9	2.4				ug/L	1300	Standard
P	31	11868.0	4.8				ug/L	12220	Standard
S	34	1858.4	0.4				ug/L	1602	Standard
Sr	88	1255.1	7.3				ug/L	50	Standard
C	12	333.3	18.1				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	597.1	6.7				mg/L	16	Standard
Ho-1	165	401.7	22.0				mg/L	17	Standard
Er	166	340.0	25.6				mg/L	17	Standard
I	127	82052.5	8.1				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		193.602	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.461	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602004602
Report Date/Time: Wednesday, February 03, 2016 15:02:53
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	106.973	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	91.687	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602004602
Report Date/Time: Wednesday, February 03, 2016 15:02:53
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602005502
Sample Date/Time: Wednesday, February 03, 2016 15:03:48
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69002.2	6.5				ug/L	50061	Standard
	Be	9	11.7	24.7	**0.0301**	0.003	9.9	ug/L	5	Standard
	Al	27	19749836.1	3.2	**122.0374**	3.994	3.3	ug/L	215	Standard
	Sc	45	42023.2	1.5				ug/L	42886	Standard
	Ti	47	417.3	10.4	**0.9447**	0.126	13.3	ug/L	87	Standard
	V	51	2190.4	36.2	**-0.0352**	0.082	233.0	ug/L	2648	Standard
	Cr	52	15515.3	1.8	**0.5968**	0.029	4.8	ug/L	10137	Standard
	Cr	53	12378.4	2.0	**11.0850**	0.244	2.2	ug/L	288	Standard
	Mn	55	529086.4	1.6	**55.2414**	0.972	1.8	ug/L	688	Standard
	Co	59	9943.6	3.8	**0.9471**	0.038	4.0	ug/L	85	Standard
	Ni	60	5647.1	5.0	**2.1249**	0.111	5.2	ug/L	33	Standard
	Cu	65	1482.7	4.0	**0.5009**	0.022	4.5	ug/L	104	Standard
	Zn	66	21231.5	2.1	**16.0094**	0.359	2.2	ug/L	162	Standard
>	**Ge**	72	601600.7	0.2				ug/L	610528	Standard
	As	75	1073.7	10.9	**0.8296**	0.083	10.0	ug/L	-115	Standard
	Se	82	443.8	2.8	**2.9046**	0.086	3.0	ug/L	12	Standard
	Se-1	77	866.0	6.7	**8.6736**	0.622	7.2	ug/L	64	Standard
>	**Ga**	71	55.0	24.1				mg/L	32	Standard
	Rb	85	14116.6	3.7				ug/L	22	Standard
	Y	89	567803.5	2.7				ug/L	547160	Standard
>	**Rh**	103	145.0	9.1				ug/L	2	Standard
	Mo	98	1047.9	1.6	**0.2484**	0.003	1.3	ug/L	12	Standard
	Ag	107	181.3	30.3	**-0.0004**	0.005	1224.7	ug/L	159	Standard
	Cd	111	128.0	17.2	**0.0299**	0.007	21.9	mg/L	7	Standard
	Cd	114	307.9	31.1	**0.0268**	0.012	44.4	ug/L	14	Standard
>	**In**	115	941520.7	1.1				ug/L	890169	Standard
	Sn	118	1568.4	21.7	**0.0834**	0.034	40.7	ug/L	717	Standard
	Sb	123	1367.4	6.6	**0.1687**	0.013	7.9	ug/L	96	Standard
	Ba	135	426489.3	1.1	**116.3745**	0.939	0.8	ug/L	24	Standard
	Ce	140	2180.2	41.2				ug/L	263	Standard
>	**Tb**	159	1551584.5	1.4				ug/L	1497855	Standard
	Ho	165	115.0	85.5				ug/L	17	Standard
	Tl	203	519.3	16.5	**0.0386**	0.007	19.0	ug/L	63	Standard
	Tl	205	351.7	26.1	**0.0400**	0.011	27.3	ug/L	12	Standard
	Pb	206	813.0	4.7	**0.0201**	0.006	30.5	ug/L	444	Standard
	Pb	207	702.3	1.6	**0.0163**	0.001	7.4	ug/L	376	Standard
	Pb	208	2759.8	3.6	**0.0190**	0.005	25.0	ug/L	1375	Standard
	U	238	9013.7	2.3	**1.0054**	0.032	3.2	ug/L	9	Standard
>	**Bi**	209	752427.5	1.9				ug/L	798986	Standard

Sample ID: L1602005502
Report Date/Time: Wednesday, February 03, 2016 15:06:05
Page 1

Approved: February 04, 2016

Na	23	3.3	86.6	**20.2506**	17.539	86.6	mg/L	2	Standard
Mg	24	106756.4	0.4	**161.1876**	2.904	1.8	mg/L	10	Standard
K	39	110.0	15.7	**0.4216**	0.076	18.0	mg/L	8	Standard
Ca	43	128.3	11.9	**12.7776**	2.501	19.6	mg/L	62	Standard
Fe	54	303.8	13.2	**0.0738**	0.028	37.7	mg/L	194	Standard
Fe	57	143.3	38.6	**0.2011**	0.139	69.2	mg/L	48	Standard
> **Sc-1**	45	42023.2	1.5				mg/L	42886	Standard
Cl	35	66302.3	4.7				ug/L	30129	Standard
Kr	83	3.0	66.7				ug/L	3	Standard
Br	81	60223.0	5.5				ug/L	1300	Standard
P	31	20994.6	4.5				ug/L	12220	Standard
S	34	1378.4	4.3				ug/L	1602	Standard
Sr	88	715.0	6.0				ug/L	50	Standard
C	12	450.0	30.1				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	43.3				mg/L	7	Standard
Dy	164	137.3	83.5				mg/L	16	Standard
Ho-1	165	115.0	85.5				mg/L	17	Standard
Er	166	126.7	105.1				mg/L	17	Standard
I	127	748388.4	4.9				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.837	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.538	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602005502
Report Date/Time: Wednesday, February 03, 2016 15:06:05
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.769	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.173	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1602005502
Report Date/Time: Wednesday, February 03, 2016 15:06:05
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602005802
Sample Date/Time: Wednesday, February 03, 2016 15:06:59
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75628.3	0.1				ug/L	50061	Standard
	Be	9	180.0	19.4	**0.2444**	0.045	18.4	ug/L	5	Standard
	Al	27	7675250.9	1.1	**43.2068**	0.538	1.2	ug/L	215	Standard
	Sc	45	44226.1	2.4				ug/L	42886	Standard
	Ti	47	653.7	13.4	**1.5113**	0.246	16.3	ug/L	87	Standard
	V	51	6057.4	3.3	**0.3289**	0.024	7.3	ug/L	2648	Standard
	Cr	52	16137.3	2.5	**0.5617**	0.027	4.8	ug/L	10137	Standard
	Cr	53	1866.8	7.8	**1.3314**	0.118	8.9	ug/L	288	Standard
	Mn	55	842479.4	1.6	**82.9428**	1.398	1.7	ug/L	688	Standard
	Co	59	94463.6	0.5	**8.5601**	0.052	0.6	ug/L	85	Standard
	Ni	60	66660.0	1.8	**23.8772**	0.293	1.2	ug/L	33	Standard
	Cu	65	5562.7	2.4	**1.9066**	0.027	1.4	ug/L	104	Standard
	Zn	66	51544.2	1.0	**36.9267**	0.668	1.8	ug/L	162	Standard
>	**Ge**	72	638398.3	1.0				ug/L	610528	Standard
	As	75	1778.3	2.9	**1.2557**	0.023	1.8	ug/L	-115	Standard
	Se	82	106.0	6.8	**0.5253**	0.040	7.5	ug/L	12	Standard
	Se-1	77	132.0	11.2	**0.7130**	0.135	18.9	ug/L	64	Standard
>	**Ga**	71	135.0	7.4				mg/L	32	Standard
	Rb	85	39544.9	2.3				ug/L	22	Standard
	Y	89	624275.7	2.8				ug/L	547160	Standard
>	**Rh**	103	58.3	26.2				ug/L	2	Standard
	Mo	98	125.9	18.8	**0.0240**	0.005	22.8	ug/L	12	Standard
	Ag	107	192.7	27.4	**-0.0004**	0.005	1316.7	ug/L	159	Standard
	Cd	111	1569.5	2.0	**0.4316**	0.003	0.7	mg/L	7	Standard
	Cd	114	3791.7	5.1	**0.4291**	0.029	6.9	ug/L	14	Standard
>	**In**	115	997802.7	1.6				ug/L	890169	Standard
	Sn	118	1260.1	14.4	**0.0438**	0.020	45.1	ug/L	717	Standard
	Sb	123	869.1	8.6	**0.0986**	0.011	10.8	ug/L	96	Standard
	Ba	135	33525.4	2.8	**8.6165**	0.125	1.5	ug/L	24	Standard
	Ce	140	60083.9	1.9				ug/L	263	Standard
>	**Tb**	159	1585958.6	1.9				ug/L	1497855	Standard
	Ho	165	2865.3	8.3				ug/L	17	Standard
	Tl	203	2302.8	1.8	**0.1608**	0.003	1.7	ug/L	63	Standard
	Tl	205	1653.4	5.2	**0.1709**	0.011	6.4	ug/L	12	Standard
	Pb	206	1150.4	3.8	**0.0463**	0.006	12.6	ug/L	444	Standard
	Pb	207	983.7	2.6	**0.0400**	0.002	4.1	ug/L	376	Standard
	Pb	208	3829.9	2.2	**0.0427**	0.004	8.8	ug/L	1375	Standard
	U	238	908.7	4.5	**0.0883**	0.005	5.4	ug/L	9	Standard
>	**Bi**	209	841640.2	1.3				ug/L	798986	Standard

Sample ID: L1602005802
Report Date/Time: Wednesday, February 03, 2016 15:09:16
Page 1

Approved: February 04, 2016

Na	23	6.7	43.3	**38.2403**	15.538	40.6	mg/L	2	Standard
Mg	24	14473.6	5.0	**20.7323**	0.541	2.6	mg/L	10	Standard
K	39	181.7	23.4	**0.6916**	0.157	22.7	mg/L	8	Standard
Ca	43	103.3	14.0	**7.3828**	2.626	35.6	mg/L	62	Standard
Fe	54	1506.6	2.4	**0.8109**	0.025	3.1	mg/L	194	Standard
Fe	57	398.3	18.4	**0.7705**	0.175	22.7	mg/L	48	Standard
> **Sc-1**	45	44226.1	2.4				mg/L	42886	Standard
Cl	35	60257.7	3.4				ug/L	30129	Standard
Kr	83	3.0	66.7				ug/L	3	Standard
Br	81	12325.0	3.9				ug/L	1300	Standard
P	31	28216.3	2.7				ug/L	12220	Standard
S	34	1123.4	21.0				ug/L	1602	Standard
Sr	88	208.3	12.3				ug/L	50	Standard
C	12	593.3	8.0				mg/L	107	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	3691.1	1.9				mg/L	16	Standard
Ho-1	165	2865.3	8.3				mg/L	17	Standard
Er	166	2980.3	8.1				mg/L	17	Standard
I	127	153311.9	1.7				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		151.073	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.565	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602005802
Report Date/Time: Wednesday, February 03, 2016 15:09:16
Page 2

Approved: February 04, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.091
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.339
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1602005802
Report Date/Time: Wednesday, February 03, 2016 15:09:16
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602005804
Sample Date/Time: Wednesday, February 03, 2016 15:10:11
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75057.2	2.2				ug/L	50061	Standard
	Be	9	70.0	50.0	**0.1039**	0.045	43.1	ug/L	5	Standard
	Al	27	20191748.7	0.2	**114.5762**	2.462	2.1	ug/L	215	Standard
	Sc	45	41887.9	3.4				ug/L	42886	Standard
	Ti	47	406.3	8.6	**0.8783**	0.078	8.8	ug/L	87	Standard
	V	51	4174.6	8.3	**0.1571**	0.028	17.7	ug/L	2648	Standard
	Cr	52	12880.1	2.4	**0.2552**	0.008	2.9	ug/L	10137	Standard
	Cr	53	5287.6	8.3	**4.4342**	0.466	10.5	ug/L	288	Standard
	Mn	55	404963.0	3.2	**41.0054**	0.565	1.4	ug/L	688	Standard
	Co	59	5883.1	3.1	**0.5395**	0.013	2.3	ug/L	85	Standard
	Ni	60	34927.9	2.7	**12.8751**	0.267	2.1	ug/L	33	Standard
	Cu	65	1932.5	1.2	**0.6480**	0.017	2.7	ug/L	104	Standard
	Zn	66	18504.0	1.6	**13.5067**	0.041	0.3	ug/L	162	Standard
>	**Ge**	72	619839.7	1.9				ug/L	610528	Standard
	As	75	1608.5	5.7	**1.1749**	0.065	5.6	ug/L	-115	Standard
	Se	82	283.2	5.4	**1.7356**	0.079	4.6	ug/L	12	Standard
	Se-1	77	373.7	6.3	**3.2694**	0.177	5.4	ug/L	64	Standard
>	**Ga**	71	43.3	40.5				mg/L	32	Standard
	Rb	85	13249.1	2.9				ug/L	22	Standard
	Y	89	594335.1	3.2				ug/L	547160	Standard
>	**Rh**	103	185.0	4.7				ug/L	2	Standard
	Mo	98	230.2	3.8	**0.0490**	0.003	5.8	ug/L	12	Standard
	Ag	107	135.7	10.1	**-0.0050**	0.001	21.8	ug/L	159	Standard
	Cd	111	954.3	3.9	**0.2653**	0.006	2.4	mg/L	7	Standard
	Cd	114	2363.0	3.7	**0.2693**	0.006	2.4	ug/L	14	Standard
>	**In**	115	975403.7	1.5				ug/L	890169	Standard
	Sn	118	1510.1	2.7	**0.0720**	0.004	5.1	ug/L	717	Standard
	Sb	123	526.2	8.9	**0.0586**	0.006	10.8	ug/L	96	Standard
	Ba	135	35569.7	2.2	**9.3536**	0.081	0.9	ug/L	24	Standard
	Ce	140	10126.7	2.6				ug/L	263	Standard
>	**Tb**	159	1560457.7	1.5				ug/L	1497855	Standard
	Ho	165	558.3	10.3				ug/L	17	Standard
	Tl	203	674.0	3.9	**0.0478**	0.003	5.3	ug/L	63	Standard
	Tl	205	433.3	10.1	**0.0465**	0.004	9.0	ug/L	12	Standard
	Pb	206	769.0	2.7	**0.0093**	0.003	34.3	ug/L	444	Standard
	Pb	207	678.7	1.9	**0.0078**	0.001	8.5	ug/L	376	Standard
	Pb	208	2611.4	3.1	**0.0082**	0.003	34.8	ug/L	1375	Standard
	U	238	329.7	6.2	**0.0321**	0.002	6.8	ug/L	9	Standard
>	**Bi**	209	798616.5	1.3				ug/L	798986	Standard

Sample ID: L1602005804
Report Date/Time: Wednesday, February 03, 2016 15:12:28
Page 1

Approved: February 04, 2016

Na	23	5.0	100.0	**30.3702**	30.892	101.7	mg/L	2	Standard
Mg	24	40946.9	2.4	**62.0502**	2.745	4.4	mg/L	10	Standard
K	39	165.0	15.7	**0.6619**	0.101	15.3	mg/L	8	Standard
Ca	43	208.3	15.6	**27.3174**	5.826	21.3	mg/L	62	Standard
Fe	54	638.5	7.6	**0.2935**	0.023	7.9	mg/L	194	Standard
Fe	57	308.3	0.9	**0.6027**	0.024	4.0	mg/L	48	Standard
> **Sc-1**	45	41887.9	3.4				mg/L	42886	Standard
Cl	35	88739.8	0.7				ug/L	30129	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	37633.3	0.8				ug/L	1300	Standard
P	31	27570.1	5.3				ug/L	12220	Standard
S	34	1266.7	6.4				ug/L	1602	Standard
Sr	88	860.0	5.0				ug/L	50	Standard
C	12	530.0	8.6				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	7	Standard
Dy	164	762.1	28.8				mg/L	16	Standard
Ho-1	165	558.3	10.3				mg/L	17	Standard
Er	166	513.3	17.7				mg/L	17	Standard
I	127	162050.5	1.9				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		149.932	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.525	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602005804
Report Date/Time: Wednesday, February 03, 2016 15:12:28
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.575
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.954
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1602005804
Report Date/Time: Wednesday, February 03, 2016 15:12:28
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602005806
Sample Date/Time: Wednesday, February 03, 2016 15:13:23
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74804.3	2.2				ug/L	50061	Standard
	Be	9	16.7	17.3	**0.0355**	0.004	11.5	ug/L	5	Standard
	Al	27	43557888.5	4.5	**247.9030**	8.540	3.4	ug/L	215	Standard
	Sc	45	42790.4	1.9				ug/L	42886	Standard
	Ti	47	271.3	3.3	**0.5093**	0.020	4.0	ug/L	87	Standard
	V	51	3774.8	4.4	**0.1191**	0.020	17.0	ug/L	2648	Standard
	Cr	52	12108.2	1.4	**0.1764**	0.013	7.4	ug/L	10137	Standard
	Cr	53	6971.6	2.4	**5.9617**	0.268	4.5	ug/L	288	Standard
	Mn	55	323814.0	2.8	**32.9200**	0.572	1.7	ug/L	688	Standard
	Co	59	1547.4	4.4	**0.1350**	0.004	2.7	ug/L	85	Standard
	Ni	60	76517.4	1.8	**28.3608**	0.222	0.8	ug/L	33	Standard
	Cu	65	1642.1	2.7	**0.5450**	0.009	1.7	ug/L	104	Standard
	Zn	66	7434.2	2.8	**5.3125**	0.102	1.9	ug/L	162	Standard
>	**Ge**	72	617091.1	2.0				ug/L	610528	Standard
	As	75	926.8	12.7	**0.7089**	0.077	10.8	ug/L	-115	Standard
	Se	82	393.6	1.8	**2.4895**	0.027	1.1	ug/L	12	Standard
	Se-1	77	526.7	4.4	**4.8891**	0.195	4.0	ug/L	64	Standard
>	**Ga**	71	35.0	37.8				mg/L	32	Standard
	Rb	85	9092.7	2.0				ug/L	22	Standard
	Y	89	595805.1	2.1				ug/L	547160	Standard
>	**Rh**	103	396.7	11.7				ug/L	2	Standard
	Mo	98	4367.1	2.4	**1.0188**	0.015	1.5	ug/L	12	Standard
	Ag	107	141.0	8.7	**-0.0045**	0.001	27.0	ug/L	159	Standard
	Cd	111	597.3	2.4	**0.1640**	0.005	3.0	mg/L	7	Standard
	Cd	114	1536.4	8.0	**0.1722**	0.015	8.7	ug/L	14	Standard
>	**In**	115	970191.2	1.1				ug/L	890169	Standard
	Sn	118	1255.1	2.1	**0.0467**	0.002	3.6	ug/L	717	Standard
	Sb	123	469.9	9.6	**0.0519**	0.006	12.0	ug/L	96	Standard
	Ba	135	36662.6	0.3	**9.6949**	0.132	1.4	ug/L	24	Standard
	Ce	140	2191.8	0.7				ug/L	263	Standard
>	**Tb**	159	1531921.3	2.6				ug/L	1497855	Standard
	Ho	165	236.7	33.2				ug/L	17	Standard
	Tl	203	621.7	2.8	**0.0452**	0.001	3.2	ug/L	63	Standard
	Tl	205	481.7	6.9	**0.0534**	0.004	8.0	ug/L	12	Standard
	Pb	206	736.7	4.1	**0.0081**	0.002	29.8	ug/L	444	Standard
	Pb	207	657.7	3.4	**0.0076**	0.002	23.0	ug/L	376	Standard
	Pb	208	2420.7	4.1	**0.0042**	0.002	56.1	ug/L	1375	Standard
	U	238	2029.5	1.4	**0.2175**	0.003	1.5	ug/L	9	Standard
>	**Bi**	209	775537.1	1.4				ug/L	798986	Standard

Sample ID: L1602005806
Report Date/Time: Wednesday, February 03, 2016 15:15:39
Page 1

Approved: February 04, 2016

Na	23	30.0	33.3	**178.9508**	58.778	32.8	mg/L	2	Standard
Mg	24	57427.0	1.8	**85.1320**	1.091	1.3	mg/L	10	Standard
K	39	251.7	22.2	**1.0162**	0.223	21.9	mg/L	8	Standard
Ca	43	441.7	14.9	**67.9310**	12.966	19.1	mg/L	62	Standard
Fe	54	287.1	22.6	**0.0594**	0.041	69.7	mg/L	194	Standard
Fe	57	296.7	14.7	**0.5601**	0.118	21.1	mg/L	48	Standard
> **Sc-1**	45	42790.4	1.9				mg/L	42886	Standard
Cl	35	121025.6	2.4				ug/L	30129	Standard
Kr	83	4.0	66.1				ug/L	3	Standard
Br	81	56431.6	1.9				ug/L	1300	Standard
P	31	24660.1	3.1				ug/L	12220	Standard
S	34	1481.7	6.5				ug/L	1602	Standard
Sr	88	2253.5	2.8				ug/L	50	Standard
C	12	396.7	10.2				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	243.4	16.5				mg/L	16	Standard
Ho-1	165	236.7	33.2				mg/L	17	Standard
Er	166	276.7	14.6				mg/L	17	Standard
I	127	238944.0	3.3				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		149.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.075	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602005806
Report Date/Time: Wednesday, February 03, 2016 15:15:39
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	108.990	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.065	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1602005806
Report Date/Time: Wednesday, February 03, 2016 15:15:39
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602005808
Sample Date/Time: Wednesday, February 03, 2016 15:16:34
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	120037.8	5.3				ug/L	50061	Standard
	Be	9	1173.4	8.5	**0.9597**	0.041	4.2	ug/L	5	Standard
	Al	27	182282212.2	6.3	**646.3759**	6.344	1.0	ug/L	215	Standard
	Sc	45	41643.9	3.3				ug/L	42886	Standard
	Ti	47	324.7	2.2	**0.7421**	0.026	3.6	ug/L	87	Standard
	V	51	2974.2	0.8	**0.0664**	0.010	14.5	ug/L	2648	Standard
	Cr	52	12455.1	1.7	**0.3436**	0.011	3.2	ug/L	10137	Standard
	Cr	53	4152.2	16.2	**3.7737**	0.570	15.1	ug/L	288	Standard
	Mn	55	53925050.8	2.9	**6012.9565**	83.631	1.4	ug/L	688	Standard
	Co	59	1556407.6	3.4	**159.7188**	2.048	1.3	ug/L	85	Standard
	Ni	60	1100407.4	2.0	**446.4260**	5.753	1.3	ug/L	33	Standard
	Cu	65	31719.2	1.1	**12.5964**	0.219	1.7	ug/L	104	Standard
	Zn	66	779020.4	2.4	**635.0844**	5.711	0.9	ug/L	162	Standard
>	**Ge**	72	564268.0	2.4				ug/L	610528	Standard
	As	75	1939.7	9.4	**1.5362**	0.174	11.4	ug/L	-115	Standard
	Se	82	856.4	8.1	**6.1622**	0.671	10.9	ug/L	12	Standard
	Se-1	77	514.3	11.1	**5.2590**	0.548	10.4	ug/L	64	Standard
>	**Ga**	71	1743.4	4.8				mg/L	32	Standard
	Rb	85	117272.1	1.1				ug/L	22	Standard
	Y	89	1368655.6	2.8				ug/L	547160	Standard
>	**Rh**	103	696.7	6.9				ug/L	2	Standard
	Mo	98	245.7	13.6	**0.0568**	0.009	16.1	ug/L	12	Standard
	Ag	107	418.7	15.5	**0.0226**	0.007	29.8	ug/L	159	Standard
	Cd	111	52011.7	1.1	**15.9699**	0.205	1.3	mg/L	7	Standard
	Cd	114	124941.7	1.9	**15.8810**	0.047	0.3	ug/L	14	Standard
>	**In**	115	910103.8	1.6				ug/L	890169	Standard
	Sn	118	1431.7	3.7	**0.0745**	0.008	10.2	ug/L	717	Standard
	Sb	123	503.8	11.8	**0.0603**	0.009	14.4	ug/L	96	Standard
	Ba	135	14597.7	3.5	**4.1070**	0.182	4.4	ug/L	24	Standard
	Ce	140	2230570.1	0.8				ug/L	263	Standard
>	**Tb**	159	1472023.7	1.3				ug/L	1497855	Standard
	Ho	165	48793.5	2.3				ug/L	17	Standard
	Tl	203	4876.8	1.8	**0.4251**	0.009	2.1	ug/L	63	Standard
	Tl	205	3537.1	2.3	**0.4529**	0.004	0.9	ug/L	12	Standard
	Pb	206	8073.8	2.7	**1.0051**	0.033	3.3	ug/L	444	Standard
	Pb	207	6569.1	1.7	**0.8952**	0.010	1.1	ug/L	376	Standard
	Pb	208	25613.5	2.1	**0.9312**	0.005	0.6	ug/L	1375	Standard
	U	238	2646.9	1.6	**0.3243**	0.005	1.5	ug/L	9	Standard
>	**Bi**	209	681160.0	2.5				ug/L	798986	Standard

Sample ID: L1602005808
Report Date/Time: Wednesday, February 03, 2016 15:18:51
Page 1

Approved: February 04, 2016

Na	23	41.7	45.4	**256.4568**	117.813	45.9	mg/L	2	Standard
Mg	24	177003.3	2.4	**269.7120**	3.388	1.3	mg/L	10	Standard
K	39	615.0	4.9	**2.6461**	0.194	7.3	mg/L	8	Standard
Ca	43	1111.7	8.4	**191.9938**	20.594	10.7	mg/L	62	Standard
Fe	54	6240.3	5.0	**3.9981**	0.343	8.6	mg/L	194	Standard
Fe	57	2238.5	5.2	**5.3355**	0.385	7.2	mg/L	48	Standard
> **Sc-1**	45	41643.9	3.3				mg/L	42886	Standard
Cl	35	693257.0	1.8				ug/L	30129	Standard
Kr	83	4.3	35.3				ug/L	3	Standard
Br	81	101888.4	3.6				ug/L	1300	Standard
P	31	24962.2	3.4				ug/L	12220	Standard
S	34	2480.2	7.8				ug/L	1602	Standard
Sr	88	5107.5	2.6				ug/L	50	Standard
C	12	530.0	8.2				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	69926.7	2.7				mg/L	16	Standard
Ho-1	165	48793.5	2.3				mg/L	17	Standard
Er	166	45394.6	3.9				mg/L	17	Standard
I	127	472389.2	3.7				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		239.784	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.423	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602005808
Report Date/Time: Wednesday, February 03, 2016 15:18:51
Page 2

Approved: February 04, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.239
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	85.253
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602005808
Report Date/Time: Wednesday, February 03, 2016 15:18:51
Page 3

Approved: February 04, 2016

Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602005810
Sample Date/Time: Wednesday, February 03, 2016 15:19:45
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	96620.8	4.0				ug/L	50061	Standard
	Be	9	13.3	43.3	**0.0271**	0.005	19.1	ug/L	5	Standard
	Al	27	54792035.8	1.8	**241.6002**	5.460	2.3	ug/L	215	Standard
	Sc	45	41241.1	2.7				ug/L	42886	Standard
	Ti	47	232.0	8.5	**0.4358**	0.056	12.9	ug/L	87	Standard
	V	51	2034.5	8.5	**-0.0451**	0.020	44.8	ug/L	2648	Standard
	Cr	52	75554.3	1.1	**7.6489**	0.114	1.5	ug/L	10137	Standard
	Cr	53	12688.6	3.5	**11.7115**	0.552	4.7	ug/L	288	Standard
	Mn	55	5797058.9	2.6	**623.7595**	12.546	2.0	ug/L	688	Standard
	Co	59	925.7	14.5	**0.0814**	0.012	15.2	ug/L	85	Standard
	Ni	60	3212.3	6.5	**1.2333**	0.067	5.5	ug/L	33	Standard
	Cu	65	1572.1	1.2	**0.5513**	0.007	1.2	ug/L	104	Standard
	Zn	66	6709.5	2.2	**5.0496**	0.073	1.4	ug/L	162	Standard
>	Ge	72	584661.2	1.2				ug/L	610528	Standard
	As	75	1220.1	8.1	**0.9582**	0.070	7.3	ug/L	-115	Standard
	Se	82	480.6	3.1	**3.2557**	0.072	2.2	ug/L	12	Standard
	Se-1	77	465.7	3.1	**4.5232**	0.214	4.7	ug/L	64	Standard
>	Ga	71	163.3	30.2				mg/L	32	Standard
	Rb	85	6047625.0	1.3				ug/L	22	Standard
	Y	89	562973.7	4.3				ug/L	547160	Standard
>	Rh	103	418.3	10.4				ug/L	2	Standard
	Mo	98	1094.9	1.2	**0.2623**	0.008	2.9	ug/L	12	Standard
	Ag	107	129.0	10.8	**-0.0051**	0.001	22.7	ug/L	159	Standard
	Cd	111	32.3	33.0	**0.0015**	0.003	205.6	mg/L	7	Standard
	Cd	114	89.7	23.5	**-0.0000**	0.002	7520.0	ug/L	14	Standard
>	In	115	932845.8	2.0				ug/L	890169	Standard
	Sn	118	1253.4	8.2	**0.0516**	0.009	16.5	ug/L	717	Standard
	Sb	123	182.2	11.2	**0.0171**	0.003	18.0	ug/L	96	Standard
	Ba	135	57881.0	1.1	**15.9289**	0.164	1.0	ug/L	24	Standard
	Ce	140	3457.1	8.7				ug/L	263	Standard
>	Tb	159	1460583.6	2.2				ug/L	1497855	Standard
	Ho	165	31.7	24.1				ug/L	17	Standard
	Tl	203	471.7	2.1	**0.0368**	0.001	2.4	ug/L	63	Standard
	Tl	205	363.3	3.5	**0.0437**	0.002	5.1	ug/L	12	Standard
	Pb	206	648.7	2.2	**0.0045**	0.000	7.4	ug/L	444	Standard
	Pb	207	546.0	5.2	**-0.0006**	0.003	466.9	ug/L	376	Standard
	Pb	208	2110.4	1.0	**-0.0001**	0.001	1161.6	ug/L	1375	Standard
	U	238	67.3	9.7	**0.0053**	0.001	11.3	ug/L	9	Standard
>	Bi	209	712902.0	2.0				ug/L	798986	Standard

Sample ID: L1602005810
Report Date/Time: Wednesday, February 03, 2016 15:22:02
Page 1

Approved: February 04, 2016

Na	23	16.7	34.6	**102.5844**	33.552	32.7	mg/L	2	Standard
Mg	24	55528.3	2.2	**85.4657**	3.822	4.5	mg/L	10	Standard
K	39	16876.1	2.0	**74.7581**	1.030	1.4	mg/L	8	Standard
Ca	43	436.7	7.6	**69.9135**	7.720	11.0	mg/L	62	Standard
Fe	54	10917.2	0.7	**7.1491**	0.204	2.9	mg/L	194	Standard
Fe	57	3323.7	3.8	**8.0626**	0.126	1.6	mg/L	48	Standard
> **Sc-1**	45	41241.1	2.7				mg/L	42886	Standard
Cl	35	141510.2	3.3				ug/L	30129	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	61665.3	2.2				ug/L	1300	Standard
P	31	18891.8	3.1				ug/L	12220	Standard
S	34	1421.7	4.5				ug/L	1602	Standard
Sr	88	2343.5	1.3				ug/L	50	Standard
C	12	556.7	2.1				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	40.6	48.3				mg/L	16	Standard
Ho-1	165	31.7	24.1				mg/L	17	Standard
Er	166	56.7	44.4				mg/L	17	Standard
I	127	90517.9	1.0				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		193.006	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.763	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602005810
Report Date/Time: Wednesday, February 03, 2016 15:22:02
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.794	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	89.226	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602005810
Report Date/Time: Wednesday, February 03, 2016 15:22:02
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602007536
Sample Date/Time: Wednesday, February 03, 2016 15:22:57
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61169.0	9.7				ug/L	50061	Standard
	Be	9	13.3	57.3	**0.0354**	0.013	38.1	ug/L	5	Standard
	Al	27	47716.7	2.9	**0.3275**	0.025	7.5	ug/L	215	Standard
	Sc	45	44480.3	4.1				ug/L	42886	Standard
	Ti	47	88.7	3.6	**-0.0018**	0.018	1005.5	ug/L	87	Standard
	V	51	3254.7	2.0	**0.0611**	0.020	32.6	ug/L	2648	Standard
	Cr	52	12137.5	2.0	**0.1563**	0.029	18.6	ug/L	10137	Standard
	Cr	53	723.4	3.9	**0.3525**	0.025	7.1	ug/L	288	Standard
	Mn	55	43489.4	2.7	**4.2606**	0.088	2.1	ug/L	688	Standard
	Co	59	1372.1	3.0	**0.1164**	0.006	4.9	ug/L	85	Standard
	Ni	60	595.7	5.7	**0.1932**	0.008	4.1	ug/L	33	Standard
	Cu	65	844.7	8.6	**0.2486**	0.016	6.5	ug/L	104	Standard
	Zn	66	7886.4	5.9	**5.5423**	0.126	2.3	ug/L	162	Standard
>	**Ge**	72	628345.9	4.2				ug/L	610528	Standard
	As	75	23.9	195.0	**0.0849**	0.031	36.8	ug/L	-115	Standard
	Se	82	58.2	27.2	**0.2177**	0.090	41.4	ug/L	12	Standard
	Se-1	77	79.3	8.6	**0.1934**	0.044	22.9	ug/L	64	Standard
>	**Ga**	71	36.7	51.6				mg/L	32	Standard
	Rb	85	1041.7	26.4				ug/L	22	Standard
	Y	89	585144.4	5.0				ug/L	547160	Standard
>	**Rh**	103	31.7	32.9				ug/L	2	Standard
	Mo	98	30.2	9.3	**0.0024**	0.001	40.4	ug/L	12	Standard
	Ag	107	171.3	14.9	**-0.0019**	0.002	108.4	ug/L	159	Standard
	Cd	111	107.9	12.7	**0.0227**	0.003	11.6	mg/L	7	Standard
	Cd	114	260.3	20.2	**0.0198**	0.007	33.5	ug/L	14	Standard
>	**In**	115	975912.2	4.5				ug/L	890169	Standard
	Sn	118	1293.4	16.2	**0.0496**	0.017	33.9	ug/L	717	Standard
	Sb	123	177.9	11.8	**0.0156**	0.004	23.4	ug/L	96	Standard
	Ba	135	1924.5	1.0	**0.4917**	0.018	3.7	ug/L	24	Standard
	Ce	140	1870.1	6.6				ug/L	263	Standard
>	**Tb**	159	1554139.7	2.8				ug/L	1497855	Standard
	Ho	165	58.3	4.9				ug/L	17	Standard
	Tl	203	456.3	15.7	**0.0301**	0.004	13.0	ug/L	63	Standard
	Tl	205	268.3	20.5	**0.0273**	0.005	17.4	ug/L	12	Standard
	Pb	206	795.0	4.3	**0.0091**	0.004	46.8	ug/L	444	Standard
	Pb	207	656.7	3.7	**0.0021**	0.002	98.7	ug/L	376	Standard
	Pb	208	2654.8	4.9	**0.0064**	0.001	16.6	ug/L	1375	Standard
	U	238	225.3	6.2	**0.0203**	0.001	2.9	ug/L	9	Standard
>	**Bi**	209	828227.1	3.7				ug/L	798986	Standard

Sample ID: L1602007536
Report Date/Time: Wednesday, February 03, 2016 15:25:14
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	510.0	22.4	**0.7006**	0.138	19.7	mg/L	10	Standard
K	39	20.0	25.0	**0.0257**	0.024	92.5	mg/L	8	Standard
Ca	43	43.3	37.1	**-2.8940**	2.915	100.7	mg/L	62	Standard
Fe	54	190.5	13.6	**-0.0067**	0.021	317.4	mg/L	194	Standard
Fe	57	61.7	4.7	**-0.0062**	0.013	204.1	mg/L	48	Standard
> **Sc-1**	45	44480.3	4.1				mg/L	42886	Standard
Cl	35	37781.7	3.1				ug/L	30129	Standard
Kr	83	2.3	107.9				ug/L	3	Standard
Br	81	2346.9	20.8				ug/L	1300	Standard
P	31	11953.0	2.6				ug/L	12220	Standard
S	34	1260.1	8.9				ug/L	1602	Standard
Sr	88	30.0	33.3				ug/L	50	Standard
C	12	196.7	7.8				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	70.8	19.7				mg/L	16	Standard
Ho-1	165	58.3	4.9				mg/L	17	Standard
Er	166	53.3	60.3				mg/L	17	Standard
I	127	8162.2	14.7				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.189	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.919	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602007536
Report Date/Time: Wednesday, February 03, 2016 15:25:14
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.632
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.660
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1602007536
Report Date/Time: Wednesday, February 03, 2016 15:25:14
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602007538
Sample Date/Time: Wednesday, February 03, 2016 15:26:08
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56492.0	5.2				ug/L	50061	Standard
	Be	9	5.0	100.0	**0.0223**	0.008	36.5	ug/L	5	Standard
	Al	27	36126.3	123.1	**0.2747**	0.353	128.4	ug/L	215	Standard
	Sc	45	45978.1	3.7				ug/L	42886	Standard
	Ti	47	66.0	20.4	**-0.0656**	0.035	53.9	ug/L	87	Standard
	V	51	3207.2	6.7	**0.0535**	0.024	44.4	ug/L	2648	Standard
	Cr	52	12709.0	1.4	**0.2070**	0.032	15.7	ug/L	10137	Standard
	Cr	53	540.0	3.3	**0.1871**	0.010	5.5	ug/L	288	Standard
	Mn	55	22325.4	152.1	**2.1402**	3.409	159.3	ug/L	688	Standard
	Co	59	1044.1	131.7	**0.0859**	0.127	148.0	ug/L	85	Standard
	Ni	60	384.7	123.5	**0.1161**	0.174	149.5	ug/L	33	Standard
	Cu	65	641.7	2.7	**0.1744**	0.007	4.1	ug/L	104	Standard
	Zn	66	5257.9	7.9	**3.5914**	0.334	9.3	ug/L	162	Standard
>	**Ge**	72	633286.9	1.2				ug/L	610528	Standard
	As	75	-49.1	96.1	**0.0368**	0.031	84.9	ug/L	-115	Standard
	Se	82	39.2	24.0	**0.0924**	0.065	70.0	ug/L	12	Standard
	Se-1	77	73.7	27.7	**0.1313**	0.216	164.5	ug/L	64	Standard
>	**Ga**	71	28.3	36.7				mg/L	32	Standard
	Rb	85	2420.5	149.1				ug/L	22	Standard
	Y	89	588864.3	2.4				ug/L	547160	Standard
>	**Rh**	103	18.3	56.8				ug/L	2	Standard
	Mo	98	59.1	124.2	**0.0095**	0.018	187.1	ug/L	12	Standard
	Ag	107	310.0	91.1	**0.0110**	0.026	235.7	ug/L	159	Standard
	Cd	111	115.2	153.7	**0.0259**	0.052	202.6	mg/L	7	Standard
	Cd	114	235.6	151.2	**0.0177**	0.044	247.0	ug/L	14	Standard
>	**In**	115	961009.5	2.2				ug/L	890169	Standard
	Sn	118	1220.0	1.1	**0.0444**	0.004	8.8	ug/L	717	Standard
	Sb	123	233.0	90.2	**0.0230**	0.027	117.5	ug/L	96	Standard
	Ba	135	2030.8	17.1	**0.5283**	0.101	19.1	ug/L	24	Standard
	Ce	140	3652.8	150.4				ug/L	263	Standard
>	**Tb**	159	1556808.5	3.0				ug/L	1497855	Standard
	Ho	165	220.0	159.5				ug/L	17	Standard
	Tl	203	305.7	138.6	**0.0196**	0.031	158.4	ug/L	63	Standard
	Tl	205	113.3	112.2	**0.0112**	0.014	122.4	ug/L	12	Standard
	Pb	206	594.7	37.8	**-0.0129**	0.026	200.8	ug/L	444	Standard
	Pb	207	502.7	34.7	**-0.0166**	0.022	133.8	ug/L	376	Standard
	Pb	208	1871.0	23.2	**-0.0189**	0.015	79.1	ug/L	1375	Standard
	U	238	88.3	149.7	**0.0065**	0.014	210.1	ug/L	9	Standard
>	**Bi**	209	829294.7	1.9				ug/L	798986	Standard

Sample ID: L1602007538
Report Date/Time: Wednesday, February 03, 2016 15:28:25
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	573.3	9.2	**0.7692**	0.089	11.6	mg/L	10	Standard
K	39	25.0	60.0	**0.0438**	0.063	143.3	mg/L	8	Standard
Ca	43	48.3	15.8	**-2.3711**	1.112	46.9	mg/L	62	Standard
Fe	54	307.2	40.3	**0.0598**	0.079	132.8	mg/L	194	Standard
Fe	57	81.7	30.2	**0.0341**	0.060	175.5	mg/L	48	Standard
> **Sc-1**	45	45978.1	3.7				mg/L	42886	Standard
Cl	35	37683.5	2.2				ug/L	30129	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	1683.4	7.8				ug/L	1300	Standard
P	31	12662.0	2.5				ug/L	12220	Standard
S	34	1446.7	7.7				ug/L	1602	Standard
Sr	88	31.7	36.5				ug/L	50	Standard
C	12	226.7	10.2				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	266.9	163.6				mg/L	16	Standard
Ho-1	165	220.0	159.5				mg/L	17	Standard
Er	166	203.3	169.0				mg/L	17	Standard
I	127	6893.2	4.5				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.847	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.728	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602007538
Report Date/Time: Wednesday, February 03, 2016 15:28:25
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.958
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.793
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1602007538
Report Date/Time: Wednesday, February 03, 2016 15:28:25
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602008602
Sample Date/Time: Wednesday, February 03, 2016 15:29:20
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58803.9	2.8				ug/L	50061	Standard
	Be	9	6.7	43.3	**0.0248**	0.005	18.7	ug/L	5	Standard
	Al	27	26525929.2	4.0	**192.2388**	11.295	5.9	ug/L	215	Standard
	Sc	45	44147.7	5.2				ug/L	42886	Standard
	Ti	47	640.0	9.8	**1.5373**	0.151	9.8	ug/L	87	Standard
	V	51	3368.8	4.4	**0.0792**	0.018	23.0	ug/L	2648	Standard
	Cr	52	14745.8	1.3	**0.4729**	0.020	4.1	ug/L	10137	Standard
	Cr	53	5869.6	36.4	**4.9935**	1.944	38.9	ug/L	288	Standard
	Mn	55	52084.1	4.0	**5.2299**	0.147	2.8	ug/L	688	Standard
	Co	59	1793.4	4.9	**0.1586**	0.006	3.9	ug/L	85	Standard
	Ni	60	8587.4	4.0	**3.1708**	0.080	2.5	ug/L	33	Standard
	Cu	65	4382.3	1.5	**1.5491**	0.009	0.6	ug/L	104	Standard
	Zn	66	23702.5	3.2	**17.4963**	0.306	1.7	ug/L	162	Standard
>	**Ge**	72	615162.3	1.5				ug/L	610528	Standard
	As	75	479.9	7.6	**0.4020**	0.028	6.9	ug/L	-115	Standard
	Se	82	130.5	5.5	**0.7169**	0.044	6.2	ug/L	12	Standard
	Se-1	77	419.3	7.0	**3.7779**	0.238	6.3	ug/L	64	Standard
>	**Ga**	71	163.3	27.4				mg/L	32	Standard
	Rb	85	19005.3	5.7				ug/L	22	Standard
	Y	89	570750.3	2.5				ug/L	547160	Standard
>	**Rh**	103	145.0	21.0				ug/L	2	Standard
	Mo	98	13306.2	1.8	**3.2594**	0.052	1.6	ug/L	12	Standard
	Ag	107	142.7	6.5	**-0.0037**	0.001	28.0	ug/L	159	Standard
	Cd	111	66.8	6.9	**0.0120**	0.002	12.8	mg/L	7	Standard
	Cd	114	154.8	17.1	**0.0082**	0.003	38.6	ug/L	14	Standard
>	**In**	115	927058.0	1.6				ug/L	890169	Standard
	Sn	118	1621.8	3.7	**0.0920**	0.009	9.9	ug/L	717	Standard
	Sb	123	1350.8	1.7	**0.1692**	0.001	0.4	ug/L	96	Standard
	Ba	135	162438.4	2.3	**45.0033**	0.581	1.3	ug/L	24	Standard
	Ce	140	1655.1	12.0				ug/L	263	Standard
>	**Tb**	159	1544295.5	1.5				ug/L	1497855	Standard
	Ho	165	48.3	66.5				ug/L	17	Standard
	Tl	203	570.3	2.1	**0.0419**	0.001	2.7	ug/L	63	Standard
	Tl	205	353.3	18.8	**0.0396**	0.008	19.9	ug/L	12	Standard
	Pb	206	1000.7	2.0	**0.0411**	0.003	6.1	ug/L	444	Standard
	Pb	207	838.7	2.5	**0.0329**	0.003	9.9	ug/L	376	Standard
	Pb	208	3305.8	3.5	**0.0367**	0.003	9.1	ug/L	1375	Standard
	U	238	4621.7	1.4	**0.5065**	0.005	0.9	ug/L	9	Standard
>	**Bi**	209	763628.7	0.6				ug/L	798986	Standard

Sample ID: L1602008602
Report Date/Time: Wednesday, February 03, 2016 15:31:36
Page 1

Approved: February 04, 2016

Na	23	20.0	43.3	**114.9034**	48.067	41.8	mg/L	2	Standard
Mg	24	29967.9	1.7	**43.1261**	2.454	5.7	mg/L	10	Standard
K	39	688.3	8.9	**2.8049**	0.376	13.4	mg/L	8	Standard
Ca	43	726.7	7.3	**114.1981**	5.316	4.7	mg/L	62	Standard
Fe	54	471.7	1.7	**0.1690**	0.012	7.1	mg/L	194	Standard
Fe	57	426.7	10.2	**0.8409**	0.138	16.4	mg/L	48	Standard
> **Sc-1**	45	44147.7	5.2				mg/L	42886	Standard
Cl	35	108473.6	0.7				ug/L	30129	Standard
Kr	83	3.3	34.6				ug/L	3	Standard
Br	81	5821.1	3.7				ug/L	1300	Standard
P	31	18327.8	10.9				ug/L	12220	Standard
S	34	1595.1	3.9				ug/L	1602	Standard
Sr	88	580.0	8.5				ug/L	50	Standard
C	12	293.3	33.1				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	116.8	8.6				mg/L	16	Standard
Ho-1	165	48.3	66.5				mg/L	17	Standard
Er	166	66.7	8.7				mg/L	17	Standard
I	127	35202.5	1.4				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.465	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.759	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602008602
Report Date/Time: Wednesday, February 03, 2016 15:31:36
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.144	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.575	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1602008602
Report Date/Time: Wednesday, February 03, 2016 15:31:36
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, February 03, 2016 15:32:33
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52690.1	7.2				ug/L	50061	Standard
	Be	9	27997.6	5.1	**51.5211**	1.031	2.0	ug/L	5	Standard
	Al	27	6155008.2	2.6	**49.8884**	3.529	7.1	ug/L	215	Standard
	Sc	45	46334.1	2.9				ug/L	42886	Standard
	Ti	47	36465.2	1.9	**100.8082**	0.630	0.6	ug/L	87	Standard
	V	51	500831.0	1.7	**50.1480**	0.147	0.3	ug/L	2648	Standard
	Cr	52	461377.7	2.3	**49.7070**	0.463	0.9	ug/L	10137	Standard
	Cr	53	55292.6	5.5	**49.1105**	1.992	4.1	ug/L	288	Standard
	Mn	55	482257.0	2.4	**48.9783**	0.464	0.9	ug/L	688	Standard
	Co	59	537303.6	2.2	**50.3187**	0.456	0.9	ug/L	85	Standard
	Ni	60	132623.0	1.6	**49.0778**	0.401	0.8	ug/L	33	Standard
	Cu	65	136465.5	1.0	**49.6099**	0.785	1.6	ug/L	104	Standard
	Zn	66	66794.6	1.0	**49.4854**	0.438	0.9	ug/L	162	Standard
>	Ge	72	618274.2	1.5				ug/L	610528	Standard
	As	75	73025.7	1.8	**50.3683**	0.817	1.6	ug/L	-115	Standard
	Se	82	7751.0	2.4	**52.0110**	0.738	1.4	ug/L	12	Standard
	Se-1	77	4886.5	2.1	**50.4164**	1.230	2.4	ug/L	64	Standard
>	Ga	71	26.7	57.3				mg/L	32	Standard
	Rb	85	1231.7	9.1				ug/L	22	Standard
	Y	89	582398.0	1.9				ug/L	547160	Standard
>	Rh	103	53.3	37.9				ug/L	2	Standard
	Mo	98	424243.8	0.5	**104.1768**	1.295	1.2	ug/L	12	Standard
	Ag	107	531436.7	0.7	**49.2379**	0.323	0.7	ug/L	159	Standard
	Cd	111	166646.8	0.6	**50.3001**	0.428	0.9	mg/L	7	Standard
	Cd	114	406755.5	1.2	**50.8372**	0.580	1.1	ug/L	14	Standard
>	In	115	926085.7	1.1				ug/L	890169	Standard
	Sn	118	458294.5	2.0	**48.9962**	0.447	0.9	ug/L	717	Standard
	Sb	123	378751.3	1.8	**49.3090**	0.594	1.2	ug/L	96	Standard
	Ba	135	175845.3	1.3	**48.7725**	0.456	0.9	ug/L	24	Standard
	Ce	140	130.0	3.8				ug/L	263	Standard
>	Tb	159	1561594.9	3.0				ug/L	1497855	Standard
	Ho	165	15.0	57.7				ug/L	17	Standard
	Tl	203	677617.6	1.0	**50.0189**	0.177	0.4	ug/L	63	Standard
	Tl	205	467812.5	3.9	**50.5075**	1.632	3.2	ug/L	12	Standard
	Pb	206	433271.5	0.8	**48.8674**	0.623	1.3	ug/L	444	Standard
	Pb	207	395359.8	1.1	**49.2109**	0.479	1.0	ug/L	376	Standard
	Pb	208	1510562.3	1.6	**50.0993**	0.486	1.0	ug/L	1375	Standard
	U	238	482863.2	1.4	**50.1897**	0.666	1.3	ug/L	9	Standard
>	Bi	209	809263.9	1.3				ug/L	798986	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, February 03, 2016 15:34:50
Page 1

Approved: February 04, 2016

Na	23	3.3	173.2	**18.2356**	31.576	173.2	mg/L	2	Standard
Mg	24	3573.8	9.3	**4.8645**	0.326	6.7	mg/L	10	Standard
K	39	1076.7	2.7	**4.1927**	0.146	3.5	mg/L	8	Standard
Ca	43	110.0	19.8	**7.7276**	4.131	53.5	mg/L	62	Standard
Fe	54	8316.1	1.3	**4.8081**	0.191	4.0	mg/L	194	Standard
Fe	57	2263.5	4.9	**4.8289**	0.148	3.1	mg/L	48	Standard
Sc-1	45	46334.1	2.9				mg/L	42886	Standard
Cl	35	33651.5	7.5				ug/L	30129	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	1563.4	13.5				ug/L	1300	Standard
P	31	11636.2	9.2				ug/L	12220	Standard
S	34	1516.7	5.7				ug/L	1602	Standard
Sr	88	36.7	43.8				ug/L	50	Standard
C	12	100.0	30.0				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	28.6	59.2				mg/L	16	Standard
Ho-1	165	15.0	57.7				mg/L	17	Standard
Er	166	30.0	33.3				mg/L	17	Standard
I	127	3650.4	8.0				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.042		
Al	27	99.777		
Sc	45			
Ti	47	100.808		
V	51	100.296		
Cr	52	99.414		
Cr	53			
Mn	55	97.957		
Co	59	100.637		
Ni	60	98.156		
Cu	65	99.220		
Zn	66	98.971		
Ge	72		101.269	
As	75	100.737		
Se	82	104.022		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, February 03, 2016 15:34:50
Page 2

Approved: February 04, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	104.177		
Ag	107	98.476		
Cd	111	100.600		
Cd	114			
> In	115			104.035
Sn	118	97.992		
Sb	123	98.618		
Ba	135	97.545		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.038		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.199		
U	238	100.379		
> Bi	209			101.286
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, February 03, 2016 15:34:50
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, February 03, 2016 15:35:44
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46909.3	6.0				ug/L	50061	Standard
	Be	9	11.7	89.2	**0.0376**	0.021	55.2	ug/L	5	Standard
	Al	27	2618.6	42.2	**0.0179**	0.011	62.9	ug/L	215	Standard
	Sc	45	44754.4	3.2				ug/L	42886	Standard
	Ti	47	53.7	15.1	**-0.0947**	0.024	25.0	ug/L	87	Standard
	V	51	2316.5	0.8	**-0.0277**	0.008	27.3	ug/L	2648	Standard
	Cr	52	9199.5	1.1	**-0.1427**	0.044	31.0	ug/L	10137	Standard
	Cr	53	410.0	16.4	**0.0824**	0.045	54.1	ug/L	288	Standard
	Mn	55	1005.4	5.5	**0.0062**	0.004	68.6	ug/L	688	Standard
	Co	59	159.3	12.8	**0.0047**	0.002	33.5	ug/L	85	Standard
	Ni	60	54.0	8.1	**-0.0037**	0.002	64.1	ug/L	33	Standard
	Cu	65	182.0	18.9	**0.0132**	0.015	112.6	ug/L	104	Standard
	Zn	66	275.0	9.6	**-0.0255**	0.021	81.2	ug/L	162	Standard
>	**Ge**	72	616395.3	4.1				ug/L	610528	Standard
	As	75	-69.3	50.5	**0.0220**	0.024	108.5	ug/L	-115	Standard
	Se	82	30.5	39.1	**0.0420**	0.087	206.9	ug/L	12	Standard
	Se-1	77	71.0	18.6	**0.1250**	0.157	125.3	ug/L	64	Standard
>	**Ga**	71	20.0	25.0				mg/L	32	Standard
	Rb	85	73.3	3.9				ug/L	22	Standard
	Y	89	567071.9	3.2				ug/L	547160	Standard
>	**Rh**	103	18.3	15.7				ug/L	2	Standard
	Mo	98	225.3	9.9	**0.0509**	0.008	14.8	ug/L	12	Standard
	Ag	107	238.0	17.3	**0.0052**	0.005	86.9	ug/L	159	Standard
	Cd	111	22.6	27.5	**-0.0012**	0.002	164.8	mg/L	7	Standard
	Cd	114	43.4	62.0	**-0.0057**	0.003	61.0	ug/L	14	Standard
>	**In**	115	925177.9	4.1				ug/L	890169	Standard
	Sn	118	1176.7	14.2	**0.0452**	0.023	50.1	ug/L	717	Standard
	Sb	123	582.5	20.5	**0.0699**	0.018	26.1	ug/L	96	Standard
	Ba	135	48.7	34.4	**-0.0020**	0.005	249.4	ug/L	24	Standard
	Ce	140	51.7	39.1				ug/L	263	Standard
>	**Tb**	159	1524468.1	5.4				ug/L	1497855	Standard
	Ho	165	21.7	58.1				ug/L	17	Standard
	Tl	203	115.7	26.1	**0.0059**	0.002	35.5	ug/L	63	Standard
	Tl	205	93.3	17.2	**0.0092**	0.002	18.6	ug/L	12	Standard
	Pb	206	477.0	3.2	**-0.0246**	0.001	4.7	ug/L	444	Standard
	Pb	207	405.7	2.5	**-0.0271**	0.001	5.5	ug/L	376	Standard
	Pb	208	1606.4	5.9	**-0.0261**	0.003	10.7	ug/L	1375	Standard
	U	238	65.0	37.6	**0.0042**	0.003	63.3	ug/L	9	Standard
>	**Bi**	209	805389.0	3.4				ug/L	798986	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, February 03, 2016 15:38:01
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	23.3	12.4	**0.0098**	0.005	51.5	mg/L	10	Standard
K	39	11.7	24.7	**-0.0092**	0.013	136.3	mg/L	8	Standard
Ca	43	51.7	31.1	**-1.5414**	2.888	187.3	mg/L	62	Standard
Fe	54	218.9	17.8	**0.0092**	0.023	243.9	mg/L	194	Standard
Fe	57	56.7	5.1	**-0.0189**	0.002	13.1	mg/L	48	Standard
> **Sc-1**	45	44754.4	3.2				mg/L	42886	Standard
Cl	35	30903.5	2.2				ug/L	30129	Standard
Kr	83	3.7	68.6				ug/L	3	Standard
Br	81	1443.4	12.3				ug/L	1300	Standard
P	31	11984.7	5.1				ug/L	12220	Standard
S	34	1525.1	6.8				ug/L	1602	Standard
Sr	88	30.0	0.0				ug/L	50	Standard
C	12	103.3	34.0				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	28.2	35.5				mg/L	16	Standard
Ho-1	165	21.7	58.1				mg/L	17	Standard
Er	166	36.7	31.5				mg/L	17	Standard
I	127	7063.3	3.1				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.961	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, February 03, 2016 15:38:01
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.933
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.801
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, February 03, 2016 15:38:01
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602005808
Sample Date/Time: Wednesday, February 03, 2016 16:04:38
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45518.3	2.3				ug/L	50061	Standard
	Be	9	18.3	41.7	**0.0528**	0.016	30.4	ug/L	5	Standard
	Al	27	1998831.0	4.4	**18.6858**	0.396	2.1	ug/L	215	Standard
	Sc	45	48039.5	4.3				ug/L	42886	Standard
	Ti	47	64.3	14.9	**-0.0720**	0.028	38.7	ug/L	87	Standard
	V	51	2822.3	5.7	**0.0123**	0.021	171.3	ug/L	2648	Standard
	Cr	52	11199.8	5.1	**0.0298**	0.082	275.1	ug/L	10137	Standard
	Cr	53	411.7	4.6	**0.0709**	0.023	31.9	ug/L	288	Standard
	Mn	55	622775.0	2.8	**60.9749**	0.527	0.9	ug/L	688	Standard
	Co	59	19211.2	2.2	**1.7240**	0.005	0.3	ug/L	85	Standard
	Ni	60	13609.1	3.0	**4.8314**	0.088	1.8	ug/L	33	Standard
	Cu	65	562.3	2.3	**0.1436**	0.001	0.9	ug/L	104	Standard
	Zn	66	11231.2	0.6	**7.8262**	0.127	1.6	ug/L	162	Standard
>	**Ge**	72	641577.7	2.1				ug/L	610528	Standard
	As	75	-85.6	9.5	**0.0128**	0.005	40.5	ug/L	-115	Standard
	Se	82	27.9	14.4	**0.0156**	0.028	181.0	ug/L	12	Standard
	Se-1	77	74.3	9.9	**0.1281**	0.089	69.4	ug/L	64	Standard
>	**Ga**	71	48.3	52.1				mg/L	32	Standard
	Rb	85	1316.7	6.8				ug/L	22	Standard
	Y	89	579415.7	3.7				ug/L	547160	Standard
>	**Rh**	103	16.7	62.4				ug/L	2	Standard
	Mo	98	37.4	20.9	**0.0048**	0.002	43.5	ug/L	12	Standard
	Ag	107	150.3	3.0	**-0.0026**	0.001	23.7	ug/L	159	Standard
	Cd	111	561.6	3.0	**0.1663**	0.003	1.7	mg/L	7	Standard
	Cd	114	1390.7	6.0	**0.1676**	0.007	3.9	ug/L	14	Standard
>	**In**	115	900166.2	2.5				ug/L	890169	Standard
	Sn	118	845.0	6.2	**0.0115**	0.006	47.8	ug/L	717	Standard
	Sb	123	327.4	25.8	**0.0376**	0.012	33.2	ug/L	96	Standard
	Ba	135	191.0	5.4	**0.0390**	0.004	11.1	ug/L	24	Standard
	Ce	140	25606.6	2.0				ug/L	263	Standard
>	**Tb**	159	1537491.4	2.3				ug/L	1497855	Standard
	Ho	165	550.0	6.6				ug/L	17	Standard
	Tl	203	143.0	9.1	**0.0079**	0.001	14.5	ug/L	63	Standard
	Tl	205	100.0	43.3	**0.0099**	0.005	48.5	ug/L	12	Standard
	Pb	206	802.4	3.8	**0.0116**	0.002	17.8	ug/L	444	Standard
	Pb	207	697.7	2.6	**0.0088**	0.001	12.6	ug/L	376	Standard
	Pb	208	2736.8	1.5	**0.0110**	0.003	23.3	ug/L	1375	Standard
	U	238	31.0	14.1	**0.0006**	0.000	78.9	ug/L	9	Standard
>	**Bi**	209	811737.2	2.1				ug/L	798986	Standard

Sample ID: L1602005808
Report Date/Time: Wednesday, February 03, 2016 16:06:55
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1961.8	6.9	**2.5676**	0.144	5.6	mg/L	10	Standard
K	39	35.0	24.7	**0.0767**	0.036	46.5	mg/L	8	Standard
Ca	43	80.0	16.5	**2.2566**	1.740	77.1	mg/L	62	Standard
Fe	54	272.4	13.8	**0.0306**	0.018	58.0	mg/L	194	Standard
Fe	57	80.0	37.5	**0.0204**	0.057	277.9	mg/L	48	Standard
> **Sc-1**	45	48039.5	4.3				mg/L	42886	Standard
Cl	35	37531.1	1.9				ug/L	30129	Standard
Kr	83	4.0	50.0				ug/L	3	Standard
Br	81	2006.8	8.2				ug/L	1300	Standard
P	31	12163.2	10.5				ug/L	12220	Standard
S	34	1476.7	3.5				ug/L	1602	Standard
Sr	88	58.3	39.6				ug/L	50	Standard
C	12	73.3	41.7				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	827.5	6.9				mg/L	16	Standard
Ho-1	165	550.0	6.6				mg/L	17	Standard
Er	166	470.0	19.5				mg/L	17	Standard
I	127	11044.0	1.5				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.926	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.086	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602005808
Report Date/Time: Wednesday, February 03, 2016 16:06:55
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.123
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.596
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602005810
Sample Date/Time: Wednesday, February 03, 2016 16:07:49
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	47524.5	3.8				ug/L	50061	Standard
	Be	9	5.0	100.0	**0.0238**	0.010	41.0	ug/L	5	Standard
	Al	27	1175566.0	6.9	**10.5191**	0.361	3.4	ug/L	215	Standard
	Sc	45	47165.0	1.1				ug/L	42886	Standard
	Ti	47	61.7	9.2	**-0.0790**	0.015	19.3	ug/L	87	Standard
	V	51	3087.0	4.2	**0.0383**	0.012	30.3	ug/L	2648	Standard
	Cr	52	13742.2	2.7	**0.3023**	0.034	11.1	ug/L	10137	Standard
	Cr	53	748.4	10.7	**0.3623**	0.072	19.8	ug/L	288	Standard
	Mn	55	124886.6	3.4	**12.1799**	0.373	3.1	ug/L	688	Standard
	Co	59	122.7	25.2	**0.0009**	0.003	318.8	ug/L	85	Standard
	Ni	60	137.7	10.5	**0.0254**	0.005	20.3	ug/L	33	Standard
	Cu	65	187.0	10.8	**0.0121**	0.007	58.7	ug/L	104	Standard
	Zn	66	1838.8	1.5	**1.0910**	0.014	1.3	ug/L	162	Standard
>	Ge	72	640048.8	0.5				ug/L	610528	Standard
	As	75	-78.2	12.8	**0.0176**	0.007	37.4	ug/L	-115	Standard
	Se	82	30.2	21.7	**0.0305**	0.042	137.3	ug/L	12	Standard
	Se-1	77	74.0	9.7	**0.1256**	0.076	60.9	ug/L	64	Standard
>	Ga	71	25.0	80.0				mg/L	32	Standard
	Rb	85	128460.9	2.9				ug/L	22	Standard
	Y	89	582068.9	1.0				ug/L	547160	Standard
>	Rh	103	10.0	86.6				ug/L	2	Standard
	Mo	98	137.0	11.0	**0.0293**	0.003	11.1	ug/L	12	Standard
	Ag	107	133.0	4.7	**-0.0045**	0.001	15.6	ug/L	159	Standard
	Cd	111	8.1	28.6	**-0.0057**	0.001	11.3	mg/L	7	Standard
	Cd	114	30.8	39.4	**-0.0072**	0.002	21.3	ug/L	14	Standard
>	In	115	916048.9	2.4				ug/L	890169	Standard
	Sn	118	840.0	10.7	**0.0095**	0.011	112.5	ug/L	717	Standard
	Sb	123	100.5	32.4	**0.0068**	0.004	66.0	ug/L	96	Standard
	Ba	135	1211.4	3.9	**0.3242**	0.010	3.2	ug/L	24	Standard
	Ce	140	105.0	23.8				ug/L	263	Standard
>	Tb	159	1555007.9	1.8				ug/L	1497855	Standard
	Ho	165	21.7	66.6				ug/L	17	Standard
	Tl	203	252.7	10.7	**0.0159**	0.002	13.5	ug/L	63	Standard
	Tl	205	200.0	5.0	**0.0207**	0.001	6.2	ug/L	12	Standard
	Pb	206	831.4	1.0	**0.0150**	0.000	2.4	ug/L	444	Standard
	Pb	207	721.4	3.4	**0.0118**	0.002	17.1	ug/L	376	Standard
	Pb	208	2722.4	1.3	**0.0106**	0.002	16.4	ug/L	1375	Standard
	U	238	6.3	105.1	**-0.0019**	0.001	35.6	ug/L	9	Standard
>	Bi	209	811007.8	1.3				ug/L	798986	Standard

Sample ID: L1602005810
Report Date/Time: Wednesday, February 03, 2016 16:10:06
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1253.4	9.1	**1.6629**	0.155	9.3	mg/L	10	Standard
K	39	610.0	7.3	**2.3084**	0.193	8.4	mg/L	8	Standard
Ca	43	45.0	29.4	**-3.0990**	2.093	67.5	mg/L	62	Standard
Fe	54	458.8	0.2	**0.1423**	0.003	2.1	mg/L	194	Standard
Fe	57	125.0	40.6	**0.1220**	0.108	88.7	mg/L	48	Standard
> **Sc-1**	45	47165.0	1.1				mg/L	42886	Standard
Cl	35	38795.6	1.2				ug/L	30129	Standard
Kr	83	6.0	16.7				ug/L	3	Standard
Br	81	2260.2	13.0				ug/L	1300	Standard
P	31	12221.6	6.3				ug/L	12220	Standard
S	34	1453.4	3.1				ug/L	1602	Standard
Sr	88	95.0	13.9				ug/L	50	Standard
C	12	66.7	31.2				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	31.6	48.8				mg/L	16	Standard
Ho-1	165	21.7	66.6				mg/L	17	Standard
Er	166	36.7	41.7				mg/L	17	Standard
I	127	8142.2	4.1				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.933	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.835	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602005810
Report Date/Time: Wednesday, February 03, 2016 16:10:06
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.505
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1602005810
Report Date/Time: Wednesday, February 03, 2016 16:10:06
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602005502
Sample Date/Time: Wednesday, February 03, 2016 16:11:01
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46640.1	3.6				ug/L	50061	Standard
	Be	9	3.3	173.2	**0.0209**	0.012	58.2	ug/L	5	Standard
	Al	27	1972311.4	4.8	**17.9966**	0.386	2.1	ug/L	215	Standard
	Sc	45	47511.1	3.6				ug/L	42886	Standard
	Ti	47	91.7	4.5	**0.0046**	0.004	95.5	ug/L	87	Standard
	V	51	3081.4	9.6	**0.0419**	0.027	65.0	ug/L	2648	Standard
	Cr	52	12735.0	2.5	**0.2135**	0.006	3.0	ug/L	10137	Standard
	Cr	53	2445.2	4.9	**1.8577**	0.146	7.9	ug/L	288	Standard
	Mn	55	54948.9	3.4	**5.3783**	0.083	1.5	ug/L	688	Standard
	Co	59	1111.4	7.0	**0.0916**	0.005	4.9	ug/L	85	Standard
	Ni	60	689.7	3.2	**0.2262**	0.006	2.6	ug/L	33	Standard
	Cu	65	331.0	4.6	**0.0643**	0.004	6.7	ug/L	104	Standard
	Zn	66	3677.8	2.8	**2.4490**	0.018	0.7	ug/L	162	Standard
>	**Ge**	72	631511.2	2.8				ug/L	610528	Standard
	As	75	16.6	228.8	**0.0804**	0.026	31.9	ug/L	-115	Standard
	Se	82	63.6	16.3	**0.2535**	0.067	26.3	ug/L	12	Standard
	Se-1	77	148.3	1.9	**0.8967**	0.068	7.5	ug/L	64	Standard
>	**Ga**	71	23.3	75.3				mg/L	32	Standard
	Rb	85	1498.4	2.0				ug/L	22	Standard
	Y	89	569942.0	3.9				ug/L	547160	Standard
>	**Rh**	103	23.3	24.7				ug/L	2	Standard
	Mo	98	97.3	5.0	**0.0200**	0.001	7.2	ug/L	12	Standard
	Ag	107	131.3	9.6	**-0.0044**	0.001	19.6	ug/L	159	Standard
	Cd	111	21.5	34.3	**-0.0015**	0.002	149.1	mg/L	7	Standard
	Cd	114	33.2	75.2	**-0.0069**	0.003	45.7	ug/L	14	Standard
>	**In**	115	898512.1	2.8				ug/L	890169	Standard
	Sn	118	873.4	5.9	**0.0150**	0.008	55.8	ug/L	717	Standard
	Sb	123	195.5	2.3	**0.0197**	0.000	0.8	ug/L	96	Standard
	Ba	135	43230.0	3.2	**12.3464**	0.172	1.4	ug/L	24	Standard
	Ce	140	331.7	14.0				ug/L	263	Standard
>	**Tb**	159	1558569.7	4.2				ug/L	1497855	Standard
	Ho	165	20.0	0.0				ug/L	17	Standard
	Tl	203	763.0	2.7	**0.0547**	0.003	4.6	ug/L	63	Standard
	Tl	205	565.0	0.9	**0.0612**	0.001	0.9	ug/L	12	Standard
	Pb	206	850.4	5.7	**0.0191**	0.005	24.1	ug/L	444	Standard
	Pb	207	715.7	4.4	**0.0129**	0.003	20.3	ug/L	376	Standard
	Pb	208	2795.8	3.0	**0.0149**	0.001	9.1	ug/L	1375	Standard
	U	238	860.0	2.5	**0.0885**	0.004	4.3	ug/L	9	Standard
>	**Bi**	209	794645.3	1.7				ug/L	798986	Standard

Sample ID: L1602005502
Report Date/Time: Wednesday, February 03, 2016 16:13:18
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	10855.6	4.0	**14.4726**	0.161	1.1	mg/L	10	Standard
K	39	36.7	20.8	**0.0842**	0.029	34.8	mg/L	8	Standard
Ca	43	66.7	21.7	**0.3305**	2.448	740.7	mg/L	62	Standard
Fe	54	234.0	14.0	**0.0108**	0.024	218.4	mg/L	194	Standard
Fe	57	71.7	24.5	**0.0051**	0.033	636.5	mg/L	48	Standard
> **Sc-1**	45	47511.1	3.6				mg/L	42886	Standard
Cl	35	38980.8	2.5				ug/L	30129	Standard
Kr	83	4.3	53.3				ug/L	3	Standard
Br	81	6671.5	4.7				ug/L	1300	Standard
P	31	13222.5	8.4				ug/L	12220	Standard
S	34	1638.4	0.8				ug/L	1602	Standard
Sr	88	80.0	22.5				ug/L	50	Standard
C	12	120.0	22.0				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	42.1	59.6				mg/L	16	Standard
Ho-1	165	20.0	0.0				mg/L	17	Standard
Er	166	26.7	78.1				mg/L	17	Standard
I	127	78285.4	5.3				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.167	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.437	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602005502
Report Date/Time: Wednesday, February 03, 2016 16:13:18
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.937
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.457
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, February 03, 2016 16:14:14
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	45690.6	4.9				ug/L	50061	Standard
	Be	9	24105.8	3.3	**51.1346**	0.952	1.9	ug/L	5	Standard
	Al	27	6041148.1	2.6	**56.3388**	1.610	2.9	ug/L	215	Standard
	Sc	45	45249.2	2.3				ug/L	42886	Standard
	Ti	47	37704.5	2.9	**103.5246**	1.289	1.2	ug/L	87	Standard
	V	51	498978.4	1.9	**49.6213**	0.228	0.5	ug/L	2648	Standard
	Cr	52	474072.0	3.2	**50.7481**	0.786	1.5	ug/L	10137	Standard
	Cr	53	57378.5	3.5	**50.6366**	1.046	2.1	ug/L	288	Standard
	Mn	55	496661.4	2.2	**50.1031**	0.336	0.7	ug/L	688	Standard
	Co	59	555523.9	3.1	**51.6682**	0.769	1.5	ug/L	85	Standard
	Ni	60	137144.9	3.0	**50.4000**	0.685	1.4	ug/L	33	Standard
	Cu	65	138483.0	3.1	**49.9888**	0.732	1.5	ug/L	104	Standard
	Zn	66	67454.5	2.4	**49.6299**	0.444	0.9	ug/L	162	Standard
>	Ge	72	622490.0	1.6				ug/L	610528	Standard
	As	75	72849.7	1.9	**49.9041**	0.336	0.7	ug/L	-115	Standard
	Se	82	7633.4	2.0	**50.8731**	0.318	0.6	ug/L	12	Standard
	Se-1	77	4920.8	2.9	**50.4174**	0.946	1.9	ug/L	64	Standard
>	Ga	71	46.7	16.4				mg/L	32	Standard
	Rb	85	1080.0	5.1				ug/L	22	Standard
	Y	89	573508.8	4.9				ug/L	547160	Standard
>	Rh	103	41.7	18.3				ug/L	2	Standard
	Mo	98	407466.1	3.2	**103.8785**	0.999	1.0	ug/L	12	Standard
	Ag	107	534278.0	2.7	**51.3988**	0.245	0.5	ug/L	159	Standard
	Cd	111	158614.5	2.9	**49.7084**	0.457	0.9	mg/L	7	Standard
	Cd	114	377162.4	2.1	**48.9518**	0.630	1.3	ug/L	14	Standard
>	In	115	891867.3	2.6				ug/L	890169	Standard
	Sn	118	433242.2	3.7	**48.0904**	0.923	1.9	ug/L	717	Standard
	Sb	123	361102.6	0.8	**48.8310**	0.876	1.8	ug/L	96	Standard
	Ba	135	172566.3	1.4	**49.7098**	0.636	1.3	ug/L	24	Standard
	Ce	140	141.7	23.5				ug/L	263	Standard
>	Tb	159	1535743.8	2.4				ug/L	1497855	Standard
	Ho	165	11.7	24.7				ug/L	17	Standard
	Tl	203	671867.2	2.4	**49.9889**	0.312	0.6	ug/L	63	Standard
	Tl	205	454037.0	1.6	**49.4211**	0.109	0.2	ug/L	12	Standard
	Pb	206	427932.8	1.4	**48.6520**	0.233	0.5	ug/L	444	Standard
	Pb	207	386758.2	1.3	**48.5284**	0.340	0.7	ug/L	376	Standard
	Pb	208	1481560.8	2.5	**49.5299**	0.606	1.2	ug/L	1375	Standard
	U	238	476947.4	2.6	**49.9674**	0.451	0.9	ug/L	9	Standard
>	Bi	209	802795.5	1.9				ug/L	798986	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, February 03, 2016 16:16:31
Page 1

Approved: February 04, 2016

Na	23	1.7	173.2	**9.6443**	16.696	173.1	mg/L	2	Standard
Mg	24	3660.4	4.2	**5.1098**	0.208	4.1	mg/L	10	Standard
K	39	1315.1	10.0	**5.2616**	0.607	11.5	mg/L	8	Standard
Ca	43	108.3	18.7	**7.8453**	3.738	47.6	mg/L	62	Standard
Fe	54	8207.5	3.5	**4.8596**	0.241	5.0	mg/L	194	Standard
Fe	57	2318.5	3.6	**5.0729**	0.132	2.6	mg/L	48	Standard
> **Sc-1**	45	45249.2	2.3				mg/L	42886	Standard
Cl	35	34294.8	5.0				ug/L	30129	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	1366.7	12.3				ug/L	1300	Standard
P	31	13020.6	2.4				ug/L	12220	Standard
S	34	1858.4	8.7				ug/L	1602	Standard
Sr	88	36.7	28.4				ug/L	50	Standard
C	12	93.3	72.9				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	22.4	27.8				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	17	Standard
Er	166	20.0	86.6				mg/L	17	Standard
I	127	3625.4	16.6				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.269		
Al	27	112.678		
Sc	45			
Ti	47	103.525		
V	51	99.243		
Cr	52	101.496		
Cr	53			
Mn	55	100.206		
Co	59	103.336		
Ni	60	100.800		
Cu	65	99.978		
Zn	66	99.260		
> Ge	72		101.959	
As	75	99.808		
Se	82	101.746		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, February 03, 2016 16:16:31
Page 2

Approved: February 04, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	103.878		
Ag	107	102.798		
Cd	111	99.417		
Cd	114			
In	115			100.191
Sn	118	96.181		
Sb	123	97.662		
Ba	135	99.420		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.978		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.060		
U	238	99.935		
Bi	209			100.477
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Wednesday, February 03, 2016 16:16:31
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, February 03, 2016 16:17:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43993.8	4.0				ug/L	50061	Standard
	Be	9	0.0		**0.0139**	0.000	0.0	ug/L	5	Standard
	Al	27	1558.5	92.6	**0.0086**	0.013	153.6	ug/L	215	Standard
	Sc	45	46795.6	5.8				ug/L	42886	Standard
	Ti	47	58.7	18.1	**-0.0772**	0.039	50.3	ug/L	87	Standard
	V	51	2364.0	1.9	**-0.0192**	0.013	70.1	ug/L	2648	Standard
	Cr	52	9507.0	0.2	**-0.0926**	0.054	58.5	ug/L	10137	Standard
	Cr	53	318.3	22.8	**0.0051**	0.059	1164.1	ug/L	288	Standard
	Mn	55	1490.1	86.9	**0.0542**	0.124	228.7	ug/L	688	Standard
	Co	59	186.0	45.3	**0.0074**	0.008	102.4	ug/L	85	Standard
	Ni	60	51.7	37.3	**-0.0043**	0.008	181.7	ug/L	33	Standard
	Cu	65	136.0	14.8	**-0.0032**	0.008	241.1	ug/L	104	Standard
	Zn	66	239.3	5.8	**-0.0492**	0.017	33.7	ug/L	162	Standard
>	**Ge**	72	607501.3	5.2				ug/L	610528	Standard
	As	75	-99.2	33.6	**0.0006**	0.021	3481.7	ug/L	-115	Standard
	Se	82	28.4	34.2	**0.0316**	0.078	245.7	ug/L	12	Standard
	Se-1	77	63.0	1.6	**0.0498**	0.041	82.4	ug/L	64	Standard
>	**Ga**	71	26.7	60.3				mg/L	32	Standard
	Rb	85	15.0	88.2				ug/L	22	Standard
	Y	89	561532.2	5.9				ug/L	547160	Standard
>	**Rh**	103	3.3	86.6				ug/L	2	Standard
	Mo	98	219.9	22.1	**0.0525**	0.013	25.1	ug/L	12	Standard
	Ag	107	250.7	29.5	**0.0075**	0.006	85.7	ug/L	159	Standard
	Cd	111	16.0	75.0	**-0.0030**	0.004	134.2	mg/L	7	Standard
	Cd	114	60.0	47.8	**-0.0032**	0.004	124.8	ug/L	14	Standard
>	**In**	115	875918.3	4.8				ug/L	890169	Standard
	Sn	118	1180.0	14.3	**0.0526**	0.024	45.6	ug/L	717	Standard
	Sb	123	565.1	12.9	**0.0717**	0.013	18.7	ug/L	96	Standard
	Ba	135	58.3	50.6	**0.0014**	0.008	584.1	ug/L	24	Standard
	Ce	140	150.0	141.5				ug/L	263	Standard
>	**Tb**	159	1492760.0	3.5				ug/L	1497855	Standard
	Ho	165	18.3	87.7				ug/L	17	Standard
	Tl	203	127.3	69.2	**0.0069**	0.006	92.6	ug/L	63	Standard
	Tl	205	63.3	52.6	**0.0062**	0.004	63.1	ug/L	12	Standard
	Pb	206	462.0	16.7	**-0.0249**	0.006	24.9	ug/L	444	Standard
	Pb	207	426.7	15.7	**-0.0229**	0.007	29.6	ug/L	376	Standard
	Pb	208	1528.0	10.2	**-0.0272**	0.004	12.9	ug/L	1375	Standard
	U	238	63.3	59.1	**0.0042**	0.004	97.2	ug/L	9	Standard
>	**Bi**	209	781534.5	5.0				ug/L	798986	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, February 03, 2016 16:19:42
Page 1

Approved: February 04, 2016

Na	23	1.7	173.2	**9.6105**	16.637	173.1	mg/L	2	Standard
Mg	24	21.7	70.5	**0.0063**	0.022	347.4	mg/L	10	Standard
K	39	13.3	57.3	**-0.0046**	0.032	692.6	mg/L	8	Standard
Ca	43	45.0	22.2	**-3.0489**	1.532	50.3	mg/L	62	Standard
Fe	54	214.0	12.6	**0.0005**	0.013	2399.6	mg/L	194	Standard
Fe	57	51.7	39.1	**-0.0360**	0.042	117.4	mg/L	48	Standard
Sc-1	45	46795.6	5.8				mg/L	42886	Standard
Cl	35	32947.1	1.9				ug/L	30129	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	1413.4	12.0				ug/L	1300	Standard
P	31	12968.9	6.3				ug/L	12220	Standard
S	34	1881.8	6.4				ug/L	1602	Standard
Sr	88	41.7	25.0				ug/L	50	Standard
C	12	73.3	28.4				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	34.1	86.0				mg/L	16	Standard
Ho-1	165	18.3	87.7				mg/L	17	Standard
Er	166	53.3	47.2				mg/L	17	Standard
I	127	6172.9	0.0				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.504	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, February 03, 2016 16:19:42
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.399
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.816
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, February 03, 2016 16:19:42
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, February 03, 2016 16:20:38
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43337.1	7.4				ug/L	50061	Standard
	Be	9	88.3	11.8	**0.2128**	0.035	16.3	ug/L	5	Standard
	Al	27	381.7	7.2	**-0.0025**	0.000	5.8	ug/L	215	Standard
	Sc	45	44368.5	8.8				ug/L	42886	Standard
	Ti	47	53.3	6.0	**-0.0945**	0.001	0.6	ug/L	87	Standard
	V	51	6280.6	2.3	**0.3787**	0.021	5.6	ug/L	2648	Standard
	Cr	52	18423.9	3.1	**0.8963**	0.068	7.6	ug/L	10137	Standard
	Cr	53	1370.1	4.2	**0.9589**	0.113	11.8	ug/L	288	Standard
	Mn	55	5534.0	4.5	**0.4737**	0.013	2.8	ug/L	688	Standard
	Co	59	4288.9	4.5	**0.3965**	0.008	2.1	ug/L	85	Standard
	Ni	60	4344.0	3.0	**1.6052**	0.052	3.2	ug/L	33	Standard
	Cu	65	2362.9	3.7	**0.8170**	0.021	2.5	ug/L	104	Standard
	Zn	66	9327.2	3.4	**6.7990**	0.176	2.6	ug/L	162	Standard
>	**Ge**	72	611071.8	5.7				ug/L	610528	Standard
	As	75	495.4	9.7	**0.4149**	0.030	7.2	ug/L	-115	Standard
	Se	82	79.5	7.2	**0.3766**	0.041	10.9	ug/L	12	Standard
	Se-1	77	90.3	10.5	**0.3323**	0.065	19.6	ug/L	64	Standard
>	**Ga**	71	25.0	60.0				mg/L	32	Standard
	Rb	85	26.7	10.8				ug/L	22	Standard
	Y	89	545843.3	3.7				ug/L	547160	Standard
>	**Rh**	103	15.0	88.2				ug/L	2	Standard
	Mo	98	141.6	10.0	**0.0325**	0.005	16.0	ug/L	12	Standard
	Ag	107	4170.9	5.8	**0.3951**	0.012	3.0	ug/L	159	Standard
	Cd	111	731.8	9.3	**0.2271**	0.011	4.9	mg/L	7	Standard
	Cd	114	1735.3	9.0	**0.2199**	0.013	5.8	ug/L	14	Standard
>	**In**	115	868591.6	4.6				ug/L	890169	Standard
	Sn	118	613.3	18.2	**-0.0112**	0.015	136.4	ug/L	717	Standard
	Sb	123	2953.2	1.1	**0.4039**	0.014	3.4	ug/L	96	Standard
	Ba	135	2466.9	4.3	**0.7143**	0.009	1.3	ug/L	24	Standard
	Ce	140	45.0	22.2				ug/L	263	Standard
>	**Tb**	159	1494027.1	5.9				ug/L	1497855	Standard
	Ho	165	10.0					ug/L	17	Standard
	Tl	203	1035.0	3.1	**0.0762**	0.003	3.4	ug/L	63	Standard
	Tl	205	698.3	6.5	**0.0771**	0.007	8.8	ug/L	12	Standard
	Pb	206	2154.8	4.6	**0.1726**	0.001	0.9	ug/L	444	Standard
	Pb	207	1788.1	5.4	**0.1522**	0.006	3.9	ug/L	376	Standard
	Pb	208	7140.0	5.9	**0.1651**	0.008	4.7	ug/L	1375	Standard
	U	238	3667.1	6.6	**0.3912**	0.027	6.9	ug/L	9	Standard
>	**Bi**	209	784102.5	5.2				ug/L	798986	Standard

Sample ID: QC Std 8
Report Date/Time: Wednesday, February 03, 2016 16:22:55
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11.7	65.5	**-0.0064**	0.012	190.2	mg/L	10	Standard
K	39	16.7	17.3	**0.0122**	0.015	121.6	mg/L	8	Standard
Ca	43	51.7	24.4	**-1.3488**	2.837	210.3	mg/L	62	Standard
Fe	54	219.6	19.4	**0.0122**	0.032	264.8	mg/L	194	Standard
Fe	57	71.7	22.4	**0.0185**	0.045	241.9	mg/L	48	Standard
> **Sc-1**	45	44368.5	8.8				mg/L	42886	Standard
Cl	35	33193.0	2.4				ug/L	30129	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	1303.4	15.0				ug/L	1300	Standard
P	31	12143.2	6.3				ug/L	12220	Standard
S	34	1671.8	8.4				ug/L	1602	Standard
Sr	88	41.7	27.7				ug/L	50	Standard
C	12	120.0	22.0				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	25.5	60.8				mg/L	16	Standard
Ho-1	165	10.0					mg/L	17	Standard
Er	166	23.3	24.7				mg/L	17	Standard
I	127	1863.4	5.6				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.384		
Al	27			
Sc	45			
Ti	47			
V	51	94.666		
Cr	52	112.042		
Cr	53			
Mn	55	94.746		
Co	59	99.121		
Ni	60	100.324		
Cu	65	102.124		
Zn	66	108.784		
> Ge	72		100.089	
As	75	103.735		
Se	82	94.149		
Se-1	77			
> Ga	71			

Sample ID: QC Std 8
Report Date/Time: Wednesday, February 03, 2016 16:22:55
Page 2

Approved: February 04, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	98.779		
Cd	111	94.613		
Cd	114			
> In	115			97.576
Sn	118			
Sb	123	100.976		
Ba	135	95.234		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.303		
Tl	205			
Pb	206			
Pb	207			
Pb	208	82.558		
U	238	97.796		
> Bi	209			98.137
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Wednesday, February 03, 2016 16:22:55
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: PBS M9 WG555856-02
Sample Date/Time: Wednesday, February 03, 2016 18:00:12
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47143.5	6.9				ug/L	50061	Standard
	Be	9	1.7	173.2	**0.0171**	0.006	32.3	ug/L	5	Standard
	Al	27	1298.4	9.2	**0.0055**	0.001	11.6	ug/L	215	Standard
	Sc	45	44993.6	7.1				ug/L	42886	Standard
	Ti	47	71.7	10.3	**-0.0412**	0.013	32.6	ug/L	87	Standard
	V	51	2672.4	4.6	**0.0133**	0.006	43.8	ug/L	2648	Standard
	Cr	52	11396.0	3.2	**0.1242**	0.030	23.9	ug/L	10137	Standard
	Cr	53	345.0	10.1	**0.0316**	0.033	103.8	ug/L	288	Standard
	Mn	55	1464.4	2.1	**0.0561**	0.005	9.1	ug/L	688	Standard
	Co	59	98.3	9.7	**-0.0008**	0.000	51.0	ug/L	85	Standard
	Ni	60	127.3	7.9	**0.0243**	0.001	5.8	ug/L	33	Standard
	Cu	65	843.0	8.1	**0.2597**	0.010	3.7	ug/L	104	Standard
	Zn	66	3794.1	4.7	**2.6564**	0.035	1.3	ug/L	162	Standard
>	**Ge**	72	604798.3	5.2				ug/L	610528	Standard
	As	75	-102.2	18.2	**-0.0021**	0.010	459.8	ug/L	-115	Standard
	Se	82	19.7	32.9	**-0.0281**	0.051	181.6	ug/L	12	Standard
	Se-1	77	53.0	8.6	**-0.0553**	0.041	73.8	ug/L	64	Standard
>	**Ga**	71	20.0	50.0				mg/L	32	Standard
	Rb	85	66.7	45.8				ug/L	22	Standard
	Y	89	543153.2	6.3				ug/L	547160	Standard
>	**Rh**	103	5.0	100.0				ug/L	2	Standard
	Mo	98	57.0	12.9	**0.0106**	0.002	14.8	ug/L	12	Standard
	Ag	107	147.0	11.4	**-0.0021**	0.001	69.8	ug/L	159	Standard
	Cd	111	7.2	21.2	**-0.0058**	0.000	6.7	mg/L	7	Standard
	Cd	114	42.8	24.3	**-0.0053**	0.001	20.3	ug/L	14	Standard
>	**In**	115	847110.5	6.4				ug/L	890169	Standard
	Sn	118	888.4	9.6	**0.0229**	0.014	59.7	ug/L	717	Standard
	Sb	123	268.4	19.4	**0.0321**	0.010	30.3	ug/L	96	Standard
	Ba	135	213.0	5.3	**0.0491**	0.001	2.4	ug/L	24	Standard
	Ce	140	171.7	9.4				ug/L	263	Standard
>	**Tb**	159	1461492.3	5.9				ug/L	1497855	Standard
	Ho	165	16.7	45.8				ug/L	17	Standard
	Tl	203	7.7	19.9	**-0.0021**	0.000	7.0	ug/L	63	Standard
	Tl	205	5.0	0.0	**-0.0003**	0.000	9.5	ug/L	12	Standard
	Pb	206	575.3	7.4	**-0.0096**	0.002	16.0	ug/L	444	Standard
	Pb	207	515.3	4.2	**-0.0095**	0.001	11.1	ug/L	376	Standard
	Pb	208	1973.7	3.5	**-0.0099**	0.002	22.2	ug/L	1375	Standard
	U	238	4.7	32.7	**-0.0021**	0.000	9.3	ug/L	9	Standard
>	**Bi**	209	760740.8	5.3				ug/L	798986	Standard

Sample ID: PBS M9 WG555856-02
Report Date/Time: Thursday, February 04, 2016 11:09:25
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	31.7	32.9	**0.0208**	0.012	59.5	mg/L	10	Standard
K	39	23.3	24.7	**0.0389**	0.029	75.2	mg/L	8	Standard
Ca	43	55.0	45.5	**-0.8468**	4.801	567.0	mg/L	62	Standard
Fe	54	210.2	15.0	**0.0032**	0.015	471.6	mg/L	194	Standard
Fe	57	53.3	10.8	**-0.0265**	0.017	63.9	mg/L	48	Standard
> **Sc-1**	45	44993.6	7.1				mg/L	42886	Standard
Cl	35	33793.7	4.8				ug/L	30129	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	1300.1	9.4				ug/L	1300	Standard
P	31	11883.0	3.4				ug/L	12220	Standard
S	34	1505.1	4.2				ug/L	1602	Standard
Sr	88	21.7	58.1				ug/L	50	Standard
C	12	123.3	24.8				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	7	Standard
Dy	164	25.9	60.5				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	17	Standard
Er	166	16.7	91.7				mg/L	17	Standard
I	127	4577.4	2.8				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.172	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.062	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBS M9 WG555856-02
Report Date/Time: Thursday, February 04, 2016 11:09:25
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.163
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.213
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M9 WG555856-02
Report Date/Time: Thursday, February 04, 2016 11:09:25
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: LCSS M9 WG555856-03
Sample Date/Time: Wednesday, February 03, 2016 18:03:23
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46514.7	4.9				ug/L	50061	Standard
	Be	9	11150.8	8.2	**23.2050**	0.769	3.3	ug/L	5	Standard
	Al	27	1556.7	7.4	**0.0080**	0.000	6.0	ug/L	215	Standard
	Sc	45	45842.8	6.4				ug/L	42886	Standard
	Ti	47	76.7	9.8	**-0.0243**	0.030	122.5	ug/L	87	Standard
	V	51	235130.6	5.4	**24.1220**	0.635	2.6	ug/L	2648	Standard
	Cr	52	228432.4	5.1	**24.7877**	0.487	2.0	ug/L	10137	Standard
	Cr	53	27141.1	9.4	**24.6646**	1.114	4.5	ug/L	288	Standard
	Mn	55	235459.4	6.2	**24.5830**	0.638	2.6	ug/L	688	Standard
	Co	59	256926.8	6.4	**24.7768**	0.661	2.7	ug/L	85	Standard
	Ni	60	65102.2	5.8	**24.7992**	0.276	1.1	ug/L	33	Standard
	Cu	65	67167.9	5.6	**25.1230**	0.501	2.0	ug/L	104	Standard
	Zn	66	33798.7	6.0	**25.6782**	0.553	2.2	ug/L	162	Standard
>	**Ge**	72	600184.4	5.0				ug/L	610528	Standard
	As	75	34963.2	5.7	**24.8735**	0.433	1.7	ug/L	-115	Standard
	Se	82	3499.0	3.6	**24.1176**	0.725	3.0	ug/L	12	Standard
	Se-1	77	2282.8	6.0	**23.9388**	0.788	3.3	ug/L	64	Standard
>	**Ga**	71	51.7	20.1				mg/L	32	Standard
	Rb	85	86.7	6.7				ug/L	22	Standard
	Y	89	543153.8	6.5				ug/L	547160	Standard
>	**Rh**	103	16.7	17.3				ug/L	2	Standard
	Mo	98	107.6	9.2	**0.0239**	0.001	6.3	ug/L	12	Standard
	Ag	107	249283.0	6.6	**24.9833**	0.625	2.5	ug/L	159	Standard
	Cd	111	73776.1	5.9	**24.0933**	0.261	1.1	mg/L	7	Standard
	Cd	114	173726.2	5.8	**23.4915**	0.255	1.1	ug/L	14	Standard
>	**In**	115	855473.6	4.9				ug/L	890169	Standard
	Sn	118	740.0	12.7	**0.0045**	0.013	292.3	ug/L	717	Standard
	Sb	123	167342.1	6.0	**23.5737**	0.354	1.5	ug/L	96	Standard
	Ba	135	80879.5	4.0	**24.2833**	0.258	1.1	ug/L	24	Standard
	Ce	140	101.7	22.7				ug/L	263	Standard
>	**Tb**	159	1474749.9	5.5				ug/L	1497855	Standard
	Ho	165	16.7	34.6				ug/L	17	Standard
	Tl	203	313579.7	4.7	**24.0314**	0.096	0.4	ug/L	63	Standard
	Tl	205	209180.7	5.9	**23.4426**	0.370	1.6	ug/L	12	Standard
	Pb	206	208375.2	5.5	**24.3555**	0.356	1.5	ug/L	444	Standard
	Pb	207	180747.2	4.6	**23.3185**	0.167	0.7	ug/L	376	Standard
	Pb	208	689202.6	4.5	**23.6933**	0.241	1.0	ug/L	1375	Standard
	U	238	216477.1	4.0	**23.3654**	0.195	0.8	ug/L	9	Standard
>	**Bi**	209	779334.2	4.4				ug/L	798986	Standard

Sample ID: LCSS M9 WG555856-03
Report Date/Time: Thursday, February 04, 2016 11:09:31
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	23.3	44.6	**0.0087**	0.013	155.4	mg/L	10	Standard
K	39	25.0	40.0	**0.0433**	0.040	93.2	mg/L	8	Standard
Ca	43	45.0	22.2	**-2.8130**	2.093	74.4	mg/L	62	Standard
Fe	54	197.7	27.3	**-0.0049**	0.041	839.3	mg/L	194	Standard
Fe	57	56.7	43.5	**-0.0233**	0.048	205.5	mg/L	48	Standard
> **Sc-1**	45	45842.8	6.4				mg/L	42886	Standard
Cl	35	32911.1	4.5				ug/L	30129	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	1346.7	7.5				ug/L	1300	Standard
P	31	10949.0	1.6				ug/L	12220	Standard
S	34	1478.4	2.7				ug/L	1602	Standard
Sr	88	46.7	22.3				ug/L	50	Standard
C	12	120.0	14.4				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	26.0	43.3				mg/L	16	Standard
Ho-1	165	16.7	34.6				mg/L	17	Standard
Er	166	13.3	86.6				mg/L	17	Standard
I	127	4432.3	2.8				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.916	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.306	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSS M9 WG555856-03
Report Date/Time: Thursday, February 04, 2016 11:09:31
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.102
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.540
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M9 WG555856-03
Report Date/Time: Thursday, February 04, 2016 11:09:31
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1601137608
Sample Date/Time: Wednesday, February 03, 2016 18:06:34
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	47875.6	3.3				ug/L	50061	Standard
	Be	9	11697.9	5.0	**23.6678**	0.416	1.8	ug/L	5	Standard
	Al	27	671766.8	4.2	**5.9673**	0.054	0.9	ug/L	215	Standard
	Sc	45	47509.5	4.1				ug/L	42886	Standard
	Ti	47	10088.7	2.4	**27.1581**	0.223	0.8	ug/L	87	Standard
	V	51	174777.2	2.0	**16.9819**	0.242	1.4	ug/L	2648	Standard
	Cr	52	240483.3	2.7	**24.8255**	0.158	0.6	ug/L	10137	Standard
	Cr	53	28483.4	3.6	**24.6594**	0.412	1.7	ug/L	288	Standard
	Mn	55	627958.8	1.7	**62.5480**	0.969	1.5	ug/L	688	Standard
	Co	59	146166.4	2.9	**13.4086**	0.160	1.2	ug/L	85	Standard
	Ni	60	90082.0	4.7	**32.6491**	0.579	1.8	ug/L	33	Standard
	Cu	65	106393.4	4.3	**37.8760**	0.448	1.2	ug/L	104	Standard
	Zn	66	77718.9	2.7	**56.4588**	0.425	0.8	ug/L	162	Standard
>	Ge	72	630940.8	3.2				ug/L	610528	Standard
	As	75	11601.1	2.2	**7.9012**	0.084	1.1	ug/L	-115	Standard
	Se	82	2384.5	1.5	**15.5711**	0.303	1.9	ug/L	12	Standard
	Se-1	77	1570.7	3.6	**15.4526**	0.084	0.5	ug/L	64	Standard
>	Ga	71	3183.7	3.2				mg/L	32	Standard
	Rb	85	61983.2	1.1				ug/L	22	Standard
	Y	89	620502.9	3.6				ug/L	547160	Standard
>	Rh	103	23.3	24.7				ug/L	2	Standard
	Mo	98	28547.9	2.6	**7.1721**	0.150	2.1	ug/L	12	Standard
	Ag	107	96979.6	3.4	**9.1833**	0.188	2.1	ug/L	159	Standard
	Cd	111	59078.7	2.3	**18.2489**	0.115	0.6	mg/L	7	Standard
	Cd	114	143265.3	1.9	**18.3232**	0.019	0.1	ug/L	14	Standard
>	In	115	904608.9	2.0				ug/L	890169	Standard
	Sn	118	27620.2	1.3	**2.9469**	0.027	0.9	ug/L	717	Standard
	Sb	123	12645.8	2.7	**1.6790**	0.012	0.7	ug/L	96	Standard
	Ba	135	168892.2	2.6	**47.9524**	0.544	1.1	ug/L	24	Standard
	Ce	140	489221.0	3.7				ug/L	263	Standard
>	Tb	159	1566149.9	5.3				ug/L	1497855	Standard
	Ho	165	4439.0	11.0				ug/L	17	Standard
	Tl	203	358811.4	2.1	**26.1977**	0.168	0.6	ug/L	63	Standard
	Tl	205	244001.9	3.1	**26.0621**	0.689	2.6	ug/L	12	Standard
	Pb	206	331111.4	3.3	**36.9109**	0.246	0.7	ug/L	444	Standard
	Pb	207	276586.2	1.9	**34.0311**	0.396	1.2	ug/L	376	Standard
	Pb	208	1069743.4	2.2	**35.0706**	0.144	0.4	ug/L	1375	Standard
	U	238	135436.5	2.0	**13.9237**	0.206	1.5	ug/L	9	Standard
>	Bi	209	818185.3	2.6				ug/L	798986	Standard

Sample ID: L1601137608
Report Date/Time: Thursday, February 04, 2016 11:09:33
Page 1

Approved: February 04, 2016

Na	23	3.3	173.2	**17.3272**	30.003	173.2	mg/L	2	Standard
Mg	24	146.7	15.4	**0.1724**	0.028	16.2	mg/L	10	Standard
K	39	153.3	13.2	**0.5315**	0.056	10.6	mg/L	8	Standard
Ca	43	70.0	12.4	**0.8563**	1.566	182.9	mg/L	62	Standard
Fe	54	3697.0	4.6	**2.0171**	0.181	9.0	mg/L	194	Standard
Fe	57	1030.0	6.1	**2.0645**	0.174	8.4	mg/L	48	Standard
> **Sc-1**	45	47509.5	4.1				mg/L	42886	Standard
Cl	35	33893.2	1.2				ug/L	30129	Standard
Kr	83	6.3	36.5				ug/L	3	Standard
Br	81	1466.7	5.8				ug/L	1300	Standard
P	31	13521.1	10.5				ug/L	12220	Standard
S	34	1613.4	9.5				ug/L	1602	Standard
Sr	88	51.7	55.0				ug/L	50	Standard
C	12	116.7	13.1				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	5874.5	4.6				mg/L	7	Standard
Dy	164	7354.9	7.4				mg/L	16	Standard
Ho-1	165	4439.0	11.0				mg/L	17	Standard
Er	166	3973.9	3.0				mg/L	17	Standard
I	127	8487.4	1.1				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.635	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.344	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1601137608
Report Date/Time: Thursday, February 04, 2016 11:09:33
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.622
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.403
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1601137608SDL WG556009-04
Sample Date/Time: Wednesday, February 03, 2016 18:09:46
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45737.4	5.0				ug/L	50061	Standard
	Be	9	2305.2	10.4	**4.8860**	0.266	5.4	ug/L	5	Standard
	Al	27	128465.1	8.9	**1.1883**	0.047	4.0	ug/L	215	Standard
	Sc	45	46855.9	7.6				ug/L	42886	Standard
	Ti	47	1931.8	5.6	**5.0227**	0.030	0.6	ug/L	87	Standard
	V	51	35314.7	5.2	**3.2363**	0.083	2.6	ug/L	2648	Standard
	Cr	52	53380.0	4.2	**4.6320**	0.074	1.6	ug/L	10137	Standard
	Cr	53	5747.8	4.3	**4.7728**	0.141	3.0	ug/L	288	Standard
	Mn	55	121882.6	5.6	**12.1077**	0.236	1.9	ug/L	688	Standard
	Co	59	27905.7	4.9	**2.5630**	0.081	3.2	ug/L	85	Standard
	Ni	60	17377.3	4.5	**6.3090**	0.148	2.4	ug/L	33	Standard
	Cu	65	20796.6	5.8	**7.3918**	0.159	2.2	ug/L	104	Standard
	Zn	66	17998.7	3.5	**12.9601**	0.395	3.1	ug/L	162	Standard
>	**Ge**	72	628402.0	5.3				ug/L	610528	Standard
	As	75	2048.8	6.3	**1.4577**	0.029	2.0	ug/L	-115	Standard
	Se	82	467.7	4.6	**2.9333**	0.061	2.1	ug/L	12	Standard
	Se-1	77	363.0	9.9	**3.1038**	0.213	6.9	ug/L	64	Standard
>	**Ga**	71	635.0	16.7				mg/L	32	Standard
	Rb	85	12313.4	7.4				ug/L	22	Standard
	Y	89	559509.2	4.1				ug/L	547160	Standard
>	**Rh**	103	10.0	86.6				ug/L	2	Standard
	Mo	98	5628.5	3.9	**1.4555**	0.007	0.5	ug/L	12	Standard
	Ag	107	18763.6	2.4	**1.8211**	0.035	1.9	ug/L	159	Standard
	Cd	111	11464.1	4.5	**3.6478**	0.049	1.3	mg/L	7	Standard
	Cd	114	27428.4	3.6	**3.6120**	0.063	1.7	ug/L	14	Standard
>	**In**	115	876569.8	4.0				ug/L	890169	Standard
	Sn	118	5594.4	7.6	**0.5509**	0.026	4.8	ug/L	717	Standard
	Sb	123	2507.4	1.6	**0.3386**	0.009	2.5	ug/L	96	Standard
	Ba	135	31800.4	4.8	**9.3040**	0.113	1.2	ug/L	24	Standard
	Ce	140	92895.8	3.2				ug/L	263	Standard
>	**Tb**	159	1494968.0	6.5				ug/L	1497855	Standard
	Ho	165	821.7	9.5				ug/L	17	Standard
	Tl	203	69310.5	5.3	**5.2406**	0.033	0.6	ug/L	63	Standard
	Tl	205	46737.1	4.2	**5.1729**	0.056	1.1	ug/L	12	Standard
	Pb	206	63623.5	5.2	**7.2871**	0.092	1.3	ug/L	444	Standard
	Pb	207	52851.8	4.6	**6.6758**	0.027	0.4	ug/L	376	Standard
	Pb	208	205693.1	4.0	**6.9257**	0.067	1.0	ug/L	1375	Standard
	U	238	25702.5	4.2	**2.7363**	0.022	0.8	ug/L	9	Standard
>	**Bi**	209	789569.5	4.9				ug/L	798986	Standard

Sample ID: L1601137608SDL WG556009-04
Report Date/Time: Thursday, February 04, 2016 11:09:39
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	22.2	**0.0532**	0.015	29.0	mg/L	10	Standard
K	39	43.3	24.0	**0.1107**	0.028	25.4	mg/L	8	Standard
Ca	43	53.3	35.5	**-1.6636**	3.089	185.7	mg/L	62	Standard
Fe	54	890.8	5.5	**0.3988**	0.040	9.9	mg/L	194	Standard
Fe	57	246.7	7.1	**0.3897**	0.040	10.3	mg/L	48	Standard
> **Sc-1**	45	46855.9	7.6				mg/L	42886	Standard
Cl	35	33293.2	3.3				ug/L	30129	Standard
Kr	83	2.7	108.3				ug/L	3	Standard
Br	81	1283.4	12.9				ug/L	1300	Standard
P	31	12131.5	5.9				ug/L	12220	Standard
S	34	1620.1	4.8				ug/L	1602	Standard
Sr	88	36.7	51.6				ug/L	50	Standard
C	12	106.7	56.5				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1110.0	13.9				mg/L	7	Standard
Dy	164	1264.9	18.3				mg/L	16	Standard
Ho-1	165	821.7	9.5				mg/L	17	Standard
Er	166	733.4	14.6				mg/L	17	Standard
I	127	5991.2	1.9				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.363	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.928	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1601137608SDL WG556009-04
Report Date/Time: Thursday, February 04, 2016 11:09:39
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.472
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.821
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1601137101
Sample Date/Time: Wednesday, February 03, 2016 18:12:57
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53385.6	2.1				ug/L	50061	Standard
	Be	9	191.7	27.9	**0.3615**	0.097	26.8	ug/L	5	Standard
	Al	27	710955.1	5.9	**5.6619**	0.234	4.1	ug/L	215	Standard
	Sc	45	52418.9	2.8				ug/L	42886	Standard
	Ti	47	26707.2	3.6	**70.2341**	0.823	1.2	ug/L	87	Standard
	V	51	591083.2	2.1	**56.4071**	0.439	0.8	ug/L	2648	Standard
	Cr	52	279396.7	2.7	**28.1785**	0.048	0.2	ug/L	10137	Standard
	Cr	53	33473.6	3.1	**28.2041**	0.224	0.8	ug/L	288	Standard
	Mn	55	204990.1	2.0	**19.7755**	0.309	1.6	ug/L	688	Standard
	Co	59	20828.0	2.6	**1.8480**	0.013	0.7	ug/L	85	Standard
	Ni	60	21022.2	0.7	**7.3912**	0.145	2.0	ug/L	33	Standard
	Cu	65	92044.5	2.5	**31.8466**	0.192	0.6	ug/L	104	Standard
	Zn	66	181114.7	2.1	**128.1649**	1.362	1.1	ug/L	162	Standard
>	Ge	72	649187.3	2.7				ug/L	610528	Standard
	As	75	9556.5	2.7	**6.3382**	0.017	0.3	ug/L	-115	Standard
	Se	82	204.3	4.2	**1.1452**	0.083	7.3	ug/L	12	Standard
	Se-1	77	187.3	3.3	**1.2419**	0.014	1.1	ug/L	64	Standard
>	Ga	71	33934.7	5.4				mg/L	32	Standard
	Rb	85	125701.3	3.4				ug/L	22	Standard
	Y	89	661484.6	3.1				ug/L	547160	Standard
>	Rh	103	395.0	4.4				ug/L	2	Standard
	Mo	98	5166.7	3.7	**1.2827**	0.013	1.1	ug/L	12	Standard
	Ag	107	1947.5	1.0	**0.1663**	0.007	4.1	ug/L	159	Standard
	Cd	111	7062.0	2.7	**2.1553**	0.002	0.1	mg/L	7	Standard
	Cd	114	17689.3	2.6	**2.2335**	0.055	2.5	ug/L	14	Standard
>	In	115	912544.3	2.8				ug/L	890169	Standard
	Sn	118	1965.1	1.8	**0.1320**	0.002	1.7	ug/L	717	Standard
	Sb	123	229.0	16.7	**0.0239**	0.006	24.8	ug/L	96	Standard
	Ba	135	542979.5	1.4	**152.9081**	2.197	1.4	ug/L	24	Standard
	Ce	140	977192.7	1.7				ug/L	263	Standard
>	Tb	159	1603128.3	3.9				ug/L	1497855	Standard
	Ho	165	9254.5	0.1				ug/L	17	Standard
	Tl	203	2159.2	2.9	**0.1544**	0.006	3.8	ug/L	63	Standard
	Tl	205	1483.4	5.1	**0.1570**	0.009	5.5	ug/L	12	Standard
	Pb	206	9465050.6	1.7	**1053.5628**	7.345	0.7	ug/L	444	Standard
	Pb	207	7941917.8	1.6	**975.6318**	10.119	1.0	ug/L	376	Standard
	Pb	208	30966112.4	2.2	**1013.6107**	13.378	1.3	ug/L	1375	Standard
	U	238	6997.3	3.1	**0.7141**	0.016	2.2	ug/L	9	Standard
>	Bi	209	821146.0	1.0				ug/L	798986	Standard

Sample ID: L1601137101
Report Date/Time: Thursday, February 04, 2016 11:09:40
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	133.3	15.2	**0.1379**	0.023	16.7	mg/L	10	Standard
K	39	123.3	15.3	**0.3722**	0.055	14.7	mg/L	8	Standard
Ca	43	78.3	19.5	**0.9740**	1.998	205.1	mg/L	62	Standard
Fe	54	36036.4	2.1	**18.7591**	0.168	0.9	mg/L	194	Standard
Fe	57	9416.3	3.3	**18.1547**	0.157	0.9	mg/L	48	Standard
Sc-1	45	52418.9	2.8				mg/L	42886	Standard
Cl	35	33581.2	3.7				ug/L	30129	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	6428.0	3.0				ug/L	1300	Standard
P	31	12360.0	2.7				ug/L	12220	Standard
S	34	1510.1	8.0				ug/L	1602	Standard
Sr	88	46.7	43.3				ug/L	50	Standard
C	12	500.0	2.0				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	266.7	37.9				mg/L	7	Standard
Dy	164	16392.0	4.0				mg/L	16	Standard
Ho-1	165	9254.5	0.1				mg/L	17	Standard
Er	166	8502.4	7.1				mg/L	17	Standard
I	127	22281.4	1.5				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.641	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.332	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1601137101
Report Date/Time: Thursday, February 04, 2016 11:09:40
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.514
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.774
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	
Pb 206 Upper, S, EEE	Pb	206	

Sample ID: L1601137101
Report Date/Time: Thursday, February 04, 2016 11:09:40
Page 3

Approved: February 04, 2016

Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Sample ID: L1601137101
Report Date/Time: Thursday, February 04, 2016 11:09:40
Page 4

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1601137101PS WG556009-05
Sample Date/Time: Wednesday, February 03, 2016 18:16:09
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54732.0	0.6				ug/L	50061	Standard
	Be	9	27949.1	4.6	**49.4753**	2.533	5.1	ug/L	5	Standard
	Al	27	774366.4	5.2	**6.0196**	0.351	5.8	ug/L	215	Standard
	Sc	45	55061.6	3.6				ug/L	42886	Standard
	Ti	47	28019.6	2.6	**72.8742**	1.285	1.8	ug/L	87	Standard
	V	51	1129902.9	2.4	**106.8256**	0.821	0.8	ug/L	2648	Standard
	Cr	52	778541.6	3.0	**79.6647**	1.389	1.7	ug/L	10137	Standard
	Cr	53	94431.7	1.3	**79.1942**	1.473	1.9	ug/L	288	Standard
	Mn	55	743750.1	4.2	**71.1540**	1.570	2.2	ug/L	688	Standard
	Co	59	596626.5	3.8	**52.6072**	1.202	2.3	ug/L	85	Standard
	Ni	60	162944.0	4.5	**56.7603**	1.343	2.4	ug/L	33	Standard
	Cu	65	242065.8	3.4	**82.8718**	1.009	1.2	ug/L	104	Standard
	Zn	66	264838.3	3.4	**185.3382**	2.614	1.4	ug/L	162	Standard
>	**Ge**	72	656621.9	2.2				ug/L	610528	Standard
	As	75	87090.9	2.5	**56.5475**	0.332	0.6	ug/L	-115	Standard
	Se	82	8078.1	2.4	**51.0385**	0.113	0.2	ug/L	12	Standard
	Se-1	77	5250.6	1.9	**51.0154**	0.649	1.3	ug/L	64	Standard
>	**Ga**	71	35301.1	4.7				mg/L	32	Standard
	Rb	85	132581.0	1.8				ug/L	22	Standard
	Y	89	685321.7	2.4				ug/L	547160	Standard
>	**Rh**	103	438.3	13.2				ug/L	2	Standard
	Mo	98	5419.5	3.0	**1.3301**	0.046	3.5	ug/L	12	Standard
	Ag	107	550743.0	3.2	**51.1792**	1.833	3.6	ug/L	159	Standard
	Cd	111	169373.0	2.3	**51.2743**	1.416	2.8	mg/L	7	Standard
	Cd	114	417927.0	1.1	**52.3881**	0.886	1.7	ug/L	14	Standard
>	**In**	115	923390.3	0.6				ug/L	890169	Standard
	Sn	118	2256.8	8.3	**0.1609**	0.022	13.4	ug/L	717	Standard
	Sb	123	363780.9	2.0	**47.5024**	1.137	2.4	ug/L	96	Standard
	Ba	135	739887.7	1.3	**205.8676**	3.027	1.5	ug/L	24	Standard
	Ce	140	1013422.4	3.2				ug/L	263	Standard
>	**Tb**	159	1603105.7	1.2				ug/L	1497855	Standard
	Ho	165	9990.0	3.4				ug/L	17	Standard
	Tl	203	679271.7	2.1	**49.0318**	1.022	2.1	ug/L	63	Standard
	Tl	205	468765.9	3.8	**49.4976**	1.903	3.8	ug/L	12	Standard
	Pb	206	10300825.0	1.7	**1137.7812**	20.331	1.8	ug/L	444	Standard
	Pb	207	8679307.6	1.3	**1057.9989**	14.781	1.4	ug/L	376	Standard
	Pb	208	33861291.7	2.5	**1099.8964**	27.969	2.5	ug/L	1375	Standard
	U	238	486771.2	3.1	**49.4761**	1.581	3.2	ug/L	9	Standard
>	**Bi**	209	827548.9	0.1				ug/L	798986	Standard

Sample ID: L1601137101PS WG556009-05
Report Date/Time: Thursday, February 04, 2016 11:09:47
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	170.0	12.8	**0.1725**	0.024	14.1	mg/L	10	Standard
K	39	145.0	22.6	**0.4222**	0.091	21.5	mg/L	8	Standard
Ca	43	58.3	13.1	**-2.3153**	0.793	34.3	mg/L	62	Standard
Fe	54	37171.6	0.7	**18.4308**	0.597	3.2	mg/L	194	Standard
Fe	57	9564.7	5.0	**17.5471**	0.303	1.7	mg/L	48	Standard
Sc-1	45	55061.6	3.6				mg/L	42886	Standard
Cl	35	34080.3	3.5				ug/L	30129	Standard
Kr	83	3.7	56.8				ug/L	3	Standard
Br	81	6298.0	3.6				ug/L	1300	Standard
P	31	12985.6	3.7				ug/L	12220	Standard
S	34	1500.1	4.4				ug/L	1602	Standard
Sr	88	68.3	29.6				ug/L	50	Standard
C	12	606.7	6.7				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	266.7	22.9				mg/L	7	Standard
Dy	164	16879.4	1.6				mg/L	16	Standard
Ho-1	165	9990.0	3.4				mg/L	17	Standard
Er	166	8986.0	3.0				mg/L	17	Standard
I	127	23905.5	2.0				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.331	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.550	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1601137101PS WG556009-05
Report Date/Time: Thursday, February 04, 2016 11:09:47
Page 2

Approved: February 04, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.732
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.575
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1601137101PS WG556009-05
Report Date/Time: Thursday, February 04, 2016 11:09:47
Page 3

Approved: February 04, 2016

Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Sample ID: L1601137101PS WG556009-05
Report Date/Time: Thursday, February 04, 2016 11:09:47
Page 4

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1601137101SDL WG556009-06
Sample Date/Time: Wednesday, February 03, 2016 18:19:20
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52820.6	7.9				ug/L	50061	Standard
	Be	9	45.0	29.4	**0.0978**	0.031	31.8	ug/L	5	Standard
	Al	27	164130.7	9.1	**1.3162**	0.029	2.2	ug/L	215	Standard
	Sc	45	49469.1	5.8				ug/L	42886	Standard
	Ti	47	5991.9	5.7	**15.3253**	0.320	2.1	ug/L	87	Standard
	V	51	132793.4	2.6	**12.2802**	0.131	1.1	ug/L	2648	Standard
	Cr	52	71089.1	5.9	**6.1877**	0.168	2.7	ug/L	10137	Standard
	Cr	53	7830.4	2.1	**6.2830**	0.105	1.7	ug/L	288	Standard
	Mn	55	47475.6	3.1	**4.4368**	0.055	1.2	ug/L	688	Standard
	Co	59	4899.1	6.2	**0.4200**	0.012	2.9	ug/L	85	Standard
	Ni	60	4954.5	5.7	**1.6961**	0.036	2.1	ug/L	33	Standard
	Cu	65	21014.3	4.9	**7.1178**	0.124	1.7	ug/L	104	Standard
	Zn	66	42913.1	3.6	**29.7310**	0.033	0.1	ug/L	162	Standard
>	**Ge**	72	659076.6	3.6				ug/L	610528	Standard
	As	75	2008.6	2.0	**1.3679**	0.022	1.6	ug/L	-115	Standard
	Se	82	67.0	12.0	**0.2587**	0.064	24.9	ug/L	12	Standard
	Se-1	77	82.7	20.4	**0.1893**	0.168	88.7	ug/L	64	Standard
>	**Ga**	71	7818.7	5.5				mg/L	32	Standard
	Rb	85	28842.4	2.2				ug/L	22	Standard
	Y	89	620072.2	4.6				ug/L	547160	Standard
>	**Rh**	103	105.0	12.6				ug/L	2	Standard
	Mo	98	1290.8	6.9	**0.3107**	0.012	3.8	ug/L	12	Standard
	Ag	107	753.7	3.1	**0.0526**	0.002	4.1	ug/L	159	Standard
	Cd	111	1658.2	3.4	**0.4903**	0.006	1.2	mg/L	7	Standard
	Cd	114	4014.1	7.7	**0.4880**	0.024	4.9	ug/L	14	Standard
>	**In**	115	930212.4	3.7				ug/L	890169	Standard
	Sn	118	1048.4	5.1	**0.0303**	0.007	22.1	ug/L	717	Standard
	Sb	123	1809.9	17.6	**0.2293**	0.050	21.8	ug/L	96	Standard
	Ba	135	122116.2	3.4	**33.7182**	0.354	1.0	ug/L	24	Standard
	Ce	140	222860.4	4.0				ug/L	263	Standard
>	**Tb**	159	1593730.4	2.3				ug/L	1497855	Standard
	Ho	165	2110.1	1.3				ug/L	17	Standard
	Tl	203	604.7	12.0	**0.0404**	0.004	10.6	ug/L	63	Standard
	Tl	205	420.0	3.6	**0.0430**	0.003	6.3	ug/L	12	Standard
	Pb	206	2176763.9	2.9	**237.7721**	1.156	0.5	ug/L	444	Standard
	Pb	207	1839552.6	3.5	**221.7314**	2.294	1.0	ug/L	376	Standard
	Pb	208	7076565.4	3.7	**227.2746**	1.152	0.5	ug/L	1375	Standard
	U	238	1620.8	3.9	**0.1604**	0.007	4.1	ug/L	9	Standard
>	**Bi**	209	836654.7	3.2				ug/L	798986	Standard

Sample ID: L1601137101SDL WG556009-06
Report Date/Time: Thursday, February 04, 2016 11:09:48
Page 1

Approved: February 04, 2016

Na	23	1.7	173.2	**8.7636**	15.170	173.1	mg/L	2	Standard
Mg	24	43.3	24.0	**0.0328**	0.016	49.6	mg/L	10	Standard
K	39	41.7	30.2	**0.0983**	0.051	52.3	mg/L	8	Standard
Ca	43	80.0	0.0	**1.9483**	0.690	35.4	mg/L	62	Standard
Fe	54	7862.1	3.0	**4.2447**	0.122	2.9	mg/L	194	Standard
Fe	57	2116.8	4.1	**4.2185**	0.226	5.4	mg/L	48	Standard
> **Sc-1**	45	49469.1	5.8				mg/L	42886	Standard
Cl	35	31124.6	4.0				ug/L	30129	Standard
Kr	83	5.3	65.8				ug/L	3	Standard
Br	81	2440.2	5.0				ug/L	1300	Standard
P	31	12323.3	2.8				ug/L	12220	Standard
S	34	1281.7	9.1				ug/L	1602	Standard
Sr	88	43.3	6.7				ug/L	50	Standard
C	12	186.7	8.2				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	40.5				mg/L	7	Standard
Dy	164	3921.7	9.0				mg/L	16	Standard
Ho-1	165	2110.1	1.3				mg/L	17	Standard
Er	166	1993.5	5.5				mg/L	17	Standard
I	127	9966.6	3.8				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.513	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.952	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1601137101SDL WG556009-06
Report Date/Time: Thursday, February 04, 2016 11:09:48
Page 2

Approved: February 04, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.498
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.715
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Pb 206 Upper, S, EEE	Pb	206	
Pb 207 Upper, S, EEE	Pb	207	
Pb 208 Upper, S, EEE	Pb	208	

Sample ID: L1601137101SDL WG556009-06
Report Date/Time: Thursday, February 04, 2016 11:09:48
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1601140307 WG555856-01
Sample Date/Time: Wednesday, February 03, 2016 18:22:32
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49852.0	4.7				ug/L	50061	Standard
	Be	9	8.3	91.7	**0.0305**	0.015	50.2	ug/L	5	Standard
	Al	27	44211.1	2.1	**0.3718**	0.015	4.0	ug/L	215	Standard
	Sc	45	47770.2	1.0				ug/L	42886	Standard
	Ti	47	511.7	5.6	**1.1204**	0.033	3.0	ug/L	87	Standard
	V	51	4789.4	2.3	**0.2025**	0.009	4.3	ug/L	2648	Standard
	Cr	52	11398.3	2.9	**0.0488**	0.022	44.4	ug/L	10137	Standard
	Cr	53	521.7	6.9	**0.1648**	0.026	15.6	ug/L	288	Standard
	Mn	55	59998.0	3.8	**5.7812**	0.013	0.2	ug/L	688	Standard
	Co	59	953.4	3.2	**0.0759**	0.005	6.9	ug/L	85	Standard
	Ni	60	554.3	3.1	**0.1739**	0.009	5.2	ug/L	33	Standard
	Cu	65	804.4	8.9	**0.2278**	0.015	6.6	ug/L	104	Standard
	Zn	66	4550.7	6.4	**3.0276**	0.108	3.6	ug/L	162	Standard
>	**Ge**	72	642298.1	3.8				ug/L	610528	Standard
	As	75	56.9	19.9	**0.1073**	0.007	6.3	ug/L	-115	Standard
	Se	82	25.5	20.9	**-0.0012**	0.030	2568.3	ug/L	12	Standard
	Se-1	77	64.0	8.1	**0.0220**	0.042	190.7	ug/L	64	Standard
>	**Ga**	71	283.3	16.0				mg/L	32	Standard
	Rb	85	2320.2	5.8				ug/L	22	Standard
	Y	89	584418.9	2.0				ug/L	547160	Standard
>	**Rh**	103	1.7	173.2				ug/L	2	Standard
	Mo	98	238.5	5.0	**0.0551**	0.004	7.5	ug/L	12	Standard
	Ag	107	214.3	9.1	**0.0033**	0.002	68.8	ug/L	159	Standard
	Cd	111	44.3	24.2	**0.0056**	0.004	64.4	mg/L	7	Standard
	Cd	114	110.3	14.0	**0.0029**	0.002	57.7	ug/L	14	Standard
>	**In**	115	907776.0	2.4				ug/L	890169	Standard
	Sn	118	795.0	16.4	**0.0054**	0.015	283.0	ug/L	717	Standard
	Sb	123	533.8	22.8	**0.0647**	0.018	27.2	ug/L	96	Standard
	Ba	135	4531.3	2.4	**1.2670**	0.013	1.0	ug/L	24	Standard
	Ce	140	24561.6	2.3				ug/L	263	Standard
>	**Tb**	159	1570711.6	4.2				ug/L	1497855	Standard
	Ho	165	181.7	26.0				ug/L	17	Standard
	Tl	203	124.0	25.1	**0.0066**	0.002	37.8	ug/L	63	Standard
	Tl	205	90.0	47.5	**0.0089**	0.005	52.0	ug/L	12	Standard
	Pb	206	8988.3	5.9	**0.9444**	0.077	8.2	ug/L	444	Standard
	Pb	207	7544.2	5.1	**0.8697**	0.063	7.3	ug/L	376	Standard
	Pb	208	28962.2	7.3	**0.8896**	0.080	9.0	ug/L	1375	Standard
	U	238	149.7	8.5	**0.0131**	0.002	11.6	ug/L	9	Standard
>	**Bi**	209	803986.6	3.2				ug/L	798986	Standard

Sample ID: L1601140307 WG555856-01
Report Date/Time: Thursday, February 04, 2016 11:09:55
Page 1

Approved: February 04, 2016

Na	23	1.7	173.2	**8.9691**	15.526	173.1	mg/L	2	Standard
Mg	24	21.7	66.6	**0.0053**	0.019	357.8	mg/L	10	Standard
K	39	11.7	65.5	**-0.0124**	0.029	238.3	mg/L	8	Standard
Ca	43	41.7	38.6	**-3.7314**	2.466	66.1	mg/L	62	Standard
Fe	54	493.9	10.7	**0.1590**	0.030	18.7	mg/L	194	Standard
Fe	57	141.7	19.4	**0.1540**	0.056	36.2	mg/L	48	Standard
> **Sc-1**	45	47770.2	1.0				mg/L	42886	Standard
Cl	35	30174.0	1.6				ug/L	30129	Standard
Kr	83	4.7	53.9				ug/L	3	Standard
Br	81	1280.1	11.7				ug/L	1300	Standard
P	31	12943.9	4.6				ug/L	12220	Standard
S	34	1168.4	2.8				ug/L	1602	Standard
Sr	88	30.0	50.0				ug/L	50	Standard
C	12	83.3	6.9				mg/L	107	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	60.0	44.1				mg/L	7	Standard
Dy	164	277.3	17.5				mg/L	16	Standard
Ho-1	165	181.7	26.0				mg/L	17	Standard
Er	166	126.7	58.2				mg/L	17	Standard
I	127	6578.1	4.0				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.583	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.204	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1601140307 WG555856-01
Report Date/Time: Thursday, February 04, 2016 11:09:55
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.978
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.626
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1601140308S WG555856-04
Sample Date/Time: Wednesday, February 03, 2016 18:25:43
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49064.8	9.4				ug/L	50061	Standard
	Be	9	243.3	8.3	**0.4957**	0.044	8.8	ug/L	5	Standard
	Al	27	26066.0	12.4	**0.2196**	0.007	3.0	ug/L	215	Standard
	Sc	45	45846.3	8.6				ug/L	42886	Standard
	Ti	47	642.3	7.7	**1.5182**	0.054	3.5	ug/L	87	Standard
	V	51	9374.1	9.5	**0.6715**	0.033	4.9	ug/L	2648	Standard
	Cr	52	15212.0	6.6	**0.4996**	0.017	3.3	ug/L	10137	Standard
	Cr	53	956.7	3.4	**0.5641**	0.039	6.9	ug/L	288	Standard
	Mn	55	48848.5	6.7	**4.8258**	0.041	0.8	ug/L	688	Standard
	Co	59	6117.9	8.5	**0.5568**	0.015	2.6	ug/L	85	Standard
	Ni	60	1800.8	8.4	**0.6359**	0.018	2.8	ug/L	33	Standard
	Cu	65	1958.8	5.1	**0.6528**	0.024	3.6	ug/L	104	Standard
	Zn	66	4792.1	5.9	**3.3016**	0.009	0.3	ug/L	162	Standard
>	**Ge**	72	624225.9	5.9				ug/L	610528	Standard
	As	75	701.9	5.4	**0.5492**	0.031	5.7	ug/L	-115	Standard
	Se	82	99.3	8.8	**0.5004**	0.094	18.8	ug/L	12	Standard
	Se-1	77	104.3	2.9	**0.4595**	0.044	9.6	ug/L	64	Standard
>	**Ga**	71	235.0	9.8				mg/L	32	Standard
	Rb	85	1813.4	5.1				ug/L	22	Standard
	Y	89	568680.3	6.1				ug/L	547160	Standard
>	**Rh**	103	6.7	114.6				ug/L	2	Standard
	Mo	98	207.3	12.5	**0.0475**	0.004	8.6	ug/L	12	Standard
	Ag	107	5250.9	8.2	**0.4819**	0.013	2.7	ug/L	159	Standard
	Cd	111	1588.4	6.6	**0.4837**	0.006	1.2	mg/L	7	Standard
	Cd	114	3875.9	10.2	**0.4852**	0.023	4.7	ug/L	14	Standard
>	**In**	115	902635.3	5.9				ug/L	890169	Standard
	Sn	118	791.7	6.1	**0.0055**	0.004	70.8	ug/L	717	Standard
	Sb	123	959.9	4.6	**0.1218**	0.003	2.3	ug/L	96	Standard
	Ba	135	5506.0	7.6	**1.5510**	0.044	2.8	ug/L	24	Standard
	Ce	140	21971.0	6.5				ug/L	263	Standard
>	**Tb**	159	1507914.8	5.3				ug/L	1497855	Standard
	Ho	165	150.0	29.1				ug/L	17	Standard
	Tl	203	6478.7	9.4	**0.4847**	0.017	3.5	ug/L	63	Standard
	Tl	205	4595.7	3.6	**0.5059**	0.012	2.4	ug/L	12	Standard
	Pb	206	13887.6	38.0	**1.5024**	0.498	33.1	ug/L	444	Standard
	Pb	207	11656.3	39.9	**1.3857**	0.488	35.2	ug/L	376	Standard
	Pb	208	41004.8	25.7	**1.2997**	0.268	20.6	ug/L	1375	Standard
	U	238	4598.7	6.0	**0.4852**	0.006	1.2	ug/L	9	Standard
>	**Bi**	209	793126.2	6.0				ug/L	798986	Standard

Sample ID: L1601140308S WG555856-04
Report Date/Time: Thursday, February 04, 2016 11:09:56
Page 1

Approved: February 04, 2016

Na	23	1.7	173.2	**9.7663**	16.907	173.1	mg/L	2	Standard
Mg	24	18.3	15.7	**0.0023**	0.006	253.4	mg/L	10	Standard
K	39	38.3	19.9	**0.0962**	0.032	33.5	mg/L	8	Standard
Ca	43	73.3	15.7	**1.9502**	2.821	144.6	mg/L	62	Standard
Fe	54	431.6	8.6	**0.1352**	0.036	26.3	mg/L	194	Standard
Fe	57	135.0	9.8	**0.1541**	0.045	29.0	mg/L	48	Standard
> **Sc-1**	45	45846.3	8.6				mg/L	42886	Standard
Cl	35	30945.0	6.3				ug/L	30129	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	1366.7	0.8				ug/L	1300	Standard
P	31	12251.6	5.9				ug/L	12220	Standard
S	34	1160.0	12.4				ug/L	1602	Standard
Sr	88	35.0	37.8				ug/L	50	Standard
C	12	80.0	33.1				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	60.1				mg/L	7	Standard
Dy	164	286.3	10.1				mg/L	16	Standard
Ho-1	165	150.0	29.1				mg/L	17	Standard
Er	166	146.7	3.9				mg/L	17	Standard
I	127	6071.2	5.2				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.010	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.244	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1601140308S WG555856-04
Report Date/Time: Thursday, February 04, 2016 11:09:56
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.400	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.267	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1601140308S WG555856-04
Report Date/Time: Thursday, February 04, 2016 11:09:56
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1601140309SD WG555856-05
Sample Date/Time: Wednesday, February 03, 2016 18:28:54
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48888.9	5.8				ug/L	50061	Standard
	Be	9	226.7	27.9	**0.4623**	0.120	25.9	ug/L	5	Standard
	Al	27	33392.0	9.6	**0.2842**	0.012	4.1	ug/L	215	Standard
	Sc	45	46509.7	5.4				ug/L	42886	Standard
	Ti	47	610.7	6.4	**1.4360**	0.107	7.4	ug/L	87	Standard
	V	51	9284.1	4.8	**0.6653**	0.006	0.8	ug/L	2648	Standard
	Cr	52	15748.5	4.2	**0.5616**	0.002	0.4	ug/L	10137	Standard
	Cr	53	1115.0	5.4	**0.7049**	0.038	5.4	ug/L	288	Standard
	Mn	55	72736.8	4.7	**7.2473**	0.087	1.2	ug/L	688	Standard
	Co	59	6198.6	5.1	**0.5657**	0.005	0.9	ug/L	85	Standard
	Ni	60	1902.1	2.5	**0.6753**	0.015	2.2	ug/L	33	Standard
	Cu	65	2128.5	6.2	**0.7146**	0.027	3.8	ug/L	104	Standard
	Zn	66	5250.2	4.6	**3.6460**	0.051	1.4	ug/L	162	Standard
>	**Ge**	72	623153.6	4.3				ug/L	610528	Standard
	As	75	661.3	7.4	**0.5219**	0.036	6.9	ug/L	-115	Standard
	Se	82	89.9	9.8	**0.4356**	0.066	15.2	ug/L	12	Standard
	Se-1	77	113.0	16.0	**0.5486**	0.173	31.6	ug/L	64	Standard
>	**Ga**	71	276.7	21.7				mg/L	32	Standard
	Rb	85	2605.2	1.7				ug/L	22	Standard
	Y	89	568932.2	2.9				ug/L	547160	Standard
>	**Rh**	103	10.0	50.0				ug/L	2	Standard
	Mo	98	210.8	2.8	**0.0487**	0.001	1.1	ug/L	12	Standard
	Ag	107	5226.2	4.2	**0.4821**	0.005	1.1	ug/L	159	Standard
	Cd	111	1599.0	4.1	**0.4892**	0.003	0.6	mg/L	7	Standard
	Cd	114	3981.1	2.1	**0.5019**	0.009	1.9	ug/L	14	Standard
>	**In**	115	898775.5	3.7				ug/L	890169	Standard
	Sn	118	785.0	4.2	**0.0050**	0.001	17.7	ug/L	717	Standard
	Sb	123	714.2	7.0	**0.0895**	0.010	11.0	ug/L	96	Standard
	Ba	135	8432.7	4.1	**2.3952**	0.050	2.1	ug/L	24	Standard
	Ce	140	22017.7	5.4				ug/L	263	Standard
>	**Tb**	159	1533372.6	1.9				ug/L	1497855	Standard
	Ho	165	163.3	13.8				ug/L	17	Standard
	Tl	203	6454.7	4.2	**0.4846**	0.010	2.0	ug/L	63	Standard
	Tl	205	4225.6	6.2	**0.4654**	0.010	2.2	ug/L	12	Standard
	Pb	206	11810.9	5.0	**1.2852**	0.014	1.1	ug/L	444	Standard
	Pb	207	9903.6	5.5	**1.1840**	0.019	1.6	ug/L	376	Standard
	Pb	208	38332.0	4.7	**1.2221**	0.011	0.9	ug/L	1375	Standard
	U	238	4511.0	6.1	**0.4766**	0.012	2.5	ug/L	9	Standard
>	**Bi**	209	791424.9	4.0				ug/L	798986	Standard

Sample ID: L1601140309SD WG555856-05
Report Date/Time: Thursday, February 04, 2016 11:10:02
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	36.7	41.7	**0.0267**	0.021	80.5	mg/L	10	Standard
K	39	11.7	49.5	**-0.0114**	0.022	195.6	mg/L	8	Standard
Ca	43	63.3	44.9	**0.0275**	4.831	17560.6	mg/L	62	Standard
Fe	54	515.5	3.7	**0.1799**	0.015	8.2	mg/L	194	Standard
Fe	57	145.0	12.4	**0.1717**	0.054	31.5	mg/L	48	Standard
Sc-1	45	46509.7	5.4				mg/L	42886	Standard
Cl	35	29137.4	3.9				ug/L	30129	Standard
Kr	83	3.3	34.6				ug/L	3	Standard
Br	81	1576.7	8.7				ug/L	1300	Standard
P	31	11602.8	2.6				ug/L	12220	Standard
S	34	1021.7	5.4				ug/L	1602	Standard
Sr	88	28.3	27.0				ug/L	50	Standard
C	12	93.3	22.3				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	25.0				mg/L	7	Standard
Dy	164	257.6	7.9				mg/L	16	Standard
Ho-1	165	163.3	13.8				mg/L	17	Standard
Er	166	190.0	36.8				mg/L	17	Standard
I	127	6288.0	1.9				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		97.659	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.068	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1601140309SD WG555856-05
Report Date/Time: Thursday, February 04, 2016 11:10:02
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.967
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.054
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1601140309SD WG555856-05
Report Date/Time: Thursday, February 04, 2016 11:10:02
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, February 03, 2016 18:32:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49728.2	4.1				ug/L	50061	Standard
	Be	9	25910.6	8.4	**50.4190**	2.239	4.4	ug/L	5	Standard
	Al	27	6186075.9	3.0	**52.9802**	0.848	1.6	ug/L	215	Standard
	Sc	45	47002.8	2.6				ug/L	42886	Standard
	Ti	47	37879.7	2.9	**101.7954**	0.726	0.7	ug/L	87	Standard
	V	51	512230.9	3.7	**49.8506**	0.937	1.9	ug/L	2648	Standard
	Cr	52	472928.3	3.7	**49.5196**	0.711	1.4	ug/L	10137	Standard
	Cr	53	56599.0	4.4	**48.8710**	1.119	2.3	ug/L	288	Standard
	Mn	55	499399.5	2.8	**49.3054**	0.255	0.5	ug/L	688	Standard
	Co	59	559661.6	3.3	**50.9462**	0.504	1.0	ug/L	85	Standard
	Ni	60	136244.2	4.1	**48.9989**	0.947	1.9	ug/L	33	Standard
	Cu	65	140475.8	2.6	**49.6357**	0.363	0.7	ug/L	104	Standard
	Zn	66	69141.5	3.4	**49.7866**	0.673	1.4	ug/L	162	Standard
>	Ge	72	636017.6	2.3				ug/L	610528	Standard
	As	75	74168.9	3.8	**49.7172**	0.748	1.5	ug/L	-115	Standard
	Se	82	7569.5	4.1	**49.3579**	0.860	1.7	ug/L	12	Standard
	Se-1	77	4908.1	4.9	**49.1871**	1.284	2.6	ug/L	64	Standard
>	Ga	71	36.7	20.8				mg/L	32	Standard
	Rb	85	1133.4	5.3				ug/L	22	Standard
	Y	89	565723.4	3.3				ug/L	547160	Standard
>	Rh	103	33.3	17.3				ug/L	2	Standard
	Mo	98	421357.5	2.5	**106.0696**	1.339	1.3	ug/L	12	Standard
	Ag	107	533127.1	2.3	**50.6452**	1.005	2.0	ug/L	159	Standard
	Cd	111	161243.4	3.4	**49.8844**	0.307	0.6	mg/L	7	Standard
	Cd	114	389732.8	1.7	**49.9541**	1.474	3.0	ug/L	14	Standard
>	In	115	903480.1	3.3				ug/L	890169	Standard
	Sn	118	442203.0	4.4	**48.4599**	1.306	2.7	ug/L	717	Standard
	Sb	123	360714.6	3.2	**48.1395**	0.420	0.9	ug/L	96	Standard
	Ba	135	173463.7	3.4	**49.3174**	0.617	1.3	ug/L	24	Standard
	Ce	140	188.3	38.1				ug/L	263	Standard
>	Tb	159	1540904.5	3.6				ug/L	1497855	Standard
	Ho	165	25.0	40.0				ug/L	17	Standard
	Tl	203	673270.3	4.4	**50.2712**	1.528	3.0	ug/L	63	Standard
	Tl	205	459240.6	1.8	**50.1719**	0.258	0.5	ug/L	12	Standard
	Pb	206	435535.5	1.7	**49.6996**	0.109	0.2	ug/L	444	Standard
	Pb	207	397697.7	1.7	**50.0864**	0.397	0.8	ug/L	376	Standard
	Pb	208	1489023.7	1.4	**49.9708**	0.511	1.0	ug/L	1375	Standard
	U	238	482452.7	2.3	**50.7396**	1.046	2.1	ug/L	9	Standard
>	Bi	209	799835.8	1.8				ug/L	798986	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, February 04, 2016 11:10:04
Page 1

Approved: February 04, 2016

Na	23	1.7	173.2	**9.2534**	16.019	173.1	mg/L	2	Standard
Mg	24	3472.1	6.2	**4.6615**	0.212	4.5	mg/L	10	Standard
K	39	1293.4	11.4	**4.9850**	0.695	13.9	mg/L	8	Standard
Ca	43	101.7	24.8	**6.0327**	3.971	65.8	mg/L	62	Standard
Fe	54	8081.7	5.8	**4.5959**	0.190	4.1	mg/L	194	Standard
Fe	57	2176.8	7.2	**4.5680**	0.229	5.0	mg/L	48	Standard
Sc-1	45	47002.8	2.6				mg/L	42886	Standard
Cl	35	33430.8	1.6				ug/L	30129	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	1290.1	9.3				ug/L	1300	Standard
P	31	13516.0	2.9				ug/L	12220	Standard
S	34	1660.1	7.6				ug/L	1602	Standard
Sr	88	31.7	36.5				ug/L	50	Standard
C	12	96.7	57.0				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	18.7	52.1				mg/L	16	Standard
Ho-1	165	25.0	40.0				mg/L	17	Standard
Er	166	26.7	21.7				mg/L	17	Standard
I	127	2045.1	4.3				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.838		
Al	27	105.960		
Sc	45			
Ti	47	101.795		
V	51	99.701		
Cr	52	99.039		
Cr	53			
Mn	55	98.611		
Co	59	101.892		
Ni	60	97.998		
Cu	65	99.271		
Zn	66	99.573		
Ge	72		104.175	
As	75	99.434		
Se	82	98.716		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, February 04, 2016 11:10:04
Page 2

Approved: February 04, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	106.070		
Ag	107	101.290		
Cd	111	99.769		
Cd	114			
> In	115			101.495
Sn	118	96.920		
Sb	123	96.279		
Ba	135	98.635		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.542		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.942		
U	238	101.479		
> Bi	209			100.106
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, February 04, 2016 11:10:04
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, February 03, 2016 18:35:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48985.8	4.2				ug/L	50061	Standard
	Be	9	5.0	0.0	**0.0238**	0.000	1.7	ug/L	5	Standard
	Al	27	996.7	45.4	**0.0024**	0.004	149.2	ug/L	215	Standard
	Sc	45	45876.1	5.4				ug/L	42886	Standard
	Ti	47	64.7	0.9	**-0.0636**	0.012	18.9	ug/L	87	Standard
	V	51	2308.2	3.9	**-0.0283**	0.005	18.9	ug/L	2648	Standard
	Cr	52	9311.9	4.3	**-0.1296**	0.022	17.0	ug/L	10137	Standard
	Cr	53	246.7	10.4	**-0.0629**	0.011	17.1	ug/L	288	Standard
	Mn	55	772.7	9.7	**-0.0175**	0.004	23.6	ug/L	688	Standard
	Co	59	162.0	34.2	**0.0049**	0.005	93.7	ug/L	85	Standard
	Ni	60	51.0	36.3	**-0.0051**	0.006	114.9	ug/L	33	Standard
	Cu	65	131.0	7.3	**-0.0057**	0.004	78.3	ug/L	104	Standard
	Zn	66	229.0	4.3	**-0.0593**	0.014	23.7	ug/L	162	Standard
>	**Ge**	72	615714.2	6.0				ug/L	610528	Standard
	As	75	-54.4	29.7	**0.0319**	0.012	37.6	ug/L	-115	Standard
	Se	82	29.3	23.4	**0.0329**	0.049	149.3	ug/L	12	Standard
	Se-1	77	66.7	0.9	**0.0795**	0.038	48.1	ug/L	64	Standard
>	**Ga**	71	16.7	45.8				mg/L	32	Standard
	Rb	85	28.3	20.4				ug/L	22	Standard
	Y	89	559813.5	7.7				ug/L	547160	Standard
>	**Rh**	103	8.3	69.3				ug/L	2	Standard
	Mo	98	230.0	14.6	**0.0539**	0.005	9.3	ug/L	12	Standard
	Ag	107	217.0	18.3	**0.0039**	0.003	64.9	ug/L	159	Standard
	Cd	111	27.3	24.2	**0.0004**	0.002	397.8	mg/L	7	Standard
	Cd	114	84.3	64.3	**-0.0004**	0.006	1596.0	ug/L	14	Standard
>	**In**	115	889189.8	5.9				ug/L	890169	Standard
	Sn	118	1145.0	5.7	**0.0466**	0.014	29.6	ug/L	717	Standard
	Sb	123	597.0	13.5	**0.0751**	0.015	20.4	ug/L	96	Standard
	Ba	135	47.7	29.1	**-0.0019**	0.003	163.4	ug/L	24	Standard
	Ce	140	38.3	32.8				ug/L	263	Standard
>	**Tb**	159	1516629.5	6.7				ug/L	1497855	Standard
	Ho	165	18.3	15.7				ug/L	17	Standard
	Tl	203	131.7	48.7	**0.0070**	0.004	61.3	ug/L	63	Standard
	Tl	205	86.7	29.0	**0.0085**	0.002	27.8	ug/L	12	Standard
	Pb	206	594.0	28.3	**-0.0111**	0.016	145.8	ug/L	444	Standard
	Pb	207	501.7	21.3	**-0.0148**	0.011	71.8	ug/L	376	Standard
	Pb	208	1906.7	23.7	**-0.0159**	0.012	77.6	ug/L	1375	Standard
	U	238	62.3	24.6	**0.0039**	0.001	33.8	ug/L	9	Standard
>	**Bi**	209	798500.2	4.3				ug/L	798986	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, February 04, 2016 11:10:10
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	15.0	88.2	**-0.0030**	0.018	595.4	mg/L	10	Standard
K	39	10.0	86.6	**-0.0166**	0.035	211.6	mg/L	8	Standard
Ca	43	50.0	17.3	**-2.1041**	1.024	48.7	mg/L	62	Standard
Fe	54	210.8	11.8	**0.0021**	0.022	1080.7	mg/L	194	Standard
Fe	57	60.0	22.0	**-0.0137**	0.034	250.0	mg/L	48	Standard
Sc-1	45	45876.1	5.4				mg/L	42886	Standard
Cl	35	32812.2	4.3				ug/L	30129	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	1340.1	5.8				ug/L	1300	Standard
P	31	13234.1	2.4				ug/L	12220	Standard
S	34	1671.8	5.1				ug/L	1602	Standard
Sr	88	35.0	37.8				ug/L	50	Standard
C	12	76.7	45.8				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	19.5	100.0				mg/L	16	Standard
Ho-1	165	18.3	15.7				mg/L	17	Standard
Er	166	10.0	100.0				mg/L	17	Standard
I	127	4689.1	1.2				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.850	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, February 04, 2016 11:10:10
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.890
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.939
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, February 04, 2016 11:10:10
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, February 03, 2016 18:38:31
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46469.6	5.2				ug/L	50061	Standard
	Be	9	111.7	2.6	**0.2468**	0.006	2.5	ug/L	5	Standard
	Al	27	976.7	37.1	**0.0029**	0.004	129.8	ug/L	215	Standard
	Sc	45	44829.7	5.1				ug/L	42886	Standard
	Ti	47	63.0	13.6	**-0.0661**	0.032	48.4	ug/L	87	Standard
	V	51	6254.4	7.2	**0.3756**	0.018	4.9	ug/L	2648	Standard
	Cr	52	18125.5	4.0	**0.8643**	0.043	5.0	ug/L	10137	Standard
	Cr	53	1223.4	6.5	**0.8260**	0.099	12.0	ug/L	288	Standard
	Mn	55	5650.1	5.1	**0.4861**	0.010	2.0	ug/L	688	Standard
	Co	59	4301.3	5.5	**0.3979**	0.007	1.7	ug/L	85	Standard
	Ni	60	4163.6	8.7	**1.5360**	0.059	3.8	ug/L	33	Standard
	Cu	65	2271.2	4.1	**0.7839**	0.010	1.3	ug/L	104	Standard
	Zn	66	8770.5	4.6	**6.3832**	0.055	0.9	ug/L	162	Standard
>	**Ge**	72	610325.4	5.2				ug/L	610528	Standard
	As	75	440.9	11.8	**0.3766**	0.022	5.7	ug/L	-115	Standard
	Se	82	78.0	5.5	**0.3666**	0.021	5.7	ug/L	12	Standard
	Se-1	77	91.7	7.1	**0.3483**	0.037	10.7	ug/L	64	Standard
>	**Ga**	71	18.3	41.7				mg/L	32	Standard
	Rb	85	23.3	44.6				ug/L	22	Standard
	Y	89	554560.6	7.0				ug/L	547160	Standard
>	**Rh**	103	0.0					ug/L	2	Standard
	Mo	98	111.8	12.2	**0.0239**	0.004	15.8	ug/L	12	Standard
	Ag	107	4083.9	5.7	**0.3758**	0.008	2.1	ug/L	159	Standard
	Cd	111	752.1	7.2	**0.2274**	0.008	3.5	mg/L	7	Standard
	Cd	114	1777.6	7.9	**0.2196**	0.016	7.4	ug/L	14	Standard
>	**In**	115	892104.7	4.4				ug/L	890169	Standard
	Sn	118	590.0	11.8	**-0.0157**	0.010	65.9	ug/L	717	Standard
	Sb	123	3012.9	6.4	**0.4006**	0.012	3.1	ug/L	96	Standard
	Ba	135	2532.2	5.5	**0.7136**	0.018	2.5	ug/L	24	Standard
	Ce	140	85.0	56.1				ug/L	263	Standard
>	**Tb**	159	1522257.1	5.5				ug/L	1497855	Standard
	Ho	165	18.3	41.7				ug/L	17	Standard
	Tl	203	1063.7	7.4	**0.0777**	0.003	4.0	ug/L	63	Standard
	Tl	205	728.4	4.7	**0.0798**	0.006	7.5	ug/L	12	Standard
	Pb	206	2239.2	8.2	**0.1800**	0.011	6.0	ug/L	444	Standard
	Pb	207	1861.4	7.0	**0.1595**	0.005	3.1	ug/L	376	Standard
	Pb	208	7283.0	6.0	**0.1679**	0.002	1.0	ug/L	1375	Standard
	U	238	3541.1	5.2	**0.3742**	0.000	0.1	ug/L	9	Standard
>	**Bi**	209	790473.5	5.3				ug/L	798986	Standard

Sample ID: QC Std 8
Report Date/Time: Thursday, February 04, 2016 11:10:12
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11.7	65.5	**-0.0072**	0.010	136.9	mg/L	10	Standard
K	39	11.7	65.5	**-0.0088**	0.034	382.5	mg/L	8	Standard
Ca	43	45.0	66.7	**-2.6358**	5.381	204.2	mg/L	62	Standard
Fe	54	203.6	17.8	**-0.0007**	0.017	2443.8	mg/L	194	Standard
Fe	57	45.0	40.1	**-0.0451**	0.043	95.6	mg/L	48	Standard
Sc-1	45	44829.7	5.1				mg/L	42886	Standard
Cl	35	32696.6	1.1				ug/L	30129	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	1370.1	11.3				ug/L	1300	Standard
P	31	12128.2	2.2				ug/L	12220	Standard
S	34	1660.1	9.4				ug/L	1602	Standard
Sr	88	51.7	14.8				ug/L	50	Standard
C	12	103.3	24.4				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	7.9	117.5				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	17	Standard
Er	166	43.3	48.0				mg/L	17	Standard
I	127	1643.4	11.1				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	123.401		
Al	27			
Sc	45			
Ti	47			
V	51	93.901		
Cr	52	108.035		
Cr	53			
Mn	55	97.227		
Co	59	99.484		
Ni	60	96.000		
Cu	65	97.987		
Zn	66	102.132		
Ge	72		99.967	
As	75	94.145		
Se	82	91.658		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
Report Date/Time: Thursday, February 04, 2016 11:10:12
Page 2

Approved: February 04, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	93.955		
Cd	111	94.753		
Cd	114			
> In	115			100.218
Sn	118			
Sb	123	100.141		
Ba	135	95.147		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.079		
Tl	205			
Pb	206			
Pb	207			
Pb	208	83.965		
U	238	93.561		
> Bi	209			98.935
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Thursday, February 04, 2016 11:10:12
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: PBW 87 WG556097-02
Sample Date/Time: Wednesday, February 03, 2016 18:41:43
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46861.0	8.2				ug/L	50061	Standard
	Be	9	1.7	173.2	**0.0171**	0.006	32.4	ug/L	5	Standard
	Al	27	465.0	4.9	**-0.0020**	0.000	22.3	ug/L	215	Standard
	Sc	45	45662.3	7.8				ug/L	42886	Standard
	Ti	47	54.0	11.3	**-0.0917**	0.011	11.6	ug/L	87	Standard
	V	51	433.5	53.5	**-0.2178**	0.023	10.5	ug/L	2648	Standard
	Cr	52	10676.4	4.7	**0.0396**	0.014	35.1	ug/L	10137	Standard
	Cr	53	17737.1	3.5	**15.9223**	1.215	7.6	ug/L	288	Standard
	Mn	55	1583.1	3.1	**0.0681**	0.008	11.0	ug/L	688	Standard
	Co	59	88.7	11.3	**-0.0017**	0.001	76.1	ug/L	85	Standard
	Ni	60	81.0	10.8	**0.0067**	0.002	29.2	ug/L	33	Standard
	Cu	65	189.0	3.8	**0.0166**	0.003	17.3	ug/L	104	Standard
	Zn	66	1799.1	4.4	**1.1352**	0.021	1.9	ug/L	162	Standard
>	**Ge**	72	606282.4	5.6				ug/L	610528	Standard
	As	75	-148.3	41.4	**-0.0347**	0.044	125.4	ug/L	-115	Standard
	Se	82	21.6	24.6	**-0.0176**	0.036	202.9	ug/L	12	Standard
	Se-1	77	903.0	3.7	**9.0283**	0.868	9.6	ug/L	64	Standard
>	**Ga**	71	18.3	56.8				mg/L	32	Standard
	Rb	85	25.0	20.0				ug/L	22	Standard
	Y	89	540053.6	6.3				ug/L	547160	Standard
>	**Rh**	103	6.7	114.6				ug/L	2	Standard
	Mo	98	118.1	4.6	**0.0263**	0.000	1.4	ug/L	12	Standard
	Ag	107	156.0	8.2	**-0.0016**	0.000	24.2	ug/L	159	Standard
	Cd	111	9.1	27.5	**-0.0052**	0.001	15.1	mg/L	7	Standard
	Cd	114	20.4	99.1	**-0.0084**	0.003	32.2	ug/L	14	Standard
>	**In**	115	868593.7	5.8				ug/L	890169	Standard
	Sn	118	918.4	10.6	**0.0239**	0.017	69.7	ug/L	717	Standard
	Sb	123	184.8	17.2	**0.0194**	0.006	30.2	ug/L	96	Standard
	Ba	135	41.0	11.2	**-0.0034**	0.001	37.0	ug/L	24	Standard
	Ce	140	31.7	87.0				ug/L	263	Standard
>	**Tb**	159	1506324.9	6.7				ug/L	1497855	Standard
	Ho	165	18.3	15.7				ug/L	17	Standard
	Tl	203	488.7	5.0	**0.0357**	0.004	10.9	ug/L	63	Standard
	Tl	205	303.3	12.6	**0.0340**	0.006	17.1	ug/L	12	Standard
	Pb	206	973.7	8.5	**0.0377**	0.003	7.1	ug/L	444	Standard
	Pb	207	855.7	6.0	**0.0352**	0.002	6.4	ug/L	376	Standard
	Pb	208	3217.5	3.8	**0.0337**	0.003	9.7	ug/L	1375	Standard
	U	238	9.7	52.1	**-0.0015**	0.000	31.8	ug/L	9	Standard
>	**Bi**	209	763844.3	6.4				ug/L	798986	Standard

Sample ID: PBW 87 WG556097-02
Report Date/Time: Thursday, February 04, 2016 11:10:18
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	18.3	56.8	**0.0017**	0.013	735.4	mg/L	10	Standard
K	39	26.7	47.2	**0.0520**	0.059	113.5	mg/L	8	Standard
Ca	43	56.7	53.9	**-1.0324**	4.488	434.7	mg/L	62	Standard
Fe	54	195.7	31.5	**-0.0079**	0.031	393.2	mg/L	194	Standard
Fe	57	73.3	7.9	**0.0164**	0.017	101.2	mg/L	48	Standard
Sc-1	45	45662.3	7.8				mg/L	42886	Standard
Cl	35	33426.2	3.9				ug/L	30129	Standard
Kr	83	3.7	41.7				ug/L	3	Standard
Br	81	1493.4	2.8				ug/L	1300	Standard
P	31	12069.8	6.9				ug/L	12220	Standard
S	34	1675.1	8.0				ug/L	1602	Standard
Sr	88	30.0	16.7				ug/L	50	Standard
C	12	86.7	63.5				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	7	Standard
Dy	164	12.2	190.3				mg/L	16	Standard
Ho-1	165	18.3	15.7				mg/L	17	Standard
Er	166	23.3	65.5				mg/L	17	Standard
I	127	6164.6	4.7				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		93.608	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.305	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: PBW 87 WG556097-02
Report Date/Time: Thursday, February 04, 2016 11:10:18
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.576
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.602
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 87 WG556097-02
Report Date/Time: Thursday, February 04, 2016 11:10:18
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: LCSW 87 WG556097-03
Sample Date/Time: Wednesday, February 03, 2016 18:44:55
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58956.2	3.4				ug/L	50061	Standard
	Be	9	243.3	12.0	**0.4130**	0.039	9.4	ug/L	5	Standard
	Al	27	125955.9	5.9	**0.9034**	0.043	4.7	ug/L	215	Standard
	Sc	45	46750.5	4.8				ug/L	42886	Standard
	Ti	47	3749.8	4.4	**10.1392**	0.218	2.1	ug/L	87	Standard
	V	51	94203.4	3.7	**9.2136**	0.138	1.5	ug/L	2648	Standard
	Cr	52	57577.2	2.3	**5.1854**	0.158	3.1	ug/L	10137	Standard
	Cr	53	40682.9	1.1	**36.0884**	1.753	4.9	ug/L	288	Standard
	Mn	55	50150.0	4.8	**5.0019**	0.031	0.6	ug/L	688	Standard
	Co	59	20696.5	3.5	**1.9272**	0.025	1.3	ug/L	85	Standard
	Ni	60	13568.4	3.7	**4.9961**	0.072	1.4	ug/L	33	Standard
	Cu	65	14018.8	2.1	**5.0467**	0.147	2.9	ug/L	104	Standard
	Zn	66	18589.4	3.9	**13.5941**	0.174	1.3	ug/L	162	Standard
>	**Ge**	72	618933.0	4.8				ug/L	610528	Standard
	As	75	5686.5	2.8	**3.9847**	0.093	2.3	ug/L	-115	Standard
	Se	82	593.2	2.3	**3.8268**	0.103	2.7	ug/L	12	Standard
	Se-1	77	2339.2	5.0	**23.8522**	2.268	9.5	ug/L	64	Standard
>	**Ga**	71	38.3	15.1				mg/L	32	Standard
	Rb	85	113.3	9.2				ug/L	22	Standard
	Y	89	559071.8	6.5				ug/L	547160	Standard
>	**Rh**	103	15.0	88.2				ug/L	2	Standard
	Mo	98	38512.0	6.9	**10.2634**	0.179	1.7	ug/L	12	Standard
	Ag	107	40082.7	4.1	**4.0220**	0.144	3.6	ug/L	159	Standard
	Cd	111	1511.6	2.6	**0.4883**	0.023	4.7	mg/L	7	Standard
	Cd	114	3736.1	14.2	**0.4943**	0.039	7.8	ug/L	14	Standard
>	**In**	115	852952.2	6.8				ug/L	890169	Standard
	Sn	118	82200.9	4.0	**9.4885**	0.269	2.8	ug/L	717	Standard
	Sb	123	83757.9	4.6	**11.8463**	0.257	2.2	ug/L	96	Standard
	Ba	135	33259.2	4.3	**10.0146**	0.252	2.5	ug/L	24	Standard
	Ce	140	53.3	32.9				ug/L	263	Standard
>	**Tb**	159	1477984.5	3.2				ug/L	1497855	Standard
	Ho	165	28.3	20.4				ug/L	17	Standard
	Tl	203	63689.3	3.1	**5.0220**	0.091	1.8	ug/L	63	Standard
	Tl	205	43626.1	3.8	**5.0335**	0.134	2.7	ug/L	12	Standard
	Pb	206	43272.5	4.6	**5.1429**	0.043	0.8	ug/L	444	Standard
	Pb	207	39268.5	3.8	**5.1527**	0.036	0.7	ug/L	376	Standard
	Pb	208	142145.9	4.1	**4.9651**	0.029	0.6	ug/L	1375	Standard
	U	238	13.3	63.8	**-0.0011**	0.001	77.5	ug/L	9	Standard
>	**Bi**	209	757522.8	4.4				ug/L	798986	Standard

Sample ID: LCSW 87 WG556097-03
Report Date/Time: Thursday, February 04, 2016 11:10:20
Page 1

Approved: February 04, 2016

Na	23	1.7	173.2	**9.1517**	15.843	173.1	mg/L	2	Standard
Mg	24	401.7	9.7	**0.5242**	0.078	15.0	mg/L	10	Standard
K	39	165.0	5.2	**0.5882**	0.014	2.4	mg/L	8	Standard
Ca	43	53.3	14.3	**-1.6847**	1.135	67.4	mg/L	62	Standard
Fe	54	263.0	10.9	**0.0303**	0.023	76.6	mg/L	194	Standard
Fe	57	78.3	25.8	**0.0230**	0.045	193.8	mg/L	48	Standard
> **Sc-1**	45	46750.5	4.8				mg/L	42886	Standard
Cl	35	32416.0	1.9				ug/L	30129	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	1306.7	6.6				ug/L	1300	Standard
P	31	12166.5	0.8				ug/L	12220	Standard
S	34	1571.7	4.5				ug/L	1602	Standard
Sr	88	58.3	4.9				ug/L	50	Standard
C	12	113.3	40.8				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	7	Standard
Dy	164	18.2	107.0				mg/L	16	Standard
Ho-1	165	28.3	20.4				mg/L	17	Standard
Er	166	36.7	41.7				mg/L	17	Standard
I	127	6049.5	2.8				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.769	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.377	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 87 WG556097-03
Report Date/Time: Thursday, February 04, 2016 11:10:20
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.819
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 87 WG556097-03
Report Date/Time: Thursday, February 04, 2016 11:10:20
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602009303 WG556097-01
Sample Date/Time: Wednesday, February 03, 2016 18:48:06
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71652.7	5.5				ug/L	50061	Standard
	Be	9	1.7	173.2	**0.0162**	0.004	25.0	ug/L	5	Standard
	Al	27	139862.9	2.8	**0.8262**	0.041	5.0	ug/L	215	Standard
	Sc	45	45284.4	6.4				ug/L	42886	Standard
	Ti	47	131.3	13.3	**0.1139**	0.040	34.7	ug/L	87	Standard
	V	51	1203.0	51.5	**-0.1437**	0.057	39.5	ug/L	2648	Standard
	Cr	52	11144.4	8.2	**0.0476**	0.060	125.8	ug/L	10137	Standard
	Cr	53	16282.1	1.2	**14.0542**	0.404	2.9	ug/L	288	Standard
	Mn	55	1438.1	0.7	**0.0478**	0.004	7.6	ug/L	688	Standard
	Co	59	2463.5	2.9	**0.2171**	0.003	1.4	ug/L	85	Standard
	Ni	60	2400.2	7.3	**0.8506**	0.036	4.2	ug/L	33	Standard
	Cu	65	299.0	10.4	**0.0534**	0.008	15.5	ug/L	104	Standard
	Zn	66	1920.8	0.9	**1.1776**	0.031	2.7	ug/L	162	Standard
>	**Ge**	72	627779.4	3.2				ug/L	610528	Standard
	As	75	-109.6	54.1	**-0.0042**	0.038	912.1	ug/L	-115	Standard
	Se	82	31.0	26.8	**0.0410**	0.060	145.6	ug/L	12	Standard
	Se-1	77	1265.4	9.3	**12.3772**	0.788	6.4	ug/L	64	Standard
>	**Ga**	71	35.0	37.8				mg/L	32	Standard
	Rb	85	1386.7	7.6				ug/L	22	Standard
	Y	89	571564.0	3.4				ug/L	547160	Standard
>	**Rh**	103	1.7	173.2				ug/L	2	Standard
	Mo	98	606.8	6.4	**0.1482**	0.012	8.2	ug/L	12	Standard
	Ag	107	139.7	7.9	**-0.0037**	0.001	22.6	ug/L	159	Standard
	Cd	111	46.0	9.4	**0.0061**	0.002	25.4	mg/L	7	Standard
	Cd	114	114.4	33.3	**0.0035**	0.005	131.9	ug/L	14	Standard
>	**In**	115	903540.2	2.3				ug/L	890169	Standard
	Sn	118	893.4	12.1	**0.0166**	0.013	80.2	ug/L	717	Standard
	Sb	123	194.0	15.6	**0.0195**	0.005	23.4	ug/L	96	Standard
	Ba	135	627.0	3.0	**0.1628**	0.007	4.5	ug/L	24	Standard
	Ce	140	55.0	24.1				ug/L	263	Standard
>	**Tb**	159	1509983.8	2.0				ug/L	1497855	Standard
	Ho	165	13.3	114.6				ug/L	17	Standard
	Tl	203	443.7	14.3	**0.0317**	0.005	15.2	ug/L	63	Standard
	Tl	205	268.3	7.1	**0.0295**	0.001	4.7	ug/L	12	Standard
	Pb	206	813.4	1.3	**0.0179**	0.001	6.5	ug/L	444	Standard
	Pb	207	696.3	6.9	**0.0133**	0.004	30.4	ug/L	376	Standard
	Pb	208	2636.1	5.5	**0.0123**	0.004	31.0	ug/L	1375	Standard
	U	238	9.3	83.2	**-0.0016**	0.001	55.1	ug/L	9	Standard
>	**Bi**	209	770007.7	2.5				ug/L	798986	Standard

Sample ID: L1602009303 WG556097-01
Report Date/Time: Thursday, February 04, 2016 11:10:26
Page 1

Approved: February 04, 2016

Na	23	1.7	173.2	**9.4051**	16.281	173.1	mg/L	2	Standard
Mg	24	14136.6	5.0	**19.7956**	0.413	2.1	mg/L	10	Standard
K	39	41.7	42.1	**0.1134**	0.080	70.9	mg/L	8	Standard
Ca	43	55.0	50.6	**-1.0345**	4.759	460.0	mg/L	62	Standard
Fe	54	240.1	10.4	**0.0207**	0.012	59.2	mg/L	194	Standard
Fe	57	51.7	53.3	**-0.0310**	0.064	207.0	mg/L	48	Standard
> **Sc-1**	45	45284.4	6.4				mg/L	42886	Standard
Cl	35	40313.1	7.6				ug/L	30129	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	2416.9	3.8				ug/L	1300	Standard
P	31	11692.9	5.4				ug/L	12220	Standard
S	34	1335.1	5.3				ug/L	1602	Standard
Sr	88	45.0	40.1				ug/L	50	Standard
C	12	100.0	45.8				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	7	Standard
Dy	164	25.1	59.5				mg/L	16	Standard
Ho-1	165	13.3	114.6				mg/L	17	Standard
Er	166	33.3	45.8				mg/L	17	Standard
I	127	6881.6	1.2				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.131	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.826	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602009303 WG556097-01
Report Date/Time: Thursday, February 04, 2016 11:10:26
Page 2

Approved: February 04, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.502
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.373
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602009303S WG556097-04
Sample Date/Time: Wednesday, February 03, 2016 18:51:18
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86274.9	0.9				ug/L	50061	Standard
	Be	9	236.7	7.4	**0.2795**	0.020	7.0	ug/L	5	Standard
	Al	27	271571.4	2.4	**1.3343**	0.043	3.2	ug/L	215	Standard
	Sc	45	46073.4	5.8				ug/L	42886	Standard
	Ti	47	3772.8	4.5	**10.1145**	0.319	3.2	ug/L	87	Standard
	V	51	95917.0	1.2	**9.3065**	0.082	0.9	ug/L	2648	Standard
	Cr	52	54580.1	1.4	**4.8027**	0.009	0.2	ug/L	10137	Standard
	Cr	53	30278.6	1.2	**26.5362**	0.572	2.2	ug/L	288	Standard
	Mn	55	50295.4	1.6	**4.9768**	0.107	2.2	ug/L	688	Standard
	Co	59	23230.1	1.8	**2.1462**	0.013	0.6	ug/L	85	Standard
	Ni	60	15508.6	2.3	**5.6661**	0.075	1.3	ug/L	33	Standard
	Cu	65	13951.4	1.7	**4.9776**	0.060	1.2	ug/L	104	Standard
	Zn	66	15103.9	2.3	**10.9086**	0.100	0.9	ug/L	162	Standard
>	**Ge**	72	623878.3	1.4				ug/L	610528	Standard
	As	75	5590.0	2.4	**3.8858**	0.115	3.0	ug/L	-115	Standard
	Se	82	598.7	0.4	**3.8289**	0.042	1.1	ug/L	12	Standard
	Se-1	77	2258.8	3.0	**22.7670**	1.033	4.5	ug/L	64	Standard
>	**Ga**	71	85.0	30.6				mg/L	32	Standard
	Rb	85	1380.1	7.5				ug/L	22	Standard
	Y	89	562724.2	4.8				ug/L	547160	Standard
>	**Rh**	103	20.0	25.0				ug/L	2	Standard
	Mo	98	41159.1	2.5	**10.3600**	0.067	0.6	ug/L	12	Standard
	Ag	107	40314.6	1.8	**3.8151**	0.011	0.3	ug/L	159	Standard
	Cd	111	1717.2	14.2	**0.5237**	0.078	14.8	mg/L	7	Standard
	Cd	114	4431.1	10.9	**0.5576**	0.068	12.2	ug/L	14	Standard
>	**In**	115	902983.8	2.1				ug/L	890169	Standard
	Sn	118	85876.0	1.5	**9.3513**	0.058	0.6	ug/L	717	Standard
	Sb	123	86572.5	2.7	**11.5537**	0.116	1.0	ug/L	96	Standard
	Ba	135	34360.3	0.8	**9.7637**	0.172	1.8	ug/L	24	Standard
	Ce	140	723.4	164.2				ug/L	263	Standard
>	**Tb**	159	1514753.7	0.4				ug/L	1497855	Standard
	Ho	165	21.7	74.2				ug/L	17	Standard
	Tl	203	63503.8	1.7	**4.9133**	0.020	0.4	ug/L	63	Standard
	Tl	205	43870.1	1.2	**4.9677**	0.105	2.1	ug/L	12	Standard
	Pb	206	45354.6	10.5	**5.2920**	0.527	10.0	ug/L	444	Standard
	Pb	207	40783.8	8.6	**5.2526**	0.425	8.1	ug/L	376	Standard
	Pb	208	147417.9	3.7	**5.0555**	0.162	3.2	ug/L	1375	Standard
	U	238	85.0	165.1	**0.0066**	0.015	229.6	ug/L	9	Standard
>	**Bi**	209	771682.8	1.5				ug/L	798986	Standard

Sample ID: L1602009303S WG556097-04
Report Date/Time: Thursday, February 04, 2016 11:10:27
Page 1

Approved: February 04, 2016

Na	23	3.3	86.6	**18.1825**	15.795	86.9	mg/L	2	Standard
Mg	24	15232.7	1.8	**20.9857**	0.860	4.1	mg/L	10	Standard
K	39	163.3	17.9	**0.5898**	0.101	17.1	mg/L	8	Standard
Ca	43	60.0	25.0	**-0.3574**	2.933	820.7	mg/L	62	Standard
Fe	54	291.3	25.1	**0.0506**	0.052	102.3	mg/L	194	Standard
Fe	57	95.0	9.1	**0.0620**	0.007	11.1	mg/L	48	Standard
Sc-1	45	46073.4	5.8				mg/L	42886	Standard
Cl	35	40718.6	0.4				ug/L	30129	Standard
Kr	83	4.3	70.5				ug/L	3	Standard
Br	81	2353.5	8.4				ug/L	1300	Standard
P	31	11345.9	3.2				ug/L	12220	Standard
S	34	1253.4	12.2				ug/L	1602	Standard
Sr	88	55.0	18.2				ug/L	50	Standard
C	12	133.3	11.5				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	33.3				mg/L	7	Standard
Dy	164	40.9	158.6				mg/L	16	Standard
Ho-1	165	21.7	74.2				mg/L	17	Standard
Er	166	50.0	69.3				mg/L	17	Standard
I	127	6616.4	3.1				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		172.340	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.187	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602009303S WG556097-04
Report Date/Time: Thursday, February 04, 2016 11:10:27
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.440	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.583	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1602009303S WG556097-04
Report Date/Time: Thursday, February 04, 2016 11:10:27
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1602009303SD WG556097-05
Sample Date/Time: Wednesday, February 03, 2016 18:54:29
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89163.3	1.1				ug/L	50061	Standard
	Be	9	345.0	14.0	**0.3889**	0.055	14.1	ug/L	5	Standard
	Al	27	283557.7	1.9	**1.3481**	0.033	2.5	ug/L	215	Standard
	Sc	45	46432.8	4.1				ug/L	42886	Standard
	Ti	47	3851.8	2.0	**10.1613**	0.088	0.9	ug/L	87	Standard
	V	51	100659.5	2.3	**9.6151**	0.176	1.8	ug/L	2648	Standard
	Cr	52	56841.5	3.6	**4.9472**	0.146	2.9	ug/L	10137	Standard
	Cr	53	32516.6	4.4	**28.0510**	1.428	5.1	ug/L	288	Standard
	Mn	55	51510.2	3.8	**5.0130**	0.150	3.0	ug/L	688	Standard
	Co	59	23935.6	2.2	**2.1754**	0.024	1.1	ug/L	85	Standard
	Ni	60	16117.6	2.5	**5.7926**	0.064	1.1	ug/L	33	Standard
	Cu	65	14197.0	2.0	**4.9827**	0.098	2.0	ug/L	104	Standard
	Zn	66	15786.2	0.1	**11.2240**	0.153	1.4	ug/L	162	Standard
>	**Ge**	72	634236.2	1.4				ug/L	610528	Standard
	As	75	5780.8	3.8	**3.9501**	0.097	2.5	ug/L	-115	Standard
	Se	82	647.8	1.6	**4.0866**	0.118	2.9	ug/L	12	Standard
	Se-1	77	2301.2	0.8	**22.8090**	0.352	1.5	ug/L	64	Standard
>	**Ga**	71	51.7	31.1				mg/L	32	Standard
	Rb	85	1476.7	8.6				ug/L	22	Standard
	Y	89	562927.9	1.4				ug/L	547160	Standard
>	**Rh**	103	18.3	78.7				ug/L	2	Standard
	Mo	98	42472.1	4.1	**10.6730**	0.165	1.5	ug/L	12	Standard
	Ag	107	40933.9	2.2	**3.8686**	0.036	0.9	ug/L	159	Standard
	Cd	111	1608.9	4.3	**0.4891**	0.010	2.1	mg/L	7	Standard
	Cd	114	4281.6	1.9	**0.5373**	0.021	3.9	ug/L	14	Standard
>	**In**	115	904289.5	2.6				ug/L	890169	Standard
	Sn	118	90952.6	4.8	**9.8899**	0.224	2.3	ug/L	717	Standard
	Sb	123	90369.6	2.9	**12.0436**	0.084	0.7	ug/L	96	Standard
	Ba	135	35009.8	2.9	**9.9322**	0.147	1.5	ug/L	24	Standard
	Ce	140	50.0	26.5				ug/L	263	Standard
>	**Tb**	159	1529963.6	2.2				ug/L	1497855	Standard
	Ho	165	28.3	79.6				ug/L	17	Standard
	Tl	203	64664.1	3.2	**5.0144**	0.082	1.6	ug/L	63	Standard
	Tl	205	45297.6	2.6	**5.1402**	0.044	0.9	ug/L	12	Standard
	Pb	206	44431.1	2.8	**5.1964**	0.024	0.5	ug/L	444	Standard
	Pb	207	40119.7	2.5	**5.1792**	0.024	0.5	ug/L	376	Standard
	Pb	208	145823.4	2.1	**5.0124**	0.052	1.0	ug/L	1375	Standard
	U	238	6.0	33.3	**-0.0019**	0.000	10.6	ug/L	9	Standard
>	**Bi**	209	769974.6	2.9				ug/L	798986	Standard

Sample ID: L1602009303SD WG556097-05
Report Date/Time: Thursday, February 04, 2016 11:10:34
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	15633.1	3.1	**21.3477**	0.541	2.5	mg/L	10	Standard
K	39	156.7	12.1	**0.5595**	0.067	12.0	mg/L	8	Standard
Ca	43	41.7	18.3	**-3.5470**	0.989	27.9	mg/L	62	Standard
Fe	54	252.4	10.6	**0.0242**	0.010	42.3	mg/L	194	Standard
Fe	57	81.7	9.4	**0.0316**	0.019	59.4	mg/L	48	Standard
> **Sc-1**	45	46432.8	4.1				mg/L	42886	Standard
Cl	35	42008.2	2.3				ug/L	30129	Standard
Kr	83	5.0	52.9				ug/L	3	Standard
Br	81	2253.5	3.0				ug/L	1300	Standard
P	31	11100.7	5.4				ug/L	12220	Standard
S	34	1371.7	3.5				ug/L	1602	Standard
Sr	88	55.0	18.2				ug/L	50	Standard
C	12	136.7	4.2				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	7	Standard
Dy	164	12.1	53.7				mg/L	16	Standard
Ho-1	165	28.3	79.6				mg/L	17	Standard
Er	166	26.7	57.3				mg/L	17	Standard
I	127	6831.5	2.7				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		178.110	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.883	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602009303SD WG556097-05
Report Date/Time: Thursday, February 04, 2016 11:10:34
Page 2

Approved: February 04, 2016

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	101.586
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	96.369
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1602009303SD WG556097-05
Report Date/Time: Thursday, February 04, 2016 11:10:34
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1601143501
Sample Date/Time: Wednesday, February 03, 2016 18:57:41
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54282.1	3.0				ug/L	50061	Standard
	Be	9	0.0		0.0139	0.000	0.0	ug/L	5	Standard
	Al	27	935.0	3.7	0.0011	0.000	5.0	ug/L	215	Standard
	Sc	45	46247.2	3.9				ug/L	42886	Standard
	Ti	47	54.3	14.9	-0.0959	0.025	26.1	ug/L	87	Standard
	V	51	2298.6	26.0	-0.0355	0.054	151.7	ug/L	2648	Standard
	Cr	52	11127.1	2.5	0.0449	0.072	160.4	ug/L	10137	Standard
	Cr	53	11190.8	5.5	9.5549	0.870	9.1	ug/L	288	Standard
	Mn	55	1115.0	4.5	0.0150	0.005	31.5	ug/L	688	Standard
	Co	59	153.0	1.3	0.0038	0.000	10.1	ug/L	85	Standard
	Ni	60	396.0	1.1	0.1203	0.006	5.3	ug/L	33	Standard
	Cu	65	1066.7	4.8	0.3274	0.007	2.3	ug/L	104	Standard
	Zn	66	16657.8	3.0	11.9425	0.062	0.5	ug/L	162	Standard
>	Ge	72	629750.7	3.5				ug/L	610528	Standard
	As	75	-201.1	36.9	-0.0659	0.048	72.5	ug/L	-115	Standard
	Se	82	58.6	9.9	0.2224	0.046	20.8	ug/L	12	Standard
	Se-1	77	850.7	0.3	8.1088	0.328	4.0	ug/L	64	Standard
>	Ga	71	53.3	32.9				mg/L	32	Standard
	Rb	85	22905.7	4.8				ug/L	22	Standard
	Y	89	560391.6	3.5				ug/L	547160	Standard
>	Rh	103	20.0	50.0				ug/L	2	Standard
	Mo	98	1311.6	4.8	0.3224	0.007	2.2	ug/L	12	Standard
	Ag	107	136.3	9.7	-0.0041	0.001	36.5	ug/L	159	Standard
	Cd	111	4.7	21.2	-0.0067	0.000	4.5	mg/L	7	Standard
	Cd	114	34.3	34.9	-0.0068	0.002	24.0	ug/L	14	Standard
>	In	115	911681.3	2.6				ug/L	890169	Standard
	Sn	118	835.0	8.4	0.0092	0.006	63.8	ug/L	717	Standard
	Sb	123	181.2	2.5	0.0175	0.001	6.9	ug/L	96	Standard
	Ba	135	11966.4	2.4	3.3572	0.042	1.2	ug/L	24	Standard
	Ce	140	38.3	27.2				ug/L	263	Standard
>	Tb	159	1527244.4	2.0				ug/L	1497855	Standard
	Ho	165	13.3	57.3				ug/L	17	Standard
	Tl	203	441.3	1.5	0.0306	0.001	2.5	ug/L	63	Standard
	Tl	205	288.3	22.1	0.0309	0.007	22.3	ug/L	12	Standard
	Pb	206	12568.5	1.6	1.3703	0.034	2.5	ug/L	444	Standard
	Pb	207	10841.9	2.3	1.3013	0.022	1.7	ug/L	376	Standard
	Pb	208	40433.5	2.5	1.2909	0.023	1.8	ug/L	1375	Standard
	U	238	4.0	0.0	-0.0022	0.000	0.7	ug/L	9	Standard
>	Bi	209	793364.9	3.9				ug/L	798986	Standard

Sample ID: L1601143501
Report Date/Time: Thursday, February 04, 2016 11:10:35
Page 1

Approved: February 04, 2016

Na	23	5.0	173.2	**28.1398**	48.731	173.2	mg/L	2	Standard
Mg	24	3100.3	1.8	**4.2362**	0.238	5.6	mg/L	10	Standard
K	39	1385.1	5.1	**5.4168**	0.137	2.5	mg/L	8	Standard
Ca	43	113.3	40.0	**8.2047**	7.470	91.0	mg/L	62	Standard
Fe	54	225.7	3.6	**0.0093**	0.008	88.6	mg/L	194	Standard
Fe	57	76.7	35.9	**0.0205**	0.058	284.8	mg/L	48	Standard
> **Sc-1**	45	46247.2	3.9				mg/L	42886	Standard
Cl	35	36856.1	0.5				ug/L	30129	Standard
Kr	83	4.0	25.0				ug/L	3	Standard
Br	81	2090.1	8.4				ug/L	1300	Standard
P	31	11896.3	3.1				ug/L	12220	Standard
S	34	1565.1	9.4				ug/L	1602	Standard
Sr	88	43.3	6.7				ug/L	50	Standard
C	12	146.7	27.6				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	7	Standard
Dy	164	18.7	109.4				mg/L	16	Standard
Ho-1	165	13.3	57.3				mg/L	17	Standard
Er	166	26.7	43.3				mg/L	17	Standard
I	127	13130.7	2.8				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.432	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.149	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1601143501
Report Date/Time: Thursday, February 04, 2016 11:10:35
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.417
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.296
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1601143501
Report Date/Time: Thursday, February 04, 2016 11:10:35
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1601143601
Sample Date/Time: Wednesday, February 03, 2016 19:00:52
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53465.9	3.6				ug/L	50061	Standard
	Be	9	8.3	69.3	**0.0292**	0.011	38.1	ug/L	5	Standard
	Al	27	696.7	13.3	**-0.0007**	0.001	84.7	ug/L	215	Standard
	Sc	45	46168.7	5.1				ug/L	42886	Standard
	Ti	47	50.3	5.0	**-0.1074**	0.006	5.7	ug/L	87	Standard
	V	51	1530.1	39.4	**-0.1119**	0.054	48.3	ug/L	2648	Standard
	Cr	52	11774.2	4.2	**0.1101**	0.024	22.0	ug/L	10137	Standard
	Cr	53	15369.5	7.7	**13.1531**	0.515	3.9	ug/L	288	Standard
	Mn	55	1445.1	3.2	**0.0476**	0.002	4.3	ug/L	688	Standard
	Co	59	131.3	19.4	**0.0018**	0.002	112.8	ug/L	85	Standard
	Ni	60	397.0	3.0	**0.1202**	0.006	5.4	ug/L	33	Standard
	Cu	65	485.7	1.9	**0.1197**	0.010	8.2	ug/L	104	Standard
	Zn	66	7040.0	3.5	**4.9012**	0.091	1.9	ug/L	162	Standard
>	**Ge**	72	631358.0	3.9				ug/L	610528	Standard
	As	75	-181.1	42.6	**-0.0524**	0.051	96.8	ug/L	-115	Standard
	Se	82	72.3	1.7	**0.3115**	0.022	7.2	ug/L	12	Standard
	Se-1	77	997.7	1.8	**9.5889**	0.272	2.8	ug/L	64	Standard
>	**Ga**	71	58.3	21.6				mg/L	32	Standard
	Rb	85	23338.0	5.3				ug/L	22	Standard
	Y	89	570878.8	4.9				ug/L	547160	Standard
>	**Rh**	103	8.3	34.6				ug/L	2	Standard
	Mo	98	809.5	12.5	**0.1953**	0.017	8.5	ug/L	12	Standard
	Ag	107	1616.1	7.5	**0.1339**	0.005	3.8	ug/L	159	Standard
	Cd	111	10.3	39.2	**-0.0050**	0.001	21.8	mg/L	7	Standard
	Cd	114	30.0	27.0	**-0.0074**	0.001	11.5	ug/L	14	Standard
>	**In**	115	918320.8	4.1				ug/L	890169	Standard
	Sn	118	1056.7	8.3	**0.0324**	0.005	15.5	ug/L	717	Standard
	Sb	123	157.0	11.1	**0.0142**	0.003	19.7	ug/L	96	Standard
	Ba	135	26148.9	3.9	**7.3011**	0.023	0.3	ug/L	24	Standard
	Ce	140	38.3	41.9				ug/L	263	Standard
>	**Tb**	159	1549051.5	3.5				ug/L	1497855	Standard
	Ho	165	15.0	66.7				ug/L	17	Standard
	Tl	203	389.3	4.4	**0.0262**	0.002	9.4	ug/L	63	Standard
	Tl	205	298.3	16.8	**0.0313**	0.004	13.6	ug/L	12	Standard
	Pb	206	6549.4	1.9	**0.6636**	0.024	3.7	ug/L	444	Standard
	Pb	207	5504.7	4.1	**0.6103**	0.024	4.0	ug/L	376	Standard
	Pb	208	20881.0	2.7	**0.6161**	0.019	3.1	ug/L	1375	Standard
	U	238	3.3	45.8	**-0.0022**	0.000	7.9	ug/L	9	Standard
>	**Bi**	209	807500.3	5.2				ug/L	798986	Standard

Sample ID: L1601143601
Report Date/Time: Thursday, February 04, 2016 11:10:42
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3127.0	8.1	**4.2715**	0.198	4.6	mg/L	10	Standard
K	39	1506.7	6.9	**5.9112**	0.355	6.0	mg/L	8	Standard
Ca	43	108.3	30.0	**7.2924**	4.459	61.1	mg/L	62	Standard
Fe	54	220.4	5.3	**0.0066**	0.013	199.1	mg/L	194	Standard
Fe	57	81.7	38.9	**0.0325**	0.071	217.0	mg/L	48	Standard
> **Sc-1**	45	46168.7	5.1				mg/L	42886	Standard
Cl	35	39425.9	1.9				ug/L	30129	Standard
Kr	83	3.3	96.4				ug/L	3	Standard
Br	81	2130.2	7.0				ug/L	1300	Standard
P	31	11944.7	3.0				ug/L	12220	Standard
S	34	1681.8	8.1				ug/L	1602	Standard
Sr	88	50.0	36.1				ug/L	50	Standard
C	12	153.3	3.8				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	63.8				mg/L	7	Standard
Dy	164	22.9	52.4				mg/L	16	Standard
Ho-1	165	15.0	66.7				mg/L	17	Standard
Er	166	10.0	100.0				mg/L	17	Standard
I	127	10592.0	2.1				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.802	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.412	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1601143601
Report Date/Time: Thursday, February 04, 2016 11:10:42
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.163
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.066
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1601143601
Report Date/Time: Thursday, February 04, 2016 11:10:42
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1601143601PS WG556159-01
Sample Date/Time: Wednesday, February 03, 2016 19:04:03
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54959.6	3.0				ug/L	50061	Standard
	Be	9	27411.5	4.3	**48.3066**	0.976	2.0	ug/L	5	Standard
	Al	27	801.7	6.9	**0.0000**	0.001	9780.1	ug/L	215	Standard
	Sc	45	47240.3	4.4				ug/L	42886	Standard
	Ti	47	59.7	12.7	**-0.0834**	0.020	23.8	ug/L	87	Standard
	V	51	501746.5	5.0	**48.7885**	1.174	2.4	ug/L	2648	Standard
	Cr	52	467919.6	3.3	**48.9636**	0.598	1.2	ug/L	10137	Standard
	Cr	53	68684.1	6.5	**59.3150**	2.296	3.9	ug/L	288	Standard
	Mn	55	504880.6	4.4	**49.8119**	0.882	1.8	ug/L	688	Standard
	Co	59	542832.0	4.9	**49.3782**	1.176	2.4	ug/L	85	Standard
	Ni	60	135710.1	4.3	**48.7812**	0.860	1.8	ug/L	33	Standard
	Cu	65	139511.1	4.2	**49.2600**	0.970	2.0	ug/L	104	Standard
	Zn	66	73955.9	3.8	**53.2402**	0.621	1.2	ug/L	162	Standard
>	**Ge**	72	636324.2	2.6				ug/L	610528	Standard
	As	75	73039.7	3.4	**48.9416**	0.392	0.8	ug/L	-115	Standard
	Se	82	7608.0	3.9	**49.5887**	0.699	1.4	ug/L	12	Standard
	Se-1	77	5975.8	4.4	**60.0008**	1.241	2.1	ug/L	64	Standard
>	**Ga**	71	51.7	14.8				mg/L	32	Standard
	Rb	85	23498.2	5.2				ug/L	22	Standard
	Y	89	561251.4	2.4				ug/L	547160	Standard
>	**Rh**	103	40.0					ug/L	2	Standard
	Mo	98	759.0	7.5	**0.1864**	0.019	10.0	ug/L	12	Standard
	Ag	107	522099.0	5.0	**49.5029**	0.770	1.6	ug/L	159	Standard
	Cd	111	161938.7	4.6	**50.0228**	0.086	0.2	mg/L	7	Standard
	Cd	114	387545.7	4.0	**49.5800**	0.488	1.0	ug/L	14	Standard
>	**In**	115	904901.4	4.7				ug/L	890169	Standard
	Sn	118	943.4	2.9	**0.0219**	0.002	8.4	ug/L	717	Standard
	Sb	123	357336.0	4.1	**47.6241**	0.771	1.6	ug/L	96	Standard
	Ba	135	196223.9	3.6	**55.7191**	0.657	1.2	ug/L	24	Standard
	Ce	140	26.7	60.3				ug/L	263	Standard
>	**Tb**	159	1508815.9	4.3				ug/L	1497855	Standard
	Ho	165	28.3	44.4				ug/L	17	Standard
	Tl	203	658884.2	2.6	**48.6496**	0.385	0.8	ug/L	63	Standard
	Tl	205	458420.3	2.9	**49.5184**	1.184	2.4	ug/L	12	Standard
	Pb	206	448535.5	4.0	**50.5897**	0.789	1.6	ug/L	444	Standard
	Pb	207	390230.9	3.6	**48.5774**	0.810	1.7	ug/L	376	Standard
	Pb	208	1479946.1	2.6	**49.0961**	0.341	0.7	ug/L	1375	Standard
	U	238	466289.7	3.4	**48.4702**	0.097	0.2	ug/L	9	Standard
>	**Bi**	209	809154.3	3.3				ug/L	798986	Standard

Sample ID: L1601143601PS WG556159-01
Report Date/Time: Thursday, February 04, 2016 11:10:43
Page 1

Approved: February 04, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3342.0	5.3	**4.4650**	0.126	2.8	mg/L	10	Standard
K	39	1501.7	6.6	**5.7502**	0.132	2.3	mg/L	8	Standard
Ca	43	111.7	15.7	**7.6103**	2.993	39.3	mg/L	62	Standard
Fe	54	238.3	16.1	**0.0132**	0.017	130.8	mg/L	194	Standard
Fe	57	81.7	9.4	**0.0290**	0.025	85.0	mg/L	48	Standard
Sc-1	45	47240.3	4.4				mg/L	42886	Standard
Cl	35	39883.8	2.7				ug/L	30129	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2100.1	8.6				ug/L	1300	Standard
P	31	12268.3	6.7				ug/L	12220	Standard
S	34	1731.8	2.6				ug/L	1602	Standard
Sr	88	51.7	20.1				ug/L	50	Standard
C	12	173.3	37.1				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	43.3				mg/L	7	Standard
Dy	164	5.5	101.6				mg/L	16	Standard
Ho-1	165	28.3	44.4				mg/L	17	Standard
Er	166	23.3	24.7				mg/L	17	Standard
I	127	11002.3	2.3				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.785	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.225	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1601143601PS WG556159-01
Report Date/Time: Thursday, February 04, 2016 11:10:43
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.655
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.273
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: L1601143601SDL WG55615902
Sample Date/Time: Wednesday, February 03, 2016 19:07:15
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51880.6	6.7				ug/L	50061	Standard
	Be	9	10.0	100.0	**0.0320**	0.017	54.4	ug/L	5	Standard
	Al	27	481.7	35.3	**-0.0023**	0.001	47.8	ug/L	215	Standard
	Sc	45	45266.0	5.3				ug/L	42886	Standard
	Ti	47	56.3	10.4	**-0.0877**	0.024	27.4	ug/L	87	Standard
	V	51	2342.8	17.5	**-0.0277**	0.029	104.9	ug/L	2648	Standard
	Cr	52	10951.6	3.1	**0.0428**	0.025	58.6	ug/L	10137	Standard
	Cr	53	6044.5	4.8	**5.1066**	0.340	6.7	ug/L	288	Standard
	Mn	55	995.4	12.3	**0.0043**	0.007	165.5	ug/L	688	Standard
	Co	59	163.0	27.1	**0.0049**	0.003	67.6	ug/L	85	Standard
	Ni	60	131.3	17.1	**0.0245**	0.006	25.3	ug/L	33	Standard
	Cu	65	242.0	9.3	**0.0340**	0.005	13.8	ug/L	104	Standard
	Zn	66	2904.6	6.4	**1.9223**	0.026	1.3	ug/L	162	Standard
>	**Ge**	72	620474.0	5.2				ug/L	610528	Standard
	As	75	-90.0	2.0	**0.0077**	0.003	33.4	ug/L	-115	Standard
	Se	82	29.4	48.4	**0.0323**	0.100	309.2	ug/L	12	Standard
	Se-1	77	302.3	6.0	**2.5282**	0.196	7.8	ug/L	64	Standard
>	**Ga**	71	31.7	32.9				mg/L	32	Standard
	Rb	85	4545.7	11.3				ug/L	22	Standard
	Y	89	558276.3	6.1				ug/L	547160	Standard
>	**Rh**	103	1.7	173.2				ug/L	2	Standard
	Mo	98	183.3	6.6	**0.0417**	0.001	2.4	ug/L	12	Standard
	Ag	107	544.7	5.9	**0.0351**	0.002	4.4	ug/L	159	Standard
	Cd	111	18.7	88.9	**-0.0025**	0.005	191.1	mg/L	7	Standard
	Cd	114	65.9	25.3	**-0.0027**	0.002	62.6	ug/L	14	Standard
>	**In**	115	898441.9	5.3				ug/L	890169	Standard
	Sn	118	711.7	15.8	**-0.0031**	0.011	373.2	ug/L	717	Standard
	Sb	123	1767.4	14.6	**0.2323**	0.046	19.9	ug/L	96	Standard
	Ba	135	5154.5	6.5	**1.4580**	0.023	1.6	ug/L	24	Standard
	Ce	140	36.7	51.6				ug/L	263	Standard
>	**Tb**	159	1545273.9	5.6				ug/L	1497855	Standard
	Ho	165	21.7	13.3				ug/L	17	Standard
	Tl	203	782.4	4.0	**0.0558**	0.002	3.8	ug/L	63	Standard
	Tl	205	583.3	9.4	**0.0628**	0.003	5.1	ug/L	12	Standard
	Pb	206	1909.5	5.5	**0.1396**	0.005	3.3	ug/L	444	Standard
	Pb	207	1621.8	8.1	**0.1266**	0.009	6.9	ug/L	376	Standard
	Pb	208	6203.2	7.1	**0.1288**	0.006	4.7	ug/L	1375	Standard
	U	238	67.0	48.9	**0.0044**	0.003	70.9	ug/L	9	Standard
>	**Bi**	209	799180.0	4.3				ug/L	798986	Standard

Sample ID: L1601143601SDL WG55615902
Report Date/Time: Thursday, February 04, 2016 11:10:49
Page 1

Approved: February 04, 2016

Na	23	1.7	173.2	**8.9294**	15.458	173.1	mg/L	2	Standard
Mg	24	655.0	4.3	**0.8959**	0.051	5.7	mg/L	10	Standard
K	39	318.3	20.0	**1.2231**	0.208	17.0	mg/L	8	Standard
Ca	43	81.7	21.5	**3.4210**	3.492	102.1	mg/L	62	Standard
Fe	54	218.9	14.0	**0.0076**	0.012	162.1	mg/L	194	Standard
Fe	57	60.0	28.9	**-0.0137**	0.032	233.5	mg/L	48	Standard
> **Sc-1**	45	45266.0	5.3				mg/L	42886	Standard
Cl	35	38833.1	2.9				ug/L	30129	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1510.1	7.2				ug/L	1300	Standard
P	31	12620.3	8.5				ug/L	12220	Standard
S	34	1810.1	7.0				ug/L	1602	Standard
Sr	88	33.3	48.2				ug/L	50	Standard
C	12	146.7	21.9				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	45.1				mg/L	7	Standard
Dy	164	15.9	32.1				mg/L	16	Standard
Ho-1	165	21.7	13.3				mg/L	17	Standard
Er	166	16.7	91.7				mg/L	17	Standard
I	127	6949.9	2.0				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.635	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.629	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1601143601SDL WG55615902
Report Date/Time: Thursday, February 04, 2016 11:10:49
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		100.929
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		100.024
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, February 03, 2016 19:10:28
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51771.8	5.5				ug/L	50061	Standard
	Be	9	26952.3	5.9	**50.4226**	0.309	0.6	ug/L	5	Standard
	Al	27	6039268.8	7.0	**49.6404**	1.200	2.4	ug/L	215	Standard
	Sc	45	46899.2	3.1				ug/L	42886	Standard
	Ti	47	37167.2	3.9	**103.5530**	1.328	1.3	ug/L	87	Standard
	V	51	495412.2	4.8	**49.9793**	0.963	1.9	ug/L	2648	Standard
	Cr	52	461364.1	4.5	**50.0982**	1.124	2.2	ug/L	10137	Standard
	Cr	53	56779.7	4.8	**50.8436**	1.267	2.5	ug/L	288	Standard
	Mn	55	483676.2	4.7	**49.4988**	1.025	2.1	ug/L	688	Standard
	Co	59	546950.0	5.2	**51.6073**	1.228	2.4	ug/L	85	Standard
	Ni	60	133620.8	6.3	**49.8042**	1.694	3.4	ug/L	33	Standard
	Cu	65	135728.1	5.6	**49.7001**	1.302	2.6	ug/L	104	Standard
	Zn	66	66438.2	4.4	**49.5933**	0.782	1.6	ug/L	162	Standard
>	Ge	72	613435.6	2.9				ug/L	610528	Standard
	As	75	72496.3	3.4	**50.3910**	0.458	0.9	ug/L	-115	Standard
	Se	82	7540.6	3.8	**50.9936**	0.892	1.7	ug/L	12	Standard
	Se-1	77	4917.8	4.8	**51.1268**	1.197	2.3	ug/L	64	Standard
>	Ga	71	28.3	81.5				mg/L	32	Standard
	Rb	85	1150.0	8.1				ug/L	22	Standard
	Y	89	561941.2	2.3				ug/L	547160	Standard
>	Rh	103	40.0	45.1				ug/L	2	Standard
	Mo	98	416991.7	4.2	**105.5440**	0.360	0.3	ug/L	12	Standard
	Ag	107	518247.4	4.1	**49.4959**	0.077	0.2	ug/L	159	Standard
	Cd	111	160648.7	4.3	**49.9809**	0.159	0.3	mg/L	7	Standard
	Cd	114	390364.1	3.0	**50.3086**	0.808	1.6	ug/L	14	Standard
>	In	115	898404.1	4.2				ug/L	890169	Standard
	Sn	118	444714.5	5.1	**49.0005**	0.483	1.0	ug/L	717	Standard
	Sb	123	363487.6	3.7	**48.7896**	0.546	1.1	ug/L	96	Standard
	Ba	135	172081.9	4.4	**49.1961**	0.296	0.6	ug/L	24	Standard
	Ce	140	303.3	96.2				ug/L	263	Standard
>	Tb	159	1539364.8	4.4				ug/L	1497855	Standard
	Ho	165	20.0	66.1				ug/L	17	Standard
	Tl	203	667543.0	3.2	**50.1172**	0.259	0.5	ug/L	63	Standard
	Tl	205	453182.4	3.4	**49.7774**	1.123	2.3	ug/L	12	Standard
	Pb	206	433236.6	3.2	**49.6971**	0.198	0.4	ug/L	444	Standard
	Pb	207	393126.1	3.0	**49.7715**	0.348	0.7	ug/L	376	Standard
	Pb	208	1464230.4	3.4	**49.3919**	0.479	1.0	ug/L	1375	Standard
	U	238	471319.7	3.8	**49.8218**	0.552	1.1	ug/L	9	Standard
>	Bi	209	795711.5	3.6				ug/L	798986	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, February 04, 2016 11:10:51
Page 1

Approved: February 04, 2016

Na	23	5.0	100.0	**27.1471**	27.584	101.6	mg/L	2	Standard
Mg	24	3427.1	2.5	**4.6165**	0.206	4.5	mg/L	10	Standard
K	39	1258.4	4.9	**4.8526**	0.327	6.7	mg/L	8	Standard
Ca	43	108.3	42.6	**7.1212**	7.341	103.1	mg/L	62	Standard
Fe	54	8019.6	2.4	**4.5731**	0.122	2.7	mg/L	194	Standard
Fe	57	2156.8	12.8	**4.5405**	0.621	13.7	mg/L	48	Standard
> **Sc-1**	45	46899.2	3.1				mg/L	42886	Standard
Cl	35	37094.7	4.4				ug/L	30129	Standard
Kr	83	4.0	25.0				ug/L	3	Standard
Br	81	1256.7	6.4				ug/L	1300	Standard
P	31	15224.4	11.3				ug/L	12220	Standard
S	34	2068.5	1.3				ug/L	1602	Standard
Sr	88	30.0	16.7				ug/L	50	Standard
C	12	123.3	16.9				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	33.0	47.1				mg/L	16	Standard
Ho-1	165	20.0	66.1				mg/L	17	Standard
Er	166	6.7	86.6				mg/L	17	Standard
I	127	2303.5	5.9				mg/L	7520	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.845		
	Al	27	99.281		
	Sc	45			
	Ti	47	103.553		
	V	51	99.959		
	Cr	52	100.196		
	Cr	53			
	Mn	55	98.998		
	Co	59	103.215		
	Ni	60	99.608		
	Cu	65	99.400		
	Zn	66	99.187		
>	Ge	72		100.476	
	As	75	100.782		
	Se	82	101.987		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, February 04, 2016 11:10:51
Page 2

Approved: February 04, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	105.544		
Ag	107	98.992		
Cd	111	99.962		
Cd	114			
> In	115			100.925
Sn	118	98.001		
Sb	123	97.579		
Ba	135	98.392		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.234		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.784		
U	238	99.644		
> Bi	209			99.590
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, February 04, 2016 11:10:51
Page 3

Approved: February 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, February 03, 2016 19:13:39
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47367.5	7.2				ug/L	50061	Standard
	Be	9	5.0	100.0	**0.0239**	0.010	40.0	ug/L	5	Standard
	Al	27	641.7	29.6	**-0.0005**	0.002	340.5	ug/L	215	Standard
	Sc	45	43069.6	6.2				ug/L	42886	Standard
	Ti	47	47.3	28.8	**-0.1069**	0.036	33.9	ug/L	87	Standard
	V	51	2339.9	1.3	**-0.0137**	0.015	110.9	ug/L	2648	Standard
	Cr	52	8893.3	4.9	**-0.1303**	0.027	20.5	ug/L	10137	Standard
	Cr	53	531.7	8.5	**0.2180**	0.070	32.0	ug/L	288	Standard
	Mn	55	724.0	5.7	**-0.0190**	0.002	11.0	ug/L	688	Standard
	Co	59	149.3	17.4	**0.0044**	0.002	50.6	ug/L	85	Standard
	Ni	60	46.7	19.9	**-0.0057**	0.004	63.5	ug/L	33	Standard
	Cu	65	121.7	8.8	**-0.0070**	0.005	68.9	ug/L	104	Standard
	Zn	66	212.0	14.2	**-0.0657**	0.015	22.4	ug/L	162	Standard
>	**Ge**	72	588263.3	5.5				ug/L	610528	Standard
	As	75	-68.9	66.1	**0.0198**	0.033	164.1	ug/L	-115	Standard
	Se	82	27.1	38.0	**0.0262**	0.073	277.8	ug/L	12	Standard
	Se-1	77	69.7	25.0	**0.1402**	0.171	121.8	ug/L	64	Standard
>	**Ga**	71	26.7	57.3				mg/L	32	Standard
	Rb	85	33.3	34.6				ug/L	22	Standard
	Y	89	529489.2	4.0				ug/L	547160	Standard
>	**Rh**	103	6.7	86.6				ug/L	2	Standard
	Mo	98	206.4	9.2	**0.0502**	0.002	3.7	ug/L	12	Standard
	Ag	107	196.0	4.9	**0.0028**	0.001	51.8	ug/L	159	Standard
	Cd	111	18.7	50.9	**-0.0020**	0.003	157.5	mg/L	7	Standard
	Cd	114	61.0	28.1	**-0.0029**	0.002	78.5	ug/L	14	Standard
>	**In**	115	854135.9	5.9				ug/L	890169	Standard
	Sn	118	1205.0	10.4	**0.0587**	0.017	29.4	ug/L	717	Standard
	Sb	123	649.5	17.3	**0.0860**	0.021	24.0	ug/L	96	Standard
	Ba	135	39.0	32.0	**-0.0039**	0.003	89.2	ug/L	24	Standard
	Ce	140	26.7	57.3				ug/L	263	Standard
>	**Tb**	159	1451072.4	5.1				ug/L	1497855	Standard
	Ho	165	16.7	45.8				ug/L	17	Standard
	Tl	203	149.3	23.6	**0.0090**	0.002	26.6	ug/L	63	Standard
	Tl	205	110.0	34.3	**0.0116**	0.004	31.5	ug/L	12	Standard
	Pb	206	412.3	13.1	**-0.0292**	0.005	18.5	ug/L	444	Standard
	Pb	207	390.3	5.9	**-0.0260**	0.004	15.7	ug/L	376	Standard
	Pb	208	1502.7	8.0	**-0.0266**	0.001	4.4	ug/L	1375	Standard
	U	238	46.0	28.3	**0.0025**	0.002	61.0	ug/L	9	Standard
>	**Bi**	209	760146.3	5.8				ug/L	798986	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, February 04, 2016 11:10:57
Page 1

Approved: February 04, 2016

Na	23	1.7	173.2	**10.3557**	17.928	173.1	mg/L	2	Standard
Mg	24	20.0	50.0	**0.0066**	0.016	239.1	mg/L	10	Standard
K	39	25.0	91.7	**0.0508**	0.103	203.5	mg/L	8	Standard
Ca	43	55.0	9.1	**-0.6549**	0.578	88.3	mg/L	62	Standard
Fe	54	191.0	10.7	**-0.0026**	0.017	648.3	mg/L	194	Standard
Fe	57	60.0	43.3	**-0.0080**	0.051	639.1	mg/L	48	Standard
Sc-1	45	43069.6	6.2				mg/L	42886	Standard
Cl	35	35551.1	6.9				ug/L	30129	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1190.0	14.0				ug/L	1300	Standard
P	31	12907.2	6.5				ug/L	12220	Standard
S	34	1891.8	6.3				ug/L	1602	Standard
Sr	88	35.0	0.0				ug/L	50	Standard
C	12	110.0	31.5				mg/L	107	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	15.9	99.6				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	17	Standard
Er	166	16.7	69.3				mg/L	17	Standard
I	127	4303.9	3.7				mg/L	7520	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.353	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, February 04, 2016 11:10:57
Page 2

Approved: February 04, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.952
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.139
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, February 04, 2016 11:10:57
Page 3

Approved: February 04, 2016

2.3 General Chemistry Data

2.3.1 Method 9056

2.3.1.1 Summary Data

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-01	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW02-020116	**Prep Method:**	9056	**Prep Date:**	02/02/2016 14:03
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	01/20/2016 12:54
Workgroup #:	WG555960	**Analyst:**	AED	**Run Date:**	02/02/2016 17:08
Collect Date:	02/01/2016 08:10	**Dilution:**	2	**File ID:**	I3_020216-12
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	0.400	U	0.800	0.400	0.200
Nitrate	14797-55-8	0.400	U	0.800	0.400	0.200
Nitrite	14797-65-0	0.400	U	0.800	0.400	0.200
Sulfate	14808-79-8	164		4.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-03	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW11-020116	**Prep Method:**	9056	**Prep Date:**	02/02/2016 14:03
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	01/20/2016 12:54
Workgroup #:	WG555960	**Analyst:**	AED	**Run Date:**	02/02/2016 17:29
Collect Date:	02/01/2016 09:25	**Dilution:**	10	**File ID:**	I3_020216-13
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	196		4.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00
Sulfate	14808-79-8	343		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-05	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	LHSMW19-020116	**Prep Method:**	9056	**Prep Date:**	02/02/2016 14:03
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	01/20/2016 12:54
Workgroup #:	WG555960	**Analyst:**	AED	**Run Date:**	02/02/2016 17:49
Collect Date:	02/01/2016 10:30	**Dilution:**	20	**File ID:**	I3_020216-14
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	296		8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	531		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-07	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW05-020116	**Prep Method:**	9056	**Prep Date:**	02/02/2016 14:03
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	01/20/2016 12:54
Workgroup #:	WG555960	**Analyst:**	AED	**Run Date:**	02/02/2016 18:50
Collect Date:	02/01/2016 13:15	**Dilution:**	50	**File ID:**	I3_020216-17
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	245		20.0	10.0	5.00
Nitrate	14797-55-8	10.0	U	20.0	10.0	5.00
Nitrite	14797-65-0	10.0	U	20.0	10.0	5.00
Sulfate	14808-79-8	4350		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-09	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW16-020116	**Prep Method:**	9056	**Prep Date:**	02/02/2016 14:03
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	01/20/2016 12:54
Workgroup #:	WG555960	**Analyst:**	AED	**Run Date:**	02/02/2016 19:11
Collect Date:	02/01/2016 14:30	**Dilution:**	20	**File ID:**	I3_020216-18
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	299		8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	690		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.3.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(- c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 012016 IC3 ICAL.SEQ

Analyst1: AED Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 18

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#: RGT35881

Workgroups: Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Internal STD: NA Surrogate STD: NA Calibration STD STD71545 20-JAN-2016

CCV STD: STD71545 LCS STD: STD71546 MS/MSD STD: STD71546

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I3_012016-01	ELUENT	1	1		01/20/16 10:32
2	I3_012016-02	DI WATER	1	1		01/20/16 10:52
3	I3_012016-03	WG554201-01 STD \#6	1	1		01/20/16 11:12
4	I3_012016-04	WG554201-02 STD \#5	1	1		01/20/16 11:33
5	I3_012016-05	WG554201-03 STD \#4	1	1		01/20/16 11:53
6	I3_012016-06	WG554201-04 STD \#3	1	1		01/20/16 12:14
7	I3_012016-07	WG554201-05 STD \#2	1	1		01/20/16 12:34
8	I3_012016-08	WG554201-06 STD \#1	1	1		01/20/16 12:54
9	I3_012016-09	WG554201-07 SSCV	1	1		01/20/16 13:15
10	I3_012016-10	LCR LVL 6	1	1		01/20/16 13:35
11	I3_012016-11	LCR LVL 2	1	1		01/20/16 13:55
12	I3_012016-12	LCR LVL 0	1	1		01/20/16 14:16
13	I3_012016-13	END	1	1		01/20/16 14:36

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 22-JAN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 020216 IC3.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 18

Maintenance Log ID: Syringe Filter Lot#: 150323254
Eluent ID#: RGT35971
Workgroups: Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Internal STD: NA Surrogate STD: NA Calibration STD STD71545 20-JAN-2016
CCV STD: STD71545 LCS STD: STD71546 MS/MSD STD: STD71546

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I3_020216-01	ELUENT	1	1		02/02/16 13:25
2	I3_020216-02	DI WATER	1	1		02/02/16 13:45
3	I3_020216-03	WG555959-01 ANION CCV	1	1		02/02/16 14:05
4	I3_020216-04	WG555959-02 ANION CCB	1	1		02/02/16 14:25
5	I3_020216-05	WG555960-01 BLANK	1	1		02/02/16 14:46
6	I3_020216-06	WG555960-02 ANION LCS	1	1		02/02/16 15:06
7	I3_020216-07	L16011377-01 SO4 CL FL 2X (SO4)	1	2		02/02/16 15:26
8	I3_020216-08	WG555960-04 DUP 2X	1	2		02/02/16 15:47
9	I3_020216-09	WG555960-05 MS 2X	1	2		02/02/16 16:07
10	I3_020216-10	WG555960-06 MSD 2X	1	2		02/02/16 16:28
11	I3_020216-11	L16011377-01 SO4 CL FL 10X (CL)	1	10		02/02/16 16:48
12	I3_020216-12	L16020058-01 NO3 NO2 CL SO4 2X	1	2		02/02/16 17:08
13	I3_020216-13	L16020058-03 NO3 NO2 CL SO4 10X	1	10		02/02/16 17:29
14	I3_020216-14	L16020058-05 NO3 NO2 CL SO4 20X	1	20		02/02/16 17:49
15	I3_020216-15	WG555959-03 ANION CCV	1	1		02/02/16 18:09
16	I3_020216-16	WG555959-04 ANION CCB	1	1		02/02/16 18:30
17	I3_020216-17	L16020058-07 NO3 NO2 CL SO4 50X	1	50		02/02/16 18:50
18	I3_020216-18	L16020058-09 NO3 NO2 CL SO4 20X	1	20		02/02/16 19:11
19	I3_020216-19	WG555959-05 ANION CCV	1	1		02/02/16 19:31
20	I3_020216-20	WG555959-06 ANION CCB	1	1		02/02/16 19:51

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7	X	10	Over Calibration Range	CL
	L16011377-01 SO4 CL FL 2X (SO4): Diluted due to high SO4 screen results.			
9				
	WG555960-05 MS 2X: Failed CL recovery due to hits of CL over ICAL in parent sample and failed SO4 recovery low.			
10				
	WG555960-06 MSD 2X: Failed CL recovery due to hits of CL over ICAL in parent sample and failed SO4 recovery low.			
12				
	L16020058-01 NO3 NO2 CL SO4 2X: Diluted due to high SO4 screen results.			
13				
	L16020058-03 NO3 NO2 CL SO4 10X: Diluted due to high CL and SO4 screen results.			

Page: 1 Approved: 03-FEB-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 020216 IC3.SEQ

Analyst1: AED Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 18

Maintenance Log ID: Syringe Filter Lot#: 150323254

Eluent ID#: RGT35971

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups:

Internal STD: NA Surrogate STD: NA STD71545 20-JAN-2016

CCV STD: STD71545 LCS STD: STD71546 STD71546

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14				
	L16020058-05 NO3 NO2 CL SO4 20X: Diluted due to high CL and SO4 screen results.			
17				
	L16020058-07 NO3 NO2 CL SO4 50X: Diluted due to high SO4 screen results.			
18				
	L16020058-09 NO3 NO2 CL SO4 20X: Diluted due to high CL and SO4 screen results and possible dissolved Fe which required treatments.			

Page: 2 Approved: 03-FEB-16

Microbac Laboratories Inc.

Data Checklist

Date: 20-JAN-2016
Analyst: AED
Analyst: NA
Method: 300/9056
Instrument: IC3
Curve Workgroup: NA
Runlog ID: 72850
Analytical Workgroups: WG554201 ICAL

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	NA
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
20-JAN-2016

Secondary Reviewer:
22-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-22-2016 13:17:08

Microbac Laboratories Inc.

Data Checklist

Date: 02-FEB-2016
Analyst: AED
Analyst: NA
Method: 300/9056
Instrument: IC3
Curve Workgroup: NA
Runlog ID: 73093
Analytical Workgroups: L16011377, L16020058

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ALS

Primary Reviewer:
03-FEB-2016

Secondary Reviewer:
03-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-04-2016 10:31:21

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG555960

Login Number: L16020058

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW02-020116	01	02/01/16					02/02/2016	1.2	2		02/02/16	1.4	2	
46WW11-020116	03	02/01/16					02/02/2016	1.2	2		02/02/16	1.3	2	
LHSMW19-020116	05	02/01/16					02/02/2016	1.1	2		02/02/16	1.3	2	
46WW05-020116	07	02/01/16					02/02/2016	1	2		02/02/16	1.2	2	
46WW16-020116	09	02/01/16					02/02/2016	1	2		02/02/16	1.2	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4615673
Report generated 02/04/2016 10:52

METHOD BLANK SUMMARY

Login Number: L16020058
Blank File ID: I3_020216-05
Prep Date: 02/02/16 14:03
Analyzed Date: 02/02/16 14:46
Analyst: AED

Work Group: WG555960
Blank Sample ID: WG555960-01
Instrument ID: IC3
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG555960-02	I3_020216-06	02/02/16 15:06	01
DUP	WG555960-04	I3_020216-08	02/02/16 15:47	DL01
46WW02-020116	L16020058-01	I3_020216-12	02/02/16 17:08	DL01
46WW11-020116	L16020058-03	I3_020216-13	02/02/16 17:29	DL01
LHSMW19-020116	L16020058-05	I3_020216-14	02/02/16 17:49	DL01
46WW05-020116	L16020058-07	I3_020216-17	02/02/16 18:50	DL01
46WW16-020116	L16020058-09	I3_020216-18	02/02/16 19:11	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4615674
Report generated 02/04/2016 10:52

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020058 Prep Date: 02/02/16 14:03 Sample ID: WG555960-01
Instrument ID: IC3 Run Date: 02/02/16 14:46 Prep Method: 9056
File ID: I3 020216-05 Analyst: AED Method: 9056
Workgroup (AAB#): WG555960 Matrix: Water Units: mg/L
Contract #: Cal ID: IC3-20-JAN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4615675
04-FEB-2016 10:52

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020058 Run Date: 02/02/2016 Sample ID: WG555960-02
Instrument ID: IC3 Run Time: 15:06 Prep Method: 9056
File ID: I3 020216-06 Analyst: AED Method: 9056
Workgroup (AAB#): WG555960 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD71546 Cal ID: IC3-20-JAN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	7.89	98.7	90 - 110	
Nitrate	5.42	5.33	98.4	90 - 110	
Nitrite	4.87	4.82	99.0	90 - 110	
Sulfate	40.0	39.2	98.0	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4615676
Report generated: 02/04/2016 10:52

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16020058
Analytical Method: 9056
ICAL Workgroup: WG554201

Instrument ID: IC3
Initial Calibration Date: 20-JAN-16 12:54
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		6.052	5.53		
Nitrate		2.294	5.18		
Nitrite		3.035	3.51		
Sulfate		7.712	10.7		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4615677
Report generated 02/04/2016 10:52

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L16020058
Analytical Method: 9056
Instrument ID: IC3
Initial Calibration Date: 20-JAN-16 12:54
Column ID: F

Analyte	WG554201-01			WG554201-02			WG554201-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.34100000	5.529	12.0	2.05130000	5.850	8.00	1.33130000	6.009
Nitrate	16.3	7.55160000	2.154	8.13	3.57380000	2.276	5.42	2.31520000	2.342
Nitrite	14.6	5.04620000	2.896	7.31	2.48410000	2.942	4.87	1.62190000	3.004
Sulfate	120	17.9924000	6.669	60.0	8.40640000	7.137	40.0	5.39470000	7.415

INT_CAL - Modified 03/06/2008
PDF File ID: 4615677
Report generated 02/04/2016 10:52

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L16020058
Analytical Method: 9056
Instrument ID: IC3
Initial Calibration Date: 20-JAN-16 12:54
Column ID: F

Analyte	WG554201-04			WG554201-05			WG554201-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.642300000	6.228	1.00	0.158600000	6.305	0.200	0.0313000000	6.390
Nitrate	2.71	1.11950000	2.421	0.678	0.281400000	2.408	0.134	0.0618000000	2.161
Nitrite	2.44	0.787500000	3.093	0.609	0.191700000	3.176	0.122	0.0393000000	3.099
Sulfate	20.0	2.56610000	7.794	5.00	0.612300000	8.166	1.00	0.110000000	9.091

INT_CAL - Modified 03/06/2008
PDF File ID: 4615677
Report generated 02/04/2016 10:52

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16020058 Run Date: 01/20/2016 Sample ID: WG554201-07
Instrument ID: IC3 Run Time: 13:15 Method: 9056
File ID: I3 012016-09 Analyst: AED QC Key: DOD4
ICal Workgroup: WG554201 Cal ID: IC3 - 20-JAN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	8.01	mg/L	5.74	0.100	10	
Nitrate		5.42	5.22	mg/L	2.32	3.70	10	
Nitrite		4.87	4.66	mg/L	3.08	4.40	10	
Sulfate		40.0	38.1	mg/L	7.35	4.70	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4615678
Report generated 02/04/2016 10:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020058
Run Date: 02/02/2016
Sample ID: WG555959-02
Instrument ID: IC3
Run Time: 14:25
Method: 9056
File ID: I3 020216-04
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG555960
Cal ID: IC3 - 20-JAN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4615680
Report generated 02/04/2016 10:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020058
Run Date: 02/02/2016
Sample ID: WG555959-04
Instrument ID: IC3
Run Time: 18:30
Method: 9056
File ID: I3_020216-16
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG555960
Cal ID: IC3 - 20-JAN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4615680
Report generated 02/04/2016 10:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020058
Run Date: 02/02/2016
Sample ID: WG555959-06
Instrument ID: IC3
Run Time: 19:51
Method: 9056
File ID: I3_020216-20
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG555960
Cal ID: IC3 - 20-JAN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4615680
Report generated 02/04/2016 10:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058
Run Date: 02/02/2016
Sample ID: WG555959-01
Instrument ID: IC3
Run Time: 14:05
Method: 9056
File ID: I3_020216-03
Analyst: AED
QC Key: DOD4
Workgroup (AAB#): WG555960
Cal ID: IC3 - 20-JAN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.84	mg/L	5.86	1.96	10	
Nitrate		5.42	5.30	mg/L	2.28	2.17	10	
Nitrite		4.87	4.70	mg/L	3.05	3.44	10	
Sulfate		40.0	38.9	mg/L	7.20	2.81	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4615679
Report generated 02/04/2016 10:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058
Run Date: 02/02/2016
Sample ID: WG555959-03
Instrument ID: IC3
Run Time: 18:09
Method: 9056
File ID: I3 020216-15
Analyst: AED
QC Key: DOD4
Workgroup (AAB#): WG555960
Cal ID: IC3 - 20-JAN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.85	mg/L	5.86	1.94	10	
Nitrate		5.42	5.30	mg/L	2.29	2.30	10	
Nitrite		4.87	4.77	mg/L	3.00	2.00	10	
Sulfate		40.0	39.2	mg/L	7.15	2.09	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4615679
Report generated 02/04/2016 10:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020058
Run Date: 02/02/2016
Sample ID: WG555959-05
Instrument ID: IC3
Run Time: 19:31
Method: 9056
File ID: I3_020216-19
Analyst: AED
QC Key: DOD4
Workgroup (AAB#): WG555960
Cal ID: IC3 - 20-JAN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.89	mg/L	5.82	1.34	10	
Nitrate		5.42	5.33	mg/L	2.27	1.69	10	
Nitrite		4.87	4.79	mg/L	3.00	1.73	10	
Sulfate		40.0	39.3	mg/L	7.12	1.72	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4615679
Report generated 02/04/2016 10:52

2.3.1.3 Sample Data

12 L16020058-01 NO3 NO2 CL SO4 2X 1,2 AED

Sample Name:	**L16020058-01 NO3 NO2 CL SO4 2X**	*Injection Volume:*	**5000.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/02/2016 17:08**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

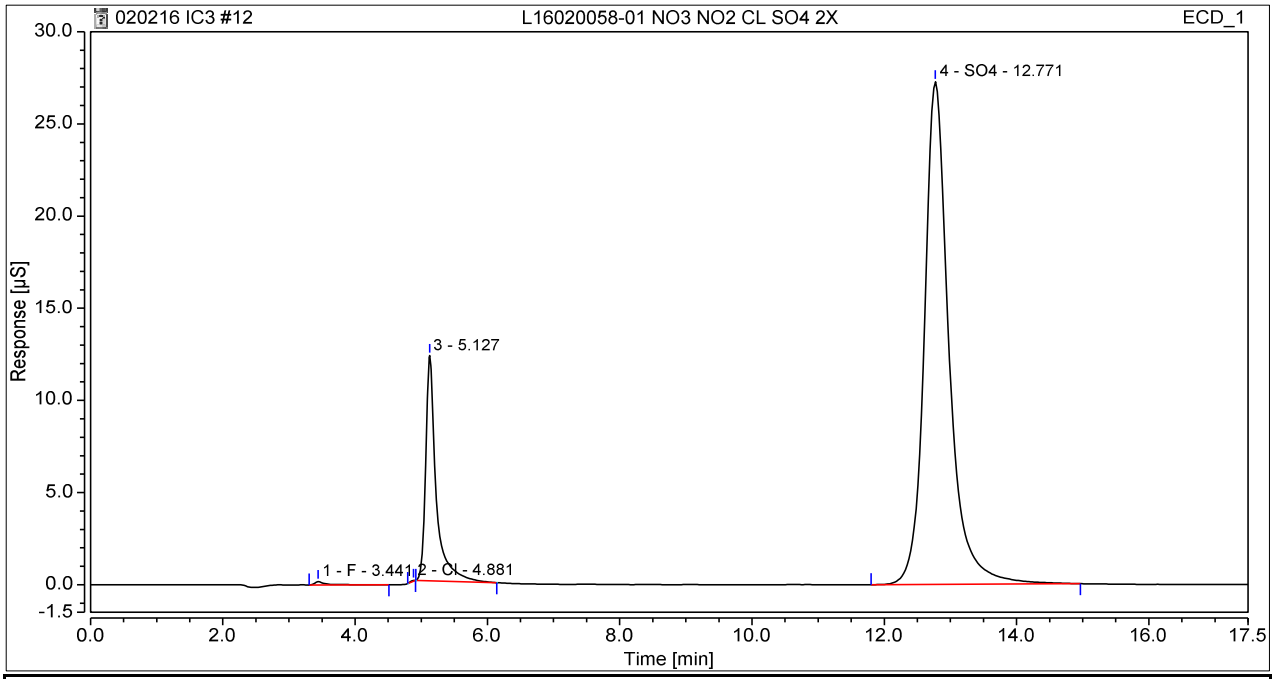

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.44	F	0.1774	0.0370	0.3	0.133	M
2	4.88	Cl	0.0554	0.0042	0.0	0.075	M
4	12.77	SO4	27.2717	11.7877	83.9	82.021	M
Total:			**27.50**	**11.83**	**84**	**82.23**	

13 L16020058-03 NO3 NO2 CL SO4 10X 1,10 AED

Sample Name:	**L16020058-03 NO3 NO2 CL SO4 10X**	*Injection Volume:*	**5000.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/02/2016 17:29**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

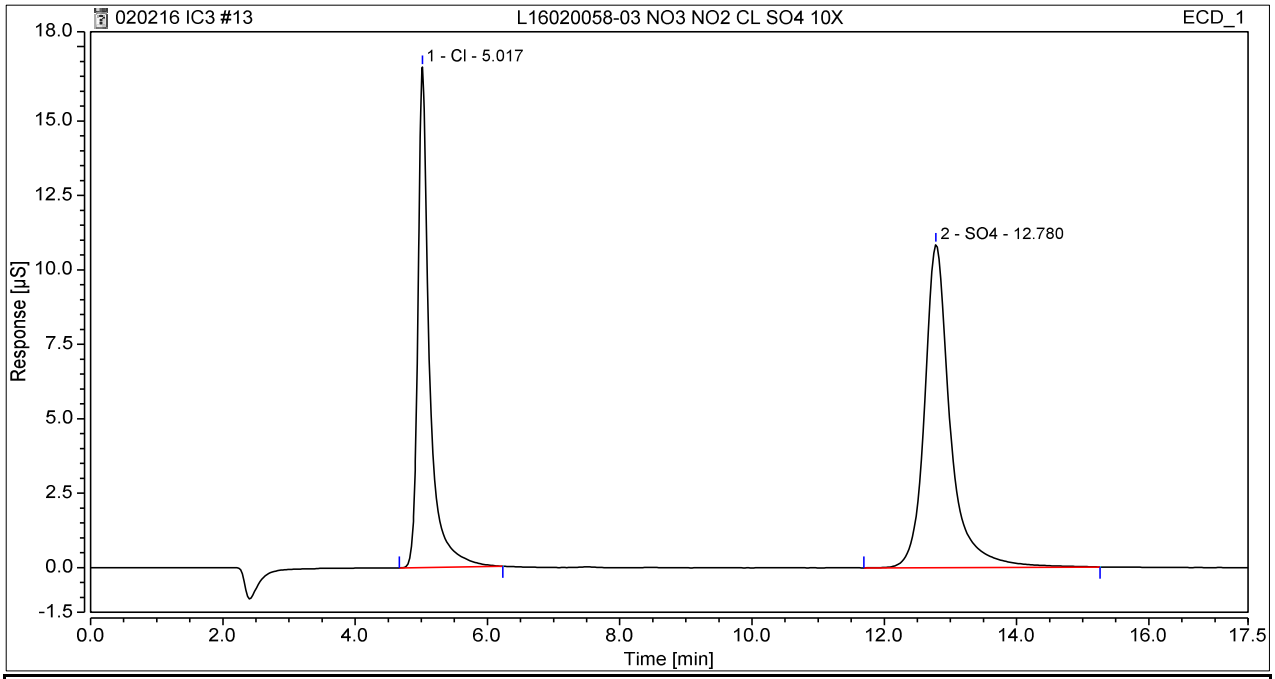

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	5.02	Cl	16.8064	3.4269	41.2	19.605	M
2	12.78	SO4	10.8557	4.8998	58.8	34.347	M
Total:			**27.66**	**8.33**	**100**	**53.95**	

14 L16020058-05 NO3 NO2 CL SO4 20X 1,20 AED

Sample Name:	**L16020058-05 NO3 NO2 CL SO4 20X**	*Injection Volume:*	**5000.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/02/2016 17:49**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

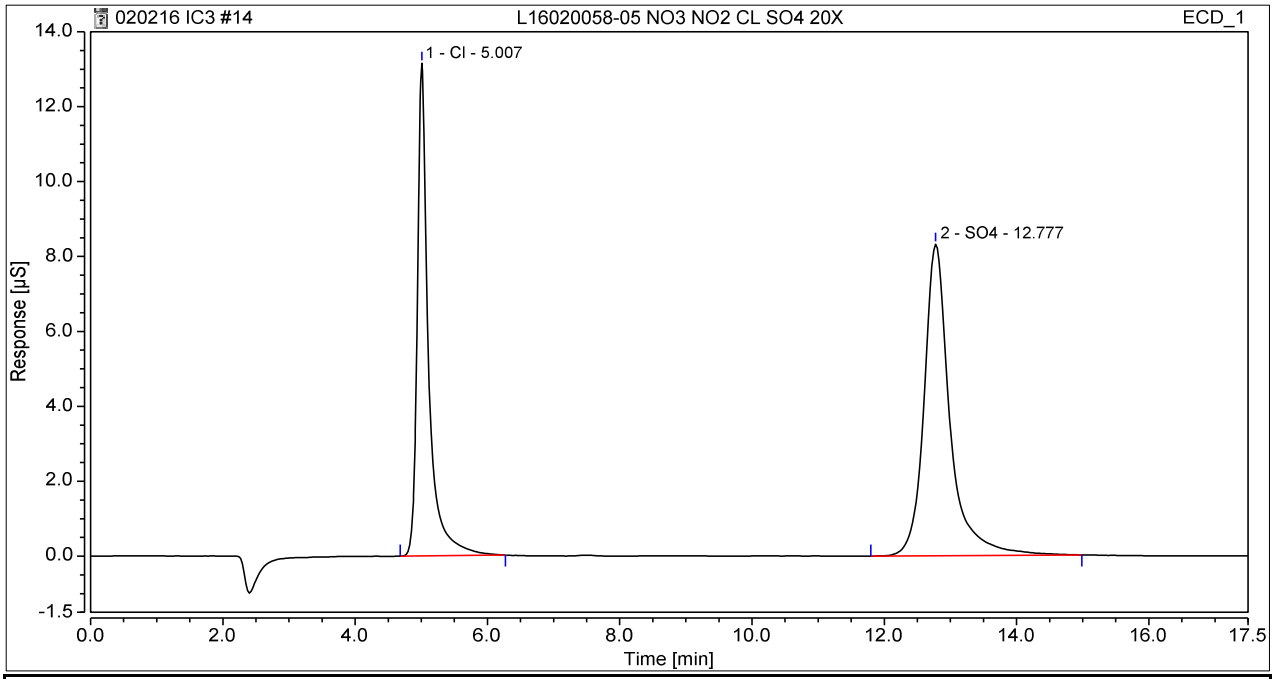

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	5.01	Cl	13.1509	2.5842	40.6	14.797	M
2	12.78	SO4	8.3221	3.7740	59.4	26.554	M
Total:			**21.47**	**6.36**	**100**	**41.35**	

17 L16020058-07 NO3 NO2 CL SO4 50X 1,50 AED

Sample Name:	**L16020058-07 NO3 NO2 CL SO4 50X**	*Injection Volume:*	**5000.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/02/2016 18:50**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

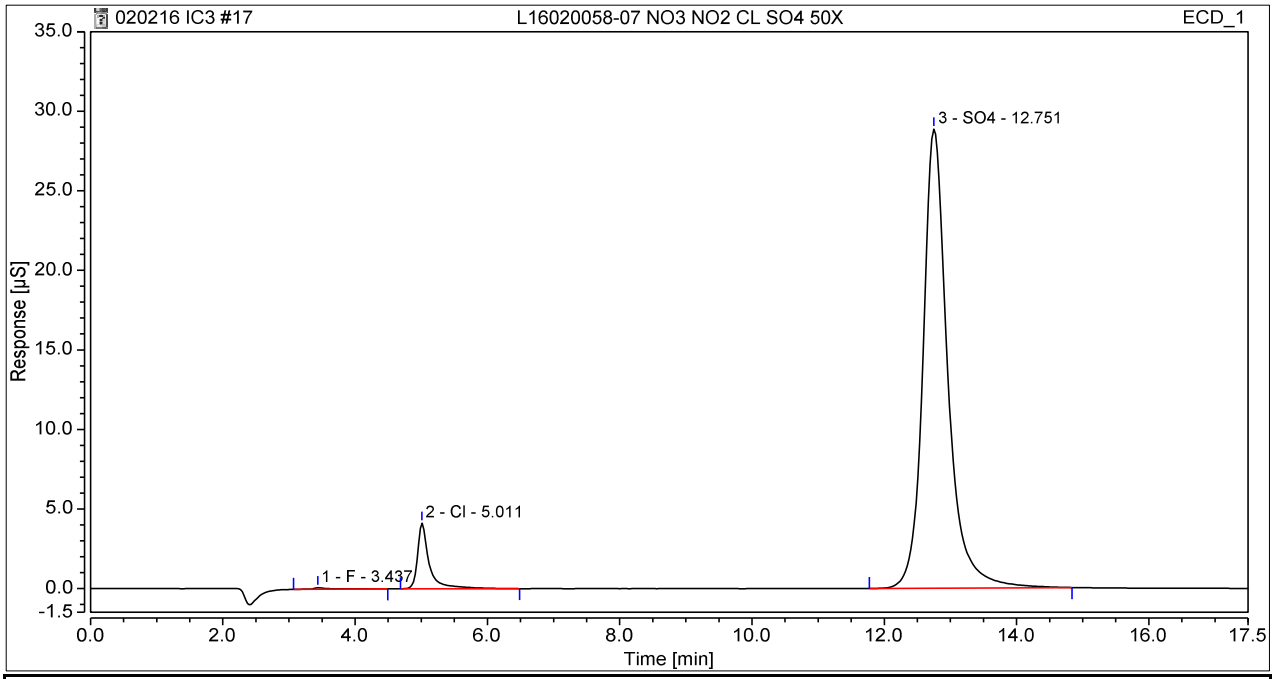

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
n.a.	3.44	F	0.1016	0.0304	0.2	0.108	M
n.a.	5.01	Cl	4.1207	0.8512	6.4	4.908	M
n.a.	12.75	SO4	28.8710	12.5115	93.4	87.032	M
Total:			**33.09**	**13.39**	**100**	**92.05**	

18 L16020058-09 NO3 NO2 CL SO4 20X 1,20 AED

Sample Name:	**L16020058-09 NO3 NO2 CL SO4 20X**	*Injection Volume:*	**5000.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/02/2016 19:11**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

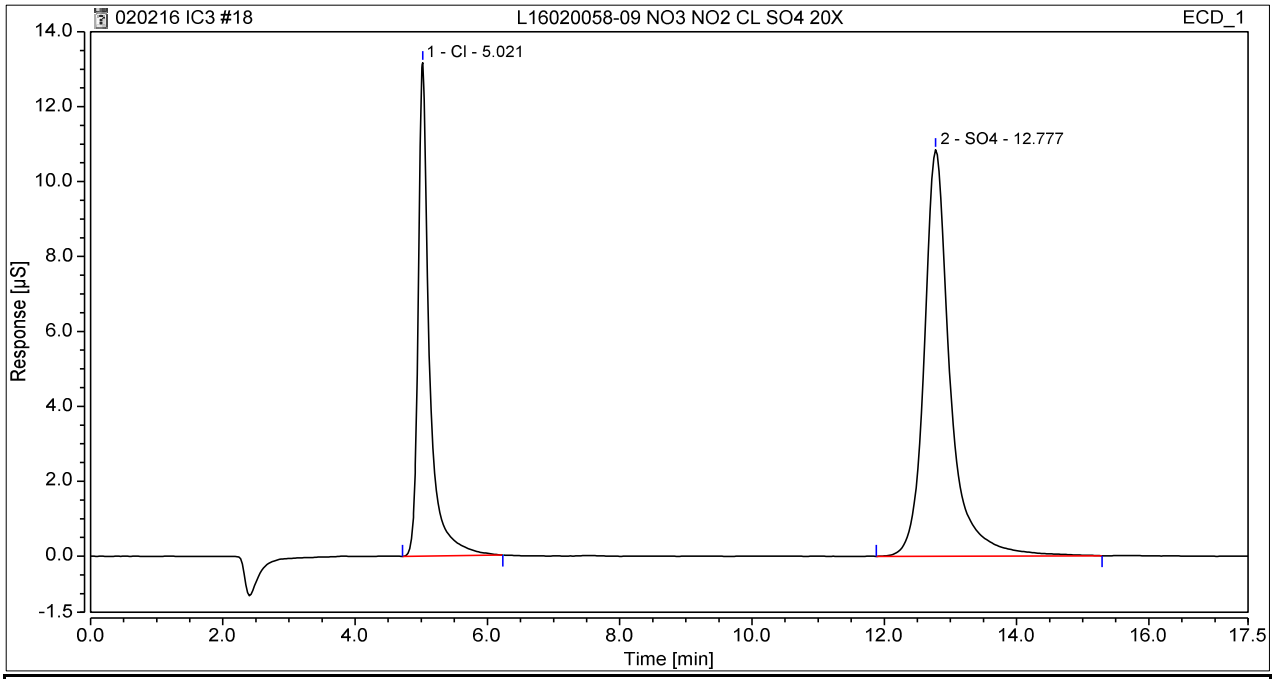

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
n.a.	5.02	Cl	13.1733	2.6102	34.7	14.945	M
n.a.	12.78	SO4	10.8509	4.9200	65.3	34.486	M
Total:			**24.02**	**7.53**	**100**	**49.43**	

2.3.1.4 Standards Data

3 WG554201-01 STD #6
1,1 AED STD71545

Sample Name:	**WG554201-01 STD #6**	*Injection Volume:*	**5000.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/20/2016 11:12**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

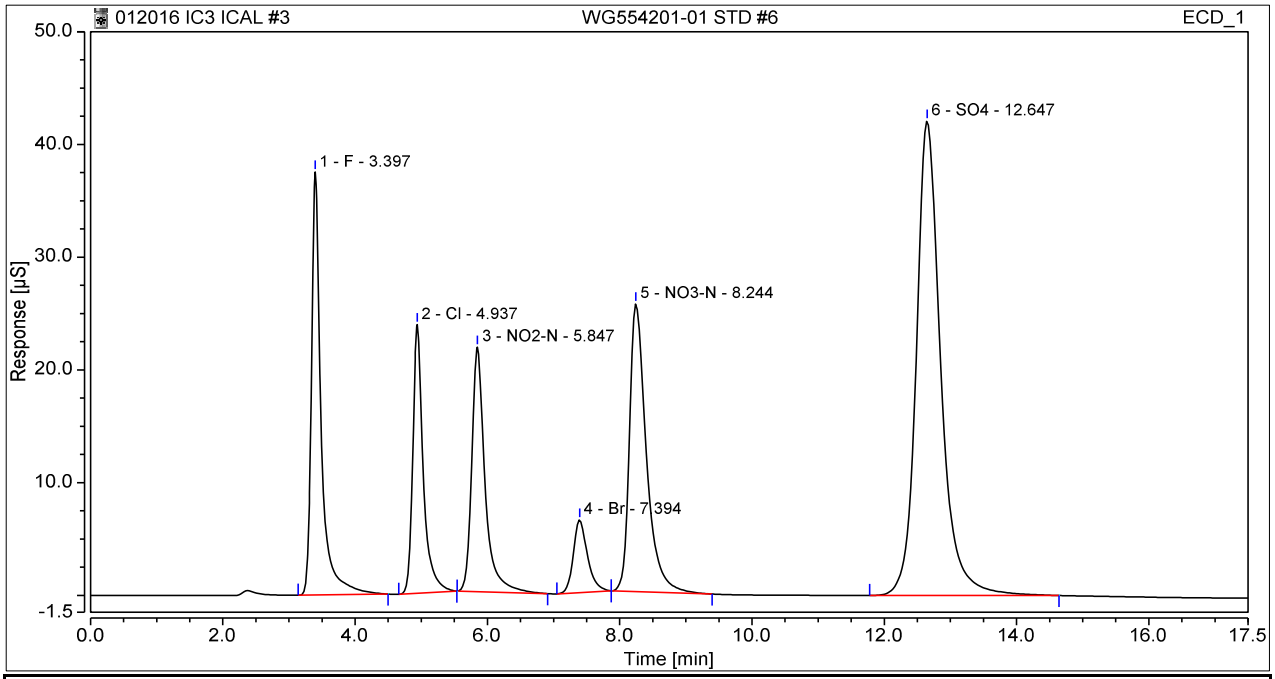

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.40	F	37.5218	6.4008	14.9	24.431	M
2	4.94	Cl	23.8310	4.3410	10.1	24.862	M
3	5.85	NO2-N	21.6922	5.0462	11.8	14.828	M
4	7.39	Br	6.4445	1.6004	3.7	24.355	M
5	8.24	NO3-N	25.5403	7.5516	17.6	16.857	M
6	12.65	SO4	42.0940	17.9924	41.9	125.291	M
Total:			**157.12**	**42.93**	**100**	**230.63**	

4 WG554201-02 STD #5
1,1 AED STD71545

Sample Name:	**WG554201-02 STD #5**	*Injection Volume:*	**5000.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/20/2016 11:33**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

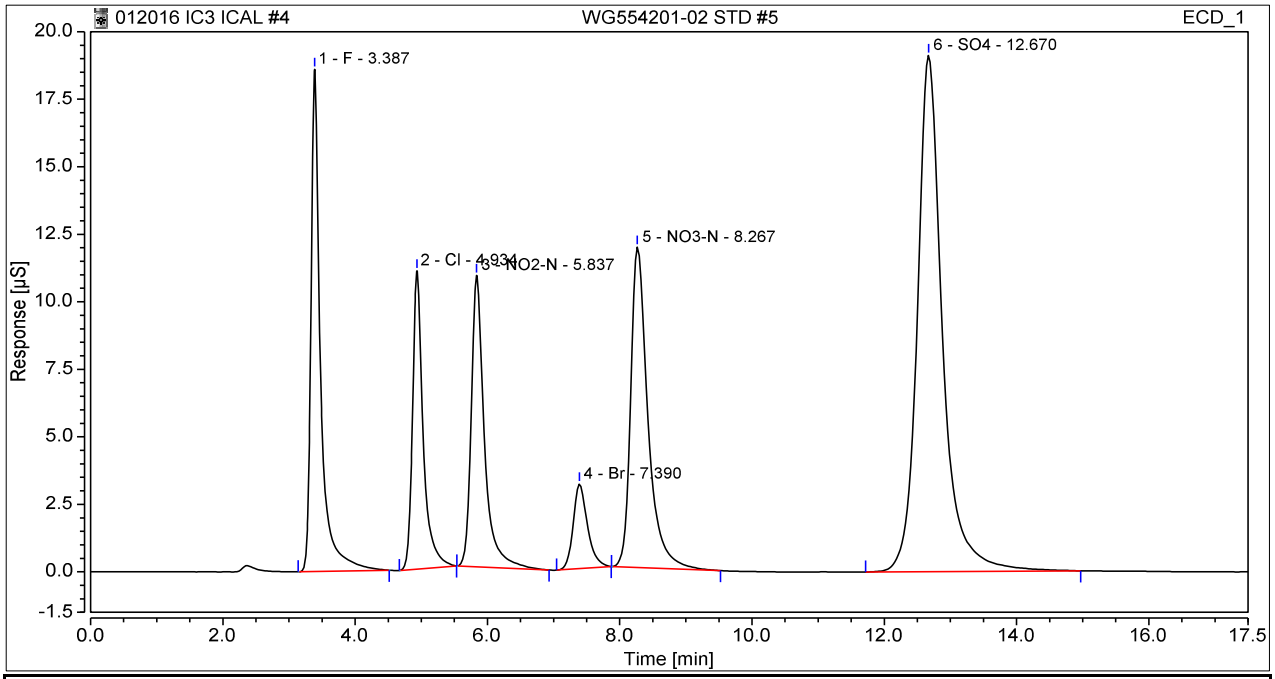

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.39	F	18.5978	3.1358	15.3	11.965	M
2	4.93	Cl	11.0420	2.0513	10.0	11.775	M
3	5.84	NO2-N	10.7898	2.4841	12.2	7.309	M
4	7.39	Br	3.1346	0.7846	3.8	11.934	M
5	8.27	NO3-N	11.8600	3.5738	17.5	7.986	M
6	12.67	SO4	19.1133	8.4064	41.1	58.763	M
Total:			**74.54**	**20.44**	**100**	**109.73**	

5 WG554201-03 STD #4
1,1 AED STD71545

Sample Name:	**WG554201-03 STD #4**	*Injection Volume:*	**5000.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/20/2016 11:53**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

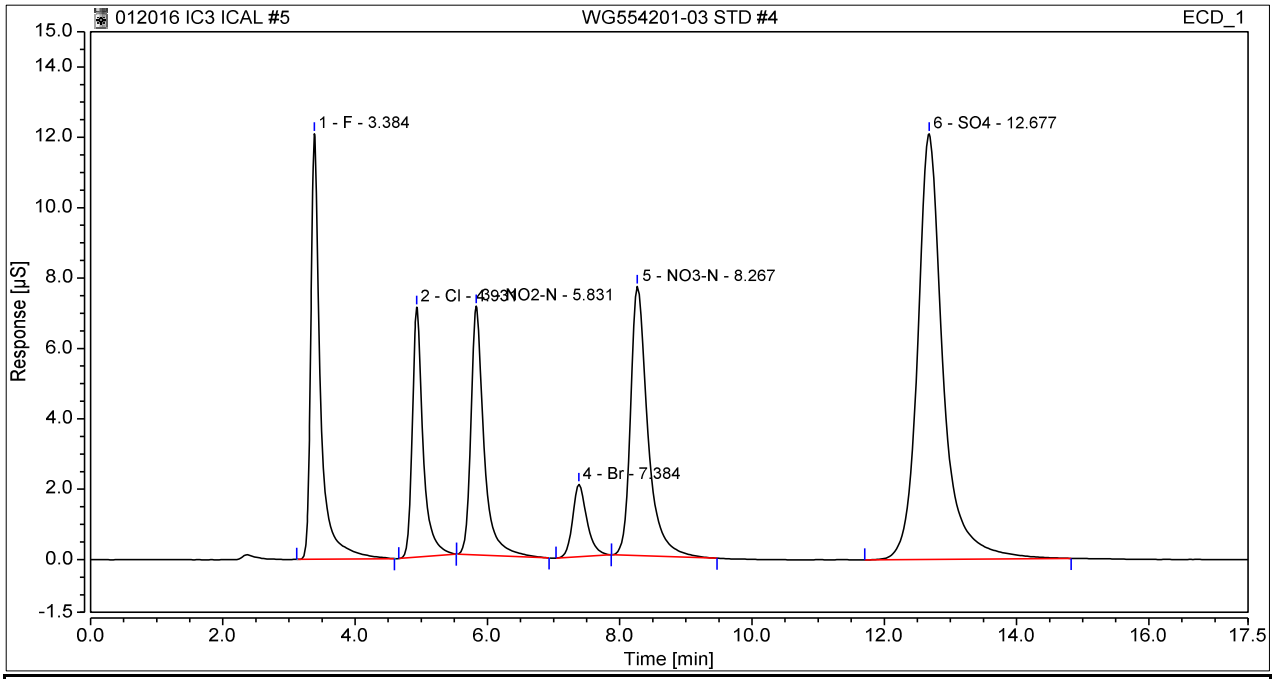

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	12.0924	2.0601	15.6	7.858	M
2	4.93	Cl	7.1073	1.3313	10.1	7.659	M
3	5.83	NO2-N	7.0712	1.6219	12.3	4.778	M
4	7.38	Br	2.0591	0.5157	3.9	7.838	M
5	8.27	NO3-N	7.6484	2.3152	17.5	5.179	M
6	12.68	SO4	12.0920	5.3947	40.7	37.861	M
Total:			**48.07**	**13.24**	**100**	**71.17**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

6 WG554201-04 STD #3
1,1 AED STD71545

Sample Name:	**WG554201-04 STD #3**	*Injection Volume:*	**5000.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/20/2016 12:14**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

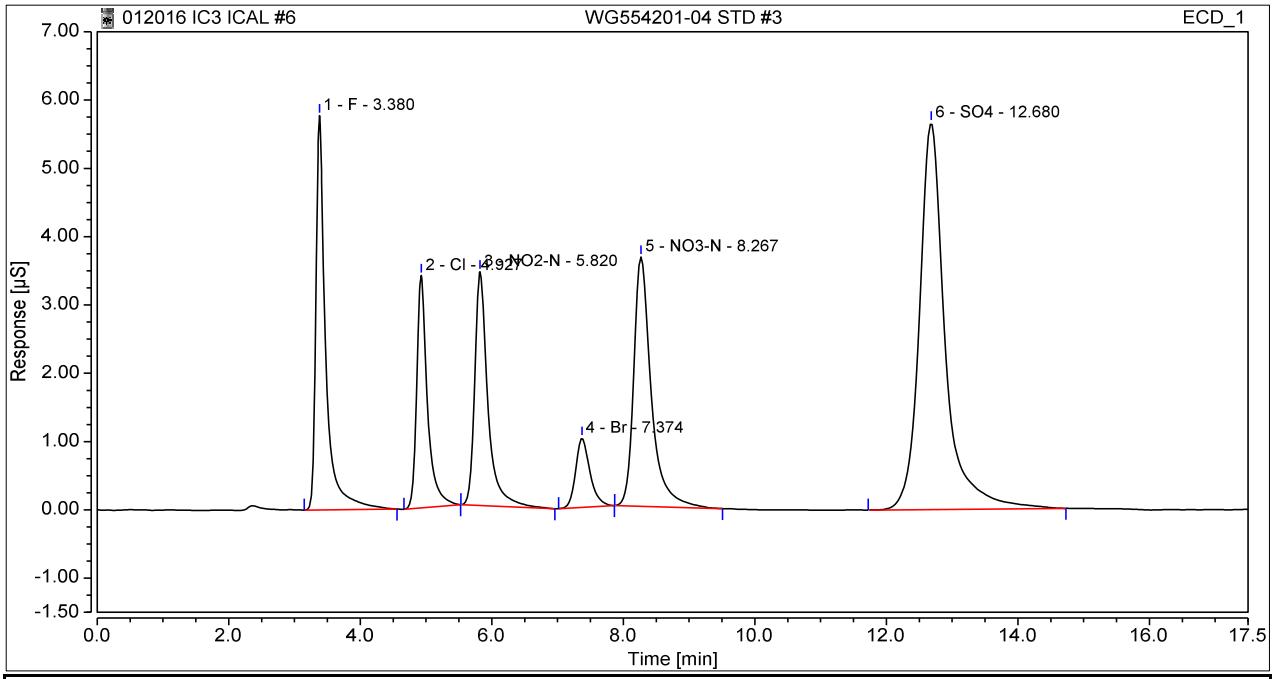

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	5.7732	0.9959	15.6	3.794	M
2	4.93	Cl	3.4027	0.6423	10.1	3.721	M
3	5.82	NO2-N	3.4258	0.7875	12.4	2.329	M
4	7.37	Br	1.0150	0.2557	4.0	3.880	M
5	8.27	NO3-N	3.6505	1.1195	17.6	2.513	M
6	12.68	SO4	5.6608	2.5661	40.3	18.230	M
Total:			**22.93**	**6.37**	**100**	**34.47**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

7 WG554201-05 STD #2
1,1 AED STD71545

Sample Name:	**WG554201-05 STD #2**	*Injection Volume:*	**5000.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/20/2016 12:34**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

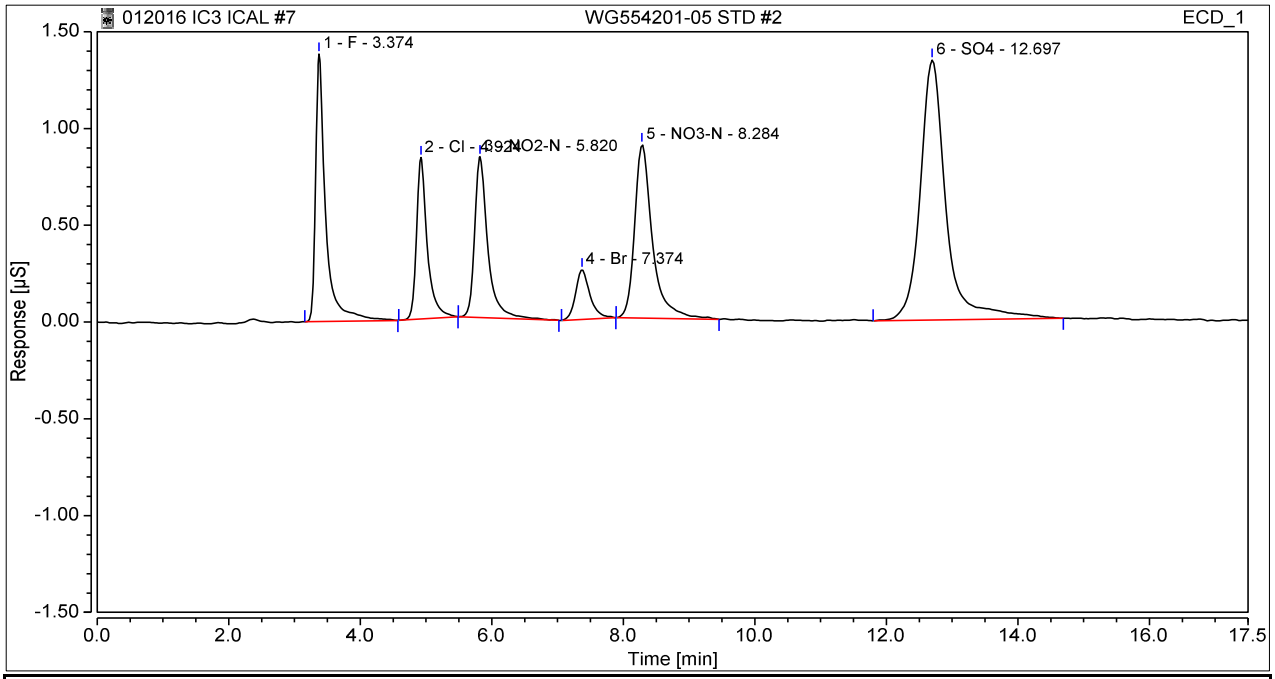

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	1.3830	0.2447	15.7	0.926	M
2	4.92	Cl	0.8338	0.1586	10.2	0.956	M
3	5.82	NO2-N	0.8311	0.1917	12.3	0.581	M
4	7.37	Br	0.2567	0.0653	4.2	0.980	M
5	8.28	NO3-N	0.8969	0.2814	18.1	0.644	M
6	12.70	SO4	1.3434	0.6123	39.4	4.671	M
Total:			**5.54**	**1.55**	**100**	**8.76**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

8 WG554201-06 STD #1
1,1 AED STD71545

Sample Name:	**WG554201-06 STD #1**	*Injection Volume:*	**5000.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/20/2016 12:54**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

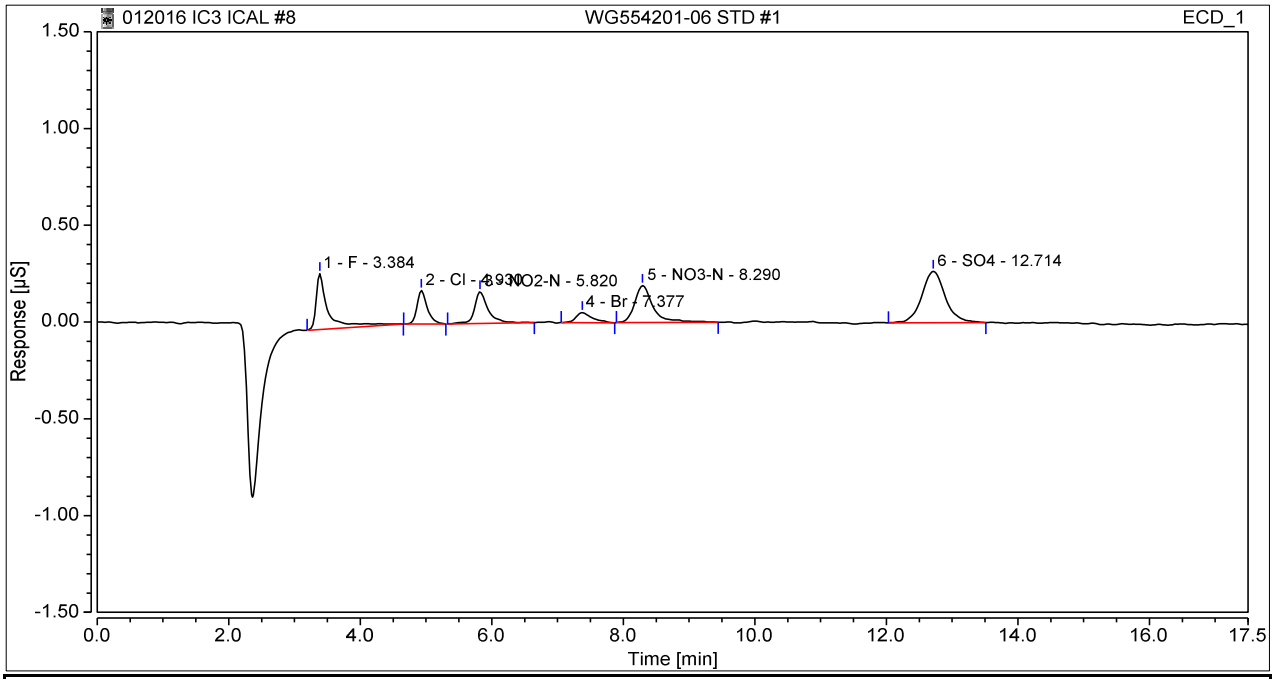

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	0.2877	0.0613	19.2	0.226	M
2	4.93	Cl	0.1732	0.0313	9.8	0.228	M
3	5.82	NO2-N	0.1632	0.0393	12.3	0.133	M
4	7.38	Br	0.0515	0.0148	4.7	0.212	M
5	8.29	NO3-N	0.1902	0.0618	19.4	0.154	M
6	12.71	SO4	0.2653	0.1100	34.5	1.184	M
Total:			**1.13**	**0.32**	**100**	**2.14**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

Calibration

Calibration Details	F		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	0.0022
Evaluation Type	Area	*Slope (C1)*	0.2619
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9993

Calibration Plot F

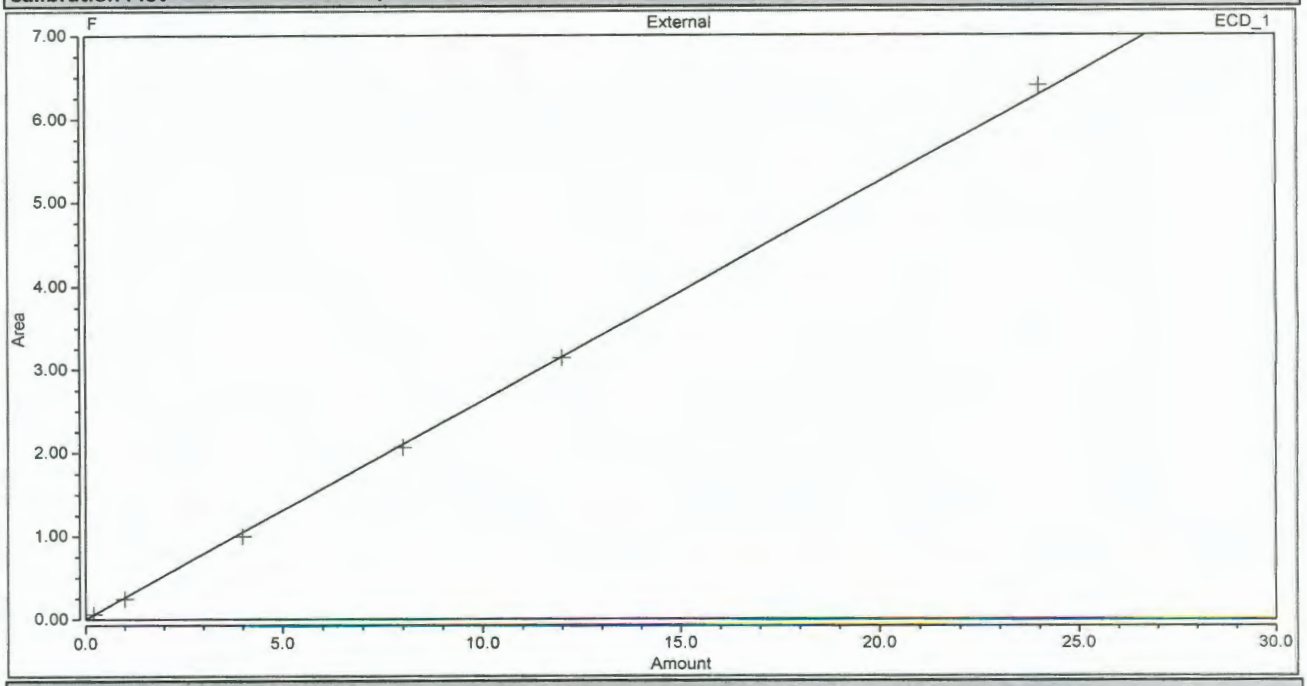

Calibration Results F

No.	Injection Name	Calibration Level	X Value ECD_1 F	Y Value ECD_1 F	Y Value ECD_1 F	Area µS*min ECD_1 F	Height µS ECD_1 F
1	WG554201-01 STD #6	06	24.0000	6.4008	6.4008	6.401	37.522
2	WG554201-02 STD #5	05	12.0000	3.1358	3.1358	3.136	18.598
3	WG554201-03 STD #4	04	8.0000	2.0601	2.0601	2.060	12.092
4	WG554201-04 STD #3	03	4.0000	0.9959	0.9959	0.996	5.773
5	WG554201-05 STD #2	02	1.0000	0.2447	0.2447	0.245	1.383
6	WG554201-06 STD #1	01	0.2000	0.0613	0.0613	0.061	0.288

Calibration

Calibration Details	Cl		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0086
Evaluation Type	Area	*Slope (C1)*	0.1749
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9983

Calibration Plot Cl

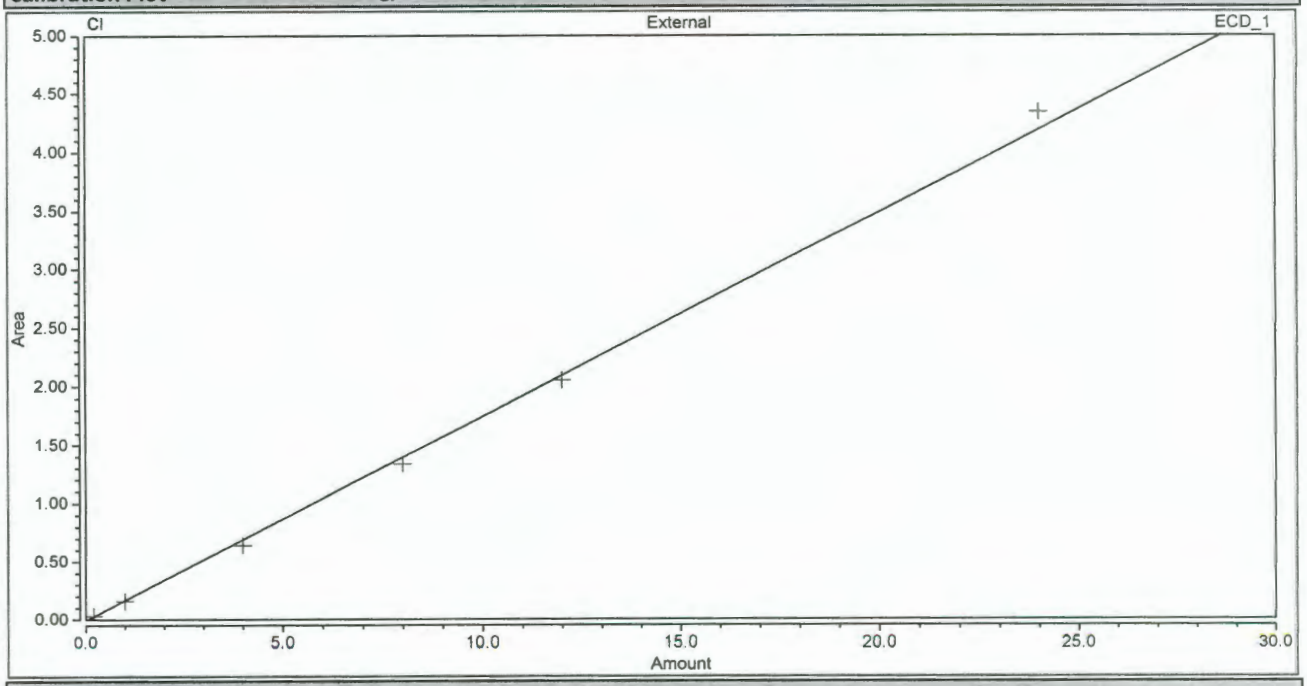

Calibration Results Cl

No.	Injection Name	Calibration Level	X Value ECD_1 Cl	Y Value ECD_1 Cl	Y Value ECD_1 Cl	Area µS*min ECD_1 Cl	Height µS ECD_1 Cl
1	WG554201-01 STD #6	06	24.0000	4.3410	4.3410	4.341	23.831
2	WG554201-02 STD #5	05	12.0000	2.0513	2.0513	2.051	11.042
3	WG554201-03 STD #4	04	8.0000	1.3313	1.3313	1.331	7.107
4	WG554201-04 STD #3	03	4.0000	0.6423	0.6423	0.642	3.403
5	WG554201-05 STD #2	02	1.0000	0.1586	0.1586	0.159	0.834
6	WG554201-06 STD #1	01	0.2000	0.0313	0.0313	0.031	0.173

Calibration

Calibration Details	NO2-N		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0061
Evaluation Type	Area	*Slope (C1)*	0.3407
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9996

Calibration Plot NO2-N

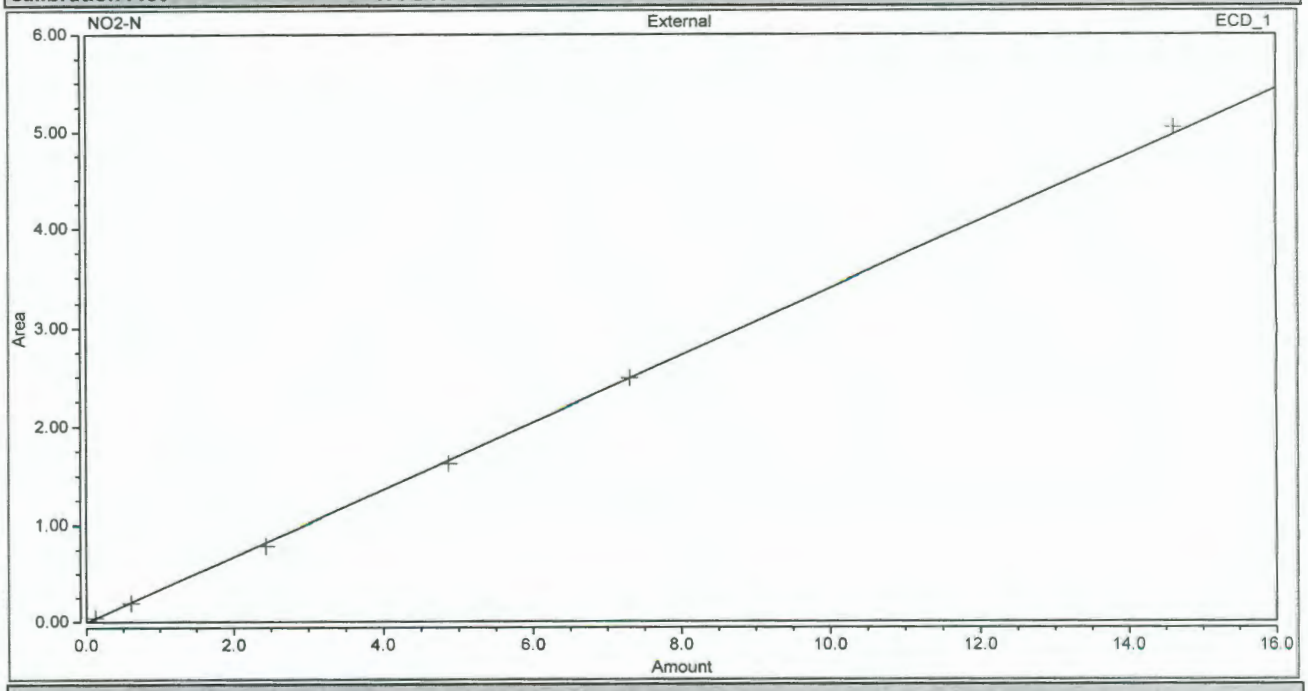

Calibration Results NO2-N

No.	Injection Name	Calibration Level	X Value ECD_1 NO2-N	Y Value ECD_1 NO2-N	Y Value ECD_1 NO2-N	Area µS*min ECD_1 NO2-N	Height µS ECD_1 NO2-N
1	WG554201-01 STD #6	06	14.6140	5.0462	5.0462	5.046	21.692
2	WG554201-02 STD #5	05	7.3070	2.4841	2.4841	2.484	10.790
3	WG554201-03 STD #4	04	4.8714	1.6219	1.6219	1.622	7.071
4	WG554201-04 STD #3	03	2.4356	0.7875	0.7875	0.788	3.426
5	WG554201-05 STD #2	02	0.6089	0.1917	0.1917	0.192	0.831
6	WG554201-06 STD #1	01	0.1218	0.0393	0.0393	0.039	0.163

Calibration

Calibration Details	Br		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	0.0009
Evaluation Type	Area	*Slope (C1)*	0.0657
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9997

Calibration Plot Br

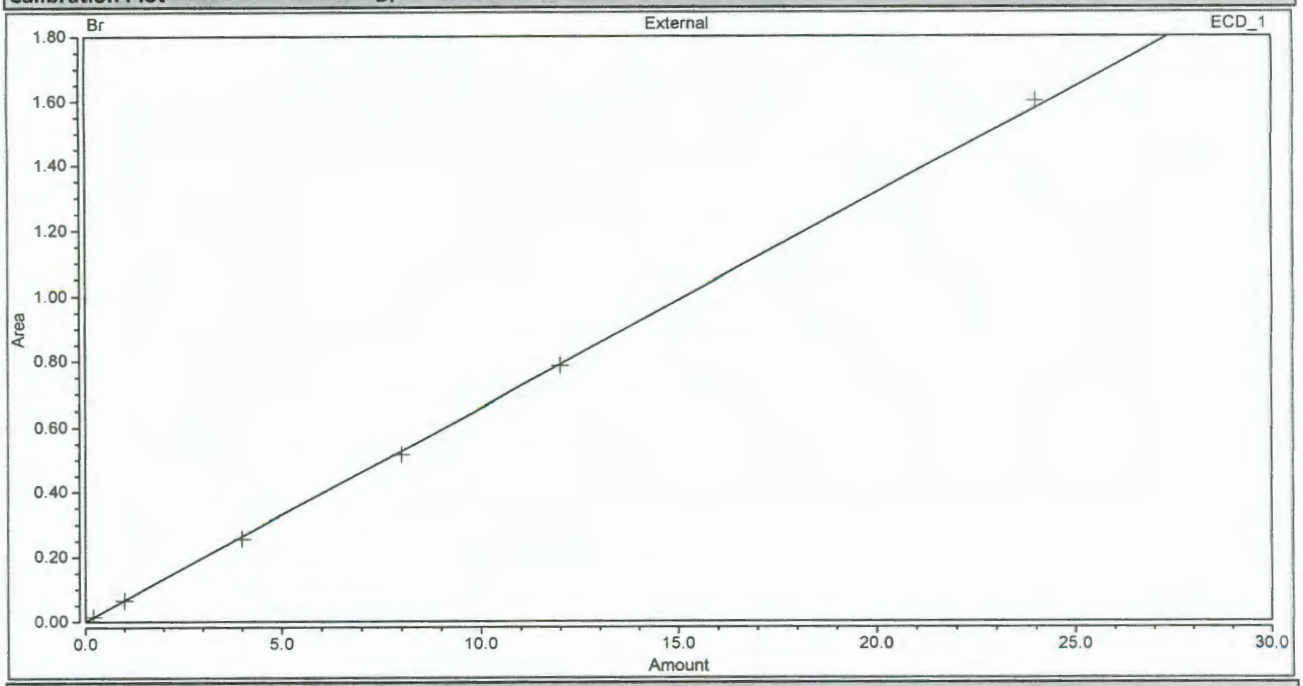

Calibration Results Br

No.	Injection Name	Calibration Level	X Value ECD_1 Br	Y Value ECD_1 Br	Y Value ECD_1 Br	Area µS*min ECD_1 Br	Height µS ECD_1 Br
1	WG554201-01 STD #6	06	24.0000	1.6004	1.6004	1.600	6.445
2	WG554201-02 STD #5	05	12.0000	0.7846	0.7846	0.785	3.135
3	WG554201-03 STD #4	04	8.0000	0.5157	0.5157	0.516	2.059
4	WG554201-04 STD #3	03	4.0000	0.2557	0.2557	0.256	1.015
5	WG554201-05 STD #2	02	1.0000	0.0653	0.0653	0.065	0.257
6	WG554201-06 STD #1	01	0.2000	0.0148	0.0148	0.015	0.051

Calibration

Calibration Details	NO3-N		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0072
Evaluation Type	Area	*Slope (C1)*	0.4484
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9982

Calibration Plot NO3-N

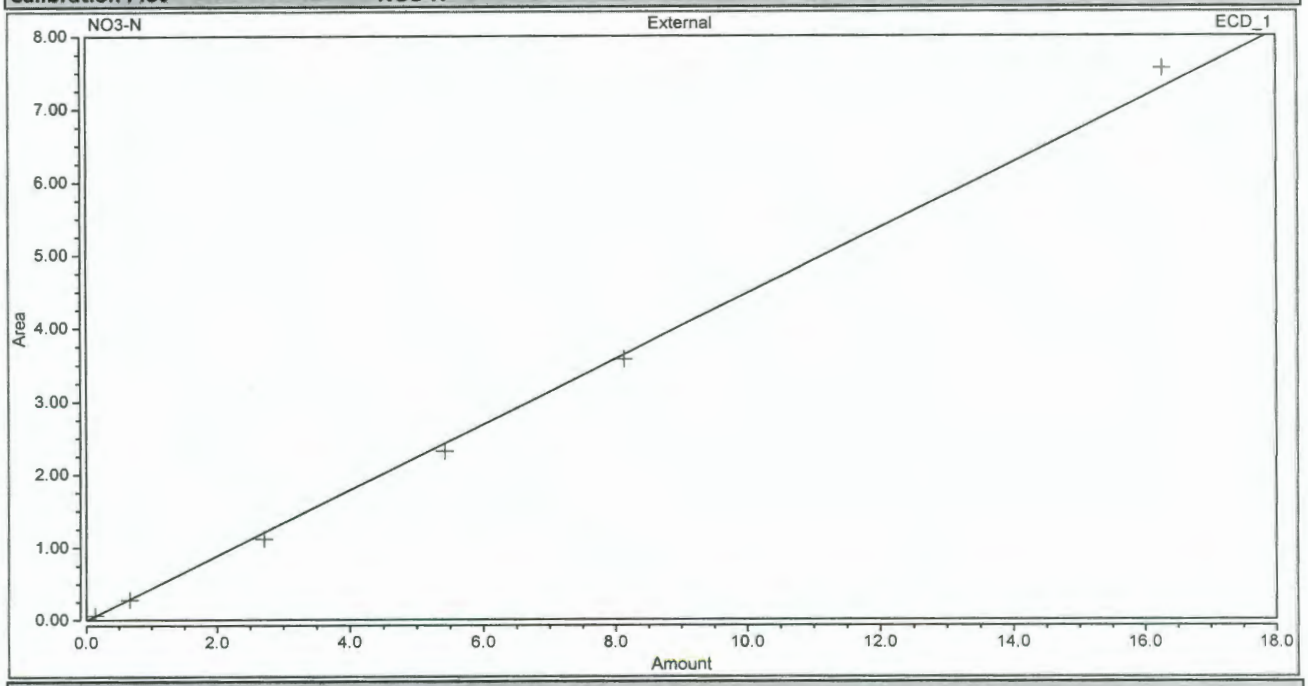

Calibration Results NO3-N

No.	Injection Name	Calibration Level	X Value ECD_1 NO3-N	Y Value ECD_1 NO3-N	Y Value ECD_1 NO3-N	Area µS*min ECD_1 NO3-N	Height µS ECD_1 NO3-N
1	WG554201-01 STD #6	06	16.2644	7.5516	7.5516	7.552	25.540
2	WG554201-02 STD #5	05	8.1322	3.5738	3.5738	3.574	11.860
3	WG554201-03 STD #4	04	5.4216	2.3152	2.3152	2.315	7.648
4	WG554201-04 STD #3	03	2.7108	1.1195	1.1195	1.119	3.651
5	WG554201-05 STD #2	02	0.6675	0.2814	0.2814	0.281	0.897
6	WG554201-06 STD #1	01	0.1355	0.0618	0.0618	0.062	0.190

Calibration

Calibration Details	SO4		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0607
Evaluation Type	Area	*Slope (C1)*	0.1441
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9973

Calibration Plot SO4

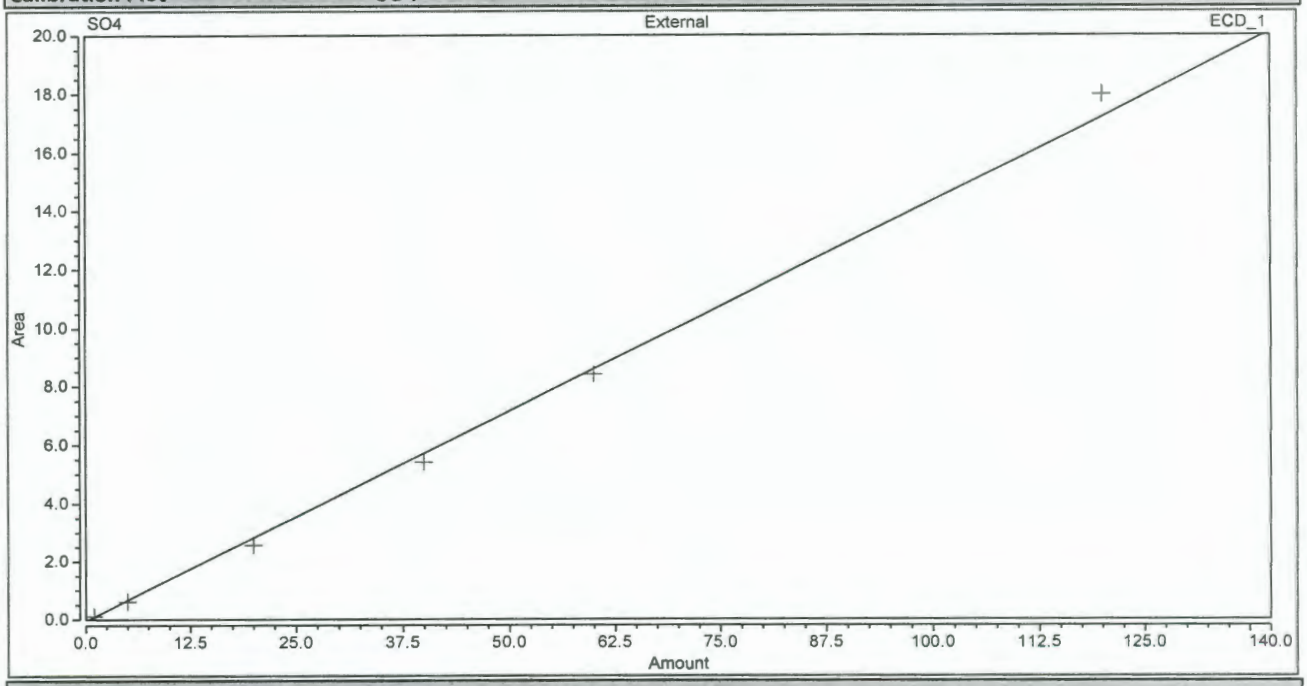

Calibration Results SO4

No.	Injection Name	Calibration Level	X Value ECD_1 SO4	Y Value ECD_1 SO4	Y Value ECD_1 SO4	Area µS*min ECD_1 SO4	Height µS ECD_1 SO4
1	WG554201-01 STD #6	06	120.0000	17.9924	17.9924	17.992	42.094
2	WG554201-02 STD #5	05	60.0000	8.4064	8.4064	8.406	19.113
3	WG554201-03 STD #4	04	40.0000	5.3947	5.3947	5.395	12.092
4	WG554201-04 STD #3	03	20.0000	2.5661	2.5661	2.566	5.661
5	WG554201-05 STD #2	02	5.0000	0.6123	0.6123	0.612	1.343
6	WG554201-06 STD #1	01	1.0000	0.1100	0.1100	0.110	0.265

9 WG554201-07 SSCV
1,1 AED STD71546

Sample Name:	**WG554201-07 SSCV**	*Injection Volume:*	**5000.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**Check Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/20/2016 13:15**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

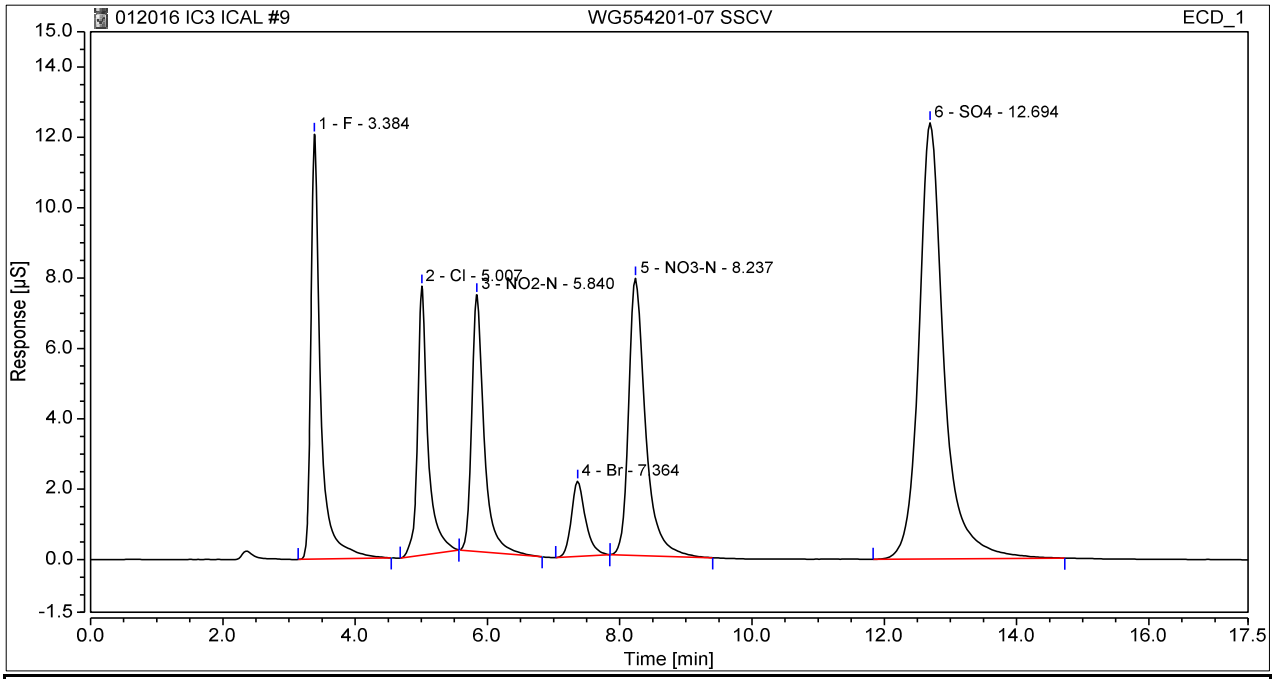

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	12.0738	2.0666	15.5	7.882	M
2	5.01	Cl	7.6400	1.3941	10.4	8.018	M
3	5.84	NO2-N	7.2923	1.5807	11.8	4.657	M
4	7.36	Br	2.1326	0.5263	3.9	8.000	M
5	8.24	NO3-N	7.8782	2.3381	17.5	5.230	M
6	12.69	SO4	12.3941	5.4430	40.8	38.196	M
Total:			**49.41**	**13.35**	**100**	**71.98**	

9 WG554201-07 SSCV
1,1 AED STD71546

Sequence Details

Name:	**WG554201-07 SSCV**	*Run Time:*	**17.50**
Vial Number:	**9**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**1/20/2016 13:15**	*Sample Weight:*	**1.0000**

WG554201-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.882425767**	**-1.469677906**	**PASS**
CL	8.00	**8.018006396**	**0.2250799516**	**PASS**
NO2	4.87	**4.657309982**	**-4.367351509**	**PASS**
BR	8.00	**7.999780885**	**-0.00273893418**	**PASS**
NO3	5.42	**5.23015**	**-3.521217705**	**PASS**
SO4	40.00	**38.1961552**	**-4.509611997**	**PASS**

3 WG555959-01 ANION CCV
1,1 AED STD71545

Sample Name:	**WG555959-01 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/02/2016 14:05**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

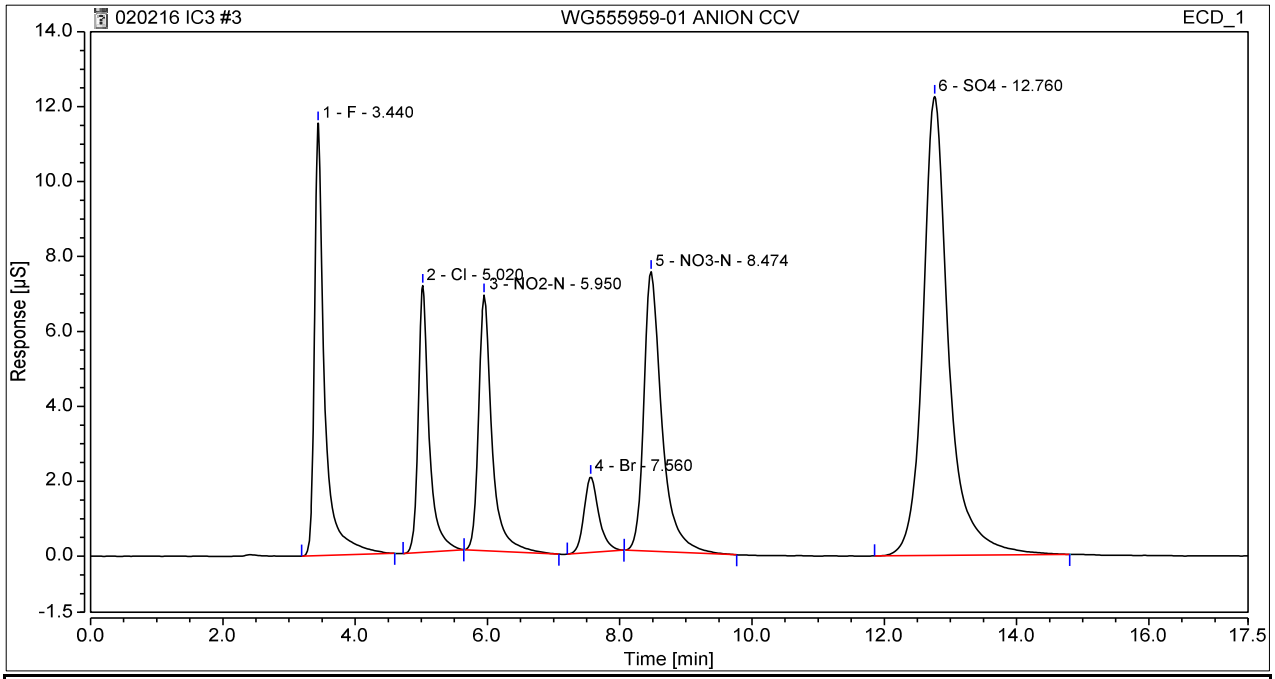

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.44	F	11.5464	2.0535	15.2	7.828	M
2	5.02	Cl	7.1222	1.3655	10.1	7.843	M
3	5.95	NO2-N	6.8248	1.5971	11.9	4.704	M
4	7.56	Br	2.0260	0.5248	3.9	7.975	M
5	8.47	NO3-N	7.4682	2.3747	17.6	5.304	M
6	12.76	SO4	12.2514	5.5544	41.2	38.877	M
Total:			**47.24**	**13.47**	**100**	**72.53**	

3 WG555959-01 ANION CCV
1,1 AED STD71545

Sequence Details

Name:	**WG555959-01 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**3**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/2/2016 14:05**	*Sample Weight:*	**1.0000**

WG555959-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.827836576**	**-2.152042806**	**PASS**
CL	8.00	**7.842570031**	**-1.967874616**	**PASS**
NO2	4.87	**4.703610506**	**-3.416622046**	**PASS**
BR	8.00	**7.9754683**	**-0.3066462548**	**PASS**
NO3	5.42	**5.303518154**	**-2.167561737**	**PASS**
SO4	40.00	**38.87747249**	**-2.806318775**	**PASS**

15 WG555959-03 ANION CCV
1,1 AED STD71545

Sample Name:	**WG555959-03 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/02/2016 18:09**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

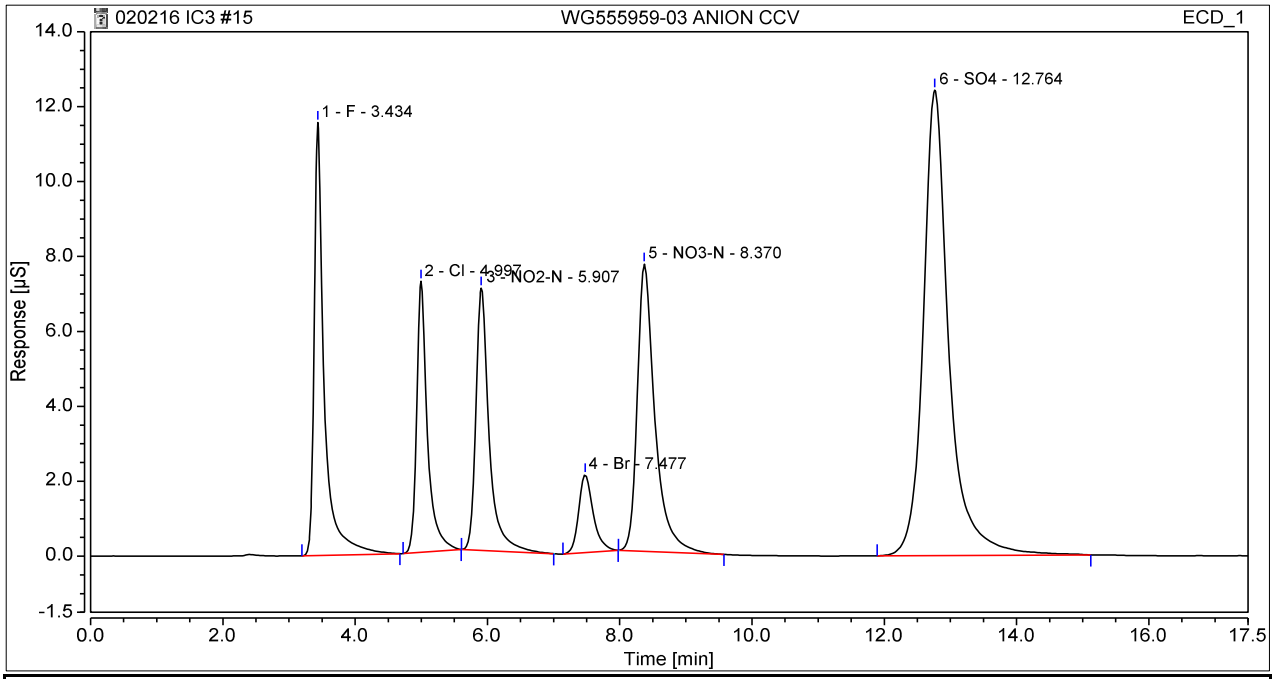

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
n.a.	3.43	F	11.5618	2.0430	15.1	7.788	M
n.a.	5.00	Cl	7.2344	1.3660	10.1	7.845	M
n.a.	5.91	NO2-N	7.0002	1.6212	12.0	4.774	M
n.a.	7.48	Br	2.0725	0.5299	3.9	8.053	M
n.a.	8.37	NO3-N	7.6661	2.3718	17.5	5.297	M
n.a.	12.76	SO4	12.4263	5.5957	41.4	39.163	M
Total:			**47.96**	**13.53**	**100**	**72.92**	

15 WG555959-03 ANION CCV
1,1 AED STD71545

Sequence Details

Name:	**WG555959-03 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**15**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/2/2016 18:09**	*Sample Weight:*	**1.0000**

WG555959-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.787697398**	**-2.653782519**	**PASS**
CL	8.00	**7.845136355**	**-1.935795558**	**PASS**
NO2	4.87	**4.774387526**	**-1.963295161**	**PASS**
BR	8.00	**8.053297239**	**0.6662154913**	**PASS**
NO3	5.42	**5.296968136**	**-2.28841077**	**PASS**
SO4	40.00	**39.16313426**	**-2.092164346**	**PASS**

19 WG555959-05 ANION CCV
1,1 AED STD71545

Sample Name:	**WG555959-05 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/02/2016 19:31**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

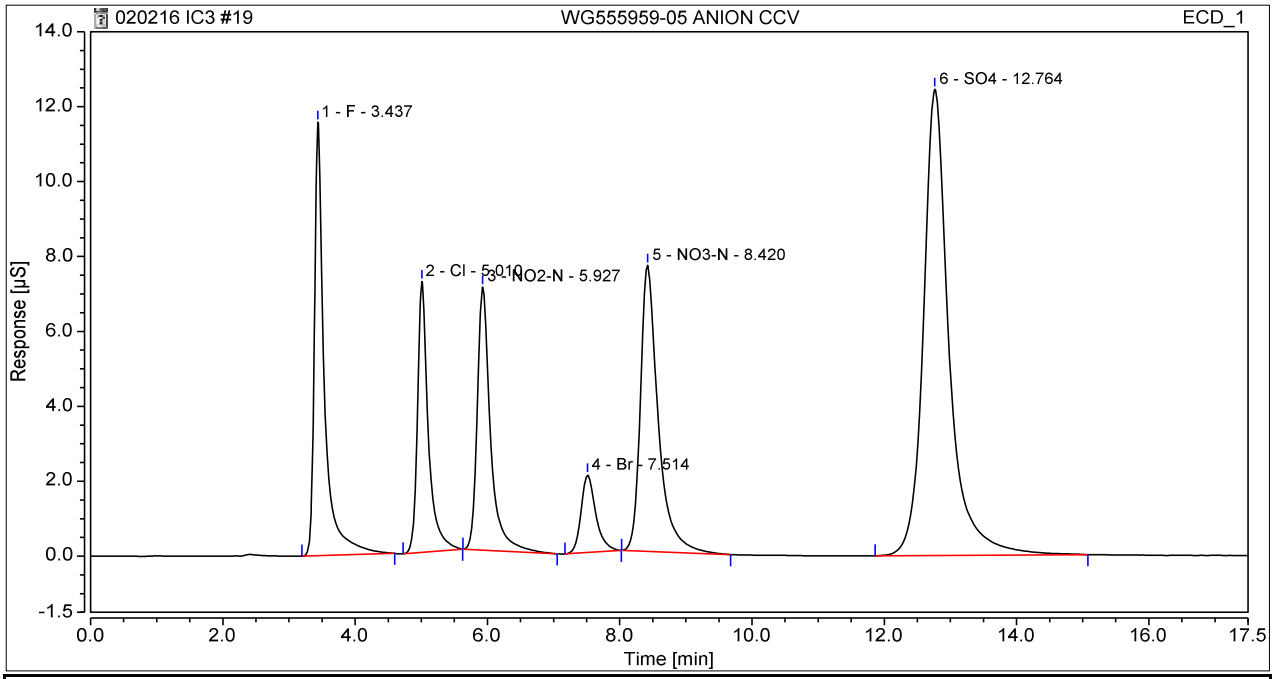

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
n.a.	3.44	F	11.5717	2.0417	15.0	7.783	M
n.a.	5.01	Cl	7.2281	1.3743	10.1	7.893	M
n.a.	5.93	NO2-N	7.0213	1.6257	12.0	4.787	M
n.a.	7.51	Br	2.0702	0.5332	3.9	8.103	M
n.a.	8.42	NO3-N	7.6333	2.3867	17.6	5.330	M
n.a.	12.76	SO4	12.4444	5.6171	41.4	39.311	M
Total:			**47.97**	**13.58**	**100**	**73.21**	

19 WG555959-05 ANION CCV
1,1 AED STD71545

Sequence Details

Name:	**WG555959-05 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**19**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/2/2016 19:31**	*Sample Weight:*	**1.0000**

WG555959-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.782506936**	**-2.718663303**	**PASS**
CL	8.00	**7.892722503**	**-1.340968718**	**PASS**
NO2	4.87	**4.787318956**	**-1.697762702**	**PASS**
BR	8.00	**8.103366166**	**1.292077069**	**PASS**
NO3	5.42	**5.330095466**	**-1.677205422**	**PASS**
SO4	40.00	**39.31145768**	**-1.7213558**	**PASS**

4 WG555959-02 ANION CCB
1,1 AED

Sample Name:	**WG555959-02 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/02/2016 14:25**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

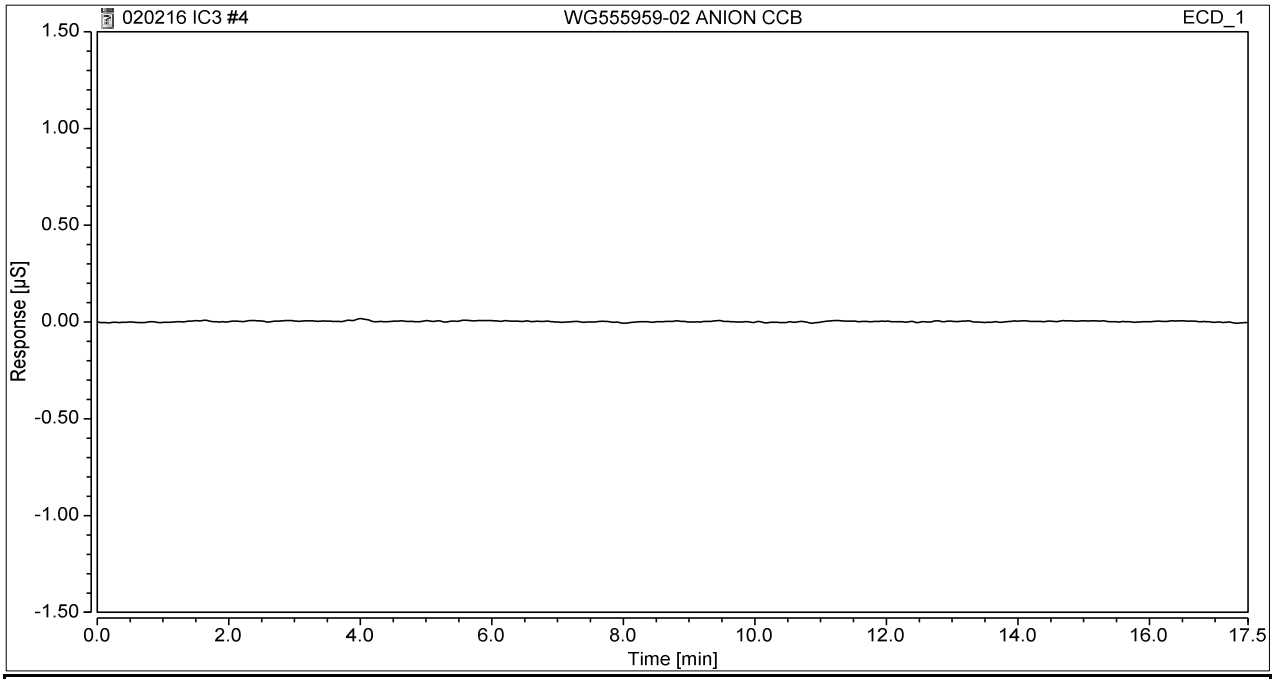

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

16 WG555959-04 ANION CCB
1,1 AED

Sample Name:	**WG555959-04 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/02/2016 18:30**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

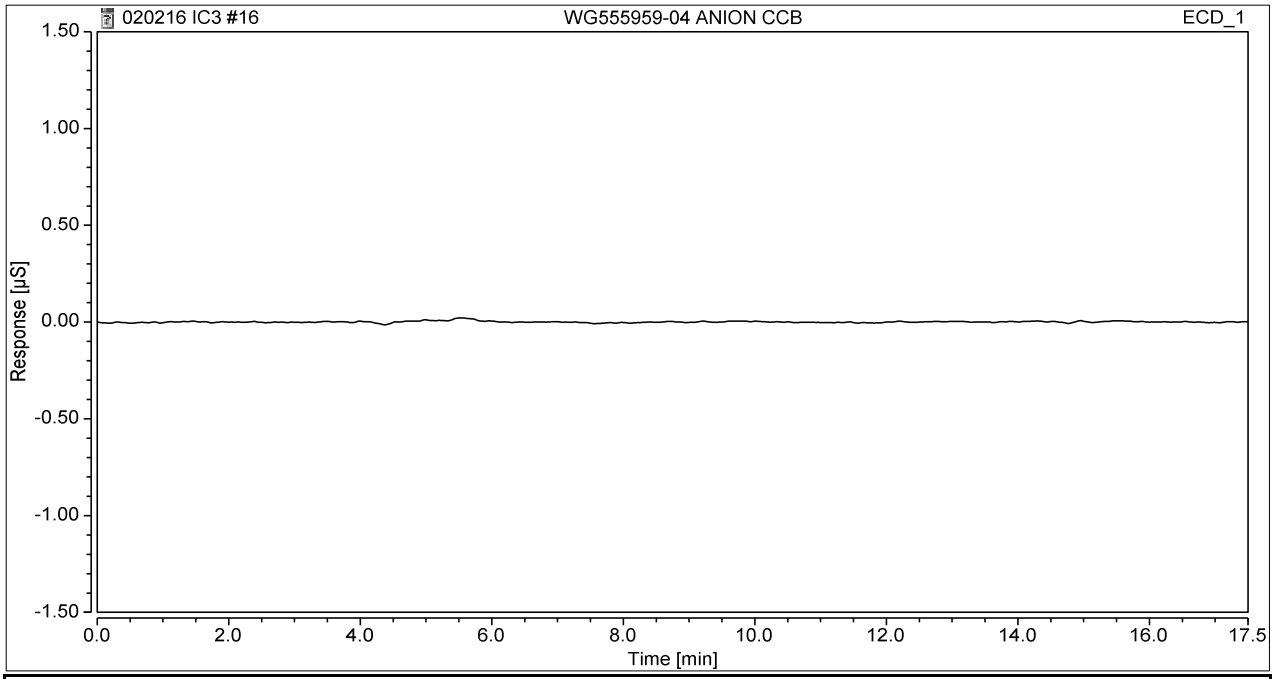

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

20 WG555959-06 ANION CCB
1,1 AED

Sample Name:	**WG555959-06 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/02/2016 19:51**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

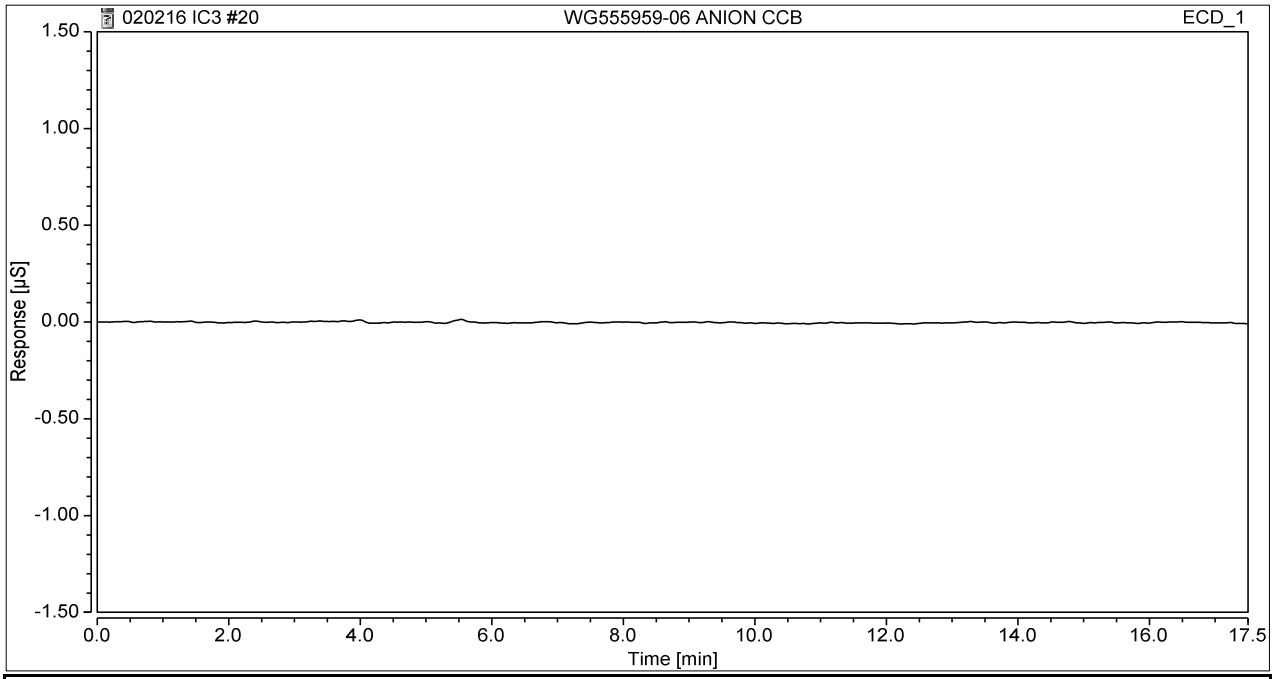

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AS14A-4mm

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	3/2/2015	3/4/2015	3/5/2015
File #	WG514023-02	WG514341-02	WG514431-02
Time	23:15	18:47	17:41

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.33	3.33	3.32	0.017
Cl	4.75	4.78	4.76	0.043
NO2-N	5.54	5.59	5.56	0.082
Br	6.86	6.98	6.93	0.180
NO3-N	7.59	7.73	7.67	0.222
SO4	12.42	12.38	12.34	0.116

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.3.1.5 Raw QC Data

5 WG555960-01 BLANK
1,1 AED

Sample Name:	**WG555960-01 BLANK**	*Injection Volume:*	**5000.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/02/2016 14:46**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

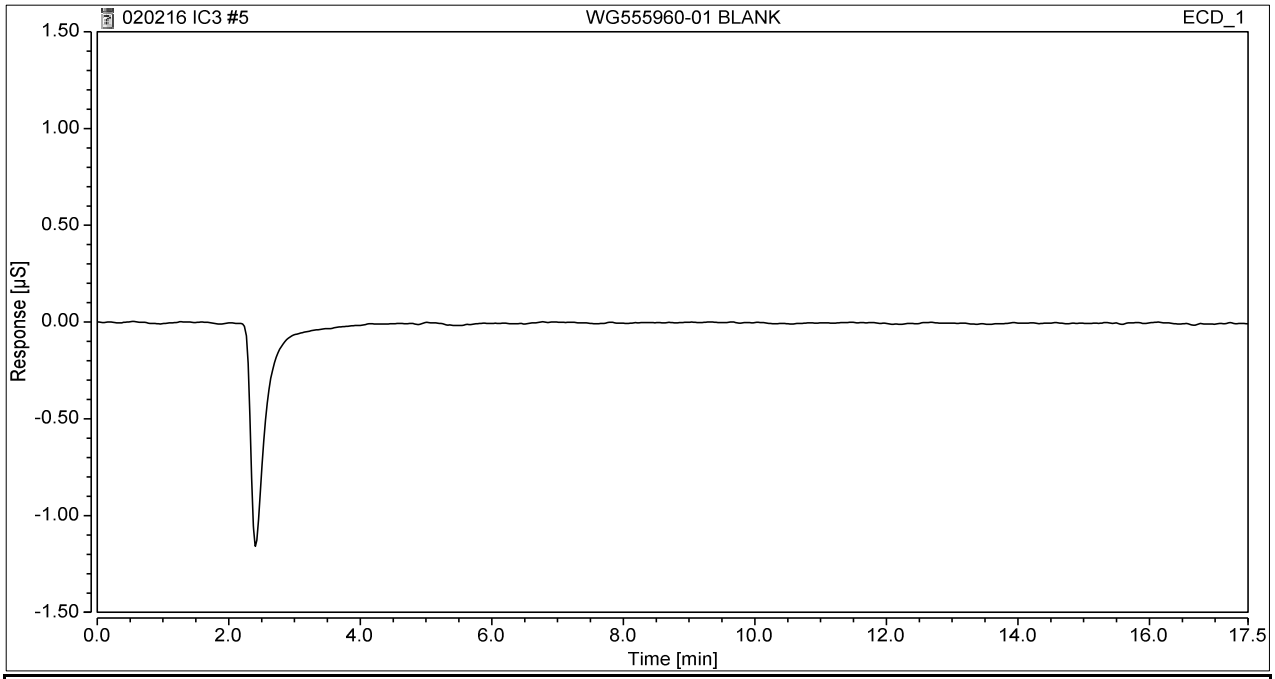

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

6 WG555960-02 ANION LCS
1,1 AED

Sample Name:	**WG555960-02 ANION LCS**	*Injection Volume:*	**5000.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_012016_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/02/2016 15:06**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

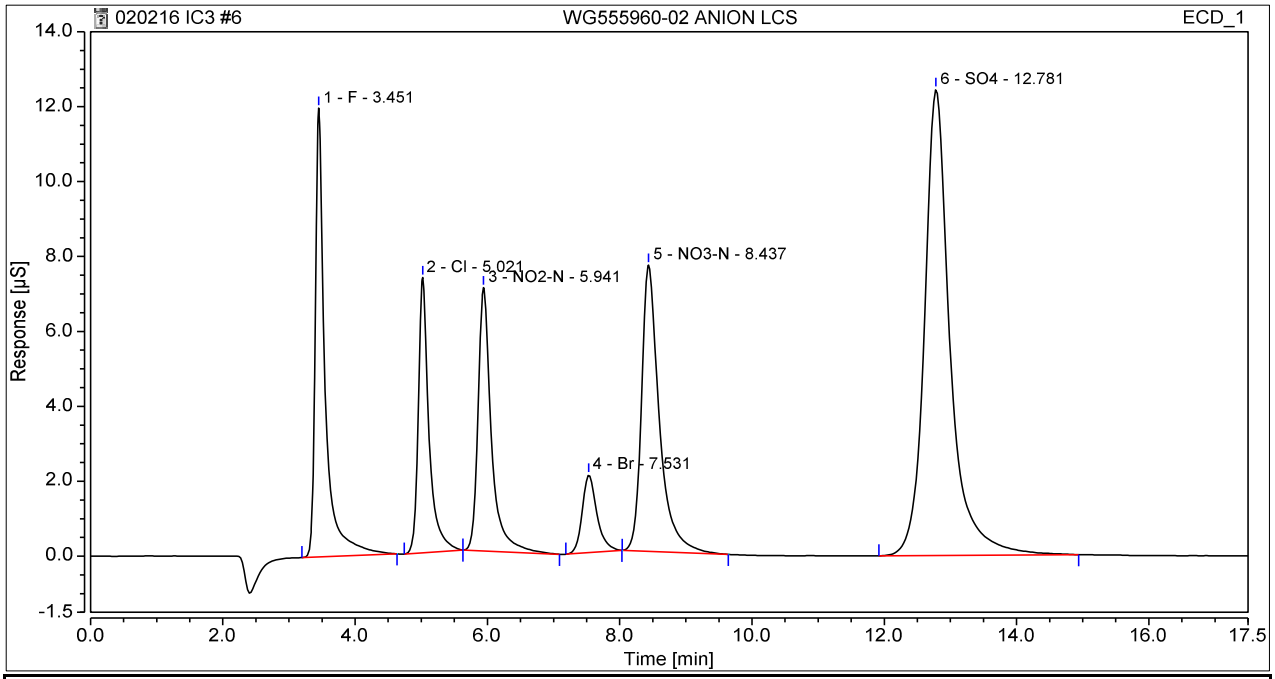

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.45	F	11.9833	2.0766	15.3	7.916	M
2	5.02	Cl	7.3525	1.3744	10.1	7.893	M
3	5.94	NO2-N	7.0267	1.6375	12.0	4.822	M
4	7.53	Br	2.0755	0.5327	3.9	8.095	M
5	8.44	NO3-N	7.6414	2.3861	17.5	5.329	M
6	12.78	SO4	12.4449	5.6004	41.2	39.196	M
Total:			**48.52**	**13.61**	**100**	**73.25**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

2.3.2 Alkalinity Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	46WW02-020116	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/05/2016 09:51
Workgroup #:	WG556354	**Analyst:**	DCM	**Run Date:**	02/05/2016 09:59
Collect Date:	02/01/2016 08:10	**Dilution:**	1	**File ID:**	S2160205002.020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	37.6	J	40.0	20.0	10.0

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	46WW11-020116	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/05/2016 09:51
Workgroup #:	WG556354	**Analyst:**	DCM	**Run Date:**	02/05/2016 10:00
Collect Date:	02/01/2016 09:25	**Dilution:**	1	**File ID:**	S2160205002.023
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	63.7		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16020058-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	LHSMW19-020116	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/05/2016 09:51
Workgroup #:	WG556354	**Analyst:**	DCM	**Run Date:**	02/05/2016 10:01
Collect Date:	02/01/2016 10:30	**Dilution:**	2	**File ID:**	S2160205002.024
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	319		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L16020058-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	46WW05-020116	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/05/2016 09:51
Workgroup #:	WG556354	**Analyst:**	DCM	**Run Date:**	02/05/2016 10:02
Collect Date:	02/01/2016 13:15	**Dilution:**	1	**File ID:**	S2160205002.025
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	78.2		40.0	20.0	10.0

Certificate of Analysis

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16020058-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	46WW16-020116	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/05/2016 11:12
Workgroup #:	WG556396	**Analyst:**	DCM	**Run Date:**	02/05/2016 11:16
Collect Date:	02/01/2016 14:30	**Dilution:**	5	**File ID:**	S2160205003.015
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	586		200	100	50.0

2.3.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG556354

Login Number: L16020058

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW02-020116	01	02/01/16					02/05/2016	4.1	14		02/05/16	4.1	14	
46WW11-020116	03	02/01/16					02/05/2016	4	14		02/05/16	4	14	
LHSMW19-020116	05	02/01/16					02/05/2016	4	14		02/05/16	4	14	
46WW05-020116	07	02/01/16					02/05/2016	3.9	14		02/05/16	3.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4624053
Report generated 02/09/2016 16:25

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG556396

Login Number: L16020058

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW16-020116	09	02/01/16					02/05/2016	3.9	14		02/05/16	3.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4624053
Report generated 02/09/2016 16:25

METHOD BLANK SUMMARY

Login Number: L16020058
Blank File ID: S2160205002.012
Prep Date: 02/05/16 09:53
Analyzed Date: 02/05/16 09:53
Analyst: DCM

Work Group: WG556354
Blank Sample ID: WG556354-01
Instrument ID: SMARTCHEM2
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556354-02	S2160205002.013	02/05/16 09:54	01
LCS2	WG556354-03	S2160205002.014	02/05/16 09:55	01
46WW02-020116	L16020058-01	S2160205002.020	02/05/16 09:59	01
46WW11-020116	L16020058-03	S2160205002.023	02/05/16 10:00	01
LHSMW19-020116	L16020058-05	S2160205002.024	02/05/16 10:01	DL01
46WW05-020116	L16020058-07	S2160205002.025	02/05/16 10:02	01
DUP	WG556354-05	S2160205002.028	02/05/16 10:04	01

Report Name: BLANK_SUMMARY
PDF File ID: 4624054
Report generated 02/09/2016 16:25

METHOD BLANK SUMMARY

Login Number: L16020058
Blank File ID: S2160205003.012
Prep Date: 02/05/16 11:14
Analyzed Date: 02/05/16 11:14
Analyst: DCM

Work Group: WG556396
Blank Sample ID: WG556396-01
Instrument ID: SMARTCHEM2
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556396-02	S2160205003.013	02/05/16 11:15	01
LCS2	WG556396-03	S2160205003.014	02/05/16 11:15	01
46WW16-020116	L16020058-09	S2160205003.015	02/05/16 11:16	DL01
DUP	WG556396-05	S2160205003.024	02/05/16 11:30	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4624054
Report generated 02/09/2016 16:25

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020058 Prep Date: 02/05/16 09:53 Sample ID: WG556354-01
Instrument ID: SMARTCHEM2 Run Date: 02/05/16 09:53 Prep Method: 310.2
File ID: S2160205002.012 Analyst: DCM Method: 310.2
Workgroup (AAB#): WG556354 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-05-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	-11.7	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4624055
09-FEB-2016 16:25

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020058 Prep Date: 02/05/16 11:14 Sample ID: WG556396-01
Instrument ID: SMARTCHEM2 Run Date: 02/05/16 11:14 Prep Method: 310.2
File ID: S2160205003.012 Analyst: DCM Method: 310.2
Workgroup (AAB#): WG556396 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-05-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	-15.8	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4624055
09-FEB-2016 16:25

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020058 Analyst: DCM Prep Method: 310.2
Instrument ID: SMARTCHEM2 Matrix: Water Method: 310.2
Workgroup (AAB#): WG556354 Units: mg/L
QC Key: DOD4 Lot #: STD74579

Sample ID: WG556354-02 LCS File ID: S2160205002.013 Run Date: 02/05/2016 09:54
Sample ID: WG556354-03 LCS2 File ID: S2160205002.014 Run Date: 02/05/2016 09:55

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	206	103	200	208	104	1.13	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4624056
Report generated: 02/09/2016 16:25

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020058 Analyst: DCM Prep Method: 310.2
Instrument ID: SMARTCHEM2 Matrix: Water Method: 310.2
Workgroup (AAB#): WG556396 Units: mg/L
QC Key: DOD4 Lot #: STD74579

Sample ID: WG556396-02 LCS File ID: S2160205003.013 Run Date: 02/05/2016 11:15
Sample ID: WG556396-03 LCS2 File ID: S2160205003.014 Run Date: 02/05/2016 11:15

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	203	102	200	199	99.7	1.98	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4624056
Report generated: 02/09/2016 16:25

2.3.2.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG556354
556396

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20160205002
2) **Workgroup** _____
Plan # 20160205003
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		Alk		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	Blk			
1-3	LCS			
1-4	LCSDup			
1-5	02-916-02	1/4		color
1-6	03	1/4		color
1-7	05	1/4		color
1-8	06	1/4		color
1-9	07	1/20		color
1-10	02-58-01			
1-11	03			
1-12	05	1/2		
1-13	07			
1-14	09	1/2		
1-15	02-141-01			
1-16	Dup 02-141-01			
1-17				
1-18				
1-19				
1-20				
1-21				
1-22				
2-1				
2-2				
2-3				

	Analyte	1	2	3
Position				
2-4 1	ICV			
2-5 2	Blk			
2-6 3	LCS			
2-7 4	LCSDup			
2-8 5	02-58-09	1/5		
2-9 6	02-179-01			
2-10 7	01			
2-11 8	01			
2-12 9	01			
2-13 10	02-179-02	1/2		
2-14 11	02	1/2		
2-15 12	02	1/2		
2-16 13	02	1/2		
2-17 14	02-179-03	1/2		
2-18 15	03	1/2		
2-19 16	03	1/2		
2-20 17	03	1/2		
2-21 18	02-179-04	1/2		
2-22 19	04	1/2		
2-23 20	04	1/2		
2-24 21	04	1/2		
2-25 22	Dup 04	1/2		
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#116454

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG556354

Analyte		1	2	3
Position				
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Analyte		1	2	3
Position				
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
✓	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	Alk		Reagents
SOP & Revision	K3103 R17		RGT 36017
Curve Stock (SC made)	Std 73515		
NO2 STD			
ICV	Std 74290		
CCV	Std 74550		
LCS	Std 74579		
MS	NA Dilution		

Comments: _____

Analyst: Daniel Morehle Date: 2/5/16

DCN#116454

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.6421	0.00		9:43:24 AM
DIL-1	RBL	0.0	0.6373	0.00		9:43:42 AM
DIL-1	RBL	0.0	0.6395	0.00		9:45:48 AM
DIL-1	Std-1	0.0	0.0017	0.00	INV	9:46:42 AM
SR5-1	Std-2	10.0	-0.0126	0.00		9:47:00 AM
SR5-2	Std-3	20.0	-0.0276	0.00		9:47:54 AM
SR5-3	Std-4	50.0	-0.0576	0.00		9:48:12 AM
SR5-4	Std-5	100.0	-0.1088	0.00		9:49:06 AM
SR5-5	Std-6	200.0	-0.2353	0.00		9:49:24 AM
SR5-6	Std-7	250.0	-0.3131	0.00		9:50:18 AM
SR5-7	Std-8	300.0	-0.3742	0.00		9:51:12 AM
ST-3	1CCV (150 mg/L)	148.7	-0.1722	99.15		9:51:30 AM
ST-2	2CCB (0 mg/L)	-7.3	0.0064	0.00	INV,><,LL	9:52:24 AM
1	ICV	256.8	-0.3151	0.00		9:52:42 AM
2	WG556354-01 BLK	-11.7	0.0111	0.00	INV,><,LL	9:53:36 AM
3	WG556354-02 LCS	205.7	-0.2451	0.00		9:54:30 AM
4	WG556354-03 LCSDUP	208.1	-0.2482	0.00		9:55:24 AM
5	L16020096-02 (4)	172.6	-0.2021	0.00		9:55:42 AM
6	L16020096-03 (4)	128.5	-0.1475	0.00		9:56:54 AM
7	L16020096-05 (4)	188.7	-0.2228	0.00		9:57:12 AM
8	L16020096-06 (4)	115.6	-0.1320	0.00		9:58:06 AM
9	L16020096-07 (100)	129.4	-0.1485	0.00		9:58:24 AM
10	L16020058-01	37.6	-0.0423	0.00		9:59:18 AM
ST-3	1CCV (150 mg/L)	167.3	-0.1954	111.52		9:59:36 AM
ST-2	2CCB (0 mg/L)	5.3	-0.0071	0.00		10:00:30 AM
11	L16020058-03	63.7	-0.0716	0.00		10:00:48 AM
12	L16020058-05 (2)	159.6	-0.1857	0.00		10:01:42 AM
13	L16020058-07	78.2	-0.0881	0.00		10:02:00 AM
14	L16020058-09 (2)	X361.8	-0.4777	0.00	><,LH	10:02:54 AM
15	L16020141-01	183.0	-0.2155	0.00		10:03:12 AM
16	WG556354-05 DUP	180.0	-0.2116	0.00		10:04:06 AM
17	ID 17	41.6	-0.0468	0.00	EPL	10:04:24 AM

Report Date :02/05/2016 **Run Date :2/5/2016** **Operator : SMARTCHEM2** **Plan # :20160205001**

Plan Description : ALK-A2-DCM/02/05/2016

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-3	1CCV (150 mg/L)	172.3	-0.2017	114.83		10:05:18 AM
ST-2	2CCB (0 mg/L)	19.2	-0.0221	0.00		10:06:30 AM
14-[1/2]	L16020058-09 (2)	X 601.7	-0.3798	0.00	><,LH	10:14:28 AM
ST-3	1CCV (150 mg/L)	179.4	-0.2108	119.59		10:14:28 AM
ST-2	2CCB (0 mg/L)	17.9	-0.0207	0.00		10:15:22 AM
14-[1/4]	L16020058-09 (2)	X 739.6	-0.2179	0.00	LH	10:23:02 AM
ST-3	1CCV (150 mg/L)	183.7	-0.2163	122.44		10:23:02 AM
ST-2	2CCB (0 mg/L)	31.5	-0.0356	0.00		10:23:56 AM

Report Date :02/05/2016 **Run Date :2/5/2016** **Operator : SMARTCHEM2** **Plan # :20160205001**

Plan Description : ALK-A2-DCM/02/05/2016

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20160205002 Description : [ALK-A2-DCM/02/05/2016] Unit

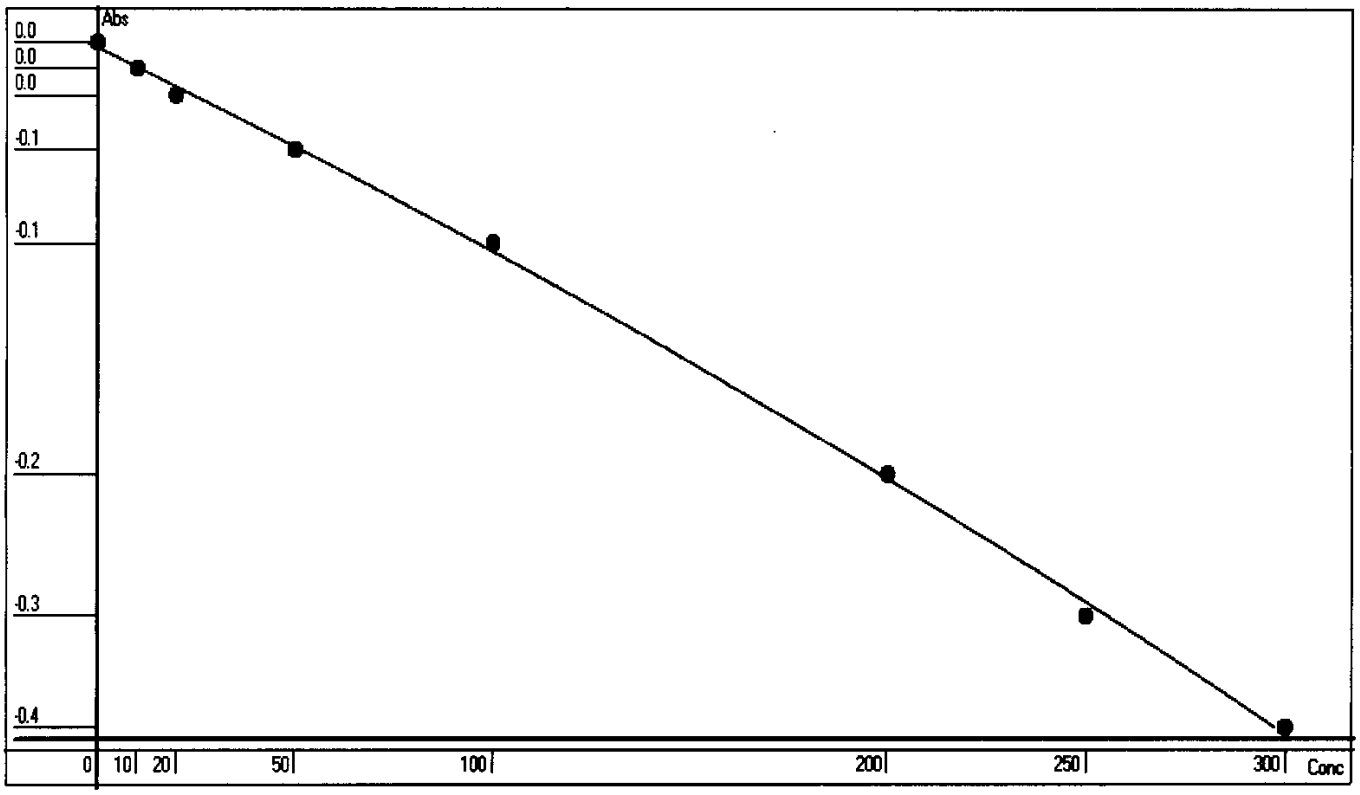

Point	OD	Conc	Recalc Conc	% Error
1	0.0017	0	-2.8495	-284.95
2	-0.0126	10	10.4438	4.44
3	-0.0276	20	24.2280	21.14
4	-0.0576	50	51.3058	2.61
5	-0.1088	100	96.0073	-3.99
6	-0.2353	200	198.2808	-0.86
7	-0.3131	250	255.4035	2.16
8	-0.3742	300	297.1798	-0.94

Conc= -363.4872*Abso^2 -933.5616*Abso -1.2614 R^2=0.9991

RBL
0.6384
0

Report Date 2/5/2016 Run Date 2/5/2016

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.5630	0.00		11:05:25 AM
DIL-1	RBL	0.0	0.5812	0.00		11:05:44 AM
DIL-1	RBL	0.0	0.5470	0.00		11:06:38 AM
DIL-1	Std-1	0.0	-0.0069	0.00		11:06:55 AM
SR5-1	Std-2	10.0	-0.0448	0.00		11:07:50 AM
SR5-2	Std-3	20.0	-0.0217	0.00		11:08:44 AM
SR5-3	Std-4	50.0	-0.0551	0.00		11:09:38 AM
SR5-4	Std-5	100.0	-0.0984	0.00		11:09:56 AM
SR5-5	Std-6	200.0	-0.2224	0.00		11:10:50 AM
SR5-6	Std-7	250.0	-0.2877	0.00		11:11:08 AM
SR5-7	Std-8	300.0	-0.3509	0.00		11:12:02 AM
ST-3	1CCV (150 mg/L)	146.0	-0.1596	97.31		11:12:20 AM
ST-2	2CCB (0 mg/L)	-4.9	-0.0060	0.00	LL	11:13:14 AM
1	ICV	246.9	-0.2803	0.00		11:14:08 AM
2	WG556396-01 BLK	-15.8	0.0042	0.00	INV,><,LL	11:14:26 AM
3	WG556396-02 LCS	203.5	-0.2261	0.00		11:15:20 AM
4	WG556396-03 LCSDUP	199.5	-0.2213	0.00		11:15:38 AM
5	L16020058-09 (5)	117.3	-0.1283	0.00		11:16:32 AM
6	L16020179-01A	150.1	-0.1642	0.00		11:17:26 AM
7	L16020179-01B	149.5	-0.1635	0.00		11:18:20 AM
8	L16020179-01C	143.4	-0.1568	0.00		11:18:38 AM
9	L16020179-01D	157.4	-0.1724	0.00		11:19:50 AM
10	L16020179-02A (2)	185.7	-0.2050	0.00		11:20:08 AM
ST-3	1CCV (150 mg/L)	149.7	-0.1638	99.82		11:21:02 AM
ST-2	2CCB (0 mg/L)	5.7	-0.0160	0.00		11:21:20 AM
11	L16020179-02B (2)	192.9	-0.2135	0.00		11:22:14 AM
12	L16020179-02C (2)	196.4	-0.2176	0.00		11:22:32 AM
13	L16020179-02D (2)	196.6	-0.2178	0.00		11:23:26 AM
14	L16020179-03A (2)	159.5	-0.1748	0.00		11:23:44 AM
15	L16020179-03B (2)	153.8	-0.1684	0.00		11:24:38 AM
16	L16020179-03C (2)	163.4	-0.1792	0.00		11:24:56 AM
17	L16020179-03D (2)	161.0	-0.1765	0.00		11:25:50 AM

Report Date :02/05/2016 **Run Date :2/5/2016** **Operator : SMARTCHEM2** **Plan # :20160205003**

Plan Description : ALK-B2-DCM/02/05/2016

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L16020179-04A (2)	177.9	-0.1959	0.00		11:26:08 AM
19	L16020179-04B (2)	166.0	-0.1821	0.00		11:27:02 AM
20	L16020179-04C (2)	175.4	-0.1930	0.00		11:27:20 AM
ST-3	1CCV (150 mg/L)	158.4	-0.1735	105.58		11:28:14 AM
ST-2	2CCB (0 mg/L)	17.0	-0.0268	0.00		11:29:26 AM
21	L160201479-04D (2)	171.4	-0.1883	0.00		11:29:44 AM
22	WG556396-05 (2) DUP	174.7	-0.1922	0.00		11:30:38 AM
ST-3	1CCV (150 mg/L)	163.8	-0.1796	109.17		11:30:56 AM
ST-2	2CCB (0 mg/L)	16.4	-0.0262	0.00		11:32:08 AM

Report Date :02/05/2016 **Run Date :2/5/2016** **Operator : SMARTCHEM2** **Plan # :20160205003**

Plan Description : ALK-B2-DCM/02/05/2016

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20160205003 Description : [ALK-B2-DCM/02/05/2016] Unit

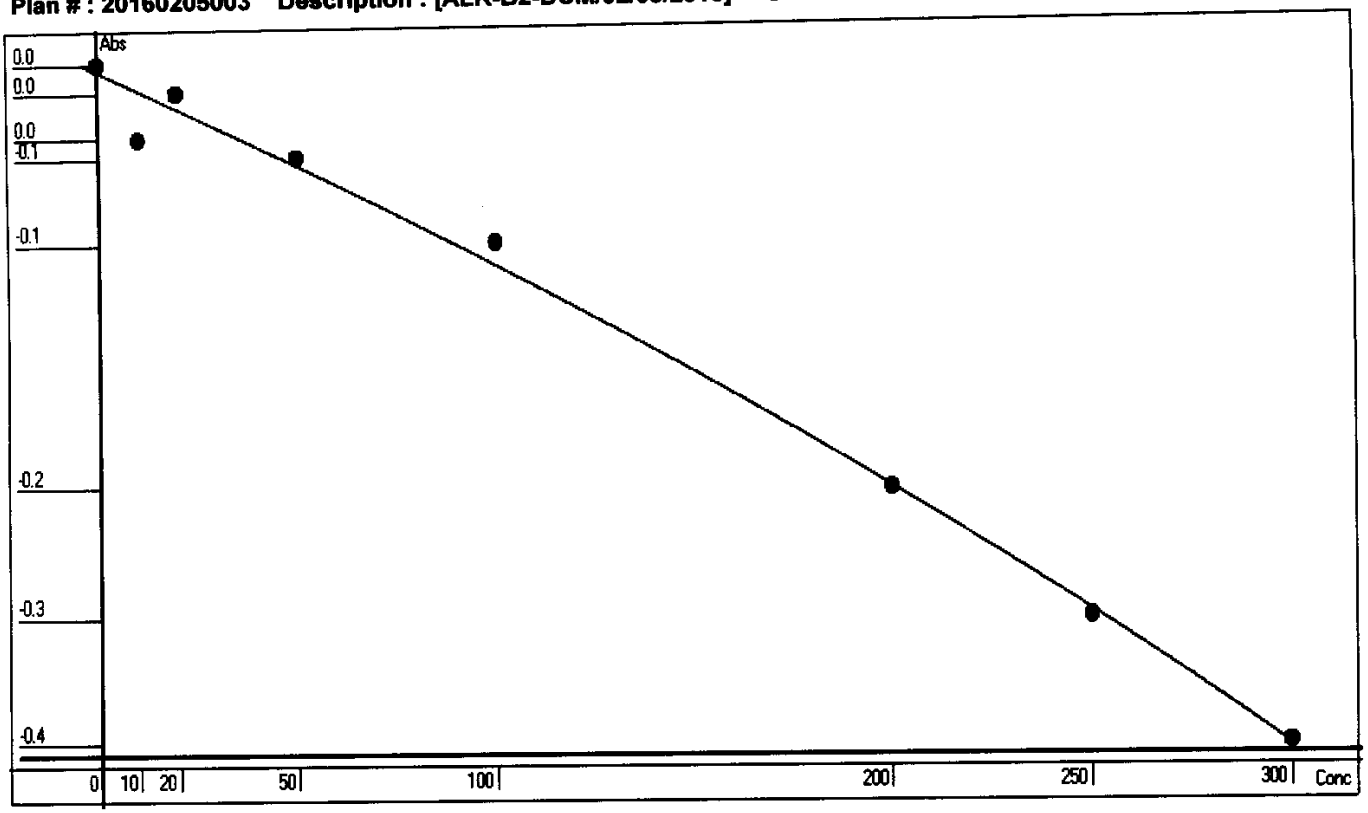

Point	OD	Conc	Recalc Conc	% Error
1	-0.0069	0	-3.9140	-391.40
2	-0.0448	10	35.6007	256.01
3	-0.0217	20	11.6985	-41.51
4	-0.0551	50	46.0754	-7.85
5	-0.0984	100	88.8746	-11.13
6	-0.2224	200	200.4011	0.20
7	-0.2877	250	252.5546	1.02
8	-0.3509	300	298.7092	-0.43

Conc= -532.136*Abso^2 -1070.117*Abso -11.2725 R^2=0.9909

RBL
0.555
0

Report Date 2/5/2016 Run Date 2/5/2016

2.3.3 Phosphorus Data

2.3.3.1 Summary Data

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW02-020116	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/04/2016 11:28
Workgroup #:	WG556212	**Analyst:**	DCM	**Run Date:**	02/04/2016 11:31
Collect Date:	02/01/2016 08:10	**Dilution:**	1	**File ID:**	SC160204002.013
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.320	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW11-020116	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/04/2016 11:28
Workgroup #:	WG556212	**Analyst:**	DCM	**Run Date:**	02/04/2016 11:32
Collect Date:	02/01/2016 09:25	**Dilution:**	1	**File ID:**	SC160204002.014
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.273	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	LHSMW19-020116	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/04/2016 11:28
Workgroup #:	WG556212	**Analyst:**	DCM	**Run Date:**	02/04/2016 11:33
Collect Date:	02/01/2016 10:30	**Dilution:**	1	**File ID:**	SC160204002.015
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW05-020116	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/04/2016 11:28
Workgroup #:	WG556212	**Analyst:**	DCM	**Run Date:**	02/04/2016 11:34
Collect Date:	02/01/2016 13:15	**Dilution:**	1	**File ID:**	SC160204002.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.310	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW16-020116	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/04/2016 11:28
Workgroup #:	WG556212	**Analyst:**	DCM	**Run Date:**	02/04/2016 11:34
Collect Date:	02/01/2016 14:30	**Dilution:**	1	**File ID:**	SC160204002.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.3.3.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 04-FEB-2016
Analyst: DCM
Analyst: NA
Method: PHOS
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG556212

Calibration/Linearity	02-04-2016
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
04-FEB-2016

Secondary Reviewer:
05-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-05-2016 12:52:19

Microbac Laboratories Inc.

00742293

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4 AAB#: WG556212

Login Number: L16020058

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW02-020116	01	02/01/16					02/04/2016	3.1	28		02/04/16	3.1	28	
46WW11-020116	03	02/01/16					02/04/2016	3.1	28		02/04/16	3.1	28	
LHSMW19-020116	05	02/01/16					02/04/2016	3	28		02/04/16	3	28	
46WW05-020116	07	02/01/16					02/04/2016	2.9	28		02/04/16	2.9	28	
46WW16-020116	09	02/01/16					02/04/2016	2.9	28		02/04/16	2.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4617978
Report generated 02/04/2016 16:11

METHOD BLANK SUMMARY

Login Number: L16020058
Blank File ID: SC160204002.010
Prep Date: 02/04/16 11:30
Analyzed Date: 02/04/16 11:30
Analyst: DCM

Work Group: WG556212
Blank Sample ID: WG556212-01
Instrument ID: SMARTCHEM
Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556212-02	SC160204002.011	02/04/16 11:30	01
46WW02-020116	L16020058-01	SC160204002.013	02/04/16 11:31	01
46WW11-020116	L16020058-03	SC160204002.014	02/04/16 11:32	01
LHSMW19-020116	L16020058-05	SC160204002.015	02/04/16 11:33	01
46WW05-020116	L16020058-07	SC160204002.016	02/04/16 11:34	01
46WW16-020116	L16020058-09	SC160204002.017	02/04/16 11:34	01
DUP	WG556212-04	SC160204002.021	02/04/16 11:36	01

Report Name: BLANK_SUMMARY
PDF File ID: 4617979
Report generated 02/04/2016 16:11

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020058 Prep Date: 02/04/16 11:30 Sample ID: WG556212-01
Instrument ID: SMARTCHEM Run Date: 02/04/16 11:30 Prep Method: 365.4
File ID: SC160204002.010 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG556212 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-04-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4617981
04-FEB-2016 16:11

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020058 Run Date: 02/04/2016 Sample ID: WG556212-02
Instrument ID: SMARTCHEM Run Time: 11:30 Prep Method: 365.4
File ID: SC160204002.011 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG556212 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD74474 Cal ID: SMARTC-04-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Phosphorus, Total	1.00	0.856	85.6	70 - 130	

LCS - Modified 03/06/2008
PDF File ID: 4617982
Report generated: 02/04/2016 16:11

2.3.3.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG556212

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20160204C02
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [x] SC2 [ ]

	Analyte	1	2	3
		PHCS		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	BLK			
1-3	LCS			
1-4	01-0006-50			
1-5	02-58-01			
1-6	03			
1-7	05			
1-8	07			
1-9	dup 02-14-16 09			
1-10	~~Dup~~ 02-73-08	REF		
1-11	~~MS~~ DUP	02-73-08		
1-12	MS 02-73-08			
1-13				
1-14				
1-15	MS			
1-16				
1-17				
1-18				
1-19				
1-20				
1-21				
1-22				
2-1				
2-2				
2-3				

Position	Analyte	1	2	3
2-4				
2-5				
2-6				
2-7				
2-8				
2-9				
2-10				
2-11				
2-12				
2-13				
2-14				
2-15				
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#116431

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG556212

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
✓	Phos	EPA 365.4

Analyte	PHOS		Reagents
SOP & Revision	K3654 R18		RGT 35825
Curve Stock (SC made)			RGT 35857
NO2 STD			RGT 35866
ICV	See Digest		
CCV	Log		
LCS			
MS	Dilution		

Comments: LCS As ICV: MADE FROM SAME SOURCE

Analyst: David Merkle

Date: 2/4/16

DCN#116431

TKN/Phosphorus Digestion Log

TKN WG:
TKN Std: std 74510
TKN CCV: 1/2(std 74510)
TKN ICV: std 74182
TKN LCS: std 74607

Phos WG:
Phos Std: std 74510
Phos CCV: 1/2 std 74510
Phos ICV: std 74504
Phos LCS: std 74474

MS/MSD: std 74442
Daily Dilution: 1(25/25) = 1

Block Digester Temperature: 380 °C
Digest Reagent: RG 35885

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	std		5	2	26	02-73-06		✓	
2	std		5	2	27	07		✓	
3	ICVT		2		28	08		✓	✓
4	ICVP			1.5	29	09		✓	
5	LCST		1		30	10		✓	
6	LCSP			1	31	02-58-01			✓
7	01-006-37/43		✓		32	03			✓
8	44		✓		33	05			✓
9	45		✓		34	07			✓
10	46		✓		35	09			✓
11	47		✓		36	DUP 02-73-08		✓	✓
12	48/49		✓	✓	37	MS 02-73-08		✓	✓
13	01-1426-02	1/50	✓		38	MS 02-73-10		✓	
14	05	1/50	✓		39	BK			
15	08	1/50	✓		40				
16	02-57-01		✓		41				
17	02		✓		42				
18	03		✓		43				
19	02-63-01		✓		44				
20	02		✓		45				
21	02-73-01		✓		46				
22	02		✓		47				
23	03		✓		48				
24	04		✓		49				
25	05		✓		50				

Analyst: David Merkle Date: 2/3/16

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0363	0.00		11:23:15 AM
DIL-1	RBL	0.000	0.0354	0.00		11:23:33 AM
DIL-1	RBL	0.000	0.0428	0.00		11:24:27 AM
SR5-1	Std-1	0.010	0.0129	0.00		11:24:45 AM
SR5-2	Std-2	0.200	0.0355	0.00		11:25:39 AM
SR5-3	Std-3	0.500	0.0700	0.00		11:25:57 AM
SR5-4	Std-4	1.000	0.1419	0.00		11:26:51 AM
SR5-5	Std-5	1.500	0.2134	0.00		11:27:09 AM
ST-1	Std-6	2.000	0.2825	0.00		11:28:04 AM
ST-3	1CCV (1 mg/L)	1.067	0.1532	106.67		11:28:22 AM
ST-2	2CCB (0 mg/L)	0.036	0.0120	0.00	><	11:29:16 AM
1	ICV	1.222	0.1744	0.00		11:29:33 AM
2	WG556212-01 BLK	-0.001	0.0070	0.00	><,LL	11:30:28 AM
3	WG556212-02 LCS	0.856	0.1244	0.00		11:30:45 AM
4	L16010006-50	0.171	0.0305	0.00		11:31:40 AM
5	L16020058-01	0.320	0.0509	0.00		11:31:57 AM
6	L16020058-03	0.273	0.0445	0.00		11:32:52 AM
7	L16020058-05	0.099	0.0207	0.00		11:33:09 AM
8	L16020058-07	0.310	0.0495	0.00		11:34:04 AM
9	L16020058-09	-0.064	-0.0018	0.00	INV,><,LL	11:34:21 AM
10	WG556212-03 REF	0.028	0.0110	0.00	><	11:35:16 AM
ST-3	1CCV (1 mg/L)	0.975	0.1407	97.54		11:35:33 AM
ST-2	2CCB (0 mg/L)	0.001	0.0073	0.00	><	11:36:27 AM
11	WG556212-04 DUP	-0.008	0.0061	0.00	><,LL	11:36:45 AM
12	WG556212-05 MS	X-0.016	0.0050	0.00	><,LL	11:37:39 AM
13	ID 13	0.047	0.0136	0.00		11:41:15 AM
13	ID 13	***	***	0.00	SS	11:37:57 AM
14	ID 14	***	***	0.00	SS	11:38:51 AM
14	ID 14	0.036	0.0120	0.00	><	11:41:33 AM
15	ID 15 MS	0.069	0.0165	0.00		11:42:27 AM
15	ID 15	***	***	0.00	SS	11:39:09 AM
ST-3	1CCV (1 mg/L)	0.974	0.1405	97.40		11:40:03 AM
ST-2	2CCB (0 mg/L)	-0.040	0.0017	0.00	><,LL	11:40:21 AM

Report Date :02/04/2016 **Run Date :02/04/2016** **Operator : SMARTCHEM1** **Plan # :20160204002**

Plan Description : PHOS-A1-DCM/02/04/2016

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20160204002 Description : [PHOS-A1-DCM/02/04/2016] Unit [mg/L]

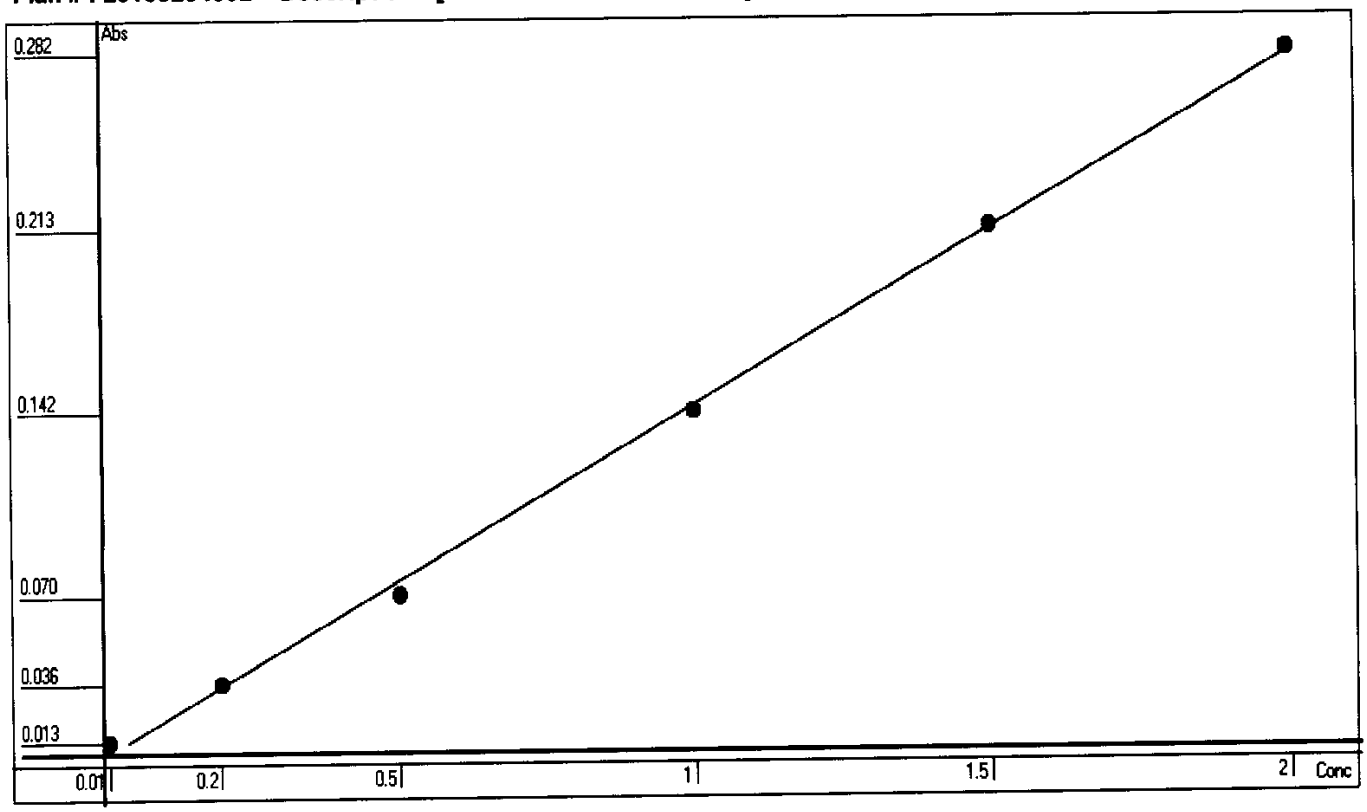

Point	OD	Conc	Recalc Conc	% Error
1	0.0128	0.01	0.0419	319.00
2	0.0355	0.2	0.2076	3.80
3	0.0699	0.5	0.4588	-8.24
4	0.1418	1	0.9839	-1.61
5	0.2133	1.5	1.5060	0.40
6	0.2824	2	2.0106	0.53

Conc= +7.3024*Abso -0.0516 R^2=0.9990

RBL
0.0358
0

Report Date 2/4/2016 Run Date 2/4/2016

2.3.4 Sulfide Data

2.3.4.1 Summary Data

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW02-020116	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG556327	**Analyst:**	EPT	**Run Date:**	02/04/2016 17:00
Collect Date:	02/01/2016 08:10	**Dilution:**	1	**File ID:**	ET.1602041700-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-03	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW11-020116	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG556327	**Analyst:**	EPT	**Run Date:**	02/04/2016 17:00
Collect Date:	02/01/2016 09:25	**Dilution:**	1	**File ID:**	ET.1602041700-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-05	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	LHSMW19-020116	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG556327	**Analyst:**	EPT	**Run Date:**	02/04/2016 17:00
Collect Date:	02/01/2016 10:30	**Dilution:**	1	**File ID:**	ET.1602041700-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-07	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW05-020116	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG556327	**Analyst:**	EPT	**Run Date:**	02/04/2016 17:00
Collect Date:	02/01/2016 13:15	**Dilution:**	1	**File ID:**	ET.1602041700-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-09	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW16-020116	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG556327	**Analyst:**	EPT	**Run Date:**	02/04/2016 17:00
Collect Date:	02/01/2016 14:30	**Dilution:**	1	**File ID:**	ET.1602041700-08
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.3.4.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 04-FEB-2016
Analyst: EPT
Analyst: NA
Method: SULFIDE
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG556327

Calibration/Linearity	2/4/16
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
10-FEB-2016

Ethan Tido

Secondary Reviewer:
12-FEB-2016

Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-12-2016 12:13:45

Microbac Laboratories Inc.

00742314

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F-

AAB#: WG556327

Login Number: L16020058

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW02-020116	01	02/01/16					02/04/2016	3.4	7		02/04/16	3.4	7	
46WW11-020116	03	02/01/16					02/04/2016	3.3	7		02/04/16	3.3	7	
LHSMW19-020116	05	02/01/16					02/04/2016	3.3	7		02/04/16	3.3	7	
46WW05-020116	07	02/01/16					02/04/2016	3.2	7		02/04/16	3.2	7	
46WW16-020116	09	02/01/16					02/04/2016	3.1	7		02/04/16	3.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4627709
Report generated 02/12/2016 08:51

METHOD BLANK SUMMARY

Login Number: L16020058
Blank File ID: ET.1602041700-01
Prep Date: 02/04/16 17:00
Analyzed Date: 02/04/16 17:00
Analyst: EPT

Work Group: WG556327
Blank Sample ID: WG556327-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556327-02	ET.1602041700-02	02/04/16 17:00	
LCS2	WG556327-03	ET.1602041700-03	02/04/16 17:00	
46WW02-020116	L16020058-01	ET.1602041700-04	02/04/16 17:00	
46WW11-020116	L16020058-03	ET.1602041700-05	02/04/16 17:00	
LHSMW19-020116	L16020058-05	ET.1602041700-06	02/04/16 17:00	
46WW05-020116	L16020058-07	ET.1602041700-07	02/04/16 17:00	
46WW16-020116	L16020058-09	ET.1602041700-08	02/04/16 17:00	

Report Name: BLANK_SUMMARY
PDF File ID: 4627710
Report generated 02/12/2016 08:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020058 Prep Date: 02/04/16 17:00 Sample ID: WG556327-01
Instrument ID: BURET Run Date: 02/04/16 17:00 Prep Method: SM4500-S-(-2)-F
File ID: ET.1602041700-01 Analyst: EPT Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG556327 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4627711
12-FEB-2016 08:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020058 Analyst: EPT Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG556327 Units: mg/L
QC Key: DOD4 Lot #: STD74639

Sample ID: WG556327-02 LCS File ID: ET.1602041700-02 Run Date: 02/04/2016 17:00
Sample ID: WG556327-03 LCS2 File ID: ET.1602041700-03 Run Date: 02/04/2016 17:00

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	24.0	23.6	98.2	24.0	23.8	99.0	0.845	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4627712
Report generated: 02/12/2016 08:51

2.3.4.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG556327

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: _____

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: Std 74639

Iodine standardization (0.025N) COA: 18575
mL 0.025N titrant: ~~0.0~~ 10.0
Volume I: 10.0 mL
Normality I: ~~0.0250~~ 0.0248

(0.1 N I) COA: 18573
mL 0.025 N titrant: 8.0
Volume I: 2.0 mL
Normality I: 0.0992

Stock standardization (in duplicate) 5.0 mL stock
mL I 1) 10.0 2) 10.0
N I 1) 0.0992 2) 0.0992
mL 0.025 titrant 1) 20.0 2) 20.0
LCS daily dilution: (3)(1600)/200 = 24.00 mg/L

1600 = stock conc (mg/L)

Titrant: T- 11089-10-05

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	~~0.0250~~ 0.0250 cpt 2/4/16 N Sodium Thiosulfate (mL)
BLANK	200	15.0	0.0248	15.0
LCS (mL)	200	15.0	0.0248	3.1
LCSDUP (mL)	200	15.0	0.0248	3.0
02-0058-01	520	15.0	0.0248	14.8
-03	480	15.0	0.0248	15.0
-05	520	15.0	0.0248	14.6
-07	500	15.0	0.0248	14.9
-09	520	15.0	0.0248	15.0
02-0141-01	510	15.0	0.0248	14.8

Analyst: Erin Todd Date/Time: 02/04/16 1700

DCN#116450

Microbac Laboratories Inc.
TITRAMETRIC REPORT

Workgroup (AAB#): WG556327
Product: EPA 376.1\9034
Analyte: Sulfide

Analyst: EPT
Run Date: 02/04/2016 17:00

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG556327-01	200.0	15	.0248	15	.025	1	-0.240	-0.2400	mg/L
WG556327-02	200.0	15	.0248	3.1	.025	1	23.6	23.56	mg/L
WG556327-03	200.0	15	.0248	3	.025	1	23.8	23.76	mg/L
L16020058-01	520.0	15	.0248	14.8	.025	1	0.0615	ND	mg/L
L16020058-03	480.0	15	.0248	15	.025	1	-0.100	ND	mg/L
L16020058-05	520.0	15	.0248	14.6	.025	1	0.215	ND	mg/L
L16020058-07	500.0	15	.0248	14.9	.025	1	-0.0160	ND	mg/L
L16020058-09	520.0	15	.0248	15	.025	1	-0.0923	ND	mg/L
L16020141-01	510.0	15	.0248	14.8	.025	1	0.0627	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 02/10/2016 14:16

[redacted]

2.3.5 Total Organic Carbon Data

2.3.5.1 Summary Data

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020058-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW02-020116	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG556095	**Analyst:**	EPT	**Run Date:**	02/03/2016 15:42
Collect Date:	02/01/2016 08:10	**Dilution:**	10	**File ID:**	TC02032016.009
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	46.3		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16020058-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW11-020116	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG556095	**Analyst:**	EPT	**Run Date:**	02/03/2016 16:15
Collect Date:	02/01/2016 09:25	**Dilution:**	10	**File ID:**	TC02032016.010
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	44.0		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16020058-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	LHSMW19-020116	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG556095	**Analyst:**	EPT	**Run Date:**	02/03/2016 16:37
Collect Date:	02/01/2016 10:30	**Dilution:**	3	**File ID:**	TC02032016.011
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	11.7		6.00	3.00	1.50

Certificate of Analysis

Microbac

Lab Report #: L16020058
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16020058-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW05-020116	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG556095	**Analyst:**	EPT	**Run Date:**	02/03/2016 16:59
Collect Date:	02/01/2016 13:15	**Dilution:**	3	**File ID:**	TC02032016.012
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	20.7		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L16020058-09	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW16-020116	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG556095	**Analyst:**	EPT	**Run Date:**	02/03/2016 17:34
Collect Date:	02/01/2016 14:30	**Dilution:**	10	**File ID:**	TC02032016.013
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	82.4		20.0	10.0	5.00

2.3.5.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 03-FEB-2016
Analyst: EPT
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG556095

Calibration/Linearity	10/31/15
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
05-FEB-2016

Ethan Tido

Secondary Reviewer:
10-FEB-2016

Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-10-2016 07:52:03

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG556095

Login Number: L16020058

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW02-020116	01	02/01/16					02/03/2016	2.3	28		02/03/16	2.3	28	
46WW11-020116	03	02/01/16					02/03/2016	2.3	28		02/03/16	2.3	28	
LHSMW19-020116	05	02/01/16					02/03/2016	2.3	28		02/03/16	2.3	28	
46WW05-020116	07	02/01/16					02/03/2016	2.2	28		02/03/16	2.2	28	
46WW16-020116	09	02/01/16					02/03/2016	2.1	28		02/03/16	2.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4623996
Report generated 02/09/2016 15:43

METHOD BLANK SUMMARY

Login Number: L16020058
Blank File ID: TC02032016.004
Prep Date: 02/03/16 13:20
Analyzed Date: 02/03/16 13:20
Analyst: EPT

Work Group: WG556095
Blank Sample ID: WG556095-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556095-02	TC02032016.005	02/03/16 13:39	01
LCS2	WG556095-03	TC02032016.006	02/03/16 14:02	01
46WW02-020116	L16020058-01	TC02032016.009	02/03/16 15:42	DL01
46WW11-020116	L16020058-03	TC02032016.010	02/03/16 16:15	DL01
LHSMW19-020116	L16020058-05	TC02032016.011	02/03/16 16:37	DL01
46WW05-020116	L16020058-07	TC02032016.012	02/03/16 16:59	DL01
46WW16-020116	L16020058-09	TC02032016.013	02/03/16 17:34	DL01
DUP	WG556095-05	TC02032016.019	02/03/16 19:27	01

Report Name: BLANK_SUMMARY
PDF File ID: 4623997
Report generated 02/09/2016 15:43

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020058 Prep Date: 02/03/16 13:20 Sample ID: WG556095-01
Instrument ID: TOC-VWP Run Date: 02/03/16 13:20 Prep Method: 415.1
File ID: TC02032016.004 Analyst: EPT Method: 415.1
Workgroup (AAB#): WG556095 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-30-OCT-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4623998
09-FEB-2016 15:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020058 Analyst: EPT Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG556095 Units: mg/L
QC Key: DOD4 Lot #: STD72270

Sample ID: WG556095-02 LCS File ID: TC02032016.005 Run Date: 02/03/2016 13:39
Sample ID: WG556095-03 LCS2 File ID: TC02032016.006 Run Date: 02/03/2016 14:02

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	26.7	107	25.0	26.8	107	0.411	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4623999
Report generated: 02/09/2016 15:43

2.3.5.3 Raw Data

Curve

wg545145

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L

See Below

MS (TOC): _____

Calibration Curve Date: _____

Reagent: RGT 34567 / RGT 34459

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 18

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

- ☑ drain reservoir filled
- ☑ ASI water bottle full
- ☑ dilution water bottle full
- ☑ 3rd bottle full
- ☑ sufficient gas
- ☑ sufficient persulfate
- ☑ sufficient acid
- ☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC Curve		27	Std 72153		52	See SOP	
3	TC ICV		28			53		
4	TIC ICV		29	TIC Curve		54	for point	
5			30	Std 72165		55	preparation	
6			31			56		
7			32			57		
8			33	TOC (TC)		58		
9			34	ICV		59		
10			35	Std 72270		60	5/200 (1000) = 25	
11			36			61		
12			37	TIC ICV		62		
13	All points		38	Std 72654		63		
14	analyzed		39			64		
15	in duplicate		40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: David Merkle Date/Time: 10/31/15

DCN#114406

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID:
Cal. Curve: TCCURVE-10-30-2015.2015_10_30_16_06_37.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	4.764	500uL	1	*******		10/30/2015 4:10:07 PM
2	3.607	500uL	1	*******		10/30/2015 4:13:33 PM

Acid Add. 0.000%
Mean Area 4.186

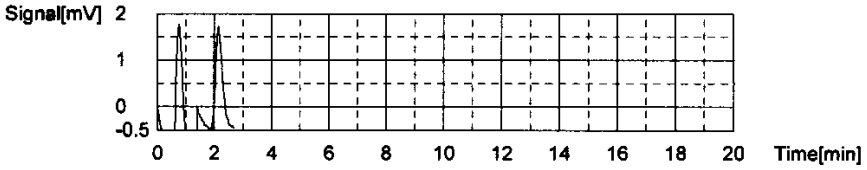

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	46.19	500uL	1	*******		10/30/2015 4:19:03 PM
2	46.28	500uL	1	*******		10/30/2015 4:22:56 PM

Acid Add. 0.000%
Mean Area 46.23

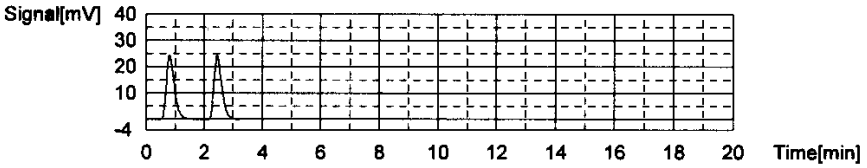

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	194.3	500uL	1	*******		10/30/2015 4:28:42 PM
2	193.1	500uL	1	*******		10/30/2015 4:32:47 PM

Acid Add. 0.000%
Mean Area 193.7

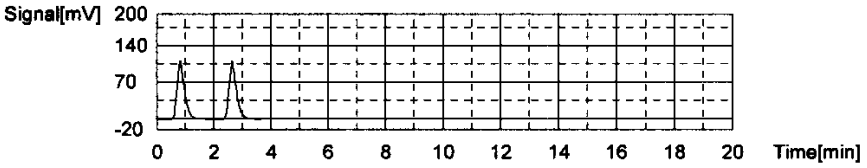

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	390.8	500uL	1	*******		10/30/2015 4:38:42 PM
2	391.3	500uL	1	*******		10/30/2015 4:42:54 PM

Acid Add. 0.000%
Mean Area 391.1

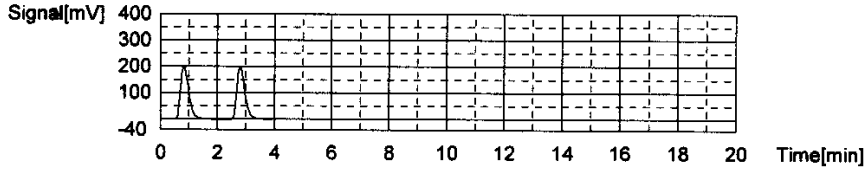

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	989.0	500uL	1	*******		10/30/2015 4:49:06 PM
2	994.6	500uL	1	*******		10/30/2015 4:53:33 PM

Acid Add. 0.000%
Mean Area 991.8

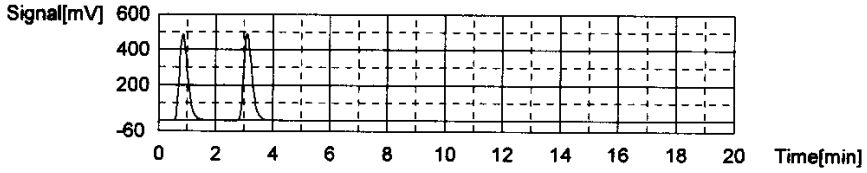

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1946	500uL	1	*******		10/30/2015 5:00:24 PM
2	1948	500uL	1	*******		10/30/2015 5:05:23 PM

Acid Add. 0.000%
Mean Area 1947

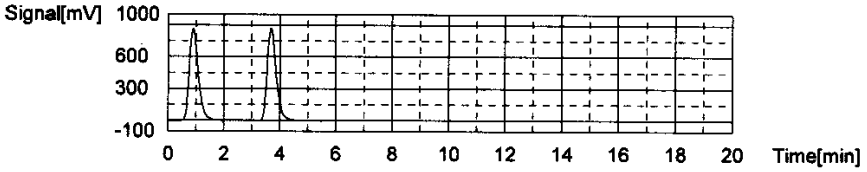

Slope: 38.95
Intercept 4.952
r^2 0.999910 ✓
Zero Shift No

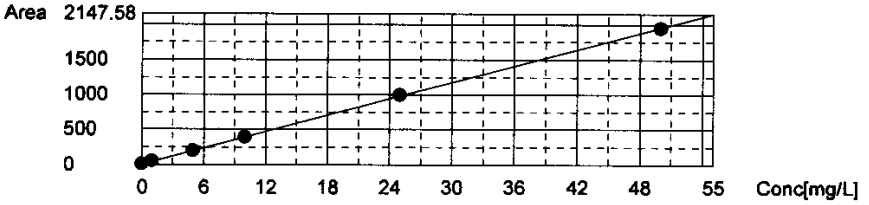

Sample

Sample Name: TC ICV
Sample ID:
Origin: TCCURVE-10-30-2015.2015_10_30_16_06_37.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:25.93mg/L

= 103.7%

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1020	26.06mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	10/31/2015 9:56:57 AM
2	1010	25.80mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	10/31/2015 10:02:17 AM

Mean Area 1015
Mean Conc. 25.93mg/L

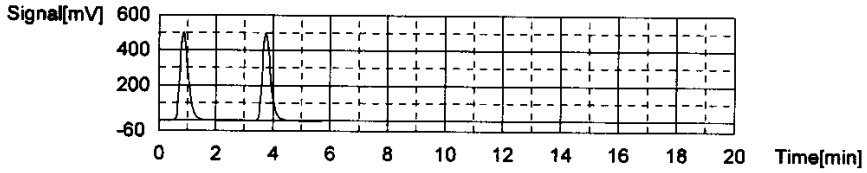

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-10-30-2015.2015_10_31_11_55_05.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	2.732	500uL	1	*******		10/31/2015 12:00:21 PM
2	5.011	500uL	1	*******		10/31/2015 12:04:52 PM

Acid Add. 10.00%
Mean Area 3.872

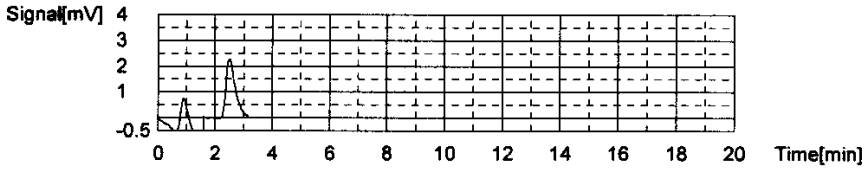

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	35.96	500uL	1	*******		10/31/2015 12:12:47 PM
2	37.13	500uL	1	*******		10/31/2015 12:17:43 PM

Acid Add. 10.00%
Mean Area 36.55

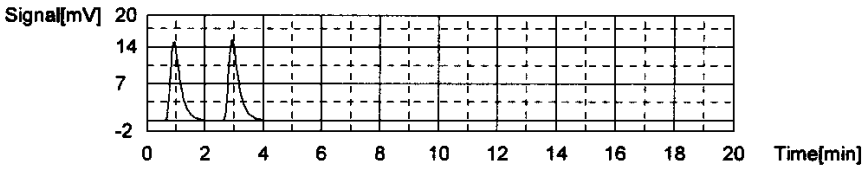

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	173.6	500uL	1	*******		10/31/2015 12:26:14 PM
2	175.6	500uL	1	*******		10/31/2015 12:31:38 PM

Acid Add. 10.00%
Mean Area 174.6

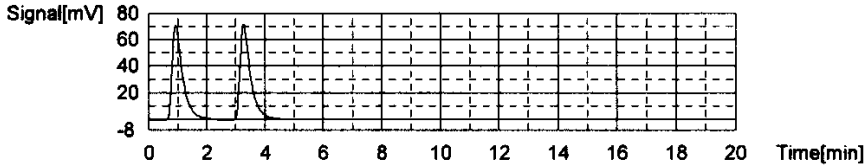

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	344.8	500uL	1	*******		10/31/2015 12:40:18 PM
2	345.1	500uL	1	*******		10/31/2015 12:45:49 PM

Acid Add. 10.00%
Mean Area 345.0

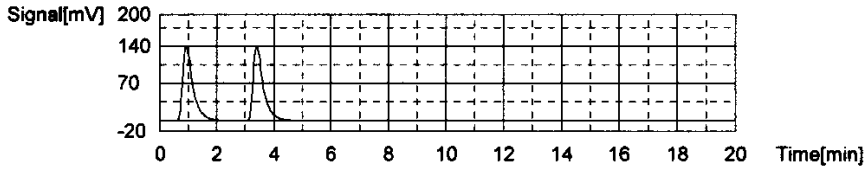

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	835.5	500uL	1	*******		10/31/2015 12:54:43 PM
2	845.9	500uL	1	*******		10/31/2015 1:00:42 PM

Acid Add. 10.00%
Mean Area 840.7

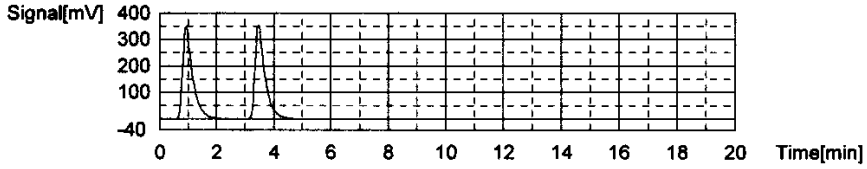

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1676	500uL	1	*******		10/31/2015 1:09:51 PM
2	1677	500uL	1	*******		10/31/2015 1:15:54 PM

Acid Add. 10.00%
Mean Area 1677

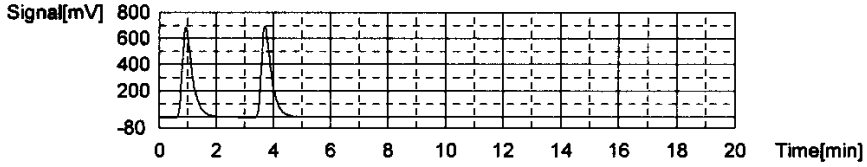

Slope: 33.42
Intercept 5.927
r^2 0.999982
Zero Shift No

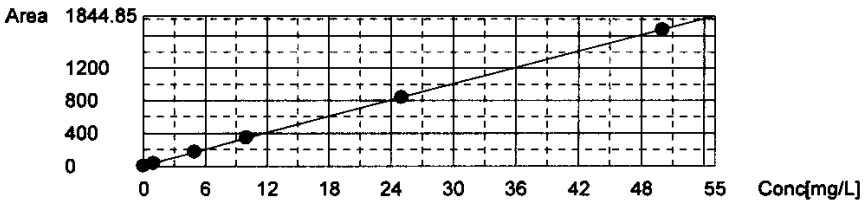

Sample

Sample Name: TIC ICV
Sample ID: Untitled
Origin: TICCURVE-10-30-2015.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:25.37mg/L

= 101.5%

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	854.5	25.39mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	10/31/2015 1:25:27 PM
2	853.1	25.35mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	10/31/2015 1:31:33 PM

Mean Area 853.8
Mean Conc. 25.37mg/L

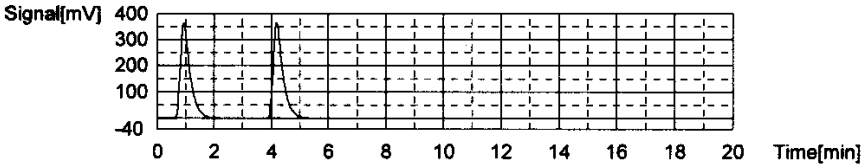

WORKGROUP: WG556095

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 72133
(5/200)(1000) = 25mg/L

LCS (TOC): Std 72270
(5/200)(1000) = 25mg/L

CCV (TIC): Std 72654
(5/200)(1000) = 25mg/L

MS (TOC): Std 72270
(.4)(1000)/40=10

Calibration Curve Date: _____

Reagent: 35609
34459

☐ SM5310-C : Matrix 2 WG 556095
☐ EPA 415.1/9060A(mod): Matrix 1 WG _____
WG _____

SOP: K 4161 Rev. 18
Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

- ☒ drain reservoir filled
- ☒ ASI water bottle full
- ☒ dilution water bottle full
- ☒ 3rd bottle full
- ☒ sufficient gas
- ☒ sufficient persulfate
- ☒ sufficient acid
- ☒ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TIC		26			51		
2	TOC/TIC		27			52		
3	CCV		28			53		
4	Blk		29			54		
5	LCS		30			55		
6	LCSDUP		31			56		
7	01-1377-01	1/3	32			57		
8	02-0054-01	1/3	33			58		
9	02-0058-01	~~1/3~~ 1/10	34			59		
10	-03	~~1/3~~ 1/10	35			60		
11	-05	1/3	36			61		
12	-07	1/3	37			62		
13	-09	~~1/3~~ 1/10	38			63		
14	CCV		39			64		
15	CCB		40			65		
16	02-0079-01		41			66		
17	02-0097-09		42			67		
18	02-0141-01	1/3	43			68		
19	DUP 97-09		44			69		
20	MS 97-09		45			70		
21	CCV		46			71		
22	CCB		47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: Ellen Tell

Date/Time: 02/03/16 1245

DCN#116409

C:\TOC3201\Data\02-03-2016-EPT-TOC.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	TOC:3.851mg/L TC:29.32mg/L IC:25.47mg/L	Complete	2/3/2016 12:50:31 PM	1
2	TOC	TOC/TIC	TOC:27.10mg/L TC:34.59mg/L IC:7.482mg/L	Complete	2/3/2016 1:03:23 PM	2
3	TOC	CCV	TOC:25.29mg/L TC:25.31mg/L IC:0.01694mg/L	Complete	2/3/2016 1:15:34 PM	3
4	TOC	WG556095-01 BLK	TOC:0.04680mg/L TC:0.1237mg/L IC:0.07687mg/L	Complete	2/3/2016 1:32:03 PM	0
5	TOC	WG556095-02 LCS	TOC:26.70mg/L TC:26.74mg/L IC:0.04281mg/L	Complete	2/3/2016 1:54:15 PM	5
6	TOC	WG556095-03 LCSDUP	TOC:26.81mg/L TC:26.86mg/L IC:0.04741mg/L	Complete	2/3/2016 2:15:13 PM	6
7	TOC	L16011377-01 (3)	TOC:3.847mg/L TC:23.62mg/L IC:19.77mg/L	Complete	2/3/2016 2:36:45 PM	7
8	TOC	L16020054-01 (3)	TOC:9.835mg/L TC:20.12mg/L IC:10.29mg/L	Complete	2/3/2016 2:59:42 PM	8
9	TOC	L16020058-01 (10)	TOC:4.625mg/L TC:26.29mg/L IC:21.67mg/L	Complete	2/3/2016 3:57:29 PM	9
10	TOC	L16020058-03 (10)	TOC:4.400mg/L TC:26.01mg/L IC:21.61mg/L	Complete	2/3/2016 4:30:07 PM	10
11	TOC	L16020058-05 (3)	TOC:3.892mg/L TC:16.44mg/L IC:12.55mg/L	Complete	2/3/2016 4:51:39 PM	11
12	TOC	L16020058-07 (3)	TOC:6.895mg/L TC:22.03mg/L IC:15.13mg/L	Complete	2/3/2016 5:13:39 PM	12
13	TOC	L16020058-09 (10)	TOC:8.241mg/L TC:33.34mg/L IC:25.10mg/L	Complete	2/3/2016 5:49:24 PM	13
14	TOC	CCV	TOC:25.89mg/L TC:26.06mg/L IC:0.1709mg/L	Complete	2/3/2016 6:01:35 PM	14
15	TOC	CCB	TOC:0.05711mg/L TC:0.1424mg/L IC:0.08533mg/L	Complete	2/3/2016 6:10:39 PM	0
16	TOC	L16020079-01	TOC:13.90mg/L TC:20.29mg/L IC:6.393mg/L	Complete	2/3/2016 6:35:38 PM	16
17	TOC	L16020097-09	TOC:3.101mg/L TC:7.709mg/L IC:4.608mg/L	Complete	2/3/2016 6:56:59 PM	17
18	TOC	L16020141-01 (3)	TOC:8.209mg/L TC:37.50mg/L IC:29.29mg/L	Complete	2/3/2016 7:19:52 PM	18
19	TOC	WG556095-05 DUP	TOC:3.177mg/L TC:7.581mg/L IC:4.403mg/L	Complete	2/3/2016 7:41:00 PM	19
20	TOC	WG556095-06 MS	TOC:13.63mg/L TC:17.32mg/L IC:3.690mg/L	Complete	2/3/2016 8:02:22 PM	20
21	TOC	CCV	TOC:26.02mg/L TC:26.11mg/L IC:0.08857mg/L	Complete	2/3/2016 8:14:30 PM	21
22	TOC	CCB	TOC:0.05655mg/L TC:0.1373mg/L IC:0.08076mg/L	Complete	2/3/2016 8:23:31 PM	0

2/4/2016 9:01:37 AM

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.851mg/L TC:29.32mg/L IC:25.47mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1147	29.32mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 12:45:28 PM

Mean Area 1147
Mean Conc. 29.32mg/L

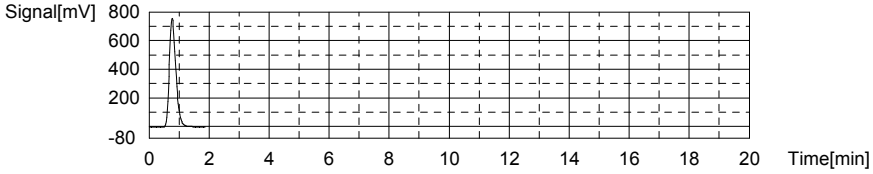

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	857.3	25.47mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 12:50:31 PM

Mean Area 857.3
Mean Conc. 25.47mg/L

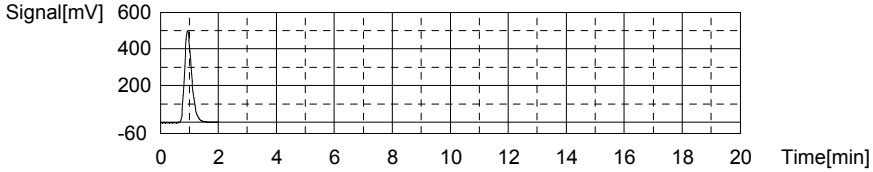

Sample

Sample Name: TOC/TIC
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.10mg/L TC:34.59mg/L IC:7.482mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1352	34.59mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 12:58:21 PM

Mean Area 1352
Mean Conc. 34.59mg/L

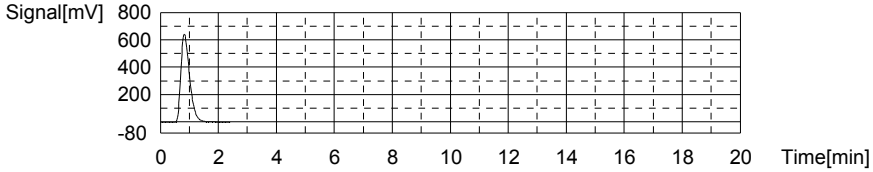

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	256.0	7.482mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 1:03:23 PM

Mean Area 256.0
Mean Conc. 7.482mg/L

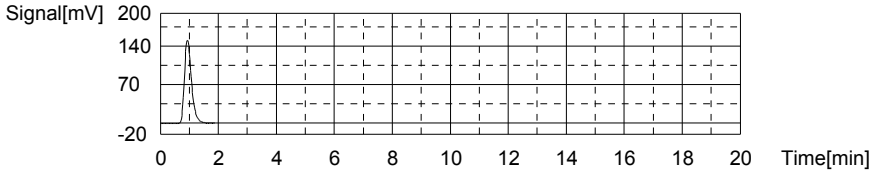

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.29mg/L TC:25.31mg/L IC:0.01694mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	990.7	25.31mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 1:11:13 PM

Mean Area 990.7
Mean Conc. 25.31mg/L

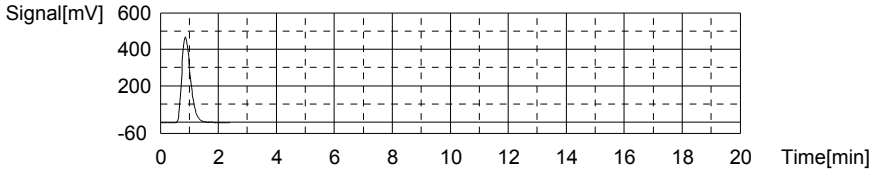

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.493	0.01694mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 1:15:34 PM

Mean Area 6.493
Mean Conc. 0.01694mg/L

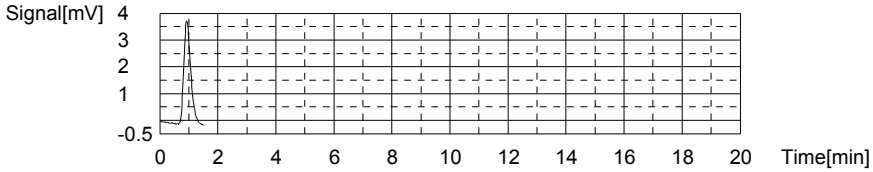

Sample

Sample Name: WG556095-01 BLK
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.04680mg/L TC:0.1237mg/L IC:0.07687mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.81	0.1504mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 1:20:39 PM
2	8.727	0.09692mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 1:24:11 PM

Mean Area 9.768
Mean Conc. 0.1237mg/L

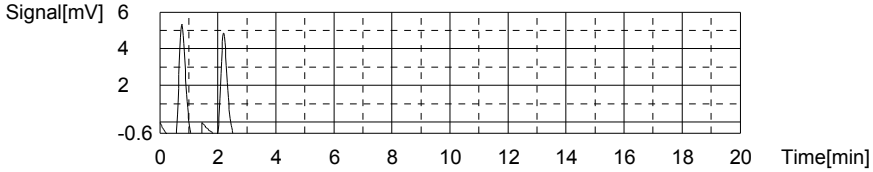

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.460	0.07579mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 1:28:06 PM
2	8.532	0.07795mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 1:32:03 PM

Mean Area 8.496
Mean Conc. 0.07687mg/L

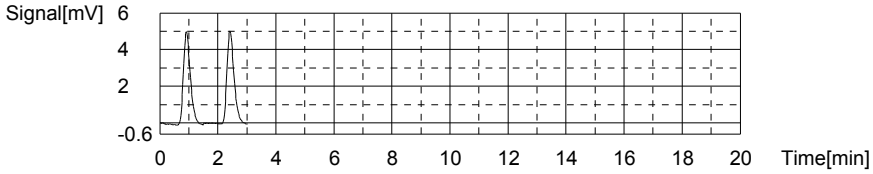

Sample

Sample Name: WG556095-02 LCS
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.70mg/L TC:26.74mg/L IC:0.04281mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1043	26.65mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 1:39:52 PM
2	1050	26.83mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 1:45:39 PM

Mean Area 1047
Mean Conc. 26.74mg/L

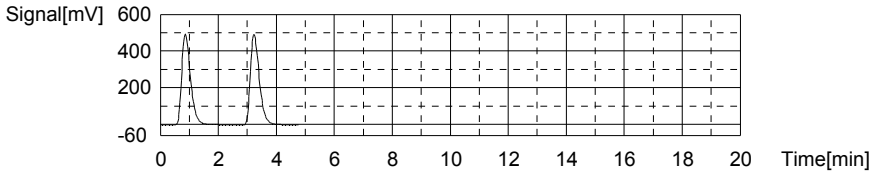

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.277	0.04040mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 1:50:01 PM
2	7.438	0.04521mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 1:54:15 PM

Mean Area 7.357
Mean Conc. 0.04281mg/L

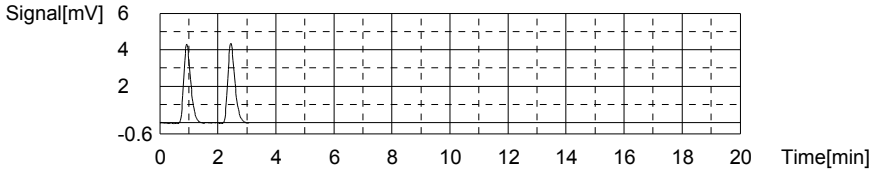

Sample

Sample Name: WG556095-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.81mg/L TC:26.86mg/L IC:0.04741mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1060	27.09mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 2:02:10 PM
2	1042	26.63mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 2:06:48 PM

Mean Area 1051
Mean Conc. 26.86mg/L

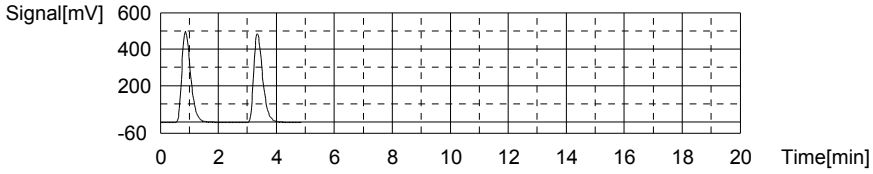

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.500	0.04707mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 2:11:07 PM
2	7.523	0.04776mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 2:15:13 PM

Mean Area 7.511
Mean Conc. 0.04741mg/L

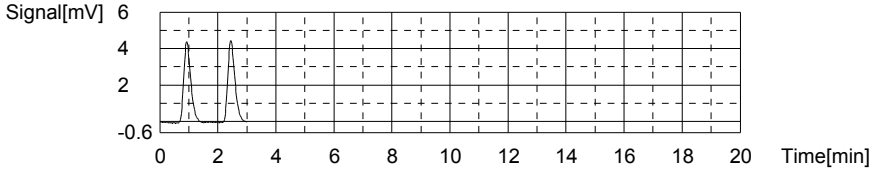

Sample

Sample Name: L16011377-01 (3)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.847mg/L TC:23.62mg/L IC:19.77mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	913.3	23.32mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 2:22:35 PM
2	936.3	23.91mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 2:26:47 PM

Mean Area 924.8
Mean Conc. 23.62mg/L

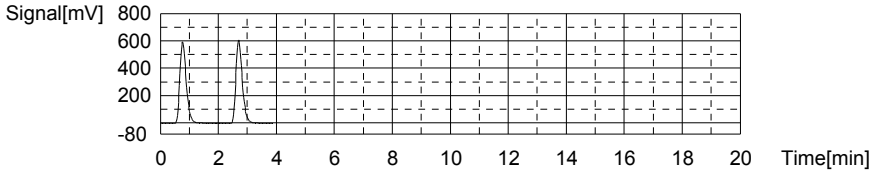

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	669.5	19.85mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 2:31:54 PM
2	664.0	19.69mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 2:36:45 PM

Mean Area 666.8
Mean Conc. 19.77mg/L

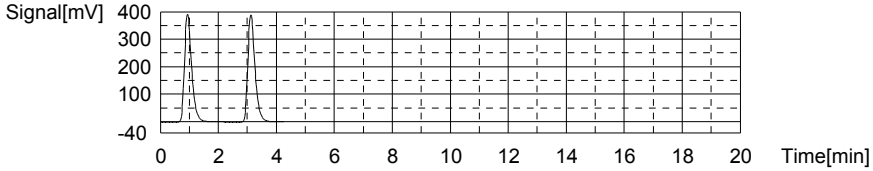

Sample

Sample Name: L16020054-01 (3)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.835mg/L TC:20.12mg/L IC:10.29mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	795.1	20.29mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 2:45:04 PM
2	782.1	19.95mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 2:50:04 PM

Mean Area 788.6
Mean Conc. 20.12mg/L

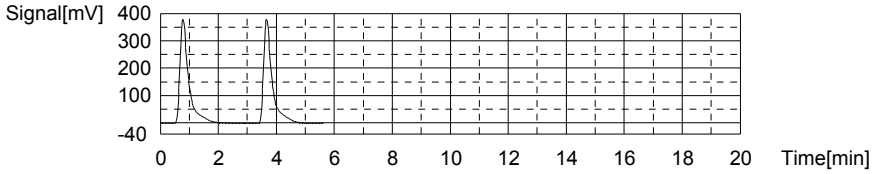

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	350.6	10.31mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 2:55:05 PM
2	348.8	10.26mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 2:59:42 PM

Mean Area 349.7
Mean Conc. 10.29mg/L

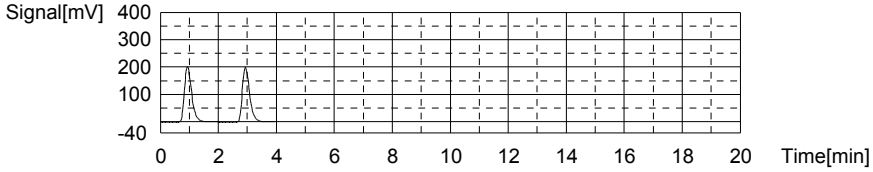

Sample

Sample Name: L16020058-01 (10)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.625mg/L TC:26.29mg/L IC:21.67mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1039	26.55mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 3:42:58 PM
2	1019	26.04mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 3:47:23 PM

Mean Area 1029
Mean Conc. 26.29mg/L

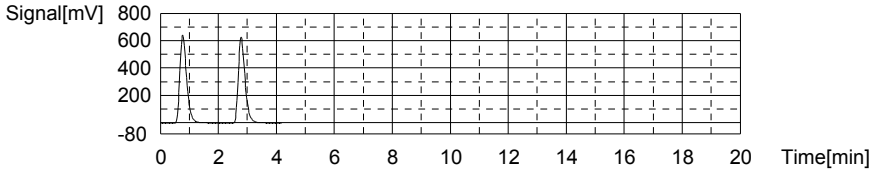

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	730.5	21.68mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 3:52:42 PM
2	729.8	21.66mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 3:57:29 PM

Mean Area 730.2
Mean Conc. 21.67mg/L

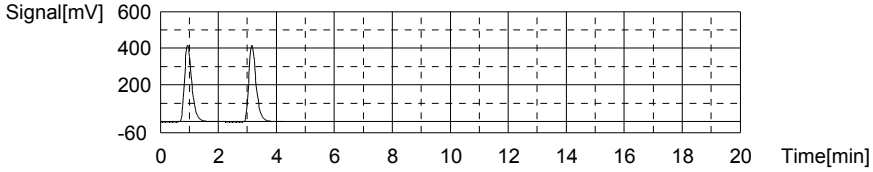

Sample

Sample Name: L16020058-03 (10)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.400mg/L TC:26.01mg/L IC:21.61mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1020	26.06mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 4:15:30 PM
2	1016	25.96mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 4:19:45 PM

Mean Area 1018
Mean Conc. 26.01mg/L

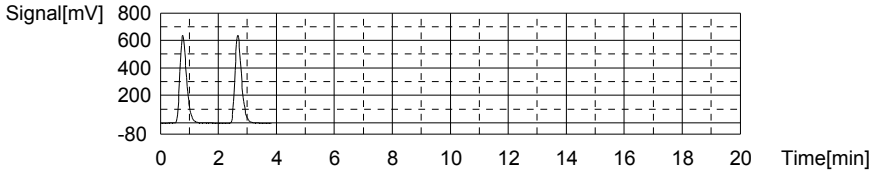

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	728.4	21.62mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 4:25:03 PM
2	728.1	21.61mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 4:30:07 PM

Mean Area 728.3
Mean Conc. 21.61mg/L

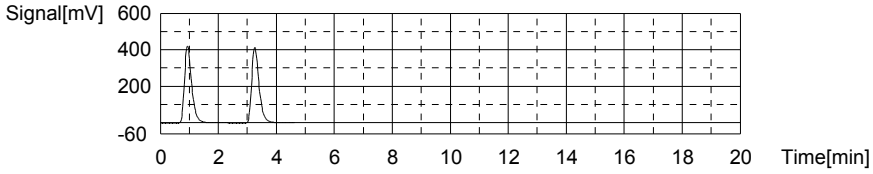

Sample

Sample Name: L16020058-05 (3)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.892mg/L TC:16.44mg/L IC:12.55mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	644.5	16.42mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 4:37:37 PM
2	646.2	16.46mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 4:41:57 PM

Mean Area 645.4
Mean Conc. 16.44mg/L

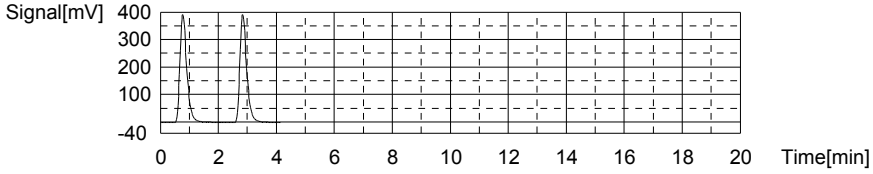

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	427.2	12.60mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 4:46:53 PM
2	423.6	12.50mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 4:51:39 PM

Mean Area 425.4
Mean Conc. 12.55mg/L

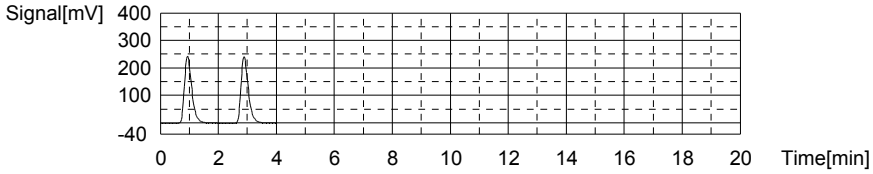

Sample

Sample Name: L16020058-07 (3)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.895mg/L TC:22.03mg/L IC:15.13mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	856.0	21.85mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 4:59:19 PM
2	869.8	22.21mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 5:03:55 PM

Mean Area 862.9
Mean Conc. 22.03mg/L

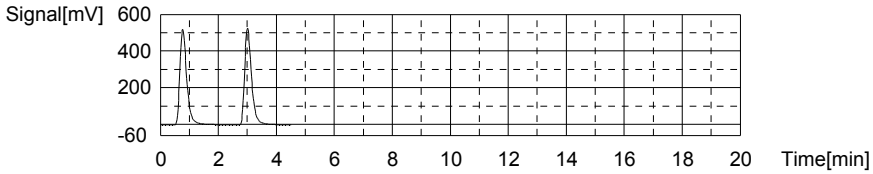

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	513.6	15.19mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 5:08:56 PM
2	509.9	15.08mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 5:13:39 PM

Mean Area 511.8
Mean Conc. 15.13mg/L

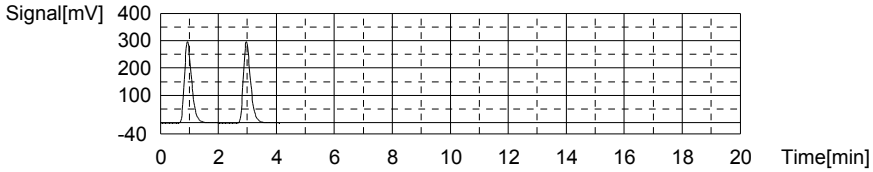

Sample

Sample Name: L16020058-09 (10)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.241mg/L TC:33.34mg/L IC:25.10mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1303	33.33mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 5:34:57 PM
2	1304	33.35mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 5:39:12 PM

Mean Area 1304
Mean Conc. 33.34mg/L

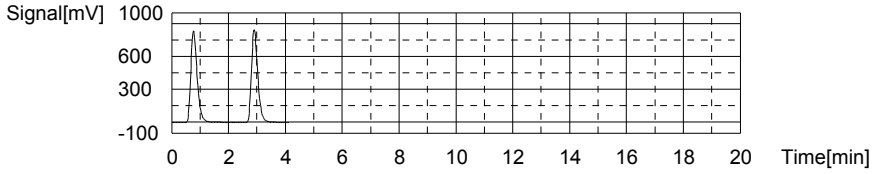

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	854.2	25.38mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 5:44:26 PM
2	835.5	24.82mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 5:49:24 PM

Mean Area 844.9
Mean Conc. 25.10mg/L

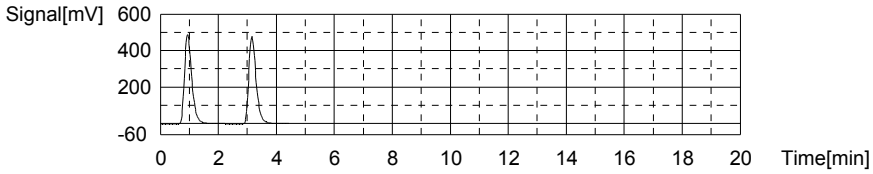

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.89mg/L TC:26.06mg/L IC:0.1709mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1020	26.06mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 5:57:07 PM

Mean Area 1020
Mean Conc. 26.06mg/L

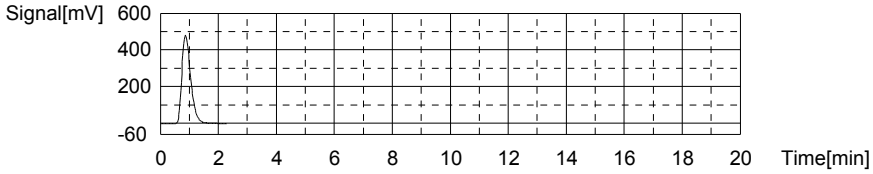

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.64	0.1709mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 6:01:35 PM

Mean Area 11.64
Mean Conc. 0.1709mg/L

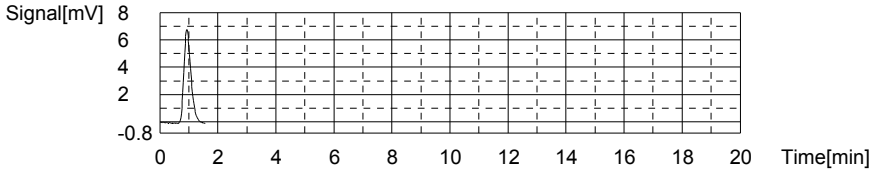

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.05711mg/L TC:0.1424mg/L IC:0.08533mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.50	0.1424mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 6:06:42 PM

Mean Area 10.50
Mean Conc. 0.1424mg/L

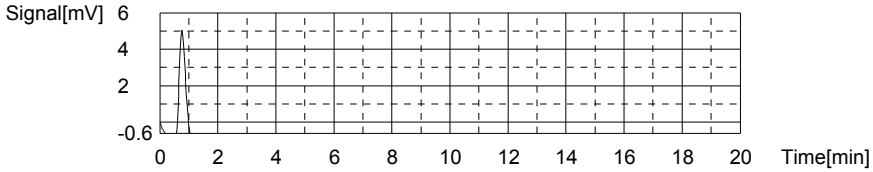

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.779	0.08533mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 6:10:39 PM

Mean Area 8.779
Mean Conc. 0.08533mg/L

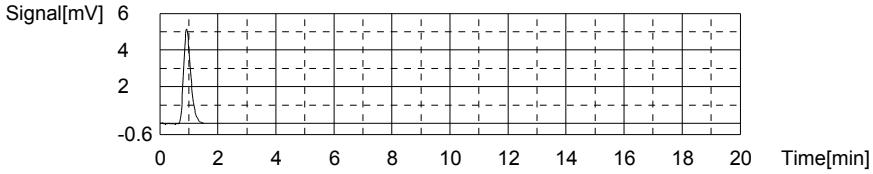

Sample

Sample Name: L16020079-01
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.90mg/L TC:20.29mg/L IC:6.393mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	793.8	20.25mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 6:19:59 PM
2	796.8	20.33mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 6:26:06 PM

Mean Area 795.3
Mean Conc. 20.29mg/L

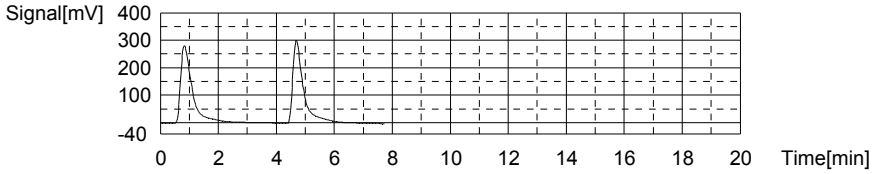

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	220.5	6.420mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 6:30:58 PM
2	218.7	6.366mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 6:35:38 PM

Mean Area 219.6
Mean Conc. 6.393mg/L

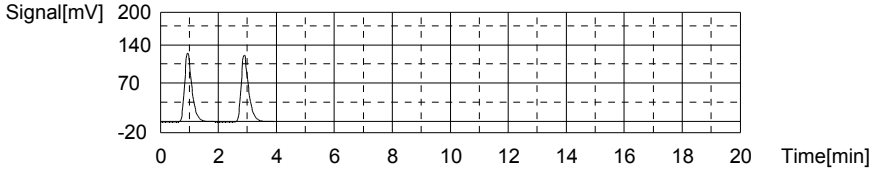

Sample

Sample Name: L16020097-09
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.101mg/L TC:7.709mg/L IC:4.608mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	304.7	7.696mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 6:43:09 PM
2	305.7	7.722mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 6:47:29 PM

Mean Area 305.2
Mean Conc. 7.709mg/L

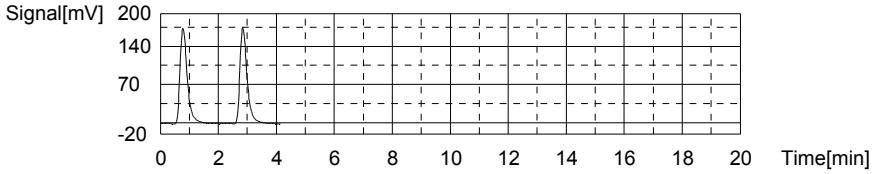

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	160.6	4.628mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 6:52:27 PM
2	159.3	4.589mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 6:56:59 PM

Mean Area 159.9
Mean Conc. 4.608mg/L

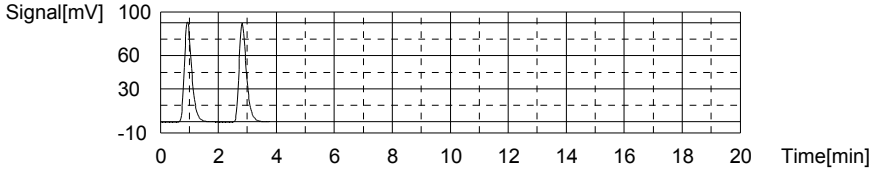

Sample

Sample Name: L16020141-01 (3)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.209mg/L TC:37.50mg/L IC:29.29mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1470	37.62mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 7:05:04 PM
2	1461	37.38mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 7:09:43 PM

Mean Area 1466
Mean Conc. 37.50mg/L

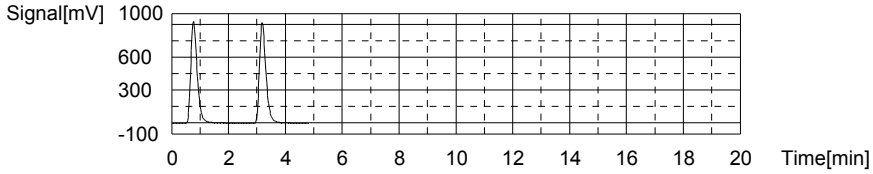

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	991.1	29.47mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 7:14:55 PM
2	978.8	29.11mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 7:19:52 PM

Mean Area 985.0
Mean Conc. 29.29mg/L

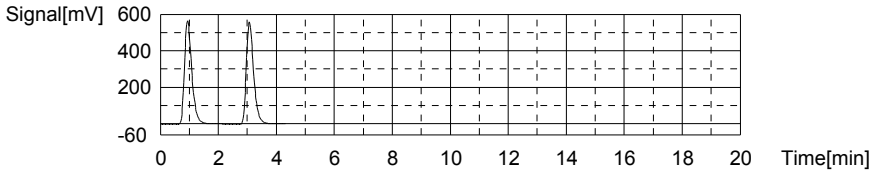

Sample

Sample Name: WG556095-05 DUP
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.177mg/L TC:7.581mg/L IC:4.403mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	302.9	7.650mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 7:27:23 PM
2	297.5	7.511mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 7:31:41 PM

Mean Area 300.2
Mean Conc. 7.581mg/L

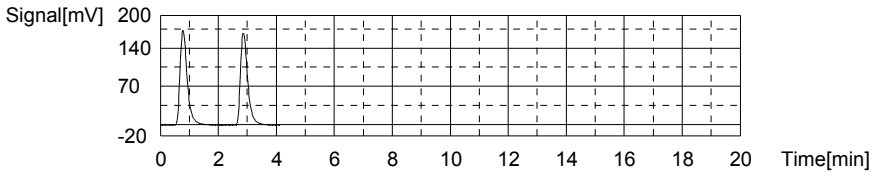

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	154.2	4.436mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 7:36:30 PM
2	152.0	4.370mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 7:41:00 PM

Mean Area 153.1
Mean Conc. 4.403mg/L

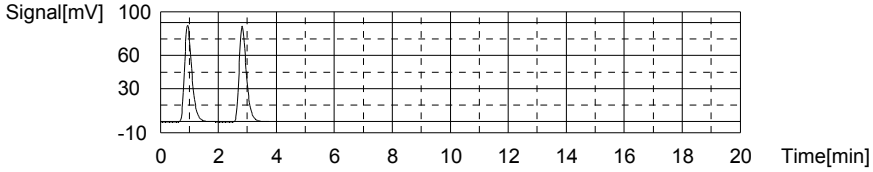

Sample

Sample Name: WG556095-06 MS
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.63mg/L TC:17.32mg/L IC:3.690mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	678.8	17.30mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 7:48:38 PM
2	680.2	17.34mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 7:53:05 PM

Mean Area 679.5
Mean Conc. 17.32mg/L

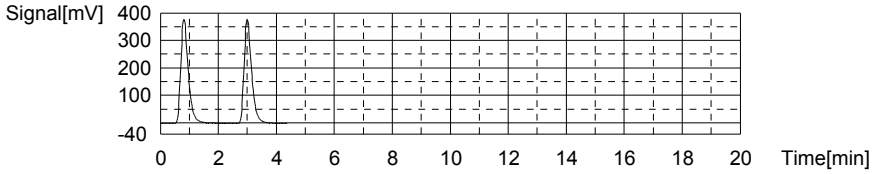

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	130.0	3.712mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 7:57:49 PM
2	128.5	3.667mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 8:02:22 PM

Mean Area 129.3
Mean Conc. 3.690mg/L

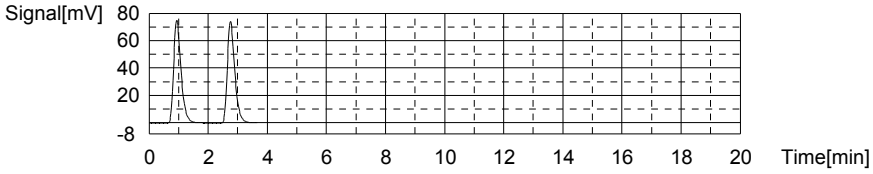

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.02mg/L TC:26.11mg/L IC:0.08857mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1022	26.11mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 8:10:04 PM

Mean Area 1022
Mean Conc. 26.11mg/L

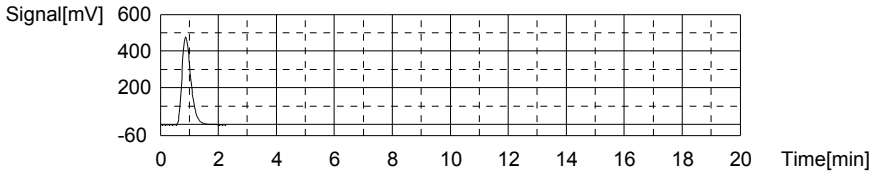

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.887	0.08857mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 8:14:30 PM

Mean Area 8.887
Mean Conc. 0.08857mg/L

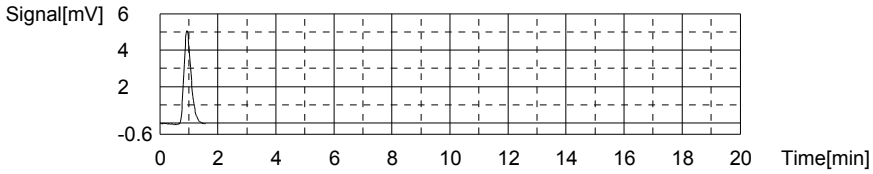

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.05655mg/L TC:0.1373mg/L IC:0.08076mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.30	0.1373mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 8:19:35 PM

Mean Area 10.30
Mean Conc. 0.1373mg/L

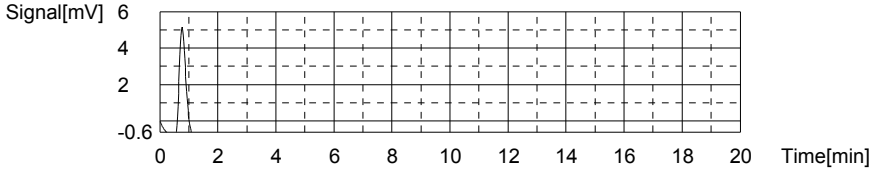

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.626	0.08076mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 8:23:31 PM

Mean Area 8.626
Mean Conc. 0.08076mg/L

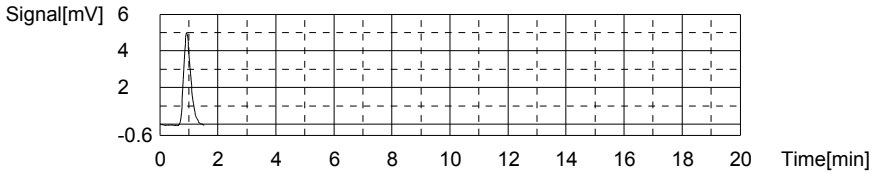

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
February 16, 2016

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
February 16, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
February 16, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD		
Project Name/Location:	Longhorn		
Project Number:	60256135.0002FA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp-	Grab	Matrix	Number of Containers	VOC	Dissolved Gases / Carbon Dioxide	Sulfide	Alkalinity	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Total Iron	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 46	46WW02-020116			2/1/16	0810		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	46WW02FF-020116			2/1/16	0810		✓	W	1								✓					
	46WW11-020116			2/1/16	0925		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	46WW11FF-020116			2/1/16	0925		✓	W	1								✓					
	LHSMW19-020116			2/1/16	1030		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	LHSMW19FF-020116			2/1/16	1030		✓	W	1								✓					
	46WW05-020116			2/1/16	1315		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	46WW05FF-020116			2/1/16	1315		✓	W	1								✓					
	46WW16-020116			2/1/16	1430		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	46WW16FF-020116			2/1/16	1430		✓	W	1								✓					
	TRIP BLANK			2/1/16			✓	W	2	✓												

Comments: STANDARD TAT

Relinquished by: (Signature) Scott Beesinger	Date 2/1/16	Time 1600	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory (Signature)				

Microbac OVD
Received: 02/02/2016 09:55
By: BRENDA GREGORY
221000081510
Brenda Gregory

Remarks:

•Homogenize all composite samples prior to analysis

Dis: C Manager

00742361

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020058
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 12-FEB-2016

Samplenum	Container ID	Products
L16020058-01	695666	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG4	02-FEB-2016 11:47	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG4	02-FEB-2016 11:47	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG4	02-FEB-2016 11:47	TMB	CLS	

Samplenum	Container ID	Products
L16020058-01	695667	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG1	03-FEB-2016 07:36	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG1	03-FEB-2016 07:36	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG1	03-FEB-2016 07:36	AWE	CLS	

Samplenum	Container ID	Products
L16020058-01	695668	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	02-FEB-2016 11:17	CLS		
2	PREP	L1	SEM	02-FEB-2016 11:27	AED	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020058
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 12-FEB-2016

Samplenum	Container ID	Products
L16020058-01	695669	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	ANALYZ	W1	WET	05-FEB-2016 08:16	DCM	CLS	
3	STORE	WET	A1	11-FEB-2016 15:13	BRG	TB	

Samplenum	Container ID	Products
L16020058-01	695670	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		<2
2	ANALYZ	W1	WET	03-FEB-2016 07:50	DCM	CLS	
3	STORE	WET	A1	05-FEB-2016 08:42	EPT	BRG	

Samplenum	Container ID	Products
L16020058-01	695671	FE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	PREP	W1	DIG	02-FEB-2016 15:11	VC	CLS	
3	STORE	DIG	A1	05-FEB-2016 13:30	BRG	ERP	
4	ANALYZ*	DIG	METALS	12-FEB-2016 09:58	KHR	VC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16020058-01	695672	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	ANALYZ	W1	WET	04-FEB-2016 08:35	EPT	BRG	
3	STORE	WET	A1	05-FEB-2016 08:42	EPT	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020058
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 12-FEB-2016

Samplenum	Container ID	Products
L16020058-02	695673	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	PREP	W1	DIG	02-FEB-2016 15:11	VC	CLS	
3	STORE	DIG	A1	05-FEB-2016 13:30	BRG	ERP	
4	ANALYZ*	DIG	METALS	11-FEB-2016 13:25	MMB	VC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16020058-03	695674	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG4	02-FEB-2016 11:47	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG4	02-FEB-2016 11:47	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG4	02-FEB-2016 11:47	TMB	CLS	

Samplenum	Container ID	Products
L16020058-03	695675	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG1	03-FEB-2016 07:36	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG1	03-FEB-2016 07:36	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG1	03-FEB-2016 07:36	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020058
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 12-FEB-2016

Samplenum	Container ID	Products
L16020058-03	695676	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	02-FEB-2016 11:17	CLS		
2	PREP	L1	SEM	02-FEB-2016 11:27	AED	CLS	

Samplenum	Container ID	Products
L16020058-03	695677	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	ANALYZ	W1	WET	05-FEB-2016 08:16	DCM	CLS	
3	STORE	WET	A1	11-FEB-2016 15:13	BRG	TB	

Samplenum	Container ID	Products
L16020058-03	695678	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		<2
2	ANALYZ	W1	WET	03-FEB-2016 07:50	DCM	CLS	
3	STORE	WET	A1	05-FEB-2016 08:42	EPT	BRG	

Samplenum	Container ID	Products
L16020058-03	695679	FE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	PREP	W1	DIG	02-FEB-2016 15:11	VC	CLS	
3	STORE	DIG	A1	05-FEB-2016 13:30	BRG	ERP	
4	ANALYZ*	DIG	METALS	12-FEB-2016 09:58	KHR	VC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020058
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 12-FEB-2016

Samplenum	Container ID	Products
L16020058-03	695680	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	ANALYZ	W1	WET	04-FEB-2016 08:35	EPT	BRG	
3	STORE	WET	A1	05-FEB-2016 08:42	EPT	BRG	

Samplenum	Container ID	Products
L16020058-04	695681	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	PREP	W1	DIG	02-FEB-2016 15:11	VC	CLS	
3	STORE	DIG	A1	05-FEB-2016 13:30	BRG	ERP	
4	ANALYZ*	DIG	METALS	11-FEB-2016 13:25	MMB	VC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16020058-05	695682	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG4	02-FEB-2016 11:47	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG4	02-FEB-2016 11:47	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG4	02-FEB-2016 11:47	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020058
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 12-FEB-2016

Samplenum	Container ID	Products
L16020058-05	695683	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG1	03-FEB-2016 07:37	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG1	03-FEB-2016 07:37	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG1	03-FEB-2016 07:37	AWE	CLS	

Samplenum	Container ID	Products
L16020058-05	695684	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	02-FEB-2016 11:17	CLS		
2	PREP	L1	SEM	02-FEB-2016 11:27	AED	CLS	

Samplenum	Container ID	Products
L16020058-05	695685	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	ANALYZ	W1	WET	05-FEB-2016 08:16	DCM	CLS	
3	STORE	WET	A1	11-FEB-2016 15:13	BRG	TB	

Samplenum	Container ID	Products
L16020058-05	695686	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	02-FEB-2016 11:17	CLS		<2
2	STORE	WET	A1	05-FEB-2016 08:42	EPT	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020058
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 12-FEB-2016

Samplenum	Container ID	Products
L16020058-05	695687	FE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	PREP	W1	DIG	02-FEB-2016 15:11	VC	CLS	
3	STORE	DIG	A1	05-FEB-2016 13:30	BRG	ERP	
4	ANALYZ*	DIG	METALS	12-FEB-2016 09:58	KHR	VC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16020058-05	695688	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	ANALYZ	W1	WET	04-FEB-2016 08:35	EPT	BRG	
3	STORE	WET	A1	05-FEB-2016 08:42	EPT	BRG	

Samplenum	Container ID	Products
L16020058-06	695689	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	PREP	W1	DIG	02-FEB-2016 15:11	VC	CLS	
3	STORE	DIG	A1	05-FEB-2016 13:30	BRG	ERP	
4	ANALYZ*	DIG	METALS	11-FEB-2016 13:25	MMB	VC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020058
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 12-FEB-2016

Samplenum	Container ID	Products
L16020058-07	695690	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG4	02-FEB-2016 11:47	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG4	02-FEB-2016 11:47	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG4	02-FEB-2016 11:47	TMB	CLS	

Samplenum	Container ID	Products
L16020058-07	695691	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG1	03-FEB-2016 07:37	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG1	03-FEB-2016 07:37	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG1	03-FEB-2016 07:37	AWE	CLS	

Samplenum	Container ID	Products
L16020058-07	695692	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	02-FEB-2016 11:17	CLS		
2	PREP	L1	SEM	02-FEB-2016 11:27	AED	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020058
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 12-FEB-2016

Samplenum	Container ID	Products
L16020058-07	695693	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	ANALYZ	W1	WET	05-FEB-2016 08:16	DCM	CLS	
3	STORE	WET	A1	11-FEB-2016 15:13	BRG	TB	

Samplenum	Container ID	Products
L16020058-07	695694	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		<2
2	ANALYZ	W1	WET	03-FEB-2016 07:50	DCM	CLS	
3	STORE	WET	A1	05-FEB-2016 08:42	EPT	BRG	

Samplenum	Container ID	Products
L16020058-07	695695	FE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	PREP	W1	DIG	02-FEB-2016 15:11	VC	CLS	
3	STORE	DIG	A1	05-FEB-2016 13:30	BRG	ERP	
4	ANALYZ*	DIG	METALS	12-FEB-2016 09:58	KHR	VC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16020058-07	695696	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	ANALYZ	W1	WET	04-FEB-2016 08:35	EPT	BRG	
3	STORE	WET	A1	05-FEB-2016 08:42	EPT	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020058
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 12-FEB-2016

Samplenum	Container ID	Products
L16020058-08	695697	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	PREP	W1	DIG	02-FEB-2016 15:11	VC	CLS	
3	STORE	DIG	A1	05-FEB-2016 13:30	BRG	ERP	
4	ANALYZ*	DIG	METALS	11-FEB-2016 13:25	MMB	VC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16020058-09	695698	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG4	02-FEB-2016 11:47	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG4	02-FEB-2016 11:47	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG4	02-FEB-2016 11:47	TMB	CLS	

Samplenum	Container ID	Products
L16020058-09	695699	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG1	03-FEB-2016 07:37	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG1	03-FEB-2016 07:37	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG1	03-FEB-2016 07:37	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020058
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 12-FEB-2016

Samplenum	Container ID	Products
L16020058-09	695700	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	02-FEB-2016 11:17	CLS		
2	PREP	L1	SEM	02-FEB-2016 11:27	AED	CLS	

Samplenum	Container ID	Products
L16020058-09	695701	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	ANALYZ	W1	WET	05-FEB-2016 08:16	DCM	CLS	
3	STORE	WET	A1	11-FEB-2016 15:13	BRG	TB	

Samplenum	Container ID	Products
L16020058-09	695702	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		<2
2	ANALYZ	W1	WET	03-FEB-2016 07:50	DCM	CLS	
3	STORE	WET	A1	05-FEB-2016 08:42	EPT	BRG	

Samplenum	Container ID	Products
L16020058-09	695703	FE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	PREP	W1	DIG	02-FEB-2016 15:11	VC	CLS	
3	STORE	DIG	A1	05-FEB-2016 13:30	BRG	ERP	
4	ANALYZ*	DIG	METALS	12-FEB-2016 09:58	KHR	VC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020058
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 12-FEB-2016

Samplenum	Container ID	Products
L16020058-09	695704	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	ANALYZ	W1	WET	04-FEB-2016 08:35	EPT	BRG	
3	STORE	WET	A1	05-FEB-2016 08:42	EPT	BRG	

Samplenum	Container ID	Products
L16020058-10	695705	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	02-FEB-2016 11:17	CLS		
2	PREP	W1	DIG	02-FEB-2016 15:11	VC	CLS	
3	STORE	DIG	A1	05-FEB-2016 13:30	BRG	ERP	
4	ANALYZ*	DIG	METALS	11-FEB-2016 13:25	MMB	VC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16020058-11	695706	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG4	02-FEB-2016 11:47	TMB	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	02-FEB-2016 11:17	CLS		
2	ANALYZ	V1	ORG4	02-FEB-2016 11:47	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16020141

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on February 16 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110728	I	4.0		J4599414018	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
46WW09-020216	L16020141-01	02/02/2016 08:10	02/03/2016 09:46
46WW09F-020216	L16020141-02	02/02/2016 08:10	02/03/2016 09:46
46WW09FF-020216	L16020141-03	02/02/2016 08:10	02/03/2016 09:46
46WW06-020216	L16020141-04	02/02/2016 10:05	02/03/2016 09:46
46WW07-020216	L16020141-05	02/02/2016 11:10	02/03/2016 09:46
LHSMW25-020216	L16020141-06	02/02/2016 13:40	02/03/2016 09:46
LHSMW25FD-020216	L16020141-07	02/02/2016 13:40	02/03/2016 09:46
46WW14-020216	L16020141-08	02/02/2016 14:45	02/03/2016 09:46
46WW14FD-020216	L16020141-09	02/02/2016 14:45	02/03/2016 09:46
TRIP BLANK	L16020141-10	02/02/2016 00:01	02/03/2016 09:46

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16020141
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 61
2.0 Full Sample Data Package 91
2.1 Volatiles Data 92
2.1.1 Volatiles GCMS Data (8260) 93
2.1.1.1 Summary Data 94
2.1.1.2 QC Summary Data 116
2.1.1.3 Sample Data 174
2.1.1.4 Standards Data 206
2.1.1.5 Raw QC Data 282
2.1.2 RSK 175 319
2.1.2.1 Summary Data 320
2.1.2.2 QC Summary Data 324
2.1.2.3 Sample Data 345
2.1.2.4 Standards Data 350
2.1.2.5 Raw QC Data 387
2.2 Metals Data 394
2.2.1 Metals I C P Data 395
2.2.1.1 Summary Data 396
2.2.1.2 QC Summary Data 400
2.2.1.3 Raw Data 446
2.2.2 Metals ICP-MS Data 736
2.2.2.1 Summary Data 737
2.2.2.2 QC Summary Data 739
2.2.2.3 Raw Data 771
2.3 General Chemistry Data 1006
2.3.1 Method 9056 1007
2.3.1.1 Summary Data 1008
2.3.1.2 QC Summary Data 1012
2.3.1.3 Sample Data 1032
2.3.1.4 Standards Data 1035
2.3.1.5 Raw QC Data 1056
2.3.2 Alkalinity Data 1059
2.3.2.1 Summary Data 1060
2.3.2.2 QC Summary Data 1062
2.3.2.3 Raw Data 1068
2.3.3 Phosphorus Data 1077
2.3.3.1 Summary Data 1078
2.3.3.2 QC Summary Data 1080
2.3.3.3 Raw Data 1086
2.3.4 Sulfide Data 1097
2.3.4.1 Summary Data 1098
2.3.4.2 QC Summary Data 1101
2.3.4.3 Raw Data 1108
2.3.5 Total Organic Carbon Data 1111
2.3.5.1 Summary Data 1112
2.3.5.2 QC Summary Data 1114
2.3.5.3 Raw Data 1121
3.0 Attachments 1146

1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Anthony Canter
LRC Date:	2016-02-12 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Anthony Canter	Anthony Canter	Analyst I	2016-02-12 20:20:35

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Anthony Canter
LRC Date:	2016-02-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Anthony Canter
LRC Date:	2016-02-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Anthony Canter
LRC Date:	2016-02-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Anthony Canter
LRC Date:	2016-02-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Anthony Canter
LRC Date:	2016-02-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Dichlorodifluoromethane and Trichlorofluoromethane were below the LCL in the ICV analyzed 01/21/16 on HPMS17.

2) 4-Methyl-2-Pentanone was below the LCL in the CCV analyzed on 02/04/16 on HPMS17.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG556003	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-05 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-02-05 15:47:59

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG556003	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-05 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG556003	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-05 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG556003	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-05 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG556003	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-05 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG556003	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-05 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There were no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG556359	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-02-16 21:07:36

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG556359	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG556359	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG556359	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG556359	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG556359	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG556201	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-02-16 21:05:09

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG556201	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG556201	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG556201	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG556201	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG556201	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-02-16 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 03 required dilution analysis in order to obtain a result for manganese within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG556163	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-02-05 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-02-05 13:36:07

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG556163	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-02-05 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				2
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG556163	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-02-05 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					1
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG556163	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-02-05 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG556163	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-02-05 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG556163	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-02-05 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fraction -01 was analyzed at dilutions only due to its high analyte concentrations (Cl and/or SO4) which was over 200 ppm. Any sample that has a single anion load greater than 200 ppm (or a total anion load greater than 400 ppm) will be diluted in order to prevent damage to the IC from repeated overloading of the analytical column and oversaturation of the suppressor membranes.

2. Fraction -01 was analyzed less than 2 hours out of hold. This is acceptable due to Texas and Ohio having a 2 hour difference per time zone change.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG556354	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-02-12 18:31:30

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG556354	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG556354	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG556354	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG556354	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG556354	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG556739	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-02-12 18:32:03

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG556739	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG556739	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG556739	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG556739	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG556739	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	S
Prep Batch Number(s):	WG556327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-02-12 18:30:53

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	S
Prep Batch Number(s):	WG556327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	S
Prep Batch Number(s):	WG556327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	S
Prep Batch Number(s):	WG556327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	S
Prep Batch Number(s):	WG556327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	S
Prep Batch Number(s):	WG556327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG556095	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-02-12 18:32:37

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG556095	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG556095	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG556095	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG556095	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16020141
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG556095	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-12 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	46WW09-020216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556769	**Analyst:**	ADC	**Run Date:**	02/09/2016 16:11
Collect Date:	02/02/2016 08:10	**Dilution:**	1	**File ID:**	17M017642
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.3	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW09-020216	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 13:25
Collect Date:	02/02/2016 08:10	**Dilution:**	1	**File ID:**	16G49345
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW09-020216	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 15:18
Collect Date:	02/02/2016 08:10	**Dilution:**	10	**File ID:**	16G49350
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	567000		100000	50000	25000

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	46WW09-020216	**Prep Method:**	9056	**Prep Date:**	02/04/2016 09:22
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG556163	**Analyst:**	AED	**Run Date:**	02/04/2016 09:57
Collect Date:	02/02/2016 08:10	**Dilution:**	20	**File ID:**	I1_020316-03
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	478		8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	2.32	J	8.00	4.00	2.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	46WW09-020216	**Prep Method:**	9056	**Prep Date:**	02/04/2016 09:22
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG556163	**Analyst:**	AED	**Run Date:**	02/04/2016 13:12
Collect Date:	02/02/2016 08:10	**Dilution:**	50	**File ID:**	I1_020316-14
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfate	14808-79-8	2160		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	46WW09-020216	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/05/2016 09:51
Workgroup #:	WG556354	**Analyst:**	DCM	**Run Date:**	02/05/2016 10:03
Collect Date:	02/02/2016 08:10	**Dilution:**	1	**File ID:**	S2160205002.027
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	183		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16020141-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	46WW09-020216	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/09/2016 10:19
Workgroup #:	WG556739	**Analyst:**	DCM	**Run Date:**	02/09/2016 10:34
Collect Date:	02/02/2016 08:10	**Dilution:**	1	**File ID:**	S2160209002.028
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.641		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16020141-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW09-020216	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG556327	**Analyst:**	EPT	**Run Date:**	02/04/2016 17:00
Collect Date:	02/02/2016 08:10	**Dilution:**	1	**File ID:**	ET.1602041700-09
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW09-020216	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG556095	**Analyst:**	EPT	**Run Date:**	02/03/2016 19:05
Collect Date:	02/02/2016 08:10	**Dilution:**	3	**File ID:**	TC02032016.018
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	24.6		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L16020141-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW09F-020216	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 14:06
Collect Date:	02/02/2016 08:10	**Dilution:**	1	**File ID:**	T3.021116.140611
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW09FF-020216	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 14:10
Collect Date:	02/02/2016 08:10	**Dilution:**	1	**File ID:**	T3.021116.141014
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	46WW09FF-020216	**Prep Method:**	3015	**Prep Date:**	02/04/2016 08:32
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/11/2016 12:30
Workgroup #:	WG556540	**Analyst:**	BKT	**Run Date:**	02/11/2016 17:58
Collect Date:	02/02/2016 08:10	**Dilution:**	100	**File ID:**	NI.021116.175846
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	1.67		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16020141-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	46WW06-020216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556290	**Analyst:**	ADC	**Run Date:**	02/04/2016 22:23
Collect Date:	02/02/2016 10:05	**Dilution:**	1	**File ID:**	17M017539
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	0.545	J	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.0	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	110	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	46WW07-020216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556408	**Analyst:**	ADC	**Run Date:**	02/05/2016 18:49
Collect Date:	02/02/2016 11:10	**Dilution:**	1	**File ID:**	17M017593
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.6	85	115	
1,2-Dichloroethane-d4	119	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	107	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	LHSMW25-020216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556290	**Analyst:**	ADC	**Run Date:**	02/04/2016 23:41
Collect Date:	02/02/2016 13:40	**Dilution:**	1	**File ID:**	17M017543
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	LHSMW25FD-020216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556290	**Analyst:**	ADC	**Run Date:**	02/05/2016 00:01
Collect Date:	02/02/2016 13:40	**Dilution:**	1	**File ID:**	17M017544
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.4	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	46WW14-020216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556290	**Analyst:**	ADC	**Run Date:**	02/04/2016 23:02
Collect Date:	02/02/2016 14:45	**Dilution:**	1	**File ID:**	17M017541
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.6	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	106	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	46WW14FD-020216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556408	**Analyst:**	ADC	**Run Date:**	02/05/2016 19:09
Collect Date:	02/02/2016 14:45	**Dilution:**	1	**File ID:**	17M017594
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.6	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	105	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556408	**Analyst:**	ADC	**Run Date:**	02/05/2016 16:08
Collect Date:	02/02/2016 00:01	**Dilution:**	1	**File ID:**	17M017586
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.1	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	105	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	46WW09-020216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556769	**Analyst:**	ADC	**Run Date:**	02/09/2016 16:11
Collect Date:	02/02/2016 08:10	**Dilution:**	1	**File ID:**	17M017642
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.3	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	46WW06-020216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556290	**Analyst:**	ADC	**Run Date:**	02/04/2016 22:23
Collect Date:	02/02/2016 10:05	**Dilution:**	1	**File ID:**	17M017539
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	0.545	J	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.0	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	110	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	46WW07-020216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556408	**Analyst:**	ADC	**Run Date:**	02/05/2016 18:49
Collect Date:	02/02/2016 11:10	**Dilution:**	1	**File ID:**	17M017593
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.6	85	115	
1,2-Dichloroethane-d4	119	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	107	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	LHSMW25-020216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556290	**Analyst:**	ADC	**Run Date:**	02/04/2016 23:41
Collect Date:	02/02/2016 13:40	**Dilution:**	1	**File ID:**	17M017543
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	LHSMW25FD-020216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556290	**Analyst:**	ADC	**Run Date:**	02/05/2016 00:01
Collect Date:	02/02/2016 13:40	**Dilution:**	1	**File ID:**	17M017544
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.4	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	46WW14-020216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556290	**Analyst:**	ADC	**Run Date:**	02/04/2016 23:02
Collect Date:	02/02/2016 14:45	**Dilution:**	1	**File ID:**	17M017541
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.6	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	106	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	46WW14FD-020216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556408	**Analyst:**	ADC	**Run Date:**	02/05/2016 19:09
Collect Date:	02/02/2016 14:45	**Dilution:**	1	**File ID:**	17M017594
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.6	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	105	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	01/21/2016 19:10
Workgroup #:	WG556408	**Analyst:**	ADC	**Run Date:**	02/05/2016 16:08
Collect Date:	02/02/2016 00:01	**Dilution:**	1	**File ID:**	17M017586
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.1	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	105	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

MICROBAC®

TCLP Volatile

Analyst(s): CPD
Date: 2/8/16
Filter Lot #: 9676955

Agitator Speed 30 ± 2 rpm ☑

Analyst / Date		Analyst / Date	
CPD	2/8/16	CPD	2/9/16
Time On	Temp On °C	Time Off	Temp Off °C
1605	22.0	0827	21.6

ZHE	Sample #	Pressure √	PSI ON	PSI OFF	Method	Fluid #	Matrix*	%Solid	Size Reduction Yes	Size Reduction No	Int. Wt. (g)	Fluid Vol. (mL)
A												
B												
C												
D												
E												
F												
G												
H												
I												
J												
K												
L												
M												
N												
✓ O	02-0360-02	✓	10	10	1311	F1-162	S	100		✓	25.02	500
✓ P	02-0227-02	✓	⊥	⊥	⊥	⊥	⊥	⊥		✓	25.24	505
Q												
R												
S												
NA	FBIK1	NA	NA	NA	1311	F1-162	NA	NA	NA	NA	40	40

CPD 2/8/16

CPD 2/8/16

CPD 2/8/16

*Matrix Code = (S-solid) (SS-sand, soil or sludge) (P-paint) (O-organic) (W-water or waste)

omments: N/A

Peer Review By: Blenda Schegoey

Analyst(s): CPD
Date: 2-4-16
Filter Lot #: 9676955

Agitator Speed 30 ± 2 rpm ✓

Analyst / Date		Analyst / Date	
CPD	2/4/16	CPD	2/5/16
Time On	Temp On °C	Time Off	Temp Off °C
1529	21.9	0809	21.8

ZHE	Sample #	Pressure √	PSI ON	PSI OFF	Method	Fluid #	Matrix*	%Solid	Size Reduction Yes	Size Reduction No	Int. Wt. (g)	Fluid Vol. (mL)
A												
B												
C												
D												
E												
F												
G												
H												
I												
✓ J	02-0207-01	✓	10	10	1311	F1-162	S	100		✓	25.21	504
K												
L												
M												
N												
O												
P												
Q												
✓ R	02-0201-02	✓	10	10	1311	F1-162	S	100		✓	25.03	501
✓ S	02-0166-02	✓	10	10	1311	F1-162	S	100		✓	25.08	502
NA	FBIK1	NA	NA	NA	1311	F1-162	NA	NA	NA	NA	40	40

CPD 2-4-16

CPD 2-4-16

CPD 2-4-16

*Matrix Code = (S-solid) (SS-sand, soil or sludge) (P-paint) (O-organic) (W-water or waste)

omments: N/A

Peer Review By: [signature]

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 012116
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74413
CCV: STD74444 LCS: STD74446 MS/MSD: NA

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG554589 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M017419	WG554589-01 50ng BFB STD 8260	NA	1	1	STD73676	01/21/16 15:25
17M017420	WG554589-02 50ug/L CCV STD 8260	NA	1	1	STD74444	01/21/16 15:45
17M017421	RINSE	NA	1	1		01/21/16 16:06
17M017422	WG554589-03 0.3ug/L STD 8260	NA	1	1	STD74444	01/21/16 16:26
17M017423	WG554589-04 0.4ug/L STD 8260	NA	1	1	STD74444	01/21/16 16:47
17M017424	WG554589-05 1.0ug/L STD 8260	NA	1	1	STD74444	01/21/16 17:07
17M017425	WG554589-06 2.0ug/L STD 8260	NA	1	1	STD74444	01/21/16 17:28
17M017426	WG554589-07 5.0ug/L STD 8260	NA	1	1	STD74444	01/21/16 17:48
17M017427	WG554589-08 20.0ug/L STD 8260	NA	1	1	STD74444	01/21/16 18:09
17M017428	WG554589-09 100.0ug/L STD 8260	NA	1	1	STD74444	01/21/16 18:29
17M017429	WG554589-10 200.0ug/L STD 8260	NA	1	1	STD74444	01/21/16 18:50
17M017430	WG554589-11 300.0ug/L STD 8260	NA	1	1	STD74444	01/21/16 19:10
17M017431	RINSE	NA	1	1		01/21/16 19:31
17M017432	WG554589-12 50.0ug/L ALTSRC 8260	NA	1	1	STD74446	01/21/16 19:51

Approved: February 03, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 020416
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74413
CCV: STD74444 LCS: STD74621 MS/MSD: NA

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG556290, WG556160

Comments: L16020055-03, 0058-01, -03, -05, -07, -09, -11, 0141-01, -05.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M017512	rinse check	NA	1	1	STD73676	02/04/16 11:00
17M017513	rinse check	NA	1	1	STD74444	02/04/16 12:31
17M017514	rinse check	NA	1	1	STD73676	02/04/16 12:51
17M017515	rinse check	NA	1	1	STD73676	02/04/16 13:10
17M017516	WG556287-01 50ng BFB	NA	1	1	STD73676	02/04/16 15:00
17M017517	WG556287-02 50ug/L CCV	NA	1	1	STD74444	02/04/16 15:18
17M017518	RINSE	NA	1	1		02/04/16 15:49
17M017519	WG556290-01 BLK 8260	NA	1	1		02/04/16 16:08
17M017520	MDL6	NA	1	1	STD74621	02/04/16 16:28
17M017521	MDL7	NA	1	1	STD74621	02/04/16 16:48
17M017522	WG556290-02 20ug/L LCS	NA	1	1	STD74621	02/04/16 17:03
17M017523	WG556290-02 20ug/L LCS	NA	1	1	STD74621	02/04/16 17:07
17M017524	L16011401-02 A MS 10X 826-TC	NA	12	10		02/04/16 17:27
17M017525	L16011401-03 A MSD 10X 826-TC	NA	12	10		02/04/16 17:47
17M017526	L16011371-01 A 10X 826-TC	NA	17	10		02/04/16 18:07
17M017527	L16011401-01 A 10X 826-TC	NA	12	10		02/04/16 18:26
17M017528	L16011401-04 A 10X 826-TC	NA	17	10		02/04/16 18:46
17M017529	RINSE	NA	1	1		02/04/16 19:06
17M017530	RINSE	NA	1	1		02/04/16 19:25
17M017531	L16020055-03 A 826-LOW	<2	1	1		02/04/16 19:45
17M017532	L16020058-11 A 826-LOW	<2	1	1		02/04/16 20:05
17M017533	L16020058-01 A 826-LOW	<2	1	1		02/04/16 20:25
17M017534	L16020058-03 A 826-LOW	<2	1	1		02/04/16 20:44
17M017535	L16020058-05 A 826-LOW	<2	1	1		02/04/16 21:04
17M017536	L16020058-07 A 826-LOW	<2	1	1		02/04/16 21:24
17M017537	L16020058-09 A 826-LOW	<2	1	1		02/04/16 21:43
17M017538	L16020141-01 A 826-LOW	<2	1	1		02/04/16 22:03
17M017539	L16020141-04 A 826-LOW	<2	1	1		02/04/16 22:23
17M017540	L16020141-05 A 826-LOW	<2	1	1		02/04/16 22:43
17M017541	L16020141-08 A 826-LOW	<2	1	1		02/04/16 23:02
17M017542	L16020055-01 A 50X 826-LOW	<2	1	50		02/04/16 23:22
17M017543	L16020141-06 A 826-LOW	<2	1	1		02/04/16 23:41
17M017544	L16020141-07 A 826-LOW	<2	1	1		02/05/16 00:01
17M017545	L16020074-01 A 100X 826-SPE	NA	12	100		02/05/16 00:21

Approved: February 08, 2016

Sarah Vandenberg

Microbac

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 020416
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74413
CCV: STD74444 LCS: STD74621 MS/MSD: NA

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG556290, WG556160

Comments: L16020055-03, 0058-01, -03, -05, -07, -09, -11, 0141-01, -05.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M017546	RINSE	NA	1	1		02/05/16 00:40
17M017547	RINSE	NA	1	1		02/05/16 01:00
17M017548	WG556160-02 20ug/L LCS 624	NA	2	1		02/05/16 01:20
17M017549	WG556160-03 20ug/L LCSDUP 624	NA	2	1		02/05/16 01:40
17M017550	RINSE	NA	2	1		02/05/16 02:00
17M017551	WG556160-04 624-BLK	NA	2	1		02/05/16 02:19
17M017552	L16020101-07 A 624-SPE1	6	2	1		02/05/16 02:39
17M017553	L16020101-09 A 624-SPE1	6	2	1		02/05/16 02:59
17M017554	L16020102-07 A 624-SPE1	6	2	1		02/05/16 03:19
17M017555	L16020102-09 A 624-SPE1	6	2	1		02/05/16 03:39
17M017556	L16020103-02 A 624-SPE	6	2	1		02/05/16 03:58
17M017557	L16020103-03 A 624-SPE	6	2	1		02/05/16 04:18
17M017558	L16020100-01 A 624-SPE1	7	2	1		02/05/16 04:38
17M017559	L16020101-01 A 624-SPE1	7	2	1		02/05/16 04:58
17M017560	L16020101-03 A 624-SPE1	7	2	1		02/05/16 05:18
17M017561	L16020101-05 A 624-SPE1	7	2	1		02/05/16 05:38
17M017562	L16020102-01 A 624-SPE1	7	2	1		02/05/16 05:57
17M017563	L16020102-03 A 624-SPE1	7	2	1		02/05/16 06:17
17M017564	L16020102-05 A 624-SPE1	7	2	1		02/05/16 06:37
17M017565	L16020103-01 A 624-SPE	7	2	1		02/05/16 06:57
17M017566	L16020160-01 A 624-SPE	<2	2	1		02/05/16 07:17
17M017567	L16020160-03 A 624-SPE	<2	2	1		02/05/16 07:36
17M017568	L16020165-01 A 624-SPE2	<2	2	1		02/05/16 07:56
17M017569	L16020165-02 A 624-SPE1	<2	2	1		02/05/16 08:16
17M017570	L16020160-02 A 624-SPE	<2	2	1		02/05/16 08:36
17M017571	RINSE	NA	2	1		02/05/16 08:55
17M017572	RINSE	NA	2	1		02/05/16 09:15

Comments

Seq.	Rerun	Dil.	Reason	Analytes
11				
File ID: 17M017522				
WG556290-02 error, false injection. No data to report.				

Approved: February 08, 2016

Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 020416
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74413
CCV: STD74444 LCS: STD74621 MS/MSD: NA

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG556290, WG556160

Comments: L16020055-03, 0058-01, -03, -05, -07, -09, -11, 0141-01, -05.

Comments

Seq.	Rerun	Dil.	Reason	Analytes
15	X	10	Analyzed too dilute	
File ID: 17M017526				
	L16011371-01			
16	X	500	Over Calibration Range	PCE
File ID: 17M017527				
	L16011401-01			
17	X	500	Over Calibration Range	PCE
File ID: 17M017528				
	L16011401-04			
52	X	10	Over Calibration Range	CIS12
File ID: 17M017563				
	L16020102-03			
59	X	10	Over Calibration Range	TCE
File ID: 17M017570				
	L16020160-02			

Approved: February 08, 2016

Sarah Vandenberg

Page: 3

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 020516
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74413 Surrogate Standard: STD74414
CCV: STD74444 LCS: STD74621 MS/MSD: STD74621

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG556539, WG556408

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M017573	WG556406-01 50ng BFB	NA	1	1	STD73676	02/05/16 11:30
17M017574	WG556406-02 50ug/L CCV	NA	1	1	STD74444	02/05/16 11:48
17M017575	RINSE	NA	1	1		02/05/16 12:12
17M017576	WG556408-01 BLK 8260	NA	1	1		02/05/16 12:31
17M017577	WG556408-02 20ug/L LCS	NA	1	1	STD74621	02/05/16 12:51
17M017578	WG556408-03 20ug/L LCSDUP	NA	1	1	STD74621	02/05/16 13:11
17M017579	L16011371-02 B 10X 826-TC	NA	17	10		02/05/16 13:30
17M017580	L16011401-01 B 500X 826-TC	NA	17	500		02/05/16 13:50
17M017581	L16011401-04 B 500X 826-TC	NA	17	500		02/05/16 14:10
17M017582	WG556408-04 20ug/L ACRYLONITRILE LC	NA	1	1	STD74618	02/05/16 14:30
17M017583	WG556408-05 20ug/L ACRYLONITRILE LC	NA	1	1	STD74618	02/05/16 14:49
17M017584	L16020055-03 B 826-LOW	<2	1	1		02/05/16 15:19
17M017585	L16020058-11 B 826-LOW	<2	1	1		02/05/16 15:38
17M017586	L16020141-10 A 826-LOW	<2	1	1		02/05/16 16:08
17M017587	L16020248-06 A 826-SPE	<2	1	1		02/05/16 16:28
17M017588	L16020058-01 B 826-LOW	<2	1	1		02/05/16 16:59
17M017589	L16020058-03 B 826-LOW	<2	1	1		02/05/16 17:19
17M017590	L16020058-05 B 826-LOW	<2	1	1		02/05/16 17:50
17M017591	L16020058-07 B 826-LOW	<2	1	1		02/05/16 18:09
17M017592	L16020058-09 B 826-LOW	<2	1	1		02/05/16 18:29
17M017593	L16020141-05 B 826-LOW	<2	1	1		02/05/16 18:49
17M017594	L16020141-09 A 826-LOW	<2	1	1		02/05/16 19:09
17M017595	L16020248-01 A 826-SPE	<2	1	1		02/05/16 19:28
17M017596	L16020248-02 A 826-SPE	<2	1	1		02/05/16 19:48
17M017597	L16020248-03 A 826-SPE	<2	1	1		02/05/16 20:08
17M017598	L16020248-04 A 826-SPE	<2	1	1		02/05/16 20:28
17M017599	L16020248-05 A 826-SPE	<2	1	1		02/05/16 20:47
17M017600	WG556539-01 20ug/L LCS 624	NA	2	1	STD74621	02/05/16 21:07
17M017601	WG556539-02 20ug/L LCSDUP 624	NA	2	1	STD74621	02/05/16 21:27
17M017602	RINSE	NA	2	1		02/05/16 21:46
17M017603	WG556539-03 624-BLK	NA	2	1		02/05/16 22:06
17M017604	L16020202-01 A 624-SPE2	5	2	1		02/05/16 22:26
17M017605	L16020326-13 A 624-SPE1	5	2	1		02/05/16 22:46
17M017606	L16020326-15 A 624-SPE1	5	2	1		02/05/16 23:06

Approved: February 08, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 020516
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74413 Surrogate Standard: STD74414
CCV: STD74444 LCS: STD74621 MS/MSD: STD74621

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG556539, WG556408

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M017607	L16020102-03 B 10X 624-SPE	7	2	10		02/05/16 23:26
17M017608	L16020160-02 A 10X 624	<2	2	10		02/05/16 23:45
17M017609	L16020183-02 A 624-SPE	6	2	1		02/06/16 00:05
17M017610	L16020185-01 A 624-SPE	6	2	1		02/06/16 00:25
17M017611	L16020202-02 A 624-SPE2	6	2	1		02/06/16 00:45
17M017612	L16020326-01 A 624-SPE1	7	2	1		02/06/16 01:05
17M017613	L16020326-03 A 624-SPE1	7	2	1		02/06/16 01:25
17M017614	L16020326-05 A 624-SPE1	7	2	1		02/06/16 01:45
17M017615	L16020302-01 A 624-SPE	6	2	1		02/06/16 02:04
17M017616	L16020371-03 A 624-SPE	6	2	1		02/06/16 02:24
17M017617	L16020376-01 A 624-SPE	6	2	1		02/06/16 02:44
17M017618	L16020376-03 A 624-SPE	6	2	1		02/06/16 03:04
17M017619	L16020228-01 A 624-SPE	<2	2	1		02/06/16 03:24
17M017620	L16020351-02 A 624-SPE1	<2	2	1		02/06/16 03:43
17M017621	L16020351-03 A 624-SPE1	<2	2	1		02/06/16 04:03
17M017622	L16020351-04 A 624-SPE1	<2	2	1		02/06/16 04:23
17M017623	L16020345-02 A 624-SPE	<2	2	1		02/06/16 04:43
17M017624	RINSE	NA	2	1		02/06/16 05:03
17M017625	RINSE	NA	2	1		02/06/16 05:22
17M017626	RINSE	NA	2	1		02/06/16 05:42

Comments

Seq.	Rerun	Dil.	Reason	Analytes
43	X	10	Over Calibration Range	
File ID: 17M017615				
L16020302-01				

Approved: February 08, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 020916
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74413 Surrogate Standard: STD74414
CCV: STD74444 LCS: STD74621 MS/MSD: STD74621

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG556769

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M017627	WG556768-01 50ng BFB	NA	1	1	STD73676	02/09/16 11:12
17M017628	WG556768-02 50ug/L CCV	NA	1	1	STD74444	02/09/16 11:31
17M017629	RINSE	NA	1	1		02/09/16 11:59
17M017630	WG556769-01 BLK 8260	NA	1	1		02/09/16 12:19
17M017631	WG556769-02 20ug/L LCS	NA	1	1	STD74621	02/09/16 12:38
17M017632	WG556769-03 20ug/L LCSDUP	NA	1	1	STD74621	02/09/16 12:58
17M017634	L16020207-01 A 10X 826-TC	NA	17	10		02/09/16 13:33
17M017635	L16020227-02 A 10X 826-TC	NA	17	10		02/09/16 13:53
17M017636	L16020360-02 A 10X 826-TC	NA	17	10		02/09/16 14:13
17M017637	L16011376-23 A 10X 826-TC	NA	17	10		02/09/16 14:32
17M017638	L16020361-01 B 50X 826-SPE	<2	1	50		02/09/16 14:52
17M017639	L16020415-01 A 826-SPE	<2	1	1		02/09/16 15:12
17M017640	L16020361-02 B 826-SPE1	<2	1	1		02/09/16 15:32
17M017641	L16020361-03 B 826-SPE1	<2	1	1		02/09/16 15:51
17M017642	L16020141-01 B 826-LOW	<2	1	1		02/09/16 16:11
17M017643	L16020415-02 A 826-SPE	<2	1	1		02/09/16 16:31
17M017644	L16020415-04 A 10X 826-SPE	<2	1	10		02/09/16 16:51
17M017645	L16020415-06 A 10X 826-SPE	<2	1	10		02/09/16 17:10
17M017646	RINSE	NA	1	1		02/09/16 17:30
17M017647	WG556769-04 624-BLK	NA	2	1		02/09/16 17:50
17M017648	L16020421-03 A 624-SPE	5	2	1		02/09/16 18:10
17M017649	L16020421-04 A 624-SPE	5	2	1		02/09/16 18:29
17M017650	L16020326-07 A REF 624-SPE1	7	1	1		02/09/16 18:49
17M017651	L16020421-01 A 826-SPE	6	2	1		02/09/16 19:09
17M017652	L16020421-02 A 624-SPE	6	2	1		02/09/16 19:29
17M017653	L16020327-01 B 500X 624-SPE1	7	2	500		02/09/16 19:48
17M017654	L16020326-09 A MS 624-SPE1	7	1	1	STD74621	02/09/16 20:08
17M017655	L16020326-11 A MSD 624-SPE1	7	1	1	STD74621	02/09/16 20:28
17M017656	RINSE	NA	2	1		02/09/16 20:47
17M017657	RINSE	NA	2	1		02/09/16 21:07
17M017658	RINSE	NA	2	1		02/09/16 21:27
17M017659	WG556661-01 FBLK	NA	17	10		02/09/16 21:46
17M017660	WG556231-01 FBLK	NA	17	10		02/09/16 22:06

Approved: February 12, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS17	Dataset:	020916		
Analyst1:	ADC	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	5035/5030B/5030C	SOP:	PAT01	Rev:	18
Method:	624	SOP:	MSV10	Rev:	12
Maintenance Log ID:					

Internal Standard: STD74413 Surrogate Standard: STD74414

CCV: STD74444 LCS: STD74621 MS/MSD: STD74621

Column 1 ID: RTX-VMS Column 2 ID: NA

Workgroups: WG556769

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X	5	Analyzed too dilute	
File ID: 17M017644				
	L16020415-04 dnr			
18	X		Analyzed too dilute	
File ID: 17M017645				
	L16020415-06 dnr			

Approved: February 12, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 21-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 73041
Analytical Workgroups: WG554589

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-FEB-2016

Secondary Reviewer:
03-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-03-2016 11:42:23

Microbac Laboratories Inc.

Data Checklist

Date: 04-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 73148
Analytical Workgroups: WG556290

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
05-FEB-2016

Secondary Reviewer:
08-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-08-2016 14:36:27

Microbac Laboratories Inc.

Data Checklist

Date: 05-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 73151
Analytical Workgroups: WG556408

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
08-FEB-2016

Secondary Reviewer:
08-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-08-2016 14:35:54

Microbac Laboratories Inc.

Data Checklist

Date: 09-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 73186
Analytical Workgroups: WG556769

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
10-FEB-2016

Secondary Reviewer:
12-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-12-2016 09:45:28

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG556290

Login Number: L16020141

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW09-020216	01	02/02/16					02/04/2016	2.6	14		02/04/16	2.6	14	
46WW06-020216	04	02/02/16					02/04/2016	2.5	14		02/04/16	2.5	14	
LHSMW25-020216	06	02/02/16					02/04/2016	2.4	14		02/04/16	2.4	14	
LHSMW25FD-020216	07	02/02/16					02/05/2016	2.4	14		02/05/16	2.4	14	
46WW14-020216	08	02/02/16					02/04/2016	2.3	14		02/04/16	2.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4620127
Report generated 02/10/2016 13:57

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG556408

Login Number: L16020141

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW07-020216	05	02/02/16					02/05/2016	3.3	14		02/05/16	3.3	14	
46WW14FD-020216	09	02/02/16					02/05/2016	3.2	14		02/05/16	3.2	14	
TRIP BLANK	10	02/02/16					02/05/2016	3.7	14		02/05/16	3.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4620127
Report generated 02/10/2016 13:57

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG556769

Login Number: L16020141

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW09-020216	01	02/02/16					02/09/2016	7.3	14		02/09/16	7.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4620127
Report generated 02/10/2016 13:57

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16020141
Instrument Id: HPMS17
Workgroup (AAB#): WG556290

Method: 8260
CAL ID: HPMS17-21-JAN-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16020141-01	1.00	01	108	100	106	103
L16020141-04	1.00	01	105	98.0	110	105
L16020141-06	1.00	01	109	99.2	107	105
L16020141-07	1.00	01	105	96.4	108	103
L16020141-08	1.00	01	102	96.6	106	103
WG556290-01	1.00	01	103	98.1	103	101
WG556290-02	1.00	01	104	103	104	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4620135
Report generated: 02/10/2016 13:58

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16020141
Instrument Id: HPMS17
Workgroup (AAB#): WG556769

Method: 8260
CAL ID: HPMS17-21-JAN-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16020141-01	1.00	02	109	97.3	101	101
WG556769-01	1.00	01	107	95.9	98.4	99.7
WG556769-02	1.00	01	109	103	99.6	102
WG556769-03	1.00	01	111	105	101	102
WG556769-04	1.00	01	108	98.4	99.7	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4620135
Report generated: 02/10/2016 13:58

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16020141
Instrument Id: HPMS17
Workgroup (AAB#): WG556408

Method: 8260
CAL ID: HPMS17-21-JAN-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16020141-05	1.00	01	119	99.6	107	104
L16020141-09	1.00	01	107	96.6	105	102
L16020141-10	1.00	01	106	95.1	105	102
WG556408-01	1.00	01	108	95.6	109	105
WG556408-02	1.00	01	107	103	110	105
WG556408-03	1.00	01	108	103	107	103
WG556408-04	1.00	02	107	99.6	108	105
WG556408-05	1.00	02	106	100	105	104

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4620135
Report generated: 02/10/2016 13:58

METHOD BLANK SUMMARY

Login Number: L16020141
Blank File ID: 17M017519
Prep Date: 02/04/16 16:08
Analyzed Date: 02/04/16 16:08
Analyst: ADC

Work Group: WG556290
Blank Sample ID: WG556290-01
Instrument ID: HPMS17
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556290-02	17M017523	02/04/16 17:07	01
46WW09-020216	L16020141-01	17M017538	02/04/16 22:03	01
46WW06-020216	L16020141-04	17M017539	02/04/16 22:23	01
46WW14-020216	L16020141-08	17M017541	02/04/16 23:02	01
LHSMW25-020216	L16020141-06	17M017543	02/04/16 23:41	01
LHSMW25FD-020216	L16020141-07	17M017544	02/05/16 00:01	01

Report Name: BLANK_SUMMARY
PDF File ID: 4620128
Report generated 02/10/2016 13:57

METHOD BLANK SUMMARY

Login Number: L16020141
Blank File ID: 17M017576
Prep Date: 02/05/16 12:31
Analyzed Date: 02/05/16 12:31
Analyst: ADC

Work Group: WG556408
Blank Sample ID: WG556408-01
Instrument ID: HPMS17
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556408-02	17M017577	02/05/16 12:51	01
LCS2	WG556408-03	17M017578	02/05/16 13:11	01
LCS	WG556408-04	17M017582	02/05/16 14:30	02
LCS2	WG556408-05	17M017583	02/05/16 14:49	02
TRIP BLANK	L16020141-10	17M017586	02/05/16 16:08	01
46WW07-020216	L16020141-05	17M017593	02/05/16 18:49	01
46WW14FD-020216	L16020141-09	17M017594	02/05/16 19:09	01

Report Name: BLANK_SUMMARY
PDF File ID: 4620128
Report generated 02/10/2016 13:57

METHOD BLANK SUMMARY

Login Number: L16020141
Blank File ID: 17M017630
Prep Date: 02/09/16 12:19
Analyzed Date: 02/09/16 12:19
Analyst: ADC

Work Group: WG556769
Blank Sample ID: WG556769-01
Instrument ID: HPMS17
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556769-02	17M017631	02/09/16 12:38	01
LCS2	WG556769-03	17M017632	02/09/16 12:58	01
46WW09-020216	L16020141-01	17M017642	02/09/16 16:11	02

Report Name: BLANK_SUMMARY
PDF File ID: 4620128
Report generated 02/10/2016 13:57

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020141 Prep Date: 02/04/16 16:08 Sample ID: WG556290-01
Instrument ID: HPMS17 Run Date: 02/04/16 16:08 Prep Method: 5030B/5030C/503
File ID: 17M017519 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG556290 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-21-JAN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4620129
10-FEB-2016 13:57

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020141 Prep Date: 02/04/16 16:08 Sample ID: WG556290-01
Instrument ID: HPMS17 Run Date: 02/04/16 16:08 Prep Method: 5030B/5030C/503
File ID: 17M017519 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG556290 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-21-JAN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	98.1	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	103	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4620129
10-FEB-2016 13:57

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16020141 Prep Date: 02/05/16 12:31 Sample ID: WG556408-01
Instrument ID: HPMS17 Run Date: 02/05/16 12:31 Prep Method: 5030B/5030C/503
File ID: 17M017576 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG556408 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-21-JAN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4620129
10-FEB-2016 13:57

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020141 Prep Date: 02/05/16 12:31 Sample ID: WG556408-01
Instrument ID: HPMS17 Run Date: 02/05/16 12:31 Prep Method: 5030B/5030C/503
File ID: 17M017576 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG556408 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-21-JAN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	95.6	85 - 115	PASS
1,2-Dichloroethane-d4	108	70 - 120	PASS
Toluene-d8	105	85 - 120	PASS
4-Bromofluorobenzene	109	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4620129
10-FEB-2016 13:57

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16020141 Prep Date: 02/09/16 12:19 Sample ID: WG556769-01
Instrument ID: HPMS17 Run Date: 02/09/16 12:19 Prep Method: 5030B/5030C/503
File ID: 17M017630 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG556769 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-21-JAN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4620129
10-FEB-2016 13:57

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020141 Prep Date: 02/09/16 12:19 Sample ID: WG556769-01
Instrument ID: HPMS17 Run Date: 02/09/16 12:19 Prep Method: 5030B/5030C/503
File ID: 17M017630 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG556769 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-21-JAN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	95.9	85 - 115	PASS
1,2-Dichloroethane-d4	107	70 - 120	PASS
Toluene-d8	99.7	85 - 120	PASS
4-Bromofluorobenzene	98.4	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4620129
10-FEB-2016 13:57

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020141 | Run Date: 02/04/2016 | Sample ID: WG556290-02
Instrument ID: HPMS17 | Run Time: 17:07 | Prep Method: 5030B/5030C/503
File ID: 17M017523 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG556290 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD74621 | Cal ID: HPMS17-21-JAN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	24.4	122	40 - 140	
Benzene	20.0	18.8	93.8	80 - 120	
Bromobenzene	20.0	18.3	91.5	75 - 125	
Bromochloromethane	20.0	19.4	96.8	65 - 130	
Bromodichloromethane	20.0	19.2	95.9	75 - 120	
Bromoform	20.0	19.3	96.3	70 - 130	
Bromomethane	20.0	20.6	103	30 - 145	
2-Butanone	20.0	22.2	111	30 - 150	
n-Butylbenzene	20.0	19.8	98.8	70 - 135	
sec-Butylbenzene	20.0	20.1	100	70 - 125	
tert-Butylbenzene	20.0	19.5	97.4	70 - 130	
Carbon disulfide	20.0	18.4	91.9	35 - 160	
Carbon tetrachloride	20.0	18.2	91.2	65 - 140	
Chlorobenzene	20.0	19.2	95.8	80 - 120	
Chlorodibromomethane	20.0	19.4	96.9	60 - 135	
Chloroethane	20.0	16.7	83.3	60 - 135	
Chloroform	20.0	19.0	95.1	65 - 135	
Chloromethane	20.0	15.8	79.1	40 - 125	
2-Chlorotoluene	20.0	19.0	95.1	75 - 125	
4-Chlorotoluene	20.0	19.5	97.5	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	20.8	104	50 - 130	
1,2-Dibromoethane	20.0	19.5	97.5	80 - 120	
Dibromomethane	20.0	19.5	97.6	75 - 125	
1,2-Dichlorobenzene	20.0	19.3	96.5	70 - 120	
1,3-Dichlorobenzene	20.0	19.3	96.4	75 - 125	
1,4-Dichlorobenzene	20.0	18.7	93.5	75 - 125	
Dichlorodifluoromethane	20.0	13.7	68.4	30 - 155	
1,1-Dichloroethane	20.0	17.7	88.5	70 - 135	
1,2-Dichloroethane	20.0	19.6	97.9	70 - 130	
1,1-Dichloroethene	20.0	17.8	89.2	70 - 130	
cis-1,2-Dichloroethene	20.0	19.0	95.0	70 - 125	
trans-1,2-Dichloroethene	20.0	18.3	91.5	60 - 140	
1,2-Dichloropropane	20.0	19.5	97.3	75 - 125	
1,3-Dichloropropane	20.0	20.4	102	75 - 125	
2,2-Dichloropropane	20.0	17.6	87.8	70 - 135	
cis-1,3-Dichloropropene	20.0	20.8	104	70 - 130	
trans-1,3-Dichloropropene	20.0	20.3	101	55 - 140	
1,1-Dichloropropene	20.0	17.8	88.9	75 - 130	
Ethylbenzene	20.0	19.0	95.2	75 - 125	
2-Hexanone	20.0	21.2	106	55 - 130	
Hexachlorobutadiene	20.0	20.6	103	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4620130
Report generated: 02/05/2016 16:08

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020141 Run Date: 02/04/2016 Sample ID: WG556290-02
Instrument ID: HPMS17 Run Time: 17:07 Prep Method: 5030B/5030C/503
File ID: 17M017523 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG556290 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD74621 Cal ID: HPMS17-21-JAN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	19.7	98.7	75 - 125	
p-Isopropyltoluene	20.0	19.3	96.7	75 - 130	
4-Methyl-2-pentanone	20.0	21.0	105	60 - 135	
Methylene chloride	20.0	18.5	92.7	55 - 140	
Naphthalene	20.0	19.0	95.1	55 - 140	
n-Propylbenzene	20.0	19.8	98.9	70 - 130	
Styrene	20.0	19.4	97.0	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.0	95.2	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	20.3	102	65 - 130	
Tetrachloroethene	20.0	18.0	90.0	45 - 150	
Toluene	20.0	18.7	93.4	75 - 120	
1,2,3-Trichlorobenzene	20.0	20.0	99.9	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.5	97.6	65 - 135	
1,1,1-Trichloroethane	20.0	18.9	94.6	65 - 130	
1,1,2-Trichloroethane	20.0	19.5	97.3	75 - 125	
Trichloroethene	20.0	19.0	95.1	70 - 125	
Trichlorofluoromethane	20.0	13.1	65.4	60 - 145	
1,2,3-Trichloropropane	20.0	20.6	103	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.2	95.9	75 - 130	
1,3,5-Trimethylbenzene	20.0	19.4	97.1	75 - 130	
Vinyl chloride	20.0	17.5	87.3	50 - 145	
o-Xylene	20.0	19.8	98.9	80 - 120	
m-,p-Xylene	40.0	38.4	96.1	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	103	85 - 115	PASS
1,2-Dichloroethane-d4	104	70 - 120	PASS
Toluene-d8	102	85 - 120	PASS
4-Bromofluorobenzene	104	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4620130
Report generated: 02/05/2016 16:08

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020141 Analyst: ADC Prep Method: 5030B/5030C/503
Instrument ID: HPMS17 Matrix: Water Method: 8260B
Workgroup (AAB#): WG556769 Units: ug/L
QC Key: DOD4 Lot #: STD74605

Sample ID: WG556769-02 LCS File ID: 17M017631 Run Date: 02/09/2016 12:38
Sample ID: WG556769-03 LCS2 File ID: 17M017632 Run Date: 02/09/2016 12:58

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	19.5	97.4	20.0	19.6	98.2	0.730	80 - 130	30	
1,1,1-Trichloroethane	20.0	19.4	97.0	20.0	20.0	100	3.10	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.3	91.7	20.0	18.8	94.1	2.59	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.1	100	20.0	20.2	101	0.428	75 - 125	30	
1,1-Dichloroethane	20.0	18.8	93.9	20.0	19.0	95.2	1.43	70 - 135	30	
1,1-Dichloroethene	20.0	17.8	88.8	20.0	19.8	98.8	10.6	70 - 130	30	
1,1-Dichloropropene	20.0	18.5	92.4	20.0	19.1	95.3	3.13	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.6	97.8	20.0	20.2	101	2.98	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.9	99.5	20.0	20.0	100	0.482	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.4	97.0	20.0	19.8	99.2	2.15	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	18.7	93.5	20.0	19.0	95.2	1.89	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.1	95.3	20.0	19.7	98.7	3.44	50 - 130	30	
1,2-Dibromoethane	20.0	20.1	100	20.0	20.4	102	1.90	80 - 120	30	
1,2-Dichlorobenzene	20.0	18.8	94.2	20.0	19.0	95.1	0.985	70 - 120	30	
1,2-Dichloroethane	20.0	21.1	105	20.0	21.3	106	0.961	70 - 130	30	
1,2-Dichloropropane	20.0	20.2	101	20.0	20.6	103	2.11	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	18.9	94.3	20.0	19.3	96.3	2.08	75 - 130	30	
1,3-Dichlorobenzene	20.0	18.9	94.4	20.0	19.4	96.9	2.66	75 - 125	30	
1,3-Dichloropropane	20.0	21.3	106	20.0	21.4	107	0.441	75 - 125	30	
1,4-Dichlorobenzene	20.0	18.6	92.9	20.0	18.8	93.9	1.05	75 - 125	30	
2,2-Dichloropropane	20.0	18.5	92.6	20.0	18.8	94.0	1.46	70 - 135	30	
2-Butanone	20.0	22.5	112	20.0	23.2	116	3.37	30 - 150	30	
2-Chlorotoluene	20.0	18.6	93.2	20.0	18.9	94.4	1.27	75 - 125	30	
2-Hexanone	20.0	20.5	103	20.0	21.3	106	3.56	55 - 130	30	
4-Chlorotoluene	20.0	19.5	97.6	20.0	19.8	98.9	1.29	75 - 130	30	
4-Methyl-2-pentanone	20.0	20.3	101	20.0	20.8	104	2.56	60 - 135	30	
Acetone	20.0	24.3	121	20.0	25.2	126	3.73	40 - 140	30	
Benzene	20.0	19.4	96.8	20.0	19.7	98.7	1.96	80 - 120	30	
Bromobenzene	20.0	17.9	89.3	20.0	18.1	90.5	1.39	75 - 125	30	
Bromochloromethane	20.0	19.9	99.7	20.0	20.2	101	1.03	65 - 130	30	
Bromodichloromethane	20.0	20.0	100	20.0	20.3	101	1.18	75 - 120	30	
Bromoform	20.0	19.6	98.2	20.0	19.8	99.1	0.962	70 - 130	30	
Bromomethane	20.0	17.7	88.4	20.0	17.3	86.7	1.95	30 - 145	30	
Carbon disulfide	20.0	15.1	75.6	20.0	17.3	86.4	13.3	35 - 160	30	
Carbon tetrachloride	20.0	18.8	93.8	20.0	19.4	97.2	3.58	65 - 140	30	
Chlorobenzene	20.0	19.6	97.9	20.0	19.8	99.1	1.21	80 - 120	30	
Chloroethane	20.0	16.8	83.9	20.0	17.0	85.2	1.57	60 - 135	30	
Chloroform	20.0	19.9	99.3	20.0	20.2	101	1.69	65 - 135	30	
Chloromethane	20.0	19.4	97.2	20.0	19.8	98.8	1.69	40 - 125	30	
cis-1,2-Dichloroethene	20.0	19.5	97.4	20.0	20.0	100	2.72	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4622095
Report generated: 02/10/2016 13:57

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020141 Analyst: ADC Prep Method: 5030B/5030C/503
Instrument ID: HPMS17 Matrix: Water Method: 8260B
Workgroup (AAB#): WG556769 Units: ug/L
QC Key: DOD4 Lot #: STD74605

Sample ID: WG556769-02 LCS File ID: 17M017631 Run Date: 02/09/2016 12:38
Sample ID: WG556769-03 LCS2 File ID: 17M017632 Run Date: 02/09/2016 12:58

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.4	112	20.0	22.8	114	1.93	70 - 130	30	
Chlorodibromomethane	20.0	20.2	101	20.0	20.2	101	0.160	60 - 135	30	
Dibromomethane	20.0	20.8	104	20.0	21.2	106	1.61	75 - 125	30	
Dichlorodifluoromethane	20.0	19.8	99.2	20.0	20.4	102	2.83	30 - 155	30	
Ethylbenzene	20.0	19.3	96.4	20.0	19.4	97.1	0.645	75 - 125	30	
Hexachlorobutadiene	20.0	19.0	95.2	20.0	19.6	97.9	2.81	50 - 140	30	
Isopropylbenzene	20.0	19.9	99.6	20.0	20.3	102	1.98	75 - 125	30	
m-,p-Xylene	40.0	39.4	98.5	40.0	39.7	99.4	0.874	75 - 130	30	
Methylene chloride	20.0	19.6	97.8	20.0	19.8	98.8	1.03	55 - 140	30	
n-Butylbenzene	20.0	20.1	100	20.0	20.7	104	3.09	70 - 135	30	
n-Propylbenzene	20.0	19.7	98.3	20.0	20.1	100	1.99	70 - 130	30	
Naphthalene	20.0	18.5	92.3	20.0	18.8	94.1	1.93	55 - 140	30	
o-Xylene	20.0	20.1	100	20.0	20.2	101	0.577	80 - 120	30	
p-Isopropyltoluene	20.0	18.8	94.2	20.0	19.3	96.6	2.53	75 - 130	30	
sec-Butylbenzene	20.0	19.5	97.5	20.0	19.8	98.8	1.33	70 - 125	30	
Styrene	20.0	19.8	98.9	20.0	20.0	100	1.21	65 - 135	30	
tert-Butylbenzene	20.0	18.6	92.9	20.0	19.1	95.5	2.84	70 - 130	30	
Tetrachloroethene	20.0	18.2	90.9	20.0	18.5	92.7	1.97	45 - 150	30	
Toluene	20.0	19.2	95.8	20.0	19.4	96.8	1.04	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.4	97.2	20.0	19.7	98.5	1.28	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.4	107	20.0	21.9	109	2.35	55 - 140	30	
Trichloroethene	20.0	20.0	100	20.0	20.4	102	2.08	70 - 125	30	
Trichlorofluoromethane	20.0	18.0	90.1	20.0	16.8	84.0	7.04	60 - 145	30	
Vinyl chloride	20.0	19.5	97.5	20.0	19.9	99.6	2.10	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	109	111	70 - 120	PASS
Dibromofluoromethane	103	105	85 - 115	PASS
4-Bromofluorobenzene	99.6	101	75 - 120	PASS
Toluene-d8	102	102	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4622095
Report generated: 02/10/2016 13:57

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020141 Analyst: ADC Prep Method: 5030B/5030C/503
Instrument ID: HPMS17 Matrix: Water Method: 8260B
Workgroup (AAB#): WG556408 Units: ug/L
QC Key: DOD4 Lot #: STD74621

Sample ID: WG556408-02 LCS File ID: 17M017577 Run Date: 02/05/2016 12:51
Sample ID: WG556408-03 LCS2 File ID: 17M017578 Run Date: 02/05/2016 13:11

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.2	101	20.0	19.6	98.1	2.93	80 - 130	30	
1,1,1-Trichloroethane	20.0	19.8	99.1	20.0	19.2	96.1	3.04	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	20.5	102	20.0	20.0	100	2.13	65 - 130	30	
1,1,2-Trichloroethane	20.0	21.0	105	20.0	20.8	104	0.864	75 - 125	30	
1,1-Dichloroethane	20.0	19.2	95.8	20.0	18.5	92.3	3.66	70 - 135	30	
1,1-Dichloroethene	20.0	19.1	95.6	20.0	18.8	93.8	1.92	70 - 130	30	
1,1-Dichloropropene	20.0	18.7	93.5	20.0	18.1	90.3	3.48	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	21.2	106	20.0	20.8	104	2.29	55 - 140	30	
1,2,3-Trichloropropane	20.0	22.6	113	20.0	22.0	110	2.80	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	20.7	103	20.0	20.0	99.9	3.34	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	21.0	105	20.0	20.1	100	4.62	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	20.7	103	20.0	21.0	105	1.42	50 - 130	30	
1,2-Dibromoethane	20.0	20.8	104	20.0	20.7	103	0.423	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.9	105	20.0	20.3	102	3.12	70 - 120	30	
1,2-Dichloroethane	20.0	21.1	106	20.0	21.0	105	0.428	70 - 130	30	
1,2-Dichloropropane	20.0	20.6	103	20.0	20.3	101	1.48	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	21.4	107	20.0	20.3	102	5.03	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.8	104	20.0	20.0	99.8	3.92	75 - 125	30	
1,3-Dichloropropane	20.0	21.9	110	20.0	21.7	108	1.35	75 - 125	30	
1,4-Dichlorobenzene	20.0	20.2	101	20.0	19.5	97.3	3.79	75 - 125	30	
2,2-Dichloropropane	20.0	18.3	91.4	20.0	17.2	86.0	6.05	70 - 135	30	
2-Butanone	20.0	24.1	121	20.0	24.2	121	0.142	30 - 150	30	
2-Chlorotoluene	20.0	21.0	105	20.0	20.1	101	4.21	75 - 125	30	
2-Hexanone	20.0	22.6	113	20.0	22.9	114	1.41	55 - 130	30	
4-Chlorotoluene	20.0	21.3	106	20.0	20.6	103	3.55	75 - 130	30	
4-Methyl-2-pentanone	20.0	21.7	109	20.0	22.2	111	2.26	60 - 135	30	
Acetone	20.0	27.2	136	20.0	27.7	138	1.62	40 - 140	30	
Benzene	20.0	19.8	99.2	20.0	19.4	96.8	2.40	80 - 120	30	
Bromobenzene	20.0	19.9	99.5	20.0	19.0	95.1	4.53	75 - 125	30	
Bromochloromethane	20.0	20.4	102	20.0	20.0	99.8	2.08	65 - 130	30	
Bromodichloromethane	20.0	20.1	101	20.0	19.9	99.7	0.942	75 - 120	30	
Bromoform	20.0	19.5	97.5	20.0	19.5	97.5	0.0406	70 - 130	30	
Bromomethane	20.0	20.2	101	20.0	18.5	92.7	8.57	30 - 145	30	
Carbon disulfide	20.0	19.0	95.1	20.0	18.4	91.9	3.39	35 - 160	30	
Carbon tetrachloride	20.0	19.1	95.6	20.0	18.5	92.3	3.55	65 - 140	30	
Chlorobenzene	20.0	20.3	102	20.0	19.8	99.0	2.69	80 - 120	30	
Chloroethane	20.0	16.9	84.3	20.0	16.4	82.1	2.62	60 - 135	30	
Chloroform	20.0	20.4	102	20.0	19.8	98.8	3.14	65 - 135	30	
Chloromethane	20.0	20.9	105	20.0	20.0	100	4.54	40 - 125	30	
cis-1,2-Dichloroethene	20.0	19.9	99.6	20.0	19.4	97.1	2.56	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4622095
Report generated: 02/10/2016 13:57

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020141 Analyst: ADC Prep Method: 5030B/5030C/503
Instrument ID: HPMS17 Matrix: Water Method: 8260B
Workgroup (AAB#): WG556408 Units: ug/L
QC Key: DOD4 Lot #: STD74621

Sample ID: WG556408-02 LCS File ID: 17M017577 Run Date: 02/05/2016 12:51
Sample ID: WG556408-03 LCS2 File ID: 17M017578 Run Date: 02/05/2016 13:11

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.0	110	20.0	21.6	108	1.62	70 - 130	30	
Chlorodibromomethane	20.0	20.2	101	20.0	20.0	100	0.992	60 - 135	30	
Dibromomethane	20.0	20.6	103	20.0	20.6	103	0.204	75 - 125	30	
Dichlorodifluoromethane	20.0	21.3	106	20.0	20.3	101	4.81	30 - 155	30	
Ethylbenzene	20.0	20.0	100	20.0	19.4	97.2	2.97	75 - 125	30	
Hexachlorobutadiene	20.0	21.4	107	20.0	20.3	102	5.12	50 - 140	30	
Isopropylbenzene	20.0	20.8	104	20.0	20.0	100	3.63	75 - 125	30	
m-,p-Xylene	40.0	40.7	102	40.0	39.3	98.3	3.46	75 - 130	30	
Methylene chloride	20.0	19.9	99.3	20.0	19.2	96.2	3.14	55 - 140	30	
n-Butylbenzene	20.0	21.6	108	20.0	20.5	103	5.19	70 - 135	30	
n-Propylbenzene	20.0	21.8	109	20.0	20.7	104	5.23	70 - 130	30	
Naphthalene	20.0	20.6	103	20.0	20.4	102	0.983	55 - 140	30	
o-Xylene	20.0	21.0	105	20.0	20.2	101	3.86	80 - 120	30	
p-Isopropyltoluene	20.0	20.9	104	20.0	20.0	99.8	4.57	75 - 130	30	
sec-Butylbenzene	20.0	21.8	109	20.0	20.7	104	5.25	70 - 125	30	
Styrene	20.0	20.4	102	20.0	19.8	99.2	3.04	65 - 135	30	
tert-Butylbenzene	20.0	21.1	106	20.0	19.9	99.4	6.02	70 - 130	30	
Tetrachloroethene	20.0	18.9	94.4	20.0	18.1	90.5	4.22	45 - 150	30	
Toluene	20.0	20.0	100	20.0	19.2	95.9	4.10	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.7	98.3	20.0	18.9	94.3	4.12	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.2	106	20.0	20.9	105	1.20	55 - 140	30	
Trichloroethene	20.0	20.6	103	20.0	20.1	101	2.45	70 - 125	30	
Trichlorofluoromethane	20.0	15.0	74.8	20.0	14.2	70.8	5.44	60 - 145	30	
Vinyl chloride	20.0	20.6	103	20.0	19.5	97.4	5.64	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	107	108	70 - 120	PASS
Dibromofluoromethane	103	103	85 - 115	PASS
4-Bromofluorobenzene	110	107	75 - 120	PASS
Toluene-d8	105	103	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4622095
Report generated: 02/10/2016 13:57

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16020141
Instrument: HPMS17
Analyst: ADC
Workgroup: WG554589

Tune ID: WG554589-01
Run Date: 01/21/2016
Run Time: 15:25
File ID: 17M017419
Cal ID: HPMS17 - 21-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.3	9806	PASS
75.0	95.0	30.0	60.0	50.5	27128	PASS
95.0	95.0	100	100	100	53731	PASS
96.0	95.0	5.00	9.00	6.43	3455	PASS
173	174	0	2.00	1.16	576	PASS
174	95.0	50.0	100	92.4	49645	PASS
175	174	5.00	9.00	7.86	3904	PASS
176	174	95.0	101	96.3	47824	PASS
177	176	5.00	9.00	6.48	3098	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG554589-02	STD-CCV	01	01/21/2016 15:45	
WG554589-03	STD	01	01/21/2016 16:26	
WG554589-04	STD	01	01/21/2016 16:47	
WG554589-05	STD	01	01/21/2016 17:07	
WG554589-06	STD	01	01/21/2016 17:28	
WG554589-07	STD	01	01/21/2016 17:48	
WG554589-08	STD	01	01/21/2016 18:09	
WG554589-09	STD	01	01/21/2016 18:29	
WG554589-10	STD	01	01/21/2016 18:50	
WG554589-11	STD	01	01/21/2016 19:10	
WG554589-12	SSCV	01	01/21/2016 19:51	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4620132
Report generated 02/10/2016 13:58

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16020141
Instrument: HPMS17
Analyst: ADC
Workgroup: WG555684

Tune ID: WG555684-01
Run Date: 01/29/2016
Run Time: 15:48
File ID: 17M017437
Cal ID: HPMS17 - 21-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.3	10633	PASS
75.0	95.0	30.0	60.0	50.0	29120	PASS
95.0	95.0	100	100	100	58189	PASS
96.0	95.0	5.00	9.00	6.43	3742	PASS
173	174	0	2.00	0.409	217	PASS
174	95.0	50.0	100	91.3	53107	PASS
175	174	5.00	9.00	7.70	4087	PASS
176	174	95.0	101	96.0	51005	PASS
177	176	5.00	9.00	6.93	3537	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG554589-13	SSCV	01	01/29/2016 16:33	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4620132
Report generated 02/10/2016 13:58

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16020141
Instrument: HPMS17
Analyst: ADC
Workgroup: WG556287

Tune ID: WG556287-01
Run Date: 02/04/2016
Run Time: 15:00
File ID: 17M017516
Cal ID: HPMS17 - 21-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.6	9095	PASS
75.0	95.0	30.0	60.0	50.2	23285	PASS
95.0	95.0	100	100	100	46405	PASS
96.0	95.0	5.00	9.00	6.92	3209	PASS
173	174	0	2.00	0.934	392	PASS
174	95.0	50.0	100	90.4	41965	PASS
175	174	5.00	9.00	7.84	3292	PASS
176	174	95.0	101	97.2	40795	PASS
177	176	5.00	9.00	7.27	2967	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG556287-02	CCV	01	02/04/2016 15:18	
WG556290-01	BLANK	01	02/04/2016 16:08	
WG556290-02	LCS	01	02/04/2016 17:07	
L16020141-01	46WW09-020216	01	02/04/2016 22:03	
L16020141-04	46WW06-020216	01	02/04/2016 22:23	
L16020141-08	46WW14-020216	01	02/04/2016 23:02	
L16020141-06	LHSMW25-020216	01	02/04/2016 23:41	
L16020141-07	LHSMW25FD-020216	01	02/05/2016 00:01	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4620132
Report generated 02/10/2016 13:58

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16020141
Instrument: HPMS17
Analyst: ADC
Workgroup: WG556406

Tune ID: WG556406-01
Run Date: 02/05/2016
Run Time: 11:30
File ID: 17M017573
Cal ID: HPMS17 - 21-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.7	8759	PASS
75.0	95.0	30.0	60.0	49.6	22075	PASS
95.0	95.0	100	100	100	44525	PASS
96.0	95.0	5.00	9.00	6.47	2879	PASS
173	174	0	2.00	0.830	313	PASS
174	95.0	50.0	100	84.7	37725	PASS
175	174	5.00	9.00	8.04	3032	PASS
176	174	95.0	101	99.3	37453	PASS
177	176	5.00	9.00	7.20	2697	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG556406-02	CCV	01	02/05/2016 11:48	
WG556408-01	BLANK	01	02/05/2016 12:31	
WG556408-02	LCS	01	02/05/2016 12:51	
WG556408-03	LCS2	01	02/05/2016 13:11	
WG556408-04	LCS	02	02/05/2016 14:30	
WG556408-05	LCS2	02	02/05/2016 14:49	
L16020141-10	TRIP BLANK	01	02/05/2016 16:08	
L16020141-05	46WW07-020216	01	02/05/2016 18:49	
L16020141-09	46WW14FD-020216	01	02/05/2016 19:09	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4620132
Report generated 02/10/2016 13:58

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16020141
Instrument: HPMS17
Analyst: ADC
Workgroup: WG556768

Tune ID: WG556768-01
Run Date: 02/09/2016
Run Time: 11:12
File ID: 17M017627
Cal ID: HPMS17 - 21-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.5	9334	PASS
75.0	95.0	30.0	60.0	51.2	23261	PASS
95.0	95.0	100	100	100	45437	PASS
96.0	95.0	5.00	9.00	6.91	3139	PASS
173	174	0	2.00	0.959	390	PASS
174	95.0	50.0	100	89.5	40683	PASS
175	174	5.00	9.00	7.86	3196	PASS
176	174	95.0	101	96.1	39109	PASS
177	176	5.00	9.00	6.81	2664	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG556768-02	CCV	01	02/09/2016 11:31	
WG556769-01	BLANK	01	02/09/2016 12:19	
WG556769-02	LCS	01	02/09/2016 12:38	
WG556769-03	LCS2	01	02/09/2016 12:58	
L16020141-01	46WW09-020216	02	02/09/2016 16:11	
WG556769-04	BLANK2	01	02/09/2016 17:50	
WG556661-01	FBLK1	DL01	02/09/2016 21:46	
WG556231-01	FBLK1	DL01	02/09/2016 22:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4620132
Report generated 02/10/2016 13:58

Response Factor Report HPMS17

Method Path : D:\MassHunter\GCMS\1\methods\
Method File : 8260VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
Last Update : Wed Jan 27 12:15:43 2016
Response Via : Initial Calibration
Curve: WG554589
Calibration Files
0.3 =17M017422.D 0.4 =17M017423.D 1 =17M017424.D 2 =17M017425.D 5 =17M017426.D 20 =17M017427.D
50 =17M017420.D 100 =17M017428.D 200 =17M017429.D 300 =17M017430.D

		Compound	0.3	0.4	1	2	5	20	50	100	200	300	Avg	%RSD	Linear
1)	I	Fluorobenzene	----------ISTD----------												
2)	T	Dichlorodifluo...			0.349	0.319	0.318	0.394	0.410	0.404	0.413	0.426	0.379	11.51	
3)	P	Chloromethane			0.386	0.337	0.337	0.364	0.378	0.380	0.386	0.393	0.370	6.02	
4)	C	Vinyl Chloride		0.341	0.354	0.332	0.329	0.360	0.369	0.369	0.376	0.389	0.358	5.71#	
5)	T	1,3-Butadiene			0.299	0.273	0.272	0.276	0.320	0.315	0.323	0.332	0.301	8.25	
6)	T	Bromomethane			0.298	0.277	0.265	0.223	0.208	0.188	0.191	0.205	0.232	18.22	0.998
7)	T	Chloroethane			0.179	0.166	0.162	0.168	0.147	0.144	0.144	0.153	0.158	8.08	
8)	T	Trichlorofluor...		0.462	0.460	0.430	0.414	0.447	0.450	0.437	0.344	0.367	0.423	9.84	
9)	T	Diethyl ether			0.205	0.193	0.200	0.194	0.197	0.207	0.210	0.214	0.202	3.76	
10)	C	1,1-Dichloroet...		0.443	0.412	0.392	0.389	0.413	0.416	0.416	0.433	0.463	0.420	5.57#	
11)	T	Carbon Disulfide		1.126	0.902	0.807	0.764	0.761	0.851	0.837	0.856	0.883	0.865	12.62	
12)	T	1,1,2-Trichlor...		0.269	0.258	0.233	0.230	0.245	0.252	0.244	0.252	0.268	0.250	5.45	
13)	T	Iodomethane			0.088	0.097	0.164	0.345	0.441	0.486	0.460	0.474	0.319	54.76	0.997
14)	T	Acrolein					0.029	0.030	0.030	0.033	0.035	0.035	0.032	8.38	
15)	T	Methylene Chlo...			0.319	0.291	0.277	0.284	0.277	0.284	0.291	0.310	0.292	5.21	
16)	T	Acetone					0.074	0.060	0.045	0.053	0.053	0.052	0.056	17.32	0.997
17)	T	trans-1,2-Dich...		0.277	0.275	0.251	0.251	0.262	0.265	0.266	0.276	0.295	0.269	5.22	
18)	T	Methyl acetate		0.130	0.137	0.136	0.160	0.168	0.162	0.185	0.190	0.189	0.162	14.48	
19)	T	Methyl Tert Bu...		0.718	0.720	0.650	0.673	0.684	0.641	0.695	0.720	0.749	0.694	5.14	
20)	P	1,1-Dichloroet...		0.539	0.542	0.500	0.501	0.522	0.516	0.526	0.544	0.579	0.530	4.63	
21)	T	Acrylonitrile				0.066	0.068	0.066	0.064	0.072	0.073	0.072	0.068	5.27	
22)	T	Vinyl Acetate					0.012	0.020	0.022	0.027	0.029	0.029	0.023	28.80	0.996
23)	T	cis-1,2-Dichlo...		0.316	0.310	0.281	0.285	0.295	0.295	0.299	0.310	0.332	0.302	5.28	
24)	T	2,2-Dichloropr...			0.169	0.217	0.258	0.346	0.415	0.400	0.412	0.437	0.332	31.10	0.998
25)	T	Cyclohexane		0.496	0.499	0.463	0.459	0.445	0.491	0.494	0.508	0.522	0.486	5.15	
26)	T	Bromochloromet...			0.161	0.157	0.168	0.180	0.177	0.186	0.192	0.203	0.178	8.77	
27)	C	Chloroform	0.494	0.471	0.500	0.464	0.482	0.501	0.498	0.507	0.521	0.551	0.499	4.99#	
28)	T	Carbon Tetrach...		0.361	0.391	0.372	0.378	0.408	0.415	0.418	0.438	0.467	0.405	8.34	
29)	S	Dibromofluorom...					0.273	0.253	0.277	0.277	0.272		0.271	3.65	
30)	T	1,1,1-Trichlor...		0.414	0.449	0.408	0.422	0.450	0.447	0.457	0.475	0.504	0.447	6.78	
31)	T	1,1-Dichloropr...		0.395	0.386	0.349	0.353	0.370	0.378	0.381	0.399	0.425	0.382	6.11	
32)	T	2-Butanone					0.085	0.087	0.075	0.091	0.092	0.087	0.086	7.13	
33)	T	Benzene		1.186	1.174	1.069	1.067	1.121	1.102	1.125	1.160	1.227	1.137	4.76	
34)	S	1,2-Dichloroet...					0.292	0.256	0.268	0.274	0.267		0.271	4.84	
35)	T	1,2-Dichloroet...		0.361	0.362	0.334	0.336	0.347	0.334	0.352	0.364	0.381	0.352	4.62	
36)	T	Methylcyclohexane	0.521	0.468	0.475	0.435	0.437	0.416	0.474	0.469	0.485	0.499	0.468	6.69	
37)	T	Trichloroethene		0.338	0.319	0.291	0.292	0.300	0.299	0.303	0.316	0.336	0.310	5.71	
38)	T	Dibromomethane		0.118	0.140	0.138	0.145	0.154	0.149	0.162	0.169	0.179	0.150	12.14	
39)	C	1,2-Dichloropr...		0.313	0.315	0.303	0.295	0.307	0.300	0.312	0.323	0.341	0.312	4.37#	

40)	T	Bromodichlorom...		0.332	0.361	0.347	0.363	0.381	0.379	0.399	0.415	0.438	0.379	8.82
41)	T	1,4-Dioxane						0.002	0.002	0.002	0.002	0.002	0.002	8.13
42)	T	2-Chloroethyl ...			0.136	0.126	0.133	0.144	0.133	0.148	0.151	0.147	0.140	6.55
43)	T	cis-1,3-Dichlo...		0.414	0.399	0.387	0.405	0.435	0.436	0.454	0.474	0.496	0.433	8.37
44)	T	4-Methyl-2-Pen...					0.069	0.073	0.064	0.080	0.082	0.076	0.074	9.12
45)	T	trans-1,3-Dich...		0.315	0.340	0.317	0.335	0.367	0.366	0.391	0.403	0.419	0.361	10.40
46)	I	Chlorobenzene-d5	----------ISTD----------											
47)	S	Toluene-d8					1.464	1.330	1.451	1.415	1.377		1.407	3.91
48)	C	Toluene		1.850	1.773	1.630	1.640	1.726	1.705	1.689	1.728	1.844	1.732	4.55#
49)	T	Tetrachloroethene		0.508	0.481	0.434	0.428	0.452	0.461	0.453	0.472	0.520	0.468	6.65
50)	T	1,1,2-Trichlor...		0.290	0.318	0.301	0.300	0.308	0.291	0.307	0.317	0.335	0.308	4.64
51)	T	Dibromochlorom...		0.368	0.376	0.355	0.378	0.409	0.400	0.430	0.446	0.478	0.404	10.01
52)	T	1,3-Dichloropr...		0.537	0.537	0.494	0.491	0.504	0.477	0.506	0.515	0.545	0.512	4.62
53)	T	1,2-Dibromoethane		0.288	0.307	0.296	0.290	0.305	0.290	0.313	0.321	0.342	0.306	5.78
54)	T	2-Hexanone				0.189	0.201	0.207	0.180	0.218	0.224	0.216	0.205	7.82
55)	P	Chlorobenzene		1.163	1.161	1.034	1.033	1.068	1.076	1.083	1.101	1.154	1.097	4.69
56)	T	1-Chlorohexane			0.100	0.090	0.095	0.094	0.106	0.104	0.106	0.112	0.101	7.35
57)	C	Ethylbenzene		0.608	0.595	0.556	0.552	0.587	0.584	0.590	0.603	0.639	0.590	4.47#
58)	T	1,1,1,2-Tetrac...		0.395	0.412	0.380	0.389	0.410	0.400	0.413	0.425	0.449	0.408	5.03
59)	T	m-,p-Xylene		0.739	0.732	0.655	0.672	0.712	0.718	0.725	0.720	0.729	0.711	4.00
60)	T	o-Xylene		0.684	0.719	0.643	0.657	0.699	0.687	0.703	0.712	0.754	0.695	4.73
61)	T	Styrene		1.120	1.085	1.022	1.049	1.137	1.139	1.175	1.198	1.227	1.128	5.98
62)	P	Bromoform		0.224	0.244	0.236	0.245	0.264	0.255	0.286	0.300	0.311	0.263	11.37
63)	T	Isopropylbenzene		1.843	1.865	1.754	1.742	1.839	1.842	1.850	1.818	1.798	1.817	2.39
64)	I	1,4-Dichlorobenzen...	----------ISTD----------											
65)	T	1,3,5-Trimethy...		3.024	3.105	2.809	2.856	3.036	3.043	3.011	2.996	2.967	2.983	3.15
66)	S	p-Bromofluorob...					0.872	0.913	0.976	0.969	0.954		0.937	4.68
67)	T	Bromobenzene	1.091	0.977	0.948	0.879	0.868	0.930	0.922	0.933	0.961	1.021	0.953	6.91
68)	T	n-Propylbenzene		4.048	4.048	3.704	3.776	4.110	4.132	3.999	3.928	3.854	3.955	3.80
69)	P	1,1,2,2-Tetrac...		0.694	0.713	0.670	0.674	0.704	0.640	0.702	0.724	0.744	0.696	4.47
70)	T	2-Chlorotoluene		2.549	2.528	2.337	2.329	2.460	2.446	2.432	2.460	2.532	2.453	3.24
71)	T	1,2,3-Trichlor...			0.194	0.183	0.181	0.188	0.169	0.187	0.194	0.198	0.187	5.01
72)	T	trans-1,4-Dich...			0.152	0.129	0.133	0.142	0.145	0.157	0.159	0.163	0.147	8.27
73)	T	1,2,4-Trimethy...		3.070	3.095	2.744	2.850	3.044	3.058	2.998	2.993	2.932	2.976	3.88
74)	T	4-Chlorotoluene		2.707	2.492	2.291	2.312	2.469	2.493	2.458	2.558	2.571	2.484	5.15
75)	T	tert-Butylbenzene		0.623	0.561	0.519	0.526	0.554	0.551	0.546	0.567	0.590	0.560	5.66
76)	T	sec-Butylbenzene		3.781	3.738	3.458	3.496	3.756	3.779	3.667	3.598	3.455	3.636	3.80
77)	T	p-Isopropyltol...		3.241	3.151	2.872	2.958	3.247	3.280	3.183	3.130	3.043	3.123	4.45
78)	T	1,3-Dichlorobe...		1.923	1.741	1.597	1.620	1.693	1.736	1.717	1.750	1.790	1.730	5.52
79)	T	1,4-Dichlorobe...	2.224	2.055	1.774	1.587	1.574	1.680	1.708	1.703	1.735	1.780	1.782	11.47
80)	T	n-Butylbenzene		2.812	2.718	2.499	2.516	2.851	3.010	2.900	2.901	2.828	2.782	6.26
81)	T	1,2-Dichlorobe...	1.935	1.805	1.735	1.554	1.562	1.642	1.619	1.636	1.656	1.698	1.684	6.89
82)	T	1,2-Dibromo-3-...				0.117	0.118	0.126	0.114	0.131	0.133	0.138	0.125	7.42
83)	T	Hexachlorobuta...		0.699	0.728	0.623	0.622	0.686	0.705	0.670	0.714	0.753	0.689	6.45
84)	T	1,2,4-Trichlor...		1.441	1.293	1.117	1.136	1.245	1.250	1.253	1.320	1.389	1.272	8.31
85)	T	Naphthalene		2.527	2.380	2.151	2.252	2.427	2.194	2.366	2.402	2.405	2.345	5.17
86)	T	1,2,3-Trichlor...		1.297	1.203	1.057	1.095	1.186	1.124	1.146	1.209	1.271	1.177	6.72

(#) = Out of Range

8260VMS.M Mon Feb 01 12:22:22 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16020141 Run Date: 01/21/2016 Sample ID: WG554589-12
Instrument ID: HPMS17 Run Time: 19:51 Method: 8260B
File ID: 17M017432 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG554589 Cal ID: HPMS17 - 21-JAN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.6	ug/L	0.495	0.800	20	
1,1-Dichloroethene	CCC	50.0	44.4	ug/L	0.373	11.2	20	
1,2-Dichloropropane	CCC	50.0	50.7	ug/L	0.316	1.40	20	
Ethylbenzene	CCC	50.0	50.3	ug/L	0.594	0.500	20	
Toluene	CCC	50.0	50.1	ug/L	1.74	0.200	20	
Vinyl Chloride	CCC	50.0	45.0	ug/L	0.322	9.90	20	
Bromoform	SPCC	50.0	48.5	ug/L	0.255	3.00	20	
Chlorobenzene	SPCC	50.0	50.6	ug/L	1.11	1.20	20	
Chloromethane	SPCC	50.0	41.5	ug/L	0.307	16.9	20	
1,1-Dichloroethane	SPCC	50.0	46.2	ug/L	0.490	7.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.8	ug/L	0.721	3.60	20	
Acetone		50.0	55.8	ug/L	0.0592	11.6	20	
Benzene		50.0	48.6	ug/L	1.11	2.80	20	
Bromobenzene		50.0	49.3	ug/L	0.940	1.40	20	
Bromochloromethane		50.0	50.1	ug/L	0.178	0.100	20	
Bromodichloromethane		50.0	50.4	ug/L	0.382	0.800	20	
Bromomethane		50.0	51.2	ug/L	0.206	2.40	20	
2-Butanone		50.0	53.6	ug/L	0.0923	7.20	20	
n-Butylbenzene		50.0	53.5	ug/L	2.98	7.00	20	
sec-Butylbenzene		50.0	53.6	ug/L	3.90	7.20	20	
tert-Butylbenzene		50.0	52.3	ug/L	0.585	4.60	20	
Carbon Disulfide		50.0	48.9	ug/L	0.846	2.30	20	
Carbon Tetrachloride		50.0	48.4	ug/L	0.392	3.20	20	
Dibromochloromethane		50.0	50.7	ug/L	0.410	1.40	20	
Chloroethane		50.0	41.1	ug/L	0.130	17.7	20	
2-Chlorotoluene		50.0	51.8	ug/L	2.54	3.60	20	
4-Chlorotoluene		50.0	54.0	ug/L	2.68	8.00	20	
1,2-Dibromo-3-Chloropropane		50.0	52.4	ug/L	0.131	4.80	20	
1,2-Dibromoethane		50.0	50.6	ug/L	0.310	1.30	20	
Dibromomethane		50.0	50.5	ug/L	0.152	1.00	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.70	1.10	20	
1,3-Dichlorobenzene		50.0	51.1	ug/L	1.77	2.20	20	
1,4-Dichlorobenzene		50.0	50.1	ug/L	1.79	0.200	20	
Dichlorodifluoromethane		50.0	37.5	ug/L	0.285	24.9	20	*
1,2-Dichloroethane		50.0	50.1	ug/L	0.353	0.300	20	
cis-1,2-Dichloroethene		50.0	49.5	ug/L	0.300	0.900	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.259	3.80	20	
1,3-Dichloropropane		50.0	52.9	ug/L	0.541	5.70	20	
2,2-Dichloropropane		50.0	46.5	ug/L	0.385	7.00	20	
cis-1,3-Dichloropropene		50.0	55.1	ug/L	0.478	10.2	20	
trans-1,3-Dichloropropene		50.0	52.5	ug/L	0.379	5.00	20	
1,1-Dichloropropene		50.0	46.8	ug/L	0.357	6.40	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4620131
Report generated 02/10/2016 13:57

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16020141 Run Date: 01/21/2016 Sample ID: WG554589-12
Instrument ID: HPMS17 Run Time: 19:51 Method: 8260B
File ID: 17M017432 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG554589 Cal ID: HPMS17 - 21-JAN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	50.1	ug/L	0.205	0.200	20	
Hexachlorobutadiene		50.0	52.7	ug/L	0.726	5.40	20	
Isopropylbenzene		50.0	51.3	ug/L	1.87	2.70	20	
p-Isopropyltoluene		50.0	51.7	ug/L	3.23	3.30	20	
4-Methyl-2-Pentanone		50.0	48.9	ug/L	0.0723	2.20	20	
Methylene Chloride		50.0	47.8	ug/L	0.279	4.40	20	
Naphthalene		50.0	46.8	ug/L	2.20	6.30	20	
n-Propylbenzene		50.0	54.3	ug/L	4.30	8.60	20	
Styrene		50.0	50.6	ug/L	1.14	1.10	20	
1,1,1,2-Tetrachloroethane		50.0	50.1	ug/L	0.409	0.200	20	
Tetrachloroethene		50.0	48.3	ug/L	0.452	3.30	20	
1,2,3-Trichlorobenzene		50.0	49.5	ug/L	1.16	1.00	20	
1,2,4-Trichlorobenzene		50.0	50.3	ug/L	1.28	0.600	20	
1,1,1-Trichloroethane		50.0	49.5	ug/L	0.443	1.00	20	
1,1,2-Trichloroethane		50.0	50.1	ug/L	0.308	0.100	20	
Trichloroethene		50.0	49.4	ug/L	0.306	1.20	20	
Trichlorofluoromethane		50.0	33.5	ug/L	0.284	33.0	20	*
1,2,3-Trichloropropane		50.0	52.5	ug/L	0.196	4.90	20	
1,2,4-Trimethylbenzene		50.0	51.3	ug/L	3.05	2.60	20	
1,3,5-Trimethylbenzene		50.0	53.0	ug/L	3.16	6.00	20	
o-Xylene		50.0	52.1	ug/L	0.724	4.10	20	
m-,p-Xylene		100	103	ug/L	0.734	3.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4620131
Report generated 02/10/2016 13:57

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141 Run Date: 02/04/2016 Sample ID: WG556287-02
Instrument ID: HPMS17 Run Time: 15:18 Method: 8260B
File ID: 17M017517 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG556290 Cal ID: HPMS17 - 21-JAN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.8	ug/L	0.487	2.32	20	
1,1-Dichloroethene	CCC	50.0	51.0	ug/L	0.428	1.91	20	
1,2-Dichloropropane	CCC	50.0	46.9	ug/L	0.293	6.13	20	
Ethylbenzene	CCC	50.0	48.4	ug/L	0.572	3.15	20	
Toluene	CCC	50.0	47.8	ug/L	1.66	4.34	20	
Vinyl Chloride	CCC	50.0	49.8	ug/L	0.356	0.378	20	
Bromoform	SPCC	50.0	46.6	ug/L	0.245	6.81	20	
Chlorobenzene	SPCC	50.0	47.6	ug/L	1.04	4.85	20	
Chloromethane	SPCC	50.0	48.0	ug/L	0.356	3.91	20	
1,1-Dichloroethane	SPCC	50.0	48.0	ug/L	0.508	4.09	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	43.5	ug/L	0.605	13.0	20	
Xylenes		150	147	ug/L	0.688	1.88	20	
Acetone		50.0	44.5	ug/L	0.0477	10.9	20	
Benzene		50.0	47.9	ug/L	1.09	4.23	20	
Bromobenzene		50.0	46.7	ug/L	0.891	6.51	20	
Bromochloromethane		50.0	49.2	ug/L	0.175	1.70	20	
Bromodichloromethane		50.0	48.8	ug/L	0.370	2.37	20	
Bromomethane		50.0	50.6	ug/L	0.204	1.17	20	
2-Butanone		50.0	42.0	ug/L	0.0724	16.0	20	
n-Butylbenzene		50.0	52.6	ug/L	2.92	5.12	20	
sec-Butylbenzene		50.0	50.6	ug/L	3.68	1.30	20	
tert-Butylbenzene		50.0	48.4	ug/L	0.542	3.13	20	
Carbon Disulfide		50.0	42.1	ug/L	0.729	15.8	20	
Carbon Tetrachloride		50.0	49.8	ug/L	0.404	0.313	20	
Dibromochloromethane		50.0	47.4	ug/L	0.384	5.18	20	
Chloroethane		50.0	47.2	ug/L	0.149	5.66	20	
2-Chlorotoluene		50.0	48.3	ug/L	2.37	3.45	20	
4-Chlorotoluene		50.0	48.5	ug/L	2.41	3.00	20	
1,2-Dibromo-3-Chloropropane		50.0	42.0	ug/L	0.105	15.9	20	
1,2-Dibromoethane		50.0	45.3	ug/L	0.277	9.42	20	
Dibromomethane		50.0	48.7	ug/L	0.146	2.70	20	
1,2-Dichlorobenzene		50.0	46.3	ug/L	1.56	7.49	20	
1,3-Dichlorobenzene		50.0	48.6	ug/L	1.68	2.78	20	
1,4-Dichlorobenzene		50.0	46.8	ug/L	1.67	6.34	20	
Dichlorodifluoromethane		50.0	53.0	ug/L	0.402	5.96	20	
1,2-Dichloroethane		50.0	46.4	ug/L	0.327	7.15	20	
cis-1,2-Dichloroethene		50.0	47.8	ug/L	0.289	4.33	20	
trans-1,2-Dichloroethene		50.0	48.4	ug/L	0.260	3.20	20	
1,3-Dichloropropane		50.0	44.6	ug/L	0.456	10.8	20	
2,2-Dichloropropane		50.0	48.3	ug/L	0.399	3.48	20	
cis-1,3-Dichloropropene		50.0	49.2	ug/L	0.426	1.62	20	
trans-1,3-Dichloropropene		50.0	49.4	ug/L	0.357	1.24	20	

CCV - Modified 03/05/2008
PDF File ID: 4620133
Report generated 02/10/2016 13:58

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141 Run Date: 02/04/2016 Sample ID: WG556287-02
Instrument ID: HPMS17 Run Time: 15:18 Method: 8260B
File ID: 17M017517 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG556290 Cal ID: HPMS17 - 21-JAN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	49.0	ug/L	0.375	1.92	20	
2-Hexanone		50.0	40.0	ug/L	0.164	20.0	20	
Hexachlorobutadiene		50.0	49.4	ug/L	0.681	1.16	20	
Isopropylbenzene		50.0	49.6	ug/L	1.80	0.865	20	
p-Isopropyltoluene		50.0	51.1	ug/L	3.19	2.26	20	
4-Methyl-2-Pentanone		50.0	39.9	ug/L	0.0590	20.2	20	*
Methylene Chloride		50.0	46.6	ug/L	0.272	6.73	20	
Naphthalene		50.0	45.0	ug/L	2.11	9.96	20	
n-Propylbenzene		50.0	51.0	ug/L	4.03	1.95	20	
Styrene		50.0	49.3	ug/L	1.11	1.44	20	
1,1,1,2-Tetrachloroethane		50.0	47.8	ug/L	0.390	4.36	20	
Tetrachloroethene		50.0	48.1	ug/L	0.450	3.86	20	
1,2,3-Trichlorobenzene		50.0	46.2	ug/L	1.09	7.61	20	
1,2,4-Trichlorobenzene		50.0	48.0	ug/L	1.22	4.04	20	
1,1,1-Trichloroethane		50.0	49.4	ug/L	0.442	1.29	20	
1,1,2-Trichloroethane		50.0	45.1	ug/L	0.278	9.73	20	
Trichloroethene		50.0	48.1	ug/L	0.298	3.89	20	
Trichlorofluoromethane		50.0	52.0	ug/L	0.440	3.90	20	
1,2,3-Trichloropropane		50.0	43.4	ug/L	0.162	13.3	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.96	0.577	20	
1,3,5-Trimethylbenzene		50.0	49.9	ug/L	2.98	0.220	20	
o-Xylene		50.0	48.5	ug/L	0.674	3.05	20	
m-,p-Xylene		100	98.7	ug/L	0.702	1.30	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4620133
Report generated 02/10/2016 13:58

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141 Run Date: 02/05/2016 Sample ID: WG556406-02
Instrument ID: HPMS17 Run Time: 11:48 Method: 8260B
File ID: 17M017574 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG556408 Cal ID: HPMS17 - 21-JAN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.1	ug/L	0.500	0.244	20	
1,1-Dichloroethene	CCC	50.0	52.4	ug/L	0.440	4.80	20	
1,2-Dichloropropane	CCC	50.0	48.7	ug/L	0.304	2.62	20	
Ethylbenzene	CCC	50.0	49.1	ug/L	0.580	1.71	20	
Toluene	CCC	50.0	48.9	ug/L	1.69	2.13	20	
Vinyl Chloride	CCC	50.0	50.7	ug/L	0.363	1.39	20	
Bromoform	SPCC	50.0	47.3	ug/L	0.248	5.45	20	
Chlorobenzene	SPCC	50.0	48.0	ug/L	1.05	4.02	20	
Chloromethane	SPCC	50.0	51.7	ug/L	0.383	3.36	20	
1,1-Dichloroethane	SPCC	50.0	49.5	ug/L	0.525	0.908	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	44.4	ug/L	0.618	11.2	20	
Xylenes		150	149	ug/L	0.699	0.408	20	
Acetone		50.0	50.2	ug/L	0.0535	0.327	20	
Benzene		50.0	48.7	ug/L	1.11	2.56	20	
Bromobenzene		50.0	47.6	ug/L	0.908	4.76	20	
Bromochloromethane		50.0	49.6	ug/L	0.177	0.755	20	
Bromodichloromethane		50.0	50.5	ug/L	0.384	1.08	20	
Bromomethane		50.0	44.8	ug/L	0.181	10.3	20	
2-Butanone		50.0	46.9	ug/L	0.0807	6.29	20	
n-Butylbenzene		50.0	53.6	ug/L	2.98	7.30	20	
sec-Butylbenzene		50.0	51.8	ug/L	3.77	3.59	20	
tert-Butylbenzene		50.0	48.8	ug/L	0.546	2.40	20	
Carbon Disulfide		50.0	41.8	ug/L	0.724	16.3	20	
Carbon Tetrachloride		50.0	50.9	ug/L	0.413	1.78	20	
Dibromochloromethane		50.0	49.0	ug/L	0.396	2.05	20	
Chloroethane		50.0	44.4	ug/L	0.140	11.2	20	
2-Chlorotoluene		50.0	50.3	ug/L	2.47	0.619	20	
4-Chlorotoluene		50.0	49.9	ug/L	2.48	0.206	20	
1,2-Dibromo-3-Chloropropane		50.0	44.6	ug/L	0.112	10.8	20	
1,2-Dibromoethane		50.0	47.4	ug/L	0.290	5.26	20	
Dibromomethane		50.0	50.8	ug/L	0.153	1.65	20	
1,2-Dichlorobenzene		50.0	47.4	ug/L	1.60	5.15	20	
1,3-Dichlorobenzene		50.0	49.1	ug/L	1.70	1.74	20	
1,4-Dichlorobenzene		50.0	47.0	ug/L	1.67	6.01	20	
Dichlorodifluoromethane		50.0	54.3	ug/L	0.412	8.55	20	
1,2-Dichloroethane		50.0	48.8	ug/L	0.344	2.37	20	
cis-1,2-Dichloroethene		50.0	48.4	ug/L	0.293	3.17	20	
trans-1,2-Dichloroethene		50.0	49.0	ug/L	0.264	1.92	20	
1,3-Dichloropropane		50.0	47.2	ug/L	0.483	5.60	20	
2,2-Dichloropropane		50.0	47.8	ug/L	0.395	4.44	20	
cis-1,3-Dichloropropene		50.0	50.2	ug/L	0.435	0.494	20	
trans-1,3-Dichloropropene		50.0	50.6	ug/L	0.366	1.17	20	

CCV - Modified 03/05/2008
PDF File ID: 4620133
Report generated 02/10/2016 13:58

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141 Run Date: 02/05/2016 Sample ID: WG556406-02
Instrument ID: HPMS17 Run Time: 11:48 Method: 8260B
File ID: 17M017574 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG556408 Cal ID: HPMS17 - 21-JAN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	49.9	ug/L	0.381	0.215	20	
2-Hexanone		50.0	43.0	ug/L	0.176	14.0	20	
Hexachlorobutadiene		50.0	47.9	ug/L	0.660	4.18	20	
Isopropylbenzene		50.0	50.2	ug/L	1.82	0.448	20	
p-Isopropyltoluene		50.0	52.2	ug/L	3.26	4.40	20	
4-Methyl-2-Pentanone		50.0	41.9	ug/L	0.0619	16.2	20	
Methylene Chloride		50.0	47.8	ug/L	0.279	4.34	20	
Naphthalene		50.0	47.3	ug/L	2.22	5.46	20	
n-Propylbenzene		50.0	52.5	ug/L	4.15	5.02	20	
Styrene		50.0	49.6	ug/L	1.12	0.796	20	
1,1,1,2-Tetrachloroethane		50.0	48.6	ug/L	0.397	2.75	20	
Tetrachloroethene		50.0	48.2	ug/L	0.451	3.63	20	
1,2,3-Trichlorobenzene		50.0	46.8	ug/L	1.10	6.47	20	
1,2,4-Trichlorobenzene		50.0	48.0	ug/L	1.22	3.96	20	
1,1,1-Trichloroethane		50.0	50.2	ug/L	0.449	0.412	20	
1,1,2-Trichloroethane		50.0	47.4	ug/L	0.292	5.28	20	
Trichloroethene		50.0	49.0	ug/L	0.304	1.95	20	
Trichlorofluoromethane		50.0	52.7	ug/L	0.447	5.43	20	
1,2,3-Trichloropropane		50.0	46.6	ug/L	0.174	6.72	20	
1,2,4-Trimethylbenzene		50.0	51.2	ug/L	3.05	2.32	20	
1,3,5-Trimethylbenzene		50.0	51.1	ug/L	3.05	2.14	20	
o-Xylene		50.0	49.3	ug/L	0.685	1.42	20	
m-,p-Xylene		100	100	ug/L	0.712	0.0988	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4620133
Report generated 02/10/2016 13:58

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141
Run Date: 02/09/2016
Sample ID: WG556768-02
Instrument ID: HPMS17
Run Time: 11:31
Method: 8260B
File ID: 17M017628
Analyst: ADC
QC Key: DOD4
Workgroup (AAB#): WG556769
Cal ID: HPMS17 - 21-JAN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.2	ug/L	0.490	1.70	20	
1,1-Dichloroethene	CCC	50.0	51.8	ug/L	0.435	3.62	20	
1,2-Dichloropropane	CCC	50.0	47.4	ug/L	0.296	5.11	20	
Ethylbenzene	CCC	50.0	47.4	ug/L	0.559	5.26	20	
Toluene	CCC	50.0	47.0	ug/L	1.63	5.96	20	
Vinyl Chloride	CCC	50.0	48.3	ug/L	0.345	3.47	20	
Bromoform	SPCC	50.0	46.4	ug/L	0.244	7.28	20	
Chlorobenzene	SPCC	50.0	46.3	ug/L	1.02	7.41	20	
Chloromethane	SPCC	50.0	51.5	ug/L	0.381	3.00	20	
1,1-Dichloroethane	SPCC	50.0	48.7	ug/L	0.516	2.62	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	41.8	ug/L	0.582	16.4	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4620133
Report generated 02/10/2016 13:58

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16020141
Instrument ID: HPMS17
Workgroup (AAB#): WG556290

ICAL CCV Number: WG554589-02
CAL ID: HPMS17-21-JAN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG554589-02	NA	NA	174141	332552	467028
Upper Limit	NA	NA	348282	665104	934056
Lower Limit	NA	NA	87071	166276	233514
L16020141-01	1.00	01	154983	294626	409370
L16020141-04	1.00	01	153235	294478	413713
L16020141-06	1.00	01	148367	286230	400980
L16020141-07	1.00	01	146357	281731	398373
L16020141-08	1.00	01	154041	293868	412129
WG556290-01	1.00	01	171698	329094	454035
WG556290-02	1.00	01	170761	321378	440816

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4620134
Report generated 02/10/2016 13:58

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16020141
Instrument ID: HPMS17
Workgroup (AAB#): WG556408

ICAL CCV Number: WG554589-02
CAL ID: HPMS17-21-JAN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG554589-02	NA	NA	174141	332552	467028
Upper Limit	NA	NA	348282	665104	934056
Lower Limit	NA	NA	87071	166276	233514
L16020141-05	1.00	01	134521	266387	376206
L16020141-09	1.00	01	138624	268989	375510
L16020141-10	1.00	01	139064	273050	381188
WG556408-01	1.00	01	136621	268707	379280
WG556408-02	1.00	01	135568	265086	373520
WG556408-03	1.00	01	137453	265154	369126
WG556408-04	1.00	02	135495	260915	366761
WG556408-05	1.00	02	139642	264551	368722

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4620134
Report generated 02/10/2016 13:58

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16020141
Instrument ID: HPMS17
Workgroup (AAB#): WG556769

ICAL CCV Number: WG554589-02
CAL ID: HPMS17-21-JAN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG554589-02	NA	NA	174141	332552	467028
Upper Limit	NA	NA	348282	665104	934056
Lower Limit	NA	NA	87071	166276	233514
L16020141-01	1.00	02	148023	269177	367149
WG556769-01	1.00	01	152697	278309	381492
WG556769-02	1.00	01	148985	267924	367315
WG556769-03	1.00	01	150457	272354	369172

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4620134
Report generated 02/10/2016 13:58

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16020141
Instrument ID: HPMS17
Workgroup (AAB#): WG556290

ICAL CCV Number: WG554589-02
CAL ID: HPMS17-21-JAN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG554589-02	NA	NA	9.293	7.961	5.121
Upper Limit	NA	NA	9.793	8.461	5.621
Lower Limit	NA	NA	8.793	7.461	4.621
L16020141-01	1.00	01	9.29	7.96	5.12
L16020141-04	1.00	01	9.29	7.96	5.12
L16020141-06	1.00	01	9.29	7.96	5.12
L16020141-07	1.00	01	9.29	7.96	5.12
L16020141-08	1.00	01	9.29	7.96	5.12
WG556290-01	1.00	01	9.29	7.96	5.12
WG556290-02	1.00	01	9.29	7.96	5.12

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4620136
Report generated: 02/10/2016 13:58

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16020141
Instrument ID: HPMS17
Workgroup (AAB#): WG556408

ICAL CCV Number: WG554589-02
CAL ID: HPMS17-21-JAN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG554589-02	NA	NA	9.293	7.961	5.121
Upper Limit	NA	NA	9.793	8.461	5.621
Lower Limit	NA	NA	8.793	7.461	4.621
L16020141-05	1.00	01	9.29	7.96	5.12
L16020141-09	1.00	01	9.29	7.96	5.12
L16020141-10	1.00	01	9.29	7.96	5.12
WG556408-01	1.00	01	9.29	7.96	5.12
WG556408-02	1.00	01	9.29	7.96	5.12
WG556408-03	1.00	01	9.29	7.96	5.12
WG556408-04	1.00	02	9.29	7.96	5.12
WG556408-05	1.00	02	9.29	7.96	5.12

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4620136
Report generated: 02/10/2016 13:58

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16020141
Instrument ID: HPMS17
Workgroup (AAB#): WG556769

ICAL CCV Number: WG554589-02
CAL ID: HPMS17-21-JAN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG554589-02	NA	NA	9.293	7.961	5.121
Upper Limit	NA	NA	9.793	8.461	5.621
Lower Limit	NA	NA	8.793	7.461	4.621
L16020141-01	1.00	02	9.29	7.96	5.12
WG556769-01	1.00	01	9.29	7.96	5.12
WG556769-02	1.00	01	9.29	7.96	5.12
WG556769-03	1.00	01	9.29	7.96	5.12

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4620136
Report generated: 02/10/2016 13:58

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017642.D
Acq On : 09 Feb 2016 16:11
Operator : ADC
Sample : L16020141-01 B 826-LOW
Misc : 1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Feb 10 09:35:53 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	367149	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.958	117	269177	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	148023	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	96655	24.3277 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.311%		
34) 1,2-Dichloroethane-d4	4.788	65	108922	27.3409 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.364%		
47) Toluene-d8	6.693	98	384398	25.3691 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.476%		
66) p-Bromofluorobenzene	8.711	95	140018	25.2419 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.968%		
Target Compounds					Qvalue
6) Bromomethane	1.377	94	187	Below Cal	99
16) Acetone	2.330	43	886	Below Cal #	45
54) 2-Hexanone	7.796	43	594	0.2692 ug/L #	27

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017642.D
Acq On : 09 Feb 2016 16:11
Operator : ADC
Sample : L16020141-01 B 826-LOW
Misc : 1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Feb 10 09:35:53 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

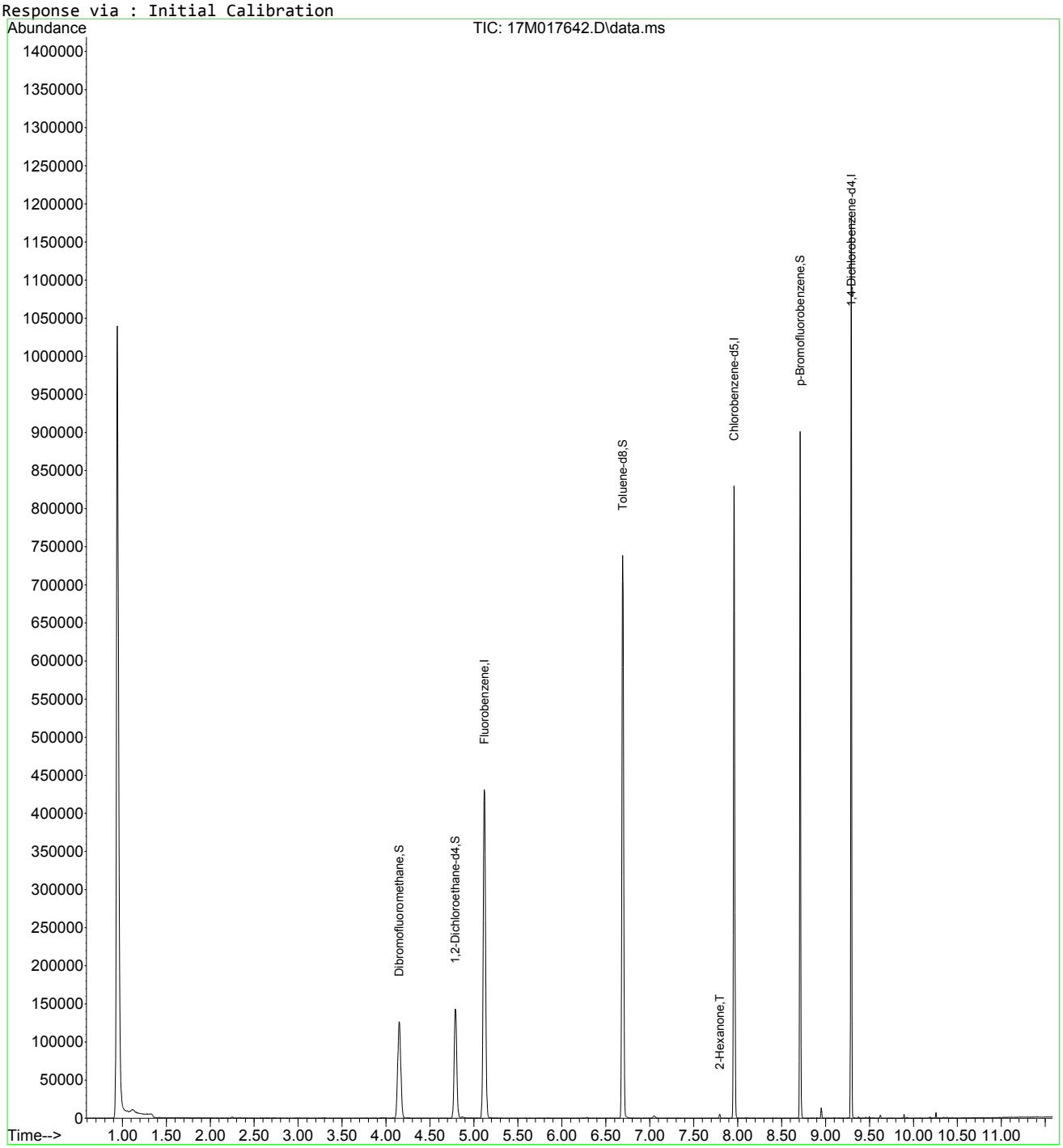

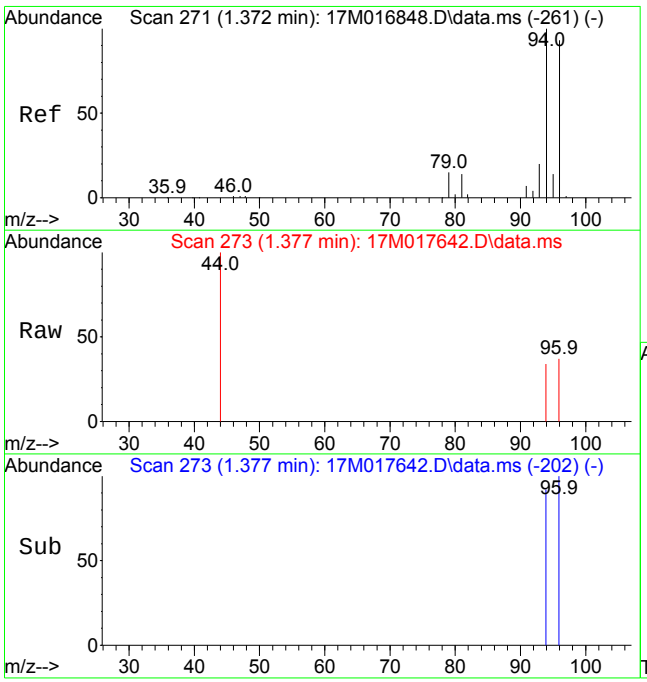

#6
Bromomethane
Concen: Below Cal
RT: 1.377 min Scan# 273
Delta R.T. 0.006 min
Lab File: 17M017642.D
Acq: 09 Feb 2016 16:11

Tgt Ion: 94 Resp: 187

Ion	Ratio	Lower	Upper
94	100		
96	92.5	56.0	130.6

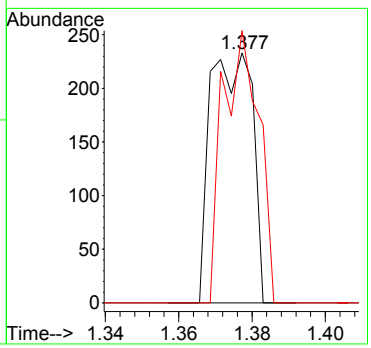

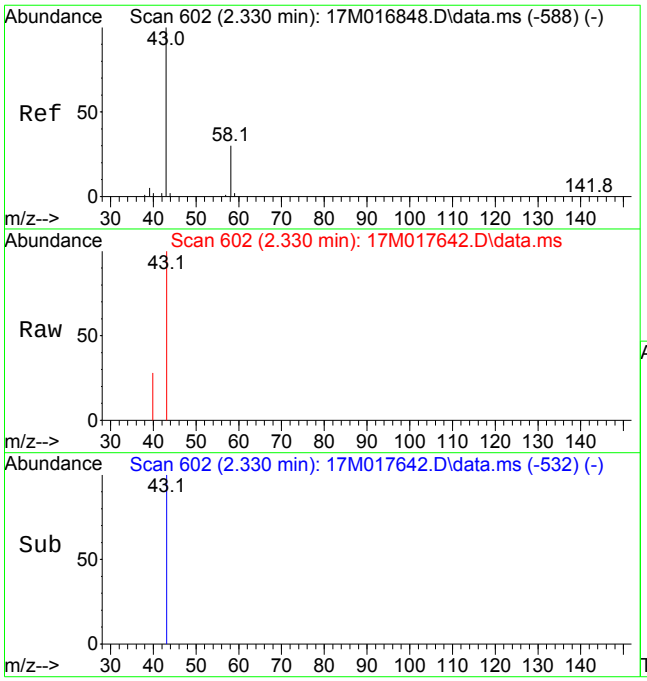

#16
Acetone
Concen: Below Cal
RT: 2.330 min Scan# 602
Delta R.T. 0.003 min
Lab File: 17M017642.D
Acq: 09 Feb 2016 16:11

Tgt Ion: 43 Resp: 886

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.1#

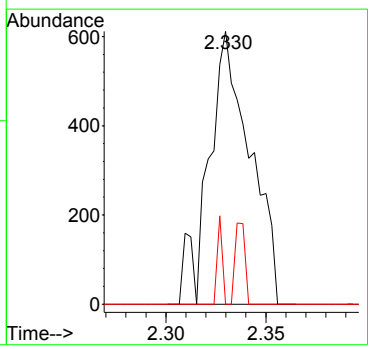

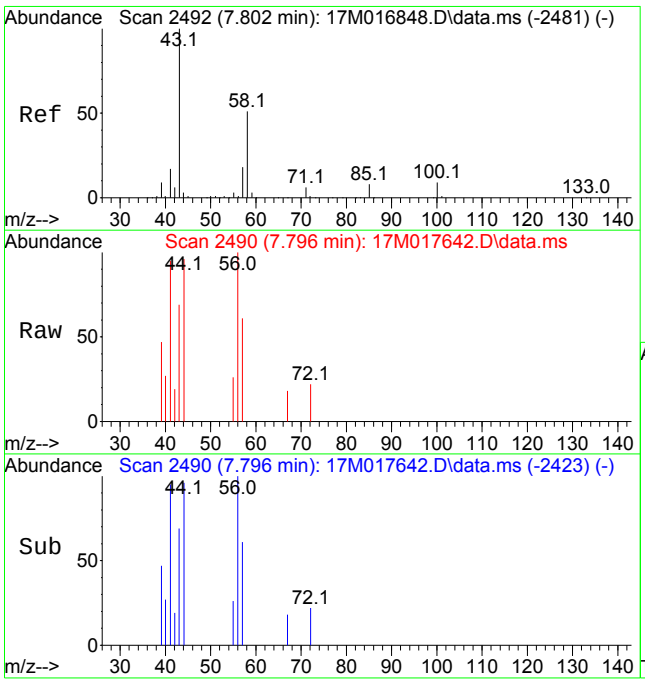

#54
2-Hexanone
Concen: 0.2692 ug/L
RT: 7.796 min Scan# 2490
Delta R.T. -0.006 min
Lab File: 17M017642.D
Acq: 09 Feb 2016 16:11

Tgt Ion: 43 Resp: 594

Ion	Ratio	Lower	Upper
43	100		
58	0.0	39.9	59.9#

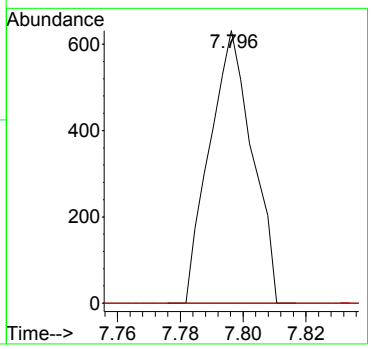

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017539.D
Acq On : 04 Feb 2016 22:23
Operator : ADC
Sample : L16020141-04 A 826-LOW
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Feb 05 14:31:19 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	413713	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	294478	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	153235	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	109664	24.4953 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.981%		
34) 1,2-Dichloroethane-d4	4.788	65	117646	26.2070 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.828%		
47) Toluene-d8	6.693	98	436618	26.3397 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.359%		
66) p-Bromofluorobenzene	8.711	95	157656	27.4549 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.820%		
Target Compounds					Qvalue
7) Chloroethane	1.427	64	1422	0.5447 ug/L	81
16) Acetone	2.333	43	478	Below Cal #	45
18) Methyl acetate	2.333	43	478	0.1783 ug/L #	62
49) Tetrachloroethene	7.072	166	1326	0.2407 ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017539.D
Acq On : 04 Feb 2016 22:23
Operator : ADC
Sample : L16020141-04 A 826-LOW
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Feb 05 14:31:19 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

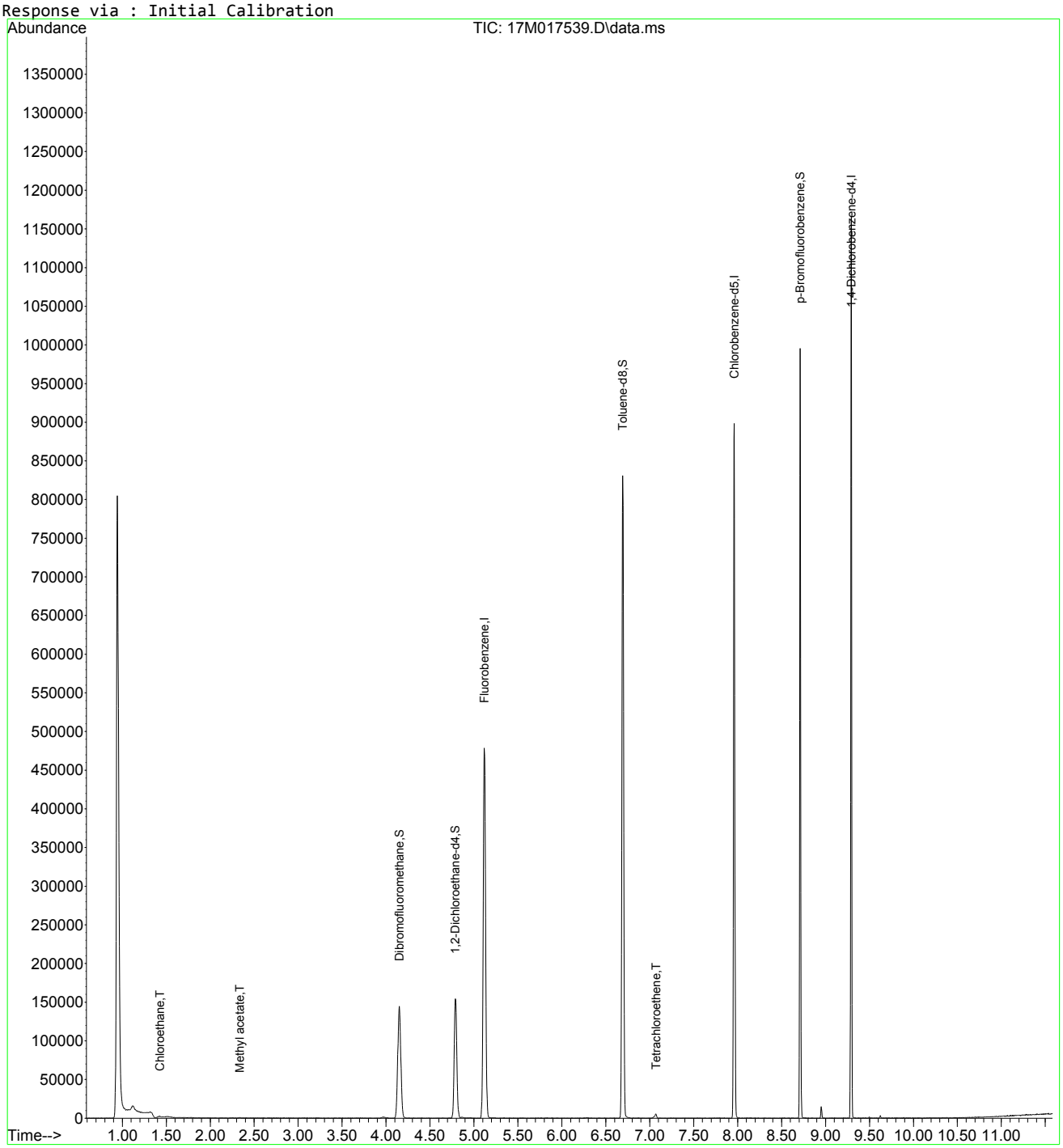

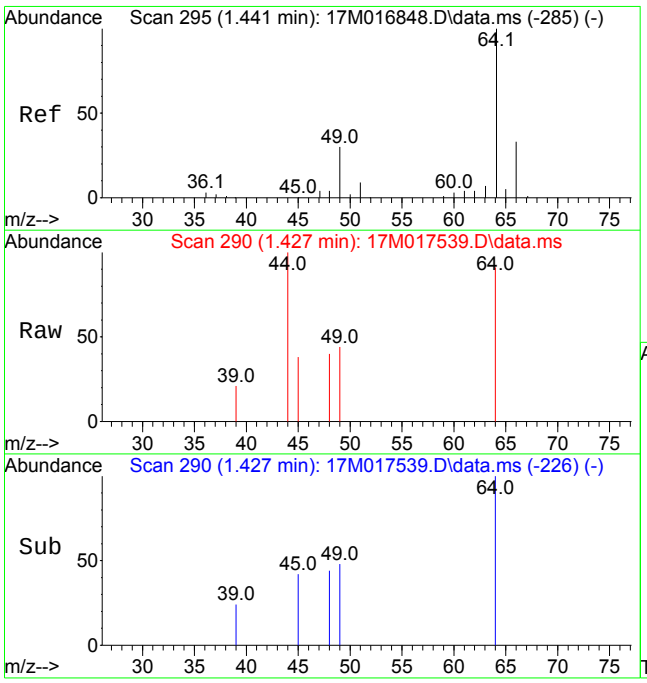

#7
Chloroethane
Concen: 0.5447 ug/L
RT: 1.427 min Scan# 290
Delta R.T. -0.014 min
Lab File: 17M017539.D
Acq: 04 Feb 2016 22:23

Tgt Ion: 64 Resp: 1422

Ion	Ratio	Lower	Upper
64	100		
49	19.5	18.0	42.0

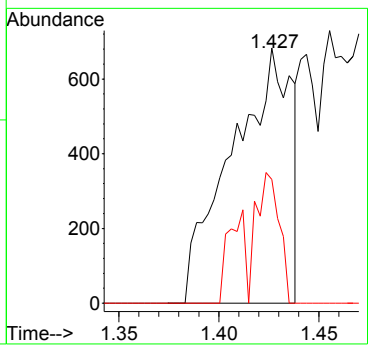

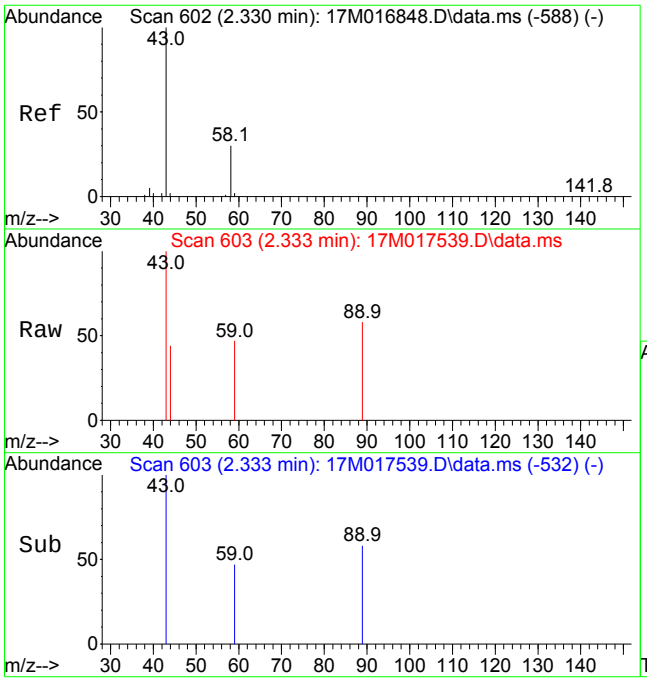

#16
Acetone
Concen: Below Cal
RT: 2.333 min Scan# 603
Delta R.T. 0.006 min
Lab File: 17M017539.D
Acq: 04 Feb 2016 22:23

Tgt Ion: 43 Resp: 478

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.1#

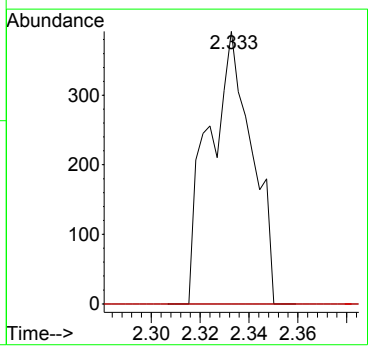

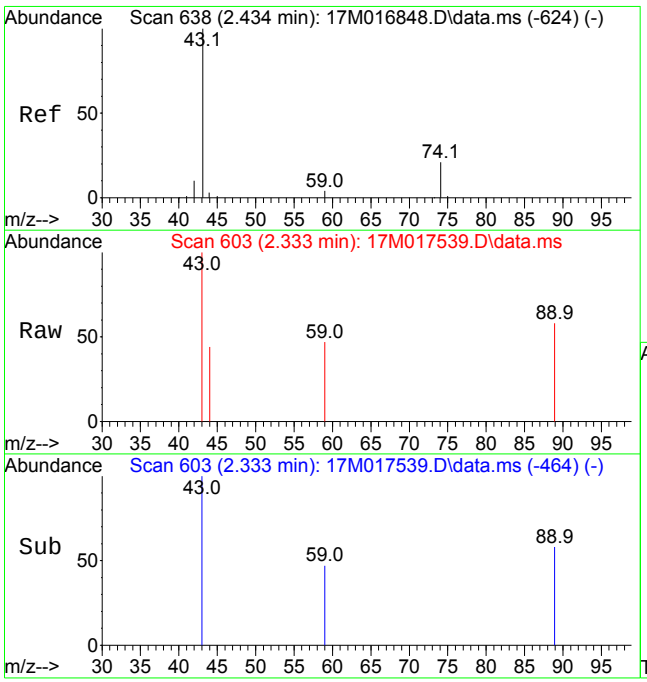

#18
Methyl acetate
Concen: 0.1783 ug/L
RT: 2.333 min Scan# 603
Delta R.T. -0.098 min
Lab File: 17M017539.D
Acq: 04 Feb 2016 22:23

Tgt Ion: 43 Resp: 478

Ion	Ratio	Lower	Upper
43	100		
74	0.0	20.2	20.2#
59	0.0	6.6	10.0#

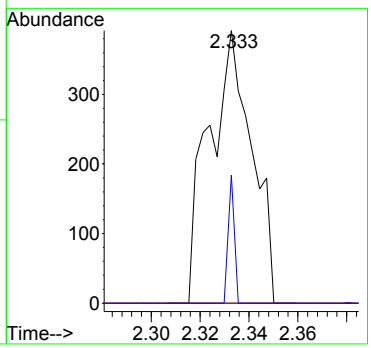

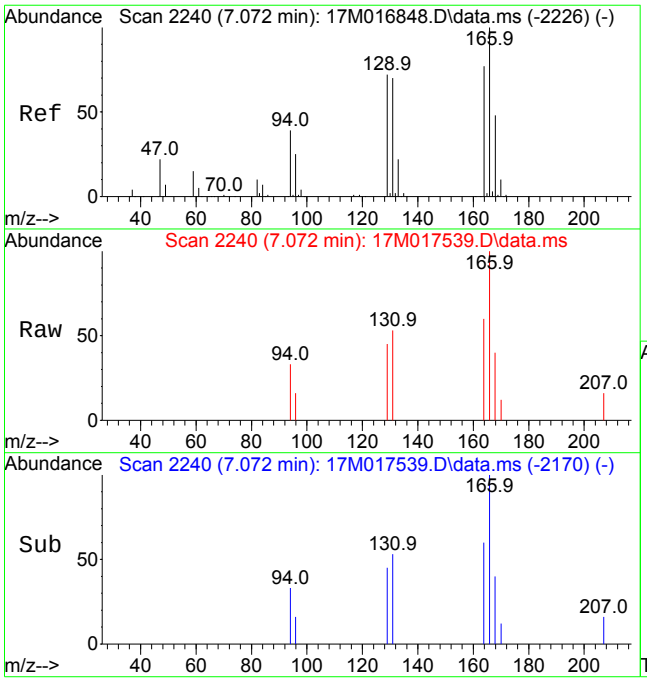

#49
Tetrachloroethene
Concen: 0.2407 ug/L
RT: 7.072 min Scan# 2240
Delta R.T. 0.002 min
Lab File: 17M017539.D
Acq: 04 Feb 2016 22:23

Tgt Ion:166 Resp: 1326

Ion	Ratio	Lower	Upper
166	100		
129	70.4	57.9	86.9
94	42.4	32.3	48.5

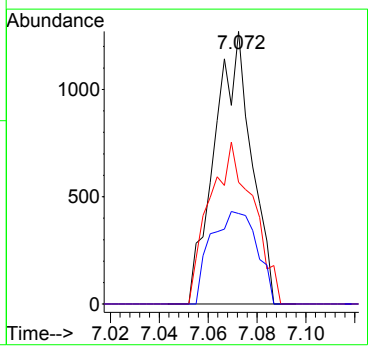

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017593.D
Acq On : 05 Feb 2016 18:49
Operator : ADC
Sample : L16020141-05 B 826-LOW
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Feb 08 09:26:30 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	376206	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	266387	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	134521	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	101353	24.8960 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.584%		
34) 1,2-Dichloroethane-d4	4.788	65	121368	29.7316 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 118.926%		
47) Toluene-d8	6.693	98	389223	25.9565 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.826%		
66) p-Bromofluorobenzene	8.711	95	135129	26.8056 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.222%		
Target Compounds					Qvalue
7) Chloroethane	1.403	64	385	0.1622 ug/L #	1
16) Acetone	2.336	43	550	Below Cal #	45
18) Methyl acetate	2.336	43	550	0.2256 ug/L #	17

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017593.D
Acq On : 05 Feb 2016 18:49
Operator : ADC
Sample : L16020141-05 B 826-LOW
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Feb 08 09:26:30 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

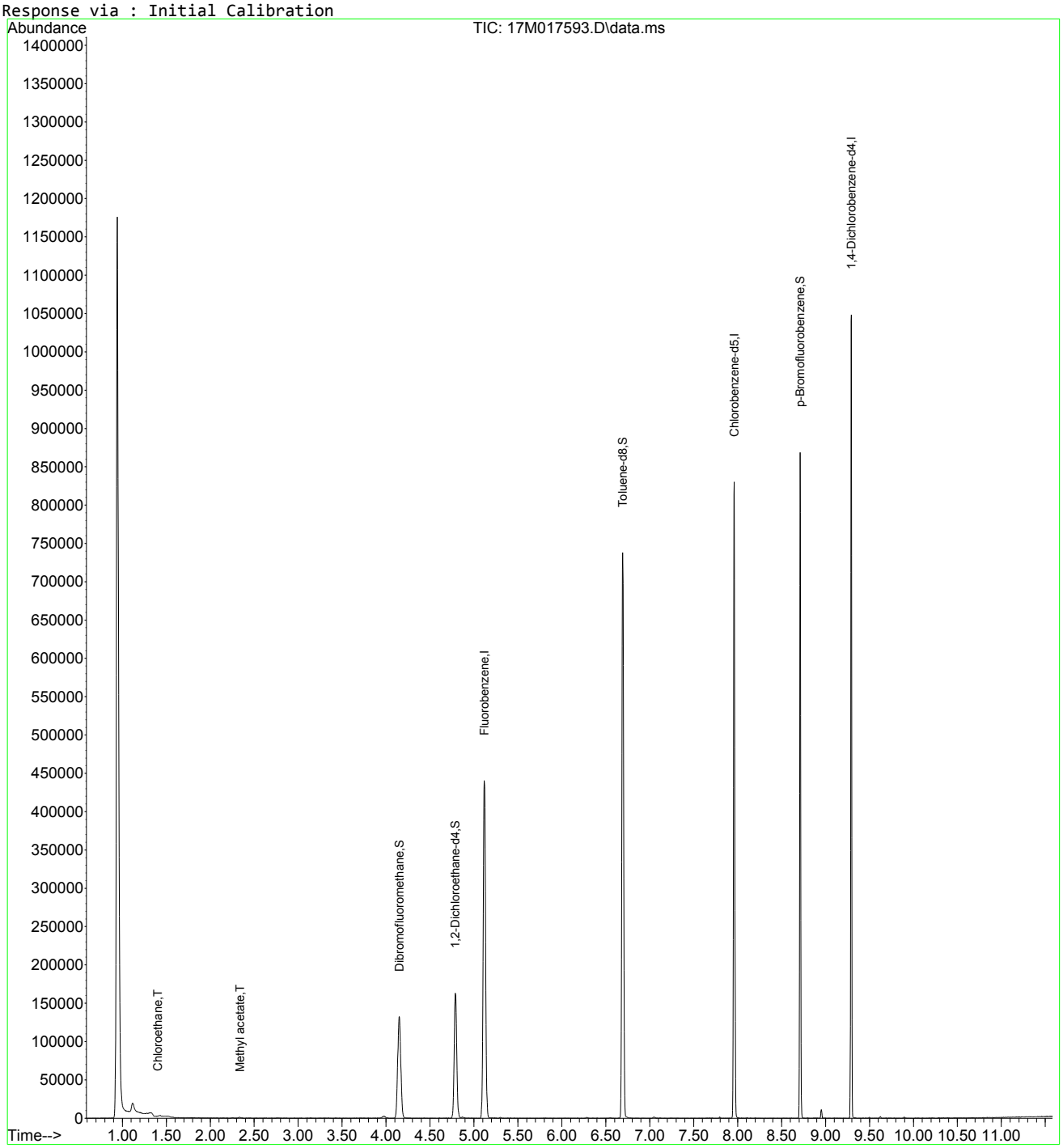

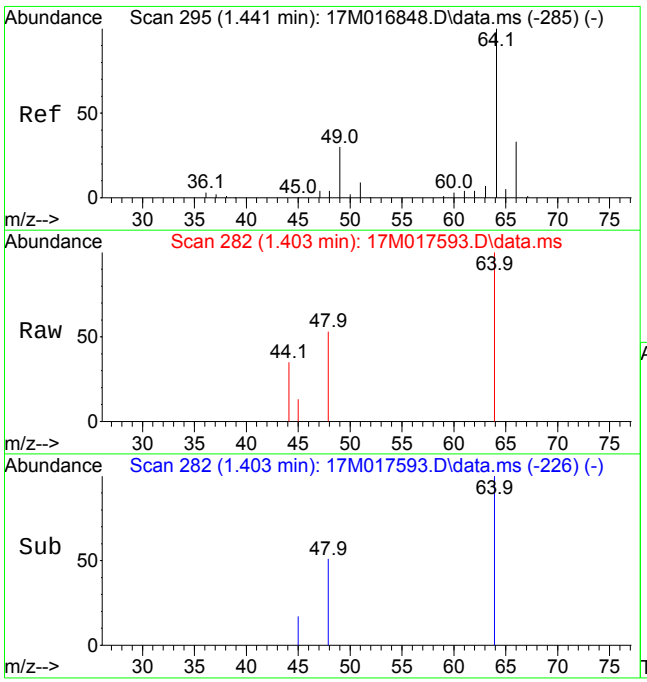

#7
Chloroethane
Concen: 0.1622 ug/L
RT: 1.403 min Scan# 282
Delta R.T. -0.038 min
Lab File: 17M017593.D
Acq: 05 Feb 2016 18:49

Tgt Ion: 64 Resp: 385

Ion	Ratio	Lower	Upper
64	100		
49	109.4	18.0	42.0#

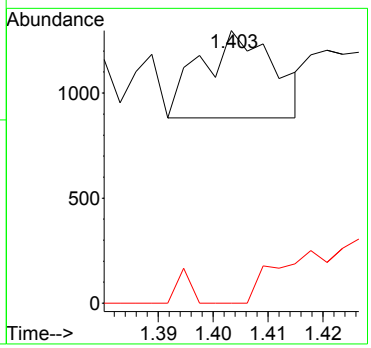

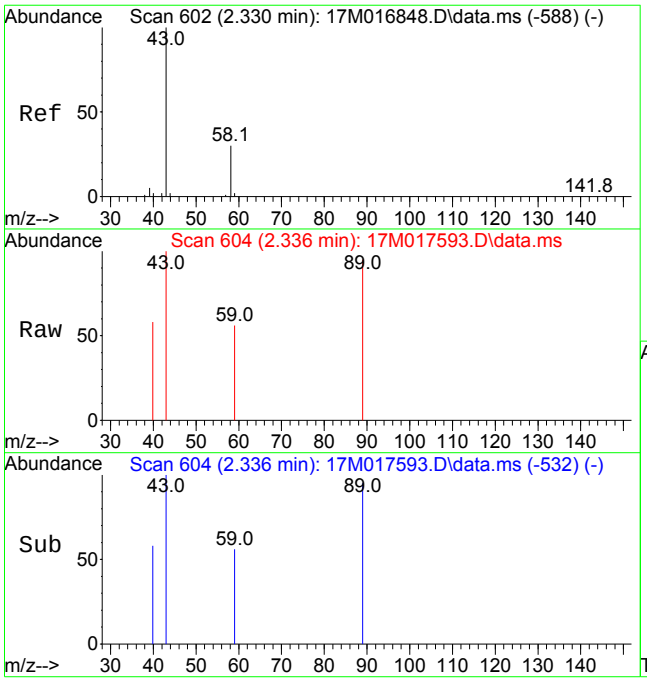

#16
Acetone
Concen: Below Cal
RT: 2.336 min Scan# 604
Delta R.T. 0.009 min
Lab File: 17M017593.D
Acq: 05 Feb 2016 18:49

Tgt Ion: 43 Resp: 550

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.1#

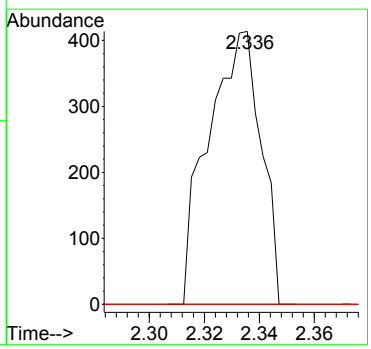

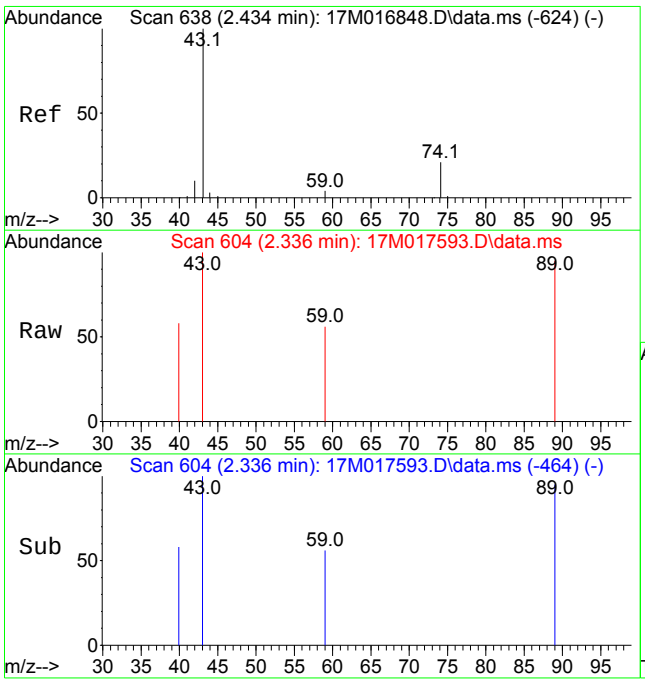

#18
Methyl acetate
Concen: 0.2256 ug/L
RT: 2.336 min Scan# 604
Delta R.T. -0.095 min
Lab File: 17M017593.D
Acq: 05 Feb 2016 18:49

Tgt Ion: 43 Resp: 550

Ion	Ratio	Lower	Upper
43	100		
74	0.0	20.2	20.2#
59	72.2	6.6	10.0#

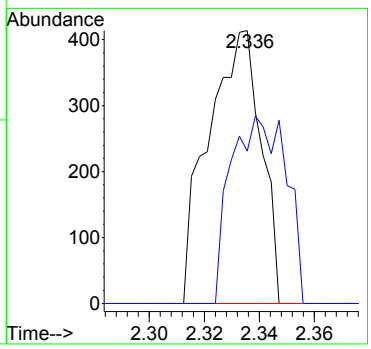

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017543.D
Acq On : 04 Feb 2016 23:41
Operator : ADC
Sample : L16020141-06 A 826-LOW
Misc : 1,1
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Feb 05 14:31:32 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	400980	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	286230	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	148367	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	107587	24.7945 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.178%		
34) 1,2-Dichloroethane-d4	4.791	65	118235	27.1746 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.698%		
47) Toluene-d8	6.693	98	423679	26.2956 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.182%		
66) p-Bromofluorobenzene	8.711	95	149095	26.8160 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.264%		
Target Compounds					Qvalue
6) Bromomethane	1.371	94	107	Below Cal	81
16) Acetone	2.327	43	491	Below Cal #	45
37) Trichloroethene	5.303	130	1144	0.2299 ug/L	88
49) Tetrachloroethene	7.069	166	934	0.1744 ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017543.D
Acq On : 04 Feb 2016 23:41
Operator : ADC
Sample : L16020141-06 A 826-LOW
Misc : 1,1
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Feb 05 14:31:32 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

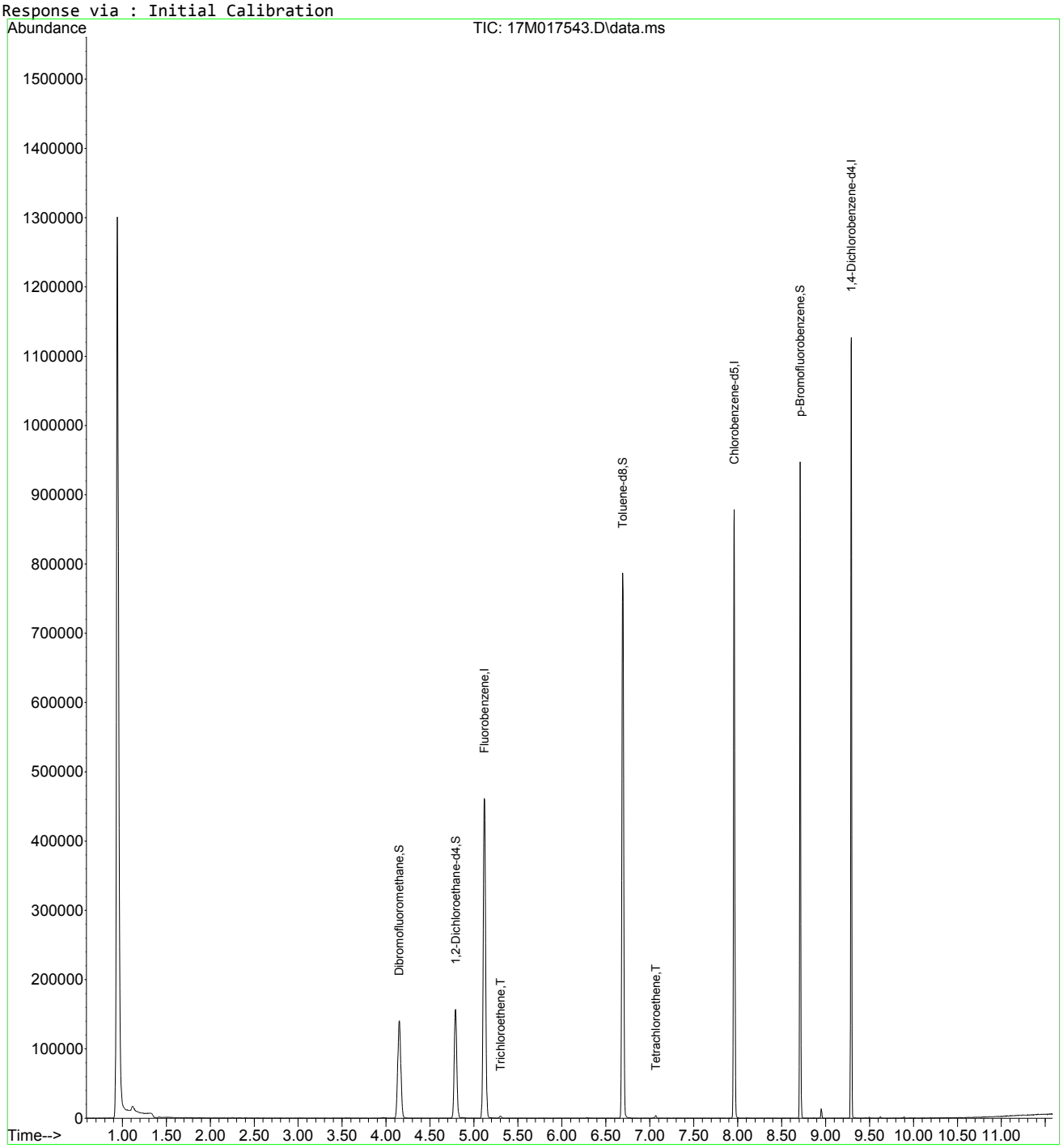

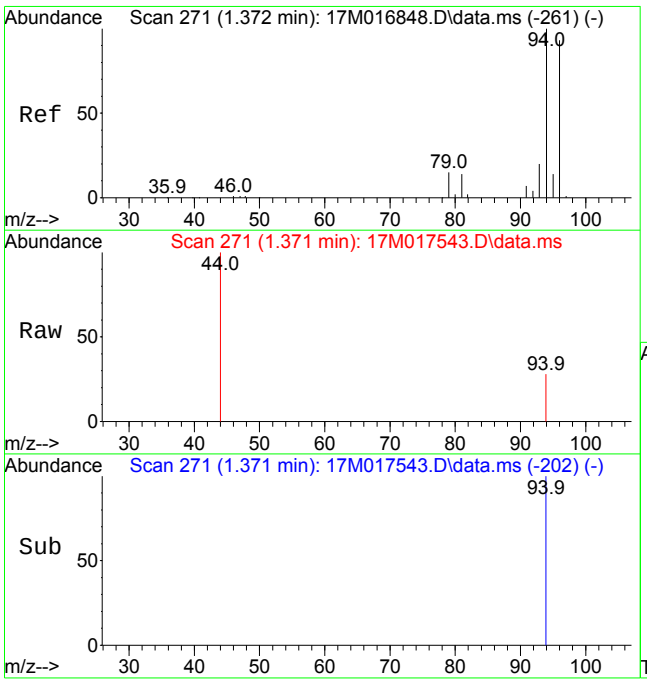

#6
Bromomethane
Concen: Below Cal
RT: 1.371 min Scan# 271
Delta R.T. 0.000 min
Lab File: 17M017543.D
Acq: 04 Feb 2016 23:41

Tgt Ion: 94 Resp: 107

Ion	Ratio	Lower	Upper
94	100		
96	111.2	56.0	130.6

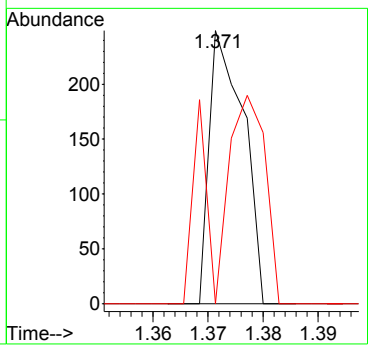

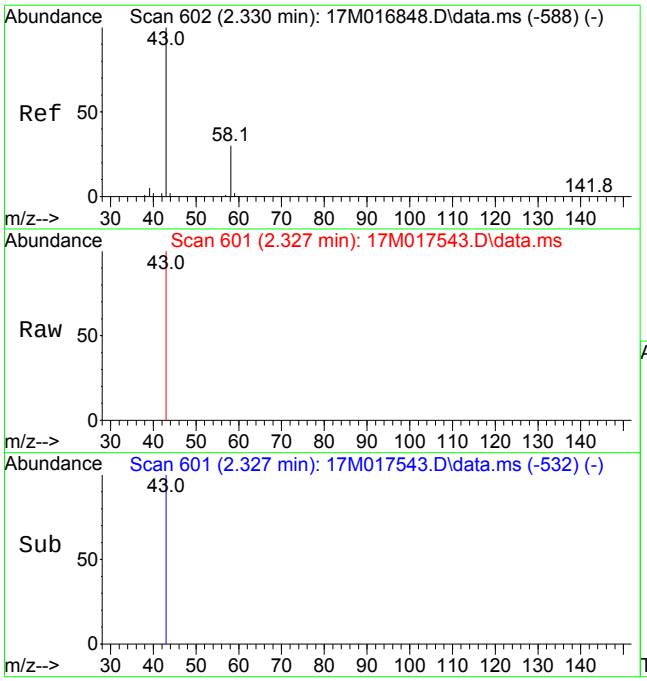

#16
Acetone
Concen: Below Cal
RT: 2.327 min Scan# 601
Delta R.T. -0.000 min
Lab File: 17M017543.D
Acq: 04 Feb 2016 23:41

Tgt Ion: 43 Resp: 491

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.1#

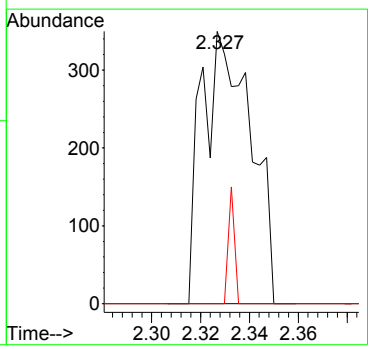

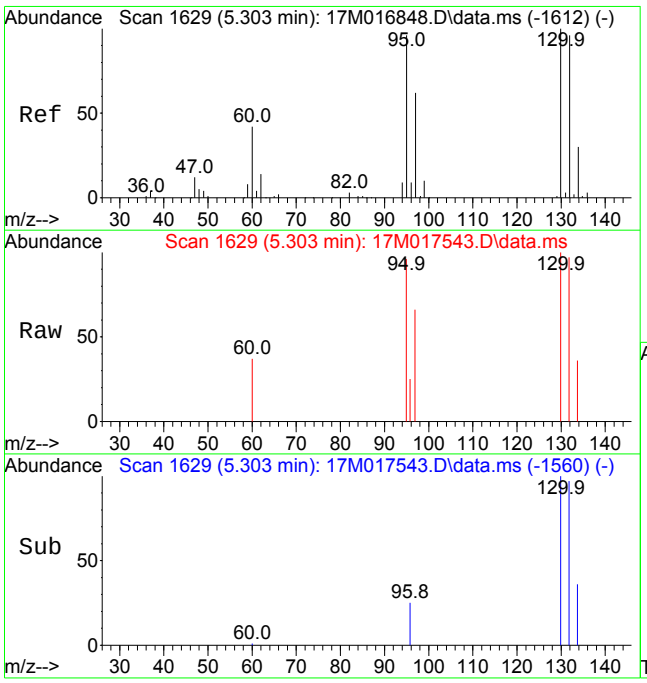

#37
Trichloroethene
Concen: 0.2299 ug/L
RT: 5.303 min Scan# 1629
Delta R.T. 0.000 min
Lab File: 17M017543.D
Acq: 04 Feb 2016 23:41

Tgt Ion:130 Resp: 1144

Ion	Ratio	Lower	Upper
130	100		
60	36.0	26.4	61.6

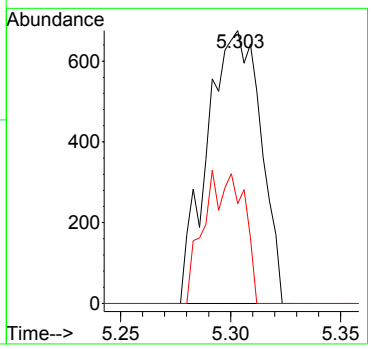

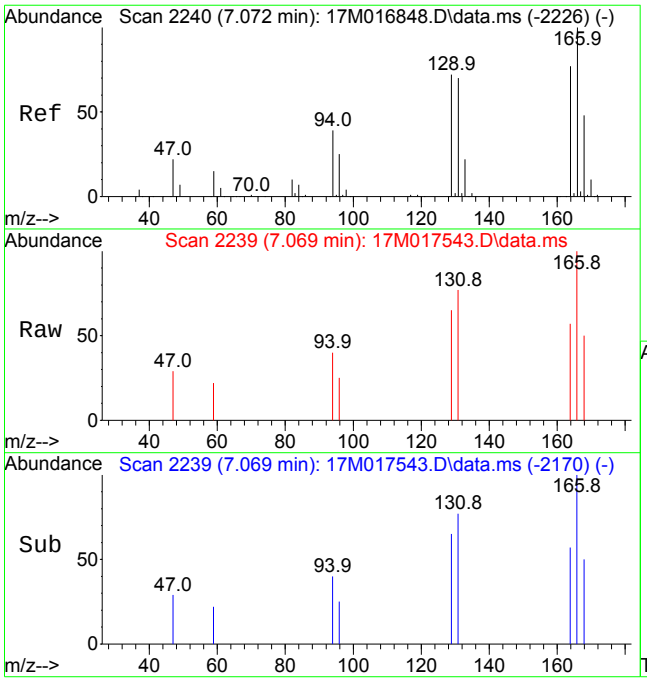

#49
Tetrachloroethene
Concen: 0.1744 ug/L
RT: 7.069 min Scan# 2239
Delta R.T. -0.001 min
Lab File: 17M017543.D
Acq: 04 Feb 2016 23:41

Tgt Ion:166 Resp: 934

Ion	Ratio	Lower	Upper
166	100		
129	68.2	57.9	86.9
94	43.6	32.3	48.5

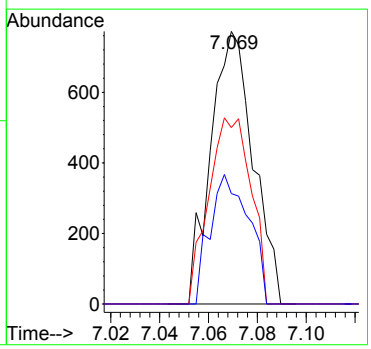

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017544.D
Acq On : 05 Feb 2016 00:01
Operator : ADC
Sample : L16020141-07 A 826-LOW
Misc : 1,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Feb 05 14:31:35 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	398373	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	281731	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	146357	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	103862	24.0927 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.371%		
34) 1,2-Dichloroethane-d4	4.788	65	113817	26.3304 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.322%		
47) Toluene-d8	6.693	98	409595	25.8274 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.310%		
66) p-Bromofluorobenzene	8.711	95	147599	26.9115 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.646%		
Target Compounds					Qvalue
6) Bromomethane	1.374	94	121	Below Cal	91
16) Acetone	2.333	43	391	Below Cal #	45
18) Methyl acetate	2.333	43	391	0.1515 ug/L #	62
49) Tetrachloroethene	7.072	166	867	0.1645 ug/L #	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017544.D
Acq On : 05 Feb 2016 00:01
Operator : ADC
Sample : L16020141-07 A 826-LOW
Misc : 1,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Feb 05 14:31:35 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

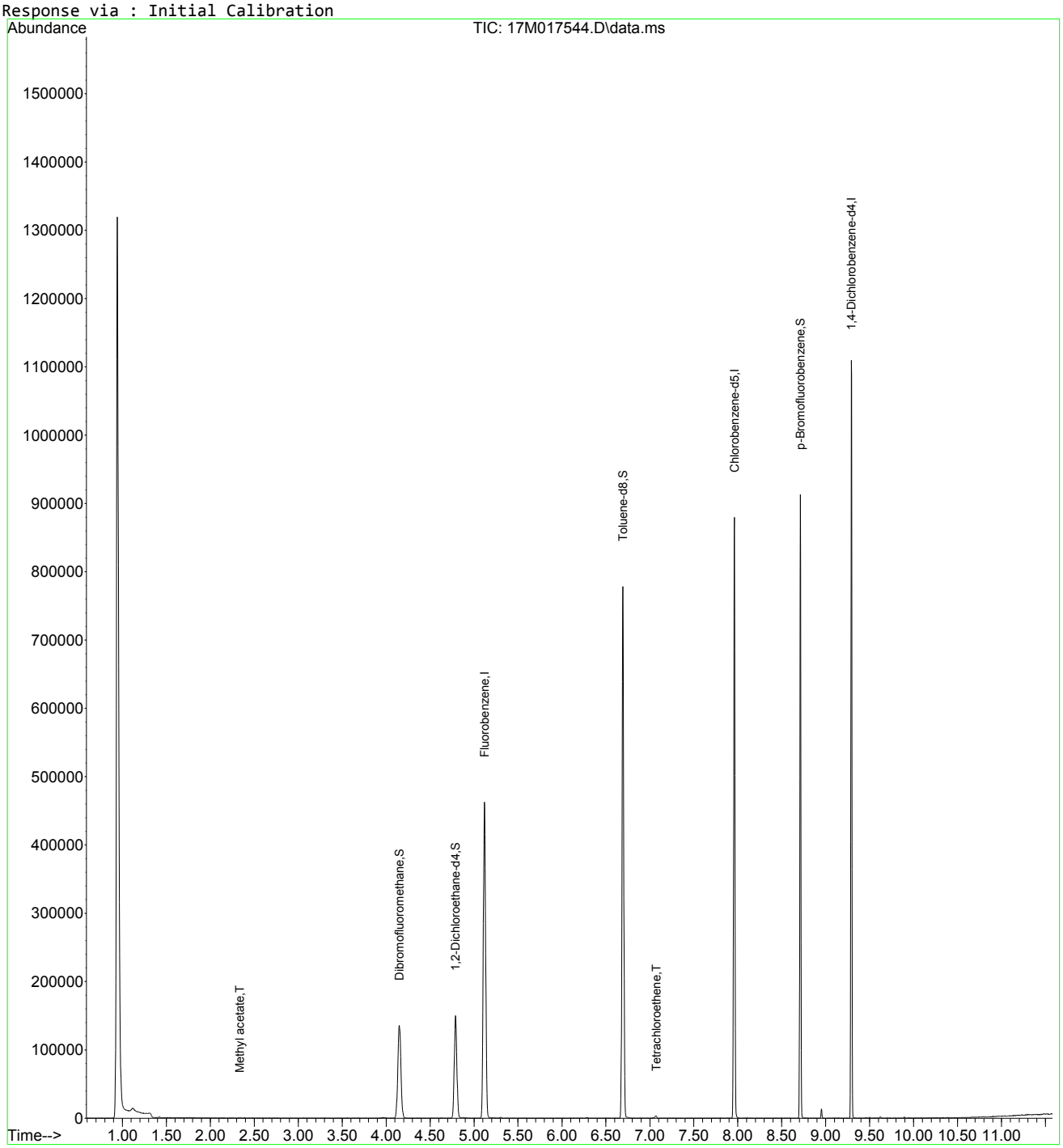

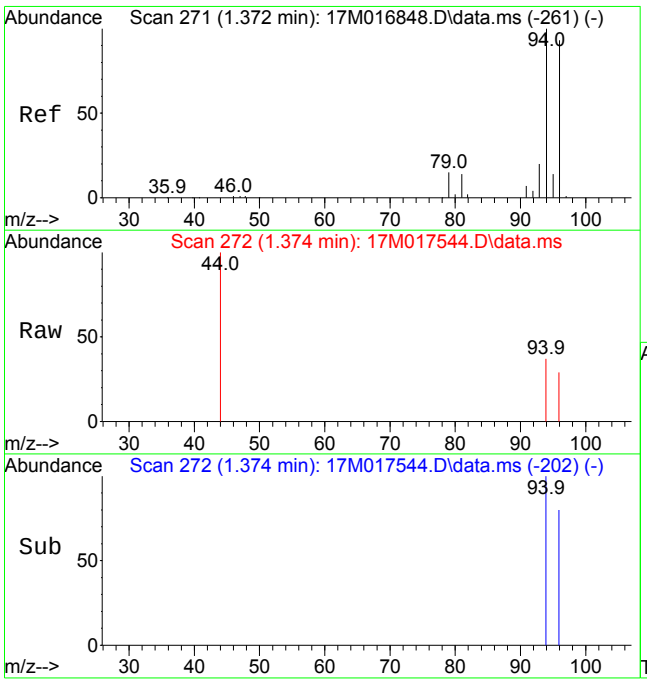

#6
Bromomethane
Concen: Below Cal
RT: 1.374 min Scan# 272
Delta R.T. 0.003 min
Lab File: 17M017544.D
Acq: 05 Feb 2016 00:01

Tgt Ion: 94 Resp: 121

Ion	Ratio	Lower	Upper
94	100		
96	85.1	56.0	130.6

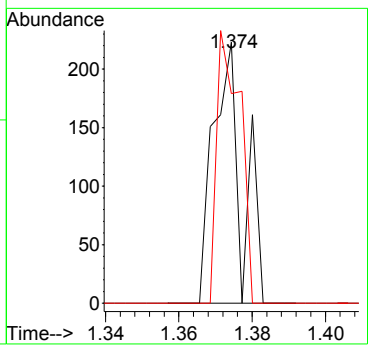

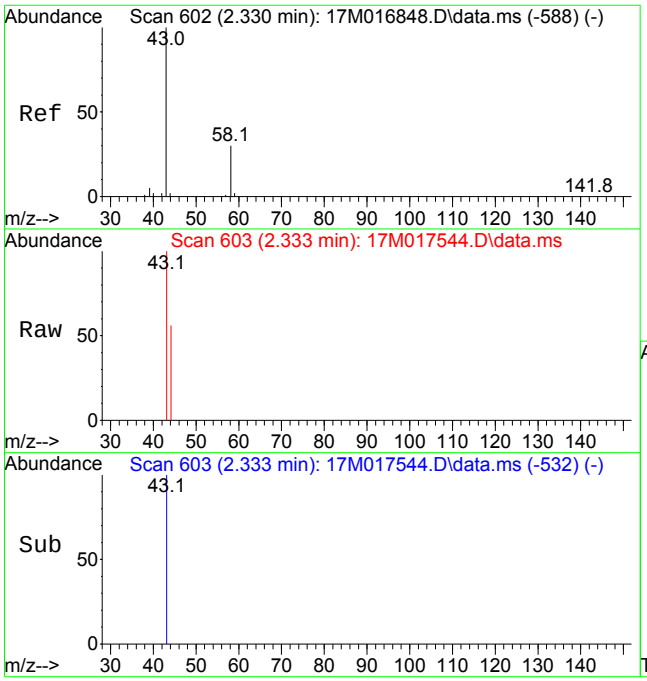

#16
Acetone
Concen: Below Cal
RT: 2.333 min Scan# 603
Delta R.T. 0.006 min
Lab File: 17M017544.D
Acq: 05 Feb 2016 00:01

Tgt Ion: 43 Resp: 391

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.1#

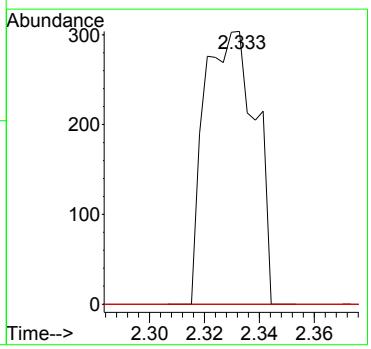

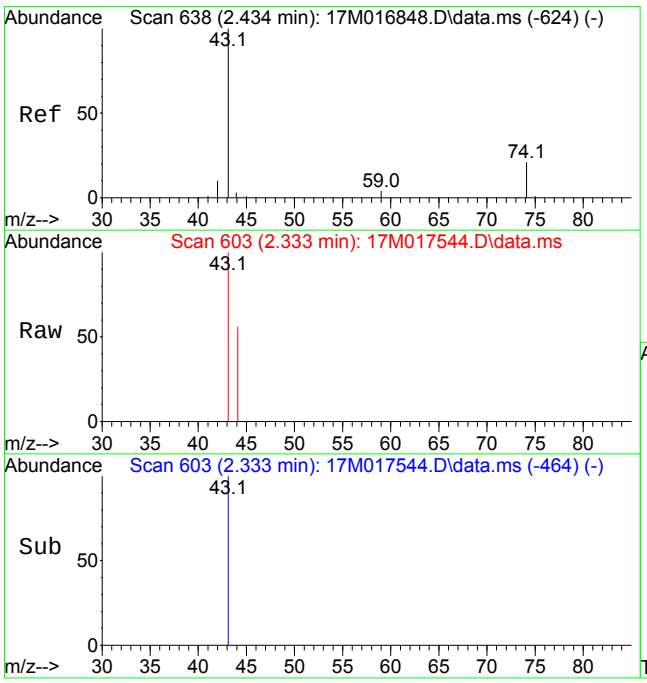

#18
Methyl acetate
Concen: 0.1515 ug/L
RT: 2.333 min Scan# 603
Delta R.T. -0.098 min
Lab File: 17M017544.D
Acq: 05 Feb 2016 00:01

Tgt Ion: 43 Resp: 391

Ion	Ratio	Lower	Upper
43	100		
74	0.0	20.2	20.2#
59	0.0	6.6	10.0#

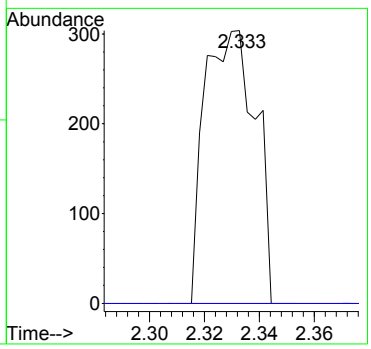

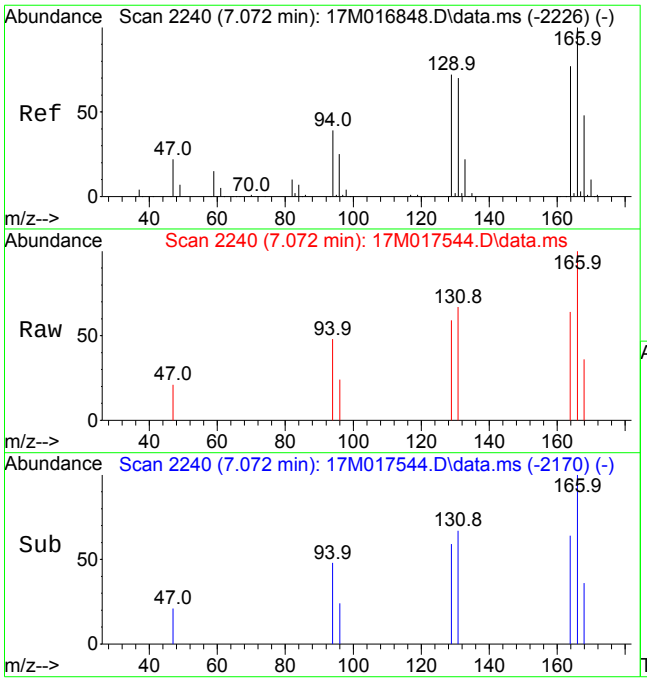

#49
Tetrachloroethene
Concen: 0.1645 ug/L
RT: 7.072 min Scan# 2240
Delta R.T. 0.002 min
Lab File: 17M017544.D
Acq: 05 Feb 2016 00:01

Tgt Ion:166 Resp: 867

Ion	Ratio	Lower	Upper
166	100		
129	69.4	57.9	86.9
94	30.6	32.3	48.5#

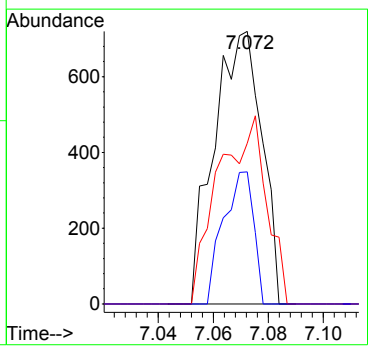

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017541.D
Acq On : 04 Feb 2016 23:02
Operator : ADC
Sample : L16020141-08 A 826-LOW
Misc : 1,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Feb 05 14:31:25 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	412129	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	293868	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	154041	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	107712	24.1518 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.607%		
34) 1,2-Dichloroethane-d4	4.791	65	114428	25.5881 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.352%		
47) Toluene-d8	6.693	98	424028	25.6332 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.533%		
66) p-Bromofluorobenzene	8.711	95	152298	26.3831 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.532%		
Target Compounds					Qvalue
7) Chloroethane	1.432	64	1139	0.4379 ug/L	82
16) Acetone	2.333	43	888	Below Cal #	45
18) Methyl acetate	2.333	43	888	0.3325 ug/L #	62
49) Tetrachloroethene	7.070	166	914	0.1662 ug/L	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017541.D
Acq On : 04 Feb 2016 23:02
Operator : ADC
Sample : L16020141-08 A 826-LOW
Misc : 1,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Feb 05 14:31:25 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

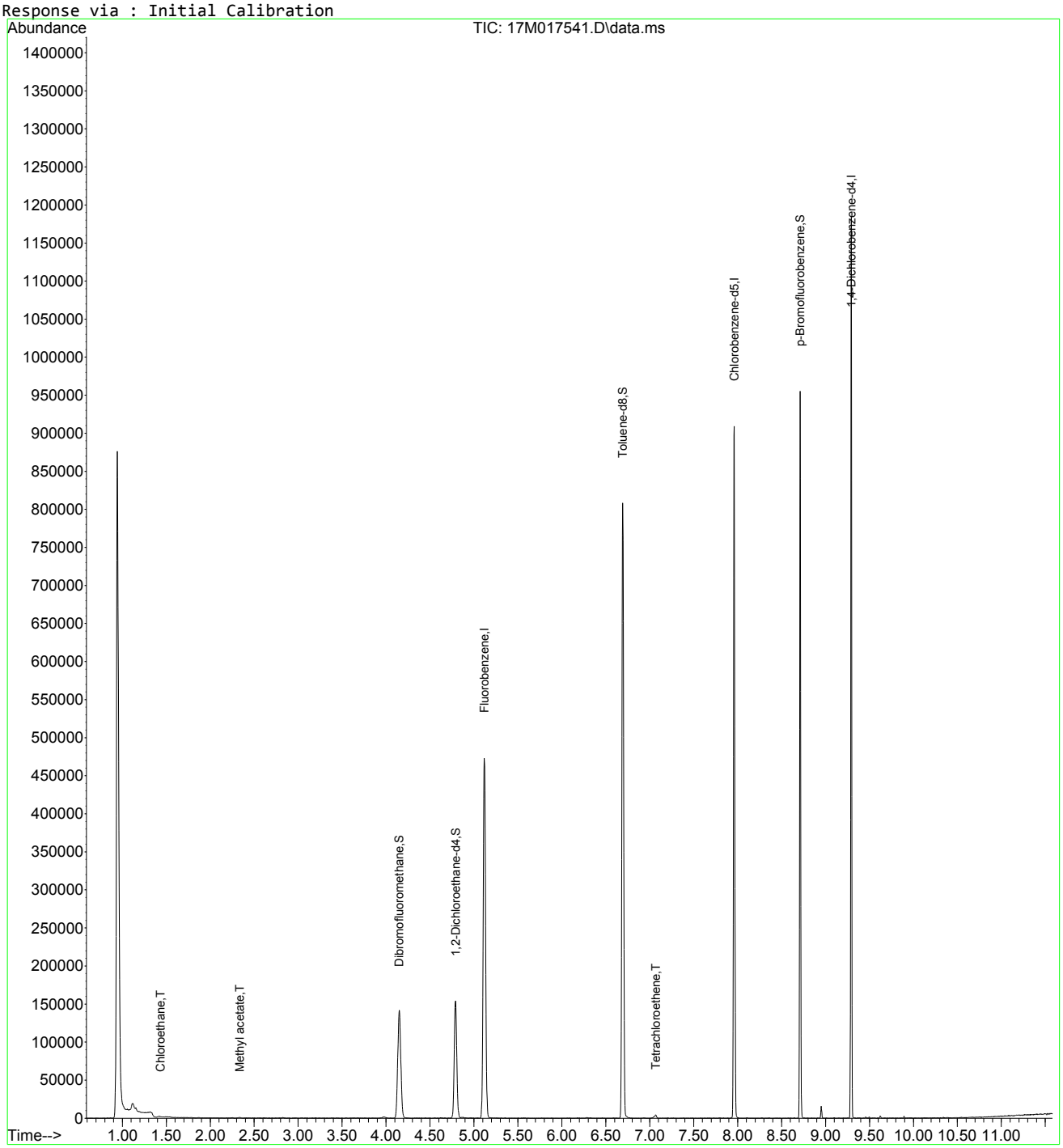

8260VMS.M Fri Feb 05 14:31:26 2016 Page: 2

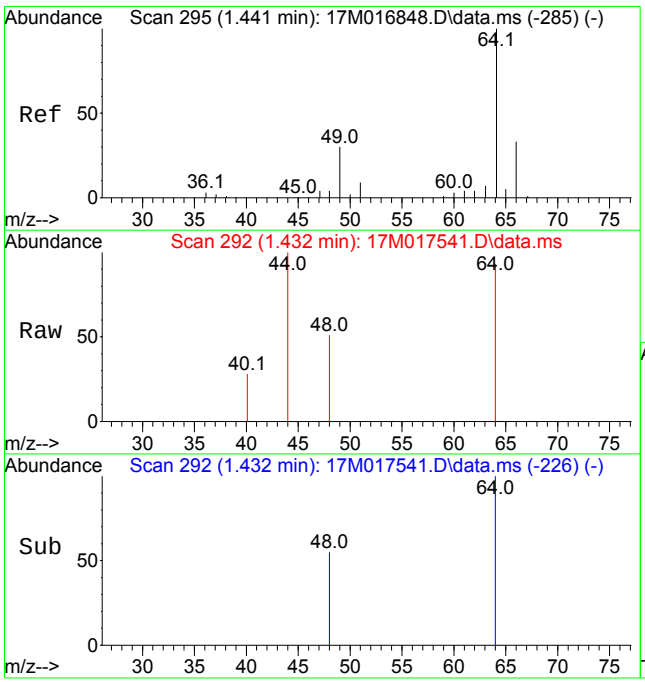

#7
Chloroethane
Concen: 0.4379 ug/L
RT: 1.432 min Scan# 292
Delta R.T. -0.009 min
Lab File: 17M017541.D
Acq: 04 Feb 2016 23:02

Tgt Ion: 64 Resp: 1139

Ion	Ratio	Lower	Upper
64	100		
49	39.9	18.0	42.0

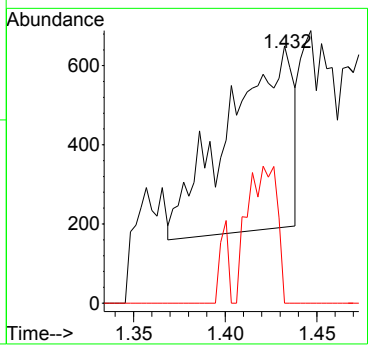

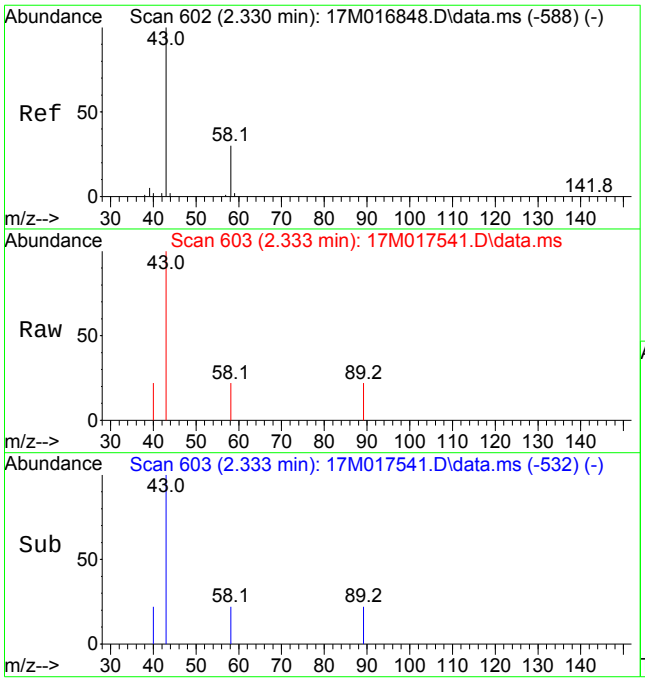

#16
Acetone
Concen: Below Cal
RT: 2.333 min Scan# 603
Delta R.T. 0.006 min
Lab File: 17M017541.D
Acq: 04 Feb 2016 23:02

Tgt Ion: 43 Resp: 888

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.1#

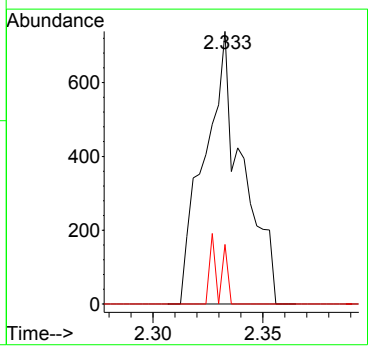

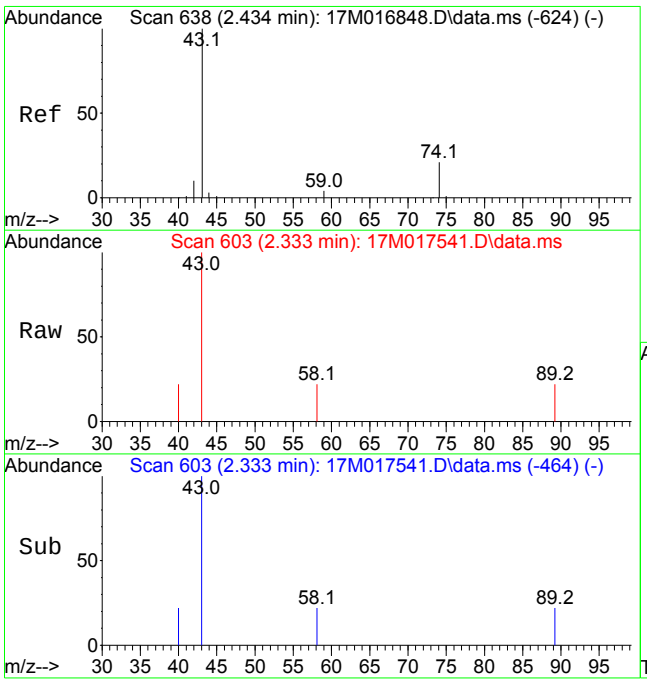

#18
Methyl acetate
Concen: 0.3325 ug/L
RT: 2.333 min Scan# 603
Delta R.T. -0.098 min
Lab File: 17M017541.D
Acq: 04 Feb 2016 23:02

Tgt Ion: 43 Resp: 888

Ion	Ratio	Lower	Upper
43	100		
74	0.0	20.2	20.2#
59	0.0	6.6	10.0#

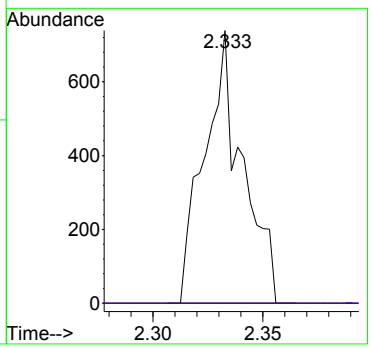

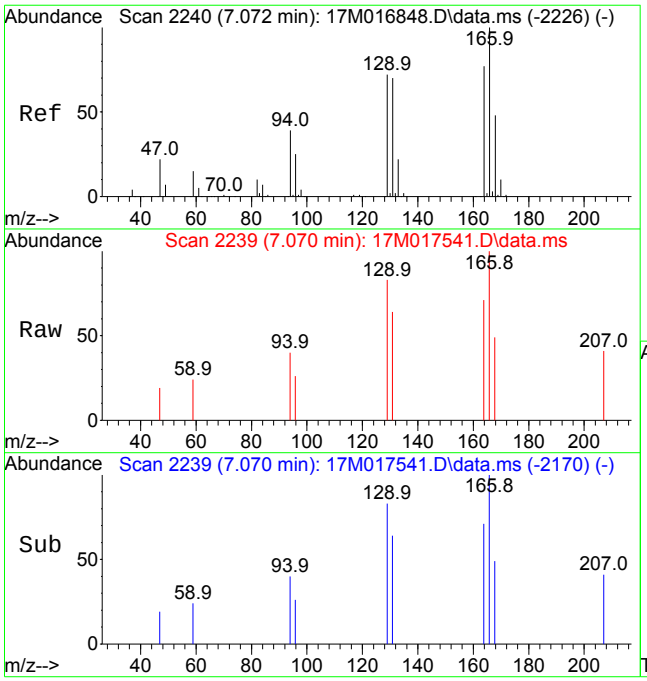

#49
Tetrachloroethene
Concen: 0.1662 ug/L
RT: 7.070 min Scan# 2239
Delta R.T. -0.000 min
Lab File: 17M017541.D
Acq: 04 Feb 2016 23:02

Tgt Ion:166 Resp: 914

Ion	Ratio	Lower	Upper
166	100		
129	78.9	57.9	86.9
94	41.9	32.3	48.5

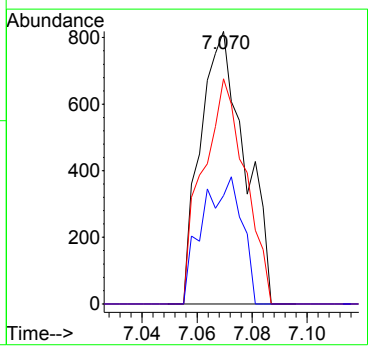

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017594.D
Acq On : 05 Feb 2016 19:09
Operator : ADC
Sample : L16020141-09 A 826-LOW
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Feb 08 09:26:33 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	375510	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	268989	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	138624	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	98167	24.1581 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.632%		
34) 1,2-Dichloroethane-d4	4.791	65	108669	26.6700 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.680%		
47) Toluene-d8	6.693	98	384582	25.3990 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.596%		
66) p-Bromofluorobenzene	8.711	95	136870	26.3474 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.390%		
Target Compounds					Qvalue
7) Chloroethane	1.409	64	435	0.1836 ug/L #	1
16) Acetone	2.327	43	657	Below Cal #	45

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017594.D
Acq On : 05 Feb 2016 19:09
Operator : ADC
Sample : L16020141-09 A 826-LOW
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Feb 08 09:26:33 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

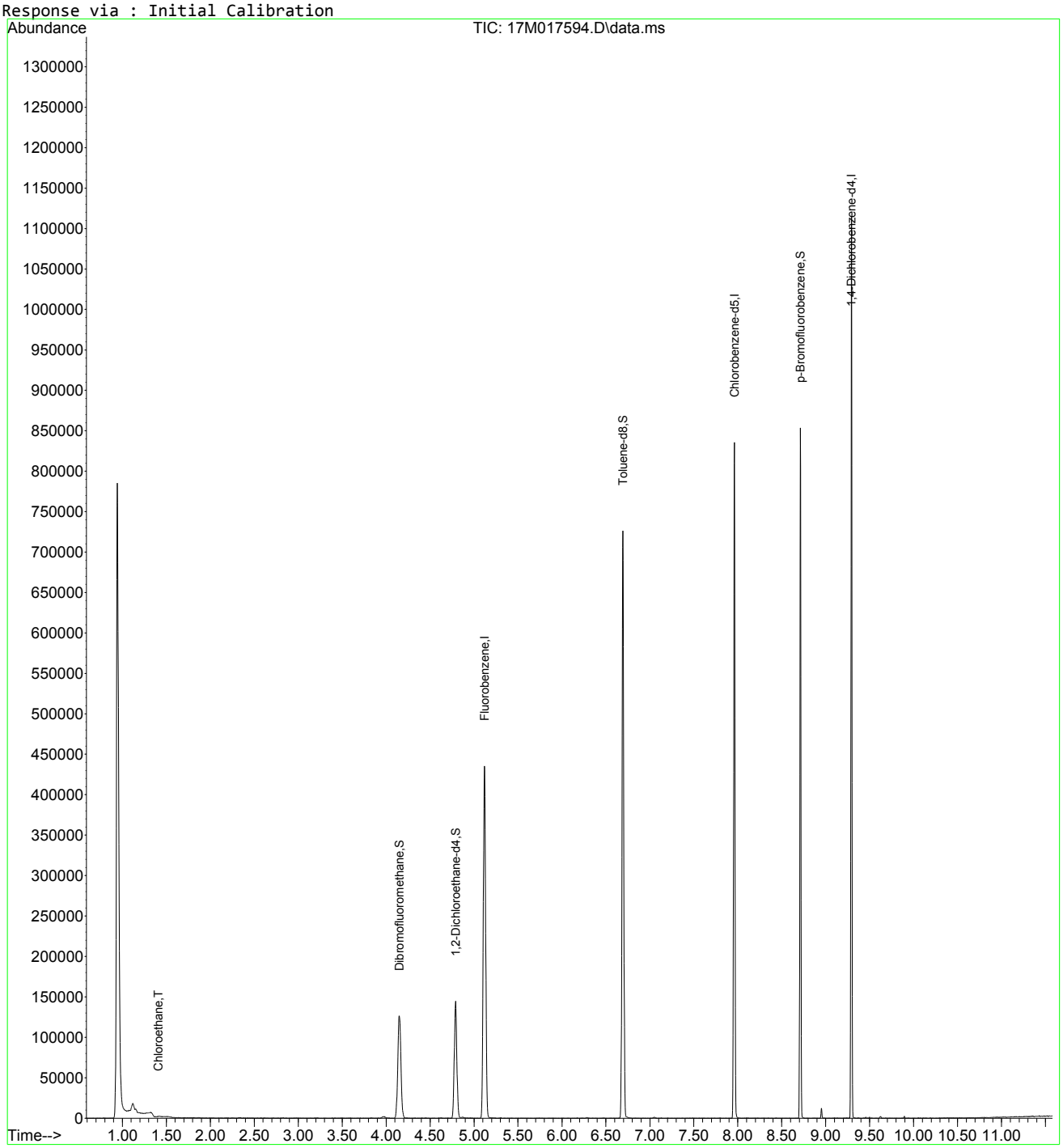

8260VMS.M Mon Feb 08 09:26:34 2016 Page: 2

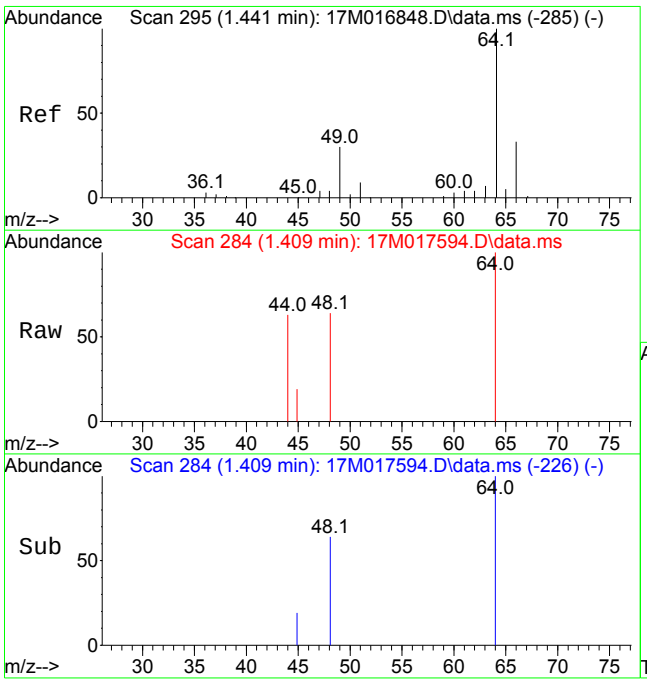

#7
Chloroethane
Concen: 0.1836 ug/L
RT: 1.409 min Scan# 284
Delta R.T. -0.032 min
Lab File: 17M017594.D
Acq: 05 Feb 2016 19:09

Tgt Ion: 64 Resp: 435

Ion	Ratio	Lower	Upper
64	100		
49	94.7	18.0	42.0#

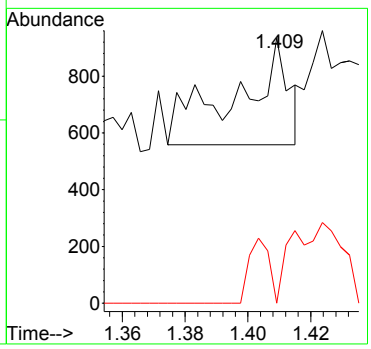

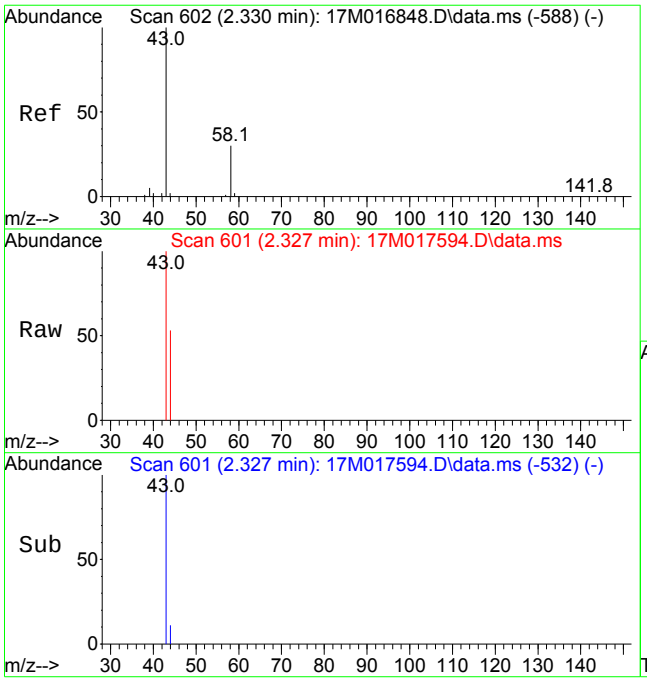

#16
Acetone
Concen: Below Cal
RT: 2.327 min Scan# 601
Delta R.T. 0.000 min
Lab File: 17M017594.D
Acq: 05 Feb 2016 19:09

Tgt Ion: 43 Resp: 657

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.1#

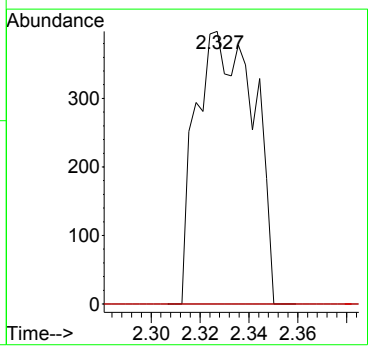

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017586.D
Acq On : 05 Feb 2016 16:08
Operator : ADC
Sample : L16020141-10 A 826-LOW
Misc : 1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Feb 08 09:26:05 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.121	96	381188	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	273050	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	139064	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	98072	23.7752 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.101%		
34) 1,2-Dichloroethane-d4	4.791	65	109342	26.4355 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.742%		
47) Toluene-d8	6.693	98	392424	25.5314 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.126%		
66) p-Bromofluorobenzene	8.711	95	136339	26.1621 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.648%		
Target Compounds					Qvalue
6) Bromomethane	1.377	94	284	Below Cal	93
16) Acetone	2.324	43	650	Below Cal #	45
18) Methyl acetate	2.324	43	650	0.2632 ug/L #	23

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017586.D
Acq On : 05 Feb 2016 16:08
Operator : ADC
Sample : L16020141-10 A 826-LOW
Misc : 1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Feb 08 09:26:05 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

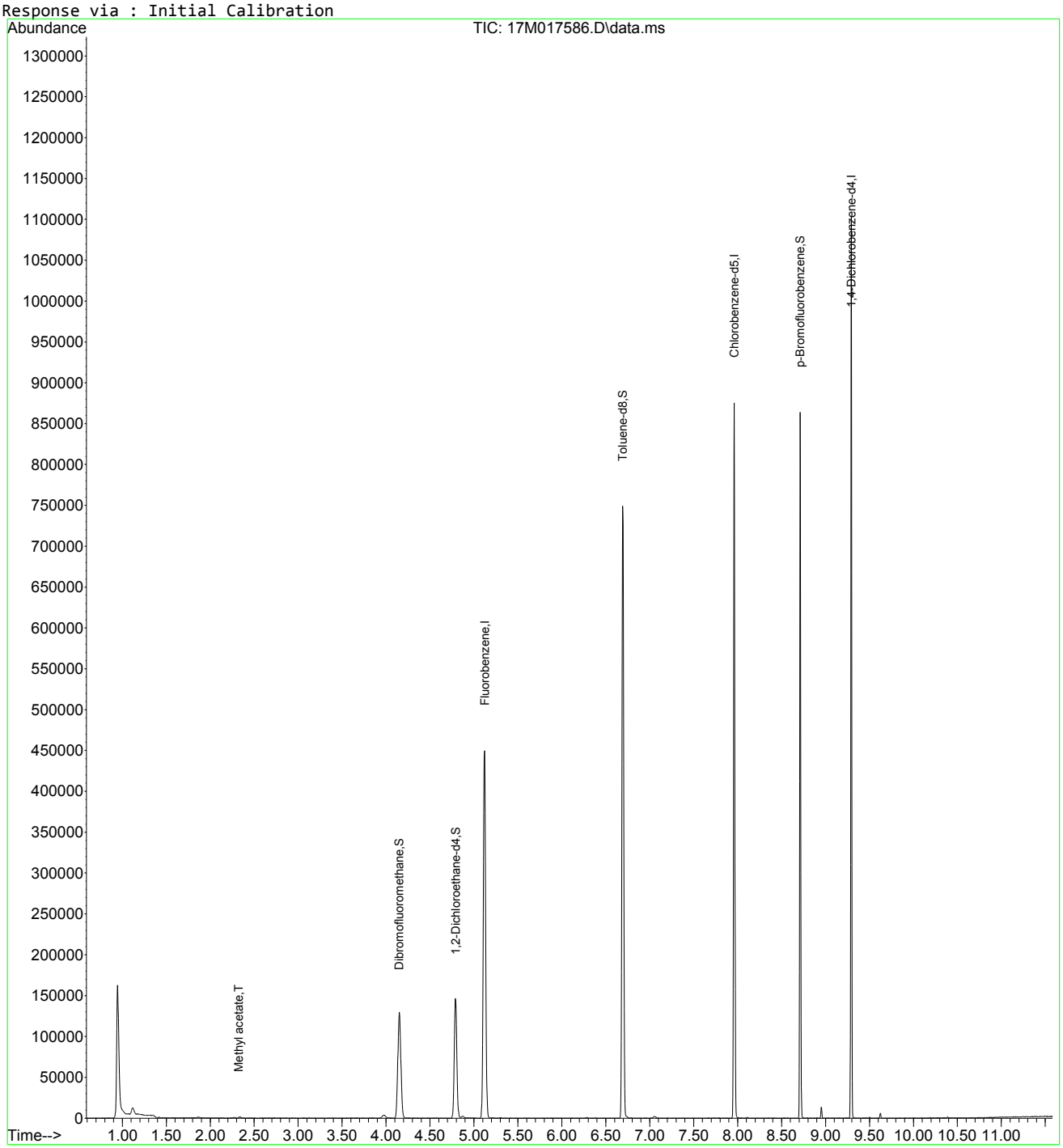

8260VMS.M Mon Feb 08 09:26:06 2016 Page: 2

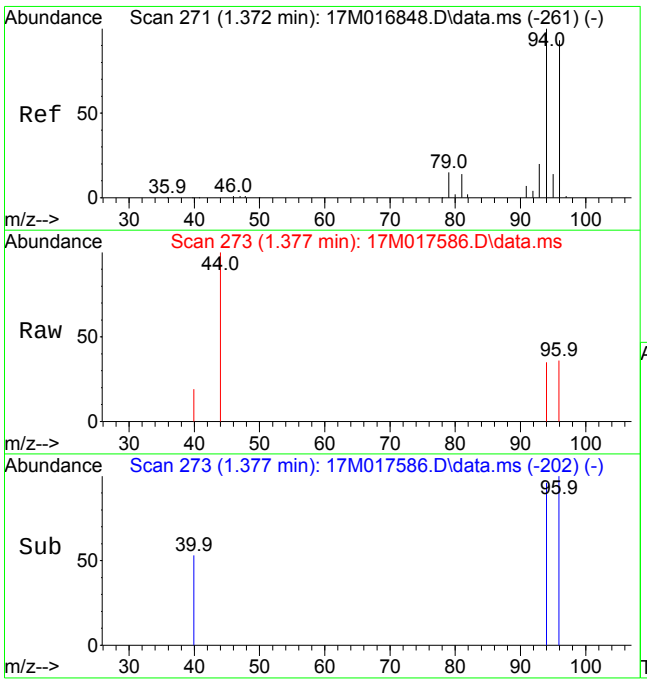

#6
Bromomethane
Concen: Below Cal
RT: 1.377 min Scan# 273
Delta R.T. 0.006 min
Lab File: 17M017586.D
Acq: 05 Feb 2016 16:08

Tgt Ion: 94 Resp: 284

Ion	Ratio	Lower	Upper
94	100		
96	86.6	56.0	130.6

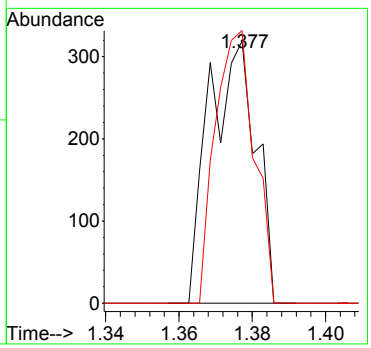

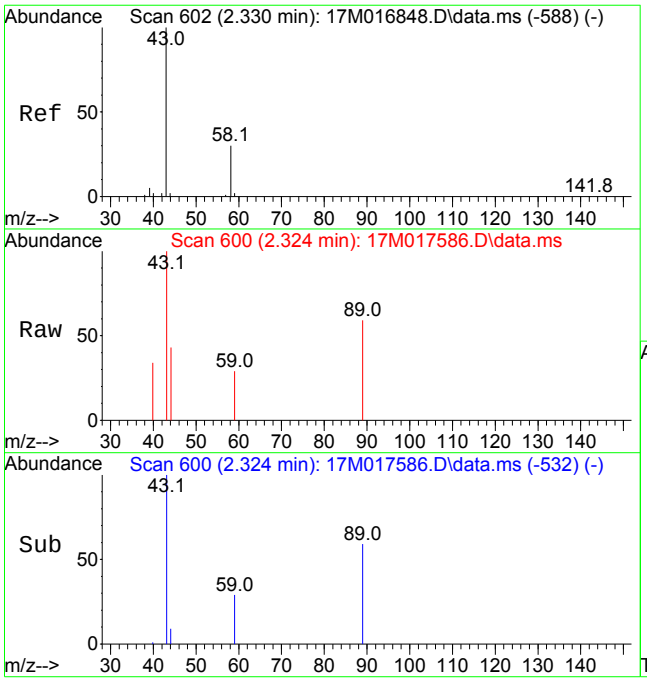

#16
Acetone
Concen: Below Cal
RT: 2.324 min Scan# 600
Delta R.T. -0.003 min
Lab File: 17M017586.D
Acq: 05 Feb 2016 16:08

Tgt Ion: 43 Resp: 650

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.1#

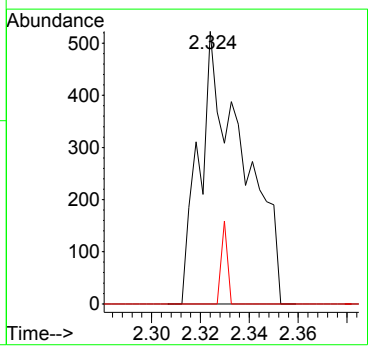

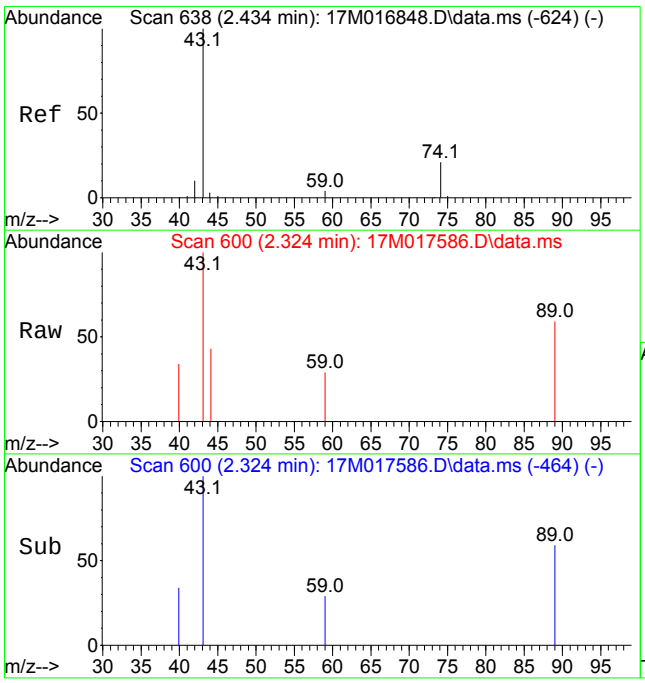

#18
Methyl acetate
Concen: 0.2632 ug/L
RT: 2.324 min Scan# 600
Delta R.T. -0.107 min
Lab File: 17M017586.D
Acq: 05 Feb 2016 16:08

Tgt Ion: 43 Resp: 650

Ion	Ratio	Lower	Upper
43	100		
74	0.0	20.2	20.2#
59	64.9	6.6	10.0#

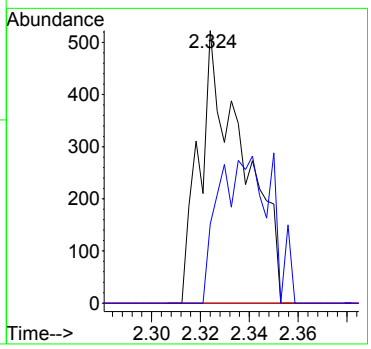

2.1.1.4 Standards Data

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017420.D
Acq On : 21 Jan 2016 15:45
Operator : ADC
Sample : WG554589-02 50ug/L CCV STD 8260
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 27 12:19:11 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.121	96	467028	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	332552	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	174141	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	129189	25.5624 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.250%		
34) 1,2-Dichloroethane-d4	4.791	65	124937	24.6540 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.616%		
47) Toluene-d8	6.696	98	482594	25.7801 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.120%		
66) p-Bromofluorobenzene	8.711	95	169959	26.0442 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.177%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.030	85	382865	54.0340 ug/L	100
3) Chloromethane	1.143	50	352610	51.0004 ug/L	100
4) Vinyl Chloride	1.186	62	344218	51.5125 ug/L	100
5) 1,3-Butadiene	1.198	54	298898	53.1029 ug/L	100
6) Bromomethane	1.371	94	194195	51.6918 ug/L	100
7) Chloroethane	1.441	64	137005	46.4855 ug/L	100
8) Trichlorofluoromethane	1.525	101	421164	53.2364 ug/L	100
9) Diethyl ether	1.736	59	184284	48.7158 ug/L	100
10) 1,1-Dichloroethene	1.855	61	388527	49.5567 ug/L	100
11) Carbon Disulfide	1.867	76	794364	49.1446 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.884	101	235886	50.4567 ug/L	100
13) Iodomethane	1.948	142	411734	48.4056 ug/L	100
14) Acrolein	2.095	56	27960	46.6814 ug/L	100
15) Methylene Chloride	2.275	84	259189	47.5563 ug/L	100
16) Acetone	2.327	43	42469	42.3599 ug/L	100
17) trans-1,2-Dichloroethene	2.402	96	247511	49.3158 ug/L	100
18) Methyl acetate	2.431	43	151558	50.0812 ug/L #	99
19) Methyl Tert Butyl Ether	2.509	73	598813	46.1560 ug/L	100
20) 1,1-Dichloroethane	2.955	63	481701	48.6682 ug/L	100
21) Acrylonitrile	3.013	53	59479	46.5216 ug/L	100
22) Vinyl Acetate	3.253	86	20288	41.5716 ug/L	100
23) cis-1,2-Dichloroethene	3.543	96	275500	48.7521 ug/L	100
24) 2,2-Dichloropropane	3.670	77	388250	50.1827 ug/L	100
25) Cyclohexane	3.769	56	458205	50.4291 ug/L	100
26) Bromochloromethane	3.780	130	165354	49.7381 ug/L	100
27) Chloroform	3.911	83	465094	49.9116 ug/L	100
28) Carbon Tetrachloride	4.055	117	386490	51.0416 ug/L	100
30) 1,1,1-Trichloroethane	4.151	97	417844	49.9919 ug/L	100
31) 1,1-Dichloropropene	4.322	75	352978	49.4901 ug/L	100
32) 2-Butanone	4.342	43	70102	43.5517 ug/L	100
33) Benzene	4.626	78	1029507	48.4784 ug/L	100
35) 1,2-Dichloroethane	4.869	62	311887	47.3812 ug/L	100
36) Methylcyclohexane	5.277	83	442363	50.5853 ug/L	100
37) Trichloroethene	5.303	130	279356	48.1905 ug/L	100
38) Dibromomethane	5.723	93	138718	49.4457 ug/L	100
39) 1,2-Dichloropropane	5.830	63	279770	48.0046 ug/L	100
40) Bromodichloromethane	5.920	83	354402	50.0011 ug/L	100
41) 1,4-Dioxane	6.134	88	3434	96.4493 ug/L	100
42) 2-Chloroethyl Vinyl Ether	6.511	63	124201	47.5607 ug/L	100
43) cis-1,3-Dichloropropene	6.528	75	406950	50.2817 ug/L	100
44) 4-Methyl-2-Pentanone	7.802	58	59690	43.2301 ug/L	100
45) trans-1,3-Dichloropropene	7.130	75	341451	50.5673 ug/L	100
48) Toluene	6.739	91	1134004	49.2287 ug/L	100
49) Tetrachloroethene	7.070	166	306680	49.2936 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017420.D
Acq On : 21 Jan 2016 15:45
Operator : ADC
Sample : WG554589-02 50ug/L CCV STD 8260
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 27 12:19:11 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50)	1,1,2-Trichloroethane	7.261	97	193754	47.3258 ug/L	100
51)	Dibromochloromethane	7.400	129	266030	49.4487 ug/L	100
52)	1,3-Dichloropropane	7.484	76	317043	46.5706 ug/L	100
53)	1,2-Dibromoethane	7.570	107	192976	47.4671 ug/L	100
54)	2-Hexanone	7.802	43	119515	43.8461 ug/L	100
55)	Chlorobenzene	7.973	112	715875	49.0523 ug/L	100
56)	1-Chlorohexane	7.987	69	70412	52.4612 ug/L	100
57)	Ethylbenzene	8.011	106	388369	49.4628 ug/L	100
58)	1,1,1,2-Tetrachloroethane	8.028	131	265991	49.0077 ug/L	100
59)	m-,p-Xylene	8.112	106	955217	100.9715 ug/L	100
60)	o-Xylene	8.375	106	457143	49.4260 ug/L	100
61)	Styrene	8.407	104	757403	50.4774 ug/L	100
62)	Bromoform	8.410	173	169686	48.5490 ug/L	100
63)	Isopropylbenzene	8.564	105	1225228	50.7013 ug/L	100
65)	1,3,5-Trimethylbenzene	8.902	105	1059742	51.0021 ug/L	100
67)	Bromobenzene	8.763	156	321121	48.3695 ug/L	100
68)	n-Propylbenzene	8.795	91	1439020	52.2293 ug/L	100
69)	1,1,2,2-Tetrachloroethane	8.836	83	222891	45.9754 ug/L	100
70)	2-Chlorotoluene	8.868	91	853476	49.9593 ug/L	100
71)	1,2,3-Trichloropropane	8.899	110	58771	45.1666 ug/L	100
72)	trans-1,4-Dichloro-2-B...	8.928	53	50423	49.1286 ug/L #	100
73)	1,2,4-Trimethylbenzene	9.099	105	1065226	51.3852 ug/L	100
74)	4-Chlorotoluene	8.957	91	868333	50.1938 ug/L	100
75)	tert-Butylbenzene	9.064	134	191900	49.2289 ug/L	100
76)	sec-Butylbenzene	9.154	105	1316314	51.9674 ug/L	100
77)	p-Isopropyltoluene	9.229	119	1142508	52.5223 ug/L	100
78)	1,3-Dichlorobenzene	9.255	146	604477	50.1740 ug/L	100
79)	1,4-Dichlorobenzene	9.302	146	594933	47.9270 ug/L	100
80)	n-Butylbenzene	9.432	91	1048360	54.1070 ug/L	100
81)	1,2-Dichlorobenzene	9.505	146	563817	48.0588 ug/L	100
82)	1,2-Dibromo-3-Chloropr...	9.881	75	39563	45.3363 ug/L	100
83)	Hexachlorobutadiene	10.179	225	245538	51.1667 ug/L	100
84)	1,2,4-Trichlorobenzene	10.194	180	435445	49.1611 ug/L	100
85)	Naphthalene	10.344	128	764043	46.7791 ug/L	100
86)	1,2,3-Trichlorobenzene	10.428	180	391436	47.7632 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017420.D
Acq On : 21 Jan 2016 15:45
Operator : ADC
Sample : WG554589-02 50ug/L CCV STD 8260
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 27 12:19:11 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

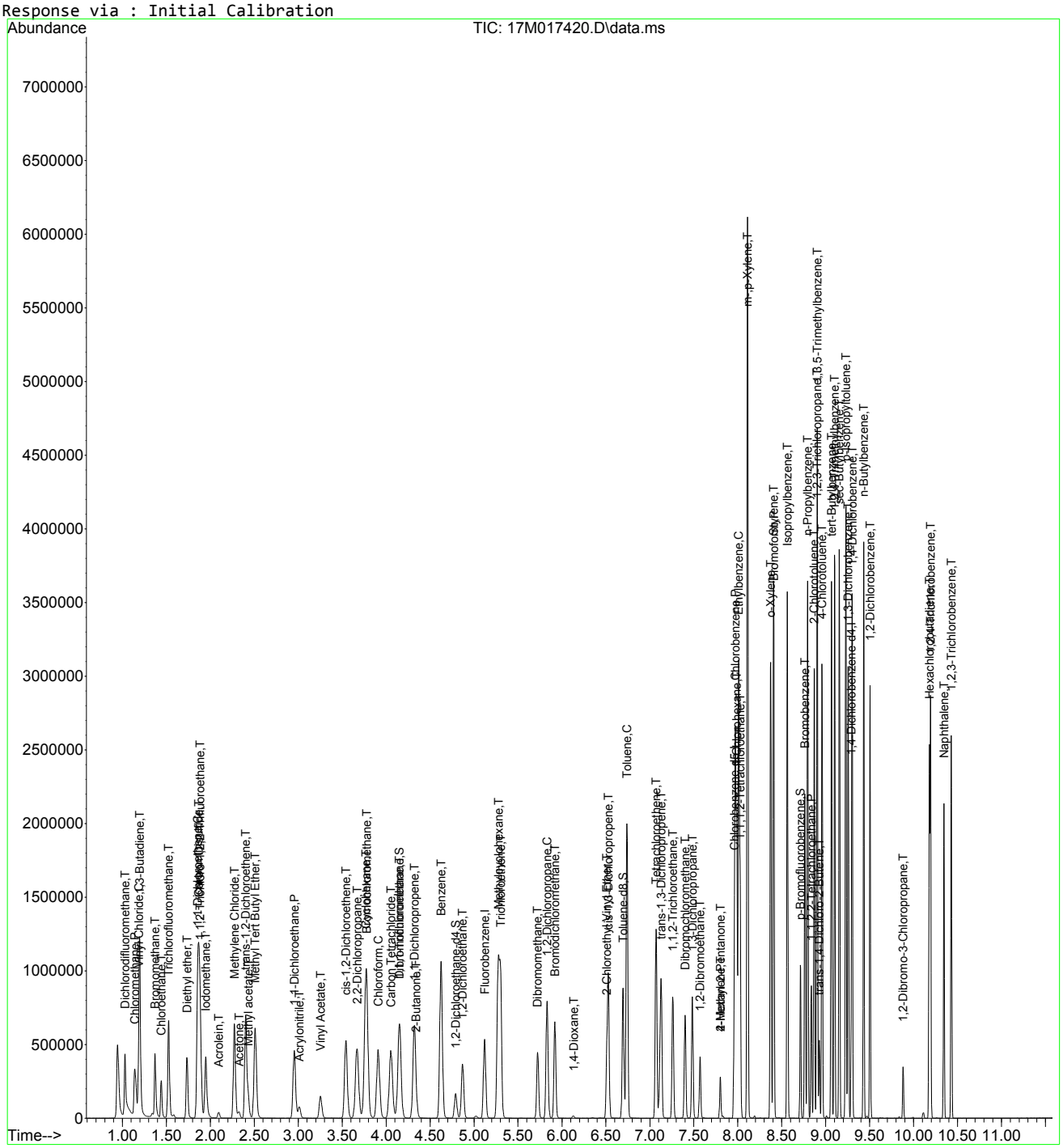

8260VMS.M Wed Jan 27 12:32:36 2016 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017422.D
Acq On : 21 Jan 2016 16:26
Operator : ADC
Sample : WG554589-03 0.3ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 27 12:10:37 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:09:57 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.121	96	466174	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	332953	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	173734	25.00000	ug/L	0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	0.000	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.000%#	
34) 1,2-Dichloroethane-d4	0.000	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.000%#	
47) Toluene-d8	6.693	98	437	0.0233	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.093%#	
66) p-Bromofluorobenzene	8.711	95	221	0.0339	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.136%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.030	85	1766	0.2497	ug/L #	85
3) Chloromethane	1.140	50	2564	0.3715	ug/L	89
4) Vinyl Chloride	1.189	62	1995	0.2991	ug/L	96
5) 1,3-Butadiene	1.198	54	1825	0.3248	ug/L	96
6) Bromomethane	1.374	94	1878	Below Cal		100
7) Chloroethane	1.452	64	982	0.3338	ug/L	94
8) Trichlorofluoromethane	1.536	101	2809	0.3557	ug/L	97
9) Diethyl ether	1.736	59	1140	0.3019	ug/L	86
10) 1,1-Dichloroethene	1.858	61	2539	0.3244	ug/L	96
11) Carbon Disulfide	1.872	76	7090	0.4394	ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.887	101	1661	0.3559	ug/L	95
13) Iodomethane	1.959	142	672	1.5060	ug/L #	70
14) Acrolein	2.095	56	127	0.2124	ug/L #	13
15) Methylene Chloride	2.275	84	2153	0.3958	ug/L	100
16) Acetone	2.333	43	833	Below Cal #		45
17) trans-1,2-Dichloroethene	2.399	96	1759	0.3511	ug/L	98
18) Methyl acetate	2.431	43	640	0.2119	ug/L #	62
19) Methyl Tert Butyl Ether	2.512	73	3889	0.3003	ug/L	95
20) 1,1-Dichloroethane	2.964	63	2987	0.3023	ug/L	92
21) Acrylonitrile	3.016	53	237	0.1857	ug/L #	56
23) cis-1,2-Dichloroethene	3.552	96	1777	0.3150	ug/L	98
24) 2,2-Dichloropropane	3.679	77	746	0.6638	ug/L	89
25) Cyclohexane	3.769	56	2874	0.3169	ug/L	99
26) Bromochloromethane	3.780	130	793	0.2390	ug/L	88
27) Chloroform	3.913	83	2765	0.2973	ug/L	98
28) Carbon Tetrachloride	4.050	117	2096	0.2773	ug/L #	97
30) 1,1,1-Trichloroethane	4.151	97	2446	0.2932	ug/L	96
31) 1,1-Dichloropropene	4.322	75	2267	0.3184	ug/L	98
32) 2-Butanone	4.348	43	364	0.2266	ug/L #	39
33) Benzene	4.632	78	6836	0.3225	ug/L	98
35) 1,2-Dichloroethane	4.875	62	1996	0.3038	ug/L #	82
36) Methylcyclohexane	5.274	83	2915	0.3339	ug/L	97
37) Trichloroethene	5.303	130	2073	0.3583	ug/L	99
38) Dibromomethane	5.723	93	753	0.2689	ug/L	89
39) 1,2-Dichloropropane	5.827	63	1770	0.3043	ug/L	96
40) Bromodichloromethane	5.917	83	1906	0.2694	ug/L	89
42) 2-Chloroethyl Vinyl Ether	6.511	63	741	0.2843	ug/L #	68
43) cis-1,3-Dichloropropene	6.531	75	2399	0.2970	ug/L	96
44) 4-Methyl-2-Pentanone	7.805	58	314	0.2278	ug/L #	62
45) trans-1,3-Dichloropropene	7.130	75	2025	0.3004	ug/L	92
48) Toluene	6.742	91	7701	0.3339	ug/L	98
49) Tetrachloroethene	7.066	166	2241	0.3598	ug/L	99
50) 1,1,2-Trichloroethane	7.260	97	1176	0.2869	ug/L	97
51) Dibromochloromethane	7.402	129	1444	0.2681	ug/L	97

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017422.D
Acq On : 21 Jan 2016 16:26
Operator : ADC
Sample : WG554589-03 0.3ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 27 12:10:37 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:09:57 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52) 1,3-Dichloropropane	7.481	76	2043	0.2997 ug/L	97
53) 1,2-Dibromoethane	7.570	107	1217	0.2990 ug/L	96
54) 2-Hexanone	7.802	43	836	0.3063 ug/L #	82
55) Chlorobenzene	7.973	112	5017	0.3434 ug/L #	10
56) 1-Chlorohexane	7.984	69	459	0.3416 ug/L #	60
57) Ethylbenzene	8.007	106	2523	0.3209 ug/L	87
58) 1,1,1,2-Tetrachloroethane	8.025	131	1499	0.2759 ug/L	87
59) m-,p-Xylene	8.109	106	6119	0.6460 ug/L	95
60) o-Xylene	8.372	106	2940	0.3175 ug/L	98
61) Styrene	8.404	104	4473	0.2977 ug/L	98
62) Bromoform	8.410	173	936	0.2675 ug/L #	89
63) Isopropylbenzene	8.563	105	7651	0.3162 ug/L	98
65) 1,3,5-Trimethylbenzene	8.902	105	6526	0.3148 ug/L	99
67) Bromobenzene	8.763	156	2275	0.3435 ug/L	96
68) n-Propylbenzene	8.795	91	9162	0.3333 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.836	83	1369	0.2830 ug/L	98
70) 2-Chlorotoluene	8.867	91	5677	0.3331 ug/L	98
71) 1,2,3-Trichloropropane	8.902	110	386	0.2973 ug/L	86
72) trans-1,4-Dichloro-2-B...	8.928	53	316	0.3086 ug/L #	78
73) 1,2,4-Trimethylbenzene	9.099	105	7009	0.3389 ug/L	97
74) 4-Chlorotoluene	8.957	91	5924	0.3432 ug/L	99
75) tert-Butylbenzene	9.064	134	1167	0.3001 ug/L	88
76) sec-Butylbenzene	9.154	105	8183	0.3238 ug/L	96
77) p-Isopropyltoluene	9.226	119	6898	0.3179 ug/L	98
78) 1,3-Dichlorobenzene	9.255	146	4234	0.3523 ug/L	97
79) 1,4-Dichlorobenzene	9.299	146	4637	0.3744 ug/L	85
80) n-Butylbenzene	9.432	91	6537	0.3382 ug/L	99
81) 1,2-Dichlorobenzene	9.501	146	4034	0.3447 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.881	75	269	0.3090 ug/L	87
83) Hexachlorobutadiene	10.179	225	1707	0.3565 ug/L	92
84) 1,2,4-Trichlorobenzene	10.191	180	3624	0.4101 ug/L	98
85) Naphthalene	10.344	128	5986	0.3674 ug/L	98
86) 1,2,3-Trichlorobenzene	10.428	180	3129	0.3827 ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017422.D
Acq On : 21 Jan 2016 16:26
Operator : ADC
Sample : WG554589-03 0.3ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 27 12:10:37 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:09:57 2016
Response via : Initial Calibration

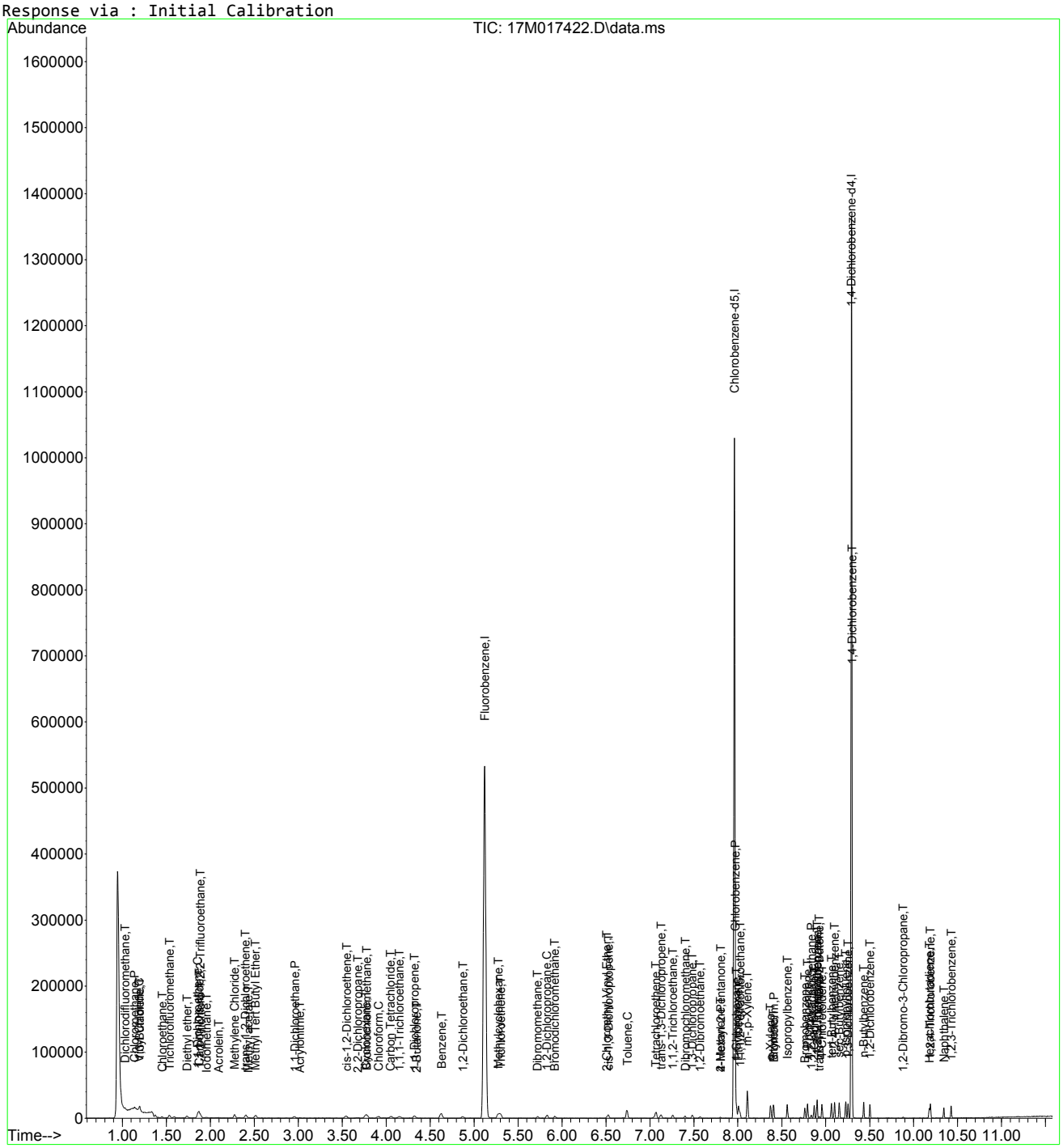

8260VMS.M Wed Jan 27 12:14:33 2016 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017422.D
Acq On : 21 Jan 2016 16:26
Operator : ADC
Sample : WG554589-03 0.3ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 27 12:10:37 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:09:57 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	-1.000	0.250	0.0	0	0.000
3	P	Chloromethane	-1.000	0.372	0.0	0	0.000
4	C	Vinyl Chloride	-1.000	0.299	0.0	0	0.000
5	T	1,3-Butadiene	-1.000	0.325	0.0	0	0.000
6	T	Bromomethane	-1.000	-0.253	0.0	0	0.000
7	T	Chloroethane	-1.000	0.334	0.0	0	0.011
8	T	Trichlorofluoromethane	-1.000	0.356	0.0	0	0.011
9	T	Diethyl ether	-1.000	0.302	0.0	0	0.000
10	C	1,1-Dichloroethene	-1.000	0.324	0.0	0	0.000
11	T	Carbon Disulfide	-1.000	0.439	0.0	0	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.000	0.356	0.0	0	0.000
13	T	Iodomethane	-1.000	1.506	0.0	100	0.011
14	T	Acrolein	-1.000	0.212	0.0	0	0.000
15	T	Methylene Chloride	-1.000	0.396	0.0	0	0.000
16	T	Acetone	-1.000	-1.068	0.0	0	0.000
17	T	trans-1,2-Dichloroethene	-1.000	0.351	0.0	0	0.000
18	T	Methyl acetate	-1.000	0.212	0.0	100	0.000
19	T	Methyl Tert Butyl Ether	-1.000	0.300	0.0	0	0.000
20	P	1,1-Dichloroethane	-1.000	0.302	0.0	0	0.000
21	T	Acrylonitrile	-1.000	0.186	0.0	0	0.000
22	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.253#
23	T	cis-1,2-Dichloroethene	-1.000	0.315	0.0	0	0.000
24	T	2,2-Dichloropropane	-1.000	0.664	0.0	0	0.000
25	T	Cyclohexane	-1.000	0.317	0.0	0	0.000
26	T	Bromochloromethane	-1.000	0.239	0.0	0	0.000
27	C	Chloroform	0.300	0.297	1.0#	100	0.000
28	T	Carbon Tetrachloride	-1.000	0.277	0.0	0	0.000
29	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.151#
30	T	1,1,1-Trichloroethane	-1.000	0.293	0.0	0	0.000
31	T	1,1-Dichloropropene	-1.000	0.318	0.0	0	0.000
32	T	2-Butanone	-1.000	0.227	0.0	0	0.000
33	T	Benzene	-1.000	0.322	0.0	0	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.000	0.0	0	-4.791#
35	T	1,2-Dichloroethane	-1.000	0.304	0.0	0	0.000
36	T	Methylcyclohexane	0.300	0.334	-11.3	100	0.000
37	T	Trichloroethene	-1.000	0.358	0.0	0	0.000
38	T	Dibromomethane	-1.000	0.269	0.0	0	0.000
39	C	1,2-Dichloropropane	-1.000	0.304	0.0	0	0.000
40	T	Bromodichloromethane	-1.000	0.269	0.0	0	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.134#
42	T	2-Chloroethyl Vinyl Ether	-1.000	0.284	0.0	0	0.000
43	T	cis-1,3-Dichloropropene	-1.000	0.297	0.0	0	0.000
44	T	4-Methyl-2-Pentanone	-1.000	0.228	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	-1.000	0.300	0.0	0	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.023	0.0	0	0.000
48	C	Toluene	-1.000	0.334	0.0	0	0.000
49	T	Tetrachloroethene	-1.000	0.360	0.0	0	0.000
50	T	1,1,2-Trichloroethane	-1.000	0.287	0.0	0	0.000
51	T	Dibromochloromethane	-1.000	0.268	0.0	0	0.000
52	T	1,3-Dichloropropane	-1.000	0.300	0.0	0	0.000
53	T	1,2-Dibromoethane	-1.000	0.299	0.0	0	0.000
54	T	2-Hexanone	-1.000	0.306	0.0	0	0.000
55	P	Chlorobenzene	-1.000	0.343	0.0	0	0.000

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017422.D
Acq On : 21 Jan 2016 16:26
Operator : ADC
Sample : WG554589-03 0.3ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 27 12:10:37 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:09:57 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	-1.000	0.342	0.0	0	0.000
57	C	Ethylbenzene	-1.000	0.321	0.0	0	0.000
58	T	1,1,1,2-Tetrachloroethane	-1.000	0.276	0.0	0	0.000
59	T	m-,p-Xylene	-1.000	0.646	0.0	0	0.000
60	T	o-Xylene	-1.000	0.317	0.0	0	0.000
61	T	Styrene	-1.000	0.298	0.0	0	0.000
62	P	Bromoform	-1.000	0.267	0.0	0	0.000
63	T	Isopropylbenzene	-1.000	0.316	0.0	0	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	-1.000	0.315	0.0	0	0.000
66	S	p-Bromofluorobenzene	-1.000	0.034	0.0	0	0.000
67	T	Bromobenzene	0.300	0.343	-14.3	100	0.000
68	T	n-Propylbenzene	-1.000	0.333	0.0	0	0.000
69	P	1,1,2,2-Tetrachloroethane	-1.000	0.283	0.0	0	0.000
70	T	2-Chlorotoluene	-1.000	0.333	0.0	0	0.000
71	T	1,2,3-Trichloropropane	-1.000	0.297	0.0	0	0.000
72	T	trans-1,4-Dichloro-2-Butene	-1.000	0.309	0.0	0	0.000
73	T	1,2,4-Trimethylbenzene	-1.000	0.339	0.0	0	0.000
74	T	4-Chlorotoluene	-1.000	0.343	0.0	0	0.000
75	T	tert-Butylbenzene	-1.000	0.300	0.0	0	0.000
76	T	sec-Butylbenzene	-1.000	0.324	0.0	0	0.000
77	T	p-Isopropyltoluene	-1.000	0.318	0.0	0	0.000
78	T	1,3-Dichlorobenzene	-1.000	0.352	0.0	0	0.000
79	T	1,4-Dichlorobenzene	0.300	0.374	-24.7	100	0.000
80	T	n-Butylbenzene	-1.000	0.338	0.0	0	0.000
81	T	1,2-Dichlorobenzene	0.300	0.345	-15.0	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	-1.000	0.309	0.0	0	0.000
83	T	Hexachlorobutadiene	-1.000	0.357	0.0	0	0.000
84	T	1,2,4-Trichlorobenzene	-1.000	0.410	0.0	0	0.000
85	T	Naphthalene	-1.000	0.367	0.0	0	0.000
86	T	1,2,3-Trichlorobenzene	-1.000	0.383	0.0	0	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 1

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017423.D
Acq On : 21 Jan 2016 16:47
Operator : ADC
Sample : WG554589-04 0.4ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 27 12:15:46 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.121	96	457067	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	324162	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	168503	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	0.000	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.000%#	
34) 1,2-Dichloroethane-d4	0.000	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.000%#	
47) Toluene-d8	6.693	98	426	0.0233 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.093%#	
66) p-Bromofluorobenzene	8.711	95	155	0.0245 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.098%#	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.030	85	2561	0.3693 ug/L #	82
3) Chloromethane	1.143	50	3254	0.4809 ug/L	93
4) Vinyl Chloride	1.186	62	2495	0.3815 ug/L	96
5) 1,3-Butadiene	1.198	54	2297	0.4170 ug/L	97
6) Bromomethane	1.374	94	2158	Below Cal	93
7) Chloroethane	1.450	64	1273	0.4413 ug/L	93
8) Trichlorofluoromethane	1.534	101	3377	0.4362 ug/L	98
9) Diethyl ether	1.733	59	1483	0.4006 ug/L	89
10) 1,1-Dichloroethene	1.858	61	3238	0.4220 ug/L	92
11) Carbon Disulfide	1.870	76	8237	0.5207 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.887	101	1965	0.4295 ug/L	96
13) Iodomethane	1.951	142	669	1.5071 ug/L #	76
14) Acrolein	2.095	56	149	0.2542 ug/L #	13
15) Methylene Chloride	2.278	84	2605	0.4884 ug/L	98
16) Acetone	2.324	43	1025	Below Cal #	45
17) trans-1,2-Dichloroethene	2.405	96	2024	0.4121 ug/L	93
18) Methyl acetate	2.434	43	954	0.3221 ug/L #	62
19) Methyl Tert Butyl Ether	2.515	73	5253	0.4137 ug/L	99
20) 1,1-Dichloroethane	2.958	63	3944	0.4072 ug/L	94
21) Acrylonitrile	3.016	53	352	0.2813 ug/L	85
23) cis-1,2-Dichloroethene	3.549	96	2308	0.4173 ug/L	98
24) 2,2-Dichloropropane	3.662	77	761	1.0564 ug/L	99
25) Cyclohexane	3.772	56	3630	0.4082 ug/L	95
26) Bromochloromethane	3.780	130	1026	0.3153 ug/L	88
27) Chloroform	3.911	83	3441	0.3773 ug/L	96
28) Carbon Tetrachloride	4.058	117	2643	0.3567 ug/L #	95
30) 1,1,1-Trichloroethane	4.145	97	3029	0.3703 ug/L	95
31) 1,1-Dichloropropene	4.319	75	2888	0.4137 ug/L	99
32) 2-Butanone	4.360	43	514	0.3263 ug/L #	39
33) Benzene	4.629	78	8670	0.4172 ug/L	96
35) 1,2-Dichloroethane	4.863	62	2642	0.4101 ug/L #	89
36) Methylcyclohexane	5.280	83	3426	0.4003 ug/L	96
37) Trichloroethene	5.301	130	2470	0.4354 ug/L	98
38) Dibromomethane	5.720	93	860	0.3132 ug/L	95
39) 1,2-Dichloropropane	5.833	63	2287	0.4010 ug/L	91
40) Bromodichloromethane	5.923	83	2427	0.3499 ug/L	100
42) 2-Chloroethyl Vinyl Ether	6.514	63	858	0.3357 ug/L	83
43) cis-1,3-Dichloropropene	6.528	75	3027	0.3822 ug/L	91
44) 4-Methyl-2-Pentanone	7.799	58	482	0.3567 ug/L #	62
45) trans-1,3-Dichloropropene	7.130	75	2305	0.3488 ug/L	98
48) Toluene	6.737	91	9597	0.4274 ug/L	99
49) Tetrachloroethene	7.070	166	2634	0.4343 ug/L	100
50) 1,1,2-Trichloroethane	7.261	97	1506	0.3774 ug/L	93
51) Dibromochloromethane	7.403	129	1907	0.3636 ug/L	95

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017423.D
Acq On : 21 Jan 2016 16:47
Operator : ADC
Sample : WG554589-04 0.4ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 27 12:15:46 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52) 1,3-Dichloropropane	7.484	76	2786	0.4198 ug/L	100
53) 1,2-Dibromoethane	7.570	107	1493	0.3767 ug/L	98
54) 2-Hexanone	7.802	43	1111	0.4181 ug/L	91
55) Chlorobenzene	7.973	112	6034	0.4242 ug/L #	30
56) 1-Chlorohexane	7.990	69	578	0.4418 ug/L	90
57) Ethylbenzene	8.011	106	3151	0.4117 ug/L	91
58) 1,1,1,2-Tetrachloroethane	8.025	131	2049	0.3873 ug/L	85
59) m-,p-Xylene	8.109	106	7661	0.8308 ug/L	99
60) o-Xylene	8.372	106	3547	0.3934 ug/L	94
61) Styrene	8.407	104	5809	0.3972 ug/L	94
62) Bromoform	8.410	173	1164	0.3417 ug/L	97
63) Isopropylbenzene	8.564	105	9560	0.4058 ug/L	99
65) 1,3,5-Trimethylbenzene	8.902	105	8152	0.4055 ug/L	99
67) Bromobenzene	8.763	156	2635	0.4102 ug/L	94
68) n-Propylbenzene	8.792	91	10914	0.4094 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.833	83	1870	0.3986 ug/L	94
70) 2-Chlorotoluene	8.868	91	6870	0.4156 ug/L	97
71) 1,2,3-Trichloropropane	8.899	110	446	0.3542 ug/L #	70
72) trans-1,4-Dichloro-2-B...	8.928	53	408	0.4108 ug/L #	80
73) 1,2,4-Trimethylbenzene	9.099	105	8278	0.4127 ug/L	99
74) 4-Chlorotoluene	8.957	91	7299	0.4360 ug/L	97
75) tert-Butylbenzene	9.064	134	1679	0.4451 ug/L	83
76) sec-Butylbenzene	9.154	105	10193	0.4159 ug/L	100
77) p-Isopropyltoluene	9.230	119	8737	0.4151 ug/L	97
78) 1,3-Dichlorobenzene	9.256	146	5185	0.4448 ug/L	99
79) 1,4-Dichlorobenzene	9.299	146	5541	0.4613 ug/L	89
80) n-Butylbenzene	9.432	91	7580	0.4043 ug/L	99
81) 1,2-Dichlorobenzene	9.505	146	4866	0.4286 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.881	75	304	0.3600 ug/L	95
83) Hexachlorobutadiene	10.176	225	1885	0.4060 ug/L	97
84) 1,2,4-Trichlorobenzene	10.191	180	3886	0.4534 ug/L	99
85) Naphthalene	10.341	128	6810	0.4309 ug/L	98
86) 1,2,3-Trichlorobenzene	10.428	180	3498	0.4411 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017423.D
Acq On : 21 Jan 2016 16:47
Operator : ADC
Sample : WG554589-04 0.4ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 27 12:15:46 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

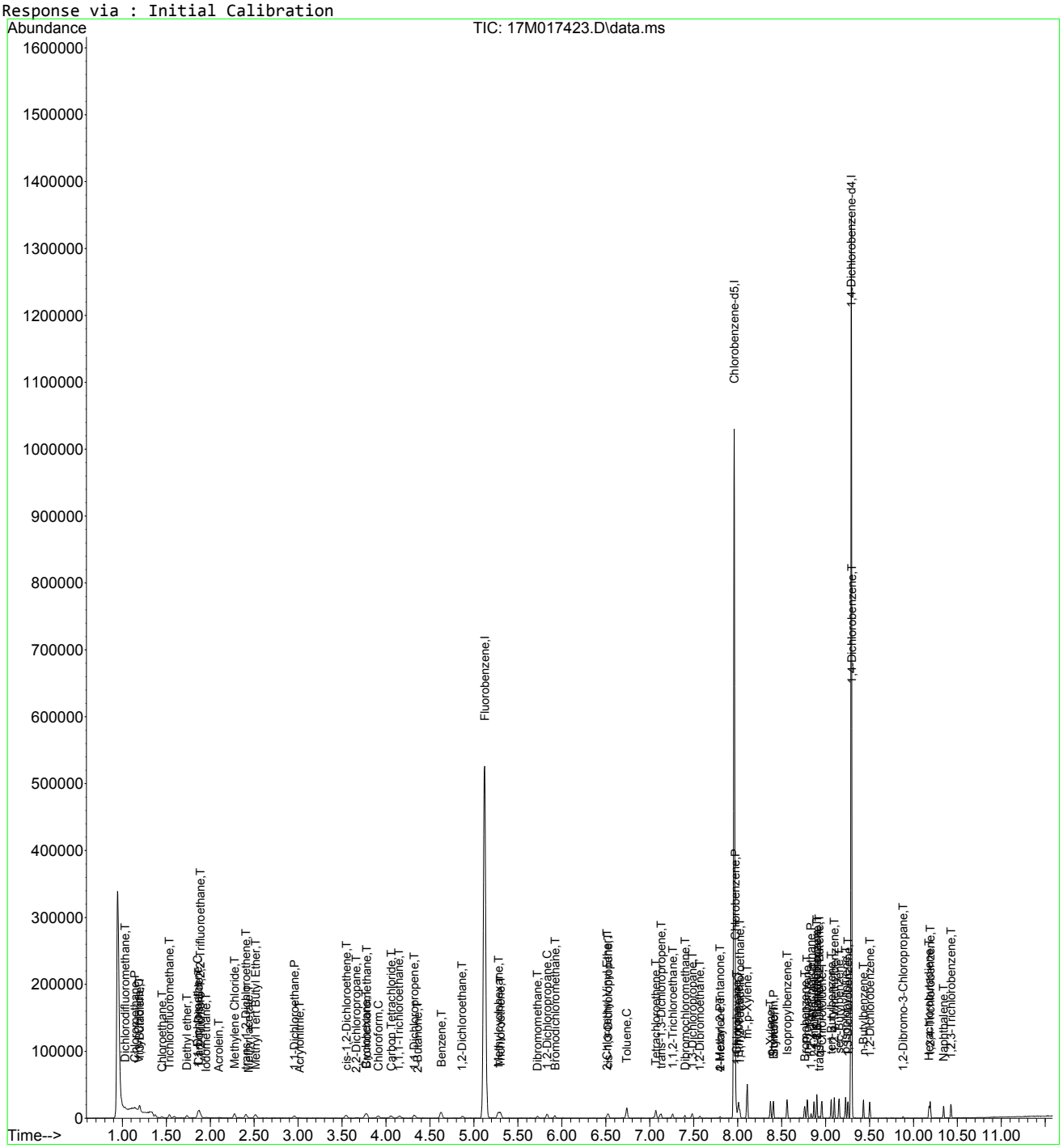

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017423.D
Acq On : 21 Jan 2016 16:47
Operator : ADC
Sample : WG554589-04 0.4ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 27 12:15:46 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	-1.000	0.369	0.0	0	0.000
3	P	Chloromethane	-1.000	0.481	0.0	0	0.000
4	C	Vinyl Chloride	0.400	0.382	4.5#	100	0.000
5	T	1,3-Butadiene	-1.000	0.417	0.0	0	0.000
6	T	Bromomethane	-1.000	-0.165	0.0	0	0.000
7	T	Chloroethane	-1.000	0.441	0.0	0	0.000
8	T	Trichlorofluoromethane	0.400	0.436	-9.0	100	0.000
9	T	Diethyl ether	-1.000	0.401	0.0	0	0.000
10	C	1,1-Dichloroethene	0.400	0.422	-5.5#	100	0.000
11	T	Carbon Disulfide	0.400	0.521	-30.3#	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.400	0.429	-7.2	100	0.000
13	T	Iodomethane	-1.000	1.507	0.0	100	0.000
14	T	Acrolein	-1.000	0.254	0.0	0	0.000
15	T	Methylene Chloride	-1.000	0.488	0.0	0	0.000
16	T	Acetone	-1.000	-0.846	0.0	0	0.000
17	T	trans-1,2-Dichloroethene	0.400	0.412	-3.0	100	0.000
18	T	Methyl acetate	0.400	0.322	19.5	100	0.000
19	T	Methyl Tert Butyl Ether	0.400	0.414	-3.5	100	0.000
20	P	1,1-Dichloroethane	0.400	0.407	-1.7	100	0.000
21	T	Acrylonitrile	-1.000	0.281	0.0	0	0.000
22	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.253#
23	T	cis-1,2-Dichloroethene	0.400	0.417	-4.2	100	0.000
24	T	2,2-Dichloropropane	-1.000	1.056	0.0	100	0.000
25	T	Cyclohexane	0.400	0.408	-2.0	100	0.000
26	T	Bromochloromethane	-1.000	0.315	0.0	0	0.000
27	C	Chloroform	0.400	0.377	5.8#	100	0.000
28	T	Carbon Tetrachloride	0.400	0.357	10.8	100	0.000
29	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.151#
30	T	1,1,1-Trichloroethane	0.400	0.370	7.5	100	0.000
31	T	1,1-Dichloropropene	0.400	0.414	-3.5	100	0.000
32	T	2-Butanone	-1.000	0.326	0.0	0	0.018
33	T	Benzene	0.400	0.417	-4.2	100	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.000	0.0	0	-4.791#
35	T	1,2-Dichloroethane	0.400	0.410	-2.5	100	0.000
36	T	Methylcyclohexane	0.400	0.400	0.0	100	0.000
37	T	Trichloroethene	0.400	0.435	-8.7	100	0.000
38	T	Dibromomethane	0.400	0.313	21.8	100	0.000
39	C	1,2-Dichloropropane	0.400	0.401	-0.3#	100	0.000
40	T	Bromodichloromethane	0.400	0.350	12.5	100	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.134#
42	T	2-Chloroethyl Vinyl Ether	-1.000	0.336	0.0	0	0.000
43	T	cis-1,3-Dichloropropene	0.400	0.382	4.5	100	0.000
44	T	4-Methyl-2-Pentanone	-1.000	0.357	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	0.400	0.349	12.8	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.023	0.0	0	0.000
48	C	Toluene	0.400	0.427	-6.7#	100	0.000
49	T	Tetrachloroethene	0.400	0.434	-8.5	100	0.000
50	T	1,1,2-Trichloroethane	0.400	0.377	5.8	100	0.000
51	T	Dibromochloromethane	0.400	0.364	9.0	100	0.000
52	T	1,3-Dichloropropane	0.400	0.420	-5.0	100	0.000
53	T	1,2-Dibromoethane	0.400	0.377	5.8	100	0.000
54	T	2-Hexanone	-1.000	0.418	0.0	0	0.000
55	P	Chlorobenzene	0.400	0.424	-6.0	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017423.D
Acq On : 21 Jan 2016 16:47
Operator : ADC
Sample : WG554589-04 0.4ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 27 12:15:46 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	-1.000	0.442	0.0	0	0.000
57	C	Ethylbenzene	0.400	0.412	-3.0#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	0.400	0.387	3.3	100	0.000
59	T	m-,p-Xylene	0.800	0.831	-3.9	100	0.000
60	T	o-Xylene	0.400	0.393	1.8	100	0.000
61	T	Styrene	0.400	0.397	0.8	100	0.000
62	P	Bromoform	0.400	0.342	14.5	100	0.000
63	T	Isopropylbenzene	0.400	0.406	-1.5	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	0.400	0.405	-1.3	100	0.000
66	S	p-Bromofluorobenzene	-1.000	0.025	0.0	0	0.000
67	T	Bromobenzene	0.400	0.410	-2.5	100	0.000
68	T	n-Propylbenzene	0.400	0.409	-2.2	100	0.000
69	P	1,1,2,2-Tetrachloroethane	0.400	0.399	0.3	100	0.000
70	T	2-Chlorotoluene	0.400	0.416	-4.0	100	0.000
71	T	1,2,3-Trichloropropane	-1.000	0.354	0.0	0	0.000
72	T	trans-1,4-Dichloro-2-Butene	-1.000	0.411	0.0	0	0.000
73	T	1,2,4-Trimethylbenzene	0.400	0.413	-3.2	100	0.000
74	T	4-Chlorotoluene	0.400	0.436	-9.0	100	0.000
75	T	tert-Butylbenzene	0.400	0.445	-11.2	100	0.000
76	T	sec-Butylbenzene	0.400	0.416	-4.0	100	0.000
77	T	p-Isopropyltoluene	0.400	0.415	-3.7	100	0.000
78	T	1,3-Dichlorobenzene	0.400	0.445	-11.2	100	0.000
79	T	1,4-Dichlorobenzene	0.400	0.461	-15.3	100	0.000
80	T	n-Butylbenzene	0.400	0.404	-1.0	100	0.000
81	T	1,2-Dichlorobenzene	0.400	0.429	-7.2	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	-1.000	0.360	0.0	0	0.000
83	T	Hexachlorobutadiene	0.400	0.406	-1.5	100	0.000
84	T	1,2,4-Trichlorobenzene	0.400	0.453	-13.2	100	0.000
85	T	Naphthalene	0.400	0.431	-7.7	100	0.000
86	T	1,2,3-Trichlorobenzene	0.400	0.441	-10.2	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017424.D
Acq On : 21 Jan 2016 17:07
Operator : ADC
Sample : WG554589-05 1.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 27 12:16:18 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.121	96	448805	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	317030	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	165563	25.00000	ug/L	0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	0.000	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.000%#	
34) 1,2-Dichloroethane-d4	4.860	65	119	0.0244	ug/L	0.0692
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.098%#	
47) Toluene-d8	6.693	98	204	0.0114	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.046%#	
66) p-Bromofluorobenzene	8.714	95	161	0.0259	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.104%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.033	85	6272	0.9211	ug/L	92
3) Chloromethane	1.143	50	6936	1.0439	ug/L	100
4) Vinyl Chloride	1.186	62	6362	0.9907	ug/L	100
5) 1,3-Butadiene	1.198	54	5375	0.9937	ug/L	98
6) Bromomethane	1.377	94	5354	0.7439	ug/L	99
7) Chloroethane	1.447	64	3205	1.1316	ug/L	94
8) Trichlorofluoromethane	1.536	101	8255	1.0858	ug/L	99
9) Diethyl ether	1.733	59	3688	1.0145	ug/L	94
10) 1,1-Dichloroethene	1.855	61	7396	0.9817	ug/L	95
11) Carbon Disulfide	1.872	76	16194	1.0425	ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.890	101	4640	1.0328	ug/L	99
13) Iodomethane	1.950	142	1574	1.6160	ug/L	90
14) Acrolein	2.101	56	569	0.9886	ug/L	89
15) Methylene Chloride	2.272	84	5732	1.0944	ug/L	98
16) Acetone	2.333	43	1978	0.2088	ug/L	91
17) trans-1,2-Dichloroethene	2.408	96	4943	1.0249	ug/L	98
18) Methyl acetate	2.434	43	2458	0.8452	ug/L #	87
19) Methyl Tert Butyl Ether	2.515	73	12926	1.0368	ug/L	100
20) 1,1-Dichloroethane	2.958	63	9735	1.0235	ug/L	98
21) Acrylonitrile	3.013	53	1268	1.0320	ug/L	90
23) cis-1,2-Dichloroethene	3.543	96	5564	1.0246	ug/L	99
24) 2,2-Dichloropropane	3.667	77	3031	1.3577	ug/L	92
25) Cyclohexane	3.775	56	8967	1.0270	ug/L	97
26) Bromochloromethane	3.780	130	2891	0.9049	ug/L	97
27) Chloroform	3.916	83	8970	1.0017	ug/L	99
28) Carbon Tetrachloride	4.055	117	7011	0.9635	ug/L	98
30) 1,1,1-Trichloroethane	4.160	97	8058	1.0032	ug/L	98
31) 1,1-Dichloropropene	4.322	75	6925	1.0104	ug/L	99
32) 2-Butanone	4.345	43	1546	0.9995	ug/L #	49
33) Benzene	4.629	78	21070	1.0324	ug/L	99
35) 1,2-Dichloroethane	4.869	62	6503	1.0280	ug/L	97
36) Methylcyclohexane	5.274	83	8527	1.0147	ug/L	96
37) Trichloroethene	5.303	130	5718	1.0264	ug/L	99
38) Dibromomethane	5.723	93	2511	0.9314	ug/L	99
39) 1,2-Dichloropropane	5.830	63	5648	1.0085	ug/L	99
40) Bromodichloromethane	5.920	83	6483	0.9518	ug/L	100
42) 2-Chloroethyl Vinyl Ether	6.508	63	2449	0.9759	ug/L	96
43) cis-1,3-Dichloropropene	6.525	75	7161	0.9207	ug/L	98
44) 4-Methyl-2-Pentanone	7.799	58	1256	0.9466	ug/L #	62
45) trans-1,3-Dichloropropene	7.124	75	6106	0.9410	ug/L	98
48) Toluene	6.739	91	22480	1.0237	ug/L	98
49) Tetrachloroethene	7.069	166	6096	1.0278	ug/L	99
50) 1,1,2-Trichloroethane	7.260	97	4038	1.0346	ug/L	97
51) Dibromochloromethane	7.399	129	4768	0.9297	ug/L	97

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017424.D
Acq On : 21 Jan 2016 17:07
Operator : ADC
Sample : WG554589-05 1.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 27 12:16:18 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52) 1,3-Dichloropropane	7.481	76	6812	1.0496 ug/L	96
53) 1,2-Dibromoethane	7.570	107	3895	1.0050 ug/L	94
54) 2-Hexanone	7.802	43	2525	0.9717 ug/L	100
55) Chlorobenzene	7.973	112	14721	1.0581 ug/L	71
56) 1-Chlorohexane	7.984	69	1273	0.9949 ug/L	76
57) Ethylbenzene	8.007	106	7541	1.0074 ug/L	96
58) 1,1,1,2-Tetrachloroethane	8.025	131	5221	1.0090 ug/L	97
59) m-,p-Xylene	8.109	106	18559	2.0578 ug/L	99
60) o-Xylene	8.372	106	9112	1.0334 ug/L	98
61) Styrene	8.407	104	13761	0.9620 ug/L	98
62) Bromoform	8.410	173	3093	0.9283 ug/L	98
63) Isopropylbenzene	8.563	105	23645	1.0264 ug/L	99
65) 1,3,5-Trimethylbenzene	8.902	105	20566	1.0411 ug/L	98
67) Bromobenzene	8.763	156	6279	0.9948 ug/L	97
68) n-Propylbenzene	8.795	91	26806	1.0233 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.836	83	4720	1.0240 ug/L	97
70) 2-Chlorotoluene	8.867	91	16708	1.0287 ug/L	98
71) 1,2,3-Trichloropropane	8.899	110	1287	1.0403 ug/L	93
72) trans-1,4-Dichloro-2-B...	8.925	53	1004	1.0289 ug/L #	80
73) 1,2,4-Trimethylbenzene	9.099	105	20495	1.0399 ug/L	99
74) 4-Chlorotoluene	8.957	91	16502	1.0033 ug/L	99
75) tert-Butylbenzene	9.064	134	3716	1.0027 ug/L	93
76) sec-Butylbenzene	9.154	105	24753	1.0279 ug/L	100
77) p-Isopropyltoluene	9.226	119	20867	1.0090 ug/L	99
78) 1,3-Dichlorobenzene	9.255	146	11527	1.0064 ug/L	99
79) 1,4-Dichlorobenzene	9.299	146	11751	0.9957 ug/L	93
80) n-Butylbenzene	9.432	91	17997	0.9770 ug/L	100
81) 1,2-Dichlorobenzene	9.504	146	11491	1.0302 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.881	75	838	1.0100 ug/L	98
83) Hexachlorobutadiene	10.176	225	4822	1.0569 ug/L	96
84) 1,2,4-Trichlorobenzene	10.191	180	8561	1.0166 ug/L	97
85) Naphthalene	10.344	128	15766	1.0153 ug/L	100
86) 1,2,3-Trichlorobenzene	10.428	180	7968	1.0226 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017424.D
Acq On : 21 Jan 2016 17:07
Operator : ADC
Sample : WG554589-05 1.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 27 12:16:18 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

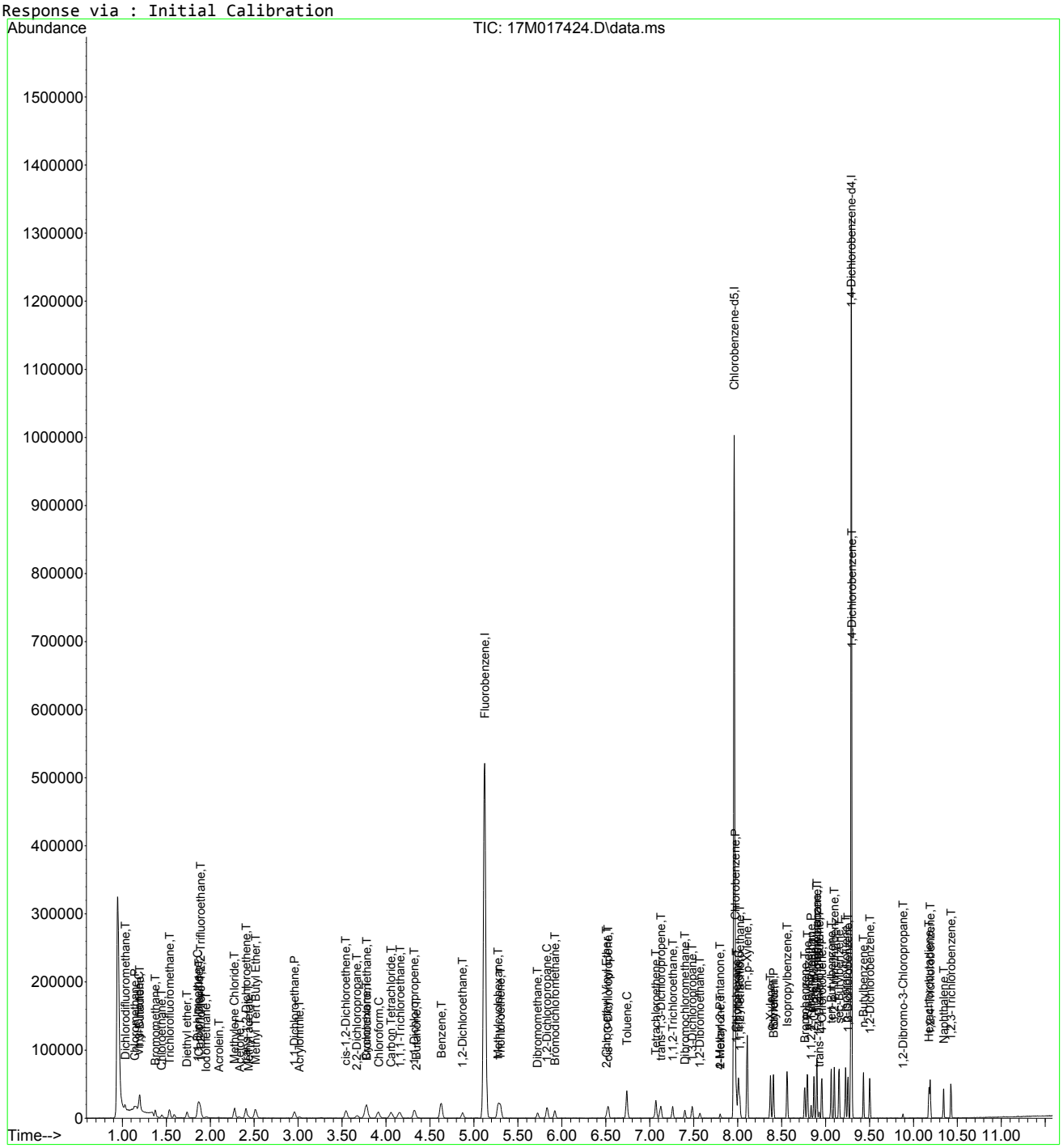

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017424.D
Acq On : 21 Jan 2016 17:07
Operator : ADC
Sample : WG554589-05 1.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 27 12:16:18 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	1.000	0.921	7.9	100	0.000
3	P	Chloromethane	1.000	1.044	-4.4	100	0.000
4	C	Vinyl Chloride	1.000	0.991	0.9#	100	0.000
5	T	1,3-Butadiene	1.000	0.994	0.6	100	0.000
6	T	Bromomethane	1.000	0.744	25.6#	100	0.000
7	T	Chloroethane	1.000	1.132	-13.2	100	0.000
8	T	Trichlorofluoromethane	1.000	1.086	-8.6	100	0.011
9	T	Diethyl ether	1.000	1.015	-1.5	100	0.000
10	C	1,1-Dichloroethene	1.000	0.982	1.8#	100	0.000
11	T	Carbon Disulfide	1.000	1.043	-4.3	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.000	1.033	-3.3	100	0.000
13	T	Iodomethane	1.000	1.616	-61.6#	100	0.000
14	T	Acrolein	-1.000	0.989	0.0	0	0.000
15	T	Methylene Chloride	1.000	1.094	-9.4	100	0.000
16	T	Acetone	-1.000	0.209	0.0	0	0.000
17	T	trans-1,2-Dichloroethene	1.000	1.025	-2.5	100	0.000
18	T	Methyl acetate	1.000	0.845	15.5	100	0.000
19	T	Methyl Tert Butyl Ether	1.000	1.037	-3.7	100	0.000
20	P	1,1-Dichloroethane	1.000	1.024	-2.4	100	0.000
21	T	Acrylonitrile	-1.000	1.032	0.0	0	0.000
22	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.253#
23	T	cis-1,2-Dichloroethene	1.000	1.025	-2.5	100	0.000
24	T	2,2-Dichloropropane	1.000	1.358	-35.8#	100	0.000
25	T	Cyclohexane	1.000	1.027	-2.7	100	0.000
26	T	Bromochloromethane	1.000	0.905	9.5	100	0.000
27	C	Chloroform	1.000	1.002	-0.2#	100	0.000
28	T	Carbon Tetrachloride	1.000	0.963	3.7	100	0.000
29	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.151#
30	T	1,1,1-Trichloroethane	1.000	1.003	-0.3	100	0.000
31	T	1,1-Dichloropropene	1.000	1.010	-1.0	100	0.000
32	T	2-Butanone	-1.000	0.999	0.0	0	0.000
33	T	Benzene	1.000	1.032	-3.2	100	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.024	0.0	0	0.069
35	T	1,2-Dichloroethane	1.000	1.028	-2.8	100	0.000
36	T	Methylcyclohexane	1.000	1.015	-1.5	100	0.000
37	T	Trichloroethene	1.000	1.026	-2.6	100	0.000
38	T	Dibromomethane	1.000	0.931	6.9	100	0.000
39	C	1,2-Dichloropropane	1.000	1.008	-0.8#	100	0.000
40	T	Bromodichloromethane	1.000	0.952	4.8	100	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.134#
42	T	2-Chloroethyl Vinyl Ether	1.000	0.976	2.4	100	0.000
43	T	cis-1,3-Dichloropropene	1.000	0.921	7.9	100	0.000
44	T	4-Methyl-2-Pentanone	-1.000	0.947	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	1.000	0.941	5.9	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.011	0.0	0	0.000
48	C	Toluene	1.000	1.024	-2.4#	100	0.000
49	T	Tetrachloroethene	1.000	1.028	-2.8	100	0.000
50	T	1,1,2-Trichloroethane	1.000	1.035	-3.5	100	0.000
51	T	Dibromochloromethane	1.000	0.930	7.0	100	0.000
52	T	1,3-Dichloropropane	1.000	1.050	-5.0	100	0.000
53	T	1,2-Dibromoethane	1.000	1.005	-0.5	100	0.000
54	T	2-Hexanone	-1.000	0.972	0.0	0	0.000
55	P	Chlorobenzene	1.000	1.058	-5.8	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017424.D
Acq On : 21 Jan 2016 17:07
Operator : ADC
Sample : WG554589-05 1.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 27 12:16:18 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	1.000	0.995	0.5	100	0.000
57	C	Ethylbenzene	1.000	1.007	-0.7#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	1.000	1.009	-0.9	100	0.000
59	T	m-,p-Xylene	2.000	2.058	-2.9	100	0.000
60	T	o-Xylene	1.000	1.033	-3.3	100	0.000
61	T	Styrene	1.000	0.962	3.8	100	0.000
62	P	Bromoform	1.000	0.928	7.2	100	0.000
63	T	Isopropylbenzene	1.000	1.026	-2.6	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	1.000	1.041	-4.1	100	0.000
66	S	p-Bromofluorobenzene	-1.000	0.026	0.0	0	0.000
67	T	Bromobenzene	1.000	0.995	0.5	100	0.000
68	T	n-Propylbenzene	1.000	1.023	-2.3	100	0.000
69	P	1,1,2,2-Tetrachloroethane	1.000	1.024	-2.4	100	0.000
70	T	2-Chlorotoluene	1.000	1.029	-2.9	100	0.000
71	T	1,2,3-Trichloropropane	1.000	1.040	-4.0	100	0.000
72	T	trans-1,4-Dichloro-2-Butene	1.000	1.029	-2.9	100	0.000
73	T	1,2,4-Trimethylbenzene	1.000	1.040	-4.0	100	0.000
74	T	4-Chlorotoluene	1.000	1.003	-0.3	100	0.000
75	T	tert-Butylbenzene	1.000	1.003	-0.3	100	0.000
76	T	sec-Butylbenzene	1.000	1.028	-2.8	100	0.000
77	T	p-Isopropyltoluene	1.000	1.009	-0.9	100	0.000
78	T	1,3-Dichlorobenzene	1.000	1.006	-0.6	100	0.000
79	T	1,4-Dichlorobenzene	1.000	0.996	0.4	100	0.000
80	T	n-Butylbenzene	1.000	0.977	2.3	100	0.000
81	T	1,2-Dichlorobenzene	1.000	1.030	-3.0	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	-1.000	1.010	0.0	0	0.000
83	T	Hexachlorobutadiene	1.000	1.057	-5.7	100	0.000
84	T	1,2,4-Trichlorobenzene	1.000	1.017	-1.7	100	0.000
85	T	Naphthalene	1.000	1.015	-1.5	100	0.000
86	T	1,2,3-Trichlorobenzene	1.000	1.023	-2.3	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017425.D
Acq On : 21 Jan 2016 17:28
Operator : ADC
Sample : WG554589-06 2.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 27 12:16:55 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.121	96	452606	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	320670	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	169473	25.00000	ug/L	0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	0.000	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.000%#	
34) 1,2-Dichloroethane-d4	4.875	65	351	0.0715	ug/L	0.0836
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.286%#	
47) Toluene-d8	6.702	98	250	0.0138	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.055%#	
66) p-Bromofluorobenzene	0.000	95	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.000%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.030	85	11565	1.6842	ug/L	92
3) Chloromethane	1.145	50	12198	1.8205	ug/L	96
4) Vinyl Chloride	1.189	62	12028	1.8574	ug/L	98
5) 1,3-Butadiene	1.200	54	9883	1.8118	ug/L	98
6) Bromomethane	1.374	94	10038	2.0368	ug/L	98
7) Chloroethane	1.449	64	6013	2.1052	ug/L	99
8) Trichlorofluoromethane	1.536	101	15571	2.0309	ug/L	99
9) Diethyl ether	1.739	59	7003	1.9102	ug/L	98
10) 1,1-Dichloroethene	1.858	61	14197	1.8685	ug/L	98
11) Carbon Disulfide	1.872	76	29229	1.8659	ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.892	101	8449	1.8649	ug/L	99
13) Iodomethane	1.950	142	3509	1.8423	ug/L	94
14) Acrolein	2.098	56	1090	1.8778	ug/L	98
15) Methylene Chloride	2.280	84	10535	1.9946	ug/L	100
16) Acetone	2.330	43	2954	1.2413	ug/L	94
17) trans-1,2-Dichloroethene	2.402	96	9094	1.8697	ug/L	100
18) Methyl acetate	2.428	43	4908	1.6735	ug/L #	95
19) Methyl Tert Butyl Ether	2.512	73	23536	1.8719	ug/L	98
20) 1,1-Dichloroethane	2.958	63	18111	1.8881	ug/L	100
21) Acrylonitrile	3.022	53	2375	1.9168	ug/L	99
23) cis-1,2-Dichloroethene	3.543	96	10181	1.8590	ug/L	97
24) 2,2-Dichloropropane	3.670	77	7847	1.9844	ug/L	95
25) Cyclohexane	3.769	56	16776	1.9052	ug/L	99
26) Bromochloromethane	3.783	130	5690	1.7661	ug/L	97
27) Chloroform	3.910	83	16814	1.8619	ug/L	98
28) Carbon Tetrachloride	4.055	117	13457	1.8338	ug/L	99
30) 1,1,1-Trichloroethane	4.154	97	14768	1.8232	ug/L	98
31) 1,1-Dichloropropene	4.322	75	12652	1.8304	ug/L	99
32) 2-Butanone	4.345	43	2801	1.7956	ug/L #	53
33) Benzene	4.626	78	38719	1.8813	ug/L	99
35) 1,2-Dichloroethane	4.872	62	12110	1.8983	ug/L	100
36) Methylcyclohexane	5.274	83	15766	1.8603	ug/L	99
37) Trichloroethene	5.303	130	10540	1.8761	ug/L	100
38) Dibromomethane	5.726	93	4993	1.8365	ug/L	98
39) 1,2-Dichloropropane	5.833	63	10955	1.9396	ug/L	100
40) Bromodichloromethane	5.920	83	12579	1.8313	ug/L	99
42) 2-Chloroethyl Vinyl Ether	6.508	63	4548	1.7971	ug/L	97
43) cis-1,3-Dichloropropene	6.528	75	14010	1.7862	ug/L	99
44) 4-Methyl-2-Pentanone	7.805	58	2477	1.8511	ug/L	94
45) trans-1,3-Dichloropropene	7.127	75	11466	1.7522	ug/L	98
48) Toluene	6.739	91	41812	1.8824	ug/L	100
49) Tetrachloroethene	7.072	166	11134	1.8559	ug/L	99
50) 1,1,2-Trichloroethane	7.260	97	7730	1.9581	ug/L	97
51) Dibromochloromethane	7.399	129	9116	1.7572	ug/L	98

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017425.D
Acq On : 21 Jan 2016 17:28
Operator : ADC
Sample : WG554589-06 2.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 27 12:16:55 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52)	1,3-Dichloropropane	7.483	76	12666	1.9295 ug/L	99
53)	1,2-Dibromoethane	7.567	107	7592	1.9366 ug/L	95
54)	2-Hexanone	7.799	43	4860	1.8490 ug/L	98
55)	Chlorobenzene	7.973	112	26536	1.8856 ug/L	82
56)	1-Chlorohexane	7.984	69	2314	1.7880 ug/L #	66
57)	Ethylbenzene	8.007	106	14255	1.8828 ug/L	98
58)	1,1,1,2-Tetrachloroethane	8.025	131	9741	1.8612 ug/L	98
59)	m-,p-Xylene	8.109	106	33615	3.6849 ug/L	97
60)	o-Xylene	8.372	106	16498	1.8498 ug/L	98
61)	Styrene	8.407	104	26227	1.8127 ug/L	100
62)	Bromoform	8.407	173	6056	1.7969 ug/L	99
63)	Isopropylbenzene	8.563	105	44997	1.9310 ug/L	99
65)	1,3,5-Trimethylbenzene	8.902	105	38085	1.8834 ug/L	99
67)	Bromobenzene	8.763	156	11918	1.8446 ug/L	99
68)	n-Propylbenzene	8.792	91	50220	1.8729 ug/L	99
69)	1,1,2,2-Tetrachloroethane	8.835	83	9085	1.9256 ug/L	98
70)	2-Chlorotoluene	8.867	91	31644	1.9033 ug/L	100
71)	1,2,3-Trichloropropane	8.899	110	2487	1.9640 ug/L	99
72)	trans-1,4-Dichloro-2-B...	8.925	53	1752	1.7540 ug/L #	92
73)	1,2,4-Trimethylbenzene	9.099	105	37191	1.8435 ug/L	98
74)	4-Chlorotoluene	8.957	91	31060	1.8449 ug/L	99
75)	tert-Butylbenzene	9.064	134	7030	1.8531 ug/L	100
76)	sec-Butylbenzene	9.154	105	46877	1.9017 ug/L	100
77)	p-Isopropyltoluene	9.226	119	38942	1.8395 ug/L	99
78)	1,3-Dichlorobenzene	9.255	146	21647	1.8463 ug/L	98
79)	1,4-Dichlorobenzene	9.302	146	21513	1.7808 ug/L	96
80)	n-Butylbenzene	9.432	91	33887	1.7971 ug/L	98
81)	1,2-Dichlorobenzene	9.504	146	21075	1.8459 ug/L	98
82)	1,2-Dibromo-3-Chloropr...	9.881	75	1585	1.8663 ug/L	93
83)	Hexachlorobutadiene	10.176	225	8445	1.8083 ug/L	99
84)	1,2,4-Trichlorobenzene	10.190	180	15139	1.7562 ug/L	98
85)	Naphthalene	10.344	128	29165	1.8348 ug/L	98
86)	1,2,3-Trichlorobenzene	10.428	180	14333	1.7971 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017425.D
Acq On : 21 Jan 2016 17:28
Operator : ADC
Sample : WG554589-06 2.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 27 12:16:55 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

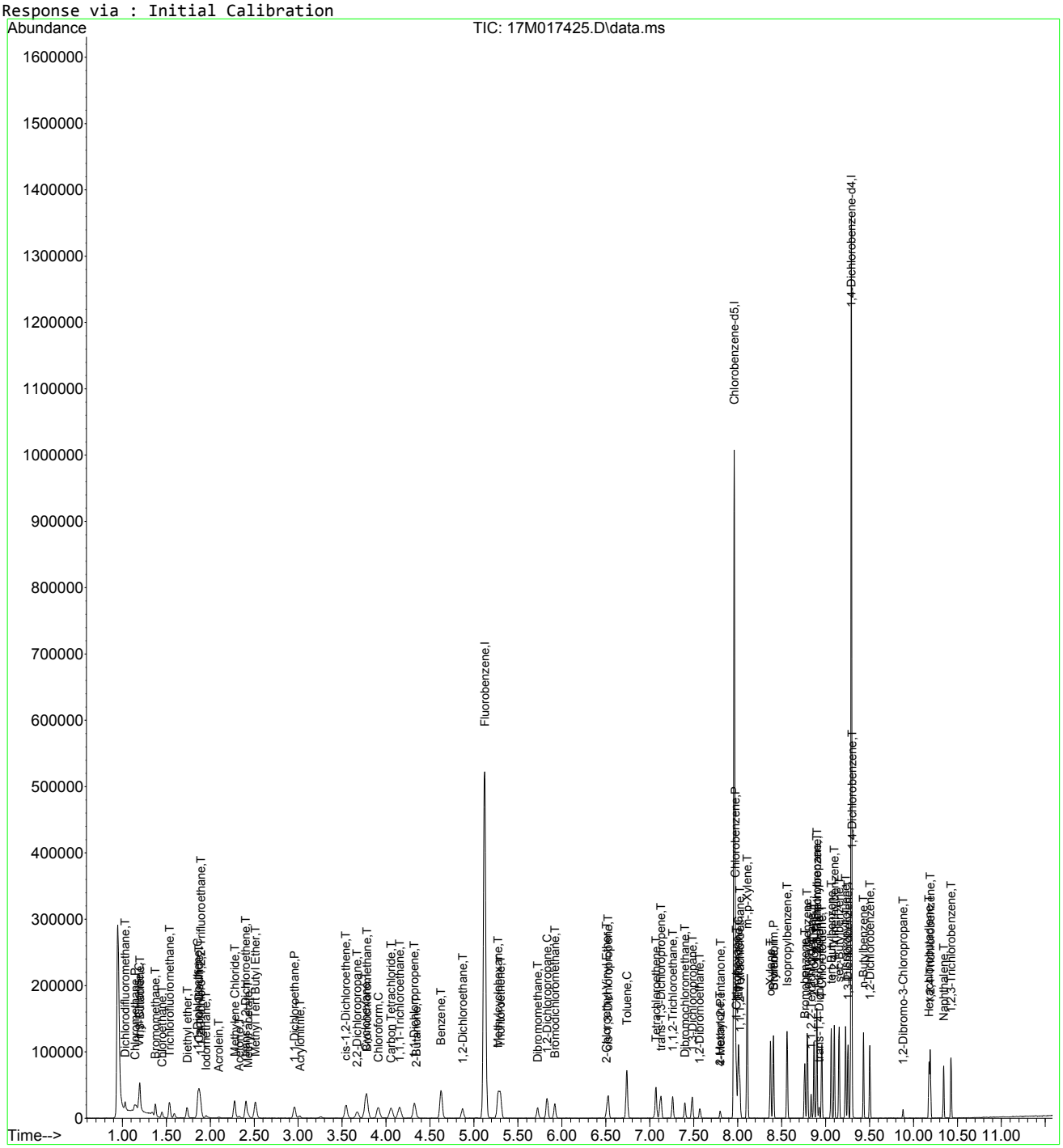

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017425.D
Acq On : 21 Jan 2016 17:28
Operator : ADC
Sample : WG554589-06 2.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 27 12:16:55 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	2.000	1.684	15.8	100	0.000
3	P	Chloromethane	2.000	1.820	9.0	100	0.000
4	C	Vinyl Chloride	2.000	1.857	7.2#	100	0.000
5	T	1,3-Butadiene	2.000	1.812	9.4	100	0.000
6	T	Bromomethane	2.000	2.037	-1.8	100	0.000
7	T	Chloroethane	2.000	2.105	-5.2	100	0.000
8	T	Trichlorofluoromethane	2.000	2.031	-1.6	100	0.011
9	T	Diethyl ether	2.000	1.910	4.5	100	0.000
10	C	1,1-Dichloroethene	2.000	1.869	6.6#	100	0.000
11	T	Carbon Disulfide	2.000	1.866	6.7	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.000	1.865	6.8	100	0.000
13	T	Iodomethane	2.000	1.842	7.9	100	0.000
14	T	Acrolein	-1.000	1.878	0.0	0	0.000
15	T	Methylene Chloride	2.000	1.995	0.2	100	0.000
16	T	Acetone	-1.000	1.241	0.0	0	0.000
17	T	trans-1,2-Dichloroethene	2.000	1.870	6.5	100	0.000
18	T	Methyl acetate	2.000	1.673	16.3	99	0.000
19	T	Methyl Tert Butyl Ether	2.000	1.872	6.4	100	0.000
20	P	1,1-Dichloroethane	2.000	1.888	5.6	100	0.000
21	T	Acrylonitrile	2.000	1.917	4.1	100	0.000
22	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.253#
23	T	cis-1,2-Dichloroethene	2.000	1.859	7.1	100	0.000
24	T	2,2-Dichloropropane	2.000	1.984	0.8	100	0.000
25	T	Cyclohexane	2.000	1.905	4.7	100	0.000
26	T	Bromochloromethane	2.000	1.766	11.7	100	0.000
27	C	Chloroform	2.000	1.862	6.9#	100	0.000
28	T	Carbon Tetrachloride	2.000	1.834	8.3	100	0.000
29	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.151#
30	T	1,1,1-Trichloroethane	2.000	1.823	8.9	100	0.000
31	T	1,1-Dichloropropene	2.000	1.830	8.5	100	0.000
32	T	2-Butanone	-1.000	1.796	0.0	0	0.000
33	T	Benzene	2.000	1.881	5.9	100	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.071	0.0	0	0.084
35	T	1,2-Dichloroethane	2.000	1.898	5.1	100	0.000
36	T	Methylcyclohexane	2.000	1.860	7.0	100	0.000
37	T	Trichloroethene	2.000	1.876	6.2	100	0.000
38	T	Dibromomethane	2.000	1.836	8.2	100	0.000
39	C	1,2-Dichloropropane	2.000	1.940	3.0#	100	0.000
40	T	Bromodichloromethane	2.000	1.831	8.5	100	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.134#
42	T	2-Chloroethyl Vinyl Ether	2.000	1.797	10.2	100	0.000
43	T	cis-1,3-Dichloropropene	2.000	1.786	10.7	100	0.000
44	T	4-Methyl-2-Pentanone	-1.000	1.851	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	2.000	1.752	12.4	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.014	0.0	0	0.000
48	C	Toluene	2.000	1.882	5.9#	100	0.000
49	T	Tetrachloroethene	2.000	1.856	7.2	100	0.000
50	T	1,1,2-Trichloroethane	2.000	1.958	2.1	100	0.000
51	T	Dibromochloromethane	2.000	1.757	12.2	100	0.000
52	T	1,3-Dichloropropane	2.000	1.929	3.5	100	0.000
53	T	1,2-Dibromoethane	2.000	1.937	3.1	100	0.000
54	T	2-Hexanone	2.000	1.849	7.6	100	0.000
55	P	Chlorobenzene	2.000	1.886	5.7	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017425.D
Acq On : 21 Jan 2016 17:28
Operator : ADC
Sample : WG554589-06 2.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 27 12:16:55 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	2.000	1.788	10.6	100	0.000
57	C	Ethylbenzene	2.000	1.883	5.8#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	2.000	1.861	7.0	100	0.000
59	T	m-,p-Xylene	4.000	3.685	7.9	100	0.000
60	T	o-Xylene	2.000	1.850	7.5	100	0.000
61	T	Styrene	2.000	1.813	9.4	100	0.000
62	P	Bromoform	2.000	1.797	10.2	100	0.000
63	T	Isopropylbenzene	2.000	1.931	3.4	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	2.000	1.883	5.8	100	0.000
66	S	p-Bromofluorobenzene	-1.000	0.000	0.0	0	-8.711#
67	T	Bromobenzene	2.000	1.845	7.8	100	0.000
68	T	n-Propylbenzene	2.000	1.873	6.3	100	0.000
69	P	1,1,2,2-Tetrachloroethane	2.000	1.926	3.7	100	0.000
70	T	2-Chlorotoluene	2.000	1.903	4.8	100	0.000
71	T	1,2,3-Trichloropropane	2.000	1.964	1.8	100	0.000
72	T	trans-1,4-Dichloro-2-Butene	2.000	1.754	12.3	100	0.000
73	T	1,2,4-Trimethylbenzene	2.000	1.843	7.9	100	0.000
74	T	4-Chlorotoluene	2.000	1.845	7.8	100	0.000
75	T	tert-Butylbenzene	2.000	1.853	7.4	100	0.000
76	T	sec-Butylbenzene	2.000	1.902	4.9	100	0.000
77	T	p-Isopropyltoluene	2.000	1.840	8.0	100	0.000
78	T	1,3-Dichlorobenzene	2.000	1.846	7.7	100	0.000
79	T	1,4-Dichlorobenzene	2.000	1.781	11.0	100	0.000
80	T	n-Butylbenzene	2.000	1.797	10.2	100	0.000
81	T	1,2-Dichlorobenzene	2.000	1.846	7.7	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	2.000	1.866	6.7	100	0.000
83	T	Hexachlorobutadiene	2.000	1.808	9.6	100	0.000
84	T	1,2,4-Trichlorobenzene	2.000	1.756	12.2	100	0.000
85	T	Naphthalene	2.000	1.835	8.3	100	0.000
86	T	1,2,3-Trichlorobenzene	2.000	1.797	10.2	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017426.D
Acq On : 21 Jan 2016 17:48
Operator : ADC
Sample : WG554589-07 5.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 27 12:17:22 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.121	96	462597	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	329325	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	173554	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.154	111	25240	5.0420 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 20.168%#		
34) 1,2-Dichloroethane-d4	4.791	65	26993	5.3776 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 21.510%#		
47) Toluene-d8	6.693	98	96406	5.2004 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 20.802%#		
66) p-Bromofluorobenzene	8.711	95	30274	4.6548 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 18.619%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.030	85	29431	4.1934 ug/L	100
3) Chloromethane	1.143	50	31139	4.5470 ug/L	99
4) Vinyl Chloride	1.186	62	30423	4.5964 ug/L	99
5) 1,3-Butadiene	1.198	54	25132	4.5078 ug/L	99
6) Bromomethane	1.371	94	24492	5.9178 ug/L	99
7) Chloroethane	1.444	64	14951	5.1214 ug/L	93
8) Trichlorofluoromethane	1.534	101	38351	4.8941 ug/L	99
9) Diethyl ether	1.733	59	18466	4.9283 ug/L	98
10) 1,1-Dichloroethene	1.855	61	36023	4.6388 ug/L	98
11) Carbon Disulfide	1.872	76	70705	4.4162 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.884	101	21275	4.5944 ug/L	98
13) Iodomethane	1.953	142	15187	3.1785 ug/L	99
14) Acrolein	2.098	56	2729	4.5999 ug/L	98
15) Methylene Chloride	2.275	84	25659	4.7530 ug/L	98
16) Acetone	2.333	43	6801	5.2237 ug/L	95
17) trans-1,2-Dichloroethene	2.405	96	23184	4.6636 ug/L	100
18) Methyl acetate	2.431	43	14883	4.9651 ug/L #	99
19) Methyl Tert Butyl Ether	2.515	73	62262	4.8451 ug/L	99
20) 1,1-Dichloroethane	2.955	63	46329	4.7256 ug/L	99
21) Acrylonitrile	3.019	53	6264	4.9463 ug/L	100
22) Vinyl Acetate	3.259	86	1115	6.2606 ug/L	89
23) cis-1,2-Dichloroethene	3.543	96	26375	4.7120 ug/L	100
24) 2,2-Dichloropropane	3.667	77	23887	4.0154 ug/L	99
25) Cyclohexane	3.769	56	42484	4.7205 ug/L	99
26) Bromochloromethane	3.780	130	15538	4.7186 ug/L	99
27) Chloroform	3.908	83	44625	4.8348 ug/L	100
28) Carbon Tetrachloride	4.058	117	34944	4.6591 ug/L	100
30) 1,1,1-Trichloroethane	4.151	97	39072	4.7194 ug/L	99
31) 1,1-Dichloropropene	4.322	75	32702	4.6290 ug/L	100
32) 2-Butanone	4.345	43	7839	4.9167 ug/L #	94
33) Benzene	4.623	78	98741	4.6941 ug/L	100
35) 1,2-Dichloroethane	4.872	62	31050	4.7622 ug/L	98
36) Methylcyclohexane	5.274	83	40476	4.6729 ug/L	100
37) Trichloroethene	5.303	130	26971	4.6972 ug/L	99
38) Dibromomethane	5.720	93	13382	4.8157 ug/L	100
39) 1,2-Dichloropropane	5.833	63	27339	4.7359 ug/L	100
40) Bromodichloromethane	5.917	83	33554	4.7793 ug/L	100
41) 1,4-Dioxane	6.134	88	126	3.5728 ug/L #	15
42) 2-Chloroethyl Vinyl Ether	6.508	63	12263	4.7409 ug/L	100
43) cis-1,3-Dichloropropene	6.525	75	37437	4.6699 ug/L	99
44) 4-Methyl-2-Pentanone	7.802	58	6395	4.6759 ug/L	100
45) trans-1,3-Dichloropropene	7.127	75	31004	4.6355 ug/L	100
48) Toluene	6.737	91	108030	4.7357 ug/L	100
49) Tetrachloroethene	7.072	166	28207	4.5782 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017426.D
Acq On : 21 Jan 2016 17:48
Operator : ADC
Sample : WG554589-07 5.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 27 12:17:22 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50)	1,1,2-Trichloroethane	7.258	97	19789	4.8810 ug/L	99
51)	Dibromochloromethane	7.400	129	24891	4.6720 ug/L	98
52)	1,3-Dichloropropane	7.481	76	32368	4.8011 ug/L	97
53)	1,2-Dibromoethane	7.570	107	19069	4.7364 ug/L	97
54)	2-Hexanone	7.799	43	13213	4.8949 ug/L	98
55)	Chlorobenzene	7.970	112	68057	4.7090 ug/L	94
56)	1-Chlorohexane	7.984	69	6230	4.6872 ug/L	85
57)	Ethylbenzene	8.008	106	36341	4.6738 ug/L	99
58)	1,1,1,2-Tetrachloroethane	8.025	131	25644	4.7711 ug/L	99
59)	m-,p-Xylene	8.109	106	88513	9.4480 ug/L	99
60)	o-Xylene	8.372	106	43298	4.7272 ug/L	100
61)	Styrene	8.404	104	69091	4.6497 ug/L	99
62)	Bromoform	8.407	173	16124	4.6585 ug/L	99
63)	Isopropylbenzene	8.563	105	114717	4.7936 ug/L	100
65)	1,3,5-Trimethylbenzene	8.902	105	99125	4.7867 ug/L	99
67)	Bromobenzene	8.763	156	30137	4.5548 ug/L	97
68)	n-Propylbenzene	8.792	91	131074	4.7734 ug/L	99
69)	1,1,2,2-Tetrachloroethane	8.836	83	23379	4.8387 ug/L	100
70)	2-Chlorotoluene	8.868	91	80679	4.7386 ug/L	98
71)	1,2,3-Trichloropropane	8.899	110	6274	4.8380 ug/L	97
72)	trans-1,4-Dichloro-2-B...	8.925	53	4616	4.5127 ug/L #	95
73)	1,2,4-Trimethylbenzene	9.099	105	98945	4.7891 ug/L	100
74)	4-Chlorotoluene	8.957	91	80240	4.6539 ug/L	100
75)	tert-Butylbenzene	9.064	134	18271	4.7030 ug/L	100
76)	sec-Butylbenzene	9.154	105	121345	4.8068 ug/L	99
77)	p-Isopropyltoluene	9.227	119	102689	4.7367 ug/L	100
78)	1,3-Dichlorobenzene	9.255	146	56232	4.6833 ug/L	100
79)	1,4-Dichlorobenzene	9.299	146	54631	4.4159 ug/L	99
80)	n-Butylbenzene	9.432	91	87323	4.5221 ug/L	100
81)	1,2-Dichlorobenzene	9.502	146	54231	4.6382 ug/L	99
82)	1,2-Dibromo-3-Chloropr...	9.881	75	4103	4.7176 ug/L	97
83)	Hexachlorobutadiene	10.176	225	21598	4.5159 ug/L	99
84)	1,2,4-Trichlorobenzene	10.191	180	39436	4.4673 ug/L	99
85)	Naphthalene	10.341	128	78155	4.8013 ug/L	100
86)	1,2,3-Trichlorobenzene	10.425	180	38016	4.6544 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017426.D
Acq On : 21 Jan 2016 17:48
Operator : ADC
Sample : WG554589-07 5.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 27 12:17:22 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

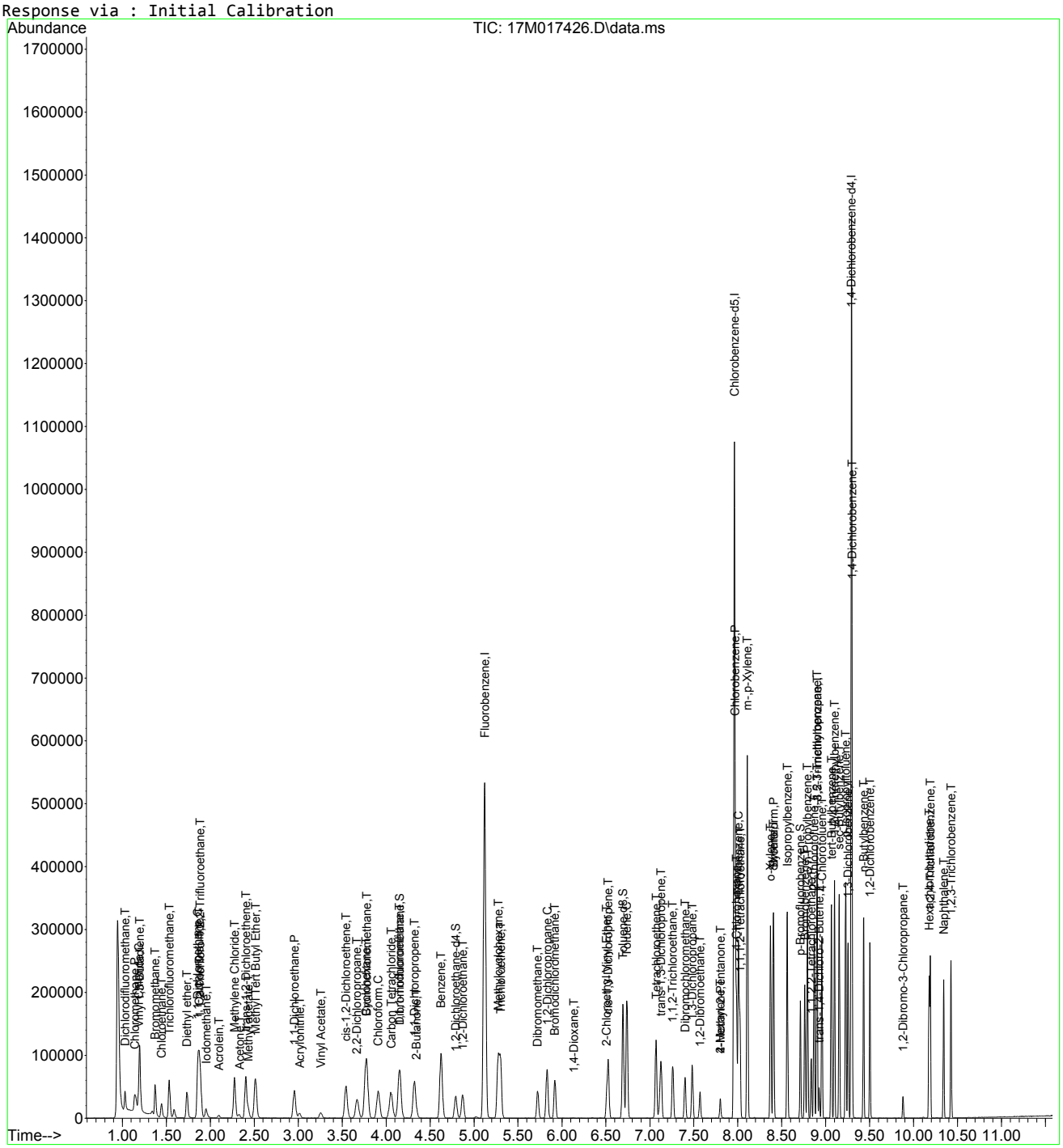

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017426.D
Acq On : 21 Jan 2016 17:48
Operator : ADC
Sample : WG554589-07 5.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 27 12:17:22 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	5.000	4.193	16.1	100	0.000
3	P	Chloromethane	5.000	4.547	9.1	100	0.000
4	C	Vinyl Chloride	5.000	4.596	8.1#	100	0.000
5	T	1,3-Butadiene	5.000	4.508	9.8	100	0.000
6	T	Bromomethane	5.000	5.918	-18.4	100	0.000
7	T	Chloroethane	5.000	5.121	-2.4	100	0.000
8	T	Trichlorofluoromethane	5.000	4.894	2.1	100	0.000
9	T	Diethyl ether	5.000	4.928	1.4	100	0.000
10	C	1,1-Dichloroethene	5.000	4.639	7.2#	100	0.000
11	T	Carbon Disulfide	5.000	4.416	11.7	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.000	4.594	8.1	100	0.000
13	T	Iodomethane	5.000	3.178	36.4#	100	0.000
14	T	Acrolein	5.000	4.600	8.0	100	0.000
15	T	Methylene Chloride	5.000	4.753	4.9	100	0.000
16	T	Acetone	5.000	5.224	-4.5	100	0.000
17	T	trans-1,2-Dichloroethene	5.000	4.664	6.7	100	0.000
18	T	Methyl acetate	5.000	4.965	0.7	100	0.000
19	T	Methyl Tert Butyl Ether	5.000	4.845	3.1	100	0.000
20	P	1,1-Dichloroethane	5.000	4.726	5.5	100	0.000
21	T	Acrylonitrile	5.000	4.946	1.1	100	0.000
22	T	Vinyl Acetate	5.000	6.261	-25.2#	100	0.000
23	T	cis-1,2-Dichloroethene	5.000	4.712	5.8	100	0.000
24	T	2,2-Dichloropropane	5.000	4.015	19.7	100	0.000
25	T	Cyclohexane	5.000	4.720	5.6	100	0.000
26	T	Bromochloromethane	5.000	4.719	5.6	100	0.000
27	C	Chloroform	5.000	4.835	3.3#	100	0.000
28	T	Carbon Tetrachloride	5.000	4.659	6.8	100	0.000
29	S	Dibromofluoromethane	5.000	5.042	-0.8	100	0.000
30	T	1,1,1-Trichloroethane	5.000	4.719	5.6	100	0.000
31	T	1,1-Dichloropropene	5.000	4.629	7.4	100	0.000
32	T	2-Butanone	5.000	4.917	1.7	100	0.000
33	T	Benzene	5.000	4.694	6.1	100	0.000
34	S	1,2-Dichloroethane-d4	5.000	5.378	-7.6	100	0.000
35	T	1,2-Dichloroethane	5.000	4.762	4.8	100	0.000
36	T	Methylcyclohexane	5.000	4.673	6.5	100	0.000
37	T	Trichloroethene	5.000	4.697	6.1	100	0.000
38	T	Dibromomethane	5.000	4.816	3.7	100	0.000
39	C	1,2-Dichloropropane	5.000	4.736	5.3#	100	0.000
40	T	Bromodichloromethane	5.000	4.779	4.4	100	0.000
41	T	1,4-Dioxane	-1.000	3.573	0.0	0	0.000
42	T	2-Chloroethyl Vinyl Ether	5.000	4.741	5.2	100	0.000
43	T	cis-1,3-Dichloropropene	5.000	4.670	6.6	100	0.000
44	T	4-Methyl-2-Pentanone	5.000	4.676	6.5	100	0.000
45	T	trans-1,3-Dichloropropene	5.000	4.636	7.3	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	5.000	5.200	-4.0	100	0.000
48	C	Toluene	5.000	4.736	5.3#	100	0.000
49	T	Tetrachloroethene	5.000	4.578	8.4	100	0.000
50	T	1,1,2-Trichloroethane	5.000	4.881	2.4	100	0.000
51	T	Dibromochloromethane	5.000	4.672	6.6	100	0.000
52	T	1,3-Dichloropropane	5.000	4.801	4.0	100	0.000
53	T	1,2-Dibromoethane	5.000	4.736	5.3	100	0.000
54	T	2-Hexanone	5.000	4.895	2.1	100	0.000
55	P	Chlorobenzene	5.000	4.709	5.8	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017426.D
Acq On : 21 Jan 2016 17:48
Operator : ADC
Sample : WG554589-07 5.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 27 12:17:22 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	5.000	4.687	6.3	100	0.000
57	C	Ethylbenzene	5.000	4.674	6.5#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	5.000	4.771	4.6	100	0.000
59	T	m-,p-Xylene	10.000	9.448	5.5	100	0.000
60	T	o-Xylene	5.000	4.727	5.5	100	0.000
61	T	Styrene	5.000	4.650	7.0	100	0.000
62	P	Bromoform	5.000	4.658	6.8	100	0.000
63	T	Isopropylbenzene	5.000	4.794	4.1	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	5.000	4.787	4.3	100	0.000
66	S	p-Bromofluorobenzene	5.000	4.655	6.9	100	0.000
67	T	Bromobenzene	5.000	4.555	8.9	100	0.000
68	T	n-Propylbenzene	5.000	4.773	4.5	100	0.000
69	P	1,1,2,2-Tetrachloroethane	5.000	4.839	3.2	100	0.000
70	T	2-Chlorotoluene	5.000	4.739	5.2	100	0.000
71	T	1,2,3-Trichloropropane	5.000	4.838	3.2	100	0.000
72	T	trans-1,4-Dichloro-2-Butene	5.000	4.513	9.7	100	0.000
73	T	1,2,4-Trimethylbenzene	5.000	4.789	4.2	100	0.000
74	T	4-Chlorotoluene	5.000	4.654	6.9	100	0.000
75	T	tert-Butylbenzene	5.000	4.703	5.9	100	0.000
76	T	sec-Butylbenzene	5.000	4.807	3.9	100	0.000
77	T	p-Isopropyltoluene	5.000	4.737	5.3	100	0.000
78	T	1,3-Dichlorobenzene	5.000	4.683	6.3	100	0.000
79	T	1,4-Dichlorobenzene	5.000	4.416	11.7	100	0.000
80	T	n-Butylbenzene	5.000	4.522	9.6	100	0.000
81	T	1,2-Dichlorobenzene	5.000	4.638	7.2	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	5.000	4.718	5.6	100	0.000
83	T	Hexachlorobutadiene	5.000	4.516	9.7	100	0.000
84	T	1,2,4-Trichlorobenzene	5.000	4.467	10.7	100	0.000
85	T	Naphthalene	5.000	4.801	4.0	100	0.000
86	T	1,2,3-Trichlorobenzene	5.000	4.654	6.9	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017427.D
Acq On : 21 Jan 2016 18:09
Operator : ADC
Sample : WG554589-08 20.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 27 12:17:57 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.121	96	452572	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	322471	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	167877	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	45864	9.3649 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 37.460%#		
34) 1,2-Dichloroethane-d4	4.791	65	46385	9.4456 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 37.782%#		
47) Toluene-d8	6.693	98	171517	9.4488 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 37.795%#		
66) p-Bromofluorobenzene	8.711	95	61308	9.7453 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 38.981%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.030	85	142705	20.7834 ug/L	100
3) Chloromethane	1.143	50	131772	19.6679 ug/L	100
4) Vinyl Chloride	1.186	62	130303	20.1228 ug/L	100
5) 1,3-Butadiene	1.198	54	99853	18.3068 ug/L	99
6) Bromomethane	1.371	94	80644	21.7171 ug/L	99
7) Chloroethane	1.444	64	60759	21.2739 ug/L	99
8) Trichlorofluoromethane	1.531	101	161684	21.0902 ug/L	99
9) Diethyl ether	1.733	59	70124	19.1295 ug/L	99
10) 1,1-Dichloroethene	1.855	61	149674	19.7007 ug/L	100
11) Carbon Disulfide	1.869	76	275461	17.5862 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.887	101	88728	19.5854 ug/L	99
13) Iodomethane	1.950	142	125033	16.1504 ug/L	100
14) Acrolein	2.095	56	10838	18.6729 ug/L	100
15) Methylene Chloride	2.275	84	102659	19.4377 ug/L	100
16) Acetone	2.327	43	21748	21.4711 ug/L	98
17) trans-1,2-Dichloroethene	2.402	96	94724	19.4763 ug/L	99
18) Methyl acetate	2.431	43	60864	20.7545 ug/L #	99
19) Methyl Tert Butyl Ether	2.509	73	247579	19.6927 ug/L	100
20) 1,1-Dichloroethane	2.955	63	188984	19.7037 ug/L	99
21) Acrylonitrile	3.016	53	23847	19.2478 ug/L	100
22) Vinyl Acetate	3.253	86	7286	18.0412 ug/L	90
23) cis-1,2-Dichloroethene	3.543	96	106652	19.4758 ug/L	99
24) 2,2-Dichloropropane	3.673	77	125095	17.3248 ug/L	99
25) Cyclohexane	3.769	56	161135	18.3007 ug/L	99
26) Bromochloromethane	3.777	130	65080	20.2012 ug/L	100
27) Chloroform	3.908	83	181214	20.0682 ug/L	99
28) Carbon Tetrachloride	4.055	117	147548	20.1083 ug/L	100
30) 1,1,1-Trichloroethane	4.151	97	163037	20.1292 ug/L	100
31) 1,1-Dichloropropene	4.322	75	133857	19.3672 ug/L	99
32) 2-Butanone	4.342	43	31334	20.0884 ug/L	96
33) Benzene	4.623	78	405794	19.7188 ug/L	100
35) 1,2-Dichloroethane	4.869	62	125541	19.6811 ug/L	99
36) Methylcyclohexane	5.277	83	150727	17.7866 ug/L	99
37) Trichloroethene	5.300	130	108516	19.3176 ug/L	99
38) Dibromomethane	5.723	93	55685	20.4828 ug/L	100
39) 1,2-Dichloropropane	5.830	63	111229	19.6950 ug/L	100
40) Bromodichloromethane	5.917	83	137777	20.0593 ug/L	99
41) 1,4-Dioxane	6.134	88	1205	34.9254 ug/L	93
42) 2-Chloroethyl Vinyl Ether	6.511	63	52207	20.6304 ug/L	100
43) cis-1,3-Dichloropropene	6.525	75	157531	20.0858 ug/L	99
44) 4-Methyl-2-Pentanone	7.799	58	26349	19.6927 ug/L	99
45) trans-1,3-Dichloropropene	7.127	75	132944	20.3173 ug/L	99
48) Toluene	6.739	91	445348	19.9376 ug/L	100
49) Tetrachloroethene	7.069	166	116568	19.3220 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017427.D
Acq On : 21 Jan 2016 18:09
Operator : ADC
Sample : WG554589-08 20.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 27 12:17:57 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,1,2-Trichloroethane	7.261	97	79561	20.0409 ug/L	100
51) Dibromochloromethane	7.400	129	105493	20.2217 ug/L	100
52) 1,3-Dichloropropane	7.481	76	129902	19.6779 ug/L	98
53) 1,2-Dibromoethane	7.570	107	78592	19.9359 ug/L	100
54) 2-Hexanone	7.802	43	53441	20.2187 ug/L	99
55) Chlorobenzene	7.973	112	275566	19.4723 ug/L	98
56) 1-Chlorohexane	7.987	69	24215	18.6057 ug/L	76
57) Ethylbenzene	8.010	106	151537	19.9032 ug/L	95
58) 1,1,1,2-Tetrachloroethane	8.025	131	105710	20.0855 ug/L	100
59) m-,p-Xylene	8.109	106	367163	40.0244 ug/L	100
60) o-Xylene	8.372	106	180230	20.0955 ug/L	98
61) Styrene	8.407	104	293194	20.1509 ug/L	100
62) Bromoform	8.410	173	68045	20.0770 ug/L	100
63) Isopropylbenzene	8.563	105	474401	20.2450 ug/L	100
65) 1,3,5-Trimethylbenzene	8.902	105	407772	20.3571 ug/L	100
67) Bromobenzene	8.763	156	124930	19.5200 ug/L	99
68) n-Propylbenzene	8.792	91	552015	20.7830 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.836	83	94593	20.2396 ug/L	100
70) 2-Chlorotoluene	8.867	91	330201	20.0500 ug/L	100
71) 1,2,3-Trichloropropane	8.899	110	25248	20.1276 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.925	53	19083	19.2869 ug/L #	98
73) 1,2,4-Trimethylbenzene	9.099	105	408842	20.4579 ug/L	100
74) 4-Chlorotoluene	8.957	91	331630	19.8851 ug/L	100
75) tert-Butylbenzene	9.064	134	74352	19.7855 ug/L	99
76) sec-Butylbenzene	9.154	105	504384	20.6558 ug/L	100
77) p-Isopropyltoluene	9.226	119	436059	20.7941 ug/L	99
78) 1,3-Dichlorobenzene	9.255	146	227381	19.5778 ug/L	99
79) 1,4-Dichlorobenzene	9.299	146	225653	18.8566 ug/L	100
80) n-Butylbenzene	9.432	91	382863	20.4973 ug/L	100
81) 1,2-Dichlorobenzene	9.504	146	220525	19.4985 ug/L	100
82) 1,2-Dibromo-3-Chloropr...	9.878	75	16945	20.1423 ug/L	98
83) Hexachlorobutadiene	10.176	225	92131	19.9152 ug/L	100
84) 1,2,4-Trichlorobenzene	10.191	180	167208	19.5819 ug/L	99
85) Naphthalene	10.341	128	325933	20.7001 ug/L	100
86) 1,2,3-Trichlorobenzene	10.425	180	159311	20.1645 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017427.D
Acq On : 21 Jan 2016 18:09
Operator : ADC
Sample : WG554589-08 20.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 27 12:17:57 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

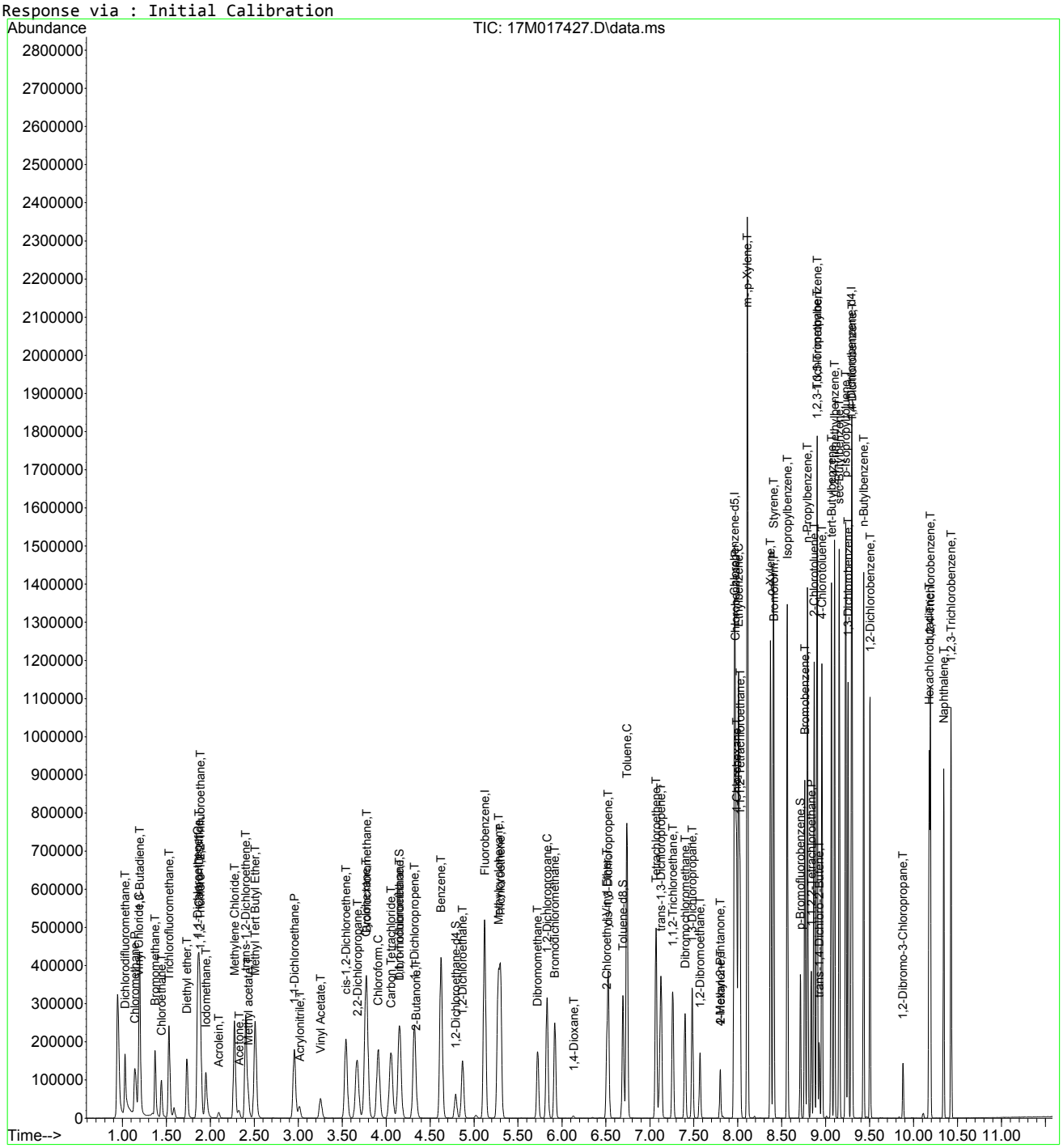

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017428.D
Acq On : 21 Jan 2016 18:29
Operator : ADC
Sample : WG554589-09 100.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 27 12:18:01 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	424688	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	310320	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.296	152	167578	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	235666	51.2797 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 205.119%#		
34) 1,2-Dichloroethane-d4	4.791	65	232851	50.5298 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 202.119%#		
47) Toluene-d8	6.696	98	877967	50.2609 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 201.044%#		
66) p-Bromofluorobenzene	8.714	95	324844	51.7280 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 206.912%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.030	85	686741	106.5828 ug/L	100
3) Chloromethane	1.143	50	646370	102.8095 ug/L	100
4) Vinyl Chloride	1.186	62	627416	103.2542 ug/L	100
5) 1,3-Butadiene	1.198	54	535040	104.5333 ug/L	100
6) Bromomethane	1.372	94	319750	94.2150 ug/L	99
7) Chloroethane	1.441	64	244112	91.0843 ug/L	99
8) Trichlorofluoromethane	1.516	101	742947	103.2734 ug/L	100
9) Diethyl ether	1.736	59	351610	102.2155 ug/L	100
10) 1,1-Dichloroethene	1.849	61	706409	99.0855 ug/L	100
11) Carbon Disulfide	1.864	76	1421413	96.7050 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.881	101	414508	97.5040 ug/L	100
13) Iodomethane	1.945	142	825278	104.9759 ug/L	100
14) Acrolein	2.095	56	55432	101.7748 ug/L	100
15) Methylene Chloride	2.272	84	482934	97.4434 ug/L	99
16) Acetone	2.330	43	89541	100.7706 ug/L	100
17) trans-1,2-Dichloroethene	2.402	96	452131	99.0670 ug/L	100
18) Methyl acetate	2.434	43	314035	114.1161 ug/L #	100
19) Methyl Tert Butyl Ether	2.512	73	1181764	100.1707 ug/L	100
20) 1,1-Dichloroethane	2.955	63	893109	99.2306 ug/L	99
21) Acrylonitrile	3.016	53	122020	104.9531 ug/L	99
22) Vinyl Acetate	3.254	86	45376	96.1383 ug/L	98
23) cis-1,2-Dichloroethene	3.543	96	507411	98.7427 ug/L	99
24) 2,2-Dichloropropane	3.668	77	679932	95.7586 ug/L	99
25) Cyclohexane	3.769	56	838969	101.5408 ug/L	99
26) Bromochloromethane	3.780	130	315231	104.2741 ug/L	100
27) Chloroform	3.911	83	860523	101.5538 ug/L	100
28) Carbon Tetrachloride	4.053	117	709144	102.9896 ug/L	99
30) 1,1,1-Trichloroethane	4.151	97	776788	102.2024 ug/L	100
31) 1,1-Dichloropropene	4.319	75	647655	99.8591 ug/L	100
32) 2-Butanone	4.342	43	155127	105.9827 ug/L	95
33) Benzene	4.626	78	1911316	98.9748 ug/L	100
35) 1,2-Dichloroethane	4.869	62	597732	99.8592 ug/L	99
36) Methylcyclohexane	5.274	83	797322	100.2657 ug/L	99
37) Trichloroethene	5.303	130	515216	97.7385 ug/L	100
38) Dibromomethane	5.723	93	275108	107.8381 ug/L	100
39) 1,2-Dichloropropane	5.830	63	530199	100.0446 ug/L	99
40) Bromodichloromethane	5.920	83	677674	105.1423 ug/L	100
41) 1,4-Dioxane	6.134	88	6750	208.4853 ug/L	96
42) 2-Chloroethyl Vinyl Ether	6.511	63	251500	105.9092 ug/L	100
43) cis-1,3-Dichloropropene	6.528	75	772078	104.9066 ug/L	99
44) 4-Methyl-2-Pentanone	7.802	58	135816	108.1705 ug/L	100
45) trans-1,3-Dichloropropene	7.130	75	664578	108.2332 ug/L	100
48) Toluene	6.739	91	2097057	97.5582 ug/L	100
49) Tetrachloroethene	7.070	166	562837	96.9476 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017428.D
Acq On : 21 Jan 2016 18:29
Operator : ADC
Sample : WG554589-09 100.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 27 12:18:01 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50)	1,1,2-Trichloroethane	7.261	97	381575	99.8797 ug/L	99
51)	Dibromochloromethane	7.403	129	534366	106.4420 ug/L	99
52)	1,3-Dichloropropane	7.484	76	628285	98.9008 ug/L	99
53)	1,2-Dibromoethane	7.570	107	388228	102.3354 ug/L	100
54)	2-Hexanone	7.802	43	270349	106.2878 ug/L	100
55)	Chlorobenzene	7.973	112	1344278	98.7100 ug/L	100
56)	1-Chlorohexane	7.990	69	129641	103.5103 ug/L	98
57)	Ethylbenzene	8.013	106	731940	99.8987 ug/L	98
58)	1,1,1,2-Tetrachloroethane	8.028	131	512468	101.1844 ug/L	100
59)	m-,p-Xylene	8.112	106	1799659	203.8622 ug/L	98
60)	o-Xylene	8.375	106	872688	101.1142 ug/L	99
61)	Styrene	8.407	104	1458913	104.1956 ug/L	99
62)	Bromoform	8.410	173	354904	108.8165 ug/L	100
63)	Isopropylbenzene	8.564	105	2295986	101.8173 ug/L	100
65)	1,3,5-Trimethylbenzene	8.905	105	2018301	100.9388 ug/L	100
67)	Bromobenzene	8.763	156	625094	97.8436 ug/L	100
68)	n-Propylbenzene	8.795	91	2680813	101.1109 ug/L	100
69)	1,1,2,2-Tetrachloroethane	8.836	83	470653	100.8829 ug/L	100
70)	2-Chlorotoluene	8.870	91	1632105	99.2790 ug/L	100
71)	1,2,3-Trichloropropane	8.899	110	125273	100.0452 ug/L	99
72)	trans-1,4-Dichloro-2-B...	8.928	53	104992	106.3031 ug/L #	99
73)	1,2,4-Trimethylbenzene	9.102	105	2009823	100.7483 ug/L	99
74)	4-Chlorotoluene	8.960	91	1647625	98.9707 ug/L	100
75)	tert-Butylbenzene	9.064	134	366254	97.6363 ug/L	100
76)	sec-Butylbenzene	9.157	105	2458326	100.8545 ug/L	100
77)	p-Isopropyltoluene	9.229	119	2133544	101.9225 ug/L	99
78)	1,3-Dichlorobenzene	9.258	146	1150972	99.2768 ug/L	100
79)	1,4-Dichlorobenzene	9.302	146	1141435	95.5536 ug/L	100
80)	n-Butylbenzene	9.432	91	1943877	104.2548 ug/L	100
81)	1,2-Dichlorobenzene	9.505	146	1096852	97.1553 ug/L	99
82)	1,2-Dibromo-3-Chloropr...	9.881	75	87697	104.4302 ug/L	99
83)	Hexachlorobutadiene	10.179	225	449235	97.2805 ug/L	100
84)	1,2,4-Trichlorobenzene	10.194	180	840010	98.5500 ug/L	100
85)	Naphthalene	10.341	128	1585396	100.8686 ug/L	100
86)	1,2,3-Trichlorobenzene	10.428	180	768151	97.4010 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017428.D
Acq On : 21 Jan 2016 18:29
Operator : ADC
Sample : WG554589-09 100.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 27 12:18:01 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

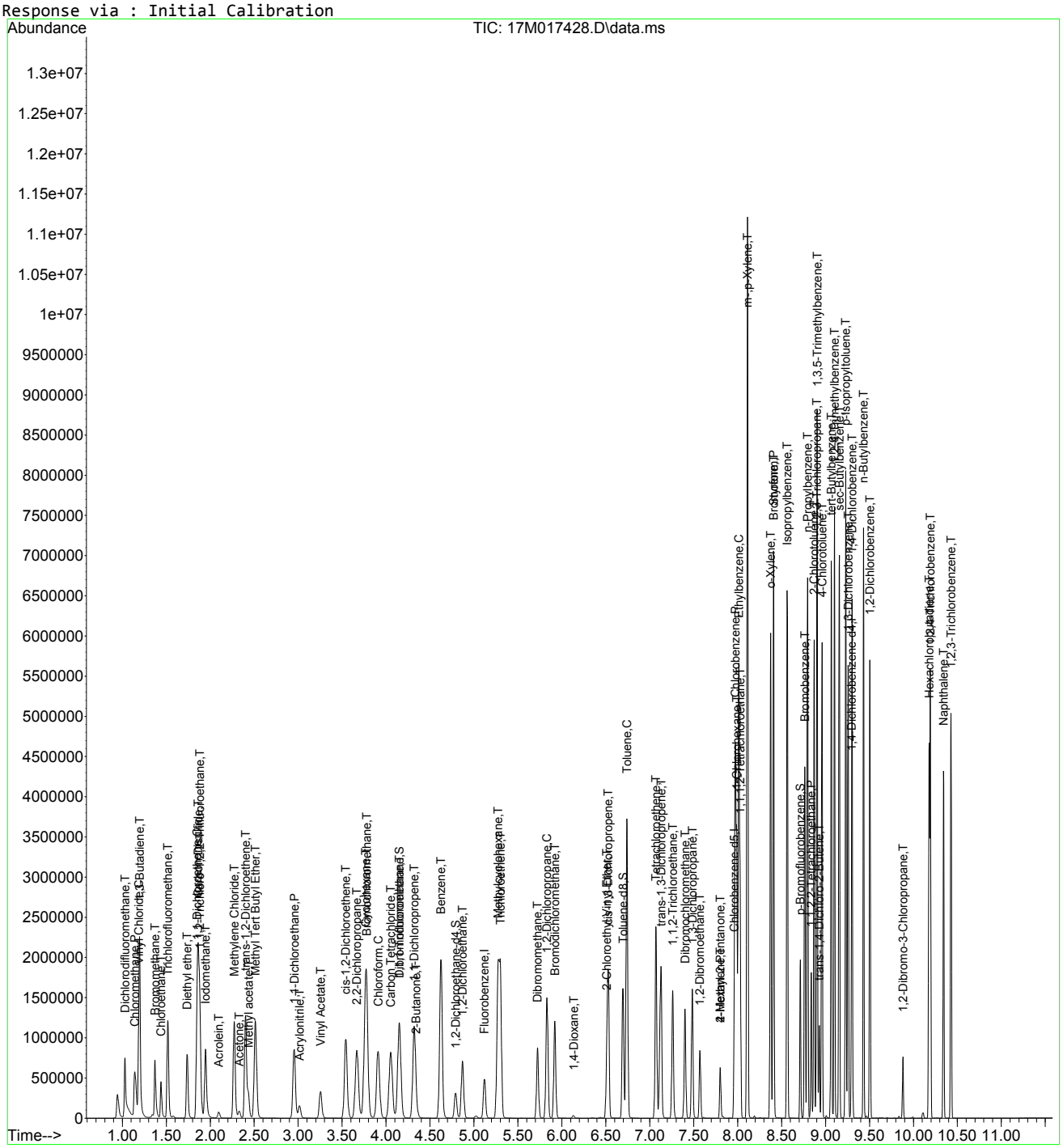

8260VMS.M Wed Jan 27 12:32:51 2016 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017429.D
Acq On : 21 Jan 2016 18:50
Operator : ADC
Sample : WG554589-10 200.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 27 12:18:04 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	416490	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.964	117	303191	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.296	152	162386	25.00000 ug/L	# 0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	453862	100.7019 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 402.808%#		
34) 1,2-Dichloroethane-d4	4.791	65	444315	98.3164 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 393.266%#		
47) Toluene-d8	6.696	98	1670182	97.8608 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.443%#		
66) p-Bromofluorobenzene	8.714	95	619583	101.8166 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 407.266%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.027	85	1375024	217.6055 ug/L	99
3) Chloromethane	1.140	50	1286397	208.6376 ug/L	100
4) Vinyl Chloride	1.186	62	1252712	210.2175 ug/L	100
5) 1,3-Butadiene	1.195	54	1077495	214.6590 ug/L	100
6) Bromomethane	1.371	94	636482	192.0157 ug/L	99
7) Chloroethane	1.438	64	480795	182.9278 ug/L	99
8) Trichlorofluoromethane	1.513	101	1145376	162.3469 ug/L	100
9) Diethyl ether	1.742	59	698504	207.0569 ug/L	100
10) 1,1-Dichloroethene	1.843	61	1444334	206.5794 ug/L	100
11) Carbon Disulfide	1.858	76	2853015	197.9239 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.875	101	841248	201.7804 ug/L	99
13) Iodomethane	1.942	142	1531657	197.3873 ug/L	100
14) Acrolein	2.098	56	117130	219.2871 ug/L	100
15) Methylene Chloride	2.272	84	970483	199.6724 ug/L	99
16) Acetone	2.338	43	177550	205.7309 ug/L	100
17) trans-1,2-Dichloroethene	2.399	96	919807	205.5072 ug/L	100
18) Methyl acetate	2.437	43	635463	235.4639 ug/L #	100
19) Methyl Tert Butyl Ether	2.518	73	2396946	207.1733 ug/L	100
20) 1,1-Dichloroethane	2.952	63	1812340	205.3270 ug/L	99
21) Acrylonitrile	3.019	53	242094	212.3311 ug/L	99
22) Vinyl Acetate	3.253	86	97653	205.9701 ug/L	98
23) cis-1,2-Dichloroethene	3.540	96	1033842	205.1467 ug/L	99
24) 2,2-Dichloropropane	3.667	77	1371994	196.0160 ug/L	99
25) Cyclohexane	3.766	56	1692765	208.9088 ug/L	99
26) Bromochloromethane	3.780	130	641560	216.3965 ug/L	100
27) Chloroform	3.908	83	1735651	208.8630 ug/L	100
28) Carbon Tetrachloride	4.053	117	1457223	215.7996 ug/L	99
30) 1,1,1-Trichloroethane	4.151	97	1581090	212.1194 ug/L	100
31) 1,1-Dichloropropene	4.319	75	1328660	208.8927 ug/L	100
32) 2-Butanone	4.348	43	306910	213.8081 ug/L	96
33) Benzene	4.626	78	3865640	204.1169 ug/L	100
35) 1,2-Dichloroethane	4.872	62	1212086	206.4811 ug/L	99
36) Methylcyclohexane	5.277	83	1616830	207.3234 ug/L	99
37) Trichloroethene	5.303	130	1053131	203.7154 ug/L	100
38) Dibromomethane	5.726	93	561730	224.5236 ug/L	100
39) 1,2-Dichloropropane	5.833	63	1075338	206.9023 ug/L	100
40) Bromodichloromethane	5.920	83	1382824	218.7706 ug/L	100
41) 1,4-Dioxane	6.143	88	13559	427.0363 ug/L	98
42) 2-Chloroethyl Vinyl Ether	6.514	63	503671	216.2759 ug/L	100
43) cis-1,3-Dichloropropene	6.531	75	1578857	218.7510 ug/L	100
44) 4-Methyl-2-Pentanone	7.805	58	272596	221.3823 ug/L	100
45) trans-1,3-Dichloropropene	7.133	75	1342960	223.0195 ug/L	100
48) Toluene	6.742	91	4190231	199.5194 ug/L	98
49) Tetrachloroethene	7.072	166	1144746	201.8167 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017429.D
Acq On : 21 Jan 2016 18:50
Operator : ADC
Sample : WG554589-10 200.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 27 12:18:04 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50)	1,1,2-Trichloroethane	7.263	97	768565	205.9072 ug/L	99
51)	Dibromochloromethane	7.402	129	1080593	220.3077 ug/L	100
52)	1,3-Dichloropropane	7.486	76	1249773	201.3574 ug/L	98
53)	1,2-Dibromoethane	7.573	107	778282	209.9760 ug/L	99
54)	2-Hexanone	7.805	43	542613	218.3445 ug/L	100
55)	Chlorobenzene	7.976	112	2669322	200.6163 ug/L	98
56)	1-Chlorohexane	7.993	69	257687	210.5849 ug/L	99
57)	Ethylbenzene	8.016	106	1462533	204.3070 ug/L	95
58)	1,1,1,2-Tetrachloroethane	8.034	131	1031052	208.3632 ug/L	100
59)	m-,p-Xylene	8.118	106	3491452	404.8051 ug/L	92
60)	o-Xylene	8.378	106	1727269	204.8361 ug/L	98
61)	Styrene	8.410	104	2905110	212.3616 ug/L	98
62)	Bromoform	8.413	173	727675	228.3572 ug/L	100
63)	Isopropylbenzene	8.566	105	4409473	200.1393 ug/L	98
65)	1,3,5-Trimethylbenzene	8.908	105	3891584	200.8477 ug/L	98
67)	Bromobenzene	8.766	156	1248486	201.6691 ug/L	99
68)	n-Propylbenzene	8.798	91	5102288	198.5934 ug/L	98
69)	1,1,2,2-Tetrachloroethane	8.839	83	940428	208.0227 ug/L	100
70)	2-Chlorotoluene	8.873	91	3191136	200.3195 ug/L	99
71)	1,2,3-Trichloropropane	8.902	110	252367	207.9887 ug/L	97
72)	trans-1,4-Dichloro-2-B...	8.931	53	206340	215.5965 ug/L #	98
73)	1,2,4-Trimethylbenzene	9.105	105	3888146	201.1365 ug/L	97
74)	4-Chlorotoluene	8.963	91	3323709	206.0343 ug/L	100
75)	tert-Butylbenzene	9.067	134	736751	202.6834 ug/L	96
76)	sec-Butylbenzene	9.157	105	4674428	197.9031 ug/L	98
77)	p-Isopropyltoluene	9.232	119	4066503	200.4741 ug/L	97
78)	1,3-Dichlorobenzene	9.261	146	2273286	202.3510 ug/L	98
79)	1,4-Dichlorobenzene	9.305	146	2253619	194.6906 ug/L	99
80)	n-Butylbenzene	9.435	91	3768776	208.5913 ug/L	98
81)	1,2-Dichlorobenzene	9.507	146	2151136	196.6323 ug/L	98
82)	1,2-Dibromo-3-Chloropr...	9.881	75	172511	211.9955 ug/L	100
83)	Hexachlorobutadiene	10.179	225	927446	207.2571 ug/L	100
84)	1,2,4-Trichlorobenzene	10.194	180	1715247	207.6668 ug/L	99
85)	Naphthalene	10.344	128	3119844	204.8423 ug/L	99
86)	1,2,3-Trichlorobenzene	10.428	180	1571267	205.6056 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017429.D
Acq On : 21 Jan 2016 18:50
Operator : ADC
Sample : WG554589-10 200.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 27 12:18:04 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

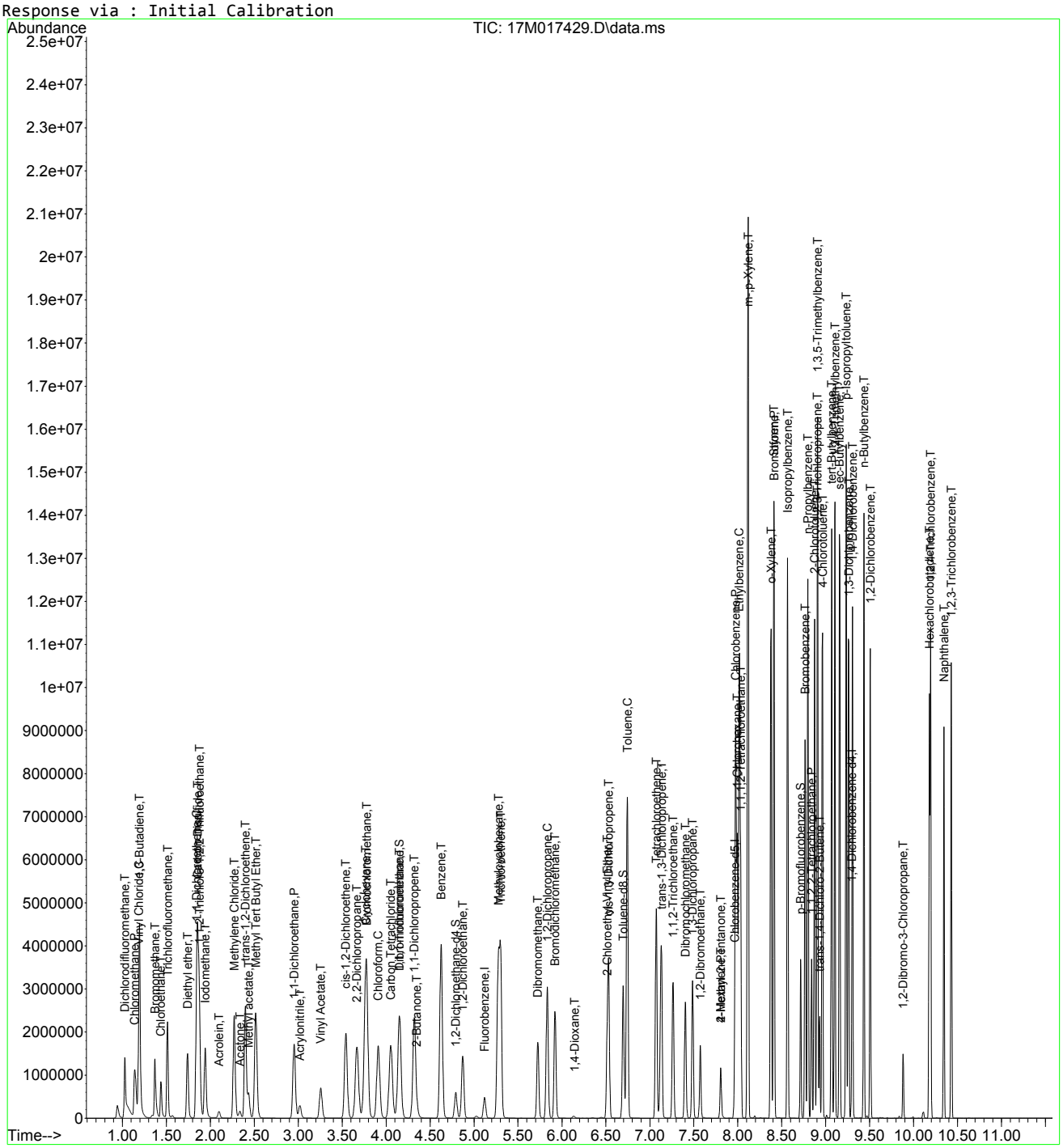

8260VMS.M Wed Jan 27 12:18:05 2016 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017430.D
Acq On : 21 Jan 2016 19:10
Operator : ADC
Sample : WG554589-11 300.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 27 12:33:35 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.121	96	432443	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.967	117	303465	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.299	152	160713	25.00000	ug/L	# 0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	4.163	111	293	0.0626	ug/L	0.0116
Spiked Amount 25.000	Range 86 - 118		Recovery = 0.250%#			
34) 1,2-Dichloroethane-d4	4.872	65	86243	18.3795	ug/L	0.0809
Spiked Amount 25.000	Range 80 - 120		Recovery = 73.518%#			
47) Toluene-d8	6.696	98	2476	0.1449	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 0.580%#			
66) p-Bromofluorobenzene	8.717	95	1814	0.3012	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 1.205%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.027	85	2213156	337.3240	ug/L	100
3) Chloromethane	1.140	50	2039118	318.5192	ug/L	100
4) Vinyl Chloride	1.186	62	2018606	326.2458	ug/L	100
5) 1,3-Butadiene	1.195	54	1724306	330.8445	ug/L	100
6) Bromomethane	1.371	94	1064167	309.6620	ug/L	100
7) Chloroethane	1.438	64	796283	291.7849	ug/L	98
8) Trichlorofluoromethane	1.513	101	1905296	260.0962	ug/L	99
9) Diethyl ether	1.742	59	1110155	316.9422	ug/L	100
10) 1,1-Dichloroethene	1.843	61	2400925	330.7301	ug/L	100
11) Carbon Disulfide	1.855	76	4582003	306.1437	ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.872	101	1391340	321.4134	ug/L	99
13) Iodomethane	1.942	142	2459158	304.4440	ug/L	100
14) Acrolein	2.101	56	183036	330.0329	ug/L	100
15) Methylene Chloride	2.272	84	1607656	318.5656	ug/L	99
16) Acetone	2.339	43	267541	299.4437	ug/L	99
17) trans-1,2-Dichloroethene	2.399	96	1532285	329.7202	ug/L	100
18) Methyl acetate	2.437	43	984061	351.1817	ug/L #	100
19) Methyl Tert Butyl Ether	2.518	73	3884022	323.3202	ug/L	99
20) 1,1-Dichloroethane	2.955	63	3002078	327.5700	ug/L	99
21) Acrylonitrile	3.022	53	372316	314.4974	ug/L	100
22) Vinyl Acetate	3.259	86	152079	306.8398	ug/L	98
23) cis-1,2-Dichloroethene	3.543	96	1721842	329.0633	ug/L	100
24) 2,2-Dichloropropane	3.670	77	2267067	311.3794	ug/L	99
25) Cyclohexane	3.772	56	2706330	321.6744	ug/L	99
26) Bromochloromethane	3.783	130	1052168	341.8013	ug/L	100
27) Chloroform	3.914	83	2860502	331.5257	ug/L	99
28) Carbon Tetrachloride	4.055	117	2419021	345.0165	ug/L	99
30) 1,1,1-Trichloroethane	4.151	97	2615808	337.9913	ug/L	100
31) 1,1-Dichloropropene	4.322	75	2205218	333.9155	ug/L	100
32) 2-Butanone	4.354	43	452643	303.6999	ug/L	99
33) Benzene	4.629	78	6367023	323.7947	ug/L	99
35) 1,2-Dichloroethane	4.875	62	1979163	324.7163	ug/L	99
36) Methylcyclohexane	5.280	83	2590355	319.9035	ug/L	99
37) Trichloroethene	5.306	130	1742270	324.5882	ug/L	100
38) Dibromomethane	5.726	93	927489	357.0415	ug/L	99
39) 1,2-Dichloropropane	5.836	63	1767717	327.5735	ug/L	100
40) Bromodichloromethane	5.923	83	2271594	346.1215	ug/L	99
41) 1,4-Dioxane	6.149	88	20806	631.1047	ug/L	99
42) 2-Chloroethyl Vinyl Ether	6.519	63	764729	316.2602	ug/L	100
43) cis-1,3-Dichloropropene	6.534	75	2572074	343.2151	ug/L	100
44) 4-Methyl-2-Pentanone	7.808	58	393893	308.0898	ug/L	100
45) trans-1,3-Dichloropropene	7.136	75	2174081	347.7213	ug/L	100
48) Toluene	6.745	91	6715247	319.4603	ug/L	97
49) Tetrachloroethene	7.075	166	1894376	333.6737	ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017430.D
Acq On : 21 Jan 2016 19:10
Operator : ADC
Sample : WG554589-11 300.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 27 12:33:35 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50)	1,1,2-Trichloroethane	7.266	97	1221482	326.9532 ug/L	99
51)	Dibromochloromethane	7.405	129	1741178	354.6651 ug/L	99
52)	1,3-Dichloropropane	7.489	76	1984414	319.4306 ug/L	98
53)	1,2-Dibromoethane	7.576	107	1244501	335.4560 ug/L	99
54)	2-Hexanone	7.808	43	786536	316.2121 ug/L	100
55)	Chlorobenzene	7.979	112	4203318	315.6206 ug/L	96
56)	1-Chlorohexane	7.999	69	406436	331.8445 ug/L	93
57)	Ethylbenzene	8.022	106	2326222	324.6658 ug/L	89
58)	1,1,1,2-Tetrachloroethane	8.037	131	1634138	329.9414 ug/L	100
59)	m-,p-Xylene	8.121	106	5308884	614.9656 ug/L	85
60)	o-Xylene	8.381	106	2744790	325.2096 ug/L	93
61)	Styrene	8.413	104	4468963	326.3833 ug/L	96
62)	Bromoform	8.416	173	1131633	354.8057 ug/L	100
63)	Isopropylbenzene	8.569	105	6547094	296.8944 ug/L	95
65)	1,3,5-Trimethylbenzene	8.911	105	5722543	298.4194 ug/L	95
67)	Bromobenzene	8.769	156	1969298	321.4139 ug/L	99
68)	n-Propylbenzene	8.801	91	7431828	292.2759 ug/L	94
69)	1,1,2,2-Tetrachloroethane	8.841	83	1434152	320.5369 ug/L	100
70)	2-Chlorotoluene	8.876	91	4895057	310.4797 ug/L	98
71)	1,2,3-Trichloropropane	8.905	110	381871	317.9959 ug/L	97
72)	trans-1,4-Dichloro-2-B...	8.934	53	313599	331.0782 ug/L #	98
73)	1,2,4-Trimethylbenzene	9.108	105	5653688	295.5138 ug/L	94
74)	4-Chlorotoluene	8.966	91	4959063	310.6087 ug/L	98
75)	tert-Butylbenzene	9.070	134	1137231	316.1140 ug/L	90
76)	sec-Butylbenzene	9.160	105	6662551	285.0114 ug/L	94
77)	p-Isopropyltoluene	9.235	119	5868807	292.3375 ug/L	94
78)	1,3-Dichlorobenzene	9.264	146	3452397	310.5057 ug/L	97
79)	1,4-Dichlorobenzene	9.308	146	3433462	299.7052 ug/L	98
80)	n-Butylbenzene	9.438	91	5454545	305.0366 ug/L	95
81)	1,2-Dichlorobenzene	9.507	146	3273861	302.3742 ug/L	97
82)	1,2-Dibromo-3-Chloropr...	9.881	75	267024	331.5566 ug/L	100
83)	Hexachlorobutadiene	10.182	225	1451803	327.8129 ug/L	99
84)	1,2,4-Trichlorobenzene	10.196	180	2678349	327.6462 ug/L	99
85)	Naphthalene	10.347	128	4637851	307.6813 ug/L	97
86)	1,2,3-Trichlorobenzene	10.431	180	2451798	324.1659 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017430.D
Acq On : 21 Jan 2016 19:10
Operator : ADC
Sample : WG554589-11 300.0ug/L STD 8260
Misc : 1,1 STD74444
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 27 12:33:35 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

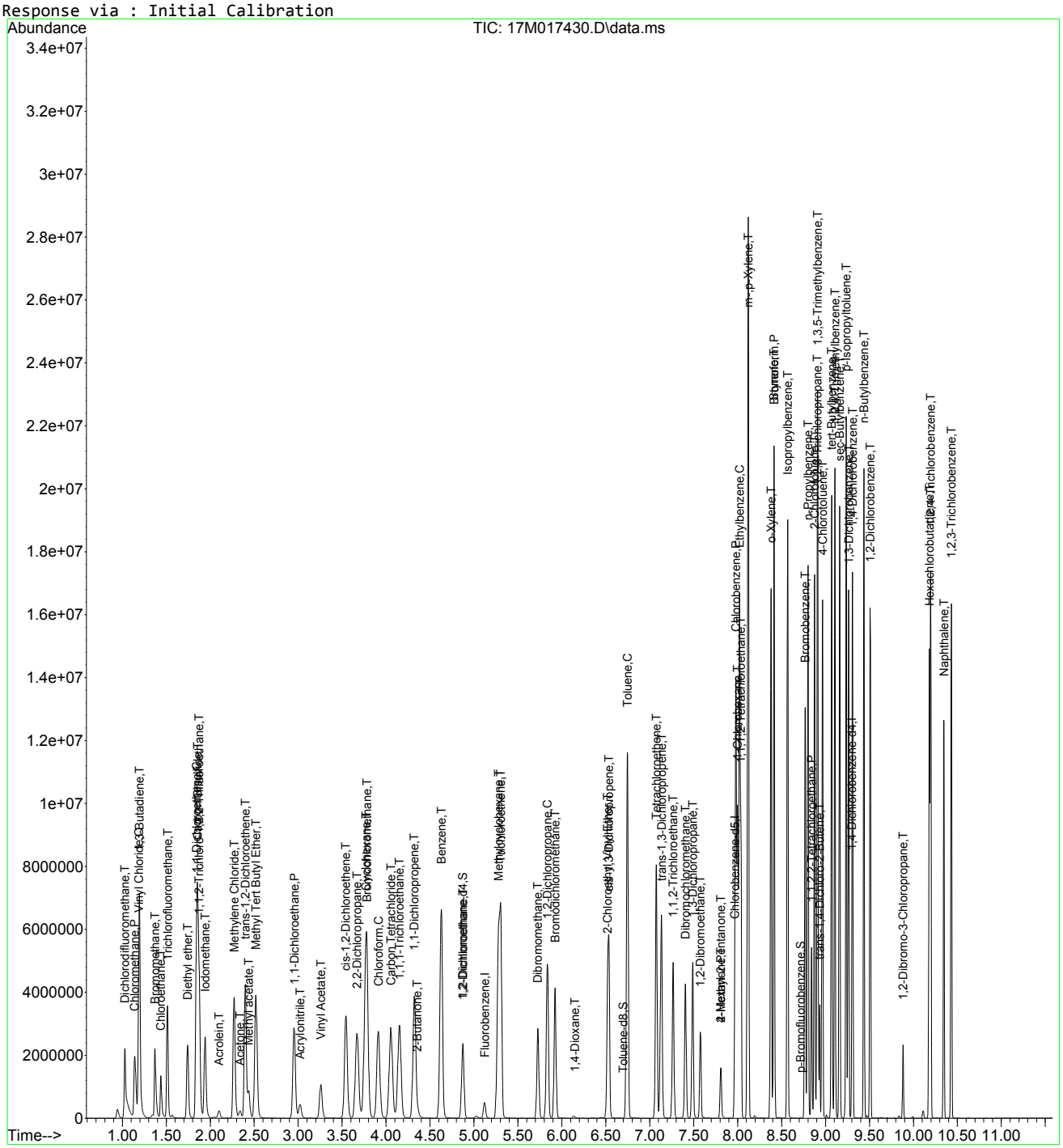

8260VMS.M Wed Jan 27 12:33:36 2016 Page: 3

Bromomethane

00742623

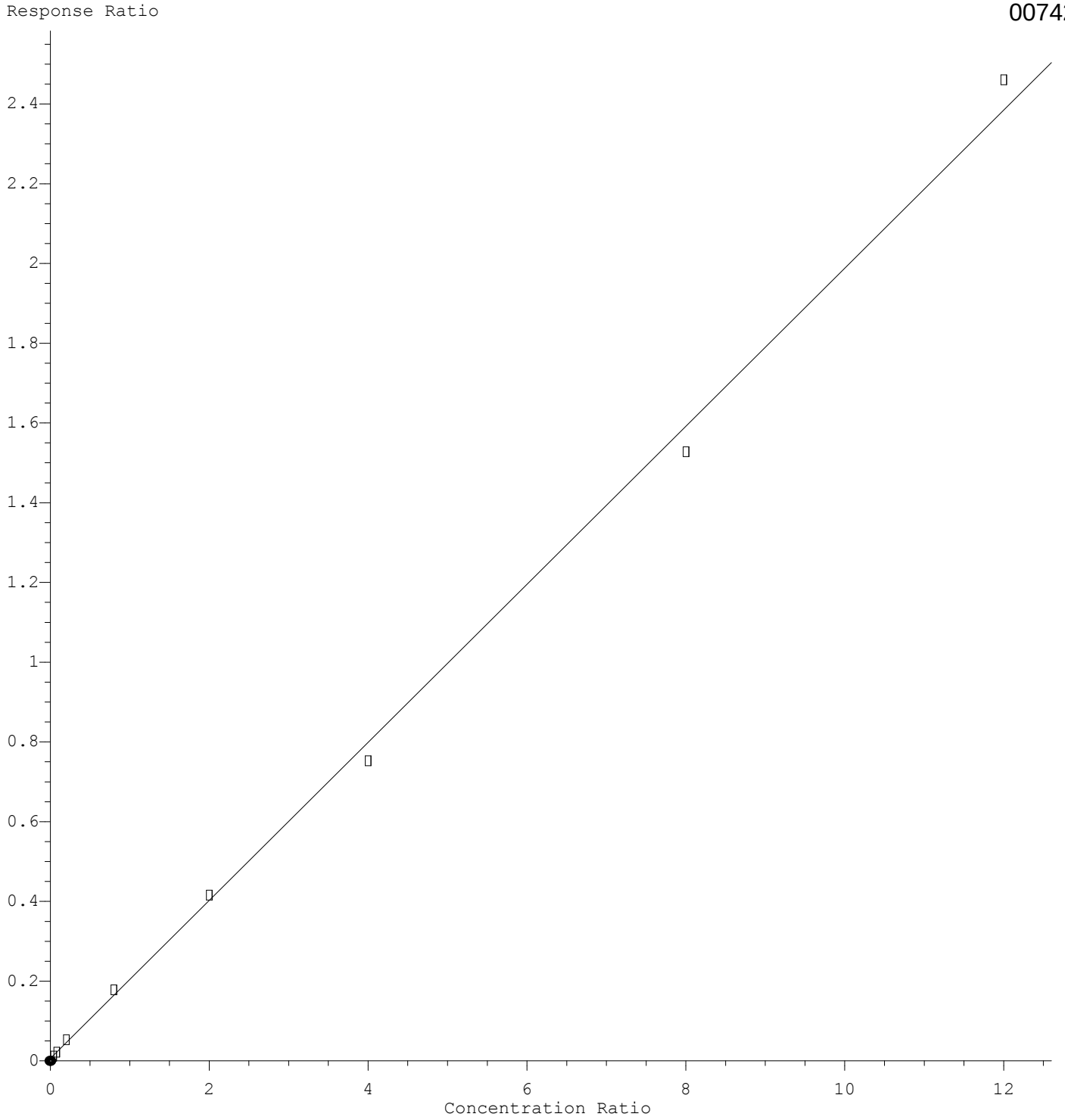

Response = 1.982e-001 * Amt + 6.032e-003
Coef of Det (r^2) = 0.997819 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Wed Jan 27 12:15:43 2016

Iodomethane

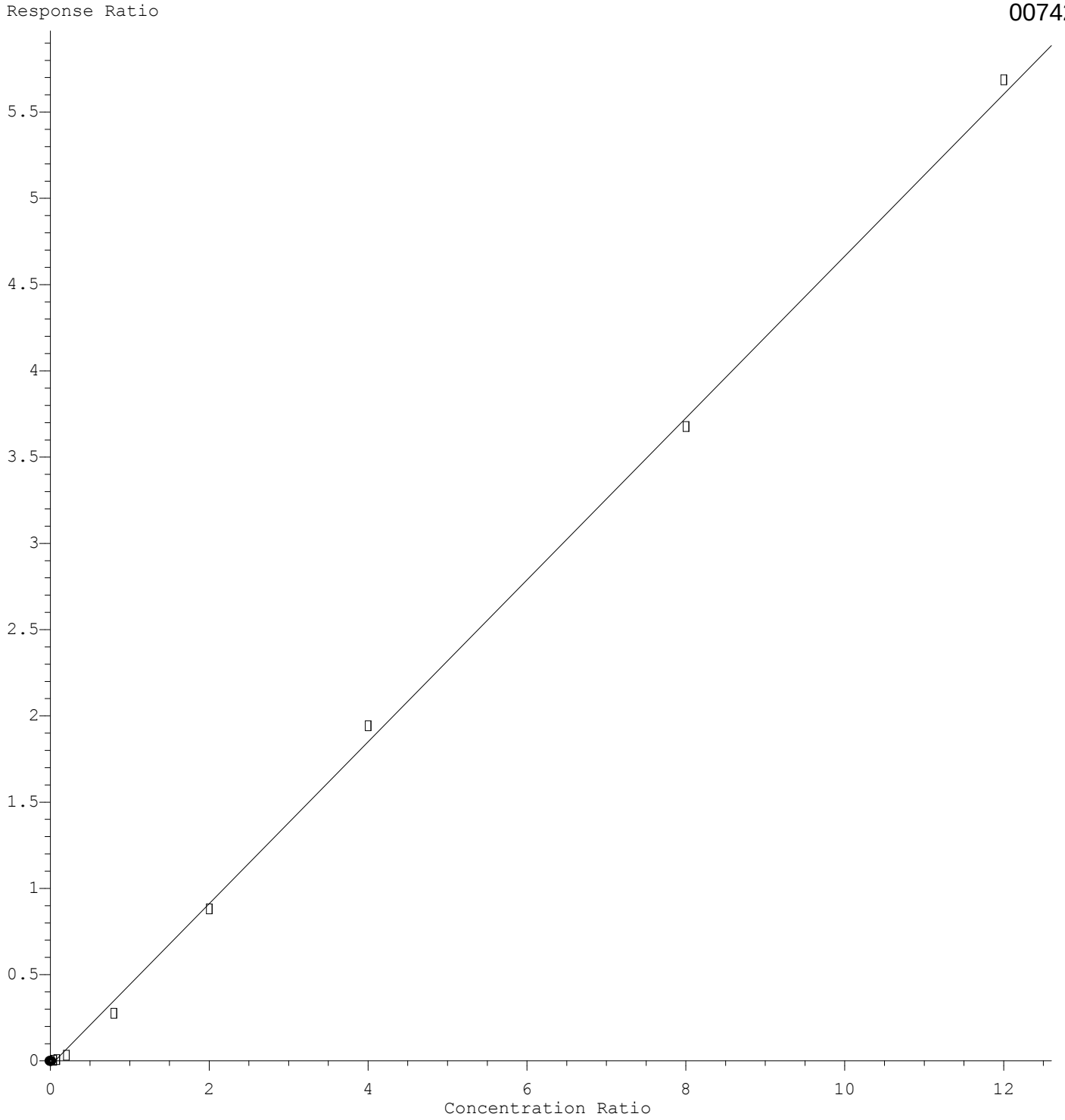

Response = 4.692e-001 * Amt - 2.682e-002
Coef of Det (r^2) = 0.996594 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Wed Jan 27 12:15:43 2016

Acetone

00742625

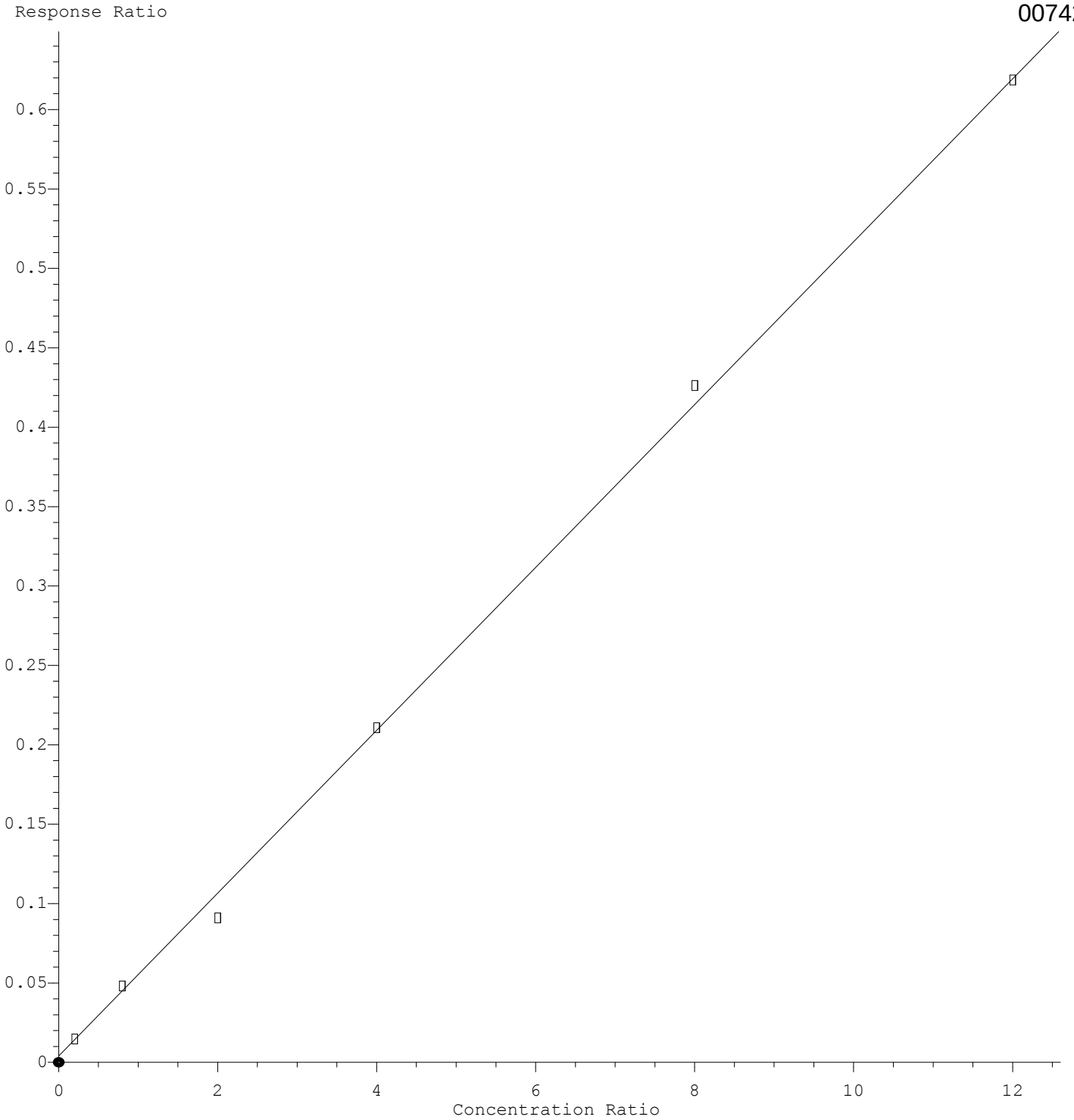

Response = 5.132e-002 * Amt + 3.979e-003
Coef of Det (r^2) = 0.997359 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Wed Jan 27 12:15:43 2016

Vinyl Acetate

00742626

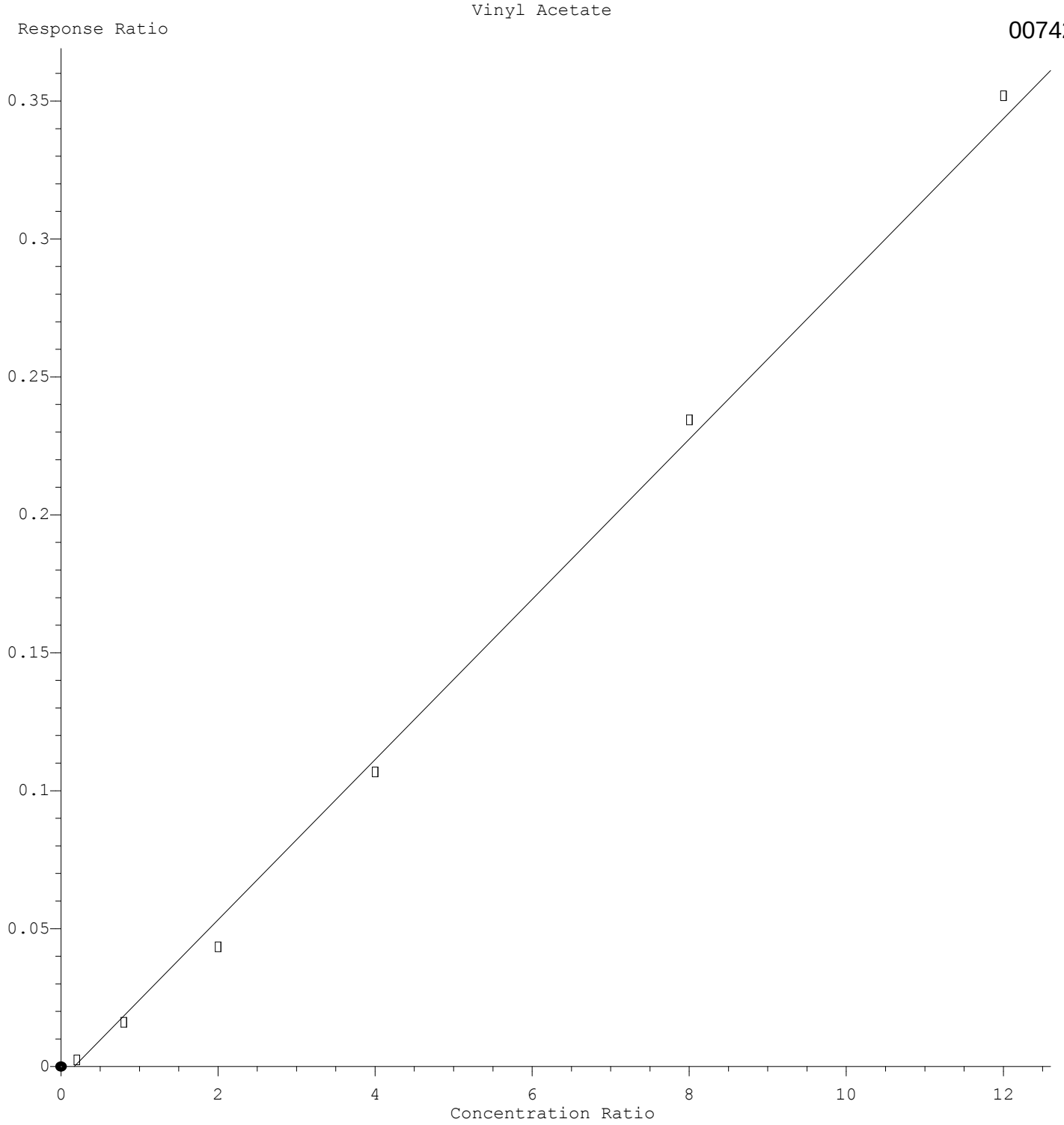

Response = 2.905e-002 * Amt - 4.864e-003
Coef of Det (r^2) = 0.995622 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Wed Jan 27 12:15:43 2016

2,2-Dichloropropane

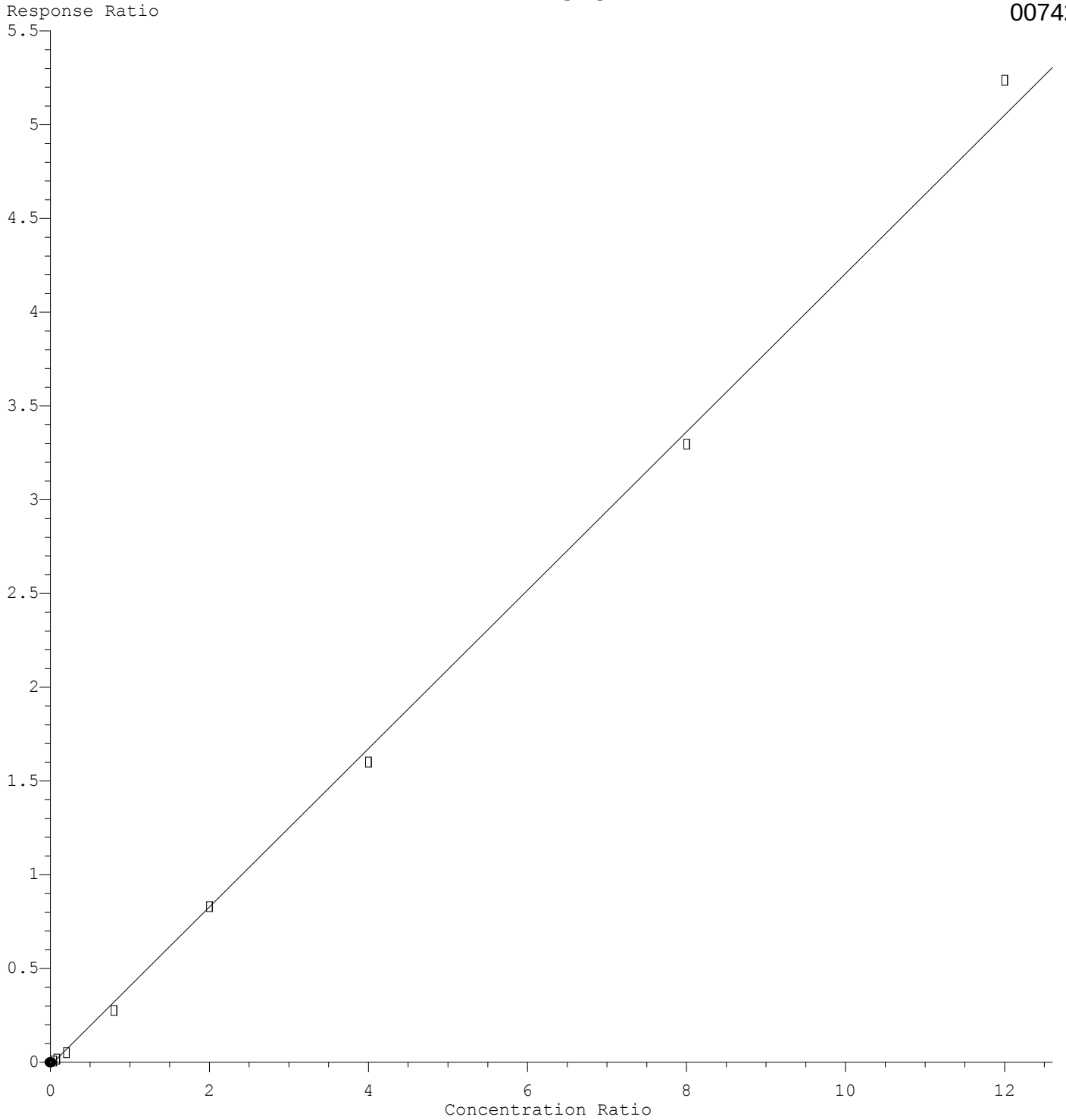

Response = 4.222e-001 * Amt - 1.618e-002
Coef of Det (r^2) = 0.997923 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260VMS.M
Calibration Table Last Updated: Wed Jan 27 12:15:43 2016

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017432.D
Acq On : 21 Jan 2016 19:51
Operator : ADC
Sample : WG554589-12 50.0ug/L ALTSRC 8260
Misc : 1,1 STD74446
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 27 12:18:13 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	455892	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	321888	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	161364	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	128180	25.9822 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.929%		
34) 1,2-Dichloroethane-d4	4.791	65	127535	25.7814 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.126%		
47) Toluene-d8	6.693	98	473089	26.1096 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.438%		
66) p-Bromofluorobenzene	8.714	95	162974	26.9513 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.805%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.027	85	259640	37.5382 ug/L	100
3) Chloromethane	1.140	50	280282	41.5294 ug/L	100
4) Vinyl Chloride	1.183	62	293740	45.0322 ug/L	100
5) 1,3-Butadiene	1.195	54	230333	41.9211 ug/L	99
6) Bromomethane	1.369	94	187870	51.2229 ug/L	100
7) Chloroethane	1.435	64	118373	41.1448 ug/L	98
8) Trichlorofluoromethane	1.508	101	258858	33.5197 ug/L	99
9) Diethyl ether	1.742	59	942196	255.1553 ug/L	100
10) 1,1-Dichloroethene	1.835	61	339940	44.4185 ug/L	100
11) Carbon Disulfide	1.846	76	770965	48.8620 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.864	101	213600	46.8057 ug/L	99
13) Iodomethane	1.936	142	310778	37.7532 ug/L	100
14) Acrolein	2.104	56	46645	79.7797 ug/L	99
15) Methylene Chloride	2.269	84	254433	47.8240 ug/L	99
16) Acetone	2.347	43	54014	55.7784 ug/L	100
17) trans-1,2-Dichloroethene	2.394	96	235769	48.1238 ug/L	99
18) Methyl acetate	2.440	43	149439	50.5872 ug/L #	99
19) Methyl Tert Butyl Ether	2.521	73	663407	52.3839 ug/L	99
20) 1,1-Dichloroethane	2.949	63	446369	46.2001 ug/L	99
21) Acrylonitrile	3.022	53	14455	11.5822 ug/L	98
22) Vinyl Acetate	3.256	86	26959	55.0780 ug/L	97
23) cis-1,2-Dichloroethene	3.537	96	273246	49.5344 ug/L	99
24) 2,2-Dichloropropane	3.662	77	350621	46.4978 ug/L	100
25) Cyclohexane	3.757	56	452442	51.0112 ug/L	99
26) Bromochloromethane	3.777	130	162457	50.0604 ug/L	100
27) Chloroform	3.908	83	451290	49.6132 ug/L	100
28) Carbon Tetrachloride	4.047	117	357651	48.3868 ug/L	100
30) 1,1,1-Trichloroethane	4.145	97	404052	49.5226 ug/L	100
31) 1,1-Dichloropropene	4.313	75	325834	46.8003 ug/L	99
32) 2-Butanone	4.354	43	84180	53.5753 ug/L #	72
33) Benzene	4.620	78	1007592	48.6054 ug/L	100
35) 1,2-Dichloroethane	4.869	62	322137	50.1337 ug/L	100
36) Methylcyclohexane	5.271	83	431778	50.5810 ug/L	99
37) Trichloroethene	5.300	130	279407	49.3766 ug/L	100
38) Dibromomethane	5.723	93	138275	50.4918 ug/L	99
39) 1,2-Dichloropropane	5.830	63	288384	50.6914 ug/L	100
40) Bromodichloromethane	5.920	83	348705	50.3991 ug/L	100
41) 1,4-Dioxane	6.143	88	17832	513.0737 ug/L	100
42) 2-Chloroethyl Vinyl Ether	6.511	63	139718	54.8095 ug/L	100
43) cis-1,3-Dichloropropene	6.525	75	435364	55.1064 ug/L	100
44) 4-Methyl-2-Pentanone	7.805	58	65896	48.8906 ug/L	99
45) trans-1,3-Dichloropropene	7.127	75	345932	52.4823 ug/L	100
48) Toluene	6.737	91	1117433	50.1164 ug/L	100
49) Tetrachloroethene	7.069	166	291063	48.3333 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017432.D
Acq On : 21 Jan 2016 19:51
Operator : ADC
Sample : WG554589-12 50.0ug/L ALTSRC 8260
Misc : 1,1 STD74446
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 27 12:18:13 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50)	1,1,2-Trichloroethane	7.261	97	198363	50.0568 ug/L	100
51)	Dibromochloromethane	7.402	129	264019	50.7007 ug/L	100
52)	1,3-Dichloropropane	7.484	76	348271	52.8525 ug/L	99
53)	1,2-Dibromoethane	7.570	107	199221	50.6267 ug/L	99
54)	2-Hexanone	7.805	43	132225	50.1161 ug/L	100
55)	Chlorobenzene	7.973	112	714609	50.5877 ug/L	99
56)	1-Chlorohexane	7.987	69	69861	53.7751 ug/L	99
57)	Ethylbenzene	8.010	106	382075	50.2733 ug/L	99
58)	1,1,1,2-Tetrachloroethane	8.028	131	263189	50.0979 ug/L	99
59)	m-,p-Xylene	8.109	106	944699	103.1680 ug/L	100
60)	o-Xylene	8.372	106	466094	52.0633 ug/L	99
61)	Styrene	8.407	104	734471	50.5708 ug/L	100
62)	Bromoform	8.410	173	164051	48.4917 ug/L	100
63)	Isopropylbenzene	8.563	105	1200669	51.3311 ug/L	100
65)	1,3,5-Trimethylbenzene	8.902	105	1020727	53.0142 ug/L	100
67)	Bromobenzene	8.763	156	303361	49.3125 ug/L	99
68)	n-Propylbenzene	8.795	91	1386221	54.2968 ug/L	100
69)	1,1,2,2-Tetrachloroethane	8.839	83	232711	51.8017 ug/L	100
70)	2-Chlorotoluene	8.867	91	819713	51.7823 ug/L	100
71)	1,2,3-Trichloropropane	8.902	110	63246	52.4544 ug/L	98
72)	trans-1,4-Dichloro-2-B...	8.928	53	55946	58.8260 ug/L #	98
73)	1,2,4-Trimethylbenzene	9.102	105	985113	51.2833 ug/L	100
74)	4-Chlorotoluene	8.957	91	865996	54.0225 ug/L	99
75)	tert-Butylbenzene	9.064	134	188895	52.2950 ug/L	99
76)	sec-Butylbenzene	9.154	105	1257995	53.5975 ug/L	100
77)	p-Isopropyltoluene	9.229	119	1041453	51.6676 ug/L	100
78)	1,3-Dichlorobenzene	9.255	146	570186	51.0752 ug/L	100
79)	1,4-Dichlorobenzene	9.302	146	576187	50.0922 ug/L	100
80)	n-Butylbenzene	9.432	91	960414	53.4929 ug/L	99
81)	1,2-Dichlorobenzene	9.504	146	549315	50.5301 ug/L	99
82)	1,2-Dibromo-3-Chloropr...	9.881	75	42370	52.3975 ug/L	98
83)	Hexachlorobutadiene	10.179	225	234430	52.7201 ug/L	100
84)	1,2,4-Trichlorobenzene	10.194	180	412779	50.2921 ug/L	100
85)	Naphthalene	10.344	128	708864	46.8373 ug/L	100
86)	1,2,3-Trichlorobenzene	10.428	180	375721	49.4758 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017432.D
Acq On : 21 Jan 2016 19:51
Operator : ADC
Sample : WG554589-12 50.0ug/L ALTSRC 8260
Misc : 1,1 STD74446
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 27 12:18:13 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

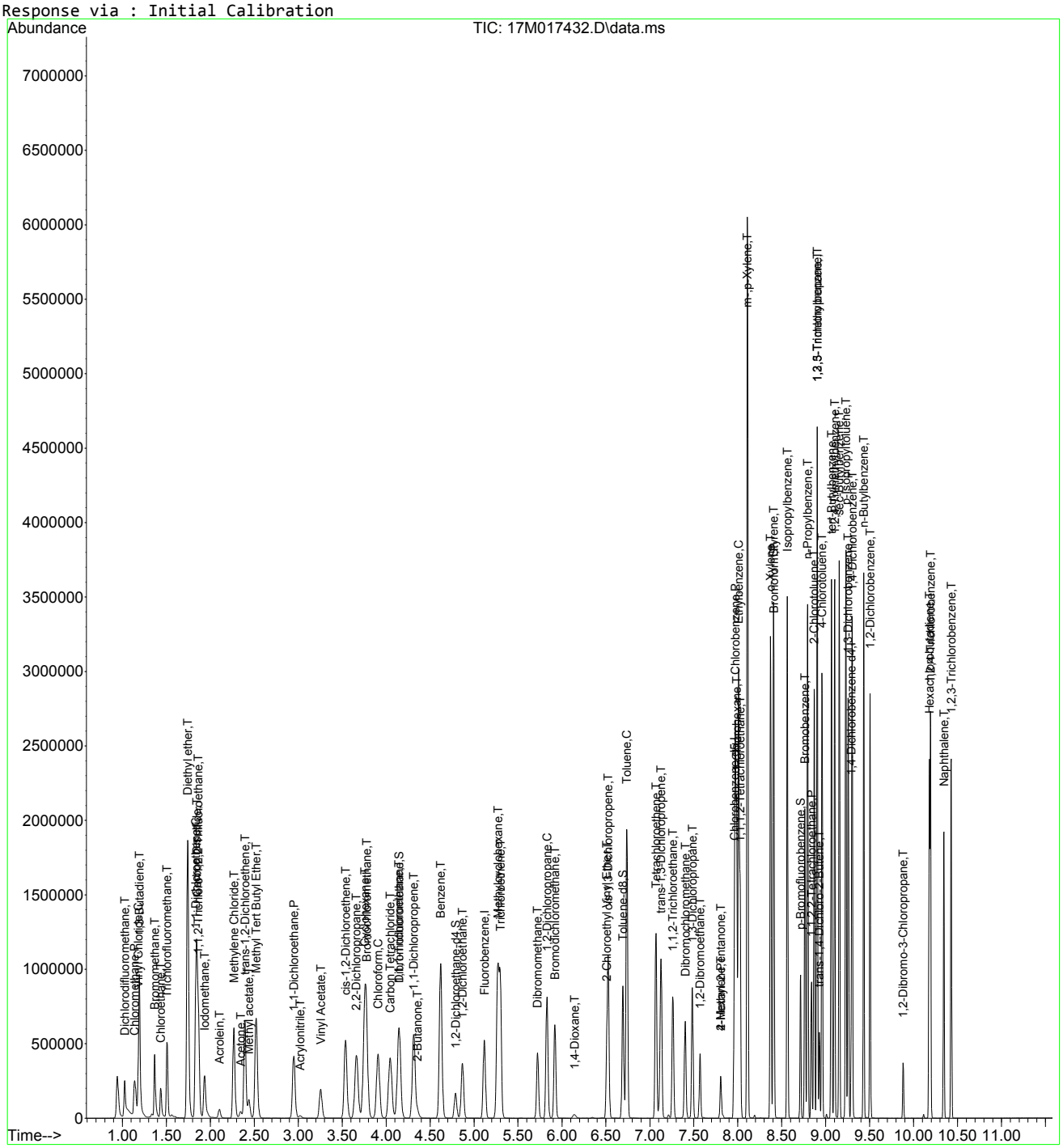

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017432.D
Acq On : 21 Jan 2016 19:51
Operator : ADC
Sample : WG554589-12 50.0ug/L ALTSRC 8260
Misc : 1,1 STD74446
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 27 12:18:13 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	98	0.000
2	T	Dichlorodifluoromethane	50.000	37.538	24.9	68	0.000
3	P	Chloromethane	50.000	41.529	16.9	79	0.000
4	C	Vinyl Chloride	50.000	45.032	9.9#	85	0.000
5	T	1,3-Butadiene	50.000	41.921	16.2	77	0.000
6	T	Bromomethane	50.000	51.223	-2.4	97	0.000
7	T	Chloroethane	50.000	41.145	17.7	86	0.000
8	T	Trichlorofluoromethane	50.000	33.520	33.0#	62	-0.017
9	T	Diethyl ether	50.000	255.155	-410.3#	511	0.000
10	C	1,1-Dichloroethene	50.000	44.419	11.2#	88	-0.020
11	T	Carbon Disulfide	50.000	48.862	2.3	97	-0.021
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	46.806	6.4	91	-0.020
13	T	Iodomethane	50.000	37.753	24.5	75	-0.012
14	T	Acrolein	50.000	79.780	-59.6#	167	0.000
15	T	Methylene Chloride	50.000	47.824	4.4	98	0.000
16	T	Acetone	50.000	55.778	-11.6	127	0.020
17	T	trans-1,2-Dichloroethene	50.000	48.124	3.8	95	0.000
18	T	Methyl acetate	50.000	50.587	-1.2	99	0.000
19	T	Methyl Tert Butyl Ether	50.000	52.384	-4.8	111	0.012
20	P	1,1-Dichloroethane	50.000	46.200	7.6	93	0.000
21	T	Acrylonitrile	50.000	11.582	76.8#	24	0.000
22	T	Vinyl Acetate	50.000	55.078	-10.2	133	0.000
23	T	cis-1,2-Dichloroethene	50.000	49.534	0.9	99	0.000
24	T	2,2-Dichloropropane	50.000	46.498	7.0	90	0.000
25	T	Cyclohexane	50.000	51.011	-2.0	99	-0.012
26	T	Bromochloromethane	50.000	50.060	-0.1	98	0.000
27	C	Chloroform	50.000	49.613	0.8#	97	0.000
28	T	Carbon Tetrachloride	50.000	48.387	3.2	92	0.000
29	S	Dibromofluoromethane	25.000	25.982	-3.9	99	0.000
30	T	1,1,1-Trichloroethane	50.000	49.523	1.0	97	0.000
31	T	1,1-Dichloropropene	50.000	46.800	6.4	92	0.000
32	T	2-Butanone	50.000	53.575	-7.2	120	0.012
33	T	Benzene	50.000	48.605	2.8	98	0.000
34	S	1,2-Dichloroethane-d4	25.000	25.781	-3.1	102	0.000
35	T	1,2-Dichloroethane	50.000	50.134	-0.3	103	0.000
36	T	Methylcyclohexane	50.000	50.581	-1.2	98	0.000
37	T	Trichloroethene	50.000	49.377	1.2	100	0.000
38	T	Dibromomethane	50.000	50.492	-1.0	100	0.000
39	C	1,2-Dichloropropane	50.000	50.691	-1.4#	103	0.000
40	T	Bromodichloromethane	50.000	50.399	-0.8	98	0.000
41	T	1,4-Dioxane	100.000	513.074	-413.1#	519	0.000
42	T	2-Chloroethyl Vinyl Ether	50.000	54.810	-9.6	112	0.000
43	T	cis-1,3-Dichloropropene	50.000	55.106	-10.2	107	0.000
44	T	4-Methyl-2-Pentanone	50.000	48.891	2.2	110	0.000
45	T	trans-1,3-Dichloropropene	50.000	52.482	-5.0	101	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	97	0.000
47	S	Toluene-d8	25.000	26.110	-4.4	98	0.000
48	C	Toluene	50.000	50.116	-0.2#	99	0.000
49	T	Tetrachloroethene	50.000	48.333	3.3	95	0.000
50	T	1,1,2-Trichloroethane	50.000	50.057	-0.1	102	0.000
51	T	Dibromochloromethane	50.000	50.701	-1.4	99	0.000
52	T	1,3-Dichloropropane	50.000	52.852	-5.7	110	0.000
53	T	1,2-Dibromoethane	50.000	50.627	-1.3	103	0.000
54	T	2-Hexanone	50.000	50.116	-0.2	111	0.000
55	P	Chlorobenzene	50.000	50.588	-1.2	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017432.D
Acq On : 21 Jan 2016 19:51
Operator : ADC
Sample : WG554589-12 50.0ug/L ALTSRC 8260
Misc : 1,1 STD74446
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 27 12:18:13 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	50.000	53.775	-7.5	99	0.000
57	C	Ethylbenzene	50.000	50.273	-0.5#	98	0.000
58	T	1,1,1,2-Tetrachloroethane	50.000	50.098	-0.2	99	0.000
59	T	m-,p-Xylene	100.000	103.168	-3.2	99	0.000
60	T	o-Xylene	50.000	52.063	-4.1	102	0.000
61	T	Styrene	50.000	50.571	-1.1	97	0.000
62	P	Bromoform	50.000	48.492	3.0	97	0.000
63	T	Isopropylbenzene	50.000	51.331	-2.7	98	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	93	0.000
65	T	1,3,5-Trimethylbenzene	50.000	53.014	-6.0	96	0.000
66	S	p-Bromofluorobenzene	25.000	26.951	-7.8	96	0.000
67	T	Bromobenzene	50.000	49.313	1.4	94	0.000
68	T	n-Propylbenzene	50.000	54.297	-8.6	96	0.000
69	P	1,1,2,2-Tetrachloroethane	50.000	51.802	-3.6	104	0.000
70	T	2-Chlorotoluene	50.000	51.782	-3.6	96	0.000
71	T	1,2,3-Trichloropropane	50.000	52.454	-4.9	108	0.000
72	T	trans-1,4-Dichloro-2-Butene	50.000	58.826	-17.7	111	0.000
73	T	1,2,4-Trimethylbenzene	50.000	51.283	-2.6	92	0.000
74	T	4-Chlorotoluene	50.000	54.022	-8.0	100	0.000
75	T	tert-Butylbenzene	50.000	52.295	-4.6	98	0.000
76	T	sec-Butylbenzene	50.000	53.598	-7.2	96	0.000
77	T	p-Isopropyltoluene	50.000	51.668	-3.3	91	0.000
78	T	1,3-Dichlorobenzene	50.000	51.075	-2.2	94	0.000
79	T	1,4-Dichlorobenzene	50.000	50.092	-0.2	97	0.000
80	T	n-Butylbenzene	50.000	53.493	-7.0	92	0.000
81	T	1,2-Dichlorobenzene	50.000	50.530	-1.1	97	0.000
82	T	1,2-Dibromo-3-Chloropropane	50.000	52.397	-4.8	107	0.000
83	T	Hexachlorobutadiene	50.000	52.720	-5.4	95	0.000
84	T	1,2,4-Trichlorobenzene	50.000	50.292	-0.6	95	0.000
85	T	Naphthalene	50.000	46.837	6.3	93	0.000
86	T	1,2,3-Trichlorobenzene	50.000	49.476	1.0	96	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\012916\
Data File : 17M017439.D
Acq On : 29 Jan 2016 16:33
Operator : ADC
Sample : WG554589-13 50ug/L Acrylonitrile
Misc : 1,1 STD74319
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 29 16:45:17 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	460591	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	328891	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	177233	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.154	111	125249	25.1291 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.516%		
34) 1,2-Dichloroethane-d4	4.791	65	126275	25.2663 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.065%		
47) Toluene-d8	6.693	98	475755	25.6976 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.790%		
66) p-Bromofluorobenzene	8.711	95	172941	26.0388 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.155%		
Target Compounds					Qvalue
3) Chloromethane	1.137	50	3322	0.4872 ug/L	98
5) 1,3-Butadiene	1.195	54	1168	0.2104 ug/L	90
6) Bromomethane	1.368	94	34993	8.8229 ug/L	100
11) Carbon Disulfide	1.861	76	489572	30.7114 ug/L	98
13) Iodomethane	1.942	142	123176	15.6792 ug/L	100
16) Acetone	2.333	43	43707	44.2884 ug/L	100
18) Methyl acetate	2.434	43	118526	39.7134 ug/L #	99
19) Methyl Tert Butyl Ether	2.512	73	589680	46.0873 ug/L	99
21) Acrylonitrile	3.016	53	59145	46.9069 ug/L	98
24) 2,2-Dichloropropane	3.763	77	4584	1.5471 ug/L #	1
25) Cyclohexane	3.766	56	386627	43.1461 ug/L	100
32) 2-Butanone	4.345	43	72388	45.6004 ug/L #	73
36) Methylcyclohexane	5.274	83	394981	45.7983 ug/L	99
42) 2-Chloroethyl Vinyl Ether	6.511	63	132439	51.4240 ug/L	98
44) 4-Methyl-2-Pentanone	7.802	58	63588	46.6969 ug/L	100
50) 1,1,2-Trichloroethane	7.313	97	1174	0.2900 ug/L #	1
54) 2-Hexanone	7.802	43	125950	46.7213 ug/L	99
56) 1-Chlorohexane	7.987	69	66037	49.7492 ug/L #	1
59) m-,p-Xylene	8.112	106	1261	0.1348 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.925	53	53956	51.6538 ug/L #	98
75) tert-Butylbenzene	9.064	134	514	0.1296 ug/L	76
78) 1,3-Dichlorobenzene	9.255	146	1615	0.1317 ug/L	95
79) 1,4-Dichlorobenzene	9.299	146	1976	0.1564 ug/L #	60
80) n-Butylbenzene	9.432	91	2453	0.1244 ug/L	93
83) Hexachlorobutadiene	10.176	225	615	0.1259 ug/L	95
84) 1,2,4-Trichlorobenzene	10.190	180	2114	0.2345 ug/L	90
85) Naphthalene	10.341	128	3495	0.2103 ug/L	99
86) 1,2,3-Trichlorobenzene	10.425	180	1575	0.1888 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\012916\
Data File : 17M017439.D
Acq On : 29 Jan 2016 16:33
Operator : ADC
Sample : WG554589-13 50ug/L Acrylonitrile
Misc : 1,1 STD74319
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 29 16:45:17 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

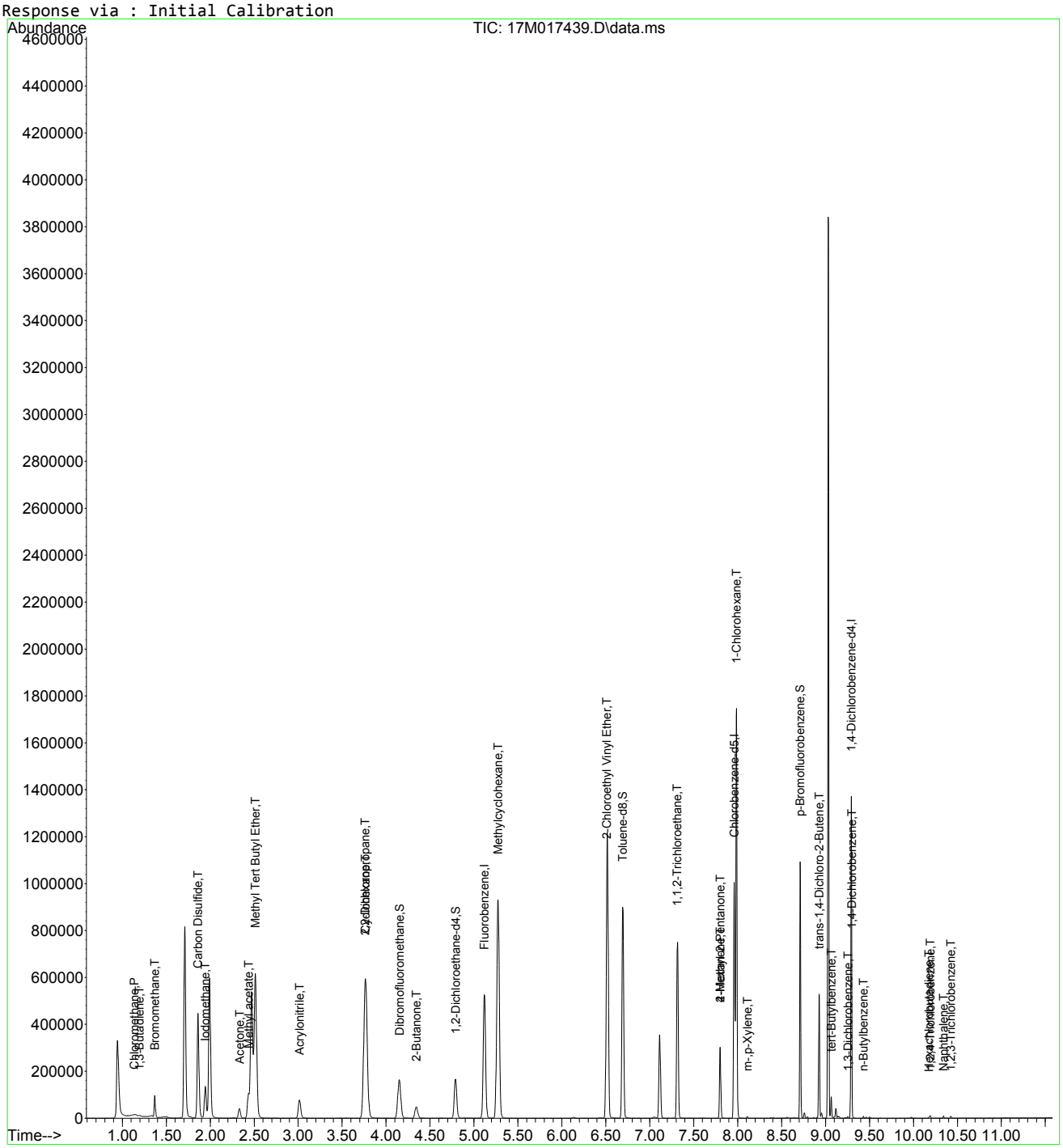

8260VMS.M Fri Jan 29 16:45:18 2016 Page: 2

Data Path : D:\MassHunter\GCMS\1\data\012916\
Data File : 17M017439.D
Acq On : 29 Jan 2016 16:33
Operator : ADC
Sample : WG554589-13 50ug/L Acrylonitrile
Misc : 1,1 STD74319
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 29 16:45:17 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	99	0.000
2	T	Dichlorodifluoromethane	50.000	0.000	100.0#	0	-1.030#
3	P	Chloromethane	50.000	0.487	99.0#	1	0.000
4	C	Vinyl Chloride	50.000	0.033	99.9#	0	0.000
5	T	1,3-Butadiene	50.000	0.210	99.6#	0	0.000
6	T	Bromomethane	50.000	8.823	82.4#	18	0.000
7	T	Chloroethane	50.000	0.000	100.0#	0	-1.441#
8	T	Trichlorofluoromethane	50.000	0.018	100.0#	0	-0.015
9	T	Diethyl ether	50.000	0.035	99.9#	0	0.000
10	C	1,1-Dichloroethene	50.000	0.045	99.9#	0	-0.012
11	T	Carbon Disulfide	50.000	30.711	38.6#	62	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	0.000	100.0#	0	-1.884#
13	T	Iodomethane	50.000	15.679	68.6#	30	0.000
14	T	Acrolein	50.000	0.000	100.0#	0	-2.095#
15	T	Methylene Chloride	50.000	0.082	99.8#	0	0.000
16	T	Acetone	50.000	44.288	11.4	103	0.000
17	T	trans-1,2-Dichloroethene	50.000	0.086	99.8#	0	0.000
18	T	Methyl acetate	50.000	39.713	20.6	78	0.000
19	T	Methyl Tert Butyl Ether	50.000	46.087	7.8	98	0.000
20	P	1,1-Dichloroethane	50.000	0.000	100.0#	0	-2.955#
21	T	Acrylonitrile	50.000	46.907	6.2	99	0.000
22	T	Vinyl Acetate	50.000	0.000	100.0#	0	-3.253#
23	T	cis-1,2-Dichloroethene	50.000	0.038	99.9#	0	0.000
24	T	2,2-Dichloropropane	50.000	1.547	96.9#	1	0.093
25	T	Cyclohexane	50.000	43.146	13.7	84	0.000
26	T	Bromochloromethane	50.000	0.000	100.0#	0	-3.780#
27	C	Chloroform	50.000	0.018	100.0#	0	0.000
28	T	Carbon Tetrachloride	50.000	0.000	100.0#	0	-4.055#
29	S	Dibromofluoromethane	25.000	25.129	-0.5	97	0.000
30	T	1,1,1-Trichloroethane	50.000	0.000	100.0#	0	-4.151#
31	T	1,1-Dichloropropene	50.000	0.043	99.9#	0	0.000
32	T	2-Butanone	50.000	45.600	8.8	103	0.000
33	T	Benzene	50.000	0.035	99.9#	0	0.000
34	S	1,2-Dichloroethane-d4	25.000	25.266	-1.1	101	0.000
35	T	1,2-Dichloroethane	50.000	0.000	100.0#	0	-4.869#
36	T	Methylcyclohexane	50.000	45.798	8.4	89	0.000
37	T	Trichloroethene	50.000	0.077	99.8#	0	0.000
38	T	Dibromomethane	50.000	0.000	100.0#	0	-5.723#
39	C	1,2-Dichloropropane	50.000	0.000	100.0#	0	-5.830#
40	T	Bromodichloromethane	50.000	0.000	100.0#	0	-5.920#
41	T	1,4-Dioxane	100.000	0.000	100.0#	0	-6.134#
42	T	2-Chloroethyl Vinyl Ether	50.000	51.424	-2.8	107	0.000
43	T	cis-1,3-Dichloropropene	50.000	0.056	99.9#	0	0.000
44	T	4-Methyl-2-Pentanone	50.000	46.697	6.6	107	0.000
45	T	trans-1,3-Dichloropropene	50.000	0.065	99.9#	0	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	99	0.000
47	S	Toluene-d8	25.000	25.698	-2.8	99	0.000
48	C	Toluene	50.000	0.072	99.9#	0	0.000
49	T	Tetrachloroethene	50.000	0.060	99.9#	0	0.000
50	T	1,1,2-Trichloroethane	50.000	0.290	99.4#	1	0.051
51	T	Dibromochloromethane	50.000	0.000	100.0#	0	-7.400#
52	T	1,3-Dichloropropane	50.000	0.000	100.0#	0	-7.484#
53	T	1,2-Dibromoethane	50.000	0.000	100.0#	0	-7.570#
54	T	2-Hexanone	50.000	46.721	6.6	105	0.000
55	P	Chlorobenzene	50.000	0.066	99.9#	0	0.000

Data Path : D:\MassHunter\GCMS\1\data\012916\
Data File : 17M017439.D
Acq On : 29 Jan 2016 16:33
Operator : ADC
Sample : WG554589-13 50ug/L Acrylonitrile
Misc : 1,1 STD74319
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 29 16:45:17 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	50.000	49.749	0.5	94	0.000
57	C	Ethylbenzene	50.000	0.054	99.9#	0	0.000
58	T	1,1,1,2-Tetrachloroethane	50.000	0.000	100.0#	0	-8.028#
59	T	m-,p-Xylene	100.000	0.135	99.9#	0	0.000
60	T	o-Xylene	50.000	0.042	99.9#	0	0.000
61	T	Styrene	50.000	0.070	99.9#	0	0.000
62	P	Bromoform	50.000	0.000	100.0#	0	-8.410#
63	T	Isopropylbenzene	50.000	0.044	99.9#	0	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	102	0.000
65	T	1,3,5-Trimethylbenzene	50.000	0.055	99.9#	0	0.000
66	S	p-Bromofluorobenzene	25.000	26.039	-4.2	102	0.000
67	T	Bromobenzene	50.000	0.078	99.8#	0	0.000
68	T	n-Propylbenzene	50.000	0.087	99.8#	0	0.000
69	P	1,1,2,2-Tetrachloroethane	50.000	0.000	100.0#	0	-8.836#
70	T	2-Chlorotoluene	50.000	0.054	99.9#	0	0.000
71	T	1,2,3-Trichloropropane	50.000	0.000	100.0#	0	-8.899#
72	T	trans-1,4-Dichloro-2-Butene	50.000	51.654	-3.3	107	0.000
73	T	1,2,4-Trimethylbenzene	50.000	0.094	99.8#	0	0.000
74	T	4-Chlorotoluene	50.000	0.105	99.8#	0	0.000
75	T	tert-Butylbenzene	50.000	0.130	99.7#	0	0.000
76	T	sec-Butylbenzene	50.000	0.098	99.8#	0	0.000
77	T	p-Isopropyltoluene	50.000	0.064	99.9#	0	0.000
78	T	1,3-Dichlorobenzene	50.000	0.132	99.7#	0	0.000
79	T	1,4-Dichlorobenzene	50.000	0.156	99.7#	0	0.000
80	T	n-Butylbenzene	50.000	0.124	99.8#	0	0.000
81	T	1,2-Dichlorobenzene	50.000	0.079	99.8#	0	0.000
82	T	1,2-Dibromo-3-Chloropropane	50.000	0.000	100.0#	0	-9.881#
83	T	Hexachlorobutadiene	50.000	0.126	99.7#	0	0.000
84	T	1,2,4-Trichlorobenzene	50.000	0.235	99.5#	0	0.000
85	T	Naphthalene	50.000	0.210	99.6#	0	0.000
86	T	1,2,3-Trichlorobenzene	50.000	0.189	99.6#	0	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017517.D
Acq On : 04 Feb 2016 15:18
Operator : ADC
Sample : WG556287-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 04 15:30:07 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	469745	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	340840	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	178531	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	127296	25.0421 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.168%		
34) 1,2-Dichloroethane-d4	4.791	65	122728	24.0780 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.312%		
47) Toluene-d8	6.693	98	478796	24.9552 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.821%		
66) p-Bromofluorobenzene	8.711	95	169798	25.3797 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.519%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.030	85	377571	52.9786 ug/L	99
3) Chloromethane	1.140	50	334101	48.0438 ug/L	100
4) Vinyl Chloride	1.186	62	334786	49.8112 ug/L	100
5) 1,3-Butadiene	1.195	54	192645	34.0278 ug/L	99
6) Bromomethane	1.369	94	191197	50.5833 ug/L	99
7) Chloroethane	1.441	64	139832	47.1703 ug/L	99
8) Trichlorofluoromethane	1.522	101	413391	51.9516 ug/L	100
9) Diethyl ether	1.733	59	163932	43.0851 ug/L	100
10) 1,1-Dichloroethene	1.849	61	401819	50.9556 ug/L	99
11) Carbon Disulfide	1.864	76	684546	42.1055 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.881	101	243010	51.6799 ug/L	99
13) Iodomethane	1.945	142	370141	43.4158 ug/L	100
14) Acrolein	2.095	56	11699	19.4194 ug/L	98
15) Methylene Chloride	2.272	84	255655	46.6366 ug/L	98
16) Acetone	2.327	43	44827	44.5490 ug/L	98
17) trans-1,2-Dichloroethene	2.399	96	244332	48.4009 ug/L	99
18) Methyl acetate	2.431	43	124663	40.9557 ug/L #	99
19) Methyl Tert Butyl Ether	2.509	73	583127	44.6870 ug/L	100
20) 1,1-Dichloroethane	2.952	63	477421	47.9568 ug/L	99
21) Acrylonitrile	3.013	53	54076	42.0510 ug/L	99
22) Vinyl Acetate	3.254	86	24092	48.3246 ug/L	99
23) cis-1,2-Dichloroethene	3.540	96	271879	47.8331 ug/L	100
24) 2,2-Dichloropropane	3.668	77	375247	48.2590 ug/L	98
25) Cyclohexane	3.769	56	422913	46.2757 ug/L	99
26) Bromochloromethane	3.780	130	164356	49.1520 ug/L	99
27) Chloroform	3.908	83	457736	48.8379 ug/L	100
28) Carbon Tetrachloride	4.053	117	379613	49.8434 ug/L	99
30) 1,1,1-Trichloroethane	4.151	97	414941	49.3574 ug/L	100
31) 1,1-Dichloropropene	4.319	75	351815	49.0418 ug/L	100
32) 2-Butanone	4.339	43	68000	42.0015 ug/L	99
33) Benzene	4.623	78	1022782	47.8832 ug/L	100
35) 1,2-Dichloroethane	4.869	62	307382	46.4267 ug/L	100
36) Methylcyclohexane	5.274	83	422333	48.0155 ug/L	100
37) Trichloroethene	5.301	130	280205	48.0574 ug/L	99
38) Dibromomethane	5.723	93	137284	48.6515 ug/L	100
39) 1,2-Dichloropropane	5.830	63	275122	46.9341 ug/L	100
40) Bromodichloromethane	5.920	83	348001	48.8141 ug/L	99
41) 1,4-Dioxane	6.134	88	3042	84.9452 ug/L	96
42) 2-Chloroethyl Vinyl Ether	6.511	63	127520	48.5492 ug/L	100
43) cis-1,3-Dichloropropene	6.528	75	400446	49.1919 ug/L	100
44) 4-Methyl-2-Pentanone	7.799	58	55406	39.8954 ug/L	99
45) trans-1,3-Dichloropropene	7.127	75	335379	49.3808 ug/L	100
48) Toluene	6.740	91	1129243	47.8300 ug/L	100
49) Tetrachloroethene	7.070	166	306534	48.0720 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017517.D
Acq On : 04 Feb 2016 15:18
Operator : ADC
Sample : WG556287-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 04 15:30:07 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,1,2-Trichloroethane	7.261	97	189383	45.1334 ug/L	100
51) Dibromochloromethane	7.400	129	261410	47.4084 ug/L	100
52) 1,3-Dichloropropane	7.484	76	311128	44.5904 ug/L	100
53) 1,2-Dibromoethane	7.570	107	188712	45.2895 ug/L	100
54) 2-Hexanone	7.799	43	111724	39.9912 ug/L	100
55) Chlorobenzene	7.973	112	711603	47.5739 ug/L	100
56) 1-Chlorohexane	7.987	69	69273	50.3575 ug/L	97
57) Ethylbenzene	8.011	106	389701	48.4256 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.025	131	266014	47.8201 ug/L	99
59) m-,p-Xylene	8.112	106	956972	98.6972 ug/L	100
60) o-Xylene	8.375	106	459544	48.4774 ug/L	99
61) Styrene	8.407	104	757893	49.2819 ug/L	100
62) Bromoform	8.410	173	166907	46.5927 ug/L	99
63) Isopropylbenzene	8.564	105	1227679	49.5674 ug/L	100
65) 1,3,5-Trimethylbenzene	8.902	105	1062762	49.8898 ug/L	100
67) Bromobenzene	8.763	156	318146	46.7430 ug/L	100
68) n-Propylbenzene	8.795	91	1439807	50.9729 ug/L	100
69) 1,1,2,2-Tetrachloroethane	8.836	83	216100	43.4785 ug/L	99
70) 2-Chlorotoluene	8.868	91	845488	48.2748 ug/L	100
71) 1,2,3-Trichloropropane	8.899	110	57861	43.3739 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.928	53	46794	44.4717 ug/L #	97
73) 1,2,4-Trimethylbenzene	9.102	105	1056508	49.7114 ug/L	100
74) 4-Chlorotoluene	8.957	91	860172	48.4994 ug/L	99
75) tert-Butylbenzene	9.064	134	193571	48.4365 ug/L	99
76) sec-Butylbenzene	9.154	105	1315260	50.6490 ug/L	100
77) p-Isopropyltoluene	9.229	119	1140219	51.1282 ug/L	100
78) 1,3-Dichlorobenzene	9.256	146	600419	48.6117 ug/L	100
79) 1,4-Dichlorobenzene	9.302	146	595983	46.8310 ug/L	99
80) n-Butylbenzene	9.432	91	1044099	52.5621 ug/L	100
81) 1,2-Dichlorobenzene	9.505	146	556339	46.2553 ug/L	100
82) 1,2-Dibromo-3-Chloropr...	9.881	75	37602	42.0296 ug/L	98
83) Hexachlorobutadiene	10.179	225	243136	49.4203 ug/L	100
84) 1,2,4-Trichlorobenzene	10.194	180	435687	47.9789 ug/L	99
85) Naphthalene	10.344	128	753820	45.0183 ug/L	100
86) 1,2,3-Trichlorobenzene	10.428	180	388112	46.1931 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017517.D
Acq On : 04 Feb 2016 15:18
Operator : ADC
Sample : WG556287-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 04 15:30:07 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

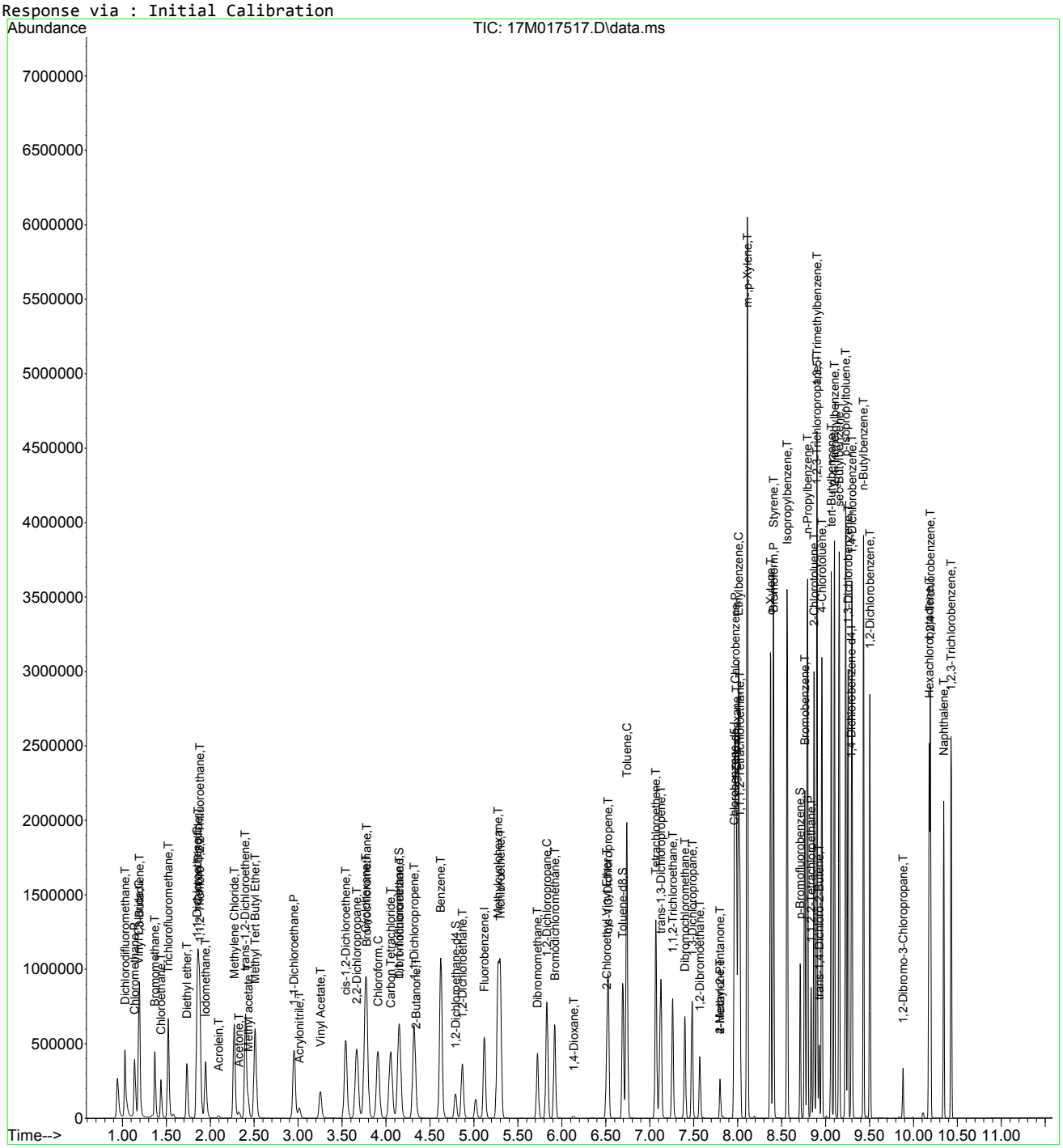

8260VMS.M Thu Feb 04 15:30:09 2016 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017517.D
Acq On : 04 Feb 2016 15:18
Operator : ADC
Sample : WG556287-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 04 15:30:07 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	101	0.000
2	T	Dichlorodifluoromethane	0.379	0.402	-6.1	99	0.000
3	P	Chloromethane	0.370	0.356	3.8	95	0.000
4	C	Vinyl Chloride	0.358	0.356	0.6#	97	0.000
5	T	1,3-Butadiene	0.301	0.205	31.9#	64	0.000
6	T	Bromomethane	0.232	0.204	12.1	98	0.000
7	T	Chloroethane	0.158	0.149	5.7	102	0.000
8	T	Trichlorofluoromethane	0.423	0.440	-4.0	98	0.000
9	T	Diethyl ether	0.202	0.174	13.9	89	0.000
10	C	1,1-Dichloroethene	0.420	0.428	-1.9#	104	0.000
11	T	Carbon Disulfide	0.865	0.729	15.7	86	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.250	0.259	-3.6	103	0.000
13	T	Iodomethane	0.319	0.394	-23.5	90	0.000
14	T	Acrolein	0.032	0.012	62.5#	42#	0.000
15	T	Methylene Chloride	0.292	0.272	6.8	99	0.000
16	T	Acetone	0.056	0.048	14.3	106	0.000
17	T	trans-1,2-Dichloroethene	0.269	0.260	3.3	99	0.000
18	T	Methyl acetate	0.162	0.133	17.9	83	0.000
19	T	Methyl Tert Butyl Ether	0.694	0.621	10.5	97	0.000
20	P	1,1-Dichloroethane	0.530	0.508	4.2	99	0.000
21	T	Acrylonitrile	0.068	0.058	14.7	91	0.000
22	T	Vinyl Acetate	0.023	0.026	-13.0	119	0.000
23	T	cis-1,2-Dichloroethene	0.302	0.289	4.3	99	0.000
24	T	2,2-Dichloropropane	0.332	0.399	-20.2	97	0.000
25	T	Cyclohexane	0.486	0.450	7.4	92	0.000
26	T	Bromochloromethane	0.178	0.175	1.7	99	0.000
27	C	Chloroform	0.499	0.487	2.4#	98	0.000
28	T	Carbon Tetrachloride	0.405	0.404	0.2	98	0.000
29	S	Dibromofluoromethane	0.271	0.271	0.0	99	0.000
30	T	1,1,1-Trichloroethane	0.447	0.442	1.1	99	0.000
31	T	1,1-Dichloropropene	0.382	0.374	2.1	100	0.000
32	T	2-Butanone	0.086	0.072	16.3	97	0.000
33	T	Benzene	1.137	1.089	4.2	99	0.000
34	S	1,2-Dichloroethane-d4	0.271	0.261	3.7	98	0.000
35	T	1,2-Dichloroethane	0.352	0.327	7.1	99	0.000
36	T	Methylcyclohexane	0.468	0.450	3.8	95	0.000
37	T	Trichloroethene	0.310	0.298	3.9	100	0.000
38	T	Dibromomethane	0.150	0.146	2.7	99	0.000
39	C	1,2-Dichloropropane	0.312	0.293	6.1#	98	0.000
40	T	Bromodichloromethane	0.379	0.370	2.4	98	0.000
41	T	1,4-Dioxane	0.002	0.002	0.0	89	0.000
42	T	2-Chloroethyl Vinyl Ether	0.140	0.136	2.9	103	0.000
43	T	cis-1,3-Dichloropropene	0.433	0.426	1.6	98	0.000
44	T	4-Methyl-2-Pentanone	0.074	0.059	20.3	93	0.000
45	T	trans-1,3-Dichloropropene	0.361	0.357	1.1	98	0.000
46	I	Chlorobenzene-d5	1.000	1.000	0.0	102	0.000
47	S	Toluene-d8	1.407	1.405	0.1	99	0.000
48	C	Toluene	1.732	1.657	4.3#	100	0.000
49	T	Tetrachloroethene	0.468	0.450	3.8	100	0.000
50	T	1,1,2-Trichloroethane	0.308	0.278	9.7	98	0.000
51	T	Dibromochloromethane	0.404	0.383	5.2	98	0.000
52	T	1,3-Dichloropropane	0.512	0.456	10.9	98	0.000
53	T	1,2-Dibromoethane	0.306	0.277	9.5	98	0.000
54	T	2-Hexanone	0.205	0.164	20.0	93	0.000
55	P	Chlorobenzene	1.097	1.044	4.8	99	0.000

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017517.D
Acq On : 04 Feb 2016 15:18
Operator : ADC
Sample : WG556287-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 04 15:30:07 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	0.101	0.102	-1.0	98	0.000
57	C	Ethylbenzene	0.590	0.572	3.1#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	0.408	0.390	4.4	100	0.000
59	T	m-,p-Xylene	0.711	0.702	1.3	100	0.000
60	T	o-Xylene	0.695	0.674	3.0	101	0.000
61	T	Styrene	1.128	1.112	1.4	100	0.000
62	P	Bromoform	0.263	0.245	6.8	98	0.000
63	T	Isopropylbenzene	1.817	1.801	0.9	100	0.000
64	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	103	0.000
65	T	1,3,5-Trimethylbenzene	2.983	2.976	0.2	100	0.000
66	S	p-Bromofluorobenzene	0.937	0.951	-1.5	100	0.000
67	T	Bromobenzene	0.953	0.891	6.5	99	0.000
68	T	n-Propylbenzene	3.955	4.032	-1.9	100	0.000
69	P	1,1,2,2-Tetrachloroethane	0.696	0.605	13.1	97	0.000
70	T	2-Chlorotoluene	2.453	2.368	3.5	99	0.000
71	T	1,2,3-Trichloropropane	0.187	0.162	13.4	98	0.000
72	T	trans-1,4-Dichloro-2-Butene	0.147	0.131	10.9	93	0.000
73	T	1,2,4-Trimethylbenzene	2.976	2.959	0.6	99	0.000
74	T	4-Chlorotoluene	2.484	2.409	3.0	99	0.000
75	T	tert-Butylbenzene	0.560	0.542	3.2	101	0.000
76	T	sec-Butylbenzene	3.636	3.684	-1.3	100	0.000
77	T	p-Isopropyltoluene	3.123	3.193	-2.2	100	0.000
78	T	1,3-Dichlorobenzene	1.730	1.682	2.8	99	0.000
79	T	1,4-Dichlorobenzene	1.782	1.669	6.3	100	0.000
80	T	n-Butylbenzene	2.782	2.924	-5.1	100	0.000
81	T	1,2-Dichlorobenzene	1.684	1.558	7.5	99	0.000
82	T	1,2-Dibromo-3-Chloropropane	0.125	0.105	16.0	95	0.000
83	T	Hexachlorobutadiene	0.689	0.681	1.2	99	0.000
84	T	1,2,4-Trichlorobenzene	1.272	1.220	4.1	100	0.000
85	T	Naphthalene	2.345	2.111	10.0	99	0.000
86	T	1,2,3-Trichlorobenzene	1.177	1.087	7.6	99	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017517.D
Acq On : 04 Feb 2016 15:18
Operator : ADC
Sample : WG556287-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 04 15:30:07 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	101	0.000
2	T	Dichlorodifluoromethane	50.000	52.979	-6.0	99	0.000
3	P	Chloromethane	50.000	48.044	3.9	95	0.000
4	C	Vinyl Chloride	50.000	49.811	0.4#	97	0.000
5	T	1,3-Butadiene	50.000	34.028	31.9#	64	0.000
6	T	Bromomethane	50.000	50.583	-1.2	98	0.000
7	T	Chloroethane	50.000	47.170	5.7	102	0.000
8	T	Trichlorofluoromethane	50.000	51.952	-3.9	98	0.000
9	T	Diethyl ether	50.000	43.085	13.8	89	0.000
10	C	1,1-Dichloroethene	50.000	50.956	-1.9#	104	0.000
11	T	Carbon Disulfide	50.000	42.106	15.8	86	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	51.680	-3.4	103	0.000
13	T	Iodomethane	50.000	43.416	13.2	90	0.000
14	T	Acrolein	50.000	19.419	61.2#	42	0.000
15	T	Methylene Chloride	50.000	46.637	6.7	99	0.000
16	T	Acetone	50.000	44.549	10.9	106	0.000
17	T	trans-1,2-Dichloroethene	50.000	48.401	3.2	99	0.000
18	T	Methyl acetate	50.000	40.956	18.1	83	0.000
19	T	Methyl Tert Butyl Ether	50.000	44.687	10.6	97	0.000
20	P	1,1-Dichloroethane	50.000	47.957	4.1	99	0.000
21	T	Acrylonitrile	50.000	42.051	15.9	91	0.000
22	T	Vinyl Acetate	50.000	48.325	3.3	119	0.000
23	T	cis-1,2-Dichloroethene	50.000	47.833	4.3	99	0.000
24	T	2,2-Dichloropropane	50.000	48.259	3.5	97	0.000
25	T	Cyclohexane	50.000	46.276	7.4	92	0.000
26	T	Bromochloromethane	50.000	49.152	1.7	99	0.000
27	C	Chloroform	50.000	48.838	2.3#	98	0.000
28	T	Carbon Tetrachloride	50.000	49.843	0.3	98	0.000
29	S	Dibromofluoromethane	25.000	25.042	-0.2	99	0.000
30	T	1,1,1-Trichloroethane	50.000	49.357	1.3	99	0.000
31	T	1,1-Dichloropropene	50.000	49.042	1.9	100	0.000
32	T	2-Butanone	50.000	42.001	16.0	97	0.000
33	T	Benzene	50.000	47.883	4.2	99	0.000
34	S	1,2-Dichloroethane-d4	25.000	24.078	3.7	98	0.000
35	T	1,2-Dichloroethane	50.000	46.427	7.1	99	0.000
36	T	Methylcyclohexane	50.000	48.015	4.0	95	0.000
37	T	Trichloroethene	50.000	48.057	3.9	100	0.000
38	T	Dibromomethane	50.000	48.652	2.7	99	0.000
39	C	1,2-Dichloropropane	50.000	46.934	6.1#	98	0.000
40	T	Bromodichloromethane	50.000	48.814	2.4	98	0.000
41	T	1,4-Dioxane	100.000	84.945	15.1	89	0.000
42	T	2-Chloroethyl Vinyl Ether	50.000	48.549	2.9	103	0.000
43	T	cis-1,3-Dichloropropene	50.000	49.192	1.6	98	0.000
44	T	4-Methyl-2-Pentanone	50.000	39.895	20.2	93	0.000
45	T	trans-1,3-Dichloropropene	50.000	49.381	1.2	98	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	102	0.000
47	S	Toluene-d8	25.000	24.955	0.2	99	0.000
48	C	Toluene	50.000	47.830	4.3#	100	0.000
49	T	Tetrachloroethene	50.000	48.072	3.9	100	0.000
50	T	1,1,2-Trichloroethane	50.000	45.133	9.7	98	0.000
51	T	Dibromochloromethane	50.000	47.408	5.2	98	0.000
52	T	1,3-Dichloropropane	50.000	44.590	10.8	98	0.000
53	T	1,2-Dibromoethane	50.000	45.290	9.4	98	0.000
54	T	2-Hexanone	50.000	39.991	20.0	93	0.000
55	P	Chlorobenzene	50.000	47.574	4.9	99	0.000

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017517.D
Acq On : 04 Feb 2016 15:18
Operator : ADC
Sample : WG556287-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 04 15:30:07 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	50.000	50.358	-0.7	98	0.000
57	C	Ethylbenzene	50.000	48.426	3.1#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	50.000	47.820	4.4	100	0.000
59	T	m-,p-Xylene	100.000	98.697	1.3	100	0.000
60	T	o-Xylene	50.000	48.477	3.0	101	0.000
61	T	Styrene	50.000	49.282	1.4	100	0.000
62	P	Bromoform	50.000	46.593	6.8	98	0.000
63	T	Isopropylbenzene	50.000	49.567	0.9	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	103	0.000
65	T	1,3,5-Trimethylbenzene	50.000	49.890	0.2	100	0.000
66	S	p-Bromofluorobenzene	25.000	25.380	-1.5	100	0.000
67	T	Bromobenzene	50.000	46.743	6.5	99	0.000
68	T	n-Propylbenzene	50.000	50.973	-1.9	100	0.000
69	P	1,1,2,2-Tetrachloroethane	50.000	43.479	13.0	97	0.000
70	T	2-Chlorotoluene	50.000	48.275	3.5	99	0.000
71	T	1,2,3-Trichloropropane	50.000	43.374	13.3	98	0.000
72	T	trans-1,4-Dichloro-2-Butene	50.000	44.472	11.1	93	0.000
73	T	1,2,4-Trimethylbenzene	50.000	49.711	0.6	99	0.000
74	T	4-Chlorotoluene	50.000	48.499	3.0	99	0.000
75	T	tert-Butylbenzene	50.000	48.436	3.1	101	0.000
76	T	sec-Butylbenzene	50.000	50.649	-1.3	100	0.000
77	T	p-Isopropyltoluene	50.000	51.128	-2.3	100	0.000
78	T	1,3-Dichlorobenzene	50.000	48.612	2.8	99	0.000
79	T	1,4-Dichlorobenzene	50.000	46.831	6.3	100	0.000
80	T	n-Butylbenzene	50.000	52.562	-5.1	100	0.000
81	T	1,2-Dichlorobenzene	50.000	46.255	7.5	99	0.000
82	T	1,2-Dibromo-3-Chloropropane	50.000	42.030	15.9	95	0.000
83	T	Hexachlorobutadiene	50.000	49.420	1.2	99	0.000
84	T	1,2,4-Trichlorobenzene	50.000	47.979	4.0	100	0.000
85	T	Naphthalene	50.000	45.018	10.0	99	0.000
86	T	1,2,3-Trichlorobenzene	50.000	46.193	7.6	99	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017574.D
Acq On : 05 Feb 2016 11:48
Operator : ADC
Sample : WG556406-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 05 12:00:23 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.121	96	398079	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	284511	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	147016	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.154	111	111392	25.8585 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.434%		
34) 1,2-Dichloroethane-d4	4.791	65	112131	25.9595 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.838%		
47) Toluene-d8	6.693	98	419330	26.1829 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.732%		
66) p-Bromofluorobenzene	8.711	95	147038	26.6890 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.756%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.030	85	327793	54.2743 ug/L	99
3) Chloromethane	1.143	50	304544	51.6777 ug/L	100
4) Vinyl Chloride	1.186	62	288756	50.6972 ug/L	100
5) 1,3-Butadiene	1.198	54	158921	33.1246 ug/L	98
6) Bromomethane	1.371	94	143895	44.8374 ug/L	99
7) Chloroethane	1.441	64	111573	44.4134 ug/L	95
8) Trichlorofluoromethane	1.525	101	355460	52.7135 ug/L	100
9) Diethyl ether	1.736	59	144753	44.8935 ug/L	99
10) 1,1-Dichloroethene	1.852	61	350180	52.4018 ug/L	98
11) Carbon Disulfide	1.866	76	576451	41.8400 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.881	101	207763	52.1385 ug/L	99
13) Iodomethane	1.947	142	314556	43.5343 ug/L	99
14) Acrolein	2.095	56	23995	47.0003 ug/L	99
15) Methylene Chloride	2.275	84	222202	47.8314 ug/L	98
16) Acetone	2.327	43	42576	50.1635 ug/L	100
17) trans-1,2-Dichloroethene	2.402	96	209790	49.0400 ug/L	99
18) Methyl acetate	2.434	43	124385	48.2211 ug/L #	99
19) Methyl Tert Butyl Ether	2.512	73	520167	47.0385 ug/L	99
20) 1,1-Dichloroethane	2.955	63	417990	49.5459 ug/L	99
21) Acrylonitrile	3.013	53	51499	47.2567 ug/L	100
22) Vinyl Acetate	3.256	86	18510	44.2030 ug/L	98
23) cis-1,2-Dichloroethene	3.543	96	233197	48.4137 ug/L	98
24) 2,2-Dichloropropane	3.670	77	314791	47.7819 ug/L	95
25) Cyclohexane	3.769	56	364282	47.0363 ug/L	98
26) Bromochloromethane	3.777	130	140614	49.6223 ug/L	100
27) Chloroform	3.908	83	398101	50.1219 ug/L	99
28) Carbon Tetrachloride	4.052	117	328453	50.8901 ug/L	99
30) 1,1,1-Trichloroethane	4.151	97	357681	50.2059 ug/L	99
31) 1,1-Dichloropropene	4.319	75	303312	49.8924 ug/L	98
32) 2-Butanone	4.339	43	64286	46.8560 ug/L	98
33) Benzene	4.626	78	881897	48.7204 ug/L	100
35) 1,2-Dichloroethane	4.869	62	273876	48.8131 ug/L	99
36) Methylcyclohexane	5.277	83	350592	47.0350 ug/L	98
37) Trichloroethene	5.303	130	242227	49.0229 ug/L	98
38) Dibromomethane	5.723	93	121537	50.8251 ug/L	99
39) 1,2-Dichloropropane	5.830	63	241871	48.6900 ug/L	100
40) Bromodichloromethane	5.920	83	305339	50.5405 ug/L	100
41) 1,4-Dioxane	6.131	88	2754	90.7479 ug/L	94
42) 2-Chloroethyl Vinyl Ether	6.511	63	98608	44.3005 ug/L	99
43) cis-1,3-Dichloropropene	6.528	75	346630	50.2468 ug/L	99
44) 4-Methyl-2-Pentanone	7.799	58	49316	41.9031 ug/L	99
45) trans-1,3-Dichloropropene	7.127	75	291152	50.5865 ug/L	100
48) Toluene	6.739	91	964440	48.9373 ug/L	100
49) Tetrachloroethene	7.069	166	256481	48.1860 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017574.D
Acq On : 05 Feb 2016 11:48
Operator : ADC
Sample : WG556406-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 05 12:00:23 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,1,2-Trichloroethane	7.260	97	165892	47.3624 ug/L	99
51) Dibromochloromethane	7.399	129	225424	48.9762 ug/L	100
52) 1,3-Dichloropropane	7.483	76	274908	47.1999 ug/L	97
53) 1,2-Dibromoethane	7.570	107	164766	47.3715 ug/L	100
54) 2-Hexanone	7.799	43	100241	42.9848 ug/L	99
55) Chlorobenzene	7.973	112	599215	47.9916 ug/L	99
56) 1-Chlorohexane	7.987	69	57851	50.3805 ug/L	94
57) Ethylbenzene	8.010	106	330127	49.1446 ug/L	98
58) 1,1,1,2-Tetrachloroethane	8.025	131	225793	48.6260 ug/L	99
59) m-,p-Xylene	8.112	106	810162	100.0988 ug/L	99
60) o-Xylene	8.375	106	390022	49.2893 ug/L	99
61) Styrene	8.407	104	636749	49.6020 ug/L	99
62) Bromoform	8.410	173	141362	47.2745 ug/L	99
63) Isopropylbenzene	8.563	105	1038358	50.2239 ug/L	99
65) 1,3,5-Trimethylbenzene	8.902	105	895891	51.0716 ug/L	100
67) Bromobenzene	8.763	156	266906	47.6209 ug/L	99
68) n-Propylbenzene	8.795	91	1221456	52.5124 ug/L	100
69) 1,1,2,2-Tetrachloroethane	8.835	83	181755	44.4074 ug/L	100
70) 2-Chlorotoluene	8.870	91	725587	50.3096 ug/L	99
71) 1,2,3-Trichloropropane	8.899	110	51237	46.6418 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.928	53	38365	44.2769 ug/L #	94
73) 1,2,4-Trimethylbenzene	9.102	105	895357	51.1598 ug/L	100
74) 4-Chlorotoluene	8.957	91	728739	49.8968 ug/L	99
75) tert-Butylbenzene	9.064	134	160593	48.7987 ug/L	98
76) sec-Butylbenzene	9.154	105	1107605	51.7956 ug/L	100
77) p-Isopropyltoluene	9.229	119	958623	52.1998 ug/L	100
78) 1,3-Dichlorobenzene	9.255	146	499725	49.1322 ug/L	100
79) 1,4-Dichlorobenzene	9.302	146	492479	46.9933 ug/L	100
80) n-Butylbenzene	9.432	91	877574	53.6492 ug/L	99
81) 1,2-Dichlorobenzene	9.504	146	469741	47.4274 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.881	75	32866	44.6109 ug/L	97
83) Hexachlorobutadiene	10.179	225	194104	47.9114 ug/L	100
84) 1,2,4-Trichlorobenzene	10.193	180	359080	48.0193 ug/L	99
85) Naphthalene	10.344	128	651779	47.2684 ug/L	100
86) 1,2,3-Trichlorobenzene	10.428	180	323542	46.7627 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017574.D
Acq On : 05 Feb 2016 11:48
Operator : ADC
Sample : WG556406-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 05 12:00:23 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

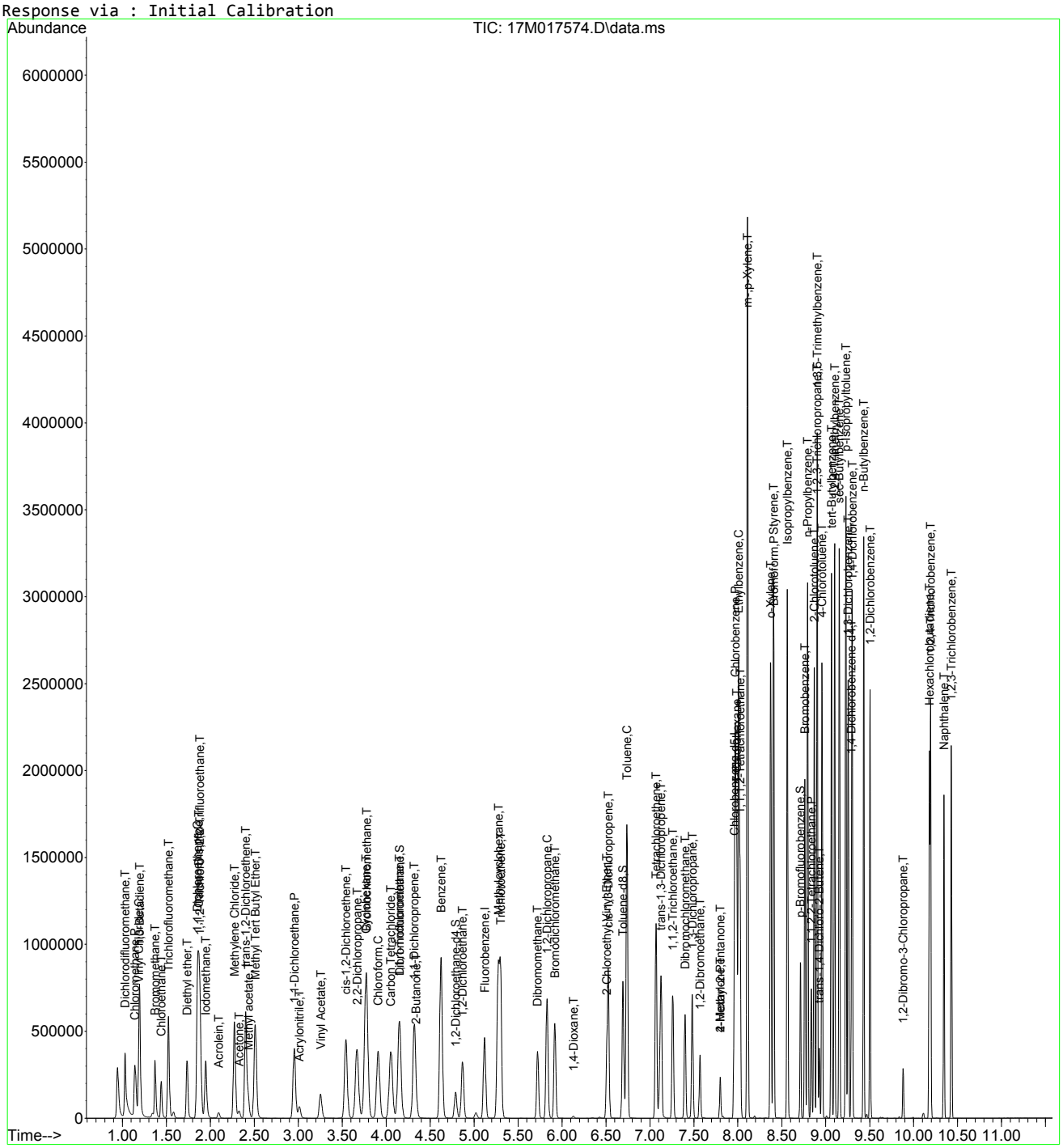

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017574.D
Acq On : 05 Feb 2016 11:48
Operator : ADC
Sample : WG556406-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 05 12:00:23 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	85	0.000
2	T	Dichlorodifluoromethane	0.379	0.412	-8.7	86	0.000
3	P	Chloromethane	0.370	0.383	-3.5	86	0.000
4	C	Vinyl Chloride	0.358	0.363	-1.4#	84	0.000
5	T	1,3-Butadiene	0.301	0.200	33.6#	53	0.000
6	T	Bromomethane	0.232	0.181	22.0	74	0.000
7	T	Chloroethane	0.158	0.140	11.4	81	0.000
8	T	Trichlorofluoromethane	0.423	0.446	-5.4	84	0.000
9	T	Diethyl ether	0.202	0.182	9.9	79	0.000
10	C	1,1-Dichloroethene	0.420	0.440	-4.8#	90	0.000
11	T	Carbon Disulfide	0.865	0.724	16.3	73	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.250	0.261	-4.4	88	0.000
13	T	Iodomethane	0.319	0.395	-23.8	76	0.000
14	T	Acrolein	0.032	0.030	6.3	86	0.000
15	T	Methylene Chloride	0.292	0.279	4.5	86	0.000
16	T	Acetone	0.056	0.053	5.4	100	0.000
17	T	trans-1,2-Dichloroethene	0.269	0.264	1.9	85	0.000
18	T	Methyl acetate	0.162	0.156	3.7	82	0.000
19	T	Methyl Tert Butyl Ether	0.694	0.653	5.9	87	0.000
20	P	1,1-Dichloroethane	0.530	0.525	0.9	87	0.000
21	T	Acrylonitrile	0.068	0.065	4.4	87	0.000
22	T	Vinyl Acetate	0.023	0.023	0.0	91	0.000
23	T	cis-1,2-Dichloroethene	0.302	0.293	3.0	85	0.000
24	T	2,2-Dichloropropane	0.332	0.395	-19.0	81	0.000
25	T	Cyclohexane	0.486	0.458	5.8	80	0.000
26	T	Bromochloromethane	0.178	0.177	0.6	85	0.000
27	C	Chloroform	0.499	0.500	-0.2#	86	0.000
28	T	Carbon Tetrachloride	0.405	0.413	-2.0	85	0.000
29	S	Dibromofluoromethane	0.271	0.280	-3.3	86	0.000
30	T	1,1,1-Trichloroethane	0.447	0.449	-0.4	86	0.000
31	T	1,1-Dichloropropene	0.382	0.381	0.3	86	0.000
32	T	2-Butanone	0.086	0.081	5.8	92	0.000
33	T	Benzene	1.137	1.108	2.6	86	0.000
34	S	1,2-Dichloroethane-d4	0.271	0.282	-4.1	90	0.000
35	T	1,2-Dichloroethane	0.352	0.344	2.3	88	0.000
36	T	Methylcyclohexane	0.468	0.440	6.0	79	0.000
37	T	Trichloroethene	0.310	0.304	1.9	87	0.000
38	T	Dibromomethane	0.150	0.153	-2.0	88	0.000
39	C	1,2-Dichloropropane	0.312	0.304	2.6#	86	0.000
40	T	Bromodichloromethane	0.379	0.384	-1.3	86	0.000
41	T	1,4-Dioxane	0.002	0.002	0.0	80	0.000
42	T	2-Chloroethyl Vinyl Ether	0.140	0.124	11.4	79	0.000
43	T	cis-1,3-Dichloropropene	0.433	0.435	-0.5	85	0.000
44	T	4-Methyl-2-Pentanone	0.074	0.062	16.2	83	0.000
45	T	trans-1,3-Dichloropropene	0.361	0.366	-1.4	85	0.000
46	I	Chlorobenzene-d5	1.000	1.000	0.0	86	0.000
47	S	Toluene-d8	1.407	1.474	-4.8	87	0.000
48	C	Toluene	1.732	1.695	2.1#	85	0.000
49	T	Tetrachloroethene	0.468	0.451	3.6	84	0.000
50	T	1,1,2-Trichloroethane	0.308	0.292	5.2	86	0.000
51	T	Dibromochloromethane	0.404	0.396	2.0	85	0.000
52	T	1,3-Dichloropropane	0.512	0.483	5.7	87	0.000
53	T	1,2-Dibromoethane	0.306	0.290	5.2	85	0.000
54	T	2-Hexanone	0.205	0.176	14.1	84	0.000
55	P	Chlorobenzene	1.097	1.053	4.0	84	0.000

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017574.D
Acq On : 05 Feb 2016 11:48
Operator : ADC
Sample : WG556406-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 05 12:00:23 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	0.101	0.102	-1.0	82	0.000
57	C	Ethylbenzene	0.590	0.580	1.7#	85	0.000
58	T	1,1,1,2-Tetrachloroethane	0.408	0.397	2.7	85	0.000
59	T	m-,p-Xylene	0.711	0.712	-0.1	85	0.000
60	T	o-Xylene	0.695	0.685	1.4	85	0.000
61	T	Styrene	1.128	1.119	0.8	84	0.000
62	P	Bromoform	0.263	0.248	5.7	83	0.000
63	T	Isopropylbenzene	1.817	1.825	-0.4	85	0.000
64	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	84	0.000
65	T	1,3,5-Trimethylbenzene	2.983	3.047	-2.1	85	0.000
66	S	p-Bromofluorobenzene	0.937	1.000	-6.7	86	0.000
67	T	Bromobenzene	0.953	0.908	4.7	83	0.000
68	T	n-Propylbenzene	3.955	4.154	-5.0	85	0.000
69	P	1,1,2,2-Tetrachloroethane	0.696	0.618	11.2	82	0.000
70	T	2-Chlorotoluene	2.453	2.468	-0.6	85	0.000
71	T	1,2,3-Trichloropropane	0.187	0.174	7.0	87	0.000
72	T	trans-1,4-Dichloro-2-Butene	0.147	0.130	11.6	76	0.000
73	T	1,2,4-Trimethylbenzene	2.976	3.045	-2.3	84	0.000
74	T	4-Chlorotoluene	2.484	2.478	0.2	84	0.000
75	T	tert-Butylbenzene	0.560	0.546	2.5	84	0.000
76	T	sec-Butylbenzene	3.636	3.767	-3.6	84	0.000
77	T	p-Isopropyltoluene	3.123	3.260	-4.4	84	0.000
78	T	1,3-Dichlorobenzene	1.730	1.700	1.7	83	0.000
79	T	1,4-Dichlorobenzene	1.782	1.675	6.0	83	0.000
80	T	n-Butylbenzene	2.782	2.985	-7.3	84	0.000
81	T	1,2-Dichlorobenzene	1.684	1.598	5.1	83	0.000
82	T	1,2-Dibromo-3-Chloropropane	0.125	0.112	10.4	83	0.000
83	T	Hexachlorobutadiene	0.689	0.660	4.2	79	0.000
84	T	1,2,4-Trichlorobenzene	1.272	1.221	4.0	82	0.000
85	T	Naphthalene	2.345	2.217	5.5	85	0.000
86	T	1,2,3-Trichlorobenzene	1.177	1.100	6.5	83	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017574.D
Acq On : 05 Feb 2016 11:48
Operator : ADC
Sample : WG556406-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 05 12:00:23 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	85	0.000
2	T	Dichlorodifluoromethane	50.000	54.274	-8.5	86	0.000
3	P	Chloromethane	50.000	51.678	-3.4	86	0.000
4	C	Vinyl Chloride	50.000	50.697	-1.4#	84	0.000
5	T	1,3-Butadiene	50.000	33.125	33.8#	53	0.000
6	T	Bromomethane	50.000	44.837	10.3	74	0.000
7	T	Chloroethane	50.000	44.413	11.2	81	0.000
8	T	Trichlorofluoromethane	50.000	52.714	-5.4	84	0.000
9	T	Diethyl ether	50.000	44.894	10.2	79	0.000
10	C	1,1-Dichloroethene	50.000	52.402	-4.8#	90	0.000
11	T	Carbon Disulfide	50.000	41.840	16.3	73	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	52.138	-4.3	88	0.000
13	T	Iodomethane	50.000	43.534	12.9	76	0.000
14	T	Acrolein	50.000	47.000	6.0	86	0.000
15	T	Methylene Chloride	50.000	47.831	4.3	86	0.000
16	T	Acetone	50.000	50.163	-0.3	100	0.000
17	T	trans-1,2-Dichloroethene	50.000	49.040	1.9	85	0.000
18	T	Methyl acetate	50.000	48.221	3.6	82	0.000
19	T	Methyl Tert Butyl Ether	50.000	47.039	5.9	87	0.000
20	P	1,1-Dichloroethane	50.000	49.546	0.9	87	0.000
21	T	Acrylonitrile	50.000	47.257	5.5	87	0.000
22	T	Vinyl Acetate	50.000	44.203	11.6	91	0.000
23	T	cis-1,2-Dichloroethene	50.000	48.414	3.2	85	0.000
24	T	2,2-Dichloropropane	50.000	47.782	4.4	81	0.000
25	T	Cyclohexane	50.000	47.036	5.9	80	0.000
26	T	Bromochloromethane	50.000	49.622	0.8	85	0.000
27	C	Chloroform	50.000	50.122	-0.2#	86	0.000
28	T	Carbon Tetrachloride	50.000	50.890	-1.8	85	0.000
29	S	Dibromofluoromethane	25.000	25.858	-3.4	86	0.000
30	T	1,1,1-Trichloroethane	50.000	50.206	-0.4	86	0.000
31	T	1,1-Dichloropropene	50.000	49.892	0.2	86	0.000
32	T	2-Butanone	50.000	46.856	6.3	92	0.000
33	T	Benzene	50.000	48.720	2.6	86	0.000
34	S	1,2-Dichloroethane-d4	25.000	25.959	-3.8	90	0.000
35	T	1,2-Dichloroethane	50.000	48.813	2.4	88	0.000
36	T	Methylcyclohexane	50.000	47.035	5.9	79	0.000
37	T	Trichloroethene	50.000	49.023	2.0	87	0.000
38	T	Dibromomethane	50.000	50.825	-1.7	88	0.000
39	C	1,2-Dichloropropane	50.000	48.690	2.6#	86	0.000
40	T	Bromodichloromethane	50.000	50.541	-1.1	86	0.000
41	T	1,4-Dioxane	100.000	90.748	9.3	80	0.000
42	T	2-Chloroethyl Vinyl Ether	50.000	44.301	11.4	79	0.000
43	T	cis-1,3-Dichloropropene	50.000	50.247	-0.5	85	0.000
44	T	4-Methyl-2-Pentanone	50.000	41.903	16.2	83	0.000
45	T	trans-1,3-Dichloropropene	50.000	50.587	-1.2	85	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	86	0.000
47	S	Toluene-d8	25.000	26.183	-4.7	87	0.000
48	C	Toluene	50.000	48.937	2.1#	85	0.000
49	T	Tetrachloroethene	50.000	48.186	3.6	84	0.000
50	T	1,1,2-Trichloroethane	50.000	47.362	5.3	86	0.000
51	T	Dibromochloromethane	50.000	48.976	2.0	85	0.000
52	T	1,3-Dichloropropane	50.000	47.200	5.6	87	0.000
53	T	1,2-Dibromoethane	50.000	47.372	5.3	85	0.000
54	T	2-Hexanone	50.000	42.985	14.0	84	0.000
55	P	Chlorobenzene	50.000	47.992	4.0	84	0.000

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017574.D
Acq On : 05 Feb 2016 11:48
Operator : ADC
Sample : WG556406-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 05 12:00:23 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	50.000	50.381	-0.8	82	0.000
57	C	Ethylbenzene	50.000	49.145	1.7#	85	0.000
58	T	1,1,1,2-Tetrachloroethane	50.000	48.626	2.7	85	0.000
59	T	m-,p-Xylene	100.000	100.099	-0.1	85	0.000
60	T	o-Xylene	50.000	49.289	1.4	85	0.000
61	T	Styrene	50.000	49.602	0.8	84	0.000
62	P	Bromoform	50.000	47.275	5.5	83	0.000
63	T	Isopropylbenzene	50.000	50.224	-0.4	85	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	84	0.000
65	T	1,3,5-Trimethylbenzene	50.000	51.072	-2.1	85	0.000
66	S	p-Bromofluorobenzene	25.000	26.689	-6.8	86	0.000
67	T	Bromobenzene	50.000	47.621	4.8	83	0.000
68	T	n-Propylbenzene	50.000	52.512	-5.0	85	0.000
69	P	1,1,2,2-Tetrachloroethane	50.000	44.407	11.2	82	0.000
70	T	2-Chlorotoluene	50.000	50.310	-0.6	85	0.000
71	T	1,2,3-Trichloropropane	50.000	46.642	6.7	87	0.000
72	T	trans-1,4-Dichloro-2-Butene	50.000	44.277	11.4	76	0.000
73	T	1,2,4-Trimethylbenzene	50.000	51.160	-2.3	84	0.000
74	T	4-Chlorotoluene	50.000	49.897	0.2	84	0.000
75	T	tert-Butylbenzene	50.000	48.799	2.4	84	0.000
76	T	sec-Butylbenzene	50.000	51.796	-3.6	84	0.000
77	T	p-Isopropyltoluene	50.000	52.200	-4.4	84	0.000
78	T	1,3-Dichlorobenzene	50.000	49.132	1.7	83	0.000
79	T	1,4-Dichlorobenzene	50.000	46.993	6.0	83	0.000
80	T	n-Butylbenzene	50.000	53.649	-7.3	84	0.000
81	T	1,2-Dichlorobenzene	50.000	47.427	5.1	83	0.000
82	T	1,2-Dibromo-3-Chloropropane	50.000	44.611	10.8	83	0.000
83	T	Hexachlorobutadiene	50.000	47.911	4.2	79	0.000
84	T	1,2,4-Trichlorobenzene	50.000	48.019	4.0	82	0.000
85	T	Naphthalene	50.000	47.268	5.5	85	0.000
86	T	1,2,3-Trichlorobenzene	50.000	46.763	6.5	83	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017628.D
Acq On : 09 Feb 2016 11:31
Operator : ADC
Sample : WG556768-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 09 11:43:11 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	388054	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	280325	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.296	152	151348	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	107466	25.5916 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.366%		
34) 1,2-Dichloroethane-d4	4.791	65	108566	25.7835 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.134%		
47) Toluene-d8	6.693	98	398691	25.2660 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.064%		
66) p-Bromofluorobenzene	8.711	95	137950	24.3227 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.291%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.030	85	314360	53.3948 ug/L	99
3) Chloromethane	1.143	50	295852	51.4997 ug/L	100
4) Vinyl Chloride	1.186	62	267971	48.2634 ug/L	100
5) 1,3-Butadiene	1.195	54	138326	29.5767 ug/L	98
6) Bromomethane	1.371	94	128549	41.0269 ug/L	99
7) Chloroethane	1.441	64	102726	41.9481 ug/L	94
8) Trichlorofluoromethane	1.522	101	331266	50.3947 ug/L	99
9) Diethyl ether	1.736	59	133866	42.5896 ug/L	99
10) 1,1-Dichloroethene	1.849	61	337518	51.8118 ug/L	98
11) Carbon Disulfide	1.864	76	564584	42.0373 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.881	101	199708	51.4118 ug/L	99
13) Iodomethane	1.948	142	292957	41.6562 ug/L	98
14) Acrolein	2.095	56	19990	40.1671 ug/L	100
15) Methylene Chloride	2.275	84	210902	46.5718 ug/L	96
16) Acetone	2.327	43	41451	50.0972 ug/L	99
17) trans-1,2-Dichloroethene	2.402	96	199944	47.9459 ug/L	97
18) Methyl acetate	2.431	43	121414	48.2853 ug/L #	99
19) Methyl Tert Butyl Ether	2.512	73	493170	45.7493 ug/L	99
20) 1,1-Dichloroethane	2.955	63	400412	48.6885 ug/L	99
21) Acrylonitrile	3.016	53	51404	48.3881 ug/L	99
22) Vinyl Acetate	3.253	86	20686	50.0627 ug/L	93
23) cis-1,2-Dichloroethene	3.540	96	220589	46.9793 ug/L	96
24) 2,2-Dichloropropane	3.668	77	305477	47.5704 ug/L	97
25) Cyclohexane	3.766	56	366506	48.5460 ug/L	98
26) Bromochloromethane	3.780	130	133835	48.4501 ug/L	100
27) Chloroform	3.911	83	380559	49.1511 ug/L	99
28) Carbon Tetrachloride	4.055	117	312518	49.6720 ug/L	99
30) 1,1,1-Trichloroethane	4.151	97	341611	49.1890 ug/L	99
31) 1,1-Dichloropropene	4.322	75	289815	48.9038 ug/L	98
32) 2-Butanone	4.342	43	62460	46.7011 ug/L	97
33) Benzene	4.623	78	836902	47.4291 ug/L	99
35) 1,2-Dichloroethane	4.869	62	263718	48.2169 ug/L	99
36) Methylcyclohexane	5.277	83	358427	49.3284 ug/L	98
37) Trichloroethene	5.303	130	228627	47.4659 ug/L	97
38) Dibromomethane	5.723	93	115895	49.7177 ug/L	100
39) 1,2-Dichloropropane	5.830	63	229753	47.4454 ug/L	100
40) Bromodichloromethane	5.920	83	291584	49.5106 ug/L	100
41) 1,4-Dioxane	6.129	88	2983	100.8330 ug/L	96
42) 2-Chloroethyl Vinyl Ether	6.511	63	105331	48.5434 ug/L	100
43) cis-1,3-Dichloropropene	6.528	75	333829	49.6414 ug/L	99
44) 4-Methyl-2-Pentanone	7.802	58	46803	40.7952 ug/L	98
45) trans-1,3-Dichloropropene	7.127	75	282686	50.3845 ug/L	99
48) Toluene	6.739	91	913027	47.0203 ug/L	100
49) Tetrachloroethene	7.072	166	243156	46.3647 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017628.D
Acq On : 09 Feb 2016 11:31
Operator : ADC
Sample : WG556768-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 09 11:43:11 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,1,2-Trichloroethane	7.261	97	156717	45.4110 ug/L	99
51) Dibromochloromethane	7.400	129	217248	47.9047 ug/L	99
52) 1,3-Dichloropropane	7.484	76	262816	45.7976 ug/L	97
53) 1,2-Dibromoethane	7.570	107	156917	45.7886 ug/L	100
54) 2-Hexanone	7.802	43	96450	41.9768 ug/L	98
55) Chlorobenzene	7.973	112	569536	46.2957 ug/L	98
56) 1-Chlorohexane	7.987	69	60275	53.2754 ug/L	89
57) Ethylbenzene	8.011	106	313525	47.3701 ug/L	98
58) 1,1,1,2-Tetrachloroethane	8.028	131	213486	46.6621 ug/L	99
59) m-,p-Xylene	8.112	106	758930	95.1691 ug/L	99
60) o-Xylene	8.375	106	366187	46.9682 ug/L	100
61) Styrene	8.407	104	605451	47.8682 ug/L	99
62) Bromoform	8.410	173	136590	46.3608 ug/L	99
63) Isopropylbenzene	8.564	105	978964	48.0581 ug/L	100
65) 1,3,5-Trimethylbenzene	8.902	105	850223	47.0809 ug/L	99
67) Bromobenzene	8.763	156	253658	43.9619 ug/L	98
68) n-Propylbenzene	8.795	91	1166932	48.7323 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.836	83	176111	41.7969 ug/L	99
70) 2-Chlorotoluene	8.868	91	689643	46.4488 ug/L	99
71) 1,2,3-Trichloropropane	8.899	110	48609	42.9829 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.925	53	42956	48.1564 ug/L #	95
73) 1,2,4-Trimethylbenzene	9.102	105	854186	47.4103 ug/L	100
74) 4-Chlorotoluene	8.957	91	707209	47.0366 ug/L	99
75) tert-Butylbenzene	9.064	134	152383	44.9786 ug/L	98
76) sec-Butylbenzene	9.154	105	1059423	48.1244 ug/L	100
77) p-Isopropyltoluene	9.229	119	917067	48.5076 ug/L	100
78) 1,3-Dichlorobenzene	9.256	146	483610	46.1869 ug/L	100
79) 1,4-Dichlorobenzene	9.302	146	480304	44.5197 ug/L	100
80) n-Butylbenzene	9.432	91	867222	51.4989 ug/L	99
81) 1,2-Dichlorobenzene	9.505	146	449279	44.0631 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.881	75	32164	42.4084 ug/L	97
83) Hexachlorobutadiene	10.179	225	186354	44.6819 ug/L	99
84) 1,2,4-Trichlorobenzene	10.194	180	359446	46.6924 ug/L	100
85) Naphthalene	10.344	128	630394	44.4090 ug/L	100
86) 1,2,3-Trichlorobenzene	10.428	180	319328	44.8326 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017628.D
Acq On : 09 Feb 2016 11:31
Operator : ADC
Sample : WG556768-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 09 11:43:11 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

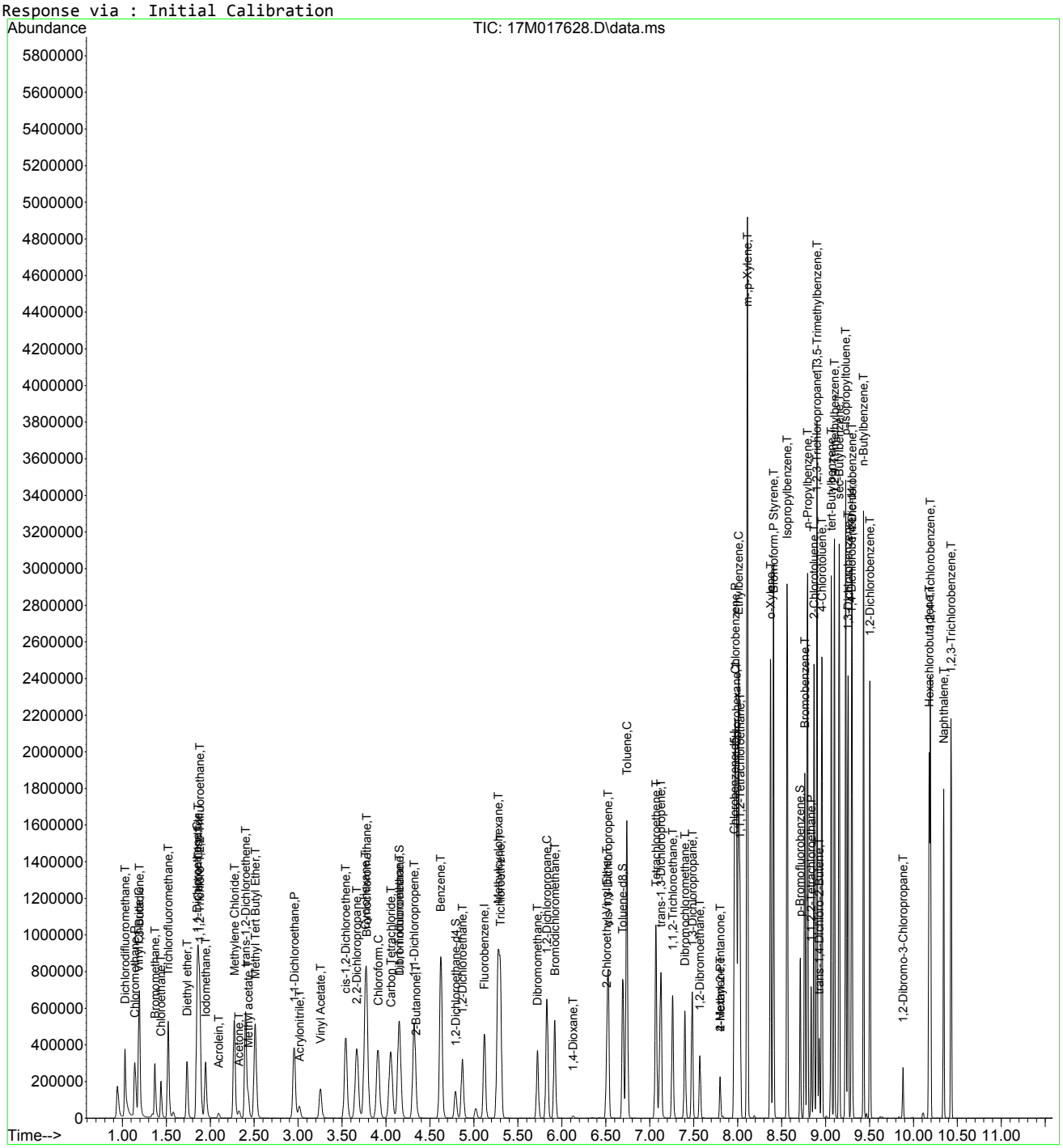

8260VMS.M Tue Feb 09 11:43:12 2016 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017628.D
Acq On : 09 Feb 2016 11:31
Operator : ADC
Sample : WG556768-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 09 11:43:11 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	83	0.000
2	T	Dichlorodifluoromethane	0.379	0.405	-6.9	82	0.000
3	P	Chloromethane	0.370	0.381	-3.0	84	0.000
4	C	Vinyl Chloride	0.358	0.345	3.6#	78	0.000
5	T	1,3-Butadiene	0.301	0.178	40.9#	46#	0.000
6	T	Bromomethane	0.232	0.166	28.4#	66	0.000
7	T	Chloroethane	0.158	0.132	16.5	75	0.000
8	T	Trichlorofluoromethane	0.423	0.427	-0.9	79	0.000
9	T	Diethyl ether	0.202	0.172	14.9	73	0.000
10	C	1,1-Dichloroethene	0.420	0.435	-3.6#	87	0.000
11	T	Carbon Disulfide	0.865	0.727	16.0	71	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.250	0.257	-2.8	85	0.000
13	T	Iodomethane	0.319	0.377	-18.2	71	0.000
14	T	Acrolein	0.032	0.026	18.8	72	0.000
15	T	Methylene Chloride	0.292	0.272	6.8	81	0.000
16	T	Acetone	0.056	0.053	5.4	98	0.000
17	T	trans-1,2-Dichloroethene	0.269	0.258	4.1	81	0.000
18	T	Methyl acetate	0.162	0.156	3.7	80	0.000
19	T	Methyl Tert Butyl Ether	0.694	0.635	8.5	82	0.000
20	P	1,1-Dichloroethane	0.530	0.516	2.6	83	0.000
21	T	Acrylonitrile	0.068	0.066	2.9	86	0.000
22	T	Vinyl Acetate	0.023	0.027	-17.4	102	0.000
23	T	cis-1,2-Dichloroethene	0.302	0.284	6.0	80	0.000
24	T	2,2-Dichloropropane	0.332	0.394	-18.7	79	0.000
25	T	Cyclohexane	0.486	0.472	2.9	80	0.000
26	T	Bromochloromethane	0.178	0.172	3.4	81	0.000
27	C	Chloroform	0.499	0.490	1.8#	82	0.000
28	T	Carbon Tetrachloride	0.405	0.403	0.5	81	0.000
29	S	Dibromofluoromethane	0.271	0.277	-2.2	83	0.000
30	T	1,1,1-Trichloroethane	0.447	0.440	1.6	82	0.000
31	T	1,1-Dichloropropene	0.382	0.373	2.4	82	0.000
32	T	2-Butanone	0.086	0.080	7.0	89	0.000
33	T	Benzene	1.137	1.078	5.2	81	0.000
34	S	1,2-Dichloroethane-d4	0.271	0.280	-3.3	87	0.000
35	T	1,2-Dichloroethane	0.352	0.340	3.4	85	0.000
36	T	Methylcyclohexane	0.468	0.462	1.3	81	0.000
37	T	Trichloroethene	0.310	0.295	4.8	82	0.000
38	T	Dibromomethane	0.150	0.149	0.7	84	0.000
39	C	1,2-Dichloropropane	0.312	0.296	5.1#	82	0.000
40	T	Bromodichloromethane	0.379	0.376	0.8	82	0.000
41	T	1,4-Dioxane	0.002	0.002	0.0	87	0.000
42	T	2-Chloroethyl Vinyl Ether	0.140	0.136	2.9	85	0.000
43	T	cis-1,3-Dichloropropene	0.433	0.430	0.7	82	0.000
44	T	4-Methyl-2-Pentanone	0.074	0.060	18.9	78	0.000
45	T	trans-1,3-Dichloropropene	0.361	0.364	-0.8	83	0.000
46	I	Chlorobenzene-d5	1.000	1.000	0.0	84	0.000
47	S	Toluene-d8	1.407	1.422	-1.1	83	0.000
48	C	Toluene	1.732	1.629	5.9#	81	0.000
49	T	Tetrachloroethene	0.468	0.434	7.3	79	0.000
50	T	1,1,2-Trichloroethane	0.308	0.280	9.1	81	0.000
51	T	Dibromochloromethane	0.404	0.387	4.2	82	0.000
52	T	1,3-Dichloropropane	0.512	0.469	8.4	83	0.000
53	T	1,2-Dibromoethane	0.306	0.280	8.5	81	0.000
54	T	2-Hexanone	0.205	0.172	16.1	81	0.000
55	P	Chlorobenzene	1.097	1.016	7.4	80	0.000

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017628.D
Acq On : 09 Feb 2016 11:31
Operator : ADC
Sample : WG556768-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 09 11:43:11 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	0.101	0.108	-6.9	86	0.000
57	C	Ethylbenzene	0.590	0.559	5.3#	81	0.000
58	T	1,1,1,2-Tetrachloroethane	0.408	0.381	6.6	80	0.000
59	T	m-,p-Xylene	0.711	0.677	4.8	79	0.000
60	T	o-Xylene	0.695	0.653	6.0	80	0.000
61	T	Styrene	1.128	1.080	4.3	80	0.000
62	P	Bromoform	0.263	0.244	7.2	80	0.000
63	T	Isopropylbenzene	1.817	1.746	3.9	80	0.000
64	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	87	0.000
65	T	1,3,5-Trimethylbenzene	2.983	2.809	5.8	80	0.000
66	S	p-Bromofluorobenzene	0.937	0.911	2.8	81	0.000
67	T	Bromobenzene	0.953	0.838	12.1	79	0.000
68	T	n-Propylbenzene	3.955	3.855	2.5	81	0.000
69	P	1,1,2,2-Tetrachloroethane	0.696	0.582	16.4	79	0.000
70	T	2-Chlorotoluene	2.453	2.278	7.1	81	0.000
71	T	1,2,3-Trichloropropane	0.187	0.161	13.9	83	0.000
72	T	trans-1,4-Dichloro-2-Butene	0.147	0.142	3.4	85	0.000
73	T	1,2,4-Trimethylbenzene	2.976	2.822	5.2	80	0.000
74	T	4-Chlorotoluene	2.484	2.336	6.0	81	0.000
75	T	tert-Butylbenzene	0.560	0.503	10.2	79	0.000
76	T	sec-Butylbenzene	3.636	3.500	3.7	80	0.000
77	T	p-Isopropyltoluene	3.123	3.030	3.0	80	0.000
78	T	1,3-Dichlorobenzene	1.730	1.598	7.6	80	0.000
79	T	1,4-Dichlorobenzene	1.782	1.587	10.9	81	0.000
80	T	n-Butylbenzene	2.782	2.865	-3.0	83	0.000
81	T	1,2-Dichlorobenzene	1.684	1.484	11.9	80	0.000
82	T	1,2-Dibromo-3-Chloropropane	0.125	0.106	15.2	81	0.000
83	T	Hexachlorobutadiene	0.689	0.616	10.6	76	0.000
84	T	1,2,4-Trichlorobenzene	1.272	1.187	6.7	83	0.000
85	T	Naphthalene	2.345	2.083	11.2	83	0.000
86	T	1,2,3-Trichlorobenzene	1.177	1.055	10.4	82	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017628.D
Acq On : 09 Feb 2016 11:31
Operator : ADC
Sample : WG556768-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 09 11:43:11 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	83	0.000
2	T	Dichlorodifluoromethane	50.000	53.395	-6.8	82	0.000
3	P	Chloromethane	50.000	51.500	-3.0	84	0.000
4	C	Vinyl Chloride	50.000	48.263	3.5#	78	0.000
5	T	1,3-Butadiene	50.000	29.577	40.8#	46	0.000
6	T	Bromomethane	50.000	41.027	17.9	66	0.000
7	T	Chloroethane	50.000	41.948	16.1	75	0.000
8	T	Trichlorofluoromethane	50.000	50.395	-0.8	79	0.000
9	T	Diethyl ether	50.000	42.590	14.8	73	0.000
10	C	1,1-Dichloroethene	50.000	51.812	-3.6#	87	0.000
11	T	Carbon Disulfide	50.000	42.037	15.9	71	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	51.412	-2.8	85	0.000
13	T	Iodomethane	50.000	41.656	16.7	71	0.000
14	T	Acrolein	50.000	40.167	19.7	72	0.000
15	T	Methylene Chloride	50.000	46.572	6.9	81	0.000
16	T	Acetone	50.000	50.097	-0.2	98	0.000
17	T	trans-1,2-Dichloroethene	50.000	47.946	4.1	81	0.000
18	T	Methyl acetate	50.000	48.285	3.4	80	0.000
19	T	Methyl Tert Butyl Ether	50.000	45.749	8.5	82	0.000
20	P	1,1-Dichloroethane	50.000	48.688	2.6	83	0.000
21	T	Acrylonitrile	50.000	48.388	3.2	86	0.000
22	T	Vinyl Acetate	50.000	50.063	-0.1	102	0.000
23	T	cis-1,2-Dichloroethene	50.000	46.979	6.0	80	0.000
24	T	2,2-Dichloropropane	50.000	47.570	4.9	79	0.000
25	T	Cyclohexane	50.000	48.546	2.9	80	0.000
26	T	Bromochloromethane	50.000	48.450	3.1	81	0.000
27	C	Chloroform	50.000	49.151	1.7#	82	0.000
28	T	Carbon Tetrachloride	50.000	49.672	0.7	81	0.000
29	S	Dibromofluoromethane	25.000	25.592	-2.4	83	0.000
30	T	1,1,1-Trichloroethane	50.000	49.189	1.6	82	0.000
31	T	1,1-Dichloropropene	50.000	48.904	2.2	82	0.000
32	T	2-Butanone	50.000	46.701	6.6	89	0.000
33	T	Benzene	50.000	47.429	5.1	81	0.000
34	S	1,2-Dichloroethane-d4	25.000	25.783	-3.1	87	0.000
35	T	1,2-Dichloroethane	50.000	48.217	3.6	85	0.000
36	T	Methylcyclohexane	50.000	49.328	1.3	81	0.000
37	T	Trichloroethene	50.000	47.466	5.1	82	0.000
38	T	Dibromomethane	50.000	49.718	0.6	84	0.000
39	C	1,2-Dichloropropane	50.000	47.445	5.1#	82	0.000
40	T	Bromodichloromethane	50.000	49.511	1.0	82	0.000
41	T	1,4-Dioxane	100.000	100.833	-0.8	87	0.000
42	T	2-Chloroethyl Vinyl Ether	50.000	48.543	2.9	85	0.000
43	T	cis-1,3-Dichloropropene	50.000	49.641	0.7	82	0.000
44	T	4-Methyl-2-Pentanone	50.000	40.795	18.4	78	0.000
45	T	trans-1,3-Dichloropropene	50.000	50.384	-0.8	83	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	84	0.000
47	S	Toluene-d8	25.000	25.266	-1.1	83	0.000
48	C	Toluene	50.000	47.020	6.0#	81	0.000
49	T	Tetrachloroethene	50.000	46.365	7.3	79	0.000
50	T	1,1,2-Trichloroethane	50.000	45.411	9.2	81	0.000
51	T	Dibromochloromethane	50.000	47.905	4.2	82	0.000
52	T	1,3-Dichloropropane	50.000	45.798	8.4	83	0.000
53	T	1,2-Dibromoethane	50.000	45.789	8.4	81	0.000
54	T	2-Hexanone	50.000	41.977	16.0	81	0.000
55	P	Chlorobenzene	50.000	46.296	7.4	80	0.000

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017628.D
Acq On : 09 Feb 2016 11:31
Operator : ADC
Sample : WG556768-02 50ug/L CCV
Misc : 1,1 STD74444
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 09 11:43:11 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	50.000	53.275	-6.5	86	0.000
57	C	Ethylbenzene	50.000	47.370	5.3#	81	0.000
58	T	1,1,1,2-Tetrachloroethane	50.000	46.662	6.7	80	0.000
59	T	m-,p-Xylene	100.000	95.169	4.8	79	0.000
60	T	o-Xylene	50.000	46.968	6.1	80	0.000
61	T	Styrene	50.000	47.868	4.3	80	0.000
62	P	Bromoform	50.000	46.361	7.3	80	0.000
63	T	Isopropylbenzene	50.000	48.058	3.9	80	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	87	0.000
65	T	1,3,5-Trimethylbenzene	50.000	47.081	5.8	80	0.000
66	S	p-Bromofluorobenzene	25.000	24.323	2.7	81	0.000
67	T	Bromobenzene	50.000	43.962	12.1	79	0.000
68	T	n-Propylbenzene	50.000	48.732	2.5	81	0.000
69	P	1,1,2,2-Tetrachloroethane	50.000	41.797	16.4	79	0.000
70	T	2-Chlorotoluene	50.000	46.449	7.1	81	0.000
71	T	1,2,3-Trichloropropane	50.000	42.983	14.0	83	0.000
72	T	trans-1,4-Dichloro-2-Butene	50.000	48.156	3.7	85	0.000
73	T	1,2,4-Trimethylbenzene	50.000	47.410	5.2	80	0.000
74	T	4-Chlorotoluene	50.000	47.037	5.9	81	0.000
75	T	tert-Butylbenzene	50.000	44.979	10.0	79	0.000
76	T	sec-Butylbenzene	50.000	48.124	3.8	80	0.000
77	T	p-Isopropyltoluene	50.000	48.508	3.0	80	0.000
78	T	1,3-Dichlorobenzene	50.000	46.187	7.6	80	0.000
79	T	1,4-Dichlorobenzene	50.000	44.520	11.0	81	0.000
80	T	n-Butylbenzene	50.000	51.499	-3.0	83	0.000
81	T	1,2-Dichlorobenzene	50.000	44.063	11.9	80	0.000
82	T	1,2-Dibromo-3-Chloropropane	50.000	42.408	15.2	81	0.000
83	T	Hexachlorobutadiene	50.000	44.682	10.6	76	0.000
84	T	1,2,4-Trichlorobenzene	50.000	46.692	6.6	83	0.000
85	T	Naphthalene	50.000	44.409	11.2	83	0.000
86	T	1,2,3-Trichlorobenzene	50.000	44.833	10.3	82	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

2.1.1.5 Raw QC Data

Data Path : D:\MassHunter\GCMS\1\data\012116\
Data File : 17M017419.D
Acq On : 21 Jan 2016 15:25
Operator : ADC
Sample : WG554589-01 50ng BFB STD 8260
Misc : 1,1 STD73676
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
Last Update : Wed Jan 27 12:15:43 2016

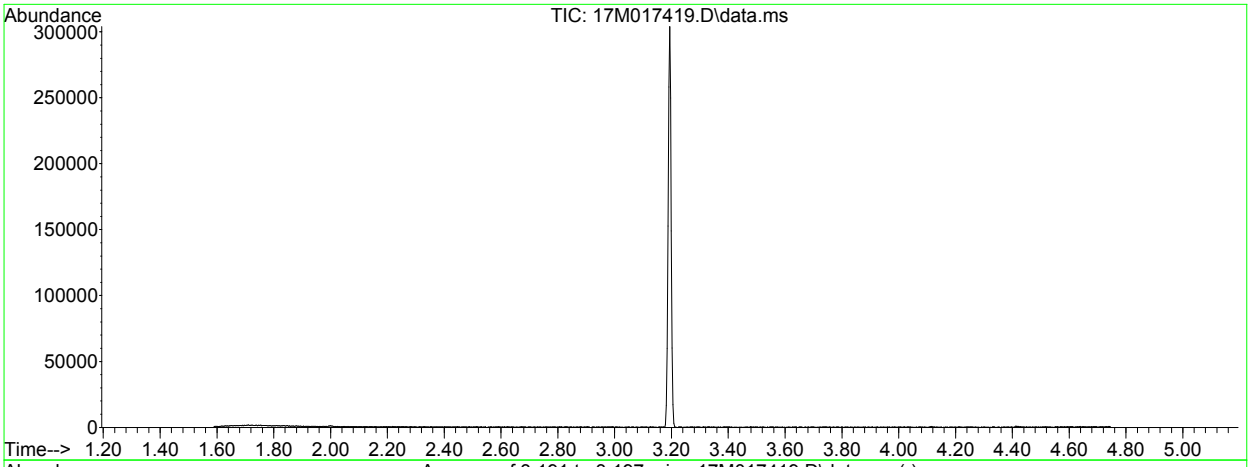

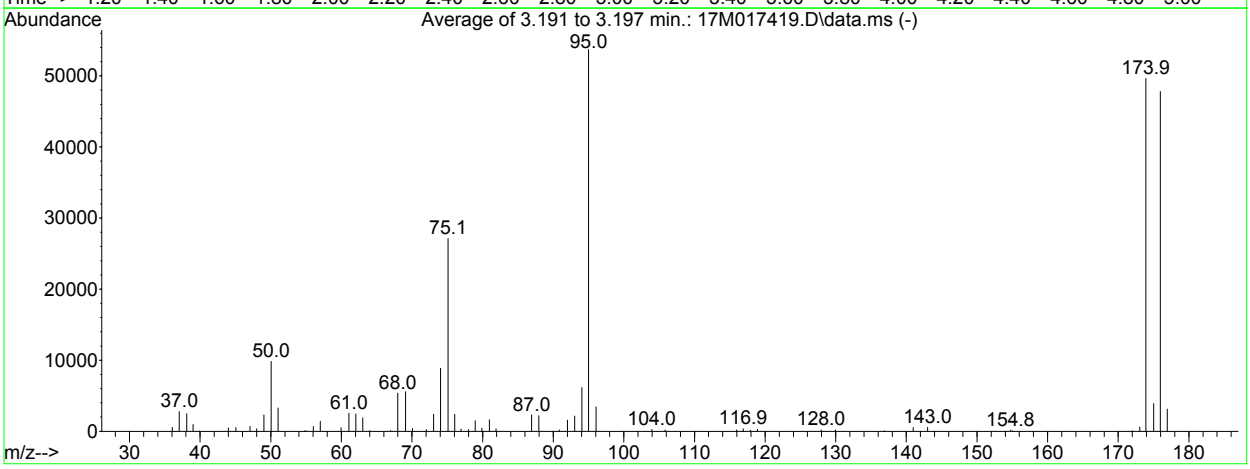

AutoFind: Scans 554, 555, 556; Background Corrected with Scan 546

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.3	9806	PASS
75	95	30	60	50.5	27128	PASS
95	95	100	100	100.0	53731	PASS
96	95	5	9	6.4	3455	PASS
173	174	0.00	2	1.2	576	PASS
174	95	50	100	92.4	49645	PASS
175	174	5	9	7.9	3904	PASS
176	174	95	101	96.3	47824	PASS
177	176	5	9	6.5	3098	PASS

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017516.D
Acq On : 04 Feb 2016 15:00
Operator : ADC
Sample : WG556287-01 50ng BFB
Misc : 1,1 STD73676
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
Last Update : Wed Jan 27 12:15:43 2016

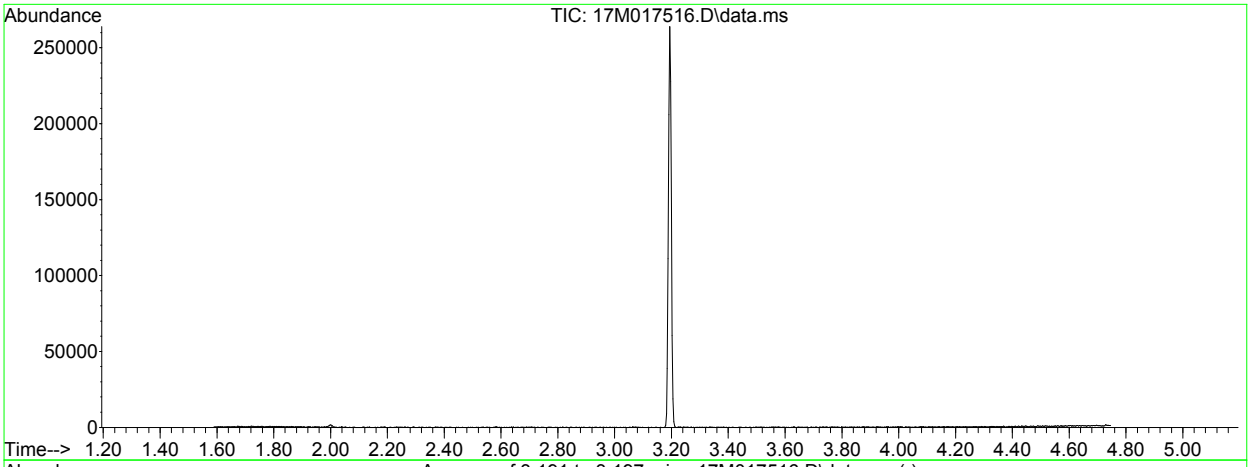

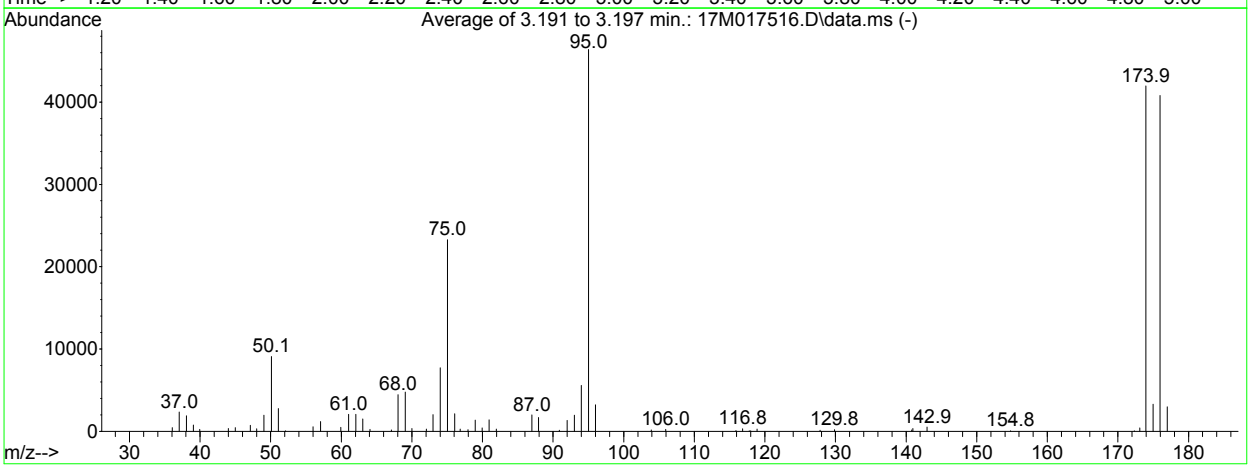

AutoFind: Scans 554, 555, 556; Background Corrected with Scan 546

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.6	9095	PASS
75	95	30	60	50.2	23285	PASS
95	95	100	100	100.0	46405	PASS
96	95	5	9	6.9	3209	PASS
173	174	0.00	2	0.9	392	PASS
174	95	50	100	90.4	41965	PASS
175	174	5	9	7.8	3292	PASS
176	174	95	101	97.2	40795	PASS
177	176	5	9	7.3	2967	PASS

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017573.D
Acq On : 05 Feb 2016 11:30
Operator : ADC
Sample : WG556406-01 50ng BFB
Misc : 1,1 STD73676
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
Last Update : Wed Jan 27 12:15:43 2016

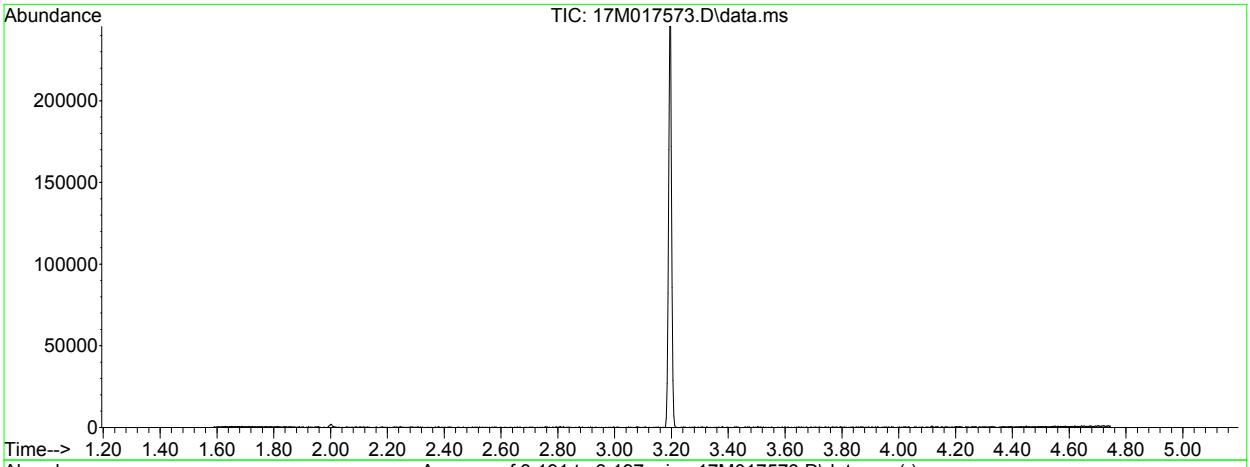

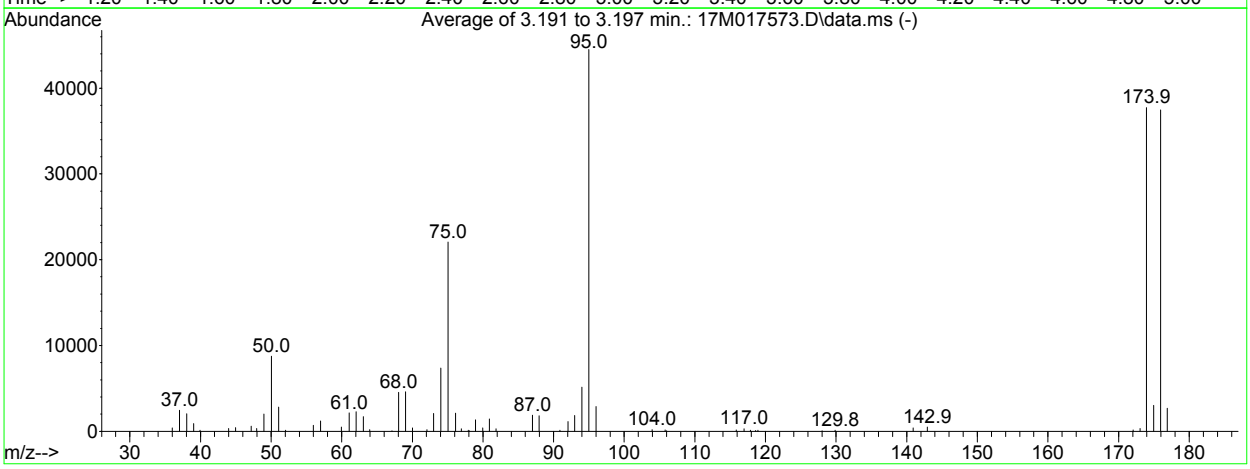

AutoFind: Scans 554, 555, 556; Background Corrected with Scan 546

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.7	8759	PASS
75	95	30	60	49.6	22075	PASS
95	95	100	100	100.0	44525	PASS
96	95	5	9	6.5	2879	PASS
173	174	0.00	2	0.8	313	PASS
174	95	50	100	84.7	37725	PASS
175	174	5	9	8.0	3032	PASS
176	174	95	101	99.3	37453	PASS
177	176	5	9	7.2	2697	PASS

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017627.D
Acq On : 09 Feb 2016 11:12
Operator : ADC
Sample : WG556768-01 50ng BFB
Misc : 1,1 STD73676
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
Last Update : Wed Jan 27 12:15:43 2016

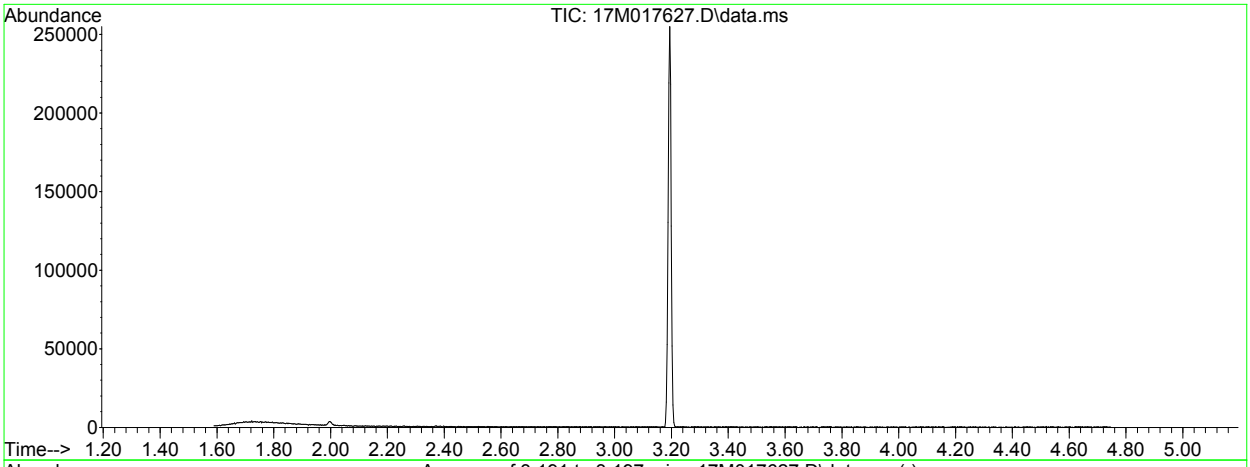

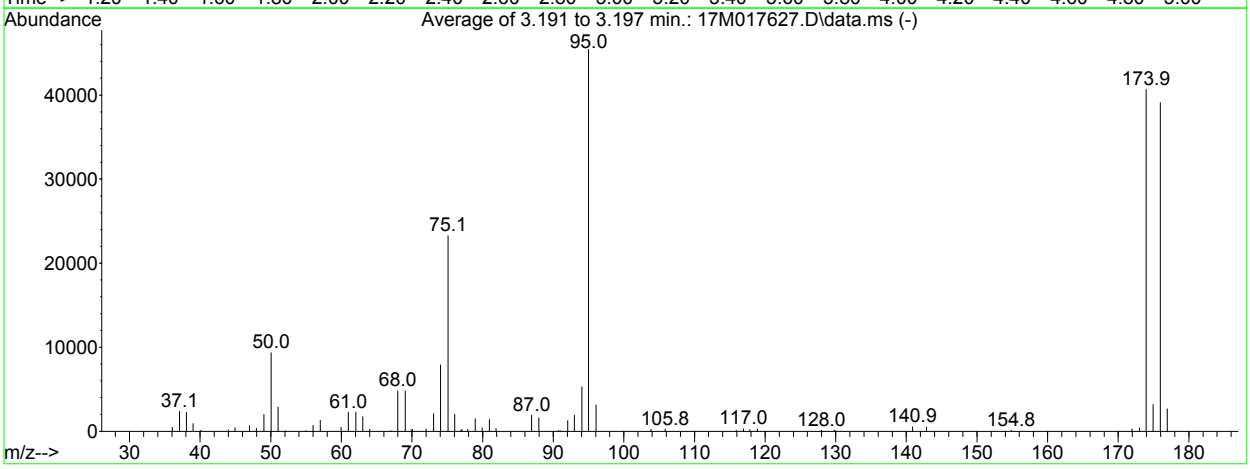

AutoFind: Scans 554, 555, 556; Background Corrected with Scan 546

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.5	9334	PASS
75	95	30	60	51.2	23261	PASS
95	95	100	100	100.0	45437	PASS
96	95	5	9	6.9	3139	PASS
173	174	0.00	2	1.0	390	PASS
174	95	50	100	89.5	40683	PASS
175	174	5	9	7.9	3196	PASS
176	174	95	101	96.1	39109	PASS
177	176	5	9	6.8	2664	PASS

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017519.D
Acq On : 04 Feb 2016 16:08
Operator : ADC
Sample : WG556290-01 BLK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 05 14:30:34 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.121	96	454035	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	329094	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	171698	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	120437	24.5126 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.050%		
34) 1,2-Dichloroethane-d4	4.791	65	127083	25.7951 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.180%		
47) Toluene-d8	6.693	98	466793	25.1980 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.792%		
66) p-Bromofluorobenzene	8.711	95	165800	25.7684 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.074%		
Target Compounds					Qvalue
6) Bromomethane	1.369	94	319	Below Cal	99
13) Iodomethane	1.959	142	119	1.4431 ug/L #	33
16) Acetone	2.330	43	1728	Below Cal	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017519.D
Acq On : 04 Feb 2016 16:08
Operator : ADC
Sample : WG556290-01 BLK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 05 14:30:34 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

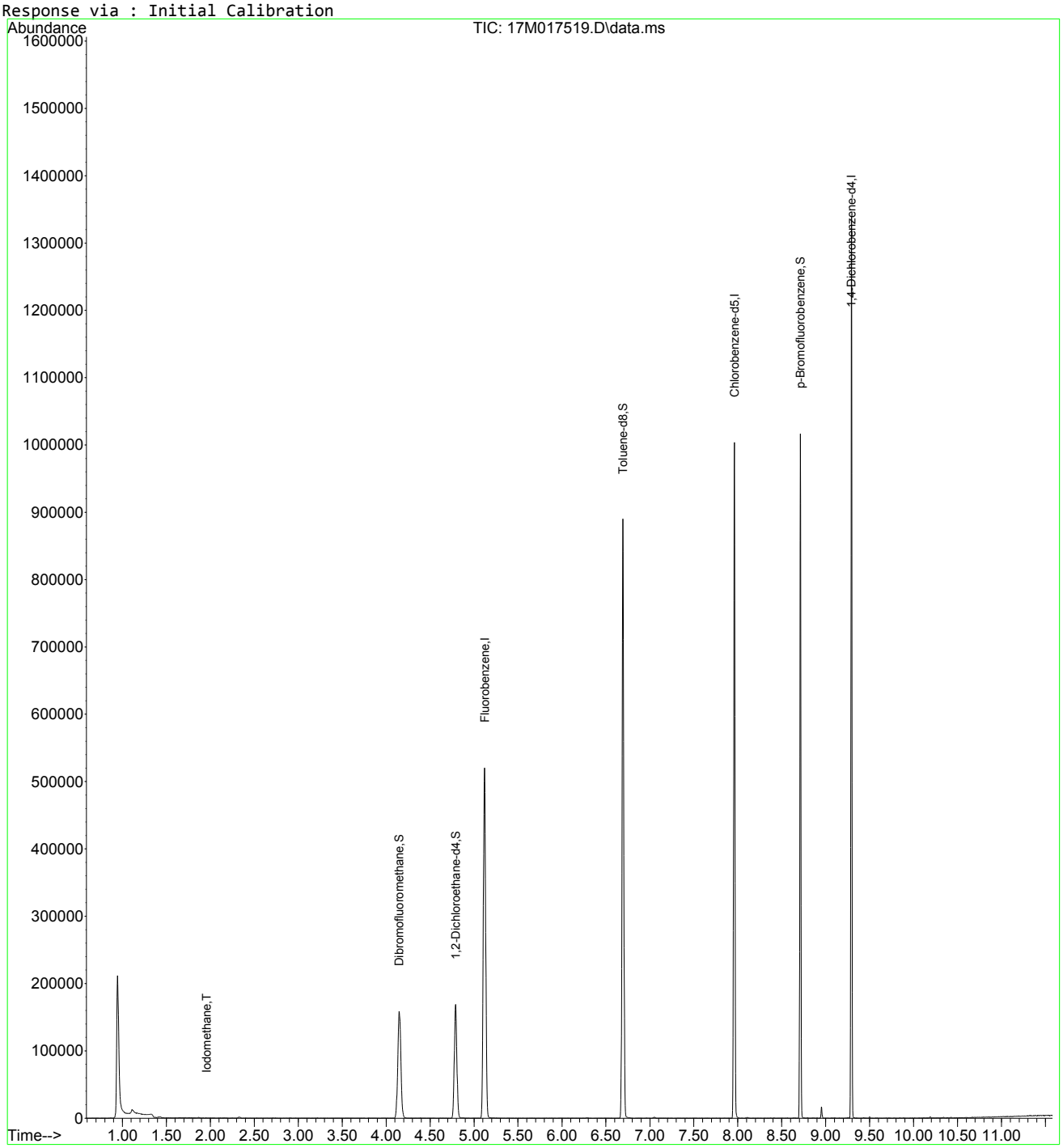

8260VMS.M Fri Feb 05 14:30:35 2016 Page: 2

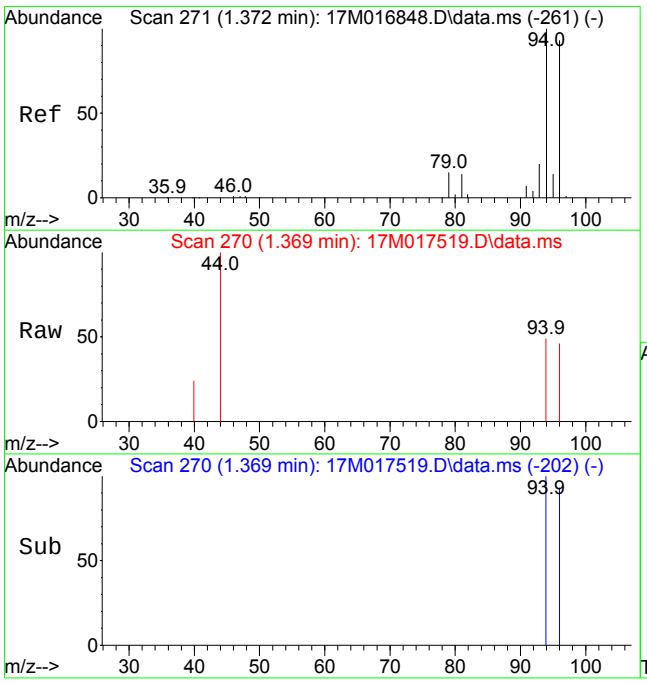

#6
Bromomethane
Concen: Below Cal
RT: 1.369 min Scan# 270
Delta R.T. -0.002 min
Lab File: 17M017519.D
Acq: 04 Feb 2016 16:08

Tgt Ion: 94 Resp: 319

Ion	Ratio	Lower	Upper
94	100		
96	92.5	56.0	130.6

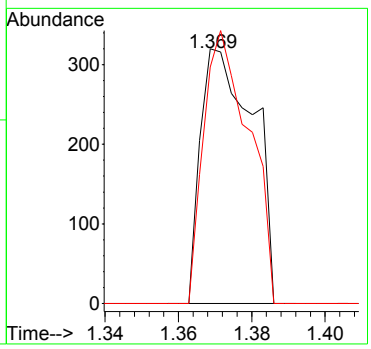

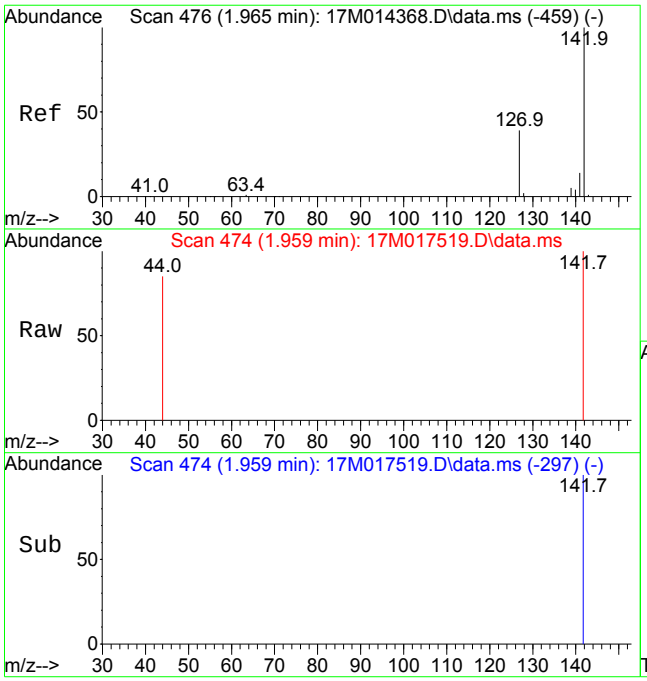

#13
Iodomethane
Concen: 1.4431 ug/L
RT: 1.959 min Scan# 474
Delta R.T. 0.011 min
Lab File: 17M017519.D
Acq: 04 Feb 2016 16:08

Tgt Ion:142 Resp: 119

Ion	Ratio	Lower	Upper
142	100		
127	0.0	34.2	51.4#

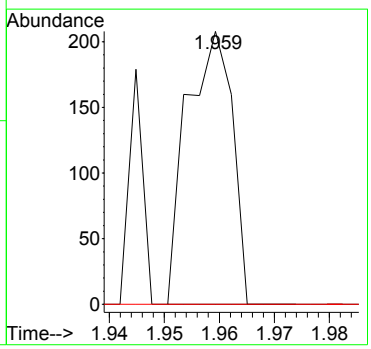

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017576.D
Acq On : 05 Feb 2016 12:31
Operator : ADC
Sample : WG556408-01 BLK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 08 09:25:44 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	379280	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	268707	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	136621	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	98055	23.8907 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.563%		
34) 1,2-Dichloroethane-d4	4.788	65	111433	27.0766 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.306%		
47) Toluene-d8	6.693	98	396043	26.1833 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.733%		
66) p-Bromofluorobenzene	8.711	95	139503	27.2479 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.992%		
Target Compounds					Qvalue
6) Bromomethane	1.374	94	227	Below Cal	90
16) Acetone	2.333	43	1475	Below Cal	86
18) Methyl acetate	2.333	43	1475	0.6002 ug/L #	62

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017576.D
Acq On : 05 Feb 2016 12:31
Operator : ADC
Sample : WG556408-01 BLK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 08 09:25:44 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

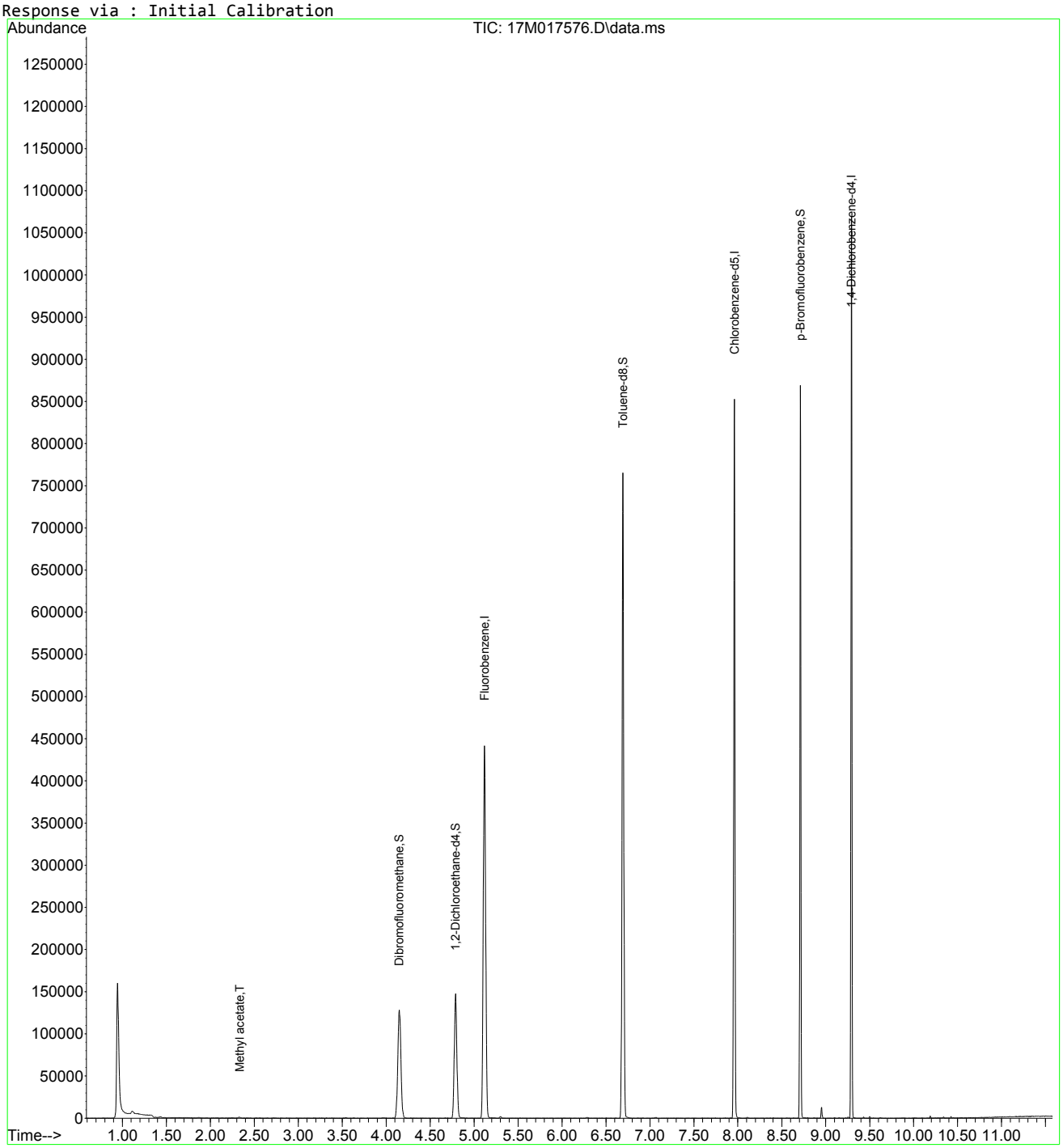

8260VMS.M Mon Feb 08 09:25:45 2016 Page: 2

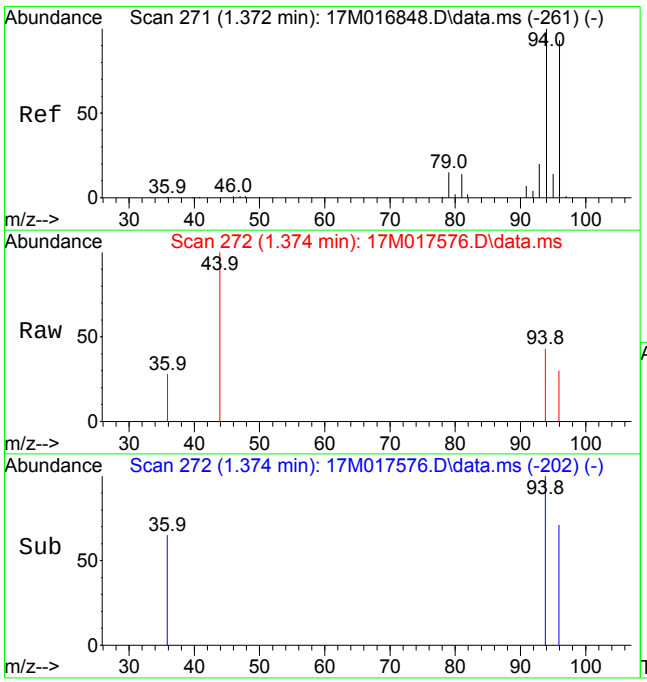

#6
Bromomethane
Concen: Below Cal
RT: 1.374 min Scan# 272
Delta R.T. 0.003 min
Lab File: 17M017576.D
Acq: 05 Feb 2016 12:31

Tgt Ion: 94 Resp: 227

Ion	Ratio	Lower	Upper
94	100		
96	84.1	56.0	130.6

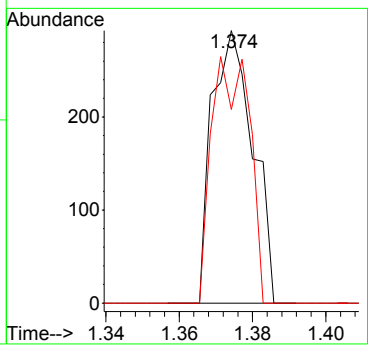

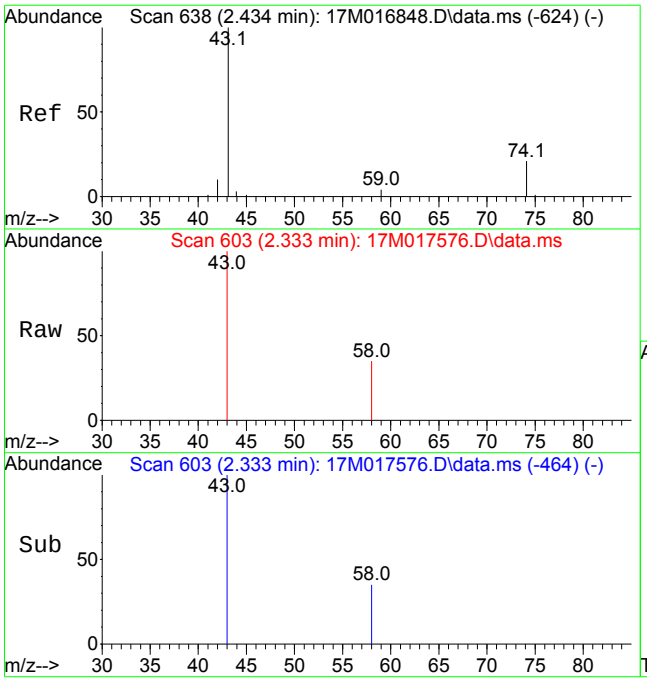

#18
Methyl acetate
Concen: 0.6002 ug/L
RT: 2.333 min Scan# 603
Delta R.T. -0.098 min
Lab File: 17M017576.D
Acq: 05 Feb 2016 12:31

Tgt Ion: 43 Resp: 1475

Ion	Ratio	Lower	Upper
43	100		
74	0.0	20.2	20.2#
59	0.0	6.6	10.0#

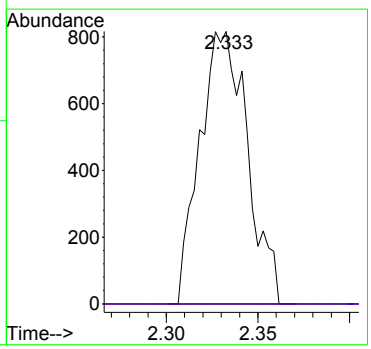

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017630.D
Acq On : 09 Feb 2016 12:19
Operator : ADC
Sample : WG556769-01 BLK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 10 09:35:16 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.121	96	381492	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	278309	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	152697	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.154	111	98973	23.9745 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.898%		
34) 1,2-Dichloroethane-d4	4.791	65	111109	26.8413 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.365%		
47) Toluene-d8	6.693	98	390375	24.9182 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.673%		
66) p-Bromofluorobenzene	8.711	95	140830	24.6112 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.445%		
Target Compounds					Qvalue
6) Bromomethane	1.377	94	245	Below Cal	65
16) Acetone	2.333	43	662	Below Cal #	45
18) Methyl acetate	2.333	43	662	0.2678 ug/L #	62

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017630.D
Acq On : 09 Feb 2016 12:19
Operator : ADC
Sample : WG556769-01 BLK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 10 09:35:16 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

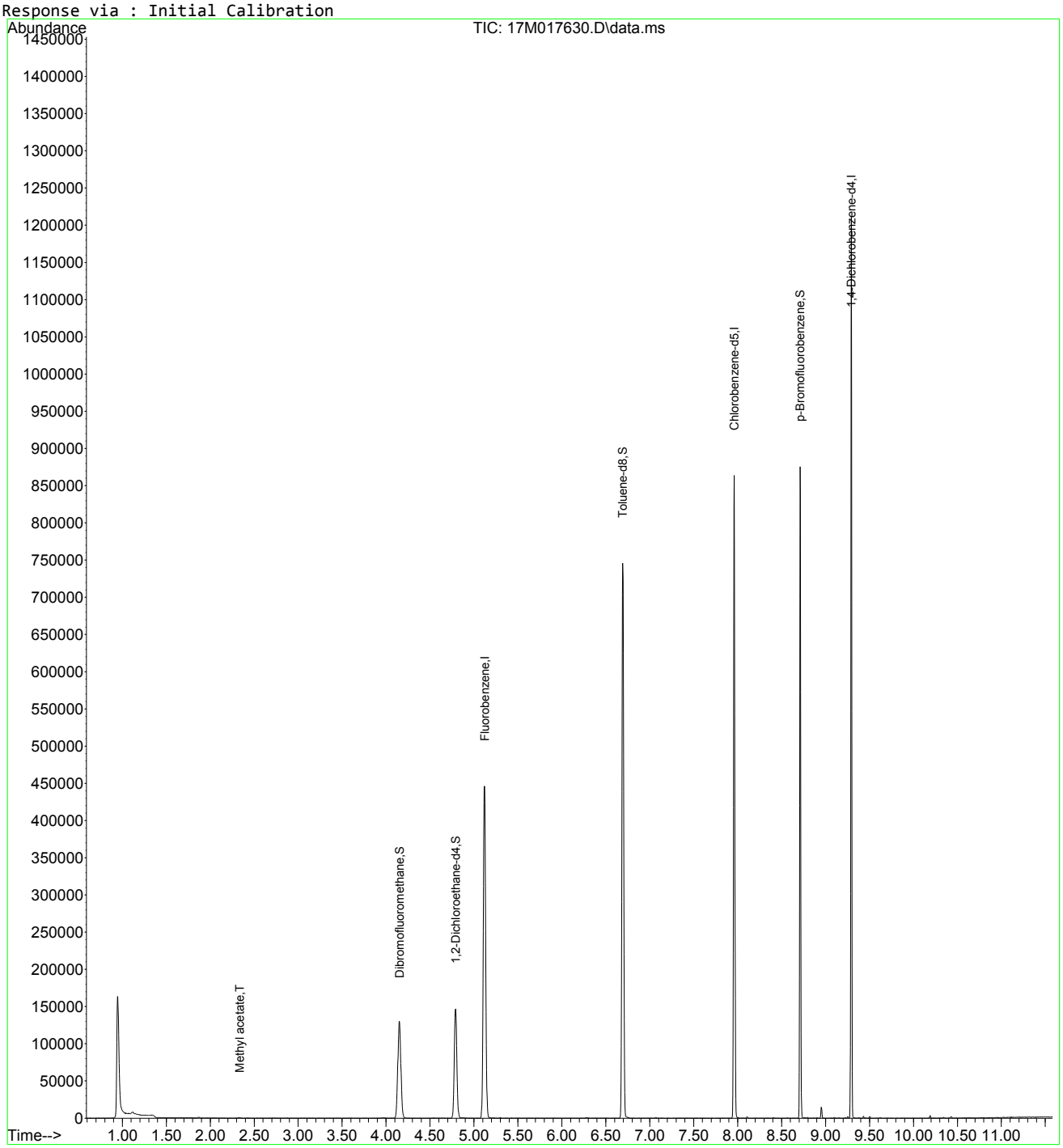

8260VMS.M Wed Feb 10 09:35:17 2016 Page: 2

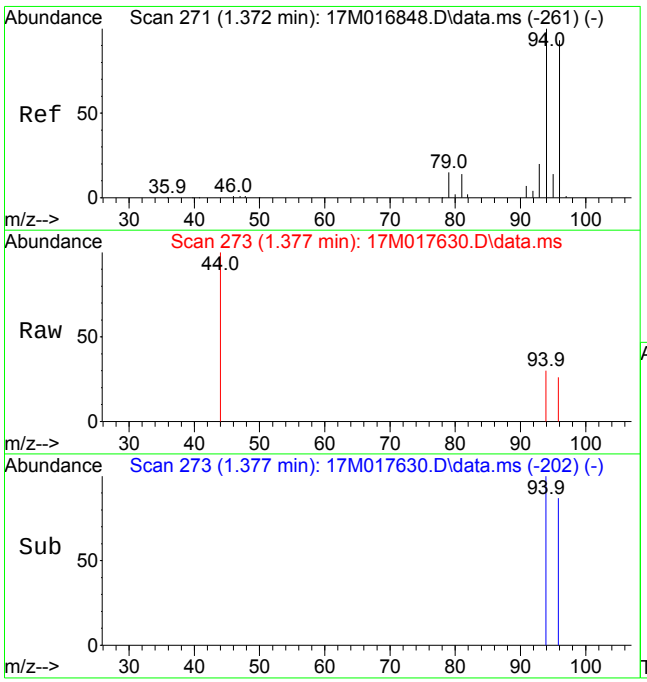

#6
Bromomethane
Concen: Below Cal
RT: 1.377 min Scan# 273
Delta R.T. 0.006 min
Lab File: 17M017630.D
Acq: 09 Feb 2016 12:19

Tgt Ion: 94 Resp: 245

Ion	Ratio	Lower	Upper
94	100		
96	60.0	56.0	130.6

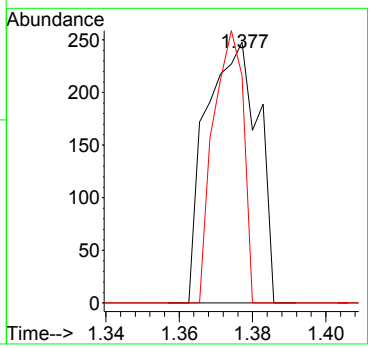

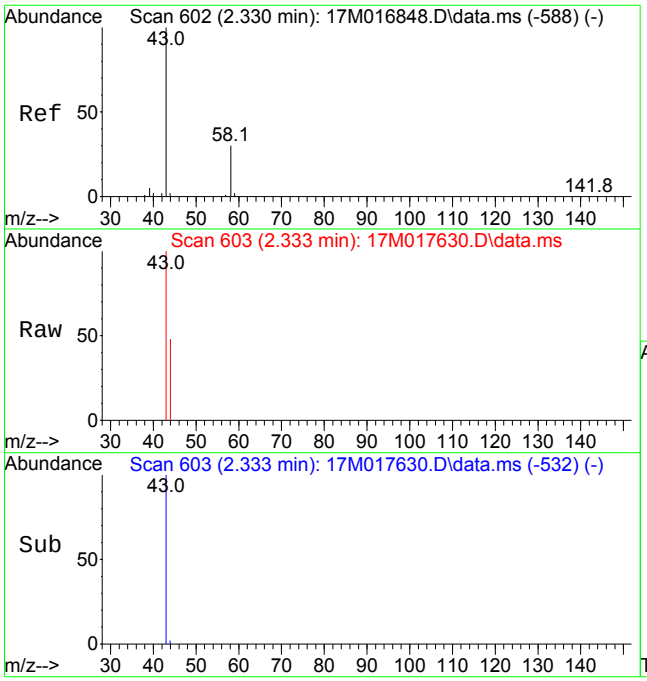

#16
Acetone
Concen: Below Cal
RT: 2.333 min Scan# 603
Delta R.T. 0.006 min
Lab File: 17M017630.D
Acq: 09 Feb 2016 12:19

Tgt Ion: 43 Resp: 662

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.1#

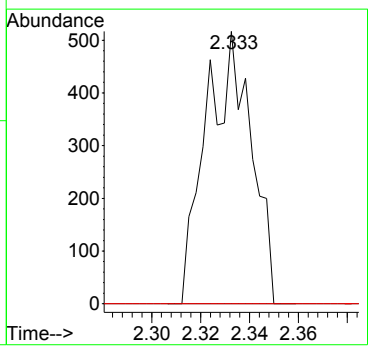

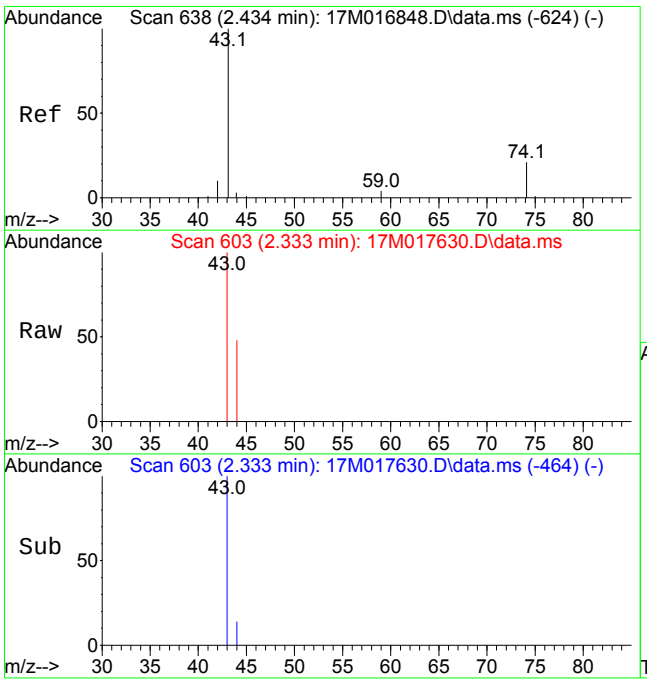

#18
Methyl acetate
Concen: 0.2678 ug/L
RT: 2.333 min Scan# 603
Delta R.T. -0.098 min
Lab File: 17M017630.D
Acq: 09 Feb 2016 12:19

Tgt Ion: 43 Resp: 662

Ion	Ratio	Lower	Upper
43	100		
74	0.0	20.2	20.2#
59	0.0	6.6	10.0#

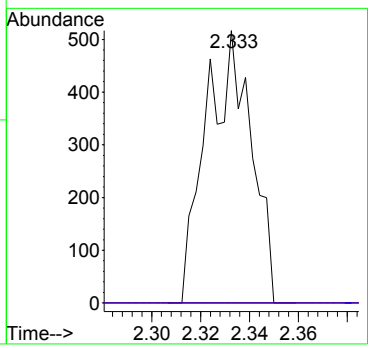

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017647.D
Acq On : 09 Feb 2016 17:50
Operator : ADC
Sample : WG556769-04 624-BLK
Misc : 2,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Feb 10 09:36:07 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	367653	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	268418	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	148437	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	97903	24.6080 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.432%		
34) 1,2-Dichloroethane-d4	4.791	65	107782	27.0177 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.071%		
47) Toluene-d8	6.693	98	385499	25.5137 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.055%		
66) p-Bromofluorobenzene	8.711	95	138712	24.9367 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.747%		
Target Compounds					Qvalue
6) Bromomethane	1.374	94	182	Below Cal	61
16) Acetone	2.330	43	886	Below Cal #	45

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017647.D
Acq On : 09 Feb 2016 17:50
Operator : ADC
Sample : WG556769-04 624-BLK
Misc : 2,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Feb 10 09:36:07 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

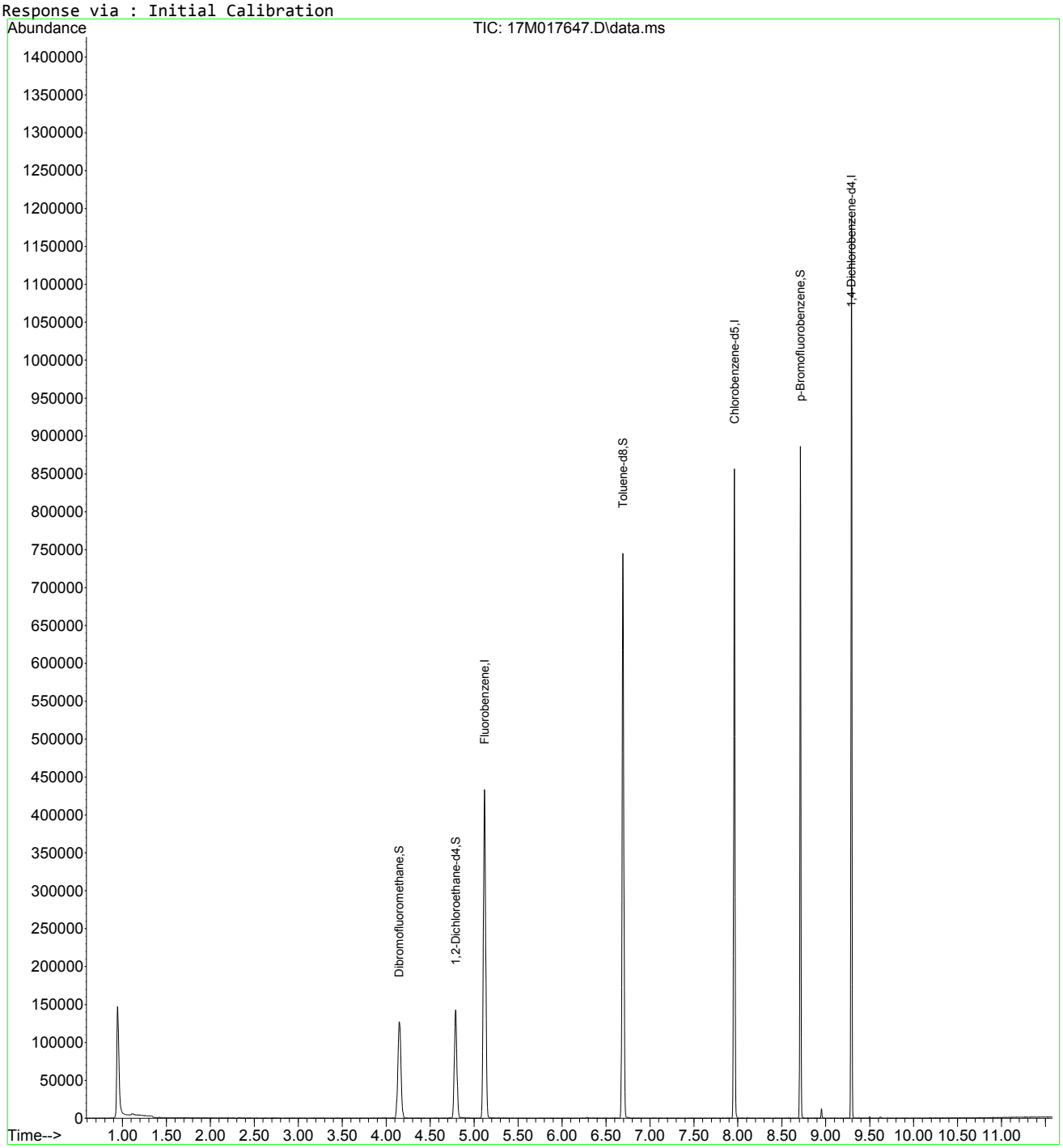

8260VMS.M Wed Feb 10 09:36:08 2016 Page: 2

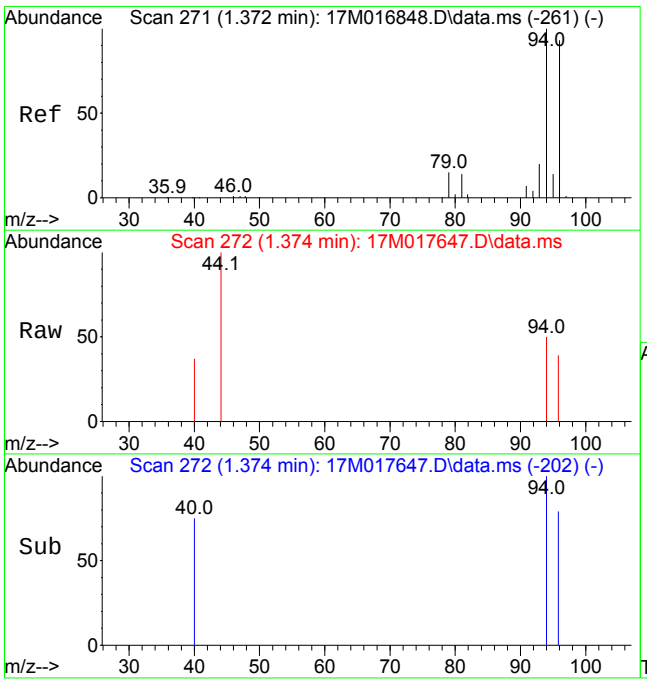

#6
Bromomethane
Concen: Below Cal
RT: 1.374 min Scan# 272
Delta R.T. 0.003 min
Lab File: 17M017647.D
Acq: 09 Feb 2016 17:50

Tgt Ion: 94 Resp: 182

Ion	Ratio	Lower	Upper
94	100		
96	56.0	56.0	130.6

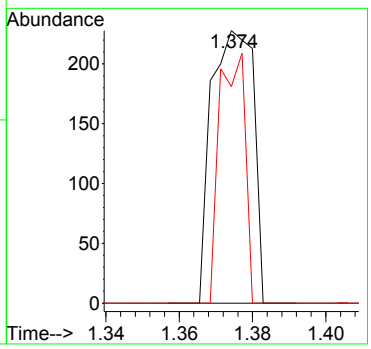

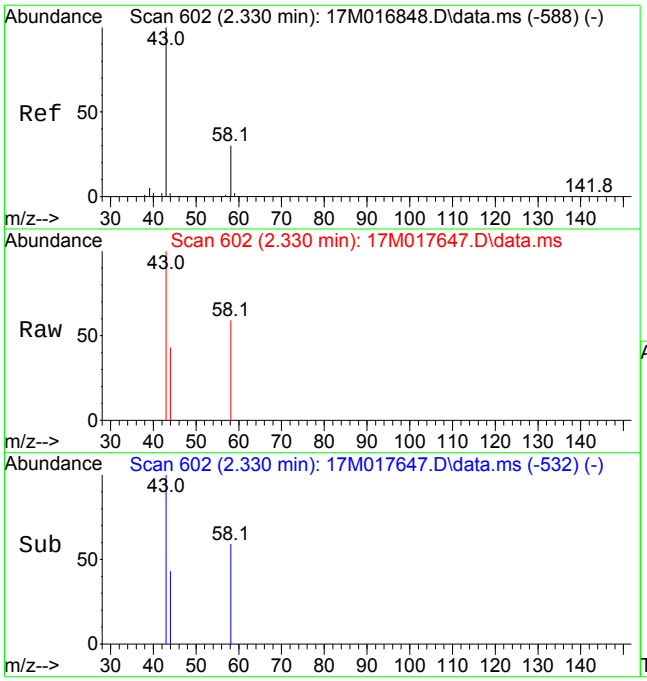

#16
Acetone
Concen: Below Cal
RT: 2.330 min Scan# 602
Delta R.T. 0.003 min
Lab File: 17M017647.D
Acq: 09 Feb 2016 17:50

Tgt Ion: 43 Resp: 886

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.1#

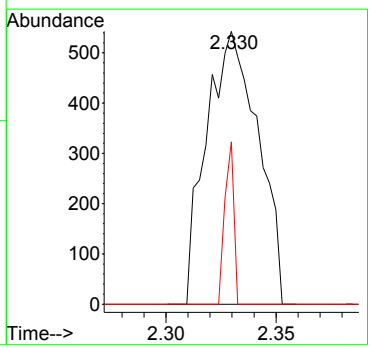

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017523.D
Acq On : 04 Feb 2016 17:07
Operator : ADC
Sample : WG556290-02 20ug/L LCS
Misc : 1,1 STD74621
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 04 17:19:34 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	440816	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	321378	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	170761	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	122708	25.7237 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.895%		
34) 1,2-Dichloroethane-d4	4.788	65	124873	26.1066 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.426%		
47) Toluene-d8	6.693	98	459210	25.3838 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.535%		
66) p-Bromofluorobenzene	8.711	95	167037	26.1031 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.412%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.027	85	91443	13.6728 ug/L	99
3) Chloromethane	1.137	50	103194	15.8132 ug/L	100
4) Vinyl Chloride	1.183	62	110101	17.4565 ug/L	99
5) 1,3-Butadiene	1.192	54	89967	16.9342 ug/L	99
6) Bromomethane	1.366	94	74677	20.6090 ug/L	99
7) Chloroethane	1.435	64	46371	16.6691 ug/L	91
8) Trichlorofluoromethane	1.508	101	97720	13.0866 ug/L	99
9) Diethyl ether	1.739	59	361526	101.2529 ug/L	100
10) 1,1-Dichloroethene	1.841	61	132060	17.8459 ug/L	99
11) Carbon Disulfide	1.852	76	280539	18.3880 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.870	101	85207	19.3098 ug/L	99
13) Iodomethane	1.936	142	112289	15.0025 ug/L	99
14) Acrolein	2.101	56	62000	109.6690 ug/L	98
15) Methylene Chloride	2.269	84	95335	18.5323 ug/L	99
16) Acetone	2.339	43	23867	24.4371 ug/L	98
17) trans-1,2-Dichloroethene	2.396	96	86680	18.2977 ug/L	99
18) Methyl acetate	2.437	43	54287	19.0054 ug/L #	99
19) Methyl Tert Butyl Ether	2.515	73	259166	21.1641 ug/L	100
20) 1,1-Dichloroethane	2.950	63	165320	17.6962 ug/L	100
21) Acrylonitrile	3.016	53	5511	4.5668 ug/L	99
22) Vinyl Acetate	3.253	86	10116	23.9358 ug/L	95
23) cis-1,2-Dichloroethene	3.537	96	101327	18.9969 ug/L	100
24) 2,2-Dichloropropane	3.659	77	123547	17.5534 ug/L	97
25) Cyclohexane	3.763	56	169105	19.7180 ug/L	99
26) Bromochloromethane	3.778	130	60755	19.3616 ug/L	99
27) Chloroform	3.905	83	167298	19.0212 ug/L	100
28) Carbon Tetrachloride	4.044	117	130416	18.2475 ug/L	100
30) 1,1,1-Trichloroethane	4.145	97	149191	18.9110 ug/L	100
31) 1,1-Dichloropropene	4.313	75	119703	17.7812 ug/L	100
32) 2-Butanone	4.348	43	33706	22.1854 ug/L	91
33) Benzene	4.620	78	375906	18.7536 ug/L	100
35) 1,2-Dichloroethane	4.866	62	121603	19.5721 ug/L	100
36) Methylcyclohexane	5.274	83	164472	19.9261 ug/L	100
37) Trichloroethene	5.298	130	104015	19.0101 ug/L	99
38) Dibromomethane	5.720	93	51682	19.5173 ug/L	99
39) 1,2-Dichloropropane	5.827	63	107063	19.4629 ug/L	100
40) Bromodichloromethane	5.920	83	128361	19.1868 ug/L	100
41) 1,4-Dioxane	6.137	88	7093	211.0641 ug/L	97
42) 2-Chloroethyl Vinyl Ether	6.511	63	52664	21.3660 ug/L	98
43) cis-1,3-Dichloropropene	6.525	75	159166	20.8355 ug/L	100
44) 4-Methyl-2-Pentanone	7.802	58	27377	21.0066 ug/L	99
45) trans-1,3-Dichloropropene	7.127	75	129357	20.2963 ug/L	100
48) Toluene	6.737	91	415998	18.6870 ug/L	100
49) Tetrachloroethene	7.067	166	108255	18.0051 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017523.D
Acq On : 04 Feb 2016 17:07
Operator : ADC
Sample : WG556290-02 20ug/L LCS
Misc : 1,1 STD74621
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 04 17:19:34 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,1,2-Trichloroethane	7.258	97	76961	19.4519 ug/L	99
51) Dibromochloromethane	7.400	129	100797	19.3872 ug/L	99
52) 1,3-Dichloropropane	7.481	76	134271	20.4089 ug/L	99
53) 1,2-Dibromoethane	7.570	107	76638	19.5064 ug/L	99
54) 2-Hexanone	7.799	43	55906	21.2232 ug/L	99
55) Chlorobenzene	7.973	112	270105	19.1513 ug/L	99
56) 1-Chlorohexane	7.984	69	25865	19.9410 ug/L	99
57) Ethylbenzene	8.008	106	144534	19.0479 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.025	131	99866	19.0396 ug/L	100
59) m-,p-Xylene	8.109	106	351297	38.4251 ug/L	100
60) o-Xylene	8.372	106	176839	19.7845 ug/L	99
61) Styrene	8.404	104	281217	19.3935 ug/L	100
62) Bromoform	8.407	173	65051	19.2589 ug/L	99
63) Isopropylbenzene	8.564	105	460946	19.7377 ug/L	100
65) 1,3,5-Trimethylbenzene	8.902	105	395483	19.4101 ug/L	100
67) Bromobenzene	8.763	156	119145	18.3017 ug/L	99
68) n-Propylbenzene	8.792	91	534454	19.7820 ug/L	100
69) 1,1,2,2-Tetrachloroethane	8.836	83	96552	20.3098 ug/L	100
70) 2-Chlorotoluene	8.868	91	318544	19.0155 ug/L	100
71) 1,2,3-Trichloropropane	8.899	110	26317	20.6255 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.925	53	21375	21.2385 ug/L #	94
73) 1,2,4-Trimethylbenzene	9.099	105	389850	19.1781 ug/L	100
74) 4-Chlorotoluene	8.957	91	330631	19.4904 ug/L	100
75) tert-Butylbenzene	9.064	134	74481	19.4851 ug/L	98
76) sec-Butylbenzene	9.154	105	498557	20.0724 ug/L	100
77) p-Isopropyltoluene	9.227	119	412714	19.3484 ug/L	100
78) 1,3-Dichlorobenzene	9.256	146	227715	19.2754 ug/L	100
79) 1,4-Dichlorobenzene	9.299	146	227543	18.6934 ug/L	99
80) n-Butylbenzene	9.429	91	375392	19.7579 ug/L	100
81) 1,2-Dichlorobenzene	9.502	146	222102	19.3063 ug/L	100
82) 1,2-Dibromo-3-Chloropr...	9.878	75	17777	20.7744 ug/L	97
83) Hexachlorobutadiene	10.173	225	97150	20.6454 ug/L	99
84) 1,2,4-Trichlorobenzene	10.188	180	169494	19.5144 ug/L	99
85) Naphthalene	10.338	128	304757	19.0283 ug/L	100
86) 1,2,3-Trichlorobenzene	10.422	180	160525	19.9750 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020416\
Data File : 17M017523.D
Acq On : 04 Feb 2016 17:07
Operator : ADC
Sample : WG556290-02 20ug/L LCS
Misc : 1,1 STD74621
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 04 17:19:34 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

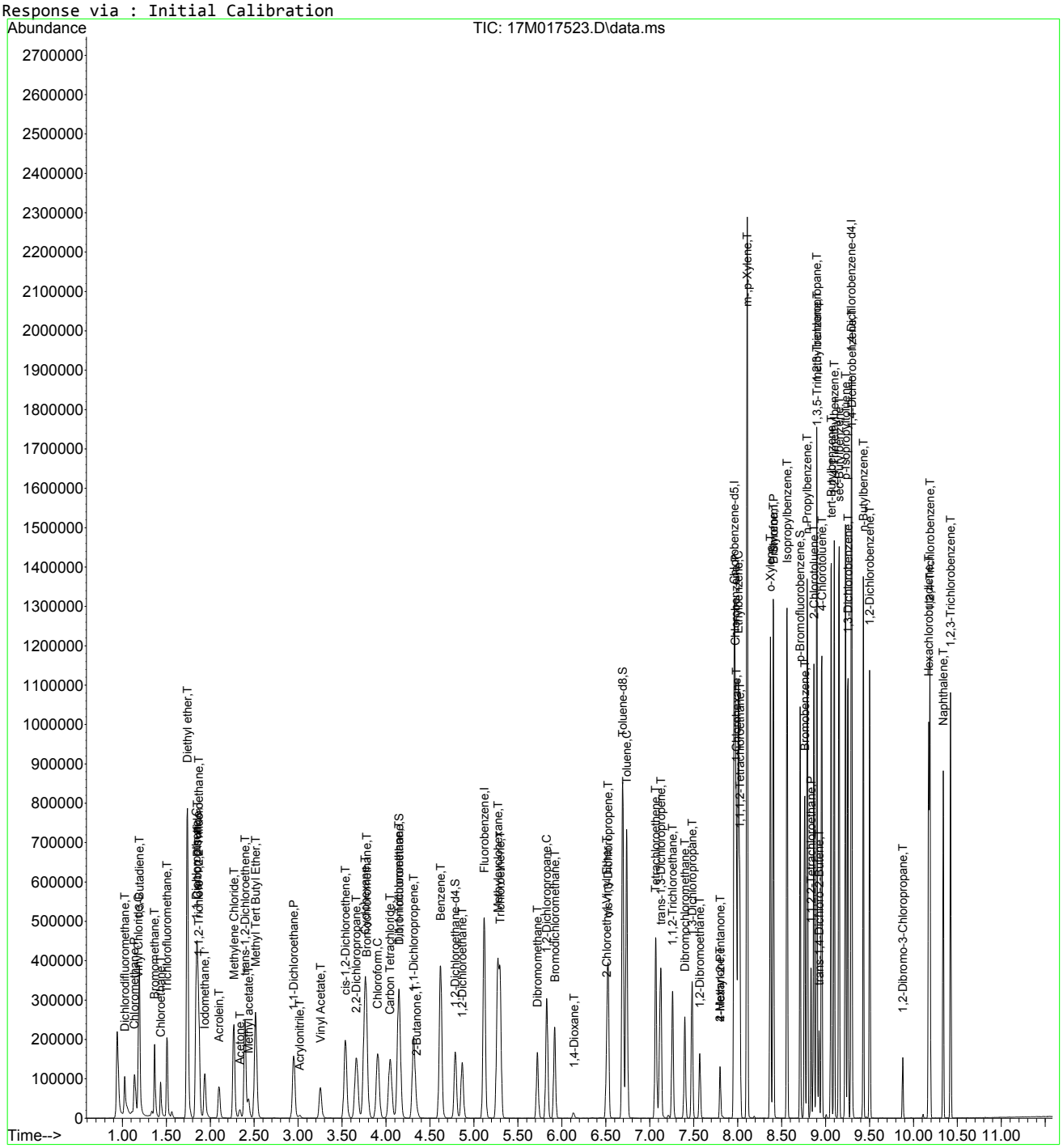

8260VMS.M Thu Feb 04 17:19:36 2016 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017577.D
Acq On : 05 Feb 2016 12:51
Operator : ADC
Sample : WG556408-02 20ug/L LCS
Misc : 1,1 STD74621
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 05 13:03:16 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	373520	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	265086	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	135568	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	104297	25.8034 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.214%		
34) 1,2-Dichloroethane-d4	4.788	65	108211	26.6991 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.796%		
47) Toluene-d8	6.693	98	393390	26.3632 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.453%		
66) p-Bromofluorobenzene	8.711	95	139697	27.4978 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.991%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.027	85	120564	21.2749 ug/L	99
3) Chloromethane	1.140	50	115748	20.9325 ug/L	99
4) Vinyl Chloride	1.183	62	110100	20.6013 ug/L	100
5) 1,3-Butadiene	1.195	54	82133	18.2449 ug/L	99
6) Bromomethane	1.369	94	62074	20.2028 ug/L	100
7) Chloroethane	1.438	64	39754	16.8652 ug/L	87
8) Trichlorofluoromethane	1.508	101	94666	14.9617 ug/L	100
9) Diethyl ether	1.739	59	311731	103.0366 ug/L	98
10) 1,1-Dichloroethene	1.841	61	119916	19.1244 ug/L	98
11) Carbon Disulfide	1.852	76	245818	19.0151 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.867	101	75398	20.1653 ug/L	98
13) Iodomethane	1.939	142	93269	14.7346 ug/L	99
14) Acrolein	2.101	56	55075	114.9715 ug/L	99
15) Methylene Chloride	2.269	84	86576	19.8618 ug/L	98
16) Acetone	2.339	43	22363	27.2275 ug/L	96
17) trans-1,2-Dichloroethene	2.394	96	78904	19.6571 ug/L	99
18) Methyl acetate	2.437	43	52309	21.6123 ug/L #	99
19) Methyl Tert Butyl Ether	2.515	73	231129	22.2751 ug/L	100
20) 1,1-Dichloroethane	2.949	63	151642	19.1565 ug/L	99
21) Acrylonitrile	3.022	53	5004	4.8937 ug/L	97
22) Vinyl Acetate	3.253	86	7106	20.5588 ug/L	98
23) cis-1,2-Dichloroethene	3.540	96	90064	19.9275 ug/L	97
24) 2,2-Dichloropropane	3.662	77	109230	18.2737 ug/L	95
25) Cyclohexane	3.760	56	150582	20.7216 ug/L	98
26) Bromochloromethane	3.777	130	54191	20.3813 ug/L	99
27) Chloroform	3.905	83	152001	20.3956 ug/L	99
28) Carbon Tetrachloride	4.047	117	115789	19.1198 ug/L	99
30) 1,1,1-Trichloroethane	4.148	97	132456	19.8146 ug/L	99
31) 1,1-Dichloropropene	4.316	75	106618	18.6909 ug/L	98
32) 2-Butanone	4.348	43	31081	24.1434 ug/L	89
33) Benzene	4.623	78	336843	19.8324 ug/L	100
35) 1,2-Dichloroethane	4.866	62	111185	21.1195 ug/L	98
36) Methylcyclohexane	5.271	83	142829	20.4217 ug/L	98
37) Trichloroethene	5.300	130	95646	20.6300 ug/L	97
38) Dibromomethane	5.720	93	46303	20.6364 ug/L	99
39) 1,2-Dichloropropane	5.830	63	95999	20.5958 ug/L	99
40) Bromodichloromethane	5.917	83	114140	20.1350 ug/L	100
41) 1,4-Dioxane	6.134	88	5906	207.4060 ug/L	94
42) 2-Chloroethyl Vinyl Ether	6.511	63	40338	19.3137 ug/L	100
43) cis-1,3-Dichloropropene	6.525	75	142365	21.9938 ug/L	99
44) 4-Methyl-2-Pentanone	7.802	58	24014	21.7460 ug/L	99
45) trans-1,3-Dichloropropene	7.127	75	114270	21.1594 ug/L	99
48) Toluene	6.737	91	367080	19.9911 ug/L	100
49) Tetrachloroethene	7.069	166	93602	18.8739 ug/L	98

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017577.D
Acq On : 05 Feb 2016 12:51
Operator : ADC
Sample : WG556408-02 20ug/L LCS
Misc : 1,1 STD74621
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 05 13:03:16 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,1,2-Trichloroethane	7.258	97	68515	20.9945 ug/L	99
51) Dibromochloromethane	7.400	129	86620	20.1983 ug/L	100
52) 1,3-Dichloropropane	7.481	76	119086	21.9446 ug/L	97
53) 1,2-Dibromoethane	7.570	107	67259	20.7545 ug/L	100
54) 2-Hexanone	7.802	43	49048	22.5737 ug/L	99
55) Chlorobenzene	7.970	112	236637	20.3412 ug/L	98
56) 1-Chlorohexane	7.984	69	23268	21.7482 ug/L	95
57) Ethylbenzene	8.008	106	125326	20.0239 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.025	131	87413	20.2044 ug/L	100
59) m-,p-Xylene	8.109	106	306877	40.6943 ug/L	98
60) o-Xylene	8.372	106	154721	20.9858 ug/L	99
61) Styrene	8.404	104	244541	20.4454 ug/L	99
62) Bromoform	8.407	173	54325	19.4987 ug/L	99
63) Isopropylbenzene	8.563	105	400120	20.7714 ug/L	100
65) 1,3,5-Trimethylbenzene	8.902	105	345839	21.3799 ug/L	99
67) Bromobenzene	8.763	156	102893	19.9082 ug/L	98
68) n-Propylbenzene	8.792	91	467904	21.8146 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.836	83	77290	20.4786 ug/L	99
70) 2-Chlorotoluene	8.868	91	279205	20.9939 ug/L	99
71) 1,2,3-Trichloropropane	8.899	110	22890	22.5967 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.925	53	16020	20.0499 ug/L #	92
73) 1,2,4-Trimethylbenzene	9.099	105	339378	21.0292 ug/L	100
74) 4-Chlorotoluene	8.957	91	286806	21.2959 ug/L	100
75) tert-Butylbenzene	9.064	134	64047	21.1051 ug/L	99
76) sec-Butylbenzene	9.154	105	430244	21.8188 ug/L	100
77) p-Isopropyltoluene	9.227	119	353758	20.8898 ug/L	100
78) 1,3-Dichlorobenzene	9.255	146	194776	20.7672 ug/L	99
79) 1,4-Dichlorobenzene	9.299	146	195281	20.2076 ug/L	100
80) n-Butylbenzene	9.432	91	326068	21.6170 ug/L	98
81) 1,2-Dichlorobenzene	9.504	146	191306	20.9463 ug/L	100
82) 1,2-Dibromo-3-Chloropr...	9.881	75	14033	20.6563 ug/L	98
83) Hexachlorobutadiene	10.179	225	79855	21.3754 ug/L	100
84) 1,2,4-Trichlorobenzene	10.191	180	142449	20.6581 ug/L	100
85) Naphthalene	10.341	128	261507	20.5665 ug/L	99
86) 1,2,3-Trichlorobenzene	10.425	180	135534	21.2434 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017577.D
Acq On : 05 Feb 2016 12:51
Operator : ADC
Sample : WG556408-02 20ug/L LCS
Misc : 1,1 STD74621
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 05 13:03:16 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

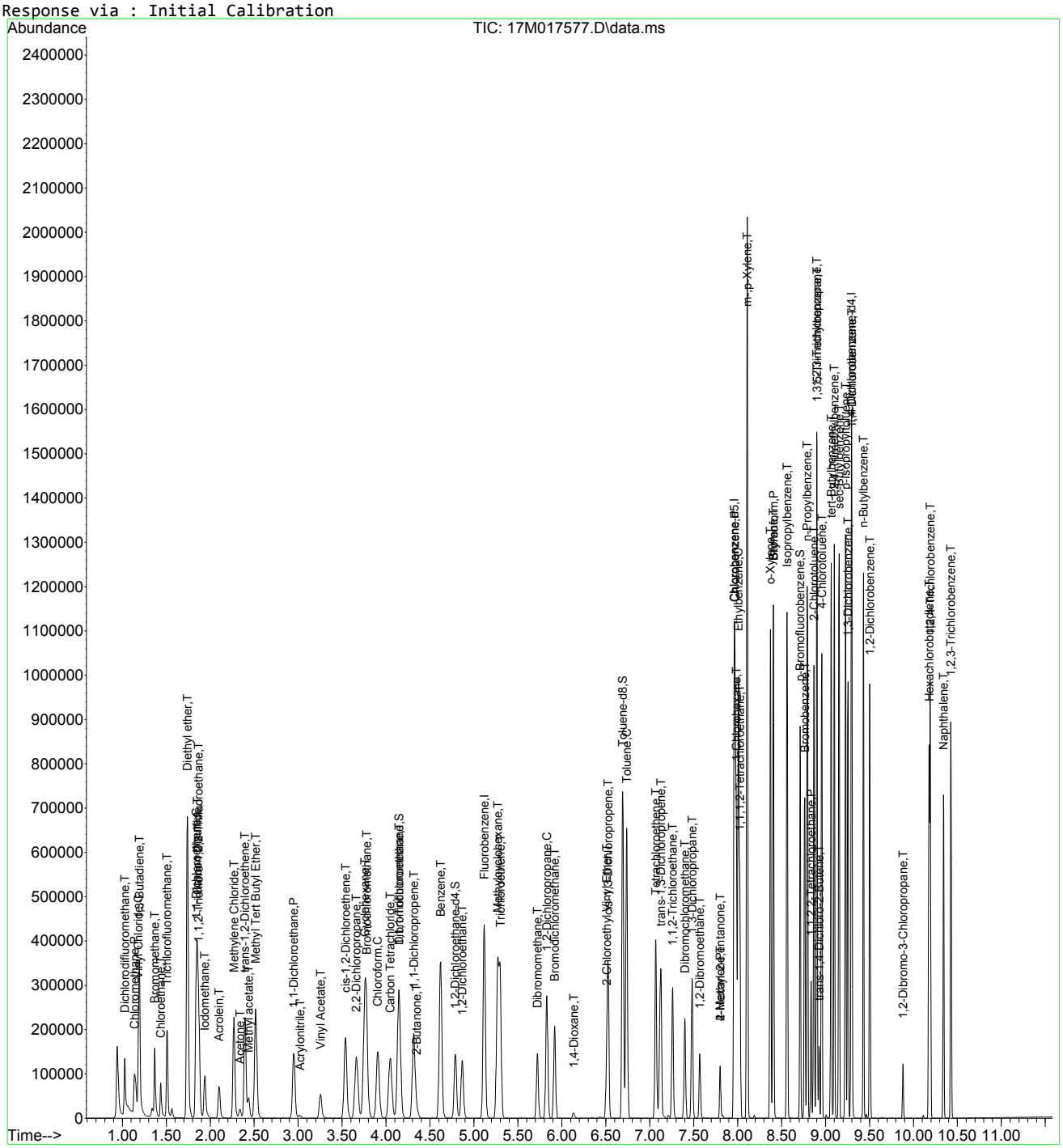

8260VMS.M Fri Feb 05 13:03:18 2016 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017582.D
Acq On : 05 Feb 2016 14:30
Operator : ADC
Sample : WG556408-04 20ug/L ACRYLONITRILE LCS
Misc : 1,1 STD74618
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 08 09:48:55 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	366761	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	260915	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	135495	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	98865	24.9102 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.641%		
34) 1,2-Dichloroethane-d4	4.788	65	106023	26.6414 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.566%		
47) Toluene-d8	6.693	98	387201	26.3632 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.453%		
66) p-Bromofluorobenzene	8.711	95	137213	27.0234 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.094%		
Target Compounds					Qvalue
3) Chloromethane	1.131	50	1366	0.2516 ug/L	94
5) 1,3-Butadiene	1.195	54	2655	0.6006 ug/L	92
6) Bromomethane	1.368	94	13367	3.8366 ug/L	99
11) Carbon Disulfide	1.864	76	215777	16.9989 ug/L	98
13) Iodomethane	1.948	142	38893	7.0798 ug/L	100
14) Acrolein	1.997	56	637	1.3543 ug/L #	13
16) Acetone	2.327	43	21465	26.5723 ug/L	98
18) Methyl acetate	2.431	43	46906	19.7371 ug/L #	99
19) Methyl Tert Butyl Ether	2.509	73	225026	22.0866 ug/L #	63
21) Acrylonitrile	3.013	53	23619	23.5241 ug/L	98
24) 2,2-Dichloropropane	3.766	77	1800	1.2484 ug/L #	1
25) Cyclohexane	3.766	56	143644	20.1312 ug/L #	68
32) 2-Butanone	4.342	43	29799	23.5742 ug/L #	72
36) Methylcyclohexane	5.274	83	132878	19.3490 ug/L	97
42) 2-Chloroethyl Vinyl Ether	6.511	63	33819	16.4909 ug/L	98
44) 4-Methyl-2-Pentanone	7.799	58	23966	22.1024 ug/L	98
49) Tetrachloroethene	7.069	166	596	0.1221 ug/L #	83
54) 2-Hexanone	7.799	43	50132	23.4414 ug/L	97
56) 1-Chlorohexane	7.984	69	21668	20.5765 ug/L #	1
72) trans-1,4-Dichloro-2-B...	8.925	53	13309	16.6659 ug/L #	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017582.D
Acq On : 05 Feb 2016 14:30
Operator : ADC
Sample : WG556408-04 20ug/L ACRYLONITRILE LCS
Misc : 1,1 STD74618
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 08 09:48:55 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

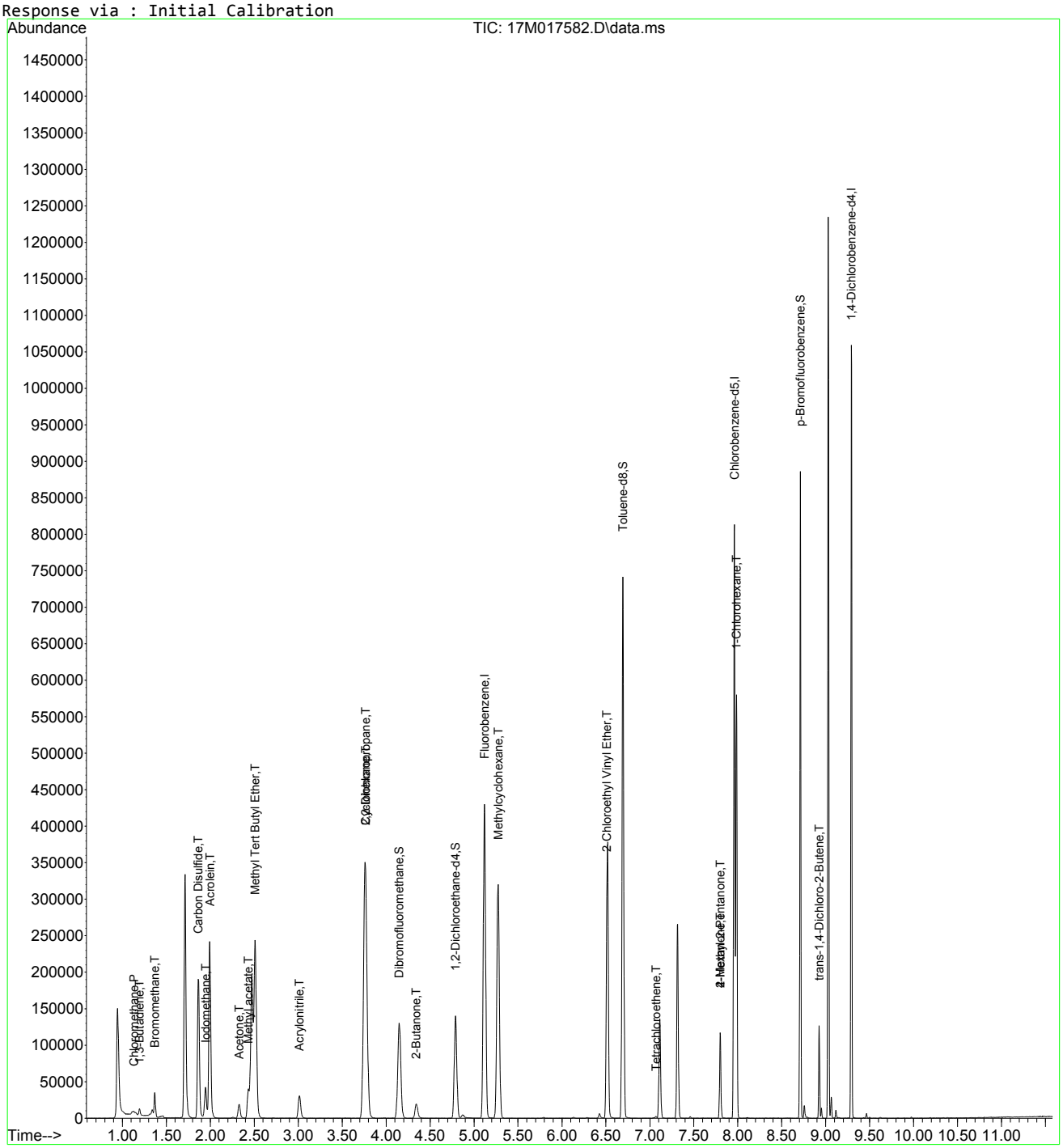

8260VMS.M Mon Feb 08 09:48:56 2016 Page: 2

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017631.D
Acq On : 09 Feb 2016 12:38
Operator : ADC
Sample : WG556769-02 20ug/L LCS
Misc : 1,1 STD74621
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 09 12:50:36 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	367315	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	267924	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	148985	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	102557	25.8015 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.206%		
34) 1,2-Dichloroethane-d4	4.791	65	108969	27.3403 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.361%		
47) Toluene-d8	6.693	98	384629	25.5030 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.012%		
66) p-Bromofluorobenzene	8.711	95	139058	24.9070 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.628%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.027	85	110571	19.8411 ug/L	99
3) Chloromethane	1.143	50	105655	19.4300 ug/L	99
4) Vinyl Chloride	1.186	62	102486	19.5006 ug/L	100
5) 1,3-Butadiene	1.195	54	78258	17.6778 ug/L	99
6) Bromomethane	1.368	94	53686	17.6763 ug/L	100
7) Chloroethane	1.438	64	38875	16.7709 ug/L	86
8) Trichlorofluoromethane	1.513	101	112136	18.0222 ug/L	99
9) Diethyl ether	1.736	59	283268	95.2104 ug/L	99
10) 1,1-Dichloroethene	1.846	61	109564	17.7686 ug/L	97
11) Carbon Disulfide	1.861	76	192331	15.1290 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.875	101	67607	18.3871 ug/L	98
13) Iodomethane	1.945	142	41252	7.4134 ug/L	98
14) Acrolein	2.098	56	55119	117.0071 ug/L	99
15) Methylene Chloride	2.272	84	83840	19.5590 ug/L	98
16) Acetone	2.333	43	19779	24.2932 ug/L	97
17) trans-1,2-Dichloroethene	2.399	96	76750	19.4435 ug/L	98
18) Methyl acetate	2.434	43	54035	22.7026 ug/L #	98
19) Methyl Tert Butyl Ether	2.515	73	215051	21.0757 ug/L	100
20) 1,1-Dichloroethane	2.949	63	146179	18.7783 ug/L	99
21) Acrylonitrile	3.016	53	22462	22.3380 ug/L	100
22) Vinyl Acetate	3.253	86	11821	31.8825 ug/L #	1
23) cis-1,2-Dichloroethene	3.540	96	86601	19.4849 ug/L	97
24) 2,2-Dichloropropane	3.667	77	108988	18.5272 ug/L	97
25) Cyclohexane	3.766	56	139195	19.4782 ug/L #	67
26) Bromochloromethane	3.775	130	52163	19.9499 ug/L	99
27) Chloroform	3.908	83	145543	19.8590 ug/L	100
28) Carbon Tetrachloride	4.050	117	111720	18.7595 ug/L	99
30) 1,1,1-Trichloroethane	4.148	97	127544	19.4021 ug/L	98
31) 1,1-Dichloropropene	4.316	75	103660	18.4793 ug/L	98
32) 2-Butanone	4.345	43	28457	22.4785 ug/L	92
33) Benzene	4.620	78	323317	19.3576 ug/L	100
35) 1,2-Dichloroethane	4.866	62	109054	21.0647 ug/L	99
36) Methylcyclohexane	5.274	83	132823	19.3118 ug/L	98
37) Trichloroethene	5.300	130	91283	20.0215 ug/L	97
38) Dibromomethane	5.723	93	45923	20.8128 ug/L	99
39) 1,2-Dichloropropane	5.830	63	92482	20.1764 ug/L	99
40) Bromodichloromethane	5.917	83	111622	20.0234 ug/L	100
41) 1,4-Dioxane	6.134	88	3804	135.8450 ug/L	92
42) 2-Chloroethyl Vinyl Ether	6.511	63	42043	20.4701 ug/L	99
43) cis-1,3-Dichloropropene	6.528	75	142643	22.4091 ug/L	99
44) 4-Methyl-2-Pentanone	7.802	58	22000	20.2587 ug/L	99
45) trans-1,3-Dichloropropene	7.127	75	113437	21.3600 ug/L	99
48) Toluene	6.739	91	355452	19.1528 ug/L	100
49) Tetrachloroethene	7.069	166	91117	18.1783 ug/L	98

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017631.D
Acq On : 09 Feb 2016 12:38
Operator : ADC
Sample : WG556769-02 20ug/L LCS
Misc : 1,1 STD74621
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 09 12:50:36 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,1,2-Trichloroethane	7.261	97	66196	20.0691 ug/L	99
51) Dibromochloromethane	7.399	129	87485	20.1839 ug/L	100
52) 1,3-Dichloropropane	7.481	76	116607	21.2601 ug/L	98
53) 1,2-Dibromoethane	7.570	107	65684	20.0538 ug/L	100
54) 2-Hexanone	7.802	43	45082	20.5286 ug/L	98
55) Chlorobenzene	7.973	112	230319	19.5884 ug/L	98
56) 1-Chlorohexane	7.987	69	22865	21.1451 ug/L	93
57) Ethylbenzene	8.008	106	122009	19.2874 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.025	131	85220	19.4889 ug/L	99
59) m-,p-Xylene	8.109	106	300283	39.3981 ug/L	99
60) o-Xylene	8.372	106	149428	20.0532 ug/L	99
61) Styrene	8.407	104	238996	19.7701 ug/L	99
62) Bromoform	8.407	173	55282	19.6321 ug/L	98
63) Isopropylbenzene	8.563	105	387661	19.9114 ug/L	100
65) 1,3,5-Trimethylbenzene	8.902	105	335199	18.8560 ug/L	100
67) Bromobenzene	8.763	156	101432	17.8582 ug/L	98
68) n-Propylbenzene	8.792	91	463580	19.6667 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.836	83	76028	18.3301 ug/L	100
70) 2-Chlorotoluene	8.867	91	272403	18.6378 ug/L	99
71) 1,2,3-Trichloropropane	8.899	110	22161	19.9069 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.925	53	14350	16.3424 ug/L #	93
73) 1,2,4-Trimethylbenzene	9.099	105	331495	18.6910 ug/L	100
74) 4-Chlorotoluene	8.957	91	288906	19.5200 ug/L	99
75) tert-Butylbenzene	9.064	134	61944	18.5739 ug/L	97
76) sec-Butylbenzene	9.154	105	422728	19.5070 ug/L	99
77) p-Isopropyltoluene	9.226	119	350620	18.8400 ug/L	100
78) 1,3-Dichlorobenzene	9.255	146	194597	18.8796 ug/L	100
79) 1,4-Dichlorobenzene	9.302	146	197297	18.5777 ug/L	99
80) n-Butylbenzene	9.432	91	333159	20.0980 ug/L	99
81) 1,2-Dichlorobenzene	9.504	146	189131	18.8432 ug/L	100
82) 1,2-Dibromo-3-Chloropr...	9.881	75	14236	19.0679 ug/L	96
83) Hexachlorobutadiene	10.176	225	78191	19.0451 ug/L	100
84) 1,2,4-Trichlorobenzene	10.191	180	147073	19.4079 ug/L	99
85) Naphthalene	10.341	128	257913	18.4572 ug/L	100
86) 1,2,3-Trichlorobenzene	10.425	180	137192	19.5668 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017631.D
Acq On : 09 Feb 2016 12:38
Operator : ADC
Sample : WG556769-02 20ug/L LCS
Misc : 1,1 STD74621
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 09 12:50:36 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

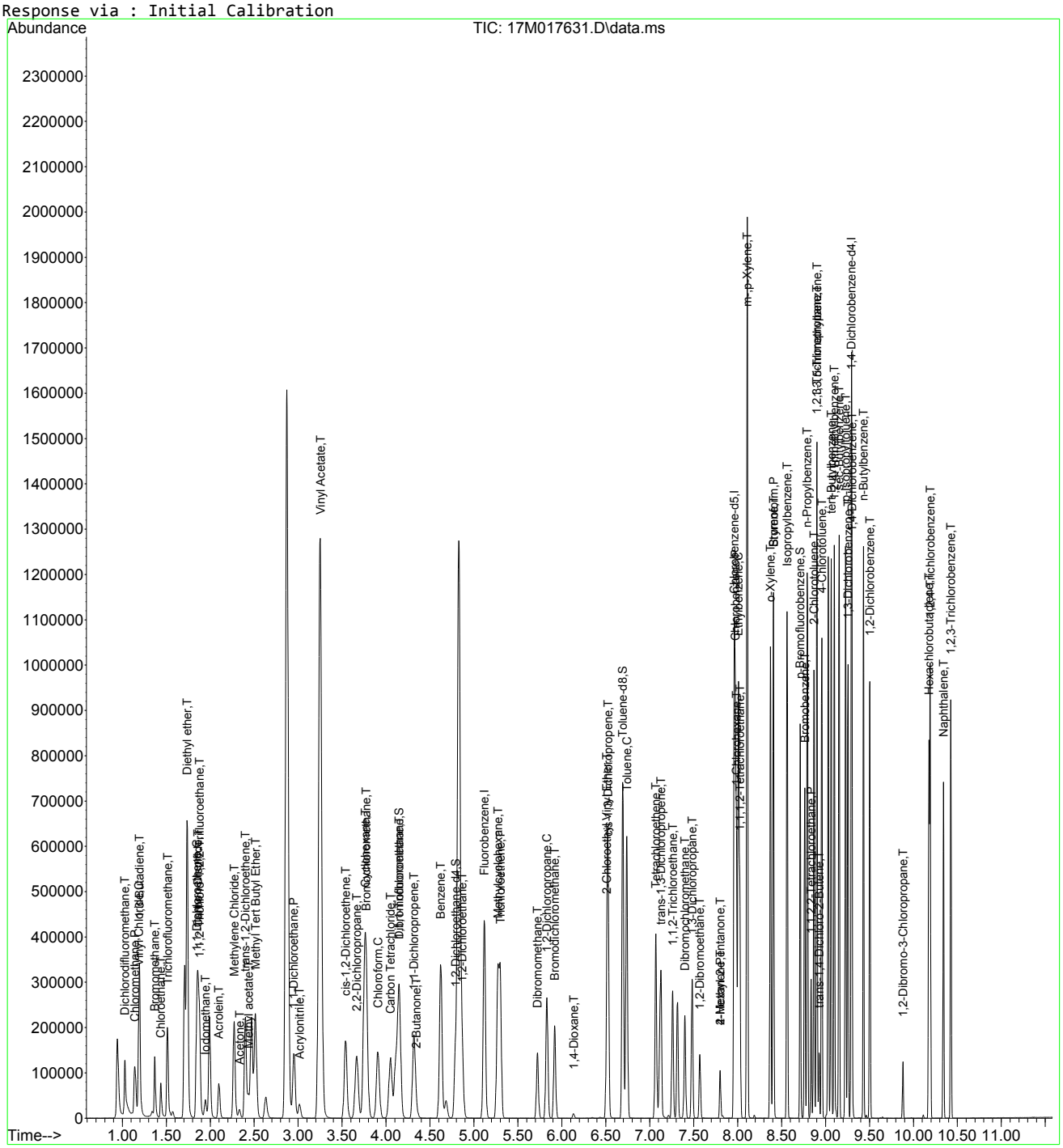

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017578.D
Acq On : 05 Feb 2016 13:11
Operator : ADC
Sample : WG556408-03 20ug/L LCSDUP
Misc : 1,1 STD74621
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 05 13:22:53 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	369126	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	265154	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	137453	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.151	111	102764	25.7267 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.907%		
34) 1,2-Dichloroethane-d4	4.788	65	108256	27.0282 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.113%		
47) Toluene-d8	6.693	98	386004	25.8616 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.446%		
66) p-Bromofluorobenzene	8.711	95	137199	26.6357 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.543%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.027	85	113544	20.2747 ug/L	99
3) Chloromethane	1.140	50	109305	20.0027 ug/L	99
4) Vinyl Chloride	1.183	62	102834	19.4708 ug/L	100
5) 1,3-Butadiene	1.195	54	75860	17.0521 ug/L	98
6) Bromomethane	1.368	94	56484	18.5420 ug/L	99
7) Chloroethane	1.438	64	38272	16.4297 ug/L	88
8) Trichlorofluoromethane	1.510	101	88597	14.1692 ug/L	99
9) Diethyl ether	1.739	59	308678	103.2420 ug/L	99
10) 1,1-Dichloroethene	1.840	61	116246	18.7598 ug/L	99
11) Carbon Disulfide	1.852	76	234819	18.3805 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.869	101	71863	19.4487 ug/L	99
13) Iodomethane	1.939	142	105504	16.6592 ug/L	100
14) Acrolein	2.101	56	54958	116.0929 ug/L	99
15) Methylene Chloride	2.269	84	82916	19.2486 ug/L	97
16) Acetone	2.338	43	22437	27.6724 ug/L	97
17) trans-1,2-Dichloroethene	2.396	96	74828	18.8636 ug/L	98
18) Methyl acetate	2.437	43	51792	21.6534 ug/L #	98
19) Methyl Tert Butyl Ether	2.515	73	227762	22.2119 ug/L	99
20) 1,1-Dichloroethane	2.949	63	144466	18.4672 ug/L	99
21) Acrylonitrile	3.016	53	4840	4.7897 ug/L	96
22) Vinyl Acetate	3.256	86	6830	20.1102 ug/L	91
23) cis-1,2-Dichloroethene	3.540	96	86758	19.4245 ug/L	97
24) 2,2-Dichloropropane	3.664	77	101256	17.2007 ug/L	96
25) Cyclohexane	3.760	56	144039	20.0572 ug/L	97
26) Bromochloromethane	3.777	130	52453	19.9624 ug/L	99
27) Chloroform	3.905	83	145566	19.7646 ug/L	99
28) Carbon Tetrachloride	4.049	117	110437	18.4531 ug/L	99
30) 1,1,1-Trichloroethane	4.148	97	126980	19.2216 ug/L	99
31) 1,1-Dichloropropene	4.313	75	101756	18.0509 ug/L	98
32) 2-Butanone	4.345	43	30759	24.1777 ug/L	89
33) Benzene	4.620	78	325001	19.3630 ug/L	100
35) 1,2-Dichloroethane	4.866	62	109408	21.0294 ug/L	99
36) Methylcyclohexane	5.271	83	137114	19.8379 ug/L	99
37) Trichloroethene	5.300	130	92229	20.1298 ug/L	97
38) Dibromomethane	5.720	93	45665	20.5943 ug/L	100
39) 1,2-Dichloropropane	5.827	63	93476	20.2932 ug/L	99
40) Bromodichloromethane	5.920	83	111740	19.9462 ug/L	100
41) 1,4-Dioxane	6.131	88	6006	213.4285 ug/L	97
42) 2-Chloroethyl Vinyl Ether	6.511	63	39935	19.3484 ug/L	99
43) cis-1,3-Dichloropropene	6.525	75	138434	21.6411 ug/L	99
44) 4-Methyl-2-Pentanone	7.802	58	24273	22.2422 ug/L	98
45) trans-1,3-Dichloropropene	7.127	75	111574	20.9061 ug/L	99
48) Toluene	6.736	91	352417	19.1877 ug/L	100
49) Tetrachloroethene	7.066	166	89753	18.0932 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017578.D
Acq On : 05 Feb 2016 13:11
Operator : ADC
Sample : WG556408-03 20ug/L LCSDUP
Misc : 1,1 STD74621
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 05 13:22:53 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50)	1,1,2-Trichloroethane	7.258	97	67943	20.8139 ug/L	99
51)	Dibromochloromethane	7.399	129	85787	19.9989 ug/L	100
52)	1,3-Dichloropropane	7.480	76	117522	21.6508 ug/L	97
53)	1,2-Dibromoethane	7.567	107	66992	20.6668 ug/L	99
54)	2-Hexanone	7.802	43	49756	22.8937 ug/L	98
55)	Chlorobenzene	7.970	112	230419	19.8017 ug/L	98
56)	1-Chlorohexane	7.984	69	22183	20.7288 ug/L	99
57)	Ethylbenzene	8.007	106	121686	19.4373 ug/L	99
58)	1,1,1,2-Tetrachloroethane	8.025	131	84907	19.6201 ug/L	99
59)	m-,p-Xylene	8.109	106	296524	39.3113 ug/L	98
60)	o-Xylene	8.372	106	148898	20.1908 ug/L	100
61)	Styrene	8.404	104	237280	19.8332 ug/L	99
62)	Bromoform	8.407	173	54361	19.5067 ug/L	99
63)	Isopropylbenzene	8.563	105	385945	20.0304 ug/L	99
65)	1,3,5-Trimethylbenzene	8.902	105	333431	20.3302 ug/L	99
67)	Bromobenzene	8.763	156	99703	19.0265 ug/L	98
68)	n-Propylbenzene	8.792	91	450238	20.7031 ug/L	99
69)	1,1,2,2-Tetrachloroethane	8.835	83	76712	20.0467 ug/L	100
70)	2-Chlorotoluene	8.867	91	271415	20.1283 ug/L	99
71)	1,2,3-Trichloropropane	8.899	110	22567	21.9723 ug/L	98
72)	trans-1,4-Dichloro-2-B...	8.925	53	16111	19.8873 ug/L #	91
73)	1,2,4-Trimethylbenzene	9.099	105	328565	20.0800 ug/L	100
74)	4-Chlorotoluene	8.957	91	280660	20.5538 ug/L	100
75)	tert-Butylbenzene	9.064	134	61140	19.8709 ug/L	97
76)	sec-Butylbenzene	9.154	105	413891	20.7016 ug/L	99
77)	p-Isopropyltoluene	9.226	119	342659	19.9569 ug/L	99
78)	1,3-Dichlorobenzene	9.255	146	189899	19.9696 ug/L	100
79)	1,4-Dichlorobenzene	9.299	146	190640	19.4569 ug/L	99
80)	n-Butylbenzene	9.432	91	313879	20.5235 ug/L	98
81)	1,2-Dichlorobenzene	9.504	146	188013	20.3034 ug/L	100
82)	1,2-Dibromo-3-Chloropr...	9.878	75	14431	20.9508 ug/L	94
83)	Hexachlorobutadiene	10.176	225	76927	20.3093 ug/L	99
84)	1,2,4-Trichlorobenzene	10.191	180	139685	19.9795 ug/L	100
85)	Naphthalene	10.341	128	262549	20.3653 ug/L	100
86)	1,2,3-Trichlorobenzene	10.425	180	134309	20.7627 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017578.D
Acq On : 05 Feb 2016 13:11
Operator : ADC
Sample : WG556408-03 20ug/L LCSDUP
Misc : 1,1 STD74621
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 05 13:22:53 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

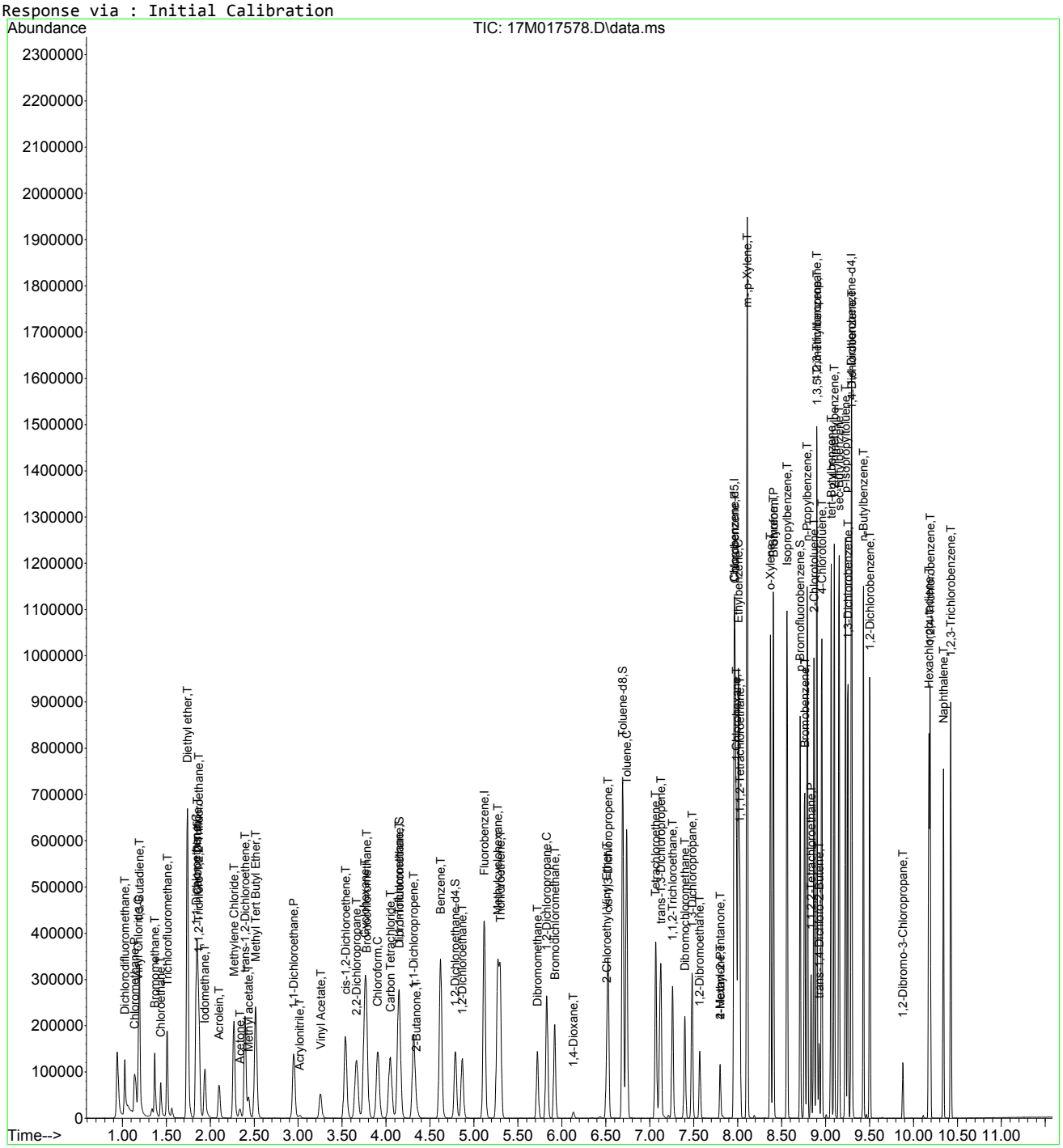

8260VMS.M Fri Feb 05 13:22:55 2016 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017583.D
Acq On : 05 Feb 2016 14:49
Operator : ADC
Sample : WG556408-05 20ug/L ACRYLONITRILE LCSDUP
Misc : 1,1 STD74618
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Feb 08 09:47:54 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	368722	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	264551	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	139642	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	100119	25.0920 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.368%		
34) 1,2-Dichloroethane-d4	4.788	65	106437	26.6032 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.413%		
47) Toluene-d8	6.693	98	386466	25.9516 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.806%		
66) p-Bromofluorobenzene	8.711	95	136958	26.1721 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.688%		
Target Compounds					Qvalue
3) Chloromethane	1.134	50	1333	0.2442 ug/L	90
5) 1,3-Butadiene	1.195	54	2749	0.6186 ug/L	95
6) Bromomethane	1.368	94	10427	2.8063 ug/L	98
11) Carbon Disulfide	1.864	76	226818	17.7737 ug/L	97
13) Iodomethane	1.945	142	51066	8.8089 ug/L	100
14) Acrolein	1.997	56	626	1.3238 ug/L #	13
16) Acetone	2.333	43	21120	25.9648 ug/L	98
18) Methyl acetate	2.437	43	48924	20.4768 ug/L #	98
19) Methyl Tert Butyl Ether	2.509	73	229969	22.4518 ug/L #	61
21) Acrylonitrile	3.016	53	23980	23.7566 ug/L	99
24) 2,2-Dichloropropane	3.766	77	1689	1.2291 ug/L #	1
25) Cyclohexane	3.766	56	148604	20.7155 ug/L #	68
32) 2-Butanone	4.342	43	31213	24.5615 ug/L #	70
36) Methylcyclohexane	5.274	83	138216	20.0192 ug/L	98
42) 2-Chloroethyl Vinyl Ether	6.511	63	34513	16.7398 ug/L	97
44) 4-Methyl-2-Pentanone	7.799	58	24328	22.3170 ug/L	99
54) 2-Hexanone	7.799	43	50561	23.3171 ug/L	97
56) 1-Chlorohexane	7.984	69	22412	20.9905 ug/L #	1
72) trans-1,4-Dichloro-2-B...	8.925	53	13360	16.2329 ug/L #	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020516\
Data File : 17M017583.D
Acq On : 05 Feb 2016 14:49
Operator : ADC
Sample : WG556408-05 20ug/L ACRYLONITRILE LCSDUP
Misc : 1,1 STD74618
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Feb 08 09:47:54 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

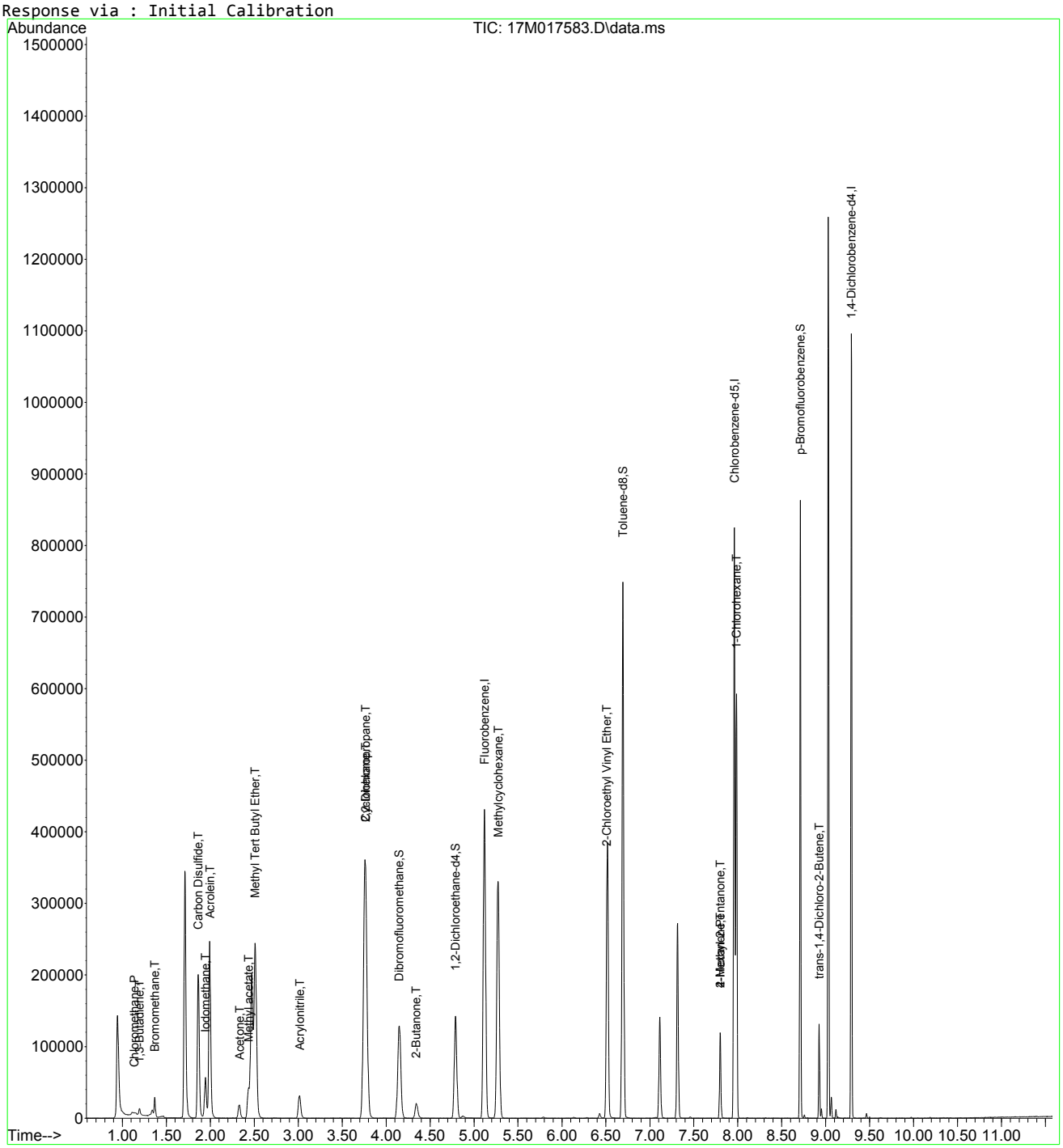

8260VMS.M Mon Feb 08 09:48:48 2016 Page: 2

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017632.D
Acq On : 09 Feb 2016 12:58
Operator : ADC
Sample : WG556769-03 20ug/L LCSDUP
Misc : 1,1 STD74621
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 09 13:10:19 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.118	96	369172	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.961	117	272354	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.293	152	150457	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.148	111	104650	26.1956 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.782%		
34) 1,2-Dichloroethane-d4	4.785	65	111159	27.7495 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.998%		
47) Toluene-d8	6.693	98	391890	25.5618 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.247%		
66) p-Bromofluorobenzene	8.711	95	142934	25.3507 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.403%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.027	85	114320	20.4107 ug/L	99
3) Chloromethane	1.140	50	107999	19.7612 ug/L	99
4) Vinyl Chloride	1.183	62	105186	19.9137 ug/L	100
5) 1,3-Butadiene	1.195	54	79555	17.8804 ug/L	98
6) Bromomethane	1.369	94	52956	17.3341 ug/L	100
7) Chloroethane	1.438	64	39689	17.0359 ug/L	87
8) Trichlorofluoromethane	1.510	101	105042	16.7971 ug/L	99
9) Diethyl ether	1.739	59	283586	94.8378 ug/L	99
10) 1,1-Dichloroethene	1.840	61	122475	19.7625 ug/L	99
11) Carbon Disulfide	1.855	76	220906	17.2893 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.872	101	76430	20.6821 ug/L	100
13) Iodomethane	1.942	142	55620	9.4572 ug/L	100
14) Acrolein	2.098	56	56401	119.1263 ug/L	99
15) Methylene Chloride	2.269	84	85139	19.7622 ug/L	97
16) Acetone	2.336	43	20579	25.2169 ug/L	97
17) trans-1,2-Dichloroethene	2.396	96	78132	19.6941 ug/L	97
18) Methyl acetate	2.437	43	47311	19.7775 ug/L #	96
19) Methyl Tert Butyl Ether	2.512	73	219723	21.4253 ug/L	100
20) 1,1-Dichloroethane	2.952	63	149030	19.0483 ug/L	100
21) Acrylonitrile	3.016	53	22741	22.5017 ug/L	100
22) Vinyl Acetate	3.250	86	11402	30.7664 ug/L #	1
23) cis-1,2-Dichloroethene	3.537	96	89435	20.0214 ug/L	98
24) 2,2-Dichloropropane	3.662	77	111236	18.7994 ug/L	98
25) Cyclohexane	3.766	56	143537	19.9848 ug/L #	68
26) Bromochloromethane	3.780	130	52967	20.1555 ug/L	99
27) Chloroform	3.905	83	148773	20.1976 ug/L	100
28) Carbon Tetrachloride	4.050	117	116374	19.4427 ug/L	99
30) 1,1,1-Trichloroethane	4.148	97	132228	20.0135 ug/L	99
31) 1,1-Dichloropropene	4.313	75	107496	19.0668 ug/L	98
32) 2-Butanone	4.345	43	29582	23.2497 ug/L	92
33) Benzene	4.620	78	331368	19.7399 ug/L	99
35) 1,2-Dichloroethane	4.869	62	110664	21.2681 ug/L	99
36) Methylcyclohexane	5.271	83	137626	19.9095 ug/L	98
37) Trichloroethene	5.300	130	93670	20.4417 ug/L	97
38) Dibromomethane	5.723	93	46905	21.1509 ug/L	100
39) 1,2-Dichloropropane	5.830	63	94930	20.6063 ug/L	99
40) Bromodichloromethane	5.917	83	113517	20.2609 ug/L	99
41) 1,4-Dioxane	6.131	88	4360	154.9171 ug/L	98
42) 2-Chloroethyl Vinyl Ether	6.511	63	43710	21.1747 ug/L	98
43) cis-1,3-Dichloropropene	6.525	75	146155	22.8453 ug/L	99
44) 4-Methyl-2-Pentanone	7.802	58	22685	20.7844 ug/L	99
45) trans-1,3-Dichloropropene	7.127	75	116725	21.8685 ug/L	100
48) Toluene	6.736	91	365094	19.3524 ug/L	100
49) Tetrachloroethene	7.069	166	94462	18.5391 ug/L	98

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017632.D
Acq On : 09 Feb 2016 12:58
Operator : ADC
Sample : WG556769-03 20ug/L LCSDUP
Misc : 1,1 STD74621
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 09 13:10:19 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,1,2-Trichloroethane	7.261	97	67579	20.1551 ug/L	99
51) Dibromochloromethane	7.399	129	89074	20.2163 ug/L	100
52) 1,3-Dichloropropane	7.481	76	119059	21.3541 ug/L	98
53) 1,2-Dibromoethane	7.570	107	68054	20.4394 ug/L	99
54) 2-Hexanone	7.802	43	47488	21.2725 ug/L	97
55) Chlorobenzene	7.970	112	236967	19.8260 ug/L	99
56) 1-Chlorohexane	7.984	69	23396	21.2843 ug/L	94
57) Ethylbenzene	8.008	106	124829	19.4122 ug/L	98
58) 1,1,1,2-Tetrachloroethane	8.025	131	87264	19.6317 ug/L	100
59) m-,p-Xylene	8.109	106	307929	39.7441 ug/L	99
60) o-Xylene	8.372	106	152777	20.1691 ug/L	100
61) Styrene	8.407	104	245903	20.0106 ug/L	99
62) Bromoform	8.407	173	56739	19.8217 ug/L	99
63) Isopropylbenzene	8.563	105	401945	20.3093 ug/L	99
65) 1,3,5-Trimethylbenzene	8.902	105	345621	19.2520 ug/L	99
67) Bromobenzene	8.763	156	103863	18.1073 ug/L	98
68) n-Propylbenzene	8.792	91	477574	20.0621 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.836	83	78796	18.8116 ug/L	100
70) 2-Chlorotoluene	8.867	91	278615	18.8764 ug/L	99
71) 1,2,3-Trichloropropane	8.899	110	22488	20.0030 ug/L	97
72) trans-1,4-Dichloro-2-B...	8.925	53	14918	16.8231 ug/L #	96
73) 1,2,4-Trimethylbenzene	9.099	105	341164	19.0479 ug/L	99
74) 4-Chlorotoluene	8.957	91	295563	19.7744 ug/L	100
75) tert-Butylbenzene	9.064	134	64360	19.1095 ug/L	99
76) sec-Butylbenzene	9.154	105	432642	19.7692 ug/L	100
77) p-Isopropyltoluene	9.226	119	363143	19.3219 ug/L	100
78) 1,3-Dichlorobenzene	9.255	146	201820	19.3888 ug/L	100
79) 1,4-Dichlorobenzene	9.299	146	201340	18.7729 ug/L	100
80) n-Butylbenzene	9.432	91	347002	20.7283 ug/L	99
81) 1,2-Dichlorobenzene	9.504	146	192891	19.0298 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.881	75	14880	19.7355 ug/L	95
83) Hexachlorobutadiene	10.176	225	81210	19.5869 ug/L	99
84) 1,2,4-Trichlorobenzene	10.191	180	151761	19.8306 ug/L	100
85) Naphthalene	10.341	128	265527	18.8162 ug/L	99
86) 1,2,3-Trichlorobenzene	10.425	180	142732	20.1578 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\020916\
Data File : 17M017632.D
Acq On : 09 Feb 2016 12:58
Operator : ADC
Sample : WG556769-03 20ug/L LCSDUP
Misc : 1,1 STD74621
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 09 13:10:19 2016
Quant Method : D:\MassHunter\GCMS\1\methods\8260VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 01/21/16 HPMS17
QLast Update : Wed Jan 27 12:15:43 2016
Response via : Initial Calibration

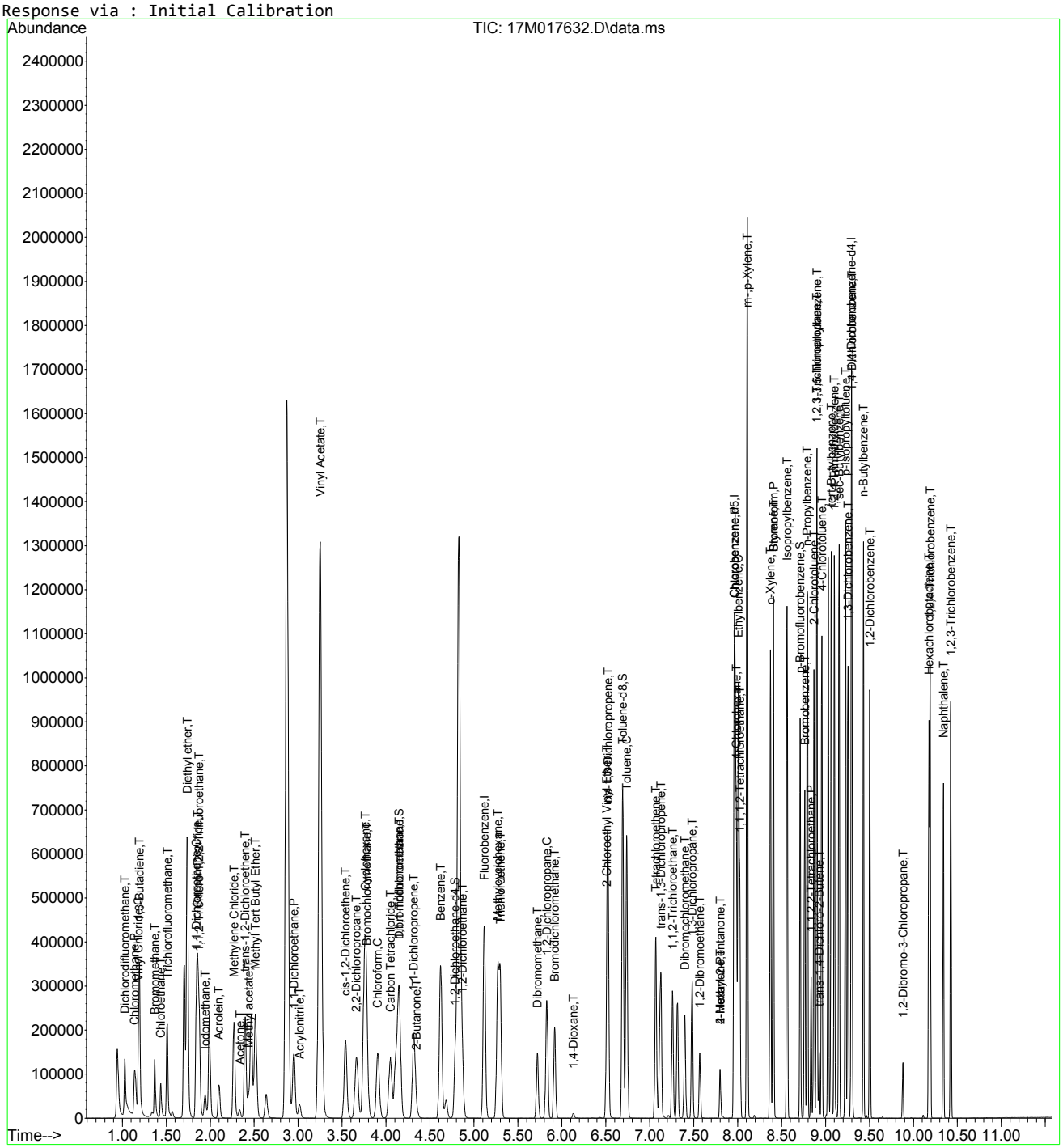

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW09-020216	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 13:25
Collect Date:	02/02/2016 08:10	**Dilution:**	1	**File ID:**	16G49345
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	769000	J	10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW09-020216	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG556003	**Analyst:**	JDS	**Run Date:**	02/03/2016 15:18
Collect Date:	02/02/2016 08:10	**Dilution:**	10	**File ID:**	16G49350
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	567000		100000	50000	25000
Methane	74-82-8	20.0	U	50.0	20.0	10.0
ethene	74-85-1	20.0	U	50.0	20.0	10.0
ethane	74-84-0	20.0	U	50.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:	
y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:		
Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 030315
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG514119

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46874	RINSE	NA	1	1		03/03/15 14:05
16G46875	WG514119-01 0.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:17
16G46876	WG514119-02 1.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:30
16G46877	WG514119-03 33.3umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:42
16G46878	WG514119-04 66.7umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 14:53
16G46879	WG514119-05 133umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:05
16G46880	WG514119-06 333umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:17
16G46881	WG514119-07 533umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:29
16G46882	RINSE	NA	1	1		03/03/15 15:41
16G46883	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 16:14
16G46884	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 17:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X			
File ID: 16G46883				
	Wrong vial taken up by HT3 autosampler			

Approved: March 11, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 020316
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD72628 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG556003

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G49333	WG556002-01 133umol/mol CCV STD RSK	NA	1	1	STD72628	02/03/16 09:12
16G49334	WG556003-01 BLANK RSK175	NA	1	1		02/03/16 11:00
16G49335	WG556003-02 67umol/mol LCS RSK175	NA	1	1	STD68250	02/03/16 11:13
16G49336	WG556003-03 67umol/mol LCS2 RSK175	NA	1	1	STD68250	02/03/16 11:25
16G49337	L16011283-01 A RSK175	<2	1	1		02/03/16 11:37
16G49338	L16020072-02 A RSK175	4	1	1		02/03/16 11:49
16G49339	L16020058-01 A RSK175	5	1	1		02/03/16 12:01
16G49340	L16020058-03 A RSK175	5	1	1		02/03/16 12:13
16G49341	L16020058-05 A RSK175	7	1	1		02/03/16 12:26
16G49342	L16020058-07 A RSK175	5	1	1		02/03/16 12:38
16G49343	L16020058-09 A RSK175	7	1	1		02/03/16 12:50
16G49344	WG556002-02 133umol/mol CCV STD RSK	NA	1	1	STD72628	02/03/16 13:14
16G49345	L16020141-01 A RSK175	7	1	1		02/03/16 13:25
16G49346	L16020058-01 B D1 10X RSK175	5	1	10		02/03/16 14:28
16G49347	L16020058-03 B D1 10X RSK175	5	1	10		02/03/16 14:41
16G49348	L16020058-07 B D1 5X RSK175	4	1	5		02/03/16 14:54
16G49349	L16020058-09 B D1 10X RSK175	7	1	10		02/03/16 15:06
16G49350	L16020141-01 B D1 10X RSK175	7	1	10		02/03/16 15:18
16G49351	L16020163-01 A RSK175	<2	1	1		02/03/16 15:30
16G49352	L16020164-01 A RSK175	<2	1	1		02/03/16 15:42
16G49353	WG556002-03 133umol/mol CCV STD RSK	NA	1	1	STD72628	02/03/16 15:55

Comments

Seq.	Rerun	Dil.	Reason	Analytes
6	X	10	Over Calibration Range	CO2
File ID: 16G49339				
	L16020058-01			
7	X	10	Over Calibration Range	CO2
File ID: 16G49340				
	L16020058-03			
9	X	5	Over Calibration Range	CO2
File ID: 16G49342				
	L16020058-07			
10	X	10	Over Calibration Range	CO2

Approved: February 05, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 020316
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD72628 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG556003

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 16G49343				
	L16020058-09			
12	X	10	Over Calibration Range	CO2
File ID: 16G49345				
	L16020141-01			

Approved: February 05, 2016

Page: 2

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B202656

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG514119-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B218122

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG556002-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG556002-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG556002-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L16020058-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L16020058-09	15	mL	15	mL					5.47	mL	5.47	mL	40
L16020163-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L16020072-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L16020058-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L16020141-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L16011283-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L16020058-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG556003-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16020164-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG556003-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16020058-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B218125

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG556003-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B218124

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
L16020141-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAR-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 66688
Analytical Workgroups: WG514119

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	NA
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
06-MAR-2015

Secondary Reviewer:
11-MAR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-11-2015 12:34:12

Microbac Laboratories Inc.

Data Checklist

Date: 03-FEB-2016
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 73121
Analytical Workgroups: WG556003

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
04-FEB-2016

Secondary Reviewer:
05-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-05-2016 09:18:25

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG556003

Login Number: L16020141

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW09-020216	01	02/02/16					02/03/2016	1.2	7		02/03/16	1.2	7	
46WW09-020216	01	02/02/16					02/03/2016	1.3	7		02/03/16	1.3	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4618388
Report generated 02/05/2016 09:15

METHOD BLANK SUMMARY

Login Number: L16020141
Blank File ID: 16G49334
Prep Date: 02/03/16 11:00
Analyzed Date: 02/03/16 11:00
Analyst: JDS

Work Group: WG556003
Blank Sample ID: WG556003-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556003-02	16G49335	02/03/16 11:13	01
LCS2	WG556003-03	16G49336	02/03/16 11:25	01
46WW09-020216	L16020141-01	16G49345	02/03/16 13:25	01
46WW09-020216	L16020141-01	16G49350	02/03/16 15:18	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4618389
Report generated 02/05/2016 09:15

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020141 Prep Date: 02/03/16 11:00 Sample ID: WG556003-01
Instrument ID: HP16 Run Date: 02/03/16 11:00 Prep Method: 5021
File ID: 16G49334 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG556003 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4618390
05-FEB-2016 09:15

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020141 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG556003 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG556003-02 LCS File ID: 16G49335 Run Date: 02/03/2016 11:13
Sample ID: WG556003-03 LCS2 File ID: 16G49336 Run Date: 02/03/2016 11:25

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	107	94.1	114	108	94.7	0.572	86.5 - 109	20	
ethene	200	187	93.8	200	187	93.9	0.112	84.4 - 111	20	
ethane	214	194	90.9	214	195	91.1	0.231	80.4 - 109	20	
Carbon Dioxide	31300	26700	85.2	31300	27200	86.9	1.97	53.1 - 130	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4618391
Report generated: 02/05/2016 09:15

Calibration Table Report
Method: RSKEXT1.M
Title: RSK175 HP16 (SOP: OVL RSK01) 030315
Last Calibration: Fri Mar 06 11:52:33 2015
Curve:WG514119
Calibration Files

		0.67	1.67	33.3	66.7	133	333	533			
		16G46875.	16G46876.	16G46877.	16G46878.	16G46879.	16G46880.	16G46881.D			
	Compound								Avg	%RSD	Linear
T	methane		442542.3	201716.7	175611.6	187516.9	186065.3	188702.9	230359.0	45.3	0.999
T	ethene		322209.5	334124.6	295911.1	313430.8	319356.4	318282.1	317219.0	3.9	
T	acetylene		316851.9	343603.6	313507.6	354933.8	357109.5	344601.6	338435.0	5.6	
T	ethane	381661.4	339569.9	346403.4	312338.4	328333.4	335709.7	335266.3	339897.0	6.3	
T	propane	528069.3	481580.8	518227.1	469331.7	483950.9	500133.6	493547.4	496406.0	4.2	
T	n-butane	686564.3	616037.4	680754.9	613926.5	634552.4	659898.4	646188.9	648275.0	4.5	
	Signal #2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T	carbon dioxide		3977.4	5604.2	5581.8	6054.5	6060.7	5810.7	5514.9	14.2	

Fri Mar 06 11:59:12 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16020141 Run Date: 03/03/2015 Sample ID: WG514119-08
Instrument ID: HP16 Run Time: 17:10 Method: RSK175
File ID: 16G46884 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG514119 Cal ID: HP16 - 03-MAR-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
carbon dioxide		62500	65100	ug/L	5740	4.10	15	
methane		228	236	ug/L	195000	3.50	15	
ethene		398	407	ug/L	324000	2.20	15	
ethane		427	423	ug/L	337000	0.900	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4618392
Report generated 02/05/2016 09:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141 Run Date: 02/03/2016 Sample ID: WG556002-01
Instrument ID: HP16 Run Time: 09:12 Method: RSK175
File ID: 16G49333 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG556003 Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	63700	ug/L	5620	1.84	15	
methane		228	215	ug/L	178000	5.66	15	
ethene		398	377	ug/L	300000	5.40	15	
ethane		427	394	ug/L	314000	7.62	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4618393
Report generated 02/05/2016 09:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141 Run Date: 02/03/2016 Sample ID: WG556002-02
Instrument ID: HP16 Run Time: 13:14 Method: RSK175
File ID: 16G49344 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG556003 Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	62400	ug/L	5500	0.228	15	
methane		228	208	ug/L	172000	8.72	15	
ethene		398	364	ug/L	290000	8.68	15	
ethane		427	382	ug/L	304000	10.5	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4618393
Report generated 02/05/2016 09:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141 Run Date: 02/03/2016 Sample ID: WG556002-03
Instrument ID: HP16 Run Time: 15:55 Method: RSK175
File ID: 16G49353 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG556003 Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	57100	ug/L	5040	8.56	15	
methane		228	209	ug/L	173000	8.21	15	
ethene		398	363	ug/L	289000	8.84	15	
ethane		427	382	ug/L	304000	10.5	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4618393
Report generated 02/05/2016 09:15

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\020316\16G49345.D\FID1A.CH Vial: 13
Signal #2 : C:\MSDchem\1\DATA\020316\16G49345.D\TCD2B.CH
Acq On    : 03 Feb 2016  13:25                      Operator: JDS
Sample    : L16020141-01 A RSK175                   Inst    : HP16
Misc      : 1,1                                     Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 13:32:02 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	260066	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	29016	0.085	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.19	903020634	163742.690	umol/

Signal #1 : C:\MSDchem\1\DATA\020316\16G49345.D\FID1A.CH Vial: 13
Signal #2 : C:\MSDchem\1\DATA\020316\16G49345.D\TCD2B.CH
Acq On : 03 Feb 2016 13:25 Operator: JDS
Sample : L16020141-01 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 3 13:32 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

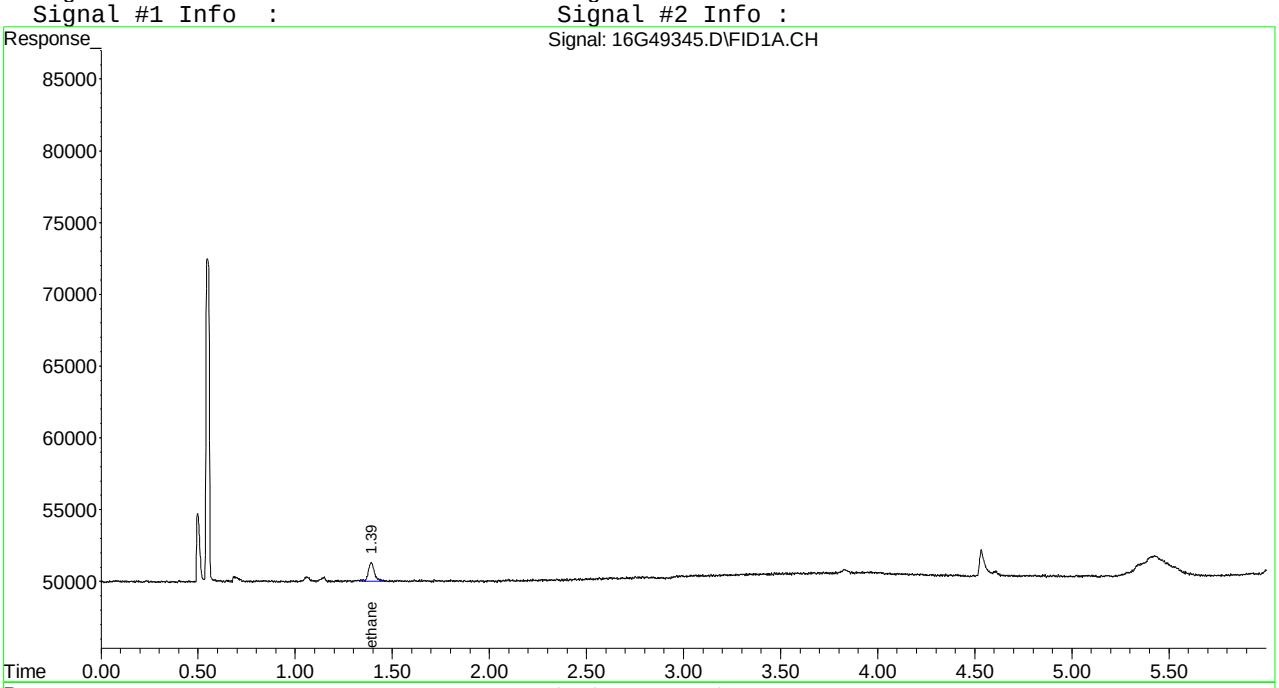

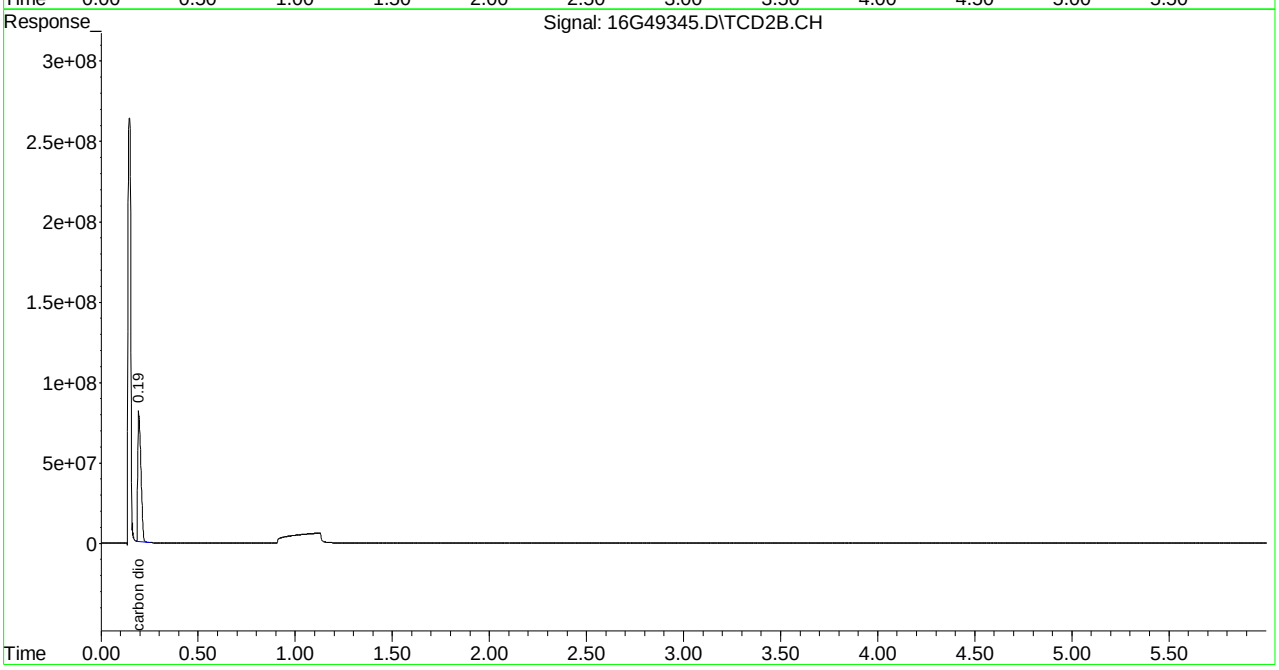

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49350.D\FID1A.CH Vial: 18
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49350.D\TCD2B.CH
Acq On    : 03 Feb 2016  15:18                        Operator: JDS
Sample    : L16020141-01 B D1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 15:24:23 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	268849	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.21	66483880	12055.372	umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49350.D\FID1A.CH Vial: 18
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49350.D\TCD2B.CH
Acq On : 03 Feb 2016 15:18 Operator: JDS
Sample : L16020141-01 B D1 10X RSK175 Inst : HP16
Misc : 1,10 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 3 15:24 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

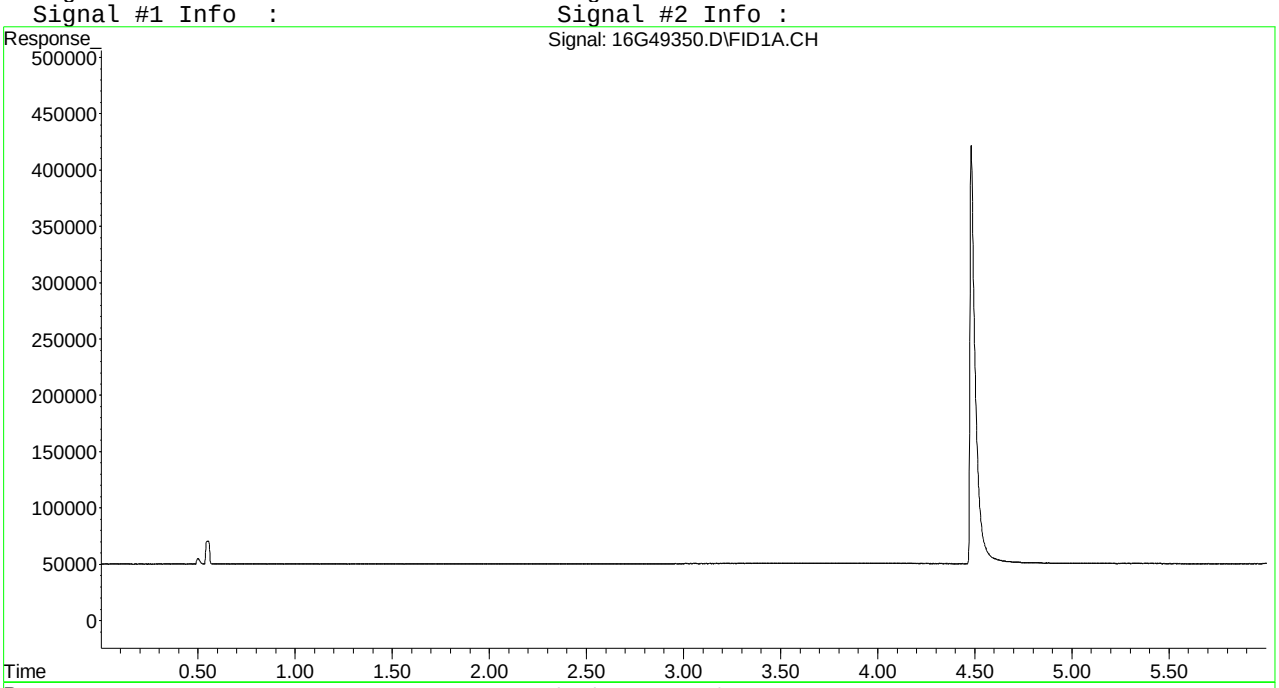

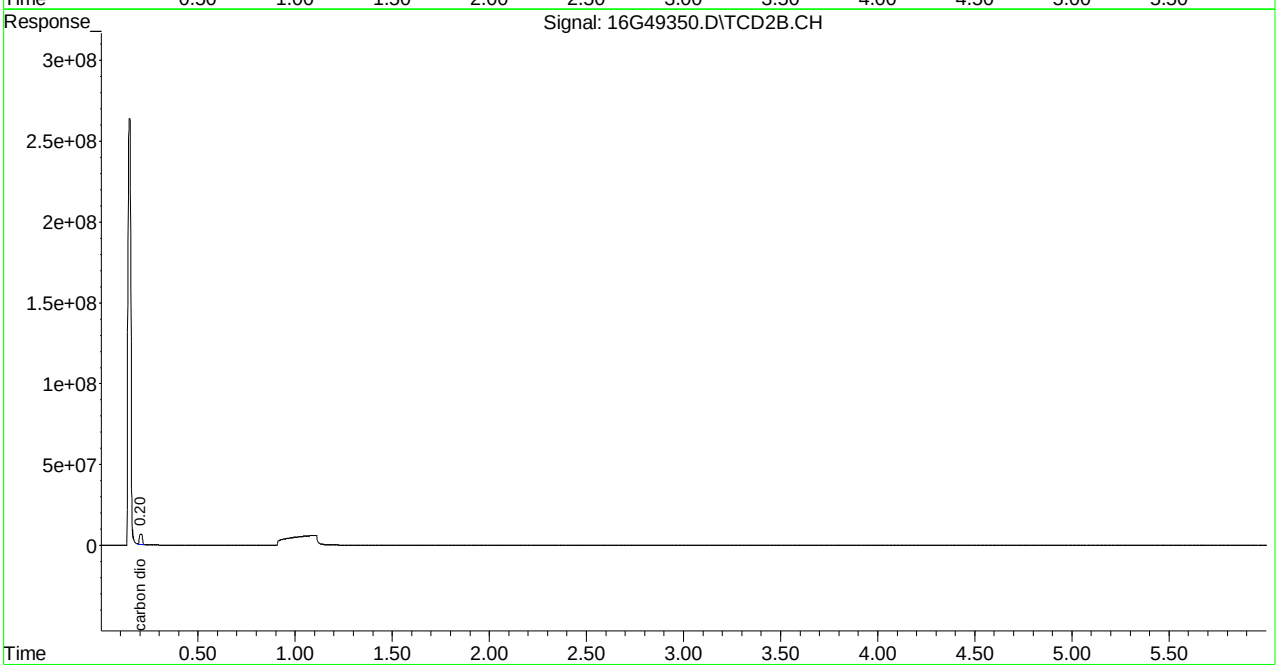

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:54:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	566979	0.846	umol/
2) T	ethene	1.06	233416	0.736	umol/
3) T	acetylene	1.14	213812	0.632	umol/
4) T	ethane	1.39	254568	0.749	umol/
5) T	propane	3.83	352222	0.710	umol/
6) T	n-butane	5.34	457938	0.706	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46875.D RSKEXT1.M Fri Mar 06 11:56:43 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:54 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

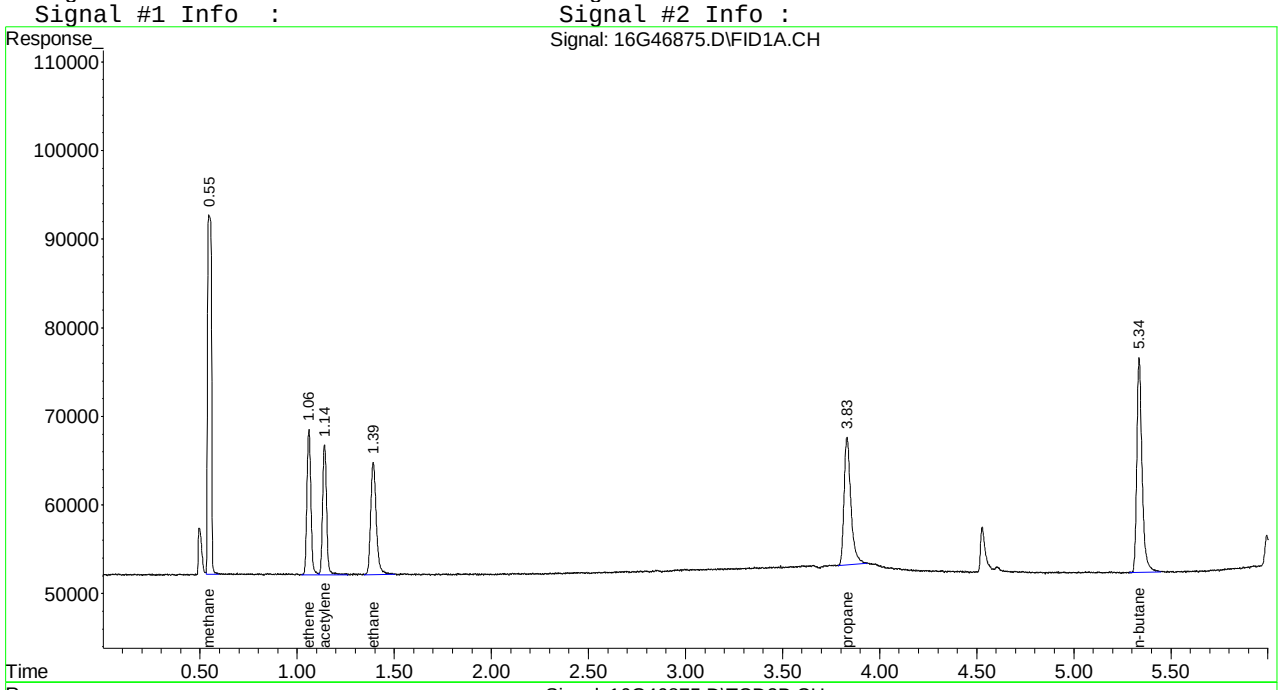

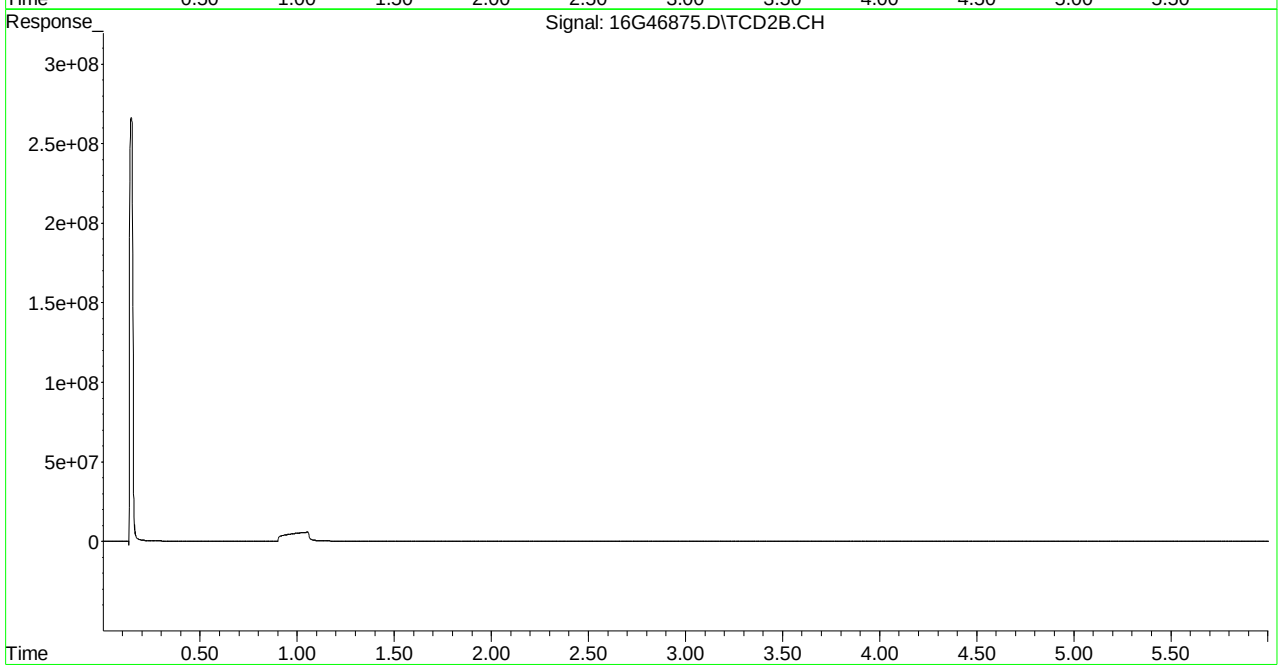

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	-1.000	0.846	0.0	0	0.00
2	T	ethene	-1.000	0.736	0.0	100	0.00
3	T	acetylene	-1.000	0.632	0.0	100	0.00
4	T	ethane	0.667	0.749	-12.3	100	0.00
5	T	propane	0.667	0.710	-6.4	100	0.00
6	T	n-butane	0.667	0.706	-5.8	100	0.00

Signal #2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46875.D RSKEXT1.M Fri Mar 06 11:55:53 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:17                        Operator: JDS
Sample    : WG514119-01 0.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
	Signal #2					
8 T	carbon dioxide	-1.000	0.000	0.0	0	-0.21

```
---------------------------------------------------------------------------
(#) = Out of Range            SPCC's out = 0  CCC's out = 0
16G46875.D  RSKEXT1.M      Fri Mar 06 11:55:53 2015                    Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	739046	1.773	umol/
2) T	ethene	1.06	538090	1.696	umol/
3) T	acetylene	1.14	529143	1.564	umol/
4) T	ethane	1.39	567082	1.668	umol/
5) T	propane	3.83	804240	1.620	umol/
6) T	n-butane	5.34	1028782	1.587	umol/
8) T	carbon dioxide	0.20	7954783	1442.423	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46876.D RSKEXT1.M Fri Mar 06 11:57:08 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

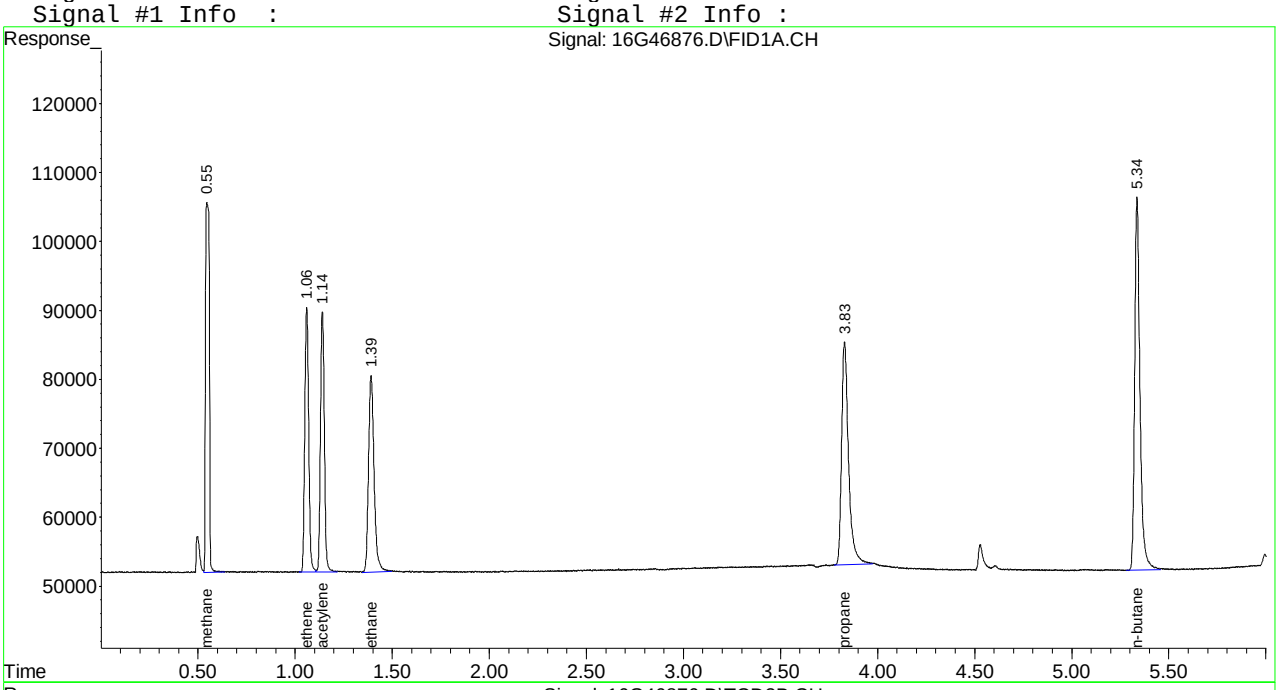

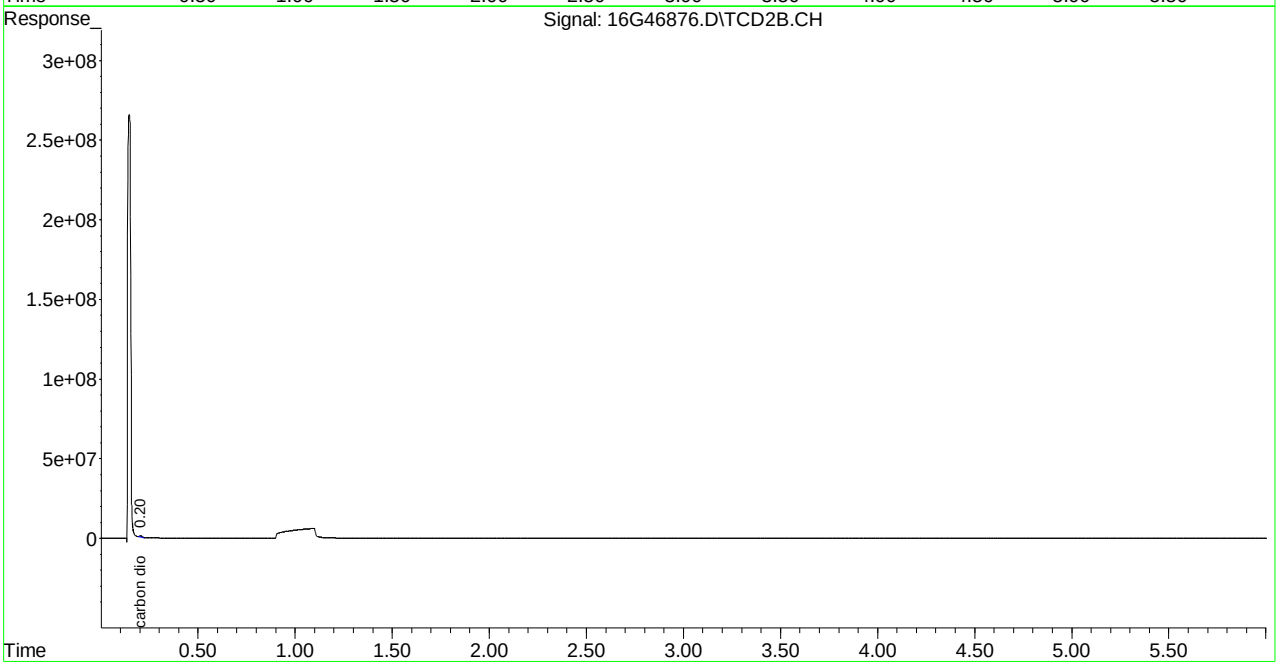

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	1.670	1.773	-6.2	100	0.00
2	T	ethene	1.670	1.696	-1.6	100	0.00
3	T	acetylene	1.670	1.564	6.3	100	0.00
4	T	ethane	1.670	1.668	0.1	100	0.00
5	T	propane	1.670	1.620	3.0	100	0.00
6	T	n-butane	1.670	1.587	5.0	100	0.00

Signal #2

8	T	carbon dioxide	2000.000	1442.423	27.9#	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46876.D RSKEXT1.M Fri Mar 06 11:52:49 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:30                        Operator: JDS
Sample    : WG514119-02 1.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:10 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	6717167	33.998	umol/
2) T	ethene	1.06	11126351	35.075	umol/
3) T	acetylene	1.14	11442001	33.809	umol/
4) T	ethane	1.39	11535235	33.937	umol/
5) T	propane	3.83	17256964	34.764	umol/
6) T	n-butane	5.34	22669140	34.968	umol/
8) T	carbon dioxide	0.20	18661832	3383.908	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46877.D RSKEXT1.M Fri Mar 06 11:57:10 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

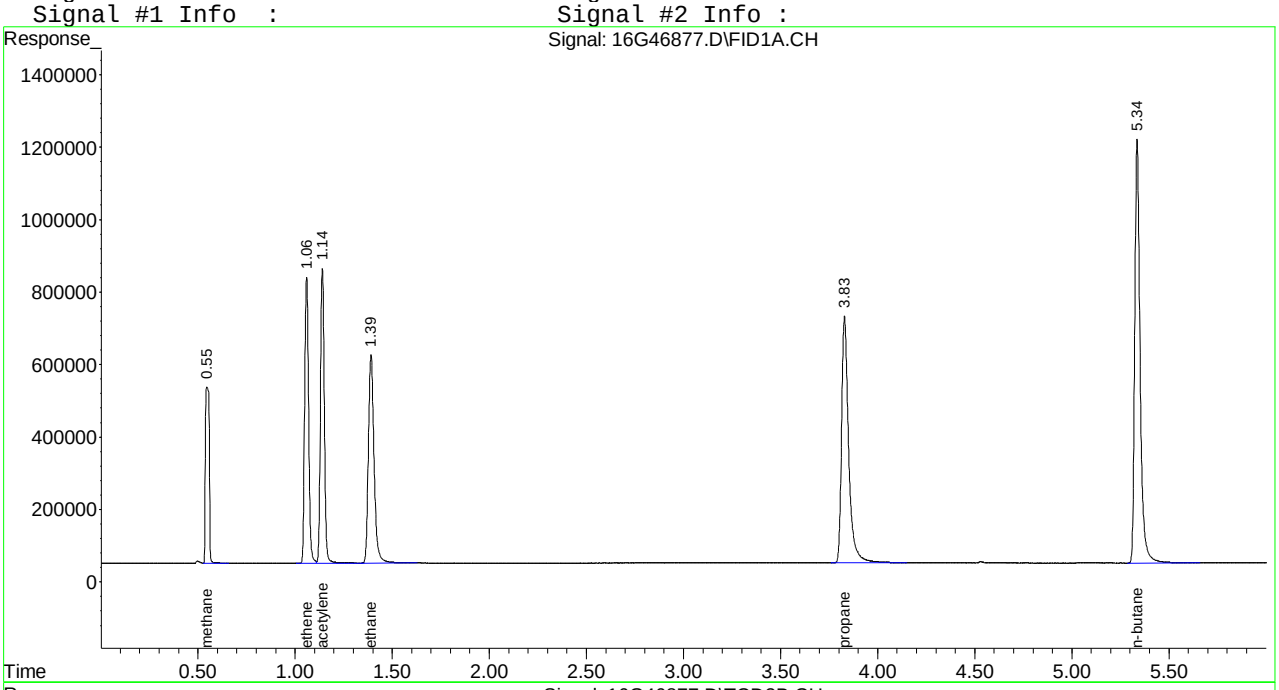

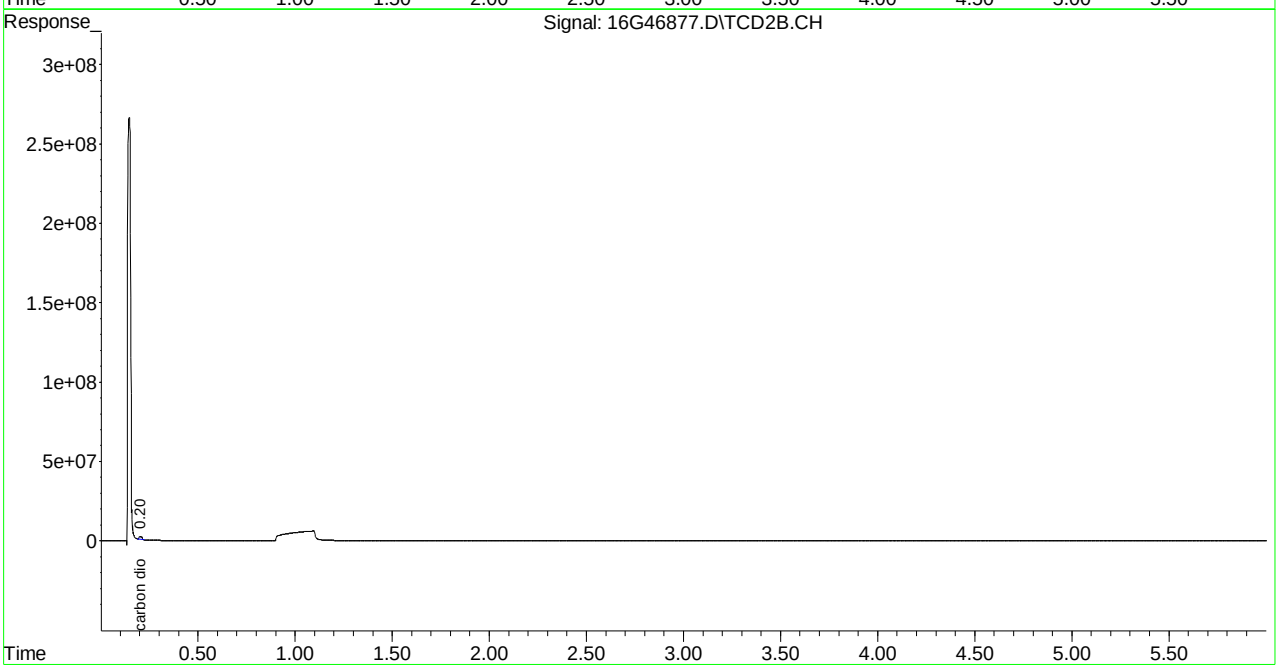

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11713293	60.930	umol/
2) T	ethene	1.06	19737271	62.220	umol/
3) T	acetylene	1.14	20910957	61.787	umol/
4) T	ethane	1.39	20832969	61.292	umol/
5) T	propane	3.83	31304425	63.062	umol/
6) T	n-butane	5.33	40948894	63.166	umol/
8) T	carbon dioxide	0.20	37230879	6750.991	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46878.D RSKEXT1.M Fri Mar 06 11:57:11 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

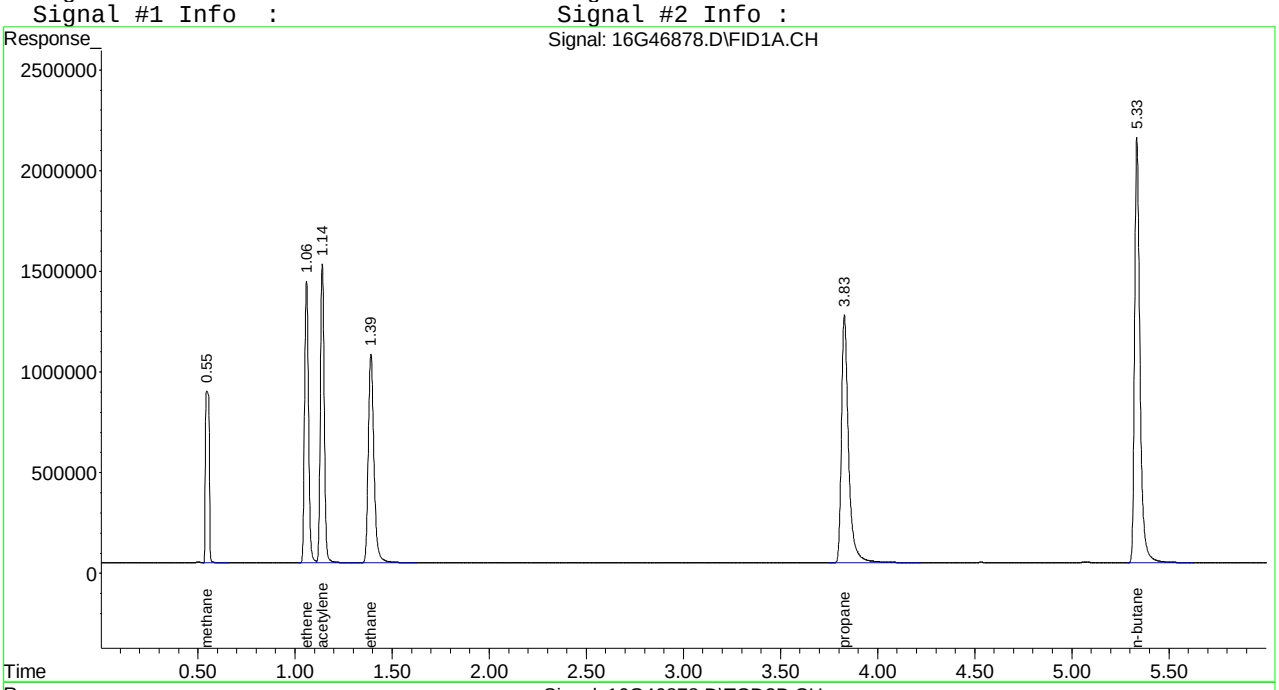

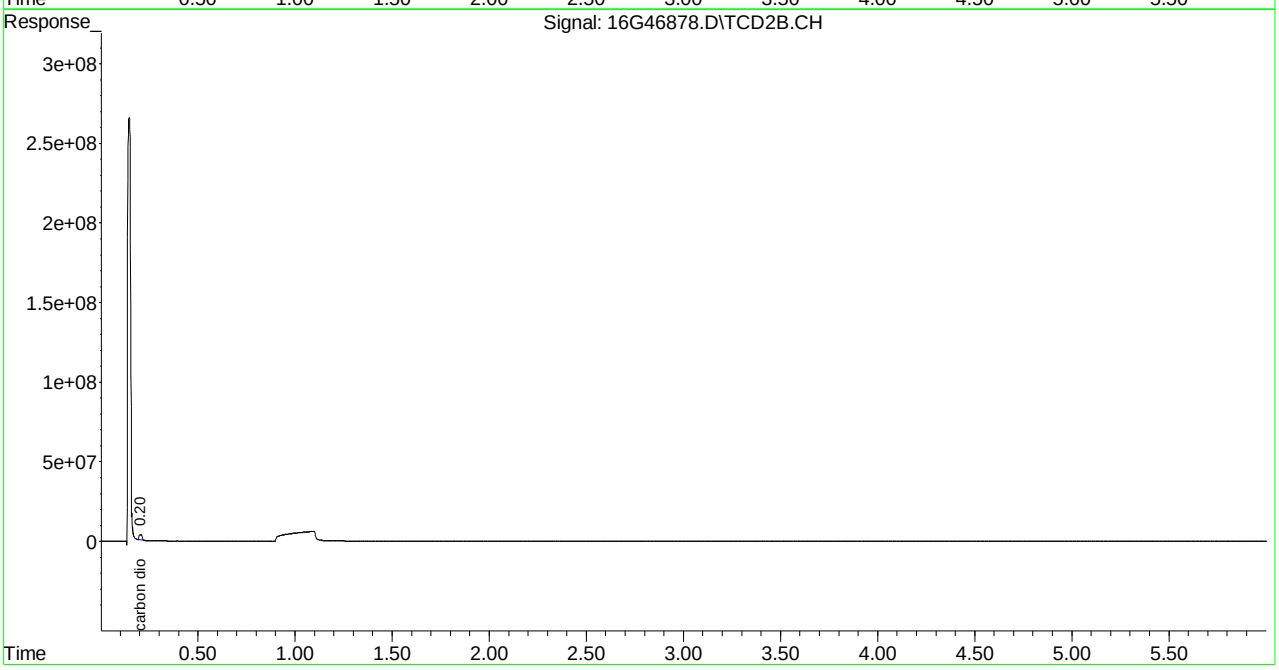

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
Target Compounds				
1) T	methane	0.55	24939741	132.227 umol/
2) T	ethene	1.06	41686300	131.412 umol/
3) T	acetylene	1.14	47206199	139.484 umol/
4) T	ethane	1.39	43668346	128.475 umol/
5) T	propane	3.83	64365472	129.663 umol/
6) T	n-butane	5.33	84395468	130.185 umol/
8) T	carbon dioxide	0.20	80524699	14601.362 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46879.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

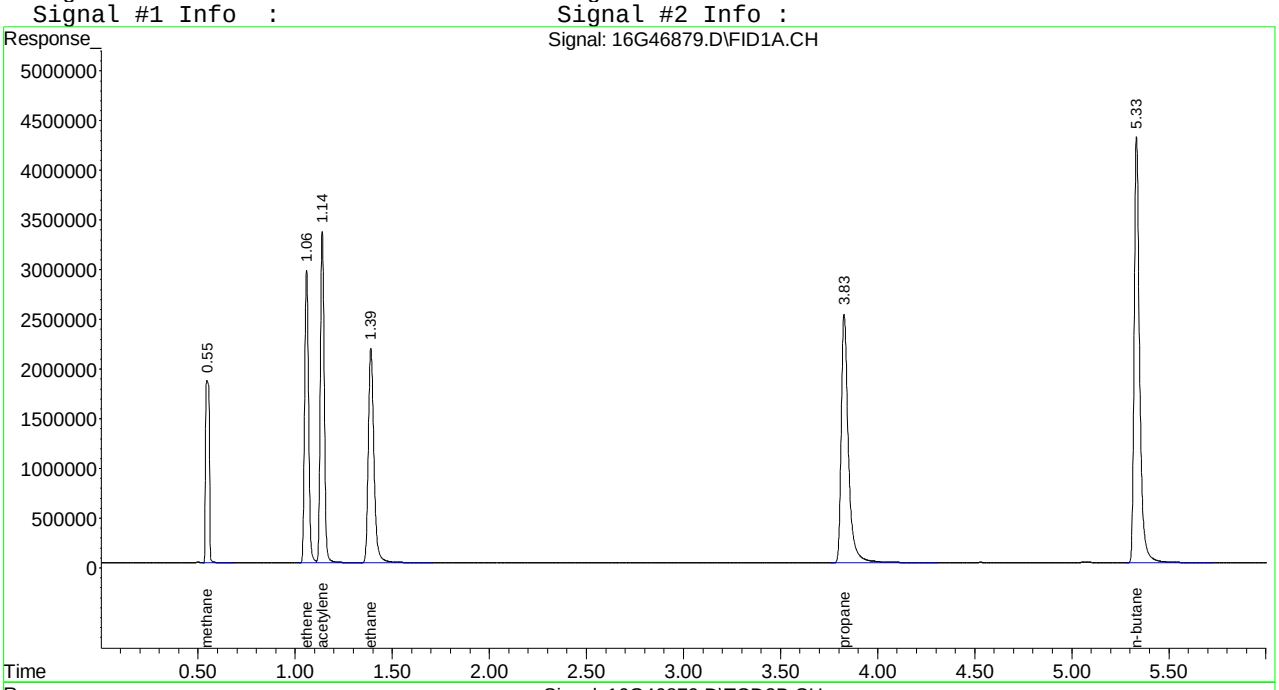

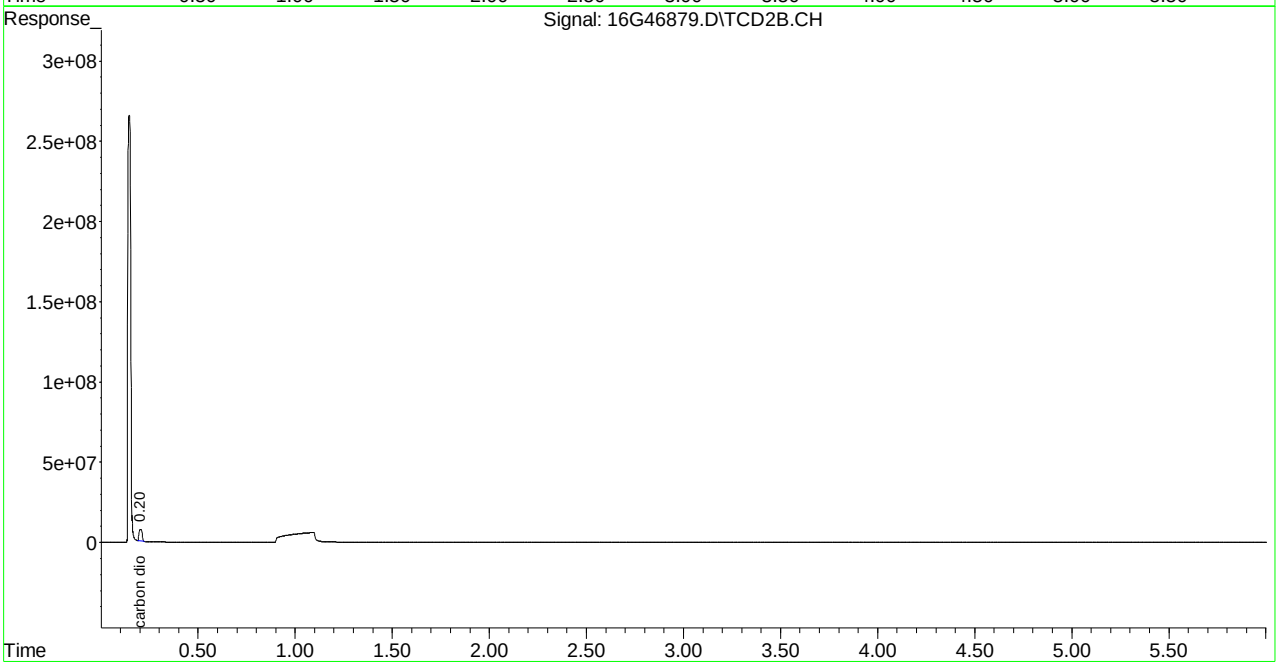

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On    : 03 Mar 2015  15:17                        Operator: JDS
Sample    : WG514119-06 333umol/mol STD RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:12 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	61959752	331.783	umol/
2) T	ethene	1.06	106345688	335.244	umol/
3) T	acetylene	1.14	118917475	351.375	umol/
4) T	ethane	1.39	111791323	328.897	umol/
5) T	propane	3.83	166544491	335.501	umol/
6) T	n-butane	5.33	219746160	338.971	umol/
8) T	carbon dioxide	0.20	201820251	36595.610	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G46880.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

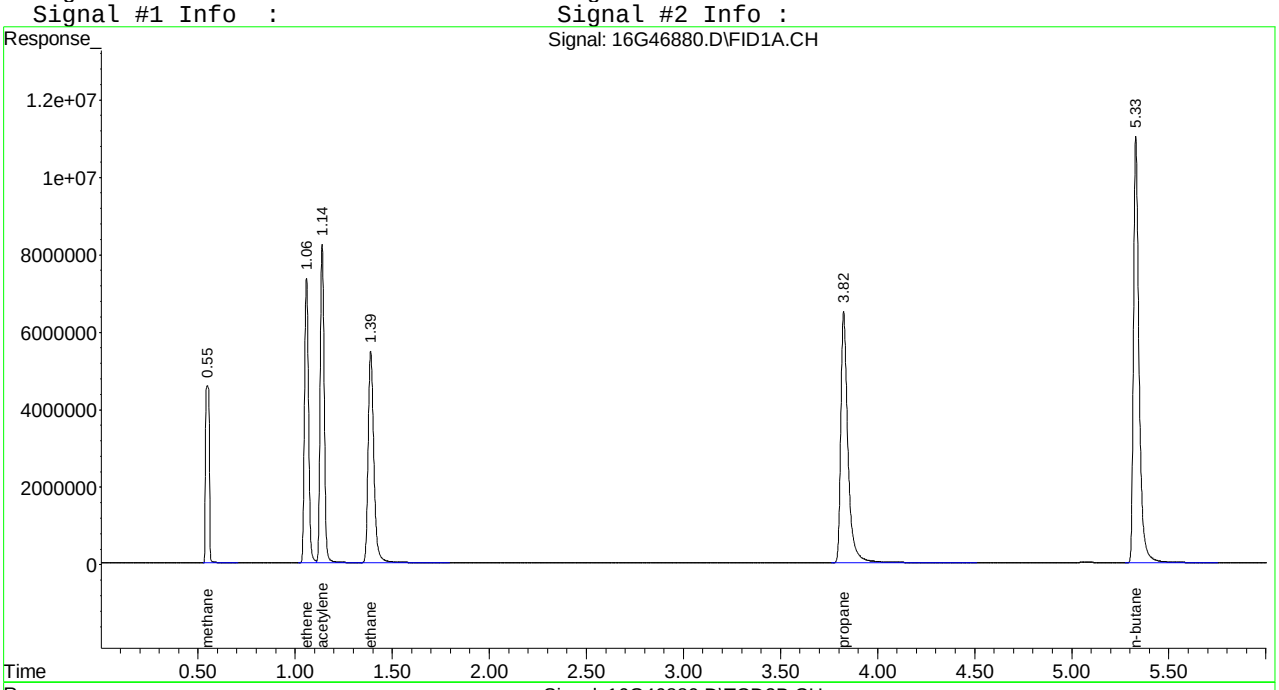

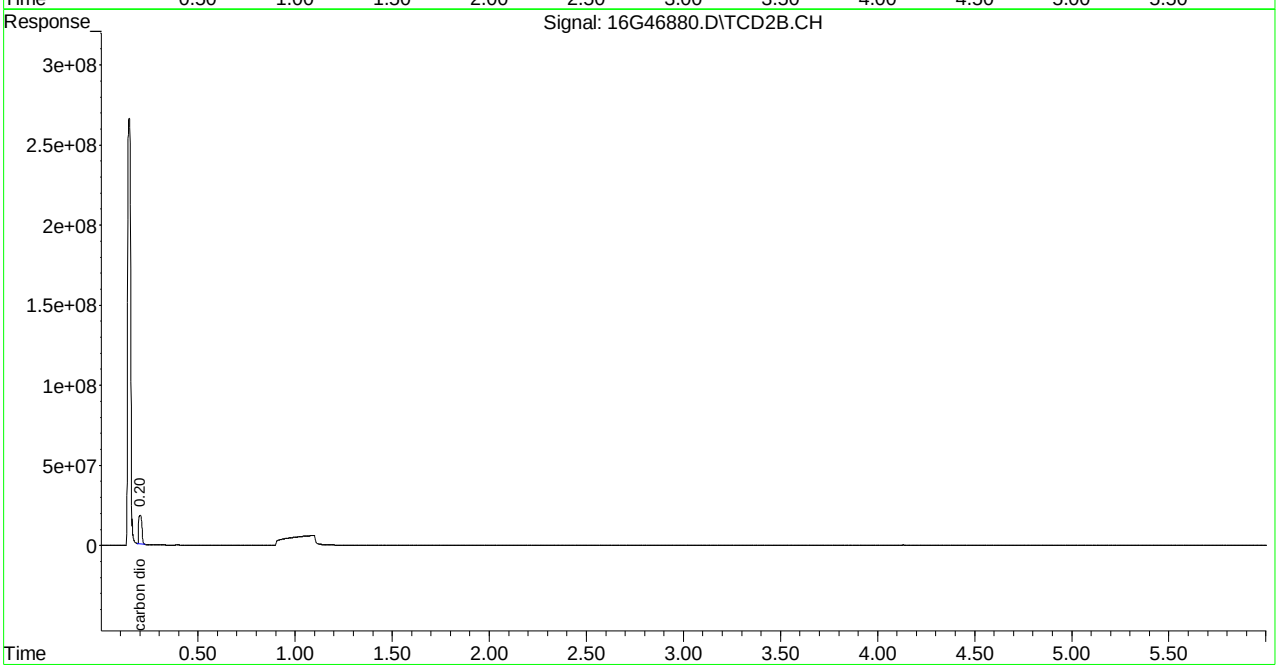

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On    : 03 Mar 2015  15:29                        Operator: JDS
Sample    : WG514119-07 533umol/mol STD RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:13 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	100578633	539.958	umol/
2) T	ethene	1.06	169644372	534.786	umol/
3) T	acetylene	1.14	183672662	542.712	umol/
4) T	ethane	1.39	178696917	525.738	umol/
5) T	propane	3.82	263060772	529.931	umol/
6) T	n-butane	5.33	344418707	531.285	umol/
8) T	carbon dioxide	0.20	309711021	56159.199	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On : 03 Mar 2015 15:29 Operator: JDS
Sample : WG514119-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

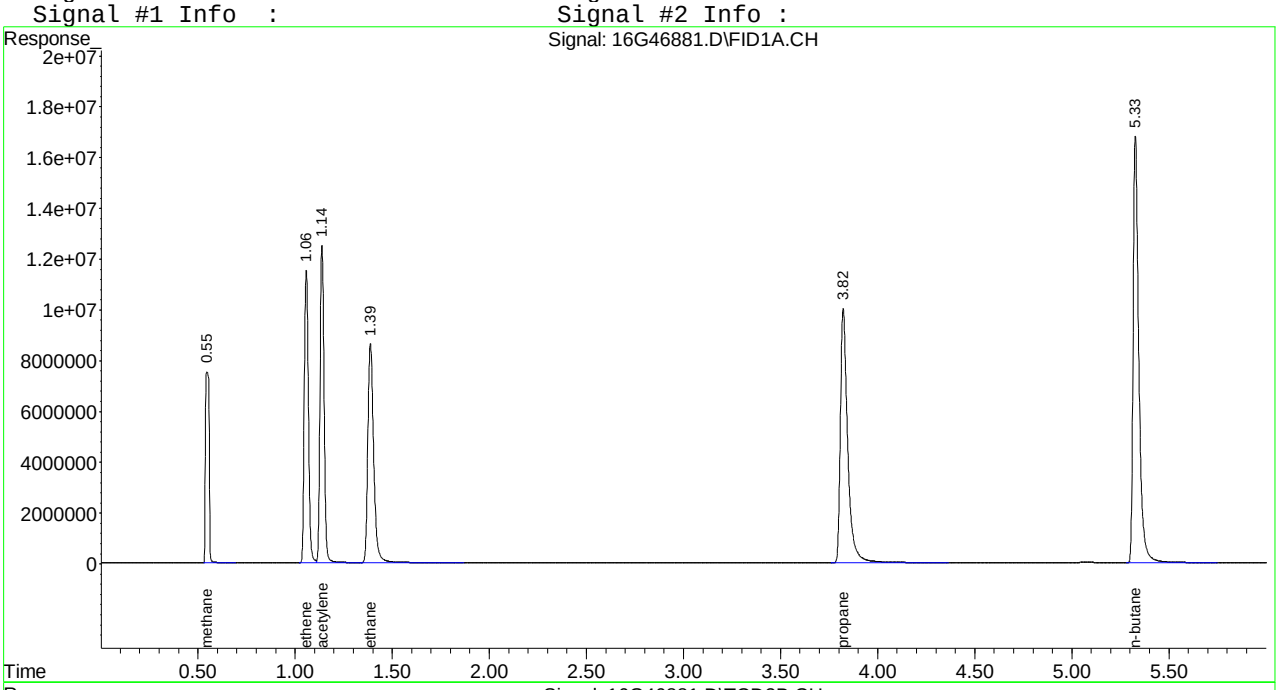

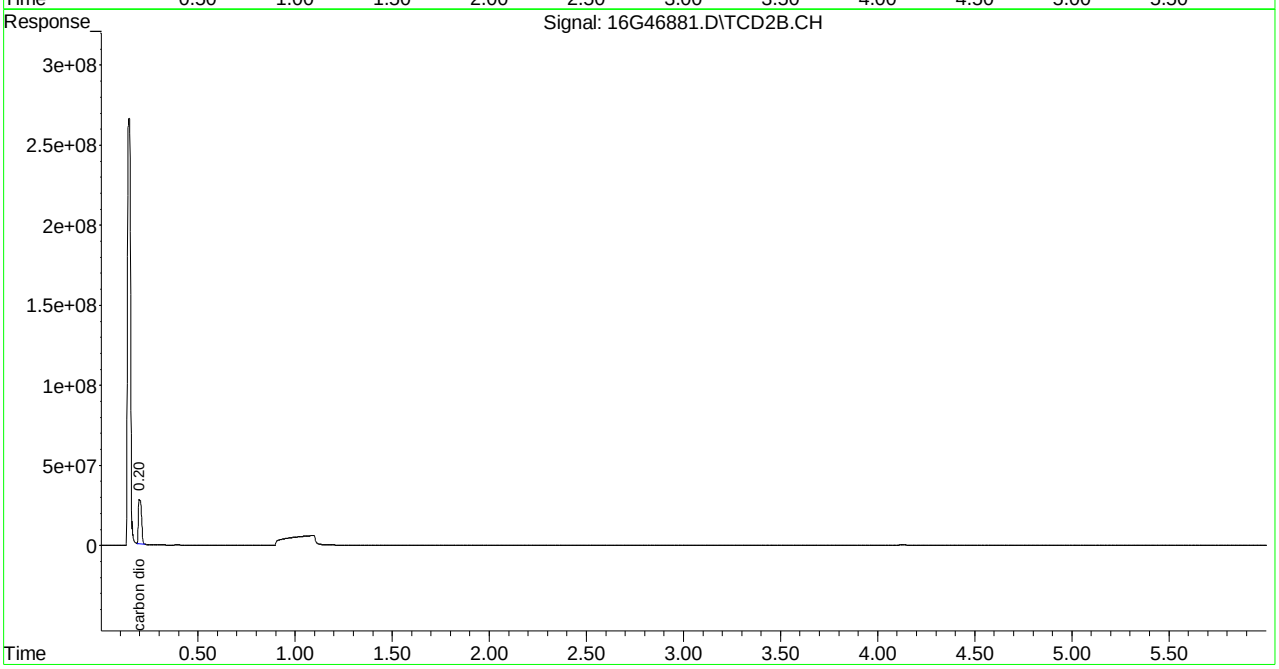

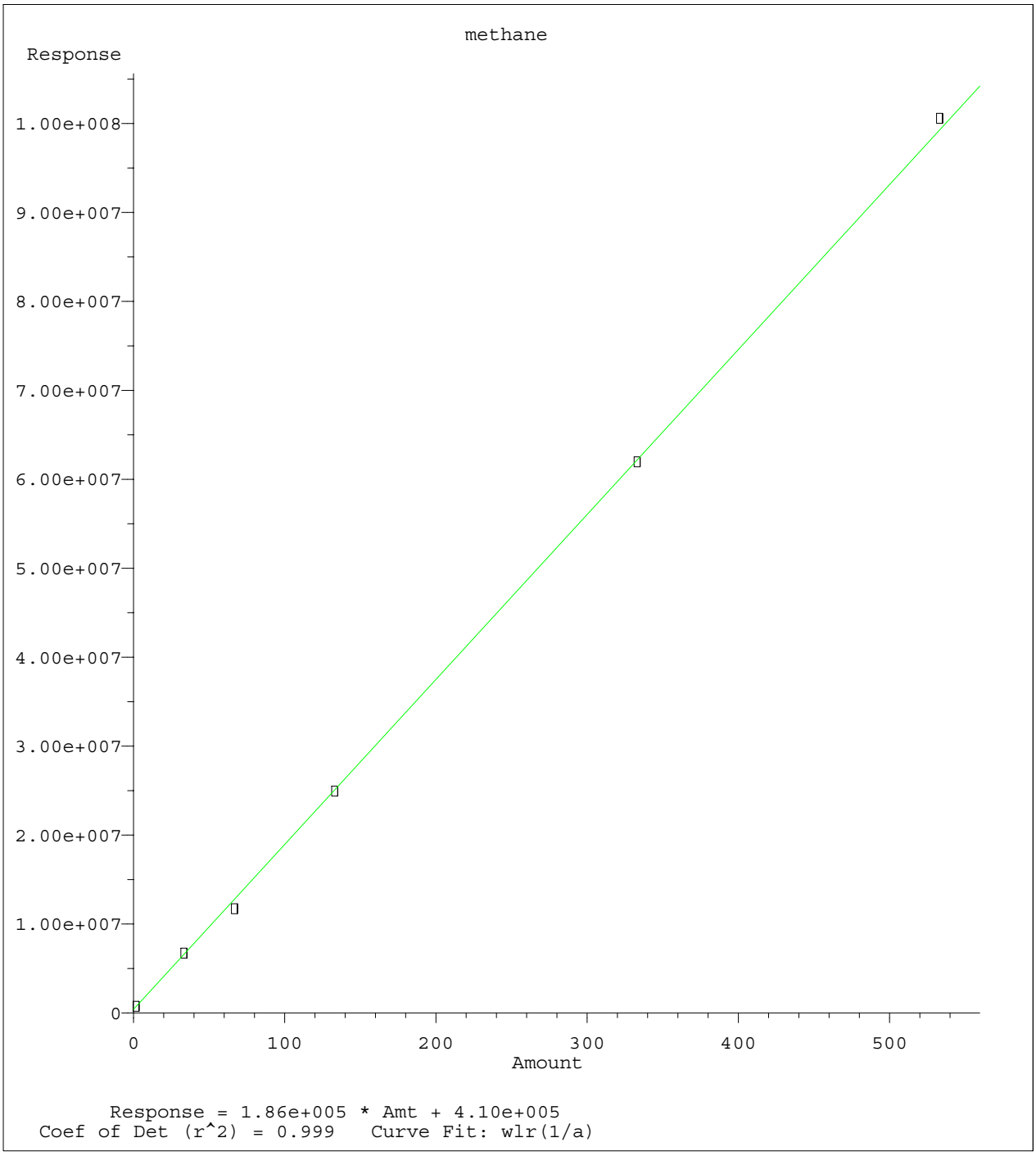

Method Name: C:\MSDCHEM\1\METHODS\RSKEXT1.M
Calibration Table Last Updated: Fri Mar 06 11:52:33 2015

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:58:49 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	25936090	137.598	umol/
2) T	ethene	1.06	43111404	135.904	umol/
3) T	acetylene	1.14	47098795	139.167	umol/
4) T	ethane	1.39	44778091	131.740	umol/
5) T	propane	3.83	64822008	130.583	umol/
6) T	n-butane	5.33	82856392	127.811	umol/
8) T	carbon dioxide	0.20	76359751	13846.141	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46884.D RSKEXT1.M Fri Mar 06 11:58:49 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:58 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

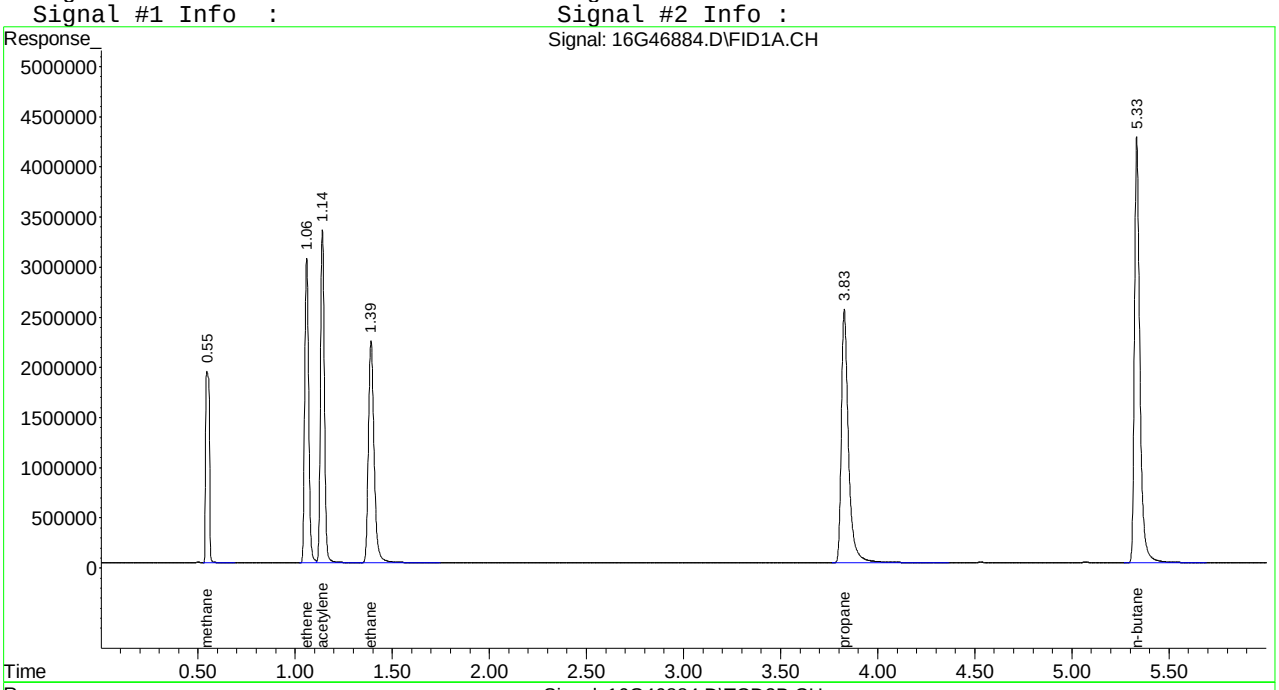

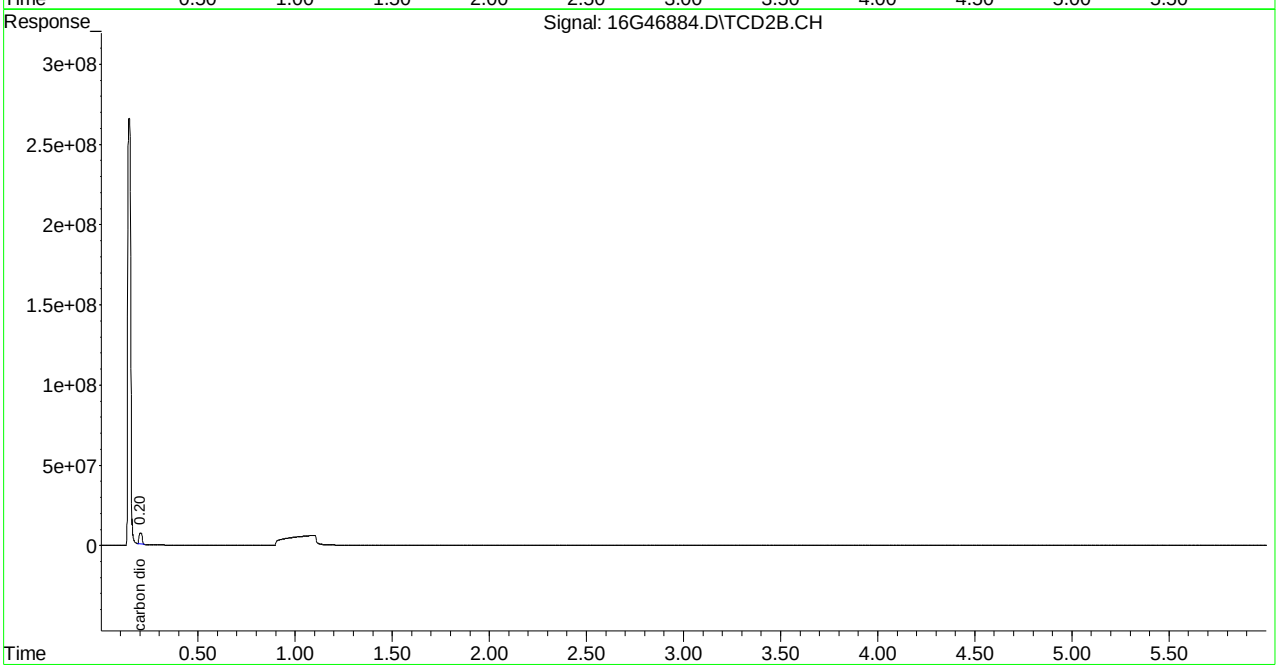

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	137.598	-3.5	104	0.00
2	T	ethene	133.000	135.904	-2.2	103	0.00
3	T	acetylene	133.000	139.167	-4.6	100	0.00
4	T	ethane	133.000	131.740	0.9	103	0.00
5	T	propane	133.000	130.583	1.8	101	0.00
6	T	n-butane	133.000	127.811	3.9	98	0.00

Signal #2

8	T	carbon dioxide	13300.000	13846.141	-4.1	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46884.D RSKEXT1.M Fri Mar 06 11:59:02 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On    : 03 Mar 2015  17:10                        Operator: JDS
Sample    : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

```
---------------------------------------------------------------------------
 (#) = Out of Range            SPCC's out = 0  CCC's out = 0
 16G46884.D  RSKEXT1.M      Fri Mar 06 11:59:02 2015                    Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49333.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\020316\16G49333.D\TCD2B.CH
Acq On : 03 Feb 2016 9:12 Operator: JDS
Sample : WG556002-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 09:18:06 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	23685466	125.466 umol/
2) T	ethene	1.06	39912293	125.819 umol/
3) T	acetylene	1.14	43836979	129.529 umol/
4) T	ethane	1.39	41762163	122.867 umol/
5) T	propane	3.83	60450719	121.777 umol/
6) T	n-butane	5.34	77290542	119.225 umol/
8) T	carbon dioxide	0.20	74700498	13545.272 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49333.D RSKEXT1.M Wed Feb 03 09:18:07 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49333.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\020316\16G49333.D\TCD2B.CH
Acq On : 03 Feb 2016 9:12 Operator: JDS
Sample : WG556002-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 3 9:18 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

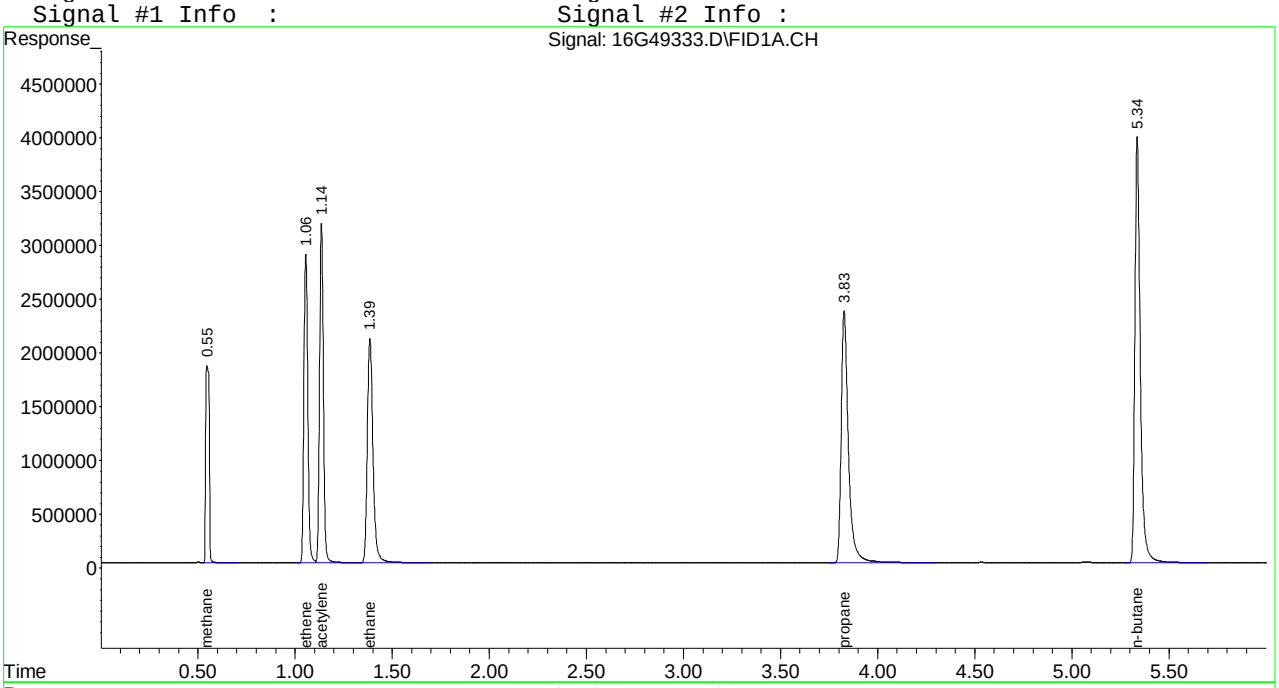

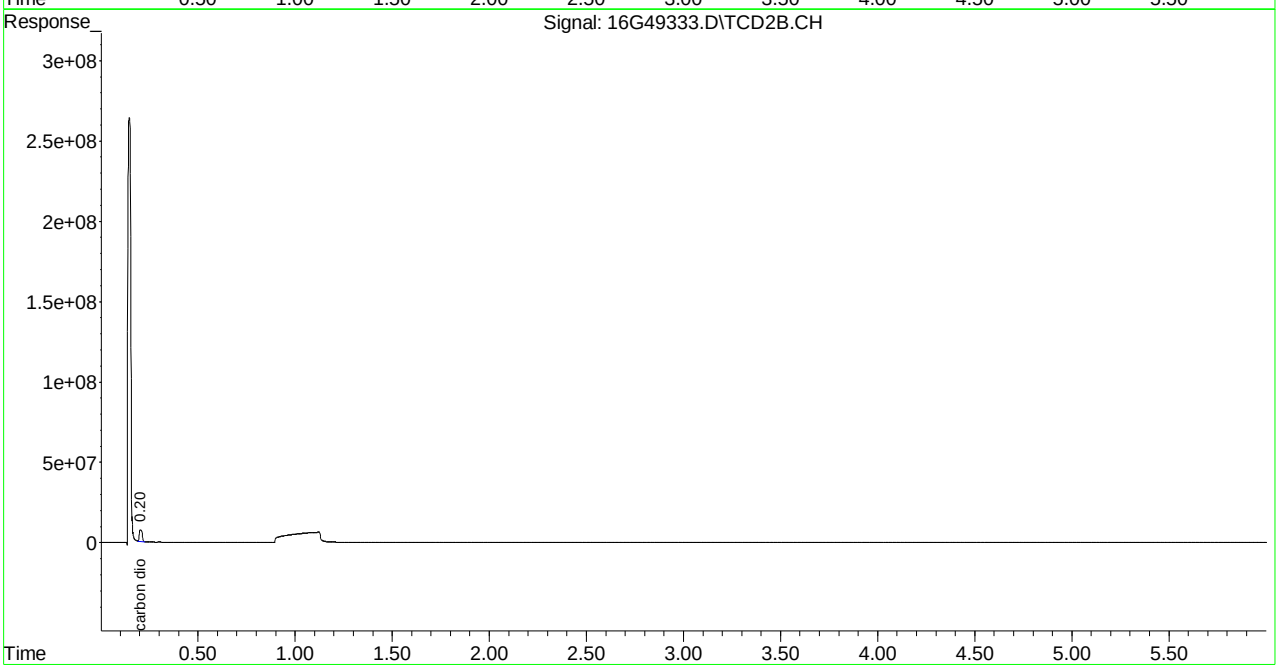

Evaluate Continuing Calibration Report

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49333.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49333.D\TCD2B.CH
Acq On    : 03 Feb 2016   9:12                        Operator: JDS
Sample    : WG556002-01 133umol/mol CCV STD RSK175    Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	125.466	5.7	95	0.00
2	T	ethene	133.000	125.819	5.4	96	0.00
3	T	acetylene	133.000	129.529	2.6	93	0.00
4	T	ethane	133.000	122.867	7.6	96	0.00
5	T	propane	133.000	121.777	8.4	94	0.00
6	T	n-butane	133.000	119.225	10.4	92	0.00
		Signal #2					
8	T	carbon dioxide	13300.000	13545.272	-1.8	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G49333.D RSKEXT1.M Wed Feb 03 11:33:54 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49333.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49333.D\TCD2B.CH
Acq On    : 03 Feb 2016   9:12                        Operator: JDS
Sample    : WG556002-01 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49344.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\020316\16G49344.D\TCD2B.CH
Acq On : 03 Feb 2016 13:14 Operator: JDS
Sample : WG556002-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 13:20:24 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	22930869	121.398	umol/
2) T	ethene	1.06	38528148	121.456	umol/
3) T	acetylene	1.14	42066709	124.298	umol/
4) T	ethane	1.39	40451959	119.012	umol/
5) T	propane	3.83	58372946	117.591	umol/
6) T	n-butane	5.34	74990199	115.677	umol/
8) T	carbon dioxide	0.20	73180331	13269.624	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49344.D RSKEXT1.M Wed Feb 03 13:20:24 2016 Page 1

Signal #1 : C:\MSDchem\1\DATA\020316\16G49344.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\020316\16G49344.D\TCD2B.CH
Acq On : 03 Feb 2016 13:14 Operator: JDS
Sample : WG556002-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 3 13:20 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

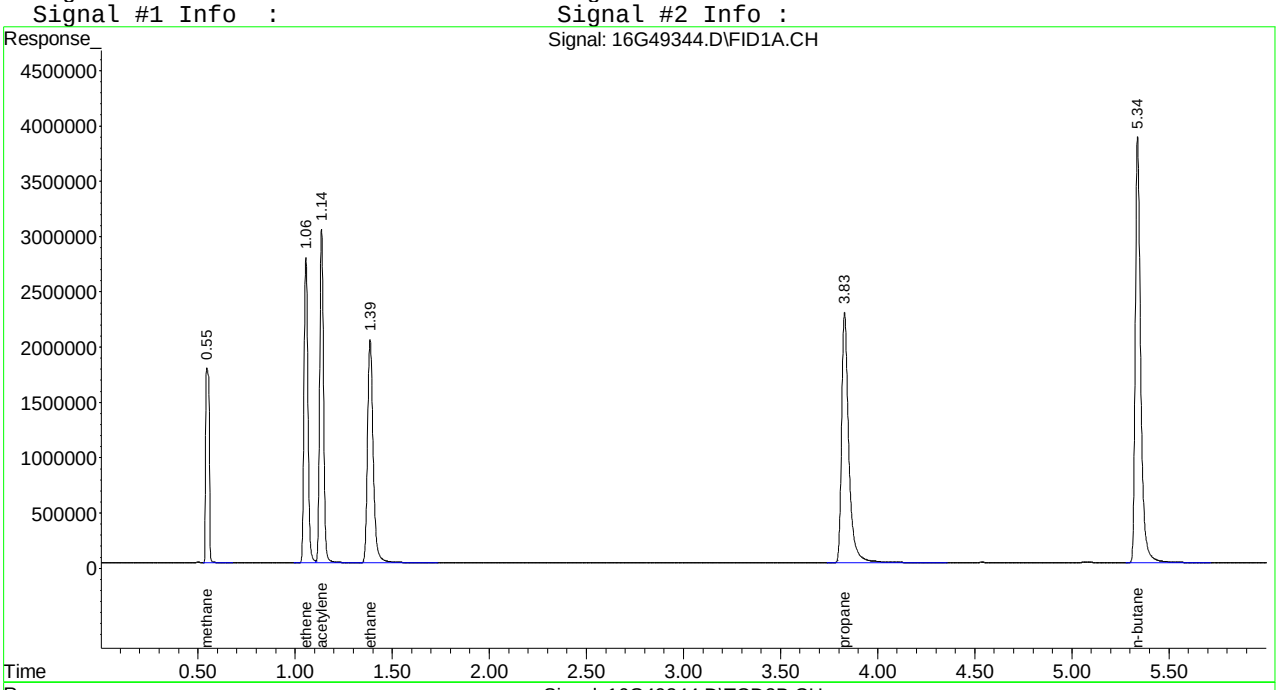

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49344.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49344.D\TCD2B.CH
Acq On : 03 Feb 2016 13:14 Operator: JDS
Sample : WG556002-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	121.398	8.7	92	0.00
2	T	ethene	133.000	121.456	8.7	92	0.00
3	T	acetylene	133.000	124.298	6.5	89	0.00
4	T	ethane	133.000	119.012	10.5	93	0.00
5	T	propane	133.000	117.591	11.6	91	0.00
6	T	n-butane	133.000	115.677	13.0	89	0.00

Signal #2

8	T	carbon dioxide	13300.000	13269.624	0.2	91	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G49344.D RSKEXT1.M Wed Feb 03 13:25:08 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49344.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49344.D\TCD2B.CH
Acq On    : 03 Feb 2016  13:14                        Operator: JDS
Sample    : WG556002-02 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

```
---------------------------------------------------------------------------
 (#) = Out of Range            SPCC's out = 0  CCC's out = 0
 16G49344.D  RSKEXT1.M      Wed Feb 03 13:25:08 2016                          Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49353.D\FID1A.CH Vial: 21
Signal #2 : C:\MSDchem\1\DATA\020316\16G49353.D\TCD2B.CH
Acq On : 03 Feb 2016 15:55 Operator: JDS
Sample : WG556002-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 16:01:55 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23057244	122.079	umol/
2) T	ethene	1.05	38462406	121.249	umol/
3) T	acetylene	1.13	40181808	118.728	umol/
4) T	ethane	1.38	40461048	119.039	umol/
5) T	propane	3.83	58221514	117.286	umol/
6) T	n-butane	5.34	74413349	114.787	umol/
8) T	carbon dioxide	0.20	67067139	12161.133	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49353.D RSKEXT1.M Wed Feb 03 16:01:55 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49353.D\FID1A.CH Vial: 21
Signal #2 : C:\MSDchem\1\DATA\020316\16G49353.D\TCD2B.CH
Acq On : 03 Feb 2016 15:55 Operator: JDS
Sample : WG556002-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 3 16:01 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

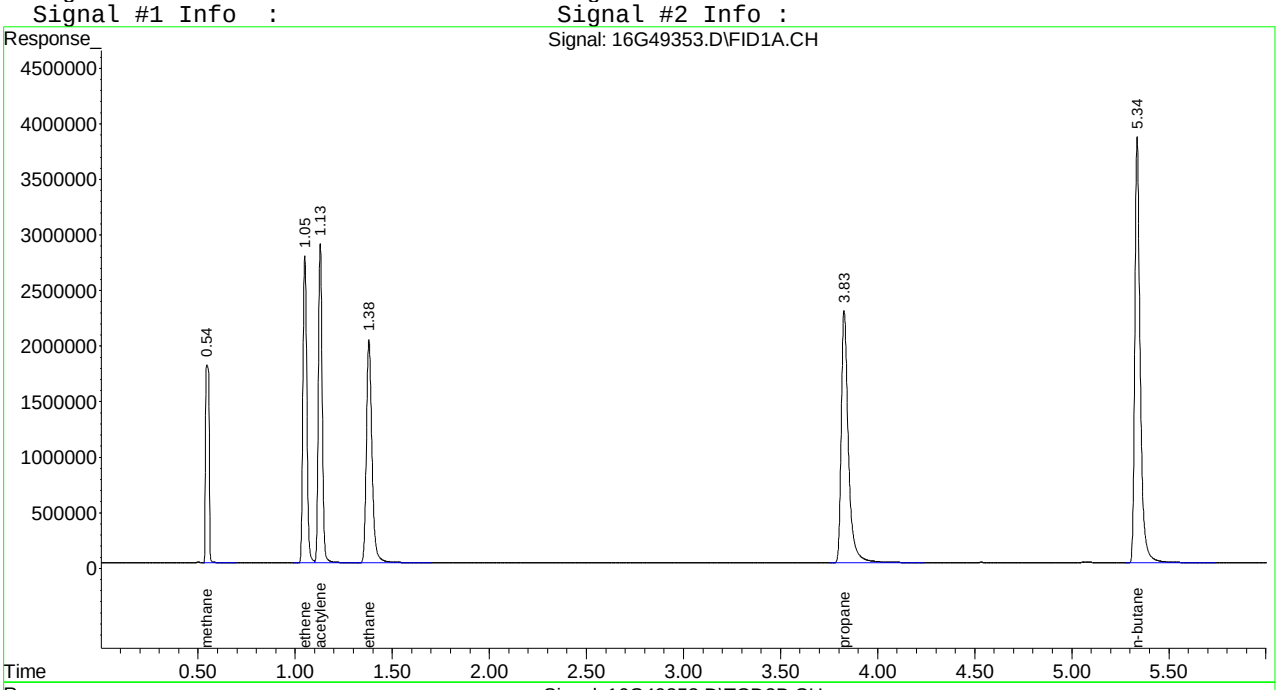

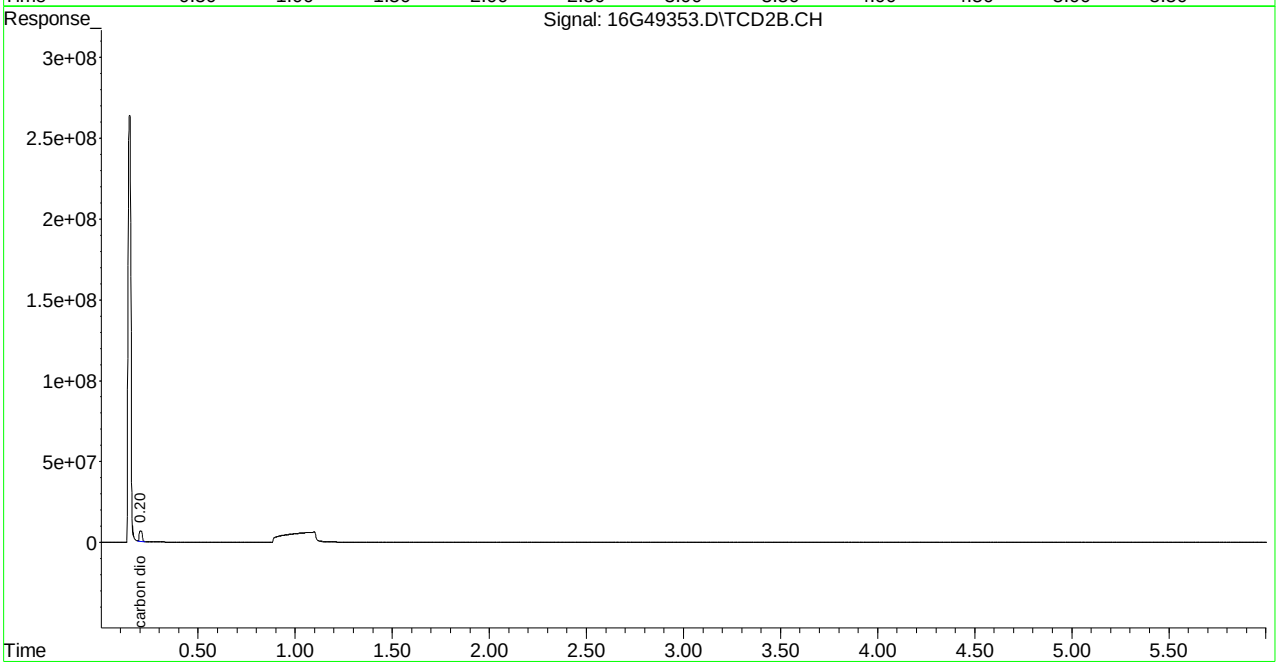

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49353.D\FID1A.CH Vial: 21
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49353.D\TCD2B.CH
Acq On : 03 Feb 2016 15:55 Operator: JDS
Sample : WG556002-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	122.079	8.2	92	0.00
2	T	ethene	133.000	121.249	8.8	92	-0.01
3	T	acetylene	133.000	118.728	10.7	85	-0.01
4	T	ethane	133.000	119.039	10.5	93	-0.01
5	T	propane	133.000	117.286	11.8	90	0.00
6	T	n-butane	133.000	114.787	13.7	88	0.00

Signal #2

8	T	carbon dioxide	13300.000	12161.133	8.6	83	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G49353.D RSKEXT1.M Wed Feb 03 16:18:01 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49353.D\FID1A.CH Vial: 21
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49353.D\TCD2B.CH
Acq On    : 03 Feb 2016  15:55                        Operator: JDS
Sample    : WG556002-03 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L16020141 **Run Date:** 02/03/2016 **Sample ID:** WG556002-01
Instrument: HP16 **Run Time:** 09:12 **Method:** RSK175
Workgroup (AAB#): WG556003 **File ID:** 16G49333

RT Standard	Analysis Date	File ID	Analyst
WG547709-01	11/19/2015	16G49048	JDS
WG547424-01	11/18/2015	16G49025	JDS
WG547084-01	11/16/2015	16G49008	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.55	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.39	1.360	1.420
PROPANE	3.83	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.34	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4618394
Report generated 02/05/2016 09:15

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49334.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49334.D\TCD2B.CH
Acq On : 03 Feb 2016 11:00 Operator: JDS
Sample : WG556003-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 11:06:57 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	306772	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49334.D RSKEXT1.M Wed Feb 03 11:11:45 2016 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\020316\16G49334.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\020316\16G49334.D\TCD2B.CH
Acq On    : 03 Feb 2016  11:00                        Operator: JDS
Sample    : WG556003-01 BLANK RSK175                  Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb  3 11:06 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

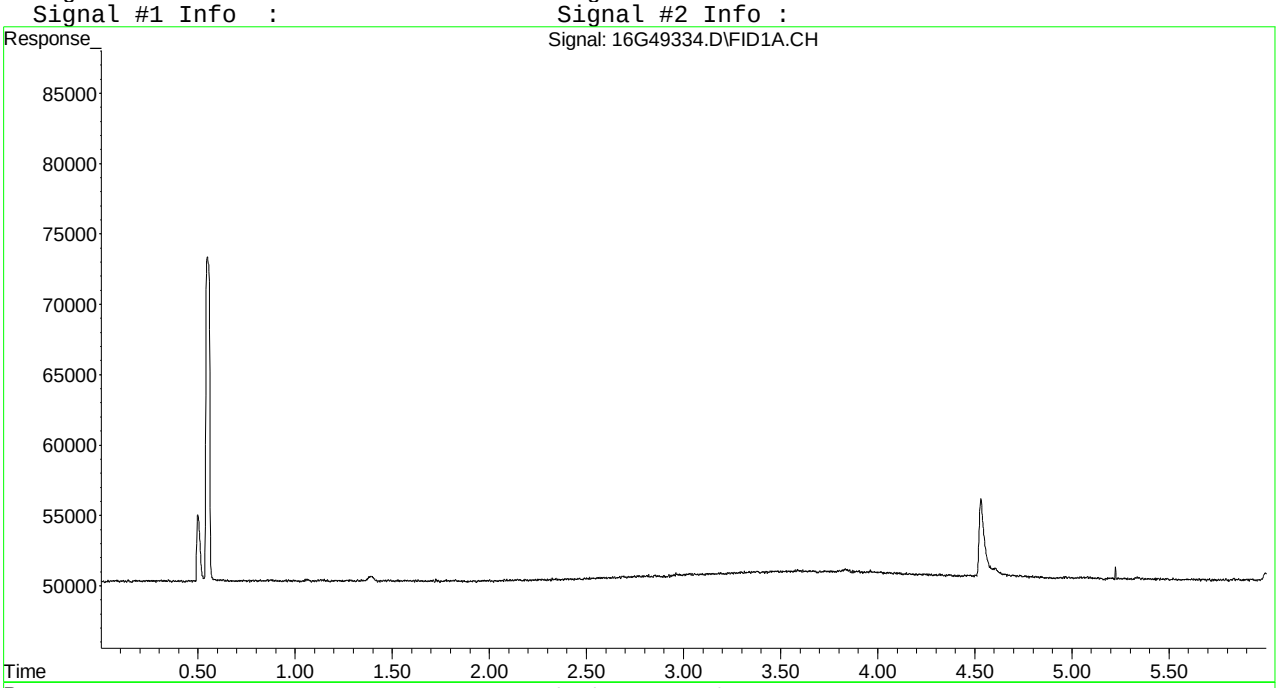

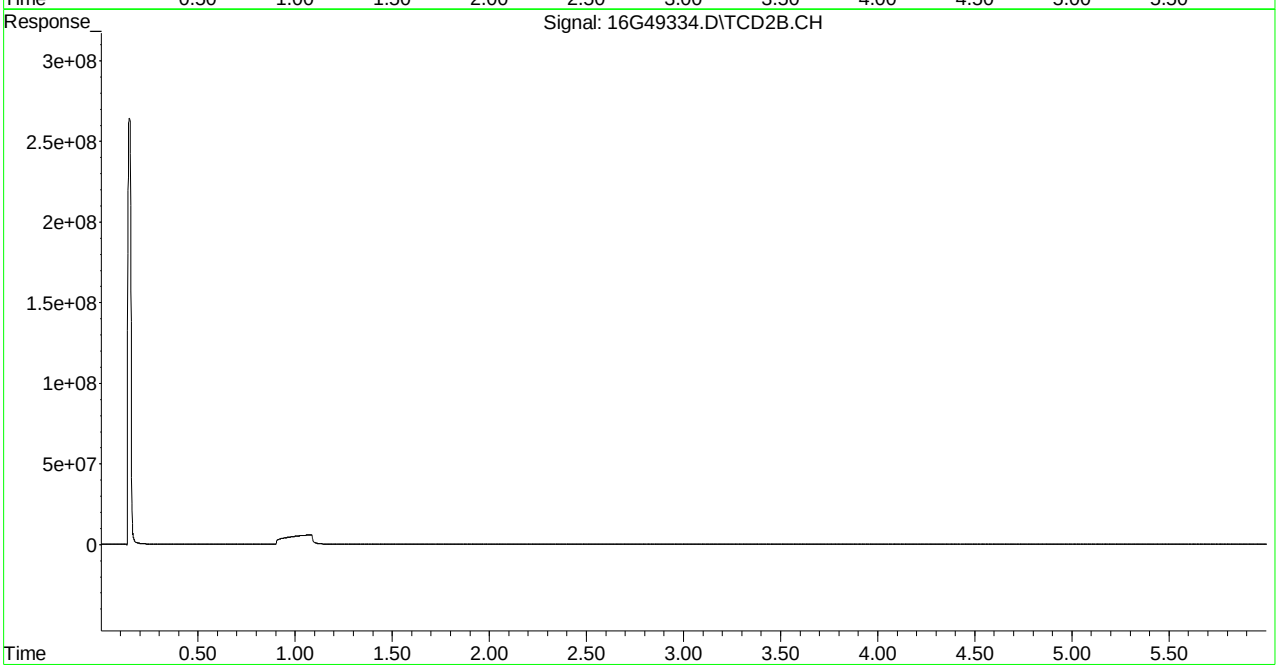

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49335.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\020316\16G49335.D\TCD2B.CH
Acq On : 03 Feb 2016 11:13 Operator: JDS
Sample : WG556003-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 11:19:22 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12053401	62.763	umol/
2) T	ethene	1.06	19827507	62.504	umol/
3) T	acetylene	1.14	20940517	61.875	umol/
4) T	ethane	1.39	20593017	60.586	umol/
5) T	propane	3.83	29754638	59.940	umol/
6) T	n-butane	5.34	38266369	59.028	umol/
8) T	carbon dioxide	0.20	31341370	5683.060	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49335.D RSKEXT1.M Wed Feb 03 11:19:22 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49335.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\020316\16G49335.D\TCD2B.CH
Acq On : 03 Feb 2016 11:13 Operator: JDS
Sample : WG556003-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 3 11:19 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

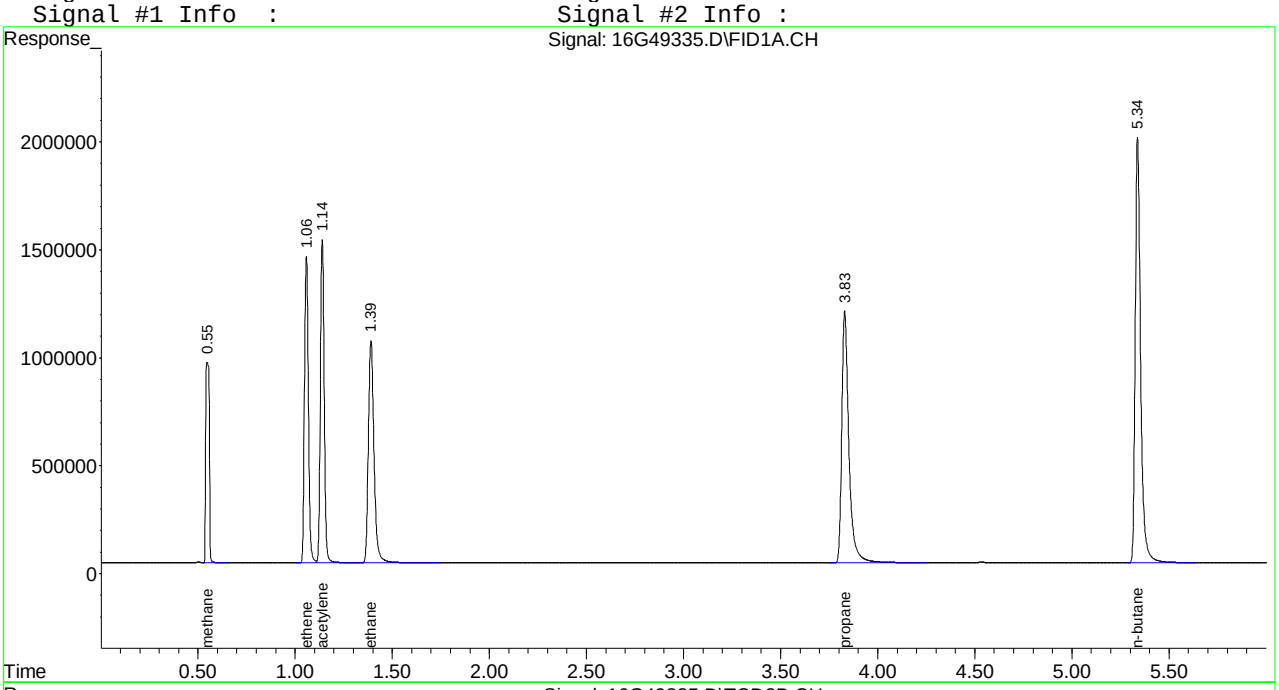

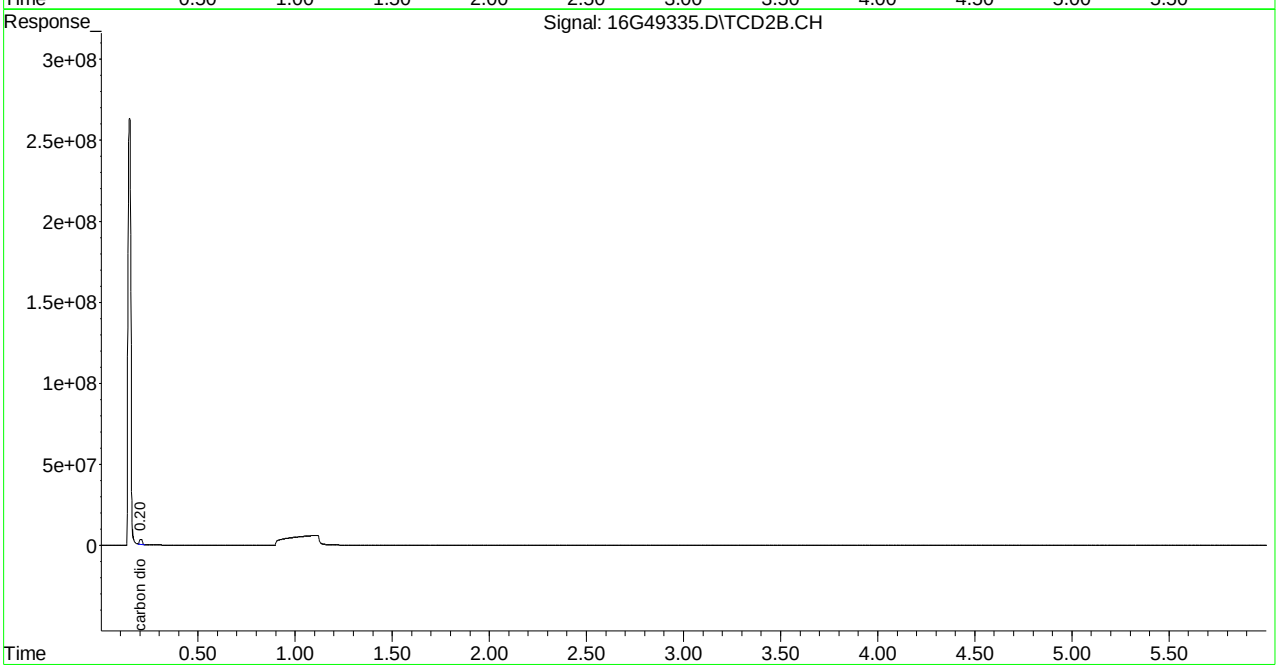

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49336.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\020316\16G49336.D\TCD2B.CH
Acq On : 03 Feb 2016 11:25 Operator: JDS
Sample : WG556003-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 03 11:31:27 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12118969	63.117	umol/
2) T	ethene	1.06	19849715	62.574	umol/
3) T	acetylene	1.14	20289427	59.951	umol/
4) T	ethane	1.39	20643356	60.734	umol/
5) T	propane	3.83	29815281	60.062	umol/
6) T	n-butane	5.34	38360544	59.173	umol/
8) T	carbon dioxide	0.20	31964569	5796.063	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49336.D RSKEXT1.M Wed Feb 03 11:31:27 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\020316\16G49336.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\020316\16G49336.D\TCD2B.CH
Acq On : 03 Feb 2016 11:25 Operator: JDS
Sample : WG556003-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 3 11:31 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

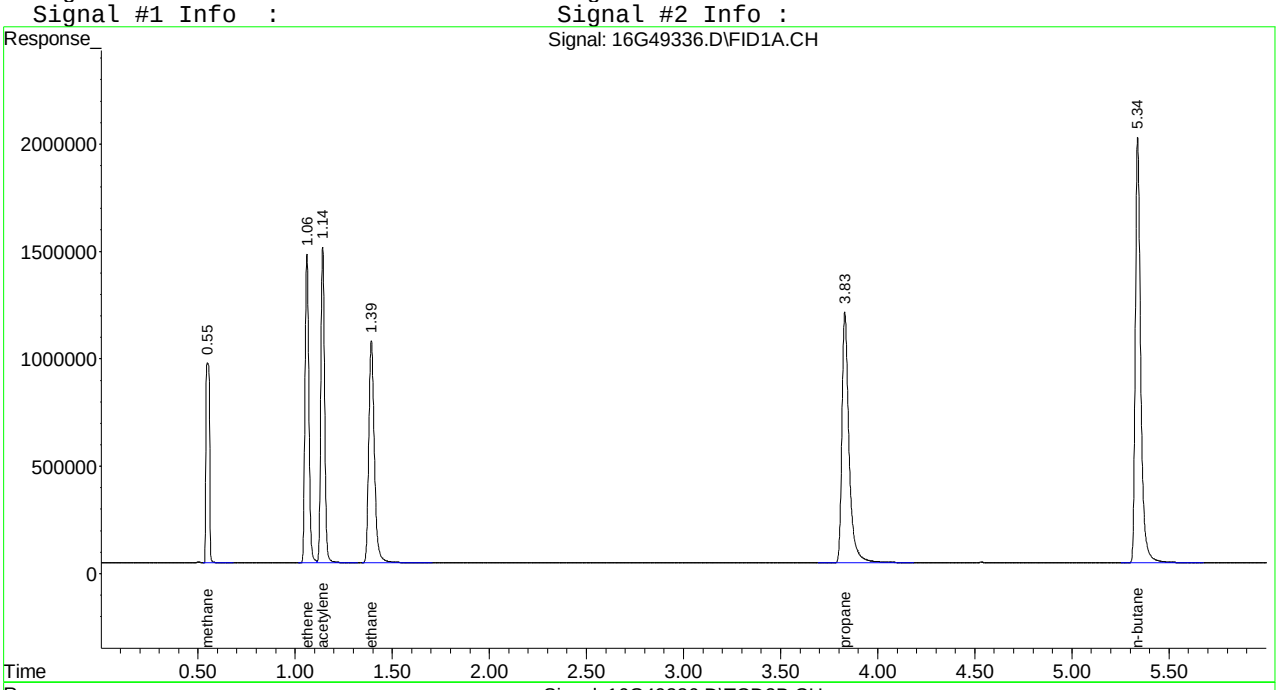

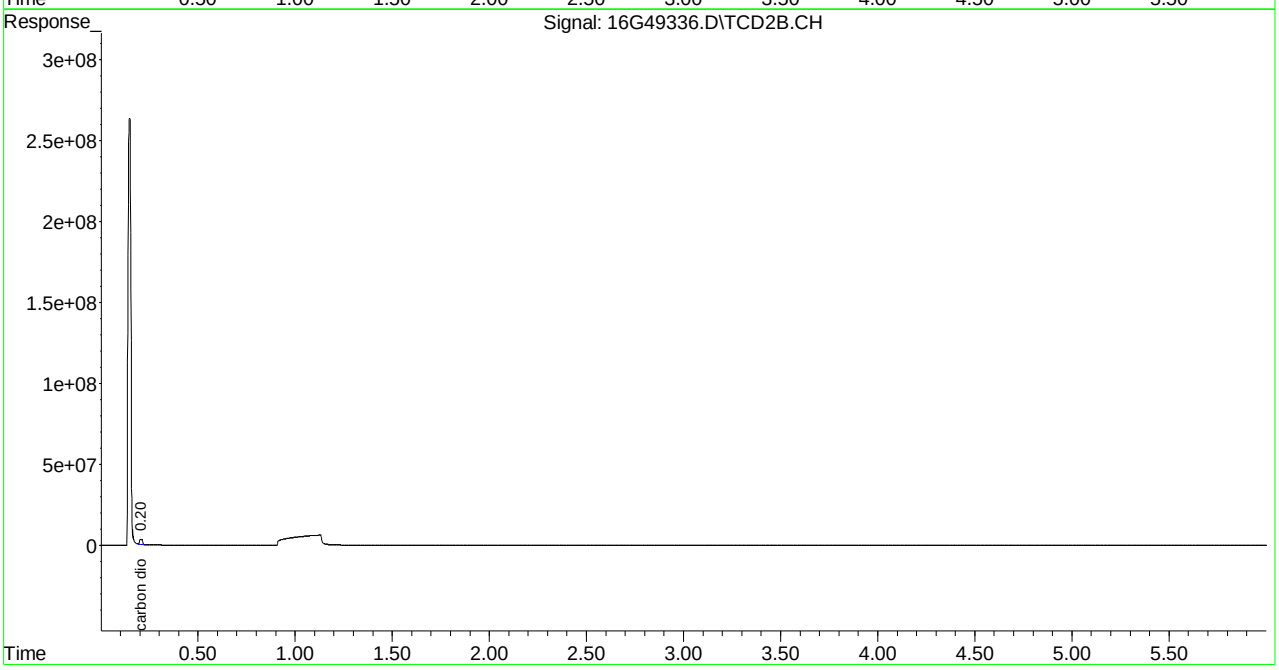

2.2 Metals Data

2.2.1 Metals I C P Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW09F-020216	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 14:06
Collect Date:	02/02/2016 08:10	**Dilution:**	1	**File ID:**	T3.021116.140611
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW09FF-020216	**Prep Method:**	3015	**Prep Date:**	02/05/2016 08:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/11/2016 09:32
Workgroup #:	WG556970	**Analyst:**	BKT	**Run Date:**	02/11/2016 14:10
Collect Date:	02/02/2016 08:10	**Dilution:**	1	**File ID:**	T3.021116.141014
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG556359
Analyst: ERP
Spike Analyst: ERP
Run Date: 02/05/2016 08:41
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 02/05/2016 08:59

SOP: ME407 Revison 19
Spike Solution: STD74526
Spike Witness: VC
HNO3 Lot #: COA18708
HCL Lot #: COA18695
40 & 50 ML. DIGESTION TU COA18558
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG556359-02	BLANK	1	40 mL	50 mL	204.52 g	204.51 g		
2	WG556359-03	LCS	1	40 mL	50 mL	210.065 g	210.057 g	5 mL	
3	L16020058-01	SAMP	1	40 mL	50 mL	206.421 g	206.389 g		02/12/16
4	L16020058-02	SAMP	1	40 mL	50 mL	205.738 g	205.725 g		02/12/16
5	L16020058-03	SAMP	1	40 mL	50 mL	206.958 g	206.952 g		02/12/16
6	L16020058-04	SAMP	1	40 mL	50 mL	205.226 g	205.205 g		02/12/16
7	L16020058-05	SAMP	1	40 mL	50 mL	206.338 g	206.308 g		02/12/16
8	L16020058-06	SAMP	1	40 mL	50 mL	206.448 g	206.428 g		02/12/16
9	L16020058-07	SAMP	1	40 mL	50 mL	206.629 g	206.607 g		02/12/16
10	L16020058-08	SAMP	1	40 mL	50 mL	205.686 g	205.658 g		02/12/16
11	L16020058-09	SAMP	1	40 mL	50 mL	207.674 g	207.644 g		02/12/16
12	L16020058-10	SAMP	1	40 mL	50 mL	207.492 g	207.47 g		02/12/16
13	L16020141-02	SAMP	1	40 mL	50 mL	206.08 g	206.051 g		02/12/16
14	L16020141-03	SAMP	1	40 mL	50 mL	205.355 g	205.336 g		02/12/16
15	L16020222-01	SAMP	1	40 mL	50 mL	204.721 g	204.702 g		02/11/16
16	L16020222-02	SAMP	1	40 mL	50 mL	205.563 g	205.534 g		02/11/16
17	L16020222-03	SAMP	1	40 mL	50 mL	203.744 g	203.713 g		02/11/16
18	L16020222-04	SAMP	1	40 mL	50 mL	203.88 g	203.853 g		02/11/16
19	L16020222-05	SAMP	1	40 mL	50 mL	205.382 g	205.365 g		02/11/16
20	WG556359-01	REF	1	40 mL	50 mL	204.479 g	204.453 g		
21	L16020222-06	SAMP	1	40 mL	50 mL	204.479 g	204.453 g		02/11/16
22	L16020222-07	SAMP	1	40 mL	50 mL	205.993 g	205.98 g		02/11/16
23	L16020222-08	SAMP	1	40 mL	50 mL	206.824 g	206.811 g		02/11/16
24	WG556359-04	MS	1	40 mL	50 mL	212.504 g	212.487 g	5 mL	
25	WG556359-05	MSD	1	40 mL	50 mL	212.777 g	212.76 g	5 mL	

Analyst: Erin Potter

Reviewer: Vicki Collins

MW_DIG - Modified 09/30/2009
PDF ID: 4618608
Report generated: 02/05/2016 10:15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 021116T3.1

Analyst1: BKT Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 7

Maintenance Log ID:

Calibration Std: STD74152 ICV Std: STD74313 Post Spike: STD74298

ICSA: STD74299 ICSAB: STD74298 Int. Std: RGT35157

CCV: STD74316 LLCCV: STD74540 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 556969,556970,556971,557159

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.021116.091642	WG557147-01	Calibration Point		1		02/11/16 09:16
2	T3.021116.092046	WG557147-02	Calibration Point		1		02/11/16 09:20
3	T3.021116.092453	WG557147-03	Calibration Point		1		02/11/16 09:24
4	T3.021116.092859	WG557147-04	Calibration Point		1		02/11/16 09:28
5	T3.021116.093243	WG557147-05	Calibration Point		1		02/11/16 09:32
6	T3.021116.093627	WG557147-06	Initial Calibration Verification		1		02/11/16 09:36
7	T3.021116.094012	WG557147-07	Initial Calib Blank		1		02/11/16 09:40
8	T3.021116.094418	WG557147-08	Low Level Initial Calibration V		1		02/11/16 09:44
9	T3.021116.094822	WG557147-09	Interference Check		1		02/11/16 09:48
10	T3.021116.095221	WG557147-10	Interference Check		1		02/11/16 09:52
11	T3.021116.095612	WG557147-11	CCV		1		02/11/16 09:56
12	T3.021116.095956	WG557147-12	CCB		1		02/11/16 09:59
13	T3.021116.100403	WG556579-02	Method/Prep Blank	40/50	1		02/11/16 10:04
14	T3.021116.100809	WG556579-03	Laboratory Control S	40/50	1		02/11/16 10:08
15	T3.021116.101157	L16020259-01	KFF-WL01-020216	40/50	10		02/11/16 10:11
16	T3.021116.101600	L16020262-11	KFF-EB01-020216	40/50	1		02/11/16 10:16
17	T3.021116.102005	L16020273-01	6-10-27.06 W1	40/50	1		02/11/16 10:20
18	T3.021116.102405	L16020277-01	59-11-23 P1	40/50	1		02/11/16 10:24
19	T3.021116.102807	L16020277-02	59-11-23 S1	40/50	1		02/11/16 10:28
20	T3.021116.103208	WG556969-01	Post Digestion Spike		1	L16020277-02	02/11/16 10:32
21	T3.021116.103555	WG556969-02	Serial Dilution		5	L16020277-02	02/11/16 10:35
22	T3.021116.103959	WG557147-13	CCV		1		02/11/16 10:39
23	T3.021116.104342	WG557147-14	CCB		1		02/11/16 10:43
24	T3.021116.104751	L16020277-03	59-11-23 W1	40/50	1		02/11/16 10:47
25	T3.021116.105154	L16020281-01	59-11-11.11 W1	40/50	1		02/11/16 10:51
26	T3.021116.105556	L16020283-01	59-8-6.08 S1	40/50	1		02/11/16 10:55
27	T3.021116.105958	L16020288-01	1801-148-S1	40/50	1		02/11/16 10:59
28	T3.021116.110401	L16020288-02	1801-148-S2	40/50	1		02/11/16 11:04
29	T3.021116.110804	L16020290-01	1804-105-S1	40/50	1		02/11/16 11:08
30	T3.021116.111205	L16020292-01	01-01-140-W1	40/50	1		02/11/16 11:12
31	T3.021116.111608	WG556579-01	Reference Sample		1	L16020292-02	02/11/16 11:16
32	T3.021116.112011	WG556579-04	Matrix Spike	40/50	1	L16020292-02	02/11/16 11:20
33	T3.021116.112357	WG556579-05	Matrix Spike Duplica	40/50	1	L16020292-02	02/11/16 11:23
34	T3.021116.112744	WG557147-15	CCV		1		02/11/16 11:27

Page: 1 Approved: February 12, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 021116T3.1
Analyst1: BKT Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 7
Maintenance Log ID:

Calibration Std: STD74152 ICV Std: STD74313 Post Spike: STD74298
ICSA: STD74299 ICSAB: STD74298 Int. Std: RGT35157
CCV: STD74316 LLCCV: STD74540 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 556969,556970,556971,557159

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.021116.113129	WG557147-16	CCB		1		02/11/16 11:31
36	T3.021116.113536	L16020373-03	OUTFALL 901	40/50	1		02/11/16 11:35
37	T3.021116.113938	L16020374-01	WVOG	40/50	100		02/11/16 11:39
38	T3.021116.114348	L16020387-01	0101-151 W1	40/50	1		02/11/16 11:43
39	T3.021116.114750	L16020387-02	0101-151 S1	40/50	1		02/11/16 11:47
40	T3.021116.115152	L16020391-01	27-2-3 P1	40/50	1		02/11/16 11:51
41	T3.021116.115552	L16020391-02	27-2-3 W1	40/50	1		02/11/16 11:55
42	T3.021116.115955	L16020391-03	27-2-3 S1	40/50	1		02/11/16 11:59
43	T3.021116.120355	L16020374-01	WVOG	40/50	5000		02/11/16 12:03
44	T3.021116.120801	WG557147-17	CCV		1		02/11/16 12:08
45	T3.021116.121145	WG557147-18	CCB		1		02/11/16 12:11
46	T3.021116.123509	WG557147-19	Interference Check		1		02/11/16 12:35
47	T3.021116.123909	WG557147-20	Interference Check		1		02/11/16 12:39
48	T3.021116.124301	WG557147-21	CCV		1		02/11/16 12:43
49	T3.021116.124644	WG557147-22	CCB		1		02/11/16 12:46
50	T3.021116.125051	WG556359-02	Method/Prep Blank	40/50	1		02/11/16 12:50
51	T3.021116.125456	WG556359-03	Laboratory Control S	40/50	1		02/11/16 12:54
52	T3.021116.125843	WG556359-01	Reference Sample		1	L16020222-06	02/11/16 12:58
53	T3.021116.130245	WG556359-04	Matrix Spike	40/50	1	L16020222-06	02/11/16 13:02
54	T3.021116.130631	WG556359-05	Matrix Spike Duplica	40/50	1	L16020222-06	02/11/16 13:06
55	T3.021116.131020	L16020058-01	46WW02-020116	40/50	1		02/11/16 13:10
56	T3.021116.131422	L16020058-02	46WW02FF-020116	40/50	1		02/11/16 13:14
57	T3.021116.131824	L16020058-03	46WW11-020116	40/50	1		02/11/16 13:18
58	T3.021116.132227	WG556970-03	Post Digestion Spike		1	L16020058-03	02/11/16 13:22
59	T3.021116.132614	WG556970-04	Serial Dilution		5	L16020058-03	02/11/16 13:26
60	T3.021116.133008	WG557147-23	CCV		1		02/11/16 13:30
61	T3.021116.133353	WG557147-24	CCB		1		02/11/16 13:33
62	T3.021116.133800	L16020058-04	46WW11FF-020116	40/50	1		02/11/16 13:38
63	T3.021116.134204	L16020058-05	LHSMW19-020116	40/50	1		02/11/16 13:42
64	T3.021116.134605	L16020058-06	LHSMW19FF-020116	40/50	1		02/11/16 13:46
65	T3.021116.135007	L16020058-07	46WW05-020116	40/50	1		02/11/16 13:50
66	T3.021116.135410	L16020058-08	46WW05FF-020116	40/50	1		02/11/16 13:54
67	T3.021116.135812	L16020058-09	46WW16-020116	40/50	1		02/11/16 13:58
68	T3.021116.140211	L16020058-10	46WW16FF-020116	40/50	1		02/11/16 14:02

Page: 2 Approved: February 12, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 021116T3.1
Analyst1: BKT Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 7
Maintenance Log ID:

Calibration Std: STD74152 ICV Std: STD74313 Post Spike: STD74298
ICSA: STD74299 ICSAB: STD74298 Int. Std: RGT35157
CCV: STD74316 LLCCV: STD74540 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 556969,556970,556971,557159

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.021116.140611	L16020141-02	46WW09F-020216	40/50	1		02/11/16 14:06
70	T3.021116.141014	L16020141-03	46WW09FF-020216	40/50	1		02/11/16 14:10
71	T3.021116.141417	WG557147-25	CCV		1		02/11/16 14:14
72	T3.021116.141800	WG557147-26	CCB		1		02/11/16 14:18
73	T3.021116.142952	L16020058-07	46WW05-020116	40/50	5		02/11/16 14:29
74	T3.021116.143348	L16020058-08	46WW05FF-020116	40/50	5		02/11/16 14:33
75	T3.021116.143743	L16020058-09	46WW16-020116	40/50	5		02/11/16 14:37
76	T3.021116.144146	L16020058-10	46WW16FF-020116	40/50	5		02/11/16 14:41
77	T3.021116.144550	WG557147-27	CCV		1		02/11/16 14:45
78	T3.021116.144934	WG557147-28	CCB		1		02/11/16 14:49
79	T3.021116.145342	WG557147-29	Low Level Continuing Calibra		1		02/11/16 14:53
80	T3.021116.161325	WG556761-02	Method/Prep Blank	40/50	1		02/11/16 16:13
81	T3.021116.161730	WG556761-03	Laboratory Control S	40/50	1		02/11/16 16:17
82	T3.021116.162117	WG556761-01	Reference Sample		1	L16020406-01	02/11/16 16:21
83	T3.021116.162519	WG556761-04	Matrix Spike	5/50	1	L16020406-01	02/11/16 16:25
84	T3.021116.162905	WG556761-05	Matrix Spike Duplica	5/50	1	L16020406-01	02/11/16 16:29
85	T3.021116.163253	L16020227-02	S6B0219-01	5/50	1		02/11/16 16:32
86	T3.021116.163656	L16020382-01	J6B0230-01	5/50	1		02/11/16 16:36
87	T3.021116.164053	L16020384-01	S6B0280-01	5/50	1		02/11/16 16:40
88	T3.021116.164450	WG556971-03	Post Digestion Spike		1	L16020384-01	02/11/16 16:44
89	T3.021116.164835	WG556971-04	Serial Dilution		5	L16020384-01	02/11/16 16:48
90	T3.021116.165238	WG557147-30	CCV		1		02/11/16 16:52
91	T3.021116.165627	WG557147-31	CCB		1		02/11/16 16:56
92	T3.021116.170033	L16020384-02	S6B0280-02	5/50	1		02/11/16 17:00
93	T3.021116.170430	L16020389-01	0101-129 W1	40/50	1		02/11/16 17:04
94	T3.021116.170831	L16020389-02	0101-129 S1	40/50	1		02/11/16 17:08
95	T3.021116.171233	L16020392-01	6-10-7 W1	40/50	1		02/11/16 17:12
96	T3.021116.171634	L16020395-01	6-11-6.02 W1	40/50	1		02/11/16 17:16
97	T3.021116.172034	L16020415-03	MW4D-GW-020616	40/50	1		02/11/16 17:20
98	T3.021116.172435	L16020415-05	MW2S-GW-020616	40/50	1		02/11/16 17:24
99	T3.021116.172836	L16020415-07	MW5S-GW-020616	40/50	1		02/11/16 17:28
100	T3.021116.173225	L16020443-01	01-01-0173-S1	40/50	1		02/11/16 17:32
101	T3.021116.173627	L16020443-02	01-01-0173-S2	40/50	1		02/11/16 17:36
102	T3.021116.174031	WG557147-32	CCV		1		02/11/16 17:40

Page: 3 Approved: February 12, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 021116T3.1
Analyst1: BKT Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 7
Maintenance Log ID:

Calibration Std: STD74152 ICV Std: STD74313 Post Spike: STD74298
ICSA: STD74299 ICSAB: STD74298 Int. Std: RGT35157
CCV: STD74316 LLCCV: STD74540 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 556969,556970,556971,557159

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.021116.174415	WG557147-33	CCB		1		02/11/16 17:44
104	T3.021116.174822	L16020443-03	01-01-0173-S3	40/50	1		02/11/16 17:48
105	T3.021116.175226	WG557147-34	CCV		1		02/11/16 17:52
106	T3.021116.175609	WG557147-35	CCB		1		02/11/16 17:56
107	T3.021116.180015	WG557147-36	Low Level Continuing Calibra		1		02/11/16 18:00
108	T3.021116.180418	WG557147-37	Interference Check		1		02/11/16 18:04
109	T3.021116.180818	WG557147-38	Interference Check		1		02/11/16 18:08
110	T3.021116.181209	WG557147-39	CCV		1		02/11/16 18:12
111	T3.021116.181553	WG557147-40	CCB		1		02/11/16 18:15
112	T3.021116.182001	WG557081-02	Method/Prep Blank	40/50	1		02/11/16 18:20
113	T3.021116.182407	WG557081-03	Laboratory Control S	40/50	1		02/11/16 18:24
114	T3.021116.182754	WG556947-01	Fluid Blank 1		1		02/11/16 18:27
115	T3.021116.183201	L16020524-01	16974-B01-WQ-W0002	40/50	1		02/11/16 18:32
116	T3.021116.183606	L16020461-02	S6B0345-02		1	WG557081-01	02/11/16 18:36
117	T3.021116.184009	WG557081-04	Matrix Spike	5/50	1	L16020461-02	02/11/16 18:40
118	T3.021116.184356	WG557081-05	Matrix Spike Duplica	5/50	1	L16020461-02	02/11/16 18:43
119	T3.021116.184743	L16020444-01	1804-105 W1	40/50	1		02/11/16 18:47
120	T3.021116.185145	WG557159-01	Post Digestion Spike		1	L16020444-01	02/11/16 18:51
121	T3.021116.185531	WG557159-02	Serial Dilution		5	L16020444-01	02/11/16 18:55
122	T3.021116.185936	WG557147-41	CCV		1		02/11/16 18:59
123	T3.021116.190320	WG557147-42	CCB		1		02/11/16 19:03
124	T3.021116.190729	L16020444-02	1804-105-A W1/S1	40/50	1		02/11/16 19:07
125	T3.021116.191131	L16020454-01	LH18/24-SP650-6334-GRAB	40/50	1		02/11/16 19:11
126	T3.021116.191532	L16020454-02	LH18/24-SP650-6334-COMP	40/50	1		02/11/16 19:15
127	T3.021116.191934	L16020460-01	S6B0344-01	5/50	1		02/11/16 19:19
128	T3.021116.192335	L16020471-01	6-10-10 W1	40/50	1		02/11/16 19:23
129	T3.021116.192736	L16020472-01	0101-148 W2	40/50	1		02/11/16 19:27
130	T3.021116.193140	L16020472-02	0101-148 S1	40/50	1		02/11/16 19:31
131	T3.021116.193541	L16020474-01	0101-144A W1	40/50	1		02/11/16 19:35
132	T3.021116.193943	L16020475-01	0101-144 S1	40/50	1		02/11/16 19:39
133	T3.021116.194346	L16020516-01	GLASS VESSEL \#2	5/50	1		02/11/16 19:43
134	T3.021116.194754	WG557147-43	CCV		1		02/11/16 19:47
135	T3.021116.195138	WG557147-44	CCB		1		02/11/16 19:51
136	T3.021116.195546	L16020516-02	GLASS VESSEL \#3	5/50	1		02/11/16 19:55

Page: 4 Approved: February 12, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 021116T3.1

Analyst1: BKT Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 7

Maintenance Log ID:

Calibration Std: STD74152 ICV Std: STD74313 Post Spike: STD74298

ICSA: STD74299 ICSAB: STD74298 Int. Std: RGT35157

CCV: STD74316 LLCCV: STD74540 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 556969,556970,556971,557159

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.021116.195951	L16020516-03	GLASS VESSEL \#4	5/50	1		02/11/16 19:59
138	T3.021116.200357	L16020520-02	PERMEATE	1/50	1		02/11/16 20:03
139	T3.021116.200804	L16020520-04	BLEED	1/50	1		02/11/16 20:08
140	T3.021116.201205	L16020520-06	N. DOCK FLUME	1/50	1		02/11/16 20:12
141	T3.021116.201611	L16020563-01	59-10-1.03 W1	40/50	1		02/11/16 20:16
142	T3.021116.202015	WG557147-45	CCV		1		02/11/16 20:20
143	T3.021116.202359	WG557147-46	CCB		1		02/11/16 20:23
144	T3.021116.202806	WG557147-47	Low Level Continuing Calibra		1		02/11/16 20:28

Page: 5 Approved: February 12, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 11-FEB-2016
Analyst: BKT
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 557147
Runlog ID: 73229
Analytical Workgroups: 556969,556970,556971,557159

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	259,262,415
Level 4	58,141
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
12-FEB-2016

Secondary Reviewer:
12-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-12-2016 13:44:33

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG556970

Login Number: L16020141

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW09F-020216	02	02/02/16					02/05/2016	3	180		02/11/16	9.2	180	
46WW09FF-020216	03	02/02/16					02/05/2016	3	180		02/11/16	9.3	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4628650
Report generated 02/12/2016 11:26

METHOD BLANK SUMMARY

Login Number: L16020141
Blank File ID: T3.021116.125051
Prep Date: 02/05/16 08:41
Analyzed Date: 02/11/16 12:50
Analyst: BKT

Work Group: WG556970
Blank Sample ID: WG556359-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556359-03	T3.021016.185231	02/10/16 18:52	01
LCS	WG556359-03	T3.021116.125456	02/11/16 12:54	02
46WW09F-020216	L16020141-02	T3.021116.140611	02/11/16 14:06	01
46WW09FF-020216	L16020141-03	T3.021116.141014	02/11/16 14:10	01

Report Name: BLANK_SUMMARY
PDF File ID: 4628651
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020141 Prep Date: 02/05/16 08:41 Sample ID: WG556359-02
Instrument ID: ICP-THERMO3 Run Date: 02/11/16 12:50 Prep Method: 3015
File ID: T3.021116.125051 Analyst: BKT Method: 6010C
Workgroup (AAB#): WG556970 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-11-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Total	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4628652
12-FEB-2016 11:26

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020141 Run Date: 02/11/2016 Sample ID: WG556359-03
Instrument ID: ICP-THERMO3 Run Time: 12:54 Prep Method: 3015
File ID: T3.021116.125456 Analyst: BKT Method: 6010C
Workgroup (AAB#): WG556970 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD74526 Cal ID: ICP-TH-11-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Total	2.50	2.46	98.5	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4628653
Report generated: 02/12/2016 11:26

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16020141 Cal ID: ICP-THERMO3 - Worknum: WG556970
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG556359-01 File ID: T3.021116.125843 Dil: 1 Matrix: WATER
Sample ID: WG556359-04 MS File ID: T3.021116.130245 Dil: 1 Units: mg/L
Sample ID: WG556359-05 MSD File ID: T3.021116.130631 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron	ND	2.50	2.52	101	2.50	2.50	99.9	0.882	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4628654
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16020141 **Worknum:** WG556970
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG556970-04 **File ID:** T3.021116.132614 **Dil:** 5 **Units:** ug/L
Sample: L16020058-03 **File ID:** T3.021116.131824 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Iron	855		829		3.04	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4628648
02/12/2016 11:26

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16020141 **Worknum:** WG556970
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG556970-03 **File ID:** T3.021116.132227 **Dil:** 1 **Units:** ug/L
Sample ID: L16020058-03 **File ID:** T3.021116.131824 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
IRON	2720		855		2000	97.6	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4628649
Report generated: 02/12/2016 11:26

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16020141	Workgroup (AAB#):	WG556970
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG557147	Initial Calibration Date:	11-FEB-2016 09:32

	WG557147-01		WG557147-02		WG557147-03		WG557147-04		WG557147-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
IRON	0	-0.0000500	.04	0.000560	.08	0.00128	4	0.0696	8	0.140	.999892	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4628657
Report generated: 12-FEB-2016 11:26

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16020141
Instrument ID: ICP-THERMO3
File ID: T3.021116.094012
Workgroup (AAB#): WG556970
Matrix: WATER

Run Date: 02/11/2016
Run Time: 09:40
Analyst: BKT
Cal ID: ICP-THERI - 11-FEB-16

Sample ID: WG557147-07
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
IRON	.04	.16	.04	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4628659
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557147-12
Instrument ID: ICP-THERMO3
Run Time: 09:59
Method: 6010C
File ID: T3.021116.095956
Analyst: BKT
Units: mg/L
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4628662
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557147-18
Instrument ID: ICP-THERMO3
Run Time: 12:11
Method: 6010C
File ID: T3.021116.121145
Analyst: BKT
Units: mg/L
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4628662
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557147-22
Instrument ID: ICP-THERMO3
Run Time: 12:46
Method: 6010C
File ID: T3.021116.124644
Analyst: BKT
Units: mg/L
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4628662
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557147-24
Instrument ID: ICP-THERMO3
Run Time: 13:33
Method: 6010C
File ID: T3.021116.133353
Analyst: BKT
Units: mg/L
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4628662
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557147-26
Instrument ID: ICP-THERMO3
Run Time: 14:18
Method: 6010C
File ID: T3.021116.141800
Analyst: BKT
Units: mg/L
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4628662
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557147-35
Instrument ID: ICP-THERMO3
Run Time: 17:56
Method: 6010C
File ID: T3.021116.175609
Analyst: BKT
Units: mg/L
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4628662
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557147-40
Instrument ID: ICP-THERMO3
Run Time: 18:15
Method: 6010C
File ID: T3.021116.181553
Analyst: BKT
Units: mg/L
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4628662
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16020141 Run Date: 02/11/2016 Sample ID: WG557147-06
Instrument ID: ICP-THERMO3 Run Time: 09:36 Method: 6010C
File ID: T3.021116.093627 Analyst: BKT Units: mg/L
Workgroup (AAB#): WG556970 Cal ID: ICP-TH - 11-FEB-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Iron		4	4.04	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4628658
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557147-11
Instrument ID: ICP-THERMO3
Run Time: 09:56
Method: 6010C
File ID: T3.021116.095612
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.09	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4628661
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557147-17
Instrument ID: ICP-THERMO3
Run Time: 12:08
Method: 6010C
File ID: T3.021116.120801
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.17	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4628661
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557147-21
Instrument ID: ICP-THERMO3
Run Time: 12:43
Method: 6010C
File ID: T3.021116.124301
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.15	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4628661
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557147-23
Instrument ID: ICP-THERMO3
Run Time: 13:30
Method: 6010C
File ID: T3.021116.133008
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.15	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4628661
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557147-25
Instrument ID: ICP-THERMO3
Run Time: 14:14
Method: 6010C
File ID: T3.021116.141417
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.30	mg/L	107	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4628661
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557147-34
Instrument ID: ICP-THERMO3
Run Time: 17:52
Method: 6010C
File ID: T3.021116.175226
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.37	mg/L	109	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4628661
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557147-39
Instrument ID: ICP-THERMO3
Run Time: 18:12
Method: 6010C
File ID: T3.021116.181209
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.39	mg/L	110	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4628661
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557147-08
Instrument ID: ICP-THERMO3
Run Time: 09:44
Method: 6010C
File ID: T3.021116.094418
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.0786	mg/L	98.2	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4628663
Report generated 02/12/2016 11:31

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557147-29
Instrument ID: ICP-THERMO3
Run Time: 14:53
Method: 6010C
File ID: T3.021116.145342
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556970
Cal ID: ICP-TH - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.0735	mg/L	91.8	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4628663
Report generated 02/12/2016 11:31

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16020141
Instrument ID: ICP-THERMO3
Sol. A : WG557147-09 **File ID:** T3.021116.094822
Sol. AB : WG557147-10 **File ID:** T3.021116.095221

Workgroup (AAB#): WG556970
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	97.3	97.3	100	96.9	96.9	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4628660
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16020141
Instrument ID: ICP-THERMO3
Sol. A : WG557147-19 **File ID:** T3.021116.123509
Sol. AB : WG557147-20 **File ID:** T3.021116.123909

Workgroup (AAB#): WG556970
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	99.2	99.2	100	98.5	98.5	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4628660
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16020141
Instrument ID: ICP-THERMO3
Sol. A : WG557147-37 **File ID:** T3.021116.180418
Sol. AB : WG557147-38 **File ID:** T3.021116.180818

Workgroup (AAB#): WG556970
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	106	106	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4628660
Report generated 02/12/2016 11:26

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16020141 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4628656
Report generated: 02/12/2016 11:26

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16020141 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4628656
Report generated: 02/12/2016 11:26

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16020141 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4628656
Report generated: 02/12/2016 11:26

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16020141 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4628656
Report generated: 02/12/2016 11:26

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16020141 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4628656
Report generated: 02/12/2016 11:26

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16020141 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4628656
Report generated: 02/12/2016 11:26

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16020141 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4628656
Report generated: 02/12/2016 11:26

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16020141 **Date:** 01/07/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4628655
Report generated: 02/12/2016 11:26

2.2.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	2/11/2016 9:36:22	2/11/2016 9:36:22	Linear	1/Conc	-0.000092	0.039966	0.000000	1.000000
Al 308.215 {109}	2/11/2016 9:36:22	2/11/2016 9:36:22	Linear	1/Conc	0.000782	0.006417	0.000000	1.000000
As 189.042 {478}	2/11/2016 9:36:22	2/11/2016 9:36:22	Linear	1/Conc	-0.000000	0.017989	0.000000	1.000000
B 249.678 {135}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000070	0.016745	0.000000	1.000000
Ba 455.403 { 74}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.009382	1.980026	0.000000	1.000000
Be 313.107 {108}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000548	0.669046	0.000000	1.000000
Ca 422.673 { 80}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000599	0.043662	0.000000	1.000000
Cd 228.802 {447}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000007	0.388236	0.000000	1.000000
Co 228.616 {447}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000007	0.295712	0.000000	1.000000
Cr 267.716 {126}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000187	0.043286	0.000000	1.000000
Cu 224.700 {450}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000135	0.100019	0.000000	1.000000
Fe 261.187 {129}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000050	0.017485	0.000000	1.000000
K 766.490 { 44}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.019676	0.047830	0.000000	1.000000
Li 670.784 { 50}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.016578	1.056564	0.000000	1.000000
Mg 279.079 {121}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000676	0.004484	0.000000	1.000000
Mn 257.610 {131}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000128	0.224923	0.000000	1.000000
Mo 202.030 {467}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000030	0.150464	0.000000	1.000000
Na 589.592 { 57}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.015363	0.145154	0.000000	1.000000
Ni 231.604 {446}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000474	0.111969	0.000000	1.000000
P 214.914 {457}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000133	0.010063	0.000000	1.000000
Pb 220.353 {453}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000291	0.049902	0.000000	1.000000
Sb 206.833 {463}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000359	0.023265	0.000000	1.000000
Se 196.090 {472}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000115	0.011936	0.000000	1.000000
Si 212.412 {459}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000277	0.029628	0.000000	1.000000
Sn 189.989 {477}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000020	0.052860	0.000000	1.000000
Sr 407.771 { 83}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.001323	3.335624	0.000000	1.000000
Ti 337.280 {100}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.001447	0.100540	0.000000	1.000000
Tl 190.856 {477}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.000196	0.022886	0.000000	1.000000
V 292.402 {115}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000050	0.039589	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	0.000058	0.286087	0.000000	1.000000
Zr 339.198 { 99}	2/11/2016 9:36:23	2/11/2016 9:36:23	Linear	1/Conc	-0.008723	0.000392	0.000000	1.000000

Approved: February 12, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999994	0.000000	0.001784	0.005946	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999997	0.000001	0.007535	0.025117	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999780	0.000001	0.003213	0.010711	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999936	0.000001	0.002469	0.008231	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999984	0.000070	0.000792	0.002641	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999958	0.000002	0.000066	0.000220	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999973	0.000020	0.027046	0.090153	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999878	0.000002	0.000256	0.000852	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999728	0.000009	0.000384	0.001280	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999967	0.000001	0.001020	0.003399	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999862	0.000005	0.001329	0.004429	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999892	0.000007	0.021110	0.070365	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999986	0.000080	0.087007	0.290024	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999984	0.000059	0.003910	0.013033	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999543	0.000013	0.090456	0.301521	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999842	0.000013	0.002325	0.007749	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	1.000000	0.000001	0.000400	0.001332	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999986	0.000244	0.026601	0.088670	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999982	0.000002	0.001085	0.003618	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999958	0.000006	0.007441	0.024802	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999942	0.000002	0.003480	0.011601	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999964	0.000001	0.004249	0.014163	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999595	0.000001	0.007032	0.023440	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999998	0.000002	0.002325	0.007749	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999974	0.000002	0.000905	0.003016	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999998	0.000037	0.000351	0.001170	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999952	0.000006	0.006150	0.020501	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999888	0.000002	0.003025	0.010085	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999968	0.000002	0.001019	0.003397	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999999	0.000002	0.000219	0.000731	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.302331	0.000008	3.277552	10.925173	OK.	1.000000	0.000000	1	0

Approved: February 12, 2016

Sample Name: S0 Acquired: 2/11/2016 9:16:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00009	.00078	-.00000	.00007	.00938	.00055	-.00060
Stddev	.00004	.00000	.00002	.00004	.00131	.00002	.00111
%RSD	46.424	.38879	5103.1	51.120	13.917	4.2003	185.08
#1	-.00012	.00078	.00001	.00003	.00866	.00052	.00047
#2	-.00012	.00078	.00001	.00011	.00859	.00056	-.00053
#3	-.00004	.00078	-.00002	.00007	.01089	.00056	-.00174

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00001	.00001	.00019	-.00014	-.00005	-.01967	-.01658
Stddev	.00004	.00015	.00002	.00012	.00036	.00222	.00229
%RSD	547.48	1891.0	10.950	90.047	712.42	11.287	13.801
#1	.00004	.00005	.00020	-.00026	.00007	-.01726	-.01584
#2	-.00004	.00013	.00016	-.00013	-.00045	-.02164	-.01914
#3	.00002	-.00015	.00020	-.00002	.00023	-.02012	-.01475

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00068	-.00013	.00003	-.01537	-.00047	-.00013	-.00029
Stddev	.00027	.00027	.00003	.00287	.00006	.00006	.00014
%RSD	39.313	206.93	96.843	18.647	12.015	45.663	48.983
#1	-.00095	-.00009	.00003	-.01207	-.00042	-.00008	-.00037
#2	-.00065	.00012	.00006	-.01722	-.00047	-.00020	-.00038
#3	-.00042	-.00041	.00000	-.01682	-.00053	-.00012	-.00013

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00036	-.00011	.00028	-.00002	.00132	-.00145	-.00020
Stddev	.00003	.00010	.00001	.00007	.00066	.00056	.00007
%RSD	7.2801	85.523	3.6769	337.94	49.650	38.930	35.837
#1	.00033	-.00002	.00029	-.00007	.00197	-.00089	-.00014
#2	.00037	-.00021	.00027	-.00005	.00066	-.00144	-.00017
#3	.00038	-.00011	.00027	.00006	.00133	-.00202	-.00028

Approved: February 12, 2016

Sample Name: S0 Acquired: 2/11/2016 9:16:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00005	.00006	-.00872
Stddev	.00001	.00005	.00056
%RSD	16.400	89.508	6.3652
#1	.00006	-.00000	-.00888
#2	.00005	.00010	-.00918
#3	.00004	.00008	-.00811
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12036.	88304.	3520.8
Stddev	37.	42.	13.8
%RSD	.31138	.04756	.39073
#1	12078.	88293.	3518.0
#2	12006.	88351.	3508.6
#3	12022.	88269.	3535.7

Approved: February 12, 2016

Sample Name: S1 Acquired: 2/11/2016 9:20:46 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00004	.00130	.02606	.00079	.00239	.00021	.00029
Stddev	.00003	.00003	.00114	.00001	.00065	.00002	.00005
%RSD	69.556	2.6430	4.3846	1.3319	27.115	9.9381	18.204
#1	.00006	.00133	.02616	.00078	.00255	.00022	.00027
#2	.00001	.00126	.02715	.00080	.00168	.00018	.00036
#3	.00005	.00132	.02488	.00080	.00295	.00021	.00026

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00035	.00038	.00056	-.00188	.00101	.00123	.04753
Stddev	.00003	.00014	.00013	.00431	.00020	.00003	.00039
%RSD	7.2026	37.827	22.417	229.56	19.540	2.8302	.81698
#1	.00035	.00022	.00046	-.00193	.00124	.00126	.04730
#2	.00037	.00048	.00070	.00246	.00090	.00124	.04797
#3	.00032	.00044	.00052	-.00616	.00090	.00119	.04731

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00001	.00064	-.00012	.00058	.00146	.00046	.02856
Stddev	.00001	.00004	.00005	.00003	.00004	.00004	.00115
%RSD	56.917	5.5636	38.647	5.5999	2.9741	8.8079	4.0340
#1	.00001	.00062	-.00012	.00059	.00149	.00043	.02834
#2	.00001	.00068	-.00017	.00060	.00149	.00044	.02753
#3	.00002	.00063	-.00007	.00054	.00141	.00050	.02980

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00058	.00033	.00237	-.00883
Stddev	.00028	.00001	.00004	.00031
%RSD	47.232	2.5956	1.8587	3.5377
#1	-.00042	.00033	.00232	-.00847
#2	-.00090	.00034	.00238	-.00902
#3	-.00043	.00033	.00241	-.00901

Approved: February 12, 2016

Sample Name: S1 Acquired: 2/11/2016 9:20:46 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12029.	88503.	3524.6
Stddev	9.	153.	22.8
%RSD	.07166	.17329	.64642
#1	12032.	88629.	3542.6
#2	12035.	88332.	3499.0
#3	12019.	88549.	3532.3

Approved: February 12, 2016

Sample Name: S2 Acquired: 2/11/2016 9:24:53 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00016**	**.00180**	**.00008**	**.00020**	**.04313**	**.00104**	**.00635**
Stddev	.00001	.00001	.00003	.00002	.00158	.00002	.00069
%RSD	3.2125	.40186	39.322	9.5206	3.6538	1.9056	10.946
#1	.00016	.00180	.00009	.00018	.04239	.00104	.00707
#2	.00016	.00181	.00005	.00022	.04493	.00106	.00628
#3	.00017	.00179	.00012	.00020	.04205	.00102	.00569

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00032**	**.00080**	**.00050**	**.00074**	**.00128**	**.01657**	**-.00050**
Stddev	.00002	.00005	.00002	.00003	.00027	.00059	.00251
%RSD	5.7651	6.0913	3.2865	4.0340	21.437	3.5543	502.95
#1	.00030	.00084	.00050	.00071	.00097	.01618	-.00048
#2	.00034	.00083	.00051	.00075	.00147	.01724	.00200
#3	.00033	.00075	.00048	.00076	.00140	.01627	-.00303

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00033**	**.00194**	**.00243**	**.10384**	**.00045**	**.00145**	**.00008**
Stddev	.00028	.00039	.00005	.00259	.00011	.00002	.00034
%RSD	85.223	20.233	2.1977	2.4940	24.972	1.1525	411.65
#1	.00006	.00218	.00244	.10142	.00050	.00147	.00006
#2	.00030	.00149	.00247	.10351	.00032	.00145	.00043
#3	.00063	.00215	.00237	.10657	.00053	.00144	-.00024

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00075**	**-.00007**	**.00265**	**.00085**	**.05572**	**.00035**	**-.00006**
Stddev	.00009	.00002	.00005	.00005	.00093	.00026	.00006
%RSD	12.221	32.448	1.9141	5.3078	1.6614	75.506	100.88
#1	.00082	-.00005	.00269	.00086	.05593	.00012	-.00007
#2	.00079	-.00009	.00268	.00089	.05652	.00028	-.00011
#3	.00065	-.00006	.00259	.00080	.05471	.00064	.00001

Approved: February 12, 2016

Sample Name: S2 Acquired: 2/11/2016 9:24:53 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00065	.00462	-.00851
Stddev	.00003	.00003	.00099
%RSD	4.1596	.68017	11.599
#1	.00062	.00465	-.00741
#2	.00065	.00462	-.00931
#3	.00068	.00458	-.00881

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12073.	89103.	3541.2
Stddev	15.	113.	18.8
%RSD	.12103	.12662	.53098
#1	12087.	88973.	3562.9
#2	12074.	89170.	3531.2
#3	12058.	89166.	3529.5

Approved: February 12, 2016

Sample Name: S3 Acquired: 2/11/2016 9:28:59 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01579	.06534	.00707	.00831	1.9853	.03452	.43615
Stddev	.00003	.00012	.00008	.00002	.0179	.00004	.00224
%RSD	.18345	.18227	1.1894	.28709	.90088	.11222	.51329
#1	.01577	.06548	.00699	.00834	1.9687	.03453	.43528
#2	.01582	.06528	.00716	.00831	2.0043	.03455	.43870
#3	.01576	.06526	.00706	.00829	1.9830	.03447	.43449

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02110	.05932	.02184	.05014	.06963	2.3717	1.0470
Stddev	.00002	.00035	.00000	.00019	.00082	.0183	.0073
%RSD	.09611	.58676	.00760	.38079	1.1762	.77198	.69627
#1	.02110	.05944	.02184	.05023	.06922	2.3587	1.0419
#2	.02112	.05960	.02184	.05028	.07057	2.3927	1.0553
#3	.02108	.05893	.02184	.04993	.06910	2.3639	1.0437

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04427	.11271	.15062	7.2646	.05576	.09765	.02501
Stddev	.00073	.00158	.00070	.0532	.00021	.00023	.00022
%RSD	1.6405	1.3990	.46565	.73295	.36986	.23470	.88626
#1	.04344	.11099	.15121	7.2186	.05597	.09772	.02511
#2	.04455	.11408	.15080	7.3229	.05574	.09784	.02517
#3	.04481	.11307	.14984	7.2522	.05556	.09740	.02476

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02763	.00465	.14851	.05278	3.3367	.09846	.01042
Stddev	.00002	.00003	.00025	.00011	.0300	.00067	.00002
%RSD	.06845	.72971	.16903	.20369	.89974	.67803	.14526
#1	.02762	.00467	.14873	.05288	3.3124	.09784	.01040
#2	.02761	.00468	.14855	.05281	3.3703	.09916	.01041
#3	.02765	.00461	.14824	.05267	3.3275	.09838	.01043

Approved: February 12, 2016

Sample Name: S3 Acquired: 2/11/2016 9:28:59 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.03932	.28637	-.00887
Stddev	.00004	.00059	.00089
%RSD	.10874	.20574	10.034
#1	.03934	.28675	-.00985
#2	.03927	.28668	-.00811
#3	.03935	.28569	-.00865

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11838.	86054.	3505.8
Stddev	26.	162.	8.9
%RSD	.21849	.18857	.25339
#1	11808.	86232.	3515.8
#2	11853.	85915.	3502.8
#3	11852.	86013.	3498.8

Approved: February 12, 2016

Sample Name: S4 Acquired: 2/11/2016 9:32:43 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03184	.13046	.01441	.01695	3.9706	.06899	.87305
Stddev	.00007	.00010	.00006	.00008	.0275	.00014	.00710
%RSD	.23303	.07688	.43113	.46220	.69340	.20820	.81358
#1	.03188	.13052	.01440	.01687	3.9700	.06908	.87050
#2	.03189	.13052	.01447	.01702	3.9984	.06905	.88108
#3	.03176	.13034	.01435	.01695	3.9434	.06882	.86758

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04252	.11816	.04356	.09965	.13980	4.7667	2.0904
Stddev	.00023	.00034	.00009	.00027	.00157	.0340	.0144
%RSD	.53017	.28463	.21571	.27544	1.1206	.71214	.68995
#1	.04277	.11848	.04362	.09995	.13980	4.7599	2.0873
#2	.04234	.11820	.04361	.09959	.14137	4.8036	2.1061
#3	.04244	.11781	.04345	.09942	.13823	4.7367	2.0778

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.08823	.22397	.30080	14.470	.11118	.19930	.04972
Stddev	.00091	.00234	.00146	.106	.00008	.00039	.00025
%RSD	1.0301	1.0462	.48397	.73409	.07608	.19775	.51193
#1	.08830	.22369	.30233	14.459	.11120	.19967	.04998
#2	.08911	.22644	.30064	14.581	.11126	.19935	.04947
#3	.08729	.22178	.29943	14.369	.11109	.19889	.04970

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.05539	.00949	.29813	.10537	6.6717	.19948	.02067
Stddev	.00024	.00007	.00062	.00047	.0558	.00217	.00013
%RSD	.43193	.75906	.20672	.44237	.83623	1.0856	.61279
#1	.05551	.00947	.29883	.10587	6.6616	.19962	.02081
#2	.05554	.00957	.29790	.10530	6.7319	.20158	.02060
#3	.05511	.00943	.29767	.10495	6.6217	.19725	.02058

Approved: February 12, 2016

Sample Name: S4 Acquired: 2/11/2016 9:32:43 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: IR Corr. Factor: 1.000000
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.07930	.57148	-.00749
Stddev	.00019	.00153	.00131
%RSD	.23838	.26743	17.472
#1	.07943	.57297	-.00599
#2	.07939	.57155	-.00814
#3	.07909	.56991	-.00836
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11751.	84755.	3537.7
Stddev	6.	79.	21.3
%RSD	.04876	.09309	.60272
#1	11756.	84671.	3534.3
#2	11752.	84828.	3518.3
#3	11744.	84767.	3560.5

Approved: February 12, 2016

Sample Name: ICV Acquired: 2/11/2016 9:36:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40093	10.202	.39844	.49954	1.0301	.04974	10.101
Stddev	.00242	.025	.00299	.00271	.0044	.00011	.041
%RSD	.60237	.24034	.75095	.54291	.42403	.21814	.40441
#1	.40365	10.225	.39803	.50082	1.0291	.04981	10.081
#2	.40009	10.176	.40161	.49642	1.0348	.04961	10.148
#3	.39904	10.206	.39567	.50138	1.0262	.04980	10.074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04983	.20125	.50291	.50648	4.0375	50.178	1.0096
Stddev	.00017	.00037	.00144	.00094	.0155	.214	.0042
%RSD	.34279	.18361	.28543	.18471	.38487	.42571	.41235
#1	.04971	.20159	.50318	.50723	4.0426	50.006	1.0106
#2	.04976	.20130	.50420	.50678	4.0499	50.417	1.0131
#3	.05002	.20086	.50136	.50543	4.0201	50.111	1.0050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.265	.50494	.95984	50.049	.50660	9.8964	.51150
Stddev	.077	.00151	.00317	.212	.00101	.0051	.00258
%RSD	.75459	.29908	.33072	.42449	.19988	.05146	.50363
#1	10.240	.50385	.96261	49.927	.50616	9.9002	.51072
#2	10.204	.50666	.96053	50.294	.50776	9.8984	.51438
#3	10.352	.50431	.95638	49.925	.50588	9.8907	.50941
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: ICV Acquired: 2/11/2016 9:36:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2139	.40428	5.0707	1.0338	1.0039	1.0079	.51352
Stddev	.0041	.00594	.0137	.0012	.0040	.0074	.00395
%RSD	.33915	1.4696	.26990	.11874	.40220	.73795	.76830
#1	1.2150	.39897	5.0771	1.0351	1.0029	1.0003	.51266
#2	1.2174	.40317	5.0801	1.0338	1.0084	1.0083	.51783
#3	1.2094	.41070	5.0550	1.0326	1.0005	1.0152	.51008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.99667	1.0087	F .61141
Stddev	.00010	.0011	1.6994
%RSD	.01050	.10557	277.95
#1	.99655	1.0095	-.60101
#2	.99671	1.0091	2.5538
#3	.99675	1.0075	-.11862
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11847.	86073.	3534.5
Stddev	19.	188.	10.4
%RSD	.15881	.21894	.29427
#1	11827.	85861.	3543.7
#2	11864.	86136.	3536.5
#3	11849.	86222.	3523.2

Approved: February 12, 2016

Sample Name: ICB Acquired: 2/11/2016 9:40:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00678	-.00207	.00274	.00022	-.00000	.00811
Stddev	.00115	.00042	.00377	.00115	.00034	.00002	.02801
%RSD	482.97	6.2480	182.30	42.179	156.55	467.07	345.26
#1	-.00156	.00637	-.00615	.00146	.00049	.00001	-.00776
#2	.00048	.00676	-.00135	.00370	-.00016	.00000	-.00835
#3	.00036	.00722	.00129	.00305	.00032	-.00002	.04045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	-.00071	-.00020	.00054	.01078	.07849	-.00003
Stddev	.00006	.00043	.00064	.00115	.02024	.06918	.00473
%RSD	113.91	60.179	316.71	213.50	187.77	88.132	14006.
#1	-.00006	-.00082	-.00083	.00048	.02455	.13465	.00489
#2	-.00011	-.00024	-.00024	-.00058	-.01246	.09960	-.00044
#3	.00001	-.00106	.00046	.00172	.02026	.00122	-.00455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.12770	.00238	.00123	.03952	-.00053	-.00274	.00018
Stddev	.02048	.00066	.00005	.01732	.00029	.00830	.00196
%RSD	16.036	27.669	4.1876	43.819	53.793	303.09	1096.8
#1	.11549	.00208	.00128	.05457	-.00035	.00485	.00072
#2	.15134	.00192	.00122	.02059	-.00038	-.00147	.00181
#3	.11627	.00314	.00118	.04340	-.00086	-.01160	-.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: ICB Acquired: 2/11/2016 9:40:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00329	-.00412	.00295	.00099	.00035	.00199	-.00148
Stddev	.00092	.00794	.00117	.00062	.00026	.00567	.00114
%RSD	27.884	192.74	39.551	62.631	73.975	285.09	76.691
#1	-.00223	.00399	.00381	.00063	.00062	.00588	-.00172
#2	-.00390	-.01187	.00342	.00170	.00011	-.00451	-.00024
#3	-.00373	-.00448	.00162	.00063	.00032	.00460	-.00248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00027	.00075	F .11517
Stddev	.00075	.00011	.77587
%RSD	280.89	14.561	673.67
#1	-.00108	.00082	-.77372
#2	-.00010	.00063	.46278
#3	.00039	.00081	.65646
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12111.	89109.	3582.4
Stddev	19.	528.	28.4
%RSD	.15580	.59259	.79372
#1	12133.	88689.	3588.7
#2	12105.	88937.	3551.3
#3	12096.	89702.	3607.1

Approved: February 12, 2016

Sample Name: LLICV Acquired: 2/11/2016 9:44:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00832	.16816	.00764	.07524	.00850	.00143	.41200
Stddev	.00140	.00523	.00158	.00172	.00027	.00007	.02066
%RSD	16.828	3.1106	20.634	2.2813	3.1693	4.9642	5.0153
#1	.00870	.16466	.00800	.07566	.00875	.00144	.39270
#2	.00949	.16565	.00901	.07672	.00852	.00150	.40949
#3	.00677	.17417	.00592	.07336	.00822	.00135	.43380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.00382	.00404	.00436	.07857	.75310	.07842
Stddev	.00006	.00016	.00065	.00008	.01080	.04992	.00162
%RSD	6.3970	4.0595	15.977	1.8243	13.750	6.6286	2.0720
#1	.00102	.00392	.00450	.00438	.08248	.79142	.07922
#2	.00090	.00390	.00433	.00427	.06636	.77123	.07948
#3	.00098	.00364	.00330	.00442	.08688	.69665	.07655
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47002	.01023	.00761	.42688	.01614	.77566	.00575
Stddev	.01762	.00082	.00024	.02611	.00055	.01160	.00021
%RSD	3.7489	8.0168	3.1026	6.1161	3.3903	1.4956	3.6005
#1	.48599	.00929	.00763	.39688	.01587	.77838	.00593
#2	.45112	.01079	.00737	.44444	.01578	.78566	.00578
#3	.47295	.01061	.00784	.43933	.01677	.76294	.00553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: LLICV Acquired: 2/11/2016 9:44:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08625	.01178	.77817	.40161	.03924	.02624	.15568
Stddev	.00219	.00297	.00274	.00378	.00066	.00252	.00391
%RSD	2.5377	25.220	.35240	.94032	1.6730	9.5969	2.5086
#1	.08415	.01433	.77770	.40250	.03892	.02912	.15994
#2	.08852	.00852	.78112	.40486	.04000	.02517	.15485
#3	.08609	.01249	.77570	.39747	.03881	.02443	.15226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00797	.01776	F 317.10
Stddev	.00042	.00008	7.10
%RSD	5.3015	.45557	2.2376
#1	.00816	.01782	320.09
#2	.00748	.01781	322.21
#3	.00826	.01767	309.00
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12167.	90175.	3601.7
Stddev	9.	82.	44.5
%RSD	.07401	.09099	1.2342
#1	12159.	90155.	3611.9
#2	12177.	90266.	3553.0
#3	12165.	90106.	3640.2

Approved: February 12, 2016

Sample Name: ICSA Acquired: 2/11/2016 9:48:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00164	264.92	-.00009	.03919	.00010	-.00006	240.85
Stddev	.00111	.26	.00036	.00141	.00052	.00003	2.37
%RSD	67.685	.09826	407.48	3.5921	506.04	46.269	.98411
#1	.00166	264.71	-.00014	.03761	-.00015	-.00009	238.38
#2	.00052	265.21	.00030	.04031	-.00025	-.00006	243.11
#3	.00274	264.84	-.00042	.03966	.00070	-.00003	241.07
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	-.00139	-.00265	F -.00727	97.342	.00480	.00636
Stddev	.00017	.00035	.00060	.00209	.984	.08055	.00367
%RSD	55.637	25.386	22.742	28.757	1.0110	1676.7	57.726
#1	.00049	-.00099	-.00210	-.00486	96.380	.08700	.00405
#2	.00022	-.00152	-.00255	-.00852	98.347	-.07399	.00445
#3	.00019	-.00166	-.00329	-.00844	97.299	.00140	.01060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	247.11	.00109	-.00073	.08885	-.00170	.04540	-.00313
Stddev	2.39	.00086	.00019	.04230	.00110	.01318	.00241
%RSD	.96755	78.432	25.556	47.604	64.679	29.039	76.866
#1	244.71	.00012	-.00093	.13668	-.00115	.04368	-.00211
#2	249.49	.00143	-.00069	.05639	-.00098	.03317	-.00588
#3	247.12	.00173	-.00056	.07347	-.00296	.05937	-.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: ICSA Acquired: 2/11/2016 9:48:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00361	-.00274	.66164	.00071	.00042	-.00201	.00028
Stddev	.00266	.00770	.00050	.00074	.00034	.00537	.00170
%RSD	73.765	280.95	.07498	104.17	80.939	266.90	607.49
#1	.00648	.00615	.66204	.00157	.00066	.00312	-.00141
#2	.00312	-.00740	.66108	.00032	.00003	-.00156	.00198
#3	.00123	-.00697	.66179	.00025	.00056	-.00760	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00155	-.00533	F -28.531
Stddev	.00084	.00006	2.889
%RSD	53.861	1.1056	10.125
#1	-.00116	-.00539	-26.037
#2	-.00099	-.00532	-27.861
#3	-.00251	-.00527	-31.697
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11193.	81628.	3455.0
Stddev	19.	99.	14.8
%RSD	.16708	.12119	.42959
#1	11211.	81518.	3471.4
#2	11173.	81708.	3451.1
#3	11194.	81659.	3442.5

Approved: February 12, 2016

Sample Name: ICSAB Acquired: 2/11/2016 9:52:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52017	264.35	.24184	-.02959	.25308	.23475	241.71
Stddev	.00088	.64	.00395	.00169	.00124	.00060	1.04
%RSD	.16962	.24249	1.6317	5.7265	.49123	.25349	.43115
#1	.51915	263.70	.23732	-.03078	.25232	.23407	241.19
#2	.52071	264.98	.24358	-.03033	.25451	.23520	242.91
#3	.52064	264.39	.24461	-.02765	.25240	.23497	241.04
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.45714	.23618	.24266	.23804	96.876	5.2411	.00524
Stddev	.00224	.00041	.00073	.00079	.256	.0514	.00216
%RSD	.48983	.17496	.30195	.33155	.26470	.98112	41.212
#1	.45901	.23580	.24325	.23882	96.781	5.2172	.00432
#2	.45775	.23662	.24289	.23805	97.166	5.2060	.00771
#3	.45466	.23613	.24184	.23724	96.681	5.3002	.00369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	247.12	.24876	-.00106	5.2664	.47071	.04690	.48447
Stddev	.60	.00212	.00018	.0230	.00226	.00593	.00420
%RSD	.24124	.85131	16.886	.43671	.48103	12.643	.86677
#1	246.97	.24639	-.00093	5.2398	.47116	.04717	.48479
#2	247.78	.25046	-.00099	5.2798	.47271	.04084	.48850
#3	246.62	.24942	-.00127	5.2795	.46825	.05269	.48012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: ICSAB Acquired: 2/11/2016 9:52:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50670	.24922	.00945	.00159	.00026	.00311	.45356
Stddev	.00214	.00530	.00262	.00078	.00018	.00538	.00742
%RSD	.42328	2.1252	27.742	49.170	69.357	173.17	1.6363
#1	.50472	.25265	.01189	.00243	.00005	-.00300	.46114
#2	.50898	.24312	.00668	.00089	.00034	.00516	.45323
#3	.50641	.25189	.00976	.00146	.00039	.00715	.44631
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.24720	.46857	F -28.820
Stddev	.00047	.00179	2.873
%RSD	.19154	.38256	9.9688
#1	.24667	.47028	-31.117
#2	.24758	.46871	-25.599
#3	.24736	.46671	-29.745
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11155.	81506.	3446.1
Stddev	10.	113.	5.9
%RSD	.09326	.13841	.16988
#1	11164.	81469.	3450.4
#2	11144.	81416.	3439.4
#3	11157.	81632.	3448.4

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 9:56:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39922	10.141	.39897	.50235	1.0184	.05019	10.226
Stddev	.00317	.035	.00194	.00470	.0069	.00012	.083
%RSD	.79506	.34975	.48540	.93465	.67538	.24534	.81461
#1	.39596	10.105	.39863	.49693	1.0130	.05005	10.144
#2	.40230	10.176	.39723	.50489	1.0261	.05029	10.310
#3	.39939	10.143	.40106	.50522	1.0161	.05023	10.225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05063	.20362	.50414	.51221	4.0870	50.999	1.0241
Stddev	.00038	.00034	.00196	.00241	.0353	.355	.0076
%RSD	.75040	.16884	.38864	.47052	.86437	.69601	.73947
#1	.05089	.20377	.50221	.51315	4.0724	50.630	1.0157
#2	.05080	.20387	.50613	.51401	4.0613	51.338	1.0304
#3	.05019	.20323	.50407	.50948	4.1273	51.028	1.0261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.131	.50857	1.0204	51.140	.51098	10.022	.51091
Stddev	.154	.00517	.0036	.344	.00231	.023	.00280
%RSD	1.5183	1.0164	.35589	.67205	.45127	.23005	.54876
#1	9.9618	.50340	1.0230	50.817	.51081	10.007	.51079
#2	10.263	.50857	1.0220	51.501	.51336	10.049	.51377
#3	10.168	.51374	1.0163	51.101	.50876	10.011	.50816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 9:56:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2133	.40411	5.1049	1.0179	1.0199	1.0203	.51608
Stddev	.0053	.00243	.0098	.0037	.0067	.0095	.00227
%RSD	.44095	.60054	.19139	.36050	.65780	.93332	.43915
#1	1.2107	.40619	5.1079	1.0181	1.0133	1.0116	.51715
#2	1.2195	.40144	5.1129	1.0214	1.0267	1.0304	.51762
#3	1.2098	.40469	5.0940	1.0141	1.0197	1.0188	.51348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0087	1.0184	F 14.039
Stddev	.0035	.0026	1.058
%RSD	.34318	.25862	7.5363
#1	1.0047	1.0168	13.400
#2	1.0106	1.0215	13.456
#3	1.0108	1.0170	15.260
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11845.	86294.	3500.6
Stddev	21.	158.	18.0
%RSD	.17848	.18298	.51278
#1	11869.	86475.	3507.4
#2	11832.	86221.	3480.3
#3	11834.	86185.	3514.2

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 9:59:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00073	.01521	-.00149	.00028	.00119	-.00002	.00604
Stddev	.00125	.00530	.00222	.00171	.00019	.00002	.01739
%RSD	170.16	34.836	148.44	606.64	15.876	110.87	288.01
#1	-.00116	.01478	-.00150	.00063	.00097	-.00000	.02151
#2	.00067	.01014	-.00371	-.00157	.00126	-.00004	.00939
#3	-.00171	.02071	.00073	.00179	.00133	-.00001	-.01278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	-.00051	.00025	.00003	-.01029	.10412	-.00184
Stddev	.00007	.00009	.00030	.00033	.01445	.01344	.00173
%RSD	177.85	17.134	117.99	1034.1	140.41	12.907	93.932
#1	-.00002	-.00045	.00008	.00020	.00554	.09302	.00016
#2	.00002	-.00061	.00060	-.00035	-.02277	.10029	-.00282
#3	.00011	-.00048	.00008	.00024	-.01364	.11906	-.00286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07005	.00318	.00109	.01129	-.00052	.00544	-.00278
Stddev	.02386	.00194	.00030	.01792	.00033	.00546	.00060
%RSD	34.056	60.890	27.639	158.70	62.566	100.42	21.610
#1	.09755	.00130	.00144	.01080	-.00017	.00669	-.00261
#2	.05481	.00517	.00088	-.00638	-.00058	-.00054	-.00345
#3	.05781	.00308	.00096	.02944	-.00081	.01017	-.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 9:59:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	.00041	.00321	.00094	.00050	-.00235	-.00157
Stddev	.00315	.00433	.00085	.00100	.00055	.00329	.00104
%RSD	274.36	1056.5	26.543	106.03	111.76	140.10	66.234
#1	.00250	.00533	.00246	.00013	.00048	.00068	-.00257
#2	.00340	-.00283	.00414	.00064	-.00005	-.00187	-.00164
#3	-.00245	-.00127	.00303	.00206	.00106	-.00585	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00008	.00013	F 1.0719
Stddev	.00058	.00016	3.8575
%RSD	708.04	121.99	359.87
#1	-.00012	.00030	4.7634
#2	.00052	.00012	1.3849
#3	-.00065	-.00002	-2.9325
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11946.	88046.	3538.8
Stddev	15.	81.	20.5
%RSD	.12812	.09167	.57908
#1	11944.	87966.	3559.0
#2	11963.	88127.	3518.0
#3	11932.	88045.	3539.3

Approved: February 12, 2016

Sample Name: PBW 21 Acquired: 2/11/2016 10:04:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00076	.00711	-.00159	.00023	-.00006	-.00006	-.00578
Stddev	.00118	.00345	.00150	.00056	.00070	.00001	.02769
%RSD	155.33	48.438	93.986	242.81	1112.2	17.952	479.43
#1	.00052	.00767	-.00288	.00052	-.00004	-.00005	-.02433
#2	-.00181	.00342	-.00196	-.00042	.00062	-.00007	.02605
#3	-.00098	.01025	.00005	.00059	-.00077	-.00005	-.01904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	-.00038	.00006	.00148	F -.02337	.07113	-.00079
Stddev	.00029	.00021	.00072	.00053	.00959	.06986	.00481
%RSD	218.05	56.005	1259.2	35.719	41.062	98.214	607.26
#1	.00046	-.00062	-.00076	.00151	-.01526	.14985	.00384
#2	.00001	-.00031	.00058	.00094	-.02088	.04700	-.00577
#3	-.00008	-.00021	.00035	.00200	-.03396	.01653	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09740	.00042	.00001	.01883	.00067	-.00313	-.00207
Stddev	.09251	.00011	.00022	.01024	.00052	.00223	.00077
%RSD	94.979	26.722	1730.2	54.390	77.644	71.292	37.319
#1	-.00938	.00050	-.00020	.02990	.00034	-.00440	-.00288
#2	.14815	.00029	-.00000	.00970	.00128	-.00443	-.00201
#3	.15343	.00046	.00024	.01688	.00041	-.00055	-.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: PBW 21 Acquired: 2/11/2016 10:04:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00089	.00147	.00405	.00111	.00030	.00035	-.00292
Stddev	.00338	.00469	.00198	.00039	.00039	.00046	.00018
%RSD	378.63	320.03	48.991	34.835	131.93	129.96	6.2866
#1	-.00346	-.00270	.00611	.00141	.00015	.00010	-.00271
#2	.00294	.00655	.00216	.00126	.00000	.00008	-.00306
#3	-.00215	.00055	.00386	.00067	.00074	.00088	-.00298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00002	.00160	.17613
Stddev	.00046	.00012	1.0656
%RSD	2000.2	7.4649	605.01
#1	.00049	.00173	.94653
#2	-.00017	.00158	.62182
#3	-.00039	.00150	-1.0400
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12133.	90102.	3565.4
Stddev	34.	326.	15.0
%RSD	.28110	.36143	.42035
#1	12105.	89794.	3551.8
#2	12122.	90067.	3563.0
#3	12171.	90443.	3581.5

Approved: February 12, 2016

Sample Name: LCSW 21 Acquired: 2/11/2016 10:08:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19437	4.8532	.19202	.95256	.50180	.02364	4.9825	.02436
Stddev	.00158	.0164	.00244	.00125	.00159	.00012	.0272	.00023
%RSD	.81266	.33711	1.2726	.13135	.31751	.50160	.54677	.92975
#1	.19618	4.8462	.19409	.95219	.50095	.02355	4.9764	.02411
#2	.19326	4.8719	.19264	.95395	.50363	.02377	4.9588	.02456
#3	.19367	4.8415	.18932	.95154	.50080	.02359	5.0123	.02440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09993	.24446	.25286	2.0082	25.113	.49560	5.0009	.25025
Stddev	.00098	.00151	.00087	.0246	.086	.00250	.1768	.00170
%RSD	.98114	.61955	.34256	1.2263	.34359	.50529	3.5362	.68017
#1	.09941	.24579	.25363	1.9874	25.048	.49626	4.8575	.25205
#2	.10106	.24477	.25192	2.0017	25.211	.49772	5.1985	.25003
#3	.09931	.24281	.25304	2.0354	25.080	.49284	4.9469	.24867
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50813	25.095	.25178	4.8012	.25234	.59089	.18950	2.4935
Stddev	.00325	.119	.00070	.0170	.00258	.00280	.00325	.0157
%RSD	.64021	.47547	.27915	.35302	1.0240	.47468	1.7129	.63056
#1	.50629	25.079	.25100	4.8022	.24936	.58856	.19187	2.4774
#2	.51189	25.221	.25237	4.8176	.25375	.59400	.19083	2.5089
#3	.50621	24.984	.25195	4.7838	.25392	.59010	.18580	2.4942
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: LCSW 21 Acquired: 2/11/2016 10:08:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50512	.50105	.49898	.25228	.48738	.50538	2.6085
Stddev	.00195	.00125	.00147	.00205	.00059	.00227	1.7509
%RSD	.38536	.24853	.29490	.81223	.12079	.44888	67.124
#1	.50401	.50002	.49932	.25457	.48738	.50505	.60327
#2	.50737	.50243	.50025	.25064	.48679	.50779	3.8347
#3	.50398	.50071	.49737	.25163	.48796	.50329	3.3874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11869.	87851.	3548.0
Stddev	42.	293.	7.1
%RSD	.35392	.33400	.20074
#1	11899.	88016.	3544.0
#2	11821.	87512.	3543.8
#3	11887.	88026.	3556.2

Approved: February 12, 2016

Sample Name: L1602025901 0.1 Acquired: 2/11/2016 10:11:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.11144	.00186	.01000	.02063	.00001	4.1951	.00004
Stddev	.00041	.00330	.00080	.00275	.00075	.00004	.0331	.00008
%RSD	150.90	2.9607	43.161	27.549	3.6582	432.62	.78934	179.81
#1	-.00006	.11524	.00108	.00911	.01989	-.00003	4.1569	-.00001
#2	.00014	.10924	.00181	.01309	.02140	.00005	4.2163	.00001
#3	.00073	.10985	.00268	.00779	.02059	.00001	4.2121	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00045	.00101	1.4429	1.8612	.00074	.60257	.15635
Stddev	.00020	.00062	.00061	.0149	.0370	.00285	.02704	.00128
%RSD	111.84	137.10	60.471	1.0334	1.9865	385.71	4.4878	.81574
#1	-.00042	.00117	.00102	1.4298	1.8205	-.00175	.63363	.15489
#2	-.00006	.00013	.00161	1.4398	1.8705	.00384	.58429	.15688
#3	-.00007	.00006	.00039	1.4591	1.8927	.00012	.58978	.15727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	4.2613	.00183	.09793	-.00065	-.00195	.00200	.66529
Stddev	.00014	.0512	.00041	.00772	.00128	.00478	.00128	.00447
%RSD	110.99	1.2016	22.241	7.8816	196.69	244.49	64.303	.67172
#1	.00006	4.2073	.00230	.08986	-.00116	-.00652	.00057	.66257
#2	.00004	4.3091	.00157	.09868	.00080	-.00236	.00306	.67045
#3	.00029	4.2674	.00162	.10524	-.00160	.00301	.00235	.66286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602025901 0.1 Acquired: 2/11/2016 10:11:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	.01862	.00496	-.00196	-.00001	.04833	4.9862
Stddev	.00114	.00009	.00430	.00087	.00086	.00036	1.4279
%RSD	91.191	.45830	86.763	44.485	7533.6	.73608	28.638
#1	-.00002	.01854	.00782	-.00134	-.00081	.04816	4.3125
#2	.00159	.01871	.00705	-.00296	-.00012	.04873	4.0197
#3	.00218	.01860	.00001	-.00159	.00090	.04808	6.6263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12234.	89453.	3590.0
Stddev	45.	172.	17.6
%RSD	.36735	.19265	.48902
#1	12252.	89276.	3606.7
#2	12183.	89462.	3591.6
#3	12268.	89621.	3571.7

Approved: February 12, 2016

Sample Name: L1602026211 Acquired: 2/11/2016 10:16:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00526	-.00155	.00154	.00124	-.00004	.03610
Stddev	.00135	.00457	.00109	.00048	.00046	.00006	.02017
%RSD	1373.4	86.955	69.997	30.933	36.787	162.92	55.874
#1	-.00106	.00355	-.00259	.00208	.00175	-.00002	.01333
#2	-.00068	.00179	-.00042	.00134	.00112	-.00010	.04327
#3	.00144	.01044	-.00164	.00119	.00086	.00001	.05171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	-.00043	.00003	.00092	.01372	.00069	-.00013
Stddev	.00009	.00009	.00031	.00145	.00052	.03407	.00316
%RSD	70.865	21.757	968.68	157.87	3.8109	4925.8	2433.0
#1	.00023	-.00053	-.00015	-.00014	.01409	-.02658	.00175
#2	.00013	-.00044	.00039	.00258	.01312	-.01022	.00163
#3	.00004	-.00034	-.00015	.00033	.01394	.03888	-.00378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08276	.00202	.00002	.11419	.00050	-.00331	-.00039
Stddev	.06227	.00041	.00015	.02670	.00077	.00520	.00025
%RSD	75.246	20.264	812.90	23.380	155.66	157.21	65.116
#1	.03202	.00183	-.00011	.08741	.00082	-.00819	-.00058
#2	.15225	.00250	.00018	.11435	-.00039	-.00391	-.00049
#3	.06400	.00175	-.00002	.14080	.00105	.00217	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602026211 Acquired: 2/11/2016 10:16:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00152	.00039	.00870	.00082	.00055	.00174	-.00255
Stddev	.00163	.00345	.00085	.00074	.00010	.00193	.00071
%RSD	106.80	886.21	9.7343	90.812	17.418	110.95	27.927
#1	-.00265	-.00079	.00820	.00073	.00046	.00371	-.00242
#2	.00034	.00427	.00822	.00012	.00054	-.00013	-.00331
#3	-.00226	-.00231	.00968	.00160	.00065	.00163	-.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00067	.00152	F -.24794
Stddev	.00058	.00011	.91695
%RSD	86.968	7.4482	369.83
#1	-.00069	.00165	.45473
#2	-.00124	.00147	-1.2852
#3	-.00007	.00144	.08664
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12262.	90637.	3534.6
Stddev	39.	282.	12.7
%RSD	.31538	.31070	.35951
#1	12279.	90344.	3535.2
#2	12290.	90662.	3521.6
#3	12218.	90905.	3547.0

Approved: February 12, 2016

Sample Name: L1602027301 Acquired: 2/11/2016 10:20:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00100	.10872	-.00042	.01970	.20213	-.00009	20.930	.00056
Stddev	.00105	.00174	.00142	.00130	.00114	.00006	.135	.00014
%RSD	104.81	1.5991	335.69	6.5868	.56392	69.488	.64324	25.608
#1	-.00216	.10706	.00084	.02089	.20335	-.00009	21.062	.00065
#2	-.00013	.11053	-.00195	.01831	.20194	-.00015	20.934	.00039
#3	-.00070	.10857	-.00015	.01990	.20110	-.00003	20.793	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00039	.01995	.57257	1.4962	.00026	5.3346	.04440
Stddev	.00009	.00073	.00015	.02179	.0702	.00158	.0815	.00107
%RSD	24.144	184.81	.74600	3.8064	4.6884	617.15	1.5284	2.4094
#1	-.00028	-.00039	.01978	.54861	1.4678	.00137	5.4028	.04318
#2	-.00046	.00104	.02007	.59123	1.5761	-.00155	5.3568	.04488
#3	-.00042	.00053	.01999	.57787	1.4447	.00096	5.2443	.04515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	8.8698	-.00007	.01048	.00625	-.00030	-.00063	1.1235
Stddev	.00027	.0631	.00086	.00097	.00207	.00246	.00252	.0103
%RSD	98.049	.71183	1309.3	9.2182	33.215	821.64	402.85	.91287
#1	.00001	8.9208	-.00000	.01015	.00688	-.00042	.00018	1.1291
#2	.00054	8.8894	.00076	.01157	.00393	-.00269	-.00345	1.1297
#3	.00026	8.7992	-.00096	.00973	.00793	.00222	.00140	1.1116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602027301 Acquired: 2/11/2016 10:20:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	.25343	-.00779	-.00341	-.00072	1.1154	.22347
Stddev	.00010	.00125	.00161	.00194	.00067	.0129	1.2142
%RSD	8.0571	.49355	20.709	56.843	93.696	1.1595	543.33
#1	.00110	.25433	-.00666	-.00233	-.00143	1.1259	.08568
#2	.00122	.25395	-.00964	-.00225	-.00009	1.1195	1.5007
#3	.00129	.25200	-.00708	-.00564	-.00063	1.1010	-.91593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12099.	88856.	3565.7
Stddev	24.	173.	19.6
%RSD	.19724	.19479	.54834
#1	12074.	88952.	3545.1
#2	12121.	88959.	3567.9
#3	12103.	88656.	3584.0

Approved: February 12, 2016

Sample Name: L1602027701 Acquired: 2/11/2016 10:24:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.16600	-.00146	.00926	.05218	-.00001	35.842	.00013
Stddev	.00185	.00499	.00262	.00197	.00118	.00005	.316	.00012
%RSD	464.10	3.0032	178.64	21.315	2.2679	537.47	.88071	93.811
#1	.00121	.16309	.00094	.01080	.05297	-.00001	35.775	.00010
#2	.00000	.17176	-.00425	.00994	.05276	.00004	36.185	.00003
#3	-.00241	.16315	-.00108	.00703	.05082	-.00006	35.564	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.00043	.00187	.23728	.67675	.00078	3.6565	.07607
Stddev	.00025	.00059	.00151	.01119	.03987	.00314	.1388	.00109
%RSD	54.519	138.31	80.810	4.7176	5.8914	402.02	3.7957	1.4388
#1	-.00021	.00005	.00212	.22760	.64896	.00313	3.6087	.07534
#2	-.00048	.00012	.00025	.24954	.72243	.00200	3.8129	.07733
#3	-.00072	.00111	.00323	.23472	.65885	-.00279	3.5480	.07555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	2.0588	.00025	.01358	-.00211	-.00113	-.00363	2.9742
Stddev	.00038	.0381	.00036	.00210	.00078	.00167	.00963	.0271
%RSD	121.68	1.8483	144.43	15.468	37.092	148.44	265.23	.91132
#1	.00019	2.0543	-.00004	.01492	-.00204	-.00142	-.00133	2.9915
#2	.00074	2.0990	.00014	.01116	-.00293	-.00263	-.01420	2.9882
#3	.00001	2.0233	.00064	.01466	-.00137	.00067	.00464	2.9430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602027701 Acquired: 2/11/2016 10:24:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.10138	-.00572	-.00395	-.00015	.00267	5.0758
Stddev	.00081	.00106	.00834	.00335	.00092	.00024	.4783
%RSD	190.89	1.0448	145.72	84.723	631.83	8.8461	9.4225
#1	-.00018	.10134	-.01321	-.00041	.00077	.00292	5.1627
#2	.00011	.10246	.00327	-.00707	-.00108	.00266	5.5046
#3	.00134	.10035	-.00723	-.00439	-.00012	.00245	4.5600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11990.	88704.	3568.7
Stddev	27.	257.	21.7
%RSD	.22520	.28916	.60853
#1	11966.	88969.	3578.8
#2	12019.	88688.	3543.8
#3	11984.	88457.	3583.6

Approved: February 12, 2016

Sample Name: L1602027702 Acquired: 2/11/2016 10:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.06910	.00052	.01068	.07992	-.00002	48.410	.00001
Stddev	.00104	.00275	.00093	.00288	.00105	.00003	.272	.00016
%RSD	2425.0	3.9747	181.27	26.932	1.3115	151.19	.56288	2503.4
#1	.00085	.06757	.00000	.01219	.08099	-.00002	48.720	-.00016
#2	-.00118	.07227	-.00005	.01247	.07889	-.00005	48.208	.00003
#3	.00021	.06746	.00159	.00736	.07987	.00001	48.302	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00086	.00136	.03821	.44522	.00428	3.7186	-.00014
Stddev	.00046	.00048	.00121	.00994	.06193	.00388	.0750	.00141
%RSD	2207.4	55.300	89.109	26.017	13.909	90.767	2.0169	982.82
#1	.00008	.00113	.00275	.03078	.38632	.00226	3.6760	.00108
#2	.00038	.00114	.00078	.04950	.43956	.00876	3.6745	-.00169
#3	-.00053	.00031	.00055	.03435	.50978	.00182	3.8052	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	2.4639	-.00064	.01338	-.00221	-.00135	.00121	3.8642
Stddev	.00013	.0250	.00029	.00532	.00093	.00110	.00194	.0408
%RSD	1380.2	1.0150	45.719	39.728	41.978	81.507	159.92	1.0557
#1	.00000	2.4762	-.00031	.01787	-.00152	-.00262	.00303	3.8964
#2	-.00015	2.4351	-.00087	.01475	-.00185	-.00061	.00143	3.8779
#3	.00012	2.4804	-.00074	.00751	-.00326	-.00083	-.00083	3.8184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602027702 Acquired: 2/11/2016 10:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.11665	-.00120	-.00076	-.00087	.00163	2.4197
Stddev	.00046	.00050	.00387	.00176	.00053	.00011	.4663
%RSD	84.468	.42985	323.90	230.63	61.252	6.9581	19.270
#1	.00002	.11721	.00229	-.00271	-.00046	.00165	1.9697
#2	.00089	.11624	-.00051	.00072	-.00147	.00174	2.3888
#3	.00073	.11652	-.00536	-.00030	-.00068	.00151	2.9007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11919.	87947.	3574.6
Stddev	34.	180.	16.7
%RSD	.28724	.20503	.46634
#1	11949.	87749.	3557.0
#2	11882.	87990.	3576.6
#3	11927.	88102.	3590.2

Approved: February 12, 2016

Sample Name: L1602027702PS Acquired: 2/11/2016 10:32:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556969-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19744	4.9329	.18893	.97091	.57195	.02364	48.827	.02449
Stddev	.00126	.0169	.00369	.00411	.00217	.00007	.098	.00024
%RSD	.64027	.34314	1.9551	.42295	.37853	.29905	.20074	.97905
#1	.19879	4.9499	.19263	.97261	.56946	.02370	48.714	.02422
#2	.19723	4.9329	.18893	.97390	.57338	.02366	48.878	.02459
#3	.19629	4.9160	.18524	.96623	.57300	.02357	48.889	.02466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09805	.24403	.24744	2.0411	25.539	.49702	8.2138	.24945
Stddev	.00068	.00163	.00210	.0257	.126	.00355	.0679	.00116
%RSD	.69513	.66998	.85023	1.2599	.49267	.71364	.82687	.46429
#1	.09830	.24582	.24973	2.0130	25.429	.49644	8.1689	.25059
#2	.09857	.24261	.24700	2.0469	25.676	.49380	8.2919	.24948
#3	.09728	.24367	.24559	2.0634	25.513	.50082	8.1805	.24828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50624	27.426	.24667	4.8649	.24808	.59374	.19342	6.0298
Stddev	.00253	.079	.00218	.0349	.00198	.00680	.00197	.0319
%RSD	.49953	.28916	.88227	.71722	.79785	1.1456	1.0184	.52904
#1	.50778	27.365	.24841	4.8919	.24877	.59071	.19312	6.0520
#2	.50762	27.516	.24738	4.8772	.24963	.60152	.19552	6.0442
#3	.50332	27.398	.24423	4.8255	.24585	.58897	.19161	5.9933
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602027702PS Acquired: 2/11/2016 10:32:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556969-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50119	.60185	.50225	.25066	.48794	.48913	2.0574
Stddev	.00265	.00093	.00886	.00276	.00098	.00293	1.9216
%RSD	.52915	.15395	1.7649	1.1024	.20156	.59975	93.401
#1	.50313	.60078	.49203	.24809	.48869	.49054	2.2859
#2	.50228	.60234	.50779	.25358	.48683	.49109	3.8546
#3	.49817	.60243	.50693	.25031	.48831	.48576	.03175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11788.	86719.	3515.2
Stddev	27.	254.	10.4
%RSD	.22944	.29318	.29443
#1	11781.	86474.	3526.8
#2	11766.	86982.	3512.1
#3	11819.	86701.	3506.8

Approved: February 12, 2016

Sample Name: L1602027702SDL Acquired: 2/11/2016 10:35:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG556969-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	.00686	-.00107	.00362	.01538	-.00001	8.9494	-.00007
Stddev	.00151	.00512	.00135	.00166	.00158	.00003	.3371	.00014
%RSD	221.20	74.691	125.56	45.979	10.243	431.39	3.7669	196.57
#1	-.00154	.00795	-.00227	.00532	.01504	-.00004	8.8025	-.00005
#2	.00106	.00128	.00039	.00353	.01710	.00002	9.3350	-.00023
#3	-.00156	.01135	-.00134	.00200	.01400	.00000	8.7106	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00058	-.00029	.00154	-.00631	.03928	.00054	.74223	.00063
Stddev	.00016	.00027	.00047	.00786	.09520	.00278	.04233	.00074
%RSD	27.728	94.258	30.230	124.53	242.37	514.48	5.7027	117.19
#1	-.00073	-.00043	.00119	-.00089	-.02053	.00142	.77100	.00040
#2	-.00041	-.00047	.00136	-.00272	-.01069	-.00257	.76206	.00147
#3	-.00058	.00002	.00207	-.01532	.14907	.00278	.69363	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.49054	-.00044	.00713	.00147	-.00096	-.00372	.71401
Stddev	.00017	.01743	.00040	.00850	.00150	.00279	.00559	.00498
%RSD	186.43	3.5524	90.780	119.19	102.23	289.47	149.99	.69738
#1	.00026	.49512	-.00089	.00447	.00319	.00217	-.00877	.71303
#2	-.00007	.50523	-.00020	.00028	.00055	-.00316	.00228	.71941
#3	.00008	.47129	-.00021	.01664	.00065	-.00189	-.00469	.70959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602027702SDL Acquired: 2/11/2016 10:35:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG556969-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.02124	-.00195	.00098	-.00040	.00113	.88225
Stddev	.00074	.00128	.00726	.00114	.00061	.00011	.57897
%RSD	58.532	6.0216	371.70	116.44	152.46	9.2930	65.625
#1	.00072	.02022	.00067	-.00030	.00017	.00120	.40330
#2	.00211	.02268	-.01016	.00189	-.00032	.00101	1.5257
#3	.00097	.02082	.00363	.00134	-.00105	.00119	.71778
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12632.	93320.	3667.9
Stddev	34.	682.	95.2
%RSD	.26799	.73069	2.5956
#1	12665.	94103.	3709.8
#2	12632.	92856.	3558.9
#3	12598.	93001.	3735.0

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 10:39:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42507	10.814	.42575	.54003	1.0742	.05379	10.725	.05361
Stddev	.00128	.023	.00326	.00495	.0053	.00004	.072	.00047
%RSD	.30082	.21581	.76584	.91638	.49607	.07612	.66968	.87247
#1	.42503	10.838	.42398	.53439	1.0682	.05374	10.643	.05415
#2	.42636	10.813	.42376	.54208	1.0761	.05381	10.751	.05332
#3	.42381	10.792	.42951	.54362	1.0784	.05382	10.779	.05336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21626	.54333	.54144	4.3470	53.466	1.0729	10.806	.53717
Stddev	.00125	.00140	.00340	.0371	.137	.0036	.060	.00447
%RSD	.57753	.25799	.62840	.85320	.25577	.33728	.55471	.83184
#1	.21759	.54299	.54533	4.3042	53.309	1.0690	10.812	.53277
#2	.21608	.54214	.53996	4.3709	53.535	1.0762	10.744	.53704
#3	.21511	.54487	.53903	4.3658	53.556	1.0735	10.863	.54170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0760	53.780	.54291	10.691	.54334	1.2932	.42357	5.4192
Stddev	.0065	.179	.00270	.043	.00386	.0015	.00990	.0189
%RSD	.59965	.33242	.49698	.40673	.71087	.11403	2.3362	.34801
#1	1.0828	53.581	.54545	10.737	.54415	1.2915	.43006	5.4402
#2	1.0755	53.830	.54321	10.687	.54673	1.2942	.42846	5.4137
#3	1.0699	53.928	.54008	10.650	.53914	1.2938	.41218	5.4037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 10:39:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0798	1.0745	1.0696	.54225	1.0840	1.0858	1.0796
Stddev	.0052	.0042	.0006	.00734	.0017	.0038	4.3924
%RSD	.47901	.39025	.05798	1.3543	.15737	.34943	406.86
#1	1.0848	1.0703	1.0703	.54965	1.0857	1.0897	-2.0385
#2	1.0802	1.0746	1.0691	.54215	1.0823	1.0855	6.1029
#3	1.0744	1.0787	1.0694	.53496	1.0840	1.0821	-.82562
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11360.	82063.	3356.2
Stddev	40.	14.	10.0
%RSD	.35179	.01765	.29755
#1	11346.	82080.	3367.1
#2	11329.	82057.	3354.0
#3	11405.	82052.	3347.5

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 10:43:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00099	.00948	.00052	.00089	.00062	.00002	.00587
Stddev	.00154	.00891	.00250	.00189	.00045	.00003	.01430
%RSD	155.03	94.042	480.95	211.90	72.491	112.16	243.62
#1	-.00081	.01622	.00273	.00181	.00084	.00004	.01622
#2	.00045	-.00063	-.00219	-.00128	.00092	.00003	-.01045
#3	-.00262	.01284	.00102	.00214	.00010	-.00001	.01184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00041	-.00020	.00048	-.00814	-.00077	-.00111
Stddev	.00037	.00011	.00029	.00046	.00943	.06472	.00467
%RSD	239.16	28.056	140.92	97.836	115.90	8386.1	420.70
#1	-.00059	-.00048	.00008	.00067	.00021	-.02269	.00427
#2	.00002	-.00027	-.00020	-.00006	-.01838	-.05168	-.00402
#3	.00010	-.00047	-.00049	.00081	-.00626	.07206	-.00358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07721	.00203	.00101	.02469	-.00024	.00369	-.00122
Stddev	.09201	.00171	.00037	.02896	.00016	.00303	.00112
%RSD	119.18	84.206	36.509	117.31	65.724	82.155	91.374
#1	.18320	.00336	.00132	.04919	-.00042	.00668	-.00236
#2	.01778	.00010	.00109	.03215	-.00010	.00063	-.00013
#3	.03065	.00261	.00060	-.00727	-.00021	.00375	-.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 10:43:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	.00112	.00496	.00067	.00017	.00328	-.00046
Stddev	.00139	.00359	.00266	.00023	.00024	.00302	.00133
%RSD	105.73	319.82	53.568	34.787	137.87	91.792	290.30
#1	-.00146	.00426	.00403	.00064	.00042	.00622	-.00161
#2	-.00262	-.00280	.00796	.00046	-.00006	.00020	-.00076
#3	.00014	.00191	.00289	.00092	.00016	.00344	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00094	.00010	F -.61363
Stddev	.00023	.00013	3.8589
%RSD	24.814	129.50	628.87
#1	-.00115	.00016	-1.9206
#2	-.00069	.00018	3.7291
#3	-.00097	-.00005	-3.6493
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11686.	85751.	3450.1
Stddev	18.	141.	9.1
%RSD	.15808	.16394	.26373
#1	11686.	85603.	3447.2
#2	11668.	85769.	3460.3
#3	11705.	85882.	3442.8

Approved: February 12, 2016

Sample Name: L1602027703 Acquired: 2/11/2016 10:47:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.02277	-.00036	.01724	.11162	.00003	56.190	-.00007
Stddev	.00039	.00282	.00039	.00210	.00030	.00000	.234	.00026
%RSD	555.62	12.376	107.64	12.161	.26943	9.5289	.41675	348.80
#1	.00035	.02005	-.00056	.01959	.11197	.00002	56.002	-.00014
#2	.00023	.02257	.00009	.01656	.11143	.00003	56.453	.00021
#3	-.00038	.02568	-.00061	.01557	.11147	.00002	56.116	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	.00110	.00355	.87616	.80502	.01019	12.311	.16786
Stddev	.00005	.00026	.00124	.01969	.04945	.00293	.110	.00150
%RSD	11.131	23.949	34.885	2.2477	6.1423	28.806	.89650	.89435
#1	-.00055	.00082	.00352	.89574	.80519	.00772	12.348	.16764
#2	-.00046	.00135	.00233	.85635	.85437	.00941	12.397	.16648
#3	-.00045	.00112	.00480	.87640	.75548	.01343	12.186	.16946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	9.6487	-.00072	.04662	-.00136	-.00195	.00269	7.0305
Stddev	.00008	.0365	.00094	.00171	.00245	.00359	.00340	.0454
%RSD	111.19	.37826	129.61	3.6685	179.59	184.18	126.21	.64635
#1	.00006	9.6096	-.00060	.04597	-.00303	-.00289	.00172	7.0600
#2	-.00000	9.6818	-.00171	.04856	-.00251	.00202	-.00012	7.0532
#3	.00016	9.6548	.00015	.04534	.00145	-.00499	.00647	6.9781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602027703 Acquired: 2/11/2016 10:47:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.21494	-.00422	-.00141	.00007	.00323	1.3087
Stddev	.00047	.00089	.00362	.00212	.00048	.00013	2.4609
%RSD	287.34	.41626	85.870	150.53	662.38	4.0890	188.04
#1	-.00030	.21469	-.00181	-.00373	.00032	.00312	.21601
#2	.00065	.21594	-.00838	-.00092	.00037	.00338	-.41657
#3	.00014	.21421	-.00246	.00043	-.00048	.00321	4.1268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11875.	87474.	3567.6
Stddev	26.	198.	6.3
%RSD	.22263	.22650	.17705
#1	11851.	87661.	3564.1
#2	11872.	87495.	3563.9
#3	11903.	87267.	3574.9

Approved: February 12, 2016

Sample Name: L1602028101 Acquired: 2/11/2016 10:51:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00100	.05032	.00003	.02719	.15975	-.00001	48.890	-.00007
Stddev	.00022	.00953	.00194	.00157	.00141	.00004	.117	.00021
%RSD	21.541	18.944	6647.6	5.7845	.88177	301.44	.24003	291.02
#1	-.00084	.06132	.00004	.02782	.15991	.00003	48.784	-.00032
#2	-.00092	.04516	.00196	.02540	.16107	-.00004	48.868	.00002
#3	-.00125	.04448	-.00191	.02835	.15827	-.00003	49.016	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00021	.00124	.17533	1.0275	.00644	13.779	.03064
Stddev	.00031	.00022	.00044	.01581	.0652	.00355	.118	.00117
%RSD	282.42	106.66	35.150	9.0153	6.3412	55.193	.85845	3.8336
#1	.00021	.00029	.00174	.18255	1.0986	.00247	13.642	.03065
#2	.00035	.00038	.00094	.15720	1.0132	.00932	13.849	.02945
#3	-.00024	-.00004	.00104	.18623	.97071	.00752	13.845	.03180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	5.2436	.00051	.00664	.00089	-.00285	.00274	5.3892
Stddev	.00013	.0317	.00081	.00461	.00314	.00629	.00220	.0320
%RSD	57.685	.60433	158.92	69.416	354.17	220.89	80.499	.59406
#1	.00007	5.2761	.00094	.00784	.00448	.00392	.00107	5.4148
#2	.00028	5.2127	.00101	.00155	-.00134	-.00394	.00523	5.3994
#3	.00030	5.2420	-.00043	.01052	-.00048	-.00852	.00190	5.3533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602028101 Acquired: 2/11/2016 10:51:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.43207	-.00661	-.00162	-.00068	.01573	.46463
Stddev	.00015	.00070	.00324	.00070	.00052	.00027	.49202
%RSD	26.991	.16147	48.964	43.460	77.117	1.6917	105.90
#1	.00067	.43127	-.00477	-.00081	-.00043	.01589	.95484
#2	.00060	.43255	-.00471	-.00206	-.00032	.01588	.46823
#3	.00038	.43238	-.01035	-.00198	-.00127	.01542	-.02918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11911.	88029.	3522.2
Stddev	53.	206.	3.5
%RSD	.44752	.23413	.10000
#1	11854.	88249.	3525.5
#2	11918.	87999.	3522.4
#3	11960.	87840.	3518.5

Approved: February 12, 2016

Sample Name: L1602028301 Acquired: 2/11/2016 10:55:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.13476	-.00211	.01644	.11816	-.00004	86.933	.00002
Stddev	.00112	.01035	.00292	.00053	.00087	.00005	.538	.00026
%RSD	126.51	7.6815	138.70	3.2167	.73942	143.85	.61877	1085.9
#1	.00186	.13337	-.00304	.01634	.11829	-.00009	87.224	.00017
#2	-.00033	.14574	.00117	.01701	.11896	.00000	87.263	-.00028
#3	.00112	.12518	-.00445	.01597	.11723	-.00001	86.312	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00098	.00197	.16123	.89298	.00723	11.807	.00785
Stddev	.00008	.00115	.00110	.01199	.06886	.00115	.146	.00220
%RSD	21.826	116.79	55.896	7.4391	7.7108	15.968	1.2406	28.070
#1	-.00044	.00210	.00324	.17449	.96301	.00620	11.915	.00988
#2	-.00042	-.00019	.00130	.15804	.82536	.00848	11.866	.00551
#3	-.00029	.00104	.00137	.15115	.89058	.00702	11.640	.00815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	14.022	.00002	.01241	-.00082	-.00043	.00258	4.0844
Stddev	.00022	.073	.00037	.01016	.00196	.00225	.00395	.0277
%RSD	45.344	.52011	1711.9	81.872	237.98	519.59	153.12	.67870
#1	.00023	14.068	.00042	.02383	-.00182	.00201	.00554	4.1051
#2	.00059	14.061	-.00031	.00441	.00143	-.00090	.00411	4.0953
#3	.00061	13.938	-.00005	.00897	-.00209	-.00241	-.00191	4.0529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602028301 Acquired: 2/11/2016 10:55:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.40389	-.00932	-.00059	-.00098	.00235	1.6940
Stddev	.00061	.00217	.00825	.00471	.00121	.00015	4.5053
%RSD	233.60	.53668	88.510	800.98	123.00	6.2484	265.95
#1	-.00037	.40505	.00020	.00373	-.00121	.00237	-.39538
#2	.00031	.40522	-.01399	.00011	.00032	.00220	-1.3872
#3	.00084	.40139	-.01418	-.00560	-.00206	.00249	6.8647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11821.	87292.	3551.0
Stddev	25.	419.	19.6
%RSD	.20814	.47981	.55073
#1	11849.	87220.	3539.4
#2	11810.	87742.	3540.0
#3	11805.	86914.	3573.6

Approved: February 12, 2016

Sample Name: L1602028801 Acquired: 2/11/2016 10:59:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.14584	-.00166	.01268	.01763	-.00004	18.834	-.00007
Stddev	.00084	.00222	.00352	.00041	.00034	.00003	.122	.00018
%RSD	450.31	1.5199	212.29	3.2633	1.9206	74.645	.64970	270.71
#1	-.00031	.14427	-.00261	.01259	.01796	-.00002	18.968	-.00027
#2	.00115	.14837	-.00461	.01232	.01764	-.00007	18.807	.00003
#3	-.00029	.14487	.00224	.01313	.01728	-.00002	18.728	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00064	.00184	.11966	1.4714	.00244	3.4039	.00455
Stddev	.00034	.00057	.00049	.00870	.0195	.00382	.0814	.00103
%RSD	132.99	89.128	26.711	7.2687	1.3246	156.44	2.3927	22.615
#1	.00011	.00067	.00150	.10964	1.4563	-.00125	3.4669	.00549
#2	-.00057	.00006	.00161	.12522	1.4646	.00639	3.4329	.00345
#3	-.00030	.00119	.00241	.12412	1.4934	.00220	3.3119	.00472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	1.6861	.00023	.03729	-.00123	-.00087	.00048	3.7617
Stddev	.00028	.0279	.00161	.00507	.00414	.00312	.00928	.0327
%RSD	161.28	1.6536	683.99	13.596	335.53	360.59	1937.5	.87035
#1	.00009	1.7183	-.00162	.03421	-.00576	-.00248	-.00115	3.7825
#2	-.00046	1.6709	.00127	.04314	-.00030	-.00285	-.00787	3.7787
#3	-.00014	1.6691	.00105	.03451	.00236	.00273	.01046	3.7240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602028801 Acquired: 2/11/2016 10:59:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.05010	.00180	-.00136	-.00037	.00217	.21470
Stddev	.00057	.00067	.00343	.00344	.00013	.00008	1.8474
%RSD	142.21	1.3310	190.42	253.85	36.296	3.7278	860.45
#1	.00101	.05084	-.00015	.00100	-.00044	.00208	-1.1626
#2	.00031	.04994	-.00021	.00023	-.00021	.00223	-.50733
#3	-.00012	.04953	.00576	-.00530	-.00045	.00221	2.3141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12138.	88848.	3587.4
Stddev	27.	74.	31.7
%RSD	.22649	.08328	.88355
#1	12121.	88840.	3556.0
#2	12122.	88926.	3586.7
#3	12169.	88779.	3619.4

Approved: February 12, 2016

Sample Name: L1602028802 Acquired: 2/11/2016 11:04:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00102	.14156	-.00228	.01064	.02200	-.00004	14.028	.00009
Stddev	.00097	.00552	.00173	.00131	.00087	.00002	.033	.00022
%RSD	94.760	3.8977	75.660	12.266	3.9477	47.858	.23385	261.04
#1	-.00002	.14551	-.00409	.00946	.02139	-.00006	13.998	.00019
#2	-.00109	.13525	-.00064	.01043	.02162	-.00003	14.023	.00024
#3	-.00196	.14391	-.00213	.01204	.02299	-.00002	14.063	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00019	.00191	.15462	.82770	.00304	2.2128	.00624
Stddev	.00025	.00074	.00162	.01197	.01838	.00368	.0616	.00091
%RSD	77.434	393.99	84.889	7.7442	2.2206	121.06	2.7851	14.581
#1	-.00011	.00086	.00332	.14080	.84851	.00663	2.2838	.00718
#2	-.00059	-.00060	.00227	.16115	.82091	-.00073	2.1824	.00537
#3	-.00026	.00030	.00014	.16191	.81368	.00323	2.1724	.00617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	1.3496	.00074	.04548	-.00025	-.00074	.00443	3.9491
Stddev	.00013	.0186	.00058	.00468	.00399	.00299	.00070	.0216
%RSD	69.831	1.3774	77.515	10.282	1577.0	403.31	15.703	.54668
#1	.00029	1.3596	.00118	.05018	-.00325	.00209	.00428	3.9695
#2	.00004	1.3281	.00095	.04542	-.00178	-.00045	.00519	3.9511
#3	.00024	1.3610	.00009	.04083	.00427	-.00387	.00383	3.9265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602028802 Acquired: 2/11/2016 11:04:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.03106	.00071	.00020	.00009	.00293	2.6124
Stddev	.00064	.00015	.00476	.00187	.00072	.00007	1.0066
%RSD	85.075	.48994	667.26	925.36	810.38	2.3091	38.533
#1	.00142	.03118	-.00387	-.00045	.00030	.00294	3.4143
#2	.00013	.03089	.00563	.00231	-.00071	.00299	2.9400
#3	.00072	.03112	.00038	-.00125	.00067	.00285	1.4827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12096.	89118.	3581.9
Stddev	10.	169.	9.0
%RSD	.08546	.18914	.25145
#1	12088.	89170.	3581.9
#2	12108.	89254.	3573.0
#3	12092.	88929.	3591.0

Approved: February 12, 2016

Sample Name: L1602029001 Acquired: 2/11/2016 11:08:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00059	.01611	.00049	.03841	.93758	.00002	67.953	-.00003
Stddev	.00072	.00714	.00120	.00094	.00727	.00001	.557	.00022
%RSD	121.72	44.318	245.78	2.4485	.77521	40.951	.82008	655.40
#1	-.00001	.01159	.00176	.03946	.94562	.00002	68.584	.00005
#2	-.00140	.01240	.00034	.03765	.93561	.00002	67.749	-.00028
#3	-.00036	.02434	-.00063	.03813	.93149	.00001	67.527	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.00001	.00938	.55916	1.7990	.00542	11.214	.20246
Stddev	.00006	.00060	.00104	.02087	.0514	.00266	.101	.00145
%RSD	14.441	10324.	11.091	3.7329	2.8555	49.090	.89815	.71449
#1	-.00047	-.00047	.00893	.56139	1.7836	.00260	11.329	.20412
#2	-.00036	-.00019	.00865	.57883	1.7571	.00788	11.167	.20148
#3	-.00047	.00068	.01057	.53726	1.8564	.00576	11.145	.20177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	27.485	-.00031	-.00013	.00161	.00038	-.00626	6.4750
Stddev	.00020	.221	.00155	.00415	.00261	.00315	.00685	.0377
%RSD	72.731	.80340	501.05	3217.2	161.73	829.90	109.42	.58244
#1	.00013	27.736	-.00083	.00457	.00314	-.00099	.00127	6.5083
#2	.00020	27.398	-.00153	-.00330	.00310	.00398	-.01213	6.4826
#3	.00050	27.320	.00143	-.00166	-.00140	-.00185	-.00793	6.4341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602029001 Acquired: 2/11/2016 11:08:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	1.0631	-.00451	-.00149	-.00141	.03599	1.8020
Stddev	.00090	.0075	.00451	.00039	.00038	.00029	3.3433
%RSD	110.15	.70514	99.984	26.259	27.310	.80697	185.53
#1	.00049	1.0715	-.00043	-.00194	-.00161	.03609	5.3893
#2	.00184	1.0606	-.00375	-.00129	-.00096	.03622	-1.2269
#3	.00012	1.0571	-.00936	-.00123	-.00164	.03566	1.2437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11844.	87224.	3517.0
Stddev	14.	178.	17.8
%RSD	.11523	.20413	.50502
#1	11828.	87294.	3498.0
#2	11853.	87021.	3519.9
#3	11851.	87356.	3533.1

Approved: February 12, 2016

Sample Name: L1602029201 Acquired: 2/11/2016 11:12:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.01447	-.00018	.01705	.09050	-.00003	37.648	.00015
Stddev	.00166	.00039	.00170	.00159	.00074	.00001	.153	.00018
%RSD	2917.8	2.6997	942.00	9.2991	.81546	22.541	.40506	118.49
#1	-.00186	.01491	.00177	.01579	.09088	-.00003	37.757	.00005
#2	.00095	.01420	-.00093	.01883	.09098	-.00003	37.713	.00004
#3	.00108	.01429	-.00138	.01653	.08965	-.00004	37.474	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00069	.00146	-.00382	1.0074	.00173	8.7728	.00033
Stddev	.00028	.00029	.00067	.04058	.0760	.00132	.0798	.00180
%RSD	71.833	42.158	46.156	1061.3	7.5432	76.474	.90901	539.02
#1	-.00023	.00037	.00192	-.00387	1.0387	.00162	8.8635	-.00159
#2	-.00071	.00094	.00069	-.04438	1.0627	.00310	8.7135	.00198
#3	-.00022	.00077	.00176	.03678	.92074	.00046	8.7415	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	7.7757	-.00078	.00283	-.00098	-.00124	-.00398	3.3918
Stddev	.00012	.0186	.00112	.00563	.00281	.00419	.00149	.0113
%RSD	31.308	.23882	142.96	198.92	286.01	339.24	37.364	.33292
#1	.00029	7.7824	.00001	.00912	.00224	-.00135	-.00481	3.3939
#2	.00053	7.7900	-.00207	.00111	-.00289	-.00537	-.00488	3.4020
#3	.00036	7.7548	-.00030	-.00174	-.00231	.00301	-.00227	3.3797
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602029201 Acquired: 2/11/2016 11:12:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.20137	-.00680	-.00099	-.00065	.00940	2.2598
Stddev	.00060	.00081	.00107	.00036	.00084	.00012	1.4488
%RSD	103.00	.40090	15.807	36.300	127.78	1.3115	64.111
#1	-.00005	.20108	-.00678	-.00080	-.00007	.00948	1.5216
#2	.00066	.20228	-.00788	-.00077	-.00028	.00946	3.9290
#3	.00115	.20075	-.00573	-.00141	-.00161	.00926	1.3288
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12037.	88715.	3541.4
Stddev	18.	157.	16.8
%RSD	.14824	.17691	.47479
#1	12016.	88802.	3539.4
#2	12045.	88810.	3525.7
#3	12049.	88534.	3559.1

Approved: February 12, 2016

Sample Name: L1602029202 Acquired: 2/11/2016 11:16:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.26710	-.00217	.00772	.01238	-.00002	8.5421	.00003
Stddev	.00281	.00216	.00054	.00142	.00048	.00005	.0713	.00015
%RSD	1465.6	.80691	25.120	18.357	3.8754	222.04	.83498	454.51
#1	.00073	.26467	-.00166	.00931	.01183	-.00005	8.5412	-.00009
#2	-.00334	.26878	-.00275	.00661	.01263	.00004	8.6139	.00020
#3	.00203	.26784	-.00209	.00723	.01269	-.00005	8.4712	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.00004	.00095	.29045	.62331	.00059	1.4268	.00824
Stddev	.00036	.00035	.00069	.01352	.05448	.00169	.0497	.00057
%RSD	131.14	952.60	72.834	4.6540	8.7409	288.12	3.4858	6.8944
#1	-.00066	.00032	.00143	.29690	.68620	-.00130	1.4406	.00845
#2	-.00023	-.00035	.00016	.29954	.59307	.00109	1.3716	.00760
#3	.00006	.00014	.00127	.27492	.59064	.00197	1.4682	.00868
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	1.2298	-.00032	.02107	.00331	-.00191	-.00180	3.7399
Stddev	.00029	.0180	.00079	.00170	.00098	.00198	.00782	.0619
%RSD	603.44	1.4592	251.33	8.0879	29.521	103.61	433.51	1.6539
#1	.00033	1.2505	-.00088	.01948	.00443	-.00390	.00183	3.7840
#2	-.00025	1.2181	-.00066	.02085	.00270	-.00186	.00354	3.7665
#3	.00007	1.2209	.00059	.02287	.00279	.00005	-.01078	3.6692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602029202 Acquired: 2/11/2016 11:16:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.02166	.00449	-.00333	-.00047	.00195	5.2964
Stddev	.00019	.00027	.00243	.00203	.00044	.00026	2.7231
%RSD	55.585	1.2619	54.143	60.999	92.856	13.249	51.414
#1	.00041	.02135	.00640	-.00369	.00000	.00219	2.1848
#2	.00012	.02185	.00534	-.00115	-.00056	.00198	6.4603
#3	.00047	.02178	.00175	-.00517	-.00087	.00168	7.2441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12098.	88900.	3533.1
Stddev	28.	83.	12.9
%RSD	.23079	.09326	.36482
#1	12130.	88837.	3522.8
#2	12081.	88871.	3528.9
#3	12083.	88994.	3547.5

Approved: February 12, 2016

Sample Name: L1602029202MS Acquired: 2/11/2016 11:20:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19604	5.2308	.19051	.97535	.50957	.02389	13.580	.02424
Stddev	.00065	.0159	.00413	.00307	.00118	.00009	.041	.00014
%RSD	.33234	.30461	2.1676	.31473	.23219	.38987	.29998	.56360
#1	.19666	5.2479	.19072	.97459	.51024	.02395	13.551	.02411
#2	.19610	5.2282	.19454	.97873	.51027	.02394	13.627	.02423
#3	.19536	5.2164	.18628	.97273	.50820	.02378	13.563	.02438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09949	.25066	.24960	2.3305	25.287	.49071	6.3234	.25541
Stddev	.00036	.00006	.00078	.0158	.133	.00063	.1268	.00024
%RSD	.36152	.02360	.31313	.67936	.52701	.12898	2.0055	.09537
#1	.09991	.25070	.24980	2.3320	25.296	.48998	6.3362	.25558
#2	.09932	.25069	.25026	2.3455	25.416	.49104	6.1907	.25513
#3	.09926	.25059	.24873	2.3140	25.150	.49111	6.4433	.25552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49828	26.221	.25218	4.8445	.25047	.59002	.18981	6.5033
Stddev	.00352	.090	.00205	.0280	.00391	.00151	.00377	.0400
%RSD	.70590	.34387	.81415	.57713	1.5599	.25636	1.9852	.61444
#1	.50049	26.270	.25342	4.8582	.25066	.58889	.18703	6.5235
#2	.50014	26.276	.25332	4.8630	.25428	.59174	.19410	6.5291
#3	.49423	26.117	.24981	4.8124	.24647	.58944	.18830	6.4572
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602029202MS Acquired: 2/11/2016 11:20:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50460	.51744	.50410	.24763	.50119	.49959	5.1154
Stddev	.00264	.00244	.00097	.00399	.00225	.00254	1.0686
%RSD	.52390	.47095	.19303	1.6118	.44805	.50938	20.890
#1	.50634	.51888	.50298	.24632	.50229	.50122	4.4290
#2	.50590	.51881	.50472	.25211	.50267	.50089	4.5706
#3	.50156	.51462	.50460	.24446	.49861	.49666	6.3466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11867.	86710.	3523.1
Stddev	10.	287.	24.8
%RSD	.08033	.33068	.70334
#1	11876.	86500.	3530.8
#2	11866.	86594.	3495.4
#3	11857.	87037.	3543.1

Approved: February 12, 2016

Sample Name: L1602029202MSD Acquired: 2/11/2016 11:23:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19307	5.2775	.18963	.97432	.51060	.02359	13.606	.02430
Stddev	.00457	.0150	.00117	.00189	.00366	.00008	.089	.00019
%RSD	2.3650	.28480	.61941	.19358	.71656	.35981	.65554	.79881
#1	.18908	5.2661	.18934	.97564	.50792	.02367	13.563	.02452
#2	.19207	5.2945	.18863	.97216	.51477	.02350	13.709	.02425
#3	.19805	5.2719	.19092	.97516	.50910	.02359	13.547	.02414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10031	.24455	.25100	2.3708	25.411	.49007	6.3505	.25283
Stddev	.00055	.00141	.00158	.0219	.166	.00504	.0306	.00362
%RSD	.54962	.57702	.62938	.92426	.65361	1.0291	.48211	1.4324
#1	.10009	.24602	.25052	2.3474	25.258	.48891	6.3453	.25065
#2	.09990	.24321	.24971	2.3908	25.587	.49559	6.3228	.25701
#3	.10093	.24443	.25276	2.3741	25.387	.48571	6.3833	.25083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50293	26.281	.25224	4.8662	.25619	.59085	.18948	6.6765
Stddev	.00165	.245	.00053	.0064	.00431	.00118	.00148	.0100
%RSD	.32845	.93043	.21029	.13092	1.6813	.19972	.77901	.14936
#1	.50198	26.147	.25175	4.8731	.25169	.58987	.18892	6.6872
#2	.50197	26.564	.25280	4.8606	.25659	.59051	.19115	6.6674
#3	.50483	26.133	.25216	4.8649	.26028	.59216	.18836	6.6750
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602029202MSD Acquired: 2/11/2016 11:23:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556579-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50424	.51882	.50426	.25190	.49009	.49850	5.2401
Stddev	.00060	.00433	.00992	.00103	.00085	.00065	1.0015
%RSD	.11831	.83436	1.9679	.40799	.17297	.12954	19.111
#1	.50363	.51609	.49763	.25075	.49014	.49804	4.4592
#2	.50427	.52381	.51567	.25272	.48922	.49823	4.8919
#3	.50482	.51656	.49948	.25222	.49091	.49924	6.3692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11877.	87305.	3529.6
Stddev	24.	159.	17.3
%RSD	.20436	.18231	.49098
#1	11896.	87163.	3542.7
#2	11886.	87477.	3510.0
#3	11850.	87275.	3536.1

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 11:27:44 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39098	9.9054	.39240	.50300	1.0031	.04872	9.9489
Stddev	.00362	.0302	.00399	.00113	.0200	.00010	.2195
%RSD	.92675	.30441	1.0157	.22504	1.9894	.20788	2.2064
#1	.38817	9.8746	.39334	.50169	.99029	.04860	9.7931
#2	.38969	9.9349	.39583	.50360	1.0261	.04879	10.200
#3	.39507	9.9068	.38802	.50370	.99297	.04876	9.8537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04987	.20102	.49562	.50525	4.0513	50.701	.99766
Stddev	.00007	.00046	.00014	.00162	.0719	1.015	.01720
%RSD	.13304	.23057	.02898	.32052	1.7742	2.0009	1.7237
#1	.04984	.20143	.49552	.50699	3.9932	50.086	.98328
#2	.04982	.20112	.49555	.50497	4.1316	51.872	1.0167
#3	.04995	.20052	.49579	.50379	4.0290	50.145	.99300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9879	.50309	.99436	50.920	.50725	9.9209	.50838
Stddev	.2080	.01288	.00215	.987	.00110	.0158	.00091
%RSD	2.0829	2.5606	.21658	1.9374	.21694	.15971	.17840
#1	9.8535	.49247	.99441	50.281	.50717	9.9183	.50756
#2	10.228	.51742	.99649	52.056	.50839	9.9378	.50822
#3	9.8826	.49939	.99218	50.422	.50620	9.9065	.50936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 11:27:44 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1983	.39610	5.0154	.99952	1.0040	1.0093	.50271
Stddev	.0057	.00168	.0087	.00168	.0212	.0148	.00104
%RSD	.47329	.42339	.17269	.16760	2.1084	1.4689	.20651
#1	1.1933	.39658	5.0054	.99783	.99040	1.0007	.50391
#2	1.2045	.39424	5.0203	1.0012	1.0284	1.0264	.50200
#3	1.1972	.39749	5.0204	.99956	.99318	1.0008	.50224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.98791	1.0104	F 1.8685
Stddev	.00183	.0015	1.8811
%RSD	.18575	.15118	100.68
#1	.98618	1.0098	-.30040
#2	.98772	1.0122	2.8504
#3	.98983	1.0093	3.0556
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12052.	88122.	3525.9
Stddev	25.	317.	55.0
%RSD	.20646	.35944	1.5611
#1	12078.	88450.	3577.1
#2	12050.	87818.	3467.7
#3	12028.	88099.	3532.9

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 11:31:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00587	-.00222	.00352	.00114	-.00000	.01373
Stddev	.00087	.00855	.00040	.00252	.00021	.00002	.01296
%RSD	628.58	145.58	18.133	71.543	18.745	443.77	94.356
#1	.00000	.01545	-.00267	.00626	.00112	.00002	.02859
#2	-.00066	-.00098	-.00189	.00131	.00136	-.00001	.00787
#3	.00107	.00314	-.00210	.00298	.00093	-.00002	.00474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	-.00023	.00004	.00020	-.00547	.00007	-.00173
Stddev	.00016	.00014	.00113	.00105	.02291	.07126	.00158
%RSD	191.41	60.765	2588.6	537.65	418.79	102020.	90.924
#1	-.00026	-.00024	.00004	.00111	.01289	-.06269	-.00306
#2	-.00003	-.00008	.00117	-.00095	-.03115	.07754	-.00214
#3	.00004	-.00036	-.00108	.00043	.00185	-.01463	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03700	.00371	.00105	.01837	.00036	.00143	-.00069
Stddev	.08354	.00112	.00009	.01564	.00022	.00358	.00086
%RSD	225.77	30.080	8.1692	85.141	62.424	249.68	125.21
#1	.12732	.00479	.00101	.01748	.00010	.00511	.00010
#2	-.03751	.00256	.00115	.03444	.00052	-.00205	-.00056
#3	.02120	.00378	.00099	.00319	.00045	.00125	-.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 11:31:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	-.00521	.00100	.00064	.00020	-.00033	-.00090
Stddev	.00203	.00559	.00276	.00033	.00005	.00646	.00395
%RSD	319.55	107.27	275.85	52.598	23.158	1976.6	436.60
#1	.00130	.00011	.00040	.00089	.00016	-.00492	-.00195
#2	-.00046	-.00471	-.00141	.00076	.00025	-.00312	-.00423
#3	-.00275	-.01104	.00401	.00026	.00021	.00706	.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00070	.00008	F 1.8443
Stddev	.00073	.00006	1.3943
%RSD	105.10	81.872	75.601
#1	.00002	.00013	1.7669
#2	-.00144	.00001	.49025
#3	-.00067	.00009	3.2756
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12290.	89976.	3544.1
Stddev	24.	270.	19.2
%RSD	.19861	.29953	.54150
#1	12270.	90111.	3564.9
#2	12317.	89666.	3527.1
#3	12283.	90153.	3540.3

Approved: February 12, 2016

Sample Name: L1602037303 Acquired: 2/11/2016 11:35:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.73895	-.00159	.02301	.03603	.00012	33.859	.00005
Stddev	.00115	.01190	.00160	.00225	.00047	.00006	.124	.00004
%RSD	146.70	1.6105	100.30	9.7999	1.3042	47.337	.36562	76.739
#1	.00038	.75202	-.00179	.02232	.03573	.00013	33.932	.00001
#2	-.00192	.72875	.00010	.02552	.03657	.00006	33.929	.00007
#3	-.00082	.73607	-.00308	.02117	.03578	.00017	33.716	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.00102	.00343	1.8924	1.7249	.00166	10.198	.22114
Stddev	.00044	.00025	.00080	.0086	.0887	.00069	.091	.00338
%RSD	72.546	24.622	23.366	.45346	5.1424	41.315	.88950	1.5302
#1	.00022	.00074	.00312	1.8826	1.7105	.00116	10.213	.21973
#2	.00108	.00123	.00282	1.8958	1.8199	.00138	10.280	.22500
#3	.00051	.00110	.00434	1.8987	1.6443	.00244	10.100	.21869
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00846	25.866	.00390	.07128	.00293	-.00011	-.00294	2.9477
Stddev	.00037	.132	.00063	.00547	.00276	.00089	.00545	.0023
%RSD	4.4008	.51118	16.080	7.6674	94.344	819.77	185.31	.07945
#1	.00886	25.968	.00323	.07759	.00189	-.00069	.00330	2.9450
#2	.00841	25.912	.00401	.06801	.00606	.00091	-.00538	2.9494
#3	.00812	25.716	.00447	.06824	.00083	-.00055	-.00674	2.9485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602037303 Acquired: 2/11/2016 11:35:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.17873	.00524	-.00137	.03933	.01676	3.8812
Stddev	.00044	.00109	.00521	.00077	.00051	.00022	.3513
%RSD	27.604	.61122	99.439	56.296	1.2894	1.3000	9.0521
#1	.00116	.17951	-.00066	-.00082	.03943	.01672	3.7961
#2	.00204	.17920	.00715	-.00225	.03879	.01699	4.2672
#3	.00157	.17748	.00924	-.00104	.03979	.01656	3.5802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12257.	89966.	3624.2
Stddev	22.	330.	18.0
%RSD	.17888	.36729	.49583
#1	12281.	89607.	3636.3
#2	12250.	90257.	3603.5
#3	12239.	90036.	3632.7

Approved: February 12, 2016

Sample Name: L1602037401 0.01 Acquired: 2/11/2016 11:39:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	.03162	.00439	.47359	6.6443	.00004	141.40
Stddev	.00010	.00214	.00229	.00229	.1105	.00006	2.22
%RSD	23.007	6.7597	52.237	.48266	1.6623	155.65	1.5719
#1	-.00034	.03126	.00317	.47361	6.6059	.00008	140.79
#2	-.00055	.03391	.00296	.47129	6.7688	.00007	143.87
#3	-.00046	.02968	.00703	.47586	6.5582	-.00003	139.55
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00098	.00039	.00217	.73691	9.5023	.64855
Stddev	.00005	.00020	.00059	.00075	.01690	.0852	.00758
%RSD	87.073	20.356	149.73	34.671	2.2929	.89709	1.1686
#1	.00010	.00080	.00023	.00303	.71834	9.4359	.64797
#2	.00007	.00094	-.00010	.00163	.75137	9.5984	.65640
#3	.00000	.00119	.00105	.00186	.74103	9.4725	.64127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.102	.07822	-.00011	F 378.81	-.00076	.00769	.00135
Stddev	.255	.00084	.00010	6.46	.00169	.00617	.00196
%RSD	1.6878	1.0760	93.018	1.7066	222.37	80.171	144.89
#1	14.945	.07792	-.00021	377.99	.00118	.00115	.00177
#2	15.396	.07916	-.00009	385.65	-.00189	.01340	-.00078
#3	14.965	.07756	-.00002	372.80	-.00156	.00852	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: February 12, 2016

Sample Name: L1602037401 0.01 Acquired: 2/11/2016 11:39:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00254	-.00147	.04567	-.00019	F 27.459	-.01869	-.00210
Stddev	.00262	.00689	.00294	.00055	.525	.00358	.00125
%RSD	103.21	468.70	6.4350	291.99	1.9136	19.151	59.261
#1	.00553	.00031	.04816	-.00077	27.668	-.02076	-.00086
#2	.00140	-.00908	.04642	-.00012	27.849	-.01456	-.00209
#3	.00067	.00436	.04243	.00032	26.862	-.02076	-.00336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00048	.00761	1.3266
Stddev	.00057	.00010	2.0230
%RSD	119.74	1.3741	152.49
#1	-.00015	.00770	-.96088
#2	-.00113	.00750	2.0608
#3	-.00015	.00762	2.8800
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11438.	81776.	3481.6
Stddev	31.	98.	34.4
%RSD	.27512	.11959	.98896
#1	11408.	81888.	3492.1
#2	11436.	81732.	3443.1
#3	11471.	81708.	3509.5

Approved: February 12, 2016

Sample Name: L1602038701 Acquired: 2/11/2016 11:43:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00085	.02395	.00072	.03523	.33200	.00002	17.026	.00002
Stddev	.00162	.00630	.00297	.00041	.00074	.00003	.065	.00012
%RSD	190.30	26.311	411.36	1.1659	.22385	200.23	.38027	547.62
#1	-.00237	.01720	-.00084	.03551	.33257	.00000	16.974	.00014
#2	.00085	.02968	-.00114	.03476	.33227	-.00001	17.098	-.00010
#3	-.00102	.02496	.00415	.03542	.33116	.00005	17.004	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00042	.00040	.00617	.24570	1.1683	.00598	4.1984	.04205
Stddev	.00043	.00022	.00148	.03512	.0928	.00195	.0468	.00082
%RSD	103.53	55.744	23.911	14.293	7.9443	32.606	1.1147	1.9537
#1	-.00062	.00015	.00761	.20803	1.0646	.00436	4.1459	.04299
#2	-.00071	.00048	.00466	.27754	1.2437	.00544	4.2357	.04161
#3	.00008	.00058	.00625	.25154	1.1965	.00814	4.2135	.04154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	41.291	-.00020	.00544	.00224	.00043	-.00367	6.4398
Stddev	.00036	.186	.00049	.00141	.00311	.00338	.00341	.0612
%RSD	130.49	.44997	243.50	26.014	139.24	786.96	92.987	.95091
#1	.00063	41.088	-.00056	.00384	.00557	.00349	-.00091	6.4732
#2	.00030	41.453	-.00041	.00654	-.00060	-.00319	-.00262	6.4771
#3	-.00010	41.332	.00036	.00594	.00174	.00100	-.00748	6.3691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602038701 Acquired: 2/11/2016 11:43:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.66247	.00069	-.00535	-.00040	.00478	3.7159
Stddev	.00014	.00336	.00302	.00294	.00071	.00024	1.5760
%RSD	12.491	.50662	436.64	54.969	179.70	4.9900	42.413
#1	.00101	.65966	.00029	-.00562	-.00095	.00461	4.9335
#2	.00129	.66619	-.00210	-.00815	.00041	.00468	1.9358
#3	.00113	.66157	.00389	-.00228	-.00065	.00505	4.2784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12023.	88270.	3513.1
Stddev	52.	247.	22.5
%RSD	.43358	.27931	.63947
#1	12045.	88554.	3496.8
#2	11964.	88111.	3503.8
#3	12061.	88145.	3538.7

Approved: February 12, 2016

Sample Name: L1602038702 Acquired: 2/11/2016 11:47:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.75640	.00186	.00847	.07526	.00013	17.674	.00002
Stddev	.00062	.00513	.00271	.00172	.00040	.00006	.044	.00013
%RSD	114.56	.67858	145.64	20.351	.52656	44.580	.25019	616.76
#1	.00125	.75097	.00281	.00769	.07546	.00019	17.719	.00017
#2	.00014	.75706	-.00120	.01045	.07480	.00008	17.630	-.00007
#3	.00023	.76117	.00397	.00728	.07552	.00010	17.674	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00101	.00179	.77066	.64069	.00193	3.4329	.06355
Stddev	.00031	.00095	.00049	.02722	.06808	.00143	.0560	.00143
%RSD	72.533	94.043	27.314	3.5319	10.626	74.202	1.6303	2.2489
#1	.00076	-.00008	.00197	.73993	.62019	.00141	3.4057	.06207
#2	.00017	.00170	.00215	.78029	.58522	.00355	3.4973	.06366
#3	.00034	.00142	.00123	.79175	.71667	.00083	3.3957	.06492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	2.2163	.00085	.02124	-.00044	-.00236	-.00012	3.7998
Stddev	.00026	.0155	.00026	.00309	.00110	.00299	.00145	.0394
%RSD	141.24	.70104	30.205	14.556	246.79	126.99	1188.7	1.0355
#1	.00039	2.2325	.00055	.01781	.00017	-.00317	-.00164	3.8257
#2	-.00010	2.2148	.00103	.02211	.00020	-.00485	.00004	3.8191
#3	.00025	2.2016	.00095	.02381	-.00171	.00096	.00124	3.7545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602038702 Acquired: 2/11/2016 11:47:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.05119	.00070	-.00369	.00034	.00552	3.7542
Stddev	.00077	.00032	.00177	.00102	.00055	.00025	2.4858
%RSD	71.307	.63318	253.30	27.550	162.28	4.5597	66.212
#1	.00103	.05093	-.00126	-.00326	.00075	.00540	.88660
#2	.00188	.05109	.00218	-.00295	-.00028	.00534	5.2955
#3	.00034	.05156	.00118	-.00484	.00055	.00580	5.0806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12184.	89604.	3521.9
Stddev	37.	317.	2.4
%RSD	.30498	.35414	.06956
#1	12150.	89690.	3519.8
#2	12179.	89869.	3524.6
#3	12224.	89253.	3521.2

Approved: February 12, 2016

Sample Name: L1602039101 Acquired: 2/11/2016 11:51:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.16313	.00034	.01040	.03877	-.00003	24.434	-.00009
Stddev	.00056	.00896	.00418	.00285	.00046	.00003	.202	.00021
%RSD	10946.	5.4954	1229.6	27.436	1.1820	95.953	.82677	237.17
#1	.00063	.16381	.00499	.01211	.03929	-.00007	24.267	.00001
#2	-.00020	.15384	-.00086	.00711	.03850	-.00002	24.376	-.00032
#3	-.00045	.17173	-.00311	.01199	.03851	-.00001	24.659	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00065	.00150	.18775	.85665	-.00006	3.9316	.02052
Stddev	.00009	.00025	.00099	.00272	.06281	.00240	.1286	.00045
%RSD	23.015	37.456	65.797	1.4485	7.3316	3758.2	3.2718	2.1689
#1	-.00030	.00064	.00180	.18572	.88762	-.00162	3.9507	.02001
#2	-.00043	.00042	.00040	.18669	.78437	.00270	3.7945	.02075
#3	-.00047	.00091	.00232	.19084	.89795	-.00126	4.0496	.02081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	2.1700	-.00023	.01204	.00040	-.00264	-.00086	3.3341
Stddev	.00015	.0055	.00081	.00468	.00332	.00071	.00617	.0312
%RSD	1419.6	.25157	358.12	38.876	823.85	26.989	719.61	.93706
#1	.00017	2.1642	.00040	.01733	.00322	-.00329	.00595	3.3620
#2	-.00000	2.1750	.00006	.01032	-.00326	-.00188	-.00609	3.3399
#3	-.00014	2.1709	-.00114	.00846	.00126	-.00276	-.00244	3.3004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602039101 Acquired: 2/11/2016 11:51:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.08121	.00241	-.00274	-.00013	.00228	4.1810
Stddev	.00045	.00083	.00506	.00050	.00113	.00012	2.2316
%RSD	112.38	1.0206	209.73	18.123	896.65	5.2709	53.374
#1	.00011	.08170	.00819	-.00218	-.00143	.00242	1.7082
#2	.00092	.08026	.00022	-.00295	.00063	.00219	6.0450
#3	.00017	.08169	-.00118	-.00310	.00042	.00223	4.7899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12201.	89100.	3540.3
Stddev	36.	131.	8.8
%RSD	.29695	.14711	.24763
#1	12201.	89251.	3542.6
#2	12238.	89035.	3547.7
#3	12165.	89014.	3530.6

Approved: February 12, 2016

Sample Name: L1602039102 Acquired: 2/11/2016 11:55:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	.01829	-.00190	.13424	.30779	-.00002	33.457	.00005
Stddev	.00057	.01139	.00367	.00150	.00282	.00006	.242	.00019
%RSD	110.59	62.267	193.12	1.1169	.91717	387.70	.72458	356.93
#1	-.00092	.02255	-.00237	.13595	.30644	.00006	33.443	.00024
#2	-.00075	.02695	-.00531	.13315	.30590	-.00005	33.222	.00007
#3	.00013	.00539	.00198	.13361	.31103	-.00005	33.706	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00072	.00009	.00892	.06353	1.6046	.00911	15.771	.01470
Stddev	.00026	.00033	.00017	.00634	.0590	.00183	.127	.00238
%RSD	36.962	364.14	1.8844	9.9777	3.6779	20.131	.80774	16.175
#1	-.00094	.00025	.00875	.05861	1.6694	.01113	15.704	.01303
#2	-.00043	.00031	.00908	.06131	1.5539	.00866	15.690	.01364
#3	-.00078	-.00029	.00894	.07068	1.5906	.00755	15.917	.01742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	75.475	-.00048	.01378	-.00432	-.00023	-.00246	5.2480
Stddev	.00013	.551	.00060	.00378	.00229	.00205	.00199	.0259
%RSD	936.28	.73069	124.41	27.441	53.100	909.61	80.792	.49349
#1	.00013	75.408	-.00029	.01798	-.00203	-.00004	-.00055	5.2654
#2	-.00011	74.961	-.00116	.01272	-.00661	-.00236	-.00233	5.2604
#3	-.00006	76.058	.00000	.01064	-.00430	.00173	-.00452	5.2183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602039102 Acquired: 2/11/2016 11:55:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	1.2056	-.00417	-.00204	-.00003	.01445	1.4236
Stddev	.00061	.0096	.00147	.00058	.00131	.00019	2.4455
%RSD	62.210	.79977	35.335	28.694	4156.5	1.2853	171.78
#1	.00050	1.2046	-.00579	-.00153	.00066	.01461	-.05327
#2	.00166	1.1965	-.00378	-.00268	-.00154	.01425	.07770
#3	.00077	1.2157	-.00292	-.00191	.00079	.01450	4.2464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11940.	87068.	3529.7
Stddev	23.	277.	27.6
%RSD	.19572	.31773	.78078
#1	11940.	87371.	3531.5
#2	11916.	87005.	3556.3
#3	11963.	86828.	3501.3

Approved: February 12, 2016

Sample Name: L1602039103 Acquired: 2/11/2016 11:59:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00058	.80705	-.00110	.00856	.04418	.00008	17.632	.00011
Stddev	.00062	.00473	.00115	.00138	.00020	.00010	.026	.00023
%RSD	107.53	.58599	104.29	16.162	.45708	129.49	.14878	217.26
#1	-.00056	.80199	.00022	.01014	.04442	-.00004	17.638	.00037
#2	.00003	.81136	-.00164	.00799	.04404	.00013	17.603	-.00007
#3	-.00122	.80780	-.00188	.00756	.04410	.00014	17.654	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00124	.00263	1.4469	.68038	.00112	2.8101	.01658
Stddev	.00014	.00051	.00062	.0409	.06216	.00281	.0377	.00139
%RSD	107.99	41.027	23.535	2.8298	9.1353	250.80	1.3402	8.3874
#1	-.00027	.00070	.00255	1.4195	.63293	-.00035	2.8192	.01704
#2	.00001	.00171	.00206	1.4273	.75074	-.00065	2.8423	.01502
#3	-.00013	.00130	.00329	1.4940	.65748	.00436	2.7686	.01769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	1.2802	.00184	.05244	.00047	-.00313	-.00303	3.3188
Stddev	.00013	.0037	.00063	.00088	.00022	.00199	.00084	.0203
%RSD	164.33	.28918	34.002	1.6850	45.994	63.593	27.749	.61114
#1	-.00023	1.2835	.00140	.05149	.00024	-.00489	-.00384	3.3331
#2	.00003	1.2762	.00256	.05323	.00053	-.00097	-.00216	3.3278
#3	-.00004	1.2809	.00157	.05261	.00066	-.00352	-.00309	3.2956
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602039103 Acquired: 2/11/2016 11:59:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.04831	.00796	-.00125	.00113	.02243	1.3834
Stddev	.00043	.00047	.00246	.00194	.00019	.00020	1.8711
%RSD	59.410	.96722	30.860	154.95	17.066	.91091	135.26
#1	.00111	.04827	.00714	.00091	.00129	.02260	3.5166
#2	.00082	.04787	.01072	-.00282	.00092	.02248	.61328
#3	.00026	.04880	.00601	-.00184	.00117	.02220	.02017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12226.	90150.	3563.5
Stddev	19.	146.	5.1
%RSD	.15852	.16241	.14229
#1	12216.	90075.	3559.9
#2	12213.	90057.	3561.3
#3	12248.	90319.	3569.3

Approved: February 12, 2016

Sample Name: L1602037401 Acquired: 2/11/2016 12:03:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	-.00047	-.00233	.00818	.13160	-.00003	2.9260
Stddev	.00260	.00178	.00174	.00065	.00150	.00003	.0748
%RSD	488.55	378.41	74.955	7.9845	1.1405	109.41	2.5556
#1	-.00353	-.00029	-.00177	.00862	.12988	-.00006	2.8768
#2	.00122	.00121	-.00093	.00849	.13266	-.00003	3.0120
#3	.00071	-.00233	-.00428	.00743	.13226	.00000	2.8891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	-.00052	-.00092	.00002	-.00579	.13648	.01182
Stddev	.00026	.00021	.00012	.00054	.01463	.03302	.00216
%RSD	902.63	39.954	13.058	3067.8	252.42	24.192	18.299
#1	.00018	-.00043	-.00089	-.00043	-.02266	.16740	.01419
#2	-.00032	-.00038	-.00105	-.00014	.00187	.14035	.00996
#3	.00006	-.00076	-.00081	.00062	.00341	.10170	.01130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38852	.00246	.00033	7.9031	-.00034	.00363	.00067
Stddev	.06431	.00038	.00002	.0866	.00041	.00432	.00064
%RSD	16.552	15.419	6.1149	1.0958	117.95	118.95	95.630
#1	.39723	.00232	.00035	7.8939	-.00053	.00570	.00000
#2	.32030	.00289	.00031	7.9939	.00012	-.00133	.00129
#3	.44803	.00217	.00033	7.8214	-.00062	.00652	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602037401 Acquired: 2/11/2016 12:03:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5000 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00102	-.00027	.00114	-.00024	.55868	.00158	-.00172
Stddev	.00496	.00564	.00204	.00047	.00532	.00199	.00164
%RSD	485.21	2100.8	178.71	196.95	.95227	125.84	95.320
#1	-.00164	.00016	.00238	-.00036	.55319	.00265	-.00012
#2	.00422	.00515	.00225	.00028	.56381	.00280	-.00165
#3	-.00565	-.00611	-.00121	-.00064	.55905	-.00071	-.00340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00097	.00064	F -.57016
Stddev	.00033	.00021	1.2649
%RSD	33.443	32.945	221.86
#1	-.00117	.00054	.70064
#2	-.00060	.00049	-1.8292
#3	-.00115	.00088	-.58196
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12752.	92822.	3632.1
Stddev	14.	92.	26.2
%RSD	.10766	.09909	.72259
#1	12746.	92909.	3662.4
#2	12768.	92726.	3617.2
#3	12742.	92830.	3616.7

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 12:08:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40439	10.216	.40868	.50935	1.0273	.05093	10.237
Stddev	.00246	.030	.00116	.00225	.0254	.00027	.248
%RSD	.60752	.29024	.28297	.44094	2.4759	.53222	2.4209
#1	.40187	10.183	.40735	.50982	1.0214	.05062	10.154
#2	.40454	10.226	.40924	.51133	1.0551	.05108	10.516
#3	.40677	10.239	.40946	.50691	1.0053	.05110	10.041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05102	.20663	.51119	.51774	4.1747	51.410	1.0261
Stddev	.00018	.00064	.00243	.00041	.0771	1.212	.0235
%RSD	.35834	.30798	.47593	.08005	1.8464	2.3580	2.2937
#1	.05117	.20736	.50879	.51770	4.1561	51.057	1.0226
#2	.05106	.20634	.51366	.51735	4.2594	52.760	1.0511
#3	.05081	.20620	.51113	.51818	4.1086	50.414	1.0045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.392	.51743	1.0286	51.442	.51749	10.204	.51953
Stddev	.226	.01469	.0041	1.216	.00174	.017	.00190
%RSD	2.1758	2.8388	.39713	2.3634	.33653	.16778	.36568
#1	10.384	.51641	1.0318	51.146	.51934	10.219	.52149
#2	10.622	.53260	1.0301	52.778	.51725	10.208	.51938
#3	10.170	.50328	1.0240	50.401	.51588	10.185	.51770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 12:08:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2301	.41382	5.1440	1.0327	1.0278	1.0297	.52017
Stddev	.0016	.00375	.0082	.0035	.0240	.0240	.00106
%RSD	.13363	.90686	.15902	.34131	2.3353	2.3339	.20285
#1	1.2315	.41053	5.1529	1.0342	1.0239	1.0216	.52130
#2	1.2306	.41791	5.1420	1.0353	1.0535	1.0567	.52000
#3	1.2283	.41301	5.1369	1.0287	1.0060	1.0107	.51921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0236	1.0401	F 1.4986
Stddev	.0039	.0030	1.1536
%RSD	.38354	.28568	76.980
#1	1.0191	1.0435	1.2214
#2	1.0261	1.0390	2.7656
#3	1.0257	1.0379	.50884
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11838.	85667.	3493.1
Stddev	20.	347.	59.9
%RSD	.16998	.40512	1.7135
#1	11816.	86067.	3489.6
#2	11844.	85467.	3435.1
#3	11855.	85466.	3554.7

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 12:11:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00506	-.00014	.00214	.00105	.00005	-.00073
Stddev	.00089	.00658	.00159	.00189	.00058	.00004	.02867
%RSD	5425.8	130.10	1109.9	88.329	55.593	80.018	3912.9
#1	.00004	.00049	-.00020	.00392	.00169	.00001	-.01582
#2	-.00089	.00209	-.00171	.00016	.00055	.00005	-.01872
#3	.00089	.01261	.00147	.00234	.00091	.00009	.03234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	-.00020	.00018	.00099	-.00797	.03323	-.00022
Stddev	.00023	.00014	.00110	.00155	.03405	.03371	.00251
%RSD	1093.4	68.931	611.10	156.38	427.27	101.44	1156.6
#1	.00013	-.00024	-.00081	-.00075	-.02226	.02634	-.00304
#2	-.00029	-.00005	-.00000	.00222	-.03254	.00350	.00174
#3	.00009	-.00031	.00135	.00150	.03090	.06986	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02716	.00230	.00105	.03213	-.00077	.00088	-.00010
Stddev	.09359	.00129	.00021	.00915	.00043	.00386	.00202
%RSD	344.54	56.072	20.359	28.484	55.894	440.49	1954.7
#1	-.05506	.00377	.00120	.03098	-.00124	-.00173	.00028
#2	.00754	.00178	.00115	.02361	-.00063	.00531	.00169
#3	.12901	.00135	.00081	.04180	-.00042	-.00095	-.00228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 12:11:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00213	.00255	.00057	.00090	.00028	.00066	.00042
Stddev	.00100	.00569	.00420	.00079	.00029	.00478	.00144
%RSD	46.890	222.73	737.48	87.249	102.24	724.32	340.49
#1	.00292	.00691	-.00360	.00046	.00009	.00372	.00209
#2	.00247	-.00388	.00479	.00044	.00014	-.00485	-.00035
#3	.00101	.00463	.00052	.00182	.00062	.00310	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00013	.00003	F -.35388
Stddev	.00059	.00006	2.4199
%RSD	446.51	184.99	683.81
#1	-.00069	-.00001	1.7903
#2	.00048	.00000	.12568
#3	-.00018	.00010	-2.9776
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12045.	88344.	3478.8
Stddev	29.	60.	28.0
%RSD	.24077	.06798	.80400
#1	12012.	88376.	3509.9
#2	12057.	88275.	3455.7
#3	12066.	88381.	3470.8

Approved: February 12, 2016

Sample Name: ICSA Acquired: 2/11/2016 12:35:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	270.95	-.00285	.03811	-.00018	-.00004	243.89
Stddev	.00145	.12	.00275	.00025	.00088	.00008	1.00
%RSD	86.666	.04396	96.404	.65588	480.95	216.12	.40974
#1	.00039	270.81	-.00600	.03793	-.00120	.00004	243.21
#2	.00323	270.98	-.00094	.03799	.00038	-.00012	245.03
#3	.00138	271.04	-.00162	.03839	.00028	-.00004	243.42
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	-.00166	-.00286	F -.00816	99.207	.00049	.00508
Stddev	.00035	.00029	.00090	.00095	.449	.05543	.00200
%RSD	142.86	17.629	31.654	11.602	.45247	11256.	39.431
#1	-.00006	-.00169	-.00267	-.00796	98.888	.03598	.00375
#2	.00017	-.00135	-.00384	-.00919	99.720	-.06338	.00738
#3	.00063	-.00193	-.00206	-.00733	99.012	.02888	.00410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	254.19	.00247	-.00094	.06019	-.00230	.05376	-.00304
Stddev	1.33	.00232	.00031	.03079	.00062	.00912	.00066
%RSD	.52311	93.876	33.145	51.156	26.803	16.962	21.752
#1	252.95	.00422	-.00124	.09567	-.00176	.06269	-.00295
#2	255.59	-.00016	-.00062	.04450	-.00297	.04446	-.00374
#3	254.05	.00337	-.00096	.04041	-.00217	.05411	-.00242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: ICSA Acquired: 2/11/2016 12:35:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00431	.00439	.68140	.00080	.00047	.00692	-.00304
Stddev	.00782	.00901	.00395	.00111	.00013	.00210	.00221
%RSD	181.51	205.42	.57945	139.87	28.681	30.314	72.748
#1	.00009	.01439	.68585	.00038	.00059	.00897	-.00362
#2	-.00050	-.00310	.68002	-.00005	.00049	.00701	-.00489
#3	.01333	.00188	.67832	.00206	.00032	.00478	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00179	-.00520	F -29.577
Stddev	.00067	.00017	1.743
%RSD	37.299	3.3137	5.8937
#1	-.00159	-.00500	-27.663
#2	-.00253	-.00528	-31.073
#3	-.00125	-.00531	-29.996
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11109.	80103.	3409.0
Stddev	20.	214.	19.3
%RSD	.18026	.26668	.56590
#1	11106.	79951.	3408.9
#2	11091.	80347.	3389.8
#3	11131.	80010.	3428.3

Approved: February 12, 2016

Sample Name: ICSAB Acquired: 2/11/2016 12:39:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53385	270.94	.24686	-.03019	.25449	.24756	242.83
Stddev	.00021	.14	.00153	.00146	.00180	.00027	.90
%RSD	.03971	.05298	.62141	4.8218	.70716	.11058	.37155
#1	.53400	270.80	.24540	-.02855	.25254	.24744	241.82
#2	.53361	271.08	.24846	-.03134	.25608	.24736	243.56
#3	.53395	270.93	.24673	-.03068	.25486	.24787	243.10
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.46008	.23873	.25251	.23964	98.504	5.2775	.00494
Stddev	.00122	.00077	.00111	.00237	.443	.0579	.00451
%RSD	.26436	.32168	.43762	.98956	.44993	1.0968	91.262
#1	.46079	.23849	.25132	.24163	98.001	5.2854	.00532
#2	.46077	.23959	.25272	.24026	98.674	5.3310	.00025
#3	.45867	.23811	.25350	.23702	98.837	5.2161	.00925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	253.77	.25060	-.00111	5.2227	.47677	.04643	.48729
Stddev	.82	.00386	.00027	.0573	.00104	.00142	.00124
%RSD	.32426	1.5389	24.259	1.0974	.21873	3.0604	.25430
#1	252.93	.24663	-.00091	5.1565	.47628	.04722	.48828
#2	254.58	.25084	-.00142	5.2536	.47796	.04479	.48770
#3	253.80	.25434	-.00101	5.2579	.47606	.04728	.48590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: ICSAB Acquired: 2/11/2016 12:39:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50608	.24805	.01041	.00111	.00047	.00333	.46314
Stddev	.00210	.00430	.00383	.00093	.00025	.00346	.00255
%RSD	.41431	1.7354	36.832	84.081	52.898	103.84	.55065
#1	.50798	.24419	.01474	.00198	.00029	.00536	.46606
#2	.50642	.24726	.00746	.00123	.00037	.00529	.46201
#3	.50383	.25269	.00902	.00012	.00075	-.00066	.46134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.25709	.47931	F -31.542
Stddev	.00092	.00093	.717
%RSD	.35780	.19477	2.2725
#1	.25632	.48021	-30.844
#2	.25685	.47935	-32.276
#3	.25811	.47835	-31.507
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11113.	79802.	3421.8
Stddev	16.	52.	6.8
%RSD	.14517	.06468	.19967
#1	11132.	79845.	3425.5
#2	11102.	79745.	3413.9
#3	11106.	79818.	3425.9

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 12:43:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40545	10.279	.40686	.50274	1.0236	.05196	10.317
Stddev	.00112	.022	.00303	.00346	.0109	.00013	.139
%RSD	.27708	.21800	.74505	.68905	1.0643	.25208	1.3471
#1	.40437	10.272	.40418	.49881	1.0116	.05182	10.162
#2	.40537	10.261	.40625	.50536	1.0328	.05207	10.431
#3	.40661	10.304	.41015	.50405	1.0265	.05201	10.358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05091	.20526	.51755	.51380	4.1490	50.992	1.0340
Stddev	.00018	.00067	.00051	.00170	.0385	.590	.0120
%RSD	.35444	.32838	.09943	.33068	.92832	1.1579	1.1578
#1	.05110	.20592	.51799	.51459	4.1254	50.352	1.0202
#2	.05086	.20529	.51767	.51497	4.1935	51.515	1.0416
#3	.05075	.20457	.51698	.51186	4.1282	51.110	1.0402
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.479	.51464	1.0346	50.740	.51283	10.098	.51240
Stddev	.044	.00776	.0035	.519	.00173	.020	.00115
%RSD	.41811	1.5072	.33717	1.0232	.33766	.19900	.22378
#1	10.429	.50736	1.0368	50.171	.51403	10.119	.51268
#2	10.507	.52280	1.0365	51.188	.51362	10.094	.51338
#3	10.502	.51376	1.0306	50.860	.51085	10.080	.51114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 12:43:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2198	.40891	5.1412	1.0294	1.0242	1.0194	.52474
Stddev	.0026	.00217	.0130	.0040	.0115	.0095	.00208
%RSD	.21403	.53117	.25246	.38757	1.1252	.93429	.39630
#1	1.2191	.41026	5.1487	1.0320	1.0117	1.0090	.52433
#2	1.2227	.41006	5.1486	1.0314	1.0344	1.0277	.52699
#3	1.2177	.40640	5.1262	1.0248	1.0265	1.0217	.52289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0273	1.0312	F 4.0456
Stddev	.0028	.0031	1.9787
%RSD	.27445	.29589	48.910
#1	1.0259	1.0339	3.9252
#2	1.0255	1.0320	6.0819
#3	1.0306	1.0279	2.1299
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11824.	85336.	3514.5
Stddev	17.	219.	19.3
%RSD	.14297	.25662	.55004
#1	11809.	85492.	3535.4
#2	11821.	85430.	3510.8
#3	11843.	85086.	3497.2

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 12:46:44 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.01060	.00042	.00068	.00056	-.00001	.00061
Stddev	.00121	.00473	.00217	.00134	.00036	.00003	.01135
%RSD	152.17	44.632	514.25	197.69	64.556	186.92	1873.8
#1	-.00108	.00516	.00183	.00060	.00019	.00000	.00869
#2	.00053	.01288	.00151	-.00062	.00091	.00000	-.01237
#3	-.00183	.01377	-.00208	.00205	.00058	-.00004	.00549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	-.00059	-.00028	.00065	-.01413	.06018	-.00260
Stddev	.00017	.00023	.00049	.00079	.00090	.08916	.00095
%RSD	118.72	38.202	175.13	122.52	6.3499	148.16	36.491
#1	-.00004	-.00034	-.00075	-.00017	-.01418	.07519	-.00242
#2	.00018	-.00066	-.00031	.00069	-.01321	.14089	-.00362
#3	.00028	-.00077	.00022	.00142	-.01500	-.03553	-.00175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10174	.00135	.00110	.02279	.00002	.00102	-.00104
Stddev	.02175	.00376	.00048	.01847	.00026	.00161	.00271
%RSD	21.379	279.05	43.445	81.055	1317.6	158.05	259.61
#1	.10767	.00544	.00127	.03300	.00024	.00225	-.00411
#2	.07764	.00057	.00146	.03391	.00008	.00162	.00100
#3	.11990	-.00196	.00056	.00147	-.00027	-.00081	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 12:46:44 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00336	-.00282	.00225	.00113	.00038	.00496	.00097
Stddev	.00246	.00459	.00205	.00050	.00021	.00548	.00120
%RSD	73.183	162.54	91.201	43.977	54.332	110.47	123.99
#1	-.00615	-.00448	.00410	.00162	.00039	.01085	.00069
#2	-.00147	.00236	.00004	.00112	.00057	.00404	.00229
#3	-.00248	-.00634	.00262	.00063	.00016	.00000	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00058	.00018	F -1.0763
Stddev	.00126	.00007	3.5036
%RSD	217.24	36.759	325.53
#1	.00043	.00023	-3.0852
#2	-.00017	.00011	2.9693
#3	-.00199	.00020	-3.1128
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12021.	87559.	3499.1
Stddev	24.	324.	22.6
%RSD	.20298	.36997	.64633
#1	12007.	87186.	3473.0
#2	12049.	87728.	3510.4
#3	12007.	87764.	3513.8

Approved: February 12, 2016

Sample Name: PBW C6 Acquired: 2/11/2016 12:50:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00803	-.00087	-.00092	-.00037	-.00004	.01961	-.00001
Stddev	.00027	.00349	.00215	.00150	.00047	.00003	.01568	.00021
%RSD	132.29	43.432	247.76	162.61	126.38	74.137	79.989	1888.6
#1	.00029	.00704	.00101	-.00015	-.00008	-.00007	.03351	-.00026
#2	-.00010	.00514	-.00321	-.00266	-.00092	-.00001	.02271	.00009
#3	.00043	.01190	-.00041	.00003	-.00012	-.00006	.00260	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00048	-.00046	.00072	-.01040	.00461	-.00122	.08943	.00147
Stddev	.00036	.00057	.00044	.00087	.00611	.00440	.05098	.00037
%RSD	74.909	122.82	60.985	8.3889	132.72	359.66	56.998	24.993
#1	-.00060	-.00100	.00115	-.00957	.00860	-.00427	.07052	.00182
#2	-.00008	-.00053	.00072	-.01030	.00765	-.00322	.14716	.00150
#3	-.00076	.00013	.00028	-.01131	-.00243	.00382	.05062	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.04694	.00053	-.00488	.00016	-.00240	-.00225	.00458
Stddev	.00021	.02010	.00064	.00675	.00220	.00176	.00330	.00064
%RSD	213.14	42.823	119.10	138.35	1378.6	73.019	146.88	14.067
#1	.00003	.02670	.00125	.00185	-.00051	-.00352	-.00443	.00447
#2	-.00007	.06691	.00003	-.01164	.00262	-.00331	-.00386	.00527
#3	.00034	.04722	.00032	-.00484	-.00163	-.00038	.00155	.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: PBW C6 Acquired: 2/11/2016 12:50:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.00009	.00076	-.00296	-.00075	.00145	1.0453
Stddev	.00058	.00010	.00308	.00114	.00014	.00014	.5558
%RSD	51.164	109.28	406.25	38.408	17.939	9.9952	53.176
#1	.00159	.00014	.00419	-.00371	-.00060	.00154	.48979
#2	.00135	-.00002	-.00012	-.00351	-.00079	.00152	1.0446
#3	.00048	.00017	-.00179	-.00165	-.00086	.00128	1.6015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12192.	89430.	3555.7
Stddev	27.	143.	8.2
%RSD	.22405	.15984	.23037
#1	12223.	89576.	3546.3
#2	12173.	89290.	3561.0
#3	12179.	89424.	3559.8

Approved: February 12, 2016

Sample Name: LCSW C6 Acquired: 2/11/2016 12:54:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19353	4.8440	.18545	.93944	.48976	.02401	4.9088	.02388
Stddev	.00257	.0076	.00302	.00111	.00125	.00005	.0292	.00014
%RSD	1.3280	.15624	1.6298	.11801	.25449	.22453	.59510	.56729
#1	.19646	4.8389	.18271	.93922	.48833	.02397	4.8789	.02400
#2	.19164	4.8527	.18869	.93846	.49036	.02399	4.9372	.02391
#3	.19251	4.8405	.18496	.94064	.49060	.02407	4.9102	.02373
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09847	.24709	.24651	1.9708	24.346	.49616	5.0134	.24899
Stddev	.00091	.00138	.00026	.0120	.018	.00452	.0678	.00160
%RSD	.92616	.55903	.10347	.60814	.07269	.91168	1.3519	.64302
#1	.09922	.24550	.24676	1.9828	24.341	.49198	5.0717	.24820
#2	.09875	.24802	.24654	1.9588	24.332	.50096	5.0296	.24793
#3	.09745	.24774	.24625	1.9708	24.366	.49555	4.9390	.25083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50198	24.294	.24720	4.6713	.24541	.58014	.18717	2.4588
Stddev	.00390	.042	.00096	.0077	.00042	.00163	.00238	.0109
%RSD	.77696	.17428	.38699	.16392	.17208	.28136	1.2704	.44217
#1	.50558	24.253	.24823	4.6788	.24576	.58047	.18791	2.4612
#2	.50252	24.291	.24702	4.6717	.24494	.58159	.18452	2.4683
#3	.49784	24.338	.24635	4.6635	.24553	.57837	.18910	2.4469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: LCSW C6 Acquired: 2/11/2016 12:54:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49745	.48916	.49213	.24999	.49370	.48598	3.6545
Stddev	.00266	.00182	.00352	.00138	.00074	.00199	2.3200
%RSD	.53409	.37154	.71488	.55110	.15046	.40931	63.483
#1	.49858	.48860	.49552	.24896	.49298	.48718	1.0505
#2	.49935	.48768	.49239	.24944	.49364	.48708	4.4119
#3	.49441	.49119	.48849	.25155	.49447	.48369	5.5011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11965.	87147.	3551.4
Stddev	21.	60.	21.6
%RSD	.17830	.06927	.60950
#1	11942.	87208.	3564.3
#2	11984.	87087.	3526.5
#3	11968.	87146.	3563.6

Approved: February 12, 2016

Sample Name: L1602022206 Acquired: 2/11/2016 12:58:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.01676	-.00085	.04683	.04130	-.00002	72.095	-.00001
Stddev	.00016	.00364	.00176	.00275	.00071	.00003	.186	.00029
%RSD	23.853	21.742	206.78	5.8793	1.7289	172.78	.25861	3087.5
#1	.00073	.02092	-.00159	.04952	.04212	.00001	72.299	-.00016
#2	.00050	.01523	-.00212	.04402	.04095	-.00001	71.935	.00032
#3	.00081	.01412	.00116	.04695	.04082	-.00006	72.050	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00030	.00154	.01249	1.9797	.00247	11.543	-.00013
Stddev	.00009	.00065	.00020	.01868	.0566	.00214	.109	.00340
%RSD	22.517	218.59	12.756	149.55	2.8617	86.755	.94363	2710.3
#1	-.00038	.00088	.00136	-.00893	2.0237	.00488	11.604	.00333
#2	-.00030	.00041	.00175	.02101	1.9997	.00176	11.417	-.00023
#3	-.00047	-.00040	.00151	.02539	1.9158	.00077	11.607	-.00348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	28.475	-.00100	.00249	.00117	-.00100	-.00027	3.7339
Stddev	.00029	.014	.00070	.00375	.00163	.00358	.00547	.0334
%RSD	32.895	.04824	69.535	150.75	138.74	358.09	2049.8	.89556
#1	.00057	28.490	-.00179	.00381	-.00018	-.00112	-.00014	3.7507
#2	.00094	28.465	-.00075	.00540	.00298	-.00452	.00513	3.7556
#3	.00114	28.468	-.00047	-.00175	.00072	.00264	-.00580	3.6954
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602022206 Acquired: 2/11/2016 12:58:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	.21205	-.01175	-.00358	-.00071	.00179	.15011
Stddev	.00042	.00025	.00785	.00088	.00132	.00012	1.6594
%RSD	30.995	.11931	66.781	24.641	185.74	6.6022	1105.4
#1	.00104	.21177	-.00533	-.00375	.00075	.00184	-1.6852
#2	.00121	.21226	-.02050	-.00262	-.00107	.00165	.59116
#3	.00185	.21211	-.00942	-.00436	-.00181	.00187	1.5444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11884.	86050.	3540.7
Stddev	22.	197.	16.0
%RSD	.18337	.22880	.45237
#1	11863.	86260.	3528.1
#2	11882.	85870.	3558.7
#3	11907.	86019.	3535.2

Approved: February 12, 2016

Sample Name: L1602022206S Acquired: 2/11/2016 13:02:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20037	4.9898	.19202	1.0269	.54790	.02474	80.678	.02451
Stddev	.00152	.0129	.00407	.0010	.00133	.00010	.233	.00013
%RSD	.75757	.25855	2.1189	.09841	.24222	.41194	.28916	.51651
#1	.20120	5.0046	.18803	1.0264	.54942	.02467	80.947	.02466
#2	.19862	4.9836	.19188	1.0281	.54727	.02470	80.555	.02446
#3	.20128	4.9812	.19616	1.0262	.54701	.02486	80.532	.02442
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09887	.25241	.24712	2.0166	27.166	.50757	16.861	.25312
Stddev	.00031	.00199	.00242	.0258	.089	.00292	.015	.00308
%RSD	.31178	.78676	.97752	1.2788	.32864	.57626	.09182	1.2167
#1	.09878	.25317	.24789	2.0458	27.206	.51046	16.878	.25261
#2	.09921	.25390	.24906	1.9970	27.064	.50461	16.854	.25033
#3	.09861	.25016	.24441	2.0071	27.229	.50763	16.850	.25643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51808	54.598	.24548	4.9268	.24834	.60492	.19313	6.5118
Stddev	.00239	.257	.00060	.0100	.00276	.00266	.00896	.0205
%RSD	.46102	.47087	.24471	.20190	1.1111	.43894	4.6391	.31565
#1	.51998	54.894	.24575	4.9351	.24622	.60710	.20201	6.5354
#2	.51886	54.432	.24591	4.9296	.25146	.60569	.18409	6.4986
#3	.51540	54.468	.24480	4.9158	.24734	.60196	.19331	6.5013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602022206S Acquired: 2/11/2016 13:02:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50861	.72171	.49607	.24957	.50803	.49139	3.3300
Stddev	.00349	.00292	.00337	.00117	.00089	.00161	1.7854
%RSD	.68669	.40449	.67855	.47020	.17456	.32741	53.616
#1	.51203	.72496	.49588	.24904	.50707	.49280	4.8174
#2	.50875	.72082	.49953	.25091	.50820	.49173	3.8226
#3	.50505	.71933	.49280	.24875	.50882	.48964	1.3500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11582.	84642.	3497.6
Stddev	9.	119.	15.6
%RSD	.07831	.14074	.44477
#1	11591.	84505.	3485.1
#2	11583.	84724.	3492.8
#3	11573.	84696.	3515.0

Approved: February 12, 2016

Sample Name: L1602022206SD Acquired: 2/11/2016 13:06:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19758	4.9134	.19024	1.0117	.53768	.02436	79.519	.02443
Stddev	.00261	.0066	.00278	.0041	.00045	.00005	.073	.00022
%RSD	1.3194	.13484	1.4614	.40311	.08428	.20994	.09221	.88157
#1	.20055	4.9205	.18851	1.0153	.53739	.02436	79.436	.02468
#2	.19567	4.9125	.18876	1.0072	.53821	.02431	79.547	.02432
#3	.19652	4.9073	.19344	1.0126	.53746	.02441	79.575	.02430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09713	.24636	.24362	1.9989	26.728	.50127	16.674	.24690
Stddev	.00062	.00134	.00182	.0152	.076	.00294	.029	.00508
%RSD	.63714	.54521	.74645	.75804	.28330	.58723	.17400	2.0569
#1	.09743	.24655	.24570	1.9865	26.675	.49791	16.668	.24827
#2	.09753	.24493	.24234	2.0158	26.815	.50250	16.649	.25115
#3	.09641	.24760	.24282	1.9945	26.694	.50340	16.706	.24128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51001	53.826	.24351	4.8505	.24407	.59235	.19157	6.4218
Stddev	.00250	.039	.00128	.0087	.00352	.00441	.00466	.0223
%RSD	.48968	.07324	.52689	.18006	1.4406	.74499	2.4334	.34796
#1	.51103	53.844	.24420	4.8469	.24054	.59394	.19170	6.4372
#2	.51182	53.853	.24429	4.8605	.24411	.59574	.19616	6.4320
#3	.50716	53.781	.24203	4.8442	.24757	.58736	.18684	6.3962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602022206SD Acquired: 2/11/2016 13:06:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556359-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50152	.71058	.49156	.24684	.49859	.48314	4.5817
Stddev	.00327	.00163	.00599	.00170	.00104	.00190	2.4719
%RSD	.65104	.22909	1.2190	.68740	.20806	.39393	53.952
#1	.50173	.71007	.49288	.24649	.49978	.48391	6.7653
#2	.50468	.71241	.49679	.24868	.49793	.48454	1.8980
#3	.49816	.70927	.48502	.24534	.49804	.48097	5.0818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11624.	84550.	3484.6
Stddev	14.	127.	10.3
%RSD	.12109	.14979	.29442
#1	11615.	84675.	3474.6
#2	11616.	84422.	3495.1
#3	11640.	84552.	3484.1

Approved: February 12, 2016

Sample Name: L1602005801 Acquired: 2/11/2016 13:10:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.22508	.00028	.04217	.01860	.00036	12.930	.00094
Stddev	.00096	.00190	.00109	.00287	.00034	.00002	.046	.00013
%RSD	295.92	.84303	382.52	6.8030	1.8141	5.7435	.35599	13.666
#1	.00031	.22688	-.00082	.03951	.01832	.00035	12.918	.00086
#2	-.00063	.22310	.00033	.04521	.01852	.00035	12.891	.00088
#3	.00129	.22525	.00135	.04180	.01898	.00039	12.981	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01723	.00176	.00412	1.6266	1.8398	.07243	12.378	.17685
Stddev	.00001	.00008	.00032	.0101	.0333	.00358	.074	.00241
%RSD	.08589	4.6395	7.7392	.62366	1.8127	4.9456	.60131	1.3645
#1	.01722	.00179	.00397	1.6374	1.8127	.07336	12.453	.17843
#2	.01725	.00167	.00390	1.6251	1.8770	.07546	12.304	.17407
#3	.01722	.00182	.00449	1.6172	1.8298	.06848	12.377	.17805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	39.895	.04901	.20503	.00447	-.00143	.00219	20.800
Stddev	.00027	.252	.00045	.00377	.00082	.00427	.00618	.190
%RSD	128.92	.63130	.92177	1.8376	18.389	298.55	282.78	.91330
#1	-.00008	40.061	.04857	.20365	.00365	-.00538	-.00080	20.950
#2	.00046	39.605	.04898	.20215	.00446	.00311	-.00193	20.863
#3	.00026	40.018	.04948	.20929	.00529	-.00202	.00929	20.586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602005801 Acquired: 2/11/2016 13:10:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00163	.15209	.00158	-.00153	-.00059	.06966	5.6054
Stddev	.00076	.00026	.00316	.00066	.00046	.00086	1.9512
%RSD	46.742	.16864	199.96	43.463	77.397	1.2374	34.809
#1	.00142	.15202	-.00207	-.00077	-.00098	.07043	3.5075
#2	.00099	.15187	.00351	-.00201	-.00009	.06982	7.3659
#3	.00247	.15237	.00330	-.00180	-.00070	.06873	5.9427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12039.	87834.	3595.8
Stddev	20.	150.	23.2
%RSD	.16951	.17081	.64504
#1	12048.	87705.	3586.4
#2	12016.	87999.	3622.2
#3	12054.	87799.	3578.7

Approved: February 12, 2016

Sample Name: L1602005802 Acquired: 2/11/2016 13:14:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.23388	.00120	.03861	.01932	.00033	12.846	.00093
Stddev	.00238	.00431	.00188	.00148	.00094	.00008	.030	.00042
%RSD	810.16	1.8419	156.51	3.8460	4.8648	24.038	.23182	44.818
#1	-.00044	.23851	.00247	.03692	.01890	.00024	12.816	.00105
#2	-.00163	.23314	-.00096	.03921	.02039	.00040	12.847	.00128
#3	.00296	.22999	.00210	.03970	.01866	.00034	12.875	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01707	.00155	.00332	1.5844	1.8032	.07323	12.311	.17692
Stddev	.00034	.00077	.00020	.0159	.0534	.00361	.154	.00195
%RSD	2.0029	49.772	6.0254	1.0063	2.9633	4.9340	1.2534	1.1049
#1	.01735	.00075	.00355	1.5992	1.7973	.06939	12.138	.17912
#2	.01669	.00229	.00323	1.5675	1.7530	.07373	12.434	.17537
#3	.01717	.00161	.00318	1.5866	1.8594	.07657	12.362	.17629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	39.716	.04853	.20478	.00312	-.00136	-.00479	20.662
Stddev	.00025	.109	.00081	.00694	.00189	.00523	.00463	.092
%RSD	320.93	.27561	1.6726	3.3878	60.422	384.40	96.577	.44562
#1	-.00030	39.632	.04925	.20620	.00205	-.00722	-.00760	20.737
#2	-.00013	39.676	.04868	.21090	.00202	.00031	-.00734	20.690
#3	.00019	39.840	.04765	.19724	.00530	.00283	.00055	20.559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602005802 Acquired: 2/11/2016 13:14:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.15143	.00345	-.00367	.00015	.06705	3.7949
Stddev	.00051	.00047	.00452	.00074	.00037	.00070	2.3966
%RSD	54.618	.31045	130.92	20.211	243.79	1.0446	63.151
#1	.00128	.15101	.00327	-.00310	.00004	.06754	6.2988
#2	.00116	.15194	.00806	-.00451	-.00015	.06735	1.5225
#3	.00035	.15134	-.00098	-.00340	.00056	.06624	3.5635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12061.	88179.	3571.8
Stddev	25.	233.	7.1
%RSD	.20897	.26438	.19842
#1	12084.	88321.	3567.7
#2	12034.	88305.	3580.0
#3	12065.	87910.	3567.7

Approved: February 12, 2016

Sample Name: L1602005803 Acquired: 2/11/2016 13:18:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00097	.07335	-.00091	.01609	.02054	.00011	43.630	.00057
Stddev	.00042	.00527	.00313	.00192	.00063	.00002	.179	.00028
%RSD	43.085	7.1841	343.20	11.906	3.0651	14.165	.41004	48.735
#1	-.00071	.07020	-.00355	.01592	.01995	.00011	43.673	.00070
#2	-.00075	.07043	.00254	.01427	.02120	.00013	43.434	.00025
#3	-.00146	.07944	-.00172	.01809	.02047	.00010	43.784	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.00054	.00108	.85466	1.9327	.09798	32.975	.09643
Stddev	.00044	.00053	.00093	.02644	.0447	.00367	.149	.00101
%RSD	58.558	99.588	86.593	3.0933	2.3110	3.7435	.45100	1.0455
#1	.00113	.00023	.00211	.87819	1.9024	.09399	32.984	.09594
#2	.00027	.00022	.00082	.85975	1.9840	.09874	32.822	.09759
#3	.00083	.00115	.00030	.82605	1.9116	.10120	33.119	.09575
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	116.09	.02551	.10154	.00095	-.00200	.00706	21.637
Stddev	.00012	.30	.00136	.00805	.00196	.00146	.00409	.141
%RSD	252.83	.26032	5.3198	7.9250	205.21	72.881	58.028	.65334
#1	.00019	116.32	.02478	.11080	.00018	-.00126	.01178	21.740
#2	-.00002	115.75	.02707	.09622	.00318	-.00367	.00482	21.696
#3	-.00002	116.19	.02467	.09760	-.00050	-.00106	.00457	21.476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602005803 Acquired: 2/11/2016 13:18:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00130	.70697	-.00037	.00040	-.00043	.03568	2.5079
Stddev	.00032	.00156	.00257	.00245	.00032	.00031	2.2411
%RSD	24.725	.22026	698.35	610.90	74.454	.87212	89.362
#1	.00145	.70519	.00107	.00283	-.00008	.03595	1.6140
#2	.00093	.70767	.00116	.00045	-.00052	.03576	5.0581
#3	.00151	.70806	-.00334	-.00207	-.00070	.03534	.85166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11769.	85399.	3524.7
Stddev	14.	14.	14.8
%RSD	.11989	.01670	.42099
#1	11755.	85415.	3508.3
#2	11768.	85394.	3537.1
#3	11783.	85389.	3528.8

Approved: February 12, 2016

Sample Name: L1602005803PS Acquired: 2/11/2016 13:22:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556970-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19449	4.9198	.19358	.97786	.50730	.02459	43.884	.02451
Stddev	.00006	.0053	.00168	.00250	.00117	.00007	.035	.00035
%RSD	.03292	.10687	.86650	.25563	.23092	.27727	.07913	1.4181
#1	.19444	4.9205	.19515	.97546	.50819	.02466	43.883	.02456
#2	.19447	4.9247	.19182	.97766	.50774	.02452	43.919	.02483
#3	.19457	4.9142	.19379	.98045	.50597	.02460	43.849	.02414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09773	.24498	.24361	2.7217	26.212	.57854	34.425	.32950
Stddev	.00053	.00036	.00015	.0254	.085	.00134	.083	.00229
%RSD	.54527	.14595	.06138	.93443	.32519	.23085	.24157	.69606
#1	.09827	.24514	.24344	2.7036	26.199	.57722	34.389	.32969
#2	.09771	.24524	.24367	2.7108	26.303	.57989	34.367	.33169
#3	.09721	.24457	.24371	2.7508	26.134	.57851	34.520	.32712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50244	128.04	.26352	4.9281	.24014	.58738	.19543	22.107
Stddev	.00170	.14	.00109	.0144	.00273	.00424	.00547	.090
%RSD	.33924	.10695	.41263	.29196	1.1387	.72154	2.8014	.40633
#1	.50368	128.09	.26328	4.9376	.24132	.58687	.19053	22.166
#2	.50315	128.14	.26471	4.9351	.24208	.59185	.20134	22.152
#3	.50050	127.88	.26258	4.9115	.23701	.58342	.19441	22.004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602005803PS Acquired: 2/11/2016 13:22:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556970-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49727	1.1187	.49430	.24013	.49574	.51677	1.3624
Stddev	.00394	.0017	.00371	.00172	.00293	.00267	3.3244
%RSD	.79307	.14993	.75112	.71831	.59019	.51678	244.02
#1	.50087	1.1186	.49599	.24123	.49357	.51831	-.26183
#2	.49788	1.1170	.49687	.23814	.49907	.51831	-.83769
#3	.49306	1.1204	.49004	.24102	.49457	.51368	5.1866
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11690.	84885.	3528.5
Stddev	9.	189.	10.9
%RSD	.08117	.22234	.30873
#1	11681.	84772.	3527.1
#2	11690.	85103.	3518.4
#3	11700.	84780.	3540.1

Approved: February 12, 2016

Sample Name: L1602005803SDL Acquired: 2/11/2016 13:26:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG556970-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	.01426	.00108	.00508	.00470	.00001	8.6736	.00017
Stddev	.00044	.00406	.00161	.00086	.00027	.00004	.0595	.00017
%RSD	64.756	28.494	148.38	16.919	5.6681	515.12	.68627	100.47
#1	-.00102	.01339	.00224	.00500	.00440	.00004	8.6278	.00008
#2	-.00018	.01869	.00176	.00426	.00490	-.00003	8.7409	.00007
#3	-.00083	.01070	-.00075	.00597	.00480	.00001	8.6520	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	-.00019	.00018	.16573	.38986	.01947	6.7361	.02188
Stddev	.00022	.00019	.00064	.01239	.02731	.00211	.0645	.00127
%RSD	120.36	100.10	360.86	7.4740	7.0058	10.819	.95802	5.7890
#1	-.00028	-.00036	.00031	.15402	.40703	.01994	6.6832	.02055
#2	.00007	.00002	.00073	.16448	.35836	.02130	6.8080	.02202
#3	-.00034	-.00023	-.00052	.17869	.40419	.01717	6.7171	.02307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	23.363	.00430	.02216	-.00228	-.00218	-.00156	4.2811
Stddev	.00033	.201	.00059	.00500	.00137	.00524	.00395	.0177
%RSD	124.10	.85976	13.603	22.560	59.971	240.50	252.93	.41397
#1	-.00011	23.154	.00438	.01735	-.00214	-.00569	-.00533	4.2973
#2	.00051	23.554	.00368	.02179	-.00099	-.00469	-.00190	4.2838
#3	.00040	23.382	.00485	.02733	-.00371	.00385	.00255	4.2622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602005803SDL Acquired: 2/11/2016 13:26:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG556970-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.14089	-.00208	-.00013	-.00077	.00785	1.6414
Stddev	.00066	.00113	.00340	.00235	.00041	.00030	4.8100
%RSD	182.79	.80369	163.25	1811.4	53.211	3.7700	293.05
#1	-.00017	.13978	.00110	.00224	-.00108	.00786	6.7294
#2	.00015	.14205	-.00565	-.00245	-.00092	.00814	1.0262
#3	.00111	.14085	-.00169	-.00017	-.00031	.00754	-2.8315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12318.	89311.	3559.6
Stddev	22.	391.	32.6
%RSD	.17465	.43789	.91563
#1	12315.	89739.	3596.8
#2	12341.	88972.	3536.0
#3	12298.	89223.	3546.0

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 13:30:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40378	10.218	.40666	.50495	1.0302	.05114	10.315
Stddev	.00211	.036	.00284	.00296	.0100	.00016	.159
%RSD	.52137	.35413	.69741	.58632	.96720	.31198	1.5441
#1	.40213	10.190	.40419	.50159	1.0206	.05098	10.142
#2	.40615	10.259	.40602	.50612	1.0405	.05130	10.457
#3	.40305	10.206	.40976	.50716	1.0296	.05116	10.346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05107	.20648	.51225	.51525	4.1450	51.323	1.0345
Stddev	.00022	.00047	.00126	.00036	.0884	.543	.0110
%RSD	.43265	.22815	.24672	.06967	2.1333	1.0588	1.0644
#1	.05117	.20700	.51109	.51559	4.0570	50.745	1.0231
#2	.05123	.20636	.51359	.51487	4.2338	51.824	1.0450
#3	.05082	.20608	.51206	.51527	4.1443	51.400	1.0353
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.448	.52103	1.0362	51.206	.51497	10.096	.51615
Stddev	.111	.00402	.0033	.518	.00061	.018	.00488
%RSD	1.0638	.77209	.32025	1.0108	.11812	.17768	.94558
#1	10.353	.51685	1.0386	50.656	.51543	10.109	.51680
#2	10.422	.52488	1.0377	51.684	.51428	10.102	.52067
#3	10.571	.52136	1.0324	51.277	.51521	10.075	.51097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 13:30:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2210	.40745	5.1430	1.0309	1.0322	1.0319	.52171
Stddev	.0043	.00084	.0066	.0020	.0107	.0147	.00366
%RSD	.34855	.20670	.12918	.19586	1.0404	1.4271	.70139
#1	1.2189	.40835	5.1470	1.0325	1.0208	1.0149	.51978
#2	1.2259	.40731	5.1467	1.0315	1.0421	1.0413	.52593
#3	1.2182	.40668	5.1354	1.0286	1.0338	1.0394	.51942
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0171	1.0308	F -.07237
Stddev	.0035	.0017	3.2498
%RSD	.34683	.16540	4490.4
#1	1.0137	1.0317	-.61631
#2	1.0208	1.0319	3.4151
#3	1.0169	1.0288	-3.0159
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11825.	85945.	3505.8
Stddev	37.	122.	39.1
%RSD	.31145	.14144	1.1158
#1	11823.	86083.	3546.9
#2	11789.	85851.	3501.6
#3	11863.	85902.	3469.0

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 13:33:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00180	.00008	.00247	.00051	-.00003	-.00053
Stddev	.00211	.00602	.00018	.00217	.00041	.00001	.01421
%RSD	309.61	334.49	229.84	87.616	80.181	26.984	2684.9
#1	.00098	-.00515	.00026	-.00002	.00098	-.00004	-.00526
#2	-.00156	.00518	.00009	.00385	.00031	-.00003	.01545
#3	.00262	.00537	-.00011	.00359	.00024	-.00003	-.01177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	-.00043	-.00054	.00030	-.00966	.00255	-.00200
Stddev	.00004	.00010	.00082	.00184	.01312	.00566	.00120
%RSD	70.890	22.273	151.98	608.37	135.79	222.10	60.133
#1	.00002	-.00049	.00035	-.00156	.00219	-.00389	-.00077
#2	.00007	-.00032	-.00070	.00035	-.00741	.00674	-.00318
#3	.00011	-.00048	-.00128	.00212	-.02376	.00479	-.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09720	.00059	.00099	.03505	.00006	.00542	-.00132
Stddev	.03735	.00186	.00019	.00900	.00066	.00913	.00201
%RSD	38.428	316.80	19.470	25.668	1064.6	168.32	152.38
#1	.08352	.00272	.00119	.04532	.00077	-.00353	-.00362
#2	.13946	-.00063	.00081	.02858	-.00055	.00508	.00011
#3	.06861	-.00034	.00097	.03124	-.00003	.01472	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 13:33:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00245	.00136	.00236	.00069	.00030	-.00522	.00060
Stddev	.00140	.00204	.00253	.00052	.00025	.00409	.00018
%RSD	57.079	149.39	107.21	75.665	83.527	78.275	30.894
#1	-.00089	-.00096	.00466	.00053	.00047	-.00881	.00065
#2	-.00286	.00283	-.00035	.00128	.00001	-.00608	.00075
#3	-.00361	.00221	.00277	.00027	.00042	-.00077	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00078	.00012	F 1.5025
Stddev	.00066	.00010	3.0510
%RSD	84.752	81.530	203.06
#1	-.00026	.00006	4.2666
#2	-.00055	.00006	2.0122
#3	-.00152	.00023	-1.7712
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12069.	88723.	3535.1
Stddev	11.	229.	16.2
%RSD	.08936	.25807	.45813
#1	12081.	88984.	3550.8
#2	12061.	88555.	3518.5
#3	12065.	88630.	3535.9

Approved: February 12, 2016

Sample Name: L1602005804 Acquired: 2/11/2016 13:38:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.06295	-.00022	.01731	.02098	.00017	45.257	.00053
Stddev	.00078	.00455	.00083	.00059	.00036	.00005	.141	.00018
%RSD	197.09	7.2331	368.61	3.4135	1.7056	31.018	.31159	34.957
#1	.00064	.05790	-.00086	.01742	.02139	.00014	45.368	.00074
#2	.00102	.06421	.00071	.01668	.02076	.00014	45.303	.00041
#3	-.00048	.06674	-.00052	.01784	.02079	.00022	45.098	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00063	.00253	.59610	2.0525	.10049	34.072	.08893
Stddev	.00009	.00061	.00061	.03483	.0656	.00281	.194	.00144
%RSD	16.972	96.240	23.957	5.8437	3.1980	2.7928	.56830	1.6191
#1	.00059	.00008	.00286	.62961	1.9773	.10085	33.891	.08861
#2	.00056	.00128	.00183	.59860	2.0982	.10309	34.050	.08767
#3	.00042	.00054	.00289	.56008	2.0820	.09752	34.276	.09050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	121.05	.02593	.08577	-.00129	-.00193	-.00059	22.716
Stddev	.00021	.32	.00062	.00311	.00248	.00404	.00371	.134
%RSD	72.724	.26541	2.3903	3.6264	192.36	209.65	623.94	.58908
#1	.00034	121.33	.02536	.08259	-.00180	.00103	-.00462	22.816
#2	.00048	120.70	.02583	.08880	-.00347	-.00653	.00269	22.768
#3	.00006	121.12	.02659	.08591	.00141	-.00028	.00014	22.564
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602005804 Acquired: 2/11/2016 13:38:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.73548	-.00863	-.00274	-.00051	.01818	2.2679
Stddev	.00083	.00125	.00580	.00270	.00053	.00020	1.5679
%RSD	71.695	.16934	67.179	98.618	104.79	1.1010	69.134
#1	.00045	.73677	-.00455	.00037	-.00067	.01826	3.0308
#2	.00207	.73429	-.00607	-.00450	.00009	.01833	3.3085
#3	.00095	.73536	-.01526	-.00409	-.00094	.01795	.46459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11744.	85277.	3560.5
Stddev	19.	184.	13.2
%RSD	.16066	.21579	.37031
#1	11760.	85453.	3558.7
#2	11724.	85291.	3574.5
#3	11749.	85086.	3548.3

Approved: February 12, 2016

Sample Name: L1602005805 Acquired: 2/11/2016 13:42:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00135	.02771	-.00317	.02693	.02410	-.00002	113.39	.00048
Stddev	.00199	.00167	.00101	.00157	.00040	.00004	.18	.00021
%RSD	148.07	6.0341	31.752	5.8201	1.6488	223.15	.16242	43.511
#1	.00094	.02932	-.00425	.02601	.02436	.00001	113.60	.00049
#2	-.00269	.02598	-.00300	.02873	.02430	-.00001	113.31	.00027
#3	-.00230	.02784	-.00226	.02603	.02365	-.00006	113.26	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00149	.00239	.08970	2.7468	.10661	76.941	.07465
Stddev	.00046	.00041	.00093	.00458	.0207	.00257	.158	.00210
%RSD	249.09	27.750	38.910	5.1085	.75474	2.4066	.20479	2.8073
#1	.00034	.00127	.00217	.09075	2.7653	.10929	76.853	.07597
#2	-.00037	.00196	.00341	.08468	2.7507	.10418	77.123	.07575
#3	-.00052	.00123	.00159	.09366	2.7244	.10636	76.847	.07224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00183	171.65	.05922	.03680	.00171	.00203	.00108	18.163
Stddev	.00019	.27	.00151	.00234	.00040	.00365	.00260	.065
%RSD	10.339	.15816	2.5495	6.3585	23.351	179.70	241.13	.35646
#1	.00205	171.95	.06071	.03864	.00206	.00530	.00030	18.205
#2	.00173	171.55	.05769	.03417	.00179	-.00191	-.00105	18.195
#3	.00171	171.44	.05925	.03760	.00127	.00271	.00397	18.088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602005805 Acquired: 2/11/2016 13:42:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	1.8703	-.01922	-.00125	-.00034	.00463	2.7711
Stddev	.00078	.0028	.00223	.00199	.00143	.00005	2.8324
%RSD	196.84	.15013	11.610	159.87	424.62	.97719	102.21
#1	-.00004	1.8732	-.02161	.00104	-.00164	.00462	5.8768
#2	-.00007	1.8701	-.01719	-.00260	-.00056	.00468	2.1060
#3	.00129	1.8676	-.01887	-.00219	.00119	.00459	.33047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11539.	83572.	3537.4
Stddev	28.	205.	19.6
%RSD	.24084	.24589	.55502
#1	11542.	83764.	3518.5
#2	11509.	83355.	3536.0
#3	11565.	83598.	3557.7

Approved: February 12, 2016

Sample Name: L1602005806 Acquired: 2/11/2016 13:46:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.02606	-.00033	.02785	.02268	-.00003	112.36	.00059
Stddev	.00025	.00507	.00130	.00224	.00100	.00003	.19	.00017
%RSD	225.72	19.454	387.78	8.0504	4.4149	107.91	.16529	28.793
#1	.00000	.02240	.00088	.02788	.02361	-.00003	112.55	.00058
#2	.00006	.02394	-.00018	.02560	.02280	.00000	112.36	.00077
#3	-.00040	.03185	-.00170	.03008	.02162	-.00006	112.18	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00060	.00181	.07035	2.8100	.10671	76.274	.07247
Stddev	.00012	.00012	.00093	.01190	.0355	.00359	.169	.00203
%RSD	167.44	19.444	51.497	16.913	1.2639	3.3598	.22204	2.8073
#1	-.00005	.00053	.00167	.08180	2.7704	.11038	76.270	.07461
#2	.00004	.00074	.00281	.07121	2.8391	.10652	76.445	.07056
#3	-.00021	.00054	.00096	.05805	2.8205	.10322	76.107	.07224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00197	170.22	.05804	.03661	.00071	-.00428	.00241	17.993
Stddev	.00024	.43	.00117	.00742	.00200	.00421	.00385	.125
%RSD	12.413	.25203	2.0224	20.258	283.40	98.382	159.57	.69704
#1	.00179	170.70	.05816	.04336	.00051	-.00464	.00664	18.099
#2	.00225	170.06	.05915	.02867	.00280	-.00830	-.00088	18.025
#3	.00187	169.88	.05681	.03779	-.00119	.00010	.00147	17.854
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602005806 Acquired: 2/11/2016 13:46:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	1.8531	-.01603	-.00524	-.00026	.00431	2.1534
Stddev	.00012	.0020	.00239	.00104	.00022	.00019	3.3249
%RSD	85.390	.10566	14.912	19.914	85.197	4.4341	154.41
#1	.00017	1.8551	-.01844	-.00644	-.00049	.00443	-.49124
#2	.00026	1.8529	-.01366	-.00456	-.00006	.00440	5.8860
#3	.00001	1.8512	-.01598	-.00472	-.00022	.00409	1.0653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11536.	84088.	3544.7
Stddev	21.	241.	21.3
%RSD	.18599	.28659	.60062
#1	11515.	84346.	3520.2
#2	11534.	83868.	3555.0
#3	11558.	84051.	3558.8

Approved: February 12, 2016

Sample Name: L1602005807 Acquired: 2/11/2016 13:50:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	3.9243	.00098	.24621	.01111	.00313	F 347.09
Stddev	.00195	.0124	.00083	.00335	.00085	.00008	.82
%RSD	197.20	.31529	84.143	1.3594	7.6661	2.4957	.23492
#1	-.00102	3.9367	.00035	.24734	.01013	.00304	347.95
#2	.00287	3.9240	.00068	.24885	.01158	.00319	346.33
#3	.00112	3.9120	.00192	.24245	.01162	.00316	346.99
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03302	.34506	.00726	.03770	11.161	11.733	.61154
Stddev	.00054	.00384	.00193	.00105	.034	.103	.00312
%RSD	1.6338	1.1126	26.651	2.7917	.30409	.87680	.51065
#1	.03333	.34884	.00856	.03862	11.191	11.852	.61406
#2	.03333	.34516	.00504	.03655	11.124	11.668	.61252
#3	.03240	.34116	.00819	.03792	11.168	11.680	.60805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	350.26	12.801	-.00041	F 581.90	.97671	.02364	.00428
Stddev	1.35	.034	.00032	3.94	.00914	.00317	.00231
%RSD	.38660	.26169	76.909	.67642	.93596	13.425	53.973
#1	351.37	12.833	-.00060	583.24	.98598	.02448	.00592
#2	348.75	12.766	-.00005	577.47	.97645	.02631	.00164
#3	350.65	12.803	-.00060	584.99	.96770	.02013	.00528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: February 12, 2016

Sample Name: L1602005807 Acquired: 2/11/2016 13:50:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00113	-.00672	22.101	.00043	3.9574	F -.04171	-.00478
Stddev	.00802	.00339	.210	.00190	.0156	.00575	.00088
%RSD	712.51	50.434	.94839	441.26	.39355	13.796	18.449
#1	-.01012	-.00287	22.316	.00256	3.9749	-.03606	-.00553
#2	.00525	-.00925	22.091	-.00022	3.9453	-.04756	-.00501
#3	.00150	-.00804	21.897	-.00106	3.9519	-.04151	-.00381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00104	1.3498	4.5363
Stddev	.00058	.0127	3.4394
%RSD	56.358	.93736	75.819
#1	.00170	1.3610	2.1139
#2	.00078	1.3523	3.0221
#3	.00062	1.3361	8.4730
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10715.	77020.	3419.8
Stddev	78.	756.	14.8
%RSD	.72941	.98114	.43192
#1	10805.	76383.	3436.2
#2	10675.	76822.	3415.7
#3	10666.	77855.	3407.5

Approved: February 12, 2016

Sample Name: L1602005808 Acquired: 2/11/2016 13:54:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00188	3.7844	.00010	.24159	.00970	.00305	F 342.11
Stddev	.00118	.0100	.00199	.00127	.00042	.00002	1.30
%RSD	62.772	.26447	1917.7	.52747	4.3121	.68679	.38006
#1	.00165	3.7931	-.00043	.24107	.00968	.00306	343.08
#2	.00317	3.7865	-.00156	.24304	.01013	.00303	340.63
#3	.00083	3.7734	.00230	.24066	.00930	.00307	342.61
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03273	.33940	.00212	.03687	9.6161	11.437	.60110
Stddev	.00041	.00340	.00089	.00170	.0176	.113	.00059
%RSD	1.2391	1.0017	42.201	4.5981	.18294	.98879	.09767
#1	.03294	.34155	.00148	.03673	9.6345	11.383	.60137
#2	.03299	.34117	.00314	.03864	9.5995	11.362	.60042
#3	.03226	.33548	.00173	.03525	9.6142	11.567	.60150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	345.54	12.593	-.00068	F 562.40	.95909	.00206	.00314
Stddev	.64	.077	.00019	3.62	.00909	.00453	.00185
%RSD	.18589	.61300	28.201	.64326	.94794	219.51	58.973
#1	346.24	12.650	-.00088	560.39	.96710	.00008	.00221
#2	344.98	12.505	-.00049	566.58	.96096	-.00114	.00195
#3	345.39	12.624	-.00068	560.24	.94921	.00724	.00528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: February 12, 2016

Sample Name: L1602005808 Acquired: 2/11/2016 13:54:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00267	-.00484	21.621	.00018	3.8900	F -.04411	-.00212
Stddev	.00415	.00162	.160	.00123	.0214	.00884	.00020
%RSD	155.35	33.492	.73780	681.10	.54916	20.035	9.2861
#1	.00143	-.00672	21.752	-.00090	3.9093	-.05407	-.00202
#2	-.00257	-.00389	21.668	.00151	3.8670	-.04107	-.00198
#3	-.00688	-.00393	21.443	-.00007	3.8937	-.03720	-.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00033	1.3268	5.2258
Stddev	.00061	.0142	4.0069
%RSD	186.91	1.0711	76.674
#1	-.00038	1.3387	.71487
#2	.00062	1.3306	6.5905
#3	.00074	1.3111	8.3721
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10894.	77121.	3410.0
Stddev	73.	1036.	22.2
%RSD	.66853	1.3439	.65174
#1	10815.	78056.	3408.1
#2	10907.	77302.	3388.9
#3	10959.	76007.	3433.2

Approved: February 12, 2016

Sample Name: L1602005809 Acquired: 2/11/2016 13:58:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.09058	.00035	.06899	.05041	-.00000	112.62
Stddev	.00044	.00381	.00235	.00239	.00074	.00001	.50
%RSD	128.54	4.2049	675.49	3.4698	1.4688	452.93	.44699
#1	-.00017	.08618	.00298	.06630	.04957	-.00002	112.11
#2	.00059	.09279	-.00042	.07088	.05067	.00000	113.12
#3	.00060	.09276	-.00152	.06979	.05098	.00001	112.64
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	-.00040	.08035	.00187	19.451	222.24	.39238
Stddev	.00018	.00007	.00028	.00152	.140	.75	.00419
%RSD	102.28	18.853	.34718	81.259	.71839	.33792	1.0681
#1	-.00003	-.00037	.08056	.00211	19.313	221.46	.38940
#2	.00032	-.00048	.08045	.00326	19.592	222.95	.39717
#3	.00024	-.00034	.08003	.00025	19.448	222.30	.39056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	103.76	1.3951	.00054	177.10	.00132	.10768	-.00113
Stddev	.83	.0036	.00036	.81	.00079	.00287	.00229
%RSD	.80241	.25432	67.398	.45471	60.290	2.6674	202.92
#1	102.83	1.3910	.00039	176.20	.00215	.11086	-.00377
#2	104.42	1.3975	.00027	177.73	.00057	.10689	.00030
#3	104.04	1.3968	.00095	177.39	.00123	.10529	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602005809 Acquired: 2/11/2016 13:58:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	-.00320	15.651	.00013	2.2711	-.00802	-.00175
Stddev	.00533	.00176	.030	.00089	.0144	.00597	.00192
%RSD	826.56	55.139	.19313	687.98	.63196	74.418	109.82
#1	.00235	-.00492	15.668	-.00014	2.2549	-.01359	.00047
#2	.00492	-.00326	15.669	-.00059	2.2822	-.00172	-.00285
#3	-.00533	-.00140	15.616	.00113	2.2762	-.00874	-.00286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00081	.00416	F -4.8835
Stddev	.00069	.00008	3.0435
%RSD	84.951	1.8757	62.322
#1	-.00146	.00416	-4.1596
#2	-.00087	.00424	-2.2672
#3	-.00009	.00408	-8.2237
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11391.	82825.	3641.0
Stddev	23.	942.	22.8
%RSD	.19788	1.1374	.62574
#1	11417.	83907.	3652.7
#2	11374.	82385.	3614.7
#3	11383.	82184.	3655.5

Approved: February 12, 2016

Sample Name: L1602005810 Acquired: 2/11/2016 14:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.02574	.00094	.06533	.03536	.00002	103.03
Stddev	.00100	.00459	.00426	.00312	.00095	.00007	.25
%RSD	524.54	17.841	452.29	4.7820	2.6880	335.53	.24101
#1	.00005	.02601	-.00392	.06390	.03544	-.00005	102.91
#2	.00067	.03019	.00401	.06318	.03437	.00009	103.32
#3	-.00129	.02102	.00274	.06892	.03627	.00003	102.87
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00054	.01640	-.00033	14.610	211.77	.37453
Stddev	.00011	.00013	.00072	.00072	.078	.45	.00263
%RSD	1163.3	24.346	4.3729	217.96	.53617	.21218	.70096
#1	-.00013	-.00069	.01669	-.00032	14.652	211.67	.37164
#2	.00004	-.00050	.01693	.00038	14.519	212.25	.37677
#3	.00006	-.00044	.01559	-.00105	14.658	211.37	.37519
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	100.05	1.2870	.00009	172.85	.00070	.04497	-.00119
Stddev	.38	.0058	.00041	.28	.00018	.00406	.00203
%RSD	.38242	.45318	461.95	.16430	25.624	9.0280	170.79
#1	99.729	1.2885	.00051	172.65	.00052	.04695	-.00217
#2	100.47	1.2919	-.00032	173.18	.00088	.04030	.00115
#3	99.938	1.2805	.00007	172.73	.00071	.04765	-.00255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602005810 Acquired: 2/11/2016 14:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	-.00517	10.873	.00045	1.9423	-.00996	-.00304
Stddev	.00268	.00424	.066	.00037	.0053	.00555	.00155
%RSD	258.57	82.013	.60390	80.674	.27494	55.698	50.970
#1	-.00401	-.00957	10.925	.00014	1.9379	-.01139	-.00362
#2	-.00030	-.00486	10.895	.00037	1.9483	-.00384	-.00128
#3	.00120	-.00110	10.799	.00085	1.9408	-.01465	-.00420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00044	.00283	F -2.9721
Stddev	.00018	.00018	2.3330
%RSD	40.937	6.2829	78.496
#1	-.00023	.00303	-3.5390
#2	-.00053	.00269	-.40788
#3	-.00055	.00277	-4.9693
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11450.	82669.	3520.1
Stddev	32.	205.	16.3
%RSD	.27760	.24787	.46310
#1	11414.	82702.	3502.6
#2	11471.	82450.	3523.0
#3	11466.	82856.	3534.8

Approved: February 12, 2016

Sample Name: L1602014102 Acquired: 2/11/2016 14:06:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.06529	-.00207	.14842	.01964	.00006	232.37
Stddev	.00039	.00433	.00117	.00233	.00038	.00006	1.03
%RSD	158.57	6.6252	56.612	1.5706	1.9406	97.925	.44485
#1	.00005	.06829	-.00333	.14884	.01946	.00007	233.54
#2	-.00069	.06724	-.00189	.15052	.01937	.00011	231.93
#3	-.00009	.06033	-.00100	.14591	.02007	-.00000	231.62
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00260	.01426	.00332	.00543	.02908	7.4808	.41168
Stddev	.00015	.00053	.00047	.00073	.01004	.0640	.00379
%RSD	5.8993	3.7393	14.212	13.468	34.512	.85569	.92147
#1	.00277	.01462	.00289	.00594	.02151	7.5462	.41602
#2	.00259	.01450	.00383	.00577	.04047	7.4182	.40897
#3	.00246	.01364	.00325	.00459	.02528	7.4779	.41006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	258.48	1.3201	-.00005	F 281.06	.04268	.00853	-.00095
Stddev	.85	.0056	.00041	1.43	.00051	.00946	.00576
%RSD	.32782	.42484	740.11	.50970	1.2019	110.95	605.72
#1	259.45	1.3219	.00012	282.69	.04235	.01010	-.00077
#2	257.85	1.3245	.00024	280.50	.04327	.01710	-.00680
#3	258.15	1.3138	-.00052	279.99	.04241	-.00162	.00472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: February 12, 2016

Sample Name: L1602014102 Acquired: 2/11/2016 14:06:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00365	-.00466	13.083	.00032	4.0744	F -.03273	-.00141
Stddev	.00200	.00267	.096	.00008	.0191	.00456	.00588
%RSD	54.933	57.182	.73159	26.304	.46981	13.933	417.50
#1	.00139	-.00165	13.141	.00041	4.0954	-.02769	-.00813
#2	.00435	-.00561	13.137	.00027	4.0699	-.03394	.00112
#3	.00521	-.00673	12.973	.00026	4.0579	-.03656	.00279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00109	.04379	1.9782
Stddev	.00090	.00035	2.6342
%RSD	82.596	.79948	133.16
#1	-.00135	.04391	3.0687
#2	-.00009	.04407	-1.0261
#3	-.00183	.04340	3.8919
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11010.	79587.	3466.6
Stddev	44.	463.	7.9
%RSD	.39968	.58203	.22920
#1	11035.	79407.	3460.8
#2	10959.	79240.	3475.7
#3	11036.	80113.	3463.4

Approved: February 12, 2016

Sample Name: L1602014103 Acquired: 2/11/2016 14:10:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	.04286	.00125	.14892	.01925	.00004	235.55
Stddev	.00053	.01119	.00162	.00087	.00014	.00005	.74
%RSD	78.450	26.104	129.76	.58572	.74936	106.53	.31221
#1	-.00125	.04999	-.00021	.14925	.01909	.00003	236.39
#2	-.00023	.02996	.00299	.14958	.01934	.00001	235.12
#3	-.00053	.04861	.00097	.14793	.01933	.00010	235.12
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00287	.01473	.00246	.00415	.00294	7.3842	.41783
Stddev	.00019	.00021	.00059	.00170	.01363	.0372	.00284
%RSD	6.5316	1.4173	23.816	40.904	464.00	.50413	.68043
#1	.00307	.01454	.00304	.00485	.00511	7.3772	.41849
#2	.00282	.01470	.00248	.00539	-.01165	7.4245	.41471
#3	.00270	.01495	.00187	.00221	.01535	7.3510	.42029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	263.29	1.3321	-.00015	F 284.44	.04391	.00358	-.00234
Stddev	.56	.0040	.00026	1.04	.00121	.00999	.00208
%RSD	.21323	.29653	170.97	.36526	2.7473	278.66	88.893
#1	263.26	1.3288	-.00011	285.63	.04448	.00344	-.00419
#2	262.74	1.3365	-.00043	283.93	.04474	-.00633	-.00274
#3	263.86	1.3311	.00008	283.75	.04253	.01364	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: February 12, 2016

Sample Name: L1602014103 Acquired: 2/11/2016 14:10:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00090	-.00483	13.313	-.00020	4.1424	F -.03294	-.00088
Stddev	.00384	.00326	.155	.00102	.0106	.00473	.00226
%RSD	425.05	67.500	1.1659	513.19	.25601	14.351	257.83
#1	.00220	-.00218	13.383	.00051	4.1538	-.02810	-.00320
#2	-.00519	-.00847	13.421	-.00137	4.1329	-.03316	.00131
#3	.00028	-.00384	13.135	.00027	4.1404	-.03755	-.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00060	.04453	4.4661
Stddev	.00042	.00048	.6331
%RSD	69.639	1.0719	14.177
#1	-.00087	.04475	3.7373
#2	-.00012	.04485	4.8804
#3	-.00081	.04398	4.7806
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11016.	80628.	3512.0
Stddev	161.	178.	13.1
%RSD	1.4595	.22075	.37288
#1	11016.	80441.	3518.9
#2	11176.	80796.	3520.1
#3	10855.	80647.	3496.9

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 14:14:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41607	10.581	.41519	.52427	1.0551	.05308	10.605
Stddev	.00021	.040	.00475	.00197	.0120	.00033	.108
%RSD	.05100	.38080	1.1432	.37506	1.1359	.61419	1.0167
#1	.41629	10.538	.40977	.52421	1.0428	.05271	10.484
#2	.41606	10.617	.41862	.52627	1.0557	.05329	10.639
#3	.41586	10.589	.41718	.52234	1.0668	.05325	10.691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05248	.21275	.53450	.53142	4.2981	52.496	1.0595
Stddev	.00040	.00065	.00214	.00071	.0788	.639	.0132
%RSD	.76663	.30748	.40077	.13307	1.8336	1.2164	1.2421
#1	.05272	.21312	.53203	.53115	4.2089	51.840	1.0443
#2	.05270	.21314	.53569	.53222	4.3268	52.531	1.0673
#3	.05201	.21200	.53578	.53089	4.3585	53.116	1.0668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.831	.53299	1.0600	52.441	.53161	10.393	.52981
Stddev	.174	.00933	.0030	.645	.00184	.026	.00523
%RSD	1.6082	1.7498	.28484	1.2295	.34658	.24841	.98692
#1	10.879	.52277	1.0615	51.741	.53183	10.406	.52377
#2	10.638	.53514	1.0621	52.570	.53333	10.409	.53306
#3	10.976	.54105	1.0566	53.011	.52966	10.363	.53258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 14:14:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2597	.40577	5.2704	1.0615	1.0552	1.0602	.53678
Stddev	.0027	.00165	.0074	.0030	.0137	.0138	.00333
%RSD	.21868	.40713	.14044	.28672	1.3012	1.2981	.62075
#1	1.2590	.40766	5.2721	1.0623	1.0399	1.0494	.54062
#2	1.2627	.40504	5.2768	1.0642	1.0591	1.0555	.53504
#3	1.2574	.40461	5.2623	1.0582	1.0665	1.0757	.53468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0616	1.0695	F 3.5057
Stddev	.0046	.0008	2.8061
%RSD	.43278	.07733	80.044
#1	1.0566	1.0697	6.5962
#2	1.0625	1.0703	1.1172
#3	1.0657	1.0686	2.8038
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11350.	82244.	3387.2
Stddev	65.	673.	42.3
%RSD	.57286	.81780	1.2475
#1	11379.	83000.	3434.8
#2	11396.	81714.	3372.6
#3	11276.	82017.	3354.2

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 14:18:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00324	.00077	-.00054	.00022	.00002	.00603
Stddev	.00146	.00753	.00216	.00080	.00033	.00002	.02147
%RSD	507.79	232.26	282.16	147.38	150.31	121.44	356.17
#1	.00101	-.00321	-.00158	.00025	.00059	.00004	.01515
#2	-.00000	.01152	.00119	-.00135	.00005	-.00001	.02142
#3	-.00187	.00142	.00269	-.00052	.00001	.00002	-.01849
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	-.00036	-.00004	.00059	.01153	.11827	.00000
Stddev	.00005	.00040	.00018	.00059	.00606	.07636	.00377
%RSD	24.350	110.91	424.07	100.26	52.608	64.565	161820.
#1	-.00016	.00006	-.00019	.00076	.01798	.16650	.00341
#2	-.00017	-.00041	-.00010	.00108	.00595	.15808	-.00404
#3	-.00025	-.00073	.00016	-.00007	.01065	.03023	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.13128	.00344	.00105	.05433	.00005	.00308	.00011
Stddev	.01398	.00107	.00024	.01732	.00095	.00585	.00264
%RSD	10.647	30.974	23.215	31.871	1799.4	190.00	2356.7
#1	.12376	.00349	.00080	.04803	-.00102	.00309	.00059
#2	.14741	.00448	.00107	.04105	.00077	.00893	-.00274
#3	.12267	.00235	.00129	.07392	.00041	-.00278	.00249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 14:18:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00263	-.00159	.00471	.00090	.00055	-.00459	-.00211
Stddev	.00231	.00739	.00175	.00036	.00014	.00196	.00259
%RSD	87.841	463.30	37.193	40.388	25.463	42.771	122.67
#1	-.00381	.00132	.00418	.00048	.00039	-.00608	-.00438
#2	-.00412	-.00999	.00666	.00107	.00062	-.00236	.00071
#3	.00003	.00389	.00328	.00114	.00064	-.00534	-.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00060	.00009	F -.76711
Stddev	.00072	.00020	2.9392
%RSD	120.09	231.92	383.16
#1	.00007	-.00012	2.4412
#2	-.00050	.00010	-3.3300
#3	-.00137	.00029	-1.4125
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11782.	86323.	3468.6
Stddev	74.	913.	4.5
%RSD	.62495	1.0579	.12969
#1	11727.	87369.	3467.2
#2	11753.	85916.	3473.6
#3	11865.	85684.	3464.9

Approved: February 12, 2016

Sample Name: L1602005807 Acquired: 2/11/2016 14:29:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00099	.74838	.00030	.04624	.00298	.00063	71.482
Stddev	.00071	.00587	.00236	.00087	.00011	.00004	1.266
%RSD	72.129	.78503	783.16	1.8855	3.7823	6.7834	1.7707
#1	-.00057	.75458	.00003	.04625	.00309	.00063	70.677
#2	-.00059	.74766	.00279	.04711	.00287	.00059	72.941
#3	-.00182	.74290	-.00191	.04537	.00297	.00067	70.828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00619	.06875	.00168	.00743	2.1791	2.1896	.11514
Stddev	.00007	.00014	.00079	.00030	.0212	.1070	.00241
%RSD	1.1088	.20129	46.773	4.0342	.97132	4.8871	2.0925
#1	.00621	.06864	.00091	.00710	2.1655	2.0714	.11464
#2	.00611	.06871	.00165	.00767	2.2035	2.2799	.11776
#3	.00624	.06890	.00249	.00754	2.1684	2.2174	.11302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	68.282	2.5419	-.00032	116.76	.19798	.00745	.00025
Stddev	1.216	.0435	.00011	1.94	.00165	.00244	.00293
%RSD	1.7801	1.7098	34.934	1.6643	.83237	32.742	1159.3
#1	67.412	2.5104	-.00030	115.63	.19684	.00921	-.00064
#2	69.671	2.5915	-.00044	119.00	.19987	.00847	-.00212
#3	67.763	2.5238	-.00022	115.64	.19723	.00466	.00352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602005807 Acquired: 2/11/2016 14:29:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00217	-.00325	4.1638	-.00024	.76154	-.00511	.00005
Stddev	.00313	.00259	.0137	.00127	.01356	.00187	.00142
%RSD	144.12	79.720	.32834	533.67	1.7812	36.527	2666.2
#1	.00183	-.00259	4.1484	-.00041	.75201	-.00523	.00092
#2	.00546	-.00106	4.1685	.00111	.77707	-.00319	.00082
#3	-.00077	-.00612	4.1744	-.00141	.75554	-.00691	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00113	.27881	F -1.4580
Stddev	.00068	.00149	1.9279
%RSD	60.457	.53301	132.23
#1	-.00086	.27723	-1.0379
#2	-.00191	.28018	.22515
#3	-.00062	.27903	-3.5614
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11904.	86562.	3545.5
Stddev	56.	107.	40.6
%RSD	.46940	.12312	1.1437
#1	11905.	86504.	3555.8
#2	11848.	86685.	3500.7
#3	11960.	86496.	3579.9

Approved: February 12, 2016

Sample Name: L1602005808 Acquired: 2/11/2016 14:33:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.74864	.00066	.04616	.00254	.00062	72.928	.00631
Stddev	.00105	.00259	.00344	.00117	.00056	.00002	.259	.00012
%RSD	255.58	.34588	519.38	2.5377	22.086	3.5312	.35582	1.9061
#1	-.00112	.74890	-.00331	.04574	.00232	.00059	72.840	.00619
#2	-.00091	.74592	.00264	.04526	.00212	.00063	72.723	.00643
#3	.00080	.75108	.00266	.04749	.00317	.00063	73.220	.00632
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07032	-.00038	.00835	1.9557	2.2054	.11579	69.479	2.5851
Stddev	.00037	.00129	.00037	.0035	.0507	.00139	.242	.0025
%RSD	.52572	338.57	4.3985	.18027	2.3000	1.2015	.34864	.09580
#1	.07014	-.00133	.00862	1.9591	2.1678	.11569	69.372	2.5826
#2	.07074	.00109	.00793	1.9560	2.2631	.11723	69.309	2.5853
#3	.07007	-.00090	.00849	1.9521	2.1854	.11445	69.756	2.5875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	119.08	.20176	.00632	-.00012	-.00025	-.00132	4.2400
Stddev	.00015	.42	.00061	.00243	.00073	.00065	.00426	.0039
%RSD	115.81	.35206	.30308	38.414	616.49	255.10	323.79	.09253
#1	-.00030	119.05	.20106	.00603	.00053	-.00099	.00307	4.2421
#2	-.00009	118.67	.20203	.00405	-.00091	.00023	-.00543	4.2425
#3	-.00001	119.51	.20219	.00888	.00003	-.00001	-.00159	4.2355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602005808 Acquired: 2/11/2016 14:33:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.77798	-.01319	-.00163	.00004	.28500	.89367
Stddev	.00085	.00321	.00432	.00120	.00053	.00077	2.5761
%RSD	656.73	.41273	32.712	73.827	1314.7	.27034	288.27
#1	.00027	.77880	-.01012	-.00292	.00050	.28437	.99574
#2	-.00110	.77445	-.01134	-.00145	-.00054	.28586	3.4173
#3	.00044	.78071	-.01813	-.00053	.00016	.28478	-1.7320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12008.	85893.	3562.9
Stddev	68.	559.	30.7
%RSD	.56494	.65098	.86111
#1	12021.	85839.	3594.9
#2	11935.	85363.	3560.1
#3	12069.	86477.	3533.7

Approved: February 12, 2016

Sample Name: L1602005809 Acquired: 2/11/2016 14:37:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.01994	.00040	.01095	.01054	-.00004	23.251
Stddev	.00069	.00549	.00297	.00167	.00048	.00005	.593
%RSD	1610.6	27.555	743.14	15.290	4.5335	127.90	2.5485
#1	.00075	.01600	-.00300	.01088	.01045	-.00005	22.701
#2	-.00047	.01760	.00168	.00932	.01105	.00002	23.879
#3	-.00041	.02621	.00252	.01266	.01011	-.00009	23.174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	-.00030	.01531	-.00060	3.9818	45.363	.07574
Stddev	.00011	.00026	.00102	.00096	.0955	1.285	.00462
%RSD	269.19	84.305	6.6796	161.04	2.3987	2.8329	6.0990
#1	-.00001	-.00046	.01627	-.00112	3.8874	44.224	.07347
#2	-.00017	-.00001	.01424	.00051	4.0784	46.756	.08105
#3	.00005	-.00044	.01543	-.00119	3.9795	45.109	.07269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	21.341	.28694	-.00026	36.580	.00034	.02619	.00033
Stddev	.516	.00681	.00041	.897	.00030	.00661	.00329
%RSD	2.4171	2.3749	157.86	2.4535	85.619	25.228	1005.2
#1	20.901	.28008	-.00027	35.795	.00033	.01860	-.00149
#2	21.909	.29371	-.00066	37.559	.00006	.02931	.00412
#3	21.214	.28703	.00016	36.385	.00065	.03066	-.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602005809 Acquired: 2/11/2016 14:37:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00259	-.00683	3.1043	.00119	.45910	.00271	.00072
Stddev	.00478	.00735	.0102	.00079	.01198	.00209	.00209
%RSD	184.94	107.67	.32980	66.198	2.6085	76.996	290.58
#1	-.00796	-.00393	3.1057	.00145	.44807	.00489	.00279
#2	-.00100	-.00137	3.1138	.00182	.47184	.00253	.00076
#3	.00120	-.01519	3.0935	.00031	.45739	.00072	-.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00018	.00154	F -.21469
Stddev	.00038	.00013	.29923
%RSD	209.01	8.1106	139.38
#1	.00017	.00165	.10436
#2	-.00013	.00157	-.48909
#3	-.00059	.00141	-.25934
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11993.	87194.	3577.5
Stddev	29.	1156.	76.3
%RSD	.24232	1.3259	2.1315
#1	12010.	88468.	3656.2
#2	12010.	86903.	3504.0
#3	11960.	86211.	3572.2

Approved: February 12, 2016

Sample Name: L1602005810 Acquired: 2/11/2016 14:41:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.01086	.00031	.01175	.00739	.00002	21.005
Stddev	.00068	.00280	.00148	.00107	.00096	.00002	.420
%RSD	165.90	25.827	472.08	9.1315	12.972	116.32	1.9994
#1	-.00033	.00763	.00120	.01130	.00820	.00005	20.947
#2	-.00113	.01265	-.00139	.01297	.00633	.00000	21.452
#3	.00023	.01230	.00113	.01097	.00765	.00001	20.618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	-.00021	.00284	.00088	2.9828	43.162	.07591
Stddev	.00023	.00024	.00037	.00066	.0593	.813	.00419
%RSD	165.64	110.82	13.035	75.284	1.9866	1.8827	5.5159
#1	.00012	.00004	.00314	.00125	2.9582	43.002	.07846
#2	-.00031	-.00044	.00243	.00127	3.0504	44.043	.07819
#3	-.00022	-.00024	.00294	.00011	2.9399	42.442	.07107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.379	.26052	.00000	35.265	-.00141	.01412	-.00057
Stddev	.406	.00270	.00011	.679	.00082	.01028	.00080
%RSD	1.9924	1.0347	2119.9	1.9249	57.796	72.793	140.54
#1	20.244	.25803	.00011	35.156	-.00047	.02444	-.00039
#2	20.836	.26338	-.00010	35.992	-.00184	.00389	-.00144
#3	20.059	.26014	-.00000	34.648	-.00192	.01402	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602005810 Acquired: 2/11/2016 14:41:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00130	-.00118	2.1861	.00090	.39086	-.00572	.00012
Stddev	.00045	.00566	.0033	.00074	.00865	.00651	.00191
%RSD	34.229	477.56	.14963	82.371	2.2143	113.87	1607.6
#1	-.00176	.00247	2.1830	.00051	.38804	.00012	.00074
#2	-.00087	.00168	2.1895	.00176	.40058	-.00454	.00164
#3	-.00129	-.00770	2.1858	.00044	.38397	-.01274	-.00203
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00103	.00137	F -1.7370
Stddev	.00053	.00001	3.6404
%RSD	51.272	.99616	209.58
#1	-.00160	.00138	-5.6412
#2	-.00090	.00136	1.5643
#3	-.00057	.00135	-1.1341
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12174.	87501.	3572.9
Stddev	55.	261.	58.9
%RSD	.45220	.29863	1.6496
#1	12138.	87744.	3546.6
#2	12238.	87534.	3531.7
#3	12147.	87224.	3640.4

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 14:45:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40725	10.336	.41412	.51519	1.0460	.05161	10.427
Stddev	.00093	.026	.00162	.00407	.0220	.00005	.210
%RSD	.22817	.24806	.39226	.78906	2.1045	.10200	2.0152
#1	.40623	10.307	.41598	.51162	1.0253	.05162	10.193
#2	.40806	10.344	.41342	.51432	1.0691	.05165	10.599
#3	.40747	10.357	.41296	.51961	1.0436	.05155	10.490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05162	.20852	.51865	.52250	4.2305	51.916	1.0482
Stddev	.00012	.00060	.00284	.00056	.0860	.933	.0209
%RSD	.23156	.28911	.54731	.10779	2.0338	1.7979	1.9911
#1	.05173	.20913	.51647	.52261	4.1461	51.056	1.0290
#2	.05164	.20852	.52186	.52301	4.3181	52.909	1.0704
#3	.05149	.20792	.51763	.52189	4.2274	51.784	1.0451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.532	.53132	1.0429	51.972	.52245	10.292	.52257
Stddev	.229	.01156	.0044	1.042	.00114	.023	.00461
%RSD	2.1781	2.1749	.42215	2.0046	.21802	.22264	.88296
#1	10.277	.51850	1.0475	50.966	.52368	10.315	.52741
#2	10.721	.54093	1.0424	53.046	.52225	10.292	.51822
#3	10.598	.53454	1.0387	51.903	.52143	10.269	.52207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 14:45:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2409	.41252	5.2199	1.0440	1.0467	1.0544	.52363
Stddev	.0066	.00281	.0146	.0022	.0212	.0321	.00229
%RSD	.53016	.68124	.27981	.20893	2.0218	3.0485	.43802
#1	1.2469	.40944	5.2351	1.0462	1.0267	1.0299	.52514
#2	1.2418	.41495	5.2187	1.0419	1.0689	1.0908	.52475
#3	1.2339	.41316	5.2059	1.0438	1.0447	1.0424	.52099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0382	1.0453	F 2.2759
Stddev	.0042	.0030	1.2744
%RSD	.40543	.28564	55.994
#1	1.0341	1.0484	1.7261
#2	1.0425	1.0450	1.3688
#3	1.0381	1.0425	3.7329
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11898.	86389.	3470.7
Stddev	44.	376.	14.3
%RSD	.37137	.43554	.41136
#1	11848.	85969.	3482.5
#2	11929.	86696.	3454.8
#3	11918.	86503.	3474.7

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 14:49:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00512	.00149	.00044	.00030	-.00003	-.00659
Stddev	.00075	.00249	.00106	.00151	.00012	.00004	.00533
%RSD	2210.2	48.577	71.325	341.39	41.782	127.13	80.887
#1	-.00027	.00226	.00065	-.00060	.00026	-.00003	-.01189
#2	.00089	.00675	.00268	.00218	.00019	.00001	-.00123
#3	-.00052	.00636	.00113	-.00025	.00044	-.00007	-.00664
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	-.00026	-.00057	.00008	-.00145	.05403	-.00125
Stddev	.00027	.00010	.00048	.00111	.01317	.03023	.00344
%RSD	177.76	40.095	83.969	1462.8	906.70	55.961	273.94
#1	-.00045	-.00020	-.00087	-.00040	-.00545	.07120	.00268
#2	.00009	-.00019	-.00082	-.00072	-.01215	.07177	-.00366
#3	-.00010	-.00037	-.00002	.00135	.01325	.01912	-.00278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01346	.00218	.00124	.02057	.00042	.00160	.00025
Stddev	.02677	.00113	.00034	.01246	.00050	.00322	.00131
%RSD	198.90	51.856	27.136	60.549	118.75	201.64	519.88
#1	.04434	.00285	.00149	.03274	-.00015	.00517	-.00118
#2	-.00093	.00282	.00086	.00784	.00063	-.00107	.00054
#3	-.00304	.00087	.00137	.02115	.00077	.00069	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: LLCCV Acquired: 2/11/2016 14:53:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00901	.16577	.00727	.07686	.00842	.00150	.40482
Stddev	.00205	.00547	.00145	.00196	.00096	.00003	.01854
%RSD	22.778	3.3024	19.906	2.5475	11.404	1.7538	4.5796
#1	.00819	.16029	.00608	.07847	.00773	.00147	.41278
#2	.01135	.16578	.00888	.07468	.00952	.00153	.38363
#3	.00750	.17124	.00686	.07741	.00802	.00149	.41805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.00368	.00340	.00440	.07345	.80723	.07588
Stddev	.00019	.00027	.00085	.00023	.01255	.03221	.00121
%RSD	24.052	7.2663	25.073	5.2245	17.088	3.9899	1.5900
#1	.00098	.00343	.00382	.00420	.08789	.84398	.07472
#2	.00060	.00396	.00242	.00465	.06727	.79380	.07581
#3	.00083	.00365	.00397	.00435	.06519	.78391	.07713
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.45393	.01040	.00760	.43451	.01677	.78565	.00648
Stddev	.06325	.00123	.00014	.00814	.00034	.00306	.00472
%RSD	13.934	11.870	1.8180	1.8735	2.0065	.38956	72.847
#1	.40550	.01151	.00746	.44359	.01650	.78689	.00633
#2	.43079	.00907	.00773	.43207	.01666	.78790	.01127
#3	.52549	.01063	.00762	.42787	.01715	.78217	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: LLCCV Acquired: 2/11/2016 14:53:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08128	.01815	.79079	.40875	.03980	.02610	.15555
Stddev	.00239	.00409	.00280	.00287	.00013	.00507	.00179
%RSD	2.9415	22.535	.35370	.70289	.32188	19.405	1.1536
#1	.08119	.02130	.79313	.41087	.03977	.02080	.15656
#2	.08372	.01353	.79153	.40991	.03994	.02662	.15661
#3	.07894	.01962	.78769	.40548	.03969	.03089	.15348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00806	.01746	F 326.96
Stddev	.00056	.00023	4.18
%RSD	6.9269	1.3392	1.2799
#1	.00840	.01760	327.49
#2	.00742	.01759	330.86
#3	.00836	.01719	322.54
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12356.	90301.	3622.7
Stddev	20.	119.	18.4
%RSD	.16556	.13203	.50714
#1	12332.	90180.	3634.1
#2	12370.	90304.	3601.5
#3	12365.	90419.	3632.4

Approved: February 12, 2016

Sample Name: PBW YZ Acquired: 2/11/2016 16:13:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00290	-.00030	-.00291	.00081	-.00001	-.01958	.00008
Stddev	.00132	.00124	.00054	.00216	.00035	.00005	.00147	.00011
%RSD	871.46	42.823	176.47	74.326	43.724	389.09	7.5239	140.61
#1	.00087	.00388	-.00063	-.00414	.00120	.00001	-.02118	-.00002
#2	.00096	.00150	.00032	-.00041	.00052	.00002	-.01828	.00019
#3	-.00138	.00333	-.00059	-.00417	.00071	-.00007	-.01929	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	-.00020	.00139	.01257	.01412	-.00407	.11741	.00168
Stddev	.00007	.00117	.00153	.00390	.04882	.00244	.04976	.00103
%RSD	16.094	574.82	110.28	31.004	345.70	59.863	42.384	61.107
#1	-.00050	-.00027	-.00028	.01178	.07037	-.00136	.07787	.00050
#2	-.00036	-.00134	.00170	.00912	-.01724	-.00609	.17329	.00234
#3	-.00043	.00100	.00273	.01679	-.01076	-.00475	.10107	.00220
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00163	.00038	-.00698	.00078	-.00192	-.00480	.00477
Stddev	.00017	.01858	.00009	.00436	.00202	.00220	.00385	.00219
%RSD	42.319	1140.3	23.660	62.538	259.19	114.44	80.166	45.994
#1	.00023	.02217	.00048	-.00353	.00179	.00006	-.00281	.00482
#2	.00056	-.00325	.00031	-.01188	.00209	-.00428	-.00923	.00255
#3	.00038	-.01403	.00035	-.00552	-.00155	-.00154	-.00235	.00693
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: PBW YZ Acquired: 2/11/2016 16:13:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.00026	.00009	-.00171	-.00059	.00122	1.6117
Stddev	.00037	.00019	.00306	.00299	.00047	.00008	2.0609
%RSD	45.795	71.334	3320.2	175.02	79.704	6.9073	127.87
#1	.00109	.00019	.00143	-.00310	-.00009	.00117	3.9792
#2	.00039	.00012	.00226	.00172	-.00064	.00132	.63623
#3	.00092	.00047	-.00341	-.00375	-.00102	.00117	.21964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12158.	88705.	3479.3
Stddev	18.	231.	8.4
%RSD	.14817	.26093	.24207
#1	12178.	88970.	3471.7
#2	12147.	88542.	3488.3
#3	12148.	88603.	3477.9

Approved: February 12, 2016

Sample Name: LCSW YZ Acquired: 2/11/2016 16:17:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19936	4.9589	.18844	.96303	.50398	.02474	5.0271	.02452
Stddev	.00085	.0119	.00153	.00271	.00210	.00002	.0353	.00020
%RSD	.42715	.24045	.80964	.28185	.41633	.09196	.70273	.82721
#1	.20028	4.9641	.18869	.96032	.50505	.02474	5.0644	.02450
#2	.19918	4.9453	.18983	.96302	.50156	.02477	5.0226	.02473
#3	.19861	4.9674	.18681	.96575	.50533	.02472	4.9942	.02433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10066	.25557	.25234	2.0414	24.987	.50545	5.2097	.25802
Stddev	.00117	.00039	.00163	.0314	.171	.00309	.0982	.00132
%RSD	1.1665	.15311	.64657	1.5378	.68444	.61134	1.8849	.51001
#1	.10162	.25525	.25416	2.0776	24.992	.50490	5.2705	.25706
#2	.10101	.25546	.25182	2.0250	24.813	.50267	5.0964	.25952
#3	.09935	.25601	.25102	2.0216	25.155	.50878	5.2623	.25749
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50950	25.096	.25367	4.7659	.25419	.58732	.18763	2.4947
Stddev	.00584	.095	.00292	.0458	.00274	.00460	.00699	.0161
%RSD	1.1464	.37698	1.1513	.96180	1.0783	.78262	3.7251	.64442
#1	.51460	25.111	.25663	4.8048	.25704	.59036	.18660	2.5064
#2	.51079	24.994	.25357	4.7775	.25157	.58957	.19508	2.5013
#3	.50313	25.182	.25080	4.7154	.25394	.58203	.18122	2.4764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: LCSW YZ Acquired: 2/11/2016 16:17:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51037	.50211	.50054	.25491	.50615	.49985	14.965
Stddev	.00580	.00173	.00342	.00301	.00089	.00482	5.479
%RSD	1.1355	.34452	.68301	1.1803	.17662	.96406	36.612
#1	.51440	.50269	.50325	.25730	.50577	.50338	9.1359
#2	.51298	.50016	.49670	.25590	.50717	.50182	15.751
#3	.50373	.50347	.50168	.25153	.50550	.49436	20.009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11864.	85863.	3437.1
Stddev	22.	237.	20.2
%RSD	.18372	.27659	.58899
#1	11889.	85714.	3419.7
#2	11853.	85739.	3459.3
#3	11850.	86137.	3432.4

Approved: February 12, 2016

Sample Name: L1602040601 Acquired: 2/11/2016 16:21:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.01597	.00021	.00468	.01827	.00001	60.449	.00004
Stddev	.00111	.00328	.00151	.00137	.00067	.00003	.123	.00019
%RSD	996.13	20.533	719.05	29.332	3.6856	315.94	.20290	494.62
#1	.00007	.01225	.00022	.00404	.01815	.00004	60.485	.00023
#2	.00090	.01846	.00172	.00625	.01900	-.00002	60.550	.00005
#3	-.00130	.01719	-.00130	.00375	.01767	.00001	60.312	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00160	.00118	-.01134	2.7755	.00229	.31257	-.00064
Stddev	.00006	.00097	.00136	.01623	.0673	.00160	.04977	.00087
%RSD	27.979	60.556	115.26	143.09	2.4233	69.742	15.923	135.85
#1	-.00023	.00270	.00056	-.00948	2.8416	.00330	.26965	.00032
#2	-.00014	.00087	.00024	-.02843	2.7072	.00313	.30094	-.00136
#3	-.00023	.00123	.00275	.00387	2.7777	.00045	.36713	-.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00151	122.26	-.00062	.00278	.00065	-.00183	-.00068	3.3247
Stddev	.00030	.16	.00118	.01028	.00067	.00245	.00274	.0621
%RSD	19.693	.13400	189.87	369.33	103.04	134.00	403.92	1.8694
#1	.00171	122.29	-.00164	-.00754	.00140	.00025	-.00380	3.3719
#2	.00117	122.41	-.00089	.01302	.00040	-.00121	.00135	3.3479
#3	.00165	122.09	.00067	.00287	.00014	-.00452	.00041	3.2543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602040601 Acquired: 2/11/2016 16:21:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.09389	-.01141	-.00042	.00464	.00174	1.9835
Stddev	.00018	.00052	.00697	.00124	.00099	.00011	4.7174
%RSD	22.322	.55639	61.121	296.42	21.265	6.5101	237.83
#1	.00073	.09388	-.00742	-.00107	.00504	.00182	2.1849
#2	.00101	.09441	-.00734	.00101	.00352	.00179	-2.8313
#3	.00067	.09337	-.01946	-.00119	.00537	.00161	6.5970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11921.	85314.	3507.1
Stddev	3.	324.	7.4
%RSD	.02377	.38010	.21187
#1	11924.	85109.	3500.4
#2	11922.	85144.	3505.7
#3	11918.	85687.	3515.1

Approved: February 12, 2016

Sample Name: L1602040601S Acquired: 2/11/2016 16:25:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19957	5.0013	.19573	.98672	.51084	.02535	66.869	.02445
Stddev	.00130	.0127	.00534	.00361	.00240	.00009	.291	.00013
%RSD	.65211	.25424	2.7266	.36624	.47049	.35011	.43457	.54572
#1	.20016	5.0157	.19956	.98979	.51348	.02538	67.187	.02456
#2	.19808	4.9917	.19800	.98274	.50879	.02526	66.617	.02430
#3	.20047	4.9966	.18963	.98763	.51025	.02543	66.803	.02449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09872	.25730	.24911	2.0108	27.590	.49671	5.1729	.25056
Stddev	.00037	.00040	.00170	.0297	.155	.00329	.1127	.00046
%RSD	.37292	.15460	.68222	1.4761	.56128	.66266	2.1778	.18377
#1	.09877	.25773	.24951	2.0238	27.767	.49858	5.1124	.25092
#2	.09905	.25695	.25057	1.9768	27.482	.49291	5.1034	.25071
#3	.09832	.25722	.24724	2.0317	27.520	.49864	5.3029	.25004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51400	148.74	.24712	4.9655	.24817	.59902	.19200	6.0849
Stddev	.00221	.72	.00090	.0240	.00264	.00228	.00428	.0170
%RSD	.43035	.48259	.36592	.48361	1.0641	.37995	2.2289	.27882
#1	.51537	149.44	.24609	4.9838	.24672	.60050	.19641	6.0974
#2	.51519	148.00	.24743	4.9744	.25122	.59639	.18786	6.0918
#3	.51145	148.77	.24782	4.9383	.24657	.60015	.19172	6.0656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602040601S Acquired: 2/11/2016 16:25:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50581	.58649	.49108	.24530	.52191	.50361	6.1000
Stddev	.00320	.00263	.00651	.00149	.00114	.00192	3.4777
%RSD	.63361	.44888	1.3250	.60608	.21776	.38165	57.012
#1	.50833	.58921	.49277	.24529	.52321	.50490	2.1960
#2	.50690	.58396	.48390	.24382	.52133	.50453	7.2371
#3	.50220	.58630	.49658	.24680	.52117	.50140	8.8668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11572.	83523.	3489.9
Stddev	19.	57.	27.3
%RSD	.16848	.06866	.78330
#1	11587.	83461.	3475.1
#2	11580.	83533.	3521.5
#3	11550.	83575.	3473.2

Approved: February 12, 2016

Sample Name: L1602040601SD Acquired: 2/11/2016 16:29:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19824	5.0141	.19440	.99163	.51105	.02549	66.351	.02463
Stddev	.00218	.0018	.00224	.00253	.00152	.00004	.188	.00023
%RSD	1.1018	.03598	1.1505	.25470	.29659	.17355	.28330	.93428
#1	.19577	5.0122	.19643	.98903	.51277	.02545	66.564	.02489
#2	.19905	5.0157	.19477	.99408	.51049	.02547	66.285	.02446
#3	.19990	5.0143	.19201	.99177	.50990	.02554	66.206	.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09884	.25734	.24922	1.9789	27.576	.49554	5.1929	.25082
Stddev	.00043	.00030	.00178	.0063	.121	.00155	.1150	.00155
%RSD	.43951	.11607	.71585	.31696	.43707	.31184	2.2154	.61830
#1	.09932	.25738	.24890	1.9785	27.634	.49728	5.3110	.24940
#2	.09846	.25702	.25114	1.9728	27.438	.49432	5.1866	.25060
#3	.09874	.25761	.24762	1.9854	27.657	.49503	5.0811	.25247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51472	147.63	.24713	4.9681	.24951	.60195	.19721	6.0692
Stddev	.00338	.32	.00133	.0319	.00472	.00296	.00617	.0314
%RSD	.65723	.21874	.53789	.64296	1.8924	.49158	3.1291	.51718
#1	.51737	148.00	.24722	4.9814	.25173	.60439	.19767	6.0972
#2	.51588	147.47	.24841	4.9912	.25271	.60279	.20314	6.0751
#3	.51091	147.41	.24576	4.9317	.24409	.59866	.19082	6.0353
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602040601SD Acquired: 2/11/2016 16:29:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556761-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50710	.58611	.48651	.24483	.52436	.50725	2.2362
Stddev	.00571	.00280	.00487	.00160	.00059	.00258	2.6613
%RSD	1.1261	.47699	1.0010	.65339	.11232	.50914	119.01
#1	.51192	.58927	.49095	.24330	.52404	.50926	1.9059
#2	.50858	.58513	.48130	.24649	.52400	.50815	-.24453
#3	.50079	.58394	.48729	.24468	.52504	.50433	5.0473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11508.	82603.	3442.5
Stddev	15.	223.	15.8
%RSD	.12794	.26968	.45964
#1	11522.	82511.	3432.1
#2	11510.	82857.	3434.7
#3	11493.	82441.	3460.7

Approved: February 12, 2016

Sample Name: L1602022702 Acquired: 2/11/2016 16:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00098	.03270	.00064	.01799	8.9433	-.00001	12.643
Stddev	.00038	.00496	.00161	.00156	.0511	.00004	.096
%RSD	38.275	15.160	251.97	8.6829	.57141	333.33	.75728
#1	-.00108	.03650	.00246	.01697	9.0020	-.00006	12.751
#2	-.00057	.02709	-.00058	.01979	8.9182	-.00001	12.611
#3	-.00130	.03451	.00004	.01721	8.9095	.00002	12.567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00043	.00291	.02279	1.8026	.09365	.10614
Stddev	.00018	.00012	.00157	.00101	.0368	.05538	.00350
%RSD	236.01	27.267	54.176	4.4100	2.0420	59.140	3.3017
#1	-.00007	.00045	.00126	.02195	1.8437	.03537	.10848
#2	.00028	.00030	.00305	.02390	1.7913	.14559	.10211
#3	.00002	.00053	.00440	.02253	1.7728	.09998	.10784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1268	.04792	.00066	146.87	.00088	.00658	-.00129
Stddev	.0233	.00120	.00007	1.07	.00087	.00381	.00159
%RSD	2.0665	2.5001	11.048	.72570	98.701	57.873	122.49
#1	1.1213	.04880	.00062	148.08	.00117	.01089	.00001
#2	1.1524	.04841	.00062	146.45	.00158	.00367	-.00084
#3	1.1068	.04655	.00075	146.08	-.00009	.00518	-.00306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602022702 Acquired: 2/11/2016 16:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00098	.00412	.11861	.00088	3.2906	-.00436	-.00224
Stddev	.00153	.00500	.00078	.00101	.0202	.00171	.00151
%RSD	156.39	121.43	.65616	114.89	.61435	39.147	67.306
#1	-.00143	.00750	.11782	.00204	3.3140	-.00290	-.00057
#2	.00073	-.00162	.11937	.00045	3.2794	-.00624	-.00267
#3	-.00224	.00647	.11863	.00016	3.2786	-.00394	-.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00006	.01359	F -.04540
Stddev	.00090	.00029	1.2619
%RSD	1468.3	2.1221	2779.7
#1	-.00014	.01360	-.97093
#2	.00105	.01387	1.3920
#3	-.00072	.01330	-.55725
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11653.	84597.	3461.3
Stddev	35.	154.	62.1
%RSD	.30139	.18217	1.7930
#1	11694.	84770.	3405.2
#2	11636.	84474.	3450.7
#3	11630.	84547.	3527.9

Approved: February 12, 2016

Sample Name: L1602038201 Acquired: 2/11/2016 16:36:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.28224	.00263	.68825	.00537	.00016	41.084	.00197
Stddev	.00087	.01237	.00130	.00327	.00105	.00006	.144	.00022
%RSD	240.28	4.3833	49.526	.47450	19.585	35.690	.34942	11.142
#1	-.00137	.28751	.00346	.69118	.00658	.00018	41.248	.00196
#2	.00009	.29109	.00330	.68473	.00478	.00010	41.025	.00175
#3	.00019	.26810	.00113	.68884	.00474	.00021	40.980	.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.00123	2.3709	-.00818	.35332	-.00212	2.7775	.09598
Stddev	.00025	.00084	.0238	.00925	.09059	.00177	.0964	.00185
%RSD	19.116	67.728	1.0026	113.08	25.641	83.771	3.4693	1.9250
#1	.00162	.00031	2.3855	-.01733	.40970	-.00416	2.7301	.09790
#2	.00121	.00145	2.3837	.00116	.40143	-.00098	2.8884	.09581
#3	.00116	.00194	2.3434	-.00836	.24882	-.00121	2.7140	.09422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19163	115.87	.00888	55.863	.00143	.05066	-.00114	.52895
Stddev	.00213	.57	.00013	.497	.00229	.00182	.00536	.00503
%RSD	1.1132	.49566	1.4660	.89037	159.56	3.5921	469.90	.95000
#1	.19345	116.50	.00881	56.165	.00208	.05141	.00483	.53407
#2	.19215	115.75	.00903	56.135	.00333	.04858	-.00270	.52875
#3	.18928	115.37	.00880	55.289	-.00111	.05198	-.00555	.52402
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602038201 Acquired: 2/11/2016 16:36:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	.16239	-.00454	-.00318	.00042	1.5179	1.3405
Stddev	.00021	.00112	.00396	.00026	.00035	.0139	.3901
%RSD	19.232	.68745	87.227	8.1067	83.175	.91589	29.103
#1	.00099	.16311	-.00096	-.00338	.00081	1.5272	1.7441
#2	.00133	.16296	-.00386	-.00326	.00030	1.5247	.96543
#3	.00096	.16110	-.00880	-.00289	.00015	1.5019	1.3121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11817.	85215.	3480.4
Stddev	39.	247.	24.4
%RSD	.32758	.28931	.70018
#1	11844.	84933.	3452.3
#2	11834.	85392.	3493.6
#3	11772.	85319.	3495.3

Approved: February 12, 2016

Sample Name: L1602038401 Acquired: 2/11/2016 16:40:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00064	.02396	-.00179	.03048	.00800	-.00000	69.560	.00016
Stddev	.00251	.00642	.00261	.00165	.00044	.00001	.390	.00026
%RSD	394.80	26.787	146.11	5.4096	5.5413	427.18	.56015	159.34
#1	-.00222	.02507	-.00455	.03178	.00787	-.00001	69.872	.00005
#2	-.00196	.02974	.00063	.02862	.00763	-.00000	69.124	-.00002
#3	.00226	.01706	-.00143	.03104	.00849	.00001	69.685	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02564	.03859	.15469	.18471	16.258	.00100	2.5671	1.8610
Stddev	.00045	.00085	.00172	.02322	.108	.00180	.0554	.0134
%RSD	1.7604	2.2075	1.1099	12.570	.66611	180.84	2.1584	.71734
#1	.02591	.03827	.15492	.21142	16.282	.00300	2.5033	1.8690
#2	.02588	.03794	.15628	.17326	16.140	-.00051	2.5940	1.8456
#3	.02511	.03955	.15287	.16943	16.352	.00051	2.6038	1.8684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	162.48	.18066	-.00206	-.00167	.00333	-.00302	1.4201
Stddev	.00053	1.05	.00150	.00285	.00165	.00226	.00243	.0142
%RSD	228.41	.64604	.83268	138.66	98.806	67.896	80.330	.99869
#1	-.00034	163.35	.18198	-.00533	-.00137	.00139	-.00299	1.4275
#2	.00032	161.31	.18099	-.00014	-.00345	.00581	-.00546	1.4291
#3	.00072	162.76	.17903	-.00069	-.00019	.00279	-.00061	1.4038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602038401 Acquired: 2/11/2016 16:40:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.33549	-.00982	-.00248	-.00103	8.6565	.23792
Stddev	.00072	.00213	.00086	.00326	.00083	.0950	1.2267
%RSD	91.660	.63630	8.7913	131.31	80.806	1.0972	515.60
#1	.00115	.33675	-.01074	-.00602	-.00040	8.7261	1.5070
#2	.00125	.33302	-.00903	-.00183	-.00198	8.6950	-.94153
#3	-.00004	.33669	-.00967	.00040	-.00072	8.5483	.14828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11802.	83873.	3462.9
Stddev	20.	266.	15.0
%RSD	.17340	.31658	.43186
#1	11816.	83580.	3447.4
#2	11778.	83939.	3477.3
#3	11811.	84099.	3464.1

Approved: February 12, 2016

Sample Name: L1602038401PS Acquired: 2/11/2016 16:44:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556971-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19721	4.9180	.19551	.99686	.49377	.02488	67.792	.02457
Stddev	.00096	.0131	.00137	.00232	.00191	.00012	.268	.00018
%RSD	.48659	.26677	.70272	.23262	.38581	.48980	.39595	.73061
#1	.19830	4.9166	.19643	.99562	.49519	.02493	67.991	.02478
#2	.19649	4.9055	.19616	.99542	.49161	.02474	67.487	.02445
#3	.19683	4.9317	.19393	.99953	.49452	.02497	67.898	.02448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.12083	.28367	.38274	2.1770	38.999	.49297	7.1560	1.9265
Stddev	.00113	.00123	.00282	.0318	.160	.00130	.1760	.0091
%RSD	.93456	.43210	.73572	1.4613	.40916	.26411	2.4592	.47049
#1	.12175	.28309	.38493	2.1949	39.033	.49147	7.2812	1.9297
#2	.12118	.28284	.38372	2.1402	38.825	.49382	6.9548	1.9163
#3	.11957	.28508	.37956	2.1957	39.139	.49362	7.2321	1.9336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50302	170.36	.40748	4.9430	.24125	.59727	.18938	3.8035
Stddev	.00341	.59	.00163	.0311	.00183	.00179	.00785	.0115
%RSD	.67850	.34754	.40029	.62823	.75696	.29959	4.1441	.30226
#1	.50643	170.78	.40899	4.9669	.24281	.59877	.19631	3.8151
#2	.50303	169.68	.40771	4.9541	.24171	.59774	.19097	3.8033
#3	.49961	170.62	.40575	4.9079	.23924	.59529	.18086	3.7921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602038401PS Acquired: 2/11/2016 16:44:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556971-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50025	.78369	.47678	.23869	.50813	8.2835	4.2572
Stddev	.00409	.00355	.00313	.00217	.00126	.0549	2.5152
%RSD	.81791	.45295	.65648	.90807	.24706	.66288	59.080
#1	.50452	.78447	.47324	.24117	.50951	8.3352	2.0008
#2	.49985	.77981	.47916	.23714	.50781	8.2895	6.9689
#3	.49637	.78678	.47795	.23776	.50706	8.2258	3.8019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11702.	84100.	3485.7
Stddev	17.	159.	25.7
%RSD	.14791	.18903	.73710
#1	11688.	83967.	3456.7
#2	11722.	84058.	3505.8
#3	11697.	84276.	3494.4

Approved: February 12, 2016

Sample Name: L1602038401SDL Acquired: 2/11/2016 16:48:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG556971-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00088	-.00390	.00261	.00866	.00207	-.00002	13.339	-.00013
Stddev	.00097	.00106	.00288	.00144	.00038	.00004	.157	.00007
%RSD	110.30	27.252	110.32	16.595	18.559	200.85	1.1797	52.340
#1	-.00021	-.00456	.00562	.00930	.00174	.00002	13.170	-.00011
#2	-.00044	-.00267	-.00012	.00968	.00249	-.00005	13.482	-.00008
#3	-.00198	-.00446	.00233	.00702	.00197	-.00002	13.363	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00492	.00660	.02980	.02297	3.1701	.00124	.58546	.35477
Stddev	.00019	.00116	.00092	.02183	.0932	.00137	.03784	.00790
%RSD	3.8313	17.527	3.0890	95.037	2.9391	110.61	6.4627	2.2257
#1	.00512	.00527	.02914	-.00199	3.1113	.00028	.57763	.34569
#2	.00490	.00720	.03085	.03241	3.2775	.00280	.62661	.35862
#3	.00474	.00734	.02941	.03850	3.1214	.00063	.55216	.36000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	31.249	.03602	.00411	-.00059	-.00152	.00081	.27423
Stddev	.00015	.389	.00063	.00194	.00065	.00543	.00525	.00163
%RSD	182.81	1.2434	1.7421	47.185	110.79	358.40	646.88	.59516
#1	-.00009	30.805	.03669	.00239	-.00022	-.00442	.00668	.27330
#2	.00017	31.527	.03545	.00373	-.00135	-.00488	-.00344	.27611
#3	.00018	31.415	.03592	.00621	-.00021	.00475	-.00081	.27327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602038401SDL Acquired: 2/11/2016 16:48:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG556971-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.06365	-.00555	.00090	-.00014	1.7037	3.2582
Stddev	.00076	.00095	.00257	.00147	.00052	.0059	.7837
%RSD	302.66	1.4984	46.252	163.46	373.58	.34530	24.053
#1	.00111	.06265	-.00804	.00251	-.00074	1.7030	2.3697
#2	-.00004	.06455	-.00572	.00054	.00021	1.7098	3.5534
#3	-.00032	.06375	-.00291	-.00036	.00011	1.6981	3.8513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12916.	92490.	3715.4
Stddev	124.	547.	41.6
%RSD	.96088	.59134	1.1186
#1	12841.	93012.	3760.9
#2	12847.	91921.	3705.9
#3	13059.	92536.	3679.4

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 16:52:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42321	10.760	.42513	.53320	1.0551	.05439	10.519
Stddev	.00026	.031	.00053	.00299	.0169	.00013	.138
%RSD	.06185	.29075	.12503	.56010	1.6012	.24475	1.3084
#1	.42313	10.726	.42527	.53193	1.0399	.05434	10.402
#2	.42300	10.768	.42454	.53106	1.0733	.05429	10.671
#3	.42351	10.787	.42557	.53661	1.0522	.05454	10.484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05331	.21565	.54485	.54239	4.3149	52.287	1.0668
Stddev	.00012	.00092	.00303	.00092	.0537	.744	.0170
%RSD	.23348	.42871	.55539	.17010	1.2455	1.4228	1.5937
#1	.05317	.21469	.54222	.54277	4.2610	51.631	1.0496
#2	.05335	.21654	.54417	.54134	4.3685	53.095	1.0836
#3	.05341	.21571	.54815	.54307	4.3151	52.134	1.0672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.880	.53583	1.0831	52.286	.54257	10.653	.53987
Stddev	.108	.00684	.0025	.756	.00075	.015	.00189
%RSD	.99015	1.2765	.23468	1.4454	.13880	.13762	.34968
#1	10.761	.52907	1.0852	51.628	.54271	10.664	.54199
#2	10.971	.54275	1.0840	53.111	.54176	10.658	.53925
#3	10.908	.53566	1.0803	52.117	.54324	10.636	.53837
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 16:52:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2886	.42757	5.3974	1.0878	1.0574	1.0525	.54431
Stddev	.0006	.00478	.0090	.0031	.0151	.0143	.00176
%RSD	.05001	1.1170	.16605	.28338	1.4307	1.3620	.32293
#1	1.2883	.42627	5.4045	1.0910	1.0432	1.0451	.54433
#2	1.2894	.42358	5.4004	1.0849	1.0733	1.0691	.54254
#3	1.2882	.43286	5.3873	1.0873	1.0558	1.0435	.54605
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0871	1.0882	F .36951
Stddev	.0034	.0009	1.9979
%RSD	.31453	.08658	540.69
#1	1.0845	1.0892	-.41267
#2	1.0858	1.0874	2.6402
#3	1.0910	1.0880	-1.1190
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11870.	85834.	3594.4
Stddev	23.	243.	34.2
%RSD	.19576	.28300	.95199
#1	11897.	85951.	3623.8
#2	11860.	85997.	3556.8
#3	11854.	85555.	3602.5

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 16:56:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00109	.00437	.00019	.00102	.00121	-.00001	.01392
Stddev	.00174	.00975	.00192	.00117	.00074	.00006	.03123
%RSD	159.71	223.35	1019.1	114.64	61.085	431.08	224.28
#1	-.00309	.01433	-.00202	.00219	.00051	.00002	-.02213
#2	.00007	.00394	.00114	.00104	.00114	.00002	.03235
#3	-.00025	-.00517	.00144	-.00016	.00198	-.00008	.03155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	-.00053	-.00076	.00091	-.01883	.05698	-.00056
Stddev	.00019	.00023	.00026	.00080	.01617	.08045	.00190
%RSD	221.30	43.284	34.406	88.328	85.861	141.19	341.26
#1	.00014	-.00076	-.00047	-.00002	-.01719	.00648	-.00085
#2	-.00020	-.00054	-.00098	.00133	-.00354	.14976	.00148
#3	-.00020	-.00030	-.00082	.00140	-.03575	.01471	-.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.12527	.00153	.00079	.02827	-.00007	.00266	-.00062
Stddev	.06414	.00207	.00006	.01430	.00075	.00517	.00128
%RSD	51.199	135.64	7.6395	50.596	1056.6	194.17	206.83
#1	.06116	.00389	.00072	.03927	.00033	.00025	.00085
#2	.12522	.00064	.00082	.03343	-.00094	-.00086	-.00124
#3	.18943	.00005	.00082	.01210	.00039	.00860	-.00147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 16:56:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	-.00546	.00306	.00085	-.00000	-.00013	-.00153
Stddev	.00264	.00278	.00135	.00058	.00031	.00389	.00121
%RSD	5198.3	50.896	44.053	68.000	45500.	3041.0	79.243
#1	.00069	-.00241	.00461	.00135	-.00032	.00178	-.00026
#2	.00232	-.00785	.00225	.00022	.00030	.00244	-.00165
#3	-.00286	-.00612	.00231	.00098	.00002	-.00460	-.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00014	.00025	F 3.4615
Stddev	.00023	.00006	3.4662
%RSD	164.27	25.586	100.14
#1	.00014	.00032	6.9965
#2	.00036	.00019	3.3196
#3	-.00009	.00024	.06836
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12278.	88936.	3557.1
Stddev	30.	142.	18.2
%RSD	.24314	.15971	.51133
#1	12248.	89007.	3565.7
#2	12279.	89029.	3536.2
#3	12308.	88773.	3569.4

Approved: February 12, 2016

Sample Name: L1602038402 Acquired: 2/11/2016 17:00:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.02587	.00223	.02596	.00807	.00000	74.301	.00007
Stddev	.00103	.00287	.00460	.00190	.00067	.00002	.240	.00007
%RSD	107.67	11.113	206.03	7.3278	8.3196	640.02	.32263	102.55
#1	.00184	.02592	-.00306	.02477	.00878	-.00001	74.070	.00002
#2	-.00018	.02871	.00443	.02495	.00745	-.00001	74.549	.00004
#3	.00121	.02297	.00532	.02815	.00798	.00003	74.284	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02482	.04710	.18204	.26954	11.050	.00208	1.9605	1.5486
Stddev	.00037	.00032	.00066	.00890	.063	.00251	.1016	.0064
%RSD	1.5030	.67582	.36138	3.3030	.57443	121.03	5.1803	.41064
#1	.02508	.04700	.18236	.27973	11.022	-.00047	1.9274	1.5451
#2	.02500	.04684	.18248	.26326	11.123	.00456	2.0745	1.5560
#3	.02440	.04745	.18128	.26563	11.005	.00214	1.8797	1.5448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	143.34	.18316	-.00507	-.00200	.00067	-.00020	1.4591
Stddev	.00018	.33	.00063	.00643	.00243	.00095	.00378	.0067
%RSD	27.857	.22684	.34147	126.94	121.15	142.61	1849.7	.46280
#1	.00044	143.06	.18369	-.00987	-.00463	.00170	-.00061	1.4667
#2	.00078	143.70	.18333	-.00758	-.00155	-.00017	-.00376	1.4565
#3	.00067	143.27	.18247	.00224	.00016	.00047	.00376	1.4540
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602038402 Acquired: 2/11/2016 17:00:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.33281	-.00915	-.00344	-.00023	9.2838	1.8479
Stddev	.00059	.00114	.00765	.00157	.00064	.0525	1.5392
%RSD	397.25	.34356	83.598	45.495	283.12	.56601	83.293
#1	.00072	.33159	-.01731	-.00485	-.00033	9.3139	.07064
#2	.00020	.33385	-.00801	-.00372	-.00081	9.3144	2.7303
#3	-.00047	.33299	-.00214	-.00176	.00046	9.2231	2.7429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12012.	87008.	3695.6
Stddev	55.	190.	9.2
%RSD	.46146	.21843	.24769
#1	12068.	86852.	3686.9
#2	11957.	86953.	3694.7
#3	12010.	87220.	3705.2

Approved: February 12, 2016

Sample Name: L1602038901 Acquired: 2/11/2016 17:04:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	.02487	-.00359	.05864	.26531	-.00004	12.979	.00003
Stddev	.00029	.00178	.00238	.00075	.00184	.00004	.053	.00009
%RSD	22.879	7.1390	66.288	1.2805	.69247	94.759	.40500	332.28
#1	.00095	.02322	-.00119	.05805	.26480	-.00001	12.968	.00013
#2	.00136	.02675	-.00361	.05839	.26734	-.00008	13.036	-.00005
#3	.00151	.02466	-.00595	.05948	.26377	-.00002	12.932	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	-.00041	.00199	.08317	.83581	.00520	2.6998	.03873
Stddev	.00020	.00074	.00068	.01855	.10810	.00385	.0747	.00136
%RSD	62.037	182.22	33.980	22.309	12.934	73.959	2.7659	3.5137
#1	-.00019	.00041	.00271	.09929	.81943	.00158	2.7806	.04020
#2	-.00023	-.00061	.00191	.06289	.73683	.00479	2.6334	.03751
#3	-.00056	-.00103	.00136	.08733	.95116	.00924	2.6854	.03846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	46.673	-.00086	-.00099	.00188	-.00256	.00107	3.8650
Stddev	.00018	.230	.00051	.00339	.00092	.00208	.00571	.0126
%RSD	13.391	.49228	59.272	341.27	48.990	81.426	533.13	.32697
#1	.00144	46.668	-.00049	-.00409	.00281	-.00485	.00063	3.8740
#2	.00116	46.905	-.00066	-.00152	.00185	-.00206	-.00441	3.8704
#3	.00150	46.445	-.00145	.00263	.00097	-.00077	.00699	3.8506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602038901 Acquired: 2/11/2016 17:04:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.36466	.00049	-.00086	-.00016	.00385	3.0163
Stddev	.00027	.00139	.00338	.00184	.00134	.00014	2.2614
%RSD	27.268	.38052	685.28	215.20	819.87	3.7493	74.974
#1	.00075	.36483	.00437	.00116	.00117	.00382	1.8682
#2	.00128	.36596	-.00103	-.00126	-.00151	.00400	5.6215
#3	.00095	.36320	-.00186	-.00246	-.00015	.00372	1.5592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12122.	87990.	3601.5
Stddev	7.	235.	22.1
%RSD	.05966	.26688	.61414
#1	12114.	88261.	3602.6
#2	12128.	87839.	3578.8
#3	12124.	87871.	3623.0

Approved: February 12, 2016

Sample Name: L1602038902 Acquired: 2/11/2016 17:08:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	.28455	.00257	.00935	.02316	-.00006	23.167	-.00015
Stddev	.00211	.00347	.00166	.00229	.00031	.00003	.143	.00002
%RSD	168.85	1.2181	64.345	24.463	1.3366	53.671	.61576	12.986
#1	.00229	.28055	.00154	.00840	.02290	-.00007	23.245	-.00014
#2	.00265	.28650	.00169	.01196	.02308	-.00002	23.253	-.00017
#3	-.00118	.28661	.00448	.00769	.02350	-.00008	23.002	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	-.00021	.00089	.19307	.63288	-.00086	3.5850	.00433
Stddev	.00010	.00038	.00179	.01066	.02650	.00504	.0859	.00121
%RSD	59.613	176.55	201.80	5.5223	4.1875	588.57	2.3970	28.029
#1	-.00019	-.00005	.00270	.20218	.62023	.00404	3.6341	.00537
#2	-.00027	.00006	.00084	.18134	.61507	-.00602	3.4857	.00299
#3	-.00006	-.00064	-.00088	.19568	.66333	-.00058	3.6350	.00462
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	2.0695	.00063	.00876	-.00014	-.00526	-.00116	3.2990
Stddev	.00006	.0287	.00060	.00297	.00101	.00345	.00551	.0374
%RSD	33.440	1.3880	95.210	33.892	728.34	65.588	474.89	1.1346
#1	.00014	2.0856	.00085	.01102	.00043	-.00697	.00494	3.3187
#2	.00015	2.0865	.00109	.00985	-.00130	-.00752	-.00267	3.3224
#3	.00025	2.0363	-.00005	.00540	.00045	-.00129	-.00576	3.2558
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602038902 Acquired: 2/11/2016 17:08:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.10739	.00315	.00012	-.00000	.00229	2.0142
Stddev	.00088	.00014	.00210	.00100	.00039	.00006	1.7828
%RSD	98.641	.13276	66.746	801.85	246820.	2.6971	88.512
#1	.00054	.10739	.00458	-.00097	.00031	.00228	.51145
#2	.00190	.10725	.00414	.00035	.00013	.00236	1.5471
#3	.00025	.10754	.00074	.00099	-.00044	.00224	3.9840
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12312.	89570.	3623.0
Stddev	4.	215.	26.0
%RSD	.03493	.24023	.71689
#1	12310.	89391.	3620.6
#2	12309.	89512.	3598.3
#3	12317.	89809.	3650.1

Approved: February 12, 2016

Sample Name: L1602039201 Acquired: 2/11/2016 17:12:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.01624	-.00170	.01984	.13974	-.00010	40.473	.00008
Stddev	.00139	.00481	.00210	.00118	.00087	.00005	.169	.00005
%RSD	295.42	29.622	123.97	5.9381	.62276	46.396	.41785	69.849
#1	.00015	.01087	-.00014	.01880	.13961	-.00013	40.494	.00010
#2	.00199	.01768	-.00409	.02112	.14067	-.00005	40.630	.00012
#3	-.00073	.02016	-.00086	.01960	.13894	-.00013	40.294	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.00036	.00990	.01141	.77371	.00829	9.5764	.00116
Stddev	.00015	.00066	.00058	.01417	.05714	.00316	.1274	.00203
%RSD	34.301	184.59	5.9073	124.20	7.3846	38.044	1.3305	174.54
#1	-.00033	.00066	.01056	.02560	.76508	.00635	9.4684	-.00001
#2	-.00036	-.00040	.00944	.01138	.83467	.01193	9.7169	-.00001
#3	-.00060	.00081	.00969	-.00274	.72138	.00659	9.5439	.00351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	6.4330	-.00056	.00009	-.00019	-.00168	-.00305	6.2547
Stddev	.00021	.0469	.00042	.00778	.00103	.00250	.00147	.0652
%RSD	206.45	.72933	73.656	9126.7	553.13	149.39	48.186	1.0428
#1	.00006	6.4454	-.00056	.00720	.00044	-.00088	-.00452	6.2970
#2	-.00008	6.4725	-.00098	.00128	-.00137	.00033	-.00303	6.2874
#3	.00034	6.3812	-.00015	-.00822	.00038	-.00448	-.00159	6.1796
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602039201 Acquired: 2/11/2016 17:12:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.20770	-.00552	-.00153	-.00058	.02675	2.6038
Stddev	.00073	.00128	.00612	.00113	.00017	.00012	.7732
%RSD	1053.8	.61813	110.80	73.673	29.536	.46159	29.695
#1	.00051	.20830	-.00283	-.00087	-.00077	.02685	2.1128
#2	.00047	.20858	-.01253	-.00283	-.00051	.02678	2.2035
#3	-.00077	.20623	-.00122	-.00089	-.00045	.02661	3.4950
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12126.	88661.	3607.0
Stddev	35.	71.	14.2
%RSD	.28890	.08042	.39400
#1	12143.	88740.	3615.6
#2	12086.	88601.	3590.6
#3	12149.	88642.	3614.8

Approved: February 12, 2016

Sample Name: L1602039501 Acquired: 2/11/2016 17:16:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00050	.95401	.00306	.02604	.05647	-.00000	72.717	.00019
Stddev	.00094	.00240	.00145	.00291	.00022	.00003	.412	.00009
%RSD	187.54	.25181	47.502	11.178	.39484	834.01	.56609	49.213
#1	.00024	.95155	.00269	.02936	.05629	.00003	72.945	.00027
#2	-.00156	.95413	.00466	.02390	.05640	-.00003	72.965	.00009
#3	-.00018	.95635	.00183	.02487	.05672	-.00001	72.242	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00214	.00980	1.2109	3.9006	.00676	2.2399	.04541
Stddev	.00005	.00042	.00020	.0248	.0180	.00255	.1384	.00134
%RSD	42.395	19.867	2.0248	2.0492	.46101	37.717	6.1794	2.9562
#1	-.00006	.00236	.00977	1.2123	3.8877	.00970	2.3004	.04582
#2	-.00016	.00240	.01001	1.2349	3.8930	.00535	2.3378	.04391
#3	-.00012	.00165	.00962	1.1853	3.9211	.00522	2.0815	.04651
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00194	1.9826	.00135	.23045	.00262	-.00071	.00085	7.2187
Stddev	.00043	.0447	.00007	.00432	.00200	.00176	.00323	.0309
%RSD	22.343	2.2564	4.9177	1.8755	76.556	247.22	378.21	.42859
#1	.00217	2.0248	.00131	.22890	.00195	.00040	.00458	7.2419
#2	.00221	1.9873	.00131	.23534	.00104	.00021	-.00113	7.2305
#3	.00144	1.9357	.00142	.22712	.00487	-.00275	-.00088	7.1836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602039501 Acquired: 2/11/2016 17:16:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.29936	.01171	-.00118	.01130	.06965	7.0398
Stddev	.00040	.00208	.00054	.00125	.00043	.00053	.4567
%RSD	40.623	.69462	4.6382	106.39	3.8249	.75979	6.4881
#1	.00096	.30022	.01126	-.00167	.01105	.06991	7.5229
#2	.00139	.30087	.01231	-.00211	.01180	.07000	6.6150
#3	.00059	.29699	.01154	.00025	.01105	.06904	6.9815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12234.	89480.	3648.3
Stddev	46.	133.	8.6
%RSD	.37986	.14881	.23573
#1	12274.	89379.	3658.0
#2	12183.	89631.	3641.5
#3	12244.	89430.	3645.4

Approved: February 12, 2016

Sample Name: L1602041503 Acquired: 2/11/2016 17:20:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.20511	.00553	.14312	.09669	-.00000	4.1881
Stddev	.00037	.00291	.00302	.00144	.00143	.00009	.0101
%RSD	97.816	1.4200	54.561	1.0042	1.4778	5600.2	.24143
#1	.00079	.20438	.00756	.14386	.09725	-.00010	4.1998
#2	.00027	.20262	.00206	.14403	.09775	.00006	4.1824
#3	.00008	.20831	.00697	.14146	.09507	.00003	4.1821
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00077	.00148	.00262	.17534	1.4733	.01627
Stddev	.00037	.00018	.00046	.00064	.00666	.0505	.00202
%RSD	316.71	22.918	31.219	24.229	3.7977	3.4241	12.433
#1	-.00022	.00059	.00183	.00317	.17941	1.4240	.01817
#2	.00007	.00077	.00165	.00276	.16766	1.5248	.01414
#3	.00050	.00094	.00095	.00193	.17896	1.4712	.01649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.64884	.00730	.13882	F 400.08	.00124	.09078	-.00342
Stddev	.03105	.00206	.00113	.88	.00113	.00798	.00289
%RSD	4.7855	28.226	.81732	.21899	91.463	8.7933	84.697
#1	.65079	.00952	.13968	399.30	.00188	.09271	-.00655
#2	.67888	.00545	.13924	401.03	.00192	.08201	-.00084
#3	.61687	.00693	.13753	399.91	-.00007	.09763	-.00286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: February 12, 2016

Sample Name: L1602041503 Acquired: 2/11/2016 17:20:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00226	.00113	2.3371	.00150	.20495	.00434	-.00084
Stddev	.00055	.00597	.0141	.00130	.00102	.00441	.00165
%RSD	24.285	529.20	.60559	86.517	.49926	101.56	195.28
#1	.00285	-.00526	2.3477	.00111	.20394	.00556	-.00243
#2	.00176	.00207	2.3426	.00295	.20599	-.00055	-.00095
#3	.00218	.00657	2.3210	.00044	.20492	.00802	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00067	.00659	6.9819
Stddev	.00079	.00018	3.5834
%RSD	116.94	2.7791	51.325
#1	.00059	.00678	3.4063
#2	-.00007	.00657	6.9664
#3	.00150	.00642	10.573
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11784.	85208.	3699.6
Stddev	33.	59.	22.4
%RSD	.27912	.06891	.60620
#1	11809.	85232.	3725.4
#2	11747.	85141.	3688.0
#3	11795.	85251.	3685.3

Approved: February 12, 2016

Sample Name: L1602041505 Acquired: 2/11/2016 17:24:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00146	.02778	.02216	.01892	.19812	.00002	49.873	.00039
Stddev	.00139	.00529	.00048	.00141	.00259	.00004	.538	.00009
%RSD	95.693	19.034	2.1824	7.4385	1.3077	173.91	1.0781	22.075
#1	-.00007	.03389	.02163	.01958	.19937	.00005	50.224	.00044
#2	.00179	.02467	.02257	.01730	.19985	.00005	50.142	.00045
#3	.00265	.02479	.02229	.01986	.19514	-.00002	49.254	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	-.00106	.00046	15.171	3.0926	.00014	22.641	2.1884
Stddev	.00016	.00053	.00128	.160	.0926	.00157	.261	.0220
%RSD	28.889	49.952	279.39	1.0527	2.9930	1130.9	1.1536	1.0059
#1	.00074	-.00073	-.00071	15.288	3.1189	.00188	22.687	2.2008
#2	.00057	-.00078	.00025	15.236	2.9897	-.00117	22.876	2.2015
#3	.00041	-.00167	.00183	14.989	3.1691	-.00030	22.360	2.1630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	154.13	.00023	.18542	.00050	-.00145	-.00091	5.7281
Stddev	.00019	1.71	.00134	.00448	.00131	.00269	.00428	.0264
%RSD	528.98	1.1084	579.12	2.4164	260.98	186.01	471.68	.46030
#1	.00018	155.11	-.00084	.18754	-.00093	.00074	-.00571	5.7423
#2	-.00018	155.13	-.00020	.18844	.00079	-.00064	.00249	5.7443
#3	.00011	152.16	.00173	.18027	.00164	-.00445	.00050	5.6977
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602041505 Acquired: 2/11/2016 17:24:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.38781	-.00243	-.00343	.00026	.00505	.94390
Stddev	.00057	.00423	.00110	.00318	.00036	.00013	3.1884
%RSD	136.75	1.0896	45.054	92.852	135.84	2.6203	337.79
#1	.00068	.39034	-.00305	-.00710	-.00009	.00490	2.8400
#2	-.00024	.39017	-.00308	-.00155	.00026	.00515	-2.7372
#3	.00080	.38294	-.00117	-.00163	.00062	.00509	2.7289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11723.	85198.	3618.4
Stddev	63.	870.	53.0
%RSD	.53513	1.0214	1.4638
#1	11779.	84217.	3587.2
#2	11734.	85499.	3588.4
#3	11655.	85878.	3679.5

Approved: February 12, 2016

Sample Name: L1602041507 Acquired: 2/11/2016 17:28:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.81622	-.00002	.03672	.19327	.00007	92.196
Stddev	.00061	.00131	.00581	.00039	.00095	.00007	.369
%RSD	1634.0	.16105	28157.	1.0617	.48998	103.50	.40067
#1	-.00009	.81477	-.00045	.03677	.19335	-.00001	92.049
#2	-.00061	.81655	.00599	.03631	.19418	.00013	92.616
#3	.00059	.81733	-.00560	.03708	.19229	.00008	91.923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00083	.00820	.00431	1.5105	8.3086	.05627
Stddev	.00025	.00025	.00067	.00059	.0230	.0359	.00120
%RSD	524.70	30.223	8.2239	13.747	1.5222	.43223	2.1351
#1	.00011	.00054	.00757	.00374	1.5092	8.2738	.05748
#2	-.00033	.00094	.00891	.00492	1.4882	8.3456	.05508
#3	.00008	.00101	.00812	.00426	1.5341	8.3063	.05625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	68.410	.07096	.00168	F 307.90	.00519	.01666	.00094
Stddev	.178	.00195	.00038	1.39	.00055	.00211	.00167
%RSD	.26067	2.7548	22.873	.45299	10.536	12.657	176.91
#1	68.593	.07319	.00208	307.67	.00582	.01516	.00154
#2	68.398	.06951	.00164	309.39	.00484	.01908	-.00094
#3	68.237	.07020	.00132	306.63	.00491	.01576	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: February 12, 2016

Sample Name: L1602041507 Acquired: 2/11/2016 17:28:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00242	-.00196	4.5847	.00063	3.6919	.01095	-.00106
Stddev	.00264	.00221	.0277	.00082	.0140	.00528	.00212
%RSD	109.09	112.89	.60314	130.69	.37866	48.194	200.92
#1	-.00089	-.00360	4.6033	-.00024	3.6858	.01658	-.00109
#2	-.00547	.00055	4.5980	.00140	3.7079	.00612	.00108
#3	-.00091	-.00282	4.5530	.00073	3.6821	.01014	-.00316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00008	.03485	3.2356
Stddev	.00027	.00017	1.8440
%RSD	327.81	.50206	56.990
#1	-.00019	.03495	2.2545
#2	.00007	.03495	5.3628
#3	.00036	.03465	2.0897
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11225.	80279.	3454.8
Stddev	3.	190.	20.3
%RSD	.02976	.23668	.58890
#1	11227.	80084.	3451.0
#2	11227.	80289.	3436.6
#3	11221.	80463.	3476.7

Approved: February 12, 2016

Sample Name: L1602044301 Acquired: 2/11/2016 17:32:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	.58505	-.00001	.00670	.02397	-.00001	12.810	.00004
Stddev	.00054	.00470	.00381	.00153	.00076	.00001	.087	.00017
%RSD	45.086	.80384	64886.	22.880	3.1726	80.309	.68311	429.46
#1	.00102	.58744	.00120	.00599	.02340	-.00002	12.812	-.00016
#2	.00179	.57963	-.00428	.00565	.02368	-.00000	12.896	.00015
#3	.00076	.58808	.00306	.00846	.02484	-.00002	12.721	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00098	.00046	.43324	.55148	-.00111	2.8800	.01538
Stddev	.00043	.00033	.00046	.00529	.07401	.00087	.0818	.00153
%RSD	1019.0	34.167	100.08	1.2201	13.420	78.849	2.8393	9.9715
#1	.00002	.00099	-.00004	.42851	.63671	-.00196	2.9669	.01434
#2	-.00050	.00064	.00086	.43226	.51437	-.00113	2.8046	.01714
#3	.00035	.00131	.00056	.43895	.50337	-.00022	2.8685	.01467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	1.6791	.00037	.02027	-.00197	.00060	.00473	3.6724
Stddev	.00040	.0200	.00021	.00552	.00051	.00347	.00596	.0527
%RSD	343.55	1.1921	56.273	27.217	25.937	576.63	125.87	1.4353
#1	.00043	1.6946	.00015	.02624	-.00240	-.00249	.01119	3.7089
#2	.00024	1.6862	.00056	.01921	-.00141	-.00006	-.00056	3.6964
#3	-.00033	1.6565	.00039	.01536	-.00209	.00436	.00357	3.6120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602044301 Acquired: 2/11/2016 17:32:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.05203	.00599	-.00244	.00058	.00370	7.2514
Stddev	.00028	.00060	.00257	.00112	.00075	.00009	2.1943
%RSD	28.595	1.1535	42.984	45.848	129.58	2.4367	30.261
#1	.00071	.05232	.00483	-.00135	.00083	.00377	5.5760
#2	.00128	.05244	.00894	-.00359	.00116	.00373	6.4429
#3	.00100	.05135	.00420	-.00238	-.00026	.00360	9.7353
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11987.	87384.	3513.1
Stddev	21.	247.	20.3
%RSD	.17382	.28263	.57667
#1	11978.	87535.	3496.3
#2	12010.	87099.	3507.4
#3	11972.	87517.	3535.6

Approved: February 12, 2016

Sample Name: L1602044302 Acquired: 2/11/2016 17:36:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	.15266	-.00160	.00737	.01870	.00000	11.616	-.00001
Stddev	.00145	.00380	.00215	.00039	.00083	.00005	.107	.00031
%RSD	116.52	2.4867	134.49	5.2547	4.4430	1123.5	.92446	4623.0
#1	-.00021	.15293	-.00400	.00717	.01952	.00003	11.654	.00033
#2	.00125	.14874	.00013	.00781	.01872	.00004	11.698	-.00027
#3	.00270	.15632	-.00091	.00712	.01786	-.00006	11.494	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	-.00041	.00013	.12636	.71116	-.00431	3.0564	.01138
Stddev	.00008	.00075	.00058	.00919	.04994	.00275	.0881	.00120
%RSD	28.611	183.72	433.85	7.2693	7.0218	63.681	2.8807	10.558
#1	-.00022	-.00116	-.00051	.11948	.70222	-.00530	2.9773	.01220
#2	-.00026	-.00041	.00061	.13679	.76495	-.00644	3.1513	.01000
#3	-.00039	.00035	.00030	.12281	.66629	-.00121	3.0407	.01194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	1.9553	.00002	-.00002	-.00073	-.00465	.00141	3.5186
Stddev	.00036	.0238	.00122	.00584	.00183	.00466	.00049	.0227
%RSD	654.51	1.2154	5184.8	25049.	251.07	100.11	34.998	.64531
#1	-.00012	1.9827	.00078	.00512	-.00214	-.00265	.00163	3.5332
#2	-.00019	1.9425	-.00139	.00119	-.00137	-.00133	.00085	3.5302
#3	.00047	1.9406	.00068	-.00638	.00133	-.00998	.00176	3.4925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602044302 Acquired: 2/11/2016 17:36:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.04026	.00111	-.00076	-.00048	.00356	2.4813
Stddev	.00063	.00049	.00352	.00250	.00035	.00007	2.9044
%RSD	122.41	1.2228	317.30	330.25	73.278	2.0987	117.05
#1	.00047	.04042	-.00266	-.00276	-.00051	.00364	.24521
#2	.00117	.04066	.00168	-.00156	-.00012	.00356	1.4349
#3	-.00009	.03971	.00431	.00205	-.00082	.00349	5.7639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12030.	87888.	3525.4
Stddev	14.	338.	22.5
%RSD	.11399	.38435	.63786
#1	12045.	87498.	3521.4
#2	12018.	88083.	3505.2
#3	12026.	88084.	3549.7

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 17:40:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42672	10.829	.42569	.53030	1.0731	.05478	10.816
Stddev	.00215	.036	.00280	.00304	.0078	.00034	.053
%RSD	.50427	.33156	.65802	.57236	.73149	.62894	.48681
#1	.42490	10.790	.42893	.52822	1.0651	.05438	10.757
#2	.42615	10.861	.42405	.52889	1.0807	.05496	10.834
#3	.42909	10.835	.42410	.53378	1.0735	.05500	10.857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05375	.21693	.54761	.54391	4.3794	53.333	1.0836
Stddev	.00034	.00076	.00306	.00219	.0219	.430	.0105
%RSD	.63414	.34919	.55944	.40224	.49990	.80713	.96657
#1	.05351	.21742	.54428	.54643	4.3543	52.902	1.0761
#2	.05359	.21730	.55030	.54244	4.3891	53.763	1.0955
#3	.05414	.21605	.54825	.54286	4.3947	53.335	1.0791
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.956	F .55011	1.0956	53.079	.54170	10.639	.53898
Stddev	.212	.00630	.0035	.434	.00063	.025	.00295
%RSD	1.9325	1.1450	.32288	.81844	.11569	.23842	.54705
#1	10.756	.54862	1.0994	52.686	.54228	10.668	.53974
#2	11.178	.55702	1.0949	53.545	.54179	10.632	.54146
#3	10.935	.54469	1.0925	53.006	.54103	10.619	.53572
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000					
Range		10.000%					

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 17:40:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2881	.42285	5.3867	1.0932	1.0778	1.0781	.54945
Stddev	.0036	.00539	.0080	.0008	.0084	.0075	.00339
%RSD	.27935	1.2748	.14890	.07581	.77918	.69265	.61610
#1	1.2884	.42747	5.3904	1.0937	1.0693	1.0743	.55132
#2	1.2843	.41693	5.3921	1.0936	1.0861	1.0867	.54554
#3	1.2915	.42414	5.3775	1.0922	1.0779	1.0733	.55149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0832	1.0890	F 3.2486
Stddev	.0048	.0017	3.3473
%RSD	.44036	.15325	103.04
#1	1.0788	1.0909	.12973
#2	1.0883	1.0884	2.8309
#3	1.0825	1.0878	6.7852
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11276.	81276.	3329.0
Stddev	11.	591.	17.5
%RSD	.09726	.72679	.52669
#1	11267.	81953.	3347.1
#2	11288.	80863.	3312.1
#3	11274.	81013.	3327.7

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 17:44:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00405	-.00050	.00059	.00081	.00004	-.00417
Stddev	.00059	.00437	.00071	.00137	.00066	.00002	.01697
%RSD	3126.8	107.85	140.16	232.33	80.692	53.381	406.99
#1	.00020	.00084	-.00096	.00214	.00028	.00004	-.01942
#2	.00043	.00229	-.00086	.00009	.00062	.00006	.01411
#3	-.00068	.00902	.00031	-.00046	.00155	.00002	-.00720
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00013	.00018	-.00113	-.01619	-.03353	-.00520
Stddev	.00014	.00034	.00067	.00063	.02025	.11692	.00160
%RSD	181.14	263.01	372.84	56.257	125.08	348.68	30.725
#1	-.00008	-.00051	-.00058	-.00171	-.02540	-.13890	-.00641
#2	.00013	-.00001	.00044	-.00122	.00703	-.05394	-.00580
#3	.00018	.00013	.00068	-.00045	-.03019	.09225	-.00339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10769	-.00044	.00111	.02668	-.00062	-.00037	.00113
Stddev	.03963	.00122	.00026	.01520	.00097	.00459	.00166
%RSD	36.804	276.54	23.348	56.968	156.20	1239.1	146.49
#1	.08453	.00013	.00116	.03473	-.00152	.00462	.00280
#2	.15345	-.00184	.00083	.00915	.00041	-.00134	-.00051
#3	.08508	.00039	.00135	.03617	-.00075	-.00440	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 17:44:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00201	-.00063	.00258	.00127	.00040	-.00452	-.00204
Stddev	.00286	.00465	.00186	.00029	.00029	.00194	.00148
%RSD	142.09	738.64	71.889	22.829	72.466	42.827	72.563
#1	-.00083	-.00438	.00463	.00148	.00018	-.00229	-.00036
#2	.00198	.00457	.00209	.00139	.00073	-.00567	-.00258
#3	.00488	-.00208	.00102	.00094	.00029	-.00561	-.00317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00051	.00041	F -2.1139
Stddev	.00103	.00027	1.8078
%RSD	202.76	65.783	85.522
#1	-.00059	.00053	-2.7054
#2	-.00150	.00010	-3.5518
#3	.00056	.00059	-.08438
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11605.	85136.	3375.3
Stddev	28.	417.	35.5
%RSD	.24472	.48946	1.0512
#1	11580.	85596.	3401.5
#2	11599.	85027.	3334.9
#3	11636.	84784.	3389.4

Approved: February 12, 2016

Sample Name: L1602044303 Acquired: 2/11/2016 17:48:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	1.3007	-.00001	.00725	.04527	.00002	12.157	-.00008
Stddev	.00068	.0081	.00150	.00085	.00019	.00001	.055	.00006
%RSD	139.61	.62373	17494.	11.726	.42461	69.786	.44973	77.748
#1	-.00001	1.2975	-.00088	.00635	.04509	.00003	12.218	-.00008
#2	-.00018	1.2947	.00173	.00736	.04547	.00002	12.141	-.00014
#3	-.00127	1.3099	-.00087	.00804	.04526	.00001	12.112	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	.00178	.00281	1.9082	.77146	-.00200	2.0294	.08891
Stddev	.00006	.00007	.00073	.0079	.01837	.00521	.0413	.00092
%RSD	8.2280	4.0124	26.097	.41228	2.3809	260.08	2.0330	1.0367
#1	.00076	.00181	.00244	1.9122	.78153	.00340	2.0162	.08946
#2	.00075	.00183	.00365	1.9132	.75026	-.00241	1.9962	.08785
#3	.00066	.00169	.00233	1.8991	.78258	-.00700	2.0756	.08942
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	1.0409	.00164	.09272	.00148	-.00156	-.00544	3.8419
Stddev	.00029	.0208	.00058	.00780	.00346	.00222	.00377	.0108
%RSD	110.61	1.9951	35.185	8.4142	234.14	142.13	69.381	.28086
#1	.00014	1.0307	.00137	.10004	.00022	-.00262	-.00919	3.8533
#2	.00059	1.0273	.00124	.08451	-.00118	-.00305	-.00548	3.8405
#3	.00005	1.0648	.00230	.09361	.00539	.00099	-.00165	3.8318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602044303 Acquired: 2/11/2016 17:48:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.03285	.02152	-.00218	.00099	.04354	1.7010
Stddev	.00115	.00035	.00354	.00165	.00079	.00025	2.3589
%RSD	156.19	1.0781	16.440	75.677	79.939	.56274	138.68
#1	.00206	.03302	.02310	-.00140	.00008	.04382	4.0985
#2	-.00004	.03309	.02399	-.00107	.00149	.04342	-.61745
#3	.00019	.03245	.01746	-.00408	.00140	.04338	1.6221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12076.	88557.	3526.9
Stddev	42.	171.	11.5
%RSD	.34497	.19296	.32633
#1	12088.	88553.	3514.5
#2	12030.	88730.	3537.3
#3	12111.	88388.	3528.9

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 17:52:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42750	10.800	.42728	.52796	1.0794	.05441	10.872
Stddev	.00139	.047	.00275	.00235	.0092	.00020	.056
%RSD	.32610	.43934	.64361	.44530	.85237	.37562	.51945
#1	.42590	10.749	.42876	.52568	1.0715	.05424	10.826
#2	.42819	10.809	.42897	.52783	1.0895	.05434	10.935
#3	.42842	10.843	.42411	.53038	1.0771	.05464	10.855
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05422	.21809	.54313	.54602	4.3731	53.753	1.0935
Stddev	.00029	.00054	.00283	.00246	.0863	.540	.0066
%RSD	.54259	.24537	.52040	.45039	1.9741	1.0042	.60646
#1	.05446	.21766	.53989	.54620	4.3357	53.352	1.0867
#2	.05431	.21869	.54446	.54838	4.4719	54.366	1.0999
#3	.05389	.21793	.54505	.54348	4.3119	53.539	1.0940
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.988	.54895	F 1.1012	53.616	.54532	10.626	.54429
Stddev	.089	.00458	.0033	.452	.00235	.029	.00454
%RSD	.81384	.83444	.29837	.84266	.43071	.27161	.83336
#1	10.912	.54416	1.1023	53.309	.54315	10.612	.53923
#2	10.966	.55329	1.1038	54.135	.54781	10.659	.54797
#3	11.086	.54942	1.0975	53.404	.54499	10.606	.54568
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			1.0000				
Range			10.000%				

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 17:52:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2896	.42525	5.4152	1.0937	1.0837	1.0860	.54915
Stddev	.0047	.00533	.0064	.0030	.0095	.0078	.00331
%RSD	.36373	1.2530	.11814	.27196	.87403	.71680	.60204
#1	1.2852	.43041	5.4180	1.0922	1.0764	1.0785	.54730
#2	1.2945	.42556	5.4198	1.0972	1.0944	1.0941	.55297
#3	1.2890	.41977	5.4079	1.0918	1.0802	1.0854	.54718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0795	1.0895	F -2.0283
Stddev	.0026	.0025	1.4932
%RSD	.23994	.23182	73.622
#1	1.0770	1.0870	-3.0625
#2	1.0793	1.0921	-.31634
#3	1.0822	1.0894	-2.7060
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11271.	82057.	3318.5
Stddev	20.	530.	23.3
%RSD	.17368	.64553	.70100
#1	11293.	82663.	3330.3
#2	11260.	81685.	3291.7
#3	11258.	81822.	3333.5

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 17:56:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	.00980	-.00280	.00072	.00109	.00001	.01394
Stddev	.00043	.00566	.00164	.00285	.00046	.00005	.01737
%RSD	41.752	57.752	58.536	396.55	41.622	364.22	124.61
#1	-.00089	.01463	-.00243	-.00161	.00060	.00002	-.00611
#2	-.00070	.00357	-.00459	.00389	.00150	-.00004	.02362
#3	-.00153	.01119	-.00138	-.00013	.00119	.00005	.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.00064	-.00016	.00001	-.01006	-.00691	.00176
Stddev	.00026	.00022	.00087	.00101	.00582	.13246	.00274
%RSD	222.37	34.456	549.71	11347.	57.785	1918.3	155.64
#1	-.00018	-.00077	.00054	-.00028	-.01291	-.12124	.00003
#2	.00025	-.00077	.00013	-.00083	-.00337	.13825	.00034
#3	.00029	-.00039	-.00114	.00113	-.01390	-.03772	.00493
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10540	.00108	.00107	.02200	-.00039	.00573	-.00048
Stddev	.01062	.00183	.00028	.00344	.00041	.00474	.00214
%RSD	10.076	170.08	25.954	15.656	105.89	82.786	446.21
#1	.09678	.00075	.00091	.02400	-.00042	.00498	-.00208
#2	.10216	.00305	.00140	.01802	.00004	.01079	.00195
#3	.11726	-.00057	.00092	.02397	-.00079	.00140	-.00131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 17:56:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00175	.00123	.00398	.00070	.00035	-.00127	-.00225
Stddev	.00165	.00822	.00017	.00095	.00026	.00660	.00211
%RSD	94.528	665.93	4.3588	134.38	72.867	517.95	93.955
#1	-.00152	-.00731	.00393	-.00021	.00016	.00469	-.00213
#2	-.00350	.00908	.00417	.00064	.00064	-.00837	-.00020
#3	-.00022	.00193	.00383	.00168	.00025	-.00014	-.00441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00014	.00038	F -1.6421
Stddev	.00052	.00015	1.3533
%RSD	386.94	38.823	82.417
#1	.00070	.00051	-1.2241
#2	-.00033	.00041	-.54701
#3	.00003	.00022	-3.1551
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11640.	85119.	3372.2
Stddev	17.	279.	6.6
%RSD	.14471	.32783	.19603
#1	11643.	85407.	3374.2
#2	11622.	84850.	3377.6
#3	11655.	85101.	3364.8

Approved: February 12, 2016

Sample Name: LLCCV Acquired: 2/11/2016 18:00:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00905	.16880	.00621	.07714	.00900	.00156	.39573
Stddev	.00048	.00263	.00256	.00182	.00052	.00008	.01449
%RSD	5.3010	1.5603	41.164	2.3534	5.8222	5.4169	3.6608
#1	.00916	.16987	.00377	.07896	.00960	.00150	.41232
#2	.00853	.16580	.00599	.07713	.00876	.00165	.38926
#3	.00947	.17073	.00887	.07533	.00864	.00151	.38560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.00388	.00367	.00386	.05614	.78930	.07989
Stddev	.00012	.00032	.00087	.00023	.01133	.08766	.00208
%RSD	17.321	8.2348	23.560	5.8887	20.176	11.106	2.5976
#1	.00076	.00352	.00421	.00360	.05362	.76645	.08177
#2	.00075	.00414	.00413	.00396	.04628	.88613	.08022
#3	.00055	.00397	.00267	.00402	.06851	.71534	.07766
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55079	.00958	.00791	.39658	.01655	.77923	.00769
Stddev	.01933	.00260	.00054	.03031	.00072	.00694	.00167
%RSD	3.5094	27.180	6.8644	7.6442	4.3810	.89002	21.753
#1	.56979	.01098	.00757	.39853	.01737	.77816	.00758
#2	.55142	.01117	.00854	.36533	.01625	.78664	.00942
#3	.53115	.00657	.00763	.42586	.01601	.77289	.00608
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: LLCCV Acquired: 2/11/2016 18:00:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08293	.01102	.79533	.41373	.03952	.02346	.15991
Stddev	.00387	.00524	.00495	.00431	.00019	.00410	.00326
%RSD	4.6693	47.600	.62197	1.0412	.47400	17.480	2.0413
#1	.08588	.01385	.79884	.41528	.03932	.02527	.16155
#2	.08437	.00497	.79748	.41704	.03954	.02634	.16203
#3	.07855	.01424	.78967	.40886	.03969	.01876	.15615
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00670	.01790	F 328.16
Stddev	.00035	.00016	.62
%RSD	5.2818	.88194	.18912
#1	.00641	.01791	327.47
#2	.00660	.01806	328.68
#3	.00709	.01774	328.33
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11760.	85946.	3454.5
Stddev	26.	137.	3.3
%RSD	.22524	.15889	.09412
#1	11790.	86093.	3451.2
#2	11739.	85924.	3457.7
#3	11752.	85822.	3454.5

Approved: February 12, 2016

Sample Name: ICSA Acquired: 2/11/2016 18:04:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00307	F 288.54	F -.00171	F .03970	F .00149	F -.00002	F 258.32
Stddev	.00011	2.04	.00601	.00148	.00063	.00009	1.22
%RSD	3.6626	.70791	350.57	3.7392	42.316	506.76	.47210
#1	.00308	289.84	-.00861	.03948	.00206	.00007	256.92
#2	.00318	289.60	.00245	.04128	.00160	-.00011	259.13
#3	.00296	286.19	.00101	.03833	.00081	-.00001	258.91
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.40000	10.000	.40000	.50000	1.0000	.05000	10.000
Range	-10.000%	10.000%	-10.000%	-10.000%	-10.000%	-10.000%	10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00033	F -.00163	F -.00128	F -.01088	F 106.01	F -.05219	F .00619
Stddev	.00027	.00028	.00045	.00064	.57	.05598	.00371
%RSD	80.373	17.081	35.162	5.9158	.54077	107.26	59.926
#1	.00065	-.00195	-.00177	-.01021	105.35	-.04669	.00959
#2	.00018	-.00151	-.00121	-.01150	106.34	-.11071	.00223
#3	.00018	-.00144	-.00088	-.01092	106.34	.00084	.00674
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	-10.000%	-10.000%	-10.000%	-10.000%	10.000%	-10.000%	-10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 272.15	F .00357	F -.00102	F .06216	F -.00201	F .03959	F -.00667
Stddev	1.23	.00097	.00010	.00920	.00053	.00988	.00452
%RSD	.45338	27.261	9.6774	14.798	26.268	24.958	67.817
#1	270.85	.00469	-.00092	.06623	-.00260	.03305	-.00926
#2	272.30	.00287	-.00112	.06862	-.00183	.03476	-.00930
#3	273.30	.00316	-.00102	.05163	-.00159	.05095	-.00145
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Approved: February 12, 2016

Sample Name: ICSA Acquired: 2/11/2016 18:04:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00308	F .00098	F .73093	F .00098	F .00057	F .00396	F -.00370
Stddev	.00181	.00581	.00508	.00110	.00022	.00476	.00258
%RSD	58.628	594.09	.69567	111.86	39.144	120.19	69.572
#1	.00193	.00755	.73233	-.00027	.00075	.00567	-.00603
#2	.00215	-.00111	.73517	.00176	.00064	.00762	-.00414
#3	.00517	-.00350	.72530	.00145	.00032	-.00142	-.00094
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F -.00138	F -.00581	F -29.187
Stddev	.00064	.00035	2.643
%RSD	46.089	5.9625	9.0557
#1	-.00180	-.00585	-31.846
#2	-.00065	-.00614	-29.154
#3	-.00170	-.00545	-26.560
Check ?	Chk Fail	Chk Fail	Chk Fail
Value	1.0000	1.0000	1.0000
Range	-10.000%	-10.000%	-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10678.	76209.	3245.7
Stddev	31.	585.	6.9
%RSD	.29031	.76781	.21380
#1	10664.	75762.	3250.5
#2	10713.	75994.	3237.8
#3	10656.	76871.	3248.9

Approved: February 12, 2016

Sample Name: ICSAB Acquired: 2/11/2016 18:08:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .55149	F 281.14	F .25384	F -.03448	F .26478	F .25541	F 253.58
Stddev	.00225	.32	.00067	.00144	.00120	.00023	.94
%RSD	.40775	.11483	.26377	4.1739	.45293	.09129	.37179
#1	.55139	281.12	.25355	-.03597	.26530	.25524	252.56
#2	.55379	281.48	.25336	-.03310	.26340	.25568	253.76
#3	.54930	280.83	.25460	-.03435	.26562	.25532	254.42
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.40000	10.000	.40000	.50000	1.0000	.05000	10.000
Range	10.000%	10.000%	-10.000%	-10.000%	-10.000%	10.000%	10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .48004	F .24918	F .26036	F .24705	F 103.29	F 5.3805	F .00596
Stddev	.00102	.00089	.00065	.00102	.52	.0319	.00150
%RSD	.21313	.35750	.24921	.41356	.50204	.59357	25.099
#1	.48088	.24958	.26037	.24822	102.76	5.3449	.00674
#2	.48034	.24980	.26100	.24656	103.33	5.4068	.00690
#3	.47890	.24816	.25970	.24636	103.79	5.3897	.00423
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	10.000%	10.000%	-10.000%	-10.000%	10.000%	-10.000%	-10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 265.12	F .26547	F -.00091	F 5.4339	.49728	F .04399	.50938
Stddev	.69	.00028	.00046	.0316	.00230	.00721	.00586
%RSD	.25910	.10709	50.548	.58112	.46340	16.399	1.1497
#1	264.39	.26577	-.00084	5.3992	.49643	.03790	.51124
#2	265.22	.26521	-.00140	5.4610	.49988	.04211	.51407
#3	265.75	.26543	-.00049	5.4415	.49552	.05196	.50281
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Pass
Value	10.000	.50000	1.0000	50.000		10.000	
Range	10.000%	-10.000%	-10.000%	-10.000%		-10.000%	

Approved: February 12, 2016

Sample Name: ICSAB Acquired: 2/11/2016 18:08:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .52864	F .26410	F .01249	F .00040	F .00024	F .00811	.48019
Stddev	.00450	.00739	.00086	.00100	.00016	.00386	.00242
%RSD	.85067	2.7974	6.9208	250.93	68.204	47.639	.50333
#1	.53383	.26228	.01261	.00144	.00011	.00528	.48165
#2	.52609	.25778	.01156	.00030	.00043	.00653	.48152
#3	.52600	.27222	.01328	-.00055	.00018	.01251	.47740
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F .26621	F .50017	F -30.141
Stddev	.00094	.00132	3.027
%RSD	.35140	.26387	10.042
#1	.26691	.50153	-27.855
#2	.26515	.50008	-28.995
#3	.26659	.49890	-33.574
Check ?	Chk Fail	Chk Fail	Chk Fail
Value	1.0000	1.0000	1.0000
Range	-10.000%	-10.000%	-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10665.	77174.	3307.6
Stddev	12.	435.	19.9
%RSD	.11669	.56393	.60151
#1	10661.	77651.	3330.5
#2	10655.	77074.	3298.3
#3	10679.	76797.	3294.1

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 18:12:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42134	10.740	.42403	.52610	1.0780	.05377	10.911
Stddev	.00254	.022	.00692	.00454	.0089	.00009	.052
%RSD	.60371	.20100	1.6316	.86279	.82841	.17209	.47679
#1	.41945	10.723	.43181	.52145	1.0694	.05371	10.851
#2	.42034	10.764	.42169	.52634	1.0773	.05372	10.939
#3	.42423	10.733	.41858	.53052	1.0872	.05388	10.943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05379	.21574	.53793	.54053	4.3886	53.717	1.0896
Stddev	.00022	.00052	.00238	.00273	.0282	.441	.0107
%RSD	.40724	.24261	.44196	.50582	.64356	.82090	.98167
#1	.05385	.21634	.53519	.54317	4.3587	53.260	1.0809
#2	.05355	.21535	.53922	.54071	4.3921	53.752	1.0863
#3	.05397	.21555	.53939	.53771	4.4149	54.140	1.1015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 11.167	F .55338	1.0931	53.441	.53775	10.571	.53897
Stddev	.128	.00501	.0020	.450	.00107	.014	.00220
%RSD	1.1420	.90464	.18243	.84165	.19849	.13481	.40747
#1	11.106	.54889	1.0952	53.019	.53882	10.583	.53756
#2	11.082	.55248	1.0929	53.388	.53774	10.556	.54150
#3	11.314	.55878	1.0913	53.914	.53669	10.576	.53784
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	10.000	.50000					
Range	10.000%	10.000%					

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 18:12:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2757	.42394	5.3407	1.0848	1.0849	1.0803	.54690
Stddev	.0026	.00612	.0034	.0024	.0098	.0158	.00262
%RSD	.20487	1.4441	.06354	.22434	.90320	1.4630	.47910
#1	1.2783	.41755	5.3436	1.0875	1.0766	1.0627	.54828
#2	1.2758	.42976	5.3370	1.0838	1.0825	1.0932	.54854
#3	1.2730	.42451	5.3415	1.0830	1.0957	1.0851	.54387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0629	1.0784	F 14.048
Stddev	.0020	.0019	.907
%RSD	.19188	.17739	6.4540
#1	1.0606	1.0805	14.919
#2	1.0644	1.0779	13.109
#3	1.0637	1.0768	14.117
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11273.	81763.	3303.5
Stddev	26.	339.	8.3
%RSD	.23104	.41422	.25253
#1	11266.	81909.	3307.4
#2	11302.	82003.	3309.3
#3	11252.	81375.	3294.0

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 18:15:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00218	.00565	.00207	.00147	.00072	-.00005	.02977
Stddev	.00174	.00636	.00172	.00186	.00048	.00007	.01587
%RSD	79.578	112.40	83.215	126.85	66.913	148.20	53.302
#1	.00378	.01273	.00406	-.00067	.00022	-.00010	.04060
#2	.00033	.00379	.00122	.00272	.00077	-.00008	.01156
#3	.00244	.00044	.00094	.00236	.00119	.00003	.03716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00006	-.00024	-.00008	.00021	.03310	-.00230
Stddev	.00015	.00017	.00014	.00100	.01134	.05811	.00397
%RSD	90.994	303.77	56.280	1213.3	5310.3	175.56	172.44
#1	-.00004	-.00025	-.00011	-.00031	-.01288	.09731	-.00650
#2	-.00033	.00007	-.00024	-.00095	.00664	-.01589	.00138
#3	-.00012	.00001	-.00038	.00101	.00688	.01789	-.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07833	.00194	.00126	.00551	-.00030	-.00018	-.00113
Stddev	.04728	.00114	.00038	.02400	.00116	.00606	.00181
%RSD	60.368	58.773	30.132	435.71	380.28	3357.5	160.66
#1	.07399	.00141	.00082	.02388	-.00130	-.00141	.00021
#2	.03336	.00325	.00149	.01430	-.00058	.00640	-.00040
#3	.12763	.00116	.00148	-.02165	.00096	-.00553	-.00319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 18:15:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00223	-.00489	.00382	.00037	.00031	-.00356	-.00180
Stddev	.00263	.00667	.00094	.00071	.00041	.00885	.00101
%RSD	118.24	136.51	24.628	192.71	134.38	248.80	56.344
#1	.00037	.00245	.00319	-.00021	.00079	-.00275	-.00195
#2	-.00216	-.01060	.00336	.00117	.00007	-.01278	-.00272
#3	-.00490	-.00651	.00490	.00015	.00007	.00486	-.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00007	.00045	F -1.1009
Stddev	.00033	.00015	3.3434
%RSD	474.60	32.312	303.69
#1	-.00021	.00032	-.92318
#2	-.00002	.00042	2.1501
#3	.00043	.00061	-4.5297
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11570.	84865.	3358.3
Stddev	27.	92.	5.7
%RSD	.22963	.10830	.16948
#1	11544.	84760.	3356.1
#2	11569.	84902.	3364.8
#3	11597.	84932.	3354.0

Approved: February 12, 2016

Sample Name: PBW 78 Acquired: 2/11/2016 18:20:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	-.00207	.00076	-.00217	.00029	-.00003	.01640	-.00003
Stddev	.00022	.00078	.00273	.00100	.00053	.00003	.03090	.00012
%RSD	97.284	37.836	358.28	45.936	185.37	94.212	188.40	356.03
#1	-.00009	-.00296	.00279	-.00305	-.00028	.00000	.02831	-.00010
#2	-.00047	-.00150	-.00235	-.00236	.00037	-.00004	.03957	.00010
#3	-.00011	-.00174	.00184	-.00109	.00077	-.00006	-.01868	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00014	-.00087	-.00235	.05145	-.00046	.06421	.00245
Stddev	.00038	.00053	.00021	.00702	.04631	.00112	.07567	.00123
%RSD	99.062	391.17	23.657	298.74	90.012	242.23	117.86	50.335
#1	-.00026	.00075	-.00110	-.00845	.06726	-.00149	.05209	.00317
#2	-.00082	-.00019	-.00070	-.00392	-.00070	.00074	.14521	.00102
#3	-.00008	-.00015	-.00081	.00532	.08777	-.00064	-.00468	.00314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.03523	.00100	-.00926	-.00146	-.00253	-.00009	.00948
Stddev	.00014	.01389	.00085	.00830	.00306	.00275	.00211	.00169
%RSD	30.458	39.430	84.690	89.641	209.56	108.73	2427.5	17.802
#1	.00045	.05092	.00116	-.01885	-.00177	-.00186	-.00148	.00753
#2	.00060	.03030	.00009	-.00445	.00175	-.00018	-.00112	.01032
#3	.00032	.02448	.00176	-.00449	-.00436	-.00556	.00234	.01057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: PBW 78 Acquired: 2/11/2016 18:20:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.00024	-.00177	-.00289	-.00120	.00269	2.9507
Stddev	.00087	.00007	.00170	.00433	.00040	.00020	.8076
%RSD	94.810	31.147	95.912	149.53	33.380	7.3430	27.371
#1	-.00005	.00026	-.00366	.00104	-.00156	.00274	2.3329
#2	.00115	.00015	-.00036	-.00219	-.00077	.00286	2.6546
#3	.00163	.00029	-.00129	-.00753	-.00126	.00247	3.8645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12075.	88975.	3525.0
Stddev	19.	274.	20.0
%RSD	.15916	.30826	.56734
#1	12077.	88802.	3512.0
#2	12093.	89291.	3514.9
#3	12055.	88831.	3548.0

Approved: February 12, 2016

Sample Name: LCSW 78 Acquired: 2/11/2016 18:24:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19417	4.8763	.18820	.94100	.49703	.02404	4.9774	.02406
Stddev	.00089	.0210	.00113	.00227	.00064	.00002	.0179	.00007
%RSD	.45911	.42981	.59849	.24111	.12973	.09976	.35965	.28881
#1	.19458	4.8953	.18800	.93839	.49768	.02403	4.9767	.02406
#2	.19315	4.8538	.18942	.94248	.49639	.02402	4.9598	.02413
#3	.19479	4.8798	.18719	.94213	.49701	.02407	4.9956	.02399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09979	.24872	.24903	1.9988	24.604	.49827	4.9761	.25130
Stddev	.00062	.00079	.00219	.0143	.035	.00109	.0740	.00199
%RSD	.62111	.31705	.87962	.71380	.14175	.21779	1.4880	.79051
#1	.09990	.24960	.24926	1.9825	24.635	.49947	4.8931	.25291
#2	.10035	.24809	.25110	2.0090	24.610	.49736	4.9999	.24908
#3	.09913	.24846	.24674	2.0049	24.566	.49796	5.0354	.25192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51041	24.659	.24868	4.6934	.24760	.58211	.19054	2.4602
Stddev	.00189	.042	.00095	.0062	.00240	.00289	.00264	.0030
%RSD	.37073	.16970	.38319	.13298	.96871	.49731	1.3876	.12228
#1	.51245	24.691	.24926	4.6993	.24875	.58527	.19142	2.4630
#2	.51006	24.673	.24919	4.6941	.24921	.58149	.18756	2.4605
#3	.50871	24.611	.24758	4.6868	.24484	.57958	.19262	2.4570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: LCSW 78 Acquired: 2/11/2016 18:24:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50183	.49815	.49482	.25168	.49068	.49233	1.5298
Stddev	.00151	.00084	.00814	.00233	.00011	.00105	.8403
%RSD	.30189	.16888	1.6444	.92668	.02276	.21395	54.928
#1	.50354	.49881	.49473	.25158	.49080	.49281	1.1554
#2	.50130	.49720	.48673	.25406	.49062	.49306	.94179
#3	.50065	.49845	.50301	.24940	.49060	.49112	2.4922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11737.	85953.	3490.8
Stddev	46.	139.	19.3
%RSD	.39221	.16122	.55363
#1	11754.	86102.	3472.4
#2	11772.	85828.	3488.9
#3	11685.	85929.	3510.9

Approved: February 12, 2016

Sample Name: FBLANK 78 Acquired: 2/11/2016 18:27:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556947-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00810	-.00183	.00242	.00087	-.00002	.00210	-.00009
Stddev	.00041	.00401	.00298	.00166	.00078	.00008	.00641	.00013
%RSD	441.70	49.479	162.65	68.526	89.655	419.72	305.54	140.81
#1	.00037	.00513	-.00396	.00051	.00068	-.00008	.00313	-.00024
#2	-.00025	.01266	.00158	.00320	.00174	.00007	-.00476	-.00003
#3	-.00039	.00651	-.00312	.00354	.00021	-.00005	.00793	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	-.00037	.00001	-.00654	.07786	-.00472	.06339	.00231
Stddev	.00014	.00022	.00101	.01252	.04265	.00354	.03127	.00221
%RSD	30.610	59.829	20089.	191.41	54.769	75.016	49.327	95.486
#1	.00061	-.00059	.00082	-.01390	.09531	-.00702	.08077	-.00023
#2	.00047	-.00039	.00033	-.01363	.02926	-.00650	.08211	.00373
#3	.00032	-.00014	-.00113	.00791	.10902	-.00064	.02729	.00343
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	118.97	.00043	-.00601	-.00008	-.00241	-.00220	.00543
Stddev	.00012	.27	.00118	.00165	.00027	.00087	.00162	.00128
%RSD	52.692	.22522	274.42	27.495	325.99	36.129	73.552	23.635
#1	.00035	118.75	.00165	-.00503	-.00026	-.00169	-.00403	.00665
#2	.00010	119.27	.00036	-.00792	-.00021	-.00338	-.00093	.00555
#3	.00026	118.89	-.00071	-.00509	.00022	-.00217	-.00166	.00409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: FBLANK 78 Acquired: 2/11/2016 18:27:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG556947-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00020	-.00171	-.00404	-.00014	.00546	1.7874
Stddev	.00035	.00009	.00305	.00139	.00012	.00008	2.0039
%RSD	40.682	43.453	178.49	34.507	87.452	1.4137	112.11
#1	.00081	.00026	-.00393	-.00480	.00000	.00552	1.3825
#2	.00053	.00010	-.00295	-.00243	-.00022	.00537	.01698
#3	.00122	.00022	.00176	-.00489	-.00021	.00547	3.9629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11905.	86039.	3531.1
Stddev	24.	428.	14.0
%RSD	.19809	.49755	.39750
#1	11925.	85880.	3545.7
#2	11879.	85713.	3517.7
#3	11910.	86524.	3530.0

Approved: February 12, 2016

Sample Name: L1602052401 Acquired: 2/11/2016 18:32:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.08463	-.00049	.00094	.00180	.00000	.50613	-.00002
Stddev	.00089	.00553	.00231	.00096	.00053	.00002	.02687	.00026
%RSD	256.35	6.5380	472.11	102.73	29.393	564.83	5.3097	1186.3
#1	-.00121	.08827	-.00316	.00205	.00146	.00002	.52926	-.00017
#2	-.00042	.07827	.00071	.00039	.00241	-.00002	.47665	-.00017
#3	.00058	.08736	.00098	.00038	.00152	.00001	.51247	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00062	.02253	.20420	.15256	-.00130	.11944	.00523
Stddev	.00032	.00118	.00125	.02624	.04305	.00257	.06547	.00248
%RSD	79.790	189.39	5.5363	12.849	28.220	198.09	54.818	47.324
#1	-.00050	.00007	.02386	.20603	.14449	-.00244	.10469	.00692
#2	-.00066	.00198	.02235	.17709	.19908	-.00309	.19103	.00639
#3	-.00004	-.00018	.02138	.22947	.11412	.00165	.06260	.00239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.22702	.00107	.00157	.00326	-.00085	-.00148	.17774
Stddev	.00031	.00392	.00038	.00163	.00403	.00239	.00162	.01312
%RSD	222.16	1.7246	35.485	104.18	123.67	282.08	109.68	7.3841
#1	-.00048	.23006	.00145	-.00021	.00792	-.00070	-.00006	.18088
#2	-.00006	.22261	.00070	.00192	.00092	.00146	-.00112	.18901
#3	.00012	.22840	.00104	.00300	.00095	-.00330	-.00325	.16333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602052401 Acquired: 2/11/2016 18:32:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00153	.00176	.00211	-.00151	-.00030	.01363	1.3015
Stddev	.00088	.00030	.00415	.00509	.00068	.00025	4.3512
%RSD	57.593	17.150	197.19	337.10	227.00	1.8594	334.31
#1	.00165	.00165	.00073	-.00334	.00045	.01373	6.2448
#2	.00234	.00210	-.00118	.00424	-.00047	.01381	-1.9483
#3	.00059	.00153	.00677	-.00544	-.00088	.01334	-.39199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12016.	87823.	3510.0
Stddev	23.	291.	24.7
%RSD	.18886	.33105	.70380
#1	12004.	87867.	3481.6
#2	12042.	88088.	3522.0
#3	12002.	87512.	3526.4

Approved: February 12, 2016

Sample Name: L1602046102 Acquired: 2/11/2016 18:36:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.02686	.00208	.01011	2.6161	.00001	3.5875
Stddev	.00125	.00297	.00055	.00057	.0197	.00001	.0359
%RSD	137.88	11.049	26.449	5.6128	.75421	89.056	1.0012
#1	.00233	.02348	.00227	.00957	2.6235	.00001	3.5858
#2	-.00001	.02902	.00251	.01070	2.6310	.00001	3.6242
#3	.00040	.02809	.00146	.01005	2.5937	-.00000	3.5524
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00040	.01746	.00644	5.8251	.01817	.04170
Stddev	.00026	.00011	.00058	.00062	.0303	.01438	.00170
%RSD	395.13	26.785	3.3481	9.6840	.52098	79.104	4.0665
#1	-.00036	.00043	.01760	.00716	5.8454	.03071	.04214
#2	.00002	.00028	.01682	.00613	5.8398	.00248	.04314
#3	.00014	.00049	.01797	.00603	5.7902	.02133	.03983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43265	.08754	.00063	127.06	.00357	-.00191	-.00040
Stddev	.06231	.00245	.00015	1.04	.00063	.00172	.00115
%RSD	14.402	2.8004	24.621	.82123	17.609	90.013	287.70
#1	.39829	.08968	.00045	127.64	.00404	-.00117	-.00053
#2	.39509	.08808	.00075	127.68	.00381	-.00068	-.00149
#3	.50458	.08487	.00069	125.85	.00285	-.00388	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602046102 Acquired: 2/11/2016 18:36:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00112	.00089	.06042	.00057	1.0059	.00429	-.00336
Stddev	.00081	.00344	.00010	.00010	.0078	.00661	.00200
%RSD	72.037	388.29	.16309	16.950	.77764	154.07	59.557
#1	-.00064	-.00179	.06046	.00046	1.0090	.01108	-.00537
#2	-.00067	-.00032	.06050	.00065	1.0118	.00390	-.00137
#3	-.00206	.00476	.06031	.00059	.99704	-.00212	-.00334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00057	.00709	F -.96899
Stddev	.00068	.00025	2.4604
%RSD	119.12	3.4595	253.92
#1	-.00017	.00715	1.3126
#2	-.00135	.00731	-.64368
#3	-.00019	.00682	-3.5759
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11839.	85461.	3532.4
Stddev	35.	445.	18.9
%RSD	.29269	.52123	.53481
#1	11799.	85903.	3512.0
#2	11855.	85013.	3535.7
#3	11862.	85466.	3549.4

Approved: February 12, 2016

Sample Name: L1602046102S Acquired: 2/11/2016 18:40:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19330	4.8262	.18869	.95554	3.1621	.02405	8.5357	.02383
Stddev	.00193	.0060	.00335	.00250	.0090	.00008	.0656	.00016
%RSD	1.0009	.12349	1.7755	.26207	.28337	.34449	.76867	.65770
#1	.19348	4.8228	.19024	.95770	3.1577	.02398	8.4892	.02367
#2	.19514	4.8331	.19098	.95280	3.1724	.02414	8.6107	.02398
#3	.19128	4.8227	.18484	.95612	3.1562	.02403	8.5071	.02383
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09772	.26169	.24920	7.9135	24.440	.53542	5.3860	.33626
Stddev	.00047	.00066	.00193	.0289	.046	.00407	.1557	.00185
%RSD	.48436	.25030	.77473	.36465	.18659	.76079	2.8902	.55049
#1	.09774	.26241	.24939	7.9218	24.443	.53423	5.3148	.33757
#2	.09818	.26112	.25104	7.9372	24.392	.53995	5.2787	.33414
#3	.09723	.26156	.24719	7.8814	24.483	.53207	5.5645	.33706
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50362	151.88	.24530	4.7654	.24222	.57442	.18968	2.4973
Stddev	.00295	.49	.00244	.0255	.00142	.00150	.00600	.0060
%RSD	.58657	.31945	.99546	.53561	.58640	.26039	3.1610	.23941
#1	.50606	151.88	.24684	4.7784	.24080	.57584	.19541	2.5001
#2	.50446	152.37	.24658	4.7818	.24224	.57286	.19017	2.5013
#3	.50033	151.40	.24249	4.7360	.24364	.57456	.18345	2.4904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602046102S Acquired: 2/11/2016 18:40:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49424	1.5138	.49344	.23960	.48922	.49428	.97340
Stddev	.00156	.0041	.00659	.00236	.00093	.00235	3.3220
%RSD	.31485	.27298	1.3352	.98318	.18947	.47587	341.28
#1	.49564	1.5117	.50070	.24095	.48971	.49586	3.8903
#2	.49450	1.5185	.49177	.23688	.48816	.49539	1.6724
#3	.49257	1.5111	.48784	.24097	.48981	.49157	-2.6425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11617.	84140.	3471.0
Stddev	18.	121.	9.9
%RSD	.15816	.14377	.28500
#1	11601.	84209.	3481.9
#2	11612.	84000.	3462.5
#3	11637.	84210.	3468.6

Approved: February 12, 2016

Sample Name: L1602046102SD Acquired: 2/11/2016 18:43:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19876	4.9381	.19180	.98193	3.2372	.02463	8.8056	.02475
Stddev	.00079	.0031	.00221	.00084	.0117	.00007	.0697	.00017
%RSD	.39847	.06198	1.1520	.08597	.36199	.27816	.79127	.70452
#1	.19930	4.9411	.19326	.98191	3.2373	.02466	8.7634	.02461
#2	.19785	4.9350	.19288	.98110	3.2488	.02467	8.8860	.02469
#3	.19914	4.9382	.18926	.98279	3.2254	.02455	8.7673	.02494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10021	.26863	.25578	8.0654	25.101	.54436	5.4322	.34667
Stddev	.00020	.00120	.00045	.0345	.073	.00343	.0221	.00271
%RSD	.19481	.44774	.17697	.42764	.28927	.63078	.40616	.78180
#1	.10042	.26777	.25542	8.1045	25.132	.54689	5.4114	.34744
#2	.10019	.26812	.25564	8.0525	25.153	.54574	5.4554	.34366
#3	.10003	.27001	.25629	8.0393	25.018	.54045	5.4298	.34892
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51825	155.35	.25191	4.8839	.24989	.59320	.19083	2.5671
Stddev	.00182	.57	.00038	.0142	.00084	.00182	.00575	.0035
%RSD	.35176	.36481	.14944	.29084	.33513	.30692	3.0138	.13696
#1	.51886	155.31	.25231	4.8832	.24893	.59386	.18621	2.5655
#2	.51969	155.93	.25186	4.8984	.25034	.59459	.19727	2.5711
#3	.51620	154.80	.25157	4.8700	.25041	.59114	.18900	2.5646
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602046102SD Acquired: 2/11/2016 18:43:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557081-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50761	1.5531	.51055	.24540	.50183	.50718	.26593
Stddev	.00305	.0057	.01179	.00154	.00188	.00217	3.8958
%RSD	.60008	.36710	2.3095	.62580	.37483	.42882	1465.0
#1	.50974	1.5519	.50471	.24717	.50392	.50891	-3.9803
#2	.50896	1.5594	.52412	.24445	.50129	.50789	1.1029
#3	.50412	1.5481	.50282	.24458	.50027	.50474	3.6752
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11592.	84226.	3476.3
Stddev	16.	55.	15.1
%RSD	.13488	.06559	.43417
#1	11575.	84290.	3478.3
#2	11606.	84190.	3460.3
#3	11594.	84199.	3490.3

Approved: February 12, 2016

Sample Name: L1602044401 Acquired: 2/11/2016 18:47:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.01554	-.00064	.04405	.97322	-.00005	70.806	.00005
Stddev	.00095	.00788	.00305	.00050	.00593	.00003	.438	.00016
%RSD	98.106	50.715	473.99	1.1439	.60904	71.018	.61886	353.68
#1	.00115	.00971	.00072	.04382	.97350	-.00003	70.866	-.00009
#2	.00181	.02450	.00149	.04370	.97901	-.00009	71.212	.00023
#3	-.00006	.01241	-.00414	.04463	.96716	-.00003	70.341	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.00060	.00914	.33432	1.7972	.00916	11.802	.21021
Stddev	.00038	.00036	.00084	.01681	.0248	.00078	.055	.00178
%RSD	81.604	60.487	9.2163	5.0281	1.3792	8.4783	.46456	.84531
#1	-.00073	.00088	.01002	.31580	1.8249	.00990	11.748	.20930
#2	-.00003	.00072	.00903	.34861	1.7769	.00835	11.858	.20906
#3	-.00063	.00019	.00835	.33856	1.7899	.00923	11.800	.21226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	27.869	-.00022	.00136	-.00135	-.00037	-.00260	6.6371
Stddev	.00010	.194	.00051	.00479	.00043	.00416	.01070	.0430
%RSD	23.953	.69498	233.91	351.66	31.488	1109.9	411.88	.64816
#1	.00048	27.904	.00035	.00308	-.00125	-.00311	-.01489	6.6775
#2	.00045	28.043	-.00065	.00506	-.00182	.00441	.00247	6.6418
#3	.00030	27.660	-.00036	-.00405	-.00099	-.00243	.00462	6.5919
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602044401 Acquired: 2/11/2016 18:47:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	1.0980	-.01198	-.00251	-.00076	.01637	1.6989
Stddev	.00015	.0057	.00598	.00297	.00019	.00025	2.8985
%RSD	9.3068	.52197	49.921	118.20	25.290	1.5475	170.62
#1	.00174	1.0983	-.00613	.00090	-.00058	.01628	-1.6377
#2	.00148	1.1035	-.01172	-.00393	-.00096	.01665	3.1395
#3	.00150	1.0921	-.01808	-.00450	-.00073	.01617	3.5949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11770.	85999.	3497.3
Stddev	17.	103.	10.5
%RSD	.14584	.12010	.30092
#1	11772.	85903.	3485.5
#2	11752.	85987.	3500.7
#3	11786.	86108.	3505.7

Approved: February 12, 2016

Sample Name: L1602044401PS Acquired: 2/11/2016 18:51:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557159-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19521	4.8206	.18500	.98097	1.3748	.02405	69.542	.02405
Stddev	.00017	.0133	.00133	.00054	.0097	.00005	.583	.00019
%RSD	.08529	.27577	.72030	.05472	.70866	.21441	.83826	.78664
#1	.19530	4.8201	.18428	.98157	1.3656	.02408	69.006	.02389
#2	.19502	4.8342	.18418	.98052	1.3850	.02408	70.163	.02401
#3	.19531	4.8076	.18654	.98082	1.3739	.02399	69.458	.02426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09592	.24268	.24822	2.2584	26.237	.49870	15.787	.43580
Stddev	.00050	.00157	.00140	.0450	.119	.00292	.063	.00895
%RSD	.52432	.64867	.56245	1.9933	.45320	.58578	.39827	2.0540
#1	.09579	.24442	.24924	2.2244	26.135	.49542	15.731	.42780
#2	.09648	.24137	.24878	2.3094	26.368	.50102	15.855	.44547
#3	.09550	.24224	.24663	2.2414	26.208	.49966	15.774	.43413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50564	49.348	.23896	4.7876	.24042	.58052	.18588	8.4804
Stddev	.00085	.358	.00136	.0024	.00237	.00228	.00329	.0130
%RSD	.16840	.72540	.56706	.04964	.98462	.39290	1.7710	.15310
#1	.50662	49.033	.24002	4.7899	.24235	.58123	.18352	8.4950
#2	.50522	49.737	.23743	4.7852	.23777	.58236	.18964	8.4761
#3	.50508	49.273	.23942	4.7878	.24113	.57796	.18448	8.4702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602044401PS Acquired: 2/11/2016 18:51:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment: WG557159-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49616	1.4892	.48833	.24453	.48616	.49285	2.3926
Stddev	.00134	.0122	.00891	.00115	.00034	.00053	1.6513
%RSD	.26952	.82197	1.8239	.46893	.07011	.10663	69.015
#1	.49765	1.4783	.47806	.24583	.48585	.49342	.51818
#2	.49575	1.5024	.49397	.24366	.48652	.49274	3.0274
#3	.49507	1.4868	.49296	.24409	.48610	.49238	3.6323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11621.	84640.	3489.1
Stddev	39.	323.	4.1
%RSD	.33396	.38168	.11610
#1	11664.	84482.	3493.6
#2	11612.	84427.	3487.9
#3	11588.	85012.	3485.8

Approved: February 12, 2016

Sample Name: L1602044401SDL Acquired: 2/11/2016 18:55:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG557159-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	-.00878	-.00018	.01174	.18678	-.00007	13.708
Stddev	.00135	.00503	.00310	.00149	.00198	.00007	.152
%RSD	565.74	57.298	1713.4	12.703	1.0626	100.86	1.1088
#1	-.00123	-.01132	-.00277	.01326	.18459	-.00012	13.544
#2	.00144	-.01204	.00325	.01169	.18847	-.00010	13.845
#3	.00050	-.00299	-.00102	.01028	.18727	.00001	13.734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	-.00043	-.00085	.00185	.06570	.37165	-.00018
Stddev	.00006	.00021	.00081	.00014	.01603	.02939	.00220
%RSD	45.173	49.795	94.970	7.7322	24.401	7.9083	1254.3
#1	-.00016	-.00053	-.00079	.00175	.07066	.39489	-.00168
#2	-.00006	-.00018	-.00007	.00202	.07868	.38146	.00235
#3	-.00016	-.00058	-.00169	.00179	.04778	.33861	-.00119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.3696	.04223	-.00002	5.4370	-.00014	.00240	.00114
Stddev	.0837	.00277	.00005	.0723	.00082	.00312	.00289
%RSD	3.5322	6.5508	221.05	1.3301	594.06	129.82	253.81
#1	2.3341	.04370	-.00007	5.3627	.00064	.00598	-.00088
#2	2.4652	.04396	-.00003	5.5072	-.00007	.00029	.00444
#3	2.3095	.03904	.00003	5.4411	-.00098	.00093	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: L1602044401SDL Acquired: 2/11/2016 18:55:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG557159-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00266	-.00235	1.2589	.00070	.21183	-.00600	-.00004
Stddev	.00234	.00476	.0015	.00030	.00237	.00139	.00077
%RSD	87.987	202.86	.11694	43.654	1.1207	23.156	1835.0
#1	.00004	-.00059	1.2582	.00094	.20912	-.00755	-.00091
#2	-.00412	-.00773	1.2606	.00080	.21352	-.00559	.00025
#3	-.00392	.00129	1.2579	.00036	.21286	-.00487	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00044	.00406	F -.82019
Stddev	.00028	.00015	1.7393
%RSD	64.345	3.7355	212.07
#1	-.00034	.00410	.73541
#2	-.00076	.00419	-2.6982
#3	-.00022	.00389	-.49779
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12627.	92100.	3629.5
Stddev	32.	123.	28.3
%RSD	.25202	.13334	.78095
#1	12599.	92241.	3661.4
#2	12620.	92037.	3619.9
#3	12661.	92021.	3607.3

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 18:59:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41602	10.534	.41486	.51722	1.0552	.05311	10.604
Stddev	.00067	.026	.00312	.00398	.0089	.00036	.135
%RSD	.15992	.24665	.75315	.77021	.84827	.67543	1.2750
#1	.41528	10.521	.41228	.51284	1.0449	.05277	10.448
#2	.41625	10.518	.41397	.51819	1.0606	.05308	10.668
#3	.41655	10.564	.41834	.52063	1.0601	.05348	10.695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05261	.21150	.52971	.53141	4.2666	52.666	1.0675
Stddev	.00046	.00080	.00282	.00094	.0245	.497	.0156
%RSD	.88021	.37772	.53300	.17709	.57386	.94299	1.4638
#1	.05310	.21190	.52733	.53246	4.2406	52.141	1.0495
#2	.05256	.21202	.52897	.53111	4.2891	53.127	1.0776
#3	.05218	.21058	.53283	.53065	4.2702	52.731	1.0755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.754	.53858	1.0729	52.358	.53050	10.348	.52841
Stddev	.104	.00603	.0035	.434	.00155	.028	.00206
%RSD	.96299	1.1188	.32244	.82842	.29223	.26663	.38942
#1	10.661	.53164	1.0761	51.864	.53220	10.366	.53068
#2	10.866	.54245	1.0733	52.677	.53014	10.362	.52790
#3	10.734	.54165	1.0692	52.533	.52916	10.316	.52666
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 18:59:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2611	.41154	5.2608	1.0648	1.0585	1.0604	.53837
Stddev	.0013	.00384	.0086	.0032	.0086	.0122	.00181
%RSD	.10127	.93292	.16271	.29653	.81162	1.1473	.33653
#1	1.2604	.40945	5.2701	1.0680	1.0486	1.0517	.54017
#2	1.2604	.41597	5.2590	1.0648	1.0634	1.0552	.53839
#3	1.2626	.40920	5.2533	1.0617	1.0636	1.0743	.53655
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0524	1.0590	F -.18556
Stddev	.0057	.0012	.34541
%RSD	.54190	.10911	186.15
#1	1.0470	1.0604	-.44764
#2	1.0518	1.0584	-.31488
#3	1.0583	1.0584	.20585
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11494.	83624.	3395.8
Stddev	17.	309.	21.9
%RSD	.14920	.36932	.64463
#1	11476.	83973.	3416.7
#2	11497.	83517.	3397.9
#3	11509.	83384.	3373.0

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 19:03:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00125	-.00237	-.00208	.00212	.00012	.00000	.00718
Stddev	.00092	.00614	.00181	.00151	.00026	.00003	.04907
%RSD	73.653	258.62	87.146	71.469	210.40	1029.6	683.43
#1	-.00042	-.00725	-.00377	.00188	-.00012	-.00001	.06370
#2	-.00224	-.00439	-.00230	.00074	.00040	.00004	-.02446
#3	-.00109	.00452	-.00017	.00374	.00010	-.00002	-.01770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00046	-.00039	-.00043	-.00017	-.01330	-.02910	-.00171
Stddev	.00021	.00040	.00050	.00053	.01788	.05951	.00373
%RSD	45.352	101.44	115.16	316.29	134.45	204.51	218.08
#1	-.00033	-.00076	-.00016	.00020	-.03178	-.09778	.00253
#2	-.00035	.00002	-.00101	.00007	-.01202	.00729	-.00320
#3	-.00070	-.00043	-.00013	-.00078	.00391	.00319	-.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10907	.00250	.00119	.01386	-.00070	.00096	-.00018
Stddev	.07860	.00272	.00029	.01780	.00016	.00463	.00393
%RSD	72.059	108.83	24.471	128.48	22.681	480.71	2140.6
#1	.07415	.00371	.00153	.01889	-.00078	-.00266	-.00266
#2	.05399	-.00062	.00107	-.00592	-.00052	-.00062	-.00224
#3	.19908	.00441	.00098	.02860	-.00080	.00617	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 19:03:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00052	.00287	.00503	.00079	.00021	.00085	.00047
Stddev	.00265	.00183	.00201	.00052	.00023	.00349	.00143
%RSD	513.96	64.000	39.883	66.643	105.69	412.64	300.64
#1	-.00078	.00298	.00612	.00057	.00011	.00441	-.00096
#2	-.00302	.00464	.00626	.00041	.00006	-.00257	.00189
#3	.00226	.00098	.00272	.00139	.00047	.00071	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00003	.00042	F .23770
Stddev	.00082	.00033	2.4012
%RSD	2869.7	78.463	1010.2
#1	-.00041	.00027	2.8802
#2	-.00059	.00019	-1.8108
#3	.00091	.00079	-.35627
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11838.	86554.	3439.2
Stddev	28.	367.	26.7
%RSD	.23560	.42394	.77537
#1	11863.	86817.	3462.9
#2	11843.	86709.	3444.3
#3	11808.	86135.	3410.3

Approved: February 12, 2016

Sample Name: L1602044402 Acquired: 2/11/2016 19:07:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.05269	-.00030	.00966	.05997	-.00007	35.950	-.00009
Stddev	.00044	.00395	.00145	.00199	.00040	.00005	.168	.00006
%RSD	1102.3	7.4897	485.55	20.598	.66491	66.446	.46802	66.937
#1	-.00026	.05123	.00056	.01091	.06025	-.00008	35.812	-.00008
#2	.00046	.04968	.00051	.01072	.06016	-.00002	36.138	-.00003
#3	-.00032	.05716	-.00197	.00737	.05952	-.00012	35.901	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00055	.00067	.02317	.04002	.83617	.00077	5.1556	.00593
Stddev	.00026	.00073	.00186	.01087	.05223	.00342	.0834	.00124
%RSD	46.921	108.54	8.0386	27.172	6.2457	442.02	1.6171	20.976
#1	-.00084	.00149	.02362	.02747	.83379	.00448	5.1162	.00578
#2	-.00036	.00009	.02112	.04597	.88955	-.00225	5.0992	.00477
#3	-.00045	.00043	.02476	.04661	.78518	.00009	5.2514	.00725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	3.1555	.00031	.02196	-.00079	-.00175	-.00218	3.7142
Stddev	.00016	.0229	.00029	.00431	.00093	.00346	.00685	.0140
%RSD	56.118	.72553	95.596	19.635	117.65	198.24	314.86	.37568
#1	.00010	3.1336	.00034	.01705	-.00186	-.00246	.00548	3.7229
#2	.00038	3.1793	-.00000	.02514	-.00013	.00202	-.00774	3.7217
#3	.00039	3.1535	.00058	.02368	-.00039	-.00480	-.00427	3.6981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602044402 Acquired: 2/11/2016 19:07:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.13793	-.00585	-.00052	-.00012	.03676	1.4887
Stddev	.00062	.00092	.00668	.00133	.00061	.00025	2.0689
%RSD	82.019	.66509	114.20	255.92	518.86	.66785	138.97
#1	.00118	.13713	-.01164	-.00030	.00021	.03705	-.69813
#2	.00105	.13893	.00146	-.00194	.00026	.03662	3.4151
#3	.00004	.13773	-.00738	.00068	-.00082	.03662	1.7492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11906.	87227.	3514.0
Stddev	6.	190.	29.7
%RSD	.04810	.21755	.84421
#1	11910.	87381.	3519.0
#2	11910.	87285.	3482.1
#3	11900.	87015.	3540.8

Approved: February 12, 2016

Sample Name: L1602045401 Acquired: 2/11/2016 19:11:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00181	.02742	-.00151	.04362	.19260	.00004	23.222
Stddev	.00267	.00501	.00043	.00105	.00099	.00001	.060
%RSD	147.21	18.273	28.239	2.4073	.51386	15.329	.26037
#1	.00077	.03321	-.00114	.04419	.19373	.00004	23.291
#2	-.00018	.02446	-.00198	.04241	.19214	.00003	23.197
#3	.00484	.02460	-.00141	.04427	.19192	.00004	23.178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00145	-.00001	.00089	.07530	1.4155	.01793
Stddev	.00026	.00026	.00040	.00081	.00742	.0360	.00257
%RSD	217.50	17.991	5758.2	91.231	9.8532	2.5405	14.358
#1	-.00000	.00173	-.00007	.00180	.07444	1.4373	.01500
#2	.00042	.00140	.00042	.00062	.06836	1.3740	.01985
#3	-.00006	.00121	-.00037	.00025	.08312	1.4351	.01893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	29.766	.11781	.00010	F 279.37	.00069	.45565	-.00015
Stddev	.139	.00165	.00019	1.18	.00062	.01316	.00250
%RSD	.46693	1.4009	199.05	.42345	90.091	2.8876	1632.6
#1	29.670	.11884	.00030	280.71	.00109	.47025	.00224
#2	29.925	.11591	.00009	278.96	-.00003	.45197	.00004
#3	29.702	.11869	-.00009	278.45	.00100	.44471	-.00274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: February 12, 2016

Sample Name: L1602045401 Acquired: 2/11/2016 19:11:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00141	.00036	14.427	.00013	.47684	-.00236	-.00161
Stddev	.00147	.00434	.115	.00016	.00177	.00651	.00092
%RSD	104.00	1222.3	.79812	123.84	.37025	275.68	57.265
#1	-.00019	.00474	14.511	.00025	.47882	.00422	-.00167
#2	-.00303	.00027	14.473	-.00005	.47543	-.00252	-.00250
#3	-.00101	-.00394	14.296	.00018	.47626	-.00879	-.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00011	.01228	2.2852
Stddev	.00062	.00023	1.9752
%RSD	540.24	1.8424	86.434
#1	.00017	.01206	4.3188
#2	.00031	.01251	2.1625
#3	-.00082	.01225	.37418
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11485.	83175.	3507.4
Stddev	17.	256.	7.6
%RSD	.14658	.30823	.21765
#1	11466.	83008.	3500.5
#2	11499.	83470.	3515.6
#3	11489.	83046.	3505.9

Approved: February 12, 2016

Sample Name: L1602045402 Acquired: 2/11/2016 19:15:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.01938	.00148	.04108	.18485	.00003	23.126	.00012
Stddev	.00171	.00605	.00109	.00101	.00137	.00002	.180	.00013
%RSD	1126.6	31.201	73.701	2.4671	.74032	73.959	.77625	104.63
#1	-.00208	.01253	.00033	.04025	.18518	.00003	23.154	.00026
#2	.00117	.02162	.00162	.04221	.18603	.00001	23.290	.00001
#3	.00046	.02399	.00249	.04078	.18335	.00005	22.934	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00128	.00080	-.00034	.06283	1.1342	.01608	29.758	.12077
Stddev	.00005	.00050	.00070	.00646	.0565	.00317	.209	.00168
%RSD	3.9354	62.929	207.73	10.285	4.9832	19.731	.70090	1.3893
#1	.00133	.00045	-.00064	.06350	1.0690	.01431	29.752	.11893
#2	.00125	.00058	-.00083	.05606	1.1660	.01975	29.970	.12221
#3	.00125	.00137	.00046	.06893	1.1678	.01420	29.553	.12116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	267.86	.00256	.51245	-.00121	-.00036	-.00428	13.483
Stddev	.00032	1.92	.00063	.00492	.00140	.00268	.00388	.056
%RSD	150.49	.71648	24.596	.96068	115.15	742.47	90.489	.41671
#1	.00006	268.40	.00255	.51340	-.00218	.00272	.00008	13.526
#2	.00057	269.44	.00193	.51683	-.00185	-.00215	-.00734	13.505
#3	-.00001	265.72	.00319	.50712	.00039	-.00165	-.00559	13.420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602045402 Acquired: 2/11/2016 19:15:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.46941	-.00841	-.00361	-.00094	.01039	2.5697
Stddev	.00085	.00254	.00042	.00225	.00022	.00014	1.4129
%RSD	177.03	.54158	5.0278	62.257	23.628	1.3249	54.983
#1	-.00050	.47038	-.00817	-.00265	-.00072	.01023	2.8743
#2	.00090	.47133	-.00890	-.00619	-.00092	.01044	1.0293
#3	.00103	.46653	-.00817	-.00201	-.00116	.01049	3.8054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11532.	83257.	3496.5
Stddev	4.	191.	28.7
%RSD	.03645	.22885	.81979
#1	11527.	83037.	3464.1
#2	11533.	83356.	3506.8
#3	11535.	83377.	3518.5

Approved: February 12, 2016

Sample Name: L1602046001 Acquired: 2/11/2016 19:19:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00059	.03525	.00229	.09157	.02089	-.00004	9.3840	.00034
Stddev	.00249	.00665	.00320	.00272	.00071	.00004	.0825	.00011
%RSD	419.19	18.869	139.56	2.9699	3.4217	111.83	.87880	32.958
#1	.00201	.04293	.00472	.08893	.02055	-.00007	9.4089	.00042
#2	-.00084	.03149	-.00133	.09437	.02171	-.00004	9.4512	.00038
#3	-.00295	.03132	.00350	.09142	.02040	.00001	9.2920	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00032	.03980	.01385	1.2803	-.00077	1.8543	1.3125
Stddev	.00028	.00052	.00036	.01718	.0677	.00225	.0696	.0122
%RSD	348.46	163.66	.89801	124.03	5.2871	293.35	3.7518	.92788
#1	.00014	-.00005	.03987	-.00262	1.3262	.00134	1.8925	1.3199
#2	-.00023	.00009	.04012	.01252	1.3122	-.00314	1.8965	1.3192
#3	.00033	.00092	.03942	.03166	1.2026	-.00050	1.7740	1.2985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	121.84	.00422	.75193	.00027	-.00155	-.00240	.30393
Stddev	.00018	.78	.00078	.00342	.00208	.00608	.00283	.00368
%RSD	91.942	.64203	18.456	.45547	780.57	391.89	117.99	1.2110
#1	-.00020	122.17	.00505	.75162	-.00111	-.00057	-.00340	.30668
#2	-.00037	122.40	.00351	.75549	-.00076	.00398	.00080	.30536
#3	-.00001	120.94	.00410	.74867	.00267	-.00806	-.00459	.29975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602046001 Acquired: 2/11/2016 19:19:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00130	.14449	-.00472	-.00213	.00038	.19932	.52661
Stddev	.00100	.00064	.00439	.00197	.00051	.00105	.63732
%RSD	76.925	.44255	93.027	92.531	134.94	.52915	121.02
#1	.00030	.14446	-.00606	-.00023	-.00009	.20011	.30977
#2	.00130	.14514	-.00828	-.00199	.00030	.19972	.02601
#3	.00230	.14386	.00019	-.00417	.00092	.19812	1.2441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11712.	85524.	3493.0
Stddev	27.	335.	29.2
%RSD	.22735	.39164	.83733
#1	11709.	85906.	3468.8
#2	11740.	85279.	3484.7
#3	11687.	85388.	3525.5

Approved: February 12, 2016

Sample Name: L1602047101 Acquired: 2/11/2016 19:23:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.03153	-.00109	.02355	.06926	-.00005	59.137	.00007
Stddev	.00124	.00356	.00148	.00046	.00067	.00004	.594	.00015
%RSD	941.45	11.285	135.40	1.9496	.96358	87.572	1.0053	203.78
#1	.00150	.02962	-.00040	.02380	.06931	-.00009	58.568	-.00000
#2	-.00020	.02933	-.00278	.02384	.06991	-.00000	59.754	-.00002
#3	-.00091	.03564	-.00009	.02302	.06858	-.00006	59.090	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00048	.00027	.46018	.02923	1.2229	.00144	9.5570	.00258
Stddev	.00046	.00014	.00180	.02422	.0406	.00305	.0531	.00094
%RSD	94.792	51.259	.39014	82.886	3.3236	212.01	.55587	36.496
#1	.00004	.00036	.46080	.00149	1.1771	.00388	9.5961	.00174
#2	-.00069	.00035	.46158	.03994	1.2373	-.00198	9.5783	.00240
#3	-.00079	.00011	.45816	.04624	1.2545	.00242	9.4965	.00360
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	36.483	-.00046	-.02872	-.00106	-.00139	-.00188	3.4786
Stddev	.00040	.290	.00001	.00680	.00076	.00207	.00461	.0166
%RSD	138.94	.79477	2.9580	23.663	71.947	148.90	245.36	.47674
#1	.00068	36.230	-.00047	-.02547	-.00024	-.00345	-.00688	3.4889
#2	.00030	36.800	-.00044	-.02416	-.00120	.00069	-.00096	3.4875
#3	-.00012	36.419	-.00046	-.03653	-.00174	-.00142	.00220	3.4595
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602047101 Acquired: 2/11/2016 19:23:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.20146	-.00492	-.00236	-.00103	.03771	1.0127
Stddev	.00037	.00258	.00231	.00242	.00083	.00028	3.4788
%RSD	57.276	1.2785	47.078	102.69	80.383	.74858	343.50
#1	.00022	.19917	-.00592	-.00515	-.00008	.03780	1.7707
#2	.00089	.20425	-.00655	-.00078	-.00156	.03794	4.0501
#3	.00083	.20095	-.00227	-.00115	-.00146	.03740	-2.7825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11726.	86152.	3468.9
Stddev	23.	166.	11.8
%RSD	.19982	.19281	.34092
#1	11739.	85967.	3481.2
#2	11699.	86198.	3457.6
#3	11740.	86290.	3468.0

Approved: February 12, 2016

Sample Name: L1602047201 Acquired: 2/11/2016 19:27:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.04247	.00053	.03741	.74335	-.00003	29.490	-.00003
Stddev	.00090	.00466	.00144	.00134	.00506	.00002	.234	.00017
%RSD	294.26	10.984	271.72	3.5933	.68093	78.159	.79244	502.19
#1	.00133	.04784	-.00108	.03863	.74098	-.00003	29.425	.00003
#2	-.00004	.03944	.00098	.03763	.74916	-.00005	29.749	-.00023
#3	-.00037	.04012	.00169	.03597	.73991	-.00000	29.295	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	-.00021	.00927	.15845	1.1007	.00105	4.8522	.05194
Stddev	.00022	.00106	.00073	.02405	.0417	.00389	.0437	.00225
%RSD	110.29	505.71	7.9172	15.176	3.7878	371.74	.89979	4.3245
#1	-.00037	-.00017	.00910	.18343	1.0543	.00390	4.8995	.05032
#2	-.00029	.00083	.01007	.15647	1.1351	-.00339	4.8436	.05450
#3	.00005	-.00129	.00863	.13546	1.1126	.00263	4.8135	.05099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	27.617	-.00009	.01703	.00379	.00130	-.00340	5.1240
Stddev	.00040	.221	.00053	.00899	.00150	.00198	.00911	.0358
%RSD	209.04	.80068	614.50	52.783	39.720	152.63	268.32	.69921
#1	.00007	27.568	.00008	.02606	.00442	.00103	-.01244	5.1543
#2	-.00013	27.858	.00034	.00809	.00207	-.00054	-.00353	5.1332
#3	.00063	27.424	-.00067	.01693	.00487	.00340	.00578	5.0845
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602047201 Acquired: 2/11/2016 19:27:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.39616	-.00260	-.00300	-.00022	.01191	1.7697
Stddev	.00037	.00325	.00258	.00062	.00055	.00026	1.1632
%RSD	42.487	.81974	99.168	20.730	244.79	2.1624	65.730
#1	.00113	.39450	.00038	-.00228	-.00086	.01217	.81833
#2	.00044	.39991	-.00399	-.00338	.00007	.01191	1.4242
#3	.00101	.39409	-.00419	-.00333	.00012	.01166	3.0665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11806.	86662.	3497.0
Stddev	8.	221.	23.5
%RSD	.06982	.25544	.67336
#1	11799.	86899.	3521.4
#2	11815.	86461.	3474.4
#3	11804.	86626.	3495.1

Approved: February 12, 2016

Sample Name: L1602047202 Acquired: 2/11/2016 19:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.93451	.00082	.00617	.03499	.00002	20.165	.00005
Stddev	.00052	.00434	.00230	.00027	.00144	.00005	.073	.00012
%RSD	94.711	.46445	281.20	4.3121	4.1023	234.39	.36177	216.85
#1	.00034	.93375	-.00184	.00609	.03441	-.00003	20.226	.00005
#2	.00114	.93918	.00224	.00647	.03662	.00003	20.185	-.00006
#3	.00016	.93060	.00205	.00596	.03393	.00006	20.084	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00172	.00297	1.0744	.79406	.00234	4.4618	.03693
Stddev	.00015	.00017	.00086	.0168	.07518	.00325	.1003	.00145
%RSD	73.373	10.090	28.919	1.5626	9.4679	139.12	2.2483	3.9398
#1	.00034	.00153	.00325	1.0699	.71346	.00546	4.3611	.03858
#2	.00022	.00188	.00367	1.0930	.86229	-.00103	4.5617	.03639
#3	.00004	.00174	.00201	1.0604	.80642	.00259	4.4627	.03582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	1.9514	.00187	.03026	.00063	-.00118	-.00414	4.1217
Stddev	.00047	.0226	.00118	.00472	.00155	.00161	.00588	.0576
%RSD	275.27	1.1596	63.303	15.594	244.21	136.06	142.04	1.3973
#1	.00007	1.9485	.00133	.02690	.00066	-.00285	-.01078	4.1570
#2	-.00071	1.9754	.00322	.03566	.00217	.00036	-.00205	4.1528
#3	.00014	1.9304	.00105	.02823	-.00093	-.00106	.00041	4.0552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602047202 Acquired: 2/11/2016 19:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.06551	.02287	-.00173	.00108	.01392	4.5467
Stddev	.00025	.00029	.00207	.00178	.00043	.00018	2.8856
%RSD	34.241	.44832	9.0593	103.18	39.978	1.3148	63.467
#1	.00071	.06560	.02526	.00019	.00075	.01388	6.6735
#2	.00049	.06574	.02162	-.00203	.00092	.01412	1.2619
#3	.00099	.06518	.02172	-.00334	.00157	.01376	5.7046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11916.	87746.	3490.4
Stddev	8.	308.	10.7
%RSD	.06850	.35071	.30566
#1	11920.	87416.	3488.4
#2	11907.	88025.	3480.8
#3	11922.	87797.	3501.9

Approved: February 12, 2016

Sample Name: L1602047401 Acquired: 2/11/2016 19:35:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.04446	-.00004	.01142	.03967	-.00003	46.850	.00001
Stddev	.00055	.01005	.00049	.00054	.00069	.00002	.178	.00014
%RSD	61.569	22.614	1233.4	4.7358	1.7389	85.960	.37999	2426.0
#1	.00152	.05605	-.00014	.01081	.04047	-.00003	46.675	-.00014
#2	.00068	.03929	-.00047	.01161	.03920	-.00004	47.031	.00002
#3	.00048	.03804	.00049	.01184	.03935	-.00000	46.845	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00063	.00646	.05974	1.1234	.00162	11.354	.00341
Stddev	.00019	.00055	.00132	.01883	.0747	.00230	.103	.00128
%RSD	83.665	88.101	20.500	31.518	6.6472	141.66	.90896	37.635
#1	-.00027	-.00001	.00603	.03937	1.2081	.00245	11.236	.00399
#2	-.00002	.00097	.00794	.06332	1.0949	.00339	11.429	.00430
#3	-.00039	.00092	.00540	.07652	1.0671	-.00097	11.396	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	3.0578	.00023	.00421	-.00165	.00063	-.00400	3.4359
Stddev	.00018	.0495	.00115	.00338	.00294	.00174	.00612	.0170
%RSD	16.780	1.6205	496.21	80.258	178.07	275.93	153.18	.49435
#1	.00127	3.0225	-.00110	.00066	-.00292	-.00021	-.01003	3.4486
#2	.00091	3.1144	.00089	.00739	.00171	-.00053	-.00416	3.4425
#3	.00108	3.0363	.00091	.00457	-.00375	.00263	.00220	3.4166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602047401 Acquired: 2/11/2016 19:35:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.18815	-.00622	-.00309	-.00077	.00566	2.8554
Stddev	.00086	.00078	.00351	.00261	.00134	.00012	.8434
%RSD	211.57	.41368	56.507	84.509	172.85	2.1288	29.539
#1	.00078	.18726	-.00941	-.00482	-.00229	.00580	3.2075
#2	.00102	.18873	-.00245	-.00009	.00024	.00557	1.8929
#3	-.00058	.18844	-.00679	-.00435	-.00027	.00562	3.4657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11832.	86966.	3494.3
Stddev	39.	99.	19.8
%RSD	.32905	.11381	.56801
#1	11792.	87073.	3502.3
#2	11836.	86878.	3471.6
#3	11869.	86945.	3508.8

Approved: February 12, 2016

Sample Name: L1602047501 Acquired: 2/11/2016 19:39:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.10041	-.00109	.00439	.03729	-.00006	35.714	.00022
Stddev	.00125	.00639	.00098	.00098	.00111	.00004	.182	.00005
%RSD	140.05	6.3589	89.930	22.380	2.9753	65.864	.50881	23.795
#1	-.00055	.10773	-.00212	.00503	.03820	-.00008	35.723	.00016
#2	.00157	.09755	-.00101	.00489	.03761	-.00001	35.892	.00026
#3	.00165	.09596	-.00016	.00326	.03606	-.00007	35.529	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00055	.00022	.00142	.05480	.68428	.00381	3.7524	.00386
Stddev	.00039	.00046	.00076	.00382	.01165	.00311	.0717	.00055
%RSD	70.753	207.56	53.717	6.9709	1.7025	81.660	1.9111	14.228
#1	-.00098	-.00022	.00211	.05461	.67473	.00706	3.6724	.00362
#2	-.00040	.00019	.00060	.05872	.69726	.00085	3.8109	.00448
#3	-.00025	.00069	.00154	.05109	.68084	.00353	3.7738	.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	1.9171	.00115	.01649	.00140	-.00368	.00099	3.2656
Stddev	.00012	.0150	.00106	.00640	.00205	.00178	.00312	.0520
%RSD	34.587	.78339	92.447	38.831	146.81	48.353	313.95	1.5939
#1	.00044	1.8998	.00236	.02353	.00368	-.00233	-.00261	3.2997
#2	.00037	1.9247	.00072	.01100	-.00028	-.00301	.00273	3.2915
#3	.00021	1.9268	.00037	.01494	.00079	-.00569	.00286	3.2057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602047501 Acquired: 2/11/2016 19:39:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.08628	.00114	-.00041	.00039	.00277	.56446
Stddev	.00018	.00040	.00429	.00103	.00025	.00016	.27970
%RSD	135.86	.46185	376.32	249.03	65.605	5.7019	49.552
#1	.00017	.08625	-.00333	-.00084	.00030	.00259	.40840
#2	.00028	.08670	.00522	-.00117	.00067	.00284	.88736
#3	-.00006	.08590	.00152	.00076	.00019	.00288	.39760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11923.	87549.	3507.9
Stddev	1.	123.	16.9
%RSD	.01225	.14026	.48121
#1	11922.	87627.	3507.6
#2	11923.	87407.	3491.2
#3	11925.	87613.	3524.9

Approved: February 12, 2016

Sample Name: L1602051601 Acquired: 2/11/2016 19:43:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00626	-.00088	.00506	.00077	.00003	.07070	-.00005
Stddev	.00105	.00247	.00077	.00179	.00016	.00004	.00530	.00022
%RSD	129.58	39.462	87.438	35.366	21.414	134.34	7.5023	459.80
#1	-.00013	.00342	-.00023	.00711	.00058	-.00001	.07591	-.00002
#2	.00062	.00745	-.00172	.00379	.00089	.00006	.07088	-.00028
#3	.00194	.00790	-.00067	.00428	.00084	.00003	.06531	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00036	.00015	.00119	.05897	-.00217	.07139	.00152
Stddev	.00007	.00036	.00062	.01309	.04484	.00543	.04843	.00044
%RSD	37.008	99.307	410.77	1098.4	76.030	250.11	67.833	29.146
#1	.00011	-.00004	.00083	-.00550	.08996	-.00605	.12310	.00166
#2	.00024	.00047	-.00039	-.00720	.00756	.00403	.02710	.00187
#3	.00024	.00066	.00001	.01628	.07941	-.00448	.06398	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	121.36	.00017	-.00103	-.00108	-.00328	-.00709	.01790
Stddev	.00012	.26	.00077	.00659	.00128	.00115	.00559	.00103
%RSD	1472.2	.21114	444.09	640.72	118.25	34.988	78.896	5.7510
#1	-.00011	121.32	.00074	-.00098	-.00127	-.00208	-.00796	.01721
#2	-.00005	121.64	-.00070	.00553	.00028	-.00437	-.01220	.01908
#3	.00013	121.13	.00048	-.00764	-.00225	-.00340	-.00111	.01740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602051601 Acquired: 2/11/2016 19:43:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	-.00004	-.00343	-.00101	-.00015	.00449	1.4130
Stddev	.00098	.00010	.00434	.00017	.00058	.00030	3.9817
%RSD	103.99	243.93	126.44	16.519	381.09	6.6200	281.79
#1	-.00009	-.00013	-.00811	-.00120	-.00076	.00432	5.1346
#2	.00106	.00006	-.00265	-.00094	-.00011	.00484	1.8903
#3	.00187	-.00004	.00046	-.00089	.00040	.00432	-2.7859
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11828.	85774.	3521.0
Stddev	19.	243.	20.2
%RSD	.16403	.28297	.57491
#1	11821.	86050.	3505.5
#2	11813.	85678.	3513.7
#3	11850.	85594.	3543.9

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 19:47:54 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41319	10.435	.41238	.50941	1.0372	.05287	10.424
Stddev	.00153	.016	.00282	.00054	.0027	.00015	.026
%RSD	.36919	.14936	.68317	.10633	.25851	.28532	.24705
#1	.41367	10.417	.41245	.50890	1.0345	.05277	10.416
#2	.41442	10.447	.41516	.50936	1.0398	.05304	10.453
#3	.41149	10.441	.40952	.50998	1.0374	.05280	10.404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05220	.20929	.52727	.52571	4.2274	51.578	1.0546
Stddev	.00038	.00114	.00220	.00249	.0477	.166	.0042
%RSD	.72414	.54453	.41747	.47390	1.1294	.32238	.39340
#1	.05218	.21033	.52536	.52598	4.2542	51.501	1.0542
#2	.05259	.20947	.52968	.52806	4.2556	51.769	1.0589
#3	.05184	.20807	.52678	.52310	4.1722	51.465	1.0506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.678	.53089	1.0609	51.277	.52218	10.226	.52124
Stddev	.093	.00204	.0060	.184	.00266	.054	.00197
%RSD	.87052	.38504	.56079	.35931	.50900	.52635	.37799
#1	10.784	.52893	1.0652	51.209	.52315	10.262	.52307
#2	10.636	.53073	1.0634	51.486	.52421	10.252	.52150
#3	10.613	.53301	1.0541	51.136	.51917	10.164	.51915
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 19:47:54 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2390	.40465	5.2026	1.0519	1.0399	1.0402	.53081
Stddev	.0064	.00298	.0203	.0052	.0061	.0012	.00195
%RSD	.51647	.73725	.38990	.49621	.58802	.11312	.36746
#1	1.2447	.40736	5.2182	1.0564	1.0365	1.0399	.53285
#2	1.2402	.40513	5.2100	1.0531	1.0469	1.0392	.52896
#3	1.2321	.40145	5.1797	1.0462	1.0362	1.0415	.53063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0458	1.0462	F -1.2395
Stddev	.0021	.0037	.6302
%RSD	.20039	.35101	50.849
#1	1.0434	1.0492	-1.9665
#2	1.0467	1.0473	-.90314
#3	1.0473	1.0421	-.84869
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11615.	83836.	3413.7
Stddev	28.	521.	21.8
%RSD	.23963	.62146	.63814
#1	11593.	84287.	3409.8
#2	11646.	83266.	3394.2
#3	11605.	83955.	3437.2

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 19:51:38 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00105	.00041	.00072	.00052	.00001	-.01703
Stddev	.00029	.00097	.00313	.00100	.00043	.00005	.01216
%RSD	187.40	93.108	756.33	139.05	82.637	1012.9	71.390
#1	.00011	.00091	.00360	.00153	.00100	.00007	-.00674
#2	.00047	.00014	.00030	.00101	.00019	-.00003	-.01390
#3	-.00011	.00208	-.00266	-.00039	.00036	-.00002	-.03044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00033	.00018	.00054	.00322	-.00299	-.00560
Stddev	.00012	.00020	.00009	.00081	.01006	.04818	.00042
%RSD	116.69	61.808	49.178	149.97	312.13	1611.1	7.5499
#1	-.00013	-.00049	.00010	.00038	.01483	-.04040	-.00608
#2	.00003	-.00010	.00016	.00141	-.00273	.05137	-.00536
#3	-.00022	-.00040	.00028	-.00018	-.00244	-.01994	-.00534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08585	.00139	.00133	.01827	-.00029	.00440	-.00155
Stddev	.00547	.00056	.00039	.02072	.00100	.00728	.00056
%RSD	6.3720	40.523	29.367	113.44	350.00	165.59	35.878
#1	.08315	.00178	.00155	.04200	.00074	.00560	-.00200
#2	.09214	.00075	.00156	.00903	-.00033	.01101	-.00173
#3	.08226	.00164	.00088	.00377	-.00127	-.00341	-.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 19:51:38 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00142	-.00228	.00244	.00113	.00002	-.00514	-.00182
Stddev	.00144	.00319	.00077	.00092	.00007	.00956	.00323
%RSD	100.92	139.87	31.749	81.030	292.19	185.97	177.58
#1	.00007	.00036	.00177	.00129	-.00001	.00143	-.00113
#2	-.00279	-.00138	.00329	.00196	.00010	-.01611	-.00534
#3	-.00155	-.00583	.00227	.00015	-.00002	-.00074	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00024	.00034	F -.49882
Stddev	.00103	.00021	2.5607
%RSD	429.44	62.406	513.34
#1	.00087	.00012	.81886
#2	-.00095	.00054	-3.4500
#3	.00080	.00035	1.1347
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11946.	87282.	3460.6
Stddev	25.	351.	18.5
%RSD	.20816	.40259	.53550
#1	11917.	86990.	3450.3
#2	11963.	87184.	3482.0
#3	11957.	87672.	3449.6

Approved: February 12, 2016

Sample Name: L1602051602 Acquired: 2/11/2016 19:55:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.00979	-.00250	.00679	.00029	-.00002	.06114	-.00011
Stddev	.00062	.00318	.00071	.00086	.00026	.00004	.03334	.00010
%RSD	183.79	32.453	28.262	12.736	89.477	168.91	54.526	89.205
#1	-.00098	.01344	-.00242	.00632	.00038	-.00002	.09938	-.00005
#2	.00026	.00829	-.00183	.00779	-.00000	-.00006	.04584	-.00022
#3	-.00030	.00764	-.00324	.00626	.00050	.00002	.03820	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	-.00030	-.00046	.00189	.05398	-.00289	.09741	.00352
Stddev	.00041	.00112	.00213	.01456	.02522	.00211	.00829	.00168
%RSD	895.75	377.81	457.98	769.77	46.731	72.981	8.5136	47.782
#1	.00052	-.00048	-.00235	-.01333	.02485	-.00177	.09998	.00378
#2	-.00012	-.00132	.00184	.01570	.06820	-.00533	.10411	.00172
#3	-.00026	.00091	-.00088	.00330	.06888	-.00158	.08813	.00506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	121.89	.00003	-.00505	-.00146	-.00161	-.00165	.01083
Stddev	.00044	.87	.00106	.00077	.00129	.00197	.00267	.00263
%RSD	97.252	.71188	3018.0	15.258	87.862	122.68	162.31	24.268
#1	.00089	121.91	.00048	-.00593	-.00005	-.00272	.00088	.01373
#2	.00001	122.75	-.00117	-.00446	-.00257	.00067	-.00444	.01018
#3	.00045	121.01	.00080	-.00478	-.00177	-.00276	-.00137	.00859
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602051602 Acquired: 2/11/2016 19:55:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.00013	-.00260	-.00225	-.00036	.00453	1.6377
Stddev	.00107	.00024	.00320	.00310	.00109	.00013	.6237
%RSD	101.63	189.61	123.29	137.53	301.45	2.8557	38.083
#1	.00075	-.00003	-.00168	-.00447	.00037	.00465	.94017
#2	.00017	.00001	-.00616	.00129	.00016	.00456	1.8314
#3	.00225	.00040	.00004	-.00358	-.00162	.00439	2.1416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11852.	85986.	3539.0
Stddev	36.	358.	24.2
%RSD	.30651	.41627	.68364
#1	11815.	85584.	3525.1
#2	11888.	86103.	3525.0
#3	11852.	86270.	3566.9

Approved: February 12, 2016

Sample Name: L1602051603 Acquired: 2/11/2016 19:59:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.00868	-.00201	.00506	.00045	-.00007	.07520	-.00001
Stddev	.00151	.00661	.00404	.00067	.00080	.00001	.00705	.00013
%RSD	232.83	76.133	200.87	13.205	180.39	11.739	9.3764	1045.6
#1	.00184	.00469	-.00044	.00543	.00049	-.00007	.07341	-.00012
#2	.00114	.00504	-.00660	.00545	-.00038	-.00008	.08298	.00013
#3	-.00104	.01631	.00100	.00429	.00123	-.00007	.06922	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	-.00030	-.00020	-.00173	-.00539	-.00147	.07546	.00316
Stddev	.00046	.00036	.00111	.02327	.04164	.00135	.09931	.00110
%RSD	154.18	122.78	564.80	1341.8	772.06	91.916	131.61	34.976
#1	.00008	.00001	-.00067	-.02796	-.05348	-.00266	.18480	.00288
#2	-.00002	-.00020	.00107	.01645	.01895	-.00000	.05070	.00222
#3	.00083	-.00070	-.00099	.00631	.01835	-.00174	-.00913	.00438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	119.48	-.00028	-.00528	-.00184	-.00158	-.00225	.01336
Stddev	.00012	.52	.00052	.00132	.00036	.00167	.00815	.00076
%RSD	36.210	.43477	186.17	25.044	19.759	105.41	363.07	5.7223
#1	.00031	120.07	.00032	-.00377	-.00212	-.00219	-.01034	.01310
#2	.00044	119.10	-.00056	-.00583	-.00198	.00030	-.00236	.01423
#3	.00021	119.27	-.00060	-.00624	-.00143	-.00287	.00597	.01277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602051603 Acquired: 2/11/2016 19:59:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00025	.00097	-.00415	.00018	.00464	.34403
Stddev	.00078	.00014	.00050	.00262	.00140	.00007	1.9619
%RSD	79.964	56.899	51.559	63.086	772.75	1.4716	570.27
#1	.00141	.00018	.00043	-.00114	.00026	.00469	-.66789
#2	.00145	.00016	.00109	-.00585	.00154	.00456	2.6053
#3	.00008	.00041	.00141	-.00548	-.00126	.00465	-.90530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11858.	86346.	3555.5
Stddev	31.	271.	37.3
%RSD	.25870	.31379	1.0480
#1	11869.	86052.	3515.2
#2	11824.	86401.	3588.7
#3	11882.	86586.	3562.6

Approved: February 12, 2016

Sample Name: L1602052002 Acquired: 2/11/2016 20:03:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00208	.00231	.00658	.00058	-.00003	2.8412	.00003
Stddev	.00118	.00322	.00309	.00077	.00045	.00003	.0248	.00018
%RSD	162.00	154.75	133.64	11.712	78.447	126.40	.87255	654.82
#1	.00189	.00231	.00457	.00746	.00100	-.00004	2.8485	-.00018
#2	.00077	.00518	.00357	.00621	.00063	.00001	2.8615	.00013
#3	-.00047	-.00125	-.00121	.00606	.00010	-.00005	2.8136	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00029	.00107	-.00156	14.140	-.00145	.64185	.00347
Stddev	.00015	.00111	.00018	.01411	.078	.00074	.03940	.00180
%RSD	162.26	379.93	17.111	905.50	.55374	50.908	6.1391	51.925
#1	-.00012	-.00010	.00089	.01454	14.084	-.00132	.59746	.00502
#2	-.00023	-.00057	.00106	-.01179	14.230	-.00079	.65540	.00388
#3	.00007	.00155	.00126	-.00743	14.107	-.00225	.67270	.00150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	25.672	.00151	1.1783	-.00171	-.00024	.00082	.20325
Stddev	.00008	.078	.00042	.0139	.00141	.00137	.00031	.00238
%RSD	8.0806	.30501	28.119	1.1832	82.822	571.03	38.308	1.1685
#1	.00090	25.747	.00187	1.1918	-.00024	-.00032	.00059	.20569
#2	.00098	25.679	.00162	1.1790	-.00181	.00117	.00069	.20095
#3	.00106	25.591	.00104	1.1640	-.00307	-.00157	.00117	.20311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602052002 Acquired: 2/11/2016 20:03:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	.00240	.00261	-.00185	.00032	.00721	2.2443
Stddev	.00063	.00051	.00076	.00117	.00054	.00025	2.4879
%RSD	49.924	21.181	29.097	63.076	168.48	3.4567	110.86
#1	.00146	.00185	.00227	-.00317	.00090	.00723	-.55477
#2	.00178	.00285	.00208	-.00140	-.00016	.00746	4.2040
#3	.00056	.00249	.00348	-.00098	.00022	.00696	3.0837
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12131.	89266.	3583.3
Stddev	16.	283.	8.7
%RSD	.13235	.31664	.24151
#1	12122.	89082.	3593.2
#2	12121.	89124.	3577.5
#3	12150.	89591.	3579.2

Approved: February 12, 2016

Sample Name: L1602052004 Acquired: 2/11/2016 20:08:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.09307	-.00088	.01037	.01167	-.00011	73.043	.00023
Stddev	.00044	.00037	.00143	.00107	.00054	.00001	.369	.00005
%RSD	99.761	.39659	163.16	10.348	4.6239	8.7563	.50467	22.752
#1	.00009	.09345	-.00017	.01070	.01223	-.00010	73.466	.00017
#2	.00093	.09306	-.00253	.01125	.01162	-.00011	72.872	.00027
#3	.00029	.09271	.00006	.00918	.01115	-.00012	72.791	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00280	.01396	.31050	16.403	.00389	3.3737	.17854
Stddev	.00021	.00008	.00099	.01570	.082	.00418	.0850	.00123
%RSD	70.567	2.8431	7.0643	5.0574	.50285	107.52	2.5201	.68688
#1	.00016	.00277	.01285	.32271	16.432	.00001	3.4410	.17996
#2	.00020	.00289	.01472	.31601	16.310	.00334	3.2781	.17782
#3	.00054	.00274	.01433	.29278	16.468	.00832	3.4019	.17785
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	29.471	.00365	40.361	.00092	-.00577	.00181	.40590
Stddev	.00027	.164	.00043	.286	.00255	.00221	.00163	.00420
%RSD	18.622	.55534	11.647	.70979	276.20	38.352	90.308	1.0342
#1	.00170	29.652	.00384	40.526	-.00040	-.00357	.00018	.40634
#2	.00155	29.426	.00317	40.528	-.00070	-.00800	.00181	.40987
#3	.00117	29.334	.00395	40.031	.00387	-.00575	.00344	.40150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602052004 Acquired: 2/11/2016 20:08:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.04959	-.00656	-.00288	.00070	.07789	1.6577
Stddev	.00033	.00044	.00385	.00136	.00025	.00053	2.1287
%RSD	68.138	.88362	58.736	47.226	35.380	.67504	128.41
#1	.00014	.05007	-.00633	-.00276	.00060	.07844	-.73853
#2	.00050	.04948	-.01053	-.00429	.00051	.07784	3.3301
#3	.00079	.04922	-.00283	-.00158	.00098	.07739	2.3816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12529.	92588.	3817.4
Stddev	21.	115.	34.1
%RSD	.17117	.12409	.89209
#1	12553.	92719.	3783.6
#2	12519.	92507.	3817.0
#3	12514.	92538.	3851.7

Approved: February 12, 2016

Sample Name: L1602052006 Acquired: 2/11/2016 20:12:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	-.00942	-.00151	.00117	.00079	-.00005	6.9553	.00000
Stddev	.00008	.00383	.00289	.00106	.00027	.00002	.0631	.00017
%RSD	16.336	40.656	191.08	90.122	33.953	45.352	.90673	6819.5
#1	.00059	-.01149	-.00304	-.00003	.00048	-.00008	6.9147	.00020
#2	.00045	-.01177	-.00332	.00160	.00092	-.00006	7.0279	-.00012
#3	.00045	-.00500	.00182	.00194	.00097	-.00003	6.9232	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00021	.00012	.00499	2.2798	.00026	.32406	.03169
Stddev	.00021	.00052	.00099	.01945	.0054	.00198	.05483	.00243
%RSD	55.138	243.97	821.42	389.88	.23771	762.16	16.921	7.6609
#1	-.00025	.00065	-.00069	-.01745	2.2773	.00140	.26204	.03449
#2	-.00062	-.00036	.00122	.01535	2.2761	-.00203	.34400	.03014
#3	-.00027	.00034	-.00017	.01706	2.2860	.00141	.36613	.03045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.74177	.00024	.18779	-.00018	-.00322	.00230	.07410
Stddev	.00022	.01031	.00064	.00801	.00058	.00258	.00308	.00108
%RSD	227.28	1.3893	261.78	4.2647	313.63	79.937	133.86	1.4521
#1	-.00001	.73342	.00079	.18437	-.00024	-.00612	.00461	.07399
#2	-.00034	.75329	.00040	.19694	-.00073	-.00119	-.00120	.07309
#3	.00007	.73859	-.00046	.18206	.00042	-.00235	.00349	.07523
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602052006 Acquired: 2/11/2016 20:12:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.01081	.00207	-.00201	-.00008	.00442	.73785
Stddev	.00054	.00016	.00394	.00219	.00028	.00020	2.5261
%RSD	87.558	1.5212	190.43	108.83	364.42	4.4829	342.36
#1	.00062	.01080	.00503	-.00007	-.00040	.00427	2.0607
#2	.00008	.01098	-.00241	-.00438	.00003	.00464	-2.1749
#3	.00117	.01065	.00359	-.00158	.00013	.00434	2.3278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12242.	90553.	3617.0
Stddev	7.	244.	8.4
%RSD	.05439	.26958	.23348
#1	12250.	90618.	3618.5
#2	12237.	90757.	3624.6
#3	12239.	90282.	3607.9

Approved: February 12, 2016

Sample Name: L1602056301 Acquired: 2/11/2016 20:16:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.02894	-.00023	.03283	.07442	-.00005	59.353	-.00010
Stddev	.00032	.00207	.00140	.00087	.00017	.00005	.365	.00006
%RSD	297.28	7.1401	613.61	2.6461	.22824	92.541	.61437	63.244
#1	-.00017	.03064	-.00028	.03182	.07423	-.00010	59.447	-.00004
#2	.00024	.02956	-.00161	.03338	.07449	-.00001	59.662	-.00017
#3	-.00040	.02664	.00120	.03328	.07454	-.00004	58.951	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00036	.00122	.25103	1.2355	.00575	10.133	.01605
Stddev	.00025	.00046	.00020	.03222	.0089	.00183	.146	.00092
%RSD	452.48	126.54	16.112	12.834	.71666	31.901	1.4440	5.7041
#1	.00033	-.00010	.00122	.21649	1.2442	.00379	10.282	.01601
#2	-.00002	.00036	.00103	.25632	1.2265	.00604	9.9899	.01515
#3	-.00015	.00082	.00142	.28027	1.2357	.00742	10.128	.01698
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	14.422	.00054	.05345	.00048	-.00147	-.00100	4.7634
Stddev	.00022	.050	.00030	.00149	.00265	.00237	.00317	.0334
%RSD	34.206	.34708	55.037	2.7799	551.83	161.04	316.55	.70160
#1	.00065	14.454	.00066	.05372	.00281	-.00421	.00086	4.7857
#2	.00086	14.449	.00020	.05478	-.00240	-.00019	.00079	4.7796
#3	.00042	14.365	.00076	.05185	.00103	-.00002	-.00466	4.7250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 12, 2016

Sample Name: L1602056301 Acquired: 2/11/2016 20:16:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.40119	-.00928	-.00342	-.00008	.00216	.27758
Stddev	.00019	.00157	.00624	.00139	.00023	.00018	2.8470
%RSD	21.765	.39214	67.214	40.608	274.89	8.5390	1025.6
#1	.00078	.40118	-.00304	-.00423	-.00033	.00222	-2.5194
#2	.00107	.40277	-.01552	-.00181	-.00004	.00195	.18022
#3	.00072	.39963	-.00929	-.00420	.00012	.00230	3.1720
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11914.	87632.	3542.9
Stddev	8.	269.	18.1
%RSD	.06693	.30661	.50998
#1	11907.	87919.	3533.5
#2	11923.	87592.	3531.4
#3	11912.	87386.	3563.7

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 20:20:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40972	10.303	.40884	.50447	1.0378	.05179	10.439
Stddev	.00273	.011	.00061	.00123	.0048	.00011	.090
%RSD	.66611	.10293	.14819	.24306	.45847	.21816	.85813
#1	.40790	10.290	.40941	.50414	1.0373	.05168	10.428
#2	.40840	10.309	.40820	.50345	1.0428	.05191	10.534
#3	.41286	10.309	.40891	.50583	1.0333	.05179	10.356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05161	.20687	.51614	.52064	4.1892	51.906	1.0560
Stddev	.00016	.00089	.00033	.00190	.0212	.231	.0062
%RSD	.30766	.42901	.06333	.36525	.50596	.44512	.58253
#1	.05160	.20777	.51650	.52277	4.2021	51.961	1.0489
#2	.05177	.20686	.51585	.52004	4.1648	52.104	1.0600
#3	.05146	.20599	.51608	.51911	4.2009	51.652	1.0590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.635	.53251	1.0583	51.264	.51500	10.151	.51535
Stddev	.196	.00240	.0056	.171	.00183	.046	.00295
%RSD	1.8434	.45032	.52520	.33388	.35516	.45234	.57165
#1	10.847	.52975	1.0639	51.270	.51626	10.199	.51546
#2	10.598	.53403	1.0583	51.432	.51583	10.147	.51824
#3	10.460	.53376	1.0528	51.090	.51290	10.107	.51235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 12, 2016

Sample Name: CCV Acquired: 2/11/2016 20:20:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2249	.40931	5.1618	1.0429	1.0449	1.0440	.52851
Stddev	.0050	.00108	.0185	.0053	.0035	.0056	.00107
%RSD	.41140	.26314	.35758	.50708	.33215	.53395	.20332
#1	1.2303	.40913	5.1790	1.0482	1.0425	1.0472	.52969
#2	1.2203	.41047	5.1642	1.0428	1.0489	1.0473	.52758
#3	1.2242	.40834	5.1423	1.0376	1.0434	1.0376	.52826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0202	1.0280	F 1.7354
Stddev	.0008	.0034	1.1253
%RSD	.07343	.33242	64.845
#1	1.0203	1.0316	2.4731
#2	1.0209	1.0278	2.2930
#3	1.0194	1.0247	.44017
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11911.	86536.	3530.8
Stddev	37.	205.	33.7
%RSD	.30760	.23710	.95438
#1	11887.	86471.	3494.3
#2	11953.	86766.	3560.6
#3	11892.	86371.	3537.5

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 20:23:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	-.00543	.00039	.00050	.00002	-.00008	.00504
Stddev	.00142	.00542	.00141	.00260	.00039	.00001	.00863
%RSD	889.99	99.729	364.16	516.98	2536.0	7.7277	171.35
#1	.00141	.00080	.00051	.00334	.00015	-.00008	.01185
#2	.00045	-.00903	.00173	-.00176	.00032	-.00009	-.00467
#3	-.00138	-.00807	-.00108	-.00007	-.00043	-.00008	.00794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	-.00016	-.00053	-.00044	.00077	.06445	-.00145
Stddev	.00026	.00027	.00073	.00095	.03248	.05318	.00132
%RSD	431.48	164.85	136.96	215.22	4204.1	82.511	91.472
#1	-.00001	.00013	.00030	-.00078	.01978	.08051	-.00009
#2	.00017	-.00023	-.00084	-.00118	.01926	.10775	-.00151
#3	-.00034	-.00039	-.00106	.00063	-.03673	.00509	-.00274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01315	.00139	.00124	.02437	.00008	.00445	-.00167
Stddev	.04324	.00080	.00023	.01206	.00030	.00176	.00238
%RSD	328.75	57.292	18.624	49.501	388.98	39.511	142.21
#1	.02886	.00064	.00131	.03640	.00010	.00445	-.00431
#2	-.05752	.00222	.00142	.01228	.00036	.00269	.00030
#3	-.01080	.00131	.00098	.02441	-.00023	.00621	-.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: CCB Acquired: 2/11/2016 20:23:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00179	-.00108	.00339	.00072	.00009	-.00557	-.00055
Stddev	.00189	.00209	.00121	.00047	.00014	.00501	.00175
%RSD	105.62	194.20	35.646	65.936	152.91	89.917	317.74
#1	-.00101	-.00347	.00439	.00018	.00021	-.00346	.00057
#2	-.00395	.00038	.00205	.00108	.00015	-.00196	-.00257
#3	-.00042	-.00014	.00372	.00090	-.00007	-.01128	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00109	.00022	F 2.2252
Stddev	.00038	.00015	3.3717
%RSD	34.999	67.520	151.52
#1	-.00113	.00009	5.9624
#2	-.00145	.00018	-.58845
#3	-.00069	.00038	1.3016
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12394.	91483.	3648.7
Stddev	31.	373.	9.6
%RSD	.25160	.40821	.26413
#1	12394.	91483.	3637.8
#2	12425.	91110.	3656.1
#3	12363.	91857.	3652.2

Approved: February 12, 2016

Sample Name: LLCCV Acquired: 2/11/2016 20:28:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00843	.14913	.00543	.07365	.00779	.00145	.40937
Stddev	.00038	.00707	.00029	.00072	.00087	.00002	.01215
%RSD	4.5549	4.7402	5.3254	.97255	11.168	1.3332	2.9671
#1	.00844	.15207	.00548	.07418	.00686	.00145	.40664
#2	.00881	.15426	.00512	.07393	.00792	.00147	.42265
#3	.00804	.14106	.00569	.07284	.00858	.00143	.39883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00352	.00285	.00421	.08585	.85971	.07891
Stddev	.00006	.00019	.00085	.00013	.01746	.03866	.00073
%RSD	8.6867	5.3600	29.917	3.1857	20.343	4.4965	.92081
#1	.00076	.00371	.00357	.00407	.09731	.82499	.07825
#2	.00077	.00333	.00191	.00424	.06575	.90136	.07969
#3	.00066	.00353	.00306	.00433	.09448	.85278	.07877
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51350	.01024	.00777	.42138	.01545	.75643	.00893
Stddev	.00385	.00272	.00033	.03180	.00012	.00379	.00193
%RSD	.74960	26.585	4.2875	7.5463	.80201	.50143	21.658
#1	.51150	.00826	.00804	.45301	.01537	.75341	.01099
#2	.51794	.01334	.00787	.38941	.01559	.76069	.00864
#3	.51106	.00912	.00740	.42171	.01537	.75519	.00716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 12, 2016

Sample Name: LLCCV Acquired: 2/11/2016 20:28:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v702) Mode: CONC Corr. Factor: 1.00000(
User: BKT Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08140	.01130	.76443	.39798	.03933	.02483	.15346
Stddev	.00389	.00540	.00144	.00397	.00074	.00305	.00136
%RSD	4.7826	47.765	.18803	.99638	1.8730	12.273	.88575
#1	.08138	.00685	.76599	.40205	.03869	.02690	.15403
#2	.07751	.01730	.76316	.39776	.03915	.02626	.15445
#3	.08530	.00974	.76413	.39413	.04013	.02133	.15191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00765	.01736	F 310.97
Stddev	.00082	.00022	3.30
%RSD	10.713	1.2456	1.0622
#1	.00852	.01734	309.21
#2	.00690	.01759	308.93
#3	.00752	.01716	314.78
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12366.	91122.	3638.8
Stddev	15.	404.	21.2
%RSD	.12220	.44303	.58288
#1	12351.	90707.	3629.0
#2	12381.	91514.	3663.1
#3	12366.	91144.	3624.2

Approved: February 12, 2016

2.2.2 Metals ICP-MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	46WW09FF-020216	**Prep Method:**	3015	**Prep Date:**	02/04/2016 08:32
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/11/2016 12:30
Workgroup #:	WG556540	**Analyst:**	BKT	**Run Date:**	02/11/2016 17:58
Collect Date:	02/02/2016 08:10	**Dilution:**	100	**File ID:**	NI.021116.175846
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	1.67		0.400	0.200	0.100

2.2.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG556201
Analyst: VC
Spike Analyst: VC
Run Date: 02/04/2016 08:32
Method: 3015
Balance: BAL016
Instrument: MW-4
Instrument Start: 02/04/2016 09:16

SOP: ME407 Revison 19
Spike Solution: STD71855
Spike Witness: ERP
HNO3 Lot #: COA18708
40 & 50 ML. DIGESTION TU COA18558
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG556201-02	BLANK	1	20 mL	50 mL	181.266 g	181.26 g		
2	WG556201-03	LCS	1	20 mL	50 mL	183.747 g	183.743 g	.25 mL	
3	L16020083-01	SAMP	2	20 mL	50 mL	182.152 g	182.138 g		02/09/16
4	L16020100-02	SAMP	2	20 mL	50 mL	183.322 g	183.314 g		02/12/16
5	L16020102-02	SAMP	2	20 mL	50 mL	182.174 g	182.168 g		02/12/16
6	L16020102-04	SAMP	2	20 mL	50 mL	180.945 g	180.931 g		02/12/16
7	WG556201-01	REF	2	20 mL	50 mL	183.032 g	183.02 g		
8	L16020102-06	SAMP	2	20 mL	50 mL	183.032 g	183.02 g		02/12/16
9	L16020102-08	SAMP	2	20 mL	50 mL	182.426 g	182.417 g		02/12/16
10	L16020103-01	SAMP	2	20 mL	50 mL	184.075 g	184.065 g		02/12/16
11	L16020103-02	SAMP	2	20 mL	50 mL	183.572 g	183.562 g		02/12/16
12	L16020141-03	SAMP	1	20 mL	50 mL	183.679 g	183.665 g		02/12/16
13	L16020159-03	SAMP	2	20 mL	50 mL	182.092 g	182.039 g		02/12/16
14	L16020167-01	SAMP	2	20 mL	50 mL	183.983 g	183.964 g		02/10/16
15	L16020167-02	SAMP	2	20 mL	50 mL	181.408 g	181.399 g		02/10/16
16	L16020183-01	SAMP	2	20 mL	50 mL	182.017 g	181.984 g		02/08/16
17	L16020183-03	SAMP	2	20 mL	50 mL	181.337 g	181.315 g		02/08/16
18	L16020185-01	SAMP	2	20 mL	50 mL	182.011 g	182.001 g		02/08/16
19	L16020186-03	SAMP	2	20 mL	50 mL	181.319 g	181.313 g		02/08/16
20	L16020189-01	SAMP	2	20 mL	50 mL	184.139 g	184.135 g		02/10/16
21	L16020189-02	SAMP	2	20 mL	50 mL	182.637 g	182.634 g		02/10/16
22	WG556201-04	DUP	1	20 mL	50 mL	182.817 g	182.795 g		
23	WG556201-05	MS	1	20 mL	50 mL	182.545 g	182.532 g	.25 mL	
24	WG556201-06	MSD	1	20 mL	50 mL	181.584 g	181.578 g	.25 mL	

L16020083-01	ph adj. filtered digestate
L16020159-03	FILTERED DIGESTATE
L16020189-01	FILTERED DIGESTATE
L16020189-02	FILTERED DIGESTATE

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4616791
Report generated: 02/04/2016 10:23

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 021116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD74378 ICV Std: STD74660 Post Spike: STD73705
ICSA: STD74498 ICSAB: STD74662 Int. Std: RGT31676
CCV: STD74377 LLCCV: STD74661 Tuning Sol : STD74379
Stannous : Hydroxylamine :

Workgroups: 557034,556980,556540

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.021116.121811	Blank	Blank		1		02/11/16 12:18
2	NI.021116.122122	WG557153-01	Calibration Point		1		02/11/16 12:21
3	NI.021116.122434	WG557153-02	Calibration Point		1		02/11/16 12:24
4	NI.021116.122745	WG557153-03	Calibration Point		1		02/11/16 12:27
5	NI.021116.123056	WG557153-04	Calibration Point		1		02/11/16 12:30
6	NI.021116.123410	WG557153-05	Initial Calibration Verification		1		02/11/16 12:34
7	NI.021116.123723	WG557153-06	Initial Calib Blank		1		02/11/16 12:37
8	NI.021116.124035	WG557153-07	Low Level Initial Calibration V		1		02/11/16 12:40
9	NI.021116.124347	WG557153-08	Interference Check		1		02/11/16 12:43
10	NI.021116.124658	WG557153-09	Interference Check		1		02/11/16 12:46
11	NI.021116.125012	WG557153-10	CCV		1		02/11/16 12:50
12	NI.021116.125323	WG557153-11	CCB		1		02/11/16 12:53
13	NI.021116.125635	WG557034-01	Post Digestion Spike		5	L16020223-09	02/11/16 12:56
14	NI.021116.125947	WG556563-04	Matrix Spike	.252/100	5	L16020223-09	02/11/16 12:59
15	NI.021116.130258	WG556563-05	Matrix Spike Duplica	.258/100	5	L16020223-09	02/11/16 13:02
16	NI.021116.130609	L16020223-02	2383-SO01-SD001-(0-6)	.257/100	10		02/11/16 13:06
17	NI.021116.130921	L16020223-02	2383-SO01-SD001-(0-6)	.257/100	100		02/11/16 13:09
18	NI.021116.131232	L16020223-03	8639-SO01-SD001-(0-6)	.254/100	10		02/11/16 13:12
19	NI.021116.131544	L16020223-05	75009-SO01-SD001-(0-6)	.25/100	10		02/11/16 13:15
20	NI.021116.131855	L16020223-06	6896-SO01-SD001-(0-6)	.256/100	10		02/11/16 13:18
21	NI.021116.132207	L16020223-12	75068-SO01-SD001-(0-6)	.258/100	10		02/11/16 13:22
22	NI.021116.132518	L16020223-13	75068-SO01-SD002-(0-6)	.257/100	50		02/11/16 13:25
23	NI.021116.132831	WG557153-12	CCV		1		02/11/16 13:28
24	NI.021116.133143	WG557153-13	CCB		1		02/11/16 13:31
25	NI.021116.133456	L16020223-14	75069-SO01-SD001-(0-6)	.253/100	10		02/11/16 13:34
26	NI.021116.133809	WG557153-14	CCV		1		02/11/16 13:38
27	NI.021116.134121	WG557153-15	CCB		1		02/11/16 13:41
28	NI.021116.141544	WG556641-02	Method/Prep Blank	20/50	1		02/11/16 14:15
29	NI.021116.141856	WG556641-03	Laboratory Control S	20/50	1		02/11/16 14:18
30	NI.021116.142207	WG556641-01	Reference Sample		1	L16020365-04	02/11/16 14:22
31	NI.021116.142519	WG556641-04	Duplicate	20/50	1	L16020365-04	02/11/16 14:25
32	NI.021116.142830	WG556641-05	Matrix Spike	20/50	1	L16020365-04	02/11/16 14:28
33	NI.021116.143142	WG556641-06	Matrix Spike Duplica	20/50	1	L16020365-04	02/11/16 14:31
34	NI.021116.143453	L16020223-16	8653-SO01-W001	20/50	1		02/11/16 14:34

Page: 1 Approved: February 11, 2016

Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 021116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD74378 ICV Std: STD74660 Post Spike: STD73705
ICSA: STD74498 ICSAB: STD74662 Int. Std: RGT31676
CCV: STD74377 LLCCV: STD74661 Tuning Sol : STD74379
Stannous : Hydroxylamine :

Workgroups: 557034,556980,556540

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.021116.143805	L16020259-01	KFF-WL01-020216	20/50	5		02/11/16 14:38
36	NI.021116.144116	WG556980-01	Post Digestion Spike		5	L16020259-01	02/11/16 14:41
37	NI.021116.144428	WG556980-02	Serial Dilution		25	L16020259-01	02/11/16 14:44
38	NI.021116.144741	WG557153-16	CCV		1		02/11/16 14:47
39	NI.021116.145052	WG557153-17	CCB		1		02/11/16 14:50
40	NI.021116.145405	L16020262-02	MW02-GW-020216	20/50	1		02/11/16 14:54
41	NI.021116.145717	L16020262-06	MW02-GW-020216 D	20/50	1		02/11/16 14:57
42	NI.021116.150028	L16020262-11	KFF-EB01-020216	20/50	1		02/11/16 15:00
43	NI.021116.150340	L16020287-01	HOA01	20/50	1		02/11/16 15:03
44	NI.021116.150651	L16020357-01	16B0132-01	20/50	1		02/11/16 15:06
45	NI.021116.151003	L16020365-01	201	20/50	1		02/11/16 15:10
46	NI.021116.151314	L16020365-02	201	20/50	1		02/11/16 15:13
47	NI.021116.151626	L16020365-05	203	20/50	1		02/11/16 15:16
48	NI.021116.151937	L16020368-01	J6B0085-01	20/50	1		02/11/16 15:19
49	NI.021116.152249	L16020381-01	J6B0004-01	20/50	1		02/11/16 15:22
50	NI.021116.152602	WG557153-18	CCV		1		02/11/16 15:26
51	NI.021116.152913	WG557153-19	CCB		1		02/11/16 15:29
52	NI.021116.153226	L16020383-01	S6B0253-01	20/50	1		02/11/16 15:32
53	NI.021116.153537	L16020385-01	J6B0071-01	20/50	1		02/11/16 15:35
54	NI.021116.153849	L16020403-01	6020464-01	20/50	1		02/11/16 15:38
55	NI.021116.154202	WG557153-20	CCV		1		02/11/16 15:42
56	NI.021116.154514	WG557153-21	CCB		1		02/11/16 15:45
57	NI.021116.160755	WG557153-22	Interference Check		1		02/11/16 16:07
58	NI.021116.161350	WG557153-23	Interference Check		1		02/11/16 16:13
59	NI.021116.162417	WG557153-24	CCV		1		02/11/16 16:24
60	NI.021116.162728	WG557153-25	CCB		1		02/11/16 16:27
61	NI.021116.173625	L16020357-01	16B0132-01	20/50	10		02/11/16 17:36
62	NI.021116.173937	WG556201-02	Method/Prep Blank	20/50	1		02/11/16 17:39
63	NI.021116.174248	WG556201-03	Laboratory Control S	20/50	1		02/11/16 17:42
64	NI.021116.174600	WG556201-01	Reference Sample		1	L16020102-06	02/11/16 17:46
65	NI.021116.174911	WG556201-05	Matrix Spike	20/50	1	L16020102-06	02/11/16 17:49
66	NI.021116.175223	WG556201-06	Matrix Spike Duplica	20/50	1	L16020102-06	02/11/16 17:52
67	NI.021116.175534	L16020100-02	NP0116-MWL9-Z	20/50	5		02/11/16 17:55
68	NI.021116.175846	L16020141-03	46WW09FF-020216	20/50	100		02/11/16 17:58

Page: 2 Approved: February 11, 2016

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 021116A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD74378 ICV Std: STD74660 Post Spike: STD73705

ICSA: STD74498 ICSAB: STD74662 Int. Std: RGT31676

CCV: STD74377 LLCCV: STD74661 Tuning Sol : STD74379

Stannous : Hydroxylamine :

Workgroups: 557034,556980,556540

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.021116.180157	WG556540-03	Post Digestion Spike		100	L16020141-03	02/11/16 18:01
70	NI.021116.180509	WG556540-04	Serial Dilution		500	L16020141-03	02/11/16 18:05
71	NI.021116.180822	WG557153-26	CCV		1		02/11/16 18:08
72	NI.021116.181133	WG557153-27	CCB		1		02/11/16 18:11
73	NI.021116.181446	WG557153-28	Low Level Continuing Calibra		1		02/11/16 18:14

Page: 3 Approved: February 11, 2016

Maren Berry

Microbac Laboratories Inc.

Data Checklist

Date: 11-FEB-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 557153
Runlog ID: 73233
Analytical Workgroups: 557034,556980,556540

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	100,259,262
Level 4	141,223
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
11-FEB-2016

Secondary Reviewer:
11-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-12-2016 14:33:48

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG556540

Login Number: L16020141

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW09FF-020216	03	02/02/16					02/04/2016	2	180		02/11/16	9.4	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4629170
Report generated 02/12/2016 13:02

METHOD BLANK SUMMARY

Login Number: L16020141
Blank File ID: NI.021116.173937
Prep Date: 02/04/16 08:32
Analyzed Date: 02/11/16 17:39
Analyst: BKT

Work Group: WG556540
Blank Sample ID: WG556201-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556201-03	NI.020516.183418	02/05/16 18:34	01
DUP	WG556201-04	NI.020516.184041	02/05/16 18:40	01
LCS	WG556201-03	NI.021116.174248	02/11/16 17:42	02
46WW09FF-020216	L16020141-03	NI.021116.175846	02/11/16 17:58	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4629171
Report generated 02/12/2016 13:02

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020141 Prep Date: 02/04/16 08:32 Sample ID: WG556201-02
Instrument ID: ICP-MS2 Run Date: 02/11/16 17:39 Prep Method: 3015
File ID: NI.021116.173937 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG556540 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-11-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Manganese, Dissolved	0.00100	0.00400	0.00100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4629172
12-FEB-2016 13:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020141 Run Date: 02/11/2016 Sample ID: WG556201-03
Instrument ID: ICP-MS2 Run Time: 17:42 Prep Method: 3015
File ID: NI.021116.174248 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG556540 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD71855 Cal ID: ICP-MS-11-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Manganese, Dissolved	0.125	0.118	94.7	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4629173
Report generated: 02/12/2016 13:02

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16020141 Cal ID: ICP-MS2 - Worknum: WG556540
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG556201-01 File ID: NI.021116.174600 Dil: 1 Matrix: WATER
Sample ID: WG556201-05 MS File ID: NI.021116.174911 Dil: 1 Units: mg/L
Sample ID: WG556201-06 MSD File ID: NI.021116.175223 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Manganese	0.00100	0.125	0.116	91.6	0.125	0.120	95.1	3.68	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4629174
Report generated 02/12/2016 13:02

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16020141 **Worknum:** WG556540
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG556540-04 **File ID:** NI.021116.180509 **Dil:** 500 **Units:** ug/L
Sample: L16020141-03 **File ID:** NI.021116.175846 **Dil:** 100

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Manganese	667	X	664	F	0.47	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4629168
02/12/2016 13:01

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16020141 **Worknum:** WG556540
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG556540-03 **File ID:** NI.021116.180157 **Dil:** 100 **Units:** ug/L
Sample ID: L16020141-03 **File ID:** NI.021116.175846 **Dil:** 100 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MANGANESE	51.8		6.67		50	90.3	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4629169
Report generated: 02/12/2016 13:02

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16020141	Workgroup (AAB#):	WG556540
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG557153	Initial Calibration Date:	11-FEB-2016 12:30

	WG557153-01		WG557153-02		WG557153-03		WG557153-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
MANGANESE	0	964	.4	1910	50	565000	100	1130000	.999899	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4629177
Report generated: 12-FEB-2016 13:02

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557153-06
Instrument ID: ICP-MS2
Run Time: 12:37
Method: 6020A
File ID: NI.021116.123723
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG556540
Cal ID: ICP-MS2 - 11-FEB-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MANGANESE	.4	1.6	.4	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4629179
Report generated 02/12/2016 13:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557153-11
Instrument ID: ICP-MS2
Run Time: 12:53
Method: 6020A
File ID: NI.021116.125323
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG556540
Cal ID: ICP-MS - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4629182
Report generated 02/12/2016 13:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557153-21
Instrument ID: ICP-MS2
Run Time: 15:45
Method: 6020A
File ID: NI.021116.154514
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG556540
Cal ID: ICP-MS - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4629182
Report generated 02/12/2016 13:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557153-25
Instrument ID: ICP-MS2
Run Time: 16:27
Method: 6020A
File ID: NI.021116.162728
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG556540
Cal ID: ICP-MS - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4629182
Report generated 02/12/2016 13:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557153-27
Instrument ID: ICP-MS2
Run Time: 18:11
Method: 6020A
File ID: NI.021116.181133
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG556540
Cal ID: ICP-MS - 11-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4629182
Report generated 02/12/2016 13:02

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16020141 Run Date: 02/11/2016 Sample ID: WG557153-05
Instrument ID: ICP-MS2 Run Time: 12:34 Method: 6020A
File ID: NI.021116.123410 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG556540 Cal ID: ICP-MS - 11-FEB-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Manganese		50	47.8	95.6	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4629178
Report generated 02/12/2016 13:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557153-10
Instrument ID: ICP-MS2
Run Time: 12:50
Method: 6020A
File ID: NI.021116.125012
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556540
Cal ID: ICP-MS - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0473	mg/L	94.5	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4629181
Report generated 02/12/2016 13:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557153-20
Instrument ID: ICP-MS2
Run Time: 15:42
Method: 6020A
File ID: NI.021116.154202
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556540
Cal ID: ICP-MS - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0457	mg/L	91.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4629181
Report generated 02/12/2016 13:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557153-24
Instrument ID: ICP-MS2
Run Time: 16:24
Method: 6020A
File ID: NI.021116.162417
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556540
Cal ID: ICP-MS - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0459	mg/L	91.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4629181
Report generated 02/12/2016 13:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557153-26
Instrument ID: ICP-MS2
Run Time: 18:08
Method: 6020A
File ID: NI.021116.180822
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556540
Cal ID: ICP-MS - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0464	mg/L	92.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4629181
Report generated 02/12/2016 13:02

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557153-07
Instrument ID: ICP-MS2
Run Time: 12:40
Method: 6020A
File ID: NI.021116.124035
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556540
Cal ID: ICP-MS - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.438	ug/L	87.5	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4629183
Report generated 02/12/2016 13:02

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16020141
Run Date: 02/11/2016
Sample ID: WG557153-28
Instrument ID: ICP-MS2
Run Time: 18:14
Method: 6020A
File ID: NI.021116.181446
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG556540
Cal ID: ICP-MS - 11-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.414	ug/L	82.8	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4629183
Report generated 02/12/2016 13:02

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16020141
Instrument ID: ICP-MS2
Sol. A : WG557153-08 **File ID:** NI.021116.124347
Sol. AB : WG557153-09 **File ID:** NI.021116.124658

Workgroup (AAB#): WG556540
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Manganese	NS	0.0416	NS	100	93.5	93.5	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4629180
Report generated 02/12/2016 13:02

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16020141
Instrument ID: ICP-MS2
Sol. A : WG557153-22 **File ID:** NI.021116.160755
Sol. AB : WG557153-23 **File ID:** NI.021116.161350

Workgroup (AAB#): WG556540
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Manganese	NS	0.0424	NS	100	91.6	91.6	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4629180
Report generated 02/12/2016 13:02

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16020141 **Analytical Method:** 6020
Analytical Workgroup: WG556540 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 11-FEB-2016 12:21

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16020141-03	SAMP	11-FEB-2016 17:58	102.224	104.641	99.907
WG556201-02	BLANK	11-FEB-2016 17:39	98.043	99.67	96.175
WG556201-03	LCS	11-FEB-2016 17:42	103.028	104.259	101.379
WG556540-03	PSPK	11-FEB-2016 18:01	103.472	106.075	100.83
WG556540-04	SERIAL	11-FEB-2016 18:05	102.066	105.061	101.72
WG557153-05	ICV	11-FEB-2016 12:34	104.723	103.689	102.521
WG557153-06	ICB	11-FEB-2016 12:37	102.091	101.067	98.466
WG557153-07	LLICV	11-FEB-2016 12:40	101.698	101.181	97.836
WG557153-08	ICS	11-FEB-2016 12:43	102.947	104.395	103.027
WG557153-09	ICS	11-FEB-2016 12:46	103.647	103.794	103.63
WG557153-10	CCV	11-FEB-2016 12:50	104.816	104.811	105.348
WG557153-11	CCB	11-FEB-2016 12:53	103.889	101.357	101.966
WG557153-20	CCV	11-FEB-2016 15:42	104.2	98.79	105.064
WG557153-21	CCB	11-FEB-2016 15:45	102.28	96.995	102.219
WG557153-22	ICS	11-FEB-2016 16:07	98.446	99.434	101.206
WG557153-23	ICS	11-FEB-2016 16:13	99.185	97.892	100.507
WG557153-24	CCV	11-FEB-2016 16:24	98.219	97.603	99.913
WG557153-25	CCB	11-FEB-2016 16:27	97.741	96.07	98.673
WG557153-26	CCV	11-FEB-2016 18:08	101.043	105.312	100.754
WG557153-27	CCB	11-FEB-2016 18:11	99.406	101.815	98.919
WG557153-28	LLCCV	11-FEB-2016 18:14	99.747	100.642	97.518

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4629176
Report generated: 02/12/2016 13:02

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16020141 **Date:** 01/05/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4629175
Report generated: 02/12/2016 13:02

2.2.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, February 11, 2016 11:55:51

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1327	2021	0.700	
Mg	23.985	23.975	4498	2019	0.699	
Co	58.933	58.925	11692	2021	0.709	
In	114.904	114.875	22859	2028	0.707	
U	238.050	238.075	47450	2043	0.710	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	12.085
5.575	6.550
5.625	6.487
5.675	5.016
5.725	6.595
5.775	4.188
5.825	3.200
5.875	4.592
5.925	4.624
5.975	3.270
6.025	4.118
6.075	4.838
6.125	4.062
6.175	4.239
6.225	6.244
6.275	17.037
6.325	34.233
6.375	87.434
6.425	74.689
6.475	28.287
6.525	15.289
6.575	5.137
6.625	2.951
6.675	4.505
6.725	3.078
6.775	6.079
6.825	2.524

Report Date/Time: Thursday, February 11, 2016 11:59:02
Page 1

Approved: February 12, 2016

6.875	1.788
6.925	2.649
6.975	3.910
7.025	2.801
7.075	4.088
7.125	4.913
7.175	6.734
7.225	8.050
7.275	9.691
7.325	11.233
7.375	37.268
7.425	43.241
7.475	84.984
7.525	116.369
7.575	49.215
7.625	43.853
7.675	47.507
7.725	60.858
7.775	59.266
7.825	91.287
7.875	100.000
7.925	100.000
7.975	29.881
8.025	35.355
8.075	38.030
8.125	72.436
8.175	52.705
8.225	46.566
8.275	50.000
8.325	70.711
8.375	136.931
8.425	37.268
8.475	47.507
22.525	223.607
22.575	64.358
22.625	25.913
22.675	61.629
22.725	36.490
22.775	57.282
22.825	47.380
22.875	36.377
22.925	11.620
22.975	31.566
23.025	28.144
23.075	45.928
23.125	15.786
23.175	23.452

Report Date/Time: Thursday, February 11, 2016 11:59:02
Page 2

Approved: February 12, 2016

23.225	19.846
23.275	64.817
23.325	15.601
23.375	49.311
23.425	22.232
23.475	33.120
23.525	5.467
23.575	3.027
23.625	2.185
23.675	0.872
23.725	0.930
23.775	1.713
23.825	2.014
23.875	1.471
23.925	1.035
23.975	1.354
24.025	1.324
24.075	1.991
24.125	0.946
24.175	2.337
24.225	1.750
24.275	4.649
24.325	19.951
24.375	32.401
24.425	31.419
24.475	7.036
24.525	4.103
24.575	5.433
24.625	3.660
24.675	2.899
24.725	2.347
24.775	4.081
24.825	2.079
24.875	1.877
24.925	2.392
24.975	1.034
25.025	2.163
25.075	2.507
25.125	2.466
25.175	1.364
25.225	4.838
25.275	7.554
25.325	53.698
25.375	74.689
25.425	40.018
25.475	34.938
57.525	4.741

Report Date/Time: Thursday, February 11, 2016 11:59:02
Page 3

Approved: February 12, 2016

57.575	3.630
57.625	2.099
57.675	4.589
57.725	3.504
57.775	2.382
57.825	2.842
57.875	2.846
57.925	2.204
57.975	1.622
58.025	1.844
58.075	1.095
58.125	2.288
58.175	1.879
58.225	5.046
58.275	11.852
58.325	51.520
58.375	4.563
58.425	10.157
58.475	8.094
58.525	4.469
58.575	4.789
58.625	1.707
58.675	2.209
58.725	1.216
58.775	1.908
58.825	1.214
58.875	2.318
58.925	1.637
58.975	1.822
59.025	1.284
59.075	2.161
59.125	1.611
59.175	2.203
59.225	4.322
59.275	12.496
59.325	89.149
59.375	53.351
59.425	35.295
59.475	7.692
59.525	5.614
59.575	5.719
59.625	1.183
59.675	4.142
59.725	4.313
59.775	4.161
59.825	4.281
59.875	2.423

Report Date/Time: Thursday, February 11, 2016 11:59:02
Page 4

Approved: February 12, 2016

59.925	2.878
59.975	1.689
60.025	3.963
60.075	2.745
60.125	5.271
60.175	3.142
60.225	11.107
60.275	44.756
60.325	60.858
60.375	26.146
60.425	70.613
60.475	30.162
113.525	7.121
113.575	3.532
113.625	0.562
113.675	3.349
113.725	3.086
113.775	3.530
113.825	2.002
113.875	1.590
113.925	2.169
113.975	2.089
114.025	4.630
114.075	2.377
114.125	2.451
114.175	2.171
114.225	5.787
114.275	12.907
114.325	22.491
114.375	26.897
114.425	3.242
114.475	2.915
114.525	2.013
114.575	2.379
114.625	2.054
114.675	1.374
114.725	1.818
114.775	1.486
114.825	1.283
114.875	1.982
114.925	1.711
114.975	0.890
115.025	1.987
115.075	1.755
115.125	3.135
115.175	3.036
115.225	2.029

Report Date/Time: Thursday, February 11, 2016 11:59:02
Page 5

Approved: February 12, 2016

115.275	11.859
115.325	47.128
115.375	29.881
115.425	22.608
115.475	16.035
115.525	9.581
115.575	2.697
115.625	7.362
115.675	3.985
115.725	1.887
115.775	2.966
115.825	1.037
115.875	1.786
115.925	2.619
115.975	2.247
116.025	1.937
116.075	1.252
116.125	3.894
116.175	5.675
116.225	13.349
116.275	22.906
116.325	43.241
116.375	42.426
116.425	44.721
116.475	18.923
236.525	223.607
236.575	38.870
236.625	24.112
236.675	34.892
236.725	28.144
236.775	28.144
236.825	25.377
236.875	59.889
236.925	46.933
236.975	48.229
237.025	36.364
237.075	18.744
237.125	20.410
237.175	19.542
237.225	19.563
237.275	10.866
237.325	29.220
237.375	37.417
237.425	28.828
237.475	29.792
237.525	22.250
237.575	7.820

Approved: February 12, 2016

237.625	8.910
237.675	2.735
237.725	4.447
237.775	2.102
237.825	0.996
237.875	1.333
237.925	1.588
237.975	1.393
238.025	1.623
238.075	1.503
238.125	1.359
238.175	0.874
238.225	1.939
238.275	1.019
238.325	2.176
238.375	1.073
238.425	3.829
238.475	5.704
238.525	6.326
238.575	18.999
238.625	26.821
238.675	6.858
238.725	32.760
238.775	12.448
238.825	17.174
238.875	18.898
238.925	29.881
238.975	24.079
239.025	14.142
239.075	12.036
239.125	22.720
239.175	24.491
239.225	19.609
239.275	13.975
239.325	36.881
239.375	23.690
239.425	16.723
239.475	19.357

Approved: February 12, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 2/11/2016 11:59:47 AM
End Time: 2/11/2016 12:02:00 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 2593.09
        Obtained Intensity (Mg 23.985): 140638.28
        Obtained Intensity (In 114.904): 116839.26
        Obtained Intensity (U 238.05): 116289.19
        Obtained Intensity (Bkgd 220): 2.07
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.015 (=6337.33 / 423531.47)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=2260.50 / 423531.47)
```

Report Date/Time: Thursday, February 11, 2016 12:02:00
Page 1

Approved: February 12, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 2/11/2016 11:59:47 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 2593.09
                Obtained Intensity (Mg 23.985): 140638.28
                Obtained Intensity (In 114.904): 116839.26
                Obtained Intensity (U 238.05): 116289.19
                Obtained Intensity (Bkgd 220): 2.07
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.015 (=6337.33 / 423531.47)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=2260.50 / 423531.47)
[Passed]  Optimum value(s): N/A

End Time: 2/11/2016 12:02:00 PM
```


Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, February 11, 2016 12:18:11
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57323.6	6.9				ug/L		Standard
	Be	9	1.7	173.2				ug/L		Standard
	Al	27	171.7	23.7				ug/L		Standard
	Sc	45	47225.5	8.8				ug/L		Standard
	Ti	47	100.0	9.2				ug/L		Standard
	V	51	2380.3	6.7				ug/L		Standard
	Cr	52	10715.1	5.4				ug/L		Standard
	Cr	53	293.3	16.8				ug/L		Standard
	Mn	55	881.7	4.7				ug/L		Standard
	Co	59	251.7	1.6				ug/L		Standard
	Ni	60	50.7	19.2				ug/L		Standard
	Cu	65	125.3	8.0				ug/L		Standard
	Zn	66	190.7	9.2				ug/L		Standard
>	**Ge**	72	693220.4	8.7				ug/L		Standard
	As	75	-96.1	33.8				ug/L		Standard
	Se	82	24.4	26.0				ug/L		Standard
	Se-1	77	65.7	15.0				ug/L		Standard
>	**Ga**	71	66.7	18.9				mg/L		Standard
	Rb	85	25.0	20.0				ug/L		Standard
	Y	89	639568.6	8.9				ug/L		Standard
>	**Rh**	103	8.3	34.6				ug/L		Standard
	Mo	98	14.9	13.8				ug/L		Standard
	Ag	107	161.7	4.3				ug/L		Standard
	Cd	111	7.3	21.0				mg/L		Standard
	Cd	114	31.4	13.3				ug/L		Standard
>	**In**	115	1030666.1	7.8				ug/L		Standard
	Sn	118	755.0	8.5				ug/L		Standard
	Sb	123	104.7	15.7				ug/L		Standard
	Ba	135	22.7	22.2				ug/L		Standard
	Ce	140	136.7	33.8				ug/L		Standard
>	**Tb**	159	1748833.4	5.7				ug/L		Standard
	Ho	165	13.3	57.3				ug/L		Standard
	Tl	203	14.0	25.8				ug/L		Standard
	Tl	205	10.0	132.3				ug/L		Standard
	Pb	206	458.7	6.3				ug/L		Standard
	Pb	207	424.0	12.7				ug/L		Standard
	Pb	208	1701.0	10.2				ug/L		Standard
	U	238	2.3	65.5				ug/L		Standard
>	**Bi**	209	937372.2	7.6				ug/L		Standard

Sample ID: Blank
Report Date/Time: Thursday, February 11, 2016 12:20:27
Page 1

Approved: February 12, 2016

	Na	23	0.0		mg/L	Standard
	Mg	24	16.7	45.8	mg/L	Standard
	K	39	15.0	33.3	mg/L	Standard
	Ca	43	66.7	37.0	mg/L	Standard
	Fe	54	214.2	18.0	mg/L	Standard
	Fe	57	81.7	23.2	mg/L	Standard
>	**Sc-1**	45	47225.5	8.8	mg/L	Standard
	Cl	35	38728.9	5.2	ug/L	Standard
	Kr	83	3.0	33.3	ug/L	Standard
	Br	81	1496.7	4.7	ug/L	Standard
	P	31	15232.8	17.9	ug/L	Standard
	S	34	1153.4	4.0	ug/L	Standard
	Sr	88	46.7	22.3	ug/L	Standard
	C	12	90.0	19.2	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	3.3	173.2	mg/L	Standard
	Dy	164	21.9	73.7	mg/L	Standard
	Ho-1	165	13.3	57.3	mg/L	Standard
	Er	166	30.0	120.2	mg/L	Standard
	I	127	2296.8	4.9	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Blank
Report Date/Time: Thursday, February 11, 2016 12:20:27
Page 2

Approved: February 12, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Thursday, February 11, 2016 12:20:27
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, February 11, 2016 12:21:22
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58334.4	9.0				ug/L	57324	Standard
	Be	9	3.3	86.6				ug/L	2	Standard
	Al	27	150.0	5.8				ug/L	172	Standard
	Sc	45	47389.6	11.2				ug/L	47226	Standard
	Ti	47	85.7	5.8				ug/L	100	Standard
	V	51	2424.3	5.5				ug/L	2380	Standard
	Cr	52	10643.1	4.6				ug/L	10715	Standard
	Cr	53	301.7	14.1				ug/L	293	Standard
	Mn	55	964.0	3.2				ug/L	882	Standard
	Co	59	232.7	2.0				ug/L	252	Standard
	Ni	60	43.7	16.9				ug/L	51	Standard
	Cu	65	111.7	6.6				ug/L	125	Standard
	Zn	66	177.7	4.3				ug/L	191	Standard
>	**Ge**	72	699376.0	6.8				ug/L	693220	Standard
	As	75	-92.0	24.5				ug/L	-96	Standard
	Se	82	27.1	22.1				ug/L	24	Standard
	Se-1	77	74.3	9.0				ug/L	66	Standard
>	**Ga**	71	73.3	3.9				mg/L	67	Standard
	Rb	85	23.3	24.7				ug/L	25	Standard
	Y	89	623348.2	8.2				ug/L	639569	Standard
>	**Rh**	103	6.7	43.3				ug/L	8	Standard
	Mo	98	7.6	55.3				ug/L	15	Standard
	Ag	107	166.0	11.5				ug/L	162	Standard
	Cd	111	4.0	43.4				mg/L	7	Standard
	Cd	114	20.0	45.8				ug/L	31	Standard
>	**In**	115	1035533.1	7.1				ug/L	1030666	Standard
	Sn	118	745.0	13.1				ug/L	755	Standard
	Sb	123	35.5	60.1				ug/L	105	Standard
	Ba	135	21.3	2.7				ug/L	23	Standard
	Ce	140	155.0	25.6				ug/L	137	Standard
>	**Tb**	159	1769582.2	8.3				ug/L	1748833	Standard
	Ho	165	16.7	45.8				ug/L	13	Standard
	Tl	203	11.3	13.5				ug/L	14	Standard
	Tl	205	11.7	107.9				ug/L	10	Standard
	Pb	206	487.3	9.1				ug/L	459	Standard
	Pb	207	392.3	12.9				ug/L	424	Standard
	Pb	208	1698.4	5.0				ug/L	1701	Standard
	U	238	4.0	66.1				ug/L	2	Standard
>	**Bi**	209	940284.6	7.0				ug/L	937372	Standard

Sample ID: Standard 1
Report Date/Time: Thursday, February 11, 2016 12:23:39
Page 1

Approved: February 12, 2016

	Na	23	0.0		mg/L	0	Standard
	Mg	24	20.0	0.0	mg/L	17	Standard
	K	39	16.7	62.4	mg/L	15	Standard
	Ca	43	73.3	7.9	mg/L	67	Standard
	Fe	54	172.3	21.8	mg/L	214	Standard
	Fe	57	90.0	19.2	mg/L	82	Standard
>	**Sc-1**	45	47389.6	11.2	mg/L	47226	Standard
	Cl	35	38678.0	3.2	ug/L	38729	Standard
	Kr	83	4.0	66.1	ug/L	3	Standard
	Br	81	1456.7	10.0	ug/L	1497	Standard
	P	31	12790.5	15.2	ug/L	15233	Standard
	S	34	1138.4	8.6	ug/L	1153	Standard
	Sr	88	53.3	66.5	ug/L	47	Standard
	C	12	70.0	24.7	mg/L	90	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	3	Standard
	Dy	164	32.9	46.0	mg/L	22	Standard
	Ho-1	165	16.7	45.8	mg/L	13	Standard
	Er	166	10.0	100.0	mg/L	30	Standard
	I	127	2268.5	9.6	mg/L	2297	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 1
Report Date/Time: Thursday, February 11, 2016 12:23:39
Page 2

Approved: February 12, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Thursday, February 11, 2016 12:23:39
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, February 11, 2016 12:24:34
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58520.1	9.0				ug/L	57324	Standard
	Be	9	25.0	20.0				ug/L	2	Standard
	Al	27	8480.7	11.9				ug/L	172	Standard
	Sc	45	49001.2	9.5				ug/L	47226	Standard
	Ti	47	123.3	8.3				ug/L	100	Standard
	V	51	2959.8	0.6				ug/L	2380	Standard
	Cr	52	11411.3	4.5				ug/L	10715	Standard
	Cr	53	381.7	14.0				ug/L	293	Standard
	Mn	55	1914.1	8.4				ug/L	882	Standard
	Co	59	924.0	6.8				ug/L	252	Standard
	Ni	60	251.0	14.5				ug/L	51	Standard
	Cu	65	334.3	10.4				ug/L	125	Standard
	Zn	66	519.3	5.6				ug/L	191	Standard
>	Ge	72	723626.5	6.4				ug/L	693220	Standard
	As	75	-12.8	205.8				ug/L	-96	Standard
	Se	82	30.9	30.6				ug/L	24	Standard
	Se-1	77	81.7	14.7				ug/L	66	Standard
>	Ga	71	53.3	19.5				mg/L	67	Standard
	Rb	85	28.3	20.4				ug/L	25	Standard
	Y	89	648425.0	6.6				ug/L	639569	Standard
>	Rh	103	13.3	43.3				ug/L	8	Standard
	Mo	98	453.8	8.5				ug/L	15	Standard
	Ag	107	784.4	9.0				ug/L	162	Standard
	Cd	111	183.2	10.9				mg/L	7	Standard
	Cd	114	499.7	17.3				ug/L	31	Standard
>	In	115	1032076.0	6.8				ug/L	1030666	Standard
	Sn	118	1255.1	5.4				ug/L	755	Standard
	Sb	123	443.1	7.8				ug/L	105	Standard
	Ba	135	224.0	10.7				ug/L	23	Standard
	Ce	140	115.0	52.2				ug/L	137	Standard
>	Tb	159	1745048.3	4.8				ug/L	1748833	Standard
	Ho	165	28.3	62.0				ug/L	13	Standard
	Tl	203	809.0	13.2				ug/L	14	Standard
	Tl	205	548.3	1.4				ug/L	10	Standard
	Pb	206	1038.0	9.1				ug/L	459	Standard
	Pb	207	922.4	3.1				ug/L	424	Standard
	Pb	208	3646.2	10.2				ug/L	1701	Standard
	U	238	583.3	6.6				ug/L	2	Standard
>	Bi	209	939469.9	5.4				ug/L	937372	Standard

Sample ID: Standard 2
Report Date/Time: Thursday, February 11, 2016 12:26:50
Page 1

Approved: February 12, 2016

Na	23	0.0		mg/L	0	Standard
Mg	24	23.3	32.7	mg/L	17	Standard
K	39	16.7	17.3	mg/L	15	Standard
Ca	43	55.0	32.8	mg/L	67	Standard
Fe	54	229.2	21.7	mg/L	214	Standard
Fe	57	81.7	23.2	mg/L	82	Standard
> **Sc-1**	45	49001.2	9.5	mg/L	47226	Standard
Cl	35	38706.8	4.8	ug/L	38729	Standard
Kr	83	2.3	49.5	ug/L	3	Standard
Br	81	1560.1	3.2	ug/L	1497	Standard
P	31	13239.1	2.2	ug/L	15233	Standard
S	34	1160.0	5.5	ug/L	1153	Standard
Sr	88	46.7	6.2	ug/L	47	Standard
C	12	140.0	37.8	mg/L	90	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	6.7	86.6	mg/L	3	Standard
Dy	164	2.7	204.0	mg/L	22	Standard
Ho-1	165	28.3	62.0	mg/L	13	Standard
Er	166	13.3	43.3	mg/L	30	Standard
I	127	2206.8	4.5	mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Standard 2
Report Date/Time: Thursday, February 11, 2016 12:26:50
Page 2

Approved: February 12, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Thursday, February 11, 2016 12:26:50
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, February 11, 2016 12:27:45
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59030.0	5.0				ug/L	57324	Standard
	Be	9	32812.3	7.5	**50.0000**	1.613	3.2	ug/L	2	Standard
	Al	27	7537571.7	6.2	**50.0000**	2.145	4.3	ug/L	172	Standard
	Sc	45	50198.1	4.4				ug/L	47226	Standard
	Ti	47	47107.3	5.7	**100.0000**	2.837	2.8	ug/L	100	Standard
	V	51	570336.6	5.6	**50.0000**	1.365	2.7	ug/L	2380	Standard
	Cr	52	532068.8	7.7	**50.0000**	2.463	4.9	ug/L	10715	Standard
	Cr	53	64453.7	5.0	**50.0000**	1.066	2.1	ug/L	293	Standard
	Mn	55	564597.5	6.3	**50.0000**	1.733	3.5	ug/L	882	Standard
	Co	59	613551.0	6.8	**50.0000**	1.977	4.0	ug/L	252	Standard
	Ni	60	153965.6	6.1	**50.0000**	1.627	3.3	ug/L	51	Standard
	Cu	65	154261.2	5.5	**50.0000**	1.332	2.7	ug/L	125	Standard
	Zn	66	75071.1	6.7	**50.0000**	1.938	3.9	ug/L	191	Standard
>	**Ge**	72	727197.8	2.9				ug/L	693220	Standard
	As	75	80425.7	5.9	**50.0000**	1.508	3.0	ug/L	-96	Standard
	Se	82	8279.4	6.5	**50.0000**	1.813	3.6	ug/L	24	Standard
	Se-1	77	5423.6	6.4	**50.0000**	1.772	3.5	ug/L	66	Standard
>	**Ga**	71	78.3	24.2				mg/L	67	Standard
	Rb	85	1306.7	5.9				ug/L	25	Standard
	Y	89	663827.6	2.8				ug/L	639569	Standard
>	**Rh**	103	46.7	30.9				ug/L	8	Standard
	Mo	98	432525.8	6.6	**100.0000**	5.116	5.1	ug/L	15	Standard
	Ag	107	601398.6	7.4	**50.0000**	2.861	5.7	ug/L	162	Standard
	Cd	111	181374.1	5.4	**50.0000**	1.919	3.8	mg/L	7	Standard
	Cd	114	437182.8	3.9	**50.0000**	1.783	3.6	ug/L	31	Standard
>	**In**	115	1076419.5	1.8				ug/L	1030666	Standard
	Sn	118	517833.5	4.2	**50.0000**	1.479	3.0	ug/L	755	Standard
	Sb	123	400697.1	6.0	**50.0000**	2.164	4.3	ug/L	105	Standard
	Ba	135	197306.8	4.6	**50.0000**	1.487	3.0	ug/L	23	Standard
	Ce	140	248.3	25.5				ug/L	137	Standard
>	**Tb**	159	1849152.8	2.5				ug/L	1748833	Standard
	Ho	165	25.0	20.0				ug/L	13	Standard
	Tl	203	778309.6	4.4	**50.0000**	2.228	4.5	ug/L	14	Standard
	Tl	205	532006.1	6.4	**50.0000**	3.102	6.2	ug/L	10	Standard
	Pb	206	494585.4	5.1	**50.0000**	2.431	4.9	ug/L	459	Standard
	Pb	207	451598.0	5.7	**50.0000**	2.931	5.9	ug/L	424	Standard
	Pb	208	1740285.4	5.1	**50.0000**	2.521	5.0	ug/L	1701	Standard
	U	238	552306.5	5.0	**50.0000**	2.538	5.1	ug/L	2	Standard
>	**Bi**	209	974340.0	1.8				ug/L	937372	Standard

Sample ID: Standard 3
Report Date/Time: Thursday, February 11, 2016 12:30:02
Page 1

Approved: February 12, 2016

Na	23	1.7	173.2	**5.0000**	8.652	173.0	mg/L	0	Standard
Mg	24	4022.2	9.8	**5.0000**	0.267	5.3	mg/L	17	Standard
K	39	1163.4	14.2	**5.0000**	0.543	10.9	mg/L	15	Standard
Ca	43	106.7	10.8	**5.0000**	0.718	14.4	mg/L	67	Standard
Fe	54	8182.4	4.0	**5.0000**	0.062	1.2	mg/L	214	Standard
Fe	57	2180.2	7.0	**5.0000**	0.424	8.5	mg/L	82	Standard
> **Sc-1**	45	50198.1	4.4				mg/L	47226	Standard
Cl	35	47806.8	5.8				ug/L	38729	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	1650.1	4.4				ug/L	1497	Standard
P	31	15688.2	9.3				ug/L	15233	Standard
S	34	1985.1	10.9				ug/L	1153	Standard
Sr	88	48.3	66.5				ug/L	47	Standard
C	12	133.3	24.1				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	29.2	89.7				mg/L	22	Standard
Ho-1	165	25.0	20.0				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	30	Standard
I	127	2373.5	4.6				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Standard 3
Report Date/Time: Thursday, February 11, 2016 12:30:02
Page 2

Approved: February 12, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
Report Date/Time: Thursday, February 11, 2016 12:30:02
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, February 11, 2016 12:30:56
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57050.7	4.5				ug/L	57324	Standard
	Be	9	66259.9	5.8	**102.1989**	1.605	1.6	ug/L	2	Standard
	Al	27	15212792.8	6.8	**102.1221**	2.299	2.3	ug/L	172	Standard
	Sc	45	48241.7	3.6				ug/L	47226	Standard
	Ti	47	92737.2	5.4	**201.1194**	3.686	1.8	ug/L	100	Standard
	V	51	1126765.7	4.8	**100.8090**	1.245	1.2	ug/L	2380	Standard
	Cr	52	1050306.6	6.6	**101.1898**	3.049	3.0	ug/L	10715	Standard
	Cr	53	133257.0	7.0	**103.0725**	3.435	3.3	ug/L	293	Standard
	Mn	55	1129760.0	4.3	**101.4184**	1.762	1.7	ug/L	882	Standard
	Co	59	1238185.7	4.5	**101.7969**	1.972	1.9	ug/L	252	Standard
	Ni	60	309157.5	3.3	**101.5522**	0.762	0.8	ug/L	51	Standard
	Cu	65	308038.0	4.4	**101.2709**	0.743	0.7	ug/L	125	Standard
	Zn	66	149536.7	4.0	**101.2862**	0.294	0.3	ug/L	191	Standard
>	**Ge**	72	708498.0	3.7				ug/L	693220	Standard
	As	75	158289.9	3.6	**100.5015**	0.526	0.5	ug/L	-96	Standard
	Se	82	16413.6	2.8	**100.9804**	1.416	1.4	ug/L	24	Standard
	Se-1	77	10541.0	2.9	**100.2706**	0.930	0.9	ug/L	66	Standard
>	**Ga**	71	108.3	27.0				mg/L	67	Standard
	Rb	85	2508.5	10.0				ug/L	25	Standard
	Y	89	651330.7	4.4				ug/L	639569	Standard
>	**Rh**	103	55.0	9.1				ug/L	8	Standard
	Mo	98	876565.3	3.7	**204.5477**	1.786	0.9	ug/L	15	Standard
	Ag	107	1179158.0	2.6	**100.6471**	1.003	1.0	ug/L	162	Standard
	Cd	111	356132.4	3.5	**100.6895**	0.754	0.7	mg/L	7	Standard
	Cd	114	852913.2	1.3	**100.3721**	1.544	1.5	ug/L	31	Standard
>	**In**	115	1042612.1	2.8				ug/L	1030666	Standard
	Sn	118	1019609.0	5.8	**100.8351**	2.976	3.0	ug/L	755	Standard
	Sb	123	796202.4	2.9	**101.2978**	1.000	1.0	ug/L	105	Standard
	Ba	135	386579.3	3.0	**100.5855**	0.262	0.3	ug/L	23	Standard
	Ce	140	296.7	8.0				ug/L	137	Standard
>	**Tb**	159	1799942.3	1.8				ug/L	1748833	Standard
	Ho	165	20.0	66.1				ug/L	13	Standard
	Tl	203	1550498.3	3.2	**100.8242**	0.993	1.0	ug/L	14	Standard
	Tl	205	1096616.4	5.5	**102.5106**	2.870	2.8	ug/L	10	Standard
	Pb	206	976854.9	3.1	**100.4269**	0.093	0.1	ug/L	459	Standard
	Pb	207	895401.6	3.3	**100.6116**	0.851	0.8	ug/L	424	Standard
	Pb	208	3489324.6	2.8	**101.1784**	0.215	0.2	ug/L	1701	Standard
	U	238	1117000.0	3.2	**101.5773**	0.845	0.8	ug/L	2	Standard
>	**Bi**	209	954528.5	3.0				ug/L	937372	Standard

Sample ID: Standard 4
Report Date/Time: Thursday, February 11, 2016 12:33:13
Page 1

Approved: February 12, 2016

Na	23	1.7	173.2	**6.6900**	11.579	173.1	mg/L	0	Standard
Mg	24	8158.9	7.2	**10.2868**	0.474	4.6	mg/L	17	Standard
K	39	2113.5	1.3	**9.7681**	0.422	4.3	mg/L	15	Standard
Ca	43	210.0	4.1	**12.3108**	0.829	6.7	mg/L	67	Standard
Fe	54	16367.9	4.3	**10.2733**	0.181	1.8	mg/L	214	Standard
Fe	57	4430.6	2.2	**10.3765**	0.170	1.6	mg/L	82	Standard
Sc-1	45	48241.7	3.6				mg/L	47226	Standard
Cl	35	45502.4	5.8				ug/L	38729	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1520.1	4.6				ug/L	1497	Standard
P	31	15429.6	7.9				ug/L	15233	Standard
S	34	2065.1	2.2				ug/L	1153	Standard
Sr	88	55.0	18.2				ug/L	47	Standard
C	12	123.3	47.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	31.4	81.6				mg/L	22	Standard
Ho-1	165	20.0	66.1				mg/L	13	Standard
Er	166	40.0	25.0				mg/L	30	Standard
I	127	2531.9	0.5				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 4
Report Date/Time: Thursday, February 11, 2016 12:33:13
Page 2

Approved: February 12, 2016

	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Thursday, February 11, 2016 12:33:13
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, February 11, 2016 12:34:10
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56107.1	3.8				ug/L	57324	Standard
	Be	9	31502.8	5.2	**49.4151**	1.008	2.0	ug/L	2	Standard
	Al	27	7199705.2	5.2	**49.1582**	0.994	2.0	ug/L	172	Standard
	Sc	45	48536.0	3.4				ug/L	47226	Standard
	Ti	47	46554.8	4.0	**99.5120**	1.423	1.4	ug/L	100	Standard
	V	51	535302.2	4.0	**47.1232**	0.576	1.2	ug/L	2380	Standard
	Cr	52	515066.2	5.1	**48.4089**	0.322	0.7	ug/L	10715	Standard
	Cr	53	63712.4	6.4	**48.4633**	0.874	1.8	ug/L	293	Standard
	Mn	55	541011.7	4.9	**47.8141**	0.245	0.5	ug/L	882	Standard
	Co	59	593706.1	5.1	**48.1027**	0.210	0.4	ug/L	252	Standard
	Ni	60	150278.6	4.6	**48.6414**	0.269	0.6	ug/L	51	Standard
	Cu	65	149952.7	4.5	**48.5789**	0.346	0.7	ug/L	125	Standard
	Zn	66	74796.5	5.4	**49.7835**	0.189	0.4	ug/L	191	Standard
>	Ge	72	718795.9	5.0				ug/L	693220	Standard
	As	75	78025.4	5.6	**48.8477**	0.326	0.7	ug/L	-96	Standard
	Se	82	8123.0	5.8	**49.1625**	0.400	0.8	ug/L	24	Standard
	Se-1	77	5294.9	3.0	**49.3106**	1.118	2.3	ug/L	66	Standard
>	Ga	71	140.0	0.0				mg/L	67	Standard
	Rb	85	825.0	9.5				ug/L	25	Standard
	Y	89	656673.7	6.1				ug/L	639569	Standard
>	Rh	103	48.3	26.0				ug/L	8	Standard
	Mo	98	450504.1	5.1	**103.8040**	1.824	1.8	ug/L	15	Standard
	Ag	107	581426.5	4.7	**48.9959**	1.115	2.3	ug/L	162	Standard
	Cd	111	175211.4	6.4	**48.8872**	0.533	1.1	mg/L	7	Standard
	Cd	114	421917.1	5.2	**49.0050**	1.089	2.2	ug/L	31	Standard
>	In	115	1056644.0	6.4				ug/L	1030666	Standard
	Sn	118	538017.1	5.0	**52.5264**	0.776	1.5	ug/L	755	Standard
	Sb	123	369142.9	5.3	**46.3587**	0.513	1.1	ug/L	105	Standard
	Ba	135	189912.2	3.8	**48.8100**	1.298	2.7	ug/L	23	Standard
	Ce	140	243.3	20.8				ug/L	137	Standard
>	Tb	159	1801163.0	3.8				ug/L	1748833	Standard
	Ho	165	26.7	10.8				ug/L	13	Standard
	Tl	203	764543.2	4.2	**48.3375**	0.173	0.4	ug/L	14	Standard
	Tl	205	527238.8	5.2	**47.9359**	1.094	2.3	ug/L	10	Standard
	Pb	206	490070.6	3.9	**48.9623**	0.432	0.9	ug/L	459	Standard
	Pb	207	427358.8	4.1	**46.6635**	0.159	0.3	ug/L	424	Standard
	Pb	208	1706652.8	5.0	**48.0778**	0.783	1.6	ug/L	1701	Standard
	U	238	533313.2	3.6	**47.1617**	0.208	0.4	ug/L	2	Standard
>	Bi	209	981642.3	4.0				ug/L	937372	Standard

Sample ID: QC Std 1
Report Date/Time: Thursday, February 11, 2016 12:36:27
Page 1

Approved: February 12, 2016

Na	23	1.7	173.2	**6.5420**	11.322	173.1	mg/L	0	Standard
Mg	24	3938.8	7.8	**4.9231**	0.259	5.3	mg/L	17	Standard
K	39	981.7	11.9	**4.4825**	0.701	15.6	mg/L	15	Standard
Ca	43	136.7	18.0	**6.4538**	1.675	25.9	mg/L	67	Standard
Fe	54	7600.3	5.3	**4.6644**	0.145	3.1	mg/L	214	Standard
Fe	57	2080.1	5.7	**4.7368**	0.121	2.6	mg/L	82	Standard
> **Sc-1**	45	48536.0	3.4				mg/L	47226	Standard
Cl	35	44907.2	5.3				ug/L	38729	Standard
Kr	83	5.0	20.0				ug/L	3	Standard
Br	81	1560.1	19.3				ug/L	1497	Standard
P	31	14653.8	3.4				ug/L	15233	Standard
S	34	1988.5	1.8				ug/L	1153	Standard
Sr	88	55.0	18.2				ug/L	47	Standard
C	12	136.7	11.2				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	34.6	18.7				mg/L	22	Standard
Ho-1	165	26.7	10.8				mg/L	13	Standard
Er	166	43.3	35.3				mg/L	30	Standard
I	127	2053.5	4.3				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.830		
Al	27	98.316		
Sc	45			
Ti	47	99.512		
V	51	94.246		
Cr	52	96.818		
Cr	53			
Mn	55	95.628		
Co	59	96.205		
Ni	60	97.283		
Cu	65	97.158		
Zn	66	99.567		
> Ge	72		103.689	
As	75	97.695		
Se	82	98.325		
Se-1	77			
> Ga	71			

Sample ID: QC Std 1
Report Date/Time: Thursday, February 11, 2016 12:36:27
Page 2

Approved: February 12, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	103.804		
Ag	107	97.992		
Cd	111	97.774		
Cd	114			
> In	115		102.521	
Sn	118	105.053		
Sb	123	92.717		
Ba	135	97.620		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.675		
Tl	205			
Pb	206	97.925		
Pb	207	93.327		
Pb	208	96.156		
U	238	94.323		
> Bi	209		104.723	
Na	23	130.840		
Mg	24	98.461		
K	39	89.650		
Ca	43	129.076		
Fe	54	93.288		
Fe	57	94.735		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

Sample ID: QC Std 1
Report Date/Time: Thursday, February 11, 2016 12:36:27
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, February 11, 2016 12:37:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54618.8	9.0				ug/L	57324	Standard
	Be	9	15.0	88.2	**0.0363**	0.022	60.8	ug/L	2	Standard
	Al	27	443.3	31.6	**-0.0024**	0.001	34.5	ug/L	172	Standard
	Sc	45	46729.1	9.7				ug/L	47226	Standard
	Ti	47	93.7	14.3	**0.0425**	0.016	36.7	ug/L	100	Standard
	V	51	2312.0	1.4	**-0.0002**	0.014	8335.9	ug/L	2380	Standard
	Cr	52	10165.1	4.4	**-0.0362**	0.034	95.2	ug/L	10715	Standard
	Cr	53	283.3	25.1	**-0.0188**	0.037	198.7	ug/L	293	Standard
	Mn	55	923.7	4.0	**-0.0342**	0.003	9.6	ug/L	882	Standard
	Co	59	249.3	8.2	**-0.0037**	0.001	21.9	ug/L	252	Standard
	Ni	60	53.7	14.5	**-0.0126**	0.003	24.2	ug/L	51	Standard
	Cu	65	143.3	10.1	**-0.0099**	0.001	13.1	ug/L	125	Standard
	Zn	66	193.0	19.3	**-0.1638**	0.015	9.2	ug/L	191	Standard
>	**Ge**	72	700617.6	7.8				ug/L	693220	Standard
	As	75	-78.5	26.9	**0.0067**	0.014	216.5	ug/L	-96	Standard
	Se	82	24.5	35.2	**0.0134**	0.054	400.6	ug/L	24	Standard
	Se-1	77	70.3	15.2	**-0.0357**	0.066	183.9	ug/L	66	Standard
>	**Ga**	71	36.7	31.5				mg/L	67	Standard
	Rb	85	21.7	26.6				ug/L	25	Standard
	Y	89	632706.1	8.2				ug/L	639569	Standard
>	**Rh**	103	6.7	43.3				ug/L	8	Standard
	Mo	98	233.0	11.2	**0.0490**	0.004	8.2	ug/L	15	Standard
	Ag	107	188.0	3.7	**-0.0010**	0.001	142.2	ug/L	162	Standard
	Cd	111	15.9	36.7	**0.0023**	0.001	52.6	mg/L	7	Standard
	Cd	114	20.2	55.8	**-0.0067**	0.001	21.1	ug/L	31	Standard
>	**In**	115	1014852.0	9.3				ug/L	1030666	Standard
	Sn	118	1360.1	16.6	**0.0649**	0.035	53.7	ug/L	755	Standard
	Sb	123	1615.3	19.6	**0.2077**	0.059	28.6	ug/L	105	Standard
	Ba	135	24.0	43.5	**-0.0024**	0.003	113.6	ug/L	23	Standard
	Ce	140	35.0	49.5				ug/L	137	Standard
>	**Tb**	159	1718393.5	9.1				ug/L	1748833	Standard
	Ho	165	10.0					ug/L	13	Standard
	Tl	203	73.7	19.2	**0.0015**	0.001	36.6	ug/L	14	Standard
	Tl	205	73.3	10.4	**0.0047**	0.001	24.9	ug/L	10	Standard
	Pb	206	491.3	6.7	**-0.0079**	0.001	16.8	ug/L	459	Standard
	Pb	207	433.0	6.8	**-0.0069**	0.001	14.8	ug/L	424	Standard
	Pb	208	1765.0	10.0	**-0.0063**	0.001	12.4	ug/L	1701	Standard
	U	238	42.0	13.3	**-0.0001**	0.000	651.0	ug/L	2	Standard
>	**Bi**	209	956974.5	8.5				ug/L	937372	Standard

Sample ID: QC Std 2
Report Date/Time: Thursday, February 11, 2016 12:39:40
Page 1

Approved: February 12, 2016

Na	23	1.7	173.2	**7.2339**	12.521	173.1	mg/L	0	Standard
Mg	24	31.7	48.2	**0.0170**	0.017	102.8	mg/L	17	Standard
K	39	11.7	89.2	**-0.0171**	0.047	276.4	mg/L	15	Standard
Ca	43	40.0	25.0	**-0.9340**	0.899	96.2	mg/L	67	Standard
Fe	54	199.1	13.1	**-0.0092**	0.027	291.1	mg/L	214	Standard
Fe	57	85.0	25.6	**0.0242**	0.071	292.0	mg/L	82	Standard
> **Sc-1**	45	46729.1	9.7				mg/L	47226	Standard
Cl	35	44084.1	5.1				ug/L	38729	Standard
Kr	83	4.3	35.3				ug/L	3	Standard
Br	81	1400.1	3.3				ug/L	1497	Standard
P	31	15326.1	10.4				ug/L	15233	Standard
S	34	1836.8	8.0				ug/L	1153	Standard
Sr	88	38.3	52.7				ug/L	47	Standard
C	12	113.3	18.4				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.0	2.5				mg/L	22	Standard
Ho-1	165	10.0					mg/L	13	Standard
Er	166	20.0	50.0				mg/L	30	Standard
I	127	2056.8	8.1				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.067	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 2
Report Date/Time: Thursday, February 11, 2016 12:39:40
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.466	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.091	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Ca	43	

Sample ID: QC Std 2
Report Date/Time: Thursday, February 11, 2016 12:39:40
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, February 11, 2016 12:40:35
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55493.4	7.0				ug/L	57324	Standard
	Be	9	148.3	29.5	**0.2451**	0.056	22.9	ug/L	2	Standard
	Al	27	2412.0	108.6	**0.0118**	0.020	165.9	ug/L	172	Standard
	Sc	45	48546.5	10.0				ug/L	47226	Standard
	Ti	47	94.7	13.3	**0.0471**	0.043	90.3	ug/L	100	Standard
	V	51	6483.9	3.6	**0.3780**	0.024	6.3	ug/L	2380	Standard
	Cr	52	20106.0	5.6	**0.9411**	0.042	4.4	ug/L	10715	Standard
	Cr	53	1466.7	15.4	**0.9070**	0.115	12.7	ug/L	293	Standard
	Mn	55	6111.2	4.3	**0.4375**	0.018	4.2	ug/L	882	Standard
	Co	59	4731.4	8.6	**0.3685**	0.009	2.4	ug/L	252	Standard
	Ni	60	4538.0	8.1	**1.4752**	0.013	0.9	ug/L	51	Standard
	Cu	65	2447.9	6.0	**0.7569**	0.028	3.7	ug/L	125	Standard
	Zn	66	9991.3	8.3	**6.5589**	0.045	0.7	ug/L	191	Standard
>	**Ge**	72	701410.3	7.7				ug/L	693220	Standard
	As	75	543.8	16.6	**0.4048**	0.038	9.3	ug/L	-96	Standard
	Se	82	93.7	13.1	**0.4442**	0.066	14.8	ug/L	24	Standard
	Se-1	77	110.7	16.5	**0.3545**	0.147	41.5	ug/L	66	Standard
>	**Ga**	71	56.7	48.6				mg/L	67	Standard
	Rb	85	20.0	43.3				ug/L	25	Standard
	Y	89	631188.3	8.3				ug/L	639569	Standard
>	**Rh**	103	1.7	173.2				ug/L	8	Standard
	Mo	98	165.0	46.4	**0.0341**	0.022	66.0	ug/L	15	Standard
	Ag	107	4553.7	7.8	**0.3847**	0.013	3.3	ug/L	162	Standard
	Cd	111	823.0	5.3	**0.2394**	0.022	9.1	mg/L	7	Standard
	Cd	114	2083.7	4.2	**0.2451**	0.012	4.8	ug/L	31	Standard
>	**In**	115	1008360.0	8.9				ug/L	1030666	Standard
	Sn	118	861.7	12.5	**0.0136**	0.019	138.2	ug/L	755	Standard
	Sb	123	3340.9	2.2	**0.4344**	0.035	8.0	ug/L	105	Standard
	Ba	135	2643.2	9.6	**0.7026**	0.031	4.4	ug/L	23	Standard
	Ce	140	31.7	24.1				ug/L	137	Standard
>	**Tb**	159	1703087.3	5.8				ug/L	1748833	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	1316.4	7.1	**0.0827**	0.008	9.6	ug/L	14	Standard
	Tl	205	1005.0	10.3	**0.0923**	0.012	13.3	ug/L	10	Standard
	Pb	206	2447.2	1.6	**0.1948**	0.020	10.4	ug/L	459	Standard
	Pb	207	2028.5	4.9	**0.1734**	0.010	6.0	ug/L	424	Standard
	Pb	208	8602.0	6.2	**0.1934**	0.021	10.9	ug/L	1701	Standard
	U	238	4216.6	8.5	**0.3804**	0.019	4.9	ug/L	2	Standard
>	**Bi**	209	953292.3	8.4				ug/L	937372	Standard

Sample ID: QC Std 3
Report Date/Time: Thursday, February 11, 2016 12:42:52
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	11.7	65.5	**-0.0096**	0.008	83.6	mg/L	17	Standard
K	39	25.0	91.7	**0.0403**	0.093	231.2	mg/L	15	Standard
Ca	43	61.7	12.4	**0.6110**	0.122	19.9	mg/L	67	Standard
Fe	54	228.5	3.8	**0.0043**	0.019	448.9	mg/L	214	Standard
Fe	57	78.3	19.5	**-0.0035**	0.036	1026.1	mg/L	82	Standard
Sc-1	45	48546.5	10.0				mg/L	47226	Standard
Cl	35	45086.5	6.1				ug/L	38729	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	1346.7	8.5				ug/L	1497	Standard
P	31	15080.8	1.7				ug/L	15233	Standard
S	34	1810.1	2.3				ug/L	1153	Standard
Sr	88	48.3	6.0				ug/L	47	Standard
C	12	140.0	14.3				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	21.6	104.5				mg/L	22	Standard
Ho-1	165	13.3	21.7				mg/L	13	Standard
Er	166	36.7	31.5				mg/L	30	Standard
I	127	1611.8	3.4				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	122.542		
Al	27	1.180		
Sc	45			
Ti	47			
V	51	94.504		
Cr	52	117.635		
Cr	53			
Mn	55	87.491		
Co	59	92.135		
Ni	60	92.199		
Cu	65	94.616		
Zn	66	104.942		
Ge	72		101.181	
As	75	101.204		
Se	82	111.045		
Se-1	77			
Ga	71			

Sample ID: QC Std 3
Report Date/Time: Thursday, February 11, 2016 12:42:52
Page 2

Approved: February 12, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.187		
Cd	111	99.769		
Cd	114			
> In	115			97.836
Sn	118			
Sb	123	108.610		
Ba	135	93.681		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.377		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.702		
U	238	95.093		
> Bi	209			101.698
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
Report Date/Time: Thursday, February 11, 2016 12:42:52
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, February 11, 2016 12:43:47
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57989.2	4.2				ug/L	57324	Standard
	Be	9	3.3	173.2	**0.0169**	0.008	50.2	ug/L	2	Standard
	Al	27	7135839.8	8.8	**47.0939**	2.242	4.8	ug/L	172	Standard
	Sc	45	48451.2	9.7				ug/L	47226	Standard
	Ti	47	46203.9	7.2	**97.9909**	1.974	2.0	ug/L	100	Standard
	V	51	2533.6	7.7	**0.0119**	0.013	106.1	ug/L	2380	Standard
	Cr	52	11666.2	5.9	**0.0730**	0.008	10.8	ug/L	10715	Standard
	Cr	53	1830.1	8.3	**1.1498**	0.059	5.2	ug/L	293	Standard
	Mn	55	1817.8	6.5	**0.0416**	0.003	8.4	ug/L	882	Standard
	Co	59	339.0	10.2	**0.0028**	0.001	51.3	ug/L	252	Standard
	Ni	60	652.3	7.8	**0.1791**	0.006	3.3	ug/L	51	Standard
	Cu	65	622.0	11.0	**0.1425**	0.012	8.5	ug/L	125	Standard
	Zn	66	1916.5	7.4	**0.9781**	0.031	3.2	ug/L	191	Standard
>	Ge	72	723687.2	5.2				ug/L	693220	Standard
	As	75	-86.9	58.2	**0.0041**	0.030	724.1	ug/L	-96	Standard
	Se	82	31.1	23.5	**0.0491**	0.049	100.5	ug/L	24	Standard
	Se-1	77	274.3	6.9	**1.8558**	0.055	3.0	ug/L	66	Standard
>	Ga	71	221.7	21.0				mg/L	67	Standard
	Rb	85	1151.7	13.0				ug/L	25	Standard
	Y	89	667643.1	4.3				ug/L	639569	Standard
>	Rh	103	11.7	65.5				ug/L	8	Standard
	Mo	98	442785.6	4.6	**101.4354**	1.417	1.4	ug/L	15	Standard
	Ag	107	188.0	8.0	**-0.0018**	0.001	82.7	ug/L	162	Standard
	Cd	111	-359.1	4.7	**-0.1021**	0.007	7.0	mg/L	7	Standard
	Cd	114	735.4	1.9	**0.0759**	0.004	5.5	ug/L	31	Standard
>	In	115	1061860.7	3.3				ug/L	1030666	Standard
	Sn	118	980.0	2.3	**0.0198**	0.005	27.0	ug/L	755	Standard
	Sb	123	307.5	21.9	**0.0316**	0.010	30.6	ug/L	105	Standard
	Ba	135	213.3	1.9	**0.0457**	0.001	1.7	ug/L	23	Standard
	Ce	140	198.3	10.2				ug/L	137	Standard
>	Tb	159	1794145.6	5.4				ug/L	1748833	Standard
	Ho	165	25.0	40.0				ug/L	13	Standard
	Tl	203	1847.8	5.9	**0.1158**	0.010	8.8	ug/L	14	Standard
	Tl	205	1336.7	12.7	**0.1219**	0.020	16.4	ug/L	10	Standard
	Pb	206	2816.9	3.3	**0.2284**	0.007	3.1	ug/L	459	Standard
	Pb	207	2398.5	3.7	**0.2113**	0.003	1.5	ug/L	424	Standard
	Pb	208	9621.5	4.2	**0.2188**	0.006	2.8	ug/L	1701	Standard
	U	238	21.3	27.5	**-0.0020**	0.001	31.1	ug/L	2	Standard
>	Bi	209	964998.2	4.0				ug/L	937372	Standard

Sample ID: QC Std 4
Report Date/Time: Thursday, February 11, 2016 12:46:04
Page 1

Approved: February 12, 2016

Na	23	5.0	0.0	**19.9456**	2.038	10.2	mg/L	0	Standard
Mg	24	9139.4	4.0	**11.5356**	0.857	7.4	mg/L	17	Standard
K	39	888.4	6.7	**4.0758**	0.577	14.2	mg/L	15	Standard
Ca	43	226.7	25.8	**13.3792**	3.088	23.1	mg/L	67	Standard
Fe	54	19008.9	4.6	**11.9481**	0.732	6.1	mg/L	214	Standard
Fe	57	5114.2	3.5	**12.0044**	0.859	7.2	mg/L	82	Standard
> **Sc-1**	45	48451.2	9.7				mg/L	47226	Standard
Cl	35	46900.5	3.4				ug/L	38729	Standard
Kr	83	4.3	35.3				ug/L	3	Standard
Br	81	1426.7	22.7				ug/L	1497	Standard
P	31	14231.7	5.5				ug/L	15233	Standard
S	34	1651.8	4.0				ug/L	1153	Standard
Sr	88	51.7	14.8				ug/L	47	Standard
C	12	283.3	23.0				mg/L	90	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	3	Standard
Dy	164	29.0	35.3				mg/L	22	Standard
Ho-1	165	25.0	40.0				mg/L	13	Standard
Er	166	20.0	50.0				mg/L	30	Standard
I	127	20387.0	1.4				mg/L	2297	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27	0.942		
	Sc	45			
	Ti	47	97.991		
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.395	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 4
Report Date/Time: Thursday, February 11, 2016 12:46:04
Page 2

Approved: February 12, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	101.435		
Ag	107			
Cd	111			
Cd	114			
> In	115			103.027
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			102.947
Na	23	159.565		
Mg	24	230.712		
K	39	81.516		
Ca	43	89.195		
Fe	54	95.585		
Fe	57	96.035		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

Sample ID: QC Std 4
Report Date/Time: Thursday, February 11, 2016 12:46:04
Page 3

Approved: February 12, 2016

QC Std 4	Mg	24

Sample ID: QC Std 4
Report Date/Time: Thursday, February 11, 2016 12:46:04
Page 4

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, February 11, 2016 12:46:58
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60947.6	5.4				ug/L	57324	Standard
	Be	9	69102.5	5.5	**99.7981**	0.860	0.9	ug/L	2	Standard
	Al	27	7326019.2	7.5	**46.0363**	1.438	3.1	ug/L	172	Standard
	Sc	45	47073.6	11.0				ug/L	47226	Standard
	Ti	47	47828.4	8.0	**102.0305**	2.440	2.4	ug/L	100	Standard
	V	51	1056909.1	6.3	**93.1142**	0.296	0.3	ug/L	2380	Standard
	Cr	52	972826.7	7.3	**92.2210**	1.592	1.7	ug/L	10715	Standard
	Cr	53	122575.9	3.7	**93.5347**	3.914	4.2	ug/L	293	Standard
	Mn	55	1058106.1	6.4	**93.5209**	1.100	1.2	ug/L	882	Standard
	Co	59	1161014.1	6.4	**93.9947**	1.329	1.4	ug/L	252	Standard
	Ni	60	290289.8	5.8	**93.9016**	1.505	1.6	ug/L	51	Standard
	Cu	65	293439.2	7.4	**94.9594**	1.130	1.2	ug/L	125	Standard
	Zn	66	145407.9	6.4	**96.9662**	0.386	0.4	ug/L	191	Standard
>	Ge	72	719519.6	6.1				ug/L	693220	Standard
	As	75	155474.4	4.3	**97.2728**	1.762	1.8	ug/L	-96	Standard
	Se	82	16072.0	5.4	**97.3650**	0.925	1.0	ug/L	24	Standard
	Se-1	77	10556.0	4.4	**98.9150**	1.682	1.7	ug/L	66	Standard
>	Ga	71	275.0	26.2				mg/L	67	Standard
	Rb	85	1353.4	5.8				ug/L	25	Standard
	Y	89	663287.8	4.7				ug/L	639569	Standard
>	Rh	103	55.0	24.1				ug/L	8	Standard
	Mo	98	459278.5	5.6	**104.6442**	1.064	1.0	ug/L	15	Standard
	Ag	107	1048651.3	5.4	**87.3782**	0.562	0.6	ug/L	162	Standard
	Cd	111	342730.0	5.9	**94.6000**	0.497	0.5	mg/L	7	Standard
	Cd	114	827758.8	5.5	**95.0749**	1.120	1.2	ug/L	31	Standard
>	In	115	1068075.4	5.8				ug/L	1030666	Standard
	Sn	118	1200.0	5.5	**0.0408**	0.012	30.4	ug/L	755	Standard
	Sb	123	759193.9	5.3	**94.3048**	0.516	0.5	ug/L	105	Standard
	Ba	135	358186.1	5.6	**90.9870**	0.233	0.3	ug/L	23	Standard
	Ce	140	145.0	10.3				ug/L	137	Standard
>	Tb	159	1809577.5	5.7				ug/L	1748833	Standard
	Ho	165	20.0	50.0				ug/L	13	Standard
	Tl	203	1471666.1	5.4	**94.0281**	0.970	1.0	ug/L	14	Standard
	Tl	205	1035363.6	5.0	**95.1497**	0.528	0.6	ug/L	10	Standard
	Pb	206	961089.3	5.7	**97.0694**	0.526	0.5	ug/L	459	Standard
	Pb	207	834365.9	4.7	**92.1409**	1.432	1.6	ug/L	424	Standard
	Pb	208	3319813.4	4.9	**94.5941**	0.969	1.0	ug/L	1701	Standard
	U	238	1057205.7	4.9	**94.4776**	0.652	0.7	ug/L	2	Standard
>	Bi	209	971560.7	5.6				ug/L	937372	Standard

Sample ID: QC Std 5
Report Date/Time: Thursday, February 11, 2016 12:49:15
Page 1

Approved: February 12, 2016

Na	23	3.3	86.6	**13.4225**	11.794	87.9	mg/L	0	Standard
Mg	24	9598.0	3.3	**12.4907**	1.079	8.6	mg/L	17	Standard
K	39	881.7	13.4	**4.1275**	0.258	6.2	mg/L	15	Standard
Ca	43	213.3	8.9	**13.0031**	0.354	2.7	mg/L	67	Standard
Fe	54	19777.3	4.6	**12.8166**	0.846	6.6	mg/L	214	Standard
Fe	57	5310.9	8.3	**12.8116**	0.426	3.3	mg/L	82	Standard
> **Sc-1**	45	47073.6	11.0				mg/L	47226	Standard
Cl	35	48067.8	7.6				ug/L	38729	Standard
Kr	83	7.0	37.8				ug/L	3	Standard
Br	81	1583.4	8.2				ug/L	1497	Standard
P	31	13941.4	7.7				ug/L	15233	Standard
S	34	1611.8	9.3				ug/L	1153	Standard
Sr	88	45.0	50.9				ug/L	47	Standard
C	12	330.0	19.9				mg/L	90	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	31.9	19.8				mg/L	22	Standard
Ho-1	165	20.0	50.0				mg/L	13	Standard
Er	166	30.0	88.2				mg/L	30	Standard
I	127	2275.2	5.2				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.798		
Al	27	0.921		
Sc	45			
Ti	47	102.030		
V	51	93.114		
Cr	52	92.221		
Cr	53			
Mn	55	93.521		
Co	59	93.995		
Ni	60	93.902		
Cu	65	94.959		
Zn	66	96.966		
> Ge	72		103.794	
As	75	97.273		
Se	82	97.365		
Se-1	77			
> Ga	71			

Sample ID: QC Std 5
Report Date/Time: Thursday, February 11, 2016 12:49:15
Page 2

Approved: February 12, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	104.644		
Ag	107	87.378		
Cd	111	94.600		
Cd	114			
> In	115		103.630	
Sn	118			
Sb	123	94.305		
Ba	135	90.987		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.028		
Tl	205			
Pb	206			
Pb	207			
Pb	208	94.594		
U	238	94.478		
> Bi	209		103.647	
Na	23	107.380		
Mg	24	249.814		
K	39	82.551		
Ca	43	86.687		
Fe	54	102.533		
Fe	57	102.493		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
Report Date/Time: Thursday, February 11, 2016 12:49:15
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, February 11, 2016 12:50:12
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60854.1	7.6				ug/L	57324	Standard
	Be	9	33746.0	7.5	**48.8214**	0.674	1.4	ug/L	2	Standard
	Al	27	7352239.6	7.2	**46.3062**	0.218	0.5	ug/L	172	Standard
	Sc	45	46964.8	9.8				ug/L	47226	Standard
	Ti	47	43722.4	5.1	**92.4802**	1.543	1.7	ug/L	100	Standard
	V	51	535983.9	5.8	**46.6786**	0.421	0.9	ug/L	2380	Standard
	Cr	52	503299.0	5.9	**46.7814**	0.432	0.9	ug/L	10715	Standard
	Cr	53	62067.2	6.2	**46.7344**	0.742	1.6	ug/L	293	Standard
	Mn	55	540509.1	6.5	**47.2603**	0.436	0.9	ug/L	882	Standard
	Co	59	597038.1	6.9	**47.8523**	0.133	0.3	ug/L	252	Standard
	Ni	60	148095.7	6.7	**47.4232**	0.857	1.8	ug/L	51	Standard
	Cu	65	149898.6	6.5	**48.0376**	0.212	0.4	ug/L	125	Standard
	Zn	66	72681.5	7.0	**47.8473**	0.298	0.6	ug/L	191	Standard
>	Ge	72	726569.6	6.7				ug/L	693220	Standard
	As	75	78053.0	5.8	**48.3721**	0.496	1.0	ug/L	-96	Standard
	Se	82	8264.7	5.3	**49.5312**	0.802	1.6	ug/L	24	Standard
	Se-1	77	5276.6	8.0	**48.5436**	0.862	1.8	ug/L	66	Standard
>	Ga	71	78.3	20.5				mg/L	67	Standard
	Rb	85	1210.0	6.9				ug/L	25	Standard
	Y	89	677396.4	8.7				ug/L	639569	Standard
>	Rh	103	40.0	25.0				ug/L	8	Standard
	Mo	98	453549.9	5.4	**101.6803**	1.116	1.1	ug/L	15	Standard
	Ag	107	577420.1	5.8	**47.3238**	0.299	0.6	ug/L	162	Standard
	Cd	111	177982.0	5.7	**48.3395**	0.704	1.5	mg/L	7	Standard
	Cd	114	431203.6	6.0	**48.7233**	1.127	2.3	ug/L	31	Standard
>	In	115	1085786.8	6.3				ug/L	1030666	Standard
	Sn	118	500118.6	10.7	**47.3911**	2.098	4.4	ug/L	755	Standard
	Sb	123	389442.4	4.9	**47.6028**	0.700	1.5	ug/L	105	Standard
	Ba	135	188831.0	5.0	**47.2052**	0.906	1.9	ug/L	23	Standard
	Ce	140	128.3	36.2				ug/L	137	Standard
>	Tb	159	1847263.4	4.5				ug/L	1748833	Standard
	Ho	165	23.3	44.6				ug/L	13	Standard
	Tl	203	762117.4	5.2	**48.1484**	0.098	0.2	ug/L	14	Standard
	Tl	205	534204.0	6.0	**48.5271**	0.848	1.7	ug/L	10	Standard
	Pb	206	484634.3	5.2	**48.3786**	0.363	0.8	ug/L	459	Standard
	Pb	207	438219.5	5.1	**47.8148**	0.122	0.3	ug/L	424	Standard
	Pb	208	1721586.3	5.8	**48.4595**	0.189	0.4	ug/L	1701	Standard
	U	238	547278.6	5.2	**48.3530**	0.195	0.4	ug/L	2	Standard
>	Bi	209	982514.9	5.4				ug/L	937372	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 12:52:28
Page 1

Approved: February 12, 2016

Na	23	1.7	173.2	**6.6227**	11.462	173.1	mg/L	0	Standard
Mg	24	3792.1	4.0	**4.9217**	0.303	6.2	mg/L	17	Standard
K	39	858.4	12.0	**4.0302**	0.300	7.4	mg/L	15	Standard
Ca	43	105.0	42.3	**4.5377**	4.327	95.4	mg/L	67	Standard
Fe	54	8101.9	4.5	**5.1749**	0.329	6.4	mg/L	214	Standard
Fe	57	2118.5	6.9	**5.0147**	0.340	6.8	mg/L	82	Standard
Sc-1	45	46964.8	9.8				mg/L	47226	Standard
Cl	35	46132.2	4.7				ug/L	38729	Standard
Kr	83	3.3	45.8				ug/L	3	Standard
Br	81	1610.1	13.0				ug/L	1497	Standard
P	31	14645.4	9.4				ug/L	15233	Standard
S	34	1838.4	2.0				ug/L	1153	Standard
Sr	88	40.0	69.6				ug/L	47	Standard
C	12	183.3	24.6				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	12.4	40.1				mg/L	22	Standard
Ho-1	165	23.3	44.6				mg/L	13	Standard
Er	166	20.0	100.0				mg/L	30	Standard
I	127	2926.9	5.8				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	97.643		
Al	27	92.612		
Sc	45			
Ti	47	92.480		
V	51	93.357		
Cr	52	93.563		
Cr	53			
Mn	55	94.521		
Co	59	95.705		
Ni	60	94.846		
Cu	65	96.075		
Zn	66	95.695		
Ge	72		104.811	
As	75	96.744		
Se	82	99.062		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 12:52:28
Page 2

Approved: February 12, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	101.680		
Ag	107	94.648		
Cd	111	96.679		
Cd	114			
In	115			105.348
Sn	118	94.782		
Sb	123	95.206		
Ba	135	94.410		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.297		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.919		
U	238	96.706		
Bi	209			104.816
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 12:52:28
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, February 11, 2016 12:53:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58018.3	9.9				ug/L	57324	Standard
	Be	9	5.0	0.0	**0.0196**	0.001	3.7	ug/L	2	Standard
	Al	27	1421.7	51.7	**0.0037**	0.004	104.9	ug/L	172	Standard
	Sc	45	45791.1	8.9				ug/L	47226	Standard
	Ti	47	78.3	9.8	**0.0088**	0.005	53.3	ug/L	100	Standard
	V	51	2458.3	4.2	**0.0124**	0.011	90.3	ug/L	2380	Standard
	Cr	52	10160.4	7.2	**-0.0400**	0.023	58.5	ug/L	10715	Standard
	Cr	53	405.0	25.0	**0.0748**	0.049	65.7	ug/L	293	Standard
	Mn	55	1005.0	6.7	**-0.0270**	0.004	15.5	ug/L	882	Standard
	Co	59	286.0	10.9	**-0.0005**	0.003	609.2	ug/L	252	Standard
	Ni	60	77.7	22.2	**-0.0050**	0.004	79.5	ug/L	51	Standard
	Cu	65	173.3	12.8	**-0.0001**	0.002	1467.4	ug/L	125	Standard
	Zn	66	207.0	5.7	**-0.1533**	0.009	6.2	ug/L	191	Standard
>	**Ge**	72	702630.3	9.3				ug/L	693220	Standard
	As	75	-98.9	6.0	**-0.0064**	0.007	111.8	ug/L	-96	Standard
	Se	82	25.4	31.4	**0.0167**	0.036	213.0	ug/L	24	Standard
	Se-1	77	72.7	5.2	**-0.0097**	0.070	720.8	ug/L	66	Standard
>	**Ga**	71	111.7	6.8				mg/L	67	Standard
	Rb	85	16.7	17.3				ug/L	25	Standard
	Y	89	633553.2	8.0				ug/L	639569	Standard
>	**Rh**	103	13.3	57.3				ug/L	8	Standard
	Mo	98	275.9	13.1	**0.0571**	0.008	13.8	ug/L	15	Standard
	Ag	107	278.7	17.2	**0.0061**	0.004	69.2	ug/L	162	Standard
	Cd	111	22.5	30.8	**0.0042**	0.002	52.2	mg/L	7	Standard
	Cd	114	110.6	11.6	**0.0038**	0.001	18.3	ug/L	31	Standard
>	**In**	115	1050932.8	8.3				ug/L	1030666	Standard
	Sn	118	1096.7	9.9	**0.0330**	0.018	55.8	ug/L	755	Standard
	Sb	123	1165.0	22.6	**0.1423**	0.044	31.0	ug/L	105	Standard
	Ba	135	49.7	10.1	**0.0041**	0.002	50.1	ug/L	23	Standard
	Ce	140	35.0	37.8				ug/L	137	Standard
>	**Tb**	159	1745471.8	7.7				ug/L	1748833	Standard
	Ho	165	26.7	84.5				ug/L	13	Standard
	Tl	203	192.0	18.2	**0.0089**	0.002	22.5	ug/L	14	Standard
	Tl	205	131.7	7.9	**0.0099**	0.001	13.8	ug/L	10	Standard
	Pb	206	556.7	10.7	**-0.0023**	0.002	91.9	ug/L	459	Standard
	Pb	207	495.0	6.5	**-0.0008**	0.002	290.7	ug/L	424	Standard
	Pb	208	2026.4	9.6	**0.0003**	0.003	841.2	ug/L	1701	Standard
	U	238	113.7	24.1	**0.0062**	0.002	34.1	ug/L	2	Standard
>	**Bi**	209	973828.4	8.9				ug/L	937372	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 12:55:40
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	25.0	52.9	**0.0106**	0.019	181.4	mg/L	17	Standard
K	39	13.3	43.3	**-0.0055**	0.029	524.3	mg/L	15	Standard
Ca	43	41.7	36.7	**-0.7777**	1.158	148.9	mg/L	67	Standard
Fe	54	217.2	20.7	**0.0031**	0.018	583.2	mg/L	214	Standard
Fe	57	115.0	13.0	**0.1019**	0.054	52.7	mg/L	82	Standard
> **Sc-1**	45	45791.1	8.9				mg/L	47226	Standard
Cl	35	46325.6	6.2				ug/L	38729	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1600.1	4.9				ug/L	1497	Standard
P	31	15022.5	8.2				ug/L	15233	Standard
S	34	1866.8	6.4				ug/L	1153	Standard
Sr	88	50.0	43.6				ug/L	47	Standard
C	12	143.3	33.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	28.7	73.0				mg/L	22	Standard
Ho-1	165	26.7	84.5				mg/L	13	Standard
Er	166	26.7	78.1				mg/L	30	Standard
I	127	2140.2	1.8				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.357	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 12:55:40
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.889
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 12:55:40
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602022309PS WG557034-01
Sample Date/Time: Thursday, February 11, 2016 12:56:35
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61640.5	6.9				ug/L	57324	Standard
	Be	9	35774.0	7.6	**51.0763**	0.421	0.8	ug/L	2	Standard
	Al	27	1010125.7	10.4	**6.2653**	0.221	3.5	ug/L	172	Standard
	Sc	45	51012.8	8.3				ug/L	47226	Standard
	Ti	47	1548.4	8.4	**3.0374**	0.090	3.0	ug/L	100	Standard
	V	51	647747.3	5.6	**55.1453**	0.921	1.7	ug/L	2380	Standard
	Cr	52	603155.9	8.0	**54.8808**	0.858	1.6	ug/L	10715	Standard
	Cr	53	74421.2	6.9	**54.7506**	0.142	0.3	ug/L	293	Standard
	Mn	55	3357496.6	8.1	**287.1500**	7.686	2.7	ug/L	882	Standard
	Co	59	655531.1	7.0	**51.3168**	0.202	0.4	ug/L	252	Standard
	Ni	60	171160.0	8.3	**53.4896**	0.798	1.5	ug/L	51	Standard
	Cu	65	182839.1	8.2	**57.2028**	1.459	2.6	ug/L	125	Standard
	Zn	66	452484.9	6.7	**292.5155**	6.069	2.1	ug/L	191	Standard
>	**Ge**	72	744004.1	7.0				ug/L	693220	Standard
	As	75	87943.7	5.5	**53.2379**	1.013	1.9	ug/L	-96	Standard
	Se	82	8549.6	6.2	**50.0285**	0.820	1.6	ug/L	24	Standard
	Se-1	77	5350.6	8.1	**48.0660**	0.508	1.1	ug/L	66	Standard
>	**Ga**	71	9087.7	8.5				mg/L	67	Standard
	Rb	85	56306.7	8.9				ug/L	25	Standard
	Y	89	740402.7	9.6				ug/L	639569	Standard
>	**Rh**	103	70.0	39.8				ug/L	8	Standard
	Mo	98	794.9	3.6	**0.1717**	0.009	5.2	ug/L	15	Standard
	Ag	107	617214.7	6.7	**50.6149**	0.273	0.5	ug/L	162	Standard
	Cd	111	182914.5	7.4	**49.6860**	0.417	0.8	mg/L	7	Standard
	Cd	114	440924.8	6.7	**49.8484**	0.697	1.4	ug/L	31	Standard
>	**In**	115	1085070.9	6.9				ug/L	1030666	Standard
	Sn	118	3358.7	5.1	**0.2444**	0.016	6.6	ug/L	755	Standard
	Sb	123	392152.6	5.9	**47.9591**	0.503	1.0	ug/L	105	Standard
	Ba	135	312538.9	6.6	**78.1526**	0.334	0.4	ug/L	23	Standard
	Ce	140	439391.0	6.6				ug/L	137	Standard
>	**Tb**	159	1818468.8	6.6				ug/L	1748833	Standard
	Ho	165	7733.7	9.8				ug/L	13	Standard
	Tl	203	779560.7	6.3	**48.0426**	0.645	1.3	ug/L	14	Standard
	Tl	205	548888.7	8.0	**48.6214**	1.406	2.9	ug/L	10	Standard
	Pb	206	968441.2	7.0	**94.3386**	1.894	2.0	ug/L	459	Standard
	Pb	207	812830.3	6.2	**86.5619**	1.187	1.4	ug/L	424	Standard
	Pb	208	3327283.8	5.9	**91.4413**	0.781	0.9	ug/L	1701	Standard
	U	238	552566.0	6.0	**47.6281**	0.574	1.2	ug/L	2	Standard
>	**Bi**	209	1006739.7	5.1				ug/L	937372	Standard

Sample ID: L1602022309PS WG557034-01
Report Date/Time: Thursday, February 11, 2016 12:58:52
Page 1

Approved: February 12, 2016

Na	23	3.3	86.6	**13.0606**	11.361	87.0	mg/L	0	Standard
Mg	24	45.0	19.2	**0.0309**	0.015	49.7	mg/L	17	Standard
K	39	68.3	22.4	**0.2312**	0.071	30.9	mg/L	15	Standard
Ca	43	76.7	30.8	**1.4263**	1.343	94.2	mg/L	67	Standard
Fe	54	18137.3	6.0	**10.7883**	0.296	2.7	mg/L	214	Standard
Fe	57	4819.1	10.0	**10.6672**	0.296	2.8	mg/L	82	Standard
> **Sc-1**	45	51012.8	8.3				mg/L	47226	Standard
Cl	35	47556.2	9.0				ug/L	38729	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1910.1	7.6				ug/L	1497	Standard
P	31	14895.7	5.7				ug/L	15233	Standard
S	34	1858.4	9.7				ug/L	1153	Standard
Sr	88	65.0	38.5				ug/L	47	Standard
C	12	220.0	39.4				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	12.4				mg/L	3	Standard
Dy	164	12903.7	9.4				mg/L	22	Standard
Ho-1	165	7733.7	9.8				mg/L	13	Standard
Er	166	6584.8	7.3				mg/L	30	Standard
I	127	19774.6	2.9				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.531	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.326	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602022309PS WG557034-01
Report Date/Time: Thursday, February 11, 2016 12:58:52
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.279
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.400
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1602022309PS WG557034-01
Report Date/Time: Thursday, February 11, 2016 12:58:52
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602022310S WG556563-04
Sample Date/Time: Thursday, February 11, 2016 12:59:47
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60591.1	4.7				ug/L	57324	Standard
	Be	9	3557.1	6.2	**5.1783**	0.196	3.8	ug/L	2	Standard
	Al	27	924489.3	9.7	**5.8337**	0.317	5.4	ug/L	172	Standard
	Sc	45	49407.3	6.6				ug/L	47226	Standard
	Ti	47	1578.7	4.7	**3.2045**	0.143	4.5	ug/L	100	Standard
	V	51	124940.9	6.6	**10.7860**	0.444	4.1	ug/L	2380	Standard
	Cr	52	116272.1	6.7	**10.0754**	0.461	4.6	ug/L	10715	Standard
	Cr	53	13496.0	9.8	**10.0249**	0.606	6.0	ug/L	293	Standard
	Mn	55	2063726.9	8.9	**181.8067**	10.383	5.7	ug/L	882	Standard
	Co	59	91124.1	7.2	**7.3283**	0.288	3.9	ug/L	252	Standard
	Ni	60	30879.9	7.5	**9.9226**	0.419	4.2	ug/L	51	Standard
	Cu	65	38404.1	6.8	**12.3384**	0.356	2.9	ug/L	125	Standard
	Zn	66	141240.7	7.5	**93.8435**	4.163	4.4	ug/L	191	Standard
>	**Ge**	72	721719.2	4.4				ug/L	693220	Standard
	As	75	12894.4	6.4	**8.0867**	0.273	3.4	ug/L	-96	Standard
	Se	82	838.1	8.6	**4.9301**	0.397	8.0	ug/L	24	Standard
	Se-1	77	609.7	9.3	**5.0153**	0.424	8.4	ug/L	66	Standard
>	**Ga**	71	7268.4	4.7				mg/L	67	Standard
	Rb	85	53907.6	5.7				ug/L	25	Standard
	Y	89	724091.7	6.7				ug/L	639569	Standard
>	**Rh**	103	38.3	7.5				ug/L	8	Standard
	Mo	98	619.2	5.5	**0.1328**	0.006	4.2	ug/L	15	Standard
	Ag	107	59013.4	7.1	**4.8469**	0.013	0.3	ug/L	162	Standard
	Cd	111	18432.5	7.6	**5.0297**	0.039	0.8	mg/L	7	Standard
	Cd	114	44129.7	7.5	**5.0040**	0.065	1.3	ug/L	31	Standard
>	**In**	115	1079604.3	6.9				ug/L	1030666	Standard
	Sn	118	985.0	3.2	**0.0187**	0.004	20.4	ug/L	755	Standard
	Sb	123	3021.5	8.6	**0.3666**	0.054	14.7	ug/L	105	Standard
	Ba	135	122901.6	6.0	**30.8922**	0.517	1.7	ug/L	23	Standard
	Ce	140	403468.5	7.4				ug/L	137	Standard
>	**Tb**	159	1812509.5	6.7				ug/L	1748833	Standard
	Ho	165	6873.2	3.8				ug/L	13	Standard
	Tl	203	74673.4	6.1	**4.6473**	0.059	1.3	ug/L	14	Standard
	Tl	205	52526.0	5.0	**4.7043**	0.051	1.1	ug/L	10	Standard
	Pb	206	365275.7	5.5	**35.9348**	0.126	0.4	ug/L	459	Standard
	Pb	207	303789.5	6.7	**32.6464**	0.330	1.0	ug/L	424	Standard
	Pb	208	1246429.6	5.5	**34.5817**	0.115	0.3	ug/L	1701	Standard
	U	238	55883.8	6.4	**4.8627**	0.034	0.7	ug/L	2	Standard
>	**Bi**	209	996598.2	5.8				ug/L	937372	Standard

Sample ID: L1602022310S WG556563-04
Report Date/Time: Thursday, February 11, 2016 13:02:04
Page 1

Approved: February 12, 2016

Na	23	3.3	86.6	**12.5668**	10.899	86.7	mg/L	0	Standard
Mg	24	46.7	50.6	**0.0338**	0.028	83.9	mg/L	17	Standard
K	39	75.0	30.6	**0.2749**	0.125	45.6	mg/L	15	Standard
Ca	43	110.0	25.3	**4.2073**	1.921	45.7	mg/L	67	Standard
Fe	54	12579.0	4.0	**7.6854**	0.305	4.0	mg/L	214	Standard
Fe	57	3437.1	9.8	**7.8000**	0.265	3.4	mg/L	82	Standard
> **Sc-1**	45	49407.3	6.6				mg/L	47226	Standard
Cl	35	48414.7	5.8				ug/L	38729	Standard
Kr	83	2.3	137.8				ug/L	3	Standard
Br	81	2010.1	6.0				ug/L	1497	Standard
P	31	15437.9	9.4				ug/L	15233	Standard
S	34	1921.8	4.8				ug/L	1153	Standard
Sr	88	68.3	25.7				ug/L	47	Standard
C	12	160.0	6.3				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	3	Standard
Dy	164	11468.1	7.6				mg/L	22	Standard
Ho-1	165	6873.2	3.8				mg/L	13	Standard
Er	166	5841.1	7.7				mg/L	30	Standard
I	127	18312.7	5.0				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.700	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.111	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602022310S WG556563-04
Report Date/Time: Thursday, February 11, 2016 13:02:04
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.748
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.318
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602022310S WG556563-04
Report Date/Time: Thursday, February 11, 2016 13:02:04
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602022311SD WG556563-05
Sample Date/Time: Thursday, February 11, 2016 13:02:58
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61402.9	6.6				ug/L	57324	Standard
	Be	9	3530.4	9.6	**5.0661**	0.200	3.9	ug/L	2	Standard
	Al	27	918341.0	8.5	**5.7216**	0.120	2.1	ug/L	172	Standard
	Sc	45	50623.3	9.7				ug/L	47226	Standard
	Ti	47	1593.1	4.5	**3.1116**	0.302	9.7	ug/L	100	Standard
	V	51	121907.7	6.9	**10.1000**	0.117	1.2	ug/L	2380	Standard
	Cr	52	117687.8	6.2	**9.7748**	0.069	0.7	ug/L	10715	Standard
	Cr	53	13567.7	5.1	**9.6987**	0.297	3.1	ug/L	293	Standard
	Mn	55	2281671.1	5.0	**193.4623**	3.605	1.9	ug/L	882	Standard
	Co	59	95062.3	5.9	**7.3533**	0.149	2.0	ug/L	252	Standard
	Ni	60	31970.8	5.9	**9.8806**	0.140	1.4	ug/L	51	Standard
	Cu	65	39671.9	4.3	**12.2672**	0.348	2.8	ug/L	125	Standard
	Zn	66	138421.8	5.0	**88.4698**	1.730	2.0	ug/L	191	Standard
>	**Ge**	72	751220.7	6.8				ug/L	693220	Standard
	As	75	12226.1	6.0	**7.3769**	0.065	0.9	ug/L	-96	Standard
	Se	82	793.1	6.1	**4.4692**	0.035	0.8	ug/L	24	Standard
	Se-1	77	587.0	9.9	**4.5809**	0.181	4.0	ug/L	66	Standard
>	**Ga**	71	7641.9	5.3				mg/L	67	Standard
	Rb	85	52919.1	6.1				ug/L	25	Standard
	Y	89	742029.5	7.8				ug/L	639569	Standard
>	**Rh**	103	30.0	44.1				ug/L	8	Standard
	Mo	98	571.4	6.0	**0.1193**	0.001	1.2	ug/L	15	Standard
	Ag	107	58794.1	5.2	**4.7336**	0.055	1.2	ug/L	162	Standard
	Cd	111	18330.1	5.4	**4.9045**	0.085	1.7	mg/L	7	Standard
	Cd	114	44540.3	7.1	**4.9481**	0.048	1.0	ug/L	31	Standard
>	**In**	115	1101908.9	6.4				ug/L	1030666	Standard
	Sn	118	1258.4	6.8	**0.0427**	0.012	27.9	ug/L	755	Standard
	Sb	123	2544.6	3.8	**0.3004**	0.027	9.1	ug/L	105	Standard
	Ba	135	132881.5	4.1	**32.7421**	0.781	2.4	ug/L	23	Standard
	Ce	140	458125.4	6.6				ug/L	137	Standard
>	**Tb**	159	1838117.8	4.8				ug/L	1748833	Standard
	Ho	165	6958.3	5.0				ug/L	13	Standard
	Tl	203	74381.1	4.9	**4.5501**	0.072	1.6	ug/L	14	Standard
	Tl	205	51271.7	3.4	**4.5139**	0.085	1.9	ug/L	10	Standard
	Pb	206	389999.2	3.8	**37.7242**	0.888	2.4	ug/L	459	Standard
	Pb	207	314199.1	4.6	**33.2053**	0.682	2.1	ug/L	424	Standard
	Pb	208	1308802.8	4.9	**35.6905**	0.778	2.2	ug/L	1701	Standard
	U	238	54762.6	5.0	**4.6844**	0.074	1.6	ug/L	2	Standard
>	**Bi**	209	1014167.3	5.3				ug/L	937372	Standard

Sample ID: L1602022311SD WG556563-05
Report Date/Time: Thursday, February 11, 2016 13:05:15
Page 1

Approved: February 12, 2016

Na	23	3.3	86.6	**12.6385**	11.088	87.7	mg/L	0	Standard
Mg	24	35.0	37.8	**0.0181**	0.015	80.5	mg/L	17	Standard
K	39	90.0	19.2	**0.3347**	0.110	32.8	mg/L	15	Standard
Ca	43	48.3	33.3	**-0.6083**	1.067	175.4	mg/L	67	Standard
Fe	54	12351.3	5.6	**7.3693**	0.351	4.8	mg/L	214	Standard
Fe	57	3275.4	0.6	**7.2979**	0.722	9.9	mg/L	82	Standard
> **Sc-1**	45	50623.3	9.7				mg/L	47226	Standard
Cl	35	45687.0	6.4				ug/L	38729	Standard
Kr	83	4.0	43.3				ug/L	3	Standard
Br	81	2106.8	19.5				ug/L	1497	Standard
P	31	14600.4	8.3				ug/L	15233	Standard
S	34	1693.4	11.6				ug/L	1153	Standard
Sr	88	40.0					ug/L	47	Standard
C	12	133.3	22.9				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	3	Standard
Dy	164	11779.1	3.2				mg/L	22	Standard
Ho-1	165	6958.3	5.0				mg/L	13	Standard
Er	166	5964.5	1.5				mg/L	30	Standard
I	127	19449.2	3.4				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.116	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.367	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602022311SD WG556563-05
Report Date/Time: Thursday, February 11, 2016 13:05:15
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.912
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.193
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602022311SD WG556563-05
Report Date/Time: Thursday, February 11, 2016 13:05:15
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602022302
Sample Date/Time: Thursday, February 11, 2016 13:06:09
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61673.8	4.4				ug/L	57324	Standard
	Be	9	128.3	19.2	**0.1944**	0.029	14.8	ug/L	2	Standard
	Al	27	580875.0	7.2	**3.6014**	0.105	2.9	ug/L	172	Standard
	Sc	45	48862.2	5.7				ug/L	47226	Standard
	Ti	47	1062.4	4.8	**2.0533**	0.043	2.1	ug/L	100	Standard
	V	51	39689.6	8.8	**3.2028**	0.090	2.8	ug/L	2380	Standard
	Cr	52	41280.1	8.2	**2.8180**	0.118	4.2	ug/L	10715	Standard
	Cr	53	4202.3	11.7	**2.8838**	0.168	5.8	ug/L	293	Standard
	Mn	55	1667222.4	8.9	**143.5849**	3.870	2.7	ug/L	882	Standard
	Co	59	23123.0	7.0	**1.8007**	0.017	0.9	ug/L	252	Standard
	Ni	60	13059.7	8.4	**4.0853**	0.121	3.0	ug/L	51	Standard
	Cu	65	68379.9	9.5	**21.5119**	0.770	3.6	ug/L	125	Standard
	Zn	66	184759.1	7.1	**120.1586**	1.062	0.9	ug/L	191	Standard
>	Ge	72	738009.4	6.3				ug/L	693220	Standard
	As	75	17961.0	7.4	**10.9939**	0.226	2.1	ug/L	-96	Standard
	Se	82	69.2	9.9	**0.2698**	0.031	11.5	ug/L	24	Standard
	Se-1	77	106.7	9.4	**0.2719**	0.153	56.3	ug/L	66	Standard
>	Ga	71	6623.1	6.8				mg/L	67	Standard
	Rb	85	42025.1	7.7				ug/L	25	Standard
	Y	89	717534.6	3.9				ug/L	639569	Standard
>	Rh	103	78.3	3.7				ug/L	8	Standard
	Mo	98	2117.3	9.8	**0.4580**	0.024	5.3	ug/L	15	Standard
	Ag	107	11389.0	6.9	**0.8978**	0.023	2.6	ug/L	162	Standard
	Cd	111	1461.1	6.3	**0.3869**	0.009	2.4	mg/L	7	Standard
	Cd	114	3588.2	12.0	**0.3878**	0.029	7.6	ug/L	31	Standard
>	In	115	1106541.2	4.6				ug/L	1030666	Standard
	Sn	118	951.7	7.1	**0.0132**	0.006	46.4	ug/L	755	Standard
	Sb	123	455.4	23.3	**0.0480**	0.015	31.3	ug/L	105	Standard
	Ba	135	79644.1	6.7	**19.5065**	0.437	2.2	ug/L	23	Standard
	Ce	140	267767.2	7.4				ug/L	137	Standard
>	Tb	159	1862248.4	5.5				ug/L	1748833	Standard
	Ho	165	4884.1	8.5				ug/L	13	Standard
	Tl	203	782.4	6.2	**0.0444**	0.002	4.4	ug/L	14	Standard
	Tl	205	538.3	8.8	**0.0449**	0.002	5.4	ug/L	10	Standard
	Pb	206	1461618.5	8.1	**140.7915**	5.849	4.2	ug/L	459	Standard
	Pb	207	1217901.4	7.1	**128.2633**	4.631	3.6	ug/L	424	Standard
	Pb	208	5022454.2	8.0	**136.4614**	6.131	4.5	ug/L	1701	Standard
	U	238	1611.4	6.4	**0.1335**	0.005	4.1	ug/L	2	Standard
>	Bi	209	1017896.3	4.2				ug/L	937372	Standard

Sample ID: L1602022302
Report Date/Time: Thursday, February 11, 2016 13:08:26
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	37.8	**0.0200**	0.017	83.3	mg/L	17	Standard
K	39	53.3	10.8	**0.1751**	0.039	22.5	mg/L	15	Standard
Ca	43	45.0	11.1	**-0.6917**	0.517	74.8	mg/L	67	Standard
Fe	54	7664.4	6.3	**4.6736**	0.125	2.7	mg/L	214	Standard
Fe	57	2035.1	6.4	**4.5995**	0.085	1.9	mg/L	82	Standard
> **Sc-1**	45	48862.2	5.7				mg/L	47226	Standard
Cl	35	45672.9	6.6				ug/L	38729	Standard
Kr	83	4.7	53.9				ug/L	3	Standard
Br	81	1903.5	9.9				ug/L	1497	Standard
P	31	14004.8	3.9				ug/L	15233	Standard
S	34	1391.7	8.5				ug/L	1153	Standard
Sr	88	40.0	37.5				ug/L	47	Standard
C	12	136.7	21.1				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	116.7	17.8				mg/L	3	Standard
Dy	164	8631.1	11.5				mg/L	22	Standard
Ho-1	165	4884.1	8.5				mg/L	13	Standard
Er	166	4207.3	4.7				mg/L	30	Standard
I	127	10500.3	5.4				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.589	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.461	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602022302
Report Date/Time: Thursday, February 11, 2016 13:08:26
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	107.362	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	108.590	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Pb 206 Upper, S, EEE	Pb	206	

Sample ID: L1602022302
Report Date/Time: Thursday, February 11, 2016 13:08:26
Page 3

Approved: February 12, 2016

Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Sample ID: L1602022302
Report Date/Time: Thursday, February 11, 2016 13:08:26
Page 4

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602022302
Sample Date/Time: Thursday, February 11, 2016 13:09:21
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58138.2	5.7				ug/L	57324	Standard
	Be	9	18.3	31.5	**0.0397**	0.008	21.3	ug/L	2	Standard
	Al	27	57716.9	8.3	**0.3746**	0.011	3.0	ug/L	172	Standard
	Sc	45	46660.2	5.7				ug/L	47226	Standard
	Ti	47	171.0	4.6	**0.2140**	0.008	3.8	ug/L	100	Standard
	V	51	6348.1	7.0	**0.3664**	0.011	3.0	ug/L	2380	Standard
	Cr	52	13801.0	6.4	**0.3235**	0.017	5.1	ug/L	10715	Standard
	Cr	53	726.7	7.7	**0.3323**	0.020	6.2	ug/L	293	Standard
	Mn	55	167489.5	9.6	**15.1259**	0.677	4.5	ug/L	882	Standard
	Co	59	2511.2	8.6	**0.1848**	0.007	4.0	ug/L	252	Standard
	Ni	60	1418.1	10.3	**0.4412**	0.025	5.7	ug/L	51	Standard
	Cu	65	6934.6	10.0	**2.2525**	0.114	5.1	ug/L	125	Standard
	Zn	66	20393.5	9.2	**13.7357**	0.570	4.2	ug/L	191	Standard
>	**Ge**	72	698613.6	5.2				ug/L	693220	Standard
	As	75	1715.5	10.3	**1.1592**	0.058	5.0	ug/L	-96	Standard
	Se	82	28.5	33.9	**0.0395**	0.061	153.4	ug/L	24	Standard
	Se-1	77	76.7	4.9	**0.0307**	0.053	172.4	ug/L	66	Standard
>	**Ga**	71	741.7	3.7				mg/L	67	Standard
	Rb	85	4379.0	8.0				ug/L	25	Standard
	Y	89	644887.2	7.6				ug/L	639569	Standard
>	**Rh**	103	10.0	50.0				ug/L	8	Standard
	Mo	98	249.8	9.8	**0.0510**	0.003	6.2	ug/L	15	Standard
	Ag	107	1296.1	7.4	**0.0924**	0.003	2.8	ug/L	162	Standard
	Cd	111	155.9	18.2	**0.0414**	0.005	12.9	mg/L	7	Standard
	Cd	114	350.9	15.1	**0.0318**	0.004	11.4	ug/L	31	Standard
>	**In**	115	1048667.1	6.6				ug/L	1030666	Standard
	Sn	118	835.0	7.9	**0.0065**	0.001	20.2	ug/L	755	Standard
	Sb	123	279.2	35.7	**0.0289**	0.015	51.7	ug/L	105	Standard
	Ba	135	7993.5	9.4	**2.0568**	0.059	2.8	ug/L	23	Standard
	Ce	140	26404.7	7.6				ug/L	137	Standard
>	**Tb**	159	1753254.6	6.6				ug/L	1748833	Standard
	Ho	165	530.0	19.5				ug/L	13	Standard
	Tl	203	104.7	16.4	**0.0036**	0.001	38.1	ug/L	14	Standard
	Tl	205	71.7	29.0	**0.0046**	0.002	44.9	ug/L	10	Standard
	Pb	206	145046.2	8.4	**14.9727**	0.562	3.8	ug/L	459	Standard
	Pb	207	121464.1	7.7	**13.7052**	0.424	3.1	ug/L	424	Standard
	Pb	208	493014.4	8.4	**14.3521**	0.546	3.8	ug/L	1701	Standard
	U	238	182.7	12.6	**0.0128**	0.001	10.6	ug/L	2	Standard
>	**Bi**	209	946406.1	4.7				ug/L	937372	Standard

Sample ID: L1602022302
Report Date/Time: Thursday, February 11, 2016 13:11:38
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	15.1	**0.0263**	0.006	21.3	mg/L	17	Standard
K	39	26.7	57.3	**0.0550**	0.070	127.0	mg/L	15	Standard
Ca	43	50.0	72.1	**-0.1286**	2.872	2234.0	mg/L	67	Standard
Fe	54	947.2	10.6	**0.4806**	0.034	7.1	mg/L	214	Standard
Fe	57	263.3	26.9	**0.4616**	0.178	38.5	mg/L	82	Standard
> **Sc-1**	45	46660.2	5.7				mg/L	47226	Standard
Cl	35	45311.9	6.8				ug/L	38729	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	1383.4	32.9				ug/L	1497	Standard
P	31	13502.7	11.3				ug/L	15233	Standard
S	34	1283.4	2.1				ug/L	1153	Standard
Sr	88	38.3	27.2				ug/L	47	Standard
C	12	160.0	16.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	173.2				mg/L	3	Standard
Dy	164	804.7	12.1				mg/L	22	Standard
Ho-1	165	530.0	19.5				mg/L	13	Standard
Er	166	460.0	23.0				mg/L	30	Standard
I	127	3165.3	5.9				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602022302
Report Date/Time: Thursday, February 11, 2016 13:11:38
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.747
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.964
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602022303
Sample Date/Time: Thursday, February 11, 2016 13:12:32
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60265.0	6.6				ug/L	57324	Standard
	Be	9	151.7	13.7	**0.2328**	0.016	6.9	ug/L	2	Standard
	Al	27	615085.1	9.2	**3.9016**	0.108	2.8	ug/L	172	Standard
	Sc	45	48179.9	5.1				ug/L	47226	Standard
	Ti	47	887.0	10.8	**1.6774**	0.095	5.7	ug/L	100	Standard
	V	51	59971.7	7.1	**4.9341**	0.082	1.7	ug/L	2380	Standard
	Cr	52	56617.9	6.5	**4.2371**	0.072	1.7	ug/L	10715	Standard
	Cr	53	5931.2	6.7	**4.1723**	0.341	8.2	ug/L	293	Standard
	Mn	55	1381891.6	8.2	**118.6304**	1.742	1.5	ug/L	882	Standard
	Co	59	41822.6	9.2	**3.2626**	0.086	2.6	ug/L	252	Standard
	Ni	60	12288.3	10.0	**3.8265**	0.134	3.5	ug/L	51	Standard
	Cu	65	13828.0	8.2	**4.2920**	0.066	1.5	ug/L	125	Standard
	Zn	66	75568.3	7.1	**48.8107**	0.222	0.5	ug/L	191	Standard
>	**Ge**	72	740576.4	6.7				ug/L	693220	Standard
	As	75	4346.0	6.5	**2.6958**	0.017	0.6	ug/L	-96	Standard
	Se	82	58.8	12.5	**0.2067**	0.021	10.1	ug/L	24	Standard
	Se-1	77	91.7	5.0	**0.1288**	0.097	75.6	ug/L	66	Standard
>	**Ga**	71	4145.6	9.6				mg/L	67	Standard
	Rb	85	25120.9	8.2				ug/L	25	Standard
	Y	89	705634.6	8.7				ug/L	639569	Standard
>	**Rh**	103	11.7	24.7				ug/L	8	Standard
	Mo	98	577.9	17.3	**0.1239**	0.015	12.4	ug/L	15	Standard
	Ag	107	479.7	14.9	**0.0222**	0.004	17.7	ug/L	162	Standard
	Cd	111	574.1	5.8	**0.1559**	0.003	2.1	mg/L	7	Standard
	Cd	114	1455.6	10.9	**0.1573**	0.009	5.8	ug/L	31	Standard
>	**In**	115	1070633.0	5.7				ug/L	1030666	Standard
	Sn	118	851.7	3.6	**0.0066**	0.002	31.4	ug/L	755	Standard
	Sb	123	271.1	22.1	**0.0269**	0.009	34.9	ug/L	105	Standard
	Ba	135	85118.7	6.3	**21.5570**	0.208	1.0	ug/L	23	Standard
	Ce	140	345650.4	6.4				ug/L	137	Standard
>	**Tb**	159	1847230.4	2.5				ug/L	1748833	Standard
	Ho	165	3815.5	9.7				ug/L	13	Standard
	Tl	203	296.7	28.0	**0.0152**	0.004	27.6	ug/L	14	Standard
	Tl	205	273.3	53.6	**0.0222**	0.012	53.7	ug/L	10	Standard
	Pb	206	139176.1	7.1	**13.7725**	0.208	1.5	ug/L	459	Standard
	Pb	207	116137.6	6.3	**12.5626**	0.110	0.9	ug/L	424	Standard
	Pb	208	476189.2	6.7	**13.2906**	0.130	1.0	ug/L	1701	Standard
	U	238	1367.7	8.8	**0.1163**	0.006	5.1	ug/L	2	Standard
>	**Bi**	209	987572.6	5.7				ug/L	937372	Standard

Sample ID: L1602022303
Report Date/Time: Thursday, February 11, 2016 13:14:49
Page 1

Approved: February 12, 2016

Na	23	3.3	173.2	**13.3624**	23.136	173.1	mg/L	0	Standard
Mg	24	30.0	44.1	**0.0139**	0.016	114.4	mg/L	17	Standard
K	39	35.0	28.6	**0.0912**	0.042	45.6	mg/L	15	Standard
Ca	43	61.7	38.3	**0.7245**	2.069	285.6	mg/L	67	Standard
Fe	54	11050.5	4.6	**6.9010**	0.089	1.3	mg/L	214	Standard
Fe	57	2903.6	4.3	**6.7436**	0.115	1.7	mg/L	82	Standard
> **Sc-1**	45	48179.9	5.1				mg/L	47226	Standard
Cl	35	44895.3	7.4				ug/L	38729	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	1566.7	8.3				ug/L	1497	Standard
P	31	14573.7	10.2				ug/L	15233	Standard
S	34	1460.1	6.5				ug/L	1153	Standard
Sr	88	45.0	11.1				ug/L	47	Standard
C	12	170.0	15.6				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	3	Standard
Dy	164	6839.6	7.2				mg/L	22	Standard
Ho-1	165	3815.5	9.7				mg/L	13	Standard
Er	166	3313.7	11.9				mg/L	30	Standard
I	127	4172.2	2.3				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.131	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.831	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602022303
Report Date/Time: Thursday, February 11, 2016 13:14:49
Page 2

Approved: February 12, 2016

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	103.878
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.355
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602022303
Report Date/Time: Thursday, February 11, 2016 13:14:49
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602022305
Sample Date/Time: Thursday, February 11, 2016 13:15:44
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59025.5	9.7				ug/L	57324	Standard
	Be	9	58.3	40.5	**0.0974**	0.026	26.7	ug/L	2	Standard
	Al	27	369616.4	8.5	**2.3964**	0.048	2.0	ug/L	172	Standard
	Sc	45	48676.8	8.2				ug/L	47226	Standard
	Ti	47	706.3	4.2	**1.3172**	0.090	6.9	ug/L	100	Standard
	V	51	24933.5	9.8	**1.9389**	0.056	2.9	ug/L	2380	Standard
	Cr	52	30871.2	6.4	**1.8567**	0.074	4.0	ug/L	10715	Standard
	Cr	53	2718.6	8.7	**1.7915**	0.120	6.7	ug/L	293	Standard
	Mn	55	910514.3	7.0	**78.6729**	1.607	2.0	ug/L	882	Standard
	Co	59	15860.3	8.8	**1.2301**	0.014	1.1	ug/L	252	Standard
	Ni	60	6828.5	8.5	**2.1275**	0.027	1.3	ug/L	51	Standard
	Cu	65	15929.4	7.6	**4.9865**	0.086	1.7	ug/L	125	Standard
	Zn	66	125973.2	6.9	**82.1012**	1.589	1.9	ug/L	191	Standard
>	**Ge**	72	736703.9	8.8				ug/L	693220	Standard
	As	75	1605.6	4.0	**1.0402**	0.056	5.4	ug/L	-96	Standard
	Se	82	40.1	21.7	**0.1024**	0.071	69.1	ug/L	24	Standard
	Se-1	77	92.0	8.2	**0.1353**	0.086	63.6	ug/L	66	Standard
>	**Ga**	71	2150.2	10.2				mg/L	67	Standard
	Rb	85	15978.5	7.8				ug/L	25	Standard
	Y	89	690036.9	8.8				ug/L	639569	Standard
>	**Rh**	103	20.0	109.0				ug/L	8	Standard
	Mo	98	322.0	27.4	**0.0662**	0.022	33.1	ug/L	15	Standard
	Ag	107	786.0	34.7	**0.0476**	0.024	49.9	ug/L	162	Standard
	Cd	111	557.8	12.8	**0.1498**	0.007	5.0	mg/L	7	Standard
	Cd	114	1435.7	5.7	**0.1547**	0.015	9.6	ug/L	31	Standard
>	**In**	115	1079401.4	8.2				ug/L	1030666	Standard
	Sn	118	1156.7	1.6	**0.0356**	0.011	29.7	ug/L	755	Standard
	Sb	123	307.1	59.6	**0.0314**	0.024	75.6	ug/L	105	Standard
	Ba	135	42855.4	7.1	**10.7703**	0.241	2.2	ug/L	23	Standard
	Ce	140	138904.3	7.2				ug/L	137	Standard
>	**Tb**	159	1794859.1	7.6				ug/L	1748833	Standard
	Ho	165	2153.5	5.8				ug/L	13	Standard
	Tl	203	295.0	79.4	**0.0153**	0.015	98.0	ug/L	14	Standard
	Tl	205	163.3	59.4	**0.0126**	0.009	71.4	ug/L	10	Standard
	Pb	206	123320.3	7.4	**12.1507**	0.106	0.9	ug/L	459	Standard
	Pb	207	101021.7	7.8	**10.8739**	0.163	1.5	ug/L	424	Standard
	Pb	208	417000.6	5.9	**11.5937**	0.100	0.9	ug/L	1701	Standard
	U	238	857.7	6.8	**0.0714**	0.006	8.4	ug/L	2	Standard
>	**Bi**	209	991499.3	6.7				ug/L	937372	Standard

Sample ID: L1602022305
Report Date/Time: Thursday, February 11, 2016 13:18:00
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	37.5	**0.0256**	0.015	58.0	mg/L	17	Standard
K	39	36.7	28.4	**0.0959**	0.036	37.3	mg/L	15	Standard
Ca	43	71.7	17.6	**1.4643**	1.472	100.5	mg/L	67	Standard
Fe	54	4791.4	5.4	**2.8853**	0.101	3.5	mg/L	214	Standard
Fe	57	1293.4	2.1	**2.8838**	0.323	11.2	mg/L	82	Standard
> **Sc-1**	45	48676.8	8.2				mg/L	47226	Standard
Cl	35	48598.6	5.4				ug/L	38729	Standard
Kr	83	5.3	47.2				ug/L	3	Standard
Br	81	1763.4	6.8				ug/L	1497	Standard
P	31	15404.6	10.6				ug/L	15233	Standard
S	34	1628.4	5.1				ug/L	1153	Standard
Sr	88	66.7	11.5				ug/L	47	Standard
C	12	166.7	28.4				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	3	Standard
Dy	164	3807.9	5.8				mg/L	22	Standard
Ho-1	165	2153.5	5.8				mg/L	13	Standard
Er	166	1863.4	11.5				mg/L	30	Standard
I	127	5402.6	3.7				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.969	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.273	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602022305
Report Date/Time: Thursday, February 11, 2016 13:18:00
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.729
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.774
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602022306
Sample Date/Time: Thursday, February 11, 2016 13:18:55
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59341.7	9.9				ug/L	57324	Standard
	Be	9	75.0	40.6	**0.1263**	0.052	41.4	ug/L	2	Standard
	Al	27	382224.0	10.3	**2.4623**	0.012	0.5	ug/L	172	Standard
	Sc	45	48772.0	7.9				ug/L	47226	Standard
	Ti	47	719.4	7.2	**1.3539**	0.020	1.5	ug/L	100	Standard
	V	51	35906.1	8.9	**2.9125**	0.030	1.0	ug/L	2380	Standard
	Cr	52	34659.5	10.1	**2.2331**	0.074	3.3	ug/L	10715	Standard
	Cr	53	3235.3	13.2	**2.1916**	0.157	7.2	ug/L	293	Standard
	Mn	55	923795.2	10.1	**80.3725**	1.963	2.4	ug/L	882	Standard
	Co	59	23720.3	9.5	**1.8673**	0.035	1.9	ug/L	252	Standard
	Ni	60	9284.2	8.9	**2.9283**	0.045	1.6	ug/L	51	Standard
	Cu	65	16259.4	9.1	**5.1311**	0.102	2.0	ug/L	125	Standard
	Zn	66	70944.1	8.3	**46.4675**	0.297	0.6	ug/L	191	Standard
>	Ge	72	730107.7	8.0				ug/L	693220	Standard
	As	75	2964.5	5.9	**1.8847**	0.039	2.0	ug/L	-96	Standard
	Se	82	46.7	21.6	**0.1415**	0.066	46.6	ug/L	24	Standard
	Se-1	77	86.3	12.5	**0.0858**	0.057	66.7	ug/L	66	Standard
>	Ga	71	3067.0	5.1				mg/L	67	Standard
	Rb	85	20927.8	6.5				ug/L	25	Standard
	Y	89	675122.8	10.7				ug/L	639569	Standard
>	Rh	103	21.7	58.1				ug/L	8	Standard
	Mo	98	353.0	3.2	**0.0735**	0.005	6.7	ug/L	15	Standard
	Ag	107	945.4	8.4	**0.0609**	0.001	1.8	ug/L	162	Standard
	Cd	111	531.7	6.7	**0.1441**	0.003	2.4	mg/L	7	Standard
	Cd	114	1279.0	10.1	**0.1372**	0.009	6.4	ug/L	31	Standard
>	In	115	1072156.6	8.3				ug/L	1030666	Standard
	Sn	118	1405.1	16.1	**0.0591**	0.013	21.3	ug/L	755	Standard
	Sb	123	185.5	25.5	**0.0163**	0.008	49.4	ug/L	105	Standard
	Ba	135	46544.7	8.4	**11.7687**	0.016	0.1	ug/L	23	Standard
	Ce	140	202912.7	8.4				ug/L	137	Standard
>	Tb	159	1819956.4	6.9				ug/L	1748833	Standard
	Ho	165	2841.9	12.7				ug/L	13	Standard
	Tl	203	192.7	3.9	**0.0089**	0.001	5.7	ug/L	14	Standard
	Tl	205	115.0	19.9	**0.0083**	0.003	34.1	ug/L	10	Standard
	Pb	206	199695.8	7.2	**19.8560**	0.217	1.1	ug/L	459	Standard
	Pb	207	165796.1	7.0	**18.0178**	0.285	1.6	ug/L	424	Standard
	Pb	208	683281.9	7.9	**19.1526**	0.038	0.2	ug/L	1701	Standard
	U	238	913.4	9.6	**0.0766**	0.003	3.9	ug/L	2	Standard
>	Bi	209	985047.5	8.0				ug/L	937372	Standard

Sample ID: L1602022306
Report Date/Time: Thursday, February 11, 2016 13:21:12
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	20.0	50.0	**0.0021**	0.015	701.4	mg/L	17	Standard
K	39	43.3	29.0	**0.1306**	0.065	49.9	mg/L	15	Standard
Ca	43	55.0	9.1	**0.0840**	0.339	403.3	mg/L	67	Standard
Fe	54	9113.2	5.3	**5.6027**	0.154	2.7	mg/L	214	Standard
Fe	57	2458.5	5.4	**5.6153**	0.146	2.6	mg/L	82	Standard
> **Sc-1**	45	48772.0	7.9				mg/L	47226	Standard
Cl	35	44832.0	10.4				ug/L	38729	Standard
Kr	83	4.0	50.0				ug/L	3	Standard
Br	81	1566.7	17.9				ug/L	1497	Standard
P	31	13816.3	9.6				ug/L	15233	Standard
S	34	1540.1	13.3				ug/L	1153	Standard
Sr	88	50.0	30.0				ug/L	47	Standard
C	12	190.0	32.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	3	Standard
Dy	164	4896.8	10.1				mg/L	22	Standard
Ho-1	165	2841.9	12.7				mg/L	13	Standard
Er	166	2520.2	2.9				mg/L	30	Standard
I	127	4020.5	4.0				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.521	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.321	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602022306
Report Date/Time: Thursday, February 11, 2016 13:21:12
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.026
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.086
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602022312
Sample Date/Time: Thursday, February 11, 2016 13:22:07
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59046.9	7.7				ug/L	57324	Standard
	Be	9	70.0	0.0	**0.1167**	0.008	6.7	ug/L	2	Standard
	Al	27	389924.2	8.3	**2.5246**	0.030	1.2	ug/L	172	Standard
	Sc	45	48109.8	6.9				ug/L	47226	Standard
	Ti	47	948.7	9.1	**1.8612**	0.119	6.4	ug/L	100	Standard
	V	51	32408.1	9.1	**2.6414**	0.028	1.1	ug/L	2380	Standard
	Cr	52	32648.6	7.9	**2.0834**	0.036	1.7	ug/L	10715	Standard
	Cr	53	3018.6	11.1	**2.0569**	0.100	4.9	ug/L	293	Standard
	Mn	55	1267547.4	10.3	**111.5976**	1.603	1.4	ug/L	882	Standard
	Co	59	23380.8	10.6	**1.8610**	0.042	2.3	ug/L	252	Standard
	Ni	60	8145.2	9.0	**2.5955**	0.013	0.5	ug/L	51	Standard
	Cu	65	14149.6	9.9	**4.5081**	0.042	0.9	ug/L	125	Standard
	Zn	66	83620.0	9.0	**55.4496**	0.044	0.1	ug/L	191	Standard
>	**Ge**	72	722009.7	9.0				ug/L	693220	Standard
	As	75	2313.5	8.4	**1.4984**	0.008	0.6	ug/L	-96	Standard
	Se	82	46.2	11.2	**0.1425**	0.046	32.0	ug/L	24	Standard
	Se-1	77	94.0	14.1	**0.1660**	0.053	32.2	ug/L	66	Standard
>	**Ga**	71	2820.3	8.3				mg/L	67	Standard
	Rb	85	19926.5	11.4				ug/L	25	Standard
	Y	89	684841.6	7.8				ug/L	639569	Standard
>	**Rh**	103	15.0	57.7				ug/L	8	Standard
	Mo	98	357.2	9.4	**0.0736**	0.004	5.3	ug/L	15	Standard
	Ag	107	897.4	6.9	**0.0565**	0.002	4.0	ug/L	162	Standard
	Cd	111	846.4	5.2	**0.2294**	0.013	5.6	mg/L	7	Standard
	Cd	114	2161.3	8.0	**0.2364**	0.003	1.1	ug/L	31	Standard
>	**In**	115	1079963.9	8.4				ug/L	1030666	Standard
	Sn	118	953.4	9.7	**0.0160**	0.012	76.7	ug/L	755	Standard
	Sb	123	160.9	16.4	**0.0130**	0.005	37.2	ug/L	105	Standard
	Ba	135	61538.2	7.4	**15.4601**	0.220	1.4	ug/L	23	Standard
	Ce	140	234364.2	6.9				ug/L	137	Standard
>	**Tb**	159	1824773.4	5.7				ug/L	1748833	Standard
	Ho	165	2801.9	7.9				ug/L	13	Standard
	Tl	203	187.7	6.4	**0.0085**	0.000	1.9	ug/L	14	Standard
	Tl	205	141.7	28.7	**0.0105**	0.003	29.0	ug/L	10	Standard
	Pb	206	206582.8	7.6	**20.5626**	0.253	1.2	ug/L	459	Standard
	Pb	207	171591.8	7.6	**18.6650**	0.138	0.7	ug/L	424	Standard
	Pb	208	703240.0	7.6	**19.7404**	0.150	0.8	ug/L	1701	Standard
	U	238	1059.7	9.9	**0.0895**	0.002	2.5	ug/L	2	Standard
>	**Bi**	209	983655.5	7.5				ug/L	937372	Standard

Sample ID: L1602022312
Report Date/Time: Thursday, February 11, 2016 13:24:23
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	21.7	48.0	**0.0044**	0.015	329.4	mg/L	17	Standard
K	39	43.3	35.3	**0.1340**	0.082	61.3	mg/L	15	Standard
Ca	43	60.0	8.3	**0.5463**	0.534	97.8	mg/L	67	Standard
Fe	54	5730.1	7.3	**3.5215**	0.295	8.4	mg/L	214	Standard
Fe	57	1491.7	4.2	**3.3830**	0.186	5.5	mg/L	82	Standard
Sc-1	45	48109.8	6.9				mg/L	47226	Standard
Cl	35	46073.6	8.7				ug/L	38729	Standard
Kr	83	3.7	15.7				ug/L	3	Standard
Br	81	1623.4	15.5				ug/L	1497	Standard
P	31	14512.0	8.5				ug/L	15233	Standard
S	34	1413.4	9.5				ug/L	1153	Standard
Sr	88	45.0	29.4				ug/L	47	Standard
C	12	160.0	22.5				mg/L	90	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	132.3				mg/L	3	Standard
Dy	164	4585.9	9.1				mg/L	22	Standard
Ho-1	165	2801.9	7.9				mg/L	13	Standard
Er	166	2326.8	12.1				mg/L	30	Standard
I	127	4757.4	8.3				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.006	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.153	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602022312
Report Date/Time: Thursday, February 11, 2016 13:24:23
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.783
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.938
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602022312
Report Date/Time: Thursday, February 11, 2016 13:24:23
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602022313
Sample Date/Time: Thursday, February 11, 2016 13:25:18
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57584.6	7.3				ug/L	57324	Standard
	Be	9	26.7	60.3	**0.0538**	0.028	51.9	ug/L	2	Standard
	Al	27	71826.8	13.0	**0.4712**	0.028	5.9	ug/L	172	Standard
	Sc	45	46742.3	8.1				ug/L	47226	Standard
	Ti	47	187.3	11.4	**0.2445**	0.019	7.9	ug/L	100	Standard
	V	51	8864.6	11.5	**0.5846**	0.027	4.7	ug/L	2380	Standard
	Cr	52	16788.7	9.8	**0.5980**	0.040	6.7	ug/L	10715	Standard
	Cr	53	1071.7	9.6	**0.5934**	0.014	2.4	ug/L	293	Standard
	Mn	55	216953.5	11.3	**19.3881**	0.573	3.0	ug/L	882	Standard
	Co	59	4861.1	10.8	**0.3756**	0.010	2.8	ug/L	252	Standard
	Ni	60	1906.1	9.4	**0.5966**	0.008	1.3	ug/L	51	Standard
	Cu	65	3434.1	10.9	**1.0729**	0.029	2.7	ug/L	125	Standard
	Zn	66	29657.2	11.3	**19.8589**	0.660	3.3	ug/L	191	Standard
>	**Ge**	72	707120.3	8.3				ug/L	693220	Standard
	As	75	411.8	20.8	**0.3173**	0.034	10.6	ug/L	-96	Standard
	Se	82	32.5	13.7	**0.0629**	0.034	53.8	ug/L	24	Standard
	Se-1	77	62.7	2.4	**-0.1120**	0.036	31.9	ug/L	66	Standard
>	**Ga**	71	615.0	4.9				mg/L	67	Standard
	Rb	85	3283.7	12.5				ug/L	25	Standard
	Y	89	645923.3	13.2				ug/L	639569	Standard
>	**Rh**	103	8.3	34.6				ug/L	8	Standard
	Mo	98	171.7	15.8	**0.0334**	0.004	10.7	ug/L	15	Standard
	Ag	107	277.3	8.9	**0.0064**	0.000	6.9	ug/L	162	Standard
	Cd	111	157.4	13.2	**0.0426**	0.001	2.5	mg/L	7	Standard
	Cd	114	412.8	7.1	**0.0401**	0.003	6.4	ug/L	31	Standard
>	**In**	115	1032997.6	10.8				ug/L	1030666	Standard
	Sn	118	1138.4	9.7	**0.0382**	0.002	5.7	ug/L	755	Standard
	Sb	123	143.4	17.6	**0.0117**	0.005	43.7	ug/L	105	Standard
	Ba	135	11039.7	12.9	**2.8865**	0.081	2.8	ug/L	23	Standard
	Ce	140	32401.6	11.6				ug/L	137	Standard
>	**Tb**	159	1733451.5	10.3				ug/L	1748833	Standard
	Ho	165	496.7	10.1				ug/L	13	Standard
	Tl	203	45.3	27.8	**-0.0004**	0.001	156.1	ug/L	14	Standard
	Tl	205	28.3	10.2	**0.0004**	0.000	38.8	ug/L	10	Standard
	Pb	206	62670.3	10.8	**6.4166**	0.114	1.8	ug/L	459	Standard
	Pb	207	52191.7	10.5	**5.8397**	0.095	1.6	ug/L	424	Standard
	Pb	208	213116.1	9.8	**6.1564**	0.059	1.0	ug/L	1701	Standard
	U	238	183.3	14.3	**0.0128**	0.001	7.0	ug/L	2	Standard
>	**Bi**	209	949408.1	9.1				ug/L	937372	Standard

Sample ID: L1602022313
Report Date/Time: Thursday, February 11, 2016 13:27:35
Page 1

Approved: February 12, 2016

Na	23	1.7	173.2	**6.7444**	11.673	173.1	mg/L	0	Standard
Mg	24	20.0	25.0	**0.0028**	0.008	305.8	mg/L	17	Standard
K	39	10.0	50.0	**-0.0239**	0.022	93.9	mg/L	15	Standard
Ca	43	56.7	33.4	**0.4257**	1.601	375.9	mg/L	67	Standard
Fe	54	1831.9	8.9	**1.0617**	0.043	4.1	mg/L	214	Standard
Fe	57	561.7	3.1	**1.1963**	0.074	6.2	mg/L	82	Standard
Sc-1	45	46742.3	8.1				mg/L	47226	Standard
Cl	35	45386.3	9.5				ug/L	38729	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	1430.1	13.6				ug/L	1497	Standard
P	31	13816.4	12.5				ug/L	15233	Standard
S	34	1351.7	1.8				ug/L	1153	Standard
Sr	88	41.7	36.7				ug/L	47	Standard
C	12	153.3	7.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	874.5	19.2				mg/L	22	Standard
Ho-1	165	496.7	10.1				mg/L	13	Standard
Er	166	393.3	15.5				mg/L	30	Standard
I	127	2401.9	5.9				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.455	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.005	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602022313
Report Date/Time: Thursday, February 11, 2016 13:27:35
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.226
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.284
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, February 11, 2016 13:28:31
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57684.9	6.7				ug/L	57324	Standard
	Be	9	31877.1	11.2	**48.5551**	2.302	4.7	ug/L	2	Standard
	Al	27	7143401.6	10.0	**47.3895**	1.645	3.5	ug/L	172	Standard
	Sc	45	46535.0	7.9				ug/L	47226	Standard
	Ti	47	43252.8	10.9	**92.8313**	1.723	1.9	ug/L	100	Standard
	V	51	523114.8	7.3	**46.3388**	0.830	1.8	ug/L	2380	Standard
	Cr	52	500691.3	9.5	**47.2891**	0.727	1.5	ug/L	10715	Standard
	Cr	53	62931.3	10.0	**48.1294**	0.466	1.0	ug/L	293	Standard
	Mn	55	521689.1	9.4	**46.3542**	0.661	1.4	ug/L	882	Standard
	Co	59	585891.8	8.6	**47.7532**	0.321	0.7	ug/L	252	Standard
	Ni	60	146311.2	9.4	**47.6071**	0.280	0.6	ug/L	51	Standard
	Cu	65	147567.4	9.5	**48.0527**	0.204	0.4	ug/L	125	Standard
	Zn	66	72299.6	8.7	**48.4003**	0.297	0.6	ug/L	191	Standard
>	Ge	72	714790.7	9.1				ug/L	693220	Standard
	As	75	75870.8	7.5	**47.8227**	0.838	1.8	ug/L	-96	Standard
	Se	82	7910.6	7.1	**48.2144**	1.114	2.3	ug/L	24	Standard
	Se-1	77	5236.9	7.0	**49.0666**	1.028	2.1	ug/L	66	Standard
>	Ga	71	85.0	45.9				mg/L	67	Standard
	Rb	85	1221.7	8.2				ug/L	25	Standard
	Y	89	645546.3	10.7				ug/L	639569	Standard
>	Rh	103	53.3	23.6				ug/L	8	Standard
	Mo	98	437329.9	7.3	**101.2620**	0.626	0.6	ug/L	15	Standard
	Ag	107	563358.7	8.2	**47.6704**	0.274	0.6	ug/L	162	Standard
	Cd	111	173022.6	7.7	**48.5278**	0.168	0.3	mg/L	7	Standard
	Cd	114	416773.7	6.6	**48.6580**	0.529	1.1	ug/L	31	Standard
>	In	115	1051104.4	7.7				ug/L	1030666	Standard
	Sn	118	482066.7	9.6	**47.2322**	1.292	2.7	ug/L	755	Standard
	Sb	123	374279.3	6.5	**47.2587**	0.659	1.4	ug/L	105	Standard
	Ba	135	183496.1	7.7	**47.3546**	0.243	0.5	ug/L	23	Standard
	Ce	140	141.7	25.5				ug/L	137	Standard
>	Tb	159	1771789.2	7.8				ug/L	1748833	Standard
	Ho	165	16.7	69.3				ug/L	13	Standard
	Tl	203	742425.4	7.3	**48.1235**	0.691	1.4	ug/L	14	Standard
	Tl	205	516128.9	8.3	**48.0890**	0.480	1.0	ug/L	10	Standard
	Pb	206	469486.0	7.1	**48.0854**	0.313	0.7	ug/L	459	Standard
	Pb	207	420724.4	5.7	**47.1322**	0.894	1.9	ug/L	424	Standard
	Pb	208	1663718.5	7.0	**48.0642**	0.656	1.4	ug/L	1701	Standard
	U	238	528973.8	7.7	**47.9375**	0.054	0.1	ug/L	2	Standard
>	Bi	209	957768.8	7.6				ug/L	937372	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 13:30:48
Page 1

Approved: February 12, 2016

Na	23	1.7	173.2	**6.3628**	11.012	173.1	mg/L	0	Standard
Mg	24	3733.8	11.2	**4.8631**	0.173	3.6	mg/L	17	Standard
K	39	923.4	9.5	**4.3771**	0.071	1.6	mg/L	15	Standard
Ca	43	121.7	34.2	**5.5813**	2.755	49.4	mg/L	67	Standard
Fe	54	7605.4	9.6	**4.8764**	0.281	5.8	mg/L	214	Standard
Fe	57	2098.5	12.0	**4.9859**	0.251	5.0	mg/L	82	Standard
> **Sc-1**	45	46535.0	7.9				mg/L	47226	Standard
Cl	35	51412.0	6.7				ug/L	38729	Standard
Kr	83	4.0	43.3				ug/L	3	Standard
Br	81	1583.4	5.1				ug/L	1497	Standard
P	31	14742.2	7.9				ug/L	15233	Standard
S	34	1955.1	3.7				ug/L	1153	Standard
Sr	88	48.3	21.5				ug/L	47	Standard
C	12	120.0	28.9				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	3	Standard
Dy	164	21.7	21.6				mg/L	22	Standard
Ho-1	165	16.7	69.3				mg/L	13	Standard
Er	166	33.3	75.5				mg/L	30	Standard
I	127	2611.9	4.1				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	97.110		
Al	27	94.779		
Sc	45			
Ti	47	92.831		
V	51	92.678		
Cr	52	94.578		
Cr	53			
Mn	55	92.708		
Co	59	95.506		
Ni	60	95.214		
Cu	65	96.105		
Zn	66	96.801		
> Ge	72		103.112	
As	75	95.645		
Se	82	96.429		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 13:30:48
Page 2

Approved: February 12, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	101.262		
Ag	107	95.341		
Cd	111	97.056		
Cd	114			
> In	115			101.983
Sn	118	94.464		
Sb	123	94.517		
Ba	135	94.709		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.247		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.128		
U	238	95.875		
> Bi	209			102.176
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 13:30:48
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, February 11, 2016 13:31:43
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55741.3	9.4				ug/L	57324	Standard
	Be	9	6.7	86.6	**0.0221**	0.009	39.9	ug/L	2	Standard
	Al	27	1475.1	47.8	**0.0049**	0.006	115.8	ug/L	172	Standard
	Sc	45	45134.8	15.2				ug/L	47226	Standard
	Ti	47	60.3	17.7	**-0.0230**	0.035	150.4	ug/L	100	Standard
	V	51	2699.6	5.4	**0.0461**	0.040	86.8	ug/L	2380	Standard
	Cr	52	10687.1	5.8	**0.0576**	0.080	138.8	ug/L	10715	Standard
	Cr	53	315.0	12.4	**0.0173**	0.021	119.9	ug/L	293	Standard
	Mn	55	1944.5	75.0	**0.0754**	0.166	220.1	ug/L	882	Standard
	Co	59	385.7	48.6	**0.0100**	0.020	203.5	ug/L	252	Standard
	Ni	60	72.7	14.7	**-0.0054**	0.004	70.9	ug/L	51	Standard
	Cu	65	166.3	15.4	**0.0006**	0.013	2355.8	ug/L	125	Standard
	Zn	66	230.3	15.5	**-0.1302**	0.032	24.8	ug/L	191	Standard
>	Ge	72	676752.2	13.2				ug/L	693220	Standard
	As	75	-80.3	39.9	**0.0051**	0.014	267.4	ug/L	-96	Standard
	Se	82	36.3	26.6	**0.1030**	0.091	88.1	ug/L	24	Standard
	Se-1	77	82.7	12.1	**0.1309**	0.206	157.5	ug/L	66	Standard
>	Ga	71	65.0	7.7				mg/L	67	Standard
	Rb	85	53.3	96.2				ug/L	25	Standard
	Y	89	615409.5	13.7				ug/L	639569	Standard
>	Rh	103	3.3	173.2				ug/L	8	Standard
	Mo	98	281.0	25.6	**0.0621**	0.025	40.7	ug/L	15	Standard
	Ag	107	321.7	43.5	**0.0116**	0.016	137.4	ug/L	162	Standard
	Cd	111	54.2	91.2	**0.0146**	0.017	117.5	mg/L	7	Standard
	Cd	114	167.8	74.6	**0.0123**	0.018	149.7	ug/L	31	Standard
>	In	115	1015906.6	12.8				ug/L	1030666	Standard
	Sn	118	1140.0	11.6	**0.0426**	0.029	68.5	ug/L	755	Standard
	Sb	123	617.9	27.3	**0.0764**	0.034	44.2	ug/L	105	Standard
	Ba	135	123.3	85.7	**0.0264**	0.034	129.1	ug/L	23	Standard
	Ce	140	193.3	117.8				ug/L	137	Standard
>	Tb	159	1694725.4	11.6				ug/L	1748833	Standard
	Ho	165	18.3	68.6				ug/L	13	Standard
	Tl	203	241.3	59.1	**0.0129**	0.011	85.2	ug/L	14	Standard
	Tl	205	121.7	59.9	**0.0095**	0.008	83.4	ug/L	10	Standard
	Pb	206	1006.0	58.4	**0.0498**	0.074	149.6	ug/L	459	Standard
	Pb	207	816.0	65.4	**0.0406**	0.073	179.0	ug/L	424	Standard
	Pb	208	2784.4	45.4	**0.0264**	0.047	177.1	ug/L	1701	Standard
	U	238	124.7	72.2	**0.0080**	0.010	122.2	ug/L	2	Standard
>	Bi	209	953405.4	12.0				ug/L	937372	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 13:34:00
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	26.7	43.3	**0.0142**	0.022	152.0	mg/L	17	Standard
K	39	13.3	57.3	**-0.0062**	0.037	594.7	mg/L	15	Standard
Ca	43	50.0	45.8	**0.1810**	2.548	1407.3	mg/L	67	Standard
Fe	54	222.4	25.8	**0.0082**	0.018	218.3	mg/L	214	Standard
Fe	57	101.7	19.9	**0.0737**	0.065	88.4	mg/L	82	Standard
> **Sc-1**	45	45134.8	15.2				mg/L	47226	Standard
Cl	35	50329.9	9.3				ug/L	38729	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1510.1	10.0				ug/L	1497	Standard
P	31	15726.5	10.0				ug/L	15233	Standard
S	34	1796.8	10.7				ug/L	1153	Standard
Sr	88	35.0	37.8				ug/L	47	Standard
C	12	133.3	4.3				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	15.5	133.7				mg/L	22	Standard
Ho-1	165	18.3	68.6				mg/L	13	Standard
Er	166	23.3	65.5				mg/L	30	Standard
I	127	1995.1	5.6				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.624	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 13:34:00
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.568	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.710	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 13:34:00
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602022314
Sample Date/Time: Thursday, February 11, 2016 13:34:56
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57929.3	7.5				ug/L	57324	Standard
	Be	9	38.3	39.8	**0.0696**	0.019	27.9	ug/L	2	Standard
	Al	27	538729.3	10.5	**3.5534**	0.125	3.5	ug/L	172	Standard
	Sc	45	49283.8	9.6				ug/L	47226	Standard
	Ti	47	822.7	13.4	**1.5994**	0.100	6.3	ug/L	100	Standard
	V	51	19290.2	6.2	**1.5031**	0.055	3.6	ug/L	2380	Standard
	Cr	52	23829.1	7.6	**1.2578**	0.031	2.5	ug/L	10715	Standard
	Cr	53	1948.5	5.9	**1.2585**	0.047	3.7	ug/L	293	Standard
	Mn	55	378722.6	7.9	**33.5625**	0.335	1.0	ug/L	882	Standard
	Co	59	8709.2	8.9	**0.6840**	0.012	1.7	ug/L	252	Standard
	Ni	60	5651.4	7.4	**1.8072**	0.030	1.7	ug/L	51	Standard
	Cu	65	14985.1	9.2	**4.8169**	0.027	0.6	ug/L	125	Standard
	Zn	66	152986.4	9.2	**102.4671**	1.315	1.3	ug/L	191	Standard
>	Ge	72	716470.8	8.9				ug/L	693220	Standard
	As	75	1884.2	9.0	**1.2396**	0.023	1.9	ug/L	-96	Standard
	Se	82	53.1	28.5	**0.1804**	0.066	36.8	ug/L	24	Standard
	Se-1	77	89.7	7.3	**0.1364**	0.065	47.9	ug/L	66	Standard
>	Ga	71	1461.7	10.7				mg/L	67	Standard
	Rb	85	9286.2	10.6				ug/L	25	Standard
	Y	89	653884.7	7.4				ug/L	639569	Standard
>	Rh	103	70.0	31.1				ug/L	8	Standard
	Mo	98	289.0	7.8	**0.0598**	0.002	3.5	ug/L	15	Standard
	Ag	107	1605.8	8.5	**0.1179**	0.002	2.0	ug/L	162	Standard
	Cd	111	1962.6	8.8	**0.5462**	0.019	3.6	mg/L	7	Standard
	Cd	114	4450.2	7.9	**0.5084**	0.010	2.0	ug/L	31	Standard
>	In	115	1055265.8	8.3				ug/L	1030666	Standard
	Sn	118	1075.0	14.8	**0.0295**	0.012	41.2	ug/L	755	Standard
	Sb	123	297.6	8.9	**0.0307**	0.006	20.3	ug/L	105	Standard
	Ba	135	25793.7	8.3	**6.6237**	0.094	1.4	ug/L	23	Standard
	Ce	140	154908.3	6.4				ug/L	137	Standard
>	Tb	159	1808428.2	8.3				ug/L	1748833	Standard
	Ho	165	2185.2	9.0				ug/L	13	Standard
	Tl	203	141.3	12.7	**0.0058**	0.001	21.6	ug/L	14	Standard
	Tl	205	73.3	39.4	**0.0046**	0.003	60.2	ug/L	10	Standard
	Pb	206	147344.6	7.4	**14.9366**	0.054	0.4	ug/L	459	Standard
	Pb	207	122455.0	7.4	**13.5655**	0.150	1.1	ug/L	424	Standard
	Pb	208	499280.2	8.6	**14.2643**	0.175	1.2	ug/L	1701	Standard
	U	238	1497.1	8.7	**0.1307**	0.003	2.2	ug/L	2	Standard
>	Bi	209	964850.0	7.5				ug/L	937372	Standard

Sample ID: L1602022314
Report Date/Time: Thursday, February 11, 2016 13:37:13
Page 1

Approved: February 12, 2016

Na	23	6.7	43.3	**25.5143**	8.706	34.1	mg/L	0	Standard
Mg	24	36.7	61.5	**0.0210**	0.025	117.5	mg/L	17	Standard
K	39	36.7	20.8	**0.0960**	0.033	34.7	mg/L	15	Standard
Ca	43	255.0	14.8	**15.4235**	2.310	15.0	mg/L	67	Standard
Fe	54	2838.4	10.9	**1.6250**	0.025	1.5	mg/L	214	Standard
Fe	57	941.7	3.4	**2.0207**	0.218	10.8	mg/L	82	Standard
> **Sc-1**	45	49283.8	9.6				mg/L	47226	Standard
Cl	35	55286.9	5.7				ug/L	38729	Standard
Kr	83	3.7	41.7				ug/L	3	Standard
Br	81	1476.7	10.3				ug/L	1497	Standard
P	31	15556.4	10.8				ug/L	15233	Standard
S	34	2091.8	4.2				ug/L	1153	Standard
Sr	88	145.0	15.0				ug/L	47	Standard
C	12	186.7	27.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	78.1				mg/L	3	Standard
Dy	164	3858.1	12.4				mg/L	22	Standard
Ho-1	165	2185.2	9.0				mg/L	13	Standard
Er	166	1930.1	5.6				mg/L	30	Standard
I	127	5165.9	3.7				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.057	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.354	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602022314
Report Date/Time: Thursday, February 11, 2016 13:37:13
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.387
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.931
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, February 11, 2016 13:38:09
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55970.6	10.2				ug/L	57324	Standard
	Be	9	30876.6	9.1	**48.6221**	1.691	3.5	ug/L	2	Standard
	Al	27	7214575.4	13.4	**49.2878**	1.768	3.6	ug/L	172	Standard
	Sc	45	46876.2	9.4				ug/L	47226	Standard
	Ti	47	42413.4	10.4	**94.2214**	0.975	1.0	ug/L	100	Standard
	V	51	520964.6	10.1	**47.6779**	0.398	0.8	ug/L	2380	Standard
	Cr	52	489140.5	9.8	**47.8055**	0.419	0.9	ug/L	10715	Standard
	Cr	53	60899.9	11.3	**48.1563**	0.966	2.0	ug/L	293	Standard
	Mn	55	514447.4	11.2	**47.2463**	0.954	2.0	ug/L	882	Standard
	Co	59	576693.2	10.4	**48.5953**	1.213	2.5	ug/L	252	Standard
	Ni	60	142731.0	10.9	**48.0125**	0.759	1.6	ug/L	51	Standard
	Cu	65	143878.0	9.6	**48.4823**	0.607	1.3	ug/L	125	Standard
	Zn	66	70058.8	9.0	**48.5283**	0.747	1.5	ug/L	191	Standard
>	Ge	72	690878.2	9.3				ug/L	693220	Standard
	As	75	74304.0	9.0	**48.4195**	0.391	0.8	ug/L	-96	Standard
	Se	82	7737.9	8.8	**48.7515**	0.293	0.6	ug/L	24	Standard
	Se-1	77	4979.8	9.9	**48.1824**	0.308	0.6	ug/L	66	Standard
>	Ga	71	70.0	14.3				mg/L	67	Standard
	Rb	85	1108.4	8.5				ug/L	25	Standard
	Y	89	635268.8	9.7				ug/L	639569	Standard
>	Rh	103	46.7	6.2				ug/L	8	Standard
	Mo	98	421697.1	9.9	**101.0384**	0.816	0.8	ug/L	15	Standard
	Ag	107	553189.7	8.2	**48.5138**	0.462	1.0	ug/L	162	Standard
	Cd	111	167263.0	8.7	**48.5924**	0.272	0.6	mg/L	7	Standard
	Cd	114	405139.6	9.8	**48.9328**	0.345	0.7	ug/L	31	Standard
>	In	115	1015068.9	9.1				ug/L	1030666	Standard
	Sn	118	464745.4	8.2	**47.2246**	0.997	2.1	ug/L	755	Standard
	Sb	123	365614.4	7.4	**47.8235**	0.812	1.7	ug/L	105	Standard
	Ba	135	179897.1	8.8	**48.0843**	0.333	0.7	ug/L	23	Standard
	Ce	140	151.7	22.0				ug/L	137	Standard
>	Tb	159	1746263.3	7.4				ug/L	1748833	Standard
	Ho	165	20.0	66.1				ug/L	13	Standard
	Tl	203	727824.8	8.4	**47.6176**	0.208	0.4	ug/L	14	Standard
	Tl	205	514201.9	10.7	**48.3244**	1.559	3.2	ug/L	10	Standard
	Pb	206	458357.1	6.6	**47.4245**	0.726	1.5	ug/L	459	Standard
	Pb	207	418097.9	8.4	**47.2402**	0.335	0.7	ug/L	424	Standard
	Pb	208	1637940.8	8.2	**47.7593**	0.383	0.8	ug/L	1701	Standard
	U	238	523372.4	8.9	**47.8731**	0.423	0.9	ug/L	2	Standard
>	Bi	209	948503.1	8.0				ug/L	937372	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 13:40:26
Page 1

Approved: February 12, 2016

Na	23	1.7	173.2	**6.1632**	10.666	173.1	mg/L	0	Standard
Mg	24	3687.1	9.7	**4.7855**	0.438	9.1	mg/L	17	Standard
K	39	1000.0	8.3	**4.7212**	0.217	4.6	mg/L	15	Standard
Ca	43	78.3	16.1	**2.1717**	1.215	55.9	mg/L	67	Standard
Fe	54	7286.3	12.6	**4.6230**	0.248	5.4	mg/L	214	Standard
Fe	57	2085.1	12.8	**4.9164**	0.212	4.3	mg/L	82	Standard
Sc-1	45	46876.2	9.4				mg/L	47226	Standard
Cl	35	50698.7	10.9				ug/L	38729	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1310.1	7.7				ug/L	1497	Standard
P	31	15409.6	12.4				ug/L	15233	Standard
S	34	2296.8	13.6				ug/L	1153	Standard
Sr	88	46.7	16.4				ug/L	47	Standard
C	12	140.0	28.6				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	2.7	219.6				mg/L	22	Standard
Ho-1	165	20.0	66.1				mg/L	13	Standard
Er	166	13.3	43.3				mg/L	30	Standard
I	127	2393.5	5.7				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	97.244		
Al	27	98.576		
Sc	45			
Ti	47	94.221		
V	51	95.356		
Cr	52	95.611		
Cr	53			
Mn	55	94.493		
Co	59	97.191		
Ni	60	96.025		
Cu	65	96.965		
Zn	66	97.057		
Ge	72		99.662	
As	75	96.839		
Se	82	97.503		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 13:40:26
Page 2

Approved: February 12, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	101.038		
Ag	107	97.028		
Cd	111	97.185		
Cd	114			
In	115			98.487
Sn	118	94.449		
Sb	123	95.647		
Ba	135	96.169		
Ce	140			
Tb	159			
Ho	165			
Tl	203	95.235		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.519		
U	238	95.746		
Bi	209			101.187
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 13:40:26
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, February 11, 2016 13:41:21
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54185.9	11.8				ug/L	57324	Standard
	Be	9	11.7	89.2	**0.0305**	0.016	52.6	ug/L	2	Standard
	Al	27	985.0	58.6	**0.0013**	0.003	252.9	ug/L	172	Standard
	Sc	45	44252.1	14.4				ug/L	47226	Standard
	Ti	47	71.0	18.9	**-0.0010**	0.017	1721.6	ug/L	100	Standard
	V	51	2465.4	3.5	**0.0246**	0.032	128.1	ug/L	2380	Standard
	Cr	52	10003.6	6.5	**-0.0089**	0.058	655.1	ug/L	10715	Standard
	Cr	53	288.3	14.4	**-0.0041**	0.005	119.2	ug/L	293	Standard
	Mn	55	1147.0	20.5	**-0.0079**	0.032	409.7	ug/L	882	Standard
	Co	59	306.3	25.5	**0.0027**	0.010	351.7	ug/L	252	Standard
	Ni	60	63.0	23.1	**-0.0088**	0.004	41.5	ug/L	51	Standard
	Cu	65	139.0	25.1	**-0.0098**	0.007	68.5	ug/L	125	Standard
	Zn	66	209.7	16.7	**-0.1461**	0.008	5.5	ug/L	191	Standard
>	**Ge**	72	673164.8	12.3				ug/L	693220	Standard
	As	75	-61.5	37.5	**0.0157**	0.018	112.7	ug/L	-96	Standard
	Se	82	28.6	7.4	**0.0473**	0.009	20.0	ug/L	24	Standard
	Se-1	77	71.3	12.7	**0.0035**	0.010	295.1	ug/L	66	Standard
>	**Ga**	71	78.3	35.2				mg/L	67	Standard
	Rb	85	26.7	21.7				ug/L	25	Standard
	Y	89	605312.3	14.0				ug/L	639569	Standard
>	**Rh**	103	1.7	173.2				ug/L	8	Standard
	Mo	98	258.0	23.1	**0.0572**	0.019	34.1	ug/L	15	Standard
	Ag	107	387.3	73.1	**0.0187**	0.030	160.5	ug/L	162	Standard
	Cd	111	23.3	46.9	**0.0045**	0.002	51.8	mg/L	7	Standard
	Cd	114	66.1	60.8	**-0.0013**	0.004	302.7	ug/L	31	Standard
>	**In**	115	994888.1	12.0				ug/L	1030666	Standard
	Sn	118	1138.4	17.7	**0.0448**	0.034	75.2	ug/L	755	Standard
	Sb	123	664.8	34.3	**0.0845**	0.041	48.6	ug/L	105	Standard
	Ba	135	107.3	98.4	**0.0224**	0.033	148.6	ug/L	23	Standard
	Ce	140	165.0	123.4				ug/L	137	Standard
>	**Tb**	159	1681325.0	15.1				ug/L	1748833	Standard
	Ho	165	23.3	53.9				ug/L	13	Standard
	Tl	203	345.3	107.4	**0.0214**	0.029	133.8	ug/L	14	Standard
	Tl	205	86.7	21.8	**0.0061**	0.002	30.6	ug/L	10	Standard
	Pb	206	741.4	43.4	**0.0223**	0.043	192.5	ug/L	459	Standard
	Pb	207	633.3	37.8	**0.0196**	0.036	182.2	ug/L	424	Standard
	Pb	208	2099.4	15.2	**0.0057**	0.011	202.1	ug/L	1701	Standard
	U	238	91.3	35.7	**0.0046**	0.003	64.6	ug/L	2	Standard
>	**Bi**	209	930799.1	13.1				ug/L	937372	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 13:43:38
Page 1

Approved: February 12, 2016

Na	23	1.7	173.2	**7.3751**	12.765	173.1	mg/L	0	Standard
Mg	24	31.7	9.1	**0.0209**	0.010	48.5	mg/L	17	Standard
K	39	13.3	57.3	**-0.0063**	0.031	499.9	mg/L	15	Standard
Ca	43	43.3	17.6	**-0.4561**	0.696	152.6	mg/L	67	Standard
Fe	54	202.5	3.7	**0.0006**	0.017	2928.2	mg/L	214	Standard
Fe	57	81.7	30.2	**0.0251**	0.069	274.3	mg/L	82	Standard
Sc-1	45	44252.1	14.4				mg/L	47226	Standard
Cl	35	48193.7	10.0				ug/L	38729	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	1516.7	2.0				ug/L	1497	Standard
P	31	14313.5	13.1				ug/L	15233	Standard
S	34	1971.8	8.2				ug/L	1153	Standard
Sr	88	51.7	31.1				ug/L	47	Standard
C	12	100.0	10.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	22.4	93.0				mg/L	22	Standard
Ho-1	165	23.3	53.9				mg/L	13	Standard
Er	166	20.0	0.0				mg/L	30	Standard
I	127	1948.5	12.5				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.107	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 13:43:38
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.529
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.299
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 13:43:38
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: PBW 56 WG556641-02
Sample Date/Time: Thursday, February 11, 2016 14:15:44
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50638.6	11.8				ug/L	57324	Standard
	Be	9	11.7	65.5	**0.0327**	0.015	45.9	ug/L	2	Standard
	Al	27	1856.8	10.6	**0.0086**	0.000	3.9	ug/L	172	Standard
	Sc	45	43431.7	17.3				ug/L	47226	Standard
	Ti	47	78.0	3.8	**0.0207**	0.017	82.7	ug/L	100	Standard
	V	51	2785.8	7.4	**0.0590**	0.014	23.5	ug/L	2380	Standard
	Cr	52	12378.7	9.0	**0.2602**	0.051	19.5	ug/L	10715	Standard
	Cr	53	423.3	13.2	**0.1146**	0.037	32.3	ug/L	293	Standard
	Mn	55	2013.1	11.8	**0.0763**	0.006	8.2	ug/L	882	Standard
	Co	59	216.7	4.1	**-0.0050**	0.003	54.5	ug/L	252	Standard
	Ni	60	227.0	6.9	**0.0500**	0.005	9.7	ug/L	51	Standard
	Cu	65	312.7	12.0	**0.0531**	0.001	1.4	ug/L	125	Standard
	Zn	66	2004.8	10.3	**1.1713**	0.074	6.3	ug/L	191	Standard
>	**Ge**	72	659464.3	12.8				ug/L	693220	Standard
	As	75	-50.9	48.1	**0.0236**	0.012	49.4	ug/L	-96	Standard
	Se	82	30.7	22.0	**0.0685**	0.064	93.6	ug/L	24	Standard
	Se-1	77	65.7	23.3	**-0.0397**	0.143	360.5	ug/L	66	Standard
>	**Ga**	71	51.7	14.8				mg/L	67	Standard
	Rb	85	68.3	34.6				ug/L	25	Standard
	Y	89	607755.1	14.4				ug/L	639569	Standard
>	**Rh**	103	6.7	86.6				ug/L	8	Standard
	Mo	98	57.3	17.2	**0.0080**	0.004	50.9	ug/L	15	Standard
	Ag	107	229.3	3.0	**0.0040**	0.003	69.6	ug/L	162	Standard
	Cd	111	26.9	19.7	**0.0061**	0.001	20.9	mg/L	7	Standard
	Cd	114	62.9	19.9	**-0.0008**	0.002	299.4	ug/L	31	Standard
>	**In**	115	955765.8	12.9				ug/L	1030666	Standard
	Sn	118	3185.3	11.1	**0.2691**	0.013	4.9	ug/L	755	Standard
	Sb	123	332.1	21.1	**0.0403**	0.015	36.7	ug/L	105	Standard
	Ba	135	211.7	8.5	**0.0515**	0.003	5.9	ug/L	23	Standard
	Ce	140	385.0	7.9				ug/L	137	Standard
>	**Tb**	159	1632704.4	12.3				ug/L	1748833	Standard
	Ho	165	26.7	47.2				ug/L	13	Standard
	Tl	203	84.7	9.5	**0.0026**	0.000	11.5	ug/L	14	Standard
	Tl	205	60.0	8.3	**0.0039**	0.001	31.5	ug/L	10	Standard
	Pb	206	544.3	11.2	**0.0020**	0.001	61.3	ug/L	459	Standard
	Pb	207	448.7	15.0	**-0.0012**	0.003	273.0	ug/L	424	Standard
	Pb	208	1883.7	13.8	**0.0015**	0.001	53.4	ug/L	1701	Standard
	U	238	39.3	23.1	**-0.0000**	0.001	2507.5	ug/L	2	Standard
>	**Bi**	209	886831.6	13.4				ug/L	937372	Standard

Sample ID: PBW 56 WG556641-02
Report Date/Time: Thursday, February 11, 2016 14:18:01
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	26.7	28.6	**0.0153**	0.015	101.0	mg/L	17	Standard
K	39	18.3	41.7	**0.0222**	0.032	142.9	mg/L	15	Standard
Ca	43	41.7	25.0	**-0.3974**	1.426	358.7	mg/L	67	Standard
Fe	54	217.4	19.6	**0.0182**	0.052	288.2	mg/L	214	Standard
Fe	57	90.0	14.7	**0.0495**	0.011	22.0	mg/L	82	Standard
> **Sc-1**	45	43431.7	17.3				mg/L	47226	Standard
Cl	35	47363.8	10.6				ug/L	38729	Standard
Kr	83	5.7	27.0				ug/L	3	Standard
Br	81	1406.7	15.2				ug/L	1497	Standard
P	31	12968.9	13.3				ug/L	15233	Standard
S	34	1698.4	7.7				ug/L	1153	Standard
Sr	88	36.7	28.4				ug/L	47	Standard
C	12	113.3	22.2				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	32.1	47.0				mg/L	22	Standard
Ho-1	165	26.7	47.2				mg/L	13	Standard
Er	166	26.7	21.7				mg/L	30	Standard
I	127	2420.2	5.0				mg/L	2297	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		88.338	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.131	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: PBW 56 WG556641-02
Report Date/Time: Thursday, February 11, 2016 14:18:01
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.733
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.608
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 56 WG556641-02
Report Date/Time: Thursday, February 11, 2016 14:18:01
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: LCSW 56 WG556641-03
Sample Date/Time: Thursday, February 11, 2016 14:18:56
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53787.8	11.3				ug/L	57324	Standard
	Be	9	30105.4	16.1	**49.1063**	2.411	4.9	ug/L	2	Standard
	Al	27	29933.5	17.4	**0.2068**	0.014	6.5	ug/L	172	Standard
	Sc	45	44800.6	15.9				ug/L	47226	Standard
	Ti	47	79.3	1.9	**0.0216**	0.027	126.5	ug/L	100	Standard
	V	51	509094.7	14.0	**47.9578**	0.577	1.2	ug/L	2380	Standard
	Cr	52	490967.3	15.8	**49.3347**	1.404	2.8	ug/L	10715	Standard
	Cr	53	60733.9	17.5	**49.3257**	2.305	4.7	ug/L	293	Standard
	Mn	55	513706.3	14.2	**48.5873**	0.685	1.4	ug/L	882	Standard
	Co	59	569098.9	14.9	**49.3169**	0.898	1.8	ug/L	252	Standard
	Ni	60	141688.7	14.1	**49.0818**	0.490	1.0	ug/L	51	Standard
	Cu	65	147041.7	13.8	**50.9933**	0.902	1.8	ug/L	125	Standard
	Zn	66	71677.4	13.1	**51.1221**	0.617	1.2	ug/L	191	Standard
>	**Ge**	72	671192.1	13.5				ug/L	693220	Standard
	As	75	73998.8	11.6	**49.7038**	1.003	2.0	ug/L	-96	Standard
	Se	82	7566.3	12.2	**49.1069**	0.819	1.7	ug/L	24	Standard
	Se-1	77	4847.5	13.6	**48.2953**	0.320	0.7	ug/L	66	Standard
>	**Ga**	71	70.0	14.3				mg/L	67	Standard
	Rb	85	85.0	56.1				ug/L	25	Standard
	Y	89	618704.1	14.0				ug/L	639569	Standard
>	**Rh**	103	31.7	32.9				ug/L	8	Standard
	Mo	98	47.9	12.3	**0.0048**	0.001	11.2	ug/L	15	Standard
	Ag	107	552063.9	12.7	**49.1648**	0.134	0.3	ug/L	162	Standard
	Cd	111	166028.2	12.7	**48.9967**	0.310	0.6	mg/L	7	Standard
	Cd	114	400556.4	12.5	**49.1848**	0.778	1.6	ug/L	31	Standard
>	**In**	115	999088.8	12.8				ug/L	1030666	Standard
	Sn	118	1548.4	10.7	**0.0846**	0.003	4.0	ug/L	755	Standard
	Sb	123	360918.9	11.8	**47.9551**	0.518	1.1	ug/L	105	Standard
	Ba	135	176933.3	13.0	**48.0334**	0.486	1.0	ug/L	23	Standard
	Ce	140	206.7	13.3				ug/L	137	Standard
>	**Tb**	159	1705304.3	11.6				ug/L	1748833	Standard
	Ho	165	23.3	12.4				ug/L	13	Standard
	Tl	203	725364.8	11.2	**48.7528**	0.364	0.7	ug/L	14	Standard
	Tl	205	497494.8	15.0	**47.9562**	1.811	3.8	ug/L	10	Standard
	Pb	206	464406.4	11.3	**49.3164**	0.147	0.3	ug/L	459	Standard
	Pb	207	401684.6	11.5	**46.6137**	0.338	0.7	ug/L	424	Standard
	Pb	208	1607836.4	12.9	**48.0968**	0.854	1.8	ug/L	1701	Standard
	U	238	494592.3	14.2	**46.3857**	1.333	2.9	ug/L	2	Standard
>	**Bi**	209	923545.1	11.3				ug/L	937372	Standard

Sample ID: LCSW 56 WG556641-03
Report Date/Time: Thursday, February 11, 2016 14:21:13
Page 1

Approved: February 12, 2016

Na	23	1.7	173.2	**7.3201**	12.670	173.1	mg/L	0	Standard
Mg	24	53.3	84.5	**0.0535**	0.075	139.4	mg/L	17	Standard
K	39	21.7	48.0	**0.0402**	0.062	155.1	mg/L	15	Standard
Ca	43	56.7	27.0	**0.8113**	2.023	249.4	mg/L	67	Standard
Fe	54	203.4	17.8	**-0.0023**	0.005	220.0	mg/L	214	Standard
Fe	57	73.3	32.2	**-0.0044**	0.030	683.7	mg/L	82	Standard
Sc-1	45	44800.6	15.9				mg/L	47226	Standard
Cl	35	46688.6	12.4				ug/L	38729	Standard
Kr	83	5.0	69.3				ug/L	3	Standard
Br	81	1616.8	11.1				ug/L	1497	Standard
P	31	13702.9	13.9				ug/L	15233	Standard
S	34	1543.4	17.9				ug/L	1153	Standard
Sr	88	61.7	26.1				ug/L	47	Standard
C	12	130.0	7.7				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	25.2	58.7				mg/L	22	Standard
Ho-1	165	23.3	12.4				mg/L	13	Standard
Er	166	30.0	33.3				mg/L	30	Standard
I	127	2496.9	4.5				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.832	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.822	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 56 WG556641-03
Report Date/Time: Thursday, February 11, 2016 14:21:13
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.936
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.525
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 56 WG556641-03
Report Date/Time: Thursday, February 11, 2016 14:21:13
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602036504 WG556641-01
Sample Date/Time: Thursday, February 11, 2016 14:22:07
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82507.4	1.8				ug/L	57324	Standard
	Be	9	10.0	50.0	**0.0227**	0.006	24.3	ug/L	2	Standard
	Al	27	58076662.7	11.6	**270.1335**	35.699	13.2	ug/L	172	Standard
	Sc	45	37876.2	13.8				ug/L	47226	Standard
	Ti	47	269.0	10.1	**0.5617**	0.043	7.6	ug/L	100	Standard
	V	51	3715.7	6.2	**0.2031**	0.010	5.1	ug/L	2380	Standard
	Cr	52	10293.2	8.4	**0.2038**	0.007	3.6	ug/L	10715	Standard
	Cr	53	2296.8	8.1	**1.9826**	0.276	13.9	ug/L	293	Standard
	Mn	55	1547581.4	10.4	**172.1431**	3.597	2.1	ug/L	882	Standard
	Co	59	3281.7	11.6	**0.3097**	0.014	4.5	ug/L	252	Standard
	Ni	60	6845.2	11.6	**2.7528**	0.098	3.6	ug/L	51	Standard
	Cu	65	5908.5	15.4	**2.3824**	0.549	23.1	ug/L	125	Standard
	Zn	66	10190.2	20.9	**8.4243**	2.473	29.4	ug/L	191	Standard
>	**Ge**	72	571439.6	8.3				ug/L	693220	Standard
	As	75	5893.8	24.8	**4.7756**	1.495	31.3	ug/L	-96	Standard
	Se	82	2596.4	22.3	**20.0100**	5.908	29.5	ug/L	24	Standard
	Se-1	77	343.0	4.4	**3.3722**	0.302	8.9	ug/L	66	Standard
>	**Ga**	71	155.0	30.8				mg/L	67	Standard
	Rb	85	93658.5	9.1				ug/L	25	Standard
	Y	89	574597.1	11.3				ug/L	639569	Standard
>	**Rh**	103	2588.6	2.4				ug/L	8	Standard
	Mo	98	246.2	5.1	**0.0600**	0.002	3.2	ug/L	15	Standard
	Ag	107	206.7	20.8	**0.0028**	0.003	115.9	ug/L	162	Standard
	Cd	111	34.9	30.6	**0.0092**	0.003	32.7	mg/L	7	Standard
	Cd	114	114.4	21.8	**0.0066**	0.004	55.3	ug/L	31	Standard
>	**In**	115	896804.3	7.2				ug/L	1030666	Standard
	Sn	118	893.4	14.7	**0.0269**	0.009	32.8	ug/L	755	Standard
	Sb	123	1057.9	12.8	**0.1508**	0.030	19.7	ug/L	105	Standard
	Ba	135	8263.9	7.6	**2.4909**	0.014	0.5	ug/L	23	Standard
	Ce	140	995.0	19.7				ug/L	137	Standard
>	**Tb**	159	1480073.4	6.7				ug/L	1748833	Standard
	Ho	165	585.0	21.3				ug/L	13	Standard
	Tl	203	1127.4	6.2	**0.0974**	0.007	7.6	ug/L	14	Standard
	Tl	205	781.7	7.6	**0.0983**	0.010	10.0	ug/L	10	Standard
	Pb	206	1994.5	7.8	**0.2227**	0.006	2.6	ug/L	459	Standard
	Pb	207	1740.8	9.6	**0.2124**	0.008	3.8	ug/L	424	Standard
	Pb	208	6602.6	8.2	**0.2051**	0.004	1.7	ug/L	1701	Standard
	U	238	821.7	5.4	**0.0986**	0.003	3.0	ug/L	2	Standard
>	**Bi**	209	696501.0	7.0				ug/L	937372	Standard

Sample ID: L1602036504 WG556641-01
Report Date/Time: Thursday, February 11, 2016 14:24:24
Page 1

Approved: February 12, 2016

Na	23	21.7	53.3	**106.9005**	43.787	41.0	mg/L	0	Standard
Mg	24	607013.1	10.2	**981.1296**	39.664	4.0	mg/L	17	Standard
K	39	658.3	16.7	**3.8221**	0.202	5.3	mg/L	15	Standard
Ca	43	765.0	11.0	**72.6332**	4.705	6.5	mg/L	67	Standard
Fe	54	465.6	7.6	**0.2411**	0.066	27.2	mg/L	214	Standard
Fe	57	455.0	7.2	**1.2011**	0.103	8.6	mg/L	82	Standard
> **Sc-1**	45	37876.2	13.8				mg/L	47226	Standard
Cl	35	1179578.6	3.9				ug/L	38729	Standard
Kr	83	4.0	66.1				ug/L	3	Standard
Br	81	178101.2	2.7				ug/L	1497	Standard
P	31	15484.7	13.0				ug/L	15233	Standard
S	34	3240.3	7.1				ug/L	1153	Standard
Sr	88	7135.0	4.4				ug/L	47	Standard
C	12	526.7	7.9				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	362.0	4.2				mg/L	22	Standard
Ho-1	165	585.0	21.3				mg/L	13	Standard
Er	166	793.4	6.3				mg/L	30	Standard
I	127	624823.5	3.3				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.933	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		82.433	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602036504 WG556641-01
Report Date/Time: Thursday, February 11, 2016 14:24:24
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	87.012	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	74.304	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602036504 WG556641-01
Report Date/Time: Thursday, February 11, 2016 14:24:24
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602036504DP WG556641-04
Sample Date/Time: Thursday, February 11, 2016 14:25:19
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90214.4	9.5				ug/L	57324	Standard
	Be	9	20.0	50.0	**0.0319**	0.010	32.1	ug/L	2	Standard
	Al	27	60218437.7	12.8	**255.3240**	9.184	3.6	ug/L	172	Standard
	Sc	45	35102.4	7.3				ug/L	47226	Standard
	Ti	47	358.7	42.4	**0.8185**	0.346	42.3	ug/L	100	Standard
	V	51	3936.1	3.1	**0.2427**	0.036	15.0	ug/L	2380	Standard
	Cr	52	10306.5	6.9	**0.2454**	0.022	8.9	ug/L	10715	Standard
	Cr	53	3395.4	9.0	**3.1291**	0.098	3.1	ug/L	293	Standard
	Mn	55	1629607.3	9.1	**187.1130**	3.971	2.1	ug/L	882	Standard
	Co	59	3374.4	10.9	**0.3301**	0.014	4.3	ug/L	252	Standard
	Ni	60	7237.7	9.6	**3.0085**	0.077	2.6	ug/L	51	Standard
	Cu	65	6592.1	11.6	**2.7389**	0.485	17.7	ug/L	125	Standard
	Zn	66	10905.3	14.5	**9.2698**	1.934	20.9	ug/L	191	Standard
>	**Ge**	72	553760.2	7.1				ug/L	693220	Standard
	As	75	6441.2	14.0	**5.3334**	1.045	19.6	ug/L	-96	Standard
	Se	82	2811.5	13.0	**22.2087**	4.244	19.1	ug/L	24	Standard
	Se-1	77	487.3	2.4	**5.2706**	0.291	5.5	ug/L	66	Standard
>	**Ga**	71	203.3	29.3				mg/L	67	Standard
	Rb	85	100683.6	9.2				ug/L	25	Standard
	Y	89	566550.0	9.2				ug/L	639569	Standard
>	**Rh**	103	2983.6	1.4				ug/L	8	Standard
	Mo	98	236.3	9.1	**0.0585**	0.002	3.5	ug/L	15	Standard
	Ag	107	218.7	33.4	**0.0049**	0.009	180.4	ug/L	162	Standard
	Cd	111	64.3	61.2	**0.0199**	0.015	74.2	mg/L	7	Standard
	Cd	114	157.4	42.5	**0.0133**	0.011	82.0	ug/L	31	Standard
>	**In**	115	878842.3	6.9				ug/L	1030666	Standard
	Sn	118	781.7	2.9	**0.0164**	0.004	22.5	ug/L	755	Standard
	Sb	123	618.4	15.7	**0.0872**	0.021	23.9	ug/L	105	Standard
	Ba	135	8787.6	5.6	**2.7058**	0.046	1.7	ug/L	23	Standard
	Ce	140	870.0	15.5				ug/L	137	Standard
>	**Tb**	159	1428250.7	6.0				ug/L	1748833	Standard
	Ho	165	525.0	16.3				ug/L	13	Standard
	Tl	203	1129.0	9.2	**0.0997**	0.015	14.7	ug/L	14	Standard
	Tl	205	785.0	5.1	**0.1005**	0.007	7.2	ug/L	10	Standard
	Pb	206	1891.1	5.8	**0.2133**	0.002	1.0	ug/L	459	Standard
	Pb	207	1605.8	0.4	**0.1971**	0.014	7.2	ug/L	424	Standard
	Pb	208	6034.8	6.3	**0.1871**	0.002	0.8	ug/L	1701	Standard
	U	238	882.7	5.2	**0.1082**	0.001	0.8	ug/L	2	Standard
>	**Bi**	209	683673.0	5.7				ug/L	937372	Standard

Sample ID: L1602036504DP WG556641-04
Report Date/Time: Thursday, February 11, 2016 14:27:36
Page 1

Approved: February 12, 2016

Na	23	30.0	33.3	**167.3062**	67.679	40.5	mg/L	0	Standard
Mg	24	635690.5	11.6	**1102.7346**	56.611	5.1	mg/L	17	Standard
K	39	710.0	15.9	**4.4732**	0.680	15.2	mg/L	15	Standard
Ca	43	735.0	4.8	**75.2866**	3.628	4.8	mg/L	67	Standard
Fe	54	460.6	10.7	**0.2608**	0.020	7.5	mg/L	214	Standard
Fe	57	485.0	4.7	**1.4084**	0.191	13.5	mg/L	82	Standard
> **Sc-1**	45	35102.4	7.3				mg/L	47226	Standard
Cl	35	1317556.5	9.0				ug/L	38729	Standard
Kr	83	3.3	45.8				ug/L	3	Standard
Br	81	193134.0	3.2				ug/L	1497	Standard
P	31	15893.4	10.5				ug/L	15233	Standard
S	34	3367.0	9.2				ug/L	1153	Standard
Sr	88	8650.8	8.8				ug/L	47	Standard
C	12	630.0	7.3				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	427.4	23.0				mg/L	22	Standard
Ho-1	165	525.0	16.3				mg/L	13	Standard
Er	166	750.0	22.0				mg/L	30	Standard
I	127	710598.3	3.6				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		157.377	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		79.882	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602036504DP WG556641-04
Report Date/Time: Thursday, February 11, 2016 14:27:36
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	85.269	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	72.935	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602036504DP WG556641-04
Report Date/Time: Thursday, February 11, 2016 14:27:36
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602036504S WG556641-05
Sample Date/Time: Thursday, February 11, 2016 14:28:30
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89809.1	10.7				ug/L	57324	Standard
	Be	9	39623.8	11.3	**38.8409**	0.942	2.4	ug/L	2	Standard
	Al	27	56952111.4	13.5	**242.5581**	6.695	2.8	ug/L	172	Standard
	Sc	45	34865.3	9.3				ug/L	47226	Standard
	Ti	47	278.3	8.7	**0.6100**	0.048	7.9	ug/L	100	Standard
	V	51	453304.6	8.8	**51.6967**	0.742	1.4	ug/L	2380	Standard
	Cr	52	367513.4	9.3	**44.6531**	0.551	1.2	ug/L	10715	Standard
	Cr	53	47991.4	9.7	**47.2802**	0.754	1.6	ug/L	293	Standard
	Mn	55	1994550.7	11.1	**228.5253**	7.141	3.1	ug/L	882	Standard
	Co	59	435838.4	9.8	**45.7193**	0.767	1.7	ug/L	252	Standard
	Ni	60	111331.7	8.2	**46.6884**	0.038	0.1	ug/L	51	Standard
	Cu	65	110490.5	7.3	**46.3943**	0.462	1.0	ug/L	125	Standard
	Zn	66	62982.8	4.9	**54.4527**	1.813	3.3	ug/L	191	Standard
>	Ge	72	554686.6	8.1				ug/L	693220	Standard
	As	75	74122.6	7.1	**60.1665**	0.622	1.0	ug/L	-96	Standard
	Se	82	10653.1	6.2	**83.7814**	3.015	3.6	ug/L	24	Standard
	Se-1	77	5475.3	8.0	**66.2794**	0.186	0.3	ug/L	66	Standard
>	Ga	71	150.0	11.5				mg/L	67	Standard
	Rb	85	96343.9	9.7				ug/L	25	Standard
	Y	89	549261.3	10.9				ug/L	639569	Standard
>	Rh	103	2947.0	4.5				ug/L	8	Standard
	Mo	98	278.8	16.5	**0.0696**	0.013	18.2	ug/L	15	Standard
	Ag	107	237863.9	7.9	**23.8140**	0.371	1.6	ug/L	162	Standard
	Cd	111	134699.4	7.2	**44.7175**	0.359	0.8	mg/L	7	Standard
	Cd	114	321934.0	6.9	**44.4685**	0.394	0.9	ug/L	31	Standard
>	In	115	887812.7	6.6				ug/L	1030666	Standard
	Sn	118	916.7	16.3	**0.0306**	0.012	38.7	ug/L	755	Standard
	Sb	123	334519.0	6.3	**49.9850**	0.646	1.3	ug/L	105	Standard
	Ba	135	150262.5	5.9	**45.9246**	0.344	0.7	ug/L	23	Standard
	Ce	140	890.0	13.1				ug/L	137	Standard
>	Tb	159	1435084.1	7.3				ug/L	1748833	Standard
	Ho	165	635.0	32.1				ug/L	13	Standard
	Tl	203	578560.7	6.3	**52.1666**	0.044	0.1	ug/L	14	Standard
	Tl	205	421075.5	6.9	**54.5936**	0.770	1.4	ug/L	10	Standard
	Pb	206	398316.6	6.3	**56.7590**	0.570	1.0	ug/L	459	Standard
	Pb	207	348454.7	6.0	**54.2752**	0.249	0.5	ug/L	424	Standard
	Pb	208	1319293.7	7.2	**52.9963**	0.520	1.0	ug/L	1701	Standard
	U	238	446306.3	6.9	**56.2634**	0.429	0.8	ug/L	2	Standard
>	Bi	209	688376.2	6.3				ug/L	937372	Standard

Sample ID: L1602036504S WG556641-05
Report Date/Time: Thursday, February 11, 2016 14:30:47
Page 1

Approved: February 12, 2016

Na	23	33.3	45.8	**183.4134**	84.966	46.3	mg/L	0	Standard
Mg	24	603208.8	9.2	**1055.4346**	5.965	0.6	mg/L	17	Standard
K	39	676.7	14.9	**4.2695**	0.293	6.9	mg/L	15	Standard
Ca	43	666.7	9.4	**68.3681**	5.217	7.6	mg/L	67	Standard
Fe	54	505.7	13.4	**0.3027**	0.020	6.7	mg/L	214	Standard
Fe	57	508.3	15.8	**1.4811**	0.112	7.5	mg/L	82	Standard
> **Sc-1**	45	34865.3	9.3				mg/L	47226	Standard
Cl	35	1284581.9	9.5				ug/L	38729	Standard
Kr	83	3.0	88.2				ug/L	3	Standard
Br	81	190074.5	6.2				ug/L	1497	Standard
P	31	15569.7	11.0				ug/L	15233	Standard
S	34	3310.4	11.3				ug/L	1153	Standard
Sr	88	8549.1	10.2				ug/L	47	Standard
C	12	536.7	12.1				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	410.6	11.9				mg/L	22	Standard
Ho-1	165	635.0	32.1				mg/L	13	Standard
Er	166	753.4	4.1				mg/L	30	Standard
I	127	690690.8	3.0				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		156.670	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		80.016	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602036504S WG556641-05
Report Date/Time: Thursday, February 11, 2016 14:30:47
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.140
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		73.437
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602036504S WG556641-05
Report Date/Time: Thursday, February 11, 2016 14:30:47
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602036504SD WG556641-06
Sample Date/Time: Thursday, February 11, 2016 14:31:42
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90590.1	9.8				ug/L	57324	Standard
	Be	9	41181.2	9.8	**40.0232**	0.112	0.3	ug/L	2	Standard
	Al	27	59232147.3	10.1	**250.6039**	8.341	3.3	ug/L	172	Standard
	Sc	45	34676.5	9.6				ug/L	47226	Standard
	Ti	47	301.3	2.3	**0.6700**	0.043	6.4	ug/L	100	Standard
	V	51	449918.7	8.6	**50.9904**	1.428	2.8	ug/L	2380	Standard
	Cr	52	369826.7	8.6	**44.6636**	0.868	1.9	ug/L	10715	Standard
	Cr	53	49198.6	9.9	**48.1546**	1.197	2.5	ug/L	293	Standard
	Mn	55	2094013.3	11.4	**238.3221**	9.736	4.1	ug/L	882	Standard
	Co	59	432902.0	10.0	**45.1135**	1.155	2.6	ug/L	252	Standard
	Ni	60	111850.4	8.6	**46.5890**	0.535	1.1	ug/L	51	Standard
	Cu	65	110727.7	6.7	**46.2030**	0.504	1.1	ug/L	125	Standard
	Zn	66	62156.7	4.5	**53.3881**	1.754	3.3	ug/L	191	Standard
>	**Ge**	72	558156.8	7.5				ug/L	693220	Standard
	As	75	73948.8	6.2	**59.6592**	0.903	1.5	ug/L	-96	Standard
	Se	82	10545.7	4.0	**82.4653**	3.387	4.1	ug/L	24	Standard
	Se-1	77	5595.0	7.5	**67.3149**	1.099	1.6	ug/L	66	Standard
>	**Ga**	71	193.3	4.0				mg/L	67	Standard
	Rb	85	97441.6	6.8				ug/L	25	Standard
	Y	89	558521.3	10.4				ug/L	639569	Standard
>	**Rh**	103	3305.4	5.7				ug/L	8	Standard
	Mo	98	245.4	13.9	**0.0602**	0.005	8.0	ug/L	15	Standard
	Ag	107	346888.8	6.5	**34.7752**	0.192	0.6	ug/L	162	Standard
	Cd	111	135011.7	6.3	**44.8584**	0.341	0.8	mg/L	7	Standard
	Cd	114	323776.8	6.5	**44.7514**	0.340	0.8	ug/L	31	Standard
>	**In**	115	887567.6	7.0				ug/L	1030666	Standard
	Sn	118	841.7	8.3	**0.0222**	0.002	8.5	ug/L	755	Standard
	Sb	123	339557.0	6.2	**50.7632**	0.437	0.9	ug/L	105	Standard
	Ba	135	150750.7	6.6	**46.0821**	0.232	0.5	ug/L	23	Standard
	Ce	140	843.4	8.1				ug/L	137	Standard
>	**Tb**	159	1430638.5	7.1				ug/L	1748833	Standard
	Ho	165	620.0	27.1				ug/L	13	Standard
	Tl	203	582684.3	6.5	**52.6174**	0.360	0.7	ug/L	14	Standard
	Tl	205	424842.3	7.0	**55.1645**	0.515	0.9	ug/L	10	Standard
	Pb	206	398684.3	7.3	**56.8775**	0.708	1.2	ug/L	459	Standard
	Pb	207	345836.5	5.7	**53.9596**	0.261	0.5	ug/L	424	Standard
	Pb	208	1329530.0	7.3	**53.4927**	0.692	1.3	ug/L	1701	Standard
	U	238	449755.7	7.7	**56.7704**	0.938	1.7	ug/L	2	Standard
>	**Bi**	209	687216.9	6.0				ug/L	937372	Standard

Sample ID: L1602036504SD WG556641-06
Report Date/Time: Thursday, February 11, 2016 14:33:59
Page 1

Approved: February 12, 2016

Na	23	25.0	87.2	**146.2868**	129.067	88.2	mg/L	0	Standard
Mg	24	615110.8	9.0	**1082.5168**	11.164	1.0	mg/L	17	Standard
K	39	628.3	19.1	**3.9696**	0.391	9.9	mg/L	15	Standard
Ca	43	746.7	8.9	**77.7508**	8.770	11.3	mg/L	67	Standard
Fe	54	530.8	13.0	**0.3277**	0.031	9.5	mg/L	214	Standard
Fe	57	495.0	14.9	**1.4676**	0.347	23.7	mg/L	82	Standard
> **Sc-1**	45	34676.5	9.6				mg/L	47226	Standard
Cl	35	1318756.9	9.2				ug/L	38729	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	202453.2	5.8				ug/L	1497	Standard
P	31	14992.4	8.1				ug/L	15233	Standard
S	34	3288.7	8.0				ug/L	1153	Standard
Sr	88	8882.6	8.8				ug/L	47	Standard
C	12	633.3	11.9				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	393.3	17.5				mg/L	22	Standard
Ho-1	165	620.0	27.1				mg/L	13	Standard
Er	166	836.7	3.7				mg/L	30	Standard
I	127	701174.3	2.6				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		158.033	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		80.516	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602036504SD WG556641-06
Report Date/Time: Thursday, February 11, 2016 14:33:59
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.116
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		73.313
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602036504SD WG556641-06
Report Date/Time: Thursday, February 11, 2016 14:33:59
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602022316
Sample Date/Time: Thursday, February 11, 2016 14:34:53
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77878.5	17.2				ug/L	57324	Standard
	Be	9	11.7	24.7	**0.0257**	0.006	21.6	ug/L	2	Standard
	Al	27	22280.1	18.0	**0.1085**	0.038	35.0	ug/L	172	Standard
	Sc	45	39130.9	11.6				ug/L	47226	Standard
	Ti	47	128.0	22.0	**0.1322**	0.030	22.8	ug/L	100	Standard
	V	51	3076.1	3.2	**0.0875**	0.042	47.5	ug/L	2380	Standard
	Cr	52	11877.3	6.4	**0.2030**	0.079	39.1	ug/L	10715	Standard
	Cr	53	771.7	19.8	**0.3979**	0.074	18.7	ug/L	293	Standard
	Mn	55	4970.2	5.8	**0.3615**	0.030	8.3	ug/L	882	Standard
	Co	59	391.7	17.8	**0.0107**	0.010	89.8	ug/L	252	Standard
	Ni	60	226.7	17.4	**0.0488**	0.005	9.3	ug/L	51	Standard
	Cu	65	2936.6	28.3	**0.9628**	0.177	18.4	ug/L	125	Standard
	Zn	66	6878.3	25.0	**4.6505**	0.676	14.5	ug/L	191	Standard
>	**Ge**	72	662767.5	11.7				ug/L	693220	Standard
	As	75	2037.7	39.5	**1.4115**	0.393	27.9	ug/L	-96	Standard
	Se	82	919.8	38.0	**5.8009**	1.630	28.1	ug/L	24	Standard
	Se-1	77	105.0	9.4	**0.3627**	0.066	18.2	ug/L	66	Standard
>	**Ga**	71	150.0	24.0				mg/L	67	Standard
	Rb	85	263.3	15.3				ug/L	25	Standard
	Y	89	634744.4	9.2				ug/L	639569	Standard
>	**Rh**	103	315.0	39.9				ug/L	8	Standard
	Mo	98	38.7	3.0	**0.0020**	0.001	33.3	ug/L	15	Standard
	Ag	107	330.0	51.9	**0.0111**	0.017	155.8	ug/L	162	Standard
	Cd	111	111.2	107.5	**0.0308**	0.037	121.3	mg/L	7	Standard
	Cd	114	261.8	96.8	**0.0230**	0.033	144.2	ug/L	31	Standard
>	**In**	115	1061100.7	10.8				ug/L	1030666	Standard
	Sn	118	1175.0	19.8	**0.0380**	0.010	26.4	ug/L	755	Standard
	Sb	123	356.2	48.9	**0.0392**	0.026	67.2	ug/L	105	Standard
	Ba	135	401.0	20.6	**0.0958**	0.031	32.7	ug/L	23	Standard
	Ce	140	305.0	23.0				ug/L	137	Standard
>	**Tb**	159	1685095.3	12.2				ug/L	1748833	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	810.7	24.3	**0.0494**	0.016	33.3	ug/L	14	Standard
	Tl	205	493.3	9.8	**0.0436**	0.007	16.0	ug/L	10	Standard
	Pb	206	985.4	10.5	**0.0423**	0.015	35.9	ug/L	459	Standard
	Pb	207	826.0	14.7	**0.0363**	0.012	34.3	ug/L	424	Standard
	Pb	208	3201.1	7.6	**0.0344**	0.002	4.4	ug/L	1701	Standard
	U	238	142.3	34.2	**0.0092**	0.006	59.6	ug/L	2	Standard
>	**Bi**	209	967285.1	9.2				ug/L	937372	Standard

Sample ID: L1602022316
Report Date/Time: Thursday, February 11, 2016 14:37:10
Page 1

Approved: February 12, 2016

Na	23	1.7	173.2	**8.9156**	15.434	173.1	mg/L	0	Standard
Mg	24	375.0	4.8	**0.5671**	0.083	14.7	mg/L	17	Standard
K	39	11.7	65.5	**-0.0036**	0.047	1291.6	mg/L	15	Standard
Ca	43	48.3	21.5	**0.5672**	1.350	238.0	mg/L	67	Standard
Fe	54	217.4	18.8	**0.0311**	0.042	133.9	mg/L	214	Standard
Fe	57	101.7	54.2	**0.1149**	0.179	155.6	mg/L	82	Standard
> **Sc-1**	45	39130.9	11.6				mg/L	47226	Standard
Cl	35	74590.4	6.9				ug/L	38729	Standard
Kr	83	4.7	24.7				ug/L	3	Standard
Br	81	4894.2	23.5				ug/L	1497	Standard
P	31	15704.8	7.7				ug/L	15233	Standard
S	34	1780.1	6.8				ug/L	1153	Standard
Sr	88	53.3	85.1				ug/L	47	Standard
C	12	270.0	11.1				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	39.2	66.8				mg/L	22	Standard
Ho-1	165	13.3	21.7				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	30	Standard
I	127	23106.3	41.8				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.858	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.607	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602022316
Report Date/Time: Thursday, February 11, 2016 14:37:10
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.953
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.191
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1602022316
Report Date/Time: Thursday, February 11, 2016 14:37:10
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602025901
Sample Date/Time: Thursday, February 11, 2016 14:38:05
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80620.6	11.0				ug/L	57324	Standard
	Be	9	26.7	78.1	**0.0400**	0.019	47.6	ug/L	2	Standard
	Al	27	810087.7	14.9	**3.8349**	0.145	3.8	ug/L	172	Standard
	Sc	45	43484.9	14.9				ug/L	47226	Standard
	Ti	47	2356.2	4.0	**4.8546**	0.529	10.9	ug/L	100	Standard
	V	51	9655.3	10.6	**0.6328**	0.018	2.8	ug/L	2380	Standard
	Cr	52	17475.2	12.2	**0.6164**	0.020	3.2	ug/L	10715	Standard
	Cr	53	1306.7	18.6	**0.7422**	0.058	7.8	ug/L	293	Standard
	Mn	55	1672378.5	14.2	**145.8559**	2.122	1.5	ug/L	882	Standard
	Co	59	5535.0	14.8	**0.4175**	0.012	3.0	ug/L	252	Standard
	Ni	60	3411.4	14.5	**1.0577**	0.018	1.7	ug/L	51	Standard
	Cu	65	4029.9	12.1	**1.2323**	0.016	1.3	ug/L	125	Standard
	Zn	66	14551.4	13.1	**9.3130**	0.064	0.7	ug/L	191	Standard
>	Ge	72	728685.2	12.7				ug/L	693220	Standard
	As	75	1387.5	18.2	**0.9095**	0.046	5.0	ug/L	-96	Standard
	Se	82	279.8	23.7	**1.5213**	0.179	11.7	ug/L	24	Standard
	Se-1	77	95.7	14.0	**0.1757**	0.053	30.3	ug/L	66	Standard
>	Ga	71	743.4	16.9				mg/L	67	Standard
	Rb	85	14487.0	9.5				ug/L	25	Standard
	Y	89	701133.0	12.9				ug/L	639569	Standard
>	Rh	103	180.0	17.3				ug/L	8	Standard
	Mo	98	590.5	10.8	**0.1193**	0.003	2.2	ug/L	15	Standard
	Ag	107	282.3	18.6	**0.0044**	0.002	37.7	ug/L	162	Standard
	Cd	111	225.1	9.4	**0.0562**	0.003	5.7	mg/L	7	Standard
	Cd	114	528.2	22.7	**0.0473**	0.007	13.8	ug/L	31	Standard
>	In	115	1138337.0	10.8				ug/L	1030666	Standard
	Sn	118	2118.5	18.3	**0.1156**	0.015	13.4	ug/L	755	Standard
	Sb	123	859.7	4.9	**0.0936**	0.008	8.5	ug/L	105	Standard
	Ba	135	72446.2	11.2	**17.2534**	0.087	0.5	ug/L	23	Standard
	Ce	140	26401.5	10.8				ug/L	137	Standard
>	Tb	159	1833343.6	13.4				ug/L	1748833	Standard
	Ho	165	633.3	3.9				ug/L	13	Standard
	Tl	203	340.3	27.2	**0.0171**	0.003	19.9	ug/L	14	Standard
	Tl	205	251.7	33.5	**0.0195**	0.006	33.2	ug/L	10	Standard
	Pb	206	4297.9	11.8	**0.3524**	0.005	1.5	ug/L	459	Standard
	Pb	207	3572.1	13.4	**0.3172**	0.009	2.9	ug/L	424	Standard
	Pb	208	15106.7	12.8	**0.3496**	0.007	1.9	ug/L	1701	Standard
	U	238	352.3	14.2	**0.0258**	0.001	4.5	ug/L	2	Standard
>	Bi	209	1026993.4	11.2				ug/L	937372	Standard

Sample ID: L1602025901
Report Date/Time: Thursday, February 11, 2016 14:40:22
Page 1

Approved: February 12, 2016

Na	23	5.0	173.2	**23.7528**	41.132	173.2	mg/L	0	Standard
Mg	24	3325.4	15.3	**4.6408**	0.134	2.9	mg/L	17	Standard
K	39	226.7	23.2	**1.0910**	0.138	12.6	mg/L	15	Standard
Ca	43	90.0	25.5	**3.7674**	2.453	65.1	mg/L	67	Standard
Fe	54	2558.8	9.6	**1.6744**	0.111	6.6	mg/L	214	Standard
Fe	57	715.0	6.7	**1.7162**	0.154	9.0	mg/L	82	Standard
Sc-1	45	43484.9	14.9				mg/L	47226	Standard
Cl	35	76620.7	17.9				ug/L	38729	Standard
Kr	83	3.3	17.3				ug/L	3	Standard
Br	81	4654.1	7.9				ug/L	1497	Standard
P	31	18233.0	21.8				ug/L	15233	Standard
S	34	1750.1	9.9				ug/L	1153	Standard
Sr	88	90.0	24.2				ug/L	47	Standard
C	12	843.4	11.0				mg/L	90	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	3	Standard
Dy	164	959.6	12.8				mg/L	22	Standard
Ho-1	165	633.3	3.9				mg/L	13	Standard
Er	166	496.7	15.1				mg/L	30	Standard
I	127	46895.9	4.7				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		140.641	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.116	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602025901
Report Date/Time: Thursday, February 11, 2016 14:40:22
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.447
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.561
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602025901
Report Date/Time: Thursday, February 11, 2016 14:40:22
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602025901PS WG556980-01
Sample Date/Time: Thursday, February 11, 2016 14:41:16
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77210.7	9.6				ug/L	57324	Standard
	Be	9	44731.5	11.5	**50.9429**	1.141	2.2	ug/L	2	Standard
	Al	27	790297.9	10.4	**3.9158**	0.071	1.8	ug/L	172	Standard
	Sc	45	42946.4	12.1				ug/L	47226	Standard
	Ti	47	2262.8	6.1	**4.8251**	0.215	4.4	ug/L	100	Standard
	V	51	514334.5	7.7	**46.5558**	1.022	2.2	ug/L	2380	Standard
	Cr	52	465613.9	9.4	**44.8922**	0.473	1.1	ug/L	10715	Standard
	Cr	53	58627.7	12.5	**45.7538**	1.924	4.2	ug/L	293	Standard
	Mn	55	2202580.9	11.8	**200.0688**	5.689	2.8	ug/L	882	Standard
	Co	59	565382.1	7.2	**47.1300**	0.914	1.9	ug/L	252	Standard
	Ni	60	140337.2	9.6	**46.6610**	0.479	1.0	ug/L	51	Standard
	Cu	65	146000.4	8.6	**48.6133**	0.284	0.6	ug/L	125	Standard
	Zn	66	83639.1	7.8	**57.3086**	0.934	1.6	ug/L	191	Standard
>	**Ge**	72	699473.7	9.1				ug/L	693220	Standard
	As	75	75055.1	6.2	**48.3864**	1.497	3.1	ug/L	-96	Standard
	Se	82	8553.3	7.4	**53.2795**	0.975	1.8	ug/L	24	Standard
	Se-1	77	5056.5	6.1	**48.4354**	1.544	3.2	ug/L	66	Standard
>	**Ga**	71	615.0	11.3				mg/L	67	Standard
	Rb	85	14448.6	7.7				ug/L	25	Standard
	Y	89	669989.2	10.3				ug/L	639569	Standard
>	**Rh**	103	166.7	6.9				ug/L	8	Standard
	Mo	98	630.2	9.1	**0.1317**	0.009	6.8	ug/L	15	Standard
	Ag	107	560930.7	7.0	**45.1000**	0.256	0.6	ug/L	162	Standard
	Cd	111	177511.0	7.5	**47.2817**	0.123	0.3	mg/L	7	Standard
	Cd	114	434855.7	7.1	**48.1983**	0.238	0.5	ug/L	31	Standard
>	**In**	115	1106780.1	7.4				ug/L	1030666	Standard
	Sn	118	1901.8	7.3	**0.1021**	0.012	12.1	ug/L	755	Standard
	Sb	123	389841.7	7.3	**46.7214**	0.218	0.5	ug/L	105	Standard
	Ba	135	246421.0	7.3	**60.4021**	0.077	0.1	ug/L	23	Standard
	Ce	140	25541.6	8.4				ug/L	137	Standard
>	**Tb**	159	1742551.2	7.5				ug/L	1748833	Standard
	Ho	165	610.0	4.6				ug/L	13	Standard
	Tl	203	758992.0	7.0	**46.4603**	0.068	0.1	ug/L	14	Standard
	Tl	205	546172.2	6.6	**48.0923**	0.573	1.2	ug/L	10	Standard
	Pb	206	498209.2	7.1	**48.1852**	0.244	0.5	ug/L	459	Standard
	Pb	207	432901.8	7.2	**45.7596**	0.139	0.3	ug/L	424	Standard
	Pb	208	1779787.1	6.8	**48.5544**	0.060	0.1	ug/L	1701	Standard
	U	238	551308.4	7.2	**47.1896**	0.279	0.6	ug/L	2	Standard
>	**Bi**	209	1013939.3	7.0				ug/L	937372	Standard

Sample ID: L1602025901PS WG556980-01
Report Date/Time: Thursday, February 11, 2016 14:43:33
Page 1

Approved: February 12, 2016

Na	23	6.7	86.6	**31.9613**	27.749	86.8	mg/L	0	Standard
Mg	24	3177.0	11.5	**4.4936**	0.220	4.9	mg/L	17	Standard
K	39	236.7	11.6	**1.1834**	0.248	21.0	mg/L	15	Standard
Ca	43	93.3	20.3	**4.2110**	2.562	60.8	mg/L	67	Standard
Fe	54	2588.8	4.5	**1.7203**	0.143	8.3	mg/L	214	Standard
Fe	57	733.4	7.9	**1.7820**	0.121	6.8	mg/L	82	Standard
> **Sc-1**	45	42946.4	12.1				mg/L	47226	Standard
Cl	35	69849.1	10.4				ug/L	38729	Standard
Kr	83	2.7	86.6				ug/L	3	Standard
Br	81	3913.8	10.6				ug/L	1497	Standard
P	31	18693.3	9.3				ug/L	15233	Standard
S	34	1693.4	9.2				ug/L	1153	Standard
Sr	88	91.7	32.0				ug/L	47	Standard
C	12	800.0	15.2				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	3	Standard
Dy	164	1046.7	6.6				mg/L	22	Standard
Ho-1	165	610.0	4.6				mg/L	13	Standard
Er	166	556.7	16.7				mg/L	30	Standard
I	127	47058.0	3.1				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.693	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.902	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602025901PS WG556980-01
Report Date/Time: Thursday, February 11, 2016 14:43:33
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.385
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.168
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602025901PS WG556980-01
Report Date/Time: Thursday, February 11, 2016 14:43:33
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602025901SDL WG556980-02
Sample Date/Time: Thursday, February 11, 2016 14:44:28
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70652.2	10.5				ug/L	57324	Standard
	Be	9	21.7	48.0	**0.0383**	0.011	28.2	ug/L	2	Standard
	Al	27	148456.8	13.0	**0.7985**	0.023	2.9	ug/L	172	Standard
	Sc	45	40933.9	10.1				ug/L	47226	Standard
	Ti	47	422.7	4.4	**0.8019**	0.056	7.0	ug/L	100	Standard
	V	51	3726.4	4.1	**0.1406**	0.017	12.2	ug/L	2380	Standard
	Cr	52	10727.1	7.2	**0.0568**	0.031	54.4	ug/L	10715	Standard
	Cr	53	591.7	5.1	**0.2439**	0.043	17.8	ug/L	293	Standard
	Mn	55	311350.5	11.3	**29.1641**	0.889	3.0	ug/L	882	Standard
	Co	59	1214.0	13.6	**0.0799**	0.006	6.9	ug/L	252	Standard
	Ni	60	675.7	13.0	**0.2016**	0.013	6.3	ug/L	51	Standard
	Cu	65	1523.1	12.8	**0.4663**	0.023	4.8	ug/L	125	Standard
	Zn	66	4371.6	9.5	**2.8148**	0.029	1.0	ug/L	191	Standard
>	**Ge**	72	676145.5	8.6				ug/L	693220	Standard
	As	75	197.2	16.4	**0.1883**	0.016	8.4	ug/L	-96	Standard
	Se	82	78.3	10.0	**0.3699**	0.081	21.8	ug/L	24	Standard
	Se-1	77	65.3	12.8	**-0.0603**	0.046	76.1	ug/L	66	Standard
>	**Ga**	71	173.3	1.7				mg/L	67	Standard
	Rb	85	2885.3	8.0				ug/L	25	Standard
	Y	89	635943.8	8.7				ug/L	639569	Standard
>	**Rh**	103	100.0	34.6				ug/L	8	Standard
	Mo	98	126.9	10.6	**0.0219**	0.003	11.7	ug/L	15	Standard
	Ag	107	279.7	12.1	**0.0056**	0.001	17.4	ug/L	162	Standard
	Cd	111	59.8	11.0	**0.0142**	0.001	4.1	mg/L	7	Standard
	Cd	114	184.9	22.8	**0.0119**	0.004	29.8	ug/L	31	Standard
>	**In**	115	1071795.8	8.0				ug/L	1030666	Standard
	Sn	118	998.4	14.7	**0.0202**	0.007	32.4	ug/L	755	Standard
	Sb	123	1902.1	12.8	**0.2308**	0.047	20.3	ug/L	105	Standard
	Ba	135	13839.7	9.1	**3.4924**	0.043	1.2	ug/L	23	Standard
	Ce	140	4950.8	7.4				ug/L	137	Standard
>	**Tb**	159	1679681.2	9.2				ug/L	1748833	Standard
	Ho	165	166.7	6.2				ug/L	13	Standard
	Tl	203	173.0	15.0	**0.0076**	0.001	12.1	ug/L	14	Standard
	Tl	205	165.0	28.9	**0.0126**	0.003	24.0	ug/L	10	Standard
	Pb	206	1740.4	9.3	**0.1162**	0.001	1.2	ug/L	459	Standard
	Pb	207	1502.4	8.1	**0.1093**	0.001	1.3	ug/L	424	Standard
	Pb	208	6147.2	10.1	**0.1165**	0.004	3.1	ug/L	1701	Standard
	U	238	130.7	15.5	**0.0077**	0.001	11.8	ug/L	2	Standard
>	**Bi**	209	978801.9	8.7				ug/L	937372	Standard

Sample ID: L1602025901SDL WG556980-02
Report Date/Time: Thursday, February 11, 2016 14:46:45
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	701.7	11.8	**1.0211**	0.040	3.9	mg/L	17	Standard
K	39	70.0	50.0	**0.3049**	0.175	57.5	mg/L	15	Standard
Ca	43	46.7	22.3	**0.1072**	0.772	720.6	mg/L	67	Standard
Fe	54	645.9	8.7	**0.3440**	0.032	9.2	mg/L	214	Standard
Fe	57	243.3	27.7	**0.4859**	0.123	25.3	mg/L	82	Standard
> **Sc-1**	45	40933.9	10.1				mg/L	47226	Standard
Cl	35	59278.2	7.6				ug/L	38729	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	2240.2	10.5				ug/L	1497	Standard
P	31	15032.5	13.6				ug/L	15233	Standard
S	34	1650.1	9.2				ug/L	1153	Standard
Sr	88	53.3	27.1				ug/L	47	Standard
C	12	283.3	24.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	243.5	32.4				mg/L	22	Standard
Ho-1	165	166.7	6.2				mg/L	13	Standard
Er	166	136.7	29.6				mg/L	30	Standard
I	127	13901.5	14.6				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.252	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.537	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602025901SDL WG556980-02
Report Date/Time: Thursday, February 11, 2016 14:46:45
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.991
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.420
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1602025901SDL WG556980-02
Report Date/Time: Thursday, February 11, 2016 14:46:45
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, February 11, 2016 14:47:41
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68602.7	10.1				ug/L	57324	Standard
	Be	9	40768.6	11.4	**52.2732**	0.830	1.6	ug/L	2	Standard
	Al	27	6771141.4	13.3	**37.7388**	1.335	3.5	ug/L	172	Standard
	Sc	45	41791.3	10.6				ug/L	47226	Standard
	Ti	47	39079.4	10.6	**86.9493**	1.097	1.3	ug/L	100	Standard
	V	51	500905.5	8.7	**45.9634**	0.390	0.8	ug/L	2380	Standard
	Cr	52	458135.6	11.1	**44.7552**	0.807	1.8	ug/L	10715	Standard
	Cr	53	55753.1	10.2	**44.1809**	0.442	1.0	ug/L	293	Standard
	Mn	55	503276.3	10.2	**46.3341**	0.377	0.8	ug/L	882	Standard
	Co	59	560788.9	9.2	**47.3691**	0.202	0.4	ug/L	252	Standard
	Ni	60	136917.8	9.8	**46.1752**	0.184	0.4	ug/L	51	Standard
	Cu	65	140052.0	9.7	**47.2817**	0.849	1.8	ug/L	125	Standard
	Zn	66	69490.7	8.4	**48.2399**	0.681	1.4	ug/L	191	Standard
>	Ge	72	689609.7	9.4				ug/L	693220	Standard
	As	75	75074.3	7.7	**49.0559**	0.894	1.8	ug/L	-96	Standard
	Se	82	8214.1	8.4	**51.8766**	0.791	1.5	ug/L	24	Standard
	Se-1	77	5047.2	8.2	**48.9950**	0.801	1.6	ug/L	66	Standard
>	Ga	71	60.0	22.0				mg/L	67	Standard
	Rb	85	1248.4	15.8				ug/L	25	Standard
	Y	89	648434.5	10.4				ug/L	639569	Standard
>	Rh	103	103.3	28.4				ug/L	8	Standard
	Mo	98	459303.4	8.2	**104.5192**	2.409	2.3	ug/L	15	Standard
	Ag	107	553446.8	9.3	**46.0098**	0.428	0.9	ug/L	162	Standard
	Cd	111	175531.6	7.9	**48.3995**	0.761	1.6	mg/L	7	Standard
	Cd	114	426435.1	10.4	**48.8386**	0.673	1.4	ug/L	31	Standard
>	In	115	1070163.2	9.3				ug/L	1030666	Standard
	Sn	118	496499.6	8.9	**47.8387**	0.392	0.8	ug/L	755	Standard
	Sb	123	390831.6	7.9	**48.4817**	0.680	1.4	ug/L	105	Standard
	Ba	135	176272.7	8.0	**44.7188**	0.611	1.4	ug/L	23	Standard
	Ce	140	110.0	16.4				ug/L	137	Standard
>	Tb	159	1700191.8	11.5				ug/L	1748833	Standard
	Ho	165	30.0	16.7				ug/L	13	Standard
	Tl	203	741986.9	8.6	**47.4858**	0.449	0.9	ug/L	14	Standard
	Tl	205	532533.3	9.5	**48.9925**	0.612	1.2	ug/L	10	Standard
	Pb	206	476868.8	7.9	**48.2400**	0.227	0.5	ug/L	459	Standard
	Pb	207	428000.6	7.5	**47.3367**	0.608	1.3	ug/L	424	Standard
	Pb	208	1725241.0	8.4	**49.2091**	0.124	0.3	ug/L	1701	Standard
	U	238	545419.2	9.2	**48.7967**	0.569	1.2	ug/L	2	Standard
>	Bi	209	969711.8	8.3				ug/L	937372	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 14:49:58
Page 1

Approved: February 12, 2016

Na	23	3.3	173.2	**13.8285**	23.943	173.1	mg/L	0	Standard
Mg	24	3558.8	14.8	**5.1600**	0.404	7.8	mg/L	17	Standard
K	39	588.3	11.6	**3.0897**	0.229	7.4	mg/L	15	Standard
Ca	43	108.3	7.1	**5.6676**	0.764	13.5	mg/L	67	Standard
Fe	54	7267.8	9.0	**5.2050**	0.213	4.1	mg/L	214	Standard
Fe	57	1998.5	9.6	**5.3139**	0.096	1.8	mg/L	82	Standard
> **Sc-1**	45	41791.3	10.6				mg/L	47226	Standard
Cl	35	55485.2	12.8				ug/L	38729	Standard
Kr	83	4.7	32.7				ug/L	3	Standard
Br	81	1993.5	13.4				ug/L	1497	Standard
P	31	14995.9	14.9				ug/L	15233	Standard
S	34	1743.4	9.5				ug/L	1153	Standard
Sr	88	46.7	44.6				ug/L	47	Standard
C	12	260.0	10.2				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	22.2	69.7				mg/L	22	Standard
Ho-1	165	30.0	16.7				mg/L	13	Standard
Er	166	23.3	24.7				mg/L	30	Standard
I	127	5734.4	8.5				mg/L	2297	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	104.546		
	Al	27	75.478		
	Sc	45			
	Ti	47	86.949		
	V	51	91.927		
	Cr	52	89.510		
	Cr	53			
	Mn	55	92.668		
	Co	59	94.738		
	Ni	60	92.350		
	Cu	65	94.563		
	Zn	66	96.480		
>	Ge	72		99.479	
	As	75	98.112		
	Se	82	103.753		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 14:49:58
Page 2

Approved: February 12, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	104.519		
Ag	107	92.020		
Cd	111	96.799		
Cd	114			
In	115		103.832	
Sn	118	95.677		
Sb	123	96.963		
Ba	135	89.438		
Ce	140			
Tb	159			
Ho	165			
Tl	203	94.972		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.418		
U	238	97.593		
Bi	209		103.450	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Ti	47	
QC Std 6	Cr	52	

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 14:49:58
Page 3

Approved: February 12, 2016

QC Std 6	Ba	135

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 14:49:58
Page 4

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, February 11, 2016 14:50:52
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64908.6	12.9				ug/L	57324	Standard
	Be	9	10.0		0.0257	0.002	6.4	ug/L	2	Standard
	Al	27	1173.4	89.9	0.0010	0.005	487.4	ug/L	172	Standard
	Sc	45	41168.3	14.1				ug/L	47226	Standard
	Ti	47	71.0	24.7	0.0006	0.022	3570.2	ug/L	100	Standard
	V	51	2224.7	5.6	0.0039	0.015	393.0	ug/L	2380	Standard
	Cr	52	9141.1	6.4	-0.0832	0.054	65.4	ug/L	10715	Standard
	Cr	53	365.0	18.0	0.0630	0.032	51.2	ug/L	293	Standard
	Mn	55	882.0	11.3	-0.0335	0.001	2.6	ug/L	882	Standard
	Co	59	236.3	23.3	-0.0038	0.003	74.7	ug/L	252	Standard
	Ni	60	54.0	33.4	-0.0119	0.004	32.7	ug/L	51	Standard
	Cu	65	460.3	16.8	0.1040	0.014	13.3	ug/L	125	Standard
	Zn	66	413.0	9.4	0.0050	0.011	210.6	ug/L	191	Standard
>	Ge	72	662893.8	12.3				ug/L	693220	Standard
	As	75	-34.8	45.9	0.0333	0.012	36.3	ug/L	-96	Standard
	Se	82	51.9	9.1	0.2034	0.023	11.1	ug/L	24	Standard
	Se-1	77	69.7	9.3	0.0098	0.148	1508.5	ug/L	66	Standard
>	Ga	71	41.7	54.1				mg/L	67	Standard
	Rb	85	28.3	50.9				ug/L	25	Standard
	Y	89	622528.0	13.9				ug/L	639569	Standard
>	Rh	103	65.0	27.7				ug/L	8	Standard
	Mo	98	209.5	23.5	0.0418	0.005	13.1	ug/L	15	Standard
	Ag	107	224.3	26.4	0.0015	0.003	175.1	ug/L	162	Standard
	Cd	111	21.6	66.4	0.0037	0.003	87.3	mg/L	7	Standard
	Cd	114	83.1	20.7	0.0007	0.001	130.3	ug/L	31	Standard
>	In	115	1037314.1	12.7				ug/L	1030666	Standard
	Sn	118	1126.7	9.4	0.0384	0.023	58.9	ug/L	755	Standard
	Sb	123	714.1	13.4	0.0862	0.023	26.8	ug/L	105	Standard
	Ba	135	34.0	54.5	-0.0002	0.004	1999.7	ug/L	23	Standard
	Ce	140	25.0	52.9				ug/L	137	Standard
>	Tb	159	1640206.6	12.6				ug/L	1748833	Standard
	Ho	165	23.3	61.9				ug/L	13	Standard
	Tl	203	116.3	64.6	0.0040	0.004	95.5	ug/L	14	Standard
	Tl	205	68.3	75.1	0.0038	0.004	101.7	ug/L	10	Standard
	Pb	206	534.3	19.6	-0.0038	0.005	121.2	ug/L	459	Standard
	Pb	207	455.3	15.3	-0.0045	0.004	79.2	ug/L	424	Standard
	Pb	208	1940.1	20.0	-0.0015	0.005	347.4	ug/L	1701	Standard
	U	238	84.7	77.7	0.0034	0.005	141.8	ug/L	2	Standard
>	Bi	209	956566.0	11.7				ug/L	937372	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 14:53:09
Page 1

Approved: February 12, 2016

Na	23	1.7	173.2	**8.5346**	14.774	173.1	mg/L	0	Standard
Mg	24	83.3	29.6	**0.1045**	0.050	48.2	mg/L	17	Standard
K	39	5.0	173.2	**-0.0477**	0.041	85.0	mg/L	15	Standard
Ca	43	33.3	8.7	**-1.0992**	0.395	36.0	mg/L	67	Standard
Fe	54	185.9	6.4	**-0.0020**	0.010	514.5	mg/L	214	Standard
Fe	57	90.0	20.0	**0.0663**	0.071	107.6	mg/L	82	Standard
> **Sc-1**	45	41168.3	14.1				mg/L	47226	Standard
Cl	35	56298.5	10.5				ug/L	38729	Standard
Kr	83	3.7	56.8				ug/L	3	Standard
Br	81	1790.1	4.2				ug/L	1497	Standard
P	31	16519.0	9.1				ug/L	15233	Standard
S	34	1801.8	12.4				ug/L	1153	Standard
Sr	88	41.7	38.6				ug/L	47	Standard
C	12	163.3	17.7				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	18.6	97.8				mg/L	22	Standard
Ho-1	165	23.3	61.9				mg/L	13	Standard
Er	166	30.0	66.7				mg/L	30	Standard
I	127	4073.9	5.0				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.625	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 14:53:09
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.645
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.048
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 14:53:09
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602026202
Sample Date/Time: Thursday, February 11, 2016 14:54:05
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67075.6	8.8				ug/L	57324	Standard
	Be	9	13.3	21.7	**0.0298**	0.005	17.0	ug/L	2	Standard
	Al	27	7879360.9	12.7	**44.9168**	1.708	3.8	ug/L	172	Standard
	Sc	45	45311.5	10.5				ug/L	47226	Standard
	Ti	47	427.0	14.5	**0.7447**	0.053	7.2	ug/L	100	Standard
	V	51	2958.0	9.0	**0.0506**	0.023	45.9	ug/L	2380	Standard
	Cr	52	11178.5	12.2	**0.0277**	0.011	38.6	ug/L	10715	Standard
	Cr	53	1203.4	7.3	**0.6790**	0.038	5.5	ug/L	293	Standard
	Mn	55	50955768.2	10.3	**4494.2780**	92.298	2.1	ug/L	882	Standard
	Co	59	30987.5	10.2	**2.4768**	0.057	2.3	ug/L	252	Standard
	Ni	60	5183.9	11.0	**1.6398**	0.008	0.5	ug/L	51	Standard
	Cu	65	1419.1	11.2	**0.4003**	0.001	0.2	ug/L	125	Standard
	Zn	66	4604.0	9.5	**2.7757**	0.086	3.1	ug/L	191	Standard
>	**Ge**	72	722660.7	11.4				ug/L	693220	Standard
	As	75	1453.0	7.6	**0.9643**	0.054	5.6	ug/L	-96	Standard
	Se	82	353.1	11.0	**2.0015**	0.232	11.6	ug/L	24	Standard
	Se-1	77	145.3	8.0	**0.6528**	0.045	6.8	ug/L	66	Standard
>	**Ga**	71	323.3	7.9				mg/L	67	Standard
	Rb	85	24034.2	11.8				ug/L	25	Standard
	Y	89	663686.8	11.1				ug/L	639569	Standard
>	**Rh**	103	65.0	40.7				ug/L	8	Standard
	Mo	98	217.6	5.6	**0.0419**	0.003	6.4	ug/L	15	Standard
	Ag	107	178.0	24.6	**-0.0032**	0.002	61.5	ug/L	162	Standard
	Cd	111	72.6	13.7	**0.0174**	0.001	5.1	mg/L	7	Standard
	Cd	114	146.3	23.3	**0.0073**	0.003	41.1	ug/L	31	Standard
>	**In**	115	1088632.8	10.7				ug/L	1030666	Standard
	Sn	118	1193.4	16.7	**0.0371**	0.007	17.8	ug/L	755	Standard
	Sb	123	630.3	6.1	**0.0706**	0.012	17.5	ug/L	105	Standard
	Ba	135	300743.7	7.8	**75.0969**	2.159	2.9	ug/L	23	Standard
	Ce	140	10440.3	7.5				ug/L	137	Standard
>	**Tb**	159	1748449.7	10.2				ug/L	1748833	Standard
	Ho	165	298.3	13.5				ug/L	13	Standard
	Tl	203	1442.1	6.8	**0.0860**	0.003	3.6	ug/L	14	Standard
	Tl	205	946.7	10.9	**0.0821**	0.008	10.3	ug/L	10	Standard
	Pb	206	1294.7	9.2	**0.0683**	0.001	0.9	ug/L	459	Standard
	Pb	207	1102.4	12.2	**0.0622**	0.005	7.4	ug/L	424	Standard
	Pb	208	4653.6	8.0	**0.0712**	0.002	2.3	ug/L	1701	Standard
	U	238	248.7	10.2	**0.0177**	0.002	11.3	ug/L	2	Standard
>	**Bi**	209	1003480.4	9.3				ug/L	937372	Standard

Sample ID: L1602026202
Report Date/Time: Thursday, February 11, 2016 14:56:22
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4575.7	11.9	**6.1349**	0.272	4.4	mg/L	17	Standard
K	39	33.3	45.8	**0.0936**	0.076	80.8	mg/L	15	Standard
Ca	43	246.7	1.2	**16.5674**	1.940	11.7	mg/L	67	Standard
Fe	54	37101.3	8.9	**25.0236**	0.456	1.8	mg/L	214	Standard
Fe	57	9843.2	10.1	**24.8014**	0.188	0.8	mg/L	82	Standard
> **Sc-1**	45	45311.5	10.5				mg/L	47226	Standard
Cl	35	58676.8	13.8				ug/L	38729	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	49795.7	11.1				ug/L	1497	Standard
P	31	23520.1	11.3				ug/L	15233	Standard
S	34	1931.8	9.6				ug/L	1153	Standard
Sr	88	168.3	9.5				ug/L	47	Standard
C	12	430.0	14.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	351.5	16.9				mg/L	22	Standard
Ho-1	165	298.3	13.5				mg/L	13	Standard
Er	166	316.7	12.8				mg/L	30	Standard
I	127	6586498.5	1.4				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.012	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.247	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602026202
Report Date/Time: Thursday, February 11, 2016 14:56:22
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.624
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.053
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602026202
Report Date/Time: Thursday, February 11, 2016 14:56:22
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602026206
Sample Date/Time: Thursday, February 11, 2016 14:57:17
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67614.6	8.3				ug/L	57324	Standard
	Be	9	18.3	31.5	**0.0356**	0.005	15.4	ug/L	2	Standard
	Al	27	7831185.8	12.0	**44.2936**	1.757	4.0	ug/L	172	Standard
	Sc	45	45782.9	10.6				ug/L	47226	Standard
	Ti	47	475.3	12.2	**0.8306**	0.020	2.4	ug/L	100	Standard
	V	51	3155.3	10.0	**0.0622**	0.002	2.8	ug/L	2380	Standard
	Cr	52	11245.9	9.8	**0.0166**	0.010	61.1	ug/L	10715	Standard
	Cr	53	1180.0	8.1	**0.6462**	0.073	11.3	ug/L	293	Standard
	Mn	55	51567888.7	11.2	**4463.3477**	28.994	0.6	ug/L	882	Standard
	Co	59	30592.1	11.5	**2.3980**	0.023	0.9	ug/L	252	Standard
	Ni	60	4300.9	11.9	**1.3301**	0.038	2.8	ug/L	51	Standard
	Cu	65	1162.7	8.4	**0.3116**	0.011	3.6	ug/L	125	Standard
	Zn	66	4601.7	10.0	**2.7174**	0.037	1.4	ug/L	191	Standard
>	**Ge**	72	735421.1	10.6				ug/L	693220	Standard
	As	75	1481.3	12.0	**0.9621**	0.017	1.8	ug/L	-96	Standard
	Se	82	362.8	12.2	**2.0127**	0.099	4.9	ug/L	24	Standard
	Se-1	77	134.7	13.3	**0.5271**	0.105	19.9	ug/L	66	Standard
>	**Ga**	71	315.0	21.5				mg/L	67	Standard
	Rb	85	23910.6	9.6				ug/L	25	Standard
	Y	89	709011.5	8.9				ug/L	639569	Standard
>	**Rh**	103	68.3	11.2				ug/L	8	Standard
	Mo	98	196.6	12.4	**0.0359**	0.006	17.5	ug/L	15	Standard
	Ag	107	155.3	6.2	**-0.0052**	0.000	6.0	ug/L	162	Standard
	Cd	111	68.0	10.8	**0.0158**	0.003	19.8	mg/L	7	Standard
	Cd	114	156.3	20.6	**0.0081**	0.004	51.5	ug/L	31	Standard
>	**In**	115	1121842.2	7.2				ug/L	1030666	Standard
	Sn	118	1133.4	6.1	**0.0288**	0.004	15.4	ug/L	755	Standard
	Sb	123	510.5	12.3	**0.0538**	0.011	20.6	ug/L	105	Standard
	Ba	135	309517.4	8.8	**74.7885**	1.226	1.6	ug/L	23	Standard
	Ce	140	10817.2	6.5				ug/L	137	Standard
>	**Tb**	159	1784849.2	10.4				ug/L	1748833	Standard
	Ho	165	316.7	6.6				ug/L	13	Standard
	Tl	203	1347.1	0.8	**0.0795**	0.007	8.4	ug/L	14	Standard
	Tl	205	1028.4	9.5	**0.0885**	0.009	10.1	ug/L	10	Standard
	Pb	206	1270.1	6.5	**0.0648**	0.005	7.7	ug/L	459	Standard
	Pb	207	1039.4	8.9	**0.0545**	0.004	7.2	ug/L	424	Standard
	Pb	208	4540.9	7.6	**0.0668**	0.001	1.9	ug/L	1701	Standard
	U	238	233.0	4.4	**0.0161**	0.001	4.8	ug/L	2	Standard
>	**Bi**	209	1013985.8	8.2				ug/L	937372	Standard

Sample ID: L1602026206
Report Date/Time: Thursday, February 11, 2016 14:59:34
Page 1

Approved: February 12, 2016

Na	23	5.0	173.2	**18.8789**	32.691	173.2	mg/L	0	Standard
Mg	24	4679.1	7.7	**6.2276**	0.330	5.3	mg/L	17	Standard
K	39	40.0	21.7	**0.1237**	0.024	19.3	mg/L	15	Standard
Ca	43	280.0	23.6	**18.8667**	4.383	23.2	mg/L	67	Standard
Fe	54	38660.3	9.7	**25.7971**	0.278	1.1	mg/L	214	Standard
Fe	57	10206.8	8.8	**25.4812**	0.502	2.0	mg/L	82	Standard
Sc-1	45	45782.9	10.6				mg/L	47226	Standard
Cl	35	60581.7	10.0				ug/L	38729	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	49601.1	3.5				ug/L	1497	Standard
P	31	23790.6	13.6				ug/L	15233	Standard
S	34	1946.8	10.2				ug/L	1153	Standard
Sr	88	185.0	21.6				ug/L	47	Standard
C	12	336.7	9.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	434.2	8.0				mg/L	22	Standard
Ho-1	165	316.7	6.6				mg/L	13	Standard
Er	166	260.0	24.0				mg/L	30	Standard
I	127	6754562.9	0.9				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		117.952	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.088	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1602026206
Report Date/Time: Thursday, February 11, 2016 14:59:34
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.846
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.173
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602026206
Report Date/Time: Thursday, February 11, 2016 14:59:34
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602026211
Sample Date/Time: Thursday, February 11, 2016 15:00:28
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60743.3	14.7				ug/L	57324	Standard
	Be	9	15.0	88.2	**0.0322**	0.015	47.5	ug/L	2	Standard
	Al	27	21684.3	21.5	**0.1305**	0.009	7.1	ug/L	172	Standard
	Sc	45	42347.1	18.3				ug/L	47226	Standard
	Ti	47	74.7	24.7	**0.0007**	0.011	1590.9	ug/L	100	Standard
	V	51	2355.5	11.5	**0.0055**	0.014	250.0	ug/L	2380	Standard
	Cr	52	9988.7	12.7	**-0.0456**	0.048	104.6	ug/L	10715	Standard
	Cr	53	510.0	15.1	**0.1656**	0.048	28.8	ug/L	293	Standard
	Mn	55	20777.5	24.8	**1.7642**	0.138	7.8	ug/L	882	Standard
	Co	59	724.0	14.4	**0.0363**	0.002	5.1	ug/L	252	Standard
	Ni	60	541.7	17.5	**0.1506**	0.012	8.2	ug/L	51	Standard
	Cu	65	2271.8	18.3	**0.7010**	0.006	0.8	ug/L	125	Standard
	Zn	66	5937.5	16.9	**3.8050**	0.041	1.1	ug/L	191	Standard
>	**Ge**	72	697540.4	17.6				ug/L	693220	Standard
	As	75	-73.4	38.5	**0.0074**	0.024	318.4	ug/L	-96	Standard
	Se	82	36.2	35.0	**0.0859**	0.056	65.8	ug/L	24	Standard
	Se-1	77	79.3	11.0	**0.0623**	0.051	81.7	ug/L	66	Standard
>	**Ga**	71	55.0	24.1				mg/L	67	Standard
	Rb	85	223.3	31.8				ug/L	25	Standard
	Y	89	651963.9	17.0				ug/L	639569	Standard
>	**Rh**	103	31.7	45.6				ug/L	8	Standard
	Mo	98	46.3	17.9	**0.0038**	0.003	67.8	ug/L	15	Standard
	Ag	107	169.0	8.2	**-0.0034**	0.001	35.9	ug/L	162	Standard
	Cd	111	101.3	13.2	**0.0257**	0.001	3.1	mg/L	7	Standard
	Cd	114	214.7	21.3	**0.0156**	0.005	31.2	ug/L	31	Standard
>	**In**	115	1071656.4	16.1				ug/L	1030666	Standard
	Sn	118	1255.1	12.8	**0.0457**	0.005	11.9	ug/L	755	Standard
	Sb	123	207.5	7.6	**0.0192**	0.006	30.8	ug/L	105	Standard
	Ba	135	1027.4	14.7	**0.2517**	0.005	2.0	ug/L	23	Standard
	Ce	140	871.7	17.7				ug/L	137	Standard
>	**Tb**	159	1704031.3	15.3				ug/L	1748833	Standard
	Ho	165	53.3	47.2				ug/L	13	Standard
	Tl	203	436.0	12.4	**0.0249**	0.002	8.9	ug/L	14	Standard
	Tl	205	328.3	14.5	**0.0282**	0.001	3.8	ug/L	10	Standard
	Pb	206	749.4	10.1	**0.0184**	0.005	27.5	ug/L	459	Standard
	Pb	207	652.3	18.0	**0.0169**	0.003	17.9	ug/L	424	Standard
	Pb	208	2705.1	15.7	**0.0204**	0.001	4.4	ug/L	1701	Standard
	U	238	133.0	19.8	**0.0081**	0.001	16.8	ug/L	2	Standard
>	**Bi**	209	964761.7	15.9				ug/L	937372	Standard

Sample ID: L1602026211
Report Date/Time: Thursday, February 11, 2016 15:02:45
Page 1

Approved: February 12, 2016

Na	23	1.7	173.2	**8.1038**	14.027	173.1	mg/L	0	Standard
Mg	24	131.7	13.3	**0.1671**	0.011	6.5	mg/L	17	Standard
K	39	1.7	173.2	**-0.0617**	0.016	26.6	mg/L	15	Standard
Ca	43	48.3	41.8	**0.0139**	1.040	7481.6	mg/L	67	Standard
Fe	54	207.8	3.7	**0.0119**	0.024	199.3	mg/L	214	Standard
Fe	57	76.7	32.2	**0.0289**	0.101	350.3	mg/L	82	Standard
> **Sc-1**	45	42347.1	18.3				mg/L	47226	Standard
Cl	35	55645.6	15.4				ug/L	38729	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2253.5	23.4				ug/L	1497	Standard
P	31	16846.3	21.1				ug/L	15233	Standard
S	34	1790.1	3.4				ug/L	1153	Standard
Sr	88	48.3	29.9				ug/L	47	Standard
C	12	230.0	26.4				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	80.8	23.7				mg/L	22	Standard
Ho-1	165	53.3	47.2				mg/L	13	Standard
Er	166	53.3	78.1				mg/L	30	Standard
I	127	116363.8	65.3				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.966	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.623	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602026211
Report Date/Time: Thursday, February 11, 2016 15:02:45
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.977
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.922
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602028701
Sample Date/Time: Thursday, February 11, 2016 15:03:40
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67733.1	6.4				ug/L	57324	Standard
	Be	9	26.7	47.2	**0.0474**	0.019	39.4	ug/L	2	Standard
	Al	27	11178440.2	11.2	**63.1166**	2.991	4.7	ug/L	172	Standard
	Sc	45	43740.2	11.2				ug/L	47226	Standard
	Ti	47	125.0	27.5	**0.1077**	0.051	47.6	ug/L	100	Standard
	V	51	2845.0	5.7	**0.0466**	0.014	30.3	ug/L	2380	Standard
	Cr	52	11863.0	5.2	**0.1255**	0.057	45.6	ug/L	10715	Standard
	Cr	53	705.0	7.2	**0.3126**	0.048	15.2	ug/L	293	Standard
	Mn	55	321196.4	11.5	**28.8715**	1.318	4.6	ug/L	882	Standard
	Co	59	4363.3	12.0	**0.3357**	0.010	3.0	ug/L	252	Standard
	Ni	60	6711.5	13.1	**2.1805**	0.070	3.2	ug/L	51	Standard
	Cu	65	1180.0	11.7	**0.3330**	0.036	10.7	ug/L	125	Standard
	Zn	66	6535.8	11.8	**4.1604**	0.093	2.2	ug/L	191	Standard
>	**Ge**	72	705258.8	10.3				ug/L	693220	Standard
	As	75	101.3	16.4	**0.1230**	0.017	13.6	ug/L	-96	Standard
	Se	82	88.7	2.6	**0.4144**	0.068	16.4	ug/L	24	Standard
	Se-1	77	81.7	11.3	**0.0814**	0.161	197.8	ug/L	66	Standard
>	**Ga**	71	48.3	15.8				mg/L	67	Standard
	Rb	85	10020.0	8.3				ug/L	25	Standard
	Y	89	661406.0	11.7				ug/L	639569	Standard
>	**Rh**	103	83.3	18.3				ug/L	8	Standard
	Mo	98	112.8	3.8	**0.0185**	0.002	12.1	ug/L	15	Standard
	Ag	107	149.7	22.9	**-0.0052**	0.003	56.4	ug/L	162	Standard
	Cd	111	82.8	14.6	**0.0203**	0.003	16.2	mg/L	7	Standard
	Cd	114	182.0	16.1	**0.0114**	0.001	13.2	ug/L	31	Standard
>	**In**	115	1085096.2	9.0				ug/L	1030666	Standard
	Sn	118	1043.4	8.7	**0.0237**	0.004	16.7	ug/L	755	Standard
	Sb	123	270.0	7.2	**0.0263**	0.005	19.8	ug/L	105	Standard
	Ba	135	21223.9	9.5	**5.2963**	0.033	0.6	ug/L	23	Standard
	Ce	140	2026.8	10.0				ug/L	137	Standard
>	**Tb**	159	1755123.0	9.9				ug/L	1748833	Standard
	Ho	165	291.7	11.4				ug/L	13	Standard
	Tl	203	745.0	10.4	**0.0455**	0.007	14.6	ug/L	14	Standard
	Tl	205	598.3	13.6	**0.0542**	0.010	17.9	ug/L	10	Standard
	Pb	206	882.0	7.2	**0.0327**	0.003	9.8	ug/L	459	Standard
	Pb	207	761.0	7.6	**0.0304**	0.005	14.9	ug/L	424	Standard
	Pb	208	3099.5	6.8	**0.0330**	0.005	16.5	ug/L	1701	Standard
	U	238	223.3	12.9	**0.0166**	0.003	17.8	ug/L	2	Standard
>	**Bi**	209	951943.9	8.0				ug/L	937372	Standard

Sample ID: L1602028701
Report Date/Time: Thursday, February 11, 2016 15:05:57
Page 1

Approved: February 12, 2016

Na	23	11.7	107.9	**50.0096**	56.106	112.2	mg/L	0	Standard
Mg	24	33973.4	11.0	**47.3671**	0.576	1.2	mg/L	17	Standard
K	39	121.7	24.1	**0.5686**	0.224	39.3	mg/L	15	Standard
Ca	43	390.0	12.2	**29.5969**	2.146	7.3	mg/L	67	Standard
Fe	54	245.7	6.2	**0.0319**	0.015	46.4	mg/L	214	Standard
Fe	57	165.0	21.0	**0.2420**	0.061	25.4	mg/L	82	Standard
> **Sc-1**	45	43740.2	11.2				mg/L	47226	Standard
Cl	35	181498.3	9.9				ug/L	38729	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	7285.1	6.7				ug/L	1497	Standard
P	31	17221.5	11.4				ug/L	15233	Standard
S	34	1825.1	12.2				ug/L	1153	Standard
Sr	88	323.3	14.0				ug/L	47	Standard
C	12	200.0	30.4				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	374.1	13.9				mg/L	22	Standard
Ho-1	165	291.7	11.4				mg/L	13	Standard
Er	166	263.3	28.5				mg/L	30	Standard
I	127	39049.0	11.4				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.159	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.737	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602028701
Report Date/Time: Thursday, February 11, 2016 15:05:57
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.281
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.555
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602035701
Sample Date/Time: Thursday, February 11, 2016 15:06:51
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68548.6	7.2				ug/L	57324	Standard
	Be	9	88.3	21.4	**0.1249**	0.017	13.9	ug/L	2	Standard
	Al	27	8832361.3	12.0	**49.2672**	2.339	4.7	ug/L	172	Standard
	Sc	45	47266.0	12.1				ug/L	47226	Standard
	Ti	47	3995.9	29.0	**8.6848**	1.763	20.3	ug/L	100	Standard
	V	51	11824.6	10.0	**0.8820**	0.024	2.7	ug/L	2380	Standard
	Cr	52	31407.1	10.2	**2.1120**	0.054	2.5	ug/L	10715	Standard
	Cr	53	15481.3	11.5	**12.1247**	0.316	2.6	ug/L	293	Standard
	Mn	55	11687364.4	9.5	**1082.5236**	9.286	0.9	ug/L	882	Standard
	Co	59	87937.0	10.5	**7.4244**	0.122	1.6	ug/L	252	Standard
	Ni	60	397691.4	10.3	**134.5575**	2.279	1.7	ug/L	51	Standard
	Cu	65	24870.1	7.7	**8.3845**	0.205	2.4	ug/L	125	Standard
	Zn	66	322363.7	9.1	**225.4462**	0.739	0.3	ug/L	191	Standard
>	Ge	72	687284.9	9.0				ug/L	693220	Standard
	As	75	269.7	87.2	**0.2257**	0.135	59.7	ug/L	-96	Standard
	Se	82	87.1	72.6	**0.3931**	0.350	89.0	ug/L	24	Standard
	Se-1	77	1152.4	3.5	**10.7019**	0.658	6.1	ug/L	66	Standard
>	Ga	71	665.0	5.3				mg/L	67	Standard
	Rb	85	73125.6	10.3				ug/L	25	Standard
	Y	89	653253.6	12.9				ug/L	639569	Standard
>	Rh	103	781.7	36.2				ug/L	8	Standard
	Mo	98	149200.6	8.8	**35.0891**	0.198	0.6	ug/L	15	Standard
	Ag	107	312.7	68.8	**0.0094**	0.019	196.5	ug/L	162	Standard
	Cd	111	1428.3	10.4	**0.4052**	0.033	8.1	mg/L	7	Standard
	Cd	114	3893.3	11.7	**0.4520**	0.027	6.1	ug/L	31	Standard
>	In	115	1034206.9	8.3				ug/L	1030666	Standard
	Sn	118	4682.4	5.6	**0.3925**	0.012	3.2	ug/L	755	Standard
	Sb	123	18899.2	6.9	**2.4190**	0.038	1.6	ug/L	105	Standard
	Ba	135	92769.5	7.3	**24.3413**	0.275	1.1	ug/L	23	Standard
	Ce	140	12762.1	6.2				ug/L	137	Standard
>	Tb	159	1683872.9	9.4				ug/L	1748833	Standard
	Ho	165	155.0	14.8				ug/L	13	Standard
	Tl	203	831.4	51.4	**0.0562**	0.031	54.9	ug/L	14	Standard
	Tl	205	448.3	29.1	**0.0439**	0.013	30.5	ug/L	10	Standard
	Pb	206	7165.7	10.7	**0.7500**	0.022	2.9	ug/L	459	Standard
	Pb	207	5960.2	8.5	**0.6804**	0.021	3.1	ug/L	424	Standard
	Pb	208	24707.0	11.1	**0.7287**	0.025	3.5	ug/L	1701	Standard
	U	238	293.0	18.1	**0.0254**	0.005	18.9	ug/L	2	Standard
>	Bi	209	869114.9	8.0				ug/L	937372	Standard

Sample ID: L1602035701
Report Date/Time: Thursday, February 11, 2016 15:09:08
Page 1

Approved: February 12, 2016

Na	23	3.3	86.6	**12.9833**	11.347	87.4	mg/L	0	Standard
Mg	24	251532.1	9.2	**325.5113**	17.261	5.3	mg/L	17	Standard
K	39	730.0	2.1	**3.4248**	0.385	11.2	mg/L	15	Standard
Ca	43	108.3	25.4	**4.4041**	1.126	25.6	mg/L	67	Standard
Fe	54	39571.4	6.8	**25.6749**	1.623	6.3	mg/L	214	Standard
Fe	57	10802.2	9.1	**26.1550**	0.761	2.9	mg/L	82	Standard
> **Sc-1**	45	47266.0	12.1				mg/L	47226	Standard
Cl	35	88010.3	11.2				ug/L	38729	Standard
Kr	83	2.3	137.8				ug/L	3	Standard
Br	81	46207.3	7.3				ug/L	1497	Standard
P	31	24712.1	15.3				ug/L	15233	Standard
S	34	1621.8	6.3				ug/L	1153	Standard
Sr	88	106.7	11.8				ug/L	47	Standard
C	12	793.4	20.4				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	66.1				mg/L	3	Standard
Dy	164	231.5	48.7				mg/L	22	Standard
Ho-1	165	155.0	14.8				mg/L	13	Standard
Er	166	176.7	3.3				mg/L	30	Standard
I	127	78900.2	5.1				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.582	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602035701
Report Date/Time: Thursday, February 11, 2016 15:09:08
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.344	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	92.718	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1602035701
Report Date/Time: Thursday, February 11, 2016 15:09:08
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602036501
Sample Date/Time: Thursday, February 11, 2016 15:10:03
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75288.5	4.0				ug/L	57324	Standard
	Be	9	918.4	13.6	**1.0856**	0.142	13.1	ug/L	2	Standard
	Al	27	30869422.3	8.9	**156.9422**	8.194	5.2	ug/L	172	Standard
	Sc	45	44380.3	10.1				ug/L	47226	Standard
	Ti	47	321.3	7.4	**0.5610**	0.076	13.6	ug/L	100	Standard
	V	51	18955.5	11.5	**1.5420**	0.048	3.1	ug/L	2380	Standard
	Cr	52	29967.2	11.4	**1.9703**	0.068	3.4	ug/L	10715	Standard
	Cr	53	3697.1	14.8	**2.7134**	0.181	6.7	ug/L	293	Standard
	Mn	55	16042695.4	10.2	**1487.7604**	17.992	1.2	ug/L	882	Standard
	Co	59	202079.2	10.6	**17.1202**	0.265	1.5	ug/L	252	Standard
	Ni	60	93464.0	10.9	**31.6401**	0.595	1.9	ug/L	51	Standard
	Cu	65	7305.1	11.9	**2.4201**	0.073	3.0	ug/L	125	Standard
	Zn	66	119970.6	10.6	**83.7812**	1.243	1.5	ug/L	191	Standard
>	**Ge**	72	686217.2	9.1				ug/L	693220	Standard
	As	75	9079.9	9.9	**6.0031**	0.047	0.8	ug/L	-96	Standard
	Se	82	178.7	9.8	**0.9989**	0.086	8.6	ug/L	24	Standard
	Se-1	77	175.3	6.3	**1.0215**	0.048	4.7	ug/L	66	Standard
>	**Ga**	71	935.0	11.1				mg/L	67	Standard
	Rb	85	168680.4	9.0				ug/L	25	Standard
	Y	89	1130201.2	6.9				ug/L	639569	Standard
>	**Rh**	103	543.3	4.6				ug/L	8	Standard
	Mo	98	370.9	11.6	**0.0810**	0.004	5.3	ug/L	15	Standard
	Ag	107	157.0	11.2	**-0.0040**	0.001	13.2	ug/L	162	Standard
	Cd	111	615.4	7.3	**0.1748**	0.001	0.6	mg/L	7	Standard
	Cd	114	1521.7	5.7	**0.1732**	0.004	2.2	ug/L	31	Standard
>	**In**	115	1025002.2	7.8				ug/L	1030666	Standard
	Sn	118	1118.4	5.5	**0.0372**	0.004	11.1	ug/L	755	Standard
	Sb	123	125.3	6.8	**0.0093**	0.002	24.7	ug/L	105	Standard
	Ba	135	8327.6	9.5	**2.1937**	0.052	2.4	ug/L	23	Standard
	Ce	140	524586.7	9.8				ug/L	137	Standard
>	**Tb**	159	1704427.0	6.2				ug/L	1748833	Standard
	Ho	165	42173.9	8.7				ug/L	13	Standard
	Tl	203	2631.9	7.7	**0.1743**	0.003	1.6	ug/L	14	Standard
	Tl	205	1871.8	8.7	**0.1795**	0.012	6.6	ug/L	10	Standard
	Pb	206	2067.5	7.5	**0.1623**	0.003	1.6	ug/L	459	Standard
	Pb	207	1765.4	7.6	**0.1505**	0.002	1.6	ug/L	424	Standard
	Pb	208	7365.7	8.3	**0.1644**	0.003	1.6	ug/L	1701	Standard
	U	238	2093.8	7.6	**0.1937**	0.003	1.4	ug/L	2	Standard
>	**Bi**	209	919992.4	7.6				ug/L	937372	Standard

Sample ID: L1602036501
Report Date/Time: Thursday, February 11, 2016 15:12:20
Page 1

Approved: February 12, 2016

Na	23	36.7	20.8	**157.4696**	16.698	10.6	mg/L	0	Standard
Mg	24	40078.3	10.0	**55.0760**	0.908	1.6	mg/L	17	Standard
K	39	393.3	13.0	**1.9156**	0.143	7.5	mg/L	15	Standard
Ca	43	1075.0	19.9	**87.0275**	10.070	11.6	mg/L	67	Standard
Fe	54	148041.0	8.9	**102.3450**	2.056	2.0	mg/L	214	Standard
Fe	57	40195.1	7.6	**104.1466**	2.730	2.6	mg/L	82	Standard
> **Sc-1**	45	44380.3	10.1				mg/L	47226	Standard
Cl	35	522816.4	10.7				ug/L	38729	Standard
Kr	83	3.3	69.3				ug/L	3	Standard
Br	81	11517.7	5.4				ug/L	1497	Standard
P	31	21577.2	14.2				ug/L	15233	Standard
S	34	2238.5	2.1				ug/L	1153	Standard
Sr	88	1351.7	2.0				ug/L	47	Standard
C	12	326.7	24.7				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	71377.9	8.6				mg/L	22	Standard
Ho-1	165	42173.9	8.7				mg/L	13	Standard
Er	166	34903.6	7.0				mg/L	30	Standard
I	127	78625.3	2.9				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.339	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.990	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602036501
Report Date/Time: Thursday, February 11, 2016 15:12:20
Page 2

Approved: February 12, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.450
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.146
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602036501
Report Date/Time: Thursday, February 11, 2016 15:12:20
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602036502
Sample Date/Time: Thursday, February 11, 2016 15:13:14
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83947.6	6.6				ug/L	57324	Standard
	Be	9	1036.7	5.0	**1.1036**	0.113	10.2	ug/L	2	Standard
	Al	27	26077439.1	11.3	**118.7985**	5.828	4.9	ug/L	172	Standard
	Sc	45	41958.4	10.0				ug/L	47226	Standard
	Ti	47	213.3	0.7	**0.3138**	0.033	10.6	ug/L	100	Standard
	V	51	13356.0	4.2	**1.0190**	0.042	4.1	ug/L	2380	Standard
	Cr	52	29617.1	8.4	**1.9164**	0.070	3.6	ug/L	10715	Standard
	Cr	53	3120.3	7.5	**2.2420**	0.014	0.6	ug/L	293	Standard
	Mn	55	13896121.4	8.9	**1279.0709**	22.924	1.8	ug/L	882	Standard
	Co	59	189310.0	8.5	**15.9257**	0.320	2.0	ug/L	252	Standard
	Ni	60	86826.9	7.3	**29.2079**	0.081	0.3	ug/L	51	Standard
	Cu	65	7226.4	7.5	**2.3791**	0.012	0.5	ug/L	125	Standard
	Zn	66	113860.5	7.6	**78.9776**	0.614	0.8	ug/L	191	Standard
>	**Ge**	72	691247.0	7.3				ug/L	693220	Standard
	As	75	6065.8	7.8	**4.0015**	0.040	1.0	ug/L	-96	Standard
	Se	82	171.7	11.0	**0.9436**	0.055	5.8	ug/L	24	Standard
	Se-1	77	145.0	12.2	**0.7050**	0.075	10.7	ug/L	66	Standard
>	**Ga**	71	810.0	1.1				mg/L	67	Standard
	Rb	85	154270.0	6.1				ug/L	25	Standard
	Y	89	1099525.9	6.4				ug/L	639569	Standard
>	**Rh**	103	340.0	19.5				ug/L	8	Standard
	Mo	98	211.0	48.4	**0.0433**	0.027	63.5	ug/L	15	Standard
	Ag	107	155.0	25.1	**-0.0042**	0.004	99.6	ug/L	162	Standard
	Cd	111	678.4	3.4	**0.1892**	0.007	3.7	mg/L	7	Standard
	Cd	114	1770.4	0.4	**0.1990**	0.013	6.3	ug/L	31	Standard
>	**In**	115	1046122.1	6.1				ug/L	1030666	Standard
	Sn	118	1045.0	8.9	**0.0280**	0.015	53.3	ug/L	755	Standard
	Sb	123	195.9	25.3	**0.0181**	0.008	42.9	ug/L	105	Standard
	Ba	135	10155.7	6.0	**2.6253**	0.008	0.3	ug/L	23	Standard
	Ce	140	479045.9	6.8				ug/L	137	Standard
>	**Tb**	159	1729706.3	5.3				ug/L	1748833	Standard
	Ho	165	39784.0	6.0				ug/L	13	Standard
	Tl	203	2575.9	5.2	**0.1668**	0.000	0.2	ug/L	14	Standard
	Tl	205	2041.8	4.6	**0.1923**	0.019	9.7	ug/L	10	Standard
	Pb	206	2547.2	4.0	**0.2079**	0.003	1.6	ug/L	459	Standard
	Pb	207	2124.5	1.0	**0.1875**	0.013	6.9	ug/L	424	Standard
	Pb	208	9139.1	4.8	**0.2128**	0.025	11.6	ug/L	1701	Standard
	U	238	1987.1	7.8	**0.1804**	0.023	12.8	ug/L	2	Standard
>	**Bi**	209	939832.1	5.1				ug/L	937372	Standard

Sample ID: L1602036502
Report Date/Time: Thursday, February 11, 2016 15:15:31
Page 1

Approved: February 12, 2016

Na	23	23.3	96.6	**100.4979**	94.360	93.9	mg/L	0	Standard
Mg	24	28799.1	5.0	**41.9963**	2.344	5.6	mg/L	17	Standard
K	39	290.0	9.1	**1.4812**	0.055	3.7	mg/L	15	Standard
Ca	43	888.4	13.5	**75.9097**	5.547	7.3	mg/L	67	Standard
Fe	54	135036.1	5.5	**98.9559**	4.533	4.6	mg/L	214	Standard
Fe	57	36574.2	7.1	**100.2947**	4.391	4.4	mg/L	82	Standard
> **Sc-1**	45	41958.4	10.0				mg/L	47226	Standard
Cl	35	495948.0	7.4				ug/L	38729	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	9139.4	6.0				ug/L	1497	Standard
P	31	22445.0	6.1				ug/L	15233	Standard
S	34	1918.5	4.4				ug/L	1153	Standard
Sr	88	1281.7	10.3				ug/L	47	Standard
C	12	383.3	18.9				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	65084.0	8.2				mg/L	22	Standard
Ho-1	165	39784.0	6.0				mg/L	13	Standard
Er	166	32067.3	5.6				mg/L	30	Standard
I	127	74740.9	5.1				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		146.445	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.715	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602036502
Report Date/Time: Thursday, February 11, 2016 15:15:31
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.500
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.262
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602036502
Report Date/Time: Thursday, February 11, 2016 15:15:31
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602036505
Sample Date/Time: Thursday, February 11, 2016 15:16:26
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88175.5	9.0				ug/L	57324	Standard
	Be	9	10.0	50.0	**0.0222**	0.005	24.2	ug/L	2	Standard
	Al	27	58063821.0	11.3	**252.0265**	6.736	2.7	ug/L	172	Standard
	Sc	45	36559.2	7.7				ug/L	47226	Standard
	Ti	47	259.7	2.0	**0.5393**	0.062	11.5	ug/L	100	Standard
	V	51	3673.8	4.9	**0.1983**	0.011	5.6	ug/L	2380	Standard
	Cr	52	10437.3	5.5	**0.2221**	0.025	11.4	ug/L	10715	Standard
	Cr	53	3753.8	6.8	**3.3962**	0.512	15.1	ug/L	293	Standard
	Mn	55	1497884.3	9.0	**166.6247**	2.570	1.5	ug/L	882	Standard
	Co	59	3349.4	10.1	**0.3166**	0.011	3.4	ug/L	252	Standard
	Ni	60	7404.8	9.5	**2.9819**	0.059	2.0	ug/L	51	Standard
	Cu	65	4651.4	9.5	**1.8548**	0.313	16.9	ug/L	125	Standard
	Zn	66	7123.0	9.2	**5.7518**	0.996	17.3	ug/L	191	Standard
>	**Ge**	72	571627.8	7.5				ug/L	693220	Standard
	As	75	3907.2	9.9	**3.1567**	0.533	16.9	ug/L	-96	Standard
	Se	82	1737.0	9.4	**13.2317**	2.231	16.9	ug/L	24	Standard
	Se-1	77	458.0	5.4	**4.7568**	0.696	14.6	ug/L	66	Standard
>	**Ga**	71	110.0	28.4				mg/L	67	Standard
	Rb	85	96259.4	8.0				ug/L	25	Standard
	Y	89	581534.3	9.9				ug/L	639569	Standard
>	**Rh**	103	2465.2	9.0				ug/L	8	Standard
	Mo	98	241.3	8.0	**0.0581**	0.004	7.6	ug/L	15	Standard
	Ag	107	126.3	18.2	**-0.0052**	0.002	31.7	ug/L	162	Standard
	Cd	111	30.6	21.3	**0.0077**	0.002	20.4	mg/L	7	Standard
	Cd	114	56.1	26.6	**-0.0014**	0.002	177.0	ug/L	31	Standard
>	**In**	115	903470.1	6.9				ug/L	1030666	Standard
	Sn	118	953.4	6.0	**0.0337**	0.011	32.5	ug/L	755	Standard
	Sb	123	407.7	5.0	**0.0529**	0.003	5.1	ug/L	105	Standard
	Ba	135	8074.8	6.9	**2.4163**	0.030	1.3	ug/L	23	Standard
	Ce	140	685.0	13.3				ug/L	137	Standard
>	**Tb**	159	1449069.5	7.7				ug/L	1748833	Standard
	Ho	165	663.3	23.8				ug/L	13	Standard
	Tl	203	883.4	5.1	**0.0742**	0.002	2.9	ug/L	14	Standard
	Tl	205	698.3	8.2	**0.0859**	0.005	6.2	ug/L	10	Standard
	Pb	206	1383.4	4.8	**0.1337**	0.002	1.2	ug/L	459	Standard
	Pb	207	1174.7	1.5	**0.1230**	0.007	6.0	ug/L	424	Standard
	Pb	208	4675.6	6.0	**0.1257**	0.002	1.8	ug/L	1701	Standard
	U	238	791.0	5.0	**0.0932**	0.002	2.2	ug/L	2	Standard
>	**Bi**	209	707449.3	5.5				ug/L	937372	Standard

Sample ID: L1602036505
Report Date/Time: Thursday, February 11, 2016 15:18:43
Page 1

Approved: February 12, 2016

Na	23	30.0	16.7	**159.1893**	35.800	22.5	mg/L	0	Standard
Mg	24	596600.1	9.8	**994.5153**	27.239	2.7	mg/L	17	Standard
K	39	608.3	18.1	**3.6894**	0.831	22.5	mg/L	15	Standard
Ca	43	745.0	12.4	**72.8781**	4.840	6.6	mg/L	67	Standard
Fe	54	218.8	29.9	**0.0402**	0.039	97.5	mg/L	214	Standard
Fe	57	388.3	7.4	**1.0412**	0.178	17.1	mg/L	82	Standard
> **Sc-1**	45	36559.2	7.7				mg/L	47226	Standard
Cl	35	1273696.3	9.1				ug/L	38729	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	194967.6	3.8				ug/L	1497	Standard
P	31	15417.9	10.5				ug/L	15233	Standard
S	34	3040.3	4.5				ug/L	1153	Standard
Sr	88	8080.5	9.1				ug/L	47	Standard
C	12	353.3	16.1				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	337.7	14.1				mg/L	22	Standard
Ho-1	165	663.3	23.8				mg/L	13	Standard
Er	166	673.3	13.0				mg/L	30	Standard
I	127	635574.8	4.7				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		153.821	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		82.460	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602036505
Report Date/Time: Thursday, February 11, 2016 15:18:43
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.659
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		75.472
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602036505
Report Date/Time: Thursday, February 11, 2016 15:18:43
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602036801
Sample Date/Time: Thursday, February 11, 2016 15:19:37
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85555.7	9.8				ug/L	57324	Standard
	Be	9	6.7	43.3	**0.0189**	0.003	16.5	ug/L	2	Standard
	Al	27	4453878.0	8.9	**19.9565**	0.169	0.8	ug/L	172	Standard
	Sc	45	43870.3	7.5				ug/L	47226	Standard
	Ti	47	1373.4	10.9	**2.7127**	0.070	2.6	ug/L	100	Standard
	V	51	4779.1	4.7	**0.2045**	0.028	13.6	ug/L	2380	Standard
	Cr	52	18690.2	5.8	**0.7211**	0.048	6.7	ug/L	10715	Standard
	Cr	53	2748.6	8.4	**1.8264**	0.204	11.2	ug/L	293	Standard
	Mn	55	83818.7	8.7	**7.1546**	0.020	0.3	ug/L	882	Standard
	Co	59	1098.4	9.6	**0.0628**	0.002	2.7	ug/L	252	Standard
	Ni	60	6251.3	11.1	**1.9496**	0.052	2.7	ug/L	51	Standard
	Cu	65	108135.4	7.0	**34.3224**	0.690	2.0	ug/L	125	Standard
	Zn	66	67931.0	8.5	**44.2605**	0.077	0.2	ug/L	191	Standard
>	Ge	72	733807.9	8.5				ug/L	693220	Standard
	As	75	1760.5	29.4	**1.1234**	0.224	19.9	ug/L	-96	Standard
	Se	82	770.3	28.3	**4.3913**	0.899	20.5	ug/L	24	Standard
	Se-1	77	212.7	8.8	**1.2511**	0.020	1.6	ug/L	66	Standard
>	Ga	71	195.0	22.4				mg/L	67	Standard
	Rb	85	119125.1	8.0				ug/L	25	Standard
	Y	89	700730.0	6.2				ug/L	639569	Standard
>	Rh	103	436.7	36.4				ug/L	8	Standard
	Mo	98	1846.8	5.1	**0.3843**	0.012	3.0	ug/L	15	Standard
	Ag	107	602310.2	6.2	**46.6180**	0.432	0.9	ug/L	162	Standard
	Cd	111	378.3	4.3	**0.0950**	0.005	5.4	mg/L	7	Standard
	Cd	114	994.2	9.7	**0.0969**	0.005	5.5	ug/L	31	Standard
>	In	115	1149831.1	6.8				ug/L	1030666	Standard
	Sn	118	18796.7	5.5	**1.6132**	0.029	1.8	ug/L	755	Standard
	Sb	123	667.2	2.6	**0.0701**	0.005	6.7	ug/L	105	Standard
	Ba	135	44797.4	7.8	**10.5571**	0.099	0.9	ug/L	23	Standard
	Ce	140	816.7	14.4				ug/L	137	Standard
>	Tb	159	1811991.7	7.0				ug/L	1748833	Standard
	Ho	165	41.7	48.5				ug/L	13	Standard
	Tl	203	651.3	20.8	**0.0353**	0.005	15.4	ug/L	14	Standard
	Tl	205	508.3	26.9	**0.0410**	0.009	21.4	ug/L	10	Standard
	Pb	206	30440.6	6.2	**2.8153**	0.015	0.5	ug/L	459	Standard
	Pb	207	26175.6	6.0	**2.6457**	0.041	1.5	ug/L	424	Standard
	Pb	208	108168.2	6.7	**2.8221**	0.026	0.9	ug/L	1701	Standard
	U	238	410.7	1.5	**0.0305**	0.003	8.3	ug/L	2	Standard
>	Bi	209	1040378.0	6.7				ug/L	937372	Standard

Sample ID: L1602036801
Report Date/Time: Thursday, February 11, 2016 15:21:54
Page 1

Approved: February 12, 2016

Na	23	6.7	43.3	**29.8218**	15.031	50.4	mg/L	0	Standard
Mg	24	20992.9	7.5	**29.1701**	0.470	1.6	mg/L	17	Standard
K	39	2538.5	0.4	**12.9602**	0.964	7.4	mg/L	15	Standard
Ca	43	158.3	1.8	**9.5432**	1.248	13.1	mg/L	67	Standard
Fe	54	386.3	2.0	**0.1297**	0.018	13.5	mg/L	214	Standard
Fe	57	161.7	18.9	**0.2383**	0.107	44.9	mg/L	82	Standard
> **Sc-1**	45	43870.3	7.5				mg/L	47226	Standard
Cl	35	97417.3	11.0				ug/L	38729	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	66716.7	4.3				ug/L	1497	Standard
P	31	17348.3	5.1				ug/L	15233	Standard
S	34	1855.1	7.6				ug/L	1153	Standard
Sr	88	106.7	14.3				ug/L	47	Standard
C	12	1736.8	13.8				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	83.3	6.9				mg/L	3	Standard
Dy	164	74.0	32.3				mg/L	22	Standard
Ho-1	165	41.7	48.5				mg/L	13	Standard
Er	166	56.7	66.8				mg/L	30	Standard
I	127	37096.6	20.1				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		149.251	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.855	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602036801
Report Date/Time: Thursday, February 11, 2016 15:21:54
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.562
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.989
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1602036801
Report Date/Time: Thursday, February 11, 2016 15:21:54
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602038101
Sample Date/Time: Thursday, February 11, 2016 15:22:49
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76482.5	11.1				ug/L	57324	Standard
	Be	9	3.3	173.2	**0.0154**	0.006	38.5	ug/L	2	Standard
	Al	27	5397243.4	12.8	**27.0122**	1.056	3.9	ug/L	172	Standard
	Sc	45	43474.8	14.0				ug/L	47226	Standard
	Ti	47	126.3	20.8	**0.1103**	0.034	31.0	ug/L	100	Standard
	V	51	2941.9	8.9	**0.0539**	0.002	4.5	ug/L	2380	Standard
	Cr	52	12034.8	8.7	**0.1359**	0.014	10.7	ug/L	10715	Standard
	Cr	53	1406.7	8.9	**0.8551**	0.028	3.2	ug/L	293	Standard
	Mn	55	37990.5	9.7	**3.3037**	0.123	3.7	ug/L	882	Standard
	Co	59	413.7	8.0	**0.0097**	0.001	13.8	ug/L	252	Standard
	Ni	60	1680.4	13.1	**0.5214**	0.019	3.6	ug/L	51	Standard
	Cu	65	12415.8	11.3	**4.0306**	0.067	1.7	ug/L	125	Standard
	Zn	66	19353.8	11.7	**12.8601**	0.401	3.1	ug/L	191	Standard
>	Ge	72	707257.2	9.8				ug/L	693220	Standard
	As	75	962.2	15.1	**0.6669**	0.032	4.8	ug/L	-96	Standard
	Se	82	180.7	20.5	**0.9681**	0.122	12.6	ug/L	24	Standard
	Se-1	77	136.0	11.1	**0.5903**	0.084	14.3	ug/L	66	Standard
>	Ga	71	35.0	24.7				mg/L	67	Standard
	Rb	85	4172.2	13.4				ug/L	25	Standard
	Y	89	665353.0	11.8				ug/L	639569	Standard
>	Rh	103	161.7	14.3				ug/L	8	Standard
	Mo	98	733.1	10.5	**0.1540**	0.007	4.4	ug/L	15	Standard
	Ag	107	508.0	11.7	**0.0233**	0.005	20.5	ug/L	162	Standard
	Cd	111	18.1	28.4	**0.0027**	0.002	57.7	mg/L	7	Standard
	Cd	114	62.5	25.4	**-0.0021**	0.002	111.0	ug/L	31	Standard
>	In	115	1108586.4	9.4				ug/L	1030666	Standard
	Sn	118	1213.4	9.9	**0.0376**	0.010	27.8	ug/L	755	Standard
	Sb	123	781.1	8.3	**0.0865**	0.001	1.7	ug/L	105	Standard
	Ba	135	178996.0	8.7	**43.8179**	0.370	0.8	ug/L	23	Standard
	Ce	140	268.3	29.1				ug/L	137	Standard
>	Tb	159	1770444.4	9.3				ug/L	1748833	Standard
	Ho	165	16.7	17.3				ug/L	13	Standard
	Tl	203	996.4	7.3	**0.0595**	0.009	15.9	ug/L	14	Standard
	Tl	205	700.0	10.4	**0.0614**	0.012	20.2	ug/L	10	Standard
	Pb	206	9393.9	9.1	**0.8701**	0.006	0.7	ug/L	459	Standard
	Pb	207	8047.5	10.7	**0.8129**	0.018	2.3	ug/L	424	Standard
	Pb	208	33805.4	10.3	**0.8844**	0.014	1.6	ug/L	1701	Standard
	U	238	3856.2	9.4	**0.3330**	0.001	0.4	ug/L	2	Standard
>	Bi	209	993679.9	9.3				ug/L	937372	Standard

Sample ID: L1602038101
Report Date/Time: Thursday, February 11, 2016 15:25:05
Page 1

Approved: February 12, 2016

Na	23	6.7	86.6	**27.9121**	24.425	87.5	mg/L	0	Standard
Mg	24	3865.5	7.7	**5.4330**	0.369	6.8	mg/L	17	Standard
K	39	45.0	22.2	**0.1593**	0.021	13.4	mg/L	15	Standard
Ca	43	250.0	29.9	**17.2968**	3.341	19.3	mg/L	67	Standard
Fe	54	205.4	16.2	**0.0058**	0.036	616.9	mg/L	214	Standard
Fe	57	136.7	33.8	**0.1664**	0.072	43.0	mg/L	82	Standard
> **Sc-1**	45	43474.8	14.0				mg/L	47226	Standard
Cl	35	74436.9	14.4				ug/L	38729	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	16662.5	8.4				ug/L	1497	Standard
P	31	17773.8	5.9				ug/L	15233	Standard
S	34	1741.8	7.2				ug/L	1153	Standard
Sr	88	223.3	13.1				ug/L	47	Standard
C	12	343.3	12.1				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	43.8	37.4				mg/L	22	Standard
Ho-1	165	16.7	17.3				mg/L	13	Standard
Er	166	60.0	44.1				mg/L	30	Standard
I	127	22773.8	5.9				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.422	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.025	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602038101
Report Date/Time: Thursday, February 11, 2016 15:25:05
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.560
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.007
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1602038101
Report Date/Time: Thursday, February 11, 2016 15:25:05
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, February 11, 2016 15:26:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70235.8	12.7				ug/L	57324	Standard
	Be	9	42431.6	12.2	**53.2059**	0.683	1.3	ug/L	2	Standard
	Al	27	7090871.4	14.0	**38.6434**	0.553	1.4	ug/L	172	Standard
	Sc	45	41565.7	10.1				ug/L	47226	Standard
	Ti	47	39427.2	13.2	**86.6462**	4.046	4.7	ug/L	100	Standard
	V	51	507250.1	11.0	**45.9727**	1.142	2.5	ug/L	2380	Standard
	Cr	52	462478.2	11.2	**44.6897**	1.463	3.3	ug/L	10715	Standard
	Cr	53	56175.0	12.7	**43.9685**	1.814	4.1	ug/L	293	Standard
	Mn	55	502758.1	11.8	**45.7377**	1.495	3.3	ug/L	882	Standard
	Co	59	560959.1	10.2	**46.8351**	0.777	1.7	ug/L	252	Standard
	Ni	60	139355.0	12.6	**46.4099**	2.019	4.4	ug/L	51	Standard
	Cu	65	139507.2	11.5	**46.5284**	1.416	3.0	ug/L	125	Standard
	Zn	66	70990.4	10.1	**48.6933**	1.050	2.2	ug/L	191	Standard
>	**Ge**	72	696890.7	8.6				ug/L	693220	Standard
	As	75	75584.9	9.5	**48.7920**	0.679	1.4	ug/L	-96	Standard
	Se	82	8399.8	9.1	**52.4409**	0.549	1.0	ug/L	24	Standard
	Se-1	77	5124.9	10.0	**49.1499**	0.716	1.5	ug/L	66	Standard
>	**Ga**	71	40.0	45.1				mg/L	67	Standard
	Rb	85	1261.7	15.1				ug/L	25	Standard
	Y	89	652194.0	11.3				ug/L	639569	Standard
>	**Rh**	103	136.7	8.4				ug/L	8	Standard
	Mo	98	460590.9	9.9	**102.2358**	0.951	0.9	ug/L	15	Standard
	Ag	107	557568.1	9.6	**45.2588**	0.449	1.0	ug/L	162	Standard
	Cd	111	177617.1	9.5	**47.7783**	0.514	1.1	mg/L	7	Standard
	Cd	114	432376.1	10.1	**48.3656**	0.304	0.6	ug/L	31	Standard
>	**In**	115	1096790.0	10.6				ug/L	1030666	Standard
	Sn	118	495208.5	10.0	**46.5601**	0.360	0.8	ug/L	755	Standard
	Sb	123	393570.2	8.9	**47.6511**	0.797	1.7	ug/L	105	Standard
	Ba	135	177500.1	9.9	**43.9211**	0.377	0.9	ug/L	23	Standard
	Ce	140	113.3	33.7				ug/L	137	Standard
>	**Tb**	159	1743550.0	10.8				ug/L	1748833	Standard
	Ho	165	18.3	68.6				ug/L	13	Standard
	Tl	203	753137.3	9.2	**47.4417**	0.468	1.0	ug/L	14	Standard
	Tl	205	533952.3	9.2	**48.3723**	0.373	0.8	ug/L	10	Standard
	Pb	206	475597.6	8.9	**47.3419**	0.288	0.6	ug/L	459	Standard
	Pb	207	429146.0	8.3	**46.7080**	0.110	0.2	ug/L	424	Standard
	Pb	208	1757932.0	10.1	**49.3233**	0.825	1.7	ug/L	1701	Standard
	U	238	556352.9	9.3	**49.0057**	0.536	1.1	ug/L	2	Standard
>	**Bi**	209	984987.0	8.5				ug/L	937372	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 15:28:18
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3793.8	10.6	**5.5439**	0.131	2.4	mg/L	17	Standard
K	39	613.3	21.3	**3.2153**	0.377	11.7	mg/L	15	Standard
Ca	43	78.3	14.7	**3.0525**	1.667	54.6	mg/L	67	Standard
Fe	54	7482.7	8.0	**5.3936**	0.170	3.1	mg/L	214	Standard
Fe	57	2095.1	15.9	**5.5875**	0.372	6.7	mg/L	82	Standard
> **Sc-1**	45	41565.7	10.1				mg/L	47226	Standard
Cl	35	60671.5	16.6				ug/L	38729	Standard
Kr	83	4.7	81.1				ug/L	3	Standard
Br	81	2273.5	15.6				ug/L	1497	Standard
P	31	16183.7	12.0				ug/L	15233	Standard
S	34	1760.1	6.2				ug/L	1153	Standard
Sr	88	40.0	33.1				ug/L	47	Standard
C	12	203.3	28.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	32.4	45.7				mg/L	22	Standard
Ho-1	165	18.3	68.6				mg/L	13	Standard
Er	166	20.0	50.0				mg/L	30	Standard
I	127	6576.4	13.2				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.412		
Al	27	77.287		
Sc	45			
Ti	47	86.646		
V	51	91.945		
Cr	52	89.379		
Cr	53			
Mn	55	91.475		
Co	59	93.670		
Ni	60	92.820		
Cu	65	93.057		
Zn	66	97.387		
> Ge	72		100.529	
As	75	97.584		
Se	82	104.882		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 15:28:18
Page 2

Approved: February 12, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	102.236		
Ag	107	90.518		
Cd	111	95.557		
Cd	114			
> In	115		106.416	
Sn	118	93.120		
Sb	123	95.302		
Ba	135	87.842		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.883		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.647		
U	238	98.011		
> Bi	209		105.080	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Ti	47	
QC Std 6	Cr	52	

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 15:28:18
Page 3

Approved: February 12, 2016

QC Std 6	Ba	135

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 15:28:18
Page 4

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, February 11, 2016 15:29:13
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65317.0	12.7				ug/L	57324	Standard
	Be	9	6.7	43.3	**0.0212**	0.004	20.8	ug/L	2	Standard
	Al	27	1108.4	26.6	**0.0010**	0.002	160.9	ug/L	172	Standard
	Sc	45	41509.3	14.8				ug/L	47226	Standard
	Ti	47	60.7	10.1	**-0.0249**	0.017	67.7	ug/L	100	Standard
	V	51	2198.5	3.4	**-0.0040**	0.021	516.5	ug/L	2380	Standard
	Cr	52	9147.4	7.5	**-0.1095**	0.048	43.9	ug/L	10715	Standard
	Cr	53	375.0	18.7	**0.0618**	0.019	31.2	ug/L	293	Standard
	Mn	55	1297.7	2.2	**0.0041**	0.015	374.1	ug/L	882	Standard
	Co	59	248.3	11.0	**-0.0031**	0.002	59.1	ug/L	252	Standard
	Ni	60	61.7	6.6	**-0.0091**	0.004	41.8	ug/L	51	Standard
	Cu	65	418.7	13.4	**0.0855**	0.002	1.9	ug/L	125	Standard
	Zn	66	410.7	10.5	**-0.0052**	0.006	105.9	ug/L	191	Standard
>	**Ge**	72	681832.0	12.5				ug/L	693220	Standard
	As	75	-29.5	142.4	**0.0399**	0.024	61.3	ug/L	-96	Standard
	Se	82	51.0	9.0	**0.1900**	0.046	24.1	ug/L	24	Standard
	Se-1	77	79.0	11.3	**0.0815**	0.147	181.0	ug/L	66	Standard
>	**Ga**	71	151.7	10.6				mg/L	67	Standard
	Rb	85	45.0	44.4				ug/L	25	Standard
	Y	89	638902.2	13.9				ug/L	639569	Standard
>	**Rh**	103	80.0	25.0				ug/L	8	Standard
	Mo	98	205.5	21.3	**0.0400**	0.007	17.3	ug/L	15	Standard
	Ag	107	370.3	13.5	**0.0136**	0.005	37.2	ug/L	162	Standard
	Cd	111	27.7	50.7	**0.0053**	0.003	63.6	mg/L	7	Standard
	Cd	114	13.2	274.6	**-0.0074**	0.005	62.6	ug/L	31	Standard
>	**In**	115	1063801.1	12.8				ug/L	1030666	Standard
	Sn	118	1745.1	61.6	**0.0874**	0.079	90.0	ug/L	755	Standard
	Sb	123	573.1	19.8	**0.0663**	0.023	34.3	ug/L	105	Standard
	Ba	135	47.7	17.1	**0.0033**	0.001	26.0	ug/L	23	Standard
	Ce	140	33.3	22.9				ug/L	137	Standard
>	**Tb**	159	1654605.2	12.3				ug/L	1748833	Standard
	Ho	165	28.3	56.7				ug/L	13	Standard
	Tl	203	140.7	30.0	**0.0057**	0.002	36.1	ug/L	14	Standard
	Tl	205	70.0	14.3	**0.0043**	0.001	18.1	ug/L	10	Standard
	Pb	206	526.0	13.7	**-0.0046**	0.003	63.2	ug/L	459	Standard
	Pb	207	457.7	15.1	**-0.0045**	0.002	38.3	ug/L	424	Standard
	Pb	208	1908.7	12.3	**-0.0023**	0.001	59.9	ug/L	1701	Standard
	U	238	48.0	31.5	**0.0006**	0.002	329.6	ug/L	2	Standard
>	**Bi**	209	960991.0	11.8				ug/L	937372	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 15:31:30
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	53.3	53.3	**0.0518**	0.029	56.7	mg/L	17	Standard
K	39	15.0	100.0	**0.0151**	0.083	546.4	mg/L	15	Standard
Ca	43	40.0	50.0	**-0.4016**	2.320	577.8	mg/L	67	Standard
Fe	54	213.9	4.1	**0.0189**	0.024	128.8	mg/L	214	Standard
Fe	57	66.7	8.7	**-0.0022**	0.033	1481.6	mg/L	82	Standard
> **Sc-1**	45	41509.3	14.8				mg/L	47226	Standard
Cl	35	58925.1	10.0				ug/L	38729	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	2050.1	11.4				ug/L	1497	Standard
P	31	15399.6	14.7				ug/L	15233	Standard
S	34	1800.1	5.8				ug/L	1153	Standard
Sr	88	53.3	56.5				ug/L	47	Standard
C	12	190.0	15.8				mg/L	90	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	12.4	100.0				mg/L	22	Standard
Ho-1	165	28.3	56.7				mg/L	13	Standard
Er	166	20.0	86.6				mg/L	30	Standard
I	127	5254.2	5.9				mg/L	2297	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.357	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 15:31:30
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.215
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.520
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 15:31:30
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602038301
Sample Date/Time: Thursday, February 11, 2016 15:32:26
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68095.0	8.3				ug/L	57324	Standard
	Be	9	15.0	145.3	**0.0323**	0.030	93.6	ug/L	2	Standard
	Al	27	6596995.4	10.1	**37.0885**	0.672	1.8	ug/L	172	Standard
	Sc	45	43394.0	8.6				ug/L	47226	Standard
	Ti	47	566.3	23.3	**1.0948**	0.162	14.8	ug/L	100	Standard
	V	51	3419.8	14.1	**0.1097**	0.066	60.5	ug/L	2380	Standard
	Cr	52	12915.2	4.5	**0.2632**	0.075	28.5	ug/L	10715	Standard
	Cr	53	4499.0	10.4	**3.4051**	0.676	19.8	ug/L	293	Standard
	Mn	55	116628.0	10.9	**10.6880**	0.151	1.4	ug/L	882	Standard
	Co	59	1357.4	8.5	**0.0909**	0.003	3.3	ug/L	252	Standard
	Ni	60	2552.9	6.5	**0.8367**	0.033	3.9	ug/L	51	Standard
	Cu	65	17392.7	9.4	**5.8476**	0.061	1.0	ug/L	125	Standard
	Zn	66	12702.3	7.6	**8.6200**	0.230	2.7	ug/L	191	Standard
>	**Ge**	72	686941.0	10.2				ug/L	693220	Standard
	As	75	1129.9	13.3	**0.7953**	0.029	3.6	ug/L	-96	Standard
	Se	82	80.1	4.2	**0.3739**	0.061	16.3	ug/L	24	Standard
	Se-1	77	329.0	9.8	**2.5756**	0.609	23.7	ug/L	66	Standard
>	**Ga**	71	253.3	10.1				mg/L	67	Standard
	Rb	85	37085.7	11.6				ug/L	25	Standard
	Y	89	660579.1	8.0				ug/L	639569	Standard
>	**Rh**	103	120.0	18.2				ug/L	8	Standard
	Mo	98	24127.0	10.2	**5.4558**	0.061	1.1	ug/L	15	Standard
	Ag	107	319.7	0.8	**0.0090**	0.002	23.9	ug/L	162	Standard
	Cd	111	46.5	44.3	**0.0107**	0.006	60.3	mg/L	7	Standard
	Cd	114	138.7	33.8	**0.0066**	0.005	72.6	ug/L	31	Standard
>	**In**	115	1074072.6	9.1				ug/L	1030666	Standard
	Sn	118	1975.1	2.9	**0.1155**	0.022	19.0	ug/L	755	Standard
	Sb	123	647.5	6.1	**0.0731**	0.004	5.6	ug/L	105	Standard
	Ba	135	61856.9	8.0	**15.6265**	0.186	1.2	ug/L	23	Standard
	Ce	140	641.7	39.6				ug/L	137	Standard
>	**Tb**	159	1710997.4	8.8				ug/L	1748833	Standard
	Ho	165	65.0	23.1				ug/L	13	Standard
	Tl	203	1112.0	5.0	**0.0701**	0.009	12.7	ug/L	14	Standard
	Tl	205	878.4	4.6	**0.0812**	0.011	13.0	ug/L	10	Standard
	Pb	206	2293.5	10.3	**0.1794**	0.006	3.2	ug/L	459	Standard
	Pb	207	1937.1	6.9	**0.1645**	0.007	4.4	ug/L	424	Standard
	Pb	208	8266.2	5.8	**0.1850**	0.007	3.7	ug/L	1701	Standard
	U	238	642.7	25.5	**0.0559**	0.020	35.0	ug/L	2	Standard
>	**Bi**	209	946239.4	8.7				ug/L	937372	Standard

Sample ID: L1602038301
Report Date/Time: Thursday, February 11, 2016 15:34:43
Page 1

Approved: February 12, 2016

Na	23	11.7	89.2	**53.9876**	47.679	88.3	mg/L	0	Standard
Mg	24	29560.6	8.3	**41.5412**	0.752	1.8	mg/L	17	Standard
K	39	356.7	5.7	**1.7762**	0.067	3.8	mg/L	15	Standard
Ca	43	303.3	7.6	**22.4380**	3.198	14.3	mg/L	67	Standard
Fe	54	320.9	40.1	**0.0905**	0.110	121.3	mg/L	214	Standard
Fe	57	181.7	16.1	**0.2979**	0.116	39.0	mg/L	82	Standard
> **Sc-1**	45	43394.0	8.6				mg/L	47226	Standard
Cl	35	70546.6	8.4				ug/L	38729	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	7465.2	10.8				ug/L	1497	Standard
P	31	17290.0	12.4				ug/L	15233	Standard
S	34	1920.1	4.6				ug/L	1153	Standard
Sr	88	196.7	10.6				ug/L	47	Standard
C	12	283.3	39.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	3	Standard
Dy	164	83.6	6.3				mg/L	22	Standard
Ho-1	165	65.0	23.1				mg/L	13	Standard
Er	166	63.3	36.5				mg/L	30	Standard
I	127	50848.5	0.9				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.094	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602038301
Report Date/Time: Thursday, February 11, 2016 15:34:43
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.212
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.946
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1602038301
Report Date/Time: Thursday, February 11, 2016 15:34:43
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602038501
Sample Date/Time: Thursday, February 11, 2016 15:35:37
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75667.1	5.1				ug/L	57324	Standard
	Be	9	15.0	145.3	**0.0292**	0.025	86.0	ug/L	2	Standard
	Al	27	12348571.3	8.8	**62.4665**	2.562	4.1	ug/L	172	Standard
	Sc	45	41034.3	10.8				ug/L	47226	Standard
	Ti	47	169.7	3.0	**0.2644**	0.041	15.4	ug/L	100	Standard
	V	51	3686.9	11.4	**0.1701**	0.012	7.0	ug/L	2380	Standard
	Cr	52	24626.8	8.5	**1.7270**	0.061	3.5	ug/L	10715	Standard
	Cr	53	15414.5	3.9	**13.5889**	0.713	5.2	ug/L	293	Standard
	Mn	55	65771.1	10.1	**6.6926**	0.172	2.6	ug/L	882	Standard
	Co	59	7204.1	11.5	**0.6577**	0.024	3.7	ug/L	252	Standard
	Ni	60	30303.8	10.3	**11.4389**	0.304	2.7	ug/L	51	Standard
	Cu	65	685282.7	9.1	**259.8632**	6.090	2.3	ug/L	125	Standard
	Zn	66	8545.4	9.4	**6.3949**	0.085	1.3	ug/L	191	Standard
>	**Ge**	72	614422.9	8.3				ug/L	693220	Standard
	As	75	3285.6	8.0	**2.4625**	0.067	2.7	ug/L	-96	Standard
	Se	82	1135.1	8.1	**7.9243**	0.106	1.3	ug/L	24	Standard
	Se-1	77	1433.1	2.0	**15.1689**	1.012	6.7	ug/L	66	Standard
>	**Ga**	71	726.7	15.8				mg/L	67	Standard
	Rb	85	384681.7	10.8				ug/L	25	Standard
	Y	89	585815.8	8.3				ug/L	639569	Standard
>	**Rh**	103	441.7	15.7				ug/L	8	Standard
	Mo	98	13269.2	8.6	**3.3777**	0.077	2.3	ug/L	15	Standard
	Ag	107	253.3	23.5	**0.0059**	0.004	75.1	ug/L	162	Standard
	Cd	111	31.2	54.6	**0.0074**	0.005	71.4	mg/L	7	Standard
	Cd	114	111.0	35.7	**0.0052**	0.005	100.1	ug/L	31	Standard
>	**In**	115	953437.0	7.2				ug/L	1030666	Standard
	Sn	118	1825.1	9.5	**0.1218**	0.009	7.3	ug/L	755	Standard
	Sb	123	2777.1	7.2	**0.3793**	0.004	1.1	ug/L	105	Standard
	Ba	135	133219.6	7.6	**37.8942**	0.383	1.0	ug/L	23	Standard
	Ce	140	575.0	15.2				ug/L	137	Standard
>	**Tb**	159	1576168.6	5.9				ug/L	1748833	Standard
	Ho	165	20.0	43.3				ug/L	13	Standard
	Tl	203	742.4	10.7	**0.0544**	0.003	6.1	ug/L	14	Standard
	Tl	205	546.7	22.0	**0.0586**	0.010	17.3	ug/L	10	Standard
	Pb	206	3366.7	7.7	**0.3562**	0.005	1.5	ug/L	459	Standard
	Pb	207	2920.9	6.3	**0.3379**	0.007	2.1	ug/L	424	Standard
	Pb	208	11913.2	9.2	**0.3561**	0.007	2.1	ug/L	1701	Standard
	U	238	104.7	110.8	**0.0076**	0.013	170.1	ug/L	2	Standard
>	**Bi**	209	797454.6	7.6				ug/L	937372	Standard

Sample ID: L1602038501
Report Date/Time: Thursday, February 11, 2016 15:37:54
Page 1

Approved: February 12, 2016

Na	23	28.3	53.9	**129.9243**	58.594	45.1	mg/L	0	Standard
Mg	24	197086.6	6.1	**293.9670**	13.849	4.7	mg/L	17	Standard
K	39	7158.4	2.3	**39.3171**	3.488	8.9	mg/L	15	Standard
Ca	43	981.7	7.0	**86.8491**	7.231	8.3	mg/L	67	Standard
Fe	54	228.0	28.6	**0.0278**	0.040	145.4	mg/L	214	Standard
Fe	57	393.3	21.0	**0.9050**	0.109	12.1	mg/L	82	Standard
> **Sc-1**	45	41034.3	10.8				mg/L	47226	Standard
Cl	35	189256.9	10.3				ug/L	38729	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	177753.0	6.7				ug/L	1497	Standard
P	31	15761.7	17.1				ug/L	15233	Standard
S	34	1898.5	3.0				ug/L	1153	Standard
Sr	88	485.0	25.9				ug/L	47	Standard
C	12	443.3	9.1				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	3	Standard
Dy	164	15.7	93.3				mg/L	22	Standard
Ho-1	165	20.0	43.3				mg/L	13	Standard
Er	166	20.0	86.6				mg/L	30	Standard
I	127	1162426.5	0.7				mg/L	2297	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		132.000	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		88.633	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1602038501
Report Date/Time: Thursday, February 11, 2016 15:37:54
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.507
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.073
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

Sample ID: L1602038501
Report Date/Time: Thursday, February 11, 2016 15:37:54
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602040301
Sample Date/Time: Thursday, February 11, 2016 15:38:49
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92185.4	6.4				ug/L	57324	Standard
	Be	9	18.3	68.6	**0.0292**	0.011	38.3	ug/L	2	Standard
	Al	27	10468060.0	11.0	**43.4319**	1.926	4.4	ug/L	172	Standard
	Sc	45	39132.6	11.5				ug/L	47226	Standard
	Ti	47	420.0	12.8	**0.8921**	0.075	8.4	ug/L	100	Standard
	V	51	4582.4	4.8	**0.2665**	0.019	7.0	ug/L	2380	Standard
	Cr	52	12418.1	8.8	**0.3618**	0.013	3.6	ug/L	10715	Standard
	Cr	53	9099.4	10.2	**7.9370**	0.377	4.7	ug/L	293	Standard
	Mn	55	568790.2	11.4	**59.0148**	1.890	3.2	ug/L	882	Standard
	Co	59	3379.4	11.9	**0.2970**	0.012	4.0	ug/L	252	Standard
	Ni	60	23422.2	10.3	**8.8756**	0.183	2.1	ug/L	51	Standard
	Cu	65	8224.2	8.1	**3.0777**	0.016	0.5	ug/L	125	Standard
	Zn	66	7557.6	4.1	**5.6664**	0.245	4.3	ug/L	191	Standard
>	**Ge**	72	611490.9	8.2				ug/L	693220	Standard
	As	75	3543.9	8.5	**2.6647**	0.145	5.4	ug/L	-96	Standard
	Se	82	2697.2	8.2	**19.1093**	0.346	1.8	ug/L	24	Standard
	Se-1	77	1947.5	5.2	**20.9365**	0.831	4.0	ug/L	66	Standard
>	**Ga**	71	401.7	7.9				mg/L	67	Standard
	Rb	85	342992.5	7.8				ug/L	25	Standard
	Y	89	584665.8	8.3				ug/L	639569	Standard
>	**Rh**	103	656.7	16.5				ug/L	8	Standard
	Mo	98	955733.5	8.6	**245.7341**	4.949	2.0	ug/L	15	Standard
	Ag	107	124.7	11.9	**-0.0059**	0.001	9.9	ug/L	162	Standard
	Cd	111	-707.7	6.5	**-0.2238**	0.024	10.6	mg/L	7	Standard
	Cd	114	1416.0	15.6	**0.1740**	0.018	10.2	ug/L	31	Standard
>	**In**	115	945737.2	7.0				ug/L	1030666	Standard
	Sn	118	1520.1	0.9	**0.0908**	0.011	11.8	ug/L	755	Standard
	Sb	123	15720.2	5.6	**2.1994**	0.034	1.6	ug/L	105	Standard
	Ba	135	83098.3	8.3	**23.8168**	0.367	1.5	ug/L	23	Standard
	Ce	140	3215.3	4.7				ug/L	137	Standard
>	**Tb**	159	1545325.5	7.6				ug/L	1748833	Standard
	Ho	165	135.0	48.4				ug/L	13	Standard
	Tl	203	1333.7	8.0	**0.1021**	0.002	1.6	ug/L	14	Standard
	Tl	205	1010.0	9.9	**0.1125**	0.005	4.1	ug/L	10	Standard
	Pb	206	1830.4	6.5	**0.1707**	0.005	2.7	ug/L	459	Standard
	Pb	207	1568.1	7.5	**0.1589**	0.002	1.1	ug/L	424	Standard
	Pb	208	6162.5	7.3	**0.1601**	0.002	1.2	ug/L	1701	Standard
	U	238	13126.4	7.7	**1.4476**	0.011	0.8	ug/L	2	Standard
>	**Bi**	209	785281.6	8.2				ug/L	937372	Standard

Sample ID: L1602040301
Report Date/Time: Thursday, February 11, 2016 15:41:06
Page 1

Approved: February 12, 2016

Na	23	23.3	65.5	**117.2867**	85.140	72.6	mg/L	0	Standard
Mg	24	350626.6	9.6	**547.3255**	12.109	2.2	mg/L	17	Standard
K	39	1201.7	9.4	**6.8665**	0.905	13.2	mg/L	15	Standard
Ca	43	581.7	17.6	**52.4991**	11.443	21.8	mg/L	67	Standard
Fe	54	407.4	14.3	**0.1780**	0.026	14.9	mg/L	214	Standard
Fe	57	405.0	4.9	**1.0067**	0.081	8.1	mg/L	82	Standard
> **Sc-1**	45	39132.6	11.5				mg/L	47226	Standard
Cl	35	628115.5	8.4				ug/L	38729	Standard
Kr	83	3.7	31.5				ug/L	3	Standard
Br	81	101737.8	5.5				ug/L	1497	Standard
P	31	15955.2	13.9				ug/L	15233	Standard
S	34	2276.8	5.4				ug/L	1153	Standard
Sr	88	408.3	1.9				ug/L	47	Standard
C	12	313.3	12.9				mg/L	90	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	3	Standard
Dy	164	139.0	24.8				mg/L	22	Standard
Ho-1	165	135.0	48.4				mg/L	13	Standard
Er	166	90.0	19.2				mg/L	30	Standard
I	127	824971.4	2.6				mg/L	2297	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		160.816	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		88.210	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1602040301
Report Date/Time: Thursday, February 11, 2016 15:41:06
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.760
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.775
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1602040301
Report Date/Time: Thursday, February 11, 2016 15:41:06
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, February 11, 2016 15:42:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68899.1	10.4				ug/L	57324	Standard
	Be	9	40727.0	13.9	**51.9120**	1.807	3.5	ug/L	2	Standard
	Al	27	6882346.7	12.2	**38.2321**	0.698	1.8	ug/L	172	Standard
	Sc	45	41865.2	14.4				ug/L	47226	Standard
	Ti	47	39191.1	11.9	**87.7401**	2.425	2.8	ug/L	100	Standard
	V	51	502077.4	11.0	**46.3245**	0.964	2.1	ug/L	2380	Standard
	Cr	52	462322.0	12.1	**45.4716**	1.427	3.1	ug/L	10715	Standard
	Cr	53	57536.8	12.3	**45.8651**	1.494	3.3	ug/L	293	Standard
	Mn	55	493345.8	11.8	**45.7018**	1.621	3.5	ug/L	882	Standard
	Co	59	551021.1	11.9	**46.7900**	1.383	3.0	ug/L	252	Standard
	Ni	60	137892.7	11.7	**46.7755**	1.347	2.9	ug/L	51	Standard
	Cu	65	139045.8	12.0	**47.1988**	1.486	3.1	ug/L	125	Standard
	Zn	66	70166.5	10.2	**48.9988**	0.835	1.7	ug/L	191	Standard
>	Ge	72	684833.0	9.3				ug/L	693220	Standard
	As	75	74831.9	9.5	**49.1796**	0.454	0.9	ug/L	-96	Standard
	Se	82	8204.9	9.5	**52.1430**	0.758	1.5	ug/L	24	Standard
	Se-1	77	5066.5	9.8	**49.4822**	0.795	1.6	ug/L	66	Standard
>	Ga	71	98.3	20.5				mg/L	67	Standard
	Rb	85	1221.7	19.0				ug/L	25	Standard
	Y	89	657796.3	11.1				ug/L	639569	Standard
>	Rh	103	158.3	47.4				ug/L	8	Standard
	Mo	98	457545.0	8.9	**102.8116**	1.720	1.7	ug/L	15	Standard
	Ag	107	549388.7	8.6	**45.1427**	0.554	1.2	ug/L	162	Standard
	Cd	111	176416.7	9.9	**47.9951**	0.629	1.3	mg/L	7	Standard
	Cd	114	430139.3	9.5	**48.7004**	0.748	1.5	ug/L	31	Standard
>	In	115	1082855.6	8.6				ug/L	1030666	Standard
	Sn	118	491052.8	9.2	**46.7311**	0.412	0.9	ug/L	755	Standard
	Sb	123	393161.9	8.4	**48.1667**	0.423	0.9	ug/L	105	Standard
	Ba	135	177307.6	9.0	**44.4120**	0.702	1.6	ug/L	23	Standard
	Ce	140	103.3	27.5				ug/L	137	Standard
>	Tb	159	1704494.6	9.1				ug/L	1748833	Standard
	Ho	165	18.3	95.8				ug/L	13	Standard
	Tl	203	745120.0	9.8	**47.2954**	1.095	2.3	ug/L	14	Standard
	Tl	205	530244.7	10.1	**48.4066**	1.496	3.1	ug/L	10	Standard
	Pb	206	468696.0	7.8	**47.0513**	0.167	0.4	ug/L	459	Standard
	Pb	207	425066.0	8.0	**46.6368**	0.248	0.5	ug/L	424	Standard
	Pb	208	1733796.8	9.4	**49.0573**	1.113	2.3	ug/L	1701	Standard
	U	238	546400.0	9.8	**48.5063**	1.287	2.7	ug/L	2	Standard
>	Bi	209	976744.2	7.5				ug/L	937372	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 15:44:19
Page 1

Approved: February 12, 2016

Na	23	3.3	86.6	**15.3003**	13.619	89.0	mg/L	0	Standard
Mg	24	3690.5	11.6	**5.3725**	0.310	5.8	mg/L	17	Standard
K	39	666.7	7.9	**3.5243**	0.251	7.1	mg/L	15	Standard
Ca	43	95.0		**4.5186**	1.202	26.6	mg/L	67	Standard
Fe	54	7323.8	7.7	**5.2620**	0.346	6.6	mg/L	214	Standard
Fe	57	2046.8	13.2	**5.4407**	0.140	2.6	mg/L	82	Standard
> **Sc-1**	45	41865.2	14.4				mg/L	47226	Standard
Cl	35	54794.8	13.7				ug/L	38729	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	3093.7	30.2				ug/L	1497	Standard
P	31	15883.6	20.8				ug/L	15233	Standard
S	34	1643.4	2.7				ug/L	1153	Standard
Sr	88	53.3	35.5				ug/L	47	Standard
C	12	143.3	39.7				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	12.5	90.0				mg/L	22	Standard
Ho-1	165	18.3	95.8				mg/L	13	Standard
Er	166	16.7	69.3				mg/L	30	Standard
I	127	21776.1	44.7				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.824		
Al	27	76.464		
Sc	45			
Ti	47	87.740		
V	51	92.649		
Cr	52	90.943		
Cr	53			
Mn	55	91.404		
Co	59	93.580		
Ni	60	93.551		
Cu	65	94.398		
Zn	66	97.998		
> Ge	72		98.790	
As	75	98.359		
Se	82	104.286		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 15:44:19
Page 2

Approved: February 12, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	102.812		
Ag	107	90.285		
Cd	111	95.990		
Cd	114			
In	115		105.064	
Sn	118	93.462		
Sb	123	96.333		
Ba	135	88.824		
Ce	140			
Tb	159			
Ho	165			
Tl	203	94.591		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.115		
U	238	97.013		
Bi	209		104.200	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Ti	47	
QC Std 6	Ba	135	

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 15:44:19
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, February 11, 2016 15:45:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63113.0	14.4				ug/L	57324	Standard
	Be	9	10.0	86.6	**0.0254**	0.012	46.5	ug/L	2	Standard
	Al	27	1060.1	78.3	**0.0006**	0.004	672.1	ug/L	172	Standard
	Sc	45	41804.9	12.5				ug/L	47226	Standard
	Ti	47	62.7	15.5	**-0.0187**	0.021	114.4	ug/L	100	Standard
	V	51	2160.6	11.2	**-0.0060**	0.010	165.3	ug/L	2380	Standard
	Cr	52	9264.5	7.5	**-0.0847**	0.045	53.7	ug/L	10715	Standard
	Cr	53	586.7	11.1	**0.2416**	0.032	13.1	ug/L	293	Standard
	Mn	55	1121.7	19.9	**-0.0127**	0.009	68.8	ug/L	882	Standard
	Co	59	255.3	27.3	**-0.0025**	0.003	127.3	ug/L	252	Standard
	Ni	60	63.0	22.2	**-0.0089**	0.002	23.7	ug/L	51	Standard
	Cu	65	452.0	19.0	**0.0984**	0.012	11.7	ug/L	125	Standard
	Zn	66	503.3	15.7	**0.0639**	0.021	33.4	ug/L	191	Standard
>	Ge	72	672392.0	12.3				ug/L	693220	Standard
	As	75	8.1	755.3	**0.0602**	0.038	63.6	ug/L	-96	Standard
	Se	82	66.7	37.5	**0.2860**	0.108	37.9	ug/L	24	Standard
	Se-1	77	76.7	24.1	**0.0514**	0.101	196.4	ug/L	66	Standard
>	Ga	71	61.7	69.0				mg/L	67	Standard
	Rb	85	48.3	39.2				ug/L	25	Standard
	Y	89	613201.6	15.7				ug/L	639569	Standard
>	Rh	103	55.0	24.1				ug/L	8	Standard
	Mo	98	296.0	24.4	**0.0608**	0.008	12.6	ug/L	15	Standard
	Ag	107	359.0	21.6	**0.0126**	0.003	25.6	ug/L	162	Standard
	Cd	111	23.5	54.9	**0.0041**	0.003	68.8	mg/L	7	Standard
	Cd	114	61.3	62.5	**-0.0022**	0.003	154.9	ug/L	31	Standard
>	In	115	1053538.9	12.8				ug/L	1030666	Standard
	Sn	118	1195.0	5.1	**0.0430**	0.018	42.3	ug/L	755	Standard
	Sb	123	557.3	9.2	**0.0644**	0.015	23.0	ug/L	105	Standard
	Ba	135	38.0	58.6	**0.0006**	0.004	690.8	ug/L	23	Standard
	Ce	140	20.0	43.3				ug/L	137	Standard
>	Tb	159	1684706.7	14.3				ug/L	1748833	Standard
	Ho	165	16.7	17.3				ug/L	13	Standard
	Tl	203	224.3	48.8	**0.0108**	0.005	48.7	ug/L	14	Standard
	Tl	205	171.7	58.9	**0.0132**	0.007	56.3	ug/L	10	Standard
	Pb	206	505.0	17.3	**-0.0068**	0.003	41.7	ug/L	459	Standard
	Pb	207	474.3	14.6	**-0.0025**	0.002	84.6	ug/L	424	Standard
	Pb	208	1898.0	20.8	**-0.0028**	0.005	169.2	ug/L	1701	Standard
	U	238	58.3	65.2	**0.0012**	0.003	230.4	ug/L	2	Standard
>	Bi	209	958740.0	11.7				ug/L	937372	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 15:47:31
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	78.3	13.3	**0.0906**	0.005	5.5	mg/L	17	Standard
K	39	5.0	0.0	**-0.0441**	0.003	7.2	mg/L	15	Standard
Ca	43	41.7	25.0	**-0.4370**	0.721	164.9	mg/L	67	Standard
Fe	54	215.8	3.6	**0.0181**	0.014	74.9	mg/L	214	Standard
Fe	57	80.0	6.3	**0.0318**	0.018	55.2	mg/L	82	Standard
Sc-1	45	41804.9	12.5				mg/L	47226	Standard
Cl	35	54307.0	8.9				ug/L	38729	Standard
Kr	83	3.0	88.2				ug/L	3	Standard
Br	81	2173.5	11.9				ug/L	1497	Standard
P	31	15593.1	8.0				ug/L	15233	Standard
S	34	1638.4	6.6				ug/L	1153	Standard
Sr	88	30.0	44.1				ug/L	47	Standard
C	12	170.0	23.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	19.0	50.2				mg/L	22	Standard
Ho-1	165	16.7	17.3				mg/L	13	Standard
Er	166	20.0	100.0				mg/L	30	Standard
I	127	7995.5	10.5				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.995	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 15:47:31
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.219
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.280
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 15:47:31
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, February 11, 2016 16:07:55
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57108.0	8.7				ug/L	57324	Standard
	Be	9	3.3	86.6	**0.0169**	0.004	25.5	ug/L	2	Standard
	Al	27	6568552.7	12.8	**43.9738**	1.769	4.0	ug/L	172	Standard
	Sc	45	43040.1	13.3				ug/L	47226	Standard
	Ti	47	42368.4	12.5	**94.2044**	3.662	3.9	ug/L	100	Standard
	V	51	2342.4	18.4	**0.0043**	0.021	494.6	ug/L	2380	Standard
	Cr	52	10575.0	9.3	**0.0192**	0.008	40.2	ug/L	10715	Standard
	Cr	53	4705.7	5.8	**3.5197**	0.108	3.1	ug/L	293	Standard
	Mn	55	1739.4	8.4	**0.0424**	0.002	5.0	ug/L	882	Standard
	Co	59	273.3	12.4	**-0.0013**	0.001	74.1	ug/L	252	Standard
	Ni	60	577.0	19.4	**0.1632**	0.020	12.4	ug/L	51	Standard
	Cu	65	601.7	8.9	**0.1460**	0.005	3.2	ug/L	125	Standard
	Zn	66	1972.5	9.7	**1.0812**	0.026	2.4	ug/L	191	Standard
>	Ge	72	689296.2	8.7				ug/L	693220	Standard
	As	75	-129.9	68.7	**-0.0308**	0.066	213.9	ug/L	-96	Standard
	Se	82	31.4	36.4	**0.0563**	0.057	100.3	ug/L	24	Standard
	Se-1	77	385.3	9.8	**3.0862**	0.356	11.5	ug/L	66	Standard
>	Ga	71	268.3	5.4				mg/L	67	Standard
	Rb	85	1030.0	13.8				ug/L	25	Standard
	Y	89	634011.8	12.3				ug/L	639569	Standard
>	Rh	103	31.7	24.1				ug/L	8	Standard
	Mo	98	428132.4	8.4	**99.9591**	1.576	1.6	ug/L	15	Standard
	Ag	107	205.0	7.6	**-0.0001**	0.001	1025.4	ug/L	162	Standard
	Cd	111	-324.3	5.5	**-0.0942**	0.007	7.1	mg/L	7	Standard
	Cd	114	723.8	12.1	**0.0762**	0.010	12.9	ug/L	31	Standard
>	In	115	1043091.8	9.7				ug/L	1030666	Standard
	Sn	118	1040.0	3.4	**0.0281**	0.013	46.6	ug/L	755	Standard
	Sb	123	283.5	11.3	**0.0295**	0.007	24.9	ug/L	105	Standard
	Ba	135	194.0	9.2	**0.0417**	0.003	6.2	ug/L	23	Standard
	Ce	140	200.0	10.0				ug/L	137	Standard
>	Tb	159	1678532.3	9.9				ug/L	1748833	Standard
	Ho	165	26.7	96.2				ug/L	13	Standard
	Tl	203	846.7	2.1	**0.0539**	0.006	10.4	ug/L	14	Standard
	Tl	205	623.3	14.4	**0.0586**	0.012	21.3	ug/L	10	Standard
	Pb	206	1515.4	9.1	**0.1028**	0.002	2.0	ug/L	459	Standard
	Pb	207	1323.4	6.6	**0.0986**	0.008	8.0	ug/L	424	Standard
	Pb	208	5466.1	10.6	**0.1065**	0.005	4.4	ug/L	1701	Standard
	U	238	5.7	36.7	**-0.0034**	0.000	4.4	ug/L	2	Standard
>	Bi	209	922807.8	8.0				ug/L	937372	Standard

Sample ID: QC Std 4
Report Date/Time: Thursday, February 11, 2016 16:10:12
Page 1

Approved: February 12, 2016

Na	23	3.3	86.6	**16.1005**	13.943	86.6	mg/L	0	Standard
Mg	24	8449.0	8.7	**12.0073**	0.829	6.9	mg/L	17	Standard
K	39	715.0	6.4	**3.6779**	0.252	6.8	mg/L	15	Standard
Ca	43	205.0	17.1	**14.1857**	4.639	32.7	mg/L	67	Standard
Fe	54	17499.2	7.9	**12.3996**	0.746	6.0	mg/L	214	Standard
Fe	57	4622.4	7.8	**12.2177**	0.634	5.2	mg/L	82	Standard
> **Sc-1**	45	43040.1	13.3				mg/L	47226	Standard
Cl	35	57778.0	13.6				ug/L	38729	Standard
Kr	83	2.7	114.6				ug/L	3	Standard
Br	81	1666.8	6.0				ug/L	1497	Standard
P	31	13566.2	17.8				ug/L	15233	Standard
S	34	1668.4	8.3				ug/L	1153	Standard
Sr	88	48.3	41.8				ug/L	47	Standard
C	12	213.3	16.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	35.4	41.6				mg/L	22	Standard
Ho-1	165	26.7	96.2				mg/L	13	Standard
Er	166	26.7	57.3				mg/L	30	Standard
I	127	12895.5	3.5				mg/L	2297	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27	0.879		
	Sc	45			
	Ti	47	94.204		
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.434	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 4
Report Date/Time: Thursday, February 11, 2016 16:10:12
Page 2

Approved: February 12, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	99.959		
Ag	107			
Cd	111			
Cd	114			
> In	115			101.206
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			98.446
Na	23	128.804		
Mg	24	240.147		
K	39	73.558		
Ca	43	94.571		
Fe	54	99.197		
Fe	57	97.741		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

Sample ID: QC Std 4
Report Date/Time: Thursday, February 11, 2016 16:10:12
Page 3

Approved: February 12, 2016

QC Std 4	Mg	24
QC Std 4	K	39

Sample ID: QC Std 4
Report Date/Time: Thursday, February 11, 2016 16:10:12
Page 4

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, February 11, 2016 16:13:50
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55588.9	8.1				ug/L	57324	Standard
	Be	9	68227.1	14.6	**107.6627**	7.077	6.6	ug/L	2	Standard
	Al	27	6977056.1	14.5	**47.9354**	3.089	6.4	ug/L	172	Standard
	Sc	45	43391.2	14.2				ug/L	47226	Standard
	Ti	47	44619.6	17.2	**100.6110**	4.480	4.5	ug/L	100	Standard
	V	51	983336.6	10.9	**92.0024**	1.717	1.9	ug/L	2380	Standard
	Cr	52	903696.3	15.2	**90.6714**	2.222	2.5	ug/L	10715	Standard
	Cr	53	115720.8	13.8	**93.4256**	1.422	1.5	ug/L	293	Standard
	Mn	55	976726.0	11.9	**91.6092**	1.348	1.5	ug/L	882	Standard
	Co	59	1093589.1	12.9	**93.8786**	1.202	1.3	ug/L	252	Standard
	Ni	60	269026.2	13.5	**92.1965**	0.699	0.8	ug/L	51	Standard
	Cu	65	273981.1	12.9	**94.0396**	0.233	0.2	ug/L	125	Standard
	Zn	66	137113.1	11.9	**97.0216**	0.778	0.8	ug/L	191	Standard
>	Ge	72	678605.3	12.7				ug/L	693220	Standard
	As	75	146877.7	10.7	**97.5328**	2.032	2.1	ug/L	-96	Standard
	Se	82	15327.3	11.8	**98.5069**	1.477	1.5	ug/L	24	Standard
	Se-1	77	9934.0	12.4	**98.6568**	0.495	0.5	ug/L	66	Standard
>	Ga	71	211.7	11.2				mg/L	67	Standard
	Rb	85	1358.4	8.1				ug/L	25	Standard
	Y	89	636955.1	9.9				ug/L	639569	Standard
>	Rh	103	81.7	14.1				ug/L	8	Standard
	Mo	98	439451.9	10.5	**103.2534**	1.799	1.7	ug/L	15	Standard
	Ag	107	941655.0	13.7	**80.7348**	2.913	3.6	ug/L	162	Standard
	Cd	111	330648.3	9.1	**94.2178**	2.172	2.3	mg/L	7	Standard
	Cd	114	809052.0	12.1	**95.7178**	1.954	2.0	ug/L	31	Standard
>	In	115	1035887.7	10.8				ug/L	1030666	Standard
	Sn	118	1263.4	10.4	**0.0505**	0.008	16.1	ug/L	755	Standard
	Sb	123	742089.3	9.3	**95.1276**	1.783	1.9	ug/L	105	Standard
	Ba	135	337197.7	10.2	**88.3471**	0.683	0.8	ug/L	23	Standard
	Ce	140	115.0	8.7				ug/L	137	Standard
>	Tb	159	1696533.8	9.0				ug/L	1748833	Standard
	Ho	165	23.3	44.6				ug/L	13	Standard
	Tl	203	1397832.2	9.5	**93.3102**	0.213	0.2	ug/L	14	Standard
	Tl	205	986199.5	12.4	**94.5271**	3.437	3.6	ug/L	10	Standard
	Pb	206	889027.3	9.4	**93.8215**	0.193	0.2	ug/L	459	Standard
	Pb	207	775423.8	10.0	**89.4090**	0.693	0.8	ug/L	424	Standard
	Pb	208	3237048.4	9.6	**96.3417**	0.449	0.5	ug/L	1701	Standard
	U	238	1009693.0	10.7	**94.1905**	1.319	1.4	ug/L	2	Standard
>	Bi	209	929731.1	9.3				ug/L	937372	Standard

Sample ID: QC Std 5
Report Date/Time: Thursday, February 11, 2016 16:16:07
Page 1

Approved: February 12, 2016

Na	23	1.7	173.2	**6.4158**	11.104	173.1	mg/L	0	Standard
Mg	24	8812.6	12.8	**12.3836**	0.283	2.3	mg/L	17	Standard
K	39	643.3	4.0	**3.2876**	0.341	10.4	mg/L	15	Standard
Ca	43	233.3	8.1	**16.4775**	3.436	20.9	mg/L	67	Standard
Fe	54	18033.4	9.2	**12.6766**	0.651	5.1	mg/L	214	Standard
Fe	57	4550.7	9.3	**11.9269**	0.587	4.9	mg/L	82	Standard
> **Sc-1**	45	43391.2	14.2				mg/L	47226	Standard
Cl	35	56048.9	14.5				ug/L	38729	Standard
Kr	83	4.7	49.5				ug/L	3	Standard
Br	81	1660.1	14.8				ug/L	1497	Standard
P	31	13859.8	15.3				ug/L	15233	Standard
S	34	1790.1	18.9				ug/L	1153	Standard
Sr	88	50.0	17.3				ug/L	47	Standard
C	12	303.3	11.6				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	3	Standard
Dy	164	28.6	92.3				mg/L	22	Standard
Ho-1	165	23.3	44.6				mg/L	13	Standard
Er	166	30.0	33.3				mg/L	30	Standard
I	127	2798.6	5.1				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	107.663		
Al	27	0.959		
Sc	45			
Ti	47	100.611		
V	51	92.002		
Cr	52	90.671		
Cr	53			
Mn	55	91.609		
Co	59	93.879		
Ni	60	92.197		
Cu	65	94.040		
Zn	66	97.022		
> Ge	72		97.892	
As	75	97.533		
Se	82	98.507		
Se-1	77			
> Ga	71			

Sample ID: QC Std 5
Report Date/Time: Thursday, February 11, 2016 16:16:07
Page 2

Approved: February 12, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	103.253		
Ag	107	80.735		
Cd	111	94.218		
Cd	114			
> In	115		100.507	
Sn	118			
Sb	123	95.128		
Ba	135	88.347		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	93.310		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.342		
U	238	94.191		
> Bi	209		99.185	
Na	23	51.327		
Mg	24	247.673		
K	39	65.751		
Ca	43	109.850		
Fe	54	101.413		
Fe	57	95.415		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
Report Date/Time: Thursday, February 11, 2016 16:16:07
Page 3

Approved: February 12, 2016

QC Std 5	K	39
QC Std 5	Ca	43

Sample ID: QC Std 5
Report Date/Time: Thursday, February 11, 2016 16:16:07
Page 4

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, February 11, 2016 16:24:17
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51159.9	8.2				ug/L	57324	Standard
	Be	9	31541.5	13.8	**54.1223**	3.129	5.8	ug/L	2	Standard
	Al	27	6603841.3	14.2	**49.3180**	3.059	6.2	ug/L	172	Standard
	Sc	45	43663.6	13.3				ug/L	47226	Standard
	Ti	47	40220.6	13.3	**91.2271**	0.739	0.8	ug/L	100	Standard
	V	51	503956.4	11.9	**47.1393**	0.389	0.8	ug/L	2380	Standard
	Cr	52	468663.9	12.3	**46.7675**	0.540	1.2	ug/L	10715	Standard
	Cr	53	56934.6	12.5	**46.0141**	0.270	0.6	ug/L	293	Standard
	Mn	55	489193.3	12.1	**45.9403**	0.214	0.5	ug/L	882	Standard
	Co	59	563710.0	14.4	**48.4542**	1.120	2.3	ug/L	252	Standard
	Ni	60	136812.2	13.4	**47.0028**	0.537	1.1	ug/L	51	Standard
	Cu	65	138984.3	12.7	**47.8147**	0.115	0.2	ug/L	125	Standard
	Zn	66	68579.1	12.3	**48.4955**	0.076	0.2	ug/L	191	Standard
>	Ge	72	676601.9	12.5				ug/L	693220	Standard
	As	75	72504.5	11.7	**48.2642**	0.580	1.2	ug/L	-96	Standard
	Se	82	7789.9	12.2	**50.1135**	0.139	0.3	ug/L	24	Standard
	Se-1	77	4791.1	10.7	**47.4084**	0.844	1.8	ug/L	66	Standard
>	Ga	71	95.0	24.1				mg/L	67	Standard
	Rb	85	1123.4	15.7				ug/L	25	Standard
	Y	89	614696.2	12.3				ug/L	639569	Standard
>	Rh	103	33.3	8.7				ug/L	8	Standard
	Mo	98	429285.4	12.4	**101.4081**	1.092	1.1	ug/L	15	Standard
	Ag	107	546572.5	12.8	**47.1956**	0.870	1.8	ug/L	162	Standard
	Cd	111	169158.1	12.5	**48.4111**	0.585	1.2	mg/L	7	Standard
	Cd	114	412601.8	13.1	**49.1024**	1.093	2.2	ug/L	31	Standard
>	In	115	1029769.8	12.0				ug/L	1030666	Standard
	Sn	118	468497.0	11.8	**46.9032**	0.263	0.6	ug/L	755	Standard
	Sb	123	373258.1	10.8	**48.1212**	0.875	1.8	ug/L	105	Standard
	Ba	135	174755.9	11.6	**46.0494**	0.768	1.7	ug/L	23	Standard
	Ce	140	143.3	5.3				ug/L	137	Standard
>	Tb	159	1674915.2	11.6				ug/L	1748833	Standard
	Ho	165	26.7	54.1				ug/L	13	Standard
	Tl	203	706805.5	11.3	**47.6045**	0.878	1.8	ug/L	14	Standard
	Tl	205	491250.3	11.6	**47.5748**	0.848	1.8	ug/L	10	Standard
	Pb	206	434688.2	10.5	**46.2819**	0.569	1.2	ug/L	459	Standard
	Pb	207	396520.5	9.7	**46.1699**	0.742	1.6	ug/L	424	Standard
	Pb	208	1652950.4	10.6	**49.6346**	0.461	0.9	ug/L	1701	Standard
	U	238	511971.0	11.5	**48.2158**	0.800	1.7	ug/L	2	Standard
>	Bi	209	920680.6	9.8				ug/L	937372	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 16:26:34
Page 1

Approved: February 12, 2016

Na	23	5.0	0.0	**22.2406**	2.892	13.0	mg/L	0	Standard
Mg	24	3617.1	14.9	**5.0261**	0.208	4.1	mg/L	17	Standard
K	39	676.7	6.7	**3.4360**	0.389	11.3	mg/L	15	Standard
Ca	43	86.7	18.5	**3.5040**	2.335	66.6	mg/L	67	Standard
Fe	54	7169.7	11.1	**4.9094**	0.127	2.6	mg/L	214	Standard
Fe	57	1986.8	13.8	**5.0441**	0.184	3.6	mg/L	82	Standard
> **Sc-1**	45	43663.6	13.3				mg/L	47226	Standard
Cl	35	50085.1	14.4				ug/L	38729	Standard
Kr	83	2.3	99.0				ug/L	3	Standard
Br	81	1583.4	16.3				ug/L	1497	Standard
P	31	14563.7	12.5				ug/L	15233	Standard
S	34	1853.4	8.4				ug/L	1153	Standard
Sr	88	45.0	40.1				ug/L	47	Standard
C	12	120.0	22.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	21.9	68.5				mg/L	22	Standard
Ho-1	165	26.7	54.1				mg/L	13	Standard
Er	166	30.0	66.7				mg/L	30	Standard
I	127	2945.3	5.3				mg/L	2297	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	108.245		
	Al	27	98.636		
	Sc	45			
	Ti	47	91.227		
	V	51	94.279		
	Cr	52	93.535		
	Cr	53			
	Mn	55	91.881		
	Co	59	96.908		
	Ni	60	94.006		
	Cu	65	95.629		
	Zn	66	96.991		
>	Ge	72		97.603	
	As	75	96.528		
	Se	82	100.227		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 16:26:34
Page 2

Approved: February 12, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	101.408		
Ag	107	94.391		
Cd	111	96.822		
Cd	114			
> In	115			99.913
Sn	118	93.806		
Sb	123	96.242		
Ba	135	92.099		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.209		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.269		
U	238	96.432		
> Bi	209			98.219
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 16:26:34
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, February 11, 2016 16:27:28
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48743.9	10.8				ug/L	57324	Standard
	Be	9	10.0	132.3	**0.0316**	0.026	83.2	ug/L	2	Standard
	Al	27	880.0	41.1	**0.0016**	0.003	216.0	ug/L	172	Standard
	Sc	45	42746.2	15.9				ug/L	47226	Standard
	Ti	47	62.3	8.8	**-0.0164**	0.028	173.2	ug/L	100	Standard
	V	51	2160.6	1.6	**-0.0027**	0.021	781.8	ug/L	2380	Standard
	Cr	52	9442.3	7.6	**-0.0572**	0.044	76.4	ug/L	10715	Standard
	Cr	53	370.0	5.9	**0.0680**	0.024	34.7	ug/L	293	Standard
	Mn	55	982.4	9.1	**-0.0237**	0.012	49.7	ug/L	882	Standard
	Co	59	268.3	6.0	**-0.0007**	0.003	455.6	ug/L	252	Standard
	Ni	60	58.3	8.6	**-0.0099**	0.003	34.7	ug/L	51	Standard
	Cu	65	220.0	9.9	**0.0201**	0.011	52.7	ug/L	125	Standard
	Zn	66	260.3	7.3	**-0.1066**	0.012	11.6	ug/L	191	Standard
>	**Ge**	72	665978.8	12.2				ug/L	693220	Standard
	As	75	-86.3	57.5	**0.0009**	0.029	3050.5	ug/L	-96	Standard
	Se	82	23.2	23.2	**0.0168**	0.053	313.6	ug/L	24	Standard
	Se-1	77	71.7	15.9	**0.0180**	0.116	640.6	ug/L	66	Standard
>	**Ga**	71	105.0	42.3				mg/L	67	Standard
	Rb	85	15.0	66.7				ug/L	25	Standard
	Y	89	604108.3	14.7				ug/L	639569	Standard
>	**Rh**	103	6.7	43.3				ug/L	8	Standard
	Mo	98	227.2	18.2	**0.0474**	0.006	13.6	ug/L	15	Standard
	Ag	107	295.7	6.6	**0.0086**	0.004	48.4	ug/L	162	Standard
	Cd	111	24.6	73.8	**0.0053**	0.006	118.5	mg/L	7	Standard
	Cd	114	65.5	49.5	**-0.0008**	0.005	591.7	ug/L	31	Standard
>	**In**	115	1016993.0	12.7				ug/L	1030666	Standard
	Sn	118	1161.7	5.5	**0.0439**	0.020	45.6	ug/L	755	Standard
	Sb	123	738.4	19.2	**0.0918**	0.030	33.1	ug/L	105	Standard
	Ba	135	33.0	34.9	**0.0004**	0.004	1120.5	ug/L	23	Standard
	Ce	140	25.0	34.6				ug/L	137	Standard
>	**Tb**	159	1640161.1	13.9				ug/L	1748833	Standard
	Ho	165	16.7	34.6				ug/L	13	Standard
	Tl	203	116.3	25.1	**0.0048**	0.003	61.8	ug/L	14	Standard
	Tl	205	76.7	55.5	**0.0056**	0.005	93.0	ug/L	10	Standard
	Pb	206	504.7	9.9	**-0.0041**	0.002	55.7	ug/L	459	Standard
	Pb	207	440.7	13.8	**-0.0038**	0.002	61.7	ug/L	424	Standard
	Pb	208	1875.7	10.4	**-0.0004**	0.003	855.3	ug/L	1701	Standard
	U	238	75.7	48.5	**0.0036**	0.004	124.3	ug/L	2	Standard
>	**Bi**	209	916195.8	13.5				ug/L	937372	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 16:29:45
Page 1

Approved: February 12, 2016

Na	23	3.3	173.2	**16.0418**	27.777	173.2	mg/L	0	Standard
Mg	24	35.0	57.1	**0.0297**	0.035	118.7	mg/L	17	Standard
K	39	18.3	56.8	**0.0270**	0.061	226.3	mg/L	15	Standard
Ca	43	45.0	29.4	**-0.1587**	1.353	852.7	mg/L	67	Standard
Fe	54	182.9	20.6	**-0.0106**	0.013	120.7	mg/L	214	Standard
Fe	57	66.7	11.5	**-0.0094**	0.009	90.5	mg/L	82	Standard
Sc-1	45	42746.2	15.9				mg/L	47226	Standard
Cl	35	51480.4	8.7				ug/L	38729	Standard
Kr	83	3.3	62.4				ug/L	3	Standard
Br	81	1600.1	9.7				ug/L	1497	Standard
P	31	16168.7	13.8				ug/L	15233	Standard
S	34	1908.5	8.3				ug/L	1153	Standard
Sr	88	55.0	32.8				ug/L	47	Standard
C	12	133.3	11.5				mg/L	90	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	18.7	91.9				mg/L	22	Standard
Ho-1	165	16.7	34.6				mg/L	13	Standard
Er	166	26.7	57.3				mg/L	30	Standard
I	127	2400.2	6.4				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.070	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 16:29:45
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.673
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.741
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 16:29:45
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602035701
Sample Date/Time: Thursday, February 11, 2016 17:36:25
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	40619.6	8.0				ug/L	57324	Standard
	Be	9	10.0	50.0	**0.0332**	0.009	27.6	ug/L	2	Standard
	Al	27	832957.2	9.4	**7.8491**	0.249	3.2	ug/L	172	Standard
	Sc	45	50757.0	9.4				ug/L	47226	Standard
	Ti	47	452.3	16.0	**0.8078**	0.195	24.1	ug/L	100	Standard
	V	51	3495.5	8.8	**0.0966**	0.008	8.0	ug/L	2380	Standard
	Cr	52	12899.9	9.6	**0.1917**	0.041	21.1	ug/L	10715	Standard
	Cr	53	4053.9	9.8	**2.8446**	0.213	7.5	ug/L	293	Standard
	Mn	55	1207728.0	9.7	**106.1910**	2.853	2.7	ug/L	882	Standard
	Co	59	9549.7	6.7	**0.7459**	0.006	0.8	ug/L	252	Standard
	Ni	60	43945.3	8.5	**14.1177**	0.219	1.5	ug/L	51	Standard
	Cu	65	2877.9	7.2	**0.8712**	0.028	3.2	ug/L	125	Standard
	Zn	66	36317.6	5.4	**23.9160**	0.416	1.7	ug/L	191	Standard
>	**Ge**	72	722542.0	7.0				ug/L	693220	Standard
	As	75	-3.6	997.3	**0.0558**	0.023	41.9	ug/L	-96	Standard
	Se	82	50.6	15.5	**0.1660**	0.037	22.0	ug/L	24	Standard
	Se-1	77	252.0	9.5	**1.6487**	0.061	3.7	ug/L	66	Standard
>	**Ga**	71	175.0	19.8				mg/L	67	Standard
	Rb	85	7250.1	6.4				ug/L	25	Standard
	Y	89	643389.6	8.8				ug/L	639569	Standard
>	**Rh**	103	21.7	53.3				ug/L	8	Standard
	Mo	98	13868.0	6.4	**3.3025**	0.063	1.9	ug/L	15	Standard
	Ag	107	165.7	2.1	**-0.0031**	0.001	41.6	ug/L	162	Standard
	Cd	111	136.1	12.0	**0.0370**	0.002	5.9	mg/L	7	Standard
	Cd	114	422.5	11.0	**0.0417**	0.005	11.4	ug/L	31	Standard
>	**In**	115	1020292.5	7.5				ug/L	1030666	Standard
	Sn	118	1211.7	6.0	**0.0476**	0.014	29.7	ug/L	755	Standard
	Sb	123	2365.1	2.9	**0.3020**	0.031	10.3	ug/L	105	Standard
	Ba	135	9760.8	6.2	**2.5885**	0.041	1.6	ug/L	23	Standard
	Ce	140	1381.7	10.2				ug/L	137	Standard
>	**Tb**	159	1730069.2	6.9				ug/L	1748833	Standard
	Ho	165	28.3	20.4				ug/L	13	Standard
	Tl	203	891.0	4.6	**0.0568**	0.007	11.7	ug/L	14	Standard
	Tl	205	571.7	18.9	**0.0533**	0.012	23.2	ug/L	10	Standard
	Pb	206	1709.4	3.2	**0.1234**	0.007	5.3	ug/L	459	Standard
	Pb	207	1414.4	5.7	**0.1087**	0.002	1.8	ug/L	424	Standard
	Pb	208	6146.5	6.2	**0.1268**	0.001	0.9	ug/L	1701	Standard
	U	238	28.3	14.3	**-0.0012**	0.000	17.6	ug/L	2	Standard
>	**Bi**	209	924781.0	6.7				ug/L	937372	Standard

Sample ID: L1602035701
Report Date/Time: Thursday, February 11, 2016 17:38:42
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	24726.9	8.0	**29.7228**	0.676	2.3	mg/L	17	Standard
K	39	111.7	27.4	**0.4287**	0.155	36.1	mg/L	15	Standard
Ca	43	75.0	17.6	**1.4796**	1.456	98.4	mg/L	67	Standard
Fe	54	4187.9	8.4	**2.3948**	0.126	5.3	mg/L	214	Standard
Fe	57	1095.0	2.4	**2.3091**	0.283	12.3	mg/L	82	Standard
> **Sc-1**	45	50757.0	9.4				mg/L	47226	Standard
Cl	35	50405.8	11.3				ug/L	38729	Standard
Kr	83	5.0	34.6				ug/L	3	Standard
Br	81	5227.6	9.2				ug/L	1497	Standard
P	31	15055.8	7.1				ug/L	15233	Standard
S	34	1933.5	1.1				ug/L	1153	Standard
Sr	88	58.3	32.5				ug/L	47	Standard
C	12	123.3	16.9				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	21.1	50.0				mg/L	22	Standard
Ho-1	165	28.3	20.4				mg/L	13	Standard
Er	166	46.7	81.1				mg/L	30	Standard
I	127	8122.2	2.0				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		70.860	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.230	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602035701
Report Date/Time: Thursday, February 11, 2016 17:38:42
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.994
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.657
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1602035701
Report Date/Time: Thursday, February 11, 2016 17:38:42
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: PBW 81 WG556201-02
Sample Date/Time: Thursday, February 11, 2016 17:39:37
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39261.2	10.4				ug/L	57324	Standard
	Be	9	1.7	173.2	**0.0159**	0.007	42.7	ug/L	2	Standard
	Al	27	1653.4	17.4	**0.0106**	0.001	10.4	ug/L	172	Standard
	Sc	45	47225.1	18.1				ug/L	47226	Standard
	Ti	47	79.3	11.9	**0.0173**	0.042	242.0	ug/L	100	Standard
	V	51	2369.5	7.7	**0.0084**	0.013	152.2	ug/L	2380	Standard
	Cr	52	11573.4	8.8	**0.1213**	0.052	42.6	ug/L	10715	Standard
	Cr	53	526.7	26.1	**0.1752**	0.057	32.3	ug/L	293	Standard
	Mn	55	1756.1	15.1	**0.0435**	0.010	23.4	ug/L	882	Standard
	Co	59	136.7	15.0	**-0.0129**	0.001	5.6	ug/L	252	Standard
	Ni	60	86.0	20.4	**-0.0015**	0.005	294.7	ug/L	51	Standard
	Cu	65	362.3	19.4	**0.0641**	0.007	11.3	ug/L	125	Standard
	Zn	66	1802.1	16.1	**0.9569**	0.033	3.5	ug/L	191	Standard
>	**Ge**	72	690931.9	13.4				ug/L	693220	Standard
	As	75	-92.4	12.9	**-0.0032**	0.009	265.8	ug/L	-96	Standard
	Se	82	25.6	10.4	**0.0257**	0.035	137.6	ug/L	24	Standard
	Se-1	77	73.3	14.3	**0.0099**	0.113	1140.5	ug/L	66	Standard
>	**Ga**	71	91.7	26.9				mg/L	67	Standard
	Rb	85	120.0	16.7				ug/L	25	Standard
	Y	89	631557.6	16.0				ug/L	639569	Standard
>	**Rh**	103	20.0	66.1				ug/L	8	Standard
	Mo	98	29.5	5.8	**0.0005**	0.001	298.2	ug/L	15	Standard
	Ag	107	158.0	5.8	**-0.0032**	0.002	58.3	ug/L	162	Standard
	Cd	111	7.9	21.9	**0.0001**	0.000	284.2	mg/L	7	Standard
	Cd	114	35.1	50.4	**-0.0046**	0.003	59.0	ug/L	31	Standard
>	**In**	115	991241.4	14.4				ug/L	1030666	Standard
	Sn	118	1113.4	15.7	**0.0403**	0.006	14.4	ug/L	755	Standard
	Sb	123	102.5	35.5	**0.0073**	0.007	95.3	ug/L	105	Standard
	Ba	135	250.3	10.4	**0.0601**	0.005	8.9	ug/L	23	Standard
	Ce	140	525.0	14.4				ug/L	137	Standard
>	**Tb**	159	1655805.2	14.2				ug/L	1748833	Standard
	Ho	165	26.7	47.2				ug/L	13	Standard
	Tl	203	60.7	66.3	**0.0006**	0.002	334.9	ug/L	14	Standard
	Tl	205	56.7	57.4	**0.0031**	0.002	81.1	ug/L	10	Standard
	Pb	206	558.0	13.5	**0.0012**	0.001	121.8	ug/L	459	Standard
	Pb	207	477.7	12.8	**0.0003**	0.002	514.4	ug/L	424	Standard
	Pb	208	1984.1	14.7	**0.0024**	0.001	61.5	ug/L	1701	Standard
	U	238	7.3	31.5	**-0.0032**	0.000	4.0	ug/L	2	Standard
>	**Bi**	209	919027.2	12.4				ug/L	937372	Standard

Sample ID: PBW 81 WG556201-02
Report Date/Time: Thursday, February 11, 2016 17:41:54
Page 1

Approved: February 12, 2016

Na	23	3.3	173.2	**16.0579**	27.804	173.2	mg/L	0	Standard
Mg	24	45.0	11.1	**0.0364**	0.017	45.9	mg/L	17	Standard
K	39	10.0	50.0	**-0.0238**	0.024	101.5	mg/L	15	Standard
Ca	43	36.7	41.7	**-1.0838**	1.548	142.8	mg/L	67	Standard
Fe	54	217.4	15.0	**0.0044**	0.040	902.6	mg/L	214	Standard
Fe	57	70.0	12.4	**-0.0158**	0.037	233.6	mg/L	82	Standard
> **Sc-1**	45	47225.1	18.1				mg/L	47226	Standard
Cl	35	47076.9	10.8				ug/L	38729	Standard
Kr	83	3.3	45.8				ug/L	3	Standard
Br	81	1720.1	4.1				ug/L	1497	Standard
P	31	14143.4	16.2				ug/L	15233	Standard
S	34	1810.1	6.4				ug/L	1153	Standard
Sr	88	56.7	27.0				ug/L	47	Standard
C	12	136.7	18.4				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	18.6	86.7				mg/L	22	Standard
Ho-1	165	26.7	47.2				mg/L	13	Standard
Er	166	30.0	100.0				mg/L	30	Standard
I	127	3835.5	5.6				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		68.490	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.670	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 81 WG556201-02
Report Date/Time: Thursday, February 11, 2016 17:41:54
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.175
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.043
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 81 WG556201-02
Report Date/Time: Thursday, February 11, 2016 17:41:54
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: LCSW 81 WG556201-03
Sample Date/Time: Thursday, February 11, 2016 17:42:48
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	41169.4	7.0				ug/L	57324	Standard
	Be	9	26964.2	12.7	**57.5382**	4.066	7.1	ug/L	2	Standard
	Al	27	2233.5	16.6	**0.0153**	0.002	15.5	ug/L	172	Standard
	Sc	45	49469.5	9.9				ug/L	47226	Standard
	Ti	47	80.3	12.1	**0.0107**	0.038	350.0	ug/L	100	Standard
	V	51	525238.2	9.6	**46.0106**	0.882	1.9	ug/L	2380	Standard
	Cr	52	515841.0	12.0	**48.1695**	0.836	1.7	ug/L	10715	Standard
	Cr	53	64062.2	15.0	**48.3368**	2.330	4.8	ug/L	293	Standard
	Mn	55	539137.9	11.7	**47.3578**	0.467	1.0	ug/L	882	Standard
	Co	59	601191.6	10.3	**48.4662**	0.474	1.0	ug/L	252	Standard
	Ni	60	148463.6	13.0	**47.7091**	1.363	2.9	ug/L	51	Standard
	Cu	65	152193.5	13.3	**48.9378**	1.246	2.5	ug/L	125	Standard
	Zn	66	82668.9	11.6	**54.7297**	0.437	0.8	ug/L	191	Standard
>	**Ge**	72	722743.9	10.8				ug/L	693220	Standard
	As	75	74200.0	8.0	**46.3064**	1.359	2.9	ug/L	-96	Standard
	Se	82	7903.3	10.4	**47.5935**	0.410	0.9	ug/L	24	Standard
	Se-1	77	5075.9	10.0	**46.9793**	1.231	2.6	ug/L	66	Standard
>	**Ga**	71	93.3	22.3				mg/L	67	Standard
	Rb	85	76.7	41.9				ug/L	25	Standard
	Y	89	639656.6	11.8				ug/L	639569	Standard
>	**Rh**	103	50.0	20.0				ug/L	8	Standard
	Mo	98	41.9	9.7	**0.0029**	0.001	49.6	ug/L	15	Standard
	Ag	107	577325.1	11.4	**49.1756**	0.895	1.8	ug/L	162	Standard
	Cd	111	169337.0	10.5	**47.8268**	0.784	1.6	mg/L	7	Standard
	Cd	114	412621.9	11.5	**48.4538**	1.439	3.0	ug/L	31	Standard
>	**In**	115	1044877.6	11.8				ug/L	1030666	Standard
	Sn	118	1661.8	3.0	**0.0898**	0.017	18.8	ug/L	755	Standard
	Sb	123	364444.0	11.4	**46.2779**	0.892	1.9	ug/L	105	Standard
	Ba	135	179352.4	9.4	**46.6481**	1.208	2.6	ug/L	23	Standard
	Ce	140	390.0	15.1				ug/L	137	Standard
>	**Tb**	159	1713625.7	9.8				ug/L	1748833	Standard
	Ho	165	21.7	13.3				ug/L	13	Standard
	Tl	203	721588.2	10.8	**46.3474**	0.744	1.6	ug/L	14	Standard
	Tl	205	496102.7	8.8	**45.8851**	0.608	1.3	ug/L	10	Standard
	Pb	206	452858.0	9.5	**45.9930**	0.142	0.3	ug/L	459	Standard
	Pb	207	394518.6	8.7	**43.8171**	0.542	1.2	ug/L	424	Standard
	Pb	208	1673642.8	10.3	**47.9190**	0.532	1.1	ug/L	1701	Standard
	U	238	514291.8	9.5	**46.2340**	0.607	1.3	ug/L	2	Standard
>	**Bi**	209	965758.4	9.8				ug/L	937372	Standard

Sample ID: LCSW 81 WG556201-03
Report Date/Time: Thursday, February 11, 2016 17:45:05
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	39.8	**0.0227**	0.014	63.1	mg/L	17	Standard
K	39	18.3	31.5	**0.0142**	0.036	253.2	mg/L	15	Standard
Ca	43	51.7	11.2	**-0.2396**	0.157	65.6	mg/L	67	Standard
Fe	54	228.4	25.6	**0.0013**	0.038	2911.4	mg/L	214	Standard
Fe	57	68.3	21.1	**-0.0301**	0.033	109.7	mg/L	82	Standard
> **Sc-1**	45	49469.5	9.9				mg/L	47226	Standard
Cl	35	47902.5	6.1				ug/L	38729	Standard
Kr	83	3.7	68.6				ug/L	3	Standard
Br	81	1360.1	9.0				ug/L	1497	Standard
P	31	14038.2	8.9				ug/L	15233	Standard
S	34	1918.5	0.9				ug/L	1153	Standard
Sr	88	46.7	16.4				ug/L	47	Standard
C	12	196.7	10.6				mg/L	90	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	21.6	68.4				mg/L	22	Standard
Ho-1	165	21.7	13.3				mg/L	13	Standard
Er	166	36.7	31.5				mg/L	30	Standard
I	127	3728.8	5.2				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		71.819	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.259	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 81 WG556201-03
Report Date/Time: Thursday, February 11, 2016 17:45:05
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.379
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.028
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 81 WG556201-03
Report Date/Time: Thursday, February 11, 2016 17:45:05
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602010206 WG556201-01
Sample Date/Time: Thursday, February 11, 2016 17:46:00
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	41495.2	5.2				ug/L	57324	Standard
	Be	9	15.0	57.7	**0.0445**	0.019	43.8	ug/L	2	Standard
	Al	27	16253567.2	7.4	**150.0037**	3.633	2.4	ug/L	172	Standard
	Sc	45	52228.7	8.9				ug/L	47226	Standard
	Ti	47	195.0	6.9	**0.2487**	0.008	3.0	ug/L	100	Standard
	V	51	3339.0	4.7	**0.0809**	0.016	19.9	ug/L	2380	Standard
	Cr	52	15908.0	4.4	**0.4682**	0.060	12.9	ug/L	10715	Standard
	Cr	53	2055.1	8.0	**1.3203**	0.225	17.0	ug/L	293	Standard
	Mn	55	5943.8	8.8	**0.4002**	0.005	1.3	ug/L	882	Standard
	Co	59	815.0	13.3	**0.0405**	0.003	8.3	ug/L	252	Standard
	Ni	60	2656.2	5.8	**0.8180**	0.030	3.7	ug/L	51	Standard
	Cu	65	1088.4	9.5	**0.2900**	0.013	4.5	ug/L	125	Standard
	Zn	66	11768.2	6.4	**7.4735**	0.147	2.0	ug/L	191	Standard
>	**Ge**	72	729776.1	8.1				ug/L	693220	Standard
	As	75	229.1	19.4	**0.1977**	0.019	9.4	ug/L	-96	Standard
	Se	82	136.2	7.0	**0.6757**	0.022	3.3	ug/L	24	Standard
	Se-1	77	208.3	13.3	**1.2441**	0.409	32.9	ug/L	66	Standard
>	**Ga**	71	96.7	20.9				mg/L	67	Standard
	Rb	85	1151.7	10.2				ug/L	25	Standard
	Y	89	662377.3	9.0				ug/L	639569	Standard
>	**Rh**	103	221.7	14.7				ug/L	8	Standard
	Mo	98	2954.2	6.6	**0.6888**	0.015	2.2	ug/L	15	Standard
	Ag	107	256.3	5.6	**0.0046**	0.002	46.0	ug/L	162	Standard
	Cd	111	64.6	25.0	**0.0160**	0.003	19.4	mg/L	7	Standard
	Cd	114	200.7	22.6	**0.0148**	0.006	39.7	ug/L	31	Standard
>	**In**	115	1034156.0	7.9				ug/L	1030666	Standard
	Sn	118	1278.4	5.0	**0.0528**	0.016	29.8	ug/L	755	Standard
	Sb	123	1717.8	17.5	**0.2162**	0.056	25.8	ug/L	105	Standard
	Ba	135	131867.1	7.4	**34.5987**	0.443	1.3	ug/L	23	Standard
	Ce	140	483.3	10.9				ug/L	137	Standard
>	**Tb**	159	1727575.0	7.6				ug/L	1748833	Standard
	Ho	165	36.7	31.5				ug/L	13	Standard
	Tl	203	1098.7	4.9	**0.0707**	0.001	1.5	ug/L	14	Standard
	Tl	205	848.4	7.3	**0.0803**	0.009	11.8	ug/L	10	Standard
	Pb	206	888.7	6.0	**0.0364**	0.002	5.3	ug/L	459	Standard
	Pb	207	777.7	9.6	**0.0350**	0.004	12.6	ug/L	424	Standard
	Pb	208	3412.8	11.2	**0.0453**	0.010	22.4	ug/L	1701	Standard
	U	238	7494.2	6.0	**0.7021**	0.012	1.7	ug/L	2	Standard
>	**Bi**	209	921319.7	5.5				ug/L	937372	Standard

Sample ID: L1602010206 WG556201-01
Report Date/Time: Thursday, February 11, 2016 17:48:17
Page 1

Approved: February 12, 2016

Na	23	10.0	100.0	**38.2504**	37.443	97.9	mg/L	0	Standard
Mg	24	16862.8	8.5	**19.6764**	0.212	1.1	mg/L	17	Standard
K	39	121.7	24.8	**0.4506**	0.121	26.9	mg/L	15	Standard
Ca	43	588.3	11.3	**38.4457**	2.058	5.4	mg/L	67	Standard
Fe	54	215.3	11.3	**-0.0143**	0.018	127.1	mg/L	214	Standard
Fe	57	226.7	13.5	**0.3159**	0.111	35.0	mg/L	82	Standard
> **Sc-1**	45	52228.7	8.9				mg/L	47226	Standard
Cl	35	66607.6	4.7				ug/L	38729	Standard
Kr	83	5.7	62.0				ug/L	3	Standard
Br	81	9569.7	6.4				ug/L	1497	Standard
P	31	17900.6	9.7				ug/L	15233	Standard
S	34	2248.5	3.4				ug/L	1153	Standard
Sr	88	645.0	12.4				ug/L	47	Standard
C	12	136.7	59.6				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	18.4	53.0				mg/L	22	Standard
Ho-1	165	36.7	31.5				mg/L	13	Standard
Er	166	33.3	17.3				mg/L	30	Standard
I	127	52892.2	2.3				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.388	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.273	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602010206 WG556201-01
Report Date/Time: Thursday, February 11, 2016 17:48:17
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.339	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.287	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1602010206 WG556201-01
Report Date/Time: Thursday, February 11, 2016 17:48:17
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602010206S WG556201-05
Sample Date/Time: Thursday, February 11, 2016 17:49:11
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	42197.1	5.7				ug/L	57324	Standard
	Be	9	27673.7	9.4	**57.6556**	2.230	3.9	ug/L	2	Standard
	Al	27	16201484.5	7.9	**147.0955**	6.140	4.2	ug/L	172	Standard
	Sc	45	51760.4	9.3				ug/L	47226	Standard
	Ti	47	201.7	12.3	**0.2602**	0.031	11.9	ug/L	100	Standard
	V	51	526998.1	7.3	**45.5061**	0.130	0.3	ug/L	2380	Standard
	Cr	52	518194.7	9.1	**47.7409**	0.949	2.0	ug/L	10715	Standard
	Cr	53	64234.7	7.7	**47.9670**	0.943	2.0	ug/L	293	Standard
	Mn	55	533158.7	8.7	**46.2052**	0.781	1.7	ug/L	882	Standard
	Co	59	580828.3	8.9	**46.1481**	0.746	1.6	ug/L	252	Standard
	Ni	60	147598.7	8.7	**46.8469**	0.626	1.3	ug/L	51	Standard
	Cu	65	145110.1	7.9	**46.1100**	0.307	0.7	ug/L	125	Standard
	Zn	66	89845.5	7.2	**58.7489**	0.095	0.2	ug/L	191	Standard
>	**Ge**	72	732442.2	7.3				ug/L	693220	Standard
	As	75	78369.8	6.5	**48.1781**	0.370	0.8	ug/L	-96	Standard
	Se	82	8063.6	6.1	**47.9293**	0.571	1.2	ug/L	24	Standard
	Se-1	77	5261.3	7.9	**48.0187**	0.518	1.1	ug/L	66	Standard
>	**Ga**	71	91.7	19.2				mg/L	67	Standard
	Rb	85	1043.4	12.6				ug/L	25	Standard
	Y	89	653537.0	4.1				ug/L	639569	Standard
>	**Rh**	103	261.7	2.2				ug/L	8	Standard
	Mo	98	2900.5	11.4	**0.6727**	0.035	5.3	ug/L	15	Standard
	Ag	107	544983.1	7.1	**46.7685**	1.012	2.2	ug/L	162	Standard
	Cd	111	166855.9	7.2	**47.4419**	0.622	1.3	mg/L	7	Standard
	Cd	114	402876.8	7.4	**47.6505**	0.705	1.5	ug/L	31	Standard
>	**In**	115	1037000.2	7.4				ug/L	1030666	Standard
	Sn	118	1396.7	9.2	**0.0633**	0.003	4.0	ug/L	755	Standard
	Sb	123	371742.7	6.6	**47.5702**	0.984	2.1	ug/L	105	Standard
	Ba	135	303362.7	6.9	**79.3792**	0.907	1.1	ug/L	23	Standard
	Ce	140	483.3	14.5				ug/L	137	Standard
>	**Tb**	159	1755383.6	7.5				ug/L	1748833	Standard
	Ho	165	41.7	18.3				ug/L	13	Standard
	Tl	203	709255.3	6.0	**47.0201**	0.330	0.7	ug/L	14	Standard
	Tl	205	492302.0	5.5	**46.9520**	0.836	1.8	ug/L	10	Standard
	Pb	206	446683.8	6.4	**46.7843**	0.858	1.8	ug/L	459	Standard
	Pb	207	387978.6	5.0	**44.4323**	0.202	0.5	ug/L	424	Standard
	Pb	208	1652973.8	6.7	**48.8254**	0.904	1.9	ug/L	1701	Standard
	U	238	532744.5	6.0	**49.3928**	0.547	1.1	ug/L	2	Standard
>	**Bi**	209	936015.9	5.3				ug/L	937372	Standard

Sample ID: L1602010206S WG556201-05
Report Date/Time: Thursday, February 11, 2016 17:51:28
Page 1

Approved: February 12, 2016

Na	23	13.3	21.7	**49.1292**	7.416	15.1	mg/L	0	Standard
Mg	24	16899.5	8.1	**19.9075**	0.252	1.3	mg/L	17	Standard
K	39	100.0	25.0	**0.3619**	0.095	26.2	mg/L	15	Standard
Ca	43	530.0	8.1	**34.9262**	6.036	17.3	mg/L	67	Standard
Fe	54	179.8	12.0	**-0.0334**	0.023	68.2	mg/L	214	Standard
Fe	57	218.3	1.3	**0.2980**	0.040	13.4	mg/L	82	Standard
> **Sc-1**	45	51760.4	9.3				mg/L	47226	Standard
Cl	35	70746.2	8.1				ug/L	38729	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	13112.3	2.9				ug/L	1497	Standard
P	31	17882.2	5.8				ug/L	15233	Standard
S	34	2305.2	4.3				ug/L	1153	Standard
Sr	88	683.3	9.0				ug/L	47	Standard
C	12	166.7	30.8				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	48.2	55.0				mg/L	22	Standard
Ho-1	165	41.7	18.3				mg/L	13	Standard
Er	166	36.7	15.7				mg/L	30	Standard
I	127	77874.7	2.9				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		73.612	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.658	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602010206S WG556201-05
Report Date/Time: Thursday, February 11, 2016 17:51:28
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.615
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.855
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1602010206S WG556201-05
Report Date/Time: Thursday, February 11, 2016 17:51:28
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602010206SD WG556201-06
Sample Date/Time: Thursday, February 11, 2016 17:52:23
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	41346.4	3.5				ug/L	57324	Standard
	Be	9	28208.0	8.8	**59.9835**	3.144	5.2	ug/L	2	Standard
	Al	27	16333570.6	10.2	**151.1652**	10.449	6.9	ug/L	172	Standard
	Sc	45	51027.8	7.8				ug/L	47226	Standard
	Ti	47	176.0	14.2	**0.2082**	0.020	9.5	ug/L	100	Standard
	V	51	535944.9	7.4	**46.6110**	0.732	1.6	ug/L	2380	Standard
	Cr	52	528335.0	9.8	**49.0227**	0.537	1.1	ug/L	10715	Standard
	Cr	53	68276.5	11.4	**51.2494**	1.526	3.0	ug/L	293	Standard
	Mn	55	549188.6	8.5	**47.9369**	0.483	1.0	ug/L	882	Standard
	Co	59	588414.5	8.4	**47.0932**	0.856	1.8	ug/L	252	Standard
	Ni	60	149438.9	8.1	**47.7793**	0.744	1.6	ug/L	51	Standard
	Cu	65	146523.7	7.5	**46.9007**	0.760	1.6	ug/L	125	Standard
	Zn	66	77795.9	7.0	**51.2000**	0.922	1.8	ug/L	191	Standard
>	**Ge**	72	727850.2	8.7				ug/L	693220	Standard
	As	75	79515.0	7.3	**49.2103**	0.744	1.5	ug/L	-96	Standard
	Se	82	8171.9	6.8	**48.9108**	1.112	2.3	ug/L	24	Standard
	Se-1	77	5404.0	7.6	**49.7035**	0.703	1.4	ug/L	66	Standard
>	**Ga**	71	110.0	32.8				mg/L	67	Standard
	Rb	85	986.7	9.4				ug/L	25	Standard
	Y	89	662417.2	7.7				ug/L	639569	Standard
>	**Rh**	103	213.3	19.5				ug/L	8	Standard
	Mo	98	2850.8	9.3	**0.6539**	0.027	4.1	ug/L	15	Standard
	Ag	107	557384.7	8.8	**47.2417**	1.282	2.7	ug/L	162	Standard
	Cd	111	168667.2	7.4	**47.3942**	0.546	1.2	mg/L	7	Standard
	Cd	114	413508.6	10.7	**48.2773**	2.145	4.4	ug/L	31	Standard
>	**In**	115	1048663.9	6.3				ug/L	1030666	Standard
	Sn	118	1370.1	16.1	**0.0587**	0.013	23.0	ug/L	755	Standard
	Sb	123	379190.4	7.5	**47.9405**	0.808	1.7	ug/L	105	Standard
	Ba	135	303797.2	8.1	**78.5292**	1.557	2.0	ug/L	23	Standard
	Ce	140	403.3	13.0				ug/L	137	Standard
>	**Tb**	159	1770123.1	6.0				ug/L	1748833	Standard
	Ho	165	45.0	40.1				ug/L	13	Standard
	Tl	203	722889.2	7.0	**47.4999**	0.104	0.2	ug/L	14	Standard
	Tl	205	514080.9	6.3	**48.6003**	0.580	1.2	ug/L	10	Standard
	Pb	206	456373.3	5.8	**47.4090**	0.608	1.3	ug/L	459	Standard
	Pb	207	397976.0	5.7	**45.1879**	0.663	1.5	ug/L	424	Standard
	Pb	208	1695178.8	6.9	**49.6444**	0.476	1.0	ug/L	1701	Standard
	U	238	541921.5	8.3	**49.7687**	0.627	1.3	ug/L	2	Standard
>	**Bi**	209	944601.6	7.0				ug/L	937372	Standard

Sample ID: L1602010206SD WG556201-06
Report Date/Time: Thursday, February 11, 2016 17:54:40
Page 1

Approved: February 12, 2016

Na	23	1.7	173.2	**6.8375**	11.834	173.1	mg/L	0	Standard
Mg	24	16936.2	7.7	**20.2268**	0.475	2.3	mg/L	17	Standard
K	39	113.3	5.1	**0.4290**	0.042	9.9	mg/L	15	Standard
Ca	43	546.7	4.7	**36.6668**	5.183	14.1	mg/L	67	Standard
Fe	54	226.4	12.8	**-0.0039**	0.029	742.3	mg/L	214	Standard
Fe	57	205.0	12.9	**0.2712**	0.027	10.0	mg/L	82	Standard
> **Sc-1**	45	51027.8	7.8				mg/L	47226	Standard
Cl	35	71293.4	7.9				ug/L	38729	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	13956.4	4.9				ug/L	1497	Standard
P	31	17945.7	9.5				ug/L	15233	Standard
S	34	2265.2	4.6				ug/L	1153	Standard
Sr	88	636.7	9.4				ug/L	47	Standard
C	12	160.0	25.0				mg/L	90	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	38.7	53.5				mg/L	22	Standard
Ho-1	165	45.0	40.1				mg/L	13	Standard
Er	166	26.7	57.3				mg/L	30	Standard
I	127	73072.5	1.3				mg/L	2297	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		72.128	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.995	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1602010206SD WG556201-06
Report Date/Time: Thursday, February 11, 2016 17:54:40
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.746
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.771
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1602010206SD WG556201-06
Report Date/Time: Thursday, February 11, 2016 17:54:40
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602010002
Sample Date/Time: Thursday, February 11, 2016 17:55:34
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43435.8	9.0				ug/L	57324	Standard
	Be	9	5.0	100.0	**0.0225**	0.011	49.7	ug/L	2	Standard
	Al	27	1454712.2	8.2	**12.8384**	0.256	2.0	ug/L	172	Standard
	Sc	45	50738.8	10.7				ug/L	47226	Standard
	Ti	47	86.7	15.3	**0.0280**	0.031	111.4	ug/L	100	Standard
	V	51	4865.8	1.7	**0.2318**	0.039	16.8	ug/L	2380	Standard
	Cr	52	13965.1	5.8	**0.3357**	0.065	19.4	ug/L	10715	Standard
	Cr	53	17146.4	2.8	**13.2803**	1.700	12.8	ug/L	293	Standard
	Mn	55	1851.1	2.5	**0.0503**	0.015	29.9	ug/L	882	Standard
	Co	59	320.7	14.1	**0.0026**	0.006	251.9	ug/L	252	Standard
	Ni	60	464.0	1.4	**0.1241**	0.014	11.7	ug/L	51	Standard
	Cu	65	654.3	1.1	**0.1609**	0.022	13.9	ug/L	125	Standard
	Zn	66	2635.9	4.8	**1.5162**	0.117	7.7	ug/L	191	Standard
>	**Ge**	72	703148.9	10.2				ug/L	693220	Standard
	As	75	1017.5	17.1	**0.7054**	0.052	7.3	ug/L	-96	Standard
	Se	82	508.8	2.6	**3.0354**	0.251	8.3	ug/L	24	Standard
	Se-1	77	1259.4	3.4	**11.4978**	0.863	7.5	ug/L	66	Standard
>	**Ga**	71	93.3	48.0				mg/L	67	Standard
	Rb	85	6316.3	4.5				ug/L	25	Standard
	Y	89	630244.8	9.7				ug/L	639569	Standard
>	**Rh**	103	151.7	21.4				ug/L	8	Standard
	Mo	98	3648.1	9.5	**0.8926**	0.008	0.9	ug/L	15	Standard
	Ag	107	226.7	30.6	**0.0033**	0.008	248.6	ug/L	162	Standard
	Cd	111	32.6	84.3	**0.0079**	0.009	117.4	mg/L	7	Standard
	Cd	114	111.6	21.6	**0.0049**	0.004	82.2	ug/L	31	Standard
>	**In**	115	986644.2	8.9				ug/L	1030666	Standard
	Sn	118	808.4	13.6	**0.0087**	0.004	46.6	ug/L	755	Standard
	Sb	123	517.0	25.4	**0.0638**	0.023	36.8	ug/L	105	Standard
	Ba	135	348634.0	6.6	**96.0016**	2.565	2.7	ug/L	23	Standard
	Ce	140	133.3	15.2				ug/L	137	Standard
>	**Tb**	159	1684439.8	9.5				ug/L	1748833	Standard
	Ho	165	23.3	65.5				ug/L	13	Standard
	Tl	203	871.7	12.0	**0.0591**	0.010	16.5	ug/L	14	Standard
	Tl	205	611.7	27.2	**0.0615**	0.022	36.1	ug/L	10	Standard
	Pb	206	1398.1	2.1	**0.0997**	0.011	11.0	ug/L	459	Standard
	Pb	207	1168.7	4.9	**0.0890**	0.015	16.3	ug/L	424	Standard
	Pb	208	5126.7	3.6	**0.1060**	0.009	8.9	ug/L	1701	Standard
	U	238	9639.7	8.4	**0.9557**	0.007	0.8	ug/L	2	Standard
>	**Bi**	209	871813.1	7.8				ug/L	937372	Standard

Sample ID: L1602010002
Report Date/Time: Thursday, February 11, 2016 17:57:51
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	106094.8	7.3	**127.8376**	4.272	3.3	mg/L	17	Standard
K	39	98.3	38.5	**0.3644**	0.166	45.7	mg/L	15	Standard
Ca	43	70.0	14.3	**1.0422**	0.627	60.1	mg/L	67	Standard
Fe	54	208.7	4.9	**-0.0145**	0.012	81.1	mg/L	214	Standard
Fe	57	95.0	19.0	**0.0255**	0.034	133.9	mg/L	82	Standard
> **Sc-1**	45	50738.8	10.7				mg/L	47226	Standard
Cl	35	60825.2	9.2				ug/L	38729	Standard
Kr	83	3.7	41.7				ug/L	3	Standard
Br	81	64019.3	10.8				ug/L	1497	Standard
P	31	16067.0	15.0				ug/L	15233	Standard
S	34	2235.2	9.2				ug/L	1153	Standard
Sr	88	408.3	10.2				ug/L	47	Standard
C	12	86.7	58.1				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	12.4	43.3				mg/L	22	Standard
Ho-1	165	23.3	65.5				mg/L	13	Standard
Er	166	20.0	50.0				mg/L	30	Standard
I	127	99227.7	4.9				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		75.773	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.432	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602010002
Report Date/Time: Thursday, February 11, 2016 17:57:51
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.729
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.006
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602014103
Sample Date/Time: Thursday, February 11, 2016 17:58:46
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	40016.2	4.4				ug/L	57324	Standard
	Be	9	13.3	108.3	**0.0411**	0.031	75.9	ug/L	2	Standard
	Al	27	1874122.0	14.6	**17.8994**	1.929	10.8	ug/L	172	Standard
	Sc	45	50738.9	11.9				ug/L	47226	Standard
	Ti	47	73.3	7.8	**-0.0066**	0.009	132.3	ug/L	100	Standard
	V	51	3137.9	0.3	**0.0666**	0.031	46.3	ug/L	2380	Standard
	Cr	52	13860.7	6.9	**0.2845**	0.080	28.3	ug/L	10715	Standard
	Cr	53	1005.0	11.3	**0.5228**	0.032	6.1	ug/L	293	Standard
	Mn	55	77261.0	10.7	**6.6676**	0.055	0.8	ug/L	882	Standard
	Co	59	1196.0	11.7	**0.0717**	0.002	3.2	ug/L	252	Standard
	Ni	60	2393.5	12.1	**0.7396**	0.081	11.0	ug/L	51	Standard
	Cu	65	643.0	20.6	**0.1494**	0.041	27.4	ug/L	125	Standard
	Zn	66	3401.4	10.8	**1.9631**	0.097	4.9	ug/L	191	Standard
>	**Ge**	72	725390.7	11.3				ug/L	693220	Standard
	As	75	-43.3	222.3	**0.0309**	0.061	198.6	ug/L	-96	Standard
	Se	82	36.7	21.5	**0.0835**	0.053	64.0	ug/L	24	Standard
	Se-1	77	98.3	14.6	**0.2038**	0.080	39.4	ug/L	66	Standard
>	**Ga**	71	78.3	24.2				mg/L	67	Standard
	Rb	85	481.7	16.6				ug/L	25	Standard
	Y	89	659397.4	11.5				ug/L	639569	Standard
>	**Rh**	103	20.0	25.0				ug/L	8	Standard
	Mo	98	24.2	12.9	**-0.0011**	0.001	125.6	ug/L	15	Standard
	Ag	107	207.3	37.1	**0.0004**	0.007	1629.1	ug/L	162	Standard
	Cd	111	90.9	40.1	**0.0241**	0.011	46.4	mg/L	7	Standard
	Cd	114	220.9	34.6	**0.0174**	0.010	55.7	ug/L	31	Standard
>	**In**	115	1029708.3	11.6				ug/L	1030666	Standard
	Sn	118	1208.4	11.0	**0.0456**	0.001	2.7	ug/L	755	Standard
	Sb	123	221.9	24.7	**0.0221**	0.009	41.4	ug/L	105	Standard
	Ba	135	544.0	19.9	**0.1353**	0.030	22.3	ug/L	23	Standard
	Ce	140	295.0	26.4				ug/L	137	Standard
>	**Tb**	159	1730052.0	9.9				ug/L	1748833	Standard
	Ho	165	31.7	63.8				ug/L	13	Standard
	Tl	203	665.7	23.2	**0.0397**	0.009	21.7	ug/L	14	Standard
	Tl	205	728.4	69.1	**0.0661**	0.049	73.4	ug/L	10	Standard
	Pb	206	941.4	13.3	**0.0380**	0.009	22.4	ug/L	459	Standard
	Pb	207	770.4	10.2	**0.0309**	0.007	21.7	ug/L	424	Standard
	Pb	208	3566.8	14.5	**0.0457**	0.012	25.4	ug/L	1701	Standard
	U	238	265.0	151.3	**0.0206**	0.037	180.8	ug/L	2	Standard
>	**Bi**	209	958216.0	8.6				ug/L	937372	Standard

Sample ID: L1602014103
Report Date/Time: Thursday, February 11, 2016 18:01:03
Page 1

Approved: February 12, 2016

Na	23	1.7	173.2	**6.5974**	11.418	173.1	mg/L	0	Standard
Mg	24	1105.0	2.0	**1.3156**	0.137	10.4	mg/L	17	Standard
K	39	20.0	25.0	**0.0184**	0.028	151.7	mg/L	15	Standard
Ca	43	88.3	27.9	**2.3751**	1.636	68.9	mg/L	67	Standard
Fe	54	167.1	6.1	**-0.0394**	0.013	33.8	mg/L	214	Standard
Fe	57	106.7	14.3	**0.0545**	0.048	87.7	mg/L	82	Standard
> **Sc-1**	45	50738.9	11.9				mg/L	47226	Standard
Cl	35	65899.4	6.9				ug/L	38729	Standard
Kr	83	3.3	75.5				ug/L	3	Standard
Br	81	2856.9	13.7				ug/L	1497	Standard
P	31	15077.5	8.6				ug/L	15233	Standard
S	34	2081.8	7.1				ug/L	1153	Standard
Sr	88	86.7	8.8				ug/L	47	Standard
C	12	100.0	26.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	38.2	24.3				mg/L	22	Standard
Ho-1	165	31.7	63.8				mg/L	13	Standard
Er	166	36.7	41.7				mg/L	30	Standard
I	127	5659.4	27.1				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		69.808	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.641	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602014103
Report Date/Time: Thursday, February 11, 2016 18:01:03
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.224
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1602014103
Report Date/Time: Thursday, February 11, 2016 18:01:03
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602014103PS WG556540-03
Sample Date/Time: Thursday, February 11, 2016 18:01:57
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	40432.4	7.5				ug/L	57324	Standard
	Be	9	26281.3	11.2	**57.1202**	2.278	4.0	ug/L	2	Standard
	Al	27	1912315.9	13.4	**18.0699**	1.102	6.1	ug/L	172	Standard
	Sc	45	50462.9	11.2				ug/L	47226	Standard
	Ti	47	62.0	5.8	**-0.0314**	0.020	65.0	ug/L	100	Standard
	V	51	518879.8	12.2	**44.5940**	0.681	1.5	ug/L	2380	Standard
	Cr	52	519090.1	13.8	**47.5906**	1.237	2.6	ug/L	10715	Standard
	Cr	53	62387.9	12.7	**46.3629**	0.979	2.1	ug/L	293	Standard
	Mn	55	600198.8	12.0	**51.8355**	0.318	0.6	ug/L	882	Standard
	Co	59	586781.0	12.7	**46.4291**	0.713	1.5	ug/L	252	Standard
	Ni	60	150028.7	12.2	**47.4327**	0.411	0.9	ug/L	51	Standard
	Cu	65	148337.5	10.8	**46.9845**	0.278	0.6	ug/L	125	Standard
	Zn	66	74879.2	10.3	**48.7564**	0.534	1.1	ug/L	191	Standard
>	Ge	72	735333.6	11.4				ug/L	693220	Standard
	As	75	76584.8	10.6	**46.9065**	0.490	1.0	ug/L	-96	Standard
	Se	82	7588.6	9.8	**44.9481**	0.786	1.7	ug/L	24	Standard
	Se-1	77	5098.9	12.6	**46.2986**	0.886	1.9	ug/L	66	Standard
>	Ga	71	106.7	37.6				mg/L	67	Standard
	Rb	85	398.3	8.0				ug/L	25	Standard
	Y	89	652097.2	10.8				ug/L	639569	Standard
>	Rh	103	73.3	3.9				ug/L	8	Standard
	Mo	98	47.2	15.9	**0.0042**	0.002	36.7	ug/L	15	Standard
	Ag	107	565467.1	9.5	**48.4421**	0.587	1.2	ug/L	162	Standard
	Cd	111	167083.7	10.5	**47.3974**	0.300	0.6	mg/L	7	Standard
	Cd	114	402721.1	10.6	**47.5334**	1.104	2.3	ug/L	31	Standard
>	In	115	1039221.8	10.4				ug/L	1030666	Standard
	Sn	118	935.0	16.9	**0.0168**	0.006	35.9	ug/L	755	Standard
	Sb	123	357463.6	9.8	**45.6395**	0.242	0.5	ug/L	105	Standard
	Ba	135	175229.6	10.6	**45.7321**	0.309	0.7	ug/L	23	Standard
	Ce	140	286.7	12.9				ug/L	137	Standard
>	Tb	159	1723054.8	10.6				ug/L	1748833	Standard
	Ho	165	35.0	37.8				ug/L	13	Standard
	Tl	203	723884.3	10.0	**46.3000**	0.698	1.5	ug/L	14	Standard
	Tl	205	509681.8	11.3	**46.8487**	1.162	2.5	ug/L	10	Standard
	Pb	206	450912.0	9.6	**45.5751**	0.375	0.8	ug/L	459	Standard
	Pb	207	392649.8	9.9	**43.3702**	0.518	1.2	ug/L	424	Standard
	Pb	208	1680730.6	10.4	**47.8935**	0.842	1.8	ug/L	1701	Standard
	U	238	512679.3	9.3	**45.8751**	0.446	1.0	ug/L	2	Standard
>	Bi	209	969920.0	9.0				ug/L	937372	Standard

Sample ID: L1602014103PS WG556540-03
Report Date/Time: Thursday, February 11, 2016 18:04:14
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1071.7	6.4	**1.2863**	0.205	15.9	mg/L	17	Standard
K	39	18.3	15.7	**0.0106**	0.013	122.0	mg/L	15	Standard
Ca	43	73.3	28.4	**1.3142**	1.560	118.7	mg/L	67	Standard
Fe	54	242.0	10.7	**0.0068**	0.022	328.6	mg/L	214	Standard
Fe	57	120.0	31.5	**0.0803**	0.057	71.6	mg/L	82	Standard
> **Sc-1**	45	50462.9	11.2				mg/L	47226	Standard
Cl	35	67703.7	8.9				ug/L	38729	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	2230.2	5.4				ug/L	1497	Standard
P	31	15222.7	6.7				ug/L	15233	Standard
S	34	2103.5	8.1				ug/L	1153	Standard
Sr	88	85.0	29.4				ug/L	47	Standard
C	12	96.7	6.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	18.9	51.8				mg/L	22	Standard
Ho-1	165	35.0	37.8				mg/L	13	Standard
Er	166	23.3	65.5				mg/L	30	Standard
I	127	3773.8	8.5				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		70.534	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.075	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602014103PS WG556540-03
Report Date/Time: Thursday, February 11, 2016 18:04:14
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.830
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.472
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1602014103PS WG556540-03
Report Date/Time: Thursday, February 11, 2016 18:04:14
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: L1602014103SDL WG556540-04
Sample Date/Time: Thursday, February 11, 2016 18:05:09
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39733.9	6.8				ug/L	57324	Standard
	Be	9	6.7	43.3	**0.0265**	0.005	19.7	ug/L	2	Standard
	Al	27	368822.0	10.5	**3.5464**	0.148	4.2	ug/L	172	Standard
	Sc	45	50735.5	11.1				ug/L	47226	Standard
	Ti	47	62.7	9.6	**-0.0285**	0.026	92.6	ug/L	100	Standard
	V	51	3167.6	4.6	**0.0670**	0.018	26.8	ug/L	2380	Standard
	Cr	52	13738.2	4.8	**0.2678**	0.078	29.3	ug/L	10715	Standard
	Cr	53	526.7	9.6	**0.1587**	0.014	9.0	ug/L	293	Standard
	Mn	55	16553.8	12.2	**1.3273**	0.026	1.9	ug/L	882	Standard
	Co	59	524.0	25.8	**0.0171**	0.006	36.7	ug/L	252	Standard
	Ni	60	275.0	26.0	**0.0565**	0.013	23.7	ug/L	51	Standard
	Cu	65	441.3	15.3	**0.0833**	0.007	8.8	ug/L	125	Standard
	Zn	66	2284.8	12.9	**1.2124**	0.052	4.3	ug/L	191	Standard
>	**Ge**	72	728300.9	10.4				ug/L	693220	Standard
	As	75	-69.3	70.0	**0.0151**	0.030	198.4	ug/L	-96	Standard
	Se	82	36.6	22.1	**0.0820**	0.058	70.4	ug/L	24	Standard
	Se-1	77	78.3	8.5	**0.0234**	0.135	574.6	ug/L	66	Standard
>	**Ga**	71	68.3	22.4				mg/L	67	Standard
	Rb	85	135.0	9.8				ug/L	25	Standard
	Y	89	636699.6	10.4				ug/L	639569	Standard
>	**Rh**	103	6.7	43.3				ug/L	8	Standard
	Mo	98	21.4	29.6	**-0.0019**	0.002	79.4	ug/L	15	Standard
	Ag	107	276.3	39.1	**0.0055**	0.007	123.6	ug/L	162	Standard
	Cd	111	46.3	55.5	**0.0105**	0.006	55.2	mg/L	7	Standard
	Cd	114	109.1	42.0	**0.0034**	0.004	122.7	ug/L	31	Standard
>	**In**	115	1048388.7	9.9				ug/L	1030666	Standard
	Sn	118	841.7	31.0	**0.0061**	0.017	278.0	ug/L	755	Standard
	Sb	123	1675.2	14.5	**0.2083**	0.052	24.8	ug/L	105	Standard
	Ba	135	186.0	37.9	**0.0385**	0.013	34.2	ug/L	23	Standard
	Ce	140	113.3	17.8				ug/L	137	Standard
>	**Tb**	159	1724669.2	8.9				ug/L	1748833	Standard
	Ho	165	21.7	13.3				ug/L	13	Standard
	Tl	203	277.3	39.2	**0.0144**	0.005	37.9	ug/L	14	Standard
	Tl	205	183.3	74.1	**0.0143**	0.011	76.5	ug/L	10	Standard
	Pb	206	819.4	16.5	**0.0254**	0.007	29.2	ug/L	459	Standard
	Pb	207	700.0	14.0	**0.0228**	0.005	22.2	ug/L	424	Standard
	Pb	208	3019.5	17.9	**0.0297**	0.009	29.0	ug/L	1701	Standard
	U	238	95.7	67.9	**0.0045**	0.005	111.4	ug/L	2	Standard
>	**Bi**	209	956739.5	8.4				ug/L	937372	Standard

Sample ID: L1602014103SDL WG556540-04
Report Date/Time: Thursday, February 11, 2016 18:07:26
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	240.0	8.3	**0.2663**	0.028	10.4	mg/L	17	Standard
K	39	20.0	43.3	**0.0154**	0.033	210.5	mg/L	15	Standard
Ca	43	71.7	33.0	**1.1000**	1.483	134.8	mg/L	67	Standard
Fe	54	210.1	13.3	**-0.0131**	0.025	186.7	mg/L	214	Standard
Fe	57	85.0	29.4	**0.0070**	0.075	1073.8	mg/L	82	Standard
Sc-1	45	50735.5	11.1				mg/L	47226	Standard
Cl	35	66052.8	6.9				ug/L	38729	Standard
Kr	83	3.3	45.8				ug/L	3	Standard
Br	81	1743.4	7.9				ug/L	1497	Standard
P	31	15384.5	2.6				ug/L	15233	Standard
S	34	2275.2	3.3				ug/L	1153	Standard
Sr	88	51.7	5.6				ug/L	47	Standard
C	12	96.7	26.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	18.1	56.1				mg/L	22	Standard
Ho-1	165	21.7	13.3				mg/L	13	Standard
Er	166	40.0	86.6				mg/L	30	Standard
I	127	2546.9	5.8				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		69.315	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.061	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1602014103SDL WG556540-04
Report Date/Time: Thursday, February 11, 2016 18:07:26
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.720
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.066
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, February 11, 2016 18:08:22
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	39144.1	8.2				ug/L	57324	Standard
	Be	9	26264.6	11.2	**59.0219**	3.626	6.1	ug/L	2	Standard
	Al	27	6801985.4	10.8	**66.5302**	3.056	4.6	ug/L	172	Standard
	Sc	45	50265.6	11.4				ug/L	47226	Standard
	Ti	47	46028.6	10.5	**96.7626**	1.801	1.9	ug/L	100	Standard
	V	51	533532.0	8.2	**46.2507**	0.690	1.5	ug/L	2380	Standard
	Cr	52	526490.1	9.9	**48.7049**	0.455	0.9	ug/L	10715	Standard
	Cr	53	65580.8	9.6	**49.1311**	0.781	1.6	ug/L	293	Standard
	Mn	55	533593.5	10.1	**46.4097**	1.174	2.5	ug/L	882	Standard
	Co	59	602795.1	8.1	**48.1209**	0.828	1.7	ug/L	252	Standard
	Ni	60	149682.7	9.1	**47.6994**	0.474	1.0	ug/L	51	Standard
	Cu	65	150202.9	10.2	**47.8735**	0.792	1.7	ug/L	125	Standard
	Zn	66	74745.1	9.8	**48.9742**	1.056	2.2	ug/L	191	Standard
>	Ge	72	730045.2	9.1				ug/L	693220	Standard
	As	75	77253.6	8.5	**47.6530**	0.763	1.6	ug/L	-96	Standard
	Se	82	7989.5	9.5	**47.6102**	0.770	1.6	ug/L	24	Standard
	Se-1	77	5310.3	8.9	**48.6578**	0.789	1.6	ug/L	66	Standard
>	Ga	71	81.7	33.7				mg/L	67	Standard
	Rb	85	1155.0	3.7				ug/L	25	Standard
	Y	89	649071.1	8.9				ug/L	639569	Standard
>	Rh	103	43.3	17.6				ug/L	8	Standard
	Mo	98	432556.2	8.2	**101.3619**	1.032	1.0	ug/L	15	Standard
	Ag	107	568814.3	9.5	**48.7037**	0.558	1.1	ug/L	162	Standard
	Cd	111	170392.4	8.3	**48.3744**	0.673	1.4	mg/L	7	Standard
	Cd	114	418315.7	8.7	**49.4005**	0.849	1.7	ug/L	31	Standard
>	In	115	1038437.4	8.3				ug/L	1030666	Standard
	Sn	118	478595.2	8.4	**47.5050**	0.404	0.9	ug/L	755	Standard
	Sb	123	368273.2	8.2	**47.0404**	0.391	0.8	ug/L	105	Standard
	Ba	135	182266.4	7.5	**47.6340**	0.525	1.1	ug/L	23	Standard
	Ce	140	131.7	17.9				ug/L	137	Standard
>	Tb	159	1728821.1	8.3				ug/L	1748833	Standard
	Ho	165	18.3	41.7				ug/L	13	Standard
	Tl	203	735446.6	7.8	**48.2114**	0.303	0.6	ug/L	14	Standard
	Tl	205	511233.8	7.9	**48.1988**	0.460	1.0	ug/L	10	Standard
	Pb	206	451658.2	7.6	**46.7862**	0.405	0.9	ug/L	459	Standard
	Pb	207	405425.2	7.8	**45.8996**	0.317	0.7	ug/L	424	Standard
	Pb	208	1713071.5	7.6	**50.0528**	0.427	0.9	ug/L	1701	Standard
	U	238	541877.1	8.6	**49.6569**	0.475	1.0	ug/L	2	Standard
>	Bi	209	947152.4	8.5				ug/L	937372	Standard

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 18:10:38
Page 1

Approved: February 12, 2016

Na	23	1.7	173.2	**5.6662**	9.805	173.1	mg/L	0	Standard
Mg	24	3743.8	8.6	**4.5308**	0.190	4.2	mg/L	17	Standard
K	39	965.0	14.4	**4.2266**	0.131	3.1	mg/L	15	Standard
Ca	43	151.7	19.3	**7.4468**	3.352	45.0	mg/L	67	Standard
Fe	54	7597.7	8.5	**4.5116**	0.245	5.4	mg/L	214	Standard
Fe	57	2140.2	8.1	**4.7195**	0.174	3.7	mg/L	82	Standard
> **Sc-1**	45	50265.6	11.4				mg/L	47226	Standard
Cl	35	55875.7	11.0				ug/L	38729	Standard
Kr	83	3.7	83.3				ug/L	3	Standard
Br	81	1630.1	12.9				ug/L	1497	Standard
P	31	16617.5	7.9				ug/L	15233	Standard
S	34	2550.2	10.5				ug/L	1153	Standard
Sr	88	43.3	43.7				ug/L	47	Standard
C	12	90.0	11.1				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	15.5	96.9				mg/L	22	Standard
Ho-1	165	18.3	41.7				mg/L	13	Standard
Er	166	23.3	24.7				mg/L	30	Standard
I	127	2270.2	7.4				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	118.044		
Al	27	133.060		
Sc	45			
Ti	47	96.763		
V	51	92.501		
Cr	52	97.410		
Cr	53			
Mn	55	92.819		
Co	59	96.242		
Ni	60	95.399		
Cu	65	95.747		
Zn	66	97.948		
> Ge	72		105.312	
As	75	95.306		
Se	82	95.220		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 18:10:38
Page 2

Approved: February 12, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	101.362		
Ag	107	97.407		
Cd	111	96.749		
Cd	114			
> In	115		100.754	
Sn	118	95.010		
Sb	123	94.081		
Ba	135	95.268		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.423		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.106		
U	238	99.314		
> Bi	209		101.043	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Thursday, February 11, 2016 18:10:38
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, February 11, 2016 18:11:33
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	36838.3	8.3				ug/L	57324	Standard
	Be	9	3.3	173.2	**0.0205**	0.015	71.7	ug/L	2	Standard
	Al	27	373.3	35.5	**-0.0016**	0.001	69.9	ug/L	172	Standard
	Sc	45	48930.0	14.4				ug/L	47226	Standard
	Ti	47	55.0	11.1	**-0.0424**	0.006	13.9	ug/L	100	Standard
	V	51	2306.6	6.2	**-0.0016**	0.014	891.7	ug/L	2380	Standard
	Cr	52	10523.7	5.9	**-0.0035**	0.075	2118.9	ug/L	10715	Standard
	Cr	53	345.0	11.5	**0.0337**	0.054	159.9	ug/L	293	Standard
	Mn	55	844.4	9.7	**-0.0419**	0.003	7.3	ug/L	882	Standard
	Co	59	230.7	8.1	**-0.0053**	0.001	18.8	ug/L	252	Standard
	Ni	60	48.3	26.6	**-0.0147**	0.002	15.6	ug/L	51	Standard
	Cu	65	163.0	14.7	**-0.0035**	0.006	174.4	ug/L	125	Standard
	Zn	66	225.0	12.0	**-0.1419**	0.002	1.6	ug/L	191	Standard
>	**Ge**	72	705805.1	13.5				ug/L	693220	Standard
	As	75	-62.0	37.8	**0.0169**	0.017	102.1	ug/L	-96	Standard
	Se	82	34.4	12.2	**0.0755**	0.033	43.5	ug/L	24	Standard
	Se-1	77	81.3	10.3	**0.0692**	0.039	56.3	ug/L	66	Standard
>	**Ga**	71	48.3	31.6				mg/L	67	Standard
	Rb	85	16.7	62.4				ug/L	25	Standard
	Y	89	632577.9	13.0				ug/L	639569	Standard
>	**Rh**	103	15.0	33.3				ug/L	8	Standard
	Mo	98	188.1	17.3	**0.0379**	0.002	4.4	ug/L	15	Standard
	Ag	107	223.0	5.1	**0.0021**	0.002	94.9	ug/L	162	Standard
	Cd	111	10.3	23.9	**0.0007**	0.000	49.3	mg/L	7	Standard
	Cd	114	51.5	46.7	**-0.0031**	0.002	63.5	ug/L	31	Standard
>	**In**	115	1019520.9	14.2				ug/L	1030666	Standard
	Sn	118	1061.7	4.1	**0.0337**	0.019	56.9	ug/L	755	Standard
	Sb	123	664.9	20.9	**0.0823**	0.030	36.4	ug/L	105	Standard
	Ba	135	25.7	29.5	**-0.0019**	0.002	108.6	ug/L	23	Standard
	Ce	140	36.7	51.6				ug/L	137	Standard
>	**Tb**	159	1686632.4	13.1				ug/L	1748833	Standard
	Ho	165	20.0	25.0				ug/L	13	Standard
	Tl	203	83.3	46.0	**0.0021**	0.002	84.4	ug/L	14	Standard
	Tl	205	58.3	30.1	**0.0033**	0.001	40.7	ug/L	10	Standard
	Pb	206	466.3	14.0	**-0.0093**	0.001	12.4	ug/L	459	Standard
	Pb	207	427.3	13.4	**-0.0063**	0.001	8.0	ug/L	424	Standard
	Pb	208	1765.7	13.5	**-0.0049**	0.001	10.5	ug/L	1701	Standard
	U	238	33.3	17.6	**-0.0008**	0.000	19.0	ug/L	2	Standard
>	**Bi**	209	931805.0	12.5				ug/L	937372	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 18:13:50
Page 1

Approved: February 12, 2016

Na	23	1.7	173.2	**7.5888**	13.136	173.1	mg/L	0	Standard
Mg	24	21.7	58.1	**0.0052**	0.020	387.8	mg/L	17	Standard
K	39	6.7	114.6	**-0.0435**	0.030	69.4	mg/L	15	Standard
Ca	43	65.0	23.1	**0.9626**	1.562	162.3	mg/L	67	Standard
Fe	54	202.8	23.4	**-0.0111**	0.045	405.1	mg/L	214	Standard
Fe	57	68.3	36.8	**-0.0211**	0.084	400.0	mg/L	82	Standard
> **Sc-1**	45	48930.0	14.4				mg/L	47226	Standard
Cl	35	55973.6	7.9				ug/L	38729	Standard
Kr	83	5.0	60.0				ug/L	3	Standard
Br	81	1700.1	6.8				ug/L	1497	Standard
P	31	16570.8	9.2				ug/L	15233	Standard
S	34	2478.5	7.2				ug/L	1153	Standard
Sr	88	46.7	12.4				ug/L	47	Standard
C	12	110.0	15.7				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	29.0	33.6				mg/L	22	Standard
Ho-1	165	20.0	25.0				mg/L	13	Standard
Er	166	20.0	50.0				mg/L	30	Standard
I	127	1843.4	8.8				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.815	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 18:13:50
Page 2

Approved: February 12, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.919
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.406
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, February 11, 2016 18:13:50
Page 3

Approved: February 12, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, February 11, 2016 18:14:46
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	36410.5	6.0				ug/L	57324	Standard
	Be	9	105.0	23.8	**0.2640**	0.045	17.2	ug/L	2	Standard
	Al	27	340.0	10.2	**-0.0019**	0.000	9.5	ug/L	172	Standard
	Sc	45	48749.3	14.0				ug/L	47226	Standard
	Ti	47	54.0	14.8	**-0.0425**	0.021	48.9	ug/L	100	Standard
	V	51	6416.9	10.6	**0.3758**	0.022	5.7	ug/L	2380	Standard
	Cr	52	20201.2	11.6	**0.9638**	0.052	5.4	ug/L	10715	Standard
	Cr	53	1496.7	21.4	**0.9326**	0.098	10.6	ug/L	293	Standard
	Mn	55	5835.8	15.4	**0.4138**	0.017	4.1	ug/L	882	Standard
	Co	59	4637.7	14.1	**0.3630**	0.003	0.7	ug/L	252	Standard
	Ni	60	4405.3	15.0	**1.4384**	0.034	2.3	ug/L	51	Standard
	Cu	65	2400.2	15.3	**0.7437**	0.008	1.1	ug/L	125	Standard
	Zn	66	10200.5	13.2	**6.7485**	0.071	1.1	ug/L	191	Standard
>	**Ge**	72	697668.0	14.3				ug/L	693220	Standard
	As	75	462.7	21.4	**0.3536**	0.021	6.0	ug/L	-96	Standard
	Se	82	82.1	16.1	**0.3732**	0.010	2.6	ug/L	24	Standard
	Se-1	77	115.3	20.0	**0.4018**	0.082	20.5	ug/L	66	Standard
>	**Ga**	71	55.0	24.1				mg/L	67	Standard
	Rb	85	31.7	24.1				ug/L	25	Standard
	Y	89	615029.9	12.9				ug/L	639569	Standard
>	**Rh**	103	11.7	65.5				ug/L	8	Standard
	Mo	98	56.1	10.5	**0.0069**	0.002	34.6	ug/L	15	Standard
	Ag	107	4394.3	13.0	**0.3719**	0.007	1.9	ug/L	162	Standard
	Cd	111	751.3	9.3	**0.2191**	0.013	5.9	mg/L	7	Standard
	Cd	114	1796.3	16.2	**0.2098**	0.009	4.3	ug/L	31	Standard
>	**In**	115	1005081.0	14.0				ug/L	1030666	Standard
	Sn	118	700.0	10.0	**-0.0026**	0.014	530.4	ug/L	755	Standard
	Sb	123	2996.7	10.7	**0.3896**	0.013	3.3	ug/L	105	Standard
	Ba	135	2562.2	10.4	**0.6851**	0.024	3.5	ug/L	23	Standard
	Ce	140	23.3	24.7				ug/L	137	Standard
>	**Tb**	159	1649985.5	14.6				ug/L	1748833	Standard
	Ho	165	15.0	57.7				ug/L	13	Standard
	Tl	203	1098.0	13.7	**0.0695**	0.001	1.6	ug/L	14	Standard
	Tl	205	826.7	17.4	**0.0764**	0.005	6.2	ug/L	10	Standard
	Pb	206	2210.8	12.6	**0.1738**	0.008	4.9	ug/L	459	Standard
	Pb	207	1899.1	15.4	**0.1620**	0.007	4.6	ug/L	424	Standard
	Pb	208	8088.5	12.7	**0.1822**	0.001	0.7	ug/L	1701	Standard
	U	238	3946.9	11.3	**0.3628**	0.003	0.9	ug/L	2	Standard
>	**Bi**	209	935000.3	12.2				ug/L	937372	Standard

Sample ID: QC Std 8
Report Date/Time: Thursday, February 11, 2016 18:17:03
Page 1

Approved: February 12, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	25.0	20.0	**0.0078**	0.006	83.3	mg/L	17	Standard
K	39	11.7	65.5	**-0.0174**	0.037	211.1	mg/L	15	Standard
Ca	43	30.0	33.3	**-1.8592**	0.779	41.9	mg/L	67	Standard
Fe	54	180.6	8.5	**-0.0268**	0.013	50.4	mg/L	214	Standard
Fe	57	93.3	13.5	**0.0321**	0.032	99.6	mg/L	82	Standard
Sc-1	45	48749.3	14.0				mg/L	47226	Standard
Cl	35	54298.9	8.6				ug/L	38729	Standard
Kr	83	4.0	25.0				ug/L	3	Standard
Br	81	1500.1	9.8				ug/L	1497	Standard
P	31	15696.5	7.8				ug/L	15233	Standard
S	34	2326.8	4.0				ug/L	1153	Standard
Sr	88	38.3	39.8				ug/L	47	Standard
C	12	130.0	23.1				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	12.1	130.4				mg/L	22	Standard
Ho-1	165	15.0	57.7				mg/L	13	Standard
Er	166	26.7	78.1				mg/L	30	Standard
I	127	1950.1	9.9				mg/L	2297	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	132.007		
Al	27			
Sc	45			
Ti	47			
V	51	93.946		
Cr	52	120.478		
Cr	53			
Mn	55	82.768		
Co	59	90.748		
Ni	60	89.898		
Cu	65	92.957		
Zn	66	107.976		
Ge	72		100.642	
As	75	88.402		
Se	82	93.306		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
Report Date/Time: Thursday, February 11, 2016 18:17:03
Page 2

Approved: February 12, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	92.971		
Cd	111	91.307		
Cd	114			
> In	115			97.518
Sn	118			
Sb	123	97.405		
Ba	135	91.346		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	86.884		
Tl	205			
Pb	206			
Pb	207			
Pb	208	91.080		
U	238	90.700		
> Bi	209			99.747
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Be	9	

Sample ID: QC Std 8
Report Date/Time: Thursday, February 11, 2016 18:17:03
Page 3

Approved: February 12, 2016

2.3 General Chemistry Data

2.3.1 Method 9056

2.3.1.1 Summary Data

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	46WW09-020216	**Prep Method:**	9056	**Prep Date:**	02/04/2016 09:22
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG556163	**Analyst:**	AED	**Run Date:**	02/04/2016 09:57
Collect Date:	02/02/2016 08:10	**Dilution:**	20	**File ID:**	I1_020316-03
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	478		8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	2.32	J	8.00	4.00	2.00
Sulfate	14808-79-8	2410	J	40.0	20.0	10.0

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	46WW09-020216	**Prep Method:**	9056	**Prep Date:**	02/04/2016 09:22
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG556163	**Analyst:**	AED	**Run Date:**	02/04/2016 13:12
Collect Date:	02/02/2016 08:10	**Dilution:**	50	**File ID:**	I1_020316-14
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	440		20.0	10.0	5.00
Nitrate	14797-55-8	10.0	U	20.0	10.0	5.00
Nitrite	14797-65-0	10.0	U	20.0	10.0	5.00
Sulfate	14808-79-8	2160		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.3.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(- c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 102915 ICAL IC1.SEQ
Analyst1: ALS Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: Syringe Filter Lot#: 150514254
Eluent ID#: RGT35199
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups:
Internal STD: NA Surrogate STD: NA Calibration STD STD71545
CCV STD: STD71545 LCS STD: STD71546 MS/MSD STD: STD71546

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_102915-01	ELUENT	1	1		10/29/15 15:53
2	I1_102915-02	DI WATER	1	1		10/29/15 16:11
3	I1_102915-03	WG544886-01 STD \#6	1	1		10/29/15 16:28
4	I1_102915-04	WG544886-02 STD \#5	1	1		10/29/15 16:46
5	I1_102915-05	WG544886-03 STD \#4	1	1		10/29/15 17:04
6	I1_102915-06	WG544886-04 STD \#3	1	1		10/29/15 17:21
7	I1_102915-07	WG544886-05 STD \#2	1	1		10/29/15 17:39
8	I1_102915-08	WG544886-06 STD \#1	1	1		10/29/15 17:57
9	I1_102915-09	WG544886-07 SSCV	1	1		10/29/15 18:15
10	I1_102915-10	LCR LEVEL 6	1	1		10/29/15 18:32
11	I1_102915-11	LCR LEVEL 2	1	1		10/29/15 18:50
12	I1_102915-12	LCR LEVEL 0	1	1		10/29/15 19:08
13	I1_102915-13	END	1	1		10/29/15 19:25

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 05-NOV-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 020316 IC1.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 18

Maintenance Log ID: Syringe Filter Lot#: 150323254
Eluent ID#: RGT35999
Workgroups: Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Internal STD: NA Surrogate STD: NA Calibration STD STD71545
CCV STD: STD71545 LCS STD: STD71546 MS/MSD STD: STD71546

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_020316-01	WG556164-01 ANION CCV	1	1		02/04/16 09:22
2	I1_020316-02	WG556164-02 ANION CCB	1	1		02/04/16 09:40
3	I1_020316-03	L16020141-01 NO2 NO3 CL SO4 20X	1	20		02/04/16 09:57
4	I1_020316-04	WG556163-01 ANION BLANK	1	1		02/04/16 10:15
5	I1_020316-05	WG556163-02 ANION LCS	1	1		02/04/16 10:33
6	I1_020316-06	L16020079-01 SO4 2X	2	2		02/04/16 10:50
7	I1_020316-07	L16020155-01 SO4 REF	2	1		02/04/16 11:08
8	I1_020316-08	WG556163-04 DUP	2	1		02/04/16 11:26
9	I1_020316-09	WG556163-05 MS	2	1		02/04/16 11:44
10	I1_020316-10	WG556163-06 MSD	2	1		02/04/16 12:01
11	I1_020316-11	L16020155-02 SO4	2	1		02/04/16 12:19
12	I1_020316-12	WG556164-03 ANION CCV	1	1		02/04/16 12:37
13	I1_020316-13	WG556164-04 ANION CCB	1	1		02/04/16 12:54
14	I1_020316-14	L16020141-01 NO2 NO3 CL SO4 (SO4) 50X	1	50		02/04/16 13:12
15	I1_020316-15	L16020183-01 SO4 BR	2	1		02/04/16 13:30
16	I1_020316-16	L16020183-03 3X SO4 BR NO2 FL	2	3		02/04/16 13:48
17	I1_020316-17	L16020185-01 SO4	2	1		02/04/16 14:05
18	I1_020316-18	L16020189-01 FL	2	1		02/04/16 14:23
19	I1_020316-19	L16020189-02 FL	2	1		02/04/16 14:41
20	I1_020316-20	WG556164-05 ANION CCV	1	1		02/04/16 14:58
21	I1_020316-21	WG556164-06 ANION CCB	1	1		02/04/16 15:16

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3	X	50	Over Calibration Range	SO4
	L16020141-01 NO2 NO3 CL SO4 20X: Diluted due to high SO4 and CL screen results. Analyzed out of hold by less that 2 hours, this is acceptable per LSB due to TX having a 2 hour different per time zone change.			
6				
	L16020079-01 SO4 2X: Diluted due to high CL screen results.			
16				
	L16020183-03 3X SO4 BR NO2 FL: Diluted due to high SO4 screen results.			

Page: 1 Approved: 05-FEB-16

Microbac Laboratories Inc.

Data Checklist

Date: 29-OCT-2015
Analyst: ALS
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 71427
Analytical Workgroups: ICAL ONLY

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	ALS
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 02-NOV-2015

Secondary Reviewer: 05-NOV-2015

CHECKLIST1 - Modified 03/05/2008

Generated: NOV-05-2015 09:23:50

Microbac Laboratories Inc.

Data Checklist

Date: 04-FEB-2016
Analyst: AED
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 73108
Analytical Workgroups: L16020079, 0141, 0155, 0183, 0185, 0189

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
05-FEB-2016

Secondary Reviewer:
05-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-05-2016 10:07:23

Microbac Laboratories Inc.

00743394

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG556163

Login Number: L16020141

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW09-020216	01	02/02/16					02/04/2016	2.1	2	*	02/04/16	2.1	2	*
46WW09-020216	01	02/02/16					02/04/2016	2.1	2	*	02/04/16	2.2	2	*

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4616781
Report generated 02/05/2016 11:03

METHOD BLANK SUMMARY

Login Number: L16020141
Blank File ID: I1_020316-04
Prep Date: 02/04/16 09:22
Analyzed Date: 02/04/16 10:15
Analyst: AED

Work Group: WG556163
Blank Sample ID: WG556163-01
Instrument ID: IC1
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
46WW09-020216	L16020141-01	I1_020316-03	02/04/16 09:57	DL01
LCS	WG556163-02	I1_020316-05	02/04/16 10:33	01
DUP	WG556163-04	I1_020316-08	02/04/16 11:26	01
46WW09-020216	L16020141-01	I1_020316-14	02/04/16 13:12	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4617770
Report generated 02/05/2016 11:03

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020141 Prep Date: 02/04/16 09:22 Sample ID: WG556163-01
Instrument ID: IC1 Run Date: 02/04/16 10:15 Prep Method: 9056
File ID: I1 020316-04 Analyst: AED Method: 9056
Workgroup (AAB#): WG556163 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1-29-OCT-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4617771
05-FEB-2016 11:03

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020141 Run Date: 02/04/2016 Sample ID: WG556163-02
Instrument ID: IC1 Run Time: 10:33 Prep Method: 9056
File ID: I1 020316-05 Analyst: AED Method: 9056
Workgroup (AAB#): WG556163 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD71546 Cal ID: IC1 - 29-OCT-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	8.29	104	90 - 110	
Nitrate	5.42	5.70	105	90 - 110	
Nitrite	4.87	5.15	106	90 - 110	
Sulfate	40.0	41.3	103	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4617772
Report generated: 02/05/2016 11:03

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16020141
Analytical Method: 9056
ICAL Workgroup: WG544886

Instrument ID: IC1
Initial Calibration Date: 29-OCT-15 17:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.663	5.31	0.99900	
Nitrate		2.324	8.67	0.99700	
Nitrite		2.800	6.08	0.99900	
Sulfate		7.615	12.5	0.99700	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4617773
Report generated 02/05/2016 11:03

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L16020141
Analytical Method: 9056
Instrument ID: IC1
Initial Calibration Date: 29-OCT-15 17:57
Column ID: F

Analyte	WG544886-01			WG544886-02			WG544886-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.56000000	5.263	12.0	2.14900000	5.584	8.00	1.32700000	6.029
Nitrate	16.3	8.10900000	2.006	8.13	3.68000000	2.210	5.42	2.32400000	2.333
Nitrite	14.6	5.37500000	2.719	7.31	2.65100000	2.756	4.87	1.68800000	2.886
Sulfate	120	18.9060000	6.347	60.0	8.66000000	6.928	40.0	5.38700000	7.425

INT_CAL - Modified 03/06/2008
PDF File ID: 4617773
Report generated 02/05/2016 11:03

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L16020141
Analytical Method: 9056
Instrument ID: IC1
Initial Calibration Date: 29-OCT-15 17:57
Column ID: F

Analyte	WG544886-04			WG544886-05			WG544886-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.676000000	5.917	1.00	0.173000000	5.780	0.200	0.0370000000	5.405
Nitrate	2.71	1.11800000	2.425	0.678	0.271000000	2.500	0.134	0.0540000000	2.473
Nitrite	2.44	0.844000000	2.886	0.609	0.202000000	3.014	0.122	0.0480000000	2.538
Sulfate	20.0	2.59300000	7.713	5.00	0.611000000	8.183	1.00	0.110000000	9.091

INT_CAL - Modified 03/06/2008
PDF File ID: 4617773
Report generated 02/05/2016 11:03

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16020141 Run Date: 10/29/2015 Sample ID: WG544886-07
Instrument ID: IC1 Run Time: 18:15 Method: 9056
File ID: I1 102915-09 Analyst: ALS QC Key: DOD4
ICal Workgroup: WG544886 Cal ID: IC1 - 29-OCT-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.87	mg/L	5.83	1.60	10	
Nitrate		5.42	5.53	mg/L	2.31	1.90	10	
Nitrite		4.87	4.97	mg/L	2.80	2.10	10	
Sulfate		40.0	39.9	mg/L	7.29	0.200	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4617774
Report generated 02/05/2016 11:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020141
Run Date: 02/04/2016
Sample ID: WG556164-02
Instrument ID: IC1
Run Time: 09:40
Method: 9056
File ID: I1 020316-02
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG556163
Cal ID: IC1 - 29-OCT-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4617776
Report generated 02/05/2016 11:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020141
Run Date: 02/04/2016
Sample ID: WG556164-04
Instrument ID: IC1
Run Time: 12:54
Method: 9056
File ID: I1 020316-13
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG556163
Cal ID: IC1 - 29-OCT-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4617776
Report generated 02/05/2016 11:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16020141
Run Date: 02/04/2016
Sample ID: WG556164-06
Instrument ID: IC1
Run Time: 15:16
Method: 9056
File ID: I1 020316-21
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG556163
Cal ID: IC1 - 29-OCT-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4617776
Report generated 02/05/2016 11:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141
Run Date: 02/04/2016
Sample ID: WG556164-01
Instrument ID: IC1
Run Time: 09:22
Method: 9056
File ID: I1 020316-01
Analyst: AED
QC Key: DOD4
Workgroup (AAB#): WG556163
Cal ID: IC1 - 29-OCT-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.23	mg/L	5.57	2.88	10	
Nitrate		5.42	5.69	mg/L	2.24	4.90	10	
Nitrite		4.87	5.11	mg/L	2.73	4.98	10	
Sulfate		40.0	40.9	mg/L	7.11	2.31	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4617775
Report generated 02/05/2016 11:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141
Run Date: 02/04/2016
Sample ID: WG556164-03
Instrument ID: IC1
Run Time: 12:37
Method: 9056
File ID: I1 020316-12
Analyst: AED
QC Key: DOD4
Workgroup (AAB#): WG556163
Cal ID: IC1 - 29-OCT-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.12	mg/L	5.65	1.55	10	
Nitrate		5.42	5.59	mg/L	2.28	3.16	10	
Nitrite		4.87	5.10	mg/L	2.73	4.73	10	
Sulfate		40.0	40.5	mg/L	7.18	1.22	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4617775
Report generated 02/05/2016 11:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020141
Run Date: 02/04/2016
Sample ID: WG556164-05
Instrument ID: IC1
Run Time: 14:58
Method: 9056
File ID: I1 020316-20
Analyst: AED
QC Key: DOD4
Workgroup (AAB#): WG556163
Cal ID: IC1 - 29-OCT-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.22	mg/L	5.58	2.71	10	
Nitrate		5.42	5.66	mg/L	2.25	4.36	10	
Nitrite		4.87	5.12	mg/L	2.72	5.08	10	
Sulfate		40.0	40.9	mg/L	7.11	2.19	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4617775
Report generated 02/05/2016 11:03

2.3.1.3 Sample Data

3 L16020141-01 NO2 NO3 CL SO4 20X

1,20 AED

Sample Name:	**L16020141-01 NO2 NO3 CL SO4 20X**	*Injection Volume:*	**20.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/4/2016 9:57**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

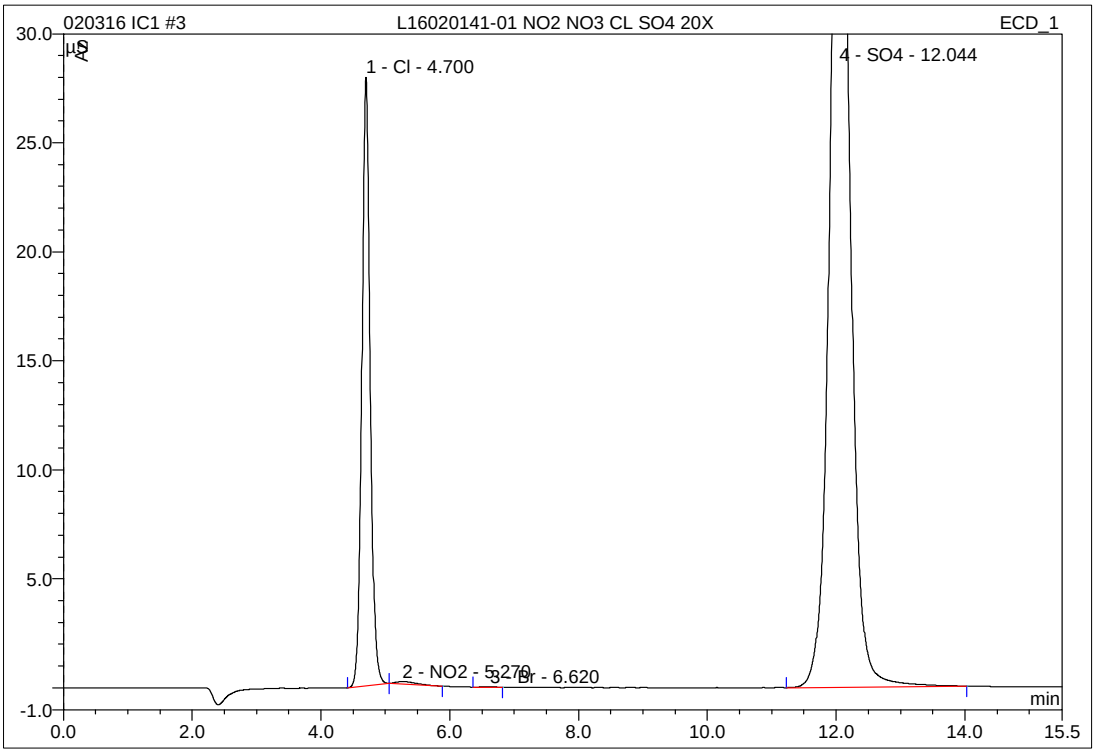

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.70	Cl	27.913	4.167	19.95	23.917	BMb
2	5.27	NO2	0.125	0.046	0.22	0.116	bMB
3	6.62	Br	0.032	0.007	0.03	0.109	BMB
4	12.04	SO4	48.107	16.662	79.80	120.722	BMB
Total:			76.177	20.881	100.00	144.864	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

14 L16020141-01 NO2 NO3 CL SO4 (SO4) 50X

1,50 AED

Sample Name:	**L16020141-01 NO2 NO3 CL SO4 (SO4) 50X**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/4/2016 13:12**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

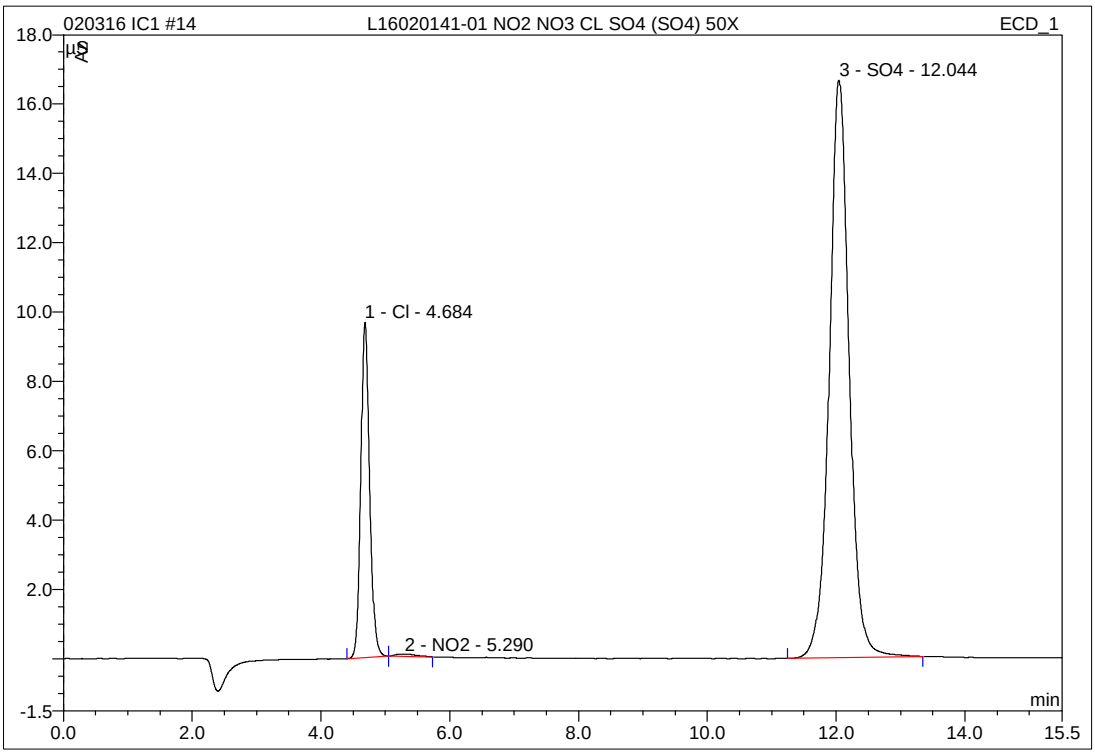

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.68	Cl	9.681	1.533	20.41	8.791	BMb
2	5.29	NO2	0.070	0.026	0.34	0.059	bMB
3	12.04	SO4	16.657	5.952	79.25	43.262	BMB
Total:			26.408	7.510	100.00	52.112	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.3.1.4 Standards Data

3 WG544886-01 STD #6

1,1 ALS STD71545 (_____psi @___:___)

Sample Name:	**WG544886-01 STD #6**	*Injection Volume:*	**20.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 16:28**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

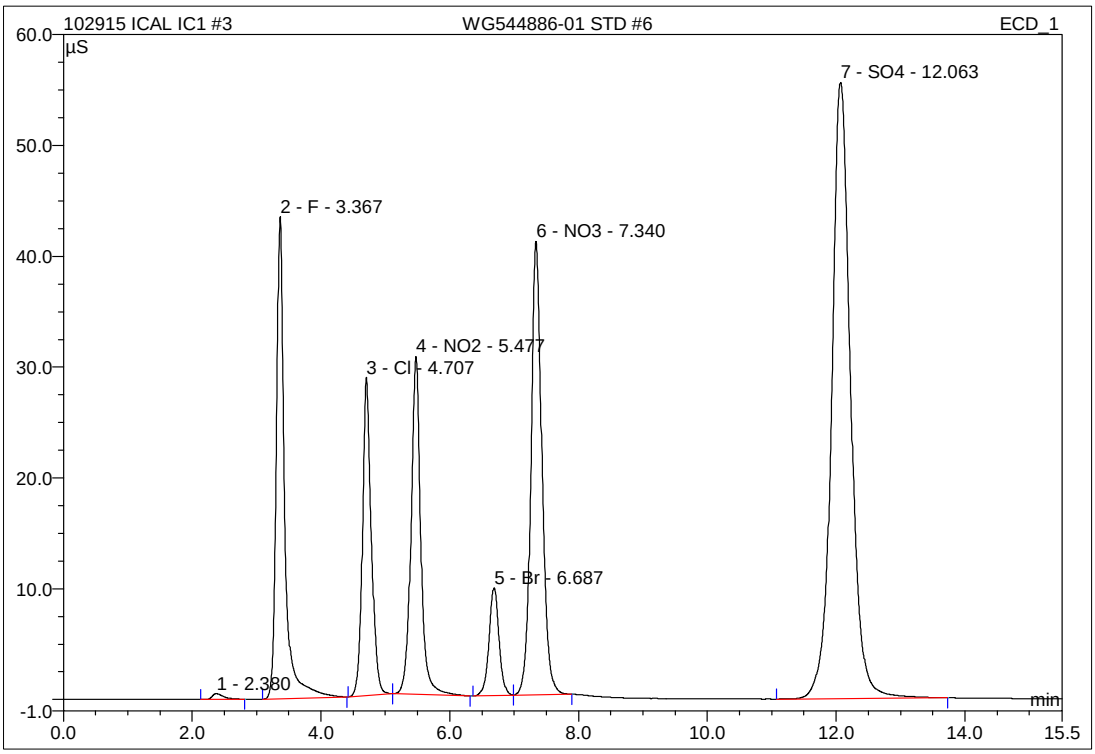

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.38	n.a.	0.518	0.105	0.23	n.a.	BMB
2	3.37	F	43.523	6.488	14.33	24.965	BMB
3	4.71	Cl	28.723	4.560	10.07	26.173	BMb
4	5.48	NO2	30.486	5.375	11.87	15.414	bMB
5	6.69	Br	9.717	1.744	3.85	25.294	BMB
6	7.34	NO3	40.882	8.109	17.91	19.027	BMB
7	12.06	SO4	55.601	18.906	41.75	136.945	BMB
Total:			209.450	45.286	100.00	247.819	

4 WG544886-02 STD #5

1,1 ALS

Sample Name:	**WG544886-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 16:46**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

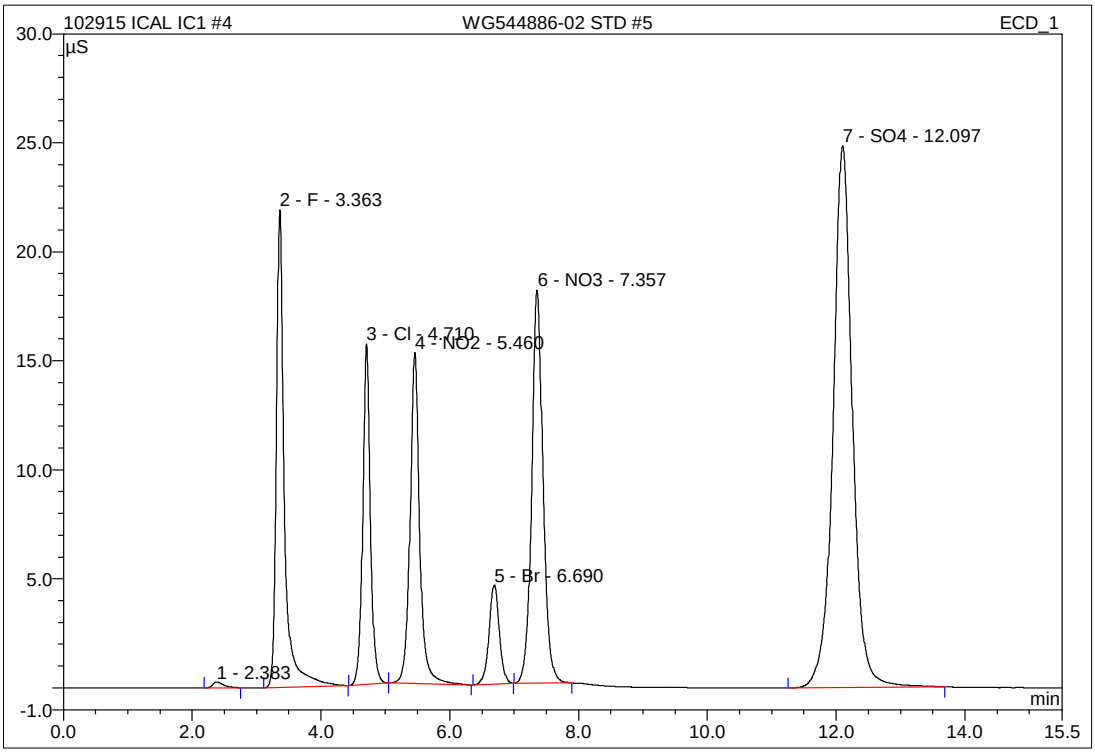

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.38	n.a.	0.269	0.053	0.25	n.a.	BMB
2	3.36	F	21.918	3.152	14.88	12.150	BMB
3	4.71	Cl	15.622	2.149	10.15	12.332	BMB
4	5.46	NO2	15.184	2.651	12.51	7.594	bMB
5	6.69	Br	4.555	0.840	3.96	12.186	BMB
6	7.36	NO3	18.039	3.680	17.37	8.640	BMB
7	12.10	SO4	24.852	8.660	40.88	62.850	BMB
Total:			100.438	21.185	100.00	115.752	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

5 WG544886-03 STD #4

1,1 ALS

Sample Name:	**WG544886-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 17:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

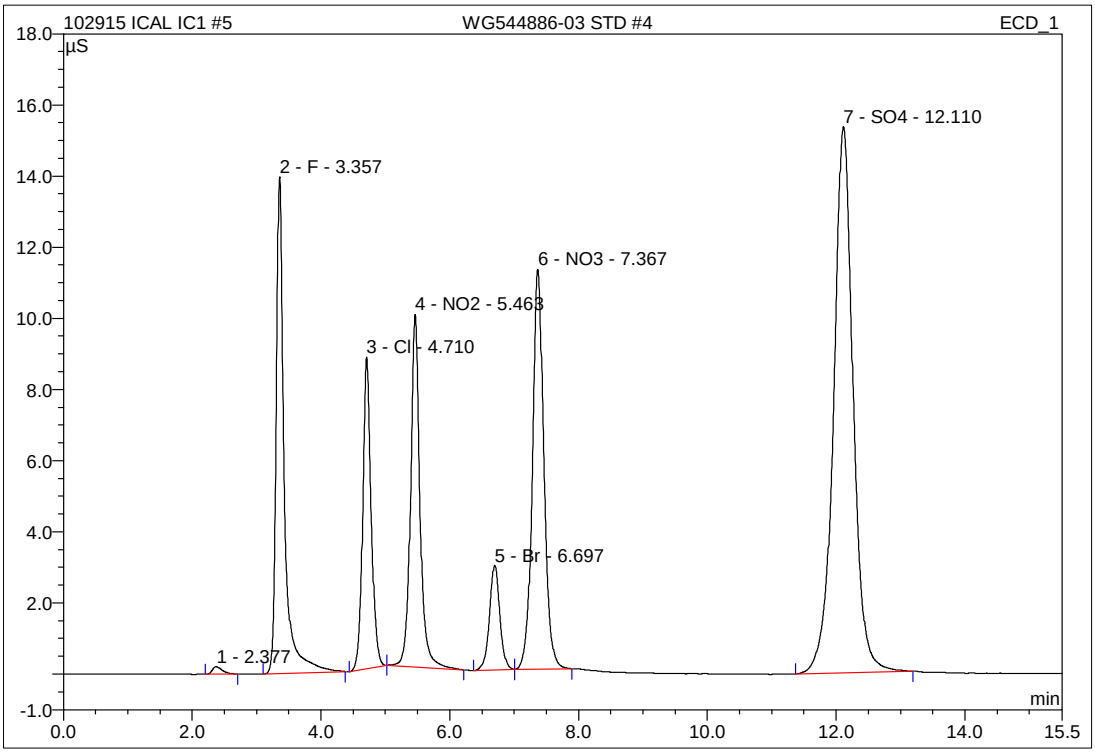

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.38	n.a.	0.210	0.038	0.29	n.a.	BMB
2	3.36	F	13.962	2.018	15.14	7.795	BMB
3	4.71	Cl	8.755	1.327	9.95	7.607	BMb
4	5.46	NO2	9.909	1.688	12.67	4.832	bMB
5	6.70	Br	2.941	0.547	4.10	7.937	BMB
6	7.37	NO3	11.231	2.324	17.43	5.460	BMB
7	12.11	SO4	15.355	5.387	40.41	39.174	BMB
Total:			62.363	13.328	100.00	72.806	

5 WG544886-03 STD #4

1,1 ALS

Sample Name:	**WG544886-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 17:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

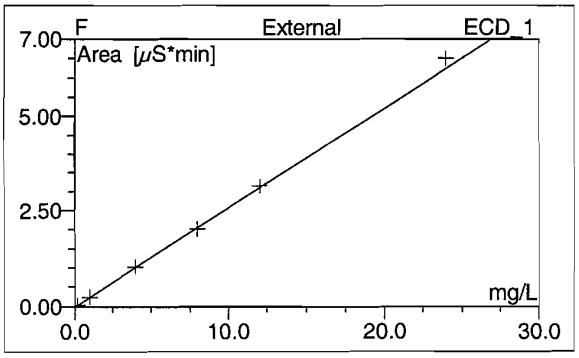

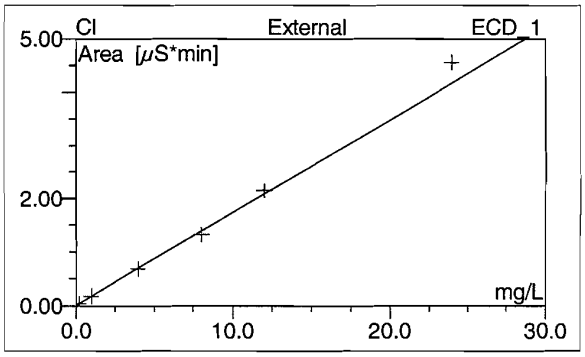

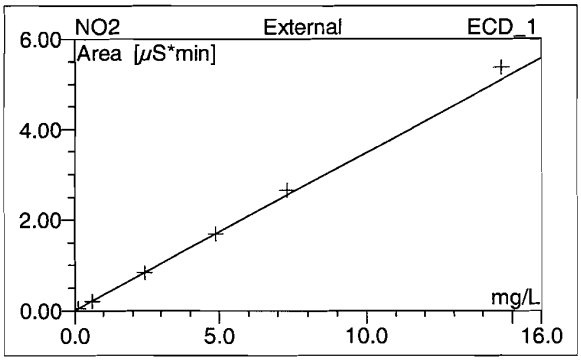

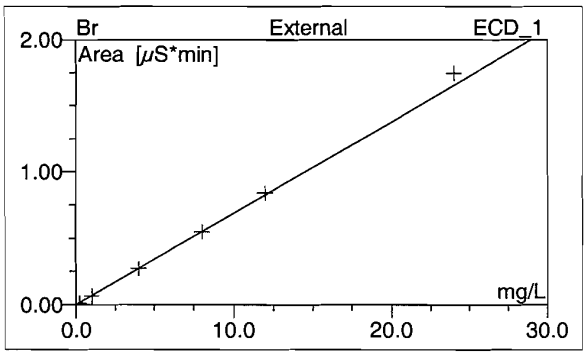

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.38	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.36	F	YYLOff	6	99.9702	-0.0113	0.2604	0.0000
3	4.71	Cl	YYLOff	6	99.8637	0.0021	0.1741	0.0000
4	5.46	NO2	YYLOff	6	99.8744	0.0051	0.3484	0.0000
5	6.70	Br	YYLOff	6	99.9333	-0.0009	0.0690	0.0000
6	7.37	NO3	YYLOff	6	99.6838	-0.0045	0.4264	0.0000
7	12.11	SO4	YYLOff	6	99.6878	-0.0302	0.1383	0.0000
Average:					99.8355	-0.0066	0.2361	0.0000

5 WG544886-03 STD #4

1,1 ALS

Sample Name:	**WG544886-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 17:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

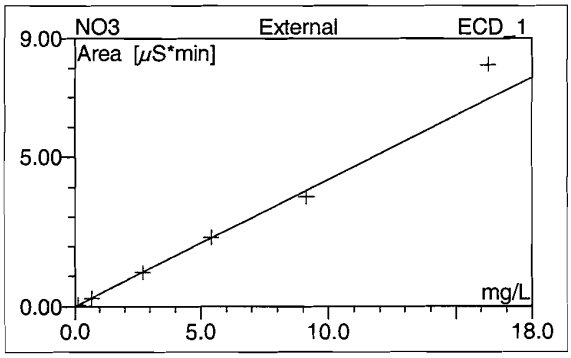

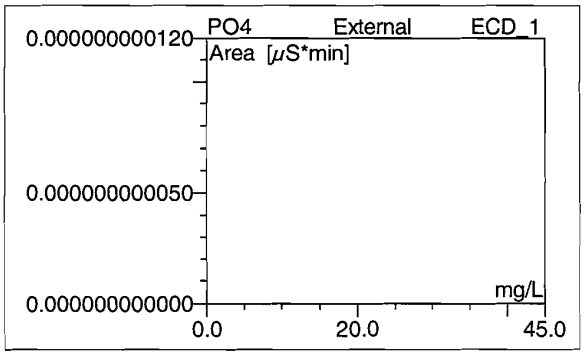

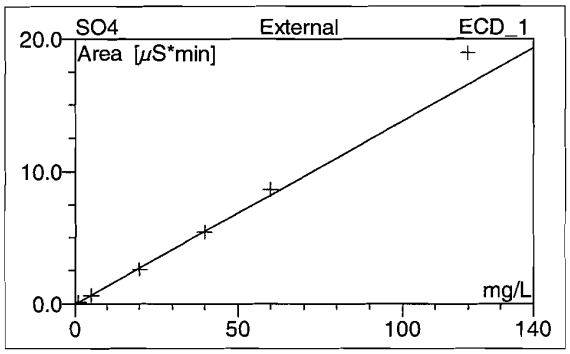

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.38	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.36	F	YYLOff	6	99.9702	-0.0113	0.2604	0.0000
3	4.71	Cl	YYLOff	6	99.8637	0.0021	0.1741	0.0000
4	5.46	NO2	YYLOff	6	99.8744	0.0051	0.3484	0.0000
5	6.70	Br	YYLOff	6	99.9333	-0.0009	0.0690	0.0000
6	7.37	NO3	YYLOff	6	99.6838	-0.0045	0.4264	0.0000
7	12.11	SO4	YYLOff	6	99.6878	-0.0302	0.1383	0.0000
Average:					99.8355	-0.0066	0.2361	0.0000

6 WG544886-04 STD #3

1,1 ALS

Sample Name:	**WG544886-04 STD #3**	*Injection Volume:*	**20.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 17:21**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

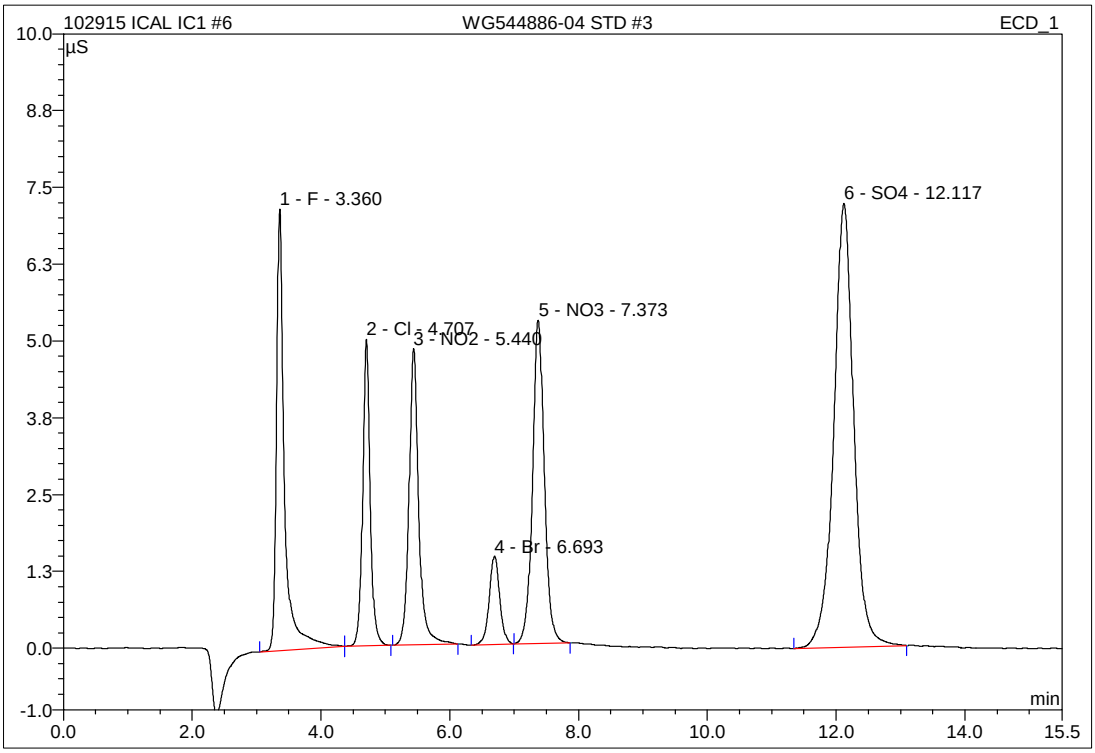

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	7.182	1.019	15.63	3.959	BMB
2	4.71	Cl	4.989	0.676	10.36	3.869	bMB
3	5.44	NO2	4.819	0.844	12.94	2.408	BMB
4	6.69	Br	1.437	0.272	4.17	3.956	BMB
5	7.37	NO3	5.261	1.118	17.15	2.633	BMB
6	12.12	SO4	7.220	2.593	39.75	18.971	BMB
Total:			30.909	6.522	100.00	35.796	

7 WG544886-05 STD #2

1,1 ALS

Sample Name:	**WG544886-05 STD #2**	*Injection Volume:*	**20.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 17:39**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

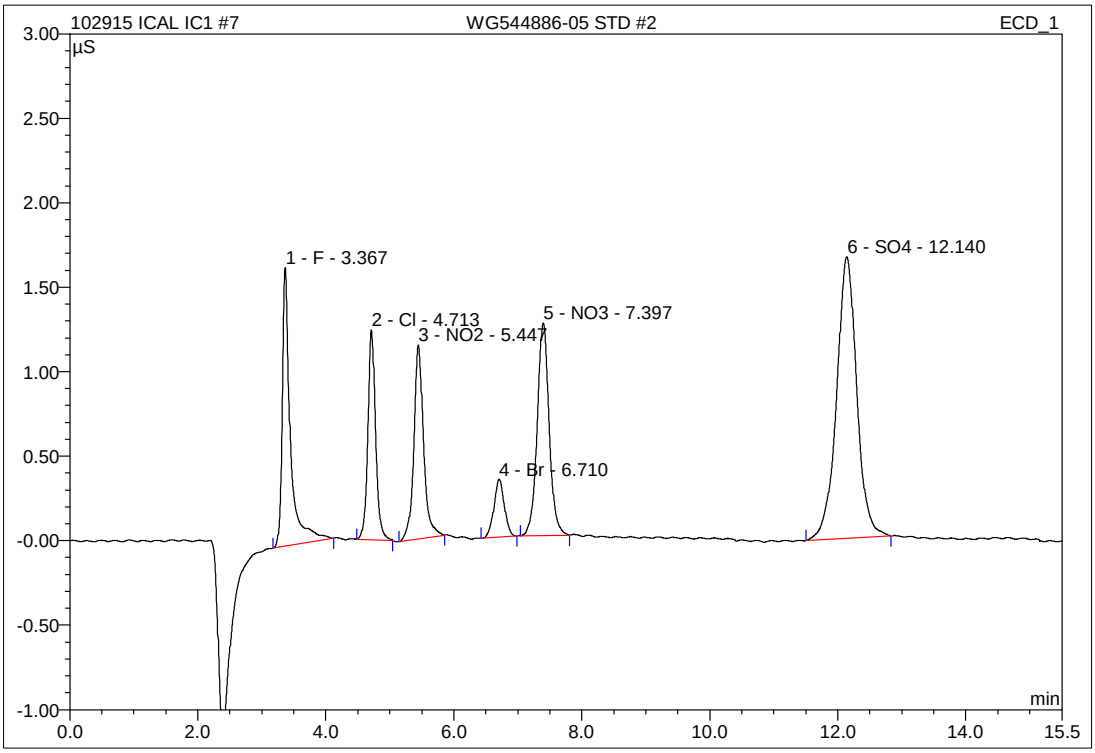

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.37	F	1.649	0.246	15.67	0.986	BMB
2	4.71	Cl	1.240	0.173	11.03	0.981	BMB
3	5.45	NO2	1.148	0.202	12.86	0.564	BMB
4	6.71	Br	0.342	0.065	4.13	0.951	BMB
5	7.40	NO3	1.258	0.271	17.30	0.646	BMB
6	12.14	SO4	1.666	0.611	39.01	4.639	BMB
Total:			7.302	1.567	100.00	8.768	

8 WG544886-06 STD #1

1,1 ALS

Sample Name:	**WG544886-06 STD #1**	*Injection Volume:*	**20.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 17:57**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

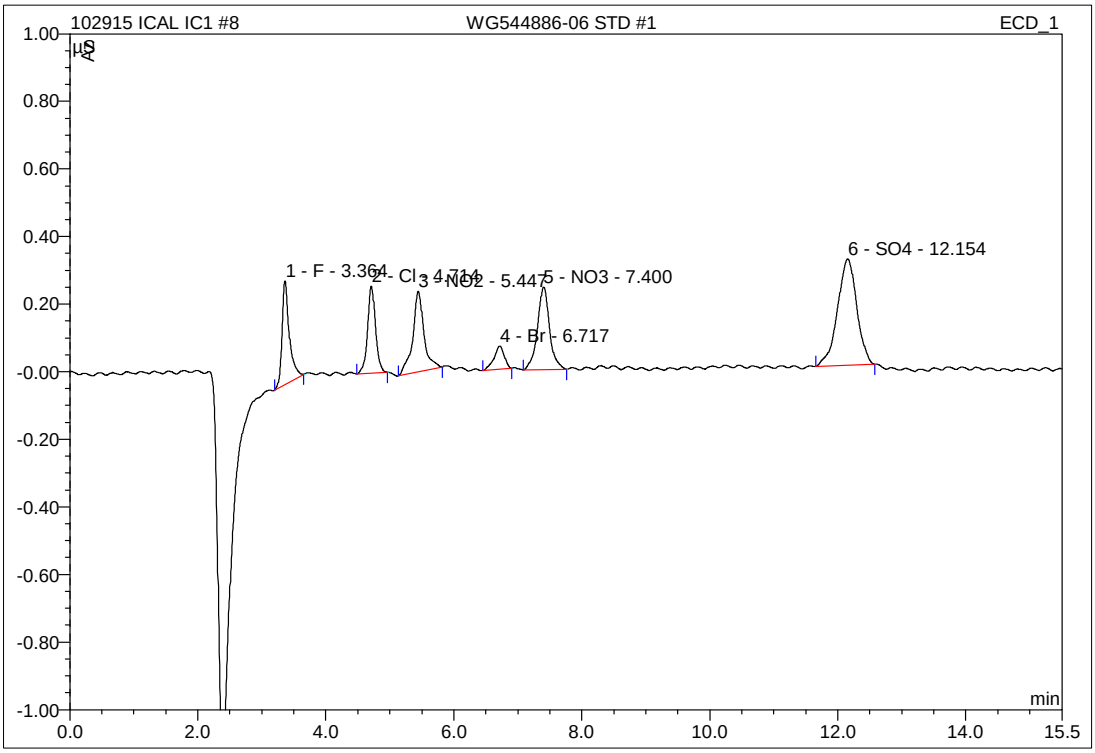

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	0.307	0.041	13.49	0.200	BMB
2	4.71	Cl	0.258	0.037	12.24	0.201	BMB
3	5.45	NO2	0.238	0.048	15.99	0.124	BMB
4	6.72	Br	0.069	0.013	4.29	0.202	BMB
5	7.40	NO3	0.245	0.054	17.76	0.137	BMB
6	12.15	SO4	0.315	0.110	36.24	1.013	BMB
Total:			1.432	0.303	100.00	1.878	

9 WG544886-07 SSCV

1,1 ALS

Sample Name:	**WG544886-07 SSCV**	*Injection Volume:*	**20.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 18:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

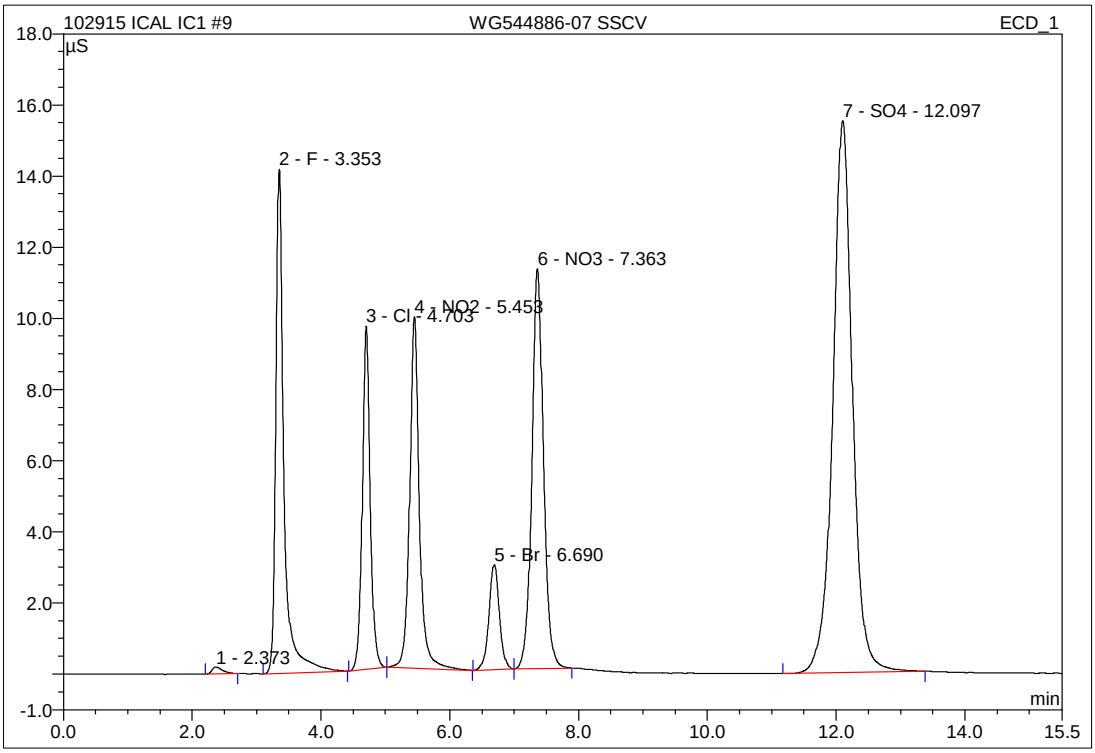

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.193	0.036	0.26	n.a.	BMB
2	3.35	F	14.173	2.052	15.09	7.923	BMB
3	4.70	Cl	9.659	1.373	10.10	7.871	BMb
4	5.45	NO2	9.887	1.737	12.78	4.972	bMB
5	6.69	Br	2.952	0.555	4.08	8.056	BMB
6	7.36	NO3	11.237	2.351	17.30	5.525	BMB
7	12.10	SO4	15.520	5.487	40.38	39.904	BMB
Total:			63.620	13.591	100.00	74.252	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

9 WG544886-07 SSCV

1,1 ALS

Sample Name:	**WG544886-07 SSCV**	*Injection Volume:*	**20.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 18:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG544886-07 SSCV	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.9233	-0.96	PASS
Cl	8.00	7.8710	-1.61	PASS
NO2-N	4.8714	4.9721	2.07	PASS
Br	8.00	8.0561	0.70	PASS
NO3-N	5.4216	5.5250	1.91	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	39.9043	-0.24	PASS

1 WG556164-01 ANION CCV

1,1 AED STD71545 (_____psi @___:___)

Sample Name:	**WG556164-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/4/2016 9:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

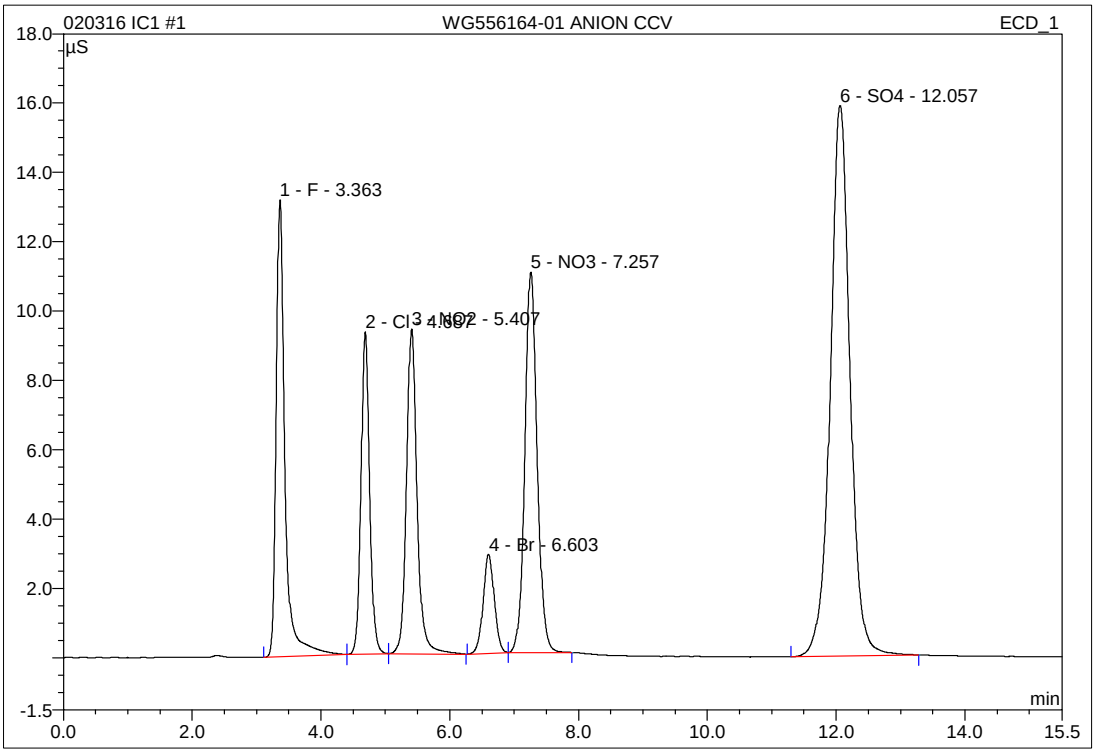

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	13.187	2.072	14.89	8.000	BMB
2	4.69	Cl	9.299	1.435	10.31	8.230	BMB
3	5.41	NO2	9.374	1.787	12.84	5.114	BMB
4	6.60	Br	2.857	0.572	4.11	8.312	BMB
5	7.26	NO3	10.977	2.420	17.39	5.687	BMB
6	12.06	SO4	15.877	5.629	40.45	40.924	BMB
Total:			61.571	13.915	100.00	76.268	

1 WG556164-01 ANION CCV

1,1 AED STD71545 (_____psi @___:___)

Sample Name:	**WG556164-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/4/2016 9:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG556164-01 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	8.0002	0.00	PASS
Cl	8.00	8.2298	2.87	PASS
NO2-N	4.8714	5.1145	4.99	PASS
Br	8.00	8.3120	3.90	PASS
NO3-N	5.4216	5.6870	4.89	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	40.9244	2.31	PASS

12 WG556164-03 ANION CCV

1,1 AED STD71545

Sample Name:	**WG556164-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/4/2016 12:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

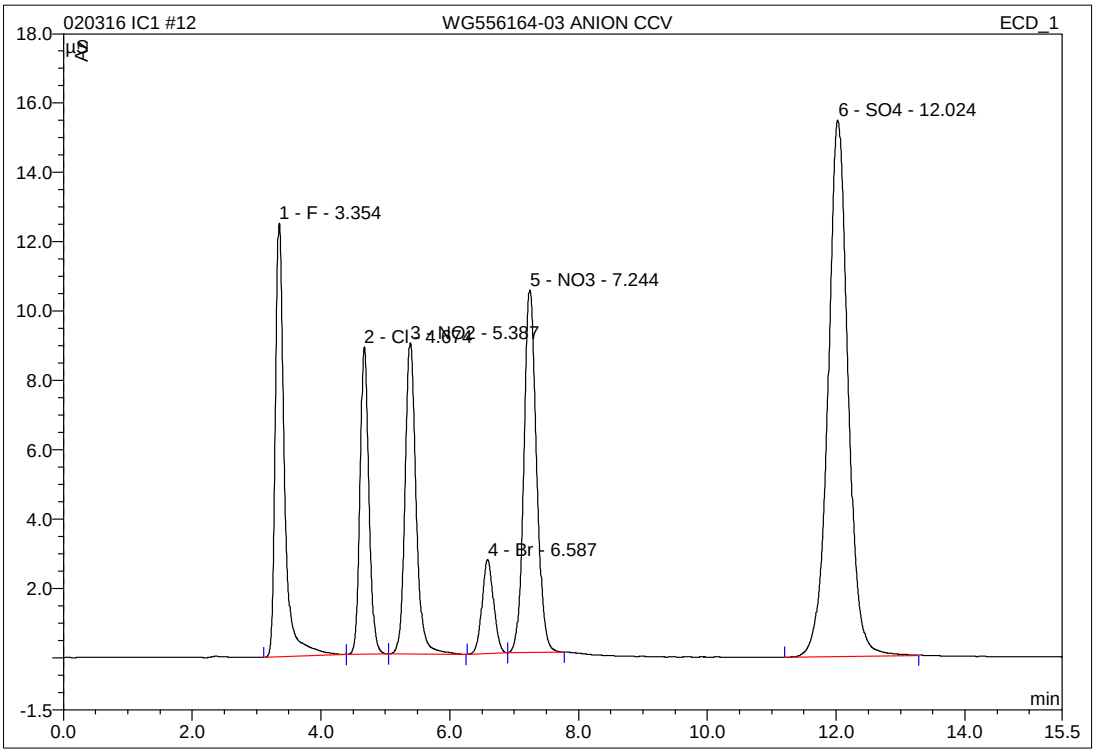

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	12.514	2.051	14.90	7.921	BMB
2	4.67	Cl	8.870	1.417	10.30	8.124	bMB
3	5.39	NO2	8.975	1.783	12.95	5.102	BMB
4	6.59	Br	2.714	0.562	4.09	8.167	BMB
5	7.24	NO3	10.457	2.380	17.30	5.593	BMB
6	12.02	SO4	15.476	5.568	40.46	40.489	BMB
Total:			59.005	13.761	100.00	75.396	

12 WG556164-03 ANION CCV

1,1 AED STD71545

Sample Name:	**WG556164-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/4/2016 12:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG556164-03 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.9206	-0.99	PASS
Cl	8.00	8.1240	1.55	PASS
NO2-N	4.8714	5.1022	4.74	PASS
Br	8.00	8.1674	2.09	PASS
NO3-N	5.4216	5.5930	3.16	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	40.4890	1.22	PASS

20 WG556164-05 ANION CCV

1,1 AED STD71545

Sample Name:	**WG556164-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/4/2016 14:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

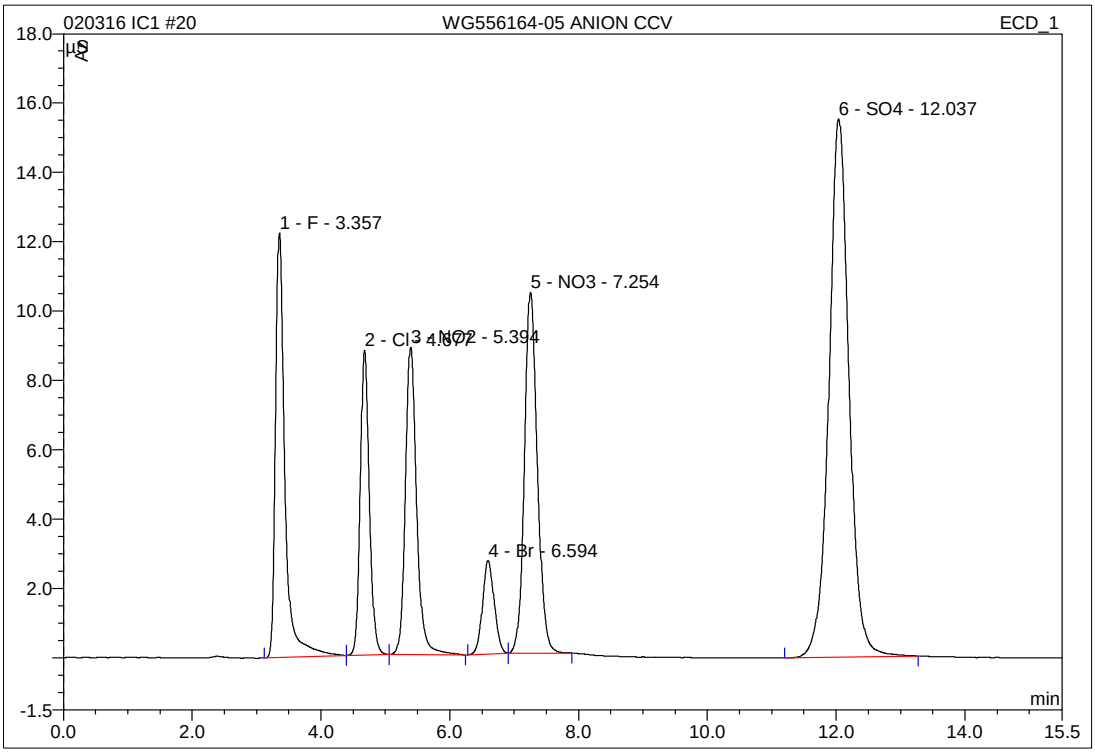

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	12.246	2.067	14.89	7.982	BMB
2	4.68	Cl	8.793	1.433	10.32	8.217	BMB
3	5.39	NO2	8.856	1.788	12.88	5.119	bMB
4	6.59	Br	2.697	0.567	4.08	8.226	BMB
5	7.25	NO3	10.404	2.408	17.34	5.658	BMB
6	12.04	SO4	15.526	5.622	40.49	40.876	BMB
Total:			58.522	13.885	100.00	76.079	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

20 WG556164-05 ANION CCV

1,1 AED STD71545

Sample Name:	**WG556164-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/4/2016 14:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG556164-05 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.9824	-0.22	PASS
Cl	8.00	8.2173	2.72	PASS
NO2-N	4.8714	5.1185	5.07	PASS
Br	8.00	8.2258	2.82	PASS
NO3-N	5.4216	5.6585	4.37	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	40.8764	2.19	PASS

2 WG556164-02 ANION CCB

1,1 AED

Sample Name:	**WG556164-02 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/4/2016 9:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

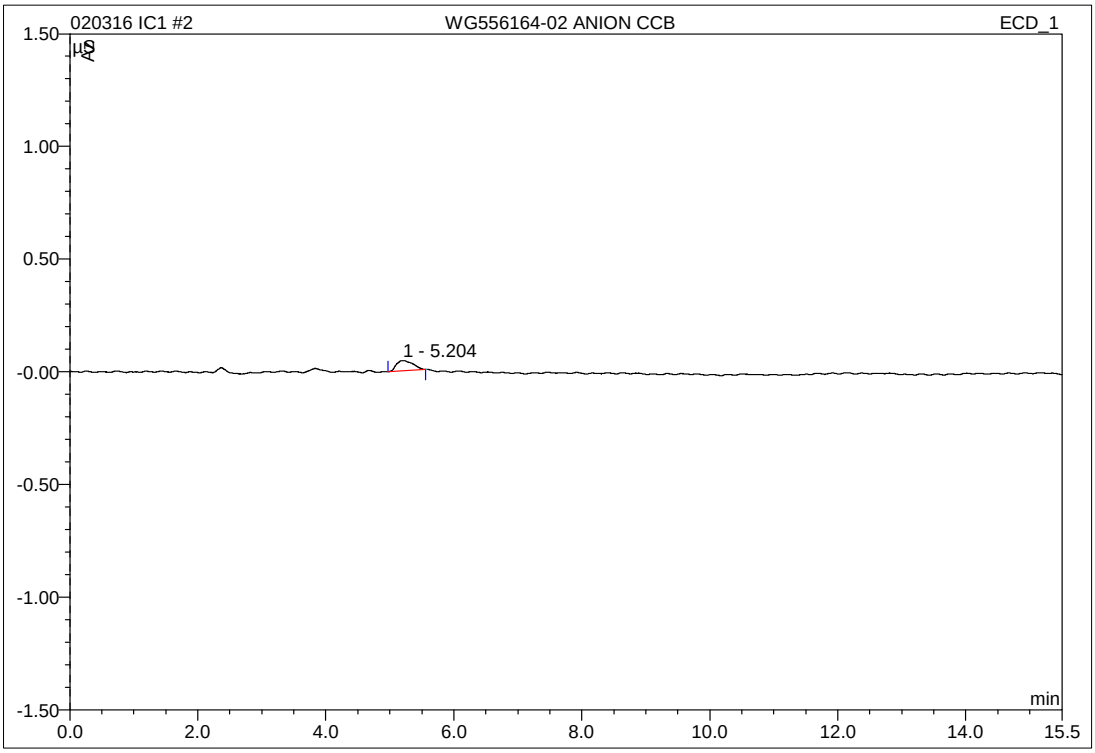

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	5.20	n.a.	0.046	0.014	100.00	n.a.	BMB
Total:			0.046	0.014	100.00	0.000	

13 WG556164-04 ANION CCB

1,1 AED

Sample Name:	**WG556164-04 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/4/2016 12:54**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

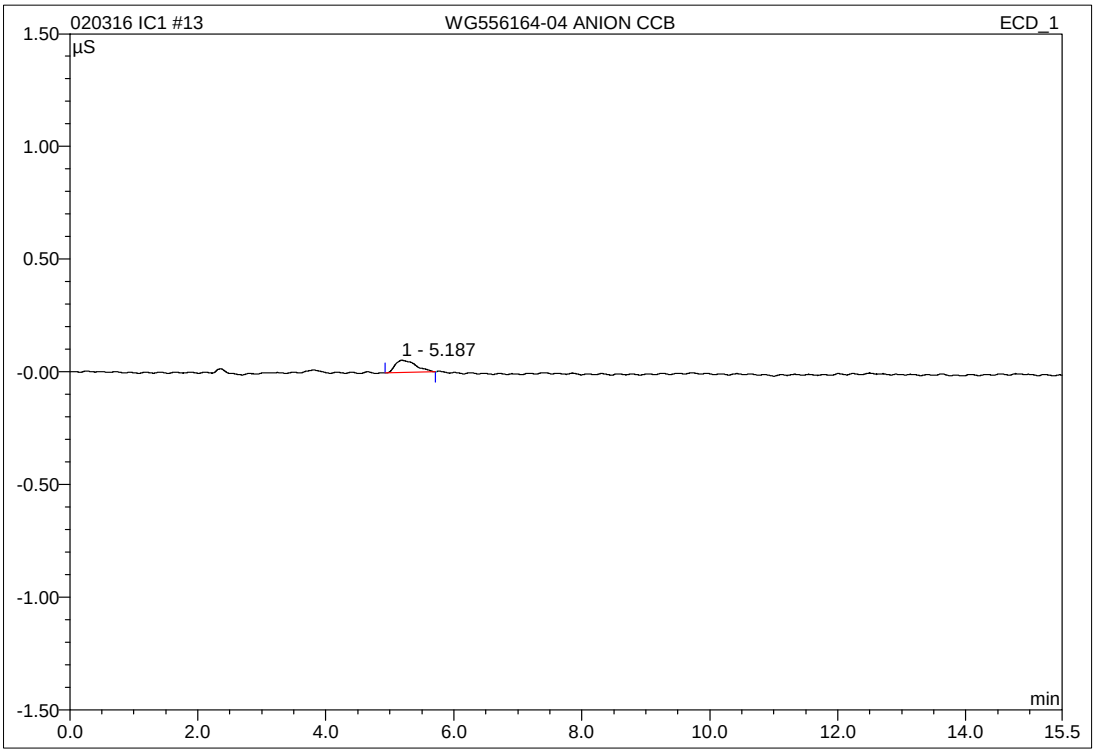

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	5.19	n.a.	0.055	0.020	100.00	n.a.	BMB
Total:			0.055	0.020	100.00	0.000	

21 WG556164-06 ANION CCB

1,1 AED

Sample Name:	**WG556164-06 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/4/2016 15:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

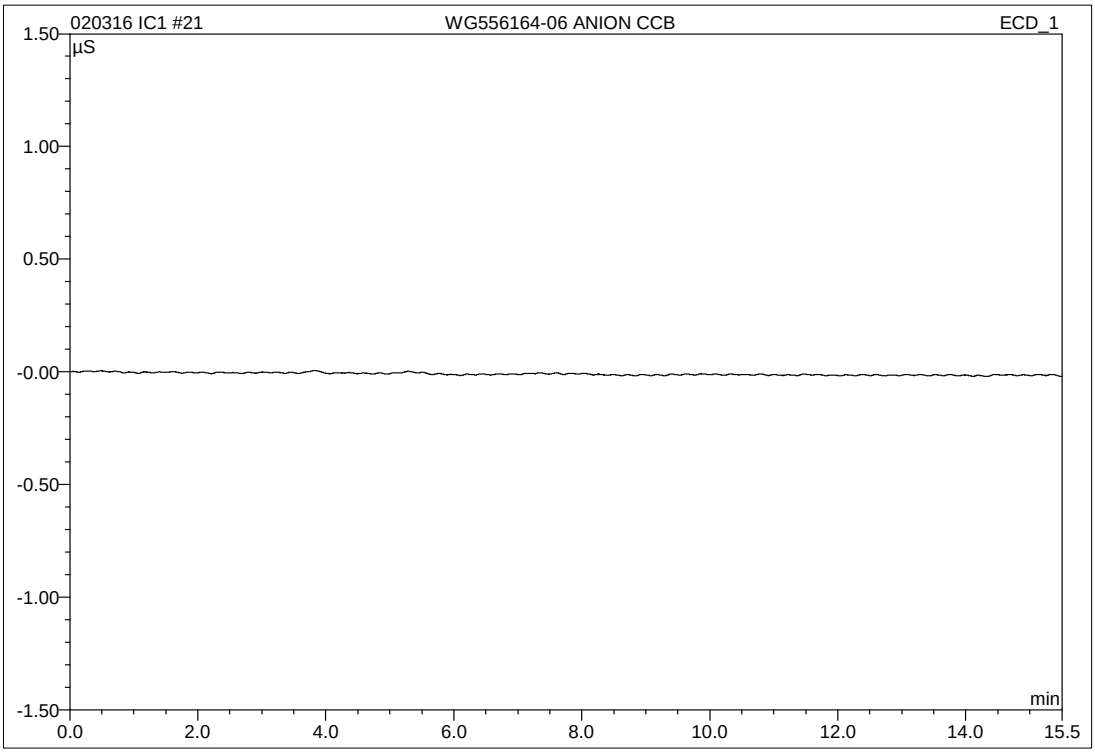

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AS14A-4mm

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	3/2/2015	3/4/2015	3/5/2015
File #	WG514023-02	WG514341-02	WG514431-02
Time	23:15	18:47	17:41

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.33	3.33	3.32	0.017
Cl	4.75	4.78	4.76	0.043
NO2-N	5.54	5.59	5.56	0.082
Br	6.86	6.98	6.93	0.180
NO3-N	7.59	7.73	7.67	0.222
SO4	12.42	12.38	12.34	0.116

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.3.1.5 Raw QC Data

4 WG556163-01 ANION BLANK

1,1 AED

Sample Name:	**WG556163-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/4/2016 10:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

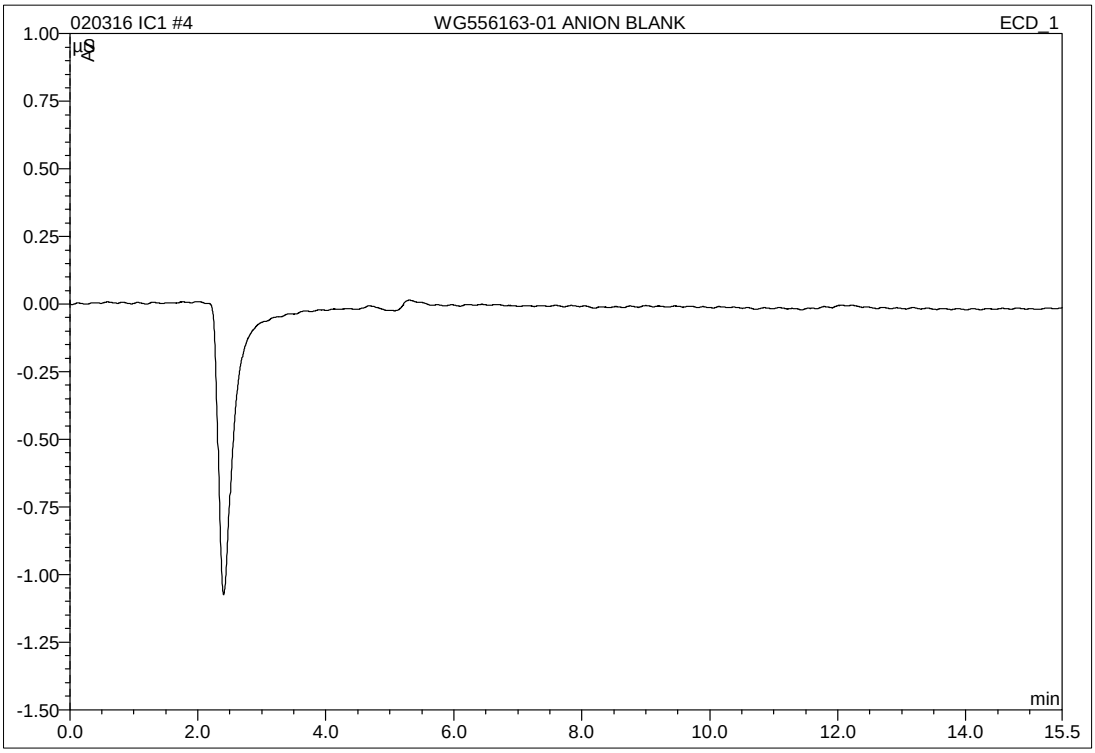

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

5 WG556163-02 ANION LCS

1,1 AED

Sample Name:	**WG556163-02 ANION LCS**	*Injection Volume:*	**20.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/4/2016 10:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

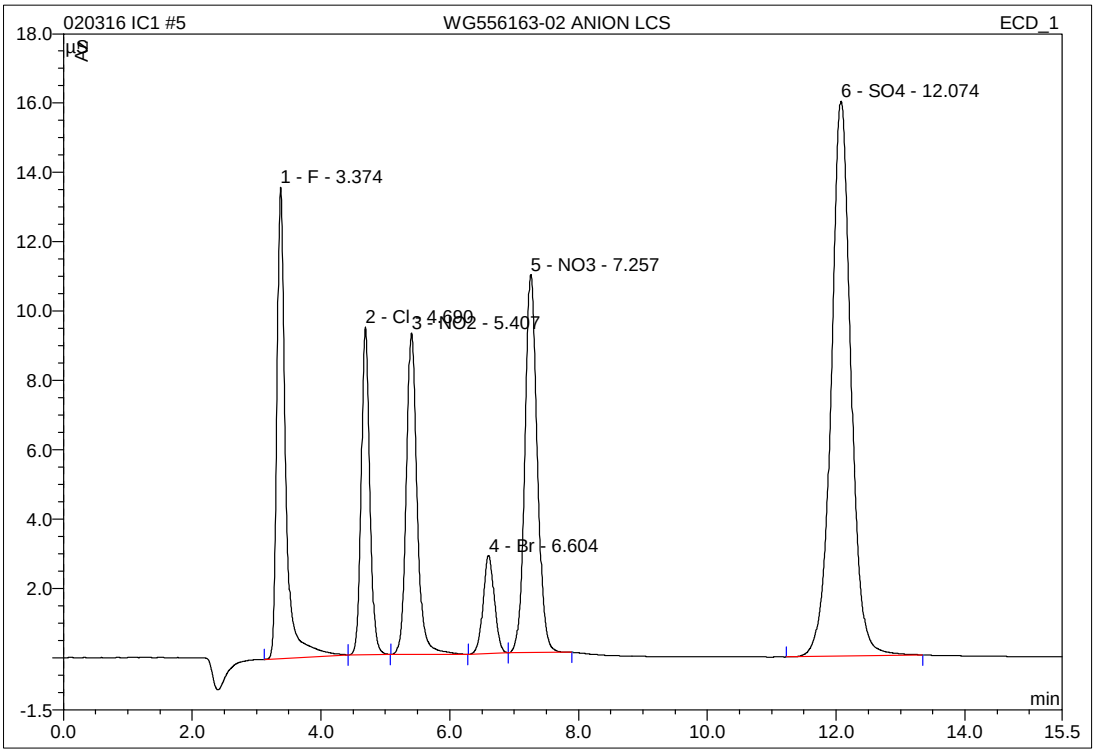

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.37	F	13.600	2.133	15.17	8.235	BMB
2	4.69	Cl	9.455	1.446	10.29	8.291	bMB
3	5.41	NO2	9.284	1.800	12.81	5.153	BMB
4	6.60	Br	2.838	0.573	4.08	8.319	BMB
5	7.26	NO3	10.915	2.427	17.27	5.703	BMB
6	12.07	SO4	16.007	5.678	40.39	41.279	BMB
Total:			62.099	14.057	100.00	76.980	

2.3.2 Alkalinity Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	46WW09-020216	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/05/2016 09:51
Workgroup #:	WG556354	**Analyst:**	DCM	**Run Date:**	02/05/2016 10:03
Collect Date:	02/02/2016 08:10	**Dilution:**	1	**File ID:**	S2160205002.027
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	183		40.0	20.0	10.0

2.3.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG556354

Login Number: L16020141

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW09-020216	01	02/02/16					02/05/2016	3.1	14		02/05/16	3.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4624061
Report generated 02/09/2016 16:26

METHOD BLANK SUMMARY

Login Number: L16020141
Blank File ID: S2160205002.012
Prep Date: 02/05/16 09:53
Analyzed Date: 02/05/16 09:53
Analyst: DCM

Work Group: WG556354
Blank Sample ID: WG556354-01
Instrument ID: SMARTCHEM2
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556354-02	S2160205002.013	02/05/16 09:54	01
LCS2	WG556354-03	S2160205002.014	02/05/16 09:55	01
46WW09-020216	L16020141-01	S2160205002.027	02/05/16 10:03	01
DUP	WG556354-05	S2160205002.028	02/05/16 10:04	01

Report Name: BLANK_SUMMARY
PDF File ID: 4624062
Report generated 02/09/2016 16:26

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020141 Prep Date: 02/05/16 09:53 Sample ID: WG556354-01
Instrument ID: SMARTCHEM2 Run Date: 02/05/16 09:53 Prep Method: 310.2
File ID: S2160205002.012 Analyst: DCM Method: 310.2
Workgroup (AAB#): WG556354 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC - 05-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	-11.7	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4624063
09-FEB-2016 16:26

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020141 Analyst: DCM Prep Method: 310.2
Instrument ID: SMARTCHEM2 Matrix: Water Method: 310.2
Workgroup (AAB#): WG556354 Units: mg/L
QC Key: DOD4 Lot #: STD74579

Sample ID: WG556354-02 LCS File ID: S2160205002.013 Run Date: 02/05/2016 09:54
Sample ID: WG556354-03 LCS2 File ID: S2160205002.014 Run Date: 02/05/2016 09:55

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	206	103	200	208	104	1.13	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4624064
Report generated: 02/09/2016 16:26

2.3.2.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG556354
556396

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20160205002
2) **Workgroup** _____
Plan # 20160205003
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		Alk		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	Blk			
1-3	LCS			
1-4	LCSDup			
1-5	02-910-02	1/4		color
1-6	03	1/4		color
1-7	05	1/4		color
1-8	06	1/4		color
1-9	07	1/20		color
1-10	02-58-01			
1-11	03			
1-12	05	1/2		
1-13	07			
1-14	09	1/2		
1-15	02-141-01			
1-16	Dup 02-141-01			
1-17				
1-18				
1-19				
1-20				
1-21				
1-22				
2-1				
2-2				
2-3				

	Analyte	1	2	3
Position				
2-4 1	ICV			
2-5 2	Blk			
2-6 3	LCS			
2-7 4	LCSDup			
2-8 5	02-58-09	1/5		
2-9 6	02-179-01			
2-10 7	01			
2-11 8	01			
2-12 9	01			
2-13 10	02-179-02	1/2		
2-14 11	02	1/2		
2-15 12	02	1/2		
2-16 13	02	1/2		
2-17 14	02-179-03	1/2		
2-18 15	03	1/2		
2-19 16	03	1/2		
2-20 17	03	1/2		
2-21 18	02-179-04	1/2		
2-22 19	04	1/2		
2-23 20	04	1/2		
2-24 21	04	1/2		
2-25 22	Dup 04	1/2		
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#116454

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG556354

	Analyte	1	2	3
Position				
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

	Analyte	1	2	3
Position				
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
✓	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	Alk		Reagents
SOP & Revision	K3103 R17		RGT 36017
Curve Stock (SC made)	Std 73515		
NO2 STD			
ICV	Std 74290		
CCV	Std 74550		
LCS	Std 74579		
MS	NA Dilution		

Comments: _____

Analyst: Daniel Morehle Date: 2/5/16

DCN#116454

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.6421	0.00		9:43:24 AM
DIL-1	RBL	0.0	0.6373	0.00		9:43:42 AM
DIL-1	RBL	0.0	0.6395	0.00		9:45:48 AM
DIL-1	Std-1	0.0	0.0017	0.00	INV	9:46:42 AM
SR5-1	Std-2	10.0	-0.0126	0.00		9:47:00 AM
SR5-2	Std-3	20.0	-0.0276	0.00		9:47:54 AM
SR5-3	Std-4	50.0	-0.0576	0.00		9:48:12 AM
SR5-4	Std-5	100.0	-0.1088	0.00		9:49:06 AM
SR5-5	Std-6	200.0	-0.2353	0.00		9:49:24 AM
SR5-6	Std-7	250.0	-0.3131	0.00		9:50:18 AM
SR5-7	Std-8	300.0	-0.3742	0.00		9:51:12 AM
ST-3	1CCV (150 mg/L)	148.7	-0.1722	99.15		9:51:30 AM
ST-2	2CCB (0 mg/L)	-7.3	0.0064	0.00	INV,><,LL	9:52:24 AM
1	ICV	256.8	-0.3151	0.00		9:52:42 AM
2	WG556354-01 BLK	-11.7	0.0111	0.00	INV,><,LL	9:53:36 AM
3	WG556354-02 LCS	205.7	-0.2451	0.00		9:54:30 AM
4	WG556354-03 LCSDUP	208.1	-0.2482	0.00		9:55:24 AM
5	L16020096-02 (4)	172.6	-0.2021	0.00		9:55:42 AM
6	L16020096-03 (4)	128.5	-0.1475	0.00		9:56:54 AM
7	L16020096-05 (4)	188.7	-0.2228	0.00		9:57:12 AM
8	L16020096-06 (4)	115.6	-0.1320	0.00		9:58:06 AM
9	L16020096-07 (100)	129.4	-0.1485	0.00		9:58:24 AM
10	L16020058-01	37.6	-0.0423	0.00		9:59:18 AM
ST-3	1CCV (150 mg/L)	167.3	-0.1954	111.52		9:59:36 AM
ST-2	2CCB (0 mg/L)	5.3	-0.0071	0.00		10:00:30 AM
11	L16020058-03	63.7	-0.0716	0.00		10:00:48 AM
12	L16020058-05 (2)	159.6	-0.1857	0.00		10:01:42 AM
13	L16020058-07	78.2	-0.0881	0.00		10:02:00 AM
14	L16020058-09 (2)	X361.8	-0.4777	0.00	><,LH	10:02:54 AM
15	L16020141-01	183.0	-0.2155	0.00		10:03:12 AM
16	WG556354-05 DUP	180.0	-0.2116	0.00		10:04:06 AM
17	ID 17	41.6	-0.0468	0.00	EPL	10:04:24 AM

Report Date :02/05/2016 **Run Date :2/5/2016** **Operator : SMARTCHEM2** **Plan # :20160205001**

Plan Description : ALK-A2-DCM/02/05/2016

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-3	1CCV (150 mg/L)	172.3	-0.2017	114.83		10:05:18 AM
ST-2	2CCB (0 mg/L)	19.2	-0.0221	0.00		10:06:30 AM
14-[1/2]	L16020058-09 (2)	X 601.7	-0.3798	0.00	><,LH	10:14:28 AM
ST-3	1CCV (150 mg/L)	179.4	-0.2108	119.59		10:14:28 AM
ST-2	2CCB (0 mg/L)	17.9	-0.0207	0.00		10:15:22 AM
14-[1/4]	L16020058-09 (2)	X 739.6	-0.2179	0.00	LH	10:23:02 AM
ST-3	1CCV (150 mg/L)	183.7	-0.2163	122.44		10:23:02 AM
ST-2	2CCB (0 mg/L)	31.5	-0.0356	0.00		10:23:56 AM

Report Date :02/05/2016 **Run Date :2/5/2016** **Operator : SMARTCHEM2** **Plan # :20160205001**

Plan Description : ALK-A2-DCM/02/05/2016

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20160205002 Description : [ALK-A2-DCM/02/05/2016] Unit

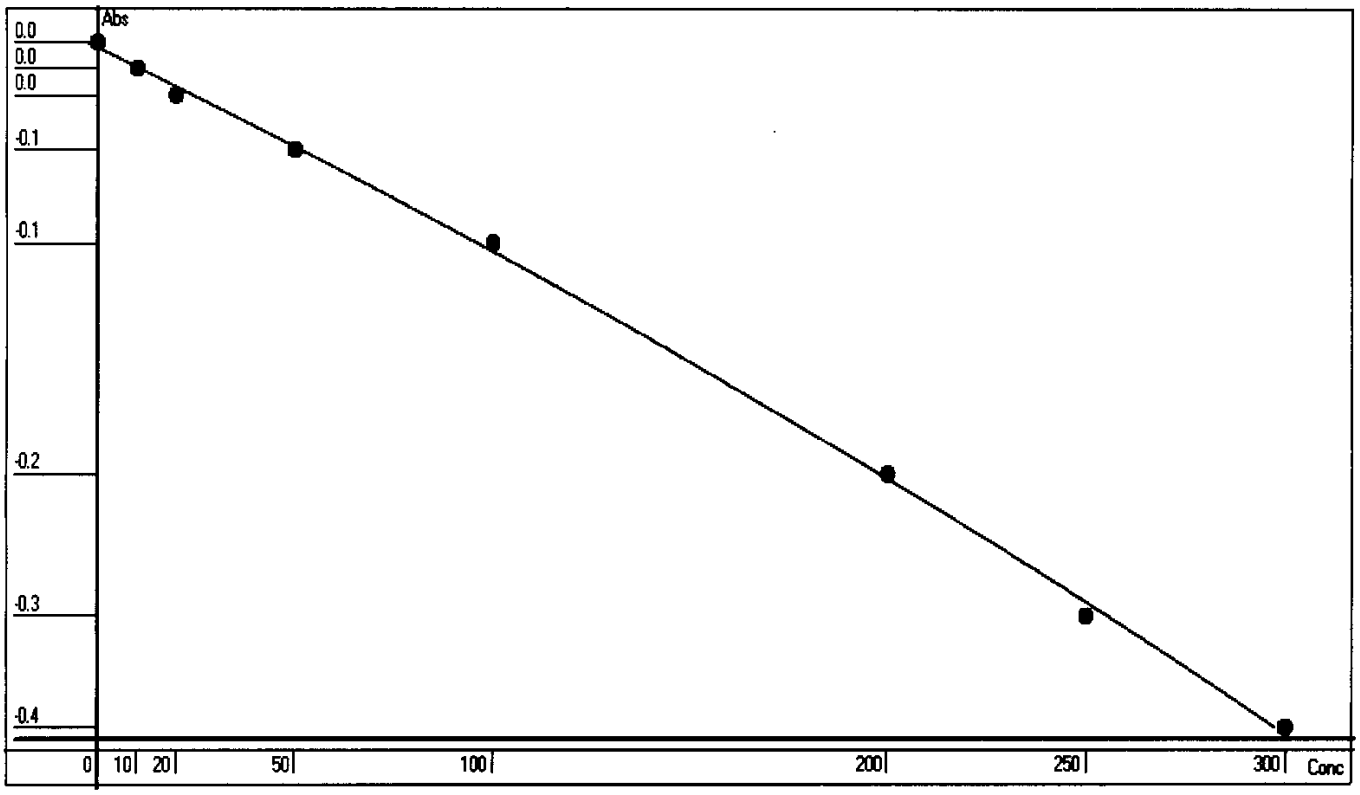

Point	OD	Conc	Recalc Conc	% Error
1	0.0017	0	-2.8495	-284.95
2	-0.0126	10	10.4438	4.44
3	-0.0276	20	24.2280	21.14
4	-0.0576	50	51.3058	2.61
5	-0.1088	100	96.0073	-3.99
6	-0.2353	200	198.2808	-0.86
7	-0.3131	250	255.4035	2.16
8	-0.3742	300	297.1798	-0.94

Conc= -363.4872*Abso^2 -933.5616*Abso -1.2614 R^2=0.9991

RBL
0.6384
0

Report Date 2/5/2016 Run Date 2/5/2016

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.5630	0.00		11:05:25 AM
DIL-1	RBL	0.0	0.5812	0.00		11:05:44 AM
DIL-1	RBL	0.0	0.5470	0.00		11:06:38 AM
DIL-1	Std-1	0.0	-0.0069	0.00		11:06:55 AM
SR5-1	Std-2	10.0	-0.0448	0.00		11:07:50 AM
SR5-2	Std-3	20.0	-0.0217	0.00		11:08:44 AM
SR5-3	Std-4	50.0	-0.0551	0.00		11:09:38 AM
SR5-4	Std-5	100.0	-0.0984	0.00		11:09:56 AM
SR5-5	Std-6	200.0	-0.2224	0.00		11:10:50 AM
SR5-6	Std-7	250.0	-0.2877	0.00		11:11:08 AM
SR5-7	Std-8	300.0	-0.3509	0.00		11:12:02 AM
ST-3	1CCV (150 mg/L)	146.0	-0.1596	97.31		11:12:20 AM
ST-2	2CCB (0 mg/L)	-4.9	-0.0060	0.00	LL	11:13:14 AM
1	ICV	246.9	-0.2803	0.00		11:14:08 AM
2	WG556396-01 BLK	-15.8	0.0042	0.00	INV,><,LL	11:14:26 AM
3	WG556396-02 LCS	203.5	-0.2261	0.00		11:15:20 AM
4	WG556396-03 LCSDUP	199.5	-0.2213	0.00		11:15:38 AM
5	L16020058-09 (5)	117.3	-0.1283	0.00		11:16:32 AM
6	L16020179-01A	150.1	-0.1642	0.00		11:17:26 AM
7	L16020179-01B	149.5	-0.1635	0.00		11:18:20 AM
8	L16020179-01C	143.4	-0.1568	0.00		11:18:38 AM
9	L16020179-01D	157.4	-0.1724	0.00		11:19:50 AM
10	L16020179-02A (2)	185.7	-0.2050	0.00		11:20:08 AM
ST-3	1CCV (150 mg/L)	149.7	-0.1638	99.82		11:21:02 AM
ST-2	2CCB (0 mg/L)	5.7	-0.0160	0.00		11:21:20 AM
11	L16020179-02B (2)	192.9	-0.2135	0.00		11:22:14 AM
12	L16020179-02C (2)	196.4	-0.2176	0.00		11:22:32 AM
13	L16020179-02D (2)	196.6	-0.2178	0.00		11:23:26 AM
14	L16020179-03A (2)	159.5	-0.1748	0.00		11:23:44 AM
15	L16020179-03B (2)	153.8	-0.1684	0.00		11:24:38 AM
16	L16020179-03C (2)	163.4	-0.1792	0.00		11:24:56 AM
17	L16020179-03D (2)	161.0	-0.1765	0.00		11:25:50 AM

Report Date :02/05/2016 **Run Date :2/5/2016** **Operator : SMARTCHEM2** **Plan # :20160205003**

Plan Description : ALK-B2-DCM/02/05/2016

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L16020179-04A (2)	177.9	-0.1959	0.00		11:26:08 AM
19	L16020179-04B (2)	166.0	-0.1821	0.00		11:27:02 AM
20	L16020179-04C (2)	175.4	-0.1930	0.00		11:27:20 AM
ST-3	1CCV (150 mg/L)	158.4	-0.1735	105.58		11:28:14 AM
ST-2	2CCB (0 mg/L)	17.0	-0.0268	0.00		11:29:26 AM
21	L160201479-04D (2)	171.4	-0.1883	0.00		11:29:44 AM
22	WG556396-05 (2) DUP	174.7	-0.1922	0.00		11:30:38 AM
ST-3	1CCV (150 mg/L)	163.8	-0.1796	109.17		11:30:56 AM
ST-2	2CCB (0 mg/L)	16.4	-0.0262	0.00		11:32:08 AM

Report Date :02/05/2016 **Run Date :2/5/2016** **Operator : SMARTCHEM2** **Plan # :20160205003**

Plan Description : ALK-B2-DCM/02/05/2016

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20160205003 Description : [ALK-B2-DCM/02/05/2016] Unit

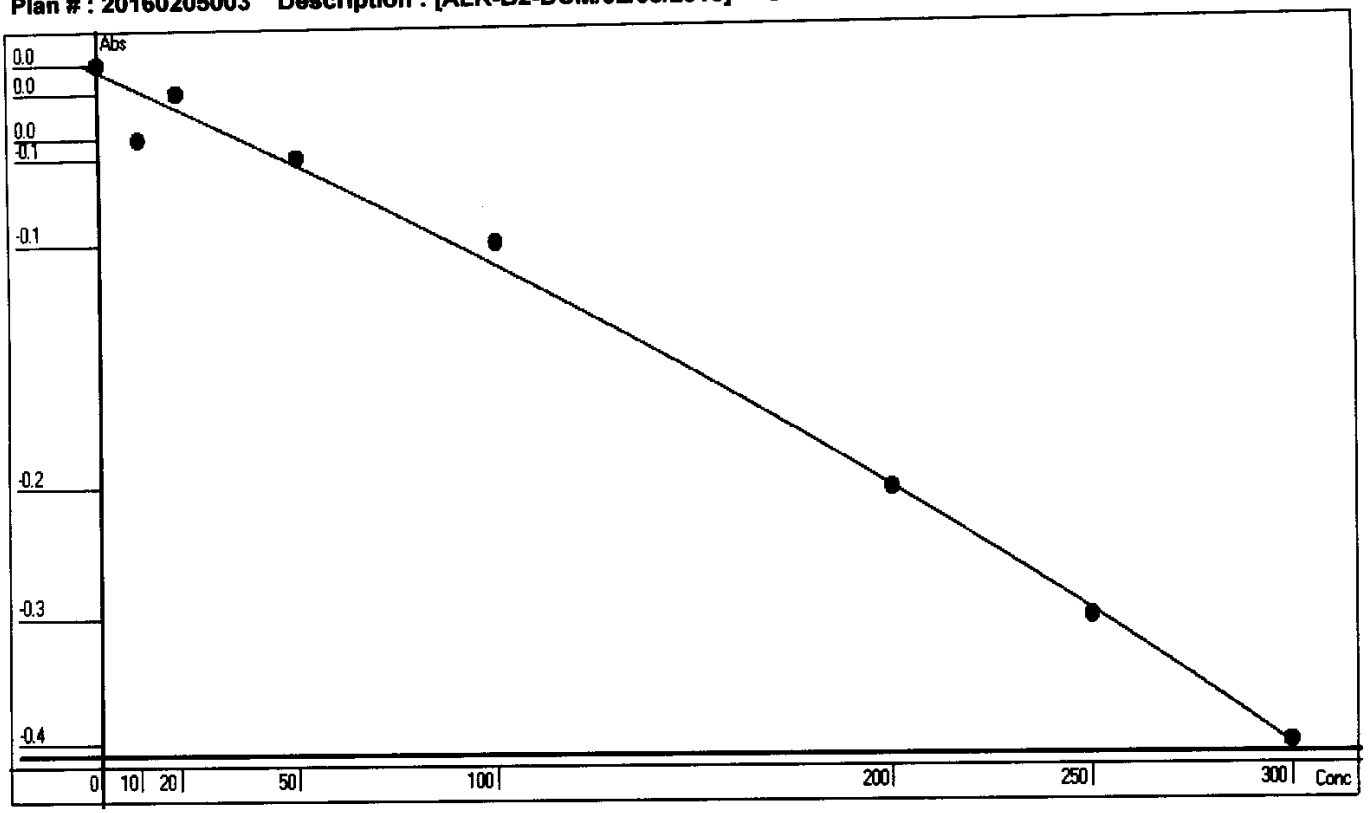

Point	OD	Conc	Recalc Conc	% Error
1	-0.0069	0	-3.9140	-391.40
2	-0.0448	10	35.6007	256.01
3	-0.0217	20	11.6985	-41.51
4	-0.0551	50	46.0754	-7.85
5	-0.0984	100	88.8746	-11.13
6	-0.2224	200	200.4011	0.20
7	-0.2877	250	252.5546	1.02
8	-0.3509	300	298.7092	-0.43

Conc= -532.136*Abso^2 -1070.117*Abso -11.2725 R^2=0.9909

RBL
0.555
0

Report Date 2/5/2016 Run Date 2/5/2016

2.3.3 Phosphorus Data

2.3.3.1 Summary Data

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	46WW09-020216	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/09/2016 10:19
Workgroup #:	WG556739	**Analyst:**	DCM	**Run Date:**	02/09/2016 10:34
Collect Date:	02/02/2016 08:10	**Dilution:**	1	**File ID:**	S2160209002.028
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.641		0.400	0.200	0.100

2.3.3.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4 AAB#: WG556739

Login Number: L16020141

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW09-020216	01	02/02/16					02/09/2016	7.1	28		02/09/16	7.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4624621
Report generated 02/10/2016 11:29

METHOD BLANK SUMMARY

Login Number: L16020141
Blank File ID: S2160209002.010
Prep Date: 02/09/16 10:22
Analyzed Date: 02/09/16 10:22
Analyst: DCM

Work Group: WG556739
Blank Sample ID: WG556739-01
Instrument ID: SMARTCHEM2
Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556739-02	S2160209002.011	02/09/16 10:22	01
LCS2	WG556739-03	S2160209002.012	02/09/16 10:23	01
46WW09-020216	L16020141-01	S2160209002.028	02/09/16 10:34	01
DUP	WG556739-05	S2160209002.030	02/09/16 10:35	01

Report Name: BLANK_SUMMARY
PDF File ID: 4624622
Report generated 02/10/2016 11:29

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020141 Prep Date: 02/09/16 10:22 Sample ID: WG556739-01
Instrument ID: SMARTCHEM2 Run Date: 02/09/16 10:22 Prep Method: 365.4
File ID: S2160209002.010 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG556739 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-09-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4624623
10-FEB-2016 11:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020141 Analyst: DCM Prep Method: 365.4
Instrument ID: SMARTCHEM2 Matrix: Water Method: 365.4
Workgroup (AAB#): WG556739 Units: mg/L
QC Key: DOD4 Lot #: STD74474

Sample ID: WG556739-02 LCS File ID: S2160209002.011 Run Date: 02/09/2016 10:22
Sample ID: WG556739-03 LCS2 File ID: S2160209002.012 Run Date: 02/09/2016 10:23

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Phosphorus, Total	1.00	0.783	78.3	1.00	0.827	82.7	5.50	70 - 130	25	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4624624
Report generated: 02/10/2016 11:29

2.3.3.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG556739

WG 556772
556781

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** 556739
Plan # 20160209002
2) **Workgroup** 556772
Plan # 20160209003
3) **Workgroup** 556781
Plan # 20160209004

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		PHOS		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	BLK			
1-3	LCS			
1-4	LCSDUP			
1-5	02-156-01			
1-6	02			
1-7	02-157-01			
1-8	02			
1-9	02-328-01			
1-10	02	Auto 1/2		
1-11	02-329-01			
1-12	02			
1-13	02-357-01			
1-14	02-205-01			
1-15	02			
1-16	03			
1-17	02147-03	1ml/100		
1-18	02-141-01			
1-19	02-217-02			
1-20	DUP 02-205-01			
1-21	MS 02-205-01			
1-22	MS 02-205-02			
2-1				
2-2				
2-3				

	Analyte	1	2	3
Position				
2-4 1	ICV			Set 2
2-5 2	BLK			
2-6 3	LCS			
2-7 4	LCS2			
2-8 5	02.328-01	1/2		
2-9 6	02	1/5		
2-10 7	02.217-02	1/2		
2-11 8	02.02.205-01			
2-12 9	DUP			
2-13 10	MS			
2-14 11				
2-15 12				
2-16				
2-17				
2-18				
2-19				
2-20 1	ICV			Set 3
2-21 2	BLK			
2-22 3	LCS			
2-23 4	02-217-02			
2-24 5	02-205-01			
2-25 6	DUP 02-205-01			
2-26 7	MS 02-205-01			
3-1 8				
3-2 9				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#116516

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG556739

	Analyte	1	2	3
Position				
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

	Analyte	1	2	3
Position				
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-Cl E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	Phos		Reagents
SOP & Revision	K3512 Rev19		35847
Curve Stock (SC made)			35995
NO2 STD			36018
ICV	See digest		
CCV			
LCS			
MS	Dilution		

Comments: _____

Analyst: Tammy Morris

Date: 2/9/16

DCN#116516

TKN/Phosphorus Digestion Log

TKN WG: _____ Phos WG: _____

TKN Std: Std 74634 Phos Std: Std 74634

TKN CCV: 1/2(Std 74634) Phos CCV: 1/2(Std 74634)

TKN ICV: Std 74635 Phos ICV: Std 74509

TKN LCS: Std 74607 Phos LCS: Std 74474

MS/MSD: Std 74442

Daily Dilution: 1.25/25 = 1

Block Digester Temperature: 380 °C Digest Reagent: RGT 35983

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	Std		5	2	26	C2-205-C3		✓	✓
2	Std		5	2	27	C2-147C3	1/250		✓
3	ICVT		2		28	C2-141-C1			✓
4	ICVP			1.5	29	C2-217-C2			✓
5	LCST		1		30	DUP C2-205C1		✓	✓
6	LCSP			1	31	MS C2-205C1		✓	✓
7	C2-94-C3		✓		32	MS C2-205-C2		✓	✓
8	C2-156-C1		✓	✓	33	01-0006-44		✓	
9	C2		✓	✓	34	45		✓	
10	C2-157-C1		✓	✓	35	46		✓	
11	C2		✓	✓	36				
12	C2-328-C1		✓	✓	37				
13	C2		✓	✓	38				
14	C2-329-C1		✓	✓	39				
15	C2		✓	✓	40				
16	C2-347-C1		✓		41				
17	C2-348-C1		✓		42				
18	C2-349-C1		✓		43				
19	C2-352-C1		✓		44				
20	C2-357-C1		✓	✓	45				
21	C2-359-C2	1/50	✓		46				
22	C5	1/50	✓		47				
23	C8	1/50	✓		48				
24	C2-265-C1		✓	✓	49				
25	C2		✓	✓	50				

Analyst: [signature] Date: _____

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0335	0.00		10:13:55 AM
DIL-1	RBL	0.000	0.0354	0.00		10:14:13 AM
DIL-1	RBL	0.000	0.0321	0.00		10:15:07 AM
SR5-1	Std-1	0.010	0.0193	0.00		10:15:25 AM
SR5-2	Std-2	0.200	0.0351	0.00		10:16:19 AM
SR5-3	Std-3	0.500	0.0743	0.00		10:17:13 AM
SR5-4	Std-4	1.000	0.1421	0.00		10:18:07 AM
SR5-5	Std-5	1.500	0.2080	0.00		10:19:01 AM
ST-1	Std-6	2.000	0.2752	0.00		10:19:19 AM
ST-3	1CCV (1 mg/L)	1.154	0.1630	115.37		10:20:14 AM
ST-2	2CCB (0 mg/L)	0.018	0.0144	0.00	><	10:20:31 AM
1	ICV	1.463	0.2035	0.00		10:21:25 AM
2	WG556739-01 BLK	0.023	0.0151	0.00	><	10:22:19 AM
3	WG556739-02 LCS	0.783	0.1145	0.00		10:22:37 AM
4	WG556739-03 LCS2	0.827	0.1203	0.00		10:23:31 AM
5	L16020156-01	-0.026	0.0087	0.00	><,LL	10:23:49 AM
6	L16020156-02	-0.031	0.0080	0.00	><,LL	10:24:43 AM
7	L16020157-01	0.151	0.0318	0.00		10:25:38 AM
8	L16020157-02	-0.057	0.0046	0.00	><,LL	10:26:31 AM
9	L16020328-01	X 3.724	0.4992	0.00	EPL,><,LH	10:26:50 AM
10	L16020328-02	X 5.256	0.6997	0.00	><,LH	10:28:02 AM
ST-3	1CCV (1 mg/L)	1.137	0.1608	113.69		10:28:20 AM
ST-2	2CCB (0 mg/L)	0.016	0.0141	0.00	><	10:29:14 AM
11	L16020329-01	-0.058	0.0045	0.00	><,LL	10:29:32 AM
12	L16020329-02	-0.105	-0.0017	0.00	INV,><,LL	10:30:25 AM
13	L16020357-01	0.172	0.0345	0.00		10:30:43 AM
14	L16020205-01	-0.102	-0.0013	0.00	INV,><,LL	10:31:37 AM
15	L16020205-02	-0.094	-0.0002	0.00	INV,><,LL	10:31:55 AM
16	L16020205-03	0.207	0.0391	0.00		10:33:07 AM
17	L16020147-03 (250)	0.877	0.1268	0.00		10:33:25 AM
18	L16020141-01	0.641	0.0959	0.00	EPL	10:34:19 AM
19	L16020217-02	X 3.868	0.5181	0.00	EPL,><,LH	10:34:37 AM

Report Date :02/09/2016 **Run Date :2/9/2016** **Operator : SMARTCHEM2** **Plan # :20160209002**

Plan Description : PHOS-A-DCM-02/09/2016

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
20	WG556739-05 DUP	0.081	0.0226	0.00		10:35:31 AM
ST-3	1CCV (1 mg/L)	1.140	0.1612	113.99		10:35:49 AM
ST-2	2CCB (0 mg/L)	0.018	0.0144	0.00	><	10:37:19 AM
21	WG556739-06 MS	0.961	0.1378	0.00		10:37:37 AM
22	WG556739-08 MS	0.942	0.1353	0.00		10:38:31 AM
23	ID 23	***	0.1974	0.00	SS	10:38:49 AM
24	ID 24	***	0.1993	0.00	SS	10:40:01 AM
25	ID 25	***	0.2027	0.00	SS	10:40:19 AM
26	ID 26	***	0.2089	0.00	SS	10:41:14 AM
ST-3	1CCV (1 mg/L)	1.135	0.1606	113.54		10:41:31 AM
ST-2	2CCB (0 mg/L)	0.021	0.0148	0.00	><	10:42:25 AM
9-[1/2]	L16020328-01	1.529	0.1121	0.00		10:51:05 AM
10-[1/2]	L16020328-02	2.598	0.1820	0.00	LH	10:52:17 AM
19-[1/2]	L16020217-02	3.318	0.2291	0.00	EPL,LH	10:53:47 AM
ST-3	1CCV (1 mg/L)	1.161	0.1639	116.06		10:53:47 AM
ST-2	2CCB (0 mg/L)	0.006	0.0129	0.00	><	10:54:41 AM

Report Date :02/09/2016 **Run Date :2/9/2016** **Operator : SMARTCHEM2** **Plan # :20160209002**

Plan Description : PHOS-A-DCM-02/09/2016

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20160209002 Description : [PHOS-A-DCM-02/09/2016] Unit

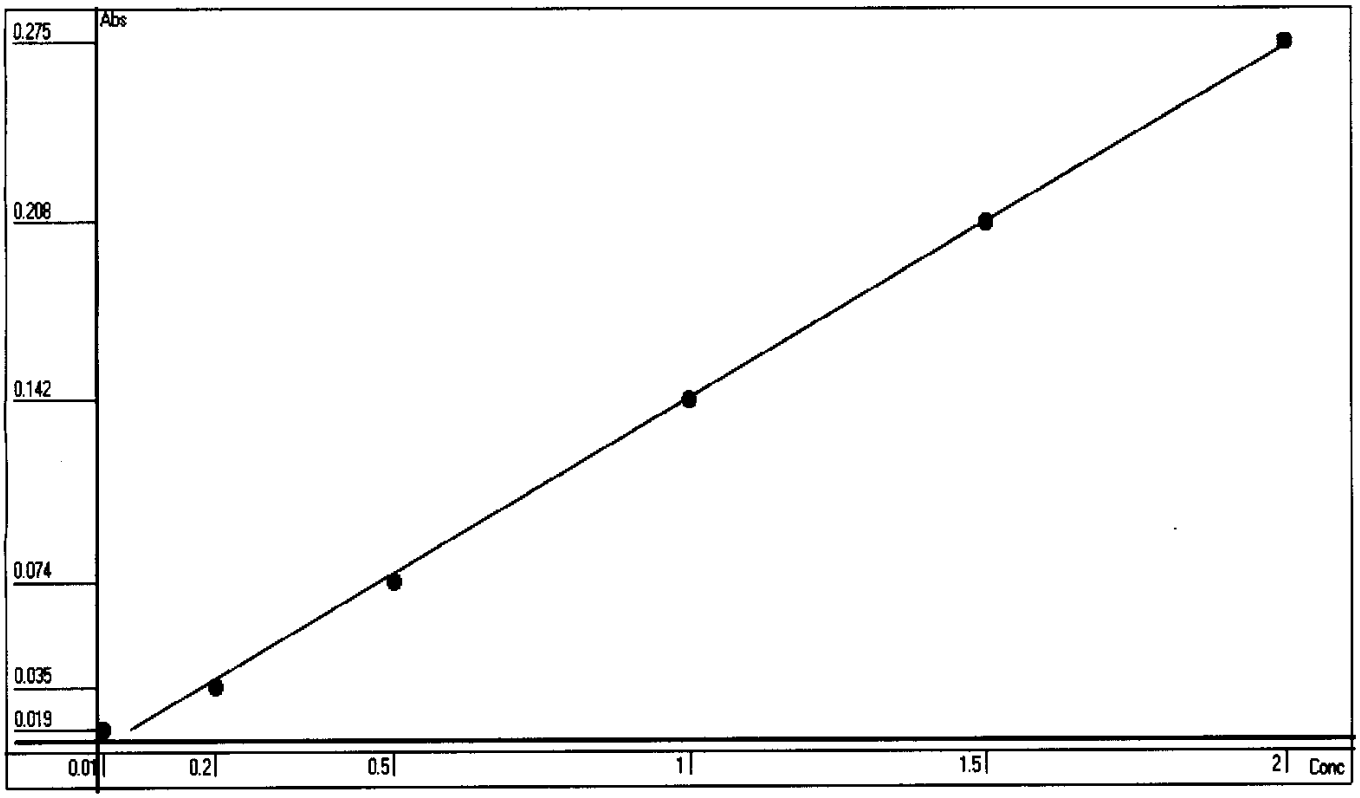

Point	OD	Conc	Recalc Conc	% Error
1	0.0193	0.01	0.0553	453.00
2	0.0351	0.2	0.1761	-11.95
3	0.0743	0.5	0.4757	-4.86
4	0.1421	1	0.9940	-0.60
5	0.2080	1.5	1.4977	-0.15
6	0.2752	2	2.0113	0.57

Conc= +7.6437*Abso -0.0922 R^2=0.9989

RBL
0.0328
0

Report Date 2/9/2016 Run Date 2/9/2016

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0300	0.00		11:24:57 AM
DIL-1	RBL	0.000	0.0317	0.00		11:25:15 AM
DIL-1	RBL	0.000	0.0302	0.00		11:26:09 AM
SR5-1	Std-1	0.010	0.0083	0.00		11:26:27 AM
SR5-2	Std-2	0.200	0.0319	0.00		11:27:21 AM
SR5-3	Std-3	0.500	0.0708	0.00		11:28:15 AM
SR5-4	Std-4	1.000	0.1357	0.00		11:29:09 AM
SR5-5	Std-5	1.500	0.1977	0.00		11:30:03 AM
ST-1	Std-6	2.000	0.2669	0.00		11:30:21 AM
ST-3	1CCV (1 mg/L)	1.000	0.1356	100.01		11:31:15 AM
ST-2	2CCB (0 mg/L)	-0.076	-0.0037	0.00	INV,><,LL	11:31:33 AM
1	ICV	1.629	0.2170	0.00		11:32:27 AM
2	WG556772-01 BLK	-0.026	0.0028	0.00	><,LL	11:33:21 AM
3	WG556772-02 LCS	0.980	0.1330	0.00		11:33:39 AM
4	WG556772-03 LCS2	1.030	0.1395	0.00		11:34:33 AM
5	L16020328-01 (2)	0.654	0.0908	0.00	EPL	11:34:51 AM
6	L16020328-02 (5)	1.067	0.1443	0.00		11:35:45 AM
7	L16020217-02 (2) Tmm 2/10/16	X0.364	0.0533	0.00		11:36:39 AM
8	WG556772-04 REF	-0.040	0.0010	0.00	><,LL	11:37:33 AM
9	WG556772-05 DUP	0.141	0.0244	0.00		11:37:51 AM
10	WG556772-06 MS	1.030	0.1395	0.00		11:39:03 AM
ST-3	1CCV (1 mg/L)	0.995	0.1349	99.47		11:39:21 AM
ST-2	2CCB (0 mg/L)	-0.078	-0.0039	0.00	INV,><,LL	11:40:15 AM
11	ID 11	X0.081	0.0167	0.00		11:40:33 AM
12	ID 12	X0.891	0.1215	0.00		11:41:27 AM
ST-3	1CCV (1 mg/L)	1.005	0.1362	100.47		11:41:45 AM
ST-2	2CCB (0 mg/L)	-0.077	-0.0038	0.00	INV,><,LL	11:42:39 AM

Report Date :02/09/2016 **Run Date :2/9/2016** **Operator : SMARTCHEM2** **Plan # :20160209003**

Plan Description : PHOS-B-DCM/02/09/2016

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20160209003 Description : [PHOS-B-DCM/02/09/2016] Unit

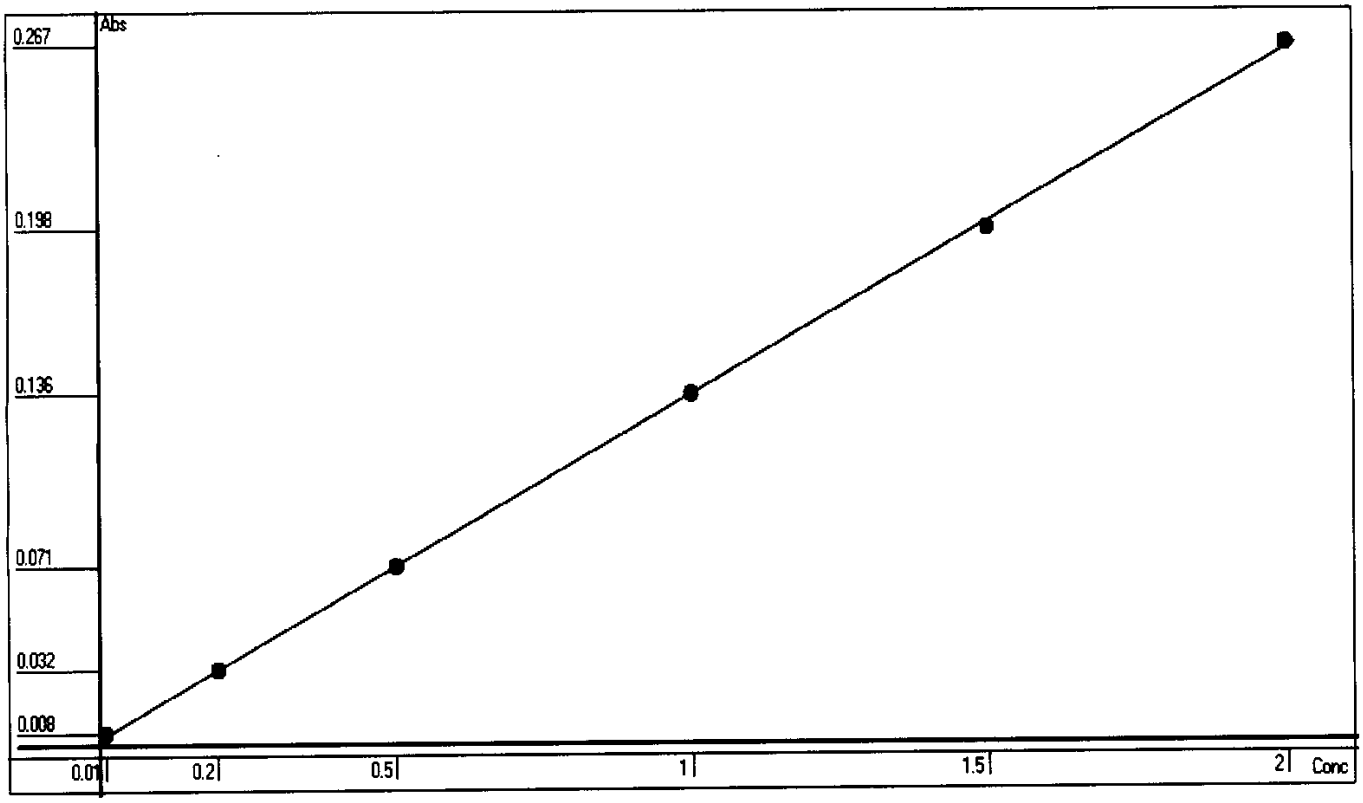

Point	OD	Conc	Recalc Conc	% Error
1	0.0083	0.01	0.0165	65.00
2	0.0319	0.2	0.1989	-0.55
3	0.0708	0.5	0.4994	-0.12
4	0.1357	1	1.0009	0.09
5	0.1977	1.5	1.4799	-1.34
6	0.2669	2	2.0146	0.73

Conc= +7.7266*Abso -0.0476 **R^2=0.9998**

RBL
0.0301
0

Report Date 2/9/2016 Run Date 2/9/2016

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0282	0.00		12:07:29 PM
DIL-1	RBL	0.000	0.0264	0.00		12:07:47 PM
DIL-1	RBL	0.000	0.0267	0.00		12:08:41 PM
SR5-1	Std-1	0.010	0.0042	0.00		12:08:59 PM
SR5-2	Std-2	0.200	0.0306	0.00		12:09:53 PM
SR5-3	Std-3	0.500	0.0681	0.00		12:10:47 PM
SR5-4	Std-4	1.000	0.1332	0.00		12:11:41 PM
SR5-5	Std-5	1.500	0.1952	0.00		12:12:35 PM
ST-1	Std-6	2.000	0.2621	0.00		12:12:53 PM
ST-3	1CCV (1 mg/L)	0.998	0.1323	99.82		12:13:48 PM
ST-2	2CCB (0 mg/L)	-0.072	-0.0055	0.00	INV,><,LL	12:14:05 PM
1	ICV	1.641	0.2150	0.00		12:14:59 PM
2	WG556781-01 BLK	-0.051	-0.0029	0.00	INV,><,LL	12:15:53 PM
3	WG556781-02 LCS	0.991	0.1314	0.00		12:16:11 PM
4	L16020217-02	X4.038	0.5236	0.00	><,LH	12:17:05 PM
5	WG556781-03 REF	-0.013	0.0020	0.00	><,LL	12:17:23 PM
6	WG556781-04 DUP	0.128	0.0203	0.00		12:18:17 PM
7	WG556781-05 MS	1.055	0.1396	0.00		12:19:11 PM
8	ID 8	X0.934	0.1240	0.00		12:20:05 PM
9	ID 9	X1.056	0.1397	0.00		12:20:23 PM
ST-3	1CCV (1 mg/L)	1.001	0.1326	100.05		12:21:35 PM
ST-2	2CCB (0 mg/L)	-0.061	-0.0041	0.00	INV,><,LL	12:21:53 PM
4-[1/2]	L16020217-02	X4.039	0.2638	0.00	><,LH	12:29:33 PM
ST-3	1CCV (1 mg/L)	1.018	0.1348	101.76		12:29:33 PM
ST-2	2CCB (0 mg/L)	-0.082	-0.0069	0.00	INV,><,LL	12:30:27 PM
4-[1/5]	L16020217-02	3.865	0.1033	0.00	LH	12:38:25 PM
ST-3	1CCV (1 mg/L)	1.011	0.1340	101.14		12:38:25 PM
ST-2	2CCB (0 mg/L)	-0.065	-0.0046	0.00	INV,><,LL	12:39:19 PM

Report Date :02/09/2016 **Run Date :2/9/2016** **Operator : SMARTCHEM2** **Plan # :20160209004**

Plan Description : PHOS-C2-DCM/02/09/2016

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20160209004 Description : [PHOS-C2-DCM/02/09/2016] Unit

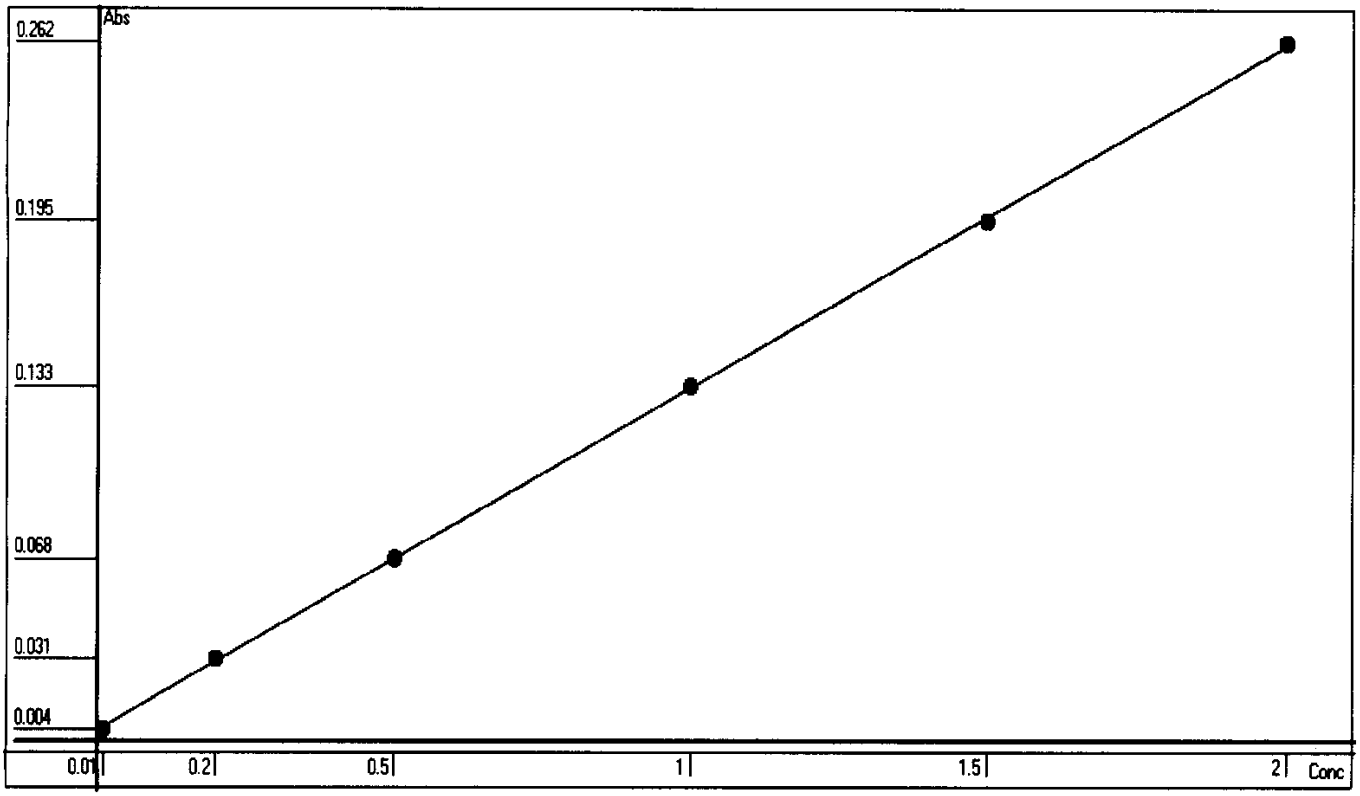

Point	OD	Conc	Recalc Conc	% Error
1	0.0042	0.01	0.0035	-65.00
2	0.0305	0.2	0.2078	3.90
3	0.0680	0.5	0.4991	-0.18
4	0.1331	1	1.0048	0.48
5	0.1952	1.5	1.4872	-0.85
6	0.2621	2	2.0069	0.35

Conc= +7.768*Abso -0.0291 R^2=0.9999

RBL
0.0266
0

Report Date 2/9/2016 Run Date 2/9/2016

2.3.4 Sulfide Data

2.3.4.1 Summary Data

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW09-020216	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG556327	**Analyst:**	EPT	**Run Date:**	02/04/2016 17:00
Collect Date:	02/02/2016 08:10	**Dilution:**	1	**File ID:**	ET.1602041700-09
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.3.4.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 04-FEB-2016
Analyst: EPT
Analyst: NA
Method: SULFIDE
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG556327

Calibration/Linearity	2/4/16
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer: 10-FEB-2016 Ethan Tido

Secondary Reviewer: 12-FEB-2016 Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-12-2016 12:13:45

Microbac Laboratories Inc.

00743480

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F-

AAB#: WG556327

Login Number: L16020141

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW09-020216	01	02/02/16					02/04/2016	2.4	7		02/04/16	2.4	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4627713
Report generated 02/12/2016 08:51

METHOD BLANK SUMMARY

Login Number: L16020141
Blank File ID: ET.1602041700-01
Prep Date: 02/04/16 17:00
Analyzed Date: 02/04/16 17:00
Analyst: EPT

Work Group: WG556327
Blank Sample ID: WG556327-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556327-02	ET.1602041700-02	02/04/16 17:00	
LCS2	WG556327-03	ET.1602041700-03	02/04/16 17:00	
46WW09-020216	L16020141-01	ET.1602041700-09	02/04/16 17:00	

Report Name: BLANK_SUMMARY
PDF File ID: 4627714
Report generated 02/12/2016 08:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020141 Prep Date: 02/04/16 17:00 Sample ID: WG556327-01
Instrument ID: BURET Run Date: 02/04/16 17:00 Prep Method: SM4500-S-(-2)-F
File ID: ET.1602041700-01 Analyst: EPT Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG556327 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4627715
12-FEB-2016 08:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020141 Analyst: EPT Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG556327 Units: mg/L
QC Key: DOD4 Lot #: STD74639

Sample ID: WG556327-02 LCS File ID: ET.1602041700-02 Run Date: 02/04/2016 17:00
Sample ID: WG556327-03 LCS2 File ID: ET.1602041700-03 Run Date: 02/04/2016 17:00

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	24.0	23.6	98.2	24.0	23.8	99.0	0.845	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4627716
Report generated: 02/12/2016 08:51

2.3.4.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG556327

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: _____

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: Std 74639

Iodine standardization (0.025N) COA: 18575
mL 0.025N titrant: ~~0.0~~ 10.0
Volume I: 10.0 mL
Normality I: ~~0.0250~~ 0.0248

(0.1 N I) COA: 18573
mL 0.025 N titrant: 8.0
Volume I: 2.0 mL
Normality I: 0.0992

Stock standardization (in duplicate) 5.0 mL stock
mL I 1) 10.0 2) 10.0
N I 1) 0.0992 2) 0.0992
mL 0.025 titrant 1) 20.0 2) 20.0
LCS daily dilution: (3)(1600)/200 = 24.00 mg/L

1600 = stock conc (mg/L)

Titrant: T- 11089-10-05

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	~~0.0250~~ 0.0250 cpt 2/4/16 N Sodium Thiosulfate (mL)
BLANK	200	15.0	0.0248	15.0
LCS (mL)	200	15.0	0.0248	3.1
LCSDUP (mL)	200	15.0	0.0248	3.0
02-0058-01	520	15.0	0.0248	14.8
-03	480	15.0	0.0248	15.0
-05	520	15.0	0.0248	14.6
-07	500	15.0	0.0248	14.9
-09	520	15.0	0.0248	15.0
02-0141-01	510	15.0	0.0248	14.8

Analyst: Erin Todd Date/Time: 02/04/16 1700

DCN#116450

Microbac Laboratories Inc.
TITRAMETRIC REPORT

Workgroup (AAB#):WG556327
Product:EPA 376.1\9034
Analyte:Sulfide

Analyst:EPT
Run Date:02/04/2016 17:00

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG556327-01	200.0	15	.0248	15	.025	1	-0.240	-0.2400	mg/L
WG556327-02	200.0	15	.0248	3.1	.025	1	23.6	23.56	mg/L
WG556327-03	200.0	15	.0248	3	.025	1	23.8	23.76	mg/L
L16020058-01	520.0	15	.0248	14.8	.025	1	0.0615	ND	mg/L
L16020058-03	480.0	15	.0248	15	.025	1	-0.100	ND	mg/L
L16020058-05	520.0	15	.0248	14.6	.025	1	0.215	ND	mg/L
L16020058-07	500.0	15	.0248	14.9	.025	1	-0.0160	ND	mg/L
L16020058-09	520.0	15	.0248	15	.025	1	-0.0923	ND	mg/L
L16020141-01	510.0	15	.0248	14.8	.025	1	0.0627	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 02/10/2016 14:16

[redacted]

2.3.5 Total Organic Carbon Data

2.3.5.1 Summary Data

Microbac

Lab Report #: L16020141
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020141-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW09-020216	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG556095	**Analyst:**	EPT	**Run Date:**	02/03/2016 19:05
Collect Date:	02/02/2016 08:10	**Dilution:**	3	**File ID:**	TC02032016.018
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	24.6		6.00	3.00	1.50

2.3.5.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 03-FEB-2016
Analyst: EPT
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG556095

Calibration/Linearity	10/31/15
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
05-FEB-2016

Ethan Tido

Secondary Reviewer:
10-FEB-2016

Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-10-2016 07:52:03

Microbac Laboratories Inc.

00743493

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG556095

Login Number: L16020141

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW09-020216	01	02/02/16					02/03/2016	1.5	28		02/03/16	1.5	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4624010
Report generated 02/09/2016 15:43

METHOD BLANK SUMMARY

Login Number: L16020141
Blank File ID: TC02032016.004
Prep Date: 02/03/16 13:20
Analyzed Date: 02/03/16 13:20
Analyst: EPT

Work Group: WG556095
Blank Sample ID: WG556095-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556095-02	TC02032016.005	02/03/16 13:39	01
LCS2	WG556095-03	TC02032016.006	02/03/16 14:02	01
46WW09-020216	L16020141-01	TC02032016.018	02/03/16 19:05	DL01
DUP	WG556095-05	TC02032016.019	02/03/16 19:27	01

Report Name: BLANK_SUMMARY
PDF File ID: 4624011
Report generated 02/09/2016 15:43

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020141 Prep Date: 02/03/16 13:20 Sample ID: WG556095-01
Instrument ID: TOC-VWP Run Date: 02/03/16 13:20 Prep Method: 415.1
File ID: TC02032016.004 Analyst: EPT Method: 415.1
Workgroup (AAB#): WG556095 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-30-OCT-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4624012
09-FEB-2016 15:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020141 Analyst: EPT Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG556095 Units: mg/L
QC Key: DOD4 Lot #: STD72270

Sample ID: WG556095-02 LCS File ID: TC02032016.005 Run Date: 02/03/2016 13:39
Sample ID: WG556095-03 LCS2 File ID: TC02032016.006 Run Date: 02/03/2016 14:02

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	26.7	107	25.0	26.8	107	0.411	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4624013
Report generated: 02/09/2016 15:43

2.3.5.3 Raw Data

Curve

wg545145

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L

See Below

MS (TOC): _____

Calibration Curve Date: _____

Reagent: RGT 34567 / RGT 34459

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 18

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

- ☑ drain reservoir filled
- ☑ ASI water bottle full
- ☑ dilution water bottle full
- ☑ 3rd bottle full
- ☑ sufficient gas
- ☑ sufficient persulfate
- ☑ sufficient acid
- ☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC Curve		27	Std 72153		52	See SOP	
3	TC ICV		28			53		
4	TIC ICV		29	TIC Curve		54	for point	
5			30	Std 72165		55	preparation	
6			31			56		
7			32			57		
8			33	TOC (TC)		58		
9			34	ICV		59		
10			35	Std 72270		60	5/200 (1000) = 25	
11			36			61		
12			37	TIC ICV		62		
13	All points		38	Std 72654		63		
14	analyzed		39			64		
15	in duplicate		40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: David Merkle Date/Time: 10/31/15

DCN#114406

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID:
Cal. Curve: TCCURVE-10-30-2015.2015_10_30_16_06_37.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	4.764	500uL	1	*******		10/30/2015 4:10:07 PM
2	3.607	500uL	1	*******		10/30/2015 4:13:33 PM

Acid Add. 0.000%
Mean Area 4.186

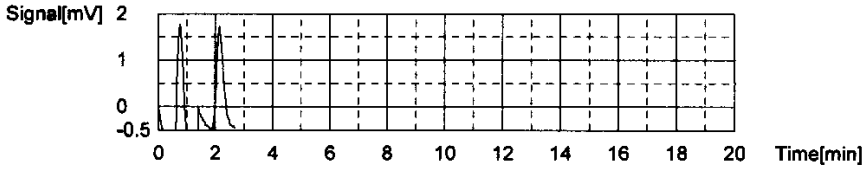

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	46.19	500uL	1	*******		10/30/2015 4:19:03 PM
2	46.28	500uL	1	*******		10/30/2015 4:22:56 PM

Acid Add. 0.000%
Mean Area 46.23

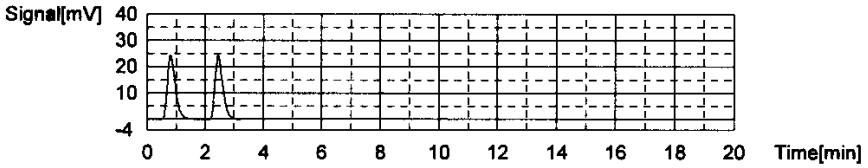

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	194.3	500uL	1	*******		10/30/2015 4:28:42 PM
2	193.1	500uL	1	*******		10/30/2015 4:32:47 PM

Acid Add. 0.000%
Mean Area 193.7

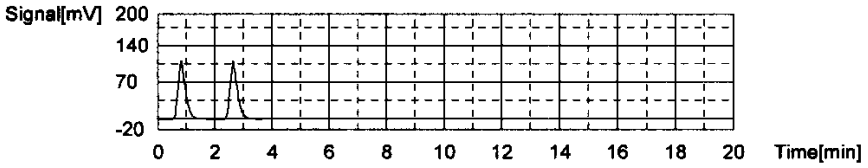

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	390.8	500uL	1	*******		10/30/2015 4:38:42 PM
2	391.3	500uL	1	*******		10/30/2015 4:42:54 PM

Acid Add. 0.000%
Mean Area 391.1

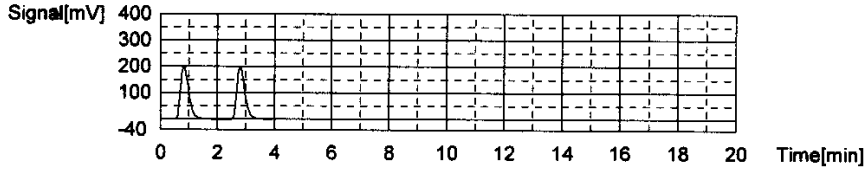

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	989.0	500uL	1	*******		10/30/2015 4:49:06 PM
2	994.6	500uL	1	*******		10/30/2015 4:53:33 PM

Acid Add. 0.000%
Mean Area 991.8

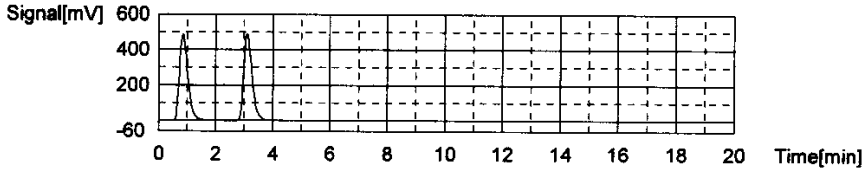

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1946	500uL	1	*******		10/30/2015 5:00:24 PM
2	1948	500uL	1	*******		10/30/2015 5:05:23 PM

Acid Add. 0.000%
Mean Area 1947

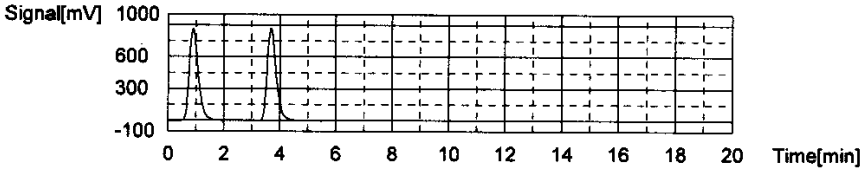

Slope: 38.95
Intercept 4.952
r^2 0.999910 ✓
Zero Shift No

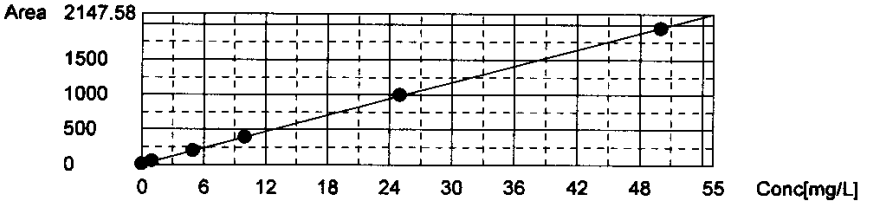

Sample

Sample Name: TC ICV
Sample ID:
Origin: TCCURVE-10-30-2015.2015_10_30_16_06_37.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:25.93mg/L

= 103.7%

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1020	26.06mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	10/31/2015 9:56:57 AM
2	1010	25.80mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	10/31/2015 10:02:17 AM

Mean Area 1015
Mean Conc. 25.93mg/L

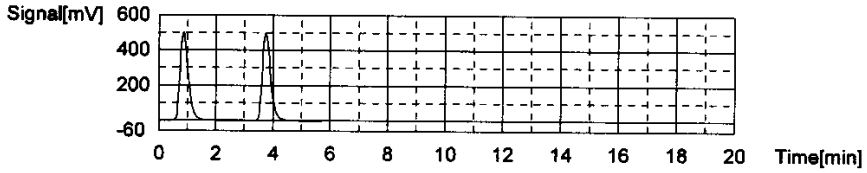

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-10-30-2015.2015_10_31_11_55_05.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	2.732	500uL	1	*******		10/31/2015 12:00:21 PM
2	5.011	500uL	1	*******		10/31/2015 12:04:52 PM

Acid Add. 10.00%
Mean Area 3.872

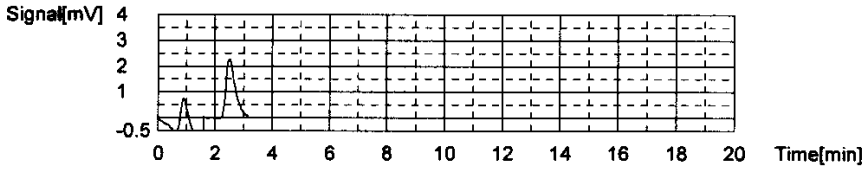

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	35.96	500uL	1	*******		10/31/2015 12:12:47 PM
2	37.13	500uL	1	*******		10/31/2015 12:17:43 PM

Acid Add. 10.00%
Mean Area 36.55

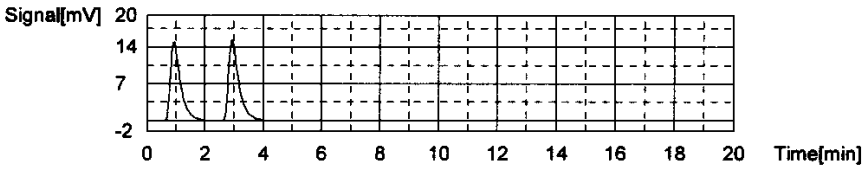

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	173.6	500uL	1	*******		10/31/2015 12:26:14 PM
2	175.6	500uL	1	*******		10/31/2015 12:31:38 PM

Acid Add. 10.00%
Mean Area 174.6

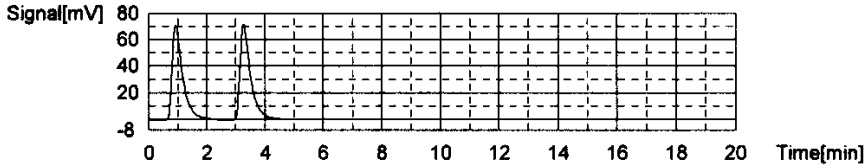

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	344.8	500uL	1	*******		10/31/2015 12:40:18 PM
2	345.1	500uL	1	*******		10/31/2015 12:45:49 PM

Acid Add. 10.00%
Mean Area 345.0

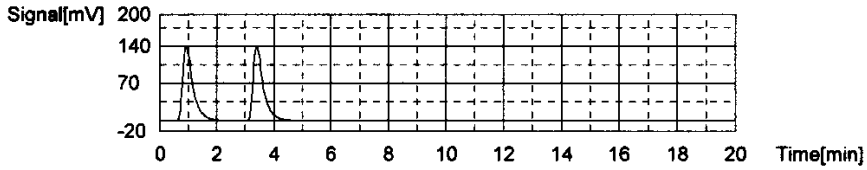

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	835.5	500uL	1	*******		10/31/2015 12:54:43 PM
2	845.9	500uL	1	*******		10/31/2015 1:00:42 PM

Acid Add. 10.00%
Mean Area 840.7

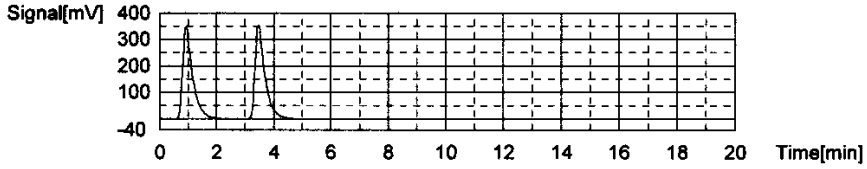

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1676	500uL	1	*******		10/31/2015 1:09:51 PM
2	1677	500uL	1	*******		10/31/2015 1:15:54 PM

Acid Add. 10.00%
Mean Area 1677

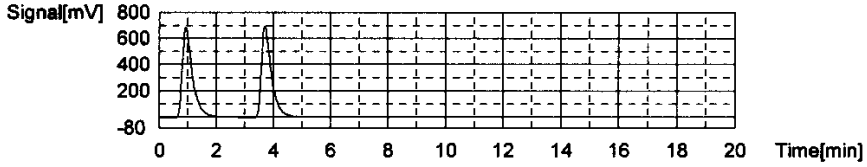

Slope: 33.42
Intercept 5.927
r^2 0.999982
Zero Shift No

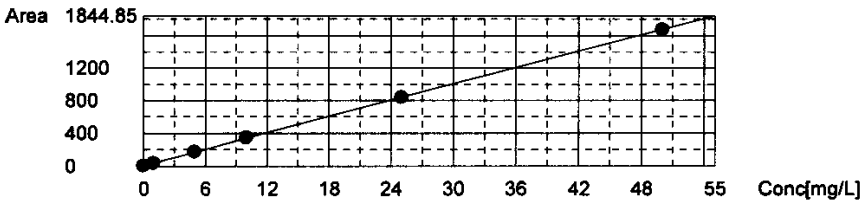

Sample

Sample Name: TIC ICV
Sample ID: Untitled
Origin: TICCURVE-10-30-2015.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:25.37mg/L

= 101.5%

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	854.5	25.39mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	10/31/2015 1:25:27 PM
2	853.1	25.35mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	10/31/2015 1:31:33 PM

Mean Area 853.8
Mean Conc. 25.37mg/L

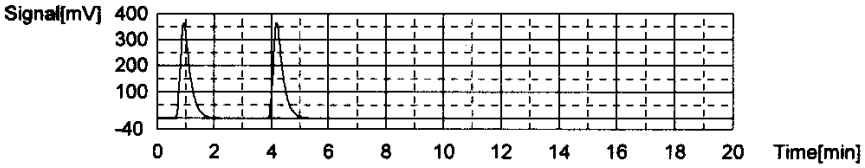

WORKGROUP: WG556095

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 72133
(5/200)(1000) = 25mg/L

LCS (TOC): Std 72270
(5/200)(1000) = 25mg/L

CCV (TIC): Std 72654
(5/200)(1000) = 25mg/L

MS (TOC): Std 72270
(.4)(1000)/40=10

Calibration Curve Date: _____

Reagent: 35609
34459

☐ SM5310-C : Matrix 2 WG 556095
☐ EPA 415.1/9060A(mod): Matrix 1 WG _____
WG _____

SOP: K 4151 Rev. 18
Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

- ☒ drain reservoir filled
- ☒ ASI water bottle full
- ☒ dilution water bottle full
- ☒ 3rd bottle full
- ☒ sufficient gas
- ☒ sufficient persulfate
- ☒ sufficient acid
- ☒ waste container

Position	Sample ID	Dilution
1	TIC	
2	TOC/TIC	
3	CCV	
4	Blk	
5	LCS	
6	LCSDUP	
7	01-1377-01	1/3
8	02-0054-01	1/3
9	02-0058-01	~~1/3~~ 1/10
10	-03	~~1/3~~ 1/10
11	-05	1/3
12	-07	1/3
13	-09	~~1/3~~ 1/10
14	CCV	
15	CCB	
16	02-0079-01	
17	02-0097-09	
18	02-0141-01	1/3
19	DUP 97-09	
20	MS 97-09	
21	CCV	
22	CCB	
23		
24		
25		

Position	Sample ID	Dilution
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		

Position	Sample ID	Dilution
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		

Analyst: Ellen Tull

Date/Time: 02/03/16 1245

DCN#116409

C:\TOC3201\Data\02-03-2016-EPT-TOC.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	TOC:3.851mg/L TC:29.32mg/L IC:25.47mg/L	Complete	2/3/2016 12:50:31 PM	1
2	TOC	TOC/TIC	TOC:27.10mg/L TC:34.59mg/L IC:7.482mg/L	Complete	2/3/2016 1:03:23 PM	2
3	TOC	CCV	TOC:25.29mg/L TC:25.31mg/L IC:0.01694mg/L	Complete	2/3/2016 1:15:34 PM	3
4	TOC	WG556095-01 BLK	TOC:0.04680mg/L TC:0.1237mg/L IC:0.07687mg/L	Complete	2/3/2016 1:32:03 PM	0
5	TOC	WG556095-02 LCS	TOC:26.70mg/L TC:26.74mg/L IC:0.04281mg/L	Complete	2/3/2016 1:54:15 PM	5
6	TOC	WG556095-03 LCSDUP	TOC:26.81mg/L TC:26.86mg/L IC:0.04741mg/L	Complete	2/3/2016 2:15:13 PM	6
7	TOC	L16011377-01 (3)	TOC:3.847mg/L TC:23.62mg/L IC:19.77mg/L	Complete	2/3/2016 2:36:45 PM	7
8	TOC	L16020054-01 (3)	TOC:9.835mg/L TC:20.12mg/L IC:10.29mg/L	Complete	2/3/2016 2:59:42 PM	8
9	TOC	L16020058-01 (10)	TOC:4.625mg/L TC:26.29mg/L IC:21.67mg/L	Complete	2/3/2016 3:57:29 PM	9
10	TOC	L16020058-03 (10)	TOC:4.400mg/L TC:26.01mg/L IC:21.61mg/L	Complete	2/3/2016 4:30:07 PM	10
11	TOC	L16020058-05 (3)	TOC:3.892mg/L TC:16.44mg/L IC:12.55mg/L	Complete	2/3/2016 4:51:39 PM	11
12	TOC	L16020058-07 (3)	TOC:6.895mg/L TC:22.03mg/L IC:15.13mg/L	Complete	2/3/2016 5:13:39 PM	12
13	TOC	L16020058-09 (10)	TOC:8.241mg/L TC:33.34mg/L IC:25.10mg/L	Complete	2/3/2016 5:49:24 PM	13
14	TOC	CCV	TOC:25.89mg/L TC:26.06mg/L IC:0.1709mg/L	Complete	2/3/2016 6:01:35 PM	14
15	TOC	CCB	TOC:0.05711mg/L TC:0.1424mg/L IC:0.08533mg/L	Complete	2/3/2016 6:10:39 PM	0
16	TOC	L16020079-01	TOC:13.90mg/L TC:20.29mg/L IC:6.393mg/L	Complete	2/3/2016 6:35:38 PM	16
17	TOC	L16020097-09	TOC:3.101mg/L TC:7.709mg/L IC:4.608mg/L	Complete	2/3/2016 6:56:59 PM	17
18	TOC	L16020141-01 (3)	TOC:8.209mg/L TC:37.50mg/L IC:29.29mg/L	Complete	2/3/2016 7:19:52 PM	18
19	TOC	WG556095-05 DUP	TOC:3.177mg/L TC:7.581mg/L IC:4.403mg/L	Complete	2/3/2016 7:41:00 PM	19
20	TOC	WG556095-06 MS	TOC:13.63mg/L TC:17.32mg/L IC:3.690mg/L	Complete	2/3/2016 8:02:22 PM	20
21	TOC	CCV	TOC:26.02mg/L TC:26.11mg/L IC:0.08857mg/L	Complete	2/3/2016 8:14:30 PM	21
22	TOC	CCB	TOC:0.05655mg/L TC:0.1373mg/L IC:0.08076mg/L	Complete	2/3/2016 8:23:31 PM	0

2/4/2016 9:01:37 AM

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.851mg/L TC:29.32mg/L IC:25.47mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1147	29.32mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 12:45:28 PM

Mean Area 1147
Mean Conc. 29.32mg/L

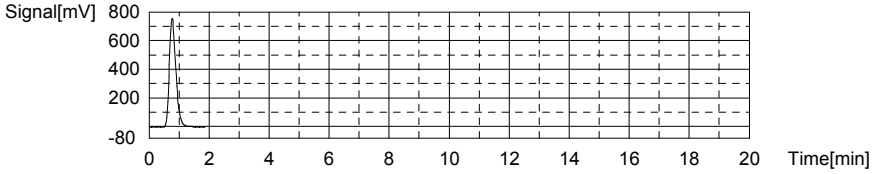

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	857.3	25.47mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 12:50:31 PM

Mean Area 857.3
Mean Conc. 25.47mg/L

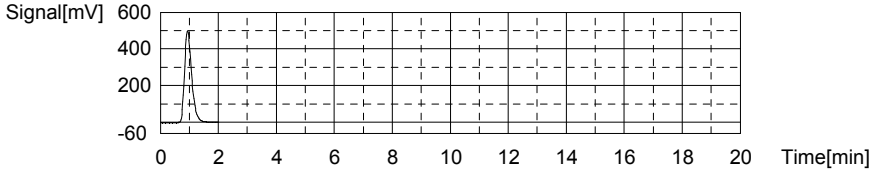

Sample

Sample Name: TOC/TIC
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.10mg/L TC:34.59mg/L IC:7.482mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1352	34.59mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 12:58:21 PM

Mean Area 1352
Mean Conc. 34.59mg/L

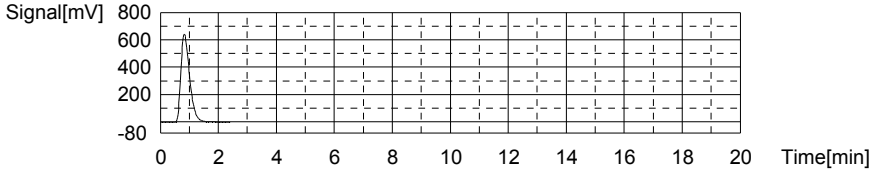

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	256.0	7.482mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 1:03:23 PM

Mean Area 256.0
Mean Conc. 7.482mg/L

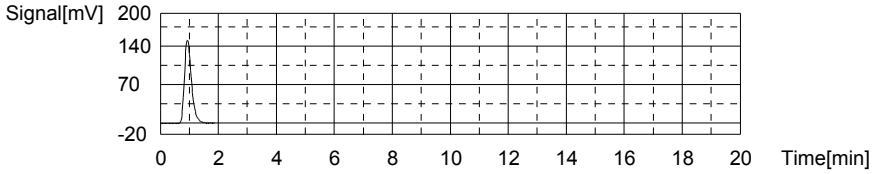

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.29mg/L TC:25.31mg/L IC:0.01694mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	990.7	25.31mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 1:11:13 PM

Mean Area 990.7
Mean Conc. 25.31mg/L

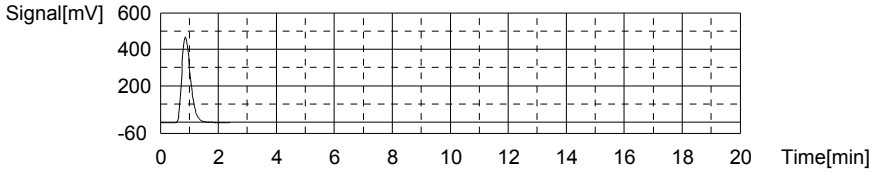

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.493	0.01694mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 1:15:34 PM

Mean Area 6.493
Mean Conc. 0.01694mg/L

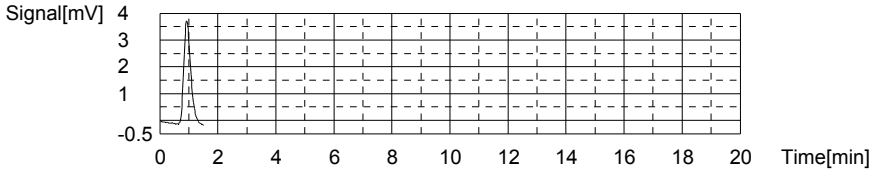

Sample

Sample Name: WG556095-01 BLK
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.04680mg/L TC:0.1237mg/L IC:0.07687mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.81	0.1504mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 1:20:39 PM
2	8.727	0.09692mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 1:24:11 PM

Mean Area 9.768
Mean Conc. 0.1237mg/L

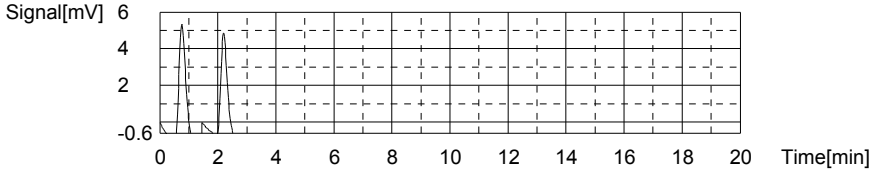

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.460	0.07579mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 1:28:06 PM
2	8.532	0.07795mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 1:32:03 PM

Mean Area 8.496
Mean Conc. 0.07687mg/L

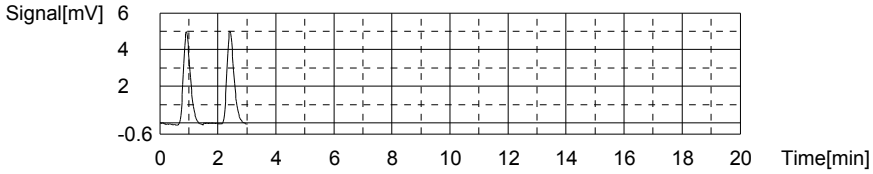

Sample

Sample Name: WG556095-02 LCS
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.70mg/L TC:26.74mg/L IC:0.04281mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1043	26.65mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 1:39:52 PM
2	1050	26.83mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 1:45:39 PM

Mean Area 1047
Mean Conc. 26.74mg/L

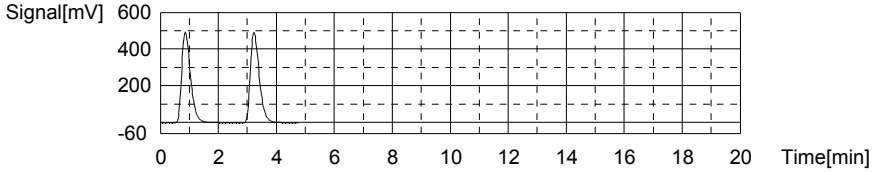

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.277	0.04040mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 1:50:01 PM
2	7.438	0.04521mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 1:54:15 PM

Mean Area 7.357
Mean Conc. 0.04281mg/L

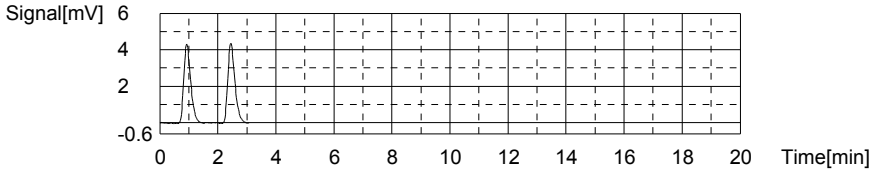

Sample

Sample Name: WG556095-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.81mg/L TC:26.86mg/L IC:0.04741mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1060	27.09mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 2:02:10 PM
2	1042	26.63mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 2:06:48 PM

Mean Area 1051
Mean Conc. 26.86mg/L

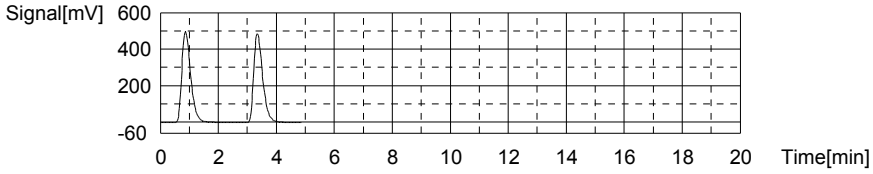

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.500	0.04707mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 2:11:07 PM
2	7.523	0.04776mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 2:15:13 PM

Mean Area 7.511
Mean Conc. 0.04741mg/L

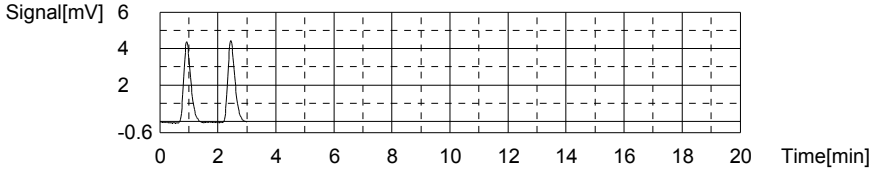

Sample

Sample Name: L16011377-01 (3)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.847mg/L TC:23.62mg/L IC:19.77mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	913.3	23.32mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 2:22:35 PM
2	936.3	23.91mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 2:26:47 PM

Mean Area 924.8
Mean Conc. 23.62mg/L

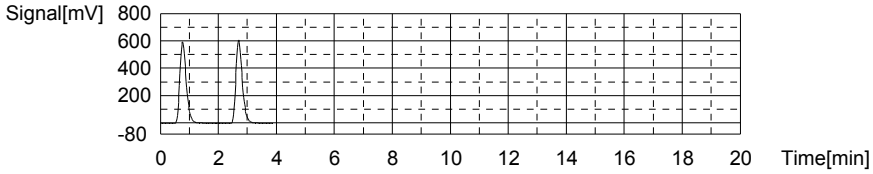

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	669.5	19.85mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 2:31:54 PM
2	664.0	19.69mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 2:36:45 PM

Mean Area 666.8
Mean Conc. 19.77mg/L

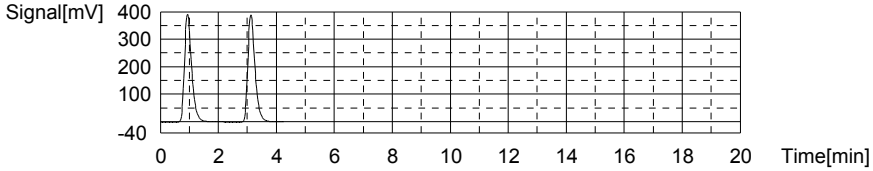

Sample

Sample Name: L16020054-01 (3)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.835mg/L TC:20.12mg/L IC:10.29mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	795.1	20.29mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 2:45:04 PM
2	782.1	19.95mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 2:50:04 PM

Mean Area 788.6
Mean Conc. 20.12mg/L

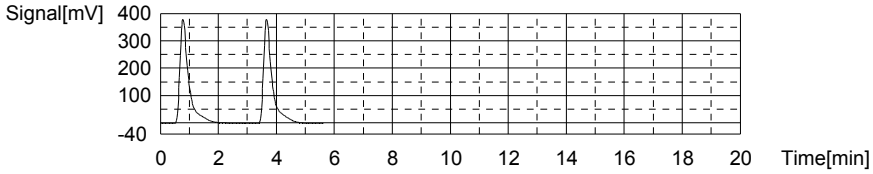

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	350.6	10.31mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 2:55:05 PM
2	348.8	10.26mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 2:59:42 PM

Mean Area 349.7
Mean Conc. 10.29mg/L

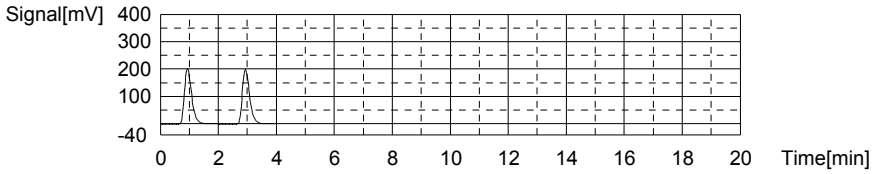

Sample

Sample Name: L16020058-01 (10)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.625mg/L TC:26.29mg/L IC:21.67mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1039	26.55mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 3:42:58 PM
2	1019	26.04mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 3:47:23 PM

Mean Area 1029
Mean Conc. 26.29mg/L

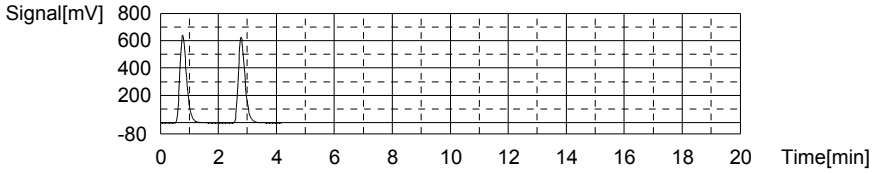

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	730.5	21.68mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 3:52:42 PM
2	729.8	21.66mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 3:57:29 PM

Mean Area 730.2
Mean Conc. 21.67mg/L

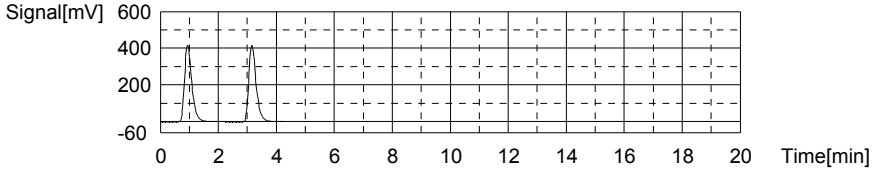

Sample

Sample Name: L16020058-03 (10)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.400mg/L TC:26.01mg/L IC:21.61mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1020	26.06mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 4:15:30 PM
2	1016	25.96mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 4:19:45 PM

Mean Area 1018
Mean Conc. 26.01mg/L

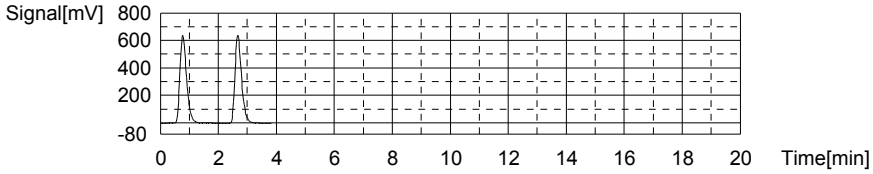

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	728.4	21.62mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 4:25:03 PM
2	728.1	21.61mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 4:30:07 PM

Mean Area 728.3
Mean Conc. 21.61mg/L

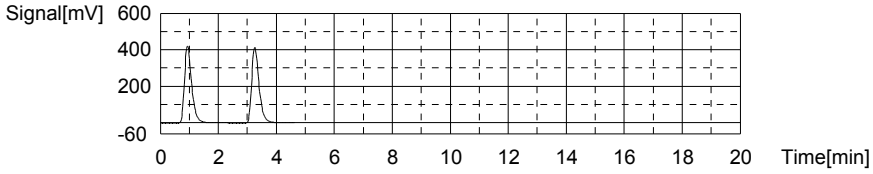

Sample

Sample Name: L16020058-05 (3)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.892mg/L TC:16.44mg/L IC:12.55mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	644.5	16.42mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 4:37:37 PM
2	646.2	16.46mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 4:41:57 PM

Mean Area 645.4
Mean Conc. 16.44mg/L

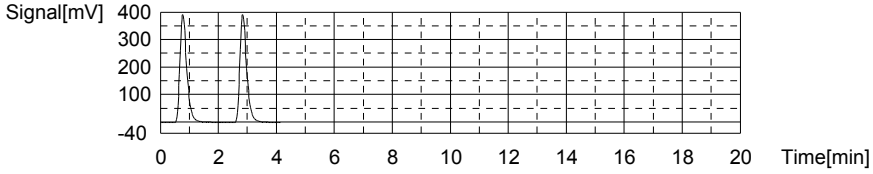

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	427.2	12.60mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 4:46:53 PM
2	423.6	12.50mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 4:51:39 PM

Mean Area 425.4
Mean Conc. 12.55mg/L

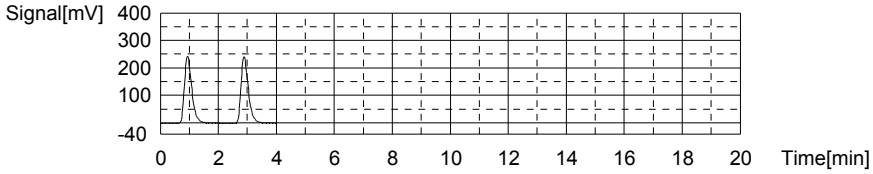

Sample

Sample Name: L16020058-07 (3)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.895mg/L TC:22.03mg/L IC:15.13mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	856.0	21.85mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 4:59:19 PM
2	869.8	22.21mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 5:03:55 PM

Mean Area 862.9
Mean Conc. 22.03mg/L

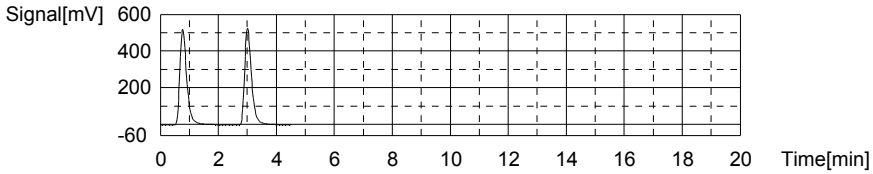

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	513.6	15.19mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 5:08:56 PM
2	509.9	15.08mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 5:13:39 PM

Mean Area 511.8
Mean Conc. 15.13mg/L

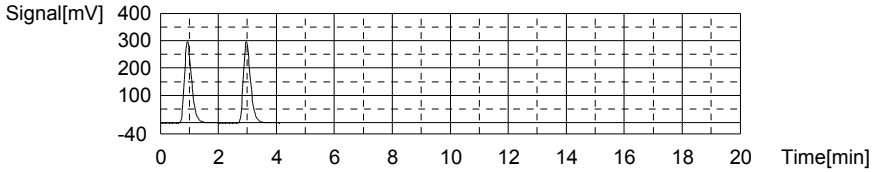

Sample

Sample Name: L16020058-09 (10)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.241mg/L TC:33.34mg/L IC:25.10mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1303	33.33mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 5:34:57 PM
2	1304	33.35mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 5:39:12 PM

Mean Area 1304
Mean Conc. 33.34mg/L

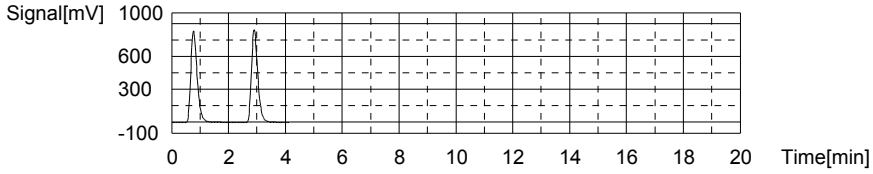

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	854.2	25.38mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 5:44:26 PM
2	835.5	24.82mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 5:49:24 PM

Mean Area 844.9
Mean Conc. 25.10mg/L

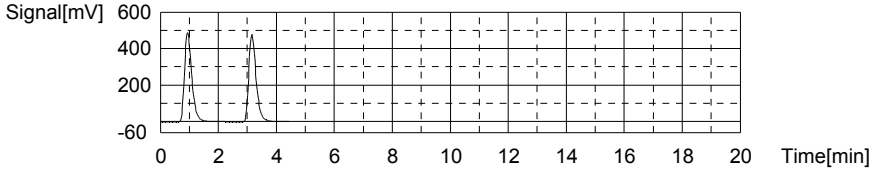

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.89mg/L TC:26.06mg/L IC:0.1709mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1020	26.06mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 5:57:07 PM

Mean Area 1020
Mean Conc. 26.06mg/L

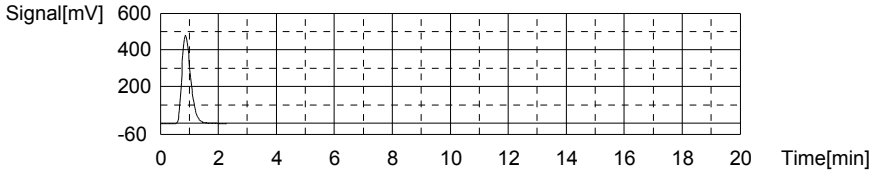

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.64	0.1709mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 6:01:35 PM

Mean Area 11.64
Mean Conc. 0.1709mg/L

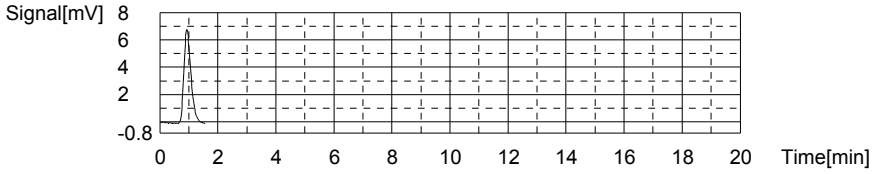

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.05711mg/L TC:0.1424mg/L IC:0.08533mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.50	0.1424mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 6:06:42 PM

Mean Area 10.50
Mean Conc. 0.1424mg/L

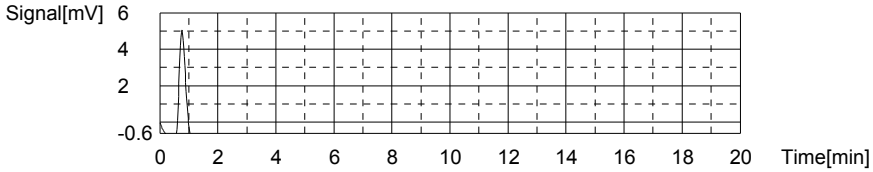

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.779	0.08533mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 6:10:39 PM

Mean Area 8.779
Mean Conc. 0.08533mg/L

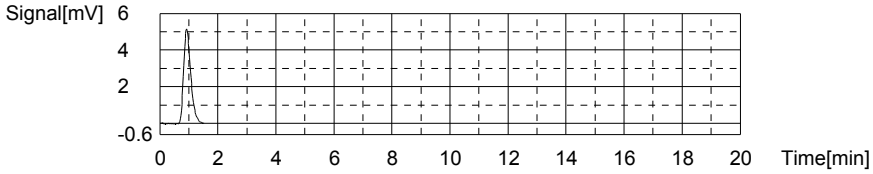

Sample

Sample Name: L16020079-01
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.90mg/L TC:20.29mg/L IC:6.393mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	793.8	20.25mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 6:19:59 PM
2	796.8	20.33mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 6:26:06 PM

Mean Area 795.3
Mean Conc. 20.29mg/L

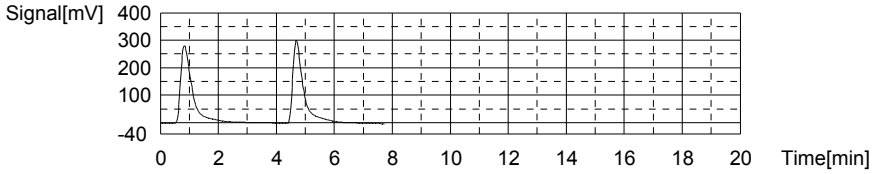

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	220.5	6.420mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 6:30:58 PM
2	218.7	6.366mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 6:35:38 PM

Mean Area 219.6
Mean Conc. 6.393mg/L

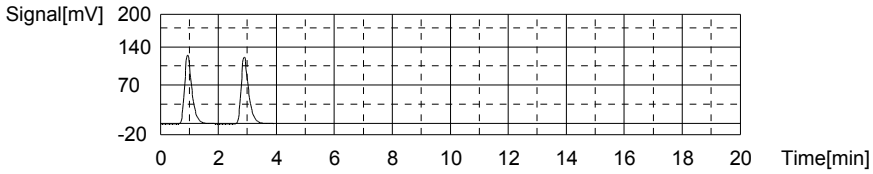

Sample

Sample Name: L16020097-09
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.101mg/L TC:7.709mg/L IC:4.608mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	304.7	7.696mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 6:43:09 PM
2	305.7	7.722mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 6:47:29 PM

Mean Area 305.2
Mean Conc. 7.709mg/L

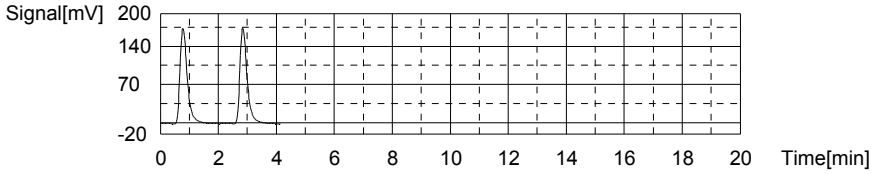

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	160.6	4.628mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 6:52:27 PM
2	159.3	4.589mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 6:56:59 PM

Mean Area 159.9
Mean Conc. 4.608mg/L

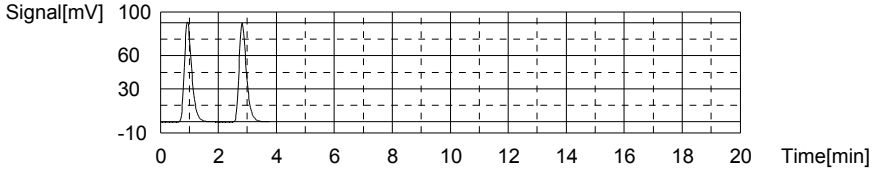

Sample

Sample Name: L16020141-01 (3)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.209mg/L TC:37.50mg/L IC:29.29mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1470	37.62mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 7:05:04 PM
2	1461	37.38mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 7:09:43 PM

Mean Area 1466
Mean Conc. 37.50mg/L

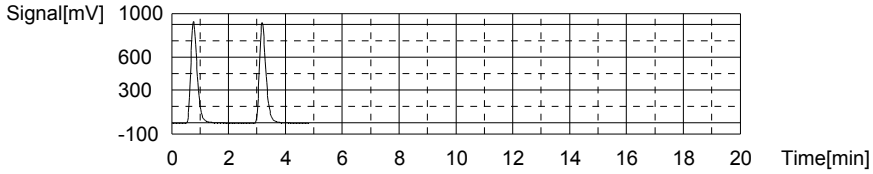

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	991.1	29.47mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 7:14:55 PM
2	978.8	29.11mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 7:19:52 PM

Mean Area 985.0
Mean Conc. 29.29mg/L

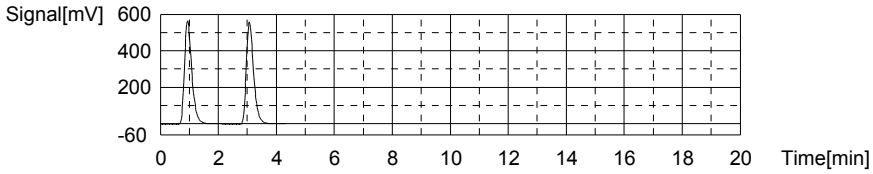

Sample

Sample Name: WG556095-05 DUP
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.177mg/L TC:7.581mg/L IC:4.403mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	302.9	7.650mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 7:27:23 PM
2	297.5	7.511mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 7:31:41 PM

Mean Area 300.2
Mean Conc. 7.581mg/L

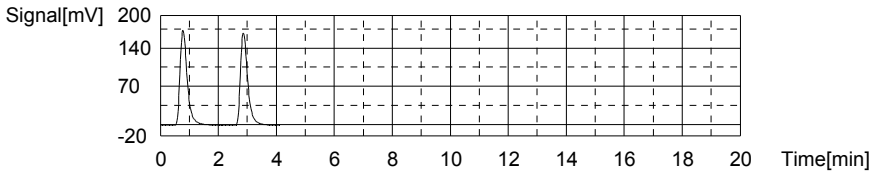

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	154.2	4.436mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 7:36:30 PM
2	152.0	4.370mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 7:41:00 PM

Mean Area 153.1
Mean Conc. 4.403mg/L

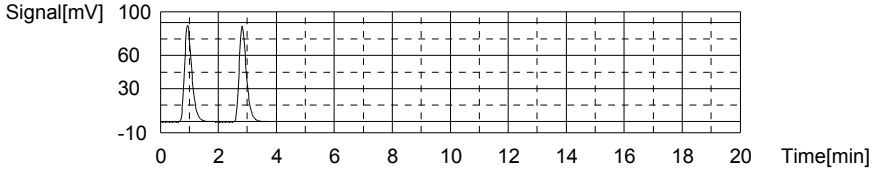

Sample

Sample Name: WG556095-06 MS
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.63mg/L TC:17.32mg/L IC:3.690mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	678.8	17.30mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 7:48:38 PM
2	680.2	17.34mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 7:53:05 PM

Mean Area 679.5
Mean Conc. 17.32mg/L

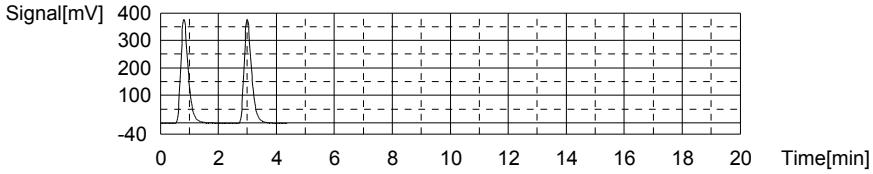

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	130.0	3.712mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 7:57:49 PM
2	128.5	3.667mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 8:02:22 PM

Mean Area 129.3
Mean Conc. 3.690mg/L

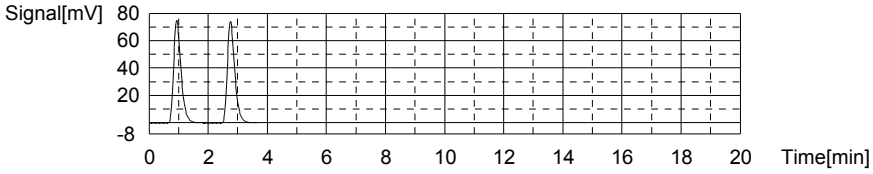

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.02mg/L TC:26.11mg/L IC:0.08857mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1022	26.11mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 8:10:04 PM

Mean Area 1022
Mean Conc. 26.11mg/L

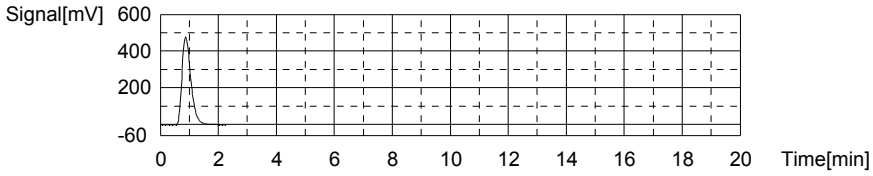

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.887	0.08857mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 8:14:30 PM

Mean Area 8.887
Mean Conc. 0.08857mg/L

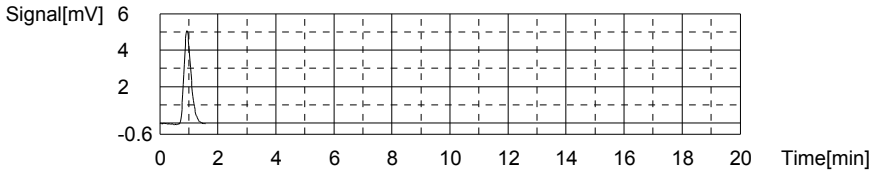

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.05655mg/L TC:0.1373mg/L IC:0.08076mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.30	0.1373mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	2/3/2016 8:19:35 PM

Mean Area 10.30
Mean Conc. 0.1373mg/L

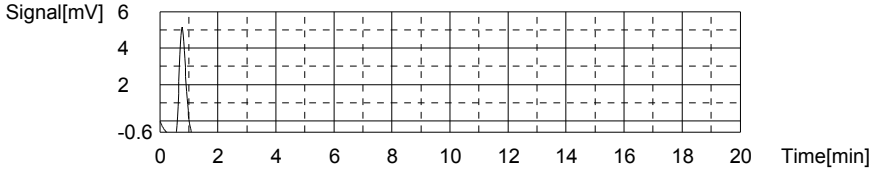

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.626	0.08076mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	2/3/2016 8:23:31 PM

Mean Area 8.626
Mean Conc. 0.08076mg/L

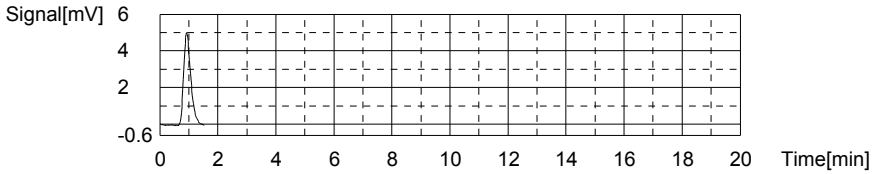

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
February 16, 2016

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
February 16, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
February 16, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD		
Project Name/Location:	Longhorn		
Project Number:	60256135.0002FA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Dissolved Gases / Carbon Dioxide	Sulfide	Alkalinity	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Total Iron	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 46	46WW09-020216			2/2/16	0810		✓	W	10	✓	✓	✓	✓	✓	✓							
	46WW09F-020216			2/2/16	0810		✓	W	1							✓						
	46WW09FF-020216			2/2/16	0810		✓	W	1								✓					
	46WW06-020216			2/2/16	1005		✓	W	3	✓												
	46WW07-020216			2/2/16	1110		✓	W	3	✓												
	46WW25-020216			2/2/16	1340		✓	W	3	✓												
	46WW25FD-020216			2/2/16	1340		✓	W	3	✓												
	46WW14-020216			2/2/16	1445		✓	W	3	✓												
	46WW14FD-020216			2/2/16	1445		✓	W	3	✓												
	TRIP BLANK			2/2/16			✓	W	2	✓												

Comments: STANDARD TAT

Relinquished by (Signature) Scott Beesinger	Date 2/2/16	Time 1600	Received by: (Sig	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Lab (Signature)				Remarks:

Microbac OVD
Received: 02/03/2016 09:46
By: BRENDA GREGORY 221000081576

Brenda Gregory

QA/QC Manager

•Homogenize all composite samples prior to analysis

00743526

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020141
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 12-FEB-2016

Samplenum	Container ID	Products
L16020141-01	696350	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:25	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Samplenum	Container ID	Products
L16020141-01	696351	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG1	03-FEB-2016 11:24	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG1	03-FEB-2016 11:24	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG1	03-FEB-2016 11:24	JDS	CLS	

Samplenum	Container ID	Products
L16020141-01	696352	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	03-FEB-2016 11:06	CLS		
2	PREP	L1	SEM	03-FEB-2016 11:28	AED	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020141
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 12-FEB-2016

Samplenum	Container ID	Products
L16020141-01	696353	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-FEB-2016 11:06	CLS		
2	ANALYZ	W1	WET	05-FEB-2016 08:16	DCM	CLS	
3	STORE	WET	A1	11-FEB-2016 15:13	BRG	TB	

Samplenum	Container ID	Products
L16020141-01	696354	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-FEB-2016 11:06	CLS		<2
2	ANALYZ	W1	WET	03-FEB-2016 11:29	EPT	BRG	
3	STORE	WET	A1	11-FEB-2016 15:13	BRG	TB	

Samplenum	Container ID	Products
L16020141-01	696355	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-FEB-2016 11:06	CLS		
2	ANALYZ	W1	WET	04-FEB-2016 08:35	EPT	BRG	
3	STORE	WET	A1	05-FEB-2016 08:42	EPT	BRG	

Samplenum	Container ID	Products
L16020141-02	696356	FE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-FEB-2016 11:06	CLS		
2	PREP	W1	DIG	03-FEB-2016 14:31	ERP	BRG	
3	STORE	DIG	A1	05-FEB-2016 13:30	BRG	ERP	
4	ANALYZ*	DIG	METALS	12-FEB-2016 09:58	KHR	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020141
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 12-FEB-2016

Samplenum	Container ID	Products
L16020141-03	696357	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-FEB-2016 11:06	CLS		
2	PREP	W1	DIG	03-FEB-2016 14:31	ERP	BRG	
3	STORE	DIG	A1	05-FEB-2016 13:30	BRG	ERP	
4	ANALYZ*	DIG	METALS	10-FEB-2016 17:18	MMB	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16020141-04	696358	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Samplenum	Container ID	Products
L16020141-05	696359	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020141
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 12-FEB-2016

Samplenum	Container ID	Products
L16020141-06	696360	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Samplenum	Container ID	Products
L16020141-07	696361	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020141
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 12-FEB-2016

Samplenum	Container ID	Products
L16020141-08	696362	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Samplenum	Container ID	Products
L16020141-09	696363	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Samplenum	Container ID	Products
L16020141-10	696364	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	03-FEB-2016 11:24	JDS	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16020210

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on February 08 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110408	I	3.0		J4599414009	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
46WW04-020316	L16020210-01	02/03/2016 07:35	02/04/2016 09:32
46WW10-020316	L16020210-02	02/03/2016 07:50	02/04/2016 09:32
46WW08-020316	L16020210-03	02/03/2016 09:00	02/04/2016 09:32
46WW03-020316	L16020210-04	02/03/2016 10:15	02/04/2016 09:32
46WW03MS-020316	L16020210-05	02/03/2016 10:15	02/04/2016 09:32
46WW03MSD-020316	L16020210-06	02/03/2016 10:15	02/04/2016 09:32
46SW10-020316	L16020210-07	02/03/2016 11:30	02/04/2016 09:32
TRIP BLANK	L16020210-08	02/03/2016 00:01	02/04/2016 09:32

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16020210
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 9
2.0 Full Sample Data Package 27
2.1 Volatiles Data 28
2.1.1 Volatiles GCMS Data (8260) 29
2.1.1.1 Summary Data 30
2.1.1.2 QC Summary Data 50
2.1.1.3 Sample Data 82
2.1.1.4 Standards Data 106
2.1.1.5 Raw QC Data 201
3.0 Attachments 219

1.0 Summary Data

1.1 Narratives

Microbac Laboratories
Case Narrative

Login Number: L16020210
Department: Volatiles
Analyst: Tiffany Bailey

METHOD

Preparation SW-846 5030C/5035A

Analysis SW-846 8260B

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Internal Standards: All acceptance criteria were met.

Surrogates: All acceptance criteria were met.

Other: None.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak. In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak. This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline. There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous. Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Managing Director or the QAO will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 108935
Approved By: Sarah Vandenberg
Sarah Vandenberg

1.2 Certificate of Analysis

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020210-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	46WW04-020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/04/2016 20:40
Workgroup #:	WG556390	**Analyst:**	TMB	**Run Date:**	02/05/2016 20:09
Collect Date:	02/03/2016 07:35	**Dilution:**	1	**File ID:**	8M409989
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.7	85	115	
1,2-Dichloroethane-d4	97.7	70	120	
Toluene-d8	96.2	85	120	
4-Bromofluorobenzene	97.5	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020210-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	46WW10-020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/04/2016 20:40
Workgroup #:	WG556390	**Analyst:**	TMB	**Run Date:**	02/05/2016 20:38
Collect Date:	02/03/2016 07:50	**Dilution:**	1	**File ID:**	8M409990
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.9	85	115	
1,2-Dichloroethane-d4	96.6	70	120	
Toluene-d8	96.4	85	120	
4-Bromofluorobenzene	96.3	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020210-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	46WW08-020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/04/2016 20:40
Workgroup #:	WG556390	**Analyst:**	TMB	**Run Date:**	02/05/2016 21:07
Collect Date:	02/03/2016 09:00	**Dilution:**	1	**File ID:**	8M409991
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.6	85	115	
1,2-Dichloroethane-d4	97.4	70	120	
Toluene-d8	95.6	85	120	
4-Bromofluorobenzene	96.2	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020210-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	46WW03-020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/04/2016 20:40
Workgroup #:	WG556390	**Analyst:**	TMB	**Run Date:**	02/05/2016 19:40
Collect Date:	02/03/2016 10:15	**Dilution:**	1	**File ID:**	8M409988
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.4	85	115	
1,2-Dichloroethane-d4	96.2	70	120	
Toluene-d8	96.2	85	120	
4-Bromofluorobenzene	96.5	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020210-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	46WW03MS-020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/04/2016 20:40
Workgroup #:	WG556390	**Analyst:**	TMB	**Run Date:**	02/05/2016 16:15
Collect Date:	02/03/2016 10:15	**Dilution:**	1	**File ID:**	8M409981
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.9		10.0	5.00	2.50
Benzene	71-43-2	20.7		1.00	0.250	0.125
Bromobenzene	108-86-1	19.7		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.2		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.6		1.00	0.500	0.250
Bromoform	75-25-2	20.4		2.00	1.00	0.500
Bromomethane	74-83-9	21.3		2.00	1.00	0.500
2-Butanone	78-93-3	23.3		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.4		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	21.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	20.4		1.00	0.500	0.250
Carbon disulfide	75-15-0	18.1		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.1		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.8		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	21.8		1.00	0.500	0.250
Chloroethane	75-00-3	20.4		2.00	1.00	0.500
Chloroform	67-66-3	19.7		1.00	0.250	0.125
Chloromethane	74-87-3	20.6		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	19.0		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	22.8		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	23.2		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	22.0		1.00	0.500	0.250
Dibromomethane	74-95-3	20.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.4		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.4		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.5		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	22.8		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.3		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.6		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.3		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	20.0		1.00	0.500	0.250

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	20.0		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.0		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	22.9		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	22.6		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	23.1		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	22.2		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.2		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.0		1.00	0.500	0.250
2-Hexanone	591-78-6	22.4		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	20.1		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.3		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.7		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	22.6		10.0	5.00	2.50
Methylene chloride	75-09-2	20.4		1.00	0.500	0.250
Naphthalene	91-20-3	19.9		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.7		1.00	0.250	0.125
Styrene	100-42-5	20.9		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.6		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	22.8		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.0		1.00	0.500	0.250
Toluene	108-88-3	20.4		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	20.0		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	20.4		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	20.1		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	21.6		1.00	0.500	0.250
Trichloroethene	79-01-6	20.5		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	20.1		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	23.0		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.7		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.7		1.00	0.500	0.250
Vinyl chloride	75-01-4	20.4		1.00	0.500	0.250
o-Xylene	95-47-6	20.9		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	42.0		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.5	85	115	
1,2-Dichloroethane-d4	96.3	70	120	
Toluene-d8	94.7	85	120	
4-Bromofluorobenzene	92.9	75	120	

Certificate of Analysis

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16020210-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	46WW03MSD-020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/04/2016 20:40
Workgroup #:	WG556390	**Analyst:**	TMB	**Run Date:**	02/05/2016 16:45
Collect Date:	02/03/2016 10:15	**Dilution:**	1	**File ID:**	8M409982
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.3		10.0	5.00	2.50
Benzene	71-43-2	19.8		1.00	0.250	0.125
Bromobenzene	108-86-1	19.5		1.00	0.250	0.125
Bromochloromethane	74-97-5	19.6		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.8		1.00	0.500	0.250
Bromoform	75-25-2	20.0		2.00	1.00	0.500
Bromomethane	74-83-9	20.3		2.00	1.00	0.500
2-Butanone	78-93-3	22.0		10.0	5.00	2.50
n-Butylbenzene	104-51-8	20.8		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	21.3		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	20.0		1.00	0.500	0.250
Carbon disulfide	75-15-0	17.5		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	19.1		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.4		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	21.1		1.00	0.500	0.250
Chloroethane	75-00-3	19.7		2.00	1.00	0.500
Chloroform	67-66-3	19.1		1.00	0.250	0.125
Chloromethane	74-87-3	19.8		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.7		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	22.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	22.5		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.8		1.00	0.500	0.250
Dibromomethane	74-95-3	19.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.2		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.3		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.4		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	21.1		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.5		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.0		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	18.2		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.5		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	19.2		1.00	0.500	0.250

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	20.0		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	22.4		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	21.1		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	22.4		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	21.6		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	18.4		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.3		1.00	0.500	0.250
2-Hexanone	591-78-6	21.4		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	19.7		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.9		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.4		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	21.0		10.0	5.00	2.50
Methylene chloride	75-09-2	20.1		1.00	0.500	0.250
Naphthalene	91-20-3	19.4		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.5		1.00	0.250	0.125
Styrene	100-42-5	20.6		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.2		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	22.1		1.00	0.400	0.200
Tetrachloroethene	127-18-4	18.8		1.00	0.500	0.250
Toluene	108-88-3	19.9		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.6		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	20.3		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.0		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	21.0		1.00	0.500	0.250
Trichloroethene	79-01-6	19.4		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	18.6		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	23.2		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.3		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.5		1.00	0.500	0.250
Vinyl chloride	75-01-4	19.6		1.00	0.500	0.250
o-Xylene	95-47-6	20.2		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.9		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.3	85	115	
1,2-Dichloroethane-d4	95.3	70	120	
Toluene-d8	94.7	85	120	
4-Bromofluorobenzene	94.3	75	120	

Certificate of Analysis

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16020210-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	46SW10-020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/04/2016 20:40
Workgroup #:	WG556390	**Analyst:**	TMB	**Run Date:**	02/05/2016 21:35
Collect Date:	02/03/2016 11:30	**Dilution:**	1	**File ID:**	8M409992
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.1	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	95.5	85	120	
4-Bromofluorobenzene	94.7	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020210-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/04/2016 20:40
Workgroup #:	WG556390	**Analyst:**	TMB	**Run Date:**	02/05/2016 17:44
Collect Date:	02/03/2016 00:01	**Dilution:**	1	**File ID:**	8M409984
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.9	85	115	
1,2-Dichloroethane-d4	97.3	70	120	
Toluene-d8	96.4	85	120	
4-Bromofluorobenzene	96.0	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac Laboratories
Case Narrative

Login Number: L16020210
Department: Volatiles
Analyst: Tiffany Bailey

METHOD

Preparation SW-846 5030C/5035A

Analysis SW-846 8260B

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Internal Standards: All acceptance criteria were met.

Surrogates: All acceptance criteria were met.

Other: None.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak. In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak. This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline. There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous. Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Managing Director or the QAO will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 108935
Approved By: Sarah Vandenberg
Sarah Vandenberg

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020210-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	46WW04-020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/04/2016 20:40
Workgroup #:	WG556390	**Analyst:**	TMB	**Run Date:**	02/05/2016 20:09
Collect Date:	02/03/2016 07:35	**Dilution:**	1	**File ID:**	8M409989
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.7	85	115	
1,2-Dichloroethane-d4	97.7	70	120	
Toluene-d8	96.2	85	120	
4-Bromofluorobenzene	97.5	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020210-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	46WW10-020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/04/2016 20:40
Workgroup #:	WG556390	**Analyst:**	TMB	**Run Date:**	02/05/2016 20:38
Collect Date:	02/03/2016 07:50	**Dilution:**	1	**File ID:**	8M409990
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.9	85	115	
1,2-Dichloroethane-d4	96.6	70	120	
Toluene-d8	96.4	85	120	
4-Bromofluorobenzene	96.3	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020210-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	46WW08-020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/04/2016 20:40
Workgroup #:	WG556390	**Analyst:**	TMB	**Run Date:**	02/05/2016 21:07
Collect Date:	02/03/2016 09:00	**Dilution:**	1	**File ID:**	8M409991
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.6	85	115	
1,2-Dichloroethane-d4	97.4	70	120	
Toluene-d8	95.6	85	120	
4-Bromofluorobenzene	96.2	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020210-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	46WW03-020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/04/2016 20:40
Workgroup #:	WG556390	**Analyst:**	TMB	**Run Date:**	02/05/2016 19:40
Collect Date:	02/03/2016 10:15	**Dilution:**	1	**File ID:**	8M409988
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.4	85	115	
1,2-Dichloroethane-d4	96.2	70	120	
Toluene-d8	96.2	85	120	
4-Bromofluorobenzene	96.5	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020210-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	46WW03MS-020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/04/2016 20:40
Workgroup #:	WG556390	**Analyst:**	TMB	**Run Date:**	02/05/2016 16:15
Collect Date:	02/03/2016 10:15	**Dilution:**	1	**File ID:**	8M409981
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.9		10.0	5.00	2.50
Benzene	71-43-2	20.7		1.00	0.250	0.125
Bromobenzene	108-86-1	19.7		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.2		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.6		1.00	0.500	0.250
Bromoform	75-25-2	20.4		2.00	1.00	0.500
Bromomethane	74-83-9	21.3		2.00	1.00	0.500
2-Butanone	78-93-3	23.3		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.4		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	21.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	20.4		1.00	0.500	0.250
Carbon disulfide	75-15-0	18.1		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.1		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.8		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	21.8		1.00	0.500	0.250
Chloroethane	75-00-3	20.4		2.00	1.00	0.500
Chloroform	67-66-3	19.7		1.00	0.250	0.125
Chloromethane	74-87-3	20.6		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	19.0		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	22.8		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	23.2		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	22.0		1.00	0.500	0.250
Dibromomethane	74-95-3	20.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.4		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.4		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.5		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	22.8		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.3		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.6		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.3		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	20.0		1.00	0.500	0.250

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	20.0		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.0		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	22.9		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	22.6		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	23.1		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	22.2		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.2		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.0		1.00	0.500	0.250
2-Hexanone	591-78-6	22.4		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	20.1		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.3		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.7		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	22.6		10.0	5.00	2.50
Methylene chloride	75-09-2	20.4		1.00	0.500	0.250
Naphthalene	91-20-3	19.9		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.7		1.00	0.250	0.125
Styrene	100-42-5	20.9		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.6		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	22.8		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.0		1.00	0.500	0.250
Toluene	108-88-3	20.4		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	20.0		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	20.4		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	20.1		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	21.6		1.00	0.500	0.250
Trichloroethene	79-01-6	20.5		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	20.1		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	23.0		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.7		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.7		1.00	0.500	0.250
Vinyl chloride	75-01-4	20.4		1.00	0.500	0.250
o-Xylene	95-47-6	20.9		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	42.0		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.5	85	115	
1,2-Dichloroethane-d4	96.3	70	120	
Toluene-d8	94.7	85	120	
4-Bromofluorobenzene	92.9	75	120	

Certificate of Analysis

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16020210-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	46WW03MSD-020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/04/2016 20:40
Workgroup #:	WG556390	**Analyst:**	TMB	**Run Date:**	02/05/2016 16:45
Collect Date:	02/03/2016 10:15	**Dilution:**	1	**File ID:**	8M409982
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.3		10.0	5.00	2.50
Benzene	71-43-2	19.8		1.00	0.250	0.125
Bromobenzene	108-86-1	19.5		1.00	0.250	0.125
Bromochloromethane	74-97-5	19.6		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.8		1.00	0.500	0.250
Bromoform	75-25-2	20.0		2.00	1.00	0.500
Bromomethane	74-83-9	20.3		2.00	1.00	0.500
2-Butanone	78-93-3	22.0		10.0	5.00	2.50
n-Butylbenzene	104-51-8	20.8		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	21.3		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	20.0		1.00	0.500	0.250
Carbon disulfide	75-15-0	17.5		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	19.1		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.4		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	21.1		1.00	0.500	0.250
Chloroethane	75-00-3	19.7		2.00	1.00	0.500
Chloroform	67-66-3	19.1		1.00	0.250	0.125
Chloromethane	74-87-3	19.8		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.7		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	22.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	22.5		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.8		1.00	0.500	0.250
Dibromomethane	74-95-3	19.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.2		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.3		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.4		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	21.1		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.5		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.0		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	18.2		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.5		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	19.2		1.00	0.500	0.250

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	20.0		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	22.4		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	21.1		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	22.4		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	21.6		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	18.4		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.3		1.00	0.500	0.250
2-Hexanone	591-78-6	21.4		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	19.7		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.9		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.4		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	21.0		10.0	5.00	2.50
Methylene chloride	75-09-2	20.1		1.00	0.500	0.250
Naphthalene	91-20-3	19.4		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.5		1.00	0.250	0.125
Styrene	100-42-5	20.6		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.2		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	22.1		1.00	0.400	0.200
Tetrachloroethene	127-18-4	18.8		1.00	0.500	0.250
Toluene	108-88-3	19.9		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.6		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	20.3		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.0		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	21.0		1.00	0.500	0.250
Trichloroethene	79-01-6	19.4		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	18.6		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	23.2		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.3		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.5		1.00	0.500	0.250
Vinyl chloride	75-01-4	19.6		1.00	0.500	0.250
o-Xylene	95-47-6	20.2		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.9		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.3	85	115	
1,2-Dichloroethane-d4	95.3	70	120	
Toluene-d8	94.7	85	120	
4-Bromofluorobenzene	94.3	75	120	

Certificate of Analysis

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16020210-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	46SW10-020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/04/2016 20:40
Workgroup #:	WG556390	**Analyst:**	TMB	**Run Date:**	02/05/2016 21:35
Collect Date:	02/03/2016 11:30	**Dilution:**	1	**File ID:**	8M409992
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.1	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	95.5	85	120	
4-Bromofluorobenzene	94.7	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16020210-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/04/2016 20:40
Workgroup #:	WG556390	**Analyst:**	TMB	**Run Date:**	02/05/2016 17:44
Collect Date:	02/03/2016 00:01	**Dilution:**	1	**File ID:**	8M409984
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.9	85	115	
1,2-Dichloroethane-d4	97.3	70	120	
Toluene-d8	96.4	85	120	
4-Bromofluorobenzene	96.0	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16020210
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100515
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53462

Internal Standard: STD72767 Surrogate Standard: STD72767
CCV: STD72810 LCS: STD72811 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG540826

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M407827	WG540826-01 50ng BFB STD 8260	NA	1	1	STD72715	10/05/15 11:26
8M407828	WG540826-02 5ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 11:49
8M407829	WG540826-03 20ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 12:17
8M407830	WG540826-04 50ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 12:51
8M407831	WG540826-05 100ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 13:20
8M407832	WG540826-06 200ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 13:49
8M407833	WG540826-07 300ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 14:17
8M407834	WG540826-08 400ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 14:47
8M407835	WG540826-09 500ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 15:15
8M407836	RINSE	NA	1	1		10/05/15 15:50
8M407837	RINSE	NA	1	1		10/05/15 16:19
8M407838	WG540826-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD72811	10/05/15 16:48

Approved: October 09, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 020416
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53631

Internal Standard: STD74217 Surrogate Standard: STD74217
CCV: STD74616 LCS: STD74617 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG556045

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M409939	BFB CHECK	NA	1	1	STD74606	02/04/16 08:41
8M409940	BFB CHECK	NA	1	1	STD74606	02/04/16 09:34
8M409941	BFB CHECK	NA	1	1	STD74606	02/04/16 09:56
8M409942	BFB CHECK	NA	1	1	STD74606	02/04/16 10:43
8M409943	BFB CHECK	NA	1	1	STD74606	02/04/16 10:57
8M409944	WG556045-01 50ng BFB STD 8260	NA	1	1	STD74606	02/04/16 11:40
8M409945	RINSE	NA	1	1		02/04/16 12:05
8M409946	WG556045-02 0.3ug/L STD 8260	NA	1	1	STD74616	02/04/16 12:37
8M409947	WG556045-03 0.4ug/L STD 8260	NA	1	1	STD74616	02/04/16 13:06
8M409948	WG556045-01 50ng BFB STD 8260	NA	1	1	STD74606	02/04/16 13:53
8M409949	WG556045-01 50ng BFB STD 8260	NA	1	1	STD74606	02/04/16 14:07
8M409950	WG556045-01 50ng BFB STD 8260	NA	1	1	STD74606	02/04/16 14:37
8M409951	WG556045-01 50ng BFB STD 8260	NA	1	1	STD74606	02/04/16 15:28
8M409952	BFB CHECK	NA	1	1	STD74606	02/04/16 15:42
8M409953	WG556045-01 50ng BFB STD 8260	NA	1	1	STD74606	02/04/16 15:58
8M409954	WG556045-02 0.3ug/L STD 8260	NA	1	1	STD74616	02/04/16 16:21
8M409955	WG556045-03 0.4ug/L STD 8260	NA	1	1	STD74616	02/04/16 16:50
8M409956	WG556045-04 1ug/L STD 8260	NA	1	1	STD74616	02/04/16 17:19
8M409957	WG556045-05 2ug/L STD 8260	NA	1	1	STD74616	02/04/16 17:48
8M409958	WG556045-06 5ug/L STD 8260	NA	1	1	STD74616	02/04/16 18:17
8M409959	WG556045-07 20ug/L STD 8260	NA	1	1	STD74616	02/04/16 18:45
8M409960	WG556045-08 50ug/L STD 8260	NA	1	1	STD74616	02/04/16 19:14
8M409961	WG556045-09 100ug/L STD 8260	NA	1	1	STD74616	02/04/16 19:43
8M409962	WG556045-10 200ug/L STD 8260	NA	1	1	STD74616	02/04/16 20:11
8M409963	WG556045-11 300ug/L STD 8260	NA	1	1	STD74616	02/04/16 20:40
8M409964	RINSE	NA	1	1		02/04/16 21:08
8M409965	RINSE	NA	1	1		02/04/16 21:37
8M409966	WG556045-12 50ug/L ALT SRC STD 8260	NA	1	1	STD74617	02/04/16 22:05
8M409967	RINSE	NA	1	1		02/04/16 22:34
8M409968	RINSE	NA	1	1		02/04/16 23:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: February 08, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	020416		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53631				

Internal Standard: STD74217 Surrogate Standard: STD74217

CCV: STD74616 LCS: STD74617 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG556045

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
8	X			
File ID: 8M409946				
	Internals were high, DNR.			
9	X			
File ID: 8M409947				
	Internals were high, DNR. Lowered the voltage by 20.			

Approved: February 08, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 020516
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD74636 Surrogate Standard: STD74636
CCV: STD74616 LCS: STD74617 MS/MSD: STD74617

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG556390

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M409969	WG556389-01 50ng BFB STD 8260	NA	1	1	STD74606	02/05/16 10:28
8M409970	WG556389-02 50ug/L CCV STD 8260	NA	1	1	STD74616	02/05/16 10:52
8M409971	WG556389-02 50ug/L CCV STD 8260	NA	1	1	STD74616	02/05/16 11:24
8M409972	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD74406	02/05/16 11:52
8M409973	WG556390-01 VBLK0205 BLANK STD 826	NA	1	1		02/05/16 12:22
8M409974	L16011050-01 A 826-REF-BLK	<2	1	1		02/05/16 12:51
8M409975	L16011050-02 A 826-REF-BLK	<2	1	1		02/05/16 13:19
8M409976	L16011050-03 A 826-REF-BLK	<2	1	1		02/05/16 13:49
8M409977	L16011050-04 A 826-REF-BLK	<2	1	1		02/05/16 14:18
8M409978	L16011050-05 A 826-REF-BLK	<2	1	1		02/05/16 14:47
8M409979	L16020021-20 B 826-VAP2	<2	1	1		02/05/16 15:16
8M409980	WG556390-02 20ug/L LCS STD 8260	NA	1	1	STD74617	02/05/16 15:46
8M409981	L16020210-05 A MS 826-LOW	<2	1	1	STD74617	02/05/16 16:15
8M409982	L16020210-06 A MSD 826-LOW	<2	1	1	STD74617	02/05/16 16:45
8M409983	L16020201-02 A 10X 826-TC	NA	17	10		02/05/16 17:15
8M409984	L16020210-08 A TB 826-LOW	<2	1	1		02/05/16 17:44
8M409985	L16020234-06 A TB 826-SPE	<2	1	1		02/05/16 18:13
8M409986	L16020234-05 A 826-SPE	<2	1	1		02/05/16 18:42
8M409987	L16020234-01 A 826-SPE	<2	1	1		02/05/16 19:11
8M409988	L16020210-04 A REF 826-LOW	<2	1	1		02/05/16 19:40
8M409989	L16020210-01 A 826-LOW	<2	1	1		02/05/16 20:09
8M409990	L16020210-02 A 826-LOW	<2	1	1		02/05/16 20:38
8M409991	L16020210-03 A 826-LOW	<2	1	1		02/05/16 21:07
8M409992	L16020210-07 A 826-LOW	<2	1	1		02/05/16 21:35
8M409993	L16020166-02 A 10X 826-TC	NA	17	10		02/05/16 22:04
8M409994	WG556390-07 20ug/L LCS2 STD 624	NA	2	1	STD74617	02/05/16 22:35
8M409995	RINSE	NA	2	1		02/05/16 23:04
8M409996	WG556390-06 VBLK0205 BLANK STD 624	NA	2	1		02/05/16 23:32
8M409997	L16020327-11 A TB 624-SPE1	5	2	1		02/06/16 00:01
8M409998	L16020327-09 A EB 624-SPE1	5	2	1		02/06/16 00:29
8M409999	L16020327-07 A 624-SPE1	7	2	1		02/06/16 00:58
8M410000	L16020327-05 A 624-SPE1	7	2	1		02/06/16 01:27
8M410001	L16020327-03 A 624-SPE1	7	2	1		02/06/16 01:55
8M410002	L16020327-01 A 624-SPE1	7	2	1		02/06/16 02:24

Approved: February 08, 2016

Sarah Vandenberg

Microbac

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 020516
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD74636 Surrogate Standard: STD74636
CCV: STD74616 LCS: STD74617 MS/MSD: STD74617

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG556390

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M410003	CCV	NA	1	1		02/06/16 02:53
8M410004	RINSE	NA	1	1		02/06/16 03:23
8M410005	RINSE	NA	1	1		02/06/16 03:52

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M409970				
	Acetone was low, DNR.			
4				
File ID: 8M409972				
	Not needed. DNR.			
31	X	20	Over Calibration Range	cis12-dce, tce
File ID: 8M409999				
32	X	1	Carry-over contamination	
File ID: 8M410000				
	Possible cis12-dce carry over.			
33	X	1	Carry-over contamination	
File ID: 8M410001				
	Possible cis12-dce carry over.			
34	X	50	Over Calibration Range	MECL, CIS12-DCE, CFORM, C. TET, TCE
File ID: 8M410002				

Approved: February 08, 2016

Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 05-OCT-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 70874
Analytical Workgroups: WG540826

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
06-OCT-2015
Tiffany Bailey

Secondary Reviewer:
09-OCT-2015

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-09-2015 12:12:03

Microbac Laboratories Inc.

Data Checklist

Date: 04-FEB-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 73133
Analytical Workgroups: WG556045

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
05-FEB-2016
Tiffany Bailey

Secondary Reviewer:
08-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-08-2016 09:35:08

Microbac Laboratories Inc.

Data Checklist

Date: 05-FEB-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 73162
Analytical Workgroups: WG556390

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
08-FEB-2016
Tiffany Bailey

Secondary Reviewer:
08-FEB-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-08-2016 14:34:47

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG556390

Login Number: L16020210

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW04-020316	01	02/03/16					02/05/2016	2.5	14		02/05/16	2.5	14	
46WW10-020316	02	02/03/16					02/05/2016	2.5	14		02/05/16	2.5	14	
46WW08-020316	03	02/03/16					02/05/2016	2.5	14		02/05/16	2.5	14	
46WW03-020316	04	02/03/16					02/05/2016	2.4	14		02/05/16	2.4	14	
46WW03MS-020316	05	02/03/16					02/05/2016	2.3	14		02/05/16	2.3	14	
46WW03MSD-020316	06	02/03/16					02/05/2016	2.3	14		02/05/16	2.3	14	
46SW10-020316	07	02/03/16					02/05/2016	2.4	14		02/05/16	2.4	14	
TRIP BLANK	08	02/03/16					02/05/2016	2.7	14		02/05/16	2.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4621919
Report generated 02/08/2016 14:29

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16020210
Instrument Id: HPMS8
Workgroup (AAB#): WG556390

Method: 8260
CAL ID: HPMS8-04-FEB-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16020210-01	1.00	01	97.7	96.7	97.5	96.2
L16020210-02	1.00	01	96.6	95.9	96.3	96.4
L16020210-03	1.00	01	97.4	95.6	96.2	95.6
L16020210-04	1.00	01	96.2	95.4	96.5	96.2
L16020210-05	1.00	01	96.3	95.5	92.9	94.7
L16020210-06	1.00	01	95.3	92.3	94.3	94.7
L16020210-07	1.00	01	100	97.1	94.7	95.5
L16020210-08	1.00	01	97.3	94.9	96.0	96.4
WG556390-01	1.00	01	96.9	95.5	96.0	96.5
WG556390-02	1.00	01	96.5	92.8	95.9	94.3
WG556390-06	1.00	01	95.0	95.1	95.5	95.0
WG556390-07	1.00	01	93.2	93.0	95.6	96.8

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4621924
Report generated: 02/08/2016 14:29

METHOD BLANK SUMMARY

Login Number: L16020210
Blank File ID: 8M409973
Prep Date: 02/05/16 12:22
Analyzed Date: 02/05/16 12:22
Analyst: TMB

Work Group: WG556390
Blank Sample ID: WG556390-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG556390-02	8M409980	02/05/16 15:46	01
46WW03MS-020316	L16020210-05	8M409981	02/05/16 16:15	01
46WW03MSD-020316	L16020210-06	8M409982	02/05/16 16:45	01
TRIP BLANK	L16020210-08	8M409984	02/05/16 17:44	01
46WW03-020316	L16020210-04	8M409988	02/05/16 19:40	01
46WW04-020316	L16020210-01	8M409989	02/05/16 20:09	01
46WW10-020316	L16020210-02	8M409990	02/05/16 20:38	01
46WW08-020316	L16020210-03	8M409991	02/05/16 21:07	01
46SW10-020316	L16020210-07	8M409992	02/05/16 21:35	01
LCS2	WG556390-07	8M409994	02/05/16 22:35	01

Report Name: BLANK_SUMMARY
PDF File ID: 4622342
Report generated 02/08/2016 14:29

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020210 Prep Date: 02/05/16 12:22 Sample ID: WG556390-01
Instrument ID: HPMS8 Run Date: 02/05/16 12:22 Prep Method: 5030B/5030C/503
File ID: 8M409973 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG556390 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-04-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4622343
08-FEB-2016 14:29

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16020210 Prep Date: 02/05/16 12:22 Sample ID: WG556390-01
Instrument ID: HPMS8 Run Date: 02/05/16 12:22 Prep Method: 5030B/5030C/503
File ID: 8M409973 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG556390 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-04-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	95.5	85 - 115	PASS
1,2-Dichloroethane-d4	96.9	70 - 120	PASS
Toluene-d8	96.5	85 - 120	PASS
4-Bromofluorobenzene	96.0	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4622343
08-FEB-2016 14:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020210 | Run Date: 02/05/2016 | Sample ID: WG556390-02
Instrument ID: HPMS8 | Run Time: 15:46 | Prep Method: 5030B/5030C/503
File ID: 8M409980 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG556390 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD74617 | Cal ID: HPMS8-04-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	23.3	116	40 - 140	
Benzene	20.0	21.1	105	80 - 120	
Bromobenzene	20.0	20.2	101	75 - 125	
Bromochloromethane	20.0	20.2	101	65 - 130	
Bromodichloromethane	20.0	20.9	104	75 - 120	
Bromoform	20.0	20.2	101	70 - 130	
Bromomethane	20.0	20.9	104	30 - 145	
2-Butanone	20.0	23.0	115	30 - 150	
n-Butylbenzene	20.0	21.9	109	70 - 135	
sec-Butylbenzene	20.0	22.4	112	70 - 125	
tert-Butylbenzene	20.0	21.3	106	70 - 130	
Carbon disulfide	20.0	18.4	92.0	35 - 160	
Carbon tetrachloride	20.0	20.2	101	65 - 140	
Chlorobenzene	20.0	21.1	106	80 - 120	
Chlorodibromomethane	20.0	21.6	108	60 - 135	
Chloroethane	20.0	20.5	102	60 - 135	
Chloroform	20.0	20.0	100	65 - 135	
Chloromethane	20.0	21.4	107	40 - 125	
2-Chlorotoluene	20.0	22.2	111	75 - 125	
4-Chlorotoluene	20.0	20.4	102	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	23.0	115	50 - 130	
1,2-Dibromoethane	20.0	21.7	108	80 - 120	
Dibromomethane	20.0	20.5	102	75 - 125	
1,2-Dichlorobenzene	20.0	20.8	104	70 - 120	
1,3-Dichlorobenzene	20.0	20.9	104	75 - 125	
1,4-Dichlorobenzene	20.0	20.3	101	75 - 125	
Dichlorodifluoromethane	20.0	22.2	111	30 - 155	
1,1-Dichloroethane	20.0	19.6	98.0	70 - 135	
1,2-Dichloroethane	20.0	21.8	109	70 - 130	
1,1-Dichloroethene	20.0	19.8	99.0	70 - 130	
cis-1,2-Dichloroethene	20.0	20.6	103	70 - 125	
trans-1,2-Dichloroethene	20.0	20.1	101	60 - 140	
1,2-Dichloropropane	20.0	20.7	103	75 - 125	
1,3-Dichloropropane	20.0	23.1	115	75 - 125	
2,2-Dichloropropane	20.0	21.6	108	70 - 135	
cis-1,3-Dichloropropene	20.0	22.5	113	70 - 130	
trans-1,3-Dichloropropene	20.0	22.0	110	55 - 140	
1,1-Dichloropropene	20.0	19.5	97.6	75 - 130	
Ethylbenzene	20.0	20.1	100	75 - 125	
2-Hexanone	20.0	21.8	109	55 - 130	
Hexachlorobutadiene	20.0	20.4	102	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4621920
Report generated: 02/08/2016 11:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16020210 Run Date: 02/05/2016 Sample ID: WG556390-02
Instrument ID: HPMS8 Run Time: 15:46 Prep Method: 5030B/5030C/503
File ID: 8M409980 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG556390 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD74617 Cal ID: HPMS8-04-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.7	109	75 - 125	
p-Isopropyltoluene	20.0	21.2	106	75 - 130	
4-Methyl-2-pentanone	20.0	22.4	112	60 - 135	
Methylene chloride	20.0	20.3	102	55 - 140	
Naphthalene	20.0	20.0	99.8	55 - 140	
n-Propylbenzene	20.0	21.4	107	70 - 130	
Styrene	20.0	21.0	105	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.2	106	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	22.6	113	65 - 130	
Tetrachloroethene	20.0	19.7	98.6	45 - 150	
Toluene	20.0	20.9	105	75 - 120	
1,2,3-Trichlorobenzene	20.0	20.3	101	55 - 140	
1,2,4-Trichlorobenzene	20.0	21.3	106	65 - 135	
1,1,1-Trichloroethane	20.0	20.1	100	65 - 130	
1,1,2-Trichloroethane	20.0	21.7	109	75 - 125	
Trichloroethene	20.0	21.2	106	70 - 125	
Trichlorofluoromethane	20.0	19.8	98.9	60 - 145	
1,2,3-Trichloropropane	20.0	23.5	118	75 - 125	
1,2,4-Trimethylbenzene	20.0	21.4	107	75 - 130	
1,3,5-Trimethylbenzene	20.0	21.4	107	75 - 130	
Vinyl chloride	20.0	21.0	105	50 - 145	
o-Xylene	20.0	21.1	105	80 - 120	
m-,p-Xylene	40.0	42.2	105	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	92.8	85 - 115	PASS
1,2-Dichloroethane-d4	96.5	70 - 120	PASS
Toluene-d8	94.3	85 - 120	PASS
4-Bromofluorobenzene	95.9	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4621920
Report generated: 02/08/2016 11:51

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16020210 Cal ID: HPMS8- 04-FEB-16 Worknum: WG556390

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16020210-04 File ID: 8M409988 Dil: 1 Method: 5035A

Sample ID: L16020210-05 MS File ID: 8M409981 Dil: 1 Matrix: 8260B

Sample ID: L16020210-06 MSD File ID: 8M409982 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	20.6	103	20.0	20.2	101	2.15	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	20.1	100	20.0	19.0	94.9	5.54	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	22.8	114	20.0	22.1	111	2.78	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	21.6	108	20.0	21.0	105	2.75	75 - 125	30	
1,1-Dichloroethane	U	20.0	19.3	96.3	20.0	18.5	92.7	3.76	70 - 135	30	
1,1-Dichloroethene	U	20.0	19.3	96.6	20.0	18.2	91.1	5.86	70 - 130	30	
1,1-Dichloropropene	U	20.0	19.2	95.9	20.0	18.4	92.1	4.09	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	20.0	99.9	20.0	19.6	98	1.91	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	23.0	115	20.0	23.2	116	0.889	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	20.4	102	20.0	20.3	102	0.313	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	20.7	104	20.0	20.3	102	2.09	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	23.2	116	20.0	22.5	113	2.78	50 - 130	30	
1,2-Dibromoethane	U	20.0	22.0	110	20.0	20.8	104	5.24	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	20.4	102	20.0	20.2	101	0.806	70 - 120	30	
1,2-Dichloroethane	U	20.0	21.6	108	20.0	21.0	105	2.52	70 - 130	30	
1,2-Dichloropropane	U	20.0	21.0	105	20.0	20.0	100	4.62	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	20.7	104	20.0	20.5	102	1.30	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	20.4	102	20.0	20.3	102	0.119	75 - 125	30	
1,3-Dichloropropane	U	20.0	22.9	115	20.0	22.4	112	2.30	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	19.5	97.4	20.0	19.4	97.1	0.313	75 - 125	30	
2,2-Dichloropropane	U	20.0	22.6	113	20.0	21.1	106	6.61	70 - 135	30	
2-Butanone	U	20.0	23.3	117	20.0	22.0	110	5.87	30 - 150	30	
2-Chlorotoluene	U	20.0	19.0	95	20.0	18.7	93.3	1.82	75 - 125	30	
2-Hexanone	U	20.0	22.4	112	20.0	21.4	107	4.59	55 - 130	30	
4-Chlorotoluene	U	20.0	22.8	114	20.0	22.4	112	1.89	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	22.6	113	20.0	21.0	105	7.23	60 - 135	30	
Acetone	U	20.0	20.9	105	20.0	21.3	107	1.98	40 - 140	30	
Benzene	U	20.0	20.7	103	20.0	19.8	99	4.33	80 - 120	30	
Bromobenzene	U	20.0	19.7	98.5	20.0	19.5	97.5	1.07	75 - 125	30	
Bromochloromethane	U	20.0	20.2	101	20.0	19.6	98	3.10	65 - 130	30	
Bromodichloromethane	U	20.0	20.6	103	20.0	19.8	99.1	4.10	75 - 120	30	
Bromoform	U	20.0	20.4	102	20.0	20.0	100	1.85	70 - 130	30	
Bromomethane	U	20.0	21.3	106	20.0	20.3	101	4.83	30 - 145	30	
Carbon disulfide	U	20.0	18.1	90.7	20.0	17.5	87.5	3.52	35 - 160	30	
Carbon tetrachloride	U	20.0	20.1	101	20.0	19.1	95.4	5.24	65 - 140	30	
Chlorobenzene	U	20.0	20.8	104	20.0	20.4	102	2.13	80 - 120	30	
Chloroethane	U	20.0	20.4	102	20.0	19.7	98.3	3.54	60 - 135	30	
Chloroform	U	20.0	19.7	98.4	20.0	19.1	95.3	3.22	65 - 135	30	
Chloromethane	U	20.0	20.6	103	20.0	19.8	99.2	3.97	40 - 125	30	
cis-1,2-Dichloroethene	U	20.0	20.0	100	20.0	19.5	97.7	2.37	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	23.1	115	20.0	22.4	112	2.98	70 - 130	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4621937
Report generated 02/08/2016 14:29

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16020210 Cal ID: HPMS8 04-FEB-16 Worknum: WG556390

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16020210-04 File ID: 8M409988 Dil: 1 Method: 5035A

Sample ID: L16020210-05 MS File ID: 8M409981 Dil: 1 Matrix: 8260B

Sample ID: L16020210-06 MSD File ID: 8M409982 Dil: 1 Units: Water

ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	21.8	109	20.0	21.1	105	3.58	60 - 135	30	
Dibromomethane	U	20.0	20.4	102	20.0	19.4	97	5.04	75 - 125	30	
Dichlorodifluoromethane	U	20.0	22.8	114	20.0	21.1	105	7.74	30 - 155	30	
Ethylbenzene	U	20.0	20.0	100	20.0	19.3	96.6	3.56	75 - 125	30	
Hexachlorobutadiene	U	20.0	20.1	101	20.0	19.7	98.6	1.95	50 - 140	30	
Isopropylbenzene	U	20.0	21.3	107	20.0	20.9	104	2.11	75 - 125	30	
m-,p-Xylene	U	40.0	42.0	105	40.0	40.9	102	2.57	75 - 130	30	
Methylene chloride	U	20.0	20.4	102	20.0	20.1	100	1.88	55 - 140	30	
n-Butylbenzene	U	20.0	21.4	107	20.0	20.8	104	2.89	70 - 135	30	
n-Propylbenzene	U	20.0	20.7	104	20.0	20.5	102	1.04	70 - 130	30	
Naphthalene	U	20.0	19.9	99.6	20.0	19.4	97.1	2.61	55 - 140	30	
o-Xylene	U	20.0	20.9	104	20.0	20.2	101	3.37	80 - 120	30	
p-Isopropyltoluene	U	20.0	20.7	103	20.0	20.4	102	1.23	75 - 130	30	
sec-Butylbenzene	U	20.0	21.5	108	20.0	21.3	106	1.33	70 - 125	30	
Styrene	U	20.0	20.9	105	20.0	20.6	103	1.62	65 - 135	30	
tert-Butylbenzene	U	20.0	20.4	102	20.0	20.0	100	2.00	70 - 130	30	
Tetrachloroethene	U	20.0	20.0	100	20.0	18.8	94.2	5.98	45 - 150	30	
Toluene	U	20.0	20.4	102	20.0	19.9	99.7	2.06	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	20.0	100	20.0	19.2	95.8	4.42	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	22.2	111	20.0	21.6	108	2.56	55 - 140	30	
Trichloroethene	U	20.0	20.5	102	20.0	19.4	97.2	5.24	70 - 125	30	
Trichlorofluoromethane	U	20.0	20.1	101	20.0	18.6	92.8	8.05	60 - 145	30	
Vinyl chloride	U	20.0	20.4	102	20.0	19.6	97.8	4.04	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4621937
Report generated 02/08/2016 14:29

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16020210
Instrument: HPMS8
Analyst: TMB
Workgroup: WG540826

Tune ID: WG540826-01
Run Date: 10/05/2015
Run Time: 11:26
File ID: 8M407827
Cal ID: HPMS8 - 05-OCT-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.7	8565	PASS
75.0	95.0	30.0	60.0	52.2	18121	PASS
95.0	95.0	100	100	100	34714	PASS
96.0	95.0	5.00	9.00	6.52	2262	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	74.2	25773	PASS
175	174	5.00	9.00	7.16	1845	PASS
176	174	95.0	101	98.5	25378	PASS
177	176	5.00	9.00	6.88	1746	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG540826-02	STD	01	10/05/2015 11:49	
WG540826-03	STD	01	10/05/2015 12:17	
WG540826-04	STD	01	10/05/2015 12:51	
WG540826-05	STD-CCV	01	10/05/2015 13:20	
WG540826-06	STD	01	10/05/2015 13:49	
WG540826-07	STD	01	10/05/2015 14:17	
WG540826-08	STD	01	10/05/2015 14:47	
WG540826-09	STD	01	10/05/2015 15:15	
WG540826-10	SSCV	01	10/05/2015 16:48	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4621922
Report generated 02/08/2016 14:29

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16020210
Instrument: HPMS8
Analyst: TMB
Workgroup: WG556045

Tune ID: WG556045-01
Run Date: 02/04/2016
Run Time: 15:58
File ID: 8M409953
Cal ID: HPMS8 - 04-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.2	11071	PASS
75.0	95.0	30.0	60.0	50.3	23026	PASS
95.0	95.0	100	100	100	45760	PASS
96.0	95.0	5.00	9.00	6.48	2964	PASS
173	174	0	2.00	0.337	113	PASS
174	95.0	50.0	100	73.3	33533	PASS
175	174	5.00	9.00	7.23	2426	PASS
176	174	95.0	101	95.4	31978	PASS
177	176	5.00	9.00	6.18	1976	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG556045-02	STD	01	02/04/2016 16:21	
WG556045-03	STD	01	02/04/2016 16:50	
WG556045-04	STD	01	02/04/2016 17:19	
WG556045-05	STD	01	02/04/2016 17:48	
WG556045-06	STD	01	02/04/2016 18:17	
WG556045-07	STD	01	02/04/2016 18:45	
WG556045-08	STD-CCV	01	02/04/2016 19:14	
WG556045-09	STD	01	02/04/2016 19:43	
WG556045-10	STD	01	02/04/2016 20:11	
WG556045-11	STD	01	02/04/2016 20:40	
WG556045-12	SSCV	01	02/04/2016 22:05	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4621922
Report generated 02/08/2016 14:29

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16020210
Instrument: HPMS8
Analyst: TMB
Workgroup: WG556389

Tune ID: WG556389-01
Run Date: 02/05/2016
Run Time: 10:28
File ID: 8M409969
Cal ID: HPMS8 - 04-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.2	10591	PASS
75.0	95.0	30.0	60.0	49.5	22634	PASS
95.0	95.0	100	100	100	45704	PASS
96.0	95.0	5.00	9.00	6.37	2912	PASS
173	174	0	2.00	0.344	104	PASS
174	95.0	50.0	100	66.2	30259	PASS
175	174	5.00	9.00	7.44	2252	PASS
176	174	95.0	101	99.5	30103	PASS
177	176	5.00	9.00	6.59	1985	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG556389-02	CCV	01	02/05/2016 11:24	
WG556390-01	BLANK	01	02/05/2016 12:22	
WG556390-02	LCS	01	02/05/2016 15:46	
L16020210-05	46WW03MS-020316	01	02/05/2016 16:15	
L16020210-06	46WW03MSD-020316	01	02/05/2016 16:45	
L16020210-08	TRIP BLANK	01	02/05/2016 17:44	
L16020210-04	46WW03-020316	01	02/05/2016 19:40	
L16020210-01	46WW04-020316	01	02/05/2016 20:09	
L16020210-02	46WW10-020316	01	02/05/2016 20:38	
L16020210-03	46WW08-020316	01	02/05/2016 21:07	
L16020210-07	46SW10-020316	01	02/05/2016 21:35	
WG556390-07	LCS2	01	02/05/2016 22:35	*
WG556390-06	BLANK2	01	02/05/2016 23:32	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4621922
Report generated 02/08/2016 14:29

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Calibration: Tue Oct 06 11:55:21 2015
Curve: WG540826
Calibration Files

	Compound	5 8M407828.D	20 8M407829.D	50 8M407830.D	100 8M407831.D	200 8M407832.D	300 8M407833.D	400 8M407834.D	500 8M407835.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.020	0.019	0.020	0.019	0.019	0.019	0.019	0.019	0.019	3.019
T	3-Chloro-1-propene	0.474	0.484	0.476	0.471	0.484	0.465	0.458	0.432	0.468	3.632
T	2-Chloro-1,3-butadiene	0.448	0.481	0.482	0.486	0.514	0.495	0.486	0.460	0.481	4.206
T	Ethyl Acetate	0.104	0.129	0.132	0.131	0.132	0.128	0.128	0.133	0.127	7.528
T	Methacrylonitrile	0.046	0.055	0.058	0.057	0.057	0.056	0.057	0.060	0.056	7.551
T	Isobutyl Alcohol			0.005	0.005	0.005	0.005	0.005	0.006	0.005	4.964
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.003	10.874
T	Methyl methacrylate	0.120	0.147	0.158	0.162	0.162	0.158	0.160	0.165	0.154	9.638
T	2-Nitropropane			0.021	0.022	0.025	0.026	0.029	0.031	0.026	14.916
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.057	0.052	0.054	0.051	0.052	0.054	0.053	3.733

Tue Oct 06 11:57:17 2015

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Calibration: Fri Feb 05 09:41:10 2016
Curve: WG556045
Calibration Files

	Compound	0.3 8M409954.D	0.4 8M409955.D	1 8M409956.D	2 8M409957.D	5 8M409958.D	20 8M409959.D	50 8M409960.D	100 8M409961.D	200 8M409962.D	300 8M409963.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.329	0.353	0.336	0.335	0.412	0.384	0.373	0.389	0.378	0.365	7.867		
P	Chloromethane			0.586	0.524	0.517	0.562	0.503	0.472	0.473	0.436	0.509	9.690		
C	Vinyl Chloride		0.360	0.369	0.335	0.322	0.350	0.313	0.289	0.290	0.270	0.322	10.727		
T	1,3-Butadiene					0.317	0.353	0.263	0.180	0.155	0.141	0.235	38.034		1.000
T	Bromomethane			0.183	0.175	0.183	0.202	0.197	0.199	0.218	0.220	0.197	8.308		
T	Chloroethane		0.196	0.198	0.198	0.197	0.213	0.198	0.196	0.210	0.211	0.202	3.548		
T	Trichlorofluoromethane		0.458	0.448	0.433	0.429	0.456	0.426	0.415	0.431	0.431	0.436	3.321		
T	Diethyl ether			0.154	0.177	0.165	0.163	0.159	0.170		0.165	0.165	4.447		
T	Isoprene		0.328	0.320	0.325	0.320	0.357	0.331	0.358	0.355	0.347	0.338	4.769		
T	Acrolein			0.016	0.016	0.016	0.017	0.016	0.018		0.019	0.017	7.692		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.222	0.210	0.230	0.233	0.226	0.223	0.239	0.241	0.228	4.472		
T	Acetone					0.062	0.047	0.045	0.037	0.040	0.038	0.045	21.344	0.997	
C	1,1-Dichloroethene		0.460	0.449	0.444	0.448	0.469	0.444	0.430	0.452	0.441	0.449	2.488		
T	Tert-Butyl Alcohol				0.012	0.011	0.010	0.010	0.010		0.010	0.011	7.021		
T	Dimethyl Sulfide		0.182	0.225	0.213	0.202	0.229	0.211	0.223	0.223	0.220	0.214	6.844		
T	Iodomethane			0.191	0.194	0.196	0.206	0.186	0.190	0.184	0.174	0.190	5.023		
T	Methyl acetate					0.139	0.131	0.121	0.129	0.122	0.123	0.127	5.506		
T	Methylene Chloride			0.253	0.243	0.236	0.251	0.241	0.234	0.243	0.242	0.243	2.752		
T	Carbon Disulfide			0.871	0.793	0.784	0.865	0.781	0.813	0.783	0.729	0.802	5.843		
T	Acrylonitrile			0.054	0.060	0.058	0.060	0.061	0.065		0.071	0.061	8.692		
T	Methyl Tert Butyl Ether			0.486	0.500	0.471	0.518	0.482	0.474	0.476	0.467	0.484	3.534		
T	trans-1,2-Dichloroethene		0.494	0.458	0.431	0.431	0.452	0.430	0.415	0.428	0.415	0.439	5.707		
T	n-Hexane					0.370	0.394	0.365	0.396	0.403	0.390	0.386	3.951		
T	Diisopropyl ether			0.921	1.048	0.989	0.975	0.946	0.966		0.891	0.962	5.244		
T	Vinyl Acetate				0.378	0.392	0.380	0.361	0.348	0.390	0.376	0.375	4.163		
P	1,1-Dichloroethane		0.531	0.563	0.537	0.527	0.556	0.532	0.514	0.523	0.505	0.532	3.472		
T	Ethyl-Tert-Butyl ether			0.722	0.830	0.778	0.774	0.742	0.767		0.713	0.761	5.192		
T	2-Butanone					0.066	0.069	0.067	0.064	0.064	0.065	0.066	3.174		
T	Propionitrile			0.017	0.021	0.020	0.020	0.019	0.021		0.021	0.020	7.618		
T	2,2-Dichloropropane		0.451	0.415	0.370	0.386	0.402	0.373	0.358	0.379	0.370	0.389	7.511		
T	cis-1,2-Dichloroethene		0.282	0.310	0.275	0.267	0.284	0.270	0.262	0.272	0.270	0.277	5.104		
C	Chloroform	0.513	0.525	0.475	0.480	0.447	0.478	0.451	0.434	0.435	0.417	0.465	7.543		
T	1-Bromopropane			0.035	0.037	0.038	0.042	0.039	0.042	0.042	0.041	0.039	7.001		
T	Bromochloromethane		0.130	0.142	0.141	0.137	0.142	0.136	0.134	0.136	0.134	0.137	2.995		
T	Tetrahydrofuran			0.044	0.046	0.042	0.042	0.041	0.044		0.042	0.043	3.698		
S	Dibromofluoromethane			0.263	0.259	0.258	0.249	0.247	0.247	0.246	0.247	0.252	2.629		
T	1,1,1-Trichloroethane		0.433	0.440	0.421	0.413	0.429	0.403	0.391	0.403	0.392	0.414	4.309		
T	Cyclohexane			0.536	0.501	0.504	0.557	0.516	0.552	0.552	0.532	0.531	4.168		
T	1,1-Dichloropropene			0.395	0.356	0.373	0.377	0.358	0.346	0.360	0.352	0.365	4.464		
T	Tert-Amyl-Methyl ether			0.480	0.566	0.526	0.523	0.503	0.525		0.496	0.517	5.319		
T	Carbon Tetrachloride		0.382	0.384	0.359	0.358	0.387	0.366	0.351	0.369	0.358	0.3685	3.55572		
S	1,2-Dichloroethane-d4			0.269	0.274	0.272	0.268	0.255	0.255	0.248	0.247	0.2609	4.18079		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.315	0.341	0.345	0.328	0.351	0.331	0.319	0.316	0.305	0.328	4.72589		
T	Benzene		1.026	1.042	1.025	0.983	1.047	0.981	0.928	0.897	0.806	0.9705	8.26821		
T	Trichloroethene		0.237	0.255	0.248	0.252	0.27	0.253	0.247	0.255	0.253	0.2523	3.39681		
T	Methylcyclohexane					0.363	0.399	0.37	0.398	0.395	0.385	0.385	3.92843		
C	1,2-Dichloropropane		0.283	0.28	0.284	0.277	0.294	0.281	0.276	0.286	0.282	0.2824	1.86519		
T	Bromodichloromethane		0.351	0.348	0.351	0.332	0.361	0.337	0.33	0.331	0.32	0.34	3.91575		
T	1,4-Dioxane				0.001	0.001	0.001	0.001	0.001		0.001	0.0011	4.96006		
T	Dibromomethane		0.123	0.13	0.117	0.119	0.125	0.118	0.116	0.118	0.117	0.1201	3.90494		
T	2-Chloroethyl Vinyl Ether				0.109	0.112	0.127	0.12	0.116	0.118	0.119	0.1173	5.0677		
T	4-Methyl-2-Pentanone					0.047	0.058	0.055	0.055	0.055	0.056	0.0544	6.78802		
T	cis-1,3-Dichloropropene		0.396	0.364	0.384	0.375	0.401	0.381	0.372	0.375	0.36	0.3787	3.56169		

T	Dimethyl Disulfide					0.188	0.215	0.199	0.211	0.208	0.205	0.2044	4.64762
I	Chlorobenzene-d5	ISTD											
S	Toluene-d8			1.386	1.297	1.321	1.292	1.289	1.284	1.212	1.18	1.2827	4.93433
C	Toluene		1.608	1.568	1.493	1.482	1.547	1.47	1.392	1.275	1.106	1.4378	11.0699
T	Ethyl Methacrylate			0.258	0.278	0.266	0.301	0.28	0.291	0.274	0.266	0.2767	5.05873
T	Paraldehyde											0	0
T	trans-1,3-Dichloropropene			0.425	0.445	0.441	0.472	0.469	0.453	0.441	0.422	0.4458	4.06032
T	1,1,2-Trichloroethane		0.222	0.215	0.221	0.216	0.233	0.226	0.225	0.22	0.217	0.2217	2.49297
T	2-Hexanone					0.067	0.075	0.075	0.074	0.072	0.071	0.0723	4.41667
T	1,3-Dichloropropane		0.407	0.4	0.408	0.394	0.432	0.414	0.407	0.391	0.381	0.4037	3.63822
T	Tetrachloroethene		0.28	0.281	0.286	0.287	0.299	0.287	0.285	0.295	0.294	0.2882	2.1653
T	Dibromochloromethane		0.261	0.275	0.296	0.303	0.32	0.31	0.308	0.301	0.295	0.2966	6.07577
T	1,2-Dibromoethane		0.215	0.219	0.229	0.214	0.233	0.228	0.225	0.22	0.215	0.222	3.10803
T	1-Chlorohexane		0.521	0.501	0.471	0.48	0.52	0.482	0.51	0.489	0.464	0.4932	4.2486
P	Chlorobenzene		1.083	0.975	0.986	0.964	1.007	0.962	0.931	0.888	0.798	0.9549	8.31232
T	1,1,1,2-Tetrachloroethane		0.318	0.342	0.331	0.327	0.356	0.344	0.338	0.336	0.32	0.3347	3.61484
C	Ethylbenzene		0.537	0.593	0.528	0.555	0.564	0.54	0.538	0.55	0.52	0.5471	4.00676
T	m-,p-Xylene		0.705	0.671	0.647	0.67	0.687	0.652	0.629	0.585	0.504	0.6389	9.62331
T	o-Xylene			0.664	0.634	0.64	0.677	0.648	0.638	0.635	0.603	0.6423	3.40209
T	Styrene		1.035	1.074	1.042	1.067	1.12	1.071	1.049	0.989	0.887	1.037	6.40762
P	Bromoform			0.159	0.164	0.158	0.177	0.171	0.175	0.172	0.172	0.1684	4.3333
T	Isopropylbenzene		1.653	1.75	1.621	1.651	1.692	1.601	1.527	1.375	1.171	1.5601	11.6109
I	1,4-Dichlorobenzene-d4	ISTD											
P	1,1,2,2-Tetrachloroethane		0.444	0.464	0.467	0.471	0.488	0.471	0.471	0.473	0.457	0.4674	2.57973
S	p-Bromofluorobenzene				1.088	1.058	1.024	1.023	1.023	0.988	0.975	1.0256	3.76473
T	1,2,3-Trichloropropane			0.086	0.126	0.135	0.141	0.134	0.133	0.133	0.13	0.1272	13.4601
T	trans-1,4-Dichloro-2-Butene			0.144	0.162	0.185	0.199	0.185	0.193	0.192	0.187	0.1808	10.2267
T	n-Propylbenzene		4.282	4.137	3.906	4.04	4.075	3.746	3.515	3.026		3.8411	10.5952
T	Bromobenzene	0.857	0.753	0.735	0.732	0.731	0.753	0.726	0.718	0.73	0.707	0.7441	5.64535
T	1,3,5-Trimethylbenzene		2.956	2.983	2.818	2.79	2.883	2.714	2.638	2.427	2.084	2.6992	10.6328
T	2-Chlorotoluene		3.204	2.529	2.846	2.495	2.535	2.704	2.61	2.368	2.009	2.589	12.6541
T	4-Chlorotoluene		2.307	2.682	2.233	2.59	2.612	2.131	2.016	1.842		2.3016	13.2473
T	a-Methylstyrene					1.33	1.512	1.411	1.483	1.411	1.299	1.4078	5.9045
T	tert-Butylbenzene			0.551	0.54	0.55	0.56	0.538	0.534	0.56	0.551	0.548	1.78198
T	1,2,4-Trimethylbenzene		2.914	2.943	2.871	2.844	2.961	2.789	2.692	2.434	2.067	2.724	10.836
T	sec-Butylbenzene			3.523	3.293	3.396	3.449	3.249	3.075	2.784	2.35	3.14	12.6163
T	p-Isopropyltoluene			3	2.792	2.87	2.939	2.758	2.648	2.427	2.079	2.6892	11.3292
T	1,3-Dichlorobenzene		1.609	1.596	1.489	1.483	1.558	1.473	1.453	1.416	1.312	1.4876	6.22824
T	1,4-Dichlorobenzene	2.137	1.662	1.494	1.463	1.472	1.521	1.456	1.425	1.384		1.5572	14.8347
T	n-Butylbenzene			2.87	2.638	2.737	2.733	2.563	2.48	2.264	1.941	2.5284	11.8904
T	1,2-Dichlorobenzene	1.575	1.345	1.388	1.351	1.282	1.355	1.287	1.267	1.231	1.164	1.3243	8.34172
T	1,2-Dibromo-3-Chloropropane				0.079	0.085	0.095	0.088	0.091	0.087	0.086	0.0871	5.74525
T	1,2,4-Trichlorobenzene		0.998	0.973	0.93	0.923	0.955	0.904	0.906	0.893	0.854	0.9263	4.74698
T	Hexachlorobutadiene		0.451	0.437	0.37	0.398	0.402	0.386	0.387	0.402	0.397	0.4034	6.29656
T	Naphthalene		1.69	1.562	1.561	1.459	1.539	1.459	1.456	1.366	1.265	1.4839	8.3025
T	1,2,3-Trichlorobenzene	1.051	0.861	0.791	0.767	0.772	0.794	0.753	0.75	0.738	0.707	0.7984	12.2415

Fri Feb 05 11:33:09 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16020210 Run Date: 02/04/2016 Sample ID: WG556045-12
Instrument ID: HPMS8 Run Time: 22:05 Method: 8260B
File ID: 8M409966 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG556045 Cal ID: HPMS8 - 04-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.3	ug/L	0.449	3.50	20	
1,1-Dichloroethene	CCC	50.0	49.0	ug/L	0.439	2.00	20	
1,2-Dichloropropane	CCC	50.0	52.0	ug/L	0.294	4.10	20	
Ethylbenzene	CCC	50.0	51.2	ug/L	0.560	2.30	20	
Toluene	CCC	50.0	51.6	ug/L	1.48	3.20	20	
Vinyl Chloride	CCC	50.0	47.4	ug/L	0.306	5.10	20	
Bromoform	SPCC	50.0	48.8	ug/L	0.164	2.40	20	
Chlorobenzene	SPCC	50.0	52.3	ug/L	0.998	4.50	20	
Chloromethane	SPCC	50.0	50.1	ug/L	0.510	0.200	20	
1,1-Dichloroethane	SPCC	50.0	48.0	ug/L	0.511	4.00	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.4	ug/L	0.481	2.90	20	
Acetone		50.0	50.8	ug/L	0.0414	1.60	20	
Benzene		50.0	51.7	ug/L	1.00	3.50	20	
Bromobenzene		50.0	48.6	ug/L	0.723	2.80	20	
Bromochloromethane		50.0	48.6	ug/L	0.133	2.90	20	
Bromodichloromethane		50.0	49.1	ug/L	0.334	1.70	20	
Bromomethane		50.0	51.5	ug/L	0.203	3.00	20	
2-Butanone		50.0	50.2	ug/L	0.0661	0.300	20	
n-Butylbenzene		50.0	53.0	ug/L	2.68	6.00	20	
sec-Butylbenzene		50.0	55.0	ug/L	3.45	10.0	20	
tert-Butylbenzene		50.0	53.2	ug/L	0.583	6.40	20	
Carbon Disulfide		50.0	46.1	ug/L	0.739	7.90	20	
Carbon Tetrachloride		50.0	49.7	ug/L	0.367	0.500	20	
Dibromochloromethane		50.0	51.0	ug/L	0.303	2.00	20	
Chloroethane		50.0	53.3	ug/L	0.215	6.60	20	
2-Chlorotoluene		50.0	47.9	ug/L	2.48	4.20	20	
4-Chlorotoluene		50.0	55.2	ug/L	2.54	10.5	20	
1,2-Dibromo-3-Chloropropane		50.0	51.0	ug/L	0.0888	2.00	20	
1,2-Dibromoethane		50.0	50.7	ug/L	0.225	1.30	20	
Dibromomethane		50.0	46.9	ug/L	0.113	6.20	20	
1,2-Dichlorobenzene		50.0	50.1	ug/L	1.33	0.200	20	
1,3-Dichlorobenzene		50.0	51.2	ug/L	1.52	2.40	20	
1,4-Dichlorobenzene		50.0	48.8	ug/L	1.52	2.40	20	
Dichlorodifluoromethane		50.0	55.3	ug/L	0.404	10.5	20	
1,2-Dichloroethane		50.0	49.9	ug/L	0.327	0.200	20	
cis-1,2-Dichloroethene		50.0	50.1	ug/L	0.278	0.200	20	
trans-1,2-Dichloroethene		50.0	49.9	ug/L	0.438	0.300	20	
1,3-Dichloropropane		50.0	53.6	ug/L	0.433	7.20	20	
2,2-Dichloropropane		50.0	49.1	ug/L	0.382	1.80	20	
cis-1,3-Dichloropropene		50.0	55.1	ug/L	0.417	10.1	20	
trans-1,3-Dichloropropene		50.0	51.4	ug/L	0.458	2.70	20	
1,1-Dichloropropene		50.0	48.5	ug/L	0.354	2.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4621921
Report generated 02/08/2016 14:29

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16020210 Run Date: 02/04/2016 Sample ID: WG556045-12
Instrument ID: HPMS8 Run Time: 22:05 Method: 8260B
File ID: 8M409966 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG556045 Cal ID: HPMS8 - 04-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	49.9	ug/L	0.0722	0.200	20	
Hexachlorobutadiene		50.0	53.4	ug/L	0.431	6.80	20	
Isopropylbenzene		50.0	54.2	ug/L	1.69	8.40	20	
p-Isopropyltoluene		50.0	52.5	ug/L	2.82	5.00	20	
4-Methyl-2-Pentanone		50.0	50.6	ug/L	0.0551	1.20	20	
Methylene Chloride		50.0	50.4	ug/L	0.245	0.900	20	
Naphthalene		50.0	44.9	ug/L	1.33	10.3	20	
n-Propylbenzene		50.0	51.5	ug/L	3.95	2.90	20	
Styrene		50.0	53.2	ug/L	1.10	6.40	20	
1,1,1,2-Tetrachloroethane		50.0	51.9	ug/L	0.347	3.80	20	
Tetrachloroethene		50.0	50.3	ug/L	0.290	0.600	20	
1,2,3-Trichlorobenzene		50.0	46.6	ug/L	0.744	6.80	20	
1,2,4-Trichlorobenzene		50.0	49.2	ug/L	0.911	1.60	20	
1,1,1-Trichloroethane		50.0	49.5	ug/L	0.410	1.00	20	
1,1,2-Trichloroethane		50.0	50.5	ug/L	0.224	1.00	20	
Trichloroethene		50.0	52.7	ug/L	0.266	5.40	20	
Trichlorofluoromethane		50.0	48.0	ug/L	0.419	4.10	20	
1,2,3-Trichloropropane		50.0	53.9	ug/L	0.137	7.80	20	
1,2,4-Trimethylbenzene		50.0	52.3	ug/L	2.85	4.50	20	
1,3,5-Trimethylbenzene		50.0	53.1	ug/L	2.86	6.10	20	
o-Xylene		50.0	53.3	ug/L	0.685	6.70	20	
m-,p-Xylene		100	106	ug/L	0.680	6.50	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4621921
Report generated 02/08/2016 14:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020210 Run Date: 02/05/2016 Sample ID: WG556389-02
Instrument ID: HPMS8 Run Time: 11:24 Method: 8260B
File ID: 8M409971 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG556390 Cal ID: HPMS8 - 04-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.4	ug/L	0.450	3.25	20	
1,1-Dichloroethene	CCC	50.0	51.3	ug/L	0.460	2.60	20	
1,2-Dichloropropane	CCC	50.0	50.2	ug/L	0.284	0.455	20	
Ethylbenzene	CCC	50.0	51.4	ug/L	0.562	2.72	20	
Toluene	CCC	50.0	52.3	ug/L	1.50	4.58	20	
Vinyl Chloride	CCC	50.0	49.7	ug/L	0.320	0.574	20	
Bromoform	SPCC	50.0	49.8	ug/L	0.168	0.464	20	
Chlorobenzene	SPCC	50.0	51.3	ug/L	0.979	2.50	20	
Chloromethane	SPCC	50.0	49.5	ug/L	0.505	0.903	20	
1,1-Dichloroethane	SPCC	50.0	50.6	ug/L	0.539	1.28	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	50.8	ug/L	0.475	1.56	20	
Xylenes		150	157	ug/L	0.667	4.50	20	
Acetone		50.0	52.0	ug/L	0.0423	3.96	20	
Benzene		50.0	51.2	ug/L	0.994	2.46	20	
Bromobenzene		50.0	49.5	ug/L	0.737	0.924	20	
Bromochloromethane		50.0	49.9	ug/L	0.137	0.129	20	
Bromodichloromethane		50.0	49.3	ug/L	0.336	1.32	20	
Bromomethane		50.0	52.0	ug/L	0.205	4.09	20	
2-Butanone		50.0	50.6	ug/L	0.0666	1.20	20	
n-Butylbenzene		50.0	54.3	ug/L	2.74	8.50	20	
sec-Butylbenzene		50.0	54.3	ug/L	3.41	8.50	20	
tert-Butylbenzene		50.0	51.3	ug/L	0.562	2.50	20	
Carbon Disulfide		50.0	50.9	ug/L	0.817	1.76	20	
Carbon Tetrachloride		50.0	50.7	ug/L	0.374	1.39	20	
Dibromochloromethane		50.0	52.0	ug/L	0.308	3.96	20	
Chloroethane		50.0	51.5	ug/L	0.208	2.93	20	
2-Chlorotoluene		50.0	46.3	ug/L	2.40	7.42	20	
4-Chlorotoluene		50.0	54.6	ug/L	2.51	9.11	20	
1,2-Dibromo-3-Chloropropane		50.0	49.2	ug/L	0.0857	1.58	20	
1,2-Dibromoethane		50.0	50.6	ug/L	0.225	1.28	20	
Dibromomethane		50.0	48.5	ug/L	0.116	3.08	20	
1,2-Dichlorobenzene		50.0	49.3	ug/L	1.31	1.34	20	
1,3-Dichlorobenzene		50.0	51.1	ug/L	1.52	2.15	20	
1,4-Dichlorobenzene		50.0	47.3	ug/L	1.47	5.37	20	
Dichlorodifluoromethane		50.0	55.3	ug/L	0.404	10.6	20	
1,2-Dichloroethane		50.0	49.3	ug/L	0.324	1.30	20	
cis-1,2-Dichloroethene		50.0	49.4	ug/L	0.274	1.22	20	
trans-1,2-Dichloroethene		50.0	50.2	ug/L	0.441	0.392	20	
1,3-Dichloropropane		50.0	50.6	ug/L	0.409	1.24	20	
2,2-Dichloropropane		50.0	55.5	ug/L	0.432	10.9	20	
cis-1,3-Dichloropropene		50.0	51.1	ug/L	0.387	2.16	20	
trans-1,3-Dichloropropene		50.0	53.2	ug/L	0.474	6.32	20	

CCV - Modified 03/05/2008
PDF File ID: 4621923
Report generated 02/08/2016 14:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16020210 Run Date: 02/05/2016 Sample ID: WG556389-02
Instrument ID: HPMS8 Run Time: 11:24 Method: 8260B
File ID: 8M409971 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG556390 Cal ID: HPMS8 - 04-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.3	ug/L	0.367	0.656	20	
2-Hexanone		50.0	51.9	ug/L	0.0751	3.84	20	
Hexachlorobutadiene		50.0	51.7	ug/L	0.417	3.45	20	
Isopropylbenzene		50.0	53.3	ug/L	1.66	6.69	20	
p-Isopropyltoluene		50.0	53.9	ug/L	2.90	7.79	20	
4-Methyl-2-Pentanone		50.0	50.3	ug/L	0.0547	0.512	20	
Methylene Chloride		50.0	49.6	ug/L	0.241	0.795	20	
Naphthalene		50.0	50.2	ug/L	1.49	0.321	20	
n-Propylbenzene		50.0	51.2	ug/L	3.93	2.31	20	
Styrene		50.0	52.5	ug/L	1.09	4.96	20	
1,1,1,2-Tetrachloroethane		50.0	52.1	ug/L	0.349	4.25	20	
Tetrachloroethene		50.0	52.5	ug/L	0.303	5.01	20	
1,2,3-Trichlorobenzene		50.0	47.8	ug/L	0.763	4.49	20	
1,2,4-Trichlorobenzene		50.0	50.9	ug/L	0.942	1.74	20	
1,1,1-Trichloroethane		50.0	49.6	ug/L	0.411	0.731	20	
1,1,2-Trichloroethane		50.0	51.1	ug/L	0.226	2.13	20	
Trichloroethene		50.0	50.7	ug/L	0.256	1.45	20	
Trichlorofluoromethane		50.0	50.6	ug/L	0.442	1.29	20	
1,2,3-Trichloropropane		50.0	50.7	ug/L	0.129	1.41	20	
1,2,4-Trimethylbenzene		50.0	52.7	ug/L	2.87	5.39	20	
1,3,5-Trimethylbenzene		50.0	52.3	ug/L	2.82	4.53	20	
o-Xylene		50.0	51.4	ug/L	0.661	2.86	20	
m-,p-Xylene		100	105	ug/L	0.673	5.31	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4621923
Report generated 02/08/2016 14:29

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16020210
Instrument ID: HPMS8
Workgroup (AAB#): WG556390

ICAL CCV Number: WG556045-08
CAL ID: HPMS8 - 04-FEB-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG556045-08	NA	NA	317039	618667	911654
Upper Limit	NA	NA	634078	1237334	1823308
Lower Limit	NA	NA	158520	309334	455827
L16020210-01	1.00	01	284378	581914	832895
L16020210-02	1.00	01	287071	573128	828322
L16020210-03	1.00	01	281241	562120	808363
L16020210-04	1.00	01	287052	580191	845420
L16020210-05	1.00	01	322815	625050	899640
L16020210-06	1.00	01	317430	624667	905790
L16020210-07	1.00	01	286499	564640	806576
L16020210-08	1.00	01	293998	593157	856050
WG556390-01	1.00	01	323400	647374	930483
WG556390-02	1.00	01	313097	621707	901000
WG556390-07	1.00	01	289802	573381	848438

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4622345
Report generated 02/08/2016 14:29

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16020210
Instrument ID: HPMS8
Workgroup (AAB#): WG556390

ICAL CCV Number: WG556045-08
CAL ID: HPMS8 - 04-FEB-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG556045-08	NA	NA	17.6	14.57	10.71
Upper Limit	NA	NA	18.1	15.07	11.21
Lower Limit	NA	NA	17.1	14.07	10.21
L16020210-01	1.00	01	17.59	14.57	10.71
L16020210-02	1.00	01	17.59	14.58	10.71
L16020210-03	1.00	01	17.59	14.57	10.71
L16020210-04	1.00	01	17.59	14.57	10.71
L16020210-05	1.00	01	17.59	14.57	10.71
L16020210-06	1.00	01	17.6	14.57	10.71
L16020210-07	1.00	01	17.59	14.57	10.71
L16020210-08	1.00	01	17.6	14.57	10.71
WG556390-01	1.00	01	17.59	14.57	10.71
WG556390-02	1.00	01	17.6	14.57	10.71
WG556390-07	1.00	01	17.59	14.58	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4622346
Report generated: 02/08/2016 14:29

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020516\8M409989.D Vial: 21
Acq On : 5 Feb 2016 20:09 Operator: TMB
Sample : L16020210-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 08 08:34:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	832895	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	581914	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	284378	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	202811	24.1696 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.68%		
43) 1,2-Dichloroethane-d4	10.30	65	212369	24.4294 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.72%		
58) Toluene-d8	12.68	98	718442	24.0624 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.24%		
80) p-Bromofluorobenzene	16.07	95	284297	24.3687 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.48%		

Target Compounds					Qvalue
13) Acetone	6.27	43	721	Below Cal	# 48

(#) = qualifier out of range (m) = manual integration
8M409989.D 8260WT.M Mon Feb 08 08:34:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020516\8M409989.D Vial: 21
Acq On : 5 Feb 2016 20:09 Operator: TMB
Sample : L16020210-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 8:34 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

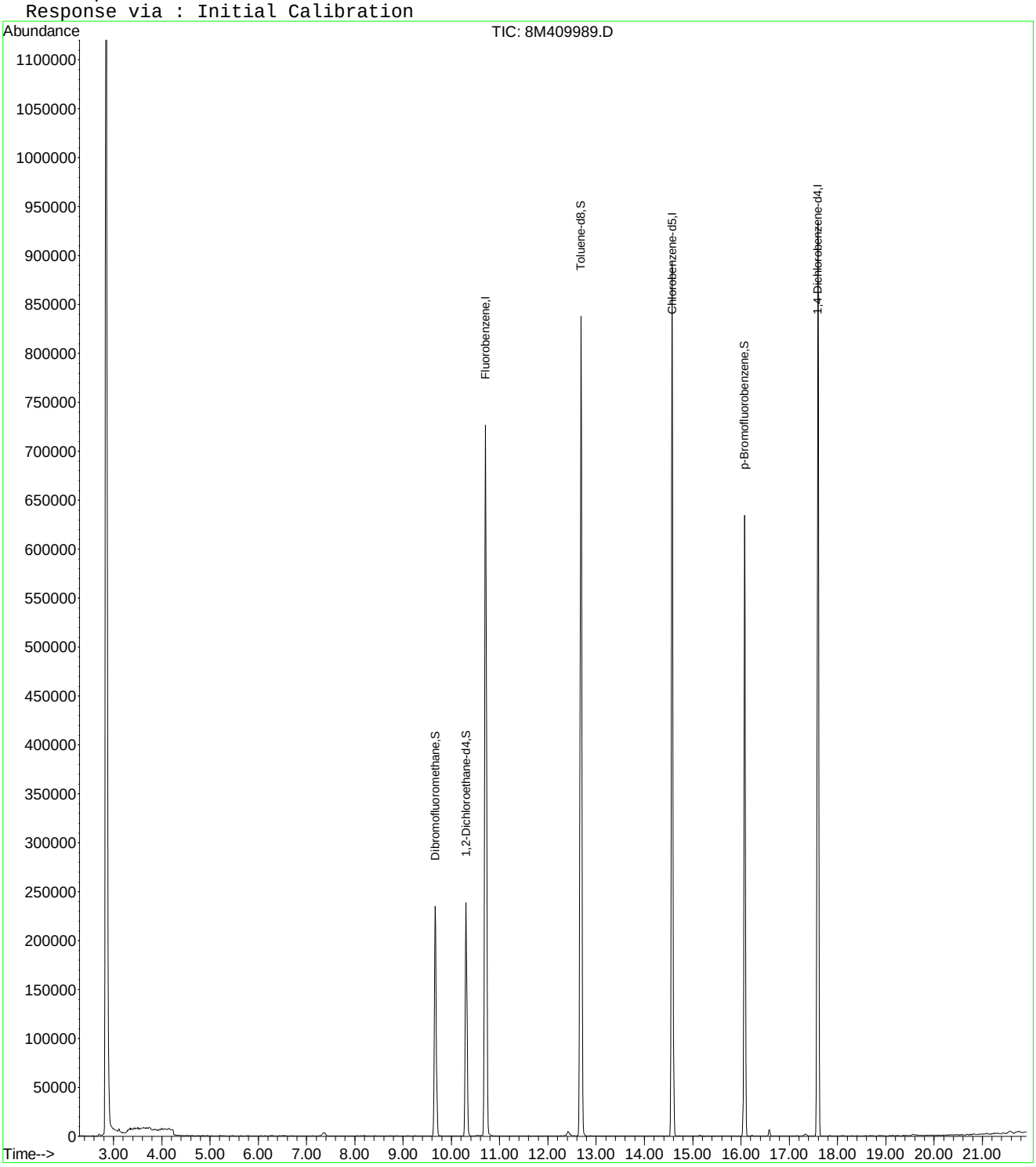

8M409989.D 8260WT.M Mon Feb 08 08:34:33 2016 Page 2

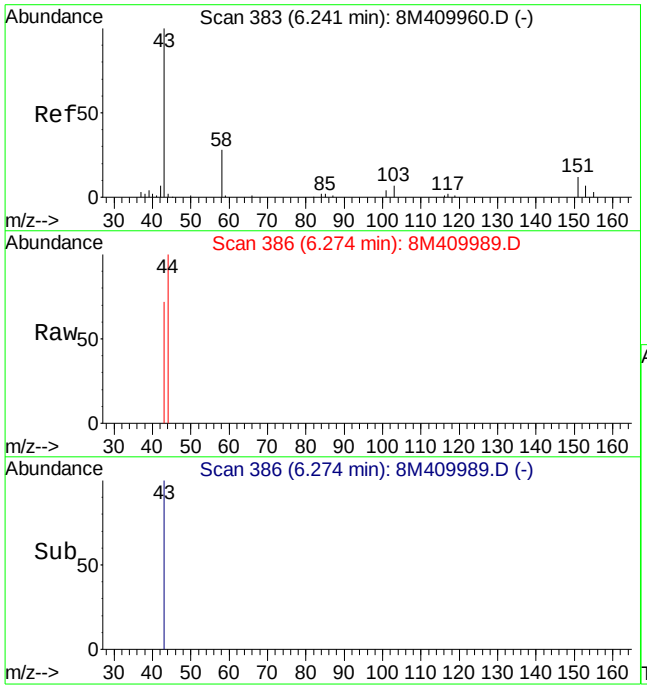

#13
Acetone
Concen: Below Cal
RT: 6.27 min Scan# 386
Delta R.T. 0.03 min
Lab File: 8M409989.D
Acq: 5 Feb 2016 20:09

Tgt Ion: 43 Resp: 721

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.2	37.8#

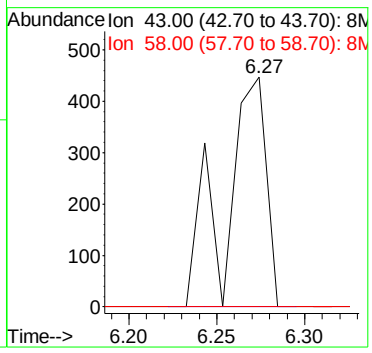

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020516\8M409990.D Vial: 22
Acq On : 5 Feb 2016 20:38 Operator: TMB
Sample : L16020210-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 08 08:34:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828322	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	573128	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	287071	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	200076	23.9753 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.92%		
43) 1,2-Dichloroethane-d4	10.31	65	208819	24.1537 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.60%		
58) Toluene-d8	12.68	98	708938	24.1081 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.44%		
80) p-Bromofluorobenzene	16.07	95	283507	24.0730 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.28%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M409990.D 8260WT.M Mon Feb 08 08:34:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020516\8M409990.D Vial: 22
Acq On : 5 Feb 2016 20:38 Operator: TMB
Sample : L16020210-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 8:34 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

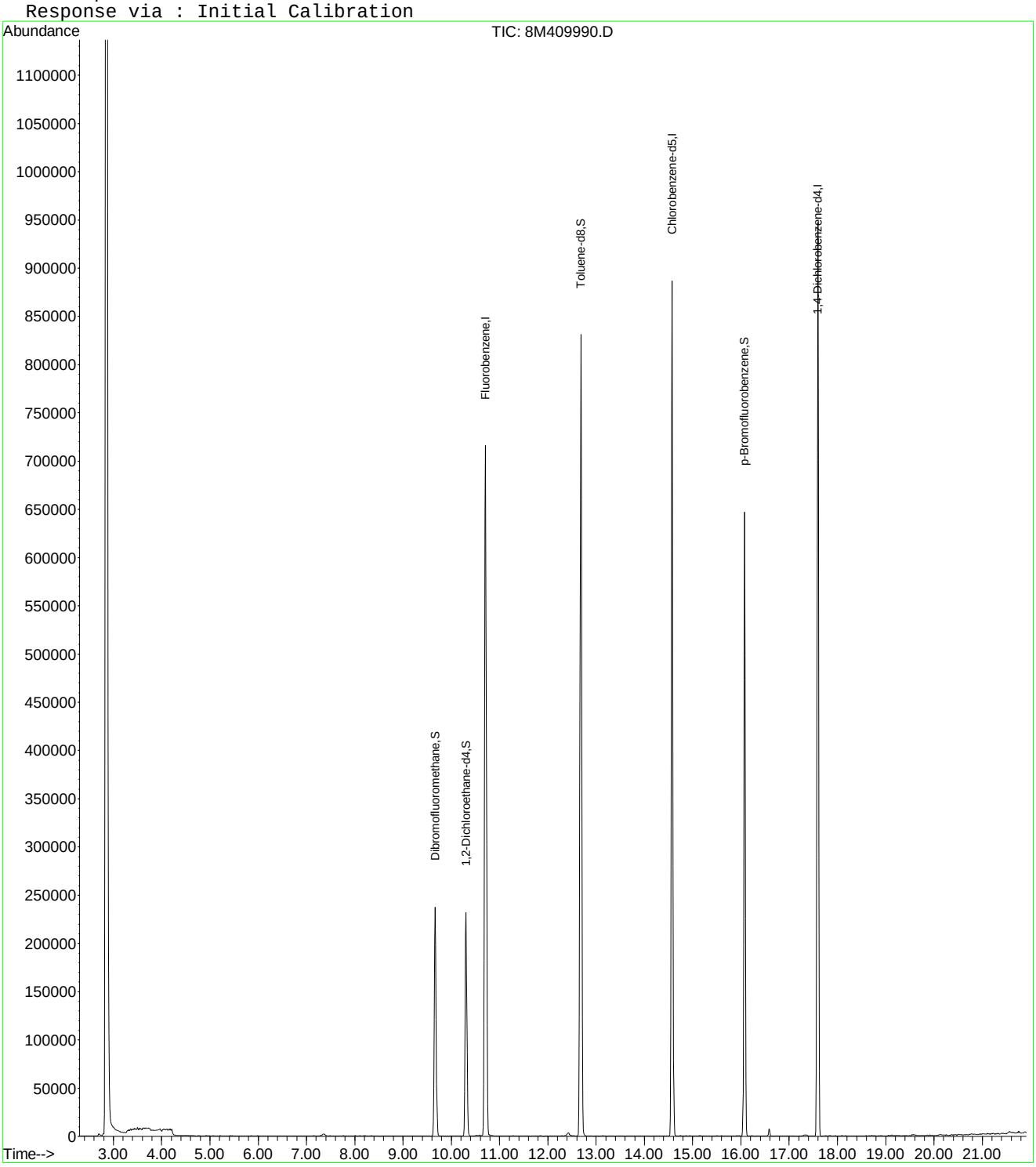

8M409990.D 8260WT.M Mon Feb 08 08:34:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020516\8M409991.D Vial: 23
Acq On : 5 Feb 2016 21:07 Operator: TMB
Sample : L16020210-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 08 08:34:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	808363	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	562120	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	281241	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	194638	23.8995 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.60%		
43) 1,2-Dichloroethane-d4	10.31	65	205447	24.3504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.40%		
58) Toluene-d8	12.68	98	689621	23.9105 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.64%		
80) p-Bromofluorobenzene	16.07	95	277393	24.0421 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.16%		

Target Compounds

					Qvalue
13) Acetone	6.24	43	3429	Below Cal	# 62
29) 2-Butanone	8.88	43	766	0.3598 ug/L	# 57

(#) = qualifier out of range (m) = manual integration
8M409991.D 8260WT.M Mon Feb 08 08:34:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020516\8M409991.D Vial: 23
Acq On : 5 Feb 2016 21:07 Operator: TMB
Sample : L16020210-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 8:34 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

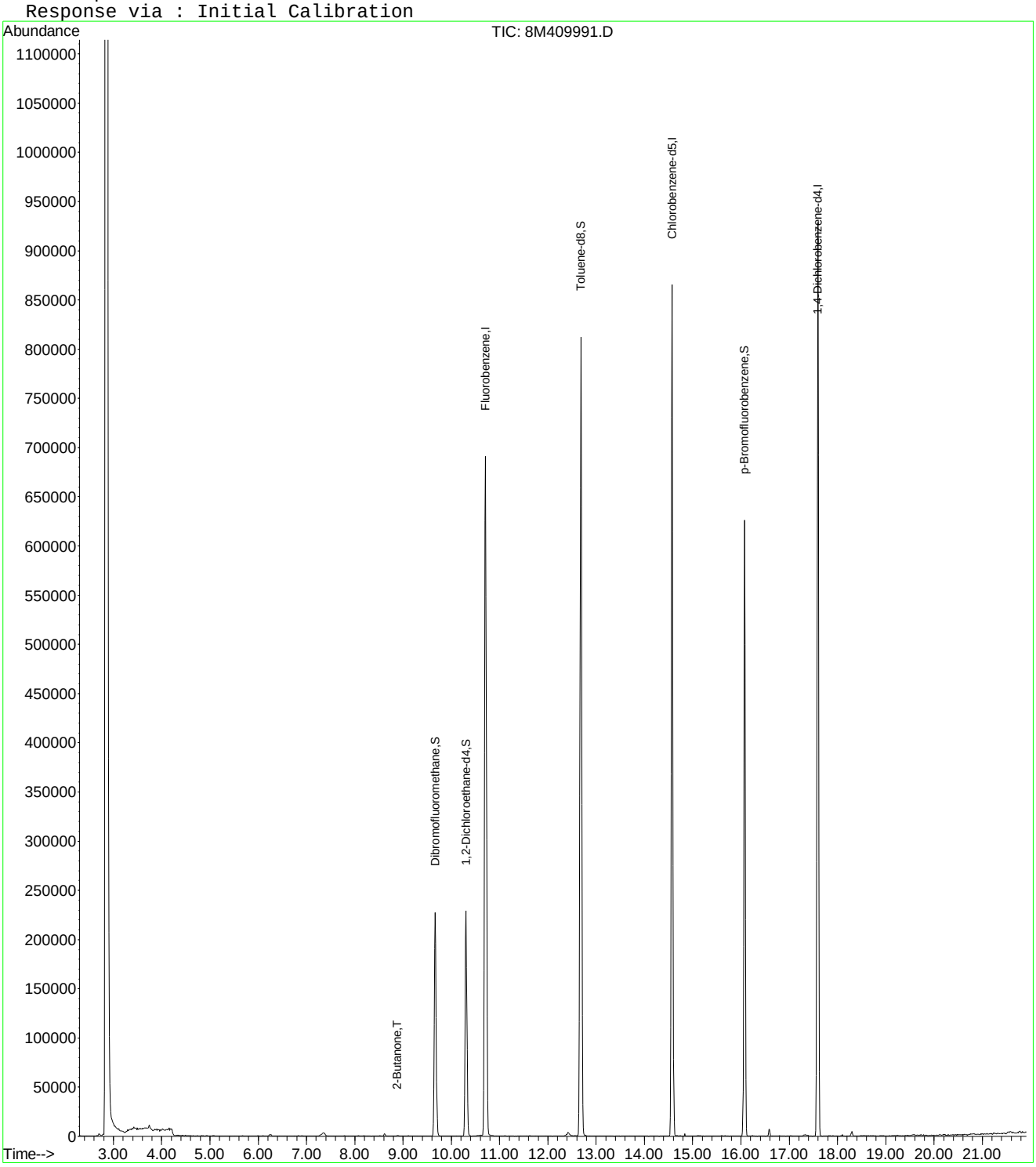

8M409991.D 8260WT.M Mon Feb 08 08:34:35 2016 Page 2

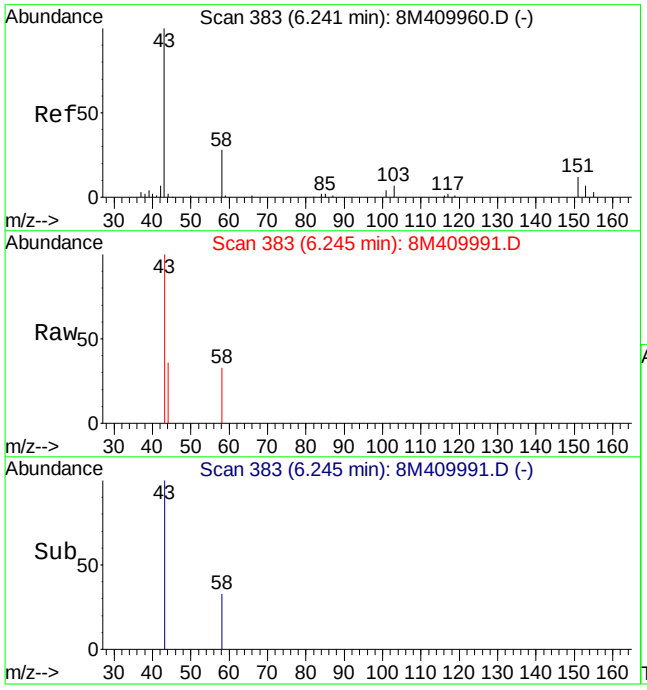

#13
Acetone
Concen: Below Cal
RT: 6.24 min Scan# 383
Delta R.T. 0.00 min
Lab File: 8M409991.D
Acq: 5 Feb 2016 21:07

Tgt Ion: 43 Resp: 3429

Ion	Ratio	Lower	Upper
43	100		
58	7.2	16.2	37.8#

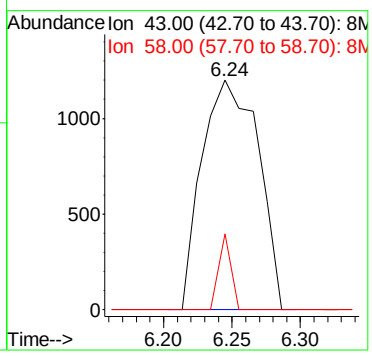

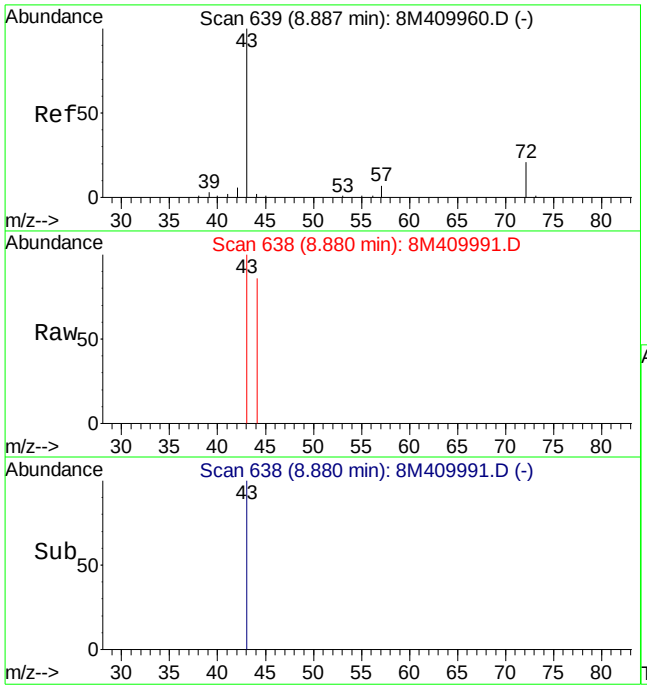

#29
2-Butanone
Concen: 0.36 ug/L
RT: 8.88 min Scan# 638
Delta R.T. 0.00 min
Lab File: 8M409991.D
Acq: 5 Feb 2016 21:07

Tgt Ion: 43 Resp: 766

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.6	27.2#

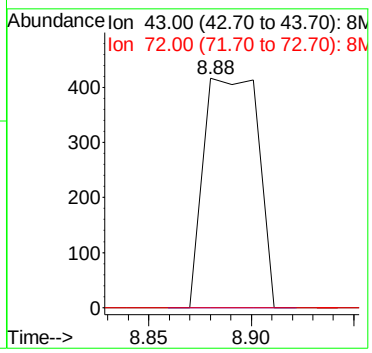

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020516\8M409988.D Vial: 20
Acq On : 5 Feb 2016 19:40 Operator: TMB
Sample : L16020210-04 A REF 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 08 08:34:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	845420	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	580191	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	287052	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	203042	23.8386 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.36%		
43) 1,2-Dichloroethane-d4	10.30	65	212268	24.0560 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.24%		
58) Toluene-d8	12.68	98	715657	24.0403 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.16%		
80) p-Bromofluorobenzene	16.07	95	284096	24.1246 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.48%		

Target Compounds					Qvalue
13) Acetone	6.26	43	427	Below Cal	# 48

(#) = qualifier out of range (m) = manual integration
8M409988.D 8260WT.M Mon Feb 08 08:34:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020516\8M409988.D Vial: 20
Acq On : 5 Feb 2016 19:40 Operator: TMB
Sample : L16020210-04 A REF 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 8:34 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

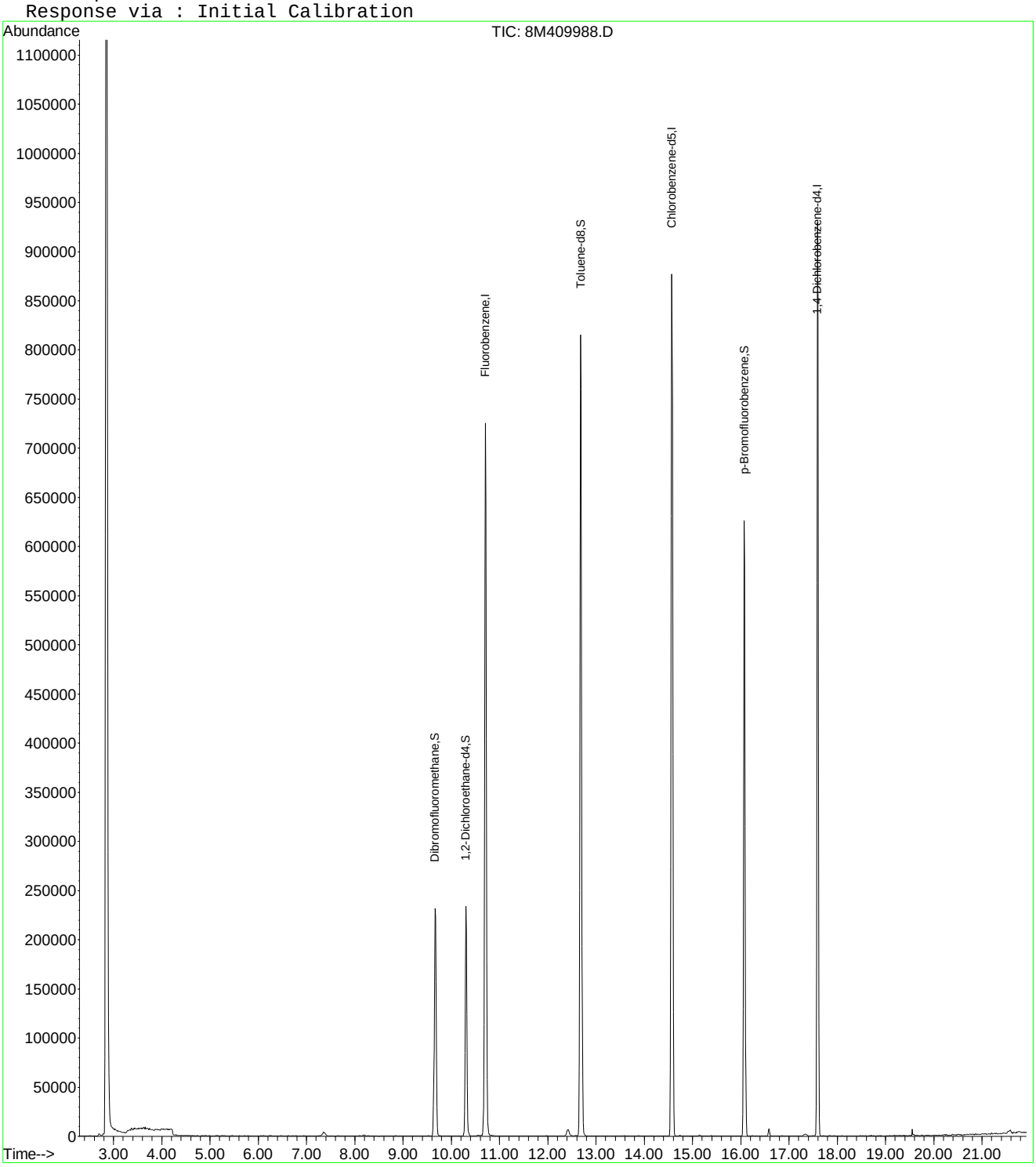

8M409988.D 8260WT.M Mon Feb 08 08:34:32 2016 Page 2

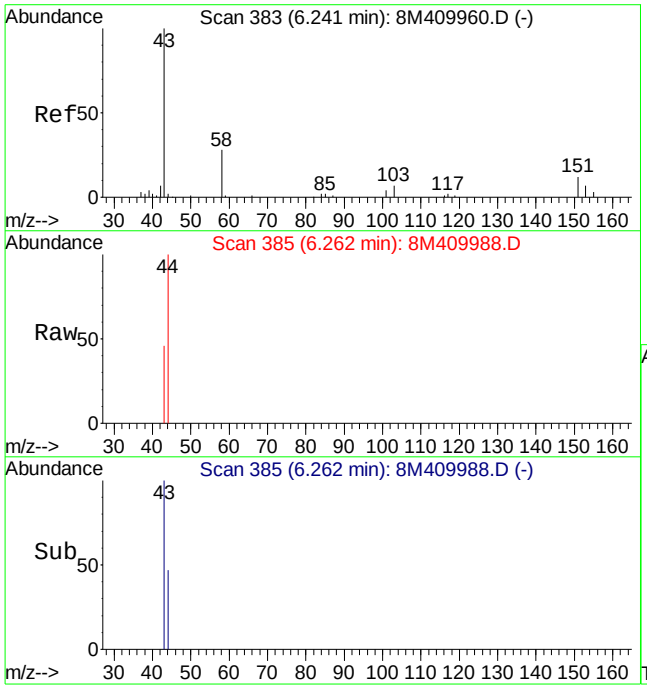

#13
Acetone
Concen: Below Cal
RT: 6.26 min Scan# 385
Delta R.T. 0.02 min
Lab File: 8M409988.D
Acq: 5 Feb 2016 19:40

Tgt Ion: 43 Resp: 427

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.2	37.8#

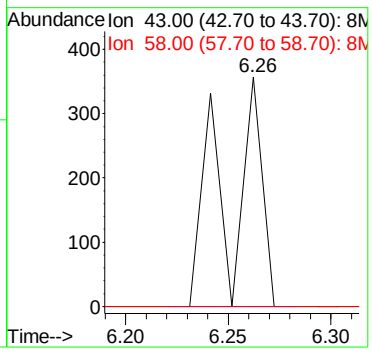

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\020516\8M409981.D Vial: 13
Acq On : 5 Feb 2016 16:15 Operator: TMB
Sample : L16020210-05 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD74617 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 16:37:38 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	899640	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	625050	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	322815	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	216344	23.8696 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.48%		
43) 1,2-Dichloroethane-d4	10.30	65	225977	24.0662 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.28%		
58) Toluene-d8	12.68	98	759146	23.6710 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.68%		
80) p-Bromofluorobenzene	16.07	95	307427	23.2137 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.84%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	299584	22.7785 ug/L	99
3) Chloromethane	3.63	50	378293	20.6495 ug/L	99
4) Vinyl Chloride	3.84	62	235925	20.3581 ug/L	99
5) 1,3-Butadiene	3.89	54	120520	10.8990 ug/L	93
6) Bromomethane	4.74	94	151044	21.2803 ug/L	99
7) Chloroethane	4.90	64	147859	20.3625 ug/L	99
8) Trichlorofluoromethane	5.38	101	315939	20.1231 ug/L	98
9) Diethyl ether	5.92	59	4088	0.6903 ug/L	79
10) Isoprene	5.95	67	277947	22.8626 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	176989	21.5751 ug/L	95
13) Acetone	6.25	43	33700	20.9155 ug/L	100
14) 1,1-Dichloroethene	6.47	61	311707	19.3100 ug/L	95
16) Dimethyl Sulfide	6.74	62	226629	29.3860 ug/L	98
17) Iodomethane	7.00	142	143529	20.9722 ug/L	99
18) Methyl acetate	7.01	43	93318	20.3529 ug/L	98
19) Methylene Chloride	7.26	84	178536	20.4389 ug/L	93
20) Carbon Disulfide	7.30	76	523598	18.1333 ug/L	99
21) Acrylonitrile	7.44	53	49510	22.4418 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	395937	22.7229 ug/L	96
23) trans-1,2-Dichloroethene	7.71	61	316429	20.0227 ug/L	90
24) n-Hexane	7.79	57	282666	20.3364 ug/L	95
26) Vinyl Acetate	8.30	43	357801	26.5002 ug/L	100
27) 1,1-Dichloroethane	8.33	63	368723	19.2579 ug/L	98
29) 2-Butanone	8.89	43	55254	23.3186 ug/L	95
31) 2,2-Dichloropropane	9.11	77	316432	22.5903 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	199499	20.0144 ug/L	86
33) Chloroform	9.38	83	329731	19.6859 ug/L	99
34) 1-Bromopropane	9.52	122	46702	32.8716 ug/L	98
35) Bromochloromethane	9.61	130	99479	20.2143 ug/L	92
38) 1,1,1-Trichloroethane	9.91	97	298860	20.0603 ug/L	99
39) Cyclohexane	9.94	56	385223	20.1484 ug/L	94
40) 1,1-Dichloropropene	10.11	75	251759	19.1876 ug/L	97
42) Carbon Tetrachloride	10.25	117	266588	20.1058 ug/L	100
45) 1,2-Dichloroethane	10.43	62	254598	21.5719 ug/L	97
46) Benzene	10.47	78	722124	20.6765 ug/L	97
47) Trichloroethene	11.21	130	185904	20.4785 ug/L	98
48) Methylcyclohexane	11.30	83	283797	20.4822 ug/L	92
49) 1,2-Dichloropropane	11.43	63	213000	20.9563 ug/L	95
50) Bromodichloromethane	11.73	83	252650	20.6481 ug/L	99
52) Dibromomethane	11.81	93	88152	20.4027 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M409981.D 8260WT.M Fri Feb 05 16:37:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\020516\8M409981.D Vial: 13
Acq On : 5 Feb 2016 16:15 Operator: TMB
Sample : L16020210-05 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD74617 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 16:37:38 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
53)	2-Chloroethyl Vinyl Ether	12.03	63	4711	1.1164	ug/L		98
54)	4-Methyl-2-Pentanone	12.06	58	44156	22.5582	ug/L		95
55)	cis-1,3-Dichloropropene	12.36	75	314186	23.0566	ug/L		99
56)	Dimethyl Disulfide	12.63	79	161136	21.9040	ug/L		95
59)	Toluene	12.78	91	731830	20.3580	ug/L		98
60)	Ethyl Methacrylate	12.88	69	165246	23.8830	ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	247079	22.1672	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	119638	21.5855	ug/L		100
64)	2-Hexanone	13.12	58	40529	22.4135	ug/L	#	94
65)	1,3-Dichloropropane	13.48	76	231182	22.9026	ug/L		96
66)	Tetrachloroethene	13.60	164	144115	19.9973	ug/L		97
67)	Dibromochloromethane	13.87	129	162020	21.8487	ug/L		99
68)	1,2-Dibromoethane	14.12	107	121976	21.9714	ug/L		100
69)	1-Chlorohexane	14.21	91	257309	20.8689	ug/L		91
70)	Chlorobenzene	14.62	112	497687	20.8459	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	172435	20.6071	ug/L		99
72)	Ethylbenzene	14.66	106	273929	20.0258	ug/L		98
73)	m-,p-Xylene	14.74	106	671011	42.0095	ug/L		99
74)	o-Xylene	15.31	106	334997	20.8599	ug/L		99
75)	Styrene	15.34	104	542153	20.9110	ug/L		99
76)	Bromoform	15.83	173	85959	20.4151	ug/L		98
77)	Isopropylbenzene	15.73	105	832349	21.3397	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	137421	22.7675	ug/L		100
81)	1,2,3-Trichloropropane	16.13	110	37710	22.9604	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	47245	20.2397	ug/L		89
83)	n-Propylbenzene	16.24	91	1027335	20.7129	ug/L		99
84)	Bromobenzene	16.36	156	189329	19.7039	ug/L		87
85)	1,3,5-Trimethylbenzene	16.42	105	722801	20.7380	ug/L		100
86)	2-Chlorotoluene	16.51	91	635180	19.0000	ug/L		92
87)	4-Chlorotoluene	16.56	91	677878	22.8094	ug/L		88
88)	a-Methylstyrene	16.83	118	402887	22.1630	ug/L		99
89)	tert-Butylbenzene	16.89	134	144376	20.4041	ug/L		91
90)	1,2,4-Trimethylbenzene	16.94	105	729237	20.7327	ug/L		100
91)	sec-Butylbenzene	17.16	105	873116	21.5346	ug/L		98
92)	p-Isopropyltoluene	17.31	119	717668	20.6674	ug/L		96
93)	1,3-Dichlorobenzene	17.51	146	391067	20.3590	ug/L		94
94)	1,4-Dichlorobenzene	17.64	146	391799	19.4858	ug/L		93
95)	n-Butylbenzene	17.84	91	699290	21.4193	ug/L		98
96)	1,2-Dichlorobenzene	18.13	146	348320	20.3691	ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	26031	23.1533	ug/L		83
98)	1,2,4-Trichlorobenzene	20.27	180	243869	20.3892	ug/L		100
99)	Hexachlorobutadiene	20.42	225	104745	20.1088	ug/L		96
100)	Naphthalene	20.64	128	381777	19.9247	ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	206026	19.9846	ug/L		100

(#) = qualifier out of range (m) = manual integration
8M409981.D 8260WT.M Fri Feb 05 16:37:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\020516\8M409981.D Vial: 13
Acq On : 5 Feb 2016 16:15 Operator: TMB
Sample : L16020210-05 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD74617 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 16:37 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

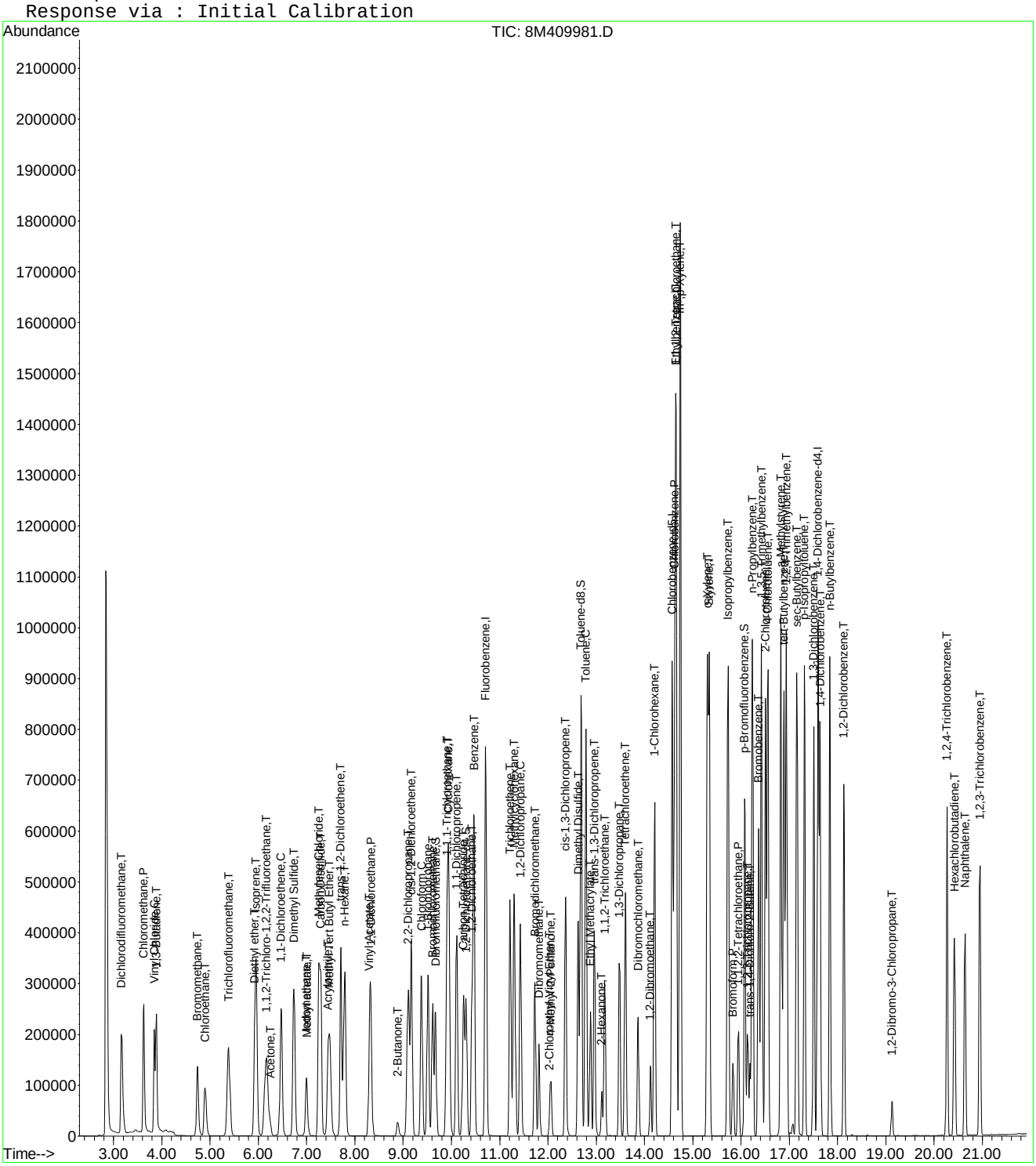

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\020516\8M409982.D Vial: 14
Acq On : 5 Feb 2016 16:45 Operator: TMB
Sample : L16020210-06 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD74617 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 17:07:16 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	905790	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	624667	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	317430	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	210529	23.0703 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.28%		
43) 1,2-Dichloroethane-d4	10.30	65	225319	23.8332 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.32%		
58) Toluene-d8	12.68	98	758483	23.6649 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.64%		
80) p-Bromofluorobenzene	16.07	95	306856	23.5637 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.24%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	279151	21.0808 ug/L	99
3) Chloromethane	3.62	50	366060	19.8461 ug/L	98
4) Vinyl Chloride	3.84	62	228131	19.5519 ug/L	98
5) 1,3-Butadiene	3.89	54	121855	10.9625 ug/L	89
6) Bromomethane	4.73	94	144911	20.2776 ug/L	98
7) Chloroethane	4.90	64	143698	19.6551 ug/L	99
8) Trichlorofluoromethane	5.38	101	293492	18.5664 ug/L	100
9) Diethyl ether	5.93	59	3979	0.6674 ug/L	75
10) Isoprene	5.95	67	265376	21.6804 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	169088	20.4720 ug/L	95
13) Acetone	6.24	43	34505	21.3337 ug/L	99
14) 1,1-Dichloroethene	6.47	61	295967	18.2105 ug/L	96
16) Dimethyl Sulfide	6.74	62	217017	27.9486 ug/L	99
17) Iodomethane	6.99	142	143370	20.8067 ug/L	100
18) Methyl acetate	7.01	43	90799	19.6690 ug/L	100
19) Methylene Chloride	7.26	84	176404	20.0577 ug/L	94
20) Carbon Disulfide	7.30	76	508933	17.5057 ug/L	99
21) Acrylonitrile	7.44	53	49080	22.0958 ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	385839	21.9930 ug/L	96
23) trans-1,2-Dichloroethene	7.71	61	304815	19.1568 ug/L	92
24) n-Hexane	7.79	57	268224	19.1664 ug/L	95
26) Vinyl Acetate	8.30	43	351663	25.8687 ug/L	100
27) 1,1-Dichloroethane	8.33	63	357556	18.5479 ug/L	98
29) 2-Butanone	8.89	43	52459	21.9888 ug/L	99
31) 2,2-Dichloropropane	9.11	77	298197	21.1439 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	196159	19.5457 ug/L	87
33) Chloroform	9.38	83	321464	19.0620 ug/L	100
34) 1-Bromopropane	9.52	122	45753	31.9850 ug/L	94
35) Bromochloromethane	9.61	130	97097	19.5963 ug/L	92
38) 1,1,1-Trichloroethane	9.91	97	284679	18.9787 ug/L	99
39) Cyclohexane	9.94	56	366019	19.0140 ug/L	94
40) 1,1-Dichloropropene	10.11	75	243319	18.4184 ug/L	97
42) Carbon Tetrachloride	10.25	117	254715	19.0799 ug/L	98
45) 1,2-Dichloroethane	10.43	62	249954	21.0346 ug/L	97
46) Benzene	10.47	78	696262	19.8007 ug/L	96
47) Trichloroethene	11.21	130	177620	19.4331 ug/L	98
48) Methylcyclohexane	11.30	83	267335	19.1631 ug/L	92
49) 1,2-Dichloropropane	11.43	63	204782	20.0110 ug/L	97
50) Bromodichloromethane	11.73	83	244153	19.8181 ug/L	99
52) Dibromomethane	11.81	93	84390	19.3994 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M409982.D 8260WT.M Fri Feb 05 17:07:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\020516\8M409982.D Vial: 14
Acq On : 5 Feb 2016 16:45 Operator: TMB
Sample : L16020210-06 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD74617 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 17:07:16 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
54)	4-Methyl-2-Pentanone	12.05	58	41355	20.9838 ug/L		100
55)	cis-1,3-Dichloropropene	12.36	75	307054	22.3802 ug/L		100
56)	Dimethyl Disulfide	12.63	79	156892	21.1822 ug/L		92
59)	Toluene	12.78	91	716447	19.9423 ug/L		99
60)	Ethyl Methacrylate	12.88	69	158388	22.9059 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	240691	21.6074 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	116319	20.9995 ug/L		100
64)	2-Hexanone	13.12	58	38687	21.4079 ug/L	#	92
65)	1,3-Dichloropropane	13.48	76	225798	22.3829 ug/L		96
66)	Tetrachloroethene	13.60	164	135661	18.8357 ug/L		96
67)	Dibromochloromethane	13.87	129	156221	21.0796 ug/L		99
68)	1,2-Dibromoethane	14.12	107	115675	20.8491 ug/L		98
69)	1-Chlorohexane	14.21	91	247552	20.0899 ug/L		91
70)	Chlorobenzene	14.62	112	486883	20.4059 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	168664	20.1688 ug/L		98
72)	Ethylbenzene	14.66	106	264179	19.3248 ug/L		98
73)	m-,p-Xylene	14.74	106	653572	40.9428 ug/L		100
74)	o-Xylene	15.31	106	323698	20.1687 ug/L		100
75)	Styrene	15.34	104	533100	20.5744 ug/L		98
76)	Bromoform	15.83	173	84330	20.0405 ug/L		98
77)	Isopropylbenzene	15.73	105	814475	20.8943 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	131429	22.1442 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	37412	23.1654 ug/L		96
82)	trans-1,4-Dichloro-2-Buten	16.18	53	45227	19.7039 ug/L		86
83)	n-Propylbenzene	16.24	91	999769	20.4991 ug/L		100
84)	Bromobenzene	16.36	156	184183	19.4935 ug/L		86
85)	1,3,5-Trimethylbenzene	16.42	105	701560	20.4701 ug/L		100
86)	2-Chlorotoluene	16.51	91	613292	18.6565 ug/L		92
87)	4-Chlorotoluene	16.56	91	654059	22.3813 ug/L		90
88)	a-Methylstyrene	16.83	118	390000	21.8180 ug/L		100
89)	tert-Butylbenzene	16.89	134	139161	20.0007 ug/L		91
90)	1,2,4-Trimethylbenzene	16.94	105	702229	20.3035 ug/L		99
91)	sec-Butylbenzene	17.16	105	847240	21.2508 ug/L		97
92)	p-Isopropyltoluene	17.31	119	697084	20.4152 ug/L		96
93)	1,3-Dichlorobenzene	17.51	146	384086	20.3348 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	384061	19.4250 ug/L		93
95)	n-Butylbenzene	17.84	91	668019	20.8086 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	339759	20.2055 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.12	75	24895	22.5185 ug/L		84
98)	1,2,4-Trichlorobenzene	20.27	180	239051	20.3254 ug/L		100
99)	Hexachlorobutadiene	20.42	225	101011	19.7209 ug/L		97
100)	Naphthalene	20.64	128	365722	19.4106 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	198747	19.6056 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M409982.D 8260WT.M Fri Feb 05 17:07:17 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\020516\8M409982.D Vial: 14
Acq On : 5 Feb 2016 16:45 Operator: TMB
Sample : L16020210-06 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD74617 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 17:07 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

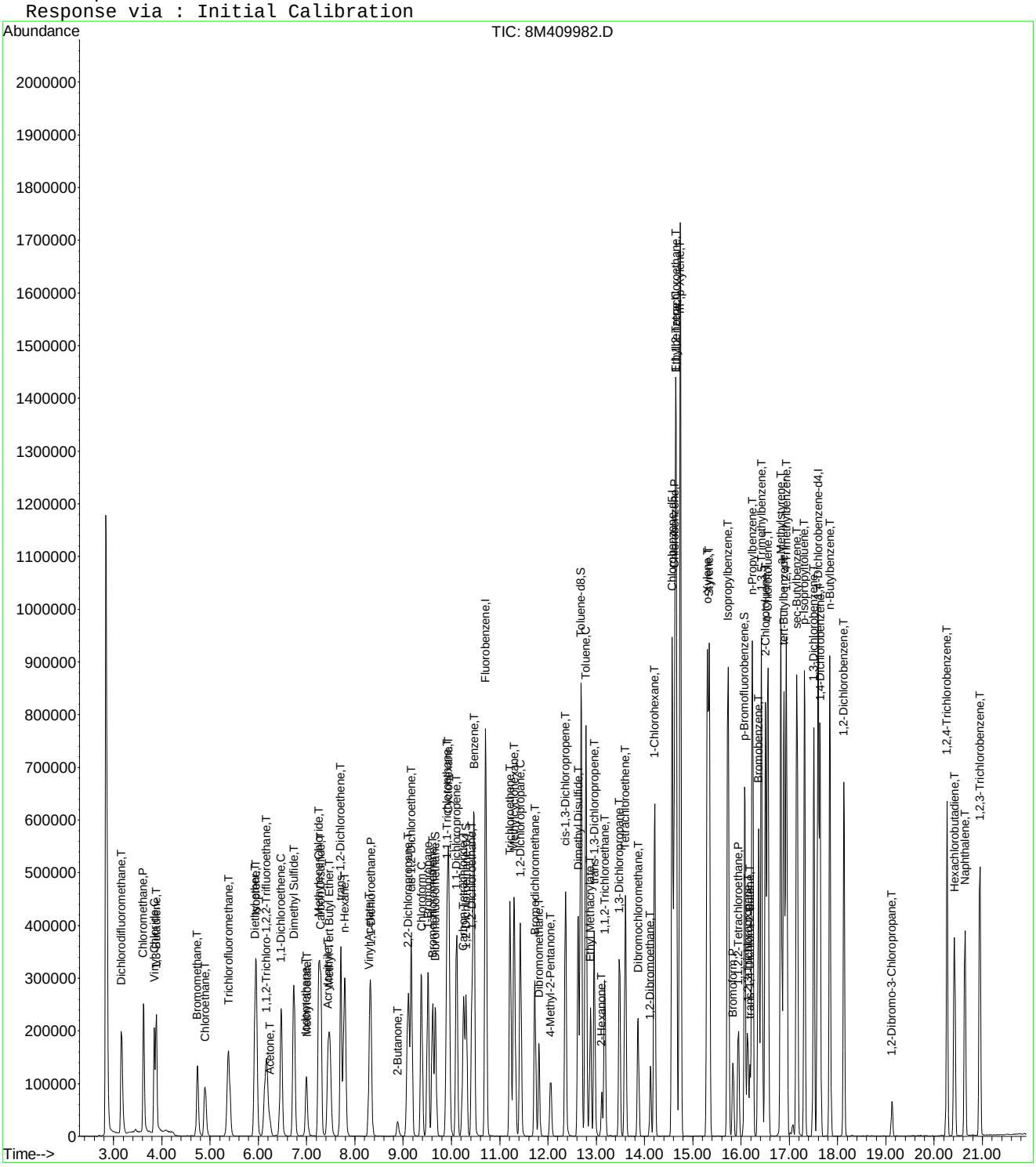

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020516\8M409992.D Vial: 24
Acq On : 5 Feb 2016 21:35 Operator: TMB
Sample : L16020210-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 08 08:34:35 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	806576	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	564640	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	286499	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	197357	24.2871 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.16%		
43) 1,2-Dichloroethane-d4	10.30	65	210534	25.0086 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.04%		
58) Toluene-d8	12.68	98	691441	23.8666 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.48%		
80) p-Bromofluorobenzene	16.07	95	278168	23.6668 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.68%		

Target Compounds					Qvalue
13) Acetone	6.24	43	2947	Below Cal	# 48

(#) = qualifier out of range (m) = manual integration
8M409992.D 8260WT.M Mon Feb 08 08:34:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020516\8M409992.D Vial: 24
Acq On : 5 Feb 2016 21:35 Operator: TMB
Sample : L16020210-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 8:34 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

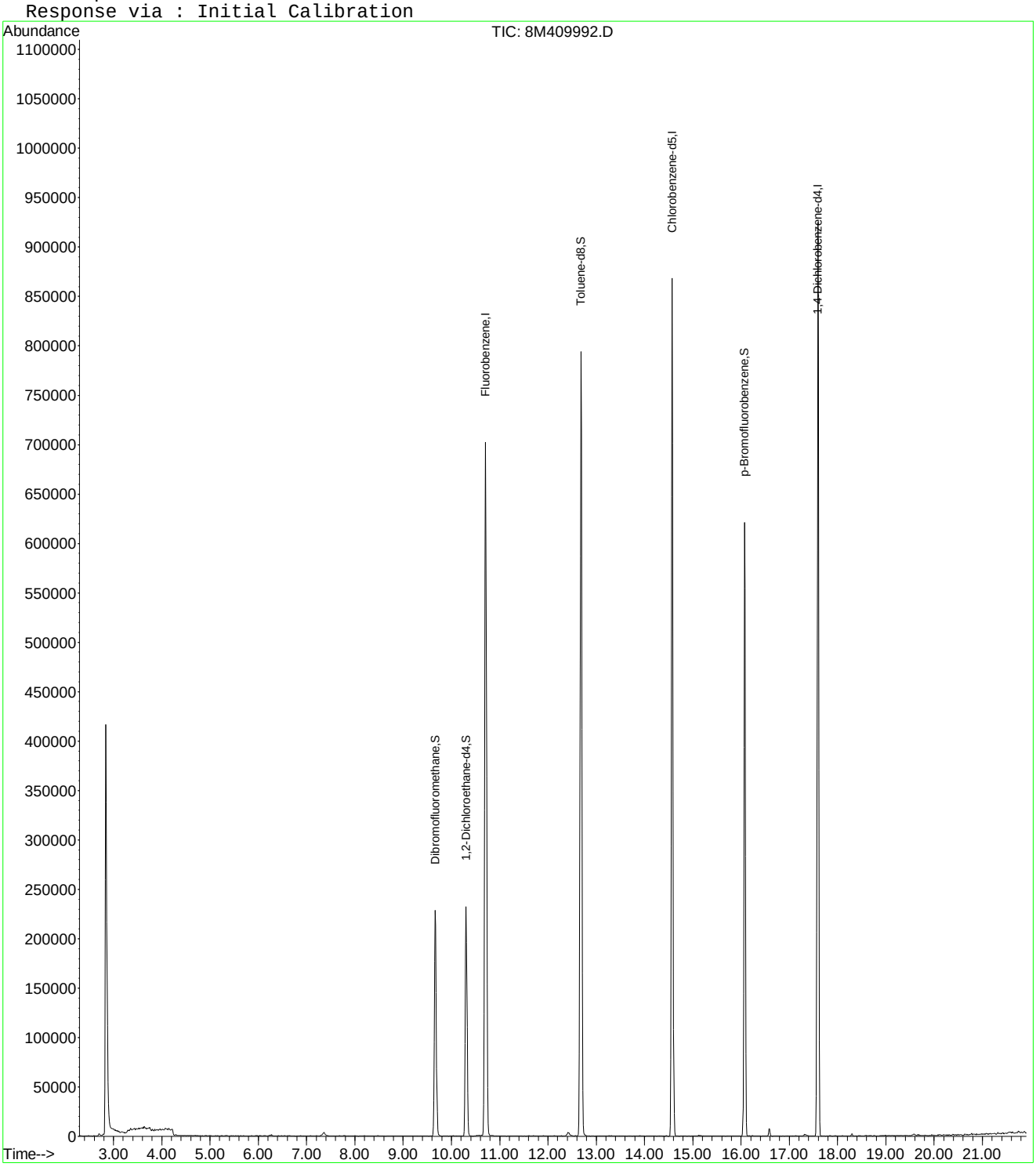

8M409992.D 8260WT.M Mon Feb 08 08:34:36 2016 Page 2

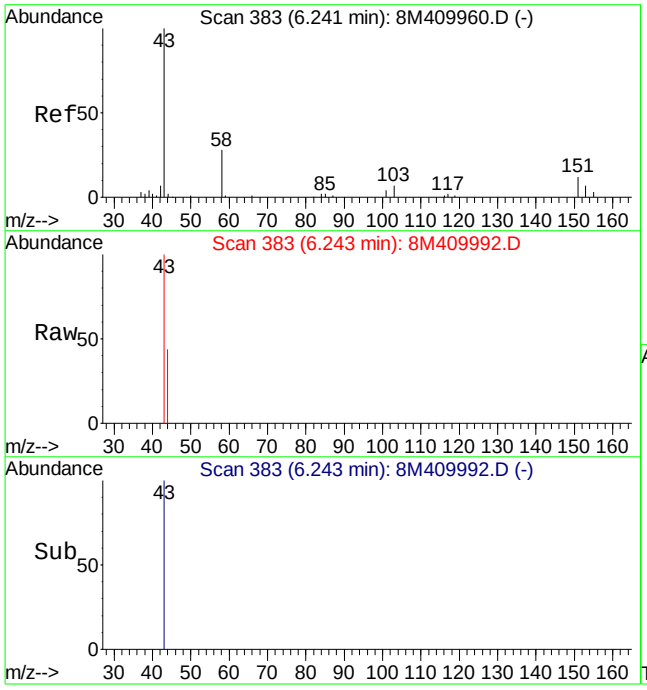

#13
Acetone
Concen: Below Cal
RT: 6.24 min Scan# 383
Delta R.T. 0.00 min
Lab File: 8M409992.D
Acq: 5 Feb 2016 21:35

Tgt Ion: 43 Resp: 2947

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.2	37.8#

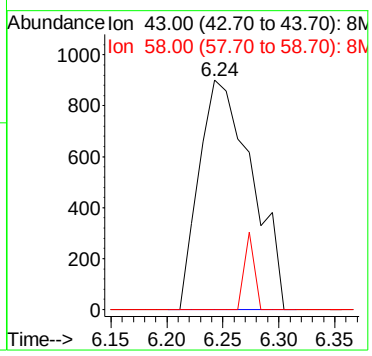

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020516\8M409984.D Vial: 16
Acq On : 5 Feb 2016 17:44 Operator: TMB
Sample : L16020210-08 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 08 08:34:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	856050	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	593157	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	293998	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	204657	23.7299 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.92%		
43) 1,2-Dichloroethane-d4	10.30	65	217268	24.3169 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.28%		
58) Toluene-d8	12.68	98	733464	24.0999 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.40%		
80) p-Bromofluorobenzene	16.07	95	289522	24.0045 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.00%		

Target Compounds

					Qvalue
13) Acetone	6.27	43	1287	Below Cal	# 48
36) Tetrahydrofuran	9.64	42	783	0.5328 ug/L	# 41

(#) = qualifier out of range (m) = manual integration
8M409984.D 8260WT.M Mon Feb 08 08:34:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020516\8M409984.D Vial: 16
Acq On : 5 Feb 2016 17:44 Operator: TMB
Sample : L16020210-08 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 8:34 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

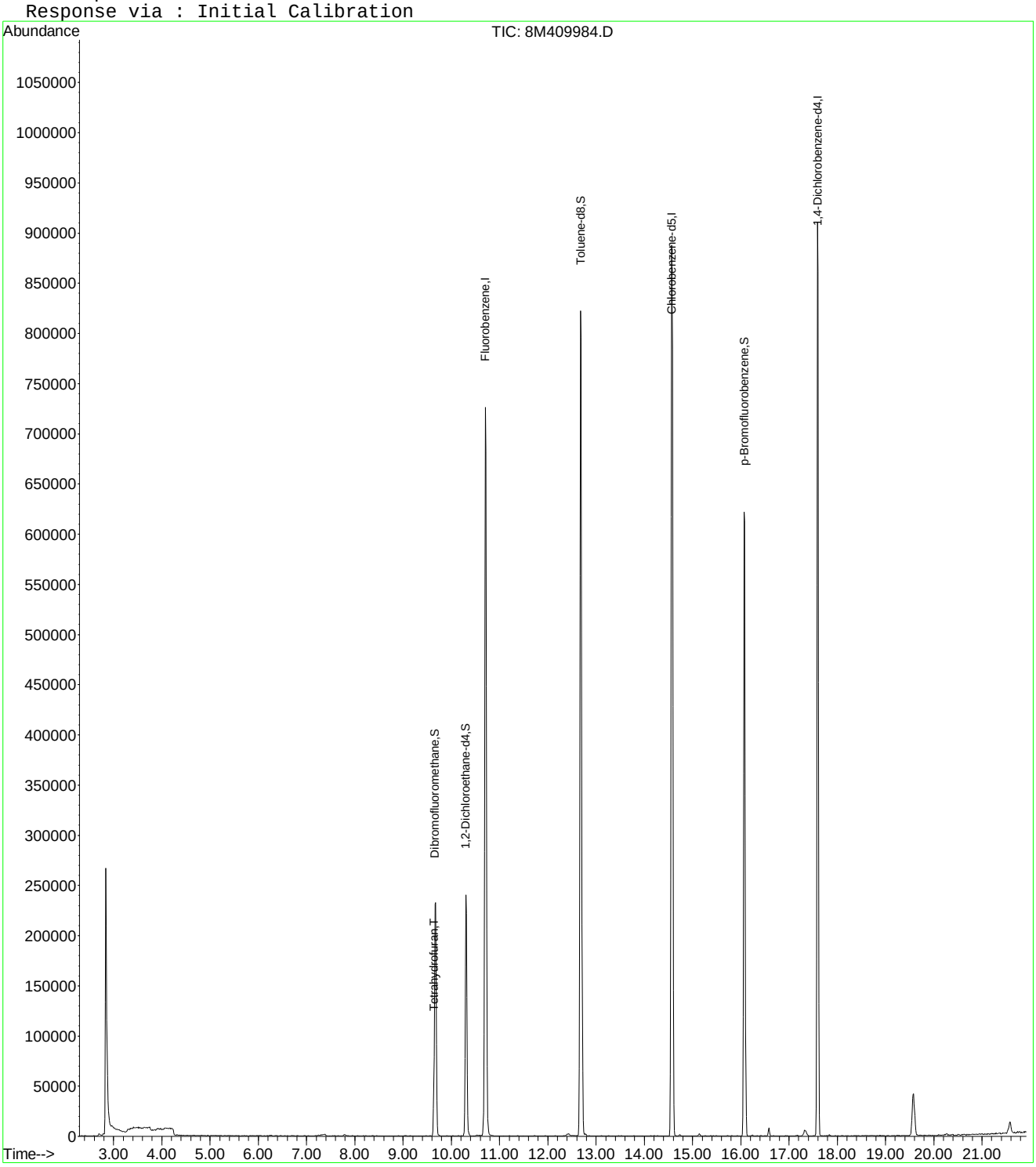

8M409984.D 8260WT.M Mon Feb 08 08:34:24 2016 Page 2

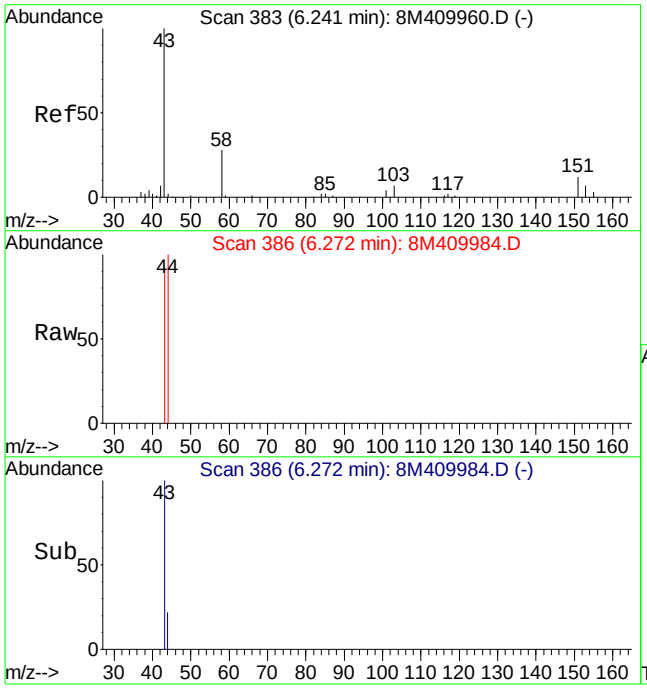

#13
Acetone
Concen: Below Cal
RT: 6.27 min Scan# 386
Delta R.T. 0.03 min
Lab File: 8M409984.D
Acq: 5 Feb 2016 17:44

Tgt Ion: 43 Resp: 1287

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.2	37.8#

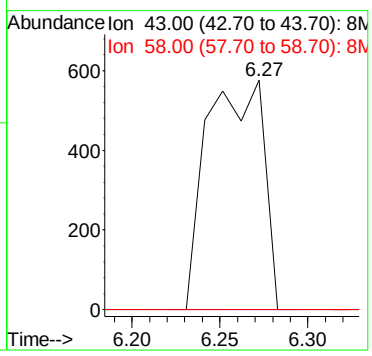

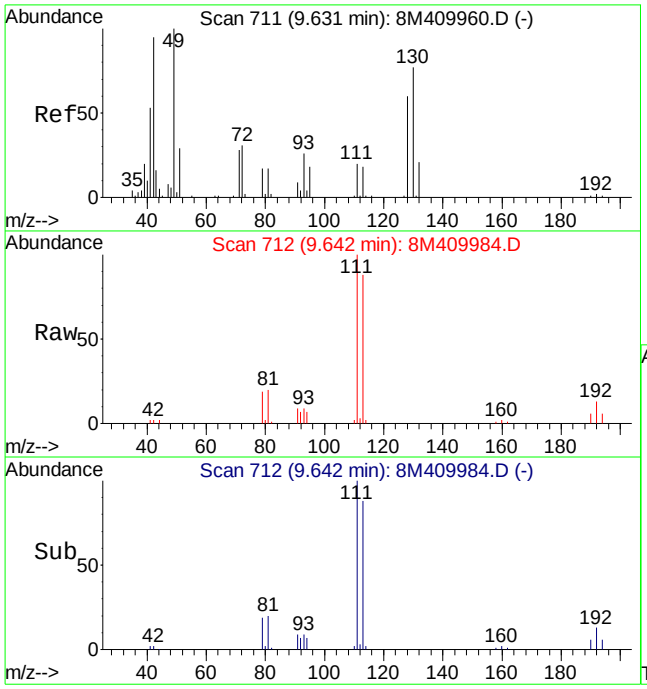

#36
Tetrahydrofuran
Concen: 0.53 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M409984.D
Acq: 5 Feb 2016 17:44

Tgt Ion: 42 Resp: 783

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.6#
71	0.0	19.0	44.4#

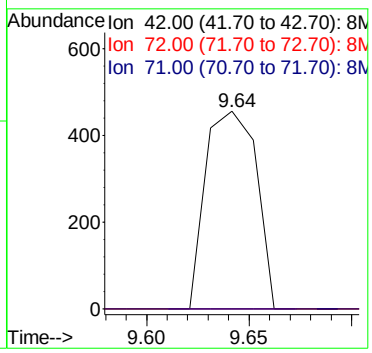

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407828.D Vial: 2
Acq On : 5 Oct 2015 11:49 Operator: TMB
Sample : WG540826-02 5ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:55 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	928093	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	670481	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	347120	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.71	41	3724	5.2139 ug/L	81
3) 3-Chloro-1-propene	7.08	41	87895	5.0600 ug/L	95
4) 2-Chloro-1,3-butadiene	8.46	53	83096	4.6491 ug/L	97
5) Ethyl Acetate	9.11	43	19297	4.0869 ug/L	95
6) Methacrylonitrile	9.27	67	8508	4.1055 ug/L	97
7) Isobutyl Alcohol	9.26	43	1318	6.8122 ug/L #	56
8) 1-Butanol	10.19	56	1930	20.2377 ug/L #	64
9) Methyl methacrylate	11.43	41	22250	3.8908 ug/L	96
10) 2-Nitropropane	11.75	43	2454	2.5566 ug/L	66
13) Cyclohexanone	15.83	55	2773	3.7471 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M407828.D A9FOOWTR.M Tue Oct 06 11:56:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407828.D Vial: 2
Acq On : 5 Oct 2015 11:49 Operator: TMB
Sample : WG540826-02 5ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

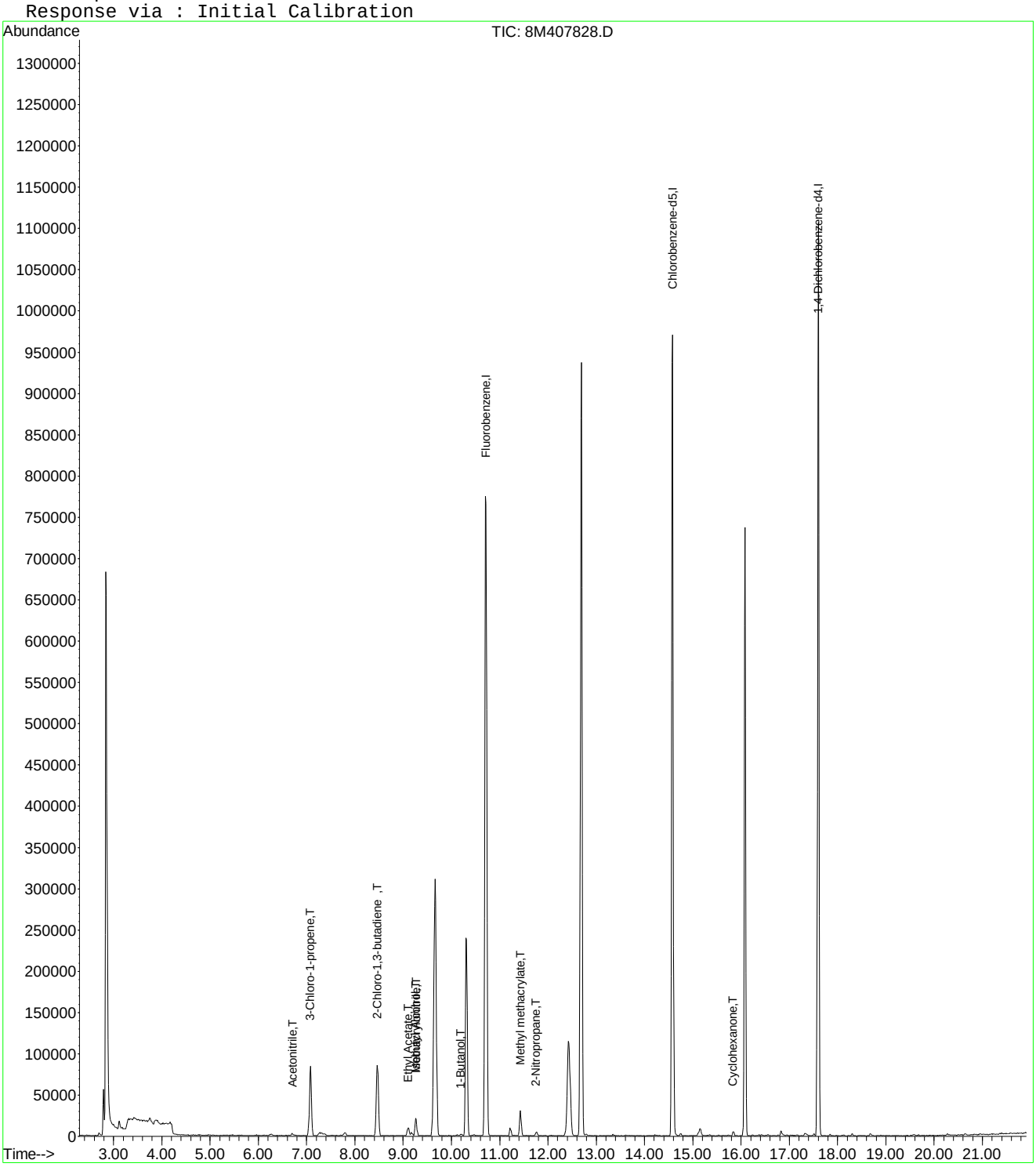

8M407828.D A9FOOWTR.M Tue Oct 06 11:56:56 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407828.D Vial: 2
Acq On : 5 Oct 2015 11:49 Operator: TMB
Sample : WG540826-02 5ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	5.2139	-4.3	100	0.01
3	T	3-Chloro-1-propene	5.0000	5.0600	-1.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.6491	7.0	100	0.00
5	T	Ethyl Acetate	5.0000	4.0869	18.3	100	0.01
6	T	Methacrylonitrile	5.0000	4.1055	17.9	100	0.01
7	T	Isobutyl Alcohol	-1.0000	6.8122	0.0	100	-0.01
8	T	1-Butanol	-1.0000	20.2377	0.0	100	0.00
9	T	Methyl methacrylate	5.0000	3.8908	22.2	100	0.00
10	T	2-Nitropropane	-1.0000	2.5566	0.0	0	-0.01
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	3.7471	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407828.D A9FOOWTR.M Tue Oct 06 11:54:24 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407829.D Vial: 3
Acq On : 5 Oct 2015 12:17 Operator: TMB
Sample : WG540826-03 20ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:56 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	903673	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	657140	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	345767	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.71	41	14085	20.2529 ug/L	98
3) 3-Chloro-1-propene	7.08	41	349549	20.6667 ug/L	100
4) 2-Chloro-1,3-butadiene	8.46	53	347796	19.9846 ug/L	100
5) Ethyl Acetate	9.10	43	93237	20.2805 ug/L	97
6) Methacrylonitrile	9.26	67	40077	19.8617 ug/L	100
7) Isobutyl Alcohol	9.27	43	6436	34.1640 ug/L #	94
9) Methyl methacrylate	11.43	41	106029	19.0419 ug/L	97
10) 2-Nitropropane	11.76	43	12836	13.7339 ug/L	86
13) Cyclohexanone	15.84	55	14620	19.8329 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M407829.D A9FOOWTR.M Tue Oct 06 11:56:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407829.D Vial: 3
Acq On : 5 Oct 2015 12:17 Operator: TMB
Sample : WG540826-03 20ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

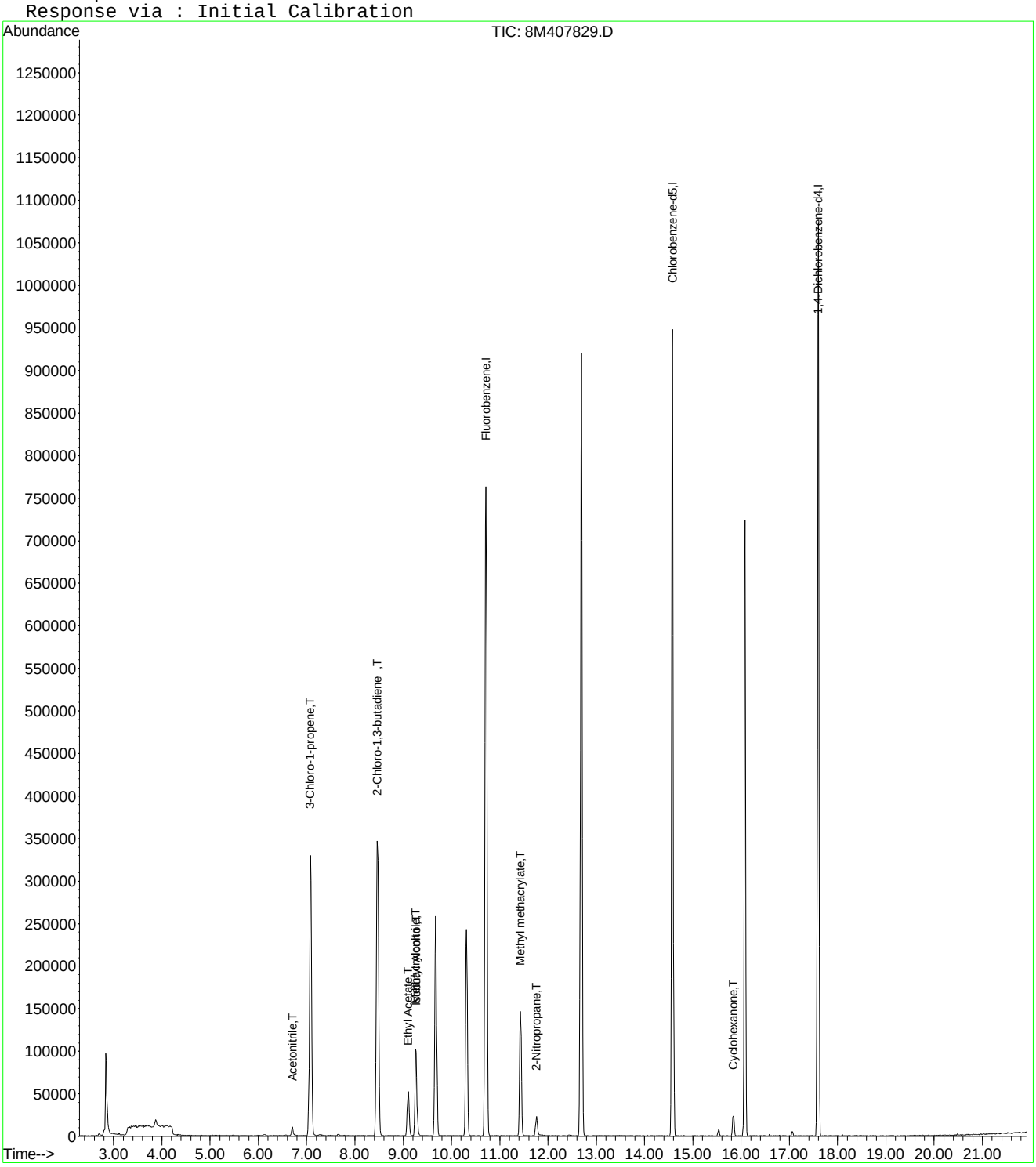

8M407829.D A9FOOWTR.M Tue Oct 06 11:56:57 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407829.D Vial: 3
Acq On : 5 Oct 2015 12:17 Operator: TMB
Sample : WG540826-03 20ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	20.2529	-1.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.6667	-3.3	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	19.9846	0.1	100	0.00
5	T	Ethyl Acetate	20.0000	20.2805	-1.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.8618	0.7	100	0.00
7	T	Isobutyl Alcohol	-1.0000	34.1640	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.19#
9	T	Methyl methacrylate	20.0000	19.0419	4.8	100	0.00
10	T	2-Nitropropane	-1.0000	13.7339	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	19.8329	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407829.D A9FOOWTR.M Tue Oct 06 11:54:38 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 13:13:37 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	883897	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	665815	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	354078	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	212038	25.2054 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.84%		
43) 1,2-Dichloroethane-d4	10.31	65	214919	25.0573 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.24%		
58) Toluene-d8	12.69	98	784209	25.3851 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.56%		
80) p-Bromofluorobenzene	16.07	95	309869	25.0818 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.32%		

Target Compounds

					Qvalue
13) Acetone	6.26	43	674	0.5137 ug/L #	48
19) Methylene Chloride	7.26	84	1894	0.2128 ug/L	67
24) n-Hexane	7.79	57	2250	0.1674 ug/L	96
36) Tetrahydrofuran	9.64	42	735	0.4954 ug/L #	40
79) 1,1,2,2-Tetrachloroethane	15.85	83	3323	0.5087 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M407830.D 8260WT.M Mon Oct 05 13:13:38 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 13:13 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

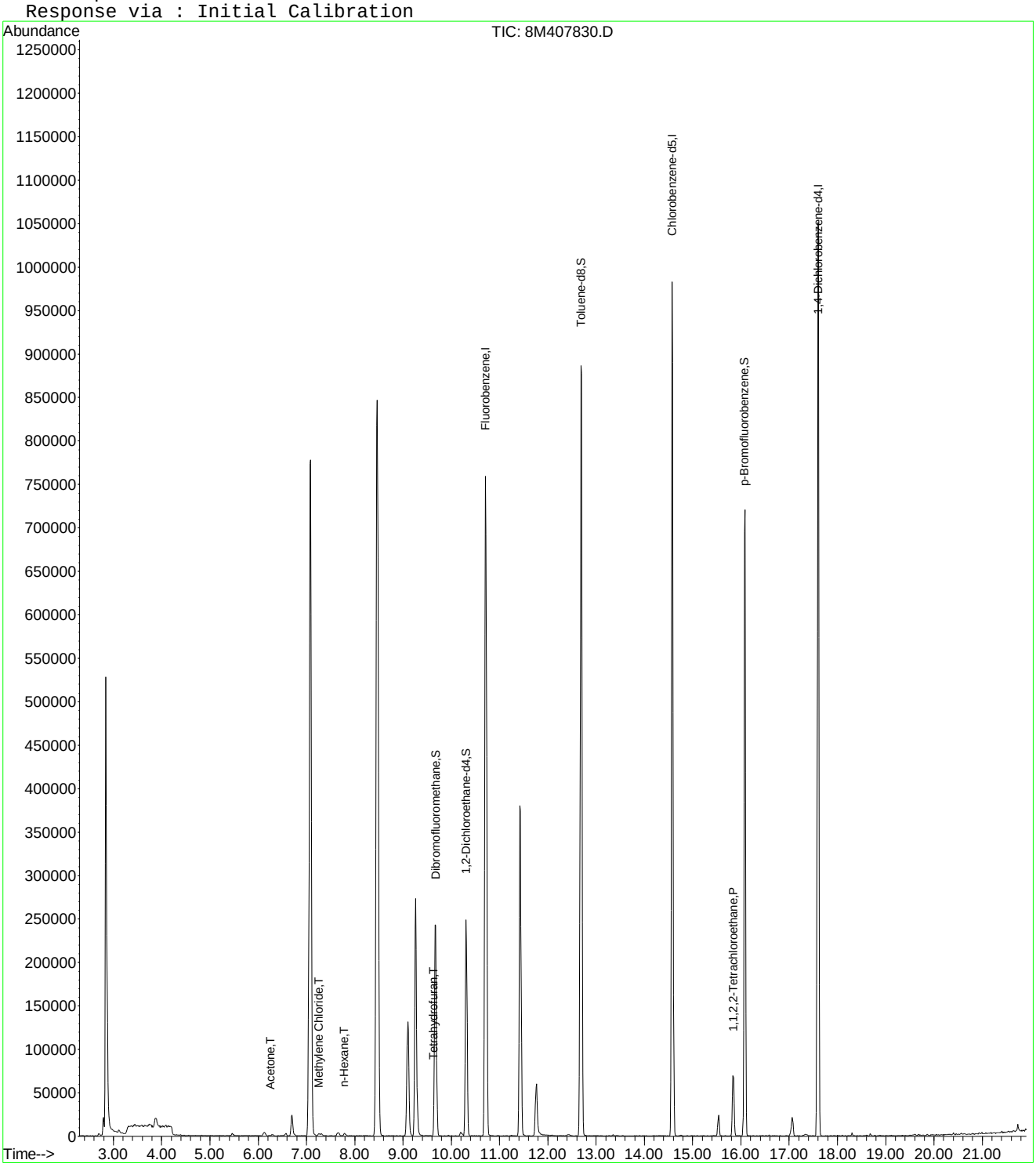

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:57 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	883897	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	665815	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	354078	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	35080	51.5703 ug/L	99
3) 3-Chloro-1-propene	7.07	41	841804	50.8844 ug/L	100
4) 2-Chloro-1,3-butadiene	8.47	53	851495	50.0222 ug/L	100
5) Ethyl Acetate	9.10	43	233139	51.8459 ug/L	97
6) Methacrylonitrile	9.26	67	101702	51.5301 ug/L	97
7) Isobutyl Alcohol	9.26	43	17567	95.3366 ug/L	98
8) 1-Butanol	10.19	56	3729	41.0570 ug/L	92
9) Methyl methacrylate	11.42	41	280126	51.4337 ug/L	98
10) 2-Nitropropane	11.76	43	37061	40.5407 ug/L	95
13) Cyclohexanone	15.84	55	40139	53.1730 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M407830.D A9FOOWTR.M Tue Oct 06 11:56:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

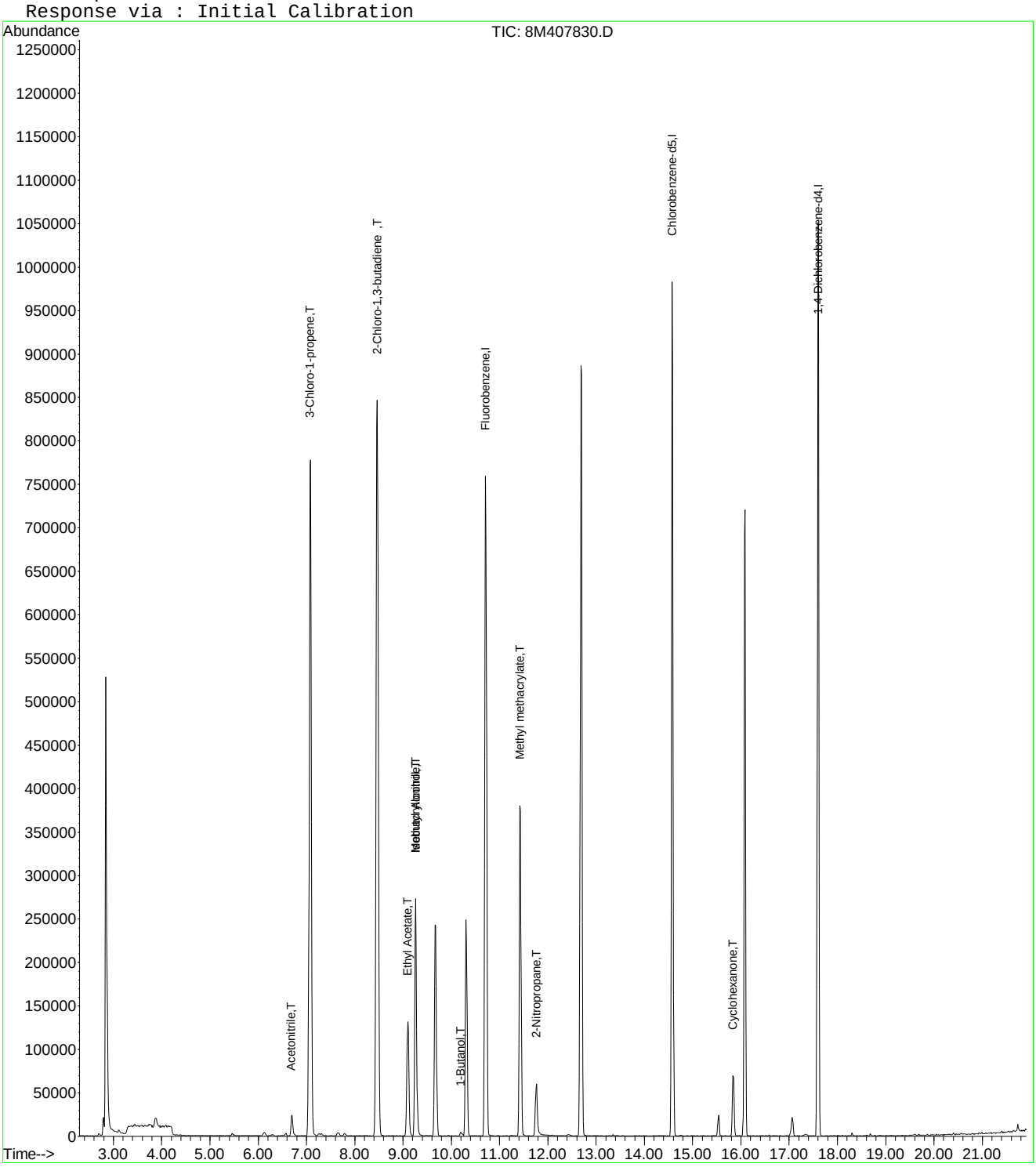

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.5703	-3.1	100	0.00
3	T	3-Chloro-1-propene	50.0000	50.8844	-1.8	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	50.0222	-0.0	100	0.00
5	T	Ethyl Acetate	50.0000	51.8459	-3.7	100	0.00
6	T	Methacrylonitrile	50.0000	51.5301	-3.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	95.3366	4.7	100	0.00
8	T	1-Butanol	50.0000	41.0570	17.9	100	0.00
9	T	Methyl methacrylate	50.0000	51.4337	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	40.5407	18.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	53.1730	-6.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407830.D A9FOOWTR.M Tue Oct 06 11:54:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 13:42:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	866178	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	661111	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	356230	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	202803	24.6008 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.40%		
43) 1,2-Dichloroethane-d4	10.31	65	203632	24.2270 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.92%		
58) Toluene-d8	12.69	98	789106	25.7254 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.92%		
80) p-Bromofluorobenzene	16.08	95	308907	24.8529 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.40%		

Target Compounds					Qvalue
24) n-Hexane	7.79	57	3351	0.2544 ug/L	79
36) Tetrahydrofuran	9.64	42	639	0.4395 ug/L #	40
39) Cyclohexane	9.94	56	2379	0.1385 ug/L #	66

(#) = qualifier out of range (m) = manual integration
8M407831.D 8260WT.M Mon Oct 05 13:42:05 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 13:42 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

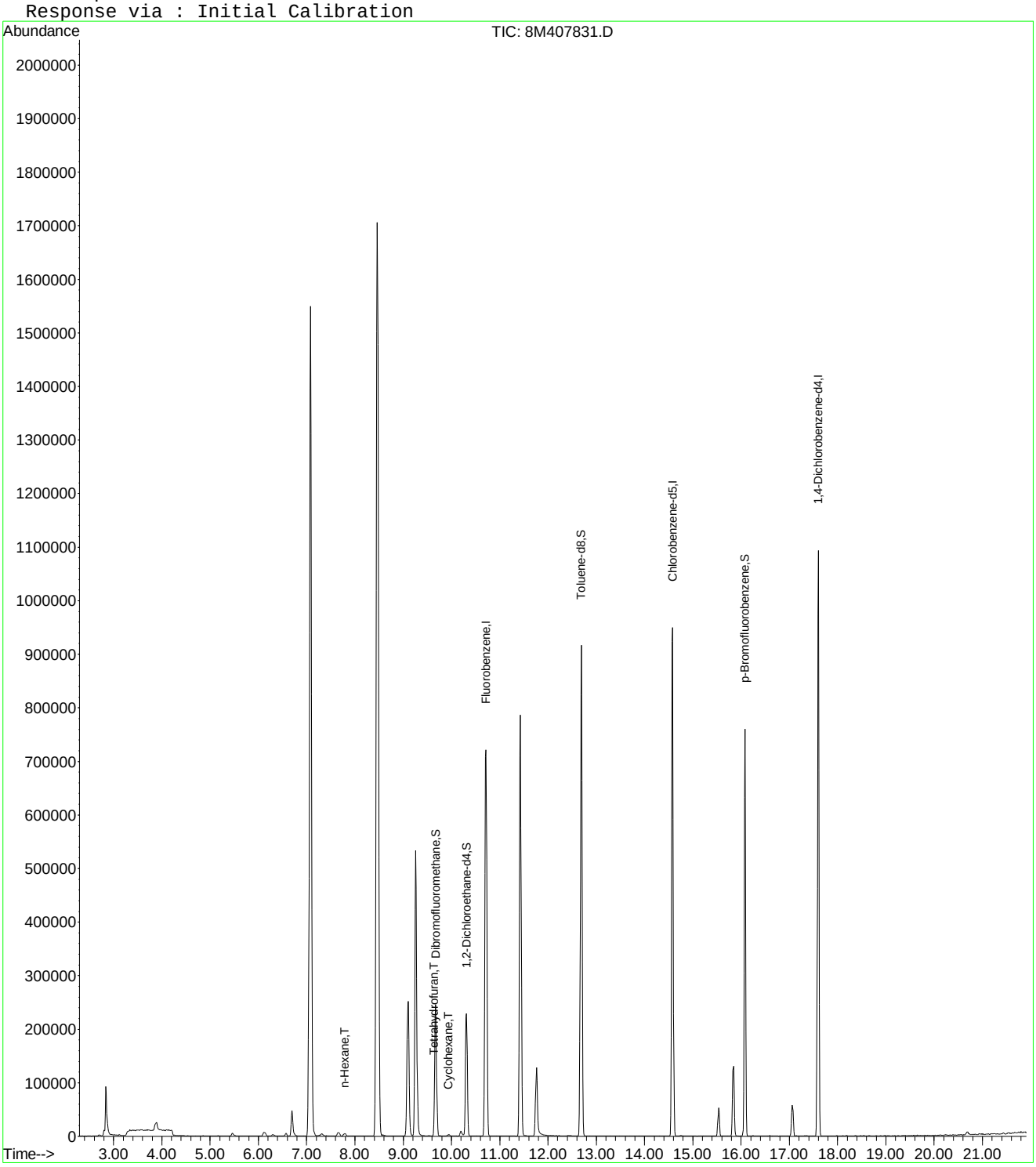

8M407831.D 8260WT.M Mon Oct 05 13:42:06 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:58 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	866178	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	661111	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	356230	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	67393	101.0995 ug/L	100
3) 3-Chloro-1-propene	7.08	41	1633129	100.7368 ug/L	100
4) 2-Chloro-1,3-butadiene	8.46	53	1684207	100.9649 ug/L	99
5) Ethyl Acetate	9.10	43	453445	102.9007 ug/L	99
6) Methacrylonitrile	9.26	67	196843	101.7762 ug/L	95
7) Isobutyl Alcohol	9.27	43	37534	207.8650 ug/L	92
8) 1-Butanol	10.20	56	8253	92.7258 ug/L	78
9) Methyl methacrylate	11.43	41	562497	105.3924 ug/L	98
10) 2-Nitropropane	11.76	43	77739	86.7776 ug/L	89
13) Cyclohexanone	15.84	55	74077	97.5385 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M407831.D A9FOOWTR.M Tue Oct 06 11:56:58 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

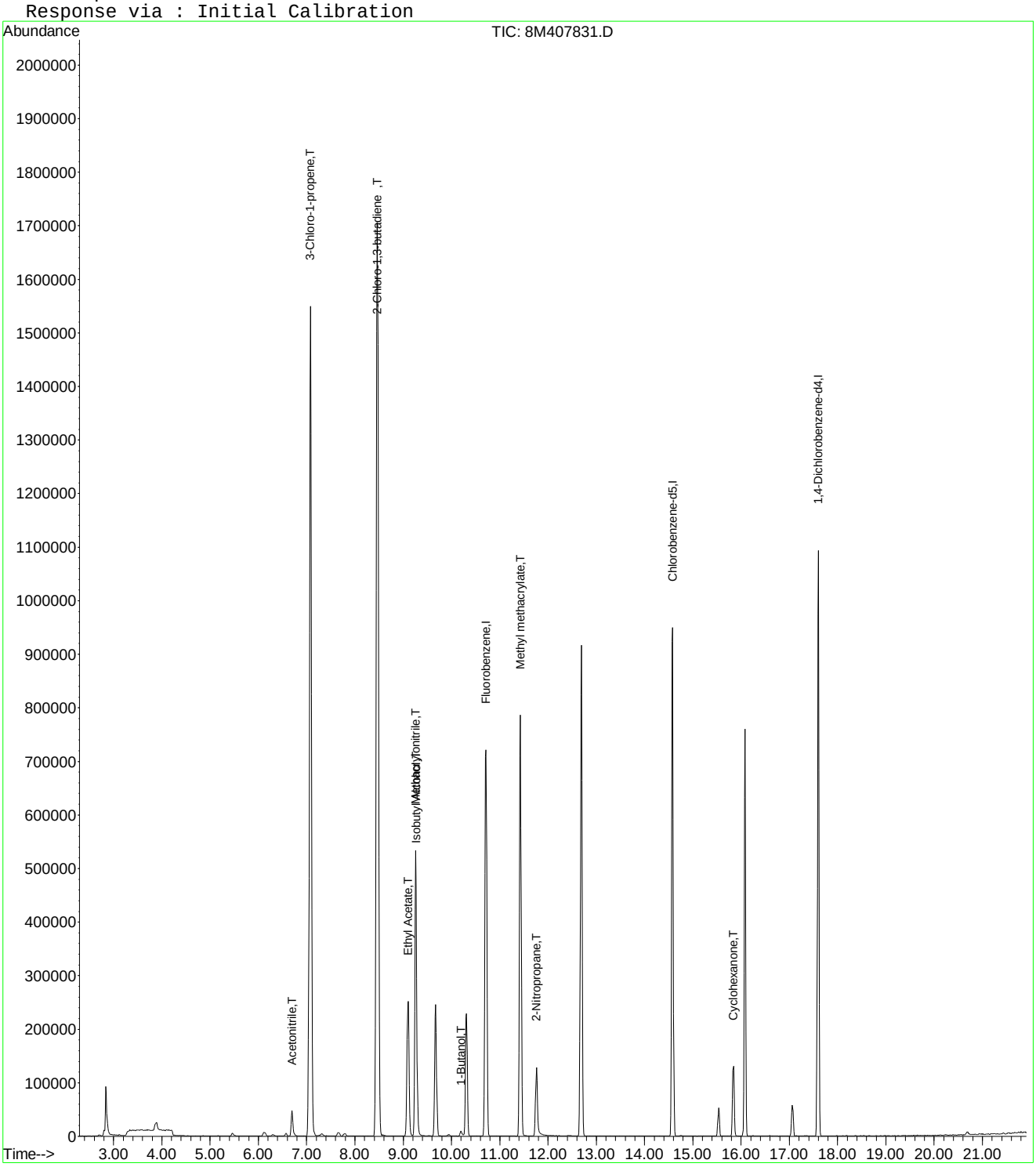

8M407831.D A9FOOWTR.M Tue Oct 06 11:56:58 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.0995	-1.1	100	0.00
3	T	3-Chloro-1-propene	100.0000	100.7368	-0.7	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	100.9649	-1.0	100	0.00
5	T	Ethyl Acetate	100.0000	102.9007	-2.9	100	0.00
6	T	Methacrylonitrile	100.0000	101.7762	-1.8	100	0.00
7	T	Isobutyl Alcohol	200.0000	207.8650	-3.9	100	0.00
8	T	1-Butanol	100.0000	92.7258	7.3	100	0.00
9	T	Methyl methacrylate	100.0000	105.3924	-5.4	100	0.00
10	T	2-Nitropropane	100.0000	86.7776	13.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	97.5386	2.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407831.D A9FOOWTR.M Tue Oct 06 11:55:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 14:10:58 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	897754	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	673480	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	363907	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	208738	24.4301 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.72%		
43) 1,2-Dichloroethane-d4	10.30	65	213605	24.5197 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.08%		
58) Toluene-d8	12.69	98	807841	25.8525 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.40%		
80) p-Bromofluorobenzene	16.08	95	324104	25.5255 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.12%		

Target Compounds

					Qvalue
13) Acetone	6.25	43	677	0.5081 ug/L #	48
18) Methyl acetate	7.08	43	1823	0.3618 ug/L #	1
20) Carbon Disulfide	7.30	76	5054	0.1712 ug/L #	78
24) n-Hexane	7.78	57	7743	0.5671 ug/L	88
36) Tetrahydrofuran	9.64	42	1466	0.9728 ug/L #	40
39) Cyclohexane	9.95	56	4715	0.2647 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M407832.D 8260WT.M Mon Oct 05 14:10:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 14:10 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

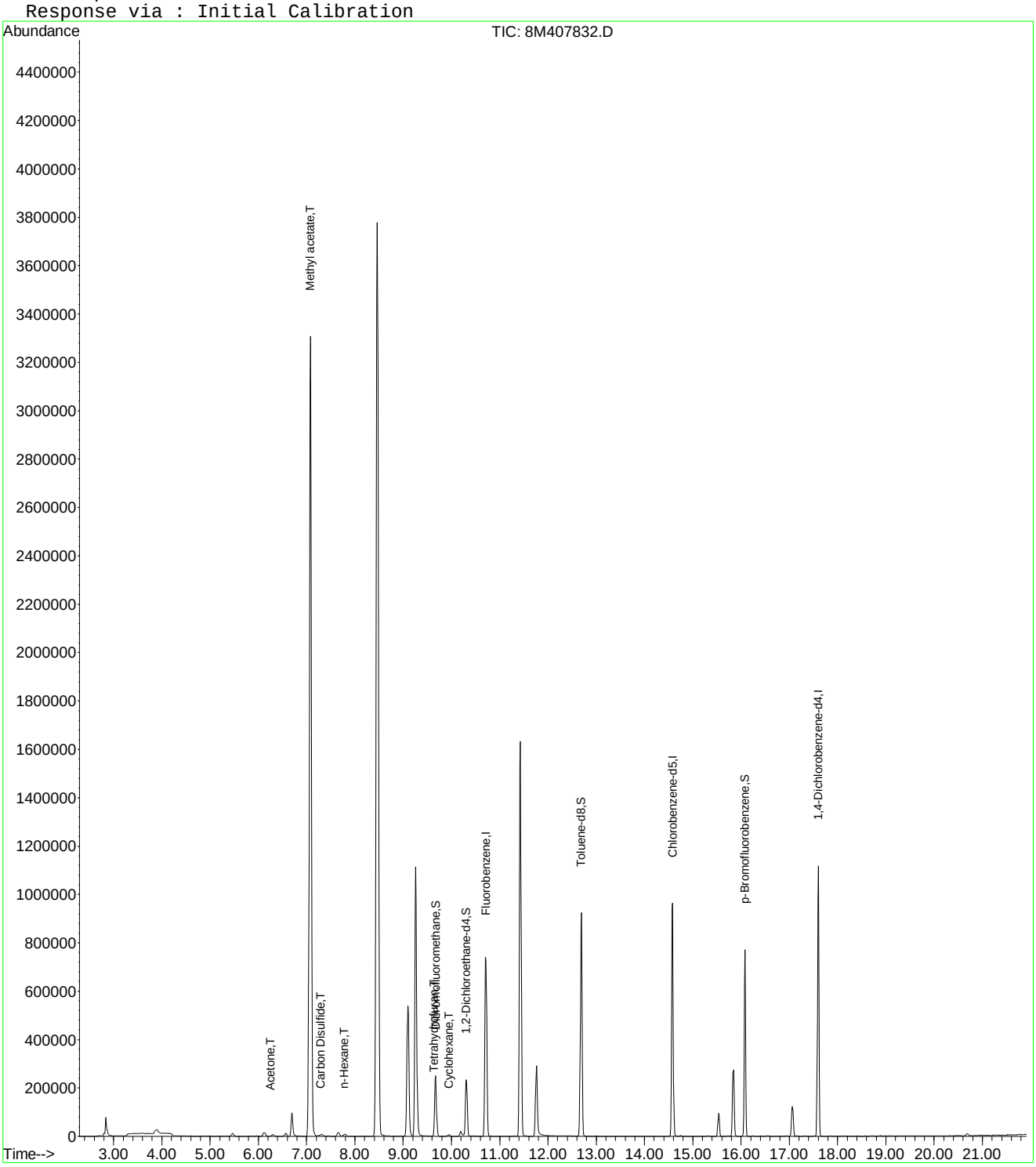

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:58 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	897754	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	673480	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	363907	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	138277	200.1400 ug/L	97
3) 3-Chloro-1-propene	7.08	41	3475078	206.8151 ug/L	99
4) 2-Chloro-1,3-butadiene	8.46	53	3691199	213.4973 ug/L	98
5) Ethyl Acetate	9.09	43	949825	207.9635 ug/L	98
6) Methacrylonitrile	9.26	67	412747	205.9018 ug/L	95
7) Isobutyl Alcohol	9.27	43	71985	384.6346 ug/L	94
8) 1-Butanol	10.20	56	18764	203.4062 ug/L	78
9) Methyl methacrylate	11.43	41	1165248	210.6479 ug/L	99
10) 2-Nitropropane	11.76	43	181242	195.1989 ug/L	92
13) Cyclohexanone	15.84	55	156208	201.3429 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M407832.D A9FOOWTR.M Tue Oct 06 11:56:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

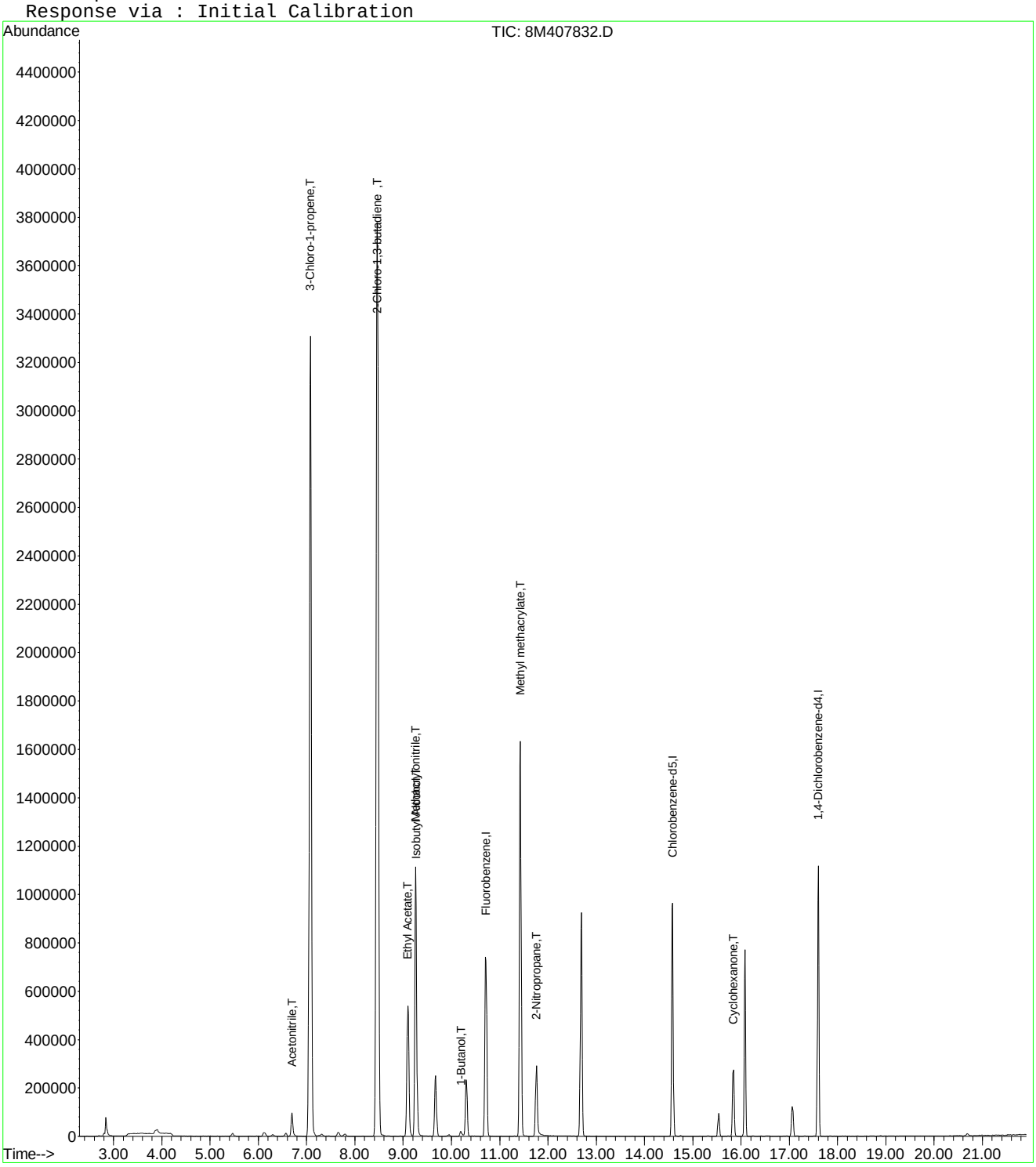

8M407832.D A9FOOWTR.M Tue Oct 06 11:56:59 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 14:39:56 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	914795	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	689423	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	367388	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	213426	24.5135 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.04%		
43) 1,2-Dichloroethane-d4	10.30	65	216408	24.3787 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.52%		
58) Toluene-d8	12.69	98	818846	25.5987 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.40%		
80) p-Bromofluorobenzene	16.08	95	327784	25.5707 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.28%		

Target Compounds

					Qvalue
13) Acetone	6.25	43	1107	0.8153 ug/L #	48
18) Methyl acetate	7.07	43	3926	0.7646 ug/L #	1
19) Methylene Chloride	7.26	84	1197	0.1300 ug/L	55
20) Carbon Disulfide	7.31	76	6659	0.2214 ug/L #	86
24) n-Hexane	7.78	57	11874	0.8534 ug/L	97
30) Propionitrile	9.05	54	208	0.3030 ug/L #	1
31) 2,2-Dichloropropane	9.09	77	2023	0.1353 ug/L #	42
36) Tetrahydrofuran	9.64	42	1301	0.8472 ug/L #	40
39) Cyclohexane	9.94	56	6598	0.3636 ug/L	94
72) Ethylbenzene	14.75	106	2422	0.1584 ug/L	54
73) m-,p-Xylene	14.75	106	2422	0.1381 ug/L	82

(#) = qualifier out of range (m) = manual integration
8M407833.D 8260WT.M Mon Oct 05 14:39:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 14:39 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

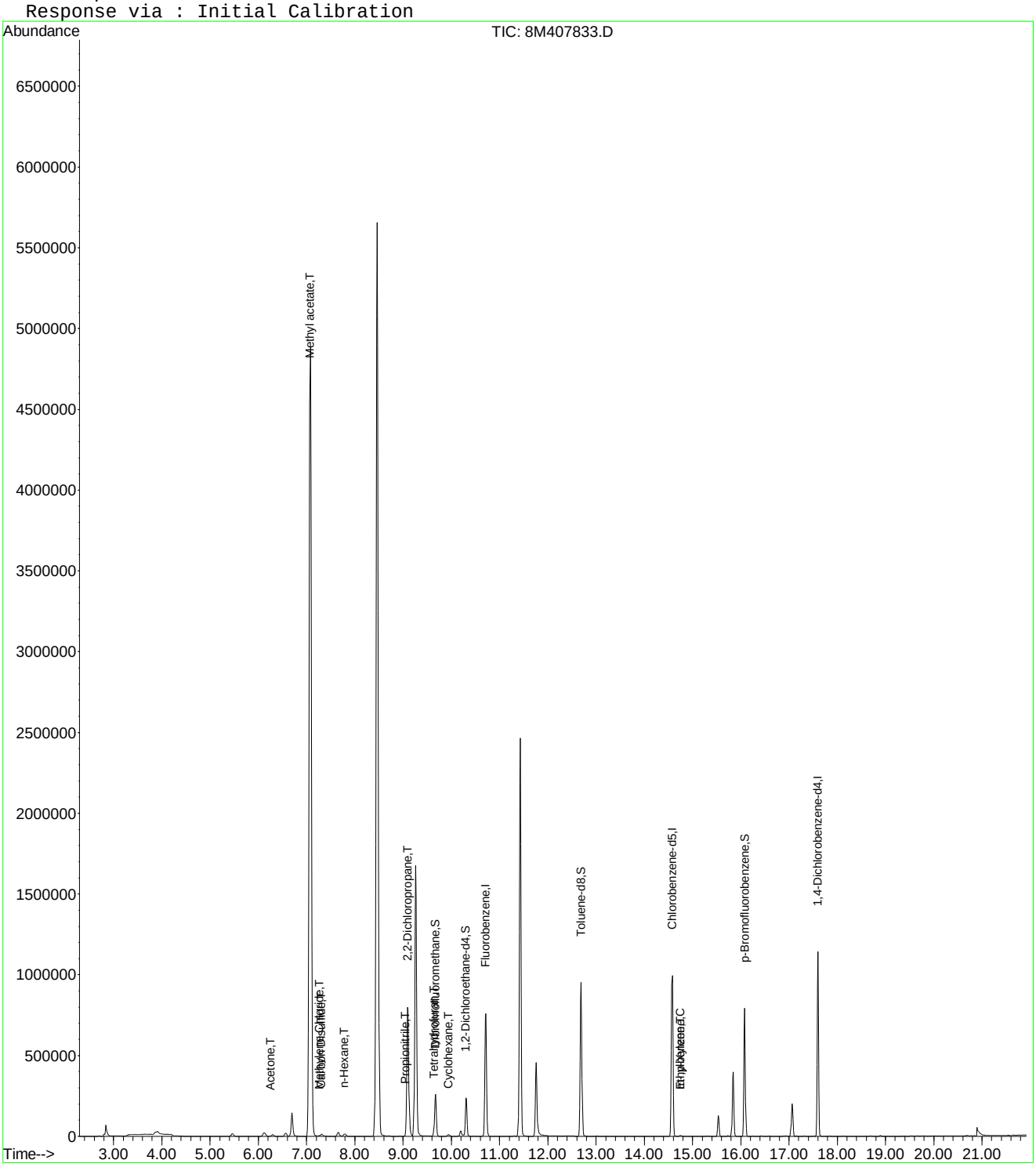

8M407833.D 8260WT.M Mon Oct 05 14:39:58 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:59 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	914795	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	689423	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	367388	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	204679	290.7307 ug/L	99
3) 3-Chloro-1-propene	7.08	41	5107808	298.3223 ug/L	99
4) 2-Chloro-1,3-butadiene	8.46	53	5432917	308.3838 ug/L	97
5) Ethyl Acetate	9.09	43	1404245	301.7310 ug/L	99
6) Methacrylonitrile	9.26	67	619787	303.4256 ug/L	96
7) Isobutyl Alcohol	9.27	43	113276	593.9881 ug/L	97
8) 1-Butanol	10.19	56	30662	326.1916 ug/L	85
9) Methyl methacrylate	11.43	41	1738162	308.3633 ug/L	98
10) 2-Nitropropane	11.76	43	289289	305.7623 ug/L	92
13) Cyclohexanone	15.84	55	224807	287.0174 ug/L	90

(#) = qualifier out of range (m) = manual integration
8M407833.D A9FOOWTR.M Tue Oct 06 11:56:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

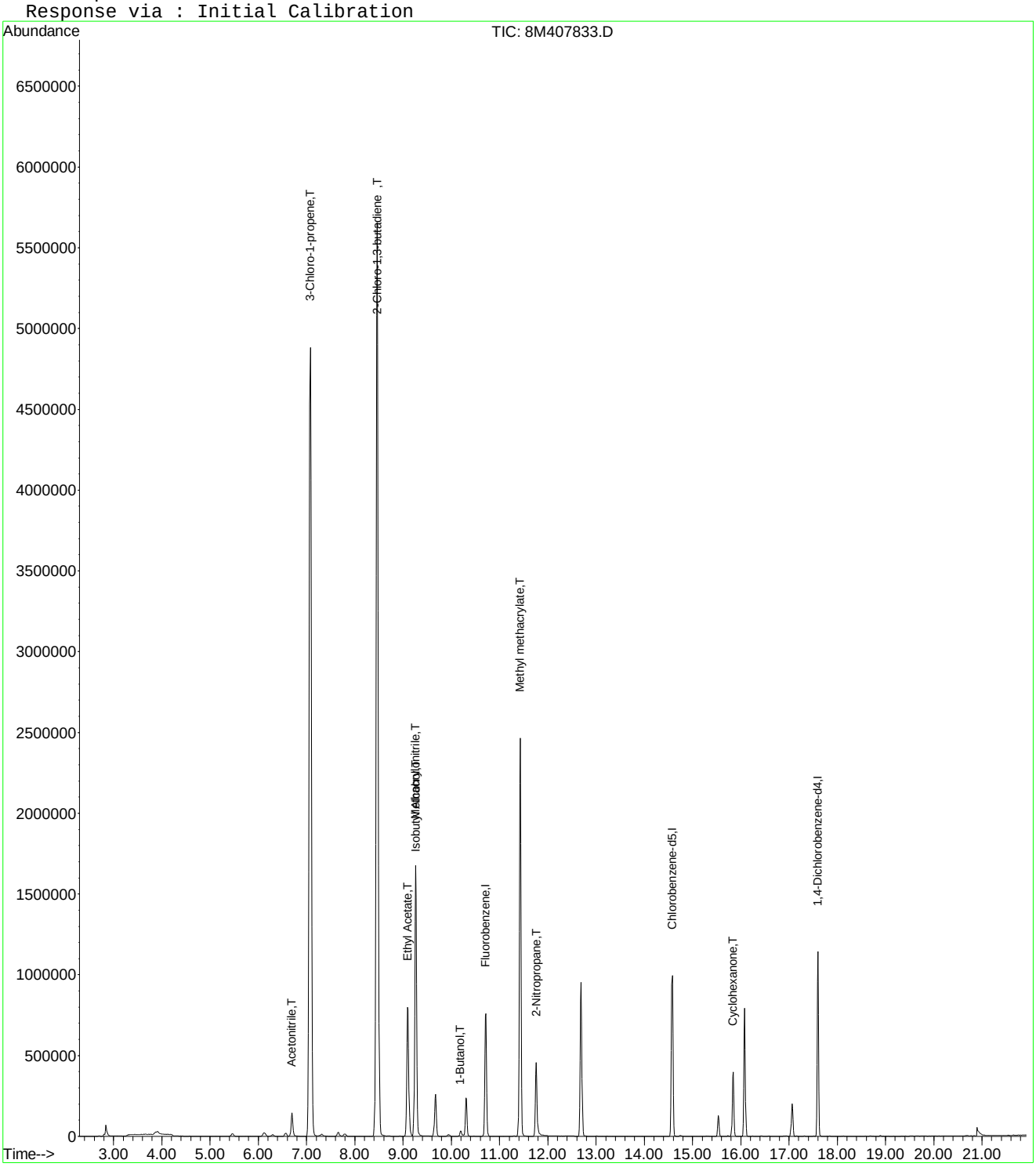

8M407833.D A9FOOWTR.M Tue Oct 06 11:57:00 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 15:09:02 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	933879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	691340	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	373332	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	222232	25.0033 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.00%		
43) 1,2-Dichloroethane-d4	10.31	65	222556	24.5590 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.24%		
58) Toluene-d8	12.69	98	831940	25.9359 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.76%		
80) p-Bromofluorobenzene	16.08	95	329799	25.3183 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.28%		

Target Compounds

					Qvalue
13) Acetone	6.25	43	2307	1.6644 ug/L #	48
18) Methyl acetate	7.07	43	5300	1.0111 ug/L #	1
19) Methylene Chloride	7.26	84	1631	0.1735 ug/L #	6
20) Carbon Disulfide	7.30	76	9227	0.3005 ug/L #	79
24) n-Hexane	7.79	57	16005	1.1268 ug/L	89
29) 2-Butanone	8.89	43	1241	0.5197 ug/L #	57
30) Propionitrile	9.07	54	773	1.1032 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	2811	0.1842 ug/L #	42
36) Tetrahydrofuran	9.65	42	1879	1.1986 ug/L #	40
39) Cyclohexane	9.95	56	9653	0.5211 ug/L	94
73) m-,p-Xylene	14.75	106	3655	0.2078 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M407834.D 8260WT.M Mon Oct 05 15:09:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 15:09 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

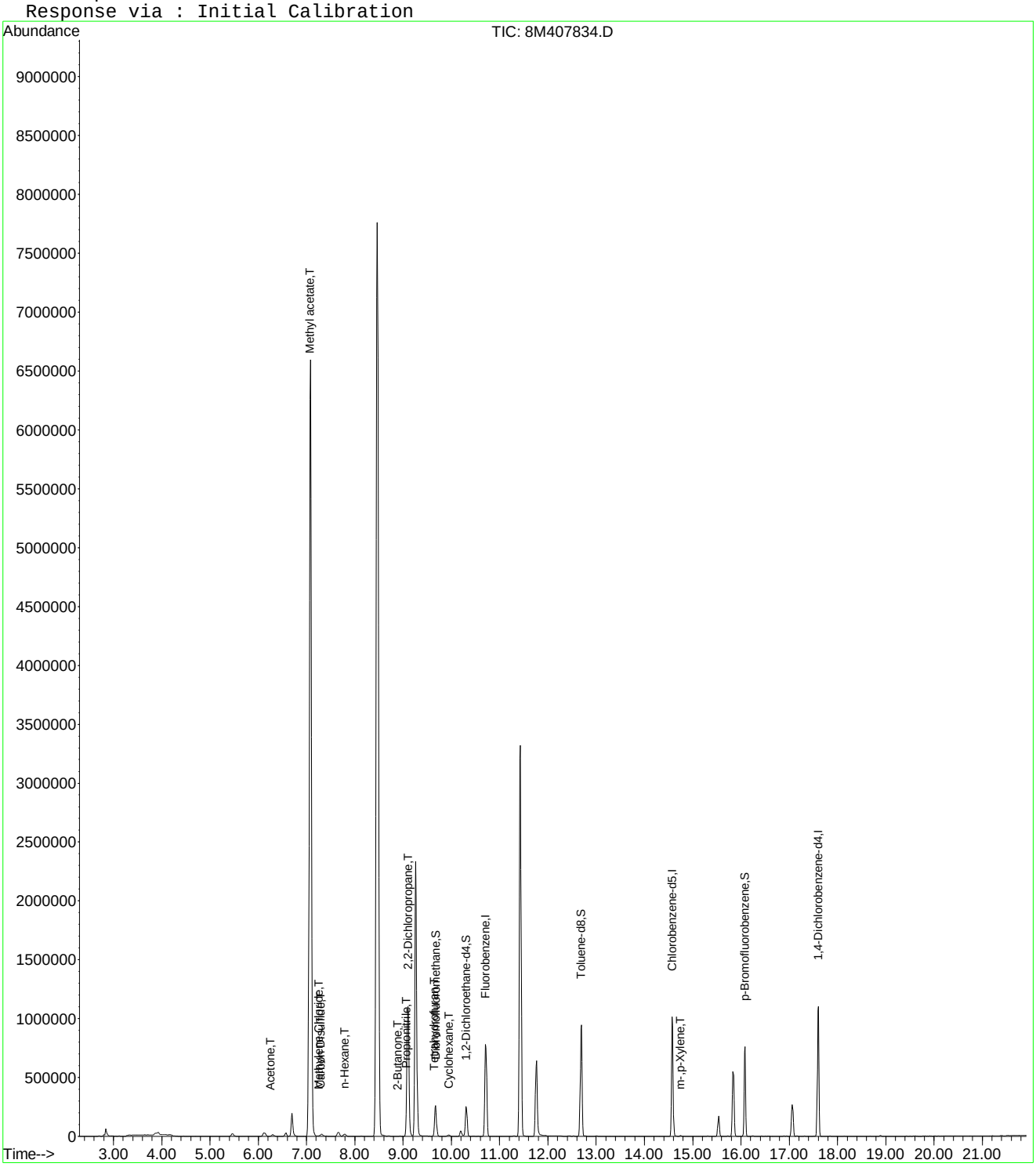

8M407834.D 8260WT.M Mon Oct 05 15:09:03 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:57:00 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	933879	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	691340	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	373332	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	276454	384.6570 ug/L	96
3) 3-Chloro-1-propene	7.08	41	6839307	391.2880 ug/L	97
4) 2-Chloro-1,3-butadiene	8.47	53	7261886	403.7765 ug/L	94
5) Ethyl Acetate	9.10	43	1919647	404.0467 ug/L	99
6) Methacrylonitrile	9.26	67	856150	410.5753 ug/L	97
7) Isobutyl Alcohol	9.27	43	151941	780.4553 ug/L	92
8) 1-Butanol	10.19	56	39703	413.7412 ug/L	80
9) Methyl methacrylate	11.43	41	2385524	414.5619 ug/L	99
10) 2-Nitropropane	11.76	43	432493	447.7796 ug/L	93
13) Cyclohexanone	15.83	55	313432	393.7962 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M407834.D A9FOOWTR.M Tue Oct 06 11:57:00 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:57 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

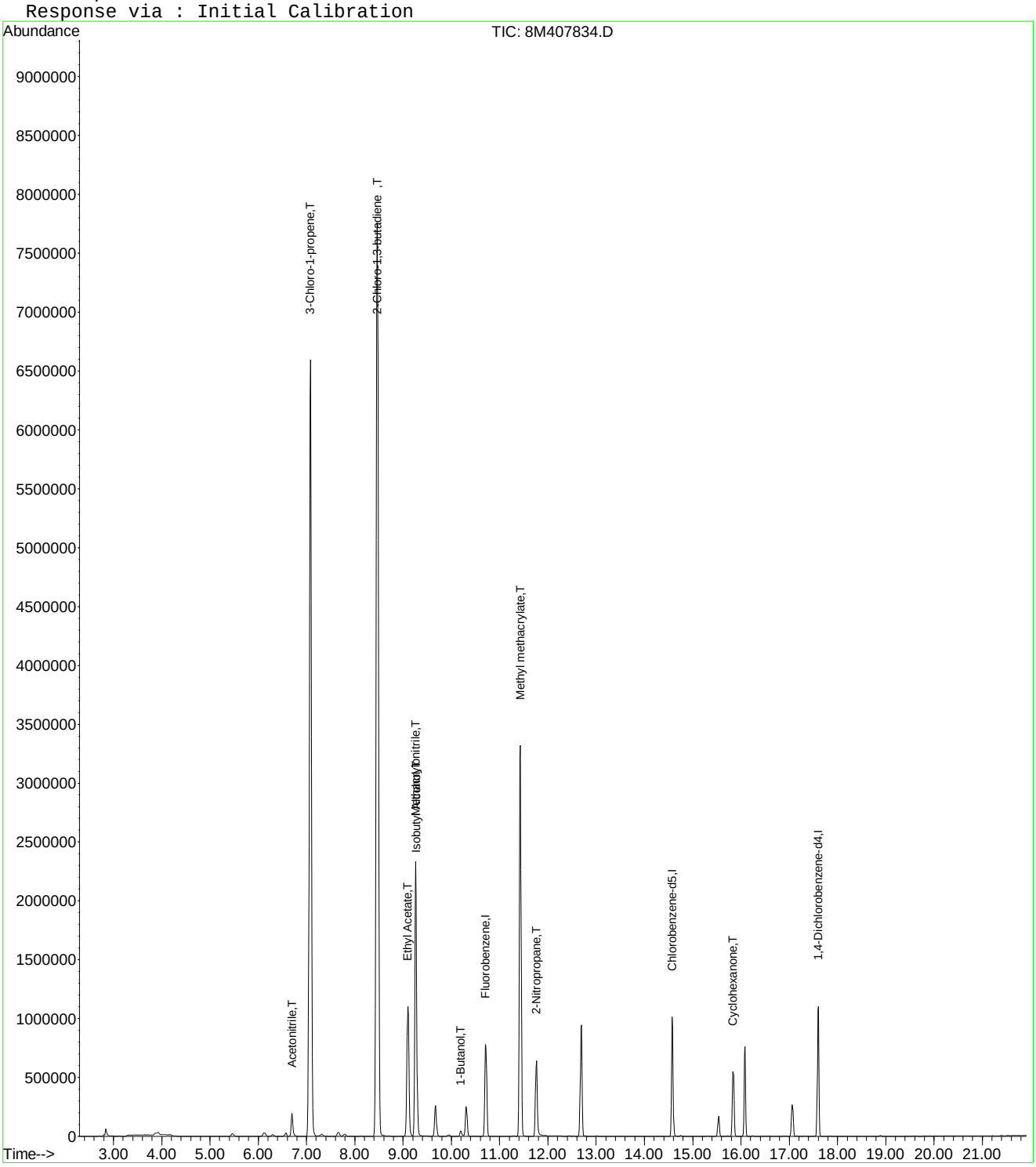

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 15:37:56 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	952136	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	712384	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	381907	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	222948	24.6029 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.40%		
43) 1,2-Dichloroethane-d4	10.30	65	229612	24.8518 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.40%		
58) Toluene-d8	12.69	98	849027	25.6867 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.76%		
80) p-Bromofluorobenzene	16.08	95	340742	25.5710 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.28%		

Target Compounds

					Qvalue
13) Acetone	6.26	43	2624	1.8568 ug/L #	48
17) Iodomethane	6.98	142	414	1.8830 ug/L #	28
18) Methyl acetate	7.00	43	818	0.1531 ug/L #	64
19) Methylene Chloride	7.27	84	2206	0.2301 ug/L	69
20) Carbon Disulfide	7.30	76	12486	0.3989 ug/L #	78
24) n-Hexane	7.79	57	21760	1.5026 ug/L	96
29) 2-Butanone	8.90	43	1797	0.7381 ug/L #	57
30) Propionitrile	9.07	54	1629	2.2802 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3861	0.2482 ug/L #	52
36) Tetrahydrofuran	9.65	42	2063	1.2908 ug/L #	40
39) Cyclohexane	9.94	56	13508	0.7152 ug/L	88
48) Methylcyclohexane	11.31	83	2456	0.1572 ug/L #	73
73) m-,p-Xylene	14.75	106	3865	0.2133 ug/L	76

(#) = qualifier out of range (m) = manual integration
8M407835.D 8260WT.M Mon Oct 05 15:37:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 15:37 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

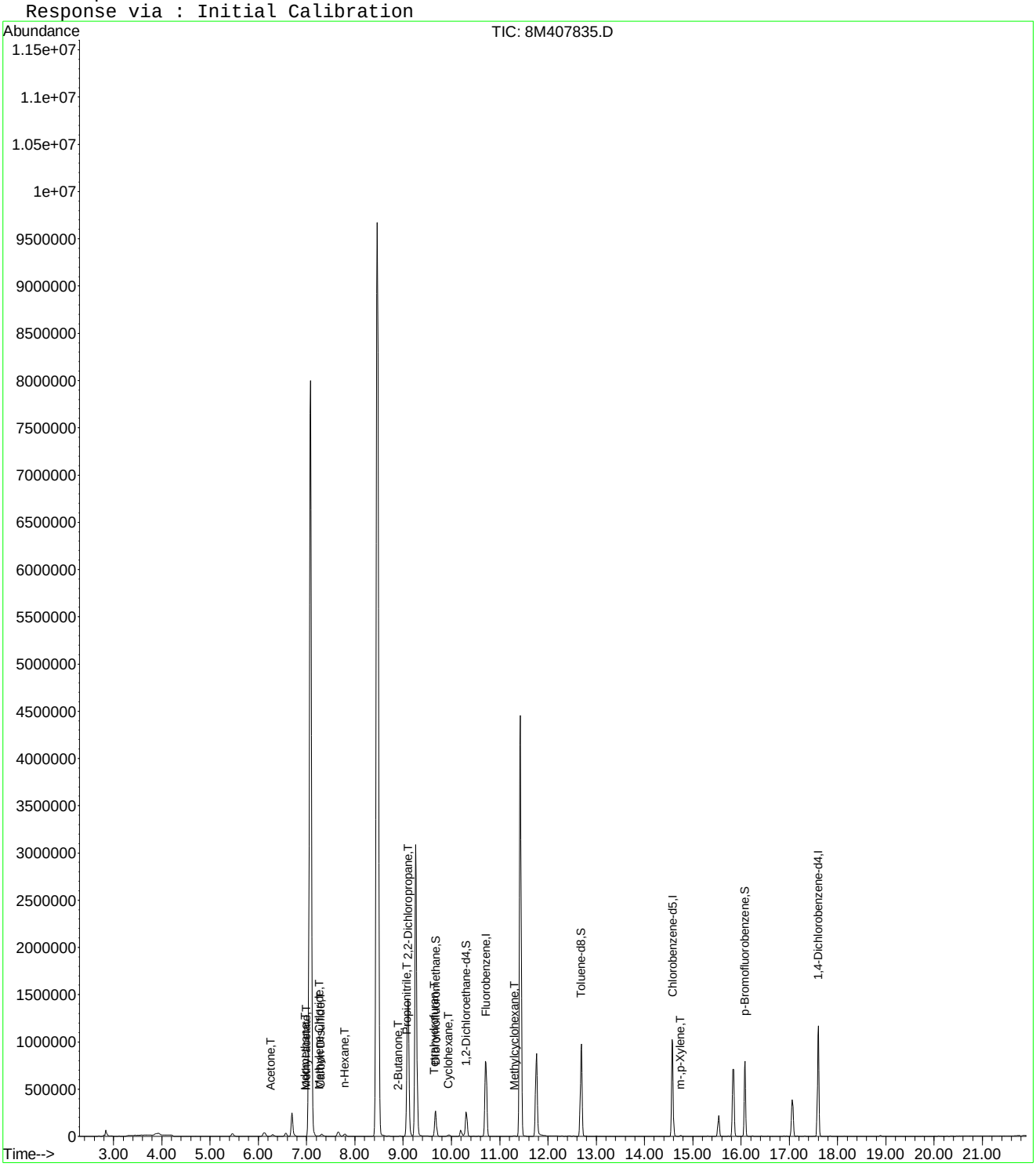

8M407835.D 8260WT.M Mon Oct 05 15:37:57 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:57:01 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	952136	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	712384	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	381907	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	355656	485.3695 ug/L	97
3) 3-Chloro-1-propene	7.08	41	8223448	461.4556 ug/L	95
4) 2-Chloro-1,3-butadiene	8.46	53	8764656	477.9893 ug/L	90
5) Ethyl Acetate	9.09	43	2535700	523.4795 ug/L	100
6) Methacrylonitrile	9.26	67	1137496	535.0377 ug/L	97
7) Isobutyl Alcohol	9.27	43	214402	1080.1734 ug/L	98
8) 1-Butanol	10.19	56	54442	556.4564 ug/L	87
9) Methyl methacrylate	11.43	41	3137676	534.8171 ug/L	99
10) 2-Nitropropane	11.76	43	594174	603.3794 ug/L	94
13) Cyclohexanone	15.83	55	412487	506.6127 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M407835.D A9FOOWTR.M Tue Oct 06 11:57:01 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:57 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

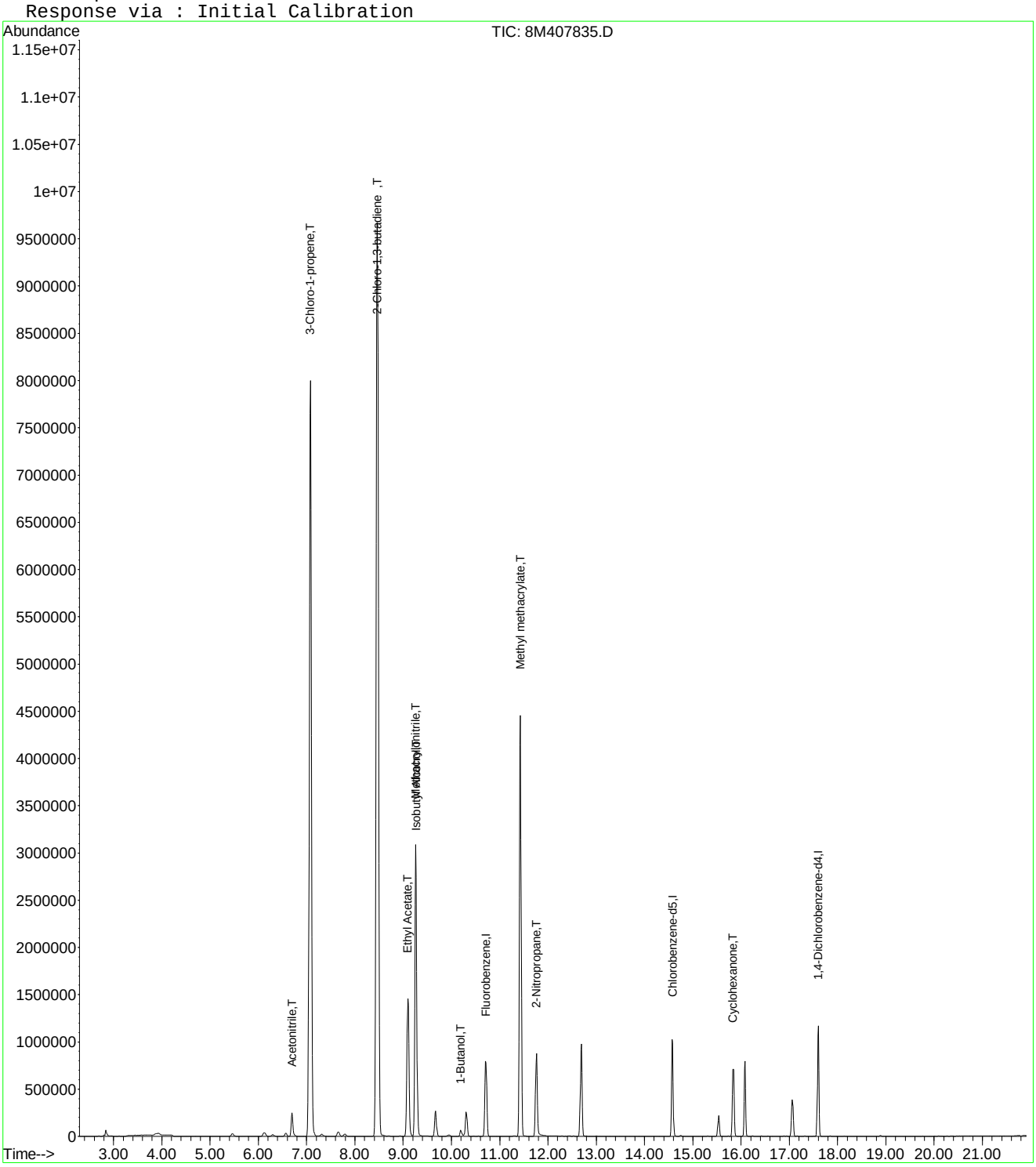

8M407835.D A9FOOWTR.M Tue Oct 06 11:57:01 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 17:10:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	910348	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	672710	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	361469	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	216028	24.9336 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.72%		
43) 1,2-Dichloroethane-d4	10.31	65	220386	24.9481 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.80%		
58) Toluene-d8	12.68	98	805489	25.8067 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	318985	25.2918 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.16%		

Target Compounds

					Qvalue
5) 1,3-Butadiene	3.90	54	680860	64.5479 ug/L	96
9) Diethyl ether	5.91	59	636031	102.4537 ug/L	99
18) Methyl acetate	7.09	43	861	0.1685 ug/L #	1
29) 2-Butanone	8.90	43	1914	0.8222 ug/L	83
30) Propionitrile	8.99	54	68619	100.4600 ug/L	99
36) Tetrahydrofuran	9.65	42	849	0.5556 ug/L #	40
39) Cyclohexane	9.96	56	4155	0.2301 ug/L #	88
51) 1,4-Dioxane	11.71	88	8398	188.8572 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M407838.D 8260WT.M Mon Oct 05 17:10:32 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 17:10 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

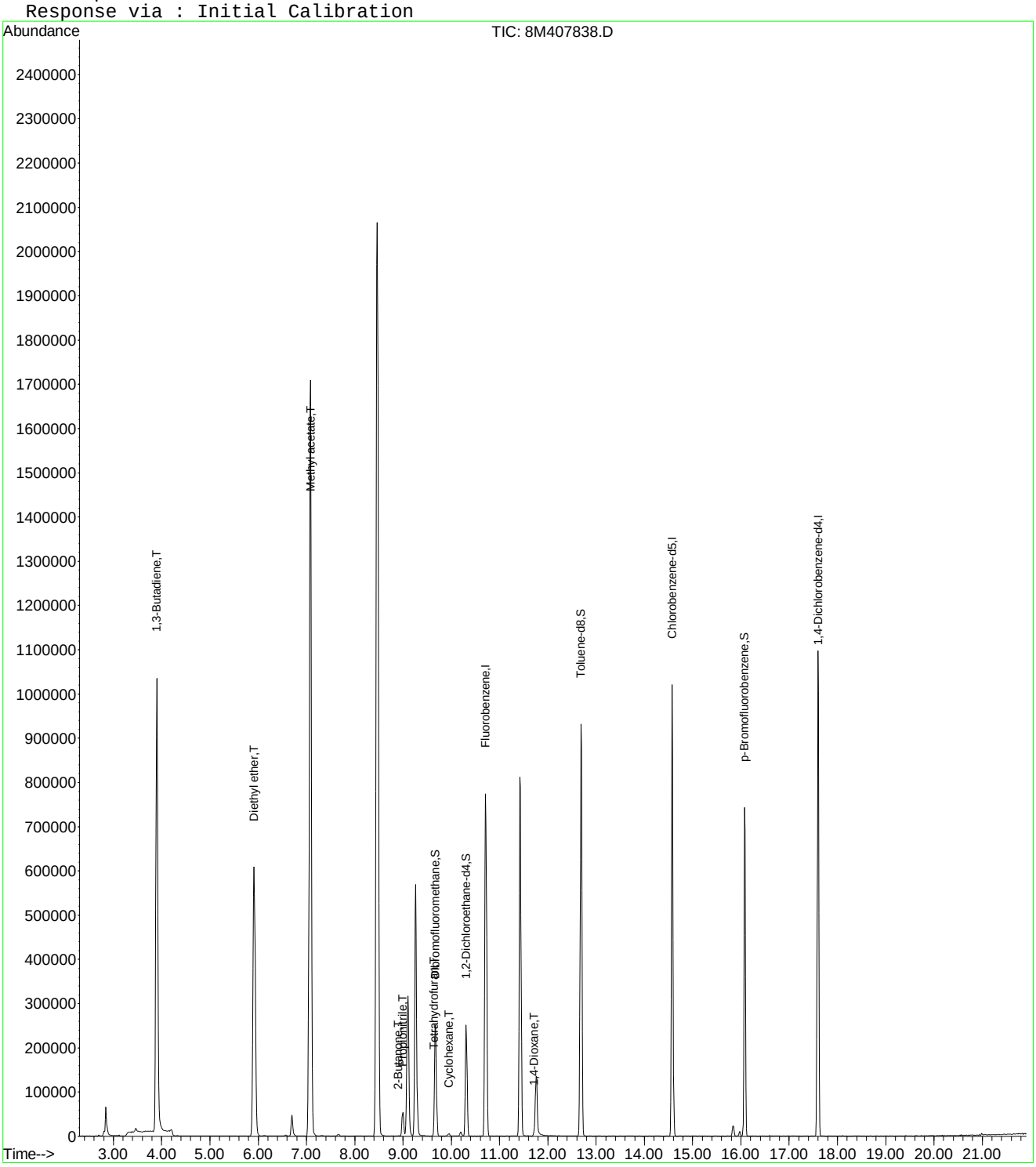

8M407838.D 8260WT.M Mon Oct 05 17:10:33 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:57:03 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	910348	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	672710	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	361469	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	68331	97.5330 ug/L	99
3) 3-Chloro-1-propene	7.08	41	1823769	107.0379 ug/L	100
4) 2-Chloro-1,3-butadiene	8.47	53	2081638	118.7353 ug/L	100
5) Ethyl Acetate	9.10	43	556798	120.2240 ug/L	97
6) Methacrylonitrile	9.26	67	209938	103.2802 ug/L	94
7) Isobutyl Alcohol	9.27	43	38987	205.4358 ug/L	96
8) 1-Butanol	10.20	56	7758	82.9351 ug/L	93
9) Methyl methacrylate	11.42	41	590033	105.1877 ug/L	99
10) 2-Nitropropane	11.75	43	94685	100.5656 ug/L	93
13) Cyclohexanone	15.84	55	13964	18.1202 ug/L	94

(#) = qualifier out of range (m) = manual integration
8M407838.D A9FOOWTR.M Tue Oct 06 11:57:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:57 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

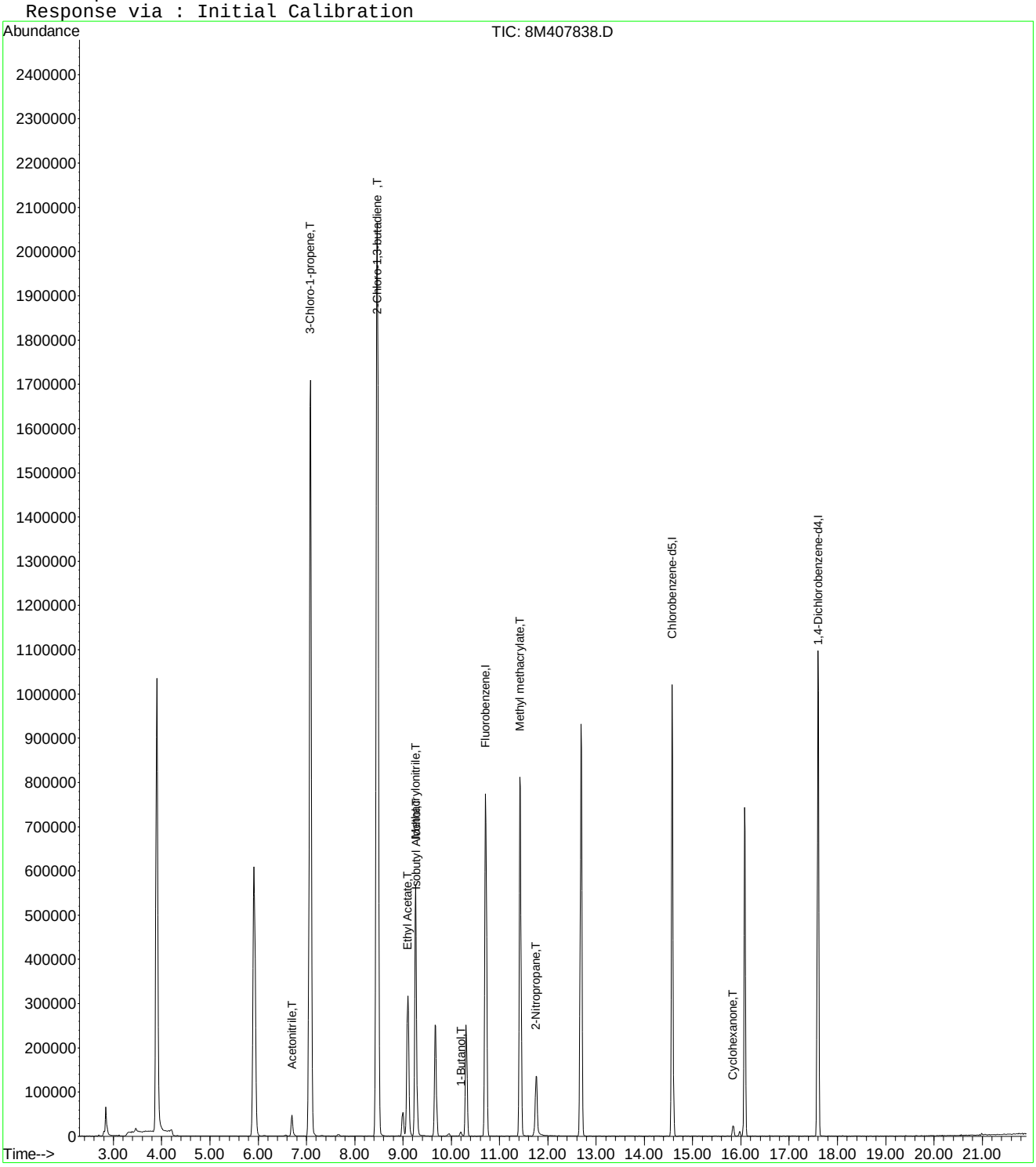

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG540826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 12:32:35 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	910348	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	672710	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	361469	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	68331	97.5330 ug/L	99
3) 3-Chloro-1-propene	7.08	41	1823769	107.0379 ug/L	100
4) 2-Chloro-1,3-butadiene	8.47	53	2081638	118.7353 ug/L	100
5) Ethyl Acetate	9.10	43	556798	120.2240 ug/L	97
6) Methacrylonitrile	9.26	67	209938	103.2802 ug/L	94
7) Isobutyl Alcohol	9.27	43	38987	205.4358 ug/L	96
8) 1-Butanol	10.20	56	7758	82.9351 ug/L	93
9) Methyl methacrylate	11.42	41	590033	105.1877 ug/L	99
10) 2-Nitropropane	11.75	43	94685	100.5656 ug/L	93
13) Cyclohexanone	15.84	55	13964	18.1202 ug/L	94

(#) = qualifier out of range (m) = manual integration
8M407838.D A9FOOWTR.M Tue Oct 06 12:32:36 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG540826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:32 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

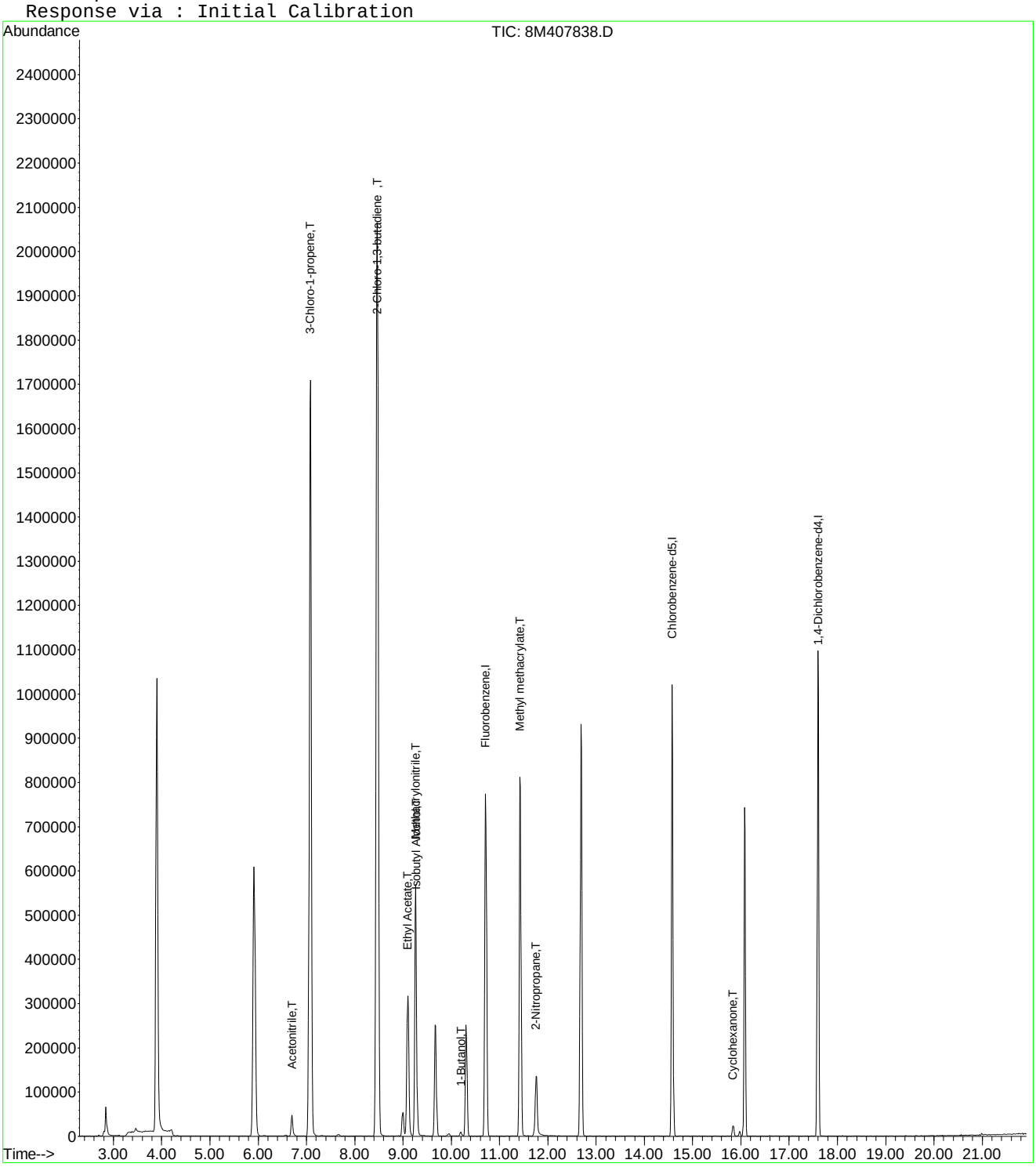

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG540826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	105	0.00
2	T	Acetonitrile	100.0000	97.5330	2.5	101	0.00
3	T	3-Chloro-1-propene	100.0000	107.0379	-7.0	112	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	118.7354	-18.7	124	0.00
5	T	Ethyl Acetate	100.0000	120.2240	-20.2	123	0.00
6	T	Methacrylonitrile	100.0000	103.2802	-3.3	107	0.00
7	T	Isobutyl Alcohol	200.0000	205.4358	-2.7	104	0.00
8	T	1-Butanol	100.0000	82.9351	17.1	94	0.01
9	T	Methyl methacrylate	100.0000	105.1877	-5.2	105	0.00
10	T	2-Nitropropane	100.0000	100.5656	-0.6	122	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	102	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
13	T	Cyclohexanone	100.0000	18.1202	81.9#	19	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407838.D A9FOOWTR.M Tue Oct 06 12:32:39 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409954.D Vial: 2
Acq On : 4 Feb 2016 16:21 Operator: TMB
Sample : WG556045-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:48 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	815409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	568499	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	279030	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.67	98	744	0.0255 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.12%#	
80) p-Bromofluorobenzene	16.07	95	1144	0.0999 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.40%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3885	0.3259 ug/L #	74
3) Chloromethane	3.63	50	7390	0.4451 ug/L	100
4) Vinyl Chloride	3.85	62	4485	0.4270 ug/L	99
5) 1,3-Butadiene	3.91	54	5469	Below Cal	90
6) Bromomethane	4.74	94	1882	0.2925 ug/L	90
7) Chloroethane	4.89	64	2146	0.3261 ug/L #	52
8) Trichlorofluoromethane	5.38	101	4688	0.3294 ug/L #	87
10) Isoprene	5.95	67	3805	0.3453 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	2165	0.2912 ug/L	96
13) Acetone	6.25	43	2792	Below Cal #	48
14) 1,1-Dichloroethene	6.48	61	5356	0.3661 ug/L	95
16) Dimethyl Sulfide	6.73	62	2295	0.3283 ug/L	93
17) Iodomethane	7.00	142	1915	0.3087 ug/L #	65
18) Methyl acetate	7.00	43	1141	0.2746 ug/L #	66
19) Methylene Chloride	7.26	84	2771	0.3500 ug/L	81
20) Carbon Disulfide	7.30	76	13916	0.5317 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	4096	0.2594 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	5042	0.3520 ug/L	97
24) n-Hexane	7.80	57	6630	0.5263 ug/L	91
26) Vinyl Acetate	8.30	43	3893	0.3181 ug/L #	79
27) 1,1-Dichloroethane	8.32	63	5530	0.3187 ug/L #	91
31) 2,2-Dichloropropane	9.11	77	4254	0.3351 ug/L	78
32) cis-1,2-Dichloroethene	9.18	96	2805	0.3105 ug/L	80
33) Chloroform	9.38	83	5024	0.3309 ug/L	98
35) Bromochloromethane	9.60	130	1294	0.2901 ug/L	84
36) Tetrahydrofuran	9.64	42	9122	6.5170 ug/L	94
38) 1,1,1-Trichloroethane	9.92	97	4521	0.3348 ug/L	92
39) Cyclohexane	9.93	56	6871	0.3965 ug/L	83
40) 1,1-Dichloropropene	10.11	75	4900	0.4120 ug/L	81
42) Carbon Tetrachloride	10.26	117	3838	0.3194 ug/L #	91
45) 1,2-Dichloroethane	10.42	62	3503	0.3275 ug/L	82
46) Benzene	10.47	78	10945	0.3458 ug/L	98
47) Trichloroethene	11.21	130	3140	0.3816 ug/L	90
48) Methylcyclohexane	11.30	83	4747	0.3780 ug/L	81
49) 1,2-Dichloropropane	11.43	63	3034	0.3293 ug/L	85
50) Bromodichloromethane	11.72	83	3404	0.3069 ug/L #	91
52) Dibromomethane	11.81	93	1286	0.3284 ug/L	72
53) 2-Chloroethyl Vinyl Ether	12.03	63	645	0.1686 ug/L #	51
54) 4-Methyl-2-Pentanone	12.05	58	216	0.1217 ug/L #	41
55) cis-1,3-Dichloropropene	12.36	75	4326	0.3503 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M409954.D 8260WT.M Fri Feb 05 11:26:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409954.D Vial: 2
Acq On : 4 Feb 2016 16:21 Operator: TMB
Sample : WG556045-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:48 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.63	79	1416	0.2124 ug/L	57
59)	Toluene	12.79	91	12027	0.3678 ug/L	99
60)	Ethyl Methacrylate	12.88	69	1532	0.2434 ug/L	81
62)	trans-1,3-Dichloropropene	12.96	75	3677	0.3627 ug/L	98
63)	1,1,2-Trichloroethane	13.18	97	1219	0.2418 ug/L	90
65)	1,3-Dichloropropane	13.48	76	2686	0.2926 ug/L	71
66)	Tetrachloroethene	13.60	164	2404	0.3668 ug/L	91
67)	Dibromochloromethane	13.86	129	1955	0.2899 ug/L	94
68)	1,2-Dibromoethane	14.12	107	1643	0.3254 ug/L	93
69)	1-Chlorohexane	14.21	91	4255	0.3794 ug/L	66
70)	Chlorobenzene	14.63	112	7843	0.3612 ug/L	88
71)	1,1,1,2-Tetrachloroethane	14.66	131	1984	0.2607 ug/L	99
72)	Ethylbenzene	14.65	106	3950	0.3175 ug/L	82
73)	m-,p-Xylene	14.74	106	11513	0.7925 ug/L	94
74)	o-Xylene	15.30	106	4808	0.3292 ug/L	97
75)	Styrene	15.34	104	8274	0.3509 ug/L	97
76)	Bromoform	15.84	173	801	0.2092 ug/L #	46
77)	Isopropylbenzene	15.73	105	12772	0.3600 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1434	0.2749 ug/L #	92
82)	trans-1,4-Dichloro-2-Buten	16.18	53	595	0.2949 ug/L #	47
83)	n-Propylbenzene	16.24	91	16964	0.3957 ug/L	99
84)	Bromobenzene	16.37	156	2869	0.3454 ug/L	72
85)	1,3,5-Trimethylbenzene	16.43	105	11300	0.3751 ug/L	99
86)	2-Chlorotoluene	16.51	91	10228	0.3540 ug/L	99
87)	4-Chlorotoluene	16.55	91	11526	0.4487 ug/L	96
88)	a-Methylstyrene	16.83	118	5246	0.3339 ug/L	100
89)	tert-Butylbenzene	16.89	134	1894	0.3097 ug/L #	41
90)	1,2,4-Trimethylbenzene	16.94	105	11522	0.3790 ug/L	96
91)	sec-Butylbenzene	17.16	105	14640	0.4177 ug/L	90
92)	p-Isopropyltoluene	17.31	119	11902	0.3965 ug/L	89
93)	1,3-Dichlorobenzene	17.51	146	6715	0.4044 ug/L	93
94)	1,4-Dichlorobenzene	17.63	146	7157	0.4118 ug/L #	52
95)	n-Butylbenzene	17.84	91	12792	0.4533 ug/L	97
96)	1,2-Dichlorobenzene	18.13	146	5274	0.3568 ug/L	97
98)	1,2,4-Trichlorobenzene	20.27	180	4766	0.4610 ug/L	96
99)	Hexachlorobutadiene	20.42	225	2035	0.4520 ug/L	97
100)	Naphthalene	20.64	128	6390	0.3858 ug/L	92
101)	1,2,3-Trichlorobenzene	20.94	180	3519	0.3949 ug/L #	93

(#) = qualifier out of range (m) = manual integration
8M409954.D 8260WT.M Fri Feb 05 11:26:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409954.D Vial: 2
Acq On : 4 Feb 2016 16:21 Operator: TMB
Sample : WG556045-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 11:26 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

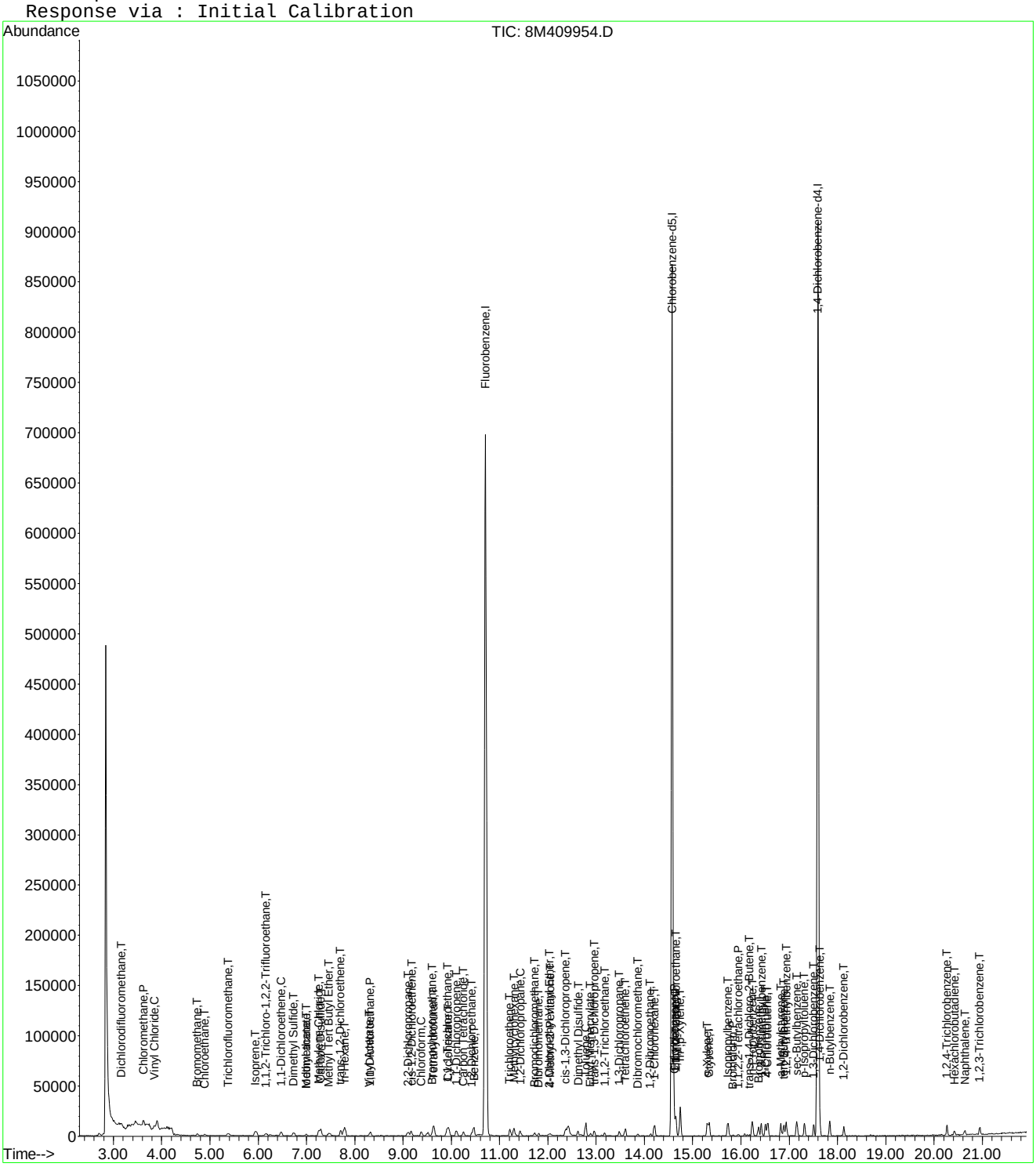

8M409954.D 8260WT.M Fri Feb 05 11:26:49 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020416\8M409954.D Vial: 2
Acq On : 4 Feb 2016 16:21 Operator: TMB
Sample : WG556045-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3259	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4451	0.0	100	0.01
4	C	Vinyl Chloride	-1.0000	0.4270	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	-1.0000	0.2925	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.3261	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.3294	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	-1.0000	0.3453	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.14#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2912	0.0	100	0.00
13	T	Acetone	-1.0000	-1.5229	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3661	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	-1.0000	0.3283	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.3087	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.2746	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.3500	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.5317	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2594	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3520	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.5263	0.0	100	0.01
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3181	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3187	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.70#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.99#
31	T	2,2-Dichloropropane	-1.0000	0.3351	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3105	0.0	100	0.01
33	C	Chloroform	0.3000	0.3309	-10.3	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	-1.0000	0.2901	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	6.5170	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.66#
38	T	1,1,1-Trichloroethane	-1.0000	0.3348	0.0	100	0.01
39	T	Cyclohexane	-1.0000	0.3965	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4120	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.30#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.3275	0.0	100	0.00
46	T	Benzene	-1.0000	0.3458	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.3816	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3780	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3293	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.3069	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.72#
52	T	Dibromomethane	-1.0000	0.3284	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1686	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.1217	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020416\8M409954.D Vial: 2
Acq On : 4 Feb 2016 16:21 Operator: TMB
Sample : WG556045-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3503	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2124	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0255	0.0	100	0.00
59	C	Toluene	-1.0000	0.3678	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2434	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3627	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2418	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2926	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3668	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2899	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3254	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3794	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3612	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2607	0.0	0	0.00
72	C	Ethylbenzene	-1.0000	0.3175	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.7925	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3292	0.0	100	0.00
75	T	Styrene	-1.0000	0.3509	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2092	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3600	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2749	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0999	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.13#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.2949	0.0	100	0.00
83	T	n-Propylbenzene	-1.0000	0.3957	0.0	0	0.00
84	T	Bromobenzene	0.3000	0.3454	-15.1	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3751	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3540	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.4487	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.3339	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3097	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3790	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4177	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3965	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.4044	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.4118	-37.3#	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4533	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3568	-18.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.12#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.4610	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.4520	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3858	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3949	-31.6#	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M409954.D 8260WT.M Fri Feb 05 11:27:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409955.D Vial: 3
Acq On : 4 Feb 2016 16:50 Operator: TMB
Sample : WG556045-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:49 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	845281	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	595130	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	297484	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.16	85	4447	0.3599 ug/L	99
3) Chloromethane	3.63	50	8594	0.4993 ug/L	96
4) Vinyl Chloride	3.84	62	4868	0.4471 ug/L	93
5) 1,3-Butadiene	3.91	54	5837	Below Cal	91
6) Bromomethane	4.73	94	2579	0.3867 ug/L	93
7) Chloroethane	4.89	64	2653	0.3889 ug/L #	50
8) Trichlorofluoromethane	5.38	101	6195	0.4200 ug/L #	94
10) Isoprene	5.95	67	4435	0.3883 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3020	0.3918 ug/L	74
13) Acetone	6.25	43	4382	Below Cal #	78
14) 1,1-Dichloroethene	6.47	61	6221	0.4102 ug/L	96
16) Dimethyl Sulfide	6.74	62	2463	0.3399 ug/L	81
17) Iodomethane	7.00	142	2529	0.3933 ug/L	80
18) Methyl acetate	7.01	43	1919	0.4455 ug/L #	66
19) Methylene Chloride	7.25	84	3372	0.4109 ug/L	98
20) Carbon Disulfide	7.30	76	12659	0.4666 ug/L	91
22) Methyl Tert Butyl Ether	7.47	73	6724	0.4107 ug/L	89
23) trans-1,2-Dichloroethene	7.71	61	6678	0.4497 ug/L	91
24) n-Hexane	7.79	57	6037	0.4623 ug/L	94
26) Vinyl Acetate	8.30	43	5548	0.4373 ug/L #	79
27) 1,1-Dichloroethane	8.32	63	7179	0.3991 ug/L	90
29) 2-Butanone	8.88	43	685	0.3077 ug/L #	57
31) 2,2-Dichloropropane	9.10	77	6106	0.4639 ug/L	84
32) cis-1,2-Dichloroethene	9.17	96	3811	0.4069 ug/L	96
33) Chloroform	9.37	83	7102	0.4513 ug/L	93
35) Bromochloromethane	9.61	130	1754	0.3793 ug/L #	62
36) Tetrahydrofuran	9.64	42	210	0.1447 ug/L #	41
38) 1,1,1-Trichloroethane	9.92	97	5850	0.4179 ug/L	95
39) Cyclohexane	9.93	56	7451	0.4148 ug/L	87
40) 1,1-Dichloropropene	10.11	75	5253	0.4261 ug/L	91
42) Carbon Tetrachloride	10.25	117	5172	0.4152 ug/L	89
45) 1,2-Dichloroethane	10.43	62	4263	0.3844 ug/L	86
46) Benzene	10.47	78	13876	0.4229 ug/L	99
47) Trichloroethene	11.21	130	3210	0.3763 ug/L	93
48) Methylcyclohexane	11.31	83	4947	0.3800 ug/L	78
49) 1,2-Dichloropropane	11.43	63	3833	0.4014 ug/L #	72
50) Bromodichloromethane	11.73	83	4741	0.4124 ug/L #	94
52) Dibromomethane	11.80	93	1658	0.4084 ug/L	90
53) 2-Chloroethyl Vinyl Ether	12.02	63	1376	0.3470 ug/L #	51
55) cis-1,3-Dichloropropene	12.37	75	5354	0.4182 ug/L	91

(#) = qualifier out of range (m) = manual integration
8M409955.D 8260WT.M Fri Feb 05 11:26:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409955.D Vial: 3
Acq On : 4 Feb 2016 16:50 Operator: TMB
Sample : WG556045-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:49 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
56)	Dimethyl Disulfide	12.63	79	2926	0.4233 ug/L		72
59)	Toluene	12.78	91	15314	0.4474 ug/L		93
60)	Ethyl Methacrylate	12.88	69	2343	0.3557 ug/L		74
62)	trans-1,3-Dichloropropene	12.96	75	3963	0.3734 ug/L		95
63)	1,1,2-Trichloroethane	13.19	97	2113	0.4004 ug/L		95
65)	1,3-Dichloropropane	13.49	76	3879	0.4036 ug/L		83
66)	Tetrachloroethene	13.60	164	2669	0.3890 ug/L		92
67)	Dibromochloromethane	13.87	129	2488	0.3524 ug/L		93
68)	1,2-Dibromoethane	14.12	107	2050	0.3878 ug/L		97
69)	1-Chlorohexane	14.21	91	4963	0.4228 ug/L		88
70)	Chlorobenzene	14.62	112	10315	0.4538 ug/L		81
71)	1,1,1,2-Tetrachloroethane	14.67	131	3028	0.3801 ug/L		92
72)	Ethylbenzene	14.65	106	5109	0.3923 ug/L		83
73)	m-,p-Xylene	14.75	106	13427	0.8829 ug/L		94
74)	o-Xylene	15.31	106	6467	0.4229 ug/L		99
75)	Styrene	15.34	104	9853	0.3991 ug/L		100
76)	Bromoform	15.83	173	1072	0.2674 ug/L		89
77)	Isopropylbenzene	15.73	105	15741	0.4239 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.94	83	2113	0.3799 ug/L	#	94
81)	1,2,3-Trichloropropane	16.13	110	742	0.4902 ug/L	#	42
82)	trans-1,4-Dichloro-2-Buten	16.17	53	628	0.2919 ug/L	#	1
83)	n-Propylbenzene	16.24	91	20382	0.4459 ug/L		98
84)	Bromobenzene	16.37	156	3582	0.4045 ug/L		87
85)	1,3,5-Trimethylbenzene	16.42	105	14068	0.4380 ug/L		98
86)	2-Chlorotoluene	16.50	91	15249	0.4950 ug/L		94
87)	4-Chlorotoluene	16.56	91	10981	0.4010 ug/L		99
88)	a-Methylstyrene	16.83	118	5965	0.3561 ug/L		99
89)	tert-Butylbenzene	16.89	134	2448	0.3754 ug/L		68
90)	1,2,4-Trimethylbenzene	16.94	105	13870	0.4279 ug/L		99
91)	sec-Butylbenzene	17.16	105	16828	0.4504 ug/L		100
92)	p-Isopropyltoluene	17.31	119	15337	0.4793 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	7657	0.4326 ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	7911	0.4269 ug/L	#	50
95)	n-Butylbenzene	17.84	91	13725	0.4562 ug/L		98
96)	1,2-Dichlorobenzene	18.13	146	6401	0.4062 ug/L		91
98)	1,2,4-Trichlorobenzene	20.27	180	4750	0.4309 ug/L		96
99)	Hexachlorobutadiene	20.42	225	2148	0.4475 ug/L		96
100)	Naphthalene	20.64	128	8042	0.4554 ug/L	#	82
101)	1,2,3-Trichlorobenzene	20.95	180	4100	0.4316 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M409955.D 8260WT.M Fri Feb 05 11:26:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409955.D Vial: 3
Acq On : 4 Feb 2016 16:50 Operator: TMB
Sample : WG556045-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 11:26 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

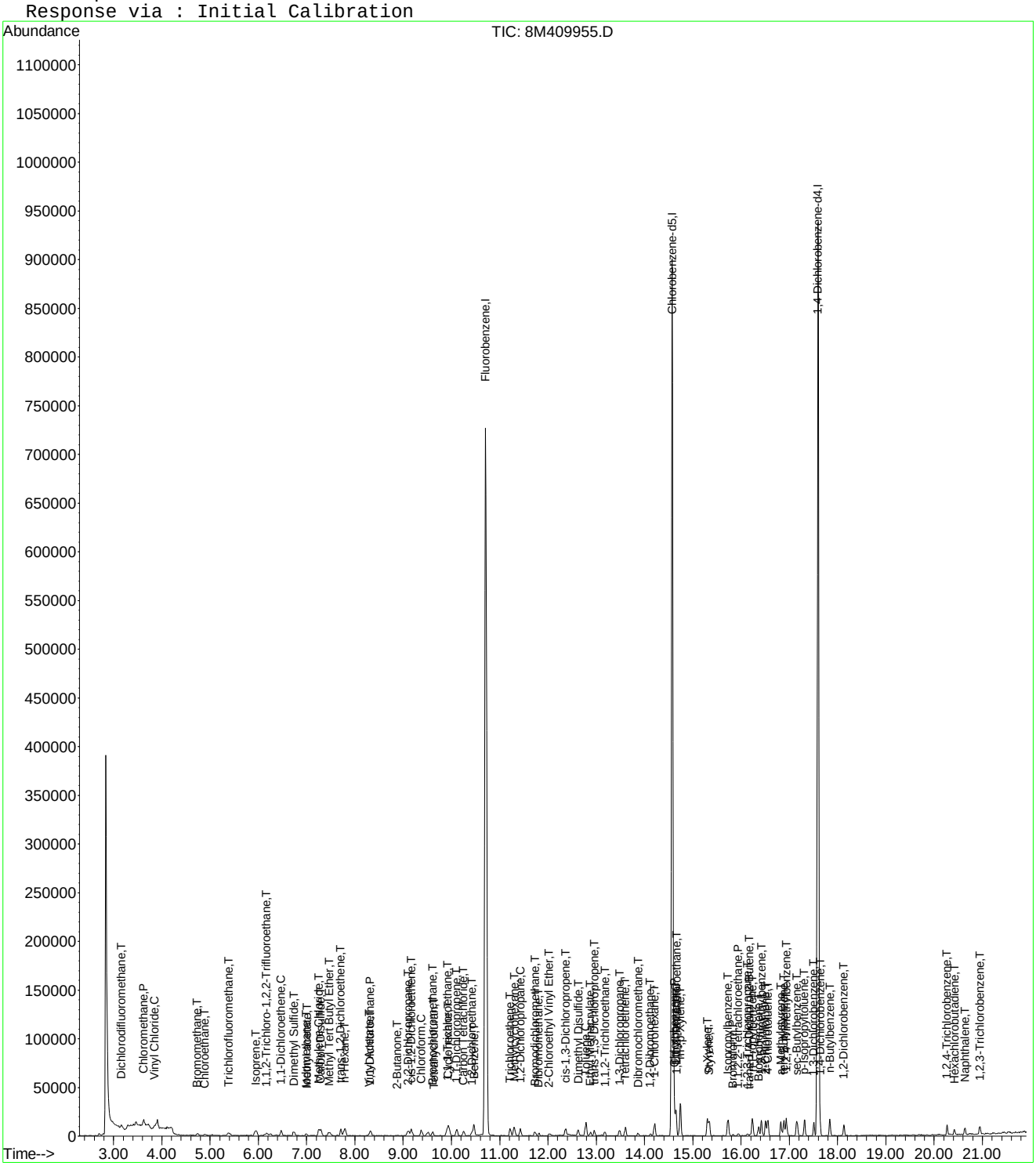

8M409955.D 8260WT.M Fri Feb 05 11:26:50 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020416\8M409955.D Vial: 3
Acq On : 4 Feb 2016 16:50 Operator: TMB
Sample : WG556045-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.3599	10.0	100	0.00
3	P	Chloromethane	-1.0000	0.4993	0.0	100	0.01
4	C	Vinyl Chloride	0.4000	0.4471	-11.8	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	-1.0000	0.3867	0.0	100	0.00
7	T	Chloroethane	0.4000	0.3889	2.8	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4199	-5.0	100	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	0.4000	0.3883	2.9	100	0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.14#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3918	0.0	100	0.01
13	T	Acetone	-1.0000	-0.3626	0.0	0	0.01
14	C	1,1-Dichloroethene	0.4000	0.4102	-2.5	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	0.4000	0.3399	15.0	100	0.00
17	T	Iodomethane	-1.0000	0.3933	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.4455	0.0	100	0.01
19	T	Methylene Chloride	-1.0000	0.4109	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4666	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.4107	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4497	-12.4	100	0.01
24	T	n-Hexane	-1.0000	0.4623	0.0	100	0.01
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.4373	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.3991	0.2	100	-0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.70#
29	T	2-Butanone	-1.0000	0.3077	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.99#
31	T	2,2-Dichloropropane	0.4000	0.4639	-16.0	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4069	-1.7	100	0.00
33	C	Chloroform	0.4000	0.4513	-12.8	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	0.4000	0.3793	5.2	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.1447	0.0	100	0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.66#
38	T	1,1,1-Trichloroethane	0.4000	0.4179	-4.5	100	0.01
39	T	Cyclohexane	-1.0000	0.4148	0.0	100	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.4261	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.4152	-3.8	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.30#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3844	3.9	100	0.00
46	T	Benzene	0.4000	0.4229	-5.7	100	0.00
47	T	Trichloroethene	0.4000	0.3763	5.9	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3800	0.0	100	0.01
49	C	1,2-Dichloropropane	0.4000	0.4014	-0.3	100	0.00
50	T	Bromodichloromethane	0.4000	0.4124	-3.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.72#
52	T	Dibromomethane	0.4000	0.4084	-2.1	100	-0.01
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.3470	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.06#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020416\8M409955.D Vial: 3
Acq On : 4 Feb 2016 16:50 Operator: TMB
Sample : WG556045-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.4182	-4.5	100	0.01
56	T	Dimethyl Disulfide	-1.0000	0.4233	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4474	-11.9	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3557	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3734	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4004	-0.1	100	0.01
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.4036	-0.9	100	0.01
66	T	Tetrachloroethene	0.4000	0.3890	2.8	100	0.00
67	T	Dibromochloromethane	0.4000	0.3524	11.9	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3878	3.0	100	0.00
69	T	1-Chlorohexane	0.4000	0.4228	-5.7	100	0.00
70	P	Chlorobenzene	0.4000	0.4538	-13.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3801	5.0	100	0.01
72	C	Ethylbenzene	0.4000	0.3923	1.9	100	0.00
73	T	m-,p-Xylene	0.8000	0.8829	-10.4	100	0.00
74	T	o-Xylene	-1.0000	0.4229	0.0	100	0.00
75	T	Styrene	0.4000	0.3991	0.2	100	-0.01
76	P	Bromoform	-1.0000	0.2674	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4239	-6.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3799	5.0	100	-0.01
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.07#
81	T	1,2,3-Trichloropropane	-1.0000	0.4902	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.2919	0.0	100	-0.01
83	T	n-Propylbenzene	0.4000	0.4459	-11.5	100	0.00
84	T	Bromobenzene	0.4000	0.4045	-1.1	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4380	-9.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4950	-23.7	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4009	-0.2	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3561	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3754	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4279	-7.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4504	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4793	0.0	100	-0.01
93	T	1,3-Dichlorobenzene	0.4000	0.4326	-8.1	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4270	-6.7	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4562	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4062	-1.5	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.12#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4475	-11.9	100	0.00
100	T	Naphthalene	0.4000	0.4554	-13.9	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4316	-7.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M409955.D 8260WT.M Fri Feb 05 11:27:45 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409956.D Vial: 4
Acq On : 4 Feb 2016 17:19 Operator: TMB
Sample : WG556045-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:50 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	838472	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	586942	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	298228	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	4402	0.5211 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.08%#	
43) 1,2-Dichloroethane-d4	10.30	65	4508	0.5151 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.08%#	
58) Toluene-d8	12.69	98	16270	0.5403 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.16%#	
80) p-Bromofluorobenzene	16.07	95	6914	0.5651 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	11842	0.9661 ug/L	95
3) Chloromethane	3.63	50	19647	1.1507 ug/L	97
4) Vinyl Chloride	3.85	62	12390	1.1471 ug/L	92
5) 1,3-Butadiene	3.91	54	13161	Below Cal	95
6) Bromomethane	4.73	94	6138	0.9279 ug/L	97
7) Chloroethane	4.89	64	6648	0.9823 ug/L	88
8) Trichlorofluoromethane	5.37	101	15024	1.0267 ug/L	95
9) Diethyl ether	5.91	59	25856	4.6848 ug/L	94
10) Isoprene	5.94	67	10748	0.9486 ug/L	95
11) Acrolein	6.14	56	1335	2.3357 ug/L	80
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	7430	0.9718 ug/L	100
13) Acetone	6.24	43	4141	Below Cal #	48
14) 1,1-Dichloroethene	6.48	61	15072	1.0018 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	3237	9.1417 ug/L #	55
16) Dimethyl Sulfide	6.74	62	7546	1.0498 ug/L	96
17) Iodomethane	6.99	142	6392	1.0021 ug/L	97
18) Methyl acetate	7.01	43	4979	1.1652 ug/L #	66
19) Methylene Chloride	7.25	84	8497	1.0437 ug/L	86
20) Carbon Disulfide	7.30	76	29210	1.0854 ug/L	97
21) Acrylonitrile	7.44	53	4555	2.2153 ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	16300	1.0037 ug/L	96
23) trans-1,2-Dichloroethene	7.71	61	15351	1.0422 ug/L	92
24) n-Hexane	7.79	57	12549	0.9687 ug/L	96
25) Diisopropyl ether	8.13	45	154480	4.7857 ug/L	96
26) Vinyl Acetate	8.30	43	12431	0.9879 ug/L #	79
27) 1,1-Dichloroethane	8.33	63	18882	1.0581 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	121114	4.7453 ug/L	98
29) 2-Butanone	8.88	43	2500	1.1320 ug/L #	57
30) Propionitrile	9.00	54	2782	4.2006 ug/L #	56
31) 2,2-Dichloropropane	9.10	77	13915	1.0659 ug/L	95
32) cis-1,2-Dichloroethene	9.18	96	10394	1.1188 ug/L	94
33) Chloroform	9.37	83	15916	1.0196 ug/L	98
34) 1-Bromopropane	9.51	122	1178	0.8896 ug/L	92
35) Bromochloromethane	9.61	130	4755	1.0367 ug/L	92
36) Tetrahydrofuran	9.64	42	7336	5.0968 ug/L	89
38) 1,1,1-Trichloroethane	9.91	97	14763	1.0632 ug/L	94
39) Cyclohexane	9.94	56	17972	1.0086 ug/L	95
40) 1,1-Dichloropropene	10.11	75	13261	1.0844 ug/L	92
41) Tert-Amyl-Methyl ether	10.21	73	80478	4.6414 ug/L	95
42) Carbon Tetrachloride	10.25	117	12881	1.0423 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M409956.D 8260WT.M Fri Feb 05 11:26:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409956.D Vial: 4
Acq On : 4 Feb 2016 17:19 Operator: TMB
Sample : WG556045-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:50 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	11439	1.0399 ug/L		95
46)	Benzene	10.47	78	34946	1.0736 ug/L		97
47)	Trichloroethene	11.21	130	8555	1.0111 ug/L		97
48)	Methylcyclohexane	11.30	83	11759	0.9106 ug/L		82
49)	1,2-Dichloropropane	11.43	63	9392	0.9915 ug/L		94
50)	Bromodichloromethane	11.73	83	11681	1.0243 ug/L		97
52)	Dibromomethane	11.81	93	4348	1.0798 ug/L		84
53)	2-Chloroethyl Vinyl Ether	12.03	63	3556	0.9042 ug/L		87
54)	4-Methyl-2-Pentanone	12.05	58	1461	0.8008 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12220	0.9622 ug/L		98
56)	Dimethyl Disulfide	12.63	79	5848	0.8529 ug/L		88
59)	Toluene	12.78	91	36810	1.0905 ug/L		99
60)	Ethyl Methacrylate	12.88	69	6061	0.9329 ug/L		86
62)	trans-1,3-Dichloropropene	12.96	75	9977	0.9532 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	5057	0.9716 ug/L		92
64)	2-Hexanone	13.11	58	1808	1.0648 ug/L	#	87
65)	1,3-Dichloropropane	13.48	76	9398	0.9915 ug/L		85
66)	Tetrachloroethene	13.61	164	6602	0.9756 ug/L		96
67)	Dibromochloromethane	13.86	129	6467	0.9287 ug/L		99
68)	1,2-Dibromoethane	14.13	107	5146	0.9871 ug/L		99
69)	1-Chlorohexane	14.21	91	11763	1.0160 ug/L		86
70)	Chlorobenzene	14.62	112	22890	1.0210 ug/L	#	62
71)	1,1,1,2-Tetrachloroethane	14.65	131	8039	1.0231 ug/L		99
72)	Ethylbenzene	14.65	106	13926	1.0842 ug/L		95
73)	m-,p-Xylene	14.74	106	31513	2.1010 ug/L		93
74)	o-Xylene	15.31	106	15585	1.0335 ug/L		97
75)	Styrene	15.34	104	25223	1.0360 ug/L		97
76)	Bromoform	15.83	173	3727	0.9426 ug/L		92
77)	Isopropylbenzene	15.73	105	41089	1.1218 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	5539	0.9933 ug/L	#	92
81)	1,2,3-Trichloropropane	16.13	110	1027	0.6769 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.18	53	1720	0.7976 ug/L		81
83)	n-Propylbenzene	16.24	91	49353	1.0771 ug/L		99
84)	Bromobenzene	16.36	156	8767	0.9876 ug/L		85
85)	1,3,5-Trimethylbenzene	16.42	105	35585	1.1051 ug/L		96
86)	2-Chlorotoluene	16.50	91	30173	0.9770 ug/L		98
87)	4-Chlorotoluene	16.56	91	31996	1.1654 ug/L		91
88)	a-Methylstyrene	16.83	118	15811	0.9415 ug/L		96
89)	tert-Butylbenzene	16.89	134	6567	1.0046 ug/L		85
90)	1,2,4-Trimethylbenzene	16.94	105	35112	1.0806 ug/L		100
91)	sec-Butylbenzene	17.16	105	42030	1.1221 ug/L		96
92)	p-Isopropyltoluene	17.31	119	35791	1.1157 ug/L		91
93)	1,3-Dichlorobenzene	17.51	146	19035	1.0727 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	17818	0.9592 ug/L	#	51
95)	n-Butylbenzene	17.84	91	34236	1.1351 ug/L		95
96)	1,2-Dichlorobenzene	18.14	146	16552	1.0477 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	19.13	75	870	0.8376 ug/L		81
98)	1,2,4-Trichlorobenzene	20.27	180	11610	1.0507 ug/L		96
99)	Hexachlorobutadiene	20.42	225	5215	1.0837 ug/L		97
100)	Naphthalene	20.64	128	18630	1.0524 ug/L		93
101)	1,2,3-Trichlorobenzene	20.95	180	9430	0.9901 ug/L		96

(#) = qualifier out of range (m) = manual integration
8M409956.D 8260WT.M Fri Feb 05 11:26:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409956.D Vial: 4
Acq On : 4 Feb 2016 17:19 Operator: TMB
Sample : WG556045-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 11:26 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

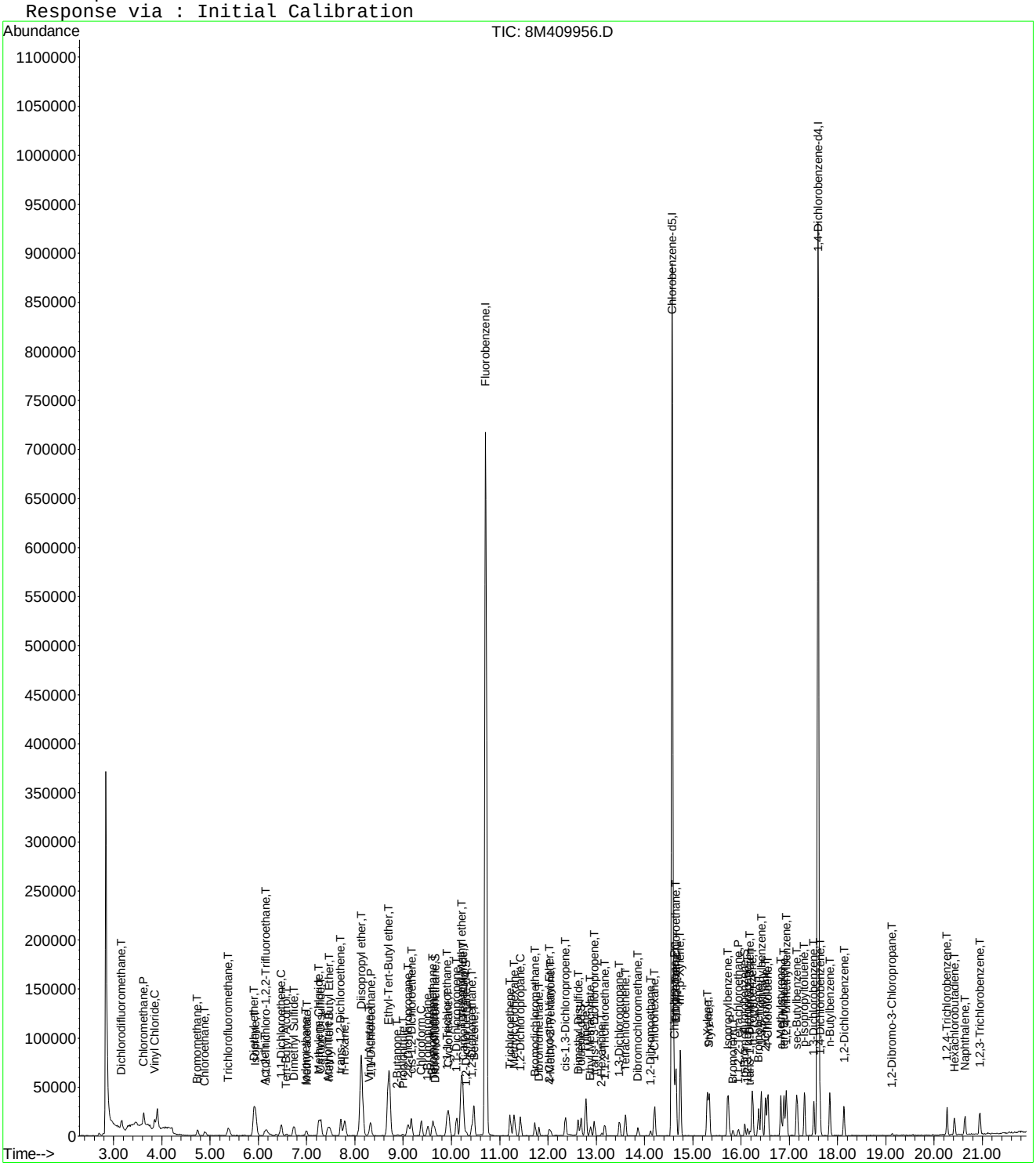

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020416\8M409956.D Vial: 4
Acq On : 4 Feb 2016 17:19 Operator: TMB
Sample : WG556045-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9661	3.4	100	0.00
3	P	Chloromethane	1.0000	1.1507	-15.1	100	0.01
4	C	Vinyl Chloride	1.0000	1.1471	-14.7	100	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	1.0000	0.9279	7.2	100	0.00
7	T	Chloroethane	1.0000	0.9823	1.8	100	0.00
8	T	Trichlorofluoromethane	1.0000	1.0267	-2.7	100	0.00
9	T	Diethyl ether	5.0000	4.6848	6.3	100	0.00
10	T	Isoprene	1.0000	0.9486	5.1	100	0.00
11	T	Acrolein	2.5000	2.3357	6.6	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9718	2.8	100	0.00
13	T	Acetone	-1.0000	-0.5243	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	1.0018	-0.2	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	9.1417	0.0	100	-0.01
16	T	Dimethyl Sulfide	1.0000	1.0498	-5.0	100	0.00
17	T	Iodomethane	1.0000	1.0021	-0.2	100	0.00
18	T	Methyl acetate	-1.0000	1.1652	0.0	100	0.01
19	T	Methylene Chloride	1.0000	1.0437	-4.4	100	0.00
20	T	Carbon Disulfide	1.0000	1.0854	-8.5	100	0.00
21	T	Acrylonitrile	2.5000	2.2153	11.4	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	1.0037	-0.4	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0422	-4.2	100	0.01
24	T	n-Hexane	-1.0000	0.9687	0.0	100	0.01
25	T	Diisopropyl ether	5.0000	4.7857	4.3	100	0.00
26	T	Vinyl Acetate	-1.0000	0.9879	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0581	-5.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.7454	5.1	100	0.00
29	T	2-Butanone	-1.0000	1.1320	0.0	100	0.00
30	T	Propionitrile	5.0000	4.2006	16.0	100	0.01
31	T	2,2-Dichloropropane	1.0000	1.0659	-6.6	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.1188	-11.9	100	0.01
33	C	Chloroform	1.0000	1.0196	-2.0	100	0.00
34		1-Bromopropane	1.0000	0.8896	11.0	100	-0.01
35	T	Bromochloromethane	1.0000	1.0367	-3.7	100	0.00
36	T	Tetrahydrofuran	5.0000	5.0968	-1.9	100	0.01
37	S	Dibromofluoromethane	0.5000	0.5211	-4.2	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	1.0632	-6.3	100	0.00
39	T	Cyclohexane	1.0000	1.0086	-0.9	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0844	-8.4	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.6414	7.2	100	0.00
42	T	Carbon Tetrachloride	1.0000	1.0423	-4.2	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.5151	-3.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	1.0399	-4.0	100	0.00
46	T	Benzene	1.0000	1.0736	-7.4	100	0.00
47	T	Trichloroethene	1.0000	1.0111	-1.1	100	0.00
48	T	Methylcyclohexane	-1.0000	0.9106	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9915	0.9	100	0.00
50	T	Bromodichloromethane	1.0000	1.0243	-2.4	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.72#
52	T	Dibromomethane	1.0000	1.0798	-8.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.9042	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.8008	0.0	100	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020416\8M409956.D Vial: 4
Acq On : 4 Feb 2016 17:19 Operator: TMB
Sample : WG556045-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9622	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8529	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.5403	-8.1	100	0.01
59	C	Toluene	1.0000	1.0905	-9.0	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.9329	6.7	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9532	4.7	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9716	2.8	100	0.00
64	T	2-Hexanone	-1.0000	1.0648	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	0.9915	0.9	100	0.00
66	T	Tetrachloroethene	1.0000	0.9756	2.4	100	0.01
67	T	Dibromochloromethane	1.0000	0.9287	7.1	100	-0.01
68	T	1,2-Dibromoethane	1.0000	0.9871	1.3	100	0.01
69	T	1-Chlorohexane	1.0000	1.0160	-1.6	100	0.00
70	P	Chlorobenzene	1.0000	1.0210	-2.1	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	1.0231	-2.3	100	0.00
72	C	Ethylbenzene	1.0000	1.0842	-8.4	100	0.00
73	T	m-,p-Xylene	2.0000	2.1010	-5.1	100	-0.01
74	T	o-Xylene	1.0000	1.0335	-3.3	100	0.00
75	T	Styrene	1.0000	1.0360	-3.6	100	-0.01
76	P	Bromoform	1.0000	0.9426	5.7	100	0.00
77	T	Isopropylbenzene	1.0000	1.1218	-12.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9933	0.7	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5651	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.6769	32.3#	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.7976	20.2	100	0.00
83	T	n-Propylbenzene	1.0000	1.0771	-7.7	100	0.00
84	T	Bromobenzene	1.0000	0.9876	1.2	100	-0.01
85	T	1,3,5-Trimethylbenzene	1.0000	1.1052	-10.5	100	0.00
86	T	2-Chlorotoluene	1.0000	0.9770	2.3	100	0.00
87	T	4-Chlorotoluene	1.0000	1.1654	-16.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9415	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0046	-0.5	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0806	-8.1	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1221	-12.2	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.1157	-11.6	100	-0.01
93	T	1,3-Dichlorobenzene	1.0000	1.0727	-7.3	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	0.9592	4.1	100	0.00
95	T	n-Butylbenzene	1.0000	1.1351	-13.5	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0477	-4.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.8376	0.0	100	0.01
98	T	1,2,4-Trichlorobenzene	1.0000	1.0507	-5.1	100	0.00
99	T	Hexachlorobutadiene	1.0000	1.0837	-8.4	100	0.00
100	T	Naphthalene	1.0000	1.0525	-5.2	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	0.9901	1.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M409956.D 8260WT.M Fri Feb 05 11:27:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409957.D Vial: 5
Acq On : 4 Feb 2016 17:48 Operator: TMB
Sample : WG556045-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:51 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	869752	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	605779	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304067	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	9003	1.0274 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.12%#	
43) 1,2-Dichloroethane-d4	10.30	65	9521	1.0488 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.20%#	
58) Toluene-d8	12.68	98	31439	1.0115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.04%#	
80) p-Bromofluorobenzene	16.08	95	13232	1.0607 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	23372	1.8381 ug/L	98
3) Chloromethane	3.63	50	36434	2.0571 ug/L	98
4) Vinyl Chloride	3.85	62	23337	2.0830 ug/L	99
5) 1,3-Butadiene	3.91	54	24406	Below Cal	95
6) Bromomethane	4.74	94	12196	1.7773 ug/L	95
7) Chloroethane	4.90	64	13784	1.9635 ug/L	95
8) Trichlorofluoromethane	5.38	101	30125	1.9847 ug/L	95
9) Diethyl ether	5.91	59	153763	26.8581 ug/L	98
10) Isoprene	5.94	67	22615	1.9241 ug/L	99
11) Acrolein	6.15	56	7146	12.0531 ug/L	79
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	14594	1.8402 ug/L	95
13) Acetone	6.25	43	5793	0.6108 ug/L #	77
14) 1,1-Dichloroethene	6.48	61	30881	1.9788 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	20691	56.3326 ug/L	97
16) Dimethyl Sulfide	6.74	62	14853	1.9921 ug/L	97
17) Iodomethane	7.00	142	13500	2.0404 ug/L	98
18) Methyl acetate	7.01	43	10487	2.3658 ug/L #	78
19) Methylene Chloride	7.25	84	16883	1.9992 ug/L	90
20) Carbon Disulfide	7.30	76	55202	1.9775 ug/L	99
21) Acrylonitrile	7.44	53	26117	12.2451 ug/L	92
22) Methyl Tert Butyl Ether	7.47	73	34818	2.0669 ug/L	94
23) trans-1,2-Dichloroethene	7.71	61	29966	1.9613 ug/L	91
24) n-Hexane	7.79	57	25078	1.8662 ug/L	96
25) Diisopropyl ether	8.13	45	911818	27.2314 ug/L	96
26) Vinyl Acetate	8.30	43	26336	2.0176 ug/L	95
27) 1,1-Dichloroethane	8.33	63	37399	2.0204 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	721739	27.2613 ug/L	98
29) 2-Butanone	8.90	43	5239	2.2870 ug/L #	75
30) Propionitrile	8.99	54	18017	26.2261 ug/L	100
31) 2,2-Dichloropropane	9.10	77	25749	1.9014 ug/L	97
32) cis-1,2-Dichloroethene	9.18	96	19138	1.9860 ug/L	91
33) Chloroform	9.38	83	33371	2.0608 ug/L	97
34) 1-Bromopropane	9.52	122	2544	1.8522 ug/L	92
35) Bromochloromethane	9.61	130	9794	2.0585 ug/L	93
36) Tetrahydrofuran	9.63	42	39757	26.6286 ug/L	93
38) 1,1,1-Trichloroethane	9.91	97	29273	2.0324 ug/L	97
39) Cyclohexane	9.95	56	34838	1.8848 ug/L	96
40) 1,1-Dichloropropene	10.11	75	24759	1.9518 ug/L	94
41) Tert-Amyl-Methyl ether	10.21	73	491863	27.3472 ug/L	98
42) Carbon Tetrachloride	10.25	117	25009	1.9510 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M409957.D 8260WT.M Fri Feb 05 11:26:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409957.D Vial: 5
Acq On : 4 Feb 2016 17:48 Operator: TMB
Sample : WG556045-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:51 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	24037	2.1066 ug/L		98
46)	Benzene	10.47	78	71329	2.1125 ug/L		98
47)	Trichloroethene	11.21	130	17248	1.9653 ug/L		94
48)	Methylcyclohexane	11.31	83	24520	1.8305 ug/L		92
49)	1,2-Dichloropropane	11.43	63	19727	2.0076 ug/L		92
50)	Bromodichloromethane	11.73	83	24445	2.0664 ug/L		98
51)	1,4-Dioxane	11.72	88	1741	46.4880 ug/L		95
52)	Dibromomethane	11.81	93	8110	1.9416 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.02	63	7570	1.8555 ug/L		96
54)	4-Methyl-2-Pentanone	12.06	58	3825	2.0213 ug/L		81
55)	cis-1,3-Dichloropropene	12.36	75	26703	2.0269 ug/L		98
56)	Dimethyl Disulfide	12.63	79	12908	1.8149 ug/L		100
59)	Toluene	12.78	91	72337	2.0763 ug/L		99
60)	Ethyl Methacrylate	12.88	69	13467	2.0083 ug/L		94
62)	trans-1,3-Dichloropropene	12.96	75	21552	1.9951 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	10705	1.9929 ug/L		100
64)	2-Hexanone	13.11	58	3140	1.7917 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	19762	2.0200 ug/L		91
66)	Tetrachloroethene	13.60	164	13882	1.9875 ug/L		95
67)	Dibromochloromethane	13.87	129	14357	1.9977 ug/L		98
68)	1,2-Dibromoethane	14.13	107	11085	2.0602 ug/L		98
69)	1-Chlorohexane	14.21	91	22814	1.9092 ug/L		88
70)	Chlorobenzene	14.62	112	47800	2.0658 ug/L		85
71)	1,1,1,2-Tetrachloroethane	14.65	131	16038	1.9776 ug/L		97
72)	Ethylbenzene	14.65	106	25580	1.9295 ug/L		96
73)	m-,p-Xylene	14.75	106	62696	4.0500 ug/L		98
74)	o-Xylene	15.31	106	30729	1.9743 ug/L		98
75)	Styrene	15.35	104	50495	2.0096 ug/L		99
76)	Bromoform	15.83	173	7953	1.9489 ug/L		94
77)	Isopropylbenzene	15.73	105	78555	2.0781 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	11366	1.9992 ug/L		98
81)	1,2,3-Trichloropropane	16.13	110	3058	1.9767 ug/L	#	42
82)	trans-1,4-Dichloro-2-Buten	16.18	53	3930	1.7874 ug/L		73
83)	n-Propylbenzene	16.24	91	95026	2.0340 ug/L		99
84)	Bromobenzene	16.37	156	17803	1.9670 ug/L		84
85)	1,3,5-Trimethylbenzene	16.42	105	68556	2.0882 ug/L		99
86)	2-Chlorotoluene	16.50	91	69229	2.1985 ug/L		97
87)	4-Chlorotoluene	16.56	91	54320	1.9405 ug/L		95
88)	a-Methylstyrene	16.82	118	32074	1.8732 ug/L		98
89)	tert-Butylbenzene	16.89	134	13131	1.9702 ug/L		89
90)	1,2,4-Trimethylbenzene	16.94	105	69839	2.1080 ug/L		99
91)	sec-Butylbenzene	17.16	105	80113	2.0977 ug/L		97
92)	p-Isopropyltoluene	17.31	119	67921	2.0766 ug/L		94
93)	1,3-Dichlorobenzene	17.51	146	36224	2.0021 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	35599	1.8797 ug/L		75
95)	n-Butylbenzene	17.84	91	64174	2.0868 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	32865	2.0404 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.12	75	1914	1.8074 ug/L		95
98)	1,2,4-Trichlorobenzene	20.27	180	22623	2.0081 ug/L		99
99)	Hexachlorobutadiene	20.42	225	9010	1.8364 ug/L		90
100)	Naphthalene	20.64	128	37974	2.1040 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	18659	1.9215 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M409957.D 8260WT.M Fri Feb 05 11:26:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409957.D Vial: 5
Acq On : 4 Feb 2016 17:48 Operator: TMB
Sample : WG556045-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 11:26 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

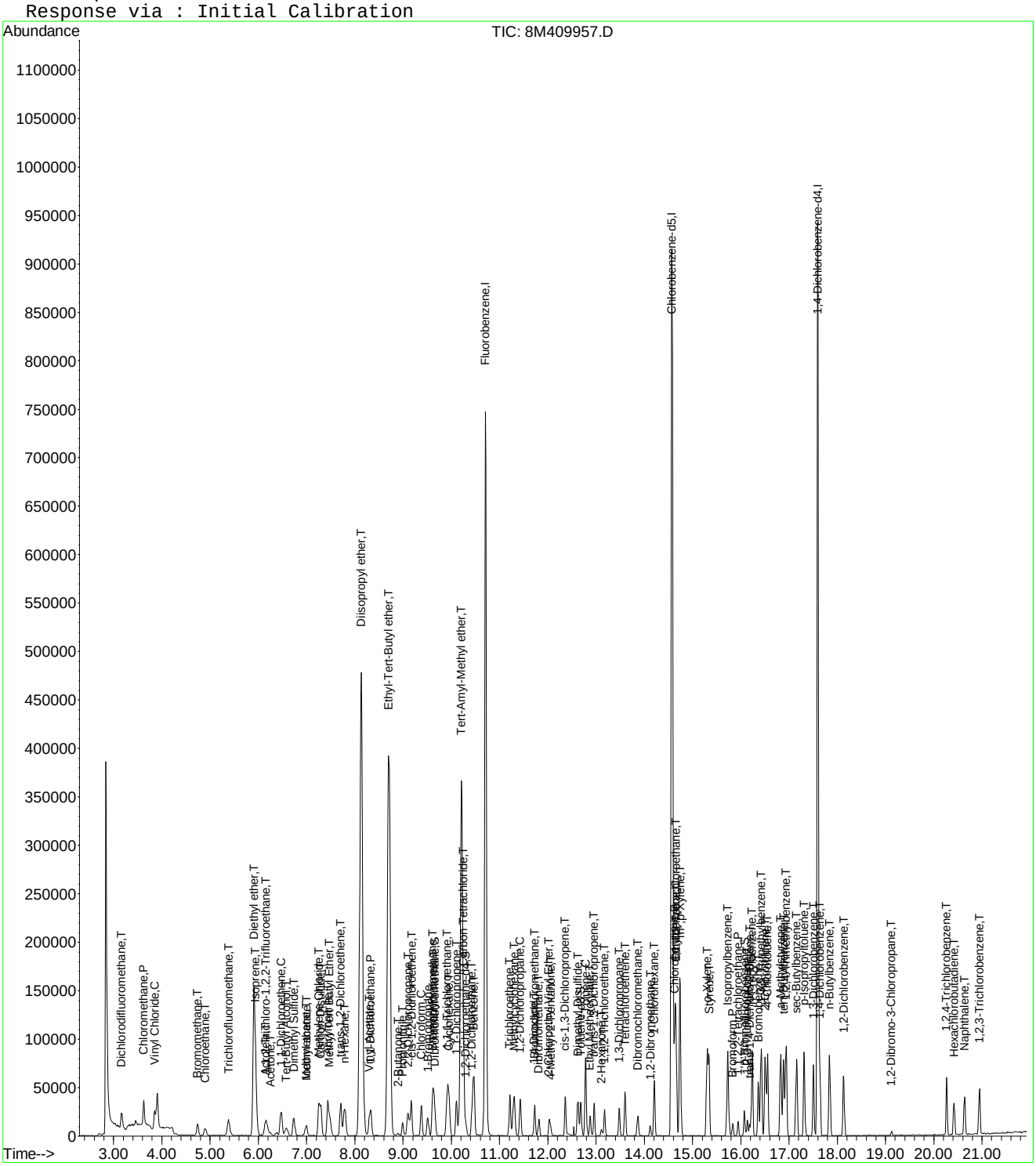

8M409957.D 8260WT.M Fri Feb 05 11:26:52 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020416\8M409957.D Vial: 5
Acq On : 4 Feb 2016 17:48 Operator: TMB
Sample : WG556045-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8381	8.1	100	0.00
3	P	Chloromethane	2.0000	2.0571	-2.9	100	0.00
4	C	Vinyl Chloride	2.0000	2.0830	-4.1	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	2.0000	1.7773	11.1	100	0.00
7	T	Chloroethane	2.0000	1.9635	1.8	100	0.00
8	T	Trichlorofluoromethane	2.0000	1.9847	0.8	100	0.00
9	T	Diethyl ether	25.0000	26.8581	-7.4	100	0.00
10	T	Isoprene	2.0000	1.9241	3.8	100	0.00
11	T	Acrolein	12.5000	12.0531	3.6	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.8402	8.0	100	0.00
13	T	Acetone	-1.0000	0.6108	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	1.9788	1.1	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	56.3326	-12.7	100	-0.01
16	T	Dimethyl Sulfide	2.0000	1.9921	0.4	100	0.00
17	T	Iodomethane	2.0000	2.0404	-2.0	100	0.00
18	T	Methyl acetate	-1.0000	2.3658	0.0	100	0.00
19	T	Methylene Chloride	2.0000	1.9992	0.0	100	0.00
20	T	Carbon Disulfide	2.0000	1.9774	1.1	100	0.00
21	T	Acrylonitrile	12.5000	12.2451	2.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0669	-3.3	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9613	1.9	100	0.00
24	T	n-Hexane	-1.0000	1.8662	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	27.2314	-8.9	100	0.00
26	T	Vinyl Acetate	2.0000	2.0176	-0.9	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0204	-1.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	27.2613	-9.0	100	0.00
29	T	2-Butanone	-1.0000	2.2870	0.0	100	0.02
30	T	Propionitrile	25.0000	26.2261	-4.9	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.9014	4.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9860	0.7	100	0.00
33	C	Chloroform	2.0000	2.0608	-3.0	100	0.00
34		1-Bromopropane	2.0000	1.8522	7.4	100	0.00
35	T	Bromochloromethane	2.0000	2.0585	-2.9	100	0.00
36	T	Tetrahydrofuran	25.0000	26.6286	-6.5	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0275	-2.7	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0324	-1.6	100	0.00
39	T	Cyclohexane	2.0000	1.8848	5.8	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9518	2.4	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	27.3472	-9.4	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.9510	2.5	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0488	-4.9	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.1066	-5.3	100	-0.01
46	T	Benzene	2.0000	2.1125	-5.6	100	0.00
47	T	Trichloroethene	2.0000	1.9653	1.7	100	0.00
48	T	Methylcyclohexane	-1.0000	1.8305	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0076	-0.4	100	0.00
50	T	Bromodichloromethane	2.0000	2.0664	-3.3	100	0.00
51	T	1,4-Dioxane	50.0000	46.4880	7.0	100	0.00
52	T	Dibromomethane	2.0000	1.9416	2.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.8555	7.2	100	-0.01
54	T	4-Methyl-2-Pentanone	-1.0000	2.0213	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020416\8M409957.D Vial: 5
Acq On : 4 Feb 2016 17:48 Operator: TMB
Sample : WG556045-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	2.0269	-1.3	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.8149	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0115	-1.1	100	0.00
59	C	Toluene	2.0000	2.0763	-3.8	100	0.00
60	T	Ethyl Methacrylate	2.0000	2.0083	-0.4	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9951	0.2	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9929	0.4	100	0.00
64	T	2-Hexanone	-1.0000	1.7917	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0200	-1.0	100	0.00
66	T	Tetrachloroethene	2.0000	1.9875	0.6	100	0.00
67	T	Dibromochloromethane	2.0000	1.9977	0.1	100	0.00
68	T	1,2-Dibromoethane	2.0000	2.0602	-3.0	100	0.00
69	T	1-Chlorohexane	2.0000	1.9092	4.5	100	0.00
70	P	Chlorobenzene	2.0000	2.0658	-3.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9776	1.1	100	0.00
72	C	Ethylbenzene	2.0000	1.9295	3.5	100	0.00
73	T	m-,p-Xylene	4.0000	4.0500	-1.3	100	0.00
74	T	o-Xylene	2.0000	1.9743	1.3	100	0.00
75	T	Styrene	2.0000	2.0096	-0.5	100	0.00
76	P	Bromoform	2.0000	1.9489	2.6	100	0.00
77	T	Isopropylbenzene	2.0000	2.0781	-3.9	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9992	0.0	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0608	-6.1	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.9767	1.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7874	10.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.0340	-1.7	100	0.00
84	T	Bromobenzene	2.0000	1.9670	1.6	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0882	-4.4	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1985	-9.9	100	0.00
87	T	4-Chlorotoluene	2.0000	1.9405	3.0	100	0.00
88	T	a-Methylstyrene	-1.0000	1.8732	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9702	1.5	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1080	-5.4	100	0.00
91	T	sec-Butylbenzene	2.0000	2.0977	-4.9	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.0766	-3.8	100	-0.01
93	T	1,3-Dichlorobenzene	2.0000	2.0021	-0.1	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	1.8797	6.0	100	0.00
95	T	n-Butylbenzene	2.0000	2.0869	-4.3	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0404	-2.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.8074	9.6	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0081	-0.4	100	0.00
99	T	Hexachlorobutadiene	2.0000	1.8364	8.2	100	0.00
100	T	Naphthalene	2.0000	2.1040	-5.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9215	3.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409958.D Vial: 6
Acq On : 4 Feb 2016 18:17 Operator: TMB
Sample : WG556045-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	880633	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	604505	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	306105	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	22678	2.5561 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.24%#		
43) 1,2-Dichloroethane-d4	10.30	65	23955	2.6062 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.44%#		
58) Toluene-d8	12.68	98	79881	2.5754 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.32%#		
80) p-Bromofluorobenzene	16.07	95	32397	2.5798 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	58990	4.5820 ug/L	99
3) Chloromethane	3.63	50	91113	5.0808 ug/L	98
4) Vinyl Chloride	3.84	62	56706	4.9988 ug/L	98
5) 1,3-Butadiene	3.91	54	55882	3.0563 ug/L	95
6) Bromomethane	4.74	94	32296	4.6483 ug/L	96
7) Chloroethane	4.90	64	34609	4.8691 ug/L	97
8) Trichlorofluoromethane	5.38	101	75585	4.9181 ug/L	99
9) Diethyl ether	5.91	59	290786	50.1645 ug/L	98
10) Isoprene	5.95	67	56325	4.7330 ug/L	98
11) Acrolein	6.15	56	14348	23.9017 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	40593	5.0551 ug/L	96
13) Acetone	6.24	43	10995	4.4509 ug/L	90
14) 1,1-Dichloroethene	6.47	61	78865	4.9911 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	38051	102.3163 ug/L	96
16) Dimethyl Sulfide	6.73	62	35520	4.7051 ug/L	100
17) Iodomethane	7.00	142	34551	5.1575 ug/L	97
18) Methyl acetate	7.01	43	24464	5.4508 ug/L	88
19) Methylene Chloride	7.26	84	41531	4.8571 ug/L	89
20) Carbon Disulfide	7.30	76	138027	4.8833 ug/L	98
21) Acrylonitrile	7.44	53	51174	23.6967 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	82956	4.8636 ug/L	95
23) trans-1,2-Dichloroethene	7.71	61	75889	4.9057 ug/L	90
24) n-Hexane	7.79	57	65192	4.7915 ug/L	95
25) Diisopropyl ether	8.13	45	1742237	51.3890 ug/L	96
26) Vinyl Acetate	8.30	43	69064	5.2256 ug/L	98
27) 1,1-Dichloroethane	8.33	63	92764	4.9495 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1370126	51.1126 ug/L	98
29) 2-Butanone	8.89	43	11549	4.9792 ug/L	91
30) Propionitrile	8.99	54	35394	50.8839 ug/L	99
31) 2,2-Dichloropropane	9.11	77	68011	4.9601 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	47110	4.8282 ug/L	86
33) Chloroform	9.38	83	78705	4.8003 ug/L	99
34) 1-Bromopropane	9.52	122	6636	4.7716 ug/L	99
35) Bromochloromethane	9.61	130	24205	5.0246 ug/L	93
36) Tetrahydrofuran	9.63	42	74526	49.2996 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	72799	4.9919 ug/L	98
39) Cyclohexane	9.94	56	88833	4.7465 ug/L	94
40) 1,1-Dichloropropene	10.11	75	65746	5.1189 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	925563	50.8248 ug/L	97
42) Carbon Tetrachloride	10.25	117	63125	4.8636 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409958.D Vial: 6
Acq On : 4 Feb 2016 18:17 Operator: TMB
Sample : WG556045-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	57695	4.9940 ug/L		95
46)	Benzene	10.46	78	173122	5.0640 ug/L		97
47)	Trichloroethene	11.21	130	44378	4.9940 ug/L		96
48)	Methylcyclohexane	11.30	83	63985	4.7176 ug/L		91
49)	1,2-Dichloropropane	11.43	63	48704	4.8952 ug/L		97
50)	Bromodichloromethane	11.73	83	58501	4.8842 ug/L		100
51)	1,4-Dioxane	11.72	88	3788	99.8970 ug/L		100
52)	Dibromomethane	11.81	93	20890	4.9393 ug/L		94
53)	2-Chloroethyl Vinyl Ether	12.03	63	19686	4.7658 ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	8353	4.3595 ug/L		94
55)	cis-1,3-Dichloropropene	12.36	75	66126	4.9574 ug/L		99
56)	Dimethyl Disulfide	12.63	79	33134	4.6013 ug/L		99
59)	Toluene	12.78	91	179130	5.1524 ug/L		98
60)	Ethyl Methacrylate	12.88	69	32143	4.8035 ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	53301	4.9445 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	26143	4.8771 ug/L		98
64)	2-Hexanone	13.12	58	8059	4.6083 ug/L	#	100
65)	1,3-Dichloropropane	13.49	76	47586	4.8744 ug/L		91
66)	Tetrachloroethene	13.60	164	34703	4.9790 ug/L		97
67)	Dibromochloromethane	13.87	129	36575	5.0998 ug/L		98
68)	1,2-Dibromoethane	14.12	107	25909	4.8256 ug/L		99
69)	1-Chlorohexane	14.21	91	58029	4.8664 ug/L		88
70)	Chlorobenzene	14.62	112	116507	5.0458 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.66	131	39537	4.8855 ug/L		97
72)	Ethylbenzene	14.66	106	67094	5.0717 ug/L		96
73)	m-,p-Xylene	14.74	106	161903	10.4806 ug/L		98
74)	o-Xylene	15.31	106	77327	4.9787 ug/L		99
75)	Styrene	15.34	104	128972	5.1435 ug/L		100
76)	Bromoform	15.83	173	19061	4.6808 ug/L		99
77)	Isopropylbenzene	15.73	105	199626	5.2919 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	28824	5.0362 ug/L		100
81)	1,2,3-Trichloropropane	16.13	110	8237	5.2890 ug/L		58
82)	trans-1,4-Dichloro-2-Buten	16.18	53	11308	5.1088 ug/L		71
83)	n-Propylbenzene	16.24	91	247351	5.2593 ug/L		99
84)	Bromobenzene	16.36	156	44776	4.9143 ug/L		88
85)	1,3,5-Trimethylbenzene	16.42	105	170831	5.1689 ug/L		99
86)	2-Chlorotoluene	16.51	91	152726	4.8179 ug/L		94
87)	4-Chlorotoluene	16.56	91	158559	5.6265 ug/L		88
88)	a-Methylstyrene	16.83	118	81427	4.7239 ug/L		98
89)	tert-Butylbenzene	16.89	134	33661	5.0169 ug/L		91
90)	1,2,4-Trimethylbenzene	16.94	105	174119	5.2205 ug/L		100
91)	sec-Butylbenzene	17.16	105	207881	5.4071 ug/L		97
92)	p-Isopropyltoluene	17.31	119	175687	5.3356 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	90806	4.9854 ug/L		94
94)	1,4-Dichlorobenzene	17.64	146	90108	4.7261 ug/L		85
95)	n-Butylbenzene	17.84	91	167592	5.4136 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	78456	4.8384 ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5187	4.8654 ug/L		83
98)	1,2,4-Trichlorobenzene	20.27	180	56529	4.9842 ug/L		97
99)	Hexachlorobutadiene	20.42	225	24342	4.9282 ug/L		99
100)	Naphthalene	20.64	128	89338	4.9170 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	47288	4.8373 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M409958.D 8260WT.M Fri Feb 05 11:26:53 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409958.D Vial: 6
Acq On : 4 Feb 2016 18:17 Operator: TMB
Sample : WG556045-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 11:26 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

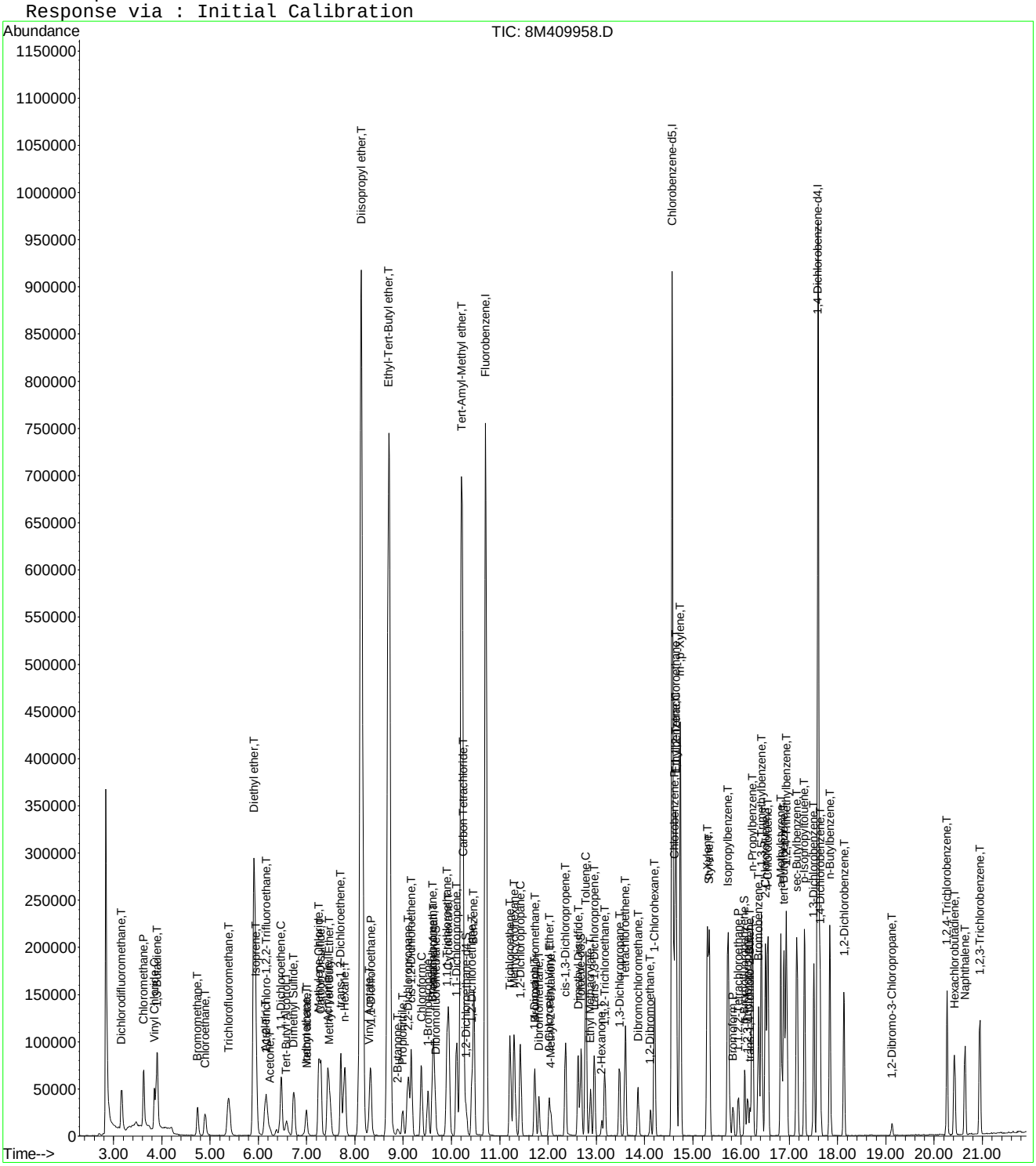

8M409958.D 8260WT.M Fri Feb 05 11:26:53 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020416\8M409958.D Vial: 6
Acq On : 4 Feb 2016 18:17 Operator: TMB
Sample : WG556045-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.5820	8.4	100	0.00
3	P	Chloromethane	5.0000	5.0808	-1.6	100	0.01
4	C	Vinyl Chloride	5.0000	4.9988	0.0	100	0.00
5	T	1,3-Butadiene	5.0000	3.0563	38.9#	100	0.02
6	T	Bromomethane	5.0000	4.6483	7.0	100	0.01
7	T	Chloroethane	5.0000	4.8691	2.6	100	0.01
8	T	Trichlorofluoromethane	5.0000	4.9181	1.6	100	0.01
9	T	Diethyl ether	50.0000	50.1645	-0.3	100	0.00
10	T	Isoprene	5.0000	4.7330	5.3	100	0.01
11	T	Acrolein	25.0000	23.9017	4.4	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.0551	-1.1	100	0.01
13	T	Acetone	5.0000	4.4509	11.0	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.9911	0.2	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	102.3163	-2.3	100	-0.01
16	T	Dimethyl Sulfide	5.0000	4.7051	5.9	100	-0.01
17	T	Iodomethane	5.0000	5.1575	-3.1	100	0.01
18	T	Methyl acetate	5.0000	5.4508	-9.0	100	0.01
19	T	Methylene Chloride	5.0000	4.8571	2.9	100	0.00
20	T	Carbon Disulfide	5.0000	4.8833	2.3	100	0.00
21	T	Acrylonitrile	25.0000	23.6967	5.2	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.8636	2.7	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.9057	1.9	100	0.01
24	T	n-Hexane	5.0000	4.7915	4.2	100	0.01
25	T	Diisopropyl ether	50.0000	51.3890	-2.8	100	0.00
26	T	Vinyl Acetate	5.0000	5.2256	-4.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9495	1.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.1126	-2.2	100	0.00
29	T	2-Butanone	5.0000	4.9792	0.4	100	0.01
30	T	Propionitrile	50.0000	50.8839	-1.8	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9601	0.8	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8282	3.4	100	0.00
33	C	Chloroform	5.0000	4.8003	4.0	100	0.01
34		1-Bromopropane	5.0000	4.7716	4.6	100	0.00
35	T	Bromochloromethane	5.0000	5.0247	-0.5	100	0.00
36	T	Tetrahydrofuran	50.0000	49.2996	1.4	100	0.00
37	S	Dibromofluoromethane	2.5000	2.5561	-2.2	100	0.01
38	T	1,1,1-Trichloroethane	5.0000	4.9919	0.2	100	0.00
39	T	Cyclohexane	5.0000	4.7465	5.1	100	0.00
40	T	1,1-Dichloropropene	5.0000	5.1189	-2.4	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	50.8248	-1.6	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8636	2.7	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.6062	-4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.9939	0.1	100	0.00
46	T	Benzene	5.0000	5.0640	-1.3	100	-0.01
47	T	Trichloroethene	5.0000	4.9940	0.1	100	0.00
48	T	Methylcyclohexane	5.0000	4.7176	5.6	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.8952	2.1	100	0.00
50	T	Bromodichloromethane	5.0000	4.8842	2.3	100	0.00
51	T	1,4-Dioxane	100.0000	99.8970	0.1	100	0.00
52	T	Dibromomethane	5.0000	4.9393	1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.7658	4.7	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.3594	12.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020416\8M409958.D Vial: 6
Acq On : 4 Feb 2016 18:17 Operator: TMB
Sample : WG556045-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.9574	0.9	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.6013	8.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.5754	-3.0	100	0.00
59	C	Toluene	5.0000	5.1524	-3.0	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.8035	3.9	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.9445	1.1	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.8771	2.5	100	0.00
64	T	2-Hexanone	5.0000	4.6083	7.8	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8744	2.5	100	0.01
66	T	Tetrachloroethene	5.0000	4.9790	0.4	100	0.00
67	T	Dibromochloromethane	5.0000	5.0998	-2.0	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.8256	3.5	100	0.00
69	T	1-Chlorohexane	5.0000	4.8664	2.7	100	0.00
70	P	Chlorobenzene	5.0000	5.0458	-0.9	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.8855	2.3	100	0.00
72	C	Ethylbenzene	5.0000	5.0717	-1.4	100	0.00
73	T	m-,p-Xylene	10.0000	10.4806	-4.8	100	-0.01
74	T	o-Xylene	5.0000	4.9787	0.4	100	0.00
75	T	Styrene	5.0000	5.1436	-2.9	100	-0.01
76	P	Bromoform	5.0000	4.6808	6.4	100	0.00
77	T	Isopropylbenzene	5.0000	5.2919	-5.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.0362	-0.7	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.5798	-3.2	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2890	-5.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	5.1088	-2.2	100	0.00
83	T	n-Propylbenzene	5.0000	5.2593	-5.2	100	0.00
84	T	Bromobenzene	5.0000	4.9143	1.7	100	-0.01
85	T	1,3,5-Trimethylbenzene	5.0000	5.1689	-3.4	100	0.00
86	T	2-Chlorotoluene	5.0000	4.8179	3.6	100	0.00
87	T	4-Chlorotoluene	5.0000	5.6265	-12.5	100	0.00
88	T	a-Methylstyrene	5.0000	4.7239	5.5	100	0.00
89	T	tert-Butylbenzene	5.0000	5.0169	-0.3	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.2206	-4.4	100	0.00
91	T	sec-Butylbenzene	5.0000	5.4071	-8.1	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.3356	-6.7	100	-0.01
93	T	1,3-Dichlorobenzene	5.0000	4.9854	0.3	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.7261	5.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.4136	-8.3	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8384	3.2	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.8654	2.7	100	0.01
98	T	1,2,4-Trichlorobenzene	5.0000	4.9842	0.3	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.9282	1.4	100	0.00
100	T	Naphthalene	5.0000	4.9170	1.7	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.8373	3.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M409958.D 8260WT.M Fri Feb 05 11:28:15 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409959.D Vial: 7
Acq On : 4 Feb 2016 18:45 Operator: TMB
Sample : WG556045-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	893454	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	619279	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	315533	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	89043	9.8923 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 39.56%#		
43) 1,2-Dichloroethane-d4	10.30	65	95838	10.2773 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.12%#		
58) Toluene-d8	12.68	98	320140	10.0754 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 40.32%#		
80) p-Bromofluorobenzene	16.07	95	129202	9.9811 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 39.92%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	294601	22.5548 ug/L	99
3) Chloromethane	3.63	50	401758	22.0822 ug/L	98
4) Vinyl Chloride	3.84	62	250024	21.7241 ug/L	99
5) 1,3-Butadiene	3.90	54	252665	28.0850 ug/L	94
6) Bromomethane	4.73	94	144030	20.4326 ug/L	99
7) Chloroethane	4.90	64	152132	21.0960 ug/L	99
8) Trichlorofluoromethane	5.38	101	325683	20.8873 ug/L	99
9) Diethyl ether	5.91	59	465061	79.0780 ug/L	99
10) Isoprene	5.94	67	254824	21.1057 ug/L	97
11) Acrolein	6.14	56	23741	38.9815 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	166416	20.4267 ug/L	96
13) Acetone	6.25	43	33840	21.1898 ug/L	100
14) 1,1-Dichloroethene	6.47	61	335293	20.9150 ug/L	96
15) Tert-Butyl Alcohol	6.58	59	59426	157.4991 ug/L	98
16) Dimethyl Sulfide	6.74	62	163464	21.3424 ug/L	99
17) Iodomethane	6.99	142	147574	21.7125 ug/L	98
18) Methyl acetate	7.00	43	93946	20.6317 ug/L	98
19) Methylene Chloride	7.26	84	179421	20.6824 ug/L	90
20) Carbon Disulfide	7.30	76	618203	21.5579 ug/L	99
21) Acrylonitrile	7.43	53	85184	38.8794 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	370134	21.3891 ug/L	96
23) trans-1,2-Dichloroethene	7.71	61	323145	20.5892 ug/L	91
24) n-Hexane	7.78	57	281395	20.3851 ug/L	95
25) Diisopropyl ether	8.13	45	2786718	81.0175 ug/L	97
26) Vinyl Acetate	8.30	43	271777	20.2683 ug/L	100
27) 1,1-Dichloroethane	8.33	63	397620	20.9110 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	2213612	81.3938 ug/L	99
29) 2-Butanone	8.89	43	49670	21.1072 ug/L	97
30) Propionitrile	8.99	54	56300	79.7778 ug/L	99
31) 2,2-Dichloropropane	9.11	77	287222	20.6469 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	203341	20.5411 ug/L	88
33) Chloroform	9.37	83	341645	20.5384 ug/L	100
34) 1-Bromopropane	9.52	122	30351	21.5107 ug/L	98
35) Bromochloromethane	9.61	130	101268	20.7203 ug/L	91
36) Tetrahydrofuran	9.63	42	119681	78.0340 ug/L	98
38) 1,1,1-Trichloroethane	9.91	97	306902	20.7427 ug/L	100
39) Cyclohexane	9.94	56	398229	20.9729 ug/L	94
40) 1,1-Dichloropropene	10.11	75	269711	20.6981 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1494677	80.8984 ug/L	97
42) Carbon Tetrachloride	10.25	117	276514	20.9988 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M409959.D 8260WT.M Fri Feb 05 11:26:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409959.D Vial: 7
Acq On : 4 Feb 2016 18:45 Operator: TMB
Sample : WG556045-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	250771	21.3947 ug/L		97
46)	Benzene	10.47	78	748310	21.5747 ug/L		97
47)	Trichloroethene	11.21	130	192634	21.3667 ug/L		97
48)	Methylcyclohexane	11.30	83	285051	20.7151 ug/L		91
49)	1,2-Dichloropropane	11.43	63	209812	20.7856 ug/L		96
50)	Bromodichloromethane	11.73	83	257941	21.2264 ug/L		99
51)	1,4-Dioxane	11.72	88	5943	154.4796 ug/L		94
52)	Dibromomethane	11.81	93	89302	20.8120 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	90884	21.6863 ug/L		97
54)	4-Methyl-2-Pentanone	12.06	58	41785	21.4948 ug/L		97
55)	cis-1,3-Dichloropropene	12.36	75	286784	21.1914 ug/L		99
56)	Dimethyl Disulfide	12.62	79	153572	21.0203 ug/L		99
59)	Toluene	12.78	91	766386	21.5180 ug/L		99
60)	Ethyl Methacrylate	12.88	69	148998	21.7354 ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	233778	21.1694 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	115279	20.9929 ug/L		100
64)	2-Hexanone	13.12	58	36992	20.6481 ug/L	#	95
65)	1,3-Dichloropropane	13.48	76	213932	21.3911 ug/L		96
66)	Tetrachloroethene	13.60	164	147889	20.7122 ug/L		97
67)	Dibromochloromethane	13.87	129	158588	21.5852 ug/L		99
68)	1,2-Dibromoethane	14.12	107	115275	20.9578 ug/L		99
69)	1-Chlorohexane	14.21	91	257793	21.1030 ug/L		92
70)	Chlorobenzene	14.62	112	498770	21.0860 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	176467	21.2855 ug/L		99
72)	Ethylbenzene	14.66	106	279458	20.6203 ug/L		97
73)	m-,p-Xylene	14.74	106	681159	43.0422 ug/L		100
74)	o-Xylene	15.31	106	335301	21.0734 ug/L		97
75)	Styrene	15.34	104	554647	21.5922 ug/L		99
76)	Bromoform	15.83	173	87682	21.0183 ug/L		99
77)	Isopropylbenzene	15.73	105	838259	21.6915 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	123263	20.8932 ug/L		98
81)	1,2,3-Trichloropropane	16.13	110	35499	22.1130 ug/L		91
82)	trans-1,4-Dichloro-2-Buten	16.18	53	50215	22.0085 ug/L		91
83)	n-Propylbenzene	16.24	91	1028567	21.2163 ug/L		99
84)	Bromobenzene	16.36	156	190143	20.2453 ug/L		87
85)	1,3,5-Trimethylbenzene	16.42	105	727713	21.3608 ug/L		99
86)	2-Chlorotoluene	16.51	91	640002	19.5861 ug/L		100
87)	4-Chlorotoluene	16.56	91	659217	22.6934 ug/L		97
88)	a-Methylstyrene	16.83	118	381743	21.4845 ug/L		100
89)	tert-Butylbenzene	16.89	134	141376	20.4412 ug/L		91
90)	1,2,4-Trimethylbenzene	16.94	105	747483	21.7419 ug/L		99
91)	sec-Butylbenzene	17.16	105	870638	21.9690 ug/L		97
92)	p-Isopropyltoluene	17.31	119	741974	21.8605 ug/L		96
93)	1,3-Dichlorobenzene	17.51	146	393239	20.9445 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	383985	19.5379 ug/L		93
95)	n-Butylbenzene	17.84	91	689992	21.6222 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	341929	20.4568 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.12	75	23942	21.7867 ug/L		83
98)	1,2,4-Trichlorobenzene	20.27	180	241048	20.6184 ug/L		100
99)	Hexachlorobutadiene	20.42	225	101404	19.9167 ug/L		99
100)	Naphthalene	20.64	128	388369	20.7365 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	200387	19.8862 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M409959.D 8260WT.M Fri Feb 05 11:26:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409959.D Vial: 7
Acq On : 4 Feb 2016 18:45 Operator: TMB
Sample : WG556045-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 11:26 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

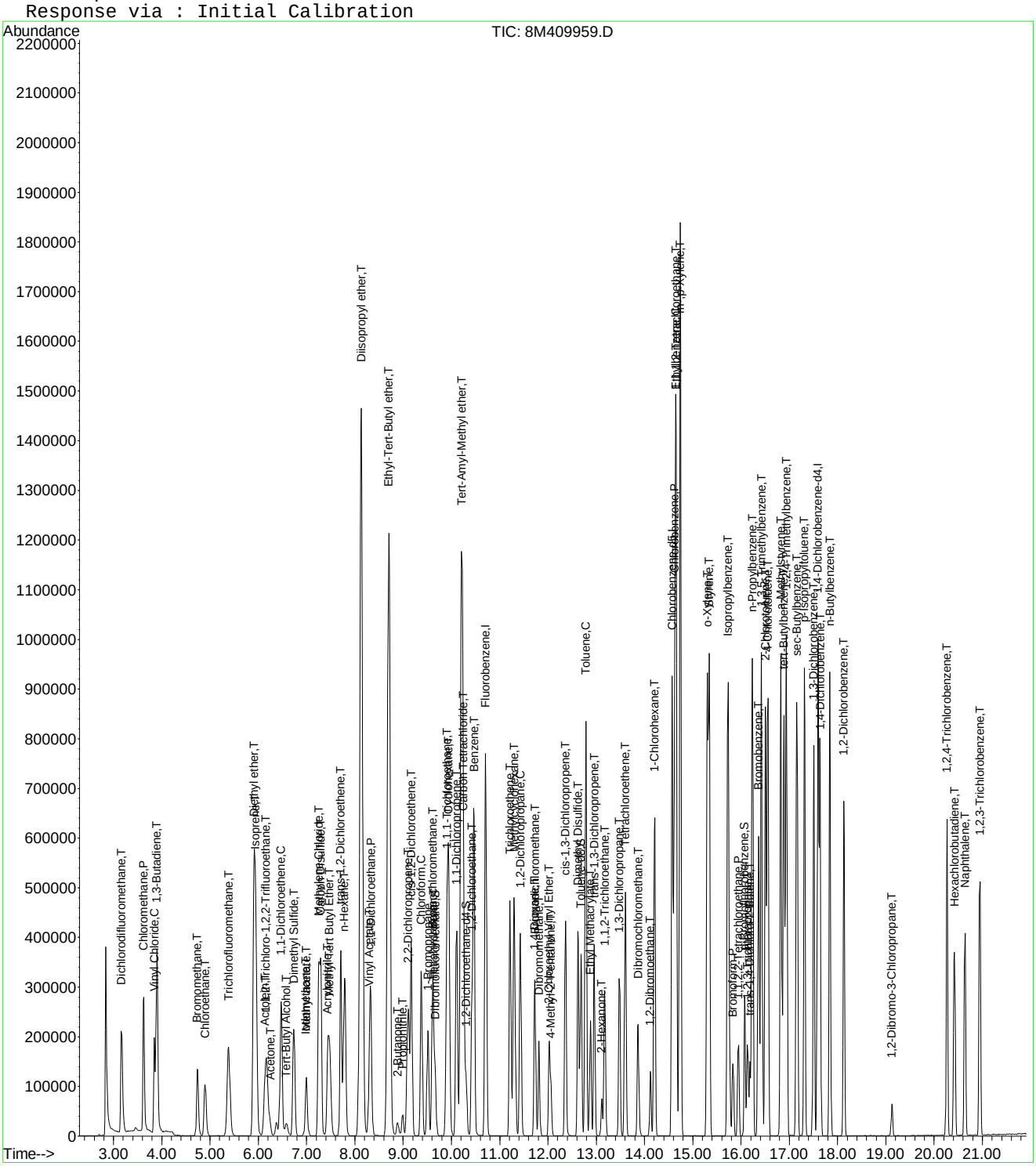

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409960.D Vial: 8
Acq On : 4 Feb 2016 19:14 Operator: TMB
Sample : WG556045-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:55 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	911654	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	618667	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	317039	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	225221	24.5215 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.08%		
43) 1,2-Dichloroethane-d4	10.30	65	232252	24.4085 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.64%		
58) Toluene-d8	12.69	98	797185	25.1136 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.44%		
80) p-Bromofluorobenzene	16.07	95	324399	24.9415 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.76%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	699617	52.4936 ug/L	100
3) Chloromethane	3.63	50	917426	49.4186 ug/L	99
4) Vinyl Chloride	3.84	62	570698	48.5968 ug/L	98
5) 1,3-Butadiene	3.90	54	479296	58.3237 ug/L	93
6) Bromomethane	4.74	94	359377	49.9647 ug/L	99
7) Chloroethane	4.90	64	360234	48.9562 ug/L	100
8) Trichlorofluoromethane	5.38	101	776334	48.7953 ug/L	99
9) Diethyl ether	5.91	59	578887	96.4677 ug/L	98
10) Isoprene	5.95	67	603087	48.9533 ug/L	96
11) Acrolein	6.15	56	29745	47.8647 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	412085	49.5714 ug/L	95
13) Acetone	6.24	43	81765	55.3485 ug/L	99
14) 1,1-Dichloroethene	6.47	61	809589	49.4925 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	72938	189.4513 ug/L	96
16) Dimethyl Sulfide	6.74	62	385034	49.2677 ug/L	99
17) Iodomethane	6.99	142	339226	48.9138 ug/L	99
18) Methyl acetate	7.01	43	219824	47.3123 ug/L	97
19) Methylene Chloride	7.25	84	439835	49.6889 ug/L	93
20) Carbon Disulfide	7.30	76	1424796	48.6934 ug/L	99
21) Acrylonitrile	7.44	53	111193	49.7371 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	878391	49.7467 ug/L	95
23) trans-1,2-Dichloroethene	7.71	61	783214	48.9064 ug/L	91
24) n-Hexane	7.79	57	664884	47.2047 ug/L	96
25) Diisopropyl ether	8.13	45	3450934	98.3251 ug/L	97
26) Vinyl Acetate	8.30	43	658955	48.1617 ug/L	100
27) 1,1-Dichloroethane	8.33	63	969869	49.9875 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	2706920	97.5455 ug/L	98
29) 2-Butanone	8.89	43	122061	50.8341 ug/L	98
30) Propionitrile	8.99	54	70857	98.4008 ug/L	99
31) 2,2-Dichloropropane	9.10	77	679558	47.8747 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	492774	48.7853 ug/L	89
33) Chloroform	9.38	83	821489	48.3989 ug/L	100
34) 1-Bromopropane	9.52	122	71415	49.6037 ug/L	99
35) Bromochloromethane	9.61	130	247893	49.7084 ug/L	91
36) Tetrahydrofuran	9.63	42	149314	95.4116 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	735513	48.7190 ug/L	100
39) Cyclohexane	9.94	56	941002	48.5689 ug/L	93
40) 1,1-Dichloropropene	10.11	75	651934	49.0317 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1834376	97.3023 ug/L	97
42) Carbon Tetrachloride	10.25	117	668019	49.7173 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M409960.D 8260WT.M Fri Feb 05 11:26:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409960.D Vial: 8
Acq On : 4 Feb 2016 19:14 Operator: TMB
Sample : WG556045-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:55 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	604358	50.5319 ug/L	98
46)	Benzene	10.47	78	1788981	50.5487 ug/L	96
47)	Trichloroethene	11.21	130	461306	50.1460 ug/L	98
48)	Methylcyclohexane	11.31	83	675387	48.1016 ug/L	92
49)	1,2-Dichloropropane	11.43	63	512363	49.7453 ug/L	96
50)	Bromodichloromethane	11.73	83	614538	49.5618 ug/L	99
51)	1,4-Dioxane	11.72	88	8043	204.8923 ug/L	96
52)	Dibromomethane	11.81	93	215249	49.1627 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.03	63	218888	51.1872 ug/L	97
54)	4-Methyl-2-Pentanone	12.06	58	99895	50.3614 ug/L	97
55)	cis-1,3-Dichloropropene	12.36	75	693979	50.2567 ug/L	99
56)	Dimethyl Disulfide	12.63	79	363676	48.7847 ug/L	98
59)	Toluene	12.78	91	1818808	51.1175 ug/L	98
60)	Ethyl Methacrylate	12.88	69	346132	50.5426 ug/L	97
62)	trans-1,3-Dichloropropene	12.96	75	579730	52.5484 ug/L	99
63)	1,1,2-Trichloroethane	13.18	97	280026	51.0445 ug/L	100
64)	2-Hexanone	13.11	58	93302	52.1305 ug/L #	88
65)	1,3-Dichloropropane	13.49	76	512305	51.2763 ug/L	95
66)	Tetrachloroethene	13.60	164	355408	49.8249 ug/L	97
67)	Dibromochloromethane	13.87	129	383080	52.1920 ug/L	100
68)	1,2-Dibromoethane	14.13	107	282431	51.3988 ug/L	99
69)	1-Chlorohexane	14.21	91	596911	48.9117 ug/L	90
70)	Chlorobenzene	14.62	112	1190524	50.3803 ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.65	131	425202	51.3386 ug/L	98
72)	Ethylbenzene	14.65	106	668673	49.3881 ug/L	96
73)	m-,p-Xylene	14.75	106	1612990	102.0252 ug/L	97
74)	o-Xylene	15.31	106	801841	50.4450 ug/L	96
75)	Styrene	15.35	104	1325549	51.6542 ug/L	99
76)	Bromoform	15.83	173	211814	50.8244 ug/L	99
77)	Isopropylbenzene	15.73	105	1980425	51.2979 ug/L	98
79)	1,1,2,2-Tetrachloroethane	15.95	83	298572	50.3677 ug/L	100
81)	1,2,3-Trichloropropane	16.13	110	84895	52.6315 ug/L	95
82)	trans-1,4-Dichloro-2-Buten	16.18	53	116999	51.0353 ug/L	91
83)	n-Propylbenzene	16.24	91	2375381	48.7644 ug/L	97
84)	Bromobenzene	16.37	156	460163	48.7627 ug/L	89
85)	1,3,5-Trimethylbenzene	16.42	105	1720660	50.2672 ug/L	98
86)	2-Chlorotoluene	16.50	91	1714761	52.2278 ug/L	100
87)	4-Chlorotoluene	16.56	91	1351160	46.2925 ug/L	99
88)	a-Methylstyrene	16.82	118	894660	50.1123 ug/L	98
89)	tert-Butylbenzene	16.89	134	341088	49.0828 ug/L	93
90)	1,2,4-Trimethylbenzene	16.94	105	1768290	51.1895 ug/L	98
91)	sec-Butylbenzene	17.16	105	2060221	51.7391 ug/L	98
92)	p-Isopropyltoluene	17.32	119	1748578	51.2730 ug/L	97
93)	1,3-Dichlorobenzene	17.51	146	933733	49.4959 ug/L	95
94)	1,4-Dichlorobenzene	17.64	146	922964	46.7392 ug/L	94
95)	n-Butylbenzene	17.84	91	1625020	50.6812 ug/L	100
96)	1,2-Dichlorobenzene	18.14	146	815821	48.5768 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	19.13	75	55699	50.4442 ug/L	87
98)	1,2,4-Trichlorobenzene	20.27	180	573249	48.8008 ug/L	99
99)	Hexachlorobutadiene	20.42	225	244918	47.8756 ug/L	98
100)	Naphthalene	20.64	128	925220	49.1663 ug/L	100
101)	1,2,3-Trichlorobenzene	20.95	180	477654	47.1767 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M409960.D 8260WT.M Fri Feb 05 11:26:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409960.D Vial: 8
Acq On : 4 Feb 2016 19:14 Operator: TMB
Sample : WG556045-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 11:26 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

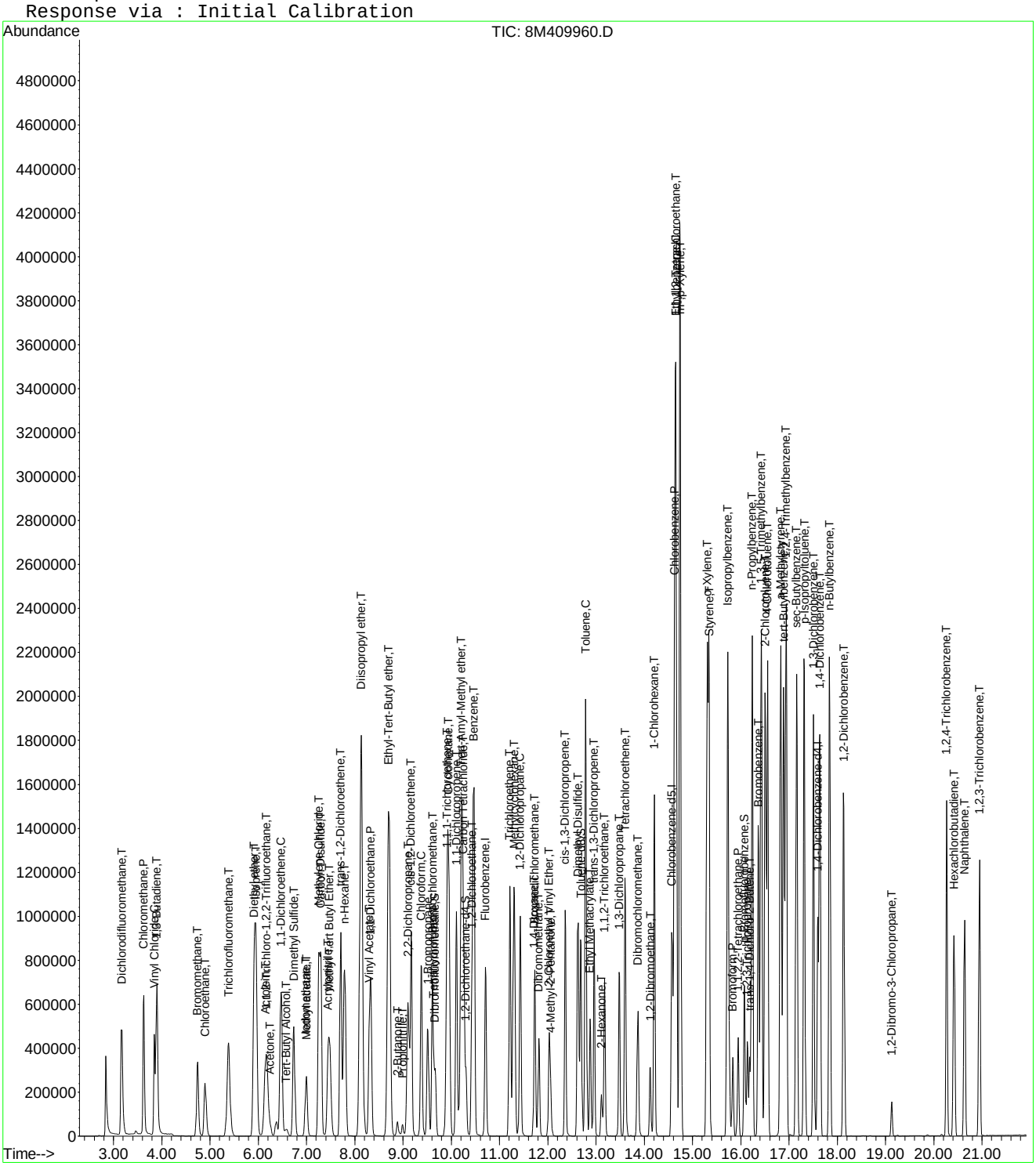

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409961.D Vial: 9
Acq On : 4 Feb 2016 19:43 Operator: TMB
Sample : WG556045-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	929697	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	633825	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	325957	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	458965	49.0012 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 196.00%#		
43) 1,2-Dichloroethane-d4	10.30	65	474039	48.8523 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 195.40%#		
58) Toluene-d8	12.68	98	1627535	50.0458 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 200.20%#		
80) p-Bromofluorobenzene	16.07	95	666916	49.8731 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 199.48%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1386958	102.0465 ug/L	99
3) Chloromethane	3.63	50	1755073	92.7051 ug/L	100
4) Vinyl Chloride	3.84	62	1075594	89.8129 ug/L	99
5) 1,3-Butadiene	3.88	54	670108	85.1073 ug/L	92
6) Bromomethane	4.73	94	739746	100.8520 ug/L	100
7) Chloroethane	4.90	64	728324	97.0590 ug/L	99
8) Trichlorofluoromethane	5.38	101	1541714	95.0215 ug/L	99
9) Diethyl ether	5.91	59	1262131	206.2439 ug/L	98
10) Isoprene	5.95	67	1330897	105.9340 ug/L	97
11) Acrolein	6.15	56	67813	107.0048 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	829009	97.7895 ug/L	96
13) Acetone	6.24	43	136519	93.0281 ug/L	92
14) 1,1-Dichloroethene	6.47	61	1600138	95.9227 ug/L	96
15) Tert-Butyl Alcohol	6.57	59	155270	395.4758 ug/L	95
16) Dimethyl Sulfide	6.74	62	828964	104.0130 ug/L	100
17) Iodomethane	6.99	142	707185	99.9918 ug/L	98
18) Methyl acetate	7.00	43	478598	101.0086 ug/L	99
19) Methylene Chloride	7.25	84	869566	96.3298 ug/L	92
20) Carbon Disulfide	7.30	76	3024703	101.3651 ug/L	100
21) Acrylonitrile	7.44	53	242470	106.3530 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	1762235	97.8654 ug/L	94
23) trans-1,2-Dichloroethene	7.71	61	1544865	94.5942 ug/L	91
24) n-Hexane	7.79	57	1471234	102.4259 ug/L	95
25) Diisopropyl ether	8.13	45	7185565	200.7601 ug/L	98
26) Vinyl Acetate	8.30	43	1295352	92.8372 ug/L	100
27) 1,1-Dichloroethane	8.33	63	1910029	96.5332 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	5701499	201.4697 ug/L	98
29) 2-Butanone	8.89	43	237639	97.0476 ug/L	99
30) Propionitrile	8.99	54	154615	210.5505 ug/L	99
31) 2,2-Dichloropropane	9.10	77	1329582	91.8509 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	975055	94.6584 ug/L	89
33) Chloroform	9.37	83	1613679	93.2265 ug/L	99
34) 1-Bromopropane	9.52	122	154754	105.4035 ug/L	100
35) Bromochloromethane	9.61	130	499382	98.1945 ug/L	93
36) Tetrahydrofuran	9.63	42	325056	203.6796 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	1453349	94.3988 ug/L	100
39) Cyclohexane	9.94	56	2051764	103.8446 ug/L	93
40) 1,1-Dichloropropene	10.11	75	1285664	94.8178 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	3893452	202.5155 ug/L	96
42) Carbon Tetrachloride	10.25	117	1305939	95.3082 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M409961.D 8260WT.M Fri Feb 05 11:26:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409961.D Vial: 9
Acq On : 4 Feb 2016 19:43 Operator: TMB
Sample : WG556045-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	1185139	97.1693	ug/L		99
46)	Benzene	10.47	78	3449306	95.5707	ug/L		94
47)	Trichloroethene	11.21	130	918109	97.8656	ug/L		98
48)	Methylcyclohexane	11.30	83	1479281	103.3109	ug/L		92
49)	1,2-Dichloropropane	11.43	63	1026934	97.7699	ug/L		95
50)	Bromodichloromethane	11.73	83	1225719	96.9344	ug/L		100
51)	1,4-Dioxane	11.72	88	16124	402.7809	ug/L		92
52)	Dibromomethane	11.81	93	429773	96.2547	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	431773	99.0110	ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	202873	100.2922	ug/L		97
55)	cis-1,3-Dichloropropene	12.36	75	1382454	98.1718	ug/L		100
56)	Dimethyl Disulfide	12.63	79	782810	102.9707	ug/L		98
59)	Toluene	12.78	91	3529866	96.8342	ug/L		96
60)	Ethyl Methacrylate	12.88	69	737903	105.1727	ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	1147610	101.5350	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	569422	101.3148	ug/L		99
64)	2-Hexanone	13.11	58	187484	102.2474	ug/L	#	89
65)	1,3-Dichloropropane	13.48	76	1030764	100.7012	ug/L		97
66)	Tetrachloroethene	13.60	164	721913	98.7852	ug/L		97
67)	Dibromochloromethane	13.87	129	779890	103.7136	ug/L		100
68)	1,2-Dibromoethane	14.12	107	571430	101.5058	ug/L		99
69)	1-Chlorohexane	14.21	91	1291785	103.3192	ug/L		89
70)	Chlorobenzene	14.62	112	2360767	97.5131	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.65	131	856958	100.9941	ug/L		99
72)	Ethylbenzene	14.65	106	1362928	98.2583	ug/L		89
73)	m-,p-Xylene	14.74	106	3190983	197.0098	ug/L		88
74)	o-Xylene	15.31	106	1616462	99.2619	ug/L		93
75)	Styrene	15.34	104	2658621	101.1240	ug/L		99
76)	Bromoform	15.83	173	442678	103.6795	ug/L		99
77)	Isopropylbenzene	15.73	105	3870938	97.8689	ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	614348	100.8022	ug/L		100
81)	1,2,3-Trichloropropane	16.13	110	173613	104.6883	ug/L	#	51
82)	trans-1,4-Dichloro-2-Buten	16.18	53	251953	106.8958	ug/L		74
83)	n-Propylbenzene	16.24	91	4583552	91.5217	ug/L		95
84)	Bromobenzene	16.37	156	935565	96.4277	ug/L		90
85)	1,3,5-Trimethylbenzene	16.42	105	3439427	97.7300	ug/L		97
86)	2-Chlorotoluene	16.50	91	3403552	100.8284	ug/L		99
87)	4-Chlorotoluene	16.56	91	2628184	87.5814	ug/L		99
88)	a-Methylstyrene	16.82	118	1933816	105.3547	ug/L		98
89)	tert-Butylbenzene	16.89	134	696674	97.5090	ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	3509261	98.8088	ug/L		96
91)	sec-Butylbenzene	17.16	105	4009714	97.9424	ug/L		100
92)	p-Isopropyltoluene	17.31	119	3452831	98.4762	ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	1894357	97.6698	ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	1858069	91.5189	ug/L		94
95)	n-Butylbenzene	17.84	91	3233329	98.0823	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	1651437	95.6419	ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.12	75	118028	103.9683	ug/L		87
98)	1,2,4-Trichlorobenzene	20.27	180	1181603	97.8381	ug/L		100
99)	Hexachlorobutadiene	20.42	225	504559	95.9307	ug/L		99
100)	Naphthalene	20.64	128	1897818	98.0911	ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	978042	93.9559	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409961.D Vial: 9
Acq On : 4 Feb 2016 19:43 Operator: TMB
Sample : WG556045-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 11:26 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

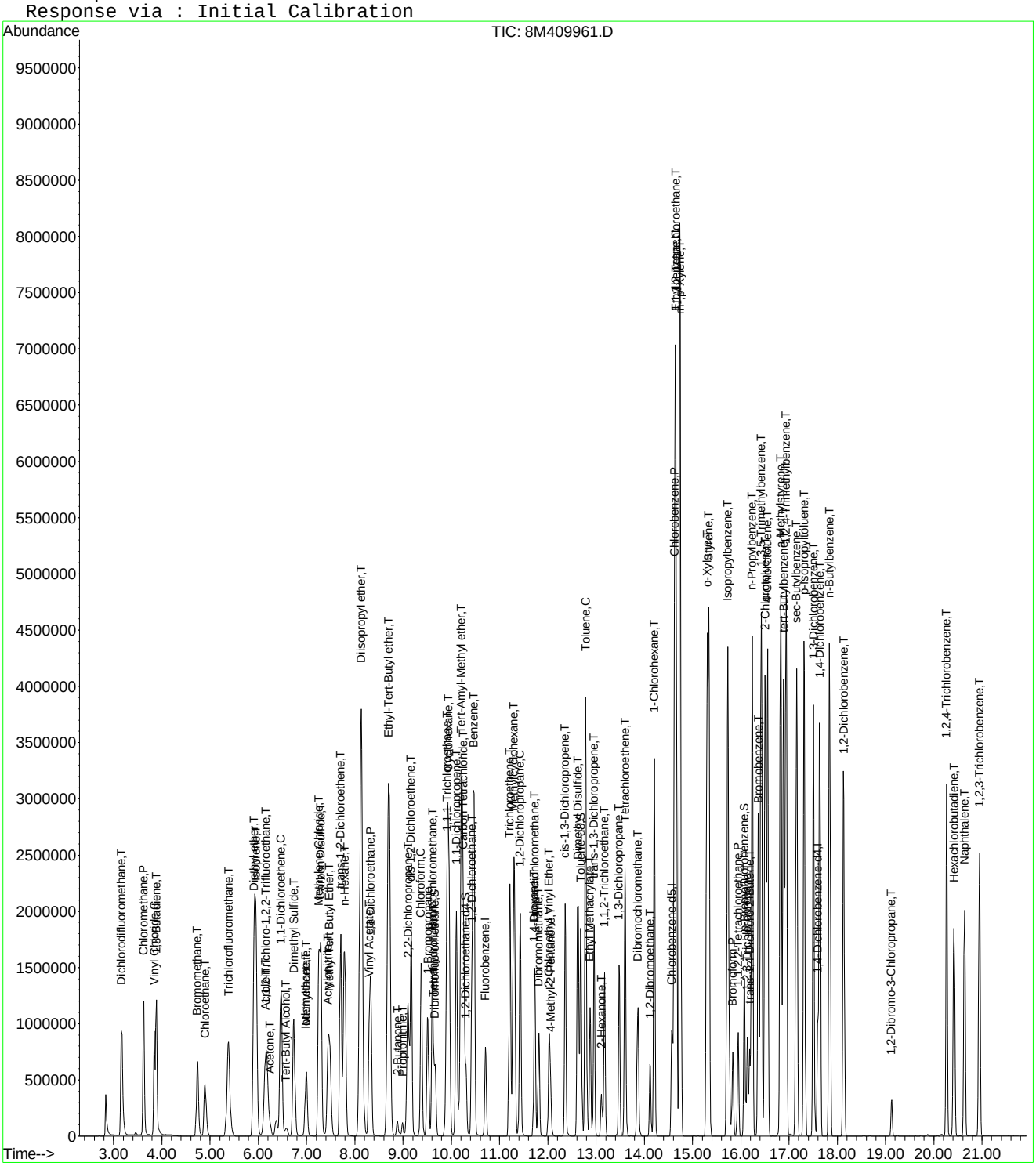

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409962.D Vial: 10
Acq On : 4 Feb 2016 20:11 Operator: TMB
Sample : WG556045-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	945374	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	667672	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	337434	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	928800	97.5185 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 390.08%#		
43) 1,2-Dichloroethane-d4	10.30	65	937993	95.0622 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 380.24%#		
58) Toluene-d8	12.68	98	3236585	94.4779 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 377.92%#		
80) p-Bromofluorobenzene	16.07	95	1334014	96.3668 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 385.48%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2945398	213.1162 ug/L	99
3) Chloromethane	3.63	50	3573752	185.6395 ug/L	98
4) Vinyl Chloride	3.84	62	2189866	179.8231 ug/L	99
5) 1,3-Butadiene	3.89	54	1171030	175.3721 ug/L	93
6) Bromomethane	4.74	94	1651453	221.4144 ug/L	99
7) Chloroethane	4.90	64	1588318	208.1548 ug/L	100
8) Trichlorofluoromethane	5.38	101	3260920	197.6495 ug/L	100
9) Diethyl ether	5.94	59	777	0.1249 ug/L #	14
10) Isoprene	5.95	67	2687086	210.3343 ug/L	97
11) Acrolein	6.13	56	404	0.6269 ug/L	79
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	1811308	210.1180 ug/L	96
13) Acetone	6.25	43	300650	205.8813 ug/L	95
14) 1,1-Dichloroethene	6.47	61	3416454	201.4082 ug/L	97
16) Dimethyl Sulfide	6.74	62	1689279	208.4449 ug/L	99
17) Iodomethane	6.99	142	1393612	193.7808 ug/L	98
18) Methyl acetate	7.00	43	920064	190.9604 ug/L	100
19) Methylene Chloride	7.25	84	1834205	199.8222 ug/L	93
20) Carbon Disulfide	7.30	76	5919353	195.0822 ug/L	98
21) Acrylonitrile	7.47	53	42253	18.2258 ug/L #	31
22) Methyl Tert Butyl Ether	7.47	73	3597868	196.4935 ug/L	93
23) trans-1,2-Dichloroethene	7.71	61	3235829	194.8485 ug/L	93
24) n-Hexane	7.79	57	3047155	208.6221 ug/L	96
26) Vinyl Acetate	8.30	43	2951895	208.0526 ug/L	99
27) 1,1-Dichloroethane	8.33	63	3957541	196.6979 ug/L	99
29) 2-Butanone	8.89	43	485502	194.9825 ug/L	99
31) 2,2-Dichloropropane	9.10	77	2866906	194.7688 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2058372	196.5132 ug/L	90
33) Chloroform	9.37	83	3290217	186.9325 ug/L	98
34) 1-Bromopropane	9.52	122	315812	211.5337 ug/L	98
35) Bromochloromethane	9.61	130	1026376	198.4716 ug/L	92
36) Tetrahydrofuran	9.64	42	2299	1.4167 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	3050860	194.8753 ug/L	100
39) Cyclohexane	9.94	56	4175345	207.8197 ug/L	93
40) 1,1-Dichloropropene	10.11	75	2722806	197.4771 ug/L	99
42) Carbon Tetrachloride	10.25	117	2794006	200.5268 ug/L	100
45) 1,2-Dichloroethane	10.43	62	2393283	192.9708 ug/L	99
46) Benzene	10.47	78	6781389	184.7777 ug/L	89
47) Trichloroethene	11.21	130	1931466	202.4701 ug/L	98
48) Methylcyclohexane	11.30	83	2989562	205.3245 ug/L	92
49) 1,2-Dichloropropane	11.43	63	2164135	202.6212 ug/L	94

(#) = qualifier out of range (m) = manual integration
8M409962.D 8260WT.M Fri Feb 05 11:26:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409962.D Vial: 10
Acq On : 4 Feb 2016 20:11 Operator: TMB
Sample : WG556045-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2500161	194.4432 ug/L		98
51)	1,4-Dioxane	11.73	88	3960	97.2812 ug/L	#	20
52)	Dibromomethane	11.81	93	889356	195.8829 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	894385	201.6928 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	418305	203.3638 ug/L		97
55)	cis-1,3-Dichloropropene	12.36	75	2834917	197.9768 ug/L		99
56)	Dimethyl Disulfide	12.63	79	1574657	203.6954 ug/L		99
59)	Toluene	12.78	91	6809404	177.3314 ug/L		90
60)	Ethyl Methacrylate	12.88	69	1464666	198.1749 ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	2354810	197.7804 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1174845	198.4382 ug/L		100
64)	2-Hexanone	13.11	58	384762	199.1988 ug/L	#	87
65)	1,3-Dichloropropane	13.48	76	2090206	193.8522 ug/L		95
66)	Tetrachloroethene	13.60	164	1575037	204.5992 ug/L		96
67)	Dibromochloromethane	13.87	129	1610154	203.2713 ug/L		99
68)	1,2-Dibromoethane	14.12	107	1174911	198.1249 ug/L		100
69)	1-Chlorohexane	14.21	91	2612310	198.3453 ug/L		88
70)	Chlorobenzene	14.62	112	4743367	185.9957 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	1792445	200.5342 ug/L		99
72)	Ethylbenzene	14.65	106	2936057	200.9403 ug/L		69
73)	m-,p-Xylene	14.75	106	6249050	366.2550 ug/L		69
74)	o-Xylene	15.31	106	3392964	197.7892 ug/L		82
75)	Styrene	15.34	104	5281670	190.7108 ug/L		95
76)	Bromoform	15.83	173	918582	204.2345 ug/L		99
77)	Isopropylbenzene	15.73	105	7341848	176.2139 ug/L		89
79)	1,1,2,2-Tetrachloroethane	15.95	83	1276243	202.2836 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	359255	209.2618 ug/L	#	53
82)	trans-1,4-Dichloro-2-Buten	16.18	53	519422	212.8791 ug/L		74
83)	n-Propylbenzene	16.24	91	8169893	157.5831 ug/L		85
84)	Bromobenzene	16.37	156	1971894	196.3284 ug/L		93
85)	1,3,5-Trimethylbenzene	16.42	105	6551917	179.8381 ug/L		90
86)	2-Chlorotoluene	16.50	91	6393528	182.9627 ug/L		92
87)	4-Chlorotoluene	16.56	91	4972761	160.0756 ug/L		92
88)	a-Methylstyrene	16.82	118	3810274	200.5241 ug/L		100
89)	tert-Butylbenzene	16.89	134	1511915	204.4155 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	6571293	178.7320 ug/L		87
91)	sec-Butylbenzene	17.16	105	7514760	177.3144 ug/L		93
92)	p-Isopropyltoluene	17.31	119	6551308	180.4909 ug/L		94
93)	1,3-Dichlorobenzene	17.51	146	3822827	190.3947 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3736113	177.7626 ug/L		91
95)	n-Butylbenzene	17.84	91	6111194	179.0764 ug/L		93
96)	1,2-Dichlorobenzene	18.14	146	3323605	185.9376 ug/L		90
97)	1,2-Dibromo-3-Chloropropan	19.12	75	234628	199.6490 ug/L		89
98)	1,2,4-Trichlorobenzene	20.27	180	2411104	192.8518 ug/L		99
99)	Hexachlorobutadiene	20.42	225	1084755	199.2273 ug/L		98
100)	Naphthalene	20.64	128	3686303	184.0507 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	1990913	184.7525 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M409962.D 8260WT.M Fri Feb 05 11:26:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409962.D Vial: 10
Acq On : 4 Feb 2016 20:11 Operator: TMB
Sample : WG556045-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 11:26 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

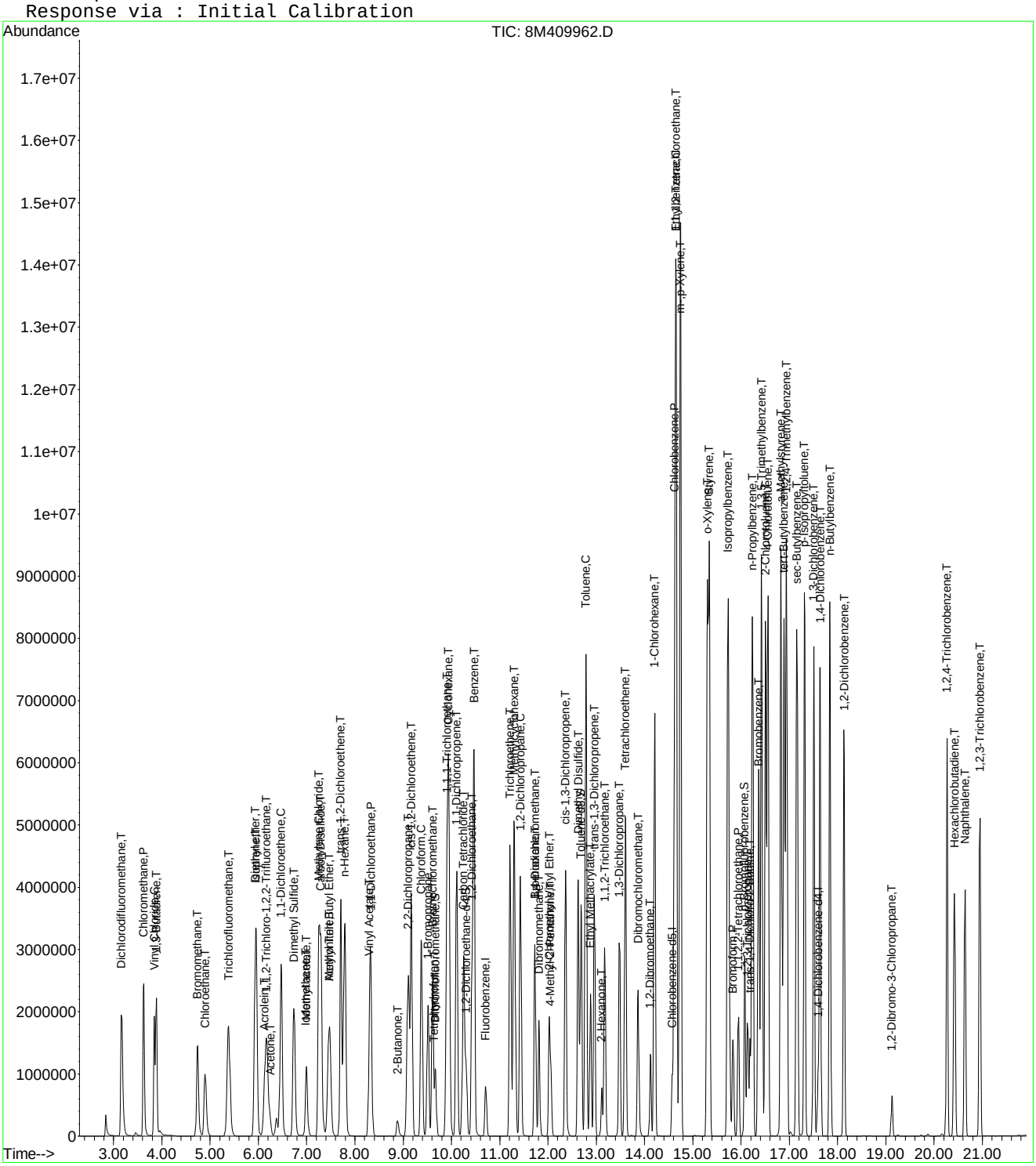

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409963.D Vial: 11
Acq On : 4 Feb 2016 20:40 Operator: TMB
Sample : WG556045-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	956212	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	681577	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	347561	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	1419881	147.3893 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 589.56%#		
43) 1,2-Dichloroethane-d4	10.30	65	1417278	142.0080 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 568.04%#		
58) Toluene-d8	12.68	98	4826283	138.0081 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 552.04%#		
80) p-Bromofluorobenzene	16.07	95	2032731	142.5623 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 570.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4341005	310.5363 ug/L	97
3) Chloromethane	3.62	50	5005315	257.0555 ug/L	95
4) Vinyl Chloride	3.84	62	3098655	251.5653 ug/L	97
5) 1,3-Butadiene	3.89	54	1614014	Below Cal	93
6) Bromomethane	4.73	94	2528726	335.1898 ug/L	99
7) Chloroethane	4.89	64	2418826	313.4030 ug/L	99
8) Trichlorofluoromethane	5.37	101	4949387	296.5900 ug/L	99
9) Diethyl ether	5.91	59	1890249	300.3191 ug/L	98
10) Isoprene	5.94	67	3980189	308.0220 ug/L	96
11) Acrolein	6.14	56	111803	171.5264 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	2761898	316.7583 ug/L	97
13) Acetone	6.24	43	426962	290.5916 ug/L	91
14) 1,1-Dichloroethene	6.47	61	5061111	294.9830 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	225296	557.9215 ug/L	92
16) Dimethyl Sulfide	6.74	62	2529206	308.5485 ug/L	98
17) Iodomethane	6.99	142	1993404	274.0398 ug/L	97
18) Methyl acetate	7.00	43	1409840	289.2975 ug/L	99
19) Methylene Chloride	7.26	84	2771334	298.4931 ug/L	96
20) Carbon Disulfide	7.30	76	8363676	272.5148 ug/L	96
21) Acrylonitrile	7.44	53	406655	173.4224 ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	5359507	289.3859 ug/L	92
23) trans-1,2-Dichloroethene	7.70	61	4756245	283.1557 ug/L	94
24) n-Hexane	7.78	57	4480751	303.2956 ug/L	96
25) Diisopropyl ether	8.13	45	10227213	277.8184 ug/L	99
26) Vinyl Acetate	8.30	43	4308789	300.2457 ug/L	98
27) 1,1-Dichloroethane	8.33	63	5799814	284.9954 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	8179816	281.0292 ug/L	95
29) 2-Butanone	8.88	43	747531	296.8133 ug/L	99
30) Propionitrile	8.99	54	239991	317.7509 ug/L	99
31) 2,2-Dichloropropane	9.11	77	4240257	284.8049 ug/L	97
32) cis-1,2-Dichloroethene	9.17	96	3093559	291.9952 ug/L	93
33) Chloroform	9.37	83	4789979	269.0563 ug/L	96
34) 1-Bromopropane	9.52	122	475970	315.1955 ug/L	98
35) Bromochloromethane	9.61	130	1531956	292.8786 ug/L	93
36) Tetrahydrofuran	9.63	42	482676	294.0576 ug/L	98
38) 1,1,1-Trichloroethane	9.91	97	4501120	284.2527 ug/L	99
39) Cyclohexane	9.94	56	6109716	300.6525 ug/L	94
40) 1,1-Dichloropropene	10.11	75	4036527	289.4392 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5694199	287.9674 ug/L	95
42) Carbon Tetrachloride	10.25	117	4107783	291.4755 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M409963.D 8260WT.M Fri Feb 05 11:26:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409963.D Vial: 11
Acq On : 4 Feb 2016 20:40 Operator: TMB
Sample : WG556045-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	3499860	278.9959 ug/L		98
46)	Benzene	10.47	78	9252893	249.2630 ug/L		84
47)	Trichloroethene	11.21	130	2907150	301.2941 ug/L		97
48)	Methylcyclohexane	11.30	83	4413556	299.6893 ug/L		92
49)	1,2-Dichloropropane	11.43	63	3232206	299.1913 ug/L		94
50)	Bromodichloromethane	11.73	83	3669809	282.1745 ug/L		97
51)	1,4-Dioxane	11.72	88	26541	644.6153 ug/L		99
52)	Dibromomethane	11.81	93	1342880	292.4203 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	1362319	303.7345 ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	640632	307.9206 ug/L		97
55)	cis-1,3-Dichloropropene	12.36	75	4132696	285.3361 ug/L		96
56)	Dimethyl Disulfide	12.63	79	2357109	301.4562 ug/L		98
59)	Toluene	12.78	91	9044654	230.7367 ug/L		83
60)	Ethyl Methacrylate	12.88	69	2177508	288.6144 ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	3451642	283.9890 ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1776179	293.8865 ug/L		99
64)	2-Hexanone	13.12	58	582579	295.4592 ug/L	#	87
65)	1,3-Dichloropropane	13.48	76	3114711	282.9747 ug/L		95
66)	Tetrachloroethene	13.60	164	2403495	305.8473 ug/L		96
67)	Dibromochloromethane	13.87	129	2413613	298.4863 ug/L		99
68)	1,2-Dibromoethane	14.12	107	1755295	289.9563 ug/L		99
69)	1-Chlorohexane	14.21	91	3795295	282.2870 ug/L		87
70)	Chlorobenzene	14.62	112	6525138	250.6422 ug/L		93
71)	1,1,1,2-Tetrachloroethane	14.66	131	2620194	287.1603 ug/L		99
72)	Ethylbenzene	14.66	106	4250950	284.9948 ug/L		54
73)	m-,p-Xylene	14.75	106	8238426	473.0010 ug/L		61
74)	o-Xylene	15.31	106	4935578	281.8446 ug/L		72
75)	Styrene	15.35	104	7252918	256.5458 ug/L		90
76)	Bromoform	15.83	173	1406870	306.4173 ug/L		99
77)	Isopropylbenzene	15.73	105	9580148	225.2451 ug/L		80
79)	1,1,2,2-Tetrachloroethane	15.95	83	1907963	293.5993 ug/L		98
81)	1,2,3-Trichloropropane	16.13	110	544022	307.6532 ug/L	#	55
82)	trans-1,4-Dichloro-2-Buten	16.18	53	778438	309.7380 ug/L		75
83)	n-Propylbenzene	16.24	91	10389965	194.5652 ug/L	#	74
84)	Bromobenzene	16.37	156	2947732	284.9346 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	8691973	231.6271 ug/L		82
86)	2-Chlorotoluene	16.51	91	8376979	232.7379 ug/L		85
87)	4-Chlorotoluene	16.56	91	6628917	207.1705 ug/L		83
88)	a-Methylstyrene	16.83	118	5417019	276.7761 ug/L		98
89)	tert-Butylbenzene	16.89	134	2299330	301.8182 ug/L		84
90)	1,2,4-Trimethylbenzene	16.94	105	8622125	227.6793 ug/L		77
91)	sec-Butylbenzene	17.16	105	9800905	224.5188 ug/L		85
92)	p-Isopropyltoluene	17.32	119	8672111	231.9583 ug/L		86
93)	1,3-Dichlorobenzene	17.51	146	5471972	264.5890 ug/L		87
94)	1,4-Dichlorobenzene	17.64	146	5343407	246.8291 ug/L		88
95)	n-Butylbenzene	17.84	91	8096719	230.3452 ug/L		86
96)	1,2-Dichlorobenzene	18.14	146	4855479	263.7228 ug/L		88
97)	1,2-Dibromo-3-Chloropropan	19.12	75	358449	296.1232 ug/L		89
98)	1,2,4-Trichlorobenzene	20.27	180	3559890	276.4408 ug/L		99
99)	Hexachlorobutadiene	20.42	225	1657161	295.4879 ug/L		98
100)	Naphthalene	20.64	128	5274277	255.6626 ug/L		96
101)	1,2,3-Trichlorobenzene	20.95	180	2947608	265.5617 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M409963.D 8260WT.M Fri Feb 05 11:26:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409963.D Vial: 11
Acq On : 4 Feb 2016 20:40 Operator: TMB
Sample : WG556045-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 11:26 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

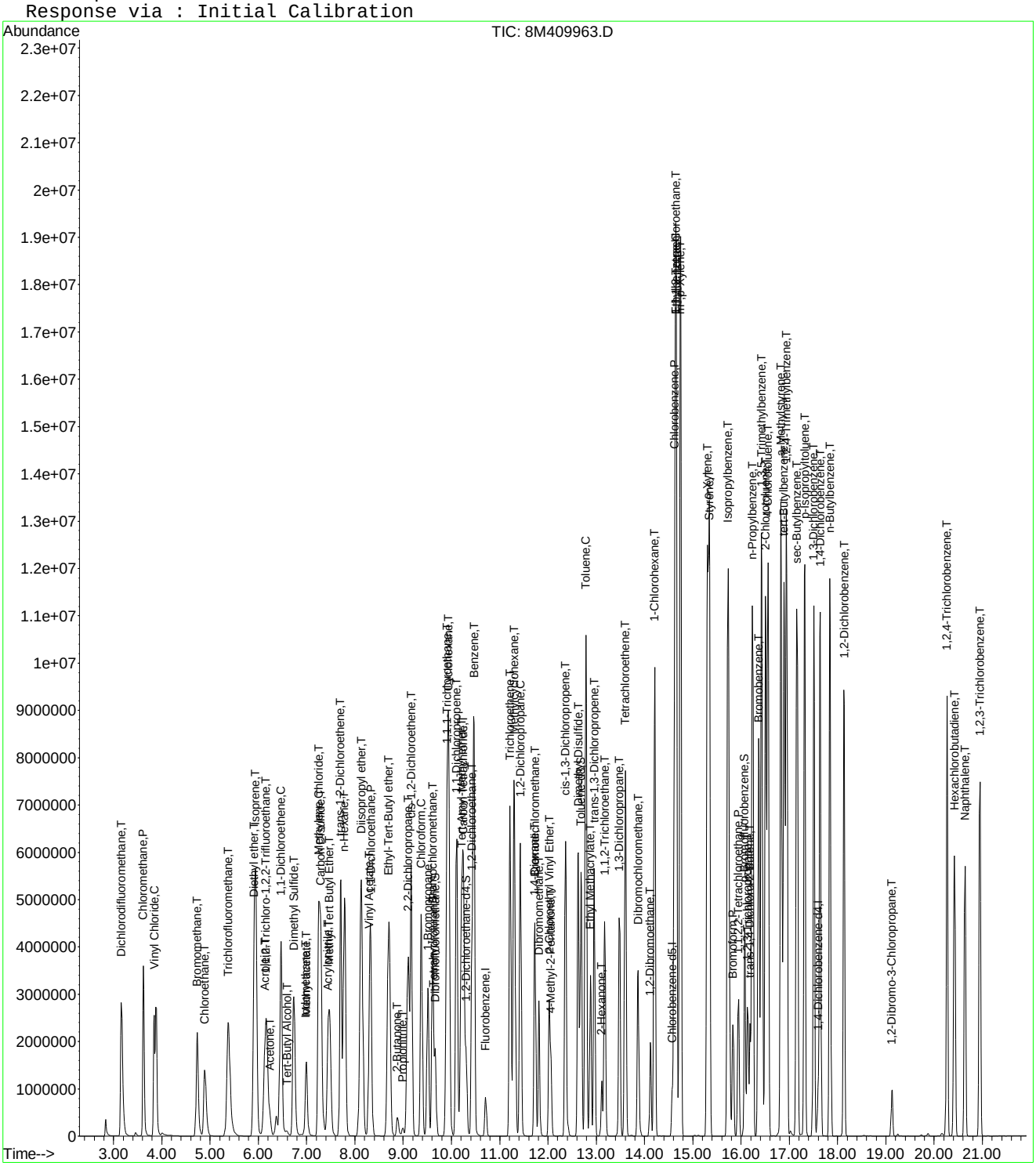

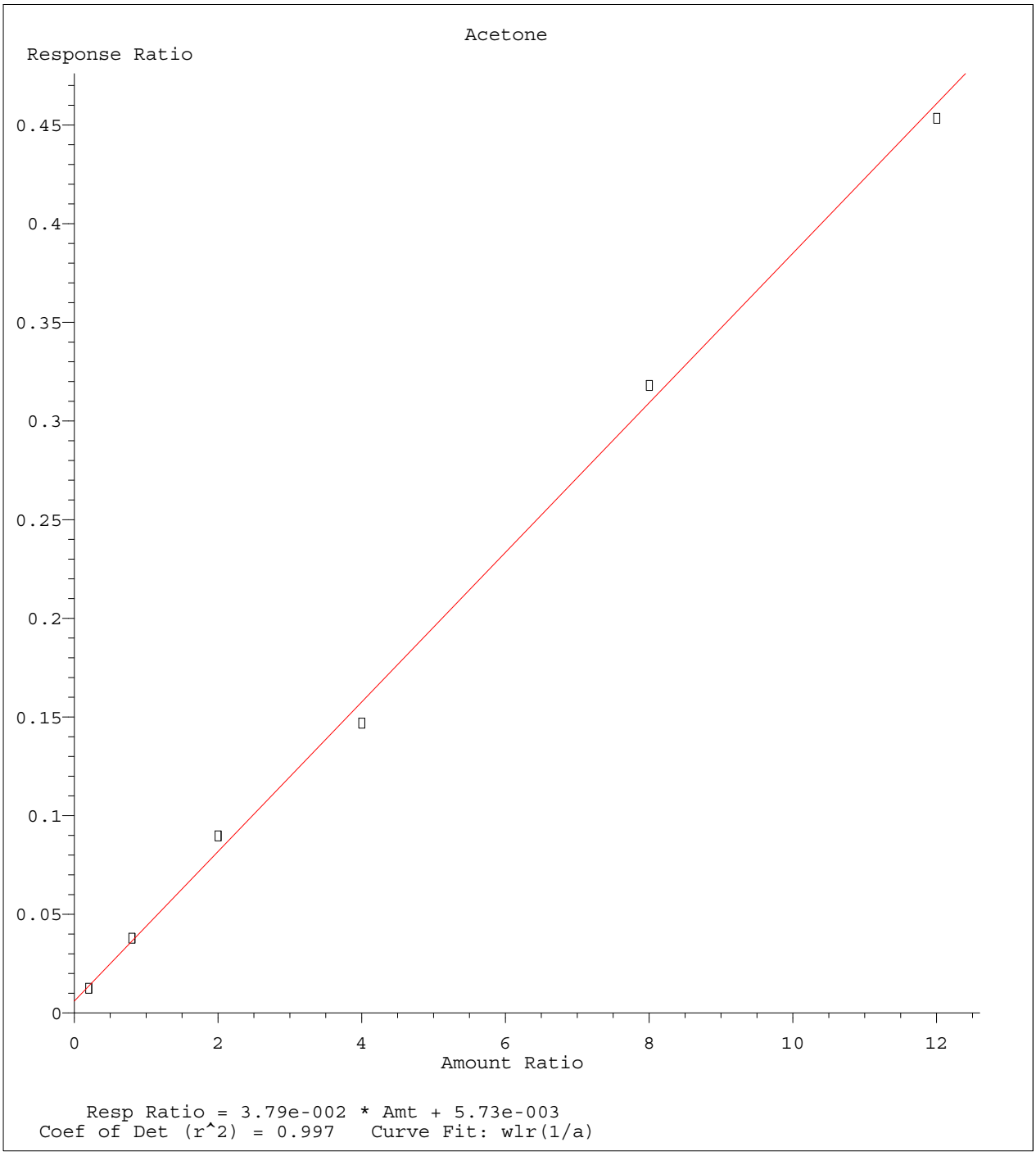

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Fri Feb 05 09:41:10 2016

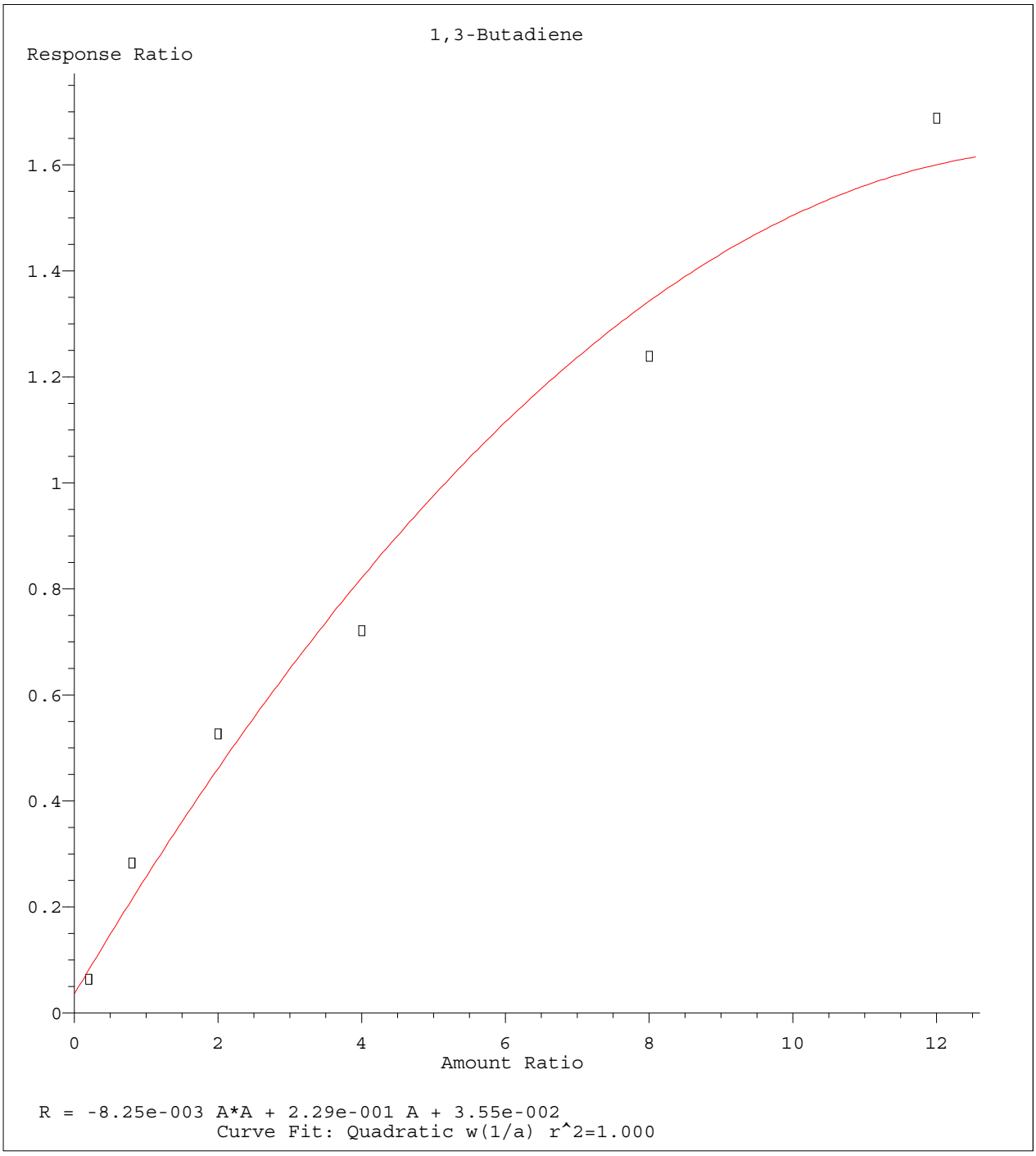

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Fri Feb 05 09:41:10 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409966.D Vial: 14
Acq On : 4 Feb 2016 22:05 Operator: TMB
Sample : WG556045-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD74617 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	923512	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	639227	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	330927	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	225951	24.2851 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.16%		
43) 1,2-Dichloroethane-d4	10.30	65	228560	23.7121 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.84%		
58) Toluene-d8	12.68	98	804133	24.5177 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.08%		
80) p-Bromofluorobenzene	16.07	95	328218	24.1761 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.72%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	745982	55.2538 ug/L	99
3) Chloromethane	3.62	50	942088	50.0955 ug/L	99
4) Vinyl Chloride	3.84	62	564292	47.4344 ug/L	99
5) 1,3-Butadiene	3.89	54	251202	26.8083 ug/L	93
6) Bromomethane	4.73	94	375345	51.5147 ug/L	99
7) Chloroethane	4.89	64	397479	53.3242 ug/L	99
8) Trichlorofluoromethane	5.37	101	773137	47.9704 ug/L	99
9) Diethyl ether	5.91	59	662032	108.9067 ug/L	98
10) Isoprene	5.94	67	729411	58.4470 ug/L	97
11) Acrolein	6.14	56	106641	169.4000 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	440013	52.2513 ug/L	96
13) Acetone	6.24	43	76450	50.7951 ug/L	89
14) 1,1-Dichloroethene	6.47	61	811668	48.9825 ug/L	96
15) Tert-Butyl Alcohol	6.58	59	78992	202.5417 ug/L	94
16) Dimethyl Sulfide	6.73	62	572639	72.3322 ug/L	98
17) Iodomethane	6.99	142	461703	65.7193 ug/L	99
18) Methyl acetate	7.00	43	214907	45.6601 ug/L	99
19) Methylene Chloride	7.26	84	452221	50.4322 ug/L	93
20) Carbon Disulfide	7.30	76	1365503	46.0678 ug/L	99
21) Acrylonitrile	7.43	53	117760	51.9982 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	913885	51.0923 ug/L	95
23) trans-1,2-Dichloroethene	7.70	61	809099	49.8740 ug/L	92
24) n-Hexane	7.78	57	663985	46.5356 ug/L	96
25) Diisopropyl ether	8.13	45	3654447	102.7867 ug/L	97
26) Vinyl Acetate	8.30	43	822795	59.3642 ug/L	100
27) 1,1-Dichloroethane	8.33	63	943759	48.0172 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	2705965	96.2591 ug/L	98
29) 2-Butanone	8.89	43	122039	50.1723 ug/L	100
30) Propionitrile	8.99	54	75892	104.0398 ug/L	99
31) 2,2-Dichloropropane	9.11	77	706072	49.1039 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	512800	50.1161 ug/L	90
33) Chloroform	9.37	83	829632	48.2511 ug/L	99
34) 1-Bromopropane	9.51	122	119894	82.2071 ug/L	100
35) Bromochloromethane	9.61	130	245370	48.5707 ug/L	92
36) Tetrahydrofuran	9.63	42	155633	98.1725 ug/L	98
38) 1,1,1-Trichloroethane	9.91	97	757241	49.5142 ug/L	99
39) Cyclohexane	9.94	56	1002632	51.0854 ug/L	94
40) 1,1-Dichloropropene	10.11	75	653603	48.5261 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1948485	102.0280 ug/L	97
42) Carbon Tetrachloride	10.25	117	676967	49.7363 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M409966.D 8260WT.M Fri Feb 05 11:27:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409966.D Vial: 14
Acq On : 4 Feb 2016 22:05 Operator: TMB
Sample : WG556045-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD74617 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:26:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	604335	49.8812 ug/L		98
46)	Benzene	10.46	78	1854934	51.7393 ug/L		97
47)	Trichloroethene	11.21	130	491300	52.7208 ug/L		97
48)	Methylcyclohexane	11.30	83	728519	51.2195 ug/L		93
49)	1,2-Dichloropropane	11.43	63	542890	52.0324 ug/L		94
50)	Bromodichloromethane	11.73	83	617279	49.1437 ug/L		99
51)	1,4-Dioxane	11.71	88	8415	211.6163 ug/L		99
52)	Dibromomethane	11.81	93	208051	46.9085 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	219839	50.7495 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	101721	50.6235 ug/L		96
55)	cis-1,3-Dichloropropene	12.36	75	770315	55.0685 ug/L		99
56)	Dimethyl Disulfide	12.62	79	398184	52.7279 ug/L		96
59)	Toluene	12.78	91	1897422	51.6117 ug/L		97
60)	Ethyl Methacrylate	12.88	69	380030	53.7076 ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	585361	51.3522 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	286345	50.5176 ug/L		99
64)	2-Hexanone	13.12	58	92263	49.8919 ug/L	#	88
65)	1,3-Dichloropropane	13.48	76	553087	53.5776 ug/L		96
66)	Tetrachloroethene	13.60	164	370683	50.2949 ug/L		97
67)	Dibromochloromethane	13.87	129	386812	51.0055 ug/L		99
68)	1,2-Dibromoethane	14.12	107	287617	50.6590 ug/L		99
69)	1-Chlorohexane	14.21	91	667726	52.9546 ug/L		92
70)	Chlorobenzene	14.62	112	1276200	52.2689 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	444001	51.8841 ug/L		98
72)	Ethylbenzene	14.66	106	715590	51.1535 ug/L		95
73)	m-,p-Xylene	14.74	106	1739386	106.4814 ug/L		95
74)	o-Xylene	15.31	106	875904	53.3320 ug/L		96
75)	Styrene	15.34	104	1410443	53.1946 ug/L		100
76)	Bromoform	15.83	173	210159	48.8053 ug/L		100
77)	Isopropylbenzene	15.73	105	2162389	54.2097 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.94	83	318214	51.4284 ug/L		100
81)	1,2,3-Trichloropropane	16.13	110	90770	53.9121 ug/L		95
82)	trans-1,4-Dichloro-2-Buten	16.19	53	107806	45.0518 ug/L		78
83)	n-Propylbenzene	16.24	91	2616742	51.4649 ug/L		98
84)	Bromobenzene	16.36	156	478569	48.5848 ug/L		88
85)	1,3,5-Trimethylbenzene	16.42	105	1895882	53.0617 ug/L		99
86)	2-Chlorotoluene	16.51	91	1641560	47.9000 ug/L		99
87)	4-Chlorotoluene	16.56	91	1682976	55.2411 ug/L		98
88)	a-Methylstyrene	16.83	118	1064538	57.1253 ug/L		98
89)	tert-Butylbenzene	16.89	134	385736	53.1781 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	1884162	52.2548 ug/L		97
91)	sec-Butylbenzene	17.16	105	2285924	54.9980 ug/L		98
92)	p-Isopropyltoluene	17.31	119	1869635	52.5219 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	1008197	51.2003 ug/L		94
94)	1,4-Dichlorobenzene	17.63	146	1006305	48.8210 ug/L		95
95)	n-Butylbenzene	17.84	91	1774604	53.0237 ug/L		100
96)	1,2-Dichlorobenzene	18.13	146	877961	50.0829 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.12	75	58776	50.9969 ug/L		91
98)	1,2,4-Trichlorobenzene	20.27	180	603046	49.1830 ug/L		99
99)	Hexachlorobutadiene	20.42	225	285211	53.4122 ug/L		99
100)	Naphthalene	20.64	128	881341	44.8691 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	492624	46.6133 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M409966.D 8260WT.M Fri Feb 05 11:27:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020416\8M409966.D Vial: 14
Acq On : 4 Feb 2016 22:05 Operator: TMB
Sample : WG556045-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD74617 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 11:26 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

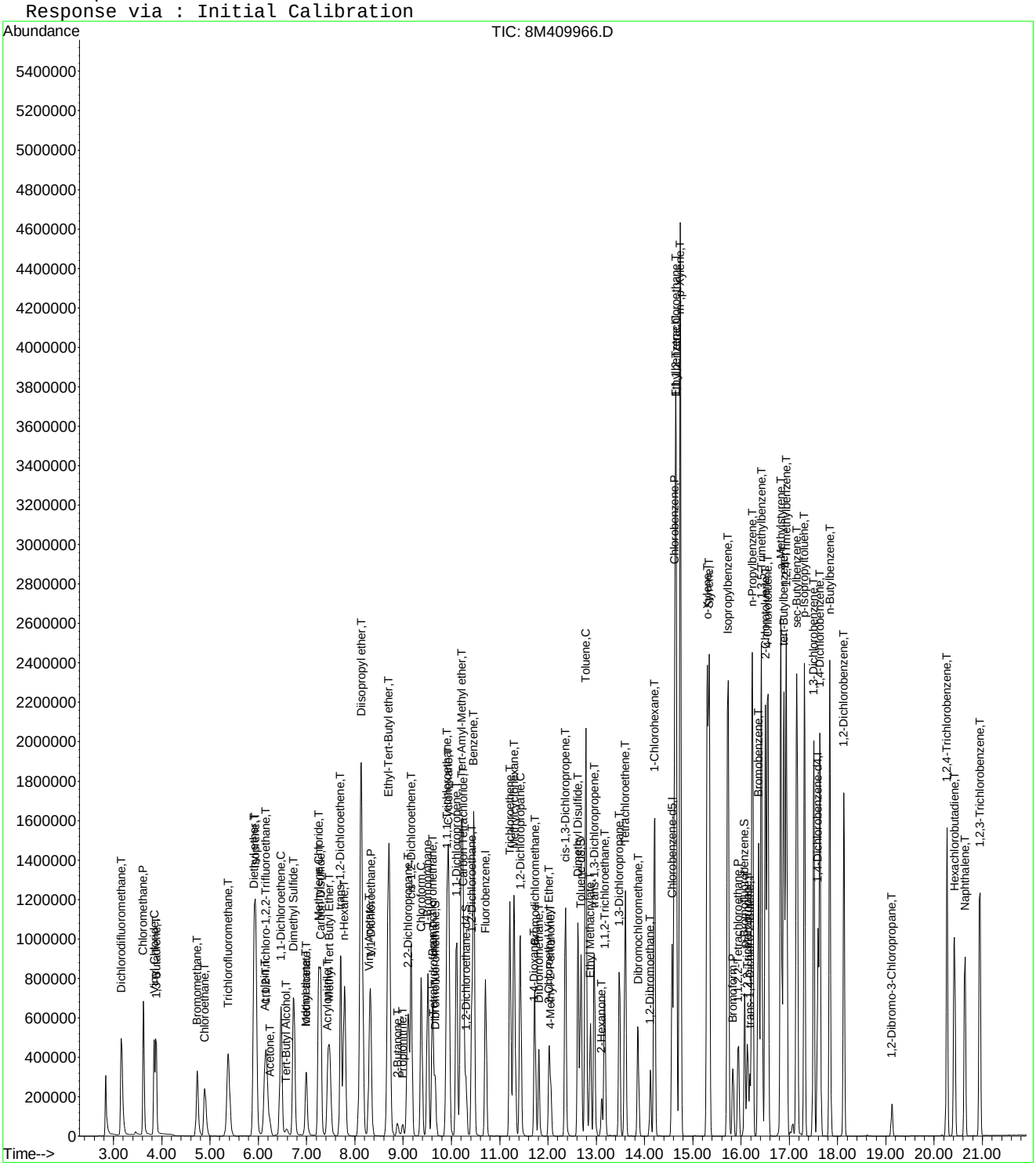

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020416\8M409966.D Vial: 14
Acq On : 4 Feb 2016 22:05 Operator: TMB
Sample : WG556045-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD74617 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	101	0.00
2	T	Dichlorodifluoromethane	50.0000	55.2538	-10.5	107	0.00
3	P	Chloromethane	50.0000	50.0955	-0.2	103	0.00
4	C	Vinyl Chloride	50.0000	47.4344	5.1	99	0.00
5	T	1,3-Butadiene	50.0000	26.8083	46.4#	52	0.00
6	T	Bromomethane	50.0000	51.5147	-3.0	104	0.00
7	T	Chloroethane	50.0000	53.3242	-6.6	110	0.00
8	T	Trichlorofluoromethane	50.0000	47.9704	4.1	100	0.00
9	T	Diethyl ether	100.0000	108.9067	-8.9	114	0.00
10	T	Isoprene	50.0000	58.4470	-16.9	121	0.00
11	T	Acrolein	50.0000	169.4000	-238.8#	359	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.2514	-4.5	107	0.00
13	T	Acetone	50.0000	50.7951	-1.6	93	0.00
14	C	1,1-Dichloroethene	50.0000	48.9825	2.0	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	202.5417	-1.3	108	0.00
16	T	Dimethyl Sulfide	50.0000	72.3322	-44.7#	149	0.00
17	T	Iodomethane	50.0000	65.7193	-31.4#	136	0.00
18	T	Methyl acetate	50.0000	45.6601	8.7	98	0.00
19	T	Methylene Chloride	50.0000	50.4322	-0.9	103	0.00
20	T	Carbon Disulfide	50.0000	46.0678	7.9	96	0.00
21	T	Acrylonitrile	50.0000	51.9982	-4.0	106	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.0923	-2.2	104	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.8740	0.3	103	0.00
24	T	n-Hexane	50.0000	46.5356	6.9	100	0.00
25	T	Diisopropyl ether	100.0000	102.7867	-2.8	106	0.00
26	T	Vinyl Acetate	50.0000	59.3642	-18.7	125	0.00
27	P	1,1-Dichloroethane	50.0000	48.0172	4.0	97	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	96.2591	3.7	100	0.00
29	T	2-Butanone	50.0000	50.1724	-0.3	100	0.01
30	T	Propionitrile	100.0000	104.0398	-4.0	107	0.00
31	T	2,2-Dichloropropane	50.0000	49.1039	1.8	104	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.1161	-0.2	104	0.00
33	C	Chloroform	50.0000	48.2510	3.5	101	0.00
34		1-Bromopropane	50.0000	82.2071	-64.4#	168	0.00
35	T	Bromochloromethane	50.0000	48.5707	2.9	99	0.00
36	T	Tetrahydrofuran	100.0000	98.1725	1.8	104	0.00
37	S	Dibromofluoromethane	25.0000	24.2851	2.9	100	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.5142	1.0	103	0.00
39	T	Cyclohexane	50.0000	51.0854	-2.2	107	0.00
40	T	1,1-Dichloropropene	50.0000	48.5261	2.9	100	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.0280	-2.0	106	0.00
42	T	Carbon Tetrachloride	50.0000	49.7363	0.5	101	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.7121	5.2	98	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.8811	0.2	100	0.00
46	T	Benzene	50.0000	51.7393	-3.5	104	0.00
47	T	Trichloroethene	50.0000	52.7208	-5.4	107	0.00
48	T	Methylcyclohexane	50.0000	51.2195	-2.4	108	0.00
49	C	1,2-Dichloropropane	50.0000	52.0324	-4.1	106	0.00
50	T	Bromodichloromethane	50.0000	49.1437	1.7	100	0.00
51	T	1,4-Dioxane	200.0000	211.6163	-5.8	105	0.00
52	T	Dibromomethane	50.0000	46.9085	6.2	97	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	50.7495	-1.5	100	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.6235	-1.2	102	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020416\8M409966.D Vial: 14
Acq On : 4 Feb 2016 22:05 Operator: TMB
Sample : WG556045-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD74617 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	55.0685	-10.1	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.7278	-5.5	109	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	103	0.00
58	S	Toluene-d8	25.0000	24.5177	1.9	101	0.00
59	C	Toluene	50.0000	51.6118	-3.2	104	0.00
60	T	Ethyl Methacrylate	50.0000	53.7076	-7.4	110	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	51.3522	-2.7	101	0.00
63	T	1,1,2-Trichloroethane	50.0000	50.5176	-1.0	102	0.00
64	T	2-Hexanone	50.0000	49.8919	0.2	99	0.00
65	T	1,3-Dichloropropane	50.0000	53.5776	-7.2	108	0.00
66	T	Tetrachloroethene	50.0000	50.2949	-0.6	104	0.00
67	T	Dibromochloromethane	50.0000	51.0055	-2.0	101	0.00
68	T	1,2-Dibromoethane	50.0000	50.6590	-1.3	102	0.00
69	T	1-Chlorohexane	50.0000	52.9546	-5.9	112	0.00
70	P	Chlorobenzene	50.0000	52.2689	-4.5	107	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.8841	-3.8	104	0.00
72	C	Ethylbenzene	50.0000	51.1535	-2.3	107	0.00
73	T	m-,p-Xylene	100.0000	106.4814	-6.5	108	0.00
74	T	o-Xylene	50.0000	53.3320	-6.7	109	0.00
75	T	Styrene	50.0000	53.1946	-6.4	106	0.00
76	P	Bromoform	50.0000	48.8053	2.4	99	0.00
77	T	Isopropylbenzene	50.0000	54.2097	-8.4	109	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	104	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	51.4284	-2.9	107	0.00
80	S	p-Bromofluorobenzene	25.0000	24.1761	3.3	101	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.9121	-7.8	107	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	45.0518	9.9	92	0.00
83	T	n-Propylbenzene	50.0000	51.4649	-2.9	110	0.00
84	T	Bromobenzene	50.0000	48.5848	2.8	104	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	53.0617	-6.1	110	0.00
86	T	2-Chlorotoluene	50.0000	47.9000	4.2	96	0.00
87	T	4-Chlorotoluene	50.0000	55.2411	-10.5	125	0.00
88	T	a-Methylstyrene	50.0000	57.1253	-14.3	119	0.00
89	T	tert-Butylbenzene	50.0000	53.1781	-6.4	113	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.2548	-4.5	107	0.00
91	T	sec-Butylbenzene	50.0000	54.9980	-10.0	111	0.00
92	T	p-Isopropyltoluene	50.0000	52.5219	-5.0	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.2003	-2.4	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.8210	2.4	109	0.00
95	T	n-Butylbenzene	50.0000	53.0237	-6.0	109	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.0829	-0.2	108	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	50.9969	-2.0	106	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.1830	1.6	105	0.00
99	T	Hexachlorobutadiene	50.0000	53.4122	-6.8	116	0.00
100	T	Naphthalene	50.0000	44.8691	10.3	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	46.6133	6.8	103	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M409966.D 8260WT.M Fri Feb 05 11:28:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\020516\8M409971.D Vial: 3
Acq On : 5 Feb 2016 11:24 Operator: TMB
Sample : WG556389-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:46:14 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	986550	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	666709	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	340700	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	227614	22.9007 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.60%		
43) 1,2-Dichloroethane-d4	10.30	65	228696	22.2101 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.84%		
58) Toluene-d8	12.68	98	827786	24.1985 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.80%		
80) p-Bromofluorobenzene	16.07	95	327176	23.4081 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.64%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	797864	55.3205 ug/L	100
3) Chloromethane	3.62	50	995407	49.5486 ug/L	99
4) Vinyl Chloride	3.84	62	631769	49.7131 ug/L	99
5) 1,3-Butadiene	3.90	54	538917	61.0240 ug/L	92
6) Bromomethane	4.73	94	405089	52.0445 ug/L	100
7) Chloroethane	4.90	64	409794	51.4635 ug/L	99
8) Trichlorofluoromethane	5.38	101	871952	50.6446 ug/L	100
9) Diethyl ether	5.91	59	635537	97.8678 ug/L	98
10) Isoprene	5.94	67	692957	51.9780 ug/L	98
11) Acrolein	6.14	56	35680	53.0564 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	483836	53.7841 ug/L	95
13) Acetone	6.24	43	83440	51.9789 ug/L	99
14) 1,1-Dichloroethene	6.47	61	908057	51.2979 ug/L	96
15) Tert-Butyl Alcohol	6.58	59	84621	203.1107 ug/L	96
16) Dimethyl Sulfide	6.74	62	415050	49.0766 ug/L	100
17) Iodomethane	6.99	142	378891	50.4856 ug/L	98
18) Methyl acetate	7.00	43	237982	47.3319 ug/L	98
19) Methylene Chloride	7.26	84	475141	49.6024 ug/L	92
20) Carbon Disulfide	7.30	76	1611155	50.8821 ug/L	100
21) Acrylonitrile	7.43	53	122327	50.5634 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	947164	49.5693 ug/L	94
23) trans-1,2-Dichloroethene	7.71	61	869909	50.1961 ug/L	90
24) n-Hexane	7.78	57	846728	55.5513 ug/L	94
25) Diisopropyl ether	8.12	45	3791248	99.8208 ug/L	97
26) Vinyl Acetate	8.30	43	777950	52.5422 ug/L	100
27) 1,1-Dichloroethane	8.33	63	1063259	50.6405 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	2960891	98.5974 ug/L	98
29) 2-Butanone	8.88	43	131478	50.5990 ug/L	97
30) Propionitrile	8.99	54	77344	99.2553 ug/L	99
31) 2,2-Dichloropropane	9.11	77	851770	55.4514 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	539860	49.3894 ug/L	87
33) Chloroform	9.37	83	888495	48.3726 ug/L	99
34) 1-Bromopropane	9.51	122	80552	51.7025 ug/L	100
35) Bromochloromethane	9.61	130	269485	49.9357 ug/L	93
36) Tetrahydrofuran	9.63	42	162669	96.0542 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	810898	49.6347 ug/L	100
39) Cyclohexane	9.94	56	1070302	51.0488 ug/L	93
40) 1,1-Dichloropropene	10.11	75	724143	50.3279 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	2011588	98.6018 ug/L	97
42) Carbon Tetrachloride	10.25	117	737121	50.6954 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M409971.D 8260WT.M Fri Feb 05 11:46:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\020516\8M409971.D Vial: 3
Acq On : 5 Feb 2016 11:24 Operator: TMB
Sample : WG556389-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 11:46:14 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	638688	49.3482 ug/L		98
46)	Benzene	10.47	78	1962080	51.2309 ug/L		96
47)	Trichloroethene	11.21	130	504962	50.7244 ug/L		98
48)	Methylcyclohexane	11.30	83	786391	51.7555 ug/L		93
49)	1,2-Dichloropropane	11.43	63	559832	50.2276 ug/L		94
50)	Bromodichloromethane	11.73	83	662065	49.3412 ug/L		99
51)	1,4-Dioxane	11.72	88	9215	216.9271 ug/L		97
52)	Dibromomethane	11.81	93	229600	48.4593 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	234082	50.5846 ug/L		99
54)	4-Methyl-2-Pentanone	12.05	58	107876	50.2562 ug/L		97
55)	cis-1,3-Dichloropropene	12.36	75	763311	51.0811 ug/L		100
56)	Dimethyl Disulfide	12.62	79	400538	49.6505 ug/L		98
59)	Toluene	12.78	91	2005059	52.2914 ug/L		97
60)	Ethyl Methacrylate	12.88	69	378507	51.2874 ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	631990	53.1575 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	301878	51.0626 ug/L		98
64)	2-Hexanone	13.12	58	100137	51.9177 ug/L	#	85
65)	1,3-Dichloropropane	13.48	76	545041	50.6218 ug/L		97
66)	Tetrachloroethene	13.60	164	403604	52.5044 ug/L		97
67)	Dibromochloromethane	13.87	129	411159	51.9811 ug/L		99
68)	1,2-Dibromoethane	14.12	107	299881	50.6419 ug/L		100
69)	1-Chlorohexane	14.21	91	690856	52.5305 ug/L		90
70)	Chlorobenzene	14.62	112	1305154	51.2513 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	465261	52.1274 ug/L		97
72)	Ethylbenzene	14.66	106	749374	51.3604 ug/L		95
73)	m-,p-Xylene	14.74	106	1794258	105.3128 ug/L		95
74)	o-Xylene	15.31	106	881020	51.4323 ug/L		96
75)	Styrene	15.34	104	1451297	52.4792 ug/L		99
76)	Bromoform	15.83	173	223517	49.7678 ug/L		99
77)	Isopropylbenzene	15.73	105	2219393	53.3453 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	323485	50.7806 ug/L		100
81)	1,2,3-Trichloropropane	16.13	110	87892	50.7053 ug/L	#	46
82)	trans-1,4-Dichloro-2-Buten	16.18	53	132814	53.9105 ug/L		72
83)	n-Propylbenzene	16.24	91	2677715	51.1534 ug/L		97
84)	Bromobenzene	16.36	156	502366	49.5378 ug/L		88
85)	1,3,5-Trimethylbenzene	16.42	105	1922596	52.2658 ug/L		98
86)	2-Chlorotoluene	16.51	91	1633171	46.2882 ug/L		99
87)	4-Chlorotoluene	16.56	91	1711183	54.5558 ug/L		98
88)	a-Methylstyrene	16.83	118	1006745	52.4743 ug/L		97
89)	tert-Butylbenzene	16.89	134	382729	51.2501 ug/L		94
90)	1,2,4-Trimethylbenzene	16.94	105	1956094	52.6936 ug/L		98
91)	sec-Butylbenzene	17.16	105	2321522	54.2523 ug/L		98
92)	p-Isopropyltoluene	17.31	119	1975246	53.8971 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	1035388	51.0728 ug/L		94
94)	1,4-Dichlorobenzene	17.64	146	1004064	47.3149 ug/L		93
95)	n-Butylbenzene	17.84	91	1869303	54.2511 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	890282	49.3290 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.12	75	58391	49.2096 ug/L		88
98)	1,2,4-Trichlorobenzene	20.27	180	642140	50.8691 ug/L		99
99)	Hexachlorobutadiene	20.42	225	284363	51.7258 ug/L		99
100)	Naphthalene	20.64	128	1014380	50.1607 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	519612	47.7567 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M409971.D 8260WT.M Fri Feb 05 11:46:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\020516\8M409971.D Vial: 3
Acq On : 5 Feb 2016 11:24 Operator: TMB
Sample : WG556389-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 11:46 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

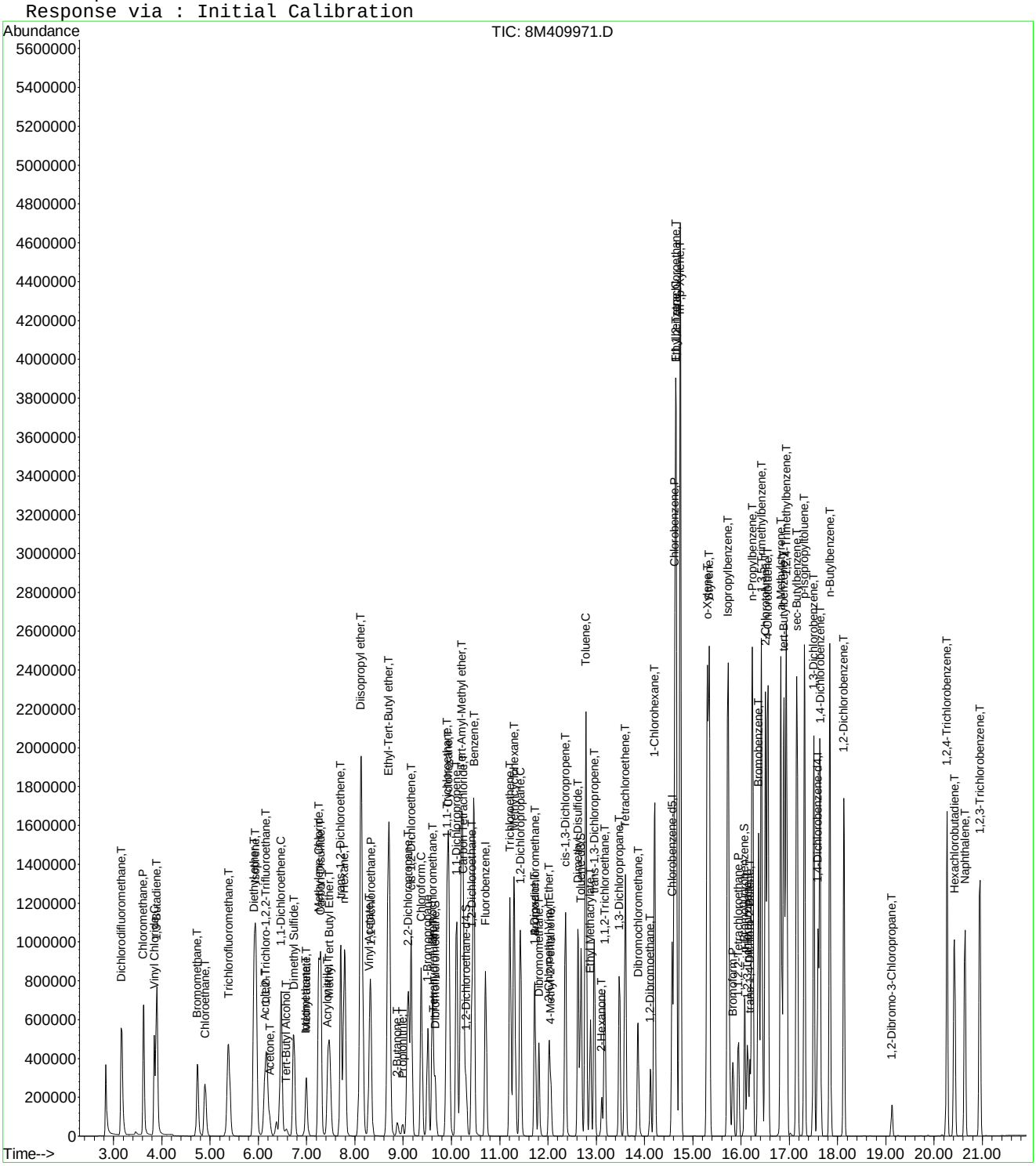

8M409971.D 8260WT.M Fri Feb 05 11:46:15 2016 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 4 Feb 2016 19:14
CCV date: 5 Feb 2016 11:24
CCV Filename: 8M409971.D

	Fluorobenzene		**Chlorobenzene-d5**		**1,4-Dichlorobenzene-d4**	
	Amount	RT	Amount	RT	Amount	RT
InitCal	911654	10.71	618667	14.57	317039	17.60
CCV	986550	10.71	666709	14.57	340700	17.59

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020516\8M409971.D Vial: 3
Acq On : 5 Feb 2016 11:24 Operator: TMB
Sample : WG556389-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	0.3655	0.4044	-10.6	114	0.00
3	P	Chloromethane	0.5091	0.5045	0.9	108	0.00
4	C	Vinyl Chloride	0.3220	0.3202	0.6	111	0.00
5	T	1,3-Butadiene	0.2349	0.2731	-16.3	112	0.01
6	T	Bromomethane	0.1972	0.2053	-4.1	113	0.00
7	T	Chloroethane	0.2018	0.2077	-2.9	114	0.01
8	T	Trichlorofluoromethane	0.4363	0.4419	-1.3	112	0.01
9	T	Diethyl ether	0.1646	0.1611	2.1	110	0.00
10	T	Isoprene	0.3378	0.3512	-4.0	115	0.00
11	T	Acrolein	0.0170	0.0181	-6.1	120	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2280	0.2452	-7.6	117	0.00
13	T	Acetone	0.0448	0.0423	5.6	102	0.00
14	C	1,1-Dichloroethene	0.4486	0.4602	-2.6	112	0.00
15	T	Tert-Butyl Alcohol	0.0106	0.0107	-1.5	116	-0.01
16	T	Dimethyl Sulfide	0.2143	0.2104	1.8	108	0.00
17	T	Iodomethane	0.1902	0.1920	-1.0	112	0.00
18	T	Methyl acetate	0.1274	0.1206	5.3	108	0.00
19	T	Methylene Chloride	0.2427	0.2408	0.8	108	0.00
20	T	Carbon Disulfide	0.8024	0.8166	-1.8	113	0.00
21	T	Acrylonitrile	0.0613	0.0620	-1.1	110	-0.01
22	T	Methyl Tert Butyl Ether	0.4842	0.4800	0.9	108	0.00
23	T	trans-1,2-Dichloroethene	0.4392	0.4409	-0.4	111	0.01
24	T	n-Hexane	0.3862	0.4291	-11.1	127	0.00
25	T	Diisopropyl ether	0.9625	0.9607	0.2	110	-0.01
26	T	Vinyl Acetate	0.3752	0.3943	-5.1	118	0.00
27	P	1,1-Dichloroethane	0.5321	0.5389	-1.3	110	0.00
28	T	Ethyl-Tert-Butyl ether	0.7610	0.7503	1.4	109	0.00
29	T	2-Butanone	0.0659	0.0666	-1.2	108	0.00
30	T	Propionitrile	0.0198	0.0196	0.8	109	0.00
31	T	2,2-Dichloropropane	0.3892	0.4317	-10.9	125	0.00
32	T	cis-1,2-Dichloroethene	0.2770	0.2736	1.2	110	0.00
33	C	Chloroform	0.4654	0.4503	3.3	108	0.00
34		1-Bromopropane	0.0395	0.0408	-3.4	113	-0.01
35	T	Bromochloromethane	0.1368	0.1366	0.1	109	0.00
36	T	Tetrahydrofuran	0.0429	0.0412	4.0	109	0.00
37	S	Dibromofluoromethane	0.2519	0.2307	8.4	101	0.00
38	T	1,1,1-Trichloroethane	0.4140	0.4110	0.7	110	0.00
39	T	Cyclohexane	0.5313	0.5424	-2.1	114	0.00
40	T	1,1-Dichloropropene	0.3646	0.3670	-0.7	111	0.00
41	T	Tert-Amyl-Methyl ether	0.5170	0.5098	1.4	110	0.00
42	T	Carbon Tetrachloride	0.3685	0.3736	-1.4	110	0.00
43	S	1,2-Dichloroethane-d4	0.2609	0.2318	11.2	98	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3280	0.3237	1.3	106	0.00
46	T	Benzene	0.9705	0.9944	-2.5	110	0.00
47	T	Trichloroethene	0.2523	0.2559	-1.4	109	0.00
48	T	Methylcyclohexane	0.3850	0.3986	-3.5	116	0.00
49	C	1,2-Dichloropropane	0.2824	0.2837	-0.5	109	0.00
50	T	Bromodichloromethane	0.3400	0.3356	1.3	108	0.00
51	T	1,4-Dioxane	0.0011	0.0012	-8.3	115	0.00
52	T	Dibromomethane	0.1201	0.1164	3.1	107	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1173	0.1186	-1.2	107	0.00
54	T	4-Methyl-2-Pentanone	0.0544	0.0547	-0.5	108	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020516\8M409971.D Vial: 3
Acq On : 5 Feb 2016 11:24 Operator: TMB
Sample : WG556389-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3787	0.3869	-2.2	110	0.00
56	T	Dimethyl Disulfide	0.2044	0.2030	0.7	110	-0.01
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	108	0.00
58	S	Toluene-d8	1.2827	1.2416	3.2	104	0.00
59	C	Toluene	1.4378	1.5037	-4.6	110	0.00
60	T	Ethyl Methacrylate	0.2767	0.2839	-2.6	109	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.4458	0.4740	-6.3	109	0.00
63	T	1,1,2-Trichloroethane	0.2217	0.2264	-2.1	108	0.00
64	T	2-Hexanone	0.0723	0.0751	-3.8	107	0.00
65	T	1,3-Dichloropropane	0.4037	0.4088	-1.2	106	0.00
66	T	Tetrachloroethene	0.2883	0.3027	-5.0	114	0.00
67	T	Dibromochloromethane	0.2966	0.3084	-4.0	107	0.00
68	T	1,2-Dibromoethane	0.2221	0.2249	-1.3	106	0.00
69	T	1-Chlorohexane	0.4931	0.5181	-5.1	116	0.00
70	P	Chlorobenzene	0.9549	0.9788	-2.5	110	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3347	0.3489	-4.3	109	0.00
72	C	Ethylbenzene	0.5471	0.5620	-2.7	112	0.00
73	T	m-,p-Xylene	0.6389	0.6728	-5.3	111	-0.01
74	T	o-Xylene	0.6423	0.6607	-2.9	110	0.00
75	T	Styrene	1.0370	1.0884	-5.0	109	-0.01
76	P	Bromoform	0.1684	0.1676	0.5	106	0.00
77	T	Isopropylbenzene	1.5601	1.6644	-6.7	112	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	107	-0.01
79	P	1,1,2,2-Tetrachloroethane	0.4674	0.4747	-1.6	108	0.00
80	S	p-Bromofluorobenzene	1.0256	0.9603	6.4	101	0.00
81	T	1,2,3-Trichloropropane	0.1272	0.1290	-1.4	104	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1808	0.1949	-7.8	114	0.00
83	T	n-Propylbenzene	3.8411	3.9297	-2.3	113	0.00
84	T	Bromobenzene	0.7441	0.7373	0.9	109	-0.01
85	T	1,3,5-Trimethylbenzene	2.6992	2.8215	-4.5	112	0.00
86	T	2-Chlorotoluene	2.5890	2.3968	7.4	95	0.00
87	T	4-Chlorotoluene	2.3016	2.5113	-9.1	127	0.00
88	T	a-Methylstyrene	1.4078	1.4775	-4.9	113	0.00
89	T	tert-Butylbenzene	0.5480	0.5617	-2.5	112	0.00
90	T	1,2,4-Trimethylbenzene	2.7239	2.8707	-5.4	111	0.00
91	T	sec-Butylbenzene	3.1399	3.4070	-8.5	113	0.00
92	T	p-Isopropyltoluene	2.6892	2.8988	-7.8	113	-0.01
93	T	1,3-Dichlorobenzene	1.4876	1.5195	-2.1	111	0.00
94	T	1,4-Dichlorobenzene	1.5572	1.4735	5.4	109	0.00
95	T	n-Butylbenzene	2.5284	2.7433	-8.5	115	0.00
96	T	1,2-Dichlorobenzene	1.3243	1.3066	1.3	109	-0.01
97	T	1,2-Dibromo-3-Chloropropane	0.0871	0.0857	1.6	105	0.00
98	T	1,2,4-Trichlorobenzene	0.9263	0.9424	-1.7	112	0.00
99	T	Hexachlorobutadiene	0.4034	0.4173	-3.5	116	0.00
100	T	Naphthalene	1.4839	1.4887	-0.3	110	0.00
101	T	1,2,3-Trichlorobenzene	0.7984	0.7626	4.5	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020516\8M409971.D Vial: 3
Acq On : 5 Feb 2016 11:24 Operator: TMB
Sample : WG556389-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	55.3205	-10.6	114	0.00
3	P	Chloromethane	50.0000	49.5486	0.9	108	0.00
4	C	Vinyl Chloride	50.0000	49.7131	0.6	111	0.00
5	T	1,3-Butadiene	50.0000	61.0239	-22.0	112	0.01
6	T	Bromomethane	50.0000	52.0445	-4.1	113	0.00
7	T	Chloroethane	50.0000	51.4635	-2.9	114	0.01
8	T	Trichlorofluoromethane	50.0000	50.6446	-1.3	112	0.01
9	T	Diethyl ether	100.0000	97.8678	2.1	110	0.00
10	T	Isoprene	50.0000	51.9780	-4.0	115	0.00
11	T	Acrolein	50.0000	53.0564	-6.1	120	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.7841	-7.6	117	0.00
13	T	Acetone	50.0000	51.9789	-4.0	102	0.00
14	C	1,1-Dichloroethene	50.0000	51.2979	-2.6	112	0.00
15	T	Tert-Butyl Alcohol	200.0000	203.1107	-1.6	116	-0.01
16	T	Dimethyl Sulfide	50.0000	49.0766	1.8	108	0.00
17	T	Iodomethane	50.0000	50.4856	-1.0	112	0.00
18	T	Methyl acetate	50.0000	47.3319	5.3	108	0.00
19	T	Methylene Chloride	50.0000	49.6024	0.8	108	0.00
20	T	Carbon Disulfide	50.0000	50.8821	-1.8	113	0.00
21	T	Acrylonitrile	50.0000	50.5634	-1.1	110	-0.01
22	T	Methyl Tert Butyl Ether	50.0000	49.5693	0.9	108	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.1961	-0.4	111	0.01
24	T	n-Hexane	50.0000	55.5513	-11.1	127	0.00
25	T	Diisopropyl ether	100.0000	99.8208	0.2	110	-0.01
26	T	Vinyl Acetate	50.0000	52.5422	-5.1	118	0.00
27	P	1,1-Dichloroethane	50.0000	50.6405	-1.3	110	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.5974	1.4	109	0.00
29	T	2-Butanone	50.0000	50.5990	-1.2	108	0.00
30	T	Propionitrile	100.0000	99.2553	0.7	109	0.00
31	T	2,2-Dichloropropane	50.0000	55.4514	-10.9	125	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.3894	1.2	110	0.00
33	C	Chloroform	50.0000	48.3726	3.3	108	0.00
34		1-Bromopropane	50.0000	51.7025	-3.4	113	-0.01
35	T	Bromochloromethane	50.0000	49.9357	0.1	109	0.00
36	T	Tetrahydrofuran	100.0000	96.0542	3.9	109	0.00
37	S	Dibromofluoromethane	25.0000	22.9007	8.4	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.6347	0.7	110	0.00
39	T	Cyclohexane	50.0000	51.0488	-2.1	114	0.00
40	T	1,1-Dichloropropene	50.0000	50.3279	-0.7	111	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	98.6018	1.4	110	0.00
42	T	Carbon Tetrachloride	50.0000	50.6954	-1.4	110	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.2101	11.2	98	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.3481	1.3	106	0.00
46	T	Benzene	50.0000	51.2309	-2.5	110	0.00
47	T	Trichloroethene	50.0000	50.7244	-1.4	109	0.00
48	T	Methylcyclohexane	50.0000	51.7555	-3.5	116	0.00
49	C	1,2-Dichloropropane	50.0000	50.2276	-0.5	109	0.00
50	T	Bromodichloromethane	50.0000	49.3412	1.3	108	0.00
51	T	1,4-Dioxane	200.0000	216.9271	-8.5	115	0.00
52	T	Dibromomethane	50.0000	48.4593	3.1	107	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	50.5846	-1.2	107	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.2563	-0.5	108	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020516\8M409971.D Vial: 3
Acq On : 5 Feb 2016 11:24 Operator: TMB
Sample : WG556389-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD74616 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.0811	-2.2	110	0.00
56	T	Dimethyl Disulfide	50.0000	49.6505	0.7	110	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	108	0.00
58	S	Toluene-d8	25.0000	24.1985	3.2	104	0.00
59	C	Toluene	50.0000	52.2914	-4.6	110	0.00
60	T	Ethyl Methacrylate	50.0000	51.2874	-2.6	109	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	53.1575	-6.3	109	0.00
63	T	1,1,2-Trichloroethane	50.0000	51.0626	-2.1	108	0.00
64	T	2-Hexanone	50.0000	51.9177	-3.8	107	0.00
65	T	1,3-Dichloropropane	50.0000	50.6218	-1.2	106	0.00
66	T	Tetrachloroethene	50.0000	52.5044	-5.0	114	0.00
67	T	Dibromochloromethane	50.0000	51.9811	-4.0	107	0.00
68	T	1,2-Dibromoethane	50.0000	50.6419	-1.3	106	0.00
69	T	1-Chlorohexane	50.0000	52.5305	-5.1	116	0.00
70	P	Chlorobenzene	50.0000	51.2513	-2.5	110	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.1274	-4.3	109	0.00
72	C	Ethylbenzene	50.0000	51.3604	-2.7	112	0.00
73	T	m-,p-Xylene	100.0000	105.3128	-5.3	111	-0.01
74	T	o-Xylene	50.0000	51.4323	-2.9	110	0.00
75	T	Styrene	50.0000	52.4792	-5.0	109	-0.01
76	P	Bromoform	50.0000	49.7678	0.5	106	0.00
77	T	Isopropylbenzene	50.0000	53.3453	-6.7	112	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	107	-0.01
79	P	1,1,2,2-Tetrachloroethane	50.0000	50.7806	-1.6	108	0.00
80	S	p-Bromofluorobenzene	25.0000	23.4080	6.4	101	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.7053	-1.4	104	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	53.9105	-7.8	114	0.00
83	T	n-Propylbenzene	50.0000	51.1534	-2.3	113	0.00
84	T	Bromobenzene	50.0000	49.5378	0.9	109	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	52.2659	-4.5	112	0.00
86	T	2-Chlorotoluene	50.0000	46.2882	7.4	95	0.00
87	T	4-Chlorotoluene	50.0000	54.5558	-9.1	127	0.00
88	T	a-Methylstyrene	50.0000	52.4743	-4.9	113	0.00
89	T	tert-Butylbenzene	50.0000	51.2501	-2.5	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.6936	-5.4	111	0.00
91	T	sec-Butylbenzene	50.0000	54.2523	-8.5	113	0.00
92	T	p-Isopropyltoluene	50.0000	53.8971	-7.8	113	-0.01
93	T	1,3-Dichlorobenzene	50.0000	51.0728	-2.1	111	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.3150	5.4	109	0.00
95	T	n-Butylbenzene	50.0000	54.2511	-8.5	115	0.00
96	T	1,2-Dichlorobenzene	50.0000	49.3290	1.3	109	-0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	49.2096	1.6	105	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.8691	-1.7	112	0.00
99	T	Hexachlorobutadiene	50.0000	51.7258	-3.5	116	0.00
100	T	Naphthalene	50.0000	50.1607	-0.3	110	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7567	4.5	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\100515\8M407827.D          Vial: 1
Acq On    :  5 Oct 2015  11:26                       Operator: TMB
Sample    : WG540826-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD72715                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

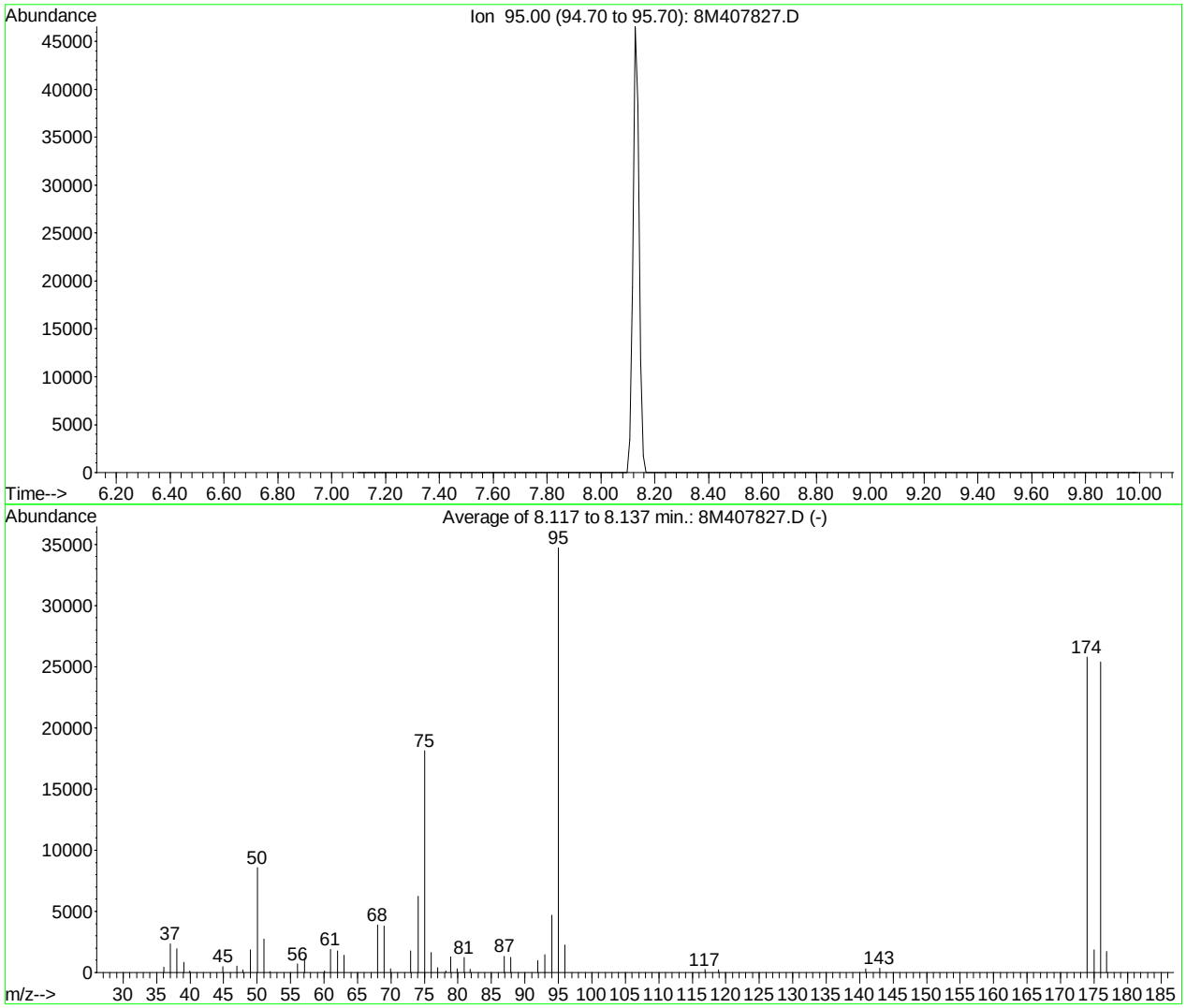

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.7	8565	PASS
75	95	30	60	52.2	18121	PASS
95	95	100	100	100.0	34714	PASS
96	95	5	9	6.5	2262	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	74.2	25773	PASS
175	174	5	9	7.2	1845	PASS
176	174	95	101	98.5	25378	PASS
177	176	5	9	6.9	1746	PASS

8M407827.D BFB.M Mon Oct 05 12:46:56 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\020416\8M409953.D          Vial: 4
Acq On    :  4 Feb 2016  15:58                       Operator: TMB
Sample    : WG556045-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD74606                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

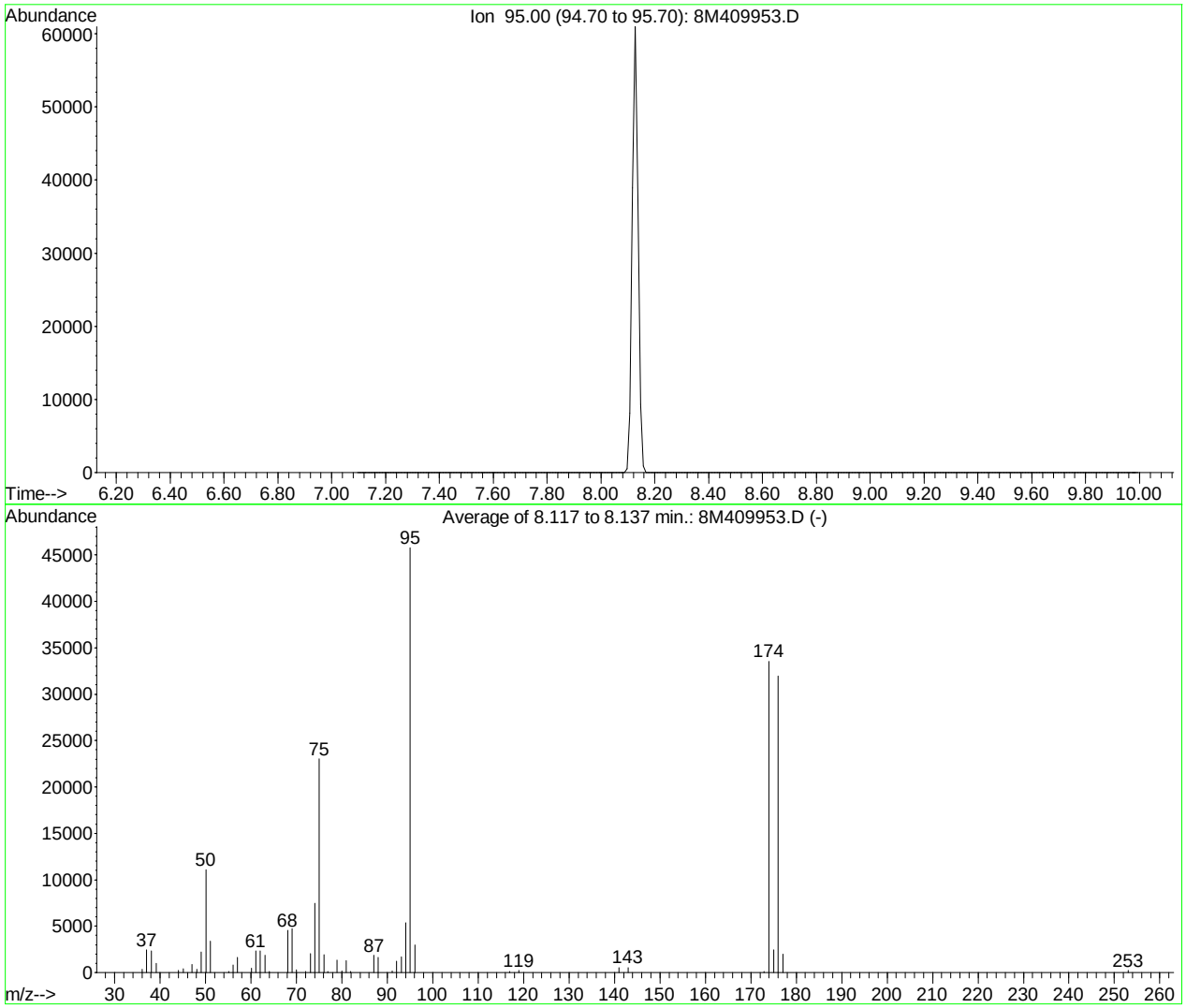

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.2	11071	PASS
75	95	30	60	50.3	23026	PASS
95	95	100	100	100.0	45760	PASS
96	95	5	9	6.5	2964	PASS
173	174	0.00	2	0.3	113	PASS
174	95	50	100	73.3	33533	PASS
175	174	5	9	7.2	2426	PASS
176	174	95	101	95.4	31978	PASS
177	176	5	9	6.2	1976	PASS

8M409953.D BFB.M Thu Feb 04 16:21:38 2016

BFB

```
Data File : C:\MSDCHEM\2\DATA\020516\8M409969.D          Vial: 1
Acq On    :  5 Feb 2016  10:28                       Operator: TMB
Sample    : WG556389-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD74606                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

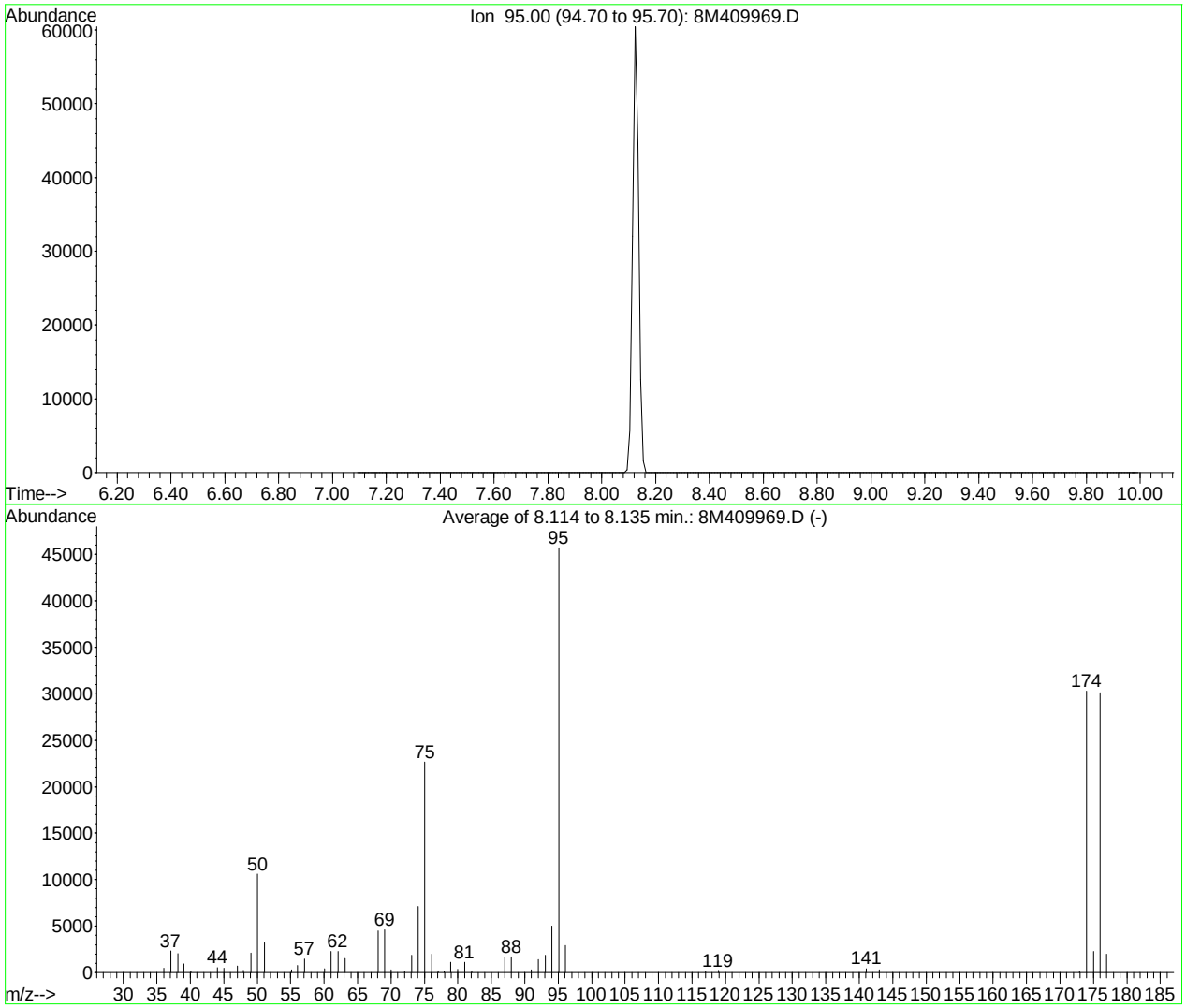

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.2	10591	PASS
75	95	30	60	49.5	22634	PASS
95	95	100	100	100.0	45704	PASS
96	95	5	9	6.4	2912	PASS
173	174	0.00	2	0.3	104	PASS
174	95	50	100	66.2	30259	PASS
175	174	5	9	7.4	2252	PASS
176	174	95	101	99.5	30103	PASS
177	176	5	9	6.6	1985	PASS

8M409969.D BFB.M Fri Feb 05 10:39:12 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020516\8M409973.D Vial: 5
Acq On : 5 Feb 2016 12:22 Operator: TMB
Sample : WG556390-01 VBLK0205 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 08 08:34:13 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	930483	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	647374	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	323400	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	223803	23.8740 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.48%		
43) 1,2-Dichloroethane-d4	10.30	65	235217	24.2199 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.88%		
58) Toluene-d8	12.68	98	801336	24.1249 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.48%		
80) p-Bromofluorobenzene	16.07	95	318391	23.9981 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.00%		
Target Compounds					Qvalue
5) 1,3-Butadiene	3.91	54	409	Below Cal #	13
13) Acetone	6.26	43	3040	Below Cal #	65
24) n-Hexane	7.79	57	2434	0.1693 ug/L	91
98) 1,2,4-Trichlorobenzene	20.27	180	1444	0.1205 ug/L #	82
99) Hexachlorobutadiene	20.42	225	967	0.1853 ug/L #	57

(#) = qualifier out of range (m) = manual integration
8M409973.D 8260WT.M Mon Feb 08 08:34:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020516\8M409973.D Vial: 5
Acq On : 5 Feb 2016 12:22 Operator: TMB
Sample : WG556390-01 VBLK0205 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 8:34 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

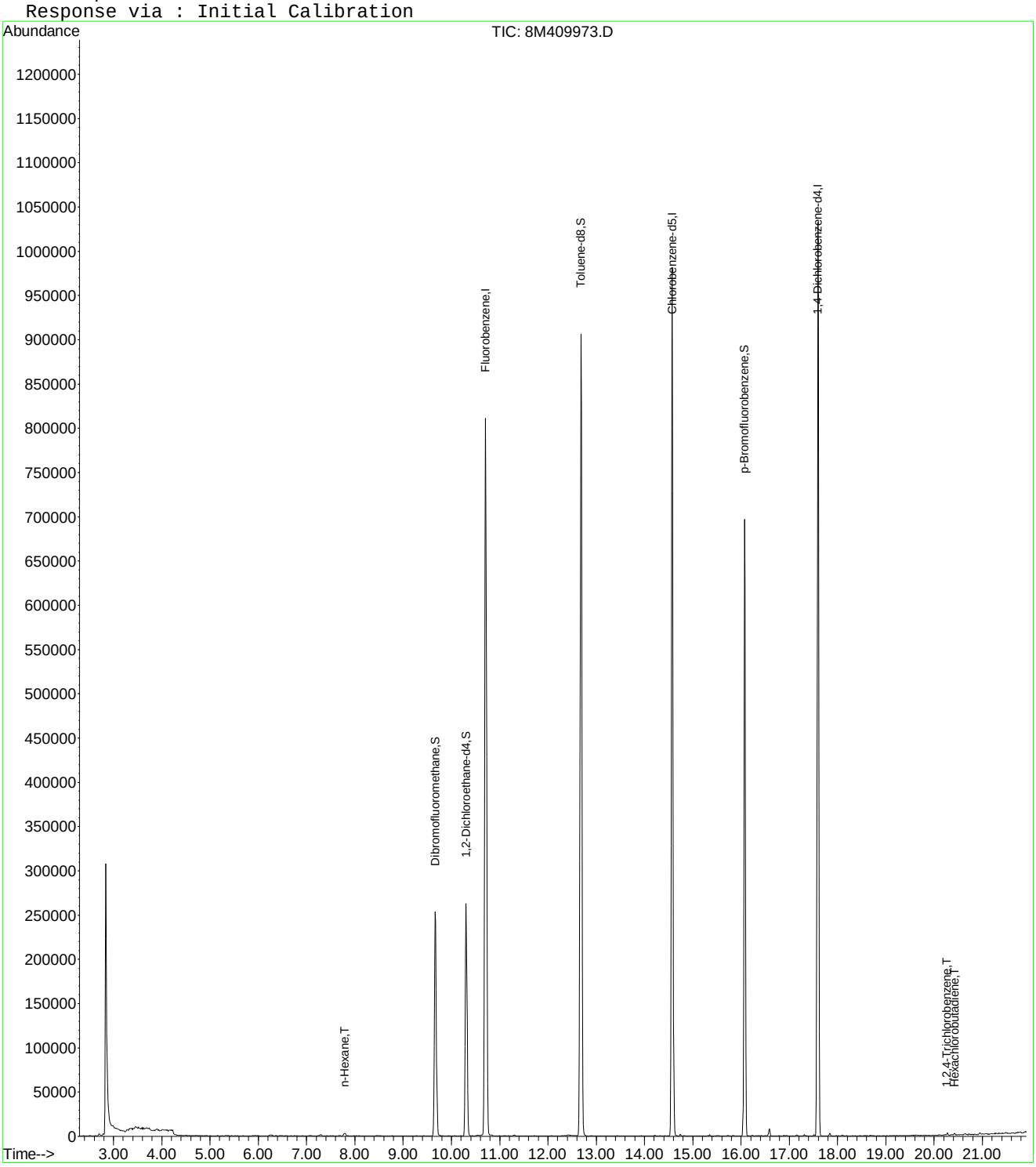

8M409973.D 8260WT.M Mon Feb 08 08:34:14 2016 Page 2

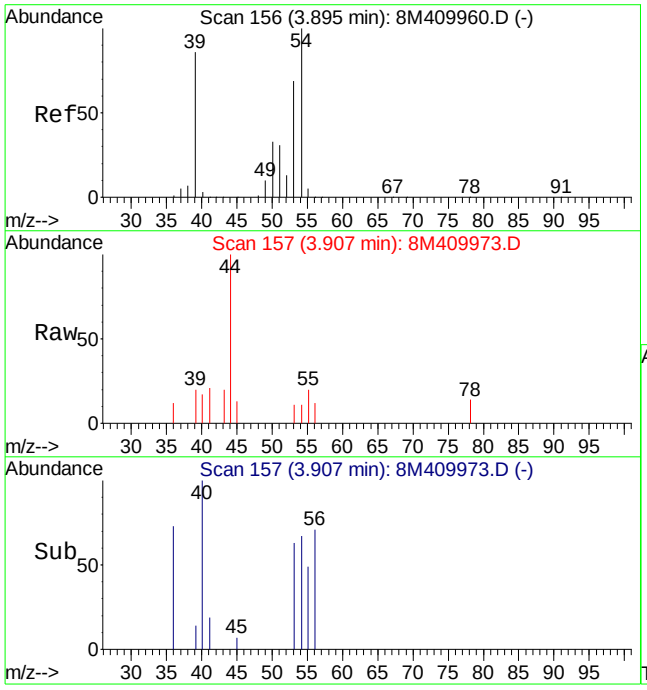

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.91 min Scan# 157
Delta R.T. 0.02 min
Lab File: 8M409973.D
Acq: 5 Feb 2016 12:22

Tgt Ion: 54 Resp: 409

Ion	Ratio	Lower	Upper
54	100		
39	225.2	60.0	140.0#
53	98.3	42.5	99.1

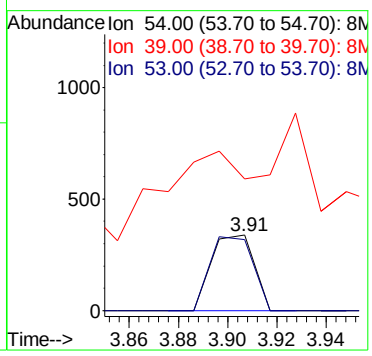

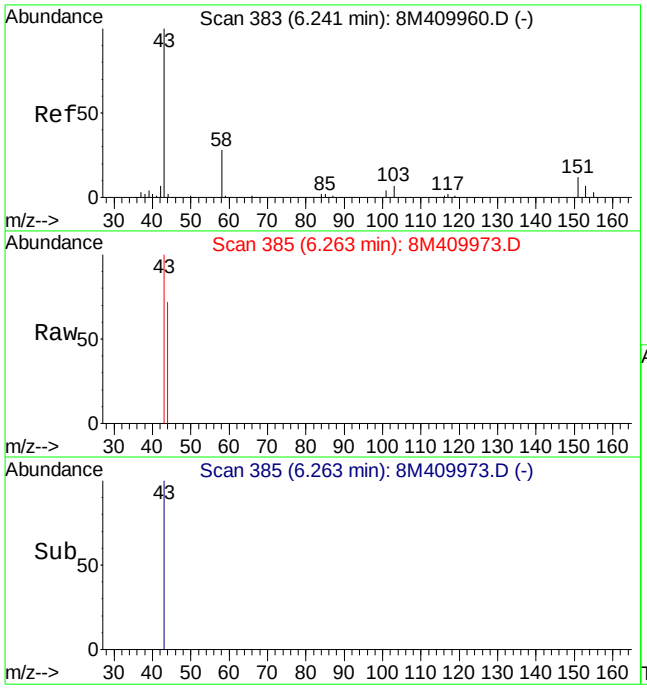

#13
Acetone
Concen: Below Cal
RT: 6.26 min Scan# 385
Delta R.T. 0.02 min
Lab File: 8M409973.D
Acq: 5 Feb 2016 12:22

Tgt Ion: 43 Resp: 3040

Ion	Ratio	Lower	Upper
43	100		
58	8.8	16.2	37.8#

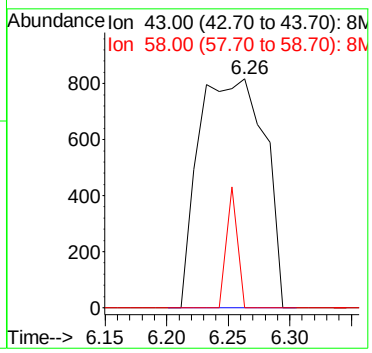

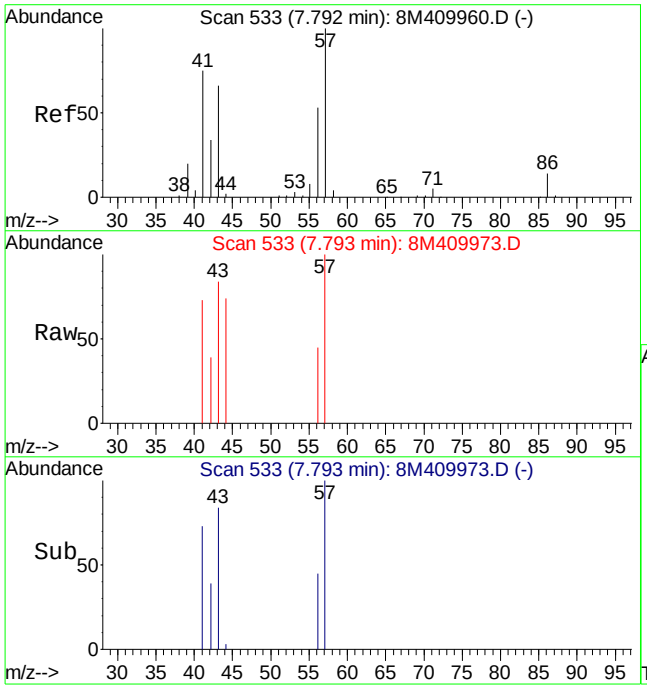

#24
n-Hexane
Concen: 0.17 ug/L
RT: 7.79 min Scan# 533
Delta R.T. 0.01 min
Lab File: 8M409973.D
Acq: 5 Feb 2016 12:22

Tgt Ion: 57 Resp: 2434

Ion	Ratio	Lower	Upper
57	100		
43	79.6	43.4	101.2

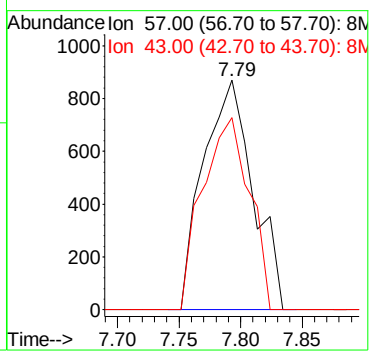

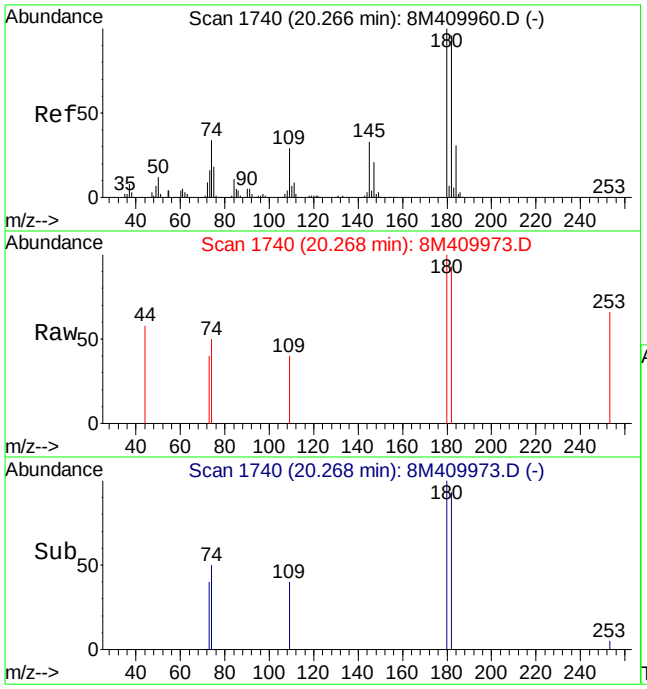

#98
1,2,4-Trichlorobenzene
Concen: 0.12 ug/L
RT: 20.27 min Scan# 1740
Delta R.T. 0.00 min
Lab File: 8M409973.D
Acq: 5 Feb 2016 12:22

Tgt Ion:180 Resp: 1444

Ion	Ratio	Lower	Upper
180	100		
182	100.9	56.9	132.9
145	0.0	18.4	42.8#

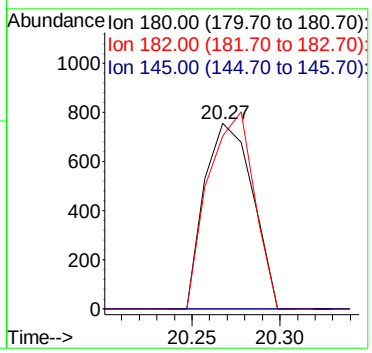

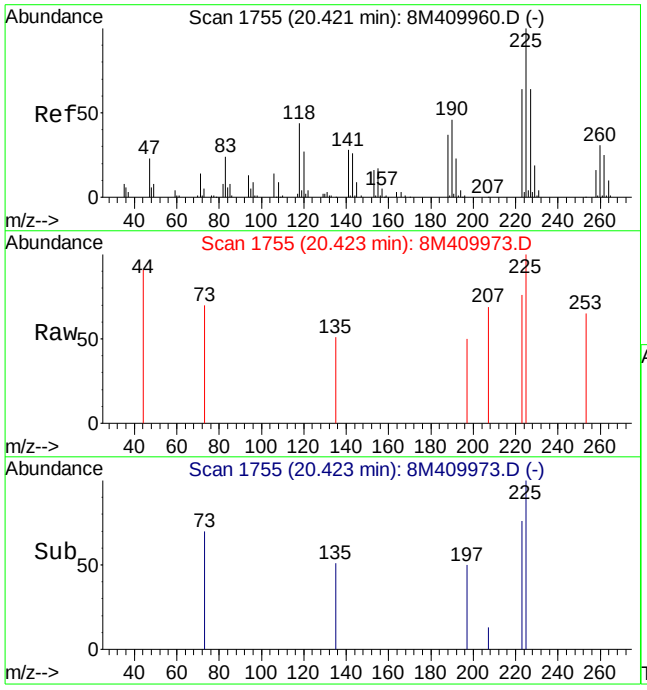

#99
Hexachlorobutadiene
Concen: 0.19 ug/L
RT: 20.42 min Scan# 1755
Delta R.T. 0.00 min
Lab File: 8M409973.D
Acq: 5 Feb 2016 12:22

Tgt Ion:225 Resp: 967

Ion	Ratio	Lower	Upper
225	100		
223	80.0	37.0	86.4
190	0.0	26.8	62.6#

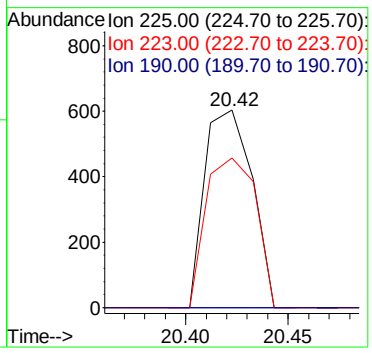

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020516\8M409996.D Vial: 28
Acq On : 5 Feb 2016 23:32 Operator: TMB
Sample : WG556390-06 VBLK0205 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 08 08:34:38 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	820448	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	570212	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	282213	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	196583	23.7828 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.12%		
43) 1,2-Dichloroethane-d4	10.31	65	203415	23.7544 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.00%		
58) Toluene-d8	12.68	98	694928	23.7525 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.00%		
80) p-Bromofluorobenzene	16.07	95	276308	23.8656 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.48%		
Target Compounds					Qvalue
13) Acetone	6.24	43	2292	Below Cal	# 48
36) Tetrahydrofuran	9.63	42	431	0.3060 ug/L	# 41

(#) = qualifier out of range (m) = manual integration
8M409996.D 8260WT.M Mon Feb 08 08:34:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020516\8M409996.D Vial: 28
Acq On : 5 Feb 2016 23:32 Operator: TMB
Sample : WG556390-06 VBLK0205 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 8:34 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

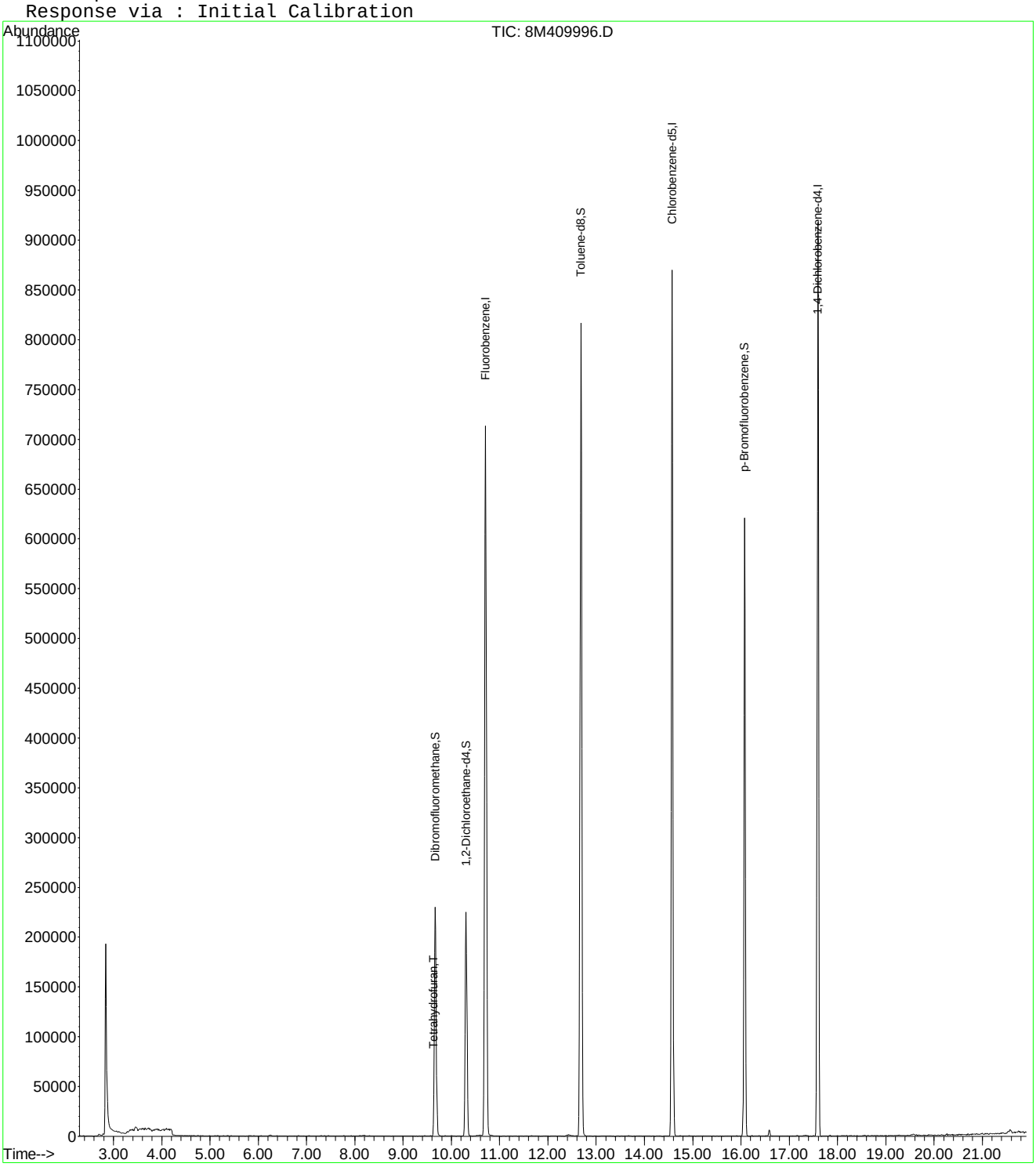

8M409996.D 8260WT.M Mon Feb 08 08:34:39 2016 Page 2

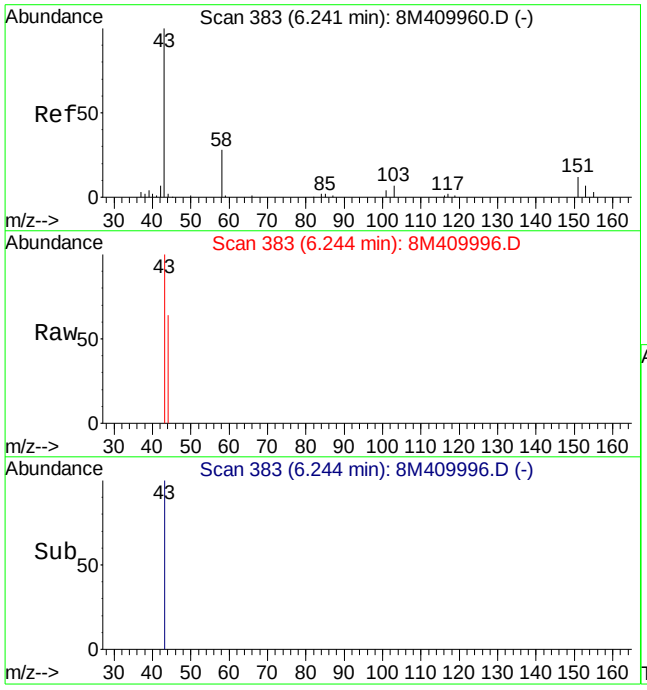

#13
Acetone
Concen: Below Cal
RT: 6.24 min Scan# 383
Delta R.T. 0.00 min
Lab File: 8M409996.D
Acq: 5 Feb 2016 23:32

Tgt Ion: 43 Resp: 2292

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.2	37.8#

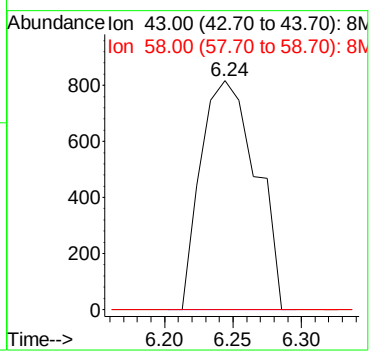

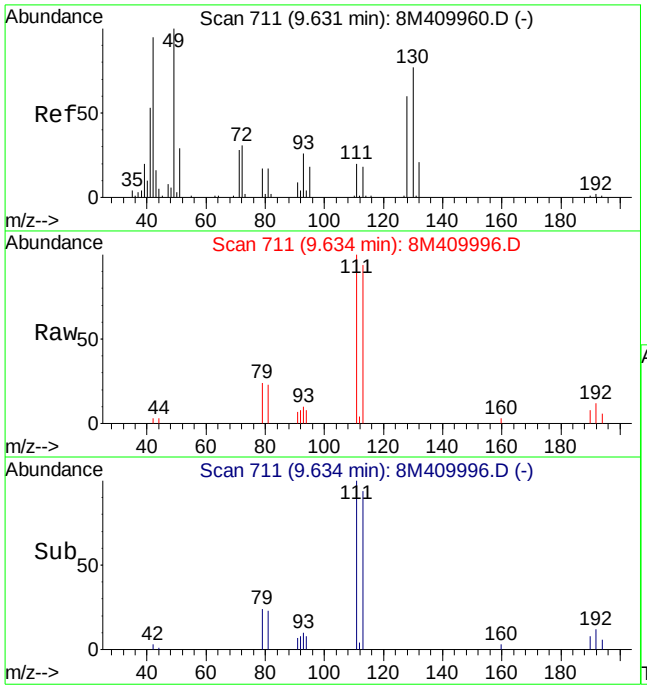

#36
Tetrahydrofuran
Concen: 0.31 ug/L
RT: 9.63 min Scan# 711
Delta R.T. 0.00 min
Lab File: 8M409996.D
Acq: 5 Feb 2016 23:32

Tgt Ion: 42 Resp: 431

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.6#
71	0.0	19.0	44.4#

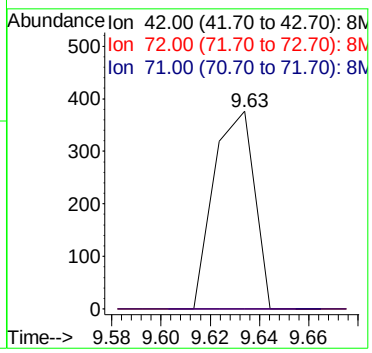

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\020516\8M409980.D Vial: 12
Acq On : 5 Feb 2016 15:46 Operator: TMB
Sample : WG556390-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD74617 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 16:08:08 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	901000	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	621707	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	313097	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	210601	23.2009 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.80%		
43) 1,2-Dichloroethane-d4	10.30	65	226797	24.1171 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.48%		
58) Toluene-d8	12.69	98	752397	23.5867 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.36%		
80) p-Bromofluorobenzene	16.07	95	307829	23.9655 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	291825	22.1551 ug/L	100
3) Chloromethane	3.63	50	392550	21.3954 ug/L	99
4) Vinyl Chloride	3.84	62	244308	21.0496 ug/L	98
5) 1,3-Butadiene	3.88	54	114348	10.1064 ug/L	91
6) Bromomethane	4.74	94	148320	20.8650 ug/L	99
7) Chloroethane	4.90	64	149033	20.4932 ug/L	100
8) Trichlorofluoromethane	5.38	101	311063	19.7826 ug/L	99
9) Diethyl ether	5.91	59	663536	111.8814 ug/L	99
10) Isoprene	5.94	67	275606	22.6358 ug/L	96
11) Acrolein	6.15	56	104499	170.1449 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	171072	20.8223 ug/L	97
13) Acetone	6.25	43	36949	23.2555 ug/L	98
14) 1,1-Dichloroethene	6.47	61	320234	19.8083 ug/L	94
15) Tert-Butyl Alcohol	6.59	59	89757	235.8942 ug/L	93
16) Dimethyl Sulfide	6.74	62	226803	29.3642 ug/L	100
17) Iodomethane	6.99	142	147395	21.5046 ug/L	99
18) Methyl acetate	7.01	43	92389	20.1198 ug/L	99
19) Methylene Chloride	7.25	84	177639	20.3055 ug/L	92
20) Carbon Disulfide	7.30	76	532171	18.4024 ug/L	99
21) Acrylonitrile	7.44	53	48736	22.0576 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	391890	22.4567 ug/L	97
23) trans-1,2-Dichloroethene	7.71	61	318662	20.1336 ug/L	91
24) n-Hexane	7.79	57	266807	19.1665 ug/L	95
25) Diisopropyl ether	8.13	45	3666254	105.6953 ug/L	97
26) Vinyl Acetate	8.30	43	339588	25.1133 ug/L	99
27) 1,1-Dichloroethane	8.33	63	375724	19.5940 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	2807325	102.3599 ug/L	99
29) 2-Butanone	8.89	43	54544	22.9843 ug/L	97
30) Propionitrile	8.99	54	79022	111.0374 ug/L	99
31) 2,2-Dichloropropane	9.10	77	303424	21.6289 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	205781	20.6135 ug/L	89
33) Chloroform	9.37	83	336275	20.0463 ug/L	100
34) 1-Bromopropane	9.52	122	47997	33.7321 ug/L	95
35) Bromochloromethane	9.61	130	99558	20.1998 ug/L	93
36) Tetrahydrofuran	9.63	42	165244	106.8395 ug/L	98
38) 1,1,1-Trichloroethane	9.91	97	299654	20.0832 ug/L	99
39) Cyclohexane	9.94	56	377569	19.7183 ug/L	94
40) 1,1-Dichloropropene	10.11	75	256441	19.5149 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	2032421	109.0822 ug/L	97
42) Carbon Tetrachloride	10.25	117	268604	20.2272 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M409980.D 8260WT.M Fri Feb 05 16:08:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\020516\8M409980.D Vial: 12
Acq On : 5 Feb 2016 15:46 Operator: TMB
Sample : WG556390-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD74617 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 16:08:08 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	257659	21.7983 ug/L		97
46)	Benzene	10.47	78	737770	21.0926 ug/L		98
47)	Trichloroethene	11.21	130	192482	21.1711 ug/L		97
48)	Methylcyclohexane	11.30	83	279253	20.1238 ug/L		93
49)	1,2-Dichloropropane	11.43	63	210635	20.6924 ug/L		99
50)	Bromodichloromethane	11.73	83	256010	20.8911 ug/L		98
51)	1,4-Dioxane	11.72	88	8779	226.2861 ug/L		90
52)	Dibromomethane	11.81	93	88658	20.4889 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	91965	21.7604 ug/L		97
54)	4-Methyl-2-Pentanone	12.05	58	43961	22.4247 ug/L		95
55)	cis-1,3-Dichloropropene	12.36	75	307734	22.5490 ug/L		99
56)	Dimethyl Disulfide	12.63	79	157461	21.3721 ug/L		91
59)	Toluene	12.78	91	747499	20.9057 ug/L		99
60)	Ethyl Methacrylate	12.88	69	161357	23.4463 ug/L		100
62)	trans-1,3-Dichloropropene	12.96	75	244172	22.0242 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	119681	21.7094 ug/L		99
64)	2-Hexanone	13.11	58	39161	21.7734 ug/L	#	94
65)	1,3-Dichloropropane	13.49	76	231533	23.0607 ug/L		96
66)	Tetrachloroethene	13.60	164	141352	19.7193 ug/L		96
67)	Dibromochloromethane	13.87	129	159076	21.5670 ug/L		100
68)	1,2-Dibromoethane	14.13	107	119595	21.6583 ug/L		100
69)	1-Chlorohexane	14.21	91	256555	20.9197 ug/L		92
70)	Chlorobenzene	14.62	112	501948	21.1374 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.65	131	176809	21.2434 ug/L		99
72)	Ethylbenzene	14.65	106	273239	20.0827 ug/L		99
73)	m-,p-Xylene	14.75	106	670061	42.1756 ug/L		99
74)	o-Xylene	15.31	106	336251	21.0506 ug/L		99
75)	Styrene	15.34	104	542064	21.0200 ug/L		97
76)	Bromoform	15.83	173	84656	20.2137 ug/L		99
77)	Isopropylbenzene	15.73	105	843156	21.7330 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	132195	22.5815 ug/L		100
81)	1,2,3-Trichloropropane	16.13	110	37439	23.5029 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.18	53	45522	20.1068 ug/L	#	1
83)	n-Propylbenzene	16.24	91	1028609	21.3823 ug/L		99
84)	Bromobenzene	16.37	156	188622	20.2396 ug/L		88
85)	1,3,5-Trimethylbenzene	16.42	105	722708	21.3789 ug/L		100
86)	2-Chlorotoluene	16.50	91	719728	22.1973 ug/L		99
87)	4-Chlorotoluene	16.56	91	587547	20.3836 ug/L		98
88)	a-Methylstyrene	16.82	118	407947	23.1379 ug/L		99
89)	tert-Butylbenzene	16.89	134	146059	21.2826 ug/L		92
90)	1,2,4-Trimethylbenzene	16.94	105	731151	21.4323 ug/L		99
91)	sec-Butylbenzene	17.16	105	882122	22.4320 ug/L		98
92)	p-Isopropyltoluene	17.32	119	714741	21.2220 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	388997	20.8798 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	394928	20.2511 ug/L		93
95)	n-Butylbenzene	17.84	91	692726	21.8768 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	344630	20.7788 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.13	75	25064	22.9852 ug/L		87
98)	1,2,4-Trichlorobenzene	20.27	180	246860	21.2798 ug/L		100
99)	Hexachlorobutadiene	20.42	225	103186	20.4243 ug/L		98
100)	Naphthalene	20.64	128	370967	19.9614 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	202706	20.2728 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M409980.D 8260WT.M Fri Feb 05 16:08:09 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\020516\8M409980.D Vial: 12
Acq On : 5 Feb 2016 15:46 Operator: TMB
Sample : WG556390-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD74617 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 16:08 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

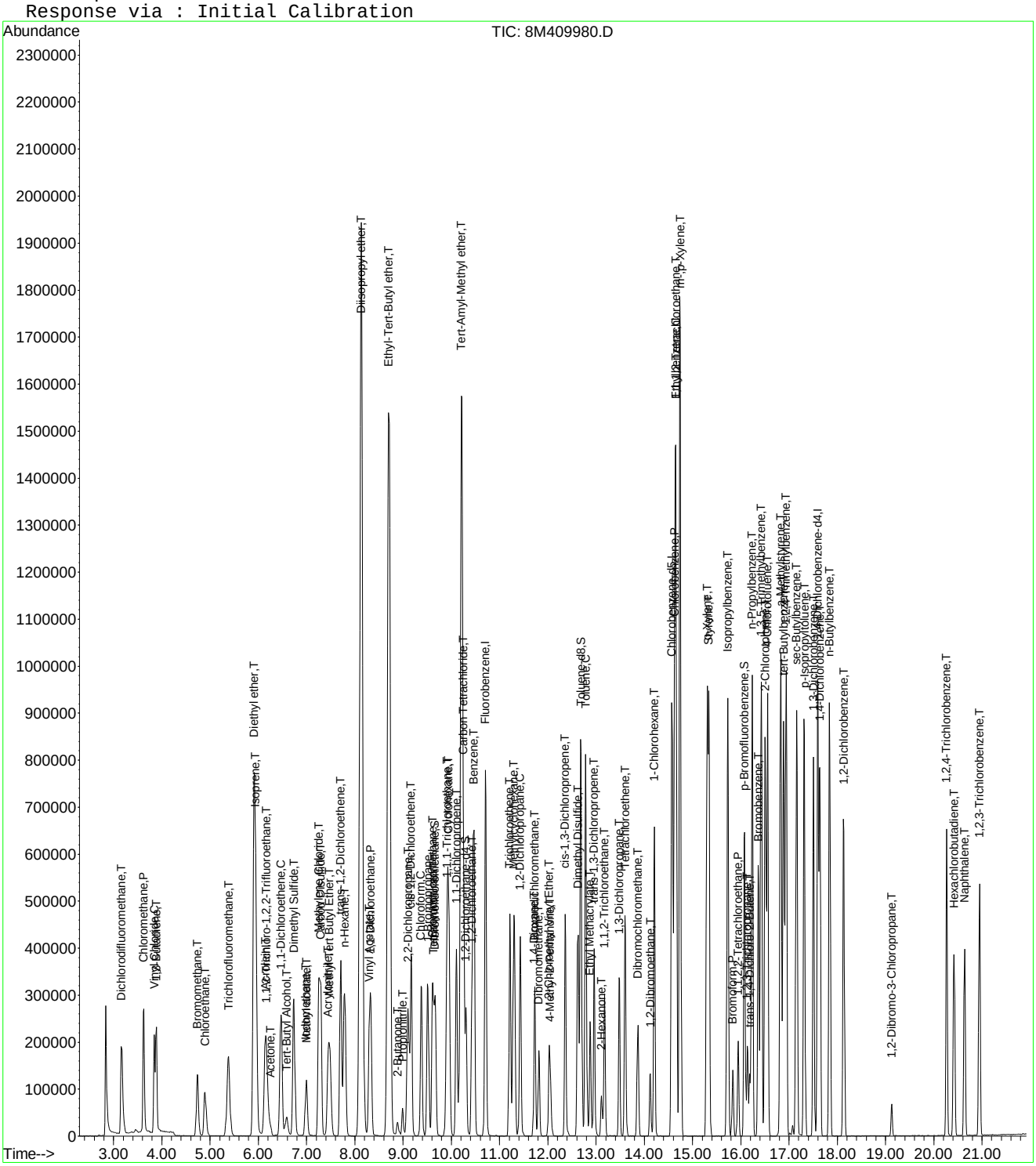

8M409980.D 8260WT.M Fri Feb 05 16:08:09 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\020516\8M409994.D Vial: 26
Acq On : 5 Feb 2016 22:35 Operator: TMB
Sample : WG556390-07 20ug/L LCS2 STD 624 Inst : HPMS8
Misc : 2,1 STD74617 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 22:57:11 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	848438	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	573381	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	289802	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	198797	23.2572 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.04%		
43) 1,2-Dichloroethane-d4	10.31	65	206231	23.2887 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.16%		
58) Toluene-d8	12.68	98	711860	24.1968 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.80%		
80) p-Bromofluorobenzene	16.07	95	284237	23.9076 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.64%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	276699	22.3082 ug/L	100
3) Chloromethane	3.62	50	377591	21.8550 ug/L	98
4) Vinyl Chloride	3.85	62	250219	22.8945 ug/L	99
5) 1,3-Butadiene	3.89	54	147594	15.4300 ug/L	89
6) Bromomethane	4.74	94	139655	20.8631 ug/L	99
7) Chloroethane	4.90	64	134715	19.6720 ug/L	98
8) Trichlorofluoromethane	5.39	101	298655	20.1701 ug/L	98
9) Diethyl ether	5.92	59	561823	100.5999 ug/L	99
10) Isoprene	5.95	67	255435	22.2788 ug/L	97
11) Acrolein	6.14	56	82017	141.8128 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	164252	21.2307 ug/L	94
13) Acetone	6.25	43	30485	19.9077 ug/L	99
14) 1,1-Dichloroethene	6.47	61	293706	19.2929 ug/L	96
15) Tert-Butyl Alcohol	6.59	59	54667	152.5734 ug/L	97
16) Dimethyl Sulfide	6.73	62	201145	27.6556 ug/L	99
17) Iodomethane	6.99	142	126309	19.5698 ug/L	98
18) Methyl acetate	7.00	43	73788	17.0645 ug/L	99
19) Methylene Chloride	7.26	84	161185	19.5661 ug/L	94
20) Carbon Disulfide	7.30	76	496205	18.2217 ug/L	98
21) Acrylonitrile	7.43	53	41132	19.7694 ug/L	95
22) Methyl Tert Butyl Ether	7.48	73	333581	20.2996 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	290746	19.5078 ug/L	93
24) n-Hexane	7.79	57	225986	17.2397 ug/L	95
25) Diisopropyl ether	8.13	45	3182882	97.4447 ug/L	99
26) Vinyl Acetate	8.30	43	254564	19.9918 ug/L	99
27) 1,1-Dichloroethane	8.33	63	341855	18.9321 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	2422491	93.8003 ug/L	99
29) 2-Butanone	8.88	43	43462	19.4490 ug/L	94
30) Propionitrile	8.99	54	60491	90.2644 ug/L	98
31) 2,2-Dichloropropane	9.11	77	254385	19.2567 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	186399	19.8287 ug/L	91
33) Chloroform	9.38	83	313269	19.8318 ug/L	100
34) 1-Bromopropane	9.52	122	42807	31.9484 ug/L	94
35) Bromochloromethane	9.62	130	88910	19.1569 ug/L	95
36) Tetrahydrofuran	9.64	42	130075	89.3109 ug/L	99
38) 1,1,1-Trichloroethane	9.91	97	288343	20.5224 ug/L	98
39) Cyclohexane	9.95	56	353179	19.5872 ug/L	96
40) 1,1-Dichloropropene	10.10	75	240255	19.4158 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	1764093	100.5463 ug/L	97
42) Carbon Tetrachloride	10.26	117	257498	20.5922 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\020516\8M409994.D Vial: 26
Acq On : 5 Feb 2016 22:35 Operator: TMB
Sample : WG556390-07 20ug/L LCS2 STD 624 Inst : HPMS8
Misc : 2,1 STD74617 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 05 22:57:11 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	234075	21.0299 ug/L		95
46)	Benzene	10.46	78	679133	20.6191 ug/L		98
47)	Trichloroethene	11.22	130	181743	21.2283 ug/L		98
48)	Methylcyclohexane	11.30	83	258016	19.7453 ug/L		94
49)	1,2-Dichloropropane	11.43	63	190078	19.8297 ug/L		99
50)	Bromodichloromethane	11.73	83	229011	19.8456 ug/L		99
51)	1,4-Dioxane	11.71	88	4127	112.9671 ug/L		99
52)	Dibromomethane	11.82	93	77558	19.0340 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	78032	19.6075 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	34303	18.5822 ug/L		99
55)	cis-1,3-Dichloropropene	12.36	75	275266	21.4195 ug/L		99
56)	Dimethyl Disulfide	12.62	79	141167	20.3475 ug/L		92
59)	Toluene	12.79	91	687315	20.8426 ug/L		99
60)	Ethyl Methacrylate	12.88	69	140575	22.1482 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	210564	20.5936 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	103730	20.4018 ug/L		99
64)	2-Hexanone	13.12	58	31025	18.7036 ug/L	#	92
65)	1,3-Dichloropropane	13.48	76	200969	21.7035 ug/L		94
66)	Tetrachloroethene	13.60	164	131768	19.9316 ug/L		95
67)	Dibromochloromethane	13.86	129	138779	20.4010 ug/L		100
68)	1,2-Dibromoethane	14.12	107	103501	20.3235 ug/L		99
69)	1-Chlorohexane	14.20	91	239711	21.1936 ug/L		94
70)	Chlorobenzene	14.63	112	457190	20.8753 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	155021	20.1954 ug/L		100
72)	Ethylbenzene	14.65	106	251212	20.0199 ug/L		98
73)	m-,p-Xylene	14.74	106	617728	42.1587 ug/L		98
74)	o-Xylene	15.30	106	308333	20.9297 ug/L		99
75)	Styrene	15.34	104	492115	20.6914 ug/L		98
76)	Bromoform	15.84	173	70924	18.3622 ug/L		99
77)	Isopropylbenzene	15.73	105	780731	21.8201 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	109004	20.1167 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	31115	21.1030 ug/L		99
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33511	15.9914 ug/L		74
83)	n-Propylbenzene	16.23	91	954197	21.4298 ug/L		99
84)	Bromobenzene	16.36	156	168587	19.5439 ug/L		88
85)	1,3,5-Trimethylbenzene	16.43	105	667041	21.3183 ug/L		99
86)	2-Chlorotoluene	16.51	91	617893	20.5884 ug/L		99
87)	4-Chlorotoluene	16.55	91	582268	21.8242 ug/L		98
88)	a-Methylstyrene	16.83	118	361864	22.1740 ug/L		99
89)	tert-Butylbenzene	16.89	134	133791	21.0621 ug/L		91
90)	1,2,4-Trimethylbenzene	16.94	105	668232	21.1625 ug/L		99
91)	sec-Butylbenzene	17.16	105	819443	22.5131 ug/L		97
92)	p-Isopropyltoluene	17.31	119	660475	21.1871 ug/L		96
93)	1,3-Dichlorobenzene	17.51	146	352634	20.4495 ug/L		94
94)	1,4-Dichlorobenzene	17.64	146	348042	19.2814 ug/L		93
95)	n-Butylbenzene	17.84	91	633777	21.6240 ug/L		98
96)	1,2-Dichlorobenzene	18.13	146	304180	19.8142 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.12	75	19550	19.3696 ug/L		82
98)	1,2,4-Trichlorobenzene	20.27	180	195852	18.2399 ug/L		99
99)	Hexachlorobutadiene	20.43	225	88525	18.9309 ug/L		96
100)	Naphthalene	20.64	128	285089	16.5735 ug/L		100
101)	1,2,3-Trichlorobenzene	20.94	180	151669	16.3879 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M409994.D 8260WT.M Fri Feb 05 22:57:12 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\020516\8M409994.D Vial: 26
Acq On : 5 Feb 2016 22:35 Operator: TMB
Sample : WG556390-07 20ug/L LCS2 STD 624 Inst : HPMS8
Misc : 2,1 STD74617 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 22:57 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-04-16 HPMS 8
Last Update : Fri Feb 05 09:41:10 2016
Response via : Initial Calibration

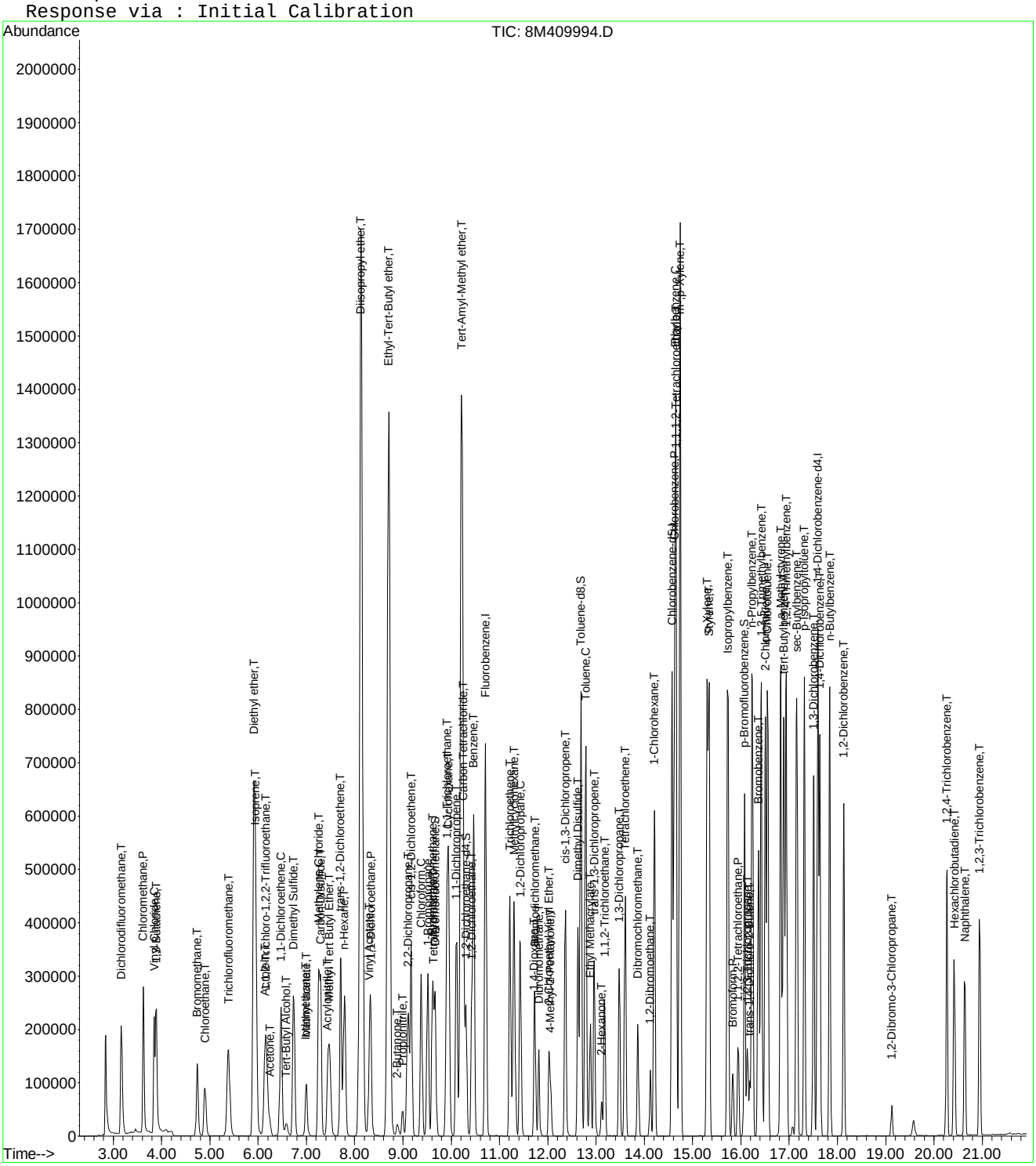

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
February 8, 2016

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
February 08, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
February 08, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60256135.0002FA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 46	46WW04-020316			2/3/16	0735		✓	W	3	✓					
	46WW10-020316			2/3/16	0750		✓	W	3	✓					
	46WW08-020316			2/3/16	0900		✓	W	3	✓					
	46WW03-020316			2/3/16	1015		✓	W	3	✓					
	46WW03MS-020316			2/3/16	1015		✓	W	3	✓					
	46WW03MSD-020316			2/3/16	1015		✓	W	3	✓					
	46SW10-020316			2/3/16	1130		✓	W	3	✓					
	TRIP BLANK			2/3/16			✓	W	2	✓					

ERPIMS REQUIRED FIELDS

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 2/3/16	Time 1400	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Receive (Signat			Time	Remarks:

Microbac OVD
Received: 02/04/2016 09:32
By: BRENDA GREGORY 221000081624

Brenda Gregory

*Homogenize all composite samples prior to analysis

...ger, Pink QA/QC Manager

00743757

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020210
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 15-FEB-2016

Samplenum	Container ID	Products
L16020210-01	696847	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

Samplenum	Container ID	Products
L16020210-02	696848	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020210
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 15-FEB-2016

Samplenum	Container ID	Products
L16020210-03	696849	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

Samplenum	Container ID	Products
L16020210-04	696850	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020210
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 15-FEB-2016

Samplenum	Container ID	Products
L16020210-05	696851	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

Samplenum	Container ID	Products
L16020210-06	696852	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16020210
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 15-FEB-2016

Samplenum	Container ID	Products
L16020210-07	696853	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:56	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:56	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:56	AWE	CLS	

Samplenum	Container ID	Products
L16020210-08	696854	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:56	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-FEB-2016 11:45	CLS		
2	ANALYZ	V1	ORG4	05-FEB-2016 07:57	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16031616

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on April 08 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
Sample ID: Trip Blank. Both vials received w/headspace. BRG	Please proceed. SLM

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113361	I	4.0		J2317165803	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	No

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
LHSMW18-032916	L16031616-01	03/29/2016 08:55	03/30/2016 10:09
46WW01-032916	L16031616-02	03/29/2016 09:10	03/30/2016 10:09
TRIP BLANK	L16031616-03	03/29/2016 00:01	03/30/2016 10:09

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16031616
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 13
2.0 Full Sample Data Package 23
2.1 Volatiles Data 24
2.1.1 Volatiles GCMS Data (8260) 25
2.1.1.1 Summary Data 26
2.1.1.2 QC Summary Data 36
2.1.1.3 Sample Data 65
2.1.1.4 Standards Data 81
2.1.1.5 Raw QC Data 178
3.0 Attachments 189

1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16031616
Project Name:		**Method:**	8260
Prep Batch Number(s):	563535, 563757	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-04-07 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-04-07 15:11:58

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16031616
Project Name:		**Method:**	8260
Prep Batch Number(s):	563535, 563757	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-04-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16031616
Project Name:		**Method:**	8260
Prep Batch Number(s):	563535, 563757	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-04-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			1
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16031616
Project Name:		**Method:**	8260
Prep Batch Number(s):	563535, 563757	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-04-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16031616
Project Name:		**Method:**	8260
Prep Batch Number(s):	563535, 563757	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-04-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16031616
Project Name:		**Method:**	8260
Prep Batch Number(s):	563535, 563757	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-04-07 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Chloromethane and 1,2-Dichloropropane exceeded the UCL in the LCS analyzed 4/5/16 on HPMS8. Dichlorodifluoromethane was below the LCL in the LCS analyzed 4/6/16 on HPMS8.

2)Chloromethane exceeded the UCL in the CCV analyzed 4/5/16 on HPMS8.

1.2 Certificate of Analysis

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16031616-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	LHSMW18-032916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/17/2016 19:18
Workgroup #:	WG563757	**Analyst:**	TMB	**Run Date:**	04/06/2016 19:26
Collect Date:	03/29/2016 08:55	**Dilution:**	1	**File ID:**	8M411261
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.28		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.469	J	1.00	0.500	0.250

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	3.35		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.4	85	115	
1,2-Dichloroethane-d4	96.5	70	120	
Toluene-d8	97.3	85	120	
4-Bromofluorobenzene	95.6	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16031616-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	46WW01-032916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/17/2016 19:18
Workgroup #:	WG563535	**Analyst:**	TMB	**Run Date:**	04/05/2016 20:05
Collect Date:	03/29/2016 09:10	**Dilution:**	1	**File ID:**	8M411238
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.0	85	115	
1,2-Dichloroethane-d4	99.1	70	120	
Toluene-d8	93.2	85	120	
4-Bromofluorobenzene	97.4	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16031616-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/17/2016 19:18
Workgroup #:	WG563535	**Analyst:**	TMB	**Run Date:**	04/05/2016 17:36
Collect Date:	03/29/2016 00:01	**Dilution:**	1	**File ID:**	8M411233
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.99	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.331	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	85	115	
1,2-Dichloroethane-d4	99.3	70	120	
Toluene-d8	92.7	85	120	
4-Bromofluorobenzene	96.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16031616-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	LHSMW18-032916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/17/2016 19:18
Workgroup #:	WG563757	**Analyst:**	TMB	**Run Date:**	04/06/2016 19:26
Collect Date:	03/29/2016 08:55	**Dilution:**	1	**File ID:**	8M411261
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.28		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.469	J	1.00	0.500	0.250

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	3.35		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.4	85	115	
1,2-Dichloroethane-d4	96.5	70	120	
Toluene-d8	97.3	85	120	
4-Bromofluorobenzene	95.6	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16031616-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	46WW01-032916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/17/2016 19:18
Workgroup #:	WG563535	**Analyst:**	TMB	**Run Date:**	04/05/2016 20:05
Collect Date:	03/29/2016 09:10	**Dilution:**	1	**File ID:**	8M411238
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.0	85	115	
1,2-Dichloroethane-d4	99.1	70	120	
Toluene-d8	93.2	85	120	
4-Bromofluorobenzene	97.4	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16031616-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/17/2016 19:18
Workgroup #:	WG563535	**Analyst:**	TMB	**Run Date:**	04/05/2016 17:36
Collect Date:	03/29/2016 00:01	**Dilution:**	1	**File ID:**	8M411233
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.99	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.331	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	85	115	
1,2-Dichloroethane-d4	99.3	70	120	
Toluene-d8	92.7	85	120	
4-Bromofluorobenzene	96.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16031616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100515
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53462

Internal Standard: STD72767 Surrogate Standard: STD72767
CCV: STD72810 LCS: STD72811 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG540826

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M407827	WG540826-01 50ng BFB STD 8260	NA	1	1	STD72715	10/05/15 11:26
8M407828	WG540826-02 5ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 11:49
8M407829	WG540826-03 20ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 12:17
8M407830	WG540826-04 50ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 12:51
8M407831	WG540826-05 100ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 13:20
8M407832	WG540826-06 200ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 13:49
8M407833	WG540826-07 300ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 14:17
8M407834	WG540826-08 400ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 14:47
8M407835	WG540826-09 500ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 15:15
8M407836	RINSE	NA	1	1		10/05/15 15:50
8M407837	RINSE	NA	1	1		10/05/15 16:19
8M407838	WG540826-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD72811	10/05/15 16:48

Approved: October 09, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 021716
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53639

Internal Standard: STD74636 Surrogate Standard: STD74636
CCV: STD74773 LCS: STD74755 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG556046

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M410188	WG556046-01 50ng BFB STD 8260	NA	1	1	STD74606	02/17/16 12:04
8M410189	WG556046-02 0.3ug/L STD 8260	NA	1	1	STD74697	02/17/16 12:31
8M410190	WG556046-03 0.4ug/L STD 8260	NA	1	1	STD74773	02/17/16 13:01
8M410191	WG556046-01 50ng BFB STD 8260	NA	1	1	STD74606	02/17/16 14:11
8M410192	WG556046-01 50ng BFB STD 8260	NA	1	1	STD74606	02/17/16 14:25
8M410193	WG556046-02 0.3ug/L STD 8260	NA	1	1	STD74773	02/17/16 14:49
8M410194	WG556046-03 0.4ug/L STD 8260	NA	1	1	STD74773	02/17/16 15:18
8M410195	WG556046-04 1ug/L STD 8260	NA	1	1	STD74773	02/17/16 15:47
8M410196	WG556046-05 2ug/L STD 8260	NA	1	1	STD74773	02/17/16 16:23
8M410197	WG556046-06 5ug/L STD 8260	NA	1	1	STD74773	02/17/16 16:52
8M410198	WG556046-07 20ug/L STD 8260	NA	1	1	STD74773	02/17/16 17:21
8M410199	WG556046-08 50ug/L STD 8260	NA	1	1	STD74773	02/17/16 17:50
8M410200	WG556046-09 100ug/L STD 8260	NA	1	1	STD74773	02/17/16 18:19
8M410201	WG556046-10 200ug/L STD 8260	NA	1	1	STD74773	02/17/16 18:49
8M410202	WG556046-11 300ug/L STD 8260	NA	1	1	STD74773	02/17/16 19:18
8M410203	RINSE	NA	1	1		02/17/16 19:46
8M410204	RINSE	NA	1	1		02/17/16 20:15
8M410205	WG556046-12 50ug/L ALT SRC STD 8260	NA	1	1	STD74755	02/17/16 20:44
8M410206	RINSE	NA	1	1		02/17/16 21:14
8M410207	RINSE	NA	1	1		02/17/16 21:42

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X		Internal standard failure	
File ID: 8M410189				
	Internals too high, DNR.			
3	X		Internal standard failure	
File ID: 8M410190				
	Internals too high, DNR. Lowered the voltage by 20.			
4	X			
File ID: 8M410191				
	Tune failed, DNR.			

Approved: February 18, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 040516
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53693

Internal Standard: STD75032 Surrogate Standard: STD75032
CCV: STD75490 LCS: STD75403 MS/MSD: STD75403

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG563535

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M411217	WG563534-01 50ng BFB STD 8260	NA	1	1	STD75485	04/05/16 09:48
8M411218	WG563534-02 50ug/L CCV STD 8260	NA	1	1	STD75490	04/05/16 10:11
8M411219	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD75328	04/05/16 10:40
8M411220	WG563535-01 VBLK0405 BLANK STD 826	NA	1	1		04/05/16 11:09
8M411221	L16031504-11 B 826-SPE	<2	1	1		04/05/16 11:38
8M411222	WG563535-02 20ug/L LCS STD 8260	NA	1	1	STD75403	04/05/16 12:08
8M411223	L16031583-01 B 5X REF 826-SPE	<2	1	5		04/05/16 12:37
8M411224	L16031583-02 B 5X MS 826-SPE	5	1	5	STD75403	04/05/16 13:06
8M411225	L16031583-03 B 5X MSD 826-SPE	3	1	5	STD75403	04/05/16 13:35
8M411226	L16031583-06 B 100X 826-SPE D1	6	1	100		04/05/16 14:04
8M411227	L16031504-06 B 826-SPE	<2	1	1		04/05/16 14:34
8M411228	L16031504-03 B 826-SPE	<2	1	1		04/05/16 15:03
8M411229	L16031504-05 A 10X 826-SPE D1	<2	1	10		04/05/16 15:39
8M411230	L16031715-04 A TB 826-SPE	<2	1	1		04/05/16 16:08
8M411231	L16031613-02 A TB 826-LOW	<2	1	1		04/05/16 16:38
8M411232	L16031614-03 A TB 826-LOW	<2	1	1		04/05/16 17:07
8M411233	L16031616-03 A TB 826-LOW	<2	1	1		04/05/16 17:36
8M411234	L16031715-01 A EB 826-SPE	<2	1	1		04/05/16 18:06
8M411235	L16031614-01 A 826-LOW	<2	1	1		04/05/16 18:36
8M411236	L16031614-02 A 826-LOW	<2	1	1		04/05/16 19:06
8M411237	L16031616-01 A 826-LOW	<2	1	1		04/05/16 19:36
8M411238	L16031616-02 A 826-LOW	<2	1	1		04/05/16 20:05
8M411239	L16031613-01 A 826-LOW	<2	1	1		04/05/16 20:34
8M411240	L16031715-02 A 10X 826-SPE	6	1	10		04/05/16 21:03
8M411241	L16031715-03 A 10X 826-SPE	6	1	10		04/05/16 21:32
8M411242	CCV	NA	1	1		04/05/16 22:01
8M411243	RINSE	NA	1	1		04/05/16 22:30
8M411244	RINSE	NA	1	1		04/05/16 22:59
8M411245	RINSE	NA	1	1		04/05/16 23:27

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				

Approved: April 07, 2016

Sarah Vandenberg

Microbac

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 040516
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53693

Internal Standard: STD75032 Surrogate Standard: STD75032
CCV: STD75490 LCS: STD75403 MS/MSD: STD75403

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG563535

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 8M411219				
	Not needed, DNR.			
20	X	20	Over Calibration Range	11-DCE
File ID: 8M411236				
21	X	1	Carry-over contamination	
File ID: 8M411237				
23	X	10	Over Calibration Range	PCE
File ID: 8M411239				
24	X	250	Over Calibration Range	VC, CIS12-DCE, 12-DCP
File ID: 8M411240				
25	X	500	Over Calibration Range	12-DCP
File ID: 8M411241				

Approved: April 07, 2016
Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 05-OCT-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 70874
Analytical Workgroups: WG540826

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
06-OCT-2015
Tiffany Bailey

Secondary Reviewer:
09-OCT-2015

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-09-2015 12:12:03

Microbac Laboratories Inc.

Data Checklist

Date: 17-FEB-2016
Analyst: TMB
Analyst: NA
Method: 8260B/OVAP/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 73351
Analytical Workgroups: WG556046

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
18-FEB-2016
Tiffany Bailey

Secondary Reviewer:
18-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-18-2016 14:47:54

Microbac Laboratories Inc.

Data Checklist

Date: 05-APR-2016
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 74281
Analytical Workgroups: WG563535

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
06-APR-2016
Tiffany Bailey

Secondary Reviewer:
07-APR-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: APR-07-2016 10:56:45

Microbac Laboratories Inc.

00743810

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG563535

Login Number: L16031616

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
LHSMW18-032916	01	03/29/16					04/05/2016	7.4	14		04/05/16	7.4	14	
46WW01-032916	02	03/29/16					04/05/2016	7.5	14		04/05/16	7.5	14	
TRIP BLANK	03	03/29/16					04/05/2016	7.7	14		04/05/16	7.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4704494
Report generated 04/07/2016 10:55

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16031616
Instrument Id: HPMS8
Workgroup (AAB#): WG563535

Method: 8260
CAL ID: HPMS8-17-FEB-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16031616-01	1.00	01	98.1	99.3	96.9	92.7
L16031616-02	1.00	01	99.1	99.0	97.4	93.2
L16031616-03	1.00	01	99.3	97.7	96.4	92.7
WG563535-01	1.00	01	92.9	95.9	95.9	93.0
WG563535-02	1.00	01	93.4	97.9	89.3	92.8

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4704505
Report generated: 04/07/2016 10:55

METHOD BLANK SUMMARY

Login Number: L16031616
Blank File ID: 8M411220
Prep Date: 04/05/16 11:09
Analyzed Date: 04/05/16 11:09
Analyst: TMB

Work Group: WG563535
Blank Sample ID: WG563535-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG563535-02	8M411222	04/05/16 12:08	01
TRIP BLANK	L16031616-03	8M411233	04/05/16 17:36	01
LHSMW18-032916	L16031616-01	8M411237	04/05/16 19:36	01
46WW01-032916	L16031616-02	8M411238	04/05/16 20:05	01

Report Name: BLANK_SUMMARY
PDF File ID: 4705350
Report generated 04/07/2016 10:55

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16031616 Prep Date: 04/05/16 11:09 Sample ID: WG563535-01
Instrument ID: HPMS8 Run Date: 04/05/16 11:09 Prep Method: 5030B/5030C/503
File ID: 8M411220 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG563535 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-17-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4705351
07-APR-2016 10:55

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16031616 Prep Date: 04/05/16 11:09 Sample ID: WG563535-01
Instrument ID: HPMS8 Run Date: 04/05/16 11:09 Prep Method: 5030B/5030C/503
File ID: 8M411220 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG563535 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-17-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	95.9	85 - 115	PASS
1,2-Dichloroethane-d4	92.9	70 - 120	PASS
Toluene-d8	93.0	85 - 120	PASS
4-Bromofluorobenzene	95.9	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4705351
07-APR-2016 10:55

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16031616 | Run Date: 04/05/2016 | Sample ID: WG563535-02
Instrument ID: HPMS8 | Run Time: 12:08 | Prep Method: 5030B/5030C/503
File ID: 8M411222 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG563535 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD75403 | Cal ID: HPMS8-17-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	25.7	129	40 - 140	
Benzene	20.0	23.8	119	80 - 120	
Bromobenzene	20.0	18.2	91.0	75 - 125	
Bromochloromethane	20.0	22.5	112	65 - 130	
Bromodichloromethane	20.0	22.9	114	75 - 120	
Bromoform	20.0	19.1	95.7	70 - 130	
Bromomethane	20.0	12.7	63.3	30 - 145	
2-Butanone	20.0	25.1	126	30 - 150	
n-Butylbenzene	20.0	19.8	99.0	70 - 135	
sec-Butylbenzene	20.0	20.4	102	70 - 125	
tert-Butylbenzene	20.0	18.7	93.7	70 - 130	
Carbon disulfide	20.0	20.2	101	35 - 160	
Carbon tetrachloride	20.0	21.8	109	65 - 140	
Chlorobenzene	20.0	21.4	107	80 - 120	
Chlorodibromomethane	20.0	20.9	105	60 - 135	
Chloroethane	20.0	25.6	128	60 - 135	
Chloroform	20.0	23.0	115	65 - 135	
Chloromethane	20.0	25.6	128	40 - 125	*
2-Chlorotoluene	20.0	19.1	95.6	75 - 125	
4-Chlorotoluene	20.0	20.4	102	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	18.6	92.8	50 - 130	
1,2-Dibromoethane	20.0	20.7	104	80 - 120	
Dibromomethane	20.0	21.9	109	75 - 125	
1,2-Dichlorobenzene	20.0	19.9	99.5	70 - 120	
1,3-Dichlorobenzene	20.0	19.6	98.1	75 - 125	
1,4-Dichlorobenzene	20.0	19.6	98.2	75 - 125	
Dichlorodifluoromethane	20.0	26.1	130	30 - 155	
1,1-Dichloroethane	20.0	22.5	112	70 - 135	
1,2-Dichloroethane	20.0	23.5	117	70 - 130	
1,1-Dichloroethene	20.0	22.3	111	70 - 130	
cis-1,2-Dichloroethene	20.0	23.6	118	70 - 125	
trans-1,2-Dichloroethene	20.0	23.2	116	60 - 140	
1,2-Dichloropropane	20.0	25.4	127	75 - 125	*
1,3-Dichloropropane	20.0	22.4	112	75 - 125	
2,2-Dichloropropane	20.0	23.4	117	70 - 135	
cis-1,3-Dichloropropene	20.0	25.9	129	70 - 130	
trans-1,3-Dichloropropene	20.0	20.9	104	55 - 140	
1,1-Dichloropropene	20.0	21.4	107	75 - 130	
Ethylbenzene	20.0	20.1	101	75 - 125	
2-Hexanone	20.0	21.5	107	55 - 130	
Hexachlorobutadiene	20.0	18.4	92.2	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4704495
Report generated: 04/07/2016 10:55

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16031616 Run Date: 04/05/2016 Sample ID: WG563535-02
Instrument ID: HPMS8 Run Time: 12:08 Prep Method: 5030B/5030C/503
File ID: 8M411222 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG563535 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75403 Cal ID: HPMS8-17-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.2	111	75 - 125	
p-Isopropyltoluene	20.0	19.7	98.4	75 - 130	
4-Methyl-2-pentanone	20.0	22.4	112	60 - 135	
Methylene chloride	20.0	22.4	112	55 - 140	
Naphthalene	20.0	16.7	83.4	55 - 140	
n-Propylbenzene	20.0	20.5	103	70 - 130	
Styrene	20.0	22.4	112	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.4	102	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	19.8	98.8	65 - 130	
Tetrachloroethene	20.0	19.3	96.5	45 - 150	
Toluene	20.0	21.6	108	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.9	89.3	55 - 140	
1,2,4-Trichlorobenzene	20.0	18.0	89.8	65 - 135	
1,1,1-Trichloroethane	20.0	22.2	111	65 - 130	
1,1,2-Trichloroethane	20.0	21.4	107	75 - 125	
Trichloroethene	20.0	22.3	111	70 - 125	
Trichlorofluoromethane	20.0	21.9	109	60 - 145	
1,2,3-Trichloropropane	20.0	18.7	93.7	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.0	100	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.1	100	75 - 130	
Vinyl chloride	20.0	24.4	122	50 - 145	
o-Xylene	20.0	20.8	104	80 - 120	
m-,p-Xylene	40.0	42.7	107	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.9	85 - 115	PASS
1,2-Dichloroethane-d4	93.4	70 - 120	PASS
Toluene-d8	92.8	85 - 120	PASS
4-Bromofluorobenzene	89.3	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4704495
Report generated: 04/07/2016 10:55

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16031616
Instrument: HPMS8
Analyst: TMB
Workgroup: WG540826

Tune ID: WG540826-01
Run Date: 10/05/2015
Run Time: 11:26
File ID: 8M407827
Cal ID: HPMS8 - 05-OCT-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.7	8565	PASS
75.0	95.0	30.0	60.0	52.2	18121	PASS
95.0	95.0	100	100	100	34714	PASS
96.0	95.0	5.00	9.00	6.52	2262	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	74.2	25773	PASS
175	174	5.00	9.00	7.16	1845	PASS
176	174	95.0	101	98.5	25378	PASS
177	176	5.00	9.00	6.88	1746	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG540826-02	STD	01	10/05/2015 11:49	
WG540826-03	STD	01	10/05/2015 12:17	
WG540826-04	STD	01	10/05/2015 12:51	
WG540826-05	STD-CCV	01	10/05/2015 13:20	
WG540826-06	STD	01	10/05/2015 13:49	
WG540826-07	STD	01	10/05/2015 14:17	
WG540826-08	STD	01	10/05/2015 14:47	
WG540826-09	STD	01	10/05/2015 15:15	
WG540826-10	SSCV	01	10/05/2015 16:48	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4704503
Report generated 04/07/2016 10:55

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16031616
Instrument: HPMS8
Analyst: TMB
Workgroup: WG556046

Tune ID: WG556046-01
Run Date: 02/17/2016
Run Time: 14:25
File ID: 8M410192
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	26.3	10897	PASS
75.0	95.0	30.0	60.0	52.3	21632	PASS
95.0	95.0	100	100	100	41381	PASS
96.0	95.0	5.00	9.00	6.35	2628	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	69.5	28751	PASS
175	174	5.00	9.00	7.35	2112	PASS
176	174	95.0	101	95.5	27459	PASS
177	176	5.00	9.00	6.72	1846	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG556046-02	STD	01	02/17/2016 14:49	
WG556046-03	STD	01	02/17/2016 15:18	
WG556046-04	STD	01	02/17/2016 15:47	
WG556046-05	STD	01	02/17/2016 16:23	
WG556046-06	STD	01	02/17/2016 16:52	
WG556046-07	STD	01	02/17/2016 17:21	
WG556046-08	STD-CCV	01	02/17/2016 17:50	
WG556046-09	STD	01	02/17/2016 18:19	
WG556046-10	STD	01	02/17/2016 18:49	
WG556046-11	STD	01	02/17/2016 19:18	
WG556046-12	SSCV	01	02/17/2016 20:44	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4704503
Report generated 04/07/2016 10:55

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16031616
Instrument: HPMS8
Analyst: TMB
Workgroup: WG563534

Tune ID: WG563534-01
Run Date: 04/05/2016
Run Time: 09:48
File ID: 8M411217
Cal ID: HPMS8 - 17-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	29.1	13211	PASS
75.0	95.0	30.0	60.0	53.8	24445	PASS
95.0	95.0	100	100	100	45421	PASS
96.0	95.0	5.00	9.00	6.13	2785	PASS
173	174	0	2.00	0.305	101	PASS
174	95.0	50.0	100	73.0	33149	PASS
175	174	5.00	9.00	8.21	2721	PASS
176	174	95.0	101	98.4	32632	PASS
177	176	5.00	9.00	5.93	1934	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG563534-02	CCV	01	04/05/2016 10:11	
WG563535-01	BLANK	01	04/05/2016 11:09	
WG563535-02	LCS	01	04/05/2016 12:08	
L16031616-03	TRIP BLANK	01	04/05/2016 17:36	
L16031616-01	LHSMW18-032916	01	04/05/2016 19:36	
L16031616-02	46WW01-032916	01	04/05/2016 20:05	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4704503
Report generated 04/07/2016 10:55

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Calibration: Tue Oct 06 11:55:21 2015
Curve: WG540826
Calibration Files

	Compound	5 8M407828.D	20 8M407829.D	50 8M407830.D	100 8M407831.D	200 8M407832.D	300 8M407833.D	400 8M407834.D	500 8M407835.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.020	0.019	0.020	0.019	0.019	0.019	0.019	0.019	0.019	3.019
T	3-Chloro-1-propene	0.474	0.484	0.476	0.471	0.484	0.465	0.458	0.432	0.468	3.632
T	2-Chloro-1,3-butadiene	0.448	0.481	0.482	0.486	0.514	0.495	0.486	0.460	0.481	4.206
T	Ethyl Acetate	0.104	0.129	0.132	0.131	0.132	0.128	0.128	0.133	0.127	7.528
T	Methacrylonitrile	0.046	0.055	0.058	0.057	0.057	0.056	0.057	0.060	0.056	7.551
T	Isobutyl Alcohol			0.005	0.005	0.005	0.005	0.005	0.006	0.005	4.964
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.003	10.874
T	Methyl methacrylate	0.120	0.147	0.158	0.162	0.162	0.158	0.160	0.165	0.154	9.638
T	2-Nitropropane			0.021	0.022	0.025	0.026	0.029	0.031	0.026	14.916
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.057	0.052	0.054	0.051	0.052	0.054	0.053	3.733

Tue Oct 06 11:57:17 2015

Calibration Table Report
Method: 8260WTR.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Calibration: Thu Feb 18 08:44:45 2016
Curve: WG556046
Calibration Files

	Compound	0.3 8M410193.D	0.4 8M410194.D	1 8M410195.D	2 8M410196.D	5 8M410197.D	20 8M410198.D	50 8M410199.D	100 8M410200.D	200 8M410201.D	300 8M410202.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.351	0.368	0.381	0.370	0.437	0.432	0.397	0.419	0.392	0.394	7.613		
P	Chloromethane			0.707	0.649	0.626	0.626	0.615	0.566	0.551	0.480	0.603	11.422		
C	Vinyl Chloride		0.412	0.459	0.470	0.454	0.465	0.439	0.384	0.371	0.321	0.419	12.261		
T	1,3-Butadiene				0.468	0.454	0.468	0.355	0.226	0.195	0.166	0.333	40.602		1.004
T	Bromomethane			0.176	0.192	0.188	0.189	0.201	0.199	0.226	0.223	0.199	8.574		
T	Chloroethane		0.157	0.179	0.185	0.187	0.194	0.195	0.190	0.209	0.209	0.190	8.249		
T	Trichlorofluoromethane		0.356	0.451	0.464	0.443	0.470	0.461	0.446	0.483	0.472	0.450	8.291		
T	Diethyl ether			0.159	0.167	0.162	0.156	0.160	0.173		0.175	0.165	4.394		
T	Isoprene		0.239	0.290	0.300	0.308	0.313	0.308	0.316	0.331	0.337	0.305	9.366		
T	Acrolein			0.021	0.026	0.025	0.025	0.025	0.027		0.030	0.026	10.130		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.229	0.245	0.247	0.247	0.245	0.236	0.261	0.254	0.245	4.026		
T	Acetone					0.043	0.042	0.042	0.040	0.041	0.037	0.041	5.295		
C	1,1-Dichloroethene		0.349	0.473	0.461	0.452	0.465	0.464	0.453	0.484	0.465	0.452	8.789		
T	Tert-Butyl Alcohol				0.011	0.010	0.011	0.010	0.011		0.009	0.010	8.176		
T	Dimethyl Sulfide		0.155	0.187	0.196	0.198	0.203	0.198	0.210	0.216	0.217	0.198	9.528		
T	Iodomethane			0.037	0.051	0.089	0.127	0.153	0.162	0.165	0.156	0.118	44.182		0.999
T	Methyl acetate					0.118	0.110	0.110	0.121	0.113	0.114	0.114	4.080		
T	Methylene Chloride			0.221	0.259	0.242	0.248	0.250	0.247	0.259	0.253	0.247	4.891		
T	Carbon Disulfide			0.778	0.815	0.773	0.806	0.774	0.770	0.766	0.728	0.776	3.390		
T	Acrylonitrile			0.046	0.055	0.053	0.053	0.060	0.065		0.071	0.058	14.747		
T	Methyl Tert Butyl Ether			0.480	0.497	0.506	0.495	0.504	0.523	0.516	0.496	0.502	2.688		
T	trans-1,2-Dichloroethene		0.341	0.421	0.427	0.423	0.430	0.436	0.430	0.457	0.436	0.422	7.643		
T	n-Hexane					0.364	0.355	0.338	0.348	0.376	0.378	0.360	4.412		
T	Diisopropyl ether			0.927	0.975	0.936	0.927	0.940	0.963		0.899	0.938	2.651		
T	Vinyl Acetate				0.430	0.422	0.430	0.428	0.448	0.431	0.429	0.431	1.806		
P	1,1-Dichloroethane		0.447	0.520	0.526	0.536	0.540	0.546	0.536	0.561	0.530	0.527	6.147		
T	Ethyl-Tert-Butyl ether			0.711	0.774	0.740	0.747	0.760	0.793		0.741	0.752	3.518		
T	2-Butanone					0.060	0.063	0.063	0.070	0.065	0.065	0.064	5.543		
T	Propionitrile			0.014	0.017	0.019	0.019	0.019	0.021		0.021	0.018	11.798		
T	2,2-Dichloropropane		0.382	0.424	0.435	0.440	0.400	0.404	0.409	0.428	0.408	0.414	4.495		
T	cis-1,2-Dichloroethene		0.237	0.254	0.275	0.279	0.278	0.280	0.275	0.290	0.280	0.272	5.979		
C	Chloroform	0.478	0.380	0.479	0.469	0.487	0.484	0.486	0.475	0.487	0.450	0.467	6.993		
T	1-Bromopropane			0.025	0.030	0.038	0.040	0.039	0.039	0.040	0.041	0.036	15.643	1.000	
T	Bromochloromethane		0.091	0.143	0.126	0.147	0.141	0.144	0.144	0.147	0.141	0.136	13.184		
T	Tetrahydrofuran			0.050	0.044	0.040	0.040	0.041	0.044		0.043	0.043	8.308		
S	Dibromofluoromethane			0.256	0.246	0.251	0.265	0.257	0.260	0.261	0.257	0.257	2.232		
T	1,1,1-Trichloroethane		0.381	0.405	0.430	0.434	0.435	0.437	0.431	0.455	0.431	0.427	4.995		
T	Cyclohexane			0.463	0.487	0.477	0.505	0.483	0.493	0.530	0.534	0.496	5.074		
T	1,1-Dichloropropene			0.374	0.376	0.367	0.367	0.371	0.362	0.385	0.368	0.371	1.869		
T	Tert-Amyl-Methyl ether			0.506	0.545	0.522	0.516	0.529	0.559		0.525	0.529	3.406		
T	Carbon Tetrachloride		0.326	0.366	0.396	0.388	0.399	0.408	0.397	0.417	0.397	0.3882	7.02026		
S	1,2-Dichloroethane-d4			0.28	0.262	0.274	0.28	0.279	0.282	0.276	0.266	0.2748	2.6686		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.292	0.366	0.357	0.366	0.362	0.371	0.371	0.369	0.342	0.3551	7.17543		
T	Benzene		0.865	1.032	1.016	1.033	1.022	1.017	0.968	0.933	0.816	0.967	8.25646		
T	Trichloroethene		0.209	0.271	0.272	0.266	0.266	0.266	0.259	0.272	0.264	0.2604	7.60614		
T	Methylcyclohexane					0.359	0.384	0.367	0.367	0.387	0.386	0.375	3.19985		
C	1,2-Dichloropropane		0.185	0.262	0.269	0.284	0.281	0.288	0.284	0.299	0.294	0.2719	12.7406		
T	Bromodichloromethane		0.251	0.354	0.342	0.356	0.357	0.364	0.364	0.368	0.348	0.3451	10.5088		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.1931		
T	Dibromomethane		0.087	0.111	0.123	0.131	0.129	0.132	0.133	0.134	0.13	0.1234	12.391		
T	2-Chloroethyl Vinyl Ether				0.105	0.114	0.116	0.122	0.128	0.124	0.119	0.1183	6.24286		
T	4-Methyl-2-Pentanone					0.052	0.053	0.055	0.058	0.056	0.057	0.0551	4.31412		
T	cis-1,3-Dichloropropene		0.265	0.386	0.361	0.391	0.39	0.4	0.4	0.405	0.383	0.3756	11.5897		

T	Dimethyl Disulfide					0.162	0.192	0.199	0.211	0.213	0.211	0.198	9.81879	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.316	1.165	1.244	1.298	1.265	1.231	1.204	1.152	1.2344	4.76846	
C	Toluene		1.245	1.503	1.474	1.507	1.504	1.488	1.408	1.308	1.101	1.3931	10.3952	
T	Ethyl Methacrylate			0.219	0.254	0.256	0.284	0.278	0.3	0.283	0.278	0.2691	9.32864	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.438	0.435	0.461	0.47	0.489	0.501	0.482	0.45	0.4656	5.15607	
T	1,1,2-Trichloroethane		0.164	0.201	0.219	0.233	0.233	0.239	0.24	0.236	0.228	0.2215	11.1669	
T	2-Hexanone					0.059	0.067	0.069	0.076	0.071	0.072	0.0689	8.19995	
T	1,3-Dichloropropane		0.33	0.388	0.418	0.417	0.418	0.432	0.432	0.421	0.398	0.406	7.86782	
T	Tetrachloroethene		0.186	0.28	0.28	0.295	0.294	0.289	0.287	0.305	0.304	0.2798	13.0158	
T	Dibromochloromethane		0.228	0.29	0.279	0.3	0.317	0.335	0.336	0.331	0.317	0.3037	11.4256	
T	1,2-Dibromoethane		0.169	0.214	0.224	0.23	0.232	0.244	0.242	0.236	0.228	0.2242	10.0577	
T	1-Chlorohexane		0.404	0.45	0.475	0.504	0.496	0.48	0.484	0.482	0.476	0.4724	6.29469	
P	Chlorobenzene		0.849	0.989	0.959	1.025	0.982	1	0.977	0.957	0.841	0.9533	6.79068	
T	1,1,1,2-Tetrachloroethane		0.252	0.319	0.327	0.341	0.35	0.369	0.375	0.383	0.363	0.342	11.7428	
C	Ethylbenzene		0.453	0.515	0.552	0.55	0.551	0.558	0.562	0.599	0.569	0.5454	7.48715	
T	m-,p-Xylene		0.519	0.653	0.635	0.675	0.664	0.67	0.651	0.622	0.521	0.6234	9.75924	
T	o-Xylene			0.64	0.613	0.652	0.646	0.665	0.651	0.673	0.633	0.6466	2.9007	
T	Styrene		0.68	0.966	0.995	1.038	1.063	1.11	1.077	1.036	0.907	0.9859	13.1823	
P	Bromoform			0.144	0.156	0.165	0.174	0.194	0.195	0.189	0.184	0.175	10.6143	
T	Isopropylbenzene		1.377	1.617	1.614	1.683	1.69	1.695	1.59	1.428	1.183	1.5419	11.4107	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.358	0.494	0.519	0.525	0.508	0.542	0.539	0.513	0.499	0.4996	11.1252	
S	p-Bromofluorobenzene				0.839	1.01	1.018	0.977	0.968	1	0.985	0.9712	6.26503	
T	1,2,3-Trichloropropane			0.103	0.155	0.143	0.137	0.147	0.149	0.143	0.141	0.1398	11.3016	
T	trans-1,4-Dichloro-2-Butene			0.153	0.154	0.193	0.191	0.196	0.203	0.201	0.198	0.186	10.9928	
T	n-Propylbenzene		3.098	3.974	3.866	4.12	4.014	3.872	3.532	3.078		3.6942	11.14	
T	Bromobenzene	0.651	0.808	0.721	0.726	0.726	0.749	0.761	0.728	0.751	0.731	0.7353	5.36612	
T	1,3,5-Trimethylbenzene		2.266	2.707	2.643	2.797	2.797	2.779	2.633	2.497	2.088	2.5785	9.73874	
T	2-Chlorotoluene		2.378	2.661	2.489	2.516	2.443	2.493	2.286	2.444	2.006	2.4131	7.60285	
T	4-Chlorotoluene		1.872	2.489	2.416	2.66	2.584	2.559	2.431	1.921		2.3667	12.7271	
T	a-Methylstyrene					1.352	1.373	1.348	1.352	1.379	1.296	1.3502	2.17308	
T	tert-Butylbenzene			0.503	0.537	0.568	0.557	0.561	0.546	0.588	0.585	0.5556	4.94159	
T	1,2,4-Trimethylbenzene		2.284	2.83	2.74	2.918	2.92	2.903	2.731	2.528	2.094	2.661	11.2193	
T	sec-Butylbenzene			3.439	3.337	3.489	3.518	3.432	3.179	2.885	2.361	3.205	12.4661	
T	p-Isopropyltoluene			2.766	2.695	2.849	2.859	2.839	2.673	2.485	2.075	2.6551	9.99136	
T	1,3-Dichlorobenzene		1.162	1.531	1.517	1.551	1.524	1.559	1.49	1.479	1.343	1.4618	8.86916	
T	1,4-Dichlorobenzene	1.52	1.175	1.573	1.455	1.526	1.51	1.538	1.472	1.443		1.4681	7.99055	
T	n-Butylbenzene			2.784	2.906	2.915	2.893	2.823	2.636	2.411	2	2.671	11.9953	
T	1,2-Dichlorobenzene	1.201	1.043	1.287	1.323	1.333	1.342	1.379	1.315	1.294	1.193	1.2711	7.81151	
T	1,2-Dibromo-3-Chloropropane				0.06	0.093	0.091	0.099	0.102	0.097	0.092	0.0908	15.6405	0.998
T	1,2,4-Trichlorobenzene		0.767	0.935	0.912	0.967	0.946	1.001	0.962	0.948	0.891	0.9255	7.26883	
T	Hexachlorobutadiene		0.256	0.373	0.367	0.39	0.393	0.4	0.389	0.42	0.419	0.3785	13.0258	
T	Naphthalene		1.314	1.576	1.522	1.596	1.577	1.684	1.608	1.456	1.296	1.5143	8.83211	
T	1,2,3-Trichlorobenzene	0.787	0.686	0.717	0.757	0.801	0.781	0.835	0.808	0.788	0.741	0.77	5.84885	

Thu Feb 18 09:10:34 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16031616 Run Date: 02/17/2016 Sample ID: WG556046-12
Instrument ID: HPMS8 Run Time: 20:44 Method: 8260B
File ID: 8M410205 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG556046 Cal ID: HPMS8 - 17-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.9	ug/L	0.466	0.200	20	
1,1-Dichloroethene	CCC	50.0	49.2	ug/L	0.444	1.60	20	
1,2-Dichloropropane	CCC	50.0	54.1	ug/L	0.294	8.20	20	
Ethylbenzene	CCC	50.0	52.2	ug/L	0.569	4.40	20	
Toluene	CCC	50.0	53.5	ug/L	1.49	7.00	20	
Vinyl Chloride	CCC	50.0	42.6	ug/L	0.358	14.8	20	
Bromoform	SPCC	50.0	47.2	ug/L	0.165	5.50	20	
Chlorobenzene	SPCC	50.0	53.3	ug/L	1.02	6.70	20	
Chloromethane	SPCC	50.0	46.7	ug/L	0.563	6.50	20	
1,1-Dichloroethane	SPCC	50.0	49.3	ug/L	0.519	1.40	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	48.9	ug/L	0.488	2.30	20	
Acetone		50.0	50.4	ug/L	0.0413	0.900	20	
Benzene		50.0	51.8	ug/L	1.00	3.60	20	
Bromobenzene		50.0	49.7	ug/L	0.731	0.500	20	
Bromochloromethane		50.0	50.2	ug/L	0.137	0.400	20	
Bromodichloromethane		50.0	50.7	ug/L	0.350	1.30	20	
Bromomethane		50.0	49.6	ug/L	0.198	0.900	20	
2-Butanone		50.0	47.5	ug/L	0.0611	5.00	20	
n-Butylbenzene		50.0	52.3	ug/L	2.80	4.70	20	
sec-Butylbenzene		50.0	54.9	ug/L	3.52	9.70	20	
tert-Butylbenzene		50.0	53.2	ug/L	0.591	6.40	20	
Carbon Disulfide		50.0	48.0	ug/L	0.745	4.00	20	
Carbon Tetrachloride		50.0	49.6	ug/L	0.385	0.900	20	
Dibromochloromethane		50.0	51.8	ug/L	0.315	3.60	20	
Chloroethane		50.0	55.0	ug/L	0.209	10.1	20	
2-Chlorotoluene		50.0	52.9	ug/L	2.55	5.80	20	
4-Chlorotoluene		50.0	55.4	ug/L	2.62	10.7	20	
1,2-Dibromo-3-Chloropropane		50.0	48.3	ug/L	0.0920	3.40	20	
1,2-Dibromoethane		50.0	51.5	ug/L	0.231	3.00	20	
Dibromomethane		50.0	47.8	ug/L	0.118	4.40	20	
1,2-Dichlorobenzene		50.0	53.6	ug/L	1.36	7.30	20	
1,3-Dichlorobenzene		50.0	52.9	ug/L	1.55	5.90	20	
1,4-Dichlorobenzene		50.0	52.8	ug/L	1.55	5.60	20	
Dichlorodifluoromethane		50.0	52.5	ug/L	0.414	5.10	20	
1,2-Dichloroethane		50.0	50.1	ug/L	0.356	0.200	20	
cis-1,2-Dichloroethene		50.0	51.6	ug/L	0.281	3.20	20	
trans-1,2-Dichloroethene		50.0	52.8	ug/L	0.446	5.70	20	
1,3-Dichloropropane		50.0	54.7	ug/L	0.444	9.40	20	
2,2-Dichloropropane		50.0	50.4	ug/L	0.418	0.800	20	
cis-1,3-Dichloropropene		50.0	56.1	ug/L	0.421	12.2	20	
trans-1,3-Dichloropropene		50.0	51.1	ug/L	0.476	2.20	20	
1,1-Dichloropropene		50.0	48.2	ug/L	0.358	3.50	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4704496
Report generated 04/07/2016 10:55

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16031616 Run Date: 02/17/2016 Sample ID: WG556046-12
Instrument ID: HPMS8 Run Time: 20:44 Method: 8260B
File ID: 8M410205 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG556046 Cal ID: HPMS8 - 17-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	51.7	ug/L	0.0713	3.50	20	
Hexachlorobutadiene		50.0	57.0	ug/L	0.431	13.9	20	
Isopropylbenzene		50.0	55.8	ug/L	1.72	11.7	20	
p-Isopropyltoluene		50.0	54.2	ug/L	2.88	8.40	20	
4-Methyl-2-Pentanone		50.0	49.1	ug/L	0.0541	1.80	20	
Methylene Chloride		50.0	49.7	ug/L	0.246	0.700	20	
Naphthalene		50.0	45.1	ug/L	1.37	9.70	20	
n-Propylbenzene		50.0	54.5	ug/L	4.03	9.00	20	
Styrene		50.0	56.1	ug/L	1.11	12.2	20	
1,1,1,2-Tetrachloroethane		50.0	52.2	ug/L	0.357	4.30	20	
Tetrachloroethene		50.0	52.0	ug/L	0.291	4.00	20	
1,2,3-Trichlorobenzene		50.0	50.1	ug/L	0.771	0.100	20	
1,2,4-Trichlorobenzene		50.0	50.3	ug/L	0.930	0.500	20	
1,1,1-Trichloroethane		50.0	50.2	ug/L	0.428	0.300	20	
1,1,2-Trichloroethane		50.0	51.9	ug/L	0.230	3.80	20	
Trichloroethene		50.0	51.3	ug/L	0.267	2.60	20	
Trichlorofluoromethane		50.0	49.1	ug/L	0.441	1.80	20	
1,2,3-Trichloropropane		50.0	49.6	ug/L	0.139	0.700	20	
1,2,4-Trimethylbenzene		50.0	54.7	ug/L	2.91	9.30	20	
1,3,5-Trimethylbenzene		50.0	56.6	ug/L	2.92	13.1	20	
o-Xylene		50.0	53.3	ug/L	0.689	6.50	20	
m-,p-Xylene		100	110	ug/L	0.683	9.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4704496
Report generated 04/07/2016 10:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16031616 Run Date: 04/05/2016 Sample ID: WG563534-02
Instrument ID: HPMS8 Run Time: 10:11 Method: 8260B
File ID: 8M411218 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG563535 Cal ID: HPMS8 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	55.8	ug/L	0.522	11.6	20	
1,1-Dichloroethene	CCC	50.0	57.4	ug/L	0.519	14.9	20	
1,2-Dichloropropane	CCC	50.0	59.2	ug/L	0.322	18.3	20	
Ethylbenzene	CCC	50.0	50.1	ug/L	0.547	0.247	20	
Toluene	CCC	50.0	51.8	ug/L	1.44	3.66	20	
Vinyl Chloride	CCC	50.0	56.8	ug/L	0.476	13.5	20	
Bromoform	SPCC	50.0	50.0	ug/L	0.175	0.0542	20	
Chlorobenzene	SPCC	50.0	50.0	ug/L	0.954	0.0358	20	
Chloromethane	SPCC	50.0	60.7	ug/L	0.732	21.4	20	*
1,1-Dichloroethane	SPCC	50.0	57.9	ug/L	0.610	15.7	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.2	ug/L	0.461	7.67	20	
Xylenes		150	152	ug/L	0.638	1.60	20	
Acetone		50.0	51.9	ug/L	0.0424	3.80	20	
Benzene		50.0	57.4	ug/L	1.11	14.9	20	
Bromobenzene		50.0	44.4	ug/L	0.653	11.2	20	
Bromochloromethane		50.0	54.6	ug/L	0.149	9.24	20	
Bromodichloromethane		50.0	55.6	ug/L	0.384	11.2	20	
Bromomethane		50.0	42.8	ug/L	0.171	14.4	20	
2-Butanone		50.0	57.4	ug/L	0.0738	14.8	20	
n-Butylbenzene		50.0	49.6	ug/L	2.65	0.773	20	
sec-Butylbenzene		50.0	48.1	ug/L	3.08	3.89	20	
tert-Butylbenzene		50.0	45.2	ug/L	0.502	9.63	20	
Carbon Disulfide		50.0	56.3	ug/L	0.875	12.7	20	
Carbon Tetrachloride		50.0	54.9	ug/L	0.426	9.79	20	
Dibromochloromethane		50.0	49.6	ug/L	0.301	0.814	20	
Chloroethane		50.0	56.8	ug/L	0.215	13.6	20	
2-Chlorotoluene		50.0	45.5	ug/L	2.20	9.02	20	
4-Chlorotoluene		50.0	47.3	ug/L	2.24	5.30	20	
1,2-Dibromo-3-Chloropropane		50.0	43.0	ug/L	0.0818	13.9	20	
1,2-Dibromoethane		50.0	48.9	ug/L	0.219	2.14	20	
Dibromomethane		50.0	55.9	ug/L	0.138	11.7	20	
1,2-Dichlorobenzene		50.0	47.0	ug/L	1.20	5.98	20	
1,3-Dichlorobenzene		50.0	47.2	ug/L	1.38	5.61	20	
1,4-Dichlorobenzene		50.0	46.0	ug/L	1.35	8.09	20	
Dichlorodifluoromethane		50.0	58.7	ug/L	0.463	17.4	20	
1,2-Dichloroethane		50.0	53.8	ug/L	0.382	7.67	20	
cis-1,2-Dichloroethene		50.0	56.0	ug/L	0.305	12.0	20	
trans-1,2-Dichloroethene		50.0	57.0	ug/L	0.482	14.0	20	
1,3-Dichloropropane		50.0	49.7	ug/L	0.404	0.505	20	
2,2-Dichloropropane		50.0	58.2	ug/L	0.482	16.4	20	
cis-1,3-Dichloropropene		50.0	58.3	ug/L	0.438	16.6	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.472	1.46	20	

CCV - Modified 03/05/2008
PDF File ID: 4704504
Report generated 04/07/2016 10:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16031616 Run Date: 04/05/2016 Sample ID: WG563534-02
Instrument ID: HPMS8 Run Time: 10:11 Method: 8260B
File ID: 8M411218 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG563535 Cal ID: HPMS8 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	54.3	ug/L	0.403	8.54	20	
2-Hexanone		50.0	52.3	ug/L	0.0720	4.53	20	
Hexachlorobutadiene		50.0	46.9	ug/L	0.355	6.18	20	
Isopropylbenzene		50.0	52.8	ug/L	1.63	5.69	20	
p-Isopropyltoluene		50.0	48.3	ug/L	2.56	3.40	20	
4-Methyl-2-Pentanone		50.0	55.0	ug/L	0.0606	9.97	20	
Methylene Chloride		50.0	54.7	ug/L	0.271	9.43	20	
Naphthalene		50.0	44.5	ug/L	1.35	10.9	20	
n-Propylbenzene		50.0	47.7	ug/L	3.52	4.69	20	
Styrene		50.0	53.9	ug/L	1.06	7.70	20	
1,1,1,2-Tetrachloroethane		50.0	50.5	ug/L	0.345	1.01	20	
Tetrachloroethene		50.0	49.1	ug/L	0.275	1.80	20	
1,2,3-Trichlorobenzene		50.0	44.8	ug/L	0.690	10.4	20	
1,2,4-Trichlorobenzene		50.0	44.8	ug/L	0.829	10.4	20	
1,1,1-Trichloroethane		50.0	54.3	ug/L	0.463	8.55	20	
1,1,2-Trichloroethane		50.0	50.8	ug/L	0.225	1.62	20	
Trichloroethene		50.0	53.6	ug/L	0.279	7.15	20	
Trichlorofluoromethane		50.0	54.2	ug/L	0.487	8.36	20	
1,2,3-Trichloropropane		50.0	43.3	ug/L	0.121	13.4	20	
1,2,4-Trimethylbenzene		50.0	48.6	ug/L	2.59	2.70	20	
1,3,5-Trimethylbenzene		50.0	47.0	ug/L	2.42	6.02	20	
o-Xylene		50.0	48.7	ug/L	0.630	2.52	20	
m-,p-Xylene		100	104	ug/L	0.646	3.67	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4704504
Report generated 04/07/2016 10:55

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16031616
Instrument ID: HPMS8
Workgroup (AAB#): WG563535

ICAL CCV Number: WG556046-08
CAL ID: HPMS8 - 17-FEB-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG556046-08	NA	NA	312633	592238	835274
Upper Limit	NA	NA	625266	1184476	1670548
Lower Limit	NA	NA	156317	296119	417637
L16031616-01	1.00	01	346312	708948	868468
L16031616-02	1.00	01	341243	697279	860411
L16031616-03	1.00	01	359335	722414	895690
WG563535-01	1.00	01	376022	768869	970096
WG563535-02	1.00	01	449855	789603	993969

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4705352
Report generated 04/07/2016 10:55

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16031616
Instrument ID: HPMS8
Workgroup (AAB#): WG563535

ICAL CCV Number: WG556046-08
CAL ID: HPMS8 - 17-FEB-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG556046-08	NA	NA	17.59	14.57	10.71
Upper Limit	NA	NA	18.09	15.07	11.21
Lower Limit	NA	NA	17.09	14.07	10.21
L16031616-01	1.00	01	17.59	14.58	10.71
L16031616-02	1.00	01	17.59	14.58	10.71
L16031616-03	1.00	01	17.59	14.57	10.71
WG563535-01	1.00	01	17.59	14.57	10.71
WG563535-02	1.00	01	17.59	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4705353
Report generated: 04/07/2016 10:55

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\040516\8M411237.D Vial: 21
Acq On : 5 Apr 2016 19:36 Operator: TMB
Sample : L16031616-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 08:29:08 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:47:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	868468	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	708948	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	346312	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	221415	24.8368 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.36%		
43) 1,2-Dichloroethane-d4	10.31	65	234200	24.5354 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.16%		
58) Toluene-d8	12.68	98	811176	23.1726 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.68%		
80) p-Bromofluorobenzene	16.07	95	325743	24.2135 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.84%		

Target Compounds					Qvalue
3) Chloromethane	3.63	50	3277	0.1565 ug/L #	5
13) Acetone	6.25	43	1307	0.9202 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	14124	0.9001 ug/L	92
23) trans-1,2-Dichloroethene	7.71	61	9732	0.6634 ug/L	86
32) cis-1,2-Dichloroethene	9.17	96	13687	1.4486 ug/L	92
36) Tetrahydrofuran	9.65	42	239	0.1597 ug/L #	41
47) Trichloroethene	11.22	130	35900	3.9680 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411237.D 8260WTR.M Wed Apr 06 08:29:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\040516\8M411237.D Vial: 21
Acq On : 5 Apr 2016 19:36 Operator: TMB
Sample : L16031616-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 8:29 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:47:33 2016
Response via : Initial Calibration

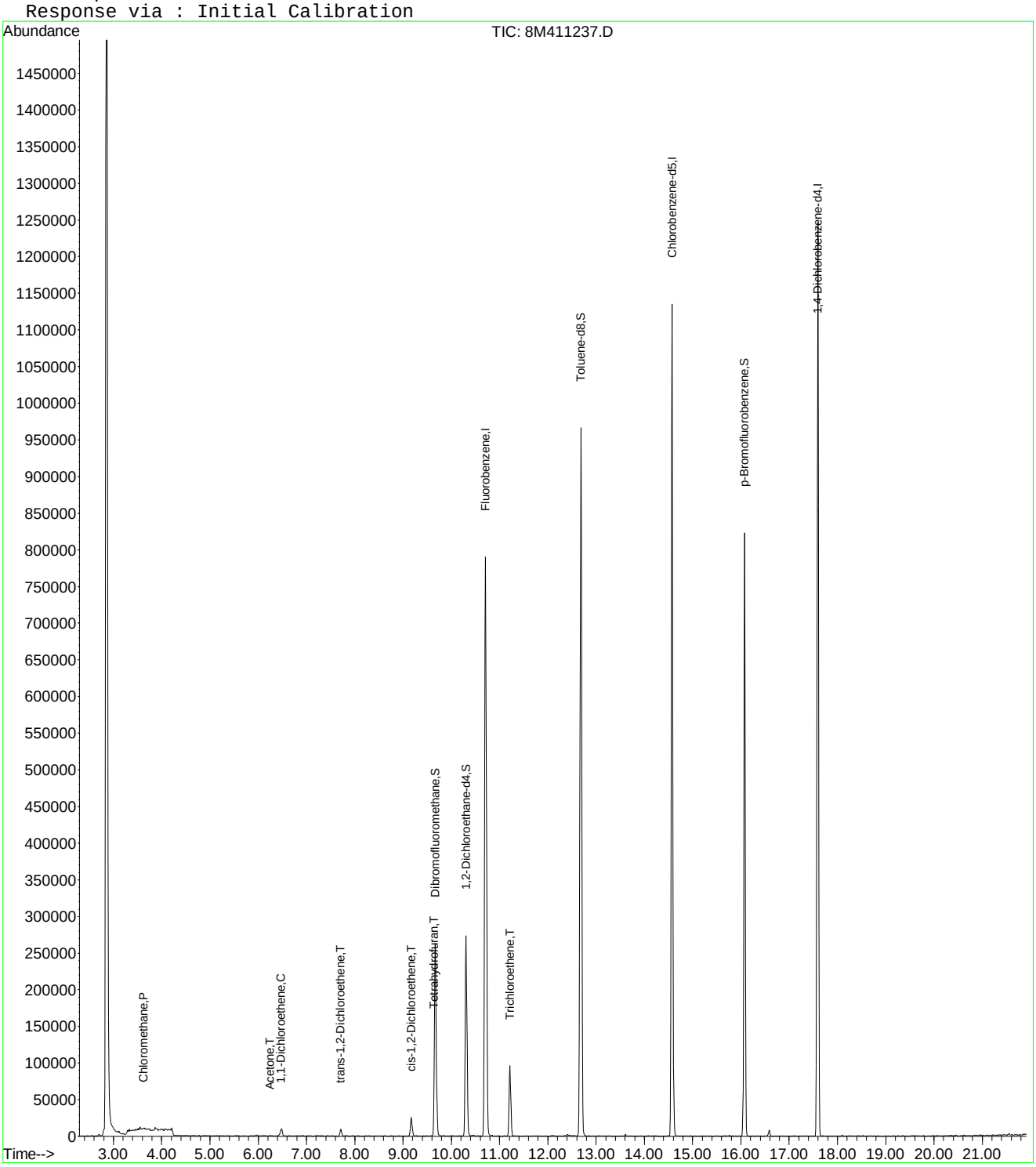

8M411237.D 8260WTR.M Wed Apr 06 08:29:09 2016 Page 2

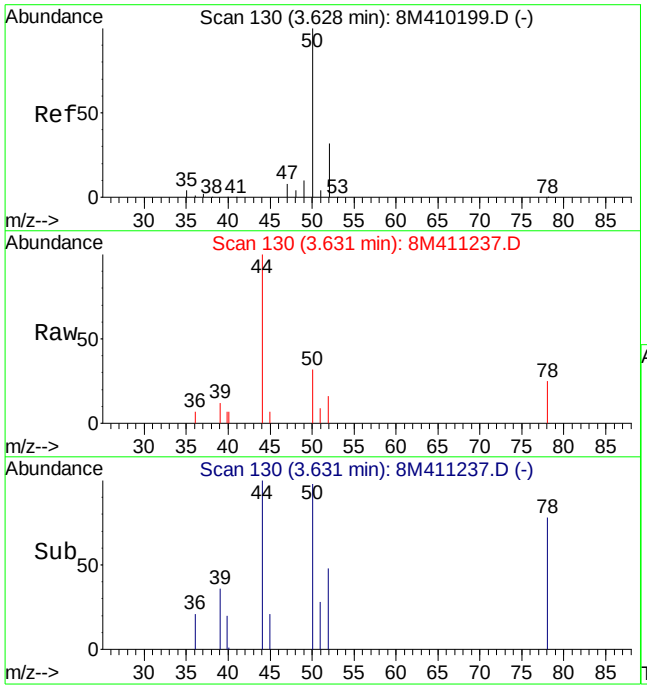

#3
Chloromethane
Concen: 0.16 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M411237.D
Acq: 5 Apr 2016 19:36

Tgt Ion: 50 Resp: 3277

Ion	Ratio	Lower	Upper
50	100		
52	85.0	19.3	44.9#

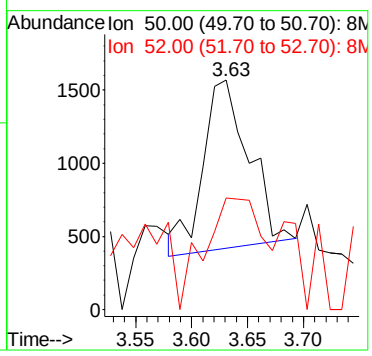

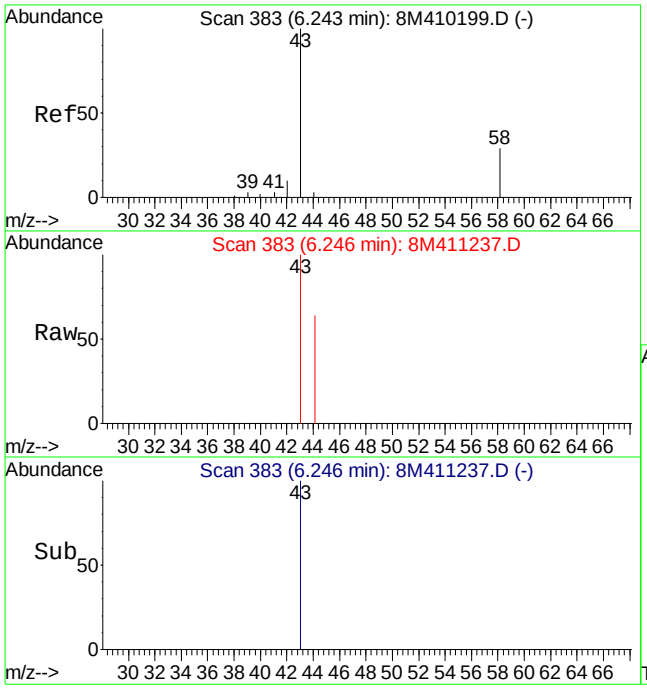

#13
Acetone
Concen: 0.92 ug/L
RT: 6.25 min Scan# 383
Delta R.T. -0.01 min
Lab File: 8M411237.D
Acq: 5 Apr 2016 19:36

Tgt Ion: 43 Resp: 1307

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.2	37.8#

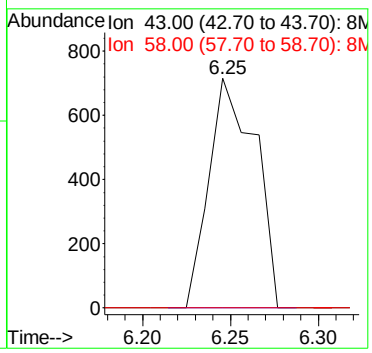

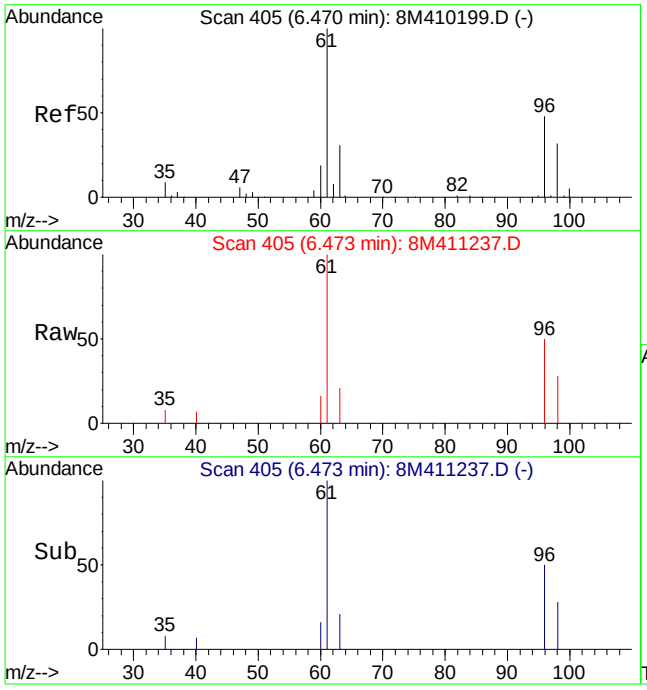

#14
1,1-Dichloroethene
Concen: 0.90 ug/L
RT: 6.47 min Scan# 405
Delta R.T. 0.00 min
Lab File: 8M411237.D
Acq: 5 Apr 2016 19:36

Tgt Ion: 61 Resp: 14124

Ion	Ratio	Lower	Upper
61	100		
96	47.5	31.9	74.5

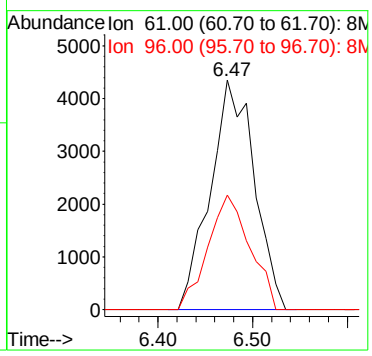

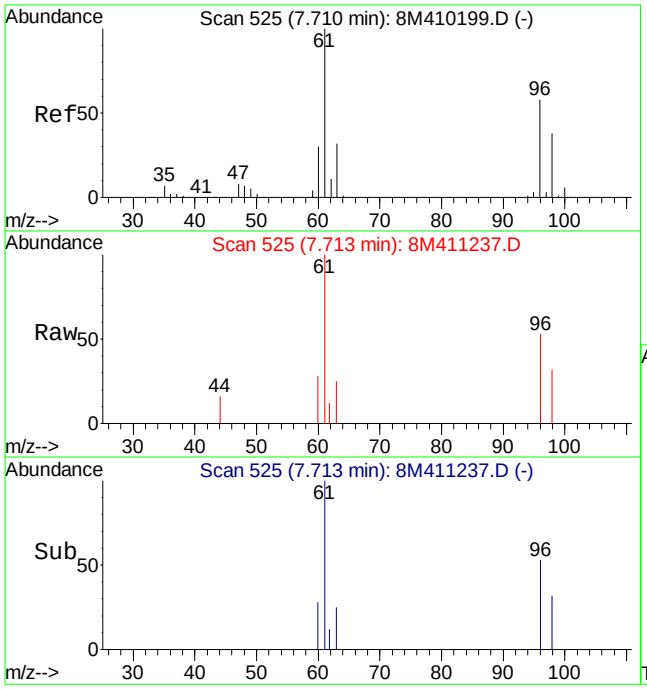

#23
trans-1,2-Dichloroethene
Concen: 0.66 ug/L
RT: 7.71 min Scan# 525
Delta R.T. 0.00 min
Lab File: 8M411237.D
Acq: 5 Apr 2016 19:36

Tgt Ion: 61 Resp: 9732

Ion	Ratio	Lower	Upper
61	100		
96	53.3	38.6	90.2

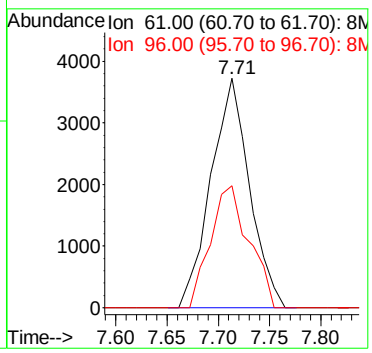

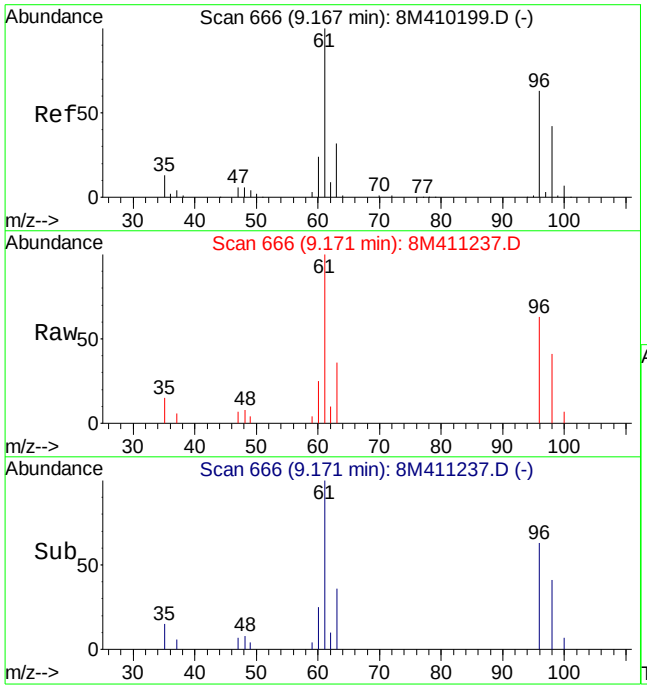

#32
cis-1,2-Dichloroethene
Concen: 1.45 ug/L
RT: 9.17 min Scan# 666
Delta R.T. 0.00 min
Lab File: 8M411237.D
Acq: 5 Apr 2016 19:36

Tgt Ion: 96 Resp: 13687

Ion	Ratio	Lower	Upper
96	100		
61	153.7	98.9	230.7

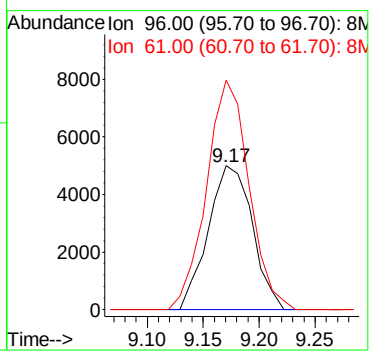

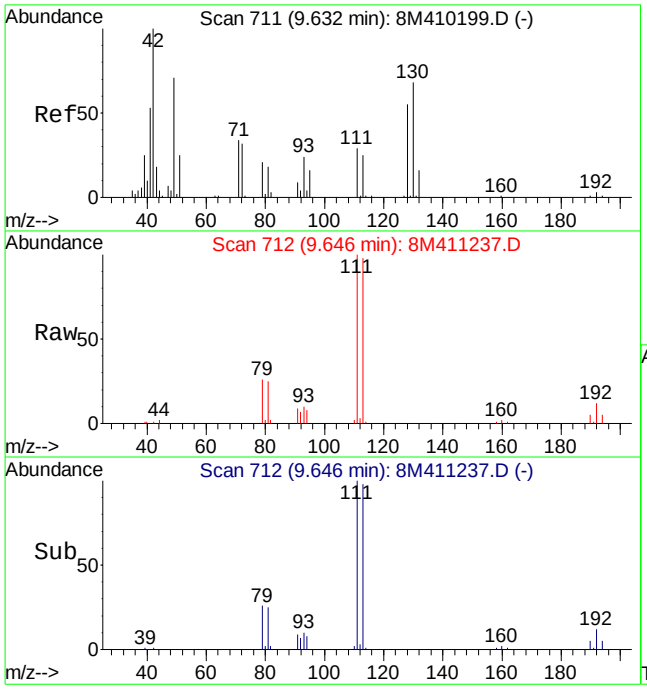

#36
Tetrahydrofuran
Concen: 0.16 ug/L
RT: 9.65 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M411237.D
Acq: 5 Apr 2016 19:36

Tgt Ion: 42 Resp: 239

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.6#
71	0.0	19.0	44.4#

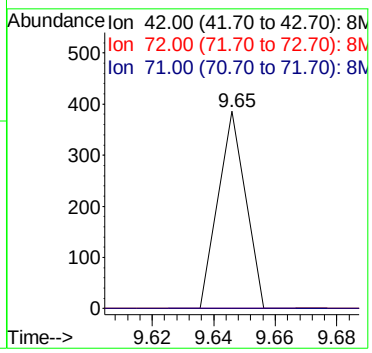

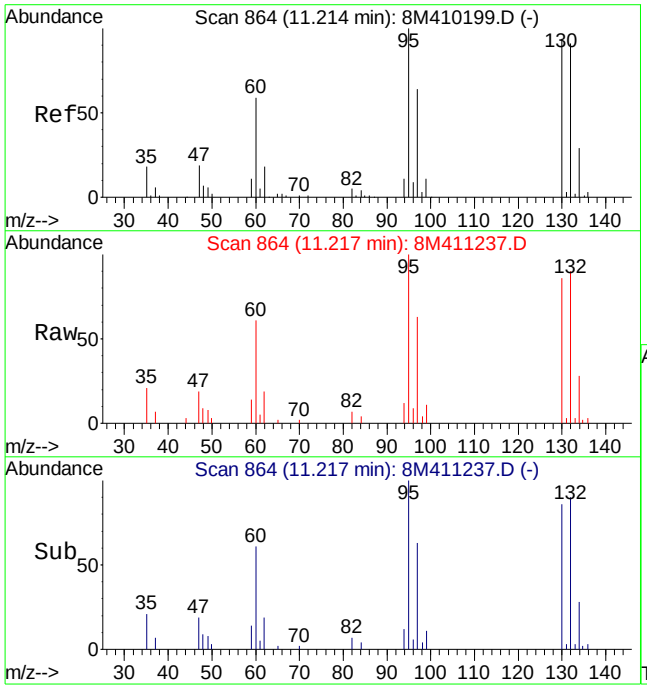

#47
Trichloroethene
Concen: 3.97 ug/L
RT: 11.22 min Scan# 864
Delta R.T. 0.00 min
Lab File: 8M411237.D
Acq: 5 Apr 2016 19:36

Tgt Ion:130 Resp: 35900

Ion	Ratio	Lower	Upper
130	100		
132	98.9	59.9	139.7
95	104.7	62.3	145.5

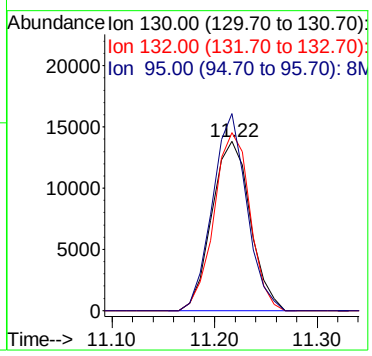

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\040516\8M411238.D Vial: 22
Acq On : 5 Apr 2016 20:05 Operator: TMB
Sample : L16031616-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 08:29:10 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:47:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	860411	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	697279	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	341243	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	218532	24.7430 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.96%		
43) 1,2-Dichloroethane-d4	10.31	65	234235	24.7689 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.08%		
58) Toluene-d8	12.68	98	802363	23.3044 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.20%		
80) p-Bromofluorobenzene	16.07	95	322752	24.3475 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.40%		

Target Compounds					Qvalue
3) Chloromethane	3.64	50	2673	0.1289 ug/L #	64
13) Acetone	6.26	43	923	0.6559 ug/L #	48
14) 1,1-Dichloroethene	6.45	61	3450	0.2219 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M411238.D 8260WTR.M Wed Apr 06 08:29:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\040516\8M411238.D Vial: 22
Acq On : 5 Apr 2016 20:05 Operator: TMB
Sample : L16031616-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 8:29 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:47:33 2016
Response via : Initial Calibration

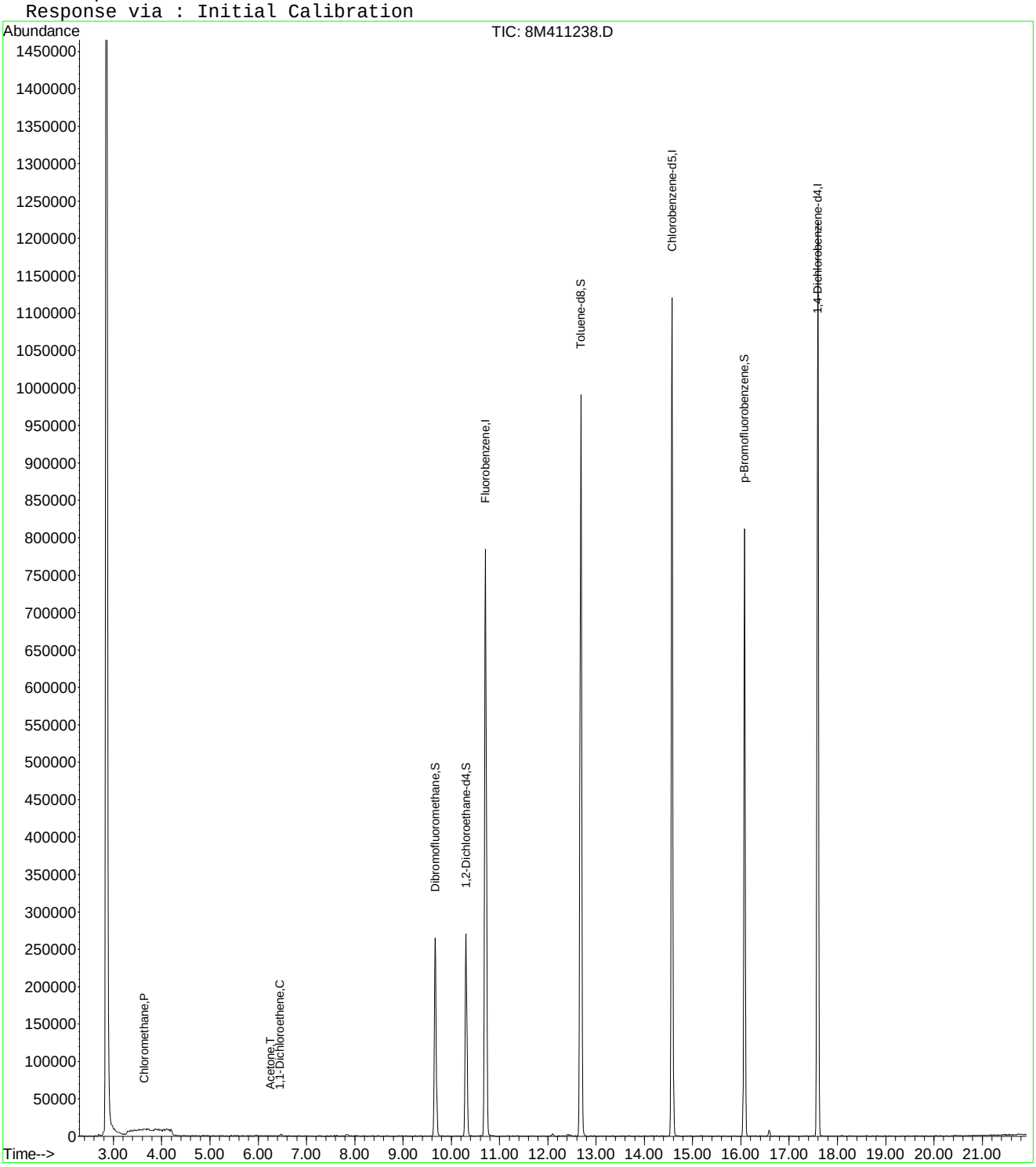

8M411238.D 8260WTR.M Wed Apr 06 08:29:11 2016 Page 2

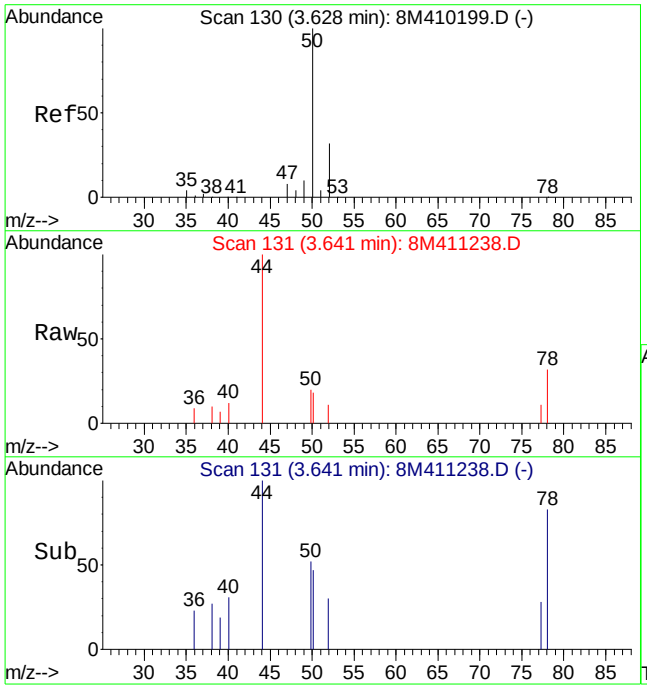

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.64 min Scan# 131
Delta R.T. 0.02 min
Lab File: 8M411238.D
Acq: 5 Apr 2016 20:05

Tgt Ion: 50 Resp: 2673

Ion	Ratio	Lower	Upper
50	100		
52	52.2	19.3	44.9#

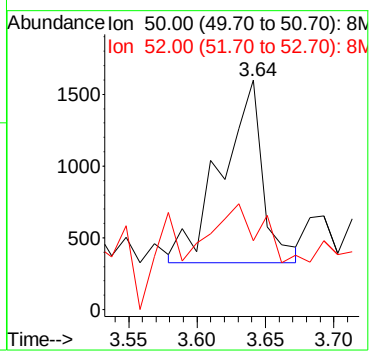

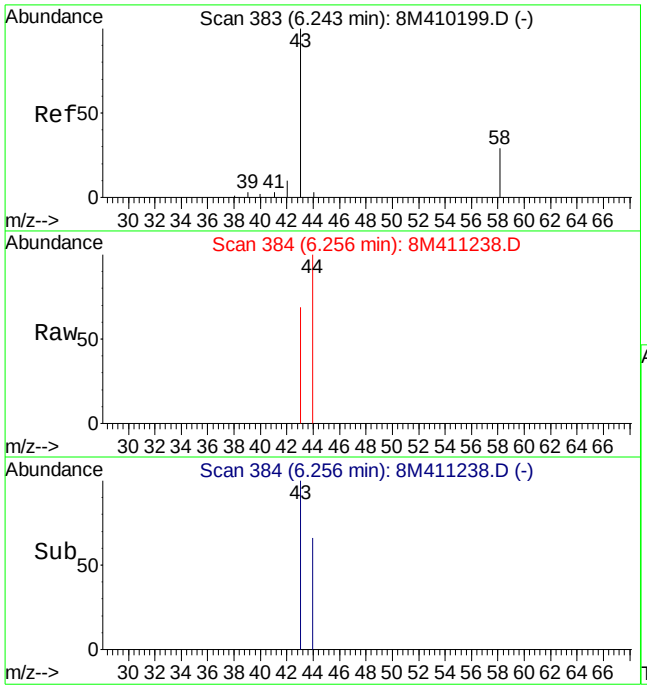

#13
Acetone
Concen: 0.66 ug/L
RT: 6.26 min Scan# 384
Delta R.T. 0.00 min
Lab File: 8M411238.D
Acq: 5 Apr 2016 20:05

Tgt Ion: 43 Resp: 923

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.2	37.8#

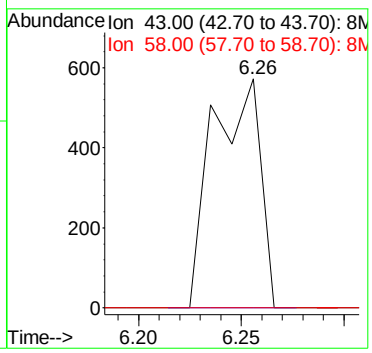

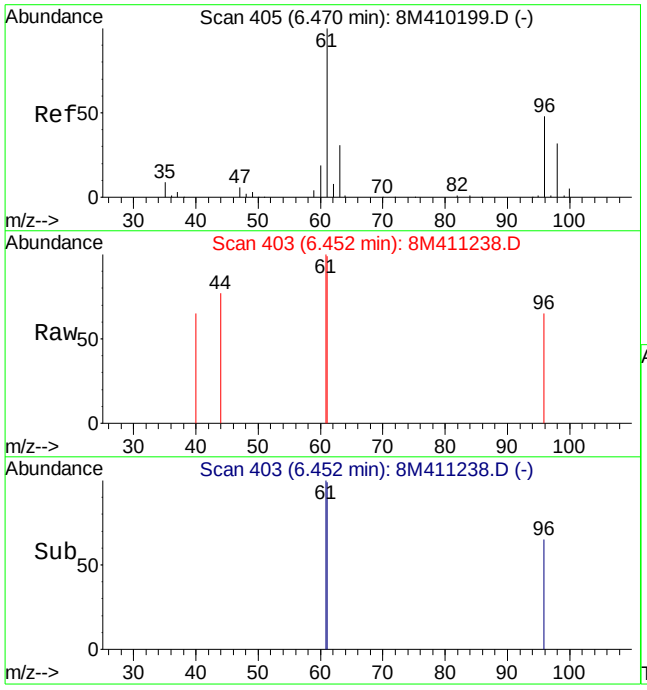

#14
1,1-Dichloroethene
Concen: 0.22 ug/L
RT: 6.45 min Scan# 403
Delta R.T. -0.02 min
Lab File: 8M411238.D
Acq: 5 Apr 2016 20:05

Tgt Ion: 61 Resp: 3450

Ion	Ratio	Lower	Upper
61	100		
96	41.6	31.9	74.5

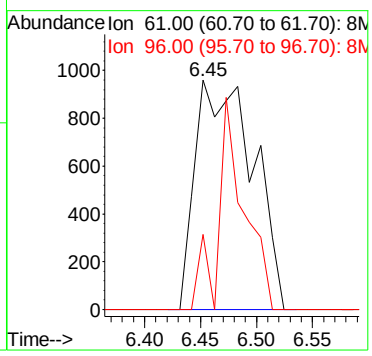

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\040516\8M411233.D Vial: 17
Acq On : 5 Apr 2016 17:36 Operator: TMB
Sample : L16031616-03 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 08:29:03 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:47:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	895690	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	722414	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	359335	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	224673	24.4363 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.76%		
43) 1,2-Dichloroethane-d4	10.30	65	244338	24.8196 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.28%		
58) Toluene-d8	12.68	98	826781	23.1781 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.72%		
80) p-Bromofluorobenzene	16.07	95	336289	24.0914 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.36%		

Target Compounds					Qvalue
3) Chloromethane	3.62	50	2839	0.1315 ug/L #	63
13) Acetone	6.26	43	4383	2.9920 ug/L #	68
15) Tert-Butyl Alcohol	6.61	59	236	0.6343 ug/L #	55
19) Methylene Chloride	7.28	84	2933	0.3310 ug/L	90
36) Tetrahydrofuran	9.64	42	665	0.4310 ug/L #	41

(#) = qualifier out of range (m) = manual integration
8M411233.D 8260WTR.M Wed Apr 06 08:29:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\040516\8M411233.D Vial: 17
Acq On : 5 Apr 2016 17:36 Operator: TMB
Sample : L16031616-03 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 8:29 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:47:33 2016
Response via : Initial Calibration

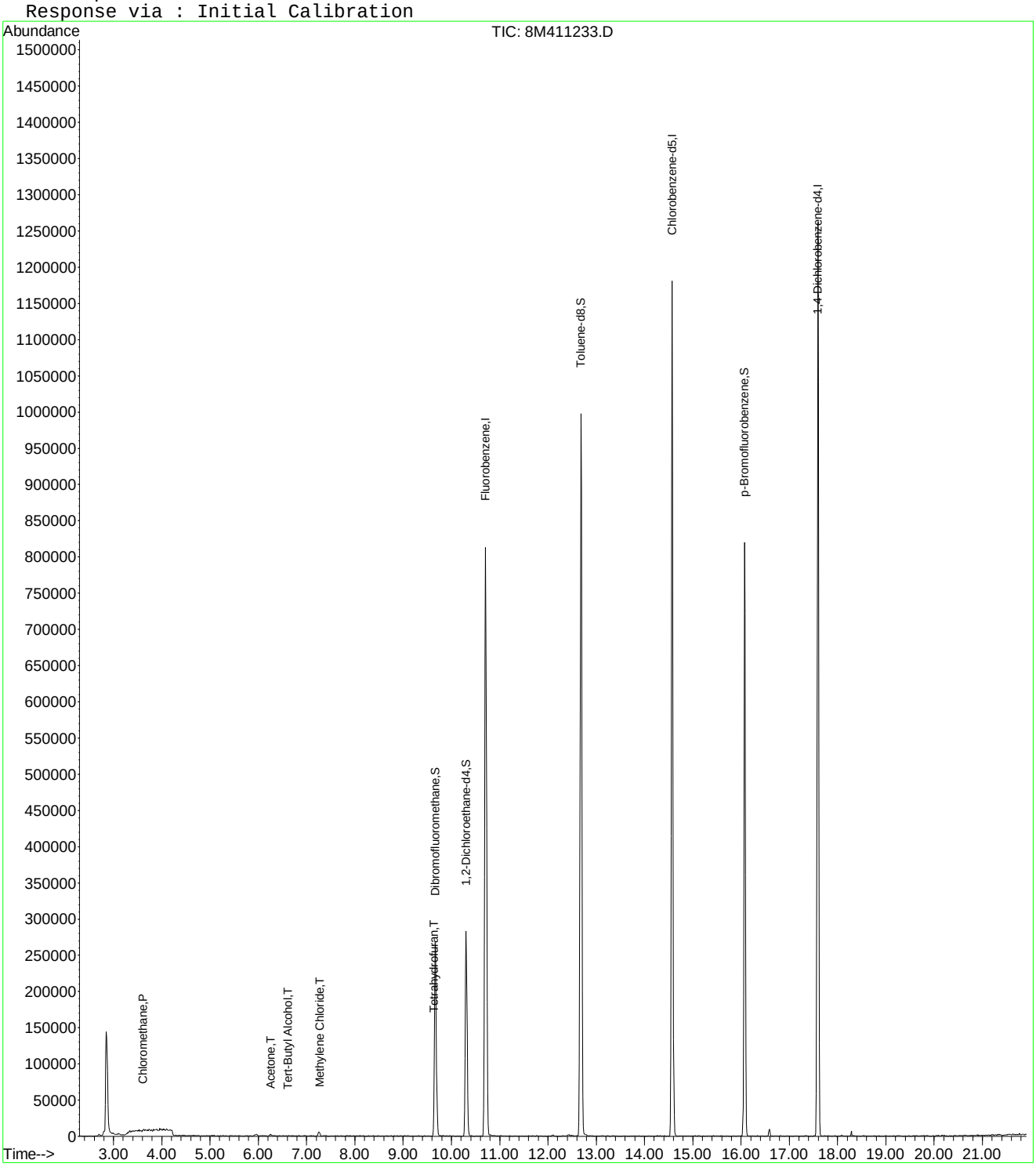

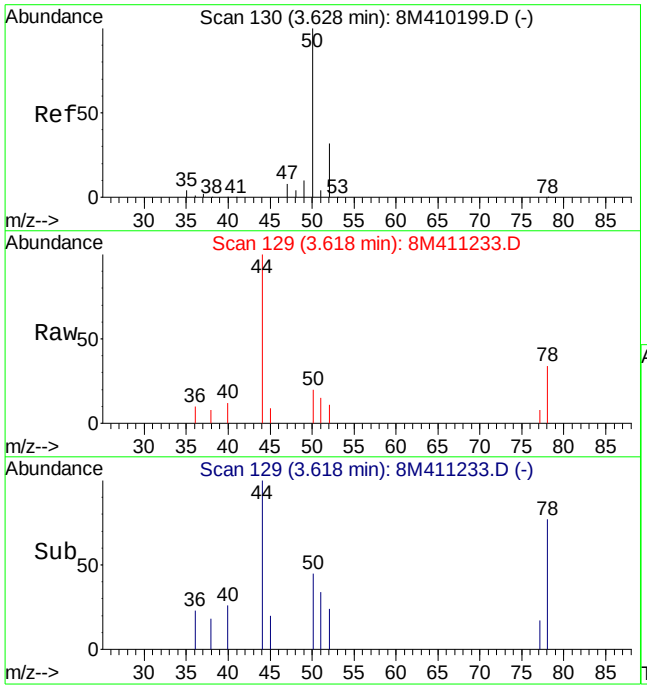

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.62 min Scan# 129
Delta R.T. 0.00 min
Lab File: 8M411233.D
Acq: 5 Apr 2016 17:36

Tgt Ion: 50 Resp: 2839

Ion	Ratio	Lower	Upper
50	100		
52	53.0	19.3	44.9#

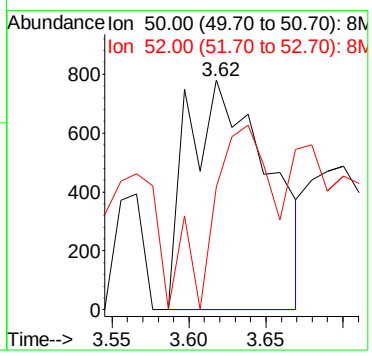

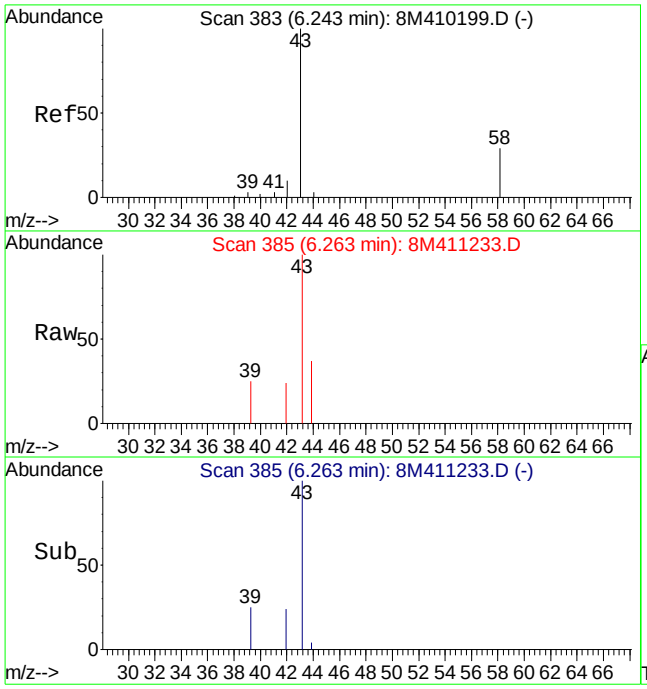

#13
Acetone
Concen: 2.99 ug/L
RT: 6.26 min Scan# 385
Delta R.T. 0.01 min
Lab File: 8M411233.D
Acq: 5 Apr 2016 17:36

Tgt Ion: 43 Resp: 4383

Ion	Ratio	Lower	Upper
43	100		
58	10.4	16.2	37.8#

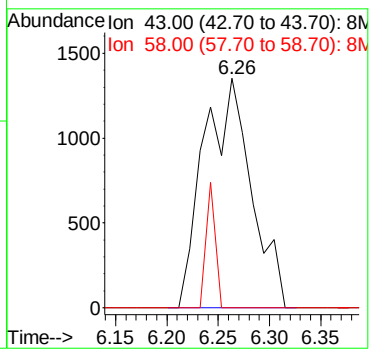

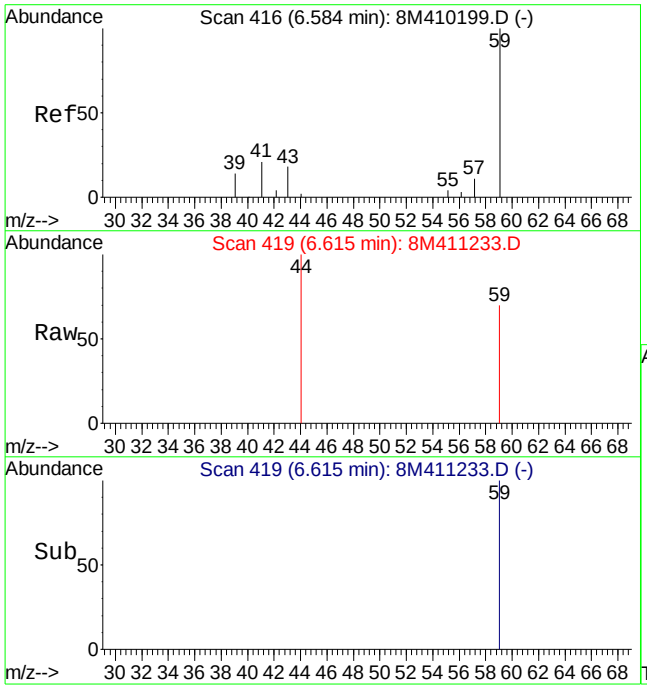

#15
Tert-Butyl Alcohol
Concen: 0.63 ug/L
RT: 6.61 min Scan# 419
Delta R.T. 0.02 min
Lab File: 8M411233.D
Acq: 5 Apr 2016 17:36

Tgt Ion: 59 Resp: 236

Ion	Ratio	Lower	Upper
59	100		
41	0.0	16.0	37.4#
57	0.0	6.1	14.1#

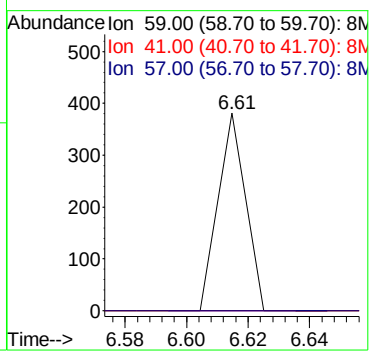

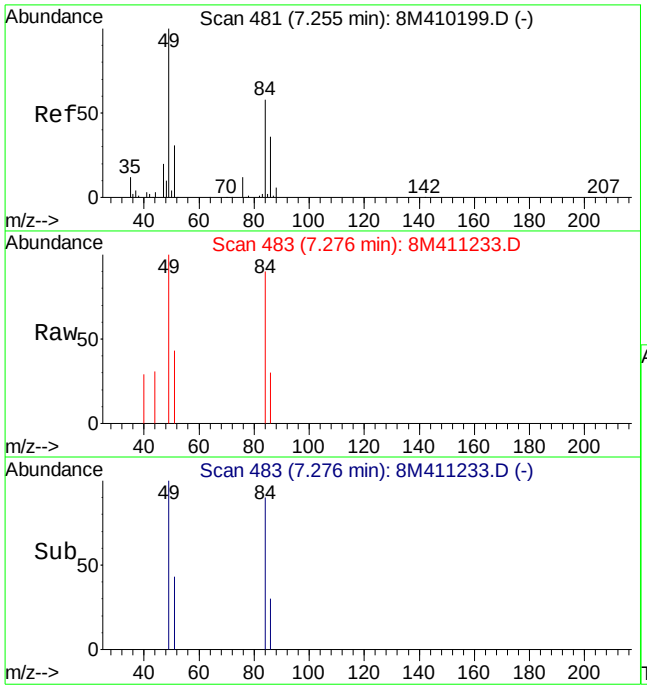

#19
Methylene Chloride
Concen: 0.33 ug/L
RT: 7.28 min Scan# 483
Delta R.T. 0.02 min
Lab File: 8M411233.D
Acq: 5 Apr 2016 17:36

Tgt Ion: 84 Resp: 2933

Ion	Ratio	Lower	Upper
84	100		
49	179.5	99.8	232.8

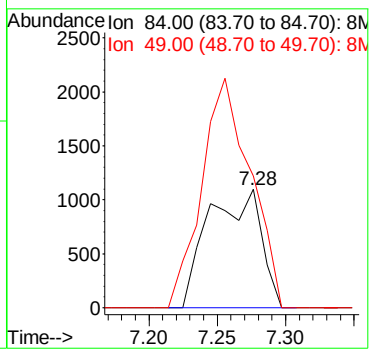

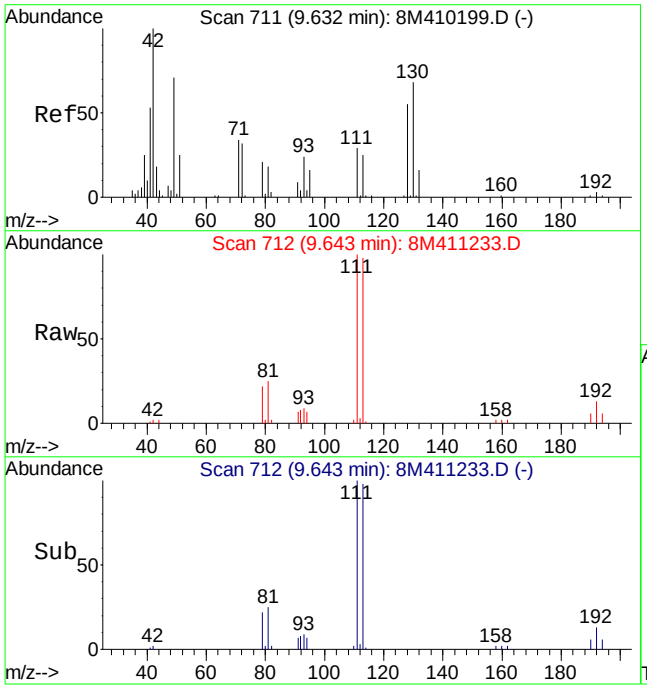

#36
Tetrahydrofuran
Concen: 0.43 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M411233.D
Acq: 5 Apr 2016 17:36

Tgt Ion: 42 Resp: 665

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.6#
71	0.0	19.0	44.4#

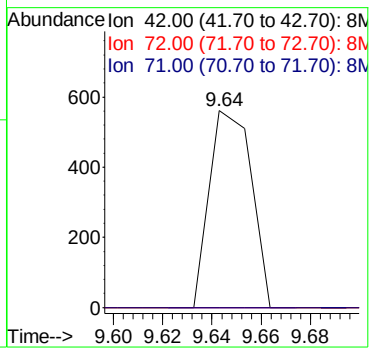

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407828.D Vial: 2
Acq On : 5 Oct 2015 11:49 Operator: TMB
Sample : WG540826-02 5ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:55 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	928093	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	670481	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	347120	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.71	41	3724	5.2139 ug/L	81
3) 3-Chloro-1-propene	7.08	41	87895	5.0600 ug/L	95
4) 2-Chloro-1,3-butadiene	8.46	53	83096	4.6491 ug/L	97
5) Ethyl Acetate	9.11	43	19297	4.0869 ug/L	95
6) Methacrylonitrile	9.27	67	8508	4.1055 ug/L	97
7) Isobutyl Alcohol	9.26	43	1318	6.8122 ug/L #	56
8) 1-Butanol	10.19	56	1930	20.2377 ug/L #	64
9) Methyl methacrylate	11.43	41	22250	3.8908 ug/L	96
10) 2-Nitropropane	11.75	43	2454	2.5566 ug/L	66
13) Cyclohexanone	15.83	55	2773	3.7471 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M407828.D A9FOOWTR.M Tue Oct 06 11:56:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407828.D Vial: 2
Acq On : 5 Oct 2015 11:49 Operator: TMB
Sample : WG540826-02 5ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

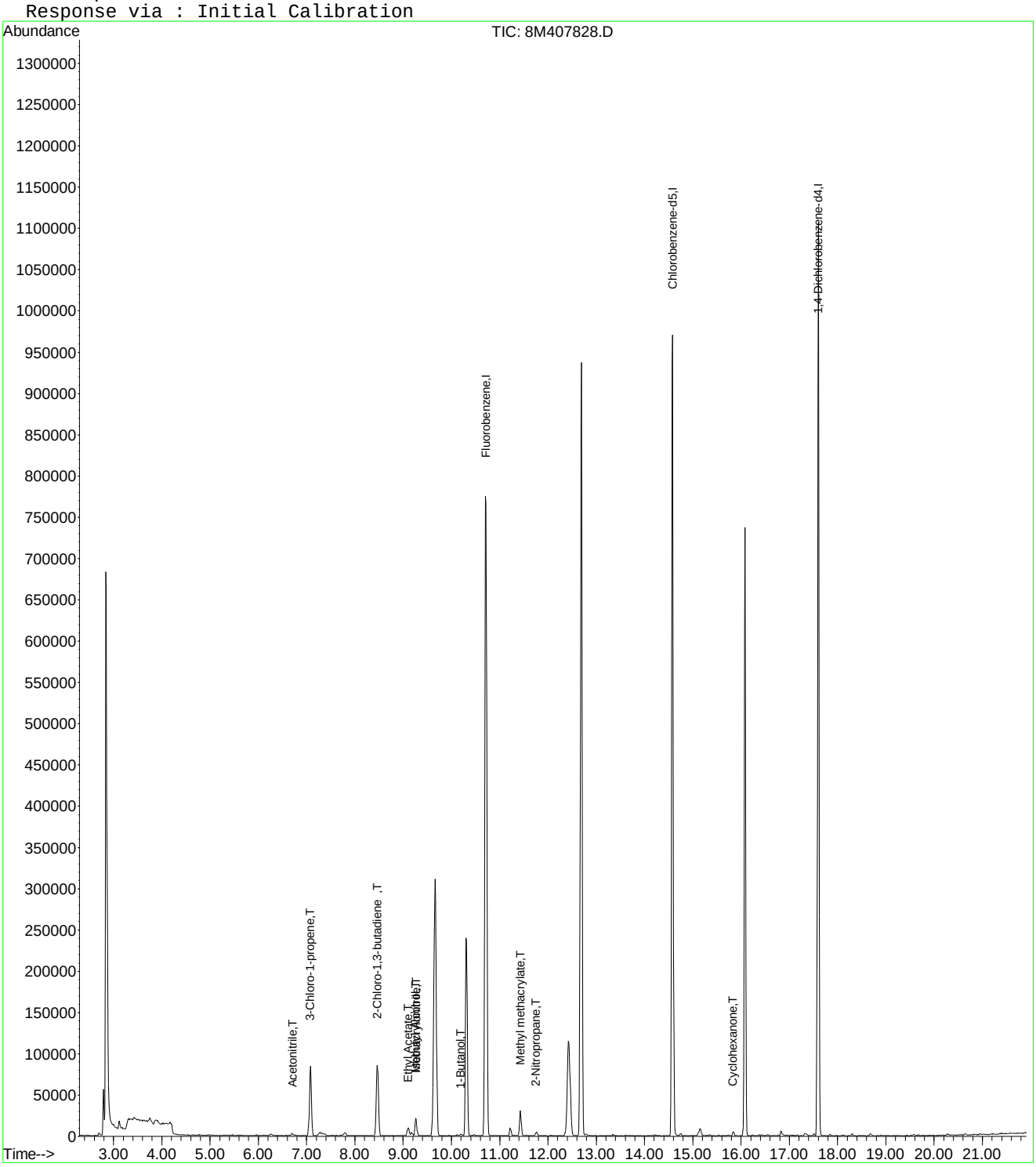

8M407828.D A9FOOWTR.M Tue Oct 06 11:56:56 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407828.D Vial: 2
Acq On : 5 Oct 2015 11:49 Operator: TMB
Sample : WG540826-02 5ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	5.2139	-4.3	100	0.01
3	T	3-Chloro-1-propene	5.0000	5.0600	-1.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.6491	7.0	100	0.00
5	T	Ethyl Acetate	5.0000	4.0869	18.3	100	0.01
6	T	Methacrylonitrile	5.0000	4.1055	17.9	100	0.01
7	T	Isobutyl Alcohol	-1.0000	6.8122	0.0	100	-0.01
8	T	1-Butanol	-1.0000	20.2377	0.0	100	0.00
9	T	Methyl methacrylate	5.0000	3.8908	22.2	100	0.00
10	T	2-Nitropropane	-1.0000	2.5566	0.0	0	-0.01
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	3.7471	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407828.D A9FOOWTR.M Tue Oct 06 11:54:24 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407829.D Vial: 3
Acq On : 5 Oct 2015 12:17 Operator: TMB
Sample : WG540826-03 20ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:56 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	903673	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	657140	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	345767	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.71	41	14085	20.2529 ug/L	98
3) 3-Chloro-1-propene	7.08	41	349549	20.6667 ug/L	100
4) 2-Chloro-1,3-butadiene	8.46	53	347796	19.9846 ug/L	100
5) Ethyl Acetate	9.10	43	93237	20.2805 ug/L	97
6) Methacrylonitrile	9.26	67	40077	19.8617 ug/L	100
7) Isobutyl Alcohol	9.27	43	6436	34.1640 ug/L #	94
9) Methyl methacrylate	11.43	41	106029	19.0419 ug/L	97
10) 2-Nitropropane	11.76	43	12836	13.7339 ug/L	86
13) Cyclohexanone	15.84	55	14620	19.8329 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M407829.D A9FOOWTR.M Tue Oct 06 11:56:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407829.D Vial: 3
Acq On : 5 Oct 2015 12:17 Operator: TMB
Sample : WG540826-03 20ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

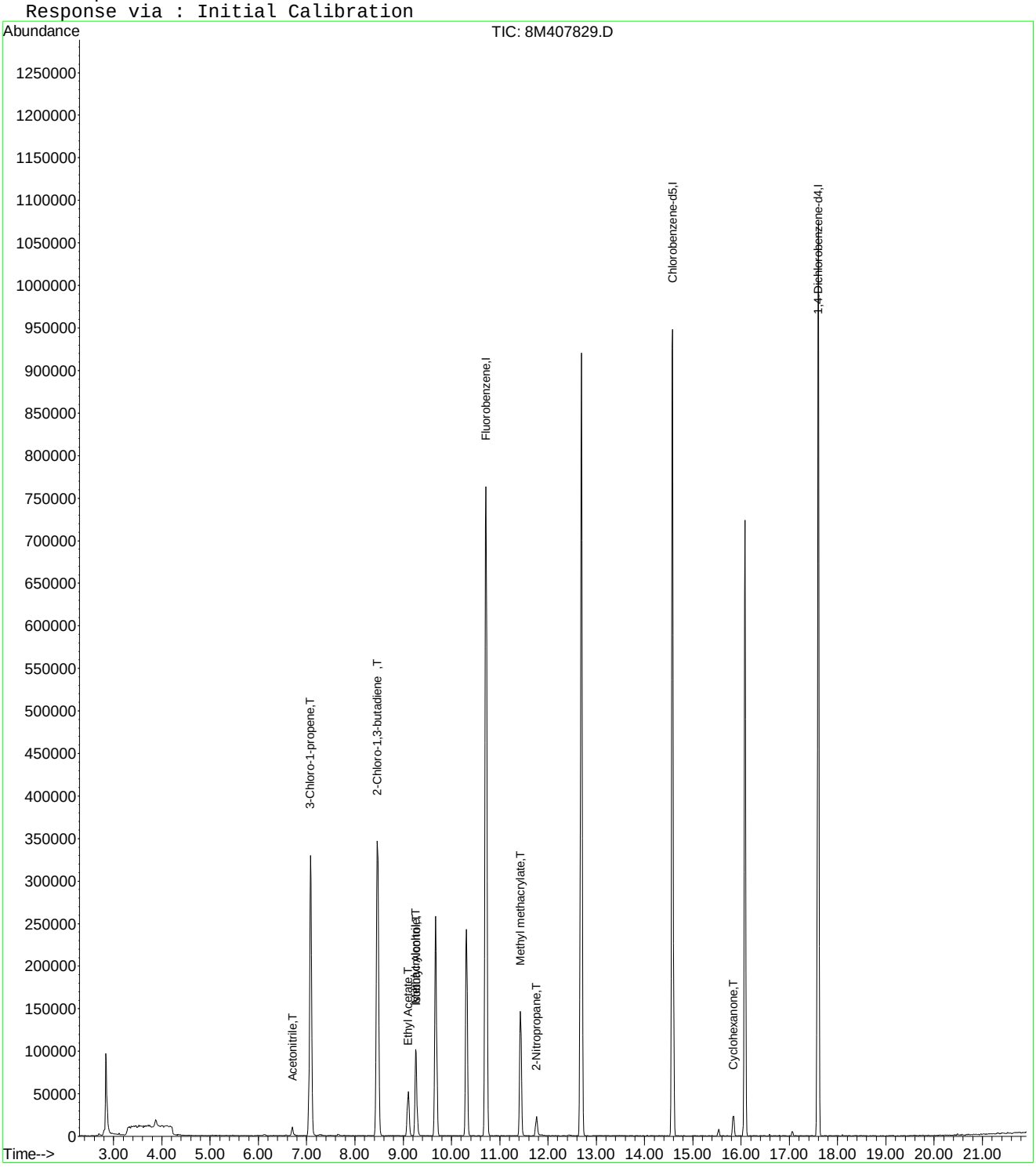

8M407829.D A9FOOWTR.M Tue Oct 06 11:56:57 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407829.D Vial: 3
Acq On : 5 Oct 2015 12:17 Operator: TMB
Sample : WG540826-03 20ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	20.2529	-1.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.6667	-3.3	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	19.9846	0.1	100	0.00
5	T	Ethyl Acetate	20.0000	20.2805	-1.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.8618	0.7	100	0.00
7	T	Isobutyl Alcohol	-1.0000	34.1640	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.19#
9	T	Methyl methacrylate	20.0000	19.0419	4.8	100	0.00
10	T	2-Nitropropane	-1.0000	13.7339	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	19.8329	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407829.D A9FOOWTR.M Tue Oct 06 11:54:38 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 13:13:37 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	883897	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	665815	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	354078	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	212038	25.2054 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.84%		
43) 1,2-Dichloroethane-d4	10.31	65	214919	25.0573 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.24%		
58) Toluene-d8	12.69	98	784209	25.3851 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.56%		
80) p-Bromofluorobenzene	16.07	95	309869	25.0818 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.32%		

Target Compounds

					Qvalue
13) Acetone	6.26	43	674	0.5137 ug/L #	48
19) Methylene Chloride	7.26	84	1894	0.2128 ug/L	67
24) n-Hexane	7.79	57	2250	0.1674 ug/L	96
36) Tetrahydrofuran	9.64	42	735	0.4954 ug/L #	40
79) 1,1,2,2-Tetrachloroethane	15.85	83	3323	0.5087 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M407830.D 8260WT.M Mon Oct 05 13:13:38 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 13:13 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

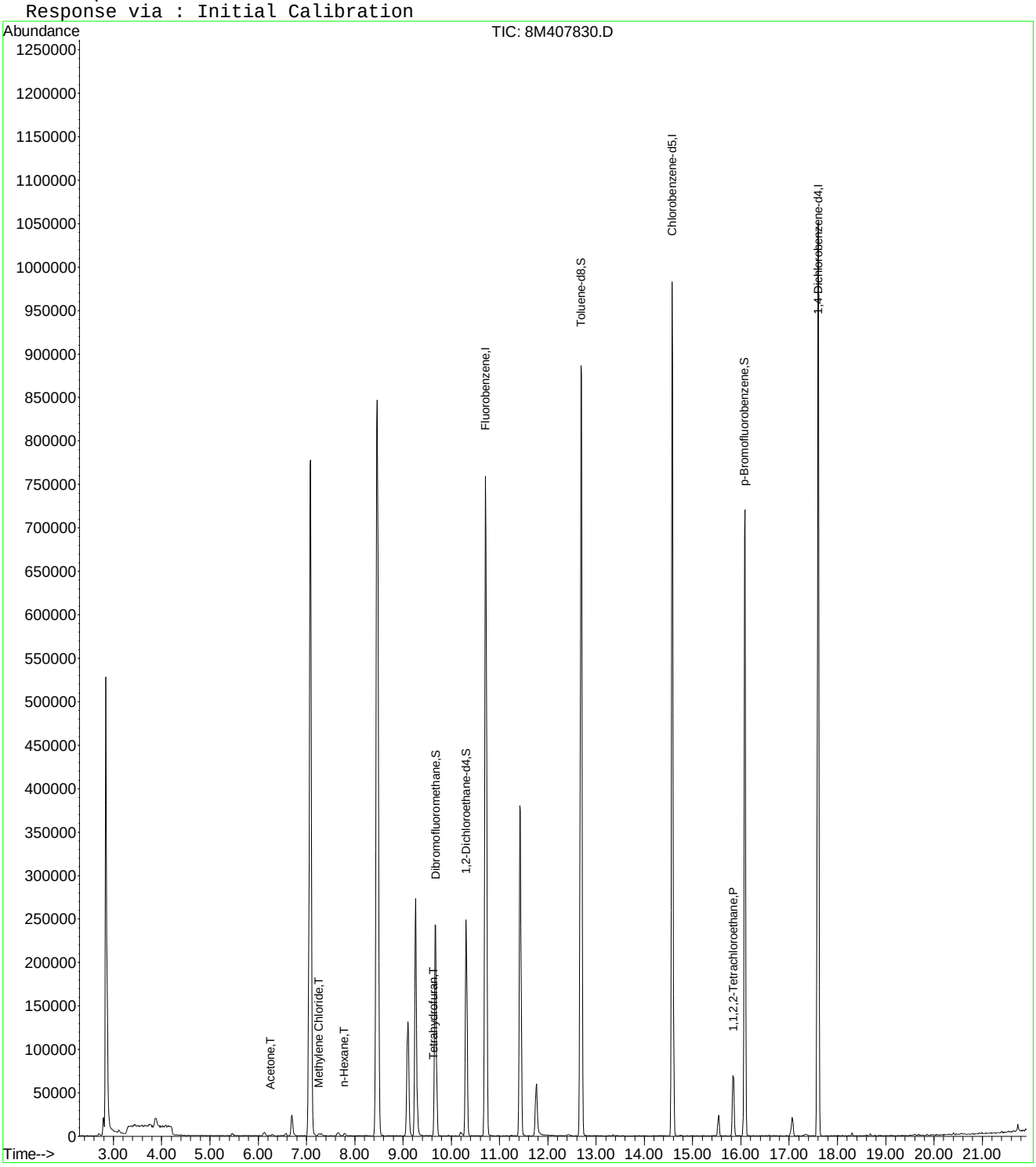

8M407830.D 8260WT.M Mon Oct 05 13:13:39 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:57 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	883897	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	665815	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	354078	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	35080	51.5703 ug/L	99
3) 3-Chloro-1-propene	7.07	41	841804	50.8844 ug/L	100
4) 2-Chloro-1,3-butadiene	8.47	53	851495	50.0222 ug/L	100
5) Ethyl Acetate	9.10	43	233139	51.8459 ug/L	97
6) Methacrylonitrile	9.26	67	101702	51.5301 ug/L	97
7) Isobutyl Alcohol	9.26	43	17567	95.3366 ug/L	98
8) 1-Butanol	10.19	56	3729	41.0570 ug/L	92
9) Methyl methacrylate	11.42	41	280126	51.4337 ug/L	98
10) 2-Nitropropane	11.76	43	37061	40.5407 ug/L	95
13) Cyclohexanone	15.84	55	40139	53.1730 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M407830.D A9FOOWTR.M Tue Oct 06 11:56:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

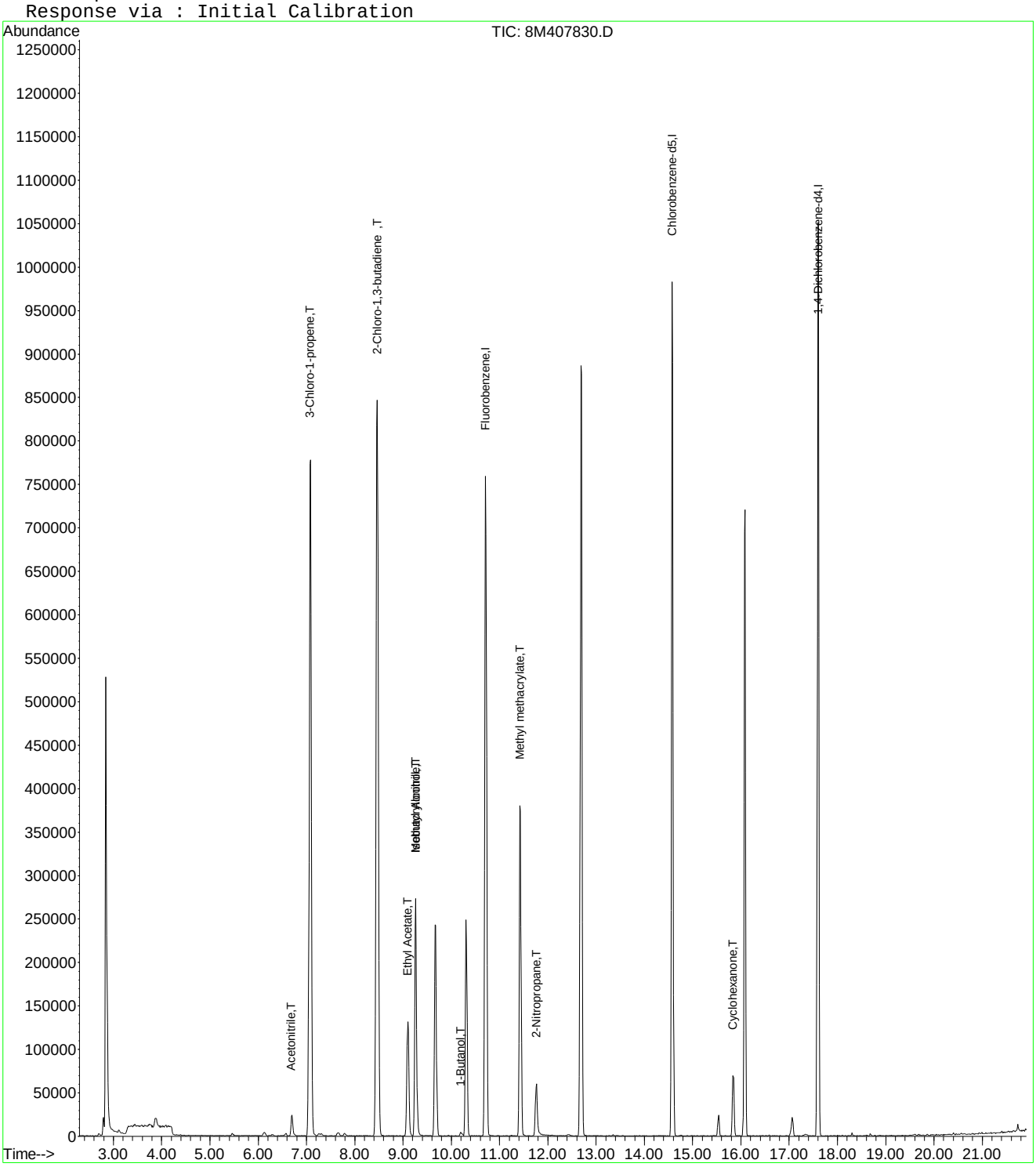

8M407830.D A9FOOWTR.M Tue Oct 06 11:56:57 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.5703	-3.1	100	0.00
3	T	3-Chloro-1-propene	50.0000	50.8844	-1.8	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	50.0222	-0.0	100	0.00
5	T	Ethyl Acetate	50.0000	51.8459	-3.7	100	0.00
6	T	Methacrylonitrile	50.0000	51.5301	-3.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	95.3366	4.7	100	0.00
8	T	1-Butanol	50.0000	41.0570	17.9	100	0.00
9	T	Methyl methacrylate	50.0000	51.4337	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	40.5407	18.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	53.1730	-6.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407830.D A9FOOWTR.M Tue Oct 06 11:54:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 13:42:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	866178	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	661111	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	356230	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	202803	24.6008 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.40%		
43) 1,2-Dichloroethane-d4	10.31	65	203632	24.2270 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.92%		
58) Toluene-d8	12.69	98	789106	25.7254 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.92%		
80) p-Bromofluorobenzene	16.08	95	308907	24.8529 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.40%		

Target Compounds					Qvalue
24) n-Hexane	7.79	57	3351	0.2544 ug/L	79
36) Tetrahydrofuran	9.64	42	639	0.4395 ug/L #	40
39) Cyclohexane	9.94	56	2379	0.1385 ug/L #	66

(#) = qualifier out of range (m) = manual integration
8M407831.D 8260WT.M Mon Oct 05 13:42:05 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 13:42 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

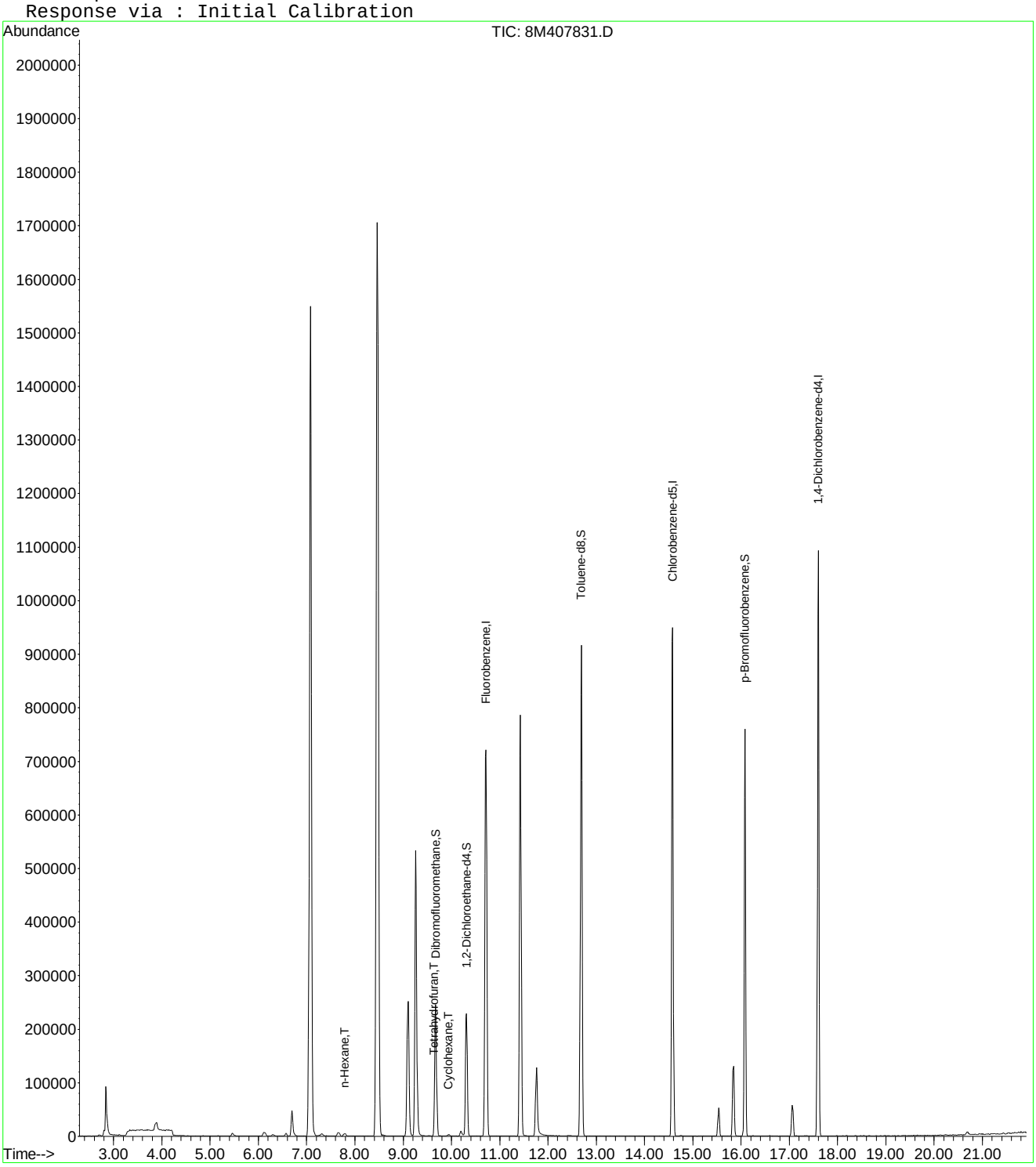

8M407831.D 8260WT.M Mon Oct 05 13:42:06 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:58 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	866178	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	661111	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	356230	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	67393	101.0995 ug/L	100
3) 3-Chloro-1-propene	7.08	41	1633129	100.7368 ug/L	100
4) 2-Chloro-1,3-butadiene	8.46	53	1684207	100.9649 ug/L	99
5) Ethyl Acetate	9.10	43	453445	102.9007 ug/L	99
6) Methacrylonitrile	9.26	67	196843	101.7762 ug/L	95
7) Isobutyl Alcohol	9.27	43	37534	207.8650 ug/L	92
8) 1-Butanol	10.20	56	8253	92.7258 ug/L	78
9) Methyl methacrylate	11.43	41	562497	105.3924 ug/L	98
10) 2-Nitropropane	11.76	43	77739	86.7776 ug/L	89
13) Cyclohexanone	15.84	55	74077	97.5385 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M407831.D A9FOOWTR.M Tue Oct 06 11:56:58 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

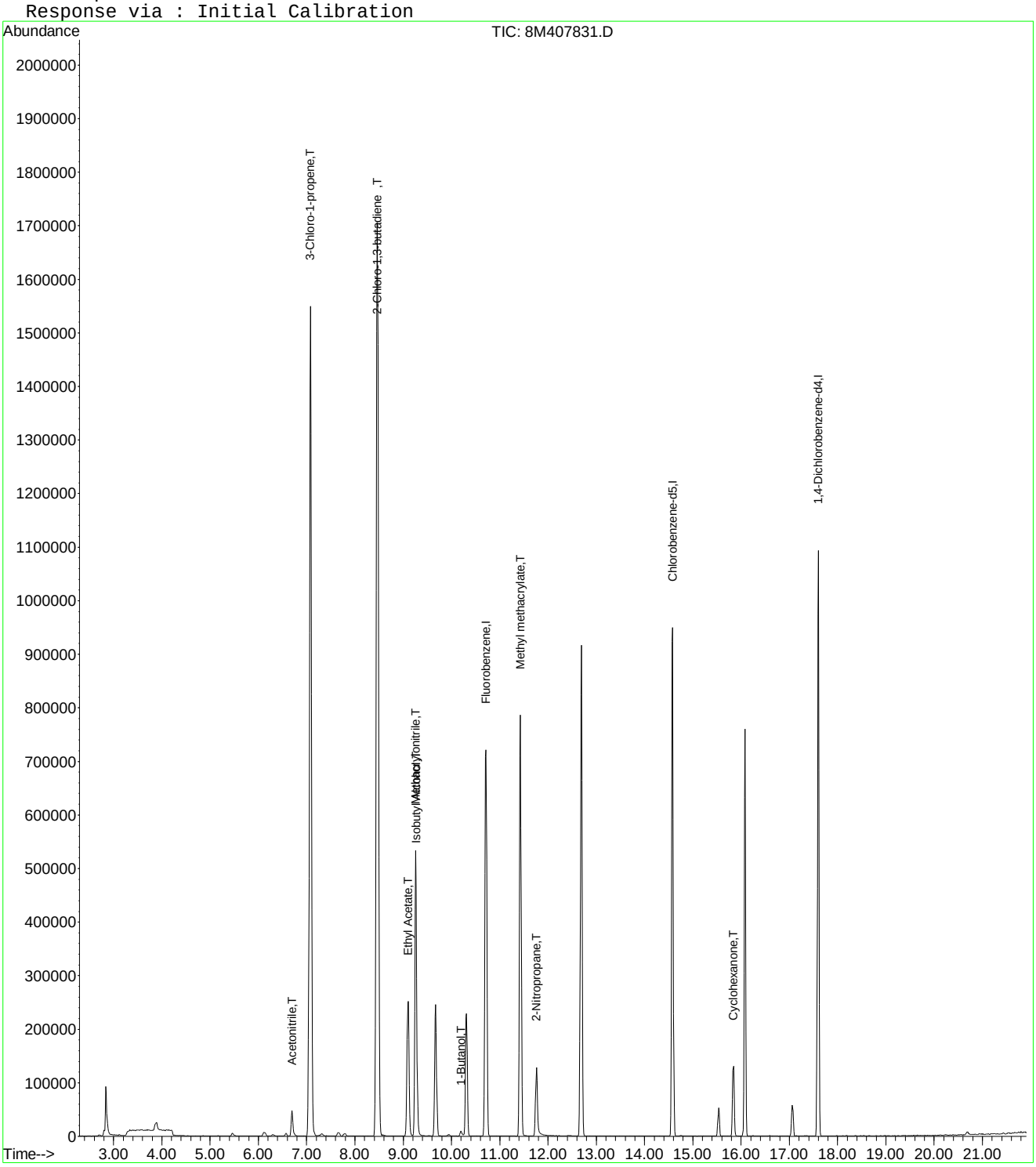

8M407831.D A9FOOWTR.M Tue Oct 06 11:56:58 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.0995	-1.1	100	0.00
3	T	3-Chloro-1-propene	100.0000	100.7368	-0.7	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	100.9649	-1.0	100	0.00
5	T	Ethyl Acetate	100.0000	102.9007	-2.9	100	0.00
6	T	Methacrylonitrile	100.0000	101.7762	-1.8	100	0.00
7	T	Isobutyl Alcohol	200.0000	207.8650	-3.9	100	0.00
8	T	1-Butanol	100.0000	92.7258	7.3	100	0.00
9	T	Methyl methacrylate	100.0000	105.3924	-5.4	100	0.00
10	T	2-Nitropropane	100.0000	86.7776	13.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	97.5386	2.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407831.D A9FOOWTR.M Tue Oct 06 11:55:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 14:10:58 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	897754	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	673480	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	363907	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	208738	24.4301 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.72%		
43) 1,2-Dichloroethane-d4	10.30	65	213605	24.5197 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.08%		
58) Toluene-d8	12.69	98	807841	25.8525 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.40%		
80) p-Bromofluorobenzene	16.08	95	324104	25.5255 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.12%		

Target Compounds

					Qvalue
13) Acetone	6.25	43	677	0.5081 ug/L #	48
18) Methyl acetate	7.08	43	1823	0.3618 ug/L #	1
20) Carbon Disulfide	7.30	76	5054	0.1712 ug/L #	78
24) n-Hexane	7.78	57	7743	0.5671 ug/L	88
36) Tetrahydrofuran	9.64	42	1466	0.9728 ug/L #	40
39) Cyclohexane	9.95	56	4715	0.2647 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M407832.D 8260WT.M Mon Oct 05 14:10:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 14:10 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

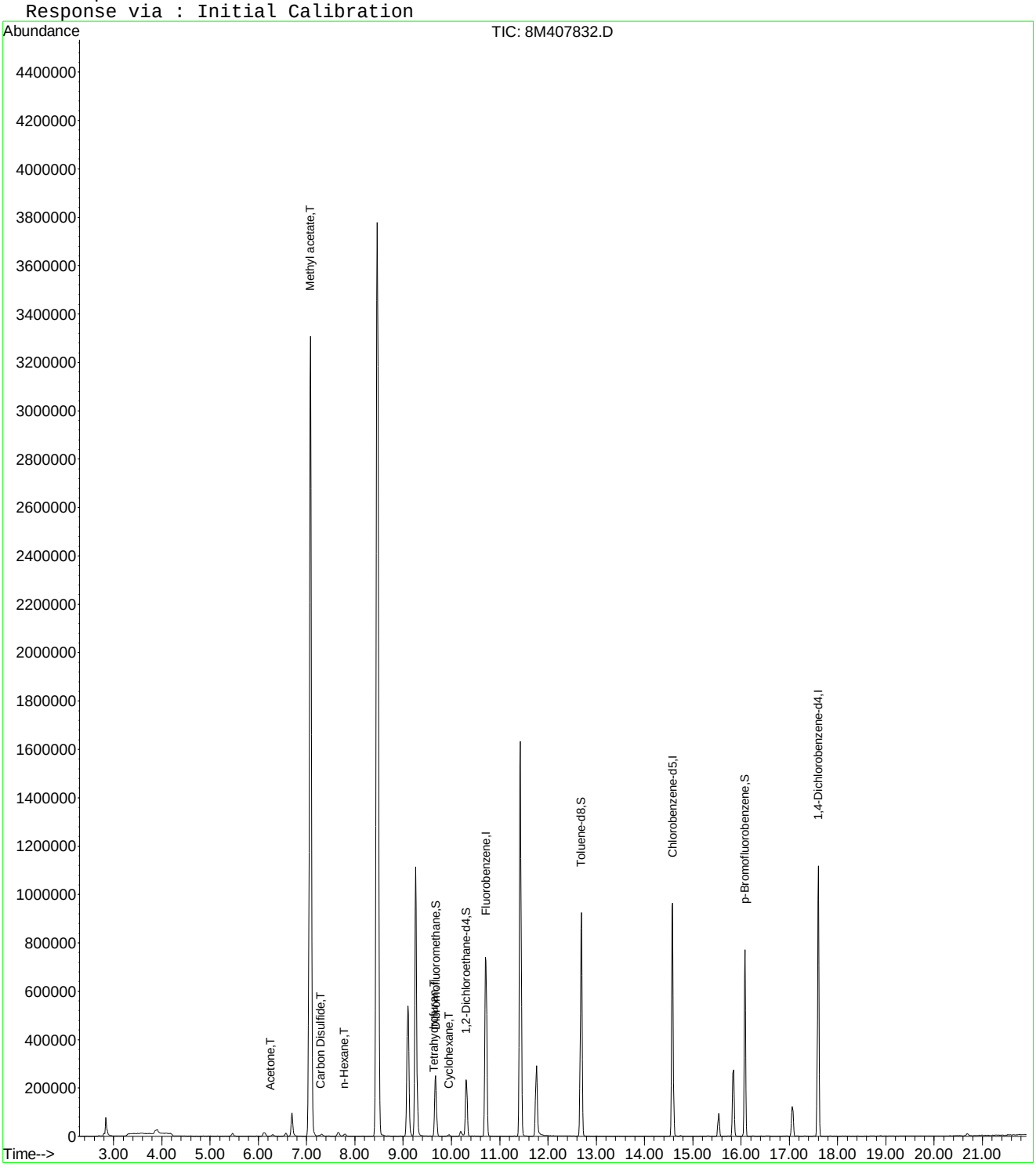

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:58 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	897754	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	673480	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	363907	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	138277	200.1400 ug/L	97
3) 3-Chloro-1-propene	7.08	41	3475078	206.8151 ug/L	99
4) 2-Chloro-1,3-butadiene	8.46	53	3691199	213.4973 ug/L	98
5) Ethyl Acetate	9.09	43	949825	207.9635 ug/L	98
6) Methacrylonitrile	9.26	67	412747	205.9018 ug/L	95
7) Isobutyl Alcohol	9.27	43	71985	384.6346 ug/L	94
8) 1-Butanol	10.20	56	18764	203.4062 ug/L	78
9) Methyl methacrylate	11.43	41	1165248	210.6479 ug/L	99
10) 2-Nitropropane	11.76	43	181242	195.1989 ug/L	92
13) Cyclohexanone	15.84	55	156208	201.3429 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M407832.D A9FOOWTR.M Tue Oct 06 11:56:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

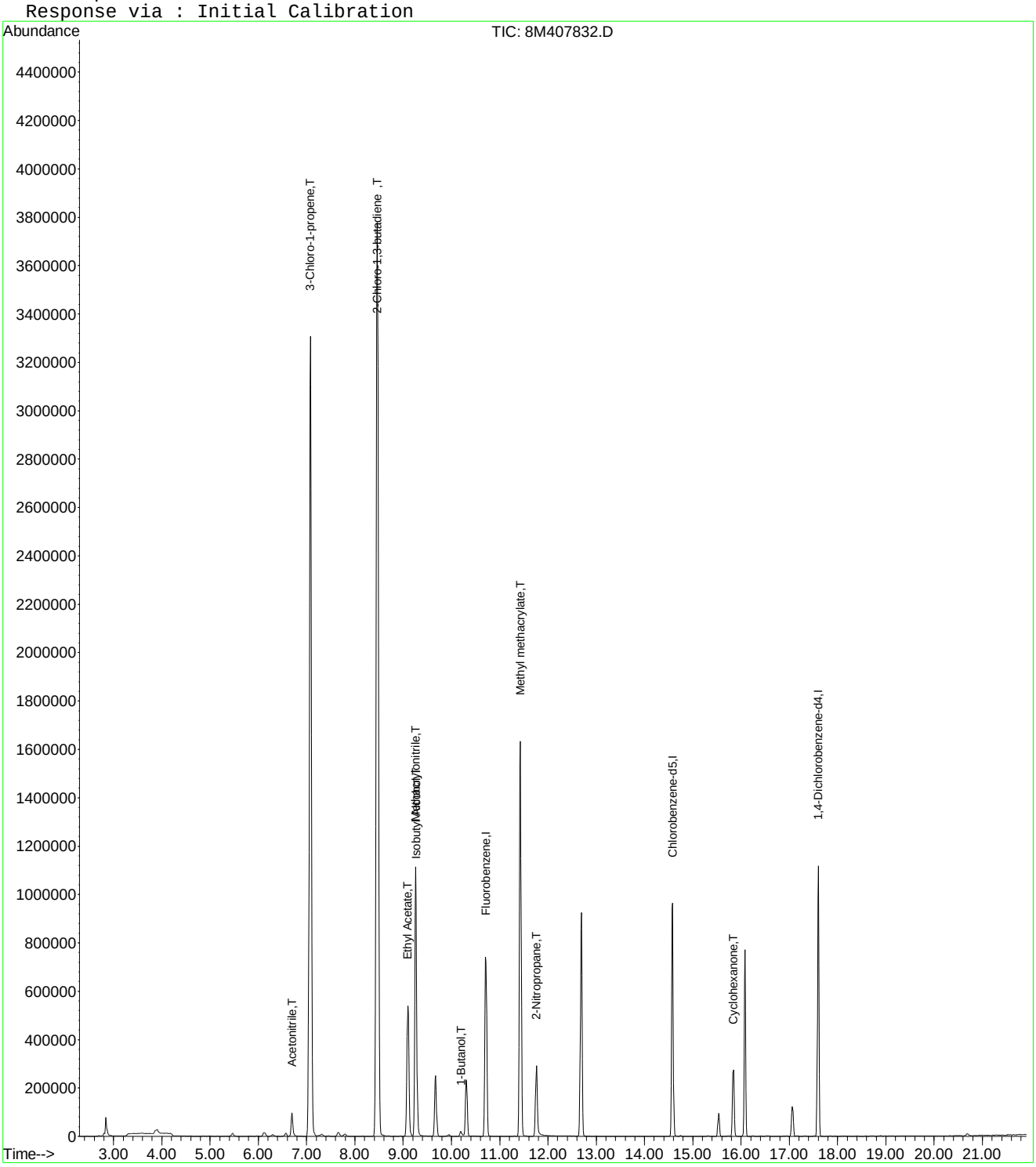

8M407832.D A9FOOWTR.M Tue Oct 06 11:56:59 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 14:39:56 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	914795	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	689423	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	367388	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	213426	24.5135 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.04%		
43) 1,2-Dichloroethane-d4	10.30	65	216408	24.3787 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.52%		
58) Toluene-d8	12.69	98	818846	25.5987 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.40%		
80) p-Bromofluorobenzene	16.08	95	327784	25.5707 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.28%		

Target Compounds

					Qvalue
13) Acetone	6.25	43	1107	0.8153 ug/L #	48
18) Methyl acetate	7.07	43	3926	0.7646 ug/L #	1
19) Methylene Chloride	7.26	84	1197	0.1300 ug/L	55
20) Carbon Disulfide	7.31	76	6659	0.2214 ug/L #	86
24) n-Hexane	7.78	57	11874	0.8534 ug/L	97
30) Propionitrile	9.05	54	208	0.3030 ug/L #	1
31) 2,2-Dichloropropane	9.09	77	2023	0.1353 ug/L #	42
36) Tetrahydrofuran	9.64	42	1301	0.8472 ug/L #	40
39) Cyclohexane	9.94	56	6598	0.3636 ug/L	94
72) Ethylbenzene	14.75	106	2422	0.1584 ug/L	54
73) m-,p-Xylene	14.75	106	2422	0.1381 ug/L	82

(#) = qualifier out of range (m) = manual integration
8M407833.D 8260WT.M Mon Oct 05 14:39:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 14:39 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

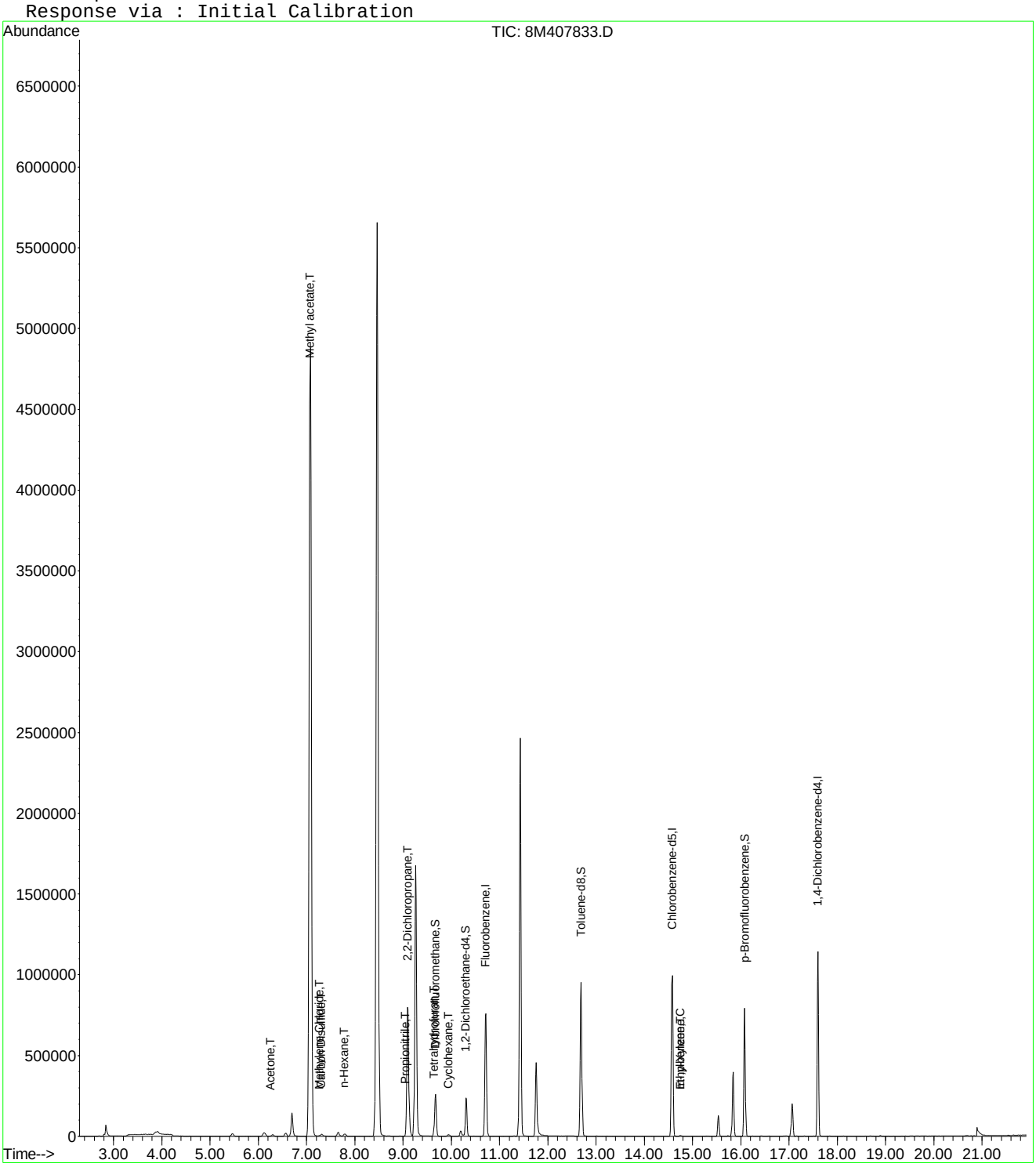

8M407833.D 8260WT.M Mon Oct 05 14:39:58 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:59 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	914795	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	689423	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	367388	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	204679	290.7307 ug/L	99
3) 3-Chloro-1-propene	7.08	41	5107808	298.3223 ug/L	99
4) 2-Chloro-1,3-butadiene	8.46	53	5432917	308.3838 ug/L	97
5) Ethyl Acetate	9.09	43	1404245	301.7310 ug/L	99
6) Methacrylonitrile	9.26	67	619787	303.4256 ug/L	96
7) Isobutyl Alcohol	9.27	43	113276	593.9881 ug/L	97
8) 1-Butanol	10.19	56	30662	326.1916 ug/L	85
9) Methyl methacrylate	11.43	41	1738162	308.3633 ug/L	98
10) 2-Nitropropane	11.76	43	289289	305.7623 ug/L	92
13) Cyclohexanone	15.84	55	224807	287.0174 ug/L	90

(#) = qualifier out of range (m) = manual integration
8M407833.D A9FOOWTR.M Tue Oct 06 11:56:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

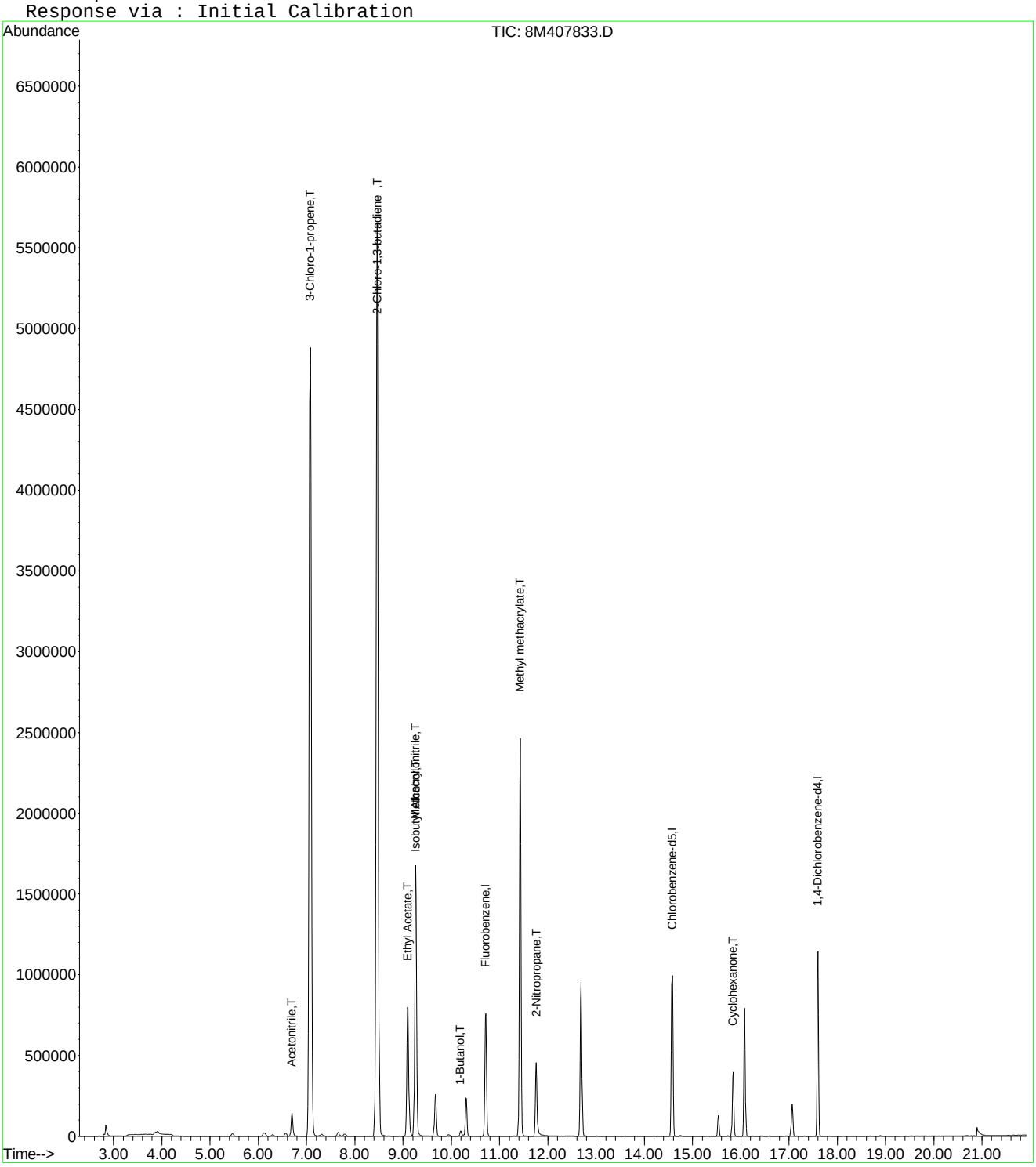

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 15:09:02 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	933879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	691340	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	373332	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	222232	25.0033 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.00%		
43) 1,2-Dichloroethane-d4	10.31	65	222556	24.5590 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.24%		
58) Toluene-d8	12.69	98	831940	25.9359 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.76%		
80) p-Bromofluorobenzene	16.08	95	329799	25.3183 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.28%		

Target Compounds

					Qvalue
13) Acetone	6.25	43	2307	1.6644 ug/L #	48
18) Methyl acetate	7.07	43	5300	1.0111 ug/L #	1
19) Methylene Chloride	7.26	84	1631	0.1735 ug/L #	6
20) Carbon Disulfide	7.30	76	9227	0.3005 ug/L #	79
24) n-Hexane	7.79	57	16005	1.1268 ug/L	89
29) 2-Butanone	8.89	43	1241	0.5197 ug/L #	57
30) Propionitrile	9.07	54	773	1.1032 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	2811	0.1842 ug/L #	42
36) Tetrahydrofuran	9.65	42	1879	1.1986 ug/L #	40
39) Cyclohexane	9.95	56	9653	0.5211 ug/L	94
73) m-,p-Xylene	14.75	106	3655	0.2078 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M407834.D 8260WT.M Mon Oct 05 15:09:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 15:09 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

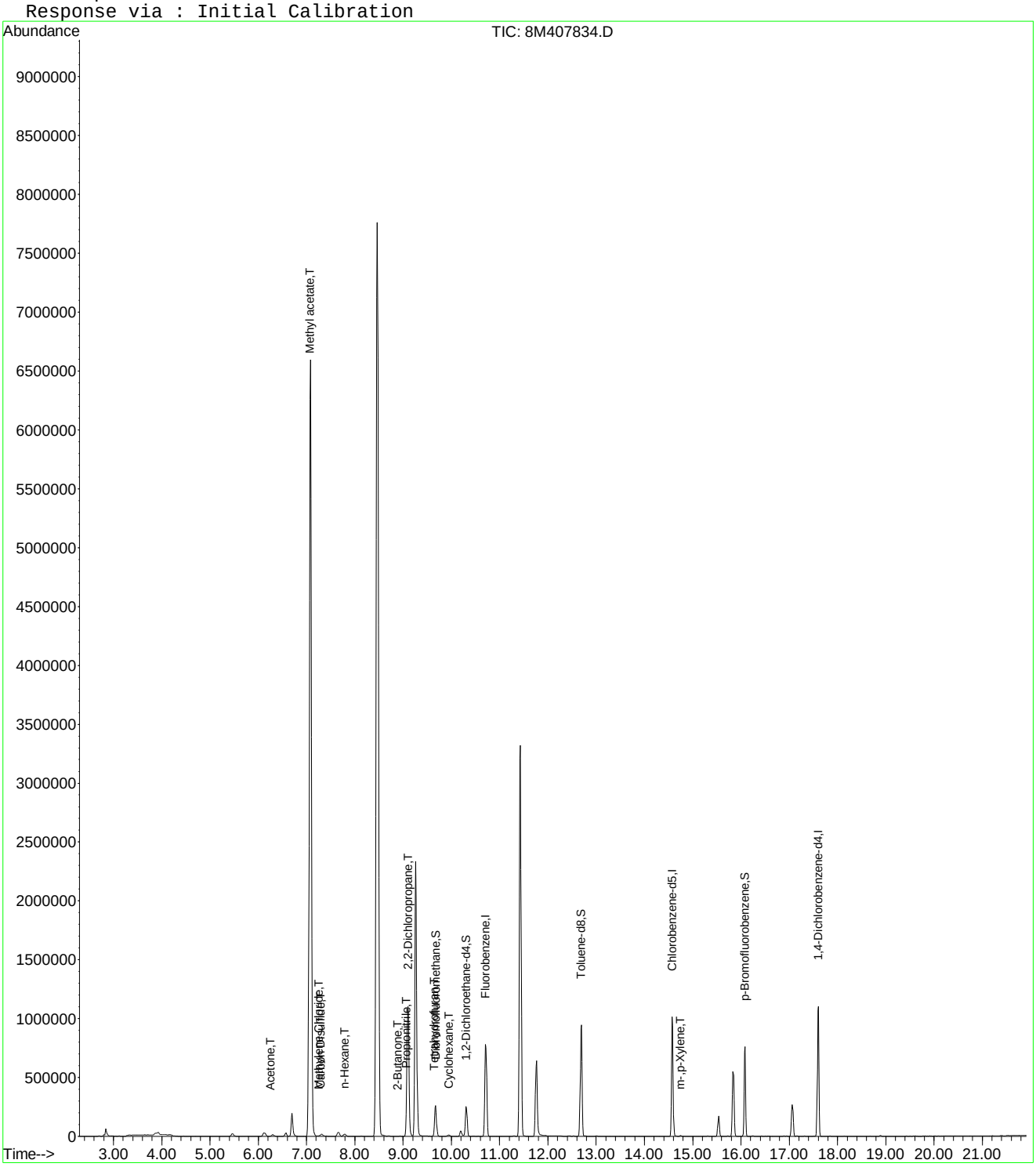

8M407834.D 8260WT.M Mon Oct 05 15:09:03 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:57:00 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	933879	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	691340	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	373332	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	276454	384.6570 ug/L	96
3) 3-Chloro-1-propene	7.08	41	6839307	391.2880 ug/L	97
4) 2-Chloro-1,3-butadiene	8.47	53	7261886	403.7765 ug/L	94
5) Ethyl Acetate	9.10	43	1919647	404.0467 ug/L	99
6) Methacrylonitrile	9.26	67	856150	410.5753 ug/L	97
7) Isobutyl Alcohol	9.27	43	151941	780.4553 ug/L	92
8) 1-Butanol	10.19	56	39703	413.7412 ug/L	80
9) Methyl methacrylate	11.43	41	2385524	414.5619 ug/L	99
10) 2-Nitropropane	11.76	43	432493	447.7796 ug/L	93
13) Cyclohexanone	15.83	55	313432	393.7962 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M407834.D A9FOOWTR.M Tue Oct 06 11:57:00 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:57 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

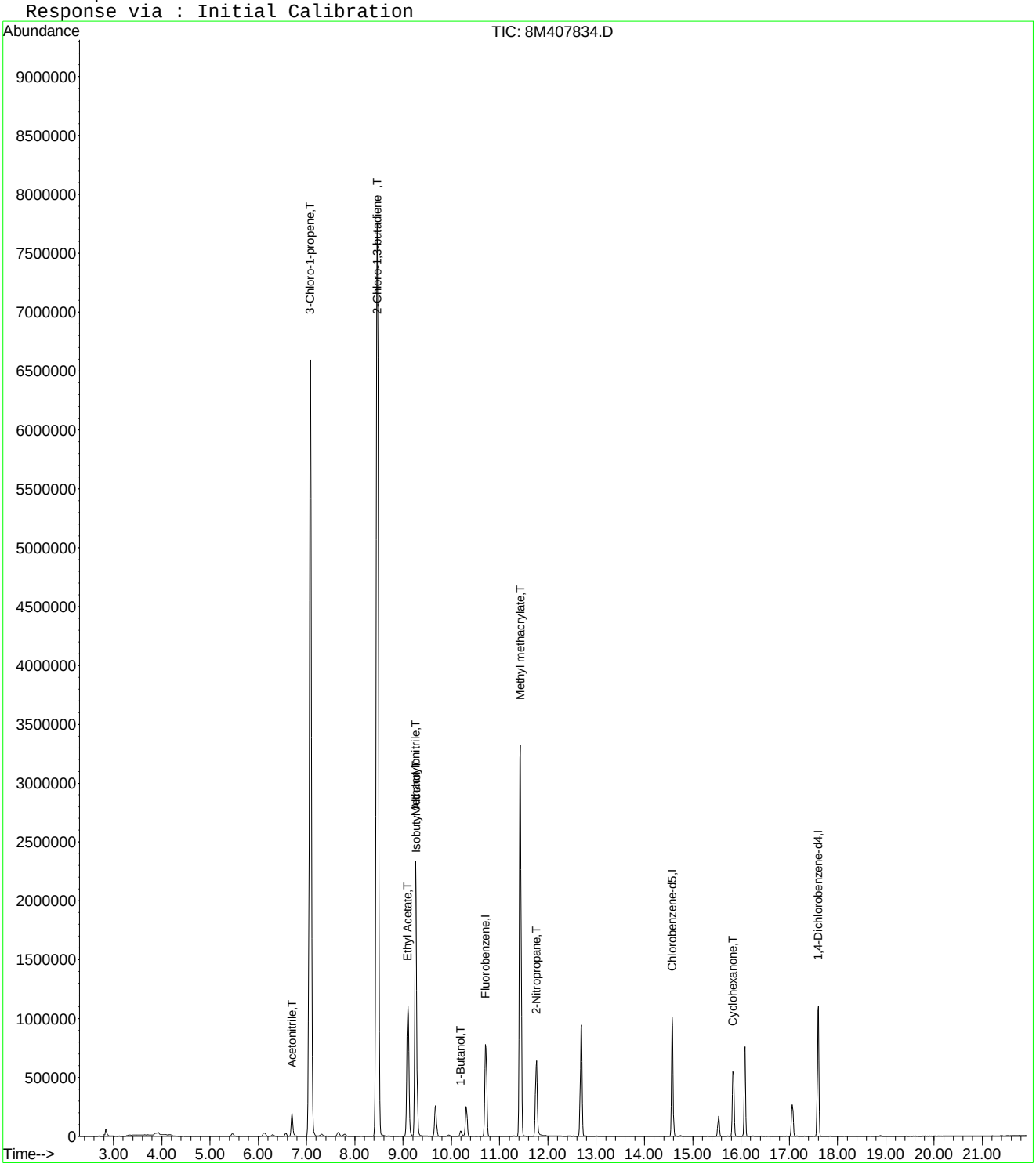

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 15:37:56 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	952136	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	712384	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	381907	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	222948	24.6029 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.40%		
43) 1,2-Dichloroethane-d4	10.30	65	229612	24.8518 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.40%		
58) Toluene-d8	12.69	98	849027	25.6867 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.76%		
80) p-Bromofluorobenzene	16.08	95	340742	25.5710 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.28%		

Target Compounds

					Qvalue
13) Acetone	6.26	43	2624	1.8568 ug/L #	48
17) Iodomethane	6.98	142	414	1.8830 ug/L #	28
18) Methyl acetate	7.00	43	818	0.1531 ug/L #	64
19) Methylene Chloride	7.27	84	2206	0.2301 ug/L	69
20) Carbon Disulfide	7.30	76	12486	0.3989 ug/L #	78
24) n-Hexane	7.79	57	21760	1.5026 ug/L	96
29) 2-Butanone	8.90	43	1797	0.7381 ug/L #	57
30) Propionitrile	9.07	54	1629	2.2802 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3861	0.2482 ug/L #	52
36) Tetrahydrofuran	9.65	42	2063	1.2908 ug/L #	40
39) Cyclohexane	9.94	56	13508	0.7152 ug/L	88
48) Methylcyclohexane	11.31	83	2456	0.1572 ug/L #	73
73) m-,p-Xylene	14.75	106	3865	0.2133 ug/L	76

(#) = qualifier out of range (m) = manual integration
8M407835.D 8260WT.M Mon Oct 05 15:37:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 15:37 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

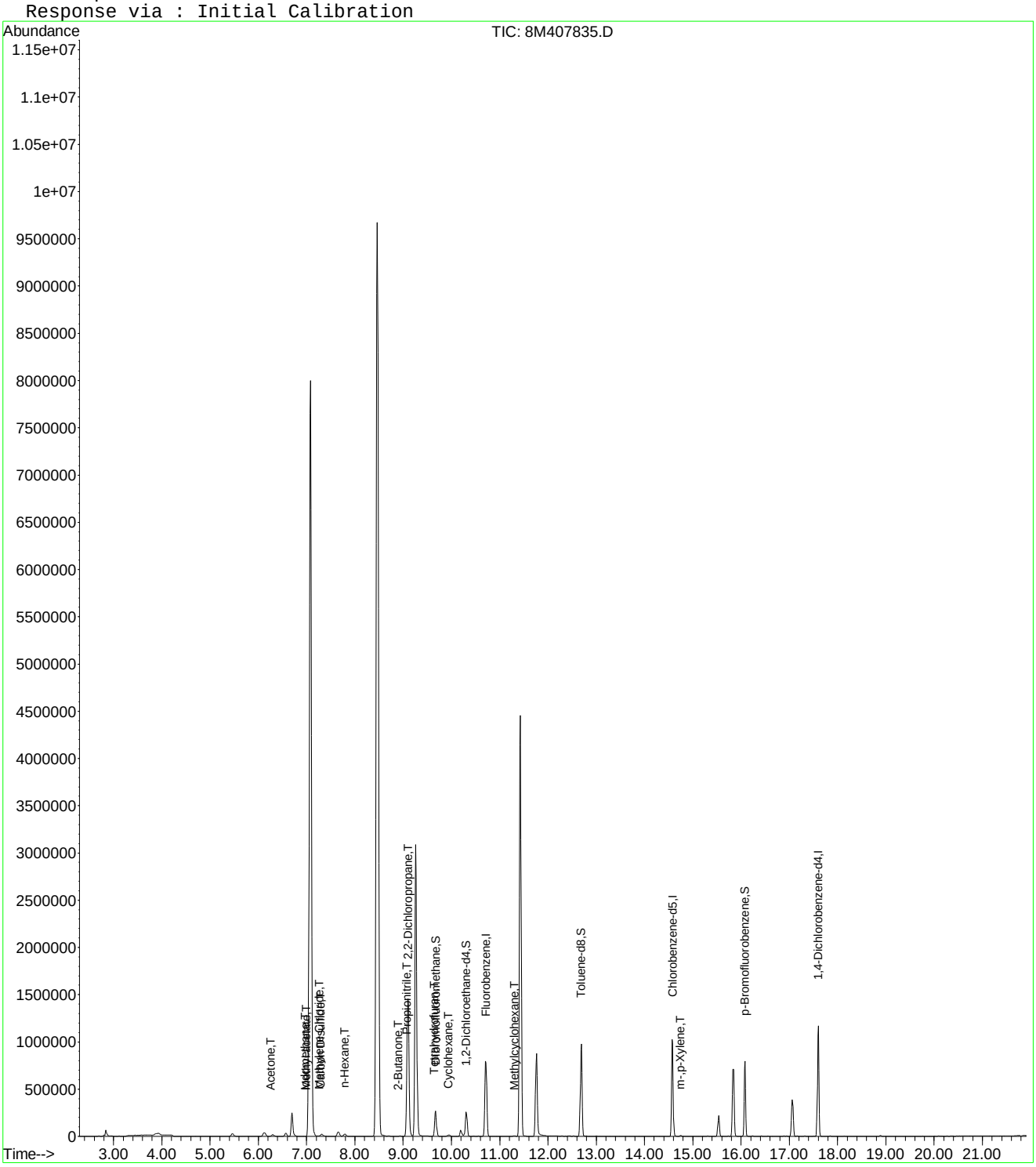

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:57:01 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	952136	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	712384	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	381907	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	355656	485.3695 ug/L	97
3) 3-Chloro-1-propene	7.08	41	8223448	461.4556 ug/L	95
4) 2-Chloro-1,3-butadiene	8.46	53	8764656	477.9893 ug/L	90
5) Ethyl Acetate	9.09	43	2535700	523.4795 ug/L	100
6) Methacrylonitrile	9.26	67	1137496	535.0377 ug/L	97
7) Isobutyl Alcohol	9.27	43	214402	1080.1734 ug/L	98
8) 1-Butanol	10.19	56	54442	556.4564 ug/L	87
9) Methyl methacrylate	11.43	41	3137676	534.8171 ug/L	99
10) 2-Nitropropane	11.76	43	594174	603.3794 ug/L	94
13) Cyclohexanone	15.83	55	412487	506.6127 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M407835.D A9FOOWTR.M Tue Oct 06 11:57:01 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:57 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

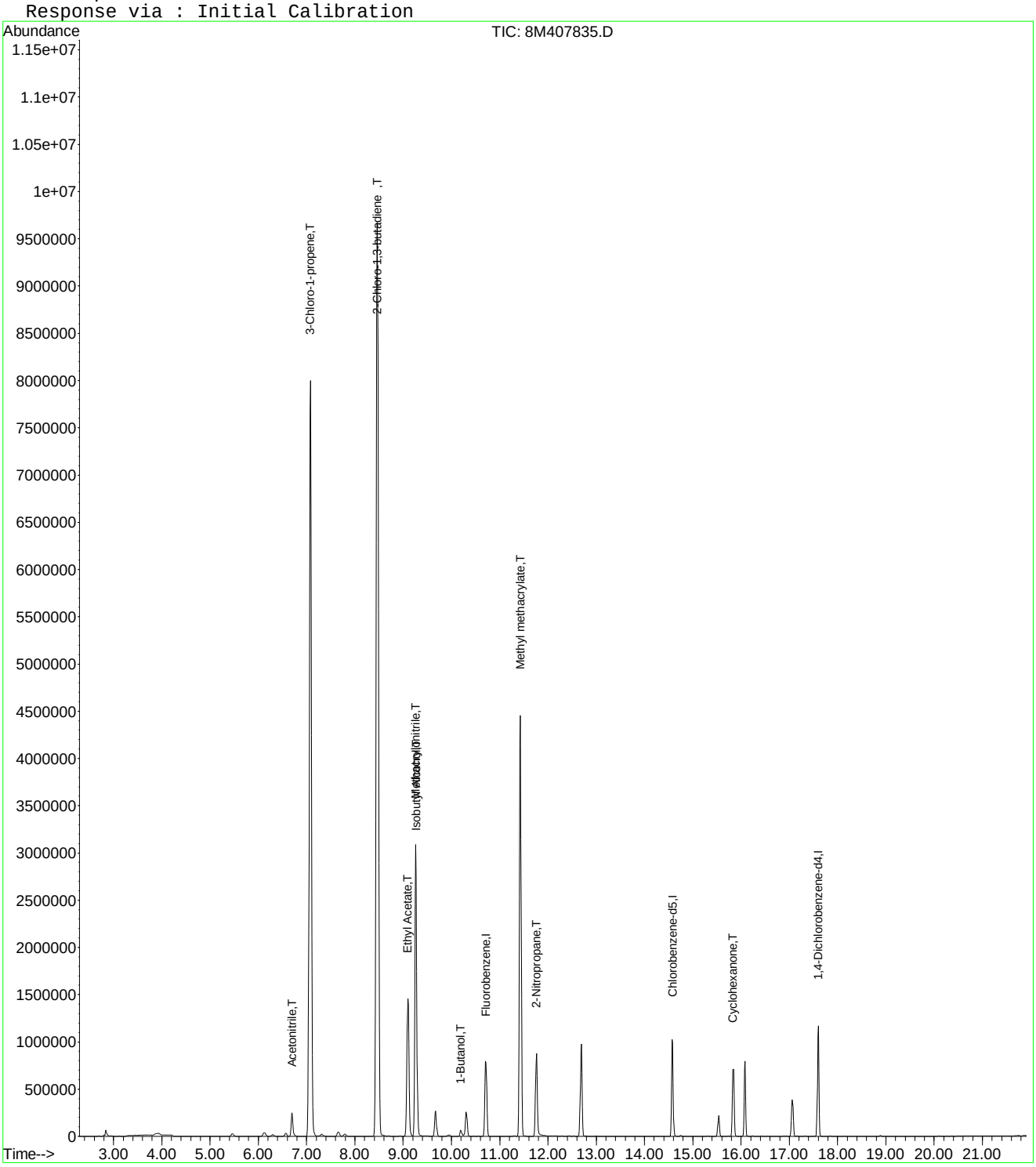

8M407835.D A9FOOWTR.M Tue Oct 06 11:57:01 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 17:10:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	910348	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	672710	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	361469	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	216028	24.9336 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.72%		
43) 1,2-Dichloroethane-d4	10.31	65	220386	24.9481 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.80%		
58) Toluene-d8	12.68	98	805489	25.8067 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	318985	25.2918 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.16%		

Target Compounds					Qvalue
5) 1,3-Butadiene	3.90	54	680860	64.5479 ug/L	96
9) Diethyl ether	5.91	59	636031	102.4537 ug/L	99
18) Methyl acetate	7.09	43	861	0.1685 ug/L #	1
29) 2-Butanone	8.90	43	1914	0.8222 ug/L	83
30) Propionitrile	8.99	54	68619	100.4600 ug/L	99
36) Tetrahydrofuran	9.65	42	849	0.5556 ug/L #	40
39) Cyclohexane	9.96	56	4155	0.2301 ug/L #	88
51) 1,4-Dioxane	11.71	88	8398	188.8572 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M407838.D 8260WT.M Mon Oct 05 17:10:32 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 17:10 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

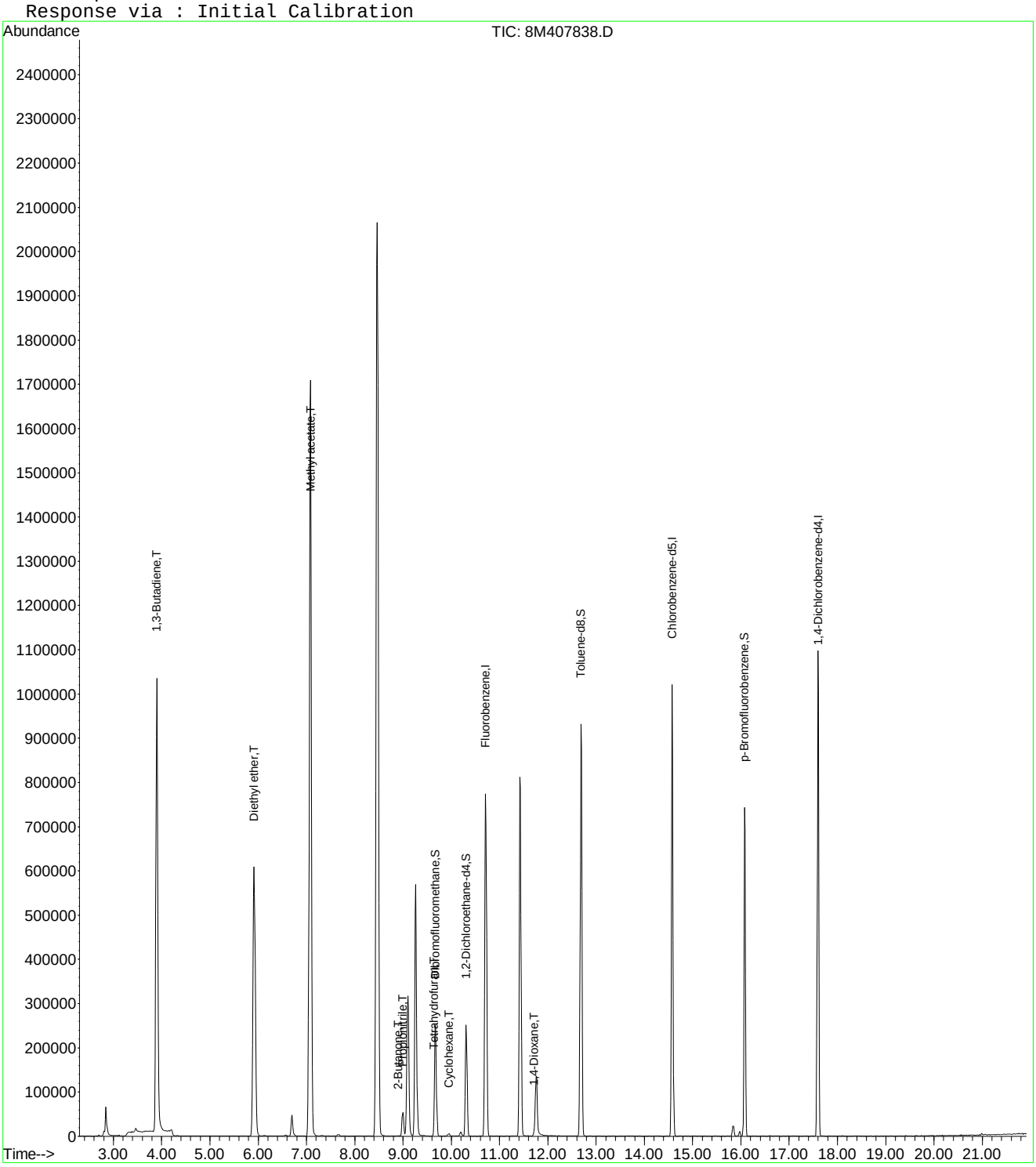

8M407838.D 8260WT.M Mon Oct 05 17:10:33 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:57:03 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	910348	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	672710	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	361469	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	68331	97.5330 ug/L	99
3) 3-Chloro-1-propene	7.08	41	1823769	107.0379 ug/L	100
4) 2-Chloro-1,3-butadiene	8.47	53	2081638	118.7353 ug/L	100
5) Ethyl Acetate	9.10	43	556798	120.2240 ug/L	97
6) Methacrylonitrile	9.26	67	209938	103.2802 ug/L	94
7) Isobutyl Alcohol	9.27	43	38987	205.4358 ug/L	96
8) 1-Butanol	10.20	56	7758	82.9351 ug/L	93
9) Methyl methacrylate	11.42	41	590033	105.1877 ug/L	99
10) 2-Nitropropane	11.75	43	94685	100.5656 ug/L	93
13) Cyclohexanone	15.84	55	13964	18.1202 ug/L	94

(#) = qualifier out of range (m) = manual integration
8M407838.D A9FOOWTR.M Tue Oct 06 11:57:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:57 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

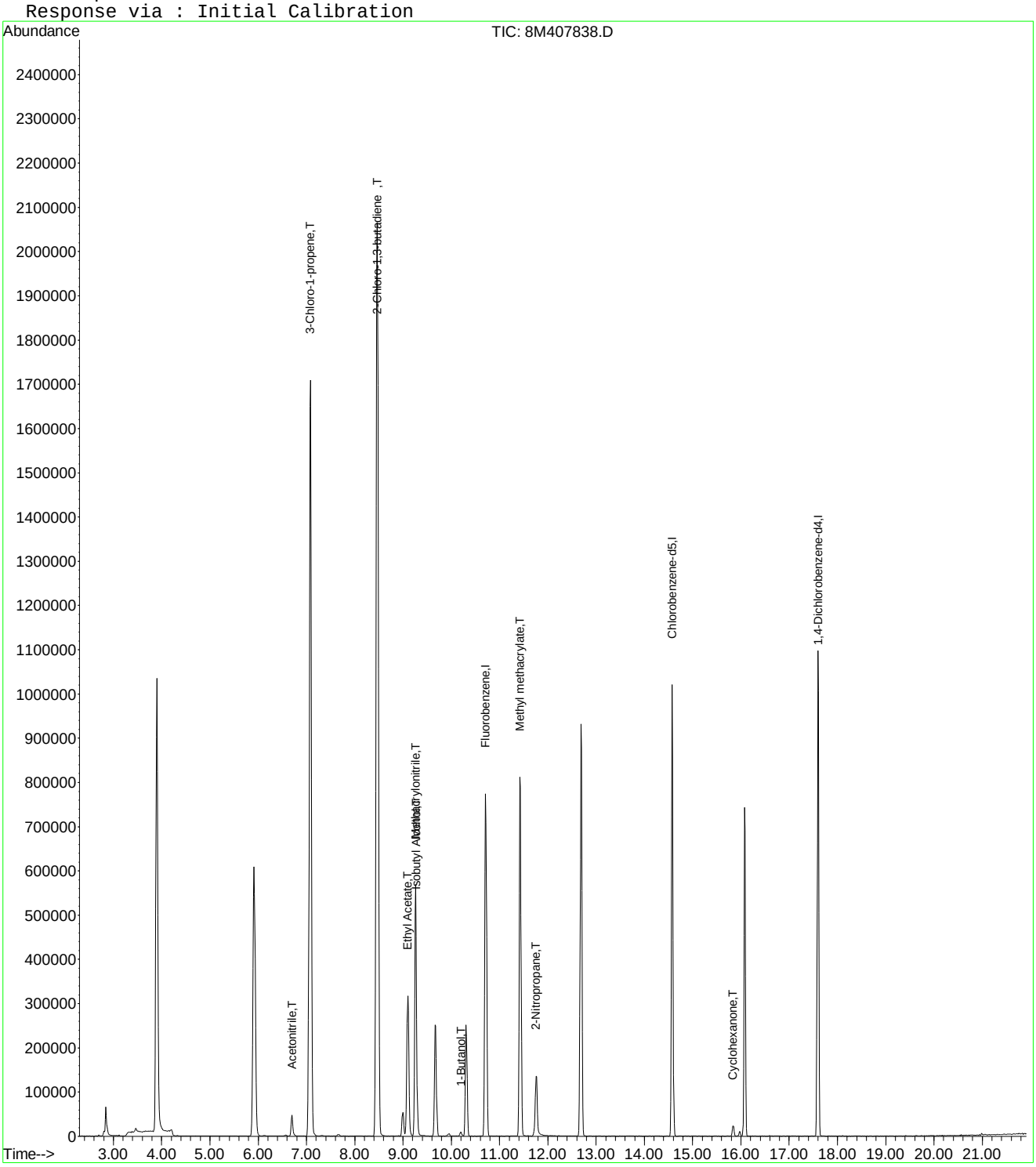

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG540826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 12:32:35 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	910348	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	672710	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	361469	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	68331	97.5330 ug/L	99
3) 3-Chloro-1-propene	7.08	41	1823769	107.0379 ug/L	100
4) 2-Chloro-1,3-butadiene	8.47	53	2081638	118.7353 ug/L	100
5) Ethyl Acetate	9.10	43	556798	120.2240 ug/L	97
6) Methacrylonitrile	9.26	67	209938	103.2802 ug/L	94
7) Isobutyl Alcohol	9.27	43	38987	205.4358 ug/L	96
8) 1-Butanol	10.20	56	7758	82.9351 ug/L	93
9) Methyl methacrylate	11.42	41	590033	105.1877 ug/L	99
10) 2-Nitropropane	11.75	43	94685	100.5656 ug/L	93
13) Cyclohexanone	15.84	55	13964	18.1202 ug/L	94

(#) = qualifier out of range (m) = manual integration
8M407838.D A9FOOWTR.M Tue Oct 06 12:32:36 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG540826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:32 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

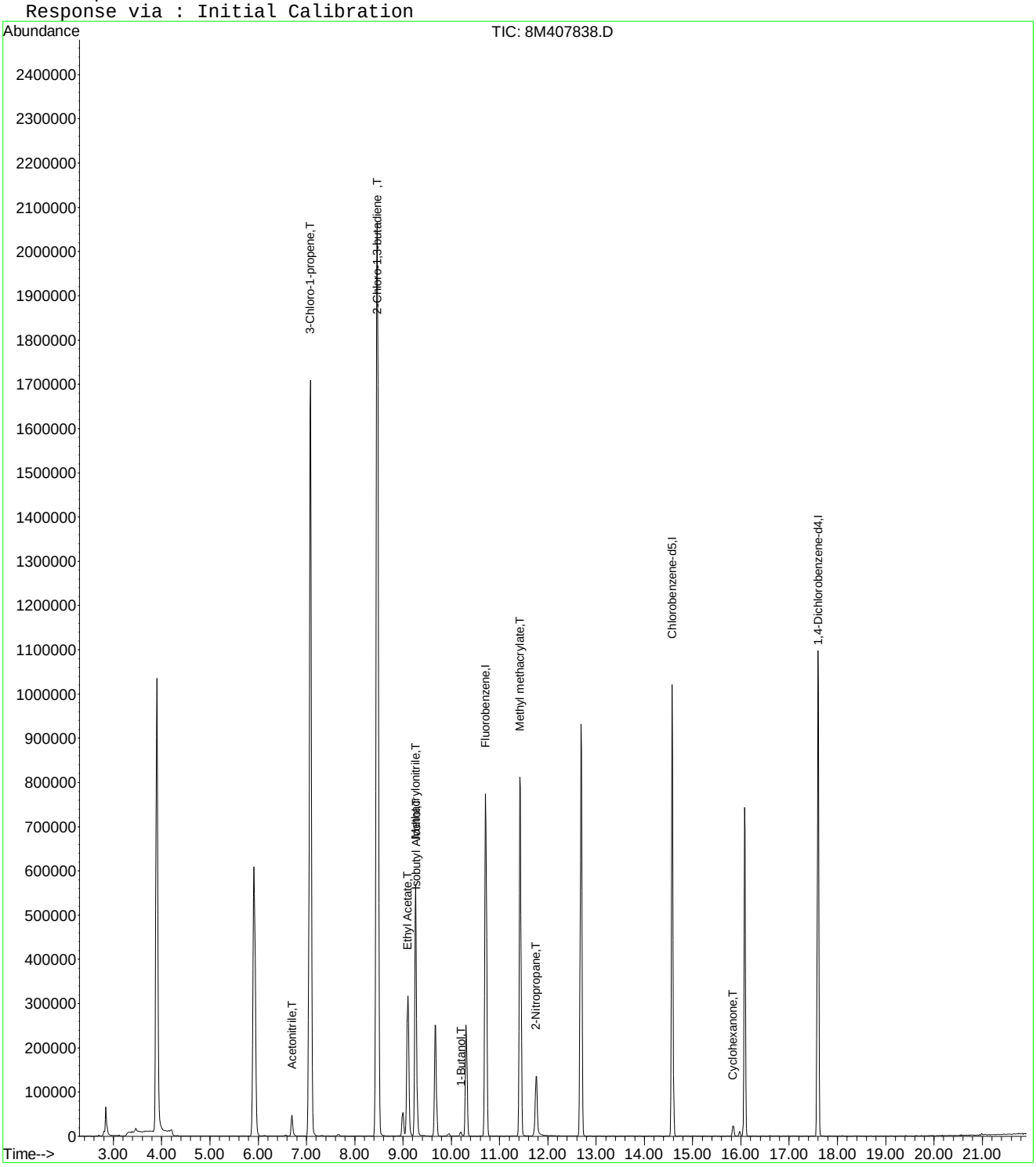

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG540826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	105	0.00
2	T	Acetonitrile	100.0000	97.5330	2.5	101	0.00
3	T	3-Chloro-1-propene	100.0000	107.0379	-7.0	112	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	118.7354	-18.7	124	0.00
5	T	Ethyl Acetate	100.0000	120.2240	-20.2	123	0.00
6	T	Methacrylonitrile	100.0000	103.2802	-3.3	107	0.00
7	T	Isobutyl Alcohol	200.0000	205.4358	-2.7	104	0.00
8	T	1-Butanol	100.0000	82.9351	17.1	94	0.01
9	T	Methyl methacrylate	100.0000	105.1877	-5.2	105	0.00
10	T	2-Nitropropane	100.0000	100.5656	-0.6	122	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	102	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
13	T	Cyclohexanone	100.0000	18.1202	81.9#	19	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407838.D A9FOOWTR.M Tue Oct 06 12:32:39 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410193.D Vial: 2
Acq On : 17 Feb 2016 14:49 Operator: TMB
Sample : WG556046-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:05 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	777257	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	550547	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	269341	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.68	98	534	0.0196 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.08%#	
80) p-Bromofluorobenzene	16.07	95	995	0.0951 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.40%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	3421	0.2792 ug/L	79
3) Chloromethane	3.63	50	7898	0.4216 ug/L #	66
4) Vinyl Chloride	3.85	62	4042	0.3099 ug/L	95
5) 1,3-Butadiene	3.90	54	4970	Below Cal	93
6) Bromomethane	4.74	94	1632	0.2634 ug/L	98
7) Chloroethane	4.91	64	1116	0.1894 ug/L #	43
8) Trichlorofluoromethane	5.39	101	3850	0.2754 ug/L #	88
10) Isoprene	5.95	67	2992	0.3159 ug/L	79
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	1006	0.1318 ug/L #	34
14) 1,1-Dichloroethene	6.48	61	3709	0.2641 ug/L	96
16) Dimethyl Sulfide	6.74	62	1734	0.2819 ug/L	60
19) Methylene Chloride	7.25	84	2125	0.2764 ug/L	94
20) Carbon Disulfide	7.30	76	8528	0.3533 ug/L	95
22) Methyl Tert Butyl Ether	7.46	73	3897	0.2495 ug/L #	61
23) trans-1,2-Dichloroethene	7.71	61	4093	0.3118 ug/L	85
24) n-Hexane	7.79	57	3138	0.2804 ug/L	84
26) Vinyl Acetate	8.31	43	2147	0.1601 ug/L #	79
27) 1,1-Dichloroethane	8.32	63	4641	0.2833 ug/L #	79
31) 2,2-Dichloropropane	9.09	77	3960	0.3074 ug/L #	73
32) cis-1,2-Dichloroethene	9.17	96	2808	0.3321 ug/L	84
33) Chloroform	9.38	83	4455	0.3065 ug/L	100
35) Bromochloromethane	9.60	130	975	0.2304 ug/L	86
36) Tetrahydrofuran	9.63	42	4679	3.4944 ug/L	93
38) 1,1,1-Trichloroethane	9.91	97	3672	0.2769 ug/L	84
39) Cyclohexane	9.94	56	4507	0.2920 ug/L #	86
40) 1,1-Dichloropropene	10.11	75	3247	0.2814 ug/L	82
42) Carbon Tetrachloride	10.25	117	3376	0.2797 ug/L	87
45) 1,2-Dichloroethane	10.43	62	2598	0.2353 ug/L #	61
46) Benzene	10.47	78	9220	0.3067 ug/L	98
47) Trichloroethene	11.21	130	4137	0.5109 ug/L	88
48) Methylcyclohexane	11.31	83	3561	0.3054 ug/L	91
49) 1,2-Dichloropropane	11.43	63	2195	0.2597 ug/L	77
50) Bromodichloromethane	11.73	83	3110	0.2898 ug/L #	74
52) Dibromomethane	11.81	93	1040	0.2711 ug/L #	56
53) 2-Chloroethyl Vinyl Ether	12.03	63	453	0.1232 ug/L #	51
55) cis-1,3-Dichloropropene	12.36	75	3654	0.3129 ug/L #	68
59) Toluene	12.78	91	9453	0.3081 ug/L	95
60) Ethyl Methacrylate	12.87	69	1112	0.1877 ug/L	95
62) trans-1,3-Dichloropropene	12.96	75	2564	0.2500 ug/L #	59
63) 1,1,2-Trichloroethane	13.18	97	934	0.1915 ug/L	67

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410193.D Vial: 2
Acq On : 17 Feb 2016 14:49 Operator: TMB
Sample : WG556046-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:05 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
65)	1,3-Dichloropropane	13.48	76	1878	0.2100 ug/L		98
66)	Tetrachloroethene	13.61	164	2092	0.3395 ug/L		77
67)	Dibromochloromethane	13.87	129	1449	0.2167 ug/L		99
68)	1,2-Dibromoethane	14.12	107	727	0.1473 ug/L	#	19
69)	1-Chlorohexane	14.21	91	2856	0.2746 ug/L		90
70)	Chlorobenzene	14.62	112	6105	0.2908 ug/L	#	53
71)	1,1,1,2-Tetrachloroethane	14.66	131	1811	0.2405 ug/L		93
72)	Ethylbenzene	14.65	106	3177	0.2645 ug/L		81
73)	m-,p-Xylene	14.75	106	8105	0.5903 ug/L		87
74)	o-Xylene	15.31	106	3485	0.2447 ug/L		85
75)	Styrene	15.35	104	6091	0.2805 ug/L		93
77)	Isopropylbenzene	15.73	105	9880	0.2910 ug/L		94
79)	1,1,2,2-Tetrachloroethane	15.95	83	1189	0.2209 ug/L	#	69
83)	n-Propylbenzene	16.24	91	12897	0.3240 ug/L		86
84)	Bromobenzene	16.37	156	2103	0.2655 ug/L		76
85)	1,3,5-Trimethylbenzene	16.42	105	8493	0.3057 ug/L		96
86)	2-Chlorotoluene	16.50	91	9127	0.3511 ug/L		98
87)	4-Chlorotoluene	16.56	91	7414	0.2908 ug/L		93
88)	a-Methylstyrene	16.82	118	3662	0.2517 ug/L		79
89)	tert-Butylbenzene	16.89	134	1169	0.1953 ug/L	#	17
90)	1,2,4-Trimethylbenzene	16.94	105	8103	0.2826 ug/L		96
91)	sec-Butylbenzene	17.16	105	11348	0.3286 ug/L		98
92)	p-Isopropyltoluene	17.31	119	8622	0.3014 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	4601	0.2921 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	4914	0.3107 ug/L	#	1
95)	n-Butylbenzene	17.84	91	9322	0.3239 ug/L	#	85
96)	1,2-Dichlorobenzene	18.13	146	3883	0.2835 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	2603	0.2611 ug/L		90
99)	Hexachlorobutadiene	20.42	225	821	0.2014 ug/L	#	51
100)	Naphthalene	20.64	128	4699	0.2880 ug/L	#	68
101)	1,2,3-Trichlorobenzene	20.95	180	2543	0.3065 ug/L		84

(#) = qualifier out of range (m) = manual integration
8M410193.D 8260WTR.M Thu Feb 18 08:46:06 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410193.D Vial: 2
Acq On : 17 Feb 2016 14:49 Operator: TMB
Sample : WG556046-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 8:46 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration

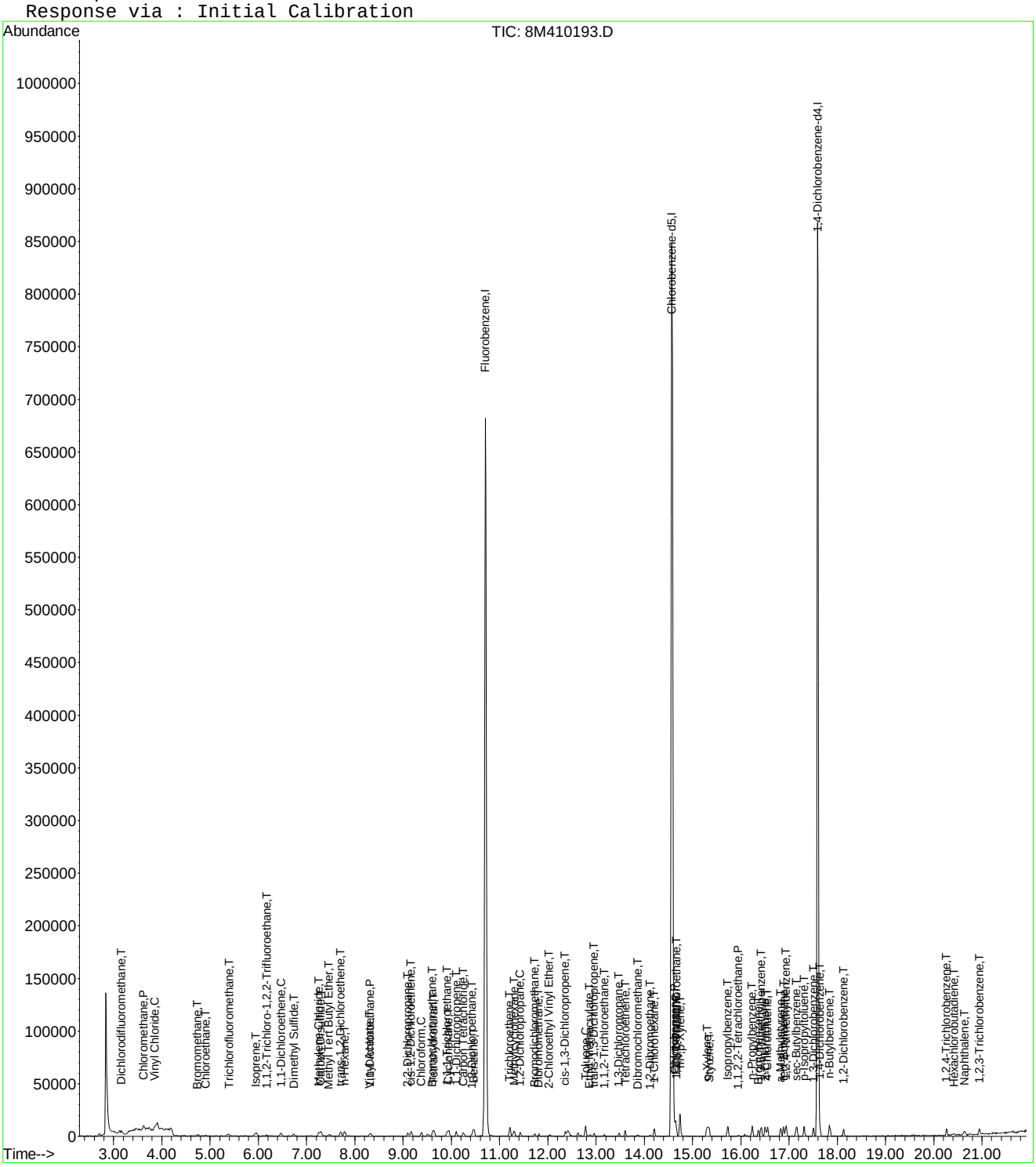

8M410193.D 8260WTR.M Thu Feb 18 08:46:06 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021716\8M410193.D Vial: 2
Acq On : 17 Feb 2016 14:49 Operator: TMB
Sample : WG556046-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2792	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4216	0.0	100	0.01
4	C	Vinyl Chloride	-1.0000	0.3099	0.0	100	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.2634	0.0	100	0.01
7	T	Chloroethane	-1.0000	0.1894	0.0	100	0.01
8	T	Trichlorofluoromethane	-1.0000	0.2754	0.0	100	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	-1.0000	0.3159	0.0	100	0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.1318	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2641	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	-1.0000	0.2819	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.99#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.2764	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3533	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2495	0.0	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.3118	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.2804	0.0	100	0.01
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.1601	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.2833	0.0	100	-0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.70#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.89#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.99#
31	T	2,2-Dichloropropane	-1.0000	0.3074	0.0	100	-0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.3321	0.0	100	0.00
33	C	Chloroform	0.3000	0.3065	-2.2	100	0.01
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	-1.0000	0.2304	0.0	100	-0.01
36	T	Tetrahydrofuran	-1.0000	3.4944	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.66#
38	T	1,1,1-Trichloroethane	-1.0000	0.2769	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2920	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2814	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.2797	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.30#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2353	0.0	100	0.00
46	T	Benzene	-1.0000	0.3067	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.5109	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3054	0.0	100	0.01
49	C	1,2-Dichloropropane	-1.0000	0.2597	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2898	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.72#
52	T	Dibromomethane	-1.0000	0.2711	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1232	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.06#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021716\8M410193.D Vial: 2
Acq On : 17 Feb 2016 14:49 Operator: TMB
Sample : WG556046-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3129	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.1022	0.0	100	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0196	0.0	100	-0.01
59	C	Toluene	-1.0000	0.3081	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.1877	0.0	100	-0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2500	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.1915	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.11#
65	T	1,3-Dichloropropane	-1.0000	0.2100	0.0	100	-0.01
66	T	Tetrachloroethene	-1.0000	0.3395	0.0	100	0.01
67	T	Dibromochloromethane	-1.0000	0.2167	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.1473	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.2746	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.2908	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2405	0.0	100	0.01
72	C	Ethylbenzene	-1.0000	0.2645	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.5903	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.2447	0.0	100	0.00
75	T	Styrene	-1.0000	0.2805	0.0	100	0.00
76	P	Bromoform	-1.0000	0.0695	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.2910	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2209	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0951	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.13#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.18#
83	T	n-Propylbenzene	-1.0000	0.3240	0.0	0	0.00
84	T	Bromobenzene	0.3000	0.2655	11.5	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3057	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3511	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.2908	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2517	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.1953	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.2826	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3286	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3014	0.0	100	-0.01
93	T	1,3-Dichlorobenzene	-1.0000	0.2921	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3107	-3.6	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3239	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.2836	5.5	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.2611	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.2014	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.2880	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3065	-2.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M410193.D 8260WTR.M Thu Feb 18 08:46:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410194.D Vial: 3
Acq On : 17 Feb 2016 15:18 Operator: TMB
Sample : WG556046-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:07 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	772738	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543906	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	269409	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4341	0.3564 ug/L	82
3) Chloromethane	3.63	50	9512	0.5107 ug/L #	77
4) Vinyl Chloride	3.85	62	5096	0.3930 ug/L	91
5) 1,3-Butadiene	3.90	54	4566	Below Cal #	41
6) Bromomethane	4.74	94	1656	0.2688 ug/L	95
7) Chloroethane	4.90	64	1946	0.3322 ug/L #	53
8) Trichlorofluoromethane	5.39	101	4405	0.3170 ug/L #	94
10) Isoprene	5.94	67	2957	0.3140 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	2310	0.3045 ug/L #	50
13) Acetone	6.25	43	223	0.1764 ug/L #	48
14) 1,1-Dichloroethene	6.48	61	4315	0.3091 ug/L	100
16) Dimethyl Sulfide	6.75	62	1913	0.3128 ug/L	97
18) Methyl acetate	7.03	43	662	0.1876 ug/L #	66
19) Methylene Chloride	7.26	84	2838	0.3712 ug/L	89
20) Carbon Disulfide	7.29	76	8915	0.3715 ug/L	97
22) Methyl Tert Butyl Ether	7.48	73	5146	0.3314 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4216	0.3230 ug/L	93
24) n-Hexane	7.78	57	3497	0.3143 ug/L	99
26) Vinyl Acetate	8.31	43	3352	0.2515 ug/L #	79
27) 1,1-Dichloroethane	8.33	63	5522	0.3391 ug/L #	88
31) 2,2-Dichloropropane	9.10	77	4726	0.3690 ug/L #	74
32) cis-1,2-Dichloroethene	9.18	96	2932	0.3488 ug/L	76
33) Chloroform	9.37	83	4700	0.3253 ug/L	99
35) Bromochloromethane	9.61	130	1130	0.2686 ug/L	69
36) Tetrahydrofuran	9.64	42	1602	1.2034 ug/L #	55
38) 1,1,1-Trichloroethane	9.91	97	4708	0.3571 ug/L	75
39) Cyclohexane	9.95	56	5119	0.3336 ug/L #	87
40) 1,1-Dichloropropene	10.11	75	3597	0.3136 ug/L	93
42) Carbon Tetrachloride	10.24	117	4028	0.3357 ug/L #	89
45) 1,2-Dichloroethane	10.43	62	3605	0.3284 ug/L #	72
46) Benzene	10.47	78	10695	0.3578 ug/L	99
47) Trichloroethene	11.22	130	2582	0.3207 ug/L	82
48) Methylcyclohexane	11.30	83	3747	0.3232 ug/L	85
49) 1,2-Dichloropropane	11.43	63	2282	0.2716 ug/L	90
50) Bromodichloromethane	11.73	83	3102	0.2908 ug/L #	95
52) Dibromomethane	11.81	93	1080	0.2832 ug/L #	65
53) 2-Chloroethyl Vinyl Ether	12.04	63	830	0.2271 ug/L #	51
55) cis-1,3-Dichloropropene	12.37	75	3273	0.2819 ug/L	97
56) Dimethyl Disulfide	12.62	79	1187	0.1939 ug/L	92
59) Toluene	12.78	91	10834	0.3575 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M410194.D 8260WTR.M Thu Feb 18 08:46:08 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410194.D Vial: 3
Acq On : 17 Feb 2016 15:18 Operator: TMB
Sample : WG556046-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:07 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
60)	Ethyl Methacrylate	12.89	69	1714	0.2928 ug/L		90
62)	trans-1,3-Dichloropropene	12.96	75	2666	0.2632 ug/L		91
63)	1,1,2-Trichloroethane	13.18	97	1427	0.2961 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2871	0.3250 ug/L		97
66)	Tetrachloroethene	13.61	164	1615	0.2653 ug/L		76
67)	Dibromochloromethane	13.86	129	1984	0.3003 ug/L		84
68)	1,2-Dibromoethane	14.12	107	1472	0.3018 ug/L		97
69)	1-Chlorohexane	14.21	91	3514	0.3419 ug/L		96
70)	Chlorobenzene	14.62	112	7386	0.3561 ug/L		91
71)	1,1,1,2-Tetrachloroethane	14.65	131	2191	0.2945 ug/L		83
72)	Ethylbenzene	14.65	106	3945	0.3325 ug/L		86
73)	m-,p-Xylene	14.74	106	9041	0.6666 ug/L		87
74)	o-Xylene	15.30	106	4500	0.3199 ug/L		94
75)	Styrene	15.35	104	5919	0.2759 ug/L		89
76)	Bromoform	15.83	173	569	0.1495 ug/L	#	61
77)	Isopropylbenzene	15.72	105	11980	0.3571 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	1543	0.2866 ug/L	#	93
83)	n-Propylbenzene	16.23	91	13353	0.3354 ug/L		99
84)	Bromobenzene	16.37	156	3484	0.4397 ug/L		85
85)	1,3,5-Trimethylbenzene	16.42	105	9768	0.3515 ug/L		97
86)	2-Chlorotoluene	16.50	91	10252	0.3942 ug/L		97
87)	4-Chlorotoluene	16.56	91	8071	0.3165 ug/L		90
88)	a-Methylstyrene	16.82	118	4229	0.2907 ug/L		96
89)	tert-Butylbenzene	16.88	134	1932	0.3227 ug/L		89
90)	1,2,4-Trimethylbenzene	16.94	105	9845	0.3433 ug/L		88
91)	sec-Butylbenzene	17.15	105	12403	0.3591 ug/L		89
92)	p-Isopropyltoluene	17.31	119	10261	0.3586 ug/L		96
93)	1,3-Dichlorobenzene	17.51	146	5008	0.3179 ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	5067	0.3203 ug/L	#	1
95)	n-Butylbenzene	17.84	91	10731	0.3728 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	4498	0.3284 ug/L		99
98)	1,2,4-Trichlorobenzene	20.27	180	3306	0.3315 ug/L	#	82
99)	Hexachlorobutadiene	20.43	225	1103	0.2704 ug/L	#	69
100)	Naphthalene	20.64	128	5665	0.3472 ug/L		90
101)	1,2,3-Trichlorobenzene	20.95	180	2955	0.3561 ug/L	#	82

(#) = qualifier out of range (m) = manual integration
8M410194.D 8260WTR.M Thu Feb 18 08:46:08 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410194.D Vial: 3
Acq On : 17 Feb 2016 15:18 Operator: TMB
Sample : WG556046-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 8:46 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration

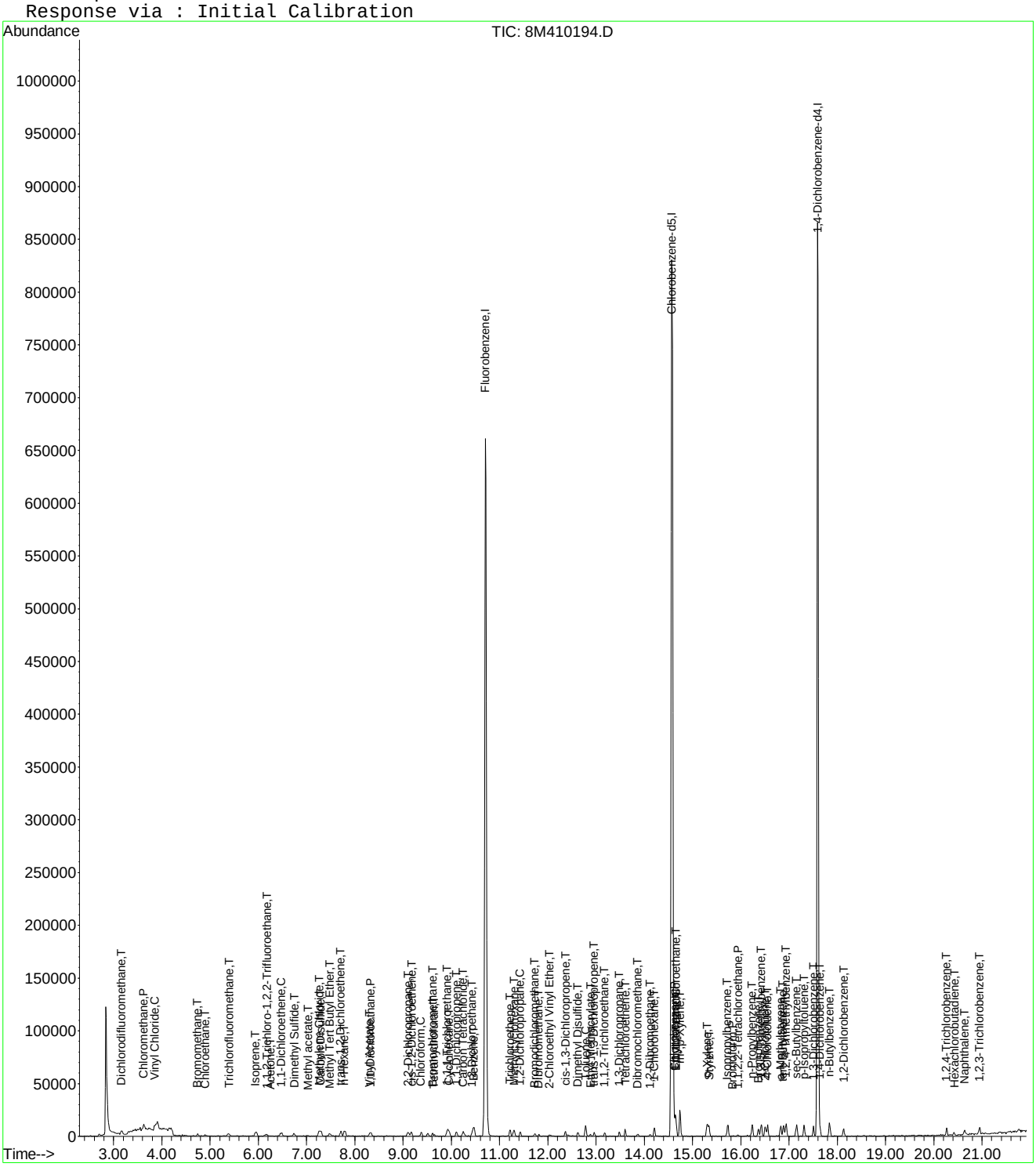

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021716\8M410194.D Vial: 3
Acq On : 17 Feb 2016 15:18 Operator: TMB
Sample : WG556046-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.3564	10.9	100	0.00
3	P	Chloromethane	-1.0000	0.5107	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3930	1.7	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	-1.0000	0.2688	0.0	100	0.00
7	T	Chloroethane	0.4000	0.3322	16.9	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.3170	20.8	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	0.4000	0.3140	21.5	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3045	0.0	100	0.03
13	T	Acetone	-1.0000	0.1764	0.0	100	0.00
14	C	1,1-Dichloroethene	0.4000	0.3090	22.7#	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	0.4000	0.3128	21.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.99#
18	T	Methyl acetate	-1.0000	0.1876	0.0	100	0.03
19	T	Methylene Chloride	-1.0000	0.3712	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3715	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3314	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.3230	19.2	100	0.00
24	T	n-Hexane	-1.0000	0.3143	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2515	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.3391	15.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.70#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.89#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.99#
31	T	2,2-Dichloropropane	0.4000	0.3690	7.8	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3488	12.8	100	0.00
33	C	Chloroform	0.4000	0.3253	18.7	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	0.4000	0.2686	32.8#	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.2034	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.66#
38	T	1,1,1-Trichloroethane	0.4000	0.3571	10.7	100	0.00
39	T	Cyclohexane	-1.0000	0.3336	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3136	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3357	16.1	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.30#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3284	17.9	100	0.00
46	T	Benzene	0.4000	0.3578	10.5	100	0.00
47	T	Trichloroethene	0.4000	0.3207	19.8	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3232	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.2716	32.1#	100	0.00
50	T	Bromodichloromethane	0.4000	0.2908	27.3#	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.72#
52	T	Dibromomethane	0.4000	0.2832	29.2#	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2271	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.06#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021716\8M410194.D Vial: 3
Acq On : 17 Feb 2016 15:18 Operator: TMB
Sample : WG556046-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.2819	29.5#	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.1939	0.0	100	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.69#
59	C	Toluene	0.4000	0.3574	10.6	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2928	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2632	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.2961	26.0#	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.11#
65	T	1,3-Dichloropropane	0.4000	0.3250	18.8	100	0.00
66	T	Tetrachloroethene	0.4000	0.2653	33.7#	100	0.00
67	T	Dibromochloromethane	0.4000	0.3003	24.9	100	-0.01
68	T	1,2-Dibromoethane	0.4000	0.3018	24.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.3419	14.5	100	0.00
70	P	Chlorobenzene	0.4000	0.3561	11.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.2945	26.4#	100	0.00
72	C	Ethylbenzene	0.4000	0.3325	16.9	100	0.00
73	T	m-,p-Xylene	0.8000	0.6666	16.7	100	-0.01
74	T	o-Xylene	-1.0000	0.3199	0.0	100	0.00
75	T	Styrene	0.4000	0.2759	31.0#	100	0.00
76	P	Bromoform	-1.0000	0.1495	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.3571	10.7	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.2866	28.4#	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.07#
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.13#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1117	0.0	100	0.00
83	T	n-Propylbenzene	0.4000	0.3354	16.1	100	0.00
84	T	Bromobenzene	0.4000	0.4397	-9.9	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.3515	12.1	100	0.00
86	T	2-Chlorotoluene	0.4000	0.3942	1.4	100	0.00
87	T	4-Chlorotoluene	0.4000	0.3165	20.9	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2907	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3227	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	0.4000	0.3433	14.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3591	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3586	0.0	100	-0.01
93	T	1,3-Dichlorobenzene	0.4000	0.3179	20.5	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3203	19.9	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3728	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3284	17.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.3315	17.1	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.2704	32.4#	100	0.00
100	T	Naphthalene	0.4000	0.3472	13.2	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.3561	11.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 2
8M410194.D 8260WTR.M Thu Feb 18 08:46:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410195.D Vial: 4
Acq On : 17 Feb 2016 15:47 Operator: TMB
Sample : WG556046-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:08 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	785884	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	555926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	273984	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	4031	0.4997 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.00%#	
43) 1,2-Dichloroethane-d4	10.31	65	4398	0.5092 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.04%#	
58) Toluene-d8	12.68	98	14634	0.5331 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.12%#	
80) p-Bromofluorobenzene	16.07	95	6061	0.5695 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	11557	0.9329 ug/L	100
3) Chloromethane	3.63	50	22216	1.1728 ug/L	95
4) Vinyl Chloride	3.86	62	14444	1.0953 ug/L	97
5) 1,3-Butadiene	3.91	54	14933	Below Cal	75
6) Bromomethane	4.73	94	5536	0.8836 ug/L	85
7) Chloroethane	4.90	64	5632	0.9454 ug/L	88
8) Trichlorofluoromethane	5.39	101	14190	1.0040 ug/L	99
9) Diethyl ether	5.91	59	25069	4.8436 ug/L	95
10) Isoprene	5.95	67	9108	0.9510 ug/L	94
11) Acrolein	6.14	56	1675	2.0840 ug/L	83
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	7205	0.9338 ug/L	86
13) Acetone	6.26	43	1243	0.9671 ug/L #	48
14) 1,1-Dichloroethene	6.48	61	14865	1.0469 ug/L	94
15) Tert-Butyl Alcohol	6.57	59	2583	7.9129 ug/L #	55
16) Dimethyl Sulfide	6.74	62	5888	0.9467 ug/L	100
17) Iodomethane	7.00	142	1150	1.4137 ug/L #	60
18) Methyl acetate	7.02	43	3094	0.8621 ug/L #	66
19) Methylene Chloride	7.26	84	6957	0.8948 ug/L	74
20) Carbon Disulfide	7.30	76	24458	1.0021 ug/L	100
21) Acrylonitrile	7.44	53	3599	1.9860 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	15081	0.9550 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	13220	0.9959 ug/L	95
24) n-Hexane	7.79	57	11770	1.0400 ug/L	93
25) Diisopropyl ether	8.13	45	145771	4.9427 ug/L	99
26) Vinyl Acetate	8.31	43	11641	0.8587 ug/L #	84
27) 1,1-Dichloroethane	8.33	63	16334	0.9862 ug/L	95
28) Ethyl-Tert-Butyl ether	8.70	59	111811	4.7270 ug/L	99
29) 2-Butanone	8.89	43	1302	0.6442 ug/L #	57
30) Propionitrile	8.99	54	2259	3.8911 ug/L #	56
31) 2,2-Dichloropropane	9.11	77	13330	1.0234 ug/L	97
32) cis-1,2-Dichloroethene	9.17	96	7971	0.9323 ug/L	76
33) Chloroform	9.38	83	15065	1.0252 ug/L	98
34) 1-Bromopropane	9.51	122	797	1.0758 ug/L	86
35) Bromochloromethane	9.61	130	4486	1.0486 ug/L	91
36) Tetrahydrofuran	9.64	42	7901	5.8360 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	12741	0.9502 ug/L	94
39) Cyclohexane	9.94	56	14543	0.9320 ug/L	98
40) 1,1-Dichloropropene	10.11	75	11745	1.0067 ug/L	91
41) Tert-Amyl-Methyl ether	10.21	73	79511	4.7826 ug/L	96
42) Carbon Tetrachloride	10.24	117	11507	0.9430 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M410195.D 8260WTR.M Thu Feb 18 08:46:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410195.D Vial: 4
Acq On : 17 Feb 2016 15:47 Operator: TMB
Sample : WG556046-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:08 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	11516	1.0315 ug/L		99
46)	Benzene	10.47	78	32435	1.0670 ug/L		96
47)	Trichloroethene	11.21	130	8509	1.0393 ug/L		96
48)	Methylcyclohexane	11.31	83	11261	0.9552 ug/L		91
49)	1,2-Dichloropropane	11.42	63	8242	0.9644 ug/L		99
50)	Bromodichloromethane	11.72	83	11142	1.0270 ug/L		95
52)	Dibromomethane	11.81	93	3486	0.8988 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	2937	0.7901 ug/L	#	67
54)	4-Methyl-2-Pentanone	12.06	58	1260	0.7278 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12149	1.0288 ug/L		90
56)	Dimethyl Disulfide	12.62	79	4873	0.7829 ug/L		85
59)	Toluene	12.79	91	33426	1.0790 ug/L		98
60)	Ethyl Methacrylate	12.89	69	4879	0.8154 ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	9736	0.9403 ug/L		95
63)	1,1,2-Trichloroethane	13.18	97	4471	0.9077 ug/L		90
64)	2-Hexanone	13.12	58	841	0.5487 ug/L	#	49
65)	1,3-Dichloropropane	13.48	76	8634	0.9562 ug/L		96
66)	Tetrachloroethene	13.60	164	6230	1.0012 ug/L		89
67)	Dibromochloromethane	13.87	129	6456	0.9561 ug/L		91
68)	1,2-Dibromoethane	14.12	107	4749	0.9526 ug/L		98
69)	1-Chlorohexane	14.21	91	10007	0.9527 ug/L		89
70)	Chlorobenzene	14.63	112	21998	1.0377 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	7085	0.9317 ug/L		98
72)	Ethylbenzene	14.66	106	11454	0.9444 ug/L		91
73)	m-,p-Xylene	14.74	106	29042	2.0949 ug/L		98
74)	o-Xylene	15.30	106	14229	0.9895 ug/L		97
75)	Styrene	15.34	104	21487	0.9800 ug/L		91
76)	Bromoform	15.83	173	3207	0.8242 ug/L		91
77)	Isopropylbenzene	15.73	105	35968	1.0490 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.94	83	5419	0.9897 ug/L	#	91
81)	1,2,3-Trichloropropane	16.13	110	1131	0.7381 ug/L		74
82)	trans-1,4-Dichloro-2-Buten	16.19	53	1677	0.8225 ug/L	#	74
83)	n-Propylbenzene	16.24	91	43550	1.0757 ug/L		98
84)	Bromobenzene	16.36	156	7902	0.9806 ug/L		80
85)	1,3,5-Trimethylbenzene	16.42	105	29663	1.0497 ug/L		100
86)	2-Chlorotoluene	16.51	91	29168	1.1029 ug/L		95
87)	4-Chlorotoluene	16.56	91	27279	1.0517 ug/L		92
88)	a-Methylstyrene	16.83	118	12336	0.8337 ug/L		94
89)	tert-Butylbenzene	16.88	134	5513	0.9054 ug/L		78
90)	1,2,4-Trimethylbenzene	16.94	105	31016	1.0636 ug/L		91
91)	sec-Butylbenzene	17.16	105	37691	1.0731 ug/L		95
92)	p-Isopropyltoluene	17.31	119	30310	1.0417 ug/L		92
93)	1,3-Dichlorobenzene	17.51	146	16779	1.0473 ug/L		90
94)	1,4-Dichlorobenzene	17.63	146	17242	1.0716 ug/L	#	62
95)	n-Butylbenzene	17.84	91	30515	1.0424 ug/L		94
96)	1,2-Dichlorobenzene	18.13	146	14104	1.0125 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.12	75	766	1.2255 ug/L		65
98)	1,2,4-Trichlorobenzene	20.27	180	10252	1.0108 ug/L		98
99)	Hexachlorobutadiene	20.41	225	4087	0.9854 ug/L		94
100)	Naphthalene	20.64	128	17272	1.0408 ug/L		98
101)	1,2,3-Trichlorobenzene	20.94	180	7861	0.9315 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M410195.D 8260WTR.M Thu Feb 18 08:46:09 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410195.D Vial: 4
Acq On : 17 Feb 2016 15:47 Operator: TMB
Sample : WG556046-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 8:46 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration

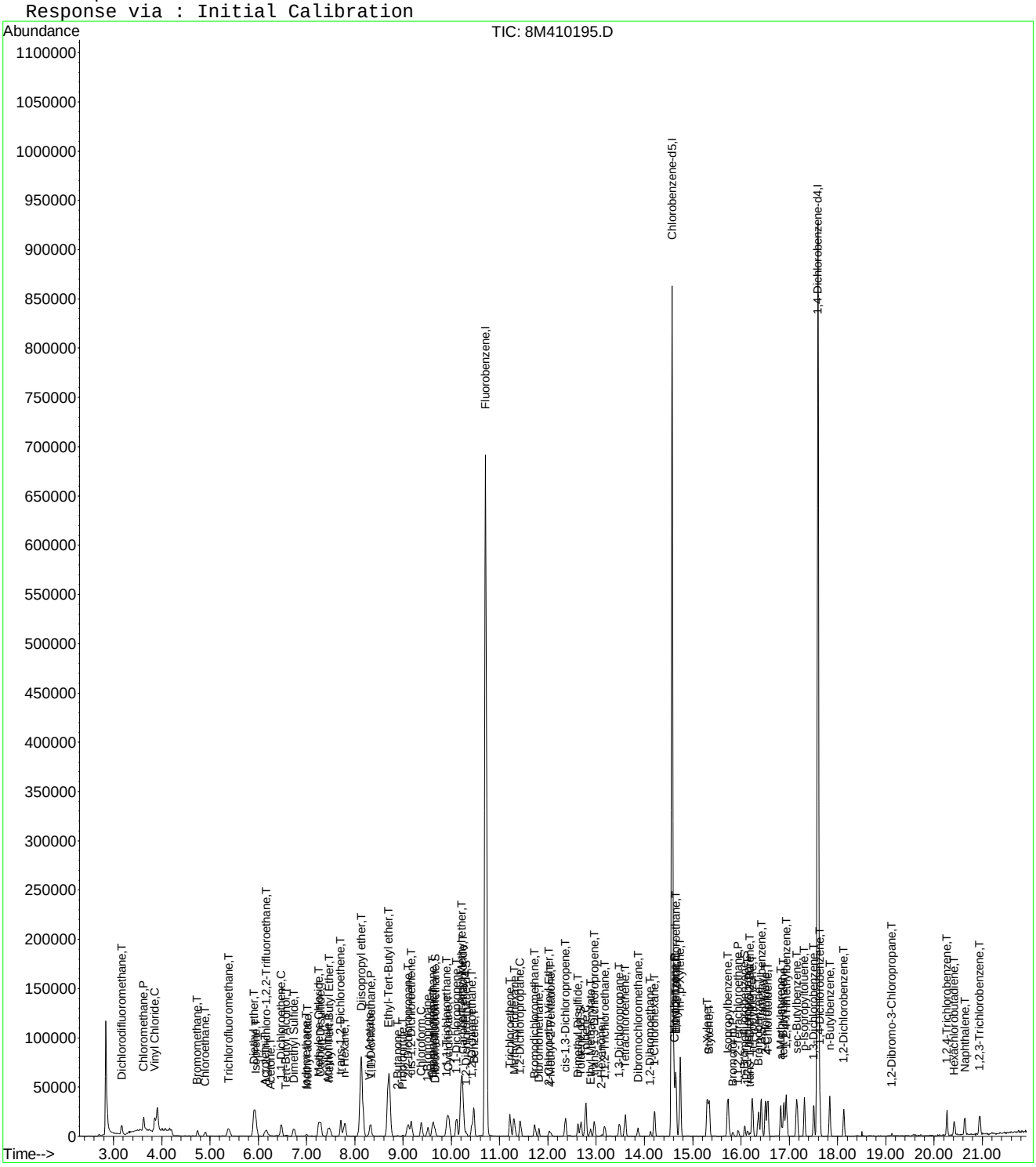

8M410195.D 8260WTR.M Thu Feb 18 08:46:09 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021716\8M410195.D Vial: 4
Acq On : 17 Feb 2016 15:47 Operator: TMB
Sample : WG556046-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9329	6.7	100	0.01
3	P	Chloromethane	1.0000	1.1728	-17.3	100	0.01
4	C	Vinyl Chloride	1.0000	1.0954	-9.5	100	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	1.0000	0.8836	11.6	100	0.00
7	T	Chloroethane	1.0000	0.9454	5.5	100	0.00
8	T	Trichlorofluoromethane	1.0000	1.0040	-0.4	100	0.00
9	T	Diethyl ether	5.0000	4.8436	3.1	100	0.00
10	T	Isoprene	1.0000	0.9510	4.9	100	0.01
11	T	Acrolein	2.5000	2.0840	16.6	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9338	6.6	100	0.01
13	T	Acetone	-1.0000	0.9671	0.0	100	0.01
14	C	1,1-Dichloroethene	1.0000	1.0469	-4.7	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	7.9129	0.0	100	-0.02
16	T	Dimethyl Sulfide	1.0000	0.9467	5.3	100	0.00
17	T	Iodomethane	1.0000	1.4137	-41.4#	100	0.01
18	T	Methyl acetate	-1.0000	0.8621	0.0	100	0.02
19	T	Methylene Chloride	1.0000	0.8948	10.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0022	-0.2	100	0.00
21	T	Acrylonitrile	2.5000	1.9860	20.6	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9550	4.5	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	0.9959	0.4	100	0.00
24	T	n-Hexane	-1.0000	1.0400	0.0	100	0.01
25	T	Diisopropyl ether	5.0000	4.9427	1.1	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8587	0.0	100	0.01
27	P	1,1-Dichloroethane	1.0000	0.9862	1.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.7270	5.5	100	0.00
29	T	2-Butanone	-1.0000	0.6442	0.0	100	0.00
30	T	Propionitrile	5.0000	3.8912	22.2	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0234	-2.3	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9323	6.8	100	0.00
33	C	Chloroform	1.0000	1.0252	-2.5	100	0.00
34		1-Bromopropane	1.0000	1.0758	-7.6	100	0.00
35	T	Bromochloromethane	1.0000	1.0486	-4.9	100	0.00
36	T	Tetrahydrofuran	5.0000	5.8360	-16.7	100	0.01
37	S	Dibromofluoromethane	0.5000	0.4997	0.1	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9502	5.0	100	0.00
39	T	Cyclohexane	1.0000	0.9320	6.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0067	-0.7	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.7826	4.3	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9430	5.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.5092	-1.8	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	1.0315	-3.2	100	0.00
46	T	Benzene	1.0000	1.0670	-6.7	100	0.00
47	T	Trichloroethene	1.0000	1.0393	-3.9	100	0.00
48	T	Methylcyclohexane	-1.0000	0.9552	0.0	100	0.01
49	C	1,2-Dichloropropane	1.0000	0.9644	3.6	100	0.00
50	T	Bromodichloromethane	1.0000	1.0270	-2.7	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.72#
52	T	Dibromomethane	1.0000	0.8988	10.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7901	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.7278	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021716\8M410195.D Vial: 4
Acq On : 17 Feb 2016 15:47 Operator: TMB
Sample : WG556046-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	1.0288	-2.9	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7829	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.5331	-6.6	100	0.00
59	C	Toluene	1.0000	1.0790	-7.9	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8154	18.5	100	0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9403	6.0	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9077	9.2	100	0.00
64	T	2-Hexanone	-1.0000	0.5487	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	0.9562	4.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0012	-0.1	100	0.00
67	T	Dibromochloromethane	1.0000	0.9561	4.4	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9526	4.7	100	0.00
69	T	1-Chlorohexane	1.0000	0.9527	4.7	100	0.00
70	P	Chlorobenzene	1.0000	1.0377	-3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9317	6.8	100	0.00
72	C	Ethylbenzene	1.0000	0.9444	5.6	100	0.00
73	T	m-,p-Xylene	2.0000	2.0949	-4.7	100	0.00
74	T	o-Xylene	1.0000	0.9895	1.0	100	0.00
75	T	Styrene	1.0000	0.9800	2.0	100	0.00
76	P	Bromoform	1.0000	0.8242	17.6	100	0.00
77	T	Isopropylbenzene	1.0000	1.0490	-4.9	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9897	1.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5695	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7381	26.2#	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.8225	17.7	100	0.00
83	T	n-Propylbenzene	1.0000	1.0757	-7.6	100	0.00
84	T	Bromobenzene	1.0000	0.9806	1.9	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0497	-5.0	100	0.00
86	T	2-Chlorotoluene	1.0000	1.1029	-10.3	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0517	-5.2	100	0.00
88	T	a-Methylstyrene	-1.0000	0.8337	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	0.9054	9.5	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0636	-6.4	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0731	-7.3	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0417	-4.2	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0474	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0716	-7.2	100	0.00
95	T	n-Butylbenzene	1.0000	1.0424	-4.2	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0125	-1.2	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.2255	0.0	0	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	1.0108	-1.1	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9853	1.5	100	0.00
100	T	Naphthalene	1.0000	1.0408	-4.1	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	0.9315	6.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M410195.D 8260WTR.M Thu Feb 18 08:47:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410196.D Vial: 5
Acq On : 17 Feb 2016 16:23 Operator: TMB
Sample : WG556046-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:10 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	785085	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557240	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	280270	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	7734	0.9597 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.84%#	
43) 1,2-Dichloroethane-d4	10.30	65	8223	0.9530 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.80%#	
58) Toluene-d8	12.68	98	25965	0.9437 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.76%#	
80) p-Bromofluorobenzene	16.07	95	9408	0.8641 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.44%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	23918	1.9327 ug/L	100
3) Chloromethane	3.62	50	40791	2.1556 ug/L	91
4) Vinyl Chloride	3.85	62	29503	2.2396 ug/L	98
5) 1,3-Butadiene	3.90	54	29376	1.1089 ug/L	98
6) Bromomethane	4.75	94	12067	1.9280 ug/L	96
7) Chloroethane	4.89	64	11615	1.9518 ug/L	98
8) Trichlorofluoromethane	5.39	101	29119	2.0625 ug/L	98
9) Diethyl ether	5.91	59	131394	25.4127 ug/L	99
10) Isoprene	5.93	67	18814	1.9664 ug/L	97
11) Acrolein	6.14	56	10267	12.7870 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	15394	1.9973 ug/L	97
13) Acetone	6.25	43	2673	2.0818 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	28926	2.0392 ug/L	95
15) Tert-Butyl Alcohol	6.59	59	17349	53.2017 ug/L #	87
16) Dimethyl Sulfide	6.73	62	12337	1.9856 ug/L	98
17) Iodomethane	6.99	142	3228	1.8283 ug/L	97
18) Methyl acetate	7.00	43	8170	2.2787 ug/L #	80
19) Methylene Chloride	7.25	84	16270	2.0948 ug/L	96
20) Carbon Disulfide	7.30	76	51176	2.0990 ug/L	97
21) Acrylonitrile	7.43	53	21751	12.0148 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	31237	1.9802 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	26849	2.0247 ug/L	96
24) n-Hexane	7.80	57	23319	2.0626 ug/L	95
25) Diisopropyl ether	8.13	45	765203	25.9721 ug/L	99
26) Vinyl Acetate	8.30	43	27022	1.9954 ug/L	94
27) 1,1-Dichloroethane	8.33	63	33058	1.9979 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	607833	25.7231 ug/L	100
29) 2-Butanone	8.89	43	3996	1.9793 ug/L #	79
30) Propionitrile	8.99	54	13597	23.4448 ug/L	99
31) 2,2-Dichloropropane	9.11	77	27313	2.0990 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	17242	2.0187 ug/L	87
33) Chloroform	9.38	83	29447	2.0060 ug/L	100
34) 1-Bromopropane	9.51	122	1876	1.9235 ug/L	62
35) Bromochloromethane	9.60	130	7895	1.8473 ug/L	77
36) Tetrahydrofuran	9.63	42	34153	25.2524 ug/L	98
38) 1,1,1-Trichloroethane	9.90	97	27001	2.0157 ug/L	99
39) Cyclohexane	9.95	56	30568	1.9609 ug/L	98
40) 1,1-Dichloropropene	10.11	75	23584	2.0235 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	427656	25.7499 ug/L	98
42) Carbon Tetrachloride	10.26	117	24856	2.0389 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M410196.D 8260WTR.M Thu Feb 18 08:46:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410196.D Vial: 5
Acq On : 17 Feb 2016 16:23 Operator: TMB
Sample : WG556046-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:10 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	22413	2.0097 ug/L		95
46)	Benzene	10.46	78	63830	2.1020 ug/L		99
47)	Trichloroethene	11.22	130	17061	2.0860 ug/L		97
48)	Methylcyclohexane	11.29	83	24208	2.0555 ug/L		95
49)	1,2-Dichloropropane	11.42	63	16914	1.9811 ug/L		99
50)	Bromodichloromethane	11.73	83	21484	1.9823 ug/L		96
51)	1,4-Dioxane	11.72	88	1262	36.6474 ug/L		75
52)	Dibromomethane	11.82	93	7726	1.9939 ug/L		94
53)	2-Chloroethyl Vinyl Ether	12.02	63	6611	1.7802 ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	2130	1.2316 ug/L	#	83
55)	cis-1,3-Dichloropropene	12.36	75	22670	1.9218 ug/L		99
56)	Dimethyl Disulfide	12.62	79	8915	1.4337 ug/L		91
59)	Toluene	12.79	91	65706	2.1160 ug/L		98
60)	Ethyl Methacrylate	12.88	69	11326	1.8885 ug/L		94
62)	trans-1,3-Dichloropropene	12.96	75	19385	1.8678 ug/L		95
63)	1,1,2-Trichloroethane	13.18	97	9784	1.9817 ug/L		98
64)	2-Hexanone	13.12	58	2742	1.7849 ug/L	#	87
65)	1,3-Dichloropropane	13.48	76	18626	2.0580 ug/L		98
66)	Tetrachloroethene	13.60	164	12489	2.0023 ug/L		91
67)	Dibromochloromethane	13.86	129	12453	1.8399 ug/L		99
68)	1,2-Dibromoethane	14.12	107	9978	1.9968 ug/L		95
69)	1-Chlorohexane	14.20	91	21195	2.0131 ug/L		91
70)	Chlorobenzene	14.62	112	42771	2.0129 ug/L		81
71)	1,1,1,2-Tetrachloroethane	14.66	131	14580	1.9127 ug/L		99
72)	Ethylbenzene	14.65	106	24594	2.0230 ug/L		99
73)	m-,p-Xylene	14.74	106	56617	4.0743 ug/L		96
74)	o-Xylene	15.30	106	27322	1.8956 ug/L		97
75)	Styrene	15.34	104	44351	2.0181 ug/L		99
76)	Bromoform	15.84	173	6936	1.7783 ug/L		89
77)	Isopropylbenzene	15.73	105	71932	2.0929 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.94	83	11637	2.0776 ug/L	#	98
81)	1,2,3-Trichloropropane	16.14	110	3486	2.2241 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.18	53	3453	1.6556 ug/L	#	56
83)	n-Propylbenzene	16.23	91	86680	2.0930 ug/L		99
84)	Bromobenzene	16.36	156	16288	1.9759 ug/L		92
85)	1,3,5-Trimethylbenzene	16.43	105	59253	2.0498 ug/L		100
86)	2-Chlorotoluene	16.51	91	55801	2.0627 ug/L		98
87)	4-Chlorotoluene	16.55	91	54177	2.0419 ug/L		94
88)	a-Methylstyrene	16.83	118	26242	1.7337 ug/L		99
89)	tert-Butylbenzene	16.88	134	12039	1.9328 ug/L		90
90)	1,2,4-Trimethylbenzene	16.94	105	61435	2.0594 ug/L		96
91)	sec-Butylbenzene	17.16	105	74823	2.0824 ug/L		95
92)	p-Isopropyltoluene	17.31	119	60435	2.0304 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	34022	2.0760 ug/L		99
94)	1,4-Dichlorobenzene	17.63	146	32632	1.9826 ug/L		75
95)	n-Butylbenzene	17.84	91	65161	2.1761 ug/L		96
96)	1,2-Dichlorobenzene	18.13	146	29661	2.0815 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1345	1.7462 ug/L		71
98)	1,2,4-Trichlorobenzene	20.27	180	20454	1.9715 ug/L		96
99)	Hexachlorobutadiene	20.41	225	8230	1.9397 ug/L		97
100)	Naphthalene	20.63	128	34116	2.0097 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	16966	1.9654 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M410196.D 8260WTR.M Thu Feb 18 08:46:10 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410196.D Vial: 5
Acq On : 17 Feb 2016 16:23 Operator: TMB
Sample : WG556046-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 8:46 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration

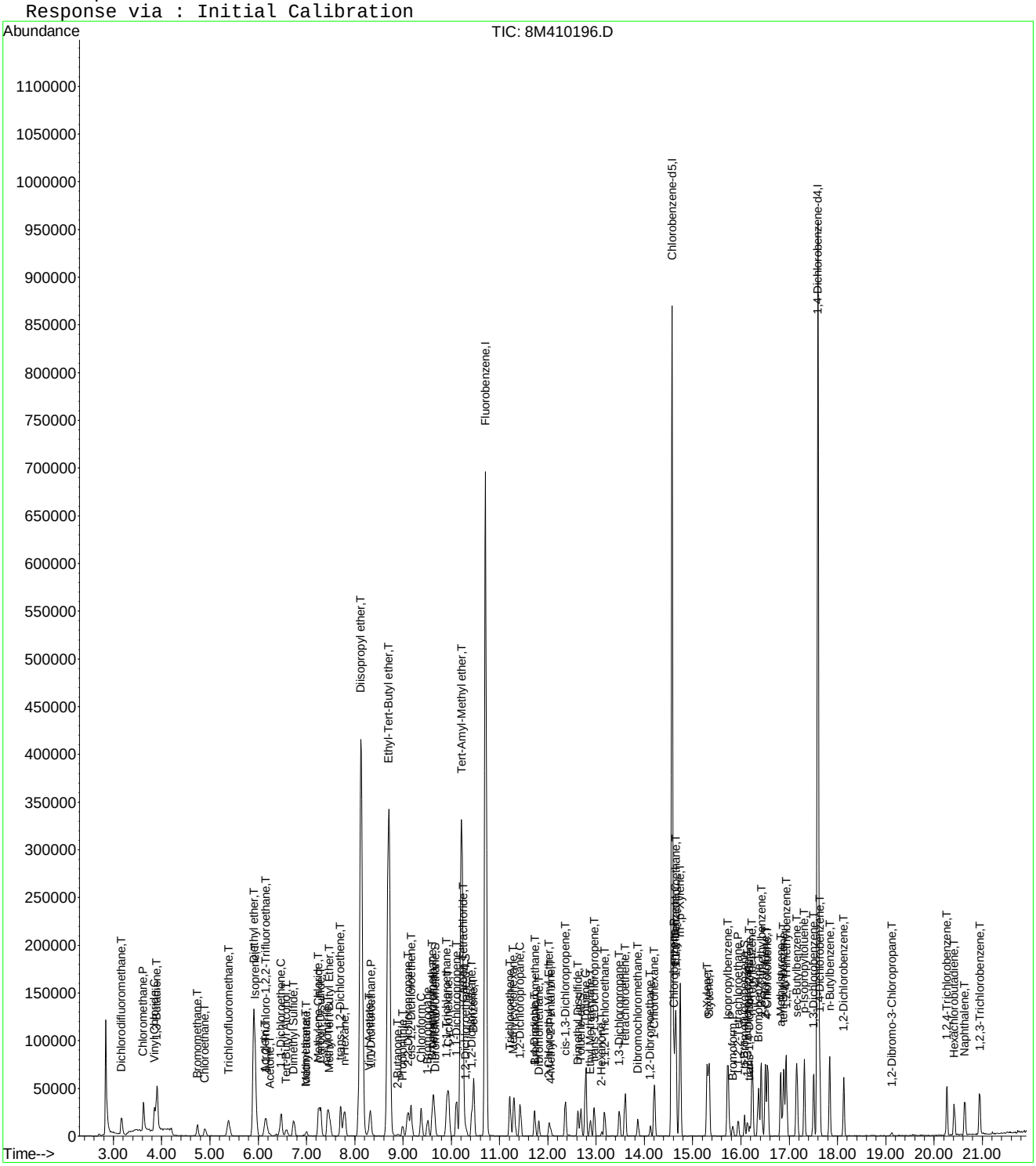

8M410196.D 8260WTR.M Thu Feb 18 08:46:10 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021716\8M410196.D Vial: 5
Acq On : 17 Feb 2016 16:23 Operator: TMB
Sample : WG556046-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.9327	3.4	100	0.00
3	P	Chloromethane	2.0000	2.1556	-7.8	100	0.00
4	C	Vinyl Chloride	2.0000	2.2396	-12.0	100	0.00
5	T	1,3-Butadiene	2.0000	1.1090	44.6#	100	0.01
6	T	Bromomethane	2.0000	1.9280	3.6	100	0.01
7	T	Chloroethane	2.0000	1.9518	2.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0625	-3.1	100	0.00
9	T	Diethyl ether	25.0000	25.4127	-1.7	100	0.00
10	T	Isoprene	2.0000	1.9664	1.7	100	0.00
11	T	Acrolein	12.5000	12.7870	-2.3	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9973	0.1	100	0.00
13	T	Acetone	-1.0000	2.0818	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0392	-2.0	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	53.2017	-6.4	100	0.00
16	T	Dimethyl Sulfide	2.0000	1.9856	0.7	100	0.00
17	T	Iodomethane	2.0000	1.8283	8.6	100	0.00
18	T	Methyl acetate	-1.0000	2.2787	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0948	-4.7	100	0.00
20	T	Carbon Disulfide	2.0000	2.0990	-5.0	100	0.00
21	T	Acrylonitrile	12.5000	12.0148	3.9	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9802	1.0	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0247	-1.2	100	0.00
24	T	n-Hexane	-1.0000	2.0626	0.0	100	0.01
25	T	Diisopropyl ether	25.0000	25.9721	-3.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9954	0.2	100	0.00
27	P	1,1-Dichloroethane	2.0000	1.9979	0.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.7231	-2.9	100	0.00
29	T	2-Butanone	-1.0000	1.9793	0.0	100	0.00
30	T	Propionitrile	25.0000	23.4448	6.2	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.0990	-5.0	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0187	-0.9	100	0.00
33	C	Chloroform	2.0000	2.0060	-0.3	100	0.00
34		1-Bromopropane	2.0000	1.9235	3.8	100	0.00
35	T	Bromochloromethane	2.0000	1.8474	7.6	100	0.00
36	T	Tetrahydrofuran	25.0000	25.2524	-1.0	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9597	4.0	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0157	-0.8	100	0.00
39	T	Cyclohexane	2.0000	1.9609	2.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0235	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	25.7498	-3.0	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0389	-1.9	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	0.9530	4.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0097	-0.5	100	0.00
46	T	Benzene	2.0000	2.1020	-5.1	100	0.00
47	T	Trichloroethene	2.0000	2.0860	-4.3	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0555	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.9811	0.9	100	0.00
50	T	Bromodichloromethane	2.0000	1.9823	0.9	100	0.00
51	T	1,4-Dioxane	-1.0000	36.6474	0.0	0	0.00
52	T	Dibromomethane	2.0000	1.9939	0.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.7802	11.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.2316	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021716\8M410196.D Vial: 5
Acq On : 17 Feb 2016 16:23 Operator: TMB
Sample : WG556046-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.9218	3.9	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.4337	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9437	5.6	100	0.00
59	C	Toluene	2.0000	2.1160	-5.8	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.8885	5.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.8678	6.6	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9817	0.9	100	0.00
64	T	2-Hexanone	-1.0000	1.7849	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0580	-2.9	100	0.00
66	T	Tetrachloroethene	2.0000	2.0023	-0.1	100	0.00
67	T	Dibromochloromethane	2.0000	1.8399	8.0	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9968	0.2	100	0.00
69	T	1-Chlorohexane	2.0000	2.0130	-0.7	100	0.00
70	P	Chlorobenzene	2.0000	2.0129	-0.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9127	4.4	100	0.00
72	C	Ethylbenzene	2.0000	2.0230	-1.1	100	0.00
73	T	m-,p-Xylene	4.0000	4.0743	-1.9	100	0.00
74	T	o-Xylene	2.0000	1.8956	5.2	100	0.00
75	T	Styrene	2.0000	2.0181	-0.9	100	0.00
76	P	Bromoform	2.0000	1.7783	11.1	100	0.00
77	T	Isopropylbenzene	2.0000	2.0929	-4.6	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0776	-3.9	100	0.00
80	S	p-Bromofluorobenzene	1.0000	0.8641	13.6	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.2241	-11.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.6556	17.2	100	0.00
83	T	n-Propylbenzene	2.0000	2.0930	-4.6	100	0.00
84	T	Bromobenzene	2.0000	1.9759	1.2	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0498	-2.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.0627	-3.1	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0419	-2.1	100	0.00
88	T	a-Methylstyrene	-1.0000	1.7337	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9328	3.4	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.0594	-3.0	100	0.00
91	T	sec-Butylbenzene	2.0000	2.0824	-4.1	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.0304	-1.5	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.0760	-3.8	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	1.9827	0.9	100	0.00
95	T	n-Butylbenzene	2.0000	2.1761	-8.8	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0815	-4.1	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.7462	12.7	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.9715	1.4	100	0.00
99	T	Hexachlorobutadiene	2.0000	1.9397	3.0	100	0.00
100	T	Naphthalene	2.0000	2.0097	-0.5	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9654	1.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M410196.D 8260WTR.M Thu Feb 18 08:47:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410197.D Vial: 6
Acq On : 17 Feb 2016 16:52 Operator: TMB
Sample : WG556046-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:11 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	797042	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	557350	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	280695	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	20034	2.4487 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 9.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	21857	2.4950 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 9.96%#		
58) Toluene-d8	12.69	98	69308	2.5184 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.08%#		
80) p-Bromofluorobenzene	16.07	95	28356	2.6005 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.40%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	59051	4.7001 ug/L	98
3) Chloromethane	3.63	50	99779	5.1936 ug/L	100
4) Vinyl Chloride	3.85	62	72392	5.4129 ug/L	97
5) 1,3-Butadiene	3.90	54	72409	5.2942 ug/L	98
6) Bromomethane	4.74	94	30020	4.7245 ug/L	100
7) Chloroethane	4.90	64	29817	4.9352 ug/L	98
8) Trichlorofluoromethane	5.38	101	70622	4.9270 ug/L	97
9) Diethyl ether	5.91	59	257952	49.1417 ug/L	98
10) Isoprene	5.95	67	49020	5.0467 ug/L	100
11) Acrolein	6.15	56	19757	24.2371 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	39355	5.0294 ug/L	89
13) Acetone	6.25	43	6934	5.3193 ug/L #	79
14) 1,1-Dichloroethene	6.47	61	72079	5.0051 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	32950	99.5272 ug/L	93
16) Dimethyl Sulfide	6.74	62	31526	4.9980 ug/L	99
17) Iodomethane	6.99	142	14146	3.9631 ug/L	95
18) Methyl acetate	7.01	43	18793	5.1630 ug/L	96
19) Methylene Chloride	7.25	84	38505	4.8832 ug/L	91
20) Carbon Disulfide	7.30	76	123292	4.9811 ug/L	100
21) Acrylonitrile	7.44	53	42420	23.0804 ug/L	100
22) Methyl Tert Butyl Ether	7.48	73	80646	5.0356 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	67401	5.0066 ug/L	94
24) n-Hexane	7.79	57	58077	5.0599 ug/L	94
25) Diisopropyl ether	8.13	45	1492563	49.8998 ug/L	100
26) Vinyl Acetate	8.30	43	67337	4.8978 ug/L	98
27) 1,1-Dichloroethane	8.33	63	85443	5.0864 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1179180	49.1535 ug/L	99
29) 2-Butanone	8.90	43	9514	4.6417 ug/L	97
30) Propionitrile	8.99	54	29950	50.8669 ug/L	99
31) 2,2-Dichloropropane	9.10	77	70099	5.3063 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	44445	5.1256 ug/L	88
33) Chloroform	9.37	83	77696	5.2133 ug/L	100
34) 1-Bromopropane	9.51	122	5993	5.0847 ug/L	100
35) Bromochloromethane	9.61	130	23460	5.4070 ug/L	98
36) Tetrahydrofuran	9.63	42	64479	46.9599 ug/L	99
38) 1,1,1-Trichloroethane	9.91	97	69234	5.0911 ug/L	100
39) Cyclohexane	9.94	56	75971	4.8003 ug/L	99
40) 1,1-Dichloropropene	10.11	75	58581	4.9509 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	831325	49.3045 ug/L	98
42) Carbon Tetrachloride	10.25	117	61888	5.0005 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M410197.D 8260WTR.M Thu Feb 18 08:46:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410197.D Vial: 6
Acq On : 17 Feb 2016 16:52 Operator: TMB
Sample : WG556046-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:11 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	58329	5.1516 ug/L	97
46)	Benzene	10.47	78	164703	5.3424 ug/L	99
47)	Trichloroethene	11.21	130	42379	5.1039 ug/L	98
48)	Methylcyclohexane	11.31	83	57276	4.7903 ug/L	92
49)	1,2-Dichloropropane	11.43	63	45273	5.2232 ug/L	99
50)	Bromodichloromethane	11.73	83	56810	5.1631 ug/L	98
51)	1,4-Dioxane	11.71	88	2779	79.4892 ug/L	89
52)	Dibromomethane	11.81	93	20879	5.3076 ug/L	94
53)	2-Chloroethyl Vinyl Ether	12.03	63	18148	4.8136 ug/L	92
54)	4-Methyl-2-Pentanone	12.05	58	8288	4.7205 ug/L	91
55)	cis-1,3-Dichloropropene	12.36	75	62255	5.1983 ug/L	99
56)	Dimethyl Disulfide	12.63	79	25812	4.0888 ug/L	92
59)	Toluene	12.78	91	167982	5.4086 ug/L	100
60)	Ethyl Methacrylate	12.88	69	28551	4.7596 ug/L	96
62)	trans-1,3-Dichloropropene	12.96	75	51347	4.9464 ug/L	98
63)	1,1,2-Trichloroethane	13.18	97	25950	5.2551 ug/L	100
64)	2-Hexanone	13.11	58	6598	4.2940 ug/L #	98
65)	1,3-Dichloropropane	13.48	76	46524	5.1395 ug/L	94
66)	Tetrachloroethene	13.60	164	32842	5.2642 ug/L	95
67)	Dibromochloromethane	13.87	129	33402	4.9341 ug/L	100
68)	1,2-Dibromoethane	14.13	107	25664	5.1349 ug/L	99
69)	1-Chlorohexane	14.21	91	56163	5.3332 ug/L	96
70)	Chlorobenzene	14.62	112	114284	5.3774 ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.65	131	37976	4.9811 ug/L	99
72)	Ethylbenzene	14.65	106	61306	5.0417 ug/L	96
73)	m-,p-Xylene	14.74	106	150534	10.8306 ug/L	97
74)	o-Xylene	15.31	106	72683	5.0418 ug/L	100
75)	Styrene	15.34	104	115749	5.2659 ug/L	98
76)	Bromoform	15.83	173	18418	4.7211 ug/L	97
77)	Isopropylbenzene	15.73	105	187588	5.4570 ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.95	83	29461	5.2519 ug/L	98
81)	1,2,3-Trichloropropane	16.13	110	8012	5.1040 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	16.18	53	10811	5.1757 ug/L	79
83)	n-Propylbenzene	16.24	91	231310	5.5767 ug/L	98
84)	Bromobenzene	16.36	156	40784	4.9401 ug/L	85
85)	1,3,5-Trimethylbenzene	16.42	105	157000	5.4230 ug/L	100
86)	2-Chlorotoluene	16.50	91	141253	5.2135 ug/L	91
87)	4-Chlorotoluene	16.56	91	149342	5.6202 ug/L	87
88)	a-Methylstyrene	16.82	118	75916	5.0078 ug/L	95
89)	tert-Butylbenzene	16.89	134	31884	5.1110 ug/L	91
90)	1,2,4-Trimethylbenzene	16.94	105	163834	5.4836 ug/L	99
91)	sec-Butylbenzene	17.16	105	195859	5.4427 ug/L	97
92)	p-Isopropyltoluene	17.31	119	159918	5.3645 ug/L	96
93)	1,3-Dichlorobenzene	17.51	146	87076	5.3053 ug/L	94
94)	1,4-Dichlorobenzene	17.64	146	85643	5.1956 ug/L	88
95)	n-Butylbenzene	17.84	91	163635	5.4563 ug/L	97
96)	1,2-Dichlorobenzene	18.14	146	74818	5.2424 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5241	5.3520 ug/L	85
98)	1,2,4-Trichlorobenzene	20.27	180	54277	5.2236 ug/L	99
99)	Hexachlorobutadiene	20.42	225	21872	5.1472 ug/L	95
100)	Naphthalene	20.64	128	89617	5.2710 ug/L	99
101)	1,2,3-Trichlorobenzene	20.95	180	44963	5.2007 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M410197.D 8260WTR.M Thu Feb 18 08:46:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410197.D Vial: 6
Acq On : 17 Feb 2016 16:52 Operator: TMB
Sample : WG556046-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 8:46 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration

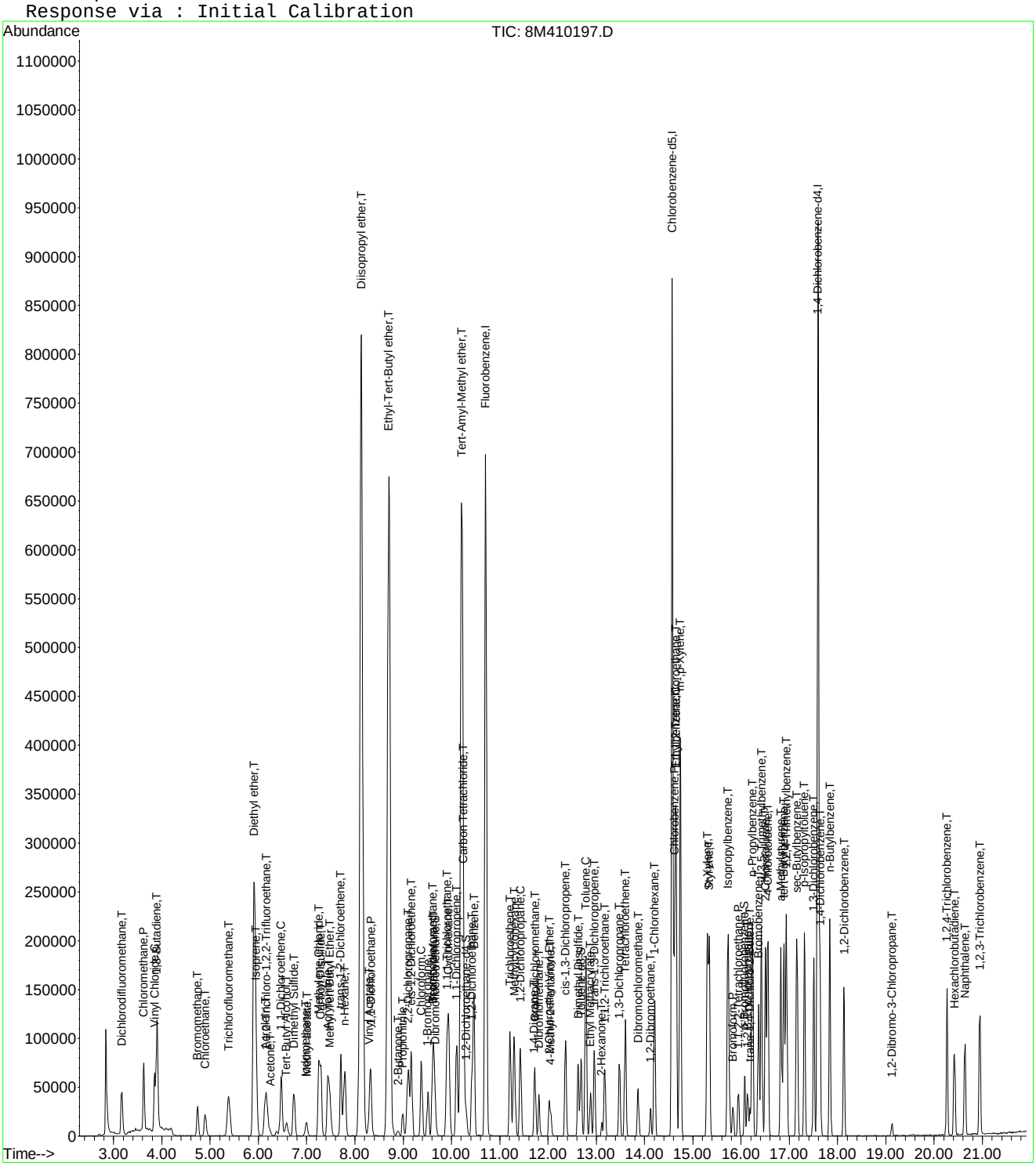

8M410197.D 8260WTR.M Thu Feb 18 08:46:12 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021716\8M410197.D Vial: 6
Acq On : 17 Feb 2016 16:52 Operator: TMB
Sample : WG556046-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.7001	6.0	100	0.01
3	P	Chloromethane	5.0000	5.1936	-3.9	100	0.01
4	C	Vinyl Chloride	5.0000	5.4129	-8.3	100	0.01
5	T	1,3-Butadiene	5.0000	5.2942	-5.9	100	0.01
6	T	Bromomethane	5.0000	4.7245	5.5	100	0.01
7	T	Chloroethane	5.0000	4.9352	1.3	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.9270	1.5	100	0.00
9	T	Diethyl ether	50.0000	49.1417	1.7	100	0.00
10	T	Isoprene	5.0000	5.0467	-0.9	100	0.01
11	T	Acrolein	25.0000	24.2371	3.1	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.0294	-0.6	100	0.01
13	T	Acetone	5.0000	5.3193	-6.4	100	0.00
14	C	1,1-Dichloroethene	5.0000	5.0050	-0.1	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	99.5272	0.5	100	-0.01
16	T	Dimethyl Sulfide	5.0000	4.9980	0.0	100	0.00
17	T	Iodomethane	5.0000	3.9631	20.7	100	0.00
18	T	Methyl acetate	5.0000	5.1630	-3.3	100	0.01
19	T	Methylene Chloride	5.0000	4.8832	2.3	100	0.00
20	T	Carbon Disulfide	5.0000	4.9811	0.4	100	0.00
21	T	Acrylonitrile	25.0000	23.0803	7.7	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	5.0356	-0.7	100	0.01
23	T	trans-1,2-Dichloroethene	5.0000	5.0065	-0.1	100	0.00
24	T	n-Hexane	5.0000	5.0599	-1.2	100	0.01
25	T	Diisopropyl ether	50.0000	49.8998	0.2	100	0.00
26	T	Vinyl Acetate	5.0000	4.8978	2.0	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.0864	-1.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	49.1535	1.7	100	0.00
29	T	2-Butanone	5.0000	4.6417	7.2	100	0.01
30	T	Propionitrile	50.0000	50.8670	-1.7	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.3063	-6.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.1257	-2.5	100	0.00
33	C	Chloroform	5.0000	5.2133	-4.3	100	0.00
34		1-Bromopropane	5.0000	5.0847	-1.7	100	0.00
35	T	Bromochloromethane	5.0000	5.4070	-8.1	100	0.00
36	T	Tetrahydrofuran	50.0000	46.9599	6.1	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4487	2.1	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	5.0911	-1.8	100	0.00
39	T	Cyclohexane	5.0000	4.8003	4.0	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.9509	1.0	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	49.3045	1.4	100	0.00
42	T	Carbon Tetrachloride	5.0000	5.0005	-0.0	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.4950	0.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	5.1517	-3.0	100	0.00
46	T	Benzene	5.0000	5.3424	-6.8	100	0.00
47	T	Trichloroethene	5.0000	5.1039	-2.1	100	0.00
48	T	Methylcyclohexane	5.0000	4.7903	4.2	100	0.01
49	C	1,2-Dichloropropane	5.0000	5.2232	-4.5	100	0.00
50	T	Bromodichloromethane	5.0000	5.1631	-3.3	100	0.00
51	T	1,4-Dioxane	100.0000	79.4892	20.5	100	0.00
52	T	Dibromomethane	5.0000	5.3076	-6.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.8136	3.7	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.7205	5.6	100	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021716\8M410197.D Vial: 6
Acq On : 17 Feb 2016 16:52 Operator: TMB
Sample : WG556046-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	5.1983	-4.0	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.0888	18.2	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.5184	-0.7	100	0.00
59	C	Toluene	5.0000	5.4086	-8.2	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.7596	4.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.9464	1.1	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	5.2551	-5.1	100	0.00
64	T	2-Hexanone	5.0000	4.2940	14.1	100	0.00
65	T	1,3-Dichloropropane	5.0000	5.1395	-2.8	100	-0.01
66	T	Tetrachloroethene	5.0000	5.2642	-5.3	100	0.00
67	T	Dibromochloromethane	5.0000	4.9341	1.3	100	0.00
68	T	1,2-Dibromoethane	5.0000	5.1349	-2.7	100	0.01
69	T	1-Chlorohexane	5.0000	5.3332	-6.7	100	0.00
70	P	Chlorobenzene	5.0000	5.3774	-7.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.9810	0.4	100	0.00
72	C	Ethylbenzene	5.0000	5.0418	-0.8	100	0.00
73	T	m-,p-Xylene	10.0000	10.8306	-8.3	100	-0.01
74	T	o-Xylene	5.0000	5.0418	-0.8	100	0.00
75	T	Styrene	5.0000	5.2659	-5.3	100	-0.01
76	P	Bromoform	5.0000	4.7211	5.6	100	0.00
77	T	Isopropylbenzene	5.0000	5.4570	-9.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.2519	-5.0	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6005	-4.0	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.1040	-2.1	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	5.1757	-3.5	100	0.00
83	T	n-Propylbenzene	5.0000	5.5767	-11.5	100	0.00
84	T	Bromobenzene	5.0000	4.9401	1.2	100	-0.01
85	T	1,3,5-Trimethylbenzene	5.0000	5.4230	-8.5	100	0.00
86	T	2-Chlorotoluene	5.0000	5.2135	-4.3	100	0.00
87	T	4-Chlorotoluene	5.0000	5.6202	-12.4	100	0.00
88	T	a-Methylstyrene	5.0000	5.0078	-0.2	100	0.00
89	T	tert-Butylbenzene	5.0000	5.1110	-2.2	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.4836	-9.7	100	0.00
91	T	sec-Butylbenzene	5.0000	5.4427	-8.9	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.3645	-7.3	100	-0.01
93	T	1,3-Dichlorobenzene	5.0000	5.3053	-6.1	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.1956	-3.9	100	0.00
95	T	n-Butylbenzene	5.0000	5.4563	-9.1	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.2424	-4.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.3520	-7.0	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	5.2236	-4.5	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.1471	-2.9	100	0.00
100	T	Naphthalene	5.0000	5.2710	-5.4	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	5.2007	-4.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410198.D Vial: 7
Acq On : 17 Feb 2016 17:21 Operator: TMB
Sample : WG556046-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:12 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823727	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	577593	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	295141	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	87309	10.3257 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.32%#		
43) 1,2-Dichloroethane-d4	10.30	65	92239	10.1881 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.76%#		
58) Toluene-d8	12.68	98	299824	10.5128 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 42.04%#		
80) p-Bromofluorobenzene	16.07	95	120192	10.4832 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.92%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	288132	22.1907 ug/L	100
3) Chloromethane	3.63	50	412247	20.7629 ug/L	99
4) Vinyl Chloride	3.85	62	306309	22.1615 ug/L	98
5) 1,3-Butadiene	3.90	54	308554	28.6584 ug/L	97
6) Bromomethane	4.74	94	124777	19.0010 ug/L	96
7) Chloroethane	4.90	64	128070	20.5110 ug/L	99
8) Trichlorofluoromethane	5.38	101	309967	20.9246 ug/L	98
9) Diethyl ether	5.92	59	412082	75.9614 ug/L	99
10) Isoprene	5.95	67	206506	20.5715 ug/L	97
11) Acrolein	6.15	56	32355	38.4061 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	162586	20.1047 ug/L	94
13) Acetone	6.25	43	27531	20.4356 ug/L	99
14) 1,1-Dichloroethene	6.48	61	306515	20.5944 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	56104	163.9751 ug/L	95
16) Dimethyl Sulfide	6.74	62	133779	20.5215 ug/L	96
17) Iodomethane	7.00	142	83366	17.0267 ug/L	96
18) Methyl acetate	7.01	43	72219	19.1979 ug/L	99
19) Methylene Chloride	7.25	84	163490	20.0621 ug/L	96
20) Carbon Disulfide	7.30	76	531297	20.7693 ug/L	99
21) Acrylonitrile	7.44	53	69771	36.7320 ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	326460	19.7242 ug/L	97
23) trans-1,2-Dichloroethene	7.71	61	283266	20.3594 ug/L	92
24) n-Hexane	7.79	57	234124	19.7372 ug/L	96
25) Diisopropyl ether	8.13	45	2443113	79.0328 ug/L	100
26) Vinyl Acetate	8.30	43	283060	19.9215 ug/L	99
27) 1,1-Dichloroethane	8.33	63	356159	20.5153 ug/L	97
28) Ethyl-Tert-Butyl ether	8.71	59	1970314	79.4708 ug/L	99
29) 2-Butanone	8.89	43	41256	19.4760 ug/L	96
30) Propionitrile	9.00	54	49449	81.2633 ug/L	98
31) 2,2-Dichloropropane	9.10	77	263742	19.3177 ug/L	100
32) cis-1,2-Dichloroethene	9.18	96	183241	20.4478 ug/L	88
33) Chloroform	9.38	83	318837	20.7007 ug/L	100
34) 1-Bromopropane	9.52	122	26063	19.9503 ug/L	98
35) Bromochloromethane	9.61	130	92999	20.7400 ug/L	93
36) Tetrahydrofuran	9.64	42	105134	74.0884 ug/L	98
38) 1,1,1-Trichloroethane	9.91	97	286634	20.3946 ug/L	99
39) Cyclohexane	9.94	56	332633	20.3368 ug/L	97
40) 1,1-Dichloropropene	10.11	75	241787	19.7723 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1355434	77.7843 ug/L	97
42) Carbon Tetrachloride	10.25	117	262820	20.5478 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M410198.D 8260WTR.M Thu Feb 18 08:46:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410198.D Vial: 7
Acq On : 17 Feb 2016 17:21 Operator: TMB
Sample : WG556046-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:12 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	238823	20.4097 ug/L	96
46)	Benzene	10.47	78	673798	21.1478 ug/L	98
47)	Trichloroethene	11.21	130	175099	20.4046 ug/L	98
48)	Methylcyclohexane	11.31	83	253261	20.4952 ug/L	96
49)	1,2-Dichloropropane	11.43	63	185391	20.6959 ug/L	98
50)	Bromodichloromethane	11.73	83	235412	20.7018 ug/L	99
51)	1,4-Dioxane	11.72	88	5613	155.3505 ug/L	99
52)	Dibromomethane	11.81	93	85288	20.9787 ug/L	95
53)	2-Chloroethyl Vinyl Ether	12.03	63	76501	19.6338 ug/L	98
54)	4-Methyl-2-Pentanone	12.06	58	34788	19.1719 ug/L	98
55)	cis-1,3-Dichloropropene	12.36	75	257004	20.7646 ug/L	99
56)	Dimethyl Disulfide	12.63	79	126729	19.4242 ug/L	99
59)	Toluene	12.78	91	695071	21.5954 ug/L	99
60)	Ethyl Methacrylate	12.88	69	131425	21.1414 ug/L	97
62)	trans-1,3-Dichloropropene	12.96	75	217105	20.1812 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	107486	21.0041 ug/L	99
64)	2-Hexanone	13.11	58	30881	19.3931 ug/L #	93
65)	1,3-Dichloropropane	13.48	76	193371	20.6130 ug/L	94
66)	Tetrachloroethene	13.60	164	135742	20.9955 ug/L	93
67)	Dibromochloromethane	13.87	129	146543	20.8885 ug/L	99
68)	1,2-Dibromoethane	14.13	107	107361	20.7283 ug/L	100
69)	1-Chlorohexane	14.21	91	229265	21.0077 ug/L	93
70)	Chlorobenzene	14.62	112	453571	20.5939 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.65	131	161638	20.4579 ug/L	99
72)	Ethylbenzene	14.65	106	254478	20.1946 ug/L	100
73)	m-,p-Xylene	14.74	106	613555	42.5970 ug/L	98
74)	o-Xylene	15.31	106	298414	19.9744 ug/L	99
75)	Styrene	15.34	104	491369	21.5711 ug/L	97
76)	Bromoform	15.83	173	80430	19.8940 ug/L	99
77)	Isopropylbenzene	15.73	105	780984	21.9227 ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.95	83	119916	20.3306 ug/L	98
81)	1,2,3-Trichloropropane	16.13	110	32413	19.6379 ug/L	87
82)	trans-1,4-Dichloro-2-Buten	16.18	53	45061	20.5166 ug/L	87
83)	n-Propylbenzene	16.24	91	947796	21.7322 ug/L	99
84)	Bromobenzene	16.36	156	176903	20.3791 ug/L	89
85)	1,3,5-Trimethylbenzene	16.42	105	660417	21.6951 ug/L	99
86)	2-Chlorotoluene	16.50	91	576854	20.2490 ug/L	91
87)	4-Chlorotoluene	16.56	91	610186	21.8391 ug/L	90
88)	a-Methylstyrene	16.82	118	324226	20.3406 ug/L	99
89)	tert-Butylbenzene	16.89	134	131402	20.0327 ug/L	88
90)	1,2,4-Trimethylbenzene	16.94	105	689555	21.9502 ug/L	99
91)	sec-Butylbenzene	17.16	105	830718	21.9549 ug/L	97
92)	p-Isopropyltoluene	17.31	119	674945	21.5331 ug/L	97
93)	1,3-Dichlorobenzene	17.51	146	359899	20.8545 ug/L	94
94)	1,4-Dichlorobenzene	17.64	146	356534	20.5707 ug/L	93
95)	n-Butylbenzene	17.84	91	683032	21.6606 ug/L	97
96)	1,2-Dichlorobenzene	18.13	146	316865	21.1157 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	21395	19.3410 ug/L	87
98)	1,2,4-Trichlorobenzene	20.27	180	223420	20.4493 ug/L	100
99)	Hexachlorobutadiene	20.42	225	92782	20.7657 ug/L	97
100)	Naphthalene	20.64	128	372235	20.8222 ug/L	100
101)	1,2,3-Trichlorobenzene	20.95	180	184489	20.2948 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410198.D Vial: 7
Acq On : 17 Feb 2016 17:21 Operator: TMB
Sample : WG556046-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 8:46 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration

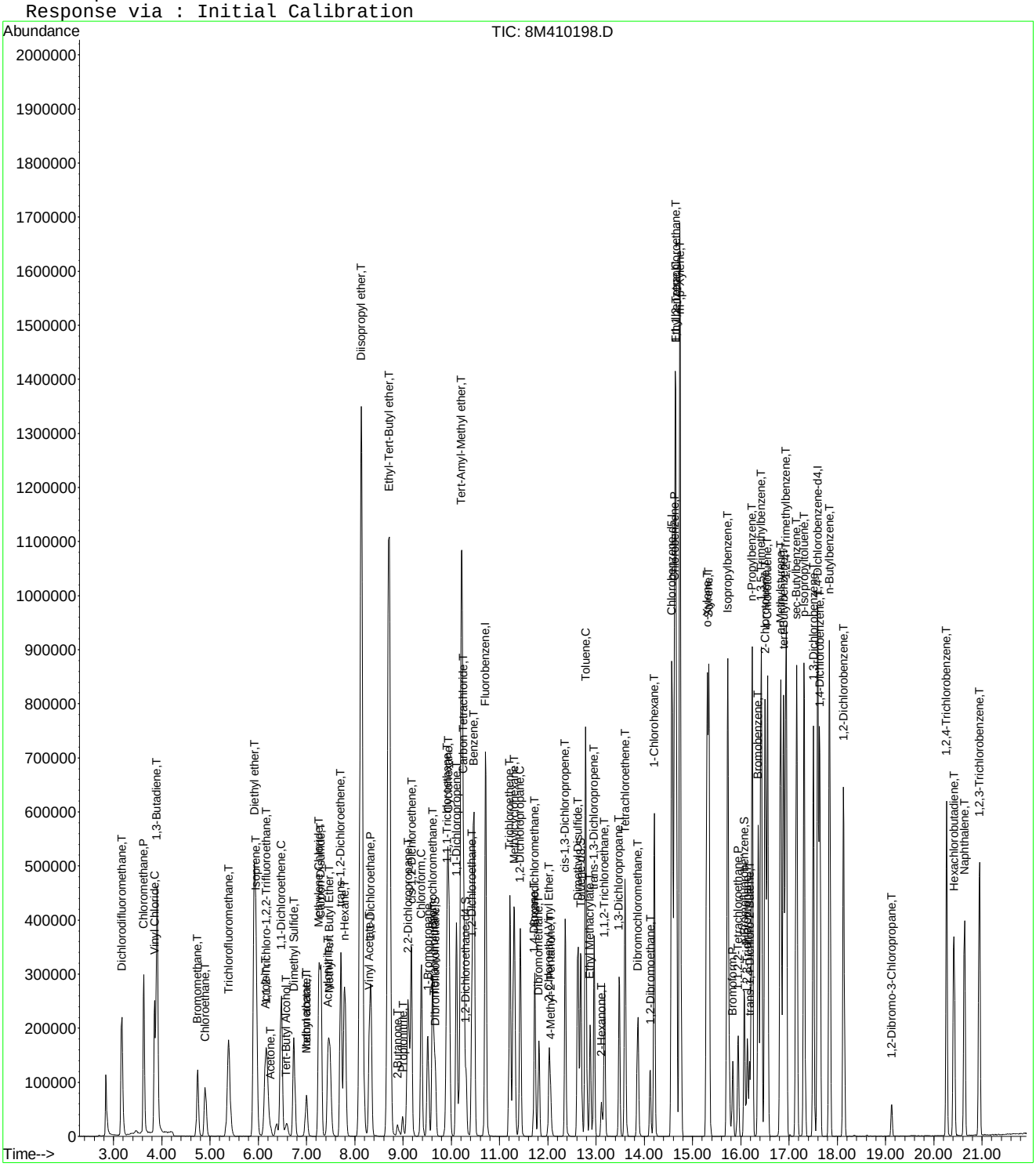

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410199.D Vial: 8
Acq On : 17 Feb 2016 17:50 Operator: TMB
Sample : WG556046-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:14 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	835274	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	592238	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	312633	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	214477	25.0146 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.04%		
43) 1,2-Dichloroethane-d4	10.30	65	233352	25.4181 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.68%		
58) Toluene-d8	12.68	98	749387	25.6262 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.52%		
80) p-Bromofluorobenzene	16.07	95	305463	25.1520 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.60%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	721282	54.7820 ug/L	99
3) Chloromethane	3.63	50	1027734	51.0464 ug/L	99
4) Vinyl Chloride	3.84	62	733207	52.3142 ug/L	98
5) 1,3-Butadiene	3.90	54	592954	59.3556 ug/L	93
6) Bromomethane	4.74	94	336011	50.4603 ug/L	100
7) Chloroethane	4.90	64	326014	51.4908 ug/L	99
8) Trichlorofluoromethane	5.38	101	770080	51.2663 ug/L	99
9) Diethyl ether	5.91	59	533035	96.8990 ug/L	99
10) Isoprene	5.95	67	514801	50.5739 ug/L	98
11) Acrolein	6.14	56	41897	49.0451 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	409046	49.8818 ug/L	93
13) Acetone	6.24	43	69466	50.8500 ug/L	100
14) 1,1-Dichloroethene	6.47	61	775236	51.3672 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	66373	191.3066 ug/L	97
16) Dimethyl Sulfide	6.74	62	331415	50.1359 ug/L	99
17) Iodomethane	6.99	142	256295	49.2035 ug/L	97
18) Methyl acetate	7.01	43	183066	47.9915 ug/L	100
19) Methylene Chloride	7.26	84	416883	50.4490 ug/L	96
20) Carbon Disulfide	7.30	76	1292800	49.8392 ug/L	99
21) Acrylonitrile	7.44	53	100176	52.0101 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	842736	50.2128 ug/L	97
23) trans-1,2-Dichloroethene	7.71	61	728370	51.6270 ug/L	92
24) n-Hexane	7.78	57	565010	46.9732 ug/L	94
25) Diisopropyl ether	8.13	45	3141690	100.2263 ug/L	100
26) Vinyl Acetate	8.30	43	715107	49.6328 ug/L	100
27) 1,1-Dichloroethane	8.33	63	912395	51.8288 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	2537926	100.9498 ug/L	99
29) 2-Butanone	8.89	43	105385	49.0620 ug/L	99
30) Propionitrile	8.99	54	62101	100.6444 ug/L	99
31) 2,2-Dichloropropane	9.11	77	674566	48.7254 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	467788	51.4787 ug/L	89
33) Chloroform	9.37	83	811667	51.9694 ug/L	99
34) 1-Bromopropane	9.52	122	64557	48.0824 ug/L	100
35) Bromochloromethane	9.61	130	240807	52.9607 ug/L	93
36) Tetrahydrofuran	9.63	42	135480	94.1535 ug/L	99
38) 1,1,1-Trichloroethane	9.91	97	730602	51.2652 ug/L	99
39) Cyclohexane	9.94	56	807134	48.6651 ug/L	97
40) 1,1-Dichloropropene	10.11	75	619589	49.9668 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	1767449	100.0264 ug/L	98
42) Carbon Tetrachloride	10.25	117	681525	52.5464 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410199.D Vial: 8
Acq On : 17 Feb 2016 17:50 Operator: TMB
Sample : WG556046-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:14 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	619162	52.1817 ug/L		96
46)	Benzene	10.47	78	1699725	52.6101 ug/L		97
47)	Trichloroethene	11.21	130	444753	51.1115 ug/L		98
48)	Methylcyclohexane	11.30	83	612738	48.9006 ug/L		96
49)	1,2-Dichloropropane	11.43	63	481617	53.0215 ug/L		100
50)	Bromodichloromethane	11.73	83	608651	52.7840 ug/L		99
51)	1,4-Dioxane	11.72	88	7116	194.2263 ug/L		97
52)	Dibromomethane	11.81	93	220726	53.5424 ug/L		94
53)	2-Chloroethyl Vinyl Ether	12.02	63	203656	51.5453 ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	91485	49.7210 ug/L		99
55)	cis-1,3-Dichloropropene	12.36	75	667924	53.2187 ug/L		99
56)	Dimethyl Disulfide	12.62	79	332655	50.2825 ug/L		99
59)	Toluene	12.78	91	1762446	53.4039 ug/L		99
60)	Ethyl Methacrylate	12.88	69	328729	51.5727 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	579282	52.5162 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	283473	54.0244 ug/L		99
64)	2-Hexanone	13.12	58	82143	50.3098 ug/L	#	92
65)	1,3-Dichloropropane	13.48	76	511486	53.1751 ug/L		95
66)	Tetrachloroethene	13.60	164	342897	51.7250 ug/L		93
67)	Dibromochloromethane	13.87	129	396784	55.1596 ug/L		99
68)	1,2-Dibromoethane	14.12	107	288531	54.3294 ug/L		98
69)	1-Chlorohexane	14.21	91	568699	50.8218 ug/L		93
70)	Chlorobenzene	14.62	112	1184148	52.4355 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	437522	54.0062 ug/L		100
72)	Ethylbenzene	14.66	106	660497	51.1188 ug/L		99
73)	m-,p-Xylene	14.74	106	1587940	107.5191 ug/L		99
74)	o-Xylene	15.31	106	787640	51.4172 ug/L		99
75)	Styrene	15.34	104	1314879	56.2957 ug/L		96
76)	Bromoform	15.83	173	229214	55.2931 ug/L		99
77)	Isopropylbenzene	15.73	105	2008012	54.9722 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	339093	54.2734 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	91604	52.3945 ug/L		91
82)	trans-1,4-Dichloro-2-Buten	16.18	53	122745	52.7598 ug/L		86
83)	n-Propylbenzene	16.24	91	2421064	52.4072 ug/L		99
84)	Bromobenzene	16.36	156	475611	51.7245 ug/L		87
85)	1,3,5-Trimethylbenzene	16.42	105	1737839	53.8949 ug/L		100
86)	2-Chlorotoluene	16.51	91	1558978	51.6622 ug/L		99
87)	4-Chlorotoluene	16.56	91	1599988	54.0609 ug/L		97
88)	a-Methylstyrene	16.83	118	842979	49.9261 ug/L		99
89)	tert-Butylbenzene	16.89	134	350928	50.5068 ug/L		90
90)	1,2,4-Trimethylbenzene	16.94	105	1815097	54.5462 ug/L		99
91)	sec-Butylbenzene	17.16	105	2145835	53.5389 ug/L		98
92)	p-Isopropyltoluene	17.31	119	1775425	53.4730 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	974599	53.3139 ug/L		93
94)	1,4-Dichlorobenzene	17.63	146	961360	52.3636 ug/L		92
95)	n-Butylbenzene	17.84	91	1765145	52.8452 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	862493	54.2603 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.12	75	62184	52.1991 ug/L		88
98)	1,2,4-Trichlorobenzene	20.27	180	625598	54.0562 ug/L		99
99)	Hexachlorobutadiene	20.42	225	250126	52.8490 ug/L		96
100)	Naphthalene	20.64	128	1052890	55.6016 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	521877	54.1972 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M410199.D 8260WTR.M Thu Feb 18 08:46:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410199.D Vial: 8
Acq On : 17 Feb 2016 17:50 Operator: TMB
Sample : WG556046-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 8:46 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration

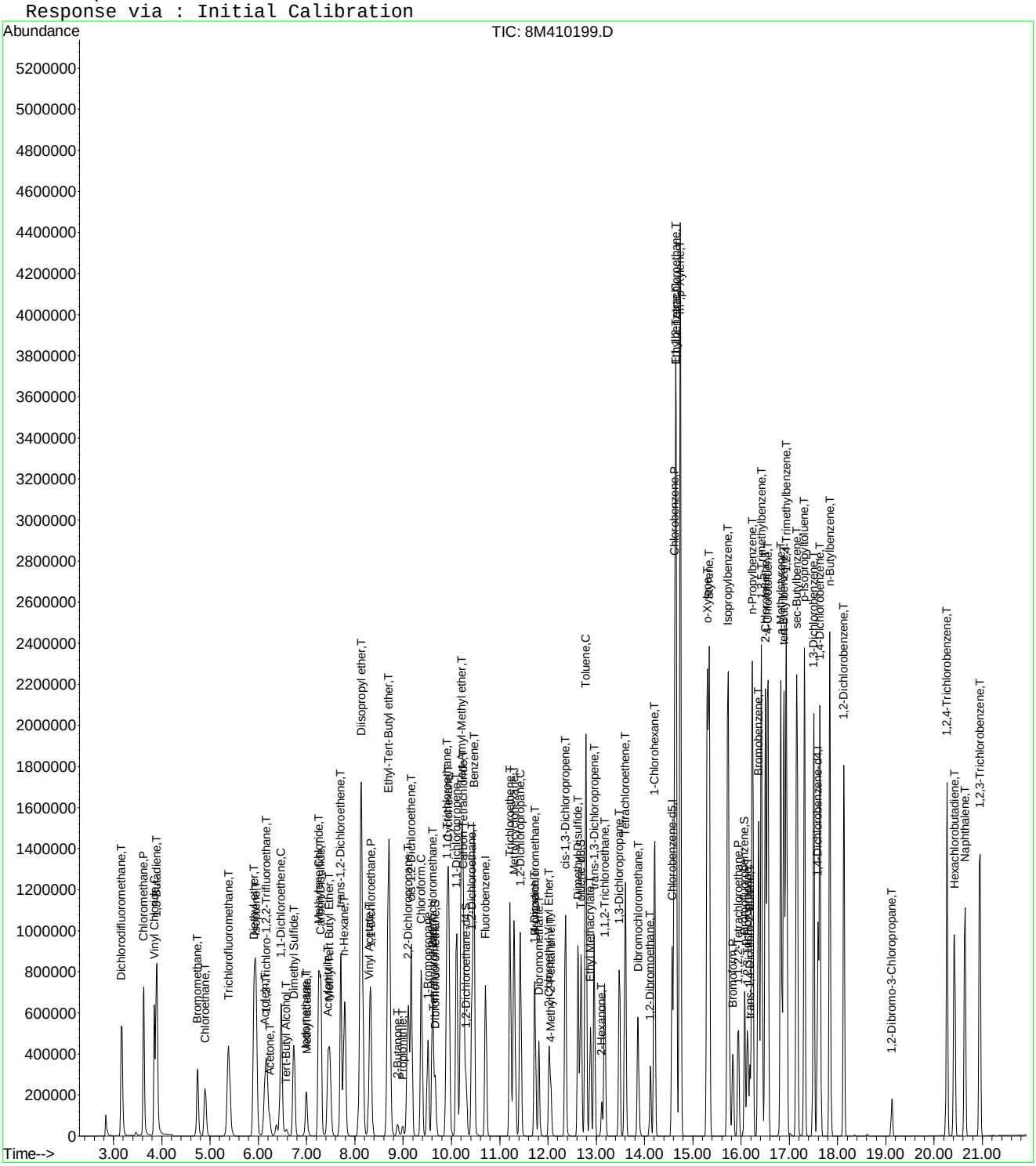

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410200.D Vial: 9
Acq On : 17 Feb 2016 18:19 Operator: TMB
Sample : WG556046-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:15 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	903347	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	637319	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	336830	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	468963	50.5739 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 202.28%#		
43) 1,2-Dichloroethane-d4	10.30	65	509308	51.2964 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 205.20%#		
58) Toluene-d8	12.68	98	1569538	49.8757 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 199.52%#		
80) p-Bromofluorobenzene	16.07	95	652340	49.8554 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 199.44%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	1433681	100.6839 ug/L	99
3) Chloromethane	3.63	50	2046102	93.9692 ug/L	100
4) Vinyl Chloride	3.84	62	1388202	91.5841 ug/L	100
5) 1,3-Butadiene	3.89	54	815853	79.1082 ug/L	89
6) Bromomethane	4.74	94	719896	99.9632 ug/L	99
7) Chloroethane	4.90	64	687141	100.3491 ug/L	99
8) Trichlorofluoromethane	5.38	101	1611966	99.2261 ug/L	100
9) Diethyl ether	5.91	59	1248419	209.8449 ug/L	99
10) Isoprene	5.94	67	1143199	103.8445 ug/L	97
11) Acrolein	6.15	56	99364	107.5514 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	851054	95.9624 ug/L	94
13) Acetone	6.24	43	145476	98.4656 ug/L	91
14) 1,1-Dichloroethene	6.47	61	1637015	100.2950 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	164137	437.4408 ug/L	96
16) Dimethyl Sulfide	6.74	62	759272	106.2058 ug/L	99
17) Iodomethane	6.99	142	584203	102.3505 ug/L	97
18) Methyl acetate	7.00	43	438076	106.1892 ug/L	99
19) Methylene Chloride	7.25	84	891713	99.7788 ug/L	95
20) Carbon Disulfide	7.30	76	2782313	99.1790 ug/L	100
21) Acrylonitrile	7.44	53	233985	112.3276 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	1891075	104.1852 ug/L	97
23) trans-1,2-Dichloroethene	7.71	61	1553137	101.7909 ug/L	92
24) n-Hexane	7.79	57	1256661	96.6021 ug/L	95
25) Diisopropyl ether	8.13	45	6957088	205.2202 ug/L	99
26) Vinyl Acetate	8.30	43	1617440	103.8007 ug/L	99
27) 1,1-Dichloroethane	8.33	63	1936758	101.7273 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	5732317	210.8294 ug/L	98
29) 2-Butanone	8.89	43	254274	109.4567 ug/L	99
30) Propionitrile	8.99	54	150086	224.9084 ug/L	98
31) 2,2-Dichloropropane	9.10	77	1476332	98.6029 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	995286	101.2746 ug/L	86
33) Chloroform	9.37	83	1716606	101.6283 ug/L	99
34) 1-Bromopropane	9.52	122	141797	97.1880 ug/L	100
35) Bromochloromethane	9.61	130	520554	105.8582 ug/L	94
36) Tetrahydrofuran	9.63	42	319359	205.2176 ug/L	99
38) 1,1,1-Trichloroethane	9.91	97	1556799	101.0064 ug/L	100
39) Cyclohexane	9.94	56	1782227	99.3595 ug/L	96
40) 1,1-Dichloropropene	10.11	75	1307923	97.5292 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	4037773	211.2925 ug/L	96
42) Carbon Tetrachloride	10.25	117	1435237	102.3197 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410200.D Vial: 9
Acq On : 17 Feb 2016 18:19 Operator: TMB
Sample : WG556046-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:15 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	1340737	104.4797 ug/L	96
46)	Benzene	10.47	78	3497550	100.0987 ug/L	94
47)	Trichloroethene	11.21	130	934321	99.2819 ug/L	98
48)	Methylcyclohexane	11.30	83	1326547	97.8895 ug/L	94
49)	1,2-Dichloropropane	11.43	63	1027383	104.5820 ug/L	99
50)	Bromodichloromethane	11.73	83	1315657	105.4996 ug/L	99
51)	1,4-Dioxane	11.72	88	18464	465.9852 ug/L	96
52)	Dibromomethane	11.81	93	482157	108.1452 ug/L	95
53)	2-Chloroethyl Vinyl Ether	12.02	63	461514	108.0067 ug/L	98
54)	4-Methyl-2-Pentanone	12.06	58	210364	105.7147 ug/L	99
55)	cis-1,3-Dichloropropene	12.36	75	1446960	106.6027 ug/L	99
56)	Dimethyl Disulfide	12.62	79	760668	106.3144 ug/L	99
59)	Toluene	12.78	91	3588819	101.0528 ug/L	97
60)	Ethyl Methacrylate	12.88	69	765654	111.6230 ug/L	98
62)	trans-1,3-Dichloropropene	12.96	75	1276094	107.5041 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	611318	108.2641 ug/L	99
64)	2-Hexanone	13.11	58	193867	110.3380 ug/L #	92
65)	1,3-Dichloropropane	13.48	76	1101893	106.4520 ug/L	95
66)	Tetrachloroethene	13.60	164	730579	102.4103 ug/L	92
67)	Dibromochloromethane	13.87	129	856678	110.6685 ug/L	100
68)	1,2-Dibromoethane	14.12	107	615818	107.7542 ug/L	99
69)	1-Chlorohexane	14.21	91	1234803	102.5426 ug/L	91
70)	Chlorobenzene	14.62	112	2490690	102.4894 ug/L	97
71)	1,1,1,2-Tetrachloroethane	14.65	131	956138	109.6739 ug/L	98
72)	Ethylbenzene	14.65	106	1433262	103.0801 ug/L	90
73)	m-,p-Xylene	14.74	106	3318826	208.8215 ug/L	89
74)	o-Xylene	15.31	106	1659760	100.6851 ug/L	96
75)	Styrene	15.34	104	2744935	109.2096 ug/L	94
76)	Bromoform	15.83	173	495939	111.1725 ug/L	100
77)	Isopropylbenzene	15.73	105	4054328	103.1419 ug/L	96
79)	1,1,2,2-Tetrachloroethane	15.95	83	726241	107.8880 ug/L	99
81)	1,2,3-Trichloropropane	16.13	110	201190	106.8074 ug/L	90
82)	trans-1,4-Dichloro-2-Buten	16.18	53	273166	108.9807 ug/L	88
83)	n-Propylbenzene	16.24	91	4758905	95.6127 ug/L	96
84)	Bromobenzene	16.36	156	980332	98.9559 ug/L	87
85)	1,3,5-Trimethylbenzene	16.42	105	3548144	102.1323 ug/L	98
86)	2-Chlorotoluene	16.50	91	3080378	94.7460 ug/L	89
87)	4-Chlorotoluene	16.56	91	3275680	102.7288 ug/L	91
88)	a-Methylstyrene	16.82	118	1822200	100.1685 ug/L	99
89)	tert-Butylbenzene	16.89	134	736282	98.3559 ug/L	94
90)	1,2,4-Trimethylbenzene	16.94	105	3679498	102.6307 ug/L	96
91)	sec-Butylbenzene	17.16	105	4282594	99.1755 ug/L	100
92)	p-Isopropyltoluene	17.31	119	3601403	100.6765 ug/L	99
93)	1,3-Dichlorobenzene	17.51	146	2007576	101.9319 ug/L	91
94)	1,4-Dichlorobenzene	17.64	146	1983749	100.2892 ug/L	92
95)	n-Butylbenzene	17.84	91	3551291	98.6814 ug/L	99
96)	1,2-Dichlorobenzene	18.13	146	1771782	103.4573 ug/L	90
97)	1,2-Dibromo-3-Chloropropan	19.12	75	137946	106.9493 ug/L	86
98)	1,2,4-Trichlorobenzene	20.27	180	1296017	103.9406 ug/L	99
99)	Hexachlorobutadiene	20.42	225	524135	102.7887 ug/L	97
100)	Naphthalene	20.64	128	2166531	106.1924 ug/L	100
101)	1,2,3-Trichlorobenzene	20.95	180	1088968	104.9658 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M410200.D 8260WTR.M Thu Feb 18 08:46:16 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410200.D Vial: 9
Acq On : 17 Feb 2016 18:19 Operator: TMB
Sample : WG556046-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 8:46 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration

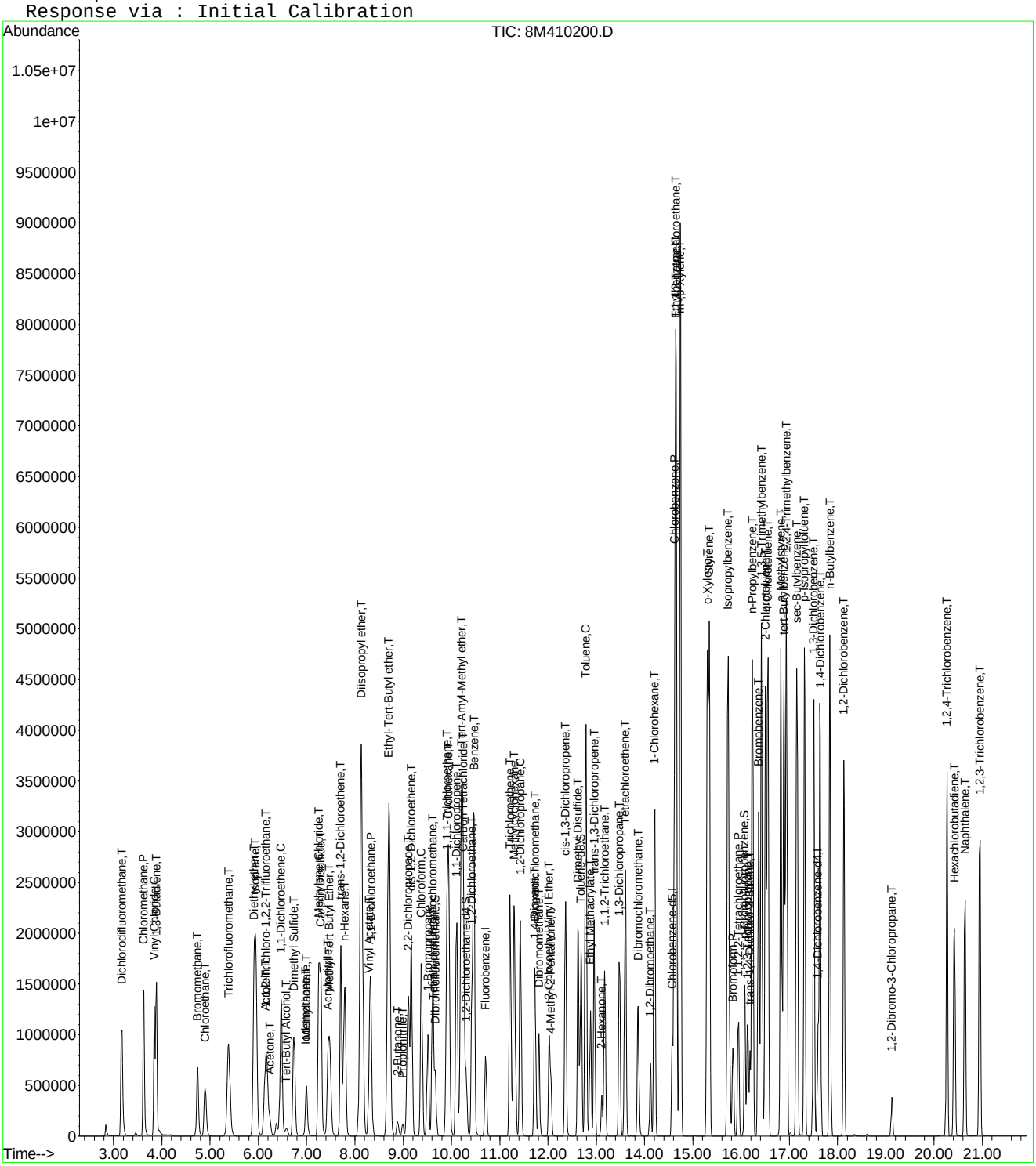

8M410200.D 8260WTR.M Thu Feb 18 08:46:16 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410201.D Vial: 10
Acq On : 17 Feb 2016 18:49 Operator: TMB
Sample : WG556046-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:16 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	956583	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	687631	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	351072	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	997283	101.5636 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 406.24%#		
43) 1,2-Dichloroethane-d4	10.30	65	1054235	100.2710 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 401.08%#		
58) Toluene-d8	12.68	98	3312230	97.5527 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 390.20%#		
80) p-Bromofluorobenzene	16.07	95	1404127	102.9579 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 411.84%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	3207125	212.6940 ug/L	98
3) Chloromethane	3.62	50	4218032	182.9364 ug/L	96
4) Vinyl Chloride	3.84	62	2842345	177.0828 ug/L	98
5) 1,3-Butadiene	3.89	54	1493970	169.3326 ug/L	91
6) Bromomethane	4.73	94	1725839	226.3095 ug/L	99
7) Chloroethane	4.90	64	1596246	220.1402 ug/L	99
8) Trichlorofluoromethane	5.38	101	3695131	214.7988 ug/L	99
10) Isoprene	5.94	67	2535752	217.5206 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	1996391	212.5797 ug/L	94
13) Acetone	6.25	43	315092	201.4015 ug/L	97
14) 1,1-Dichloroethene	6.47	61	3702570	214.2209 ug/L	95
15) Tert-Butyl Alcohol	6.57	59	6262	15.7601 ug/L #	69
16) Dimethyl Sulfide	6.74	62	1652751	218.3184 ug/L	100
17) Iodomethane	7.00	142	1265211	207.9212 ug/L	97
18) Methyl acetate	7.01	43	863527	197.6690 ug/L	99
19) Methylene Chloride	7.26	84	1981498	209.3817 ug/L	95
20) Carbon Disulfide	7.30	76	5864970	197.4292 ug/L	98
21) Acrylonitrile	7.47	53	50942	23.0944 ug/L #	32
22) Methyl Tert Butyl Ether	7.47	73	3951157	205.5671 ug/L	95
23) trans-1,2-Dichloroethene	7.71	61	3497569	216.4698 ug/L	91
24) n-Hexane	7.79	57	2877796	208.9106 ug/L	95
26) Vinyl Acetate	8.30	43	3301434	200.0815 ug/L	98
27) 1,1-Dichloroethane	8.33	63	4293451	212.9613 ug/L	99
29) 2-Butanone	8.89	43	497150	202.0970 ug/L	100
30) Propionitrile	8.98	54	214	0.3028 ug/L #	56
31) 2,2-Dichloropropane	9.11	77	3277205	206.7004 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2220701	213.3902 ug/L	87
33) Chloroform	9.37	83	3724924	208.2541 ug/L	97
34) 1-Bromopropane	9.52	122	308611	199.2751 ug/L	99
35) Bromochloromethane	9.61	130	1125830	216.2039 ug/L	94
36) Tetrahydrofuran	9.64	42	4028	2.4443 ug/L #	67
38) 1,1,1-Trichloroethane	9.91	97	3479442	213.1856 ug/L	99
39) Cyclohexane	9.94	56	4055633	213.5193 ug/L	95
40) 1,1-Dichloropropene	10.11	75	2944518	207.3473 ug/L	98
42) Carbon Tetrachloride	10.25	117	3192786	214.9499 ug/L	100
45) 1,2-Dichloroethane	10.43	62	2825501	207.9292 ug/L	98
46) Benzene	10.47	78	7136625	192.8809 ug/L	88
47) Trichloroethene	11.21	130	2082554	208.9787 ug/L	97
48) Methylcyclohexane	11.30	83	2958611	206.1737 ug/L	93
49) 1,2-Dichloropropane	11.43	63	2286532	219.8032 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M410201.D 8260WTR.M Thu Feb 18 08:46:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410201.D Vial: 10
Acq On : 17 Feb 2016 18:49 Operator: TMB
Sample : WG556046-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:16 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
50)	Bromodichloromethane	11.73	83	2817911	213.3868 ug/L	98
51)	1,4-Dioxane	11.72	88	4608	109.8224 ug/L #	29
52)	Dibromomethane	11.81	93	1022585	216.5958 ug/L	96
53)	2-Chloroethyl Vinyl Ether	12.03	63	946919	209.2718 ug/L	98
54)	4-Methyl-2-Pentanone	12.06	58	427769	203.0043 ug/L	98
55)	cis-1,3-Dichloropropene	12.36	75	3096808	215.4556 ug/L	98
56)	Dimethyl Disulfide	12.63	79	1628540	214.9449 ug/L	98
59)	Toluene	12.78	91	7196894	187.8206 ug/L	89
60)	Ethyl Methacrylate	12.88	69	1556070	210.2576 ug/L	98
62)	trans-1,3-Dichloropropene	12.96	75	2651231	207.0100 ug/L	98
63)	1,1,2-Trichloroethane	13.18	97	1298808	213.1885 ug/L	99
64)	2-Hexanone	13.12	58	388009	204.6749 ug/L #	91
65)	1,3-Dichloropropane	13.48	76	2313774	207.1747 ug/L	95
66)	Tetrachloroethene	13.60	164	1675803	217.7213 ug/L	94
67)	Dibromochloromethane	13.87	129	1819960	217.9063 ug/L	99
68)	1,2-Dibromoethane	14.12	107	1296002	210.1788 ug/L	98
69)	1-Chlorohexane	14.21	91	2650311	203.9882 ug/L	87
70)	Chlorobenzene	14.62	112	5266219	200.8443 ug/L	94
71)	1,1,1,2-Tetrachloroethane	14.66	131	2104814	223.7680 ug/L	99
72)	Ethylbenzene	14.66	106	3293664	219.5482 ug/L	66
73)	m-,p-Xylene	14.75	106	6845381	399.1994 ug/L	67
74)	o-Xylene	15.31	106	3703866	208.2459 ug/L	82
75)	Styrene	15.34	104	5701446	210.2400 ug/L	91
76)	Bromoform	15.83	173	1037882	215.6347 ug/L	99
77)	Isopropylbenzene	15.73	105	7855864	185.2302 ug/L	88
79)	1,1,2,2-Tetrachloroethane	15.95	83	1439550	205.1793 ug/L	99
81)	1,2,3-Trichloropropane	16.13	110	401727	204.6165 ug/L	90
82)	trans-1,4-Dichloro-2-Buten	16.18	53	563568	215.7168 ug/L	90
83)	n-Propylbenzene	16.24	91	8643474	166.6140 ug/L	84
84)	Bromobenzene	16.37	156	2109944	204.3404 ug/L	90
85)	1,3,5-Trimethylbenzene	16.42	105	7012987	193.6777 ug/L	90
86)	2-Chlorotoluene	16.51	91	6864917	202.5847 ug/L	92
87)	4-Chlorotoluene	16.56	91	5395143	162.3335 ug/L	91
88)	a-Methylstyrene	16.83	118	3872958	204.2643 ug/L	98
89)	tert-Butylbenzene	16.89	134	1650907	211.5891 ug/L	96
90)	1,2,4-Trimethylbenzene	16.94	105	7099816	189.9985 ug/L	86
91)	sec-Butylbenzene	17.16	105	8103104	180.0377 ug/L	92
92)	p-Isopropyltoluene	17.31	119	6978546	187.1698 ug/L	93
93)	1,3-Dichlorobenzene	17.51	146	4155181	202.4151 ug/L	89
94)	1,4-Dichlorobenzene	17.64	146	4053106	196.5938 ug/L	88
95)	n-Butylbenzene	17.84	91	6771269	180.5235 ug/L	93
96)	1,2-Dichlorobenzene	18.13	146	3634804	203.6321 ug/L	88
97)	1,2-Dibromo-3-Chloropropan	19.12	75	273206	202.7744 ug/L	85
98)	1,2,4-Trichlorobenzene	20.27	180	2662342	204.8580 ug/L	98
99)	Hexachlorobutadiene	20.42	225	1179047	221.8441 ug/L	97
100)	Naphthalene	20.64	128	4088314	192.2593 ug/L	98
101)	1,2,3-Trichlorobenzene	20.95	180	2212178	204.5819 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M410201.D 8260WTR.M Thu Feb 18 08:46:17 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410201.D Vial: 10
Acq On : 17 Feb 2016 18:49 Operator: TMB
Sample : WG556046-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 8:46 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration

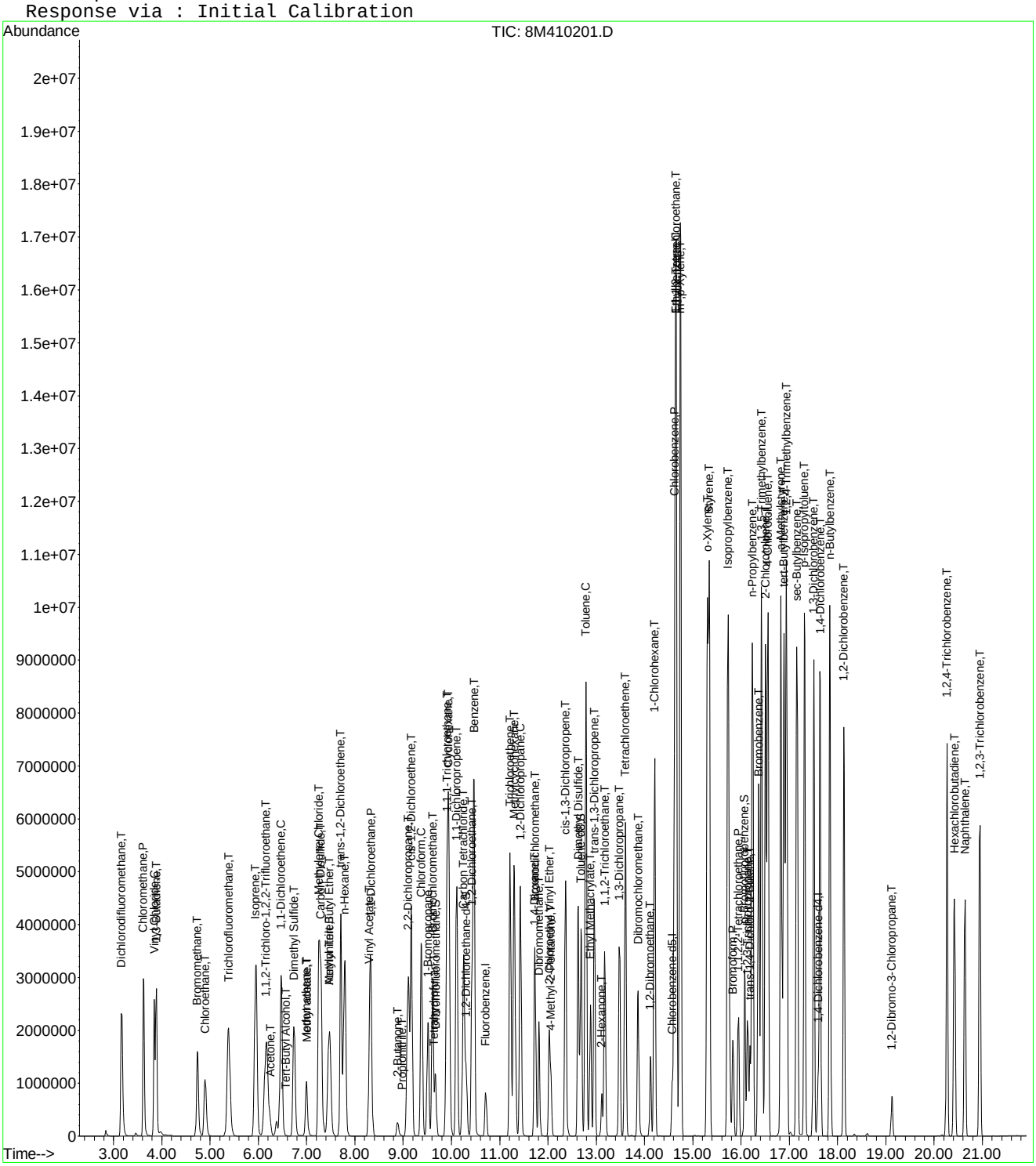

8M410201.D 8260WTR.M Thu Feb 18 08:46:17 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410202.D Vial: 11
Acq On : 17 Feb 2016 19:18 Operator: TMB
Sample : WG556046-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:17 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1008689	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	733562	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	373286	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	1555004	150.1816 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 600.72%#		
43) 1,2-Dichloroethane-d4	10.30	65	1607347	144.9817 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 579.92%#		
58) Toluene-d8	12.69	98	5071107	140.0039 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 560.00%#		
80) p-Bromofluorobenzene	16.07	95	2206855	152.1884 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 608.76%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4742513	298.2725 ug/L	96
3) Chloromethane	3.62	50	5815191	239.1772 ug/L	93
4) Vinyl Chloride	3.84	62	3879738	229.2278 ug/L	96
5) 1,3-Butadiene	3.89	54	2012878	Below Cal	91
6) Bromomethane	4.73	94	2694799	335.1153 ug/L	99
7) Chloroethane	4.90	64	2526714	330.4617 ug/L	99
8) Trichlorofluoromethane	5.38	101	5708944	314.7192 ug/L	99
9) Diethyl ether	5.91	59	2119585	319.0702 ug/L	99
10) Isoprene	5.94	67	4076181	331.5983 ug/L	95
11) Acrolein	6.15	56	179096	173.6082 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	3078534	310.8748 ug/L	95
13) Acetone	6.25	43	458158	277.7192 ug/L	95
14) 1,1-Dichloroethene	6.47	61	5625075	308.6400 ug/L	97
15) Tert-Butyl Alcohol	6.59	59	217629	519.4298 ug/L	97
16) Dimethyl Sulfide	6.74	62	2625688	328.9208 ug/L	99
17) Iodomethane	6.99	142	1892743	294.2921 ug/L	96
18) Methyl acetate	7.00	43	1374996	298.4898 ug/L	99
19) Methylene Chloride	7.25	84	3066708	307.3143 ug/L	97
20) Carbon Disulfide	7.30	76	8814282	281.3831 ug/L	96
21) Acrylonitrile	7.44	53	432432	185.9146 ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	6004862	296.2768 ug/L	93
23) trans-1,2-Dichloroethene	7.71	61	5275304	309.6306 ug/L	93
24) n-Hexane	7.78	57	4580413	315.3337 ug/L	95
25) Diisopropyl ether	8.13	45	10882775	287.4946 ug/L	97
26) Vinyl Acetate	8.30	43	5196820	298.6808 ug/L	98
27) 1,1-Dichloroethane	8.33	63	6412833	301.6543 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	8966752	295.3476 ug/L	95
29) 2-Butanone	8.89	43	787190	303.4711 ug/L	100
30) Propionitrile	8.99	54	249973	335.4717 ug/L	99
31) 2,2-Dichloropropane	9.10	77	4932564	295.0365 ug/L	97
32) cis-1,2-Dichloroethene	9.17	96	3389566	308.8829 ug/L	90
33) Chloroform	9.37	83	5444181	288.6517 ug/L	95
34) 1-Bromopropane	9.52	122	499152	305.4202 ug/L	100
35) Bromochloromethane	9.61	130	1711364	311.6725 ug/L	94
36) Tetrahydrofuran	9.63	42	514819	296.2698 ug/L	99
38) 1,1,1-Trichloroethane	9.91	97	5214542	302.9910 ug/L	98
39) Cyclohexane	9.94	56	6466550	322.8617 ug/L	95
40) 1,1-Dichloropropene	10.11	75	4453616	297.4147 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	6339266	297.0835 ug/L	94
42) Carbon Tetrachloride	10.25	117	4801994	306.5875 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M410202.D 8260WTR.M Thu Feb 18 08:46:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410202.D Vial: 11
Acq On : 17 Feb 2016 19:18 Operator: TMB
Sample : WG556046-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:17 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	4142690	289.1132 ug/L		98
46)	Benzene	10.47	78	9878306	253.1886 ug/L	#	81
47)	Trichloroethene	11.21	130	3199385	304.4652 ug/L		98
48)	Methylcyclohexane	11.30	83	4673038	308.8233 ug/L		92
49)	1,2-Dichloropropane	11.43	63	3558824	324.4357 ug/L		97
50)	Bromodichloromethane	11.73	83	4217604	302.8805 ug/L		97
51)	1,4-Dioxane	11.72	88	29150	658.8435 ug/L		94
52)	Dibromomethane	11.81	93	1569045	315.1747 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1443066	302.4472 ug/L		98
54)	4-Methyl-2-Pentanone	12.06	58	687070	309.2162 ug/L		98
55)	cis-1,3-Dichloropropene	12.36	75	4637758	305.9968 ug/L		96
56)	Dimethyl Disulfide	12.63	79	2558598	320.2552 ug/L		95
59)	Toluene	12.78	91	9689919	237.0483 ug/L		82
60)	Ethyl Methacrylate	12.88	69	2445173	309.7068 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	3963876	290.1232 ug/L		95
63)	1,1,2-Trichloroethane	13.18	97	2009765	309.2308 ug/L		99
64)	2-Hexanone	13.11	58	630123	311.5779 ug/L	#	86
65)	1,3-Dichloropropane	13.49	76	3502124	293.9449 ug/L		95
66)	Tetrachloroethene	13.60	164	2672024	325.4145 ug/L		96
67)	Dibromochloromethane	13.87	129	2786535	312.7456 ug/L		99
68)	1,2-Dibromoethane	14.12	107	2005051	304.8086 ug/L		99
69)	1-Chlorohexane	14.21	91	4187732	302.1383 ug/L		87
70)	Chlorobenzene	14.62	112	7405610	264.7524 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.65	131	3193835	318.2844 ug/L		99
72)	Ethylbenzene	14.65	106	5012485	313.2004 ug/L		48
73)	m-,p-Xylene	14.75	106	9170400	501.3016 ug/L		58
74)	o-Xylene	15.31	106	5573611	293.7491 ug/L		70
75)	Styrene	15.35	104	7985647	276.0318 ug/L		85
76)	Bromoform	15.83	173	1620565	315.6136 ug/L		99
77)	Isopropylbenzene	15.73	105	10413717	230.1666 ug/L	#	77
79)	1,1,2,2-Tetrachloroethane	15.95	83	2233257	299.3643 ug/L		98
81)	1,2,3-Trichloropropane	16.13	110	631306	302.4155 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	887643	319.5438 ug/L		94
83)	n-Propylbenzene	16.24	91	11061244	200.5310 ug/L	#	72
84)	Bromobenzene	16.37	156	3275875	298.3768 ug/L		96
85)	1,3,5-Trimethylbenzene	16.42	105	9351351	242.8877 ug/L		80
86)	2-Chlorotoluene	16.50	91	8986138	249.4014 ug/L		82
87)	4-Chlorotoluene	16.56	91	7331626	207.4723 ug/L		79
88)	a-Methylstyrene	16.82	118	5805469	287.9661 ug/L		95
89)	tert-Butylbenzene	16.89	134	2620155	315.8291 ug/L		82
90)	1,2,4-Trimethylbenzene	16.94	105	9380563	236.0948 ug/L		74
91)	sec-Butylbenzene	17.16	105	10576965	221.0180 ug/L	#	82
92)	p-Isopropyltoluene	17.32	119	9294639	234.4541 ug/L		84
93)	1,3-Dichlorobenzene	17.51	146	6013808	275.5224 ug/L		84
94)	1,4-Dichlorobenzene	17.64	146	5876289	268.0646 ug/L		84
95)	n-Butylbenzene	17.84	91	8960384	224.6699 ug/L	#	83
96)	1,2-Dichlorobenzene	18.14	146	5343587	281.5482 ug/L		85
97)	1,2-Dibromo-3-Chloropropan	19.13	75	413804	288.6380 ug/L		87
98)	1,2,4-Trichlorobenzene	20.27	180	3991013	288.8197 ug/L		98
99)	Hexachlorobutadiene	20.42	225	1876505	332.0634 ug/L		97
100)	Naphthalene	20.64	128	5805822	256.7801 ug/L		95
101)	1,2,3-Trichlorobenzene	20.95	180	3319180	288.6905 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M410202.D 8260WTR.M Thu Feb 18 08:46:18 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410202.D Vial: 11
Acq On : 17 Feb 2016 19:18 Operator: TMB
Sample : WG556046-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 8:46 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration

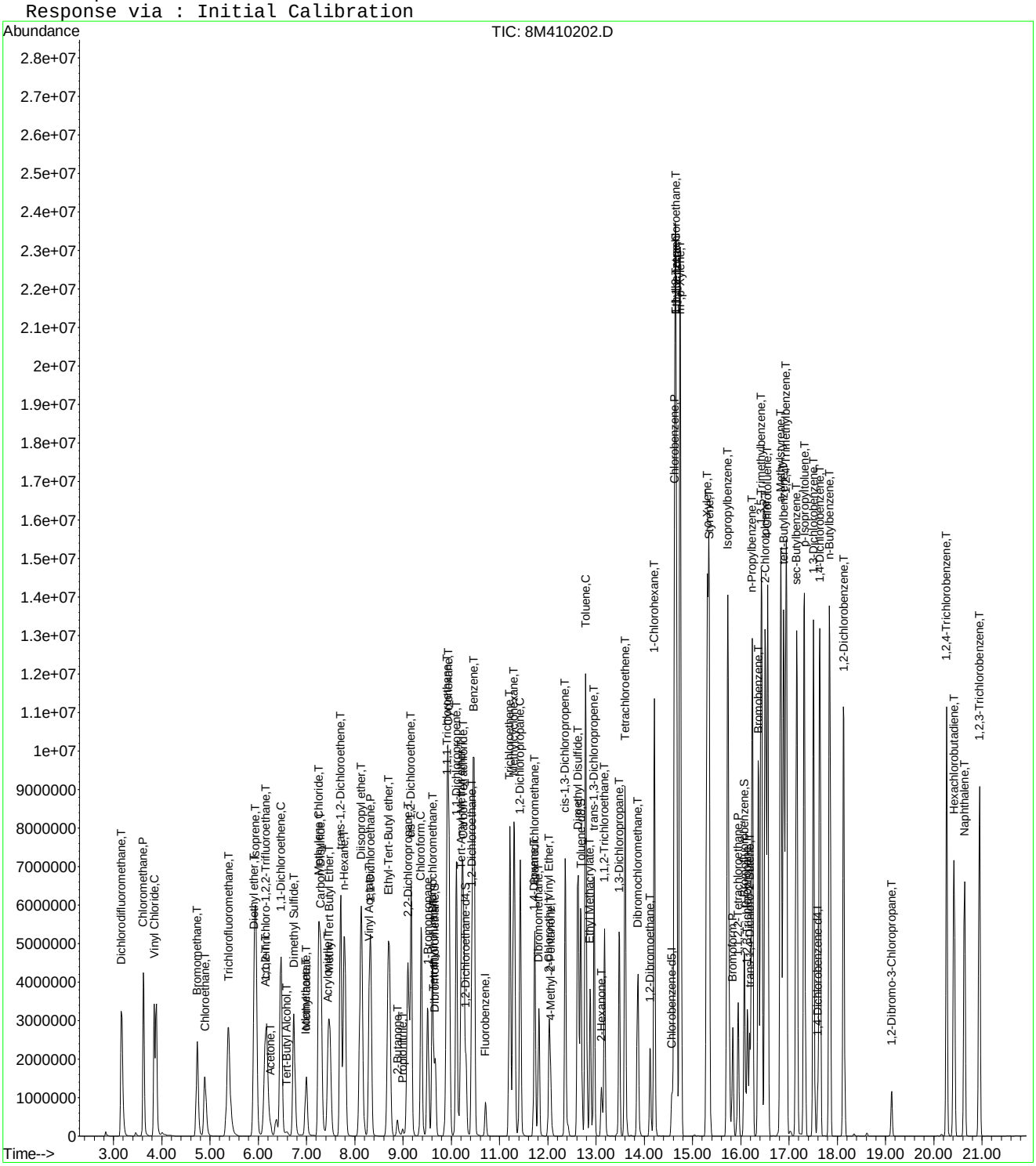

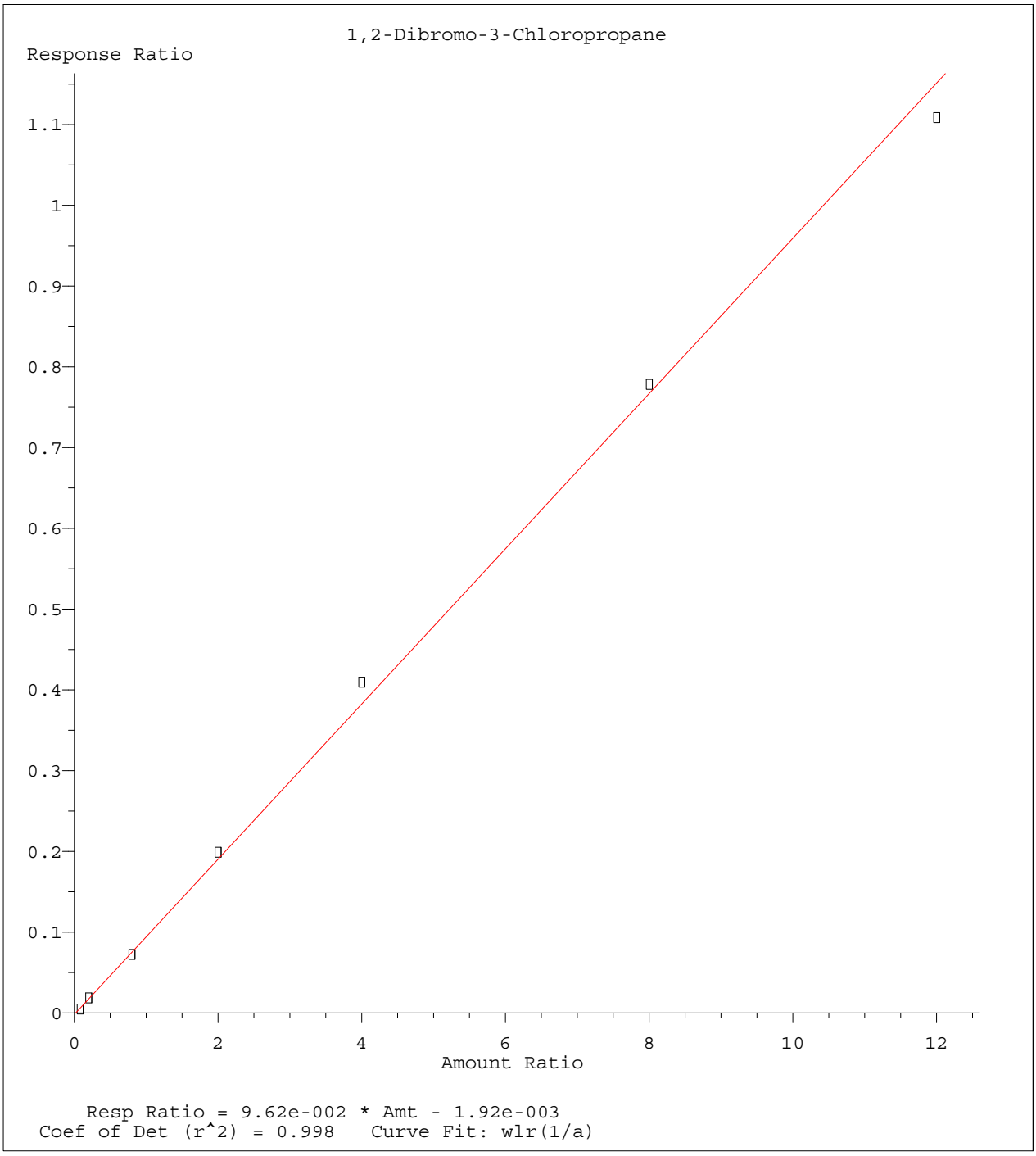

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Feb 18 08:47:33 2016

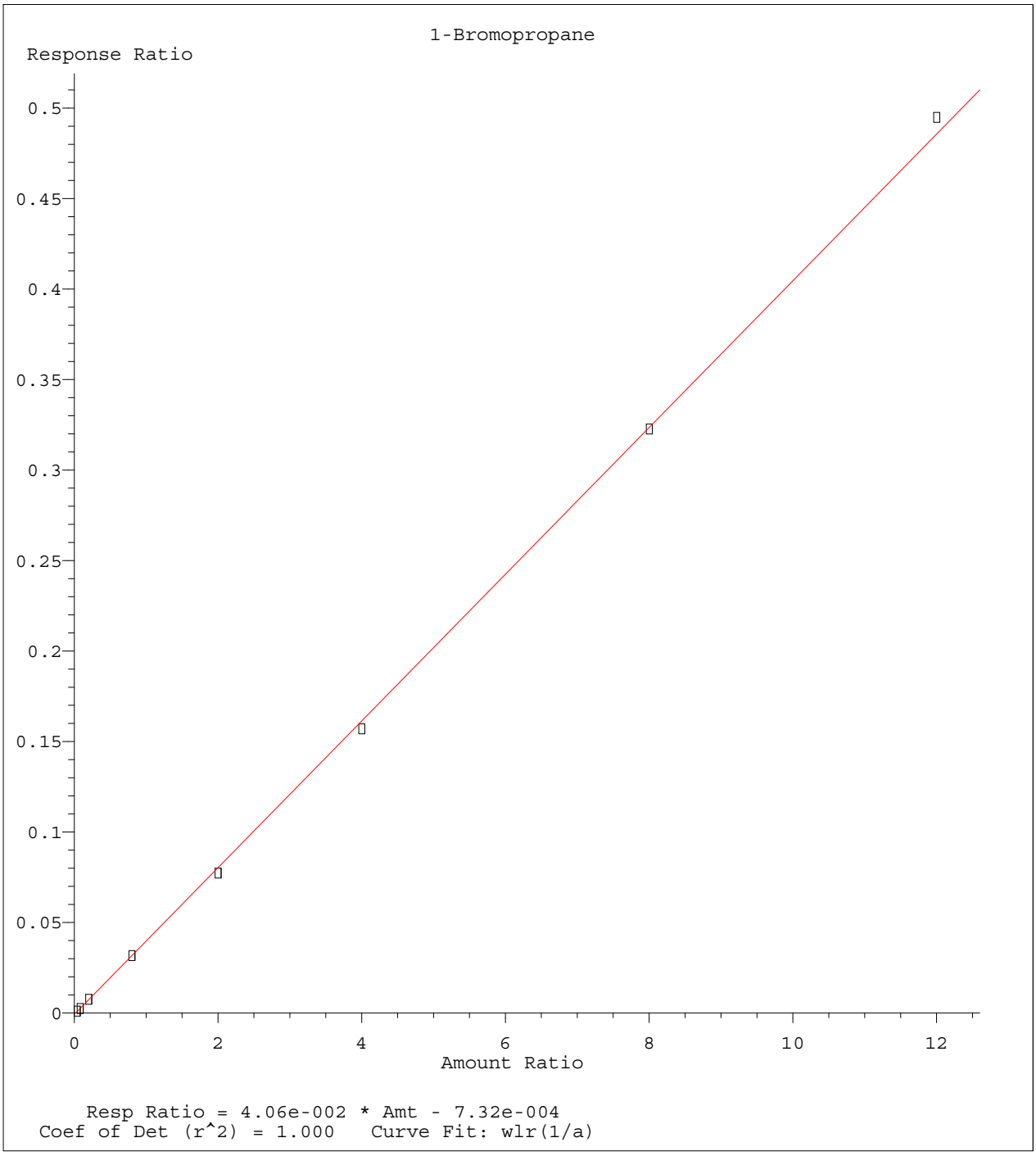

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Feb 18 08:47:33 2016

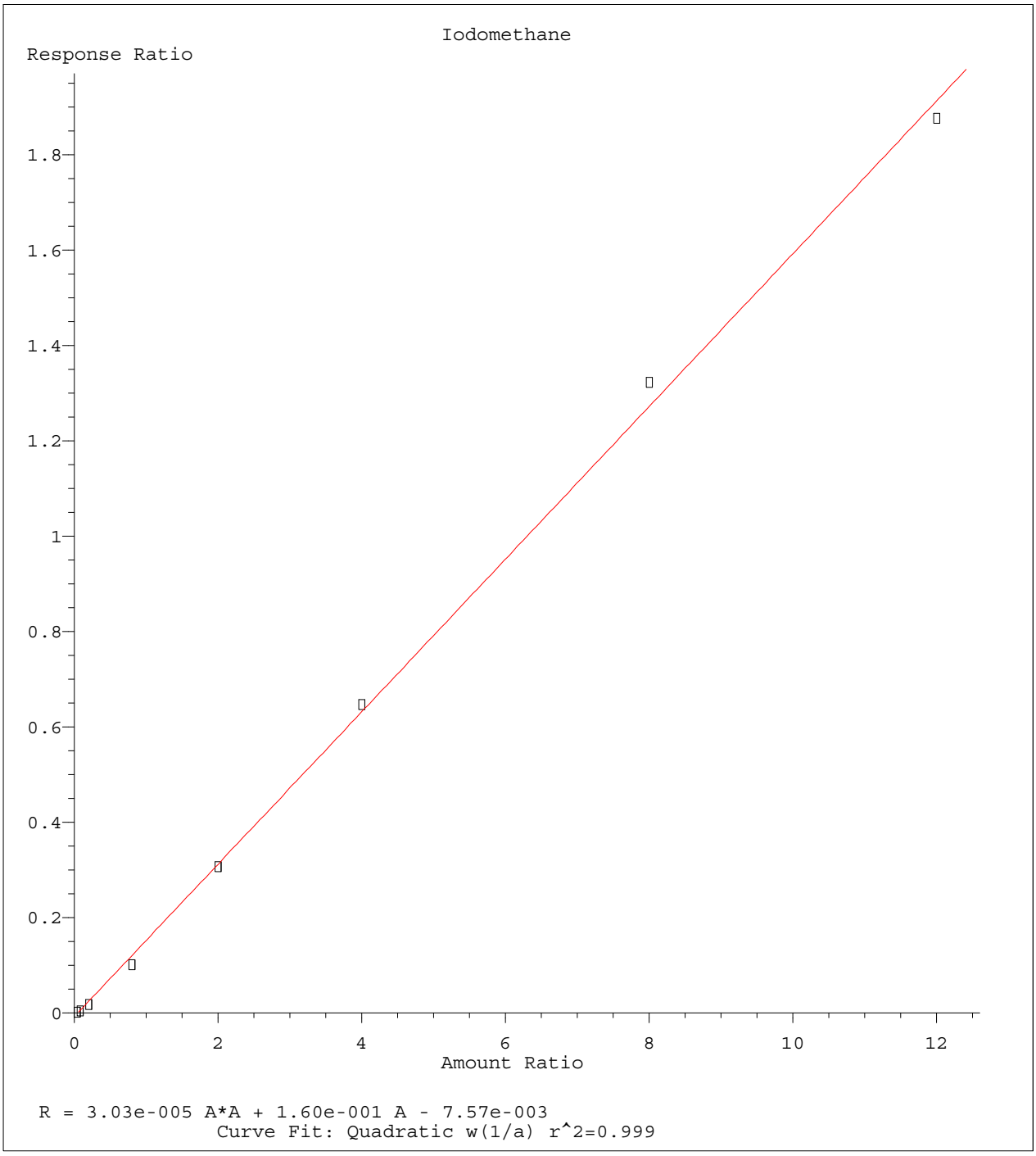

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Feb 18 08:47:33 2016

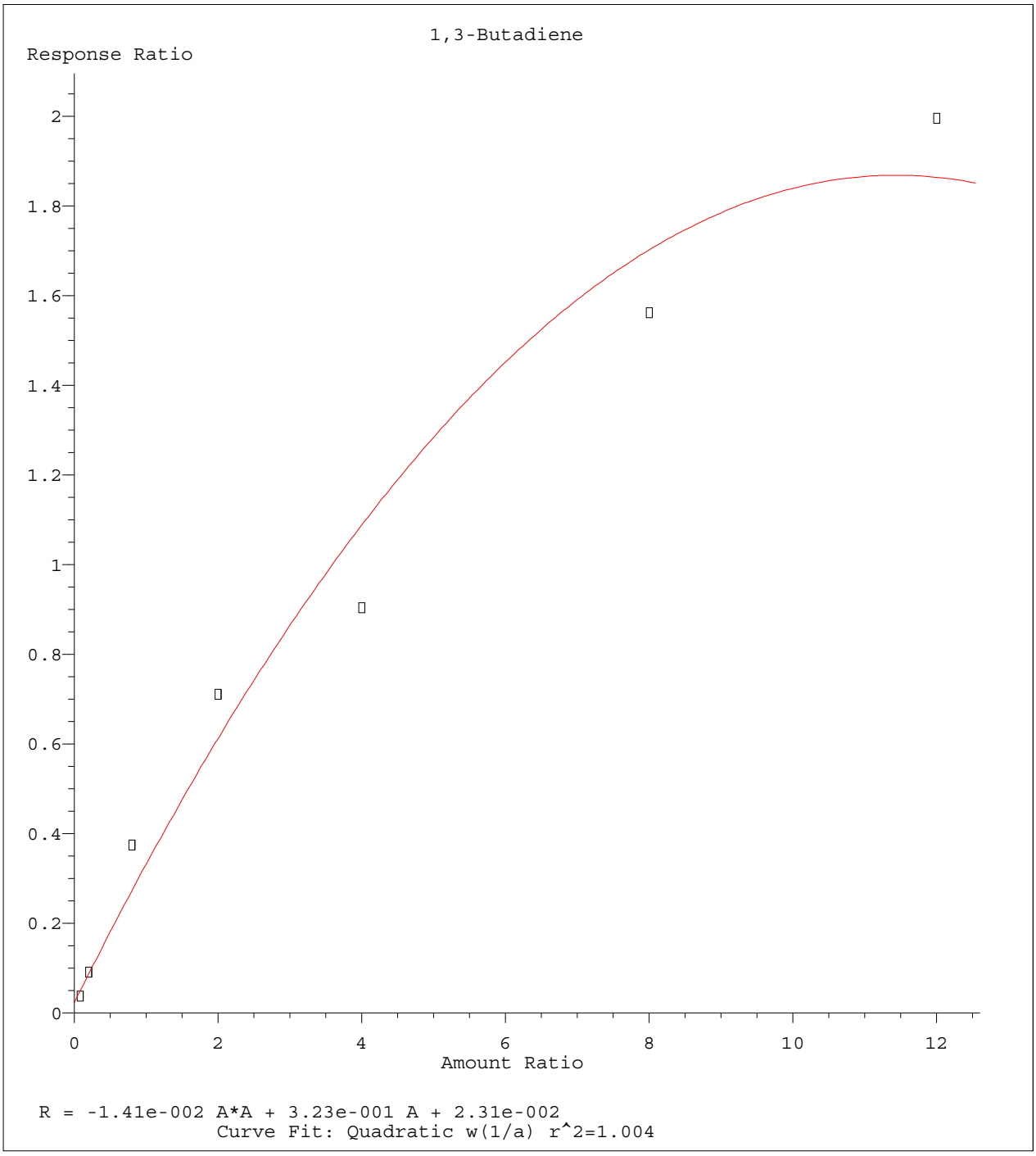

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Feb 18 08:47:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410205.D Vial: 14
Acq On : 17 Feb 2016 20:44 Operator: TMB
Sample : WG556046-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:19 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	976244	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	675638	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	348468	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	247596	24.7074 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.84%		
43) 1,2-Dichloroethane-d4	10.30	65	253347	23.6112 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.44%		
58) Toluene-d8	12.68	98	852761	25.5616 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.24%		
80) p-Bromofluorobenzene	16.07	95	353968	26.1487 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.60%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	808654	52.5492 ug/L	100
3) Chloromethane	3.62	50	1099502	46.7251 ug/L	99
4) Vinyl Chloride	3.84	62	698028	42.6125 ug/L	98
5) 1,3-Butadiene	3.89	54	144967	9.8810 ug/L	93
6) Bromomethane	4.73	94	385658	49.5529 ug/L	98
7) Chloroethane	4.90	64	407329	55.0439 ug/L	99
8) Trichlorofluoromethane	5.37	101	861620	49.0775 ug/L	99
9) Diethyl ether	5.91	59	618680	96.2278 ug/L	98
10) Isoprene	5.94	67	760979	63.9632 ug/L	97
11) Acrolein	6.15	56	86733	86.8695 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	477348	49.8053 ug/L	95
13) Acetone	6.25	43	80544	50.4455 ug/L	97
14) 1,1-Dichloroethene	6.47	61	867778	49.1962 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	78677	194.0246 ug/L	95
16) Dimethyl Sulfide	6.74	62	604240	78.2090 ug/L	99
17) Iodomethane	6.99	142	289966	47.6676 ug/L	98
18) Methyl acetate	7.00	43	233759	52.4319 ug/L	98
19) Methylene Chloride	7.26	84	479742	49.6726 ug/L	93
20) Carbon Disulfide	7.30	76	1455366	48.0045 ug/L	99
21) Acrylonitrile	7.43	53	119025	52.8729 ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	978729	49.8949 ug/L	97
23) trans-1,2-Dichloroethene	7.71	61	871366	52.8440 ug/L	90
24) n-Hexane	7.78	57	720742	51.2678 ug/L	93
25) Diisopropyl ether	8.13	45	3638969	99.3270 ug/L	98
26) Vinyl Acetate	8.30	43	726709	43.1548 ug/L	100
27) 1,1-Dichloroethane	8.33	63	1013898	49.2780 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	2801608	95.3464 ug/L	99
29) 2-Butanone	8.89	43	119204	47.4818 ug/L	99
30) Propionitrile	8.99	54	73439	101.8330 ug/L	99
31) 2,2-Dichloropropane	9.11	77	815209	50.3815 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	547762	51.5752 ug/L	87
33) Chloroform	9.37	83	910688	49.8896 ug/L	98
34) 1-Bromopropane	9.51	122	126753	80.4675 ug/L	99
35) Bromochloromethane	9.61	130	266686	50.1828 ug/L	96
36) Tetrahydrofuran	9.63	42	150924	89.7408 ug/L	98
38) 1,1,1-Trichloroethane	9.91	97	835487	50.1594 ug/L	100
39) Cyclohexane	9.94	56	1035909	53.4397 ug/L	96
40) 1,1-Dichloropropene	10.11	75	699121	48.2393 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	2047058	99.1217 ug/L	97
42) Carbon Tetrachloride	10.25	117	751391	49.5676 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410205.D Vial: 14
Acq On : 17 Feb 2016 20:44 Operator: TMB
Sample : WG556046-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 08:46:19 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	694894	50.1075 ug/L		97
46)	Benzene	10.46	78	1955621	51.7899 ug/L		97
47)	Trichloroethene	11.21	130	521512	51.2784 ug/L		97
48)	Methylcyclohexane	11.30	83	762983	52.0984 ug/L		93
49)	1,2-Dichloropropane	11.43	63	574415	54.1062 ug/L		98
50)	Bromodichloromethane	11.73	83	682792	50.6632 ug/L		100
51)	1,4-Dioxane	11.72	88	7599	177.4594 ug/L		93
52)	Dibromomethane	11.81	93	230246	47.7867 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.02	63	235486	50.9950 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	105559	49.0857 ug/L		97
55)	cis-1,3-Dichloropropene	12.36	75	822786	56.0912 ug/L		100
56)	Dimethyl Disulfide	12.62	79	422139	54.5945 ug/L		99
59)	Toluene	12.78	91	2013734	53.4862 ug/L		98
60)	Ethyl Methacrylate	12.88	69	415338	57.1170 ug/L		96
62)	trans-1,3-Dichloropropene	12.96	75	643114	51.1061 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	310746	51.9118 ug/L		99
64)	2-Hexanone	13.12	58	96369	51.7370 ug/L	#	86
65)	1,3-Dichloropropane	13.48	76	600011	54.6785 ug/L		97
66)	Tetrachloroethene	13.60	164	393140	51.9836 ug/L		95
67)	Dibromochloromethane	13.87	129	425141	51.8063 ug/L		99
68)	1,2-Dibromoethane	14.12	107	312164	51.5237 ug/L		100
69)	1-Chlorohexane	14.21	91	709973	55.6149 ug/L		91
70)	Chlorobenzene	14.62	112	1374147	53.3378 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	482124	52.1656 ug/L		98
72)	Ethylbenzene	14.66	106	769203	52.1835 ug/L		96
73)	m-,p-Xylene	14.74	106	1846902	109.6169 ug/L		98
74)	o-Xylene	15.31	106	930708	53.2569 ug/L		99
75)	Styrene	15.34	104	1494770	56.0978 ug/L		97
76)	Bromoform	15.83	173	223351	47.2280 ug/L		99
77)	Isopropylbenzene	15.73	105	2326705	55.8342 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	340363	48.8745 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	96719	49.6312 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	117135	45.1708 ug/L		78
83)	n-Propylbenzene	16.24	91	2805201	54.4779 ug/L		98
84)	Bromobenzene	16.36	156	509646	49.7262 ug/L		90
85)	1,3,5-Trimethylbenzene	16.42	105	2032788	56.5590 ug/L		100
86)	2-Chlorotoluene	16.51	91	1779453	52.9043 ug/L		100
87)	4-Chlorotoluene	16.56	91	1826278	55.3612 ug/L		98
88)	a-Methylstyrene	16.83	118	1134796	60.2977 ug/L		100
89)	tert-Butylbenzene	16.89	134	411892	53.1848 ug/L		93
90)	1,2,4-Trimethylbenzene	16.94	105	2027362	54.6598 ug/L		99
91)	sec-Butylbenzene	17.16	105	2451245	54.8696 ug/L		98
92)	p-Isopropyltoluene	17.31	119	2006459	54.2169 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	1078732	52.9419 ug/L		93
94)	1,4-Dichlorobenzene	17.63	146	1080656	52.8084 ug/L		94
95)	n-Butylbenzene	17.84	91	1948431	52.3338 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	950125	53.6265 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.12	75	64103	48.3139 ug/L		83
98)	1,2,4-Trichlorobenzene	20.27	180	648347	50.2609 ug/L		99
99)	Hexachlorobutadiene	20.42	225	300524	56.9678 ug/L		98
100)	Naphthalene	20.64	128	952570	45.1308 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	537378	50.0680 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M410205.D 8260WTR.M Thu Feb 18 08:46:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021716\8M410205.D Vial: 14
Acq On : 17 Feb 2016 20:44 Operator: TMB
Sample : WG556046-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 8:46 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Initial Calibration

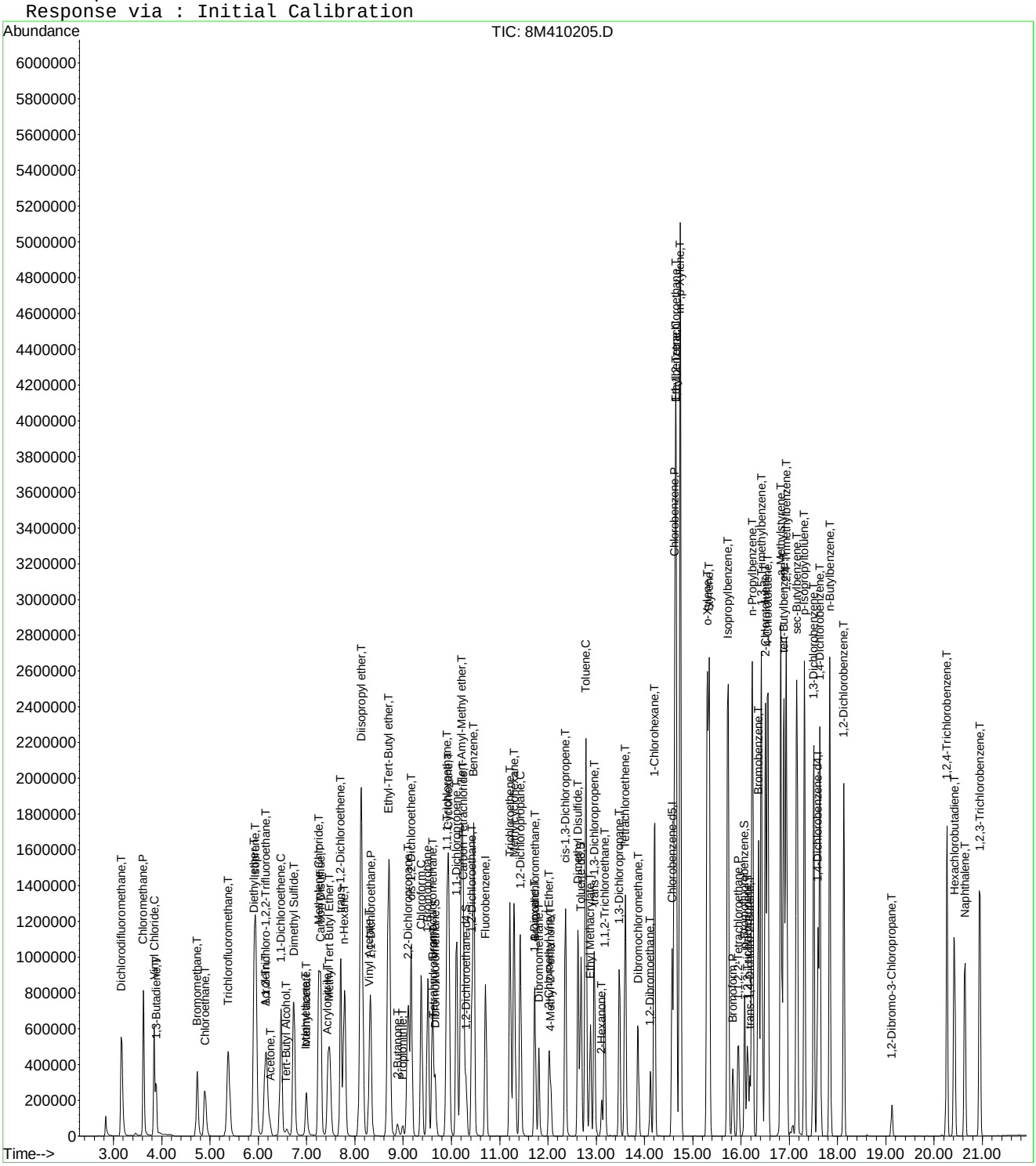

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021716\8M410205.D Vial: 14
Acq On : 17 Feb 2016 20:44 Operator: TMB
Sample : WG556046-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	117	0.00
2	T	Dichlorodifluoromethane	50.0000	52.5492	-5.1	112	0.00
3	P	Chloromethane	50.0000	46.7251	6.5	107	0.00
4	C	Vinyl Chloride	50.0000	42.6125	14.8	95	0.00
5	T	1,3-Butadiene	50.0000	9.8810	80.2#	24	0.00
6	T	Bromomethane	50.0000	49.5529	0.9	115	0.00
7	T	Chloroethane	50.0000	55.0439	-10.1	125	0.00
8	T	Trichlorofluoromethane	50.0000	49.0775	1.8	112	0.00
9	T	Diethyl ether	100.0000	96.2278	3.8	116	0.00
10	T	Isoprene	50.0000	63.9632	-27.9#	148	0.00
11	T	Acrolein	50.0000	86.8695	-73.7#	207	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.8053	0.4	117	0.00
13	T	Acetone	50.0000	50.4455	-0.9	116	0.00
14	C	1,1-Dichloroethene	50.0000	49.1962	1.6	112	0.00
15	T	Tert-Butyl Alcohol	200.0000	194.0246	3.0	119	0.00
16	T	Dimethyl Sulfide	50.0000	78.2090	-56.4#	182	0.00
17	T	Iodomethane	50.0000	47.6676	4.7	113	0.00
18	T	Methyl acetate	50.0000	52.4319	-4.9	128	0.00
19	T	Methylene Chloride	50.0000	49.6726	0.7	115	0.00
20	T	Carbon Disulfide	50.0000	48.0045	4.0	113	0.00
21	T	Acrylonitrile	50.0000	52.8729	-5.7	119	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.8949	0.2	116	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.8440	-5.7	120	0.00
24	T	n-Hexane	50.0000	51.2678	-2.5	128	0.00
25	T	Diisopropyl ether	100.0000	99.3270	0.7	116	0.00
26	T	Vinyl Acetate	50.0000	43.1548	13.7	102	0.00
27	P	1,1-Dichloroethane	50.0000	49.2780	1.4	111	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	95.3465	4.7	110	0.00
29	T	2-Butanone	50.0000	47.4818	5.0	113	0.00
30	T	Propionitrile	100.0000	101.8330	-1.8	118	0.00
31	T	2,2-Dichloropropane	50.0000	50.3815	-0.8	121	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.5752	-3.2	117	0.00
33	C	Chloroform	50.0000	49.8896	0.2	112	0.00
34		1-Bromopropane	50.0000	80.4675	-60.9#	196	0.00
35	T	Bromochloromethane	50.0000	50.1828	-0.4	111	0.00
36	T	Tetrahydrofuran	100.0000	89.7408	10.3	111	0.00
37	S	Dibromofluoromethane	25.0000	24.7074	1.2	115	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.1594	-0.3	114	0.00
39	T	Cyclohexane	50.0000	53.4397	-6.9	128	0.00
40	T	1,1-Dichloropropene	50.0000	48.2393	3.5	113	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.1217	0.9	116	0.00
42	T	Carbon Tetrachloride	50.0000	49.5676	0.9	110	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.6112	5.6	109	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	50.1075	-0.2	112	0.00
46	T	Benzene	50.0000	51.7899	-3.6	115	0.00
47	T	Trichloroethene	50.0000	51.2784	-2.6	117	0.00
48	T	Methylcyclohexane	50.0000	52.0984	-4.2	125	0.00
49	C	1,2-Dichloropropane	50.0000	54.1062	-8.2	119	0.00
50	T	Bromodichloromethane	50.0000	50.6632	-1.3	112	0.00
51	T	1,4-Dioxane	200.0000	177.4594	11.3	107	0.00
52	T	Dibromomethane	50.0000	47.7867	4.4	104	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	50.9950	-2.0	116	0.00
54	T	4-Methyl-2-Pentanone	50.0000	49.0857	1.8	115	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021716\8M410205.D Vial: 14
Acq On : 17 Feb 2016 20:44 Operator: TMB
Sample : WG556046-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:44:45 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.0912	-12.2	123	0.00
56	T	Dimethyl Disulfide	50.0000	54.5945	-9.2	127	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	114	0.00
58	S	Toluene-d8	25.0000	25.5616	-2.2	114	0.00
59	C	Toluene	50.0000	53.4862	-7.0	114	0.00
60	T	Ethyl Methacrylate	50.0000	57.1170	-14.2	126	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	51.1061	-2.2	111	0.00
63	T	1,1,2-Trichloroethane	50.0000	51.9118	-3.8	110	0.00
64	T	2-Hexanone	50.0000	51.7370	-3.5	117	0.00
65	T	1,3-Dichloropropane	50.0000	54.6785	-9.4	117	0.00
66	T	Tetrachloroethene	50.0000	51.9836	-4.0	115	0.00
67	T	Dibromochloromethane	50.0000	51.8063	-3.6	107	0.00
68	T	1,2-Dibromoethane	50.0000	51.5237	-3.0	108	0.00
69	T	1-Chlorohexane	50.0000	55.6149	-11.2	125	0.00
70	P	Chlorobenzene	50.0000	53.3378	-6.7	116	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.1656	-4.3	110	0.00
72	C	Ethylbenzene	50.0000	52.1835	-4.4	116	0.00
73	T	m-,p-Xylene	100.0000	109.6169	-9.6	116	0.00
74	T	o-Xylene	50.0000	53.2569	-6.5	118	0.00
75	T	Styrene	50.0000	56.0978	-12.2	114	0.00
76	P	Bromoform	50.0000	47.2280	5.5	97	0.00
77	T	Isopropylbenzene	50.0000	55.8342	-11.7	116	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	111	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	48.8745	2.3	100	0.00
80	S	p-Bromofluorobenzene	25.0000	26.1487	-4.6	116	0.00
81	T	1,2,3-Trichloropropane	50.0000	49.6312	0.7	106	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	45.1708	9.7	95	0.00
83	T	n-Propylbenzene	50.0000	54.4779	-9.0	116	0.00
84	T	Bromobenzene	50.0000	49.7262	0.5	107	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	56.5590	-13.1	117	0.00
86	T	2-Chlorotoluene	50.0000	52.9043	-5.8	114	0.00
87	T	4-Chlorotoluene	50.0000	55.3612	-10.7	114	0.00
88	T	a-Methylstyrene	50.0000	60.2977	-20.6	135	0.00
89	T	tert-Butylbenzene	50.0000	53.1848	-6.4	117	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	54.6598	-9.3	112	0.00
91	T	sec-Butylbenzene	50.0000	54.8696	-9.7	114	0.00
92	T	p-Isopropyltoluene	50.0000	54.2169	-8.4	113	0.00
93	T	1,3-Dichlorobenzene	50.0000	52.9419	-5.9	111	0.00
94	T	1,4-Dichlorobenzene	50.0000	52.8084	-5.6	112	0.00
95	T	n-Butylbenzene	50.0000	52.3338	-4.7	110	0.00
96	T	1,2-Dichlorobenzene	50.0000	53.6265	-7.3	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.3139	3.4	103	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.2609	-0.5	104	0.00
99	T	Hexachlorobutadiene	50.0000	56.9678	-13.9	120	0.00
100	T	Naphthalene	50.0000	45.1308	9.7	90	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.0680	-0.1	103	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M410205.D 8260WTR.M Thu Feb 18 08:47:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\040516\8M411218.D Vial: 2
Acq On : 5 Apr 2016 10:11 Operator: TMB
Sample : WG563534-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75490 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 05 10:33:46 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:47:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1024914	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	820290	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	468128	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	250083	23.7705 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.08%		
43) 1,2-Dichloroethane-d4	10.30	65	262728	23.3227 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.28%		
58) Toluene-d8	12.68	98	935193	23.0892 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.36%		
80) p-Bromofluorobenzene	16.07	95	406523	22.3548 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 89.40%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	948449	58.7068 ug/L	99
3) Chloromethane	3.63	50	1499352	60.6917 ug/L	97
4) Vinyl Chloride	3.86	62	976179	56.7629 ug/L	98
5) 1,3-Butadiene	3.90	54	894369	75.8655 ug/L	99
6) Bromomethane	4.74	94	349737	42.8035 ug/L	100
7) Chloroethane	4.90	64	441089	56.7755 ug/L	96
8) Trichlorofluoromethane	5.38	101	998609	54.1792 ug/L	99
9) Diethyl ether	5.91	59	700135	103.7259 ug/L	95
10) Isoprene	5.95	67	699864	56.0328 ug/L	91
11) Acrolein	6.15	56	39982	38.1433 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	546944	54.3568 ug/L	91
13) Acetone	6.24	43	86997	51.8997 ug/L	89
14) 1,1-Dichloroethene	6.47	61	1063453	57.4265 ug/L	93
15) Tert-Butyl Alcohol	6.58	59	101464	238.3373 ug/L	96
16) Dimethyl Sulfide	6.74	62	452630	55.8035 ug/L	91
17) Iodomethane	6.99	142	201226	31.9140 ug/L	96
18) Methyl acetate	7.00	43	297059	63.4659 ug/L	95
19) Methylene Chloride	7.26	84	554800	54.7163 ug/L	82
20) Carbon Disulfide	7.30	76	1793111	56.3363 ug/L	99
21) Acrylonitrile	7.44	53	142743	60.3977 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	1060989	51.5199 ug/L	95
23) trans-1,2-Dichloroethene	7.71	61	987097	57.0198 ug/L	91
24) n-Hexane	7.78	57	914105	61.9344 ug/L	98
25) Diisopropyl ether	8.13	45	4501746	117.0418 ug/L	98
26) Vinyl Acetate	8.30	43	1026537	58.0650 ug/L	98
27) 1,1-Dichloroethane	8.33	63	1249632	57.8511 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	3302492	107.0557 ug/L	97
29) 2-Butanone	8.88	43	151242	57.3826 ug/L	95
30) Propionitrile	8.99	54	97006	128.1242 ug/L	100
31) 2,2-Dichloropropane	9.11	77	988323	58.1797 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	624238	55.9848 ug/L	82
33) Chloroform	9.37	83	1069064	55.7847 ug/L	99
34) 1-Bromopropane	9.51	122	96928	58.7339 ug/L	100
35) Bromochloromethane	9.61	130	304728	54.6183 ug/L	80
36) Tetrahydrofuran	9.63	42	242467	137.3268 ug/L	94
38) 1,1,1-Trichloroethane	9.91	97	949151	54.2774 ug/L	100
39) Cyclohexane	9.94	56	1189609	58.4545 ug/L	92
40) 1,1-Dichloropropene	10.11	75	825728	54.2696 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	2227773	102.7497 ug/L	94
42) Carbon Tetrachloride	10.25	117	873624	54.8943 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\040516\8M411218.D Vial: 2
Acq On : 5 Apr 2016 10:11 Operator: TMB
Sample : WG563534-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75490 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 05 10:33:46 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:47:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	783803	53.8347 ug/L		97
46)	Benzene	10.46	78	2276962	57.4364 ug/L		93
47)	Trichloroethene	11.21	130	572028	53.5745 ug/L		97
48)	Methylcyclohexane	11.30	83	854556	55.5803 ug/L		91
49)	1,2-Dichloropropane	11.43	63	659374	59.1594 ug/L		94
50)	Bromodichloromethane	11.73	83	787003	55.6227 ug/L		99
51)	1,4-Dioxane	11.72	88	11647	259.0763 ug/L		90
52)	Dibromomethane	11.81	93	282563	55.8600 ug/L		93
53)	2-Chloroethyl Vinyl Ether	12.02	63	252364	52.0548 ug/L		95
54)	4-Methyl-2-Pentanone	12.05	58	124140	54.9848 ug/L		92
55)	cis-1,3-Dichloropropene	12.36	75	897685	58.2912 ug/L		99
56)	Dimethyl Disulfide	12.62	79	451957	55.6751 ug/L		98
59)	Toluene	12.78	91	2369160	51.8299 ug/L		100
60)	Ethyl Methacrylate	12.88	69	461443	52.2671 ug/L		90
62)	trans-1,3-Dichloropropene	12.96	75	775061	50.7303 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	369263	50.8092 ug/L		98
64)	2-Hexanone	13.12	58	118200	52.2671 ug/L	#	99
65)	1,3-Dichloropropane	13.48	76	662779	49.7476 ug/L		89
66)	Tetrachloroethene	13.60	164	450825	49.0992 ug/L		92
67)	Dibromochloromethane	13.87	129	494109	49.5928 ug/L		100
68)	1,2-Dibromoethane	14.12	107	359921	48.9304 ug/L		100
69)	1-Chlorohexane	14.21	91	804649	51.9162 ug/L		86
70)	Chlorobenzene	14.62	112	1564505	50.0179 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	566720	50.5058 ug/L		98
72)	Ethylbenzene	14.66	106	897018	50.1233 ug/L		98
73)	m-,p-Xylene	14.74	106	2120599	103.6666 ug/L		97
74)	o-Xylene	15.31	106	1034089	48.7379 ug/L		100
75)	Styrene	15.34	104	1742090	53.8504 ug/L		97
76)	Bromoform	15.83	173	286930	49.9729 ug/L		99
77)	Isopropylbenzene	15.73	105	2673646	52.8457 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	431879	46.1637 ug/L		98
81)	1,2,3-Trichloropropane	16.13	110	113356	43.2998 ug/L	#	46
82)	trans-1,4-Dichloro-2-Buten	16.18	53	179156	51.4281 ug/L		65
83)	n-Propylbenzene	16.24	91	3296414	47.6537 ug/L		100
84)	Bromobenzene	16.36	156	611640	44.4233 ug/L		91
85)	1,3,5-Trimethylbenzene	16.42	105	2268878	46.9915 ug/L		98
86)	2-Chlorotoluene	16.51	91	2055426	45.4888 ug/L		99
87)	4-Chlorotoluene	16.56	91	2098307	47.3485 ug/L		99
88)	a-Methylstyrene	16.83	118	1189274	47.0395 ug/L		98
89)	tert-Butylbenzene	16.89	134	470127	45.1874 ug/L		91
90)	1,2,4-Trimethylbenzene	16.94	105	2423983	48.6479 ug/L		99
91)	sec-Butylbenzene	17.16	105	2884124	48.0571 ug/L		98
92)	p-Isopropyltoluene	17.31	119	2401315	48.3005 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	1291829	47.1943 ug/L		94
94)	1,4-Dichlorobenzene	17.63	146	1263368	45.9561 ug/L		93
95)	n-Butylbenzene	17.84	91	2481455	49.6137 ug/L		97
96)	1,2-Dichlorobenzene	18.13	146	1118917	47.0105 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.12	75	76630	43.0472 ug/L		84
98)	1,2,4-Trichlorobenzene	20.27	180	776267	44.7952 ug/L		99
99)	Hexachlorobutadiene	20.42	225	332426	46.9076 ug/L		98
100)	Naphthalene	20.64	128	1262806	44.5360 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	646244	44.8204 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M411218.D 8260WTR.M Tue Apr 05 10:33:47 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\040516\8M411218.D Vial: 2
Acq On : 5 Apr 2016 10:11 Operator: TMB
Sample : WG563534-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75490 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 5 10:33 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:47:33 2016
Response via : Initial Calibration

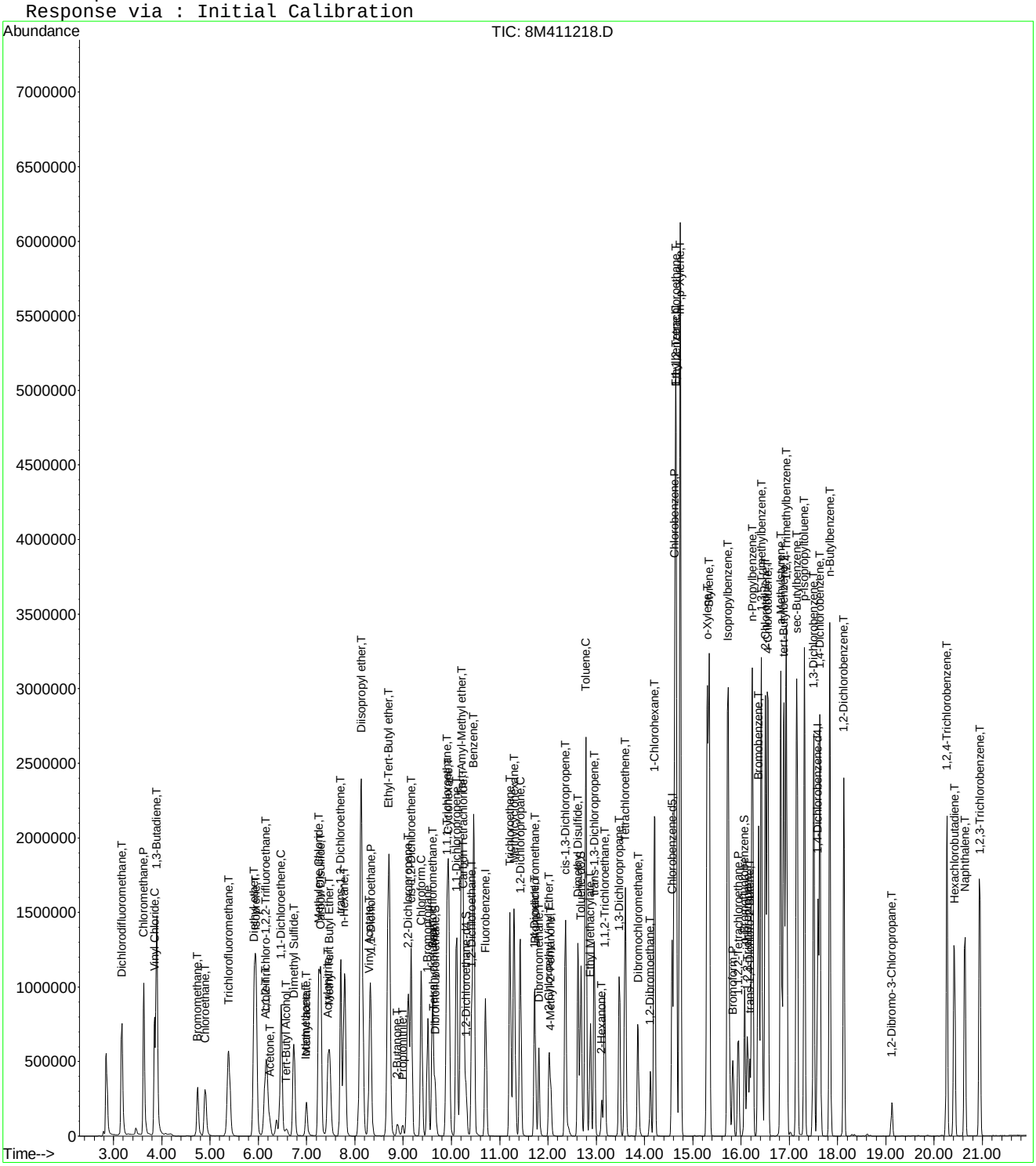

8M411218.D 8260WTR.M Tue Apr 05 10:33:47 2016 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 17 Feb 2016 17:50
CCV date: 5 Apr 2016 10:11
CCV Filename: 8M411218.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	835274	10.71	592238	14.57	312633	17.59
CCV	1024914	10.71	820290	14.57	468128	17.59

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\040516\8M411218.D Vial: 2
Acq On : 5 Apr 2016 10:11 Operator: TMB
Sample : WG563534-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75490 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:47:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	123	0.00
2	T	Dichlorodifluoromethane	0.3941	0.4627	-17.4	131	0.01
3	P	Chloromethane	0.6026	0.7315	-21.4	146	0.01
4	C	Vinyl Chloride	0.4195	0.4762	-13.5	133	0.01
5	T	1,3-Butadiene	0.3333	0.4363	-30.9#	151#	0.01
6	T	Bromomethane	0.1993	0.1706	14.4	104	0.01
7	T	Chloroethane	0.1895	0.2152	-13.6	135	0.00
8	T	Trichlorofluoromethane	0.4496	0.4872	-8.4	130	0.00
9	T	Diethyl ether	0.1646	0.1708	-3.7	131	0.00
10	T	Isoprene	0.3047	0.3414	-12.1	136	0.01
11	T	Acrolein	0.0256	0.0195	23.7	95	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2454	0.2668	-8.7	134	0.00
13	T	Acetone	0.0409	0.0424	-3.8	125	0.00
14	C	1,1-Dichloroethene	0.4517	0.5188	-14.9	137	0.00
15	T	Tert-Butyl Alcohol	0.0104	0.0124	-19.2	153#	0.00
16	T	Dimethyl Sulfide	0.1979	0.2208	-11.6	137	0.00
17	T	Iodomethane	0.1175	0.0982	16.5	79	0.00
18	T	Methyl acetate	0.1142	0.1449	-26.9#	162#	0.00
19	T	Methylene Chloride	0.2473	0.2707	-9.4	133	0.00
20	T	Carbon Disulfide	0.7764	0.8748	-12.7	139	0.00
21	T	Acrylonitrile	0.0577	0.0696	-20.8	142	0.00
22	T	Methyl Tert Butyl Ether	0.5023	0.5176	-3.0	126	0.00
23	T	trans-1,2-Dichloroethene	0.4223	0.4815	-14.0	136	0.00
24	T	n-Hexane	0.3600	0.4459	-23.9	162#	0.00
25	T	Diisopropyl ether	0.9382	1.0981	-17.0	143	0.00
26	T	Vinyl Acetate	0.4312	0.5008	-16.1	144	0.00
27	P	1,1-Dichloroethane	0.5269	0.6096	-15.7	137	0.00
28	T	Ethyl-Tert-Butyl ether	0.7525	0.8055	-7.1	130	0.00
29	T	2-Butanone	0.0643	0.0738	-14.8	144	0.00
30	T	Propionitrile	0.0185	0.0237	-28.1#	156#	0.00
31	T	2,2-Dichloropropane	0.4144	0.4822	-16.4	147	0.00
32	T	cis-1,2-Dichloroethene	0.2720	0.3045	-12.0	133	0.00
33	C	Chloroform	0.4675	0.5215	-11.6	132	0.00
34		1-Bromopropane	0.0365	0.0473	-29.6#	150#	0.00
35	T	Bromochloromethane	0.1361	0.1487	-9.2	127	0.00
36	T	Tetrahydrofuran	0.0431	0.0591	-37.3#	179#	0.00
37	S	Dibromofluoromethane	0.2566	0.2440	4.9	117	0.00
38	T	1,1,1-Trichloroethane	0.4265	0.4630	-8.6	130	0.00
39	T	Cyclohexane	0.4964	0.5804	-16.9	147	0.00
40	T	1,1-Dichloropropene	0.3711	0.4028	-8.5	133	0.00
41	T	Tert-Amyl-Methyl ether	0.5289	0.5434	-2.7	126	0.00
42	T	Carbon Tetrachloride	0.3882	0.4262	-9.8	128	0.00
43	S	1,2-Dichloroethane-d4	0.2748	0.2563	6.7	113	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3551	0.3824	-7.7	127	0.00
46	T	Benzene	0.9670	1.1108	-14.9	134	0.00
47	T	Trichloroethene	0.2604	0.2791	-7.1	129	0.00
48	T	Methylcyclohexane	0.3750	0.4169	-11.2	139	0.00
49	C	1,2-Dichloropropane	0.2719	0.3217	-18.3	137	0.00
50	T	Bromodichloromethane	0.3451	0.3839	-11.2	129	0.00
51	T	1,4-Dioxane	0.0011	0.0014	-29.1#	164#	0.00
52	T	Dibromomethane	0.1234	0.1379	-11.7	128	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1182	0.1231	-4.1	124	0.00
54	T	4-Methyl-2-Pentanone	0.0551	0.0606	-10.0	136	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\040516\8M411218.D Vial: 2
Acq On : 5 Apr 2016 10:11 Operator: TMB
Sample : WG563534-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75490 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:47:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3756	0.4379	-16.6	134	0.00
56	T	Dimethyl Disulfide	0.1980	0.2205	-11.4	136	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	139	0.00
58	S	Toluene-d8	1.2344	1.1401	7.6	125	0.00
59	C	Toluene	1.3931	1.4441	-3.7	134	0.00
60	T	Ethyl Methacrylate	0.2691	0.2813	-4.5	140	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.4656	0.4724	-1.5	134	0.00
63	T	1,1,2-Trichloroethane	0.2215	0.2251	-1.6	130	0.00
64	T	2-Hexanone	0.0689	0.0721	-4.5	144	0.00
65	T	1,3-Dichloropropane	0.4060	0.4040	0.5	130	0.00
66	T	Tetrachloroethene	0.2798	0.2748	1.8	131	0.00
67	T	Dibromochloromethane	0.3036	0.3012	0.8	125	0.00
68	T	1,2-Dibromoethane	0.2242	0.2194	2.1	125	0.00
69	T	1-Chlorohexane	0.4724	0.4905	-3.8	141	0.00
70	P	Chlorobenzene	0.9533	0.9536	-0.0	132	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3420	0.3454	-1.0	130	0.00
72	C	Ethylbenzene	0.5454	0.5468	-0.2	136	0.00
73	T	m-,p-Xylene	0.6234	0.6463	-3.7	134	0.00
74	T	o-Xylene	0.6466	0.6303	2.5	131	0.00
75	T	Styrene	0.9859	1.0619	-7.7	132	0.00
76	P	Bromoform	0.1750	0.1749	0.1	125	0.00
77	T	Isopropylbenzene	1.5419	1.6297	-5.7	133	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	150	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4996	0.4613	7.7	127	0.00
80	S	p-Bromofluorobenzene	0.9712	0.8684	10.6	133	0.00
81	T	1,2,3-Trichloropropane	0.1398	0.1211	13.4	124	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1860	0.1913	-2.9	146	0.00
83	T	n-Propylbenzene	3.6942	3.5208	4.7	136	0.00
84	T	Bromobenzene	0.7353	0.6533	11.2	129	0.00
85	T	1,3,5-Trimethylbenzene	2.5785	2.4234	6.0	131	0.00
86	T	2-Chlorotoluene	2.4131	2.1954	9.0	132	0.00
87	T	4-Chlorotoluene	2.3667	2.2412	5.3	131	0.00
88	T	a-Methylstyrene	1.3502	1.2702	5.9	141	0.00
89	T	tert-Butylbenzene	0.5556	0.5021	9.6	134	0.00
90	T	1,2,4-Trimethylbenzene	2.6610	2.5890	2.7	134	0.00
91	T	sec-Butylbenzene	3.2050	3.0805	3.9	134	0.00
92	T	p-Isopropyltoluene	2.6551	2.5648	3.4	135	0.00
93	T	1,3-Dichlorobenzene	1.4618	1.3798	5.6	133	0.00
94	T	1,4-Dichlorobenzene	1.4681	1.3494	8.1	131	0.00
95	T	n-Butylbenzene	2.6710	2.6504	0.8	141	0.00
96	T	1,2-Dichlorobenzene	1.2711	1.1951	6.0	130	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0908	0.0819	9.8	123	0.00
98	T	1,2,4-Trichlorobenzene	0.9254	0.8291	10.4	124	0.00
99	T	Hexachlorobutadiene	0.3785	0.3551	6.2	133	0.00
100	T	Naphthalene	1.5143	1.3488	10.9	120	0.00
101	T	1,2,3-Trichlorobenzene	0.7700	0.6902	10.4	124	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411218.D 8260WTR.M Tue Apr 05 11:04:05 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\040516\8M411218.D Vial: 2
Acq On : 5 Apr 2016 10:11 Operator: TMB
Sample : WG563534-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75490 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:47:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	123	0.00
2	T	Dichlorodifluoromethane	50.0000	58.7068	-17.4	131	0.01
3	P	Chloromethane	50.0000	60.6917	-21.4	146	0.01
4	C	Vinyl Chloride	50.0000	56.7629	-13.5	133	0.01
5	T	1,3-Butadiene	50.0000	75.8655	-51.7#	151	0.01
6	T	Bromomethane	50.0000	42.8035	14.4	104	0.01
7	T	Chloroethane	50.0000	56.7755	-13.6	135	0.00
8	T	Trichlorofluoromethane	50.0000	54.1792	-8.4	130	0.00
9	T	Diethyl ether	100.0000	103.7258	-3.7	131	0.00
10	T	Isoprene	50.0000	56.0328	-12.1	136	0.01
11	T	Acrolein	50.0000	38.1433	23.7	95	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.3568	-8.7	134	0.00
13	T	Acetone	50.0000	51.8997	-3.8	125	0.00
14	C	1,1-Dichloroethene	50.0000	57.4265	-14.9	137	0.00
15	T	Tert-Butyl Alcohol	200.0000	238.3373	-19.2	153	0.00
16	T	Dimethyl Sulfide	50.0000	55.8035	-11.6	137	0.00
17	T	Iodomethane	50.0000	31.9140	36.2#	79	0.00
18	T	Methyl acetate	50.0000	63.4659	-26.9#	162	0.00
19	T	Methylene Chloride	50.0000	54.7163	-9.4	133	0.00
20	T	Carbon Disulfide	50.0000	56.3363	-12.7	139	0.00
21	T	Acrylonitrile	50.0000	60.3977	-20.8	142	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.5199	-3.0	126	0.00
23	T	trans-1,2-Dichloroethene	50.0000	57.0198	-14.0	136	0.00
24	T	n-Hexane	50.0000	61.9344	-23.9	162	0.00
25	T	Diisopropyl ether	100.0000	117.0418	-17.0	143	0.00
26	T	Vinyl Acetate	50.0000	58.0650	-16.1	144	0.00
27	P	1,1-Dichloroethane	50.0000	57.8511	-15.7	137	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	107.0557	-7.1	130	0.00
29	T	2-Butanone	50.0000	57.3826	-14.8	144	0.00
30	T	Propionitrile	100.0000	128.1242	-28.1#	156	0.00
31	T	2,2-Dichloropropane	50.0000	58.1797	-16.4	147	0.00
32	T	cis-1,2-Dichloroethene	50.0000	55.9848	-12.0	133	0.00
33	C	Chloroform	50.0000	55.7847	-11.6	132	0.00
34		1-Bromopropane	50.0000	58.7339	-17.5	150	0.00
35	T	Bromochloromethane	50.0000	54.6183	-9.2	127	0.00
36	T	Tetrahydrofuran	100.0000	137.3268	-37.3#	179	0.00
37	S	Dibromofluoromethane	25.0000	23.7706	4.9	117	0.00
38	T	1,1,1-Trichloroethane	50.0000	54.2774	-8.6	130	0.00
39	T	Cyclohexane	50.0000	58.4545	-16.9	147	0.00
40	T	1,1-Dichloropropene	50.0000	54.2696	-8.5	133	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.7497	-2.7	126	0.00
42	T	Carbon Tetrachloride	50.0000	54.8943	-9.8	128	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.3227	6.7	113	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	53.8347	-7.7	127	0.00
46	T	Benzene	50.0000	57.4364	-14.9	134	0.00
47	T	Trichloroethene	50.0000	53.5745	-7.1	129	0.00
48	T	Methylcyclohexane	50.0000	55.5803	-11.2	139	0.00
49	C	1,2-Dichloropropane	50.0000	59.1594	-18.3	137	0.00
50	T	Bromodichloromethane	50.0000	55.6227	-11.2	129	0.00
51	T	1,4-Dioxane	200.0000	259.0763	-29.5#	164	0.00
52	T	Dibromomethane	50.0000	55.8600	-11.7	128	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.0548	-4.1	124	0.00
54	T	4-Methyl-2-Pentanone	50.0000	54.9848	-10.0	136	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\040516\8M411218.D Vial: 2
Acq On : 5 Apr 2016 10:11 Operator: TMB
Sample : WG563534-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75490 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:47:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	58.2912	-16.6	134	0.00
56	T	Dimethyl Disulfide	50.0000	55.6751	-11.4	136	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	139	0.00
58	S	Toluene-d8	25.0000	23.0892	7.6	125	0.00
59	C	Toluene	50.0000	51.8299	-3.7	134	0.00
60	T	Ethyl Methacrylate	50.0000	52.2671	-4.5	140	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.7303	-1.5	134	0.00
63	T	1,1,2-Trichloroethane	50.0000	50.8092	-1.6	130	0.00
64	T	2-Hexanone	50.0000	52.2671	-4.5	144	0.00
65	T	1,3-Dichloropropane	50.0000	49.7476	0.5	130	0.00
66	T	Tetrachloroethene	50.0000	49.0992	1.8	131	0.00
67	T	Dibromochloromethane	50.0000	49.5928	0.8	125	0.00
68	T	1,2-Dibromoethane	50.0000	48.9304	2.1	125	0.00
69	T	1-Chlorohexane	50.0000	51.9162	-3.8	141	0.00
70	P	Chlorobenzene	50.0000	50.0179	-0.0	132	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.5058	-1.0	130	0.00
72	C	Ethylbenzene	50.0000	50.1233	-0.2	136	0.00
73	T	m-,p-Xylene	100.0000	103.6666	-3.7	134	0.00
74	T	o-Xylene	50.0000	48.7379	2.5	131	0.00
75	T	Styrene	50.0000	53.8504	-7.7	132	0.00
76	P	Bromoform	50.0000	49.9729	0.1	125	0.00
77	T	Isopropylbenzene	50.0000	52.8457	-5.7	133	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	150	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	46.1637	7.7	127	0.00
80	S	p-Bromofluorobenzene	25.0000	22.3547	10.6	133	0.00
81	T	1,2,3-Trichloropropane	50.0000	43.2998	13.4	124	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	51.4281	-2.9	146	0.00
83	T	n-Propylbenzene	50.0000	47.6537	4.7	136	0.00
84	T	Bromobenzene	50.0000	44.4233	11.2	129	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	46.9915	6.0	131	0.00
86	T	2-Chlorotoluene	50.0000	45.4888	9.0	132	0.00
87	T	4-Chlorotoluene	50.0000	47.3485	5.3	131	0.00
88	T	a-Methylstyrene	50.0000	47.0395	5.9	141	0.00
89	T	tert-Butylbenzene	50.0000	45.1874	9.6	134	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.6479	2.7	134	0.00
91	T	sec-Butylbenzene	50.0000	48.0571	3.9	134	0.00
92	T	p-Isopropyltoluene	50.0000	48.3005	3.4	135	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.1943	5.6	133	0.00
94	T	1,4-Dichlorobenzene	50.0000	45.9561	8.1	131	0.00
95	T	n-Butylbenzene	50.0000	49.6137	0.8	141	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.0105	6.0	130	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	43.0472	13.9	123	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	44.7952	10.4	124	0.00
99	T	Hexachlorobutadiene	50.0000	46.9076	6.2	133	0.00
100	T	Naphthalene	50.0000	44.5360	10.9	120	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	44.8204	10.4	124	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411218.D 8260WTR.M Tue Apr 05 11:04:06 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\100515\8M407827.D          Vial: 1
Acq On    :  5 Oct 2015  11:26                       Operator: TMB
Sample    : WG540826-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD72715                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

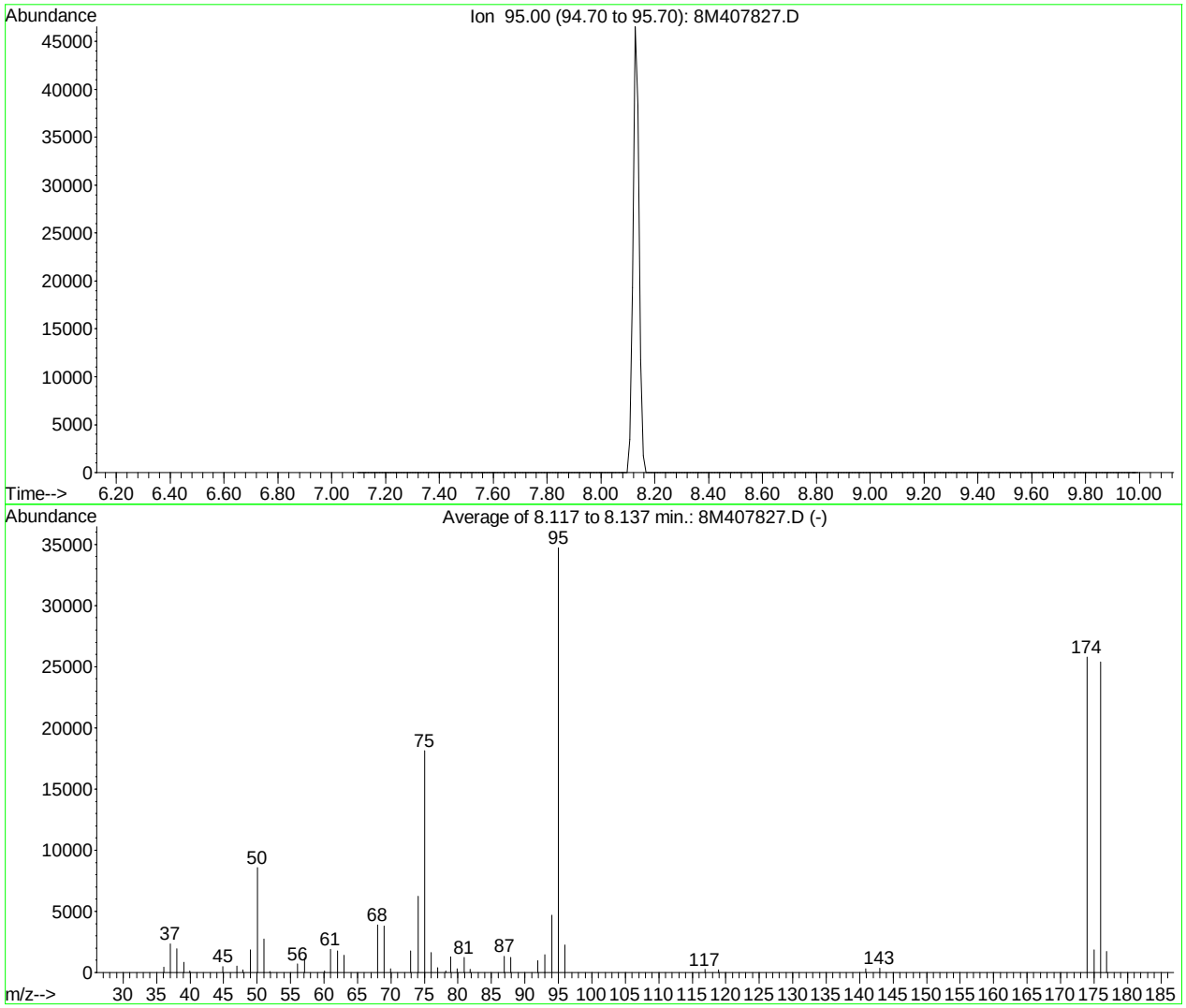

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.7	8565	PASS
75	95	30	60	52.2	18121	PASS
95	95	100	100	100.0	34714	PASS
96	95	5	9	6.5	2262	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	74.2	25773	PASS
175	174	5	9	7.2	1845	PASS
176	174	95	101	98.5	25378	PASS
177	176	5	9	6.9	1746	PASS

8M407827.D BFB.M Mon Oct 05 12:46:56 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\021716\8M410192.D          Vial: 2
Acq On    : 17 Feb 2016  14:25                       Operator: TMB
Sample    : WG556046-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD74606                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

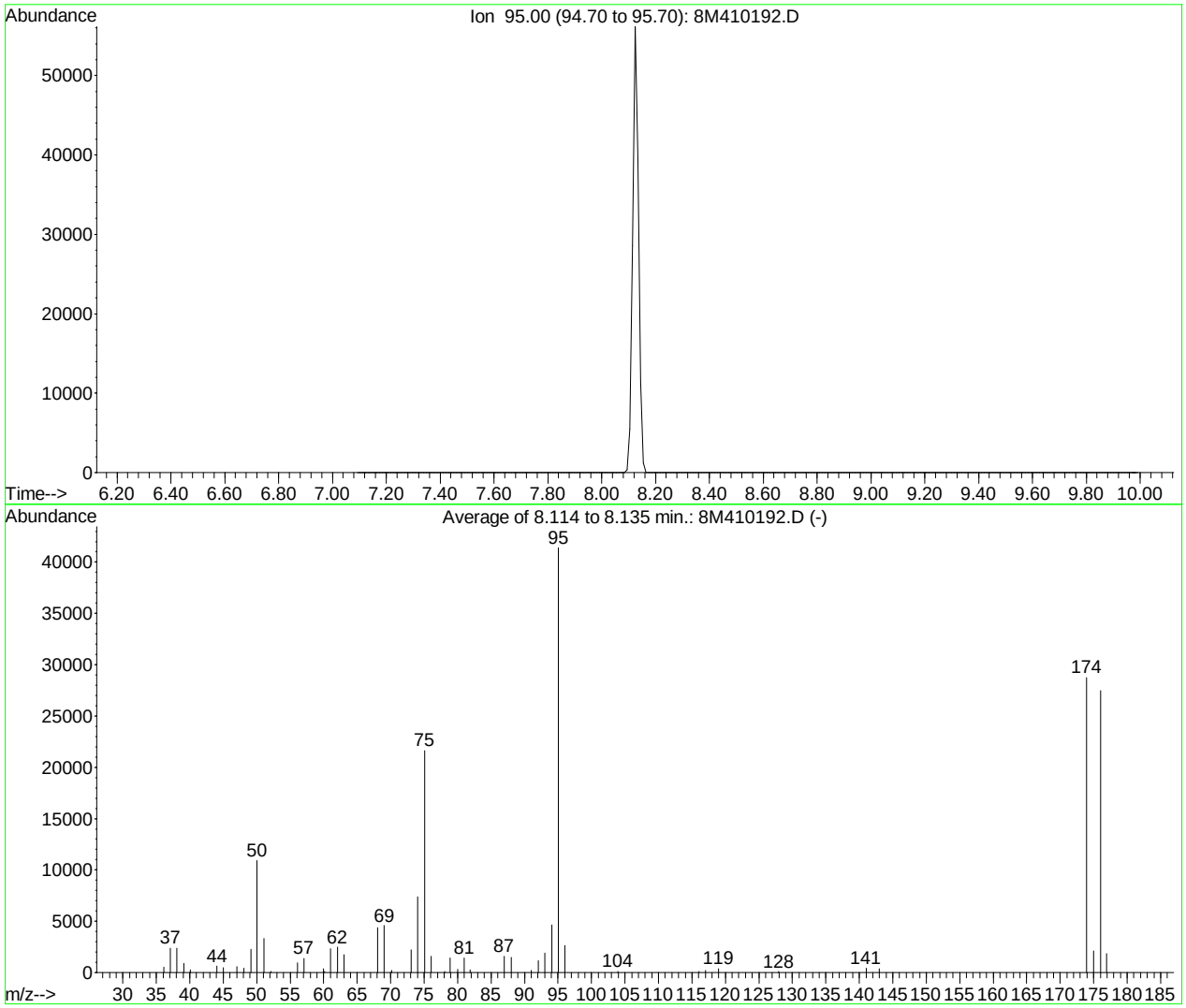

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	26.3	10897	PASS
75	95	30	60	52.3	21632	PASS
95	95	100	100	100.0	41381	PASS
96	95	5	9	6.4	2628	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	69.5	28751	PASS
175	174	5	9	7.3	2112	PASS
176	174	95	101	95.5	27459	PASS
177	176	5	9	6.7	1846	PASS

8M410192.D BFB.M Wed Feb 17 15:20:19 2016

BFB

```
Data File : C:\MSDCHEM\2\DATA\040516\8M411217.D          Vial: 1
Acq On    :  5 Apr 2016   9:48                        Operator: TMB
Sample    : WG563534-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD75485                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

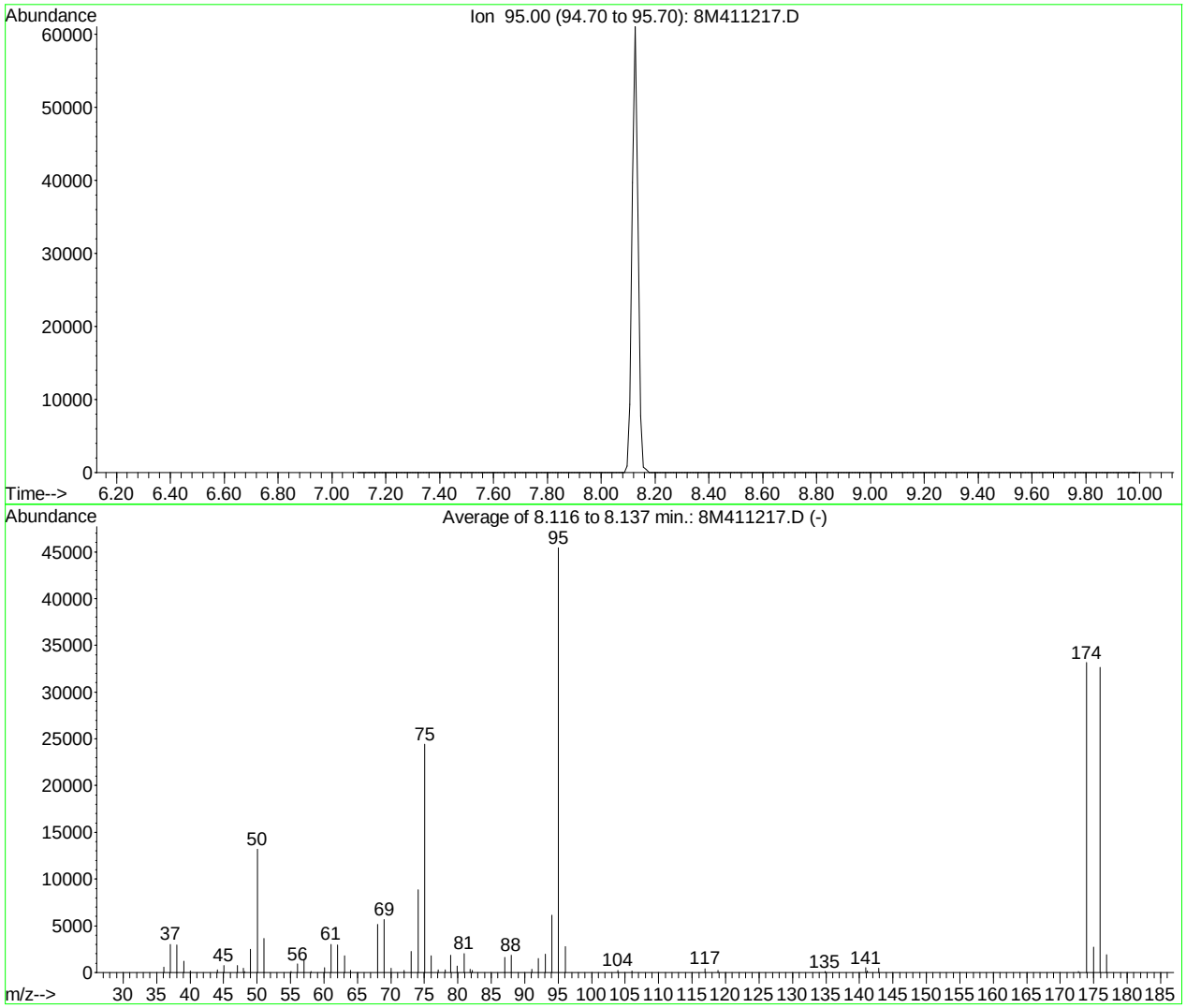

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	29.1	13211	PASS
75	95	30	60	53.8	24445	PASS
95	95	100	100	100.0	45421	PASS
96	95	5	9	6.1	2785	PASS
173	174	0.00	2	0.3	101	PASS
174	95	50	100	73.0	33149	PASS
175	174	5	9	8.2	2721	PASS
176	174	95	101	98.4	32632	PASS
177	176	5	9	5.9	1934	PASS

8M411217.D BFB.M Tue Apr 05 09:58:55 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\040516\8M411220.D Vial: 4
Acq On : 5 Apr 2016 11:09 Operator: TMB
Sample : WG563535-01 VBLK0405 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 05 16:36:55 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:47:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	970096	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	768869	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	376022	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	238776	23.9783 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.92%		
43) 1,2-Dichloroethane-d4	10.30	65	247666	23.2280 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.92%		
58) Toluene-d8	12.68	98	882242	23.2386 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.96%		
80) p-Bromofluorobenzene	16.07	95	350120	23.9692 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.88%		

Target Compounds					Qvalue
3) Chloromethane	3.63	50	4033	0.1725 ug/L #	43
5) 1,3-Butadiene	3.91	54	204	Below Cal #	1
13) Acetone	6.27	43	235	0.1481 ug/L #	48
36) Tetrahydrofuran	9.62	42	3489	2.0877 ug/L #	66

(#) = qualifier out of range (m) = manual integration
8M411220.D 8260WTR.M Tue Apr 05 16:36:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\040516\8M411220.D Vial: 4
Acq On : 5 Apr 2016 11:09 Operator: TMB
Sample : WG563535-01 VBLK0405 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 5 16:36 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:47:33 2016
Response via : Initial Calibration

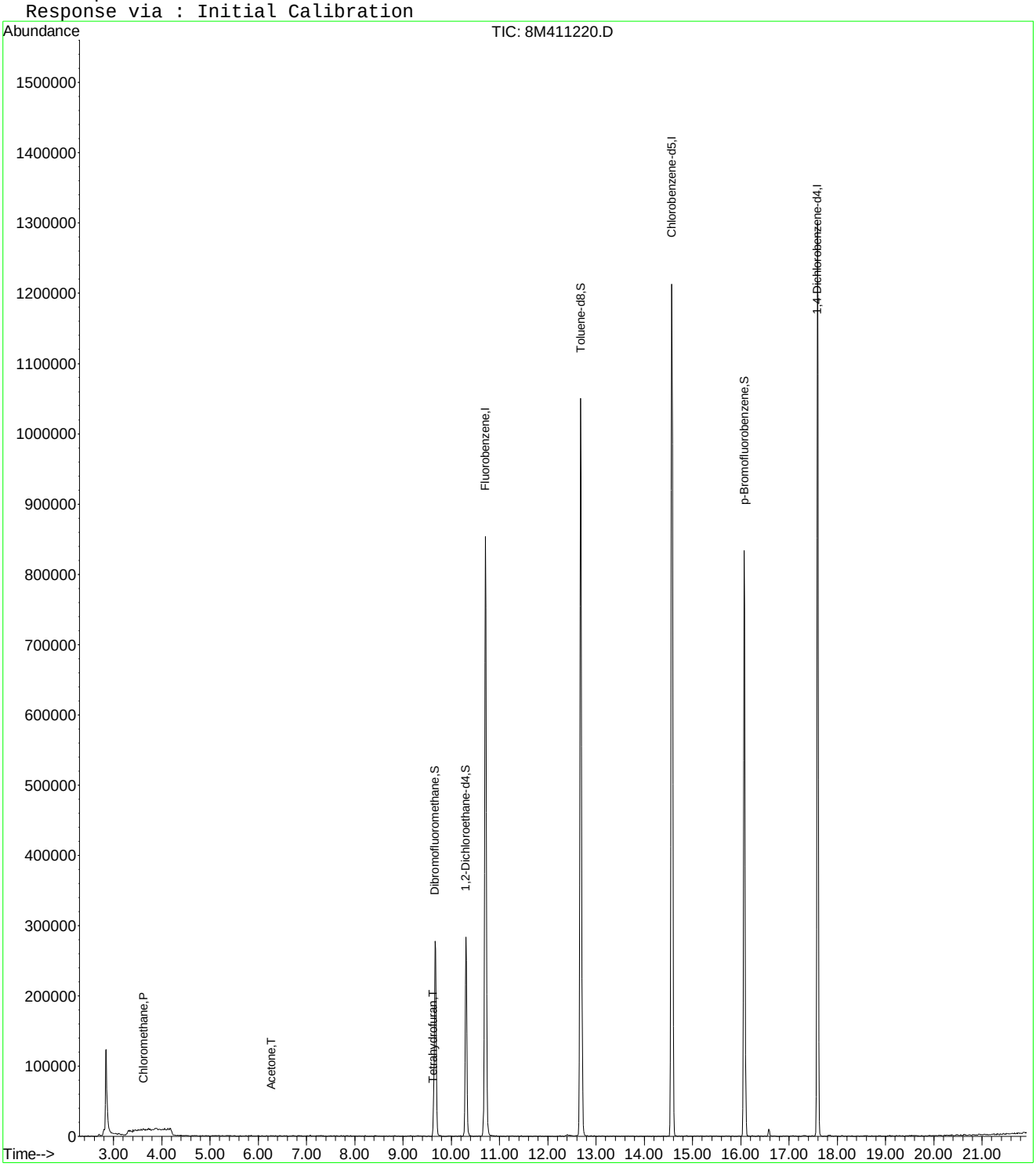

8M411220.D 8260WTR.M Tue Apr 05 16:36:55 2016 Page 2

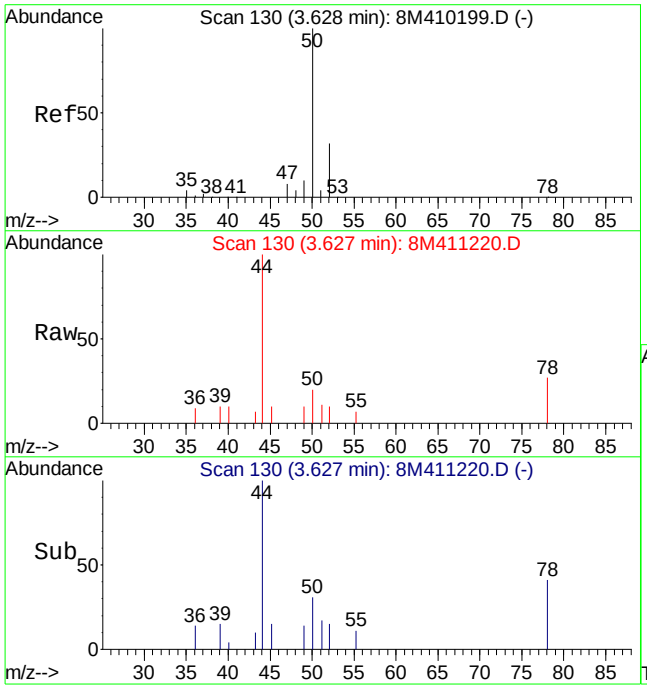

#3
Chloromethane
Concen: 0.17 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M411220.D
Acq: 5 Apr 2016 11:09

Tgt Ion: 50 Resp: 4033

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.3	44.9#

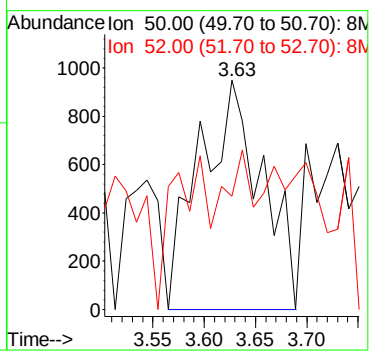

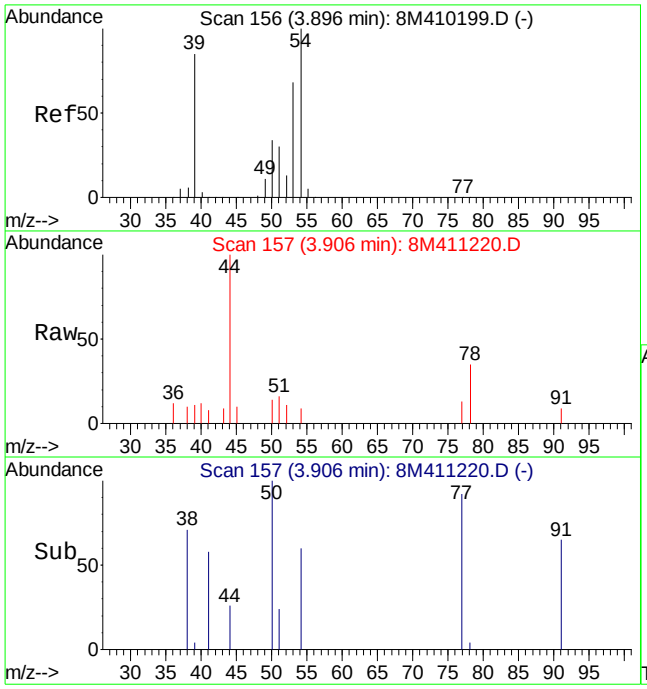

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.91 min Scan# 157
Delta R.T. 0.02 min
Lab File: 8M411220.D
Acq: 5 Apr 2016 11:09

Tgt Ion: 54 Resp: 204

Ion	Ratio	Lower	Upper
54	100		
39	270.6	60.0	140.0#
53	121.1	42.5	99.1#

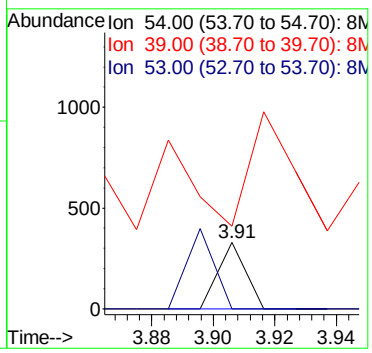

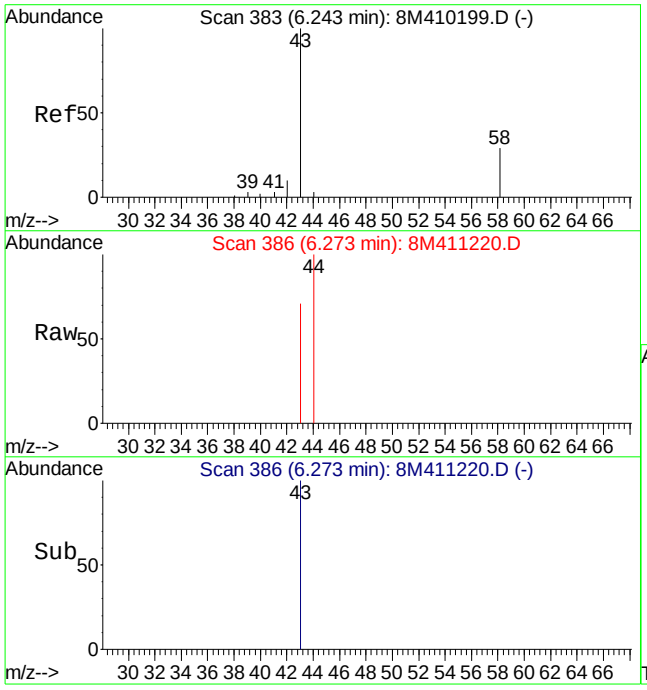

#13
Acetone
Concen: 0.15 ug/L
RT: 6.27 min Scan# 386
Delta R.T. 0.02 min
Lab File: 8M411220.D
Acq: 5 Apr 2016 11:09

Tgt Ion: 43 Resp: 235

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.2	37.8#

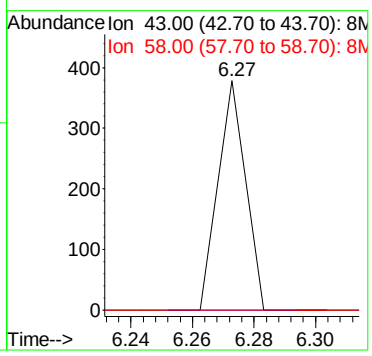

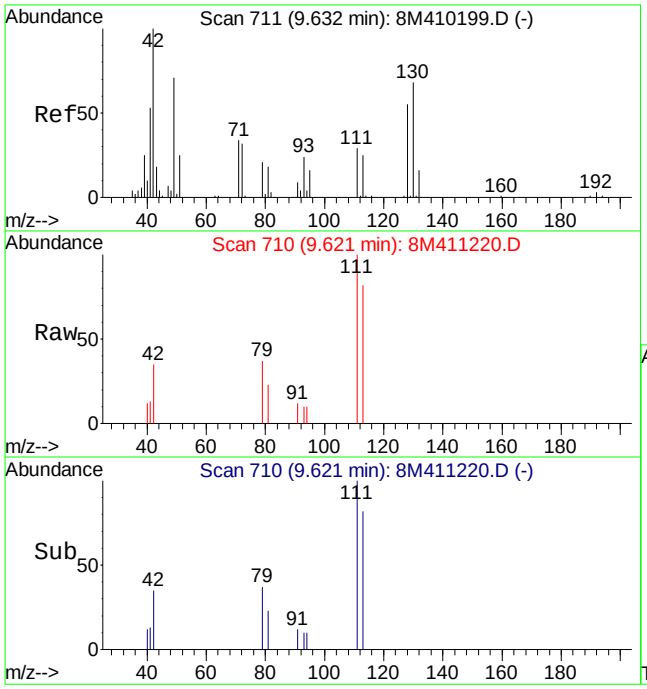

#36
Tetrahydrofuran
Concen: 2.09 ug/L
RT: 9.62 min Scan# 710
Delta R.T. -0.01 min
Lab File: 8M411220.D
Acq: 5 Apr 2016 11:09

Tgt Ion: 42 Resp: 3489

Ion	Ratio	Lower	Upper
42	100		
72	20.5	20.8	48.6#
71	6.6	19.0	44.4#

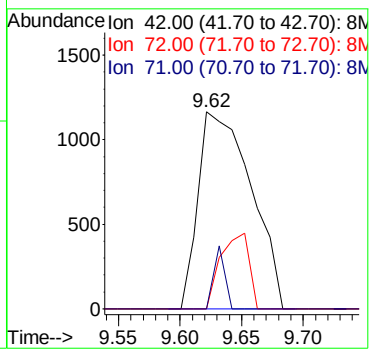

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\040516\8M411222.D Vial: 6
Acq On : 5 Apr 2016 12:08 Operator: TMB
Sample : WG563535-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75403 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 05 12:29:58 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:47:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	993969	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	789603	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	449855	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	249645	24.4677 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.88%		
43) 1,2-Dichloroethane-d4	10.30	65	255208	23.3605 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.44%		
58) Toluene-d8	12.68	98	904761	23.2059 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.84%		
80) p-Bromofluorobenzene	16.07	95	390138	22.3252 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 89.32%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	408794	26.0912 ug/L	99
3) Chloromethane	3.63	50	614396	25.6442 ug/L	99
4) Vinyl Chloride	3.84	62	406841	24.3935 ug/L	99
5) 1,3-Butadiene	3.89	54	48793	2.0179 ug/L	94
6) Bromomethane	4.74	94	100249	12.6512 ug/L	99
7) Chloroethane	4.90	64	192534	25.5539 ug/L	98
8) Trichlorofluoromethane	5.38	101	390996	21.8738 ug/L	99
9) Diethyl ether	5.91	59	786425	120.1371 ug/L	95
10) Isoprene	5.95	67	310902	25.6665 ug/L	90
11) Acrolein	6.15	56	94876	93.3308 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	227151	23.2777 ug/L	88
13) Acetone	6.24	43	41806	25.7166 ug/L	99
14) 1,1-Dichloroethene	6.47	61	399824	22.2627 ug/L	92
15) Tert-Butyl Alcohol	6.59	59	98080	237.5609 ug/L	97
16) Dimethyl Sulfide	6.74	62	247151	31.4192 ug/L	91
17) Iodomethane	7.00	142	52051	9.3823 ug/L	97
18) Methyl acetate	7.01	43	123828	27.2792 ug/L	97
19) Methylene Chloride	7.26	84	220236	22.3967 ug/L	81
20) Carbon Disulfide	7.30	76	624673	20.2371 ug/L	99
21) Acrylonitrile	7.44	53	57301	25.0001 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	428722	21.4662 ug/L	93
23) trans-1,2-Dichloroethene	7.71	61	389484	23.1991 ug/L	91
24) n-Hexane	7.78	57	319904	22.3496 ug/L	100
25) Diisopropyl ether	8.13	45	4666711	125.1081 ug/L	98
26) Vinyl Acetate	8.30	43	343807	20.0525 ug/L	97
27) 1,1-Dichloroethane	8.33	63	471041	22.4855 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	3270426	109.3168 ug/L	97
29) 2-Butanone	8.89	43	64263	25.1410 ug/L	97
30) Propionitrile	8.99	54	92894	126.5129 ug/L	98
31) 2,2-Dichloropropane	9.11	77	385779	23.4167 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	255150	23.5955 ug/L	87
33) Chloroform	9.37	83	426805	22.9644 ug/L	100
34) 1-Bromopropane	9.52	122	51257	32.2314 ug/L	100
35) Bromochloromethane	9.61	130	121476	22.4508 ug/L	82
36) Tetrahydrofuran	9.63	42	207754	121.3296 ug/L	94
38) 1,1,1-Trichloroethane	9.91	97	375770	22.1575 ug/L	98
39) Cyclohexane	9.94	56	453942	23.0000 ug/L	93
40) 1,1-Dichloropropene	10.11	75	316286	21.4345 ug/L	95
41) Tert-Amyl-Methyl ether	10.21	73	2362150	112.3392 ug/L	94
42) Carbon Tetrachloride	10.25	117	335917	21.7645 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411222.D 8260WTR.M Tue Apr 05 12:29:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\040516\8M411222.D Vial: 6
Acq On : 5 Apr 2016 12:08 Operator: TMB
Sample : WG563535-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75403 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 05 12:29:58 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:47:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	331443	23.4735	ug/L		98
46)	Benzene	10.47	78	915888	23.8226	ug/L		94
47)	Trichloroethene	11.21	130	230666	22.2761	ug/L		96
48)	Methylcyclohexane	11.30	83	323510	21.6962	ug/L		90
49)	1,2-Dichloropropane	11.43	63	274317	25.3781	ug/L		93
50)	Bromodichloromethane	11.73	83	313833	22.8712	ug/L		99
51)	1,4-Dioxane	11.71	88	10741	246.3615	ug/L		91
52)	Dibromomethane	11.81	93	107218	21.8559	ug/L		93
53)	2-Chloroethyl Vinyl Ether	12.03	63	106858	22.7277	ug/L		95
54)	4-Methyl-2-Pentanone	12.05	58	49009	22.3832	ug/L		94
55)	cis-1,3-Dichloropropene	12.36	75	386288	25.8645	ug/L		98
56)	Dimethyl Disulfide	12.63	79	175951	22.3496	ug/L		94
59)	Toluene	12.78	91	949959	21.5899	ug/L		99
60)	Ethyl Methacrylate	12.88	69	194183	22.8497	ug/L		96
62)	trans-1,3-Dichloropropene	12.96	75	307342	20.8984	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	149932	21.4319	ug/L		98
64)	2-Hexanone	13.12	58	46762	21.4814	ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	286999	22.3791	ug/L		88
66)	Tetrachloroethene	13.60	164	170517	19.2927	ug/L		89
67)	Dibromochloromethane	13.86	129	200649	20.9214	ug/L		96
68)	1,2-Dibromoethane	14.12	107	146716	20.7208	ug/L		100
69)	1-Chlorohexane	14.21	91	308180	20.6566	ug/L		86
70)	Chlorobenzene	14.62	112	643981	21.3885	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	220781	20.4406	ug/L		96
72)	Ethylbenzene	14.66	106	347111	20.1496	ug/L		97
73)	m-,p-Xylene	14.74	106	840958	42.7084	ug/L		96
74)	o-Xylene	15.31	106	423812	20.7511	ug/L		99
75)	Styrene	15.34	104	696508	22.3668	ug/L		100
76)	Bromoform	15.83	173	105809	19.1443	ug/L		99
77)	Isopropylbenzene	15.73	105	1080130	22.1789	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	177695	19.7654	ug/L		97
81)	1,2,3-Trichloropropane	16.13	110	47157	18.7447	ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.18	53	49744	14.8594	ug/L	#	1
83)	n-Propylbenzene	16.24	91	1363603	20.5133	ug/L		98
84)	Bromobenzene	16.36	156	240848	18.2033	ug/L		90
85)	1,3,5-Trimethylbenzene	16.42	105	932096	20.0891	ug/L		98
86)	2-Chlorotoluene	16.51	91	830502	19.1265	ug/L		99
87)	4-Chlorotoluene	16.56	91	869566	20.4189	ug/L		98
88)	a-Methylstyrene	16.83	118	488712	20.1153	ug/L		97
89)	tert-Butylbenzene	16.89	134	187292	18.7333	ug/L		90
90)	1,2,4-Trimethylbenzene	16.94	105	958842	20.0251	ug/L		100
91)	sec-Butylbenzene	17.16	105	1176229	20.3952	ug/L		97
92)	p-Isopropyltoluene	17.31	119	940622	19.6884	ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	516179	19.6235	ug/L		94
94)	1,4-Dichlorobenzene	17.63	146	519032	19.6472	ug/L		94
95)	n-Butylbenzene	17.84	91	951780	19.8027	ug/L		96
96)	1,2-Dichlorobenzene	18.13	146	454998	19.8929	ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.12	75	31254	18.5573	ug/L		82
98)	1,2,4-Trichlorobenzene	20.27	180	298939	17.9513	ug/L		99
99)	Hexachlorobutadiene	20.42	225	125512	18.4300	ug/L		97
100)	Naphthalene	20.64	128	454672	16.6865	ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	247355	17.8522	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M411222.D 8260WTR.M Tue Apr 05 12:29:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\040516\8M411222.D Vial: 6
Acq On : 5 Apr 2016 12:08 Operator: TMB
Sample : WG563535-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75403 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 5 12:29 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-17-16 HPMS 8
Last Update : Thu Feb 18 08:47:33 2016
Response via : Initial Calibration

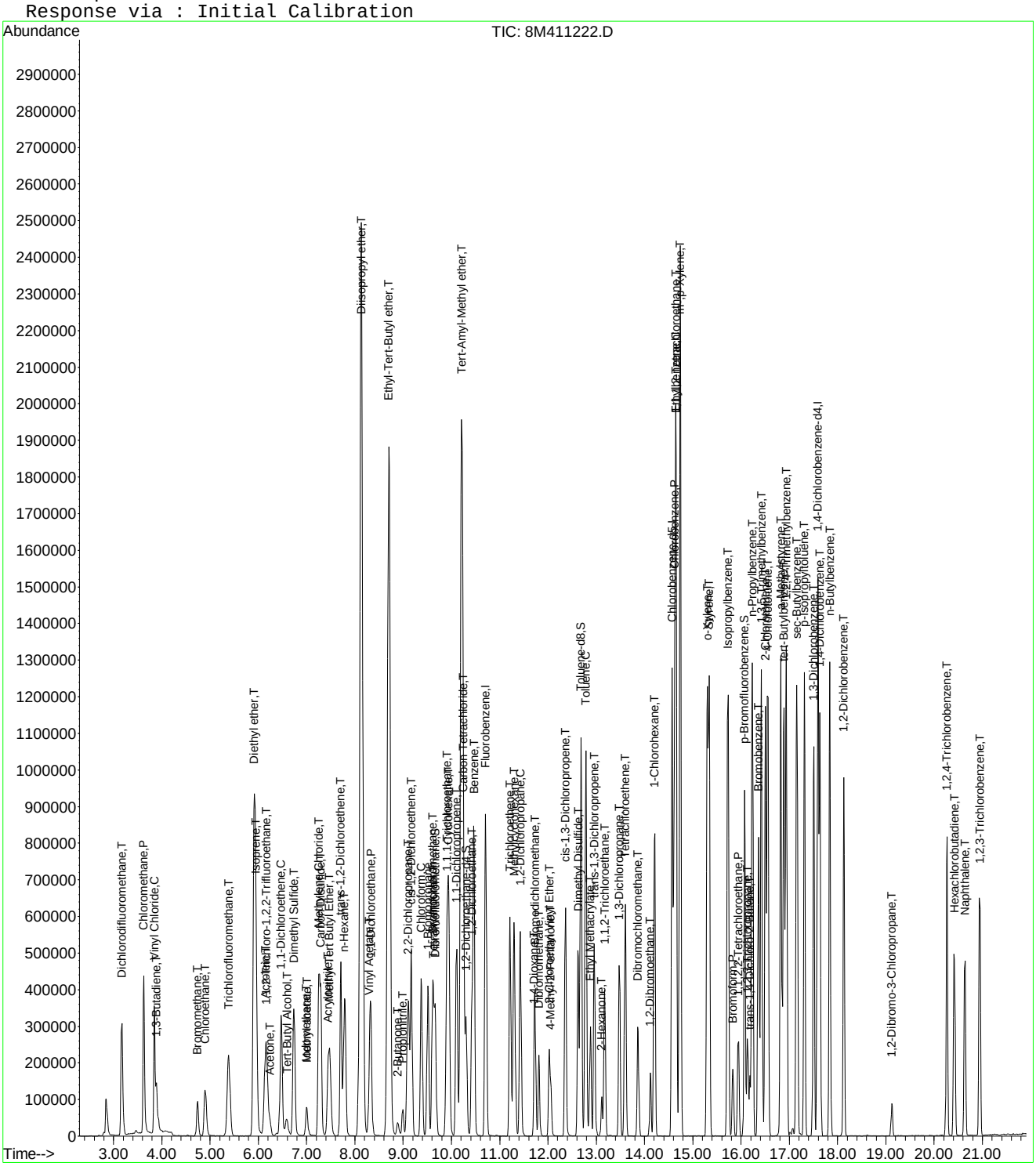

8M411222.D 8260WTR.M Tue Apr 05 12:29:59 2016 Page 3

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
April 8, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG	AZH - AFTER HOURS
BJO - BRIAN J. OGDEN	BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE	JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG	JLL - JOHN L. LENT
JMW - JEANA M. WHITE	JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KKB - KERRI K. BUCK	KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER	KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER	LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS	LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER	MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON	MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING	MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY	MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG	SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TB - TODD BOYLE
TGF - TIM G. FELTON	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
April 08, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
April 08, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD		
Project Name/Location:	Longhorn		
Project Number:	60256135.0002FA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

pH:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 46	LHSmw18-032916			3/29/16	0855		✓	W	3	✓					
	46WW01-032916			3/29/16	0910		✓	W	3	✓					
	TRIP BLANK			3/29/16			✓	W	2	✓					

Comments: STANDARD TAT

Relinquished by: (Signature) Scott Beesinger	Date 3/29/16	Time 1230	Recei	Time	Relinquished by: (Signature)	
Relinquished by: (Signature)	Date	Time	Recei (Signa	Time	Remarks:	

Microbac OVD
Received: 03/30/2016 10:09
By: CARA STRICKLER 221000083885
Cara Strickler

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16031616
Account: 2551
Project: 2551.096
Samples: 3
Due Date: 08-APR-2016

Samplenum	Container ID	Products
L16031616-01	721701	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	30-MAR-2016 12:46	BRG		
2	ANALYZ	V1	ORG4	31-MAR-2016 07:34	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	30-MAR-2016 12:46	BRG		
2	ANALYZ	V1	ORG4	31-MAR-2016 07:34	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	30-MAR-2016 12:46	BRG		
2	ANALYZ	V1	ORG4	31-MAR-2016 07:34	AWE	CLS	

Samplenum	Container ID	Products
L16031616-02	721702	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	30-MAR-2016 12:46	BRG		
2	ANALYZ	V1	ORG4	31-MAR-2016 07:34	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	30-MAR-2016 12:46	BRG		
2	ANALYZ	V1	ORG4	31-MAR-2016 07:34	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	30-MAR-2016 12:46	BRG		
2	ANALYZ	V1	ORG4	31-MAR-2016 07:34	AWE	CLS	

Samplenum	Container ID	Products
L16031616-03	721703	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	30-MAR-2016 12:46	BRG		
2	ANALYZ	V1	ORG4	31-MAR-2016 07:34	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	30-MAR-2016 12:46	BRG		
2	ANALYZ	V1	ORG4	31-MAR-2016 07:34	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16080317

Kayla Teague
AECOM Technical Services, Inc.
1950 N Stemmons FWY
Dallas, TX 75207

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on August 22 2016

Leslie Bucina – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113762	H	4.0		J4579392786	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
46WW03-080416	L16080317-01	08/04/2016 07:55	08/05/2016 09:38
46WW03MS-080416	L16080317-02	08/04/2016 07:55	08/05/2016 09:38
46WW03MSD-080416	L16080317-03	08/04/2016 07:55	08/05/2016 09:38
46WW02-080416	L16080317-04	08/04/2016 08:55	08/05/2016 09:38
46WW02FF-080416	L16080317-05	08/04/2016 08:55	08/05/2016 09:38
46WW06-080416	L16080317-06	08/04/2016 10:20	08/05/2016 09:38
46WW06FD-080416	L16080317-07	08/04/2016 10:20	08/05/2016 09:38
LHSMW25-080416	L16080317-08	08/04/2016 11:25	08/05/2016 09:38
46WW10-080416	L16080317-09	08/04/2016 12:40	08/05/2016 09:38
46WW01-080416	L16080317-10	08/04/2016 13:30	08/05/2016 09:38
TRIP BLANK	L16080317-11	08/04/2016 00:01	08/05/2016 09:38

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16080317
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 55
2.0 Full Sample Data Package 92
2.1 Volatiles Data 93
2.1.1 Volatiles GCMS Data (8260) 94
2.1.1.1 Summary Data 95
2.1.1.2 QC Summary Data 124
2.1.1.3 Sample Data 158
2.1.1.4 Standards Data 194
2.1.1.5 Raw QC Data 315
2.1.2 RSK 175 327
2.1.2.1 Summary Data 328
2.1.2.2 QC Summary Data 332
2.1.2.3 Sample Data 362
2.1.2.4 Standards Data 367
2.1.2.5 Raw QC Data 407
2.2 Metals Data 418
2.2.1 Metals I C P Data 419
2.2.1.1 Summary Data 420
2.2.1.2 QC Summary Data 423
2.2.1.3 Raw Data 464
2.3 General Chemistry Data 786
2.3.1 Method 9056 787
2.3.1.1 Summary Data 788
2.3.1.2 QC Summary Data 792
2.3.1.3 Sample Data 814
2.3.1.4 Standards Data 817
2.3.1.5 Raw QC Data 838
2.3.2 Alkalinity Data 841
2.3.2.1 Summary Data 842
2.3.2.2 QC Summary Data 845
2.3.2.3 Raw Data 852
2.3.3 Phosphorus Data 858
2.3.3.1 Summary Data 859
2.3.3.2 QC Summary Data 862
2.3.3.3 Raw Data 869
2.3.4 Sulfide Data 875
2.3.4.1 Summary Data 876
2.3.4.2 QC Summary Data 879
2.3.4.3 Raw Data 886
2.3.5 Total Organic Carbon Data 889
2.3.5.1 Summary Data 890
2.3.5.2 QC Summary Data 892
2.3.5.3 Raw Data 899
3.0 Attachments 941

1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	8260
Prep Batch Number(s):	580434	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-08-17 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-08-17 17:11:58

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	8260
Prep Batch Number(s):	580434	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-08-17 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	8260
Prep Batch Number(s):	580434	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-08-17 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	8260
Prep Batch Number(s):	580434	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-08-17 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	8260
Prep Batch Number(s):	580434	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-08-17 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	8260
Prep Batch Number(s):	580434	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-08-17 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Chloromethane exceeded the UCL in the ICV.

2)Bromomethane exceeded the UCL in the CCV.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	579430, 579716	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-08-22 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2016-08-22 19:12:36

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	579430, 579716	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-08-22 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	579430, 579716	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-08-22 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	579430, 579716	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-08-22 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	579430, 579716	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-08-22 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	579430, 579716	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-08-22 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There were no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG579570	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-08-15 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-08-15 16:09:58

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG579570	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-08-15 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG579570	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-08-15 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG579570	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-08-15 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG579570	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-08-15 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG579570	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-08-15 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG579268	**Reviewer Name:**	Allen Davis
LRC Date:	2016-08-08 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Allen Davis		Analyst I	2016-08-08 16:10:57

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG579268	**Reviewer Name:**	Allen Davis
LRC Date:	2016-08-08 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG579268	**Reviewer Name:**	Allen Davis
LRC Date:	2016-08-08 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					1
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG579268	**Reviewer Name:**	Allen Davis
LRC Date:	2016-08-08 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG579268	**Reviewer Name:**	Allen Davis
LRC Date:	2016-08-08 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG579268	**Reviewer Name:**	Allen Davis
LRC Date:	2016-08-08 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fraction -04 was analyzed at dilution due to sulfate exceeding the upper limit of the calibration range in the initial analysis.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG579433	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-08-16 18:46:37

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG579433	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG579433	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG579433	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG579433	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG579433	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG579706	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-08-16 18:47:09

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG579706	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG579706	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG579706	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG579706	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG579706	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	S
Prep Batch Number(s):	WG579275	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-08-16 18:43:09

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	S
Prep Batch Number(s):	WG579275	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	S
Prep Batch Number(s):	WG579275	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	S
Prep Batch Number(s):	WG579275	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	S
Prep Batch Number(s):	WG579275	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	S
Prep Batch Number(s):	WG579275	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG579467	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-08-16 18:47:38

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG579467	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG579467	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG579467	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG579467	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080317
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG579467	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW03-080416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 16:45
Collect Date:	08/04/2016 07:55	**Dilution:**	1	**File ID:**	6M141296
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	98.1	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW03MS-080416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 23:11
Collect Date:	08/04/2016 07:55	**Dilution:**	1	**File ID:**	6M141308
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	23.6		10.0	5.00	2.50
Benzene	71-43-2	19.5		1.00	0.250	0.125
Bromobenzene	108-86-1	19.6		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.4		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.6		1.00	0.500	0.250
Bromoform	75-25-2	19.4		2.00	1.00	0.500
Bromomethane	74-83-9	11.4	Q	2.00	1.00	0.500
2-Butanone	78-93-3	19.8		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.9		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.9		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	20.5		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.8		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	18.6		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.3		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.5		1.00	0.500	0.250
Chloroethane	75-00-3	20.1		2.00	1.00	0.500
Chloroform	67-66-3	19.5		1.00	0.250	0.125
Chloromethane	74-87-3	16.2		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.5		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	21.2		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	20.4		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.5		1.00	0.500	0.250
Dibromomethane	74-95-3	20.2		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.6		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.7		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.7		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	16.6		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.4		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.8		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	16.2		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.8		1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	19.7		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.7		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	22.0		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	15.8		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	22.2		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.3		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	17.9		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.2		1.00	0.500	0.250
2-Hexanone	591-78-6	20.3		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	20.0		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.6		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.3		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.8		10.0	5.00	2.50
Methylene chloride	75-09-2	19.4		1.00	0.500	0.250
Naphthalene	91-20-3	20.5		1.00	0.400	0.200
n-Propylbenzene	103-65-1	21.7		1.00	0.250	0.125
Styrene	100-42-5	22.0		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.6		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	20.4		1.00	0.400	0.200
Tetrachloroethene	127-18-4	18.2		1.00	0.500	0.250
Toluene	108-88-3	20.6		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	23.0		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	20.2		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	18.5		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	21.0		1.00	0.500	0.250
Trichloroethene	79-01-6	18.8		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	17.1		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	21.1		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.6		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	18.9		1.00	0.500	0.250
o-Xylene	95-47-6	21.8		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.9		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW03MSD-080416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 23:43
Collect Date:	08/04/2016 07:55	**Dilution:**	1	**File ID:**	6M141309
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	23.3		10.0	5.00	2.50
Benzene	71-43-2	18.7		1.00	0.250	0.125
Bromobenzene	108-86-1	19.0		1.00	0.250	0.125
Bromochloromethane	74-97-5	19.6		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.8		1.00	0.500	0.250
Bromoform	75-25-2	18.6		2.00	1.00	0.500
Bromomethane	74-83-9	11.8	Q	2.00	1.00	0.500
2-Butanone	78-93-3	19.8		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.2		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.3		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.8		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	18.0		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.6		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.9		1.00	0.500	0.250
Chloroethane	75-00-3	19.6		2.00	1.00	0.500
Chloroform	67-66-3	18.7		1.00	0.250	0.125
Chloromethane	74-87-3	15.8		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	19.2		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	21.1		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	20.4		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.5		1.00	0.500	0.250
Dibromomethane	74-95-3	19.6		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.7		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.8		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.5		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	15.8		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	17.8		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.7		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	15.7		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.0		1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	18.9		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	19.9		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	21.0		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	15.0		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.1		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.2		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	17.4		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.2		1.00	0.500	0.250
2-Hexanone	591-78-6	20.0		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	19.1		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.8		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.4		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.7		10.0	5.00	2.50
Methylene chloride	75-09-2	19.0		1.00	0.500	0.250
Naphthalene	91-20-3	19.6		1.00	0.400	0.200
n-Propylbenzene	103-65-1	21.0		1.00	0.250	0.125
Styrene	100-42-5	21.0		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.5		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	20.0		1.00	0.400	0.200
Tetrachloroethene	127-18-4	17.6		1.00	0.500	0.250
Toluene	108-88-3	19.6		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.7		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	20.0		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	17.9		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.8		1.00	0.500	0.250
Trichloroethene	79-01-6	18.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	16.6		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	20.1		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.9		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.2		1.00	0.500	0.250
Vinyl chloride	75-01-4	18.2		1.00	0.500	0.250
o-Xylene	95-47-6	20.7		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.2		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW02-080416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 17:17
Collect Date:	08/04/2016 08:55	**Dilution:**	1	**File ID:**	6M141297
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.40	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.31		1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	20.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.259	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	98.6	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	109	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW02-080416	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579430	**Analyst:**	JDS	**Run Date:**	08/08/2016 16:24
Collect Date:	08/04/2016 08:55	**Dilution:**	1	**File ID:**	16G50455
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW02-080416	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579716	**Analyst:**	JDS	**Run Date:**	08/10/2016 15:46
Collect Date:	08/04/2016 08:55	**Dilution:**	10	**File ID:**	16G50513
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	528000		100000	50000	25000

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW02-080416	**Prep Method:**	3015	**Prep Date:**	08/09/2016 12:31
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579664	**Analyst:**	JYH	**Run Date:**	08/10/2016 15:46
Collect Date:	08/04/2016 08:55	**Dilution:**	1	**File ID:**	T3.081016.154618
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	2.04		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	46WW02-080416	**Prep Method:**	9056	**Prep Date:**	08/05/2016 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/25/2016 14:27
Workgroup #:	WG579268	**Analyst:**	AED	**Run Date:**	08/05/2016 19:01
Collect Date:	08/04/2016 08:55	**Dilution:**	1	**File ID:**	I1_080516-21
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	17.8		0.200	0.200	0.100
Nitrate	14797-55-8	0.200	U	0.600	0.200	0.100
Nitrite	14797-65-0	0.200	U	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	46WW02-080416	**Prep Method:**	9056	**Prep Date:**	08/05/2016 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/25/2016 14:27
Workgroup #:	WG579268	**Analyst:**	AED	**Run Date:**	08/05/2016 19:19
Collect Date:	08/04/2016 08:55	**Dilution:**	3	**File ID:**	I1_080516-22
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfate	14808-79-8	158		3.00	3.00	1.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW02-080416	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/08/2016 15:23
Workgroup #:	WG579433	**Analyst:**	DCM	**Run Date:**	08/08/2016 15:34
Collect Date:	08/04/2016 08:55	**Dilution:**	1	**File ID:**	SC160808005.027
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	26.3	J	40.0	20.0	10.0

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW02-080416	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/10/2016 12:44
Workgroup #:	WG579706	**Analyst:**	TB	**Run Date:**	08/10/2016 12:48
Collect Date:	08/04/2016 08:55	**Dilution:**	1	**File ID:**	SC160810004.013
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.140	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW02-080416	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG579275	**Analyst:**	EPT	**Run Date:**	08/05/2016 16:05
Collect Date:	08/04/2016 08:55	**Dilution:**	1	**File ID:**	ET.1608051605-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW02-080416	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG579467	**Analyst:**	EPT	**Run Date:**	08/08/2016 18:39
Collect Date:	08/04/2016 08:55	**Dilution:**	10	**File ID:**	TC08082016.007
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	41.3		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16080317-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW02FF-080416	**Prep Method:**	3015	**Prep Date:**	08/09/2016 12:31
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579664	**Analyst:**	JYH	**Run Date:**	08/10/2016 15:50
Collect Date:	08/04/2016 08:55	**Dilution:**	1	**File ID:**	T3.081016.155010
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	1.66		0.200	0.100	0.0500
Magnesium, Dissolved	7439-95-4	11.9		1.00	0.500	0.250

Certificate of Analysis

Sample #:	L16080317-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW06-080416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 17:49
Collect Date:	08/04/2016 10:20	**Dilution:**	1	**File ID:**	6M141298
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW06FD-080416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 18:22
Collect Date:	08/04/2016 10:20	**Dilution:**	1	**File ID:**	6M141299
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.95	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	99.7	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	107	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	LHSMW25-080416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 18:54
Collect Date:	08/04/2016 11:25	**Dilution:**	1	**File ID:**	6M141300
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW10-080416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 19:26
Collect Date:	08/04/2016 12:40	**Dilution:**	1	**File ID:**	6M141301
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	109	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW01-080416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 19:58
Collect Date:	08/04/2016 13:30	**Dilution:**	1	**File ID:**	6M141302
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 15:06
Collect Date:	08/04/2016 00:01	**Dilution:**	1	**File ID:**	6M141293
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	94.6	70	120	
Toluene-d8	98.7	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW03-080416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 16:45
Collect Date:	08/04/2016 07:55	**Dilution:**	1	**File ID:**	6M141296
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	98.1	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW03MS-080416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 23:11
Collect Date:	08/04/2016 07:55	**Dilution:**	1	**File ID:**	6M141308
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	23.6		10.0	5.00	2.50
Benzene	71-43-2	19.5		1.00	0.250	0.125
Bromobenzene	108-86-1	19.6		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.4		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.6		1.00	0.500	0.250
Bromoform	75-25-2	19.4		2.00	1.00	0.500
Bromomethane	74-83-9	11.4	Q	2.00	1.00	0.500
2-Butanone	78-93-3	19.8		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.9		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.9		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	20.5		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.8		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	18.6		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.3		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.5		1.00	0.500	0.250
Chloroethane	75-00-3	20.1		2.00	1.00	0.500
Chloroform	67-66-3	19.5		1.00	0.250	0.125
Chloromethane	74-87-3	16.2		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.5		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	21.2		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	20.4		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.5		1.00	0.500	0.250
Dibromomethane	74-95-3	20.2		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.6		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.7		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.7		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	16.6		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.4		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.8		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	16.2		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.8		1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	19.7		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.7		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	22.0		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	15.8		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	22.2		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.3		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	17.9		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.2		1.00	0.500	0.250
2-Hexanone	591-78-6	20.3		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	20.0		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.6		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.3		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.8		10.0	5.00	2.50
Methylene chloride	75-09-2	19.4		1.00	0.500	0.250
Naphthalene	91-20-3	20.5		1.00	0.400	0.200
n-Propylbenzene	103-65-1	21.7		1.00	0.250	0.125
Styrene	100-42-5	22.0		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.6		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	20.4		1.00	0.400	0.200
Tetrachloroethene	127-18-4	18.2		1.00	0.500	0.250
Toluene	108-88-3	20.6		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	23.0		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	20.2		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	18.5		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	21.0		1.00	0.500	0.250
Trichloroethene	79-01-6	18.8		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	17.1		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	21.1		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.6		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	18.9		1.00	0.500	0.250
o-Xylene	95-47-6	21.8		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.9		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW03MSD-080416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 23:43
Collect Date:	08/04/2016 07:55	**Dilution:**	1	**File ID:**	6M141309
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	23.3		10.0	5.00	2.50
Benzene	71-43-2	18.7		1.00	0.250	0.125
Bromobenzene	108-86-1	19.0		1.00	0.250	0.125
Bromochloromethane	74-97-5	19.6		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.8		1.00	0.500	0.250
Bromoform	75-25-2	18.6		2.00	1.00	0.500
Bromomethane	74-83-9	11.8	Q	2.00	1.00	0.500
2-Butanone	78-93-3	19.8		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.2		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.3		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.8		1.00	0.500	0.250
Carbon disulfide	75-15-0	19.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	18.0		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.6		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.9		1.00	0.500	0.250
Chloroethane	75-00-3	19.6		2.00	1.00	0.500
Chloroform	67-66-3	18.7		1.00	0.250	0.125
Chloromethane	74-87-3	15.8		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	19.2		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	21.1		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	20.4		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.5		1.00	0.500	0.250
Dibromomethane	74-95-3	19.6		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.7		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.8		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.5		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	15.8		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	17.8		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.7		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	15.7		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.0		1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	18.9		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	19.9		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	21.0		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	15.0		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.1		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.2		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	17.4		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.2		1.00	0.500	0.250
2-Hexanone	591-78-6	20.0		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	19.1		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.8		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.4		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.7		10.0	5.00	2.50
Methylene chloride	75-09-2	19.0		1.00	0.500	0.250
Naphthalene	91-20-3	19.6		1.00	0.400	0.200
n-Propylbenzene	103-65-1	21.0		1.00	0.250	0.125
Styrene	100-42-5	21.0		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.5		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	20.0		1.00	0.400	0.200
Tetrachloroethene	127-18-4	17.6		1.00	0.500	0.250
Toluene	108-88-3	19.6		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.7		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	20.0		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	17.9		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.8		1.00	0.500	0.250
Trichloroethene	79-01-6	18.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	16.6		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	20.1		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.9		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.2		1.00	0.500	0.250
Vinyl chloride	75-01-4	18.2		1.00	0.500	0.250
o-Xylene	95-47-6	20.7		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.2		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW02-080416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 17:17
Collect Date:	08/04/2016 08:55	**Dilution:**	1	**File ID:**	6M141297
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.40	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.31		1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	20.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.259	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	98.6	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	109	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW06-080416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 17:49
Collect Date:	08/04/2016 10:20	**Dilution:**	1	**File ID:**	6M141298
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW06FD-080416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 18:22
Collect Date:	08/04/2016 10:20	**Dilution:**	1	**File ID:**	6M141299
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.95	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	99.7	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	107	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	LHSMW25-080416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 18:54
Collect Date:	08/04/2016 11:25	**Dilution:**	1	**File ID:**	6M141300
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW10-080416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 19:26
Collect Date:	08/04/2016 12:40	**Dilution:**	1	**File ID:**	6M141301
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	109	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW01-080416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 19:58
Collect Date:	08/04/2016 13:30	**Dilution:**	1	**File ID:**	6M141302
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580434	**Analyst:**	TMB	**Run Date:**	08/16/2016 15:06
Collect Date:	08/04/2016 00:01	**Dilution:**	1	**File ID:**	6M141293
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	94.6	70	120	
Toluene-d8	98.7	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 042416
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75498 Surrogate Standard: STD75498
CCV: STD75791 LCS: STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566155

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M138749	RINSE	NA	1	1		04/24/16 16:05
6M138750	WG566155-01 50ng BFB 826-A9	NA	1	1	STD75485	04/24/16 16:33
6M138751	WG566155-02 5ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 16:59
6M138752	WG566155-03 20ug/L STD 826-A	NA	1	1	STD75791	04/24/16 17:31
6M138753	WG566155-04 50ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 18:03
6M138754	WG566155-05 100ug/L STD 826-A	NA	1	1	STD75791	04/24/16 18:36
6M138755	WG566155-06 200ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:08
6M138756	WG566155-07 300ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:40
6M138757	WG566155-08 400ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:12
6M138758	WG566155-09 500ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:44
6M138759	RINSE	NA	1	1		04/24/16 21:16
6M138760	RINSE	NA	1	1		04/24/16 21:49
6M138761	WG566155-10 100ug/L ALT SRC	NA	1	1	STD75801	04/24/16 22:21
6M138762	RINSE	NA	1	1		04/24/16 22:53
6M138763	RINSE	NA	1	1		04/24/16 23:25

Approved: April 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 081016
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53850

Internal Standard: STD77285 Surrogate Standard: STD77285
CCV: STD77545 LCS: STD77477 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG579700

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M141163	RINSE	NA	1	1		08/10/16 09:59
6M141164	WG579700-01 50ng BFB STD 8260	NA	1	1	STD77509	08/10/16 11:26
6M141165	WG579700-02 50ug/L CCV STD 8260	NA	1	1	STD77397	08/10/16 11:50
6M141166	RINSE	NA	1	1		08/10/16 12:22
6M141167	WG579700-02 0.3ug/L STD 8260	NA	1	1	STD77545	08/10/16 14:25
6M141168	WG579700-03 0.4ug/L STD 8260	NA	1	1	STD77545	08/10/16 14:57
6M141169	WG579700-04 1ug/L STD 8260	NA	1	1	STD77545	08/10/16 15:30
6M141170	WG579700-05 2ug/L STD 8260	NA	1	1	STD77545	08/10/16 16:01
6M141171	WG579700-06 5ug/L STD 8260	NA	1	1	STD77545	08/10/16 16:34
6M141172	WG579700-07 20ug/L STD 8260	NA	1	1	STD77545	08/10/16 17:05
6M141173	WG579700-08 50ug/L STD 8260	NA	1	1	STD77545	08/10/16 17:37
6M141174	WG579700-09 100ug/L STD 8260	NA	1	1	STD77545	08/10/16 18:09
6M141175	WG579700-10 200ug/L STD 8260	NA	1	1	STD77545	08/10/16 18:42
6M141176	WG579700-11 300ug/L STD 8260	NA	1	1	STD77545	08/10/16 19:14
6M141177	RINSE	NA	1	1		08/10/16 19:46
6M141178	RINSE	NA	1	1		08/10/16 20:18
6M141179	WG579700-12 50ug/L ALT SRC STD 8260	NA	1	1	STD77477	08/10/16 20:51
6M141180	RINSE	NA	1	1		08/10/16 21:23

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3	X			
File ID: 6M141165				
	Ketones were low, and carbon tet. was high. DNR.			
17	X			
File ID: 6M141179				
	Gases were low. DNR.			

Approved: August 15, 2016

Microbac

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 081116
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD77285 Surrogate Standard: STD77285
CCV: STD77545; STD77552 LCS: STD77551 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG579701

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M141181	WG579849-01 50ng BFB STD 8260	NA	1	1	STD77509	08/11/16 11:26
6M141182	WG579849-02 50ug/L CCV STD 8260	NA	1	1	STD77545	08/11/16 11:52
6M141183	WG579849-02 50ug/L CCV STD 8260	NA	1	1	STD77545	08/11/16 12:25
6M141184	WG579905-01 100ug/L A9 CCV STD 8260	NA	1	1	STD77552	08/11/16 12:57
6M141185	WG579701-01 VBLK0811 BLANK STD 826	NA	1	1		08/11/16 13:29
6M141186	WG579700-12 50ug/L ALT SRC STD 8260	NA	1	1	STD77551	08/11/16 14:02
6M141187	WG579701-02 20ug/L LCS STD 8260	NA	1	1	STD77551	08/11/16 14:34
6M141188	WG579701-03 20ug/L LCS2 STD 8260	NA	1	1	STD77551	08/11/16 15:06
6M141189	L16080404-01 A 10X 826-TC	NA	17	10		08/11/16 15:39
6M141190	L16080333-01 A 826-SPE	<2	1	1		08/11/16 16:11
6M141191	L16080235-01 A 10X 826-TC	NA	17	10		08/11/16 16:44
6M141192	L16080197-01 A 10X 8260C-TC	NA	17	10		08/11/16 17:16
6M141193	L16080197-02 A 10X 8260C-TC	NA	17	10		08/11/16 17:48
6M141194	L16080146-01 A 10X 8260C-TC	NA	17	10		08/11/16 18:20
6M141195	L16080038-07 B 8260	<2	1	1		08/11/16 18:52
6M141196	L16080038-09 B 8260	<2	1	1		08/11/16 19:24
6M141197	L16080038-14 B 8260	7	1	1		08/11/16 19:56
6M141198	RINSE	NA	2	1		08/12/16 08:32
6M141199	WG579701-04 VBLK0811 BLANK STD 624	NA	2	1		08/12/16 09:04
6M141200	L16080474-06 A 624-SPE	6	2	1		08/12/16 09:37
6M141201	L16080489-06 A 624-SPE	5	2	1		08/12/16 10:09
6M141202	L16080570-01 A 624-SPE	5	2	1		08/12/16 10:41
6M141203	CCV	NA	1	1		08/12/16 11:14
6M141204	RINSE	NA	1	1		08/12/16 11:46
6M141205	WG578833-01 A 10X FBLK 826-TC	NA	17	10		08/12/16 12:18
6M141206	WG579015-01 A 10X FBLK 826-TC	NA	17	10		08/12/16 12:50

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M141182				
2-butanone was low, DNR.				

Approved: August 12, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 081616
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53856

Internal Standard: STD77285 Surrogate Standard: STD77285
CCV: STD77545 LCS: STD77551 MS/MSD: STD77551

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG580434

Comments: Thumbscrew fell out of the plunger, not reporting the second work group of 624's.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M141287	WG580433-01 50ng BFB STD 8260	NA	1	1	STD77509	08/16/16 12:00
6M141288	WG580433-02 50ug/L CCV STD 8260	NA	1	1	STD77545	08/16/16 12:25
6M141289	WG580433-02 50ug/L CCV STD 8260	NA	1	1	STD77545	08/16/16 12:57
6M141290	WG000000-01 100ug/L a9 CCV STD 8260	NA	1	1	STD77552	08/16/16 13:30
6M141291	WG580434-01 VBLK0816 BLANK STD 826	NA	1	1		08/16/16 14:02
6M141292	L16071345-05 B 826-REF-BLK	<2	1	1		08/16/16 14:34
6M141293	L16080317-11 A TB 826-LOW	<2	1	1		08/16/16 15:06
6M141294	L16080415-03 A TB 826-LOW	<2	1	1		08/16/16 15:38
6M141295	L16080418-10 A TB 826-SPE	<2	1	1		08/16/16 16:10
6M141296	L16080317-01 A REF 826-SPE	<2	1	1		08/16/16 16:45
6M141297	L16080317-04 A 826-SPE	<2	1	1		08/16/16 17:17
6M141298	L16080317-06 A 826-SPE	<2	1	1		08/16/16 17:49
6M141299	L16080317-07 A 826-SPE	<2	1	1		08/16/16 18:22
6M141300	L16080317-08 A 826-SPE	<2	1	1		08/16/16 18:54
6M141301	L16080317-09 A 826-SPE	<2	1	1		08/16/16 19:26
6M141302	L16080317-10 A 826-SPE	<2	1	1		08/16/16 19:58
6M141303	L16080440-01 A 826-SPE	<2	1	1		08/16/16 20:30
6M141304	L16080440-02 A 826-SPE	<2	1	1		08/16/16 21:02
6M141305	L16080440-03 A 826-SPE	<2	1	1		08/16/16 21:34
6M141306	L16080415-01 A 826-LOW	<2	1	1		08/16/16 22:06
6M141307	WG580434-02 20ug/L LCS STD 8260	NA	1	1	STD77551	08/16/16 22:39
6M141308	L16080317-02 A MS 826-LOW	<2	1	1	STD77551	08/16/16 23:11
6M141309	L16080317-03 A MSD 826-LOW	<2	1	1	STD77551	08/16/16 23:43
6M141310	WG580473-02 20ug/L LCS STD 624	NA	2	1	STD77551	08/17/16 00:15
6M141311	WG580473-03 20ug/L LCS2 STD 624	NA	2	1	STD77551	08/17/16 00:47
6M141312	RINSE	NA	2	1		08/17/16 01:19
6M141313	WG580473-01 VBLK0816 BLANK STD 624	NA	2	1		08/17/16 01:51
6M141314	L16080786-37 A TB 624-SPE	<2	2	1		08/17/16 02:23
6M141315	L16080786-01 A 624-SPE	<2	2	1		08/17/16 02:55
6M141316	L16080786-02 A 624-SPE	<2	2	1		08/17/16 03:27
6M141317	L16080786-03 A 624-SPE	<2	2	1		08/17/16 03:59
6M141318	L16080786-04 A 624-SPE	<2	2	1		08/17/16 04:31
6M141319	L16080786-05 A 624-SPE	<2	2	1		08/17/16 05:03
6M141320	L16080786-06 A 624-SPE	<2	2	1		08/17/16 05:35

Approved: August 17, 2016

Sarah Vandenberg

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 081616
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53856

Internal Standard: STD77285 Surrogate Standard: STD77285
CCV: STD77545 LCS: STD77551 MS/MSD: STD77551

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG580434

Comments: Thumbscrew fell out of the plunger, not reporting the second work group of 624's.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M141321	L16080786-07 A 624-SPE	<2	2	1		08/17/16 06:08
6M141322	L16080803-02 A 624-SPE	<2	2	1		08/17/16 06:40
6M141323	L16080803-04 A 624-SPE	7	2	1		08/17/16 07:12
6M141324	L16080745-03 A 100X 624-SPE	7	2	100		08/17/16 07:44
6M141325	L16080747-03 A 100X 8260C	<2	2	100		08/17/16 08:34

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M141288				
			Bromomethane was low, DNR.	
4				
File ID: 6M141290				
			Not needed. DNR.	
24	X			
File ID: 6M141310				
			Thumbscrew fell out of the plunger, DNR.	
25	X			
File ID: 6M141311				
			Thumbscrew fell out of the plunger, DNR.	
27	X			
File ID: 6M141313				
			Thumbscrew fell out of the plunger, DNR.	

Approved: August 17, 2016

Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 24-APR-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74754
Analytical Workgroups: WG566155

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-APR-2016
Tiffany Bailey

Secondary Reviewer:
29-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-29-2016 12:29:57

Microbac Laboratories Inc.

Data Checklist

Date: 10-AUG-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76858
Analytical Workgroups: WG579700

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
11-AUG-2016
Tiffany Bailey

Secondary Reviewer:
15-AUG-2016

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-15-2016 14:09:09

Microbac Laboratories Inc.

Data Checklist

Date: 11-AUG-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624/8260C
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76878
Analytical Workgroups: WG579701

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
12-AUG-2016
Tiffany Bailey

Secondary Reviewer:
12-AUG-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-12-2016 16:38:50

Microbac Laboratories Inc.

Data Checklist

Date: 16-AUG-2016
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76955
Analytical Workgroups: WG580434

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-AUG-2016
Tiffany Bailey

Secondary Reviewer:
17-AUG-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-17-2016 12:28:33

Microbac

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG580434

Login Number: L16080317

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW03-080416	01	08/04/16					08/16/2016	12.4	14		08/16/16	12.4	14	
46WW03MS-080416	02	08/04/16					08/16/2016	12.6	14		08/16/16	12.6	14	
46WW03MSD-080416	03	08/04/16					08/16/2016	12.7	14		08/16/16	12.7	14	
46WW02-080416	04	08/04/16					08/16/2016	12.3	14		08/16/16	12.3	14	
46WW06-080416	06	08/04/16					08/16/2016	12.3	14		08/16/16	12.3	14	
46WW06FD-080416	07	08/04/16					08/16/2016	12.3	14		08/16/16	12.3	14	
LHSMW25-080416	08	08/04/16					08/16/2016	12.3	14		08/16/16	12.3	14	
46WW10-080416	09	08/04/16					08/16/2016	12.3	14		08/16/16	12.3	14	
46WW01-080416	10	08/04/16					08/16/2016	12.3	14		08/16/16	12.3	14	
TRIP BLANK	11	08/04/16					08/16/2016	12.6	14		08/16/16	12.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4900560
Report generated 08/17/2016 12:31

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16080317
Instrument Id: HPMS6
Workgroup (AAB#): WG580434

Method: 8260
CAL ID: HPMS6-10-AUG-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16080317-01	1.00	01	98.1	103	108	104
L16080317-02	1.00	01	103	105	102	104
L16080317-03	1.00	01	102	106	103	103
L16080317-04	1.00	01	98.6	104	109	104
L16080317-06	1.00	01	100	103	108	103
L16080317-07	1.00	01	99.7	105	107	103
L16080317-08	1.00	01	102	105	108	103
L16080317-09	1.00	01	102	105	109	104
L16080317-10	1.00	01	101	104	107	104
L16080317-11	1.00	01	94.6	100	107	98.7
WG580434-01	1.00	01	92.5	100	109	97.7
WG580434-02	1.00	01	102	106	101	104

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4900567
Report generated: 08/17/2016 12:32

METHOD BLANK SUMMARY

Login Number: L16080317
Blank File ID: 6M141291
Prep Date: 08/16/16 14:02
Analyzed Date: 08/16/16 14:02
Analyst: TMB

Work Group: WG580434
Blank Sample ID: WG580434-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
TRIP BLANK	L16080317-11	6M141293	08/16/16 15:06	01
46WW03-080416	L16080317-01	6M141296	08/16/16 16:45	01
46WW02-080416	L16080317-04	6M141297	08/16/16 17:17	01
46WW06-080416	L16080317-06	6M141298	08/16/16 17:49	01
46WW06FD-080416	L16080317-07	6M141299	08/16/16 18:22	01
LHSMW25-080416	L16080317-08	6M141300	08/16/16 18:54	01
46WW10-080416	L16080317-09	6M141301	08/16/16 19:26	01
46WW01-080416	L16080317-10	6M141302	08/16/16 19:58	01
LCS	WG580434-02	6M141307	08/16/16 22:39	01
46WW03MS-080416	L16080317-02	6M141308	08/16/16 23:11	01
46WW03MSD-080416	L16080317-03	6M141309	08/16/16 23:43	01

Report Name: BLANK_SUMMARY
PDF File ID: 4901159
Report generated 08/17/2016 12:31

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16080317 Prep Date: 08/16/16 14:02 Sample ID: WG580434-01
Instrument ID: HPMS6 Run Date: 08/16/16 14:02 Prep Method: 5030B/5030C/503
File ID: 6M141291 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG580434 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-10-AUG-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.297	1	J
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4900561
17-AUG-2016 12:31

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080317 Prep Date: 08/16/16 14:02 Sample ID: WG580434-01
Instrument ID: HPMS6 Run Date: 08/16/16 14:02 Prep Method: 5030B/5030C/503
File ID: 6M141291 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG580434 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-10-AUG-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.214	1	J
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	100	85 - 115	PASS
1,2-Dichloroethane-d4	92.5	70 - 120	PASS
Toluene-d8	97.7	85 - 120	PASS
4-Bromofluorobenzene	109	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4900561
17-AUG-2016 12:31

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080317 | Run Date: 08/16/2016 | Sample ID: WG580434-02
Instrument ID: HPMS6 | Run Time: 22:39 | Prep Method: 5030B/5030C/503
File ID: 6M141307 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG580434 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD77551 | Cal ID: HPMS6-10-AUG-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.6	108	40 - 140	
Benzene	20.0	20.0	99.8	80 - 120	
Bromobenzene	20.0	19.9	99.7	75 - 125	
Bromochloromethane	20.0	20.7	103	65 - 130	
Bromodichloromethane	20.0	20.2	101	75 - 120	
Bromoform	20.0	19.4	97.0	70 - 130	
Bromomethane	20.0	11.5	57.3	30 - 145	
2-Butanone	20.0	20.6	103	30 - 150	
n-Butylbenzene	20.0	20.8	104	70 - 135	
sec-Butylbenzene	20.0	21.1	106	70 - 125	
tert-Butylbenzene	20.0	21.7	109	70 - 130	
Carbon disulfide	20.0	20.7	103	35 - 160	
Carbon tetrachloride	20.0	20.0	100	65 - 140	
Chlorobenzene	20.0	20.9	104	80 - 120	
Chlorodibromomethane	20.0	20.6	103	60 - 135	
Chloroethane	20.0	20.9	105	60 - 135	
Chloroform	20.0	19.6	98.2	65 - 135	
Chloromethane	20.0	15.6	78.1	40 - 125	
2-Chlorotoluene	20.0	20.3	102	75 - 125	
4-Chlorotoluene	20.0	22.2	111	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.8	98.8	50 - 130	
1,2-Dibromoethane	20.0	20.5	103	80 - 120	
Dibromomethane	20.0	19.6	97.9	75 - 125	
1,2-Dichlorobenzene	20.0	20.7	104	70 - 120	
1,3-Dichlorobenzene	20.0	21.0	105	75 - 125	
1,4-Dichlorobenzene	20.0	20.8	104	75 - 125	
Dichlorodifluoromethane	20.0	19.7	98.6	30 - 155	
1,1-Dichloroethane	20.0	18.8	94.2	70 - 135	
1,2-Dichloroethane	20.0	20.4	102	70 - 130	
1,1-Dichloroethene	20.0	17.3	86.3	70 - 130	
cis-1,2-Dichloroethene	20.0	20.3	102	70 - 125	
trans-1,2-Dichloroethene	20.0	19.8	98.8	60 - 140	
1,2-Dichloropropane	20.0	20.5	102	75 - 125	
1,3-Dichloropropane	20.0	22.0	110	75 - 125	
2,2-Dichloropropane	20.0	15.9	79.5	70 - 135	
cis-1,3-Dichloropropene	20.0	21.7	109	70 - 130	
trans-1,3-Dichloropropene	20.0	19.7	98.3	55 - 140	
1,1-Dichloropropene	20.0	18.9	94.6	75 - 130	
Ethylbenzene	20.0	21.0	105	75 - 125	
2-Hexanone	20.0	19.3	96.4	55 - 130	
Hexachlorobutadiene	20.0	20.2	101	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4900562
Report generated: 08/17/2016 12:31

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080317 Run Date: 08/16/2016 Sample ID: WG580434-02
Instrument ID: HPMS6 Run Time: 22:39 Prep Method: 5030B/5030C/503
File ID: 6M141307 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG580434 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD77551 Cal ID: HPMS6-10-AUG-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.7	114	75 - 125	
p-Isopropyltoluene	20.0	21.1	106	75 - 130	
4-Methyl-2-pentanone	20.0	20.1	101	60 - 135	
Methylene chloride	20.0	19.2	96.2	55 - 140	
Naphthalene	20.0	19.8	99.1	55 - 140	
n-Propylbenzene	20.0	22.4	112	70 - 130	
Styrene	20.0	22.4	112	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.8	104	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.5	92.4	65 - 130	
Tetrachloroethene	20.0	19.7	98.5	45 - 150	
Toluene	20.0	21.0	105	75 - 120	
1,2,3-Trichlorobenzene	20.0	22.8	114	55 - 140	
1,2,4-Trichlorobenzene	20.0	20.7	103	65 - 135	
1,1,1-Trichloroethane	20.0	19.2	95.9	65 - 130	
1,1,2-Trichloroethane	20.0	20.4	102	75 - 125	
Trichloroethene	20.0	20.4	102	70 - 125	
Trichlorofluoromethane	20.0	20.0	100	60 - 145	
1,2,3-Trichloropropane	20.0	20.3	102	75 - 125	
1,2,4-Trimethylbenzene	20.0	21.2	106	75 - 130	
1,3,5-Trimethylbenzene	20.0	22.5	112	75 - 130	
Vinyl chloride	20.0	20.2	101	50 - 145	
o-Xylene	20.0	22.3	112	80 - 120	
m-,p-Xylene	40.0	43.8	109	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	106	85 - 115	PASS
1,2-Dichloroethane-d4	102	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	101	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4900562
Report generated: 08/17/2016 12:31

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16080317 Cal ID: HPMS6- 10-AUG-16 Worknum: WG580434

Instrument ID: HPMS6 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16080317-01 File ID: 6M141296 Dil: 1 Method: 5035A

Sample ID: L16080317-02 MS File ID: 6M141308 Dil: 1 Matrix: 8260B

Sample ID: L16080317-03 MSD File ID: 6M141309 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	20.6	103	20.0	19.5	97.7	5.10	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	18.5	92.6	20.0	17.9	89.7	3.22	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	20.4	102	20.0	20.0	100	1.75	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	21.0	105	20.0	19.8	99.1	5.99	75 - 125	30	
1,1-Dichloroethane	U	20.0	18.4	91.9	20.0	17.8	88.9	3.33	70 - 135	30	
1,1-Dichloroethene	U	20.0	16.2	81.2	20.0	15.7	78.6	3.25	70 - 130	30	
1,1-Dichloropropene	U	20.0	17.9	89.7	20.0	17.4	87.1	2.90	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	23.0	115	20.0	21.7	109	5.74	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	21.1	105	20.0	20.1	101	4.72	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	20.2	101	20.0	20.0	99.9	1.32	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	20.6	103	20.0	19.9	99.7	3.40	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	20.4	102	20.0	20.4	102	0.273	50 - 130	30	
1,2-Dibromoethane	U	20.0	20.5	102	20.0	19.5	97.7	4.71	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	20.6	103	20.0	19.7	98.7	4.17	70 - 120	30	
1,2-Dichloroethane	U	20.0	20.8	104	20.0	19.7	98.6	5.51	70 - 130	30	
1,2-Dichloropropane	U	20.0	20.7	104	20.0	19.9	99.5	4.12	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	22.0	110	20.0	21.2	106	3.89	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	20.7	104	20.0	19.8	99.1	4.47	75 - 125	30	
1,3-Dichloropropane	U	20.0	22.0	110	20.0	21.0	105	4.75	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	20.7	104	20.0	19.5	97.5	6.00	75 - 125	30	
2,2-Dichloropropane	U	20.0	15.8	79	20.0	15.0	75	5.08	70 - 135	30	
2-Butanone	U	20.0	19.8	99.2	20.0	19.8	99.2	0.0175	30 - 150	30	
2-Chlorotoluene	U	20.0	20.5	102	20.0	19.2	95.9	6.58	75 - 125	30	
2-Hexanone	U	20.0	20.3	101	20.0	20.0	99.9	1.47	55 - 130	30	
4-Chlorotoluene	U	20.0	21.2	106	20.0	21.1	105	0.387	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	18.8	94	20.0	18.7	93.7	0.252	60 - 135	30	
Acetone	U	20.0	23.6	118	20.0	23.3	117	1.06	40 - 140	30	
Benzene	U	20.0	19.5	97.7	20.0	18.7	93.4	4.55	80 - 120	30	
Bromobenzene	U	20.0	19.6	98.1	20.0	19.0	94.8	3.43	75 - 125	30	
Bromochloromethane	U	20.0	20.4	102	20.0	19.6	97.9	3.97	65 - 130	30	
Bromodichloromethane	U	20.0	20.6	103	20.0	19.8	98.9	3.86	75 - 120	30	
Bromoform	U	20.0	19.4	96.9	20.0	18.6	93.1	4.03	70 - 130	30	
Bromomethane	U	20.0	11.4	57.1	20.0	11.8	59.1	3.39	30 - 145	30	
Carbon disulfide	U	20.0	19.8	99	20.0	19.2	96.1	2.90	35 - 160	30	
Carbon tetrachloride	U	20.0	18.6	92.8	20.0	18.0	90.1	2.93	65 - 140	30	
Chlorobenzene	U	20.0	20.3	102	20.0	19.6	98.2	3.39	80 - 120	30	
Chloroethane	U	20.0	20.1	101	20.0	19.6	98	2.52	60 - 135	30	
Chloroform	U	20.0	19.5	97.6	20.0	18.7	93.5	4.35	65 - 135	30	
Chloromethane	U	20.0	16.2	80.8	20.0	15.8	79.2	1.97	40 - 125	30	
cis-1,2-Dichloroethene	U	20.0	19.8	99.2	20.0	19.0	95.2	4.16	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	22.2	111	20.0	21.1	105	5.32	70 - 130	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4900563
Report generated 08/17/2016 12:31

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16080317 Cal ID: HPMS6 10-AUG-16 Worknum: WG580434

Instrument ID: HPMS6 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16080317-01 File ID: 6M141296 Dil: 1 Method: 5035A

Sample ID: L16080317-02 MS File ID: 6M141308 Dil: 1 Matrix: 8260B

Sample ID: L16080317-03 MSD File ID: 6M141309 Dil: 1 Units: Water

ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	20.5	103	20.0	19.9	99.4	3.18	60 - 135	30	
Dibromomethane	U	20.0	20.2	101	20.0	19.6	98.1	2.81	75 - 125	30	
Dichlorodifluoromethane	U	20.0	16.6	83.1	20.0	15.8	78.9	5.19	30 - 155	30	
Ethylbenzene	U	20.0	20.2	101	20.0	19.2	96.1	4.90	75 - 125	30	
Hexachlorobutadiene	U	20.0	20.0	99.9	20.0	19.1	95.3	4.66	50 - 140	30	
Isopropylbenzene	U	20.0	21.6	108	20.0	20.8	104	4.22	75 - 125	30	
m-,p-Xylene	U	40.0	41.9	105	40.0	40.2	101	4.02	75 - 130	30	
Methylene chloride	U	20.0	19.4	97.2	20.0	19.0	94.8	2.50	55 - 140	30	
n-Butylbenzene	U	20.0	19.9	99.3	20.0	19.2	96.1	3.26	70 - 135	30	
n-Propylbenzene	U	20.0	21.7	108	20.0	21.0	105	3.26	70 - 130	30	
Naphthalene	U	20.0	20.5	102	20.0	19.6	98	4.47	55 - 140	30	
o-Xylene	U	20.0	21.8	109	20.0	20.7	103	5.16	80 - 120	30	
p-Isopropyltoluene	U	20.0	20.3	101	20.0	19.4	97.2	4.15	75 - 130	30	
sec-Butylbenzene	U	20.0	19.9	99.6	20.0	19.3	96.6	3.10	70 - 125	30	
Styrene	U	20.0	22.0	110	20.0	21.0	105	4.51	65 - 135	30	
tert-Butylbenzene	U	20.0	20.5	102	20.0	19.8	99	3.40	70 - 130	30	
Tetrachloroethene	U	20.0	18.2	91.2	20.0	17.6	88	3.64	45 - 150	30	
Toluene	U	20.0	20.6	103	20.0	19.6	97.9	4.94	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	19.7	98.3	20.0	18.9	94.6	3.80	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	20.3	101	20.0	19.2	96.1	5.31	55 - 140	30	
Trichloroethene	U	20.0	18.8	94.2	20.0	18.1	90.3	4.18	70 - 125	30	
Trichlorofluoromethane	U	20.0	17.1	85.5	20.0	16.6	83	2.99	60 - 145	30	
Vinyl chloride	U	20.0	18.9	94.4	20.0	18.2	91	3.67	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4900563
Report generated 08/17/2016 12:31

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16080317
Instrument: HPMS6
Analyst: JDS
Workgroup: WG566155

Tune ID: WG566155-01
Run Date: 04/24/2016
Run Time: 16:33
File ID: 6M138750
Cal ID: HPMS6 - 24-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	10010	PASS
75.0	95.0	30.0	60.0	52.0	23152	PASS
95.0	95.0	100	100	100	44552	PASS
96.0	95.0	5.00	9.00	6.92	3085	PASS
173	174	0	2.00	0.346	113	PASS
174	95.0	50.0	100	73.2	32632	PASS
175	174	5.00	9.00	7.16	2336	PASS
176	174	95.0	101	99.2	32384	PASS
177	176	5.00	9.00	6.95	2251	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566155-02	STD	01	04/24/2016 16:59	
WG566155-03	STD	01	04/24/2016 17:31	
WG566155-04	STD	01	04/24/2016 18:03	
WG566155-05	STD-CCV	01	04/24/2016 18:36	
WG566155-06	STD	01	04/24/2016 19:08	
WG566155-07	STD	01	04/24/2016 19:40	
WG566155-08	STD	01	04/24/2016 20:12	
WG566155-09	STD	01	04/24/2016 20:44	
WG566155-10	SSCV	01	04/24/2016 22:21	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4900565
Report generated 08/17/2016 12:31

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16080317
Instrument: HPMS6
Analyst: TMB
Workgroup: WG579700

Tune ID: WG579700-01
Run Date: 08/10/2016
Run Time: 11:26
File ID: 6M141164
Cal ID: HPMS6 - 10-AUG-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.0	13504	PASS
75.0	95.0	30.0	60.0	56.1	30314	PASS
95.0	95.0	100	100	100	54037	PASS
96.0	95.0	5.00	9.00	6.96	3762	PASS
173	174	0	2.00	0.465	183	PASS
174	95.0	50.0	100	72.9	39370	PASS
175	174	5.00	9.00	7.29	2869	PASS
176	174	95.0	101	99.2	39056	PASS
177	176	5.00	9.00	6.61	2582	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG579700-02	STD	01	08/10/2016 14:25	
WG579700-03	STD	01	08/10/2016 14:57	
WG579700-04	STD	01	08/10/2016 15:30	
WG579700-05	STD	01	08/10/2016 16:01	
WG579700-06	STD	01	08/10/2016 16:34	
WG579700-07	STD	01	08/10/2016 17:05	
WG579700-08	STD-CCV	01	08/10/2016 17:37	
WG579700-09	STD	01	08/10/2016 18:09	
WG579700-10	STD	01	08/10/2016 18:42	
WG579700-11	STD	01	08/10/2016 19:14	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4900565
Report generated 08/17/2016 12:31

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16080317
Instrument: HPMS6
Analyst: TMB
Workgroup: WG579849

Tune ID: WG579849-01
Run Date: 08/11/2016
Run Time: 11:26
File ID: 6M141181
Cal ID: HPMS6 - 10-AUG-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.0	11209	PASS
75.0	95.0	30.0	60.0	53.1	24794	PASS
95.0	95.0	100	100	100	46669	PASS
96.0	95.0	5.00	9.00	7.06	3296	PASS
173	174	0	2.00	0.378	120	PASS
174	95.0	50.0	100	68.0	31719	PASS
175	174	5.00	9.00	7.86	2492	PASS
176	174	95.0	101	99.8	31670	PASS
177	176	5.00	9.00	6.94	2197	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG579700-12	SSCV	01	08/11/2016 14:02	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4900565
Report generated 08/17/2016 12:31

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16080317
Instrument: HPMS6
Analyst: TMB
Workgroup: WG580433

Tune ID: WG580433-01
Run Date: 08/16/2016
Run Time: 12:00
File ID: 6M141287
Cal ID: HPMS6 - 10-AUG-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.9	12537	PASS
75.0	95.0	30.0	60.0	53.5	26909	PASS
95.0	95.0	100	100	100	50306	PASS
96.0	95.0	5.00	9.00	7.21	3628	PASS
173	174	0	2.00	0.853	305	PASS
174	95.0	50.0	100	71.1	35768	PASS
175	174	5.00	9.00	7.44	2662	PASS
176	174	95.0	101	95.9	34316	PASS
177	176	5.00	9.00	6.89	2365	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG580433-02	CCV	01	08/16/2016 12:57	
WG580434-01	BLANK	01	08/16/2016 14:02	
L16080317-11	TRIP BLANK	01	08/16/2016 15:06	
L16080317-01	46WW03-080416	01	08/16/2016 16:45	
L16080317-04	46WW02-080416	01	08/16/2016 17:17	
L16080317-06	46WW06-080416	01	08/16/2016 17:49	
L16080317-07	46WW06FD-080416	01	08/16/2016 18:22	
L16080317-08	LHSMW25-080416	01	08/16/2016 18:54	
L16080317-09	46WW10-080416	01	08/16/2016 19:26	
L16080317-10	46WW01-080416	01	08/16/2016 19:58	
WG580434-02	LCS	01	08/16/2016 22:39	
L16080317-02	46WW03MS-080416	01	08/16/2016 23:11	
L16080317-03	46WW03MSD-080416	01	08/16/2016 23:43	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4900565
Report generated 08/17/2016 12:31

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 042416 - HPMS6
Last Calibration: Wed Apr 27 16:03:33 2016
Curve: WG566155
Calibration Files

	Compound	5 6M138751.D	20 6M138752.D	50 6M138753.D	100 6M138754.D	200 6M138755.D	300 6M138756.D	400 6M138757.D	500 6M138758.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.036	0.037	0.039	0.038	0.038	0.038	0.038	0.036	0.037	2.606
T	3-Chloro-1-propene	0.567	0.621	0.656	0.672	0.635	0.622	0.617	0.603	0.624	5.157
T	2-Chloro-1,3-butadiene	0.415	0.507	0.558	0.590	0.558	0.553	0.556	0.548	0.535	10.001
T	Ethyl Acetate	0.229	0.259	0.279	0.281	0.277	0.272	0.279	0.268	0.268	6.419
T	Methacrylonitrile	0.071	0.089	0.099	0.099	0.097	0.095	0.096	0.093	0.092	9.852
T	Isobutyl Alcohol		0.008	0.008	0.007	0.007	0.008	0.010	0.010	0.009	13.654
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.159	0.200	0.231	0.244	0.244	0.241	0.246	0.236	0.225	13.591
T	2-Nitropropane			0.079	0.082	0.085	0.085	0.088	0.084	0.084	3.643
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.026	0.027	0.032	0.034	0.035	0.033	0.031	12.127

Wed Apr 27 16:05:59 2016

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Calibration: Thu Aug 11 09:53:58 2016
Curve: WG579700
Calibration Files

	Compound	0.3 6M141167.D	0.4 6M141168.D	1 6M141169.D	2 6M141170.D	5 6M141171.D	20 6M141172.D	50 6M141173.D	100 6M141174.D	200 6M141175.D	300 6M141176.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.514	0.501	0.499	0.601	0.569	0.571	0.548	0.458	0.533	8.892		
P	Chloromethane			0.603	0.574	0.540	0.579	0.551	0.558	0.528	0.417	0.544	10.391		
C	Vinyl Chloride		0.386	0.371	0.369	0.355	0.384	0.355	0.363	0.348	0.296	0.358	7.496		
T	1,3-Butadiene					0.342	0.348	0.284	0.270	0.253	0.219	0.286	17.731		0.999
T	Bromomethane			0.185	0.188	0.170	0.165	0.159	0.181	0.190	0.167	0.176	6.642		
T	Chloroethane			0.213	0.210	0.198	0.214	0.203	0.210	0.207	0.180	0.204	5.579		
T	Trichlorofluoromethane		0.580	0.576	0.588	0.582	0.618	0.563	0.562	0.549	0.488	0.567	6.273		
T	Diethyl ether			0.197	0.208	0.202	0.200	0.204	0.201		0.186	0.200	3.485		
T	Isoprene					0.371	0.394	0.384	0.383	0.380	0.358	0.378	3.232		
T	Acrolein				0.030	0.029	0.029	0.030	0.029		0.034	0.030	6.731		
T	1,1,2-Trichloro-1,2,2-Trifluoroe			0.260	0.251	0.258	0.268	0.248	0.247	0.246	0.266	0.255	3.444		
T	Acetone					0.092	0.081	0.078	0.076	0.075	0.072	0.079	8.864		
C	1,1-Dichloroethene		0.560	0.541	0.532	0.539	0.577	0.504	0.505	0.537	0.503	0.533	4.826		
T	Tert-Butyl Alcohol			0.020	0.022	0.021	0.022	0.023	0.023		0.021	0.022	6.548		
T	Dimethyl Sulfide					0.297	0.332	0.327	0.325	0.321	0.313	0.319	3.870		
T	Iodomethane			0.062	0.090	0.148	0.279	0.318	0.323	0.309	0.273	0.225	47.813	0.994	
T	Methyl acetate					0.216	0.222	0.218	0.219	0.214	0.215	0.217	1.408		
T	Methylene Chloride			0.325	0.316	0.292	0.296	0.273	0.272	0.265	0.250	0.286	9.035		
T	Carbon Disulfide			0.939	0.965	0.881	0.939	0.893	0.872	0.843	0.765	0.887	7.193		
T	Acrylonitrile			0.085	0.082	0.087	0.093	0.100	0.098		0.103	0.093	8.591		
T	Methyl Tert Butyl Ether			0.629	0.675	0.685	0.766	0.725	0.745	0.728	0.699	0.707	6.182		
T	trans-1,2-Dichloroethene		0.226	0.270	0.257	0.254	0.284	0.266	0.267	0.265	0.253	0.260	6.116		
T	n-Hexane					0.372	0.400	0.393	0.390	0.387	0.381	0.387	2.540		
T	Diisopropyl ether			1.015	1.125	1.130	1.114	1.134	1.090		1.038	1.092	4.366		
T	Vinyl Acetate					0.338	0.395	0.424	0.451	0.434	0.474	0.419	11.461		
P	1,1-Dichloroethane		0.572	0.600	0.620	0.601	0.620	0.574	0.578	0.567	0.538	0.586	4.573		
T	Ethyl-Tert-Butyl ether			0.810	0.907	0.919	0.915	0.934	0.898		0.856	0.891	4.852		
T	2-Butanone					0.116	0.114	0.117	0.118	0.115	0.109	0.115	2.751		
T	Propionitrile			0.028	0.030	0.031	0.030	0.032	0.032		0.029	0.030	4.905		
T	2,2-Dichloropropane		0.509	0.539	0.508	0.517	0.518	0.479	0.480	0.472	0.445	0.496	5.898		
T	cis-1,2-Dichloroethene		0.273	0.280	0.296	0.285	0.314	0.295	0.296	0.289	0.276	0.289	4.394		
C	Chloroform	0.583	0.568	0.579	0.585	0.560	0.595	0.545	0.547	0.533	0.498	0.559	5.225		
T	1-Bromopropane			0.034	0.040	0.047	0.050	0.049	0.049	0.050	0.048	0.046	12.587		
T	Bromochloromethane		0.129	0.169	0.174	0.168	0.182	0.168	0.169	0.164	0.155	0.164	9.150		
T	Tetrahydrofuran			0.078	0.068	0.070	0.072	0.074	0.074		0.071	0.072	4.606		
S	Dibromofluoromethane			0.256	0.281	0.274	0.289	0.285	0.269	0.270	0.258	0.273	4.370		
T	1,1,1-Trichloroethane		0.497	0.575	0.537	0.532	0.561	0.520	0.524	0.516	0.483	0.527	5.436		
T	Cyclohexane			0.452	0.479	0.492	0.540	0.534	0.534	0.531	0.516	0.510	6.309		
T	1,1-Dichloropropene			0.375	0.389	0.382	0.426	0.396	0.404	0.402	0.385	0.395	4.063		
T	Tert-Amyl-Methyl ether			0.576	0.659	0.671	0.669	0.684	0.674		0.643	0.654	5.598		
T	Carbon Tetrachloride		0.424	0.459	0.477	0.478	0.515	0.477	0.484	0.477	0.442	0.4703	5.5579		
S	1,2-Dichloroethane-d4				0.391	0.373	0.388	0.368	0.353	0.351	0.332	0.365	5.8824		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.457	0.489	0.507	0.484	0.504	0.467	0.474	0.457	0.426	0.4737	5.4179		
T	Benzene		1.066	1.136	1.153	1.105	1.156	1.065	1.063	1	0.89	1.0706	7.8941		
T	Trichloroethene		0.325	0.275	0.275	0.269	0.29	0.272	0.275	0.27	0.249	0.2779	7.4629		
T	Methylcyclohexane					0.344	0.391	0.388	0.384	0.38	0.367	0.3757	4.7128		
C	1,2-Dichloropropane		0.286	0.299	0.305	0.296	0.326	0.302	0.309	0.303	0.291	0.3017	3.843		
T	1,4-Dioxane					0.001	0.002	0.002	0.002		0.002	0.0018	13.368		
T	Bromodichloromethane		0.375	0.438	0.421	0.418	0.453	0.429	0.434	0.424	0.395	0.4209	5.5564		
T	Dibromomethane		0.143	0.155	0.17	0.171	0.175	0.165	0.168	0.164	0.153	0.1627	6.2667		
T	2-Chloroethyl Vinyl Ether				0.089	0.105	0.133	0.146	0.152	0.152	0.145	0.1317	18.992	0.999	
T	4-Methyl-2-Pentanone					0.073	0.086	0.086	0.088	0.088	0.081	0.0836	7.2361		
T	cis-1,3-Dichloropropene		0.334	0.35	0.383	0.4	0.463	0.447	0.456	0.448	0.415	0.4107	11.51		
T	Dimethyl Disulfide					0.181	0.247	0.259	0.266	0.268	0.254	0.2457	13.286		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8				1.181	1.207	1.247	1.203	1.168	1.159	1.162	1.1896	2.6643		
C	Toluene		1.279	1.387	1.509	1.542	1.619	1.485	1.473	1.386	1.253	1.4369	8.408		
T	Ethyl Methacrylate			0.268	0.309	0.342	0.4	0.41	0.417	0.412	0.408	0.3707	15.472	1.000	
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.465	0.497	0.536	0.598	0.563	0.571	0.556	0.544	0.5414	7.8295		
T	1,1,2-Trichloroethane		0.246	0.323	0.31	0.294	0.304	0.285	0.285	0.276	0.268	0.2879	8.1082		
T	2-Hexanone					0.203	0.226	0.239	0.254	0.251	0.242	0.236	7.9541		
T	1,3-Dichloropropane		0.43	0.499	0.506	0.508	0.54	0.508	0.514	0.498	0.482	0.4984	6.0107		
T	Tetrachloroethene		0.356	0.408	0.39	0.398	0.414	0.382	0.38	0.371	0.364	0.3849	5.0617		
T	Dibromochloromethane		0.324	0.378	0.397	0.37	0.421	0.396	0.403	0.391	0.374	0.3838	7.1762		
T	1,2-Dibromoethane		0.227	0.29	0.259	0.255	0.285	0.275	0.282	0.275	0.267	0.2682	7.2285		
T	1-Chlorohexane		0.306	0.321	0.352	0.387	0.468	0.473	0.475	0.466	0.453	0.4111	17.065	0.999	
P	Chlorobenzene		1.05	1.081	1.064	1.019	1.062	0.977	0.97	0.912	0.834	0.9967	8.2543		
T	1,1,1,2-Tetrachloroethane		0.372	0.398	0.423	0.393	0.421	0.396	0.398	0.382	0.354	0.393	5.5023		
C	Ethylbenzene		0.434	0.522	0.505	0.522	0.559	0.522	0.524	0.503	0.473	0.5072	7.0497		
T	m-,p-Xylene		0.566	0.605	0.628	0.63	0.678	0.633	0.627	0.578	0.508	0.606	8.1269		
T	o-Xylene			0.471	0.524	0.567	0.664	0.633	0.637	0.609	0.555	0.5824	11.151		
T	Styrene		0.706	0.789	0.929	1.024	1.167	1.097	1.106	1.046	0.923	0.9765	15.693	0.994	
P	Bromoform			0.213	0.237	0.233	0.258	0.251	0.262	0.256	0.239	0.2436	6.7869		
T	Isopropylbenzene		1.21	1.307	1.41	1.516	1.754	1.674	1.664	1.529	1.268	1.4813	13.128		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.589	0.67	0.665	0.652	0.648	0.596	0.603	0.587	0.602	0.6234	5.5403		
S	p-Bromofluorobenzene				0.866	0.831	0.931	0.922	0.882	0.907	0.915	0.8932	3.9892		

T	1,2,3-Trichloropropane			0.19	0.203	0.199	0.205	0.184	0.19	0.183	0.182	0.192	4.6438	
T	trans-1,4-Dichloro-2-Butene			0.137	0.163	0.174	0.214	0.226	0.236	0.24	0.245	0.2043	19.883	0.999
T	n-Propylbenzene		2.803	3.146	3.36	3.48	3.783	3.449	3.357	2.979	2.531	3.2097	12	
T	Bromobenzene	0.822	0.787	0.841	0.841	0.813	0.819	0.751	0.741	0.723	0.711	0.7848	6.2813	
T	1,3,5-Trimethylbenzene		1.793	2.061	2.242	2.402	2.702	2.5	2.466	2.301	2.048	2.2794	12.184	
T	2-Chlorotoluene		2.169	2.307	2.479	2.389	2.482	2.396	2.348	2.244	1.987	2.3112	6.8716	
T	4-Chlorotoluene		2.169	2.335	2.527	2.474	2.559	2.184	2.187	2.014	1.871	2.2578	10.422	
T	a-Methylstyrene					1.211	1.41	1.39	1.362	1.315	1.265	1.3255	5.7963	
T	tert-Butylbenzene			0.467	0.479	0.497	0.544	0.494	0.486	0.47	0.457	0.4867	5.4959	
T	1,2,4-Trimethylbenzene			2.409	2.665	2.73	2.878	2.638	2.597	2.382	2.098	2.5497	9.5589	
T	sec-Butylbenzene			2.694	2.827	2.888	3.111	2.855	2.806	2.584	2.273	2.7549	8.9731	
T	p-Isopropyltoluene			2.156	2.296	2.454	2.711	2.511	2.463	2.278	2.019	2.361	9.252	
T	1,3-Dichlorobenzene		1.462	1.542	1.565	1.567	1.593	1.485	1.468	1.393	1.306	1.4868	6.2547	
T	1,4-Dichlorobenzene		1.659	1.616	1.681	1.556	1.597	1.477	1.468	1.39	1.296	1.5267	8.4538	
T	n-Butylbenzene			1.893	2.06	2.198	2.479	2.344	2.338	2.169	1.941	2.1775	9.4401	
T	1,2-Dichlorobenzene	1.57	1.518	1.499	1.532	1.472	1.509	1.391	1.388	1.303	1.228	1.4408	7.6591	
T	1,2-Dibromo-3-Chloropropane				0.121	0.127	0.141	0.134	0.139	0.135	0.133	0.1328	5.3019	
T	1,2,4-Trichlorobenzene	0.856	0.546	0.654	0.678	0.73	0.935	0.905	0.925	0.892	0.854	0.7974	16.967	0.999
T	Hexachlorobutadiene		0.318	0.421	0.397	0.359	0.392	0.349	0.347	0.339	0.329	0.3611	9.5779	
T	Naphthalene		0.793	0.925	1.004	1.243	1.843	1.861	1.922	1.81	1.65	1.4503	31.453	0.996
T	1,2,3-Trichlorobenzene	0.674	0.706	0.697	0.685	0.761	0.92	0.853	0.86	0.822	0.788	0.7766	11.013	

Thu Aug 11 14:47:06 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16080317 Run Date: 08/11/2016 Sample ID: WG579700-12
Instrument ID: HPMS6 Run Time: 14:02 Method: 8260B
File ID: 6M141186 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG579700 Cal ID: HPMS6 - 10-AUG-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	45.9	ug/L	0.514	8.10	20	
1,1-Dichloroethene	CCC	50.0	44.5	ug/L	0.474	11.0	20	
1,2-Dichloropropane	CCC	50.0	50.5	ug/L	0.305	1.10	20	
Ethylbenzene	CCC	50.0	48.1	ug/L	0.488	3.70	20	
Toluene	CCC	50.0	49.1	ug/L	1.41	1.90	20	
Vinyl Chloride	CCC	50.0	45.7	ug/L	0.328	8.60	20	
Bromoform	SPCC	50.0	44.6	ug/L	0.217	10.8	20	
Chlorobenzene	SPCC	50.0	46.9	ug/L	0.934	6.30	20	
Chloromethane	SPCC	50.0	39.2	ug/L	0.426	21.6	20	*
1,1-Dichloroethane	SPCC	50.0	45.6	ug/L	0.534	8.80	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.5	ug/L	0.592	5.00	20	
Acetone		50.0	52.0	ug/L	0.0823	4.00	20	
Benzene		50.0	48.1	ug/L	1.03	3.90	20	
Bromobenzene		50.0	44.9	ug/L	0.705	10.2	20	
Bromochloromethane		50.0	48.0	ug/L	0.158	4.00	20	
Bromodichloromethane		50.0	48.6	ug/L	0.409	2.90	20	
Bromomethane		50.0	42.6	ug/L	0.150	14.9	20	
2-Butanone		50.0	53.3	ug/L	0.122	6.60	20	
n-Butylbenzene		50.0	50.8	ug/L	2.21	1.50	20	
sec-Butylbenzene		50.0	49.5	ug/L	2.72	1.10	20	
tert-Butylbenzene		50.0	49.0	ug/L	0.477	2.00	20	
Carbon Disulfide		50.0	48.7	ug/L	0.864	2.60	20	
Carbon Tetrachloride		50.0	46.8	ug/L	0.441	6.30	20	
Dibromochloromethane		50.0	47.4	ug/L	0.364	5.30	20	
Chloroethane		50.0	48.5	ug/L	0.198	2.90	20	
2-Chlorotoluene		50.0	46.7	ug/L	2.16	6.50	20	
4-Chlorotoluene		50.0	50.1	ug/L	2.26	0.200	20	
1,2-Dibromo-3-Chloropropane		50.0	48.7	ug/L	0.129	2.60	20	
1,2-Dibromoethane		50.0	48.5	ug/L	0.260	3.00	20	
Dibromomethane		50.0	46.9	ug/L	0.153	6.10	20	
1,2-Dichlorobenzene		50.0	47.5	ug/L	1.37	4.90	20	
1,3-Dichlorobenzene		50.0	47.4	ug/L	1.41	5.20	20	
1,4-Dichlorobenzene		50.0	47.4	ug/L	1.45	5.30	20	
Dichlorodifluoromethane		50.0	47.6	ug/L	0.507	4.80	20	
1,2-Dichloroethane		50.0	47.6	ug/L	0.451	4.90	20	
cis-1,2-Dichloroethene		50.0	50.4	ug/L	0.291	0.700	20	
trans-1,2-Dichloroethene		50.0	49.2	ug/L	0.256	1.60	20	
1,3-Dichloropropane		50.0	51.1	ug/L	0.510	2.30	20	
2,2-Dichloropropane		50.0	49.1	ug/L	0.487	1.90	20	
cis-1,3-Dichloropropene		50.0	57.4	ug/L	0.472	14.8	20	
trans-1,3-Dichloropropene		50.0	49.4	ug/L	0.535	1.20	20	
1,1-Dichloropropene		50.0	47.4	ug/L	0.374	5.20	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4900564
Report generated 08/17/2016 12:31

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16080317 Run Date: 08/11/2016 Sample ID: WG579700-12
Instrument ID: HPMS6 Run Time: 14:02 Method: 8260B
File ID: 6M141186 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG579700 Cal ID: HPMS6 - 10-AUG-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	50.2	ug/L	0.237	0.300	20	
Hexachlorobutadiene		50.0	49.4	ug/L	0.357	1.20	20	
Isopropylbenzene		50.0	52.8	ug/L	1.57	5.70	20	
p-Isopropyltoluene		50.0	49.8	ug/L	2.35	0.400	20	
4-Methyl-2-Pentanone		50.0	53.2	ug/L	0.0890	6.40	20	
Methylene Chloride		50.0	46.3	ug/L	0.265	7.50	20	
Naphthalene		50.0	46.2	ug/L	1.61	7.70	20	
n-Propylbenzene		50.0	52.5	ug/L	3.37	5.10	20	
Styrene		50.0	50.6	ug/L	1.02	1.20	20	
1,1,1,2-Tetrachloroethane		50.0	47.1	ug/L	0.371	5.70	20	
Tetrachloroethene		50.0	45.5	ug/L	0.350	9.00	20	
1,2,3-Trichlorobenzene		50.0	52.8	ug/L	0.820	5.60	20	
1,2,4-Trichlorobenzene		50.0	50.8	ug/L	0.894	1.60	20	
1,1,1-Trichloroethane		50.0	46.4	ug/L	0.490	7.10	20	
1,1,2-Trichloroethane		50.0	47.2	ug/L	0.272	5.60	20	
Trichloroethene		50.0	47.9	ug/L	0.266	4.20	20	
Trichlorofluoromethane		50.0	46.1	ug/L	0.523	7.90	20	
1,2,3-Trichloropropane		50.0	46.7	ug/L	0.179	6.60	20	
1,2,4-Trimethylbenzene		50.0	47.7	ug/L	2.43	4.60	20	
1,3,5-Trimethylbenzene		50.0	51.9	ug/L	2.36	3.70	20	
o-Xylene		50.0	51.8	ug/L	0.604	3.70	20	
m-,p-Xylene		100	98.5	ug/L	0.597	1.50	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4900564
Report generated 08/17/2016 12:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080317 Run Date: 08/16/2016 Sample ID: WG580433-02
Instrument ID: HPMS6 Run Time: 12:57 Method: 8260B
File ID: 6M141289 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG580434 Cal ID: HPMS6 - 10-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.1	ug/L	0.571	2.15	20	
1,1-Dichloroethene	CCC	50.0	52.8	ug/L	0.563	5.61	20	
1,2-Dichloropropane	CCC	50.0	56.2	ug/L	0.339	12.3	20	
Ethylbenzene	CCC	50.0	51.9	ug/L	0.527	3.83	20	
Toluene	CCC	50.0	53.8	ug/L	1.54	7.50	20	
Vinyl Chloride	CCC	50.0	46.7	ug/L	0.335	6.53	20	
Bromoform	SPCC	50.0	47.8	ug/L	0.233	4.37	20	
Chlorobenzene	SPCC	50.0	49.6	ug/L	0.989	0.732	20	
Chloromethane	SPCC	50.0	45.9	ug/L	0.499	8.17	20	
1,1-Dichloroethane	SPCC	50.0	54.0	ug/L	0.632	7.95	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.1	ug/L	0.637	2.13	20	
Xylenes		150	159	ug/L	0.634	6.22	20	
Acetone		50.0	49.1	ug/L	0.0777	1.84	20	
Benzene		50.0	55.1	ug/L	1.18	10.1	20	
Bromobenzene		50.0	48.7	ug/L	0.765	2.56	20	
Bromochloromethane		50.0	54.4	ug/L	0.179	8.75	20	
Bromodichloromethane		50.0	52.9	ug/L	0.445	5.78	20	
Bromomethane		50.0	38.2	ug/L	0.134	23.7	20	*
2-Butanone		50.0	54.1	ug/L	0.124	8.14	20	
n-Butylbenzene		50.0	55.1	ug/L	2.40	10.3	20	
sec-Butylbenzene		50.0	52.7	ug/L	2.90	5.34	20	
tert-Butylbenzene		50.0	51.1	ug/L	0.497	2.20	20	
Carbon Disulfide		50.0	55.1	ug/L	0.978	10.2	20	
Carbon Tetrachloride		50.0	51.5	ug/L	0.484	2.90	20	
Dibromochloromethane		50.0	50.0	ug/L	0.384	0.0642	20	
Chloroethane		50.0	49.8	ug/L	0.204	0.393	20	
2-Chlorotoluene		50.0	49.8	ug/L	2.30	0.380	20	
4-Chlorotoluene		50.0	53.9	ug/L	2.44	7.90	20	
1,2-Dibromo-3-Chloropropane		50.0	49.0	ug/L	0.130	2.05	20	
1,2-Dibromoethane		50.0	51.6	ug/L	0.277	3.18	20	
Dibromomethane		50.0	53.4	ug/L	0.174	6.79	20	
1,2-Dichlorobenzene		50.0	48.7	ug/L	1.40	2.62	20	
1,3-Dichlorobenzene		50.0	50.5	ug/L	1.50	0.920	20	
1,4-Dichlorobenzene		50.0	48.8	ug/L	1.49	2.32	20	
Dichlorodifluoromethane		50.0	48.7	ug/L	0.519	2.50	20	
1,2-Dichloroethane		50.0	49.6	ug/L	0.470	0.769	20	
cis-1,2-Dichloroethene		50.0	55.6	ug/L	0.322	11.2	20	
trans-1,2-Dichloroethene		50.0	55.8	ug/L	0.291	11.6	20	
1,3-Dichloropropane		50.0	52.3	ug/L	0.522	4.67	20	
2,2-Dichloropropane		50.0	53.7	ug/L	0.533	7.38	20	
cis-1,3-Dichloropropene		50.0	59.6	ug/L	0.489	19.1	20	
trans-1,3-Dichloropropene		50.0	52.5	ug/L	0.568	4.96	20	

CCV - Modified 03/05/2008
PDF File ID: 4900566
Report generated 08/17/2016 12:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080317 Run Date: 08/16/2016 Sample ID: WG580433-02
Instrument ID: HPMS6 Run Time: 12:57 Method: 8260B
File ID: 6M141289 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG580434 Cal ID: HPMS6 - 10-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	54.8	ug/L	0.433	9.69	20	
2-Hexanone		50.0	50.0	ug/L	0.236	0.0598	20	
Hexachlorobutadiene		50.0	49.9	ug/L	0.360	0.175	20	
Isopropylbenzene		50.0	55.2	ug/L	1.64	10.5	20	
p-Isopropyltoluene		50.0	53.3	ug/L	2.52	6.58	20	
4-Methyl-2-Pentanone		50.0	55.4	ug/L	0.0926	10.8	20	
Methylene Chloride		50.0	52.6	ug/L	0.301	5.12	20	
Naphthalene		50.0	56.6	ug/L	1.98	13.1	20	
n-Propylbenzene		50.0	56.0	ug/L	3.59	12.0	20	
Styrene		50.0	54.5	ug/L	1.10	8.92	20	
1,1,1,2-Tetrachloroethane		50.0	48.8	ug/L	0.384	2.43	20	
Tetrachloroethene		50.0	49.2	ug/L	0.379	1.67	20	
1,2,3-Trichlorobenzene		50.0	56.1	ug/L	0.872	12.3	20	
1,2,4-Trichlorobenzene		50.0	53.6	ug/L	0.942	7.16	20	
1,1,1-Trichloroethane		50.0	50.4	ug/L	0.531	0.704	20	
1,1,2-Trichloroethane		50.0	50.4	ug/L	0.290	0.751	20	
Trichloroethene		50.0	51.3	ug/L	0.285	2.54	20	
Trichlorofluoromethane		50.0	45.4	ug/L	0.515	9.27	20	
1,2,3-Trichloropropane		50.0	47.9	ug/L	0.184	4.27	20	
1,2,4-Trimethylbenzene		50.0	52.2	ug/L	2.66	4.41	20	
1,3,5-Trimethylbenzene		50.0	56.0	ug/L	2.55	11.9	20	
o-Xylene		50.0	54.2	ug/L	0.631	8.41	20	
m-,p-Xylene		100	105	ug/L	0.637	5.13	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4900566
Report generated 08/17/2016 12:32

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16080317
Instrument ID: HPMS6
Workgroup (AAB#): WG580434

ICAL CCV Number: WG579700-08
CAL ID: HPMS6-10-AUG-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG579700-08	NA	NA	367321	614077	821017
Upper Limit	NA	NA	734642	1228154	1642034
Lower Limit	NA	NA	183661	307039	410509
L16080317-01	1.00	01	275369	532138	742682
L16080317-02	1.00	01	295615	505024	671259
L16080317-03	1.00	01	304447	528372	699741
L16080317-04	1.00	01	269063	528797	736120
L16080317-06	1.00	01	263317	518247	716802
L16080317-07	1.00	01	256210	504165	695910
L16080317-08	1.00	01	252748	500245	685782
L16080317-09	1.00	01	247106	487495	678108
L16080317-10	1.00	01	245154	479635	665632
L16080317-11	1.00	01	307619	587049	771865
WG580434-01	1.00	01	327898	635506	829432
WG580434-02	1.00	01	296479	503859	678518

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4901160
Report generated 08/17/2016 12:32

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16080317
Instrument ID: HPMS6
Workgroup (AAB#): WG580434

ICAL CCV Number: WG579700-08
CAL ID: HPMS6-10-AUG-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG579700-08	NA	NA	18.78	15.23	10.76
Upper Limit	NA	NA	19.28	15.73	11.26
Lower Limit	NA	NA	18.28	14.73	10.26
L16080317-01	1.00	01	18.79	15.23	10.75
L16080317-02	1.00	01	18.79	15.22	10.75
L16080317-03	1.00	01	18.78	15.23	10.76
L16080317-04	1.00	01	18.78	15.23	10.76
L16080317-06	1.00	01	18.79	15.23	10.76
L16080317-07	1.00	01	18.79	15.23	10.76
L16080317-08	1.00	01	18.79	15.23	10.76
L16080317-09	1.00	01	18.79	15.23	10.75
L16080317-10	1.00	01	18.78	15.23	10.76
L16080317-11	1.00	01	18.78	15.23	10.76
WG580434-01	1.00	01	18.79	15.23	10.76
WG580434-02	1.00	01	18.78	15.23	10.76

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4901161
Report generated: 08/17/2016 12:32

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141296.D Vial: 10
Acq On : 16 Aug 2016 16:45 Operator: TMB
Sample : L16080317-01 A REF 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 08:42:17 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	742682	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	532138	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	275369	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.58	111	208269	25.7034 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.80%		
43) 1,2-Dichloroethane-d4	10.30	65	266025	24.5312 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.12%		
58) Toluene-d8	13.03	98	656220	25.9170 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.68%		
80) p-Bromofluorobenzene	17.00	95	264684	26.9025 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.60%		
Target Compounds					Qvalue
3) Chloromethane	3.36	50	2110	0.1306 ug/L	84
13) Acetone	5.89	43	4806	2.0427 ug/L #	75

(#) = qualifier out of range (m) = manual integration
6M141296.D 8260WT.M Wed Aug 17 08:42:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141296.D Vial: 10
Acq On : 16 Aug 2016 16:45 Operator: TMB
Sample : L16080317-01 A REF 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 8:42 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

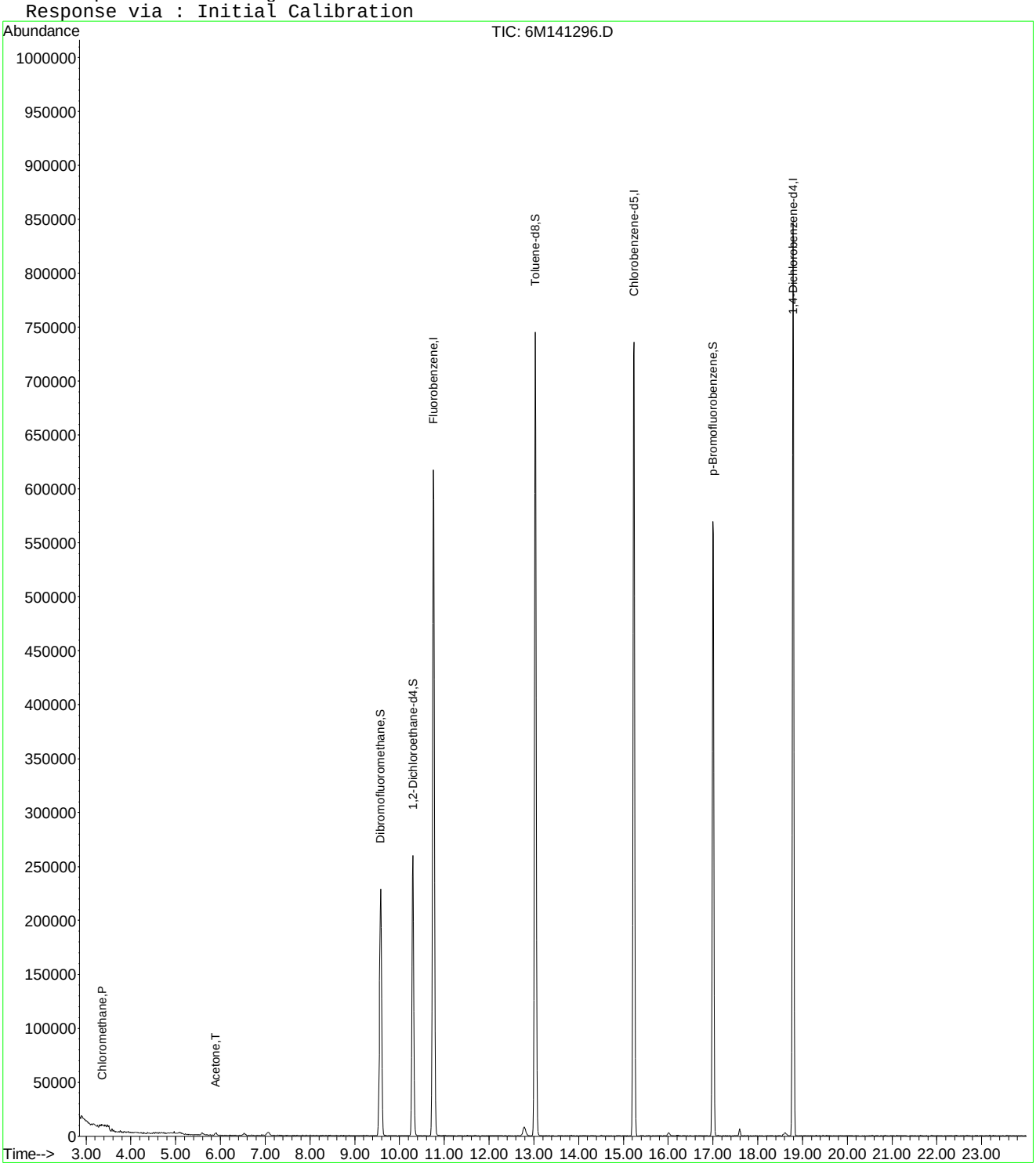

6M141296.D 8260WT.M Wed Aug 17 08:42:21 2016 Page 2

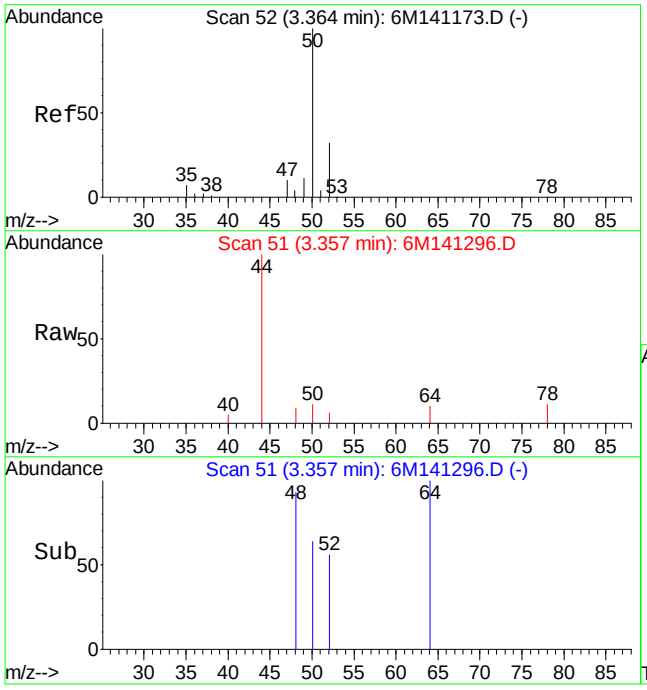

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.36 min Scan# 51
Delta R.T. 0.00 min
Lab File: 6M141296.D
Acq: 16 Aug 2016 16:45

Tgt Ion: 50 Resp: 2110

Ion	Ratio	Lower	Upper
50	100		
52	41.8	19.8	46.2

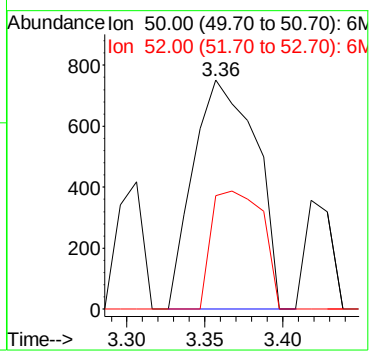

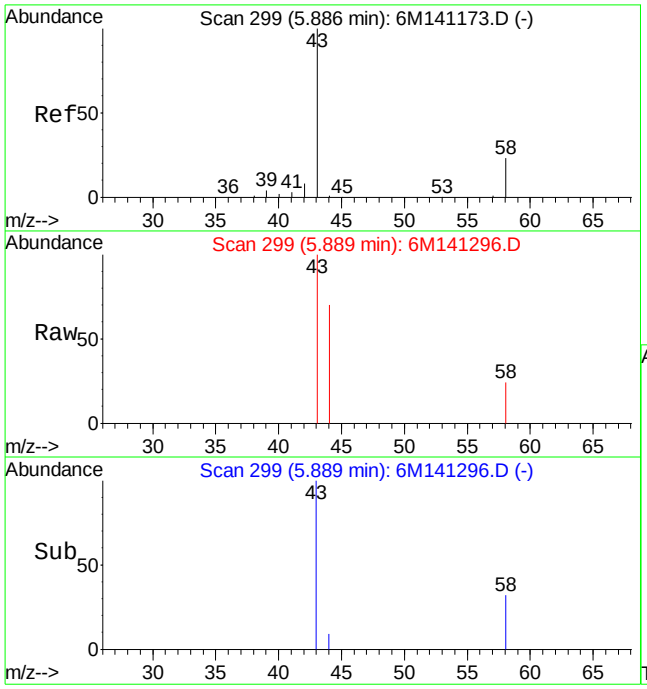

#13
Acetone
Concen: 2.04 ug/L
RT: 5.89 min Scan# 299
Delta R.T. -0.01 min
Lab File: 6M141296.D
Acq: 16 Aug 2016 16:45

Tgt Ion: 43 Resp: 4806

Ion	Ratio	Lower	Upper
43	100		
58	14.5	16.4	38.2#

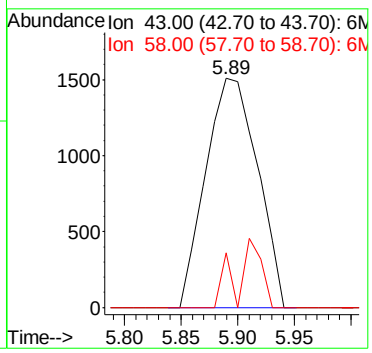

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141308.D Vial: 22
Acq On : 16 Aug 2016 23:11 Operator: TMB
Sample : L16080317-02 A MS 826-LOW Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 08:26:07 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	671259	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.22	117	505024	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	295615	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.58	111	191789	26.1880 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.76%		
43) 1,2-Dichloroethane-d4	10.30	65	251880	25.6982 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.80%		
58) Toluene-d8	13.03	98	627462	26.1117 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.44%		
80) p-Bromofluorobenzene	17.00	95	270055	25.5685 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.28%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	2.95	85	237660	16.6188 ug/L	100
3) Chloromethane	3.36	50	235920	16.1617 ug/L	99
4) Vinyl Chloride	3.55	62	181777	18.8867 ug/L	92
5) 1,3-Butadiene	3.59	54	3844	Below Cal #	40
6) Bromomethane	4.38	94	53911	11.4288 ug/L	98
7) Chloroethane	4.52	64	110340	20.1039 ug/L	91
8) Trichlorofluoromethane	4.99	101	260614	17.1067 ug/L	99
9) Diethyl ether	5.53	59	3499	0.6530 ug/L #	43
10) Isoprene	5.56	67	194238	19.1323 ug/L	89
11) Acrolein	5.78	56	218	0.2678 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	129251	18.8426 ug/L	99
13) Acetone	5.89	43	50113	23.5656 ug/L	97
14) 1,1-Dichloroethene	6.10	61	232550	16.2488 ug/L	90
15) Tert-Butyl Alcohol	6.26	59	6908	11.9000 ug/L #	85
16) Dimethyl Sulfide	6.38	62	198279	23.1458 ug/L	90
17) Iodomethane	6.64	142	150904	20.0229 ug/L	79
18) Methyl acetate	6.68	43	111888	19.1701 ug/L	97
19) Methylene Chloride	6.92	84	149269	19.4419 ug/L	88
20) Carbon Disulfide	6.95	76	471617	19.7952 ug/L	98
21) Acrylonitrile	7.14	53	57348	23.0512 ug/L	95
22) Methyl Tert Butyl Ether	7.17	73	424367	22.3685 ug/L	98
23) trans-1,2-Dichloroethene	7.41	96	137322	19.6542 ug/L	87
24) n-Hexane	7.49	57	167996	16.1521 ug/L	97
27) 1,1-Dichloroethane	8.09	63	289119	18.3892 ug/L	100
29) 2-Butanone	8.72	43	61155	19.8333 ug/L	92
30) Propionitrile	8.83	54	1076	1.3183 ug/L #	56
31) 2,2-Dichloropropane	8.94	77	210410	15.7904 ug/L	97
32) cis-1,2-Dichloroethene	9.02	96	154129	19.8427 ug/L	87
33) Chloroform	9.25	83	293247	19.5293 ug/L	99
34) 1-Bromopropane	9.40	122	30555	24.8057 ug/L	99
35) Bromochloromethane	9.51	130	89916	20.3828 ug/L	98
36) Tetrahydrofuran	9.56	42	2078	1.0704 ug/L #	49
38) 1,1,1-Trichloroethane	9.84	97	262356	18.5254 ug/L	99
39) Cyclohexane	9.86	56	239090	17.4698 ug/L	94
40) 1,1-Dichloropropene	10.07	75	190158	17.9386 ug/L	95
42) Carbon Tetrachloride	10.22	117	234332	18.5551 ug/L	100
45) 1,2-Dichloroethane	10.44	62	265145	20.8475 ug/L	92
46) Benzene	10.47	78	561688	19.5390 ug/L	96
47) Trichloroethene	11.33	130	140568	18.8409 ug/L	85
48) Methylcyclohexane	11.42	83	167657	16.6185 ug/L	93

(#) = qualifier out of range (m) = manual integration

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141308.D Vial: 22
Acq On : 16 Aug 2016 23:11 Operator: TMB
Sample : L16080317-02 A MS 826-LOW Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 08:26:07 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
49)	1,2-Dichloropropane	11.58	63	167905	20.7268 ug/L	85
50)	1,4-Dioxane	11.93	88	2220	47.0092 ug/L	90
51)	Bromodichloromethane	11.92	83	232305	20.5552 ug/L	99
52)	Dibromomethane	12.01	93	88147	20.1772 ug/L	99
54)	4-Methyl-2-Pentanone	12.33	58	42204	18.7941 ug/L	99
55)	cis-1,3-Dichloropropene	12.67	75	245075	22.2256 ug/L	97
56)	Dimethyl Disulfide	12.95	79	128334	19.4521 ug/L	99
59)	Toluene	13.14	91	597361	20.5802 ug/L	99
60)	Ethyl Methacrylate	13.30	69	170003	20.8828 ug/L	92
62)	trans-1,3-Dichloropropene	13.38	75	221722	20.2730 ug/L	93
63)	1,1,2-Trichloroethane	13.61	97	122314	21.0347 ug/L	99
64)	2-Hexanone	13.57	43	96703	20.2819 ug/L	92
65)	1,3-Dichloropropane	13.97	76	221912	22.0411 ug/L	89
66)	Tetrachloroethene	14.09	166	141854	18.2455 ug/L	90
67)	Dibromochloromethane	14.40	129	159042	20.5122 ug/L	100
68)	1,2-Dibromoethane	14.69	107	110978	20.4814 ug/L	98
69)	1-Chlorohexane	14.84	91	170907	18.5293 ug/L	81
70)	Chlorobenzene	15.29	112	409073	20.3173 ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.33	131	163253	20.5626 ug/L	94
72)	Ethylbenzene	15.34	106	206855	20.1907 ug/L	91
73)	m-,p-Xylene	15.44	106	512366	41.8533 ug/L	90
74)	o-Xylene	16.09	106	255935	21.7522 ug/L	89
75)	Styrene	16.14	104	446200	21.9807 ug/L	88
76)	Bromoform	16.69	173	95387	19.3820 ug/L	98
77)	Isopropylbenzene	16.60	105	647806	21.6488 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.86	83	150023	20.3517 ug/L	100
81)	1,2,3-Trichloropropane	17.09	110	47894	21.0974 ug/L	92
82)	trans-1,4-Dichloro-2-Buten	17.16	53	40856	15.0363 ug/L	89
83)	n-Propylbenzene	17.21	91	822326	21.6669 ug/L	98
84)	Bromobenzene	17.33	156	182049	19.6177 ug/L	94
85)	1,3,5-Trimethylbenzene	17.43	105	593262	22.0106 ug/L	95
86)	2-Chlorotoluene	17.50	91	560104	20.4947 ug/L	95
87)	4-Chlorotoluene	17.56	91	564963	21.1617 ug/L	95
88)	a-Methylstyrene	17.91	118	311169	19.8532 ug/L	99
89)	tert-Butylbenzene	17.97	134	117918	20.4914 ug/L	69
90)	1,2,4-Trimethylbenzene	18.03	105	621928	20.6287 ug/L	96
91)	sec-Butylbenzene	18.29	105	649049	19.9247 ug/L	98
92)	p-Isopropyltoluene	18.48	119	565621	20.2598 ug/L	97
93)	1,3-Dichlorobenzene	18.69	146	364481	20.7320 ug/L	95
94)	1,4-Dichlorobenzene	18.84	146	373952	20.7152 ug/L	95
95)	n-Butylbenzene	19.10	91	511430	19.8625 ug/L	96
96)	1,2-Dichlorobenzene	19.41	146	350608	20.5793 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	20.60	75	32000	20.3786 ug/L	82
98)	1,2,4-Trichlorobenzene	21.94	180	209735	20.2470 ug/L	99
99)	Hexachlorobutadiene	22.14	225	85291	19.9770 ug/L	99
100)	Naphthalene	22.36	128	419084	20.4984 ug/L	100
101)	1,2,3-Trichlorobenzene	22.74	180	211117	22.9888 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M141308.D 8260WT.M Wed Aug 17 08:26:12 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141308.D Vial: 22
Acq On : 16 Aug 2016 23:11 Operator: TMB
Sample : L16080317-02 A MS 826-LOW Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 8:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

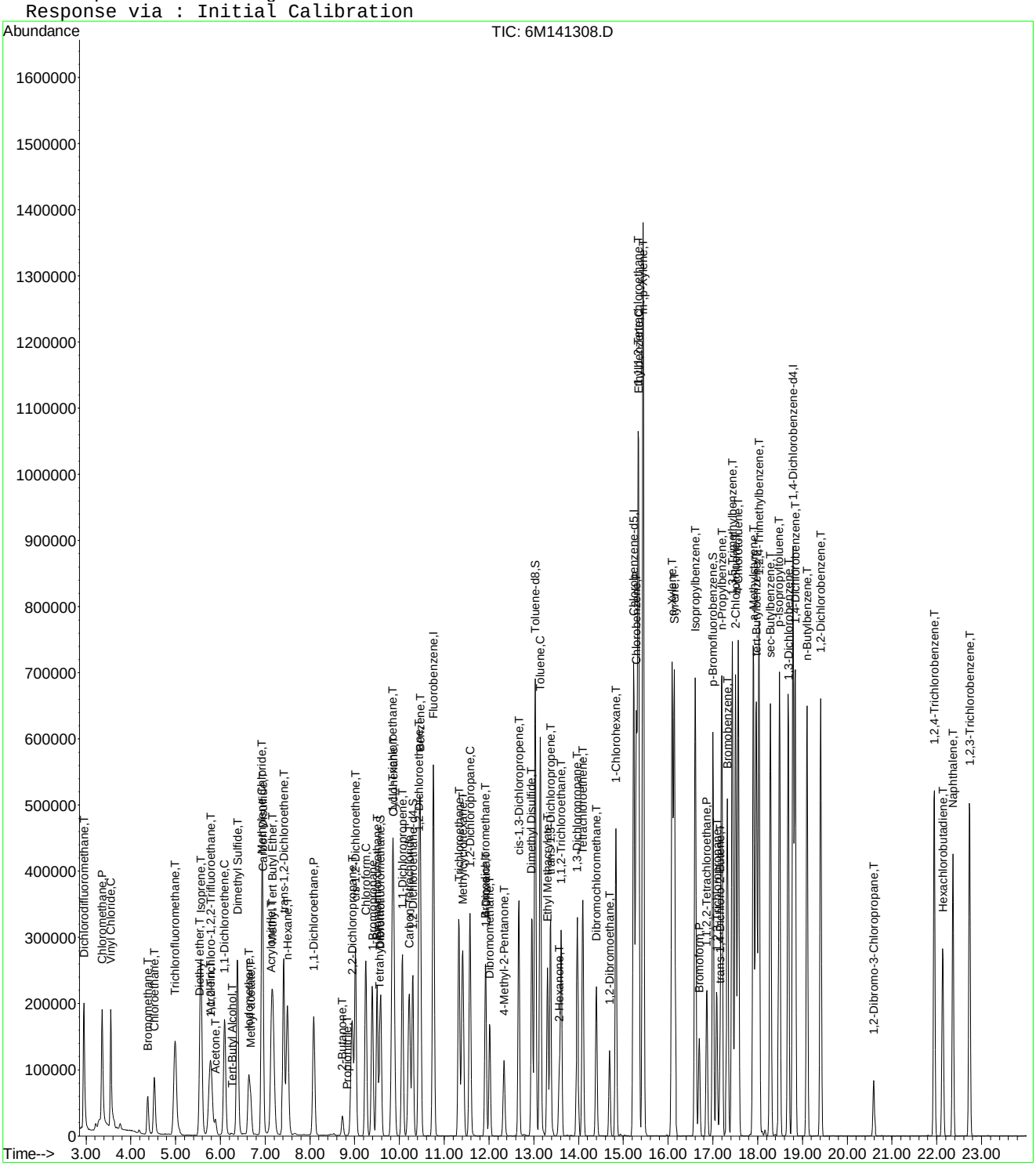

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141309.D Vial: 23
Acq On : 16 Aug 2016 23:43 Operator: TMB
Sample : L16080317-03 A MSD 826-LOW Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 08:26:17 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	699741	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	528372	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	304447	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	202560	26.5329 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.12%		
43) 1,2-Dichloroethane-d4	10.30	65	261431	25.5870 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.36%		
58) Toluene-d8	13.03	98	650424	25.8711 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.48%		
80) p-Bromofluorobenzene	17.00	95	279718	25.7151 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.88%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	2.95	85	235218	15.7785 ug/L	100
3) Chloromethane	3.35	50	241124	15.8459 ug/L	98
4) Vinyl Chloride	3.56	62	182669	18.2068 ug/L	94
5) 1,3-Butadiene	3.59	54	3556	Below Cal #	47
6) Bromomethane	4.38	94	58134	11.8225 ug/L	98
7) Chloroethane	4.53	64	112158	19.6034 ug/L	90
8) Trichlorofluoromethane	4.99	101	263679	16.6034 ug/L	100
9) Diethyl ether	5.54	59	3276	0.5865 ug/L	77
10) Isoprene	5.56	67	201471	19.0370 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	129882	18.1639 ug/L	98
13) Acetone	5.90	43	51689	23.3173 ug/L	95
14) 1,1-Dichloroethene	6.10	61	234666	15.7292 ug/L	91
15) Tert-Butyl Alcohol	6.38	59	8126	13.4284 ug/L #	3
16) Dimethyl Sulfide	6.38	62	199158	22.3021 ug/L	87
17) Iodomethane	6.63	142	156050	19.8715 ug/L	80
18) Methyl acetate	6.67	43	112742	18.5302 ug/L	96
19) Methylene Chloride	6.93	84	151754	18.9611 ug/L	90
20) Carbon Disulfide	6.95	76	477582	19.2297 ug/L	99
21) Acrylonitrile	7.13	53	59589	22.9771 ug/L	99
22) Methyl Tert Butyl Ether	7.17	73	434852	21.9882 ug/L	98
23) trans-1,2-Dichloroethene	7.41	96	137815	18.9219 ug/L	86
24) n-Hexane	7.49	57	173189	15.9736 ug/L	96
27) 1,1-Dichloroethane	8.09	63	291505	17.7863 ug/L	99
29) 2-Butanone	8.73	43	63761	19.8368 ug/L	93
31) 2,2-Dichloropropane	8.94	77	208469	15.0079 ug/L	96
32) cis-1,2-Dichloroethene	9.02	96	154122	19.0342 ug/L	85
33) Chloroform	9.25	83	292673	18.6977 ug/L	99
34) 1-Bromopropane	9.40	122	31411	24.4627 ug/L	99
35) Bromochloromethane	9.50	130	90082	19.5892 ug/L	99
36) Tetrahydrofuran	9.40	42	36887	18.2278 ug/L #	41
38) 1,1,1-Trichloroethane	9.84	97	264831	17.9390 ug/L	98
39) Cyclohexane	9.87	56	239877	16.8139 ug/L	95
40) 1,1-Dichloropropene	10.06	75	192565	17.4263 ug/L	95
41) Tert-Amyl-Methyl ether	10.06	73	33010	1.8039 ug/L #	52
42) Carbon Tetrachloride	10.22	117	237226	18.0197 ug/L	98
45) 1,2-Dichloroethane	10.43	62	261569	19.7292 ug/L	93
46) Benzene	10.46	78	559498	18.6706 ug/L	96
47) Trichloroethene	11.33	130	140528	18.0689 ug/L	84
48) Methylcyclohexane	11.41	83	169513	16.1185 ug/L	94
49) 1,2-Dichloropropane	11.58	63	167971	19.8909 ug/L	86

(#) = qualifier out of range (m) = manual integration
6M141309.D 8260WT.M Wed Aug 17 08:26:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141309.D Vial: 23
Acq On : 16 Aug 2016 23:43 Operator: TMB
Sample : L16080317-03 A MSD 826-LOW Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 08:26:17 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
51)	Bromodichloromethane	11.92	83	233003	19.7778 ug/L	100
52)	Dibromomethane	12.01	93	89340	19.6179 ug/L	98
54)	4-Methyl-2-Pentanone	12.34	58	43884	18.7468 ug/L	98
55)	cis-1,3-Dichloropropene	12.67	75	242241	21.0744 ug/L	98
56)	Dimethyl Disulfide	12.95	79	131346	19.0982 ug/L	100
59)	Toluene	13.15	91	594820	19.5872 ug/L	100
60)	Ethyl Methacrylate	13.31	69	173830	20.4194 ug/L	91
62)	trans-1,3-Dichloropropene	13.37	75	219972	19.2242 ug/L	94
63)	1,1,2-Trichloroethane	13.62	97	120529	19.8118 ug/L	99
64)	2-Hexanone	13.57	43	99698	19.9860 ug/L	92
65)	1,3-Dichloropropane	13.97	76	221400	21.0186 ug/L	90
66)	Tetrachloroethene	14.10	166	143105	17.5930 ug/L	92
67)	Dibromochloromethane	14.39	129	161191	19.8707 ug/L	100
68)	1,2-Dibromoethane	14.69	107	110766	19.5389 ug/L	99
69)	1-Chlorohexane	14.84	91	179755	18.6262 ug/L	87
70)	Chlorobenzene	15.29	112	413738	19.6410 ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.33	131	162306	19.5400 ug/L	95
72)	Ethylbenzene	15.33	106	206064	19.2247 ug/L	90
73)	m-,p-Xylene	15.45	106	514951	40.2056 ug/L	91
74)	o-Xylene	16.10	106	254294	20.6577 ug/L	89
75)	Styrene	16.14	104	446192	21.0119 ug/L	90
76)	Bromoform	16.69	173	95858	18.6170 ug/L	98
77)	Isopropylbenzene	16.61	105	649738	20.7539 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.86	83	151831	19.9995 ug/L	99
81)	1,2,3-Trichloropropane	17.09	110	47052	20.1253 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	17.16	53	40911	14.6384 ug/L	88
83)	n-Propylbenzene	17.20	91	819689	20.9709 ug/L	98
84)	Bromobenzene	17.32	156	181161	18.9557 ug/L	94
85)	1,3,5-Trimethylbenzene	17.43	105	587680	21.1709 ug/L	95
86)	2-Chlorotoluene	17.50	91	540087	19.1890 ug/L	98
87)	4-Chlorotoluene	17.57	91	579592	21.0798 ug/L	92
88)	a-Methylstyrene	17.91	118	310043	19.2075 ug/L	95
89)	tert-Butylbenzene	17.97	134	117379	19.8060 ug/L	67
90)	1,2,4-Trimethylbenzene	18.03	105	619101	19.9392 ug/L	97
91)	sec-Butylbenzene	18.29	105	648027	19.3163 ug/L	98
92)	p-Isopropyltoluene	18.49	119	558863	19.4370 ug/L	97
93)	1,3-Dichlorobenzene	18.68	146	358966	19.8260 ug/L	95
94)	1,4-Dichlorobenzene	18.84	146	362707	19.5094 ug/L	93
95)	n-Butylbenzene	19.10	91	509831	19.2260 ug/L	96
96)	1,2-Dichlorobenzene	19.41	146	346322	19.7380 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.59	75	33046	20.4342 ug/L	76
98)	1,2,4-Trichlorobenzene	21.94	180	213161	19.9824 ug/L	98
99)	Hexachlorobutadiene	22.13	225	83840	19.0675 ug/L	98
100)	Naphthalene	22.36	128	412391	19.6024 ug/L	100
101)	1,2,3-Trichlorobenzene	22.74	180	205292	21.7060 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M141309.D 8260WT.M Wed Aug 17 08:26:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141309.D Vial: 23
Acq On : 16 Aug 2016 23:43 Operator: TMB
Sample : L16080317-03 A MSD 826-LOW Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 8:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

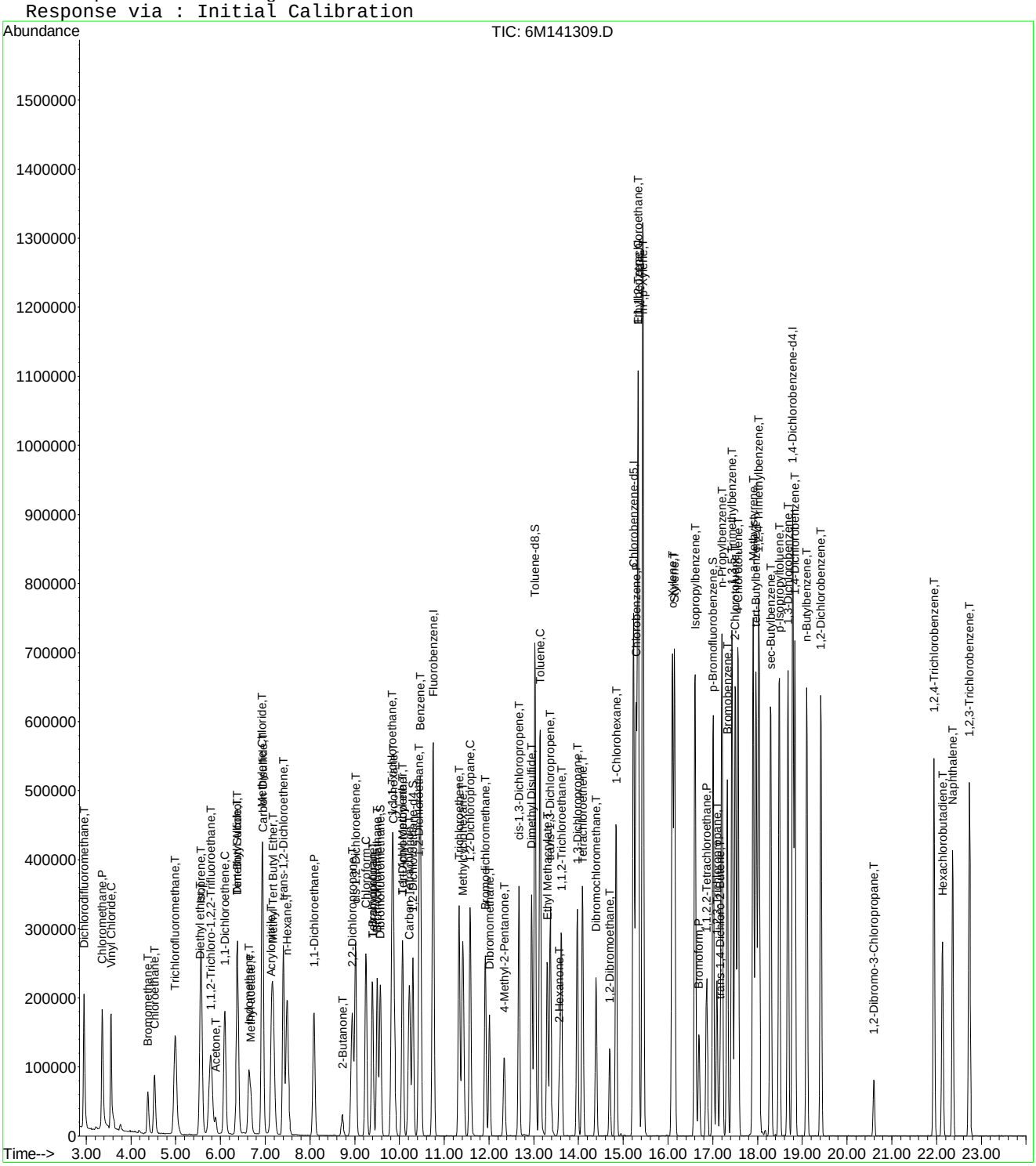

6M141309.D 8260WT.M Wed Aug 17 08:26:24 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141297.D Vial: 11
Acq On : 16 Aug 2016 17:17 Operator: TMB
Sample : L16080317-04 A 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 08:42:23 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	736120	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	528797	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	269063	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	208038	25.9038 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.60%		
43) 1,2-Dichloroethane-d4	10.30	65	264855	24.6410 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.56%		
58) Toluene-d8	13.03	98	654108	25.9968 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.00%		
80) p-Bromofluorobenzene	17.01	95	261453	27.1969 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.80%		

Target Compounds

					Qvalue
3) Chloromethane	3.37	50	1967	0.1229 ug/L #	42
4) Vinyl Chloride	3.56	62	2738	0.2594 ug/L #	1
13) Acetone	5.90	43	3320	1.4237 ug/L #	76
14) 1,1-Dichloroethene	6.09	61	21990	1.4011 ug/L	88
32) cis-1,2-Dichloroethene	9.02	96	11155	1.3096 ug/L	99
47) Trichloroethene	11.33	130	169376	20.7019 ug/L	82
48) Methylcyclohexane	11.32	83	2292	0.2072 ug/L #	1
100) Naphthalene	22.35	128	418	0.3922 ug/L #	67

(#) = qualifier out of range (m) = manual integration
6M141297.D 8260WT.M Wed Aug 17 08:42:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141297.D Vial: 11
Acq On : 16 Aug 2016 17:17 Operator: TMB
Sample : L16080317-04 A 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 8:42 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

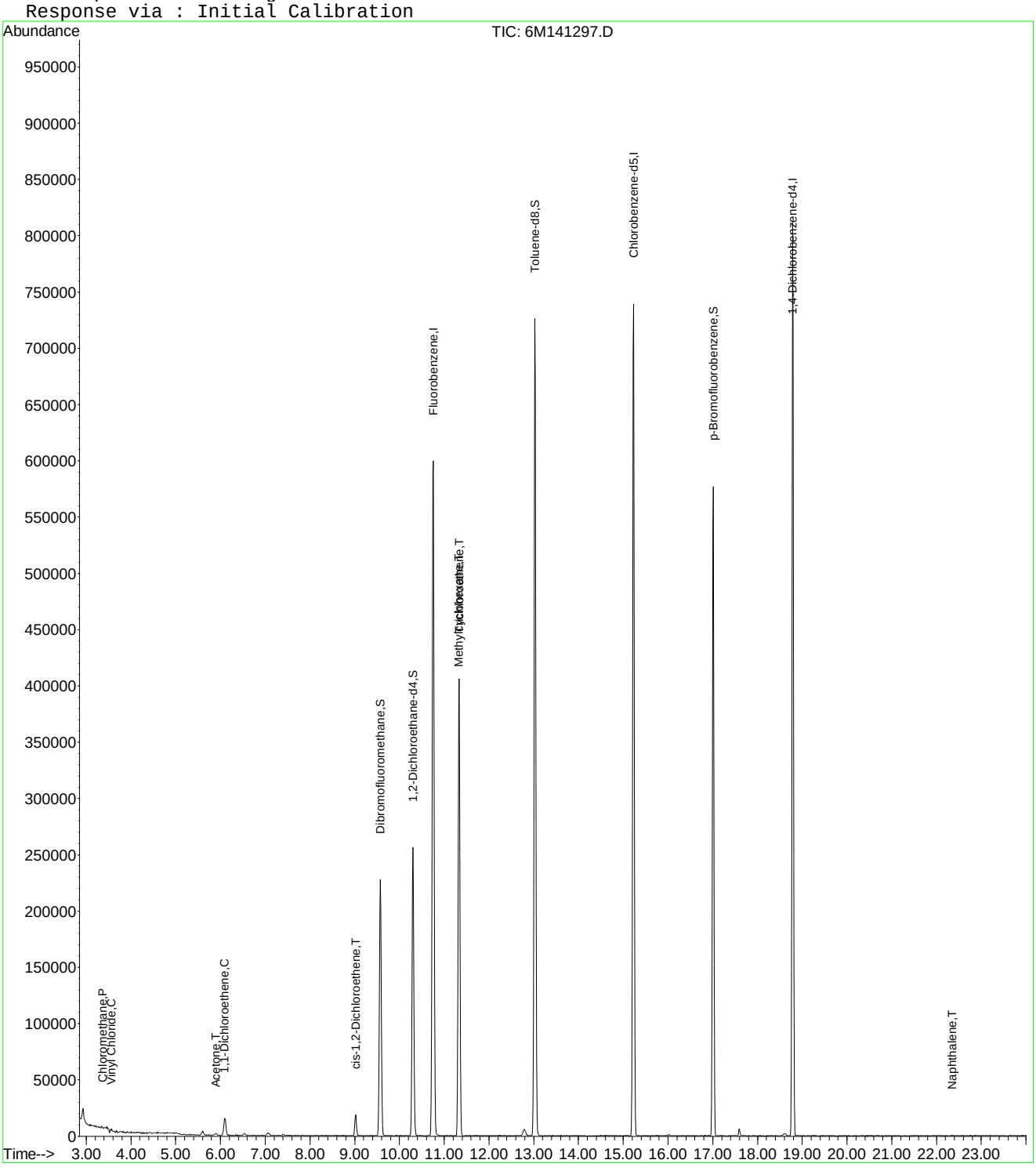

6M141297.D 8260WT.M Wed Aug 17 08:42:27 2016 Page 2

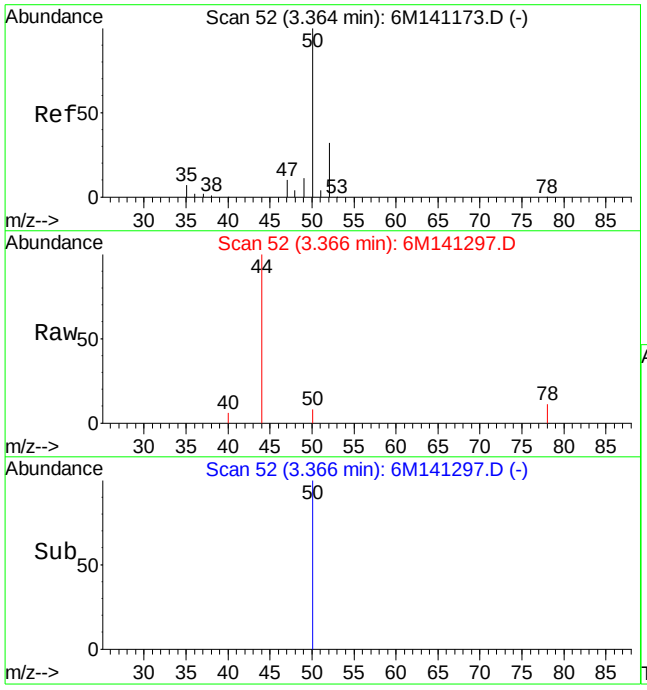

#3
Chloromethane
Concen: 0.12 ug/L
RT: 3.37 min Scan# 52
Delta R.T. 0.01 min
Lab File: 6M141297.D
Acq: 16 Aug 2016 17:17

Tgt Ion: 50 Resp: 1967

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.8	46.2#

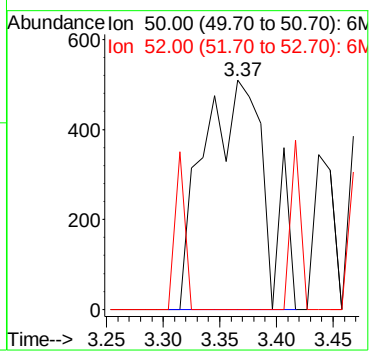

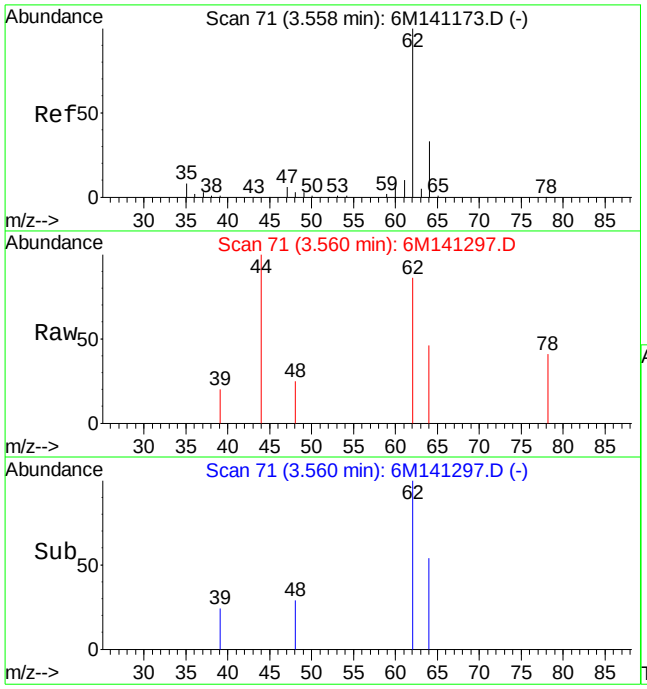

#4
Vinyl Chloride
Concen: 0.26 ug/L
RT: 3.56 min Scan# 71
Delta R.T. 0.01 min
Lab File: 6M141297.D
Acq: 16 Aug 2016 17:17

Tgt Ion: 62 Resp: 2738

Ion	Ratio	Lower	Upper
62	100		
64	159.3	19.3	45.1#

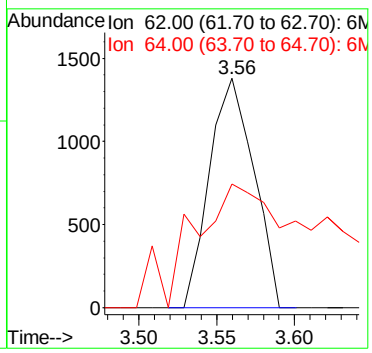

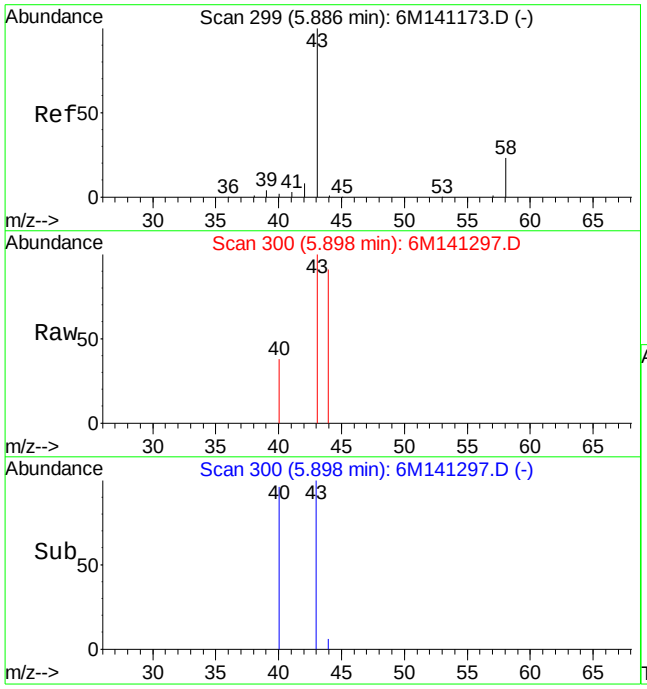

#13
Acetone
Concen: 1.42 ug/L
RT: 5.90 min Scan# 300
Delta R.T. 0.00 min
Lab File: 6M141297.D
Acq: 16 Aug 2016 17:17

Tgt Ion: 43 Resp: 3320

Ion	Ratio	Lower	Upper
43	100		
58	15.0	16.4	38.2#

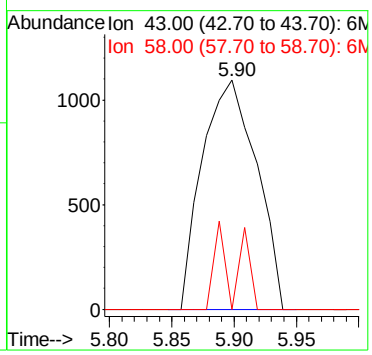

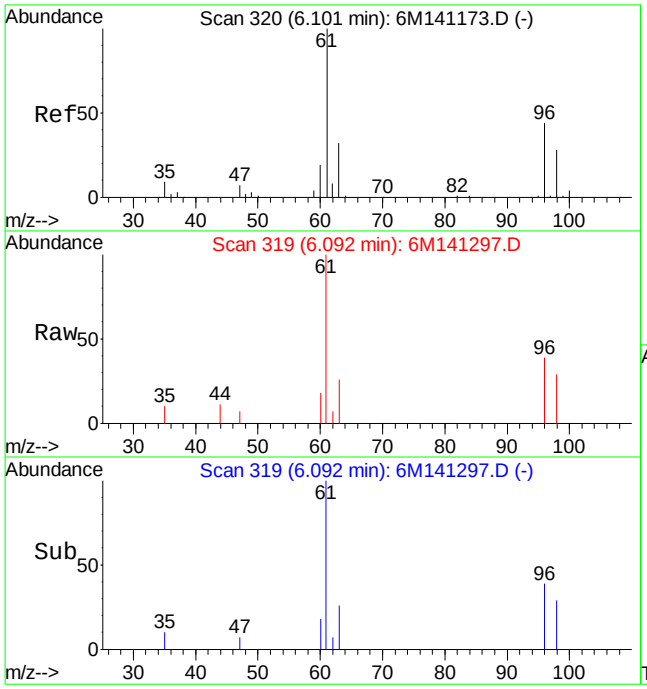

#14
1,1-Dichloroethene
Concen: 1.40 ug/L
RT: 6.09 min Scan# 319
Delta R.T. 0.00 min
Lab File: 6M141297.D
Acq: 16 Aug 2016 17:17

Tgt Ion: 61 Resp: 21990

Ion	Ratio	Lower	Upper
61	100		
96	44.5	32.0	74.6

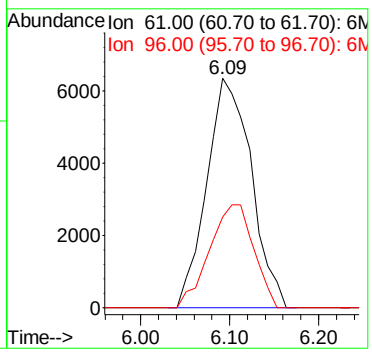

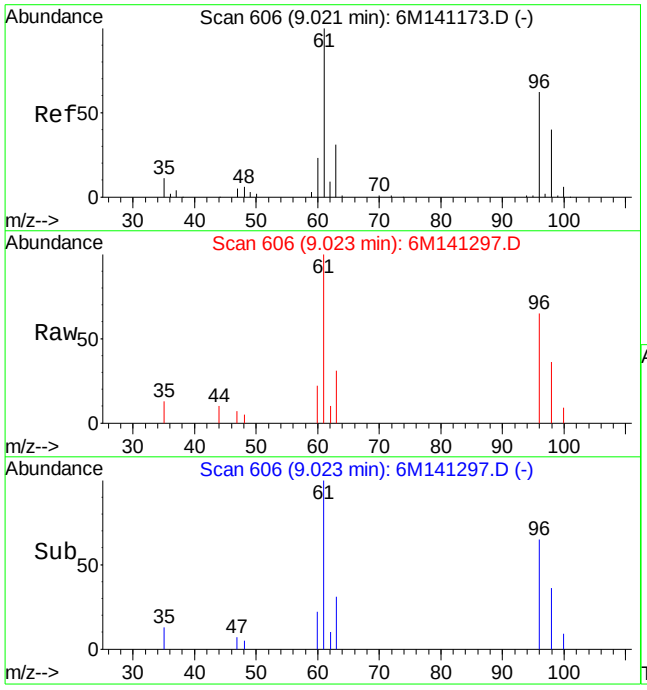

#32
cis-1,2-Dichloroethene
Concen: 1.31 ug/L
RT: 9.02 min Scan# 606
Delta R.T. 0.00 min
Lab File: 6M141297.D
Acq: 16 Aug 2016 17:17

Tgt Ion: 96 Resp: 11155

Ion	Ratio	Lower	Upper
96	100		
61	149.7	89.2	208.2

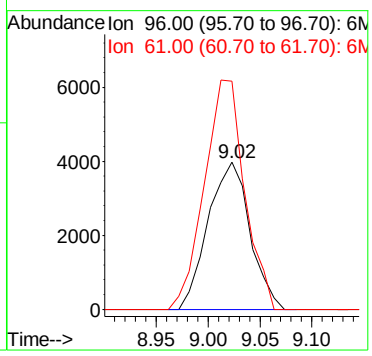

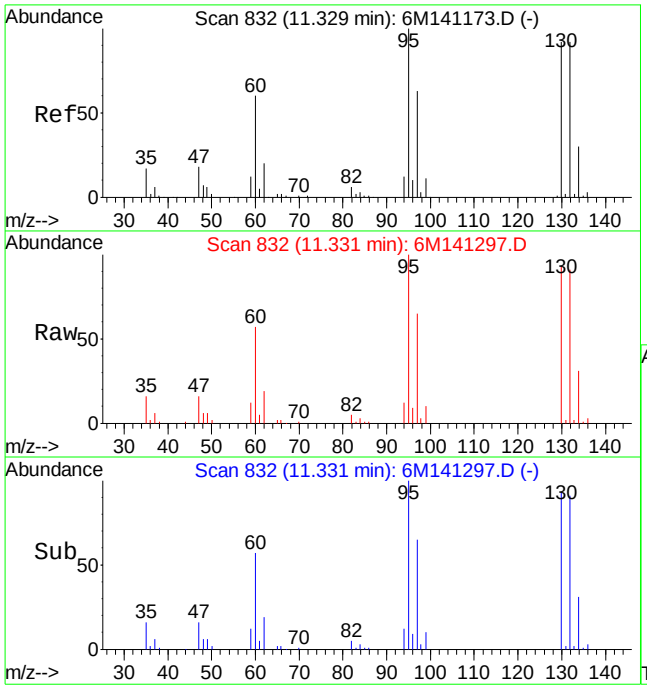

#47
Trichloroethene
Concen: 20.70 ug/L
RT: 11.33 min Scan# 832
Delta R.T. 0.00 min
Lab File: 6M141297.D
Acq: 16 Aug 2016 17:17

Tgt Ion:130 Resp: 169376

Ion	Ratio	Lower	Upper
130	100		
60	66.1	32.0	74.6

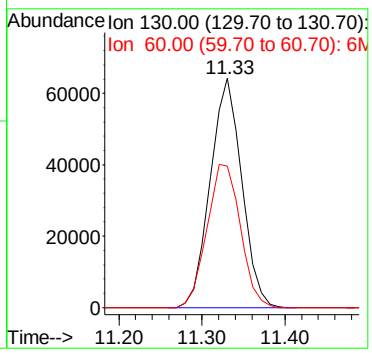

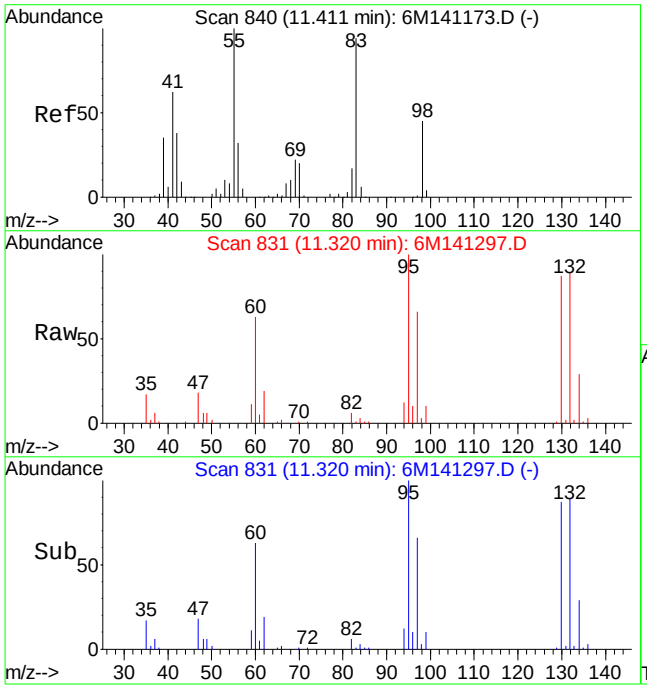

#48
Methylcyclohexane
Concen: 0.21 ug/L
RT: 11.32 min Scan# 831
Delta R.T. -0.09 min
Lab File: 6M141297.D
Acq: 16 Aug 2016 17:17

Tgt Ion: 83 Resp: 2292

Ion	Ratio	Lower	Upper
83	100		
55	0.0	56.3	131.3#
98	218.8	28.4	66.4#

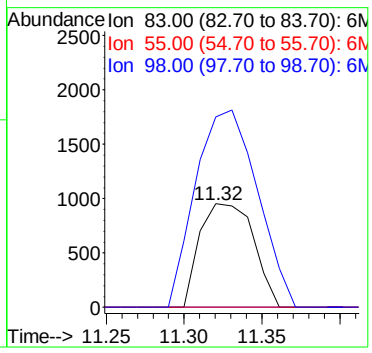

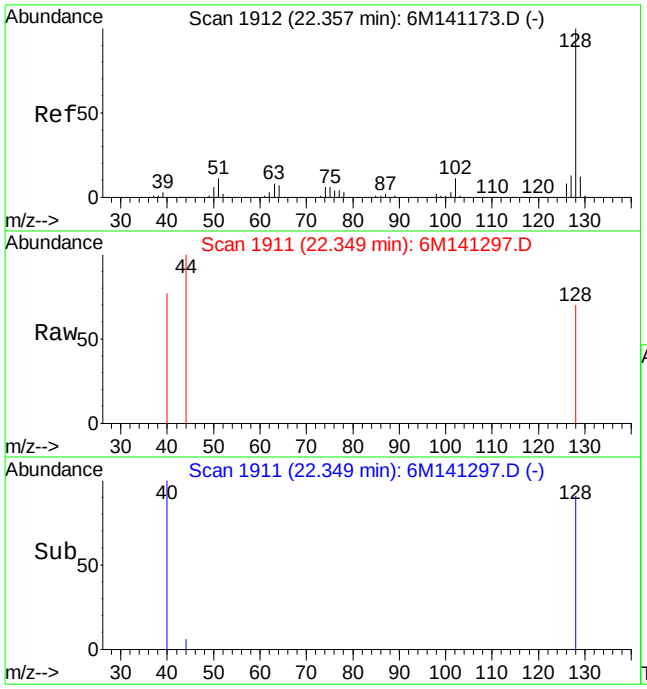

#100
Naphthalene
Concen: 0.39 ug/L
RT: 22.35 min Scan# 1911
Delta R.T. -0.02 min
Lab File: 6M141297.D
Acq: 16 Aug 2016 17:17

Tgt Ion:128 Resp: 418

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.8	18.2#

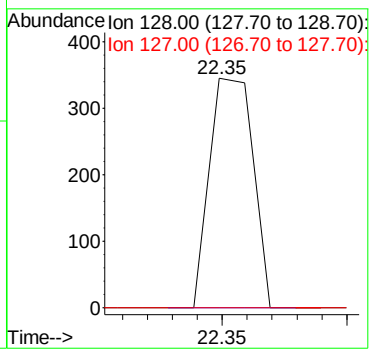

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141298.D Vial: 12
Acq On : 16 Aug 2016 17:49 Operator: TMB
Sample : L16080317-06 A 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 08:42:31 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	716802	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	518247	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	263317	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	202058	25.8372 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.36%		
43) 1,2-Dichloroethane-d4	10.30	65	261648	24.9987 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.00%		
58) Toluene-d8	13.02	98	632215	25.6382 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.56%		
80) p-Bromofluorobenzene	17.01	95	254338	27.0341 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.12%		

Target Compounds					Qvalue
5) 1,3-Butadiene	3.44	54	221	Below Cal #	5
13) Acetone	5.90	43	1691	0.7447 ug/L #	48

(#) = qualifier out of range (m) = manual integration
6M141298.D 8260WT.M Wed Aug 17 08:42:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141298.D Vial: 12
Acq On : 16 Aug 2016 17:49 Operator: TMB
Sample : L16080317-06 A 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 8:42 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

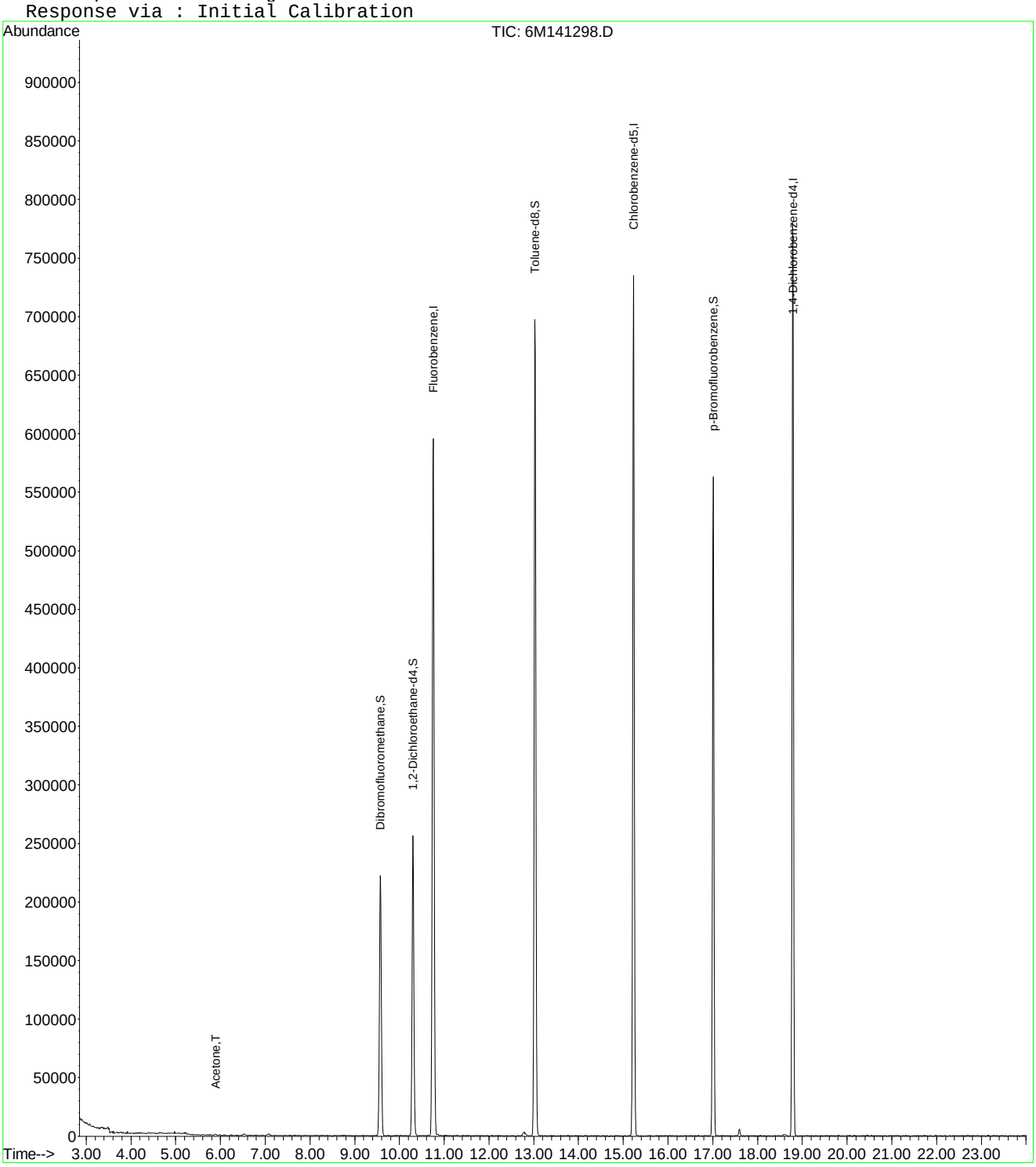

6M141298.D 8260WT.M Wed Aug 17 08:42:35 2016 Page 2

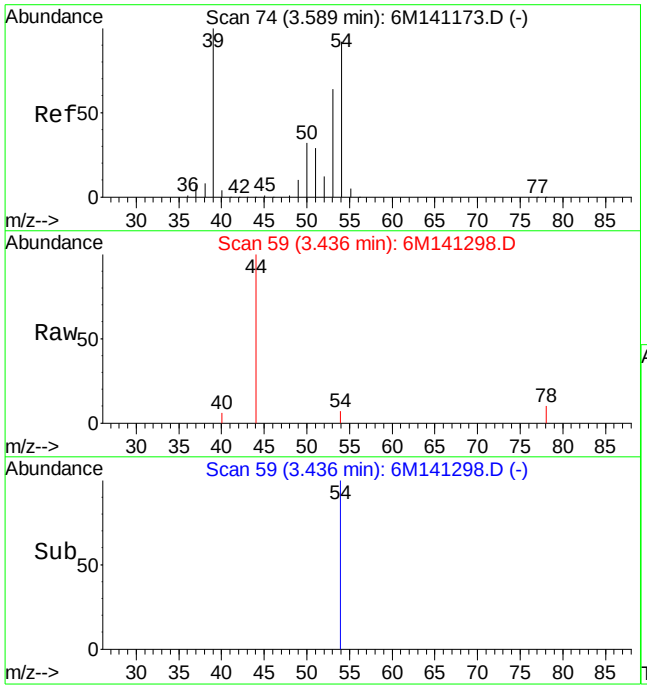

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.44 min Scan# 59
Delta R.T. -0.14 min
Lab File: 6M141298.D
Acq: 16 Aug 2016 17:49

Tgt Ion: 54 Resp: 221

Ion	Ratio	Lower	Upper
54	100		
39	0.0	62.6	146.2#
53	0.0	42.5	99.1#

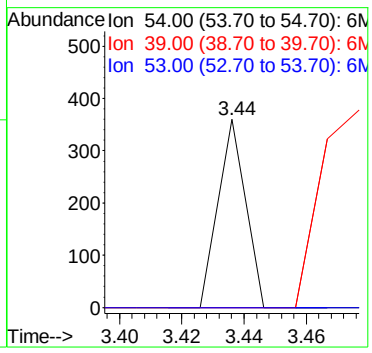

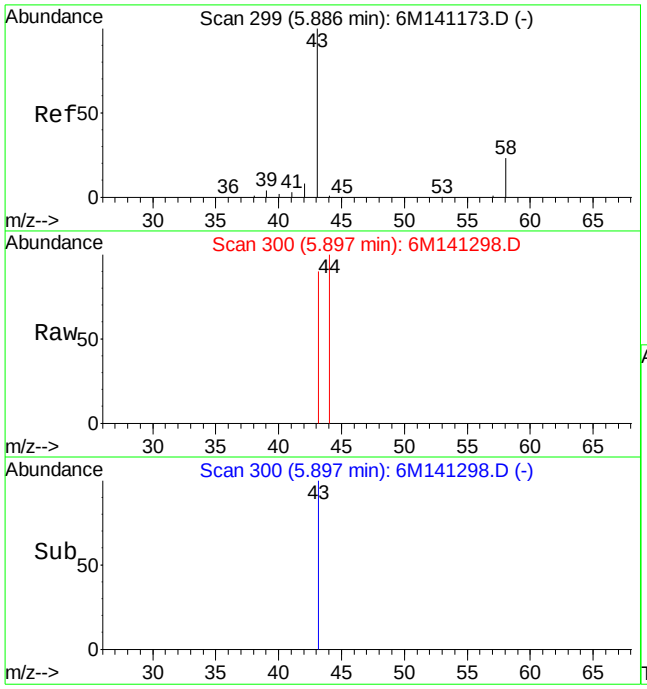

#13
Acetone
Concen: 0.74 ug/L
RT: 5.90 min Scan# 300
Delta R.T. -0.00 min
Lab File: 6M141298.D
Acq: 16 Aug 2016 17:49

Tgt Ion: 43 Resp: 1691

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

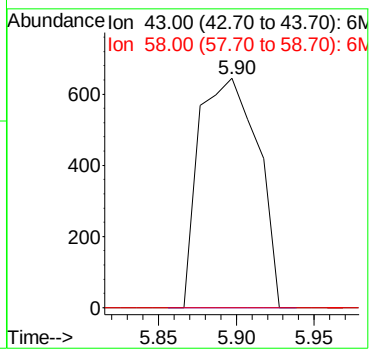

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141299.D Vial: 13
Acq On : 16 Aug 2016 18:22 Operator: TMB
Sample : L16080317-07 A 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 08:42:37 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	695910	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	504165	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	256210	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	198742	26.1761 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.72%		
43) 1,2-Dichloroethane-d4	10.30	65	253322	24.9298 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.72%		
58) Toluene-d8	13.03	98	614973	25.6355 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.56%		
80) p-Bromofluorobenzene	17.01	95	243851	26.6384 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.56%		

Target Compounds					Qvalue
3) Chloromethane	3.37	50	2403	0.1588 ug/L #	41
13) Acetone	5.89	43	6497	2.9470 ug/L	83
60) Ethyl Methacrylate	13.05	69	688	0.5287 ug/L #	7

(#) = qualifier out of range (m) = manual integration
6M141299.D 8260WT.M Wed Aug 17 08:42:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141299.D Vial: 13
Acq On : 16 Aug 2016 18:22 Operator: TMB
Sample : L16080317-07 A 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 8:42 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

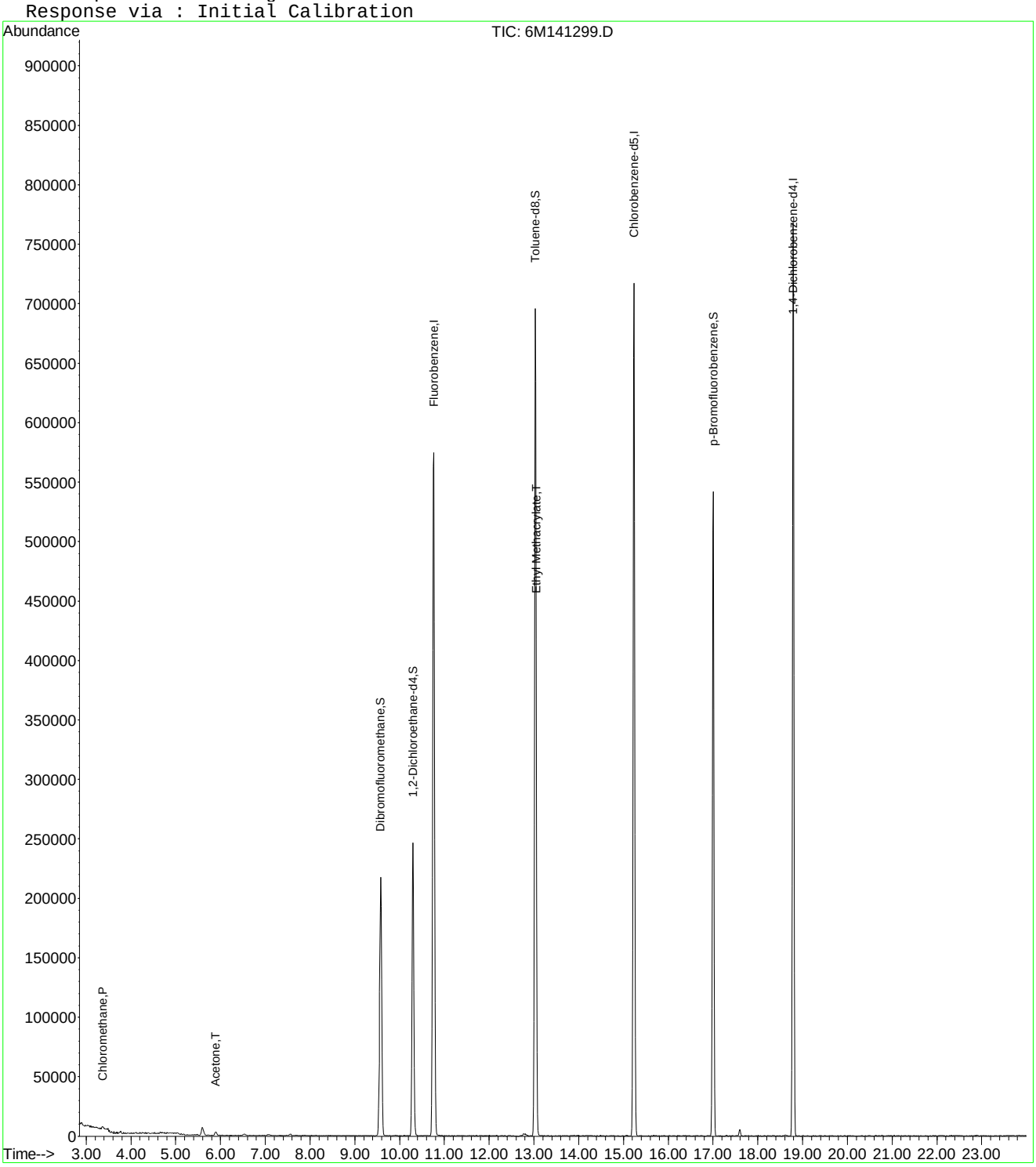

6M141299.D 8260WT.M Wed Aug 17 08:42:41 2016 Page 2

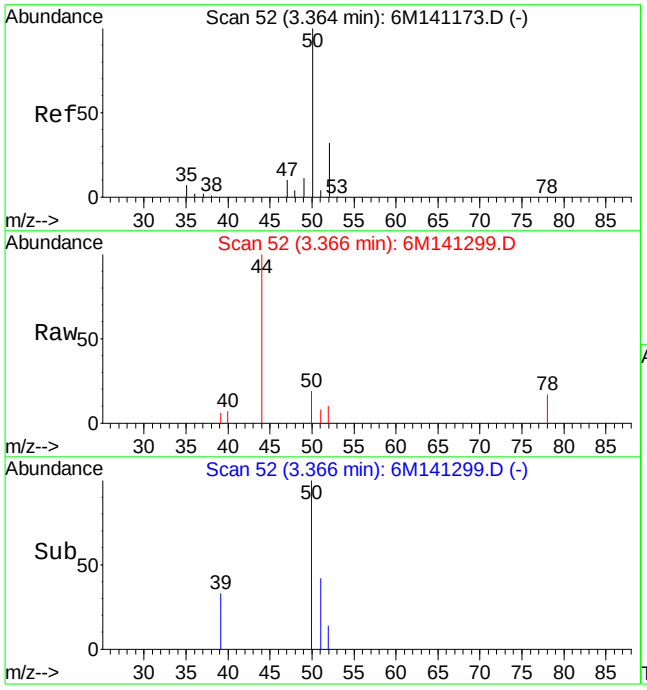

#3
Chloromethane
Concen: 0.16 ug/L
RT: 3.37 min Scan# 52
Delta R.T. 0.01 min
Lab File: 6M141299.D
Acq: 16 Aug 2016 18:22

Tgt Ion: 50 Resp: 2403

Ion	Ratio	Lower	Upper
50	100		
52	66.6	19.8	46.2#

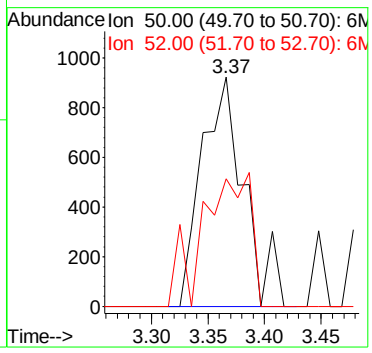

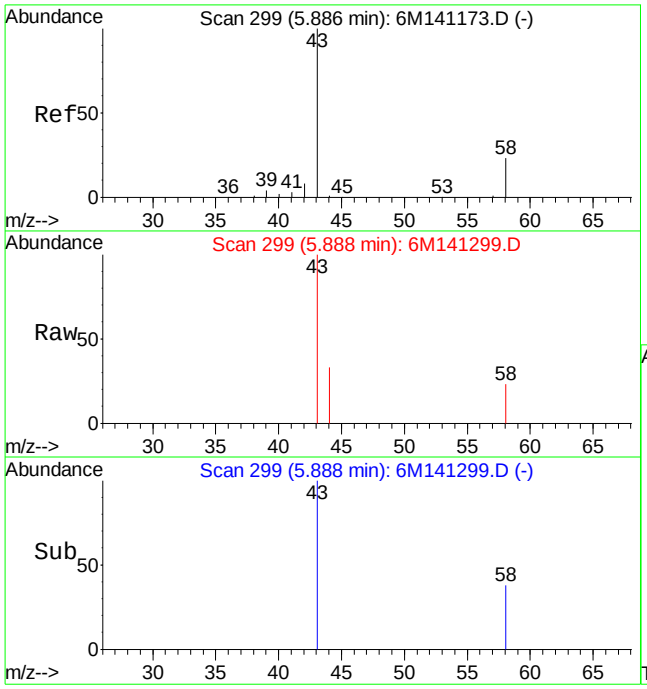

#13
Acetone
Concen: 2.95 ug/L
RT: 5.89 min Scan# 299
Delta R.T. -0.01 min
Lab File: 6M141299.D
Acq: 16 Aug 2016 18:22

Tgt Ion: 43 Resp: 6497

Ion	Ratio	Lower	Upper
43	100		
58	18.7	16.4	38.2

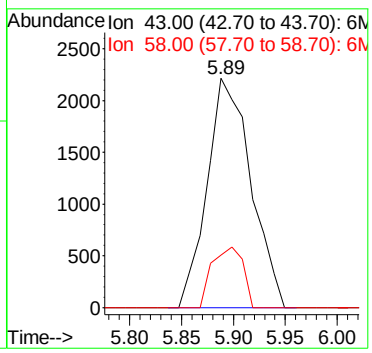

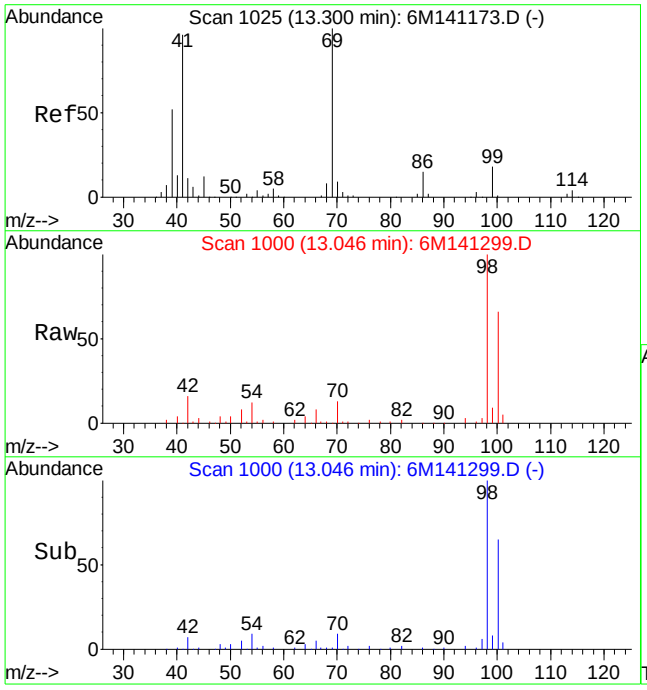

#60
Ethyl Methacrylate
Concen: 0.53 ug/L
RT: 13.05 min Scan# 1000
Delta R.T. -0.26 min
Lab File: 6M141299.D
Acq: 16 Aug 2016 18:22

Tgt Ion: 69 Resp: 688

Ion	Ratio	Lower	Upper
69	100		
41	0.0	51.4	120.0#

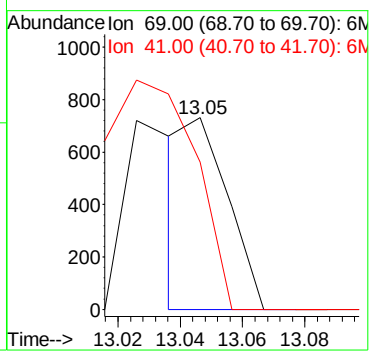

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141300.D Vial: 14
Acq On : 16 Aug 2016 18:54 Operator: TMB
Sample : L16080317-08 A 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 08:42:45 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	685782	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	500245	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	252748	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.58	111	196715	26.2918 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.16%		
43) 1,2-Dichloroethane-d4	10.30	65	254489	25.4145 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.64%		
58) Toluene-d8	13.03	98	609960	25.6258 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.52%		
80) p-Bromofluorobenzene	17.01	95	244385	27.0624 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.24%		

Target Compounds					Qvalue
13) Acetone	5.89	43	3024	1.3919 ug/L #	60

(#) = qualifier out of range (m) = manual integration
6M141300.D 8260WT.M Wed Aug 17 08:42:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141300.D Vial: 14
Acq On : 16 Aug 2016 18:54 Operator: TMB
Sample : L16080317-08 A 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 8:43 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

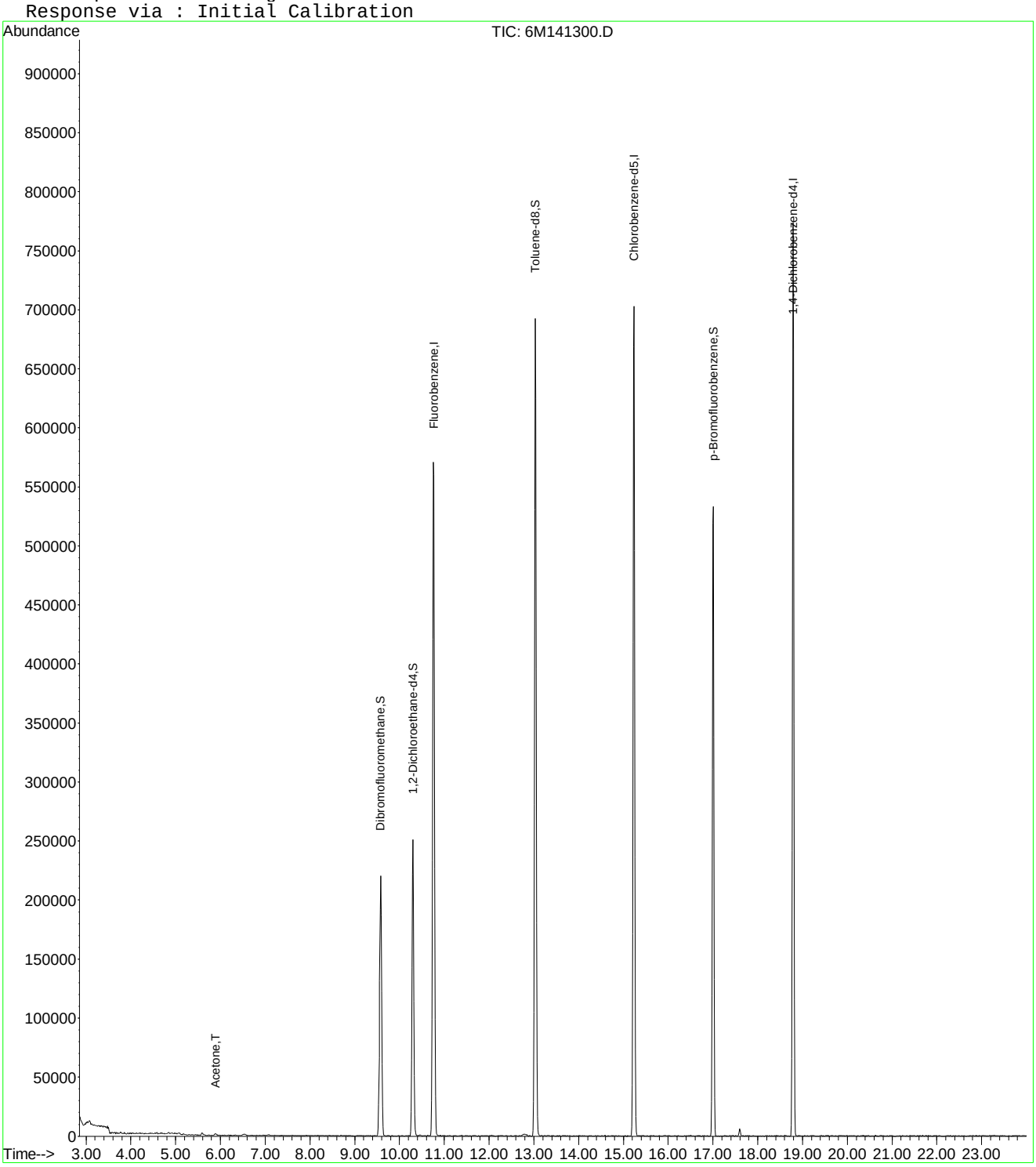

6M141300.D 8260WT.M Wed Aug 17 08:42:49 2016 Page 2

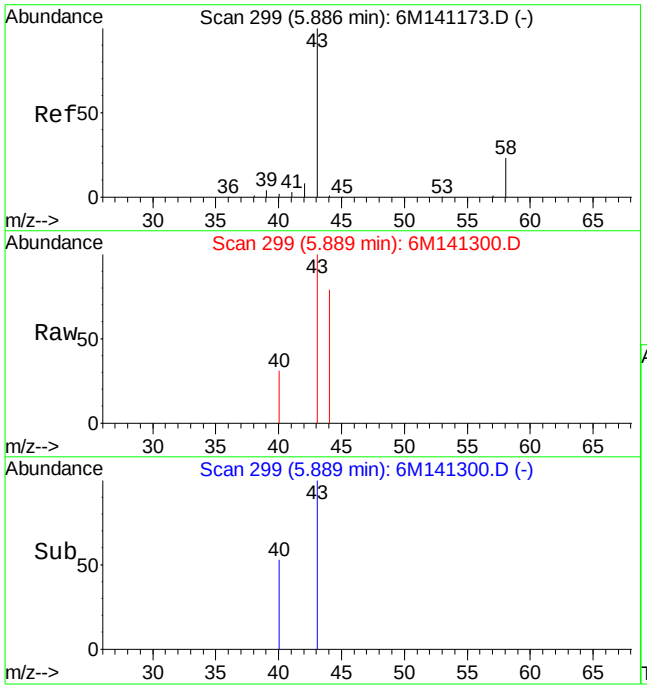

#13
Acetone
Concen: 1.39 ug/L
RT: 5.89 min Scan# 299
Delta R.T. -0.01 min
Lab File: 6M141300.D
Acq: 16 Aug 2016 18:54

Tgt Ion: 43 Resp: 3024

Ion	Ratio	Lower	Upper
43	100		
58	6.3	16.4	38.2#

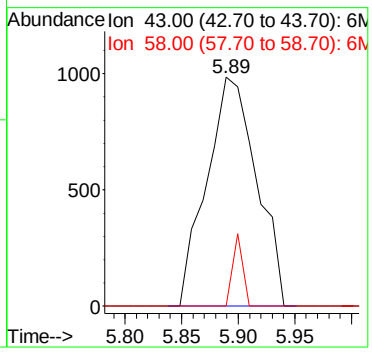

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141301.D Vial: 15
Acq On : 16 Aug 2016 19:26 Operator: TMB
Sample : L16080317-09 A 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 08:42:51 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	678108	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	487495	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	247106	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.58	111	193430	26.1453 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.60%		
43) 1,2-Dichloroethane-d4	10.30	65	251860	25.4366 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.76%		
58) Toluene-d8	13.03	98	602443	25.9720 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.88%		
80) p-Bromofluorobenzene	17.00	95	241415	27.3439 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.36%		

Target Compounds					Qvalue
3) Chloromethane	3.37	50	2064	0.1400 ug/L	79
13) Acetone	5.90	43	4314	2.0082 ug/L #	67

(#) = qualifier out of range (m) = manual integration
6M141301.D 8260WT.M Wed Aug 17 08:42:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141301.D Vial: 15
Acq On : 16 Aug 2016 19:26 Operator: TMB
Sample : L16080317-09 A 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 8:43 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

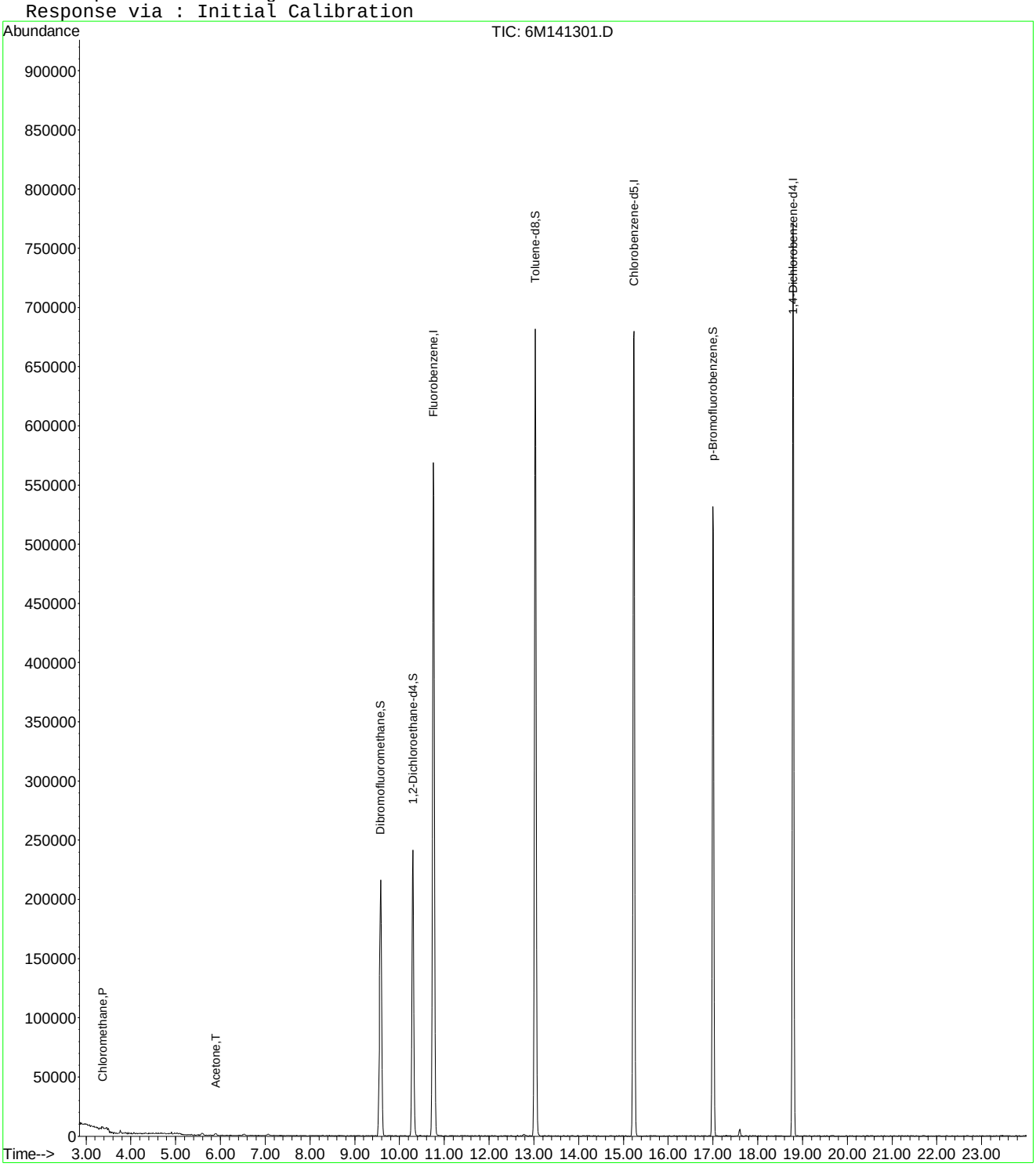

6M141301.D 8260WT.M Wed Aug 17 08:42:55 2016 Page 2

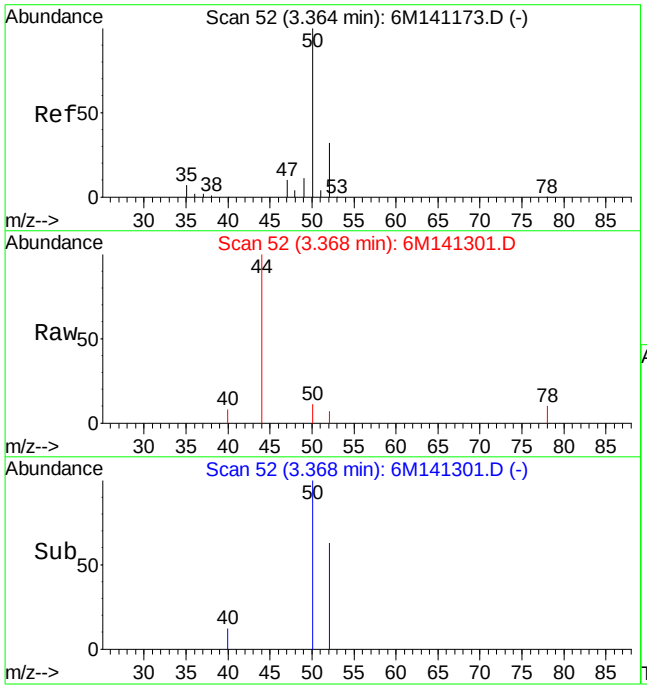

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.37 min Scan# 52
Delta R.T. 0.01 min
Lab File: 6M141301.D
Acq: 16 Aug 2016 19:26

Tgt Ion: 50 Resp: 2064

Ion	Ratio	Lower	Upper
50	100		
52	44.9	19.8	46.2

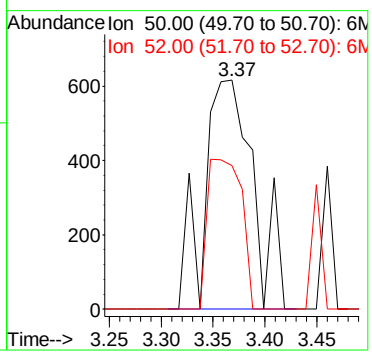

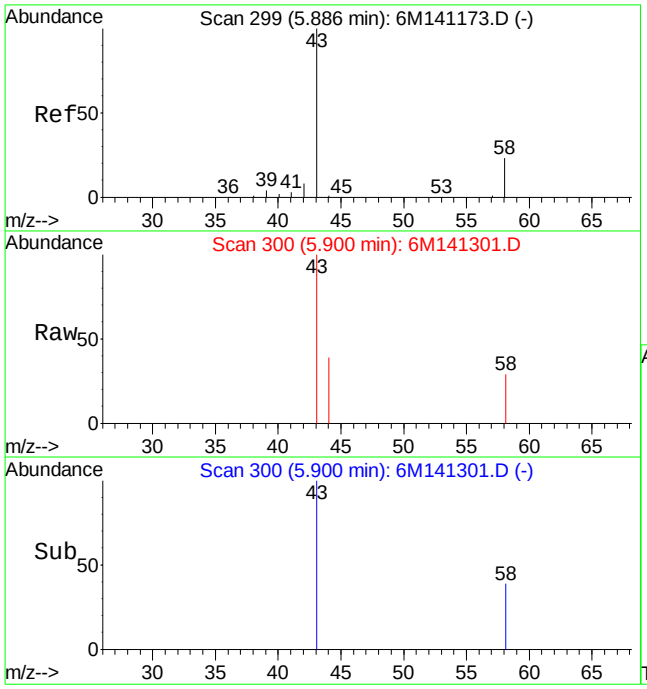

#13
Acetone
Concen: 2.01 ug/L
RT: 5.90 min Scan# 300
Delta R.T. 0.00 min
Lab File: 6M141301.D
Acq: 16 Aug 2016 19:26

Tgt Ion: 43 Resp: 4314

Ion	Ratio	Lower	Upper
43	100		
58	9.9	16.4	38.2#

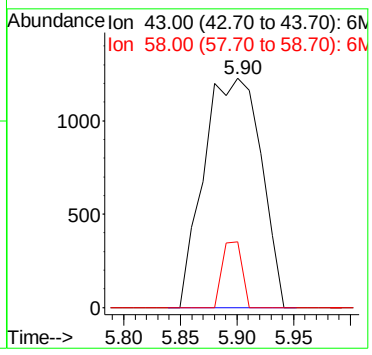

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141302.D Vial: 16
Acq On : 16 Aug 2016 19:58 Operator: TMB
Sample : L16080317-10 A 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 08:42:57 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	665632	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	479635	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	245154	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	188984	26.0231 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.08%		
43) 1,2-Dichloroethane-d4	10.30	65	246412	25.3529 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.40%		
58) Toluene-d8	13.03	98	592060	25.9426 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.76%		
80) p-Bromofluorobenzene	17.01	95	233212	26.6251 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.52%		

Target Compounds					Qvalue
13) Acetone	5.90	43	2784	1.3202 ug/L #	62

(#) = qualifier out of range (m) = manual integration
6M141302.D 8260WT.M Wed Aug 17 08:43:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141302.D Vial: 16
Acq On : 16 Aug 2016 19:58 Operator: TMB
Sample : L16080317-10 A 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 8:43 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

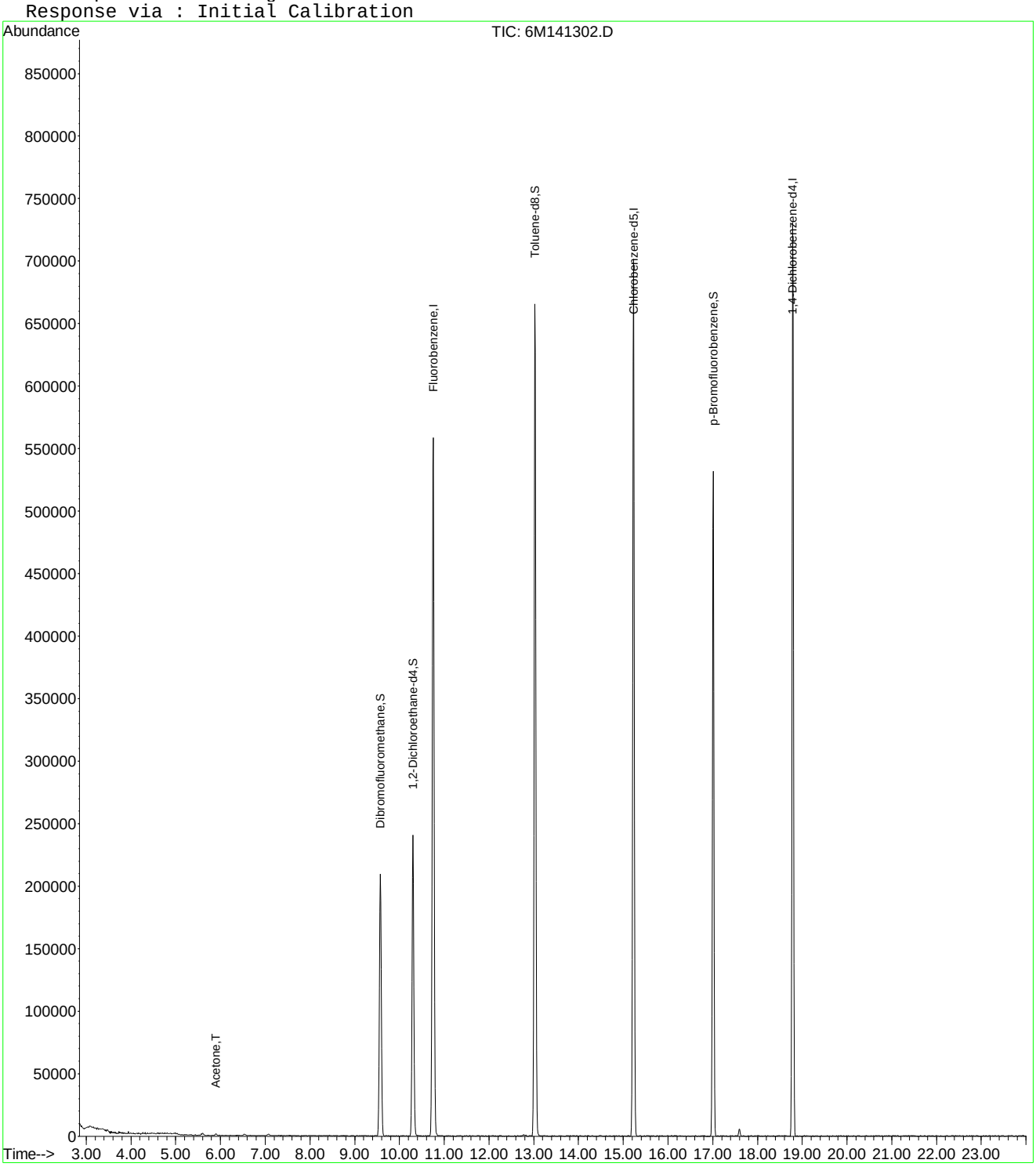

6M141302.D 8260WT.M Wed Aug 17 08:43:01 2016 Page 2

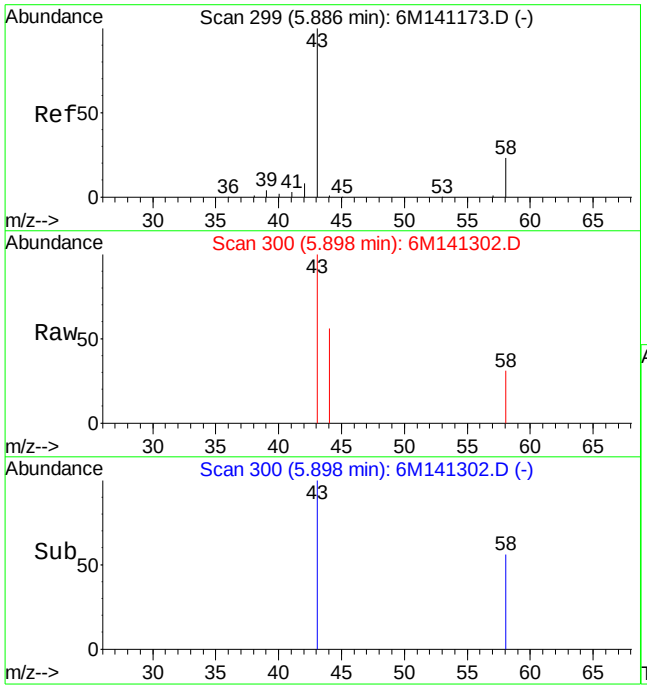

#13
Acetone
Concen: 1.32 ug/L
RT: 5.90 min Scan# 300
Delta R.T. 0.00 min
Lab File: 6M141302.D
Acq: 16 Aug 2016 19:58

Tgt Ion: 43 Resp: 2784

Ion	Ratio	Lower	Upper
43	100		
58	7.4	16.4	38.2#

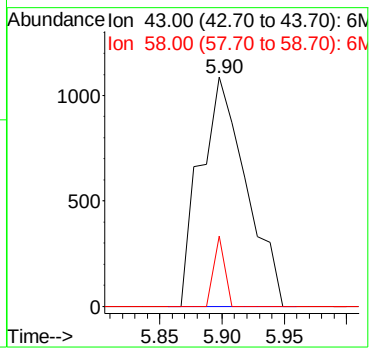

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141293.D Vial: 7
Acq On : 16 Aug 2016 15:06 Operator: TMB
Sample : L16080317-11 A TB 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 08:41:55 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	771865	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	587049	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	307619	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	211413	25.1049 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.40%		
43) 1,2-Dichloroethane-d4	10.30	65	266507	23.6465 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.60%		
58) Toluene-d8	13.03	98	688913	24.6632 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.64%		
80) p-Bromofluorobenzene	17.01	95	293661	26.7186 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.88%		

Target Compounds					Qvalue
3) Chloromethane	3.37	50	2513	0.1497 ug/L	82
13) Acetone	5.90	43	5272	2.1560 ug/L	96
36) Tetrahydrofuran	9.54	42	2778	1.2445 ug/L #	41

(#) = qualifier out of range (m) = manual integration
6M141293.D 8260WT.M Wed Aug 17 08:41:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141293.D Vial: 7
Acq On : 16 Aug 2016 15:06 Operator: TMB
Sample : L16080317-11 A TB 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 8:42 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

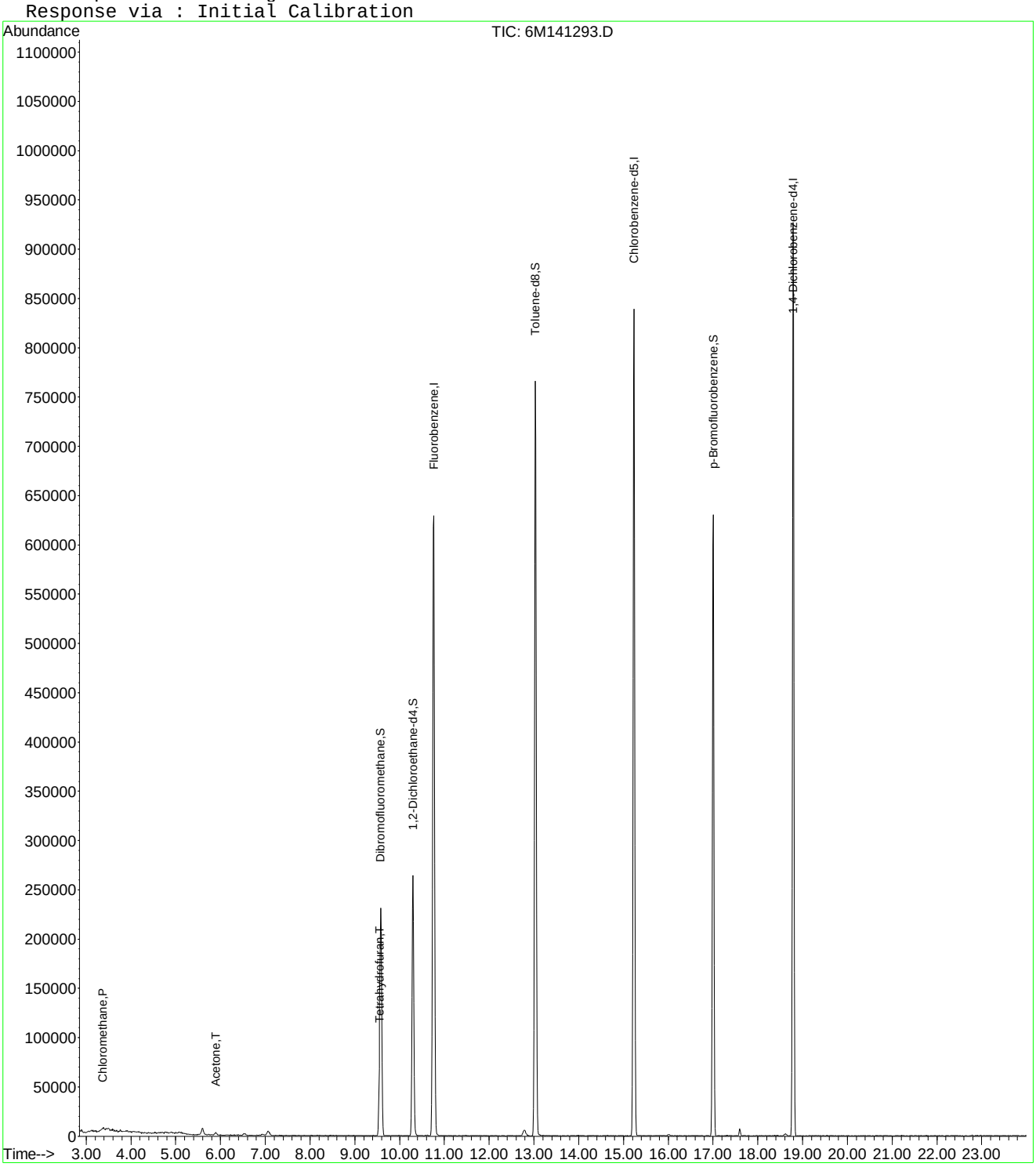

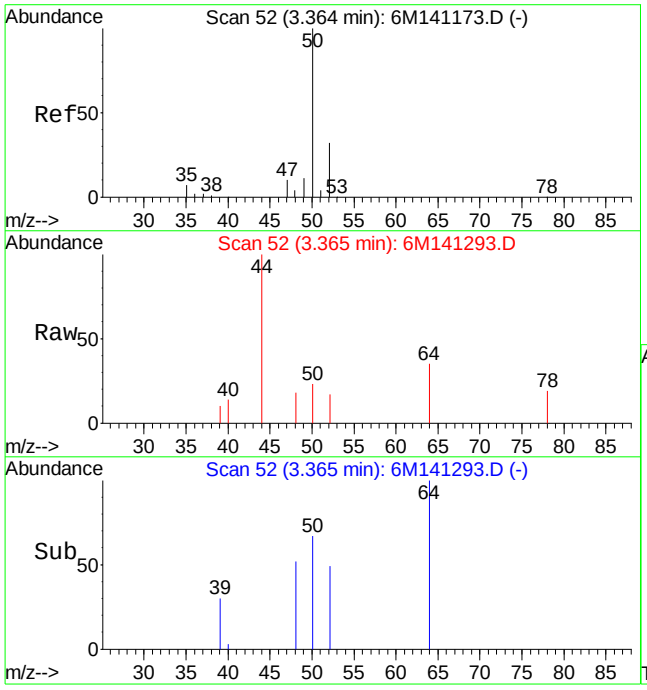

#3
Chloromethane
Concen: 0.15 ug/L
RT: 3.37 min Scan# 52
Delta R.T. 0.01 min
Lab File: 6M141293.D
Acq: 16 Aug 2016 15:06

Tgt Ion: 50 Resp: 2513

Ion	Ratio	Lower	Upper
50	100		
52	22.8	19.8	46.2

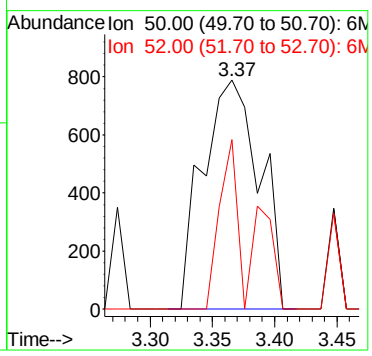

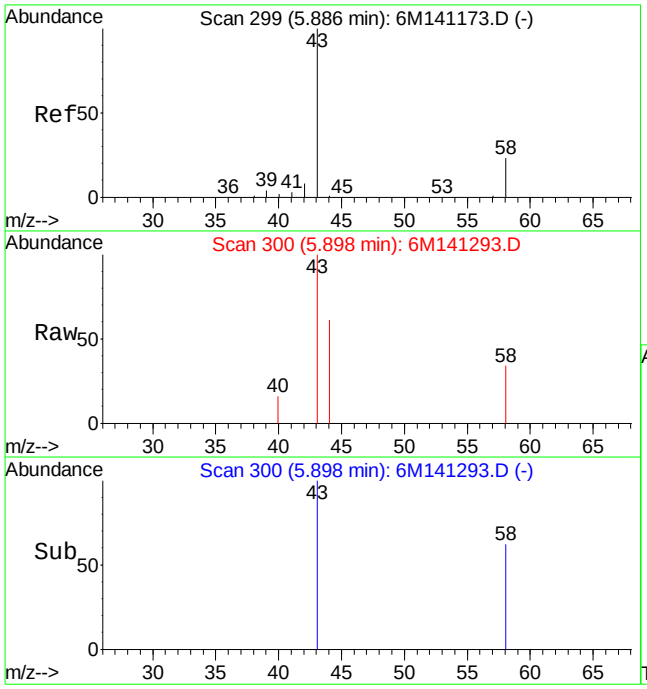

#13
Acetone
Concen: 2.16 ug/L
RT: 5.90 min Scan# 300
Delta R.T. 0.00 min
Lab File: 6M141293.D
Acq: 16 Aug 2016 15:06

Tgt Ion: 43 Resp: 5272

Ion	Ratio	Lower	Upper
43	100		
58	25.0	16.4	38.2

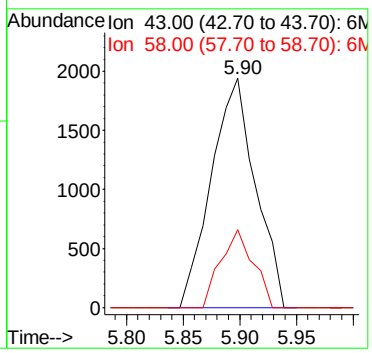

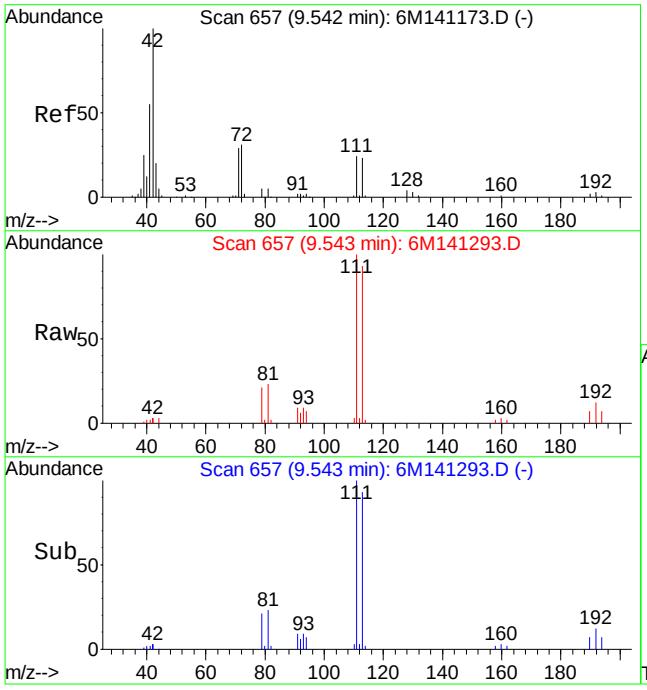

#36
Tetrahydrofuran
Concen: 1.24 ug/L
RT: 9.54 min Scan# 657
Delta R.T. 0.00 min
Lab File: 6M141293.D
Acq: 16 Aug 2016 15:06

Tgt Ion: 42 Resp: 2778

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	0.0	19.9	46.5#

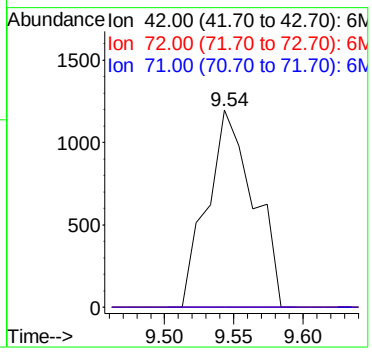

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:46 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	173671	27.7488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.00%		
43) 1,2-Dichloroethane-d4	11.12	65	203570	26.8000 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.20%		
58) Toluene-d8	13.86	98	554047	26.0139 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.04%		
80) p-Bromofluorobenzene	17.85	95	229998	27.1525 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.60%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	1325	0.6992 ug/L #	46
20) Carbon Disulfide	7.54	76	18747	0.9622 ug/L #	39
29) 2-Butanone	9.31	43	1188	0.4247 ug/L #	1
36) Tetrahydrofuran	10.36	42	2769	1.5196 ug/L #	58
60) Ethyl Methacrylate	13.87	69	899	0.1270 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

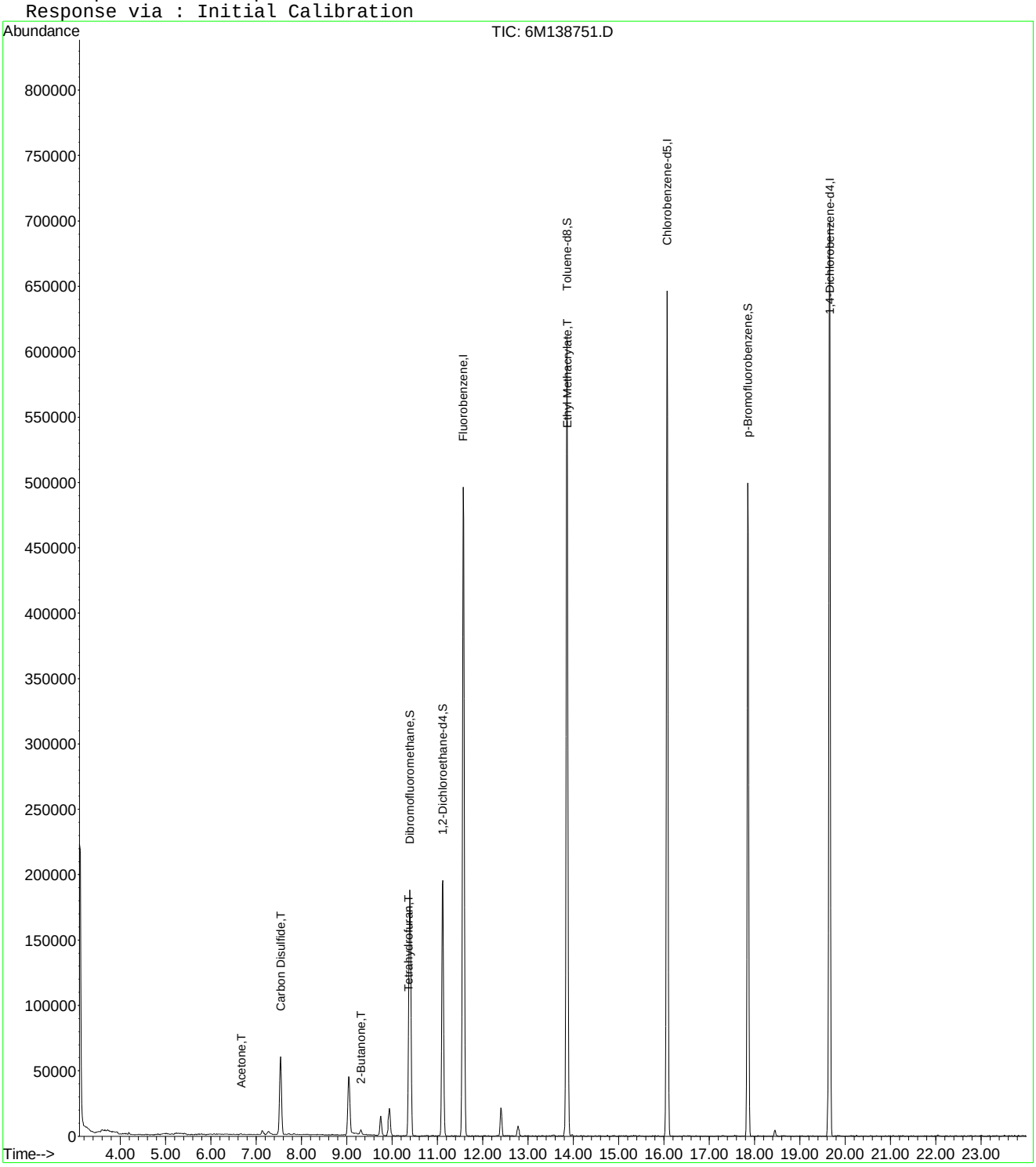

6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:52 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	3.7209 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.2301 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.6002 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.3499 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.5173 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	3.4767 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.0338 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.7392 ug/L	93
13) Cyclohexanone	17.57	55	447	0.5159 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Mon Apr 25 15:45:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

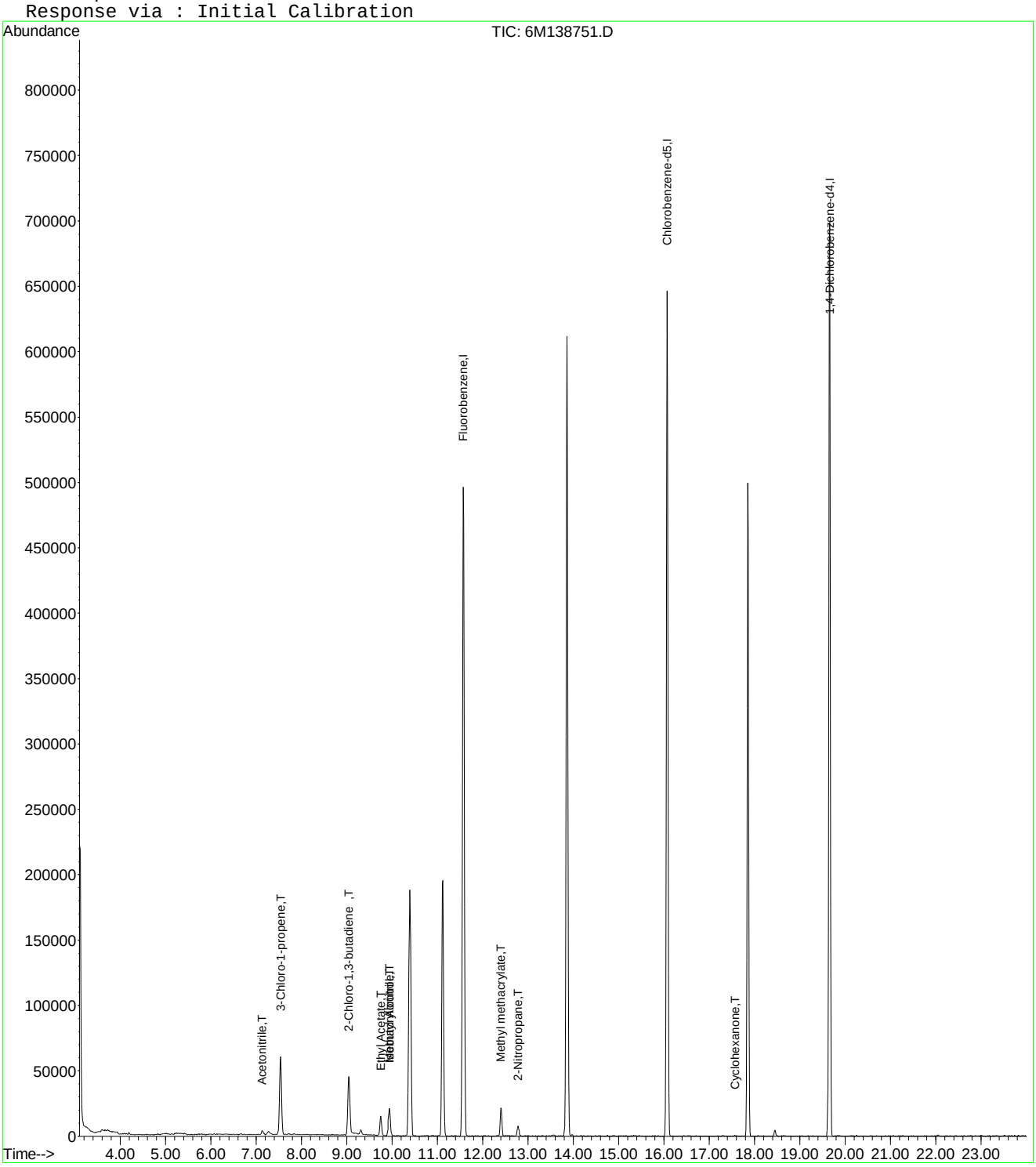

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:56 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	4.7698 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.5408 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.8775 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.2792 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.8601 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	5.9076 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.5356 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.4543 ug/L	93
13) Cyclohexanone	17.57	55	447	1.4133 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Wed Apr 27 16:04:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

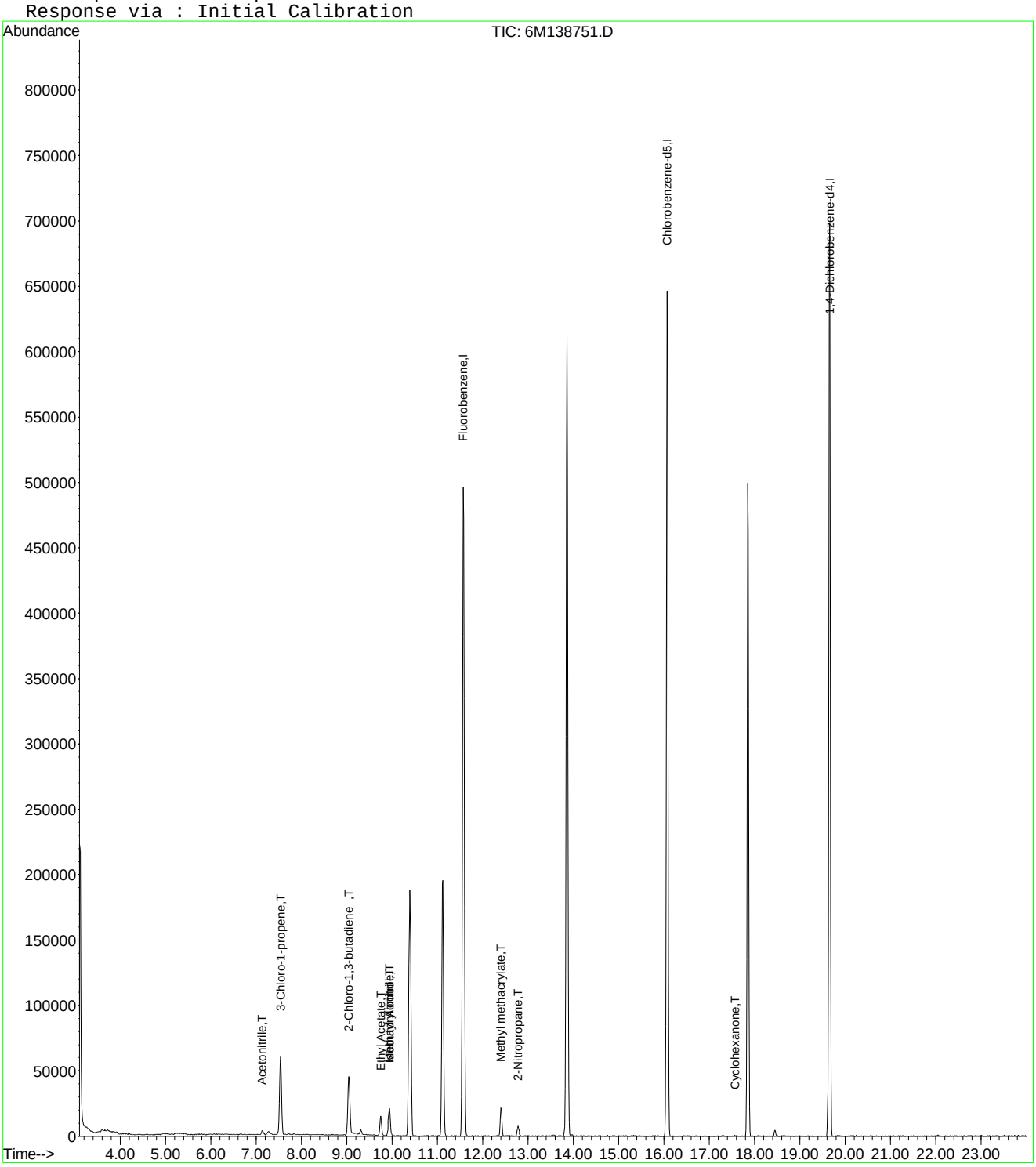

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	4.7698	4.6	100	0.00
3	T	3-Chloro-1-propene	5.0000	4.5408	9.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	3.8775	22.5	100	0.00
5	T	Ethyl Acetate	5.0000	4.2792	14.4	100	0.00
6	T	Methacrylonitrile	5.0000	3.8601	22.8	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.9076	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.99#
9	T	Methyl methacrylate	5.0000	3.5356	29.3	100	0.00
10	T	2-Nitropropane	-1.0000	3.4543	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	1.4133	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138751.D A9FOOWT.M Wed Apr 27 16:04:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	171577	27.9669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.88%		
43) 1,2-Dichloroethane-d4	11.12	65	207390	27.8532 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.40%		
58) Toluene-d8	13.86	98	547786	26.2796 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.12%		
80) p-Bromofluorobenzene	17.85	95	228171	27.5052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.04%		

Target Compounds					Qvalue
13) Acetone	6.67	43	2739	1.4745 ug/L #	59
20) Carbon Disulfide	7.54	76	81493	4.2668 ug/L #	36
27) 1,1-Dichloroethane	9.05	63	3411	0.2688 ug/L #	42
29) 2-Butanone	9.31	43	3879	1.4148 ug/L #	1
36) Tetrahydrofuran	10.37	42	3350	1.8754 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1183	0.1708 ug/L #	27

(#) = qualifier out of range (m) = manual integration
6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

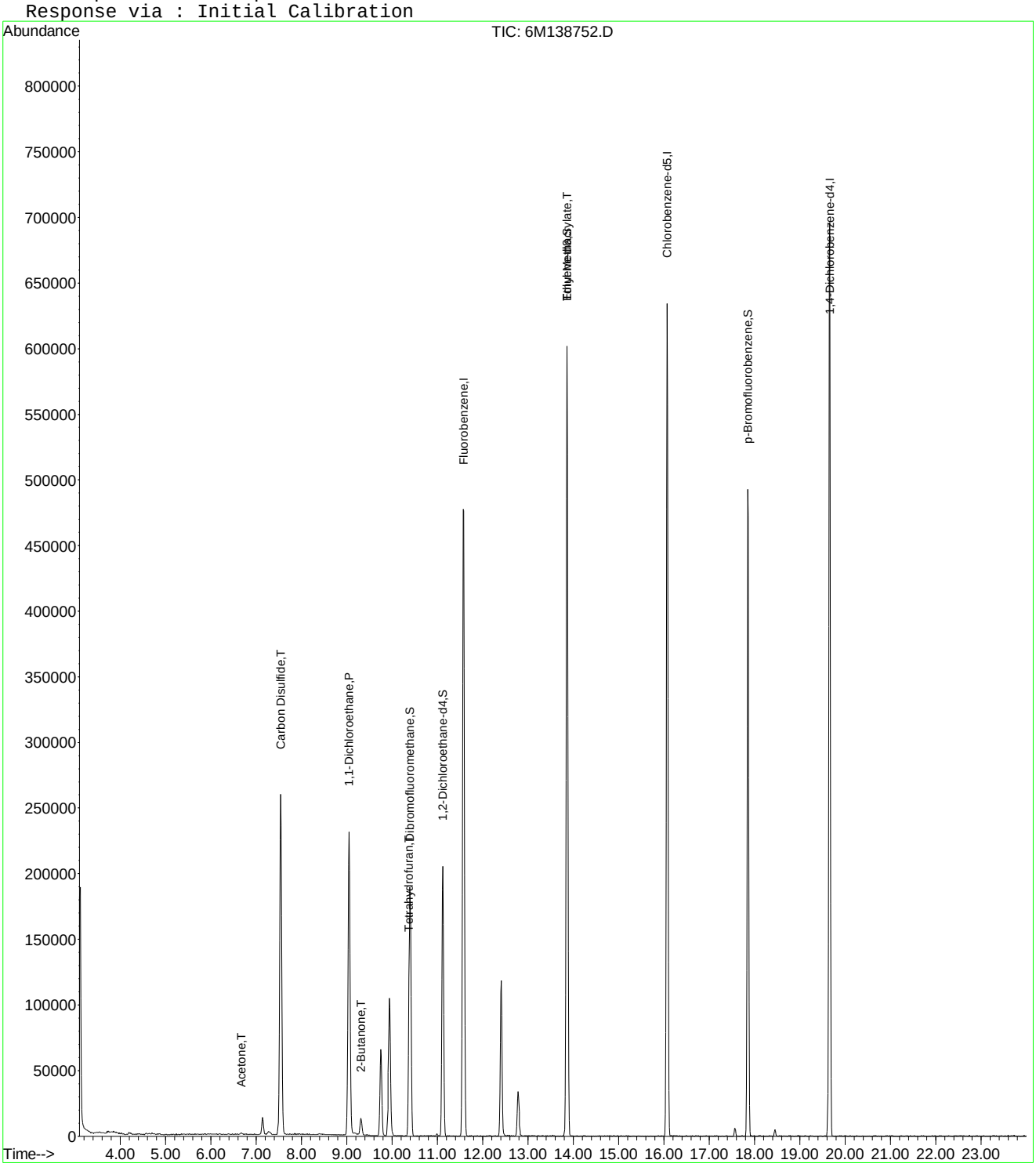

6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:54 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	15.4242 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	18.5457 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	17.5823 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.6403 ug/L	93
6) Methacrylonitrile	9.93	67	42708	17.5719 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	22.9203 ug/L #	85
8) 1-Butanol	10.98	41	982	6.5662 ug/L #	52
9) Methyl methacrylate	12.41	41	95824	15.2291 ug/L	81
10) 2-Nitropropane	12.78	43	34207	18.4403 ug/L	92
13) Cyclohexanone	17.57	55	4053	4.7763 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Mon Apr 25 15:45:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

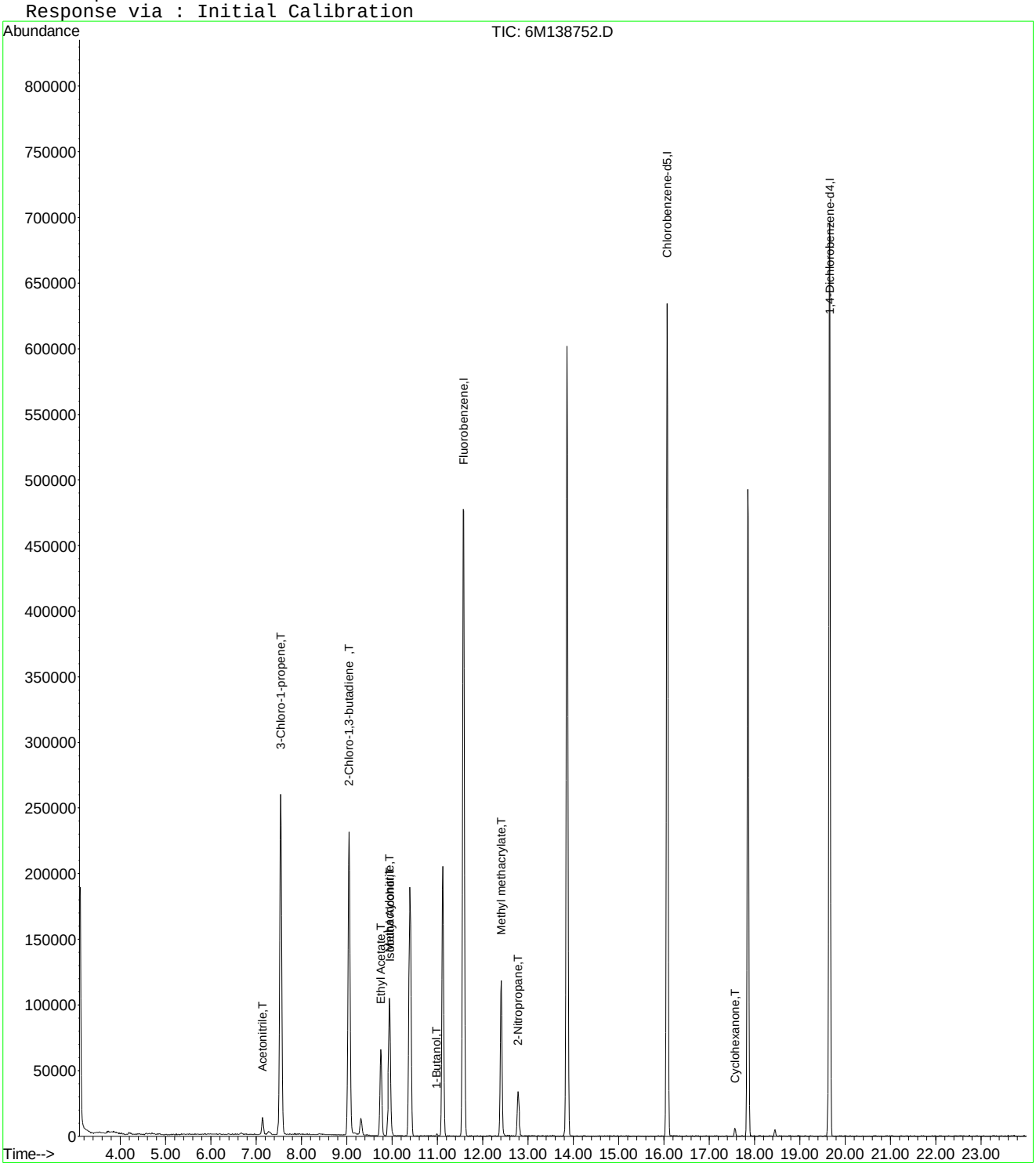

6M138752.D A9FOOWT.M Mon Apr 25 15:45:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	19.7725 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	19.9080 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	18.9362 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.3209 ug/L	93
6) Methacrylonitrile	9.93	67	42708	19.2846 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	38.9462 ug/L #	85
9) Methyl methacrylate	12.41	41	95824	17.7480 ug/L	81
10) 2-Nitropropane	12.78	43	34207	17.0355 ug/L	92
13) Cyclohexanone	17.57	55	4053	13.0852 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

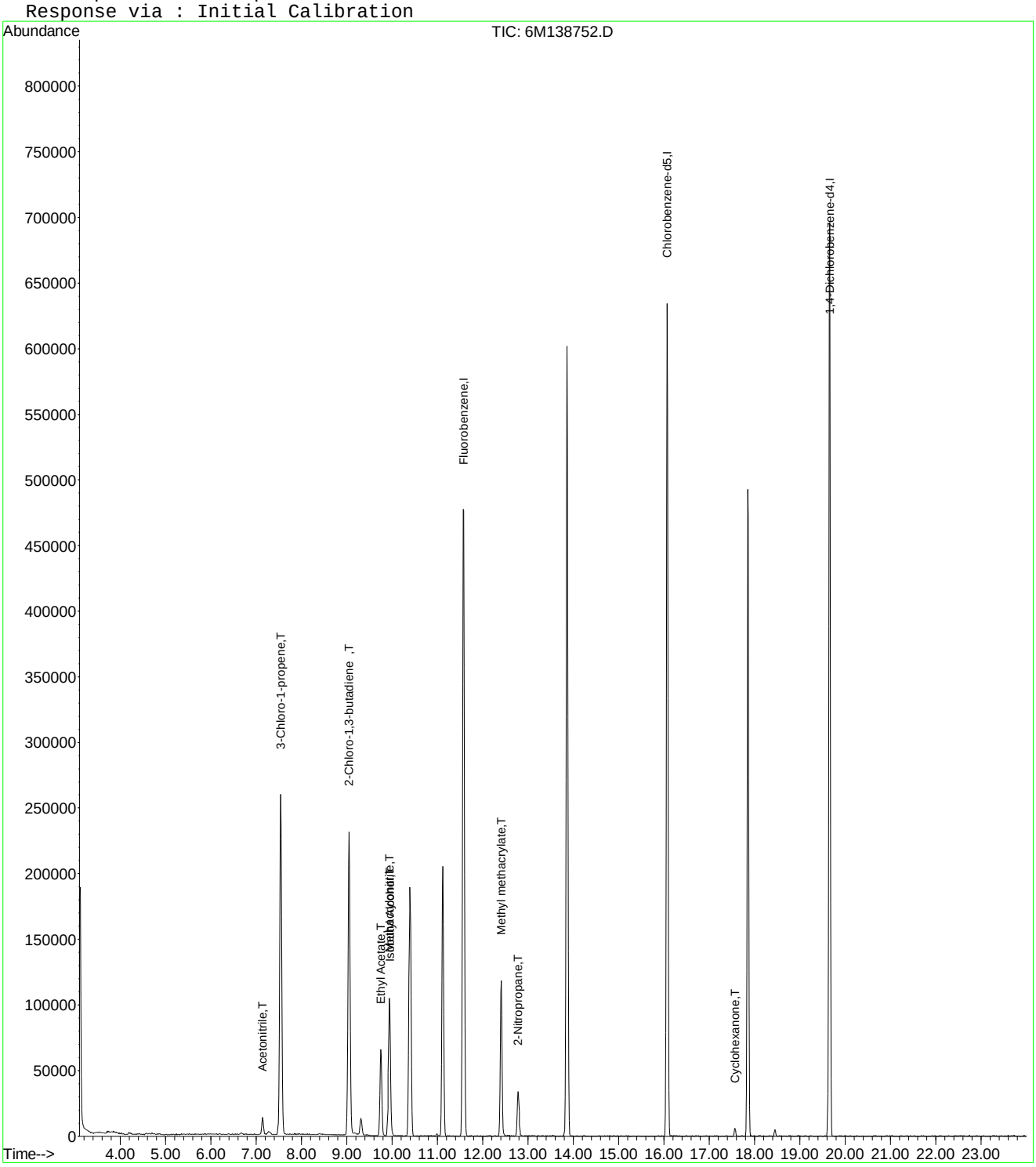

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.7724	1.1	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.9080	0.5	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.9362	5.3	100	0.00
5	T	Ethyl Acetate	20.0000	19.3209	3.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.2846	3.6	100	0.00
7	T	Isobutyl Alcohol	40.0000	38.9462	2.6	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	20.0000	17.7480	11.3	100	0.00
10	T	2-Nitropropane	-1.0000	17.0355	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	13.0852	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138752.D A9FOOWT.M Wed Apr 27 16:04:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172256	27.8132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	208744	27.7711 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.08%		
58) Toluene-d8	13.86	98	553191	26.2235 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	17.85	95	239542	28.1954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.80%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	3732	1.9901 ug/L #	57
20) Carbon Disulfide	7.54	76	220780	11.4508 ug/L #	36
26) Vinyl Acetate	9.04	43	2704	0.2791 ug/L #	8
27) 1,1-Dichloroethane	9.05	63	9803	0.7652 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	152978	7.3579 ug/L #	39
29) 2-Butanone	9.53	43	660	0.2385 ug/L #	52
36) Tetrahydrofuran	10.37	42	3746	2.0774 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1423	0.2030 ug/L #	9

(#) = qualifier out of range (m) = manual integration
6M138753.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

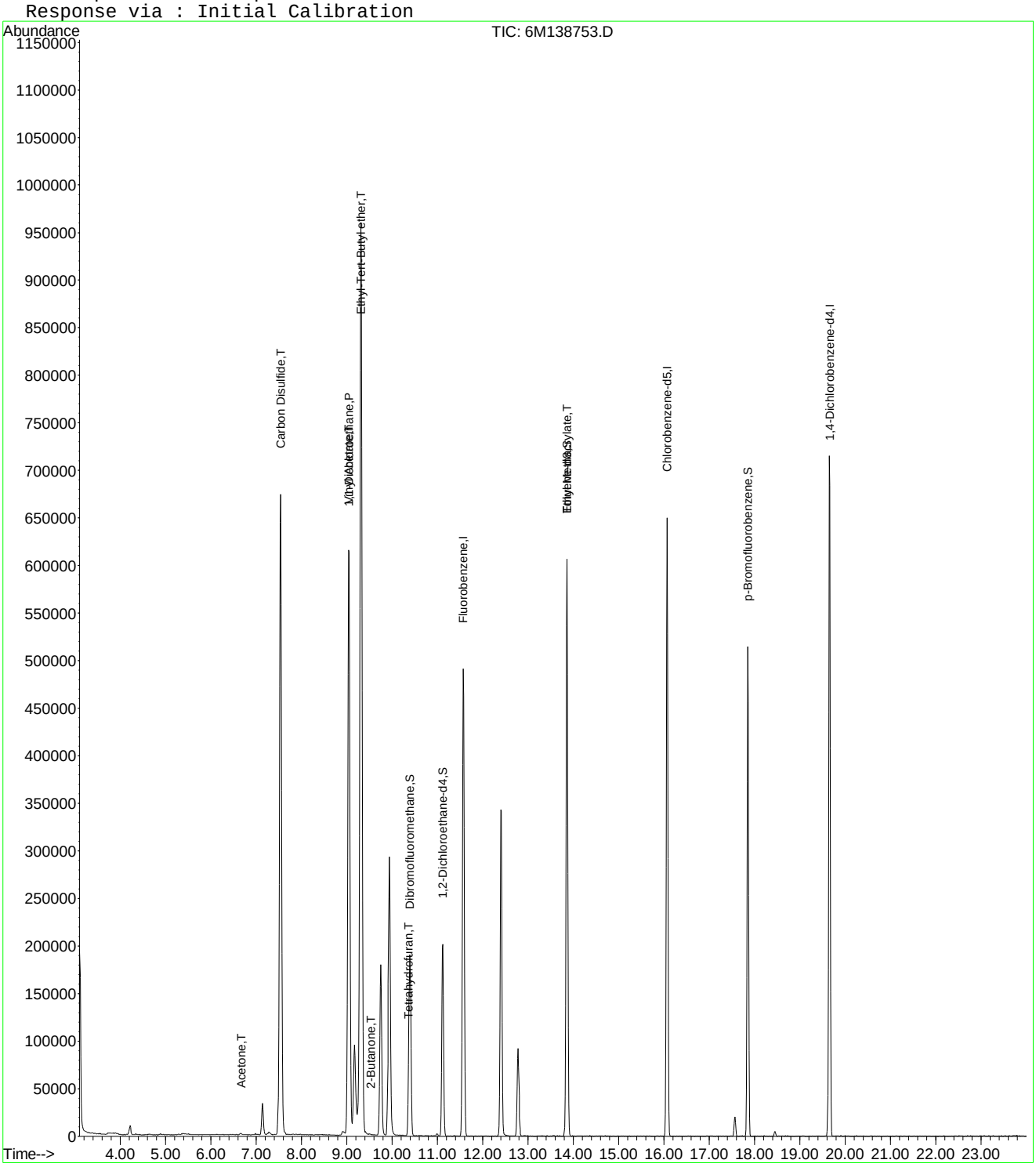

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:55 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	40.3072 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	48.9454 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	48.3496 ug/L	83
5) Ethyl Acetate	9.75	43	336975	52.8234 ug/L	93
6) Methacrylonitrile	9.94	67	119267	48.6097 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	57.3741 ug/L #	99
8) 1-Butanol	10.98	41	1474	9.7632 ug/L	77
9) Methyl methacrylate	12.40	41	279157	43.9482 ug/L	81
10) 2-Nitropropane	12.79	43	95327	50.9052 ug/L	94
13) Cyclohexanone	17.56	55	13241	15.2363 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Mon Apr 25 15:45:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

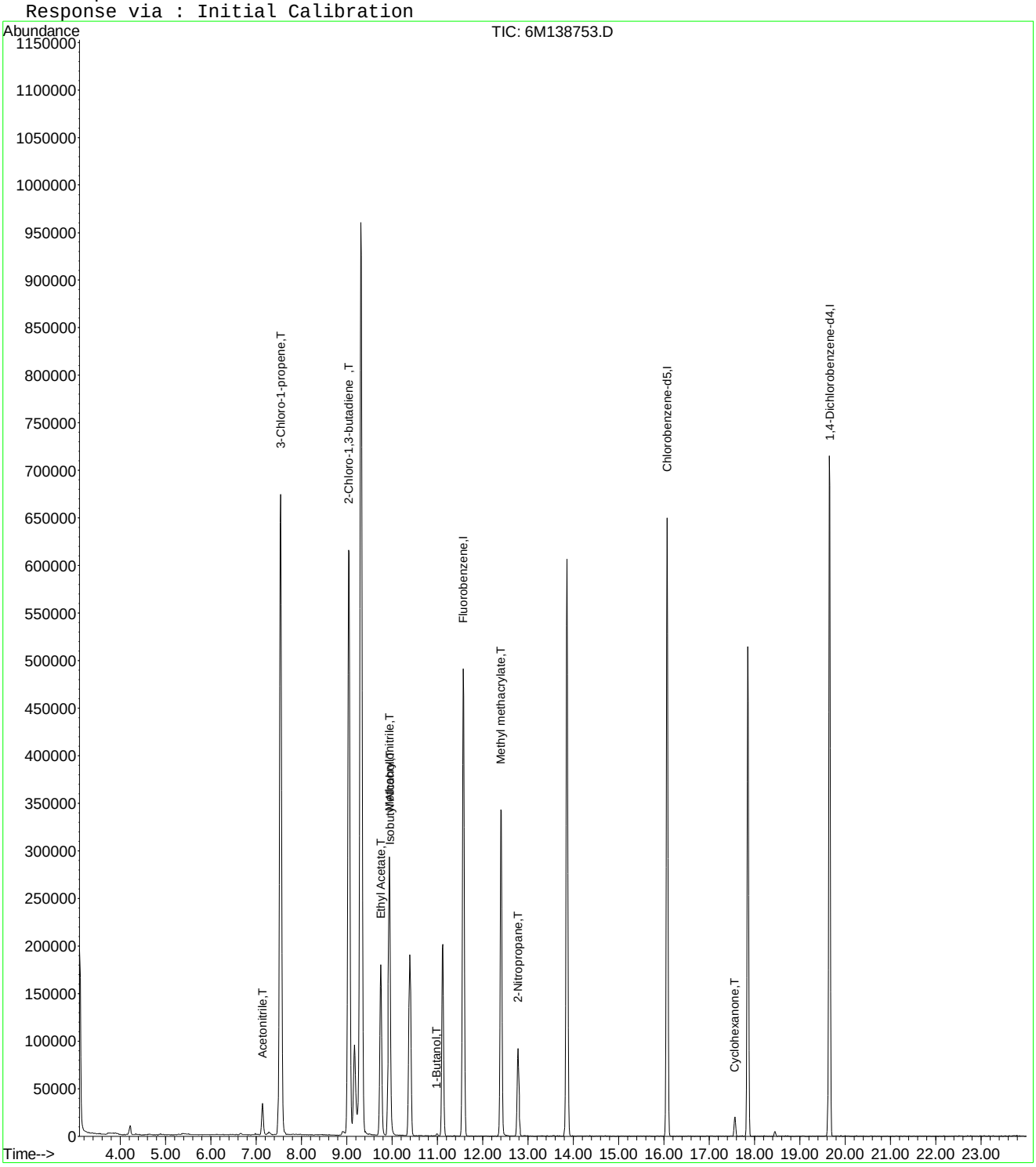

6M138753.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	51.6701 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	52.5409 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	52.0726 ug/L	83
5) Ethyl Acetate	9.75	43	336975	51.9646 ug/L	93
6) Methacrylonitrile	9.94	67	119267	53.3476 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	97.4900 ug/L #	99
9) Methyl methacrylate	12.40	41	279157	51.2171 ug/L	81
10) 2-Nitropropane	12.79	43	95327	47.0270 ug/L	94
13) Cyclohexanone	17.56	55	13241	41.7415 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

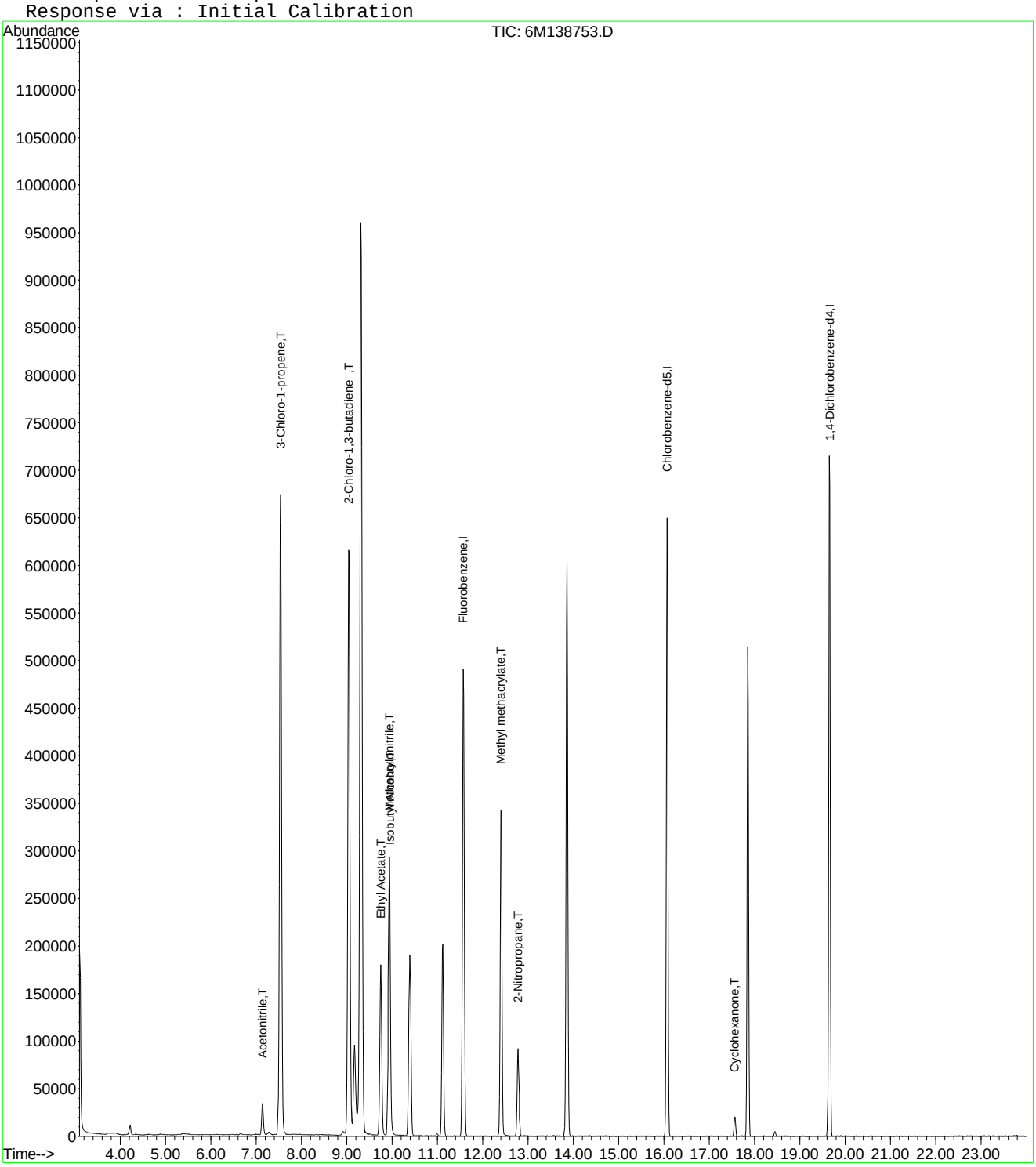

6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.6701	-3.3	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.5409	-5.1	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.0726	-4.1	100	0.00
5	T	Ethyl Acetate	50.0000	51.9646	-3.9	100	0.00
6	T	Methacrylonitrile	50.0000	53.3476	-6.7	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.4900	2.5	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	50.0000	51.2171	-2.4	100	0.00
10	T	2-Nitropropane	50.0000	47.0270	5.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	41.7415	16.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138753.D A9FOOWT.M Wed Apr 27 16:04:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:49 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169577	27.6373 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.56%		
43) 1,2-Dichloroethane-d4	11.12	65	210119	28.2161 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.88%		
58) Toluene-d8	13.86	98	550953	26.1877 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.76%		
80) p-Bromofluorobenzene	17.85	95	239480	28.0420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.16%		

Target Compounds					Qvalue
13) Acetone	6.66	43	6960	3.7463 ug/L	82
16) Dimethyl Sulfide	7.15	62	732	0.1448 ug/L #	1
18) Methyl acetate	7.53	43	1419	0.2750 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	2141	0.1320 ug/L #	72
27) 1,1-Dichloroethane	9.05	63	20725	1.6328 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	76666	3.7220 ug/L #	39
29) 2-Butanone	9.53	43	1176	0.4289 ug/L #	52
34) 1-Bromopropane	10.00	122	702	0.6817 ug/L #	1
36) Tetrahydrofuran	10.35	42	4425	2.4769 ug/L #	60
48) Methylcyclohexane	12.41	83	1461	0.1681 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1083	0.1549 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1910	0.3066 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138754.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

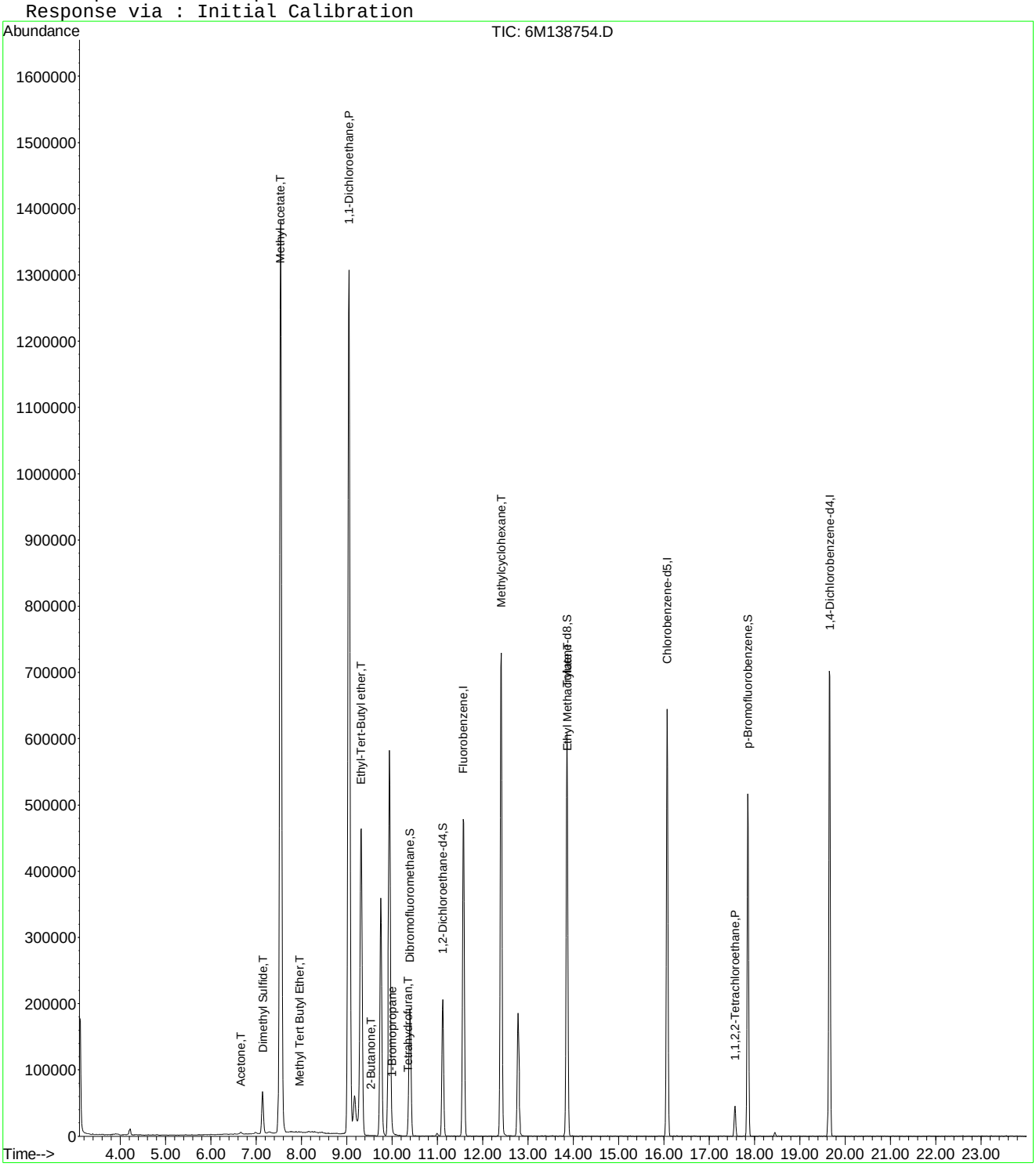

6M138754.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:57 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	79.0019 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	100.3335 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	102.2884 ug/L	83
5) Ethyl Acetate	9.75	43	673221	106.5217 ug/L	93
6) Methacrylonitrile	9.94	67	237219	97.5895 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	97.4937 ug/L #	85
8) 1-Butanol	11.00	41	2978	19.9099 ug/L #	64
9) Methyl methacrylate	12.41	41	585839	93.0942 ug/L	80
10) 2-Nitropropane	12.78	43	197598	106.5074 ug/L	97
13) Cyclohexanone	17.57	55	27547	31.5338 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

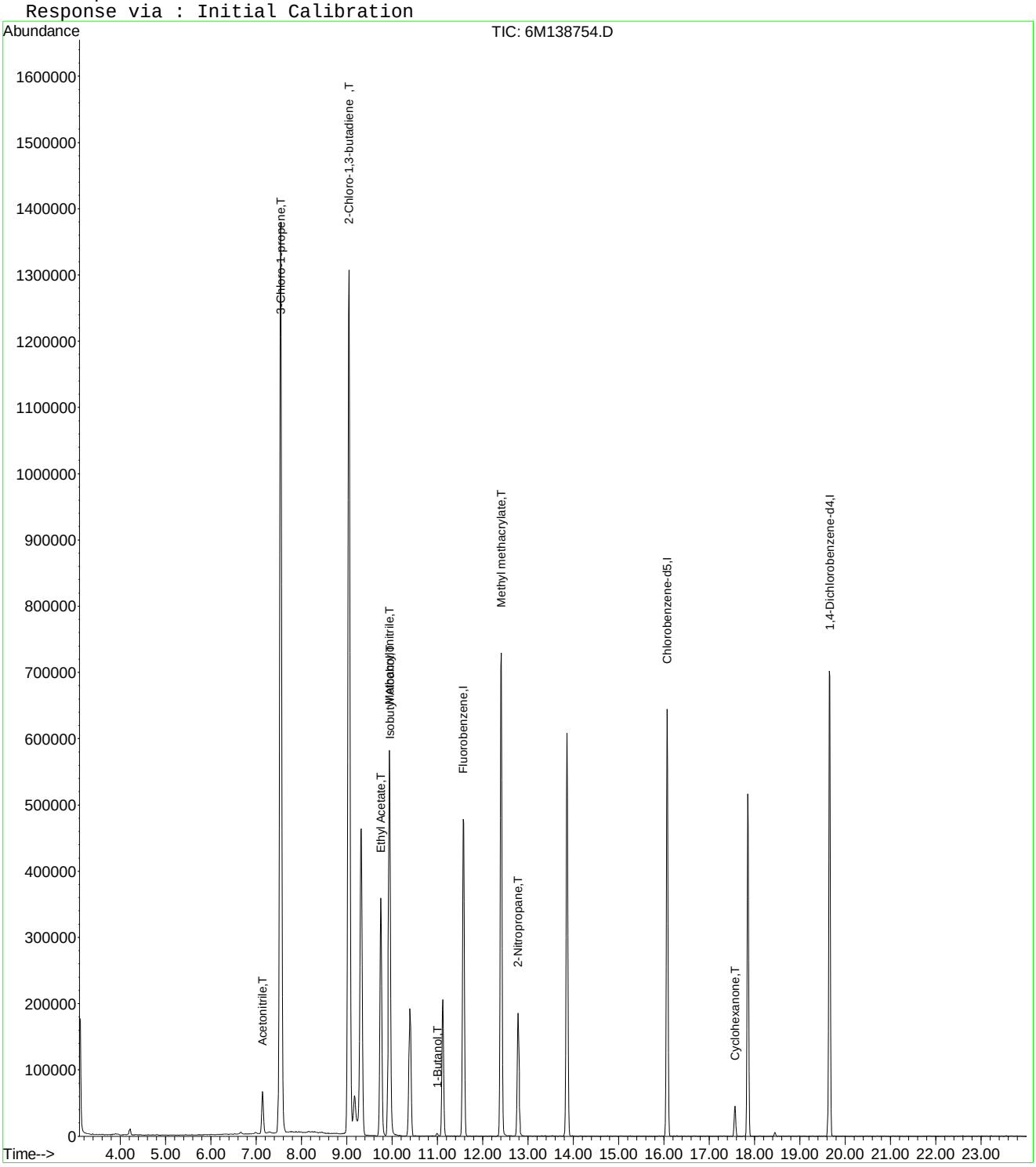

6M138754.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	101.2731 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	107.7041 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	110.1648 ug/L	83
5) Ethyl Acetate	9.75	43	673221	104.7898 ug/L	93
6) Methacrylonitrile	9.94	67	237219	107.1014 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	165.6613 ug/L #	85
9) Methyl methacrylate	12.41	41	585839	108.4917 ug/L	80
10) 2-Nitropropane	12.78	43	197598	98.3932 ug/L	97
13) Cyclohexanone	17.57	55	27547	86.3902 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

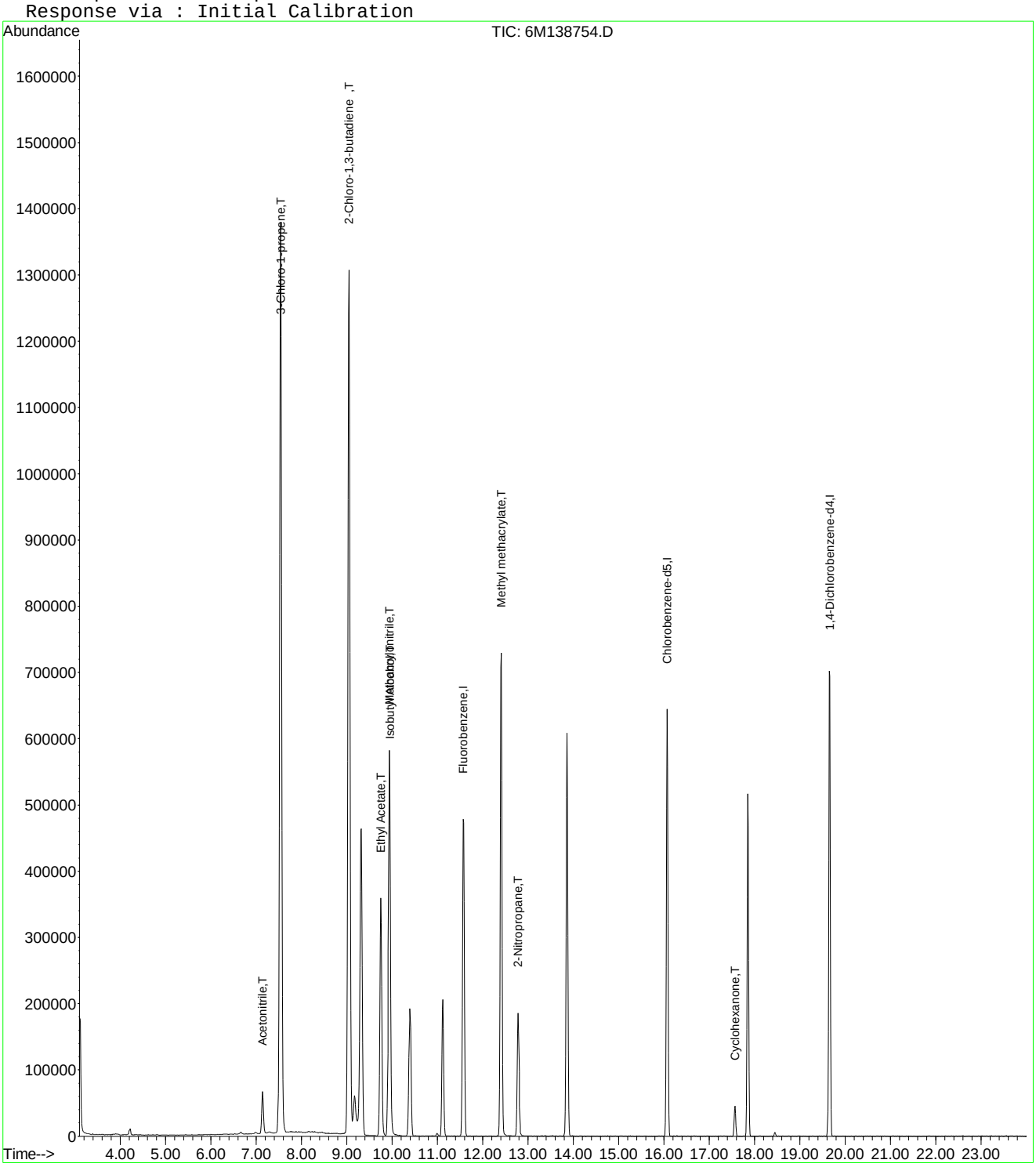

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473187	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172341	27.7160 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.88%		
43) 1,2-Dichloroethane-d4	11.12	65	211249	27.9923 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.96%		
58) Toluene-d8	13.86	98	552831	25.9510 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.80%		
80) p-Bromofluorobenzene	17.85	95	247709	28.6419 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 114.56%		

Target Compounds

					Qvalue
9) Diethyl ether	6.31	59	653	0.1225 ug/L #	12
13) Acetone	6.66	43	9406	4.9959 ug/L #	64
15) Tert-Butyl Alcohol	6.98	59	449	0.8301 ug/L #	1
16) Dimethyl Sulfide	7.16	62	680	0.1328 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	3926	0.2388 ug/L	83
24) n-Hexane	8.30	57	1777	0.2040 ug/L	87
27) 1,1-Dichloroethane	9.05	63	41640	3.2372 ug/L #	47
28) Ethyl-Tert-Butyl ether	9.31	59	272648	13.0615 ug/L #	38
29) 2-Butanone	9.51	43	2992	1.0767 ug/L #	67
30) Propionitrile	9.93	54	258	0.3232 ug/L #	57
34) 1-Bromopropane	9.99	122	1417	1.3579 ug/L #	1
36) Tetrahydrofuran	10.37	42	4839	2.6728 ug/L #	62
48) Methylcyclohexane	12.40	83	2976	0.3378 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1202	0.1698 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	5192	0.8231 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138755.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

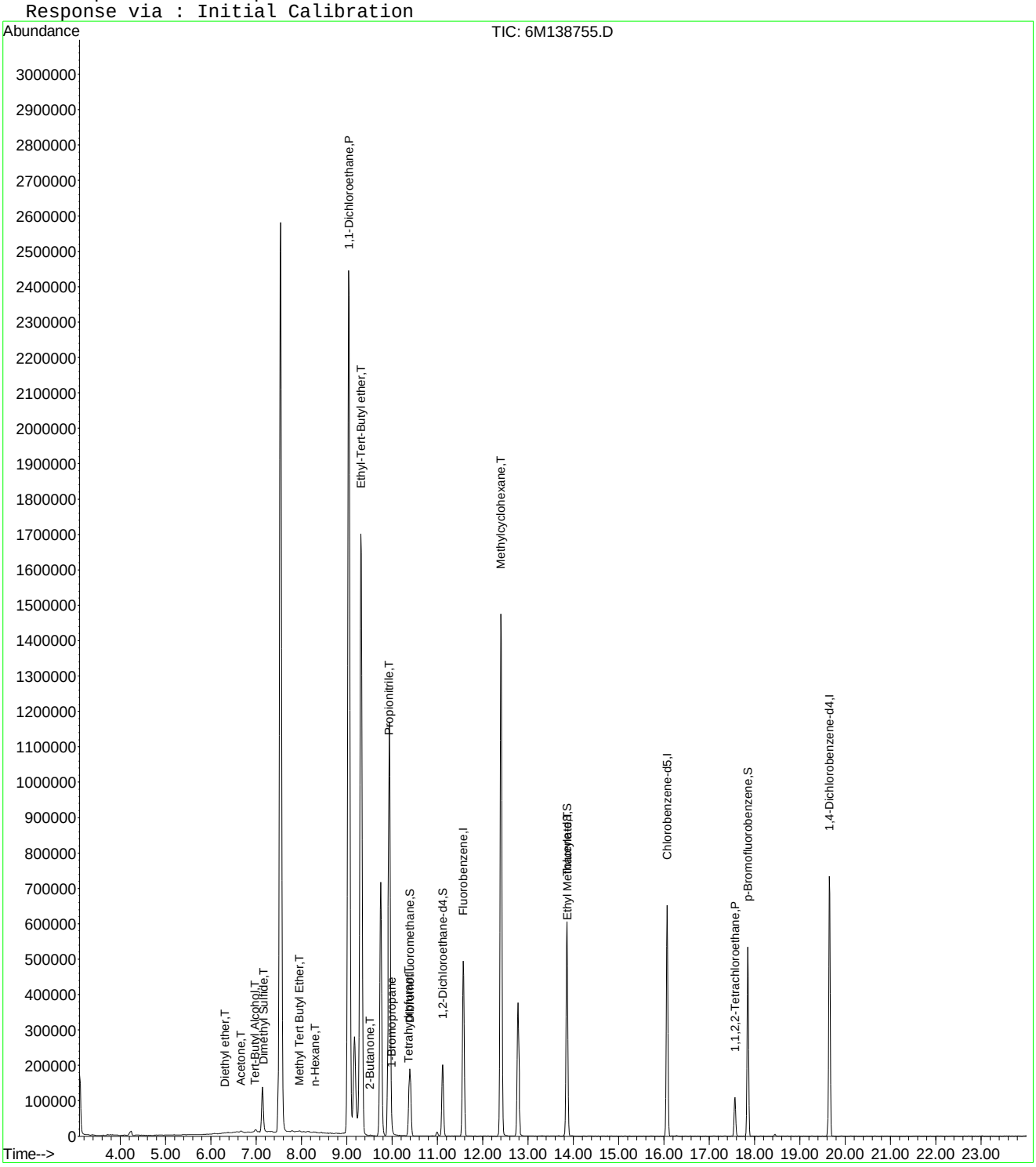

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	157.5150	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	189.6828	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	193.4336	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	210.2391	ug/L	94
6) Methacrylonitrile	9.94	67	471538	191.4186	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	206.4864	ug/L #	92
8) 1-Butanol	10.99	41	8815	58.1542	ug/L #	64
9) Methyl methacrylate	12.40	41	1186381	186.0295	ug/L	80
10) 2-Nitropropane	12.79	43	410702	218.4428	ug/L	99
13) Cyclohexanone	17.57	55	67080	75.8254	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

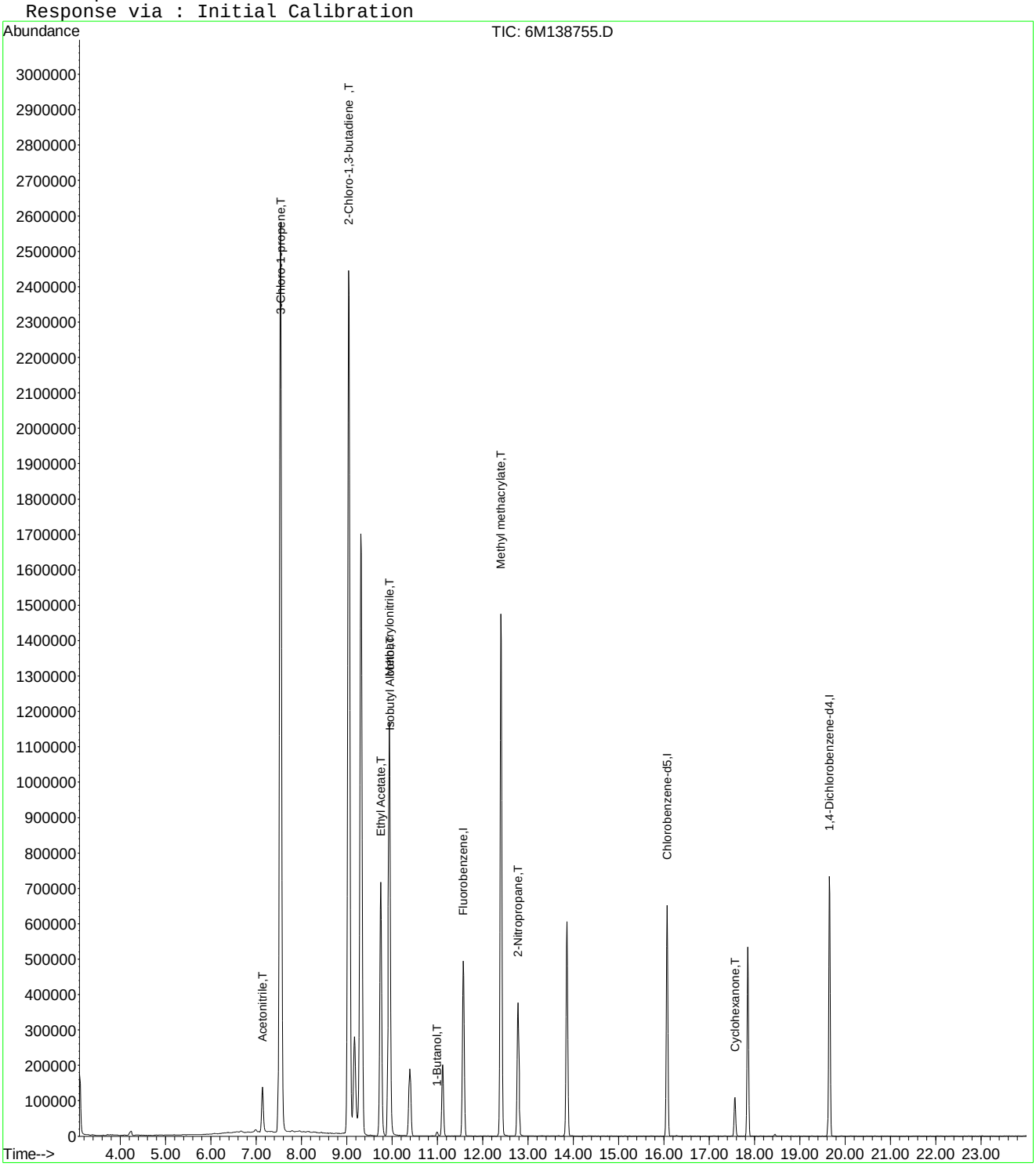

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	201.9195	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	203.6170	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	208.3284	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	206.8209	ug/L	94
6) Methacrylonitrile	9.94	67	471538	210.0757	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	350.8618	ug/L #	92
9) Methyl methacrylate	12.40	41	1186381	216.7982	ug/L	80
10) 2-Nitropropane	12.79	43	410702	201.8008	ug/L	99
13) Cyclohexanone	17.57	55	67080	207.7320	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

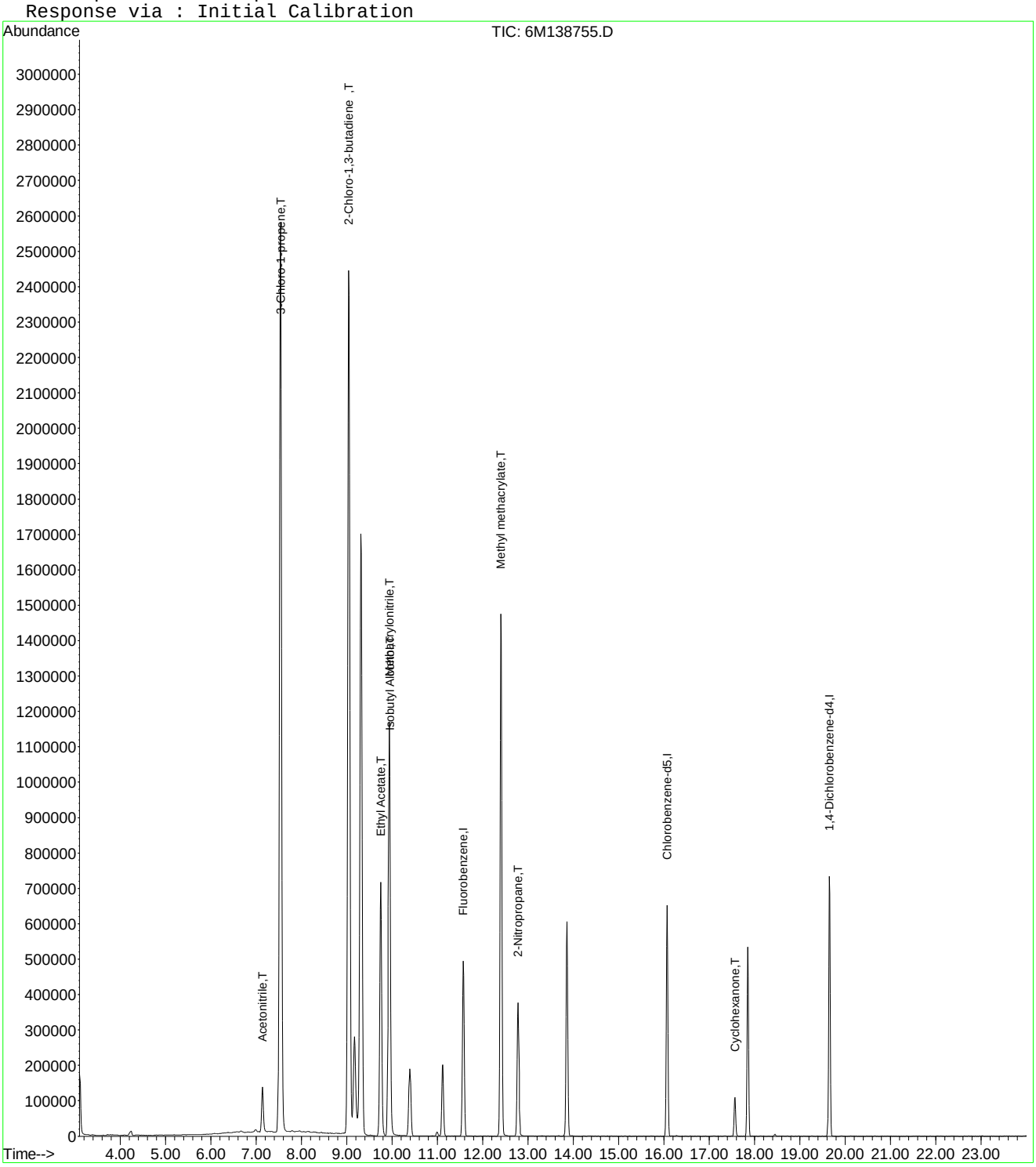

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169983	27.5546 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.20%		
43) 1,2-Dichloroethane-d4	11.12	65	207199	27.6745 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.68%		
58) Toluene-d8	13.86	98	553023	25.9875 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	17.85	95	247939	28.0615 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.24%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	13666	7.3164 ug/L #	77
15) Tert-Butyl Alcohol	7.06	59	467	0.8703 ug/L #	59
16) Dimethyl Sulfide	7.14	62	668	0.1315 ug/L #	1
18) Methyl acetate	7.54	43	3262	0.6289 ug/L #	1
22) Methyl Tert Butyl Ether	7.97	73	10591	0.6492 ug/L #	53
24) n-Hexane	8.28	57	3576	0.4138 ug/L #	56
27) 1,1-Dichloroethane	9.04	63	60743	4.7600 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	155796	7.5231 ug/L #	39
29) 2-Butanone	9.52	43	4002	1.4516 ug/L	97
30) Propionitrile	9.95	54	1113	1.4052 ug/L #	1
34) 1-Bromopropane	9.99	122	1450	1.4006 ug/L #	1
36) Tetrahydrofuran	10.36	42	4902	2.7292 ug/L #	61
48) Methylcyclohexane	12.41	83	4626	0.5293 ug/L #	1
60) Ethyl Methacrylate	13.88	69	1599	0.2261 ug/L #	1
72) Ethylbenzene	16.28	106	1349	0.1427 ug/L	56
73) m-,p-Xylene	16.28	106	1349	0.1203 ug/L	81
79) 1,1,2,2-Tetrachloroethane	17.57	83	8744	1.3569 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

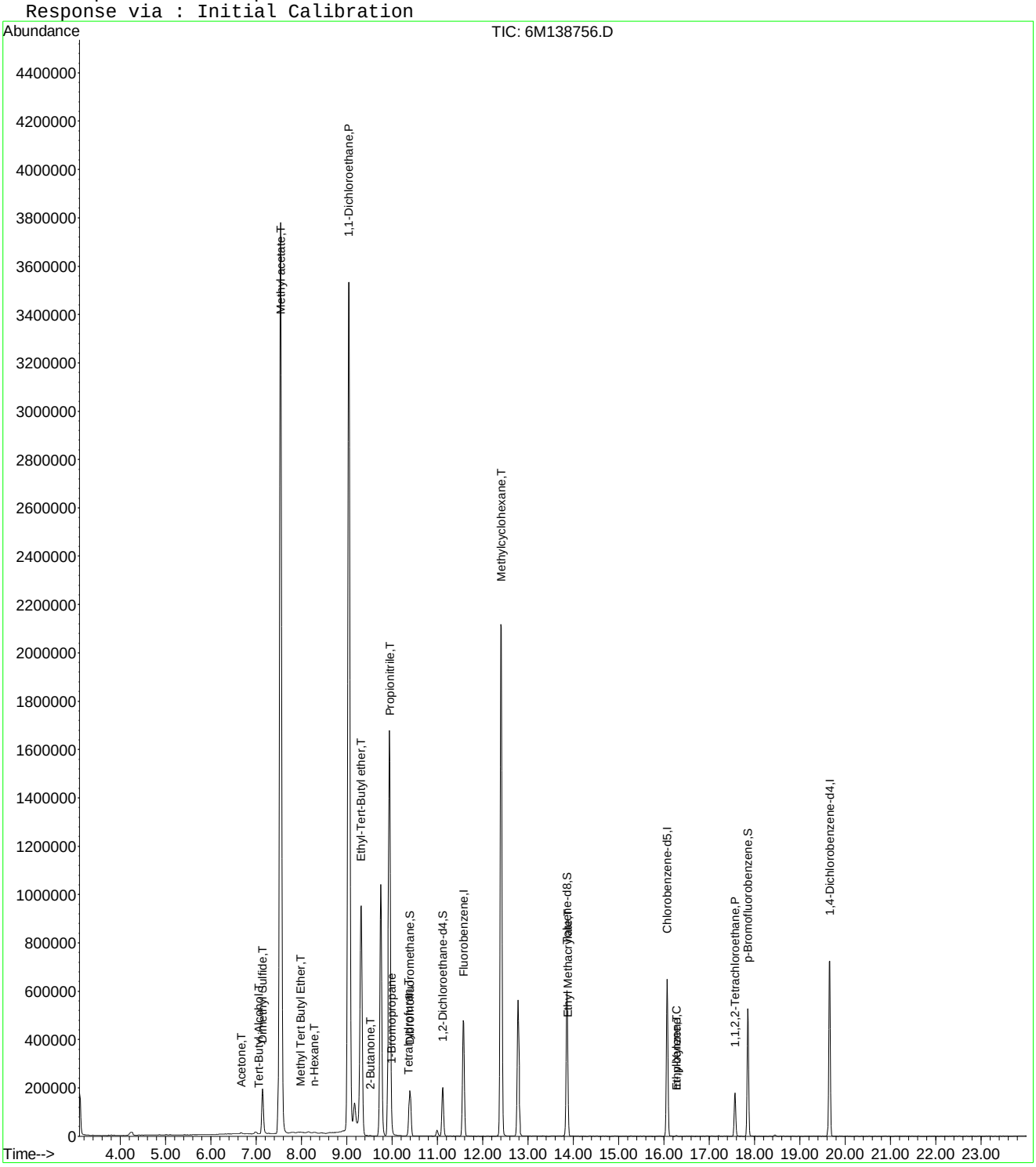

6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00	ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	472685	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	273003	236.0468	ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	278.3729	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	287.5093	ug/L	83
5) Ethyl Acetate	9.75	43	1967613	309.6573	ug/L	94
6) Methacrylonitrile	9.94	67	686612	280.9484	ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	347.5212	ug/L #	90
8) 1-Butanol	10.99	41	18116	120.4672	ug/L	69
9) Methyl methacrylate	12.40	41	1742413	275.3954	ug/L	81
10) 2-Nitropropane	12.78	43	613081	328.6824	ug/L	99
13) Cyclohexanone	17.57	55	106618	117.9661	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

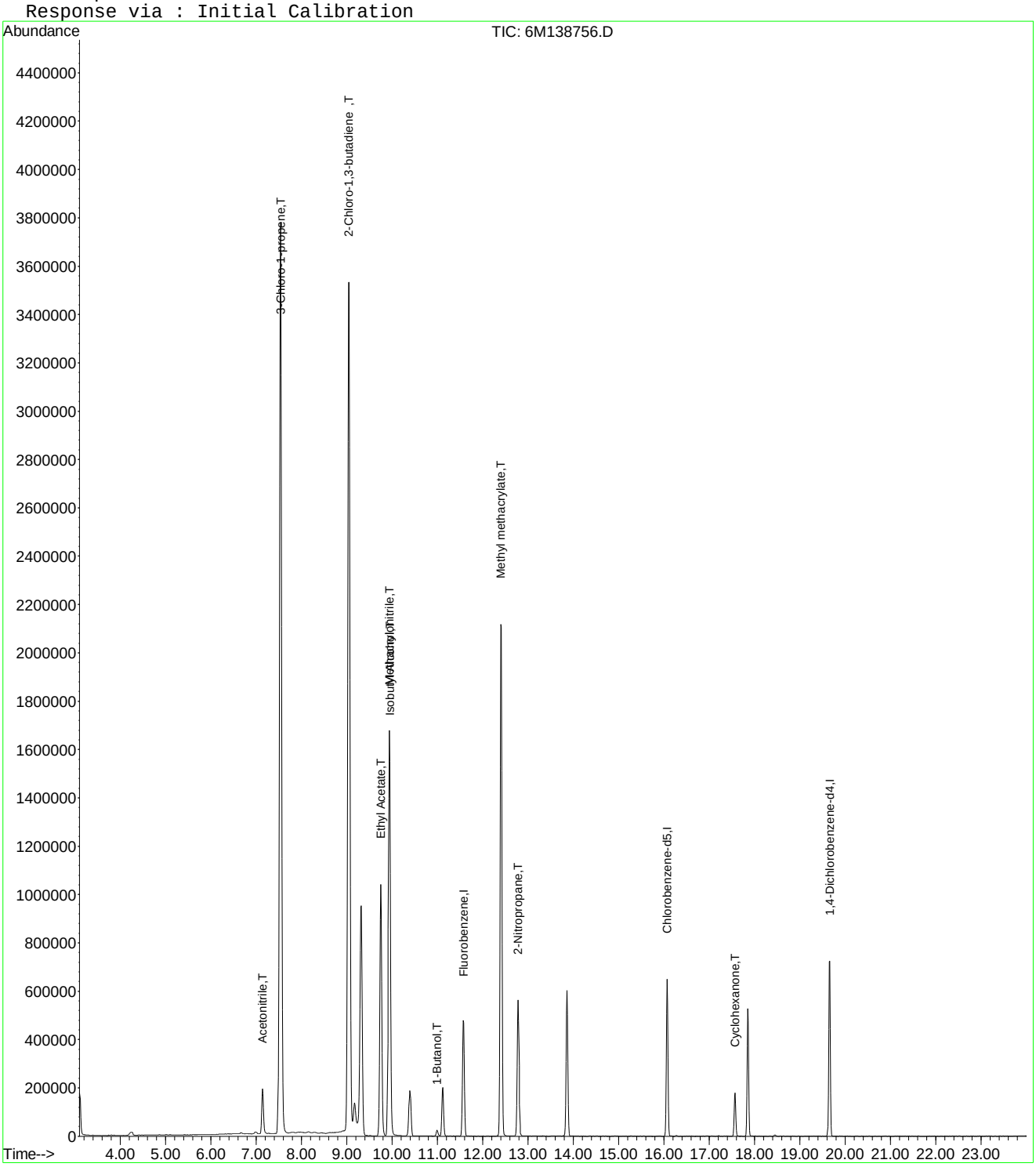

6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00	ug/L	0.01
11) Chlorobenzene-d5	16.07	117	472685	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	273003	302.5900	ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	298.8224	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	309.6481	ug/L	83
5) Ethyl Acetate	9.75	43	1967613	304.6228	ug/L	94
6) Methacrylonitrile	9.94	67	686612	308.3318	ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	590.5081	ug/L #	90
9) Methyl methacrylate	12.40	41	1742413	320.9449	ug/L	81
10) 2-Nitropropane	12.78	43	613081	303.6419	ug/L	99
13) Cyclohexanone	17.57	55	106618	323.1811	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

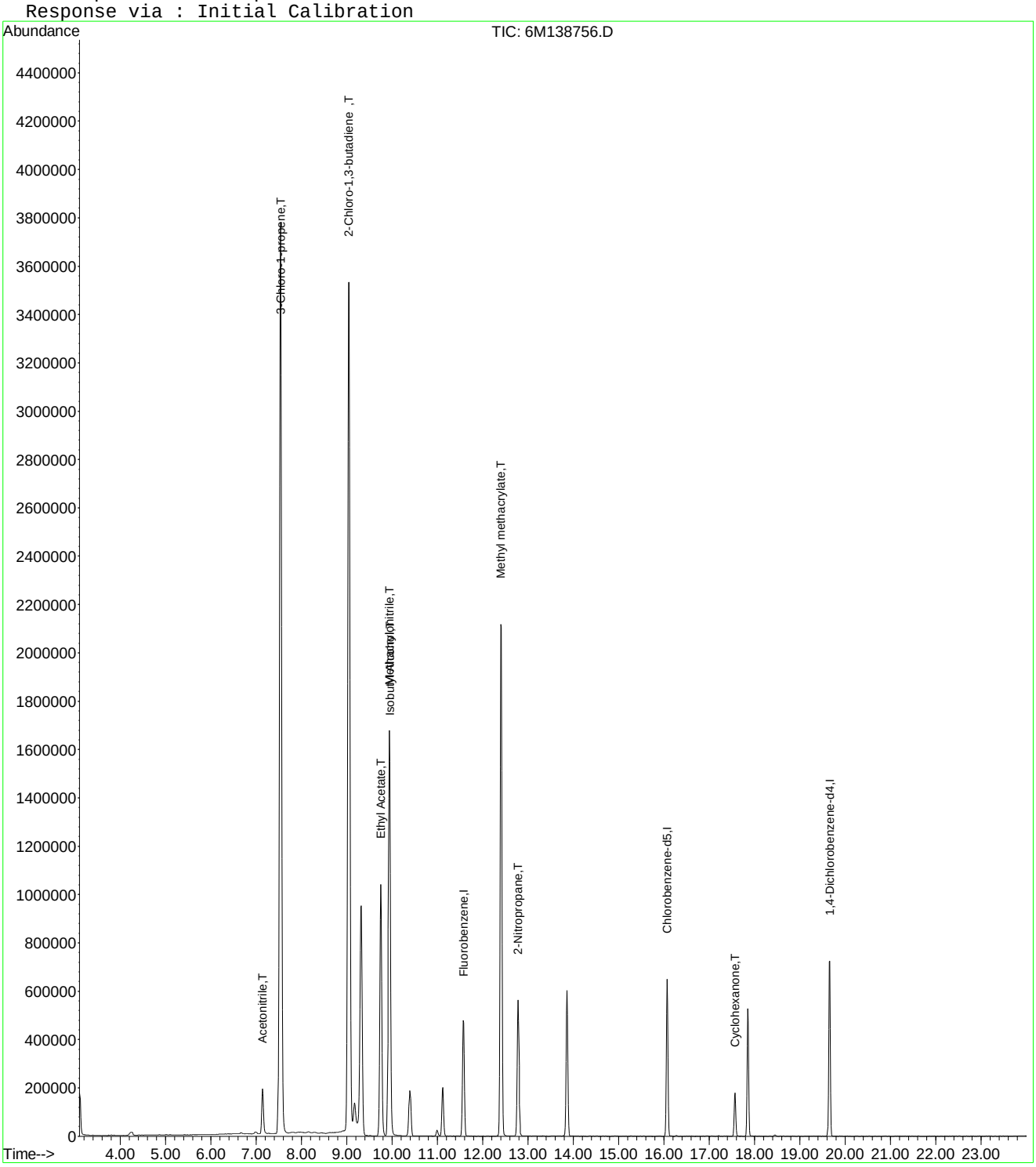

6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:51 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	170708	27.6598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.64%		
43) 1,2-Dichloroethane-d4	11.11	65	208757	27.8702 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.48%		
58) Toluene-d8	13.86	98	554316	25.9150 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	17.85	95	246698	27.9116 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.64%		

Target Compounds					Qvalue
13) Acetone	6.66	43	14063	7.5256 ug/L	99
15) Tert-Butyl Alcohol	7.05	59	807	1.5033 ug/L #	59
16) Dimethyl Sulfide	7.16	62	1034	0.2034 ug/L #	1
18) Methyl acetate	7.48	43	1103	0.2125 ug/L #	60
19) Methylene Chloride	7.73	84	1123	0.1699 ug/L #	40
22) Methyl Tert Butyl Ether	7.97	73	18318	1.1224 ug/L #	53
24) n-Hexane	8.28	57	5609	0.6488 ug/L	75
27) 1,1-Dichloroethane	9.04	63	82912	6.4943 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.32	59	139043	6.7111 ug/L #	38
29) 2-Butanone	9.53	43	4129	1.4970 ug/L	86
30) Propionitrile	9.72	54	202	0.2549 ug/L #	1
34) 1-Bromopropane	9.99	122	1978	1.9098 ug/L #	1
36) Tetrahydrofuran	10.37	42	5444	3.0296 ug/L #	63
48) Methylcyclohexane	12.40	83	6593	0.7540 ug/L #	1
60) Ethyl Methacrylate	13.85	69	1165	0.1639 ug/L #	1
73) m-,p-Xylene	16.28	106	1795	0.1593 ug/L	72
79) 1,1,2,2-Tetrachloroethane	17.57	83	12875	1.9973 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138757.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

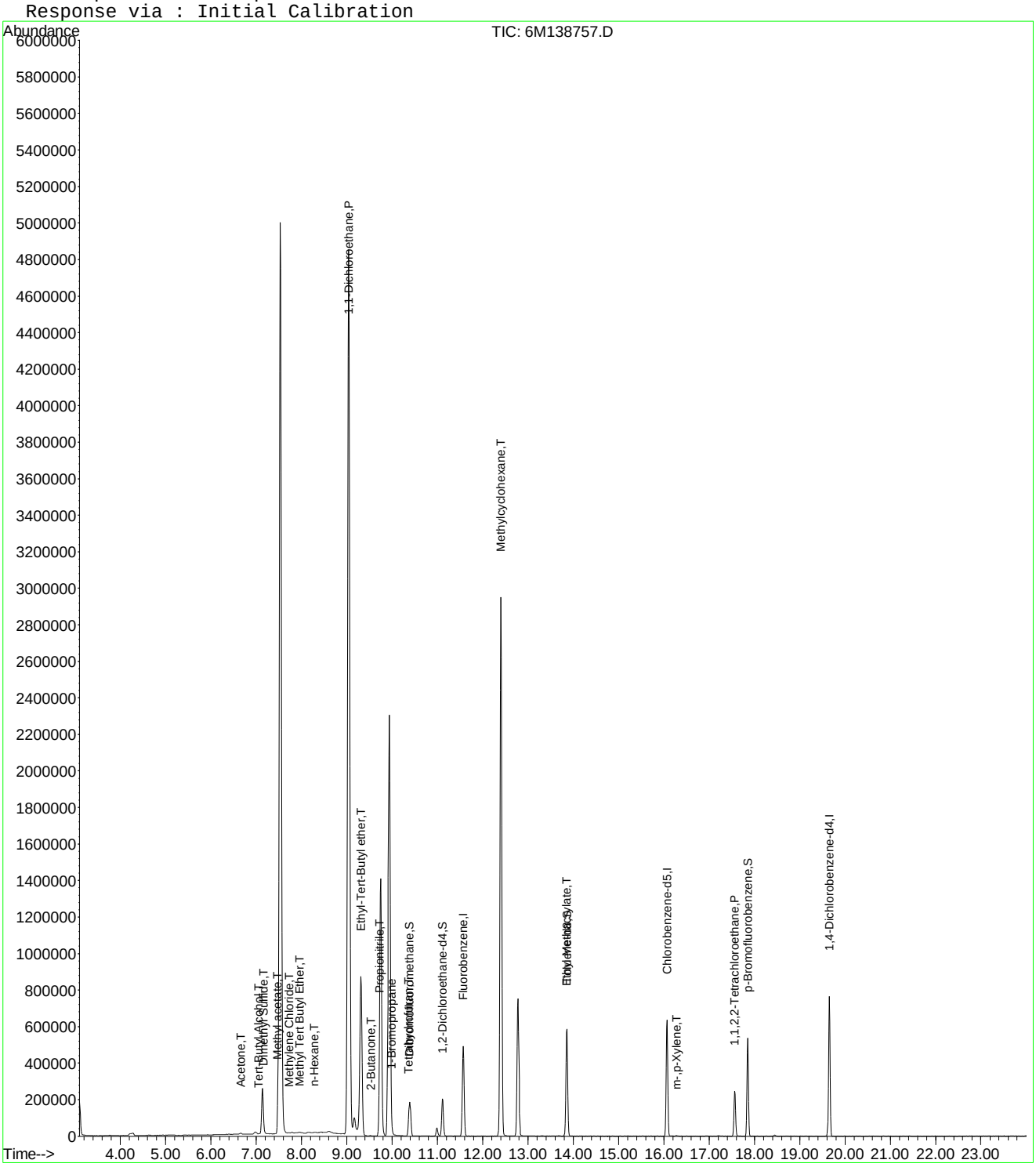

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	318.0524 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	368.4088 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	385.5211 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	423.1975 ug/L	94
6) Methacrylonitrile	9.94	67	929265	380.0675 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	550.6158 ug/L #	89
8) 1-Butanol	10.99	41	29815	198.1744 ug/L	75
9) Methyl methacrylate	12.40	41	2375132	375.2316 ug/L	81
10) 2-Nitropropane	12.79	43	849210	455.0717 ug/L	98
13) Cyclohexanone	17.57	55	149420	165.2683 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Mon Apr 25 15:46:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

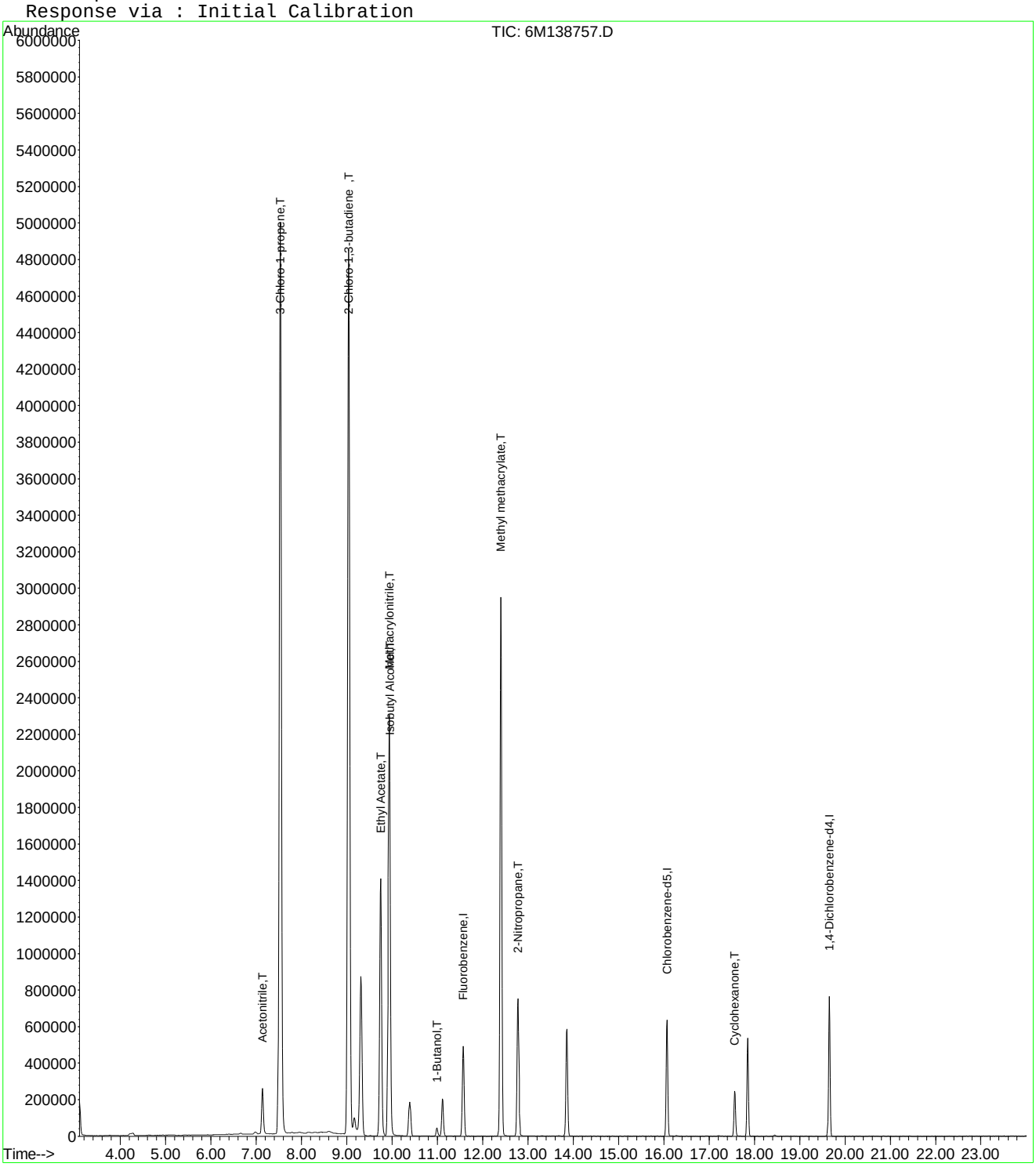

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	407.7137 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	395.4723 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	415.2070 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	416.3170 ug/L	94
6) Methacrylonitrile	9.94	67	929265	417.1119 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	935.6065 ug/L #	89
9) Methyl methacrylate	12.40	41	2375132	437.2937 ug/L	81
10) 2-Nitropropane	12.79	43	849210	420.4022 ug/L	98
13) Cyclohexanone	17.57	55	149420	452.7705 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

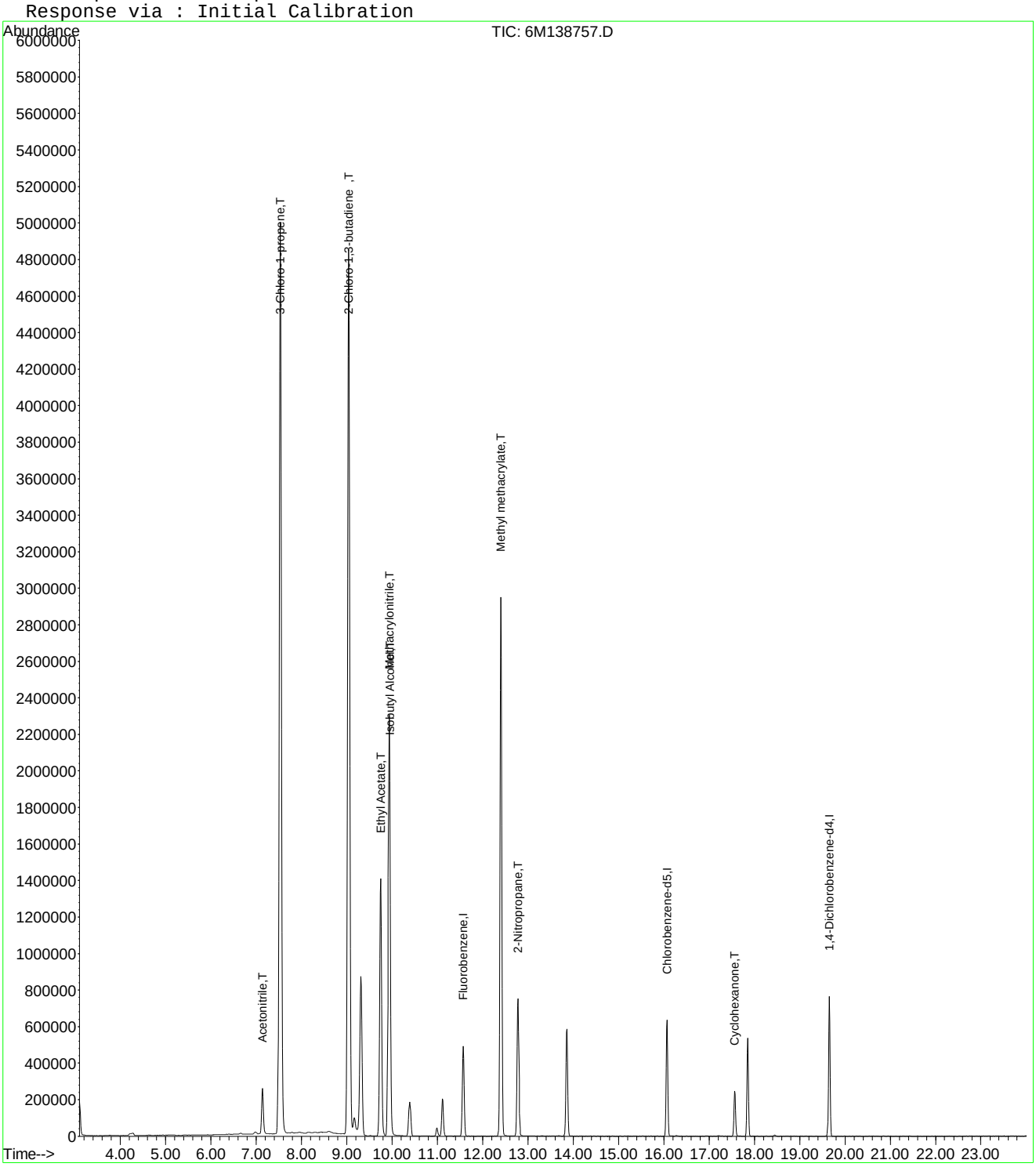

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:52 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	485048	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	175239	27.7556 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.04%		
43) 1,2-Dichloroethane-d4	11.12	65	210644	27.4898 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.96%		
58) Toluene-d8	13.86	98	563297	25.7957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	17.85	95	249406	27.7824 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.12%		

Target Compounds					Qvalue
13) Acetone	6.67	43	15233	7.9684 ug/L	89
15) Tert-Butyl Alcohol	7.06	59	370	0.6737 ug/L #	59
18) Methyl acetate	7.46	43	1079	0.2032 ug/L #	34
19) Methylene Chloride	7.73	84	1471	0.2176 ug/L	66
20) Carbon Disulfide	7.78	76	2765	0.1407 ug/L #	74
22) Methyl Tert Butyl Ether	7.96	73	25284	1.5144 ug/L #	53
24) n-Hexane	8.28	57	5266	0.5954 ug/L	97
27) 1,1-Dichloroethane	9.05	63	105121	8.0488 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	124099	5.8551 ug/L #	39
29) 2-Butanone	9.52	43	4475	1.5860 ug/L #	72
30) Propionitrile	9.71	54	473	0.5835 ug/L #	1
34) 1-Bromopropane	10.00	122	2117	1.9980 ug/L #	1
36) Tetrahydrofuran	10.36	42	5652	3.0747 ug/L #	54
48) Methylcyclohexane	12.40	83	8011	0.8956 ug/L #	1
59) Toluene	13.98	91	3373	0.1249 ug/L	84
60) Ethyl Methacrylate	13.87	69	1585	0.2184 ug/L #	1
73) m-,p-Xylene	16.28	106	2521	0.2191 ug/L	79
79) 1,1,2,2-Tetrachloroethane	17.57	83	14350	2.1917 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

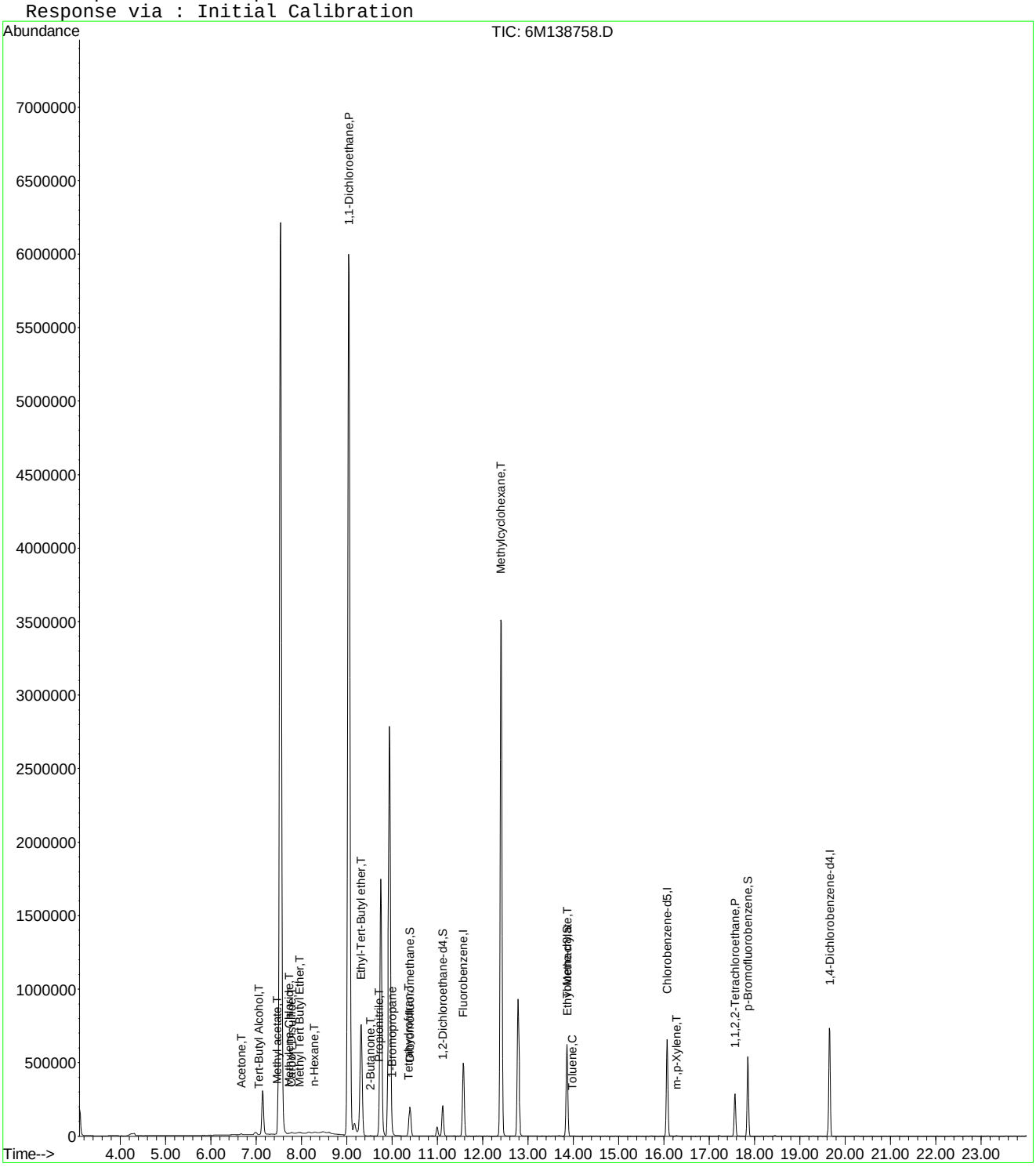

6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	379.8136	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	449.8223	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	474.8265	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	508.5794	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	457.8027	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	701.6799	ug/L #	90
8) 1-Butanol	10.99	41	42236	274.4224	ug/L	75
9) Methyl methacrylate	12.40	41	2914815	450.1389	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	543.0629	ug/L	99
13) Cyclohexanone	17.57	55	176545	192.2558	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

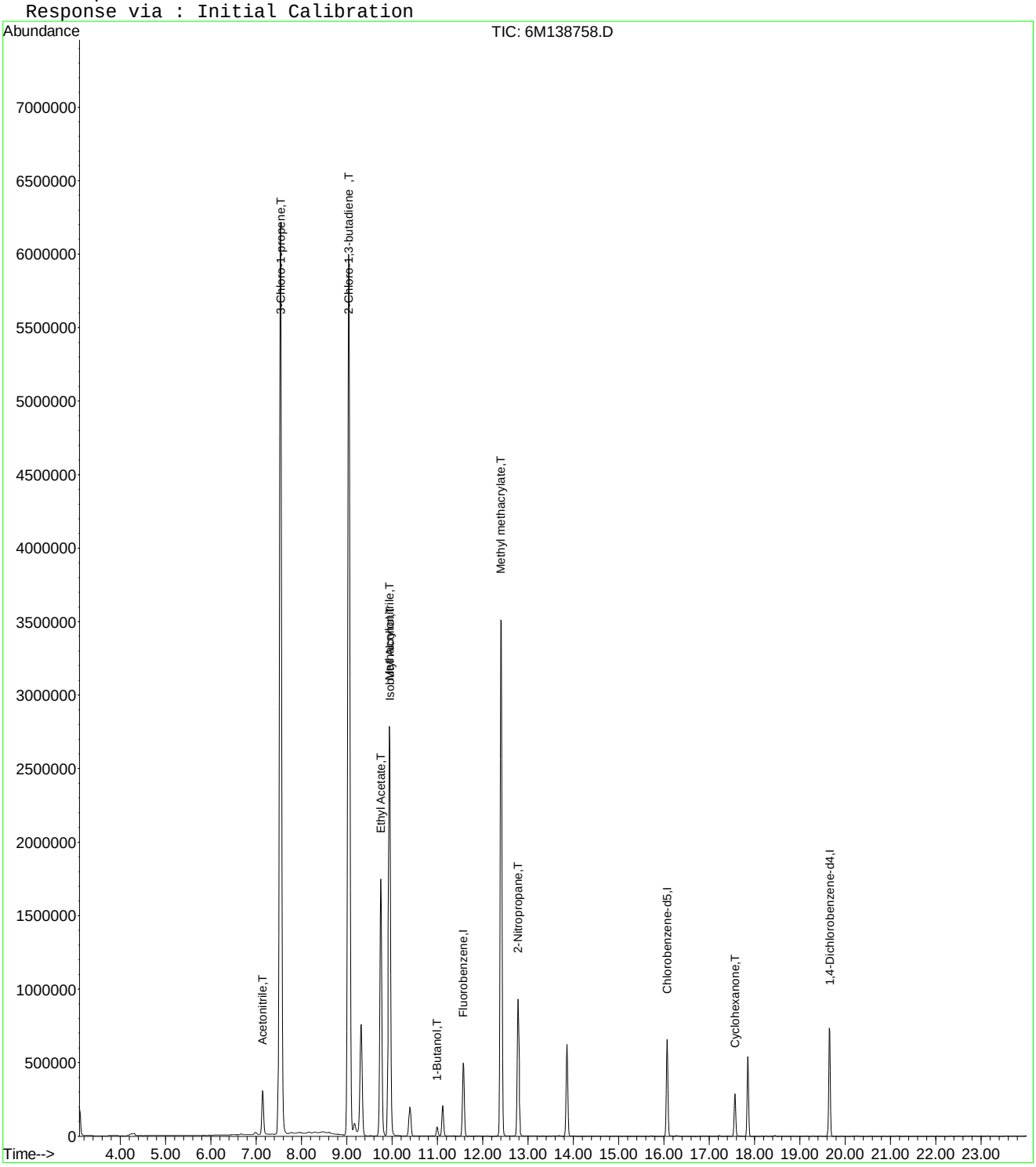

6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	486.8858	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	482.8665	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	511.3891	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	500.3107	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	502.4237	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	1192.2947	ug/L #	90
9) Methyl methacrylate	12.40	41	2914815	524.5904	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	501.6898	ug/L	99
13) Cyclohexanone	17.57	55	176545	526.7057	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

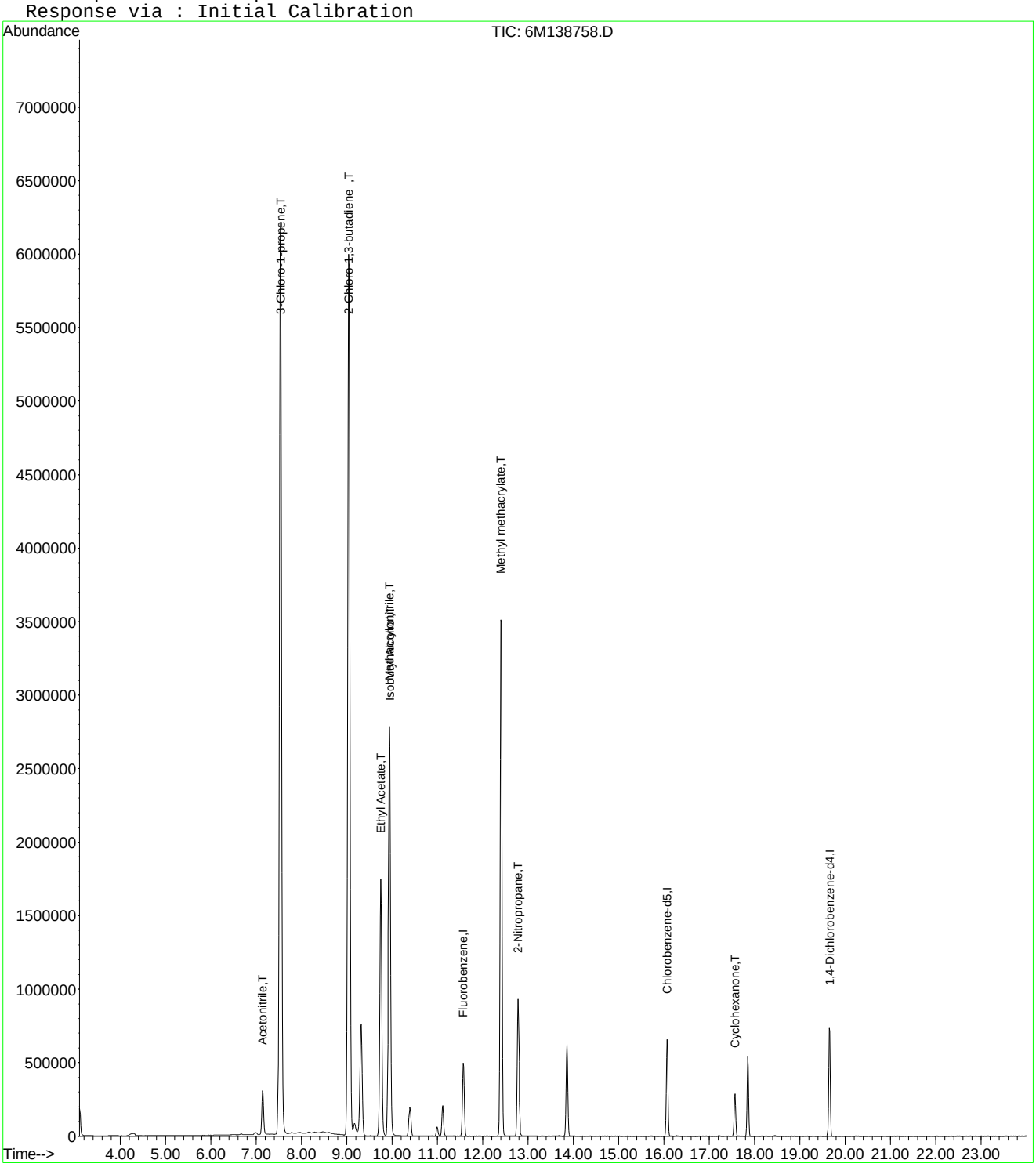

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:54 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.40	111	171708	27.8099 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	210067	28.0330 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.12%		
58) Toluene-d8	13.86	98	553825	26.0829 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.32%		
80) p-Bromofluorobenzene	17.85	95	243088	28.3441 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 113.36%		

Target Compounds					Qvalue
5) 1,3-Butadiene	4.21	54	367749	92.2302 ug/L	88
9) Diethyl ether	6.30	59	700386	132.3612 ug/L	92
13) Acetone	6.67	43	6570	3.5143 ug/L	81
16) Dimethyl Sulfide	7.14	62	2726	0.5361 ug/L #	1
20) Carbon Disulfide	7.54	76	432674	22.5096 ug/L #	36
22) Methyl Tert Butyl Ether	7.97	73	2916	0.1786 ug/L #	53
26) Vinyl Acetate	9.05	43	5230	0.5414 ug/L #	1
27) 1,1-Dichloroethane	9.04	63	22472	1.7594 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.32	59	4063	0.1960 ug/L #	35
29) 2-Butanone	9.52	43	6076	2.2019 ug/L #	66
30) Propionitrile	9.64	54	91341	115.2239 ug/L	96
36) Tetrahydrofuran	10.36	42	4030	2.2418 ug/L #	52
39) Cyclohexane	10.69	56	2387	0.2138 ug/L	79
48) Methylcyclohexane	12.40	83	1353	0.1547 ug/L #	1
50) 1,4-Dioxane	12.73	88	9231	177.0935 ug/L	71
60) Ethyl Methacrylate	13.86	69	1222	0.1732 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1146	0.1832 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

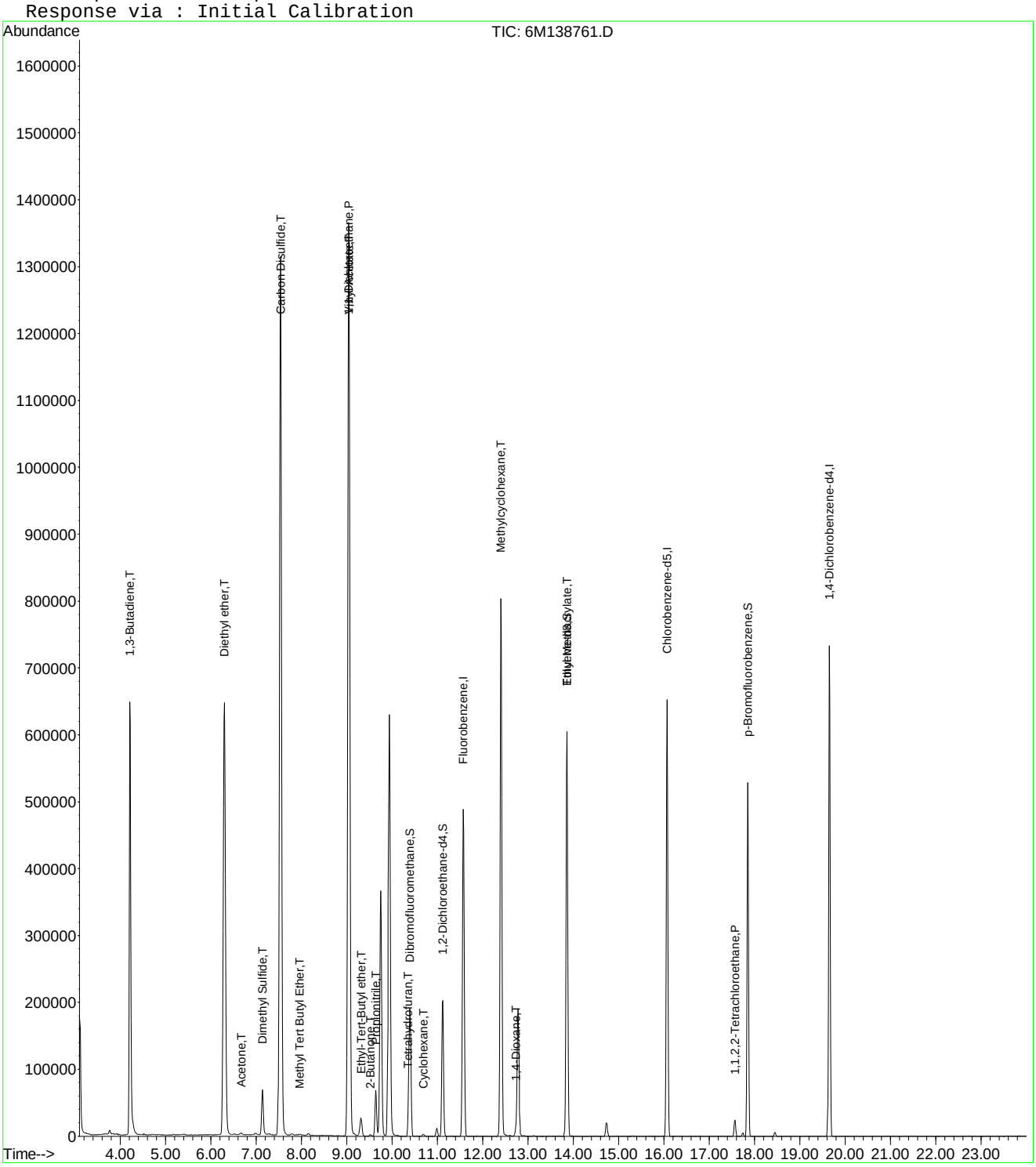

6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	96564	83.4191 ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	96.0797 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	108.7756 ug/L	83
5) Ethyl Acetate	9.75	43	691566	108.7414 ug/L	93
6) Methacrylonitrile	9.94	67	252030	103.0355 ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	146.2409 ug/L #	93
8) 1-Butanol	10.99	41	7584	50.3877 ug/L	72
9) Methyl methacrylate	12.40	41	635574	100.3670 ug/L	81
10) 2-Nitropropane	12.79	43	211020	113.0321 ug/L	98
13) Cyclohexanone	17.57	55	15491	17.6579 ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Mon Apr 25 15:46:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

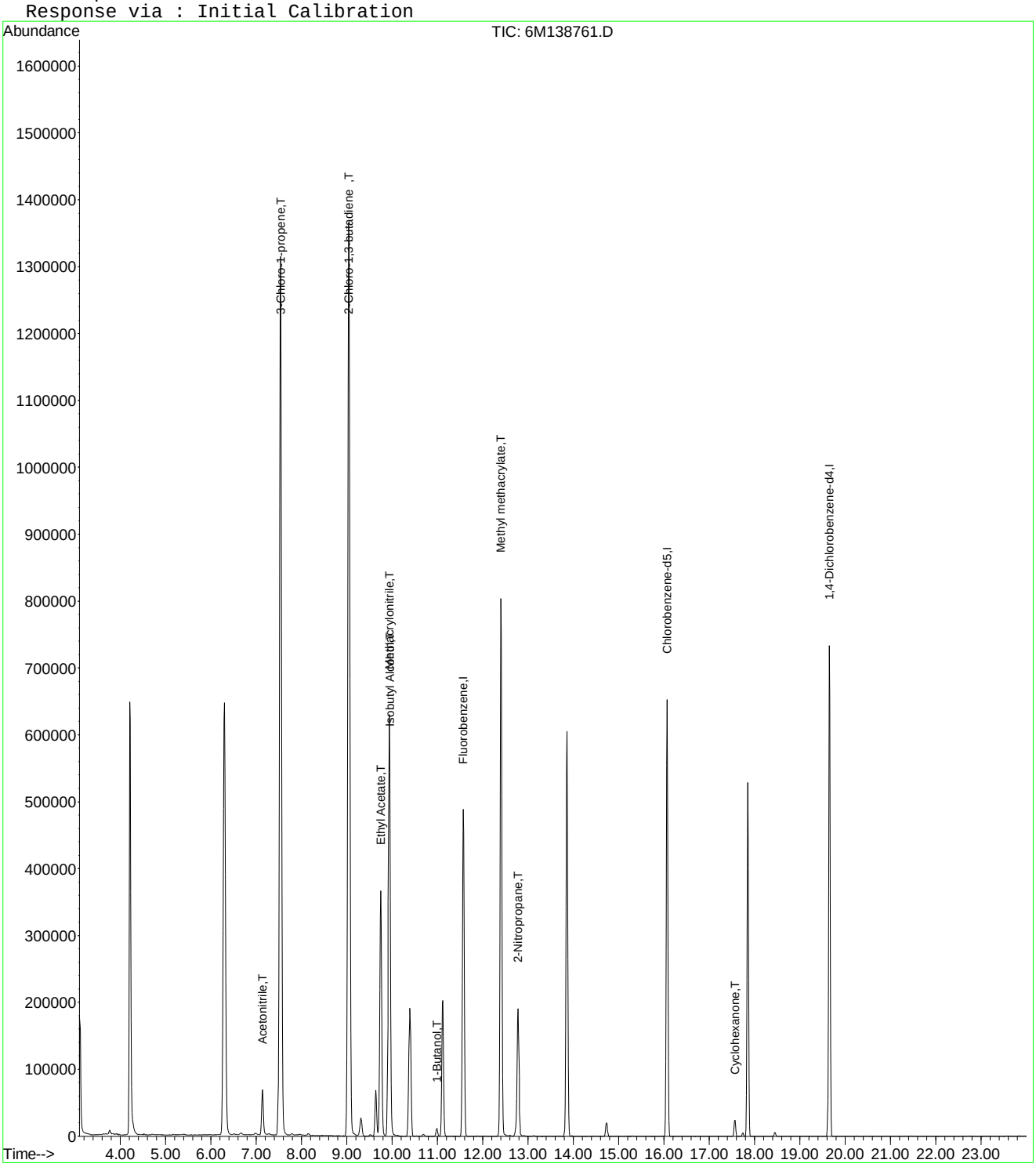

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:02 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	106.9355	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	103.1378	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	117.1516	ug/L	83
5) Ethyl Acetate	9.75	43	691566	106.9734	ug/L	93
6) Methacrylonitrile	9.94	67	252030	113.0781	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	248.4926	ug/L #	93
9) Methyl methacrylate	12.40	41	635574	116.9674	ug/L	81
10) 2-Nitropropane	12.79	43	211020	104.4208	ug/L	98
13) Cyclohexanone	17.57	55	15491	48.3758	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

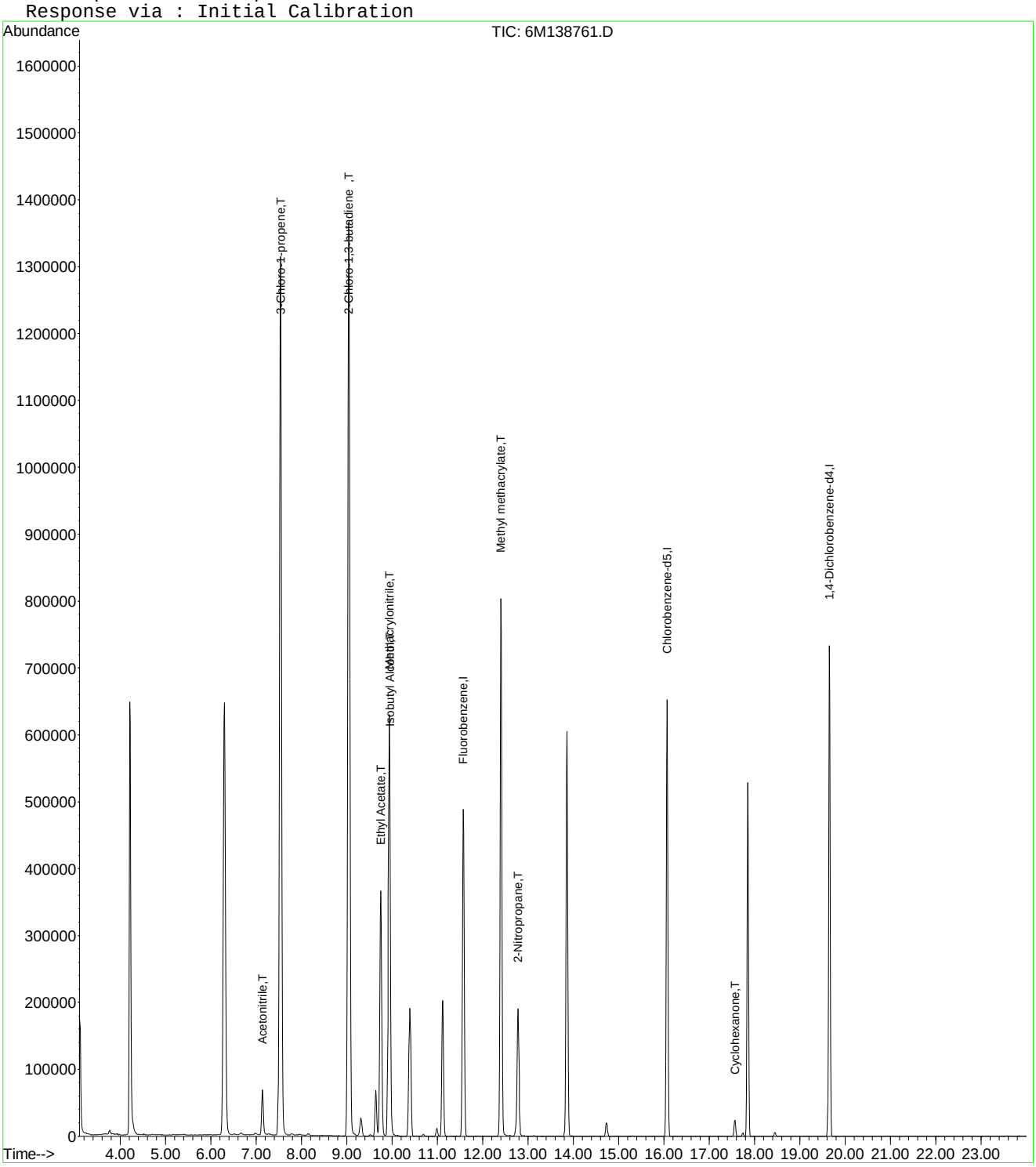

6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	101	0.00
2	T	Acetonitrile	100.0000	106.9355	-6.9	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.1378	-3.1	96	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	117.1516	-17.2	107	0.00
5	T	Ethyl Acetate	100.0000	106.9734	-7.0	103	0.00
6	T	Methacrylonitrile	100.0000	113.0781	-13.1	106	0.00
7	T	Isobutyl Alcohol	200.0000	248.4926	-24.2	151	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	116.9674	-17.0	108	0.00
10	T	2-Nitropropane	100.0000	104.4208	-4.4	107	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	48.3758	51.6	56	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138761.D A9FOOWT.M Wed Apr 27 16:05:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141167.D Vial: 2
Acq On : 10 Aug 2016 14:25 Operator: TMB
Sample : WG579700-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:31:51 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	833291	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	588328	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	294258	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	10.30	65	1282	0.1054 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.44%#	
58) Toluene-d8	13.04	98	2472	0.0883 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.36%#	
80) p-Bromofluorobenzene	17.01	95	829	0.0789 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.32%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	5418	0.3052 ug/L	92
3) Chloromethane	3.36	50	8660	0.4779 ug/L	80
4) Vinyl Chloride	3.57	62	3544	0.2966 ug/L	100
5) 1,3-Butadiene	3.61	54	3738	Below Cal #	73
6) Bromomethane	4.39	94	2378	0.4061 ug/L	84
7) Chloroethane	4.53	64	1643	0.2411 ug/L #	43
8) Trichlorofluoromethane	5.00	101	5123	0.2709 ug/L #	95
10) Isoprene	5.57	67	3442	0.2731 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	1853	0.2176 ug/L	82
13) Acetone	5.89	43	10506	3.9798 ug/L	84
14) 1,1-Dichloroethene	6.10	61	5473	0.3081 ug/L	84
16) Dimethyl Sulfide	6.38	62	2936	0.2761 ug/L	87
17) Iodomethane	6.63	142	195	1.0961 ug/L #	32
18) Methyl acetate	6.67	43	1487	0.2052 ug/L #	66
19) Methylene Chloride	6.93	84	6225	0.6531 ug/L	79
20) Carbon Disulfide	6.95	76	12084	0.4086 ug/L #	85
22) Methyl Tert Butyl Ether	7.17	73	5520	0.2344 ug/L #	57
23) trans-1,2-Dichloroethene	7.41	96	2566	0.2958 ug/L	72
24) n-Hexane	7.49	57	4233	0.3278 ug/L	85
27) 1,1-Dichloroethane	8.08	63	5689	0.2915 ug/L	86
29) 2-Butanone	8.73	43	1356	0.3543 ug/L #	57
31) 2,2-Dichloropropane	8.95	77	4461	0.2697 ug/L	100
32) cis-1,2-Dichloroethene	9.01	96	4533	0.4701 ug/L	89
33) Chloroform	9.25	83	5825	0.3125 ug/L	97
35) Bromochloromethane	9.51	130	1452	0.2651 ug/L	79
36) Tetrahydrofuran	9.54	42	2603	1.0801 ug/L #	41
38) 1,1,1-Trichloroethane	9.84	97	4441	0.2526 ug/L	95
39) Cyclohexane	9.86	56	4511	0.2655 ug/L	90
40) 1,1-Dichloropropene	10.06	75	3294	0.2503 ug/L	91
42) Carbon Tetrachloride	10.21	117	4136	0.2638 ug/L #	91
45) 1,2-Dichloroethane	10.43	62	4513	0.2858 ug/L #	74
46) Benzene	10.47	78	10386	0.2910 ug/L	96
47) Trichloroethene	11.33	130	4233	0.4570 ug/L	84
48) Methylcyclohexane	11.40	83	3351	0.2676 ug/L #	79
49) 1,2-Dichloropropane	11.58	63	2522	0.2508 ug/L	87
51) Bromodichloromethane	11.92	83	3827	0.2728 ug/L	99
52) Dibromomethane	12.01	93	1427	0.2631 ug/L	87
53) 2-Chloroethyl Vinyl Ether	12.29	63	423	1.1165 ug/L #	41
55) cis-1,3-Dichloropropene	12.67	75	3550	0.2593 ug/L #	79
56) Dimethyl Disulfide	12.95	79	1297	0.1584 ug/L #	47

(#) = qualifier out of range (m) = manual integration
6M141167.D 8260WT.M Thu Aug 11 14:31:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141167.D Vial: 2
Acq On : 10 Aug 2016 14:25 Operator: TMB
Sample : WG579700-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:31:51 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
59)	Toluene	13.15	91	10005	0.2959 ug/L	92
60)	Ethyl Methacrylate	13.30	69	1520	0.6027 ug/L	91
62)	trans-1,3-Dichloropropene	13.37	75	2547	0.1999 ug/L #	51
63)	1,1,2-Trichloroethane	13.62	97	1477	0.2180 ug/L	91
65)	1,3-Dichloropropane	13.96	76	3614	0.3081 ug/L	99
66)	Tetrachloroethene	14.10	166	3022	0.3337 ug/L	89
67)	Dibromochloromethane	14.39	129	2422	0.2681 ug/L	97
68)	1,2-Dibromoethane	14.69	107	1383	0.2191 ug/L	76
69)	1-Chlorohexane	14.83	91	2281	0.4425 ug/L	75
70)	Chlorobenzene	15.29	112	8642	0.3684 ug/L	91
71)	1,1,1,2-Tetrachloroethane	15.32	131	2642	0.2857 ug/L	98
72)	Ethylbenzene	15.33	106	3656	0.3063 ug/L	91
73)	m-,p-Xylene	15.44	106	8487	0.5951 ug/L	99
74)	o-Xylene	16.09	106	3212	0.2343 ug/L	76
75)	Styrene	16.14	104	5273	0.2876 ug/L	84
76)	Bromoform	16.69	173	1119	0.1952 ug/L #	84
77)	Isopropylbenzene	16.60	105	8743	0.2508 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.87	83	1771	0.2414 ug/L	83
83)	n-Propylbenzene	17.20	91	10331	0.2735 ug/L #	93
84)	Bromobenzene	17.32	156	2901	0.3141 ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	6541	0.2438 ug/L	97
86)	2-Chlorotoluene	17.50	91	7649	0.2812 ug/L	98
87)	4-Chlorotoluene	17.56	91	7890	0.2969 ug/L	91
88)	a-Methylstyrene	17.90	118	3345	0.2144 ug/L	95
89)	tert-Butylbenzene	17.97	134	1062	0.1854 ug/L #	30
90)	1,2,4-Trimethylbenzene	18.03	105	7199	0.2399 ug/L	100
91)	sec-Butylbenzene	18.28	105	8718	0.2689 ug/L	86
92)	p-Isopropyltoluene	18.48	119	7532	0.2710 ug/L	89
93)	1,3-Dichlorobenzene	18.68	146	5697	0.3255 ug/L	97
94)	1,4-Dichlorobenzene	18.84	146	6360	0.3539 ug/L #	39
95)	n-Butylbenzene	19.10	91	7139	0.2785 ug/L	93
96)	1,2-Dichlorobenzene	19.41	146	5544	0.3269 ug/L	99
98)	1,2,4-Trichlorobenzene	21.94	180	3023	0.4165 ug/L	96
99)	Hexachlorobutadiene	22.13	225	1741	0.4097 ug/L	76
100)	Naphthalene	22.36	128	4354	0.5802 ug/L #	67
101)	1,2,3-Trichlorobenzene	22.74	180	2379	0.2602 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M141167.D 8260WT.M Thu Aug 11 14:31:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141167.D Vial: 2
Acq On : 10 Aug 2016 14:25 Operator: TMB
Sample : WG579700-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:31 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

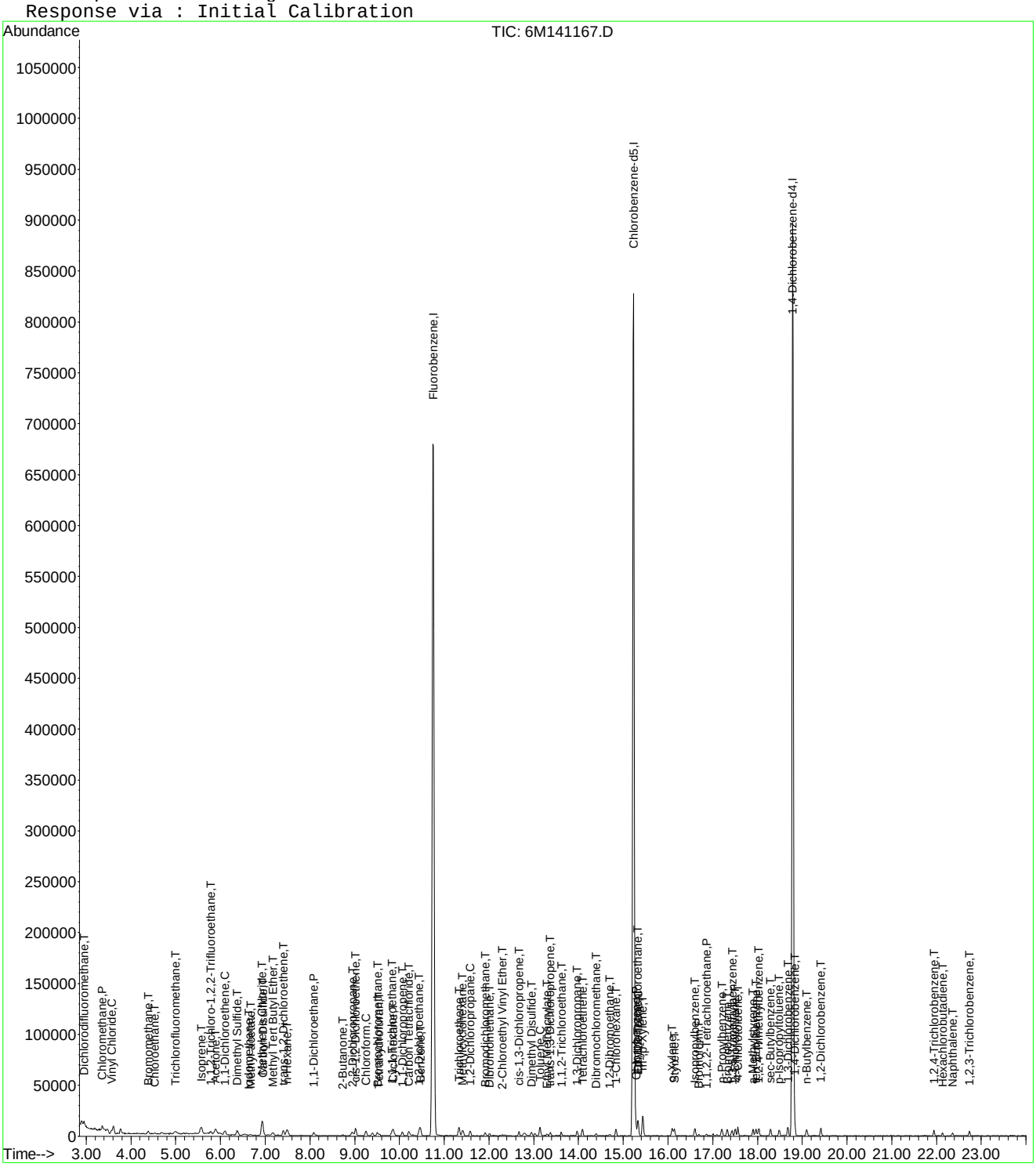

6M141167.D 8260WT.M Thu Aug 11 14:31:59 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141167.D Vial: 2
Acq On : 10 Aug 2016 14:25 Operator: TMB
Sample : WG579700-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3052	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4779	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2966	0.0	100	0.02
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.4061	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.2411	0.0	100	0.01
8	T	Trichlorofluoromethane	-1.0000	0.2709	0.0	100	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.54#
10	T	Isoprene	-1.0000	0.2731	0.0	100	0.02
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2176	0.0	100	0.01
13	T	Acetone	-1.0000	3.9798	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3081	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.2761	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.0961	0.0	0	0.00
18	T	Methyl acetate	-1.0000	0.2052	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.6531	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4086	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.14#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2344	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.2958	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3278	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.89#
26	T	Vinyl Acetate	-1.0000	0.0152	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.2915	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.52#
29	T	2-Butanone	-1.0000	0.3543	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.85#
31	T	2,2-Dichloropropane	-1.0000	0.2697	0.0	100	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.4701	0.0	100	0.00
33	C	Chloroform	0.3000	0.3125	-4.2	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.40#
35	T	Bromochloromethane	-1.0000	0.2651	0.0	100	0.01
36	T	Tetrahydrofuran	-1.0000	1.0801	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.57#
38	T	1,1,1-Trichloroethane	-1.0000	0.2526	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2655	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2503	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.2638	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.1054	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	-1.0000	0.2858	0.0	100	0.00
46	T	Benzene	-1.0000	0.2910	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.4570	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.2676	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2508	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.93#
51	T	Bromodichloromethane	-1.0000	0.2728	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.2631	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.1165	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.34#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141167.D Vial: 2
Acq On : 10 Aug 2016 14:25 Operator: TMB
Sample : WG579700-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.2593	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.1584	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0883	0.0	0	0.00
59	C	Toluene	-1.0000	0.2959	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6027	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.15#
62	T	trans-1,3-Dichloropropene	-1.0000	0.1999	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2180	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.1104	0.0	100	0.00
65	T	1,3-Dichloropropane	-1.0000	0.3081	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3337	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2681	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.2191	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.4425	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	0.3684	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2857	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.3063	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.5951	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.2343	0.0	100	0.00
75	T	Styrene	-1.0000	0.2876	0.0	0	0.00
76	P	Bromoform	-1.0000	0.1952	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.2508	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2414	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0789	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-17.09#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-17.17#
83	T	n-Propylbenzene	-1.0000	0.2735	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.3141	-4.7	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.2438	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.2812	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.2969	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2144	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.1854	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.2399	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.2689	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.2710	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3255	0.0	100	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.3539	0.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.2785	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3269	-9.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-20.59#
98	T	1,2,4-Trichlorobenzene	0.3000	0.4165	-38.8#	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.4097	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.5802	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.2602	13.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141168.D Vial: 3
Acq On : 10 Aug 2016 14:57 Operator: TMB
Sample : WG579700-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:01 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	769456	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	550129	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	273867	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	13.02	98	955	0.0365 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.16%#	
80) p-Bromofluorobenzene	16.87	95	197	0.0201 ug/L	-0.13
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.96	85	6332	0.3863 ug/L #	84
3) Chloromethane	3.36	50	9125	0.5453 ug/L	95
4) Vinyl Chloride	3.56	62	4754	0.4309 ug/L	96
5) 1,3-Butadiene	3.61	54	4530	Below Cal #	56
6) Bromomethane	4.40	94	2521	0.4662 ug/L	75
7) Chloroethane	4.53	64	2494	0.3964 ug/L	89
8) Trichlorofluoromethane	5.01	101	7144	0.4091 ug/L #	90
10) Isoprene	5.57	67	4423	0.3801 ug/L	71
12) 1,1,2-Trichloro-1,2,2-Trif	5.76	101	2356	0.2996 ug/L #	50
13) Acetone	5.88	43	3159	1.2959 ug/L #	48
14) 1,1-Dichloroethene	6.10	61	6893	0.4202 ug/L	82
16) Dimethyl Sulfide	6.39	62	3423	0.3486 ug/L	89
17) Iodomethane	6.63	142	495	1.1306 ug/L #	32
18) Methyl acetate	6.68	43	1619	0.2420 ug/L #	66
19) Methylene Chloride	6.93	84	4160	0.4727 ug/L	75
20) Carbon Disulfide	6.95	76	11563	0.4234 ug/L	92
22) Methyl Tert Butyl Ether	7.16	73	7475	0.3437 ug/L	90
23) trans-1,2-Dichloroethene	7.42	96	2784	0.3476 ug/L	75
24) n-Hexane	7.50	57	4181	0.3507 ug/L	99
27) 1,1-Dichloroethane	8.08	63	7046	0.3910 ug/L	98
29) 2-Butanone	8.72	43	1040	0.2942 ug/L #	57
31) 2,2-Dichloropropane	8.94	77	6272	0.4106 ug/L	96
32) cis-1,2-Dichloroethene	9.01	96	3361	0.3775 ug/L	68
33) Chloroform	9.26	83	6995	0.4064 ug/L	88
35) Bromochloromethane	9.50	130	1592	0.3148 ug/L	91
36) Tetrahydrofuran	9.55	42	2976	1.3374 ug/L #	53
38) 1,1,1-Trichloroethane	9.83	97	6124	0.3772 ug/L	97
39) Cyclohexane	9.86	56	5164	0.3292 ug/L	88
40) 1,1-Dichloropropene	10.06	75	3815	0.3140 ug/L	84
42) Carbon Tetrachloride	10.22	117	5219	0.3605 ug/L #	91
45) 1,2-Dichloroethane	10.43	62	5622	0.3856 ug/L #	84
46) Benzene	10.46	78	13129	0.3984 ug/L	95
47) Trichloroethene	11.33	130	4005	0.4683 ug/L	89
48) Methylcyclohexane	11.41	83	3537	0.3059 ug/L	82
49) 1,2-Dichloropropane	11.57	63	3518	0.3789 ug/L	87
51) Bromodichloromethane	11.91	83	4612	0.3560 ug/L	98
52) Dibromomethane	12.01	93	1761	0.3517 ug/L	90
53) 2-Chloroethyl Vinyl Ether	12.30	63	636	1.1699 ug/L #	41
55) cis-1,3-Dichloropropene	12.67	75	4117	0.3257 ug/L	94
56) Dimethyl Disulfide	12.95	79	1739	0.2299 ug/L	89

(#) = qualifier out of range (m) = manual integration
6M141168.D 8260WT.M Thu Aug 11 14:32:04 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141168.D Vial: 3
Acq On : 10 Aug 2016 14:57 Operator: TMB
Sample : WG579700-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:01 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
59)	Toluene	13.15	91	11256	0.3560 ug/L		98
60)	Ethyl Methacrylate	13.30	69	1950	0.6610 ug/L		80
62)	trans-1,3-Dichloropropene	13.37	75	3583	0.3007 ug/L	#	64
63)	1,1,2-Trichloroethane	13.61	97	2164	0.3416 ug/L		92
64)	2-Hexanone	13.57	43	1134	0.2183 ug/L	#	54
65)	1,3-Dichloropropane	13.96	76	3786	0.3452 ug/L		80
66)	Tetrachloroethene	14.10	166	3134	0.3700 ug/L	#	84
67)	Dibromochloromethane	14.39	129	2852	0.3377 ug/L		98
68)	1,2-Dibromoethane	14.69	107	1998	0.3385 ug/L		95
69)	1-Chlorohexane	14.83	91	2690	0.4973 ug/L	#	63
70)	Chlorobenzene	15.28	112	9245	0.4215 ug/L		90
71)	1,1,1,2-Tetrachloroethane	15.33	131	3277	0.3789 ug/L		80
72)	Ethylbenzene	15.33	106	3818	0.3421 ug/L		59
73)	m-,p-Xylene	15.45	106	9965	0.7473 ug/L		97
74)	o-Xylene	16.10	106	4039	0.3151 ug/L		88
75)	Styrene	16.15	104	6216	0.3456 ug/L		92
76)	Bromoform	16.68	173	1715	0.3199 ug/L	#	66
77)	Isopropylbenzene	16.61	105	10649	0.3267 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.86	83	2579	0.3776 ug/L		99
82)	trans-1,4-Dichloro-2-Buten	17.17	53	235	0.7646 ug/L	#	1
83)	n-Propylbenzene	17.20	91	12281	0.3493 ug/L	#	92
84)	Bromobenzene	17.32	156	3447	0.4009 ug/L		92
85)	1,3,5-Trimethylbenzene	17.43	105	7856	0.3146 ug/L		94
86)	2-Chlorotoluene	17.50	91	9504	0.3754 ug/L		97
87)	4-Chlorotoluene	17.56	91	9506	0.3843 ug/L		84
88)	a-Methylstyrene	17.90	118	4011	0.2762 ug/L		87
89)	tert-Butylbenzene	17.97	134	1612	0.3024 ug/L		78
90)	1,2,4-Trimethylbenzene	18.03	105	8330	0.2982 ug/L		94
91)	sec-Butylbenzene	18.28	105	9469	0.3138 ug/L		96
92)	p-Isopropyltoluene	18.49	119	8007	0.3096 ug/L		93
93)	1,3-Dichlorobenzene	18.68	146	6407	0.3934 ug/L		99
94)	1,4-Dichlorobenzene	18.84	146	7271	0.4348 ug/L		84
95)	n-Butylbenzene	19.10	91	7988	0.3349 ug/L		89
96)	1,2-Dichlorobenzene	19.41	146	6652	0.4215 ug/L		99
98)	1,2,4-Trichlorobenzene	21.94	180	2394	0.3731 ug/L		93
99)	Hexachlorobutadiene	22.12	225	1392	0.3519 ug/L	#	74
100)	Naphthalene	22.36	128	3477	0.5504 ug/L	#	67
101)	1,2,3-Trichlorobenzene	22.74	180	3094	0.3637 ug/L	#	83

(#) = qualifier out of range (m) = manual integration
6M141168.D 8260WT.M Thu Aug 11 14:32:05 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141168.D Vial: 3
Acq On : 10 Aug 2016 14:57 Operator: TMB
Sample : WG579700-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

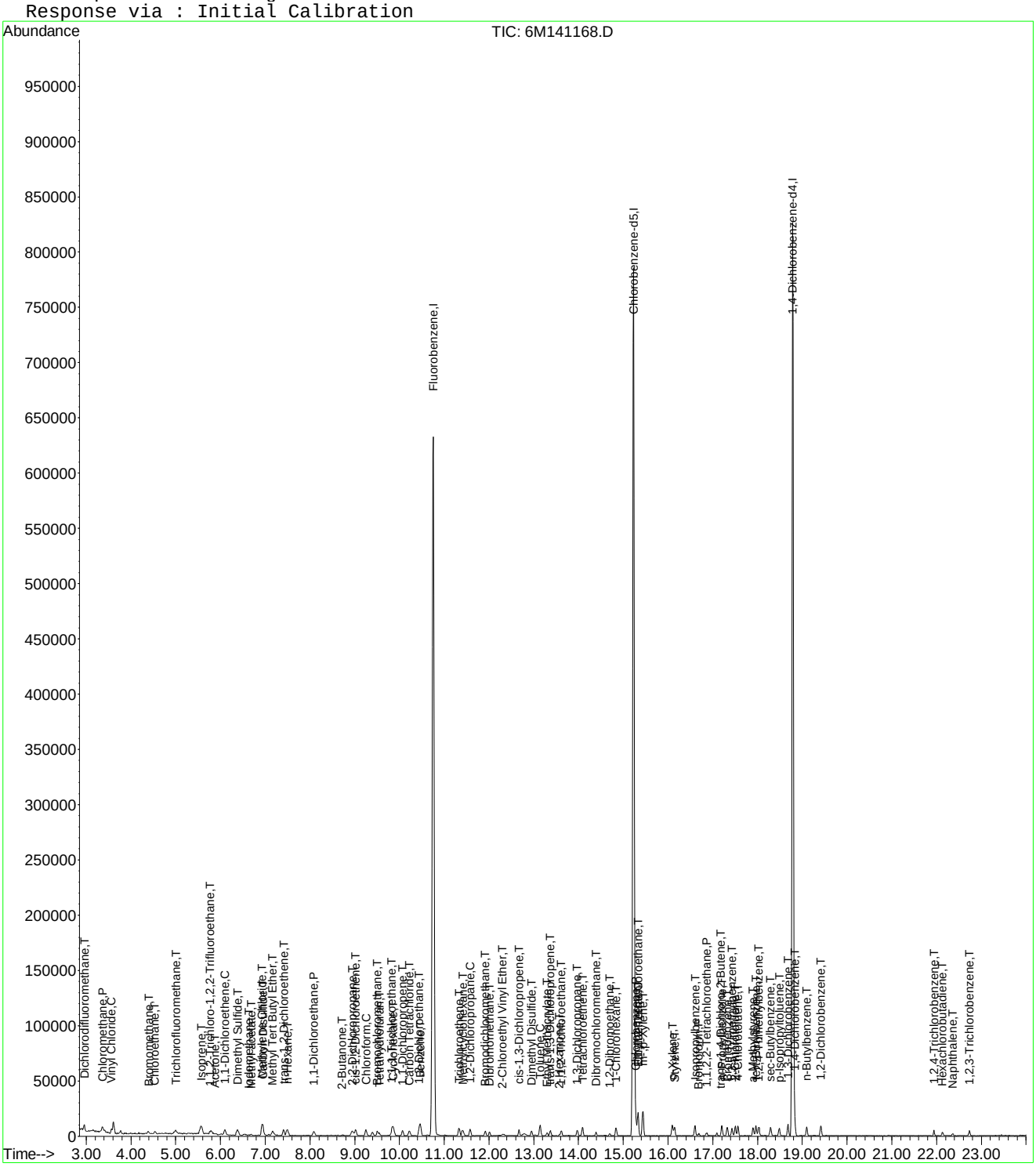

6M141168.D 8260WT.M Thu Aug 11 14:32:07 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141168.D Vial: 3
Acq On : 10 Aug 2016 14:57 Operator: TMB
Sample : WG579700-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3863	0.0	100	0.01
3	P	Chloromethane	-1.0000	0.5453	0.0	100	0.01
4	C	Vinyl Chloride	0.4000	0.4309	-7.7	100	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.4662	0.0	100	0.03
7	T	Chloroethane	-1.0000	0.3964	0.0	100	0.01
8	T	Trichlorofluoromethane	0.4000	0.4091	-2.3	100	0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.54#
10	T	Isoprene	-1.0000	0.3801	0.0	100	0.02
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2996	0.0	100	-0.01
13	T	Acetone	-1.0000	1.2959	0.0	100	-0.02
14	C	1,1-Dichloroethene	0.4000	0.4202	-5.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.3486	0.0	100	0.01
17	T	Iodomethane	-1.0000	1.1306	0.0	0	0.00
18	T	Methyl acetate	-1.0000	0.2420	0.0	100	0.01
19	T	Methylene Chloride	-1.0000	0.4727	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4234	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.14#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3437	0.0	100	-0.01
23	T	trans-1,2-Dichloroethene	0.4000	0.3476	13.1	100	0.01
24	T	n-Hexane	-1.0000	0.3507	0.0	100	0.01
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.89#
26	T	Vinyl Acetate	-1.0000	0.0708	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.3910	2.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.52#
29	T	2-Butanone	-1.0000	0.2942	0.0	100	-0.01
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.85#
31	T	2,2-Dichloropropane	0.4000	0.4106	-2.7	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3775	5.6	100	-0.01
33	C	Chloroform	0.4000	0.4064	-1.6	100	0.01
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.40#
35	T	Bromochloromethane	0.4000	0.3148	21.3#	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.3374	0.0	100	0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.57#
38	T	1,1,1-Trichloroethane	0.4000	0.3772	5.7	100	-0.01
39	T	Cyclohexane	-1.0000	0.3292	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3140	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0104	0.0	100	-0.14
42	T	Carbon Tetrachloride	0.4000	0.3605	9.9	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.30#
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	0.4000	0.3856	3.6	100	0.00
46	T	Benzene	0.4000	0.3984	0.4	100	-0.01
47	T	Trichloroethene	0.4000	0.4683	-17.1	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3059	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.3789	5.3	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.93#
51	T	Bromodichloromethane	0.4000	0.3560	11.0	100	-0.01
52	T	Dibromomethane	0.4000	0.3517	12.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.1699	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.34#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141168.D Vial: 3
Acq On : 10 Aug 2016 14:57 Operator: TMB
Sample : WG579700-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3257	18.6	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2299	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0365	0.0	0	-0.01
59	C	Toluene	0.4000	0.3560	11.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6610	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.15#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3007	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3416	14.6	100	-0.01
64	T	2-Hexanone	-1.0000	0.2183	0.0	100	-0.01
65	T	1,3-Dichloropropane	0.4000	0.3452	13.7	100	-0.01
66	T	Tetrachloroethene	0.4000	0.3700	7.5	100	0.00
67	T	Dibromochloromethane	0.4000	0.3377	15.6	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3385	15.4	100	-0.01
69	T	1-Chlorohexane	0.4000	0.4973	-24.3#	100	0.00
70	P	Chlorobenzene	0.4000	0.4215	-5.4	100	-0.01
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3789	5.3	100	0.00
72	C	Ethylbenzene	0.4000	0.3421	14.5	100	0.00
73	T	m-,p-Xylene	0.8000	0.7473	6.6	100	0.00
74	T	o-Xylene	-1.0000	0.3151	0.0	100	0.00
75	T	Styrene	0.4000	0.3456	13.6	100	0.00
76	P	Bromoform	-1.0000	0.3199	0.0	100	-0.02
77	T	Isopropylbenzene	0.4000	0.3267	18.3	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3776	5.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0201	0.0	0	-0.13
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-17.09#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.7646	0.0	100	0.00
83	T	n-Propylbenzene	0.4000	0.3493	12.7	100	0.00
84	T	Bromobenzene	0.4000	0.4009	-0.2	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.3146	21.3#	100	-0.01
86	T	2-Chlorotoluene	0.4000	0.3754	6.2	100	-0.01
87	T	4-Chlorotoluene	0.4000	0.3843	3.9	100	-0.01
88	T	a-Methylstyrene	-1.0000	0.2762	0.0	100	-0.01
89	T	tert-Butylbenzene	-1.0000	0.3024	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.2982	0.0	100	-0.01
91	T	sec-Butylbenzene	-1.0000	0.3138	0.0	100	-0.01
92	T	p-Isopropyltoluene	-1.0000	0.3096	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3934	1.7	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4348	-8.7	100	-0.01
95	T	n-Butylbenzene	-1.0000	0.3349	0.0	100	-0.01
96	T	1,2-Dichlorobenzene	0.4000	0.4214	-5.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-20.59#
98	T	1,2,4-Trichlorobenzene	0.4000	0.3731	6.7	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.3519	12.0	100	-0.01
100	T	Naphthalene	0.4000	0.5504	-37.6#	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.3637	9.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M141168.D 8260WT.M Thu Aug 11 14:34:18 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141169.D Vial: 4
Acq On : 10 Aug 2016 15:30 Operator: TMB
Sample : WG579700-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:08 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	778326	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	552824	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	281886	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.58	111	3981	0.4688 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.88%#	
43) 1,2-Dichloroethane-d4	10.29	65	6613	0.5819 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.32%#	
58) Toluene-d8	13.03	98	12986	0.4937 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.96%#	
80) p-Bromofluorobenzene	17.00	95	5054	0.5018 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	15993	0.9645 ug/L	97
3) Chloromethane	3.37	50	18770	1.1090 ug/L	95
4) Vinyl Chloride	3.56	62	11543	1.0343 ug/L	98
5) 1,3-Butadiene	3.61	54	11473	0.1328 ug/L	74
6) Bromomethane	4.39	94	5762	1.0535 ug/L	98
7) Chloroethane	4.54	64	6646	1.0443 ug/L	91
8) Trichlorofluoromethane	5.00	101	17932	1.0151 ug/L	99
9) Diethyl ether	5.54	59	30589	4.9232 ug/L	86
10) Isoprene	5.56	67	11829	1.0049 ug/L	80
11) Acrolein	5.78	56	2381	2.5224 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	8094	1.0177 ug/L	96
13) Acetone	5.89	43	4297	1.7427 ug/L #	64
14) 1,1-Dichloroethene	6.10	61	16845	1.0151 ug/L	87
15) Tert-Butyl Alcohol	6.25	59	6101	9.0641 ug/L #	85
16) Dimethyl Sulfide	6.38	62	8523	0.8581 ug/L	91
17) Iodomethane	6.64	142	1930	1.2854 ug/L	76
18) Methyl acetate	6.68	43	5237	0.7738 ug/L #	72
19) Methylene Chloride	6.93	84	10113	1.1360 ug/L	83
20) Carbon Disulfide	6.95	76	29246	1.0587 ug/L	95
21) Acrylonitrile	7.14	53	6634	2.2997 ug/L	94
22) Methyl Tert Butyl Ether	7.18	73	19588	0.8905 ug/L	95
23) trans-1,2-Dichloroethene	7.42	96	8402	1.0371 ug/L	89
24) n-Hexane	7.49	57	10716	0.8886 ug/L	89
25) Diisopropyl ether	7.89	45	158004	4.6459 ug/L	91
26) Vinyl Acetate	8.08	43	6567	0.5031 ug/L #	78
27) 1,1-Dichloroethane	8.09	63	18672	1.0243 ug/L	98
28) Ethyl-Tert-Butyl ether	8.52	59	126161	4.5466 ug/L	98
29) 2-Butanone	8.72	43	3775	1.0559 ug/L #	57
30) Propionitrile	8.83	54	4335	4.5805 ug/L	93
31) 2,2-Dichloropropane	8.94	77	16782	1.0862 ug/L	94
32) cis-1,2-Dichloroethene	9.02	96	8731	0.9694 ug/L	76
33) Chloroform	9.25	83	18019	1.0349 ug/L	99
34) 1-Bromopropane	9.41	122	1056	0.7394 ug/L	91
35) Bromochloromethane	9.50	130	5252	1.0268 ug/L	95
36) Tetrahydrofuran	9.55	42	12134	5.3906 ug/L	92
38) 1,1,1-Trichloroethane	9.84	97	17899	1.0900 ug/L	99
39) Cyclohexane	9.86	56	14057	0.8858 ug/L	90
40) 1,1-Dichloropropene	10.07	75	11672	0.9496 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	89682	4.4061 ug/L #	86
42) Carbon Tetrachloride	10.21	117	14304	0.9768 ug/L	97

(#) = qualifier out of range (m) = manual integration

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141169.D Vial: 4
Acq On : 10 Aug 2016 15:30 Operator: TMB
Sample : WG579700-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:08 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	15214	1.0317 ug/L #	93
46)	Benzene	10.46	78	35357	1.0607 ug/L	99
47)	Trichloroethene	11.33	130	8571	0.9908 ug/L	84
48)	Methylcyclohexane	11.41	83	9977	0.8529 ug/L	89
49)	1,2-Dichloropropane	11.57	63	9303	0.9904 ug/L	85
51)	Bromodichloromethane	11.91	83	13641	1.0410 ug/L	98
52)	Dibromomethane	12.02	93	4836	0.9547 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.30	63	2139	1.4923 ug/L #	76
54)	4-Methyl-2-Pentanone	12.33	58	1510	0.5799 ug/L #	38
55)	cis-1,3-Dichloropropene	12.67	75	10896	0.8522 ug/L	98
56)	Dimethyl Disulfide	12.96	79	4238	0.5540 ug/L	86
59)	Toluene	13.14	91	30667	0.9652 ug/L	96
60)	Ethyl Methacrylate	13.30	69	5919	1.0959 ug/L	91
62)	trans-1,3-Dichloropropene	13.37	75	10293	0.8598 ug/L	87
63)	1,1,2-Trichloroethane	13.61	97	7153	1.1238 ug/L	94
64)	2-Hexanone	13.58	43	3730	0.7147 ug/L	81
65)	1,3-Dichloropropane	13.98	76	11038	1.0015 ug/L	88
66)	Tetrachloroethene	14.08	166	9027	1.0607 ug/L	91
67)	Dibromochloromethane	14.40	129	8369	0.9861 ug/L	96
68)	1,2-Dibromoethane	14.69	107	6419	1.0822 ug/L	83
69)	1-Chlorohexane	14.84	91	7093	0.9266 ug/L	69
70)	Chlorobenzene	15.28	112	23908	1.0848 ug/L	94
71)	1,1,1,2-Tetrachloroethane	15.33	131	8798	1.0123 ug/L	97
72)	Ethylbenzene	15.34	106	11548	1.0297 ug/L	97
73)	m-,p-Xylene	15.44	106	26742	1.9956 ug/L	93
74)	o-Xylene	16.10	106	10415	0.8086 ug/L	77
75)	Styrene	16.14	104	17458	0.8486 ug/L	90
76)	Bromoform	16.69	173	4705	0.8734 ug/L	90
77)	Isopropylbenzene	16.60	105	28909	0.8826 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.86	83	7555	1.0748 ug/L	95
81)	1,2,3-Trichloropropane	17.09	110	2140	0.9886 ug/L	81
82)	trans-1,4-Dichloro-2-Buten	17.16	53	1549	1.2464 ug/L	62
83)	n-Propylbenzene	17.20	91	35474	0.9802 ug/L	94
84)	Bromobenzene	17.33	156	9480	1.0713 ug/L	92
85)	1,3,5-Trimethylbenzene	17.43	105	23237	0.9041 ug/L	97
86)	2-Chlorotoluene	17.50	91	26008	0.9980 ug/L	95
87)	4-Chlorotoluene	17.56	91	26330	1.0343 ug/L	92
88)	a-Methylstyrene	17.91	118	11117	0.7438 ug/L	96
89)	tert-Butylbenzene	17.97	134	5266	0.9597 ug/L	72
90)	1,2,4-Trimethylbenzene	18.03	105	27159	0.9447 ug/L	97
91)	sec-Butylbenzene	18.29	105	30381	0.9781 ug/L	97
92)	p-Isopropyltoluene	18.48	119	24312	0.9132 ug/L	93
93)	1,3-Dichlorobenzene	18.67	146	17384	1.0370 ug/L	93
94)	1,4-Dichlorobenzene	18.84	146	18225	1.0588 ug/L	95
95)	n-Butylbenzene	19.10	91	21341	0.8692 ug/L	96
96)	1,2-Dichlorobenzene	19.41	146	16898	1.0402 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	20.60	75	1349	0.9009 ug/L	60
98)	1,2,4-Trichlorobenzene	21.94	180	7369	0.8666 ug/L	92
99)	Hexachlorobutadiene	22.14	225	4748	1.1662 ug/L	98
100)	Naphthalene	22.36	128	10428	0.8954 ug/L	91
101)	1,2,3-Trichlorobenzene	22.74	180	7860	0.8976 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141169.D Vial: 4
Acq On : 10 Aug 2016 15:30 Operator: TMB
Sample : WG579700-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

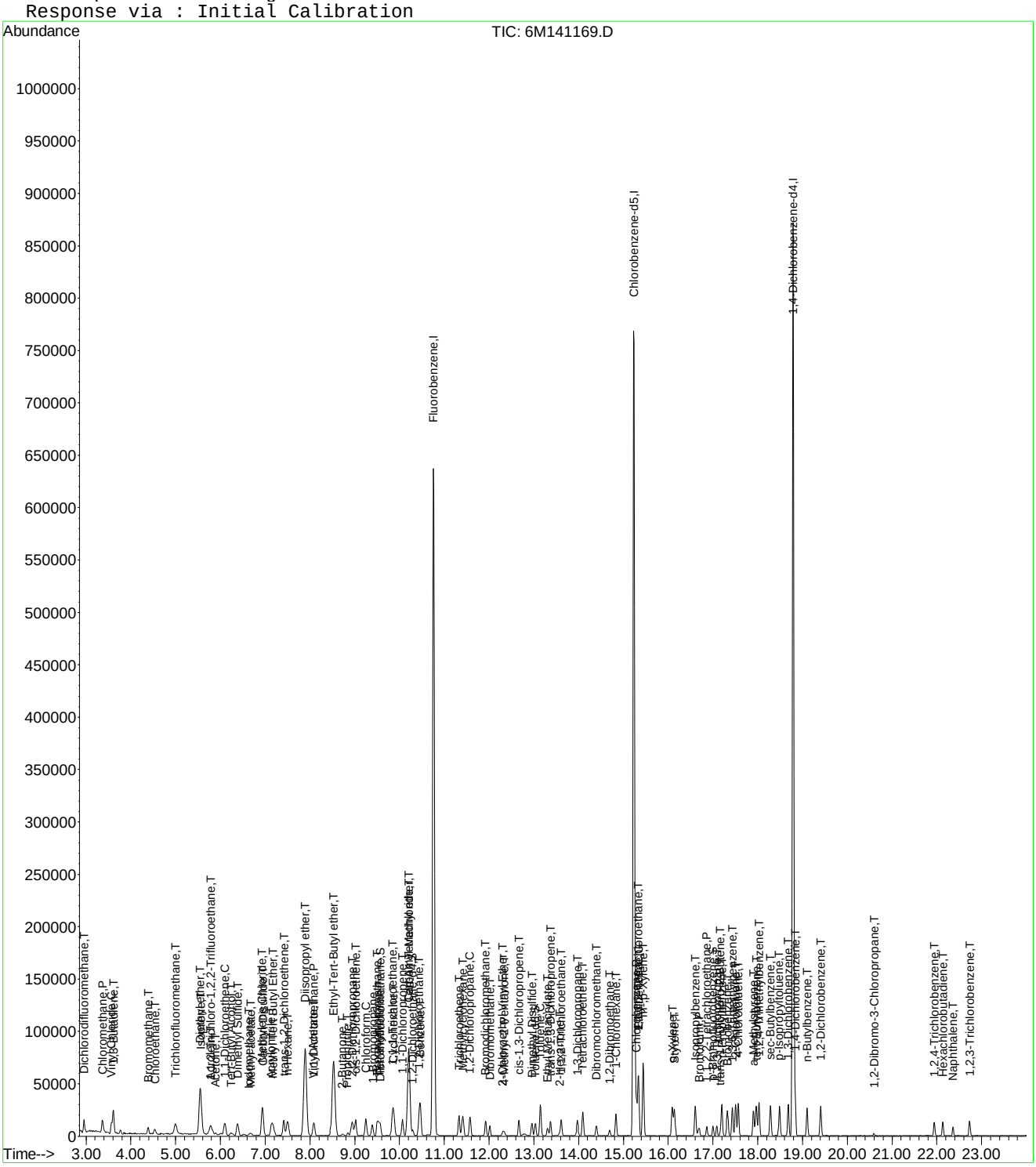

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141169.D Vial: 4
Acq On : 10 Aug 2016 15:30 Operator: TMB
Sample : WG579700-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9645	3.5	100	0.00
3	P	Chloromethane	1.0000	1.1090	-10.9	100	0.01
4	C	Vinyl Chloride	1.0000	1.0343	-3.4	100	0.01
5	T	1,3-Butadiene	-1.0000	0.1328	0.0	0	0.03
6	T	Bromomethane	1.0000	1.0535	-5.3	100	0.02
7	T	Chloroethane	1.0000	1.0443	-4.4	100	0.02
8	T	Trichlorofluoromethane	1.0000	1.0151	-1.5	100	0.01
9	T	Diethyl ether	5.0000	4.9232	1.5	100	0.00
10	T	Isoprene	-1.0000	1.0049	0.0	100	0.01
11	T	Acrolein	-1.0000	2.5224	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0176	-1.8	100	0.01
13	T	Acetone	-1.0000	1.7427	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0151	-1.5	100	0.01
15	T	Tert-Butyl Alcohol	10.0000	9.0641	9.4	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	0.8581	0.0	100	0.00
17	T	Iodomethane	1.0000	1.2854	-28.5#	100	0.00
18	T	Methyl acetate	-1.0000	0.7738	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.1360	-13.6	100	0.00
20	T	Carbon Disulfide	1.0000	1.0587	-5.9	100	0.00
21	T	Acrylonitrile	2.5000	2.2998	8.0	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.8905	11.0	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0371	-3.7	100	0.01
24	T	n-Hexane	-1.0000	0.8886	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.6459	7.1	100	0.00
26	T	Vinyl Acetate	-1.0000	0.5031	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0243	-2.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.5466	9.1	100	0.00
29	T	2-Butanone	-1.0000	1.0559	0.0	100	0.00
30	T	Propionitrile	5.0000	4.5805	8.4	100	-0.02
31	T	2,2-Dichloropropane	1.0000	1.0862	-8.6	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9694	3.1	100	0.00
33	C	Chloroform	1.0000	1.0349	-3.5	100	0.00
34		1-Bromopropane	1.0000	0.7394	26.1#	100	0.01
35	T	Bromochloromethane	1.0000	1.0268	-2.7	100	0.00
36	T	Tetrahydrofuran	5.0000	5.3906	-7.8	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4688	6.2	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	1.0900	-9.0	100	0.00
39	T	Cyclohexane	1.0000	0.8858	11.4	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9496	5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.4061	11.9	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9768	2.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.5819	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	1.0000	1.0317	-3.2	100	0.00
46	T	Benzene	1.0000	1.0608	-6.1	100	0.00
47	T	Trichloroethene	1.0000	0.9908	0.9	100	0.00
48	T	Methylcyclohexane	-1.0000	0.8529	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9904	1.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.93#
51	T	Bromodichloromethane	1.0000	1.0410	-4.1	100	0.00
52	T	Dibromomethane	1.0000	0.9547	4.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.4923	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.5799	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141169.D Vial: 4
Acq On : 10 Aug 2016 15:30 Operator: TMB
Sample : WG579700-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.8522	14.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.5540	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.4937	0.0	0	0.00
59	C	Toluene	1.0000	0.9652	3.5	100	0.00
60	T	Ethyl Methacrylate	1.0000	1.0959	-9.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	1.0000	0.8598	14.0	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	1.1238	-12.4	100	0.00
64	T	2-Hexanone	-1.0000	0.7147	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	1.0015	-0.2	100	0.00
66	T	Tetrachloroethene	1.0000	1.0607	-6.1	100	-0.02
67	T	Dibromochloromethane	1.0000	0.9860	1.4	100	0.00
68	T	1,2-Dibromoethane	1.0000	1.0822	-8.2	100	0.00
69	T	1-Chlorohexane	1.0000	0.9266	7.3	100	0.00
70	P	Chlorobenzene	1.0000	1.0848	-8.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	1.0123	-1.2	100	0.00
72	C	Ethylbenzene	1.0000	1.0297	-3.0	100	0.00
73	T	m-,p-Xylene	2.0000	1.9956	0.2	100	0.00
74	T	o-Xylene	1.0000	0.8086	19.1	100	0.00
75	T	Styrene	1.0000	0.8487	15.1	100	0.00
76	P	Bromoform	1.0000	0.8734	12.7	100	0.00
77	T	Isopropylbenzene	1.0000	0.8826	11.7	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	1.0748	-7.5	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5018	0.0	0	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.9886	1.1	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2464	-24.6#	100	0.00
83	T	n-Propylbenzene	1.0000	0.9802	2.0	100	0.00
84	T	Bromobenzene	1.0000	1.0713	-7.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	0.9041	9.6	100	0.00
86	T	2-Chlorotoluene	1.0000	0.9980	0.2	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0343	-3.4	100	0.00
88	T	a-Methylstyrene	-1.0000	0.7438	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	0.9597	4.0	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	0.9447	5.5	100	0.00
91	T	sec-Butylbenzene	1.0000	0.9781	2.2	100	0.00
92	T	p-Isopropyltoluene	1.0000	0.9132	8.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0370	-3.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0588	-5.9	100	0.00
95	T	n-Butylbenzene	1.0000	0.8692	13.1	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0401	-4.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.9009	0.0	100	0.01
98	T	1,2,4-Trichlorobenzene	1.0000	0.8666	13.3	100	0.00
99	T	Hexachlorobutadiene	1.0000	1.1663	-16.6	100	0.00
100	T	Naphthalene	1.0000	0.8954	10.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	0.8976	10.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M141169.D 8260WT.M Thu Aug 11 14:34:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141170.D Vial: 5
Acq On : 10 Aug 2016 16:01 Operator: TMB
Sample : WG579700-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:17 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	787046	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	559593	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	293009	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.57	111	8845	1.0301 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.12%#	
43) 1,2-Dichloroethane-d4	10.30	65	12324	1.0724 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.28%#	
58) Toluene-d8	13.03	98	26425	0.9924 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.96%#	
80) p-Bromofluorobenzene	17.00	95	10149	0.9694 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.88%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	31572	1.8829 ug/L	96
3) Chloromethane	3.37	50	36153	2.1123 ug/L	99
4) Vinyl Chloride	3.56	62	23214	2.0571 ug/L	97
5) 1,3-Butadiene	3.60	54	22700	1.3056 ug/L	77
6) Bromomethane	4.39	94	11843	2.1413 ug/L	93
7) Chloroethane	4.53	64	13228	2.0556 ug/L	92
8) Trichlorofluoromethane	5.00	101	37050	2.0742 ug/L	99
9) Diethyl ether	5.54	59	163349	25.9992 ug/L	93
10) Isoprene	5.56	67	24077	2.0227 ug/L	87
11) Acrolein	5.78	56	11921	12.4890 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	15820	1.9670 ug/L	98
13) Acetone	5.88	43	8176	3.2791 ug/L #	67
14) 1,1-Dichloroethene	6.10	61	33483	1.9954 ug/L	83
15) Tert-Butyl Alcohol	6.24	59	33996	49.9475 ug/L	94
16) Dimethyl Sulfide	6.38	62	18305	1.8225 ug/L	85
17) Iodomethane	6.64	142	5665	1.6830 ug/L	80
18) Methyl acetate	6.67	43	11446	1.6726 ug/L #	88
19) Methylene Chloride	6.93	84	19877	2.2081 ug/L	85
20) Carbon Disulfide	6.95	76	60751	2.1748 ug/L	98
21) Acrylonitrile	7.13	53	32290	11.0696 ug/L	90
22) Methyl Tert Butyl Ether	7.18	73	42515	1.9113 ug/L	96
23) trans-1,2-Dichloroethene	7.41	96	16168	1.9736 ug/L	77
24) n-Hexane	7.49	57	22645	1.8569 ug/L	94
25) Diisopropyl ether	7.89	45	885460	25.7472 ug/L	95
26) Vinyl Acetate	8.07	43	18115	1.3724 ug/L #	82
27) 1,1-Dichloroethane	8.08	63	39048	2.1182 ug/L	98
28) Ethyl-Tert-Butyl ether	8.52	59	713555	25.4303 ug/L	98
29) 2-Butanone	8.72	43	7005	1.9376 ug/L #	82
30) Propionitrile	8.84	54	24002	25.0801 ug/L	96
31) 2,2-Dichloropropane	8.94	77	31960	2.0456 ug/L	92
32) cis-1,2-Dichloroethene	9.02	96	18628	2.0454 ug/L	81
33) Chloroform	9.25	83	36863	2.0938 ug/L	99
34) 1-Bromopropane	9.39	122	2528	1.7504 ug/L	97
35) Bromochloromethane	9.50	130	10969	2.1207 ug/L	99
36) Tetrahydrofuran	9.54	42	53383	23.4531 ug/L	93
38) 1,1,1-Trichloroethane	9.84	97	33820	2.0368 ug/L	97
39) Cyclohexane	9.86	56	30175	1.8805 ug/L	92
40) 1,1-Dichloropropene	10.06	75	24470	1.9688 ug/L	94
41) Tert-Amyl-Methyl ether	10.21	73	519000	25.2160 ug/L	91
42) Carbon Tetrachloride	10.22	117	30023	2.0276 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M141170.D 8260WT.M Thu Aug 11 14:32:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141170.D Vial: 5
Acq On : 10 Aug 2016 16:01 Operator: TMB
Sample : WG579700-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:17 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	31913	2.1401 ug/L #	90
46)	Benzene	10.46	78	72621	2.1546 ug/L	97
47)	Trichloroethene	11.33	130	17316	1.9795 ug/L	85
48)	Methylcyclohexane	11.41	83	20205	1.7081 ug/L	87
49)	1,2-Dichloropropane	11.58	63	19197	2.0211 ug/L	87
50)	1,4-Dioxane	11.91	88	2172	39.2265 ug/L	87
51)	Bromodichloromethane	11.92	83	26515	2.0010 ug/L	98
52)	Dibromomethane	12.02	93	10680	2.0850 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.30	63	5617	2.2284 ug/L	85
54)	4-Methyl-2-Pentanone	12.34	58	4052	1.5390 ug/L	81
55)	cis-1,3-Dichloropropene	12.67	75	24118	1.8655 ug/L	97
56)	Dimethyl Disulfide	12.95	79	10201	1.3187 ug/L	97
59)	Toluene	13.15	91	67558	2.1005 ug/L	98
60)	Ethyl Methacrylate	13.31	69	13811	1.9442 ug/L	92
62)	trans-1,3-Dichloropropene	13.37	75	22242	1.8354 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	13864	2.1517 ug/L	97
64)	2-Hexanone	13.57	43	8612	1.6301 ug/L	87
65)	1,3-Dichloropropane	13.98	76	22643	2.0297 ug/L	89
66)	Tetrachloroethene	14.09	166	17479	2.0289 ug/L	90
67)	Dibromochloromethane	14.39	129	17765	2.0678 ug/L	97
68)	1,2-Dibromoethane	14.70	107	11576	1.9281 ug/L	100
69)	1-Chlorohexane	14.84	91	15742	1.7538 ug/L	71
70)	Chlorobenzene	15.28	112	47635	2.1352 ug/L	78
71)	1,1,1,2-Tetrachloroethane	15.33	131	18915	2.1501 ug/L	93
72)	Ethylbenzene	15.33	106	22598	1.9906 ug/L	85
73)	m-,p-Xylene	15.45	106	56241	4.1461 ug/L	91
74)	o-Xylene	16.09	106	23464	1.7998 ug/L	86
75)	Styrene	16.14	104	41587	1.9087 ug/L	91
76)	Bromoform	16.70	173	10598	1.9435 ug/L	97
77)	Isopropylbenzene	16.60	105	63110	1.9034 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.87	83	15596	2.1345 ug/L	94
81)	1,2,3-Trichloropropane	17.09	110	4749	2.1106 ug/L	83
82)	trans-1,4-Dichloro-2-Buten	17.16	53	3820	2.0301 ug/L	84
83)	n-Propylbenzene	17.20	91	78762	2.0937 ug/L	95
84)	Bromobenzene	17.33	156	19705	2.1423 ug/L	94
85)	1,3,5-Trimethylbenzene	17.43	105	52543	1.9667 ug/L	98
86)	2-Chlorotoluene	17.50	91	58107	2.1451 ug/L	99
87)	4-Chlorotoluene	17.56	91	59224	2.2381 ug/L	92
88)	a-Methylstyrene	17.91	118	26048	1.6767 ug/L	85
89)	tert-Butylbenzene	17.97	134	11233	1.9694 ug/L	60
90)	1,2,4-Trimethylbenzene	18.03	105	62466	2.0904 ug/L	97
91)	sec-Butylbenzene	18.29	105	66258	2.0521 ug/L	95
92)	p-Isopropyltoluene	18.49	119	53831	1.9453 ug/L	96
93)	1,3-Dichlorobenzene	18.68	146	36696	2.1059 ug/L	91
94)	1,4-Dichlorobenzene	18.84	146	39404	2.2022 ug/L	80
95)	n-Butylbenzene	19.10	91	48284	1.8919 ug/L	96
96)	1,2-Dichlorobenzene	19.41	146	35902	2.1260 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	20.59	75	2827	1.8163 ug/L	81
98)	1,2,4-Trichlorobenzene	21.94	180	15898	1.6640 ug/L	99
99)	Hexachlorobutadiene	22.13	225	9303	2.1983 ug/L	95
100)	Naphthalene	22.36	128	23546	1.5111 ug/L	96
101)	1,2,3-Trichlorobenzene	22.74	180	16068	1.7652 ug/L	95

(#) = qualifier out of range (m) = manual integration
6M141170.D 8260WT.M Thu Aug 11 14:32:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141170.D Vial: 5
Acq On : 10 Aug 2016 16:01 Operator: TMB
Sample : WG579700-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

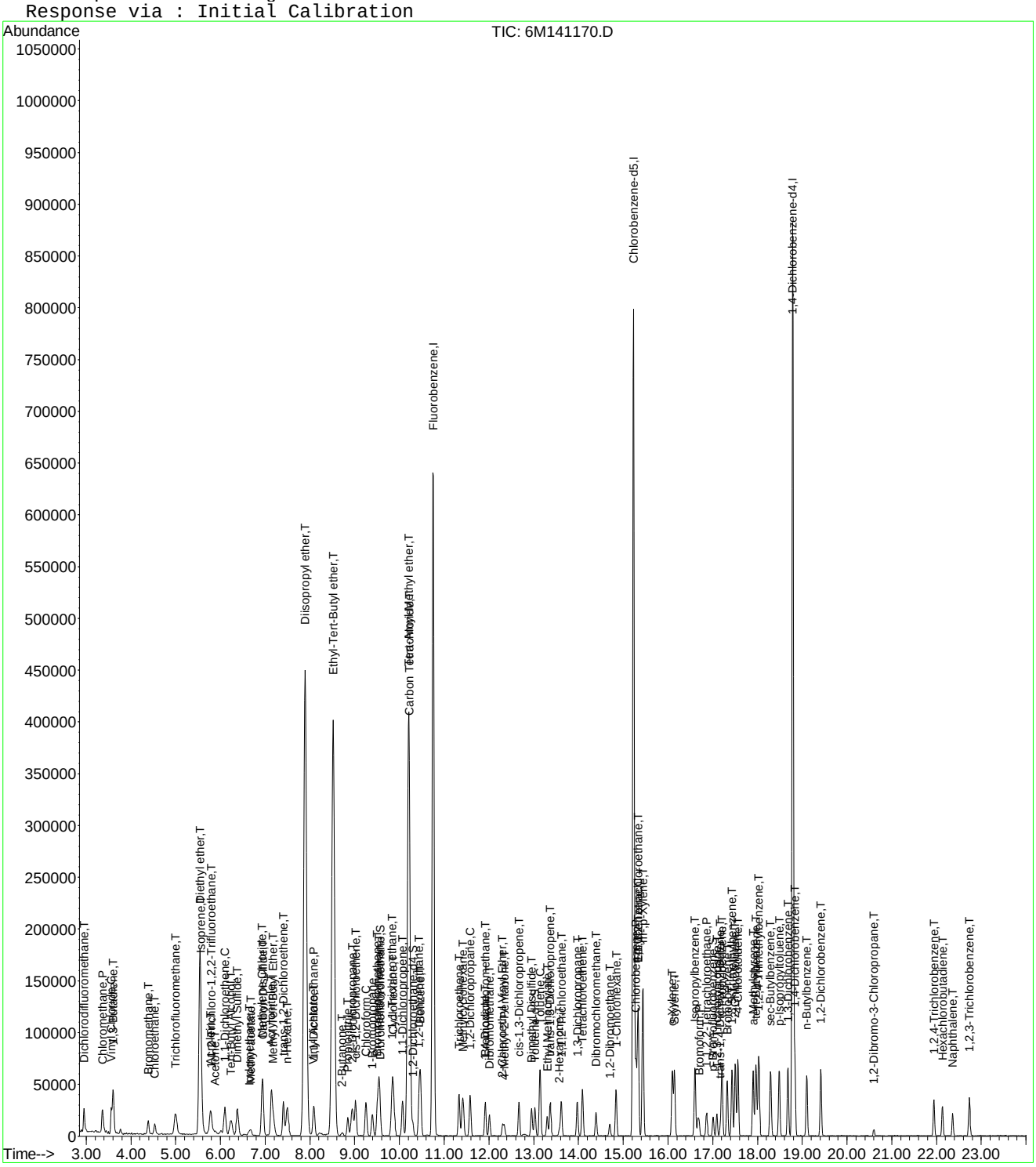

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141170.D Vial: 5
Acq On : 10 Aug 2016 16:01 Operator: TMB
Sample : WG579700-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8829	5.9	100	0.00
3	P	Chloromethane	2.0000	2.1123	-5.6	100	0.01
4	C	Vinyl Chloride	2.0000	2.0571	-2.9	100	0.01
5	T	1,3-Butadiene	-1.0000	1.3056	0.0	0	0.02
6	T	Bromomethane	2.0000	2.1413	-7.1	100	0.02
7	T	Chloroethane	2.0000	2.0556	-2.8	100	0.01
8	T	Trichlorofluoromethane	2.0000	2.0742	-3.7	100	0.01
9	T	Diethyl ether	25.0000	25.9992	-4.0	100	0.00
10	T	Isoprene	-1.0000	2.0227	0.0	100	0.01
11	T	Acrolein	12.5000	12.4890	0.1	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9670	1.6	100	0.02
13	T	Acetone	-1.0000	3.2791	0.0	100	-0.02
14	C	1,1-Dichloroethene	2.0000	1.9954	0.2	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	49.9475	0.1	100	-0.05
16	T	Dimethyl Sulfide	-1.0000	1.8225	0.0	100	0.00
17	T	Iodomethane	2.0000	1.6830	15.8	100	0.01
18	T	Methyl acetate	-1.0000	1.6726	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.2081	-10.4	100	0.00
20	T	Carbon Disulfide	2.0000	2.1748	-8.7	100	0.00
21	T	Acrylonitrile	12.5000	11.0696	11.4	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9113	4.4	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9736	1.3	100	0.00
24	T	n-Hexane	-1.0000	1.8569	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	25.7472	-3.0	100	0.00
26	T	Vinyl Acetate	-1.0000	1.3724	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1182	-5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.4303	-1.7	100	0.00
29	T	2-Butanone	-1.0000	1.9376	0.0	100	0.00
30	T	Propionitrile	25.0000	25.0801	-0.3	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.0456	-2.3	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0454	-2.3	100	0.00
33	C	Chloroform	2.0000	2.0938	-4.7	100	0.00
34		1-Bromopropane	2.0000	1.7504	12.5	100	0.00
35	T	Bromochloromethane	2.0000	2.1207	-6.0	100	0.00
36	T	Tetrahydrofuran	25.0000	23.4532	6.2	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0301	-3.0	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0368	-1.8	100	0.00
39	T	Cyclohexane	2.0000	1.8805	6.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9688	1.6	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	25.2160	-0.9	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0276	-1.4	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0724	-7.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	2.0000	2.1401	-7.0	100	0.00
46	T	Benzene	2.0000	2.1546	-7.7	100	0.00
47	T	Trichloroethene	2.0000	1.9795	1.0	100	0.00
48	T	Methylcyclohexane	-1.0000	1.7081	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0211	-1.1	100	0.00
50	T	1,4-Dioxane	-1.0000	39.2265	0.0	100	-0.02
51	T	Bromodichloromethane	2.0000	2.0010	-0.0	100	0.00
52	T	Dibromomethane	2.0000	2.0850	-4.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.2284	-11.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.5390	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141170.D Vial: 5
Acq On : 10 Aug 2016 16:01 Operator: TMB
Sample : WG579700-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8655	6.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.3187	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9924	0.8	100	0.00
59	C	Toluene	2.0000	2.1005	-5.0	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9442	2.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	2.0000	1.8354	8.2	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	2.1517	-7.6	100	0.00
64	T	2-Hexanone	-1.0000	1.6301	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0297	-1.5	100	0.00
66	T	Tetrachloroethene	2.0000	2.0289	-1.4	100	0.00
67	T	Dibromochloromethane	2.0000	2.0678	-3.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9281	3.6	100	0.00
69	T	1-Chlorohexane	2.0000	1.7538	12.3	100	0.00
70	P	Chlorobenzene	2.0000	2.1352	-6.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	2.1501	-7.5	100	0.00
72	C	Ethylbenzene	2.0000	1.9907	0.5	100	0.00
73	T	m-,p-Xylene	4.0000	4.1461	-3.7	100	0.00
74	T	o-Xylene	2.0000	1.7998	10.0	100	0.00
75	T	Styrene	2.0000	1.9087	4.6	100	0.00
76	P	Bromoform	2.0000	1.9434	2.8	100	0.00
77	T	Isopropylbenzene	2.0000	1.9034	4.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.1345	-6.7	100	0.00
80	S	p-Bromofluorobenzene	1.0000	0.9694	3.1	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.1105	-5.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0301	-1.5	100	0.00
83	T	n-Propylbenzene	2.0000	2.0937	-4.7	100	0.00
84	T	Bromobenzene	2.0000	2.1423	-7.1	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	1.9667	1.7	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1451	-7.3	100	0.00
87	T	4-Chlorotoluene	2.0000	2.2381	-11.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.6767	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9694	1.5	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.0904	-4.5	100	0.00
91	T	sec-Butylbenzene	2.0000	2.0521	-2.6	100	0.00
92	T	p-Isopropyltoluene	2.0000	1.9453	2.7	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1059	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.2022	-10.1	100	0.00
95	T	n-Butylbenzene	2.0000	1.8919	5.4	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.1260	-6.3	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.8163	9.2	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.6640	16.8	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.1983	-9.9	100	0.00
100	T	Naphthalene	2.0000	1.5111	24.4#	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.7652	11.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141171.D Vial: 6
Acq On : 10 Aug 2016 16:34 Operator: TMB
Sample : WG579700-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:25 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	782399	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	565676	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	309669	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	21471	2.5153 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.08%#		
43) 1,2-Dichloroethane-d4	10.30	65	29165	2.5529 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.20%#		
58) Toluene-d8	13.02	98	68251	2.5357 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.16%#		
80) p-Bromofluorobenzene	17.01	95	25726	2.3252 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 9.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	78049	4.6824 ug/L	99
3) Chloromethane	3.36	50	84567	4.9703 ug/L	98
4) Vinyl Chloride	3.56	62	55512	4.9484 ug/L	100
5) 1,3-Butadiene	3.60	54	53546	4.6123 ug/L	87
6) Bromomethane	4.39	94	26635	4.8444 ug/L	97
7) Chloroethane	4.53	64	30987	4.8438 ug/L	92
8) Trichlorofluoromethane	5.01	101	91002	5.1249 ug/L	97
9) Diethyl ether	5.54	59	316116	50.6130 ug/L	94
10) Isoprene	5.56	67	58002	4.9016 ug/L	81
11) Acrolein	5.77	56	23042	24.2833 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	40419	5.0554 ug/L	94
13) Acetone	5.89	43	14396	5.8081 ug/L	84
14) 1,1-Dichloroethene	6.10	61	84292	5.0530 ug/L	89
15) Tert-Butyl Alcohol	6.24	59	65675	97.0639 ug/L	95
16) Dimethyl Sulfide	6.38	62	46531	4.6602 ug/L	87
17) Iodomethane	6.63	142	23187	3.5741 ug/L	82
18) Methyl acetate	6.67	43	33800	4.9684 ug/L	93
19) Methylene Chloride	6.93	84	45636	5.0996 ug/L	90
20) Carbon Disulfide	6.95	76	137896	4.9657 ug/L	99
21) Acrylonitrile	7.14	53	68353	23.5719 ug/L	93
22) Methyl Tert Butyl Ether	7.17	73	107118	4.8442 ug/L	97
23) trans-1,2-Dichloroethene	7.41	96	39727	4.8782 ug/L	81
24) n-Hexane	7.50	57	58216	4.8021 ug/L	94
25) Diisopropyl ether	7.89	45	1767752	51.7076 ug/L	96
26) Vinyl Acetate	8.07	43	52815	4.0252 ug/L	96
27) 1,1-Dichloroethane	8.08	63	94063	5.1330 ug/L	96
28) Ethyl-Tert-Butyl ether	8.52	59	1437665	51.5411 ug/L	98
29) 2-Butanone	8.72	43	18137	5.0465 ug/L	94
30) Propionitrile	8.85	54	48682	51.1709 ug/L	97
31) 2,2-Dichloropropane	8.94	77	80934	5.2110 ug/L	96
32) cis-1,2-Dichloroethene	9.02	96	44521	4.9175 ug/L	78
33) Chloroform	9.25	83	87576	5.0038 ug/L	98
34) 1-Bromopropane	9.40	122	7383	5.1424 ug/L	97
35) Bromochloromethane	9.51	130	26308	5.1165 ug/L	98
36) Tetrahydrofuran	9.54	42	109090	48.2120 ug/L	93
38) 1,1,1-Trichloroethane	9.84	97	83269	5.0446 ug/L	100
39) Cyclohexane	9.87	56	76948	4.8238 ug/L	94
40) 1,1-Dichloropropene	10.06	75	59822	4.8417 ug/L	92
41) Tert-Amyl-Methyl ether	10.21	73	1050172	51.3264 ug/L	93
42) Carbon Tetrachloride	10.22	117	74767	5.0793 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141171.D Vial: 6
Acq On : 10 Aug 2016 16:34 Operator: TMB
Sample : WG579700-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:25 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	75756	5.1103 ug/L	94
46)	Benzene	10.47	78	172987	5.1628 ug/L	98
47)	Trichloroethene	11.33	130	42111	4.8425 ug/L	84
48)	Methylcyclohexane	11.41	83	53787	4.5741 ug/L	90
49)	1,2-Dichloropropane	11.57	63	46286	4.9021 ug/L	84
50)	1,4-Dioxane	11.93	88	4366	79.3187 ug/L	78
51)	Bromodichloromethane	11.92	83	65445	4.9682 ug/L	99
52)	Dibromomethane	12.01	93	26759	5.2551 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.30	63	16368	4.5404 ug/L	95
54)	4-Methyl-2-Pentanone	12.33	58	11382	4.3486 ug/L	96
55)	cis-1,3-Dichloropropene	12.67	75	62620	4.8722 ug/L	96
56)	Dimethyl Disulfide	12.95	79	28297	3.6798 ug/L	100
59)	Toluene	13.15	91	174400	5.3642 ug/L	98
60)	Ethyl Methacrylate	13.30	69	38666	4.5957 ug/L	92
62)	trans-1,3-Dichloropropene	13.37	75	60695	4.9546 ug/L	92
63)	1,1,2-Trichloroethane	13.62	97	33303	5.1131 ug/L	100
64)	2-Hexanone	13.57	43	23007	4.3080 ug/L	89
65)	1,3-Dichloropropane	13.97	76	57487	5.0976 ug/L	91
66)	Tetrachloroethene	14.10	166	44972	5.1642 ug/L	94
67)	Dibromochloromethane	14.39	129	41813	4.8146 ug/L	97
68)	1,2-Dibromoethane	14.70	107	28848	4.7532 ug/L	99
69)	1-Chlorohexane	14.84	91	43737	4.4131 ug/L	72
70)	Chlorobenzene	15.28	112	115283	5.1118 ug/L	87
71)	1,1,1,2-Tetrachloroethane	15.33	131	44448	4.9982 ug/L	94
72)	Ethylbenzene	15.33	106	59026	5.1437 ug/L	92
73)	m-,p-Xylene	15.44	106	142570	10.3973 ug/L	89
74)	o-Xylene	16.10	106	64157	4.8681 ug/L	91
75)	Styrene	16.14	104	115837	5.1447 ug/L	91
76)	Bromoform	16.69	173	26353	4.7806 ug/L	97
77)	Isopropylbenzene	16.61	105	171466	5.1158 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.86	83	40364	5.2272 ug/L	100
81)	1,2,3-Trichloropropane	17.09	110	12304	5.1740 ug/L	96
82)	trans-1,4-Dichloro-2-Buten	17.16	53	10774	4.2906 ug/L	93
83)	n-Propylbenzene	17.20	91	215499	5.4203 ug/L	95
84)	Bromobenzene	17.32	156	50379	5.1825 ug/L	96
85)	1,3,5-Trimethylbenzene	17.43	105	148789	5.2697 ug/L	96
86)	2-Chlorotoluene	17.50	91	147959	5.1682 ug/L	98
87)	4-Chlorotoluene	17.56	91	153220	5.4787 ug/L	92
88)	a-Methylstyrene	17.91	118	74984	4.5670 ug/L	92
89)	tert-Butylbenzene	17.98	134	30752	5.1014 ug/L	65
90)	1,2,4-Trimethylbenzene	18.03	105	169086	5.3539 ug/L	96
91)	sec-Butylbenzene	18.28	105	178857	5.2414 ug/L	97
92)	p-Isopropyltoluene	18.49	119	151956	5.1959 ug/L	97
93)	1,3-Dichlorobenzene	18.68	146	97039	5.2692 ug/L	99
94)	1,4-Dichlorobenzene	18.83	146	96365	5.0959 ug/L	90
95)	n-Butylbenzene	19.10	91	136143	5.0474 ug/L	93
96)	1,2-Dichlorobenzene	19.41	146	91162	5.1080 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.59	75	7874	4.7868 ug/L	80
98)	1,2,4-Trichlorobenzene	21.94	180	45182	4.2632 ug/L	99
99)	Hexachlorobutadiene	22.13	225	22212	4.9664 ug/L	95
100)	Naphthalene	22.36	128	76959	3.8987 ug/L	99
101)	1,2,3-Trichlorobenzene	22.74	180	47152	4.9014 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M141171.D 8260WT.M Thu Aug 11 14:32:30 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141171.D Vial: 6
Acq On : 10 Aug 2016 16:34 Operator: TMB
Sample : WG579700-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

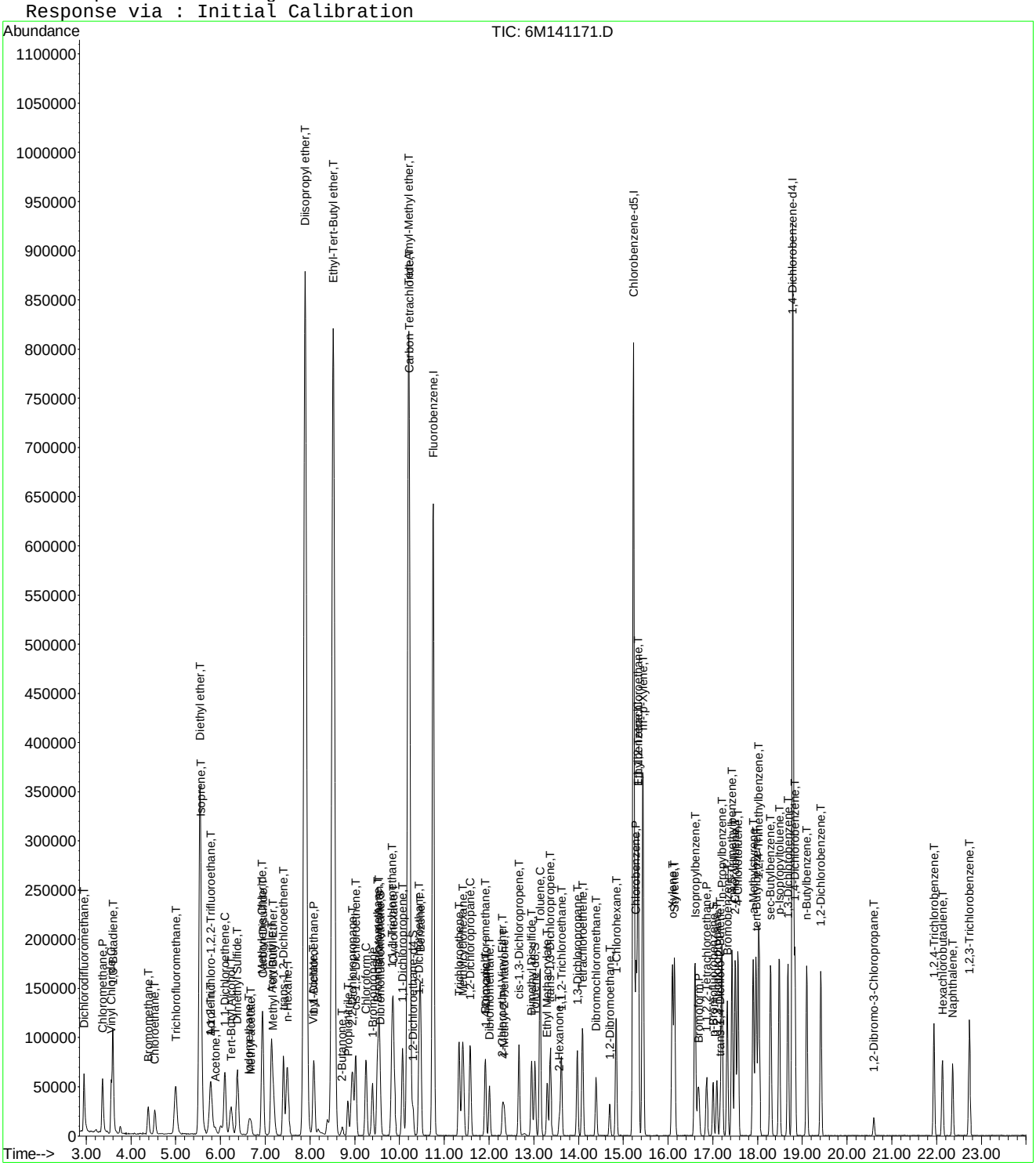

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141171.D Vial: 6
Acq On : 10 Aug 2016 16:34 Operator: TMB
Sample : WG579700-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.6824	6.4	100	0.00
3	P	Chloromethane	5.0000	4.9703	0.6	100	0.00
4	C	Vinyl Chloride	5.0000	4.9484	1.0	100	0.00
5	T	1,3-Butadiene	5.0000	4.6123	7.8	100	0.02
6	T	Bromomethane	5.0000	4.8444	3.1	100	0.02
7	T	Chloroethane	5.0000	4.8438	3.1	100	0.00
8	T	Trichlorofluoromethane	5.0000	5.1249	-2.5	100	0.02
9	T	Diethyl ether	50.0000	50.6130	-1.2	100	0.00
10	T	Isoprene	5.0000	4.9016	2.0	100	0.00
11	T	Acrolein	25.0000	24.2833	2.9	100	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.0554	-1.1	100	0.00
13	T	Acetone	5.0000	5.8081	-16.2	100	-0.01
14	C	1,1-Dichloroethene	5.0000	5.0530	-1.1	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	97.0639	2.9	100	-0.04
16	T	Dimethyl Sulfide	5.0000	4.6601	6.8	100	0.00
17	T	Iodomethane	5.0000	3.5741	28.5#	100	0.00
18	T	Methyl acetate	5.0000	4.9684	0.6	100	0.00
19	T	Methylene Chloride	5.0000	5.0996	-2.0	100	0.00
20	T	Carbon Disulfide	5.0000	4.9657	0.7	100	0.00
21	T	Acrylonitrile	25.0000	23.5719	5.7	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.8442	3.1	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.8782	2.4	100	0.00
24	T	n-Hexane	5.0000	4.8021	4.0	100	0.00
25	T	Diisopropyl ether	50.0000	51.7076	-3.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.0252	19.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.1330	-2.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.5411	-3.1	100	0.00
29	T	2-Butanone	5.0000	5.0465	-0.9	100	-0.01
30	T	Propionitrile	50.0000	51.1709	-2.3	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.2110	-4.2	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.9175	1.6	100	0.00
33	C	Chloroform	5.0000	5.0038	-0.1	100	0.00
34		1-Bromopropane	5.0000	5.1424	-2.8	100	0.00
35	T	Bromochloromethane	5.0000	5.1165	-2.3	100	0.00
36	T	Tetrahydrofuran	50.0000	48.2120	3.6	100	0.00
37	S	Dibromofluoromethane	2.5000	2.5153	-0.6	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	5.0446	-0.9	100	0.00
39	T	Cyclohexane	5.0000	4.8238	3.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.8417	3.2	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	51.3264	-2.7	100	0.00
42	T	Carbon Tetrachloride	5.0000	5.0793	-1.6	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5529	-2.1	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	-0.01
45	T	1,2-Dichloroethane	5.0000	5.1103	-2.2	100	0.00
46	T	Benzene	5.0000	5.1628	-3.3	100	0.00
47	T	Trichloroethene	5.0000	4.8425	3.1	100	0.00
48	T	Methylcyclohexane	5.0000	4.5741	8.5	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9021	2.0	100	0.00
50	T	1,4-Dioxane	100.0000	79.3187	20.7#	100	0.00
51	T	Bromodichloromethane	5.0000	4.9682	0.6	100	0.00
52	T	Dibromomethane	5.0000	5.2552	-5.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.5404	9.2	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.3486	13.0	100	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141171.D Vial: 6
Acq On : 10 Aug 2016 16:34 Operator: TMB
Sample : WG579700-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8723	2.6	100	0.00
56	T	Dimethyl Disulfide	5.0000	3.6798	26.4#	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.5357	-1.4	100	-0.01
59	C	Toluene	5.0000	5.3642	-7.3	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.5957	8.1	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	5.0000	4.9546	0.9	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	5.1131	-2.3	100	0.00
64	T	2-Hexanone	5.0000	4.3080	13.8	100	-0.01
65	T	1,3-Dichloropropane	5.0000	5.0976	-2.0	100	0.00
66	T	Tetrachloroethene	5.0000	5.1642	-3.3	100	0.00
67	T	Dibromochloromethane	5.0000	4.8146	3.7	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.7532	4.9	100	0.00
69	T	1-Chlorohexane	5.0000	4.4131	11.7	100	0.00
70	P	Chlorobenzene	5.0000	5.1118	-2.2	100	-0.01
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.9982	0.0	100	0.00
72	C	Ethylbenzene	5.0000	5.1437	-2.9	100	0.00
73	T	m-,p-Xylene	10.0000	10.3973	-4.0	100	0.00
74	T	o-Xylene	5.0000	4.8681	2.6	100	0.00
75	T	Styrene	5.0000	5.1447	-2.9	100	-0.01
76	P	Bromoform	5.0000	4.7806	4.4	100	-0.01
77	T	Isopropylbenzene	5.0000	5.1158	-2.3	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.2272	-4.5	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3252	7.0	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.1740	-3.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.2906	14.2	100	0.00
83	T	n-Propylbenzene	5.0000	5.4204	-8.4	100	0.00
84	T	Bromobenzene	5.0000	5.1825	-3.6	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.2697	-5.4	100	-0.01
86	T	2-Chlorotoluene	5.0000	5.1682	-3.4	100	-0.01
87	T	4-Chlorotoluene	5.0000	5.4787	-9.6	100	-0.01
88	T	a-Methylstyrene	5.0000	4.5670	8.7	100	0.00
89	T	tert-Butylbenzene	5.0000	5.1014	-2.0	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.3539	-7.1	100	-0.01
91	T	sec-Butylbenzene	5.0000	5.2414	-4.8	100	-0.01
92	T	p-Isopropyltoluene	5.0000	5.1959	-3.9	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.2692	-5.4	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.0959	-1.9	100	-0.01
95	T	n-Butylbenzene	5.0000	5.0474	-0.9	100	-0.01
96	T	1,2-Dichlorobenzene	5.0000	5.1080	-2.2	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.7868	4.3	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.2632	14.7	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.9664	0.7	100	0.00
100	T	Naphthalene	5.0000	3.8987	22.0#	100	-0.01
101	T	1,2,3-Trichlorobenzene	5.0000	4.9014	2.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M141171.D 8260WT.M Thu Aug 11 14:35:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141172.D Vial: 7
Acq On : 10 Aug 2016 17:05 Operator: TMB
Sample : WG579700-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:34 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	806519	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	597844	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	342298	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.58	111	93206	10.5925 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 42.36%#		
43) 1,2-Dichloroethane-d4	10.30	65	125176	10.6293 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 42.52%#		
58) Toluene-d8	13.03	98	298314	10.4868 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.96%#		
80) p-Bromofluorobenzene	17.00	95	127444	10.4207 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	387554	22.5554 ug/L	99
3) Chloromethane	3.37	50	373332	21.2860 ug/L	99
4) Vinyl Chloride	3.56	62	247982	21.4443 ug/L	99
5) 1,3-Butadiene	3.59	54	224742	22.5131 ug/L	92
6) Bromomethane	4.39	94	106341	18.7629 ug/L	99
7) Chloroethane	4.53	64	138181	20.9543 ug/L	90
8) Trichlorofluoromethane	5.00	101	398474	21.7693 ug/L	99
9) Diethyl ether	5.54	59	515242	80.0278 ug/L	94
10) Isoprene	5.56	67	253983	20.8215 ug/L	84
11) Acrolein	5.78	56	37170	38.0009 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	172759	20.9616 ug/L	98
13) Acetone	5.89	43	52563	20.5723 ug/L	87
14) 1,1-Dichloroethene	6.10	61	372223	21.6463 ug/L	91
15) Tert-Butyl Alcohol	6.25	59	111754	160.2265 ug/L	95
16) Dimethyl Sulfide	6.38	62	213974	20.7889 ug/L	87
17) Iodomethane	6.63	142	179865	19.8717 ug/L	79
18) Methyl acetate	6.68	43	143394	20.4478 ug/L	97
19) Methylene Chloride	6.93	84	191055	20.7111 ug/L	84
20) Carbon Disulfide	6.95	76	606028	21.1709 ug/L	100
21) Acrylonitrile	7.13	53	120162	40.1993 ug/L	96
22) Methyl Tert Butyl Ether	7.17	73	494536	21.6955 ug/L	99
23) trans-1,2-Dichloroethene	7.41	96	183386	21.8453 ug/L	85
24) n-Hexane	7.49	57	258355	20.6739 ug/L	94
25) Diisopropyl ether	7.89	45	2876242	81.6154 ug/L	97
26) Vinyl Acetate	8.07	43	254821	18.8397 ug/L	97
27) 1,1-Dichloroethane	8.08	63	399713	21.1598 ug/L	99
28) Ethyl-Tert-Butyl ether	8.51	59	2362564	82.1663 ug/L	97
29) 2-Butanone	8.72	43	73671	19.8854 ug/L	95
30) Propionitrile	8.84	54	78641	80.1894 ug/L	96
31) 2,2-Dichloropropane	8.94	77	334179	20.8728 ug/L	97
32) cis-1,2-Dichloroethene	9.01	96	202783	21.7282 ug/L	86
33) Chloroform	9.25	83	383656	21.2652 ug/L	99
34) 1-Bromopropane	9.40	122	32027	21.6402 ug/L	99
35) Bromochloromethane	9.50	130	117693	22.2051 ug/L	99
36) Tetrahydrofuran	9.54	42	184610	79.1478 ug/L	94
38) 1,1,1-Trichloroethane	9.84	97	362110	21.2811 ug/L	98
39) Cyclohexane	9.86	56	348104	21.1695 ug/L	94
40) 1,1-Dichloropropene	10.07	75	274708	21.5686 ug/L	94
41) Tert-Amyl-Methyl ether	10.20	73	1726477	81.8568 ug/L	94
42) Carbon Tetrachloride	10.22	117	332175	21.8914 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M141172.D 8260WT.M Thu Aug 11 14:32:37 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141172.D Vial: 7
Acq On : 10 Aug 2016 17:05 Operator: TMB
Sample : WG579700-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:34 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	325056	21.2718 ug/L	93
46)	Benzene	10.46	78	745728	21.5905 ug/L	95
47)	Trichloroethene	11.33	130	187284	20.8926 ug/L	83
48)	Methylcyclohexane	11.41	83	252272	20.8120 ug/L	93
49)	1,2-Dichloropropane	11.58	63	210493	21.6262 ug/L	88
50)	1,4-Dioxane	11.92	88	8724	153.7521 ug/L	93
51)	Bromodichloromethane	11.92	83	292137	21.5142 ug/L	100
52)	Dibromomethane	12.02	93	112756	21.4817 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.30	63	85926	18.9020 ug/L	99
54)	4-Methyl-2-Pentanone	12.33	58	55181	20.4519 ug/L	99
55)	cis-1,3-Dichloropropene	12.67	75	298662	22.5429 ug/L	98
56)	Dimethyl Disulfide	12.96	79	159634	20.1384 ug/L	99
59)	Toluene	13.14	91	774244	22.5328 ug/L	99
60)	Ethyl Methacrylate	13.30	69	191533	19.8962 ug/L	91
62)	trans-1,3-Dichloropropene	13.37	75	286205	22.1060 ug/L	93
63)	1,1,2-Trichloroethane	13.61	97	145264	21.1029 ug/L	98
64)	2-Hexanone	13.57	43	108188	19.1678 ug/L	90
65)	1,3-Dichloropropane	13.98	76	258490	21.6881 ug/L	90
66)	Tetrachloroethene	14.09	166	197880	21.5000 ug/L	92
67)	Dibromochloromethane	14.40	129	201585	21.9626 ug/L	99
68)	1,2-Dibromoethane	14.69	107	136397	21.2643 ug/L	99
69)	1-Chlorohexane	14.83	91	223781	20.4702 ug/L	85
70)	Chlorobenzene	15.28	112	508156	21.3199 ug/L	91
71)	1,1,1,2-Tetrachloroethane	15.33	131	201142	21.4015 ug/L	94
72)	Ethylbenzene	15.33	106	267524	22.0583 ug/L	92
73)	m-,p-Xylene	15.44	106	648748	44.7661 ug/L	90
74)	o-Xylene	16.09	106	317368	22.7857 ug/L	89
75)	Styrene	16.14	104	558194	23.2248 ug/L	91
76)	Bromoform	16.69	173	123224	21.1509 ug/L	97
77)	Isopropylbenzene	16.60	105	838736	23.6776 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.87	83	177405	20.7841 ug/L	98
81)	1,2,3-Trichloropropane	17.09	110	56094	21.3396 ug/L	97
82)	trans-1,4-Dichloro-2-Buten	17.16	53	58528	18.4422 ug/L	90
83)	n-Propylbenzene	17.20	91	1035915	23.5722 ug/L	98
84)	Bromobenzene	17.33	156	224195	20.8645 ug/L	92
85)	1,3,5-Trimethylbenzene	17.43	105	739935	23.7083 ug/L	96
86)	2-Chlorotoluene	17.50	91	679726	21.4797 ug/L	95
87)	4-Chlorotoluene	17.56	91	700763	22.6685 ug/L	95
88)	a-Methylstyrene	17.91	118	386108	21.2748 ug/L	96
89)	tert-Butylbenzene	17.97	134	148851	22.3390 ug/L	70
90)	1,2,4-Trimethylbenzene	18.03	105	788147	22.5768 ug/L	96
91)	sec-Butylbenzene	18.29	105	851986	22.5876 ug/L	98
92)	p-Isopropyltoluene	18.48	119	742400	22.9652 ug/L	97
93)	1,3-Dichlorobenzene	18.68	146	436097	21.4226 ug/L	95
94)	1,4-Dichlorobenzene	18.84	146	437284	20.9199 ug/L	93
95)	n-Butylbenzene	19.10	91	678804	22.7674 ug/L	96
96)	1,2-Dichlorobenzene	19.41	146	413116	20.9412 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.59	75	38740	21.3062 ug/L	78
98)	1,2,4-Trichlorobenzene	21.94	180	255921	21.3295 ug/L	98
99)	Hexachlorobutadiene	22.14	225	107229	21.6901 ug/L	99
100)	Naphthalene	22.36	128	504791	21.3084 ug/L	100
101)	1,2,3-Trichlorobenzene	22.74	180	251824	23.6816 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141172.D Vial: 7
Acq On : 10 Aug 2016 17:05 Operator: TMB
Sample : WG579700-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

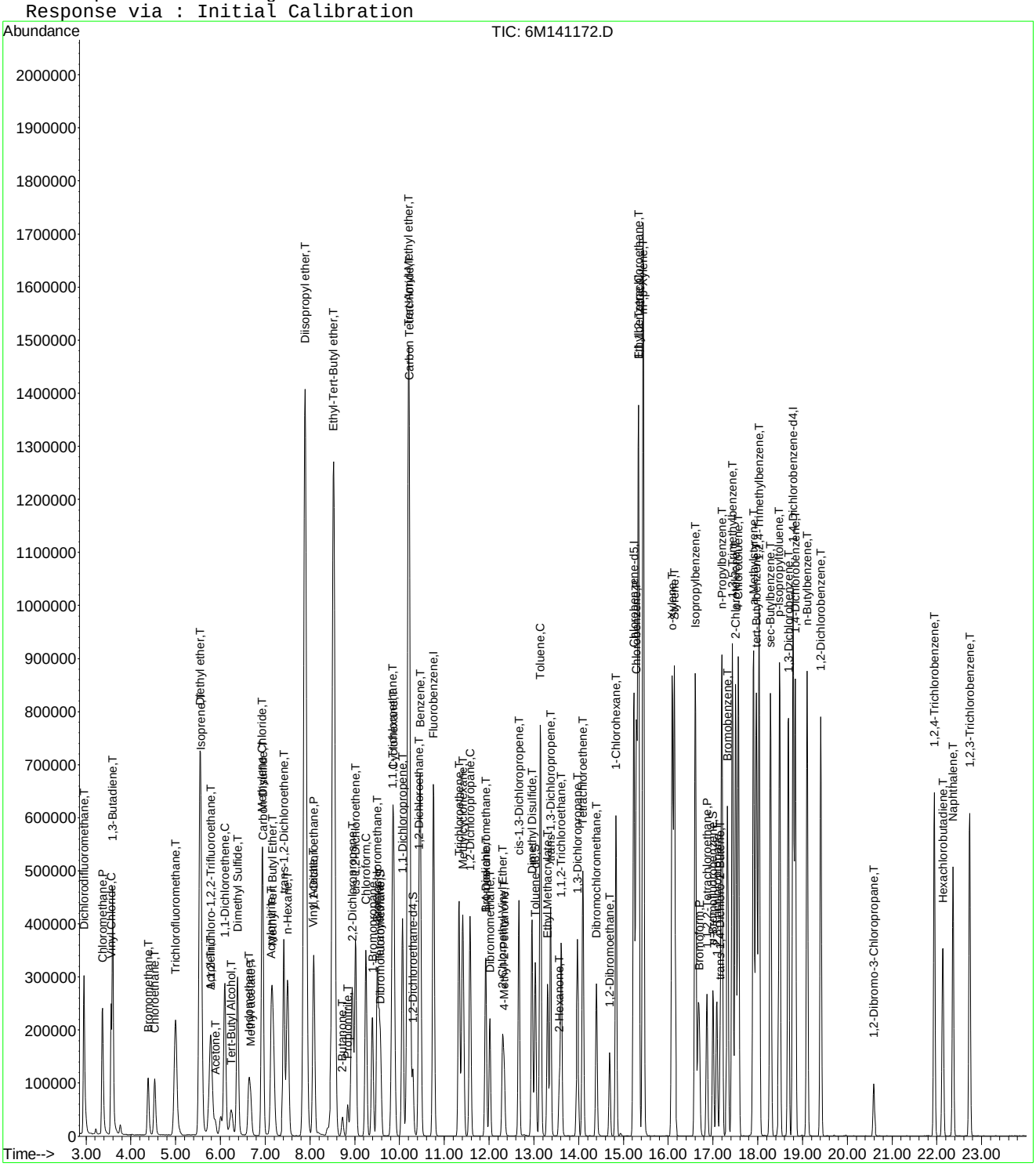

6M141172.D 8260WT.M Thu Aug 11 14:32:40 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141173.D Vial: 8
Acq On : 10 Aug 2016 17:37 Operator: TMB
Sample : WG579700-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:42 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	821017	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	614077	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	367321	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.57	111	233645	26.0839 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.32%		
43) 1,2-Dichloroethane-d4	10.30	65	301985	25.1903 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.76%		
58) Toluene-d8	13.02	98	738556	25.2767 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.12%		
80) p-Bromofluorobenzene	17.01	95	338510	25.7932 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.16%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	934147	53.4067 ug/L	99
3) Chloromethane	3.36	50	904708	50.6721 ug/L	99
4) Vinyl Chloride	3.56	62	582234	49.4597 ug/L	99
5) 1,3-Butadiene	3.59	54	466972	48.2600 ug/L	97
6) Bromomethane	4.39	94	261545	45.3324 ug/L	100
7) Chloroethane	4.53	64	333048	49.6127 ug/L	91
8) Trichlorofluoromethane	5.00	101	925140	49.6495 ug/L	99
9) Diethyl ether	5.54	59	671226	102.4144 ug/L	95
10) Isoprene	5.57	67	630350	50.7636 ug/L	84
11) Acrolein	5.78	56	49557	49.7701 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	406510	48.4526 ug/L	97
13) Acetone	5.89	43	128423	49.3751 ug/L	89
14) 1,1-Dichloroethene	6.10	61	827161	47.2534 ug/L	86
15) Tert-Butyl Alcohol	6.24	59	153519	216.2200 ug/L	94
16) Dimethyl Sulfide	6.38	62	536801	51.2327 ug/L	87
17) Iodomethane	6.63	142	521987	54.6591 ug/L	80
18) Methyl acetate	6.67	43	357347	50.0575 ug/L	98
19) Methylene Chloride	6.93	84	448515	47.7623 ug/L	86
20) Carbon Disulfide	6.95	76	1466380	50.3217 ug/L	100
21) Acrylonitrile	7.14	53	164084	53.9237 ug/L	99
22) Methyl Tert Butyl Ether	7.17	73	1190832	51.3197 ug/L	99
23) trans-1,2-Dichloroethene	7.41	96	436815	51.1154 ug/L	87
24) n-Hexane	7.50	57	645781	50.7637 ug/L	95
25) Diisopropyl ether	7.89	45	3725644	103.8510 ug/L	97
26) Vinyl Acetate	8.07	43	695604	50.5200 ug/L	97
27) 1,1-Dichloroethane	8.09	63	942556	49.0153 ug/L	99
28) Ethyl-Tert-Butyl ether	8.52	59	3066924	104.7793 ug/L	98
29) 2-Butanone	8.73	43	192138	50.9464 ug/L	94
30) Propionitrile	8.84	54	105466	105.6435 ug/L	95
31) 2,2-Dichloropropane	8.94	77	785808	48.2149 ug/L	98
32) cis-1,2-Dichloroethene	9.02	96	484380	50.9849 ug/L	86
33) Chloroform	9.25	83	894228	48.6898 ug/L	99
34) 1-Bromopropane	9.40	122	81135	53.8537 ug/L	99
35) Bromochloromethane	9.50	130	275674	51.0929 ug/L	100
36) Tetrahydrofuran	9.54	42	243449	102.5308 ug/L	94
38) 1,1,1-Trichloroethane	9.84	97	854347	49.3230 ug/L	99
39) Cyclohexane	9.87	56	877521	52.4230 ug/L	94
40) 1,1-Dichloropropene	10.06	75	649739	50.1132 ug/L	94
41) Tert-Amyl-Methyl ether	10.21	73	2245775	104.5978 ug/L	94
42) Carbon Tetrachloride	10.22	117	783957	50.7530 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M141173.D 8260WT.M Thu Aug 11 14:32:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141173.D Vial: 8
Acq On : 10 Aug 2016 17:37 Operator: TMB
Sample : WG579700-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:42 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	766821	49.2949 ug/L	94
46)	Benzene	10.46	78	1749263	49.7509 ug/L	95
47)	Trichloroethene	11.33	130	447299	49.0176 ug/L	82
48)	Methylcyclohexane	11.41	83	636707	51.5997 ug/L	93
49)	1,2-Dichloropropane	11.57	63	495154	49.9742 ug/L	86
50)	1,4-Dioxane	11.92	88	11840	204.9838 ug/L	77
51)	Bromodichloromethane	11.92	83	705156	51.0138 ug/L	100
52)	Dibromomethane	12.01	93	270323	50.5911 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.30	63	239199	49.9010 ug/L	100
54)	4-Methyl-2-Pentanone	12.33	58	141440	51.4966 ug/L	99
55)	cis-1,3-Dichloropropene	12.67	75	733434	54.3818 ug/L	98
56)	Dimethyl Disulfide	12.95	79	424830	52.6474 ug/L	99
59)	Toluene	13.15	91	1823221	51.6586 ug/L	99
60)	Ethyl Methacrylate	13.30	69	503788	50.2535 ug/L	90
62)	trans-1,3-Dichloropropene	13.37	75	691109	51.9691 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	349634	49.4496 ug/L	99
64)	2-Hexanone	13.57	43	293834	50.6827 ug/L	93
65)	1,3-Dichloropropane	13.97	76	624189	50.9869 ug/L	90
66)	Tetrachloroethene	14.10	166	469539	49.6677 ug/L	91
67)	Dibromochloromethane	14.39	129	486507	51.6035 ug/L	99
68)	1,2-Dibromoethane	14.69	107	337202	51.1801 ug/L	99
69)	1-Chlorohexane	14.84	91	581085	51.3933 ug/L	85
70)	Chlorobenzene	15.29	112	1200482	49.0354 ug/L	91
71)	1,1,1,2-Tetrachloroethane	15.33	131	486955	50.4423 ug/L	94
72)	Ethylbenzene	15.33	106	641354	51.4839 ug/L	91
73)	m-,p-Xylene	15.44	106	1555871	104.5230 ug/L	92
74)	o-Xylene	16.10	106	777107	54.3181 ug/L	90
75)	Styrene	16.14	104	1347600	54.4993 ug/L	89
76)	Bromoform	16.70	173	308867	51.6144 ug/L	98
77)	Isopropylbenzene	16.61	105	2056204	56.5124 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.86	83	438044	47.8235 ug/L	99
81)	1,2,3-Trichloropropane	17.09	110	135315	47.9706 ug/L	95
82)	trans-1,4-Dichloro-2-Buten	17.16	53	165727	47.5565 ug/L	93
83)	n-Propylbenzene	17.20	91	2533750	53.7276 ug/L	98
84)	Bromobenzene	17.32	156	551524	47.8305 ug/L	93
85)	1,3,5-Trimethylbenzene	17.43	105	1836919	54.8473 ug/L	96
86)	2-Chlorotoluene	17.51	91	1759987	51.8279 ug/L	96
87)	4-Chlorotoluene	17.57	91	1604405	48.3643 ug/L	96
88)	a-Methylstyrene	17.91	118	1020853	52.4178 ug/L	95
89)	tert-Butylbenzene	17.97	134	363200	50.7946 ug/L	69
90)	1,2,4-Trimethylbenzene	18.03	105	1938349	51.7422 ug/L	97
91)	sec-Butylbenzene	18.28	105	2097688	51.8247 ug/L	98
92)	p-Isopropyltoluene	18.49	119	1844745	53.1774 ug/L	97
93)	1,3-Dichlorobenzene	18.68	146	1091128	49.9486 ug/L	95
94)	1,4-Dichlorobenzene	18.83	146	1084948	48.3685 ug/L	95
95)	n-Butylbenzene	19.10	91	1721939	53.8203 ug/L	96
96)	1,2-Dichlorobenzene	19.42	146	1021875	48.2710 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.59	75	98552	50.5092 ug/L	81
98)	1,2,4-Trichlorobenzene	21.94	180	664978	51.4687 ug/L	99
99)	Hexachlorobutadiene	22.13	225	256180	48.2895 ug/L	100
100)	Naphthalene	22.36	128	1367427	53.2257 ug/L	100
101)	1,2,3-Trichlorobenzene	22.74	180	626416	54.8954 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141173.D Vial: 8
Acq On : 10 Aug 2016 17:37 Operator: TMB
Sample : WG579700-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

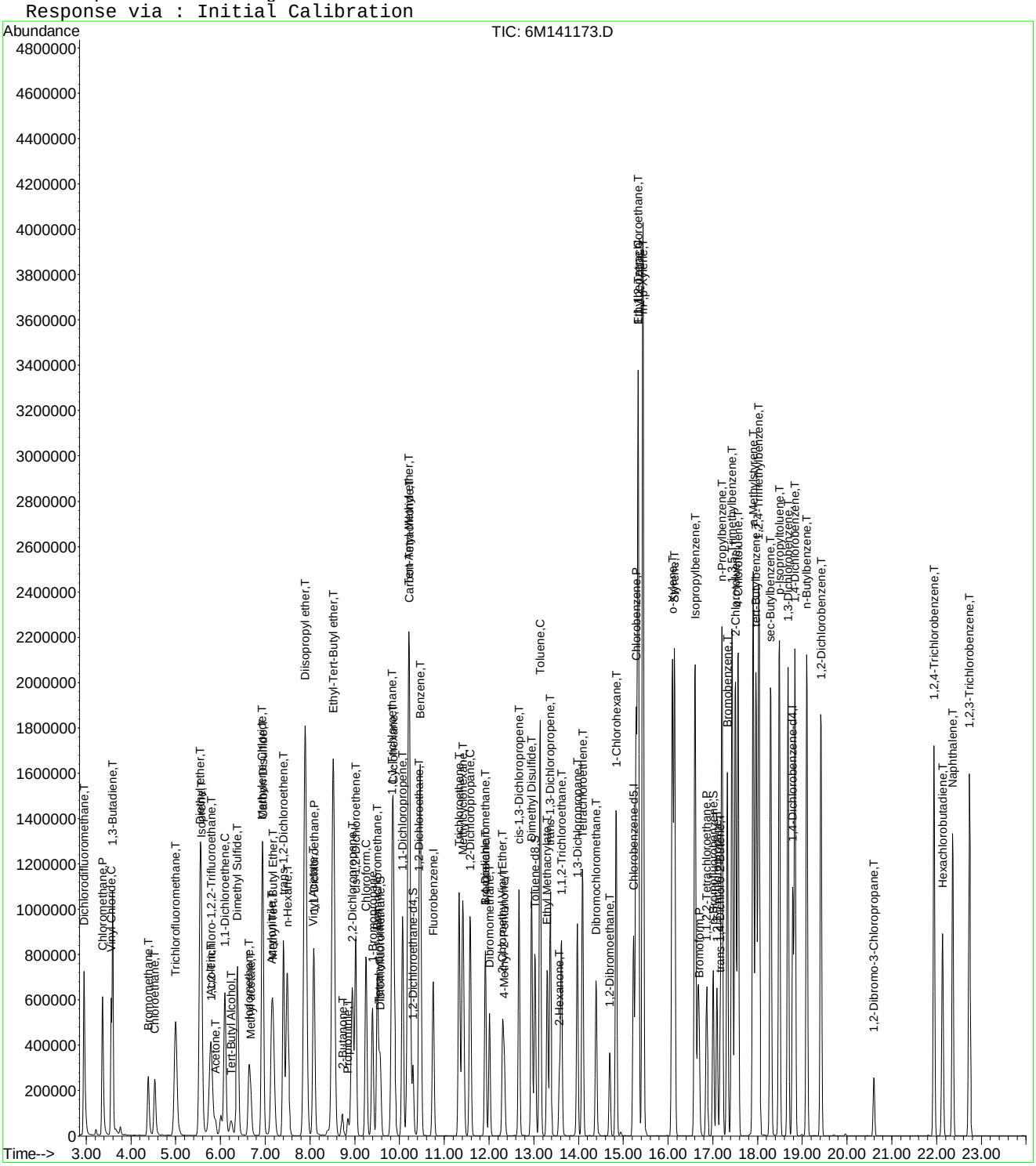

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141174.D Vial: 9
Acq On : 10 Aug 2016 18:09 Operator: TMB
Sample : WG579700-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:50 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	831658	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	628373	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	385705	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.57	111	224082	24.6962 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.80%		
43) 1,2-Dichloroethane-d4	10.30	65	293634	24.1803 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.72%		
58) Toluene-d8	13.02	98	734242	24.5573 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.24%		
80) p-Bromofluorobenzene	17.01	95	340304	24.6940 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	1899774	107.2235 ug/L	99
3) Chloromethane	3.36	50	1855921	102.6189 ug/L	99
4) Vinyl Chloride	3.56	62	1206306	101.1624 ug/L	99
5) 1,3-Butadiene	3.59	54	897585	97.0852 ug/L	98
6) Bromomethane	4.39	94	601876	102.9857 ug/L	100
7) Chloroethane	4.53	64	698575	102.7322 ug/L	91
8) Trichlorofluoromethane	5.00	101	1870623	99.1062 ug/L	99
9) Diethyl ether	5.54	59	1337072	201.3976 ug/L	95
10) Isoprene	5.56	67	1272988	101.2050 ug/L	84
11) Acrolein	5.77	56	96148	95.3259 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	822271	96.7537 ug/L	97
13) Acetone	5.89	43	254408	96.5614 ug/L	90
14) 1,1-Dichloroethene	6.10	61	1678839	94.6802 ug/L	86
15) Tert-Butyl Alcohol	6.24	59	312589	434.6252 ug/L	97
16) Dimethyl Sulfide	6.38	62	1079769	101.7354 ug/L	87
17) Iodomethane	6.63	142	1073954	109.9088 ug/L	80
18) Methyl acetate	6.67	43	729548	100.8881 ug/L	97
19) Methylene Chloride	6.93	84	904906	95.1303 ug/L	86
20) Carbon Disulfide	6.95	76	2900875	98.2756 ug/L	100
21) Acrylonitrile	7.14	53	326678	105.9841 ug/L	98
22) Methyl Tert Butyl Ether	7.16	73	2476721	105.3703 ug/L	99
23) trans-1,2-Dichloroethene	7.41	96	887547	102.5304 ug/L	86
24) n-Hexane	7.49	57	1297698	100.7046 ug/L	96
25) Diisopropyl ether	7.89	45	7251512	199.5470 ug/L	97
26) Vinyl Acetate	8.07	43	1500671	107.5956 ug/L	98
27) 1,1-Dichloroethane	8.08	63	1922600	98.7009 ug/L	99
28) Ethyl-Tert-Butyl ether	8.52	59	5974790	201.5127 ug/L	98
29) 2-Butanone	8.73	43	391126	102.3823 ug/L	95
30) Propionitrile	8.84	54	210730	208.3839 ug/L	95
31) 2,2-Dichloropropane	8.94	77	1595376	96.6351 ug/L	98
32) cis-1,2-Dichloroethene	9.02	96	983603	102.2075 ug/L	85
33) Chloroform	9.25	83	1820164	97.8381 ug/L	99
34) 1-Bromopropane	9.40	122	164011	107.4702 ug/L	99
35) Bromochloromethane	9.51	130	562767	102.9677 ug/L	100
36) Tetrahydrofuran	9.54	42	491537	204.3665 ug/L	94
38) 1,1,1-Trichloroethane	9.84	97	1744806	99.4421 ug/L	98
39) Cyclohexane	9.87	56	1777289	104.8165 ug/L	94
40) 1,1-Dichloropropene	10.06	75	1344873	102.4004 ug/L	94
41) Tert-Amyl-Methyl ether	10.21	73	4485765	206.2531 ug/L	95
42) Carbon Tetrachloride	10.22	117	1611492	102.9924 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M141174.D 8260WT.M Thu Aug 11 14:32:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141174.D Vial: 9
Acq On : 10 Aug 2016 18:09 Operator: TMB
Sample : WG579700-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:50 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	1575766	100.0016	ug/L	95
46)	Benzene	10.46	78	3536587	99.2973	ug/L	94
47)	Trichloroethene	11.33	130	913341	98.8085	ug/L	81
48)	Methylcyclohexane	11.41	83	1278645	102.2975	ug/L	93
49)	1,2-Dichloropropane	11.57	63	1026479	102.2736	ug/L	88
50)	1,4-Dioxane	11.92	88	26758	457.3291	ug/L	88
51)	Bromodichloromethane	11.92	83	1443962	103.1253	ug/L	99
52)	Dibromomethane	12.01	93	560050	103.4726	ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.30	63	506484	103.1849	ug/L	100
54)	4-Methyl-2-Pentanone	12.33	58	293866	105.6242	ug/L	100
55)	cis-1,3-Dichloropropene	12.67	75	1517503	111.0783	ug/L	97
56)	Dimethyl Disulfide	12.95	79	884042	108.1539	ug/L	99
59)	Toluene	13.15	91	3702931	102.5307	ug/L	100
60)	Ethyl Methacrylate	13.31	69	1048138	101.7138	ug/L	90
62)	trans-1,3-Dichloropropene	13.37	75	1435160	105.4641	ug/L	94
63)	1,1,2-Trichloroethane	13.62	97	715822	98.9372	ug/L	99
64)	2-Hexanone	13.57	43	637597	107.4754	ug/L	93
65)	1,3-Dichloropropane	13.97	76	1291686	103.1109	ug/L	89
66)	Tetrachloroethene	14.10	166	954798	98.7005	ug/L	90
67)	Dibromochloromethane	14.39	129	1012709	104.9736	ug/L	99
68)	1,2-Dibromoethane	14.69	107	707850	104.9924	ug/L	100
69)	1-Chlorohexane	14.84	91	1193560	102.9267	ug/L	85
70)	Chlorobenzene	15.29	112	2437637	97.3035	ug/L	89
71)	1,1,1,2-Tetrachloroethane	15.33	131	1001300	101.3621	ug/L	94
72)	Ethylbenzene	15.33	106	1316382	103.2669	ug/L	93
73)	m-,p-Xylene	15.44	106	3152476	206.9642	ug/L	95
74)	o-Xylene	16.10	106	1599923	109.2869	ug/L	90
75)	Styrene	16.14	104	2779459	109.7824	ug/L	87
76)	Bromoform	16.70	173	659411	107.6864	ug/L	98
77)	Isopropylbenzene	16.61	105	4181811	112.3175	ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.86	83	929697	96.6620	ug/L	99
81)	1,2,3-Trichloropropane	17.09	110	292980	98.9140	ug/L	95
82)	trans-1,4-Dichloro-2-Buten	17.16	53	364552	98.8852	ug/L	93
83)	n-Propylbenzene	17.20	91	5179464	104.5946	ug/L	98
84)	Bromobenzene	17.32	156	1143714	94.4601	ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	3803975	108.1667	ug/L	96
86)	2-Chlorotoluene	17.51	91	3623183	101.6096	ug/L	95
87)	4-Chlorotoluene	17.57	91	3374075	96.8625	ug/L	96
88)	a-Methylstyrene	17.91	118	2101596	102.7673	ug/L	95
89)	tert-Butylbenzene	17.97	134	749273	99.7934	ug/L	68
90)	1,2,4-Trimethylbenzene	18.03	105	4008243	101.8960	ug/L	97
91)	sec-Butylbenzene	18.29	105	4329418	101.8628	ug/L	98
92)	p-Isopropyltoluene	18.49	119	3799724	104.3118	ug/L	98
93)	1,3-Dichlorobenzene	18.68	146	2264933	98.7400	ug/L	93
94)	1,4-Dichlorobenzene	18.83	146	2265095	96.1680	ug/L	93
95)	n-Butylbenzene	19.10	91	3606696	107.3564	ug/L	97
96)	1,2-Dichlorobenzene	19.42	146	2141075	96.3188	ug/L	93
97)	1,2-Dibromo-3-Chloropropan	20.59	75	214129	104.5132	ug/L	83
98)	1,2,4-Trichlorobenzene	21.94	180	1426753	105.0354	ug/L	98
99)	Hexachlorobutadiene	22.13	225	534950	96.0309	ug/L	99
100)	Naphthalene	22.36	128	2965050	109.5165	ug/L	99
101)	1,2,3-Trichlorobenzene	22.74	180	1327307	110.7734	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141174.D Vial: 9
Acq On : 10 Aug 2016 18:09 Operator: TMB
Sample : WG579700-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

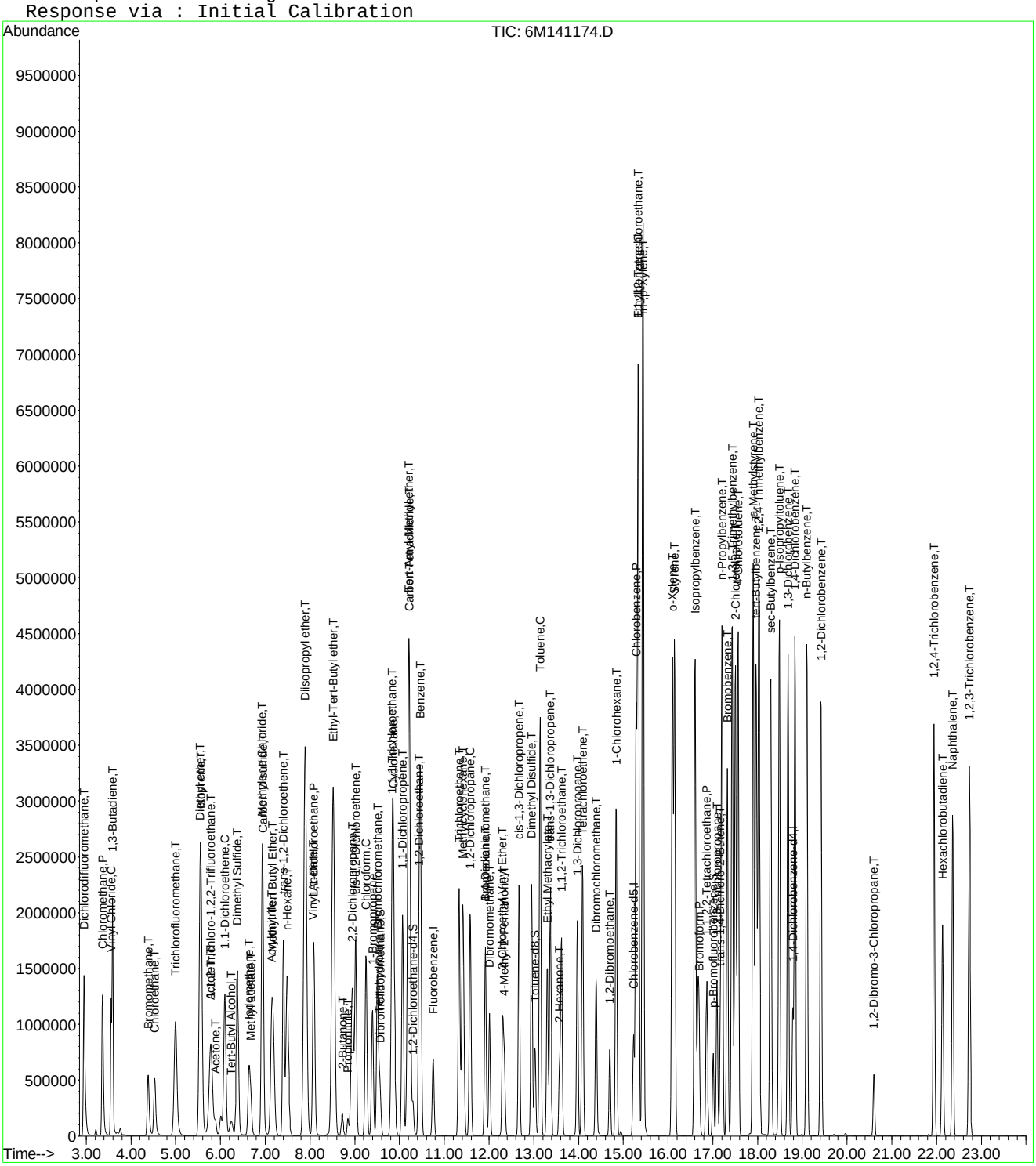

6M141174.D 8260WT.M Thu Aug 11 14:32:56 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141175.D Vial: 10
Acq On : 10 Aug 2016 18:42 Operator: TMB
Sample : WG579700-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:58 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	871554	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	658117	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	400153	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.58	111	940820	98.9421 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 395.76%#		
43) 1,2-Dichloroethane-d4	10.30	65	1222268	96.0443 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 384.16%#		
58) Toluene-d8	13.03	98	3051433	97.4450 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 389.80%#		
80) p-Bromofluorobenzene	17.00	95	1451164	101.5010 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 406.00%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	3822508	205.8671 ug/L	98
3) Chloromethane	3.36	50	3679464	194.1346 ug/L	99
4) Vinyl Chloride	3.55	62	2429711	194.4315 ug/L	99
5) 1,3-Butadiene	3.59	54	1762948	204.9259 ug/L	97
6) Bromomethane	4.38	94	1319295	215.4082 ug/L	100
7) Chloroethane	4.53	64	1444486	202.7018 ug/L	92
8) Trichlorofluoromethane	4.99	101	3830117	193.6320 ug/L	99
9) Diethyl ether	5.53	59	1096	0.1575 ug/L #	33
10) Isoprene	5.56	67	2646332	200.7579 ug/L	85
11) Acrolein	5.78	56	1709	1.6168 ug/L	66
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	1712004	192.2242 ug/L	97
13) Acetone	5.89	43	523219	189.4990 ug/L	91
14) 1,1-Dichloroethene	6.09	61	3744075	201.4861 ug/L	91
15) Tert-Butyl Alcohol	6.28	59	4848	6.4321 ug/L #	69
16) Dimethyl Sulfide	6.38	62	2237265	201.1450 ug/L	88
17) Iodomethane	6.63	142	2154475	209.4124 ug/L	82
18) Methyl acetate	6.68	43	1490081	196.6285 ug/L	98
19) Methylene Chloride	6.93	84	1844534	185.0344 ug/L	85
20) Carbon Disulfide	6.95	76	5879905	190.0804 ug/L	99
21) Acrylonitrile	7.17	53	69226	21.4309 ug/L #	35
22) Methyl Tert Butyl Ether	7.17	73	5077147	206.1158 ug/L	100
23) trans-1,2-Dichloroethene	7.41	96	1845976	203.4875 ug/L	86
24) n-Hexane	7.49	57	2698241	199.8053 ug/L	95
26) Vinyl Acetate	8.07	43	3027628	207.1390 ug/L	97
27) 1,1-Dichloroethane	8.08	63	3950955	193.5463 ug/L	99
28) Ethyl-Tert-Butyl ether	8.54	59	14789	0.4760 ug/L #	45
29) 2-Butanone	8.72	43	805268	201.1402 ug/L	95
30) Propionitrile	8.84	54	1712	1.6154 ug/L #	56
31) 2,2-Dichloropropane	8.94	77	3293004	190.3333 ug/L	99
32) cis-1,2-Dichloroethene	9.01	96	2016154	199.9111 ug/L	85
33) Chloroform	9.25	83	3715850	190.5926 ug/L	98
34) 1-Bromopropane	9.40	122	345796	216.2148 ug/L	98
35) Bromochloromethane	9.50	130	1142468	199.4651 ug/L	100
36) Tetrahydrofuran	9.56	42	7957	3.1568 ug/L	87
38) 1,1,1-Trichloroethane	9.84	97	3600447	195.8077 ug/L	98
39) Cyclohexane	9.86	56	3703858	208.4377 ug/L	94
40) 1,1-Dichloropropene	10.07	75	2805036	203.8023 ug/L	93
42) Carbon Tetrachloride	10.22	117	3324683	202.7579 ug/L	99
45) 1,2-Dichloroethane	10.43	62	3183469	192.7819 ug/L	95
46) Benzene	10.46	78	6975262	186.8805 ug/L	92

(#) = qualifier out of range (m) = manual integration
6M141175.D 8260WT.M Thu Aug 11 14:33:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141175.D Vial: 10
Acq On : 10 Aug 2016 18:42 Operator: TMB
Sample : WG579700-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:58 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
47)	Trichloroethene	11.33	130	1882145	194.2965 ug/L	79
48)	Methylcyclohexane	11.41	83	2651412	202.4150 ug/L	93
49)	1,2-Dichloropropane	11.58	63	2111708	200.7695 ug/L	88
50)	1,4-Dioxane	11.92	88	4375	71.3516 ug/L #	14
51)	Bromodichloromethane	11.92	83	2959387	201.6795 ug/L	99
52)	Dibromomethane	12.02	93	1146162	202.0668 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.30	63	1060597	205.1527 ug/L	100
54)	4-Methyl-2-Pentanone	12.33	58	616773	211.5387 ug/L	99
55)	cis-1,3-Dichloropropene	12.67	75	3123671	218.1803 ug/L	97
56)	Dimethyl Disulfide	12.96	79	1865473	217.7753 ug/L	99
59)	Toluene	13.14	91	7296890	192.9125 ug/L	97
60)	Ethyl Methacrylate	13.30	69	2168984	200.5354 ug/L	90
62)	trans-1,3-Dichloropropene	13.37	75	2927586	205.4132 ug/L	94
63)	1,1,2-Trichloroethane	13.62	97	1454042	191.8871 ug/L	99
64)	2-Hexanone	13.57	43	1324039	213.0972 ug/L	94
65)	1,3-Dichloropropane	13.98	76	2619466	199.6524 ug/L	89
66)	Tetrachloroethene	14.09	166	1955407	193.0009 ug/L	89
67)	Dibromochloromethane	14.40	129	2059946	203.8758 ug/L	99
68)	1,2-Dibromoethane	14.69	107	1447044	204.9334 ug/L	100
69)	1-Chlorohexane	14.83	91	2455854	201.9844 ug/L	85
70)	Chlorobenzene	15.28	112	4802567	183.0405 ug/L	85
71)	1,1,1,2-Tetrachloroethane	15.34	131	2010124	194.2892 ug/L	93
72)	Ethylbenzene	15.34	106	2650684	198.5416 ug/L	98
73)	m-,p-Xylene	15.45	106	6086967	381.5564 ug/L	90
74)	o-Xylene	16.10	106	3206453	209.1261 ug/L	95
75)	Styrene	16.14	104	5509341	207.7135 ug/L	83
76)	Bromoform	16.69	173	1350413	210.5647 ug/L	97
77)	Isopropylbenzene	16.60	105	8050265	206.4466 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.87	83	1877859	188.1943 ug/L	100
81)	1,2,3-Trichloropropane	17.09	110	587072	191.0471 ug/L	95
82)	trans-1,4-Dichloro-2-Buten	17.16	53	767212	199.8985 ug/L	95
83)	n-Propylbenzene	17.20	91	9535315	185.6046 ug/L	98
84)	Bromobenzene	17.33	156	2313658	184.1872 ug/L	92
85)	1,3,5-Trimethylbenzene	17.43	105	7365398	201.8744 ug/L	98
86)	2-Chlorotoluene	17.50	91	7184084	194.1981 ug/L	97
87)	4-Chlorotoluene	17.57	91	6447987	178.4244 ug/L	95
88)	a-Methylstyrene	17.91	118	4210852	198.4746 ug/L	94
89)	tert-Butylbenzene	17.97	134	1505106	193.2227 ug/L	71
90)	1,2,4-Trimethylbenzene	18.03	105	7624818	186.8366 ug/L	100
91)	sec-Butylbenzene	18.29	105	8272756	187.6142 ug/L	99
92)	p-Isopropyltoluene	18.49	119	7293159	192.9862 ug/L	100
93)	1,3-Dichlorobenzene	18.68	146	4458092	187.3337 ug/L	91
94)	1,4-Dichlorobenzene	18.84	146	4448565	182.0511 ug/L	92
95)	n-Butylbenzene	19.10	91	6941234	199.1519 ug/L	98
96)	1,2-Dichlorobenzene	19.41	146	4169832	180.8118 ug/L	91
97)	1,2-Dibromo-3-Chloropropan	20.59	75	431252	202.8878 ug/L	82
98)	1,2,4-Trichlorobenzene	21.94	180	2854309	202.4267 ug/L	98
99)	Hexachlorobutadiene	22.14	225	1086476	187.9954 ug/L	99
100)	Naphthalene	22.36	128	5793991	205.9518 ug/L	98
101)	1,2,3-Trichlorobenzene	22.74	180	2630506	211.6082 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141175.D Vial: 10
Acq On : 10 Aug 2016 18:42 Operator: TMB
Sample : WG579700-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

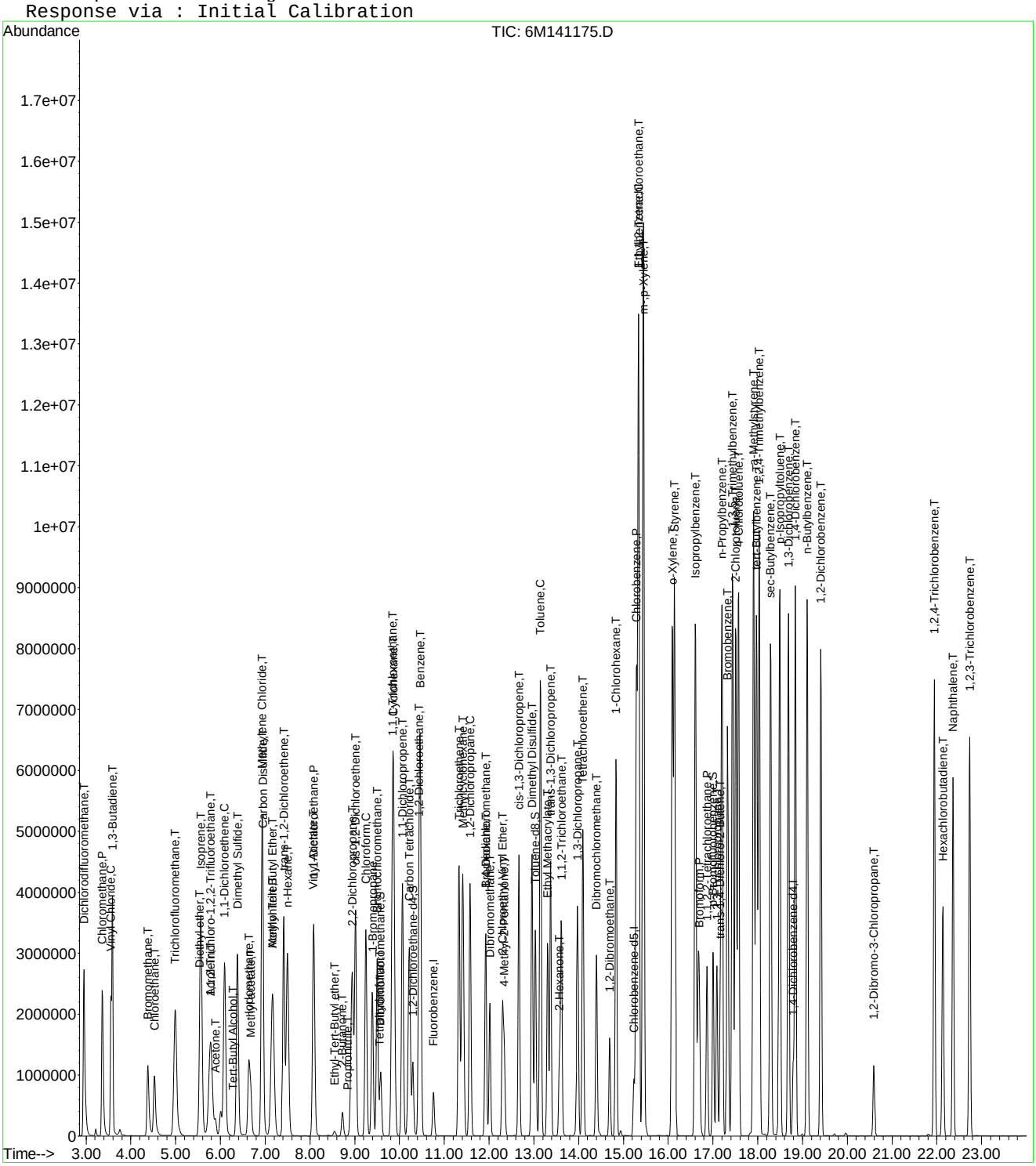

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141176.D Vial: 11
Acq On : 10 Aug 2016 19:14 Operator: TMB
Sample : WG579700-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:33:07 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	1050342	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	732738	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	414386	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	1626608	141.9453 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 567.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	2089457	136.2392 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 544.96%#		
58) Toluene-d8	13.04	98	5108360	146.5182 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 586.08%#		
80) p-Bromofluorobenzene	17.01	95	2273972	153.5889 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 614.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	5773700	258.0218 ug/L	97
3) Chloromethane	3.35	50	5250390	229.8654 ug/L	99
4) Vinyl Chloride	3.55	62	3727219	247.4917 ug/L	97
5) 1,3-Butadiene	3.58	54	2762692	297.4470 ug/L	97
6) Bromomethane	4.37	94	2109171	285.7562 ug/L	100
7) Chloroethane	4.52	64	2262864	263.4913 ug/L	92
8) Trichlorofluoromethane	4.99	101	6146131	257.8282 ug/L	99
9) Diethyl ether	5.54	59	2343476	279.4950 ug/L	96
10) Isoprene	5.55	67	4515499	284.2481 ug/L	87
11) Acrolein	5.79	56	216081	169.6295 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	5.77	101	3355173	312.5948 ug/L	97
13) Acetone	5.90	43	907559	272.7481 ug/L	96
14) 1,1-Dichloroethene	6.09	61	6346077	283.3802 ug/L	92
15) Tert-Butyl Alcohol	6.29	59	518598	570.9342 ug/L	96
16) Dimethyl Sulfide	6.38	62	3944045	294.2369 ug/L	89
17) Iodomethane	6.63	142	3446310	277.6055 ug/L	82
18) Methyl acetate	6.67	43	2714468	297.2247 ug/L	98
19) Methylene Chloride	6.93	84	3145489	261.8289 ug/L	86
20) Carbon Disulfide	6.95	76	9647621	258.7920 ug/L	97
21) Acrylonitrile	7.14	53	647195	166.2533 ug/L	96
22) Methyl Tert Butyl Ether	7.17	73	8813100	296.8820 ug/L	99
23) trans-1,2-Dichloroethene	7.41	96	3194818	292.2277 ug/L	86
24) n-Hexane	7.49	57	4806845	295.3588 ug/L	95
25) Diisopropyl ether	7.89	45	13084968	285.1040 ug/L	96
26) Vinyl Acetate	8.07	43	5976338	339.2798 ug/L	98
27) 1,1-Dichloroethane	8.08	63	6786792	275.8740 ug/L	98
28) Ethyl-Tert-Butyl ether	8.52	59	10786800	288.0623 ug/L	99
29) 2-Butanone	8.73	43	1372136	284.3932 ug/L	96
30) Propionitrile	8.85	54	366507	286.9684 ug/L	96
31) 2,2-Dichloropropane	8.94	77	5606582	268.8959 ug/L	99
32) cis-1,2-Dichloroethene	9.02	96	3474714	285.8879 ug/L	85
33) Chloroform	9.25	83	6283140	267.4165 ug/L	97
34) 1-Bromopropane	9.40	122	602558	312.6280 ug/L	100
35) Bromochloromethane	9.50	130	1953476	283.0052 ug/L	99
36) Tetrahydrofuran	9.54	42	895808	294.9053 ug/L	94
38) 1,1,1-Trichloroethane	9.84	97	6086868	274.6824 ug/L	96
39) Cyclohexane	9.86	56	6500962	303.5730 ug/L	93
40) 1,1-Dichloropropene	10.06	75	4846403	292.1822 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	8101561	294.9488 ug/L	95
42) Carbon Tetrachloride	10.22	117	5566027	281.6673 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M141176.D 8260WT.M Thu Aug 11 14:33:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141176.D Vial: 11
Acq On : 10 Aug 2016 19:14 Operator: TMB
Sample : WG579700-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:33:07 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	5365749	269.6247 ug/L	96
46)	Benzene	10.47	78	11219751	249.4309 ug/L	87
47)	Trichloroethene	11.33	130	3136845	268.7005 ug/L	78
48)	Methylcyclohexane	11.41	83	4629360	293.2582 ug/L	92
49)	1,2-Dichloropropane	11.57	63	3666181	289.2286 ug/L	89
50)	1,4-Dioxane	11.93	88	47778	646.5725 ug/L	91
51)	Bromodichloromethane	11.92	83	4982735	281.7678 ug/L	98
52)	Dibromomethane	12.01	93	1931049	282.4918 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.30	63	1828812	293.0905 ug/L	100
54)	4-Methyl-2-Pentanone	12.34	58	1015987	289.1453 ug/L	99
55)	cis-1,3-Dichloropropene	12.67	75	5227101	302.9527 ug/L	96
56)	Dimethyl Disulfide	12.95	79	3201513	310.1262 ug/L	97
59)	Toluene	13.15	91	11017385	261.6108 ug/L	92
60)	Ethyl Methacrylate	13.31	69	3590815	297.9654 ug/L	91
62)	trans-1,3-Dichloropropene	13.37	75	4785440	301.5747 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	2355661	279.2133 ug/L	98
64)	2-Hexanone	13.58	43	2129562	307.8377 ug/L	95
65)	1,3-Dichloropropane	13.97	76	4240198	290.2702 ug/L	89
66)	Tetrachloroethene	14.10	166	3203172	283.9598 ug/L	88
67)	Dibromochloromethane	14.39	129	3285924	292.0934 ug/L	99
68)	1,2-Dibromoethane	14.70	107	2347767	298.6348 ug/L	99
69)	1-Chlorohexane	14.84	91	3981855	294.0345 ug/L	84
70)	Chlorobenzene	15.29	112	7331383	250.9656 ug/L	81
71)	1,1,1,2-Tetrachloroethane	15.33	131	3116002	270.5066 ug/L	93
72)	Ethylbenzene	15.33	106	4160504	279.8942 ug/L	81
73)	m-,p-Xylene	15.45	106	8938952	503.2674 ug/L	74
74)	o-Xylene	16.10	106	4884208	286.1093 ug/L	96
75)	Styrene	16.15	104	8119692	274.9323 ug/L	78
76)	Bromoform	16.70	173	2097726	293.7799 ug/L	96
77)	Isopropylbenzene	16.61	105	11153188	256.8923 ug/L	94
79)	1,1,2,2-Tetrachloroethane	16.86	83	2991843	289.5365 ug/L	100
81)	1,2,3-Trichloropropane	17.09	110	907478	285.1715 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	17.17	53	1216239	305.6504 ug/L	97
83)	n-Propylbenzene	17.20	91	12585573	236.5634 ug/L	91
84)	Bromobenzene	17.32	156	3537331	271.9299 ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	10186282	269.6011 ug/L	97
86)	2-Chlorotoluene	17.51	91	9880793	257.9208 ug/L	96
87)	4-Chlorotoluene	17.57	91	9303511	248.5982 ug/L	94
88)	a-Methylstyrene	17.91	118	6291019	286.3367 ug/L	93
89)	tert-Butylbenzene	17.98	134	2271016	281.5349 ug/L	78
90)	1,2,4-Trimethylbenzene	18.04	105	10436415	246.9476 ug/L	96
91)	sec-Butylbenzene	18.29	105	11301875	247.5067 ug/L	95
92)	p-Isopropyltoluene	18.49	119	10039167	256.5247 ug/L	95
93)	1,3-Dichlorobenzene	18.68	146	6496041	263.5947 ug/L	88
94)	1,4-Dichlorobenzene	18.85	146	6443300	254.6260 ug/L	88
95)	n-Butylbenzene	19.11	91	9649656	267.3503 ug/L	98
96)	1,2-Dichlorobenzene	19.42	146	6105476	255.6517 ug/L	89
97)	1,2-Dibromo-3-Chloropropan	20.59	75	659955	299.8197 ug/L	83
98)	1,2,4-Trichlorobenzene	21.94	180	4247884	290.8565 ug/L	97
99)	Hexachlorobutadiene	22.13	225	1635479	273.2707 ug/L	99
100)	Naphthalene	22.37	128	8206244	281.5420 ug/L	95
101)	1,2,3-Trichlorobenzene	22.74	180	3920350	304.5362 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M141176.D 8260WT.M Thu Aug 11 14:33:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141176.D Vial: 11
Acq On : 10 Aug 2016 19:14 Operator: TMB
Sample : WG579700-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:33 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

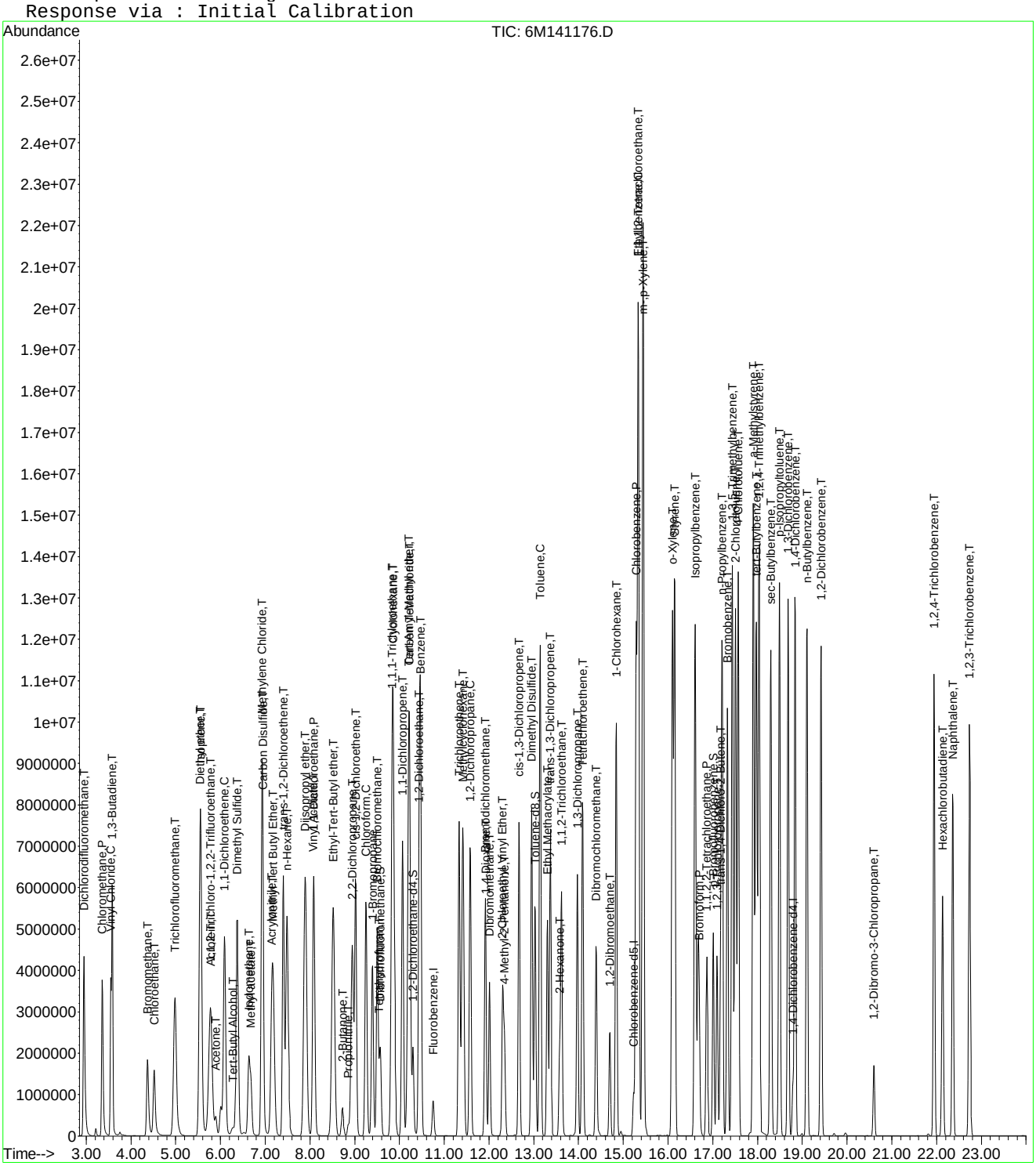

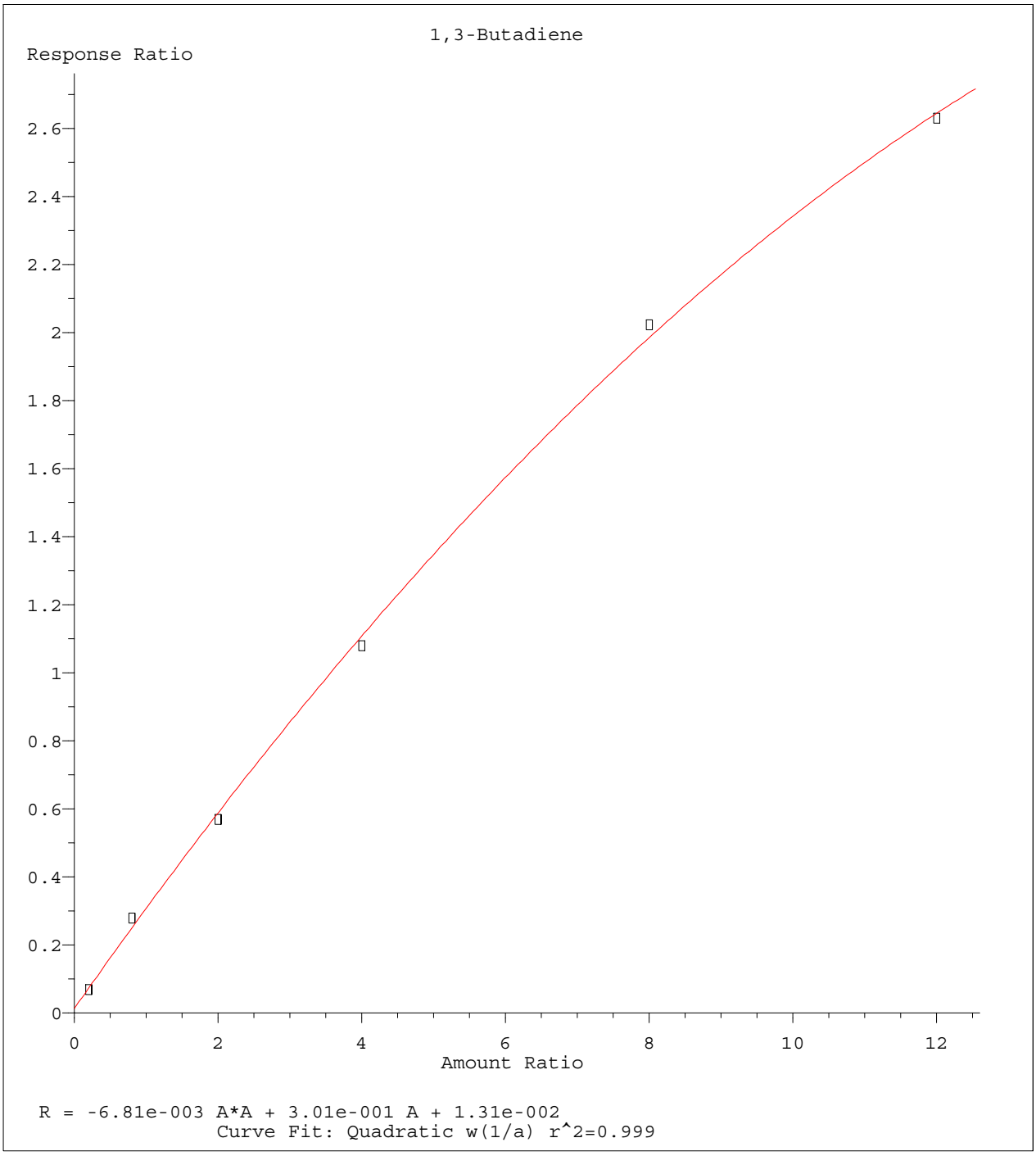

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M
Calibration Table Last Updated: Thu Aug 11 09:53:58 2016

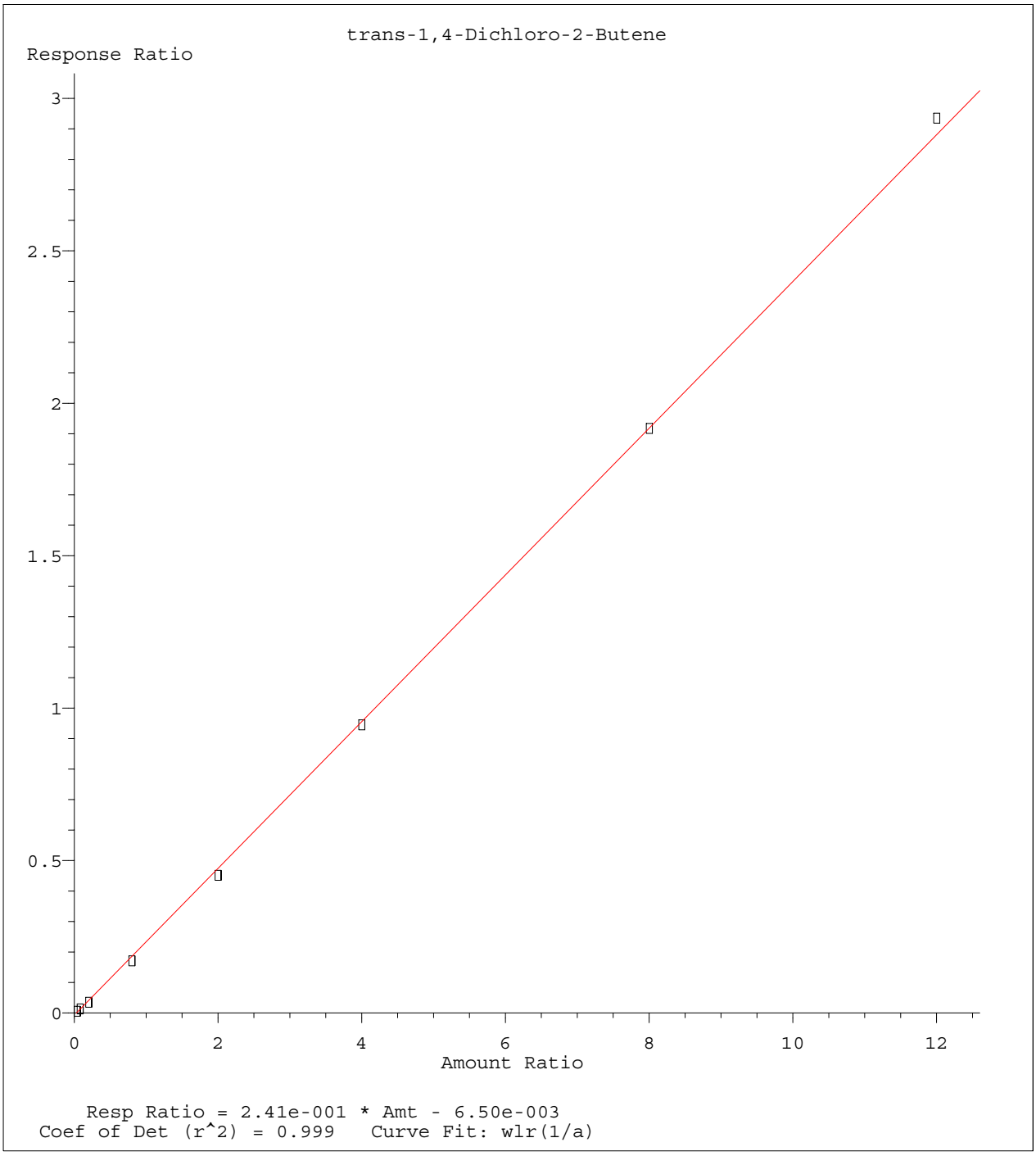

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M
Calibration Table Last Updated: Thu Aug 11 09:53:58 2016

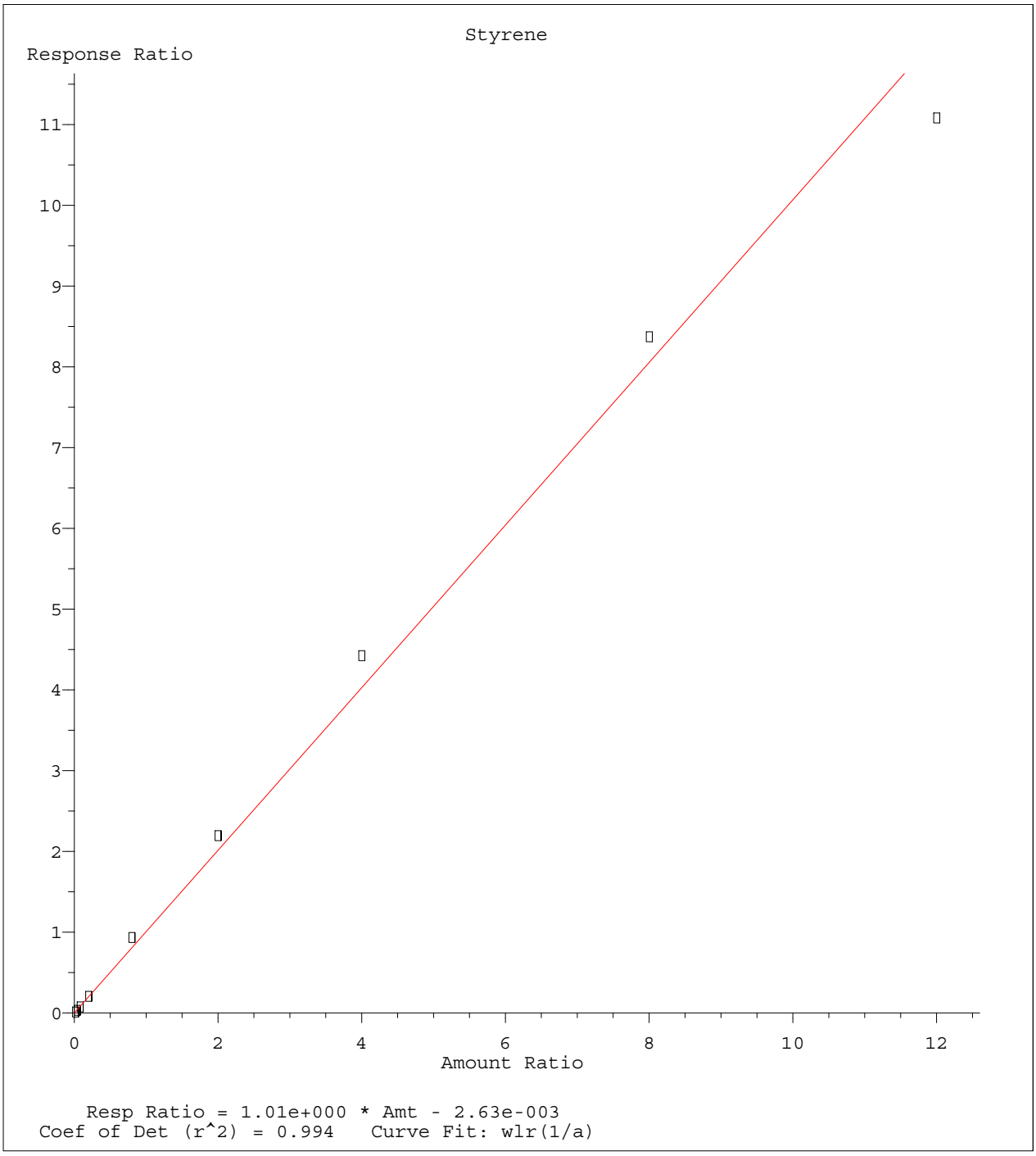

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M
Calibration Table Last Updated: Thu Aug 11 09:53:58 2016

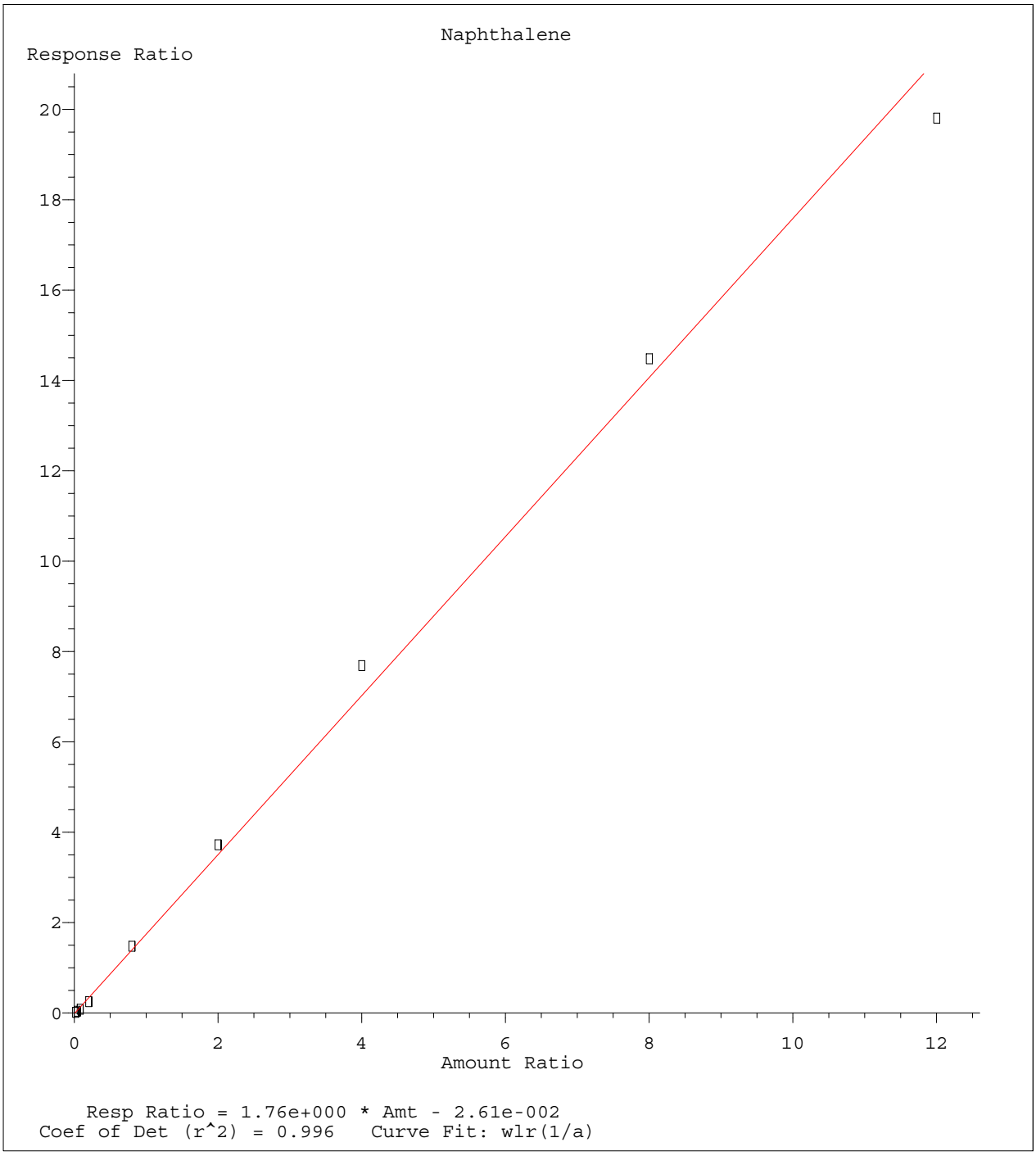

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M
Calibration Table Last Updated: Thu Aug 11 09:53:58 2016

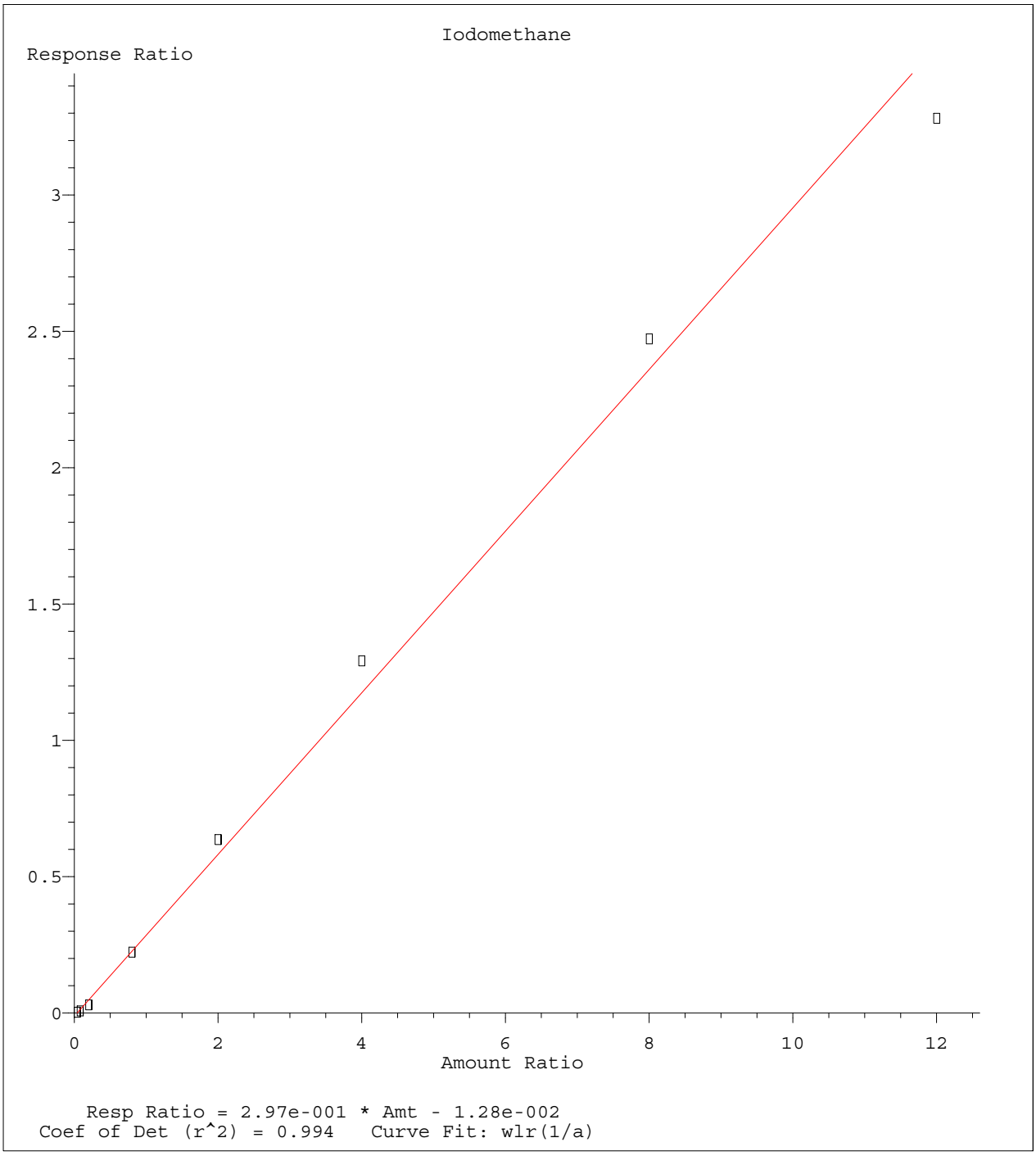

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M
Calibration Table Last Updated: Thu Aug 11 09:53:58 2016

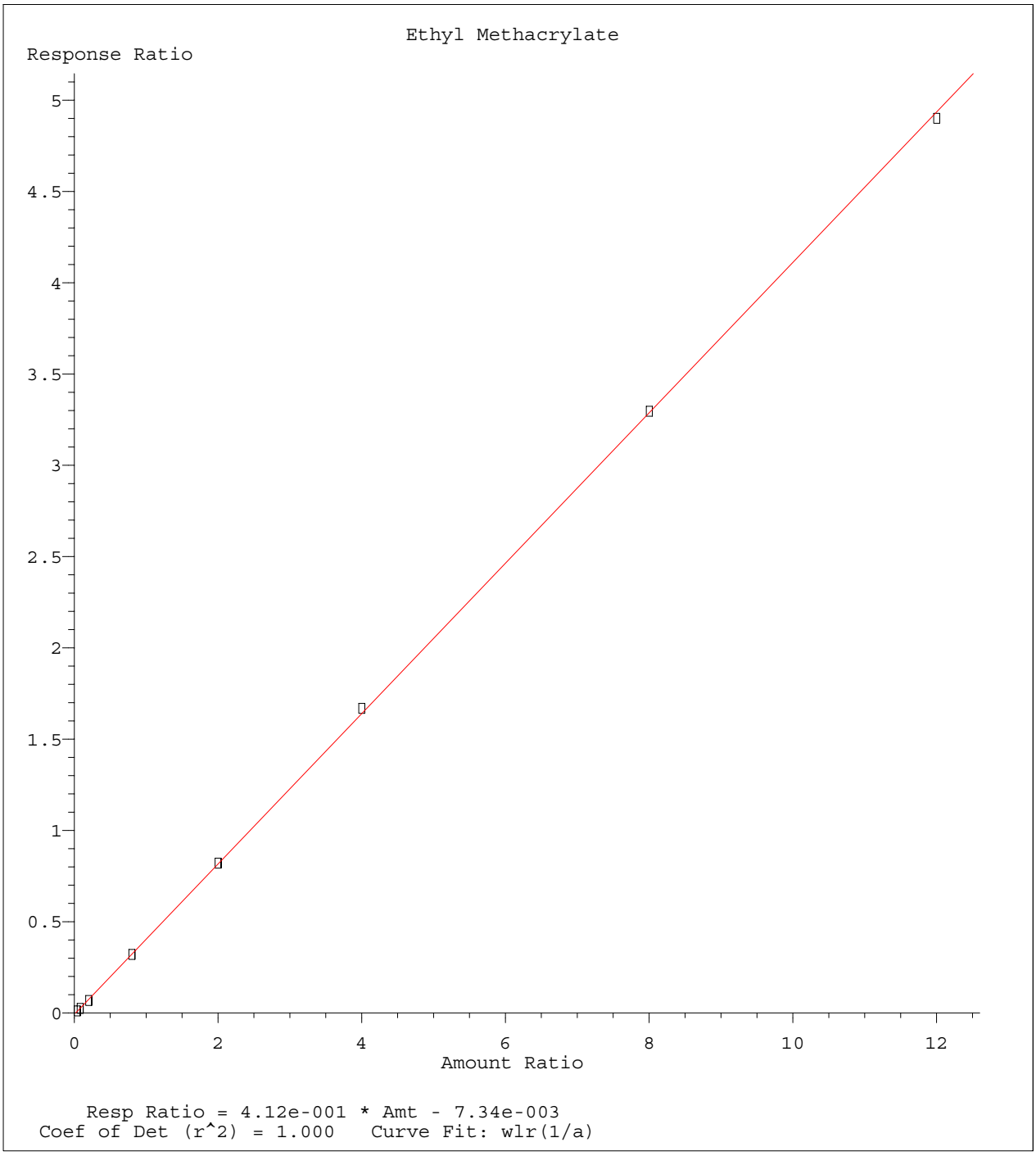

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M
Calibration Table Last Updated: Thu Aug 11 09:53:58 2016

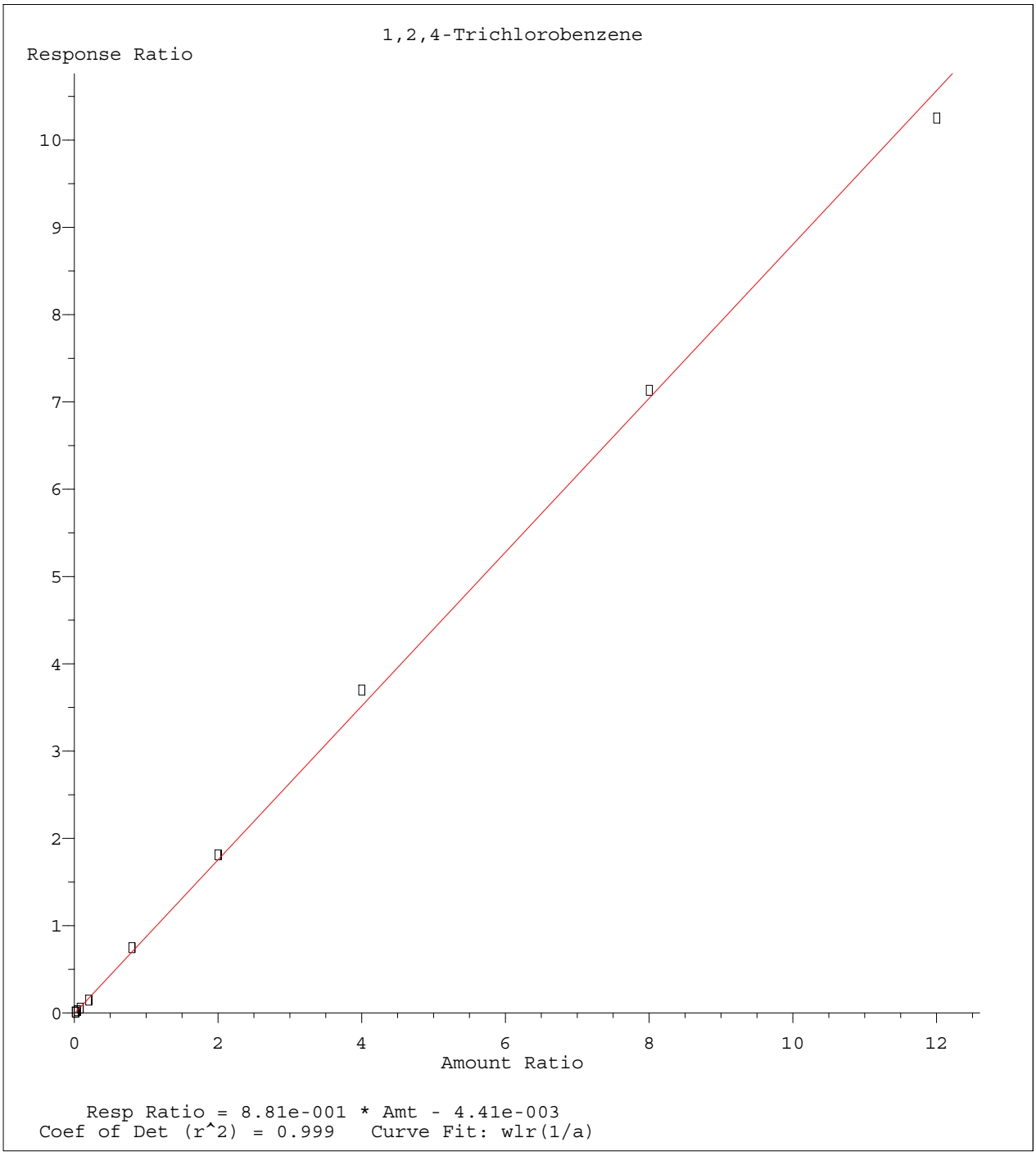

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M
Calibration Table Last Updated: Thu Aug 11 09:53:58 2016

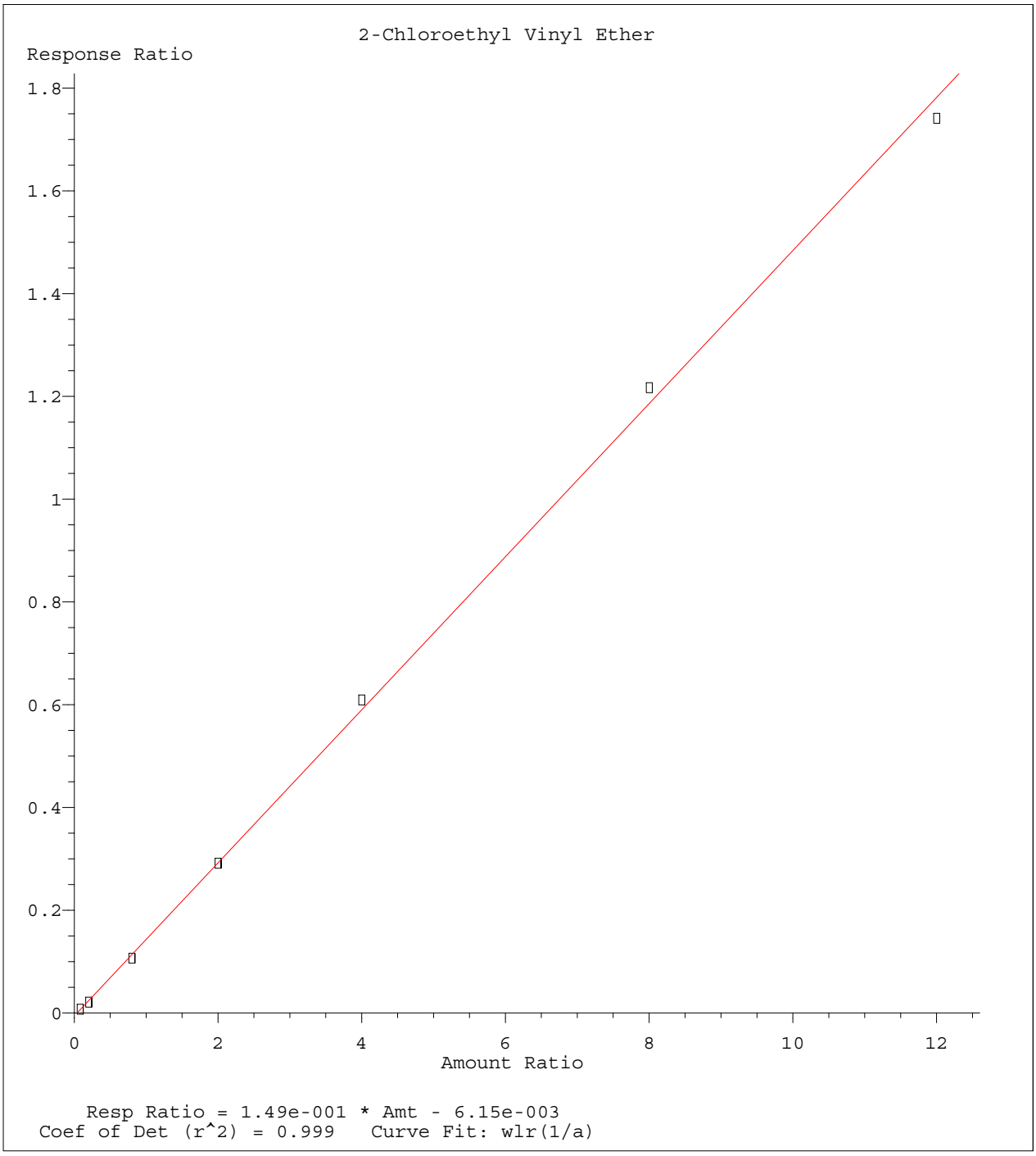

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M
Calibration Table Last Updated: Thu Aug 11 09:53:58 2016

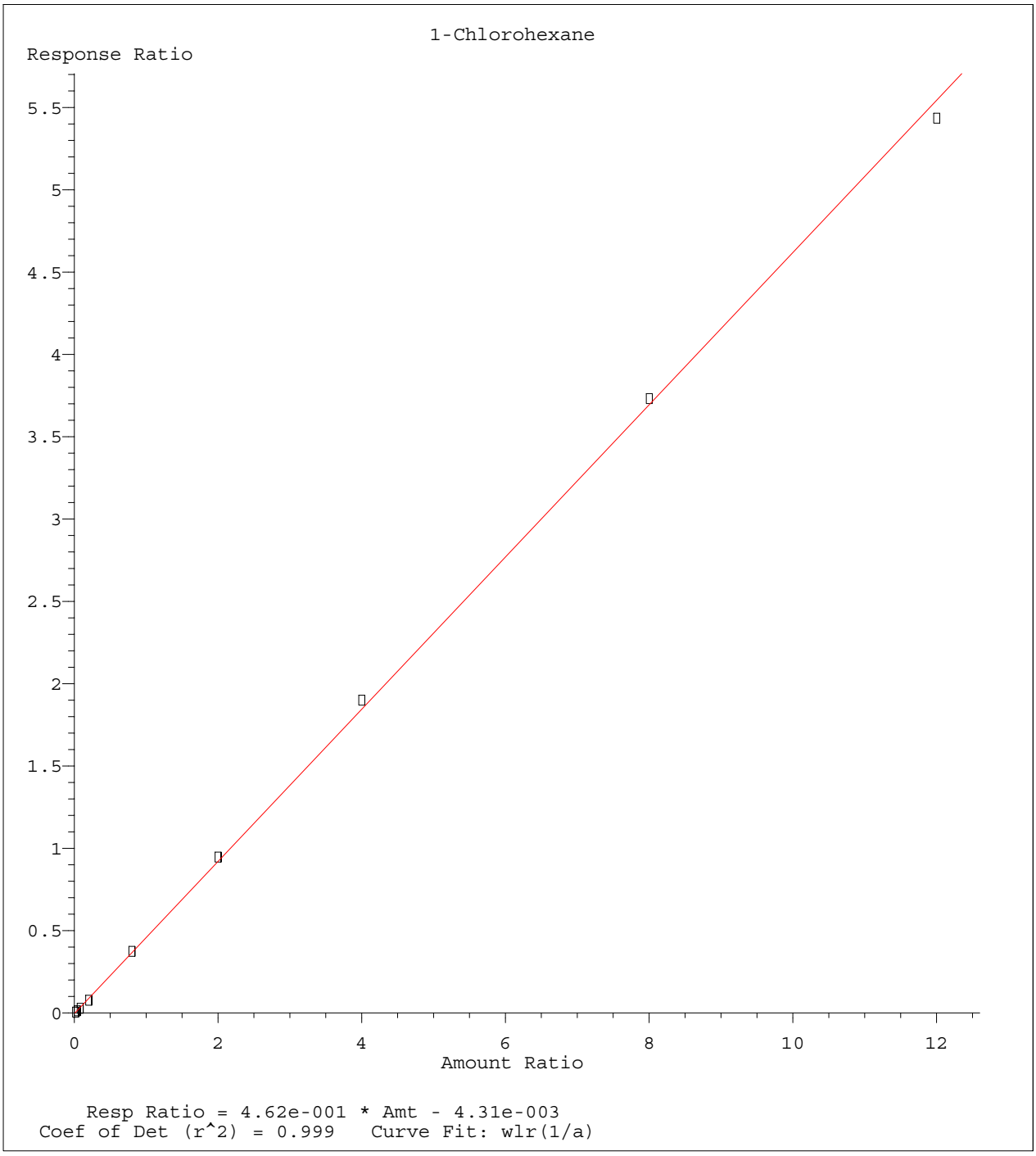

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M
Calibration Table Last Updated: Thu Aug 11 09:53:58 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081116\6M141186.D Vial: 6
Acq On : 11 Aug 2016 14:02 Operator: TMB
Sample : WG579700-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 15:56:56 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	745767	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	571096	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	326798	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.58	111	206480	25.3772 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.52%		
43) 1,2-Dichloroethane-d4	10.30	65	259346	23.8164 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.28%		
58) Toluene-d8	13.03	98	682469	25.1150 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.44%		
80) p-Bromofluorobenzene	17.00	95	297814	25.5062 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.04%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	2.94	85	756437	47.6105 ug/L	100
3) Chloromethane	3.36	50	635444	39.1820 ug/L	98
4) Vinyl Chloride	3.55	62	488485	45.6830 ug/L	99
5) 1,3-Butadiene	3.58	54	308263	34.3076 ug/L	97
6) Bromomethane	4.37	94	223060	42.5631 ug/L	100
7) Chloroethane	4.52	64	295992	48.5417 ug/L	91
8) Trichlorofluoromethane	4.99	101	779843	46.0748 ug/L	99
9) Diethyl ether	5.54	59	660052	110.8713 ug/L	95
10) Isoprene	5.55	67	567088	50.2771 ug/L	84
11) Acrolein	5.78	56	88347	97.6797 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	388086	50.9240 ug/L	97
13) Acetone	5.89	43	122815	51.9835 ug/L	94
14) 1,1-Dichloroethene	6.09	61	707502	44.4958 ug/L	92
15) Tert-Butyl Alcohol	6.27	59	139245	215.9049 ug/L	94
16) Dimethyl Sulfide	6.37	62	540811	56.8236 ug/L	90
17) Iodomethane	6.64	142	333427	38.7567 ug/L	83
18) Methyl acetate	6.68	43	339873	52.4137 ug/L	97
19) Methylene Chloride	6.92	84	394559	46.2561 ug/L	87
20) Carbon Disulfide	6.94	76	1288470	48.6780 ug/L	100
21) Acrylonitrile	7.14	53	151787	54.9158 ug/L	99
22) Methyl Tert Butyl Ether	7.17	73	1128071	53.5204 ug/L	99
23) trans-1,2-Dichloroethene	7.41	96	381956	49.2058 ug/L	86
24) n-Hexane	7.49	57	637151	55.1391 ug/L	97
25) Diisopropyl ether	7.89	45	3711475	113.8950 ug/L	98
26) Vinyl Acetate	8.08	43	800117	63.9741 ug/L	97
27) 1,1-Dichloroethane	8.09	63	796077	45.5752 ug/L	99
28) Ethyl-Tert-Butyl ether	8.52	59	2849311	107.1670 ug/L	98
29) 2-Butanone	8.72	43	182573	53.2950 ug/L	95
30) Propionitrile	8.84	54	99299	109.5026 ug/L	98
31) 2,2-Dichloropropane	8.94	77	726423	49.0685 ug/L	98
32) cis-1,2-Dichloroethene	9.01	96	434572	50.3577 ug/L	69
33) Chloroform	9.25	83	766509	45.9469 ug/L	98
34) 1-Bromopropane	9.39	122	90561	66.1756 ug/L	99
35) Bromochloromethane	9.50	130	235330	48.0166 ug/L	100
36) Tetrahydrofuran	9.55	42	225582	104.5923 ug/L	94
38) 1,1,1-Trichloroethane	9.84	97	730708	46.4417 ug/L	99
39) Cyclohexane	9.86	56	816747	53.7156 ug/L	95
40) 1,1-Dichloropropene	10.07	75	558014	47.3813 ug/L	95
41) Tert-Amyl-Methyl ether	10.20	73	2219473	113.8034 ug/L	95
42) Carbon Tetrachloride	10.22	117	657230	46.8421 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081116\6M141186.D Vial: 6
Acq On : 11 Aug 2016 14:02 Operator: TMB
Sample : WG579700-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 15:56:56 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	672165	47.5700 ug/L	94
46)	Benzene	10.46	78	1535012	48.0625 ug/L	95
47)	Trichloroethene	11.32	130	397090	47.9062 ug/L	83
48)	Methylcyclohexane	11.41	83	587938	52.4552 ug/L	93
49)	1,2-Dichloropropane	11.58	63	454892	50.5433 ug/L	88
50)	1,4-Dioxane	11.92	88	11862	226.0866 ug/L	86
51)	Bromodichloromethane	11.91	83	609729	48.5610 ug/L	99
52)	Dibromomethane	12.01	93	227830	46.9409 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.30	63	230947	52.9761 ug/L	99
54)	4-Methyl-2-Pentanone	12.33	58	132741	53.2060 ug/L	99
55)	cis-1,3-Dichloropropene	12.67	75	703434	57.4202 ug/L	98
56)	Dimethyl Disulfide	12.96	79	386207	52.6903 ug/L	99
59)	Toluene	13.14	91	1610568	49.0677 ug/L	99
60)	Ethyl Methacrylate	13.30	69	461117	49.4658 ug/L	91
62)	trans-1,3-Dichloropropene	13.37	75	611204	49.4196 ug/L	94
63)	1,1,2-Trichloroethane	13.61	97	310318	47.1922 ug/L	99
64)	2-Hexanone	13.57	43	270408	50.1523 ug/L	94
65)	1,3-Dichloropropane	13.97	76	582150	51.1318 ug/L	90
66)	Tetrachloroethene	14.09	166	400225	45.5219 ug/L	91
67)	Dibromochloromethane	14.40	129	415234	47.3584 ug/L	99
68)	1,2-Dibromoethane	14.69	107	297105	48.4881 ug/L	99
69)	1-Chlorohexane	14.84	91	535359	50.9149 ug/L	87
70)	Chlorobenzene	15.28	112	1067267	46.8750 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.34	131	423267	47.1448 ug/L	94
72)	Ethylbenzene	15.34	106	557635	48.1324 ug/L	91
73)	m-,p-Xylene	15.44	106	1363059	98.4615 ug/L	91
74)	o-Xylene	16.09	106	689784	51.8430 ug/L	90
75)	Styrene	16.14	104	1163080	50.5817 ug/L	89
76)	Bromoform	16.69	173	248212	44.6001 ug/L	98
77)	Isopropylbenzene	16.60	105	1787843	52.8349 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.87	83	387168	47.5105 ug/L	99
81)	1,2,3-Trichloropropane	17.09	110	117147	46.6796 ug/L	89
82)	trans-1,4-Dichloro-2-Buten	17.16	53	126877	41.0171 ug/L	93
83)	n-Propylbenzene	17.20	91	2204289	52.5374 ug/L	98
84)	Bromobenzene	17.33	156	460609	44.8993 ug/L	93
85)	1,3,5-Trimethylbenzene	17.43	105	1545201	51.8581 ug/L	96
86)	2-Chlorotoluene	17.50	91	1412211	46.7433 ug/L	96
87)	4-Chlorotoluene	17.56	91	1478765	50.1044 ug/L	96
88)	a-Methylstyrene	17.91	118	881814	50.8931 ug/L	95
89)	tert-Butylbenzene	17.97	134	311671	48.9930 ug/L	68
90)	1,2,4-Trimethylbenzene	18.03	105	1590498	47.7213 ug/L	97
91)	sec-Butylbenzene	18.29	105	1780829	49.4520 ug/L	98
92)	p-Isopropyltoluene	18.48	119	1536803	49.7938 ug/L	97
93)	1,3-Dichlorobenzene	18.68	146	921376	47.4079 ug/L	95
94)	1,4-Dichlorobenzene	18.84	146	945394	47.3732 ug/L	95
95)	n-Butylbenzene	19.10	91	1445113	50.7687 ug/L	96
96)	1,2-Dichlorobenzene	19.41	146	895498	47.5466 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.59	75	84517	48.6873 ug/L	82
98)	1,2,4-Trichlorobenzene	21.94	180	584092	50.8156 ug/L	98
99)	Hexachlorobutadiene	22.14	225	233118	49.3912 ug/L	99
100)	Naphthalene	22.36	128	1053888	46.1577 ug/L	100
101)	1,2,3-Trichlorobenzene	22.74	180	536086	52.8049 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M141186.D 8260WT.M Thu Aug 11 15:57:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081116\6M141186.D Vial: 6
Acq On : 11 Aug 2016 14:02 Operator: TMB
Sample : WG579700-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 15:56 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

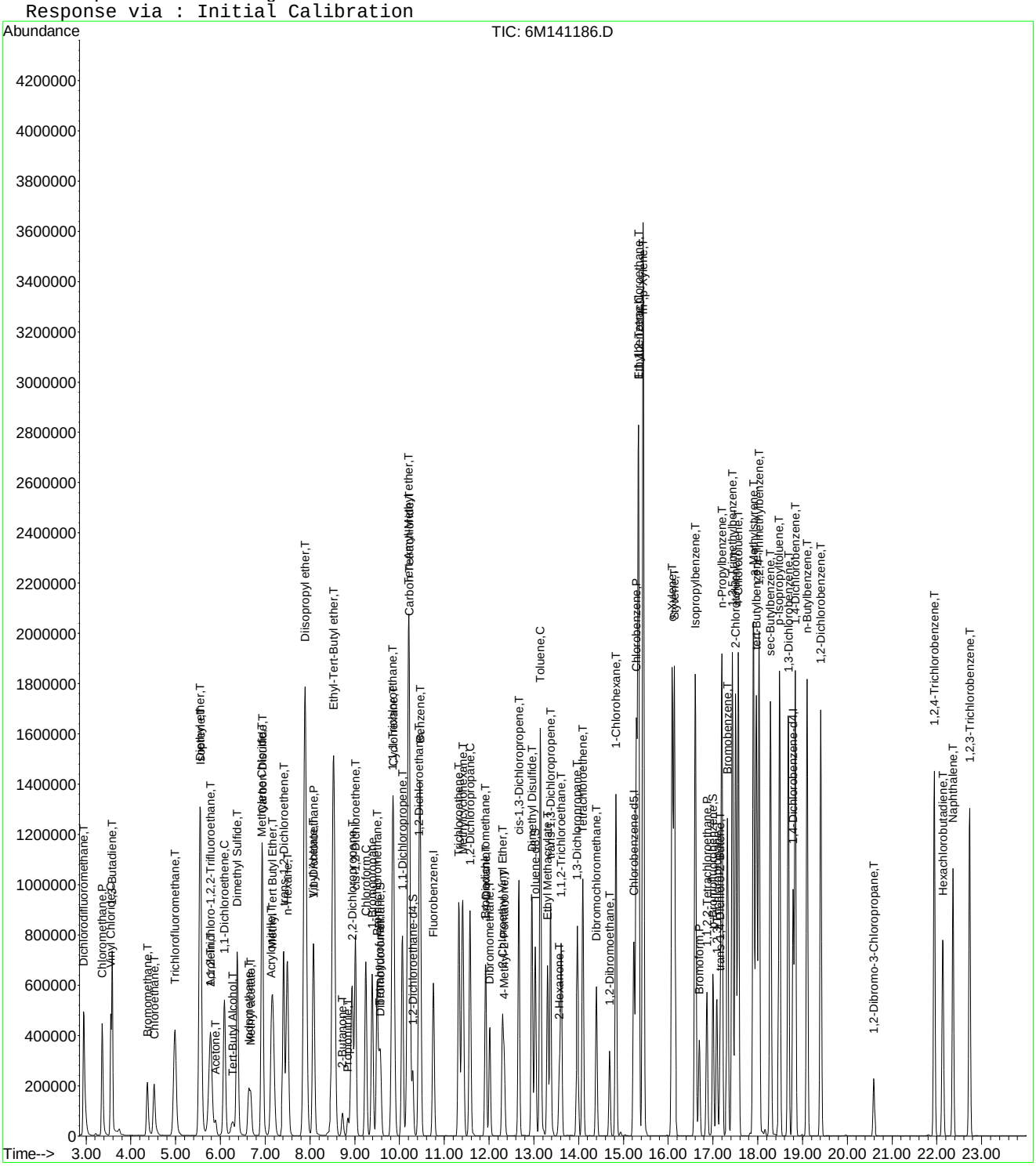

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081116\6M141186.D Vial: 6
Acq On : 11 Aug 2016 14:02 Operator: TMB
Sample : WG579700-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	91	0.00
2	T	Dichlorodifluoromethane	50.0000	47.6105	4.8	81	0.00
3	P	Chloromethane	50.0000	39.1820	21.6#	70	0.00
4	C	Vinyl Chloride	50.0000	45.6830	8.6	84	0.00
5	T	1,3-Butadiene	50.0000	34.3076	31.4#	66	0.00
6	T	Bromomethane	50.0000	42.5631	14.9	85	0.00
7	T	Chloroethane	50.0000	48.5417	2.9	89	0.00
8	T	Trichlorofluoromethane	50.0000	46.0748	7.9	84	0.00
9	T	Diethyl ether	100.0000	110.8713	-10.9	98	0.00
10	T	Isoprene	50.0000	50.2771	-0.6	90	0.00
11	T	Acrolein	50.0000	97.6797	-95.4#	178	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.9240	-1.8	95	0.00
13	T	Acetone	50.0000	51.9835	-4.0	96	0.00
14	C	1,1-Dichloroethene	50.0000	44.4958	11.0	86	0.00
15	T	Tert-Butyl Alcohol	200.0000	215.9049	-8.0	91	-0.02
16	T	Dimethyl Sulfide	50.0000	56.8235	-13.6	101	0.00
17	T	Iodomethane	50.0000	38.7567	22.5#	64	0.00
18	T	Methyl acetate	50.0000	52.4136	-4.8	95	0.00
19	T	Methylene Chloride	50.0000	46.2561	7.5	88	0.00
20	T	Carbon Disulfide	50.0000	48.6780	2.6	88	0.00
21	T	Acrylonitrile	50.0000	54.9158	-9.8	93	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.5204	-7.0	95	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.2058	1.6	87	0.00
24	T	n-Hexane	50.0000	55.1391	-10.3	99	0.00
25	T	Diisopropyl ether	100.0000	113.8950	-13.9	100	0.00
26	T	Vinyl Acetate	50.0000	63.9741	-27.9#	115	0.00
27	P	1,1-Dichloroethane	50.0000	45.5752	8.8	84	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	107.1670	-7.2	93	0.00
29	T	2-Butanone	50.0000	53.2950	-6.6	95	0.00
30	T	Propionitrile	100.0000	109.5026	-9.5	94	0.00
31	T	2,2-Dichloropropane	50.0000	49.0686	1.9	92	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.3577	-0.7	90	0.00
33	C	Chloroform	50.0000	45.9469	8.1	86	0.00
34		1-Bromopropane	50.0000	66.1756	-32.4#	112	0.00
35	T	Bromochloromethane	50.0000	48.0166	4.0	85	0.00
36	T	Tetrahydrofuran	100.0000	104.5923	-4.6	93	0.00
37	S	Dibromofluoromethane	25.0000	25.3772	-1.5	88	0.00
38	T	1,1,1-Trichloroethane	50.0000	46.4417	7.1	86	0.00
39	T	Cyclohexane	50.0000	53.7156	-7.4	93	0.00
40	T	1,1-Dichloropropene	50.0000	47.3813	5.2	86	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	113.8034	-13.8	99	0.00
42	T	Carbon Tetrachloride	50.0000	46.8421	6.3	84	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.8164	4.7	86	0.00
44		Heptane	-1.0000	0.0000	0.0	97	0.00
45	T	1,2-Dichloroethane	50.0000	47.5700	4.9	88	0.00
46	T	Benzene	50.0000	48.0625	3.9	88	0.00
47	T	Trichloroethene	50.0000	47.9062	4.2	89	0.00
48	T	Methylcyclohexane	50.0000	52.4552	-4.9	92	0.00
49	C	1,2-Dichloropropane	50.0000	50.5433	-1.1	92	0.00
50	T	1,4-Dioxane	200.0000	226.0866	-13.0	100	0.00
51	T	Bromodichloromethane	50.0000	48.5610	2.9	86	0.00
52	T	Dibromomethane	50.0000	46.9409	6.1	84	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.9761	-6.0	97	0.00
54	T	4-Methyl-2-Pentanone	50.0000	53.2060	-6.4	94	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081116\6M141186.D Vial: 6
Acq On : 11 Aug 2016 14:02 Operator: TMB
Sample : WG579700-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	57.4202	-14.8	96	0.00
56	T	Dimethyl Disulfide	50.0000	52.6903	-5.4	91	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	93	0.00
58	S	Toluene-d8	25.0000	25.1150	-0.5	92	0.00
59	C	Toluene	50.0000	49.0677	1.9	88	0.00
60	T	Ethyl Methacrylate	50.0000	49.4658	1.1	92	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	86	0.00
62	T	trans-1,3-Dichloropropene	50.0000	49.4196	1.2	88	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.1921	5.6	89	0.00
64	T	2-Hexanone	50.0000	50.1523	-0.3	92	0.00
65	T	1,3-Dichloropropane	50.0000	51.1318	-2.3	93	0.00
66	T	Tetrachloroethene	50.0000	45.5219	9.0	85	0.00
67	T	Dibromochloromethane	50.0000	47.3584	5.3	85	0.00
68	T	1,2-Dibromoethane	50.0000	48.4881	3.0	88	0.00
69	T	1-Chlorohexane	50.0000	50.9149	-1.8	92	0.00
70	P	Chlorobenzene	50.0000	46.8750	6.3	89	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	47.1448	5.7	87	0.00
72	C	Ethylbenzene	50.0000	48.1324	3.7	87	0.00
73	T	m-,p-Xylene	100.0000	98.4615	1.5	88	0.00
74	T	o-Xylene	50.0000	51.8430	-3.7	89	0.00
75	T	Styrene	50.0000	50.5817	-1.2	86	0.00
76	P	Bromoform	50.0000	44.6001	10.8	80	0.00
77	T	Isopropylbenzene	50.0000	52.8349	-5.7	87	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	89	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.5105	5.0	88	0.00
80	S	p-Bromofluorobenzene	25.0000	25.5062	-2.0	88	0.00
81	T	1,2,3-Trichloropropane	50.0000	46.6796	6.6	87	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	41.0171	18.0	77	0.00
83	T	n-Propylbenzene	50.0000	52.5374	-5.1	87	0.00
84	T	Bromobenzene	50.0000	44.8993	10.2	84	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.8581	-3.7	84	0.00
86	T	2-Chlorotoluene	50.0000	46.7434	6.5	80	0.00
87	T	4-Chlorotoluene	50.0000	50.1044	-0.2	92	0.00
88	T	a-Methylstyrene	50.0000	50.8931	-1.8	86	0.00
89	T	tert-Butylbenzene	50.0000	48.9930	2.0	86	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	47.7213	4.6	82	0.00
91	T	sec-Butylbenzene	50.0000	49.4521	1.1	85	0.00
92	T	p-Isopropyltoluene	50.0000	49.7938	0.4	83	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.4079	5.2	84	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.3732	5.3	87	0.00
95	T	n-Butylbenzene	50.0000	50.7687	-1.5	84	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.5466	4.9	88	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.6873	2.6	86	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.8156	-1.6	88	0.00
99	T	Hexachlorobutadiene	50.0000	49.3912	1.2	91	0.00
100	T	Naphthalene	50.0000	46.1577	7.7	77	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	52.8049	-5.6	86	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M141186.D 8260WT.M Thu Aug 11 15:58:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141289.D Vial: 3
Acq On : 16 Aug 2016 12:57 Operator: TMB
Sample : WG580433-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 14:05:59 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	902974	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	708377	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	397254	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.57	111	243274	24.6939 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.76%		
43) 1,2-Dichloroethane-d4	10.30	65	298212	22.6177 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.48%		
58) Toluene-d8	13.03	98	834644	24.7626 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.04%		
80) p-Bromofluorobenzene	17.00	95	373403	26.3081 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.24%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	937803	48.7494 ug/L	100
3) Chloromethane	3.36	50	901620	45.9157 ug/L	99
4) Vinyl Chloride	3.56	62	605072	46.7346 ug/L	100
5) 1,3-Butadiene	3.59	54	462492	43.1361 ug/L	96
6) Bromomethane	4.38	94	242215	38.1716 ug/L	97
7) Chloroethane	4.53	64	367703	49.8036 ug/L	95
8) Trichlorofluoromethane	5.00	101	929677	45.3645 ug/L	99
9) Diethyl ether	5.54	59	890948	123.6008 ug/L	96
10) Isoprene	5.56	67	868268	63.5772 ug/L	93
11) Acrolein	5.79	56	60323	55.0837 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	539080	58.4219 ug/L	97
13) Acetone	5.89	43	140397	49.0795 ug/L	98
14) 1,1-Dichloroethene	6.10	61	1016583	52.8035 ug/L	93
15) Tert-Butyl Alcohol	6.24	59	159147	203.8024 ug/L	93
16) Dimethyl Sulfide	6.38	62	651953	56.5753 ug/L	92
17) Iodomethane	6.63	142	611338	58.1353 ug/L	86
18) Methyl acetate	6.67	43	441702	56.2581 ug/L	97
19) Methylene Chloride	6.93	84	542838	52.5600 ug/L	88
20) Carbon Disulfide	6.95	76	1765757	55.0956 ug/L	100
21) Acrylonitrile	7.13	53	194016	57.9733 ug/L	99
22) Methyl Tert Butyl Ether	7.16	73	1402305	54.9482 ug/L	99
23) trans-1,2-Dichloroethene	7.41	96	524634	55.8197 ug/L	87
24) n-Hexane	7.49	57	827791	59.1651 ug/L	97
25) Diisopropyl ether	7.89	45	4484789	113.6654 ug/L	98
26) Vinyl Acetate	8.07	43	1000784	66.0874 ug/L	97
27) 1,1-Dichloroethane	8.08	63	1141571	53.9765 ug/L	100
28) Ethyl-Tert-Butyl ether	8.52	59	3555219	110.4373 ug/L	98
29) 2-Butanone	8.73	43	224279	54.0712 ug/L	96
30) Propionitrile	8.84	54	124606	113.4870 ug/L	97
31) 2,2-Dichloropropane	8.94	77	962399	53.6904 ug/L	99
32) cis-1,2-Dichloroethene	9.02	96	580988	55.6032 ug/L	88
33) Chloroform	9.25	83	1031687	51.0758 ug/L	100
34) 1-Bromopropane	9.40	122	96285	58.1090 ug/L	98
35) Bromochloromethane	9.50	130	322655	54.3726 ug/L	99
36) Tetrahydrofuran	9.54	42	288847	110.6091 ug/L	94
38) 1,1,1-Trichloroethane	9.84	97	959230	50.3518 ug/L	99
39) Cyclohexane	9.86	56	1075643	58.4264 ug/L	95
40) 1,1-Dichloropropene	10.06	75	782056	54.8438 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	2635140	111.5930 ug/L	95
42) Carbon Tetrachloride	10.22	117	874071	51.4509 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M141289.D 8260WT.M Tue Aug 16 14:06:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141289.D Vial: 3
Acq On : 16 Aug 2016 12:57 Operator: TMB
Sample : WG580433-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 14:05:59 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	848851	49.6154 ug/L	97
46)	Benzene	10.46	78	2129751	55.0746 ug/L	96
47)	Trichloroethene	11.33	130	514572	51.2716 ug/L	87
48)	Methylcyclohexane	11.41	83	766765	56.4998 ug/L	95
49)	1,2-Dichloropropane	11.58	63	612149	56.1746 ug/L	93
50)	1,4-Dioxane	11.93	88	13934	219.3414 ug/L	80
51)	Bromodichloromethane	11.92	83	804061	52.8893 ug/L	100
52)	Dibromomethane	12.01	93	313792	53.3962 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.30	63	298847	56.5458 ug/L	99
54)	4-Methyl-2-Pentanone	12.33	58	167278	55.3761 ug/L	99
55)	cis-1,3-Dichloropropene	12.67	75	883602	59.5698 ug/L	98
56)	Dimethyl Disulfide	12.95	79	482573	54.3753 ug/L	98
59)	Toluene	13.15	91	2188350	53.7500 ug/L	99
60)	Ethyl Methacrylate	13.30	69	595149	51.4531 ug/L	91
62)	trans-1,3-Dichloropropene	13.37	75	805065	52.4793 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	410876	50.3754 ug/L	99
64)	2-Hexanone	13.57	43	334191	49.9701 ug/L	94
65)	1,3-Dichloropropane	13.98	76	739060	52.3336 ug/L	92
66)	Tetrachloroethene	14.09	166	536183	49.1670 ug/L	92
67)	Dibromochloromethane	14.39	129	543429	49.9679 ug/L	100
68)	1,2-Dibromoethane	14.69	107	392109	51.5913 ug/L	100
69)	1-Chlorohexane	14.83	91	686954	52.6630 ug/L	87
70)	Chlorobenzene	15.28	112	1401732	49.6338 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.33	131	543280	48.7852 ug/L	95
72)	Ethylbenzene	15.33	106	746015	51.9134 ug/L	92
73)	m-,p-Xylene	15.45	106	1805188	105.1281 ug/L	94
74)	o-Xylene	16.09	106	894596	54.2062 ug/L	92
75)	Styrene	16.14	104	1553392	54.4590 ug/L	91
76)	Bromoform	16.69	173	330066	47.8144 ug/L	98
77)	Isopropylbenzene	16.60	105	2318296	55.2338 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.86	83	505868	51.0668 ug/L	99
81)	1,2,3-Trichloropropane	17.09	110	146026	47.8671 ug/L	89
82)	trans-1,4-Dichloro-2-Buten	17.16	53	181776	48.2219 ug/L	94
83)	n-Propylbenzene	17.20	91	2855325	55.9844 ug/L	98
84)	Bromobenzene	17.32	156	607587	48.7222 ug/L	91
85)	1,3,5-Trimethylbenzene	17.43	105	2026998	55.9624 ug/L	96
86)	2-Chlorotoluene	17.50	91	1829305	49.8101 ug/L	99
87)	4-Chlorotoluene	17.56	91	1935503	53.9488 ug/L	93
88)	a-Methylstyrene	17.91	118	1112005	52.7958 ug/L	95
89)	tert-Butylbenzene	17.97	134	395157	51.0997 ug/L	68
90)	1,2,4-Trimethylbenzene	18.03	105	2115023	52.2042 ug/L	97
91)	sec-Butylbenzene	18.28	105	2305577	52.6687 ug/L	98
92)	p-Isopropyltoluene	18.48	119	1999319	53.2906 ug/L	97
93)	1,3-Dichlorobenzene	18.68	146	1192126	50.4600 ug/L	95
94)	1,4-Dichlorobenzene	18.84	146	1184835	48.8415 ug/L	94
95)	n-Butylbenzene	19.10	91	1908266	55.1499 ug/L	96
96)	1,2-Dichlorobenzene	19.41	146	1114686	48.6876 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.59	75	103347	48.9757 ug/L	81
98)	1,2,4-Trichlorobenzene	21.94	180	748762	53.5816 ug/L	99
99)	Hexachlorobutadiene	22.13	225	286368	49.9125 ug/L	99
100)	Naphthalene	22.36	128	1571942	56.5526 ug/L	100
101)	1,2,3-Trichlorobenzene	22.74	180	692852	56.1425 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M141289.D 8260WT.M Tue Aug 16 14:06:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141289.D Vial: 3
Acq On : 16 Aug 2016 12:57 Operator: TMB
Sample : WG580433-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 14:06 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

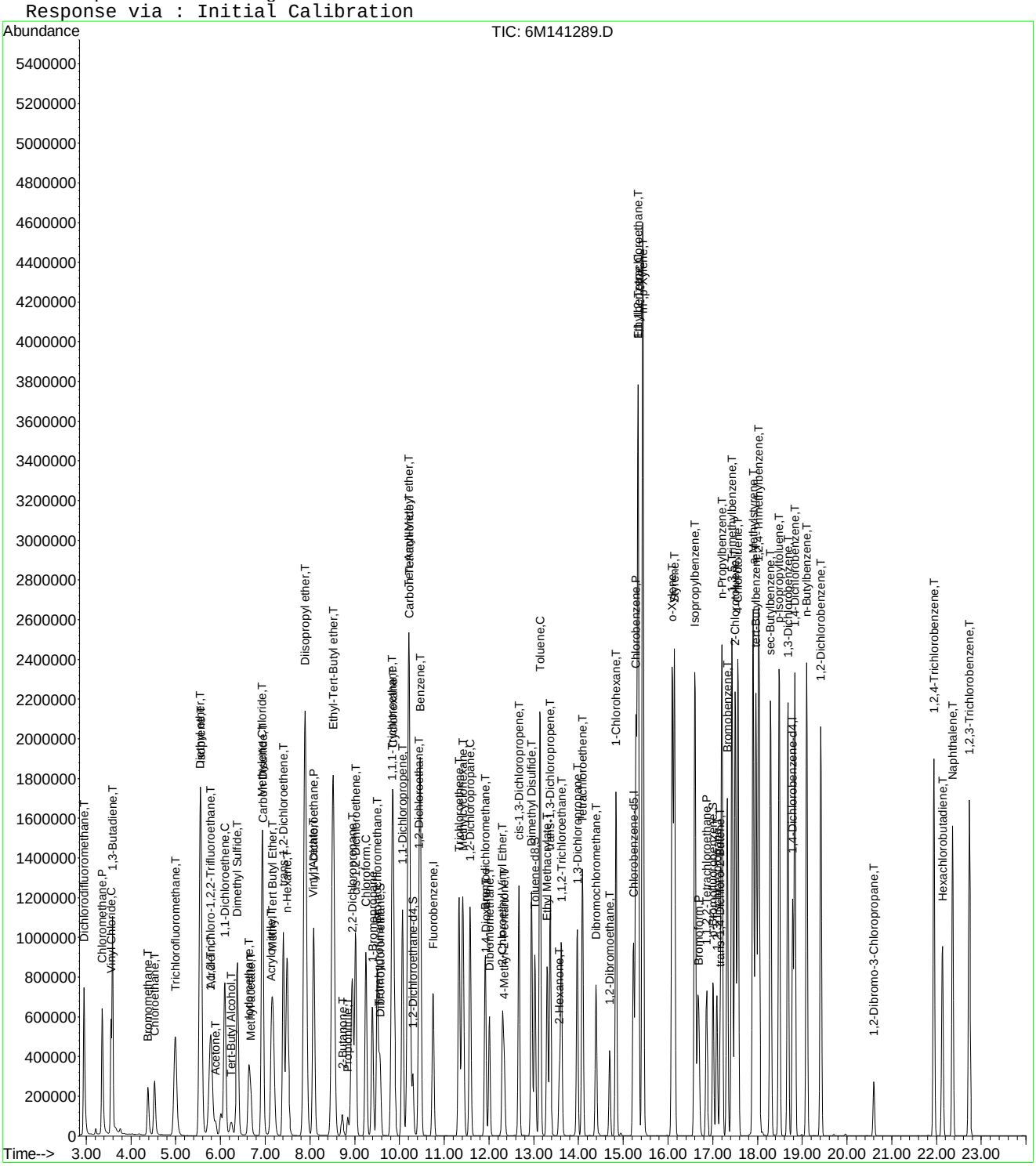

6M141289.D 8260WT.M Tue Aug 16 14:06:05 2016 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS6
Initial cal date: 10 Aug 2016 17:37
CCV date: 16 Aug 2016 12:57
CCV Filename: 6M141289.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	821017	10.76	614077	15.23	367321	18.78
CCV	902974	10.76	708377	15.23	397254	18.78

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141289.D Vial: 3
Acq On : 16 Aug 2016 12:57 Operator: TMB
Sample : WG580433-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	110	0.00
2	T	Dichlorodifluoromethane	0.5326	0.5193	2.5	100	0.00
3	P	Chloromethane	0.5437	0.4993	8.2	100	0.00
4	C	Vinyl Chloride	0.3584	0.3350	6.5	104	0.01
5	T	1,3-Butadiene	0.2861	0.2561	10.5	99	0.01
6	T	Bromomethane	0.1757	0.1341	23.7#	93	0.01
7	T	Chloroethane	0.2044	0.2036	0.4	110	0.01
8	T	Trichlorofluoromethane	0.5674	0.5148	9.3	100	0.01
9	T	Diethyl ether	0.1996	0.2467	-23.6#	133	0.00
10	T	Isoprene	0.3781	0.4808	-27.2#	138	0.01
11	T	Acrolein	0.0303	0.0334	-10.2	122	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2555	0.2985	-16.8	133	0.00
13	T	Acetone	0.0792	0.0777	1.8	109	0.00
14	C	1,1-Dichloroethene	0.5330	0.5629	-5.6	123	0.01
15	T	Tert-Butyl Alcohol	0.0216	0.0220	-1.9	104	-0.04
16	T	Dimethyl Sulfide	0.3191	0.3610	-13.1	121	0.00
17	T	Iodomethane	0.2253	0.3385	-50.3#	117	0.00
18	T	Methyl acetate	0.2174	0.2446	-12.5	124	0.00
19	T	Methylene Chloride	0.2859	0.3006	-5.1	121	0.00
20	T	Carbon Disulfide	0.8873	0.9778	-10.2	120	0.00
21	T	Acrylonitrile	0.0927	0.1074	-15.9	118	0.00
22	T	Methyl Tert Butyl Ether	0.7066	0.7765	-9.9	118	0.00
23	T	trans-1,2-Dichloroethene	0.2602	0.2905	-11.6	120	0.00
24	T	n-Hexane	0.3874	0.4584	-18.3	128	0.00
25	T	Diisopropyl ether	1.0924	1.2417	-13.7	120	0.00
26	T	Vinyl Acetate	0.4193	0.5542	-32.2#	144	0.00
27	P	1,1-Dichloroethane	0.5856	0.6321	-8.0	121	0.00
28	T	Ethyl-Tert-Butyl ether	0.8913	0.9843	-10.4	116	0.00
29	T	2-Butanone	0.1148	0.1242	-8.1	117	0.00
30	T	Propionitrile	0.0304	0.0345	-13.5	118	0.00
31	T	2,2-Dichloropropane	0.4963	0.5329	-7.4	122	0.00
32	T	cis-1,2-Dichloroethene	0.2893	0.3217	-11.2	120	0.00
33	C	Chloroform	0.5592	0.5713	-2.2	115	0.00
34		1-Bromopropane	0.0459	0.0533	-16.2	119	0.00
35	T	Bromochloromethane	0.1643	0.1787	-8.7	117	0.00
36	T	Tetrahydrofuran	0.0723	0.0800	-10.6	119	0.00
37	S	Dibromofluoromethane	0.2727	0.2694	1.2	104	0.00
38	T	1,1,1-Trichloroethane	0.5274	0.5312	-0.7	112	0.00
39	T	Cyclohexane	0.5097	0.5956	-16.9	123	0.00
40	T	1,1-Dichloropropene	0.3948	0.4330	-9.7	120	0.00
41	T	Tert-Amyl-Methyl ether	0.6538	0.7296	-11.6	117	0.00
42	T	Carbon Tetrachloride	0.4703	0.4840	-2.9	111	0.00
43	S	1,2-Dichloroethane-d4	0.3650	0.3303	9.5	99	0.00
44		Heptane	0.0000	0.0000	0.0	113	0.00
45	T	1,2-Dichloroethane	0.4737	0.4700	0.8	111	0.00
46	T	Benzene	1.0706	1.1793	-10.1	122	0.00
47	T	Trichloroethene	0.2779	0.2849	-2.5	115	0.00
48	T	Methylcyclohexane	0.3757	0.4246	-13.0	120	0.00
49	C	1,2-Dichloropropane	0.3017	0.3390	-12.4	124	0.00
50	T	1,4-Dioxane	0.0018	0.0019	-9.7	118	0.00
51	T	Bromodichloromethane	0.4209	0.4452	-5.8	114	0.00
52	T	Dibromomethane	0.1627	0.1737	-6.8	116	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1317	0.1655	-25.6#	125	0.00
54	T	4-Methyl-2-Pentanone	0.0836	0.0926	-10.8	118	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141289.D Vial: 3
Acq On : 16 Aug 2016 12:57 Operator: TMB
Sample : WG580433-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4107	0.4893	-19.1	120	0.00
56	T	Dimethyl Disulfide	0.2457	0.2672	-8.8	114	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	115	0.00
58	S	Toluene-d8	1.1896	1.1783	0.9	113	0.00
59	C	Toluene	1.4369	1.5446	-7.5	120	0.00
60	T	Ethyl Methacrylate	0.3708	0.4201	-13.3	118	0.00
61		Paraldehyde	0.0000	0.0000	0.0	118	0.00
62	T	trans-1,3-Dichloropropene	0.5414	0.5683	-5.0	116	0.00
63	T	1,1,2-Trichloroethane	0.2878	0.2900	-0.8	118	0.00
64	T	2-Hexanone	0.2360	0.2359	0.1	114	0.00
65	T	1,3-Dichloropropane	0.4984	0.5217	-4.7	118	0.00
66	T	Tetrachloroethene	0.3849	0.3785	1.7	114	0.00
67	T	Dibromochloromethane	0.3838	0.3836	0.1	112	0.00
68	T	1,2-Dibromoethane	0.2682	0.2768	-3.2	116	0.00
69	T	1-Chlorohexane	0.4111	0.4849	-17.9	118	0.00
70	P	Chlorobenzene	0.9967	0.9894	0.7	117	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3930	0.3835	2.4	112	0.00
72	C	Ethylbenzene	0.5072	0.5266	-3.8	116	0.00
73	T	m-,p-Xylene	0.6060	0.6371	-5.1	116	0.00
74	T	o-Xylene	0.5824	0.6314	-8.4	115	0.00
75	T	Styrene	0.9765	1.0964	-12.3	115	0.00
76	P	Bromoform	0.2436	0.2330	4.4	107	0.00
77	T	Isopropylbenzene	1.4813	1.6363	-10.5	113	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	0.6234	0.6367	-2.1	115	0.00
80	S	p-Bromofluorobenzene	0.8932	0.9400	-5.2	110	0.00
81	T	1,2,3-Trichloropropane	0.1920	0.1838	4.3	108	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2043	0.2288	-12.0	110	0.00
83	T	n-Propylbenzene	3.2097	3.5938	-12.0	113	0.00
84	T	Bromobenzene	0.7848	0.7647	2.6	110	0.00
85	T	1,3,5-Trimethylbenzene	2.2794	2.5513	-11.9	110	0.00
86	T	2-Chlorotoluene	2.3112	2.3024	0.4	104	0.00
87	T	4-Chlorotoluene	2.2578	2.4361	-7.9	121	0.00
88	T	a-Methylstyrene	1.3255	1.3996	-5.6	109	0.00
89	T	tert-Butylbenzene	0.4867	0.4974	-2.2	109	0.00
90	T	1,2,4-Trimethylbenzene	2.5497	2.6620	-4.4	109	0.00
91	T	sec-Butylbenzene	2.7548	2.9019	-5.3	110	0.00
92	T	p-Isopropyltoluene	2.3610	2.5164	-6.6	108	0.00
93	T	1,3-Dichlorobenzene	1.4868	1.5005	-0.9	109	0.00
94	T	1,4-Dichlorobenzene	1.5267	1.4913	2.3	109	0.00
95	T	n-Butylbenzene	2.1775	2.4018	-10.3	111	0.00
96	T	1,2-Dichlorobenzene	1.4408	1.4030	2.6	109	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1328	0.1301	2.0	105	0.00
98	T	1,2,4-Trichlorobenzene	0.7974	0.9424	-18.2	113	0.00
99	T	Hexachlorobutadiene	0.3611	0.3604	0.2	112	0.00
100	T	Naphthalene	1.4503	1.9785	-36.4#	115	0.00
101	T	1,2,3-Trichlorobenzene	0.7766	0.8720	-12.3	111	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M141289.D 8260WT.M Tue Aug 16 15:56:42 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141289.D Vial: 3
Acq On : 16 Aug 2016 12:57 Operator: TMB
Sample : WG580433-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	110	0.00
2	T	Dichlorodifluoromethane	50.0000	48.7494	2.5	100	0.00
3	P	Chloromethane	50.0000	45.9157	8.2	100	0.00
4	C	Vinyl Chloride	50.0000	46.7346	6.5	104	0.01
5	T	1,3-Butadiene	50.0000	43.1360	13.7	99	0.01
6	T	Bromomethane	50.0000	38.1716	23.7#	93	0.01
7	T	Chloroethane	50.0000	49.8036	0.4	110	0.01
8	T	Trichlorofluoromethane	50.0000	45.3645	9.3	100	0.01
9	T	Diethyl ether	100.0000	123.6008	-23.6#	133	0.00
10	T	Isoprene	50.0000	63.5772	-27.2#	138	0.01
11	T	Acrolein	50.0000	55.0837	-10.2	122	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	58.4219	-16.8	133	0.00
13	T	Acetone	50.0000	49.0795	1.8	109	0.00
14	C	1,1-Dichloroethene	50.0000	52.8035	-5.6	123	0.01
15	T	Tert-Butyl Alcohol	200.0000	203.8023	-1.9	104	-0.04
16	T	Dimethyl Sulfide	50.0000	56.5753	-13.2	121	0.00
17	T	Iodomethane	50.0000	58.1353	-16.3	117	0.00
18	T	Methyl acetate	50.0000	56.2581	-12.5	124	0.00
19	T	Methylene Chloride	50.0000	52.5600	-5.1	121	0.00
20	T	Carbon Disulfide	50.0000	55.0956	-10.2	120	0.00
21	T	Acrylonitrile	50.0000	57.9733	-15.9	118	0.00
22	T	Methyl Tert Butyl Ether	50.0000	54.9481	-9.9	118	0.00
23	T	trans-1,2-Dichloroethene	50.0000	55.8197	-11.6	120	0.00
24	T	n-Hexane	50.0000	59.1651	-18.3	128	0.00
25	T	Diisopropyl ether	100.0000	113.6654	-13.7	120	0.00
26	T	Vinyl Acetate	50.0000	66.0874	-32.2#	144	0.00
27	P	1,1-Dichloroethane	50.0000	53.9765	-8.0	121	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	110.4373	-10.4	116	0.00
29	T	2-Butanone	50.0000	54.0712	-8.1	117	0.00
30	T	Propionitrile	100.0000	113.4870	-13.5	118	0.00
31	T	2,2-Dichloropropane	50.0000	53.6904	-7.4	122	0.00
32	T	cis-1,2-Dichloroethene	50.0000	55.6031	-11.2	120	0.00
33	C	Chloroform	50.0000	51.0758	-2.2	115	0.00
34		1-Bromopropane	50.0000	58.1090	-16.2	119	0.00
35	T	Bromochloromethane	50.0000	54.3726	-8.7	117	0.00
36	T	Tetrahydrofuran	100.0000	110.6091	-10.6	119	0.00
37	S	Dibromofluoromethane	25.0000	24.6939	1.2	104	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.3518	-0.7	112	0.00
39	T	Cyclohexane	50.0000	58.4264	-16.9	123	0.00
40	T	1,1-Dichloropropene	50.0000	54.8438	-9.7	120	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	111.5930	-11.6	117	0.00
42	T	Carbon Tetrachloride	50.0000	51.4509	-2.9	111	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.6177	9.5	99	0.00
44		Heptane	-1.0000	0.0000	0.0	113	0.00
45	T	1,2-Dichloroethane	50.0000	49.6154	0.8	111	0.00
46	T	Benzene	50.0000	55.0746	-10.1	122	0.00
47	T	Trichloroethene	50.0000	51.2716	-2.5	115	0.00
48	T	Methylcyclohexane	50.0000	56.4998	-13.0	120	0.00
49	C	1,2-Dichloropropane	50.0000	56.1746	-12.3	124	0.00
50	T	1,4-Dioxane	200.0000	219.3414	-9.7	118	0.00
51	T	Bromodichloromethane	50.0000	52.8893	-5.8	114	0.00
52	T	Dibromomethane	50.0000	53.3961	-6.8	116	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	56.5458	-13.1	125	0.00
54	T	4-Methyl-2-Pentanone	50.0000	55.3761	-10.8	118	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141289.D Vial: 3
Acq On : 16 Aug 2016 12:57 Operator: TMB
Sample : WG580433-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	59.5698	-19.1	120	0.00
56	T	Dimethyl Disulfide	50.0000	54.3753	-8.8	114	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	115	0.00
58	S	Toluene-d8	25.0000	24.7626	0.9	113	0.00
59	C	Toluene	50.0000	53.7500	-7.5	120	0.00
60	T	Ethyl Methacrylate	50.0000	51.4531	-2.9	118	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	118	0.00
62	T	trans-1,3-Dichloropropene	50.0000	52.4793	-5.0	116	0.00
63	T	1,1,2-Trichloroethane	50.0000	50.3754	-0.8	118	0.00
64	T	2-Hexanone	50.0000	49.9701	0.1	114	0.00
65	T	1,3-Dichloropropane	50.0000	52.3336	-4.7	118	0.00
66	T	Tetrachloroethene	50.0000	49.1670	1.7	114	0.00
67	T	Dibromochloromethane	50.0000	49.9679	0.1	112	0.00
68	T	1,2-Dibromoethane	50.0000	51.5913	-3.2	116	0.00
69	T	1-Chlorohexane	50.0000	52.6630	-5.3	118	0.00
70	P	Chlorobenzene	50.0000	49.6338	0.7	117	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	48.7852	2.4	112	0.00
72	C	Ethylbenzene	50.0000	51.9134	-3.8	116	0.00
73	T	m-,p-Xylene	100.0000	105.1281	-5.1	116	0.00
74	T	o-Xylene	50.0000	54.2062	-8.4	115	0.00
75	T	Styrene	50.0000	54.4590	-8.9	115	0.00
76	P	Bromoform	50.0000	47.8144	4.4	107	0.00
77	T	Isopropylbenzene	50.0000	55.2338	-10.5	113	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	51.0668	-2.1	115	0.00
80	S	p-Bromofluorobenzene	25.0000	26.3081	-5.2	110	0.00
81	T	1,2,3-Trichloropropane	50.0000	47.8671	4.3	108	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	48.2219	3.6	110	0.00
83	T	n-Propylbenzene	50.0000	55.9844	-12.0	113	0.00
84	T	Bromobenzene	50.0000	48.7222	2.6	110	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	55.9624	-11.9	110	0.00
86	T	2-Chlorotoluene	50.0000	49.8101	0.4	104	0.00
87	T	4-Chlorotoluene	50.0000	53.9488	-7.9	121	0.00
88	T	a-Methylstyrene	50.0000	52.7958	-5.6	109	0.00
89	T	tert-Butylbenzene	50.0000	51.0997	-2.2	109	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.2042	-4.4	109	0.00
91	T	sec-Butylbenzene	50.0000	52.6687	-5.3	110	0.00
92	T	p-Isopropyltoluene	50.0000	53.2906	-6.6	108	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.4599	-0.9	109	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.8415	2.3	109	0.00
95	T	n-Butylbenzene	50.0000	55.1499	-10.3	111	0.00
96	T	1,2-Dichlorobenzene	50.0000	48.6876	2.6	109	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.9757	2.0	105	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	53.5816	-7.2	113	0.00
99	T	Hexachlorobutadiene	50.0000	49.9125	0.2	112	0.00
100	T	Naphthalene	50.0000	56.5526	-13.1	115	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	56.1424	-12.3	111	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M141289.D 8260WT.M Tue Aug 16 15:56:46 2016 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\1\DATA\042416\6M138750.D Vial: 1
Acq On : 24 Apr 2016 16:33 Operator: JDS
Sample : WG566155-01 50ng BFB 826-A9 Inst : HPMS6
Misc : 1,1 STD75485 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

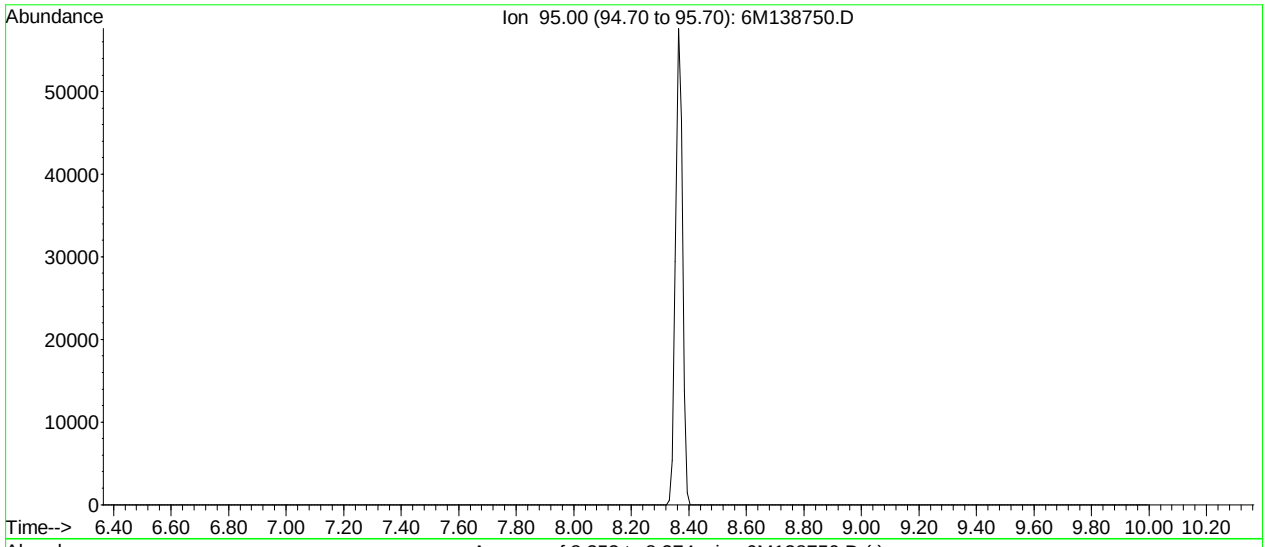

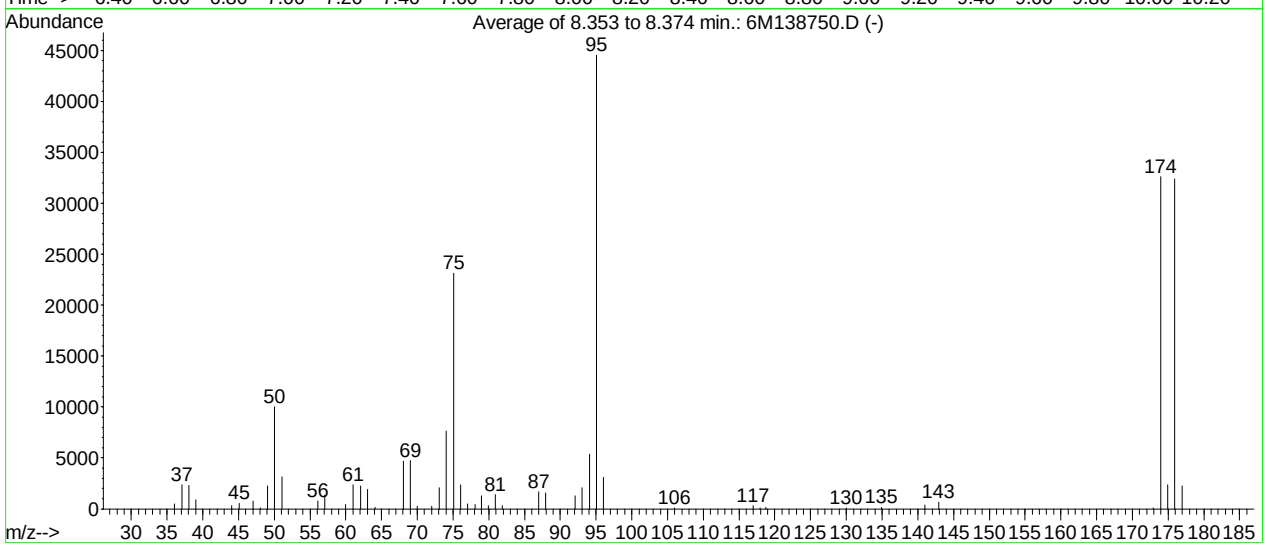

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	10010	PASS
75	95	30	60	52.0	23152	PASS
95	95	100	100	100.0	44552	PASS
96	95	5	9	6.9	3085	PASS
173	174	0.00	2	0.3	113	PASS
174	95	50	100	73.2	32632	PASS
175	174	5	9	7.2	2336	PASS
176	174	95	101	99.2	32384	PASS
177	176	5	9	7.0	2251	PASS

6M138750.D BFB.M Mon Apr 25 09:21:54 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141287.D Vial: 1
Acq On    : 16 Aug 2016  12:00                        Operator: TMB
Sample    : WG580433-01 50ng BFB STD 8260             Inst    : HPMS6
Misc      : 1,1 STD77509                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:MSV01  08-10-16 - HPMS6
```

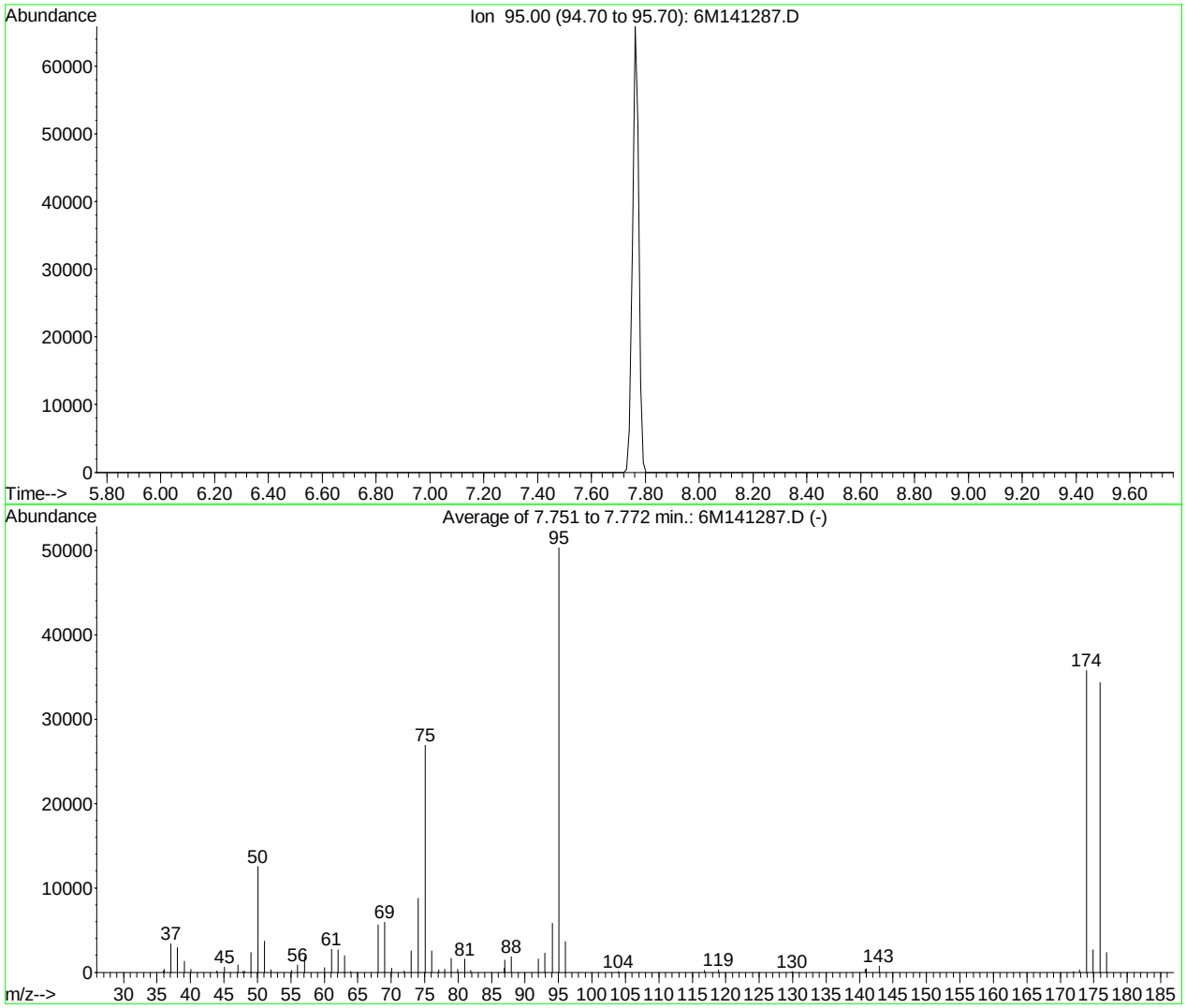

AutoFind: Scans 261, 262, 263; Background Corrected with Scan 256

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.9	12537	PASS
75	95	30	60	53.5	26909	PASS
95	95	100	100	100.0	50306	PASS
96	95	5	9	7.2	3628	PASS
173	174	0.00	2	0.9	305	PASS
174	95	50	100	71.1	35768	PASS
175	174	5	9	7.4	2662	PASS
176	174	95	101	95.9	34316	PASS
177	176	5	9	6.9	2365	PASS

6M141287.D 8260WT.M Tue Aug 16 14:05:17 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141291.D Vial: 5
Acq On : 16 Aug 2016 14:02 Operator: TMB
Sample : WG580434-01 VBLK0816 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 08:41:38 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	829432	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	635506	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	327898	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	227099	25.0959 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.40%		
43) 1,2-Dichloroethane-d4	10.30	65	280130	23.1301 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.52%		
58) Toluene-d8	13.02	98	738874	24.4348 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.72%		
80) p-Bromofluorobenzene	17.01	95	318466	27.1834 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.72%		

Target Compounds

					Qvalue
3) Chloromethane	3.35	50	3144	0.1743 ug/L #	53
13) Acetone	5.91	43	1510	0.5747 ug/L #	48
29) 2-Butanone	8.97	43	2501	0.6564 ug/L #	57
36) Tetrahydrofuran	9.54	42	2990	1.2465 ug/L #	62
98) 1,2,4-Trichlorobenzene	21.94	180	1030	0.2142 ug/L #	50
99) Hexachlorobutadiene	22.13	225	1406	0.2969 ug/L #	66
100) Naphthalene	22.37	128	1386	0.4302 ug/L #	67

(#) = qualifier out of range (m) = manual integration
6M141291.D 8260WT.M Wed Aug 17 08:41:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141291.D Vial: 5
Acq On : 16 Aug 2016 14:02 Operator: TMB
Sample : WG580434-01 VBLK0816 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 8:41 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

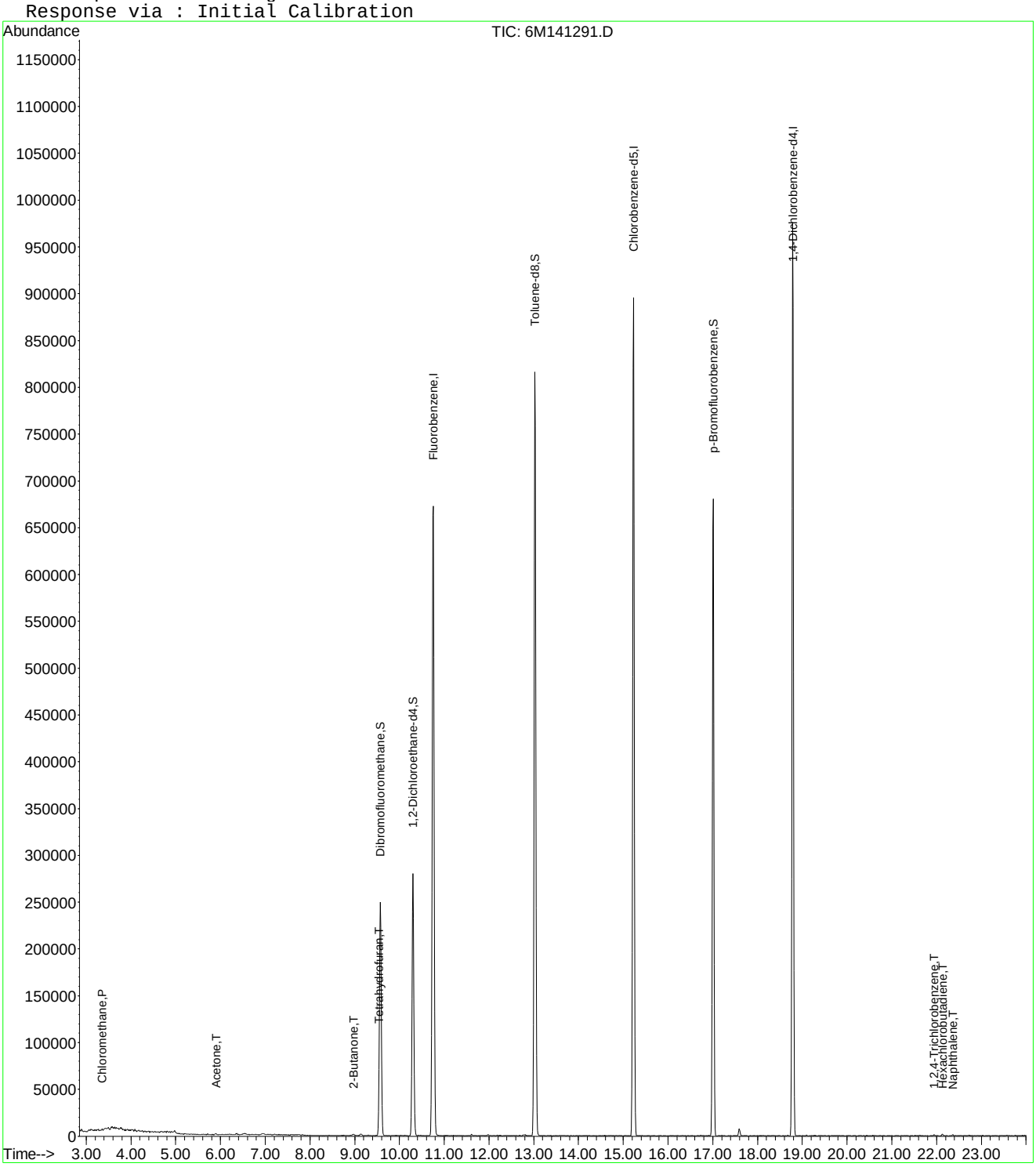

6M141291.D 8260WT.M Wed Aug 17 08:41:42 2016 Page 2

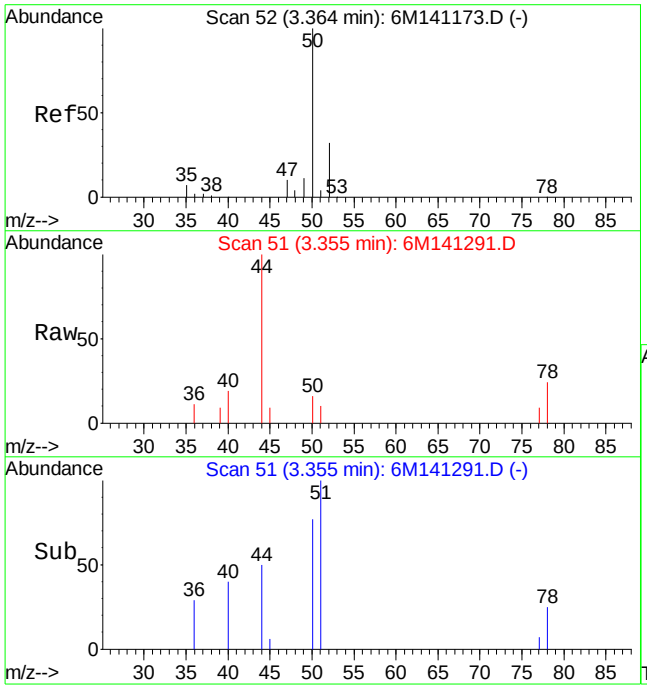

#3
Chloromethane
Concen: 0.17 ug/L
RT: 3.35 min Scan# 51
Delta R.T. -0.00 min
Lab File: 6M141291.D
Acq: 16 Aug 2016 14:02

Tgt Ion: 50 Resp: 3144

Ion	Ratio	Lower	Upper
50	100		
52	6.6	19.8	46.2#

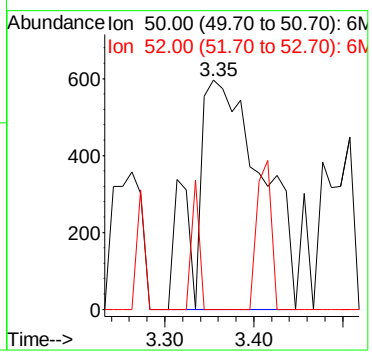

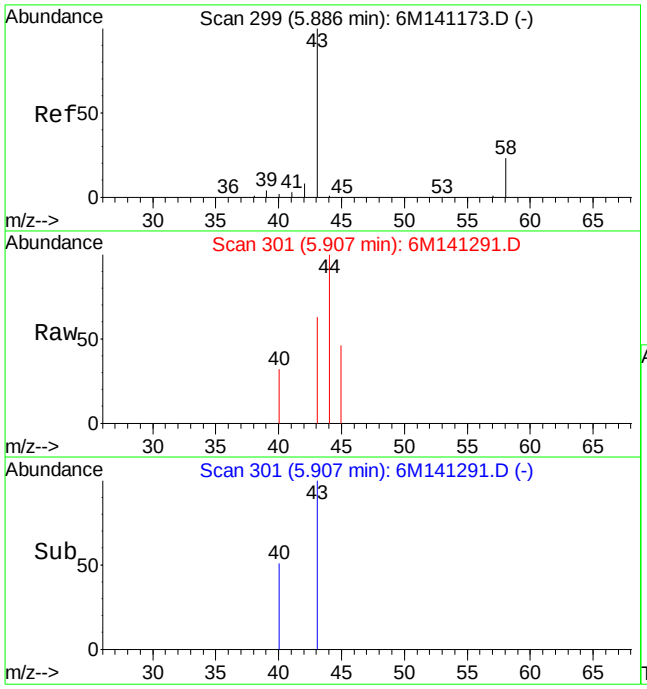

#13
Acetone
Concen: 0.57 ug/L
RT: 5.91 min Scan# 301
Delta R.T. 0.01 min
Lab File: 6M141291.D
Acq: 16 Aug 2016 14:02

Tgt Ion: 43 Resp: 1510

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

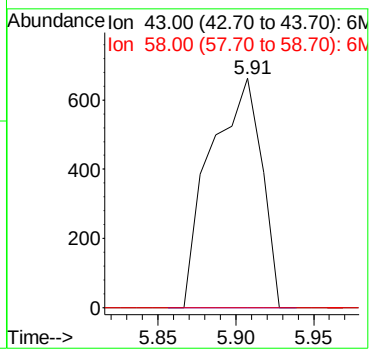

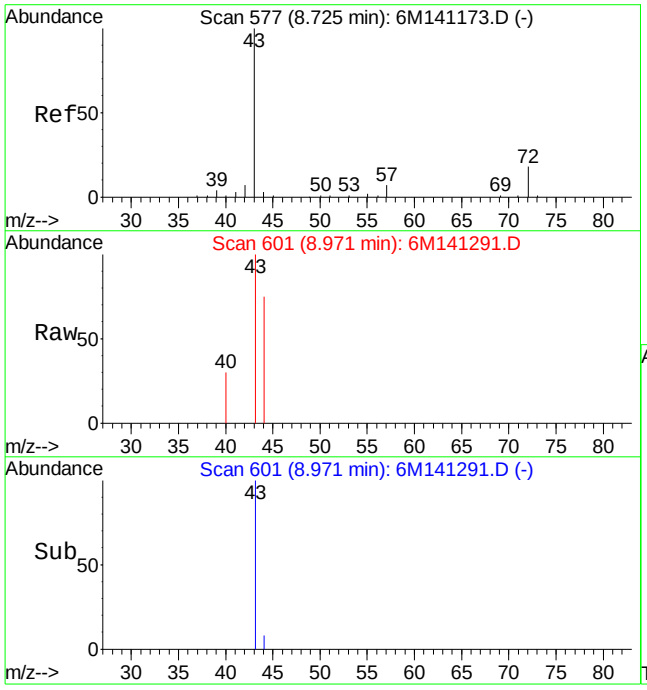

#29
2-Butanone
Concen: 0.66 ug/L
RT: 8.97 min Scan# 601
Delta R.T. 0.25 min
Lab File: 6M141291.D
Acq: 16 Aug 2016 14:02

Tgt Ion: 43 Resp: 2501

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.9	27.9#

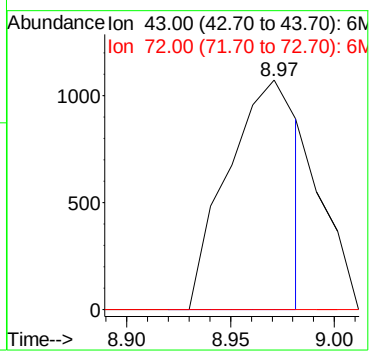

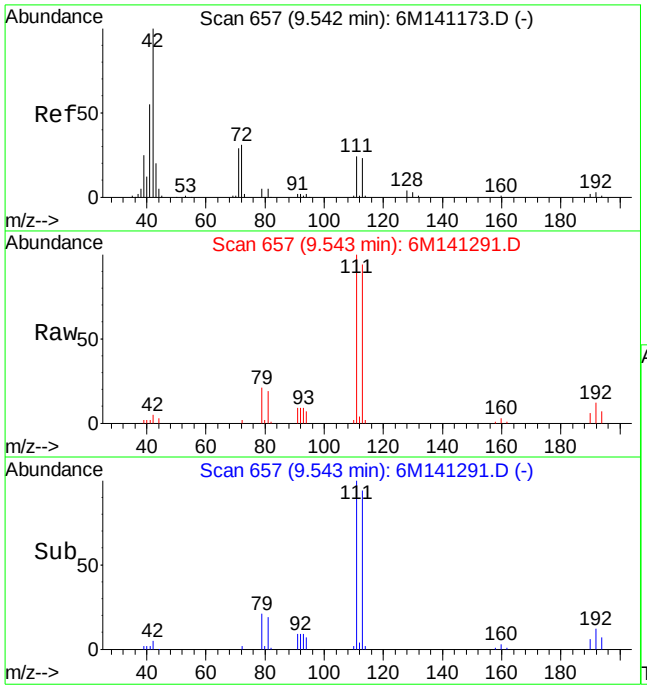

#36
Tetrahydrofuran
Concen: 1.25 ug/L
RT: 9.54 min Scan# 657
Delta R.T. -0.00 min
Lab File: 6M141291.D
Acq: 16 Aug 2016 14:02

Tgt Ion: 42 Resp: 2990

Ion	Ratio	Lower	Upper
42	100		
72	24.1	20.8	48.4
71	0.0	19.9	46.5#

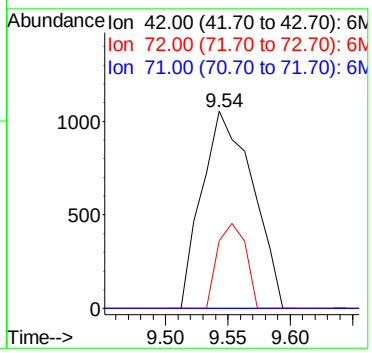

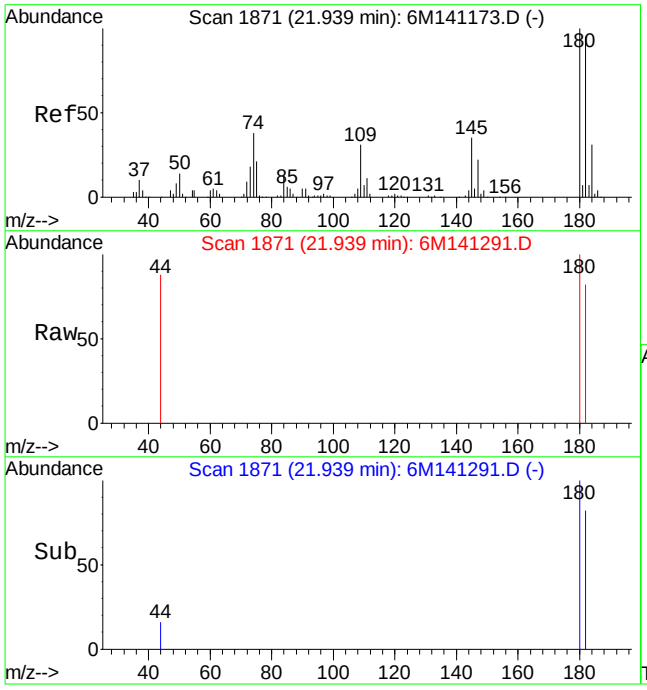

#98
1,2,4-Trichlorobenzene
Concen: 0.21 ug/L
RT: 21.94 min Scan# 1871
Delta R.T. 0.00 min
Lab File: 6M141291.D
Acq: 16 Aug 2016 14:02

Tgt Ion:180 Resp: 1030

Ion	Ratio	Lower	Upper
180	100		
182	48.9	57.7	134.5#
145	0.0	19.0	44.4#

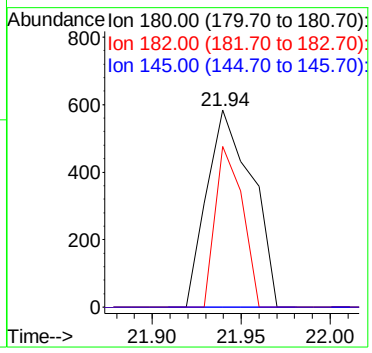

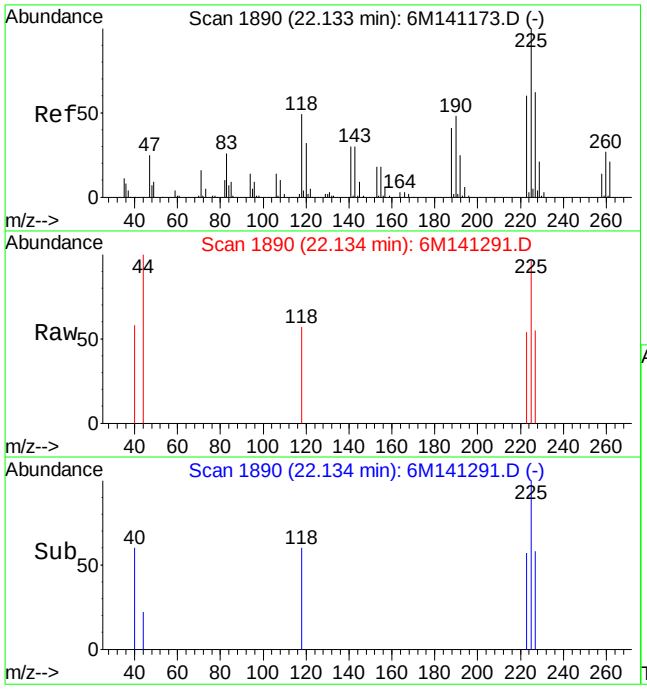

#99
Hexachlorobutadiene
Concen: 0.30 ug/L
RT: 22.13 min Scan# 1890
Delta R.T. -0.00 min
Lab File: 6M141291.D
Acq: 16 Aug 2016 14:02

Tgt Ion:225 Resp: 1406

Ion	Ratio	Lower	Upper
225	100		
223	46.7	37.7	88.1
227	27.8	38.6	90.0#

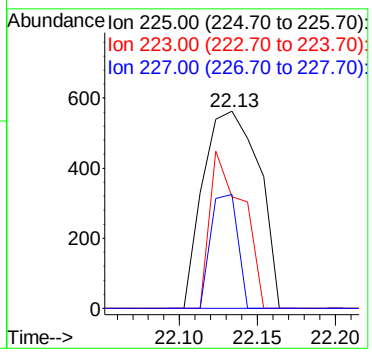

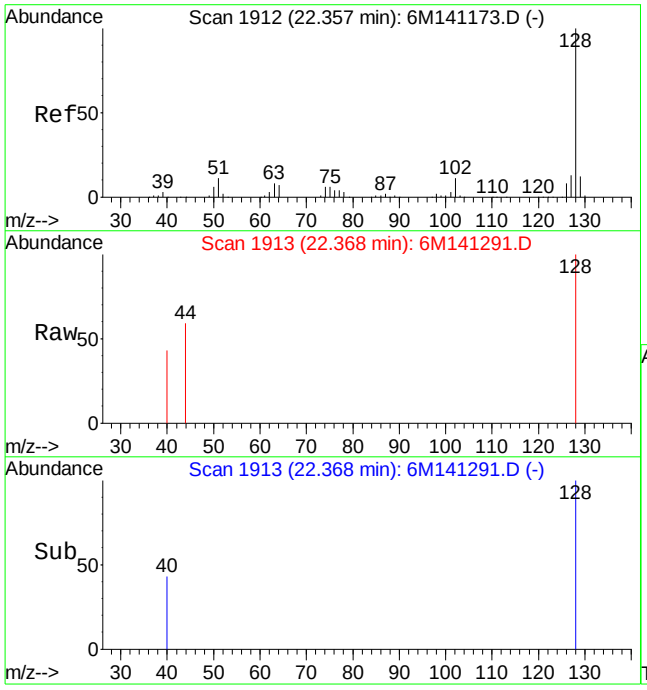

#100
Naphthalene
Concen: 0.43 ug/L
RT: 22.37 min Scan# 1913
Delta R.T. 0.00 min
Lab File: 6M141291.D
Acq: 16 Aug 2016 14:02

Tgt Ion:128 Resp: 1386

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.8	18.2#

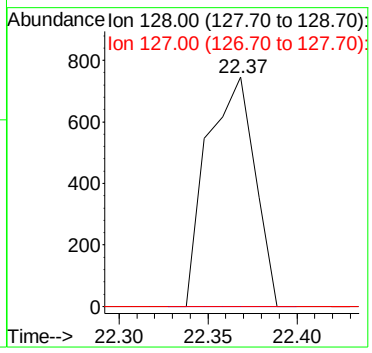

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141307.D Vial: 21
Acq On : 16 Aug 2016 22:39 Operator: TMB
Sample : WG580434-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 08:25:57 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	678518	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	503859	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	296479	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.57	111	196996	26.6112 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.44%		
43) 1,2-Dichloroethane-d4	10.30	65	252180	25.4536 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.80%		
58) Toluene-d8	13.03	98	624440	26.0460 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.20%		
80) p-Bromofluorobenzene	17.00	95	267397	25.2431 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.96%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	285055	19.7197 ug/L	100
3) Chloromethane	3.35	50	230504	15.6218 ug/L	99
4) Vinyl Chloride	3.56	62	196838	20.2327 ug/L	81
5) 1,3-Butadiene	3.59	54	133010	15.4060 ug/L	96
6) Bromomethane	4.38	94	54683	11.4685 ug/L	97
7) Chloroethane	4.52	64	116067	20.9212 ug/L	94
8) Trichlorofluoromethane	4.99	101	308500	20.0333 ug/L	99
9) Diethyl ether	5.54	59	685781	126.6101 ug/L	96
10) Isoprene	5.56	67	241330	23.5165 ug/L	90
11) Acrolein	5.79	56	65672	79.8058 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	157271	22.6822 ug/L	99
13) Acetone	5.90	43	46372	21.5731 ug/L	94
14) 1,1-Dichloroethene	6.09	61	249691	17.2598 ug/L	91
15) Tert-Butyl Alcohol	6.26	59	94185	160.5116 ug/L	91
16) Dimethyl Sulfide	6.38	62	196674	22.7128 ug/L	89
17) Iodomethane	6.63	142	150361	19.7527 ug/L	81
18) Methyl acetate	6.67	43	126418	21.4278 ug/L	97
19) Methylene Chloride	6.93	84	149306	19.2387 ug/L	87
20) Carbon Disulfide	6.95	76	498096	20.6830 ug/L	98
21) Acrylonitrile	7.14	53	56284	22.3815 ug/L	99
22) Methyl Tert Butyl Ether	7.17	73	406845	21.2155 ug/L	99
23) trans-1,2-Dichloroethene	7.41	96	139576	19.7631 ug/L	87
24) n-Hexane	7.49	57	197057	18.7435 ug/L	97
25) Diisopropyl ether	7.89	45	3358883	113.2909 ug/L	97
26) Vinyl Acetate	8.07	43	132524	11.6463 ug/L	97
27) 1,1-Dichloroethane	8.08	63	299490	18.8451 ug/L	99
28) Ethyl-Tert-Butyl ether	8.52	59	2568798	106.1923 ug/L	98
29) 2-Butanone	8.72	43	64286	20.6257 ug/L	93
30) Propionitrile	8.84	54	84914	102.9202 ug/L	96
31) 2,2-Dichloropropane	8.94	77	214260	15.9073 ug/L	96
32) cis-1,2-Dichloroethene	9.02	96	159730	20.3438 ug/L	72
33) Chloroform	9.25	83	298249	19.6499 ug/L	99
34) 1-Bromopropane	9.40	122	33432	26.8510 ug/L	98
35) Bromochloromethane	9.50	130	92131	20.6615 ug/L	100
36) Tetrahydrofuran	9.54	42	190076	96.8644 ug/L	95
38) 1,1,1-Trichloroethane	9.84	97	274700	19.1896 ug/L	97
39) Cyclohexane	9.86	56	292168	21.1197 ug/L	94
40) 1,1-Dichloropropene	10.06	75	202651	18.9127 ug/L	95
41) Tert-Amyl-Methyl ether	10.21	73	2015824	113.6056 ug/L	93
42) Carbon Tetrachloride	10.22	117	255674	20.0284 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M141307.D 8260WT.M Wed Aug 17 08:26:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141307.D Vial: 21
Acq On : 16 Aug 2016 22:39 Operator: TMB
Sample : WG580434-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 08:25:57 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	262750	20.4381 ug/L	92
46)	Benzene	10.46	78	580251	19.9688 ug/L	96
47)	Trichloroethene	11.33	130	153544	20.3600 ug/L	82
48)	Methylcyclohexane	11.41	83	204354	20.0393 ug/L	93
49)	1,2-Dichloropropane	11.58	63	167844	20.4976 ug/L	86
50)	1,4-Dioxane	11.92	88	6033	126.3840 ug/L	85
51)	Bromodichloromethane	11.92	83	231072	20.2274 ug/L	99
52)	Dibromomethane	12.01	93	86436	19.5739 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.30	63	77967	20.3058 ug/L	99
54)	4-Methyl-2-Pentanone	12.33	58	45656	20.1139 ug/L	97
55)	cis-1,3-Dichloropropene	12.67	75	242207	21.7305 ug/L	98
56)	Dimethyl Disulfide	12.95	79	131327	19.6928 ug/L	99
59)	Toluene	13.15	91	608961	21.0284 ug/L	99
60)	Ethyl Methacrylate	13.31	69	165151	20.3454 ug/L	92
62)	trans-1,3-Dichloropropene	13.37	75	214503	19.6583 ug/L	94
63)	1,1,2-Trichloroethane	13.62	97	118404	20.4094 ug/L	98
64)	2-Hexanone	13.57	43	91711	19.2794 ug/L	90
65)	1,3-Dichloropropane	13.97	76	220629	21.9644 ug/L	91
66)	Tetrachloroethene	14.09	166	152763	19.6940 ug/L	91
67)	Dibromochloromethane	14.39	129	159232	20.5842 ug/L	99
68)	1,2-Dibromoethane	14.69	107	110834	20.5021 ug/L	100
69)	1-Chlorohexane	14.83	91	185930	20.1836 ug/L	84
70)	Chlorobenzene	15.28	112	419213	20.8691 ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.33	131	164924	20.8211 ug/L	93
72)	Ethylbenzene	15.33	106	215123	21.0462 ug/L	91
73)	m-,p-Xylene	15.44	106	534533	43.7649 ug/L	91
74)	o-Xylene	16.10	106	262168	22.3335 ug/L	90
75)	Styrene	16.14	104	453917	22.4113 ug/L	90
76)	Bromoform	16.69	173	95213	19.3914 ug/L	98
77)	Isopropylbenzene	16.60	105	678520	22.7276 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.86	83	136693	18.4894 ug/L	98
81)	1,2,3-Trichloropropane	17.09	110	46238	20.3086 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	17.16	53	38743	14.2539 ug/L	88
83)	n-Propylbenzene	17.20	91	854318	22.4443 ug/L	97
84)	Bromobenzene	17.32	156	185546	19.9363 ug/L	94
85)	1,3,5-Trimethylbenzene	17.43	105	608226	22.5000 ug/L	96
86)	2-Chlorotoluene	17.50	91	557707	20.3475 ug/L	96
87)	4-Chlorotoluene	17.56	91	594290	22.1953 ug/L	95
88)	a-Methylstyrene	17.91	118	339920	21.6244 ug/L	95
89)	tert-Butylbenzene	17.97	134	125482	21.7423 ug/L	73
90)	1,2,4-Trimethylbenzene	18.03	105	641787	21.2254 ug/L	96
91)	sec-Butylbenzene	18.28	105	690544	21.1368 ug/L	98
92)	p-Isopropyltoluene	18.48	119	591631	21.1297 ug/L	97
93)	1,3-Dichlorobenzene	18.68	146	370911	21.0363 ug/L	96
94)	1,4-Dichlorobenzene	18.84	146	375856	20.7600 ug/L	94
95)	n-Butylbenzene	19.10	91	538169	20.8400 ug/L	97
96)	1,2-Dichlorobenzene	19.41	146	354267	20.7334 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	20.59	75	31113	19.7560 ug/L	79
98)	1,2,4-Trichlorobenzene	21.94	180	214956	20.6878 ug/L	99
99)	Hexachlorobutadiene	22.13	225	86473	20.1948 ug/L	98
100)	Naphthalene	22.36	128	406291	19.8271 ug/L	100
101)	1,2,3-Trichlorobenzene	22.74	180	209940	22.7940 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081616\6M141307.D Vial: 21
Acq On : 16 Aug 2016 22:39 Operator: TMB
Sample : WG580434-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 17 8:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

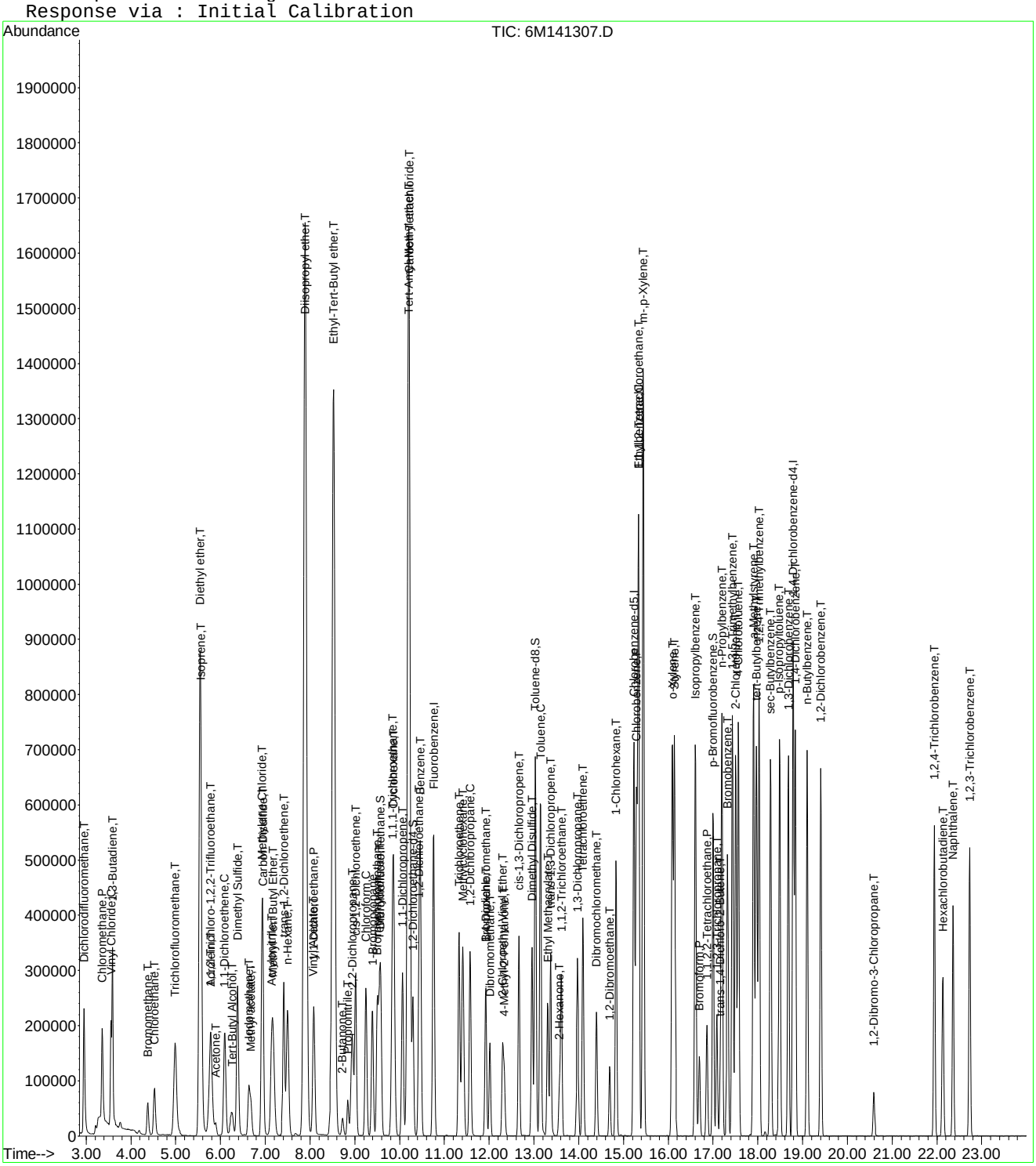

6M141307.D 8260WT.M Wed Aug 17 08:26:05 2016 Page 3

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW02-080416	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579430	**Analyst:**	JDS	**Run Date:**	08/08/2016 16:24
Collect Date:	08/04/2016 08:55	**Dilution:**	1	**File ID:**	16G50455
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW02-080416	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579716	**Analyst:**	JDS	**Run Date:**	08/10/2016 15:46
Collect Date:	08/04/2016 08:55	**Dilution:**	10	**File ID:**	16G50513
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	528000		100000	50000	25000

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:

y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 032516
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 19
Method: 5021 SOP: RSK01 Rev: 19

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD75351 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG562401 WG562514

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G49625	RINSE	NA	1	1		03/25/16 11:11
16G49626	WG562401-01 0.67umol/moL STD RSK175	NA	1	1	STD67276	03/25/16 11:22
16G49627	WG562401-02 1.67umol/moL STD RSK175	NA	1	1	STD67276	03/25/16 11:34
16G49628	WG562401-03 33.3umol/moL STD RSK175	NA	1	1	STD67276	03/25/16 11:46
16G49629	WG562401-04 66.7umol/moL STD RSK175	NA	1	1	STD67276	03/25/16 11:58
16G49630	WG562401-05 133umol/moL STD RSK175	NA	1	1	STD75351	03/25/16 12:10
16G49631	WG562401-06 333umol/moL STD RSK175	NA	1	1	STD75351	03/25/16 12:22
16G49632	WG562401-07 533umol/moL STD RSK175	NA	1	1	STD75351	03/25/16 12:34
16G49633	RINSE	NA	1	1		03/25/16 12:46
16G49634	WG562401-08 133umol/moL ALT SRC STD	NA	1	1	STD68250	03/25/16 13:47
16G49635	WG562401-08 133umol/moL ALT SRC STD	NA	1	1	STD68250	03/25/16 18:26
16G49636	WG562514-01 BLANK STD RSK175	NA	1	1		03/25/16 18:38
16G49637	WG562514-02 67umol/moL LCS STD RSK1	NA	1	1	STD68250	03/25/16 18:50
16G49638	WG562514-03 67umol/moL LCS2 STD RSK	NA	1	1	STD68250	03/25/16 19:02
16G49639	L16031272-14 B A1 RSK175	<2	1	1		03/25/16 19:14
16G49640	L16031272-15 B A1 RSK175	<2	1	1		03/25/16 19:26
16G49641	L16031272-22 B A1 RSK175	<2	1	1		03/25/16 19:38
16G49642	L16031272-03 B D1 10X RSK175	<2	1	10		03/25/16 19:50
16G49643	L16031272-04 B D1 5X RSK175	<2	1	5		03/25/16 20:01
16G49644	L16031272-08 B D1 50X RSK175	<2	1	50		03/25/16 20:13
16G49645	L16031272-19 B D1 10X RSK175	<2	1	10		03/25/16 20:25
16G49646	WG562401-09 133umol/moL CCV STD RSK	NA	1	1	STD75351	03/25/16 20:37
16G49647	L16031363-04 A RSK175	<2	1	1		03/25/16 20:49
16G49648	L16031363-05 A RSK175	<2	1	1		03/25/16 21:01
16G49649	L16031363-11 A RSK175	<2	1	1		03/25/16 21:12
16G49650	L16031363-12 A RSK175	<2	1	1		03/25/16 21:24
16G49651	L16031363-17 A RSK175	<2	1	1		03/25/16 21:36
16G49652	L16031388-01 A RSK175	<2	1	1		03/25/16 21:48
16G49653	WG562401-10 133umol/moL CCV STD RSK	NA	1	1	STD75351	03/25/16 21:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X			CO2

Approved: April 01, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 032516
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 19
Method: 5021 SOP: RSK01 Rev: 19

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD75351 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG562401 WG562514

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 16G49634				
	Alt. Src. failed low for CO2			
23	X	50	Over Calibration Range	m
File ID: 16G49647				
	L16031363-04			
24	X	20	Over Calibration Range	m
File ID: 16G49648				
	L16031363-05			
25	X	5	Over Calibration Range	m
File ID: 16G49649				
	L16031363-11			
26	X	5	Over Calibration Range	m
File ID: 16G49650				
	L16031363-12			
27	X	10	Over Calibration Range	m
File ID: 16G49651				
	L16031363-17			
28	X	5	Over Calibration Range	m, p
File ID: 16G49652				
	L16031388-01 took prop. hit with high failing prop result in CCV.			
33			Check Standard Failure	p
File ID: 16G49653				
	WG562401-10 failed high for prop.			

Approved: April 01, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 080816
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 19
Method: 5021 SOP: RSK01 Rev: 19

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD75351 LCS: STD68250 MS/MSD: STD68250

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG579430 WG579432

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G50447	WG579429-01 133umol/moL CCV STD RSK	NA	1	1	STD75351	08/08/16 14:37
16G50448	WG579430-01 BLANK STD RSK175	NA	1	1		08/08/16 15:03
16G50449	WG579430-02 67umol/mol LCS STD RSK17	NA	1	1	STD68250	08/08/16 15:15
16G50450	L16080330-05 A RSK175	5	1	1		08/08/16 15:26
16G50451	L16080330-08 A RSK175	7	1	1		08/08/16 15:38
16G50452	L16080330-11 A RSK175	7	1	1		08/08/16 15:49
16G50453	L16080330-13 A RSK175	5	1	1		08/08/16 16:01
16G50454	L16080330-15 A RSK175	7	1	1		08/08/16 16:12
16G50455	L16080317-04 A RSK175	5	1	1		08/08/16 16:24
16G50456	L16080321-15 A RSK175	<2	1	1		08/08/16 16:36
16G50457	L16080321-17 A RSK175	<2	1	1		08/08/16 16:47
16G50458	WG579429-02 133umol/moL CCV STD RSK	NA	1	1	STD75351	08/08/16 16:59
16G50459	L16080321-19 A RSK175	<2	1	1		08/08/16 17:10
16G50460	L16080321-21 A RSK175	<2	1	1		08/08/16 17:21
16G50461	WG579430-03 L16080321-23 A REF RSK17	<2	1	1		08/08/16 17:33
16G50462	WG579430-04 L16080321-25 A MS RSK17	<2	1	1	STD68250	08/08/16 17:44
16G50463	WG579430-05 L16080321-27 A MSD RSK1	<2	1	1	STD68250	08/08/16 17:56
16G50464	L16080321-29 A RSK175	<2	1	1		08/08/16 18:07
16G50465	L16080321-31 A RSK175	<2	1	1		08/08/16 18:19
16G50466	L16080321-32 A RSK175	<2	1	1		08/08/16 18:30
16G50467	L16080321-33 A RSK175	<2	1	1		08/08/16 18:41
16G50468	L16080375-01 A RSK175	7	1	1		08/08/16 18:53
16G50469	WG579429-03 133umol/moL CCV STD RSK	NA	1	1	STD75351	08/08/16 19:04
16G50470	L16080353-01 A RSK175	<2	1	1		08/08/16 19:16
16G50471	L16080353-03 A RSK175	<2	1	1		08/08/16 19:27
16G50472	WG579429-04 133umol/moL CCV STD RSK	NA	1	1	STD75351	08/08/16 19:39
16G50473	WG579432-01 BLANK STD RSK175	NA	1	1		08/08/16 19:50
16G50474	WG579432-02 67umol/mol LCS STD RSK17	NA	1	1	STD68250	08/08/16 20:01
16G50475	WG579432-03 67umol/mol LCS2 STD RSK1	NA	1	1	STD68250	08/08/16 20:13
16G50476	L16080353-05 A RSK175	<2	1	1		08/08/16 20:24
16G50477	L16080353-06 A RSK175	<2	1	1		08/08/16 20:35
16G50478	L16080353-07 A RSK175	<2	1	1		08/08/16 20:46
16G50479	WG579429-05 133umol/moL CCV STD RSK	NA	1	1	STD75351	08/08/16 20:58

Approved: August 16, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 080816
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 19
Method: 5021 SOP: RSK01 Rev: 19

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD75351 LCS: STD68250 MS/MSD: STD68250

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG579430 WG579432

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
4	X	10	Over Calibration Range	CO2
File ID:	16G50450			
	L16080330-05			
5	X	10	Over Calibration Range	CO2
File ID:	16G50451			
	L16080330-08			
6	X	10	Over Calibration Range	CO2
File ID:	16G50452			
	L16080330-11			
7	X	10	Over Calibration Range	CO2
File ID:	16G50453			
	L16080330-13			
8	X	10	Over Calibration Range	CO2
File ID:	16G50454			
	L16080330-15			
9	X	10	Over Calibration Range	CO2
File ID:	16G50455			
	L16080317-04			
10	X	20	Over Calibration Range	M
File ID:	16G50456			
	L16080321-15			
11	X	5	Over Calibration Range	M
File ID:	16G50457			
	L16080321-17			
13	X	10	Over Calibration Range	M
File ID:	16G50459			
	L16080321-19			
14	X	10	Over Calibration Range	M
File ID:	16G50460			
	L16080321-21			
15	X	10	Over Calibration Range	M
File ID:	16G50461			
	L16080321-23			
18	X	5	Over Calibration Range	M
File ID:	16G50464			
	L16080321-29			

Approved: August 16, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 080816
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 19
Method: 5021 SOP: RSK01 Rev: 19

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD75351 LCS: STD68250 MS/MSD: STD68250

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG579430 WG579432

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
19	X	1	Carry-over contamination	M
File ID:	16G50465			
	L16080321-31			
21	X	5	Over Calibration Range	M
File ID:	16G50467			
	L16080321-33			
22	X	50	Over Calibration Range	M
File ID:	16G50468			
	L16080375-01 sample received out of hold and with headspace			
24	X	5	Over Calibration Range	M
File ID:	16G50470			
	L16080353-01			
32	X	5	Over Calibration Range	M
File ID:	16G50478			
	L16080353-07			

Approved: August 16, 2016

Page: 3

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 081016
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 19
Method: 5021 SOP: RSK01 Rev: 19

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD75351 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG579716

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G50503	WG579713-01 133umol/moL CCV STD RSK	NA	1	1	STD75351	08/10/16 12:10
16G50504	WG579716-01 BLANK STD RSK175	NA	1	1		08/10/16 14:05
16G50505	WG579716-02 67umol/mol LCS STD RSK17	NA	1	1	STD68250	08/10/16 14:16
16G50506	WG579716-03 67umol/mol LCS2 STD RSK1	NA	1	1	STD68250	08/10/16 14:27
16G50507	L16080321-31 C A1 RSK175	<2	1	1		08/10/16 14:38
16G50508	L16080330-05 C A1 10X RSK175	5	1	10		08/10/16 14:49
16G50509	L16080330-08 C A1 10X RSK175	7	1	10		08/10/16 15:01
16G50510	L16080330-11 C A1 10X RSK175	7	1	10		08/10/16 15:12
16G50511	L16080330-13 C A1 10X RSK175	5	1	10		08/10/16 15:23
16G50512	L16080330-15 C A1 10X RSK175	7	1	10		08/10/16 15:35
16G50513	L16080317-04 C A1 10X RSK175	5	1	10		08/10/16 15:46
16G50514	WG579713-02 133umol/moL CCV STD RSK	NA	1	1	STD75351	08/10/16 15:58
16G50515	L16080321-15 C A1 20X RSK175	<2	1	20		08/10/16 16:09
16G50516	L16080321-17 C A1 5X RSK175	<2	1	5		08/10/16 16:20
16G50517	L16080321-19 C A1 10X RSK175	<2	1	10		08/10/16 16:31
16G50518	L16080430-01 A RSK175	<2	1	1		08/10/16 16:43
16G50519	L16080479-01 A RSK175	<2	1	1		08/10/16 16:55
16G50520	WG579713-03 133umol/moL CCV STD RSK	NA	1	1	STD75351	08/10/16 17:06

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7				
File ID: 16G50509				
	L16080330-08 sample ran out of hold			
8				
File ID: 16G50510				
	L16080330-11 sample ran out of hold			
9				
File ID: 16G50511				
	L16080330-13 sample ran out of hold			
10				
File ID: 16G50512				
	L16080330-15 sample ran out of hold			
13			Check Standard Failure	

Approved: August 16, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 081016
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 19
Method: 5021 SOP: RSK01 Rev: 19

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD75351 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG579716

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 16G50515				
	L16080321-15 CCV failure. no vials left for RR			
14			Check Standard Failure	
File ID: 16G50516				
	L16080321-17 CCV failure. no vials left for RR			
15			Check Standard Failure	
File ID: 16G50517				
	L16080321-19 CCV failure. no vials left for RR			
16	X	1	Check Standard Failure	
File ID: 16G50518				
	L16080430-01			
17	X	1	Check Standard Failure	
File ID: 16G50519				
	L16080479-01			
18			Check Standard Failure	
File ID: 16G50520				
	WG579713-03 CCV failed low			

Approved: August 16, 2016

Page: 2

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B220401

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG562401-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG562401-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG562401-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG562401-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG562401-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG562401-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG562401-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG562401-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B226899

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG579429-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579429-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579429-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579429-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579429-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-27	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16080353-06	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-31	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-32	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579432-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16080375-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080353-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579430-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080330-11	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080317-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-17	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-23	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-25	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16080321-33	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579432-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16080330-13	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-15	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579430-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579430-04	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16080353-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080353-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579430-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16080321-21	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-29	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080353-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-19	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080330-15	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579430-05	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16080330-08	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579432-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080330-05	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B227082

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG579713-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579713-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579713-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579716-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16080321-19	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080330-11	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-31	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080330-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080330-15	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080330-08	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080317-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-15	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080330-13	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-17	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579716-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579716-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 25-MAR-2016
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 74110
Analytical Workgroups: WG562401 WG562514

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
31-MAR-2016

Secondary Reviewer:
01-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-01-2016 11:20:23

Microbac Laboratories Inc.

Data Checklist

Date: 08-AUG-2016
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 76810
Analytical Workgroups: WG579430 WG579432

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	X
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
10-AUG-2016

Secondary Reviewer:
16-AUG-2016

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-16-2016 11:24:45

Microbac Laboratories Inc.

Data Checklist

Date: 10-AUG-2016
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 76907
Analytical Workgroups: WG579716

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
15-AUG-2016

Secondary Reviewer:
16-AUG-2016

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-16-2016 14:53:21

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG579430

Login Number: L16080317

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW02-080416	04	08/04/16					08/08/2016	4.3	7		08/08/16	4.3	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4891856
Report generated 08/16/2016 14:58

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG579716

Login Number: L16080317

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW02-080416	04	08/04/16					08/10/2016	6.3	7		08/10/16	6.3	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4891856
Report generated 08/16/2016 14:58

METHOD BLANK SUMMARY

Login Number: L16080317
Blank File ID: 16G50448
Prep Date: 08/08/16 15:03
Analyzed Date: 08/08/16 15:03
Analyst: JDS

Work Group: WG579430
Blank Sample ID: WG579430-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG579430-02	16G50449	08/08/16 15:15	01
46WW02-080416	L16080317-04	16G50455	08/08/16 16:24	01

Report Name: BLANK_SUMMARY
PDF File ID: 4891857
Report generated 08/16/2016 14:58

METHOD BLANK SUMMARY

Login Number: L16080317
Blank File ID: 16G50504
Prep Date: 08/10/16 14:05
Analyzed Date: 08/10/16 14:05
Analyst: JDS

Work Group: WG579716
Blank Sample ID: WG579716-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG579716-02	16G50505	08/10/16 14:16	01
LCS2	WG579716-03	16G50506	08/10/16 14:27	01
46WW02-080416	L16080317-04	16G50513	08/10/16 15:46	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4891857
Report generated 08/16/2016 14:58

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080317 Prep Date: 08/08/16 15:03 Sample ID: WG579430-01
Instrument ID: HP16 Run Date: 08/08/16 15:03 Prep Method: 5021
File ID: 16G50448 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG579430 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16-25-MAR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4891858
16-AUG-2016 14:58

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080317 Prep Date: 08/10/16 14:05 Sample ID: WG579716-01
Instrument ID: HP16 Run Date: 08/10/16 14:05 Prep Method: 5021
File ID: 16G50504 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG579716 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16-25-MAR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4891858
16-AUG-2016 14:58

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080317 Run Date: 08/08/2016 Sample ID: WG579430-02
Instrument ID: HP16 Run Time: 15:15 Prep Method: 5021
File ID: 16G50449 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG579430 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD68250 Cal ID: HP16 - 25-MAR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Methane	114	115	101	85 - 115	
ethene	200	195	97.9	85 - 115	
ethane	214	212	99.2	85 - 115	

LCS - Modified 03/06/2008
PDF File ID: 4891860
Report generated: 08/15/2016 09:39

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080317 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG579716 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG579716-02 LCS File ID: 16G50505 Run Date: 08/10/2016 14:16
Sample ID: WG579716-03 LCS2 File ID: 16G50506 Run Date: 08/10/2016 14:27

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Carbon Dioxide	31300	28900	92.4	31300	26500	84.6	8.81	53.1 - 130	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4897841
Report generated: 08/16/2016 14:58

Calibration Table Report
Method: RSKEXT1.M
Title: RSK175 HP16 (SOP: OVL RSK01) 032516
Last Calibration: Fri Mar 25 13:38:01 2016
Curve: WG562401
Calibration Files

		0.67	1.67	33.3	66.7	133	333	533			
		16G49626.	16G49627.	16G49628.	16G49629.	16G49630.	16G49631.	16G49632.D			
	Compound								Avg	%RSD	Linear
T	methane		357678.3	191763.4	178440.8	176333.2	180289.8	181011.4	210919.0	34.2	1.00
T	ethene		326426.9	323789.7	303078.0	300924.8	311353.3	306803.0	312063.0	3.4	
T	acetylene		320308.2	339363.3	305153.5	300205.1	309436.5	299142.0	312268.0	4.9	
T	ethane	315183.9	335780.5	332335.5	309080.0	306732.7	318673.0	314718.5	318929.0	3.5	
T	propane	455610.0	490813.9	490102.0	464477.8	457676.8	478108.3	465536.1	471761.0	3.1	
T	n-butane	583900.4	644607.5	634321.2	604644.0	590464.7	622084.9	599806.6	611404.0	3.7	
	Signal #2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T	carbon dioxide		4817.9	5324.5	5339.4	5356.8	5546.3	5286.4	5278.5	4.6	

Mon Mar 28 10:00:37 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16080317 Run Date: 03/25/2016 Sample ID: WG562401-08
Instrument ID: HP16 Run Time: 18:26 Method: RSK175
File ID: 16G49635 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG562401 Cal ID: HP16 - 25-MAR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
carbon dioxide		62500	68700	ug/L	5800	9.90	15	
methane		228	235	ug/L	187000	3.20	15	
ethene		398	400	ug/L	314000	0.500	15	
ethane		427	434	ug/L	324000	1.70	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4891861
Report generated 08/16/2016 14:58

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080317
Run Date: 08/08/2016
Sample ID: WG579429-01
Instrument ID: HP16
Run Time: 14:37
Method: RSK175
File ID: 16G50447
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG579430
Cal ID: HP16 - 25-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	218	ug/L	174000	4.25	15	
ethene		398	378	ug/L	296000	5.18	15	
ethane		427	402	ug/L	301000	5.75	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4891862
Report generated 08/16/2016 14:58

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080317
Run Date: 08/08/2016
Sample ID: WG579429-02
Instrument ID: HP16
Run Time: 16:59
Method: RSK175
File ID: 16G50458
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG579430
Cal ID: HP16 - 25-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	221	ug/L	176000	3.18	15	
ethene		398	376	ug/L	294000	5.68	15	
ethane		427	404	ug/L	302000	5.39	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4891862
Report generated 08/16/2016 14:58

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080317
Run Date: 08/10/2016
Sample ID: WG579713-01
Instrument ID: HP16
Run Time: 12:10
Method: RSK175
File ID: 16G50503
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG579716
Cal ID: HP16 - 25-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	68200	ug/L	5760	9.15	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4891862
Report generated 08/16/2016 14:58

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080317
Run Date: 08/10/2016
Sample ID: WG579713-02
Instrument ID: HP16
Run Time: 15:58
Method: RSK175
File ID: 16G50514
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG579716
Cal ID: HP16 - 25-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	62000	ug/L	5240	0.778	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4891862
Report generated 08/16/2016 14:58

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\080816\16G50455.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDchem\1\DATA\080816\16G50455.D\TCD2B.CH
Acq On    : 08 Aug 2016  16:24                      Operator: JDS
Sample    : L16080317-04 A RSK175                   Inst    : HP16
Misc      : 1,1                                     Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 08 16:31:11 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	288181	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	1.14	25621	0.082	umol/
4) T	ethane	1.39	17859	0.056	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.19	768863226	145658.733	umol/

```
---------------------------------------------------------------------------
(f)=RT Delta > 1/2 Window                          (m)=manual int.
16G50455.D  RSKEXT1.M      Mon Aug 08 16:31:11 2016                          Page 1
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\080816\16G50455.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDchem\1\DATA\080816\16G50455.D\TCD2B.CH
Acq On : 08 Aug 2016 16:24 Operator: JDS
Sample : L16080317-04 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 8 16:31 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

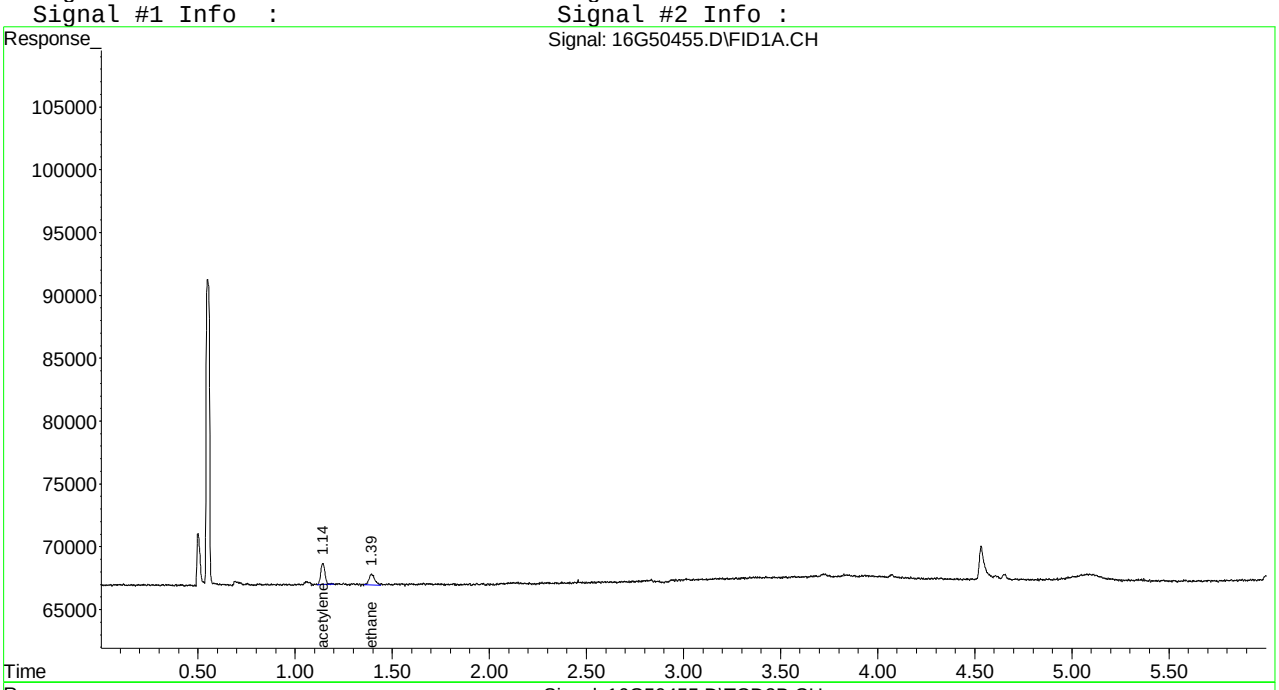

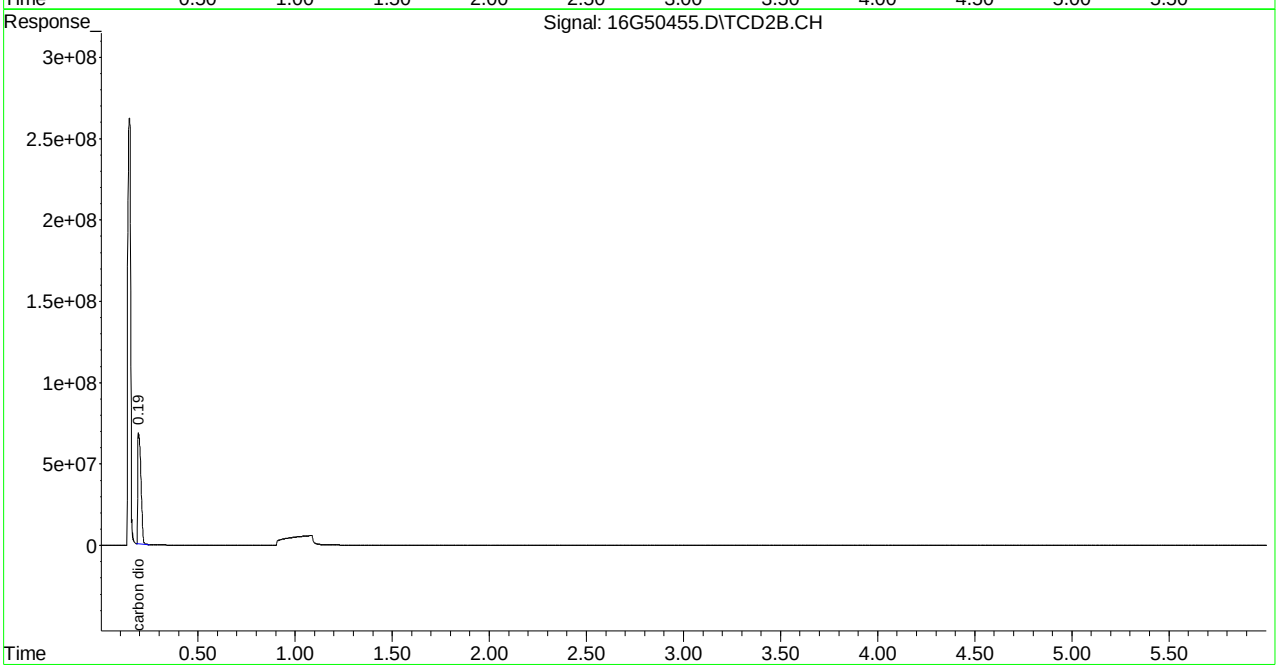

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50513.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50513.D\TCD2B.CH
Acq On    : 10 Aug 2016  15:46                        Operator: JDS
Sample    : L16080317-04 C A1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 15:53:00 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	257841	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	59363227	11246.178	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G50513.D RSKEXT1.M Mon Aug 15 10:09:29 2016 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50513.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50513.D\TCD2B.CH
Acq On    : 10 Aug 2016  15:46                        Operator: JDS
Sample    : L16080317-04 C A1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 15:53 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

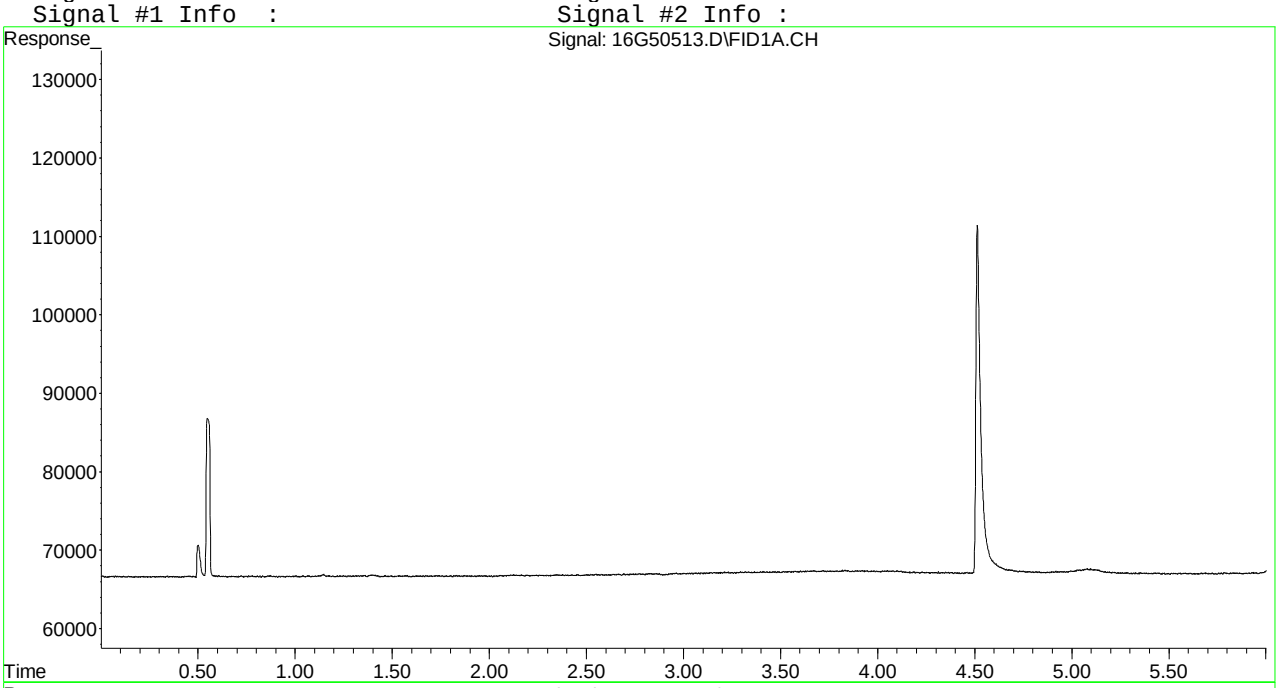

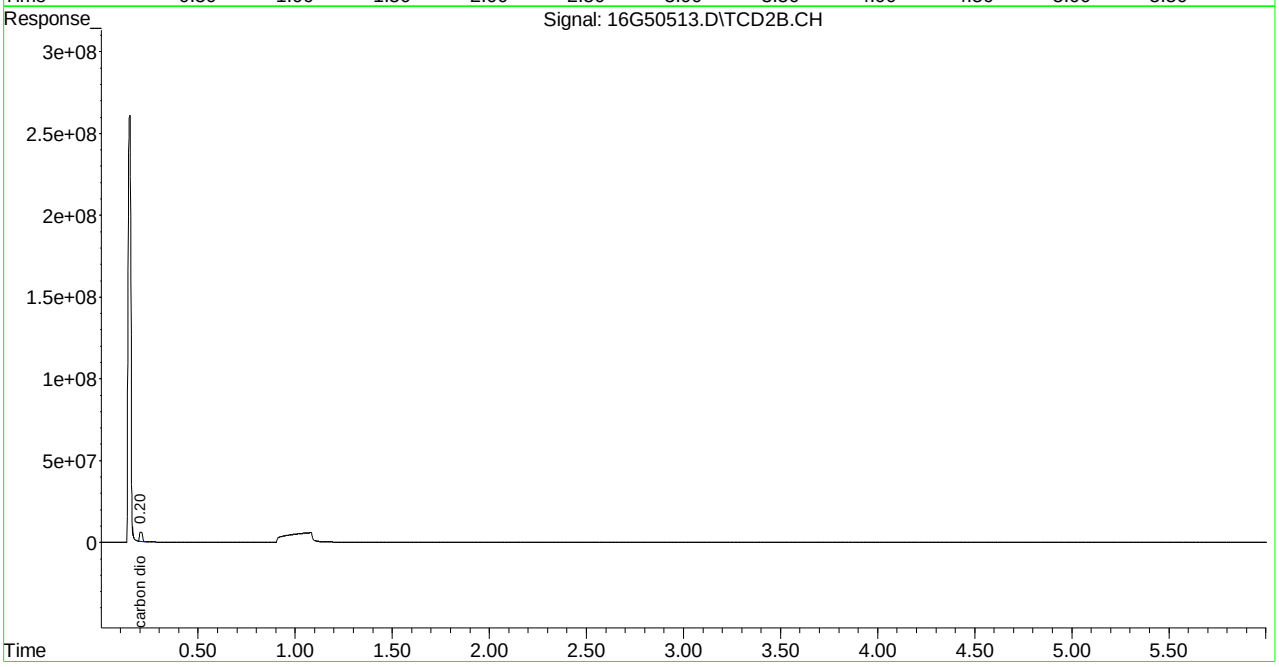

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49626.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49626.D\TCD2B.CH
Acq On : 25 Mar 2016 11:22 Operator: JDS
Sample : WG562401-01 0.67umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:32:57 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:31:58 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	386491	0.533	umol/
2) T	ethene	1.06	205756	0.659	umol/
3) T	acetylene	1.14	186400	0.597	umol/
4) T	ethane	1.39	210228	0.659	umol/
5) T	propane	3.83	303892	0.644	umol/
6) T	n-butane	5.34	389462	0.637	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49626.D RSKEXT1.M Fri Mar 25 13:33:07 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49626.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49626.D\TCD2B.CH
Acq On : 25 Mar 2016 11:22 Operator: JDS
Sample : WG562401-01 0.67umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:32 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:31:58 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

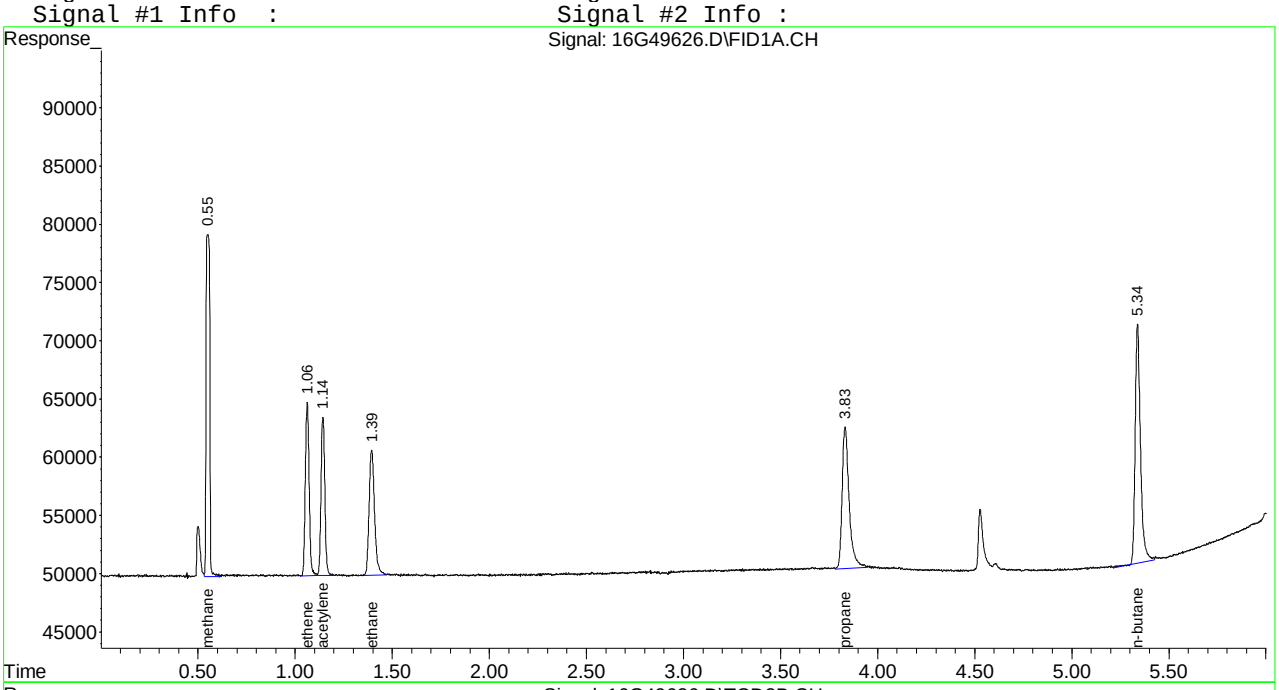

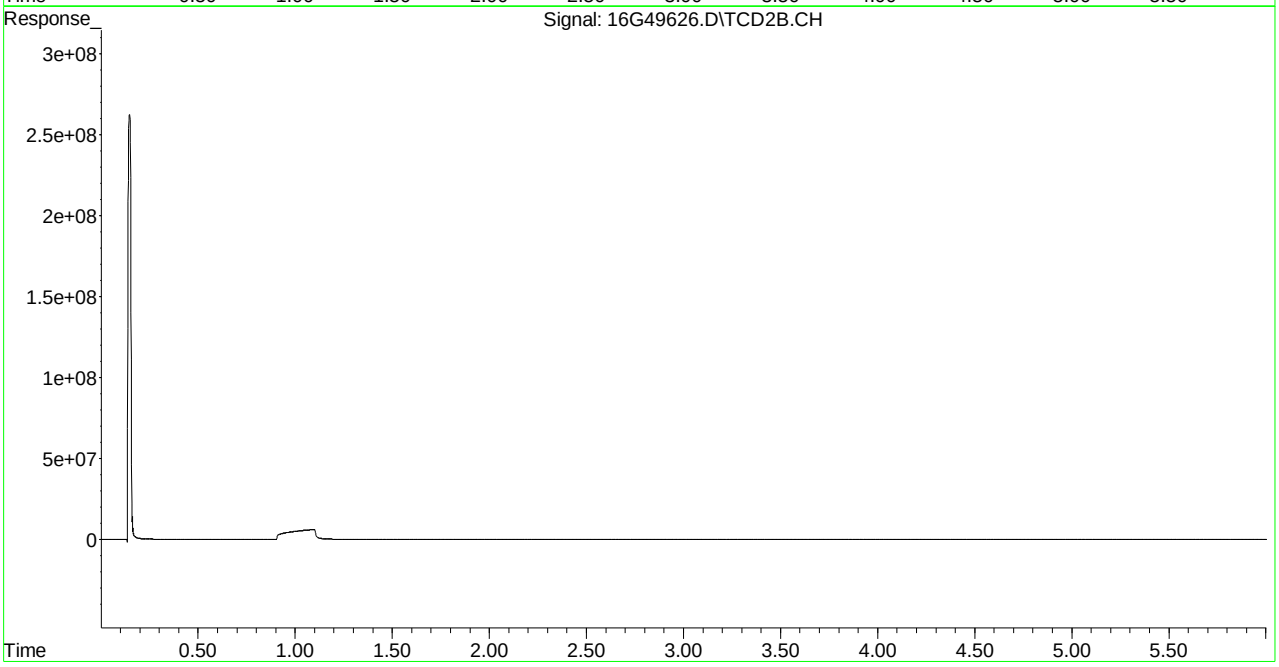

16G49626.D RSKEXT1.M Fri Mar 25 13:33:07 2016 Page 2

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49627.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49627.D\TCD2B.CH
Acq On    : 25 Mar 2016  11:34                        Operator: JDS
Sample    : WG562401-02 1.67umol/moL STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:38:12 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	597323	1.710	umol/
2) T	ethene	1.06	545133	1.747	umol/
3) T	acetylene	1.14	534915	1.713	umol/
4) T	ethane	1.39	560754	1.758	umol/
5) T	propane	3.83	819659	1.737	umol/
6) T	n-butane	5.34	1076495	1.761	umol/
8) T	carbon dioxide	0.20	9635725	1825.458	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G49627.D RSKEXT1.M Fri Mar 25 13:38:12 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49627.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49627.D\TCD2B.CH
Acq On : 25 Mar 2016 11:34 Operator: JDS
Sample : WG562401-02 1.67umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:38 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

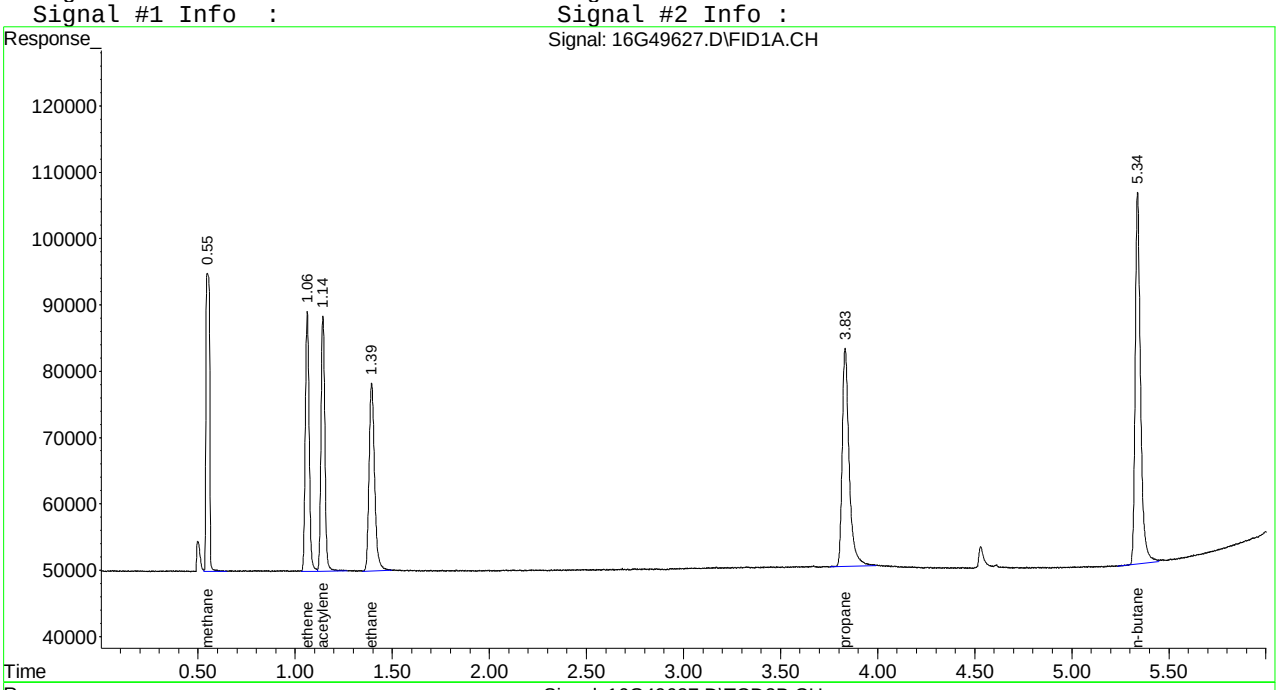

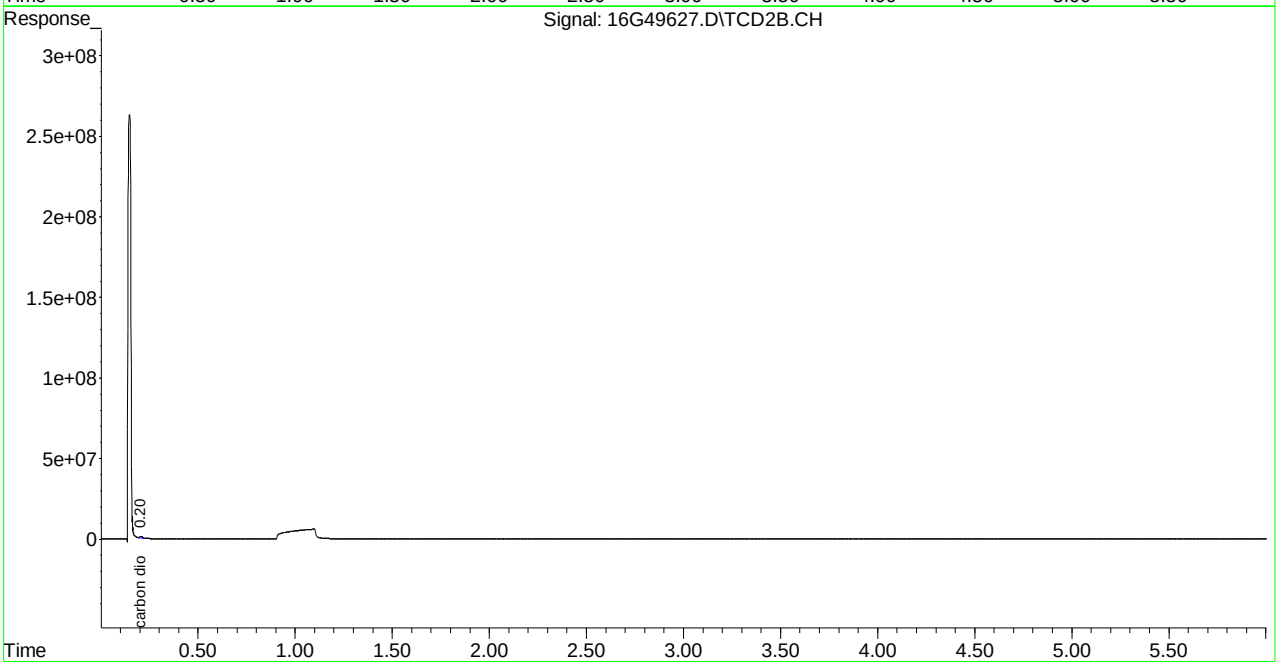

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49627.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49627.D\TCD2B.CH
Acq On : 25 Mar 2016 11:34 Operator: JDS
Sample : WG562401-02 1.67umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	1.670	1.710	-2.4	100	0.00
2	T	ethene	1.670	1.747	-4.6	100	0.00
3	T	acetylene	1.670	1.713	-2.6	100	0.00
4	T	ethane	1.670	1.758	-5.3	100	0.00
5	T	propane	1.670	1.737	-4.0	100	0.00
6	T	n-butane	1.670	1.761	-5.4	100	0.00

Signal #2

8	T	carbon dioxide	2000.000	1825.458	8.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G49627.D RSKEXT1.M Fri Mar 25 13:38:22 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49627.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49627.D\TCD2B.CH
Acq On    : 25 Mar 2016  11:34                        Operator: JDS
Sample    : WG562401-02 1.67umol/moL STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49628.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49628.D\TCD2B.CH
Acq On    : 25 Mar 2016  11:46                        Operator: JDS
Sample    : WG562401-03 33.3umol/moL STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33:25 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:32:42 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	6385721	34.033	umol/
2) T	ethene	1.06	10782198	34.551	umol/
3) T	acetylene	1.14	11300799	36.189	umol/
4) T	ethane	1.39	11066771	34.700	umol/
5) T	propane	3.83	16320395	34.595	umol/
6) T	n-butane	5.34	21122896	34.548	umol/
8) T	carbon dioxide	0.20	17730539	3358.995	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G49628.D RSKEXT1.M Fri Mar 25 13:33:26 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49628.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49628.D\TCD2B.CH
Acq On : 25 Mar 2016 11:46 Operator: JDS
Sample : WG562401-03 33.3umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:32:42 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

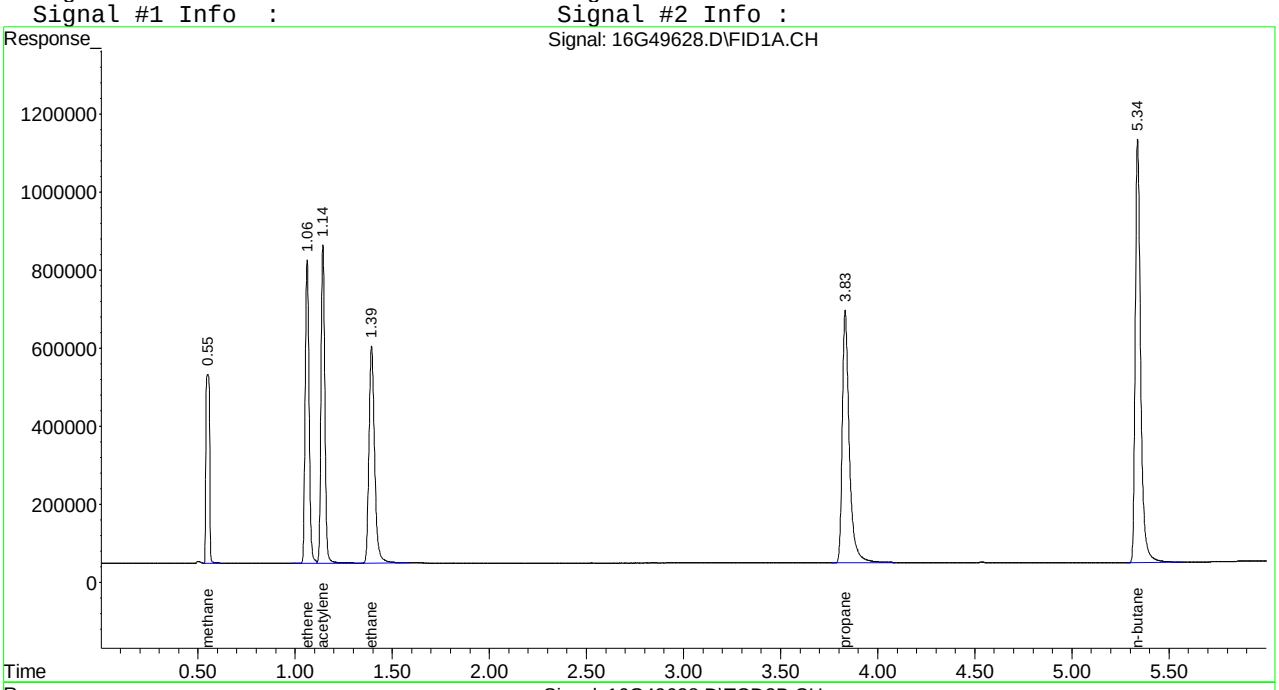

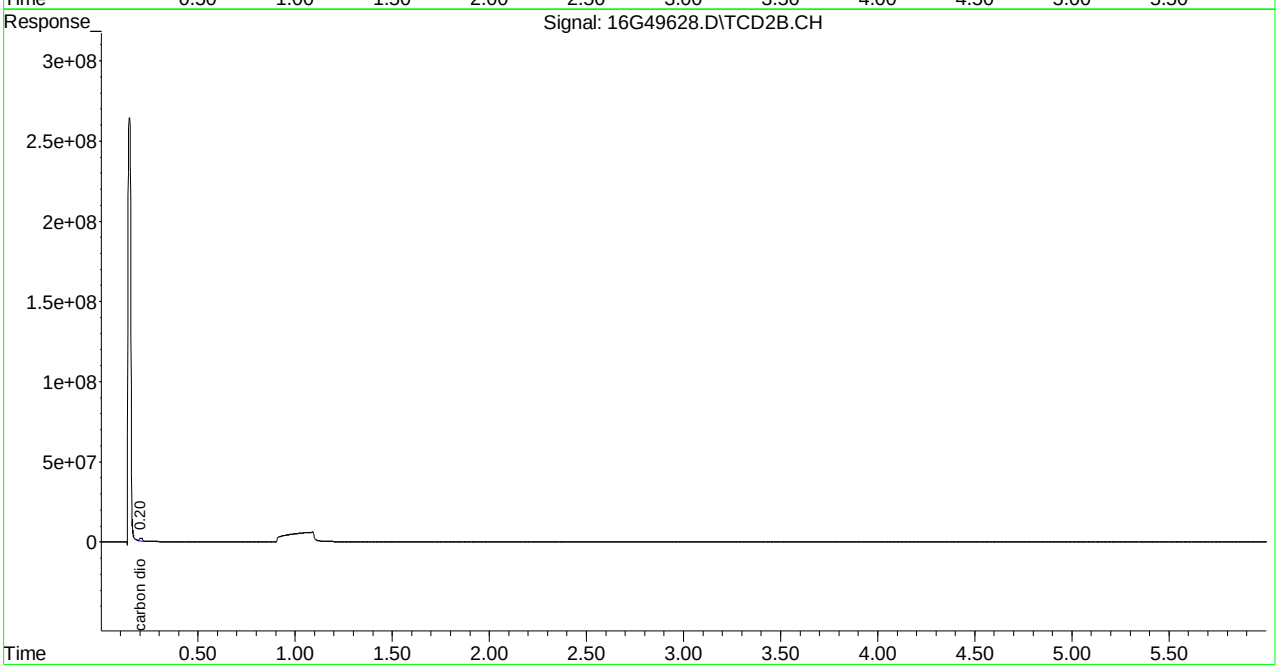

16G49628.D RSKEXT1.M Fri Mar 25 13:33:26 2016 Page 2

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49629.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49629.D\TCD2B.CH
Acq On    : 25 Mar 2016  11:58                        Operator: JDS
Sample    : WG562401-04 66.7umol/moL STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33:26 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:32:42 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11901999	64.837	umol/
2) T	ethene	1.06	20215300	64.780	umol/
3) T	acetylene	1.14	20353735	65.180	umol/
4) T	ethane	1.39	20615639	64.640	umol/
5) T	propane	3.83	30980672	65.670	umol/
6) T	n-butane	5.34	40329758	65.963	umol/
8) T	carbon dioxide	0.20	35613763	6746.916	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G49629.D RSKEXT1.M Fri Mar 25 13:33:27 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49629.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49629.D\TCD2B.CH
Acq On : 25 Mar 2016 11:58 Operator: JDS
Sample : WG562401-04 66.7umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:32:42 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

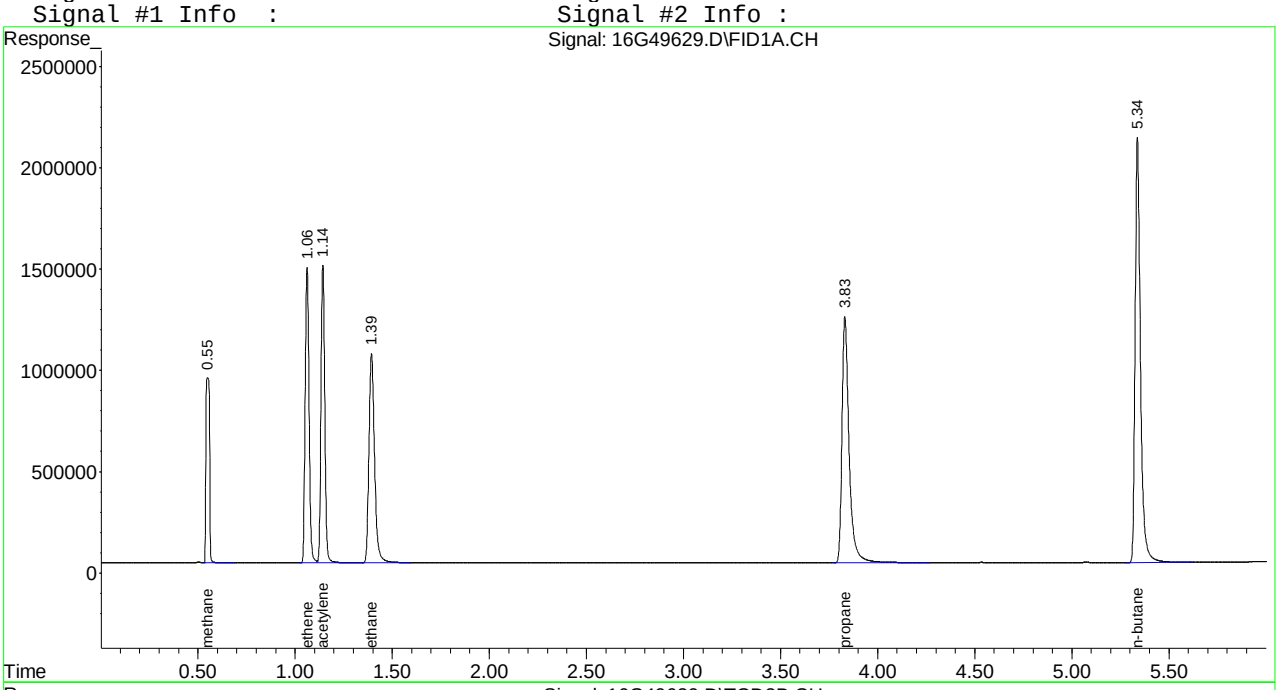

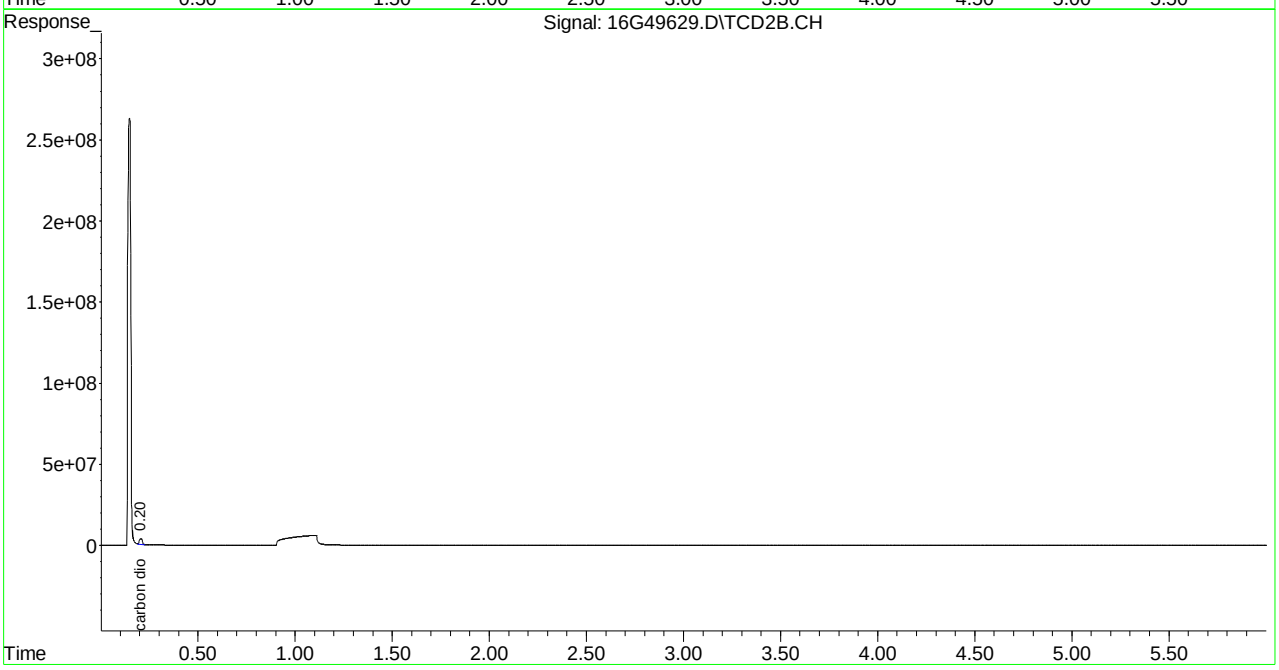

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49630.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49630.D\TCD2B.CH
Acq On    : 25 Mar 2016  12:10                        Operator: JDS
Sample    : WG562401-05 133umol/moL STD RSK175        Inst    : HP16
Misc      : 1,1 STD75351                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33:27 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:32:42 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	23452315	129.335 umol/
2) T	ethene	1.06	40022999	128.253 umol/
3) T	acetylene	1.14	39927283	127.862 umol/
4) T	ethane	1.39	40795450	127.914 umol/
5) T	propane	3.83	60871012	129.029 umol/
6) T	n-butane	5.34	78531804	128.445 umol/
8) T	carbon dioxide	0.20	71244989	13497.140 umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49630.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49630.D\TCD2B.CH
Acq On : 25 Mar 2016 12:10 Operator: JDS
Sample : WG562401-05 133umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:32:42 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

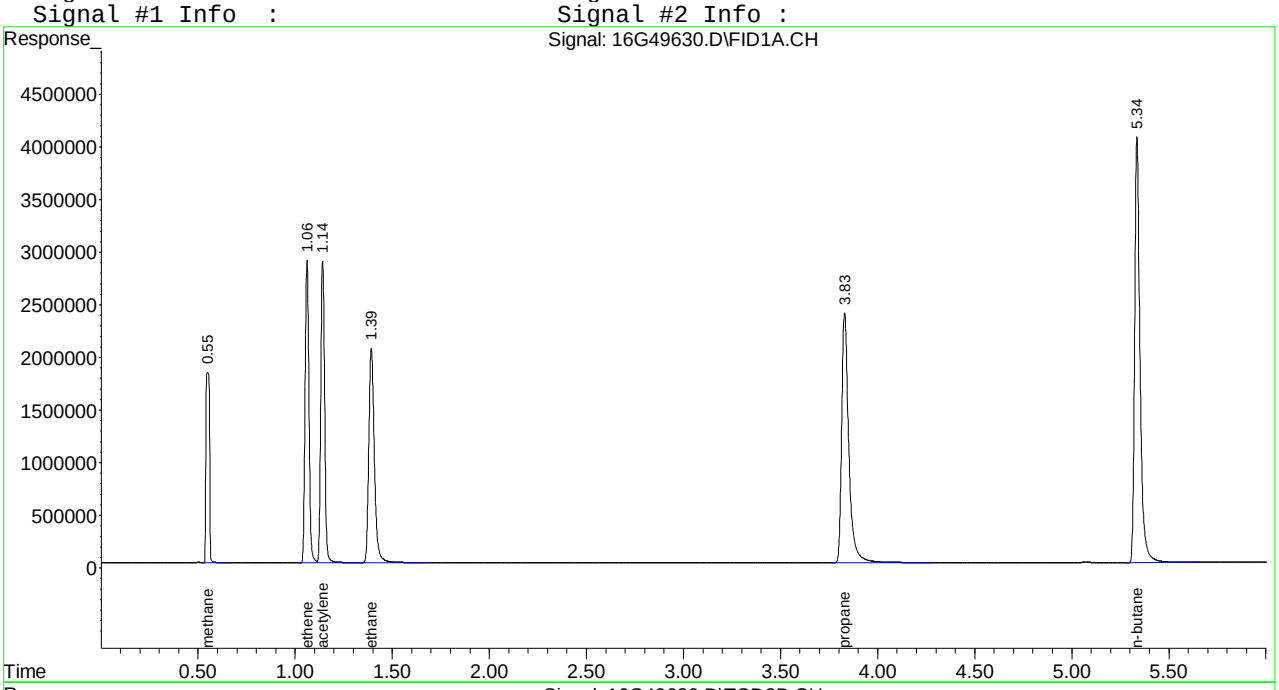

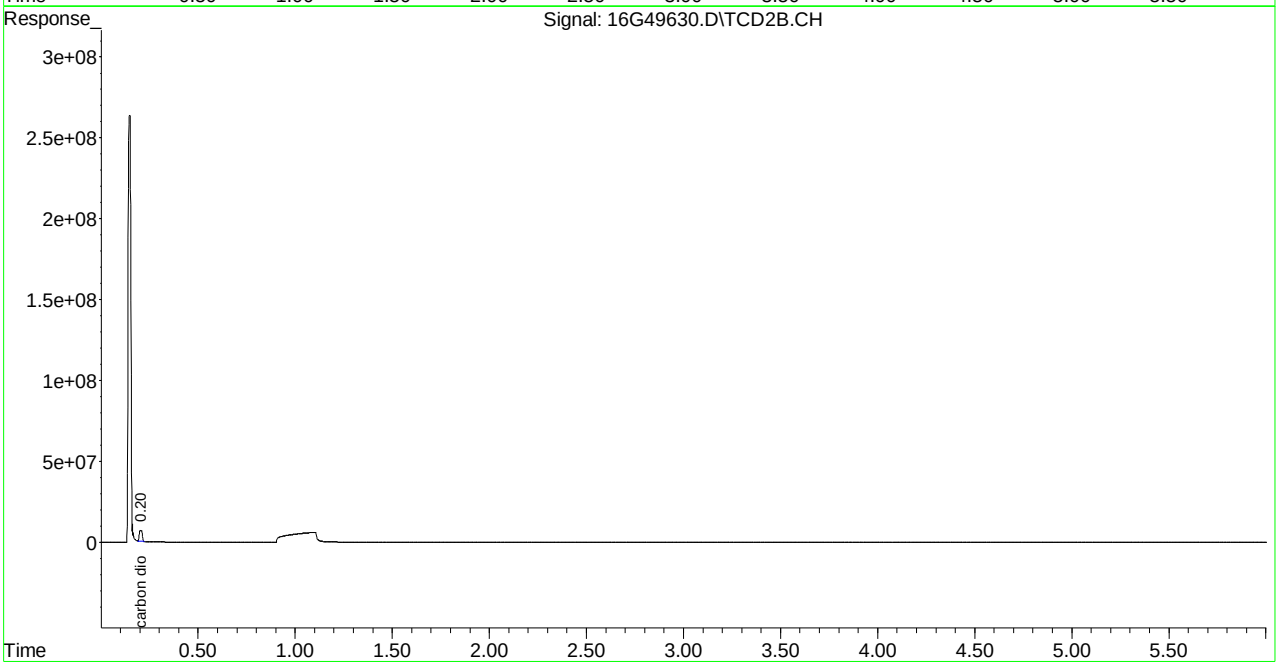

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49631.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49631.D\TCD2B.CH
Acq On    : 25 Mar 2016  12:22                        Operator: JDS
Sample    : WG562401-06 333umol/moL STD RSK175        Inst    : HP16
Misc      : 1,1 STD75351                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33:28 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:32:42 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	60036501	333.627	umol/
2) T	ethene	1.06	103680653	332.243	umol/
3) T	acetylene	1.14	103042347	329.980	umol/
4) T	ethane	1.39	106118124	332.733	umol/
5) T	propane	3.83	159210076	337.481	umol/
6) T	n-butane	5.33	207154261	338.817	umol/
8) T	carbon dioxide	0.20	184690679	34989.072	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G49631.D RSKEXT1.M Fri Mar 25 13:33:28 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49631.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49631.D\TCD2B.CH
Acq On : 25 Mar 2016 12:22 Operator: JDS
Sample : WG562401-06 333umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:32:42 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

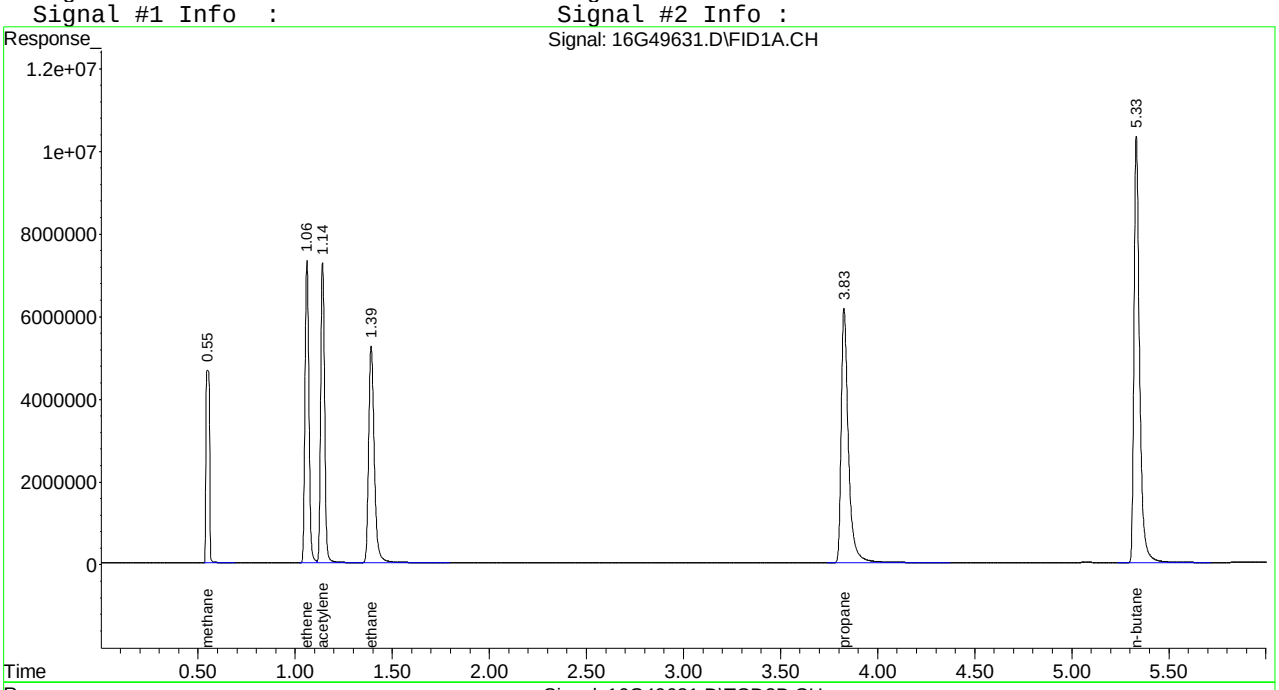

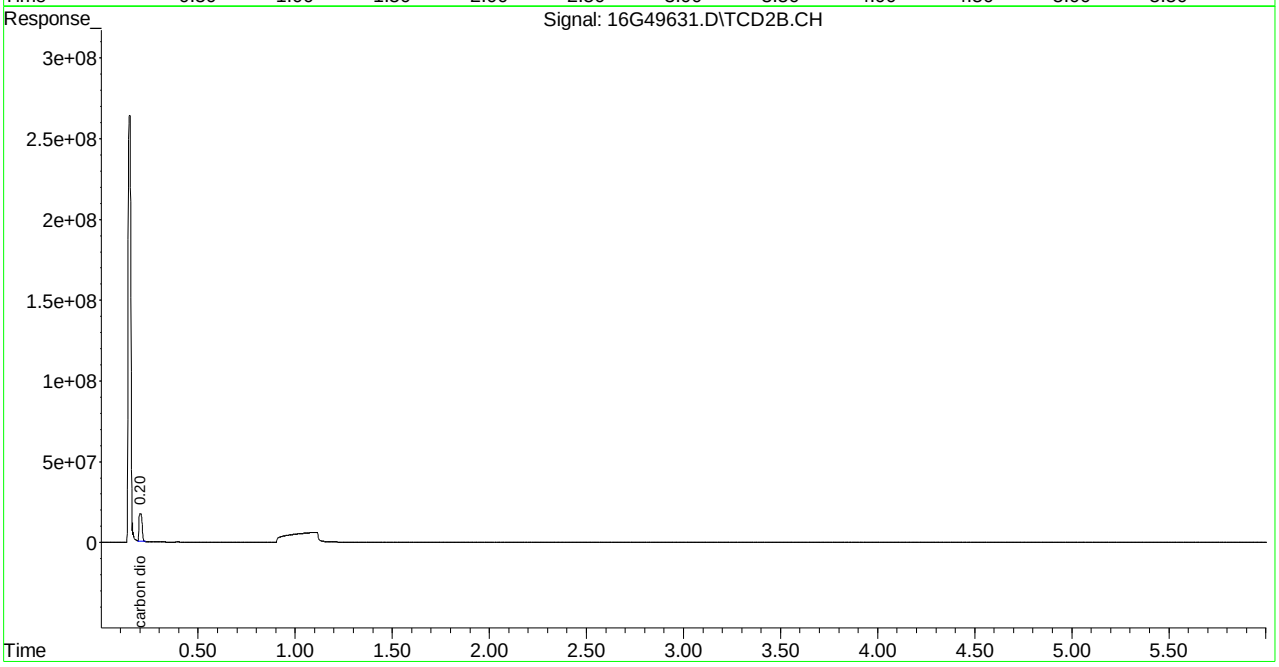

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49632.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49632.D\TCD2B.CH
Acq On    : 25 Mar 2016  12:34                        Operator: JDS
Sample    : WG562401-07 533umol/moL STD RSK175        Inst    : HP16
Misc      : 1,1 STD75351                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33:29 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:32:42 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	96479096	537.128	umol/
2) T	ethene	1.06	163526008	524.017	umol/
3) T	acetylene	1.14	159442689	510.596	umol/
4) T	ethane	1.39	167744947	525.963	umol/
5) T	propane	3.83	248130764	525.967	umol/
6) T	n-butane	5.33	319696896	522.890	umol/
8) T	carbon dioxide	0.20	281763639	53379.240	umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49632.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49632.D\TCD2B.CH
Acq On : 25 Mar 2016 12:34 Operator: JDS
Sample : WG562401-07 533umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:32:42 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

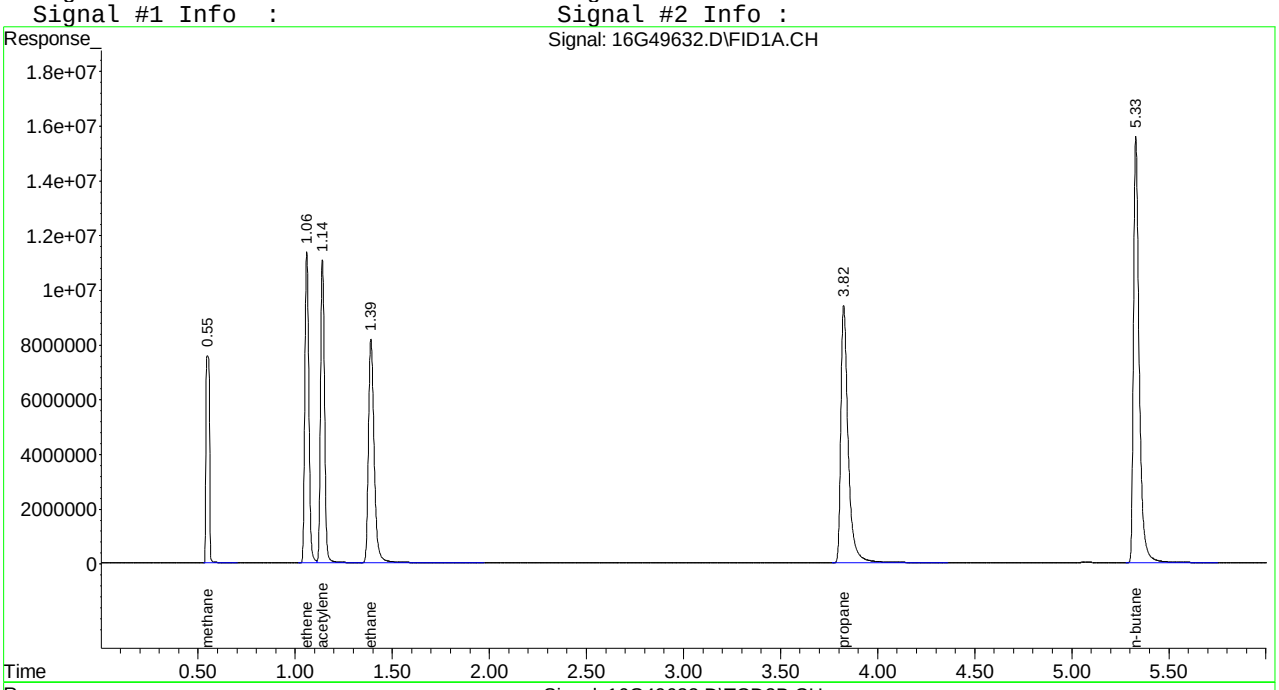

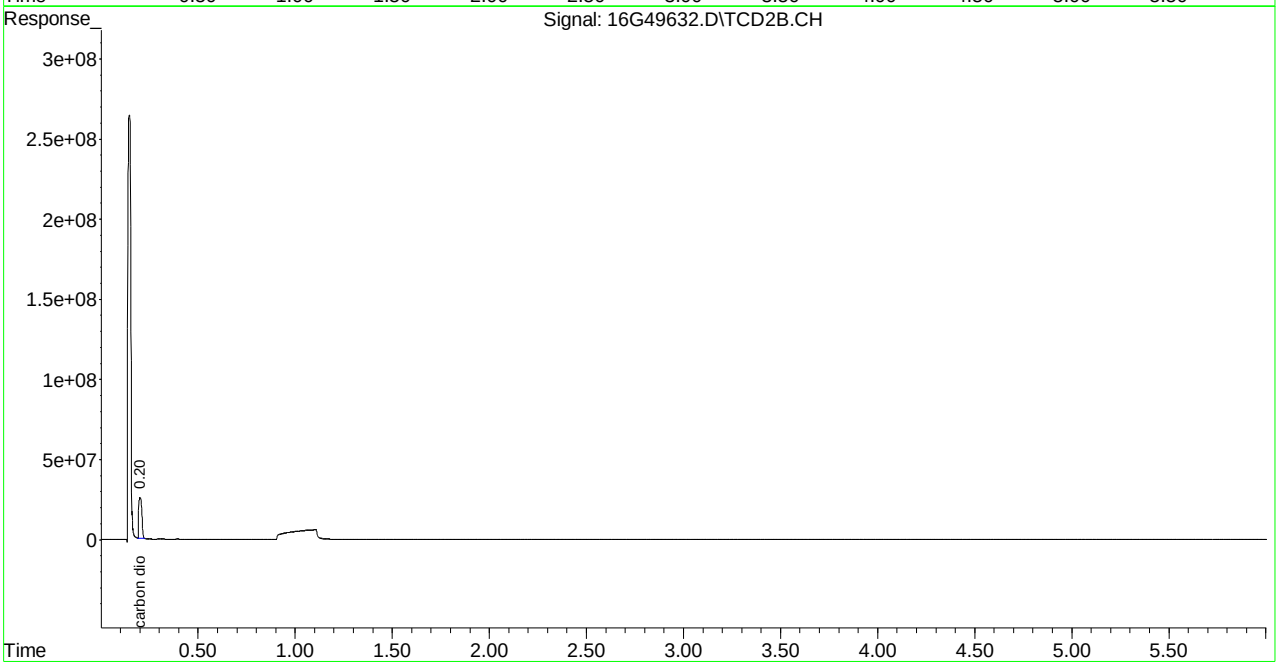

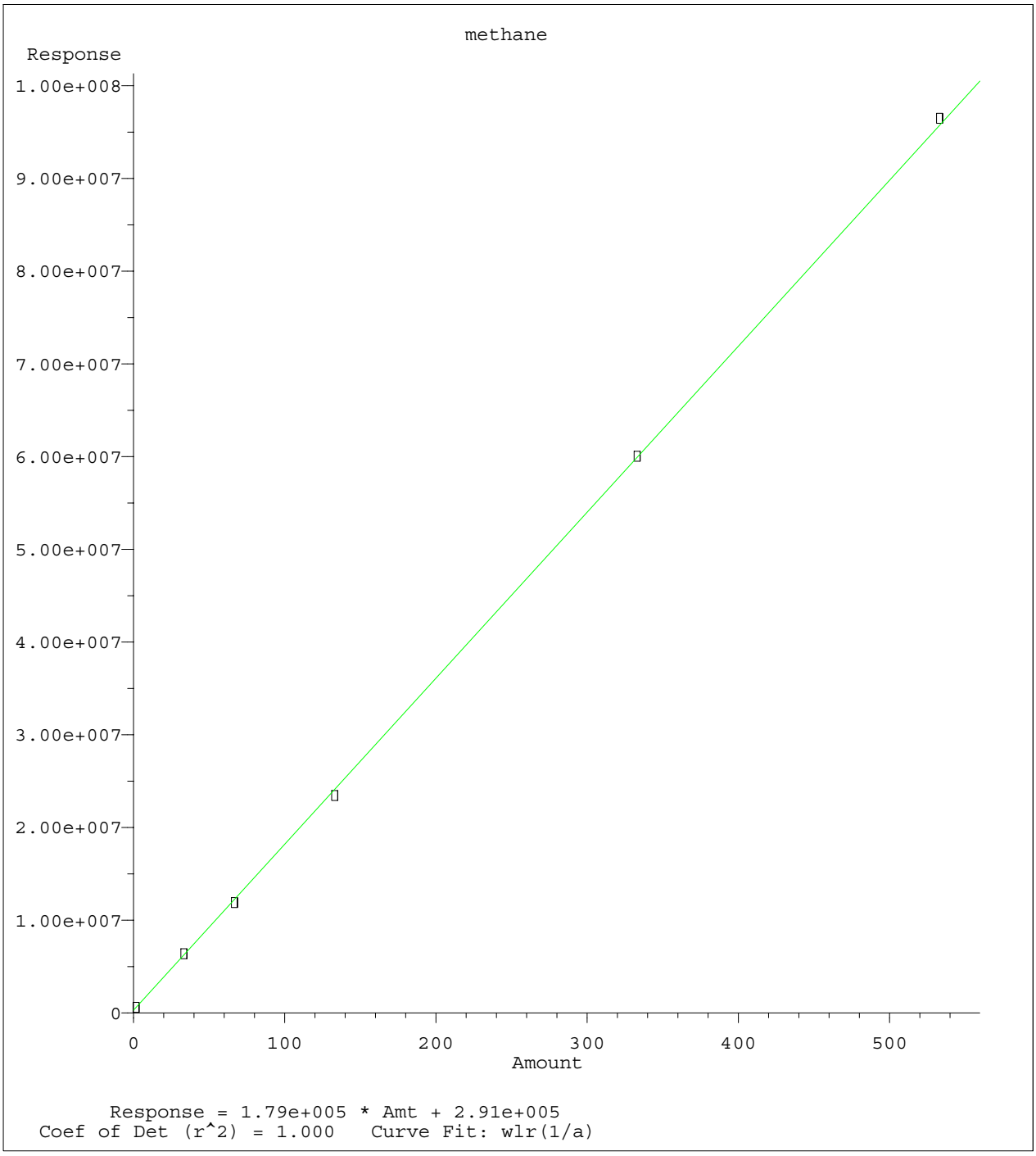

Method Name: C:\MSDCHEM\1\METHODS\RSKEXT1.M
Calibration Table Last Updated: Fri Mar 25 13:38:01 2016

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\032516\16G49635.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDchem\1\DATA\032516\16G49635.D\TCD2B.CH
Acq On    : 25 Mar 2016  18:26                        Operator: JDS
Sample    : WG562401-08 133umol/moL ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 18:32:35 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	24881813	137.318 umol/
2) T	ethene	1.06	41706426	133.648 umol/
3) T	acetylene	1.14	45236671	144.865 umol/
4) T	ethane	1.39	43137584	135.258 umol/
5) T	propane	3.83	62226584	131.903 umol/
6) T	n-butane	5.34	79421956	129.901 umol/
8) T	carbon dioxide	0.20	77169864	14619.589 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G49635.D RSKEXT1.M Fri Mar 25 18:32:35 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\032516\16G49635.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDchem\1\DATA\032516\16G49635.D\TCD2B.CH
Acq On : 25 Mar 2016 18:26 Operator: JDS
Sample : WG562401-08 133umol/moL ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 18:32 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

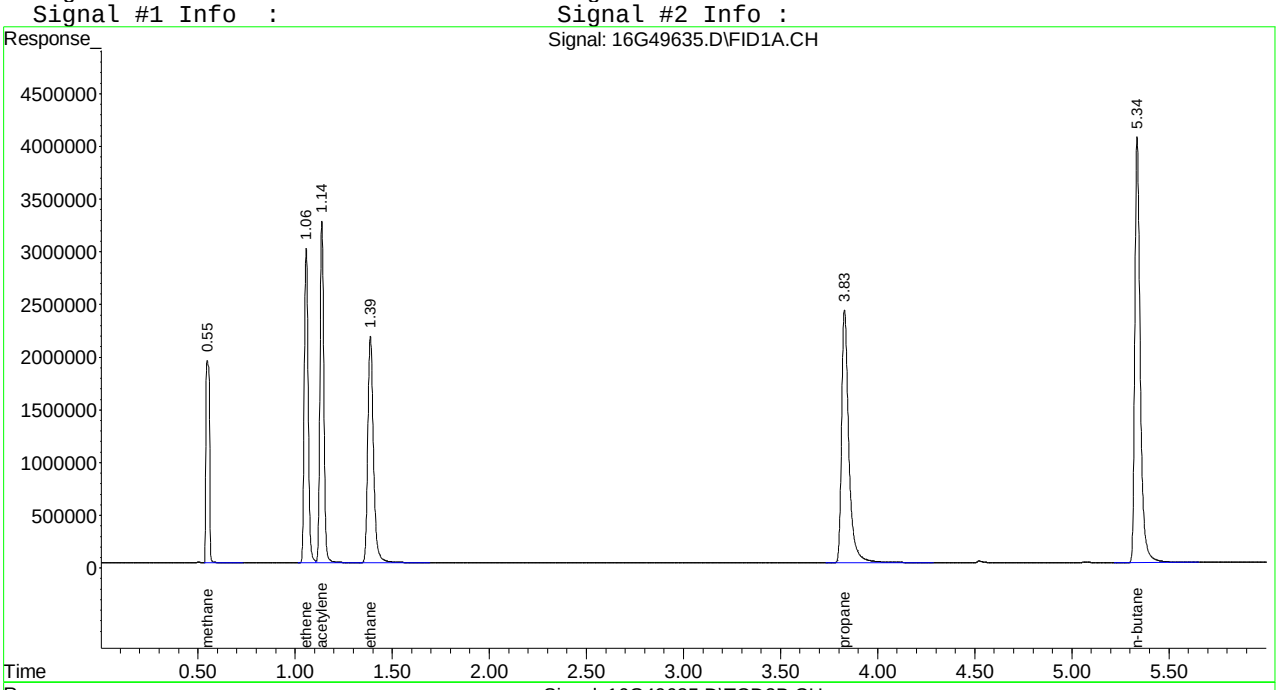

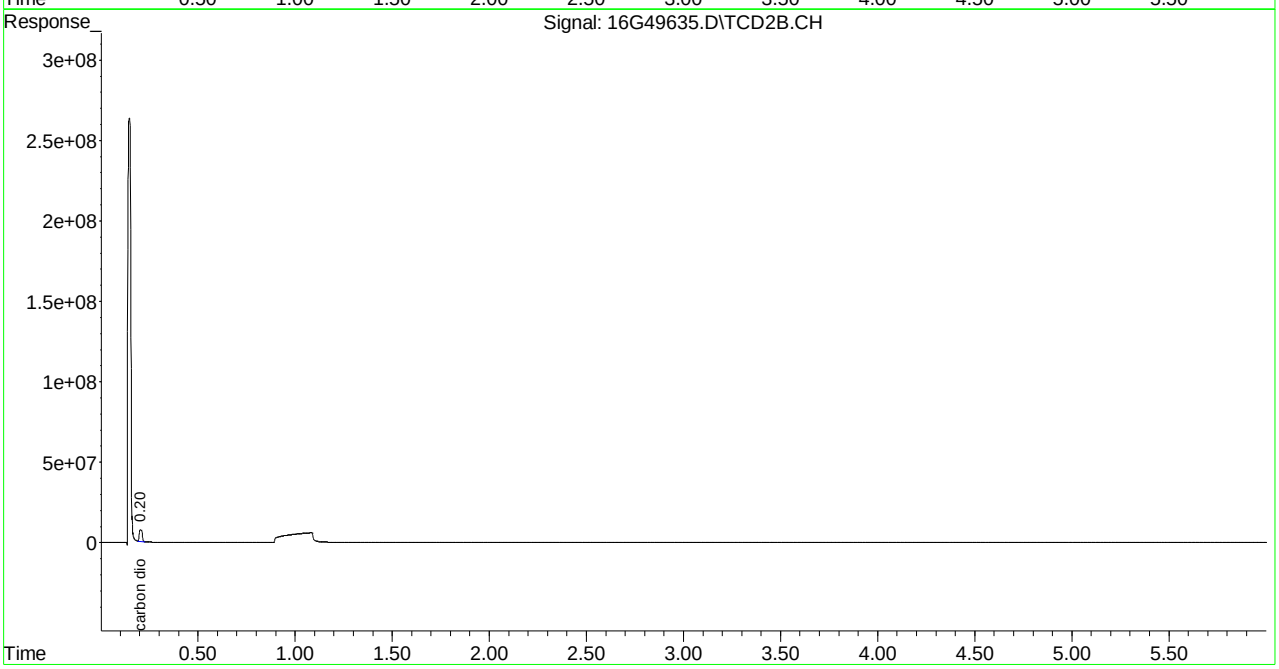

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49635.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49635.D\TCD2B.CH
Acq On : 25 Mar 2016 18:26 Operator: JDS
Sample : WG562401-08 133umol/moL ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	137.318	-3.2	106	0.00
2	T	ethene	133.000	133.648	-0.5	104	0.00
3	T	acetylene	133.000	144.865	-8.9	113	0.00
4	T	ethane	133.000	135.258	-1.7	106	0.00
5	T	propane	133.000	131.903	0.8	102	0.00
6	T	n-butane	133.000	129.901	2.3	101	0.00

Signal #2

8	T	carbon dioxide	13300.000	14619.589	-9.9	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G49635.D RSKEXT1.M Mon Mar 28 09:35:32 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49635.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49635.D\TCD2B.CH
Acq On    : 25 Mar 2016  18:26                        Operator: JDS
Sample    : WG562401-08 133umol/moL ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\080816\16G50447.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\080816\16G50447.D\TCD2B.CH
Acq On : 08 Aug 2016 14:37 Operator: JDS
Sample : WG579429-01 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 08 14:44:44 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	23095995	127.346 umol/
2) T	ethene	1.06	39355711	126.115 umol/
3) T	acetylene	1.14	41907855	134.205 umol/
4) T	ethane	1.40	39979561	125.356 umol/
5) T	propane	3.83	59546050	126.221 umol/
6) T	n-butane	5.34	77004496	125.947 umol/
8) T	carbon dioxide	0.20	75137454	14234.556 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G50447.D RSKEXT1.M Mon Aug 08 14:44:44 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\080816\16G50447.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\080816\16G50447.D\TCD2B.CH
Acq On : 08 Aug 2016 14:37 Operator: JDS
Sample : WG579429-01 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 8 14:44 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

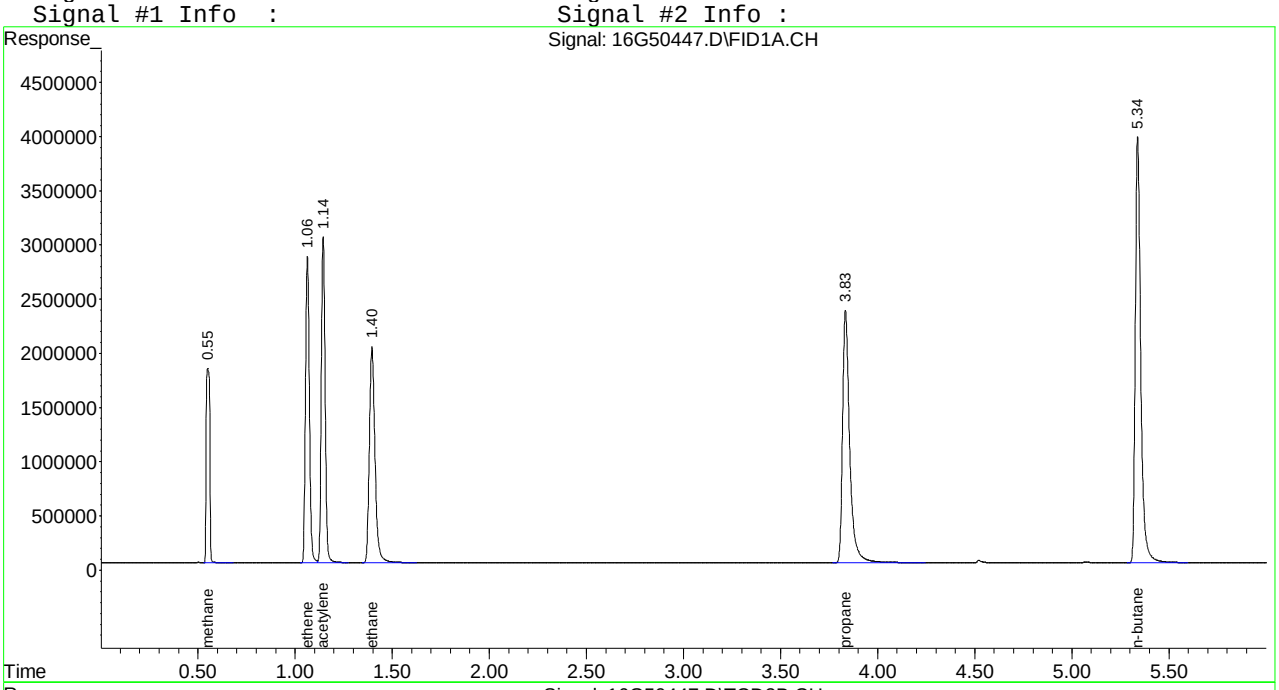

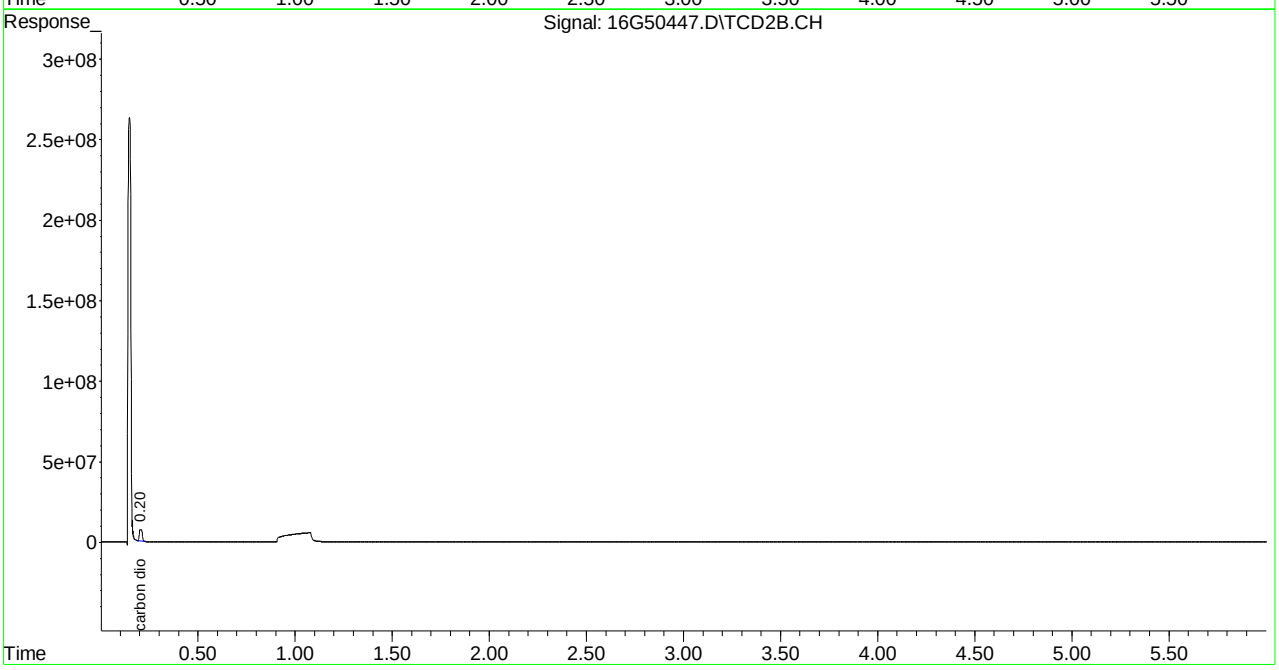

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\080816\16G50447.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\080816\16G50447.D\TCD2B.CH
Acq On : 08 Aug 2016 14:37 Operator: JDS
Sample : WG579429-01 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	127.346	4.3	98	0.00
2	T	ethene	133.000	126.115	5.2	98	0.00
3	T	acetylene	133.000	134.205	-0.9	105	0.00
4	T	ethane	133.000	125.356	5.7	98	0.00
5	T	propane	133.000	126.221	5.1	98	0.00
6	T	n-butane	133.000	125.947	5.3	98	0.00

Signal #2

8	T	carbon dioxide	13300.000	14234.556	-7.0	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G50447.D RSKEXT1.M Mon Aug 08 14:45:09 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\080816\16G50447.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\080816\16G50447.D\TCD2B.CH
Acq On    : 08 Aug 2016  14:37                        Operator: JDS
Sample    : WG579429-01 133umol/moL CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD75351                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\080816\16G50458.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\080816\16G50458.D\TCD2B.CH
Acq On    : 08 Aug 2016  16:59                        Operator: JDS
Sample    : WG579429-02 133umol/moL CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD75351                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 08 17:05:06 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	23350417	128.766 umol/
2) T	ethene	1.06	39146285	125.444 umol/
3) T	acetylene	1.14	37809910	121.082 umol/
4) T	ethane	1.39	40131749	125.833 umol/
5) T	propane	3.83	59733863	126.619 umol/
6) T	n-butane	5.34	77446482	126.670 umol/
8) T	carbon dioxide	0.20	69579573	13181.632 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\080816\16G50458.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\080816\16G50458.D\TCD2B.CH
Acq On : 08 Aug 2016 16:59 Operator: JDS
Sample : WG579429-02 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 8 17:05 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

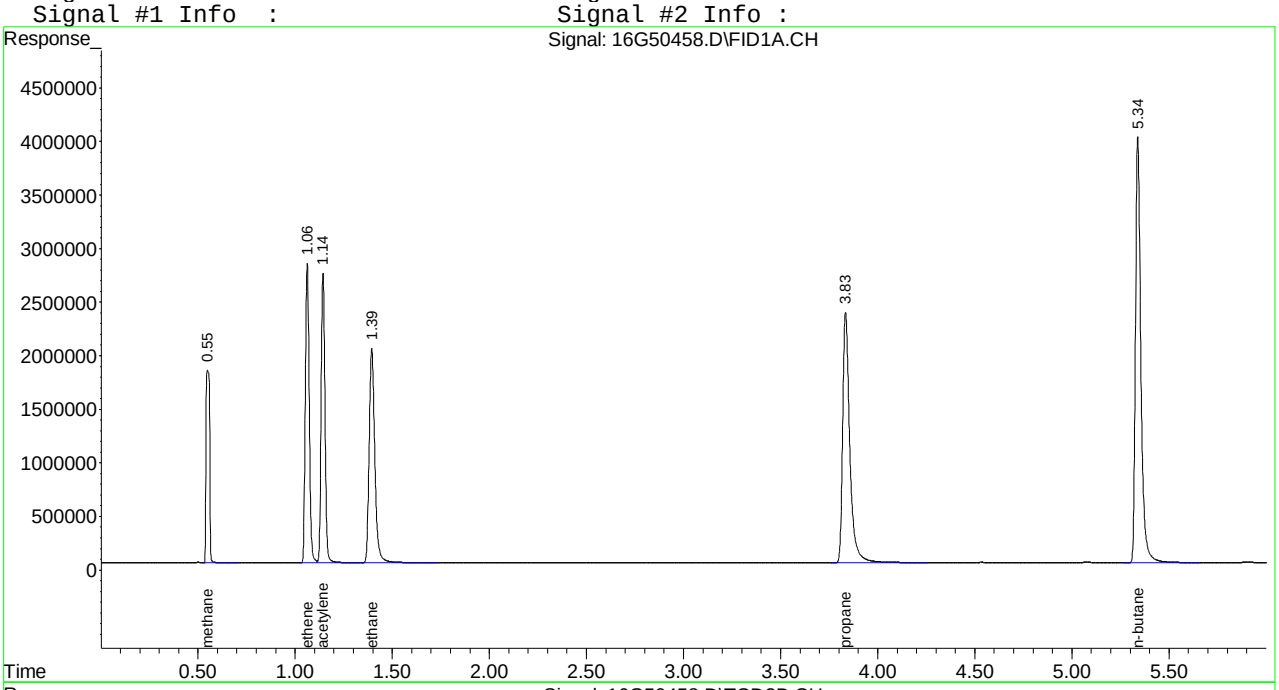

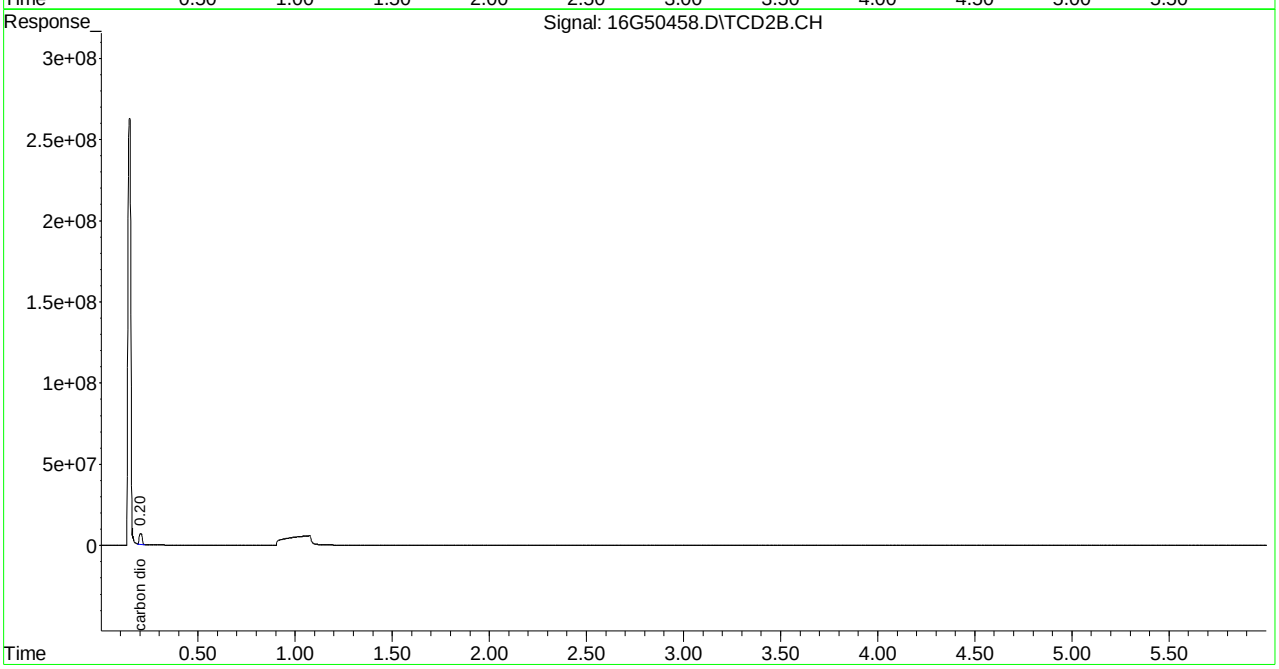

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\080816\16G50458.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\080816\16G50458.D\TCD2B.CH
Acq On : 08 Aug 2016 16:59 Operator: JDS
Sample : WG579429-02 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	128.766	3.2	100	0.00
2	T	ethene	133.000	125.444	5.7	98	0.00
3	T	acetylene	133.000	121.082	9.0	95	0.00
4	T	ethane	133.000	125.833	5.4	98	0.00
5	T	propane	133.000	126.619	4.8	98	0.00
6	T	n-butane	133.000	126.670	4.8	99	0.00

Signal #2

8	T	carbon dioxide	13300.000	13181.632	0.9	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G50458.D RSKEXT1.M Tue Aug 09 08:45:48 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\080816\16G50458.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\080816\16G50458.D\TCD2B.CH
Acq On    : 08 Aug 2016  16:59                        Operator: JDS
Sample    : WG579429-02 133umol/moL CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD75351                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081016\16G50503.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\081016\16G50503.D\TCD2B.CH
Acq On : 10 Aug 2016 12:10 Operator: JDS
Sample : WG579713-01 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 12:17:01 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24294581	134.039	umol/
2) T	ethene	1.06	41070623	131.610	umol/
3) T	acetylene	1.14	42143021	134.958	umol/
4) T	ethane	1.39	41852955	131.230	umol/
5) T	propane	3.83	61955094	131.327	umol/
6) T	n-butane	5.34	80840456	132.221	umol/
8) T	carbon dioxide	0.20	76631262	14517.553	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G50503.D RSKEXT1.M Wed Aug 10 12:17:01 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081016\16G50503.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\081016\16G50503.D\TCD2B.CH
Acq On : 10 Aug 2016 12:10 Operator: JDS
Sample : WG579713-01 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 12:17 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

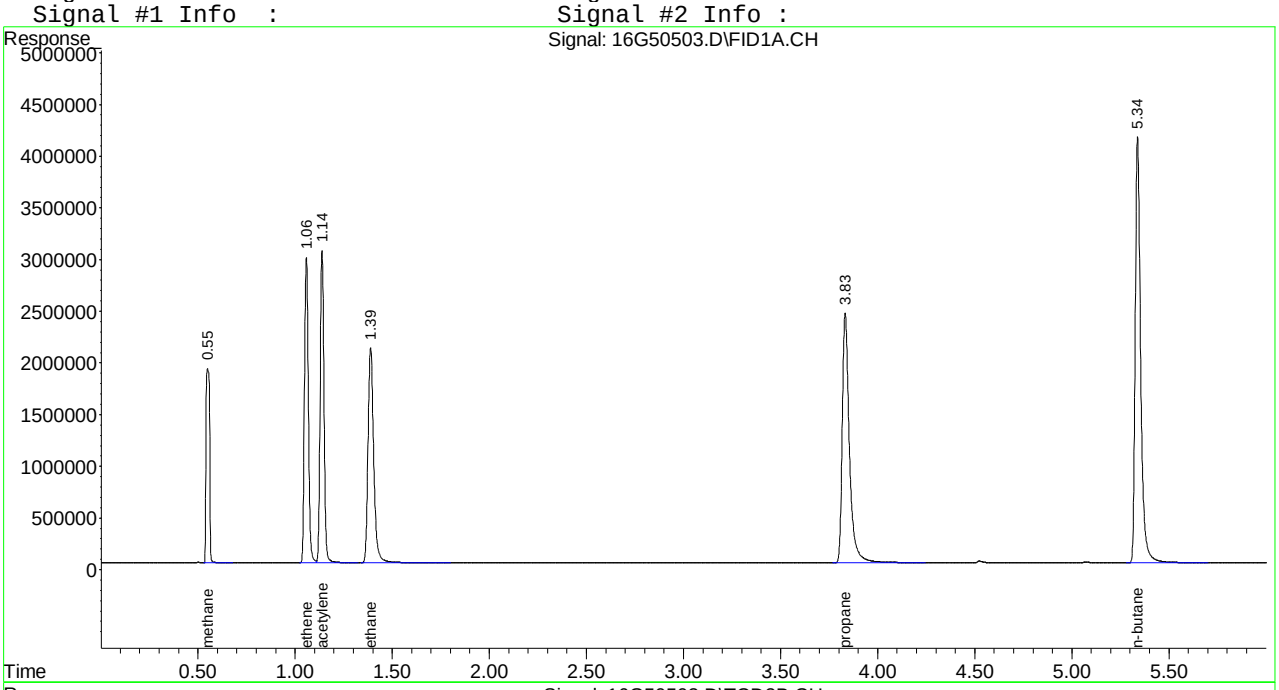

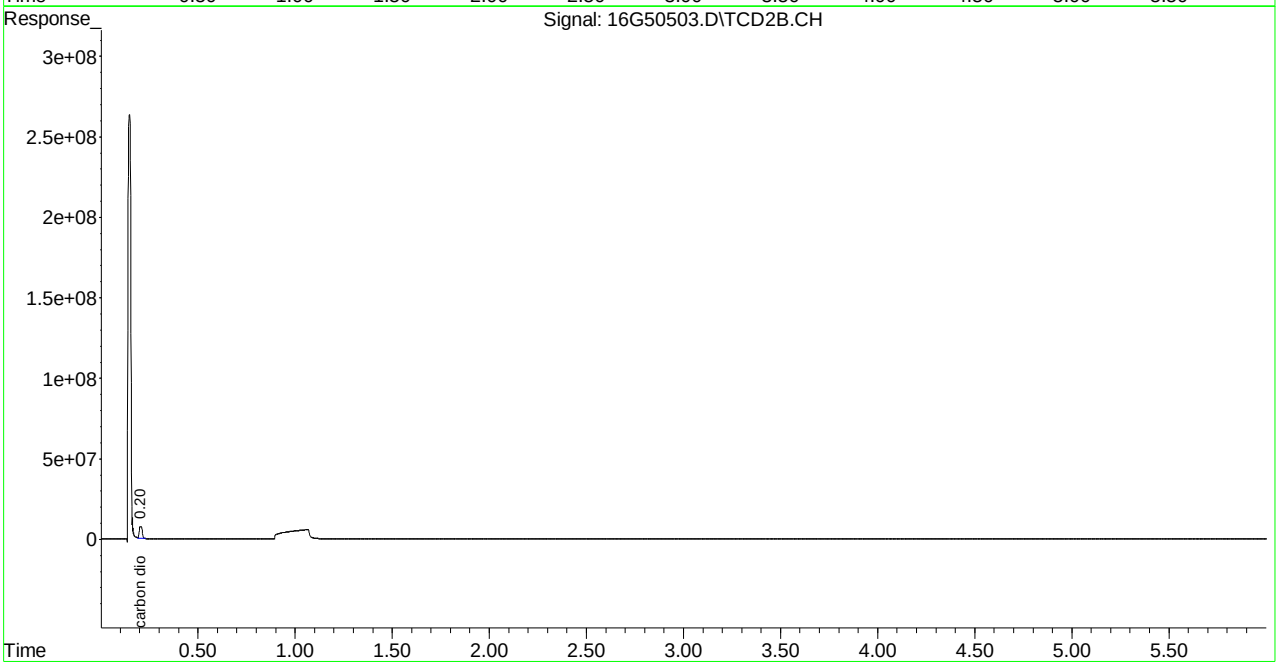

Evaluate Continuing Calibration Report

```
Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50503.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50503.D\TCD2B.CH
Acq On    : 10 Aug 2016  12:10                        Operator: JDS
Sample    : WG579713-01 133umol/moL CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD75351                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	134.039	-0.8	104	0.00
2	T	ethene	133.000	131.610	1.0	103	0.00
3	T	acetylene	133.000	134.958	-1.5	106	0.00
4	T	ethane	133.000	131.230	1.3	103	0.00
5	T	propane	133.000	131.327	1.3	102	0.00
6	T	n-butane	133.000	132.221	0.6	103	0.00
		Signal #2					
8	T	carbon dioxide	13300.000	14517.553	-9.2	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G50503.D RSKEXT1.M Thu Aug 11 08:54:05 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50503.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50503.D\TCD2B.CH
Acq On    : 10 Aug 2016  12:10                        Operator: JDS
Sample    : WG579713-01 133umol/moL CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD75351                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\081016\16G50514.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\081016\16G50514.D\TCD2B.CH
Acq On    : 10 Aug 2016  15:58                        Operator: JDS
Sample    : WG579713-02 133umol/moL CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD75351                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 16:04:29 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	22719765	125.245 umol/
2) T	ethene	1.06	38069119	121.992 umol/
3) T	acetylene	1.14	39225954	125.616 umol/
4) T	ethane	1.39	38663094	121.228 umol/
5) T	propane	3.83	57262696	121.381 umol/
6) T	n-butane	5.34	74837194	122.402 umol/
8) T	carbon dioxide	0.20	69658341	13196.555 umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081016\16G50514.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\081016\16G50514.D\TCD2B.CH
Acq On : 10 Aug 2016 15:58 Operator: JDS
Sample : WG579713-02 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 16:04 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

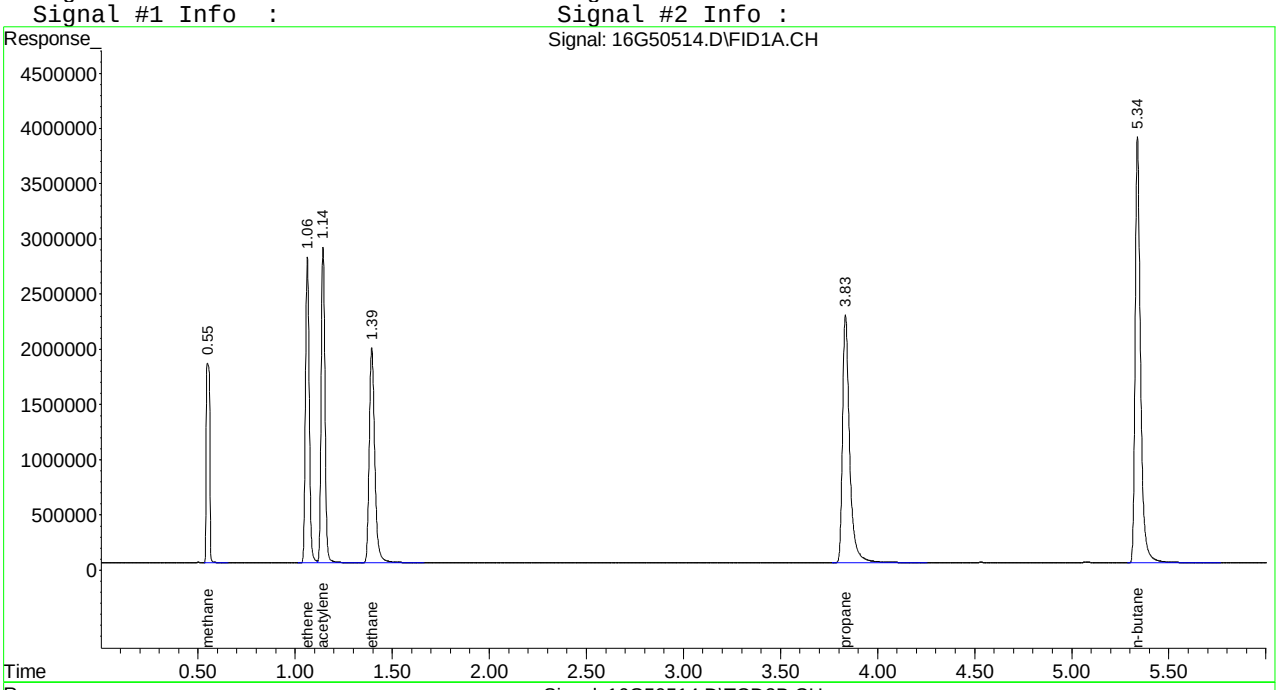

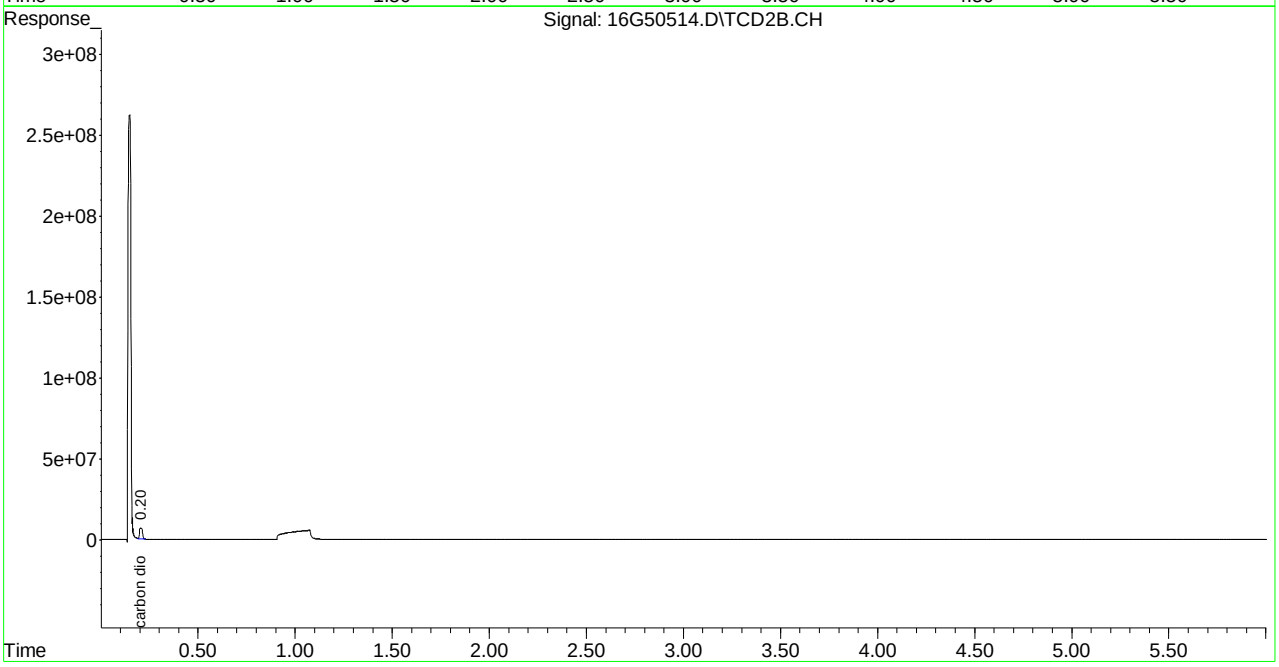

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50514.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50514.D\TCD2B.CH
Acq On : 10 Aug 2016 15:58 Operator: JDS
Sample : WG579713-02 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	125.245	5.8	97	0.00
2	T	ethene	133.000	121.992	8.3	95	0.00
3	T	acetylene	133.000	125.616	5.6	98	0.00
4	T	ethane	133.000	121.228	8.9	95	0.00
5	T	propane	133.000	121.381	8.7	94	0.00
6	T	n-butane	133.000	122.402	8.0	95	0.00

Signal #2

8	T	carbon dioxide	13300.000	13196.555	0.8	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G50514.D RSKEXT1.M Thu Aug 11 08:54:14 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50514.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50514.D\TCD2B.CH
Acq On    : 10 Aug 2016  15:58                        Operator: JDS
Sample    : WG579713-02 133umol/moL CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD75351                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L16080317 **Run Date:** 08/08/2016 **Sample ID:** WG579429-01
Instrument: HP16 **Run Time:** 14:37 **Method:** RSK175
Workgroup (AAB#): WG579430 **File ID:** 16G50447

RT Standard	Analysis Date	File ID	Analyst
WG579713-01	08/10/2016	16G50503	JDS
WG579606-01	08/09/2016	16G50480	JDS
WG579429-01	08/08/2016	16G50447	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.55	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.4	1.39	1.39	1.4	1.370	1.430
PROPANE	3.83	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.34	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4891863
Report generated 08/16/2016 14:58

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L16080317 **Run Date:** 08/10/2016 **Sample ID:** WG579713-02
Instrument: HP16 **Run Time:** 15:58 **Method:** RSK175
Workgroup (AAB#): WG579716 **File ID:** 16G50514

RT Standard	Analysis Date	File ID	Analyst
WG579713-01	08/10/2016	16G50503	JDS
WG579606-01	08/09/2016	16G50480	JDS
WG579429-01	08/08/2016	16G50447	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.55	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.4	1.39	1.39	1.39	1.360	1.420
PROPANE	3.83	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.34	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4891863
Report generated 08/16/2016 14:58

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\080816\16G50448.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\080816\16G50448.D\TCD2B.CH
Acq On    : 08 Aug 2016  15:03                        Operator: JDS
Sample    : WG579430-01 BLANK STD RSK175              Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 09 08:41:29 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	351303	0.336	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	6759	0.021	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G50448.D RSKEXT1.M Tue Aug 09 08:41:32 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\080816\16G50448.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\080816\16G50448.D\TCD2B.CH
Acq On : 08 Aug 2016 15:03 Operator: JDS
Sample : WG579430-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 9 8:41 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

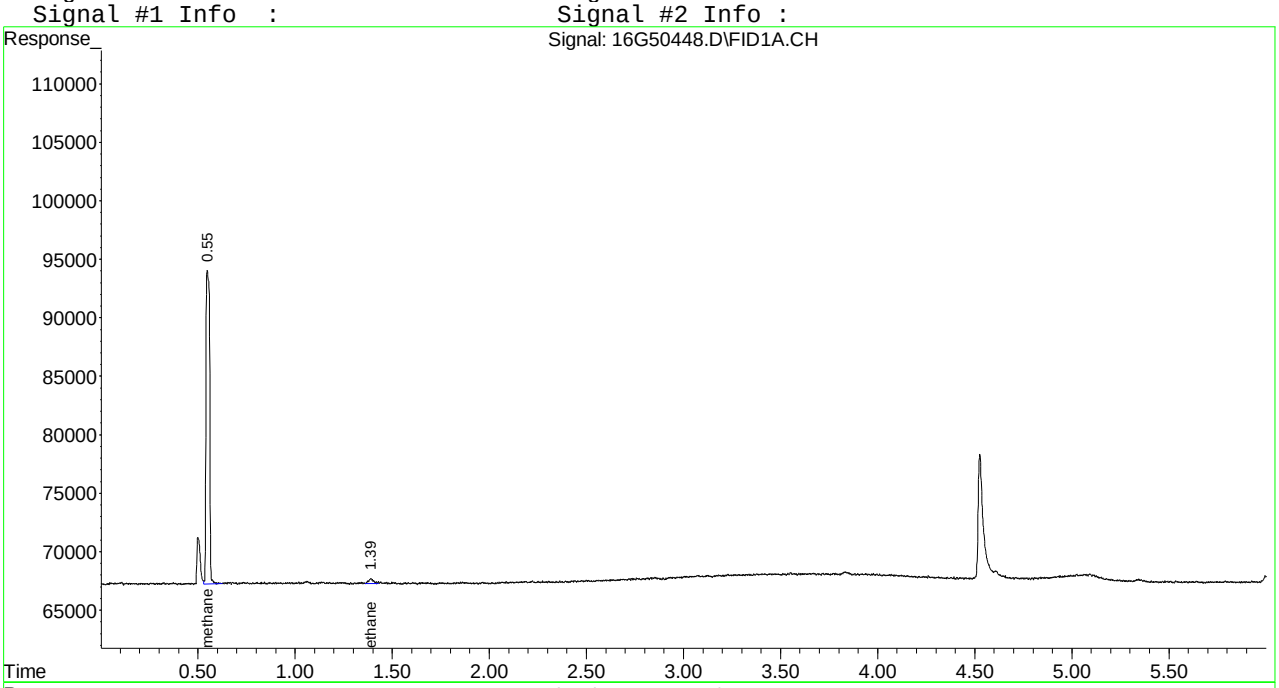

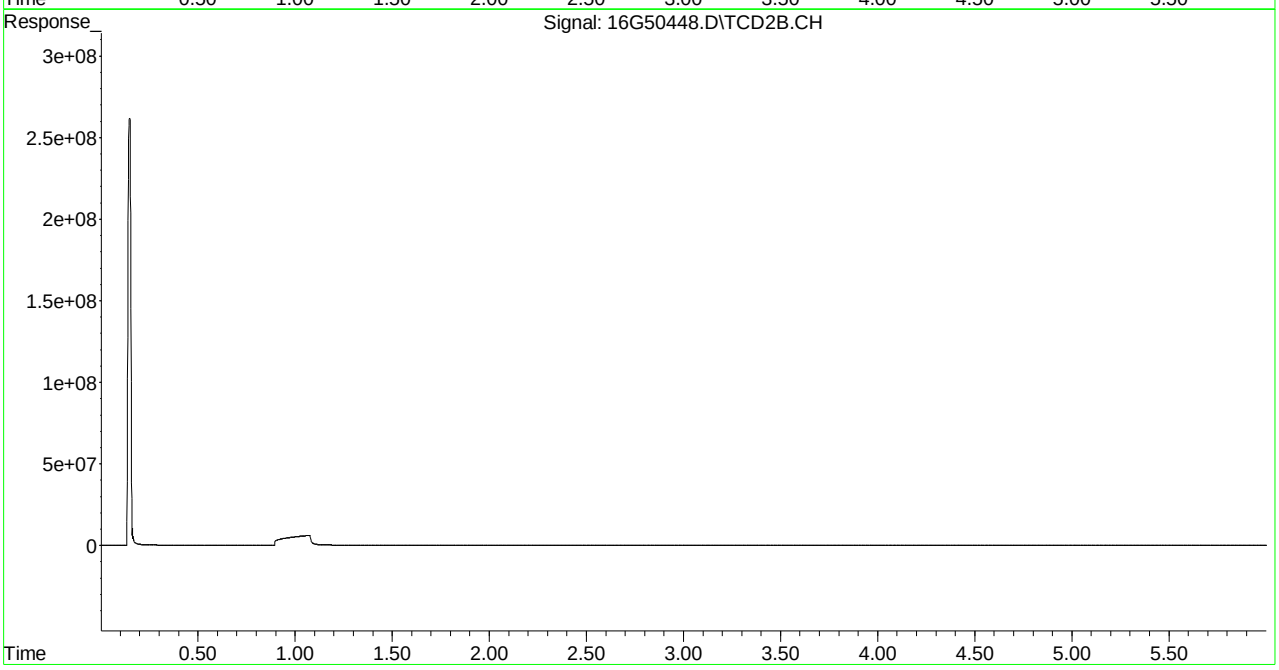

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50504.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50504.D\TCD2B.CH
Acq On    : 10 Aug 2016  14:05                        Operator: JDS
Sample    : WG579716-01 BLANK STD RSK175              Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 14:11:05 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	284837	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50504.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50504.D\TCD2B.CH
Acq On : 10 Aug 2016 14:05 Operator: JDS
Sample : WG579716-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 14:11 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

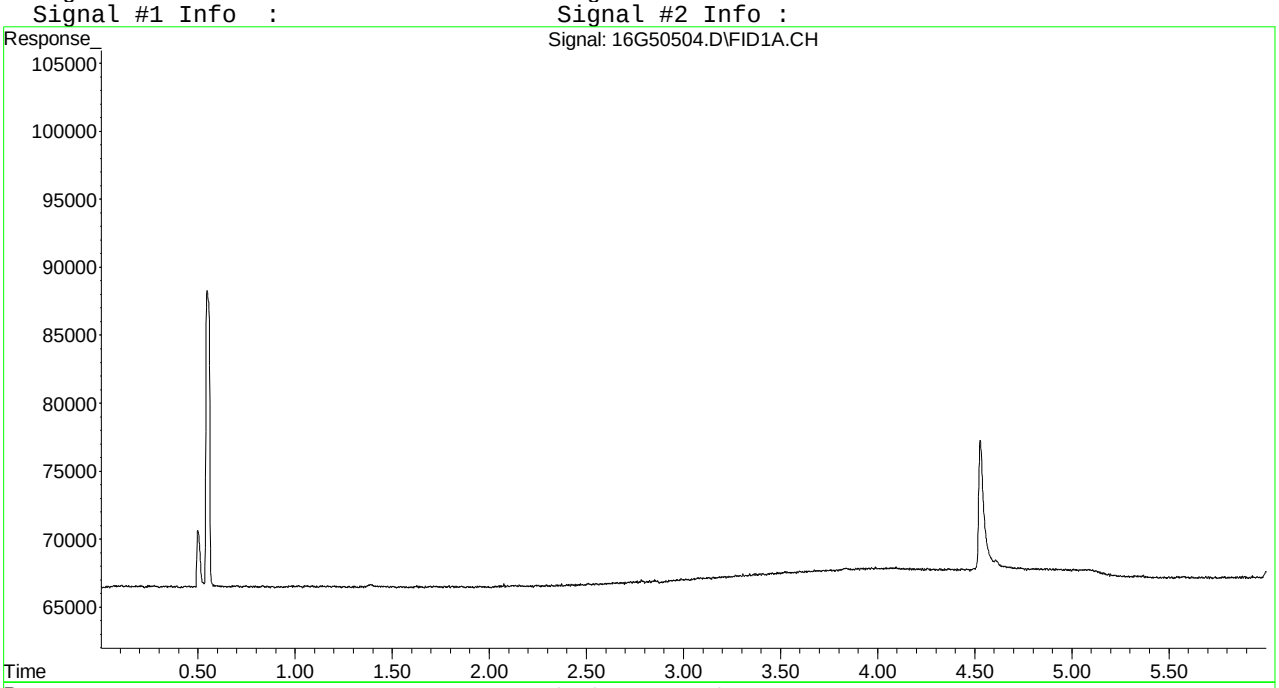

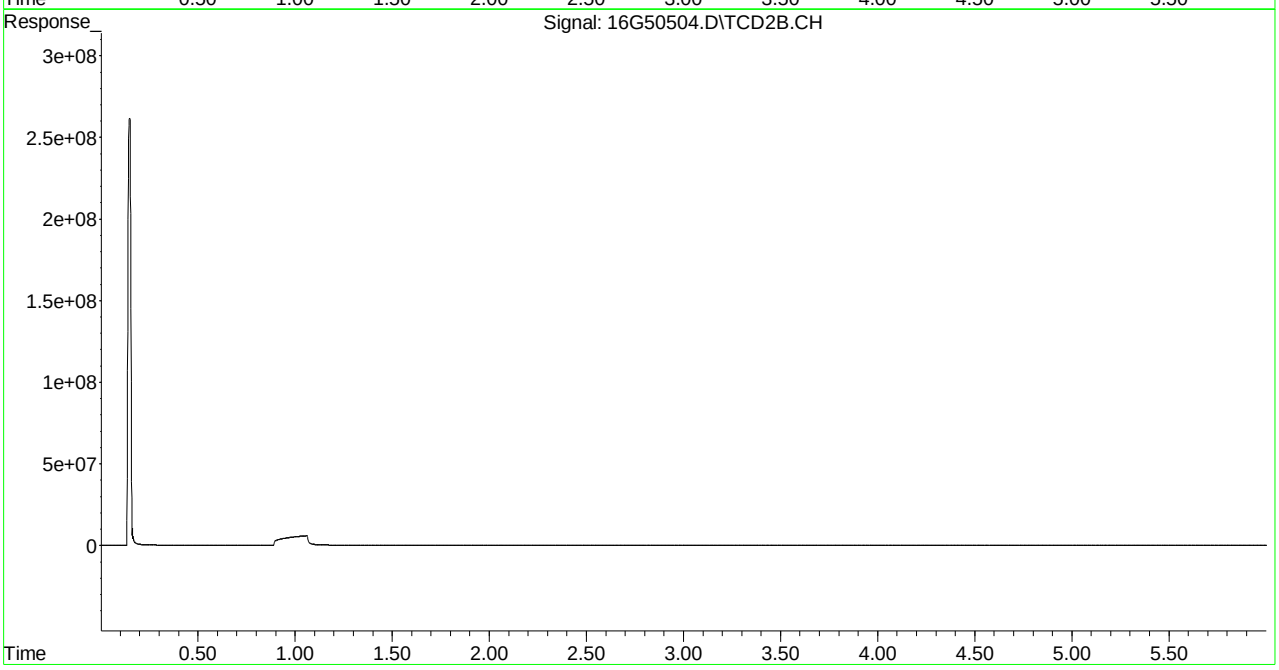

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\080816\16G50449.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\080816\16G50449.D\TCD2B.CH
Acq On : 08 Aug 2016 15:15 Operator: JDS
Sample : WG579430-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 08 15:21:32 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12346528	67.319	umol/
2) T	ethene	1.06	20358315	65.238	umol/
3) T	acetylene	1.14	21517823	68.908	umol/
4) T	ethane	1.40	21096792	66.149	umol/
5) T	propane	3.84	30321215	64.272	umol/
6) T	n-butane	5.34	38043578	62.223	umol/
8) T	carbon dioxide	0.20	33322026	6312.754	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G50449.D RSKEXT1.M Mon Aug 08 15:21:32 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\080816\16G50449.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\080816\16G50449.D\TCD2B.CH
Acq On : 08 Aug 2016 15:15 Operator: JDS
Sample : WG579430-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 8 15:21 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

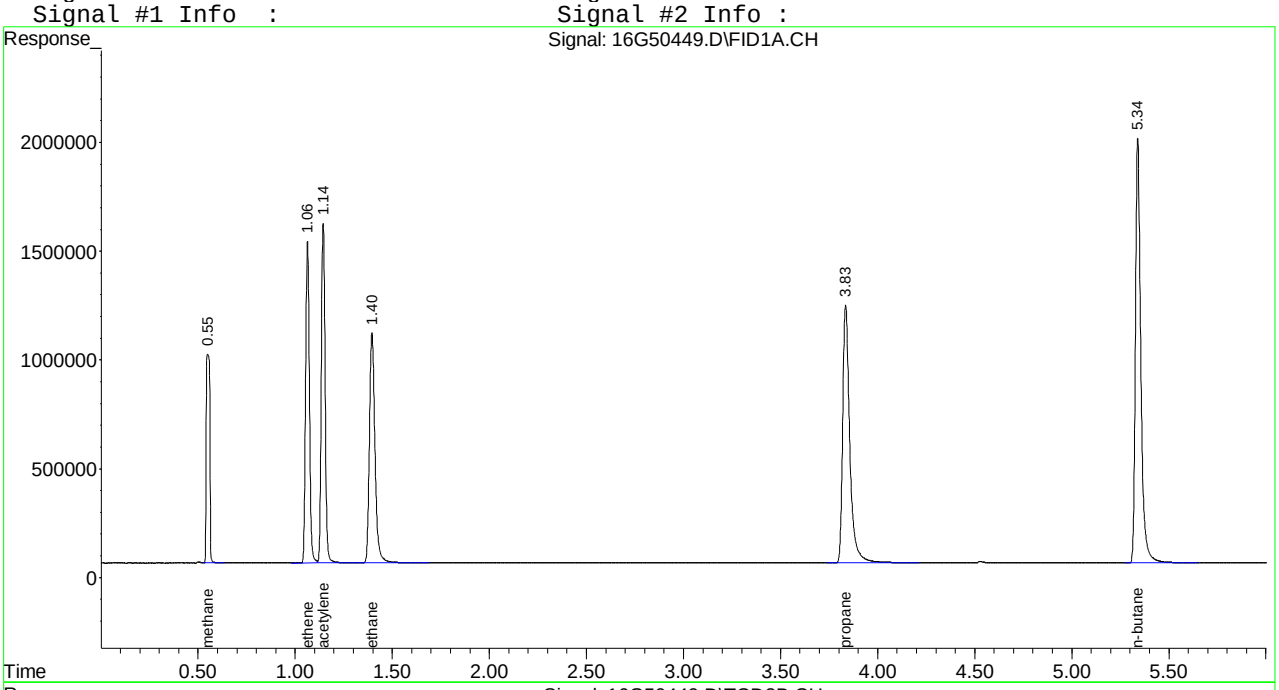

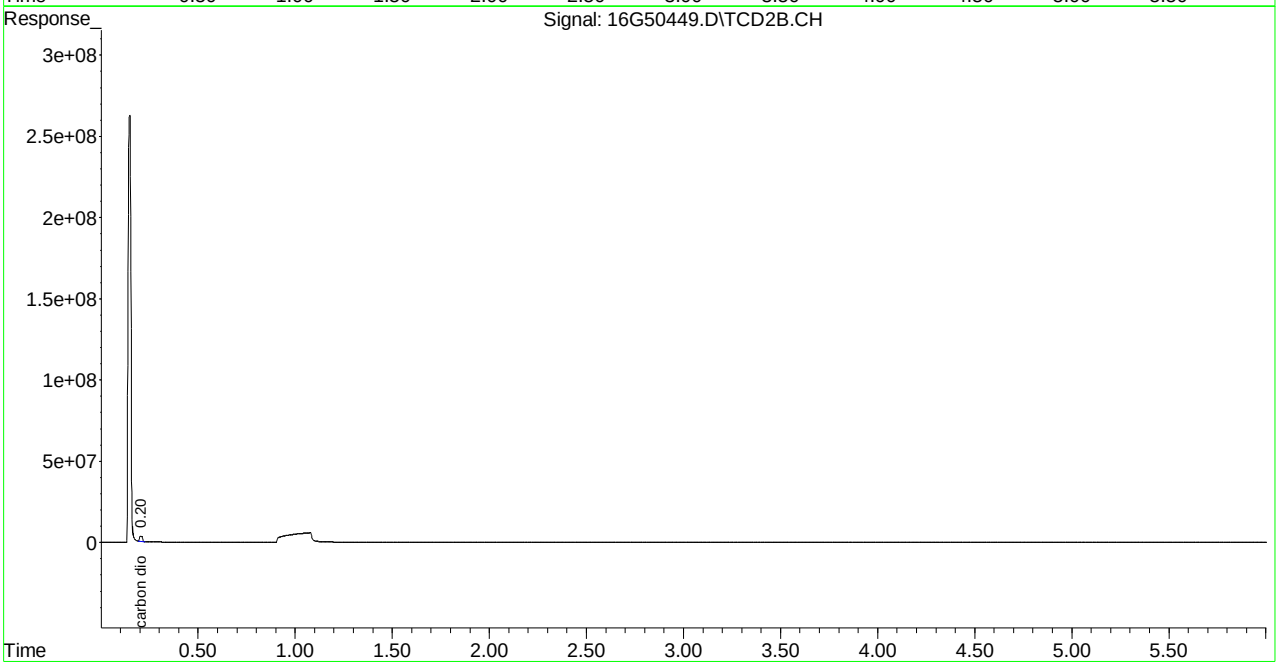

16G50449.D RSKEXT1.M Mon Aug 08 15:21:33 2016 Page 2

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081016\16G50505.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\081016\16G50505.D\TCD2B.CH
Acq On : 10 Aug 2016 14:16 Operator: JDS
Sample : WG579716-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 14:22:11 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12104475	65.967	umol/
2) T	ethene	1.06	19767371	63.344	umol/
3) T	acetylene	1.14	20988600	67.213	umol/
4) T	ethane	1.39	20406472	63.984	umol/
5) T	propane	3.84	28899050	61.258	umol/
6) T	n-butane	5.34	35670672	58.342	umol/
8) T	carbon dioxide	0.21	32510371	6158.988	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G50505.D RSKEXT1.M Wed Aug 10 14:22:11 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081016\16G50505.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\081016\16G50505.D\TCD2B.CH
Acq On : 10 Aug 2016 14:16 Operator: JDS
Sample : WG579716-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 14:22 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

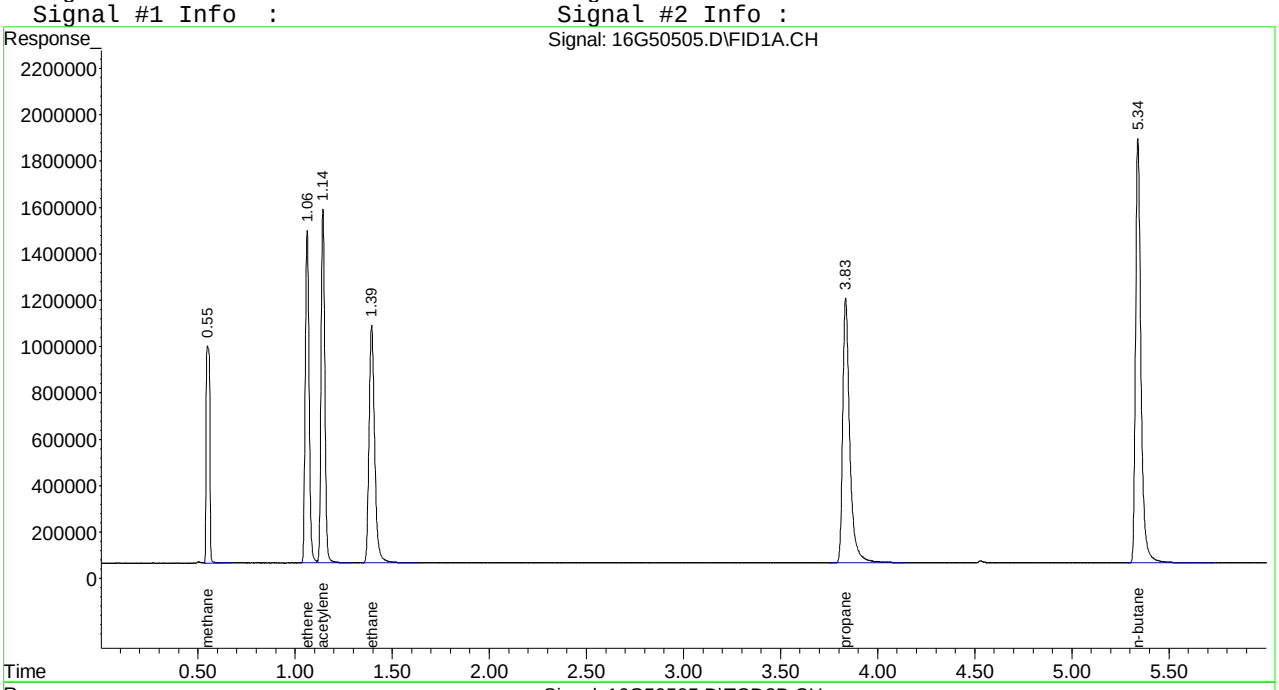

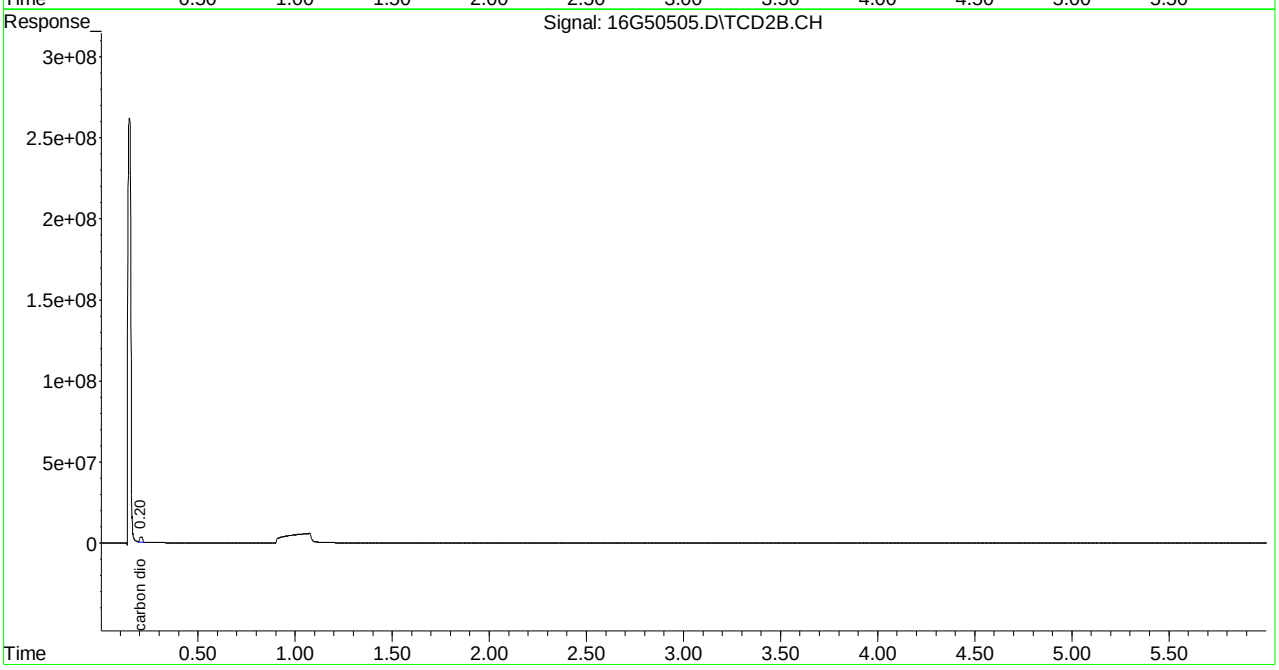

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081016\16G50506.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\081016\16G50506.D\TCD2B.CH
Acq On : 10 Aug 2016 14:27 Operator: JDS
Sample : WG579716-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 14:33:20 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11942837	65.065	umol/
2) T	ethene	1.06	19361225	62.043	umol/
3) T	acetylene	1.14	19427505	62.214	umol/
4) T	ethane	1.40	20099469	63.022	umol/
5) T	propane	3.84	28826608	61.104	umol/
6) T	n-butane	5.34	36482829	59.671	umol/
8) T	carbon dioxide	0.20	29766092	5639.093	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G50506.D RSKEXT1.M Wed Aug 10 14:33:20 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081016\16G50506.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\081016\16G50506.D\TCD2B.CH
Acq On : 10 Aug 2016 14:27 Operator: JDS
Sample : WG579716-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 14:33 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

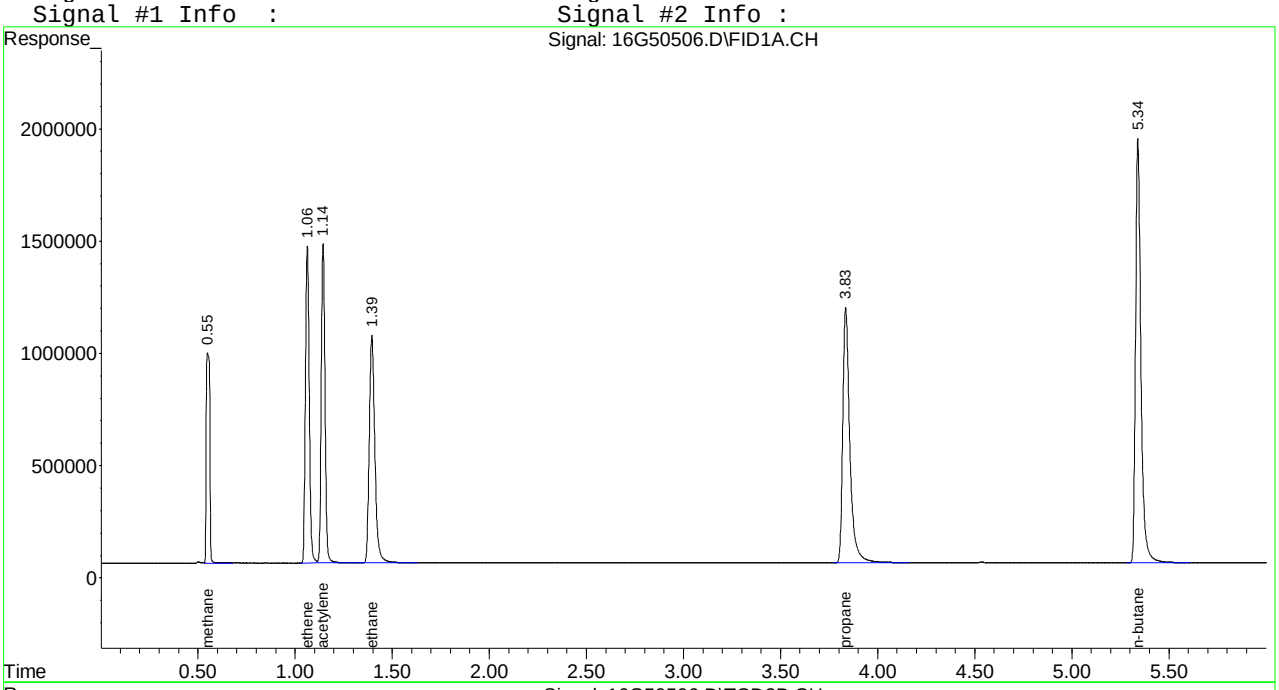

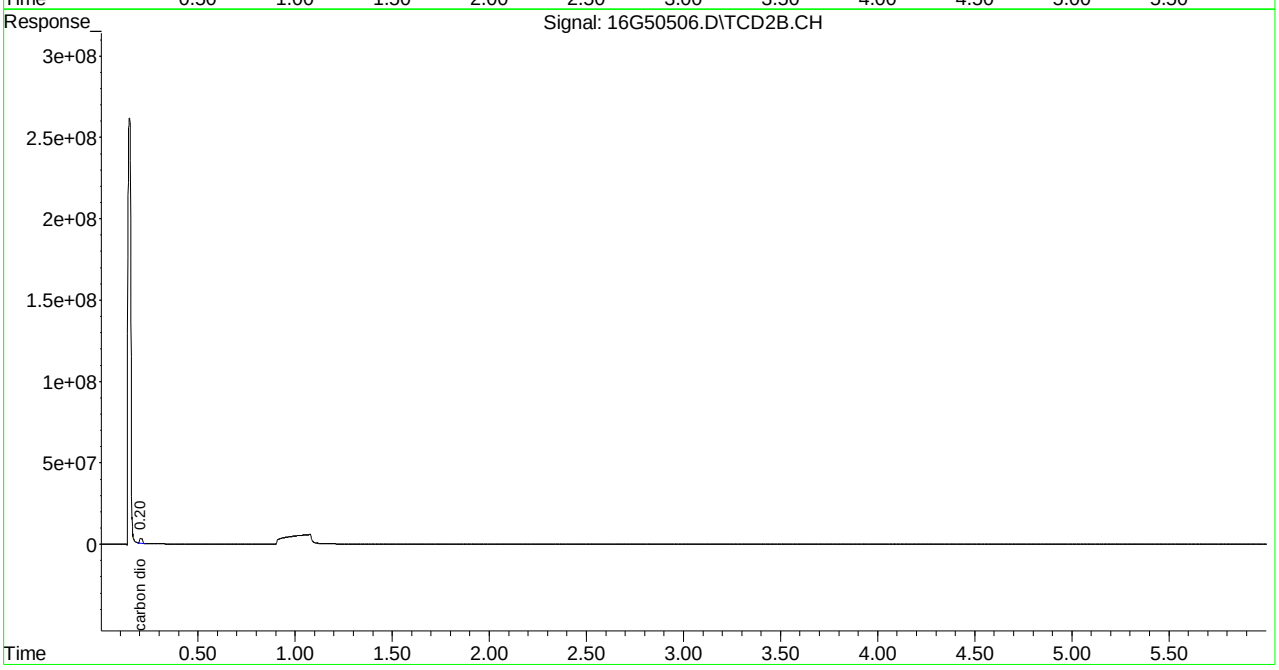

2.2 Metals Data

2.2.1 Metals I C P Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW02-080416	**Prep Method:**	3015	**Prep Date:**	08/09/2016 12:31
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579664	**Analyst:**	JYH	**Run Date:**	08/10/2016 15:46
Collect Date:	08/04/2016 08:55	**Dilution:**	1	**File ID:**	T3.081016.154618
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	2.04		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L16080317-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW02FF-080416	**Prep Method:**	3015	**Prep Date:**	08/09/2016 12:31
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579664	**Analyst:**	JYH	**Run Date:**	08/10/2016 15:50
Collect Date:	08/04/2016 08:55	**Dilution:**	1	**File ID:**	T3.081016.155010
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	1.66		0.200	0.100	0.0500
Magnesium, Dissolved	7439-95-4	11.9		1.00	0.500	0.250

2.2.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific IRIS Advantage

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG579570
Analyst: ERP
Spike Analyst: ERP
Run Date: 08/09/2016 12:31
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 08/09/2016 12:31

SOP: ME407 Revison 19
Spike Solution: STD77187
Spike Witness: REK
HNO3 Lot #: COA19069
HCL Lot #: COA19029
40 & 50 ML. DIGESTION TU COA18987
ICP FILTERS LOT#R6BA1587 RGT37256

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG579570-02	BLANK	1	40 mL	50 mL	205.349 g	205.342 g		
2	WG579321-01	FBLK1	17	5 mL	50 mL	204.018 g	203.988 g		
3	WG579321-02	FBLK2	17	5 mL	50 mL	206.712 g	206.697 g		
4	WG579570-03	LCS	1	40 mL	50 mL	212.792 g	212.778 g	5 mL	
5	L16080276-01	SAMP	17	5 mL	50 mL	205.616 g	205.601 g		08/12/16
6	L16080317-04	SAMP	1	40 mL	50 mL	204.527 g	204.486 g		08/16/16
7	L16080317-05	SAMP	1	40 mL	50 mL	206.874 g	206.843 g		08/16/16
8	L16080334-04	SAMP	17	5 mL	50 mL	204.249 g	204.235 g		08/12/16
9	L16080334-05	SAMP	17	5 mL	50 mL	207.157 g	207.15 g		08/12/16
10	L16080377-01	SAMP	17	5 mL	50 mL	205.533 g	205.513 g		08/11/16
11	WG579570-01	REF	17	5 mL	50 mL	203.837 g	203.825 g		
12	L16080378-02	SAMP	17	5 mL	50 mL	203.837 g	203.825 g		08/12/16
13	L16080415-01	SAMP	1	40 mL	50 mL	205.051 g	205.029 g		08/19/16
14	L16080415-02	SAMP	1	40 mL	50 mL	206.536 g	206.516 g		08/19/16
15	WG579570-04	MS	1	5 mL	50 mL	209.59 g	209.506 g	5 mL	
16	WG579570-05	MSD	1	5 mL	50 mL	211.89 g	211.885 g	5 mL	

Analyst: Erin Potter

Reviewer:

MW_DIG - Modified 09/30/2009
PDF ID: 4890068
Report generated: 08/09/2016 13:24

TCLP Non-Volatile

Analyst(s): AMA / BNB
Date: 8-8-16
Filter Lot #: 9248160D30
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
AMA/BNB 8-8-16		AMA/BNB 8-9-16	
Time On	Temp On °C	Time Off	Temp Off °C
1650	24.4	0852	22.3

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	08-0276-01	Me	1311	F_2-382	S	100	12.80	10.55	25.80	516	8.46
D	08-0334-04	Me		F_1-186			7.26	2.63	100.90	2018	5.71
D	08-0334-05	Me		F_2-382			8.19	5.41	25.80	516	6.13
	08-0349-01	300 SPLP-E	1312	F_1-65	S	100	NA	NA	25.17	503	9.53
	-02								25.70	514	9.60
	-03								25.57	511	9.45
	-04								25.52	510	8.80
	-05								25.22	504	9.55
	-06								25.55	511	9.46
	-07								25.37	507	8.60
	-08								25.57	511	9.51
	-09								25.86	517	8.39
	-10								25.01	500	9.49
	-11								25.37	507	9.49
	-12								25.30	506	9.34
	-13								25.45	509	9.49
	-14								25.30	506	8.70
	-15								25.70	514	9.43
	-16								25.60	512	9.44
	-17								25.80	516	9.43
	-18								25.90	518	9.61
	-19								25.65	513	6.64
	-20								25.35	507	9.50
	-21								25.40	508	9.45
	-22								25.23	504	9.48

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: NA

Peer Review By: [signature]

Page 182

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 081016T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838

ICSA: STD77063 ICSAB: STD77064 Int. Std: RGT31668

CCV: STD77089 LLCCV: STD77092 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 579045,579239,579747,579664,579662,579778

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.081016.095235	WG579759-01	Calibration Point		1		08/10/16 09:52
2	T3.081016.095632	WG579759-02	Calibration Point		1		08/10/16 09:56
3	T3.081016.100030	WG579759-03	Calibration Point		1		08/10/16 10:00
4	T3.081016.100428	WG579759-04	Calibration Point		1		08/10/16 10:04
5	T3.081016.100804	WG579759-05	Calibration Point		1		08/10/16 10:08
6	T3.081016.101142	WG579759-06	Initial Calibration Verification		1		08/10/16 10:11
7	T3.081016.101519	WG579759-07	Initial Calib Blank		1		08/10/16 10:15
8	T3.081016.101919	WG579759-08	Low Level Initial Calibration V		1		08/10/16 10:19
9	T3.081016.102312	WG579759-09	Low Level Initial Calibration V		1		08/10/16 10:23
10	T3.081016.102702	WG579759-10	Interference Check		1		08/10/16 10:27
11	T3.081016.103052	WG579759-11	Interference Check		1		08/10/16 10:30
12	T3.081016.103434	WG579759-12	CCV		1		08/10/16 10:34
13	T3.081016.103810	WG579759-13	CCB		1		08/10/16 10:38
14	T3.081016.104515	WG578864-02	Method/Prep Blank	40/50	1		08/10/16 10:45
15	T3.081016.104913	L16080002-09	DOC-1	40/50	1		08/10/16 10:49
16	T3.081016.105250	L16080002-10	DOC-1	40/50	1		08/10/16 10:52
17	T3.081016.105627	L16080002-11	DOC-1	40/50	1		08/10/16 10:56
18	T3.081016.110005	L16080002-12	DOC-1	40/50	1		08/10/16 11:00
19	T3.081016.110345	WG579759-14	CCV		1		08/10/16 11:03
20	T3.081016.110721	WG579759-15	CCB		1		08/10/16 11:07
21	T3.081016.111121	WG578986-02	Method/Prep Blank	40/50	1		08/10/16 11:11
22	T3.081016.111518	WG578986-03	Laboratory Control S	40/50	1		08/10/16 11:15
23	T3.081016.111855	WG578986-01	Reference Sample		1	L16080151-01	08/10/16 11:18
24	T3.081016.112249	WG578986-04	Matrix Spike	5/50	1	L16080151-01	08/10/16 11:22
25	T3.081016.112627	WG578986-05	Matrix Spike Duplica	5/50	1	L16080151-01	08/10/16 11:26
26	T3.081016.113006	L16080164-02	PERMEATE(T-3100)	1/50	1		08/10/16 11:30
27	T3.081016.113401	L16080164-04	BLEED(T-3100)	1/50	1		08/10/16 11:34
28	T3.081016.113754	L16080164-06	N. DOCK FLUME(BLD. 72)	1/50	1		08/10/16 11:37
29	T3.081016.114152	WG579239-05	Post Digestion Spike		1	L16080164-06	08/10/16 11:41
30	T3.081016.114547	WG579239-06	Serial Dilution		5	L16080164-06	08/10/16 11:45
31	T3.081016.114946	WG579759-16	CCV		1		08/10/16 11:49
32	T3.081016.115322	WG579759-17	CCB		1		08/10/16 11:53
33	T3.081016.115721	L16080214-01	45-15-2.3 P1	40/50	1		08/10/16 11:57
34	T3.081016.120116	L16080133-01	T1360		10		08/10/16 12:01

Page: 1 Approved: August 11, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 081016T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD77063 ICSAB: STD77064 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 579045,579239,579747,579664,579662,579778

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.081016.120508	L16080133-02	T1363		10		08/10/16 12:05
36	T3.081016.120854	L16080133-03	T1365		10		08/10/16 12:08
37	T3.081016.121241	L16080205-01	45-10-5.02 W1	40/50	1		08/10/16 12:12
38	T3.081016.121635	L16080210-01	45-15-3.1 W1	40/50	1		08/10/16 12:16
39	T3.081016.122028	L16080211-01	45-15-3.1 S1	40/50	1		08/10/16 12:20
40	T3.081016.122411	L16080213-01	45-13-3 S1	40/50	1		08/10/16 12:24
41	T3.081016.122805	L16080213-02	45-13-3 W1	40/50	1		08/10/16 12:28
42	T3.081016.123158	L16080213-02	45-13-3 W1		1		08/10/16 12:31
43	T3.081016.123557	WG579759-18	CCV		1		08/10/16 12:35
44	T3.081016.123933	WG579759-19	CCB		1		08/10/16 12:39
45	T3.081016.124332	WG579303-02	Method/Prep Blank	40/50	1		08/10/16 12:43
46	T3.081016.124729	WG579303-03	Laboratory Control S	40/50	1		08/10/16 12:47
47	T3.081016.125107	L16080002-05	DOC-1	40/50	1		08/10/16 12:51
48	T3.081016.125443	L16080002-06	DOC-1	40/50	1		08/10/16 12:54
49	T3.081016.125820	L16080002-07	DOC-1	40/50	1		08/10/16 12:58
50	T3.081016.130158	L16080002-08	DOC-1	40/50	1		08/10/16 13:01
51	T3.081016.130536	WG579759-20	CCV		1		08/10/16 13:05
52	T3.081016.130912	WG579759-21	CCB		1		08/10/16 13:09
53	T3.081016.131311	WG579303-01	Reference Sample		1	L16080330-07	08/10/16 13:13
54	T3.081016.131705	WG579303-04	Matrix Spike	40/50	1	L16080330-07	08/10/16 13:17
55	T3.081016.132050	WG579303-05	Matrix Spike Duplica	40/50	1	L16080330-07	08/10/16 13:20
56	T3.081016.132433	L16080208-01	1804-110 S1	40/50	1		08/10/16 13:24
57	T3.081016.132826	L16080282-01	1808-110 S1	40/50	1		08/10/16 13:28
58	T3.081016.133221	L16080282-02	1808-110 S2	40/50	1		08/10/16 13:32
59	T3.081016.133615	L16080282-03	1808-110 P1	40/50	1		08/10/16 13:36
60	T3.081016.134009	WG579662-01	Post Digestion Spike		1	L16080282-03	08/10/16 13:40
61	T3.081016.134346	WG579662-02	Serial Dilution		5	L16080282-03	08/10/16 13:43
62	T3.081016.134742	WG579662-02	Serial Dilution		25	L16080282-03	08/10/16 13:47
63	T3.081016.135140	WG579759-22	CCV		1		08/10/16 13:51
64	T3.081016.135516	WG579759-23	CCB		1		08/10/16 13:55
65	T3.081016.135916	L16080282-04	1808-110 P2	40/50	1		08/10/16 13:59
66	T3.081016.140310	L16080330-06	46WW05F-080316	40/50	1		08/10/16 14:03
67	T3.081016.140705	L16080330-09	46WW16F-080316	40/50	1		08/10/16 14:07
68	T3.081016.141047	L16080330-10	46WW16FF-080316	40/50	1		08/10/16 14:10

Page: 2 Approved: August 11, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 081016T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD77063 ICSAB: STD77064 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 579045,579239,579747,579664,579662,579778

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.081016.141439	L16080330-11	LHSMW19-080316	40/50	1		08/10/16 14:14
70	T3.081016.141832	L16080330-12	LHSMW19FF-080316	40/50	1		08/10/16 14:18
71	T3.081016.142225	L16080330-13	46WW11-080316	40/50	1		08/10/16 14:22
72	T3.081016.142619	L16080330-14	46WW11FF-080316	40/50	1		08/10/16 14:26
73	T3.081016.143013	L16080330-16	46WW09F-080316	40/50	1		08/10/16 14:30
74	T3.081016.143405	L16080330-17	46WW09FF-080316	40/50	1		08/10/16 14:34
75	T3.081016.143758	WG579759-24	CCV		1		08/10/16 14:37
76	T3.081016.144134	WG579759-25	CCB		1		08/10/16 14:41
77	T3.081016.144531	WG579570-02	Method/Prep Blank	40/50	1		08/10/16 14:45
78	T3.081016.144928	WG579570-03	Laboratory Control S	40/50	1		08/10/16 14:49
79	T3.081016.145306	WG579321-01	Fluid Blank 1		1		08/10/16 14:53
80	T3.081016.145702	WG579321-02	Fluid Blank 2		1		08/10/16 14:57
81	T3.081016.150101	WG579570-01	Reference Sample		1	L16080378-02	08/10/16 15:01
82	T3.081016.150458	WG579570-04	Matrix Spike	5/50	1	L16080378-02	08/10/16 15:04
83	T3.081016.150835	WG579570-05	Matrix Spike Duplica	5/50	1	L16080378-02	08/10/16 15:08
84	T3.081016.151211	L16080377-01	60500-SSP0039-SPLP025	5/50	1		08/10/16 15:12
85	T3.081016.151602	WG579664-01	Post Digestion Spike		1	L16080377-01	08/10/16 15:16
86	T3.081016.151939	WG579664-02	Serial Dilution		5	L16080377-01	08/10/16 15:19
87	T3.081016.152335	WG579759-26	CCV		1		08/10/16 15:23
88	T3.081016.152712	WG579759-27	CCB		1		08/10/16 15:27
89	T3.081016.153111	WG579239-05	Post Digestion Spike		1	L16080164-06	08/10/16 15:31
90	T3.081016.153450	WG579759-28	CCV		1		08/10/16 15:34
91	T3.081016.153826	WG579759-29	CCB		1		08/10/16 15:38
92	T3.081016.154224	L16080276-01	8-4-16/AWV 28 BAGS	5/50	1		08/10/16 15:42
93	T3.081016.154618	L16080317-04	46WW02-080416	40/50	1		08/10/16 15:46
94	T3.081016.155010	L16080317-05	46WW02FF-080416	40/50	1		08/10/16 15:50
95	T3.081016.155402	L16080334-04	H6G0696-04	5/50	1		08/10/16 15:54
96	T3.081016.155756	L16080334-05	H6G0696-05	5/50	1		08/10/16 15:57
97	T3.081016.160148	L16080415-01	LH18/24-SP650-6383-GRAB	40/50	1		08/10/16 16:01
98	T3.081016.160548	L16080415-02	LH18/24-SP650-6383-COMP	40/50	1		08/10/16 16:05
99	T3.081016.160941	WG579664-02	Serial Dilution		25	L16080377-01	08/10/16 16:09
100	T3.081016.161338	WG579759-30	CCV		1		08/10/16 16:13
101	T3.081016.161715	WG579759-31	CCB		1		08/10/16 16:17
102	T3.081016.162113	WG579759-32	Low Level Continuing Calibra		1		08/10/16 16:21

Page: 3 Approved: August 11, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 081016T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD77063 ICSAB: STD77064 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 579045,579239,579747,579664,579662,579778

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.081016.162507	WG579759-33	Low Level Continuing Calibra		1		08/10/16 16:25
104	T3.081016.162856	WG579502-01	Method/Prep Blank	1/50	1		08/10/16 16:28
105	T3.081016.163252	WG579502-02	Laboratory Control S	1/50	1		08/10/16 16:32
106	T3.081016.163643	WG579502-03	Laboratory Control S	1/50	1		08/10/16 16:36
107	T3.081016.164034	L16080245-41	17030-WP01-WP006	1/50	1		08/10/16 16:40
108	T3.081016.164428	L16080245-42	17030-WP01-WP007	1/50	1		08/10/16 16:44
109	T3.081016.164822	L16080245-43	17030-WP01-WP008	1/50	1		08/10/16 16:48
110	T3.081016.165216	L16080245-44	17030-WP01-WP009	1/50	1		08/10/16 16:52
111	T3.081016.165605	L16080245-45	17030-WP01-WP010	1/50	1		08/10/16 16:56
112	T3.081016.165959	L16080245-46	17030-WP01-WP011	1/50	1		08/10/16 16:59
113	T3.081016.170351	L16080245-47	17030-WP01-WP012	1/50	1		08/10/16 17:03
114	T3.081016.170745	WG579747-01	Post Digestion Spike		1	L16080245-47	08/10/16 17:07
115	T3.081016.171124	WG579747-02	Serial Dilution		5	L16080245-47	08/10/16 17:11
116	T3.081016.171518	WG579759-34	CCV		1		08/10/16 17:15
117	T3.081016.171854	WG579759-35	CCB		1		08/10/16 17:18
118	T3.081016.172252	WG579759-36	Low Level Continuing Calibra		1		08/10/16 17:22
119	T3.081016.172646	WG579759-37	Low Level Continuing Calibra		1		08/10/16 17:26
120	T3.081016.173038	WG579648-02	Method/Prep Blank	40/50	1		08/10/16 17:30
121	T3.081016.173436	WG579648-03	Laboratory Control S	40/50	1		08/10/16 17:34
122	T3.081016.173813	L16080440-03	FT02PTS-INFLUENT-8AUG2		1	WG579648-01	08/10/16 17:38
123	T3.081016.174208	WG579648-04	Matrix Spike	40/50	1	L16080440-03	08/10/16 17:42
124	T3.081016.174545	WG579648-05	Matrix Spike Duplica	40/50	1	L16080440-03	08/10/16 17:45
125	T3.081016.174921	L16080425-01	18215-G17-WQ-W0049	40/50	1		08/10/16 17:49
126	T3.081016.175319	L16080425-02	18215-G18-WQ-W0054	40/50	1		08/10/16 17:53
127	T3.081016.175716	WG579778-01	Post Digestion Spike		1	L16080425-02	08/10/16 17:57
128	T3.081016.180054	WG579778-02	Serial Dilution		5	L16080425-02	08/10/16 18:00
129	T3.081016.180451	WG579778-02	Serial Dilution		25	L16080425-02	08/10/16 18:04
130	T3.081016.180848	WG579759-38	CCV		1		08/10/16 18:08
131	T3.081016.181224	WG579759-39	CCB		1		08/10/16 18:12
132	T3.081016.181621	L16080334-01	H6G0696-01	1/50	1		08/10/16 18:16
133	T3.081016.182015	L16080334-02	H6G0696-02	1/50	1		08/10/16 18:20
134	T3.081016.182411	L16080334-03	H6G0696-03	1/50	1		08/10/16 18:24
135	T3.081016.182808	L16080425-03	19006-B02-WQ-W0008	40/50	1		08/10/16 18:28
136	T3.081016.183205	L16080425-04	19206-G02-WQ-W0020	40/50	1		08/10/16 18:32

Page: 4 Approved: August 11, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 081016T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD77063 ICSAB: STD77064 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 579045,579239,579747,579664,579662,579778

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.081016.183604	L16080425-05	19206-G07-WQ-W0044	40/50	1		08/10/16 18:36
138	T3.081016.184002	L16080438-01	S6H0268-01	1/50	1		08/10/16 18:40
139	T3.081016.184354	L16080439-01	LF30/31-EWTS-EFFLUENT-8	40/50	1		08/10/16 18:43
140	T3.081016.184749	L16080439-02	LF30/31-EWTS-MH3-8AUG2	40/50	1		08/10/16 18:47
141	T3.081016.185144	L16080439-03	LF30/31-EWTS-MH2-8AUG2	40/50	1		08/10/16 18:51
142	T3.081016.185542	WG579759-40	CCV		1		08/10/16 18:55
143	T3.081016.185918	WG579759-41	CCB		1		08/10/16 18:59
144	T3.081016.190316	L16080439-04	LF30/31-EWTS-MH1-8AUG2		1		08/10/16 19:03
145	T3.081016.190711	L16080439-05	LF30/31-EWTS-INFLUENT-8		1		08/10/16 19:07
146	T3.081016.191105	L16080440-01	FT02PTS-EFFLUENT-8AUG		1		08/10/16 19:11
147	T3.081016.191500	L16080440-02	FT02PTS-INTERMEDIATE-8		1		08/10/16 19:15
148	T3.081016.191855	L16080457-01	27-5-2.03 RW1(U)		1		08/10/16 19:18
149	T3.081016.192247	L16080457-02	27-5-2.03 RW1(U)		1		08/10/16 19:22
150	T3.081016.192640	L16080457-03	27-5-2.03 RW1(T)		1		08/10/16 19:26
151	T3.081016.193036	WG579759-42	CCV		1		08/10/16 19:30
152	T3.081016.193412	WG579759-43	CCB		1		08/10/16 19:34
153	T3.081016.193810	WG579759-44	Low Level Continuing Calibra		1		08/10/16 19:38
154	T3.081016.194203	WG579759-45	Low Level Continuing Calibra		1		08/10/16 19:42
155	T3.081016.194555	L16080133-01	T1360		1		08/10/16 19:45
156	T3.081016.194946	L16080133-02	T1363		1		08/10/16 19:49
157	T3.081016.195338	L16080133-03	T1365		1		08/10/16 19:53
158	T3.081016.195729	WG579759-46	CCV		1		08/10/16 19:57
159	T3.081016.200106	WG579759-47	CCB		1		08/10/16 20:01

Page: 5 Approved: August 11, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 10-AUG-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C
Instrument: ICP-THERMO3
Curve Workgroup: 579759
Runlog ID: 76833
Analytical Workgroups: 579045,579239,579747,579664,579662,579778

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	245,317,377,415,002,330,425,439
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
11-AUG-2016

Secondary Reviewer:
11-AUG-2016

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-11-2016 14:59:04

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG579664

Login Number: L16080317

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW02-080416	04	08/04/16					08/09/2016	5.2	180		08/10/16	6.3	180	
46WW02FF-080416	05	08/04/16					08/09/2016	5.2	180		08/10/16	6.3	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4893197
Report generated 08/11/2016 13:19

METHOD BLANK SUMMARY

Login Number: L16080317
Blank File ID: T3.081016.144531
Prep Date: 08/09/16 12:31
Analyzed Date: 08/10/16 14:45
Analyst: JYH

Work Group: WG579664
Blank Sample ID: WG579570-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG579570-03	T3.081016.144928	08/10/16 14:49	01
46WW02-080416	L16080317-04	T3.081016.154618	08/10/16 15:46	01
46WW02FF-080416	L16080317-05	T3.081016.155010	08/10/16 15:50	01

Report Name: BLANK_SUMMARY
PDF File ID: 4893198
Report generated 08/11/2016 14:02

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080317 Prep Date: 08/09/16 12:31 Sample ID: WG579570-02
Instrument ID: ICP-THERMO3 Run Date: 08/10/16 14:45 Prep Method: 3015
File ID: T3.081016.144531 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG579664 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-10-AUG-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Dissolved	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4893199
11-AUG-2016 14:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080317 Run Date: 08/10/2016 Sample ID: WG579570-03
Instrument ID: ICP-THERMO3 Run Time: 14:49 Prep Method: 3015
File ID: T3.081016.144928 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG579664 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD77187 Cal ID: ICP-TH-10-AUG-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Total	2.50	2.61	104	80 - 120	
Magnesium, Dissolved	6.25	6.38	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4893200
Report generated: 08/11/2016 14:02

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16080317 Cal ID: ICP-THERMO3 - Worknum: WG579664
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG579570-01 File ID: T3.081016.150101 Dil: 1 Matrix: WATER
Sample ID: WG579570-04 MS File ID: T3.081016.150458 Dil: 1 Units: mg/L
Sample ID: WG579570-05 MSD File ID: T3.081016.150835 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron	12.9	20.0	34.7	109	20.0	35.2	111	1.42	80 - 120	20	
Magnesium	33.8	50.0	86.1	105	50.0	86.0	104	0.112	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4893201
Report generated 08/11/2016 13:19

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16080317 **Worknum:** WG579664
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG579664-02 **File ID:** T3.081016.151939 **Dil:** 5 **Units:** ug/L
Sample: L16080377-01 **File ID:** T3.081016.151211 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Iron	ND	U	ND	U		
Magnesium	2860		2680		6.16	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4893195
08/11/2016 13:19

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16080317 **Worknum:** WG579664
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG579664-01 **File ID:** T3.081016.151602 **Dil:** 1 **Units:** ug/L
Sample ID: L16080377-01 **File ID:** T3.081016.151211 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
IRON	2110		0	U	2000	105.4	75 - 125	
MAGNESIUM	7720		2860		5000	103.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4893196
Report generated: 08/11/2016 14:02

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16080317	Workgroup (AAB#):	WG579664
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG579759	Initial Calibration Date:	10-AUG-2016 10:08

	WG579759-01		WG579759-02		WG579759-03		WG579759-04		WG579759-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
IRON	0	-0.0000700	.04	0.000220	.08	0.00108	4	0.0687	8	0.138	.99968	
MAGNESIUM	0	-0.000200	NA	NA	.2	0.000640	10	0.0655	20	0.132	.999888	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4893204
Report generated: 11-AUG-2016 13:19

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16080317
Instrument ID: ICP-THERMO3
File ID: T3.081016.101519
Workgroup (AAB#): WG579664
Matrix: WATER

Run Date: 08/10/2016
Run Time: 10:15
Analyst: JYH
Cal ID: ICP-THERI - 10-AUG-16

Sample ID: WG579759-07
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U

U = Result is less than 2 x MDL
F = Result is between MDL and 2 x MDL
* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4893206
Report generated 08/11/2016 13:19

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080317
Run Date: 08/10/2016
Sample ID: WG579759-13
Instrument ID: ICP-THERMO3
Run Time: 10:38
Method: 6010C
File ID: T3.081016.103810
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG579664
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4893209
Report generated 08/11/2016 13:19

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080317
Run Date: 08/10/2016
Sample ID: WG579759-25
Instrument ID: ICP-THERMO3
Run Time: 14:41
Method: 6010C
File ID: T3.081016.144134
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG579664
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4893209
Report generated 08/11/2016 13:19

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080317
Run Date: 08/10/2016
Sample ID: WG579759-27
Instrument ID: ICP-THERMO3
Run Time: 15:27
Method: 6010C
File ID: T3.081016.152712
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG579664
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4893209
Report generated 08/11/2016 13:19

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080317
Run Date: 08/10/2016
Sample ID: WG579759-29
Instrument ID: ICP-THERMO3
Run Time: 15:38
Method: 6010C
File ID: T3.081016.153826
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG579664
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4893209
Report generated 08/11/2016 13:19

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080317
Run Date: 08/10/2016
Sample ID: WG579759-31
Instrument ID: ICP-THERMO3
Run Time: 16:17
Method: 6010C
File ID: T3.081016.161715
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG579664
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4893209
Report generated 08/11/2016 13:19

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16080317 Run Date: 08/10/2016 Sample ID: WG579759-06
Instrument ID: ICP-THERMO3 Run Time: 10:11 Method: 6010C
File ID: T3.081016.101142 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG579664 Cal ID: ICP-TH - 10-AUG-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Iron		4	3.94	98.6	90 - 110	
Magnesium		10	9.89	98.9	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4893205
Report generated 08/11/2016 13:19

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080317
Run Date: 08/10/2016
Sample ID: WG579759-12
Instrument ID: ICP-THERMO3
Run Time: 10:34
Method: 6010C
File ID: T3.081016.103434
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579664
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	3.85	mg/L	96.2	90 - 110		
Magnesium		10.0	9.72	mg/L	97.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4893208
Report generated 08/11/2016 13:19

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080317
Run Date: 08/10/2016
Sample ID: WG579759-24
Instrument ID: ICP-THERMO3
Run Time: 14:37
Method: 6010C
File ID: T3.081016.143758
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579664
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.05	mg/L	101	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4893208
Report generated 08/11/2016 13:19

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080317
Run Date: 08/10/2016
Sample ID: WG579759-26
Instrument ID: ICP-THERMO3
Run Time: 15:23
Method: 6010C
File ID: T3.081016.152335
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579664
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.07	mg/L	102	90 - 110		
Magnesium		10.0	9.92	mg/L	99.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4893208
Report generated 08/11/2016 13:19

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080317
Run Date: 08/10/2016
Sample ID: WG579759-28
Instrument ID: ICP-THERMO3
Run Time: 15:34
Method: 6010C
File ID: T3.081016.153450
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579664
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.04	mg/L	101	90 - 110		
Magnesium		10.0	9.88	mg/L	98.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4893208
Report generated 08/11/2016 13:19

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080317
Run Date: 08/10/2016
Sample ID: WG579759-30
Instrument ID: ICP-THERMO3
Run Time: 16:13
Method: 6010C
File ID: T3.081016.161338
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579664
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.05	mg/L	101	90 - 110		
Magnesium		10.0	9.92	mg/L	99.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4893208
Report generated 08/11/2016 13:19

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16080317
Run Date: 08/10/2016
Sample ID: WG579759-08
Instrument ID: ICP-THERMO3
Run Time: 10:19
Method: 6010C
File ID: T3.081016.101919
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579664
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.0697	mg/L	87.1	70 - 130		
Magnesium		0.400	0.378	mg/L	94.4	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4893243
Report generated 08/11/2016 14:02

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16080317
Run Date: 08/10/2016
Sample ID: WG579759-32
Instrument ID: ICP-THERMO3
Run Time: 16:21
Method: 6010C
File ID: T3.081016.162113
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579664
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.0876	mg/L	110	70 - 130		
Magnesium		0.400	0.395	mg/L	98.9	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4893243
Report generated 08/11/2016 14:02

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16080317
Instrument ID: ICP-THERMO3
Sol. A : WG579759-10 **File ID:** T3.081016.102702
Sol. AB : WG579759-11 **File ID:** T3.081016.103052

Workgroup (AAB#): WG579664
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	98.7	98.7	100	95.9	95.9	
Magnesium	250	256	102	250	249	99.6	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4893207
Report generated 08/11/2016 13:19

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16080317 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4893203
Report generated: 08/11/2016 13:19

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16080317 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4893203
Report generated: 08/11/2016 13:19

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16080317 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4893203
Report generated: 08/11/2016 13:19

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16080317 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4893203
Report generated: 08/11/2016 13:19

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16080317 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4893203
Report generated: 08/11/2016 13:19

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16080317 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4893203
Report generated: 08/11/2016 13:19

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16080317 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4893203
Report generated: 08/11/2016 13:19

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16080317 **Date:** 07/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	90.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	360.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4893202
Report generated: 08/11/2016 13:19

2.2.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000134	0.042209	0.000000	1.000000
Al 308.215 {109}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.000668	0.006471	0.000000	1.000000
As 189.042 {478}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.000007	0.019257	0.000000	1.000000
B 249.678 {135}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000003	0.019579	0.000000	1.000000
Ba 455.403 { 74}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.042045	1.679783	0.000000	1.000000
Be 313.107 {108}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.000414	0.775341	0.000000	1.000000
Ca 422.673 { 80}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.001383	0.034309	0.000000	1.000000
Cd 228.802 {447}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000075	0.462943	0.000000	1.000000
Co 228.616 {447}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000080	0.285222	0.000000	1.000000
Cr 267.716 {126}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.000242	0.047974	0.000000	1.000000
Cu 224.700 {450}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000001	0.102579	0.000000	1.000000
Fe 261.187 {129}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000066	0.017179	0.000000	1.000000
K 766.490 { 44}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.018202	0.050042	0.000000	1.000000
Li 670.784 { 50}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.008344	1.402955	0.000000	1.000000
Mg 279.079 {121}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000204	0.006604	0.000000	1.000000
Mn 257.610 {131}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.000167	0.216144	0.000000	1.000000
Mo 202.030 {467}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000009	0.144403	0.000000	1.000000
Na 589.592 { 57}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.002836	0.137138	0.000000	1.000000
Ni 231.604 {446}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000606	0.107885	0.000000	1.000000
P 214.914 {457}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000076	0.011155	0.000000	1.000000
Pb 220.353 {453}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000758	0.050399	0.000000	1.000000
Sb 206.833 {463}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.000196	0.024644	0.000000	1.000000
Se 196.090 {472}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000385	0.014085	0.000000	1.000000
Si 212.412 {459}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.000779	0.031056	0.000000	1.000000
Sn 189.989 {477}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.000036	0.055323	0.000000	1.000000
Sr 407.771 { 83}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.002161	2.777224	0.000000	1.000000
Ti 337.280 {100}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.001382	0.079961	0.000000	1.000000
Tl 190.856 {477}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000249	0.022594	0.000000	1.000000
V 292.402 {115}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000043	0.056664	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.000245	0.335930	0.000000	1.000000
Zr 339.198 { 99}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.003807	3.361613	0.000000	1.000000

Approved: August 11, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999606	0.000003	0.002194	0.007313	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999831	0.000008	0.009860	0.032866	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999375	0.000003	0.003198	0.010660	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999802	0.000002	0.002813	0.009375	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999769	0.000229	0.001224	0.004078	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999838	0.000005	0.000097	0.000325	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999941	0.000024	0.049495	0.164983	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999914	0.000002	0.000268	0.000893	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999802	0.000007	0.000418	0.001392	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999724	0.000004	0.001234	0.004112	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999959	0.000003	0.001364	0.004546	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999680	0.000011	0.032623	0.108744	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999926	0.000193	0.126017	0.420058	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999921	0.000173	0.004160	0.013865	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999888	0.000010	0.095220	0.317400	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999863	0.000011	0.003035	0.010116	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999886	0.000014	0.000437	0.001458	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999956	0.000410	0.037093	0.123643	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999951	0.000003	0.001171	0.003902	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999869	0.000012	0.007051	0.023504	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999889	0.000002	0.003652	0.012172	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999835	0.000003	0.004388	0.014626	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999148	0.000002	0.006358	0.021193	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999725	0.000023	0.002389	0.007963	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999905	0.000005	0.000912	0.003041	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999979	0.000113	0.000509	0.001698	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.998968	0.000023	0.009014	0.030047	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999943	0.000001	0.003197	0.010657	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999982	0.000002	0.001011	0.003370	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999884	0.000032	0.000203	0.000677	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999942	0.000230	0.000545	0.001818	OK.	1.000000	0.000000	1	0

Approved: August 11, 2016

Sample Name: S0 Acquired: 8/10/2016 9:52:35 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00013**	**.00067**	**.00001**	**-.00000**	**.04205**	**.00041**	**.00138**
Stddev	.00009	.00003	.00003	.00002	.00182	.00005	.00157
%RSD	65.709	4.3400	402.65	680.41	4.3314	12.538	113.26
#1	-.00006	.00067	.00004	-.00002	.04126	.00040	.00166
#2	-.00023	.00064	-.00001	.00002	.04076	.00047	-.00030
#3	-.00011	.00070	-.00000	-.00001	.04413	.00037	.00279

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00008**	**-.00008**	**.00024**	**-.00000**	**-.00007**	**-.01821**	**-.00834**
Stddev	.00004	.00005	.00005	.00007	.00021	.00113	.00634
%RSD	49.475	62.993	20.907	5902.4	319.19	6.2083	76.063
#1	-.00008	-.00012	.00026	-.00008	.00011	-.01711	-.00326
#2	-.00011	-.00002	.00028	.00002	-.00030	-.01814	-.00631
#3	-.00004	-.00009	.00019	.00005	-.00001	-.01937	-.01545

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00020**	**.00017**	**-.00001**	**.00284**	**-.00061**	**-.00008**	**-.00076**
Stddev	.00048	.00046	.00005	.00229	.00009	.00005	.00008
%RSD	237.48	275.35	500.61	80.687	14.260	61.897	10.751
#1	-.00051	-.00034	-.00004	.00439	-.00051	-.00005	-.00084
#2	-.00045	.00056	-.00003	.00021	-.00066	-.00005	-.00067
#3	.00035	.00027	.00004	.00392	-.00065	-.00013	-.00076

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00020**	**-.00039**	**.00078**	**.00004**	**.00216**	**-.00138**	**-.00025**
Stddev	.00001	.00009	.00003	.00004	.00135	.00054	.00002
%RSD	3.5659	23.967	4.1450	125.71	62.339	38.917	10.009
#1	.00020	-.00049	.00082	.00008	.00061	-.00172	-.00022
#2	.00019	-.00030	.00076	.00004	.00293	-.00166	-.00025
#3	.00019	-.00037	.00077	-.00001	.00295	-.00076	-.00027

Approved: August 11, 2016

Sample Name: S0 Acquired: 8/10/2016 9:52:35 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	-.00004	.00025	-.00380
Stddev	.00005	.00002	.00204
%RSD	123.03	9.4630	53.768
#1	-.00007	.00027	-.00157
#2	-.00008	.00024	-.00424
#3	.00002	.00023	-.00559
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12436.	73499.	3150.3
Stddev	166.	108.	18.4
%RSD	1.3351	.14630	.58554
#1	12295.	73469.	3162.3
#2	12395.	73409.	3129.0
#3	12619.	73618.	3159.4

Approved: August 11, 2016

Sample Name: S1 Acquired: 8/10/2016 9:56:32 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00007	.00106	.05143	.00065	.00443	.00012	.00027
Stddev	.00004	.00002	.00128	.00003	.00173	.00007	.00005
%RSD	54.456	1.4782	2.4946	4.4911	39.044	56.325	19.157
#1	.00010	.00107	.05139	.00063	.00257	.00009	.00032
#2	.00003	.00107	.05017	.00064	.00474	.00020	.00022
#3	.00009	.00104	.05274	.00069	.00598	.00008	.00026

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00038	.00040	.00022	.00446	.00098	.00098	.05600
Stddev	.00003	.00007	.00025	.00569	.00051	.00009	.00097
%RSD	9.1071	17.213	114.33	127.66	52.651	9.1219	1.7306
#1	.00042	.00042	-.00005	-.00182	.00127	.00102	.05502
#2	.00036	.00045	.00025	.00591	.00038	.00104	.05695
#3	.00036	.00032	.00044	.00929	.00128	.00087	.05604

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00014	.00068	-.00054	.00045	.00172	.00042	.02329
Stddev	.00007	.00004	.00004	.00008	.00012	.00008	.00237
%RSD	51.861	6.4335	7.7007	17.805	6.6771	18.448	10.162
#1	-.00010	.00063	-.00058	.00050	.00180	.00044	.02593
#2	-.00010	.00072	-.00050	.00050	.00178	.00048	.02256
#3	-.00023	.00068	-.00054	.00036	.00159	.00033	.02137

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00054	.00042	.00259	.01936
Stddev	.00088	.00004	.00024	.00051
%RSD	162.60	9.4958	9.4404	2.6391
#1	-.00088	.00037	.00269	.01953
#2	.00046	.00044	.00277	.01878
#3	-.00120	.00045	.00231	.01976

Approved: August 11, 2016

Sample Name: S1 Acquired: 8/10/2016 9:56:32 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13895.**	**83633.**	**3564.0**
Stddev	52.	133.	20.5
%RSD	.37465	.15876	.57424
#1	13862.	83760.	3541.0
#2	13867.	83495.	3570.4
#3	13955.	83643.	3580.4

Approved: August 11, 2016

Sample Name: S2 Acquired: 8/10/2016 10:00:30 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00016	.00154	.00007	.00011	.06395	.00093	.00682
Stddev	.00006	.00003	.00003	.00003	.00052	.00003	.00127
%RSD	34.905	1.8518	39.930	26.186	.81753	3.3175	18.633
#1	.00011	.00157	.00009	.00008	.06334	.00096	.00536
#2	.00016	.00152	.00009	.00014	.06423	.00095	.00740
#3	.00022	.00153	.00004	.00011	.06427	.00090	.00770

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00038	.00067	.00053	.00076	.00108	.02660	.01038
Stddev	.00002	.00008	.00005	.00004	.00039	.00208	.00528
%RSD	5.7198	12.356	9.5406	5.3947	36.033	7.8206	50.849
#1	.00040	.00065	.00048	.00075	.00086	.02628	.00768
#2	.00036	.00076	.00054	.00080	.00085	.02470	.00701
#3	.00038	.00060	.00058	.00072	.00153	.02882	.01647

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00064	.00152	.00196	.10626	.00021	.00143	-.00043
Stddev	.00048	.00054	.00030	.00518	.00006	.00017	.00016
%RSD	75.843	35.750	15.526	4.8761	29.882	12.195	35.875
#1	.00008	.00089	.00215	.10501	.00027	.00151	-.00051
#2	.00087	.00187	.00212	.10182	.00021	.00154	-.00025
#3	.00096	.00180	.00161	.11195	.00015	.00123	-.00053

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00061	-.00024	.00281	.00080	.04401	.00064	-.00011
Stddev	.00014	.00003	.00023	.00009	.00151	.00017	.00005
%RSD	23.368	10.813	8.2170	11.632	3.4404	26.673	45.142
#1	.00066	-.00025	.00298	.00087	.04245	.00079	-.00014
#2	.00073	-.00026	.00289	.00083	.04412	.00045	-.00005
#3	.00045	-.00021	.00255	.00069	.04547	.00066	-.00013

Approved: August 11, 2016

Sample Name: S2 Acquired: 8/10/2016 10:00:30 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00082	.00488	.04545
Stddev	.00003	.00069	.00079
%RSD	4.1141	14.057	1.7362
#1	.00081	.00537	.04632
#2	.00086	.00518	.04477
#3	.00079	.00410	.04528
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	13891.	83145.	3589.7
Stddev	99.	246.	6.2
%RSD	.70997	.29597	.17223
#1	13833.	83155.	3582.6
#2	13835.	83387.	3592.4
#3	14005.	82895.	3594.1

Approved: August 11, 2016

Sample Name: S3 Acquired: 8/10/2016 10:04:28 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01662	.06562	.00758	.00969	1.7103	.03998	.33988	.02493
Stddev	.00008	.00008	.00018	.00003	.0046	.00006	.00216	.00071
%RSD	.48310	.12175	2.4071	.34936	.27201	.15252	.63495	2.8354
#1	.01652	.06570	.00765	.00967	1.7151	.04001	.34049	.02547
#2	.01666	.06554	.00771	.00968	1.7098	.04002	.33748	.02518
#3	.01666	.06562	.00737	.00973	1.7058	.03991	.34166	.02413

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.05628	.02420	.05121	.06866	2.4637	1.3890	.06547	.10791
Stddev	.00178	.00002	.00157	.00103	.0091	.0173	.00010	.00063
%RSD	3.1643	.09761	3.0650	1.4934	.36858	1.2452	.15242	.57996
#1	.05750	.02420	.05221	.06818	2.4622	1.4020	.06537	.10761
#2	.05709	.02422	.05203	.06983	2.4734	1.3956	.06556	.10749
#3	.05423	.02418	.04940	.06795	2.4554	1.3694	.06549	.10863

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14306	6.7817	.05271	.11066	.02452	.02860	.00522	.15369
Stddev	.00476	.0205	.00177	.00264	.00055	.00069	.00010	.00326
%RSD	3.3294	.30305	3.3574	2.3892	2.2470	2.4040	1.8586	2.1233
#1	.14593	6.7839	.05378	.11235	.02488	.02902	.00515	.15575
#2	.14568	6.8011	.05368	.11203	.02480	.02898	.00533	.15540
#3	.13756	6.7602	.05067	.10762	.02389	.02781	.00518	.14993

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.05477	2.7646	.07844	.01014	.05611	.33190	3.3850
Stddev	.00209	.0044	.00052	.00007	.00007	.00987	.0341
%RSD	3.8070	.15811	.65784	.69597	.12082	2.9741	1.0087
#1	.05615	2.7613	.07868	.01016	.05612	.33746	3.4018
#2	.05580	2.7696	.07880	.01020	.05617	.33774	3.4075
#3	.05238	2.7629	.07785	.01007	.05603	.32050	3.3457

Approved: August 11, 2016

Sample Name: S3 Acquired: 8/10/2016 10:04:28 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13252.**	**78380.**	**3420.2**
Stddev	6.	117.	38.1
%RSD	.04352	.14916	1.1146
#1	13251.	78291.	3398.4
#2	13246.	78512.	3397.9
#3	13258.	78337.	3464.2

Approved: August 11, 2016

Sample Name: S4 Acquired: 8/10/2016 10:08:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03335	.13186	.01546	.01962	3.4222	.07963	.69191	.05075
Stddev	.00004	.00014	.00009	.00007	.0273	.00011	.00252	.00020
%RSD	.11294	.10588	.56733	.37811	.79924	.14393	.36444	.39738
#1	.03338	.13179	.01536	.01954	3.4034	.07955	.69029	.05064
#2	.03337	.13202	.01553	.01969	3.4096	.07976	.69062	.05098
#3	.03331	.13177	.01550	.01962	3.4536	.07958	.69482	.05063

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.11469	.04845	.10385	.13755	4.9988	2.8069	.13192	.21711
Stddev	.00017	.00010	.00003	.00141	.0368	.0094	.00128	.00185
%RSD	.14594	.20150	.03286	1.0274	.73699	.33519	.96884	.85265
#1	.11459	.04839	.10387	.13610	4.9779	2.8044	.13085	.21525
#2	.11459	.04840	.10382	.13764	4.9771	2.7990	.13158	.21712
#3	.11488	.04856	.10387	.13892	5.0413	2.8173	.13333	.21895

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.29060	13.803	.10792	.22515	.05003	.05893	.01086	.31621
Stddev	.00039	.061	.00009	.00038	.00012	.00011	.00001	.00021
%RSD	.13390	.44496	.08466	.16847	.23685	.18336	.13752	.06722
#1	.29034	13.756	.10784	.22491	.05011	.05894	.01084	.31597
#2	.29105	13.779	.10802	.22558	.05008	.05904	.01087	.31633
#3	.29041	13.872	.10790	.22495	.04989	.05882	.01086	.31634

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.11113	5.5754	.15741	.02043	.11339	.67691	6.6992
Stddev	.00012	.0362	.00054	.00011	.00019	.00025	.0533
%RSD	.10382	.64860	.34000	.54271	.17132	.03672	.79617
#1	.11103	5.5480	.15708	.02034	.11326	.67683	6.6469
#2	.11110	5.5619	.15712	.02055	.11361	.67719	6.6973
#3	.11125	5.6164	.15803	.02038	.11330	.67671	6.7535

Approved: August 11, 2016

Sample Name: S4 Acquired: 8/10/2016 10:08:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13035.**	**77060.**	**3394.5**
Stddev	16.	213.	17.3
%RSD	.12552	.27603	.51074
#1	13048.	76850.	3409.1
#2	13041.	77054.	3399.2
#3	13017.	77275.	3375.3

Approved: August 11, 2016

Sample Name: ICV Acquired: 8/10/2016 10:11:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39581	9.8531	.39547	.49185	.98157	.04953	9.7387	.04946
Stddev	.00256	.0229	.00347	.00034	.00205	.00011	.1102	.00062
%RSD	.64752	.23206	.87638	.06863	.20846	.21976	1.1317	1.2523
#1	.39307	9.8288	.39492	.49217	.98233	.04941	9.6328	.04964
#2	.39814	9.8742	.39232	.49186	.98313	.04962	9.7304	.04996
#3	.39623	9.8563	.39918	.49150	.97925	.04955	9.8528	.04876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19969	.49371	.50007	3.9435	48.823	.98108	9.8904	.49338
Stddev	.00144	.00091	.00229	.0461	.158	.00905	.0499	.00491
%RSD	.71978	.18465	.45729	1.1702	.32383	.92263	.50446	.99465
#1	.20074	.49298	.50119	3.9096	48.734	.98465	9.9413	.48886
#2	.20028	.49341	.50159	3.9961	49.006	.98780	9.8415	.49269
#3	.19805	.49473	.49744	3.9248	48.730	.97079	9.8883	.49860
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99651	48.681	.49947	9.9455	.50177	1.1780	.39780	4.9198
Stddev	.00998	.051	.00326	.0417	.00137	.0120	.00528	.0217
%RSD	1.0020	.10526	.65307	.41878	.27227	1.0160	1.3281	.44168
#1	1.0028	48.692	.49909	9.9586	.50311	1.1820	.39800	4.9345
#2	1.0017	48.726	.50291	9.9790	.50183	1.1875	.40297	4.9301
#3	.98499	48.625	.49642	9.8989	.50038	1.1646	.39241	4.8948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: ICV Acquired: 8/10/2016 10:11:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0044**	**.98072**	**.98482**	**.49876**	**.98195**	**.99426**	**.99235**
Stddev	.0074	.00278	.01512	.00360	.00113	.00551	.00836
%RSD	.73286	.28341	1.5349	.72148	.11491	.55437	.84279
#1	1.0083	.98258	.96737	.50278	.98077	.99709	.99652
#2	1.0090	.98206	.99380	.49766	.98301	.99777	.99782
#3	.99593	.97753	.99330	.49584	.98209	.98790	.98273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13283.**	**78797.**	**3455.1**
Stddev	23.	40.	31.6
%RSD	.16990	.05137	.91454
#1	13261.	78824.	3439.1
#2	13306.	78750.	3434.7
#3	13284.	78816.	3491.5

Approved: August 11, 2016

Sample Name: ICB Acquired: 8/10/2016 10:15:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.01178	-.00047	.00347	-.00227	-.00004	-.01044	.00004
Stddev	.00099	.00876	.00127	.00071	.00036	.00009	.02035	.00017
%RSD	350.33	74.325	272.21	20.386	16.052	244.87	195.01	451.17
#1	-.00081	-.02190	-.00192	.00380	-.00252	.00006	-.03363	-.00015
#2	.00054	-.00658	.00010	.00395	-.00244	-.00012	.00444	.00007
#3	.00112	-.00688	.00042	.00266	-.00185	-.00006	-.00212	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	-.00006	.00013	-.01819	.29829	-.00130	.00088	-.00271
Stddev	.00021	.00071	.00080	.01098	.12149	.00106	.16358	.00281
%RSD	4922.8	1127.4	621.42	60.338	40.728	81.636	18524.	103.80
#1	-.00008	.00052	-.00066	-.01251	.39526	-.00057	-.05913	.00051
#2	.00023	.00015	.00093	-.03084	.33759	-.00252	.18600	-.00470
#3	-.00017	-.00086	.00011	-.01122	.16201	-.00081	-.12422	-.00392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.00580	.00028	.00007	-.00071	.00260	.00510	-.00070
Stddev	.00048	.03451	.00070	.00653	.00080	.00232	.00091	.00104
%RSD	406.64	595.58	252.04	9973.5	112.41	89.013	17.909	148.52
#1	.00066	.03016	.00060	-.00408	-.00120	.00456	.00553	-.00040
#2	-.00026	-.00889	-.00052	.00759	-.00114	.00005	.00405	-.00185
#3	-.00004	-.03866	.00075	-.00331	.00021	.00319	.00572	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: ICB Acquired: 8/10/2016 10:15:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00001**	**.01145**	**-.00233**	**.00038**	**.00017**	**-.00021**
Stddev	.00022	.00019	.00253	.00211	.00069	.00008	.00027
%RSD	135.20	2583.6	22.116	90.498	183.28	46.595	125.48
#1	-.00029	-.00023	.00986	-.00461	-.00016	.00016	.00009
#2	-.00030	.00014	.01012	-.00194	.00014	.00024	-.00033
#3	.00009	.00007	.01437	-.00045	.00116	.00009	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13541.**	**80600.**	**3474.6**
Stddev	57.	170.	22.4
%RSD	.42003	.21124	.64379
#1	13499.	80760.	3497.3
#2	13519.	80421.	3452.6
#3	13606.	80618.	3473.9

Approved: August 11, 2016

Sample Name: LLICV Acquired: 8/10/2016 10:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00858	.14521	.00802	.07656	.00586	.00141	.37942	.00082
Stddev	.00149	.00109	.00067	.00201	.00077	.00009	.02891	.00009
%RSD	17.319	.74815	8.3537	2.6254	13.150	6.1830	7.6194	11.413
#1	.01023	.14645	.00751	.07425	.00666	.00149	.35257	.00091
#2	.00817	.14467	.00878	.07787	.00512	.00132	.41002	.00084
#3	.00734	.14449	.00776	.07758	.00580	.00143	.37565	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00382	.00305	.00384	.06971	.91336	.07341	.37761	.00777
Stddev	.00051	.00108	.00111	.00943	.08900	.00190	.01336	.00085
%RSD	13.246	35.505	29.008	13.533	9.7443	2.5866	3.5381	10.905
#1	.00406	.00422	.00489	.07827	.91314	.07161	.38470	.00847
#2	.00416	.00208	.00396	.05960	1.0025	.07323	.38592	.00800
#3	.00324	.00286	.00267	.07126	.82447	.07539	.36220	.00683
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00691	.39018	.01583	.73008	.00773	.07381	.02303	.71659
Stddev	.00107	.00905	.00205	.07887	.00264	.01099	.00215	.06970
%RSD	15.496	2.3205	12.921	10.802	34.110	14.884	9.3453	9.7269
#1	.00699	.38732	.01686	.77863	.00486	.08000	.02388	.75770
#2	.00793	.40032	.01716	.77252	.00826	.08030	.02059	.75595
#3	.00580	.38290	.01348	.63908	.01005	.06112	.02463	.63611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LLICV Acquired: 8/10/2016 10:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.36645**	**.03888**	**.02680**	**.14081**	**.00799**	**.01509**	**.03901**
Stddev	.04601	.00044	.00502	.01354	.00133	.00172	.00046
%RSD	12.556	1.1208	18.738	9.6160	16.651	11.390	1.1753
#1	.39665	.03844	.02574	.14825	.00854	.01615	.03849
#2	.38921	.03931	.02239	.14900	.00647	.01601	.03929
#3	.31350	.03890	.03226	.12518	.00896	.01311	.03927
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13566.**	**80837.**	**3491.6**
Stddev	43.	163.	28.2
%RSD	.31853	.20220	.80853
#1	13543.	80918.	3520.3
#2	13538.	80649.	3463.8
#3	13616.	80945.	3490.8

Approved: August 11, 2016

Sample Name: LLICV Acquired: 8/10/2016 10:23:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02071	.38031	.01822	.19080	.01731	.00369	.96321	.00208
Stddev	.00086	.00128	.00070	.00296	.00083	.00002	.03030	.00015
%RSD	4.1604	.33537	3.8660	1.5499	4.7775	.54868	3.1460	7.0327
#1	.01973	.37926	.01864	.18800	.01685	.00371	.92838	.00222
#2	.02110	.37993	.01862	.19052	.01682	.00367	.98352	.00193
#3	.02132	.38173	.01741	.19389	.01827	.00369	.97774	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00982	.00817	.01075	.19686	2.2164	.18971	.90723	.01952
Stddev	.00034	.00066	.00103	.02264	.0727	.00269	.01704	.00139
%RSD	3.4450	8.0541	9.5571	11.503	3.2785	1.4178	1.8786	7.1234
#1	.00945	.00888	.00994	.17081	2.2056	.18699	.88878	.01867
#2	.00990	.00758	.01191	.21181	2.1497	.18979	.92239	.01876
#3	.01011	.00805	.01041	.20796	2.2939	.19237	.91052	.02112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01877	.96374	.04031	1.9103	.02005	.19568	.05068	1.8663
Stddev	.00015	.01796	.00029	.0061	.00349	.00661	.00364	.0049
%RSD	.81924	1.8638	.72769	.31756	17.395	3.3764	7.1743	.26065
#1	.01871	.96368	.04061	1.9098	.02359	.19345	.04649	1.8607
#2	.01866	.98173	.04029	1.9045	.01994	.20312	.05294	1.8690
#3	.01895	.94580	.04003	1.9166	.01662	.19048	.05261	1.8693
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LLICV Acquired: 8/10/2016 10:23:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97634	.09662	.05792	.36657	.01956	.04047	.09686
Stddev	.00199	.00211	.00584	.00208	.00050	.00015	.00055
%RSD	.20433	2.1799	10.080	.56738	2.5440	.38195	.56715
#1	.97861	.09471	.06255	.36892	.01918	.04030	.09690
#2	.97488	.09628	.05985	.36494	.02012	.04052	.09629
#3	.97552	.09888	.05136	.36586	.01938	.04060	.09738
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	13542.	80762.	3525.8
Stddev	25.	55.	33.9
%RSD	.18466	.06858	.96120
#1	13522.	80796.	3545.0
#2	13535.	80698.	3545.8
#3	13570.	80791.	3486.7

Approved: August 11, 2016

Sample Name: ICSA Acquired: 8/10/2016 10:27:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	264.05	-.00213	-.01451	-.00078	-.00009	247.96	-.00015
Stddev	.00185	.30	.00293	.00193	.00016	.00004	1.76	.00021
%RSD	171.78	.11382	137.53	13.307	19.977	45.198	.71149	136.23
#1	.00252	264.25	-.00499	-.01257	-.00063	-.00009	249.77	-.00038
#2	.00172	264.19	-.00226	-.01643	-.00076	-.00005	247.86	-.00010
#3	-.00101	263.70	.00086	-.01454	-.00094	-.00013	246.25	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00134	-.00346	.00163	98.655	.13696	.00517	255.56	.00100
Stddev	.00046	.00084	.01807	.466	.16477	.00099	1.02	.00106
%RSD	34.251	24.312	1108.6	.47211	120.31	19.191	.39802	105.97
#1	-.00146	-.00298	.01346	99.191	-.04834	.00581	256.67	-.00022
#2	-.00172	-.00297	.01060	98.426	.26699	.00403	254.67	.00158
#3	-.00083	-.00443	-.01917	98.348	.19223	.00569	255.34	.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00091	.02261	.00130	.00569	.00122	-.00227	.00625	.00512
Stddev	.00026	.02511	.00037	.00610	.00806	.00370	.00414	.00227
%RSD	28.688	111.07	28.437	107.37	659.56	163.26	66.204	44.232
#1	-.00064	.03662	.00169	-.00059	.00518	-.00336	.01088	.00595
#2	-.00116	-.00638	.00125	.00603	.00654	.00186	.00292	.00256
#3	-.00092	.03758	.00096	.01161	-.00805	-.00530	.00496	.00685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: ICSA Acquired: 8/10/2016 10:27:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.00013**	**-.01079**	**.00068**	**-.00216**	**-.00325**	**-.00346**
Stddev	.00039	.00024	.00745	.00221	.00111	.00061	.00027
%RSD	38.741	180.83	69.048	322.66	51.413	18.881	7.6982
#1	.00138	-.00011	-.00296	.00320	-.00133	-.00290	-.00367
#2	.00106	.00013	-.01779	-.00094	-.00174	-.00289	-.00356
#3	.00060	.00038	-.01162	-.00020	-.00343	-.00396	-.00316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12489.**	**73411.**	**3291.2**
Stddev	207.	103.	33.2
%RSD	1.6547	.14062	1.0084
#1	12342.	73369.	3252.9
#2	12400.	73529.	3309.3
#3	12725.	73335.	3311.5

Approved: August 11, 2016

Sample Name: ICSAB Acquired: 8/10/2016 10:30:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51428**	**262.87**	**.25234**	**-.01563**	**.24938**	**.24036**	**244.94**	**.47783**
Stddev	.00074	.20	.01099	.00244	.00057	.00027	.62	.01861
%RSD	.14481	.07710	4.3542	15.590	.22764	.11113	.25303	3.8943
#1	.51469	262.94	.25821	-.01784	.24925	.24057	244.27	.48887
#2	.51472	263.02	.25914	-.01302	.25000	.24046	245.49	.48827
#3	.51342	262.64	.23966	-.01604	.24888	.24006	245.07	.45634
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.23440**	**.24697**	**.25277**	**95.920**	**5.3740**	**.00663**	**248.87**	**.24841**
Stddev	.01105	.00112	.01924	.303	.0790	.00420	1.12	.00257
%RSD	4.7140	.45399	7.6129	.31592	1.4699	63.379	.45005	1.0355
#1	.24042	.24761	.26474	95.644	5.2862	.00285	248.00	.24893
#2	.24114	.24763	.26301	96.245	5.4392	.01115	250.13	.24562
#3	.22165	.24568	.23057	95.872	5.3967	.00589	248.47	.25068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**5.2133**	**.46961**	**-.01491**	**.48647**	**.49612**	**.24345**	**.00627**
Stddev	.00043	.0491	.02233	.00729	.02198	.02128	.01254	.00131
%RSD	37.963	.94163	4.7551	48.851	4.5187	4.2897	5.1496	20.914
#1	-.00144	5.1856	.48278	-.01563	.49894	.50871	.25072	.00742
#2	-.00064	5.1844	.48222	-.02181	.49939	.50811	.25065	.00655
#3	-.00131	5.2700	.44383	-.00729	.46109	.47155	.22897	.00484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: ICSAB Acquired: 8/10/2016 10:30:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00040**	**.00038**	**-.00609**	**.45119**	**.24849**	**.46249**	**-.00328**
Stddev	.00086	.00049	.00189	.01330	.00112	.01878	.00025
%RSD	213.83	128.01	31.036	2.9471	.45075	4.0604	7.5873
#1	.00059	.00089	-.00666	.45575	.24782	.47522	-.00313
#2	-.00085	-.00009	-.00763	.46162	.24979	.47133	-.00357
#3	-.00094	.00035	-.00398	.43622	.24788	.44092	-.00315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12562.**	**74521.**	**3354.2**
Stddev	62.	83.	17.5
%RSD	.49149	.11134	.52145
#1	12537.	74445.	3364.4
#2	12517.	74508.	3334.0
#3	12633.	74609.	3364.2

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 10:34:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39295	9.7087	.39110	.48777	.95952	.04854	9.5369	.04857
Stddev	.00097	.0031	.00656	.00156	.01506	.00009	.1130	.00093
%RSD	.24704	.03234	1.6770	.31897	1.5691	.17619	1.1851	1.9153
#1	.39395	9.7119	.39085	.48775	.94606	.04855	9.4542	.04929
#2	.39201	9.7088	.39778	.48623	.95671	.04862	9.4907	.04891
#3	.39289	9.7056	.38467	.48934	.97578	.04845	9.6656	.04752
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19567	.48363	.48723	3.8499	47.643	.96584	9.7179	.48286
Stddev	.00593	.00072	.01202	.0781	.704	.01677	.1935	.00974
%RSD	3.0311	.14831	2.4680	2.0282	1.4787	1.7362	1.9912	2.0173
#1	.19889	.48380	.49381	3.8006	47.039	.94978	9.5492	.47433
#2	.19929	.48425	.49452	3.8092	47.473	.96449	9.6754	.48076
#3	.18882	.48285	.47335	3.9400	48.417	.98324	9.9291	.49347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97374	47.263	.48424	9.7433	.48860	1.1544	.39006	4.8141
Stddev	.02678	.726	.01331	.1841	.00856	.0189	.00240	.0796
%RSD	2.7504	1.5359	2.7482	1.8898	1.7512	1.6340	.61622	1.6537
#1	.98873	46.579	.49282	9.8483	.49260	1.1681	.39263	4.8571
#2	.98967	47.186	.49099	9.8510	.49441	1.1621	.38787	4.8629
#3	.94282	48.025	.46891	9.5307	.47877	1.1329	.38968	4.7222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 10:34:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97536	.96180	.95556	.49395	.96484	.96824	.97733
Stddev	.03245	.01478	.01835	.00307	.00113	.02688	.00939
%RSD	3.3270	1.5369	1.9201	.62150	.11761	2.7766	.96067
#1	.99328	.94895	.94055	.49625	.96392	.98485	.97665
#2	.99489	.95850	.95011	.49513	.96611	.98264	.96830
#3	.93790	.97795	.97601	.49046	.96450	.93722	.98705
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	13373.	79946.	3506.0
Stddev	18.	190.	26.1
%RSD	.13445	.23774	.74554
#1	13355.	79948.	3515.0
#2	13391.	79755.	3526.5
#3	13372.	80135.	3476.6

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 10:38:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	-.00821	-.00146	.00324	-.00261	.00002	-.00709	.00016
Stddev	.00098	.00829	.00052	.00187	.00058	.00007	.02563	.00013
%RSD	2288.7	101.03	35.688	57.685	22.142	302.06	361.65	82.426
#1	.00076	-.00821	-.00086	.00299	-.00196	.00010	-.02306	.00010
#2	.00045	-.01650	-.00178	.00522	-.00278	-.00003	-.02068	.00032
#3	-.00107	.00008	-.00175	.00151	-.00307	-.00000	.02248	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00058	.00115	-.00683	.18547	-.00449	.03277	.00038
Stddev	.00029	.00098	.00022	.01350	.09459	.00132	.05903	.00243
%RSD	366.72	168.61	19.064	197.64	51.001	29.315	180.11	643.66
#1	-.00008	-.00077	.00093	.00345	.22484	-.00430	.08153	-.00239
#2	-.00010	.00048	.00137	-.02212	.25403	-.00589	.04965	.00139
#3	.00041	-.00146	.00115	-.00182	.07755	-.00328	-.03285	.00213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00003	.00097	.00003	.00161	.00276	.00711	-.00165
Stddev	.00010	.03218	.00137	.00381	.00153	.00324	.00182	.00104
%RSD	56.734	104240.	142.16	14210.	95.389	117.52	25.639	62.770
#1	-.00006	.03715	.00248	.00370	.00279	.00363	.00726	-.00047
#2	-.00024	-.02002	.00063	.00028	-.00012	-.00083	.00885	-.00206
#3	-.00023	-.01704	-.00021	-.00390	.00216	.00547	.00521	-.00242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 10:38:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00013**	**.00244**	**-.00076**	**.00061**	**-.00014**	**-.00052**
Stddev	.00036	.00015	.00216	.00317	.00070	.00018	.00048
%RSD	239.10	115.21	88.586	418.20	114.99	130.90	92.298
#1	-.00033	-.00002	.00012	-.00277	.00047	.00001	-.00108
#2	-.00038	.00028	.00280	-.00240	-.00001	-.00009	-.00022
#3	.00026	.00013	.00441	.00290	.00137	-.00033	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13567.**	**81307.**	**3506.3**
Stddev	49.	65.	15.6
%RSD	.36059	.08046	.44515
#1	13571.	81246.	3522.4
#2	13516.	81297.	3491.2
#3	13614.	81376.	3505.4

Approved: August 11, 2016

Sample Name: PBW BK Acquired: 8/10/2016 10:45:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578864-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.02386	-.00265	.00577	-.00030	-.00005	.04928
Stddev	.00154	.00423	.00325	.00307	.00069	.00010	.02659
%RSD	554.65	17.744	122.82	53.196	229.73	204.64	53.962
#1	.00154	.02843	-.00639	.00242	-.00107	.00006	.07849
#2	.00072	.02007	-.00046	.00644	.00024	-.00009	.04285
#3	-.00143	.02307	-.00110	.00846	-.00006	-.00012	.02649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	-.00001	-.00197	.00076	F -.02348	.19454	-.00436
Stddev	.00019	.00024	.00053	.00079	.00568	.06048	.00348
%RSD	63.293	2571.7	26.807	104.23	24.193	31.090	79.937
#1	.00053	.00004	-.00169	.00166	-.01693	.23987	-.00550
#2	.00021	.00019	-.00164	.00045	-.02640	.12586	-.00045
#3	.00018	-.00027	-.00257	.00017	-.02711	.21789	-.00712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00686	.00016	.00025	.00787	.00065	-.00438	-.00148
Stddev	.06641	.00201	.00007	.00632	.00017	.00213	.00122
%RSD	968.12	1282.6	26.384	80.201	25.922	48.490	82.574
#1	.02831	-.00201	.00027	.00533	.00065	-.00666	-.00241
#2	-.06763	.00051	.00018	.01506	.00048	-.00403	-.00195
#3	.05990	.00197	.00031	.00323	.00082	-.00246	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: PBW BK Acquired: 8/10/2016 10:45:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578864-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00585	-.00019	.00037	.00132	.00036	-.00477
Stddev	.00252	.00540	.00153	.00051	.00071	.00385	.00418
%RSD	559.15	92.239	792.65	139.62	53.680	1063.2	87.658
#1	.00114	.00068	.00115	-.00019	.00168	-.00268	-.00554
#2	-.00234	.00543	-.00185	.00081	.00051	.00469	-.00026
#3	.00255	.01145	.00012	.00047	.00179	-.00092	-.00851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00076	.00093	-.00047
Stddev	.00052	.00020	.00013
%RSD	68.205	21.772	28.562
#1	.00025	.00090	-.00062
#2	.00129	.00115	-.00036
#3	.00074	.00075	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12727.	77001.	3251.8
Stddev	44.	405.	8.1
%RSD	.34790	.52592	.24891
#1	12776.	76563.	3242.9
#2	12717.	77080.	3254.0
#3	12689.	77361.	3258.7

Approved: August 11, 2016

Sample Name: L1608000209 Acquired: 8/10/2016 10:49:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21187**	**5.2528**	**.21233**	**1.0247**	**.54400**	**.02578**	**5.6166**	**.02632**
Stddev	.00057	.0125	.00328	.0040	.00269	.00009	.0436	.00021
%RSD	.26701	.23800	1.5471	.39198	.49495	.33632	.77623	.79071
#1	.21176	5.2615	.21111	1.0265	.54699	.02570	5.6645	.02656
#2	.21249	5.2585	.21605	1.0275	.54325	.02587	5.6061	.02617
#3	.21137	5.2385	.20983	1.0201	.54176	.02576	5.5792	.02623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10761**	**.26469**	**.27004**	**2.1925**	**26.306**	**.53876**	**5.5031**	**.27122**
Stddev	.00065	.00149	.00051	.0328	.153	.00458	.0722	.00210
%RSD	.60768	.56242	.19051	1.4973	.57997	.85068	1.3117	.77611
#1	.10831	.26561	.26967	2.1610	26.482	.54403	5.4257	.27052
#2	.10752	.26297	.26983	2.2265	26.231	.53566	5.5686	.27358
#3	.10701	.26549	.27063	2.1900	26.205	.53659	5.5150	.26955
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54233**	**26.312**	**.27109**	**5.1705**	**.26920**	**.63790**	**.20081**	**2.6317**
Stddev	.00162	.110	.00120	.0145	.00332	.00175	.00476	.0099
%RSD	.29800	.41664	.44220	.27995	1.2322	.27438	2.3697	.37490
#1	.54319	26.436	.27220	5.1608	.26627	.63589	.19888	2.6430
#2	.54333	26.273	.27127	5.1871	.26853	.63877	.20623	2.6271
#3	.54046	26.228	.26982	5.1635	.27280	.63905	.19733	2.6249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608000209 Acquired: 8/10/2016 10:49:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53553	.55182	.53781	.26358	.52677	.52992	.55115
Stddev	.00167	.00202	.00946	.00134	.00219	.00149	.00241
%RSD	.31167	.36534	1.7587	.50943	.41607	.28115	.43746
#1	.53619	.55296	.54558	.26481	.52436	.52999	.55365
#2	.53676	.55302	.54057	.26378	.52733	.53138	.55098
#3	.53363	.54950	.52728	.26215	.52863	.52840	.54883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12654.	76009.	3281.8
Stddev	12.	210.	18.3
%RSD	.09092	.27603	.55795
#1	12641.	75908.	3261.3
#2	12658.	75868.	3287.3
#3	12662.	76250.	3296.6

Approved: August 11, 2016

Sample Name: L1608000210 Acquired: 8/10/2016 10:52:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20928	5.1809	.20938	1.0098	.53489	.02543	5.4457	.02584
Stddev	.00154	.0110	.00476	.0016	.00663	.00004	.0494	.00084
%RSD	.73641	.21188	2.2739	.15467	1.2400	.16593	.90697	3.2611
#1	.21011	5.1712	.21194	1.0106	.54032	.02545	5.4882	.02642
#2	.20751	5.1928	.21231	1.0080	.53685	.02546	5.4574	.02622
#3	.21023	5.1786	.20389	1.0107	.52750	.02539	5.3915	.02487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10483	.26132	.26208	2.1200	25.993	.52935	5.3881	.27068
Stddev	.00281	.00133	.00512	.0154	.449	.00208	.0820	.00212
%RSD	2.6779	.50882	1.9522	.72546	1.7258	.39383	1.5227	.78350
#1	.10664	.26226	.26535	2.1283	26.138	.53176	5.4763	.26887
#2	.10625	.25980	.26470	2.1294	26.352	.52804	5.3737	.27302
#3	.10160	.26190	.25618	2.1022	25.490	.52827	5.3141	.27015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52657	25.981	.26300	5.0538	.26298	.62400	.20246	2.5746
Stddev	.01434	.312	.00729	.0967	.00536	.01382	.00303	.0373
%RSD	2.7239	1.2010	2.7715	1.9127	2.0370	2.2140	1.4942	1.4472
#1	.53559	26.110	.26674	5.1031	.26604	.63207	.20037	2.5929
#2	.53409	26.208	.26766	5.1158	.26611	.63188	.20593	2.5992
#3	.51003	25.625	.25460	4.9424	.25680	.60805	.20109	2.5317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608000210 Acquired: 8/10/2016 10:52:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52039	.54204	.53012	.26052	.51803	.51525	.55109
Stddev	.01616	.00422	.00088	.00323	.00229	.01304	.00405
%RSD	3.1055	.77798	.16607	1.2408	.44233	2.5316	.73424
#1	.53012	.54493	.53107	.26165	.51920	.52374	.55428
#2	.52931	.54398	.52995	.26304	.51951	.52178	.55244
#3	.50173	.53720	.52934	.25688	.51539	.50023	.54654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12652.	76201.	3258.7
Stddev	32.	145.	19.1
%RSD	.25030	.19024	.58700
#1	12629.	76076.	3242.8
#2	12688.	76167.	3253.5
#3	12638.	76360.	3279.9

Approved: August 11, 2016

Sample Name: L1608000211 Acquired: 8/10/2016 10:56:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20672**	**5.1206**	**.20502**	**.99744**	**.52984**	**.02513**	**5.3846**	**.02545**
Stddev	.00029	.0073	.00293	.00311	.00739	.00007	.0572	.00040
%RSD	.13806	.14184	1.4286	.31137	1.3954	.27247	1.0630	1.5650
#1	.20677	5.1280	.20436	.99798	.53751	.02514	5.4396	.02586
#2	.20698	5.1134	.20822	1.0002	.52925	.02518	5.3887	.02542
#3	.20641	5.1205	.20248	.99410	.52276	.02505	5.3254	.02507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10416**	**.25805**	**.26121**	**2.1333**	**25.772**	**.52482**	**5.3538**	**.26648**
Stddev	.00171	.00090	.00376	.0347	.262	.00264	.1415	.00204
%RSD	1.6419	.34699	1.4405	1.6264	1.0170	.50330	2.6422	.76370
#1	.10555	.25749	.26310	2.1539	26.074	.52787	5.3728	.26786
#2	.10469	.25759	.26365	2.1528	25.609	.52347	5.4849	.26415
#3	.10225	.25909	.25687	2.0932	25.632	.52314	5.2039	.26744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52537**	**25.717**	**.26186**	**5.0203**	**.25782**	**.61404**	**.20121**	**2.5479**
Stddev	.00822	.344	.00363	.0532	.00427	.01029	.00546	.0153
%RSD	1.5653	1.3383	1.3847	1.0587	1.6579	1.6763	2.7137	.59964
#1	.52966	26.102	.26459	5.0472	.26252	.62153	.19904	2.5536
#2	.53056	25.612	.26325	5.0547	.25674	.61828	.20742	2.5594
#3	.51589	25.437	.25775	4.9591	.25418	.60230	.19716	2.5305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608000211 Acquired: 8/10/2016 10:56:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51845**	**.53683**	**.52331**	**.25716**	**.51306**	**.51305**	**.53755**
Stddev	.00905	.00626	.00387	.00133	.00191	.00670	.00649
%RSD	1.7460	1.1666	.73985	.51642	.37161	1.3053	1.2072
#1	.52462	.54395	.52619	.25718	.51106	.51657	.54484
#2	.52267	.53436	.52482	.25848	.51327	.51726	.53544
#3	.50806	.53217	.51891	.25582	.51485	.50533	.53238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12771.**	**76642.**	**3295.0**
Stddev	10.	39.	37.8
%RSD	.08172	.05154	1.1471
#1	12759.	76623.	3252.7
#2	12778.	76615.	3307.0
#3	12777.	76687.	3325.4

Approved: August 11, 2016

Sample Name: L1608000212 Acquired: 8/10/2016 11:00:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20538**	**5.0475**	**.20251**	**.98932**	**.52603**	**.02486**	**5.3521**	**.02551**
Stddev	.00150	.0165	.00208	.00356	.00553	.00003	.0668	.00056
%RSD	.72807	.32741	1.0249	.35949	1.0521	.12239	1.2481	2.1899
#1	.20390	5.0390	.20307	.98662	.53115	.02484	5.4221	.02537
#2	.20535	5.0369	.20424	.98798	.52677	.02484	5.3453	.02613
#3	.20689	5.0665	.20021	.99335	.52016	.02489	5.2890	.02504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10319**	**.25525**	**.25710**	**2.1148**	**25.548**	**.52290**	**5.3194**	**.26289**
Stddev	.00273	.00162	.00721	.0481	.404	.00643	.0709	.00122
%RSD	2.6462	.63636	2.8043	2.2765	1.5832	1.2301	1.3327	.46297
#1	.10503	.25465	.26058	2.1703	26.014	.53033	5.3636	.26424
#2	.10449	.25401	.26192	2.0841	25.282	.51913	5.3570	.26256
#3	.10005	.25709	.24881	2.0901	25.349	.51925	5.2376	.26188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51721**	**25.525**	**.25602**	**4.9618**	**.25715**	**.61226**	**.20018**	**2.5239**
Stddev	.01416	.269	.00853	.1042	.00622	.01384	.00541	.0456
%RSD	2.7383	1.0522	3.3332	2.1001	2.4201	2.2607	2.7019	1.8046
#1	.52485	25.828	.26102	5.0284	.26105	.61631	.20630	2.5528
#2	.52592	25.429	.26087	5.0152	.26043	.62362	.19817	2.5476
#3	.50087	25.318	.24616	4.8417	.24998	.59684	.19606	2.4714
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608000212 Acquired: 8/10/2016 11:00:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51020	.53085	.51091	.25629	.50735	.50513	.54028
Stddev	.01626	.00571	.01543	.00271	.00168	.01394	.00619
%RSD	3.1867	1.0750	3.0194	1.0562	.33144	2.7599	1.1463
#1	.51807	.53733	.52872	.25805	.50884	.51258	.54735
#2	.52103	.52865	.50166	.25764	.50553	.51377	.53763
#3	.49151	.52658	.50235	.25317	.50768	.48905	.53585
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12784.	76761.	3293.8
Stddev	36.	295.	37.0
%RSD	.28254	.38412	1.1221
#1	12816.	76644.	3251.9
#2	12791.	77096.	3307.8
#3	12744.	76542.	3321.7

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 11:03:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37625**	**9.3058**	**.37631**	**.47211**	**.94097**	**.04642**	**9.4159**	**.04671**
Stddev	.00239	.0131	.00902	.00136	.00162	.00020	.0176	.00114
%RSD	.63604	.14052	2.3982	.28718	.17223	.42492	.18688	2.4376
#1	.37458	9.3011	.38378	.47268	.94089	.04639	9.4256	.04744
#2	.37518	9.2956	.37886	.47056	.93940	.04663	9.4265	.04730
#3	.37899	9.3205	.36628	.47308	.94264	.04624	9.3956	.04540
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18757**	**.46598**	**.46872**	**3.7862**	**46.543**	**.94234**	**9.5562**	**.47200**
Stddev	.00625	.00056	.01492	.0322	.094	.00999	.0327	.00411
%RSD	3.3324	.11956	3.1840	.85132	.20147	1.0601	.34186	.87079
#1	.19127	.46577	.47770	3.7894	46.439	.94717	9.5261	.46865
#2	.19109	.46661	.47697	3.7525	46.570	.93085	9.5909	.47076
#3	.18036	.46556	.45149	3.8168	46.620	.94900	9.5516	.47659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.93343**	**46.395**	**.46820**	**9.4174**	**.47449**	**1.1206**	**.37786**	**4.6634**
Stddev	.02633	.087	.01455	.2233	.00904	.0248	.00937	.0805
%RSD	2.8210	.18649	3.1085	2.3707	1.9051	2.2084	2.4794	1.7270
#1	.95380	46.298	.47566	9.5453	.47856	1.1333	.37955	4.7109
#2	.94280	46.465	.47752	9.5473	.48078	1.1365	.38627	4.7088
#3	.90370	46.421	.45143	9.1596	.46414	1.0921	.36776	4.5704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 11:03:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93934	.94374	.92393	.47706	.92685	.93403	.94597
Stddev	.03312	.00169	.00730	.00272	.00078	.02655	.00823
%RSD	3.5256	.17884	.79029	.56928	.08443	2.8428	.87036
#1	.95789	.94269	.92136	.47781	.92647	.94838	.93671
#2	.95902	.94285	.93217	.47932	.92633	.95033	.94874
#3	.90110	.94569	.91826	.47405	.92775	.90339	.95247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	13820.	82296.	3579.6
Stddev	19.	121.	27.6
%RSD	.14041	.14699	.77019
#1	13803.	82175.	3610.1
#2	13815.	82417.	3572.5
#3	13841.	82294.	3556.3

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 11:07:21 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	-.01884	-.00069	.00379	-.00286	-.00004	-.01852	.00009
Stddev	.00110	.00101	.00102	.00041	.00015	.00006	.00338	.00027
%RSD	86.301	5.3766	147.68	10.792	5.0706	144.83	18.267	295.52
#1	.00081	-.01883	-.00070	.00418	-.00293	-.00010	-.01490	.00040
#2	.00048	-.01986	-.00171	.00337	-.00296	.00003	-.02160	.00002
#3	.00252	-.01784	.00033	.00383	-.00270	-.00006	-.01906	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	-.00089	-.00003	-.01194	.27731	-.00441	-.03071	.00075
Stddev	.00030	.00055	.00018	.03301	.10609	.00269	.05258	.00108
%RSD	300.81	61.726	542.91	276.47	38.256	60.915	171.22	142.80
#1	.00023	-.00035	-.00021	.02513	.39248	-.00537	-.02073	.00118
#2	-.00019	-.00144	-.00003	-.02279	.25589	-.00138	-.08756	.00155
#3	-.00034	-.00087	.00014	-.03815	.18357	-.00648	.01617	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00861	.00132	-.00040	.00021	.00263	.01362	-.00393
Stddev	.00040	.02204	.00115	.00100	.00389	.00082	.00145	.00131
%RSD	10512.	255.83	87.550	252.64	1815.6	31.272	10.613	33.359
#1	-.00030	.01868	.00002	-.00119	.00354	.00170	.01222	-.00244
#2	.00046	.02383	.00221	-.00073	-.00405	.00326	.01355	-.00489
#3	-.00014	-.01666	.00172	.00073	.00115	.00294	.01511	-.00445
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 11:07:21 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00077**	**-.00035**	**.00324**	**-.00009**	**.00012**	**-.00017**	**-.00002**
Stddev	.00081	.00029	.00695	.00105	.00045	.00009	.00026
%RSD	104.78	82.568	214.88	1171.9	371.13	50.722	1367.4
#1	-.00060	-.00023	.01114	.00069	.00035	-.00008	.00000
#2	-.00165	-.00069	-.00194	-.00128	-.00040	-.00019	.00023
#3	-.00006	-.00015	.00050	.00033	.00042	-.00025	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13981.**	**83765.**	**3570.3**
Stddev	47.	153.	14.2
%RSD	.33710	.18253	.39693
#1	13937.	83925.	3557.5
#2	13974.	83752.	3585.5
#3	14031.	83620.	3567.8

Approved: August 11, 2016

Sample Name: PBW 9R Acquired: 8/10/2016 11:11:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00132**	**.00045**	**.00055**	**.00340**	**-.00069**	**-.00002**	**-.00032**
Stddev	.00155	.00515	.00314	.00081	.00024	.00007	.02147
%RSD	117.82	1153.1	572.65	23.715	35.573	316.06	6613.3
#1	-.00036	-.00531	-.00150	.00332	-.00057	.00006	.01645
#2	.00271	.00204	.00416	.00425	-.00052	-.00005	.00710
#3	.00160	.00461	-.00101	.00264	-.00097	-.00008	-.02452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00014**	**-.00028**	**.00070**	F **-.02150**	**.13434**	**-.00253**
Stddev	.00012	.00026	.00155	.00014	.02008	.10260	.00248
%RSD	40.553	181.01	560.57	19.702	93.409	76.373	98.086
#1	.00042	-.00027	-.00068	.00061	-.00792	.25056	-.00103
#2	.00018	.00015	-.00158	.00086	-.01202	.09612	-.00540
#3	.00028	-.00032	.00143	.00064	-.04457	.05633	-.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.05638**	**.00185**	**-.00002**	**.02605**	**.00099**	**-.00557**	**.00207**
Stddev	.03476	.00092	.00046	.02247	.00078	.00389	.00038
%RSD	61.651	49.864	2417.4	86.260	78.422	69.824	18.298
#1	-.05604	.00185	-.00039	.03954	.00107	-.00980	.00164
#2	-.09130	.00093	.00050	.00011	.00018	-.00478	.00233
#3	-.02179	.00277	-.00018	.03850	.00173	-.00214	.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: PBW 9R Acquired: 8/10/2016 11:11:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	-.00096	.00134	-.00028	.00030	.00533	-.00384
Stddev	.00169	.00328	.00068	.00055	.00017	.00208	.00057
%RSD	263.34	341.96	50.937	195.30	58.465	39.019	14.898
#1	-.00008	.00263	.00140	-.00088	.00012	.00583	-.00439
#2	.00257	-.00172	.00063	.00019	.00046	.00711	-.00325
#3	-.00057	-.00378	.00199	-.00015	.00031	.00304	-.00388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00070	.00035	-.00013
Stddev	.00090	.00008	.00031
%RSD	129.30	22.759	240.94
#1	.00131	.00044	-.00048
#2	.00112	.00033	.00006
#3	-.00034	.00028	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12929.	78338.	3337.6
Stddev	9.	209.	36.3
%RSD	.06756	.26688	1.0866
#1	12927.	78105.	3295.9
#2	12921.	78507.	3361.6
#3	12939.	78403.	3355.4

Approved: August 11, 2016

Sample Name: LCSW 9R Acquired: 8/10/2016 11:15:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20599**	**5.1587**	**.20992**	**1.0162**	**.53601**	**.02531**	**5.4484**	**.02588**
Stddev	.00317	.0113	.00519	.0008	.00670	.00008	.0746	.00072
%RSD	1.5393	.21982	2.4705	.07827	1.2500	.30321	1.3689	2.7707
#1	.20725	5.1657	.21259	1.0155	.54374	.02531	5.5345	.02595
#2	.20239	5.1456	.21323	1.0160	.53255	.02523	5.4051	.02656
#3	.20834	5.1647	.20394	1.0171	.53175	.02538	5.4056	.02513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10548**	**.25968**	**.26421**	**2.1472**	**25.871**	**.52944**	**5.3555**	**.26733**
Stddev	.00319	.00011	.00752	.0174	.480	.00685	.1318	.00214
%RSD	3.0240	.04065	2.8465	.81039	1.8564	1.2931	2.4614	.80030
#1	.10689	.25979	.26865	2.1601	26.423	.53392	5.4968	.26980
#2	.10773	.25959	.26845	2.1540	25.555	.53283	5.3337	.26625
#3	.10183	.25965	.25553	2.1274	25.634	.52156	5.2359	.26596
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52992**	**26.005**	**.26434**	**5.0852**	**.26415**	**.62535**	**.20052**	**2.6170**
Stddev	.01429	.356	.00659	.1047	.00479	.01586	.00170	.0471
%RSD	2.6961	1.3695	2.4913	2.0587	1.8139	2.5363	.84700	1.8010
#1	.53907	26.416	.26863	5.1474	.26809	.63626	.20177	2.6452
#2	.53722	25.820	.26764	5.1439	.26555	.63264	.19858	2.6432
#3	.51345	25.780	.25676	4.9644	.25882	.60716	.20120	2.5625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LCSW 9R Acquired: 8/10/2016 11:15:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52205	.54119	.52081	.26114	.51606	.51812	.00044
Stddev	.01652	.00565	.01839	.00254	.00070	.01376	.00050
%RSD	3.1641	1.0437	3.5315	.97361	.13593	2.6566	111.87
#1	.53347	.54771	.52993	.26188	.51528	.52649	.00086
#2	.52957	.53821	.53286	.26323	.51627	.52564	-.00010
#3	.50311	.53766	.49964	.25831	.51664	.50224	.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12732.	76909.	3296.0
Stddev	20.	193.	28.9
%RSD	.15831	.25065	.87726
#1	12711.	77017.	3263.5
#2	12733.	76686.	3318.8
#3	12751.	77022.	3305.6

Approved: August 11, 2016

Sample Name: L1608015101 Acquired: 8/10/2016 11:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00917	.00221	.03938	.02005	.00011	9.1986	.00035
Stddev	.00227	.00315	.00241	.00293	.00052	.00003	.0839	.00021
%RSD	2482.0	34.357	109.07	7.4318	2.6002	25.018	.91262	58.905
#1	-.00218	.01273	.00465	.04225	.01991	.00013	9.2786	.00042
#2	.00236	.00800	.00216	.03950	.02063	.00013	9.2059	.00052
#3	.00009	.00677	-.00017	.03640	.01962	.00008	9.1112	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.00497	.00221	.27161	.20834	-.00587	.02304	.65142
Stddev	.00026	.00035	.00034	.03132	.03876	.00254	.07180	.00608
%RSD	32.949	6.9772	15.365	11.533	18.603	43.199	311.58	.93270
#1	.00077	.00458	.00236	.25507	.22951	-.00591	.05666	.65844
#2	.00108	.00512	.00244	.25201	.16361	-.00332	.07186	.64775
#3	.00056	.00523	.00182	.30773	.23191	-.00839	-.05940	.64808
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01536	140.87	.11415	-.00374	.00029	-.00009	.00438	.03416
Stddev	.00192	1.19	.01298	.00619	.00315	.00149	.00586	.00497
%RSD	12.509	.84786	11.369	165.58	1069.0	1599.5	133.82	14.533
#1	.01646	142.22	.12228	-.00826	-.00229	-.00105	.00681	.03644
#2	.01647	140.44	.12100	-.00626	.00381	-.00085	.00864	.03759
#3	.01314	139.96	.09919	.00331	-.00064	.00162	-.00231	.02847
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608015101 Acquired: 8/10/2016 11:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.04462	.00438	.00189	.07769	.01768	-.00028
Stddev	.00011	.00035	.00478	.00511	.00106	.00214	.00020
%RSD	141.32	.78840	109.14	270.81	1.3660	12.129	71.342
#1	.00007	.04495	.00088	-.00382	.07647	.01905	-.00021
#2	.00019	.04465	.00242	.00605	.07839	.01879	-.00050
#3	-.00003	.04425	.00982	.00344	.07821	.01521	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12896.	76941.	3355.1
Stddev	87.	61.	13.5
%RSD	.67213	.07903	.40233
#1	12824.	76946.	3340.2
#2	12871.	76999.	3358.6
#3	12992.	76877.	3366.4

Approved: August 11, 2016

Sample Name: L1608015101S Acquired: 8/10/2016 11:22:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19920**	**5.0377**	**.20685**	**1.0325**	**.54634**	**.02490**	**14.443**	**.02554**
Stddev	.00118	.0106	.00208	.0019	.00660	.00008	.115	.00020
%RSD	.59234	.21008	1.0039	.18906	1.2079	.32911	.79579	.78278
#1	.19886	5.0495	.20924	1.0338	.55270	.02480	14.570	.02532
#2	.19823	5.0348	.20587	1.0335	.54680	.02493	14.412	.02564
#3	.20052	5.0289	.20545	1.0302	.53952	.02496	14.347	.02568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10379**	**.25696**	**.25808**	**2.3726**	**25.733**	**.52075**	**5.2879**	**.91571**
Stddev	.00118	.00079	.00165	.0177	.184	.00757	.0380	.01133
%RSD	1.1365	.30819	.63954	.74792	.71590	1.4541	.71858	1.2374
#1	.10301	.25699	.25910	2.3928	25.894	.52807	5.3253	.92743
#2	.10320	.25774	.25617	2.3658	25.774	.52123	5.2493	.91490
#3	.10515	.25615	.25896	2.3593	25.532	.51295	5.2890	.90481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54032**	**167.83**	**.38060**	**5.1013**	**.25761**	**.61590**	**.19807**	**2.6306**
Stddev	.00393	1.46	.00276	.0334	.00270	.00676	.00343	.0178
%RSD	.72689	.86699	.72543	.65436	1.0475	1.0971	1.7320	.67603
#1	.53919	169.21	.37856	5.0855	.25796	.61066	.20135	2.6247
#2	.53707	167.97	.37949	5.0787	.25476	.61350	.19836	2.6164
#3	.54468	166.31	.38374	5.1396	.26012	.62353	.19450	2.6505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608015101S Acquired: 8/10/2016 11:22:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51307**	**.57413**	**.51039**	**.25416**	**.58178**	**.52932**	**.00081**
Stddev	.00403	.00525	.00531	.00253	.00185	.00356	.00032
%RSD	.78617	.91434	1.0397	.99627	.31720	.67296	39.381
#1	.51023	.58006	.51146	.25536	.58356	.52758	.00092
#2	.51130	.57224	.51508	.25125	.57988	.52696	.00106
#3	.51769	.57008	.50463	.25587	.58192	.53342	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12743.**	**76431.**	**3329.6**
Stddev	82.	255.	26.1
%RSD	.64255	.33377	.78427
#1	12775.	76189.	3300.0
#2	12804.	76407.	3339.5
#3	12650.	76698.	3349.3

Approved: August 11, 2016

Sample Name: L1608015101SD Acquired: 8/10/2016 11:26:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19941	5.0263	.20500	1.0328	.52556	.02466	13.899	.02502
Stddev	.00076	.0122	.00111	.0036	.00174	.00010	.050	.00007
%RSD	.38000	.24238	.54159	.34406	.33108	.42249	.36188	.26668
#1	.19853	5.0331	.20521	1.0317	.52511	.02473	13.849	.02495
#2	.19982	5.0334	.20380	1.0368	.52748	.02454	13.897	.02508
#3	.19987	5.0122	.20600	1.0299	.52408	.02471	13.950	.02504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10155	.25538	.25426	2.2736	24.980	.50518	5.0106	.88638
Stddev	.00016	.00034	.00112	.0376	.094	.00346	.0532	.00464
%RSD	.15718	.13323	.44040	1.6533	.37717	.68484	1.0625	.52384
#1	.10161	.25572	.25315	2.3121	24.977	.50710	5.0408	.88218
#2	.10167	.25504	.25539	2.2369	24.887	.50727	4.9492	.88559
#3	.10137	.25538	.25425	2.2717	25.075	.50119	5.0419	.89136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53120	161.94	.37326	5.0220	.25471	.60987	.19173	2.5755
Stddev	.00096	.38	.00116	.0184	.00071	.00358	.00305	.0078
%RSD	.17985	.23488	.31096	.36597	.27798	.58631	1.5901	.30363
#1	.53141	161.73	.37211	5.0169	.25553	.60669	.19492	2.5686
#2	.53202	161.70	.37323	5.0424	.25431	.61374	.19143	2.5840
#3	.53015	162.37	.37443	5.0068	.25429	.60919	.18885	2.5739
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608015101SD Acquired: 8/10/2016 11:26:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50421	.55518	.50079	.24947	.57774	.52300	.00044
Stddev	.00183	.00175	.01116	.00239	.00143	.00058	.00035
%RSD	.36378	.31596	2.2278	.95777	.24809	.11062	80.955
#1	.50335	.55355	.49551	.24713	.57818	.52275	.00084
#2	.50632	.55703	.49325	.24937	.57890	.52366	.00019
#3	.50297	.55496	.51361	.25190	.57614	.52258	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12866.	76696.	3421.9
Stddev	12.	82.	2.0
%RSD	.08994	.10733	.05711
#1	12878.	76648.	3419.7
#2	12855.	76649.	3422.7
#3	12866.	76791.	3423.3

Approved: August 11, 2016

Sample Name: L1608016402 Acquired: 8/10/2016 11:30:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.01152	-.00212	.01352	-.00225	-.00006	2.6205	.00021
Stddev	.00066	.00693	.00182	.00191	.00100	.00001	.0213	.00010
%RSD	232.03	60.196	85.821	14.153	44.538	25.436	.81169	47.029
#1	.00055	-.00375	-.00169	.01475	-.00120	-.00005	2.6253	.00010
#2	-.00047	-.01372	-.00056	.01132	-.00320	-.00005	2.6389	.00029
#3	.00078	-.01709	-.00412	.01450	-.00237	-.00007	2.5972	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.00021	.00258	-.00341	14.602	-.00389	.47019	.00944
Stddev	.00010	.00113	.00122	.00740	.037	.00205	.07661	.00165
%RSD	18.720	545.81	47.487	216.94	.25253	52.638	16.293	17.439
#1	.00066	.00043	.00254	.00414	14.559	-.00370	.54812	.01069
#2	.00054	.00121	.00382	-.00372	14.618	-.00194	.39498	.00757
#3	.00046	-.00102	.00137	-.01066	14.628	-.00602	.46748	.01005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	29.966	.00236	1.6329	.00024	-.00182	.00537	.19055
Stddev	.00020	.241	.00103	.1782	.00079	.00106	.00371	.01701
%RSD	20.808	.80519	43.436	10.914	332.60	57.859	69.098	8.9269
#1	.00105	29.702	.00272	1.7297	.00024	-.00263	.00180	.19766
#2	.00073	30.174	.00316	1.7418	-.00055	-.00221	.00921	.20285
#3	.00109	30.022	.00120	1.4273	.00102	-.00063	.00511	.17114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608016402 Acquired: 8/10/2016 11:30:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00186	.00277	-.00064	.00033	.01428	-.00037
Stddev	.00051	.00018	.00161	.00215	.00027	.00167	.00011
%RSD	212.10	9.5870	58.242	336.84	83.976	11.707	28.495
#1	.00030	.00175	.00372	.00176	.00029	.01495	-.00033
#2	.00072	.00206	.00368	-.00126	.00062	.01552	-.00049
#3	-.00030	.00177	.00091	-.00241	.00007	.01238	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12951.	79840.	3451.2
Stddev	155.	186.	11.4
%RSD	1.1962	.23315	.33151
#1	13122.	79652.	3445.8
#2	12914.	80025.	3443.6
#3	12819.	79842.	3464.4

Approved: August 11, 2016

Sample Name: L1608016404 Acquired: 8/10/2016 11:34:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	.11463	.00026	.01549	.01491	.00001	103.77	.00051
Stddev	.00074	.00774	.00142	.00139	.00129	.00010	.16	.00017
%RSD	105.55	6.7504	552.28	8.9926	8.6228	1922.6	.15064	33.137
#1	-.00093	.12166	.00188	.01634	.01629	.00008	103.67	.00064
#2	-.00131	.10634	-.00040	.01624	.01374	-.00011	103.69	.00058
#3	.00012	.11589	-.00071	.01388	.01470	.00005	103.95	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00359	.00443	.01947	.47018	15.837	.00052	5.0207	.23167
Stddev	.00043	.00016	.00192	.02973	.026	.00155	.1635	.00086
%RSD	12.073	3.5192	9.8815	6.3222	.16368	299.89	3.2565	.36938
#1	.00405	.00426	.02006	.50331	15.813	.00032	4.8468	.23220
#2	.00351	.00450	.02104	.46142	15.833	-.00093	5.0440	.23212
#3	.00320	.00454	.01732	.44583	15.865	.00215	5.1712	.23068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00220	33.252	.00471	56.562	-.00054	.00192	.00069	.38525
Stddev	.00024	.063	.00122	5.242	.00212	.00106	.00803	.02975
%RSD	11.133	.18888	25.967	9.2679	390.22	55.489	1163.8	7.7212
#1	.00202	33.185	.00607	59.840	-.00062	.00080	.00808	.40519
#2	.00247	33.260	.00432	59.330	-.00263	.00203	.00184	.39951
#3	.00210	33.310	.00372	50.516	.00161	.00292	-.00785	.35106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608016404 Acquired: 8/10/2016 11:34:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.07057**	**-.00514**	**-.00468**	**.00177**	**.11447**	**-.00029**
Stddev	.00119	.00019	.00757	.00088	.00035	.01212	.00046
%RSD	630.87	.27420	147.35	18.861	19.820	10.591	159.03
#1	.00022	.07050	.00085	-.00563	.00178	.12220	-.00073
#2	-.00152	.07042	-.01364	-.00388	.00212	.12070	-.00032
#3	.00074	.07079	-.00261	-.00454	.00142	.10050	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12538.**	**75732.**	**3323.3**
Stddev	66.	171.	9.1
%RSD	.52447	.22611	.27294
#1	12463.	75913.	3332.9
#2	12562.	75572.	3314.8
#3	12588.	75711.	3322.2

Approved: August 11, 2016

Sample Name: L1608016406 Acquired: 8/10/2016 11:37:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	-.00340	-.00170	.00410	-.00068	-.00014	4.3267	.00010
Stddev	.00202	.00576	.00414	.00063	.00052	.00010	.0342	.00004
%RSD	1016.7	169.28	244.03	15.288	77.040	73.786	.79002	38.963
#1	.00136	-.00979	-.00187	.00434	-.00127	-.00009	4.3393	.00006
#2	.00137	-.00182	-.00574	.00458	-.00047	-.00007	4.2880	.00014
#3	-.00213	.00140	.00253	.00339	-.00029	-.00025	4.3528	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	-.00016	.00120	.01418	1.6352	-.00284	.30579	.02751
Stddev	.00017	.00119	.00148	.02122	.0688	.00259	.06881	.00170
%RSD	174.20	752.07	122.98	149.65	4.2045	91.188	22.504	6.1917
#1	-.00009	-.00149	.00279	.00400	1.6295	-.00011	.24708	.02948
#2	.00007	.00081	.00095	-.00004	1.5695	-.00315	.28877	.02652
#3	-.00027	.00020	-.00013	.03856	1.7067	-.00526	.38152	.02654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.71368	.00101	.05997	.00004	-.00307	.00613	.08787
Stddev	.00019	.03566	.00071	.00331	.00245	.00199	.00562	.01282
%RSD	114.62	4.9970	70.097	5.5273	6913.5	64.766	91.652	14.594
#1	.00036	.74770	.00161	.06298	.00281	-.00440	.00153	.09351
#2	.00015	.67658	.00118	.06051	-.00184	-.00404	.01240	.09691
#3	-.00002	.71677	.00023	.05642	-.00087	-.00078	.00447	.07320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608016406 Acquired: 8/10/2016 11:37:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00072**	**.00847**	**.00394**	**-.00326**	**.00020**	**.00251**	**-.00025**
Stddev	.00023	.00048	.00435	.00087	.00036	.00045	.00029
%RSD	32.427	5.6093	110.46	26.537	183.51	18.007	116.94
#1	-.00089	.00882	-.00055	-.00420	-.00006	.00267	-.00053
#2	-.00045	.00866	.00423	-.00249	.00004	.00287	-.00025
#3	-.00083	.00793	.00813	-.00310	.00061	.00200	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13061.**	**78537.**	**3345.1**
Stddev	130.	36.	23.1
%RSD	.99734	.04538	.69100
#1	13211.	78502.	3318.8
#2	12979.	78574.	3362.1
#3	12992.	78535.	3354.5

Approved: August 11, 2016

Sample Name: L1608016406PS Acquired: 8/10/2016 11:41:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579239-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	-.02583	-.00197	.00203	-.00403	-.00000	-.03156	.00006
Stddev	.00062	.00873	.00071	.00092	.00948	.00006	.01541	.00017
%RSD	45.723	33.793	36.137	45.138	235.27	3534.2	48.837	292.79
#1	.00081	-.01728	-.00147	.00265	.00181	-.00002	-.04902	.00021
#2	.00123	-.02547	-.00278	.00098	.00106	.00006	-.01983	-.00012
#3	.00204	-.03472	-.00165	.00246	-.01496	-.00004	-.02584	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	-.00036	.00159	.00098	.19266	-.00092	.02651	-.00094
Stddev	.00025	.00033	.00075	.02041	.05957	.00405	.03455	.00181
%RSD	319.82	91.150	47.190	2073.6	30.921	440.14	130.34	192.35
#1	-.00036	-.00051	.00110	.02447	.14688	.00078	.01859	.00089
#2	.00011	.00002	.00246	-.00904	.17109	-.00555	-.00339	-.00274
#3	.00002	-.00059	.00122	-.01248	.26001	.00201	.06434	-.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.01497	.00117	.00067	.00102	-.00062	.00387	-.00174
Stddev	.00028	.03433	.00061	.00378	.00082	.00207	.00407	.00299
%RSD	169.72	229.38	52.115	564.58	79.855	331.12	105.38	171.84
#1	.00048	-.00882	.00186	-.00251	.00073	-.00268	.00836	-.00221
#2	.00007	.05433	.00091	-.00033	.00195	.00145	.00043	-.00448
#3	-.00006	-.00060	.00073	.00485	.00040	-.00064	.00281	.00146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608016406PS Acquired: 8/10/2016 11:41:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579239-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00058	-.00028	.00761	.00137	.00120	-.00011	-.00024
Stddev	.00028	.00019	.00803	.00150	.00059	.00005	.00044
%RSD	48.244	69.941	105.63	109.51	48.705	47.267	181.53
#1	-.00082	-.00010	-.00142	-.00033	.00076	-.00016	-.00045
#2	-.00065	-.00024	.01026	.00250	.00187	-.00010	-.00053
#3	-.00027	-.00048	.01397	.00195	.00099	-.00006	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14548.	87407.	5014.3
Stddev	1128.	7822.	2730.8
%RSD	7.7543	8.9488	54.459
#1	15678.	86818.	3342.0
#2	14543.	79897.	3535.5
#3	13422.	95507.	8165.6

Approved: August 11, 2016

Sample Name: L1608016406SDL Acquired: 8/10/2016 11:45:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579239-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	-.00273	-.00145	.00180	-.00223	.00001	.81991	.00011
Stddev	.00091	.00672	.00215	.00332	.00193	.00002	.01792	.00002
%RSD	143.29	245.78	148.67	184.77	86.640	177.92	2.1852	18.069
#1	.00155	-.00123	-.00391	-.00150	-.00057	.00003	.82909	.00011
#2	-.00027	-.01008	.00006	.00175	-.00434	.00002	.79926	.00009
#3	.00062	.00311	-.00049	.00514	-.00176	-.00001	.83138	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	-.00049	.00065	-.00789	.53302	-.00325	.02247	.00417
Stddev	.00030	.00012	.00096	.01440	.11350	.00096	.04120	.00210
%RSD	226.25	24.842	148.14	182.55	21.293	29.349	183.38	50.461
#1	-.00021	-.00062	.00014	-.00767	.65463	-.00216	.04491	.00230
#2	.00029	-.00039	.00005	.00640	.42991	-.00394	.04757	.00376
#3	.00032	-.00045	.00176	-.02239	.51452	-.00366	-.02508	.00645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.13929	.00064	.00945	-.00035	-.00015	.00321	.01398
Stddev	.00006	.03411	.00105	.00209	.00181	.00436	.00359	.00257
%RSD	213.42	24.488	165.38	22.140	518.41	2896.0	111.60	18.355
#1	-.00002	.10005	.00136	.00713	-.00086	-.00214	-.00090	.01681
#2	-.00010	.16186	-.00057	.01002	-.00184	.00485	.00487	.01332
#3	.00003	.15595	.00112	.01119	.00166	-.00315	.00567	.01180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608016406SDL Acquired: 8/10/2016 11:45:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579239-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00090**	**.00151**	**.00593**	**.00189**	**.00084**	**.00054**	**.00042**
Stddev	.00054	.00008	.00757	.00088	.00034	.00012	.00003
%RSD	60.165	5.3581	127.60	46.242	40.472	22.067	6.7576
#1	-.00040	.00147	-.00106	.00251	.00046	.00067	.00041
#2	-.00147	.00147	.00488	.00228	.00096	.00053	.00046
#3	-.00083	.00161	.01397	.00089	.00111	.00043	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13382.**	**80700.**	**3428.0**
Stddev	43.	88.	15.9
%RSD	.32258	.10952	.46510
#1	13395.	80725.	3409.6
#2	13418.	80774.	3437.5
#3	13334.	80602.	3436.8

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 11:49:46 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41687**	**10.369**	**.41579**	**.52978**	**1.0523**	**.05121**	**10.429**	**.05208**
Stddev	.00200	.009	.01420	.00115	.0029	.00006	.048	.00098
%RSD	.47885	.09043	3.4142	.21670	.27068	.11176	.45868	1.8837
#1	.41912	10.369	.42315	.53111	1.0537	.05125	10.470	.05283
#2	.41532	10.360	.42479	.52911	1.0490	.05115	10.377	.05245
#3	.41616	10.379	.39942	.52913	1.0542	.05124	10.441	.05097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20697**	**.51326**	**.52360**	**4.1491**	**50.724**	**1.0421**	**10.463**	**.52891**
Stddev	.00694	.00061	.01407	.0328	.073	.0118	.047	.00441
%RSD	3.3527	.11958	2.6872	.79174	.14442	1.1329	.45350	.83411
#1	.21082	.51271	.53181	4.1566	50.644	1.0552	10.468	.53122
#2	.21113	.51315	.53164	4.1131	50.739	1.0321	10.508	.52382
#3	.19896	.51392	.50735	4.1775	50.788	1.0391	10.414	.53169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0345**	**51.377**	**.52343**	**10.551**	**.52886**	**1.2564**	**.42605**	**5.2460**
Stddev	.0336	.083	.01659	.245	.01174	.0247	.01101	.1142
%RSD	3.2505	.16110	3.1697	2.3255	2.2192	1.9641	2.5852	2.1776
#1	1.0537	51.422	.53380	10.698	.53649	1.2728	.43480	5.3112
#2	1.0542	51.282	.53219	10.687	.53475	1.2684	.42966	5.3127
#3	.99567	51.429	.50429	10.268	.51535	1.2281	.41368	5.1141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 11:49:46 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0377**	**1.0528**	**1.0210**	**.52468**	**1.0189**	**1.0449**	**1.0445**
Stddev	.0376	.0032	.0067	.00384	.0022	.0306	.0040
%RSD	3.6213	.30307	.65784	.73282	.21466	2.9273	.38623
#1	1.0624	1.0551	1.0284	.52597	1.0214	1.0614	1.0477
#2	1.0563	1.0491	1.0191	.52771	1.0181	1.0637	1.0399
#3	.99445	1.0541	1.0154	.52035	1.0173	1.0096	1.0458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12716.**	**76271.**	**3343.9**
Stddev	14.	29.	15.2
%RSD	.10988	.03791	.45361
#1	12721.	76240.	3331.9
#2	12700.	76275.	3361.0
#3	12727.	76297.	3339.0

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 11:53:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	-.00921	-.00066	.00476	-.00220	.00002	.00274	.00010
Stddev	.00126	.00656	.00082	.00236	.00054	.00004	.02401	.00011
%RSD	120.41	71.292	124.98	49.598	24.372	187.95	876.76	105.99
#1	.00155	-.00881	-.00004	.00209	-.00211	.00000	.03045	.00006
#2	.00196	-.01596	-.00160	.00656	-.00277	-.00001	-.01159	.00023
#3	-.00039	-.00285	-.00034	.00564	-.00171	.00006	-.01065	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	-.00004	-.00052	-.01441	.21693	-.00092	-.01163	.00002
Stddev	.00015	.00030	.00074	.04010	.03957	.00134	.04141	.00261
%RSD	752.86	676.98	142.44	278.24	18.241	145.40	355.96	14692.
#1	.00010	.00003	.00032	.00814	.17362	.00012	-.01887	.00118
#2	.00011	.00021	-.00107	.00933	.25119	-.00243	-.04894	-.00297
#3	-.00015	-.00037	-.00081	-.06071	.22598	-.00045	.03292	.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.03934	.00035	-.00125	.00059	.00395	.00737	-.00020
Stddev	.00013	.01110	.00172	.00276	.00323	.00215	.00228	.00045
%RSD	69.951	28.226	490.24	220.15	544.98	54.419	30.913	224.45
#1	.00006	.02846	-.00136	-.00392	.00132	.00639	.00818	-.00058
#2	.00031	.03890	.00207	.00159	-.00294	.00309	.00480	-.00033
#3	.00017	.05065	.00033	-.00144	.00339	.00236	.00914	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 11:53:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**-.00018**	**.00459**	**-.00130**	**.00017**	**-.00014**	**-.00014**
Stddev	.00050	.00031	.00511	.00317	.00066	.00005	.00039
%RSD	149.07	173.74	111.31	243.65	382.87	32.439	285.55
#1	.00024	-.00032	.00858	-.00186	-.00052	-.00020	-.00025
#2	-.00065	-.00039	.00636	-.00416	.00023	-.00011	-.00046
#3	-.00058	.00018	-.00117	.00211	.00081	-.00012	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12933.**	**78122.**	**3374.8**
Stddev	62.	121.	21.1
%RSD	.48035	.15432	.62453
#1	12878.	78107.	3398.6
#2	12921.	78250.	3367.6
#3	13001.	78010.	3358.3

Approved: August 11, 2016

Sample Name: L1608021401 Acquired: 8/10/2016 11:57:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.03566	.00018	.06969	.05690	-.00009	28.138	.00002
Stddev	.00139	.00321	.00168	.00236	.00109	.00001	.101	.00012
%RSD	18977.	8.9953	919.15	3.3804	1.9205	12.928	.35792	572.33
#1	.00161	.03534	-.00165	.06838	.05794	-.00008	28.255	.00016
#2	-.00080	.03901	.00054	.06828	.05698	-.00009	28.077	-.00003
#3	-.00079	.03262	.00166	.07241	.05576	-.00010	28.083	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00041	.00127	.60255	1.4554	.00024	7.2716	.13690
Stddev	.00014	.00019	.00059	.00813	.0331	.00361	.0458	.00191
%RSD	68.893	46.851	46.440	1.3498	2.2721	1500.5	.62968	1.3948
#1	.00007	.00043	.00127	.60947	1.4177	-.00126	7.2943	.13769
#2	.00035	.00058	.00187	.60459	1.4794	.00436	7.2189	.13828
#3	.00019	.00021	.00068	.59359	1.4691	-.00238	7.3016	.13472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00111	81.307	.00119	.09029	-.00103	.00251	.00740	5.1140
Stddev	.00006	.066	.00069	.00805	.00154	.00453	.00795	.4874
%RSD	5.1621	.08079	57.947	8.9183	150.17	180.42	107.39	9.5303
#1	.00110	81.231	.00198	.09244	-.00211	.00391	.00467	5.3736
#2	.00106	81.343	.00074	.09704	.00074	-.00255	.00118	5.4166
#3	.00117	81.346	.00084	.08137	-.00170	.00618	.01635	4.5518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608021401 Acquired: 8/10/2016 11:57:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.43428**	**-.00294**	**-.00190**	**.00096**	**.00276**	**-.00006**
Stddev	.00036	.00011	.00460	.00229	.00024	.00030	.00065
%RSD	523.37	.02531	156.67	120.61	25.404	11.046	1074.4
#1	-.00048	.43422	-.00696	.00073	.00083	.00289	.00017
#2	.00004	.43441	-.00392	-.00345	.00080	.00297	.00044
#3	.00023	.43421	.00208	-.00297	.00124	.00241	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12608.**	**76006.**	**3343.6**
Stddev	24.	286.	11.7
%RSD	.19382	.37663	.34923
#1	12636.	75821.	3332.9
#2	12600.	76336.	3342.0
#3	12589.	75861.	3356.0

Approved: August 11, 2016

Sample Name: L1608013301 Acquired: 8/10/2016 12:01:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	10.684	.00174	.05944	.08302	-.00005	13.831	.00470
Stddev	.00050	.003	.00202	.00185	.00100	.00005	.026	.00004
%RSD	802.43	.03189	116.17	3.1091	1.1998	87.276	.18871	.91132
#1	-.00051	10.681	.00406	.06143	.08330	-.00009	13.809	.00466
#2	.00025	10.687	.00071	.05778	.08384	-.00006	13.825	.00471
#3	.00045	10.686	.00043	.05911	.08191	-.00000	13.860	.00474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.4239	.02969	.07925	1.4922	1.5655	.72364	3.0453	.04687
Stddev	.0757	.00070	.00452	.0388	.0477	.00113	.0772	.00204
%RSD	5.3193	2.3476	5.7027	2.6009	3.0492	.15572	2.5346	4.3455
#1	1.4677	.03047	.08259	1.5003	1.5104	.72252	3.0000	.04557
#2	1.4676	.02946	.08106	1.4500	1.5932	.72365	3.0016	.04582
#3	1.3365	.02914	.07411	1.5264	1.5930	.72477	3.1345	.04922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00373	91.264	3.8673	13.443	.00614	-.00060	.00471	.53083
Stddev	.00094	.475	.2068	.903	.00338	.00031	.00720	.03353
%RSD	25.125	.52023	5.3474	6.7206	54.986	51.148	152.85	6.3173
#1	.00389	91.644	3.9854	13.999	.00600	-.00033	.00873	.55263
#2	.00457	90.732	3.9879	13.930	.00958	-.00093	.00900	.54765
#3	.00272	91.417	3.6285	12.401	.00284	-.00054	-.00360	.49222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608013301 Acquired: 8/10/2016 12:01:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.11284**	**.00930**	**.00295**	**.00146**	**.24310**	**-.00026**
Stddev	.00082	.00038	.01104	.00111	.00044	.01213	.00029
%RSD	246.13	.33512	118.66	37.649	29.973	4.9906	113.87
#1	.00059	.11259	.01341	.00423	.00156	.25099	-.00027
#2	-.00059	.11327	.01769	.00244	.00184	.24918	.00004
#3	.00100	.11265	-.00320	.00219	.00098	.22913	-.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13446.**	**80936.**	**3554.6**
Stddev	14.	61.	13.5
%RSD	.10552	.07526	.37839
#1	13460.	80896.	3541.6
#2	13447.	80905.	3568.5
#3	13431.	81006.	3553.8

Approved: August 11, 2016

Sample Name: L1608013302 Acquired: 8/10/2016 12:05:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	18.806	-.00036	.08971	.14689	-.00000	21.466	.00816
Stddev	.00026	.174	.00116	.00222	.00322	.00007	.312	.00032
%RSD	30.360	.92471	320.92	2.4754	2.1930	1695.1	1.4540	3.8676
#1	.00102	18.614	.00058	.08843	.14365	-.00006	21.198	.00852
#2	.00099	18.850	-.00166	.08843	.14694	.00007	21.390	.00802
#3	.00056	18.953	-.00001	.09227	.15009	-.00003	21.809	.00794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.5817	.05332	.14641	2.5549	2.3025	.72509	4.6080	.07768
Stddev	.0971	.00136	.00609	.0135	.1293	.01386	.1519	.00154
%RSD	3.7620	2.5475	4.1625	.52933	5.6143	1.9110	3.2963	1.9850
#1	2.6248	.05180	.14840	2.5416	2.4492	.71420	4.4615	.07714
#2	2.6499	.05374	.15126	2.5686	2.2053	.72038	4.5977	.07649
#3	2.4705	.05441	.13957	2.5546	2.2530	.74069	4.7648	.07942
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00627	88.842	7.0667	23.693	.01133	.00076	.01165	.82234
Stddev	.00010	1.060	.2741	1.154	.00428	.00071	.00211	.03398
%RSD	1.6192	1.1926	3.8780	4.8693	37.758	93.209	18.076	4.1327
#1	.00638	87.799	7.1921	24.260	.01076	.00155	.01319	.84005
#2	.00618	88.809	7.2556	24.454	.00736	.00054	.01251	.84380
#3	.00625	89.917	6.7524	22.366	.01586	.00019	.00925	.78315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608013302 Acquired: 8/10/2016 12:05:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.18106	.00534	.00185	.00134	.45380	-.00026
Stddev	.00055	.00353	.00525	.00060	.00040	.01594	.00039
%RSD	130.76	1.9486	98.175	32.530	30.024	3.5133	146.62
#1	.00058	.17743	.00383	.00241	.00095	.45873	-.00017
#2	.00088	.18128	.00102	.00121	.00132	.46670	.00007
#3	-.00019	.18448	.01118	.00193	.00176	.43598	-.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	13184.	79689.	3524.1
Stddev	38.	349.	4.3
%RSD	.29175	.43777	.12177
#1	13224.	80056.	3523.3
#2	13181.	79650.	3528.8
#3	13147.	79362.	3520.3

Approved: August 11, 2016

Sample Name: L1608013303 Acquired: 8/10/2016 12:08:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00214**	**24.215**	**.00231**	**.11470**	**.19166**	**-.00005**	**27.792**	**.01045**
Stddev	.00119	.128	.00243	.00275	.00138	.00010	.327	.00081
%RSD	55.559	.52822	105.28	2.3960	.71861	178.55	1.1776	7.7504
#1	.00082	24.087	.00030	.11174	.19011	-.00015	27.514	.01084
#2	.00312	24.216	.00162	.11518	.19214	-.00006	27.708	.01100
#3	.00248	24.342	.00501	.11718	.19274	.00005	28.153	.00952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2487**	**.06836**	**.18344**	**3.3107**	**2.7898**	**.83910**	**5.9342**	**.10252**
Stddev	.1870	.00077	.01012	.0408	.1307	.01168	.0649	.00304
%RSD	5.7557	1.1241	5.5178	1.2314	4.6865	1.3920	1.0940	2.9688
#1	3.3517	.06757	.18929	3.2679	2.6443	.83043	5.9055	.09912
#2	3.3615	.06841	.18927	3.3150	2.8974	.83450	6.0085	.10345
#3	3.0328	.06911	.17175	3.3491	2.8278	.85239	5.8886	.10498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00734**	**98.067**	**8.8837**	**29.747**	**.01281**	**.00004**	**.00603**	**1.0564**
Stddev	.00062	1.019	.5140	2.024	.00218	.00375	.00672	.0645
%RSD	8.3992	1.0392	5.7853	6.8049	16.984	8796.6	111.37	6.1079
#1	.00802	96.983	9.1684	30.847	.01236	.00330	-.00108	1.0903
#2	.00720	98.213	9.1924	30.984	.01517	-.00405	.01227	1.0970
#3	.00681	99.005	8.2904	27.411	.01089	.00088	.00691	.98200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608013303 Acquired: 8/10/2016 12:08:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00136**	**.23605**	**.00304**	**.00451**	**.00146**	**.55633**	**-.00040**
Stddev	.00072	.00265	.00504	.00303	.00019	.03143	.00019
%RSD	53.034	1.1215	165.73	67.314	12.992	5.6500	47.619
#1	.00213	.23392	.00549	.00308	.00168	.57359	-.00044
#2	.00126	.23521	-.00275	.00245	.00132	.57536	-.00057
#3	.00070	.23901	.00638	.00799	.00138	.52005	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13164.**	**79207.**	**3519.3**
Stddev	17.	139.	6.7
%RSD	.12653	.17587	.19031
#1	13177.	79047.	3512.0
#2	13171.	79300.	3525.2
#3	13146.	79275.	3520.6

Approved: August 11, 2016

Sample Name: L1608020501 Acquired: 8/10/2016 12:12:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.03087	.00075	.01280	.05999	-.00004	49.698	.00039
Stddev	.00119	.01085	.00191	.00137	.00059	.00002	.075	.00017
%RSD	117.54	35.139	254.75	10.689	.98724	60.101	.15043	44.245
#1	.00225	.02103	.00100	.01184	.05937	-.00004	49.731	.00044
#2	.00091	.02908	.00253	.01218	.06055	-.00005	49.751	.00020
#3	-.00012	.04251	-.00127	.01436	.06005	-.00001	49.612	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00151	.00150	.21343	1.2066	.00234	4.5386	.06667
Stddev	.00025	.00060	.00081	.02917	.1030	.00348	.0981	.00301
%RSD	48.535	39.780	53.901	13.669	8.5354	149.08	2.1609	4.5083
#1	.00023	.00220	.00223	.19055	1.1089	.00619	4.6215	.06507
#2	.00067	.00113	.00063	.20346	1.3141	-.00058	4.5640	.06481
#3	.00067	.00120	.00166	.24628	1.1967	.00140	4.4304	.07014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	4.2236	.00202	.01727	.00130	.00142	.00241	3.6379
Stddev	.00004	.0138	.00081	.00503	.00067	.00350	.00376	.3931
%RSD	10.350	.32720	39.937	29.133	51.740	246.47	156.17	10.805
#1	.00039	4.2375	.00245	.02289	.00202	.00547	.00674	3.8801
#2	.00033	4.2098	.00252	.01575	.00068	-.00064	.00019	3.8493
#3	.00040	4.2234	.00109	.01318	.00121	-.00057	.00029	3.1844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608020501 Acquired: 8/10/2016 12:12:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.18705	-.00931	.00018	.00022	.02986	-.00036
Stddev	.00045	.00044	.00691	.00363	.00061	.00385	.00024
%RSD	162.54	.23681	74.280	1975.8	274.00	12.878	67.294
#1	-.00006	.18705	-.01702	.00425	.00062	.03232	-.00019
#2	.00010	.18749	-.00726	-.00096	-.00048	.03182	-.00063
#3	.00079	.18660	-.00365	-.00274	.00053	.02543	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12613.	76516.	3350.6
Stddev	13.	292.	3.8
%RSD	.10633	.38099	.11246
#1	12599.	76558.	3351.9
#2	12626.	76205.	3346.4
#3	12614.	76784.	3353.6

Approved: August 11, 2016

Sample Name: L1608021001 Acquired: 8/10/2016 12:16:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00121	.02276	-.00069	.10757	.54668	-.00007	20.595	.00020
Stddev	.00108	.00218	.00139	.00149	.00159	.00006	.011	.00013
%RSD	89.334	9.5615	200.56	1.3869	.29078	87.642	.05410	64.878
#1	.00238	.02040	.00011	.10901	.54852	-.00009	20.582	.00013
#2	.00026	.02319	-.00230	.10603	.54580	-.00013	20.599	.00035
#3	.00099	.02468	.00011	.10768	.54573	-.00000	20.604	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00045	.03912	.32455	1.4789	.00598	3.3307	.01509
Stddev	.00016	.00049	.00442	.02387	.0421	.00337	.0591	.00239
%RSD	183.71	109.01	11.300	7.3559	2.8489	56.293	1.7746	15.852
#1	-.00007	.00011	.04134	.30314	1.4365	.00380	3.3714	.01476
#2	.00009	-.00064	.04199	.35030	1.4794	.00986	3.2629	.01762
#3	.00024	-.00082	.03403	.32021	1.5207	.00428	3.3579	.01287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00366	134.70	.00101	.03127	.01129	.00325	.00350	4.2712
Stddev	.00034	.22	.00046	.00209	.00306	.00297	.00232	.3929
%RSD	9.3484	.16335	45.841	6.6728	27.110	91.393	66.208	9.1996
#1	.00390	134.95	.00099	.02907	.01310	.00217	.00190	4.5058
#2	.00380	134.60	.00056	.03150	.01301	.00098	.00244	4.4902
#3	.00327	134.55	.00149	.03323	.00776	.00661	.00615	3.8176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608021001 Acquired: 8/10/2016 12:16:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00208	.47276	-.00179	.00066	.00023	.01057	.00014
Stddev	.00038	.00078	.00051	.00186	.00050	.00123	.00025
%RSD	18.239	.16462	28.671	280.62	213.17	11.644	178.90
#1	.00183	.47288	-.00129	.00076	.00024	.01135	-.00015
#2	.00189	.47193	-.00176	-.00124	.00073	.01121	.00026
#3	.00251	.47347	-.00232	.00248	-.00027	.00915	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12503.	75627.	3325.5
Stddev	22.	127.	15.1
%RSD	.17909	.16821	.45455
#1	12490.	75481.	3314.8
#2	12529.	75712.	3342.8
#3	12490.	75689.	3318.8

Approved: August 11, 2016

Sample Name: L1608021101 Acquired: 8/10/2016 12:20:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	.06644	-.00263	.05903	.05556	-.00004	50.951	.00025
Stddev	.00045	.00919	.00159	.00163	.00115	.00006	.166	.00014
%RSD	44.056	13.831	60.342	2.7689	2.0722	169.29	.32535	55.597
#1	.00149	.07693	-.00297	.05993	.05639	-.00008	51.044	.00037
#2	.00059	.06261	-.00401	.06001	.05424	.00003	50.759	.00027
#3	.00098	.05979	-.00090	.05714	.05604	-.00007	51.048	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	-.00025	.00140	.09632	4.4199	.00680	12.915	.00700
Stddev	.00031	.00157	.00027	.01573	.0875	.00285	.122	.00281
%RSD	147.36	618.37	19.194	16.336	1.9806	41.945	.94784	40.073
#1	-.00010	.00134	.00153	.08381	4.3224	.00683	12.883	.01024
#2	.00003	-.00030	.00157	.09116	4.4918	.00393	12.811	.00558
#3	-.00057	-.00180	.00109	.11399	4.4455	.00964	13.050	.00520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	25.918	.00077	.13900	-.00255	.00105	.00102	4.5943
Stddev	.00042	.086	.00047	.01520	.00017	.00203	.00266	.4481
%RSD	67.372	.33075	61.211	10.932	6.6928	194.09	260.83	9.7541
#1	.00080	26.017	.00023	.14551	-.00251	-.00075	-.00195	4.8651
#2	.00015	25.872	.00106	.14986	-.00273	.00064	.00316	4.8407
#3	.00093	25.865	.00103	.12164	-.00240	.00325	.00185	4.0770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608021101 Acquired: 8/10/2016 12:20:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.49940**	**-.00221**	**-.00135**	**.00019**	**.02090**	**-.00062**
Stddev	.00073	.00244	.00664	.00100	.00027	.00241	.00041
%RSD	197.14	.48869	300.87	74.309	144.54	11.536	66.196
#1	.00034	.50127	-.00598	-.00140	.00024	.02237	-.00062
#2	-.00113	.49664	.00546	-.00233	-.00011	.02222	-.00021
#3	-.00033	.50028	-.00609	-.00032	.00042	.01812	-.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12506.**	**75934.**	**3298.1**
Stddev	25.	14.	4.0
%RSD	.19860	.01862	.12275
#1	12482.	75919.	3293.5
#2	12505.	75936.	3299.3
#3	12531.	75947.	3301.3

Approved: August 11, 2016

Sample Name: L1608021301 Acquired: 8/10/2016 12:24:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.05599	-.00050	.05614	.05054	-.00004	38.547	.00020
Stddev	.00087	.00426	.00171	.00180	.00094	.00004	.148	.00002
%RSD	765.56	7.6003	344.48	3.2137	1.8617	89.186	.38484	12.171
#1	-.00088	.05846	.00060	.05454	.05114	-.00008	38.473	.00017
#2	.00048	.05844	-.00247	.05578	.04945	-.00005	38.450	.00022
#3	.00075	.05108	.00037	.05809	.05102	-.00000	38.718	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	-.00050	.00163	.06168	1.4199	.00150	9.2957	.00168
Stddev	.00042	.00075	.00147	.01640	.0688	.00366	.1045	.00272
%RSD	253.66	151.40	90.109	26.594	4.8429	244.56	1.1236	161.87
#1	.00031	-.00133	.00160	.06354	1.3662	.00288	9.3537	.00345
#2	-.00032	.00014	.00311	.07707	1.3962	-.00266	9.1751	-.00145
#3	-.00049	-.00030	.00017	.04442	1.4974	.00427	9.3583	.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	28.466	.00019	.01585	.00094	-.00241	.00188	4.0213
Stddev	.00021	.202	.00023	.00619	.00327	.00160	.00163	.3940
%RSD	35.137	.71067	122.52	39.042	348.56	66.392	86.949	9.7970
#1	.00046	28.654	.00001	.01357	-.00182	-.00371	.00310	4.2668
#2	.00083	28.252	.00045	.02286	.00008	-.00062	.00250	4.2302
#3	.00048	28.491	.00011	.01113	.00455	-.00290	.00002	3.5669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608021301 Acquired: 8/10/2016 12:24:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.42602**	**.00369**	**-.00099**	**.00034**	**.00204**	**-.00021**
Stddev	.00115	.00027	.00472	.00076	.00015	.00029	.00031
%RSD	502.66	.06256	127.77	76.815	44.153	14.365	148.66
#1	-.00060	.42633	.00079	-.00080	.00017	.00227	-.00046
#2	-.00025	.42584	.00115	-.00183	.00045	.00215	-.00031
#3	.00154	.42589	.00913	-.00034	.00041	.00171	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12848.**	**77906.**	**3377.8**
Stddev	37.	217.	17.3
%RSD	.28904	.27870	.51329
#1	12874.	78000.	3357.9
#2	12865.	77658.	3385.9
#3	12805.	78061.	3389.6

Approved: August 11, 2016

Sample Name: L1608021302 Acquired: 8/10/2016 12:28:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00149	.01808	.00062	.06130	.09474	-.00008	49.069	.00029
Stddev	.00068	.01039	.00116	.00105	.00116	.00004	.491	.00019
%RSD	45.690	57.431	186.47	1.7057	1.2295	54.862	1.0009	67.464
#1	.00125	.01767	-.00048	.06010	.09459	-.00009	49.280	.00029
#2	.00097	.02867	.00051	.06188	.09597	-.00003	49.419	.00048
#3	.00227	.00791	.00184	.06193	.09365	-.00012	48.508	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	-.00052	.00170	.17330	1.4848	.00227	8.3364	.06865
Stddev	.00008	.00090	.00182	.03390	.1211	.00219	.1409	.00542
%RSD	32.379	171.79	106.82	19.560	8.1583	96.244	1.6904	7.8989
#1	-.00029	-.00038	.00096	.13430	1.6097	-.00020	8.4951	.07221
#2	-.00016	-.00148	.00377	.19564	1.4771	.00308	8.2259	.07133
#3	-.00030	.00029	.00037	.18997	1.3678	.00394	8.2882	.06241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	50.636	.00127	.00973	.00066	-.00126	.00410	4.7446
Stddev	.00030	.231	.00093	.00578	.00183	.00383	.00201	.4114
%RSD	33.430	.45713	73.026	59.350	275.19	302.88	48.991	8.6721
#1	.00124	50.899	.00230	.01493	.00032	.00176	.00187	4.9894
#2	.00068	50.461	.00052	.01075	.00264	-.00557	.00468	4.9747
#3	.00078	50.549	.00098	.00352	-.00097	.00001	.00576	4.2695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608021302 Acquired: 8/10/2016 12:28:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.67990**	**-.00606**	**-.00119**	**-.00037**	**.00480**	**.00025**
Stddev	.00038	.00365	.00311	.00256	.00015	.00059	.00057
%RSD	267.53	.53748	51.372	215.88	39.724	12.279	232.96
#1	.00003	.68364	-.00909	-.00148	-.00021	.00514	.00029
#2	-.00017	.67972	-.00622	-.00359	-.00049	.00513	-.00035
#3	.00057	.67634	-.00287	.00151	-.00041	.00412	.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12574.**	**76650.**	**3314.1**
Stddev	32.	234.	27.3
%RSD	.25628	.30473	.82343
#1	12566.	76799.	3287.5
#2	12609.	76381.	3312.8
#3	12546.	76771.	3342.0

Approved: August 11, 2016

Sample Name: L1608021302 Acquired: 8/10/2016 12:31:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00241**	s **-.06349**	k **-.00290**	s **-.00017**	**4.3097**	s **-.00016**
Stddev	.00814	.00475	.00082	.00244	7.4817	.00018
%RSD	338.36	7.4773	28.232	1477.1	173.60	115.45
#1	-.01176	-.06892	-.00284	-.00290	12.949	-.00037
#2	.00312	-.06009	-.00375	.00180	-.00738	-.00005
#3	s .00141	s -.06147	k -.00211	s .00060	-.01242	s -.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.4428**	k **.00045**	k **.00570**	s **-.00097**	k **.01116**	kF **-6.6263**
Stddev	7.6854	.00053	.01008	.00038	.01950	11.485
%RSD	172.98	119.30	176.80	38.917	174.72	173.32
#1	13.317	.00106	.01735	-.00122	.03368	-19.888
#2	.03284	.00018	-.00012	-.00116	-.00018	-.0014
#3	-.02142	k .00010	k -.00012	s -.00054	k -.00002	k .0100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit						720.00
Low Limit						-.02000

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-67.892**	F **-2.2488**	kF **-16.811**	kF **-.48245**	k **.00016**	**8.6342**
Stddev	117.98	3.8980	29.039	.83530	.00013	14.971
%RSD	173.78	173.33	172.74	173.14	78.147	173.39
#1	-204.13	-6.7499	-50.342	-1.4470	.00031	25.921
#2	.183	.00240	-.0598	.00120	.00006	-.00277
#3	.269	.00097	k -.0309	k -.00158	k .00012	-.01585
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass
High Limit	450.00	36.000	900.00	36.000		
Low Limit	-.50000	-.10000	-.10000	-.00300		

Approved: August 11, 2016

Sample Name: L1608021302 Acquired: 8/10/2016 12:31:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00277	k .00666	k .00552	k .00038	k .00877	k -.00829
Stddev	.00074	.00978	.00111	.00460	.00625	.00208
%RSD	26.894	146.82	20.108	1196.6	71.254	25.149
#1	.00301	.01796	.00589	.00552	.01459	-.00868
#2	.00193	.00100	.00428	-.00100	.00216	-.00604
#3	k .00336	k .00103	k .00640	k -.00336	k .00957	k -.01015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00711	.17432	kF -3.4578	k -.00031	s .00368	k -.00046
Stddev	.01123	.30263	6.0044	.00510	.00491	.00007
%RSD	157.97	173.61	173.65	1671.1	133.41	14.529
#1	-.02006	.52377	-10.391	-.00594	.00932	-.00050
#2	-.00032	-.00040	.0036	.00399	.00039	-.00050
#3	k -.00093	-.00042	k .0141	k .00103	s .00133	k -.00038
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000			
Low Limit			-.03000			

Elem	Zr3391
Units	ppm
Avg	kF -.26098
Stddev	.45237
%RSD	173.34
#1	-.78333
#2	.00004
#3	k .00035
Check ?	Chk Fail
High Limit	36.000
Low Limit	-.04000

Approved: August 11, 2016

Sample Name: L1608021302 Acquired: 8/10/2016 12:31:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	19960.	^ *****	3895.7
Stddev	1654.	-----	3472.9
%RSD	8.2851	-----	89.147
#1	20506.	168340.	6.292
#2	18102.	118440.	4994.6
#3	21271.	^ -----	6686.2

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 12:35:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39691**	**9.7893**	**.39114**	**.50578**	**1.0151**	**.04816**	**10.148**	**.04906**
Stddev	.00142	.0296	.01103	.00259	.0044	.00037	.089	.00142
%RSD	.35686	.30288	2.8208	.51276	.43231	.76190	.87582	2.9000
#1	.39788	9.8228	.39729	.50491	1.0102	.04852	10.137	.04997
#2	.39756	9.7791	.39772	.50870	1.0187	.04817	10.066	.04979
#3	.39528	9.7662	.37840	.50373	1.0165	.04779	10.242	.04742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19443**	**.48152**	**.49303**	**3.9435**	**48.356**	**1.0009**	**9.7422**	**.50894**
Stddev	.00592	.00153	.01368	.0296	.187	.0037	.0492	.00384
%RSD	3.0462	.31864	2.7751	.75180	.38627	.37412	.50498	.75474
#1	.19868	.48312	.50232	3.9259	48.152	1.0027	9.7788	.51002
#2	.19693	.48138	.49945	3.9268	48.518	.99660	9.6863	.50468
#3	.18766	.48006	.47732	3.9777	48.397	1.0034	9.7615	.51213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98326**	**49.354**	**.49563**	**9.9980**	**.49785**	**1.1898**	**.40477**	**4.9863**
Stddev	.02945	.239	.01590	.2321	.00697	.0294	.01435	.0984
%RSD	2.9954	.48342	3.2076	2.3218	1.3994	2.4720	3.5454	1.9730
#1	1.0013	49.091	.50726	10.141	.50451	1.2153	.41548	5.0447
#2	.99916	49.557	.50212	10.122	.49843	1.1965	.41036	5.0415
#3	.94927	49.414	.47751	9.7301	.49061	1.1576	.38847	4.8727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 12:35:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97262	1.0152	.96605	.49313	.95230	.99069	.99685
Stddev	.03489	.0058	.00425	.00257	.00322	.02827	.00587
%RSD	3.5875	.56948	.43994	.52143	.33788	2.8537	.58837
#1	.99407	1.0096	.97088	.49401	.95597	1.0058	1.0032
#2	.99144	1.0148	.96288	.49514	.95097	1.0082	.99169
#3	.93236	1.0212	.96438	.49023	.94995	.95807	.99563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	13219.	79042.	3427.6
Stddev	8.	157.	7.3
%RSD	.06286	.19856	.21152
#1	13223.	79128.	3421.9
#2	13225.	78861.	3435.8
#3	13210.	79137.	3425.2

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 12:39:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00207	-.00685	-.00183	.00136	-.00268	-.00009	-.01063	.00026
Stddev	.00081	.00502	.00125	.00176	.00032	.00008	.02507	.00006
%RSD	39.219	73.344	68.446	129.65	11.806	82.793	235.89	23.642
#1	.00177	-.00123	-.00068	-.00067	-.00236	-.00001	-.00979	.00030
#2	.00145	-.00842	-.00316	.00251	-.00299	-.00010	-.03610	.00019
#3	.00300	-.01090	-.00164	.00222	-.00269	-.00016	.01401	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	-.00057	.00094	-.01494	.24022	-.00183	-.08137	.00193
Stddev	.00017	.00063	.00142	.03094	.00425	.00061	.08272	.00268
%RSD	67.068	110.47	150.88	207.12	1.7680	33.223	101.67	139.15
#1	-.00010	.00015	.00060	.02036	.23735	-.00251	-.12598	.00501
#2	-.00043	-.00101	.00251	-.03737	.23822	-.00163	-.13222	.00061
#3	-.00022	-.00084	-.00027	-.02781	.24510	-.00134	.01408	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.05469	.00115	-.00058	-.00041	.00175	.00250	-.00158
Stddev	.00053	.02612	.00008	.00438	.00289	.00462	.00486	.00238
%RSD	1026.2	47.751	6.5685	758.41	697.44	263.45	194.90	150.64
#1	.00052	.08096	.00110	-.00533	-.00269	.00629	.00715	.00049
#2	-.00053	.02873	.00111	.00329	.00283	-.00295	-.00255	-.00419
#3	-.00015	.05438	.00123	.00031	-.00139	.00193	.00289	-.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 12:39:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**-.00000**	**.00158**	**.00021**	**.00074**	**-.00020**	**.00018**
Stddev	.00043	.00016	.00119	.00097	.00048	.00012	.00003
%RSD	63.735	15533.	75.445	471.62	64.418	60.637	18.148
#1	-.00062	.00013	.00123	-.00091	.00045	-.00007	.00018
#2	-.00028	-.00018	.00061	.00067	.00129	-.00022	.00021
#3	-.00113	.00005	.00291	.00085	.00048	-.00031	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13310.**	**80812.**	**3457.1**
Stddev	100.	264.	16.3
%RSD	.75024	.32685	.47234
#1	13201.	80570.	3439.0
#2	13397.	81094.	3470.7
#3	13332.	80773.	3461.6

Approved: August 11, 2016

Sample Name: PBW 8A Acquired: 8/10/2016 12:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.01496	-.00228	.00518	-.00275	-.00005	.08159	.00034
Stddev	.00150	.00429	.00116	.00418	.00052	.00009	.05831	.00008
%RSD	970.18	28.652	50.702	80.781	18.994	195.41	71.467	22.658
#1	-.00188	.01830	-.00347	.00071	-.00243	-.00012	.11147	.00041
#2	.00058	.01013	-.00116	.00582	-.00246	-.00009	.11889	.00026
#3	.00083	.01646	-.00222	.00901	-.00335	.00006	.01440	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	-.00019	.00067	.01504	.21106	-.00270	.02327	.00054
Stddev	.00019	.00024	.00015	.01378	.08258	.00097	.01942	.00194
%RSD	100.74	124.85	22.345	91.620	39.128	35.920	83.466	359.66
#1	-.00032	-.00046	.00050	.00755	.12158	-.00285	.04429	-.00115
#2	.00003	.00001	.00076	.00663	.28436	-.00359	.00598	.00011
#3	-.00027	-.00013	.00075	.03095	.22724	-.00166	.01954	.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.02012	.00096	.00170	.00058	-.00124	.00002	.00099
Stddev	.00039	.02581	.00106	.00451	.00116	.00280	.00469	.00030
%RSD	212.48	128.33	110.23	265.43	200.26	224.68	30717.	30.604
#1	-.00011	.04875	.00073	.00050	.00057	-.00081	.00039	.00128
#2	.00003	-.00137	.00211	.00668	-.00057	-.00423	.00450	.00067
#3	.00063	.01296	.00003	-.00209	.00174	.00131	-.00485	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: PBW 8A Acquired: 8/10/2016 12:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**.00014**	**.00650**	**-.00411**	**.00025**	**.00063**	**-.00012**
Stddev	.00037	.00024	.00574	.00169	.00044	.00041	.00025
%RSD	44.139	171.91	88.385	41.075	179.19	64.113	203.77
#1	-.00042	-.00014	.00464	-.00296	-.00026	.00089	.00001
#2	-.00099	.00029	.00192	-.00605	.00043	.00085	.00003
#3	-.00111	.00026	.01294	-.00332	.00057	.00017	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12474.**	**77455.**	**3313.7**
Stddev	283.	390.	23.2
%RSD	2.2672	.50401	.69999
#1	12631.	77527.	3287.2
#2	12147.	77805.	3323.1
#3	12643.	77034.	3330.6

Approved: August 11, 2016

Sample Name: LCSW 8A Acquired: 8/10/2016 12:47:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20828**	**5.1690**	**.20718**	**1.0949**	**.53342**	**.02468**	**5.4543**	**.02632**
Stddev	.00024	.0111	.00183	.0032	.00230	.00012	.0137	.00022
%RSD	.11737	.21552	.88448	.29313	.43186	.48507	.25058	.85358
#1	.20804	5.1571	.20535	1.0912	.53540	.02454	5.4578	.02608
#2	.20853	5.1710	.20902	1.0965	.53395	.02475	5.4392	.02636
#3	.20826	5.1791	.20717	1.0970	.53089	.02475	5.4659	.02653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10545**	**.25444**	**.26695**	**2.0775**	**25.219**	**.52774**	**5.2841**	**.26081**
Stddev	.00010	.00171	.00143	.0253	.064	.00250	.0374	.00111
%RSD	.09861	.67060	.53558	1.2192	.25500	.47456	.70720	.42637
#1	.10546	.25251	.26798	2.0562	25.261	.52833	5.2978	.26209
#2	.10534	.25574	.26532	2.0707	25.251	.52499	5.3127	.26004
#3	.10555	.25506	.26757	2.1055	25.145	.52989	5.2418	.26030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53463**	**25.593**	**.26944**	**5.1724**	**.26771**	**.64047**	**.20074**	**2.6686**
Stddev	.00087	.083	.00043	.0048	.00384	.00141	.00816	.0038
%RSD	.16310	.32618	.15860	.09251	1.4326	.22087	4.0650	.14167
#1	.53480	25.498	.26915	5.1779	.26564	.64129	.20707	2.6675
#2	.53368	25.653	.26993	5.1696	.27214	.64129	.19153	2.6655
#3	.53540	25.629	.26923	5.1697	.26536	.63884	.20361	2.6728
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LCSW 8A Acquired: 8/10/2016 12:47:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52230**	**.54051**	**.51215**	**.25942**	**.50306**	**.52808**	**.51778**
Stddev	.00095	.00169	.00243	.00335	.00023	.00047	.00158
%RSD	.18120	.31294	.47454	1.2897	.04556	.08839	.30496
#1	.52286	.53883	.51488	.25866	.50316	.52766	.51635
#2	.52121	.54048	.51021	.26308	.50280	.52799	.51947
#3	.52284	.54222	.51137	.25652	.50322	.52858	.51751
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12562.**	**76398.**	**3346.7**
Stddev	7.	121.	8.8
%RSD	.05237	.15876	.26203
#1	12568.	76478.	3354.8
#2	12555.	76258.	3337.4
#3	12564.	76457.	3348.0

Approved: August 11, 2016

Sample Name: L1608000205 Acquired: 8/10/2016 12:51:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20899**	**5.1650**	**.20927**	**1.0400**	**.54348**	**.02494**	**5.5130**	**.02627**
Stddev	.00131	.0240	.00697	.0020	.00171	.00008	.0411	.00082
%RSD	.62455	.46442	3.3324	.19534	.31390	.31170	.74633	3.1327
#1	.21021	5.1378	.21088	1.0400	.54154	.02485	5.4702	.02687
#2	.20913	5.1740	.21530	1.0380	.54477	.02498	5.5522	.02660
#3	.20761	5.1833	.20163	1.0421	.54411	.02499	5.5165	.02533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10546**	**.25732**	**.26776**	**2.1453**	**25.438**	**.53565**	**5.2730**	**.26792**
Stddev	.00326	.00048	.00688	.0258	.091	.00186	.0215	.00024
%RSD	3.0922	.18644	2.5682	1.2031	.35824	.34768	.40725	.09064
#1	.10734	.25686	.27075	2.1205	25.417	.53358	5.2686	.26811
#2	.10734	.25727	.27264	2.1720	25.538	.53617	5.2963	.26765
#3	.10169	.25782	.25989	2.1434	25.359	.53720	5.2541	.26799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53587**	**25.940**	**.26969**	**5.2112**	**.26785**	**.64313**	**.20147**	**2.6773**
Stddev	.01545	.062	.00794	.1121	.00525	.01901	.00110	.0463
%RSD	2.8837	.23764	2.9445	2.1508	1.9617	2.9565	.54548	1.7282
#1	.54534	25.896	.27491	5.2781	.27219	.65198	.20254	2.7089
#2	.54424	26.010	.27362	5.2736	.26935	.65611	.20034	2.6987
#3	.51804	25.914	.26055	5.0818	.26201	.62131	.20153	2.6242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608000205 Acquired: 8/10/2016 12:51:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52106**	**.55049**	**.51196**	**.26364**	**.50877**	**.52990**	**.55333**
Stddev	.01595	.00325	.00378	.00576	.00092	.01448	.00201
%RSD	3.0617	.59085	.73846	2.1835	.18073	2.7332	.36379
#1	.53094	.54678	.50765	.26932	.50795	.53928	.55100
#2	.52958	.55188	.51351	.26381	.50977	.53719	.55440
#3	.50266	.55283	.51473	.25781	.50859	.51322	.55458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12544.**	**76331.**	**3324.1**
Stddev	18.	206.	9.3
%RSD	.14301	.27026	.28097
#1	12528.	76106.	3332.8
#2	12542.	76376.	3314.2
#3	12563.	76511.	3325.2

Approved: August 11, 2016

Sample Name: L1608000206 Acquired: 8/10/2016 12:54:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21253	5.2329	.21058	1.0459	.54768	.02523	5.5576	.02658
Stddev	.00189	.0138	.00228	.0040	.00271	.00001	.0556	.00075
%RSD	.88921	.26473	1.0849	.38633	.49429	.05462	1.0011	2.8136
#1	.21179	5.2444	.21273	1.0413	.54793	.02525	5.4944	.02694
#2	.21112	5.2175	.21084	1.0477	.54486	.02523	5.5790	.02709
#3	.21467	5.2367	.20818	1.0488	.55026	.02522	5.5993	.02572
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10710	.26140	.27062	2.1269	25.805	.54187	5.2117	.27323
Stddev	.00342	.00022	.00842	.0075	.087	.00248	.0542	.00595
%RSD	3.1923	.08255	3.1101	.35151	.33705	.45759	1.0398	2.1774
#1	.10948	.26145	.27517	2.1230	25.812	.53967	5.1663	.27043
#2	.10864	.26116	.27577	2.1355	25.714	.54138	5.2717	.26919
#3	.10318	.26158	.26090	2.1222	25.888	.54456	5.1972	.28006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54190	26.149	.27308	5.2615	.26980	.64692	.20582	2.7050
Stddev	.01463	.226	.00804	.1038	.00455	.01857	.00319	.0493
%RSD	2.7003	.86520	2.9440	1.9733	1.6876	2.8706	1.5512	1.8225
#1	.55052	26.176	.27775	5.3286	.27385	.66049	.20910	2.7396
#2	.55018	25.911	.27769	5.3140	.27067	.65453	.20272	2.7268
#3	.52500	26.361	.26380	5.1419	.26487	.62576	.20563	2.6485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608000206 Acquired: 8/10/2016 12:54:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52753**	**.55465**	**.52116**	**.26274**	**.51511**	**.53518**	**.54686**
Stddev	.01729	.00343	.00382	.00211	.00100	.01532	.00254
%RSD	3.2776	.61856	.73323	.80252	.19425	2.8628	.46517
#1	.53898	.55389	.52017	.26499	.51622	.54395	.54606
#2	.53596	.55167	.51793	.26244	.51428	.54411	.54480
#3	.50764	.55840	.52537	.26080	.51481	.51749	.54970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12543.**	**76390.**	**3335.1**
Stddev	65.	45.	6.4
%RSD	.51571	.05887	.19334
#1	12508.	76370.	3328.9
#2	12504.	76359.	3341.8
#3	12618.	76442.	3334.6

Approved: August 11, 2016

Sample Name: L1608000207 Acquired: 8/10/2016 12:58:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21475**	**5.2250**	**.21314**	**1.0538**	**.55280**	**.02532**	**5.6331**	**.02679**
Stddev	.00056	.0160	.00400	.0011	.00284	.00003	.0335	.00044
%RSD	.26161	.30601	1.8749	.10234	.51361	.12326	.59420	1.6481
#1	.21415	5.2124	.21696	1.0531	.55343	.02535	5.6625	.02700
#2	.21525	5.2430	.21348	1.0532	.55526	.02533	5.5966	.02709
#3	.21486	5.2196	.20899	1.0550	.54969	.02529	5.6400	.02628
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10719**	**.26267**	**.27046**	**2.1550**	**26.019**	**.54643**	**5.3187**	**.27485**
Stddev	.00269	.00218	.00777	.0251	.043	.00098	.1202	.00105
%RSD	2.5140	.83162	2.8721	1.1631	.16684	.17912	2.2591	.38203
#1	.10884	.26039	.27569	2.1368	25.993	.54532	5.2743	.27524
#2	.10864	.26474	.27415	2.1836	26.069	.54680	5.4547	.27566
#3	.10408	.26289	.26153	2.1446	25.994	.54716	5.2270	.27367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54421**	**26.356**	**.27347**	**5.2802**	**.27332**	**.65003**	**.20993**	**2.7155**
Stddev	.01525	.014	.00602	.1120	.00707	.01607	.00632	.0468
%RSD	2.8014	.05241	2.2011	2.1211	2.5883	2.4716	3.0089	1.7228
#1	.55363	26.340	.27727	5.3562	.27725	.65960	.20596	2.7384
#2	.55237	26.367	.27660	5.3329	.27756	.65900	.21721	2.7464
#3	.52662	26.361	.26653	5.1516	.26515	.63148	.20661	2.6617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608000207 Acquired: 8/10/2016 12:58:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52827	.55850	.52703	.26624	.51770	.53744	.55133
Stddev	.01716	.00099	.00843	.00249	.00089	.01420	.00243
%RSD	3.2475	.17732	1.5998	.93615	.17195	2.6422	.44030
#1	.53877	.55926	.51747	.26749	.51677	.54607	.54992
#2	.53758	.55886	.53021	.26786	.51854	.54519	.55414
#3	.50848	.55738	.53341	.26337	.51781	.52105	.54995
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12545.	76323.	3300.4
Stddev	6.	108.	13.1
%RSD	.04719	.14115	.39654
#1	12552.	76222.	3305.9
#2	12542.	76310.	3285.5
#3	12541.	76436.	3309.9

Approved: August 11, 2016

Sample Name: L1608000208 Acquired: 8/10/2016 13:01:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20750**	**5.1103**	**.21001**	**1.0272**	**.53640**	**.02465**	**5.4435**	**.02637**
Stddev	.00077	.0096	.00032	.0005	.00154	.00009	.0222	.00027
%RSD	.36935	.18847	.15143	.04729	.28626	.34899	.40867	1.0232
#1	.20837	5.1169	.20970	1.0267	.53816	.02461	5.4294	.02656
#2	.20717	5.0993	.21001	1.0276	.53572	.02460	5.4692	.02648
#3	.20695	5.1148	.21033	1.0272	.53532	.02475	5.4320	.02606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10589**	**.25384**	**.26731**	**2.0733**	**25.218**	**.52822**	**5.1067**	**.26727**
Stddev	.00038	.00092	.00111	.0224	.085	.00222	.0580	.00279
%RSD	.35555	.36244	.41392	1.0825	.33696	.41974	1.1348	1.0433
#1	.10628	.25348	.26845	2.0541	25.233	.52705	5.1406	.26406
#2	.10587	.25316	.26623	2.0678	25.126	.52684	5.1398	.26866
#3	.10553	.25489	.26725	2.0980	25.293	.53078	5.0398	.26909
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53766**	**25.561**	**.27090**	**5.2082**	**.26674**	**.64211**	**.20440**	**2.6680**
Stddev	.00070	.111	.00060	.0047	.00307	.00340	.00727	.0076
%RSD	.13048	.43468	.22235	.08956	1.1505	.53008	3.5561	.28339
#1	.53757	25.635	.27150	5.2109	.26344	.63902	.21276	2.6738
#2	.53840	25.434	.27091	5.2108	.26728	.64576	.20083	2.6709
#3	.53701	25.615	.27029	5.2028	.26950	.64154	.19960	2.6595
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608000208 Acquired: 8/10/2016 13:01:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52475**	**.54206**	**.50930**	**.25878**	**.50253**	**.53128**	**.55311**
Stddev	.00145	.00178	.01370	.00256	.00138	.00061	.00438
%RSD	.27646	.32927	2.6891	.98746	.27471	.11534	.79195
#1	.52619	.54396	.50783	.26118	.50377	.53199	.55812
#2	.52477	.54042	.49640	.25908	.50104	.53101	.54998
#3	.52329	.54180	.52368	.25609	.50278	.53086	.55124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12561.**	**76707.**	**3344.1**
Stddev	10.	195.	20.6
%RSD	.08345	.25458	.61522
#1	12557.	76794.	3321.4
#2	12554.	76844.	3361.5
#3	12574.	76484.	3349.5

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 13:05:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40100**	**9.9212**	**.40513**	**.51587**	**1.0378**	**.04845**	**10.309**	**.05060**
Stddev	.00142	.0098	.00617	.00103	.0048	.00015	.027	.00144
%RSD	.35343	.09871	1.5240	.19993	.46608	.30679	.26021	2.8430
#1	.40261	9.9173	.40829	.51701	1.0406	.04848	10.299	.05164
#2	.40046	9.9323	.40907	.51500	1.0407	.04858	10.340	.05120
#3	.39994	9.9139	.39801	.51562	1.0322	.04829	10.289	.04896
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20052**	**.48851**	**.50889**	**4.0352**	**48.926**	**1.0195**	**10.010**	**.51181**
Stddev	.00654	.00112	.01647	.0242	.250	.0084	.051	.00121
%RSD	3.2613	.22841	3.2360	.59925	.51067	.82301	.51207	.23580
#1	.20463	.48936	.51951	4.0382	49.069	1.0291	9.9679	.51047
#2	.20394	.48725	.51725	4.0578	49.071	1.0134	10.067	.51282
#3	.19298	.48894	.48992	4.0097	48.637	1.0161	9.9941	.51214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0054**	**49.707**	**.51039**	**10.293**	**.51159**	**1.2301**	**.41290**	**5.1458**
Stddev	.0368	.148	.01757	.252	.01133	.0314	.00772	.1011
%RSD	3.6570	.29790	3.4421	2.4485	2.2146	2.5489	1.8697	1.9647
#1	1.0335	49.772	.52062	10.463	.52045	1.2541	.41908	5.2118
#2	1.0189	49.812	.52045	10.412	.51549	1.2417	.41537	5.1963
#3	.96382	49.538	.49011	10.003	.49882	1.1946	.40424	5.0294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 13:05:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99935**	**1.0387**	**.97451**	**.50211**	**.96145**	**1.0202**	**1.0094**
Stddev	.03576	.0040	.00455	.00182	.00192	.0314	.0083
%RSD	3.5778	.38479	.46730	.36299	.19922	3.0792	.81745
#1	1.0200	1.0388	.97454	.50421	.96365	1.0396	1.0141
#2	1.0200	1.0427	.96994	.50105	.96011	1.0370	1.0142
#3	.95807	1.0347	.97905	.50107	.96060	.98394	.99985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12974.**	**78568.**	**3407.3**
Stddev	16.	43.	21.4
%RSD	.12629	.05486	.62774
#1	12990.	78556.	3391.2
#2	12957.	78615.	3399.1
#3	12976.	78531.	3431.6

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 13:09:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	-.00788	-.00179	.00278	-.00303	-.00005	.01357	.00006
Stddev	.00121	.01129	.00263	.00075	.00079	.00005	.02422	.00010
%RSD	90.467	143.22	146.70	27.024	26.213	108.25	178.56	152.09
#1	.00158	-.00414	-.00003	.00244	-.00387	-.00010	.01219	-.00003
#2	.00003	.00106	-.00482	.00226	-.00229	-.00002	-.00994	.00007
#3	.00241	-.02057	-.00053	.00364	-.00293	-.00001	.03845	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	-.00080	.00061	-.01186	.20992	-.00021	-.05332	-.00115
Stddev	.00022	.00050	.00031	.02408	.04839	.00135	.01373	.00060
%RSD	920.04	62.934	50.776	203.09	23.052	645.57	25.755	52.187
#1	.00021	-.00060	.00097	.00640	.26557	-.00146	-.03748	-.00145
#2	-.00006	-.00137	.00051	-.03915	.17767	-.00039	-.06049	-.00046
#3	-.00022	-.00043	.00037	-.00282	.18653	.00122	-.06198	-.00154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.04566	.00098	-.00201	.00109	.00246	.00013	-.00119
Stddev	.00037	.01754	.00026	.00387	.00165	.00129	.00038	.00297
%RSD	326.37	38.410	26.311	192.52	150.55	52.622	297.80	250.38
#1	-.00045	.06537	.00071	-.00155	-.00068	.00098	.00050	.00214
#2	-.00016	.03980	.00100	.00161	.00257	.00340	-.00025	-.00212
#3	.00028	.03180	.00122	-.00608	.00140	.00298	.00013	-.00358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 13:09:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**-.00024**	**.00536**	**.00094**	**.00073**	**-.00035**	**-.00042**
Stddev	.00028	.00012	.00781	.00261	.00075	.00018	.00046
%RSD	81.501	51.081	145.86	277.75	101.58	51.390	108.80
#1	-.00016	-.00025	.01364	-.00117	-.00007	-.00035	-.00039
#2	-.00021	-.00012	-.00187	.00386	.00139	-.00017	-.00089
#3	-.00067	-.00037	.00430	.00012	.00088	-.00053	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13132.**	**79818.**	**3428.4**
Stddev	9.	432.	15.2
%RSD	.06961	.54149	.44218
#1	13122.	80147.	3433.4
#2	13139.	79978.	3440.4
#3	13136.	79328.	3411.3

Approved: August 11, 2016

Sample Name: L1608033007 Acquired: 8/10/2016 13:13:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00172	3.2710	.00247	.23741	.00671	.00238	F 368.73
Stddev	.00210	.0126	.00126	.00069	.00068	.00007	.08
%RSD	121.68	.38514	50.942	.29003	10.188	2.8935	.02101
#1	.00013	3.2832	.00279	.23662	.00633	.00233	368.65
#2	.00410	3.2580	.00353	.23776	.00750	.00235	368.73
#3	.00094	3.2719	.00108	.23786	.00630	.00246	368.81
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02663	.31100	.00258	.01966	4.9525	11.868	.64404
Stddev	.00328	.03886	.00108	.00286	.0292	.050	.00224
%RSD	12.313	12.496	41.874	14.533	.59049	.41841	.34805
#1	.02864	.33538	.00249	.02113	4.9451	11.855	.64553
#2	.02841	.33143	.00370	.02148	4.9847	11.922	.64513
#3	.02285	.26618	.00155	.01637	4.9276	11.826	.64146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	347.30	12.019	-.00058	F 613.41	.89497	.02539	.00349
Stddev	.39	.021	.00042	7.96	.11122	.01009	.00188
%RSD	.11118	.17214	71.284	1.2983	12.427	39.738	53.749
#1	347.49	12.034	-.00011	609.10	.96505	.03694	.00480
#2	347.56	11.995	-.00078	622.60	.95312	.02099	.00432
#3	346.86	12.027	-.00086	608.53	.76673	.01825	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 11, 2016

Sample Name: L1608033007 Acquired: 8/10/2016 13:13:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**-.00406**	**20.974**	**.00006**	**4.1762**	F **-.05460**	**-.00678**
Stddev	.00538	.00294	2.293	.00017	.0043	.00581	.00149
%RSD	2047.9	72.559	10.931	315.41	.10218	10.634	21.964
#1	.00155	-.00737	22.358	.00014	4.1801	-.05234	-.00771
#2	-.00564	-.00307	22.238	-.00015	4.1716	-.05026	-.00506
#3	.00488	-.00173	18.328	.00017	4.1769	-.06120	-.00757
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00062**	**1.0794**	**.00048**
Stddev	.00066	.1301	.00034
%RSD	105.84	12.051	71.116
#1	-.00006	1.1584	.00071
#2	-.00046	1.1504	.00063
#3	-.00135	.92923	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11641.**	**71003.**	**3297.2**
Stddev	90.	41.	13.6
%RSD	.76916	.05842	.41177
#1	11621.	70969.	3310.9
#2	11564.	70992.	3283.7
#3	11740.	71049.	3296.9

Approved: August 11, 2016

Sample Name: L1608033007S Acquired: 8/10/2016 13:17:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21009**	**8.3766**	**.21087**	**1.2526**	**.52053**	**.02624**	F **363.71**
Stddev	.00304	.0635	.01040	.0112	.00175	.00024	.71
%RSD	1.4492	.75828	4.9318	.89306	.33581	.93131	.19463
#1	.20717	8.3034	.21448	1.2398	.52123	.02597	364.52
#2	.21324	8.4165	.21897	1.2572	.52182	.02646	363.37
#3	.20985	8.4099	.19914	1.2607	.51854	.02628	363.23
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05307**	**.41890**	**.24119**	**.25977**	**6.7706**	**36.463**	**1.1437**
Stddev	.00226	.02430	.00318	.01491	.0877	.148	.0062
%RSD	4.2668	5.8012	1.3188	5.7382	1.2948	.40677	.54118
#1	.05480	.43347	.23752	.26864	6.8694	36.321	1.1506
#2	.05390	.43238	.24314	.26812	6.7023	36.451	1.1389
#3	.05050	.39085	.24291	.24256	6.7401	36.617	1.1414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**343.35**	**11.887**	**.50889**	F **615.50**	**1.1706**	**5.3674**	**.24865**
Stddev	.32	.042	.02912	.93	.0681	.2529	.01110
%RSD	.09377	.35558	5.7227	.15082	5.8172	4.7109	4.4660
#1	343.66	11.933	.52624	614.92	1.2087	5.5211	.25774
#2	343.02	11.880	.52516	616.58	1.2111	5.5056	.25194
#3	343.36	11.850	.47526	615.02	1.0920	5.0756	.23627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 11, 2016

Sample Name: L1608033007S Acquired: 8/10/2016 13:17:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.63037	.21035	24.292	.48059	4.5592	.42803	.22568
Stddev	.03634	.00393	1.017	.02950	.0117	.01230	.00705
%RSD	5.7641	1.8685	4.1864	6.1388	.25644	2.8738	3.1247
#1	.65139	.21440	24.890	.49739	4.5718	.42082	.22680
#2	.65131	.21011	24.869	.49786	4.5572	.42103	.23210
#3	.58842	.20655	23.118	.44653	4.5486	.44223	.21813
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.48825	1.5863	.48207
Stddev	.00377	.0864	.00121
%RSD	.77218	5.4498	.25147
#1	.48393	1.6363	.48067
#2	.49087	1.6362	.48273
#3	.48995	1.4865	.48281
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11461.	69793.	3259.6
Stddev	113.	395.	8.1
%RSD	.98902	.56657	.24812
#1	11400.	70245.	3250.6
#2	11391.	69511.	3261.6
#3	11592.	69622.	3266.4

Approved: August 11, 2016

Sample Name: L1608033007SD Acquired: 8/10/2016 13:20:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21545**	**8.5120**	**.21333**	**1.2801**	**.54003**	**.02667**	F **373.47**
Stddev	.00127	.0216	.00938	.0024	.00433	.00010	2.62
%RSD	.58813	.25376	4.3950	.18670	.80274	.38248	.70160
#1	.21557	8.4871	.22076	1.2828	.53576	.02665	371.09
#2	.21665	8.5234	.21644	1.2786	.54443	.02659	376.28
#3	.21412	8.5255	.20280	1.2788	.53990	.02679	373.04
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05340**	**.41981**	**.24682**	**.26261**	**6.9604**	**37.770**	**1.1793**
Stddev	.00250	.02014	.00182	.01465	.0595	.351	.0083
%RSD	4.6794	4.7983	.73561	5.5792	.85487	.93029	.70208
#1	.05471	.43193	.24848	.27220	6.9139	37.379	1.1732
#2	.05497	.43095	.24488	.26989	7.0274	38.059	1.1887
#3	.05052	.39656	.24708	.24575	6.9398	37.873	1.1760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**351.03**	**12.218**	**.51650**	F **642.88**	**1.1744**	**5.4492**	**.24933**
Stddev	2.16	.083	.02623	13.72	.0566	.2120	.00809
%RSD	.61553	.68292	5.0782	2.1345	4.8188	3.8905	3.2464
#1	349.40	12.148	.53268	646.34	1.2086	5.5763	.25332
#2	353.48	12.310	.53058	654.54	1.2055	5.5668	.25466
#3	350.22	12.195	.48624	627.76	1.1091	5.2044	.24002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 11, 2016

Sample Name: L1608033007SD Acquired: 8/10/2016 13:20:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.63757	.21168	24.369	.48621	4.6900	.45102	.22784
Stddev	.02971	.00747	.871	.02528	.0273	.00694	.00394
%RSD	4.6605	3.5290	3.5729	5.1995	.58288	1.5379	1.7285
#1	.65602	.21859	24.897	.50303	4.6657	.44477	.22980
#2	.65339	.21269	24.847	.49847	4.7196	.44982	.23041
#3	.60329	.20375	23.364	.45714	4.6848	.45848	.22331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.49622	1.5906	.51491
Stddev	.00210	.0719	.00433
%RSD	.42327	4.5205	.84142
#1	.49545	1.6357	.51308
#2	.49461	1.6284	.51985
#3	.49859	1.5077	.51178
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11486.	69710.	3216.5
Stddev	35.	116.	29.8
%RSD	.30835	.16651	.92633
#1	11447.	69617.	3229.8
#2	11497.	69840.	3182.4
#3	11515.	69673.	3237.4

Approved: August 11, 2016

Sample Name: L1608020801 Acquired: 8/10/2016 13:24:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.07843	-.00072	.02541	.04653	-.00007	36.598	.00051
Stddev	.00245	.01150	.00134	.00228	.00070	.00011	.227	.00017
%RSD	16285.	14.669	186.12	8.9644	1.5090	154.47	.62038	32.318
#1	-.00253	.07204	.00070	.02615	.04658	.00005	36.336	.00033
#2	.00013	.09171	-.00091	.02285	.04720	-.00018	36.741	.00066
#3	.00235	.07154	-.00196	.02722	.04580	-.00009	36.717	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00090	.48476	.03956	.97787	.00227	4.4642	.04570
Stddev	.00048	.00019	.04008	.01931	.04065	.00208	.0330	.00177
%RSD	123.23	20.984	8.2674	48.823	4.1567	91.612	.73985	3.8658
#1	.00051	.00068	.50806	.04493	.98274	-.00008	4.4261	.04419
#2	.00081	.00102	.50775	.01813	1.0159	.00300	4.4839	.04764
#3	-.00014	.00100	.43849	.05562	.93501	.00388	4.4827	.04526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	2.8866	.00263	-.04239	.00101	.00044	.00350	3.7609
Stddev	.00027	.0367	.00087	.00916	.00201	.00164	.00425	.2637
%RSD	786.44	1.2722	32.871	21.607	199.00	376.27	121.29	7.0111
#1	.00019	2.8442	.00173	-.04961	.00274	.00217	.00799	3.9161
#2	.00019	2.9074	.00271	-.04547	-.00120	-.00109	-.00046	3.9101
#3	-.00028	2.9082	.00346	-.03209	.00149	.00023	.00298	3.4564
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608020801 Acquired: 8/10/2016 13:24:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.13149**	**.00230**	**-.00081**	**.00009**	**.02642**	**-.00041**
Stddev	.00059	.00045	.01183	.00072	.00076	.00226	.00015
%RSD	415.35	.34229	514.32	89.259	862.48	8.5612	38.226
#1	-.00046	.13100	-.00451	-.00162	-.00033	.02764	-.00027
#2	-.00051	.13157	-.00454	-.00055	.00097	.02780	-.00037
#3	.00054	.13189	.01596	-.00025	-.00037	.02381	-.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12461.**	**76611.**	**3333.0**
Stddev	16.	326.	3.1
%RSD	.12765	.42576	.09431
#1	12447.	76603.	3330.5
#2	12478.	76288.	3332.0
#3	12459.	76941.	3336.6

Approved: August 11, 2016

Sample Name: L1608028201 Acquired: 8/10/2016 13:28:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.05576	-.00188	.01514	.07953	-.00005	56.731	.00029
Stddev	.00180	.00513	.00231	.00048	.00175	.00007	.402	.00010
%RSD	591.61	9.2087	122.64	3.1592	2.1940	137.65	.70884	35.641
#1	.00057	.05274	-.00422	.01564	.08059	-.00000	56.873	.00034
#2	.00196	.05285	.00040	.01508	.08049	-.00013	57.043	.00035
#3	-.00161	.06169	-.00184	.01469	.07752	-.00002	56.278	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00016	.00204	.03143	.84274	.00177	8.1104	.00304
Stddev	.00035	.00147	.00066	.01956	.08245	.00401	.0558	.00156
%RSD	146.13	913.40	32.503	62.215	9.7830	226.46	.68784	51.108
#1	-.00006	-.00097	.00273	.04741	.88967	-.00134	8.1518	.00217
#2	-.00064	.00183	.00197	.03727	.89101	.00630	8.0470	.00484
#3	-.00001	-.00038	.00141	.00962	.74754	.00035	8.1325	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	3.6050	.00165	.01099	.00097	.00305	.00259	4.1321
Stddev	.00007	.0270	.00059	.00436	.00256	.00361	.00579	.3943
%RSD	94.751	.74931	35.978	39.681	263.72	118.30	224.05	9.5424
#1	-.00015	3.6015	.00098	.01513	.00237	.00518	-.00310	4.3666
#2	-.00005	3.6335	.00189	.00644	-.00198	-.00112	.00849	4.3528
#3	-.00002	3.5799	.00209	.01141	.00252	.00509	.00237	3.6769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608028201 Acquired: 8/10/2016 13:28:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.18070**	**-.00088**	**-.00216**	**.00023**	**.00155**	**.00008**
Stddev	.00022	.00134	.00109	.00342	.00108	.00046	.00017
%RSD	58.915	.74351	124.22	158.48	464.30	29.768	211.67
#1	-.00014	.18100	-.00213	.00174	.00102	.00200	-.00008
#2	-.00041	.18187	-.00014	-.00469	-.00100	.00157	.00007
#3	-.00057	.17924	-.00037	-.00353	.00069	.00108	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12579.**	**76978.**	**3357.3**
Stddev	18.	291.	6.9
%RSD	.13970	.37757	.20583
#1	12567.	77313.	3352.5
#2	12600.	76793.	3354.1
#3	12571.	76829.	3365.2

Approved: August 11, 2016

Sample Name: L1608028202 Acquired: 8/10/2016 13:32:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.01442	-.00054	.02048	.05282	-.00009	58.027	.00004
Stddev	.00145	.00514	.00275	.00314	.00085	.00002	.195	.00009
%RSD	140.09	35.643	505.78	15.319	1.6023	18.119	.33629	227.60
#1	.00186	.00850	-.00340	.02024	.05232	-.00009	58.233	-.00005
#2	-.00064	.01773	-.00031	.01746	.05235	-.00011	57.845	.00013
#3	.00189	.01702	.00208	.02372	.05380	-.00007	58.002	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	-.00013	.00128	.01395	1.3873	.00036	13.753	.00218
Stddev	.00022	.00094	.00090	.00905	.0435	.00141	.114	.00184
%RSD	713.22	727.10	69.949	64.889	3.1383	394.15	.83026	84.348
#1	.00012	-.00121	.00121	.02357	1.3389	-.00125	13.784	.00007
#2	.00007	.00049	.00043	.00560	1.4231	.00092	13.626	.00342
#3	-.00028	.00034	.00221	.01269	1.4001	.00140	13.848	.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	6.2595	.00035	-.00303	-.00206	.00098	.00688	4.1348
Stddev	.00019	.0423	.00103	.00968	.00335	.00251	.00556	.3876
%RSD	39.320	.67622	291.11	319.16	163.00	256.33	80.833	9.3731
#1	.00050	6.3037	.00154	.00814	.00121	.00205	.00727	4.3787
#2	.00029	6.2194	-.00028	-.00892	-.00549	.00276	.01223	4.3379
#3	.00068	6.2552	-.00021	-.00832	-.00190	-.00189	.00113	3.6879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608028202 Acquired: 8/10/2016 13:32:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.37233**	**-.00158**	**-.00077**	**.00027**	**.00108**	**-.00063**
Stddev	.00045	.00118	.00663	.00261	.00043	.00018	.00048
%RSD	4349.5	.31593	418.85	340.65	160.50	16.544	76.103
#1	.00051	.37358	.00317	-.00375	.00054	.00121	-.00009
#2	-.00025	.37124	-.00916	.00035	-.00023	.00116	-.00099
#3	-.00029	.37216	.00124	.00110	.00048	.00088	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12458.**	**76393.**	**3340.8**
Stddev	28.	133.	16.6
%RSD	.22251	.17475	.49805
#1	12435.	76544.	3321.6
#2	12452.	76345.	3350.2
#3	12489.	76290.	3350.7

Approved: August 11, 2016

Sample Name: L1608028203 Acquired: 8/10/2016 13:36:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	1.0054	-.00085	.02036	.05941	.00002	37.463	.00014
Stddev	.00077	.0115	.00158	.00204	.00068	.00003	.079	.00008
%RSD	55.711	1.1434	185.59	10.000	1.1396	143.74	.21066	56.906
#1	.00200	1.0093	-.00095	.01945	.05866	.00001	37.466	.00022
#2	.00161	.99251	-.00239	.02269	.05998	.00006	37.382	.00013
#3	.00052	1.0145	.00078	.01894	.05960	.00000	37.540	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00124	.00353	1.1795	1.4282	.00056	5.8954	.07578
Stddev	.00036	.00032	.00088	.0242	.0371	.00363	.1684	.00123
%RSD	175.90	25.848	25.070	2.0498	2.5940	648.85	2.8563	1.6277
#1	-.00005	.00148	.00303	1.2070	1.3871	-.00343	5.7146	.07720
#2	.00061	.00087	.00455	1.1695	1.4591	.00366	6.0478	.07500
#3	.00004	.00135	.00301	1.1618	1.4382	.00144	5.9237	.07513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	3.2710	.00369	.04275	-.00027	.00387	.00272	4.1107
Stddev	.00036	.0039	.00095	.00741	.00181	.00331	.00081	.3681
%RSD	295.18	.11919	25.711	17.340	673.99	85.317	29.937	8.9538
#1	.00046	3.2741	.00438	.04769	.00180	.00029	.00358	4.3243
#2	-.00025	3.2722	.00410	.04633	-.00103	.00681	.00196	4.3221
#3	.00015	3.2666	.00261	.03422	-.00158	.00452	.00263	3.6857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608028203 Acquired: 8/10/2016 13:36:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.13886	.01211	-.00324	.00166	.04151	-.00024
Stddev	.00025	.00063	.00157	.00306	.00045	.00457	.00027
%RSD	136.48	.45430	12.986	94.455	26.906	11.000	111.25
#1	.00035	.13888	.01094	-.00033	.00165	.04439	-.00054
#2	-.00011	.13822	.01149	-.00643	.00211	.04389	-.00001
#3	.00032	.13948	.01390	-.00295	.00122	.03625	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12495.	76788.	3339.6
Stddev	5.	275.	12.6
%RSD	.04034	.35841	.37754
#1	12491.	76978.	3342.7
#2	12501.	76472.	3325.7
#3	12492.	76912.	3350.4

Approved: August 11, 2016

Sample Name: L1608028203PS Acquired: 8/10/2016 13:40:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579662-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20222**	**5.9746**	**.21364**	**1.0426**	**.58395**	**.02447**	**38.555**	**.02626**
Stddev	.00305	.0123	.00218	.0003	.00326	.00011	.156	.00016
%RSD	1.5079	.20548	1.0186	.03308	.55844	.46899	.40525	.61374
#1	.19877	5.9674	.21171	1.0423	.58765	.02439	38.712	.02643
#2	.20458	5.9676	.21320	1.0429	.58150	.02441	38.399	.02625
#3	.20330	5.9888	.21600	1.0428	.58269	.02460	38.552	.02611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10494**	**.25013**	**.26605**	**3.1413**	**25.845**	**.52542**	**10.115**	**.33044**
Stddev	.00092	.00100	.00110	.0293	.119	.00355	.060	.00076
%RSD	.87780	.39950	.41324	.93328	.46048	.67517	.59025	.22980
#1	.10572	.24971	.26732	3.1118	25.774	.52854	10.168	.33038
#2	.10519	.25127	.26547	3.1705	25.778	.52616	10.127	.33123
#3	.10392	.24941	.26537	3.1417	25.982	.52156	10.050	.32972
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53621**	**27.995**	**.26857**	**5.3262**	**.26378**	**.64408**	**.20398**	**6.5565**
Stddev	.00203	.103	.00093	.0216	.00132	.00069	.00200	.0049
%RSD	.37848	.36797	.34524	.40632	.50081	.10767	.98095	.07499
#1	.53777	28.102	.26955	5.3495	.26376	.64439	.20558	6.5570
#2	.53693	27.897	.26847	5.3224	.26248	.64456	.20461	6.5514
#3	.53391	27.984	.26770	5.3067	.26512	.64328	.20174	6.5612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608028203PS Acquired: 8/10/2016 13:40:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579662-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52050	.66248	.50092	.25850	.49614	.56589	.00113
Stddev	.00136	.00169	.00541	.00253	.00085	.00112	.00026
%RSD	.26140	.25522	1.0797	.97840	.17063	.19859	22.845
#1	.52158	.66398	.50612	.26138	.49525	.56582	.00136
#2	.52095	.66065	.50131	.25665	.49624	.56704	.00085
#3	.51897	.66281	.49532	.25746	.49694	.56480	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12318.	75412.	3305.1
Stddev	16.	53.	9.3
%RSD	.12697	.07028	.28126
#1	12300.	75371.	3295.9
#2	12325.	75392.	3304.9
#3	12329.	75472.	3314.5

Approved: August 11, 2016

Sample Name: L1608028203SDL Acquired: 8/10/2016 13:43:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579662-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.19422	-.00106	.00539	.00885	-.00002	7.2659	.00009
Stddev	.00089	.00514	.00200	.00108	.00046	.00006	.0190	.00007
%RSD	232.35	2.6457	188.26	20.050	5.2229	308.50	.26190	84.185
#1	-.00012	.18838	.00078	.00587	.00905	.00005	7.2575	.00014
#2	-.00014	.19621	-.00077	.00614	.00832	-.00005	7.2525	.00000
#3	.00141	.19806	-.00319	.00415	.00918	-.00006	7.2876	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00018	.00168	.21264	.43658	-.00072	1.1683	.01526
Stddev	.00007	.00073	.00080	.00693	.06840	.00115	.0537	.00215
%RSD	74.121	415.33	47.618	3.2605	15.666	160.57	4.5924	14.108
#1	.00009	-.00091	.00106	.22001	.51349	-.00170	1.2040	.01321
#2	.00003	.00054	.00258	.21167	.38261	-.00100	1.1066	.01751
#3	.00017	-.00016	.00139	.20624	.41363	.00055	1.1942	.01507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.65335	.00083	.00582	.00028	.00234	.00307	.78808
Stddev	.00025	.03642	.00021	.00812	.00270	.00243	.00145	.09708
%RSD	107.10	5.5743	25.674	139.61	981.09	103.78	47.251	12.319
#1	-.00004	.61882	.00088	.00223	.00324	.00013	.00220	.84338
#2	.00030	.69141	.00060	.01512	-.00205	.00494	.00474	.84488
#3	.00044	.64984	.00102	.00011	-.00036	.00194	.00226	.67598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608028203SDL Acquired: 8/10/2016 13:43:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579662-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00077**	**.02703**	**.00413**	**-.00086**	**.00037**	**.00842**	**-.00014**
Stddev	.00110	.00009	.00803	.00107	.00131	.00114	.00054
%RSD	142.86	.33578	194.59	124.10	351.62	13.497	387.04
#1	-.00173	.02696	-.00370	-.00019	-.00091	.00902	.00043
#2	-.00101	.02713	.00373	-.00030	.00033	.00913	-.00064
#3	.00043	.02698	.01234	-.00210	.00170	.00711	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13115.**	**80481.**	**3442.9**
Stddev	46.	204.	22.0
%RSD	.35138	.25304	.64025
#1	13123.	80705.	3451.6
#2	13156.	80428.	3459.3
#3	13065.	80309.	3417.9

Approved: August 11, 2016

Sample Name: L1608028203SDL Acquired: 8/10/2016 13:47:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG579662-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	.03078	-.00138	.00342	-.00045	.00002	1.4768	.00005
Stddev	.00114	.00800	.00141	.00108	.00113	.00005	.0391	.00002
%RSD	96.492	25.993	102.58	31.465	254.27	279.58	2.6464	42.554
#1	.00225	.02195	.00006	.00248	-.00153	.00008	1.4386	.00002
#2	.00133	.03756	-.00277	.00319	.00073	-.00001	1.4751	.00006
#3	-.00002	.03282	-.00142	.00460	-.00055	-.00001	1.5167	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	-.00058	.00025	.02260	.13837	-.00337	.20525	.00221
Stddev	.00027	.00051	.00047	.03035	.05728	.00111	.03447	.00176
%RSD	294.22	88.999	192.19	134.29	41.397	32.976	16.796	79.845
#1	-.00040	-.00002	-.00017	-.01241	.14297	-.00440	.18137	.00089
#2	.00003	-.00102	.00076	.03873	.07893	-.00350	.24477	.00421
#3	.00010	-.00069	.00015	.04148	.19321	-.00220	.18961	.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.16224	.00115	.00282	-.00040	.00121	.00379	.16541
Stddev	.00016	.02714	.00121	.00226	.00494	.00125	.00360	.02069
%RSD	92.743	16.726	104.94	79.965	1235.0	102.54	94.908	12.508
#1	.00005	.15007	.00210	.00045	-.00602	.00065	-.00006	.17429
#2	.00035	.19333	-.00021	.00495	.00154	.00264	.00706	.18017
#3	.00012	.14331	.00156	.00307	.00328	.00035	.00436	.14176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608028203SDL Acquired: 8/10/2016 13:47:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG579662-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00508**	**.00222**	**.00001**	**.00071**	**.00208**	**-.00035**
Stddev	.00036	.00027	.00835	.00323	.00068	.00033	.00012
%RSD	186.33	5.2661	376.07	56033.	95.101	15.985	35.542
#1	.00048	.00478	.00995	.00212	.00104	.00234	-.00049
#2	.00031	.00526	-.00664	.00161	.00115	.00220	-.00027
#3	-.00021	.00521	.00335	-.00371	-.00007	.00171	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13153.**	**80411.**	**3431.6**
Stddev	95.	269.	3.6
%RSD	.72585	.33434	.10562
#1	13168.	80697.	3429.2
#2	13239.	80372.	3435.7
#3	13050.	80164.	3429.7

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 13:51:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40374	9.9798	.40759	.51467	1.0408	.04837	10.320	.05123
Stddev	.00190	.0165	.00884	.00271	.0030	.00016	.008	.00145
%RSD	.47159	.16515	2.1687	.52746	.29086	.32653	.08072	2.8214
#1	.40505	9.9883	.41249	.51374	1.0443	.04854	10.325	.05205
#2	.40462	9.9903	.41289	.51772	1.0386	.04824	10.310	.05208
#3	.40156	9.9608	.39738	.51254	1.0397	.04832	10.324	.04956
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20127	.48801	.51188	4.0555	48.328	1.0278	9.9474	.52030
Stddev	.00715	.00275	.01570	.0559	.102	.0076	.1669	.00492
%RSD	3.5539	.56402	3.0678	1.3788	.21154	.73959	1.6775	.94528
#1	.20523	.49060	.52095	4.1134	48.331	1.0191	10.104	.52533
#2	.20557	.48831	.52094	4.0018	48.428	1.0319	9.9667	.51550
#3	.19301	.48512	.49375	4.0514	48.224	1.0325	9.7718	.52007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0168	49.467	.51351	10.422	.51371	1.2392	.41486	5.2061
Stddev	.0313	.314	.01720	.266	.01407	.0321	.00484	.1173
%RSD	3.0778	.63457	3.3490	2.5484	2.7389	2.5881	1.1660	2.2536
#1	1.0383	49.829	.52373	10.558	.52264	1.2544	.41486	5.2653
#2	1.0313	49.304	.52315	10.592	.52099	1.2607	.41970	5.2820
#3	.98094	49.268	.49366	10.116	.49749	1.2023	.41002	5.0710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 13:51:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0022**	**1.0423**	**.96839**	**.50582**	**.96239**	**1.0284**	**1.0013**
Stddev	.0371	.0051	.00643	.00476	.00183	.0307	.0064
%RSD	3.7005	.49133	.66426	.94171	.18989	2.9814	.64047
#1	1.0241	1.0481	.96862	.50822	.96336	1.0444	.99931
#2	1.0232	1.0401	.96184	.50891	.96352	1.0478	1.0085
#3	.95942	1.0386	.97470	.50034	.96028	.99309	.99610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12664.**	**76928.**	**3375.7**
Stddev	24.	222.	21.5
%RSD	.18779	.28873	.63545
#1	12664.	76672.	3373.2
#2	12641.	77043.	3355.6
#3	12688.	77070.	3398.3

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 13:55:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	-.00432	-.00132	.00339	-.00220	-.00009	.00012	.00020
Stddev	.00056	.00429	.00142	.00106	.00030	.00003	.03446	.00003
%RSD	69.940	99.344	107.39	31.343	13.571	37.622	27827.	14.793
#1	.00119	.00058	-.00127	.00291	-.00249	-.00012	.03028	.00016
#2	.00016	-.00611	.00007	.00460	-.00222	-.00007	-.03743	.00022
#3	.00106	-.00744	-.00276	.00265	-.00189	-.00006	.00752	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	-.00011	.00050	.00682	.15677	-.00203	-.01812	-.00033
Stddev	.00024	.00020	.00196	.01353	.04562	.00226	.03074	.00094
%RSD	544.65	171.84	393.27	198.23	29.098	111.30	169.68	285.14
#1	-.00011	.00007	.00037	.02087	.20401	-.00197	-.00217	.00060
#2	-.00008	-.00009	.00251	.00572	.11297	.00020	-.05356	-.00032
#3	.00032	-.00032	-.00139	-.00612	.15333	-.00432	.00137	-.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.02970	.00116	-.00016	-.00178	.00087	.00172	-.00035
Stddev	.00022	.02845	.00036	.01119	.00100	.00649	.00680	.00096
%RSD	188.68	95.784	30.792	6898.9	56.166	742.52	395.53	271.86
#1	.00035	.01688	.00080	.01271	-.00212	.00069	-.00433	.00062
#2	-.00007	.06231	.00151	-.00557	-.00065	.00746	.00909	-.00038
#3	.00006	.00993	.00116	-.00762	-.00256	-.00552	.00040	-.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 13:55:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00019**	**.00214**	**-.00047**	**.00004**	**-.00018**	**-.00011**
Stddev	.00046	.00036	.01362	.00323	.00009	.00002	.00013
%RSD	337.84	188.11	637.69	687.14	243.71	12.762	118.04
#1	.00017	.00022	-.01015	.00080	.00013	-.00020	-.00021
#2	-.00067	-.00046	.01679	.00193	-.00005	-.00016	-.00017
#3	.00009	-.00034	-.00024	-.00414	.00003	-.00019	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12806.**	**78345.**	**3384.3**
Stddev	23.	156.	18.9
%RSD	.18261	.19883	.55773
#1	12793.	78226.	3365.5
#2	12792.	78521.	3384.2
#3	12833.	78286.	3403.3

Approved: August 11, 2016

Sample Name: L1608028204 Acquired: 8/10/2016 13:59:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.15528	.00111	.01189	.06246	-.00008	60.837	.00033
Stddev	.00050	.00843	.00080	.00186	.00130	.00005	1.318	.00027
%RSD	172.59	5.4306	71.691	15.618	2.0856	62.323	2.1664	79.693
#1	.00028	.14583	.00129	.01082	.06386	-.00003	61.671	.00061
#2	-.00049	.16204	.00024	.01082	.06128	-.00013	59.317	.00008
#3	-.00065	.15798	.00181	.01404	.06226	-.00008	61.521	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	-.00005	.00839	.40748	2.3972	.00446	10.027	.19517
Stddev	.00038	.00181	.00188	.00889	.1314	.00155	.296	.00682
%RSD	261.47	3740.8	22.393	2.1824	5.4833	34.742	2.9480	3.4963
#1	.00027	.00055	.00892	.41359	2.4436	.00361	10.325	.20045
#2	-.00022	.00138	.00994	.41156	2.2488	.00625	9.7337	.18746
#3	-.00048	-.00208	.00630	.39728	2.4991	.00353	10.023	.19759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	3.6584	.00107	.05299	.00026	.00225	.00386	4.4584
Stddev	.00048	.0859	.00055	.00358	.00192	.00303	.00207	.3011
%RSD	61.892	2.3482	52.001	6.7512	743.62	134.72	53.645	6.7546
#1	.00095	3.7281	.00043	.05639	-.00131	.00145	.00228	4.6301
#2	.00115	3.5624	.00147	.05332	-.00032	.00559	.00309	4.6344
#3	.00024	3.6847	.00129	.04926	.00240	-.00030	.00620	4.1107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608028204 Acquired: 8/10/2016 13:59:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.23831**	**-.00150**	**-.00123**	**.00101**	**.00279**	**.00005**
Stddev	.00064	.00436	.00428	.00262	.00108	.00021	.00062
%RSD	244.61	1.8312	285.48	212.68	106.90	7.6529	1184.7
#1	-.00078	.24132	-.00401	-.00386	.00133	.00291	.00004
#2	.00045	.23331	.00344	.00138	.00189	.00292	.00068
#3	-.00044	.24031	-.00392	-.00122	-.00019	.00254	-.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12362.**	**76111.**	**3349.0**
Stddev	29.	257.	56.1
%RSD	.23752	.33756	1.6750
#1	12383.	75856.	3299.5
#2	12375.	76106.	3410.0
#3	12329.	76370.	3337.7

Approved: August 11, 2016

Sample Name: L1608033006 Acquired: 8/10/2016 14:03:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00190	3.2628	.00169	.23573	.00588	.00232	F 365.80
Stddev	.00165	.0167	.00024	.00331	.00113	.00006	.62
%RSD	86.642	.51118	14.169	1.4027	19.170	2.6083	.17072
#1	.00035	3.2756	.00144	.23926	.00616	.00234	365.08
#2	.00171	3.2439	.00192	.23270	.00464	.00225	366.11
#3	.00363	3.2689	.00170	.23523	.00685	.00236	366.22
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02626	.30650	.00269	.01698	4.8286	11.661	.63784
Stddev	.00304	.03882	.00007	.00362	.0363	.135	.00372
%RSD	11.579	12.666	2.5750	21.346	.75150	1.1543	.58282
#1	.02834	.33087	.00264	.01805	4.8647	11.513	.63704
#2	.02766	.32690	.00267	.01995	4.7922	11.775	.64190
#3	.02277	.26173	.00277	.01294	4.8289	11.697	.63460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	341.36	11.867	-.00072	F 610.30	.88860	.01860	.00400
Stddev	.66	.035	.00008	6.91	.11160	.00585	.00212
%RSD	.19463	.29345	10.945	1.1316	12.559	31.451	53.095
#1	340.60	11.831	-.00081	617.90	.96018	.02519	.00162
#2	341.66	11.872	-.00069	608.60	.94561	.01401	.00467
#3	341.82	11.900	-.00066	604.41	.76001	.01661	.00571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 11, 2016

Sample Name: L1608033006 Acquired: 8/10/2016 14:03:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00129**	**-.00129**	**20.896**	**-.00143**	**4.1365**	F **-.04704**	**-.00324**
Stddev	.00279	.00393	2.307	.00084	.0111	.00207	.00195
%RSD	216.08	304.09	11.039	58.674	.26895	4.4004	60.254
#1	.00451	.00325	22.292	-.00183	4.1246	-.04762	-.00099
#2	-.00039	-.00352	22.163	-.00200	4.1466	-.04474	-.00431
#3	-.00024	-.00361	18.233	-.00047	4.1384	-.04876	-.00443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00139**	**1.0627**	**.00046**
Stddev	.00135	.1289	.00013
%RSD	97.430	12.128	28.822
#1	-.00150	1.1433	.00031
#2	.00002	1.1306	.00057
#3	-.00268	.91402	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11512.**	**70174.**	**3259.1**
Stddev	22.	209.	11.6
%RSD	.19215	.29756	.35521
#1	11502.	69936.	3245.7
#2	11496.	70327.	3266.0
#3	11537.	70259.	3265.5

Approved: August 11, 2016

Sample Name: L1608033009 Acquired: 8/10/2016 14:07:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00242	.01131	.00013	.08002	.03922	-.00008	119.16	.00019
Stddev	.00207	.00123	.00150	.00033	.00059	.00004	.40	.00007
%RSD	85.484	10.894	1144.6	.41444	1.5117	47.000	.33529	36.354
#1	.00009	.01046	.00047	.08030	.03870	-.00004	118.78	.00025
#2	.00403	.01074	-.00151	.07965	.03911	-.00007	119.13	.00021
#3	.00315	.01272	.00143	.08010	.03987	-.00011	119.58	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.02611	.00320	16.679	195.77	.38221	98.392	1.3975
Stddev	.00013	.00071	.00138	.186	.58	.00251	.652	.0050
%RSD	134.28	2.7079	43.098	1.1172	.29624	.65559	.66286	.35502
#1	-.00019	.02542	.00429	16.533	195.43	.38068	97.818	1.3918
#2	-.00015	.02683	.00367	16.615	195.44	.38085	98.257	1.4001
#3	.00005	.02608	.00165	16.889	196.44	.38510	99.102	1.4006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	175.69	.00193	.05503	.00154	.00127	-.00125	12.488
Stddev	.00026	.56	.00165	.00146	.00147	.00137	.00119	.004
%RSD	221.59	.32030	85.530	2.6453	95.560	107.81	95.350	.03145
#1	.00027	175.28	.00069	.05606	.00014	.00277	-.00249	12.489
#2	.00026	175.47	.00381	.05566	.00307	.00095	-.00116	12.491
#3	-.00018	176.33	.00131	.05336	.00141	.00009	-.00011	12.484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033009 Acquired: 8/10/2016 14:07:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**2.3921**	**-.00678**	**-.00249**	**-.00089**	**.00233**	**-.00085**
Stddev	.00061	.0055	.01128	.00099	.00013	.00014	.00020
%RSD	108.26	.22771	166.38	39.710	14.952	5.9036	24.214
#1	-.00022	2.3863	-.00379	-.00136	-.00087	.00219	-.00084
#2	-.00021	2.3929	.00271	-.00317	-.00102	.00246	-.00064
#3	-.00127	2.3971	-.01925	-.00295	-.00076	.00234	-.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11883.**	**71854.**	**3247.5**
Stddev	23.	148.	25.9
%RSD	.19140	.20534	.79605
#1	11861.	71839.	3272.1
#2	11906.	72008.	3249.9
#3	11882.	71714.	3220.5

Approved: August 11, 2016

Sample Name: L1608033010 Acquired: 8/10/2016 14:10:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.01420	.00056	.08256	.04101	-.00007	122.35	.00015
Stddev	.00084	.00684	.00153	.00191	.00012	.00006	.17	.00013
%RSD	90.494	48.189	275.60	2.3139	.29779	89.101	.13903	85.589
#1	.00161	.02005	-.00056	.08083	.04097	-.00014	122.21	.00016
#2	.00120	.01588	-.00007	.08224	.04092	-.00006	122.54	.00027
#3	-.00001	.00667	.00230	.08461	.04115	-.00001	122.31	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.02699	-.00027	17.174	196.43	.38830	100.83	1.4316
Stddev	.00031	.00021	.00191	.028	.29	.00370	.54	.0055
%RSD	1131.5	.78064	709.80	.16272	.14807	.95176	.53316	.38105
#1	-.00012	.02692	.00020	17.142	196.74	.38888	100.24	1.4257
#2	.00032	.02682	.00136	17.192	196.38	.38435	101.30	1.4324
#3	-.00028	.02723	-.00237	17.188	196.17	.39168	100.94	1.4366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	178.33	.00093	.05349	.00017	.00241	-.00439	12.283
Stddev	.00020	.02	.00086	.00964	.00185	.00279	.00196	1.019
%RSD	717.57	.01395	92.477	18.018	1063.3	115.97	44.520	8.2938
#1	-.00025	178.34	.00061	.06461	.00221	.00555	-.00259	12.885
#2	.00012	178.35	.00191	.04832	-.00029	.00144	-.00647	12.856
#3	.00005	178.30	.00028	.04754	-.00140	.00022	-.00412	11.106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033010 Acquired: 8/10/2016 14:10:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	2.4519	-.01535	-.00238	-.00107	.00178	-.00115
Stddev	.00057	.0037	.00192	.00167	.00077	.00030	.00036
%RSD	241.09	.15311	12.533	70.022	71.929	16.615	30.974
#1	.00090	2.4548	-.01440	-.00400	-.00091	.00195	-.00104
#2	-.00012	2.4531	-.01408	-.00248	-.00191	.00196	-.00087
#3	-.00007	2.4476	-.01756	-.00067	-.00039	.00144	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11864.	72282.	3259.1
Stddev	24.	64.	23.3
%RSD	.20408	.08810	.71500
#1	11876.	72349.	3266.7
#2	11880.	72223.	3232.9
#3	11836.	72273.	3277.6

Approved: August 11, 2016

Sample Name: L1608033011 Acquired: 8/10/2016 14:14:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00181	.05164	.00128	.02898	.02810	-.00000	167.11	.00061
Stddev	.00159	.00426	.00320	.00191	.00079	.00002	1.17	.00003
%RSD	87.772	8.2571	250.90	6.6069	2.8258	3079.4	.69995	4.4802
#1	.00325	.04744	.00484	.02692	.02845	.00003	166.06	.00058
#2	.00011	.05596	.00035	.02931	.02719	-.00001	166.88	.00063
#3	.00205	.05151	-.00136	.03071	.02866	-.00002	168.37	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00625	.00273	.09977	3.8723	.13752	108.32	.05432
Stddev	.00014	.00097	.00084	.03281	.0143	.00299	1.51	.00277
%RSD	25.137	15.516	30.747	32.890	.36854	2.1712	1.3917	5.1050
#1	.00066	.00694	.00197	.12741	3.8829	.13505	106.83	.05499
#2	.00063	.00668	.00363	.06351	3.8561	.13668	108.30	.05127
#3	.00040	.00514	.00258	.10840	3.8780	.14084	109.84	.05670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00407	227.35	.05850	.04288	.00142	.00211	.00323	18.456
Stddev	.00022	1.49	.00587	.00621	.00320	.00318	.00258	1.761
%RSD	5.3430	.65410	10.026	14.472	225.58	150.88	79.920	9.5414
#1	.00424	226.15	.06187	.04214	.00355	-.00151	.00616	19.475
#2	.00416	226.88	.06192	.04942	.00297	.00447	.00129	19.469
#3	.00383	229.01	.05173	.03707	-.00226	.00337	.00224	16.422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033011 Acquired: 8/10/2016 14:14:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**2.7657**	**-.02680**	**-.00431**	**-.00014**	**.00623**	**.00013**
Stddev	.00021	.0193	.00091	.00236	.00067	.00068	.00055
%RSD	195.38	.69861	3.4092	54.771	487.64	10.949	439.81
#1	-.00014	2.7463	-.02773	-.00591	.00064	.00663	.00054
#2	.00021	2.7660	-.02590	-.00160	-.00053	.00662	.00034
#3	.00025	2.7850	-.02678	-.00543	-.00052	.00544	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12027.**	**73554.**	**3324.2**
Stddev	59.	146.	16.7
%RSD	.48931	.19882	.50345
#1	11989.	73705.	3341.9
#2	11996.	73545.	3321.9
#3	12094.	73413.	3308.7

Approved: August 11, 2016

Sample Name: L1608033012 Acquired: 8/10/2016 14:18:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00078	.00851	-.00145	.03171	.02977	-.00007	172.03	.00065
Stddev	.00200	.00179	.00504	.00133	.00052	.00008	1.14	.00011
%RSD	255.61	21.037	346.22	4.1947	1.7414	101.01	.66073	17.002
#1	.00097	.01030	-.00414	.03018	.02930	-.00015	173.29	.00077
#2	-.00035	.00850	.00435	.03239	.02969	.00000	171.09	.00065
#3	-.00297	.00672	-.00458	.03257	.03033	-.00007	171.70	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00063	.00327	-.01545	3.7359	.14219	111.53	.05014
Stddev	.00049	.00031	.00081	.01807	.1068	.00214	.59	.00295
%RSD	493.14	49.433	24.670	116.95	2.8599	1.5051	.52484	5.8920
#1	-.00035	.00061	.00290	-.00807	3.8422	.13988	111.88	.04673
#2	.00061	.00094	.00420	-.03605	3.7370	.14410	110.86	.05186
#3	.00003	.00032	.00272	-.00224	3.6285	.14260	111.86	.05184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00437	235.34	.05746	.03610	-.00065	.00373	.00560	18.781
Stddev	.00064	1.35	.00572	.00851	.00266	.00253	.00183	1.695
%RSD	14.706	.57209	9.9492	23.567	406.83	68.000	32.644	9.0238
#1	.00437	236.89	.06027	.03480	-.00017	.00296	.00478	19.799
#2	.00502	234.47	.06123	.04519	-.00352	.00656	.00432	19.719
#3	.00373	234.66	.05088	.02832	.00173	.00167	.00769	16.825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033012 Acquired: 8/10/2016 14:18:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**2.8455**	**-.02008**	**-.00147**	**-.00015**	**.00565**	**-.00064**
Stddev	.00106	.0199	.00381	.00150	.00065	.00062	.00020
%RSD	492.10	.69948	18.985	101.70	437.29	10.953	31.524
#1	.00081	2.8684	-.01868	-.00253	-.00072	.00609	-.00081
#2	-.00015	2.8326	-.02439	.00024	.00055	.00591	-.00042
#3	-.00130	2.8354	-.01716	-.00213	-.00027	.00494	-.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11967.**	**72849.**	**3254.7**
Stddev	74.	218.	5.2
%RSD	.61651	.29990	.15916
#1	11911.	72599.	3248.7
#2	11940.	72947.	3258.3
#3	12051.	73001.	3256.9

Approved: August 11, 2016

Sample Name: L1608033013 Acquired: 8/10/2016 14:22:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00162	.06453	.00155	.01650	.02121	.00008	43.009	.00050
Stddev	.00052	.00632	.00185	.00388	.00084	.00008	.172	.00032
%RSD	32.271	9.7972	119.27	23.537	3.9456	93.986	.39960	64.081
#1	.00154	.06118	.00220	.01244	.02031	-.00000	42.941	.00081
#2	.00218	.06059	.00299	.02018	.02196	.00010	43.205	.00054
#3	.00114	.07183	-.00054	.01690	.02137	.00014	42.882	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00007	.00201	.15036	2.3656	.10408	30.634	.05980
Stddev	.00037	.00042	.00083	.02435	.0515	.00151	.215	.00160
%RSD	129.71	577.09	41.401	16.191	2.1794	1.4543	.70342	2.6835
#1	.00051	.00033	.00151	.13742	2.4226	.10235	30.531	.06034
#2	.00048	-.00051	.00297	.13522	2.3223	.10472	30.882	.05799
#3	-.00014	-.00004	.00154	.17845	2.3519	.10517	30.490	.06106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	117.68	.02573	.07578	.00039	.00186	.00533	22.871
Stddev	.00009	.52	.00295	.00700	.00076	.00288	.00215	2.211
%RSD	109.71	.44310	11.450	9.2402	195.04	154.86	40.319	9.6671
#1	.00008	117.50	.02766	.07849	.00001	.00152	.00775	24.217
#2	-.00000	118.26	.02719	.08103	-.00010	-.00084	.00367	24.076
#3	.00018	117.27	.02234	.06783	.00126	.00489	.00455	20.319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033013 Acquired: 8/10/2016 14:22:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.71264	-.00470	-.00128	.00009	.02745	-.00043
Stddev	.00053	.00308	.00540	.00185	.00030	.00320	.00016
%RSD	238.03	.43268	114.83	144.37	350.32	11.673	38.126
#1	.00083	.71117	-.00992	-.00182	-.00011	.02943	-.00049
#2	-.00018	.71618	.00087	-.00279	-.00006	.02917	-.00056
#3	.00002	.71057	-.00506	.00078	.00043	.02375	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12253.	74940.	3303.1
Stddev	16.	112.	7.6
%RSD	.12884	.14990	.22891
#1	12246.	74812.	3294.7
#2	12243.	74988.	3305.0
#3	12271.	75021.	3309.5

Approved: August 11, 2016

Sample Name: L1608033014 Acquired: 8/10/2016 14:26:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	.03381	-.00095	.01641	.01982	.00009	40.820	.00089
Stddev	.00224	.00397	.00073	.00152	.00130	.00004	.014	.00005
%RSD	133.22	11.740	76.348	9.2427	6.5454	41.430	.03320	5.1636
#1	.00046	.03781	-.00143	.01526	.02130	.00013	40.820	.00091
#2	.00427	.03375	-.00131	.01813	.01934	.00006	40.833	.00084
#3	.00032	.02988	-.00012	.01585	.01884	.00008	40.806	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	-.00003	.00207	.05401	2.0023	.10215	29.236	.04895
Stddev	.00010	.00015	.00121	.01752	.0714	.00290	.057	.00318
%RSD	17.572	541.39	58.568	32.434	3.5673	2.8374	.19612	6.4921
#1	.00065	.00001	.00314	.04527	2.0590	.09887	29.288	.05129
#2	.00045	-.00019	.00075	.04258	2.0259	.10324	29.246	.04533
#3	.00057	.00010	.00231	.07418	1.9221	.10435	29.175	.05024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	111.83	.02475	.06680	.00212	.00028	.00128	21.863
Stddev	.00031	.45	.00316	.00739	.00251	.00346	.00278	2.154
%RSD	107.92	.40007	12.778	11.058	118.17	1247.2	217.21	9.8500
#1	.00005	112.32	.02662	.06860	.00422	.00385	-.00048	23.139
#2	.00064	111.73	.02654	.07313	.00282	-.00306	.00449	23.073
#3	.00018	111.44	.02110	.05868	-.00066	.00004	-.00017	19.376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033014 Acquired: 8/10/2016 14:26:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.67633	.00202	-.00093	-.00089	.01387	-.00049
Stddev	.00045	.00132	.00237	.00096	.00022	.00181	.00030
%RSD	71.706	.19474	116.96	103.79	25.155	13.062	60.564
#1	-.00068	.67782	-.00056	.00011	-.00088	.01500	-.00015
#2	-.00015	.67532	.00409	-.00111	-.00112	.01483	-.00064
#3	-.00103	.67585	.00254	-.00178	-.00067	.01178	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12242.	74867.	3288.4
Stddev	61.	118.	19.8
%RSD	.49512	.15786	.60200
#1	12216.	74731.	3278.6
#2	12198.	74927.	3275.5
#3	12311.	74944.	3311.2

Approved: August 11, 2016

Sample Name: L1608033016 Acquired: 8/10/2016 14:30:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.02207**	**-.00020**	**.15345**	**.02200**	**-.00005**	F **282.42**
Stddev	.00097	.00510	.00462	.00317	.00092	.00001	.37
%RSD	2390.5	23.127	2318.4	2.0647	4.1972	25.555	.13224
#1	-.00056	.02437	-.00028	.15304	.02248	-.00004	282.84
#2	-.00048	.02561	.00446	.15051	.02258	-.00006	282.15
#3	.00116	.01622	-.00478	.15680	.02093	-.00005	282.26
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00268**	**.00780**	**.00237**	**.00362**	**.00212**	**7.8782**	**.45536**
Stddev	.00024	.00098	.00080	.00044	.02102	.0853	.00116
%RSD	8.9071	12.539	33.645	12.053	989.84	1.0828	.25422
#1	.00254	.00811	.00174	.00394	.00235	7.9228	.45500
#2	.00296	.00858	.00210	.00313	-.01901	7.9320	.45443
#3	.00256	.00670	.00326	.00380	.02304	7.7799	.45666
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**290.93**	**1.5265**	**.00021**	F **311.02**	**.03910**	**.00253**	**.00009**
Stddev	1.38	.0047	.00041	.49	.00397	.01016	.00136
%RSD	.47281	.30585	195.29	.15734	10.147	401.95	1544.9
#1	292.47	1.5299	.00004	311.58	.04172	.00833	.00166
#2	289.82	1.5212	.00068	310.76	.04103	.00845	-.00071
#3	290.51	1.5286	-.00009	310.71	.03453	-.00920	-.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 11, 2016

Sample Name: L1608033016 Acquired: 8/10/2016 14:30:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00309	-.00039	12.686	-.00078	4.9771	F -.04257	-.00516
Stddev	.00263	.00553	1.121	.00055	.0080	.00150	.00238
%RSD	85.141	1435.4	8.8390	70.409	.16082	3.5238	46.097
#1	.00514	.00253	13.351	-.00118	4.9841	-.04127	-.00790
#2	.00402	.00308	13.315	-.00015	4.9684	-.04224	-.00397
#3	.00012	-.00676	11.391	-.00102	4.9788	-.04421	-.00362
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00179	.04395	-.00004
Stddev	.00067	.00449	.00027
%RSD	37.590	10.216	646.92
#1	-.00183	.04681	.00000
#2	-.00244	.04627	-.00033
#3	-.00110	.03878	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11554.	70867.	3223.7
Stddev	64.	166.	16.9
%RSD	.55204	.23445	.52338
#1	11485.	70678.	3205.6
#2	11566.	70989.	3239.0
#3	11611.	70935.	3226.6

Approved: August 11, 2016

Sample Name: L1608033017 Acquired: 8/10/2016 14:34:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.02333**	**-.00006**	**.14241**	**.01923**	**-.00002**	**268.87**
Stddev	.00104	.00160	.00207	.00080	.00031	.00005	.31
%RSD	327.55	6.8752	3410.4	.55870	1.6151	259.28	.11567
#1	-.00115	.02395	.00220	.14327	.01888	.00003	269.21
#2	.00085	.02453	-.00050	.14226	.01948	-.00007	268.59
#3	-.00065	.02151	-.00188	.14170	.01934	-.00002	268.81
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00282**	**.00701**	**.00328**	**.00338**	F **-.02500**	**7.4948**	**.43439**
Stddev	.00035	.00083	.00031	.00203	.02128	.0624	.00389
%RSD	12.303	11.867	9.4300	60.148	85.127	.83221	.89625
#1	.00305	.00712	.00313	.00121	-.02489	7.4936	.43815
#2	.00300	.00778	.00308	.00524	-.00377	7.4331	.43038
#3	.00242	.00613	.00364	.00368	-.04633	7.5578	.43463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**276.22**	**1.4573**	**.00028**	F **295.22**	**.03650**	**-.00221**	**-.00126**
Stddev	.91	.0087	.00076	.46	.00273	.00324	.00134
%RSD	.32795	.59959	268.97	.15479	7.4863	146.33	106.52
#1	275.38	1.4517	-.00059	295.43	.03804	-.00585	-.00281
#2	276.12	1.4528	.00081	295.54	.03812	.00036	-.00053
#3	277.18	1.4674	.00064	294.70	.03335	-.00115	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 11, 2016

Sample Name: L1608033017 Acquired: 8/10/2016 14:34:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00268	.00037	12.037	-.00096	4.7300	F -.03874	-.00298
Stddev	.00125	.00085	.989	.00001	.0062	.00118	.00136
%RSD	46.692	232.57	8.2185	1.5068	.13109	3.0450	45.667
#1	.00126	.00002	12.629	-.00096	4.7371	-.03874	-.00385
#2	.00362	.00134	12.587	-.00098	4.7263	-.03992	-.00368
#3	.00316	-.00026	10.895	-.00095	4.7265	-.03756	-.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00156	.03973	-.00017
Stddev	.00040	.00409	.00022
%RSD	25.797	10.295	133.71
#1	-.00110	.04211	-.00001
#2	-.00185	.04207	-.00007
#3	-.00172	.03501	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11905.	72610.	3300.4
Stddev	117.	553.	2.1
%RSD	.98291	.76216	.06359
#1	11829.	71971.	3299.0
#2	11846.	72930.	3299.5
#3	12040.	72929.	3302.8

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 14:37:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40301	9.9498	.40717	.51514	1.0434	.04813	10.339	.05093
Stddev	.00069	.0271	.01127	.00029	.0035	.00007	.046	.00133
%RSD	.17130	.27228	2.7680	.05667	.33119	.13965	.44500	2.6125
#1	.40222	9.9426	.41545	.51488	1.0473	.04819	10.369	.05168
#2	.40336	9.9271	.41173	.51509	1.0420	.04814	10.362	.05171
#3	.40346	9.9798	.39434	.51546	1.0408	.04806	10.286	.04939
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20096	.48553	.50798	4.0466	48.229	1.0208	10.096	.52437
Stddev	.00630	.00130	.01652	.0439	.294	.0186	.175	.00611
%RSD	3.1333	.26769	3.2526	1.0850	.60896	1.8168	1.7297	1.1649
#1	.20475	.48442	.51771	4.0852	48.127	1.0405	10.226	.52107
#2	.20444	.48696	.51732	4.0556	48.561	1.0183	10.166	.53141
#3	.19369	.48521	.48890	3.9988	48.001	1.0037	9.8979	.52062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0145	49.410	.51338	10.389	.51427	1.2371	.41561	5.1869
Stddev	.0300	.257	.01708	.255	.01158	.0286	.01118	.1033
%RSD	2.9613	.52092	3.3266	2.4562	2.2508	2.3116	2.6901	1.9908
#1	1.0280	49.491	.52296	10.541	.51806	1.2513	.42318	5.2530
#2	1.0353	49.618	.52352	10.533	.52348	1.2558	.42088	5.2399
#3	.98002	49.122	.49367	10.095	.50128	1.2042	.40276	5.0680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 14:37:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0004**	**1.0494**	**.96743**	**.50871**	**.95386**	**1.0238**	**1.0070**
Stddev	.0378	.0031	.00528	.00054	.00102	.0315	.0034
%RSD	3.7802	.29330	.54538	.10697	.10705	3.0787	.33325
#1	1.0221	1.0521	.96963	.50933	.95296	1.0426	1.0091
#2	1.0223	1.0500	.97124	.50833	.95497	1.0414	1.0087
#3	.95672	1.0460	.96141	.50848	.95364	.98744	1.0031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12708.**	**77798.**	**3385.9**
Stddev	15.	142.	14.9
%RSD	.11533	.18265	.44080
#1	12698.	77767.	3371.6
#2	12702.	77953.	3384.7
#3	12725.	77674.	3401.3

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 14:41:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	-.00408	-.00063	.00286	-.00322	-.00005	-.00269	.00010
Stddev	.00062	.00300	.00141	.00135	.00121	.00004	.02339	.00011
%RSD	1053.6	73.400	223.75	47.224	37.660	78.104	868.78	115.54
#1	-.00047	-.00464	-.00201	.00150	-.00408	-.00006	.02155	.00023
#2	-.00036	-.00676	-.00067	.00421	-.00375	-.00000	-.02513	.00001
#3	.00065	-.00085	.00080	.00288	-.00183	-.00007	-.00450	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	-.00037	.00131	.00698	.21877	-.00115	.01855	.00057
Stddev	.00022	.00069	.00045	.04398	.17908	.00225	.05406	.00148
%RSD	159.51	188.00	33.907	630.54	81.859	194.82	291.49	257.65
#1	.00009	.00022	.00088	.05665	.26681	-.00013	.07897	.00212
#2	-.00034	-.00114	.00129	-.00872	.36893	.00040	-.02525	-.00082
#3	-.00016	-.00019	.00177	-.02701	.02057	-.00373	.00192	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.07707	.00078	-.00046	-.00253	.00554	.00751	-.00240
Stddev	.00012	.00844	.00007	.00344	.00121	.00560	.00380	.00148
%RSD	143.55	10.944	8.9931	747.84	47.812	101.22	50.654	61.607
#1	-.00002	.06960	.00085	.00064	-.00116	.00845	.01100	-.00129
#2	.00022	.08622	.00071	.00230	-.00346	-.00092	.00346	-.00408
#3	.00006	.07540	.00078	-.00432	-.00297	.00908	.00806	-.00184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 14:41:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**-.00014**	**.00419**	**-.00199**	**-.00012**	**-.00047**	**-.00006**
Stddev	.00019	.00030	.00500	.00047	.00044	.00001	.00005
%RSD	43.972	210.56	119.32	23.743	353.14	2.9817	80.966
#1	-.00057	.00019	-.00147	-.00147	-.00060	-.00048	-.00007
#2	-.00050	-.00023	.00801	-.00238	.00026	-.00047	-.00011
#3	-.00021	-.00039	.00605	-.00211	-.00003	-.00046	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12906.**	**78602.**	**3394.0**
Stddev	52.	141.	15.2
%RSD	.40651	.17963	.44648
#1	12862.	78621.	3408.7
#2	12891.	78452.	3394.9
#3	12964.	78733.	3378.5

Approved: August 11, 2016

Sample Name: PBW B5 Acquired: 8/10/2016 14:45:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.00897**	**-.00205**	**.00076**	**-.00322**	**-.00011**	**-.03143**	**.00038**
Stddev	.00082	.00502	.00296	.00153	.00092	.00002	.04249	.00004
%RSD	313.19	55.950	144.52	202.81	28.466	23.275	135.18	11.542
#1	-.00003	.01286	-.00180	.00001	-.00312	-.00008	-.02442	.00036
#2	.00042	.00330	.00078	.00252	-.00418	-.00012	-.07698	.00044
#3	-.00117	.01075	-.00512	-.00027	-.00236	-.00012	.00712	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**-.00073**	**.00029**	**.03384**	**.15558**	**-.00215**	**-.01522**	**.00006**
Stddev	.00018	.00008	.00067	.03751	.13467	.00319	.00729	.00133
%RSD	67.781	10.256	230.00	110.84	86.559	148.09	47.893	2202.8
#1	-.00017	-.00082	.00103	.06470	.11504	-.00324	-.02340	-.00145
#2	-.00015	-.00067	-.00029	.04473	.30586	.00144	-.00941	.00103
#3	-.00046	-.00072	.00014	-.00791	.04584	-.00466	-.01285	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.03327**	**.00060**	**-.00355**	**.00160**	**.00152**	**.00121**	**.00667**
Stddev	.00037	.01986	.00088	.00564	.00429	.00164	.00322	.00254
%RSD	1612.9	59.696	145.91	158.88	267.90	107.99	265.41	38.142
#1	-.00040	.01160	-.00037	-.00028	.00620	.00302	-.00121	.00961
#2	.00028	.03761	.00083	-.00031	.00089	-.00023	.00486	.00526
#3	.00019	.05061	.00134	-.01006	-.00229	.00176	-.00001	.00514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: PBW B5 Acquired: 8/10/2016 14:45:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**-.00029**	**.00499**	**-.00123**	**.00086**	**.00063**	**-.00038**
Stddev	.00121	.00035	.00338	.00198	.00035	.00023	.00033
%RSD	179.39	120.95	67.591	161.34	40.936	35.619	86.949
#1	-.00042	.00010	.00193	.00091	.00072	.00066	-.00013
#2	.00039	-.00041	.00444	-.00299	.00126	.00085	-.00076
#3	-.00199	-.00056	.00861	-.00160	.00060	.00040	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12868.**	**79033.**	**3429.6**
Stddev	30.	185.	33.2
%RSD	.23211	.23443	.96863
#1	12899.	79188.	3396.2
#2	12840.	78828.	3429.9
#3	12866.	79084.	3462.6

Approved: August 11, 2016

Sample Name: LCSW B5 Acquired: 8/10/2016 14:49:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20374**	**5.1101**	**.20179**	**1.0288**	**.54218**	**.02447**	**5.4414**	**.02555**
Stddev	.00366	.0791	.00753	.0120	.00365	.00030	.0065	.00064
%RSD	1.7971	1.5476	3.7338	1.1682	.67335	1.2315	.11959	2.4968
#1	.20278	5.1898	.20520	1.0414	.54222	.02468	5.4375	.02567
#2	.20779	5.1087	.20702	1.0275	.54580	.02460	5.4489	.02612
#3	.20066	5.0317	.19315	1.0175	.53850	.02412	5.4377	.02486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10153**	**.25168**	**.25881**	**2.0894**	**24.906**	**.53190**	**5.1006**	**.26860**
Stddev	.00339	.00295	.00725	.0311	.144	.00100	.0102	.00096
%RSD	3.3434	1.1704	2.7994	1.4870	.57709	.18795	.20008	.35567
#1	.10266	.25365	.26182	2.0984	24.791	.53257	5.1099	.26752
#2	.10422	.25310	.26405	2.1151	25.067	.53238	5.0897	.26892
#3	.09772	.24829	.25054	2.0549	24.859	.53075	5.1024	.26935
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51992**	**25.523**	**.26136**	**5.0673**	**.26255**	**.62723**	**.19855**	**2.6286**
Stddev	.01557	.120	.00827	.1064	.00617	.01930	.00725	.0542
%RSD	2.9943	.47175	3.1658	2.0999	2.3508	3.0770	3.6501	2.0620
#1	.52643	25.481	.26488	5.1070	.26524	.63056	.20379	2.6433
#2	.53117	25.659	.26730	5.1482	.26692	.64465	.20159	2.6740
#3	.50215	25.429	.25191	4.9468	.25549	.60648	.19028	2.5686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LCSW B5 Acquired: 8/10/2016 14:49:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50227	.55147	.50520	.25238	.49809	.51295	.00150
Stddev	.01723	.00059	.00553	.00669	.00650	.01492	.00030
%RSD	3.4306	.10629	1.0940	2.6496	1.3054	2.9082	20.179
#1	.51131	.55151	.50896	.25327	.50411	.51897	.00180
#2	.51309	.55204	.49886	.25857	.49897	.52391	.00151
#3	.48240	.55087	.50779	.24528	.49119	.49596	.00119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12627.	75813.	3306.0
Stddev	59.	614.	15.7
%RSD	.46991	.81046	.47382
#1	12693.	75307.	3324.1
#2	12578.	75635.	3296.6
#3	12609.	76497.	3297.3

Approved: August 11, 2016

Sample Name: F BLANK Acquired: 8/10/2016 14:53:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579321-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00164	.00753	-.00022	.00493	-.00183	-.00004	.00570	.00024
Stddev	.00066	.00440	.00050	.00047	.00067	.00009	.03930	.00018
%RSD	39.999	58.412	226.41	9.6067	36.637	243.25	689.06	76.326
#1	.00207	.00659	-.00080	.00439	-.00186	.00006	.04623	.00013
#2	.00197	.01233	.00008	.00512	-.00115	-.00006	.00312	.00045
#3	.00088	.00368	.00006	.00527	-.00249	-.00011	-.03224	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00090	.00079	-.00782	.22848	-.00086	-.02083	.00122
Stddev	.00012	.00013	.00038	.02068	.02414	.00281	.07595	.00058
%RSD	120.28	13.947	48.434	264.67	10.565	327.56	364.62	47.264
#1	-.00003	-.00075	.00121	-.02985	.20061	-.00368	.05534	.00138
#2	.00020	-.00097	.00071	.01118	.24276	-.00084	-.09657	.00058
#3	.00013	-.00097	.00045	-.00478	.24206	.00194	-.02126	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	134.94	.00127	-.00185	.00120	.00158	.00513	.00296
Stddev	.00047	.68	.00040	.00289	.00144	.00506	.00304	.00080
%RSD	471.11	.50049	31.674	156.37	119.48	320.70	59.274	26.956
#1	-.00045	135.41	.00151	.00092	-.00021	.00689	.00216	.00207
#2	.00041	134.17	.00150	-.00162	.00116	.00102	.00823	.00360
#3	.00034	135.25	.00081	-.00486	.00266	-.00318	.00500	.00322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: F BLANK Acquired: 8/10/2016 14:53:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579321-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	-.00001	.00359	-.00292	.00056	.00318	-.00015
Stddev	.00092	.00017	.00599	.00348	.00054	.00053	.00039
%RSD	569.08	2224.2	166.63	119.13	96.767	16.711	260.11
#1	-.00038	-.00003	-.00316	.00108	.00034	.00363	-.00026
#2	-.00036	.00017	.00567	-.00520	.00016	.00331	.00028
#3	.00123	-.00016	.00826	-.00464	.00117	.00259	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12567.	75642.	3298.6
Stddev	103.	344.	7.6
%RSD	.81737	.45527	.22932
#1	12449.	75298.	3290.0
#2	12629.	75641.	3301.4
#3	12625.	75987.	3304.4

Approved: August 11, 2016

Sample Name: F BLANK Acquired: 8/10/2016 14:57:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579321-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00086**	**.00704**	**-.00111**	**.00210**	**-.00264**	**-.00007**	**-.00715**
Stddev	.00048	.00259	.00058	.00112	.00063	.00007	.01466
%RSD	56.158	36.771	52.071	53.413	23.962	99.859	205.05
#1	.00134	.00516	-.00108	.00338	-.00194	-.00014	.00561
#2	.00085	.00596	-.00055	.00164	-.00279	-.00004	-.00390
#3	.00038	.00999	-.00171	.00128	-.00318	-.00002	-.02316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00043**	**-.00095**	**.00034**	**.00383**	**.21469**	**-.00149**
Stddev	.00003	.00024	.00044	.00010	.01284	.07285	.00392
%RSD	2809.0	56.358	45.648	30.430	335.28	33.935	262.95
#1	-.00003	-.00032	-.00108	.00027	.01489	.26664	-.00494
#2	-.00001	-.00026	-.00131	.00030	-.01025	.24601	-.00229
#3	.00003	-.00070	-.00047	.00046	.00685	.13141	.00277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.10169**	**-.00038**	**.00023**	**.42960**	**.00127**	**-.00419**	**.00240**
Stddev	.07372	.00183	.00015	.01151	.00092	.00405	.00532
%RSD	72.500	485.92	65.651	2.6791	72.358	96.549	222.01
#1	-.13275	.00064	.00040	.43100	.00111	-.00289	.00418
#2	-.01752	.00072	.00016	.44034	.00226	-.00873	-.00359
#3	-.15480	-.00250	.00013	.41745	.00044	-.00096	.00659
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: August 11, 2016

Sample Name: F BLANK Acquired: 8/10/2016 14:57:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579321-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.00497	.01039	.00042	.00007	.00184	-.00412
Stddev	.00410	.00718	.00266	.00047	.00026	.00344	.00067
%RSD	425.36	144.47	25.626	111.83	358.58	186.65	16.361
#1	.00353	.00534	.01340	.00014	.00018	.00230	-.00404
#2	.00314	-.00239	.00833	.00097	.00026	.00503	-.00349
#3	-.00377	.01196	.00944	.00016	-.00022	-.00180	-.00483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00042	.00333	-.00034
Stddev	.00028	.00043	.00041
%RSD	66.346	12.779	121.04
#1	.00040	.00357	-.00078
#2	.00071	.00359	.00000
#3	.00015	.00284	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12792.	79037.	3396.9
Stddev	23.	147.	9.8
%RSD	.18365	.18632	.28853
#1	12784.	79125.	3385.7
#2	12818.	79118.	3403.3
#3	12774.	78867.	3401.9

Approved: August 11, 2016

Sample Name: L1608037802 Acquired: 8/10/2016 15:01:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	.05754	-.00072	.08832	.04945	-.00007	25.845	.00010
Stddev	.00154	.00202	.00087	.00334	.00086	.00001	.138	.00014
%RSD	126.25	3.5083	119.65	3.7843	1.7408	15.885	.53229	142.83
#1	-.00017	.05987	-.00142	.09174	.04866	-.00009	25.687	.00017
#2	.00287	.05647	.00025	.08814	.04931	-.00006	25.909	-.00006
#3	.00095	.05628	-.00100	.08507	.05037	-.00007	25.939	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	-.00033	.00113	1.2929	.98461	-.00038	3.3788	.04056
Stddev	.00051	.00036	.00172	.0285	.06000	.00316	.0166	.00337
%RSD	67.833	110.15	152.79	2.2053	6.0933	824.25	.49041	8.3089
#1	.00094	-.00070	.00065	1.2768	1.0366	.00117	3.3630	.04317
#2	.00116	.00002	.00304	1.2761	.99829	.00170	3.3774	.04177
#3	.00018	-.00030	-.00030	1.3259	.91896	-.00402	3.3961	.03676
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	120.51	.00452	.42905	.00403	-.00239	.00376	.22982
Stddev	.00041	.23	.00078	.06371	.00211	.00260	.00544	.02963
%RSD	200.33	.18783	17.248	14.849	52.193	108.75	144.65	12.895
#1	-.00025	120.25	.00363	.46800	.00223	-.00240	.00447	.24883
#2	.00033	120.67	.00508	.46362	.00353	.00022	.00881	.24495
#3	.00053	120.60	.00486	.35553	.00635	-.00498	-.00200	.19567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608037802 Acquired: 8/10/2016 15:01:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.04359	-.00330	-.00186	-.00015	.03977	-.00064
Stddev	.00082	.00034	.01019	.00248	.00057	.00596	.00067
%RSD	1092.5	.76999	308.88	133.26	383.73	14.989	105.35
#1	.00047	.04321	.00265	.00024	-.00072	.04359	-.00023
#2	.00063	.04386	-.01507	-.00459	-.00016	.04280	-.00141
#3	-.00087	.04369	.00252	-.00123	.00043	.03290	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12619.	76630.	3375.5
Stddev	90.	229.	12.9
%RSD	.71074	.29869	.38158
#1	12535.	76718.	3386.0
#2	12607.	76801.	3361.1
#3	12713.	76370.	3379.3

Approved: August 11, 2016

Sample Name: L1608037802S Acquired: 8/10/2016 15:04:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20434**	**5.2502**	**.21543**	**1.1319**	**.59032**	**.02480**	**32.387**	**.02605**
Stddev	.00235	.0138	.00313	.0045	.00307	.00008	.112	.00061
%RSD	1.1524	.26240	1.4527	.39383	.51930	.33384	.34649	2.3357
#1	.20647	5.2597	.21434	1.1328	.59208	.02484	32.507	.02662
#2	.20181	5.2565	.21896	1.1270	.58678	.02470	32.284	.02613
#3	.20473	5.2344	.21299	1.1358	.59210	.02485	32.369	.02541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10491**	**.25278**	**.26560**	**3.4689**	**26.164**	**.53806**	**8.6083**	**.30763**
Stddev	.00311	.00321	.00774	.0679	.225	.00081	.1054	.00385
%RSD	2.9665	1.2685	2.9136	1.9561	.85914	.15027	1.2238	1.2530
#1	.10633	.25328	.26824	3.5298	26.423	.53713	8.5824	.30905
#2	.10705	.24936	.27168	3.3957	26.030	.53848	8.7242	.30327
#3	.10134	.25571	.25689	3.4812	26.038	.53857	8.5183	.31058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53940**	**152.39**	**.26855**	**5.8594**	**.26712**	**.65054**	**.20529**	**3.0888**
Stddev	.01422	.67	.00714	.1083	.00808	.01283	.00467	.0488
%RSD	2.6355	.44253	2.6600	1.8490	3.0241	1.9725	2.2763	1.5810
#1	.54625	153.06	.27202	5.9240	.27434	.65873	.20442	3.1098
#2	.54888	151.71	.27329	5.9198	.26862	.65714	.21033	3.1236
#3	.52305	152.38	.26033	5.7343	.25839	.63575	.20110	3.0330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608037802S Acquired: 8/10/2016 15:04:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51534**	**.59552**	**.51116**	**.25657**	**.50287**	**.57353**	**.00141**
Stddev	.01409	.00194	.01181	.00168	.00043	.01234	.00004
%RSD	2.7333	.32592	2.3095	.65365	.08527	2.1518	3.1668
#1	.52221	.59713	.52146	.25827	.50262	.57963	.00141
#2	.52467	.59606	.51373	.25652	.50261	.58163	.00136
#3	.49914	.59336	.49827	.25492	.50336	.55932	.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12163.**	**74474.**	**3310.7**
Stddev	3.	67.	18.1
%RSD	.02175	.08935	.54533
#1	12160.	74481.	3304.9
#2	12164.	74537.	3331.0
#3	12166.	74404.	3296.3

Approved: August 11, 2016

Sample Name: L1608037802SD Acquired: 8/10/2016 15:08:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20524**	**5.2591**	**.21619**	**1.1453**	**.60788**	**.02493**	**32.327**	**.02672**
Stddev	.00139	.0071	.00493	.0024	.00261	.00002	.265	.00048
%RSD	.67503	.13538	2.2797	.20906	.42962	.09774	.81901	1.7936
#1	.20581	5.2512	.21807	1.1428	.60661	.02495	32.126	.02697
#2	.20366	5.2611	.21990	1.1457	.60614	.02491	32.228	.02703
#3	.20626	5.2650	.21060	1.1475	.61088	.02492	32.627	.02617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10541**	**.25343**	**.26662**	**3.5184**	**26.179**	**.54060**	**8.5987**	**.31094**
Stddev	.00340	.00181	.00648	.0092	.239	.00447	.1015	.00485
%RSD	3.2275	.71240	2.4311	.25998	.91281	.82769	1.1807	1.5596
#1	.10740	.25177	.27111	3.5165	26.093	.53674	8.5123	.30537
#2	.10735	.25535	.26955	3.5284	25.994	.53955	8.7105	.31319
#3	.10149	.25316	.25919	3.5104	26.449	.54550	8.5732	.31425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54264**	**153.19**	**.27083**	**5.9090**	**.26589**	**.65459**	**.20659**	**3.0652**
Stddev	.01530	1.13	.00939	.1236	.00237	.01691	.00586	.0543
%RSD	2.8188	.73623	3.4673	2.0913	.89043	2.5829	2.8374	1.7722
#1	.55180	152.57	.27588	5.9833	.26696	.66221	.21253	3.0970
#2	.55114	152.51	.27661	5.9773	.26752	.66635	.20642	3.0960
#3	.52498	154.50	.25999	5.7663	.26317	.63522	.20081	3.0024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608037802SD Acquired: 8/10/2016 15:08:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51922	.59703	.51050	.25741	.50714	.57687	.00082
Stddev	.01518	.00640	.00759	.00498	.00097	.01363	.00038
%RSD	2.9231	1.0720	1.4859	1.9336	.19061	2.3622	46.666
#1	.52762	.59243	.50292	.26167	.50813	.58408	.00051
#2	.52835	.59432	.51048	.25862	.50619	.58537	.00125
#3	.50170	.60434	.51809	.25194	.50710	.56115	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12015.	73949.	3293.9
Stddev	17.	45.	20.8
%RSD	.13895	.06093	.63181
#1	12032.	73977.	3310.4
#2	12015.	73897.	3300.6
#3	11998.	73973.	3270.5

Approved: August 11, 2016

Sample Name: L1608037701 Acquired: 8/10/2016 15:12:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.03632	.00245	.09845	.06645	-.00005	178.87	.01111
Stddev	.00094	.00632	.00110	.00087	.00037	.00004	.42	.00125
%RSD	89.425	17.411	44.817	.88088	.55291	85.947	.23237	11.221
#1	.00212	.02951	.00159	.09885	.06608	-.00008	178.74	.01211
#2	.00032	.04200	.00369	.09745	.06682	-.00007	178.53	.01151
#3	.00072	.03746	.00208	.09904	.06646	-.00000	179.33	.00971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00121	.00053	1.1262	-.00150	2.0454	.00618	2.8561	.41832
Stddev	.00032	.00040	.1113	.02698	.1695	.00638	.0541	.00092
%RSD	26.303	74.521	9.8859	1803.9	8.2847	103.25	1.8952	.22094
#1	.00121	.00020	1.1949	-.01804	1.8500	.01342	2.7948	.41930
#2	.00152	.00043	1.1858	-.01608	2.1336	.00377	2.8975	.41817
#3	.00089	.00097	.99771	.02963	2.1526	.00135	2.8760	.41747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	4.4433	.00313	-.09425	.01149	.00152	.00370	2.5386
Stddev	.00029	.0354	.00020	.01297	.00192	.00286	.00605	.2087
%RSD	49.694	.79577	6.4016	13.758	16.708	187.96	163.61	8.2201
#1	.00063	4.4032	.00324	-.10779	.01344	.00393	.00110	2.6619
#2	.00086	4.4700	.00290	-.09300	.00961	.00227	.01061	2.6563
#3	.00028	4.4566	.00325	-.08195	.01143	-.00164	-.00062	2.2977
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608037701 Acquired: 8/10/2016 15:12:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.44423	-.02644	-.00263	.00072	.20396	-.00073
Stddev	.00057	.00223	.00519	.00157	.00051	.02024	.00045
%RSD	67.797	.50224	19.637	59.468	70.811	9.9220	61.231
#1	.00044	.44237	-.02189	-.00222	.00047	.21686	-.00027
#2	.00060	.44362	-.03210	-.00437	.00038	.21438	-.00117
#3	.00150	.44671	-.02533	-.00131	.00131	.18064	-.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12013.	73794.	3242.1
Stddev	73.	205.	33.4
%RSD	.60896	.27716	1.0297
#1	11949.	73686.	3211.6
#2	11998.	74030.	3277.7
#3	12093.	73667.	3237.1

Approved: August 11, 2016

Sample Name: L1608037701PS Acquired: 8/10/2016 15:16:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579664-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20992**	**5.2711**	**.22093**	**1.1379**	**.60702**	**.02493**	**165.23**	**.03731**
Stddev	.00167	.0185	.00486	.0036	.00151	.00008	.17	.00083
%RSD	.79568	.35077	2.2017	.31511	.24896	.33366	.10118	2.2247
#1	.21179	5.2507	.22455	1.1346	.60835	.02491	165.19	.03801
#2	.20858	5.2756	.22284	1.1375	.60538	.02502	165.09	.03751
#3	.20939	5.2869	.21540	1.1417	.60733	.02486	165.41	.03639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10605**	**.25614**	**1.2957**	**2.1077**	**27.008**	**.55000**	**7.7196**	**.64270**
Stddev	.00311	.00108	.0308	.0413	.041	.00066	.0689	.00391
%RSD	2.9358	.42356	2.3813	1.9595	.15352	.12055	.89315	.60824
#1	.10817	.25573	1.3104	2.1027	27.041	.55076	7.6925	.64198
#2	.10751	.25533	1.3165	2.0692	26.961	.54951	7.7979	.63920
#3	.10248	.25738	1.2603	2.1514	27.020	.54974	7.6682	.64692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54631**	**29.776**	**.26783**	**5.3932**	**.28153**	**.66290**	**.20913**	**5.1690**
Stddev	.01476	.103	.00672	.1152	.00395	.01401	.00194	.0874
%RSD	2.7024	.34609	2.5094	2.1366	1.4040	2.1128	.92663	1.6901
#1	.55482	29.789	.27303	5.4613	.28440	.67562	.20933	5.2224
#2	.55484	29.667	.27020	5.4582	.28317	.66520	.21096	5.2163
#3	.52926	29.871	.26024	5.2602	.27702	.64789	.20710	5.0682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608037701PS Acquired: 8/10/2016 15:16:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579664-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52408**	**.93504**	**.48902**	**.26102**	**.50700**	**.71446**	**.00029**
Stddev	.01547	.00259	.00648	.00437	.00116	.01790	.00045
%RSD	2.9513	.27681	1.3259	1.6752	.22840	2.5051	158.24
#1	.53364	.93610	.48179	.26385	.50657	.72548	.00078
#2	.53237	.93209	.49430	.26323	.50611	.72409	.00021
#3	.50624	.93693	.49098	.25599	.50831	.69381	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11957.**	**73323.**	**3250.1**
Stddev	12.	86.	6.6
%RSD	.09667	.11710	.20228
#1	11969.	73377.	3245.0
#2	11946.	73367.	3257.5
#3	11956.	73224.	3247.8

Approved: August 11, 2016

Sample Name: L1608037701SDL Acquired: 8/10/2016 15:19:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579664-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**-.00676**	**-.00149**	**.02021**	**.01090**	**-.00003**	**35.603**
Stddev	.00203	.00622	.00287	.00076	.00031	.00004	.207
%RSD	803.24	91.971	192.77	3.7466	2.8217	139.17	.58275
#1	.00237	-.00843	-.00186	.02068	.01076	.00001	35.381
#2	.00007	-.01198	-.00416	.02062	.01125	-.00007	35.635
#3	-.00168	.00012	.00155	.01934	.01069	-.00002	35.793
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00220**	**-.00005**	**.00032**	**.22336**	F **-.02178**	**.51094**	**-.00415**
Stddev	.00029	.00029	.00096	.02187	.04537	.07681	.00329
%RSD	13.037	622.58	304.37	9.7917	208.30	15.033	79.292
#1	.00232	-.00014	-.00037	.23633	.01868	.52193	-.00087
#2	.00242	-.00028	.00141	.23565	-.01319	.58166	-.00413
#3	.00188	.00028	-.00009	.19811	-.07083	.42923	-.00744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53602**	**.08105**	**.00002**	**.88349**	**.00135**	**-.01646**	**.00094**
Stddev	.09258	.00071	.00026	.02507	.00057	.00486	.00389
%RSD	17.272	.87657	1109.2	2.8373	42.163	29.502	415.19
#1	.45203	.08181	-.00027	.86427	.00195	-.01934	-.00054
#2	.63529	.08093	.00023	.91185	.00082	-.01918	-.00200
#3	.52073	.08041	.00012	.87436	.00127	-.01085	.00535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: L1608037701SDL Acquired: 8/10/2016 15:19:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579664-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00225	.48238	-.00025	.08565	-.00014	.00094
Stddev	.00150	.00435	.04699	.00049	.00050	.00966	.00176
%RSD	185.43	193.42	9.7409	194.93	.58036	6681.9	187.83
#1	.00251	.00721	.51154	.00001	.08510	.00084	.00183
#2	.00024	-.00088	.50742	.00005	.08576	.00899	.00206
#3	-.00033	.00041	.42817	-.00081	.08608	-.01026	-.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00091	.04040	-.00059
Stddev	.00067	.00392	.00033
%RSD	73.647	9.7096	56.448
#1	.00166	.04269	-.00039
#2	.00040	.04264	-.00040
#3	.00066	.03587	-.00098
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12765.	78111.	3359.3
Stddev	12.	108.	10.1
%RSD	.09319	.13804	.30199
#1	12753.	78236.	3370.7
#2	12777.	78048.	3356.1
#3	12765.	78050.	3351.1

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 15:23:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40106**	**9.8664**	**.40385**	**.50934**	**1.0395**	**.04783**	**10.313**	**.05086**
Stddev	.00098	.0200	.01208	.00278	.0032	.00009	.053	.00143
%RSD	.24488	.20302	2.9906	.54667	.30735	.17986	.50926	2.8078
#1	.40062	9.8875	.40870	.50757	1.0414	.04785	10.367	.05162
#2	.40038	9.8476	.41276	.50789	1.0413	.04774	10.310	.05175
#3	.40219	9.8642	.39011	.51255	1.0358	.04791	10.262	.04921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20017**	**.47965**	**.50864**	**4.0703**	**48.593**	**1.0235**	**9.9176**	**.51483**
Stddev	.00657	.00330	.01680	.0272	.265	.0097	.1154	.00185
%RSD	3.2841	.68772	3.3032	.66865	.54572	.95038	1.1635	.36030
#1	.20413	.47641	.51956	4.0803	48.829	1.0186	9.8659	.51341
#2	.20380	.47954	.51706	4.0395	48.306	1.0172	10.050	.51693
#3	.19258	.48300	.48929	4.0911	48.645	1.0347	9.8371	.51415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0134**	**49.414**	**.51038**	**10.353**	**.51293**	**1.2304**	**.41773**	**5.1656**
Stddev	.0366	.161	.01831	.271	.01259	.0326	.00680	.1258
%RSD	3.6138	.32585	3.5872	2.6196	2.4543	2.6467	1.6286	2.4363
#1	1.0359	49.545	.52157	10.527	.51695	1.2511	.42251	5.2440
#2	1.0331	49.463	.52032	10.493	.52302	1.2471	.42073	5.2324
#3	.97110	49.234	.48925	10.041	.49883	1.1928	.40994	5.0205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 15:23:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99443	1.0418	.97131	.50592	.95125	1.0193	.99697
Stddev	.04057	.0028	.00517	.00517	.00104	.0320	.00688
%RSD	4.0797	.26701	.53259	1.0210	.10888	3.1375	.69024
#1	1.0204	1.0449	.97532	.50833	.95038	1.0380	1.0014
#2	1.0152	1.0395	.96547	.50944	.95240	1.0376	.98904
#3	.94768	1.0410	.97314	.49999	.95098	.98241	1.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12707.	77398.	3370.9
Stddev	39.	71.	23.0
%RSD	.30381	.09186	.68358
#1	12677.	77405.	3351.5
#2	12694.	77466.	3396.4
#3	12751.	77324.	3364.9

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 15:27:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00128	-.00480	-.00106	.00211	-.00215	-.00009	.00652	.00007
Stddev	.00093	.00222	.00352	.00184	.00017	.00004	.02893	.00019
%RSD	73.139	46.141	332.91	87.000	7.7300	51.624	443.58	283.47
#1	.00108	-.00720	-.00029	.00396	-.00205	-.00009	.01819	-.00001
#2	.00229	-.00437	.00202	.00029	-.00207	-.00004	.02780	-.00007
#3	.00045	-.00284	-.00490	.00209	-.00235	-.00013	-.02642	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	-.00070	.00010	.00333	.30608	-.00181	-.05207	.00285
Stddev	.00014	.00133	.00130	.02357	.13013	.00146	.07446	.00056
%RSD	98.451	189.27	1290.9	708.23	42.516	80.397	142.98	19.761
#1	.00029	-.00024	.00109	-.01395	.24372	-.00277	-.04544	.00262
#2	.00002	-.00221	-.00137	.03018	.45565	-.00014	.01884	.00244
#3	.00011	.00034	.00059	-.00624	.21886	-.00253	-.12963	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.01750	.00054	.00036	.00011	.00292	.00173	-.00093
Stddev	.00048	.01730	.00023	.00377	.00281	.00127	.00396	.00097
%RSD	567.88	98.864	41.783	1044.6	2445.9	43.455	228.17	104.12
#1	-.00036	.02586	.00035	.00390	.00116	.00241	.00490	-.00181
#2	.00002	-.00239	.00079	-.00361	-.00307	.00436	-.00270	.00010
#3	.00059	.02904	.00048	.00079	.00225	.00198	.00300	-.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 15:27:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00014**	**.00734**	**.00057**	**.00059**	**-.00026**	**-.00014**
Stddev	.00028	.00041	.01010	.00150	.00028	.00008	.00003
%RSD	625.33	299.90	137.60	265.22	47.538	30.718	23.470
#1	.00024	-.00051	.01835	.00228	.00027	-.00029	-.00018
#2	-.00031	-.00020	.00519	-.00008	.00075	-.00017	-.00012
#3	-.00006	.00030	-.00151	-.00050	.00075	-.00032	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12884.**	**78994.**	**3391.9**
Stddev	62.	114.	26.9
%RSD	.48170	.14435	.79227
#1	12846.	78882.	3405.0
#2	12851.	79110.	3409.8
#3	12956.	78991.	3361.0

Approved: August 11, 2016

Sample Name: L1608016406PS Acquired: 8/10/2016 15:31:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579239-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20548**	**5.1864**	**.21015**	**1.0444**	**.54998**	**.02467**	**9.4946**	**.02640**
Stddev	.00241	.0145	.00716	.0057	.00144	.00019	.0644	.00075
%RSD	1.1711	.28020	3.4049	.54764	.26272	.75843	.67789	2.8402
#1	.20617	5.1926	.21649	1.0421	.55155	.02481	9.4994	.02696
#2	.20747	5.1698	.21157	1.0510	.54967	.02474	9.5564	.02670
#3	.20281	5.1968	.20239	1.0403	.54871	.02446	9.4279	.02555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10537**	**.25442**	**.26800**	**2.1155**	**26.648**	**.54318**	**5.5383**	**.29720**
Stddev	.00385	.00179	.00809	.0239	.044	.00571	.0303	.00166
%RSD	3.6494	.70201	3.0186	1.1314	.16346	1.0507	.54771	.55733
#1	.10852	.25630	.27352	2.1337	26.614	.53797	5.5036	.29890
#2	.10651	.25274	.27176	2.1244	26.697	.54928	5.5515	.29711
#3	.10109	.25421	.25871	2.0884	26.633	.54230	5.5598	.29559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53578**	**26.398**	**.26907**	**5.3213**	**.26701**	**.64709**	**.20729**	**2.7876**
Stddev	.01775	.069	.00637	.1275	.00962	.01516	.00962	.0618
%RSD	3.3124	.26111	2.3677	2.3960	3.6037	2.3431	4.6412	2.2174
#1	.54708	26.347	.27210	5.4049	.27479	.65480	.21002	2.8313
#2	.54493	26.477	.27335	5.3844	.26999	.65685	.21525	2.8146
#3	.51532	26.370	.26174	5.1745	.25625	.62962	.19660	2.7169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608016406PS Acquired: 8/10/2016 15:31:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579239-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51661	.56858	.51630	.25762	.50226	.53253	.00112
Stddev	.01833	.00027	.00510	.00415	.00099	.01668	.00030
%RSD	3.5477	.04680	.98836	1.6120	.19693	3.1319	26.779
#1	.52727	.56829	.51243	.25817	.50219	.54337	.00078
#2	.52710	.56864	.51439	.26146	.50329	.54089	.00124
#3	.49544	.56881	.52209	.25321	.50132	.51332	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12131.	74373.	3235.3
Stddev	28.	76.	.9
%RSD	.22890	.10245	.02642
#1	12106.	74298.	3235.7
#2	12126.	74451.	3234.4
#3	12161.	74370.	3236.0

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 15:34:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39901**	**9.7863**	**.40441**	**.51218**	**1.0308**	**.04747**	**10.224**	**.05054**
Stddev	.00040	.0303	.01041	.00114	.0065	.00009	.098	.00127
%RSD	.10055	.30921	2.5730	.22265	.62641	.18053	.95712	2.5163
#1	.39933	9.7514	.40856	.51248	1.0269	.04746	10.126	.05125
#2	.39913	9.8055	.41209	.51315	1.0274	.04738	10.224	.05130
#3	.39856	9.8020	.39257	.51092	1.0383	.04755	10.321	.04908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19894**	**.47837**	**.50499**	**4.0398**	**47.845**	**1.0186**	**9.8750**	**.51156**
Stddev	.00644	.00113	.01480	.0129	.262	.0024	.0386	.00113
%RSD	3.2368	.23716	2.9316	.31863	.54827	.23554	.39094	.22075
#1	.20287	.47718	.51479	4.0256	47.657	1.0212	9.8735	.51054
#2	.20245	.47944	.51221	4.0506	47.734	1.0182	9.9143	.51137
#3	.19151	.47849	.48796	4.0433	48.145	1.0165	9.8371	.51277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0043**	**48.775**	**.50668**	**10.296**	**.51129**	**1.2262**	**.41044**	**5.1408**
Stddev	.0295	.228	.01579	.241	.00991	.0262	.00530	.1019
%RSD	2.9383	.46840	3.1164	2.3450	1.9386	2.1336	1.2913	1.9825
#1	1.0158	48.595	.51637	10.427	.51749	1.2397	.41295	5.1916
#2	1.0263	48.699	.51521	10.444	.51653	1.2429	.41401	5.2073
#3	.97077	49.032	.48846	10.018	.49986	1.1961	.40435	5.0235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 15:34:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99012**	**1.0349**	**.96451**	**.50037**	**.94066**	**1.0131**	**.98847**
Stddev	.03372	.0057	.01269	.00418	.00101	.0287	.00563
%RSD	3.4052	.55033	1.3152	.83558	.10784	2.8322	.56990
#1	1.0108	1.0297	.97915	.50515	.94004	1.0297	.98429
#2	1.0084	1.0341	.95751	.49744	.94183	1.0296	.98623
#3	.95121	1.0410	.95686	.49850	.94010	.97999	.99487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12808.**	**78047.**	**3404.6**
Stddev	12.	73.	19.8
%RSD	.09194	.09343	.58195
#1	12819.	78126.	3417.3
#2	12809.	77982.	3414.9
#3	12796.	78034.	3381.8

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 15:38:26 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	-.00897	-.00231	.00380	-.00262	-.00004	-.02162	.00019
Stddev	.00066	.00778	.00145	.00157	.00062	.00006	.00676	.00012
%RSD	86.885	86.692	62.553	41.295	23.687	133.67	31.251	62.311
#1	.00019	-.00216	-.00274	.00215	-.00201	-.00010	-.01769	.00011
#2	.00148	-.01745	-.00349	.00527	-.00259	.00001	-.02942	.00013
#3	.00060	-.00732	-.00070	.00399	-.00325	-.00004	-.01774	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	-.00047	.00138	.00421	.27896	-.00254	-.05015	.00041
Stddev	.00006	.00032	.00012	.04327	.19438	.00154	.08501	.00154
%RSD	50.038	66.999	8.4128	1027.1	69.683	60.520	169.51	371.64
#1	-.00019	-.00015	.00131	.05213	.42027	-.00430	-.04595	.00189
#2	-.00006	-.00049	.00133	-.03202	.35932	-.00142	-.13718	-.00118
#3	-.00012	-.00078	.00152	-.00747	.05728	-.00192	.03268	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.02288	.00162	.00328	-.00083	.00055	.00518	-.00197
Stddev	.00020	.02027	.00039	.00333	.00261	.00061	.00380	.00125
%RSD	64.304	88.581	24.139	101.56	314.66	110.93	73.368	63.212
#1	.00035	.04299	.00201	.00318	-.00322	.00110	.00742	-.00068
#2	.00049	.02319	.00162	.00666	.00195	-.00010	.00079	-.00317
#3	.00009	.00246	.00123	.00000	-.00121	.00064	.00732	-.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 15:38:26 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**-.00021**	**.00096**	**-.00004**	**.00094**	**-.00022**	**-.00004**
Stddev	.00042	.00053	.00501	.00378	.00069	.00008	.00015
%RSD	276.25	248.19	518.93	10413.	73.475	35.440	367.01
#1	-.00063	-.00015	.00263	.00104	.00172	-.00023	.00013
#2	.00003	-.00077	.00493	-.00424	.00072	-.00029	-.00016
#3	.00014	.00028	-.00466	.00309	.00039	-.00013	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12971.**	**79426.**	**3411.7**
Stddev	61.	318.	15.9
%RSD	.46937	.39994	.46601
#1	12946.	79302.	3416.8
#2	12928.	79786.	3393.9
#3	13041.	79188.	3424.5

Approved: August 11, 2016

Sample Name: L1608027601 Acquired: 8/10/2016 15:42:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**.07530**	**-.00056**	**.30812**	**.16183**	**-.00004**	F **583.63**
Stddev	.00239	.00365	.00088	.00126	.00161	.00002	2.91
%RSD	750.87	4.8467	156.83	.40756	.99283	56.007	.49823
#1	.00074	.07820	-.00079	.30688	.16352	-.00006	586.12
#2	.00247	.07120	.00041	.30810	.16032	-.00004	584.33
#3	-.00225	.07649	-.00131	.30939	.16164	-.00002	580.43
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00349**	**-.00013**	**.00142**	**.02031**	**-.01972**	**180.94**	**.04843**
Stddev	.00039	.00048	.00113	.00378	.04334	.83	.00045
%RSD	11.047	358.98	79.612	18.627	219.75	.45648	.92358
#1	.00384	-.00061	.00019	.02128	.02983	181.74	.04839
#2	.00356	-.00014	.00164	.02351	-.03842	180.97	.04889
#3	.00308	.00035	.00242	.01613	-.05058	180.09	.04800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.037**	**.08016**	**.00716**	**212.22**	**.00079**	**.05833**	**-.00119**
Stddev	.090	.00394	.00128	1.10	.00082	.00365	.00043
%RSD	.52722	4.9125	17.891	.52019	103.62	6.2624	35.842
#1	16.993	.07745	.00784	213.03	.00138	.05675	-.00078
#2	17.140	.07836	.00796	212.67	-.00014	.06251	-.00163
#3	16.978	.08468	.00568	210.96	.00113	.05574	-.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: L1608027601 Acquired: 8/10/2016 15:42:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01206	.05951	.11707	-.00170	.48963	F -.07646	-.00452
Stddev	.00451	.00522	.01261	.00075	.00153	.00334	.00316
%RSD	37.364	8.7661	10.770	43.827	.31245	4.3656	70.026
#1	.01397	.06087	.12620	-.00129	.49070	-.07583	-.00289
#2	.01530	.06392	.12232	-.00126	.49031	-.08007	-.00250
#3	.00691	.05375	.10268	-.00257	.48788	-.07348	-.00816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00074	.00342	-.00045
Stddev	.00084	.00044	.00038
%RSD	113.37	12.780	86.244
#1	.00022	.00383	-.00047
#2	-.00135	.00348	-.00082
#3	-.00109	.00296	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11580.	70525.	3216.6
Stddev	115.	338.	26.3
%RSD	.99470	.47898	.81694
#1	11502.	70796.	3193.3
#2	11526.	70147.	3211.5
#3	11712.	70633.	3245.1

Approved: August 11, 2016

Sample Name: L1608031704 Acquired: 8/10/2016 15:46:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.23806	.00074	.04139	.02056	.00021	11.522	.00092
Stddev	.00069	.00373	.00334	.00103	.00060	.00005	.012	.00035
%RSD	148.90	1.5664	449.11	2.4802	2.9248	24.855	.10531	37.961
#1	-.00002	.24228	-.00100	.04218	.02056	.00017	11.518	.00131
#2	.00016	.23668	-.00137	.04023	.02117	.00027	11.512	.00080
#3	.00125	.23521	.00460	.04176	.01997	.00019	11.535	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01123	.00029	.00312	1.6305	1.9503	.06818	9.2402	.11558
Stddev	.00156	.00060	.00093	.0373	.0445	.00112	.0437	.00011
%RSD	13.854	210.02	29.903	2.2889	2.2843	1.6362	.47322	.09293
#1	.01220	.00080	.00205	1.6736	1.9829	.06699	9.2370	.11571
#2	.01205	.00043	.00375	1.6092	1.9685	.06921	9.1982	.11554
#3	.00943	-.00037	.00355	1.6088	1.8995	.06834	9.2854	.11551
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	33.470	.03759	.20567	.00133	.00217	.00269	21.686
Stddev	.00027	.095	.00394	.02064	.00100	.00235	.00448	1.997
%RSD	95.501	.28245	10.470	10.035	75.057	108.39	166.45	9.2091
#1	.00060	33.570	.03944	.21948	.00050	.00111	.00566	22.911
#2	.00017	33.457	.04026	.21557	.00106	.00053	.00487	22.765
#3	.00009	33.382	.03307	.18194	.00245	.00486	-.00246	19.381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608031704 Acquired: 8/10/2016 15:46:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.12681**	**.00246**	**-.00166**	**.00008**	**.06154**	**.00008**
Stddev	.00053	.00021	.00095	.00256	.00040	.00686	.00037
%RSD	219.77	.16278	38.634	154.07	475.18	11.141	468.30
#1	.00029	.12671	.00298	-.00036	.00053	.06596	-.00031
#2	-.00077	.12668	.00136	-.00462	-.00005	.06503	.00012
#3	-.00024	.12705	.00305	-.00002	-.00023	.05364	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12350.**	**76123.**	**3291.4**
Stddev	52.	105.	34.5
%RSD	.42136	.13819	1.0480
#1	12303.	76026.	3275.1
#2	12341.	76235.	3267.9
#3	12406.	76107.	3331.0

Approved: August 11, 2016

Sample Name: L1608031705 Acquired: 8/10/2016 15:50:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	.18190	-.00002	.03926	.01850	.00022	11.709	.00096
Stddev	.00207	.00532	.00288	.00267	.00016	.00007	.062	.00016
%RSD	141.14	2.9224	18592.	6.7967	.87339	31.900	.52713	16.756
#1	-.00092	.18348	-.00324	.03675	.01838	.00031	11.723	.00103
#2	.00259	.17598	.00089	.03897	.01868	.00018	11.642	.00108
#3	.00274	.18625	.00230	.04206	.01844	.00019	11.763	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01184	.00011	.00344	1.3290	1.7962	.06630	9.4988	.12110
Stddev	.00122	.00101	.00066	.0237	.0780	.00372	.1032	.00198
%RSD	10.289	911.47	19.246	1.7793	4.3408	5.6183	1.0865	1.6320
#1	.01268	.00036	.00338	1.3514	1.7186	.06868	9.5246	.12274
#2	.01240	-.00100	.00281	1.3043	1.8746	.06821	9.5867	.11891
#3	.01044	.00097	.00413	1.3313	1.7953	.06201	9.3851	.12167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	33.840	.03947	.15680	.00301	-.00049	.00069	21.610
Stddev	.00014	.082	.00362	.01292	.00300	.00431	.00346	1.713
%RSD	310.96	.24142	9.1740	8.2395	99.548	872.08	499.74	7.9250
#1	-.00004	33.911	.04188	.16267	.00556	-.00094	.00313	22.659
#2	-.00003	33.858	.04123	.16575	.00376	.00403	.00221	22.537
#3	.00021	33.751	.03531	.14199	-.00029	-.00457	-.00327	19.634
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608031705 Acquired: 8/10/2016 15:50:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.13045	.00441	-.00252	.00076	.05849	.00020
Stddev	.00036	.00046	.00351	.00136	.00025	.00577	.00054
%RSD	509.48	.35365	79.483	54.098	33.449	9.8712	276.39
#1	-.00018	.13066	.00582	-.00285	.00082	.06198	-.00018
#2	.00033	.13076	.00042	-.00369	.00048	.06165	-.00005
#3	-.00036	.12992	.00700	-.00102	.00098	.05182	.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12395.	76237.	3308.1
Stddev	45.	102.	15.3
%RSD	.35940	.13406	.46245
#1	12346.	76137.	3291.6
#2	12407.	76233.	3310.8
#3	12432.	76342.	3321.8

Approved: August 11, 2016

Sample Name: L1608033404 Acquired: 8/10/2016 15:54:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.10290	-.00122	.09095	.01551	-.00004	33.759	.00136
Stddev	.00081	.00138	.00136	.00106	.00044	.00004	.105	.00014
%RSD	2314.6	1.3415	111.57	1.1706	2.8157	107.34	.31135	10.159
#1	-.00003	.10449	-.00012	.09216	.01602	-.00004	33.715	.00146
#2	-.00085	.10214	-.00274	.09015	.01524	-.00008	33.683	.00142
#3	.00078	.10206	-.00080	.09053	.01529	.00000	33.879	.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00435	.00214	.21064	.42870	.95666	-.00109	.53392	.27997
Stddev	.00058	.00005	.02445	.00561	.08381	.00334	.07857	.00190
%RSD	13.254	2.3229	11.605	1.3094	8.7610	306.94	14.716	.67895
#1	.00494	.00214	.22615	.43517	.95420	-.00217	.55071	.28062
#2	.00433	.00209	.22331	.42508	.87410	.00266	.44831	.27783
#3	.00379	.00219	.18246	.42585	1.0417	-.00376	.60274	.28146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	131.81	.01704	.03570	.00213	.00307	.00199	.11946
Stddev	.00039	.40	.00237	.00207	.00182	.00142	.00236	.01357
%RSD	167.96	.30294	13.882	5.7916	85.557	46.279	118.21	11.362
#1	.00067	131.62	.01780	.03459	.00245	.00458	-.00062	.12911
#2	.00010	131.53	.01893	.03809	.00377	.00176	.00265	.12533
#3	-.00007	132.26	.01439	.03444	.00017	.00287	.00395	.10394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033404 Acquired: 8/10/2016 15:54:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.14731	.08269	.00101	-.00205	.00006	.15804	-.00039
Stddev	.02121	.00010	.00995	.00415	.00032	.01896	.00041
%RSD	14.399	.12139	986.65	201.93	518.85	11.997	105.86
#1	.16037	.08274	.00982	.00205	-.00011	.16977	-.00086
#2	.15873	.08276	.00298	-.00625	.00044	.16818	-.00014
#3	.12284	.08258	-.00978	-.00196	-.00014	.13616	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12264.	75018.	3318.7
Stddev	57.	121.	14.5
%RSD	.46780	.16138	.43626
#1	12228.	74886.	3320.8
#2	12234.	75044.	3332.0
#3	12331.	75124.	3303.3

Approved: August 11, 2016

Sample Name: L1608033405 Acquired: 8/10/2016 15:57:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.01271	.00009	.03751	.19059	-.00007	181.78
Stddev	.00214	.00554	.00303	.00113	.00088	.00004	.85
%RSD	602.66	43.601	3534.4	3.0217	.46424	50.577	.46831
#1	-.00279	.00631	.00356	.03848	.19158	-.00007	182.67
#2	.00123	.01584	-.00129	.03778	.18986	-.00011	181.70
#3	.00050	.01597	-.00202	.03626	.19034	-.00004	180.97
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.00302	.00106	.00277	.06500	.86566	.00648
Stddev	.00003	.00050	.00081	.00075	.01741	.08615	.00222
%RSD	4.0406	16.455	76.048	27.059	26.786	9.9522	34.323
#1	.00078	.00332	.00041	.00355	.08287	.96162	.00686
#2	.00075	.00330	.00082	.00206	.04810	.79496	.00849
#3	.00081	.00245	.00197	.00269	.06401	.84041	.00409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.7944	.18389	.00080	5.5661	.00383	.00194	.00155
Stddev	.0755	.00313	.00027	.0137	.00042	.00247	.00157
%RSD	2.7008	1.7046	34.088	.24602	10.926	127.41	101.55
#1	2.7892	.18031	.00111	5.5761	.00392	.00434	.00074
#2	2.7216	.18521	.00065	5.5505	.00419	-.00060	.00055
#3	2.8723	.18615	.00064	5.5718	.00337	.00208	.00336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: L1608033405 Acquired: 8/10/2016 15:57:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.00104	.59484	-.00039	.39523	F -.03099	-.00216
Stddev	.00276	.00395	.04983	.00061	.00072	.00890	.00328
%RSD	283.33	377.99	8.3768	158.03	.18257	28.710	151.90
#1	.00292	.00557	.62904	-.00012	.39603	-.02714	-.00405
#2	-.00219	-.00076	.61781	.00005	.39502	-.04117	-.00405
#3	.00219	-.00168	.53767	-.00108	.39464	-.02467	.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00054	.92521	-.00047
Stddev	.00100	.09460	.00012
%RSD	183.75	10.225	26.354
#1	.00001	.98603	-.00060
#2	.00170	.97338	-.00035
#3	-.00007	.81621	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12257.	75708.	3309.8
Stddev	62.	207.	19.1
%RSD	.50259	.27405	.57733
#1	12194.	75928.	3288.8
#2	12261.	75680.	3326.1
#3	12317.	75516.	3314.4

Approved: August 11, 2016

Sample Name: L1608041501 Acquired: 8/10/2016 16:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.01197	.00004	.03261	.21622	-.00001	25.149
Stddev	.00055	.00286	.00059	.00270	.00043	.00002	.117
%RSD	812.79	23.859	1434.3	8.2909	.19704	125.15	.46537
#1	-.00045	.01481	-.00059	.03158	.21572	.00000	25.061
#2	.00056	.01201	.00012	.03568	.21647	-.00003	25.103
#3	-.00031	.00909	.00059	.03058	.21646	-.00001	25.282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00160	.00199	.00134	.13687	1.5706	.01821
Stddev	.00014	.00032	.00063	.00105	.01690	.0791	.00319
%RSD	75.525	20.202	31.647	78.455	12.348	5.0386	17.531
#1	.00034	.00196	.00200	.00027	.14338	1.5839	.02186
#2	.00010	.00150	.00260	.00237	.11769	1.4857	.01593
#3	.00011	.00134	.00135	.00136	.14955	1.6423	.01684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.218	.04292	.00052	F 345.36	.00286	1.4109	-.00108
Stddev	.076	.00101	.00024	.57	.00065	.1288	.00262
%RSD	.20865	2.3611	46.969	.16512	22.889	9.1267	242.98
#1	36.168	.04208	.00045	345.95	.00325	1.4841	.00192
#2	36.305	.04263	.00031	344.81	.00323	1.4864	-.00293
#3	36.182	.04404	.00079	345.32	.00211	1.2622	-.00223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 11, 2016

Sample Name: L1608041501 Acquired: 8/10/2016 16:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00191**	**15.178**	**-.00033**	**.45342**	**.00122**	**-.00049**
Stddev	.00321	.00600	1.321	.00052	.00081	.00276	.00154
%RSD	1890.5	313.65	8.7061	158.45	.17868	225.92	317.14
#1	.00243	-.00286	15.958	-.00050	.45435	-.00137	-.00197
#2	-.00376	.00866	15.924	.00026	.45289	.00091	-.00059
#3	.00082	-.00006	13.653	-.00075	.45302	.00412	.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00019**	**.00958**	**-.00014**
Stddev	.00070	.00113	.00068
%RSD	377.90	11.757	479.69
#1	-.00060	.01044	-.00058
#2	-.00059	.01001	.00064
#3	.00063	.00831	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12010.**	**73085.**	**3258.8**
Stddev	77.	107.	9.3
%RSD	.64214	.14586	.28549
#1	11971.	73120.	3255.4
#2	11961.	73170.	3269.4
#3	12099.	72966.	3251.7

Approved: August 11, 2016

Sample Name: L1608041502 Acquired: 8/10/2016 16:05:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.01524	-.00149	.03406	.19215	-.00000	22.296
Stddev	.00181	.00084	.00270	.00137	.00041	.00010	.028
%RSD	3923.5	5.4995	180.75	4.0310	.21105	2496.1	.12656
#1	.00119	.01563	-.00374	.03375	.19261	.00011	22.265
#2	.00080	.01427	-.00223	.03556	.19199	-.00005	22.305
#3	-.00212	.01581	.00150	.03287	.19185	-.00008	22.319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00125	.00140	.00131	.08739	1.5473	.02070
Stddev	.00009	.00008	.00079	.00018	.02186	.0958	.00049
%RSD	23.709	6.7294	56.235	13.966	25.010	6.1887	2.3609
#1	.00048	.00130	.00053	.00146	.06916	1.6081	.02124
#2	.00038	.00116	.00206	.00137	.08141	1.4369	.02029
#3	.00030	.00131	.00160	.00111	.11162	1.5968	.02057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	33.057	.03715	.00013	F 343.08	.00269	1.4170	.00060
Stddev	.236	.00123	.00004	1.06	.00145	.1474	.00240
%RSD	.71416	3.3155	34.185	.30918	53.997	10.403	399.10
#1	33.323	.03826	.00017	343.69	.00191	1.5074	.00278
#2	32.875	.03582	.00008	341.85	.00436	1.4968	-.00197
#3	32.972	.03738	.00013	343.70	.00179	1.2469	.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 11, 2016

Sample Name: L1608041502 Acquired: 8/10/2016 16:05:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00156**	**.00166**	**14.104**	**-.00090**	**.39949**	**-.00054**	**-.00190**
Stddev	.00242	.00627	1.340	.00076	.00102	.00452	.00268
%RSD	154.69	376.83	9.5012	83.530	.25627	841.52	141.23
#1	-.00434	-.00540	14.874	-.00037	.39861	-.00450	-.00412
#2	.00003	.00657	14.881	-.00057	.39924	.00438	-.00264
#3	-.00038	.00383	12.556	-.00177	.40061	-.00149	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00023**	**.00995**	**-.00074**
Stddev	.00041	.00106	.00033
%RSD	178.50	10.605	44.097
#1	-.00024	.01076	-.00066
#2	.00044	.01035	-.00110
#3	.00049	.00876	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12060.**	**73248.**	**3273.1**
Stddev	103.	274.	31.4
%RSD	.85750	.37360	.95938
#1	12025.	72954.	3259.0
#2	11980.	73495.	3309.1
#3	12177.	73294.	3251.2

Approved: August 11, 2016

Sample Name: L1608037701SDL Acquired: 8/10/2016 16:09:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG579664-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	-.00833	.00171	.00321	-.00066	-.00002	6.9674	.00060
Stddev	.00083	.00613	.00035	.00297	.00135	.00004	.0086	.00008
%RSD	79.452	73.649	20.507	92.555	205.06	269.71	.12395	13.740
#1	.00013	-.00629	.00186	.00442	-.00217	.00001	6.9753	.00059
#2	.00126	-.01522	.00197	-.00018	.00041	.00001	6.9687	.00052
#3	.00174	-.00347	.00131	.00539	-.00021	-.00006	6.9582	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	-.00114	.04412	-.00577	.30756	-.00150	.14112	.01646
Stddev	.00018	.00048	.00488	.02733	.06729	.00454	.03552	.00112
%RSD	274.04	41.857	11.052	473.52	21.878	303.70	25.171	6.7928
#1	-.00003	-.00141	.04729	-.01087	.37279	-.00127	.10479	.01720
#2	-.00005	-.00059	.04658	.02375	.23839	.00293	.17577	.01517
#3	.00028	-.00141	.03851	-.03019	.31149	-.00615	.14280	.01700
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.25630	.00126	-.00764	.00132	-.00011	.00624	.08887
Stddev	.00003	.02484	.00040	.00630	.00210	.00169	.00608	.01291
%RSD	13.398	9.6916	31.556	82.508	158.93	1518.4	97.562	14.527
#1	-.00024	.27571	.00160	-.00055	.00030	.00159	.00509	.09665
#2	-.00019	.22831	.00136	-.01260	.00374	-.00179	.00081	.09599
#3	-.00019	.26488	.00082	-.00977	-.00008	-.00013	.01281	.07397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608037701SDL Acquired: 8/10/2016 16:09:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG579664-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**.01650**	**.00496**	**.00187**	**.00023**	**.00826**	**-.00033**
Stddev	.00044	.00013	.00118	.00126	.00013	.00098	.00024
%RSD	149.72	.81244	23.710	67.345	56.679	11.828	71.271
#1	.00021	.01660	.00450	.00091	.00008	.00878	-.00048
#2	-.00059	.01655	.00630	.00140	.00029	.00888	-.00006
#3	-.00050	.01635	.00409	.00329	.00031	.00714	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13135.**	**80695.**	**3444.8**
Stddev	36.	169.	26.4
%RSD	.27060	.20963	.76772
#1	13171.	80871.	3458.3
#2	13133.	80534.	3414.3
#3	13100.	80680.	3461.7

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 16:13:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40052**	**9.8543**	**.40779**	**.51141**	**1.0414**	**.04786**	**10.325**	**.05091**
Stddev	.00089	.0149	.00863	.00179	.0075	.00009	.042	.00146
%RSD	.22147	.15134	2.1163	.35029	.71555	.19808	.40563	2.8672
#1	.40135	9.8637	.41232	.50970	1.0488	.04775	10.373	.05161
#2	.39958	9.8371	.41322	.51328	1.0416	.04788	10.296	.05188
#3	.40063	9.8621	.39784	.51127	1.0339	.04794	10.305	.04923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20131**	**.47998**	**.51069**	**4.0450**	**48.293**	**1.0197**	**9.9155**	**.51812**
Stddev	.00699	.00052	.01694	.0310	.248	.0192	.0401	.00548
%RSD	3.4726	.10810	3.3178	.76620	.51401	1.8807	.40409	1.0572
#1	.20534	.48032	.51985	4.0543	48.577	1.0416	9.9559	.52314
#2	.20535	.48024	.52109	4.0703	48.178	1.0118	9.8757	.51895
#3	.19324	.47938	.49114	4.0104	48.122	1.0058	9.9148	.51228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0140**	**49.191**	**.51308**	**10.412**	**.51633**	**1.2406**	**.42123**	**5.2055**
Stddev	.0308	.408	.01752	.266	.01028	.0239	.00806	.1062
%RSD	3.0357	.83045	3.4149	2.5566	1.9906	1.9264	1.9135	2.0395
#1	1.0242	49.653	.52378	10.551	.52472	1.2516	.42565	5.2601
#2	1.0384	49.041	.52261	10.580	.51940	1.2570	.42610	5.2732
#3	.97944	48.878	.49286	10.105	.50486	1.2131	.41192	5.0831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 16:13:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99898**	**1.0444**	**.96349**	**.50748**	**.94922**	**1.0222**	**.99007**
Stddev	.03871	.0078	.00221	.00201	.00201	.0316	.00355
%RSD	3.8752	.74334	.22959	.39690	.21123	3.0930	.35856
#1	1.0218	1.0531	.96210	.50628	.95052	1.0397	.99417
#2	1.0208	1.0422	.96604	.50980	.94692	1.0411	.98795
#3	.95428	1.0380	.96232	.50635	.95023	.98565	.98810
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12648.**	**77054.**	**3381.4**
Stddev	12.	12.	12.1
%RSD	.09760	.01579	.35749
#1	12634.	77058.	3368.8
#2	12654.	77040.	3382.5
#3	12657.	77064.	3392.9

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 16:17:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00612	-.00029	.00176	-.00240	-.00004	.00243	-.00009
Stddev	.00110	.00551	.00123	.00159	.00126	.00002	.03353	.00028
%RSD	441.26	90.026	418.26	90.332	52.413	38.483	1378.1	321.75
#1	.00124	-.00379	.00076	.00025	-.00120	-.00004	-.03304	.00022
#2	-.00093	-.00216	-.00164	.00342	-.00371	-.00006	.00674	-.00033
#3	.00043	-.01240	.00001	.00161	-.00229	-.00003	.03360	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	-.00039	.00010	-.00781	.22997	-.00348	-.05240	.00218
Stddev	.00032	.00008	.00108	.01359	.10875	.00274	.07110	.00095
%RSD	182.44	20.566	1069.9	173.96	47.288	78.770	135.70	43.673
#1	-.00017	-.00042	.00113	.00777	.35109	-.00570	-.11903	.00195
#2	.00014	-.00046	.00019	-.01719	.19807	-.00432	.02246	.00137
#3	-.00050	-.00030	-.00102	-.01402	.14074	-.00042	-.06062	.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.03713	-.00014	-.00166	.00052	.00306	-.00035	-.00192
Stddev	.00019	.03942	.00106	.00165	.00047	.00105	.00411	.00068
%RSD	5160.9	106.17	739.32	99.511	89.146	34.300	1172.9	35.307
#1	.00022	.07754	-.00112	-.00114	.00026	.00427	.00249	-.00164
#2	-.00015	.03507	.00098	-.00033	.00106	.00242	-.00507	-.00269
#3	-.00006	-.00122	-.00029	-.00350	.00024	.00248	.00153	-.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 16:17:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**-.00055**	**.00611**	**-.00129**	**.00071**	**-.00029**	**-.00042**
Stddev	.00025	.00034	.00720	.00185	.00010	.00019	.00014
%RSD	68.631	60.952	117.77	143.04	13.329	66.747	32.659
#1	-.00043	-.00078	.00732	-.00107	.00080	-.00009	-.00031
#2	-.00059	-.00071	-.00161	.00044	.00074	-.00031	-.00057
#3	-.00009	-.00017	.01264	-.00325	.00061	-.00048	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12795.**	**78448.**	**3375.1**
Stddev	22.	162.	25.4
%RSD	.17034	.20620	.75195
#1	12770.	78498.	3345.9
#2	12811.	78579.	3387.5
#3	12804.	78267.	3391.8

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 16:21:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00735	.14868	.00566	.08266	.00525	.00146	.42669	.00105
Stddev	.00095	.00340	.00151	.00231	.00098	.00003	.04669	.00014
%RSD	12.873	2.2844	26.675	2.7923	18.734	2.2482	10.943	13.336
#1	.00686	.14501	.00650	.08461	.00533	.00150	.38196	.00096
#2	.00676	.14931	.00392	.08011	.00619	.00146	.42300	.00121
#3	.00845	.15172	.00656	.08325	.00423	.00143	.47512	.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00395	.00327	.00433	.08761	.91257	.08009	.39541	.00941
Stddev	.00031	.00093	.00062	.01864	.04010	.00591	.02652	.00039
%RSD	7.9626	28.497	14.217	21.276	4.3940	7.3788	6.7076	4.1010
#1	.00409	.00230	.00492	.09500	.92235	.07677	.37173	.00982
#2	.00417	.00415	.00437	.06640	.94687	.07658	.42407	.00935
#3	.00359	.00337	.00369	.10142	.86848	.08691	.39044	.00905
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00762	.40934	.01637	.80390	.00790	.08022	.01846	.80229
Stddev	.00093	.01517	.00164	.09750	.00433	.01232	.00350	.09392
%RSD	12.168	3.7057	10.031	12.129	54.770	15.359	18.962	11.706
#1	.00829	.42627	.01696	.86270	.01075	.08835	.01455	.85940
#2	.00801	.39698	.01764	.85764	.01003	.08626	.02130	.85358
#3	.00656	.40477	.01452	.69135	.00292	.06604	.01951	.69390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 16:21:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38779**	**.04223**	**.02389**	**.14669**	**.00817**	**.01689**	**.03961**
Stddev	.05590	.00071	.00600	.01666	.00068	.00226	.00061
%RSD	14.416	1.6699	25.131	11.357	8.3648	13.358	1.5300
#1	.42412	.04295	.02441	.15732	.00852	.01841	.03999
#2	.41584	.04154	.01764	.15525	.00738	.01795	.03993
#3	.32342	.04221	.02961	.12749	.00860	.01430	.03891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12398.**	**78438.**	**3389.1**
Stddev	15.	153.	22.3
%RSD	.11877	.19563	.65764
#1	12399.	78506.	3363.9
#2	12413.	78262.	3397.2
#3	12383.	78546.	3406.2

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 16:25:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02158	.38354	.01500	.19939	.01774	.00354	1.0062	.00201
Stddev	.00275	.00505	.00236	.00134	.00039	.00004	.0320	.00025
%RSD	12.737	1.3166	15.702	.66965	2.2080	1.0927	3.1837	12.574
#1	.02221	.38531	.01624	.20045	.01810	.00353	1.0329	.00200
#2	.02396	.38746	.01649	.19983	.01778	.00351	1.0151	.00227
#3	.01857	.37784	.01229	.19789	.01732	.00358	.97068	.00176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00959	.00934	.00992	.19911	2.1075	.19611	.98806	.02084
Stddev	.00079	.00071	.00070	.02835	.0477	.00105	.07997	.00209
%RSD	8.2076	7.6048	7.0854	14.237	2.2636	.53296	8.0936	10.008
#1	.00985	.01005	.01061	.22031	2.0827	.19493	.91608	.02252
#2	.01021	.00863	.00994	.16691	2.0773	.19694	1.0741	.01851
#3	.00870	.00935	.00920	.21010	2.1625	.19645	.97396	.02149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01853	.97456	.03976	1.9347	.02051	.19957	.04142	1.9143
Stddev	.00179	.02125	.00377	.1622	.00210	.01404	.00195	.1500
%RSD	9.6421	2.1801	9.4932	8.3818	10.222	7.0327	4.7162	7.8354
#1	.01951	.95997	.04183	2.0345	.02290	.20650	.03936	1.9998
#2	.01962	.99893	.04205	2.0220	.01962	.20879	.04325	2.0021
#3	.01647	.96477	.03541	1.7476	.01901	.18342	.04164	1.7411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 16:25:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.92972**	**.10276**	**.06357**	**.35719**	**.01806**	**.03999**	**.09726**
Stddev	.09943	.00018	.00240	.02660	.00092	.00392	.00070
%RSD	10.694	.17120	3.7728	7.4467	5.1086	9.8012	.72129
#1	.99097	.10291	.06097	.37233	.01900	.04244	.09753
#2	.98319	.10256	.06404	.37277	.01802	.04206	.09778
#3	.81500	.10280	.06570	.32648	.01715	.03547	.09646
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12869.**	**78816.**	**3418.9**
Stddev	34.	114.	23.8
%RSD	.26202	.14446	.69619
#1	12847.	78947.	3435.7
#2	12852.	78757.	3391.7
#3	12908.	78743.	3429.4

Approved: August 11, 2016

Sample Name: PBS R6 Acquired: 8/10/2016 16:28:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579502-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.02732**	**.04517**	**-.01569**	**-.00175**	**-.00011**	**1.1183**
Stddev	.00060	.00677	.00284	.00209	.00070	.00008	.0182
%RSD	113.24	24.760	6.2979	13.298	40.000	70.488	1.6307
#1	-.00025	.03336	.04748	-.01797	-.00229	-.00005	1.1034
#2	-.00122	.02860	.04604	-.01388	-.00200	-.00009	1.1128
#3	-.00012	.02001	.04199	-.01522	-.00096	-.00020	1.1386
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00061**	**-.00013**	**.00049**	**.03172**	**.06953**	**1.0902**	**-.00354**
Stddev	.00013	.00036	.00094	.00399	.01711	.1013	.00090
%RSD	20.976	277.52	191.64	12.577	24.609	9.2927	25.407
#1	.00066	.00017	-.00054	.03454	.06900	.97346	-.00456
#2	.00046	-.00003	.00130	.03347	.05269	1.1426	-.00287
#3	.00070	-.00052	.00070	.02716	.08690	1.1546	-.00318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.4814**	**.00291**	**.00067**	**1.1652**	**.00258**	**.48143**	**-.00037**
Stddev	.0905	.00274	.00025	.0226	.00096	.06066	.00106
%RSD	3.6478	94.289	37.970	1.9379	37.261	12.600	288.80
#1	2.5858	.00130	.00055	1.1467	.00223	.52664	.00016
#2	2.4330	.00608	.00050	1.1584	.00367	.50515	-.00159
#3	2.4253	.00135	.00096	1.1903	.00185	.41250	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: PBS R6 Acquired: 8/10/2016 16:28:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579502-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00621	.03737	.58461	.01371	.00536	.00722	F -.05093
Stddev	.00131	.01038	.05074	.00085	.00039	.00229	.00428
%RSD	21.061	27.788	8.6799	6.1900	7.3096	31.770	8.4001
#1	.00708	.04745	.61683	.01391	.00491	.00459	-.05091
#2	.00471	.03794	.61089	.01444	.00557	.00824	-.05521
#3	.00684	.02671	.52612	.01278	.00561	.00883	-.04666
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							18.000
Low Limit							-.04000

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00000	1.5366	.00044
Stddev	.00009	.1510	.00013
%RSD	2691.6	9.8259	28.900
#1	-.00007	1.6362	.00030
#2	-.00003	1.6108	.00054
#3	.00011	1.3629	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11825.	75056.	3562.3
Stddev	100.	148.	5.4
%RSD	.84602	.19759	.15053
#1	11722.	74894.	3567.0
#2	11832.	75185.	3556.4
#3	11922.	75088.	3563.4

Approved: August 11, 2016

Sample Name: LCSS R6 Acquired: 8/10/2016 16:32:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579502-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18004	.04131	.24289	-.01028	-.00227	-.00009	.93544	.02374
Stddev	.00179	.00495	.01651	.00109	.00026	.00008	.01496	.00143
%RSD	.99696	11.975	6.7964	10.630	11.492	85.435	1.5997	6.0443
#1	.17857	.03809	.25182	-.01003	-.00257	-.00016	.93125	.02467
#2	.17950	.03884	.25301	-.01147	-.00209	-.00012	.92301	.02446
#3	.18204	.04701	.22384	-.00933	-.00215	-.00000	.95205	.02209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	-.00033	.26591	.04118	.94572	-.00281	2.4291	.26035
Stddev	.00008	.00085	.01764	.01538	.12838	.00327	.0083	.00391
%RSD	52.921	256.20	6.6333	37.341	13.575	116.66	.34206	1.5003
#1	-.00006	.00054	.27712	.04761	.95564	.00006	2.4285	.26111
#2	-.00016	-.00117	.27504	.05229	1.0688	-.00211	2.4377	.26382
#3	-.00021	-.00038	.24558	.02363	.81266	-.00637	2.4212	.25612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	1.0807	.00242	.39099	.24322	.00863	.03260	.54677
Stddev	.00034	.0329	.00063	.03615	.01023	.00064	.00174	.03125
%RSD	51.258	3.0437	25.900	9.2459	4.2067	7.4126	5.3351	5.7157
#1	.00040	1.1123	.00178	.42170	.24956	.00855	.03125	.56881
#2	.00105	1.0467	.00245	.40014	.24868	.00931	.03198	.56049
#3	.00056	1.0830	.00303	.35115	.23142	.00804	.03456	.51100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LCSS R6 Acquired: 8/10/2016 16:32:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579502-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01063	.00447	.01296	-.03962	-.00002	1.3415	.00018
Stddev	.00204	.00028	.00770	.00452	.00062	.0882	.00022
%RSD	19.184	6.3568	59.400	11.411	3300.2	6.5762	126.13
#1	.01177	.00433	.01095	-.04080	-.00072	1.3935	-.00008
#2	.01185	.00429	.02146	-.04342	.00023	1.3915	.00034
#3	.00828	.00480	.00646	-.03462	.00044	1.2397	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11958.	75905.	3517.6
Stddev	55.	825.	14.1
%RSD	.45600	1.0875	.40001
#1	11925.	76525.	3514.5
#2	11929.	76222.	3505.3
#3	12021.	74968.	3532.9

Approved: August 11, 2016

Sample Name: LCSS DP Acquired: 8/10/2016 16:36:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579502-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18303**	**.01808**	**.26158**	**-.01361**	**-.00162**	**-.00010**	**1.0009**
Stddev	.00168	.00457	.01909	.00107	.00054	.00002	.0508
%RSD	.91605	25.287	7.2995	7.8405	33.148	19.028	5.0750
#1	.18263	.01998	.27421	-.01450	-.00181	-.00011	1.0149
#2	.18487	.02139	.27091	-.01243	-.00101	-.00008	1.0432
#3	.18159	.01286	.23961	-.01391	-.00202	-.00010	.94459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02412**	**.00012**	**.00125**	**.27276**	**.07091**	**.98843**	**-.00069**
Stddev	.00129	.00021	.00062	.01944	.00752	.01793	.00049
%RSD	5.3353	175.82	50.156	7.1257	10.612	1.8141	71.687
#1	.02494	-.00006	.00172	.28424	.07952	.96835	-.00030
#2	.02478	.00007	.00054	.28372	.06562	1.0028	-.00051
#3	.02264	.00035	.00147	.25032	.06758	.99411	-.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.6013**	**.26805**	**.00074**	**1.1714**	**.00277**	**.44322**	**.24624**
Stddev	.0917	.00208	.00028	.0210	.00090	.03404	.01537
%RSD	3.5235	.77497	37.964	1.7945	32.311	7.6806	6.2414
#1	2.5643	.26786	.00088	1.1840	.00175	.47045	.25338
#2	2.5340	.27021	.00093	1.1472	.00317	.45415	.25675
#3	2.7057	.26607	.00042	1.1831	.00340	.40505	.22860
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: LCSS DP Acquired: 8/10/2016 16:36:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579502-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00637**	**.03779**	**.56341**	**.01355**	**.00469**	**.01232**	F **-.04988**
Stddev	.00154	.00323	.03421	.00151	.00017	.00257	.00327
%RSD	24.236	8.5593	6.0722	11.163	3.6676	20.841	6.5490
#1	.00811	.03873	.58647	.01447	.00457	.01114	-.05122
#2	.00585	.04046	.57965	.01438	.00489	.01056	-.05226
#3	.00516	.03420	.52410	.01181	.00461	.01527	-.04615
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							18.000
Low Limit							-.04000

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00011**	**1.4849**	**.00015**
Stddev	.00037	.1072	.00010
%RSD	331.12	7.2157	63.093
#1	-.00009	1.5495	.00007
#2	-.00011	1.5440	.00026
#3	.00054	1.3612	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11868.**	**75891.**	**3521.4**
Stddev	36.	176.	16.1
%RSD	.30439	.23212	.45750
#1	11849.	75731.	3513.4
#2	11846.	76080.	3510.9
#3	11910.	75863.	3539.9

Approved: August 11, 2016

Sample Name: L1608024541 Acquired: 8/10/2016 16:40:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.40049	.03459	-.00770	.00414	-.00010	2.1794	.00062
Stddev	.00117	.00537	.00204	.00096	.00045	.00006	.0171	.00019
%RSD	271.06	1.3398	5.8913	12.517	10.805	65.218	.78362	30.243
#1	.00166	.39702	.03558	-.00719	.00461	-.00003	2.1622	.00081
#2	.00032	.40667	.03594	-.00710	.00411	-.00016	2.1963	.00044
#3	-.00068	.39779	.03224	-.00881	.00371	-.00009	2.1796	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00141	.03439	1.3599	1.1616	-.00289	2.3315	.02781
Stddev	.00005	.00019	.00321	.0273	.0217	.00177	.0816	.00053
%RSD	190.88	13.760	9.3428	2.0114	1.8695	61.333	3.4990	1.9235
#1	.00002	.00131	.03688	1.3764	1.1659	-.00119	2.3659	.02822
#2	.00009	.00163	.03553	1.3749	1.1380	-.00472	2.3902	.02720
#3	-.00002	.00128	.03077	1.3283	1.1807	-.00275	2.2383	.02800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	1.8584	.00376	.41995	.00443	.00673	.03129	.73364
Stddev	.00019	.0125	.00108	.04151	.00188	.00260	.00338	.05159
%RSD	29.784	.67035	28.631	9.8846	42.490	38.669	10.798	7.0327
#1	.00060	1.8448	.00425	.44196	.00402	.00568	.02973	.76307
#2	.00085	1.8610	.00451	.44581	.00648	.00969	.03517	.76378
#3	.00047	1.8693	.00253	.37207	.00278	.00481	.02897	.67406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608024541 Acquired: 8/10/2016 16:40:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01054	.00694	.01345	-.03848	.00106	1.4402	.00327
Stddev	.00054	.00033	.00711	.00495	.00062	.1296	.00058
%RSD	5.1447	4.7271	52.881	12.855	58.527	8.9958	17.866
#1	.01115	.00659	.01749	-.04304	.00145	1.5194	.00274
#2	.01011	.00724	.00524	-.03918	.00035	1.5105	.00317
#3	.01036	.00698	.01762	-.03322	.00138	1.2907	.00390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12153.	77546.	3570.6
Stddev	16.	410.	20.9
%RSD	.12898	.52898	.58546
#1	12147.	77345.	3575.1
#2	12171.	77275.	3588.9
#3	12142.	78018.	3547.8

Approved: August 11, 2016

Sample Name: L1608024542 Acquired: 8/10/2016 16:44:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00176	.40718	.03792	.01235	.01503	-.00011	4.1263	.00139
Stddev	.00092	.00355	.00532	.00125	.00094	.00004	.0414	.00003
%RSD	51.885	.87183	14.024	10.130	6.2455	38.749	1.0040	2.0810
#1	.00179	.40917	.04198	.01294	.01606	-.00007	4.1165	.00139
#2	.00267	.40930	.03988	.01091	.01482	-.00016	4.0907	.00136
#3	.00084	.40308	.03190	.01320	.01421	-.00012	4.1718	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.00238	.10985	.68464	4.3047	.00017	2.3644	.03420
Stddev	.00012	.00041	.01056	.01575	.0586	.00328	.0875	.00232
%RSD	47.432	17.110	9.6116	2.3009	1.3623	1876.9	3.7023	6.7766
#1	.00016	.00255	.11768	.67348	4.2392	-.00065	2.4251	.03540
#2	.00038	.00192	.11403	.70266	4.3524	-.00261	2.4041	.03153
#3	.00021	.00268	.09784	.67779	4.3226	.00378	2.2641	.03567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	8.9692	.01840	.94164	.02259	.00555	.03231	1.4939
Stddev	.00034	.0238	.00155	.09314	.00208	.00310	.00062	.1170
%RSD	35.506	.26497	8.4382	9.8912	9.2172	55.778	1.9249	7.8310
#1	.00119	8.9502	.01947	1.0030	.02451	.00450	.03232	1.5658
#2	.00112	8.9615	.01911	.98742	.02288	.00312	.03169	1.5569
#3	.00057	8.9958	.01662	.83447	.02038	.00904	.03293	1.3589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608024542 Acquired: 8/10/2016 16:44:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01441	.01669	.01741	-.03967	.00171	2.0769	.00406
Stddev	.00156	.00032	.00282	.00366	.00054	.2049	.00027
%RSD	10.828	1.9153	16.180	9.2373	31.283	9.8643	6.7077
#1	.01615	.01689	.01417	-.04390	.00223	2.2072	.00381
#2	.01396	.01632	.01879	-.03777	.00116	2.1828	.00402
#3	.01313	.01686	.01926	-.03736	.00175	1.8408	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12054.	76715.	3512.6
Stddev	38.	429.	9.8
%RSD	.31468	.55958	.27931
#1	12015.	77182.	3504.4
#2	12057.	76625.	3523.5
#3	12091.	76338.	3509.9

Approved: August 11, 2016

Sample Name: L1608024543 Acquired: 8/10/2016 16:48:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.29585	.02450	.02115	.00745	-.00011	3.2045	.00072
Stddev	.00196	.01022	.00314	.00089	.00057	.00005	.0218	.00025
%RSD	390.01	3.4541	12.811	4.2283	7.6218	47.396	.67956	34.755
#1	-.00176	.29180	.02578	.02012	.00785	-.00016	3.1794	.00081
#2	.00150	.28827	.02679	.02160	.00680	-.00010	3.2181	.00092
#3	.00178	.30747	.02092	.02172	.00770	-.00006	3.2161	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00150	.05032	.40206	2.9775	-.00054	2.2322	.02951
Stddev	.00012	.00011	.00448	.01311	.0406	.00265	.0490	.00277
%RSD	112.52	7.1388	8.9072	3.2615	1.3635	492.95	2.1938	9.4000
#1	-.00009	.00151	.05245	.38739	2.9578	.00048	2.1788	.02916
#2	.00001	.00139	.05335	.40615	2.9505	-.00354	2.2751	.02692
#3	-.00023	.00160	.04517	.41264	3.0242	.00145	2.2427	.03244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	8.5108	.00375	.73649	.01098	.00632	.01812	1.2350
Stddev	.00012	.0977	.00005	.07354	.00414	.00191	.00418	.1075
%RSD	11.526	1.1481	1.2256	9.9849	37.753	30.191	23.093	8.7023
#1	.00091	8.4340	.00380	.78079	.01415	.00653	.01926	1.3009
#2	.00104	8.6208	.00374	.77709	.01249	.00812	.01348	1.2932
#3	.00114	8.4777	.00371	.65161	.00629	.00432	.02161	1.1110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608024543 Acquired: 8/10/2016 16:48:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00761	.01198	.01409	-.02180	.00082	1.8293	.00336
Stddev	.00041	.00002	.00348	.00109	.00050	.2023	.00019
%RSD	5.4495	.13141	24.712	4.9861	60.795	11.060	5.6453
#1	.00805	.01196	.01049	-.02263	.00131	1.9566	.00351
#2	.00755	.01199	.01433	-.02057	.00083	1.9354	.00315
#3	.00722	.01200	.01744	-.02219	.00032	1.5960	.00341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12386.	78238.	3503.4
Stddev	49.	120.	23.7
%RSD	.39760	.15274	.67596
#1	12434.	78122.	3492.8
#2	12388.	78360.	3530.5
#3	12335.	78231.	3486.9

Approved: August 11, 2016

Sample Name: L1608024544 Acquired: 8/10/2016 16:52:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00260	3.8714	.01738	.06118	.12342	.00010	11.616	.11463
Stddev	.00114	.0051	.00332	.00072	.00059	.00013	.103	.00783
%RSD	43.889	.13150	19.099	1.1816	.48107	131.80	.88474	6.8328
#1	.00304	3.8772	.01990	.06155	.12328	-.00005	11.704	.11942
#2	.00130	3.8691	.01862	.06035	.12408	.00019	11.642	.11889
#3	.00345	3.8678	.01362	.06165	.12291	.00016	11.503	.10559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	.01168	.08596	3.4354	10.165	.00214	4.3963	.08302
Stddev	.00028	.00022	.00757	.0118	.080	.00101	.0437	.00057
%RSD	19.764	1.9107	8.8039	.34189	.79157	46.956	.99308	.68773
#1	.00144	.01148	.09182	3.4264	10.221	.00186	4.3485	.08341
#2	.00169	.01192	.08865	3.4487	10.202	.00326	4.4341	.08329
#3	.00113	.01163	.07742	3.4310	10.073	.00130	4.4063	.08237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	20.688	.01715	5.1602	.10050	.00179	.01082	8.3166
Stddev	.00031	.065	.00192	.3506	.00421	.00425	.00307	.4893
%RSD	20.174	.31342	11.222	6.7941	4.1902	237.39	28.398	5.8831
#1	.00153	20.739	.01911	5.3811	.10123	.00540	.01325	8.6037
#2	.00185	20.711	.01706	5.3437	.10429	-.00289	.01184	8.5945
#3	.00123	20.615	.01527	4.7560	.09597	.00286	.00737	7.7517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608024544 Acquired: 8/10/2016 16:52:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01651	.05370	.06625	-.01366	.00473	1.9669	.02590
Stddev	.00149	.00052	.00605	.00171	.00063	.1531	.00050
%RSD	9.0296	.97671	9.1276	12.536	13.328	7.7838	1.9449
#1	.01811	.05427	.06190	-.01168	.00427	2.0612	.02622
#2	.01623	.05360	.06369	-.01467	.00448	2.0492	.02532
#3	.01517	.05323	.07315	-.01463	.00545	1.7903	.02617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12579.	78792.	3471.5
Stddev	13.	269.	15.0
%RSD	.10108	.34162	.43149
#1	12582.	78804.	3454.6
#2	12590.	78517.	3476.8
#3	12565.	79055.	3483.2

Approved: August 11, 2016

Sample Name: L1608024545 Acquired: 8/10/2016 16:56:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00058**	**.15364**	**.03643**	**-.00501**	**.00324**	**-.00009**	**2.6779**
Stddev	.00146	.00123	.00519	.00127	.00039	.00007	.0481
%RSD	249.65	.79837	14.256	25.305	12.133	74.416	1.7971
#1	.00225	.15429	.03552	-.00501	.00338	-.00017	2.7287
#2	-.00045	.15441	.04202	-.00629	.00279	-.00007	2.6720
#3	-.00005	.15223	.03175	-.00375	.00353	-.00004	2.6331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**-.00008**	**.00064**	**.03201**	**.21749**	**2.2001**	**-.00338**
Stddev	.00024	.00010	.00080	.00315	.00824	.0318	.00191
%RSD	45.696	122.36	124.18	9.8493	3.7885	1.4466	56.543
#1	.00073	-.00010	-.00021	.03478	.21085	2.1665	-.00184
#2	.00026	.00003	.00137	.03266	.21492	2.2298	-.00278
#3	.00059	-.00018	.00077	.02858	.22671	2.2039	-.00552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.1650**	**.00897**	**.00094**	**6.0833**	**.00201**	**.63993**	**.00378**
Stddev	.0442	.00179	.00031	.0149	.00100	.06584	.00164
%RSD	2.0412	19.943	33.319	.24554	49.563	10.288	43.481
#1	2.2157	.00696	.00078	6.0964	.00092	.68786	.00469
#2	2.1347	.01040	.00130	6.0671	.00287	.66708	.00188
#3	2.1446	.00954	.00074	6.0865	.00225	.56486	.00477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: L1608024545 Acquired: 8/10/2016 16:56:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00573	.03226	.71478	.01153	.01325	.01215	F -.04096
Stddev	.00104	.00310	.05654	.00166	.00061	.00962	.00545
%RSD	18.128	9.6112	7.9099	14.404	4.6270	79.154	13.302
#1	.00692	.03173	.74937	.01229	.01323	.01997	-.04481
#2	.00530	.03559	.74545	.01268	.01265	.01508	-.04333
#3	.00498	.02946	.64954	.00963	.01388	.00141	-.03472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							18.000
Low Limit							-.04000

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00008	1.4274	.00117
Stddev	.00050	.1342	.00011
%RSD	606.17	9.4022	9.1614
#1	-.00038	1.5120	.00125
#2	.00061	1.4975	.00105
#3	.00001	1.2726	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11949.	75769.	3507.4
Stddev	48.	132.	24.1
%RSD	.39787	.17407	.68646
#1	11901.	75874.	3489.5
#2	11948.	75621.	3534.8
#3	11997.	75811.	3498.0

Approved: August 11, 2016

Sample Name: L1608024546 Acquired: 8/10/2016 16:59:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	2.3812	.01188	.03193	.04973	.00002	6.4149	.00126
Stddev	.00057	.0087	.00390	.00170	.00071	.00004	.0395	.00002
%RSD	350.33	.36532	32.792	5.3197	1.4252	184.49	.61641	1.9506
#1	-.00011	2.3912	.00868	.02997	.05055	.00007	6.4093	.00128
#2	-.00076	2.3767	.01622	.03286	.04939	.00001	6.4570	.00123
#3	.00038	2.3757	.01074	.03296	.04926	-.00001	6.3785	.00125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00423	.04771	1.7342	15.779	.00371	4.3013	.04242
Stddev	.00035	.00031	.00573	.0110	.094	.00191	.0216	.00075
%RSD	97.960	7.3496	12.007	.63651	.59866	51.487	.50199	1.7686
#1	.00072	.00388	.05159	1.7296	15.678	.00179	4.3030	.04295
#2	.00034	.00432	.05041	1.7468	15.864	.00373	4.2789	.04276
#3	.00002	.00448	.04113	1.7263	15.796	.00561	4.3219	.04156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00146	23.942	.00626	3.2946	.07892	.00523	.01226	6.2007
Stddev	.00052	.073	.00077	.2852	.00709	.00271	.00400	.4873
%RSD	35.293	.30620	12.263	8.6575	8.9794	51.789	32.665	7.8594
#1	.00167	24.014	.00690	3.4623	.08265	.00469	.00764	6.4871
#2	.00185	23.946	.00646	3.4561	.08336	.00284	.01433	6.4770
#3	.00088	23.867	.00541	2.9652	.07074	.00817	.01481	5.6380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608024546 Acquired: 8/10/2016 16:59:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00648**	**.03700**	**.04485**	**-.01217**	**.00161**	**2.0478**	**.01509**
Stddev	.00075	.00012	.00180	.00038	.00056	.2031	.00026
%RSD	11.616	.32864	4.0206	3.1157	34.590	9.9191	1.7318
#1	.00699	.03688	.04662	-.01237	.00101	2.1731	.01538
#2	.00684	.03698	.04490	-.01240	.00171	2.1569	.01488
#3	.00562	.03712	.04302	-.01173	.00211	1.8135	.01502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12582.**	**78893.**	**3484.2**
Stddev	31.	191.	38.9
%RSD	.24762	.24193	1.1168
#1	12597.	78713.	3444.5
#2	12602.	78874.	3485.7
#3	12546.	79093.	3522.2

Approved: August 11, 2016

Sample Name: L1608024547 Acquired: 8/10/2016 17:03:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.05296	.02011	.00248	.00148	-.00004	2.0538	.00067
Stddev	.00193	.00286	.00362	.00086	.00054	.00003	.0379	.00013
%RSD	2812.9	5.3991	18.020	34.811	36.464	64.325	1.8446	19.845
#1	-.00205	.05130	.01664	.00175	.00176	-.00005	2.0763	.00076
#2	.00175	.05626	.01983	.00343	.00086	-.00007	2.0751	.00072
#3	.00050	.05132	.02387	.00225	.00183	-.00001	2.0101	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.00047	.03116	.07910	1.1787	-.00462	2.6574	.00501
Stddev	.00014	.00088	.00348	.01463	.0313	.00220	.0612	.00080
%RSD	46.908	186.41	11.178	18.493	2.6578	47.543	2.3041	16.033
#1	-.00017	-.00050	.03316	.08854	1.1522	-.00571	2.7005	.00446
#2	-.00045	.00123	.03319	.08652	1.2133	-.00209	2.5873	.00593
#3	-.00027	.00069	.02714	.06225	1.1706	-.00607	2.6844	.00464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	1.6122	.00243	.52273	.00026	.00122	.01158	.79829
Stddev	.00019	.0265	.00112	.05802	.00220	.00339	.00502	.07083
%RSD	26.853	1.6404	46.238	11.099	851.55	279.04	43.298	8.8727
#1	.00083	1.5820	.00337	.55585	-.00199	-.00090	.01420	.83961
#2	.00078	1.6315	.00274	.55660	.00035	.00513	.00580	.83876
#3	.00048	1.6229	.00118	.45574	.00241	-.00058	.01475	.71650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608024547 Acquired: 8/10/2016 17:03:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00473	.00637	.00719	-.01644	.00030	1.6981	.00013
Stddev	.00143	.00056	.00660	.00045	.00079	.1851	.00034
%RSD	30.174	8.8413	91.840	2.7523	260.42	10.902	257.49
#1	.00611	.00687	.01478	-.01628	-.00048	1.8140	.00043
#2	.00484	.00647	.00396	-.01695	.00110	1.7956	.00019
#3	.00326	.00576	.00282	-.01608	.00029	1.4846	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12215.	76957.	3431.5
Stddev	40.	319.	14.4
%RSD	.32581	.41497	.41841
#1	12239.	76589.	3419.7
#2	12237.	77129.	3427.2
#3	12169.	77154.	3447.5

Approved: August 11, 2016

Sample Name: L1608024547PS Acquired: 8/10/2016 17:07:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579747-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18910**	**4.6860**	**.22760**	**.94494**	**.54176**	**.02398**	**7.1449**	**.02531**
Stddev	.00238	.0326	.00488	.00366	.00312	.00010	.0522	.00061
%RSD	1.2570	.69460	2.1431	.38777	.57638	.42108	.72997	2.3928
#1	.19164	4.7226	.22666	.94735	.54309	.02406	7.1161	.02585
#2	.18693	4.6601	.23288	.94072	.53819	.02387	7.1136	.02542
#3	.18873	4.6754	.22327	.94674	.54400	.02402	7.2051	.02466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10327**	**.24945**	**.28465**	**2.1769**	**24.906**	**.52658**	**7.3863**	**.26688**
Stddev	.00297	.00115	.00823	.0065	.077	.00327	.1390	.00088
%RSD	2.8729	.45969	2.8896	.29836	.30974	.62058	1.8820	.32888
#1	.10496	.25013	.28971	2.1843	24.827	.53011	7.5371	.26790
#2	.10500	.24812	.28908	2.1745	24.911	.52598	7.2632	.26635
#3	.09984	.25009	.27516	2.1720	24.981	.52365	7.3585	.26640
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53715**	**25.893**	**.26204**	**5.6248**	**.25424**	**.61421**	**.24127**	**3.3540**
Stddev	.01257	.164	.00646	.1244	.00262	.01712	.00136	.0575
%RSD	2.3404	.63379	2.4659	2.2124	1.0302	2.7874	.56522	1.7128
#1	.54484	25.969	.26429	5.7001	.25578	.62220	.24256	3.3824
#2	.54396	25.704	.26707	5.6932	.25572	.62587	.24142	3.3916
#3	.52264	26.005	.25475	5.4812	.25122	.59455	.23985	3.2878
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608024547PS Acquired: 8/10/2016 17:07:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579747-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50124**	**.55674**	**.50667**	**.23163**	**.49240**	**2.1243**	**.00117**
Stddev	.01241	.00328	.00655	.00681	.00169	.0573	.00067
%RSD	2.4763	.58906	1.2925	2.9383	.34423	2.6971	56.869
#1	.50941	.56034	.50497	.23292	.49423	2.1571	.00186
#2	.50735	.55393	.50114	.23770	.49209	2.1577	.00052
#3	.48695	.55595	.51390	.22427	.49088	2.0581	.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12079.**	**75533.**	**3385.0**
Stddev	15.	160.	30.2
%RSD	.12331	.21145	.89285
#1	12062.	75348.	3365.4
#2	12091.	75625.	3419.8
#3	12082.	75625.	3369.8

Approved: August 11, 2016

Sample Name: L1608024547SDL Acquired: 8/10/2016 17:11:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579747-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00104**	**.00031**	**.00367**	**.00175**	**-.00252**	**-.00006**	**.37516**	**.00003**
Stddev	.00070	.00394	.00058	.00014	.00051	.00006	.05117	.00014
%RSD	67.656	1272.0	15.744	8.1615	20.110	113.43	13.639	537.39
#1	-.00029	-.00123	.00313	.00166	-.00221	-.00011	.37934	-.00005
#2	-.00115	-.00263	.00428	.00167	-.00225	.00002	.42411	.00018
#3	-.00168	.00479	.00361	.00191	-.00311	-.00008	.32203	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00150**	**.00590**	**.00447**	**.35299**	**-.00609**	**.46178**	**.00163**
Stddev	.00020	.00007	.00104	.00582	.14730	.00104	.07198	.00100
%RSD	80.886	4.3960	17.612	130.16	41.731	17.083	15.588	61.113
#1	-.00026	-.00143	.00665	.00095	.47967	-.00522	.39039	.00270
#2	-.00045	-.00155	.00634	.00127	.19135	-.00581	.53434	.00148
#3	-.00004	-.00152	.00471	.01118	.38794	-.00724	.46061	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.33326**	**.00085**	**.09255**	**.00179**	**-.00120**	**.00705**	**.14943**
Stddev	.00036	.01219	.00092	.00600	.00072	.00377	.00352	.01548
%RSD	1818.8	3.6563	107.56	6.4773	39.916	314.67	49.881	10.357
#1	-.00030	.34268	.00050	.09127	.00106	.00195	.01092	.15825
#2	.00042	.33760	.00016	.09909	.00183	-.00017	.00619	.15849
#3	-.00006	.31950	.00189	.08731	.00249	-.00538	.00405	.13156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608024547SDL Acquired: 8/10/2016 17:11:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579747-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00082	.00440	-.00147	.00041	.32417	-.00012
Stddev	.00051	.00010	.00897	.00211	.00033	.03869	.00024
%RSD	63.384	12.231	203.65	143.20	80.430	11.937	193.47
#1	.00134	.00071	-.00488	.00046	.00075	.34767	-.00036
#2	.00032	.00091	.01301	-.00373	.00009	.34533	-.00011
#3	.00076	.00082	.00508	-.00115	.00039	.27951	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	13305.	82357.	3526.3
Stddev	63.	261.	31.5
%RSD	.47055	.31726	.89459
#1	13365.	82655.	3507.6
#2	13311.	82251.	3562.8
#3	13240.	82165.	3508.7

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 17:15:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41647**	**10.304**	**.42667**	**.53117**	**1.0843**	**.04971**	**10.808**	**.05331**
Stddev	.00094	.011	.00699	.00123	.0060	.00017	.090	.00145
%RSD	.22671	.10895	1.6374	.23199	.55621	.34754	.83375	2.7286
#1	.41542	10.301	.43206	.53087	1.0776	.04954	10.713	.05407
#2	.41675	10.294	.42917	.53012	1.0892	.04969	10.893	.05423
#3	.41724	10.316	.41878	.53253	1.0862	.04988	10.819	.05163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21045**	**.50028**	**.53130**	**4.1741**	**49.703**	**1.0630**	**10.396**	**.53635**
Stddev	.00644	.00133	.01464	.0178	.196	.0113	.090	.00629
%RSD	3.0598	.26597	2.7548	.42581	.39390	1.0581	.86350	1.1734
#1	.21439	.49985	.54002	4.1920	49.596	1.0756	10.383	.53563
#2	.21393	.49922	.53948	4.1738	49.929	1.0597	10.492	.54297
#3	.20301	.50177	.51441	4.1565	49.584	1.0538	10.314	.53044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0559**	**50.870**	**.53293**	**10.810**	**.53518**	**1.2853**	**.42800**	**5.4110**
Stddev	.0351	.176	.01680	.235	.01212	.0293	.00659	.1047
%RSD	3.3264	.34596	3.1529	2.1720	2.2645	2.2830	1.5405	1.9349
#1	1.0709	50.706	.54426	10.941	.53960	1.2987	.43144	5.4680
#2	1.0810	51.056	.54091	10.949	.54447	1.3055	.43217	5.4749
#3	1.0157	50.847	.51362	10.538	.52147	1.2516	.42040	5.2902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 17:15:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0435**	**1.0883**	**1.0003**	**.52664**	**.98922**	**1.0655**	**1.0435**
Stddev	.0372	.0008	.0129	.00601	.00180	.0289	.0027
%RSD	3.5607	.06987	1.2876	1.1406	.18216	2.7155	.25369
#1	1.0665	1.0881	.98895	.52782	.98991	1.0835	1.0447
#2	1.0634	1.0891	1.0143	.53197	.98718	1.0809	1.0455
#3	1.0006	1.0876	.99760	.52013	.99058	1.0321	1.0405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12212.**	**74950.**	**3254.6**
Stddev	15.	25.	10.0
%RSD	.12211	.03320	.30625
#1	12228.	74925.	3250.3
#2	12199.	74974.	3247.5
#3	12208.	74950.	3266.0

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 17:18:54 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00254	-.00129	-.00151	.00125	-.00242	-.00003	-.01813	.00018
Stddev	.00214	.00826	.00073	.00097	.00119	.00008	.01888	.00011
%RSD	83.981	641.51	48.294	77.964	49.086	250.88	104.14	58.773
#1	.00056	.00114	-.00108	.00025	-.00262	-.00008	-.03231	.00027
#2	.00480	-.01048	-.00236	.00130	-.00115	-.00007	-.02538	.00007
#3	.00226	.00549	-.00110	.00219	-.00350	.00006	.00330	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	-.00126	.00040	-.01605	.33866	-.00246	-.05364	.00086
Stddev	.00028	.00083	.00019	.00640	.11613	.00200	.07910	.00134
%RSD	132.94	65.541	48.558	39.858	34.292	81.139	147.46	156.66
#1	.00010	-.00172	.00032	-.01490	.46121	-.00026	-.12248	.00078
#2	-.00027	-.00031	.00026	-.01031	.32453	-.00297	.03277	-.00044
#3	-.00045	-.00177	.00062	-.02295	.23023	-.00415	-.07121	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.03261	.00085	-.00302	-.00104	.00419	.00292	.00258
Stddev	.00025	.01765	.00043	.00354	.00138	.00304	.00281	.00257
%RSD	141.20	54.108	50.541	117.16	132.45	72.425	96.262	99.727
#1	-.00006	.04738	.00057	-.00375	-.00243	.00125	-.00031	.00527
#2	-.00000	.01307	.00064	.00082	.00033	.00402	.00484	.00233
#3	-.00047	.03739	.00135	-.00614	-.00103	.00731	.00424	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 17:18:54 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00004	.00249	-.00180	-.00015	-.00018	-.00046
Stddev	.00057	.00009	.00588	.00074	.00085	.00004	.00039
%RSD	745.44	242.97	236.20	41.346	550.26	20.015	84.129
#1	.00052	-.00003	-.00262	-.00218	-.00108	-.00017	-.00052
#2	.00027	-.00014	.00118	-.00228	.00059	-.00015	-.00082
#3	-.00056	.00005	.00891	-.00094	.00003	-.00022	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12471.	76585.	3282.3
Stddev	18.	172.	6.1
%RSD	.14144	.22421	.18569
#1	12469.	76779.	3283.7
#2	12455.	76452.	3287.6
#3	12490.	76524.	3275.6

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 17:22:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00755	.16518	.00617	.08478	.00713	.00155	.44586	.00109
Stddev	.00144	.00787	.00365	.00106	.00048	.00005	.01249	.00008
%RSD	19.035	4.7657	59.085	1.2554	6.6665	3.0692	2.8018	7.8020
#1	.00619	.15619	.01025	.08574	.00756	.00159	.43818	.00110
#2	.00742	.17083	.00505	.08363	.00720	.00157	.46027	.00116
#3	.00906	.16851	.00322	.08495	.00662	.00150	.43912	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00365	.00390	.00539	.07456	1.0016	.08366	.37872	.00841
Stddev	.00060	.00159	.00064	.02714	.0628	.00359	.05253	.00154
%RSD	16.348	40.658	11.806	36.400	6.2652	4.2889	13.870	18.287
#1	.00424	.00454	.00591	.04538	.96089	.08774	.41433	.00680
#2	.00366	.00210	.00468	.07925	.96997	.08228	.31839	.00986
#3	.00305	.00507	.00558	.09905	1.0738	.08097	.40344	.00857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00757	.43628	.01669	.79138	.01008	.08507	.01978	.79230
Stddev	.00120	.01555	.00183	.09949	.00338	.01157	.00387	.09034
%RSD	15.921	3.5637	10.966	12.572	33.559	13.599	19.543	11.402
#1	.00854	.42903	.01805	.85234	.01396	.09043	.01569	.84666
#2	.00794	.45413	.01743	.84524	.00851	.09298	.02337	.84223
#3	.00622	.42568	.01461	.67657	.00777	.07179	.02030	.68801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 17:22:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38546	.04368	.02438	.14492	.00792	.01671	.04117
Stddev	.05465	.00021	.00538	.01759	.00036	.00228	.00042
%RSD	14.178	.47853	22.065	12.138	4.5154	13.669	1.0240
#1	.42104	.04392	.02676	.15741	.00824	.01790	.04143
#2	.41281	.04359	.01822	.15255	.00753	.01816	.04069
#3	.32253	.04353	.02816	.12481	.00798	.01408	.04140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12433.	76754.	3278.0
Stddev	17.	186.	25.6
%RSD	.13345	.24256	.78041
#1	12438.	76771.	3260.0
#2	12414.	76931.	3307.3
#3	12446.	76560.	3266.8

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 17:26:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02057**	**.37871**	**.01668**	**.19458**	**.01754**	**.00358**	**1.0006**	**.00207**
Stddev	.00077	.00778	.00344	.00275	.00123	.00007	.0209	.00036
%RSD	3.7447	2.0544	20.600	1.4120	7.0338	1.9200	2.0886	17.177
#1	.02138	.38703	.01884	.19191	.01840	.00350	.98611	.00243
#2	.01985	.37162	.01849	.19740	.01809	.00362	.99110	.00206
#3	.02048	.37747	.01272	.19442	.01613	.00361	1.0245	.00172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00936**	**.00955**	**.01027**	**.18667**	**2.0681**	**.19726**	**.97393**	**.01907**
Stddev	.00090	.00029	.00074	.01570	.1776	.00189	.09308	.00077
%RSD	9.5856	3.0454	7.2146	8.4129	8.5891	.96005	9.5568	4.0124
#1	.01010	.00941	.01037	.18673	1.9185	.19903	1.0618	.01984
#2	.00962	.00989	.01096	.20234	2.0215	.19749	.98355	.01831
#3	.00836	.00936	.00949	.17093	2.2644	.19526	.87642	.01905
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01784**	**.97931**	**.03838**	**1.8906**	**.01817**	**.19763**	**.04178**	**1.8800**
Stddev	.00181	.01189	.00446	.1663	.00231	.01737	.00284	.1524
%RSD	10.141	1.2141	11.623	8.7957	12.705	8.7888	6.8052	8.1085
#1	.01878	.97904	.04129	1.9772	.01871	.20652	.04264	1.9643
#2	.01900	.96755	.04061	1.9958	.02017	.20877	.04409	1.9716
#3	.01576	.99132	.03324	1.6989	.01565	.17762	.03860	1.7040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 17:26:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.91817**	**.10153**	**.05984**	**.35071**	**.01748**	**.03926**	**.09681**
Stddev	.10041	.00023	.00201	.02604	.00104	.00395	.00029
%RSD	10.936	.22939	3.3513	7.4234	5.9337	10.062	.29821
#1	.98018	.10133	.06168	.36670	.01858	.04138	.09674
#2	.97201	.10147	.06014	.36477	.01652	.04170	.09713
#3	.80231	.10178	.05770	.32067	.01734	.03471	.09656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12909.**	**79486.**	**3412.0**
Stddev	32.	167.	10.2
%RSD	.24816	.20969	.29952
#1	12902.	79529.	3403.4
#2	12881.	79628.	3409.5
#3	12944.	79303.	3423.3

Approved: August 11, 2016

Sample Name: PBW 5R Acquired: 8/10/2016 17:30:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.00264	-.00145	.00031	-.00133	-.00004	.00864	-.00000
Stddev	.00166	.01045	.00031	.00180	.00135	.00002	.02039	.00022
%RSD	672.38	396.29	21.629	575.91	101.98	49.101	236.10	8105.3
#1	.00156	-.00582	-.00181	-.00167	-.00289	-.00002	.03186	.00019
#2	.00079	-.00059	-.00123	.00074	-.00056	-.00005	-.00634	-.00024
#3	-.00161	.01432	-.00132	.00186	-.00053	-.00005	.00039	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00050	-.00020	.00092	.01657	.18595	-.00488	.00377	.00088
Stddev	.00020	.00095	.00020	.01975	.10367	.00433	.13521	.00276
%RSD	40.166	479.04	22.012	119.19	55.752	88.685	3584.6	312.83
#1	-.00036	-.00105	.00073	.00946	.07042	-.00302	.01668	.00162
#2	-.00073	-.00038	.00091	.00136	.21657	-.00983	.13206	-.00217
#3	-.00041	.00083	.00113	.03889	.27085	-.00180	-.13743	.00321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00699	.00129	-.00774	-.00074	.00320	.00451	.01877
Stddev	.00012	.01641	.00107	.00692	.00046	.00015	.00142	.00360
%RSD	470.74	234.88	83.432	89.383	62.347	4.7752	31.400	19.171
#1	.00011	.00361	.00246	-.00982	-.00076	.00333	.00518	.02269
#2	-.00011	.02482	.00105	-.01339	-.00118	.00303	.00547	.01802
#3	-.00008	-.00748	.00035	-.00002	-.00027	.00323	.00288	.01561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: PBW 5R Acquired: 8/10/2016 17:30:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00054**	**-.00054**	**.00440**	**-.00099**	**.00055**	**.00049**	**-.00024**
Stddev	.00034	.00037	.00427	.00306	.00053	.00025	.00013
%RSD	62.800	68.995	97.011	308.91	96.480	51.344	53.522
#1	.00077	-.00013	.00468	-.00044	-.00001	.00033	-.00011
#2	.00070	-.00062	.00851	.00176	.00062	.00078	-.00026
#3	.00015	-.00087	-.00000	-.00429	.00103	.00036	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12383.**	**76811.**	**3297.1**
Stddev	47.	66.	6.4
%RSD	.37845	.08605	.19346
#1	12418.	76737.	3291.8
#2	12402.	76833.	3304.2
#3	12330.	76863.	3295.4

Approved: August 11, 2016

Sample Name: LCSW 5R Acquired: 8/10/2016 17:34:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20453**	**5.0842**	**.20907**	**1.0456**	**.53128**	**.02410**	**5.4033**	**.02580**
Stddev	.00247	.0139	.00361	.0034	.00797	.00010	.0733	.00051
%RSD	1.2073	.27318	1.7271	.32208	1.5003	.42713	1.3563	1.9912
#1	.20176	5.0924	.20883	1.0495	.52208	.02407	5.3249	.02593
#2	.20650	5.0921	.21279	1.0442	.53605	.02422	5.4701	.02625
#3	.20533	5.0682	.20558	1.0432	.53572	.02402	5.4149	.02524
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10395**	**.24868**	**.26279**	**2.0571**	**24.532**	**.52510**	**5.1123**	**.26167**
Stddev	.00250	.00097	.00665	.0801	.417	.00797	.1307	.00455
%RSD	2.4056	.38999	2.5304	3.8946	1.7000	1.5182	2.5559	1.7403
#1	.10560	.24851	.26708	1.9824	24.058	.51599	4.9616	.25645
#2	.10519	.24781	.26615	2.0472	24.842	.52853	5.1803	.26375
#3	.10108	.24973	.25513	2.1417	24.696	.53079	5.1948	.26481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52705**	**24.897**	**.26365**	**5.1286**	**.26645**	**.63302**	**.20332**	**2.6556**
Stddev	.01401	.447	.00791	.1009	.00617	.01306	.00213	.0455
%RSD	2.6573	1.7963	2.9986	1.9666	2.3173	2.0637	1.0468	1.7132
#1	.53501	24.389	.26738	5.1940	.26801	.63964	.20569	2.6837
#2	.53526	25.234	.26900	5.1794	.27169	.64145	.20158	2.6800
#3	.51088	25.067	.25457	5.0125	.25964	.61798	.20269	2.6031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LCSW 5R Acquired: 8/10/2016 17:34:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51118	.54171	.49278	.25536	.49158	.51877	.00130
Stddev	.01556	.00920	.01261	.00372	.00146	.01382	.00034
%RSD	3.0440	1.6982	2.5595	1.4585	.29717	2.6646	25.788
#1	.51942	.53109	.47911	.25750	.49312	.52638	.00168
#2	.52089	.54679	.49528	.25751	.49141	.52712	.00107
#3	.49323	.54726	.50396	.25106	.49021	.50282	.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12237.	75237.	3287.8
Stddev	34.	175.	28.0
%RSD	.27462	.23224	.85215
#1	12207.	75144.	3320.0
#2	12230.	75128.	3274.1
#3	12273.	75438.	3269.2

Approved: August 11, 2016

Sample Name: L1608044003 Acquired: 8/10/2016 17:38:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	-.00235	.00030	.01329	.00451	-.00003	36.870	.00039
Stddev	.00191	.00561	.00231	.00164	.00006	.00006	.077	.00009
%RSD	320.38	238.94	770.00	12.325	1.3868	200.68	.20922	22.469
#1	-.00152	-.00780	-.00134	.01517	.00458	-.00008	36.884	.00029
#2	.00220	.00341	-.00071	.01253	.00447	.00004	36.788	.00041
#3	.00110	-.00266	.00295	.01217	.00447	-.00005	36.940	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	-.00005	.00212	.09534	.59982	-.00128	5.6318	.02655
Stddev	.00027	.00121	.00152	.01166	.03077	.00088	.1093	.00452
%RSD	215.35	2545.5	71.611	12.227	5.1306	69.215	1.9415	17.009
#1	-.00014	-.00104	.00312	.10001	.56439	-.00164	5.6152	.02701
#2	-.00040	-.00041	.00287	.08207	.61508	-.00027	5.5317	.02182
#3	.00015	.00131	.00037	.10394	.61998	-.00191	5.7485	.03081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	1.8186	.00114	-.00067	.00039	.00292	.00268	2.4274
Stddev	.00006	.0466	.00101	.00101	.00293	.00214	.00175	.2451
%RSD	16.273	2.5640	88.196	151.61	750.43	73.230	65.552	10.097
#1	.00033	1.8613	.00202	-.00177	.00040	.00535	.00135	2.5615
#2	.00043	1.7688	.00136	-.00046	-.00254	.00133	.00466	2.5763
#3	.00033	1.8255	.00004	.00022	.00331	.00208	.00202	2.1445
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608044003 Acquired: 8/10/2016 17:38:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.03849**	**-.00261**	**-.00176**	**.00066**	**.00210**	**.00006**
Stddev	.00093	.00039	.00885	.00135	.00058	.00037	.00020
%RSD	206.89	1.0139	339.25	76.884	87.419	17.626	346.48
#1	-.00148	.03822	-.00165	-.00214	.00058	.00229	-.00017
#2	-.00020	.03894	-.01190	-.00288	.00013	.00233	.00022
#3	.00033	.03832	.00572	-.00026	.00127	.00167	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12292.**	**76329.**	**3309.6**
Stddev	44.	112.	16.1
%RSD	.35482	.14629	.48552
#1	12342.	76433.	3319.6
#2	12261.	76211.	3318.1
#3	12274.	76342.	3291.0

Approved: August 11, 2016

Sample Name: L1608044003S Acquired: 8/10/2016 17:42:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20263**	**5.0471**	**.20739**	**1.0207**	**.54152**	**.02406**	**41.126**	**.02584**
Stddev	.00049	.0097	.00515	.0013	.00547	.00006	.318	.00055
%RSD	.23959	.19278	2.4822	.12952	1.0092	.26769	.77424	2.1125
#1	.20210	5.0493	.20808	1.0202	.54651	.02412	41.352	.02610
#2	.20307	5.0364	.21216	1.0222	.54238	.02407	41.265	.02621
#3	.20271	5.0555	.20193	1.0197	.53568	.02399	40.762	.02521
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10231**	**.24767**	**.25829**	**2.2136**	**25.239**	**.52633**	**10.700**	**.28746**
Stddev	.00288	.00140	.00542	.0380	.064	.00633	.081	.00235
%RSD	2.8184	.56652	2.0990	1.7151	.25475	1.2024	.75583	.81822
#1	.10404	.24926	.26086	2.1717	25.237	.53061	10.697	.28901
#2	.10391	.24660	.26195	2.2457	25.176	.52931	10.782	.28475
#3	.09898	.24715	.25206	2.2236	25.304	.51906	10.620	.28861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52604**	**26.866**	**.25949**	**5.1590**	**.25922**	**.63152**	**.19519**	**5.1814**
Stddev	.01267	.194	.00571	.0904	.00551	.01217	.00429	.0812
%RSD	2.4084	.72266	2.2024	1.7521	2.1246	1.9279	2.1997	1.5672
#1	.53324	27.066	.26219	5.2184	.26236	.63941	.19963	5.2257
#2	.53347	26.852	.26336	5.2037	.26244	.63765	.19490	5.2307
#3	.51141	26.679	.25292	5.0550	.25286	.61750	.19105	5.0876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608044003S Acquired: 8/10/2016 17:42:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50819	.58236	.49227	.25426	.49033	.51251	.00099
Stddev	.01374	.00291	.01002	.00558	.00170	.01273	.00048
%RSD	2.7045	.50006	2.0357	2.1926	.34688	2.4844	47.865
#1	.51689	.58540	.48156	.25657	.49144	.52007	.00150
#2	.51534	.58208	.49384	.25832	.49117	.51965	.00093
#3	.49235	.57960	.50142	.24791	.48837	.49781	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12215.	74642.	3270.7
Stddev	7.	203.	33.8
%RSD	.05812	.27223	1.0343
#1	12209.	74512.	3234.8
#2	12213.	74538.	3275.5
#3	12223.	74876.	3301.9

Approved: August 11, 2016

Sample Name: L1608044003SD Acquired: 8/10/2016 17:45:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20073	4.9714	.20708	1.0094	.53496	.02379	39.837	.02547
Stddev	.00188	.0259	.00305	.0038	.00267	.00021	.168	.00053
%RSD	.93803	.52063	1.4719	.37372	.49904	.89843	.42185	2.0978
#1	.19991	5.0011	.20904	1.0135	.53390	.02402	39.756	.02596
#2	.19940	4.9595	.20864	1.0062	.53298	.02375	39.724	.02557
#3	.20288	4.9536	.20357	1.0084	.53800	.02360	40.030	.02490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10133	.24472	.25425	2.1457	24.897	.52139	10.389	.28549
Stddev	.00303	.00176	.00726	.0342	.101	.00164	.086	.00240
%RSD	2.9854	.72034	2.8563	1.5931	.40557	.31466	.83081	.84079
#1	.10213	.24675	.25840	2.1185	24.938	.52076	10.338	.28330
#2	.10388	.24372	.25849	2.1346	24.782	.52326	10.340	.28806
#3	.09799	.24368	.24587	2.1841	24.971	.52016	10.489	.28510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52116	26.403	.25741	5.1148	.25748	.62232	.20037	5.0896
Stddev	.01414	.080	.00530	.0969	.00835	.01595	.00778	.0859
%RSD	2.7136	.30427	2.0572	1.8940	3.2440	2.5624	3.8810	1.6888
#1	.52926	26.356	.25971	5.1624	.26509	.63136	.20176	5.1308
#2	.52939	26.357	.26116	5.1786	.25881	.63169	.20736	5.1471
#3	.50483	26.496	.25135	5.0033	.24854	.60391	.19200	4.9908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608044003SD Acquired: 8/10/2016 17:45:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50201**	**.57566**	**.48835**	**.25012**	**.48624**	**.50760**	**.00091**
Stddev	.01399	.00128	.00395	.00411	.00188	.01377	.00040
%RSD	2.7864	.22184	.80948	1.6444	.38601	2.7132	44.108
#1	.50998	.57426	.48394	.25227	.48796	.51767	.00091
#2	.51019	.57595	.49158	.25272	.48650	.51321	.00130
#3	.48586	.57676	.48952	.24538	.48424	.49190	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12219.**	**74858.**	**3271.4**
Stddev	11.	294.	4.3
%RSD	.08959	.39337	.13180
#1	12231.	74739.	3275.9
#2	12217.	74641.	3267.3
#3	12210.	75193.	3270.9

Approved: August 11, 2016

Sample Name: L1608042501 Acquired: 8/10/2016 17:49:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	.00354	-.00294	.01446	-.00188	-.00000	.20676	.00008
Stddev	.00045	.00589	.00149	.00142	.00055	.00004	.03892	.00022
%RSD	41.052	166.18	50.668	9.8365	29.162	12887.	18.824	264.71
#1	.00094	-.00034	-.00466	.01394	-.00239	.00003	.25149	.00025
#2	.00159	.01031	-.00209	.01607	-.00130	.00002	.18063	.00016
#3	.00074	.00065	-.00207	.01338	-.00196	-.00005	.18817	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	-.00023	.00176	-.01377	.18563	.00019	-.07231	-.00014
Stddev	.00057	.00141	.00077	.02524	.02720	.00080	.05916	.00112
%RSD	143.00	617.04	43.540	183.27	14.651	420.71	81.808	814.07
#1	-.00043	-.00142	.00264	.01458	.21651	.00095	-.07934	.00053
#2	-.00096	-.00059	.00143	-.03381	.17513	-.00064	-.00995	-.00142
#3	.00019	.00133	.00121	-.02209	.16525	.00026	-.12765	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.04412	.00087	-.00001	.00068	.00336	-.00033	.00244
Stddev	.00041	.01968	.00097	.00310	.00275	.00099	.00113	.00193
%RSD	330.87	44.596	110.71	29021.	405.29	29.566	343.07	79.041
#1	.00031	.03562	.00199	.00242	.00127	.00430	.00020	.00082
#2	.00041	.06662	.00023	-.00351	.00308	.00345	.00044	.00192
#3	-.00035	.03013	.00040	.00106	-.00232	.00232	-.00163	.00457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608042501 Acquired: 8/10/2016 17:49:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00001**	**.00263**	**.00033**	**-.00042**	**.00130**	**-.00037**
Stddev	.00036	.00026	.00491	.00095	.00010	.00024	.00047
%RSD	130.76	3242.1	187.01	289.34	24.724	18.211	125.02
#1	-.00002	.00005	.00435	-.00061	-.00048	.00138	.00016
#2	-.00012	-.00027	-.00291	.00128	-.00030	.00149	-.00072
#3	-.00069	.00024	.00644	.00030	-.00047	.00103	-.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12482.**	**76919.**	**3313.3**
Stddev	98.	265.	12.8
%RSD	.78903	.34464	.38533
#1	12434.	77072.	3303.0
#2	12416.	76613.	3309.3
#3	12595.	77073.	3327.5

Approved: August 11, 2016

Sample Name: L1608042502 Acquired: 8/10/2016 17:53:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.00201	-.00032	.01283	-.00187	-.00011	.15936	.00008
Stddev	.00062	.00676	.00035	.00054	.00140	.00000	.01814	.00005
%RSD	53.543	336.16	107.69	4.2384	74.993	4.6660	11.382	65.475
#1	.00072	-.00509	-.00050	.01228	-.00025	-.00011	.15828	.00011
#2	.00089	.00838	-.00054	.01336	-.00272	-.00010	.17801	.00002
#3	.00186	.00274	.00008	.01283	-.00263	-.00011	.14178	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00039	-.00009	-.01244	.11429	-.00127	-.06486	.00224
Stddev	.00014	.00164	.00094	.01256	.05342	.00461	.02001	.00423
%RSD	90.522	414.90	1087.8	100.92	46.739	361.89	30.860	188.94
#1	-.00000	-.00228	-.00117	-.01710	.05527	-.00571	-.04216	-.00025
#2	-.00028	.00062	.00039	-.02201	.12829	-.00160	-.07995	.00712
#3	-.00019	.00048	.00052	.00178	.15931	.00349	-.07246	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.02852	.00045	-.00133	-.00035	.00216	-.00195	.00173
Stddev	.00027	.01561	.00024	.00384	.00067	.00403	.00295	.00275
%RSD	118.41	54.732	53.289	288.96	189.36	186.73	150.92	158.71
#1	-.00007	.01775	.00023	-.00264	-.00103	.00443	-.00374	.00426
#2	.00031	.02138	.00071	-.00434	.00031	-.00250	-.00357	-.00119
#3	.00045	.04642	.00042	.00299	-.00035	.00454	.00145	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608042502 Acquired: 8/10/2016 17:53:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**-.00040**	**-.00008**	**-.00211**	**.00026**	**.00128**	**-.00060**
Stddev	.00042	.00008	.00497	.00156	.00031	.00026	.00023
%RSD	109.98	20.623	6086.1	73.721	121.21	20.098	38.971
#1	-.00041	-.00049	-.00275	-.00215	.00020	.00153	-.00075
#2	-.00079	-.00033	-.00314	-.00054	.00059	.00130	-.00033
#3	.00005	-.00038	.00565	-.00365	-.00002	.00102	-.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12369.**	**75912.**	**3254.5**
Stddev	84.	121.	11.5
%RSD	.67781	.15905	.35312
#1	12330.	75940.	3241.3
#2	12311.	76016.	3262.1
#3	12465.	75779.	3260.2

Approved: August 11, 2016

Sample Name: L1608042502PS Acquired: 8/10/2016 17:57:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579778-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20294**	**5.1115**	**.20920**	**1.0251**	**.53680**	**.02441**	**5.6084**	**.02627**
Stddev	.00088	.0005	.00455	.0018	.00300	.00008	.0696	.00068
%RSD	.43207	.00935	2.1763	.17257	.55913	.33407	1.2415	2.5804
#1	.20273	5.1111	.21093	1.0271	.53342	.02433	5.5490	.02684
#2	.20220	5.1114	.21264	1.0242	.53917	.02442	5.6850	.02645
#3	.20391	5.1120	.20404	1.0239	.53780	.02449	5.5912	.02552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10519**	**.25276**	**.26627**	**2.1082**	**24.749**	**.53311**	**5.2399**	**.26424**
Stddev	.00268	.00091	.00784	.0231	.167	.00347	.0520	.00205
%RSD	2.5504	.36051	2.9452	1.0977	.67558	.65026	.99332	.77437
#1	.10709	.25222	.27106	2.1343	24.647	.52912	5.2823	.26647
#2	.10637	.25381	.27054	2.0900	24.942	.53480	5.1818	.26379
#3	.10212	.25224	.25722	2.1004	24.657	.53541	5.2556	.26246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53137**	**25.166**	**.26630**	**5.1650**	**.26329**	**.64149**	**.20131**	**2.6488**
Stddev	.01512	.026	.00694	.1019	.00899	.01514	.00355	.0506
%RSD	2.8452	.10363	2.6072	1.9729	3.4144	2.3606	1.7631	1.9118
#1	.53976	25.147	.27102	5.2211	.26883	.65071	.20116	2.6780
#2	.54043	25.196	.26956	5.2266	.26812	.64974	.20494	2.6780
#3	.51391	25.157	.25833	5.0474	.25292	.62401	.19785	2.5903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608042502PS Acquired: 8/10/2016 17:57:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579778-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51703**	**.54727**	**.50551**	**.25835**	**.49642**	**.52373**	**.00080**
Stddev	.01721	.00150	.01064	.00423	.00110	.01261	.00023
%RSD	3.3280	.27384	2.1043	1.6363	.22097	2.4083	29.048
#1	.52694	.54602	.49910	.25609	.49640	.53081	.00077
#2	.52700	.54893	.51779	.26322	.49534	.53121	.00058
#3	.49717	.54685	.49964	.25573	.49753	.50917	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12185.**	**74725.**	**3255.6**
Stddev	7.	243.	12.7
%RSD	.05930	.32502	.38996
#1	12193.	74952.	3244.4
#2	12179.	74755.	3252.9
#3	12183.	74469.	3269.4

Approved: August 11, 2016

Sample Name: L1608042502SDL Acquired: 8/10/2016 18:00:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579778-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00042	-.00827	-.00098	.00477	-.00069	.00003	.07862	.00004
Stddev	.00039	.00433	.00074	.00178	.00066	.00006	.04860	.00037
%RSD	92.646	52.433	75.557	37.246	95.628	247.06	61.811	931.88
#1	-.00085	-.00870	-.00161	.00635	.00007	.00010	.10770	.00046
#2	-.00010	-.00373	-.00016	.00512	-.00101	-.00003	.02252	-.00025
#3	-.00030	-.01237	-.00117	.00285	-.00113	.00001	.10565	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00018	.00087	-.01135	.17179	-.00107	-.02913	.00069
Stddev	.00017	.00068	.00037	.03912	.11842	.00096	.05128	.00275
%RSD	85.586	378.73	42.034	344.58	68.930	89.418	176.06	400.54
#1	-.00000	-.00039	.00129	.02634	.25611	-.00004	.02684	.00250
#2	-.00031	-.00000	.00062	-.05175	.22286	-.00193	-.04037	-.00248
#3	-.00027	.00094	.00069	-.00864	.03641	-.00125	-.07385	.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.00965	.00222	-.00259	.00126	-.00306	.00356	-.00285
Stddev	.00013	.02092	.00068	.00204	.00240	.00137	.00617	.00081
%RSD	61.605	216.83	30.432	78.827	190.40	44.807	173.27	28.519
#1	-.00033	.01318	.00163	-.00365	.00337	-.00151	-.00038	-.00296
#2	-.00007	.02858	.00296	-.00024	-.00135	-.00410	.01067	-.00361
#3	-.00024	-.01282	.00208	-.00388	.00176	-.00358	.00039	-.00199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608042502SDL Acquired: 8/10/2016 18:00:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579778-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00072**	**-.00022**	**-.00091**	**-.00006**	**.00049**	**.00155**	**-.00064**
Stddev	.00057	.00006	.00325	.00239	.00040	.00028	.00036
%RSD	80.176	27.266	358.81	3702.7	82.457	18.012	56.606
#1	-.00116	-.00024	.00284	-.00093	.00021	.00171	-.00106
#2	-.00007	-.00027	-.00304	.00264	.00030	.00171	-.00039
#3	-.00092	-.00015	-.00251	-.00190	.00095	.00123	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12723.**	**77977.**	**3327.0**
Stddev	51.	55.	21.7
%RSD	.40214	.07099	.65272
#1	12732.	77992.	3302.0
#2	12770.	77915.	3340.6
#3	12669.	78023.	3338.5

Approved: August 11, 2016

Sample Name: L1608042502SDL Acquired: 8/10/2016 18:04:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG579778-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**-.00922**	**.00059**	**.00242**	**-.00224**	**.00000**	**-.00309**
Stddev	.00174	.00505	.00222	.00135	.00070	.00003	.04266
%RSD	207.83	54.777	373.54	55.845	31.015	1964.7	1380.1
#1	.00116	-.00565	-.00195	.00146	-.00171	-.00001	.00542
#2	-.00196	-.01499	.00213	.00396	-.00303	.00003	-.04936
#3	-.00171	-.00701	.00160	.00183	-.00199	-.00002	.03467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.00027**	**-.00070**	**.00165**	F **-.03278**	**.12025**	**-.00172**
Stddev	.00016	.00010	.00019	.00076	.02937	.08915	.00074
%RSD	117.68	36.725	27.377	46.086	89.586	74.134	43.144
#1	.00030	-.00023	-.00092	.00248	-.00221	.10456	-.00257
#2	.00012	-.00019	-.00064	.00098	-.06078	.21620	-.00119
#3	-.00002	-.00038	-.00055	.00150	-.03536	.03999	-.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03000**	**-.00101**	**-.00023**	**.02635**	**.00066**	**-.00329**	**.00052**
Stddev	.04177	.00382	.00015	.01861	.00032	.00382	.00139
%RSD	139.21	380.42	66.505	70.632	48.086	115.99	268.05
#1	.02450	.00341	-.00014	.00498	.00036	-.00020	.00007
#2	-.00874	-.00338	-.00041	.03902	.00063	-.00212	-.00059
#3	.07425	-.00305	-.00014	.03505	.00100	-.00756	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: L1608042502SDL Acquired: 8/10/2016 18:04:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG579778-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00241	.00068	-.00395	-.00011	-.00027	.01186	-.00182
Stddev	.00066	.00207	.00124	.00078	.00030	.00091	.00089
%RSD	27.239	304.08	31.486	699.40	110.63	7.6907	48.798
#1	.00257	.00285	-.00495	-.00096	.00007	.01114	-.00231
#2	.00297	-.00127	-.00256	.00007	-.00048	.01288	-.00079
#3	.00169	.00046	-.00433	.00056	-.00041	.01155	-.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00000	.00030	-.00038
Stddev	.00097	.00018	.00027
%RSD	19505.	60.099	70.287
#1	-.00036	.00009	-.00060
#2	-.00075	.00038	-.00046
#3	.00109	.00042	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12954.	79277.	3374.6
Stddev	82.	85.	15.6
%RSD	.63558	.10740	.46138
#1	12988.	79220.	3357.9
#2	13014.	79375.	3377.1
#3	12860.	79236.	3388.7

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 18:08:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41542**	**10.283**	**.42751**	**.53198**	**1.0835**	**.04983**	**10.697**	**.05297**
Stddev	.00197	.060	.00850	.00675	.0055	.00039	.074	.00147
%RSD	.47414	.58633	1.9877	1.2689	.51170	.78283	.69541	2.7817
#1	.41575	10.286	.43312	.53298	1.0867	.04963	10.729	.05352
#2	.41331	10.222	.43167	.52479	1.0866	.04957	10.750	.05409
#3	.41721	10.342	.41773	.53817	1.0771	.05028	10.612	.05130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21027**	**.50080**	**.53008**	**4.1994**	**50.045**	**1.0576**	**10.272**	**.53532**
Stddev	.00599	.00281	.01574	.0215	.353	.0132	.018	.00130
%RSD	2.8468	.56198	2.9696	.51087	.70461	1.2447	.17721	.24305
#1	.21380	.50060	.53917	4.2235	50.348	1.0715	10.286	.53464
#2	.21366	.49809	.53916	4.1825	50.130	1.0560	10.277	.53682
#3	.20336	.50371	.51190	4.1922	49.658	1.0454	10.251	.53450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0483**	**50.829**	**.52744**	**10.698**	**.53285**	**1.2726**	**.42930**	**5.3428**
Stddev	.0231	.347	.01669	.225	.00972	.0248	.01060	.0920
%RSD	2.1987	.68184	3.1638	2.1000	1.8246	1.9481	2.4698	1.7209
#1	1.0592	51.121	.53521	10.833	.53740	1.2860	.44032	5.4029
#2	1.0639	50.921	.53882	10.822	.53946	1.2879	.42843	5.3885
#3	1.0218	50.446	.50828	10.439	.52169	1.2440	.41917	5.2369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 18:08:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0441**	**1.0850**	**1.0095**	**.52406**	**.99211**	**1.0556**	**1.0361**
Stddev	.0367	.0038	.0035	.00385	.00398	.0276	.0091
%RSD	3.5102	.35188	.34735	.73472	.40149	2.6168	.87953
#1	1.0654	1.0883	1.0069	.52318	.98955	1.0699	1.0417
#2	1.0651	1.0860	1.0135	.52828	.99009	1.0732	1.0409
#3	1.0018	1.0808	1.0081	.52073	.99670	1.0238	1.0256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12206.**	**74425.**	**3249.5**
Stddev	11.	259.	30.4
%RSD	.09270	.34787	.93640
#1	12214.	74536.	3234.9
#2	12210.	74609.	3229.2
#3	12193.	74129.	3284.5

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 18:12:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00266	-.00123	.00193	-.00134	-.00001	.00379	.00015
Stddev	.00152	.00435	.00010	.00190	.00138	.00002	.03562	.00026
%RSD	9878.5	163.47	8.4635	98.564	103.06	156.89	938.57	171.13
#1	.00140	.00734	-.00113	.00098	-.00262	-.00003	.03462	.00038
#2	.00025	-.00125	-.00134	.00413	-.00152	.00001	-.03520	.00022
#3	-.00161	.00188	-.00121	.00069	.00012	-.00002	.01196	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	-.00095	.00123	-.00809	.25504	-.00013	-.02652	.00045
Stddev	.00024	.00049	.00050	.01342	.07221	.00449	.06363	.00248
%RSD	82.445	51.984	40.953	165.93	28.315	3533.4	239.93	554.55
#1	-.00016	-.00084	.00154	-.01781	.21229	-.00528	.01310	-.00106
#2	-.00014	-.00051	.00065	-.01368	.21441	.00293	.00726	-.00092
#3	-.00056	-.00148	.00151	.00722	.33841	.00197	-.09992	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.00420	.00116	-.00354	.00169	.00004	.00316	.00083
Stddev	.00020	.03716	.00010	.00437	.00124	.00304	.00176	.00092
%RSD	55.567	885.29	8.4948	123.37	73.739	8347.9	55.672	110.29
#1	-.00040	.02477	.00107	-.00003	.00228	-.00217	.00243	.00169
#2	-.00055	.02652	.00116	-.00843	.00026	.00350	.00188	.00093
#3	-.00015	-.03870	.00126	-.00215	.00252	-.00122	.00516	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 18:12:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00120**	**-.00008**	**.00356**	**.00011**	**.00066**	**-.00028**	**-.00035**
Stddev	.00048	.00034	.00646	.00106	.00017	.00014	.00034
%RSD	39.966	415.35	181.18	952.07	26.612	50.681	96.448
#1	-.00174	.00015	.00924	-.00111	.00081	-.00021	-.00003
#2	-.00084	.00008	.00491	.00082	.00070	-.00018	-.00032
#3	-.00101	-.00048	-.00346	.00063	.00047	-.00044	-.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12017.**	**73252.**	**3224.7**
Stddev	31.	278.	50.1
%RSD	.25438	.37907	1.5541
#1	11992.	73069.	3267.9
#2	12007.	73115.	3236.4
#3	12051.	73571.	3169.8

Approved: August 11, 2016

Sample Name: L1608033401 Acquired: 8/10/2016 18:16:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	.25570	.01480	.15528	-.00223	-.00005	1.9053	.00098
Stddev	.00146	.01265	.00179	.00090	.00012	.00004	.0283	.00010
%RSD	202.71	4.9488	12.108	.57679	5.3418	85.828	1.4826	10.304
#1	.00148	.24427	.01681	.15480	-.00220	-.00009	1.8731	.00086
#2	.00164	.25354	.01338	.15631	-.00236	-.00000	1.9169	.00105
#3	-.00096	.26930	.01420	.15472	-.00213	-.00006	1.9259	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00511	.00093	.00162	9.2004	10.761	-.00277	1.1438	.79317
Stddev	.00062	.00071	.00213	.0195	.104	.00168	.0432	.00586
%RSD	12.177	76.409	131.52	.21222	.96466	60.492	3.7736	.73919
#1	.00580	.00168	.00311	9.2145	10.723	-.00139	1.1934	.79078
#2	.00494	.00086	.00255	9.1782	10.681	-.00464	1.1147	.78888
#3	.00459	.00026	-.00082	9.2086	10.878	-.00228	1.1234	.79985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	9.9674	.04224	.02172	.00144	.00437	.00324	.64101
Stddev	.00014	.0404	.00477	.00635	.00273	.00517	.00439	.06328
%RSD	10.395	.40547	11.290	29.214	189.86	118.28	135.28	9.8720
#1	.00148	10.014	.04467	.01850	.00130	.00361	.00654	.68009
#2	.00143	9.9458	.04530	.02903	.00423	-.00038	-.00173	.67493
#3	.00121	9.9424	.03674	.01763	-.00122	.00987	.00492	.56800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033401 Acquired: 8/10/2016 18:16:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00100**	**.00495**	**.00969**	**-.00486**	**-.00004**	**.07690**	**-.00047**
Stddev	.00109	.00062	.00353	.00199	.00055	.00870	.00063
%RSD	109.19	12.534	36.395	41.026	1419.3	11.320	133.93
#1	.00195	.00554	.01333	-.00321	-.00039	.08258	-.00119
#2	-.00019	.00430	.00628	-.00707	-.00031	.08123	-.00020
#3	.00124	.00500	.00947	-.00429	.00059	.06687	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12423.**	**76852.**	**3362.6**
Stddev	33.	203.	3.4
%RSD	.26699	.26444	.10174
#1	12442.	77060.	3360.1
#2	12442.	76841.	3361.1
#3	12385.	76654.	3366.5

Approved: August 11, 2016

Sample Name: L1608033402 Acquired: 8/10/2016 18:20:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00178	.00652	.00257	.01652	.00130	.00002	1.0588	.00224
Stddev	.00131	.00268	.00292	.00137	.00109	.00010	.0389	.00017
%RSD	73.888	41.082	113.30	8.3136	83.694	399.68	3.6702	7.5663
#1	.00184	.00886	.00286	.01660	.00172	-.00009	1.0283	.00240
#2	.00043	.00711	.00533	.01786	.00212	.00008	1.1026	.00226
#3	.00306	.00360	-.00048	.01511	.00007	.00008	1.0456	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00286	.00057	.00078	4.6269	15.118	-.00206	.21669	.54478
Stddev	.00065	.00082	.00117	.0128	.041	.00209	.06972	.00362
%RSD	22.840	143.84	149.57	.27702	.27094	101.39	32.177	.66509
#1	.00329	.00049	.00195	4.6270	15.073	-.00007	.23439	.54467
#2	.00318	-.00021	.00076	4.6140	15.154	-.00424	.13982	.54846
#3	.00211	.00142	-.00038	4.6396	15.127	-.00187	.27585	.54121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	23.940	.00429	.00436	.00263	.00301	.00211	.09425
Stddev	.00020	.085	.00120	.00487	.00199	.00039	.00385	.00906
%RSD	72.087	.35606	27.905	111.87	75.749	13.028	182.31	9.6159
#1	.00030	23.894	.00567	.00995	.00288	.00257	.00398	.09780
#2	.00006	24.039	.00344	.00207	.00448	.00334	.00468	.10099
#3	.00045	23.888	.00378	.00105	.00052	.00311	-.00232	.08394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033402 Acquired: 8/10/2016 18:20:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00328	.00423	-.00142	.00037	.00325	-.00056
Stddev	.00061	.00043	.00549	.00144	.00050	.00036	.00012
%RSD	192.06	13.235	129.75	101.43	134.58	11.056	21.318
#1	.00026	.00320	.00674	-.00261	.00046	.00353	-.00043
#2	-.00026	.00289	-.00206	-.00182	-.00017	.00336	-.00065
#3	.00095	.00374	.00802	.00018	.00081	.00284	-.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12376.	76130.	3317.9
Stddev	67.	272.	18.4
%RSD	.53745	.35684	.55336
#1	12432.	76283.	3324.6
#2	12393.	75816.	3297.1
#3	12303.	76290.	3332.0

Approved: August 11, 2016

Sample Name: L1608033403 Acquired: 8/10/2016 18:24:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00265	.00213	.00145	.01322	-.00104	-.00009	.48456	.00008
Stddev	.00120	.00582	.00192	.00046	.00012	.00002	.00394	.00009
%RSD	45.418	273.41	132.30	3.4870	11.516	17.485	.81296	113.72
#1	.00197	.00310	.00203	.01374	-.00092	-.00010	.48791	.00014
#2	.00404	.00740	.00301	.01289	-.00105	-.00007	.48555	-.00002
#3	.00195	-.00411	-.00069	.01302	-.00116	-.00010	.48022	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00052	-.00033	.69821	1.1244	-.00050	.21798	.01267
Stddev	.00022	.00051	.00071	.04169	.1814	.00368	.04843	.00207
%RSD	226.21	97.654	216.87	5.9713	16.137	742.36	22.218	16.344
#1	.00029	-.00104	.00049	.74459	1.0988	-.00111	.25326	.01494
#2	-.00014	-.00052	-.00080	.68623	1.3173	.00345	.16276	.01088
#3	.00014	-.00001	-.00068	.66382	.95709	-.00383	.23793	.01218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	12.782	.00367	-.00264	-.00051	.00166	-.00201	.03232
Stddev	.00028	.306	.00015	.00059	.00051	.00173	.00276	.00320
%RSD	643.29	2.3921	4.1089	22.362	99.217	104.79	137.62	9.8883
#1	.00025	13.062	.00382	-.00288	-.00047	.00366	.00118	.03437
#2	-.00007	12.828	.00367	-.00308	-.00003	.00065	-.00359	.03395
#3	-.00031	12.455	.00352	-.00197	-.00105	.00066	-.00361	.02864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033403 Acquired: 8/10/2016 18:24:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.00335**	**.00167**	**-.00269**	**-.00009**	**.00138**	**-.00036**
Stddev	.00005	.00052	.00654	.00134	.00041	.00026	.00063
%RSD	8.5834	15.459	391.74	49.768	464.73	18.743	175.72
#1	-.00052	.00363	.00920	-.00286	-.00040	.00151	-.00004
#2	-.00062	.00275	-.00255	-.00393	-.00025	.00154	.00005
#3	-.00058	.00367	-.00165	-.00127	.00038	.00108	-.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12464.**	**76461.**	**3334.3**
Stddev	54.	350.	53.5
%RSD	.43133	.45752	1.6053
#1	12418.	76196.	3283.5
#2	12449.	76857.	3329.3
#3	12523.	76330.	3390.2

Approved: August 11, 2016

Sample Name: L1608042503 Acquired: 8/10/2016 18:28:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00449	-.00098	.00950	-.00192	.00001	.04669	.00024
Stddev	.00077	.01174	.00184	.00024	.00115	.00000	.00804	.00011
%RSD	176.56	261.76	187.36	2.5251	59.814	32.925	17.210	44.757
#1	.00016	.01796	-.00092	.00931	-.00230	.00001	.03750	.00012
#2	.00130	-.00094	-.00286	.00977	-.00063	.00001	.05016	.00032
#3	-.00016	-.00356	.00083	.00940	-.00282	.00002	.05241	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.00006	-.00015	.00697	.15256	-.00119	-.02239	-.00059
Stddev	.00029	.00039	.00069	.00356	.03906	.00083	.04944	.00153
%RSD	67.535	694.02	453.43	51.035	25.605	69.462	220.81	259.99
#1	-.00077	.00047	.00014	.00296	.16052	-.00212	-.04241	-.00234
#2	-.00028	-.00032	.00035	.00818	.11013	-.00055	-.05867	.00046
#3	-.00025	.00002	-.00094	.00976	.18702	-.00089	.03392	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.06492	.00074	-.00089	.00108	-.00004	-.00033	.00070
Stddev	.00028	.02711	.00074	.00549	.00014	.00134	.00285	.00204
%RSD	92.128	41.763	100.09	620.11	12.984	3630.7	869.81	289.97
#1	.00008	.08248	.00137	.00543	.00104	.00140	.00248	.00298
#2	.00021	.03370	-.00007	-.00452	.00097	-.00024	-.00322	.00011
#3	.00061	.07859	.00091	-.00357	.00124	-.00127	-.00025	-.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608042503 Acquired: 8/10/2016 18:28:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.00011**	**.00405**	**-.00164**	**.00072**	**.00119**	**-.00028**
Stddev	.00018	.00022	.00949	.00343	.00066	.00014	.00026
%RSD	31.514	194.05	234.45	208.42	91.707	11.522	92.399
#1	-.00063	.00037	.00072	-.00418	.00144	.00132	-.00026
#2	-.00070	-.00001	.01476	.00225	.00061	.00122	-.00055
#3	-.00036	-.00002	-.00333	-.00301	.00013	.00104	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12405.**	**76410.**	**3263.9**
Stddev	19.	366.	23.5
%RSD	.15196	.47961	.72050
#1	12425.	76105.	3246.8
#2	12387.	76310.	3254.3
#3	12404.	76817.	3290.7

Approved: August 11, 2016

Sample Name: L1608042504 Acquired: 8/10/2016 18:32:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	-.00063	-.00173	.01180	-.00154	.00001	.00216	.00025
Stddev	.00173	.00298	.00157	.00165	.00027	.00003	.02080	.00016
%RSD	215.04	472.05	90.788	13.995	17.214	425.28	964.84	64.090
#1	.00241	-.00193	-.00216	.01367	-.00137	-.00000	.02549	.00029
#2	.00101	-.00274	.00001	.01120	-.00185	.00005	-.00461	.00007
#3	-.00102	.00278	-.00303	.01054	-.00141	-.00002	-.01442	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	-.00047	.00072	-.00855	.16541	-.00105	-.02701	.00224
Stddev	.00019	.00071	.00067	.01359	.05898	.00386	.03180	.00091
%RSD	42.717	149.52	92.134	158.96	35.656	367.98	117.73	40.642
#1	-.00035	-.00111	-.00001	-.01903	.23044	.00236	-.06033	.00200
#2	-.00067	-.00060	.00130	.00680	.11539	-.00523	-.02373	.00325
#3	-.00033	.00029	.00087	-.01342	.15039	-.00027	.00302	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.04556	.00130	-.01027	.00058	.00365	.00305	.00247
Stddev	.00012	.03106	.00085	.00568	.00194	.00031	.00320	.00028
%RSD	50.438	68.169	65.628	55.331	335.19	8.4141	104.78	11.299
#1	.00022	.03499	.00032	-.00811	.00171	.00343	.00593	.00260
#2	.00013	.02116	.00187	-.01671	-.00166	.00351	-.00039	.00265
#3	.00038	.08052	.00170	-.00598	.00168	.00400	.00361	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608042504 Acquired: 8/10/2016 18:32:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	-.00000	.00397	-.00226	.00018	.00099	-.00038
Stddev	.00024	.00025	.00324	.00146	.00072	.00008	.00022
%RSD	517.67	14379.	81.588	64.767	394.72	8.6083	58.688
#1	-.00017	.00026	.00703	-.00070	.00033	.00096	-.00063
#2	.00031	-.00003	.00058	-.00359	.00082	.00108	-.00027
#3	.00000	-.00024	.00430	-.00248	-.00060	.00092	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12339.	76041.	3288.0
Stddev	64.	217.	5.0
%RSD	.52040	.28588	.15076
#1	12265.	75864.	3285.7
#2	12377.	76283.	3293.7
#3	12375.	75974.	3284.7

Approved: August 11, 2016

Sample Name: L1608042505 Acquired: 8/10/2016 18:36:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00129	-.00362	-.00026	.01098	-.00109	.00004	.00185	.00026
Stddev	.00122	.00817	.00295	.00364	.00057	.00003	.03744	.00005
%RSD	94.750	225.99	1138.4	33.118	52.508	79.266	2020.1	19.777
#1	.00155	-.00539	.00281	.01390	-.00147	.00002	.04442	.00020
#2	.00236	.00530	-.00307	.00691	-.00136	.00007	-.02597	.00027
#3	-.00004	-.01075	-.00051	.01214	-.00043	.00002	-.01289	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00009	.00063	-.01116	.16982	.00125	.01155	-.00046
Stddev	.00017	.00033	.00108	.00271	.11170	.00364	.03832	.00149
%RSD	58.493	382.25	170.94	24.256	65.773	292.10	331.86	327.06
#1	-.00012	-.00012	.00184	-.01234	.12357	.00483	.04840	-.00211
#2	-.00046	-.00009	.00031	-.00806	.29722	.00136	-.02809	.00079
#3	-.00030	.00046	-.00025	-.01308	.08868	-.00245	.01433	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.03484	.00114	-.00334	-.00088	.00126	.00280	.00212
Stddev	.00018	.02796	.00130	.00609	.00155	.00123	.00095	.00074
%RSD	120.34	80.264	113.57	182.39	177.42	97.886	33.844	35.187
#1	-.00030	.06591	-.00007	-.00590	.00085	-.00016	.00293	.00161
#2	.00005	.01169	.00252	-.00772	-.00216	.00184	.00368	.00297
#3	-.00021	.02691	.00098	.00361	-.00132	.00208	.00180	.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608042505 Acquired: 8/10/2016 18:36:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.00006**	**.00070**	**-.00452**	**.00002**	**.00107**	**-.00021**
Stddev	.00026	.00009	.00431	.00243	.00090	.00029	.00047
%RSD	136.97	149.82	616.04	53.750	5658.3	27.319	219.43
#1	.00008	-.00004	.00400	-.00378	.00100	.00125	-.00017
#2	-.00022	.00013	-.00417	-.00724	-.00077	.00124	.00023
#3	-.00044	.00008	.00227	-.00255	-.00018	.00073	-.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12363.**	**75849.**	**3232.1**
Stddev	46.	100.	23.6
%RSD	.36891	.13217	.73124
#1	12328.	75787.	3234.0
#2	12347.	75965.	3254.8
#3	12415.	75796.	3207.6

Approved: August 11, 2016

Sample Name: L1608043801 Acquired: 8/10/2016 18:40:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00337	.04776	.00241	.33126	8.7142	-.00006	44.370
Stddev	.00191	.00245	.00097	.00305	.0610	.00002	.301
%RSD	56.696	5.1250	40.111	.91934	.69966	25.125	.67889
#1	.00236	.04787	.00212	.33321	8.6509	-.00005	44.076
#2	.00218	.05016	.00162	.33282	8.7726	-.00005	44.678
#3	.00558	.04526	.00349	.32775	8.7191	-.00008	44.357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.00076	.01187	.00446	24.540	3.6236	.85981
Stddev	.00021	.00031	.00051	.00477	.232	.1990	.01003
%RSD	38.542	41.123	4.3011	106.90	.94471	5.4908	1.1663
#1	.00031	.00070	.01129	.00841	24.546	3.4778	.85772
#2	.00070	.00109	.01205	.00581	24.768	3.8503	.87072
#3	.00065	.00048	.01226	-.00084	24.305	3.5426	.85099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.7153	5.5048	.00045	187.04	.02278	.20407	.00181
Stddev	.0770	.0487	.00034	1.54	.00294	.02418	.00382
%RSD	1.3465	.88476	77.352	.82580	12.887	11.850	211.56
#1	5.6362	5.4492	.00006	185.57	.02520	.22545	-.00218
#2	5.7900	5.5399	.00072	188.65	.02361	.20892	.00543
#3	5.7196	5.5252	.00056	186.91	.01951	.17783	.00217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: L1608043801 Acquired: 8/10/2016 18:40:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.00368	.19010	.00328	F 13.573	.00457	-.00870
Stddev	.00318	.00382	.02307	.00083	.091	.00376	.00507
%RSD	531.16	103.88	12.137	25.354	.67098	82.256	58.268
#1	.00411	.00729	.21125	.00417	13.475	.00885	-.01334
#2	-.00208	.00408	.19354	.00313	13.656	.00177	-.00329
#3	-.00023	-.00033	.16550	.00253	13.589	.00309	-.00946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00055	.08583	-.00062
Stddev	.00070	.00985	.00043
%RSD	127.61	11.473	69.405
#1	-.00003	.09397	-.00104
#2	.00035	.08864	-.00018
#3	.00133	.07489	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12141.	75001.	3396.1
Stddev	287.	80.	24.4
%RSD	2.3611	.10694	.71802
#1	11814.	74960.	3421.9
#2	12263.	74950.	3392.8
#3	12346.	75094.	3373.5

Approved: August 11, 2016

Sample Name: L1608043901 Acquired: 8/10/2016 18:43:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.00904	-.00087	.00985	.00944	.00003	48.677	.00026
Stddev	.00196	.00895	.00134	.00066	.00135	.00009	.178	.00013
%RSD	493.91	99.020	153.71	6.6636	14.295	292.17	.36625	50.207
#1	-.00186	.01535	-.00084	.01055	.01096	.00012	48.853	.00013
#2	.00136	-.00120	-.00222	.00976	.00898	.00003	48.497	.00025
#3	.00169	.01298	.00045	.00924	.00838	-.00006	48.682	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	-.00011	.00117	.04730	.53240	-.00200	6.7105	.00294
Stddev	.00034	.00063	.00025	.02768	.01580	.00243	.0339	.00066
%RSD	380.73	592.18	21.571	58.525	2.9675	121.36	.50465	22.477
#1	.00020	-.00043	.00091	.07441	.52141	-.00007	6.7180	.00221
#2	-.00046	-.00051	.00141	.01908	.52529	-.00473	6.6735	.00312
#3	-.00000	.00062	.00119	.04841	.55051	-.00121	6.7399	.00350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	2.3304	.00139	.00417	-.00070	.00389	.00207	2.6739
Stddev	.00022	.0200	.00067	.00731	.00227	.00162	.00487	.2597
%RSD	181.73	.85808	48.437	175.30	325.64	41.564	235.54	9.7138
#1	-.00013	2.3080	.00217	.01259	-.00066	.00575	.00111	2.8320
#2	.00029	2.3367	.00105	.00035	-.00298	.00303	-.00225	2.8155
#3	.00020	2.3465	.00095	-.00044	.00156	.00289	.00734	2.3741
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608043901 Acquired: 8/10/2016 18:43:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.05376**	**-.00158**	**-.00302**	**.00031**	**.00137**	**-.00046**
Stddev	.00084	.00046	.00354	.00222	.00051	.00027	.00040
%RSD	296.32	.86446	224.02	73.498	165.63	19.883	88.541
#1	.00022	.05418	-.00025	-.00114	.00069	.00166	-.00028
#2	.00018	.05384	.00110	-.00548	-.00027	.00133	-.00017
#3	-.00125	.05326	-.00559	-.00245	.00051	.00112	-.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12303.**	**75537.**	**3266.2**
Stddev	13.	152.	19.5
%RSD	.10641	.20080	.59735
#1	12317.	75461.	3259.2
#2	12300.	75439.	3251.2
#3	12292.	75712.	3288.3

Approved: August 11, 2016

Sample Name: L1608043902 Acquired: 8/10/2016 18:47:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	.00610	-.00165	.01087	.01308	-.00007	47.697	.00025
Stddev	.00100	.00950	.00251	.00143	.00095	.00009	.185	.00017
%RSD	98.296	155.75	151.96	13.158	7.2952	132.81	.38774	67.140
#1	.00171	-.00480	-.00174	.00952	.01414	-.00008	47.862	.00011
#2	.00148	.01047	.00090	.01072	.01281	-.00015	47.497	.00021
#3	-.00013	.01264	-.00411	.01236	.01229	.00003	47.731	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00064	.00121	.25964	.44446	.00062	6.7068	.04123
Stddev	.00004	.00082	.00094	.00426	.05836	.00203	.0299	.00179
%RSD	19.432	127.48	77.226	1.6398	13.131	329.29	.44500	4.3468
#1	-.00017	.00105	.00229	.25614	.41657	-.00086	6.6724	.03962
#2	-.00024	-.00030	.00062	.25839	.51153	-.00022	6.7222	.04316
#3	-.00025	.00117	.00073	.26438	.40528	.00293	6.7259	.04092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	2.3817	.00103	-.00125	-.00155	.00169	.00119	2.6769
Stddev	.00038	.0347	.00140	.00253	.00309	.00162	.00282	.2601
%RSD	85.027	1.4580	136.56	202.99	198.78	95.773	236.74	9.7164
#1	.00062	2.4181	.00223	-.00209	-.00375	.00181	.00095	2.8308
#2	.00072	2.3781	.00138	-.00324	-.00289	.00325	-.00150	2.8234
#3	.00001	2.3489	-.00052	.00160	.00198	.00002	.00413	2.3766
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608043902 Acquired: 8/10/2016 18:47:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.05300**	**-.00570**	**-.00332**	**.00024**	**.00156**	**.00012**
Stddev	.00032	.00048	.00544	.00201	.00023	.00019	.00030
%RSD	632.57	.90133	95.374	60.482	95.159	11.970	246.37
#1	-.00029	.05286	-.00204	-.00258	.00021	.00149	-.00020
#2	-.00017	.05260	-.01195	-.00560	.00047	.00176	.00016
#3	.00031	.05353	-.00311	-.00179	.00002	.00141	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12288.**	**75474.**	**3274.3**
Stddev	19.	57.	35.9
%RSD	.15568	.07518	1.0967
#1	12309.	75477.	3234.1
#2	12286.	75415.	3285.6
#3	12270.	75529.	3303.1

Approved: August 11, 2016

Sample Name: L1608043903 Acquired: 8/10/2016 18:51:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00237	-.00267	.00992	.00992	-.00002	45.614	.00015
Stddev	.00161	.00619	.00098	.00134	.00114	.00005	.093	.00008
%RSD	887.52	261.13	36.539	13.471	11.503	246.68	.20348	53.575
#1	.00052	.00922	-.00280	.00897	.00934	-.00008	45.596	.00006
#2	.00159	-.00283	-.00357	.00935	.01124	-.00002	45.531	.00019
#3	-.00157	.00072	-.00163	.01145	.00919	.00003	45.714	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	.00007	.00064	.26871	.53672	.00144	6.6188	.06385
Stddev	.00040	.00060	.00135	.02991	.01595	.00102	.0787	.00323
%RSD	80.827	822.77	211.76	11.133	2.9724	70.849	1.1893	5.0632
#1	-.00007	-.00061	-.00081	.29834	.55305	.00045	6.6296	.06668
#2	-.00086	.00051	.00087	.26926	.53595	.00248	6.5352	.06032
#3	-.00054	.00031	.00185	.23852	.52117	.00139	6.6915	.06454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	2.3103	.00127	-.00604	.00127	-.00262	.00300	2.5380
Stddev	.00072	.0302	.00037	.00103	.00163	.00390	.00690	.2409
%RSD	308.11	1.3065	28.908	16.999	127.62	148.69	229.90	9.4917
#1	.00106	2.3292	.00169	-.00497	.00191	.00181	.00857	2.6833
#2	-.00023	2.3262	.00110	-.00612	.00249	-.00417	-.00471	2.6708
#3	-.00014	2.2755	.00102	-.00702	-.00057	-.00552	.00514	2.2599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608043903 Acquired: 8/10/2016 18:51:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.05086	.00371	-.00183	.00023	.00163	-.00030
Stddev	.00027	.00059	.00399	.00104	.00001	.00039	.00036
%RSD	143.79	1.1618	107.46	56.848	5.3720	24.044	120.17
#1	-.00009	.05142	.00695	-.00225	.00022	.00171	-.00053
#2	.00045	.05024	.00492	-.00259	.00024	.00198	-.00047
#3	.00020	.05093	-.00074	-.00064	.00022	.00121	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12276.	75672.	3256.9
Stddev	18.	138.	2.8
%RSD	.14350	.18251	.08530
#1	12265.	75707.	3258.2
#2	12296.	75520.	3258.8
#3	12267.	75789.	3253.7

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 18:55:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41141	10.211	.41970	.51782	1.0611	.04953	10.559	.05218
Stddev	.00142	.008	.00454	.00612	.0066	.00007	.094	.00138
%RSD	.34559	.08017	1.0821	1.1812	.62478	.15120	.89177	2.6459
#1	.40990	10.208	.42271	.51618	1.0664	.04961	10.667	.05295
#2	.41272	10.220	.42192	.51269	1.0632	.04946	10.493	.05300
#3	.41162	10.204	.41448	.52459	1.0537	.04951	10.516	.05058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20825	.50152	.52235	4.1676	49.894	1.0380	10.362	.52821
Stddev	.00652	.00114	.01482	.0344	.243	.0048	.042	.00570
%RSD	3.1285	.22714	2.8364	.82486	.48762	.46339	.40226	1.0785
#1	.21251	.50231	.53117	4.1974	49.844	1.0436	10.410	.52960
#2	.21150	.50021	.53065	4.1755	50.159	1.0348	10.344	.53309
#3	.20075	.50203	.50525	4.1300	49.680	1.0358	10.333	.52195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0429	50.325	.52155	10.497	.52318	1.2592	.41185	5.2413
Stddev	.0313	.197	.01552	.216	.00946	.0278	.01094	.0977
%RSD	3.0036	.39053	2.9761	2.0565	1.8076	2.2102	2.6558	1.8639
#1	1.0622	50.505	.53114	10.643	.52696	1.2789	.42267	5.3008
#2	1.0598	50.355	.52988	10.600	.53016	1.2713	.41207	5.2944
#3	1.0068	50.115	.50365	10.249	.51242	1.2274	.40080	5.1285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 18:55:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0343**	**1.0627**	**1.0008**	**.51751**	**.98974**	**1.0379**	**1.0374**
Stddev	.0349	.0083	.0125	.00362	.00274	.0278	.0057
%RSD	3.3763	.77708	1.2523	.70037	.27686	2.6798	.54638
#1	1.0532	1.0701	1.0151	.51935	.98915	1.0544	1.0437
#2	1.0557	1.0644	.99544	.51986	.99273	1.0535	1.0355
#3	.99401	1.0538	.99188	.51334	.98734	1.0058	1.0329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12420.**	**75402.**	**3263.9**
Stddev	7.	107.	17.1
%RSD	.05419	.14222	.52488
#1	12427.	75499.	3246.8
#2	12415.	75287.	3263.9
#3	12417.	75420.	3281.0

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 18:59:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00088**	**-.00563**	**-.00166**	**.00149**	**-.00088**	**-.00006**	**-.00185**	**-.00001**
Stddev	.00056	.00210	.00229	.00153	.00077	.00004	.04170	.00008
%RSD	63.594	37.288	137.88	102.60	87.639	67.612	2258.6	623.15
#1	-.00065	-.00713	-.00265	.00289	.00001	-.00002	.04501	.00001
#2	-.00151	-.00654	.00096	.00172	-.00130	-.00009	-.03489	.00005
#3	-.00047	-.00323	-.00328	-.00014	-.00134	-.00007	-.01566	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**-.00107**	**.00046**	**.00369**	**.16165**	**-.00073**	**-.07003**	**.00268**
Stddev	.00038	.00028	.00076	.01141	.07318	.00445	.13846	.00192
%RSD	115.59	26.019	166.08	309.67	45.269	611.64	197.73	71.500
#1	-.00067	-.00132	.00121	.01139	.24148	-.00586	-.22991	.00209
#2	-.00037	-.00113	-.00032	-.00943	.14571	.00199	.00996	.00113
#3	.00007	-.00077	.00049	.00910	.09776	.00169	.00987	.00483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01832**	**.00104**	**-.00380**	**.00020**	**.00282**	**.00762**	**-.00169**
Stddev	.00020	.01606	.00046	.00065	.00479	.00228	.00257	.00051
%RSD	212.38	87.706	44.379	17.062	2425.2	80.788	33.702	29.960
#1	-.00031	.03566	.00156	-.00323	-.00506	.00544	.00788	-.00193
#2	-.00006	.01535	.00066	-.00450	.00134	.00170	.00493	-.00111
#3	.00009	.00394	.00091	-.00366	.00432	.00132	.01005	-.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 18:59:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.00027	.00311	-.00386	.00022	-.00037	-.00034
Stddev	.00086	.00063	.00590	.00025	.00069	.00006	.00033
%RSD	239.41	234.03	189.78	6.4273	320.69	17.053	95.992
#1	.00134	.00028	.00187	-.00407	.00038	-.00039	-.00007
#2	-.00025	-.00013	-.00207	-.00391	.00082	-.00043	-.00026
#3	-.00001	-.00096	.00953	-.00359	-.00054	-.00030	-.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12675.	77023.	3313.4
Stddev	42.	239.	24.6
%RSD	.33528	.30966	.74148
#1	12643.	76812.	3285.6
#2	12659.	76976.	3322.5
#3	12723.	77282.	3332.1

Approved: August 11, 2016

Sample Name: L1608043904 Acquired: 8/10/2016 19:03:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.00085	.00063	.01037	.00955	-.00004	48.086	.00021
Stddev	.00096	.01003	.00142	.00283	.00069	.00002	.191	.00024
%RSD	106.48	1174.8	225.65	27.279	7.2202	63.338	.39672	113.69
#1	.00185	.00956	.00155	.01275	.00915	-.00007	47.938	.00048
#2	-.00006	-.01012	.00135	.00724	.00917	-.00003	48.301	.00014
#3	.00090	.00312	-.00101	.01111	.01035	-.00002	48.019	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00042	.00002	.00140	.46341	.57802	-.00350	6.9734	.04365
Stddev	.00028	.00066	.00046	.01712	.04770	.00198	.0718	.00451
%RSD	67.569	3314.0	33.193	3.6942	8.2517	56.616	1.0299	10.325
#1	-.00014	-.00004	.00192	.47824	.60835	-.00567	6.8911	.03933
#2	-.00071	-.00061	.00125	.44467	.60267	-.00308	7.0060	.04330
#3	-.00041	.00071	.00103	.46731	.52304	-.00177	7.0232	.04833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	2.4912	.00081	-.00071	.00210	.00191	.00250	2.6702
Stddev	.00035	.0237	.00145	.00597	.00282	.00036	.00131	.2320
%RSD	81.580	.95094	180.08	844.68	134.54	19.141	52.330	8.6897
#1	.00023	2.4953	.00234	-.00489	.00486	.00155	.00172	2.8161
#2	.00084	2.4657	.00064	.00612	.00222	.00228	.00401	2.7919
#3	.00023	2.5125	-.00055	-.00335	-.00078	.00189	.00177	2.4026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608043904 Acquired: 8/10/2016 19:03:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.05268	-.00166	-.00271	.00044	.00084	-.00001
Stddev	.00010	.00034	.00455	.00171	.00057	.00017	.00035
%RSD	24.054	.64486	274.83	63.034	127.92	19.649	3019.9
#1	.00039	.05229	.00356	-.00108	.00038	.00083	-.00037
#2	.00050	.05284	-.00483	-.00449	-.00009	.00102	-.00001
#3	.00031	.05290	-.00369	-.00255	.00104	.00068	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12291.	75458.	3250.0
Stddev	35.	307.	11.3
%RSD	.28397	.40648	.34709
#1	12330.	75132.	3260.9
#2	12282.	75741.	3250.6
#3	12261.	75501.	3238.4

Approved: August 11, 2016

Sample Name: L1608043905 Acquired: 8/10/2016 19:07:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.10858	-.00293	.01027	.01158	.00003	50.547	.00028
Stddev	.00095	.00505	.00238	.00090	.00132	.00003	1.513	.00001
%RSD	138.82	4.6502	81.338	8.7562	11.368	107.82	2.9934	3.2998
#1	.00163	.11278	-.00287	.00970	.01010	-.00000	49.340	.00027
#2	.00071	.10998	-.00058	.00980	.01203	.00003	50.056	.00029
#3	-.00028	.10298	-.00534	.01131	.01262	.00005	52.244	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00060	.00306	1.9038	.72874	-.00253	6.9559	.09554
Stddev	.00017	.00020	.00154	.0449	.10131	.00082	.2617	.00358
%RSD	82.699	32.401	50.278	2.3589	13.901	32.295	3.7618	3.7507
#1	-.00013	.00065	.00376	1.8765	.84476	-.00345	6.7590	.09434
#2	-.00008	.00077	.00413	1.8793	.65777	-.00188	6.8559	.09271
#3	-.00039	.00039	.00130	1.9557	.68370	-.00227	7.2528	.09957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	2.3999	.00218	.00527	.00078	.00274	.00153	2.9156
Stddev	.00024	.0861	.00054	.00364	.00316	.00598	.00604	.2696
%RSD	44.496	3.5878	24.963	69.110	404.65	218.19	395.76	9.2471
#1	.00056	2.3533	.00186	.00544	.00433	.00862	-.00532	3.0758
#2	.00078	2.3471	.00186	.00883	-.00026	-.00334	.00380	3.0666
#3	.00030	2.4993	.00280	.00155	-.00172	.00295	.00610	2.6043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608043905 Acquired: 8/10/2016 19:07:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.05349	-.00575	.00031	.00117	.02348	.00047
Stddev	.00039	.00200	.00961	.00304	.00078	.00264	.00058
%RSD	617.60	3.7310	167.05	993.44	66.134	11.243	122.54
#1	.00051	.05192	.00330	-.00318	.00150	.02512	.00114
#2	-.00019	.05282	-.00472	.00246	.00029	.02488	.00018
#3	-.00013	.05574	-.01583	.00164	.00173	.02043	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12364.	75463.	3220.9
Stddev	15.	132.	68.7
%RSD	.12379	.17453	2.1333
#1	12372.	75366.	3288.2
#2	12375.	75410.	3223.7
#3	12347.	75613.	3150.9

Approved: August 11, 2016

Sample Name: L1608044001 Acquired: 8/10/2016 19:11:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.01701	-.00158	.00404	.00567	.00001	36.441	.00039
Stddev	.00124	.00270	.00084	.00059	.00045	.00005	.036	.00007
%RSD	122.20	15.867	53.111	14.556	7.8872	592.46	.09794	18.217
#1	-.00033	.01397	-.00214	.00471	.00575	.00007	36.430	.00033
#2	.00210	.01914	-.00199	.00363	.00607	-.00003	36.481	.00047
#3	.00127	.01791	-.00062	.00378	.00519	-.00001	36.412	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00057	.00125	.01758	.47611	-.00226	5.7425	.00046
Stddev	.00019	.00055	.00065	.02186	.03275	.00038	.0737	.00360
%RSD	121.25	96.764	51.454	124.34	6.8796	16.818	1.2836	779.09
#1	-.00025	-.00036	.00059	.01855	.51392	-.00188	5.7494	.00187
#2	-.00027	-.00120	.00129	-.00475	.45674	-.00264	5.6655	.00314
#3	.00006	-.00016	.00188	.03894	.45766	-.00227	5.8124	-.00363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	1.8461	.00101	-.00182	.00017	.00693	.00206	2.4214
Stddev	.00040	.0261	.00051	.00786	.00188	.00383	.00264	.2158
%RSD	268.71	1.4119	50.970	432.46	1076.9	55.283	128.53	8.9104
#1	.00060	1.8248	.00051	.00176	.00183	.00772	.00200	2.5497
#2	-.00007	1.8751	.00154	.00362	-.00187	.01030	.00473	2.5423
#3	-.00009	1.8383	.00098	-.01084	.00057	.00276	-.00056	2.1723
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608044001 Acquired: 8/10/2016 19:11:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.03819**	**.00049**	**-.00360**	**-.00011**	**.00215**	**-.00023**
Stddev	.00015	.00035	.00114	.00344	.00055	.00027	.00063
%RSD	30.298	.91784	232.26	95.477	514.93	12.786	279.87
#1	.00035	.03792	-.00079	-.00007	.00015	.00228	-.00067
#2	.00066	.03859	.00087	-.00379	-.00074	.00233	.00050
#3	.00050	.03806	.00140	-.00694	.00027	.00183	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12376.**	**75909.**	**3276.3**
Stddev	15.	109.	12.5
%RSD	.12247	.14333	.38166
#1	12393.	75834.	3268.7
#2	12363.	75859.	3269.6
#3	12371.	76034.	3290.8

Approved: August 11, 2016

Sample Name: L1608044002 Acquired: 8/10/2016 19:15:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.02421	-.00046	.01028	.00591	-.00003	36.254	.00024
Stddev	.00232	.00498	.00083	.00158	.00079	.00002	.055	.00015
%RSD	831.94	20.578	180.26	15.394	13.409	54.772	.15119	64.158
#1	-.00290	.02676	-.00113	.00901	.00615	-.00004	36.307	.00006
#2	.00053	.01847	-.00072	.01206	.00655	-.00001	36.256	.00030
#3	.00153	.02740	.00047	.00978	.00502	-.00004	36.197	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	-.00025	.00277	.01551	.54586	-.00261	5.7501	.00026
Stddev	.00038	.00069	.00143	.00629	.09399	.00127	.0339	.00340
%RSD	148.77	275.86	51.661	40.567	17.218	48.908	.58965	1304.3
#1	.00009	-.00039	.00346	.02113	.49395	-.00217	5.7771	.00268
#2	-.00065	.00050	.00373	.00871	.65436	-.00404	5.7610	-.00362
#3	-.00020	-.00086	.00113	.01671	.48928	-.00161	5.7120	.00172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	1.8391	.00112	-.00148	.00138	.00352	.00360	2.4032
Stddev	.00008	.0174	.00017	.00338	.00228	.00196	.00487	.2174
%RSD	12.614	.94452	15.411	228.40	166.05	55.606	135.58	9.0475
#1	.00060	1.8413	.00124	.00238	.00330	.00560	.00298	2.5316
#2	.00053	1.8207	.00093	-.00295	.00197	.00326	-.00094	2.5259
#3	.00068	1.8552	.00120	-.00386	-.00115	.00171	.00875	2.1522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608044002 Acquired: 8/10/2016 19:15:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**.03803**	**-.00493**	**-.00186**	**.00086**	**.02232**	**-.00018**
Stddev	.00031	.00039	.00500	.00198	.00080	.00254	.00027
%RSD	74.779	1.0308	101.37	106.47	93.326	11.380	153.75
#1	-.00072	.03778	.00047	.00026	-.00007	.02386	.00011
#2	-.00042	.03784	-.00586	-.00368	.00128	.02370	-.00021
#3	-.00010	.03848	-.00940	-.00217	.00135	.01938	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12402.**	**76057.**	**3281.1**
Stddev	22.	281.	21.1
%RSD	.17708	.36998	.64311
#1	12420.	76224.	3258.6
#2	12408.	76215.	3300.5
#3	12378.	75732.	3284.2

Approved: August 11, 2016

Sample Name: L1608045701 Acquired: 8/10/2016 19:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00092	.19176	.00123	.15796	.36942	.00007	24.239	.00031
Stddev	.00104	.00934	.00060	.00256	.00304	.00007	.130	.00023
%RSD	113.65	4.8699	48.935	1.6207	.82255	92.672	.53823	74.496
#1	-.00011	.18543	.00171	.15827	.37292	.00008	24.344	.00048
#2	-.00210	.18736	.00055	.15525	.36790	.00013	24.093	.00041
#3	-.00055	.20248	.00142	.16035	.36745	.00000	24.279	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.00026	.00315	.23973	2.3717	.00847	8.3352	.01279
Stddev	.00037	.00038	.00019	.02347	.0530	.00351	.1132	.00204
%RSD	46.735	143.37	5.9735	9.7902	2.2329	41.437	1.3582	15.991
#1	.00053	.00043	.00332	.21326	2.3160	.00615	8.3803	.01082
#2	.00064	-.00017	.00317	.24795	2.3779	.01251	8.2064	.01264
#3	.00122	.00053	.00295	.25799	2.4214	.00675	8.4189	.01490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00465	153.12	.00219	.01541	-.00109	.00580	.00824	4.2983
Stddev	.00034	.47	.00136	.00760	.00228	.00264	.00287	.3123
%RSD	7.2860	.30385	62.275	49.327	208.66	45.589	34.823	7.2658
#1	.00476	153.55	.00279	.01204	-.00149	.00295	.01135	4.4893
#2	.00492	153.17	.00316	.02411	-.00316	.00817	.00767	4.4677
#3	.00427	152.63	.00063	.01007	.00136	.00628	.00570	3.9379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608045701 Acquired: 8/10/2016 19:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.81788	.00321	-.00272	.00037	.00614	.00028
Stddev	.00060	.00286	.00343	.00430	.00083	.00065	.00010
%RSD	185.06	.35017	107.00	157.93	226.57	10.624	36.246
#1	.00011	.82102	.00691	-.00739	.00103	.00654	.00025
#2	.00100	.81720	.00013	-.00185	.00064	.00649	.00040
#3	-.00014	.81542	.00257	.00107	-.00057	.00539	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12176.	73443.	3250.0
Stddev	4.	88.	22.3
%RSD	.03562	.12003	.68558
#1	12173.	73362.	3233.9
#2	12173.	73537.	3240.7
#3	12181.	73429.	3275.5

Approved: August 11, 2016

Sample Name: L1608045702 Acquired: 8/10/2016 19:22:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.05639	.00113	.15355	.37362	.00002	22.005	.00016
Stddev	.00121	.00067	.00160	.00148	.00190	.00002	.117	.00037
%RSD	4821.9	1.1819	140.90	.96699	.50766	107.28	.53030	238.21
#1	-.00142	.05669	.00216	.15263	.37462	.00002	22.035	.00003
#2	.00065	.05562	-.00071	.15526	.37481	.00004	22.103	.00057
#3	.00069	.05685	.00195	.15276	.37143	-.00000	21.876	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.00090	.00379	.03992	2.3333	.00819	7.5597	.00766
Stddev	.00015	.00115	.00083	.01925	.0555	.00233	.0746	.00151
%RSD	25.836	128.19	21.985	48.225	2.3776	28.438	.98693	19.782
#1	.00042	-.00041	.00469	.01813	2.3837	.00725	7.5347	.00769
#2	.00063	.00177	.00363	.05464	2.2739	.00648	7.6436	.00613
#3	.00071	.00134	.00305	.04698	2.3424	.01085	7.5008	.00916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00447	153.67	.00208	-.00184	.00214	.00054	.00357	3.9036
Stddev	.00035	.48	.00031	.00448	.00131	.00035	.00554	.2987
%RSD	7.8296	.31114	14.645	243.99	61.239	63.715	155.31	7.6523
#1	.00483	154.17	.00207	.00105	.00066	.00092	-.00054	4.0854
#2	.00413	153.64	.00239	-.00700	.00259	.00024	.00986	4.0666
#3	.00446	153.21	.00178	.00044	.00317	.00047	.00137	3.5588
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608045702 Acquired: 8/10/2016 19:22:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.76683	.00033	-.00164	.00083	.00659	-.00003
Stddev	.00020	.01154	.00655	.00134	.00066	.00073	.00038
%RSD	39.894	1.5047	2010.0	81.881	78.751	11.060	1512.7
#1	.00044	.77967	-.00676	-.00190	.00097	.00696	-.00035
#2	.00071	.76350	.00616	-.00018	.00012	.00707	.00039
#3	.00033	.75733	.00158	-.00282	.00141	.00575	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12200.	73871.	3232.5
Stddev	7.	92.	23.5
%RSD	.06062	.12388	.72801
#1	12207.	73952.	3221.5
#2	12192.	73772.	3216.5
#3	12202.	73888.	3259.6

Approved: August 11, 2016

Sample Name: L1608045703 Acquired: 8/10/2016 19:26:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00131	.10887	.00058	.09884	.15632	-.00004	6.9168	.00010
Stddev	.00110	.00456	.00151	.00045	.00082	.00005	.0250	.00002
%RSD	83.965	4.1879	262.37	.45931	.52274	126.72	.36174	24.780
#1	.00259	.10959	-.00116	.09937	.15685	-.00004	6.8937	.00008
#2	.00071	.10399	.00162	.09860	.15672	.00001	6.9135	.00012
#3	.00065	.11302	.00126	.09856	.15538	-.00008	6.9434	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00120	.01296	.03662	13.657	.00624	5.0720	.00021
Stddev	.00011	.00048	.00092	.02309	.132	.00203	.1691	.00019
%RSD	2477.2	40.178	7.0739	63.050	.96801	32.589	3.3329	91.421
#1	-.00011	.00092	.01206	.05029	13.700	.00405	5.2384	-.00001
#2	.00002	.00092	.01389	.04961	13.508	.00807	4.9004	.00032
#3	.00011	.00175	.01293	.00996	13.762	.00660	5.0772	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00265	102.43	.00125	.00502	.00109	.00361	.00195	3.2565
Stddev	.00053	.08	.00059	.00132	.00097	.00346	.00155	.2719
%RSD	19.851	.07822	47.155	26.285	88.548	96.014	79.692	8.3483
#1	.00319	102.45	.00162	.00351	.00179	-.00038	.00374	3.4247
#2	.00262	102.49	.00156	.00598	-.00001	.00586	.00108	3.4019
#3	.00214	102.34	.00057	.00556	.00150	.00535	.00102	2.9428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608045703 Acquired: 8/10/2016 19:26:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.37480**	**.00437**	**-.00138**	**.00116**	**.00482**	**-.00025**
Stddev	.00054	.00037	.00366	.00314	.00077	.00049	.00033
%RSD	129.03	.09781	83.718	228.34	66.247	10.181	129.60
#1	.00033	.37441	.00225	.00050	.00027	.00504	-.00033
#2	-.00007	.37486	.00859	.00038	.00163	.00516	.00011
#3	.00099	.37513	.00226	-.00500	.00158	.00426	-.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12280.**	**74331.**	**3249.6**
Stddev	22.	231.	1.5
%RSD	.17658	.31143	.04512
#1	12294.	74066.	3248.4
#2	12292.	74497.	3251.2
#3	12255.	74429.	3249.0

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 19:30:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .44872	F 11.200	F .45806	F .56137	F 1.1488	F .05508	F 11.393
Stddev	.00020	.007	.00964	.00102	.0056	.00011	.105
%RSD	.04438	.06325	2.1049	.18099	.49049	.19957	.92002
#1	.44849	11.208	.46684	.56194	1.1433	.05506	11.290
#2	.44883	11.194	.45961	.56197	1.1546	.05499	11.500
#3	.44884	11.197	.44774	.56019	1.1484	.05520	11.390
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.40000	10.000	.40000	.50000	1.0000	.05000	10.000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .05660	F .22725	F .55856	F .56706	F 4.5423	54.648	F 1.1316
Stddev	.00130	.00685	.00397	.01432	.0879	.408	.0064
%RSD	2.3031	3.0126	.71044	2.5249	1.9352	.74621	.56290
#1	.05725	.23186	.55520	.57679	4.4490	54.177	1.1389
#2	.05746	.23051	.55755	.57377	4.6235	54.876	1.1286
#3	.05510	.21939	.56294	.55062	4.5544	54.890	1.1272
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000		1.0000
Range	10.000%	10.000%	10.000%	10.000%	10.000%		10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 11.385	F .57384	F 1.1245	F 55.017	F .56431	F 11.339	F .56465
Stddev	.192	.00355	.0334	.326	.01497	.210	.00875
%RSD	1.6839	.61946	2.9669	.59273	2.6533	1.8521	1.5489
#1	11.167	.57088	1.1389	54.642	.57258	11.470	.57107
#2	11.460	.57778	1.1482	55.233	.57333	11.451	.56818
#3	11.528	.57284	1.0863	55.177	.54703	11.097	.55469
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 19:30:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.3512	F .44901	F 5.6080	F 1.1296	F 1.1513	F 1.1004	F .56570
Stddev	.0303	.00576	.0818	.0353	.0052	.0180	.00250
%RSD	2.2459	1.2822	1.4578	3.1266	.44768	1.6398	.44200
#1	1.3706	.44729	5.6339	1.1523	1.1455	1.0798	.56488
#2	1.3668	.45543	5.6737	1.1476	1.1552	1.1079	.56851
#3	1.3163	.44430	5.5164	1.0889	1.1532	1.1134	.56372
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0990	F 1.1256	F 1.1370
Stddev	.0010	.0288	.0080
%RSD	.09243	2.5590	.70722
#1	1.0979	1.1426	1.1280
#2	1.0999	1.1418	1.1396
#3	1.0992	1.0923	1.1435
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11705.	70487.	3055.7
Stddev	16.	145.	24.4
%RSD	.13495	.20580	.79784
#1	11712.	70632.	3083.7
#2	11717.	70342.	3044.3
#3	11687.	70487.	3039.1

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 19:34:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	-.00803	-.00063	.00155	.00050	.00008	-.02470	.00014
Stddev	.00024	.00354	.00064	.00221	.00043	.00005	.02473	.00019
%RSD	39.739	44.107	101.97	142.88	87.065	58.142	100.15	132.94
#1	.00083	-.01211	-.00012	.00133	.00094	.00014	-.04306	.00013
#2	.00035	-.00628	-.00135	.00386	.00008	.00006	-.03446	.00034
#3	.00063	-.00570	-.00043	-.00055	.00047	.00005	.00343	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	-.00008	.00046	.00490	.12481	-.00510	-.00744	.00017
Stddev	.00004	.00117	.00061	.01827	.06554	.00104	.09691	.00171
%RSD	185.95	1387.0	133.27	373.20	52.517	20.428	1302.1	989.92
#1	.00003	.00018	-.00020	-.01087	.20005	-.00391	-.05894	-.00175
#2	.00005	-.00136	.00100	.00063	.08013	-.00582	.10434	.00074
#3	-.00002	.00093	.00057	.02492	.09424	-.00559	-.06773	.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.01758	.00118	.00115	.00047	.00009	.00398	.00042
Stddev	.00028	.00866	.00036	.00179	.00049	.00480	.00345	.00283
%RSD	80.893	49.251	30.228	156.21	103.88	5301.4	86.569	676.28
#1	.00031	.01134	.00149	.00123	.00014	.00449	.00769	.00255
#2	.00008	.01394	.00079	.00290	.00103	.00081	.00087	.00150
#3	.00063	.02747	.00126	-.00068	.00024	-.00502	.00340	-.00279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 19:34:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**-.00015**	**-.00223**	**-.00226**	**.00088**	**-.00034**	**-.00066**
Stddev	.00071	.00032	.00319	.00115	.00042	.00009	.00024
%RSD	123.53	217.96	143.17	51.116	47.613	25.920	36.913
#1	.00025	-.00006	-.00012	-.00353	.00093	-.00038	-.00093
#2	-.00101	.00012	-.00066	-.00127	.00127	-.00040	-.00045
#3	-.00097	-.00050	-.00590	-.00197	.00044	-.00024	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12267.**	**73398.**	**3158.8**
Stddev	72.	213.	3.5
%RSD	.58473	.28954	.11069
#1	12185.	73432.	3162.1
#2	12294.	73170.	3159.1
#3	12321.	73591.	3155.1

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 19:38:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00865**	**.16987**	**.00824**	**.08510**	**.00925**	**.00164**	**.41548**	**.00109**
Stddev	.00226	.00726	.00278	.00117	.00040	.00007	.01084	.00018
%RSD	26.125	4.2732	33.778	1.3778	4.3090	4.0120	2.6094	16.528
#1	.00735	.17288	.00555	.08532	.00949	.00156	.42770	.00113
#2	.00735	.17514	.01111	.08615	.00948	.00166	.41170	.00124
#3	.01126	.16159	.00806	.08384	.00879	.00169	.40703	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00401**	**.00328**	**.00487**	**.07021**	**1.0550**	**.08580**	**.42177**	**.01009**
Stddev	.00010	.00038	.00075	.03238	.1268	.00138	.04300	.00152
%RSD	2.5407	11.707	15.418	46.118	12.020	1.6040	10.194	15.034
#1	.00404	.00372	.00400	.03476	1.1441	.08467	.39786	.00886
#2	.00410	.00303	.00529	.07762	.90980	.08734	.47141	.00963
#3	.00390	.00308	.00531	.09823	1.1111	.08540	.39605	.01178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00850**	**.43180**	**.01736**	**.82207**	**.00977**	**.08271**	**.02077**	**.81412**
Stddev	.00024	.01806	.00163	.04852	.00071	.00257	.00649	.04139
%RSD	2.8290	4.1835	9.3931	5.9023	7.2342	3.1063	31.239	5.0836
#1	.00853	.43256	.01696	.84908	.01028	.08426	.02446	.84001
#2	.00873	.44948	.01916	.85107	.01007	.08413	.02458	.83597
#3	.00825	.41337	.01598	.76605	.00897	.07975	.01328	.76639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 19:38:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41574**	**.04364**	**.03185**	**.15506**	**.00845**	**.01789**	**.04263**
Stddev	.02957	.00078	.01030	.00820	.00073	.00108	.00022
%RSD	7.1137	1.7924	32.349	5.2885	8.6347	6.0397	.51305
#1	.43455	.04414	.04280	.15980	.00877	.01838	.04288
#2	.43102	.04274	.02235	.15978	.00762	.01863	.04250
#3	.38165	.04405	.03040	.14559	.00897	.01665	.04251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12392.**	**74834.**	**3202.3**
Stddev	36.	168.	15.5
%RSD	.29130	.22489	.48517
#1	12373.	75029.	3186.6
#2	12369.	74735.	3202.7
#3	12433.	74739.	3217.7

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 19:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02182	.42215	.01861	.20627	.02082	.00414	1.1027	.00225
Stddev	.00004	.00552	.00286	.00126	.00049	.00008	.0425	.00032
%RSD	.18911	1.3071	15.364	.61180	2.3510	2.0242	3.8589	14.015
#1	.02186	.41579	.02136	.20769	.02031	.00405	1.0535	.00249
#2	.02182	.42501	.01883	.20529	.02129	.00417	1.1285	.00238
#3	.02178	.42565	.01565	.20582	.02085	.00421	1.1260	.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01020	.00999	.01130	.21716	2.2739	.20898	1.0650	.02080
Stddev	.00110	.00044	.00148	.03971	.0233	.00445	.0199	.00274
%RSD	10.819	4.4447	13.049	18.288	1.0245	2.1307	1.8680	13.154
#1	.01013	.00955	.01294	.21248	2.2938	.20746	1.0745	.02145
#2	.01133	.01044	.01090	.17999	2.2798	.21399	1.0422	.02315
#3	.00913	.00998	.01007	.25900	2.2483	.20548	1.0785	.01779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01996	1.0597	.04185	2.0216	.02002	.20586	.04332	1.9947
Stddev	.00166	.0331	.00353	.1366	.00404	.01208	.00435	.1248
%RSD	8.3188	3.1250	8.4353	6.7554	20.194	5.8684	10.039	6.2556
#1	.02097	1.0282	.04346	2.1085	.01599	.21174	.04312	2.0713
#2	.02087	1.0942	.04430	2.0922	.02407	.21387	.04777	2.0622
#3	.01804	1.0568	.03781	1.8642	.01998	.19196	.03908	1.8507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 19:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0180**	**.10810**	**.06734**	**.38690**	**.02130**	**.04236**	**.10591**
Stddev	.0911	.00040	.00458	.02223	.00056	.00326	.00037
%RSD	8.9532	.36571	6.8022	5.7457	2.6336	7.7069	.35011
#1	1.0727	.10833	.06408	.40365	.02131	.04434	.10596
#2	1.0686	.10832	.07257	.39538	.02073	.04415	.10626
#3	.91281	.10764	.06535	.36168	.02185	.03859	.10552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12448.**	**74850.**	**3217.8**
Stddev	3.	197.	4.6
%RSD	.02507	.26256	.14383
#1	12451.	74677.	3213.5
#2	12449.	75064.	3217.0
#3	12445.	74810.	3222.7

Approved: August 11, 2016

Sample Name: L1608013301 Acquired: 8/10/2016 19:45:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	115.84	.01180	.60107	.93605	.00021	148.48
Stddev	.00124	.18	.00191	.00443	.00141	.00002	.22
%RSD	3362.3	.15149	16.165	.73772	.15103	9.0561	.14627
#1	.00132	116.04	.01273	.60007	.93731	.00020	148.43
#2	-.00116	115.80	.01307	.59721	.93452	.00023	148.30
#3	-.00005	115.70	.00961	.60591	.93633	.00020	148.72
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04587	14.408	.32949	.77356	16.302	16.007	7.9322
Stddev	.00328	1.065	.00109	.05854	.105	.116	.0200
%RSD	7.1559	7.3899	.32999	7.5672	.64153	.72720	.25230
#1	.04928	15.465	.33073	.83192	16.344	16.093	7.9511
#2	.04559	14.423	.32869	.77392	16.183	15.874	7.9112
#3	.04273	13.335	.32906	.71484	16.379	16.052	7.9341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	33.125	.48554	.04028	F 946.22	37.715	136.62	.04905
Stddev	.157	.00394	.00269	3.28	2.773	8.89	.00404
%RSD	.47403	.81134	6.6867	.34614	7.3535	6.5035	8.2402
#1	33.277	.48449	.04319	944.55	40.480	145.76	.05340
#2	32.963	.48223	.03977	950.00	37.733	136.09	.04835
#3	33.135	.48990	.03788	944.12	34.933	128.02	.04541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 11, 2016

Sample Name: L1608013301 Acquired: 8/10/2016 19:45:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00773	.01152	5.5690	.00702	1.2059	.01006	.01433
Stddev	.00115	.00236	.3029	.00128	.0015	.00524	.00141
%RSD	14.886	20.513	5.4390	18.223	.12341	52.107	9.8190
#1	.00795	.01412	5.8943	.00759	1.2062	.01589	.01596
#2	.00875	.00949	5.5175	.00793	1.2043	.00853	.01346
#3	.00648	.01095	5.2951	.00556	1.2072	.00575	.01358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00805	2.3376	.00057
Stddev	.00060	.1698	.00039
%RSD	7.4072	7.2634	68.419
#1	.00741	2.5064	.00019
#2	.00817	2.3395	.00055
#3	.00858	2.1668	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11591.	67479.	3089.6
Stddev	291.	109.	11.1
%RSD	2.5118	.16174	.36056
#1	11397.	67375.	3091.2
#2	11926.	67469.	3099.9
#3	11451.	67593.	3077.8

Approved: August 11, 2016

Sample Name: L1608013302 Acquired: 8/10/2016 19:49:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00243	183.37	.02060	.84962	1.4924	.00032	210.97
Stddev	.00291	.32	.00316	.00543	.0038	.00007	.80
%RSD	119.81	.17179	15.360	.63944	.25393	21.262	.37697
#1	.00408	183.07	.02177	.84337	1.4892	.00039	210.11
#2	.00414	183.36	.02301	.85226	1.4966	.00026	211.69
#3	-.00093	183.70	.01701	.85323	1.4914	.00030	211.10
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07219	23.086	.51969	1.2585	25.368	22.696	7.3883
Stddev	.00523	1.875	.00108	.1061	.206	.135	.0228
%RSD	7.2397	8.1210	.20872	8.4344	.81101	.59454	.30911
#1	.07526	24.270	.51974	1.3262	25.408	22.541	7.3683
#2	.07516	24.064	.52075	1.3131	25.550	22.787	7.4132
#3	.06616	20.925	.51858	1.1361	25.145	22.760	7.3833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	46.621	.76057	.05760	F 851.18	60.494	F 215.20	.08474
Stddev	.172	.00360	.00433	8.68	4.873	15.63	.01079
%RSD	.36810	.47291	7.5088	1.0198	8.0562	7.2632	12.729
#1	46.469	.75974	.06000	842.75	63.598	225.06	.09206
#2	46.807	.75746	.06021	850.70	63.007	223.36	.08982
#3	46.587	.76451	.05261	860.09	54.877	197.18	.07235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Pass
High Limit				270.00		180.00	
Low Limit				-.50000		-.10000	

Approved: August 11, 2016

Sample Name: L1608013302 Acquired: 8/10/2016 19:49:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00655	.01425	7.5799	.00978	1.7852	.01604	.02439
Stddev	.00811	.00532	.4861	.00094	.0047	.00396	.00073
%RSD	123.84	37.319	6.4126	9.5738	.26496	24.675	2.9953
#1	.00275	.01784	7.8858	.01064	1.7808	.01530	.02389
#2	.01586	.01677	7.8344	.00992	1.7902	.01250	.02523
#3	.00104	.00814	7.0194	.00878	1.7847	.02031	.02406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01305	3.8433	.00045
Stddev	.00105	.3084	.00016
%RSD	8.0303	8.0234	36.881
#1	.01196	4.0415	.00043
#2	.01314	4.0004	.00062
#3	.01405	3.4880	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11538.	68865.	3159.3
Stddev	38.	102.	31.6
%RSD	.33117	.14799	.99960
#1	11499.	68767.	3193.8
#2	11542.	68857.	3152.2
#3	11575.	68970.	3131.9

Approved: August 11, 2016

Sample Name: L1608013303 Acquired: 8/10/2016 19:53:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00145	228.04	.02598	1.0321	1.8783	.00037	260.15
Stddev	.00184	.45	.00284	.0109	.0037	.00006	.66
%RSD	126.90	.19668	10.932	1.0540	.19949	15.706	.25240
#1	-.00012	227.59	.02895	1.0265	1.8821	.00034	260.43
#2	.00100	228.05	.02572	1.0252	1.8780	.00043	260.62
#3	.00348	228.48	.02328	1.0447	1.8747	.00033	259.40
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08818	28.392	.64828	1.5345	31.523	27.042	8.1829
Stddev	.00736	2.548	.00324	.1381	.182	.114	.0173
%RSD	8.3514	8.9749	.49934	8.9986	.57815	.42167	.21078
#1	.09329	30.083	.64629	1.6234	31.676	27.114	8.1908
#2	.09151	29.633	.64653	1.6046	31.571	27.101	8.1947
#3	.07974	25.461	.65201	1.3754	31.321	26.910	8.1631
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	56.778	.95317	.06692	F 895.81	73.782	F 263.94	.10017
Stddev	.156	.00382	.00569	11.67	6.485	21.27	.01941
%RSD	.27443	.40042	8.5038	1.3023	8.7898	8.0571	19.378
#1	56.701	.95084	.07067	909.26	78.081	277.54	.11306
#2	56.958	.95757	.06973	889.80	76.943	274.84	.10960
#3	56.677	.95109	.06037	888.38	66.322	239.43	.07784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Pass
High Limit				270.00		180.00	
Low Limit				-.50000		-.10000	

Approved: August 11, 2016

Sample Name: L1608013303 Acquired: 8/10/2016 19:53:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00895**	**.01885**	**9.4731**	**.01240**	**2.2306**	**.02039**	**.02746**
Stddev	.00517	.00519	.7074	.00064	.0036	.00531	.00333
%RSD	57.778	27.504	7.4676	5.1886	.16052	26.056	12.107
#1	.00974	.01300	9.9223	.01302	2.2338	.02263	.02594
#2	.01369	.02286	9.8393	.01245	2.2313	.02423	.03128
#3	.00343	.02070	8.6576	.01174	2.2267	.01433	.02517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01580**	**4.6312**	**-.00011**
Stddev	.00015	.4106	.00055
%RSD	.95345	8.8654	475.31
#1	.01563	4.9059	.00020
#2	.01592	4.8285	.00020
#3	.01584	4.1592	-.00074
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11561.**	**69241.**	**3153.5**
Stddev	18.	58.	5.2
%RSD	.15249	.08340	.16474
#1	11541.	69178.	3148.5
#2	11565.	69291.	3158.9
#3	11576.	69254.	3153.1

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 19:57:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42516**	**10.732**	**.43942**	**.53015**	**1.0864**	**.05250**	**10.905**
Stddev	.00250	.020	.00922	.00346	.0128	.00023	.133
%RSD	.58727	.19094	2.0978	.65269	1.1776	.43169	1.2176
#1	.42258	10.754	.44342	.52702	1.0999	.05224	11.052
#2	.42533	10.715	.44596	.52956	1.0848	.05267	10.870
#3	.42757	10.726	.42888	.53386	1.0745	.05259	10.793
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05410**	F **.22112**	**.52662**	**.54207**	**4.3792**	**52.729**	**1.0952**
Stddev	.00156	.00984	.00209	.01668	.0727	.511	.0090
%RSD	2.8896	4.4509	.39694	3.0764	1.6592	.96994	.81874
#1	.05495	.22803	.52673	.55101	4.3745	53.192	1.1050
#2	.05506	.22548	.52448	.55236	4.4541	52.814	1.0931
#3	.05230	.20985	.52866	.52283	4.3090	52.180	1.0875
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.20000					
Range		10.000%					

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **11.134**	**.54800**	**1.0734**	**53.049**	**.54648**	**10.822**	**.54209**
Stddev	.088	.01043	.0297	.631	.02286	.301	.01175
%RSD	.79149	1.9038	2.7706	1.1898	4.1829	2.7818	2.1679
#1	11.113	.55829	1.0881	53.627	.56289	10.997	.54536
#2	11.058	.54828	1.0929	53.146	.55617	10.994	.55186
#3	11.230	.53743	1.0392	52.375	.52037	10.474	.52905
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	10.000						
Range	10.000%						

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 19:57:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2898**	**.43321**	**5.3497**	**1.0842**	**1.0864**	**1.0490**	**.54421**
Stddev	.0336	.00923	.1151	.0433	.0122	.0081	.00611
%RSD	2.6077	2.1302	2.1509	3.9948	1.1189	.77578	1.1224
#1	1.2990	.44117	5.3946	1.1051	1.0997	1.0546	.54709
#2	1.3179	.43536	5.4355	1.1130	1.0836	1.0528	.54835
#3	1.2525	.42309	5.2189	1.0344	1.0759	1.0397	.53720
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0438**	**1.0748**	**1.0989**
Stddev	.0042	.0331	.0187
%RSD	.39742	3.0747	1.7023
#1	1.0417	1.0906	1.1190
#2	1.0411	1.0971	1.0956
#3	1.0486	1.0369	1.0820
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12045.**	**73303.**	**3095.8**
Stddev	97.	173.	61.9
%RSD	.80874	.23607	1.9980
#1	12156.	73484.	3038.7
#2	11976.	73139.	3087.2
#3	12002.	73286.	3161.5

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 20:01:06 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00071	.00537	-.00144	.00464	.00156	.00002	.00173	.00017
Stddev	.00325	.00474	.00240	.00095	.00063	.00006	.00427	.00012
%RSD	456.73	88.316	167.04	20.503	40.220	331.03	246.54	71.262
#1	-.00041	.00155	-.00047	.00370	.00224	.00002	.00467	.00018
#2	.00238	.01068	.00033	.00560	.00101	.00008	.00370	.00028
#3	-.00411	.00388	-.00417	.00463	.00143	-.00004	-.00317	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	-.00047	-.00067	.02902	.31106	-.00212	-.07643	-.00025
Stddev	.00027	.00109	.00085	.01139	.06422	.00341	.04858	.00117
%RSD	539.87	232.32	126.72	39.272	20.645	160.98	63.559	470.53
#1	-.00007	.00043	.00027	.04177	.34165	-.00018	-.04935	.00066
#2	.00036	-.00167	-.00140	.02544	.23726	-.00606	-.13251	.00016
#3	-.00014	-.00016	-.00089	.01984	.35425	-.00012	-.04743	-.00156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.09012	.00172	.00558	.00204	.00027	.00194	-.00110
Stddev	.00044	.03200	.00138	.00432	.00304	.00099	.00317	.00347
%RSD	378.87	35.502	79.931	77.291	149.07	367.36	163.82	314.18
#1	-.00017	.11058	.00283	.01039	.00268	-.00084	.00556	.00169
#2	.00062	.10653	.00215	.00204	-.00127	.00105	.00058	-.00001
#3	-.00011	.05325	.00018	.00432	.00470	.00059	-.00034	-.00499
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 20:01:06 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**-.00002**	**.00962**	**-.00055**	**.00064**	**-.00014**	**-.00055**
Stddev	.00069	.00035	.00097	.00246	.00010	.00022	.00029
%RSD	443.23	1466.0	10.036	447.87	15.780	163.37	52.973
#1	.00052	-.00018	.01072	-.00299	.00074	.00006	-.00043
#2	-.00013	-.00027	.00921	-.00059	.00065	-.00038	-.00089
#3	-.00086	.00038	.00892	.00194	.00054	-.00009	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12196.**	**73384.**	**3131.9**
Stddev	29.	181.	13.2
%RSD	.24058	.24611	.42152
#1	12185.	73590.	3122.1
#2	12174.	73308.	3146.9
#3	12229.	73253.	3126.7

Approved: August 11, 2016

2.3 General Chemistry Data

2.3.1 Method 9056

2.3.1.1 Summary Data

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	46WW02-080416	**Prep Method:**	9056	**Prep Date:**	08/05/2016 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/25/2016 14:27
Workgroup #:	WG579268	**Analyst:**	AED	**Run Date:**	08/05/2016 19:01
Collect Date:	08/04/2016 08:55	**Dilution:**	1	**File ID:**	I1_080516-21
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	17.8		0.200	0.200	0.100
Nitrate	14797-55-8	0.200	U	0.600	0.200	0.100
Nitrite	14797-65-0	0.200	U	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	46WW02-080416	**Prep Method:**	9056	**Prep Date:**	08/05/2016 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/25/2016 14:27
Workgroup #:	WG579268	**Analyst:**	AED	**Run Date:**	08/05/2016 19:19
Collect Date:	08/04/2016 08:55	**Dilution:**	3	**File ID:**	I1_080516-22
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfate	14808-79-8	158		3.00	3.00	1.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(- c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 062516 ICAL IC1.SEQ

Analyst1: AED Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 160319254

Eluent ID#: RGT37148

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups:

Internal STD: NA Surrogate STD: NA Calibration STD WG574118 25-JUN-2016

CCV STD: STD74524 LCS STD: STD74525 MS/MSD STD: STD74525

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_062516-01	ELUENT	1	1		06/25/16 12:23
2	I1_062516-02	DI WATER	1	1		06/25/16 12:41
3	I1_062516-03	WG574118-01 STD \#1	1	1		06/25/16 12:59
4	I1_062516-04	WG574118-02 STD \#2	1	1		06/25/16 13:16
5	I1_062516-05	WG574118-03 STD \#3	1	1		06/25/16 13:34
6	I1_062516-06	WG574118-04 STD \#4	1	1		06/25/16 13:52
7	I1_062516-07	WG574118-05 STD \#5	1	1		06/25/16 14:10
8	I1_062516-08	WG574118-06 STD \#6	1	1		06/25/16 14:27
9	I1_062516-09	WG574118-07 SSCV	1	1		06/25/16 14:45
10	I1_062516-10	LCR LEVEL 6	1	1		06/25/16 15:03
11	I1_062516-11	LCR LEVEL 2	1	1		06/25/16 15:20
12	I1_062516-12	LCR LEVEL 0	1	1		06/25/16 15:38
13	I1_062516-13	WG574121-01 ANION CCV	1	1		06/25/16 15:56
14	I1_062516-14	WG574121-02 ANION CCB	1	1		06/25/16 16:13
15	I1_062516-15	L16051325-01 MDL1 STD1 TAG03	1	1		06/25/16 16:31
16	I1_062516-16	L16051325-01 MDL1 STD1/2 TAG04	1	1		06/25/16 16:49
17	I1_062516-17	L16051325-02 MDL2 STD1 TAG03	1	1		06/25/16 17:07
18	I1_062516-18	L16051325-02 MDL2 STD1/2 TAG04	1	1		06/25/16 17:24
19	I1_062516-19	L16051325-03 MDL3 STD1 TAG03	1	1		06/25/16 17:42
20	I1_062516-20	L16051325-03 MDL3 STD1/2 TAG04	1	1		06/25/16 18:00
21	I1_062516-21	WG574219-01 BLANK	1	1		06/25/16 18:17
22	I1_062516-22	WG574121-03 ANION CCV	1	1		06/25/16 18:35
23	I1_062516-23	WG574121-04 ANION CCB	1	1		06/25/16 18:53
24	I1_062516-24	END	1	1		06/25/16 19:11

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 29-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 080516 IC1.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 160319254
Eluent ID#: RGT37502
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups:

Internal STD: NA Surrogate STD: NA Calibration STD WG574118 25-JUN-2016
CCV STD: STD74524 LCS STD: STD74525 MS/MSD STD: STD74525

Comments: L16080170: Diluted due to high screen results for chloride, which exceeded the upper limit of the calibration range.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_080516-01	ELUENT	1	1		08/05/16 13:07
2	I1_080516-02	DI WATER	1	1		08/05/16 13:25
3	I1_080516-03	WG579270-01 ANION CCV	1	1		08/05/16 13:42
4	I1_080516-04	WG579270-02 ANION CCB	1	1		08/05/16 14:00
5	I1_080516-05	WG579268-01 ANION BLANK	1	1		08/05/16 14:18
6	I1_080516-06	WG579268-02 ANION LCS	1	1		08/05/16 14:35
7	I1_080516-07	L16080321-31 NO3 SO4 CL	1	1		08/05/16 14:53
8	I1_080516-08	L16080321-32 NO3 SO4 CL	1	1		08/05/16 15:11
9	I1_080516-09	L16080321-19 NO3 SO4 CL	1	1		08/05/16 15:29
10	I1_080516-10	L16080321-29 NO3 SO4 CL	1	1		08/05/16 15:46
11	I1_080516-11	L16080321-17 NO3 SO4 CL	1	1		08/05/16 16:04
12	I1_080516-12	L16080321-21 NO3 SO4 CL	1	1		08/05/16 16:22
13	I1_080516-13	L16080321-15 NO3 SO4 CL	1	1		08/05/16 16:39
14	I1_080516-14	L16080321-23 NO3 SO4 CL REF	1	1		08/05/16 16:57
15	I1_080516-15	WG579270-03 ANION CCV	1	1		08/05/16 17:15
16	I1_080516-16	WG579270-04 ANION CCB	1	1		08/05/16 17:33
17	I1_080516-17	WG579268-04 DUP	1	1		08/05/16 17:50
18	I1_080516-18	L16080321-25 MS	1	1		08/05/16 18:08
19	I1_080516-19	L16080321-27 MSD	1	1		08/05/16 18:26
20	I1_080516-20	L16080321-33 NO3 SO4 CL	1	1		08/05/16 18:43
21	I1_080516-21	L16080317-04 NO2 NO3 CL SO4	1	1		08/05/16 19:01
22	I1_080516-22	L16080317-04 NO2 NO3 CL SO4 3X	1	3		08/05/16 19:19
23	I1_080516-23	WG579270-05 ANION CCV	1	1		08/05/16 19:37
24	I1_080516-24	WG579270-06 ANION CCB	1	1		08/05/16 19:54
25	I1_080516-25	WG579269-01 ANION BLANK	1	1		08/05/16 20:12
26	I1_080516-26	WG579269-02 ANION LCS	1	1		08/05/16 20:30
27	I1_080516-27	L16080159-09 NO3 (SO4) CL 5X	1	5		08/05/16 20:47
28	I1_080516-28	L16080170-01 CL SO4 500X	2	500		08/05/16 21:05
29	I1_080516-29	L16080170-02 CL SO4 500X	2	500		08/05/16 21:23
30	I1_080516-30	L16080170-03 CL SO4 500X	2	500		08/05/16 21:40
31	I1_080516-31	L16080170-04 CL SO4 500X	2	500		08/05/16 21:58
32	I1_080516-32	L16080170-05 CL SO4 50X	2	50		08/05/16 22:16
33	I1_080516-33	L16080188-01 CL (BR) REF	1	1		08/05/16 22:34

Page: 1 Approved: 08-AUG-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 080516 IC1.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 160319254
Eluent ID#: RGT37502
Workgroups: Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Internal STD: NA Surrogate STD: NA WG574118 25-JUN-2016
CCV STD: STD74524 LCS STD: STD74525 STD74525

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I1_080516-34	WG579269-04 DUP	1	1		08/05/16 22:51
35	I1_080516-35	WG579270-07 ANION CCV	1	1		08/05/16 23:09
36	I1_080516-36	WG579270-08 ANION CCB	1	1		08/05/16 23:27
37	I1_080516-37	WG579269-05 MS	1	1		08/05/16 23:44
38	I1_080516-38	WG579269-06 MSD	1	1		08/06/16 00:02
39	I1_080516-39	L16080212-01 CL SO4	1	1		08/06/16 00:20
40	I1_080516-40	L16080212-02 CL SO4	1	1		08/06/16 00:38
41	I1_080516-41	L16080212-03 CL SO4 5X	1	5		08/06/16 00:55
42	I1_080516-42	L16080212-04 CL SO4	1	1		08/06/16 01:13
43	I1_080516-43	L16080278-01 CL SO4 10X	1	10		08/06/16 01:31
44	I1_080516-44	L16080278-02 CL SO4 2X	1	2		08/06/16 01:48
45	I1_080516-45	L16080290-01 CL SO4 300X	2	300		08/06/16 02:06
46	I1_080516-46	L16080290-02 CL SO4 300X	2	300		08/06/16 02:24
47	I1_080516-47	WG579270-09 ANION CCV	1	1		08/06/16 02:42
48	I1_080516-48	WG579270-10 ANION CCB	1	1		08/06/16 02:59
49	I1_080516-49	L16080293-04 CL SO4	2	1		08/06/16 03:17
50	I1_080516-50	L16080293-05 CL SO4	2	1		08/06/16 03:35
51	I1_080516-51	L16080086-01 CL SO4 5000X	1	5000		08/06/16 03:52
52	I1_080516-52	WG579270-11 ANION CCV	1	1		08/06/16 04:10
53	I1_080516-53	WG579270-12 ANION CCB	1	1		08/06/16 04:28
54	I1_080516-54	END	1	1		08/06/16 04:45

Comments

Seq.	Rerun	Dil.	Reason	Analytes
11	X	2	Over Calibration Range	CL
	L16080321-17 NO3 SO4 CL			
14	X	2	Over Calibration Range	CL
	L16080321-23 NO3 SO4 CL REF: Client specified MS/MSD exceed the upper limit of the calibration range for chloride.			
21	X	3	Over Calibration Range	SO4
	L16080317-04 NO2 NO3 CL SO4			
27	X	5	Over Calibration Range	SO4
	L16080159-09 NO3 (SO4) CL 5X: Diluted due to initial analysis of sulfate exceeding the upper limit of the calibration range. This is NR due to inconsistent data and sulfate exceeding upper limit of calibration range.			
41				
	L16080212-03 CL SO4 5X: Diluted due to a high screen result for chloride, which exceeded the upper limit of the calibration range.			
43				

Page: 2 Approved: 08-AUG-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 080516 IC1.SEQ

Analyst1: AED Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 160319254

Eluent ID#: RGT37502

Workgroups: Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Internal STD: NA Surrogate STD: NA WG574118 25-JUN-2016

CCV STD: STD74524 LCS STD: STD74525 STD74525

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L16080278-01 CL SO4 10X: Diluted due to a high screen result for chloride, which exceeded the upper limit of the calibration range.			
44				
	L16080278-02 CL SO4 2X: Diluted due to a high screen result for chloride, which exceeded the upper limit of the calibration range.			
45				
	L16080290-01 CL SO4 300X: Diluted due to a high screen result for chloride, which exceeded the upper limit of the calibration range.			
46				
	L16080290-02 CL SO4 300X: Diluted due to a high screen result for chloride, which exceeded the upper limit of the calibration range.			
51				
	L16080086-01 CL SO4 5000X: Diluted due to a high screen result for chloride, which exceeded the upper limit of the calibration range.			

Page: 3 Approved: 08-AUG-16

Microbac Laboratories Inc.

Data Checklist

Date: 25-JUN-2016
Analyst: AED
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 75927
Analytical Workgroups: WG574118 L16051325

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer:
26-JUN-2016

Secondary Reviewer:
29-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 13:24:29

Microbac Laboratories Inc.

Data Checklist

Date: 05-AUG-2016
Analyst: AED
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 76764
Analytical Workgroups: L16080317, 0321, 0086, 0170, 0188, 0212, 0278, 0290, 0293

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
08-AUG-2016

Secondary Reviewer:
08-AUG-2016

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-08-2016 16:52:19

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG579268

Login Number: L16080317

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW02-080416	04	08/04/16					08/05/2016	1.1	2		08/05/16	1.4	2	
46WW02-080416	04	08/04/16					08/05/2016	1.1	2		08/05/16	1.4	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4887636
Report generated 08/09/2016 13:34

METHOD BLANK SUMMARY

Login Number: L16080317
Blank File ID: I1_080516-05
Prep Date: 08/05/16 12:00
Analyzed Date: 08/05/16 14:18
Analyst: AED

Work Group: WG579268
Blank Sample ID: WG579268-01
Instrument ID: IC1
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG579268-02	I1_080516-06	08/05/16 14:35	01
DUP	WG579268-04	I1_080516-17	08/05/16 17:50	01
46WW02-080416	L16080317-04	I1_080516-21	08/05/16 19:01	01
46WW02-080416	L16080317-04	I1_080516-22	08/05/16 19:19	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4887637
Report generated 08/09/2016 13:34

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080317 Prep Date: 08/05/16 12:00 Sample ID: WG579268-01
Instrument ID: IC1 Run Date: 08/05/16 14:18 Prep Method: 9056
File ID: I1 080516-05 Analyst: AED Method: 9056
Workgroup (AAB#): WG579268 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1-25-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.200	0.100	1	U
Nitrate	0.100	0.600	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	1.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4887638
09-AUG-2016 13:34

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080317 Run Date: 08/05/2016 Sample ID: WG579268-02
Instrument ID: IC1 Run Time: 14:35 Prep Method: 9056
File ID: I1 080516-06 Analyst: AED Method: 9056
Workgroup (AAB#): WG579268 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD77045 Cal ID: IC1-25-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	8.12	102	90 - 110	
Nitrate	5.42	5.57	103	90 - 110	
Nitrite	4.87	5.01	103	90 - 110	
Sulfate	40.0	41.0	103	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4887639
Report generated: 08/09/2016 13:35

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16080317
Analytical Method: 9056
ICAL Workgroup: WG574118

Instrument ID: IC1
Initial Calibration Date: 25-JUN-16 14:27
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.944	9.14	0.99700	
Nitrate		2.428	12.2	0.99600	
Nitrite		3.174	14.9	0.99700	
Sulfate		7.692	12.2	0.99600	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4887640
Report generated 08/09/2016 13:35

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L16080317
Analytical Method: 9056
Instrument ID: IC1
Initial Calibration Date: 25-JUN-16 14:27
Column ID: F

Analyte	WG574118-01			WG574118-02			WG574118-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	0.200	0.0310000000	6.452	1.00	0.155000000	6.452	4.00	0.644000000	6.211
Nitrate	0.134	0.0470000000	2.841	0.678	0.257000000	2.636	2.71	1.07800000	2.515
Nitrite	0.122	0.0300000000	4.060	0.609	0.175000000	3.479	2.44	0.776000000	3.139
Sulfate	1.00	0.114000000	8.772	5.00	0.585000000	8.547	20.0	2.51300000	7.959

INT_CAL - Modified 03/06/2008
PDF File ID: 4887640
Report generated 08/09/2016 13:35

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L16080317
Analytical Method: 9056
Instrument ID: IC1
Initial Calibration Date: 25-JUN-16 14:27
Column ID: F

Analyte	WG574118-04			WG574118-05			WG574118-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	8.00	1.37700000	5.810	12.0	2.14700000	5.589	24.0	4.66100000	5.149
Nitrate	5.42	2.32400000	2.333	8.13	3.67700000	2.212	16.3	8.00400000	2.032
Nitrite	4.87	1.67800000	2.903	7.31	2.62000000	2.789	14.6	5.46900000	2.672
Sulfate	40.0	5.36600000	7.454	60.0	8.53500000	7.030	120	18.7750000	6.391

INT_CAL - Modified 03/06/2008
PDF File ID: 4887640
Report generated 08/09/2016 13:35

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16080317 Run Date: 06/25/2016 Sample ID: WG574118-07
Instrument ID: IC1 Run Time: 14:45 Method: 9056
File ID: I1 062516-09 Analyst: AED QC Key: DOD4
ICal Workgroup: WG574118 Cal ID: IC1 - 25-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	8.09	mg/L	5.73	1.10	10	
Nitrate		5.42	5.43	mg/L	2.31	0.200	10	
Nitrite		4.87	5.12	mg/L	2.80	5.00	10	
Sulfate		40.0	40.2	mg/L	7.34	0.600	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4887641
Report generated 08/09/2016 13:35

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080317
Run Date: 08/05/2016
Sample ID: WG579270-02
Instrument ID: IC1
Run Time: 14:00
Method: 9056
File ID: I1 080516-04
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG579268
Cal ID: IC1 - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Nitrate	0.100	0.600	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4887643
Report generated 08/09/2016 13:35

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080317
Run Date: 08/05/2016
Sample ID: WG579270-04
Instrument ID: IC1
Run Time: 17:33
Method: 9056
File ID: I1 080516-16
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG579268
Cal ID: IC1 - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Nitrate	0.100	0.600	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4887643
Report generated 08/09/2016 13:35

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080317
Run Date: 08/05/2016
Sample ID: WG579270-06
Instrument ID: IC1
Run Time: 19:54
Method: 9056
File ID: I1 080516-24
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG579268
Cal ID: IC1 - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Nitrate	0.100	0.600	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4887643
Report generated 08/09/2016 13:35

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080317 Run Date: 08/05/2016 Sample ID: WG579270-01
Instrument ID: IC1 Run Time: 13:42 Method: 9056
File ID: I1 080516-03 Analyst: AED QC Key: DOD4
Workgroup (AAB#): WG579268 Cal ID: IC1 - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.05	mg/L	5.75	0.650	10	
Nitrate		5.42	5.52	mg/L	2.28	1.72	10	
Nitrite		4.87	4.94	mg/L	2.91	1.35	10	
Sulfate		40.0	40.5	mg/L	7.29	1.25	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4887642
Report generated 08/09/2016 13:35

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080317 Run Date: 08/05/2016 Sample ID: WG579270-03
Instrument ID: IC1 Run Time: 17:15 Method: 9056
File ID: I1 080516-15 Analyst: AED QC Key: DOD4
Workgroup (AAB#): WG579268 Cal ID: IC1 - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.09	mg/L	5.72	1.13	10	
Nitrate		5.42	5.54	mg/L	2.27	2.18	10	
Nitrite		4.87	4.99	mg/L	2.87	2.52	10	
Sulfate		40.0	40.8	mg/L	7.24	1.93	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4887642
Report generated 08/09/2016 13:35

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080317
Run Date: 08/05/2016
Sample ID: WG579270-05
Instrument ID: IC1
Run Time: 19:37
Method: 9056
File ID: I1 080516-23
Analyst: AED
QC Key: DOD4
Workgroup (AAB#): WG579268
Cal ID: IC1 - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.16	mg/L	5.68	1.94	10	
Nitrate		5.42	5.59	mg/L	2.25	3.07	10	
Nitrite		4.87	5.15	mg/L	2.79	5.62	10	
Sulfate		40.0	41.0	mg/L	7.19	2.61	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4887642
Report generated 08/09/2016 13:35

2.3.1.3 Sample Data

21 L16080317-04 NO2 NO3 CL SO4

1,1 AED

Sample Name:	**L16080317-04 NO2 NO3 CL SO4**	*Injection Volume:*	**20.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/5/2016 19:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

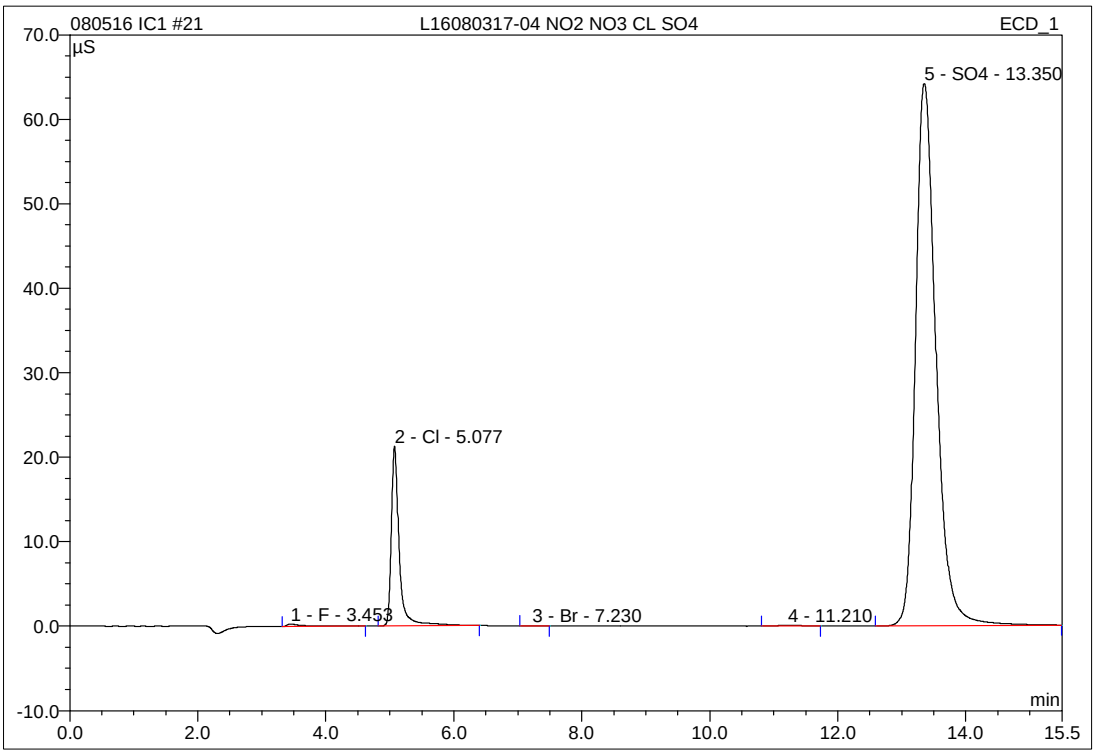

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.45	F	0.317	0.106	0.39	0.489	BMB
2	5.08	Cl	21.331	3.074	11.34	17.760	BMB
3	7.23	Br	0.035	0.008	0.03	0.163	BMB
4	11.21	n.a.	0.100	0.043	0.16	n.a.	BMB
5	13.35	SO4	64.213	23.867	88.08	175.555	BMB
Total:			85.995	27.097	100.00	193.967	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

22 L16080317-04 NO2 NO3 CL SO4 3X

1,3 AED

Sample Name:	**L16080317-04 NO2 NO3 CL SO4 3X**	*Injection Volume:*	**20.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/5/2016 19:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

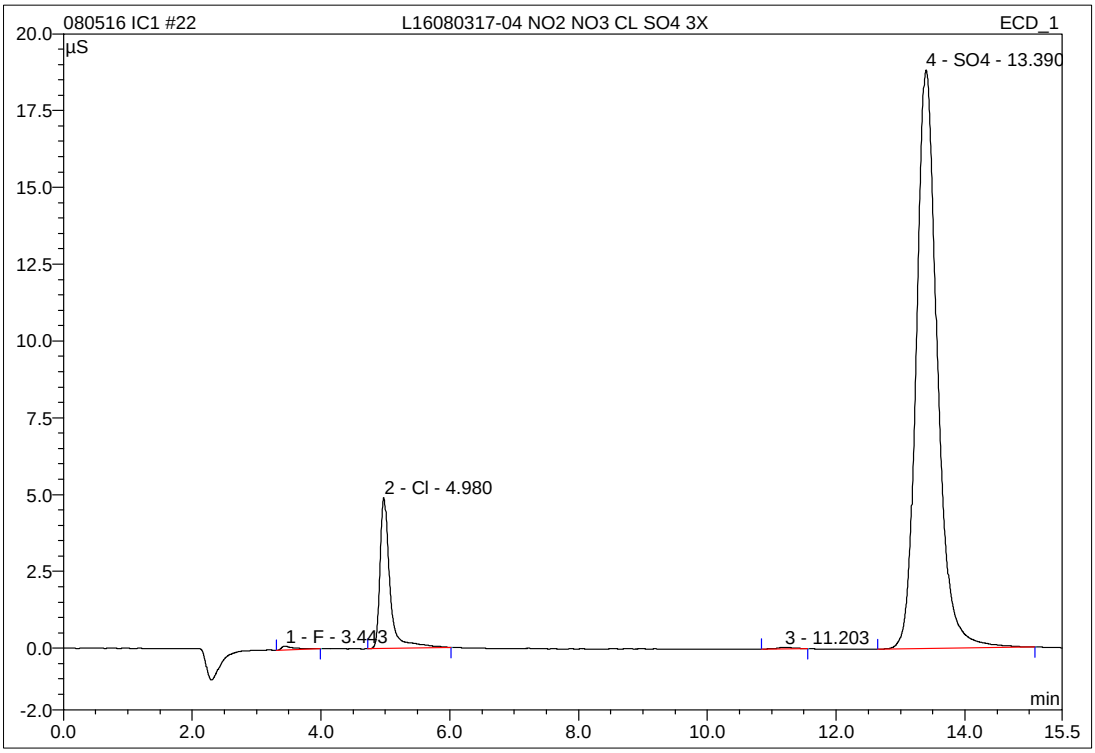

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.44	F	0.128	0.032	0.39	0.184	BMB
2	4.98	Cl	4.906	0.879	10.90	5.096	BMB
3	11.20	n.a.	0.052	0.017	0.22	n.a.	BMB
4	13.39	SO4	18.841	7.136	88.49	52.617	BMB
Total:			23.926	8.064	100.00	57.897	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.3.1.4 Standards Data

3 WG574118-01 STD #1

1,1 AED STD74524 (_____psi @___:___)

Sample Name:	**WG574118-01 STD #1**	*Injection Volume:*	**20.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/25/2016 12:59**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

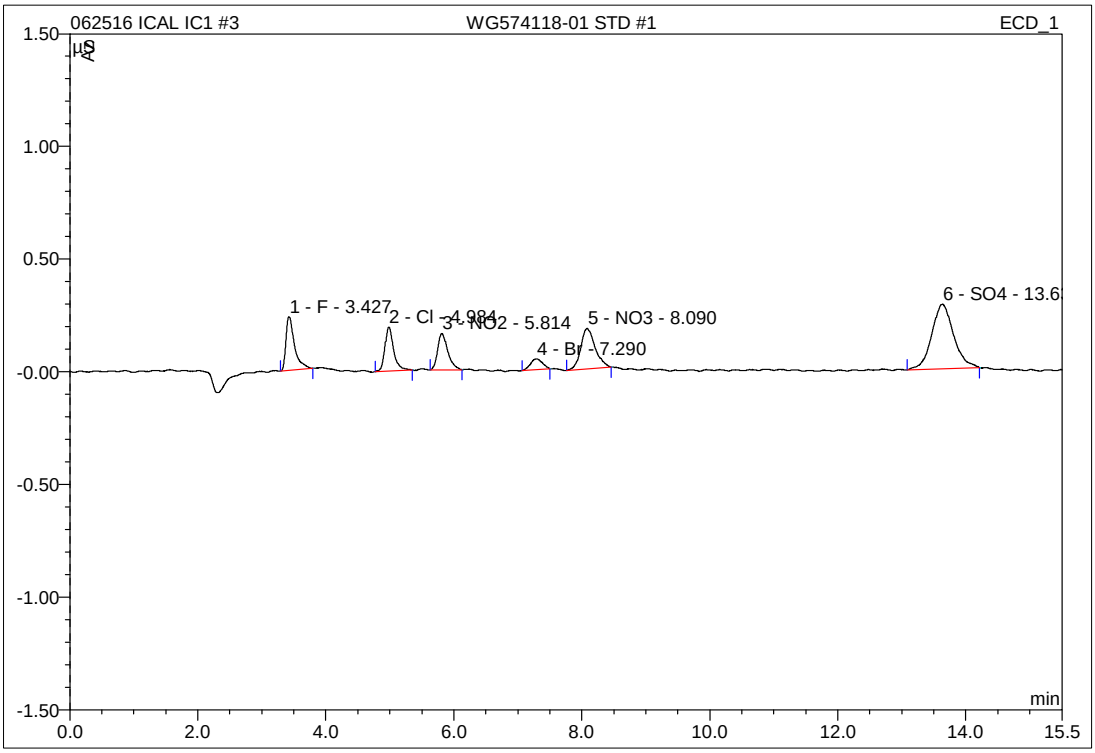

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.43	F	0.238	0.037	13.62	0.205	BMB
2	4.98	Cl	0.195	0.031	11.55	0.204	BMB
3	5.81	NO2	0.162	0.030	11.16	0.124	BMB
4	7.29	Br	0.049	0.011	3.92	0.201	BMB
5	8.09	NO3	0.180	0.047	17.47	0.138	BMB
6	13.64	SO4	0.288	0.114	42.29	1.021	BMB
Total:			1.111	0.269	100.00	1.892	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG574118-02 STD #2

1,1 AED STD74524

Sample Name:	**WG574118-02 STD #2**	*Injection Volume:*	**20.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/25/2016 13:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

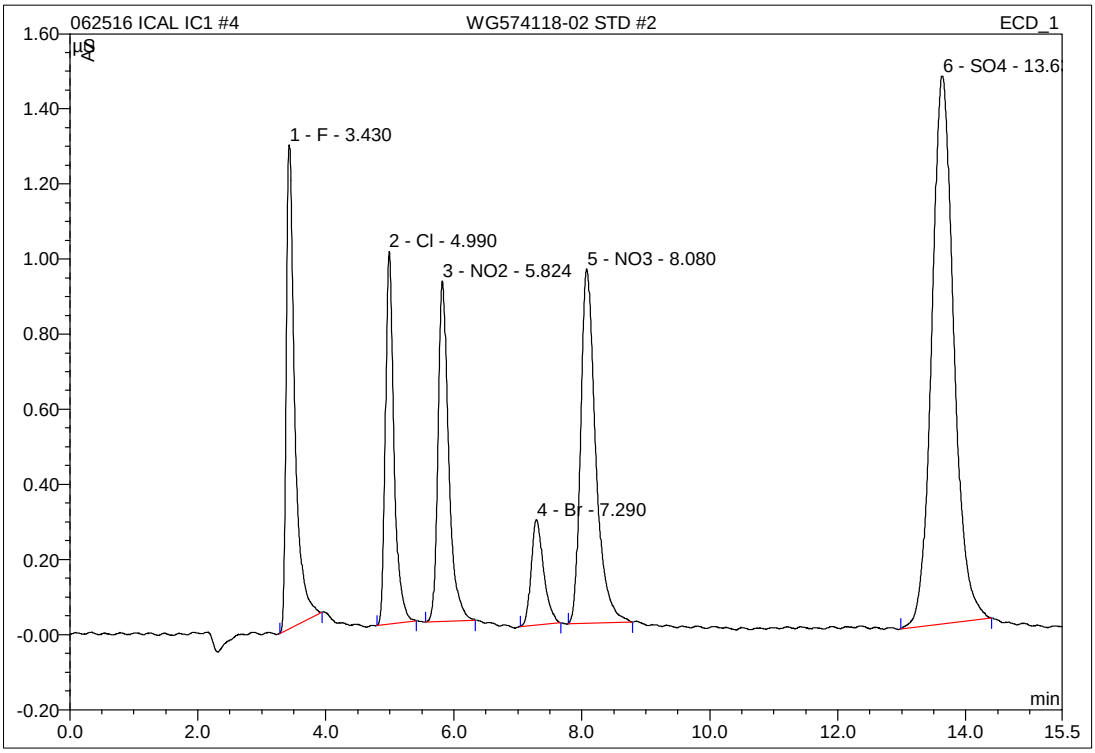

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.43	F	1.287	0.197	13.78	0.866	BMB
2	4.99	Cl	0.993	0.155	10.84	0.921	BMB
3	5.82	NO2	0.908	0.175	12.22	0.548	BMB
4	7.29	Br	0.280	0.063	4.42	0.971	BMB
5	8.08	NO3	0.944	0.257	17.94	0.622	BMB
6	13.64	SO4	1.459	0.585	40.80	4.483	BMB
Total:			5.872	1.433	100.00	8.410	

5 WG574118-03 STD #3

1,1 AED STD74524

Sample Name:	**WG574118-03 STD #3**	*Injection Volume:*	**20.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/25/2016 13:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

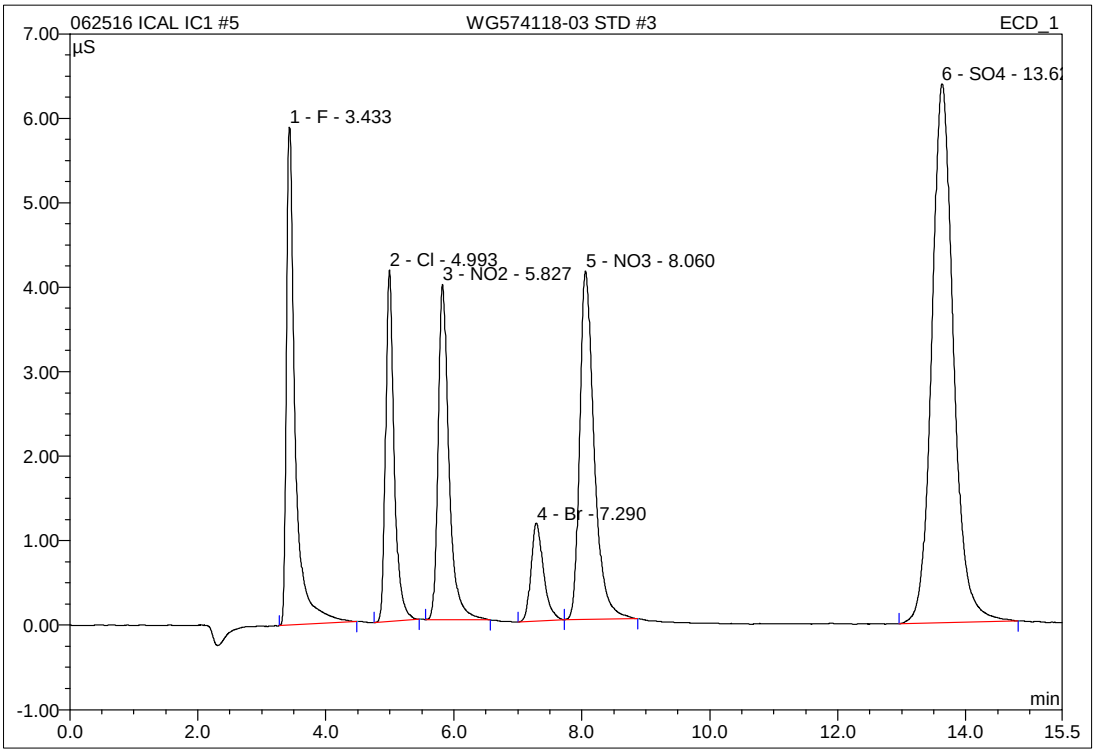

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.43	F	5.894	0.922	14.88	3.843	BMB
2	4.99	Cl	4.159	0.644	10.40	3.742	BMB
3	5.83	NO2	3.969	0.776	12.53	2.306	BMB
4	7.29	Br	1.160	0.261	4.22	3.857	BMB
5	8.06	NO3	4.121	1.078	17.41	2.513	BMB
6	13.63	SO4	6.378	2.513	40.56	18.650	BMB
Total:			25.680	6.195	100.00	34.911	

6 WG574118-04 STD #4

1,1 AED STD74524

Sample Name:	**WG574118-04 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/25/2016 13:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

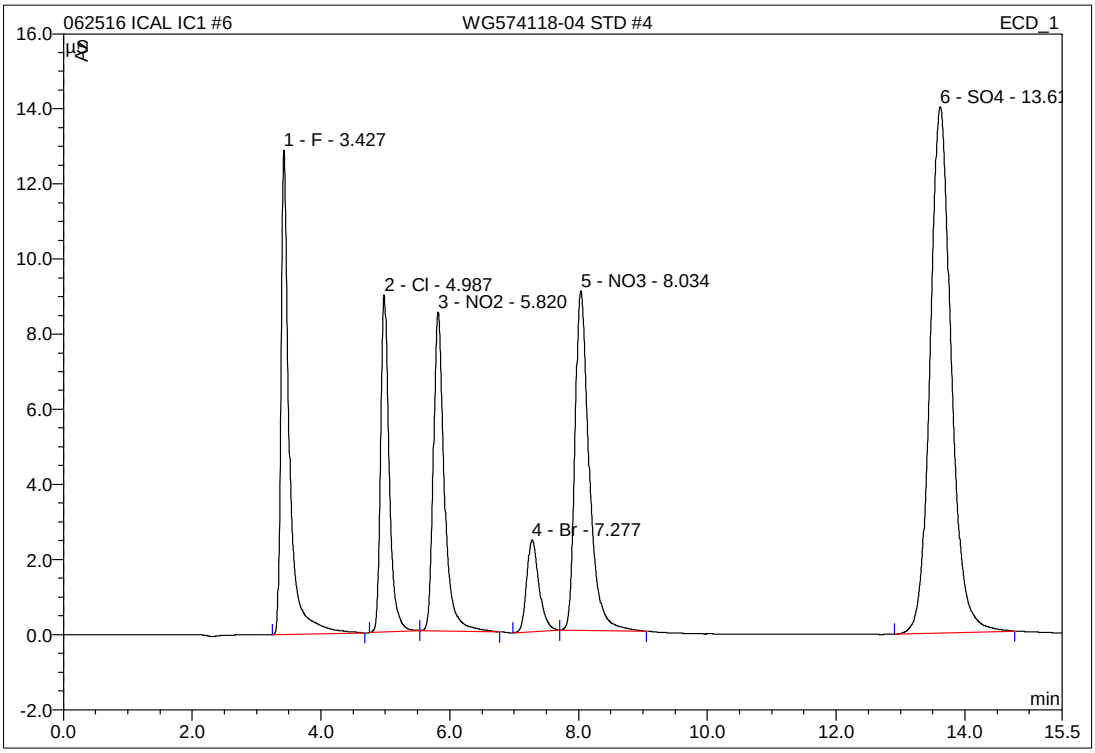

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.43	F	12.891	1.981	14.93	8.198	BMB
2	4.99	Cl	8.984	1.377	10.38	7.971	BMB
3	5.82	NO2	8.484	1.678	12.65	4.945	BMB
4	7.28	Br	2.445	0.544	4.10	7.970	BMb
5	8.03	NO3	9.045	2.324	17.51	5.381	bMB
6	13.61	SO4	14.020	5.366	40.44	39.616	BMB
Total:			55.869	13.270	100.00	74.079	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

00744783

6 WG574118-04 STD #4

1,1 AED STD74524

Sample Name:	**WG574118-04 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/25/2016 13:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

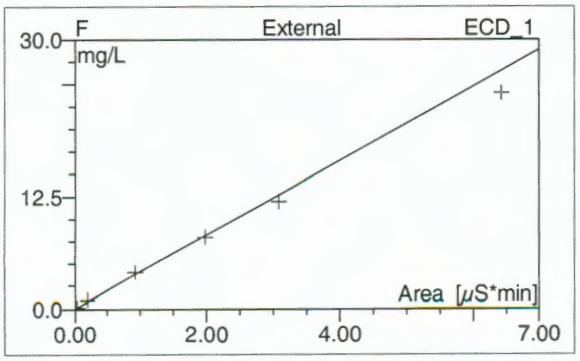

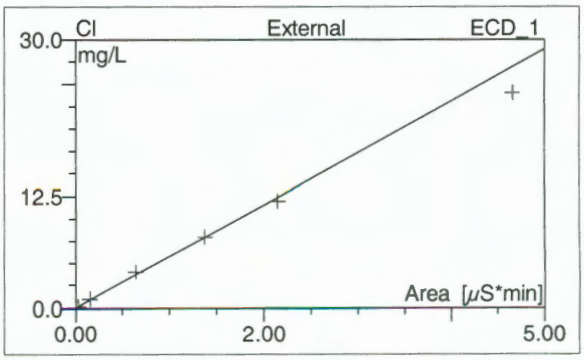

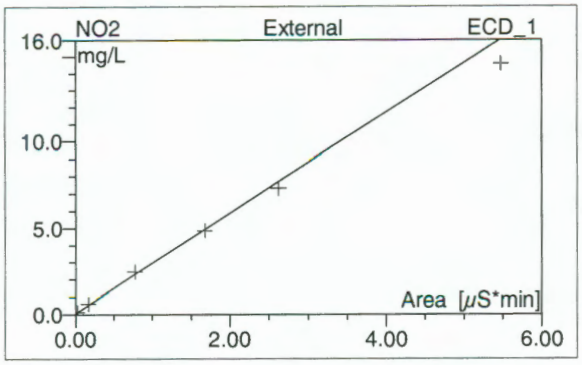

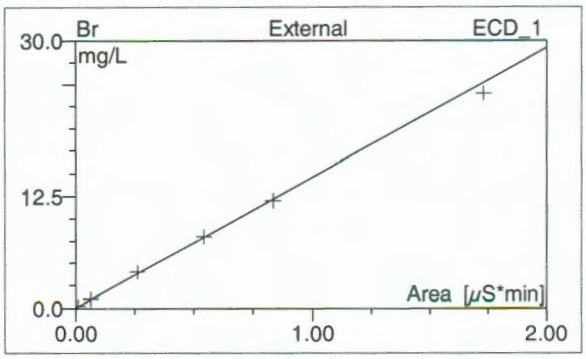

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	3.43	F	YYLOff	6	99.5255	0.0541	4.1112	0.0000
2	4.99	Cl	YYLOff	6	99.7062	0.0245	5.7703	0.0000
3	5.82	NO2	YYLOff	6	99.6858	0.0360	2.9246	0.0000
4	7.28	Br	YYLOff	6	99.9419	0.0476	14.5712	0.0000
5	8.03	NO3	YYLOff	6	99.6455	0.0295	2.3026	0.0000
6	13.61	SO4	YYLOff	6	99.5512	0.1864	7.3477	0.0000
Average:					99.6760	0.0630	6.1713	0.0000

6 WG574118-04 STD #4

1,1 AED STD74524

Sample Name:	**WG574118-04 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/25/2016 13:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

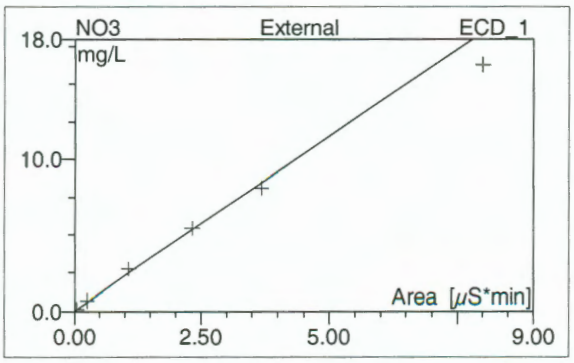

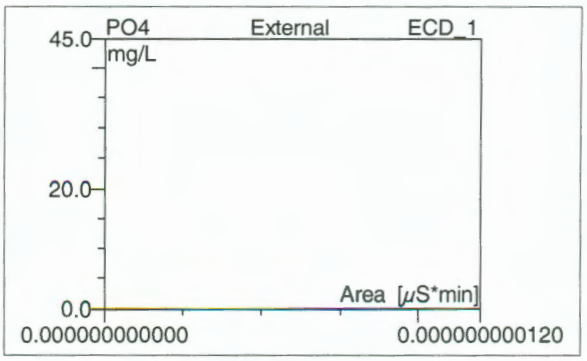

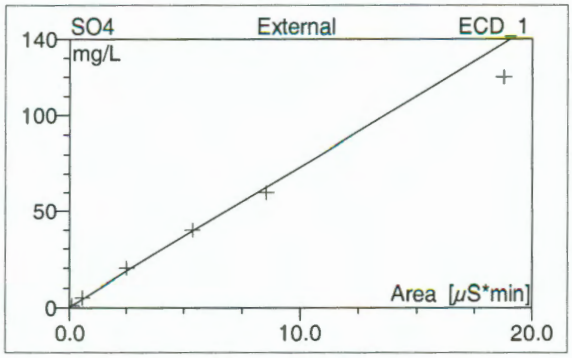

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	3.43	F	YYLOff	6	99.5255	0.0541	4.1112	0.0000
2	4.99	Cl	YYLOff	6	99.7062	0.0245	5.7703	0.0000
3	5.82	NO2	YYLOff	6	99.6858	0.0360	2.9246	0.0000
4	7.28	Br	YYLOff	6	99.9419	0.0476	14.5712	0.0000
5	8.03	NO3	YYLOff	6	99.6455	0.0295	2.3026	0.0000
6	13.61	SO4	YYLOff	6	99.5512	0.1864	7.3477	0.0000
Average:					99.6760	0.0630	6.1713	0.0000

7 WG574118-05 STD #5

1,1 AED STD74524

Sample Name:	**WG574118-05 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/25/2016 14:10**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

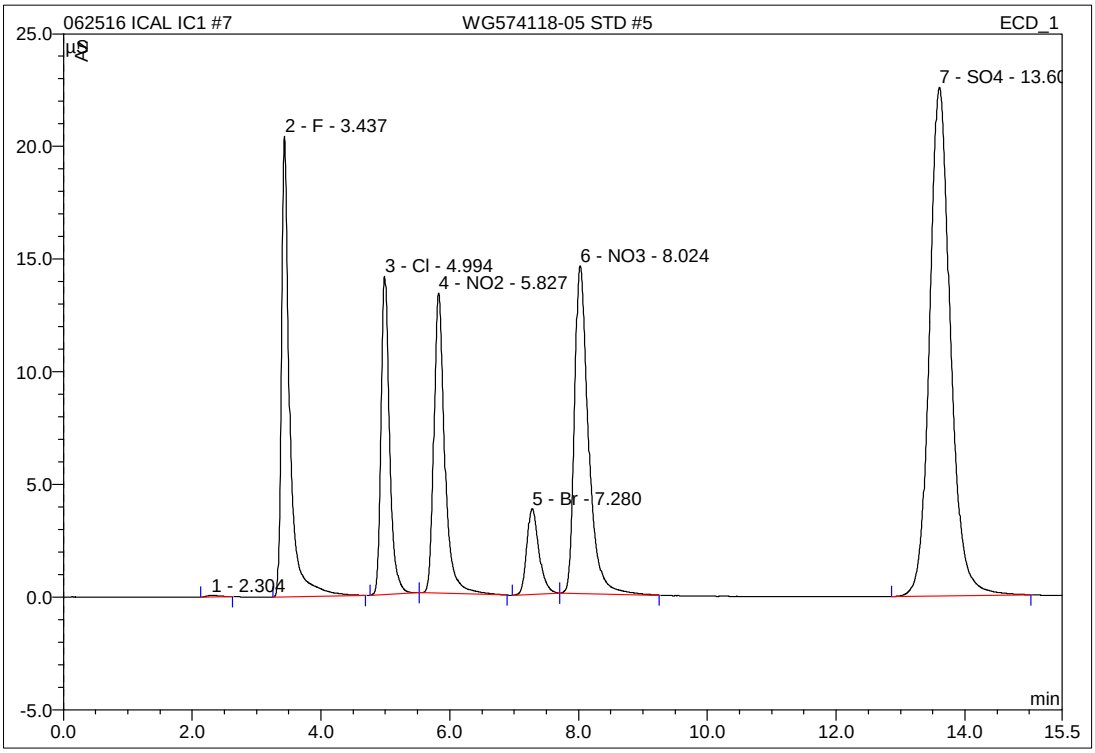

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.30	n.a.	0.078	0.018	0.08	n.a.	BMB
2	3.44	F	20.445	3.084	14.75	12.734	BMB
3	4.99	Cl	14.131	2.147	10.27	12.414	BMb
4	5.83	NO2	13.328	2.620	12.53	7.698	bMB
5	7.28	Br	3.811	0.834	3.99	12.197	BMb
6	8.02	NO3	14.536	3.677	17.58	8.496	bMB
7	13.60	SO4	22.574	8.535	40.81	62.897	BMB
Total:			88.904	20.914	100.00	116.435	

8 WG574118-06 STD #6

1,1 AED STD74525

Sample Name:	**WG574118-06 STD #6**	*Injection Volume:*	**20.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/25/2016 14:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

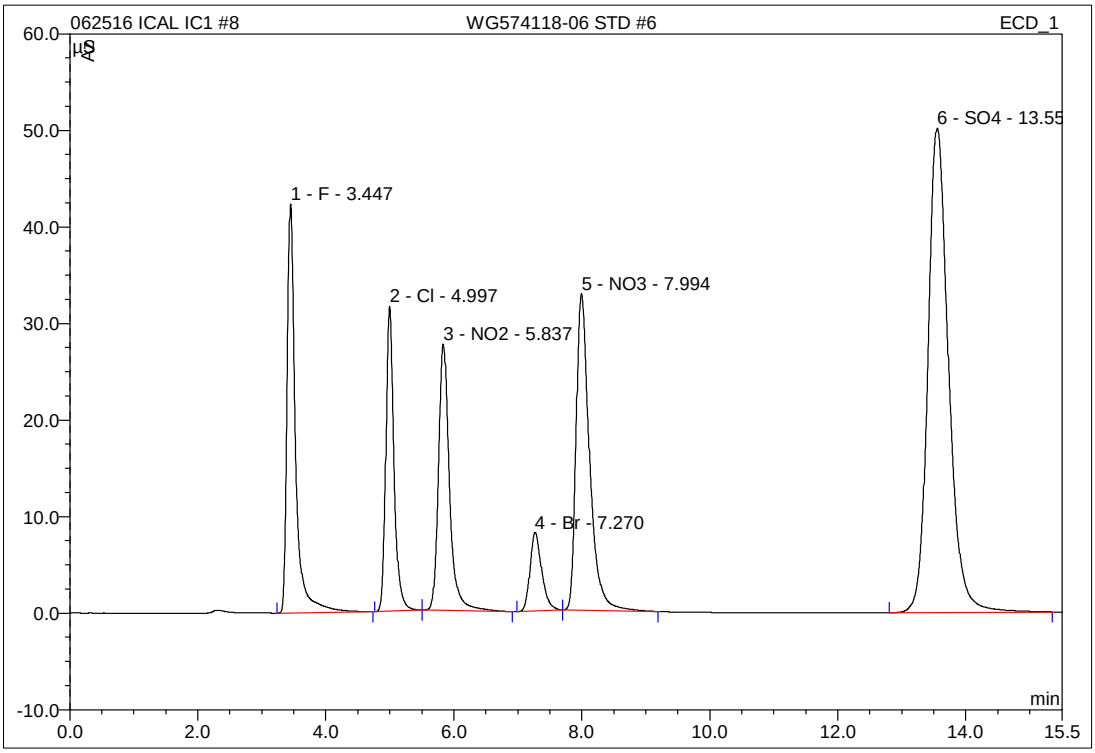

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.45	F	42.339	6.428	14.26	26.479	BMB
2	5.00	Cl	31.584	4.661	10.34	26.917	BMb
3	5.84	NO2	27.565	5.469	12.13	16.030	bMB
4	7.27	Br	8.148	1.731	3.84	25.267	BMb
5	7.99	NO3	32.776	8.004	17.76	18.459	bMB
6	13.55	SO4	50.164	18.775	41.66	138.141	BMB
Total:			192.576	45.067	100.00	251.293	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

9 WG574118-07 SSCV

1,1 AED STD74524

Sample Name:	**WG574118-07 SSCV**	*Injection Volume:*	**20.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/25/2016 14:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

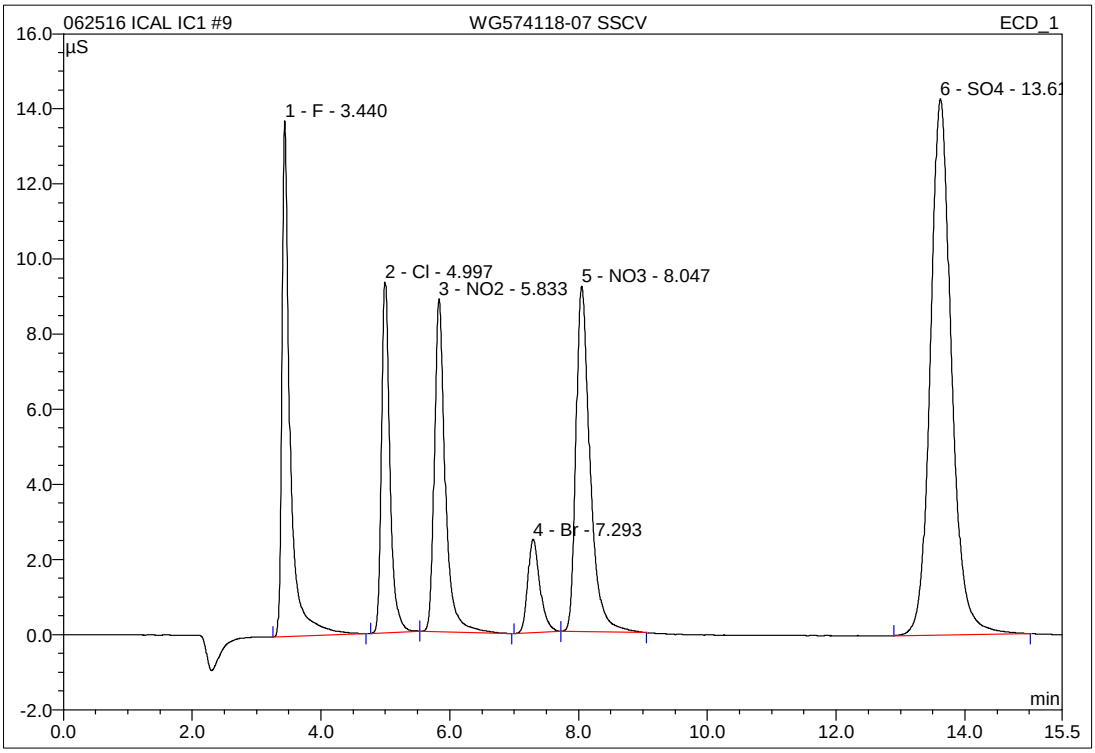

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.44	F	13.733	2.043	15.11	8.453	BMB
2	5.00	Cl	9.338	1.397	10.33	8.085	BMB
3	5.83	NO2	8.863	1.737	12.84	5.116	bMB
4	7.29	Br	2.493	0.548	4.05	8.030	BMB
5	8.05	NO3	9.201	2.347	17.35	5.433	bMB
6	13.61	SO4	14.278	5.451	40.31	40.241	BMB
Total:			57.906	13.522	100.00	75.357	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

9 WG574118-07 SSCV

1,1 AED STD74524

Sample Name:	**WG574118-07 SSCV**	*Injection Volume:*	**20.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/25/2016 14:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG574118-07 SSCV	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	8.4527	5.66	PASS
Cl	8.00	8.0846	1.06	PASS
NO2-N	4.8714	5.1158	5.02	PASS
Br	8.00	8.0295	0.37	PASS
NO3-N	5.4216	5.4331	0.21	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	40.2411	0.60	PASS

3 WG579270-01 ANION CCV

1,1 AED STD74524

Sample Name:	**WG579270-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/5/2016 13:42**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

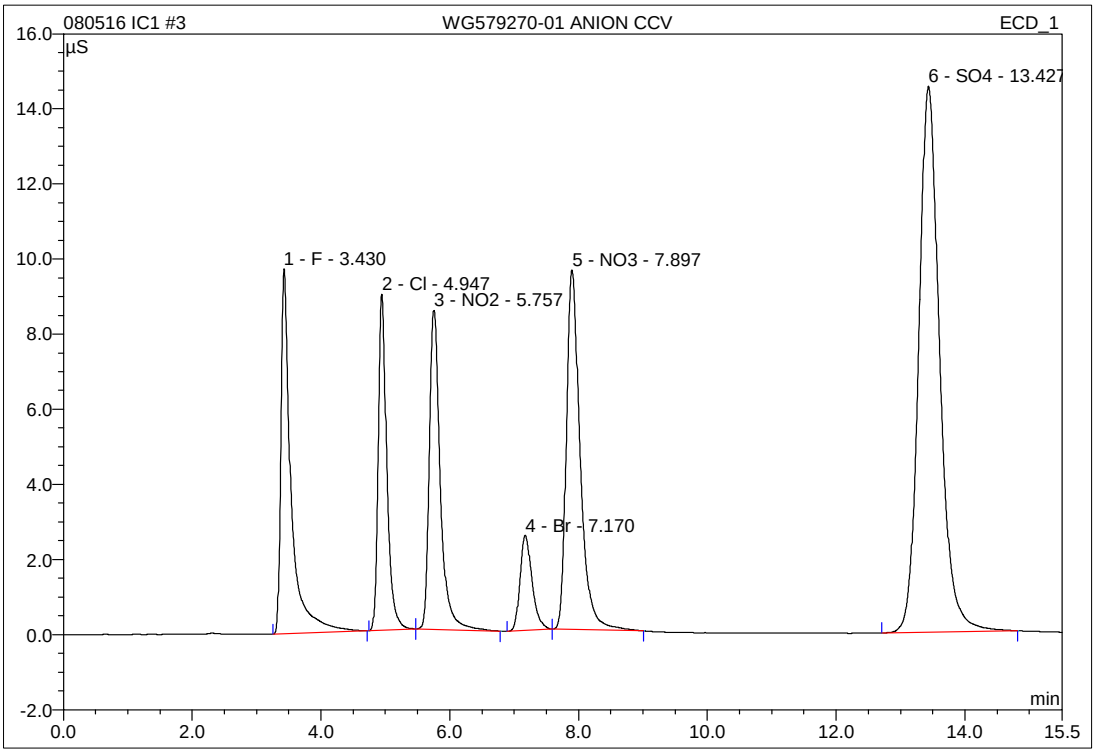

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.43	F	9.728	1.807	13.59	7.482	BMB
2	4.95	Cl	8.949	1.391	10.47	8.052	BMb
3	5.76	NO2	8.496	1.676	12.61	4.937	bMB
4	7.17	Br	2.541	0.550	4.14	8.065	BMB
5	7.90	NO3	9.582	2.382	17.92	5.515	bMB
6	13.43	SO4	14.545	5.487	41.27	40.500	BMB
Total:			53.840	13.293	100.00	74.551	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG579270-01 ANION CCV

1,1 AED STD74524

Sample Name:	**WG579270-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/5/2016 13:42**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG579270-01 ANIOI	Actual mg/L	Recoved mg/L	%Difference	PASS/FAIL
F	8.00	7.4816	-6.48	PASS
Cl	8.00	8.0519	0.65	PASS
NO2-N	4.8714	4.9373	1.35	PASS
Br	8.00	8.0647	0.81	PASS
NO3-N	5.4216	5.5154	1.73	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	40.4998	1.25	PASS

15 WG579270-03 ANION CCV

1,1 AED STD74524

Sample Name:	**WG579270-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/5/2016 17:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

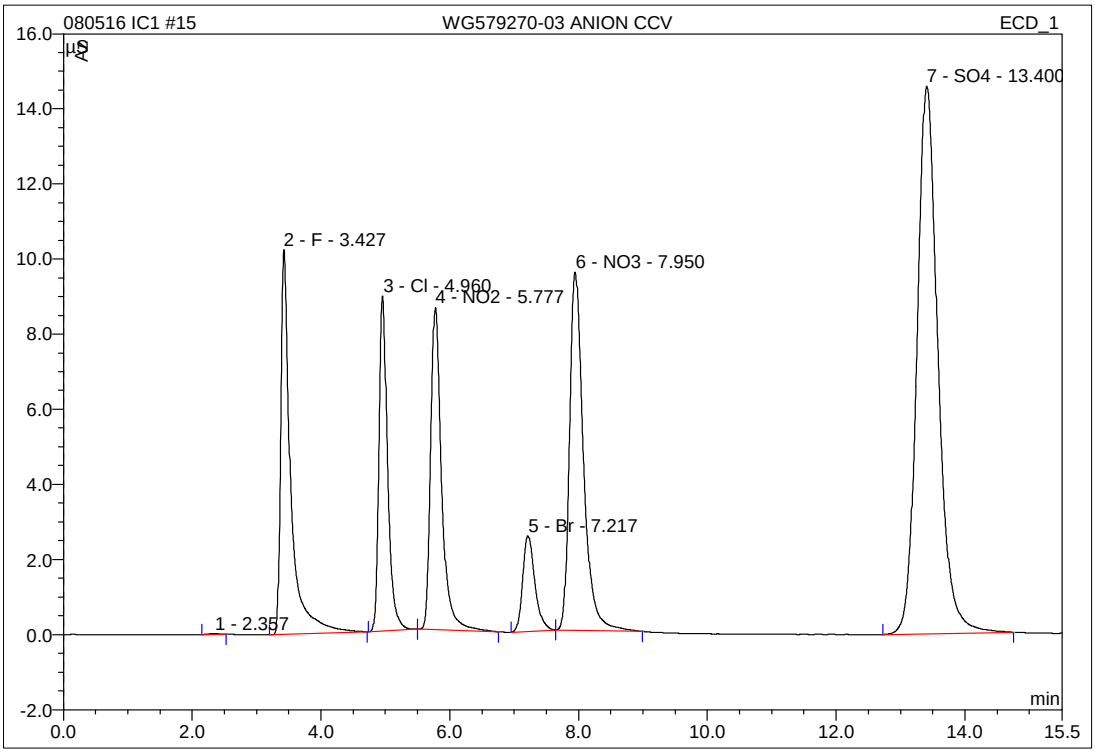

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.36	n.a.	0.024	0.005	0.04	n.a.	BMB
2	3.43	F	10.252	1.866	13.89	7.726	BMB
3	4.96	Cl	8.921	1.398	10.40	8.090	BMb
4	5.78	NO2	8.577	1.695	12.62	4.994	bMB
5	7.22	Br	2.542	0.556	4.14	8.155	BMb
6	7.95	NO3	9.534	2.393	17.81	5.540	bMB
7	13.40	SO4	14.584	5.523	41.11	40.771	BMB
Total:			54.433	13.437	100.00	75.275	

15 WG579270-03 ANION CCV

1,1 AED STD74524

Sample Name:	**WG579270-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/5/2016 17:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG579270-03 ANIOI	Actual mg/L	Recoved mg/L	%Difference	PASS/FAIL
F	8.00	7.7256	-3.43	PASS
Cl	8.00	8.0895	1.12	PASS
NO2-N	4.8714	4.9939	2.51	PASS
Br	8.00	8.1554	1.94	PASS
NO3-N	5.4216	5.5403	2.19	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	40.7708	1.93	PASS

23 WG579270-05 ANION CCV

1,1 AED STD74524

Sample Name:	**WG579270-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/5/2016 19:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

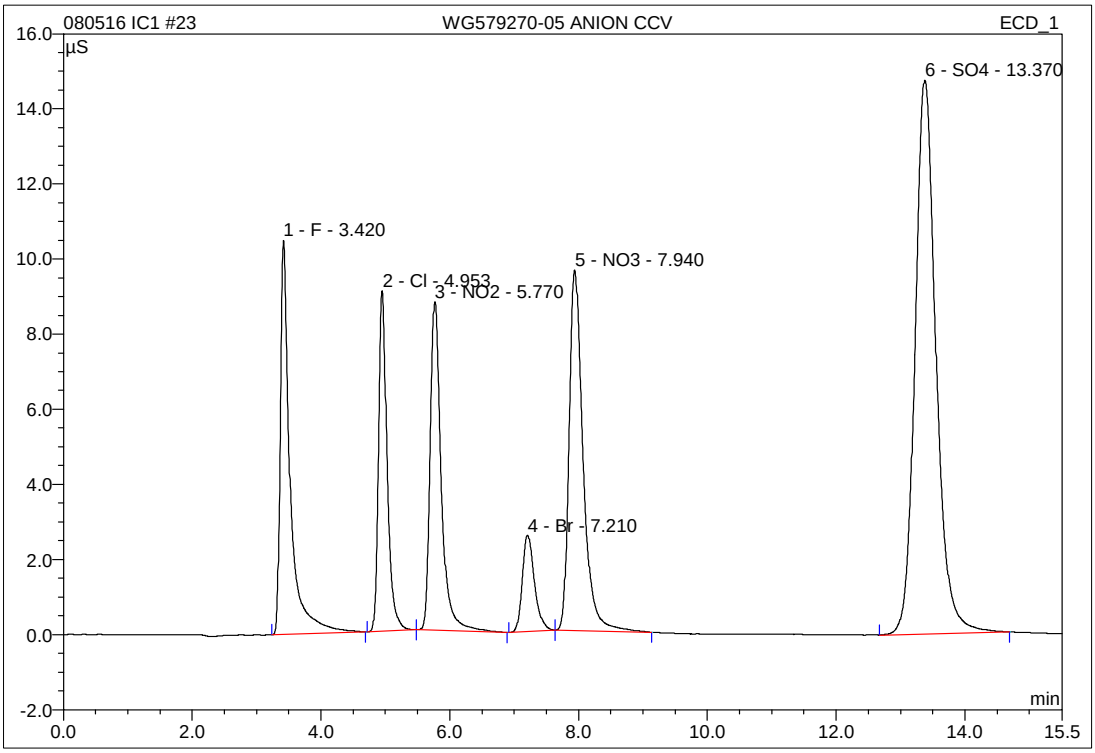

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.42	F	10.488	1.878	13.84	7.776	BMB
2	4.95	Cl	9.071	1.409	10.39	8.155	BMb
3	5.77	NO2	8.750	1.747	12.88	5.145	bMB
4	7.21	Br	2.566	0.558	4.11	8.176	BMb
5	7.94	NO3	9.600	2.414	17.79	5.588	bMB
6	13.37	SO4	14.748	5.561	40.99	41.045	BMB
Total:			55.223	13.567	100.00	75.884	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

23 WG579270-05 ANION CCV

1,1 AED STD74524

Sample Name:	**WG579270-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/5/2016 19:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG579270-05 ANIOI	Actual mg/L	Recoved mg/L	%Difference	PASS/FAIL
F	8.00	7.7756	-2.81	PASS
Cl	8.00	8.1548	1.93	PASS
NO2-N	4.8714	5.1455	5.63	PASS
Br	8.00	8.1757	2.20	PASS
NO3-N	5.4216	5.5878	3.07	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	41.0447	2.61	PASS

4 WG579270-02 ANION CCB

1,1 AED

Sample Name:	**WG579270-02 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/5/2016 14:00**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

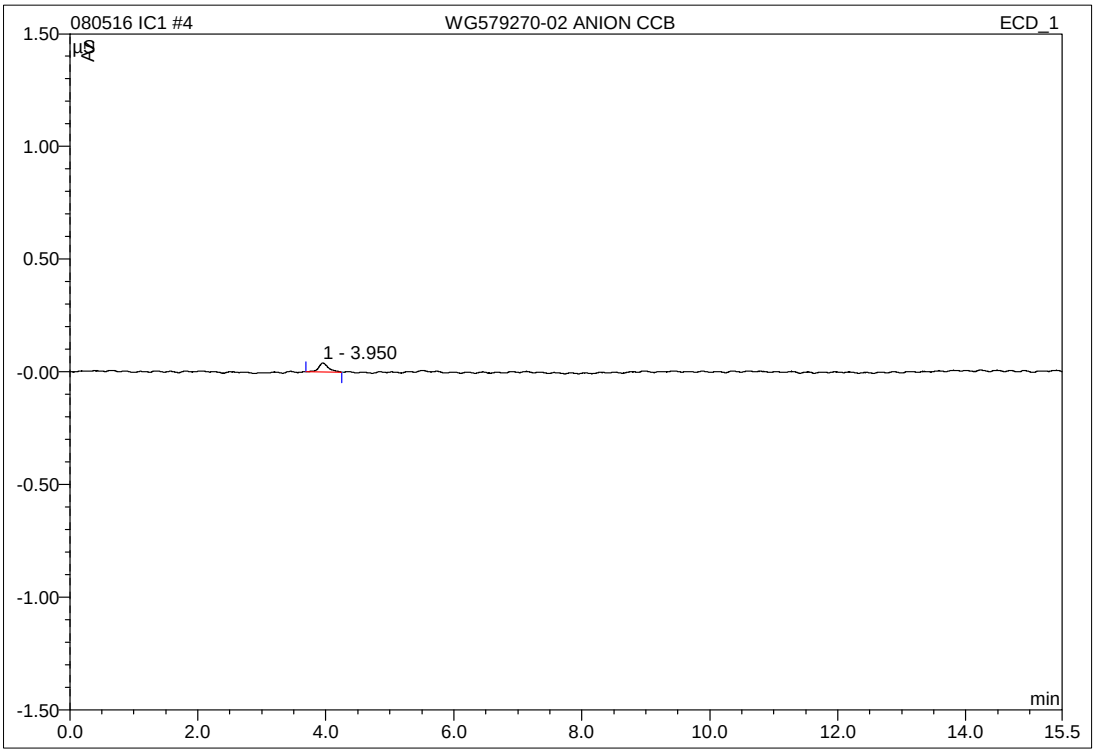

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.95	n.a.	0.041	0.008	100.00	n.a.	BMB
Total:			0.041	0.008	100.00	0.000	

16 WG579270-04 ANION CCB

1,1 AED

Sample Name:	**WG579270-04 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/5/2016 17:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

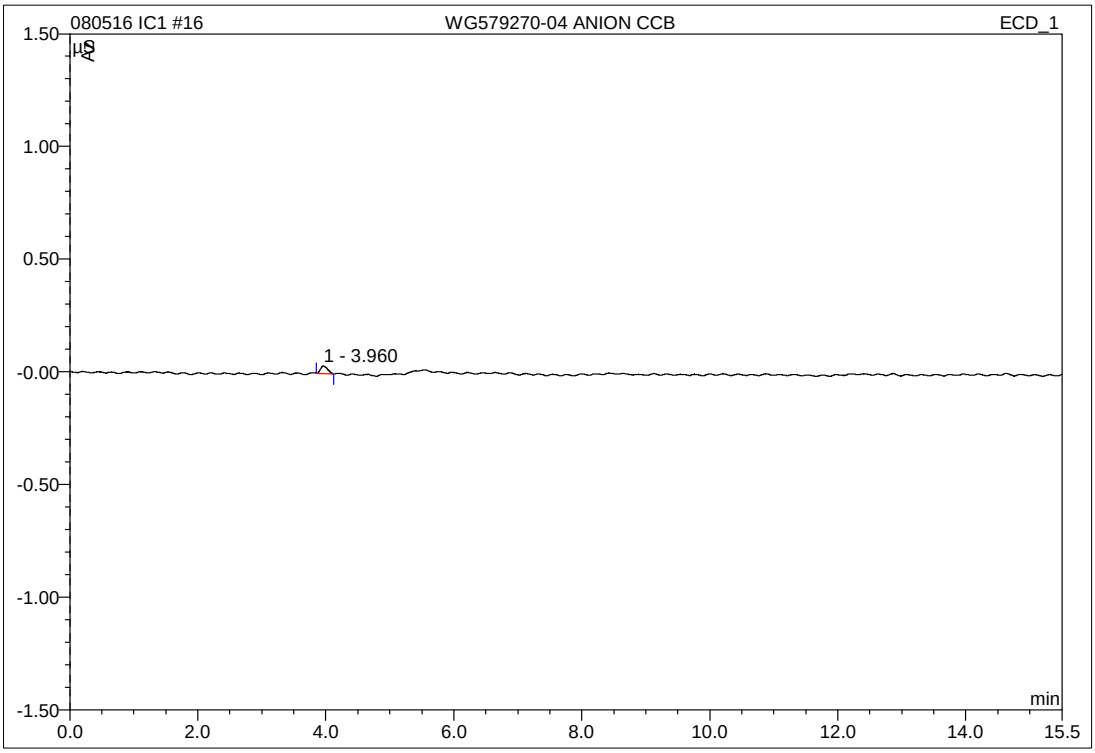

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.96	n.a.	0.033	0.004	100.00	n.a.	BMB
Total:			0.033	0.004	100.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

24 WG579270-06 ANION CCB

1,1 AED

Sample Name:	**WG579270-06 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/5/2016 19:54**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

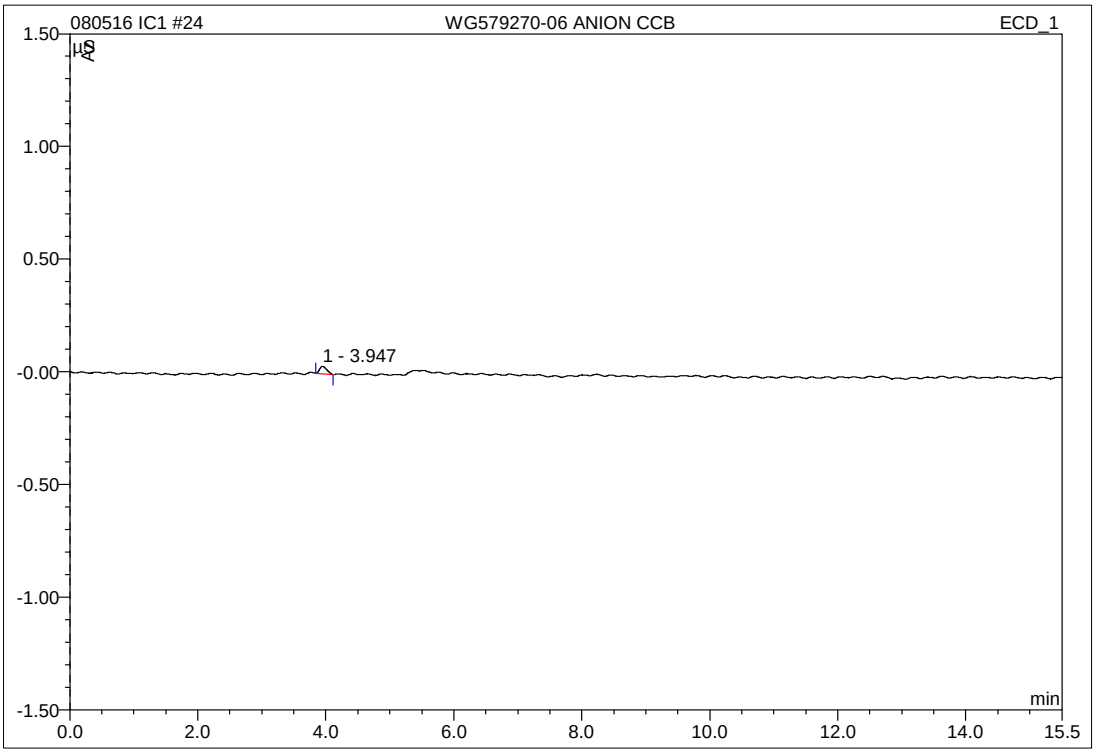

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.95	n.a.	0.033	0.004	100.00	n.a.	BMB
Total:			0.033	0.004	100.00	0.000	

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AS14A-4mm

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	3/2/2015	3/4/2015	3/5/2015
File #	WG514023-02	WG514341-02	WG514431-02
Time	23:15	18:47	17:41

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.33	3.33	3.32	0.017
Cl	4.75	4.78	4.76	0.043
NO2-N	5.54	5.59	5.56	0.082
Br	6.86	6.98	6.93	0.180
NO3-N	7.59	7.73	7.67	0.222
SO4	12.42	12.38	12.34	0.116

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.3.1.5 Raw QC Data

5 WG579268-01 ANION BLANK

1,1 AED

Sample Name:	**WG579268-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/5/2016 14:18**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

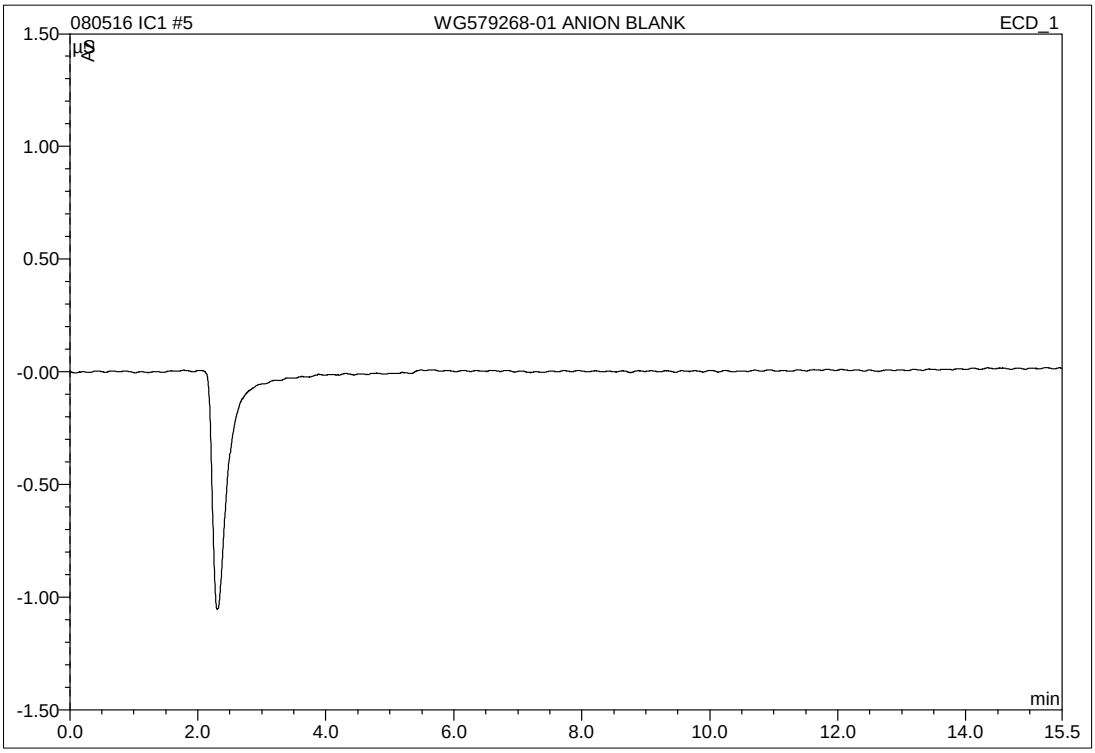

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

6 WG579268-02 ANION LCS

1,1 AED

Sample Name:	**WG579268-02 ANION LCS**	*Injection Volume:*	**20.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**062516_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/5/2016 14:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

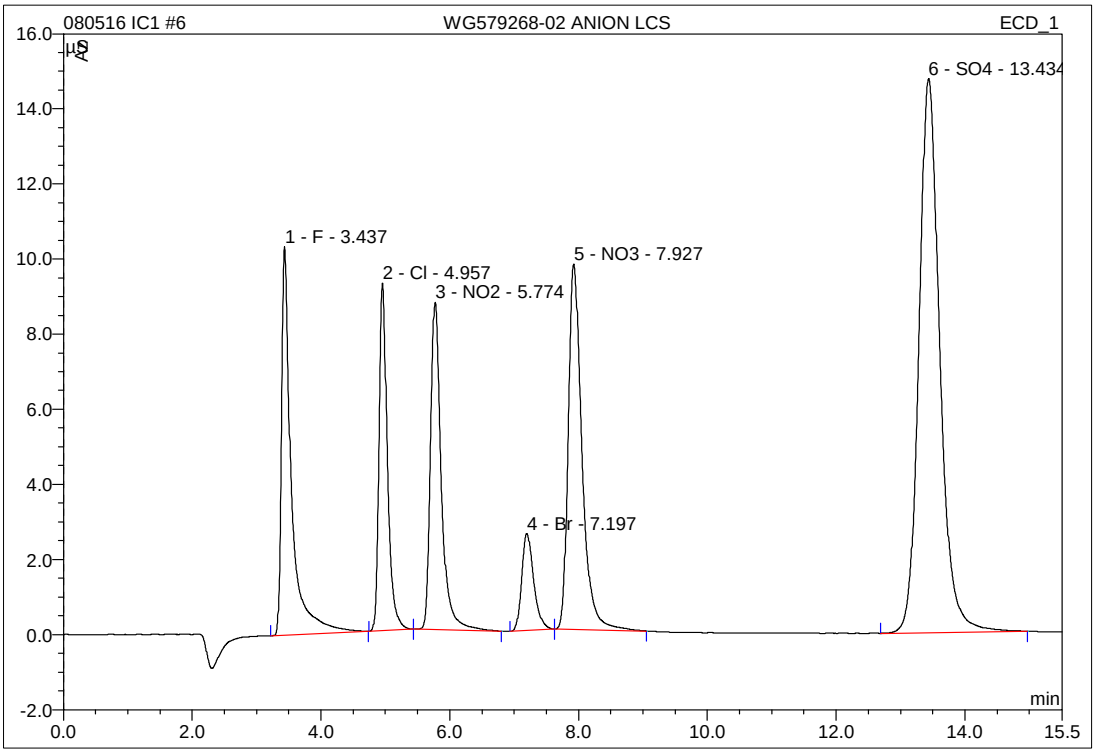

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.44	F	10.339	1.871	13.86	7.746	BMB
2	4.96	Cl	9.253	1.403	10.40	8.120	BMb
3	5.77	NO2	8.718	1.700	12.60	5.009	bMB
4	7.20	Br	2.585	0.556	4.12	8.153	BMb
5	7.93	NO3	9.736	2.408	17.84	5.574	bMB
6	13.43	SO4	14.758	5.557	41.18	41.018	BMB
Total:			55.389	13.496	100.00	75.620	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.3.2 Alkalinity Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW02-080416	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/08/2016 15:23
Workgroup #:	WG579433	**Analyst:**	DCM	**Run Date:**	08/08/2016 15:34
Collect Date:	08/04/2016 08:55	**Dilution:**	1	**File ID:**	SC160808005.027
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	26.3	J	40.0	20.0	10.0

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 08-AUG-2016
Analyst: DCM
Analyst: NA
Method: ALK
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG579433

Calibration/Linearity	08-08-2016
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
09-AUG-2016

Secondary Reviewer:
09-AUG-2016

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-09-2016 09:17:39

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG579433

Login Number: L16080317

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW02-080416	04	08/04/16					08/08/2016	4.3	14		08/08/16	4.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4889083
Report generated 08/09/2016 09:09

METHOD BLANK SUMMARY

Login Number: L16080317
Blank File ID: SC160808005.012
Prep Date: 08/08/16 15:25
Analyzed Date: 08/08/16 15:25
Analyst: DCM

Work Group: WG579433
Blank Sample ID: WG579433-01
Instrument ID: SMARTCHEM
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG579433-02	SC160808005.013	08/08/16 15:26	01
LCS2	WG579433-03	SC160808005.014	08/08/16 15:27	01
46WW02-080416	L16080317-04	SC160808005.027	08/08/16 15:34	01
DUP	WG579433-05	SC160808005.035	08/08/16 15:39	01

Report Name: BLANK_SUMMARY
PDF File ID: 4889084
Report generated 08/09/2016 09:09

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080317 Prep Date: 08/08/16 15:25 Sample ID: WG579433-01
Instrument ID: SMARTCHEM Run Date: 08/08/16 15:25 Prep Method: 310.2
File ID: SC160808005.012 Analyst: DCM Method: 310.2
Workgroup (AAB#): WG579433 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-08-AUG-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	-11.6	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4889085
09-AUG-2016 09:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080317 Analyst: DCM Prep Method: 310.2
Instrument ID: SMARTCHEM Matrix: Water Method: 310.2
Workgroup (AAB#): WG579433 Units: mg/L
QC Key: DOD4 Lot #: STD77181

Sample ID: WG579433-02 LCS File ID: SC160808005.013 Run Date: 08/08/2016 15:26
Sample ID: WG579433-03 LCS2 File ID: SC160808005.014 Run Date: 08/08/2016 15:27

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	198	99.1	200	200	100	1.10	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4889086
Report generated: 08/09/2016 09:09

2.3.2.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG579433

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20160808005
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [x] SC2 [ ]

	Analyte	1	2	3
		Alk		
		Dilution		
	SC Prepared Curve			
	Position			
1-1	IW			
1-2	Blk			
1-3	LCS			
1-4	LCSDup			
08-387-01 1-5	~~07-517-14~~	1/2		
1-6	08-387-02 ~~15~~	1/2		
1-7	08-387-03 ~~16~~	1/2		
dcm 8/8/16 1-8	08-387-04 T7	1/2		
1-9	08-324-02	1/4		
1-10	03	1/4		
1-11	05	1/4		
1-12	06	1/4		
1-13	08	1/4		
1-14	09	1/4		
1-15	08-517-04			
1-16	08-330-05			
1-17	08	1/4		
1-18	11	1/2		
1-19	13			
1-20	15			
1-21	Dup 08-330-15			
1-22				
2-1				
2-2				
2-3				

Position	Analyte	1	2	3
2-4				
2-5				
2-6				
2-7				
2-8				
2-9				
2-10				
2-11				
2-12				
2-13				
2-14				
2-15				
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#120163

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG579433

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-Cl E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
✓	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	Alk		Reagents
SOP & Revision	ISSUE R17		REG 37560
Curve Stock (SC made)	Std 76180		
NO2 STD			
ICV	Std 77257		
CCV	Std 77256		
LCS	Std 77151		
MS	NA Dilution		

Comments: _____

Analyst: David Morehale Date: 8/8/16

DCN#120163

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.6562	0.00		3:17:31 PM
DIL-1	RBL	0.0	0.6574	0.00		3:17:49 PM
DIL-1	RBL	0.0	0.6510	0.00		3:18:43 PM
DIL-1	Std-1	0.0	-0.0021	0.00		3:19:01 PM
SR5-1	Std-2	10.0	-0.0194	0.00		3:19:55 PM
SR5-2	Std-3	20.0	-0.0267	0.00		3:20:13 PM
SR5-3	Std-4	50.0	-0.0752	0.00		3:21:07 PM
SR5-4	Std-5	100.0	-0.1421	0.00		3:21:25 PM
SR5-5	Std-6	200.0	-0.3089	0.00	EPL	3:22:19 PM
SR5-6	Std-7	250.0	-0.3909	0.00		3:22:37 PM
SR5-7	Std-8	300.0	-0.4544	0.00		3:23:31 PM
ST-3	1CCV (150 mg/L)	146.3	-0.2217	97.52		3:23:49 PM
ST-2	2CCB (0 mg/L)	-9.5	0.0143	0.00	INV,><,LL	3:24:43 PM
1	ICV	256.2	-0.3925	0.00		3:25:01 PM
2	WG579433-01 BLK	-11.6	0.0174	0.00	INV,><,LL	3:25:55 PM
3	WG579433-02 LCS	198.3	-0.3020	0.00		3:26:13 PM
4	WG579433-03 LCSDUP	200.5	-0.3054	0.00		3:27:07 PM
5	L16080387-01 (2)	158.7	-0.2408	0.00		3:27:25 PM
6	L16080387-02 (2)	209.5	-0.3195	0.00		3:28:19 PM
7	L16080387-03 (2)	170.4	-0.2588	0.00		3:28:37 PM
8	L16080387-04 (2)	142.8	-0.2164	0.00		3:29:32 PM
9	L16080324-02 (4)	152.8	-0.2317	0.00		3:29:49 PM
10	L16080324-03 (4)	75.3	-0.1133	0.00		3:30:44 PM
ST-3	1CCV (150 mg/L)	146.0	-0.2213	97.35		3:31:02 PM
ST-2	2CCB (0 mg/L)	-5.0	0.0076	0.00	INV,><,LL	3:31:56 PM
11	L16080324-05 (4)	143.4	-0.2172	0.00		3:32:14 PM
12	L16080324-06 (4)	94.0	-0.1417	0.00		3:33:08 PM
13	L16080324-08 (4)	162.5	-0.2467	0.00		3:33:26 PM
14	L16080324-09 (4)	95.0	-0.1432	0.00		3:34:20 PM
15	L16080317-04	26.3	-0.0393	0.00		3:34:38 PM
16	L16080330-05	58.6	-0.0881	0.00	EPL	3:35:32 PM
17	L16080330-08 (4)	145.1	-0.2199	0.00		3:35:50 PM

Report Date :08/08/2016 **Run Date :8/8/2016** **Operator : SMARTCHEM1** **Plan # :20160808005**

Plan Description : ALK-A1-DCM/08/08/2016

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L16080330-11 (2)	219.0	-0.3343	0.00		3:36:44 PM
19	L16080330-13	45.1	-0.0677	0.00		3:37:02 PM
20	L16080330-15	177.1	-0.2692	0.00		3:37:56 PM
ST-3	1CCV (150 mg/L)	157.2	-0.2385	104.80		3:38:14 PM
ST-2	2CCB (0 mg/L)	2.6	-0.0038	0.00		3:39:08 PM
21	WG579433-05 DUP	178.9	-0.2720	0.00		3:39:26 PM
22	ID 22	24.3	-0.0364	0.00		3:40:20 PM
ST-3	1CCV (150 mg/L)	163.0	-0.2474	108.65		3:40:38 PM
ST-2	2CCB (0 mg/L)	10.6	-0.0158	0.00		3:41:32 PM

Report Date :08/08/2016 Run Date :8/8/2016 Operator : SMARTCHEM1 Plan # :20160808005

Plan Description : ALK-A1-DCM/08/08/2016

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20160808005 Description : [ALK-A1-DCM/08/08/2016] Unit

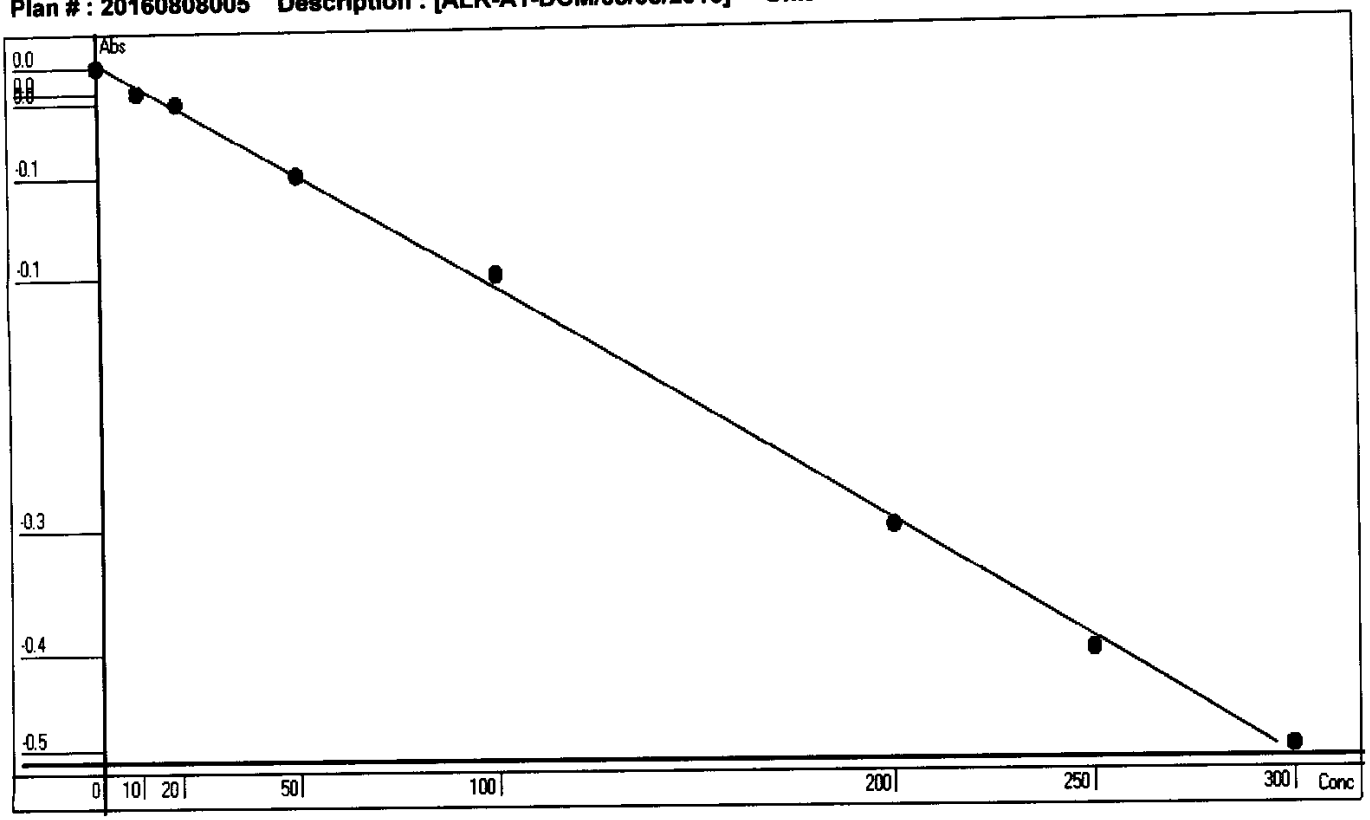

Point	OD	Conc	Recalc Conc	% Error
1	-0.0021	0	1.4396	143.96
2	-0.0194	10	12.9940	29.94
3	-0.0267	20	17.8621	-10.69
4	-0.0752	50	50.0947	0.19
5	-0.1421	100	94.2395	-5.76
6	-0.3089	200	202.7084	1.35
7	-0.3909	250	255.1969	2.08
8	-0.4544	300	295.4652	-1.51

Conc= -40.9502*Abso^2 -668.7614*Abso +0.0354 R^2=0.9989

RBL
0.6568
0

Report Date 8/8/2016 Run Date 8/8/2016

2.3.3 Phosphorus Data

2.3.3.1 Summary Data

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW02-080416	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/10/2016 12:44
Workgroup #:	WG579706	**Analyst:**	TB	**Run Date:**	08/10/2016 12:48
Collect Date:	08/04/2016 08:55	**Dilution:**	1	**File ID:**	SC160810004.013
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.140	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 10-AUG-2016
Analyst: TB
Analyst: NA
Method: PHOS
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG579706

Calibration/Linearity	08/10/2016
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TB
Secondary Reviewer	DIH
Comments	

Primary Reviewer: 10-AUG-2016
Todd Boyle

Secondary Reviewer: 15-AUG-2016
Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-15-2016 09:06:08

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4 AAB#: WG579706

Login Number: L16080317

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW02-080416	04	08/04/16					08/10/2016	6.2	28		08/10/16	6.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4899760
Report generated 08/16/2016 14:54

METHOD BLANK SUMMARY

Login Number: L16080317
Blank File ID: SC160810004.010
Prep Date: 08/10/16 12:46
Analyzed Date: 08/10/16 12:46
Analyst: TB

Work Group: WG579706
Blank Sample ID: WG579706-01
Instrument ID: SMARTCHEM
Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG579706-02	SC160810004.011	08/10/16 12:47	01
46WW02-080416	L16080317-04	SC160810004.013	08/10/16 12:48	01
DUP	WG579706-04	SC160810004.022	08/10/16 12:53	01

Report Name: BLANK_SUMMARY
PDF File ID: 4899761
Report generated 08/16/2016 14:54

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080317 Prep Date: 08/10/16 12:46 Sample ID: WG579706-01
Instrument ID: SMARTCHEM Run Date: 08/10/16 12:46 Prep Method: 365.4
File ID: SC160810004.010 Analyst: TB Method: 365.4
Workgroup (AAB#): WG579706 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-10-AUG-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4899762
16-AUG-2016 14:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080317 Run Date: 08/10/2016 Sample ID: WG579706-02
Instrument ID: SMARTCHEM Run Time: 12:47 Prep Method: 365.4
File ID: SC160810004.011 Analyst: TB Method: 365.4
Workgroup (AAB#): WG579706 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD77385 Cal ID: SMARTC-10-AUG-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Phosphorus, Total	1.00	0.844	84.4	70 - 130	

LCS - Modified 03/06/2008
PDF File ID: 4899763
Report generated: 08/16/2016 14:54

2.3.3.3 Raw Data

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG579706

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20160810004
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [x] SC2 [ ]

Analyte		1	2	3
		Phos		
		Dilution		
SC Prepared Curve				
Position				
1-1	IW			
1-2	Blk			TB 8/12/16
1-3	LCS			
1-4	8-303-01	~~1/25~~	1/5 x	1/5
1-5	317-04			
1-6	330-05			
1-7	08			
1-8	11			
1-9	13			
1-10	15			
1-11	Ref 400-01			
1-12	Dup 400-01			
1-13	MS 400-01			
1-14				
1-15				
1-16				
1-17				
1-18				
1-19				
1-20				
1-21				
1-22				
2-1				
2-2				
2-3				

Analyte		1	2	3
Position				
2-4				
2-5				
2-6				
2-7				
2-8				
2-9				
2-10				
2-11				
2-12				
2-13				
2-14				
2-15				
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#120219

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG579706

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
✓	Phos	EPA 365.4

Analyte	Phos		Reagents
SOP & Revision	k 3654 R19		
Curve Stock (SC made)			37528
NO2 STD	See		37402
ICV	Digest		37552
CCV			
LCS	Log		
MS	Dilution		

Comments:

Analyst: Tom Boyle

Date: 8/19/16

DCN#120219

TKN/Phosphorus Digestion Log

TKN WG:
TKN Std: std 77474
TKN CCV: 1/2 (std 77474)
TKN ICV: std 77333
TKN LCS: std 77334

Phos WG:
Phos Std: std 77474
Phos CCV: 1/2 (std 77474)
Phos ICV: 1B std ~~77385~~ 77437
Phos LCS 8/10/16 std ~~77437~~ 77385

MS/MSD: std 76885
Daily Dilution: 1mL/25
Block Digester Temperature: 380 °C
Digest Reagent: 3H78

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	std T/P				26				
2	std T/P				27				
3	ICV T				28				
4	LCS T				29				
5	ICV P				30				
6	LCS P				31				
7	8-303-01	5mL/25		—	32				
8	317-04			—	33				
9	324-02	1/50	—		34				
10	05	1/50	—		35				
11	08	1/50	—		36				
12	330-05			—	37				
13	08			—	38				
14	11			—	39				
15	13			—	40				
16	15			—	41				
* 17	379-03	5/25	—		42				
18	380-03		—		43				
19	400-01		—		44				
20	DUP 400-01				45				
21	MS 400-01				46				
22					47				
23					48				
24					49				
25					50				

* ~~Run~~ Digested @ 1/5 due to sample reacting with Digest Acid foamed out of tube

Analyst: Tom Brown Date: 8/9/16

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0889	0.00	R	12:39:30 PM
DIL-1	RBL	0.000	0.0905	0.00	R	12:39:48 PM
DIL-1	RBL	0.000	0.0890	0.00	R	12:40:43 PM
SR5-1	Std-1	0.010	-0.0005	0.00	INV	12:41:00 PM
SR5-2	Std-2	0.200	0.0291	0.00		12:41:55 PM
SR5-3	Std-3	0.500	0.0659	0.00		12:42:12 PM
SR5-4	Std-4	1.000	0.1356	0.00		12:43:07 PM
SR5-5	Std-5	1.500	0.1994	0.00		12:43:24 PM
ST-1	Std-6	2.000	0.2771	0.00	EPL	12:44:19 PM
ST-3	1CCV (1 mg/L)	0.964	0.1310	96.43		12:44:37 PM
ST-2	2CCB (0 mg/L)	-0.005	-0.0022	0.00	INV,><,LL	12:45:31 PM
1	ICV	1.395	0.1901	0.00		12:45:48 PM
2	WG579706-01 BLK	0.041	0.0040	0.00		12:46:43 PM
3	WG579706-02 LCS	0.844	0.1145	0.00		12:47:00 PM
4	L16080303-01 (25)	1.931	0.2638	0.00		12:47:55 PM
5	L16080317-04	0.140	0.0177	0.00		12:48:12 PM
6	L16080330-05	0.204	0.0264	0.00		12:49:07 PM
7	L16080330-08	0.071	0.0082	0.00		12:49:25 PM
8	L16080330-11	0.110	0.0135	0.00		12:50:18 PM
9	L16080330-13	0.017	0.0007	0.00		12:50:36 PM
10	L16080330-15	-0.032	-0.0060	0.00	INV,><,LL	12:51:30 PM
ST-3	1CCV (1 mg/L)	0.950	0.1290	94.97		12:51:48 PM
ST-2	2CCB (0 mg/L)	-0.010	-0.0029	0.00	INV,><,LL	12:52:43 PM
11	WG579706-03	0.231	0.0302	0.00		12:53:00 PM
12	WG579706-04 DUP	0.301	0.0399	0.00		12:53:54 PM
13	WG579706-05 MS	1.261	0.1718	0.00		12:54:13 PM
ST-3	1CCV (1 mg/L)	0.957	0.1300	95.70		12:55:07 PM
ST-2	2CCB (0 mg/L)	-0.020	-0.0043	0.00	INV,><,LL	12:55:25 PM

Report Date :08/10/2016 Run Date :8/10/2016 Operator : SMARTCHEM1 Plan # :20160810004

Plan Description : PHOS-B1-TB/08/10/2016

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20160810004 Description : [PHOS-B1-TB/08/10/2016] Unit

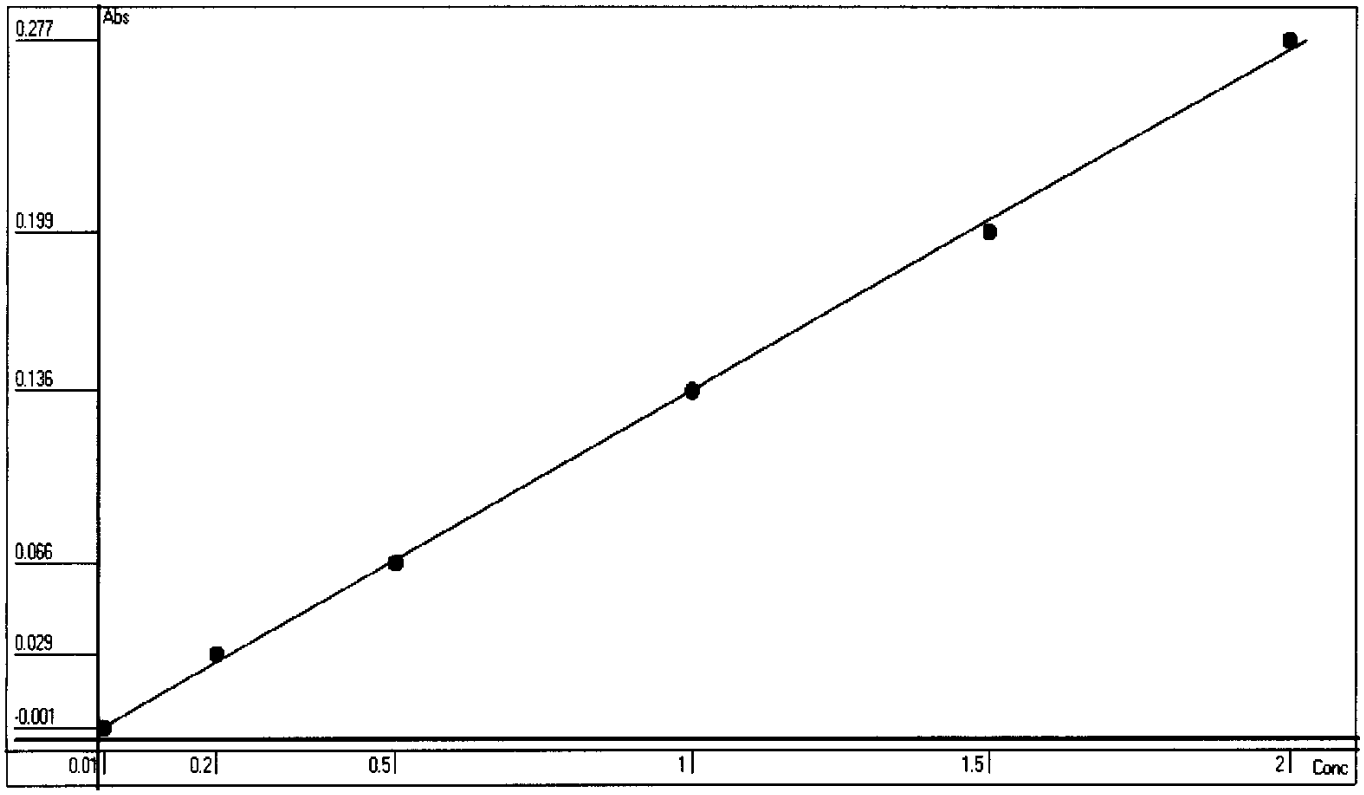

Point	OD	Conc	Recalc Conc	% Error
1	-0.0005	0.01	0.0074	-26.00
2	0.0291	0.2	0.2228	11.40
3	0.0659	0.5	0.4907	-1.86
4	0.1356	1	0.9982	-0.18
5	0.1993	1.5	1.4619	-2.54
6	0.2770	2	2.0275	1.38

Conc= +7.2799*Abso +0.011 R^2=0.9991

RBL
0.089
0

Report Date 8/10/2016 Run Date 8/10/2016

2.3.4 Sulfide Data

2.3.4.1 Summary Data

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW02-080416	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG579275	**Analyst:**	EPT	**Run Date:**	08/05/2016 16:05
Collect Date:	08/04/2016 08:55	**Dilution:**	1	**File ID:**	ET.1608051605-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.4.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 05-AUG-2016
Analyst: EPT
Analyst: NA
Method: SULFIDE
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG579275

Calibration/Linearity	8/5/16
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
10-AUG-2016
Ethan Tido

Secondary Reviewer:
11-AUG-2016
Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-11-2016 14:14:42

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F-

AAB#: WG579275

Login Number: L16080317

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW02-080416	04	08/04/16					08/05/2016	1.3	7		08/05/16	1.3	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4893605
Report generated 08/11/2016 13:32

METHOD BLANK SUMMARY

Login Number: L16080317
Blank File ID: ET.1608051605-01
Prep Date: 08/05/16 16:05
Analyzed Date: 08/05/16 16:05
Analyst: EPT

Work Group: WG579275
Blank Sample ID: WG579275-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG579275-02	ET.1608051605-02	08/05/16 16:05	
LCS2	WG579275-03	ET.1608051605-03	08/05/16 16:05	
46WW02-080416	L16080317-04	ET.1608051605-05	08/05/16 16:05	

Report Name: BLANK_SUMMARY
PDF File ID: 4893606
Report generated 08/11/2016 13:32

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080317 Prep Date: 08/05/16 16:05 Sample ID: WG579275-01
Instrument ID: BURET Run Date: 08/05/16 16:05 Prep Method: SM4500-S-(-2)-F
File ID: ET.1608051605-01 Analyst: EPT Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG579275 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4893607
11-AUG-2016 13:32

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080317 Analyst: EPT Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG579275 Units: mg/L
QC Key: DOD4 Lot #: STD77485

Sample ID: WG579275-02 LCS File ID: ET.1608051605-02 Run Date: 08/05/2016 16:05
Sample ID: WG579275-03 LCS2 File ID: ET.1608051605-03 Run Date: 08/05/2016 16:05

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	20.9	21.3	102	20.9	21.3	102	0.00	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4893608
Report generated: 08/11/2016 13:32

2.3.4.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG579275

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: _____

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: Std 77485

Iodine standardization (0.025N) COA: 18575
mL 0.025N titrant: 9.9
Volume I: 10.0 mL
Normality I: 0.0248

(0.1 N I) COA: 18745
mL 0.025 N titrant: 8.0
Volume I: 2.0 mL
Normality I: 0.100

Stock standardization (in duplicate) 5.0 mL stock
mL I 1) 10.0 2) 10.0
N I 1) 0.100 2) 0.100
mL 0.025 titrant 1) 22.5 2) 22.5
LCS daily dilution: $\frac{(3)(1392.8)}{200}$ = 20.892 mg/L

1392.8 = stock conc (mg/L)

Titrant: T- 1775-04-02

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	0.025 N Sodium Thiosulfate (mL)
BLANK	200	15.0	0.0248	14.8
LCS (mL)	200	15.0	0.0248	4.2
LCSDUP (mL)	200	15.0	0.0248	4.2
08-0127-02	546	15.0	0.0248	9.3
08-0317-04	500	15.0	0.0248	14.6
08-0330-05	410	15.0	0.0248	13.4
-08	510	15.0	0.0248	15.0
-11	480	15.0	0.0248	14.2
-13	570	15.0	0.0248	14.4
-15	500	15.0	0.0248	14.4

Analyst: Esther Tick Date/Time: 8/5/16 1605

DCN#120139

Microbac Laboratories Inc.
TITRAMETRIC REPORT

Workgroup (AAB#): WG579275
Product: EPA 376.1\9034
Analyte: Sulfide

Analyst: EPT
Run Date: 08/05/2016 16:05

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG579275-01	200.0	15	.0248	14.8	.0251	1	0.0416	0.04160	mg/L
WG579275-02	200.0	15	.0248	4.2	.0251	1	21.3	21.33	mg/L
WG579275-03	200.0	15	.0248	4.2	.0251	1	21.3	21.33	mg/L
L16080127-02	540.0	15	.0248	9.3	.0251	1	4.11	4.106	mg/L
L16080317-04	500.0	15	.0248	14.6	.0251	1	0.177	ND	mg/L
L16080330-05	410.0	15	.0248	13.4	.0251	1	1.39	1.392 F	mg/L
L16080330-08	510.0	15	.0248	15	.0251	1	-0.141	ND	mg/L
L16080330-11	480.0	15	.0248	14.2	.0251	1	0.519	0.5193 F	mg/L
L16080330-13	570.0	15	.0248	14.4	.0251	1	0.296	ND	mg/L
L16080330-15	500.0	15	.0248	14.4	.0251	1	0.338	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 08/10/2016 10:54

[redacted]

2.3.5 Total Organic Carbon Data

2.3.5.1 Summary Data

Microbac

Lab Report #: L16080317
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080317-04	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW02-080416	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG579467	**Analyst:**	EPT	**Run Date:**	08/08/2016 18:39
Collect Date:	08/04/2016 08:55	**Dilution:**	10	**File ID:**	TC08082016.007
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	41.3		20.0	10.0	5.00

2.3.5.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 08-AUG-2016
Analyst: EPT
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG579467

Calibration/Linearity	10/31/15
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
10-AUG-2016
Ethan Tido

Secondary Reviewer:
10-AUG-2016
Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-10-2016 10:33:45

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG579467

Login Number: L16080317

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW02-080416	04	08/04/16					08/08/2016	4.4	28		08/08/16	4.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4891316
Report generated 08/10/2016 10:31

METHOD BLANK SUMMARY

Login Number: L16080317
Blank File ID: TC08082016.004
Prep Date: 08/08/16 18:03
Analyzed Date: 08/08/16 18:03
Analyst: EPT

Work Group: WG579467
Blank Sample ID: WG579467-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG579467-02	TC08082016.005	08/08/16 18:15	01
LCS2	WG579467-03	TC08082016.006	08/08/16 18:27	01
46WW02-080416	L16080317-04	TC08082016.007	08/08/16 18:39	DL01
DUP	WG579467-11	TC08082016.043	08/09/16 10:41	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4891317
Report generated 08/10/2016 10:31

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080317 Prep Date: 08/08/16 18:03 Sample ID: WG579467-01
Instrument ID: TOC-VWP Run Date: 08/08/16 18:03 Prep Method: 415.1
File ID: TC08082016.004 Analyst: EPT Method: 415.1
Workgroup (AAB#): WG579467 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-30-OCT-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4891318
10-AUG-2016 10:31

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080317 Analyst: EPT Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG579467 Units: mg/L
QC Key: DOD4 Lot #: STD74954

Sample ID: WG579467-02 LCS File ID: TC08082016.005 Run Date: 08/08/2016 18:15
Sample ID: WG579467-03 LCS2 File ID: TC08082016.006 Run Date: 08/08/2016 18:27

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	27.5	110	25.0	27.6	110	0.617	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4891319
Report generated: 08/10/2016 10:31

2.3.5.3 Raw Data

Curve

wg545145

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L

See Below

MS (TOC): _____

Calibration Curve Date: _____

Reagent: RGT 34567 / RGT 34459

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 18

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

- ☑ drain reservoir filled
- ☑ ASI water bottle full
- ☑ dilution water bottle full
- ☑ 3rd bottle full
- ☑ sufficient gas
- ☑ sufficient persulfate
- ☑ sufficient acid
- ☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC Curve		27	Std 72153		52	See SOP	
3	TC ICV		28			53	for point	
4	TIC ICV		29	TIC Curve		54	preparation	
5			30	Std 72165		55		
6			31			56		
7			32			57		
8			33	TOC (TC)		58		
9			34	ICV		59		
10			35	Std 72270		60	5/200 (1000) = 25	
11			36			61		
12			37	TIC ICV		62		
13	All points		38	Std 72654		63		
14	analyzed		39			64		
15	in duplicate		40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: David Merkle Date/Time: 10/31/15

DCN#114406

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID:
Cal. Curve: TCCURVE-10-30-2015.2015_10_30_16_06_37.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	4.764	500uL	1	*******		10/30/2015 4:10:07 PM
2	3.607	500uL	1	*******		10/30/2015 4:13:33 PM

Acid Add. 0.000%
Mean Area 4.186

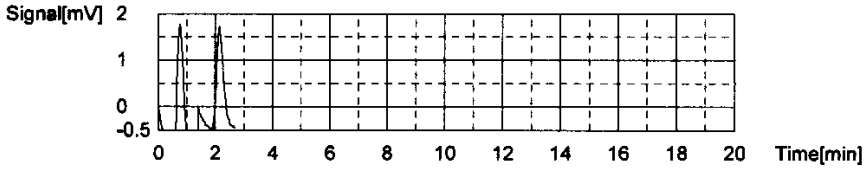

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	46.19	500uL	1	*******		10/30/2015 4:19:03 PM
2	46.28	500uL	1	*******		10/30/2015 4:22:56 PM

Acid Add. 0.000%
Mean Area 46.23

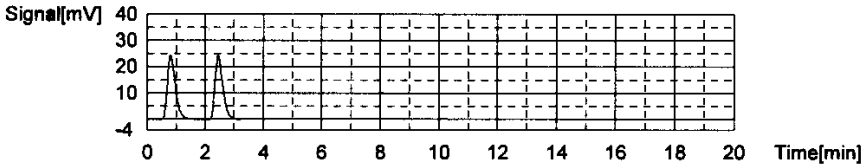

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	194.3	500uL	1	*******		10/30/2015 4:28:42 PM
2	193.1	500uL	1	*******		10/30/2015 4:32:47 PM

Acid Add. 0.000%
Mean Area 193.7

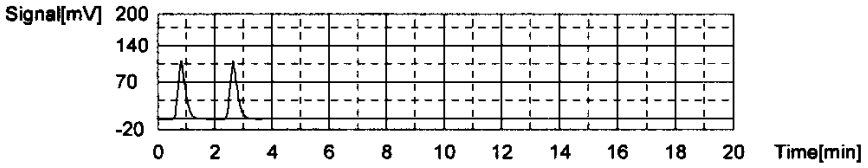

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	390.8	500uL	1	*******		10/30/2015 4:38:42 PM
2	391.3	500uL	1	*******		10/30/2015 4:42:54 PM

Acid Add. 0.000%
Mean Area 391.1

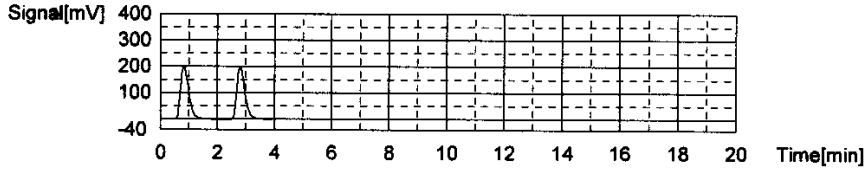

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	989.0	500uL	1	*******		10/30/2015 4:49:06 PM
2	994.6	500uL	1	*******		10/30/2015 4:53:33 PM

Acid Add. 0.000%
Mean Area 991.8

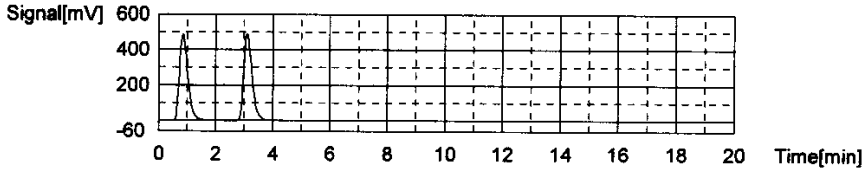

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1946	500uL	1	*******		10/30/2015 5:00:24 PM
2	1948	500uL	1	*******		10/30/2015 5:05:23 PM

Acid Add. 0.000%
Mean Area 1947

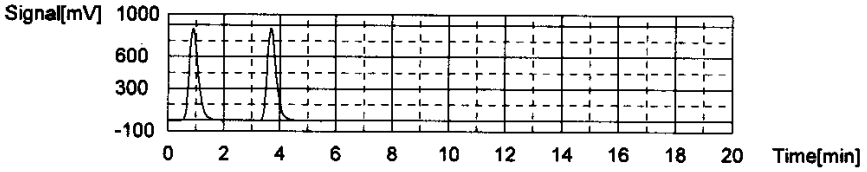

Slope: 38.95
Intercept 4.952
r^2 0.999910 ✓
Zero Shift No

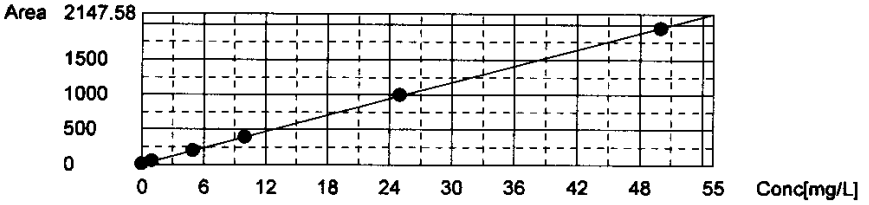

Sample

Sample Name: TC ICV
Sample ID:
Origin: TCCURVE-10-30-2015.2015_10_30_16_06_37.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:25.93mg/L

= 103.7%

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1020	26.06mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	10/31/2015 9:56:57 AM
2	1010	25.80mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	10/31/2015 10:02:17 AM

Mean Area 1015
Mean Conc. 25.93mg/L

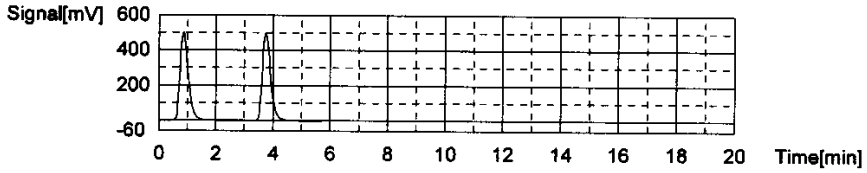

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-10-30-2015.2015_10_31_11_55_05.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	2.732	500uL	1	*******		10/31/2015 12:00:21 PM
2	5.011	500uL	1	*******		10/31/2015 12:04:52 PM

Acid Add. 10.00%
Mean Area 3.872

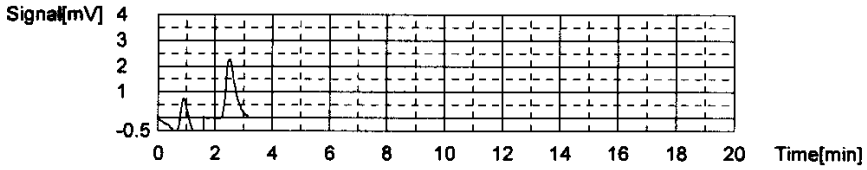

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	35.96	500uL	1	*******		10/31/2015 12:12:47 PM
2	37.13	500uL	1	*******		10/31/2015 12:17:43 PM

Acid Add. 10.00%
Mean Area 36.55

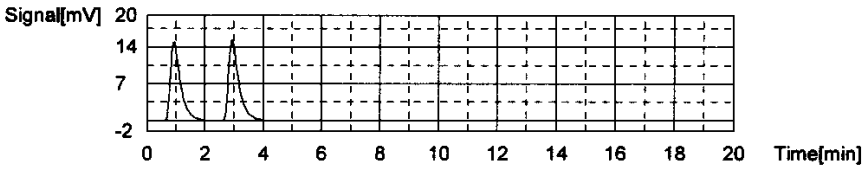

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	173.6	500uL	1	*******		10/31/2015 12:26:14 PM
2	175.6	500uL	1	*******		10/31/2015 12:31:38 PM

Acid Add. 10.00%
Mean Area 174.6

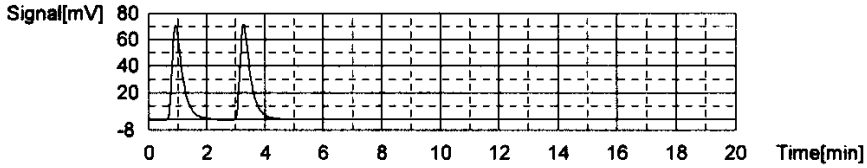

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	344.8	500uL	1	*******		10/31/2015 12:40:18 PM
2	345.1	500uL	1	*******		10/31/2015 12:45:49 PM

Acid Add. 10.00%
Mean Area 345.0

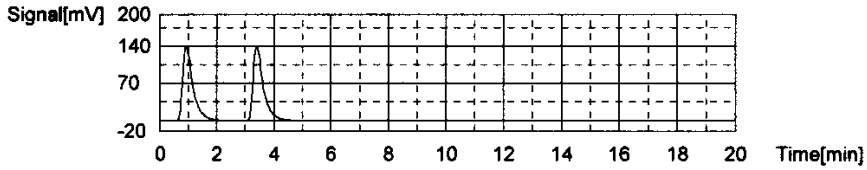

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	835.5	500uL	1	*******		10/31/2015 12:54:43 PM
2	845.9	500uL	1	*******		10/31/2015 1:00:42 PM

Acid Add. 10.00%
Mean Area 840.7

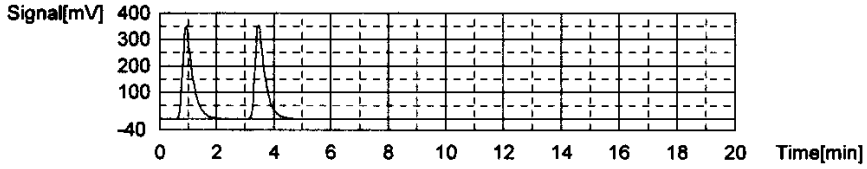

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1676	500uL	1	*******		10/31/2015 1:09:51 PM
2	1677	500uL	1	*******		10/31/2015 1:15:54 PM

Acid Add. 10.00%
Mean Area 1677

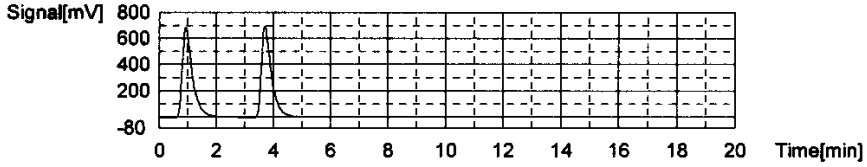

Slope: 33.42
Intercept 5.927
r^2 0.999982
Zero Shift No

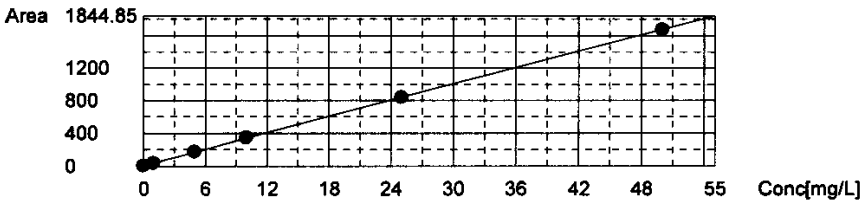

Sample

Sample Name: TIC ICV
Sample ID: Untitled
Origin: TICCURVE-10-30-2015.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:25.37mg/L

=101.5%

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	854.5	25.39mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	10/31/2015 1:25:27 PM
2	853.1	25.35mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	10/31/2015 1:31:33 PM

Mean Area 853.8
Mean Conc. 25.37mg/L

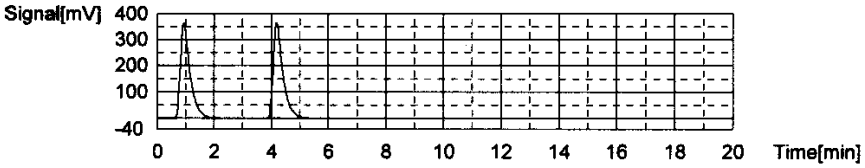

WORKGROUP: WG579467

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 75879
(5/200)(1000) = 25mg/L

LCS (TOC): Std 74954
(5/200)(1000) = 25mg/L

CCV (TIC): Std 75410
(5/200)(1000) = 25mg/L

MS (TOC): Std 74954
(.4)(1000)/40 = 10

Calibration Curve Date: 10/31/15

Reagent: 37358
36105

☐ SM5310-C : Matrix 2 WG_____

☒ EPA 415.1/9060A(mod): Matrix 1 WG 579467 SOP: K 4151 Rev. 19

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☒ drain reservoir filled
☒ ASI water bottle full
☒ dilution water bottle full
☒ 3rd bottle full
☒ sufficient gas
☒ sufficient persulfate
☒ sufficient acid
☒ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TIC		26	CCV		51		
2	TOC/TIC		27	CCB		52		
3	CCV		28	08-0321-31		53		
4	BLK		29	-32		54		
5	LCS		30	-33		55		
6	LCSDUP		31	-34	1/5	56		
7	08-0317-04	1/10	32	08-0330-05		57		
8	08-0321-15	1/3	33	-08		58		
9	-16	1/3	C/1 34	08-0332-01	1/10000	59		
10	-17	1/2	35	DUP 321-29		60		
11	-18	1/3	36	CCV		61		
12	-19	1/2	37	CCB		62		
13	-20	1/3	38	CCV		63		
14	CCV		39	CCB		64		
15	CCB		40	TOC/TIC		65		
16	08-0321-21	1/2	41	08-0321-21	1/3	66		
17	-22	1/2	42	08-0321-29	1/3	67		
18	R2 -23	1/3	43	DUP 0321-29	1/3	68		
19	R3 -24		44	08-0321-33	1/2	69		
20	MS2 -25	1/3	45	08-0330-05	1/3	70		
21	~~MS3~~ MS3 -26		46	-08	1/810	71		
22	MSD2 -27	1/3	47	~~CCV 330-05 1/2~~	1/10	72		
23	MSD3 -28		48	~~CCB~~ CCV		73		
24	-29		49	CCB		74		
25	-30	1/3	50			75		

qpt 8/9/16

qpt 8/9/16

Analyst: [illegible] Date/Time: 8/8/16 1730

DCN#120167

C:\TOC3201\Data\08-08-2016-EPT-TOC.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	TOC:4.170mg/L TC:29.22mg/L IC:25.05mg/L	Complete	8/8/2016 5:34:15 PM	1
2	TOC		TOC:29.29mg/L TC:36.90mg/L IC:7.607mg/L	Complete	8/8/2016 5:46:49 PM	2
3	TOC	CCV	TOC:27.62mg/L TC:27.63mg/L IC:0.01159mg/L	Complete	8/8/2016 5:58:53 PM	3
4	TOC	WG579467-01 BLK	TOC:0.04576mg/L TC:0.1268mg/L IC:0.08103mg/L	Complete	8/8/2016 6:07:52 PM	0
5	TOC	WG579467-02 LCS	!!Error!! TOC:27.45mg/L TC:27.45mg/L IC:-0.00313mg	Complete	8/8/2016 6:19:52 PM	5
6	TOC	WG579467-03 LCSDUP	!!Error!! TOC:27.62mg/L TC:27.60mg/L IC:-0.01304mg	Complete	8/8/2016 6:31:57 PM	6
7	TOC	L16080317-04 (10)	TOC:4.125mg/L TC:18.90mg/L IC:14.78mg/L	Complete	8/8/2016 6:44:09 PM	7
8	TOC	L16080321-15 (3)	TOC:6.579mg/L TC:34.74mg/L IC:28.16mg/L	Complete	8/8/2016 6:56:56 PM	8
9	TOC	L16080321-16 (3)	TOC:5.897mg/L TC:30.12mg/L IC:24.22mg/L	Complete	8/8/2016 7:09:45 PM	9
10	TOC	L16080321-17 (2)	TOC:4.013mg/L TC:21.30mg/L IC:17.29mg/L	Complete	8/8/2016 7:22:07 PM	10
11	TOC	L16080321-18 (3)	TOC:4.395mg/L TC:21.76mg/L IC:17.36mg/L	Complete	8/8/2016 7:34:39 PM	11
12	TOC	L16080321-19 (2)	TOC:7.990mg/L TC:33.15mg/L IC:25.16mg/L	Complete	8/8/2016 7:47:18 PM	12
13	TOC	L16080321-20 (3)	TOC:4.911mg/L TC:19.23mg/L IC:14.32mg/L	Complete	8/8/2016 7:59:25 PM	13
14	TOC	CCV	TOC:27.48mg/L TC:27.53mg/L IC:0.04103mg/L	Complete	8/8/2016 8:11:29 PM	14
15	TOC	CCB	TOC:0.04363mg/L TC:0.1360mg/L IC:0.09240mg/L	Complete	8/8/2016 8:20:25 PM	0
16	TOC		TOC:11.21mg/L TC:52.71mg/L IC:41.50mg/L	Complete	8/8/2016 8:33:46 PM	16
17	TOC	L16080321-22 (2)	TOC:12.04mg/L TC:46.42mg/L IC:34.38mg/L	Complete	8/8/2016 8:47:09 PM	17
18	TOC	L16080321-23 (3)	TOC:3.640mg/L TC:14.49mg/L IC:10.85mg/L	Complete	8/8/2016 8:59:21 PM	18
19	TOC	L16080321-24	TOC:9.566mg/L TC:43.50mg/L IC:33.93mg/L	Complete	8/8/2016 9:12:11 PM	19
20	TOC	L16080321-25 (3) MS	TOC:6.248mg/L TC:13.04mg/L IC:6.797mg/L	Complete	8/8/2016 9:24:25 PM	20
21	TOC	L16080321-26 MS	TOC:20.26mg/L TC:49.91mg/L IC:29.65mg/L	Complete	8/8/2016 9:37:11 PM	21
22	TOC	L16080321-27 (3) MSD	TOC:6.178mg/L TC:12.36mg/L IC:6.180mg/L	Complete	8/8/2016 9:49:17 PM	22
23	TOC	L16080321-28 MSD	TOC:19.42mg/L TC:46.58mg/L IC:27.15mg/L	Complete	8/8/2016 10:01:56 PM	23
24	TOC		TOC:5.107mg/L TC:60.52mg/L IC:55.41mg/L	Complete	8/8/2016 10:15:16 PM	24
25	TOC	L16080321-30 (3)	TOC:3.974mg/L TC:18.83mg/L IC:14.86mg/L	Complete	8/8/2016 10:27:38 PM	25
26	TOC	CCV	TOC:27.90mg/L TC:27.99mg/L IC:0.08291mg/L	Complete	8/8/2016 10:39:54 PM	26
27	TOC	CCB	TOC:0.03659mg/L TC:0.1363mg/L IC:0.09970mg/L	Complete	8/8/2016 10:48:47 PM	0
28	TOC	L16080321-31	TOC:1.099mg/L TC:1.172mg/L IC:0.07259mg/L	Complete	8/8/2016 11:00:21 PM	28
29	TOC	L16080321-32	TOC:0.9893mg/L TC:1.062mg/L IC:0.07310mg/L	Complete	8/8/2016 11:11:52 PM	29
30	TOC		TOC:7.999mg/L TC:55.51mg/L IC:47.51mg/L	Complete	8/8/2016 11:24:50 PM	30
31	TOC	L16080321-34 (3)	TOC:4.163mg/L TC:17.71mg/L IC:13.55mg/L	Complete	8/8/2016 11:37:17 PM	31
32	TOC		TOC:0.2936mg/L TC:81.14mg/L IC:80.84mg/L	Complete	8/8/2016 11:52:22 PM	32
33	TOC		!!Error!! TOC:-15.13mg/L TC:90.84mg/L IC:106.0mg/L	Complete	8/9/2016 12:07:26 AM	33
34	TOC	L16080332-01 (10000)	TOC:19.12mg/L TC:20.73mg/L IC:1.612mg/L	Complete	8/9/2016 12:19:35 AM	34
35	TOC		TOC:9.482mg/L TC:48.89mg/L IC:39.40mg/L	Complete	8/9/2016 12:33:18 AM	35
36	TOC	CCV	TOC:27.22mg/L TC:27.40mg/L IC:0.1817mg/L	Complete	8/9/2016 12:45:36 AM	36
37	TOC	CCB	TOC:0.01972mg/L TC:0.1412mg/L IC:0.1214mg/L	Complete	8/9/2016 12:54:32 AM	0
38	TOC	CCV	TOC:28.17mg/L TC:28.19mg/L IC:0.02511mg/L	Complete	8/9/2016 8:55:14 AM	38
39	TOC	CCB	TOC:0.06206mg/L TC:0.1484mg/L IC:0.08629mg/L	Complete	8/9/2016 9:04:11 AM	0
40	TOC	TOC/TIC	TOC:28.60mg/L TC:35.92mg/L IC:7.320mg/L	Complete	8/9/2016 10:08:28 AM	40
41	TOC	L16080321-21 (3)	TOC:7.738mg/L TC:41.70mg/L IC:33.96mg/L	Complete	8/9/2016 10:21:25 AM	41
42	TOC	L16080321-29 (3)	TOC:5.084mg/L TC:31.27mg/L IC:26.19mg/L	Complete	8/9/2016 10:34:09 AM	42
43	TOC	WG579467-11 (3) DUP	TOC:4.263mg/L TC:28.96mg/L IC:24.70mg/L	Complete	8/9/2016 10:46:46 AM	43
44	TOC	L16080321-33 (2)	TOC:6.442mg/L TC:47.73mg/L IC:41.29mg/L	Complete	8/9/2016 10:59:37 AM	44
45	TOC		TOC:3.389mg/L TC:60.77mg/L IC:57.39mg/L	Complete	8/9/2016 11:12:40 AM	45
46	TOC	L16080330-08 (10)	TOC:4.718mg/L TC:27.73mg/L IC:23.01mg/L	Complete	8/9/2016 11:44:12 AM	46
47	TOC	L16080330-05 (10)	TOC:3.386mg/L TC:17.11mg/L IC:13.73mg/L	Complete	8/9/2016 1:09:03 PM	47
48	TOC	CCV	TOC:27.73mg/L TC:27.83mg/L IC:0.1062mg/L	Complete	8/9/2016 1:21:12 PM	48
49	TOC	CCB	TOC:0.1096mg/L TC:0.1956mg/L IC:0.08596mg/L	Complete	8/9/2016 1:30:08 PM	0

8/9/2016 1:31:37 PM

1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.170mg/L TC:29.22mg/L IC:25.05mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1143	29.22mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 5:29:08 PM

Mean Area 1143
Mean Conc. 29.22mg/L

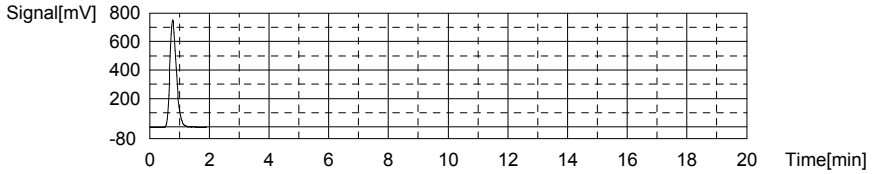

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	843.2	25.05mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 5:34:15 PM

Mean Area 843.2
Mean Conc. 25.05mg/L

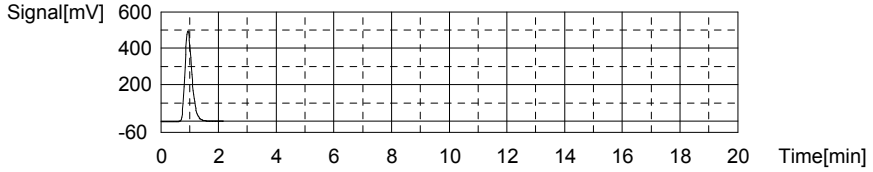

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:29.29mg/L TC:36.90mg/L IC:7.607mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1442	36.90mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 5:42:04 PM

Mean Area 1442
Mean Conc. 36.90mg/L

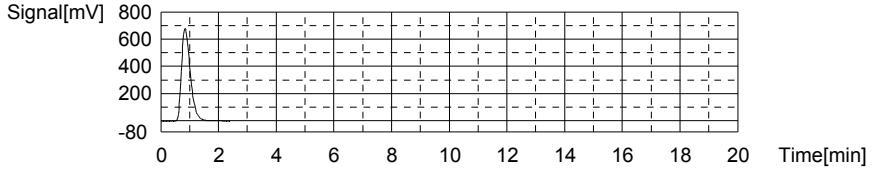

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	260.2	7.607mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 5:46:49 PM

Mean Area 260.2
Mean Conc. 7.607mg/L

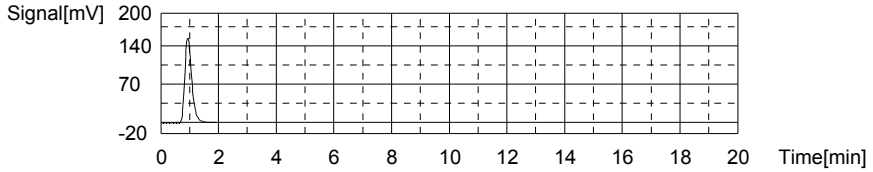

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.62mg/L TC:27.63mg/L IC:0.01159mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1081	27.63mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 5:54:35 PM

Mean Area 1081
Mean Conc. 27.63mg/L

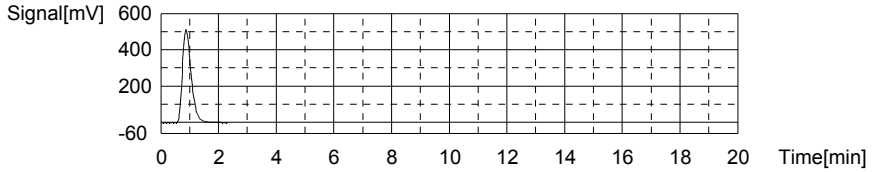

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.314	0.01159mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 5:58:53 PM

Mean Area 6.314
Mean Conc. 0.01159mg/L

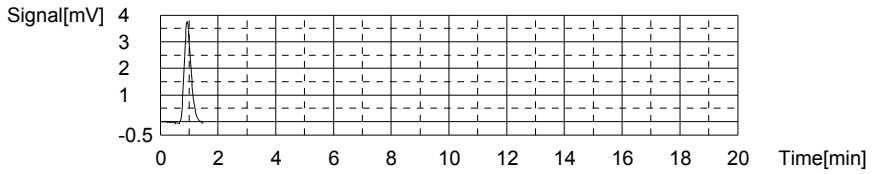

Sample

Sample Name: WG579467-01 BLK
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.04576mg/L TC:0.1268mg/L IC:0.08103mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.890	0.1268mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 6:03:58 PM

Mean Area 9.890
Mean Conc. 0.1268mg/L

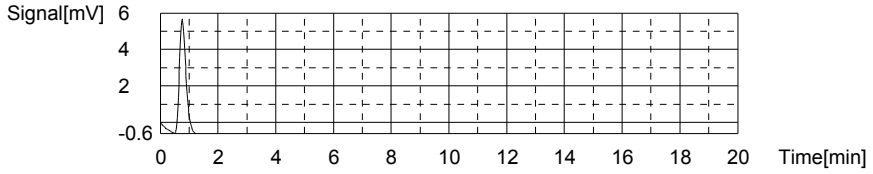

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.635	0.08103mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 6:07:52 PM

Mean Area 8.635
Mean Conc. 0.08103mg/L

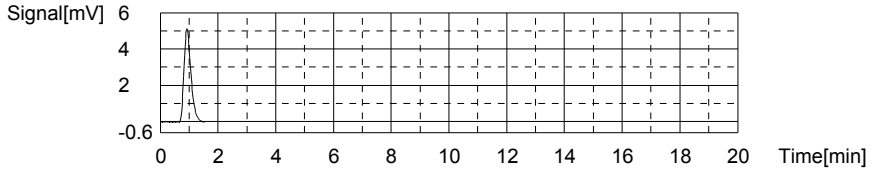

Sample

Sample Name: WG579467-02 LCS
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:27.45mg/L TC:27.45mg/L IC:-0.00313mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1074	27.45mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 6:15:35 PM

Mean Area 1074
Mean Conc. 27.45mg/L

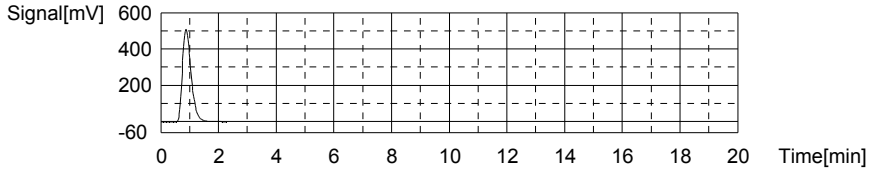

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.822	-0.00313mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 6:19:52 PM

Mean Area 5.822
Mean Conc. -0.00313mg/L

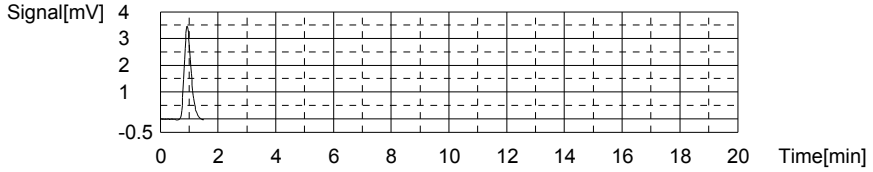

Sample

Sample Name: WG579467-03 LCSDUP
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:27.62mg/L TC:27.60mg/L IC:-0.01304mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1080	27.60mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 6:27:40 PM

Mean Area 1080
Mean Conc. 27.60mg/L

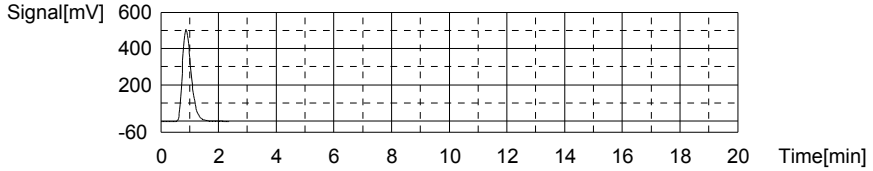

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.491	-0.01304mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 6:31:57 PM

Mean Area 5.491
Mean Conc. -0.01304mg/L

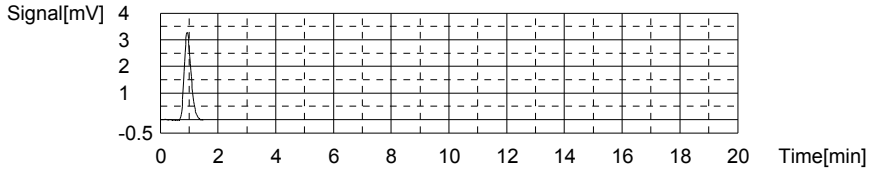

Sample

Sample Name: L16080317-04 (10)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.125mg/L TC:18.90mg/L IC:14.78mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	741.1	18.90mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 6:39:19 PM

Mean Area 741.1
Mean Conc. 18.90mg/L

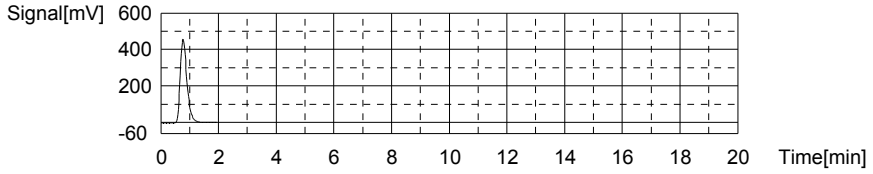

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	499.8	14.78mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 6:44:09 PM

Mean Area 499.8
Mean Conc. 14.78mg/L

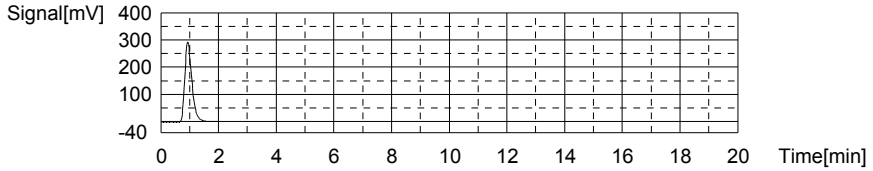

Sample

Sample Name: L16080321-15 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.579mg/L TC:34.74mg/L IC:28.16mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1358	34.74mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 6:51:39 PM

Mean Area 1358
Mean Conc. 34.74mg/L

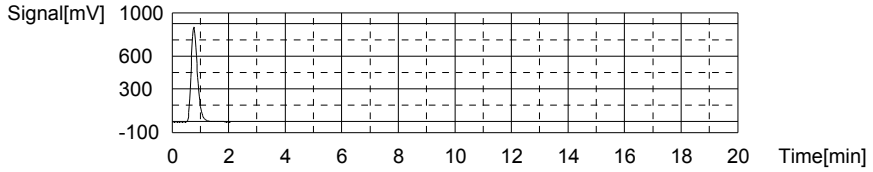

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	947.2	28.16mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 6:56:56 PM

Mean Area 947.2
Mean Conc. 28.16mg/L

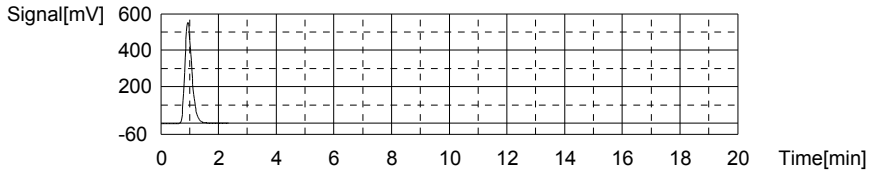

Sample

Sample Name: L16080321-16 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.897mg/L TC:30.12mg/L IC:24.22mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1178	30.12mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 7:04:35 PM

Mean Area 1178
Mean Conc. 30.12mg/L

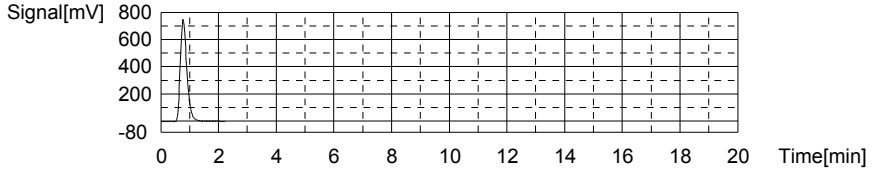

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	815.5	24.22mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 7:09:45 PM

Mean Area 815.5
Mean Conc. 24.22mg/L

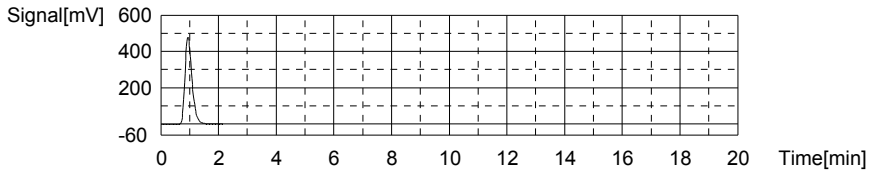

Sample

Sample Name: L16080321-17 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.013mg/L TC:21.30mg/L IC:17.29mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	834.5	21.30mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 7:17:03 PM

Mean Area 834.5
Mean Conc. 21.30mg/L

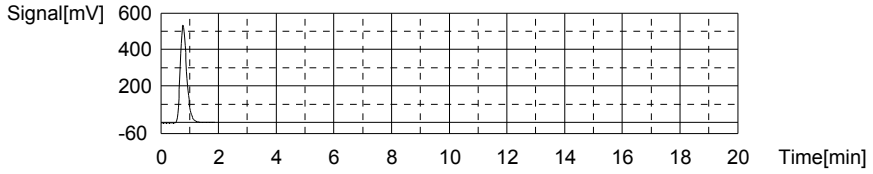

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	583.7	17.29mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 7:22:07 PM

Mean Area 583.7
Mean Conc. 17.29mg/L

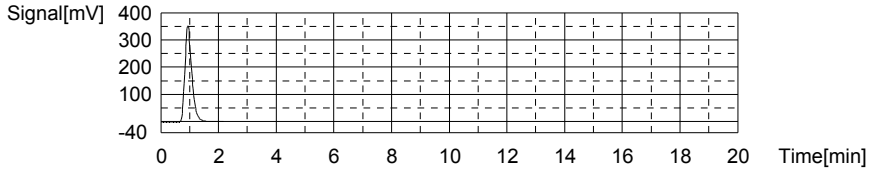

Sample

Sample Name: L16080321-18 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.395mg/L TC:21.76mg/L IC:17.36mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	852.4	21.76mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 7:29:45 PM

Mean Area 852.4
Mean Conc. 21.76mg/L

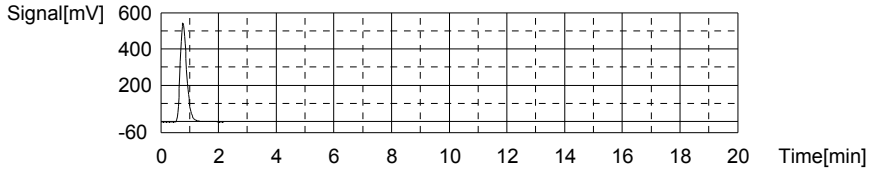

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	586.3	17.36mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 7:34:39 PM

Mean Area 586.3
Mean Conc. 17.36mg/L

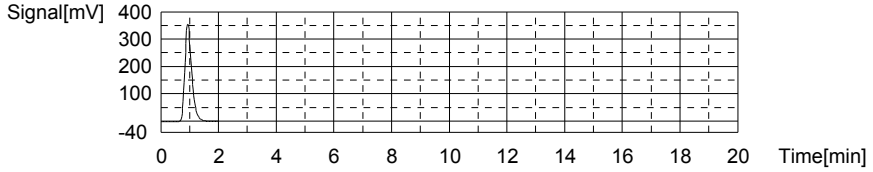

Sample

Sample Name: L16080321-19 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.990mg/L TC:33.15mg/L IC:25.16mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1296	33.15mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 7:42:19 PM

Mean Area 1296
Mean Conc. 33.15mg/L

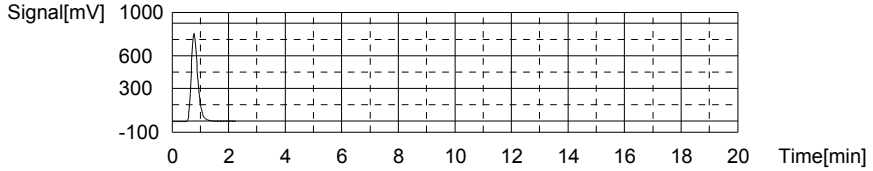

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	846.8	25.16mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 7:47:18 PM

Mean Area 846.8
Mean Conc. 25.16mg/L

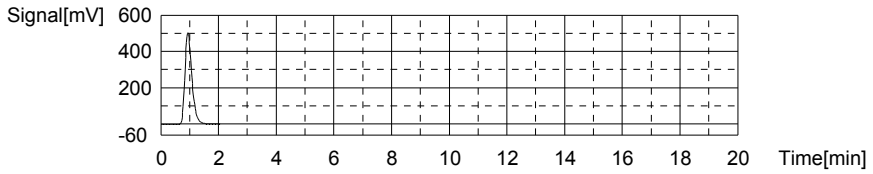

Sample

Sample Name: L16080321-20 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.911mg/L TC:19.23mg/L IC:14.32mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	753.9	19.23mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 7:54:31 PM

Mean Area 753.9
Mean Conc. 19.23mg/L

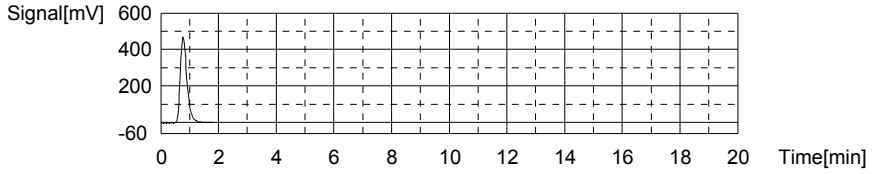

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	484.5	14.32mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 7:59:25 PM

Mean Area 484.5
Mean Conc. 14.32mg/L

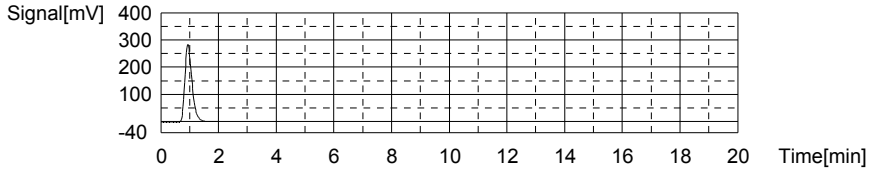

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.48mg/L TC:27.53mg/L IC:0.04103mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1077	27.53mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 8:07:10 PM

Mean Area 1077
Mean Conc. 27.53mg/L

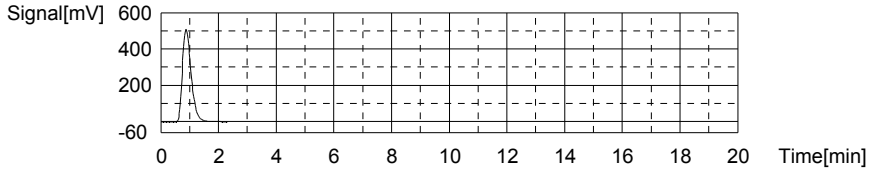

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.298	0.04103mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 8:11:29 PM

Mean Area 7.298
Mean Conc. 0.04103mg/L

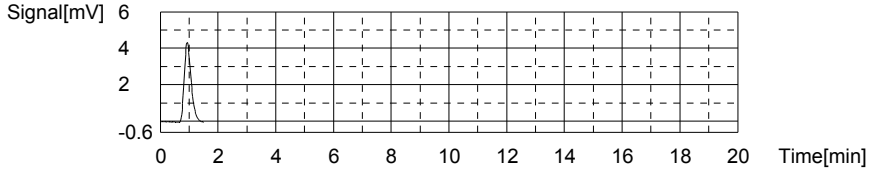

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.04363mg/L TC:0.1360mg/L IC:0.09240mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.25	0.1360mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 8:16:30 PM

Mean Area 10.25
Mean Conc. 0.1360mg/L

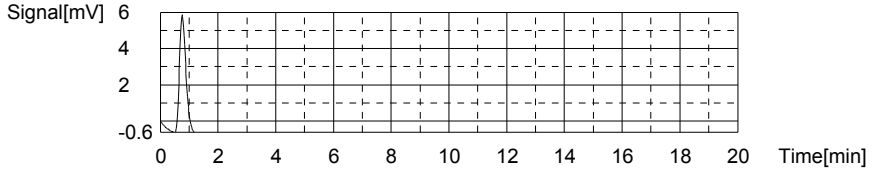

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.015	0.09240mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 8:20:25 PM

Mean Area 9.015
Mean Conc. 0.09240mg/L

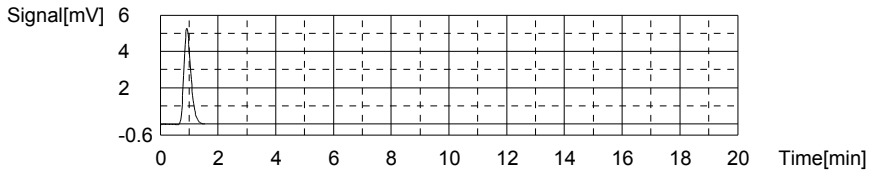

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:11.21mg/L TC:52.71mg/L IC:41.50mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2058	52.71mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 8:28:19 PM

Mean Area 2058
Mean Conc. 52.71mg/L

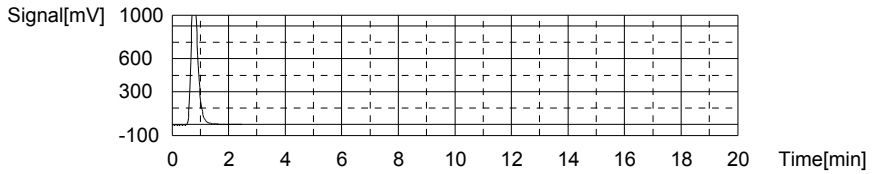

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1393	41.50mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 8:33:46 PM

Mean Area 1393
Mean Conc. 41.50mg/L

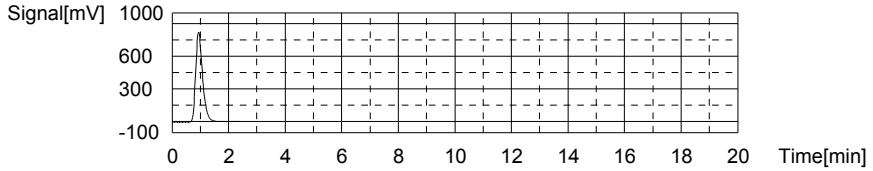

Sample

Sample Name: L16080321-22 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.04mg/L TC:46.42mg/L IC:34.38mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1813	46.42mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 8:41:52 PM

Mean Area 1813
Mean Conc. 46.42mg/L

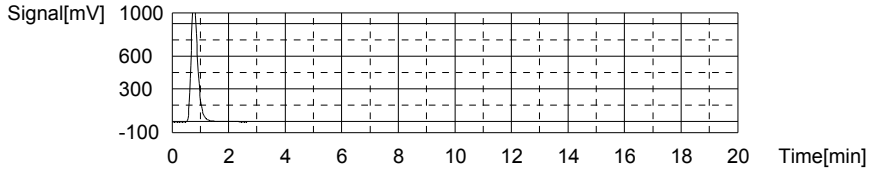

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1155	34.38mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 8:47:09 PM

Mean Area 1155
Mean Conc. 34.38mg/L

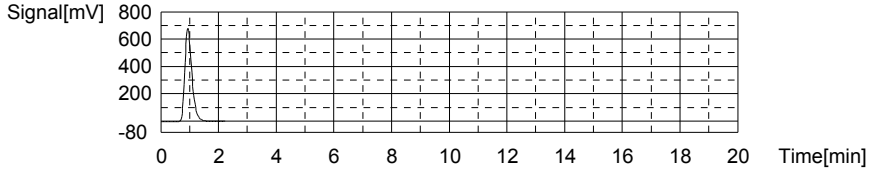

Sample

Sample Name: L16080321-23 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.640mg/L TC:14.49mg/L IC:10.85mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	569.2	14.49mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 8:54:29 PM

Mean Area 569.2
Mean Conc. 14.49mg/L

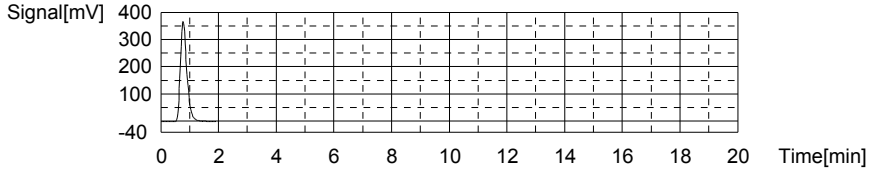

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	368.5	10.85mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 8:59:21 PM

Mean Area 368.5
Mean Conc. 10.85mg/L

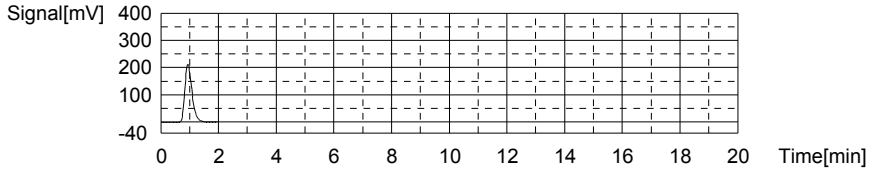

Sample

Sample Name: L16080321-24
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.566mg/L TC:43.50mg/L IC:33.93mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1699	43.50mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 9:07:04 PM

Mean Area 1699
Mean Conc. 43.50mg/L

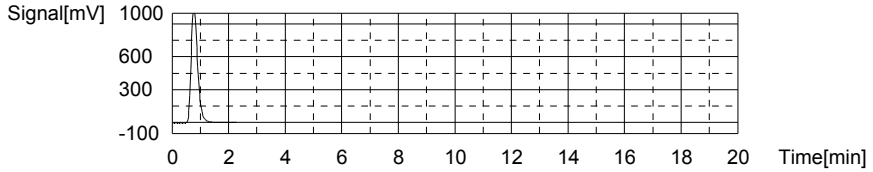

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1140	33.93mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 9:12:11 PM

Mean Area 1140
Mean Conc. 33.93mg/L

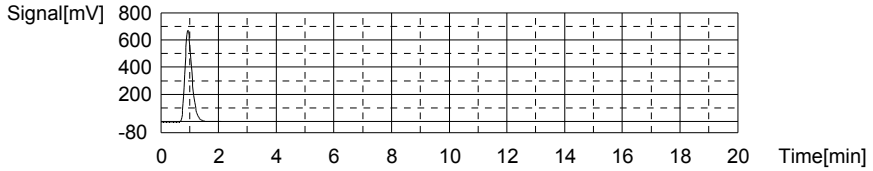

Sample

Sample Name: L16080321-25 (3) MS
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.248mg/L TC:13.04mg/L IC:6.797mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	513.0	13.04mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 9:19:34 PM

Mean Area 513.0
Mean Conc. 13.04mg/L

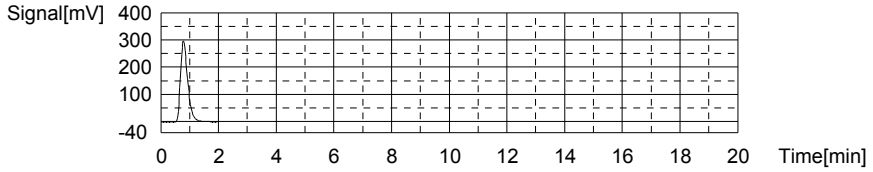

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	233.1	6.797mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 9:24:25 PM

Mean Area 233.1
Mean Conc. 6.797mg/L

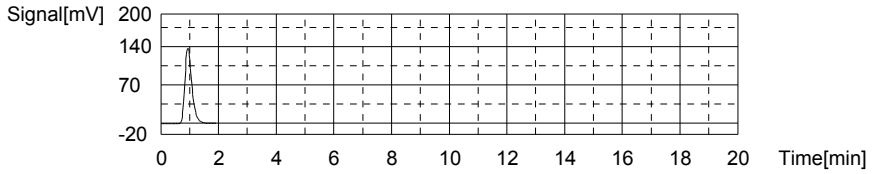

Sample

Sample Name: L16080321-26 MS
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:20.26mg/L TC:49.91mg/L IC:29.65mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1949	49.91mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 9:32:00 PM

Mean Area 1949
Mean Conc. 49.91mg/L

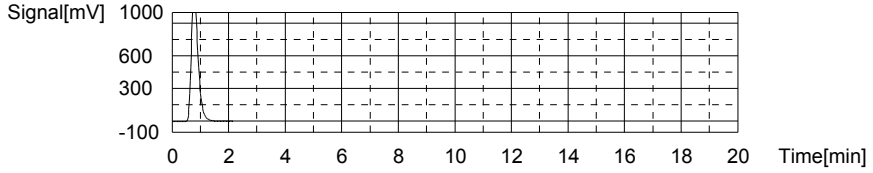

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	997.1	29.65mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 9:37:11 PM

Mean Area 997.1
Mean Conc. 29.65mg/L

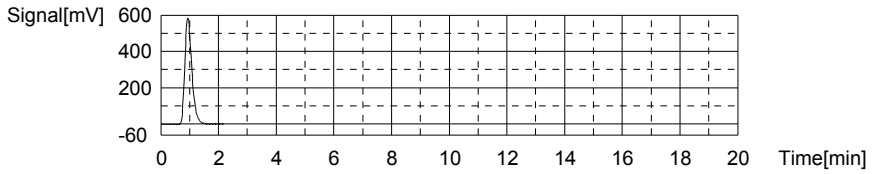

Sample

Sample Name: L16080321-27 (3) MSD
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.178mg/L TC:12.36mg/L IC:6.180mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	486.3	12.36mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 9:44:31 PM

Mean Area 486.3
Mean Conc. 12.36mg/L

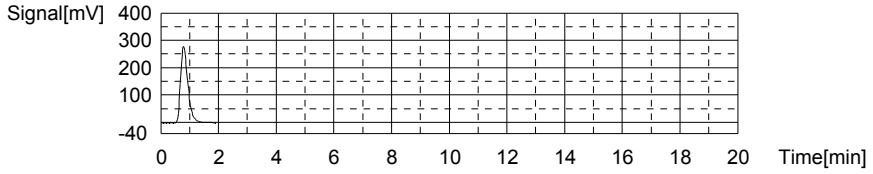

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	212.5	6.180mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 9:49:17 PM

Mean Area 212.5
Mean Conc. 6.180mg/L

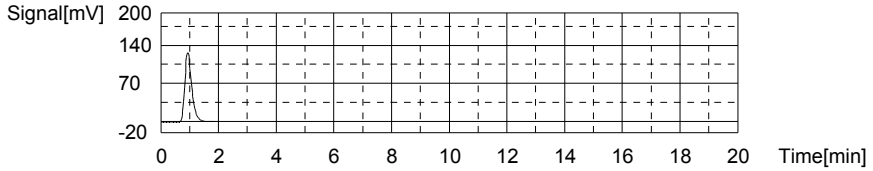

Sample

Sample Name: L16080321-28 MSD
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:19.42mg/L TC:46.58mg/L IC:27.15mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1819	46.58mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 9:56:51 PM

Mean Area 1819
Mean Conc. 46.58mg/L

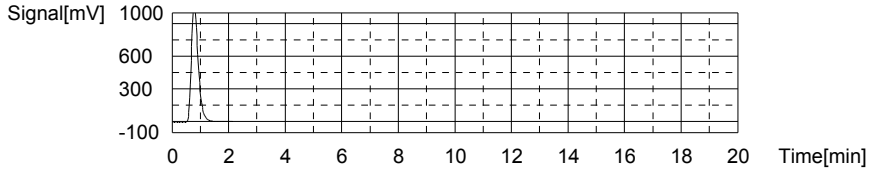

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	913.5	27.15mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 10:01:56 PM

Mean Area 913.5
Mean Conc. 27.15mg/L

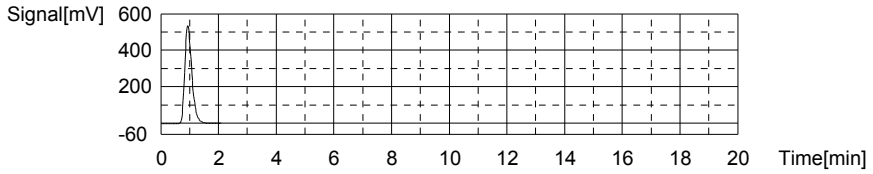

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.107mg/L TC:60.52mg/L IC:55.41mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2362	60.52mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 10:09:39 PM

Mean Area 2362
Mean Conc. 60.52mg/L

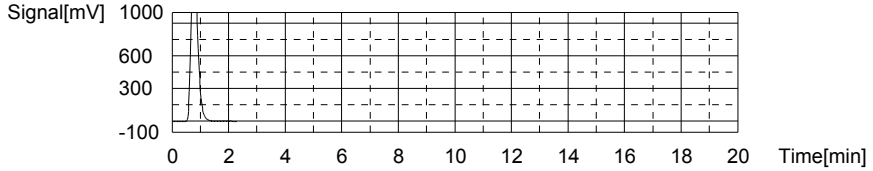

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1858	55.41mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 10:15:16 PM

Mean Area 1858
Mean Conc. 55.41mg/L

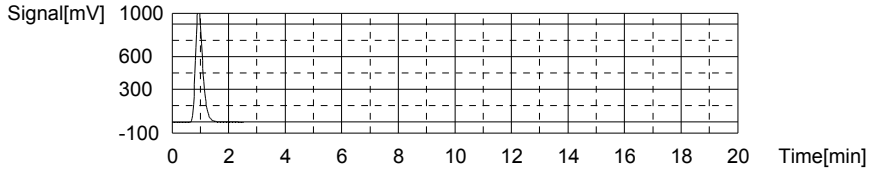

Sample

Sample Name: L16080321-30 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.974mg/L TC:18.83mg/L IC:14.86mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	738.5	18.83mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 10:22:42 PM

Mean Area 738.5
Mean Conc. 18.83mg/L

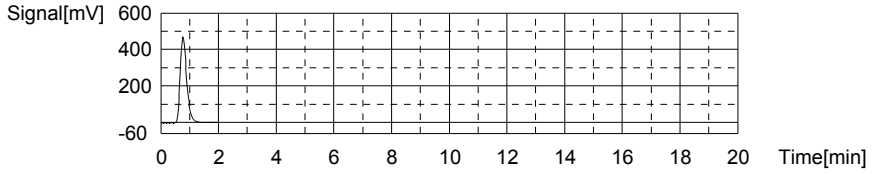

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	502.6	14.86mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 10:27:38 PM

Mean Area 502.6
Mean Conc. 14.86mg/L

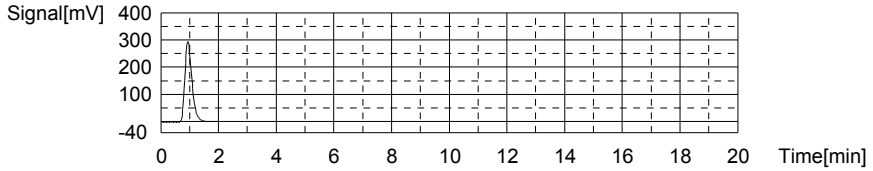

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.90mg/L TC:27.99mg/L IC:0.08291mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1095	27.99mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 10:35:28 PM

Mean Area 1095
Mean Conc. 27.99mg/L

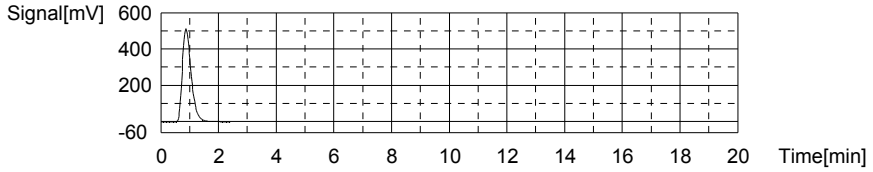

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.698	0.08291mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 10:39:54 PM

Mean Area 8.698
Mean Conc. 0.08291mg/L

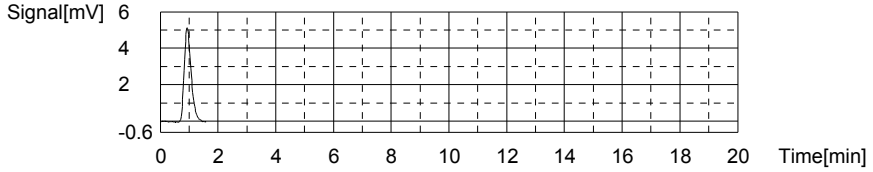

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.03659mg/L TC:0.1363mg/L IC:0.09970mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.26	0.1363mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 10:44:54 PM

Mean Area 10.26
Mean Conc. 0.1363mg/L

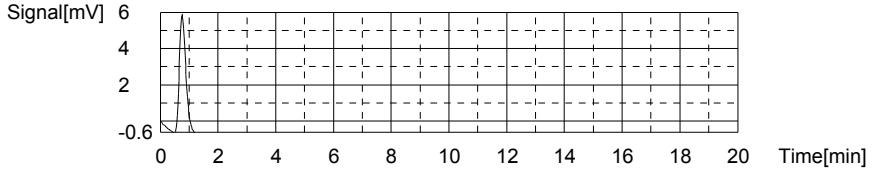

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.259	0.09970mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 10:48:47 PM

Mean Area 9.259
Mean Conc. 0.09970mg/L

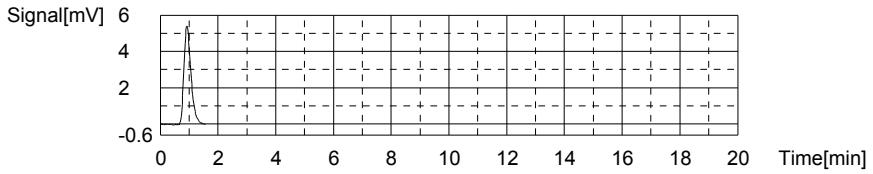

Sample

Sample Name: L16080321-31
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.099mg/L TC:1.172mg/L IC:0.07259mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	50.59	1.172mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 10:55:57 PM

Mean Area 50.59
Mean Conc. 1.172mg/L

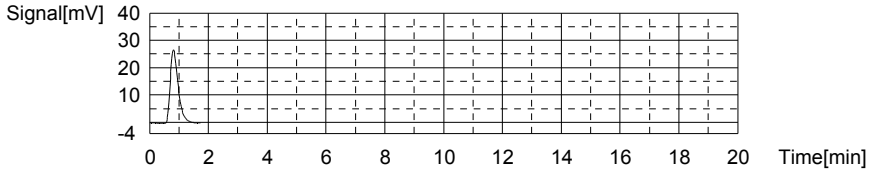

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.353	0.07259mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 11:00:21 PM

Mean Area 8.353
Mean Conc. 0.07259mg/L

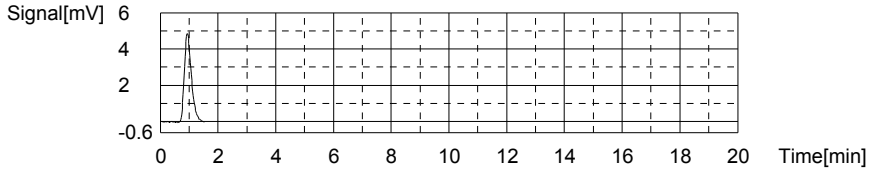

Sample

Sample Name: L16080321-32
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9893mg/L TC:1.062mg/L IC:0.07310mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	46.33	1.062mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 11:07:29 PM

Mean Area 46.33
Mean Conc. 1.062mg/L

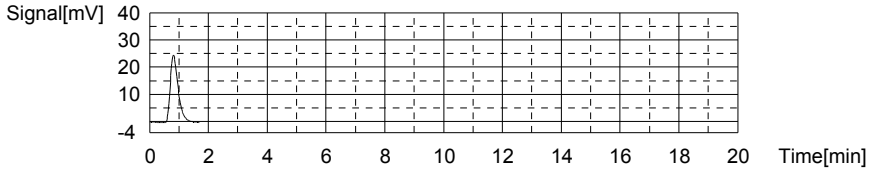

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.370	0.07310mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 11:11:52 PM

Mean Area 8.370
Mean Conc. 0.07310mg/L

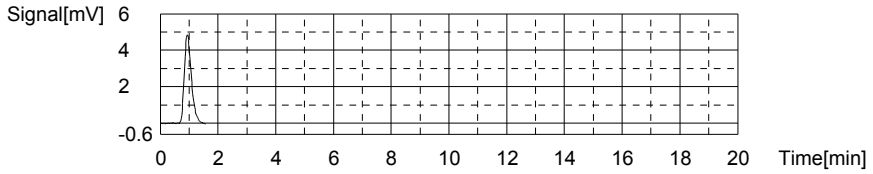

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.999mg/L TC:55.51mg/L IC:47.51mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2167	55.51mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 11:19:34 PM

Mean Area 2167
Mean Conc. 55.51mg/L

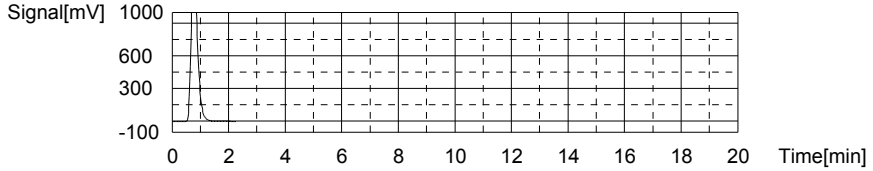

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1594	47.51mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 11:24:50 PM

Mean Area 1594
Mean Conc. 47.51mg/L

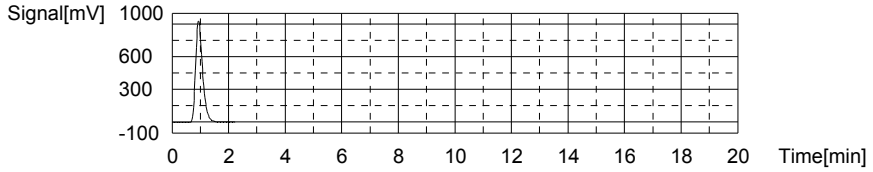

Sample

Sample Name: L16080321-34 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.163mg/L TC:17.71mg/L IC:13.55mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	694.7	17.71mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 11:32:20 PM

Mean Area 694.7
Mean Conc. 17.71mg/L

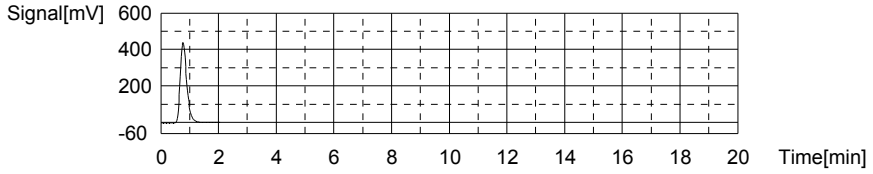

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	458.7	13.55mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 11:37:17 PM

Mean Area 458.7
Mean Conc. 13.55mg/L

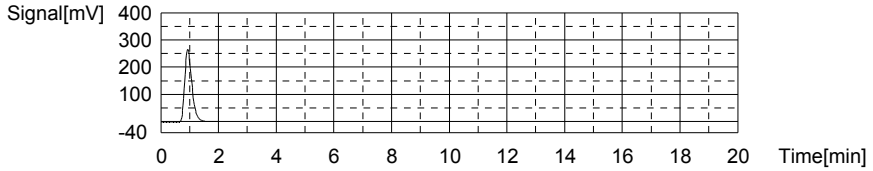

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.2936mg/L TC:81.14mg/L IC:80.84mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3165	81.14mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 11:46:26 PM

Mean Area 3165
Mean Conc. 81.14mg/L

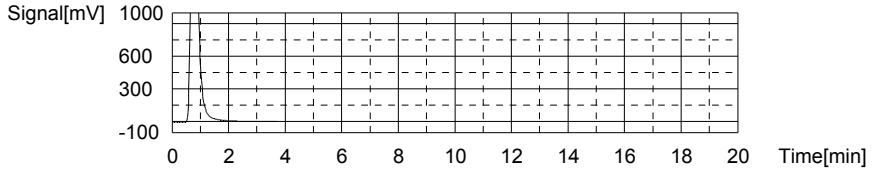

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2708	80.84mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 11:52:22 PM

Mean Area 2708
Mean Conc. 80.84mg/L

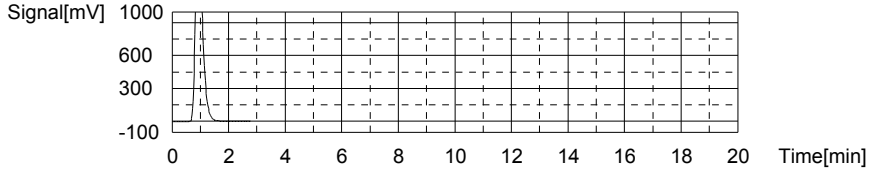

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-15.13mg/L TC:90.84mg/L IC:106.0mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3543	90.84mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 12:00:58 AM

Mean Area 3543
Mean Conc. 90.84mg/L

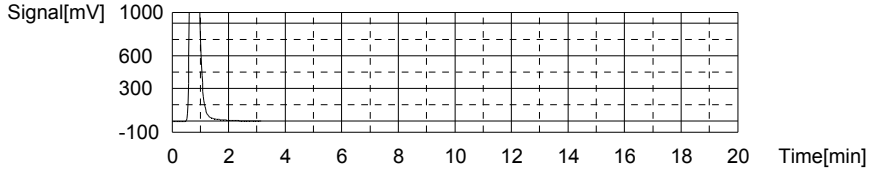

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3548	106.0mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 12:07:26 AM

Mean Area 3548
Mean Conc. 106.0mg/L

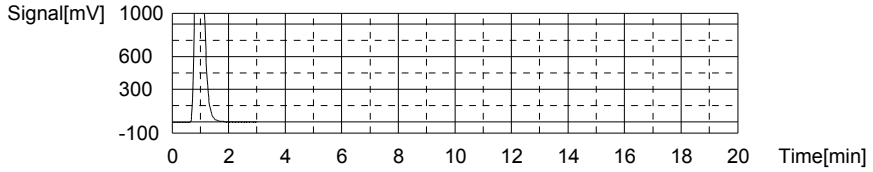

Sample

Sample Name: L16080332-01 (10000)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:19.12mg/L TC:20.73mg/L IC:1.612mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	812.5	20.73mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 12:14:49 AM

Mean Area 812.5
Mean Conc. 20.73mg/L

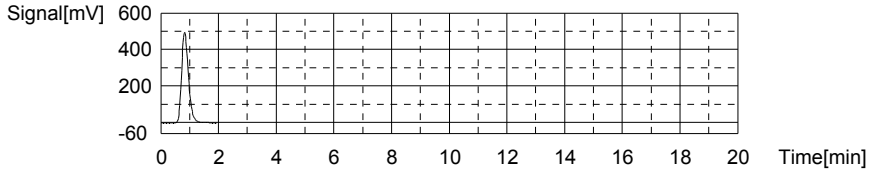

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	59.82	1.612mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 12:19:35 AM

Mean Area 59.82
Mean Conc. 1.612mg/L

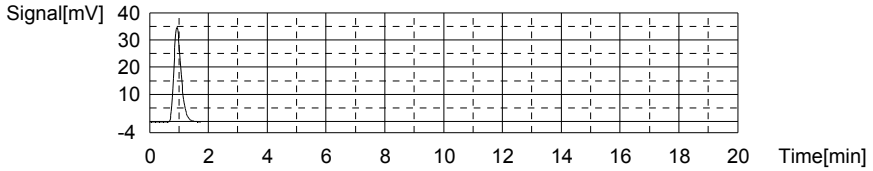

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.482mg/L TC:48.89mg/L IC:39.40mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1909	48.89mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 12:27:53 AM

Mean Area 1909
Mean Conc. 48.89mg/L

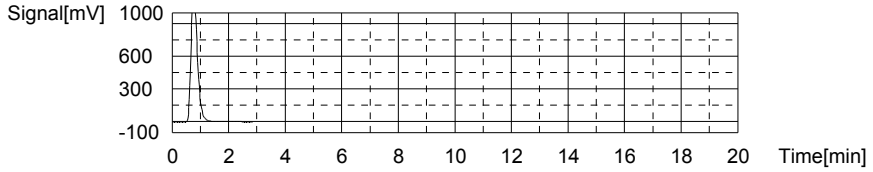

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1323	39.40mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 12:33:18 AM

Mean Area 1323
Mean Conc. 39.40mg/L

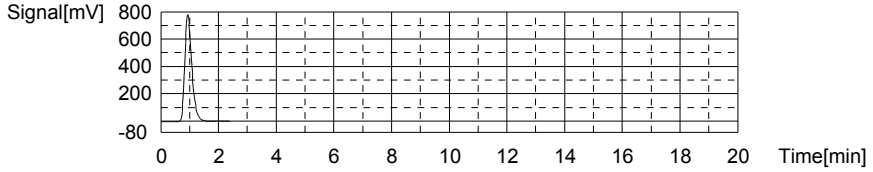

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.22mg/L TC:27.40mg/L IC:0.1817mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1072	27.40mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 12:41:07 AM

Mean Area 1072
Mean Conc. 27.40mg/L

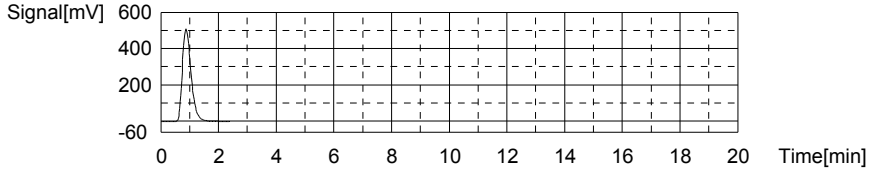

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.00	0.1817mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 12:45:36 AM

Mean Area 12.00
Mean Conc. 0.1817mg/L

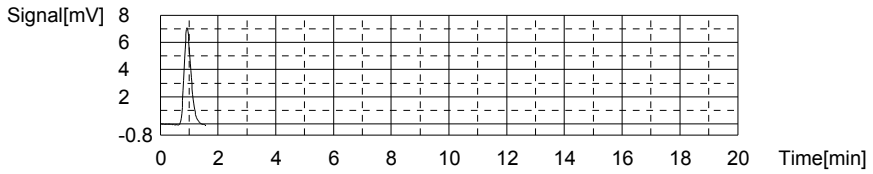

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.01972mg/L TC:0.1412mg/L IC:0.1214mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.45	0.1412mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 12:50:36 AM

Mean Area 10.45
Mean Conc. 0.1412mg/L

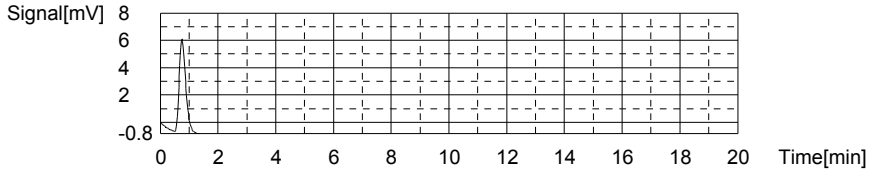

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.986	0.1214mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 12:54:32 AM

Mean Area 9.986
Mean Conc. 0.1214mg/L

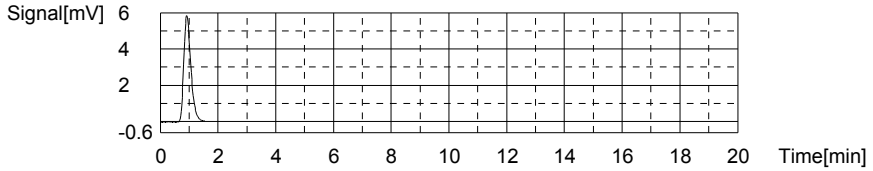

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.17mg/L TC:28.19mg/L IC:0.02511mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1103	28.19mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 8:50:58 AM

Mean Area 1103
Mean Conc. 28.19mg/L

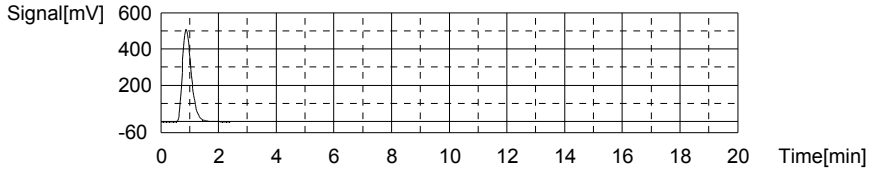

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.766	0.02511mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 8:55:14 AM

Mean Area 6.766
Mean Conc. 0.02511mg/L

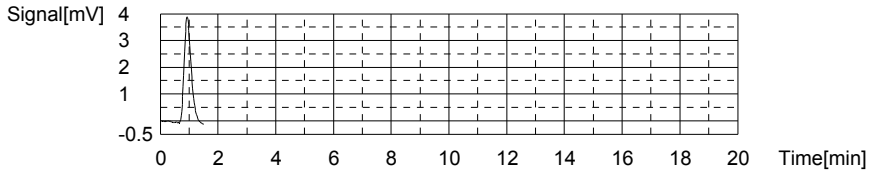

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.06206mg/L TC:0.1484mg/L IC:0.08629mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.73	0.1484mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 9:00:18 AM

Mean Area 10.73
Mean Conc. 0.1484mg/L

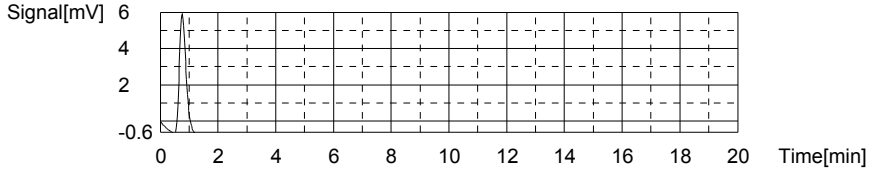

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.811	0.08629mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 9:04:11 AM

Mean Area 8.811
Mean Conc. 0.08629mg/L

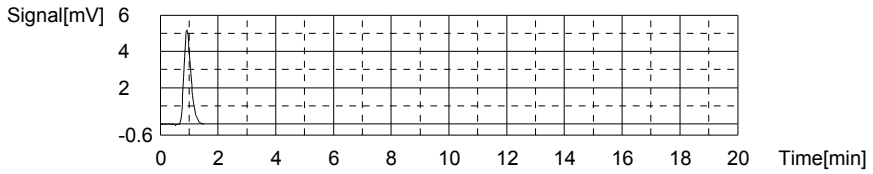

Sample

Sample Name: TOC/TIC
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.60mg/L TC:35.92mg/L IC:7.320mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1404	35.92mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 10:03:42 AM

Mean Area 1404
Mean Conc. 35.92mg/L

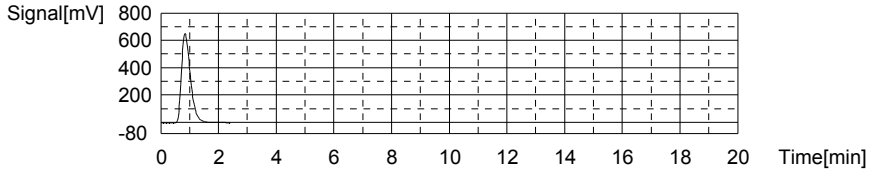

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	250.6	7.320mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 10:08:28 AM

Mean Area 250.6
Mean Conc. 7.320mg/L

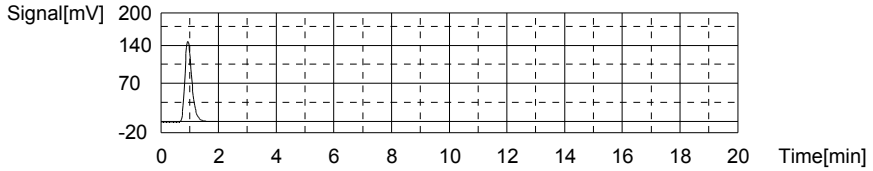

Sample

Sample Name: L16080321-21 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.738mg/L TC:41.70mg/L IC:33.96mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1629	41.70mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 10:16:08 AM

Mean Area 1629
Mean Conc. 41.70mg/L

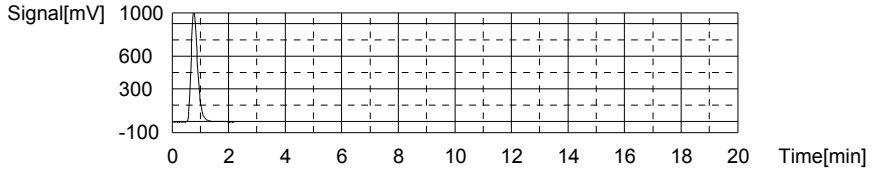

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1141	33.96mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 10:21:25 AM

Mean Area 1141
Mean Conc. 33.96mg/L

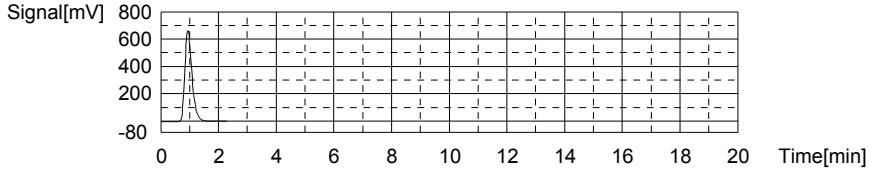

Sample

Sample Name: L16080321-29 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.084mg/L TC:31.27mg/L IC:26.19mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1223	31.27mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 10:29:03 AM

Mean Area 1223
Mean Conc. 31.27mg/L

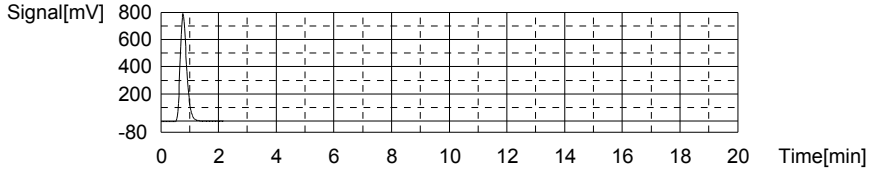

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	881.3	26.19mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 10:34:09 AM

Mean Area 881.3
Mean Conc. 26.19mg/L

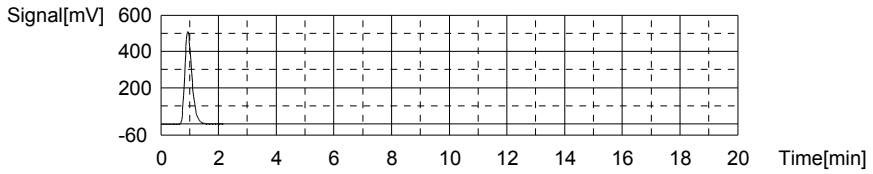

Sample

Sample Name: WG579467-11 (3) DUP
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.263mg/L TC:28.96mg/L IC:24.70mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1133	28.96mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 10:41:40 AM

Mean Area 1133
Mean Conc. 28.96mg/L

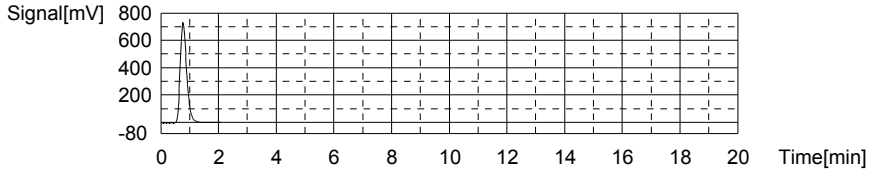

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	831.5	24.70mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 10:46:46 AM

Mean Area 831.5
Mean Conc. 24.70mg/L

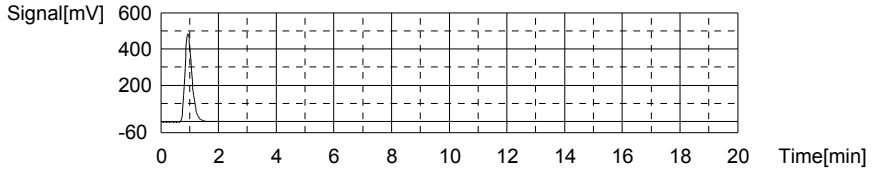

Sample

Sample Name: L16080321-33 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.442mg/L TC:47.73mg/L IC:41.29mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1864	47.73mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 10:54:17 AM

Mean Area 1864
Mean Conc. 47.73mg/L

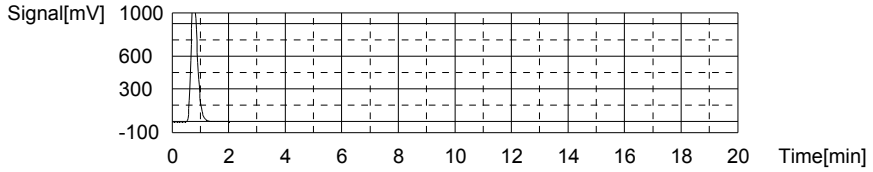

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1386	41.29mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 10:59:37 AM

Mean Area 1386
Mean Conc. 41.29mg/L

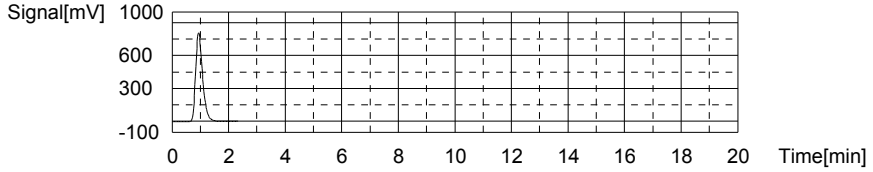

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.389mg/L TC:60.77mg/L IC:57.39mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2372	60.77mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 11:07:21 AM

Mean Area 2372
Mean Conc. 60.77mg/L

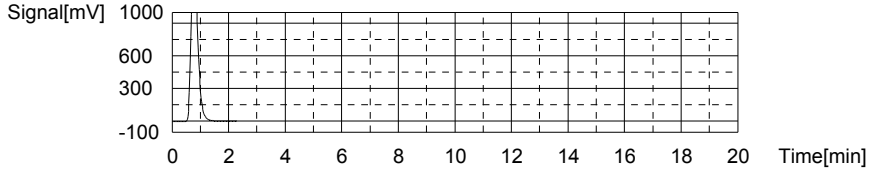

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1924	57.39mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 11:12:40 AM

Mean Area 1924
Mean Conc. 57.39mg/L

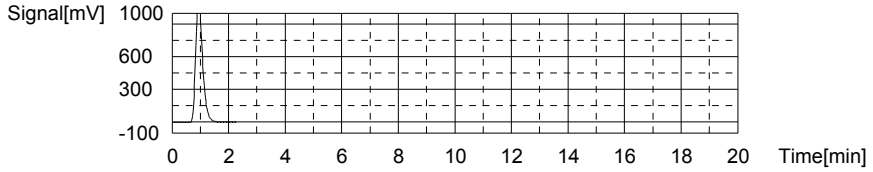

Sample

Sample Name: L16080330-08 (10)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.718mg/L TC:27.73mg/L IC:23.01mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1085	27.73mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 11:39:07 AM

Mean Area 1085
Mean Conc. 27.73mg/L

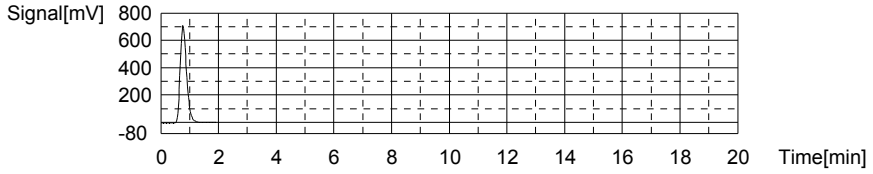

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	775.1	23.01mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 11:44:12 AM

Mean Area 775.1
Mean Conc. 23.01mg/L

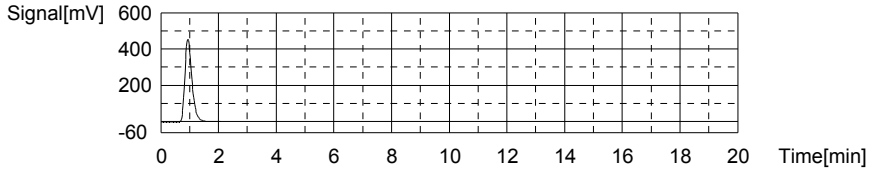

Sample

Sample Name: L16080330-05 (10)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.386mg/L TC:17.11mg/L IC:13.73mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	671.4	17.11mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 1:04:13 PM

Mean Area 671.4
Mean Conc. 17.11mg/L

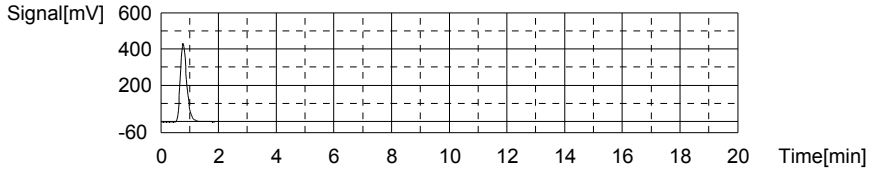

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	464.7	13.73mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 1:09:03 PM

Mean Area 464.7
Mean Conc. 13.73mg/L

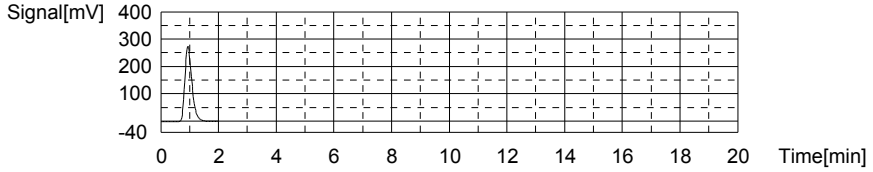

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.73mg/L TC:27.83mg/L IC:0.1062mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1089	27.83mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 1:16:51 PM

Mean Area 1089
Mean Conc. 27.83mg/L

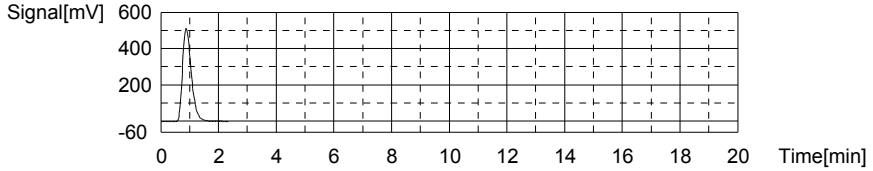

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.475	0.1062mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 1:21:12 PM

Mean Area 9.475
Mean Conc. 0.1062mg/L

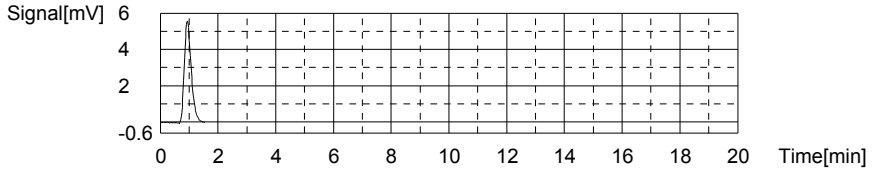

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1096mg/L TC:0.1956mg/L IC:0.08596mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.57	0.1956mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 1:26:18 PM

Mean Area 12.57
Mean Conc. 0.1956mg/L

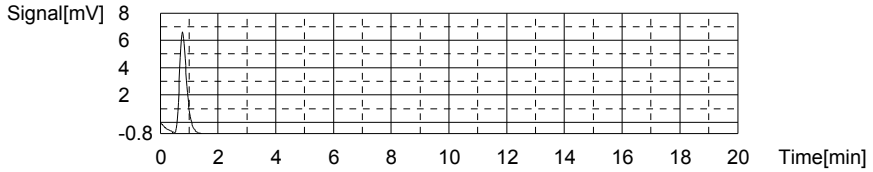

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.800	0.08596mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 1:30:08 PM

Mean Area 8.800
Mean Conc. 0.08596mg/L

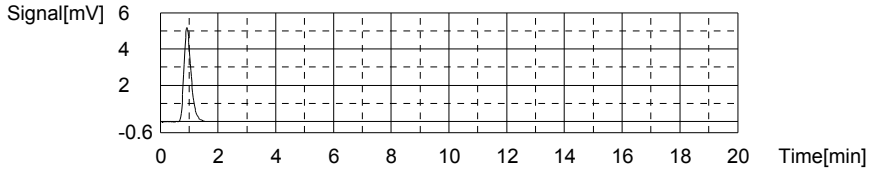

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
August 22, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED	AWE - ANDREW W. ESSIG
AZH - AFTER HOURS	BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE	BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CJQ - Cameron J. Quick
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	CV - Carl Volkman
DAK - DEAN A. KETELSEN	DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG	DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER	DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN	ENY - EMILY N. YOAK
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
HDC - HANAH D. COE	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JDS - JARED D. SMITH
JKP - JACQUELINE K. PARSONS	JLD - JESSICA L. DELONG
JLL - JOHN L. LENT	JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU
KAT - KATHY A. TUCKER	KDD - Katelyn D. Daley
KDW - KATHRYN D. WELCH	KEB - KATIE E. BARNES
KHR - KIM H. RHODES	KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS	LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF	LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA	MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MMB - MAREN M. BEERY	MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON	NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS	PIT - MICROBAC WARRENDALE
QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN
RNP - RICK N. PETTY	SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN	SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE	TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS
VC - VICKI COLLIER	WJB - WILL J. BEASLEY
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
August 22, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
August 22, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002FA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Dissolved Gases / Carbon Dioxide	Sulfide	Alkalinity	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Total Iron	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 46	46WW03-080416			8/4/16	0755		✓	W	3	✓												
	46WW03MS-080416			8/4/16	0755		✓	W	3	✓												
	46WW03MSD-080416			8/4/16	0755		✓	W	3	✓												
	46WW02-080416			8/4/16	0855		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	46WW02FF-080416			8/4/16	0855		✓	W	1								✓					
	46WW06-080416			8/4/16	1020		✓	W	3	✓												
	46WW06FD-080416			8/4/16	1020		✓	W	3	✓												
	LHSMW25-080416			8/4/16	1125		✓	W	3	✓												
	46WW10-080416			8/4/16	1240		✓	W	3	✓												
	46WW01-080416			8/4/16	1330		✓	W	3	✓												
	TRip BLANK			8/4/16			✓	W	2	✓												

Comments: **STANDARD TAT**

Microbac OVD
Received: 08/05/2016 09:38
By: CARA STRICKLER 221000089327
Cara Strickler

Relinquished by: (Signature) Scott Beesinger	Date 8/4/16	Time 1530	Received	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received (Signature)	me	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080317
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080317-01	784342	826-LOW PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Samplenum	Container ID	Products
L16080317-02	784343	826-LOW 826-SPLP-SPE SPLP-ZHE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080317
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080317-03	784344	826-LOW G-40-T2 826-SPE1

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:38	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:35	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Samplenum	Container ID	Products
L16080317-04	784345	826-LOW ENCORE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080317
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080317-04	784346	RSK175EXT PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG1	05-AUG-2016 15:36	AWE	CLS	
3	STORE	ORG1	A1	19-AUG-2016 07:34	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG1	05-AUG-2016 15:36	AWE	CLS	
3	STORE	ORG1	A1	19-AUG-2016 07:34	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG1	05-AUG-2016 15:36	AWE	CLS	
3	STORE	ORG1	A1	19-AUG-2016 07:34	CLS	AWE	

Samplenum	Container ID	Products
L16080317-04	784347	9056 826-SPLP-SPE SPLP-ZHE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	05-AUG-2016 12:16	CLS		
2	STORE	SEM	A1	10-AUG-2016 11:42	CLS	AED	

Samplenum	Container ID	Products
L16080317-04	784348	ALK 827-PAHL

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	05-AUG-2016 12:16	CLS		
2	ANALYZ	F1	WET	08-AUG-2016 14:33	DCM	CLS	
3	STORE	WET	A1	12-AUG-2016 11:08	CLS	BLR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080317
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080317-04	784349	TOC 8082

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 12:16	CLS		<2
2	ANALYZ	W1	WET	08-AUG-2016 15:49	EPT	CLS	
3	STORE	WET	A1	12-AUG-2016 11:08	CLS	BLR	

Samplenum	Container ID	Products
L16080317-04	784350	FE HG ZN BA BE V NI AG CR CO CU MN CD-AX PB-A>

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 12:16	CLS		
2	PREP	W1	DIG	05-AUG-2016 13:41	ERP	BRG	
3	STORE	DIG	A1	09-AUG-2016 13:04	BRG	ERP	
4	ANALYZ*	DIG	METALS	10-AUG-2016 08:59	JYH	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16080317-04	784351	S 8082 827-PAHL

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 12:16	CLS		
2	ANALYZ	W1	WET	05-AUG-2016 15:47	EPT	CLS	
3	STORE	WET	A1	11-AUG-2016 08:15	EPT	CLS	

Samplenum	Container ID	Products
L16080317-05	784352	FE-D MG-D HGSL ZN SB BA BE V NI SE AG CD CR C(

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 12:16	CLS		
2	PREP	W1	DIG	05-AUG-2016 13:41	ERP	BRG	
3	STORE	DIG	A1	09-AUG-2016 13:04	BRG	ERP	
4	ANALYZ*	DIG	METALS	10-AUG-2016 08:59	JYH	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080317
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080317-06	784353	826-LOW PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:38	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:38	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:38	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Samplenum	Container ID	Products
L16080317-07	784354	826-LOW SPLP-EX 8082-SPLP 827-PAHL-SPLP

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:38	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:38	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:38	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080317
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080317-08	784355	826-LOW 8082 827-PAHL-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:38	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:38	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:38	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Samplenum	Container ID	Products
L16080317-09	784356	826-LOW HGSL ZN SB V SE CO CU FE PB AS-AX

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:38	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:38	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	05-AUG-2016 12:16	CLS		
2	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080317
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080317-10	784357	826-LOW PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:38	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:38	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:38	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Samplenum	Container ID	Products
L16080317-11	784358	826-LOW SPLP-EX 827-SPLP-SPE 827-PAHL-SPLP-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:38	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 12:16	CLS		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:38	AWE	CLS	
3	STORE	ORG4	A1	19-AUG-2016 07:35	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16080330

Kayla Teague
AECOM Technical Services, Inc.
1950 N Stemmons FWY
Dallas, TX 75207

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on August 17 2016

Leslie Bucina – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
The following sample IDs were received out of hold for 300: CLS (Cooler was 1 day late). BRG 46WW05-080316 46WW16-080316 LHSMW19-080316	Please proceed. MRT

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113322	H	3.0		J4579392777	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	No
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
46WW08-080216	L16080330-01	08/02/2016 08:55	08/05/2016 09:37
46WW14-080216	L16080330-02	08/02/2016 10:00	08/05/2016 09:37
46WW14FD-080216	L16080330-03	08/02/2016 10:00	08/05/2016 09:37
46WW07-080216	L16080330-04	08/02/2016 11:05	08/05/2016 09:37
46WW05-080316	L16080330-05	08/03/2016 07:55	08/05/2016 09:37
46WW05F-080316	L16080330-06	08/03/2016 07:55	08/05/2016 09:37
46WW05FF-080316	L16080330-07	08/03/2016 07:55	08/05/2016 09:37
46WW16-080316	L16080330-08	08/03/2016 09:10	08/05/2016 09:37
46WW16F-080316	L16080330-09	08/03/2016 09:10	08/05/2016 09:37
46WW16FF-080316	L16080330-10	08/03/2016 09:10	08/05/2016 09:37
LHSMW19-080316	L16080330-11	08/03/2016 10:20	08/05/2016 09:37
LHSMW19FF-080316	L16080330-12	08/03/2016 10:20	08/05/2016 09:37
46WW11-080316	L16080330-13	08/03/2016 11:25	08/05/2016 09:37
46WW11FF-080316	L16080330-14	08/03/2016 11:25	08/05/2016 09:37
46WW09-080316	L16080330-15	08/03/2016 13:45	08/05/2016 09:37
46WW09F-080316	L16080330-16	08/03/2016 13:45	08/05/2016 09:37
46WW09FF-080316	L16080330-17	08/03/2016 13:45	08/05/2016 09:37
TRIP BLANK	L16080330-18	08/03/2016 00:01	08/05/2016 09:37

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16080330
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 61
2.0 Full Sample Data Package 129
2.1 Volatiles Data 130
2.1.1 Volatiles GCMS Data (8260) 131
2.1.1.1 Summary Data 132
2.1.1.2 QC Summary Data 163
2.1.1.3 Sample Data 195
2.1.1.4 Standards Data 237
2.1.1.5 Raw QC Data 358
2.1.2 RSK 175 372
2.1.2.1 Summary Data 373
2.1.2.2 QC Summary Data 385
2.1.2.3 Sample Data 415
2.1.2.4 Standards Data 436
2.1.2.5 Raw QC Data 476
2.2 Metals Data 487
2.2.1 Metals I C P Data 488
2.2.1.1 Summary Data 489
2.2.1.2 QC Summary Data 498
2.2.1.3 Raw Data 555
2.2.2 Metals ICP-MS Data 1248
2.2.2.1 Summary Data 1249
2.2.2.2 QC Summary Data 1252
2.2.2.3 Raw Data 1285
2.3 General Chemistry Data 1603
2.3.1 Method 9056 1604
2.3.1.1 Summary Data 1605
2.3.1.2 QC Summary Data 1616
2.3.1.3 Sample Data 1655
2.3.1.4 Standards Data 1665
2.3.1.5 Raw QC Data 1705
2.3.2 Alkalinity Data 1711
2.3.2.1 Summary Data 1712
2.3.2.2 QC Summary Data 1715
2.3.2.3 Raw Data 1722
2.3.3 Phosphorus Data 1728
2.3.3.1 Summary Data 1729
2.3.3.2 QC Summary Data 1736
2.3.3.3 Raw Data 1743
2.3.4 Sulfide Data 1749
2.3.4.1 Summary Data 1750
2.3.4.2 QC Summary Data 1757
2.3.4.3 Raw Data 1764
2.3.5 Total Organic Carbon Data 1767
2.3.5.1 Summary Data 1768
2.3.5.2 QC Summary Data 1771
2.3.5.3 Raw Data 1783
3.0 Attachments 1854

1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	8260
Prep Batch Number(s):	580241	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-08-17 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-08-17 17:06:51

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	8260
Prep Batch Number(s):	580241	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-08-17 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	8260
Prep Batch Number(s):	580241	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-08-17 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	8260
Prep Batch Number(s):	580241	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-08-17 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	8260
Prep Batch Number(s):	580241	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-08-17 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	8260
Prep Batch Number(s):	580241	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-08-17 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Chloromethane exceeded the UCL in the ICV.

2)2-Hexanone exceeded the UCL in the CCV.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	RSK175
Prep Batch Number(s):		**Reviewer Name:**	Franci Bolden
LRC Date:	2016-08-17 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2016-08-17 17:20:14

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	RSK175
Prep Batch Number(s):		**Reviewer Name:**	Franci Bolden
LRC Date:	2016-08-17 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?		X			1
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	RSK175
Prep Batch Number(s):		**Reviewer Name:**	Franci Bolden
LRC Date:	2016-08-17 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	RSK175
Prep Batch Number(s):		**Reviewer Name:**	Franci Bolden
LRC Date:	2016-08-17 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	RSK175
Prep Batch Number(s):		**Reviewer Name:**	Franci Bolden
LRC Date:	2016-08-17 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	RSK175
Prep Batch Number(s):		**Reviewer Name:**	Franci Bolden
LRC Date:	2016-08-17 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Dilution analyses of samples 05, 08, 11, 13, and 15 were analyzed between 2 and 7 hours past hold time expiration. All other holding times were met.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG579303	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-08-15 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-08-15 21:35:06

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG579303	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-08-15 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG579303	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-08-15 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG579303	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-08-15 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG579303	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-08-15 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG579303	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-08-15 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client samples 09 and 10 required dilution analyses in order to obtain results for iron within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG579385	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-08-15 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-08-15 21:33:32

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG579385	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-08-15 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG579385	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-08-15 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG579385	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-08-15 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG579385	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-08-15 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG579385	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-08-15 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client samples 07, 10, and 17 required dilution analyses in order to obtain results for manganese within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG579272	**Reviewer Name:**	Allen Davis
LRC Date:	2016-08-08 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Allen Davis		Analyst I	2016-08-08 13:10:23

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG579272	**Reviewer Name:**	Allen Davis
LRC Date:	2016-08-08 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?		X			2
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG579272	**Reviewer Name:**	Allen Davis
LRC Date:	2016-08-08 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					1
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG579272	**Reviewer Name:**	Allen Davis
LRC Date:	2016-08-08 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			3
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG579272	**Reviewer Name:**	Allen Davis
LRC Date:	2016-08-08 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG579272	**Reviewer Name:**	Allen Davis
LRC Date:	2016-08-08 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fraction -15 was diluted due to a high screen result for chloride, which exceeded the anion load limit recommended by the instrument's manufacturer and re-analyzed at dilution due to initial analysis of chloride and sulfate, which exceeded the upper limit of the calibration range.

Fraction -13 was diluted due to a high screen result for sulfate, which exceeded the upper limit of the calibration range and due to significant precipitation during treatment.

Fraction -05, -08, -11 were diluted due to high screen results for sulfate, which exceeded the anion load limit recommended by the instrument's manufacturer. Fraction -05 was re-analyzed at dilution due to initial analysis of sulfate, which exceeded the upper limit of the calibration range.

Fractions -08 & -11 were re-analyzed at dilutions due to initial analysis of chloride, which exceeded the upper limit of the calibration range.

2. Fractions -05, -08, -11 received an H1 qualifier due to being analyzed out of hold. Samples were either received out of hold, or close to hold time.

3. WG579273-01, first CCV failed high for nitrite, which is bracketing WG579272-02, the first LCS. Samples associated with the LCS that require nitrite are ND.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG579433	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-08-16 18:48:51

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG579433	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG579433	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG579433	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG579433	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG579433	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG579706	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-08-16 18:49:21

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG579706	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG579706	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG579706	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG579706	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG579706	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	S
Prep Batch Number(s):	WG579275	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-08-16 18:48:14

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	S
Prep Batch Number(s):	WG579275	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	S
Prep Batch Number(s):	WG579275	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	S
Prep Batch Number(s):	WG579275	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	S
Prep Batch Number(s):	WG579275	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	S
Prep Batch Number(s):	WG579275	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG579467, WG579534	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-08-16 18:49:51

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG579467, WG579534	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG579467, WG579534	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG579467, WG579534	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG579467, WG579534	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16080330
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG579467, WG579534	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-08-16 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW08-080216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 15:52
Collect Date:	08/02/2016 08:55	**Dilution:**	1	**File ID:**	6M141252
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.3		10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	97.4	85	120	
4-Bromofluorobenzene	104	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW14-080216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 16:24
Collect Date:	08/02/2016 10:00	**Dilution:**	1	**File ID:**	6M141253
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	98.5	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW14FD-080216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 16:56
Collect Date:	08/02/2016 10:00	**Dilution:**	1	**File ID:**	6M141254
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	97.9	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW07-080216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 17:28
Collect Date:	08/02/2016 11:05	**Dilution:**	1	**File ID:**	6M141255
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.30	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	98.7	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW05-080316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 19:05
Collect Date:	08/03/2016 07:55	**Dilution:**	1	**File ID:**	6M141258
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.67	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.843	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.84	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.86		1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	23.6		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.522	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	99.0	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW05-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579430	**Analyst:**	JDS	**Run Date:**	08/08/2016 15:26
Collect Date:	08/03/2016 07:55	**Dilution:**	1	**File ID:**	16G50450
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	15.0		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW05-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579716	**Analyst:**	JDS	**Run Date:**	08/10/2016 14:49
Collect Date:	08/03/2016 07:55	**Dilution:**	10	**File ID:**	16G50508
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	668000	H1	100000	50000	25000
Methane	74-82-8	20.0	U,H1	50.0	20.0	10.0
ethene	74-85-1	20.0	U,H1	50.0	20.0	10.0
ethane	74-84-0	20.0	U,H1	50.0	20.0	10.0

H1	Sample analysis performed past holding time.
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-05	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW05-080316	**Prep Method:**	9056	**Prep Date:**	08/05/2016 07:41
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/07/2016 12:08
Workgroup #:	WG579272	**Analyst:**	AED	**Run Date:**	08/05/2016 13:06
Collect Date:	08/03/2016 07:55	**Dilution:**	10	**File ID:**	I3_080516-19
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	236		2.00	2.00	1.00
Nitrate	14797-55-8	2.00	U,H1	6.00	2.00	1.00
Nitrite	14797-65-0	2.00	U,H1	4.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-05	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW05-080316	**Prep Method:**	9056	**Prep Date:**	08/09/2016 10:02
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/07/2016 12:08
Workgroup #:	WG579536	**Analyst:**	AED	**Run Date:**	08/09/2016 14:07
Collect Date:	08/03/2016 07:55	**Dilution:**	100	**File ID:**	I3_080916-14
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfate	14808-79-8	4060		100	100	50.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW05-080316	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/08/2016 15:23
Workgroup #:	WG579433	**Analyst:**	DCM	**Run Date:**	08/08/2016 15:35
Collect Date:	08/03/2016 07:55	**Dilution:**	1	**File ID:**	SC160808005.028
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	58.6		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16080330-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW05-080316	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/10/2016 12:44
Workgroup #:	WG579706	**Analyst:**	TB	**Run Date:**	08/10/2016 12:49
Collect Date:	08/03/2016 07:55	**Dilution:**	1	**File ID:**	SC160810004.014
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.204	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-05	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW05-080316	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG579275	**Analyst:**	EPT	**Run Date:**	08/05/2016 16:05
Collect Date:	08/03/2016 07:55	**Dilution:**	1	**File ID:**	ET.1608051605-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.39	J	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW05-080316	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG579467	**Analyst:**	EPT	**Run Date:**	08/09/2016 13:04
Collect Date:	08/03/2016 07:55	**Dilution:**	10	**File ID:**	TC08082016.047
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	33.9		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16080330-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW05F-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579662	**Analyst:**	JYH	**Run Date:**	08/10/2016 14:03
Collect Date:	08/03/2016 07:55	**Dilution:**	1	**File ID:**	T3.081016.140310
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	6.04		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L16080330-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW05FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579662	**Analyst:**	JYH	**Run Date:**	08/10/2016 13:13
Collect Date:	08/03/2016 07:55	**Dilution:**	1	**File ID:**	T3.081016.131311
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	6.19		0.200	0.100	0.0500

Certificate of Analysis

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16080330-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	46WW05FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 12:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/15/2016 11:30
Workgroup #:	WG579846	**Analyst:**	JYH	**Run Date:**	08/15/2016 13:44
Collect Date:	08/03/2016 07:55	**Dilution:**	100	**File ID:**	NI.081516.134449
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	15.2		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16080330-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW16-080316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 18:00
Collect Date:	08/03/2016 09:10	**Dilution:**	1	**File ID:**	6M141256
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.47	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	98.4	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-08	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW16-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579430	**Analyst:**	JDS	**Run Date:**	08/08/2016 15:38
Collect Date:	08/03/2016 09:10	**Dilution:**	1	**File ID:**	16G50451
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-08	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW16-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579716	**Analyst:**	JDS	**Run Date:**	08/10/2016 15:01
Collect Date:	08/03/2016 09:10	**Dilution:**	10	**File ID:**	16G50509
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	739000	H1	100000	50000	25000
Methane	74-82-8	20.0	U,H1	50.0	20.0	10.0
ethene	74-85-1	20.0	U,H1	50.0	20.0	10.0
ethane	74-84-0	20.0	U,H1	50.0	20.0	10.0

H1	Sample analysis performed past holding time.
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-08	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW16-080316	**Prep Method:**	9056	**Prep Date:**	08/05/2016 07:41
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/07/2016 12:08
Workgroup #:	WG579272	**Analyst:**	AED	**Run Date:**	08/05/2016 12:46
Collect Date:	08/03/2016 09:10	**Dilution:**	10	**File ID:**	I3_080516-18
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U,H1	6.00	2.00	1.00
Nitrite	14797-65-0	2.00	U,H1	4.00	2.00	1.00
Sulfate	14808-79-8	723		10.0	10.0	5.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-08	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW16-080316	**Prep Method:**	9056	**Prep Date:**	08/09/2016 10:02
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/07/2016 12:08
Workgroup #:	WG579536	**Analyst:**	AED	**Run Date:**	08/09/2016 15:08
Collect Date:	08/03/2016 09:10	**Dilution:**	30	**File ID:**	I3_080916-17
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	302		6.00	6.00	3.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-08	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW16-080316	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/08/2016 15:23
Workgroup #:	WG579433	**Analyst:**	DCM	**Run Date:**	08/08/2016 15:35
Collect Date:	08/03/2016 09:10	**Dilution:**	4	**File ID:**	SC160808005.029
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	580		160	80.0	40.0

Certificate of Analysis

Sample #:	L16080330-08	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW16-080316	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/10/2016 12:44
Workgroup #:	WG579706	**Analyst:**	TB	**Run Date:**	08/10/2016 12:49
Collect Date:	08/03/2016 09:10	**Dilution:**	1	**File ID:**	SC160810004.015
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-08	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW16-080316	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG579275	**Analyst:**	EPT	**Run Date:**	08/05/2016 16:05
Collect Date:	08/03/2016 09:10	**Dilution:**	1	**File ID:**	ET.1608051605-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-08	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW16-080316	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG579467	**Analyst:**	EPT	**Run Date:**	08/09/2016 11:39
Collect Date:	08/03/2016 09:10	**Dilution:**	10	**File ID:**	TC08082016.046
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	47.2		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16080330-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW16F-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/12/2016 13:24
Workgroup #:	WG579662	**Analyst:**	KKB	**Run Date:**	08/12/2016 18:10
Collect Date:	08/03/2016 09:10	**Dilution:**	10	**File ID:**	T3.081216.181002
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	21.0		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L16080330-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW16FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/12/2016 13:24
Workgroup #:	WG579662	**Analyst:**	KKB	**Run Date:**	08/12/2016 18:13
Collect Date:	08/03/2016 09:10	**Dilution:**	10	**File ID:**	T3.081216.181357
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	20.9		2.00	1.00	0.500

Certificate of Analysis

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16080330-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	46WW16FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 12:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/15/2016 11:30
Workgroup #:	WG579846	**Analyst:**	JYH	**Run Date:**	08/15/2016 13:54
Collect Date:	08/03/2016 09:10	**Dilution:**	100	**File ID:**	NI.081516.135400
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	1.71		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	LHSMW19-080316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 19:37
Collect Date:	08/03/2016 10:20	**Dilution:**	1	**File ID:**	6M141259
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.967	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	8.53		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	98.6	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	LHSMW19-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579430	**Analyst:**	JDS	**Run Date:**	08/08/2016 15:49
Collect Date:	08/03/2016 10:20	**Dilution:**	1	**File ID:**	16G50452
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	LHSMW19-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579716	**Analyst:**	JDS	**Run Date:**	08/10/2016 15:12
Collect Date:	08/03/2016 10:20	**Dilution:**	10	**File ID:**	16G50510
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	854000	H1	100000	50000	25000
Methane	74-82-8	20.0	U,H1	50.0	20.0	10.0
ethene	74-85-1	20.0	U,H1	50.0	20.0	10.0
ethane	74-84-0	20.0	U,H1	50.0	20.0	10.0

H1	Sample analysis performed past holding time.
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	LHSMW19-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579662	**Analyst:**	JYH	**Run Date:**	08/10/2016 14:14
Collect Date:	08/03/2016 10:20	**Dilution:**	1	**File ID:**	T3.081016.141439
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	0.125	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	LHSMW19-080316	**Prep Method:**	9056	**Prep Date:**	08/05/2016 07:41
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/07/2016 12:08
Workgroup #:	WG579272	**Analyst:**	AED	**Run Date:**	08/05/2016 13:26
Collect Date:	08/03/2016 10:20	**Dilution:**	10	**File ID:**	I3_080516-20
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U,H1	6.00	2.00	1.00
Nitrite	14797-65-0	2.00	U,H1	4.00	2.00	1.00
Sulfate	14808-79-8	733		10.0	10.0	5.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	LHSMW19-080316	**Prep Method:**	9056	**Prep Date:**	08/09/2016 10:02
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/07/2016 12:08
Workgroup #:	WG579536	**Analyst:**	AED	**Run Date:**	08/09/2016 15:28
Collect Date:	08/03/2016 10:20	**Dilution:**	30	**File ID:**	I3_080916-18
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	365		6.00	6.00	3.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	LHSMW19-080316	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/08/2016 15:23
Workgroup #:	WG579433	**Analyst:**	DCM	**Run Date:**	08/08/2016 15:36
Collect Date:	08/03/2016 10:20	**Dilution:**	2	**File ID:**	SC160808005.030
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	438		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	LHSMW19-080316	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/10/2016 12:44
Workgroup #:	WG579706	**Analyst:**	TB	**Run Date:**	08/10/2016 12:50
Collect Date:	08/03/2016 10:20	**Dilution:**	1	**File ID:**	SC160810004.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.110	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	LHSMW19-080316	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG579275	**Analyst:**	EPT	**Run Date:**	08/05/2016 16:05
Collect Date:	08/03/2016 10:20	**Dilution:**	1	**File ID:**	ET.1608051605-08
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	0.519	J	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	LHSMW19-080316	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG579534	**Analyst:**	DCM	**Run Date:**	08/09/2016 16:10
Collect Date:	08/03/2016 10:20	**Dilution:**	20	**File ID:**	TC08092016.009
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	90.0		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16080330-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	LHSMW19FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579662	**Analyst:**	JYH	**Run Date:**	08/10/2016 14:18
Collect Date:	08/03/2016 10:20	**Dilution:**	1	**File ID:**	T3.081016.141832
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	LHSMW19FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 12:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/15/2016 11:30
Workgroup #:	WG579846	**Analyst:**	JYH	**Run Date:**	08/15/2016 13:57
Collect Date:	08/03/2016 10:20	**Dilution:**	1	**File ID:**	NI.081516.135702
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0574		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L16080330-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW11-080316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 20:09
Collect Date:	08/03/2016 11:25	**Dilution:**	1	**File ID:**	6M141260
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.325	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	21.2		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	98.9	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-13	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW11-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579430	**Analyst:**	JDS	**Run Date:**	08/08/2016 16:01
Collect Date:	08/03/2016 11:25	**Dilution:**	1	**File ID:**	16G50453
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	45.9		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-13	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW11-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579716	**Analyst:**	JDS	**Run Date:**	08/10/2016 15:23
Collect Date:	08/03/2016 11:25	**Dilution:**	10	**File ID:**	16G50511
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	682000	H1	100000	50000	25000
Methane	74-82-8	22.1	J,H1	50.0	20.0	10.0
ethene	74-85-1	20.0	U,H1	50.0	20.0	10.0
ethane	74-84-0	20.0	U,H1	50.0	20.0	10.0

H1	Sample analysis performed past holding time.
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW11-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579662	**Analyst:**	JYH	**Run Date:**	08/10/2016 14:22
Collect Date:	08/03/2016 11:25	**Dilution:**	1	**File ID:**	T3.081016.142225
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	0.188	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-13	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW11-080316	**Prep Method:**	9056	**Prep Date:**	08/05/2016 07:41
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/07/2016 12:08
Workgroup #:	WG579272	**Analyst:**	AED	**Run Date:**	08/05/2016 12:25
Collect Date:	08/03/2016 11:25	**Dilution:**	10	**File ID:**	I3_080516-17
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	229		2.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	6.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00
Sulfate	14808-79-8	253		10.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-13	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW11-080316	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/08/2016 15:23
Workgroup #:	WG579433	**Analyst:**	DCM	**Run Date:**	08/08/2016 15:37
Collect Date:	08/03/2016 11:25	**Dilution:**	1	**File ID:**	SC160808005.031
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	45.1		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16080330-13	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW11-080316	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/10/2016 12:44
Workgroup #:	WG579706	**Analyst:**	TB	**Run Date:**	08/10/2016 12:50
Collect Date:	08/03/2016 11:25	**Dilution:**	1	**File ID:**	SC160810004.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-13	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW11-080316	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG579275	**Analyst:**	EPT	**Run Date:**	08/05/2016 16:05
Collect Date:	08/03/2016 11:25	**Dilution:**	1	**File ID:**	ET.1608051605-09
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-13	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW11-080316	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG579534	**Analyst:**	DCM	**Run Date:**	08/10/2016 07:50
Collect Date:	08/03/2016 11:25	**Dilution:**	10	**File ID:**	TC08092016.034
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	39.3		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16080330-14	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW11FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579662	**Analyst:**	JYH	**Run Date:**	08/10/2016 14:26
Collect Date:	08/03/2016 11:25	**Dilution:**	1	**File ID:**	T3.081016.142619
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0675	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-14	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	46WW11FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 12:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/15/2016 11:30
Workgroup #:	WG579846	**Analyst:**	JYH	**Run Date:**	08/15/2016 14:00
Collect Date:	08/03/2016 11:25	**Dilution:**	1	**File ID:**	NI.081516.140005
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0616		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L16080330-15	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW09-080316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 18:32
Collect Date:	08/03/2016 13:45	**Dilution:**	1	**File ID:**	6M141257
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	96.8	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-15	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW09-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579430	**Analyst:**	JDS	**Run Date:**	08/08/2016 16:12
Collect Date:	08/03/2016 13:45	**Dilution:**	1	**File ID:**	16G50454
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-15	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW09-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579716	**Analyst:**	JDS	**Run Date:**	08/10/2016 15:35
Collect Date:	08/03/2016 13:45	**Dilution:**	10	**File ID:**	16G50512
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	603000	H1	100000	50000	25000
Methane	74-82-8	20.0	U,H1	50.0	20.0	10.0
ethene	74-85-1	20.0	U,H1	50.0	20.0	10.0
ethane	74-84-0	20.0	U,H1	50.0	20.0	10.0

H1	Sample analysis performed past holding time.
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-15	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW09-080316	**Prep Method:**	9056	**Prep Date:**	08/05/2016 07:41
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/07/2016 12:08
Workgroup #:	WG579272	**Analyst:**	AED	**Run Date:**	08/05/2016 12:05
Collect Date:	08/03/2016 13:45	**Dilution:**	10	**File ID:**	I3_080516-16
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U	6.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-15	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW09-080316	**Prep Method:**	9056	**Prep Date:**	08/09/2016 10:02
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/07/2016 12:08
Workgroup #:	WG579536	**Analyst:**	AED	**Run Date:**	08/09/2016 15:48
Collect Date:	08/03/2016 13:45	**Dilution:**	50	**File ID:**	I3_080916-19
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	466		10.0	10.0	5.00
Sulfate	14808-79-8	2040		50.0	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-15	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW09-080316	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/08/2016 15:23
Workgroup #:	WG579433	**Analyst:**	DCM	**Run Date:**	08/08/2016 15:37
Collect Date:	08/03/2016 13:45	**Dilution:**	1	**File ID:**	SC160808005.032
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	177		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16080330-15	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW09-080316	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/10/2016 12:44
Workgroup #:	WG579706	**Analyst:**	TB	**Run Date:**	08/10/2016 12:51
Collect Date:	08/03/2016 13:45	**Dilution:**	1	**File ID:**	SC160810004.018
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-15	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW09-080316	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG579275	**Analyst:**	EPT	**Run Date:**	08/05/2016 16:05
Collect Date:	08/03/2016 13:45	**Dilution:**	1	**File ID:**	ET.1608051605-10
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-15	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW09-080316	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG579534	**Analyst:**	DCM	**Run Date:**	08/10/2016 08:03
Collect Date:	08/03/2016 13:45	**Dilution:**	10	**File ID:**	TC08092016.035
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	31.2		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16080330-16	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW09F-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579662	**Analyst:**	JYH	**Run Date:**	08/10/2016 14:30
Collect Date:	08/03/2016 13:45	**Dilution:**	1	**File ID:**	T3.081016.143013
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW09FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579662	**Analyst:**	JYH	**Run Date:**	08/10/2016 14:34
Collect Date:	08/03/2016 13:45	**Dilution:**	1	**File ID:**	T3.081016.143405
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	46WW09FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 12:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/15/2016 11:30
Workgroup #:	WG579846	**Analyst:**	JYH	**Run Date:**	08/15/2016 14:03
Collect Date:	08/03/2016 13:45	**Dilution:**	100	**File ID:**	NI.081516.140307
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	1.82		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16080330-18	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 13:42
Collect Date:	08/03/2016 00:01	**Dilution:**	1	**File ID:**	6M141248
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	98.2	70	120	
Toluene-d8	99.6	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW08-080216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 15:52
Collect Date:	08/02/2016 08:55	**Dilution:**	1	**File ID:**	6M141252
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.3		10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	97.4	85	120	
4-Bromofluorobenzene	104	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW14-080216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 16:24
Collect Date:	08/02/2016 10:00	**Dilution:**	1	**File ID:**	6M141253
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	98.5	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW14FD-080216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 16:56
Collect Date:	08/02/2016 10:00	**Dilution:**	1	**File ID:**	6M141254
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	97.9	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW07-080216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 17:28
Collect Date:	08/02/2016 11:05	**Dilution:**	1	**File ID:**	6M141255
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.30	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	98.7	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW05-080316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 19:05
Collect Date:	08/03/2016 07:55	**Dilution:**	1	**File ID:**	6M141258
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.67	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.843	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.84	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.86		1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	23.6		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.522	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	99.0	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW16-080316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 18:00
Collect Date:	08/03/2016 09:10	**Dilution:**	1	**File ID:**	6M141256
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.47	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	98.4	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	LHSMW19-080316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 19:37
Collect Date:	08/03/2016 10:20	**Dilution:**	1	**File ID:**	6M141259
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.967	J	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	8.53		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	98.6	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW11-080316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 20:09
Collect Date:	08/03/2016 11:25	**Dilution:**	1	**File ID:**	6M141260
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.325	J	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	21.2		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	98.9	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-15	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	46WW09-080316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 18:32
Collect Date:	08/03/2016 13:45	**Dilution:**	1	**File ID:**	6M141257
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	96.8	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-18	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	08/10/2016 19:14
Workgroup #:	WG580241	**Analyst:**	TMB	**Run Date:**	08/15/2016 13:42
Collect Date:	08/03/2016 00:01	**Dilution:**	1	**File ID:**	6M141248
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	98.2	70	120	
Toluene-d8	99.6	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 042416
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75498 Surrogate Standard: STD75498
CCV: STD75791 LCS: STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566155

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M138749	RINSE	NA	1	1		04/24/16 16:05
6M138750	WG566155-01 50ng BFB 826-A9	NA	1	1	STD75485	04/24/16 16:33
6M138751	WG566155-02 5ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 16:59
6M138752	WG566155-03 20ug/L STD 826-A	NA	1	1	STD75791	04/24/16 17:31
6M138753	WG566155-04 50ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 18:03
6M138754	WG566155-05 100ug/L STD 826-A	NA	1	1	STD75791	04/24/16 18:36
6M138755	WG566155-06 200ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:08
6M138756	WG566155-07 300ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:40
6M138757	WG566155-08 400ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:12
6M138758	WG566155-09 500ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:44
6M138759	RINSE	NA	1	1		04/24/16 21:16
6M138760	RINSE	NA	1	1		04/24/16 21:49
6M138761	WG566155-10 100ug/L ALT SRC	NA	1	1	STD75801	04/24/16 22:21
6M138762	RINSE	NA	1	1		04/24/16 22:53
6M138763	RINSE	NA	1	1		04/24/16 23:25

Approved: April 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 081016
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53850

Internal Standard: STD77285 Surrogate Standard: STD77285
CCV: STD77545 LCS: STD77477 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG579700

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M141163	RINSE	NA	1	1		08/10/16 09:59
6M141164	WG579700-01 50ng BFB STD 8260	NA	1	1	STD77509	08/10/16 11:26
6M141165	WG579700-02 50ug/L CCV STD 8260	NA	1	1	STD77397	08/10/16 11:50
6M141166	RINSE	NA	1	1		08/10/16 12:22
6M141167	WG579700-02 0.3ug/L STD 8260	NA	1	1	STD77545	08/10/16 14:25
6M141168	WG579700-03 0.4ug/L STD 8260	NA	1	1	STD77545	08/10/16 14:57
6M141169	WG579700-04 1ug/L STD 8260	NA	1	1	STD77545	08/10/16 15:30
6M141170	WG579700-05 2ug/L STD 8260	NA	1	1	STD77545	08/10/16 16:01
6M141171	WG579700-06 5ug/L STD 8260	NA	1	1	STD77545	08/10/16 16:34
6M141172	WG579700-07 20ug/L STD 8260	NA	1	1	STD77545	08/10/16 17:05
6M141173	WG579700-08 50ug/L STD 8260	NA	1	1	STD77545	08/10/16 17:37
6M141174	WG579700-09 100ug/L STD 8260	NA	1	1	STD77545	08/10/16 18:09
6M141175	WG579700-10 200ug/L STD 8260	NA	1	1	STD77545	08/10/16 18:42
6M141176	WG579700-11 300ug/L STD 8260	NA	1	1	STD77545	08/10/16 19:14
6M141177	RINSE	NA	1	1		08/10/16 19:46
6M141178	RINSE	NA	1	1		08/10/16 20:18
6M141179	WG579700-12 50ug/L ALT SRC STD 8260	NA	1	1	STD77477	08/10/16 20:51
6M141180	RINSE	NA	1	1		08/10/16 21:23

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3	X			
File ID: 6M141165				
	Ketones were low, and carbon tet. was high. DNR.			
17	X			
File ID: 6M141179				
	Gases were low. DNR.			

Approved: August 15, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 081116
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD77285 Surrogate Standard: STD77285
CCV: STD77545; STD77552 LCS: STD77551 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG579701

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M141181	WG579849-01 50ng BFB STD 8260	NA	1	1	STD77509	08/11/16 11:26
6M141182	WG579849-02 50ug/L CCV STD 8260	NA	1	1	STD77545	08/11/16 11:52
6M141183	WG579849-02 50ug/L CCV STD 8260	NA	1	1	STD77545	08/11/16 12:25
6M141184	WG579905-01 100ug/L A9 CCV STD 8260	NA	1	1	STD77552	08/11/16 12:57
6M141185	WG579701-01 VBLK0811 BLANK STD 826	NA	1	1		08/11/16 13:29
6M141186	WG579700-12 50ug/L ALT SRC STD 8260	NA	1	1	STD77551	08/11/16 14:02
6M141187	WG579701-02 20ug/L LCS STD 8260	NA	1	1	STD77551	08/11/16 14:34
6M141188	WG579701-03 20ug/L LCS2 STD 8260	NA	1	1	STD77551	08/11/16 15:06
6M141189	L16080404-01 A 10X 826-TC	NA	17	10		08/11/16 15:39
6M141190	L16080333-01 A 826-SPE	<2	1	1		08/11/16 16:11
6M141191	L16080235-01 A 10X 826-TC	NA	17	10		08/11/16 16:44
6M141192	L16080197-01 A 10X 8260C-TC	NA	17	10		08/11/16 17:16
6M141193	L16080197-02 A 10X 8260C-TC	NA	17	10		08/11/16 17:48
6M141194	L16080146-01 A 10X 8260C-TC	NA	17	10		08/11/16 18:20
6M141195	L16080038-07 B 8260	<2	1	1		08/11/16 18:52
6M141196	L16080038-09 B 8260	<2	1	1		08/11/16 19:24
6M141197	L16080038-14 B 8260	7	1	1		08/11/16 19:56
6M141198	RINSE	NA	2	1		08/12/16 08:32
6M141199	WG579701-04 VBLK0811 BLANK STD 624	NA	2	1		08/12/16 09:04
6M141200	L16080474-06 A 624-SPE	6	2	1		08/12/16 09:37
6M141201	L16080489-06 A 624-SPE	5	2	1		08/12/16 10:09
6M141202	L16080570-01 A 624-SPE	5	2	1		08/12/16 10:41
6M141203	CCV	NA	1	1		08/12/16 11:14
6M141204	RINSE	NA	1	1		08/12/16 11:46
6M141205	WG578833-01 A 10X FBLK 826-TC	NA	17	10		08/12/16 12:18
6M141206	WG579015-01 A 10X FBLK 826-TC	NA	17	10		08/12/16 12:50

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M141182				
2-butanone was low, DNR.				

Approved: August 12, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 081516
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53854

Internal Standard: STD77285 Surrogate Standard: STD77285
CCV: STD77545 LCS: STD77551 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG580241,WG580289

Comments: File 6M141283 was not used, computer froze and data was lost.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M141239	RINSE	NA	1	1		08/15/16 08:43
6M141240	RINSE	NA	1	1		08/15/16 09:20
6M141241	WG580238-01 50ng BFB STD 8260	NA	1	1	STD77509	08/15/16 10:04
6M141242	WG580238-02 50ug/L CCV STD 8260	NA	1	1	STD77545	08/15/16 10:29
6M141243	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD77552	08/15/16 11:02
6M141244	WG580241-01 VBLK0815 BLANK STD 826	NA	1	1		08/15/16 11:34
6M141245	L16080233-03 B 826-LOW	<2	1	1		08/15/16 12:07
6M141246	L16080233-04 B 826-LOW	<2	1	1		08/15/16 12:39
6M141247	L16080233-06 B 826-LOW	<2	1	1		08/15/16 13:11
6M141248	L16080330-18 TB A 826-LOW	<2	1	1		08/15/16 13:42
6M141249	WG580241-02 20ug/L LCS STD 8260	NA	1	1	STD77551	08/15/16 14:15
6M141250	WG580241-03 20ug/L LCS2 STD 8260	NA	1	1	STD77551	08/15/16 14:47
6M141251	L16080233-02 B 100X 826-LOW D1	<2	1	100		08/15/16 15:19
6M141252	L16080330-01 A 826-LOW	<2	1	1		08/15/16 15:52
6M141253	L16080330-02 A 826-LOW	<2	1	1		08/15/16 16:24
6M141254	L16080330-03 A 826-LOW	<2	1	1		08/15/16 16:56
6M141255	L16080330-04 A 826-LOW	<2	1	1		08/15/16 17:28
6M141256	L16080330-08 A 826-LOW	<2	1	1		08/15/16 18:00
6M141257	L16080330-15 A 826-LOW	<2	1	1		08/15/16 18:32
6M141258	L16080330-05 A 826-LOW	<2	1	1		08/15/16 19:05
6M141259	L16080330-11 A 826-LOW	<2	1	1		08/15/16 19:37
6M141260	L16080330-13 A 826-LOW	<2	1	1		08/15/16 20:09
6M141261	L16080334-01 B 500X 826-TC	NA	17	500		08/15/16 20:41
6M141262	L16080334-02 B 25X 826-TC	NA	17	25		08/15/16 21:14
6M141263	L16080334-03 B 50X 826-TC	NA	17	50		08/15/16 21:46
6M141264	RINSE	NA	1	1		08/15/16 22:18
6M141265	WG580289-02 20ug/L LCS STD 624	NA	2	1	STD77551	08/15/16 22:50
6M141266	WG580289-03 20ug/L LCS2 STD 624	NA	2	1	STD77551	08/15/16 23:22
6M141267	RINSE	NA	2	1		08/15/16 23:54
6M141268	WG580289-01 VBLK0815 BLANK STD 624	NA	2	1		08/16/16 00:26
6M141269	L16080705-01 A 624-SPE	<2	2	1		08/16/16 00:58
6M141270	L16080706-01 A 624-SPE2	<2	2	1		08/16/16 01:30
6M141271	L16080707-01 A 624-SPE	<2	2	1		08/16/16 02:02
6M141272	L16080730-03 A 624-SPE	7	2	1		08/16/16 02:34

Approved: August 17, 2016

Sarah Vandenberg

Microbac

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 081516
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53854

Internal Standard: STD77285 Surrogate Standard: STD77285
CCV: STD77545 LCS: STD77551 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG580241,WG580289

Comments: File 6M141283 was not used, computer froze and data was lost.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M141273	L16080730-04 A 624-SPE	7	2	1		08/16/16 03:06
6M141274	L16080730-05 A 624-SPE	7	2	1		08/16/16 03:38
6M141275	L16080730-06 A 624-SPE	7	2	1		08/16/16 04:10
6M141276	L16080731-03 A 624-SPE	7	2	1		08/16/16 04:42
6M141277	L16080731-04 A 624-SPE	7	2	1		08/16/16 05:14
6M141278	L16080731-05 A 624-SPE	8	2	1		08/16/16 05:46
6M141279	L16080731-06 A 624-SPE	8	2	1		08/16/16 06:18
6M141280	L16080732-03 A 624-SPE	9	2	1		08/16/16 06:50
6M141281	L16080732-04 A 624-SPE	9	2	1		08/16/16 07:22
6M141282	L16080732-06 A 624-SPE	9	2	1		08/16/16 08:27
6M141284	L16080732-05 B 624-SPE	9	2	1		08/16/16 09:01
6M141285	L16080704-01 A 624-SPE	<2	2	1		08/16/16 09:33
6M141286	RINSE	NA	1	1		08/16/16 10:06

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5				
File ID: 6M141243				
	Not needed. DNR.			

Approved: August 17, 2016

Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 24-APR-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74754
Analytical Workgroups: WG566155

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-APR-2016
Tiffany Bailey

Secondary Reviewer:
29-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-29-2016 12:29:57

Microbac Laboratories Inc.

Data Checklist

Date: 10-AUG-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76858
Analytical Workgroups: WG579700

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
11-AUG-2016
Tiffany Bailey

Secondary Reviewer:
15-AUG-2016

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-15-2016 14:09:09

Microbac Laboratories Inc.

Data Checklist

Date: 11-AUG-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624/8260C
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76878
Analytical Workgroups: WG579701

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
12-AUG-2016
Tiffany Bailey

Secondary Reviewer:
12-AUG-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-12-2016 16:38:50

Microbac Laboratories Inc.

Data Checklist

Date: 15-AUG-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76914
Analytical Workgroups: WG580241

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
15-AUG-2016
Tiffany Bailey

Secondary Reviewer:
17-AUG-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-17-2016 11:34:08

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG580241

Login Number: L16080330

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW08-080216	01	08/02/16					08/15/2016	13.3	14		08/15/16	13.3	14	
46WW14-080216	02	08/02/16					08/15/2016	13.3	14		08/15/16	13.3	14	
46WW14FD-080216	03	08/02/16					08/15/2016	13.3	14		08/15/16	13.3	14	
46WW07-080216	04	08/02/16					08/15/2016	13.3	14		08/15/16	13.3	14	
46WW05-080316	05	08/03/16					08/15/2016	12.5	14		08/15/16	12.5	14	
46WW16-080316	08	08/03/16					08/15/2016	12.4	14		08/15/16	12.4	14	
LHSMW19-080316	11	08/03/16					08/15/2016	12.4	14		08/15/16	12.4	14	
46WW11-080316	13	08/03/16					08/15/2016	12.4	14		08/15/16	12.4	14	
46WW09-080316	15	08/03/16					08/15/2016	12.2	14		08/15/16	12.2	14	
TRIP BLANK	18	08/03/16					08/15/2016	12.6	14		08/15/16	12.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4899134
Report generated 08/17/2016 11:43

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16080330
Instrument Id: HPMS6
Workgroup (AAB#): WG580241

Method: 8260
CAL ID: HPMS6-10-AUG-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16080330-01	1.00	01	100	105	104	97.4
L16080330-02	1.00	01	101	104	105	98.5
L16080330-03	1.00	01	101	106	105	97.9
L16080330-04	1.00	01	102	106	105	98.7
L16080330-05	1.00	01	103	107	104	99.0
L16080330-08	1.00	01	102	107	106	98.4
L16080330-11	1.00	01	102	108	106	98.6
L16080330-13	1.00	01	102	107	105	98.9
L16080330-15	1.00	01	101	106	103	96.8
L16080330-18	1.00	01	98.2	104	105	99.6
WG580241-01	1.00	01	93.5	100	109	99.8
WG580241-02	1.00	01	98.8	104	99.8	99.0
WG580241-03	1.00	01	99.1	104	98.5	98.4

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4899143
Report generated: 08/17/2016 11:44

METHOD BLANK SUMMARY

Login Number: L16080330
Blank File ID: 6M141244
Prep Date: 08/15/16 11:34
Analyzed Date: 08/15/16 11:34
Analyst: TMB

Work Group: WG580241
Blank Sample ID: WG580241-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
TRIP BLANK	L16080330-18	6M141248	08/15/16 13:42	01
LCS	WG580241-02	6M141249	08/15/16 14:15	01
LCS2	WG580241-03	6M141250	08/15/16 14:47	01
46WW08-080216	L16080330-01	6M141252	08/15/16 15:52	01
46WW14-080216	L16080330-02	6M141253	08/15/16 16:24	01
46WW14FD-080216	L16080330-03	6M141254	08/15/16 16:56	01
46WW07-080216	L16080330-04	6M141255	08/15/16 17:28	01
46WW16-080316	L16080330-08	6M141256	08/15/16 18:00	01
46WW09-080316	L16080330-15	6M141257	08/15/16 18:32	01
46WW05-080316	L16080330-05	6M141258	08/15/16 19:05	01
LHSMW19-080316	L16080330-11	6M141259	08/15/16 19:37	01
46WW11-080316	L16080330-13	6M141260	08/15/16 20:09	01

Report Name: BLANK_SUMMARY
PDF File ID: 4901100
Report generated 08/17/2016 11:43

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16080330 Prep Date: 08/15/16 11:34 Sample ID: WG580241-01
Instrument ID: HPMS6 Run Date: 08/15/16 11:34 Prep Method: 5030B/5030C/503
File ID: 6M141244 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG580241 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-10-AUG-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4899136
17-AUG-2016 11:43

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080330 Prep Date: 08/15/16 11:34 Sample ID: WG580241-01
Instrument ID: HPMS6 Run Date: 08/15/16 11:34 Prep Method: 5030B/5030C/503
File ID: 6M141244 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG580241 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-10-AUG-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	100	85 - 115	PASS
1,2-Dichloroethane-d4	93.5	70 - 120	PASS
Toluene-d8	99.8	85 - 120	PASS
4-Bromofluorobenzene	109	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4899136
17-AUG-2016 11:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080330 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG580241 Units: ug/L
QC Key: DOD4 Lot #: STD77551

Sample ID: WG580241-02 LCS File ID: 6M141249 Run Date: 08/15/2016 14:15
Sample ID: WG580241-03 LCS2 File ID: 6M141250 Run Date: 08/15/2016 14:47

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.0	100	20.0	19.7	98.7	1.45	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.0	100	20.0	20.1	101	0.443	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.6	93.1	20.0	18.6	93.0	0.162	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.6	97.8	20.0	19.9	99.6	1.79	75 - 125	30	
1,1-Dichloroethane	20.0	19.1	95.7	20.0	19.6	98.1	2.48	70 - 135	30	
1,1-Dichloroethene	20.0	18.0	90.2	20.0	18.6	93.2	3.37	70 - 130	30	
1,1-Dichloropropene	20.0	19.5	97.5	20.0	19.7	98.5	1.01	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	21.2	106	20.0	22.0	110	3.80	55 - 140	30	
1,2,3-Trichloropropane	20.0	18.7	93.7	20.0	19.2	96.0	2.43	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.7	98.7	20.0	20.6	103	4.37	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.1	101	20.0	20.2	101	0.126	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	18.7	93.6	20.0	19.2	96.2	2.76	50 - 130	30	
1,2-Dibromoethane	20.0	19.5	97.6	20.0	19.6	97.8	0.231	80 - 120	30	
1,2-Dichlorobenzene	20.0	19.7	98.3	20.0	20.1	101	2.29	70 - 120	30	
1,2-Dichloroethane	20.0	20.2	101	20.0	20.7	104	2.33	70 - 130	30	
1,2-Dichloropropane	20.0	21.2	106	20.0	21.1	105	0.562	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	21.5	107	20.0	21.5	108	0.0210	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.0	99.9	20.0	19.9	99.4	0.491	75 - 125	30	
1,3-Dichloropropane	20.0	20.7	103	20.0	21.1	105	1.97	75 - 125	30	
1,4-Dichlorobenzene	20.0	19.8	98.9	20.0	19.9	99.6	0.736	75 - 125	30	
2,2-Dichloropropane	20.0	19.2	95.8	20.0	20.0	100	4.41	70 - 135	30	
2-Butanone	20.0	20.7	104	20.0	21.8	109	4.84	30 - 150	30	
2-Chlorotoluene	20.0	19.4	97.1	20.0	19.5	97.3	0.245	75 - 125	30	
2-Hexanone	20.0	18.1	90.3	20.0	19.6	98.0	8.16	55 - 130	30	
4-Chlorotoluene	20.0	21.1	106	20.0	20.8	104	1.81	75 - 130	30	
4-Methyl-2-pentanone	20.0	20.8	104	20.0	21.3	107	2.48	60 - 135	30	
Acetone	20.0	20.6	103	20.0	21.7	108	5.21	40 - 140	30	
Benzene	20.0	20.6	103	20.0	20.9	104	1.16	80 - 120	30	
Bromobenzene	20.0	18.8	93.8	20.0	18.5	92.4	1.56	75 - 125	30	
Bromochloromethane	20.0	20.7	103	20.0	21.0	105	1.43	65 - 130	30	
Bromodichloromethane	20.0	20.7	103	20.0	20.9	104	1.01	75 - 120	30	
Bromoform	20.0	18.3	91.6	20.0	18.5	92.6	1.07	70 - 130	30	
Bromomethane	20.0	18.7	93.7	20.0	19.6	97.8	4.36	30 - 145	30	
Carbon disulfide	20.0	21.1	105	20.0	21.5	108	2.08	35 - 160	30	
Carbon tetrachloride	20.0	20.4	102	20.0	20.4	102	0.0019	65 - 140	30	
Chlorobenzene	20.0	19.9	99.6	20.0	20.0	100	0.328	80 - 120	30	
Chloroethane	20.0	21.2	106	20.0	22.0	110	3.98	60 - 135	30	
Chloroform	20.0	19.8	98.9	20.0	20.1	101	1.65	65 - 135	30	
Chloromethane	20.0	18.1	90.3	20.0	19.7	98.4	8.65	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.8	104	20.0	21.2	106	2.17	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4899138
Report generated: 08/17/2016 11:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080330 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG580241 Units: ug/L
QC Key: DOD4 Lot #: STD77551

Sample ID: WG580241-02 LCS File ID: 6M141249 Run Date: 08/15/2016 14:15
Sample ID: WG580241-03 LCS2 File ID: 6M141250 Run Date: 08/15/2016 14:47

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.9	115	20.0	23.7	118	3.15	70 - 130	30	
Chlorodibromomethane	20.0	19.6	97.8	20.0	20.0	100	2.25	60 - 135	30	
Dibromomethane	20.0	19.8	99.2	20.0	20.3	102	2.51	75 - 125	30	
Dichlorodifluoromethane	20.0	20.2	101	20.0	21.2	106	4.99	30 - 155	30	
Ethylbenzene	20.0	19.9	99.6	20.0	20.2	101	1.58	75 - 125	30	
Hexachlorobutadiene	20.0	19.6	97.8	20.0	20.4	102	4.29	50 - 140	30	
Isopropylbenzene	20.0	21.9	109	20.0	22.0	110	0.670	75 - 125	30	
m-,p-Xylene	40.0	41.8	104	40.0	42.1	105	0.807	75 - 130	30	
Methylene chloride	20.0	19.6	98.1	20.0	20.1	100	2.34	55 - 140	30	
n-Butylbenzene	20.0	20.3	102	20.0	20.6	103	1.07	70 - 135	30	
n-Propylbenzene	20.0	21.7	108	20.0	21.3	107	1.52	70 - 130	30	
Naphthalene	20.0	18.4	92.2	20.0	19.2	96.1	4.18	55 - 140	30	
o-Xylene	20.0	21.5	107	20.0	21.7	109	1.01	80 - 120	30	
p-Isopropyltoluene	20.0	20.2	101	20.0	20.4	102	1.05	75 - 130	30	
sec-Butylbenzene	20.0	20.2	101	20.0	20.3	101	0.506	70 - 125	30	
Styrene	20.0	21.5	107	20.0	21.6	108	0.821	65 - 135	30	
tert-Butylbenzene	20.0	20.5	102	20.0	20.2	101	1.36	70 - 130	30	
Tetrachloroethene	20.0	19.2	95.8	20.0	19.1	95.7	0.0959	45 - 150	30	
Toluene	20.0	20.4	102	20.0	20.5	103	0.611	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.5	102	20.0	20.7	104	1.34	60 - 140	30	
trans-1,3-Dichloropropene	20.0	19.7	98.4	20.0	20.2	101	2.62	55 - 140	30	
Trichloroethene	20.0	20.1	101	20.0	20.4	102	1.20	70 - 125	30	
Trichlorofluoromethane	20.0	20.0	100	20.0	20.0	99.9	0.180	60 - 145	30	
Vinyl chloride	20.0	20.8	104	20.0	21.7	108	3.78	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	98.8	99.1	70 - 120	PASS
Dibromofluoromethane	104	104	85 - 115	PASS
4-Bromofluorobenzene	99.8	98.5	75 - 120	PASS
Toluene-d8	99.0	98.4	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4899138
Report generated: 08/17/2016 11:43

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16080330
Instrument: HPMS6
Analyst: JDS
Workgroup: WG566155

Tune ID: WG566155-01
Run Date: 04/24/2016
Run Time: 16:33
File ID: 6M138750
Cal ID: HPMS6 - 24-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	10010	PASS
75.0	95.0	30.0	60.0	52.0	23152	PASS
95.0	95.0	100	100	100	44552	PASS
96.0	95.0	5.00	9.00	6.92	3085	PASS
173	174	0	2.00	0.346	113	PASS
174	95.0	50.0	100	73.2	32632	PASS
175	174	5.00	9.00	7.16	2336	PASS
176	174	95.0	101	99.2	32384	PASS
177	176	5.00	9.00	6.95	2251	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566155-02	STD	01	04/24/2016 16:59	
WG566155-03	STD	01	04/24/2016 17:31	
WG566155-04	STD	01	04/24/2016 18:03	
WG566155-05	STD-CCV	01	04/24/2016 18:36	
WG566155-06	STD	01	04/24/2016 19:08	
WG566155-07	STD	01	04/24/2016 19:40	
WG566155-08	STD	01	04/24/2016 20:12	
WG566155-09	STD	01	04/24/2016 20:44	
WG566155-10	SSCV	01	04/24/2016 22:21	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4899141
Report generated 08/17/2016 11:43

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16080330
Instrument: HPMS6
Analyst: TMB
Workgroup: WG579700

Tune ID: WG579700-01
Run Date: 08/10/2016
Run Time: 11:26
File ID: 6M141164
Cal ID: HPMS6 - 10-AUG-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.0	13504	PASS
75.0	95.0	30.0	60.0	56.1	30314	PASS
95.0	95.0	100	100	100	54037	PASS
96.0	95.0	5.00	9.00	6.96	3762	PASS
173	174	0	2.00	0.465	183	PASS
174	95.0	50.0	100	72.9	39370	PASS
175	174	5.00	9.00	7.29	2869	PASS
176	174	95.0	101	99.2	39056	PASS
177	176	5.00	9.00	6.61	2582	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG579700-02	STD	01	08/10/2016 14:25	
WG579700-03	STD	01	08/10/2016 14:57	
WG579700-04	STD	01	08/10/2016 15:30	
WG579700-05	STD	01	08/10/2016 16:01	
WG579700-06	STD	01	08/10/2016 16:34	
WG579700-07	STD	01	08/10/2016 17:05	
WG579700-08	STD-CCV	01	08/10/2016 17:37	
WG579700-09	STD	01	08/10/2016 18:09	
WG579700-10	STD	01	08/10/2016 18:42	
WG579700-11	STD	01	08/10/2016 19:14	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4899141
Report generated 08/17/2016 11:43

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16080330
Instrument: HPMS6
Analyst: TMB
Workgroup: WG579849

Tune ID: WG579849-01
Run Date: 08/11/2016
Run Time: 11:26
File ID: 6M141181
Cal ID: HPMS6 - 10-AUG-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.0	11209	PASS
75.0	95.0	30.0	60.0	53.1	24794	PASS
95.0	95.0	100	100	100	46669	PASS
96.0	95.0	5.00	9.00	7.06	3296	PASS
173	174	0	2.00	0.378	120	PASS
174	95.0	50.0	100	68.0	31719	PASS
175	174	5.00	9.00	7.86	2492	PASS
176	174	95.0	101	99.8	31670	PASS
177	176	5.00	9.00	6.94	2197	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG579700-12	SSCV	01	08/11/2016 14:02	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4899141
Report generated 08/17/2016 11:43

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16080330
Instrument: HPMS6
Analyst: TMB
Workgroup: WG580238

Tune ID: WG580238-01
Run Date: 08/15/2016
Run Time: 10:04
File ID: 6M141241
Cal ID: HPMS6 - 10-AUG-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.1	14095	PASS
75.0	95.0	30.0	60.0	54.2	30424	PASS
95.0	95.0	100	100	100	56168	PASS
96.0	95.0	5.00	9.00	6.76	3796	PASS
173	174	0	2.00	0.480	185	PASS
174	95.0	50.0	100	68.6	38525	PASS
175	174	5.00	9.00	7.09	2730	PASS
176	174	95.0	101	99.9	38487	PASS
177	176	5.00	9.00	6.53	2513	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG580238-02	CCV	01	08/15/2016 10:29	
WG580241-01	BLANK	01	08/15/2016 11:34	
L16080330-18	TRIP BLANK	01	08/15/2016 13:42	
WG580241-02	LCS	01	08/15/2016 14:15	
WG580241-03	LCS2	01	08/15/2016 14:47	
L16080330-01	46WW08-080216	01	08/15/2016 15:52	
L16080330-02	46WW14-080216	01	08/15/2016 16:24	
L16080330-03	46WW14FD-080216	01	08/15/2016 16:56	
L16080330-04	46WW07-080216	01	08/15/2016 17:28	
L16080330-08	46WW16-080316	01	08/15/2016 18:00	
L16080330-15	46WW09-080316	01	08/15/2016 18:32	
L16080330-05	46WW05-080316	01	08/15/2016 19:05	
L16080330-11	LHSMW19-080316	01	08/15/2016 19:37	
L16080330-13	46WW11-080316	01	08/15/2016 20:09	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4899141
Report generated 08/17/2016 11:43

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 042416 - HPMS6
Last Calibration: Wed Apr 27 16:03:33 2016
Curve: WG566155
Calibration Files

	Compound	5	20	50	100	200	300	400	500	Avg	%RSD
		6M138751.D	6M138752.D	6M138753.D	6M138754.D	6M138755.D	6M138756.D	6M138757.D	6M138758.D		
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.036	0.037	0.039	0.038	0.038	0.038	0.038	0.036	0.037	2.606
T	3-Chloro-1-propene	0.567	0.621	0.656	0.672	0.635	0.622	0.617	0.603	0.624	5.157
T	2-Chloro-1,3-butadiene	0.415	0.507	0.558	0.590	0.558	0.553	0.556	0.548	0.535	10.001
T	Ethyl Acetate	0.229	0.259	0.279	0.281	0.277	0.272	0.279	0.268	0.268	6.419
T	Methacrylonitrile	0.071	0.089	0.099	0.099	0.097	0.095	0.096	0.093	0.092	9.852
T	Isobutyl Alcohol		0.008	0.008	0.007	0.007	0.008	0.010	0.010	0.009	13.654
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.159	0.200	0.231	0.244	0.244	0.241	0.246	0.236	0.225	13.591
T	2-Nitropropane			0.079	0.082	0.085	0.085	0.088	0.084	0.084	3.643
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.026	0.027	0.032	0.034	0.035	0.033	0.031	12.127

Wed Apr 27 16:05:59 2016

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Calibration: Thu Aug 11 09:53:58 2016
Curve: WG579700
Calibration Files

	Compound	0.3 6M141167.D	0.4 6M141168.D	1 6M141169.D	2 6M141170.D	5 6M141171.D	20 6M141172.D	50 6M141173.D	100 6M141174.D	200 6M141175.D	300 6M141176.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.514	0.501	0.499	0.601	0.569	0.571	0.548	0.458	0.533	8.892		
P	Chloromethane			0.603	0.574	0.540	0.579	0.551	0.558	0.528	0.417	0.544	10.391		
C	Vinyl Chloride		0.386	0.371	0.369	0.355	0.384	0.355	0.363	0.348	0.296	0.358	7.496		
T	1,3-Butadiene					0.342	0.348	0.284	0.270	0.253	0.219	0.286	17.731		0.999
T	Bromomethane			0.185	0.188	0.170	0.165	0.159	0.181	0.190	0.167	0.176	6.642		
T	Chloroethane			0.213	0.210	0.198	0.214	0.203	0.210	0.207	0.180	0.204	5.579		
T	Trichlorofluoromethane		0.580	0.576	0.588	0.582	0.618	0.563	0.562	0.549	0.488	0.567	6.273		
T	Diethyl ether			0.197	0.208	0.202	0.200	0.204	0.201		0.186	0.200	3.485		
T	Isoprene					0.371	0.394	0.384	0.383	0.380	0.358	0.378	3.232		
T	Acrolein				0.030	0.029	0.029	0.030	0.029		0.034	0.030	6.731		
T	1,1,2-Trichloro-1,2,2-Trifluoroet			0.260	0.251	0.258	0.268	0.248	0.247	0.246	0.266	0.255	3.444		
T	Acetone					0.092	0.081	0.078	0.076	0.075	0.072	0.079	8.864		
C	1,1-Dichloroethene		0.560	0.541	0.532	0.539	0.577	0.504	0.505	0.537	0.503	0.533	4.826		
T	Tert-Butyl Alcohol			0.020	0.022	0.021	0.022	0.023	0.023		0.021	0.022	6.548		
T	Dimethyl Sulfide					0.297	0.332	0.327	0.325	0.321	0.313	0.319	3.870		
T	Iodomethane			0.062	0.090	0.148	0.279	0.318	0.323	0.309	0.273	0.225	47.813	0.994	
T	Methyl acetate					0.216	0.222	0.218	0.219	0.214	0.215	0.217	1.408		
T	Methylene Chloride			0.325	0.316	0.292	0.296	0.273	0.272	0.265	0.250	0.286	9.035		
T	Carbon Disulfide			0.939	0.965	0.881	0.939	0.893	0.872	0.843	0.765	0.887	7.193		
T	Acrylonitrile			0.085	0.082	0.087	0.093	0.100	0.098		0.103	0.093	8.591		
T	Methyl Tert Butyl Ether			0.629	0.675	0.685	0.766	0.725	0.745	0.728	0.699	0.707	6.182		
T	trans-1,2-Dichloroethene		0.226	0.270	0.257	0.254	0.284	0.266	0.267	0.265	0.253	0.260	6.116		
T	n-Hexane					0.372	0.400	0.393	0.390	0.387	0.381	0.387	2.540		
T	Diisopropyl ether			1.015	1.125	1.130	1.114	1.134	1.090		1.038	1.092	4.366		
T	Vinyl Acetate					0.338	0.395	0.424	0.451	0.434	0.474	0.419	11.461		
P	1,1-Dichloroethane		0.572	0.600	0.620	0.601	0.620	0.574	0.578	0.567	0.538	0.586	4.573		
T	Ethyl-Tert-Butyl ether			0.810	0.907	0.919	0.915	0.934	0.898		0.856	0.891	4.852		
T	2-Butanone					0.116	0.114	0.117	0.118	0.115	0.109	0.115	2.751		
T	Propionitrile			0.028	0.030	0.031	0.030	0.032	0.032		0.029	0.030	4.905		
T	2,2-Dichloropropane		0.509	0.539	0.508	0.517	0.518	0.479	0.480	0.472	0.445	0.496	5.898		
T	cis-1,2-Dichloroethene		0.273	0.280	0.296	0.285	0.314	0.295	0.296	0.289	0.276	0.289	4.394		
C	Chloroform	0.583	0.568	0.579	0.585	0.560	0.595	0.545	0.547	0.533	0.498	0.559	5.225		
T	1-Bromopropane			0.034	0.040	0.047	0.050	0.049	0.049	0.050	0.048	0.046	12.587		
T	Bromochloromethane		0.129	0.169	0.174	0.168	0.182	0.168	0.169	0.164	0.155	0.164	9.150		
T	Tetrahydrofuran			0.078	0.068	0.070	0.072	0.074	0.074		0.071	0.072	4.606		
S	Dibromofluoromethane			0.256	0.281	0.274	0.289	0.285	0.269	0.270	0.258	0.273	4.370		
T	1,1,1-Trichloroethane		0.497	0.575	0.537	0.532	0.561	0.520	0.524	0.516	0.483	0.527	5.436		
T	Cyclohexane			0.452	0.479	0.492	0.540	0.534	0.534	0.531	0.516	0.510	6.309		
T	1,1-Dichloropropene			0.375	0.389	0.382	0.426	0.396	0.404	0.402	0.385	0.395	4.063		
T	Tert-Amyl-Methyl ether			0.576	0.659	0.671	0.669	0.684	0.674		0.643	0.654	5.598		
T	Carbon Tetrachloride		0.424	0.459	0.477	0.478	0.515	0.477	0.484	0.477	0.442	0.4703	5.5579		
S	1,2-Dichloroethane-d4				0.391	0.373	0.388	0.368	0.353	0.351	0.332	0.365	5.8824		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.457	0.489	0.507	0.484	0.504	0.467	0.474	0.457	0.426	0.4737	5.4179		
T	Benzene		1.066	1.136	1.153	1.105	1.156	1.065	1.063	1	0.89	1.0706	7.8941		
T	Trichloroethene		0.325	0.275	0.275	0.269	0.29	0.272	0.275	0.27	0.249	0.2779	7.4629		
T	Methylcyclohexane					0.344	0.391	0.388	0.384	0.38	0.367	0.3757	4.7128		
C	1,2-Dichloropropane		0.286	0.299	0.305	0.296	0.326	0.302	0.309	0.303	0.291	0.3017	3.843		
T	1,4-Dioxane					0.001	0.002	0.002	0.002		0.002	0.0018	13.368		
T	Bromodichloromethane		0.375	0.438	0.421	0.418	0.453	0.429	0.434	0.424	0.395	0.4209	5.5564		
T	Dibromomethane		0.143	0.155	0.17	0.171	0.175	0.165	0.168	0.164	0.153	0.1627	6.2667		
T	2-Chloroethyl Vinyl Ether				0.089	0.105	0.133	0.146	0.152	0.152	0.145	0.1317	18.992	0.999	
T	4-Methyl-2-Pentanone					0.073	0.086	0.086	0.088	0.088	0.081	0.0836	7.2361		
T	cis-1,3-Dichloropropene		0.334	0.35	0.383	0.4	0.463	0.447	0.456	0.448	0.415	0.4107	11.51		
T	Dimethyl Disulfide					0.181	0.247	0.259	0.266	0.268	0.254	0.2457	13.286		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8				1.181	1.207	1.247	1.203	1.168	1.159	1.162	1.1896	2.6643		
C	Toluene		1.279	1.387	1.509	1.542	1.619	1.485	1.473	1.386	1.253	1.4369	8.408		
T	Ethyl Methacrylate			0.268	0.309	0.342	0.4	0.41	0.417	0.412	0.408	0.3707	15.472	1.000	
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.465	0.497	0.536	0.598	0.563	0.571	0.556	0.544	0.5414	7.8295		
T	1,1,2-Trichloroethane		0.246	0.323	0.31	0.294	0.304	0.285	0.285	0.276	0.268	0.2879	8.1082		
T	2-Hexanone					0.203	0.226	0.239	0.254	0.251	0.242	0.236	7.9541		
T	1,3-Dichloropropane		0.43	0.499	0.506	0.508	0.54	0.508	0.514	0.498	0.482	0.4984	6.0107		
T	Tetrachloroethene		0.356	0.408	0.39	0.398	0.414	0.382	0.38	0.371	0.364	0.3849	5.0617		
T	Dibromochloromethane		0.324	0.378	0.397	0.37	0.421	0.396	0.403	0.391	0.374	0.3838	7.1762		
T	1,2-Dibromoethane		0.227	0.29	0.259	0.255	0.285	0.275	0.282	0.275	0.267	0.2682	7.2285		
T	1-Chlorohexane		0.306	0.321	0.352	0.387	0.468	0.473	0.475	0.466	0.453	0.4111	17.065	0.999	
P	Chlorobenzene		1.05	1.081	1.064	1.019	1.062	0.977	0.97	0.912	0.834	0.9967	8.2543		
T	1,1,1,2-Tetrachloroethane		0.372	0.398	0.423	0.393	0.421	0.396	0.398	0.382	0.354	0.393	5.5023		
C	Ethylbenzene		0.434	0.522	0.505	0.522	0.559	0.522	0.524	0.503	0.473	0.5072	7.0497		
T	m-,p-Xylene		0.566	0.605	0.628	0.63	0.678	0.633	0.627	0.578	0.508	0.606	8.1269		
T	o-Xylene			0.471	0.524	0.567	0.664	0.633	0.637	0.609	0.555	0.5824	11.151		
T	Styrene		0.706	0.789	0.929	1.024	1.167	1.097	1.106	1.046	0.923	0.9765	15.693	0.994	
P	Bromoform			0.213	0.237	0.233	0.258	0.251	0.262	0.256	0.239	0.2436	6.7869		
T	Isopropylbenzene		1.21	1.307	1.41	1.516	1.754	1.674	1.664	1.529	1.268	1.4813	13.128		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.589	0.67	0.665	0.652	0.648	0.596	0.603	0.587	0.602	0.6234	5.5403		
S	p-Bromofluorobenzene				0.866	0.831	0.931	0.922	0.882	0.907	0.915	0.8932	3.9892		

T	1,2,3-Trichloropropane			0.19	0.203	0.199	0.205	0.184	0.19	0.183	0.182	0.192	4.6438	
T	trans-1,4-Dichloro-2-Butene			0.137	0.163	0.174	0.214	0.226	0.236	0.24	0.245	0.2043	19.883	0.999
T	n-Propylbenzene		2.803	3.146	3.36	3.48	3.783	3.449	3.357	2.979	2.531	3.2097	12	
T	Bromobenzene	0.822	0.787	0.841	0.841	0.813	0.819	0.751	0.741	0.723	0.711	0.7848	6.2813	
T	1,3,5-Trimethylbenzene		1.793	2.061	2.242	2.402	2.702	2.5	2.466	2.301	2.048	2.2794	12.184	
T	2-Chlorotoluene		2.169	2.307	2.479	2.389	2.482	2.396	2.348	2.244	1.987	2.3112	6.8716	
T	4-Chlorotoluene		2.169	2.335	2.527	2.474	2.559	2.184	2.187	2.014	1.871	2.2578	10.422	
T	a-Methylstyrene					1.211	1.41	1.39	1.362	1.315	1.265	1.3255	5.7963	
T	tert-Butylbenzene			0.467	0.479	0.497	0.544	0.494	0.486	0.47	0.457	0.4867	5.4959	
T	1,2,4-Trimethylbenzene			2.409	2.665	2.73	2.878	2.638	2.597	2.382	2.098	2.5497	9.5589	
T	sec-Butylbenzene			2.694	2.827	2.888	3.111	2.855	2.806	2.584	2.273	2.7549	8.9731	
T	p-Isopropyltoluene			2.156	2.296	2.454	2.711	2.511	2.463	2.278	2.019	2.361	9.252	
T	1,3-Dichlorobenzene		1.462	1.542	1.565	1.567	1.593	1.485	1.468	1.393	1.306	1.4868	6.2547	
T	1,4-Dichlorobenzene		1.659	1.616	1.681	1.556	1.597	1.477	1.468	1.39	1.296	1.5267	8.4538	
T	n-Butylbenzene			1.893	2.06	2.198	2.479	2.344	2.338	2.169	1.941	2.1775	9.4401	
T	1,2-Dichlorobenzene	1.57	1.518	1.499	1.532	1.472	1.509	1.391	1.388	1.303	1.228	1.4408	7.6591	
T	1,2-Dibromo-3-Chloropropane				0.121	0.127	0.141	0.134	0.139	0.135	0.133	0.1328	5.3019	
T	1,2,4-Trichlorobenzene	0.856	0.546	0.654	0.678	0.73	0.935	0.905	0.925	0.892	0.854	0.7974	16.967	0.999
T	Hexachlorobutadiene		0.318	0.421	0.397	0.359	0.392	0.349	0.347	0.339	0.329	0.3611	9.5779	
T	Naphthalene		0.793	0.925	1.004	1.243	1.843	1.861	1.922	1.81	1.65	1.4503	31.453	0.996
T	1,2,3-Trichlorobenzene	0.674	0.706	0.697	0.685	0.761	0.92	0.853	0.86	0.822	0.788	0.7766	11.013	

Thu Aug 11 14:47:06 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16080330 Run Date: 08/11/2016 Sample ID: WG579700-12
Instrument ID: HPMS6 Run Time: 14:02 Method: 8260B
File ID: 6M141186 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG579700 Cal ID: HPMS6 - 10-AUG-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	45.9	ug/L	0.514	8.10	20	
1,1-Dichloroethene	CCC	50.0	44.5	ug/L	0.474	11.0	20	
1,2-Dichloropropane	CCC	50.0	50.5	ug/L	0.305	1.10	20	
Ethylbenzene	CCC	50.0	48.1	ug/L	0.488	3.70	20	
Toluene	CCC	50.0	49.1	ug/L	1.41	1.90	20	
Vinyl Chloride	CCC	50.0	45.7	ug/L	0.328	8.60	20	
Bromoform	SPCC	50.0	44.6	ug/L	0.217	10.8	20	
Chlorobenzene	SPCC	50.0	46.9	ug/L	0.934	6.30	20	
Chloromethane	SPCC	50.0	39.2	ug/L	0.426	21.6	20	*
1,1-Dichloroethane	SPCC	50.0	45.6	ug/L	0.534	8.80	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.5	ug/L	0.592	5.00	20	
Acetone		50.0	52.0	ug/L	0.0823	4.00	20	
Benzene		50.0	48.1	ug/L	1.03	3.90	20	
Bromobenzene		50.0	44.9	ug/L	0.705	10.2	20	
Bromochloromethane		50.0	48.0	ug/L	0.158	4.00	20	
Bromodichloromethane		50.0	48.6	ug/L	0.409	2.90	20	
Bromomethane		50.0	42.6	ug/L	0.150	14.9	20	
2-Butanone		50.0	53.3	ug/L	0.122	6.60	20	
n-Butylbenzene		50.0	50.8	ug/L	2.21	1.50	20	
sec-Butylbenzene		50.0	49.5	ug/L	2.72	1.10	20	
tert-Butylbenzene		50.0	49.0	ug/L	0.477	2.00	20	
Carbon Disulfide		50.0	48.7	ug/L	0.864	2.60	20	
Carbon Tetrachloride		50.0	46.8	ug/L	0.441	6.30	20	
Dibromochloromethane		50.0	47.4	ug/L	0.364	5.30	20	
Chloroethane		50.0	48.5	ug/L	0.198	2.90	20	
2-Chlorotoluene		50.0	46.7	ug/L	2.16	6.50	20	
4-Chlorotoluene		50.0	50.1	ug/L	2.26	0.200	20	
1,2-Dibromo-3-Chloropropane		50.0	48.7	ug/L	0.129	2.60	20	
1,2-Dibromoethane		50.0	48.5	ug/L	0.260	3.00	20	
Dibromomethane		50.0	46.9	ug/L	0.153	6.10	20	
1,2-Dichlorobenzene		50.0	47.5	ug/L	1.37	4.90	20	
1,3-Dichlorobenzene		50.0	47.4	ug/L	1.41	5.20	20	
1,4-Dichlorobenzene		50.0	47.4	ug/L	1.45	5.30	20	
Dichlorodifluoromethane		50.0	47.6	ug/L	0.507	4.80	20	
1,2-Dichloroethane		50.0	47.6	ug/L	0.451	4.90	20	
cis-1,2-Dichloroethene		50.0	50.4	ug/L	0.291	0.700	20	
trans-1,2-Dichloroethene		50.0	49.2	ug/L	0.256	1.60	20	
1,3-Dichloropropane		50.0	51.1	ug/L	0.510	2.30	20	
2,2-Dichloropropane		50.0	49.1	ug/L	0.487	1.90	20	
cis-1,3-Dichloropropene		50.0	57.4	ug/L	0.472	14.8	20	
trans-1,3-Dichloropropene		50.0	49.4	ug/L	0.535	1.20	20	
1,1-Dichloropropene		50.0	47.4	ug/L	0.374	5.20	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4899139
Report generated 08/17/2016 11:43

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16080330 Run Date: 08/11/2016 Sample ID: WG579700-12
Instrument ID: HPMS6 Run Time: 14:02 Method: 8260B
File ID: 6M141186 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG579700 Cal ID: HPMS6 - 10-AUG-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	50.2	ug/L	0.237	0.300	20	
Hexachlorobutadiene		50.0	49.4	ug/L	0.357	1.20	20	
Isopropylbenzene		50.0	52.8	ug/L	1.57	5.70	20	
p-Isopropyltoluene		50.0	49.8	ug/L	2.35	0.400	20	
4-Methyl-2-Pentanone		50.0	53.2	ug/L	0.0890	6.40	20	
Methylene Chloride		50.0	46.3	ug/L	0.265	7.50	20	
Naphthalene		50.0	46.2	ug/L	1.61	7.70	20	
n-Propylbenzene		50.0	52.5	ug/L	3.37	5.10	20	
Styrene		50.0	50.6	ug/L	1.02	1.20	20	
1,1,1,2-Tetrachloroethane		50.0	47.1	ug/L	0.371	5.70	20	
Tetrachloroethene		50.0	45.5	ug/L	0.350	9.00	20	
1,2,3-Trichlorobenzene		50.0	52.8	ug/L	0.820	5.60	20	
1,2,4-Trichlorobenzene		50.0	50.8	ug/L	0.894	1.60	20	
1,1,1-Trichloroethane		50.0	46.4	ug/L	0.490	7.10	20	
1,1,2-Trichloroethane		50.0	47.2	ug/L	0.272	5.60	20	
Trichloroethene		50.0	47.9	ug/L	0.266	4.20	20	
Trichlorofluoromethane		50.0	46.1	ug/L	0.523	7.90	20	
1,2,3-Trichloropropane		50.0	46.7	ug/L	0.179	6.60	20	
1,2,4-Trimethylbenzene		50.0	47.7	ug/L	2.43	4.60	20	
1,3,5-Trimethylbenzene		50.0	51.9	ug/L	2.36	3.70	20	
o-Xylene		50.0	51.8	ug/L	0.604	3.70	20	
m-,p-Xylene		100	98.5	ug/L	0.597	1.50	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4899139
Report generated 08/17/2016 11:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330 Run Date: 08/15/2016 Sample ID: WG580238-02
Instrument ID: HPMS6 Run Time: 10:29 Method: 8260B
File ID: 6M141242 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG580241 Cal ID: HPMS6 - 10-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.1	ug/L	0.549	1.77	20	
1,1-Dichloroethene	CCC	50.0	51.4	ug/L	0.548	2.79	20	
1,2-Dichloropropane	CCC	50.0	52.0	ug/L	0.314	4.10	20	
Ethylbenzene	CCC	50.0	51.5	ug/L	0.522	3.00	20	
Toluene	CCC	50.0	52.3	ug/L	1.50	4.53	20	
Vinyl Chloride	CCC	50.0	48.4	ug/L	0.347	3.26	20	
Bromoform	SPCC	50.0	44.5	ug/L	0.217	10.9	20	
Chlorobenzene	SPCC	50.0	48.6	ug/L	0.968	2.84	20	
Chloromethane	SPCC	50.0	48.3	ug/L	0.525	3.42	20	
1,1-Dichloroethane	SPCC	50.0	51.3	ug/L	0.601	2.63	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.0	ug/L	0.561	10.1	20	
Xylenes		150	156	ug/L	0.620	3.80	20	
Acetone		50.0	40.5	ug/L	0.0642	18.9	20	
Benzene		50.0	52.1	ug/L	1.12	4.15	20	
Bromobenzene		50.0	47.8	ug/L	0.750	4.39	20	
Bromochloromethane		50.0	51.1	ug/L	0.168	2.29	20	
Bromodichloromethane		50.0	49.8	ug/L	0.419	0.411	20	
Bromomethane		50.0	45.6	ug/L	0.160	8.88	20	
2-Butanone		50.0	41.3	ug/L	0.0947	17.5	20	
n-Butylbenzene		50.0	55.8	ug/L	2.43	11.6	20	
sec-Butylbenzene		50.0	52.7	ug/L	2.90	5.36	20	
tert-Butylbenzene		50.0	51.3	ug/L	0.499	2.51	20	
Carbon Disulfide		50.0	51.1	ug/L	0.906	2.12	20	
Carbon Tetrachloride		50.0	51.0	ug/L	0.480	2.01	20	
Dibromochloromethane		50.0	47.4	ug/L	0.364	5.20	20	
Chloroethane		50.0	48.6	ug/L	0.199	2.79	20	
2-Chlorotoluene		50.0	53.1	ug/L	2.45	6.10	20	
4-Chlorotoluene		50.0	49.0	ug/L	2.21	2.03	20	
1,2-Dibromo-3-Chloropropane		50.0	43.6	ug/L	0.116	12.8	20	
1,2-Dibromoethane		50.0	47.0	ug/L	0.252	6.01	20	
Dibromomethane		50.0	48.6	ug/L	0.158	2.78	20	
1,2-Dichlorobenzene		50.0	47.4	ug/L	1.37	5.22	20	
1,3-Dichlorobenzene		50.0	50.5	ug/L	1.50	1.00	20	
1,4-Dichlorobenzene		50.0	48.6	ug/L	1.48	2.80	20	
Dichlorodifluoromethane		50.0	51.1	ug/L	0.545	2.23	20	
1,2-Dichloroethane		50.0	46.5	ug/L	0.441	6.94	20	
cis-1,2-Dichloroethene		50.0	52.7	ug/L	0.305	5.47	20	
trans-1,2-Dichloroethene		50.0	53.4	ug/L	0.278	6.82	20	
1,3-Dichloropropane		50.0	47.8	ug/L	0.477	4.38	20	
2,2-Dichloropropane		50.0	52.3	ug/L	0.519	4.53	20	
cis-1,3-Dichloropropene		50.0	55.1	ug/L	0.452	10.1	20	
trans-1,3-Dichloropropene		50.0	49.3	ug/L	0.534	1.40	20	

CCV - Modified 03/05/2008
PDF File ID: 4899142
Report generated 08/17/2016 11:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330 Run Date: 08/15/2016 Sample ID: WG580238-02
Instrument ID: HPMS6 Run Time: 10:29 Method: 8260B
File ID: 6M141242 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG580241 Cal ID: HPMS6 - 10-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.3	ug/L	0.413	4.57	20	
2-Hexanone		50.0	39.6	ug/L	0.187	20.9	20	*
Hexachlorobutadiene		50.0	50.4	ug/L	0.364	0.737	20	
Isopropylbenzene		50.0	54.5	ug/L	1.62	9.07	20	
p-Isopropyltoluene		50.0	53.7	ug/L	2.54	7.44	20	
4-Methyl-2-Pentanone		50.0	43.8	ug/L	0.0733	12.4	20	
Methylene Chloride		50.0	49.5	ug/L	0.283	1.07	20	
Naphthalene		50.0	50.9	ug/L	1.78	1.79	20	
n-Propylbenzene		50.0	55.2	ug/L	3.55	10.5	20	
Styrene		50.0	53.2	ug/L	1.07	6.30	20	
1,1,1,2-Tetrachloroethane		50.0	47.9	ug/L	0.377	4.15	20	
Tetrachloroethene		50.0	49.0	ug/L	0.377	2.06	20	
1,2,3-Trichlorobenzene		50.0	53.1	ug/L	0.825	6.18	20	
1,2,4-Trichlorobenzene		50.0	52.7	ug/L	0.927	5.46	20	
1,1,1-Trichloroethane		50.0	49.3	ug/L	0.520	1.47	20	
1,1,2-Trichloroethane		50.0	46.2	ug/L	0.266	7.59	20	
Trichloroethene		50.0	49.7	ug/L	0.276	0.573	20	
Trichlorofluoromethane		50.0	46.0	ug/L	0.522	7.97	20	
1,2,3-Trichloropropane		50.0	43.5	ug/L	0.167	12.9	20	
1,2,4-Trimethylbenzene		50.0	52.3	ug/L	2.67	4.59	20	
1,3,5-Trimethylbenzene		50.0	55.9	ug/L	2.55	11.7	20	
o-Xylene		50.0	53.0	ug/L	0.618	6.06	20	
m-,p-Xylene		100	103	ug/L	0.622	2.67	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4899142
Report generated 08/17/2016 11:43

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16080330
Instrument ID: HPMS6
Workgroup (AAB#): WG580241

ICAL CCV Number: WG579700-08
CAL ID: HPMS6-10-AUG-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG579700-08	NA	NA	367321	614077	821017
Upper Limit	NA	NA	734642	1228154	1642034
Lower Limit	NA	NA	183661	307039	410509
L16080330-01	1.00	01	278420	528162	683518
L16080330-02	1.00	01	271012	515197	676168
L16080330-03	1.00	01	270532	513765	659755
L16080330-04	1.00	01	262823	502986	650965
L16080330-05	1.00	01	259391	496491	642132
L16080330-08	1.00	01	260355	499918	650890
L16080330-11	1.00	01	258872	497945	648062
L16080330-13	1.00	01	255855	491726	633790
L16080330-15	1.00	01	261787	500432	645536
L16080330-18	1.00	01	280237	532460	700092
WG580241-01	1.00	01	312537	611427	813289
WG580241-02	1.00	01	334033	566564	719888
WG580241-03	1.00	01	339560	565669	717970

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4901101
Report generated 08/17/2016 11:44

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16080330
Instrument ID: HPMS6
Workgroup (AAB#): WG580241

ICAL CCV Number: WG579700-08
CAL ID: HPMS6-10-AUG-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG579700-08	NA	NA	18.78	15.23	10.76
Upper Limit	NA	NA	19.28	15.73	11.26
Lower Limit	NA	NA	18.28	14.73	10.26
L16080330-01	1.00	01	18.78	15.23	10.76
L16080330-02	1.00	01	18.78	15.23	10.76
L16080330-03	1.00	01	18.79	15.23	10.75
L16080330-04	1.00	01	18.78	15.23	10.76
L16080330-05	1.00	01	18.78	15.23	10.76
L16080330-08	1.00	01	18.79	15.22	10.75
L16080330-11	1.00	01	18.78	15.23	10.76
L16080330-13	1.00	01	18.78	15.23	10.76
L16080330-15	1.00	01	18.79	15.23	10.76
L16080330-18	1.00	01	18.79	15.23	10.75
WG580241-01	1.00	01	18.79	15.23	10.75
WG580241-02	1.00	01	18.78	15.23	10.76
WG580241-03	1.00	01	18.79	15.23	10.75

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4901102
Report generated: 08/17/2016 11:44

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141252.D Vial: 12
Acq On : 15 Aug 2016 15:52 Operator: TMB
Sample : L16080330-01 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 09:52:30 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	683518	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	528162	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	278420	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	194896	26.1350 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.52%		
43) 1,2-Dichloroethane-d4	10.30	65	249797	25.0286 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.12%		
58) Toluene-d8	13.02	98	611723	24.3415 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.36%		
80) p-Bromofluorobenzene	17.01	95	258084	25.9442 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.76%		

Target Compounds

					Qvalue
3) Chloromethane	3.35	50	2121	0.1427 ug/L #	58
13) Acetone	5.89	43	24411	11.2734 ug/L	95
29) 2-Butanone	8.74	43	1937	0.6169 ug/L #	57
60) Ethyl Methacrylate	13.06	69	518	0.5054 ug/L #	7
98) 1,2,4-Trichlorobenzene	21.94	180	187	0.1442 ug/L #	12

(#) = qualifier out of range (m) = manual integration
6M141252.D 8260WT.M Tue Aug 16 09:52:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141252.D Vial: 12
Acq On : 15 Aug 2016 15:52 Operator: TMB
Sample : L16080330-01 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 9:52 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

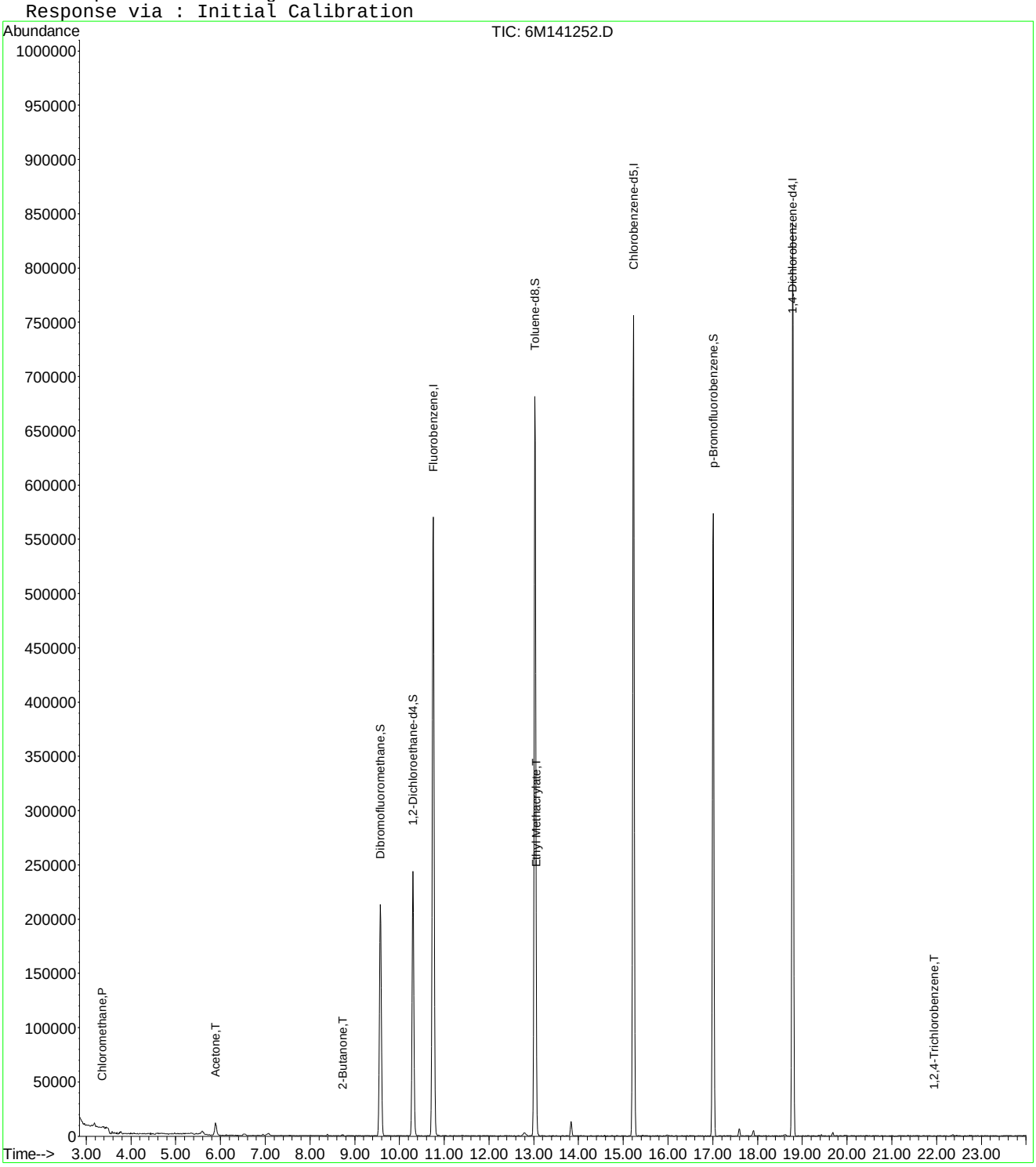

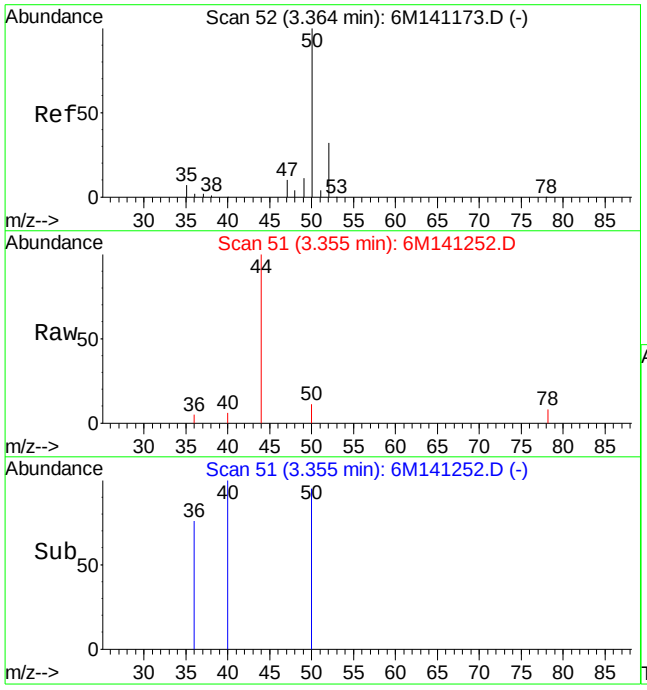

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.35 min Scan# 51
Delta R.T. -0.00 min
Lab File: 6M141252.D
Acq: 15 Aug 2016 15:52

Tgt Ion: 50 Resp: 2121

Ion	Ratio	Lower	Upper
50	100		
52	9.1	19.8	46.2#

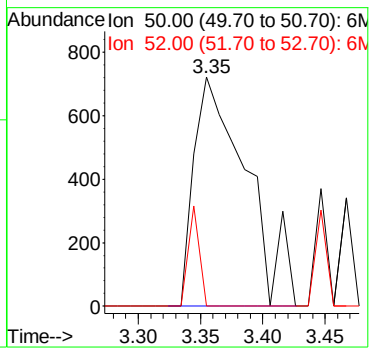

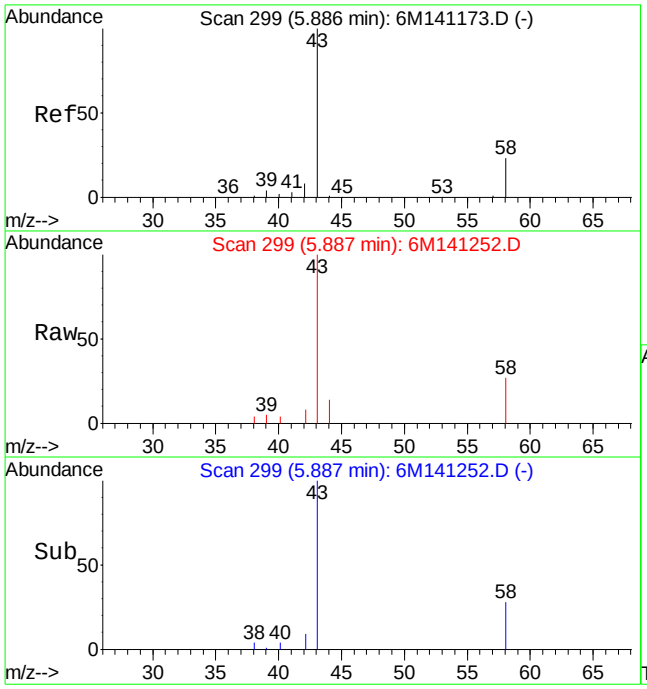

#13
Acetone
Concen: 11.27 ug/L
RT: 5.89 min Scan# 299
Delta R.T. -0.01 min
Lab File: 6M141252.D
Acq: 15 Aug 2016 15:52

Tgt Ion: 43 Resp: 24411

Ion	Ratio	Lower	Upper
43	100		
58	24.9	16.4	38.2

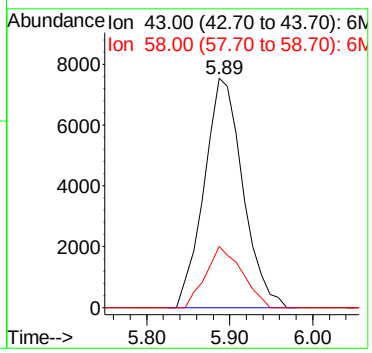

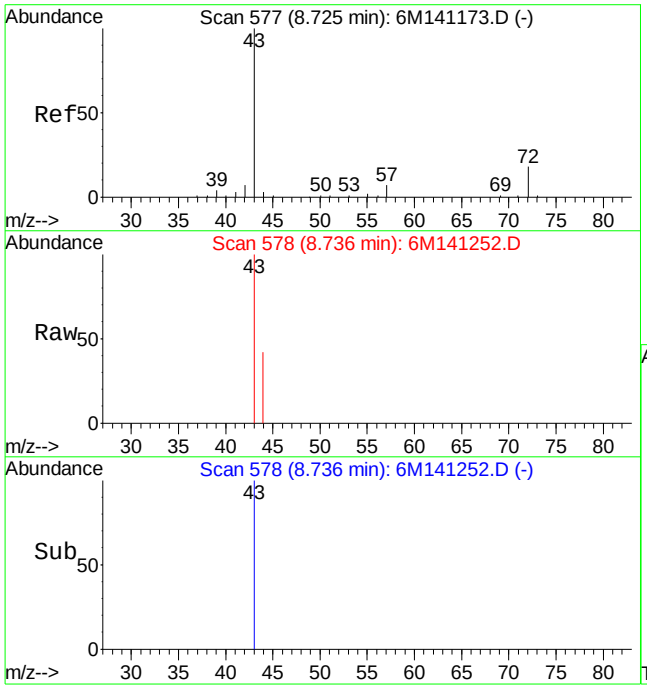

#29
2-Butanone
Concen: 0.62 ug/L
RT: 8.74 min Scan# 578
Delta R.T. 0.01 min
Lab File: 6M141252.D
Acq: 15 Aug 2016 15:52

Tgt Ion: 43 Resp: 1937

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.9	27.9#

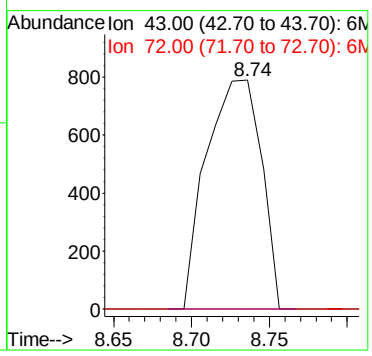

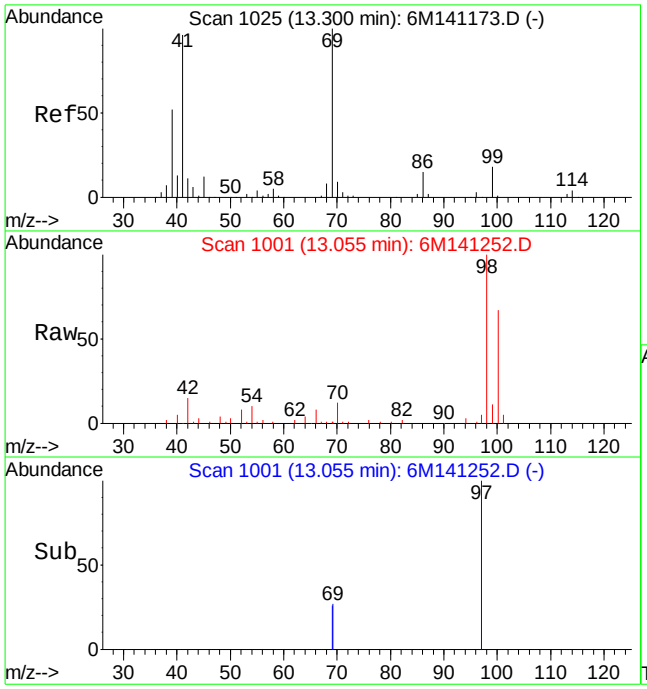

#60
Ethyl Methacrylate
Concen: 0.51 ug/L
RT: 13.06 min Scan# 1001
Delta R.T. -0.25 min
Lab File: 6M141252.D
Acq: 15 Aug 2016 15:52

Tgt Ion: 69 Resp: 518

Ion	Ratio	Lower	Upper
69	100		
41	0.0	51.4	120.0#

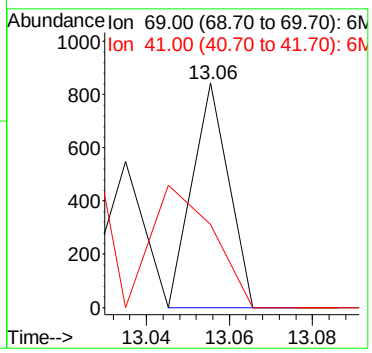

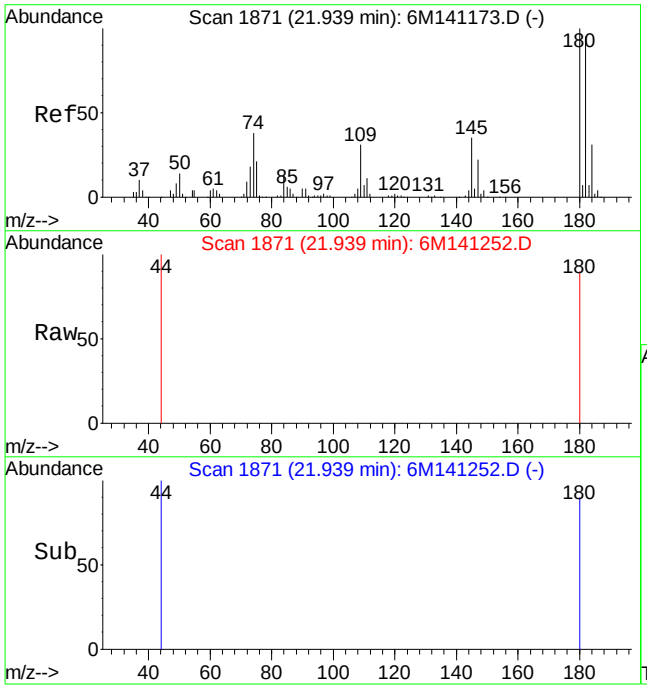

#98
1,2,4-Trichlorobenzene
Concen: 0.14 ug/L
RT: 21.94 min Scan# 1871
Delta R.T. 0.00 min
Lab File: 6M141252.D
Acq: 15 Aug 2016 15:52

Tgt Ion:180 Resp: 187

Ion	Ratio	Lower	Upper
180	100		
182	0.0	57.7	134.5#
145	0.0	19.0	44.4#

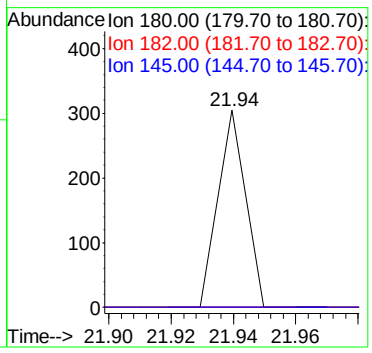

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141253.D Vial: 13
Acq On : 15 Aug 2016 16:24 Operator: TMB
Sample : L16080330-02 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 09:52:36 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	676168	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	515197	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	271012	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	191608	25.9733 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.88%		
43) 1,2-Dichloroethane-d4	10.30	65	248752	25.1948 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.76%		
58) Toluene-d8	13.03	98	603957	24.6372 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.56%		
80) p-Bromofluorobenzene	17.01	95	254793	26.3135 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.24%		

Target Compounds					Qvalue
13) Acetone	5.90	43	2868	1.3389 ug/L #	48
60) Ethyl Methacrylate	13.05	69	597	0.5162 ug/L #	7

(#) = qualifier out of range (m) = manual integration
6M141253.D 8260WT.M Tue Aug 16 09:52:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141253.D Vial: 13
Acq On : 15 Aug 2016 16:24 Operator: TMB
Sample : L16080330-02 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 9:52 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

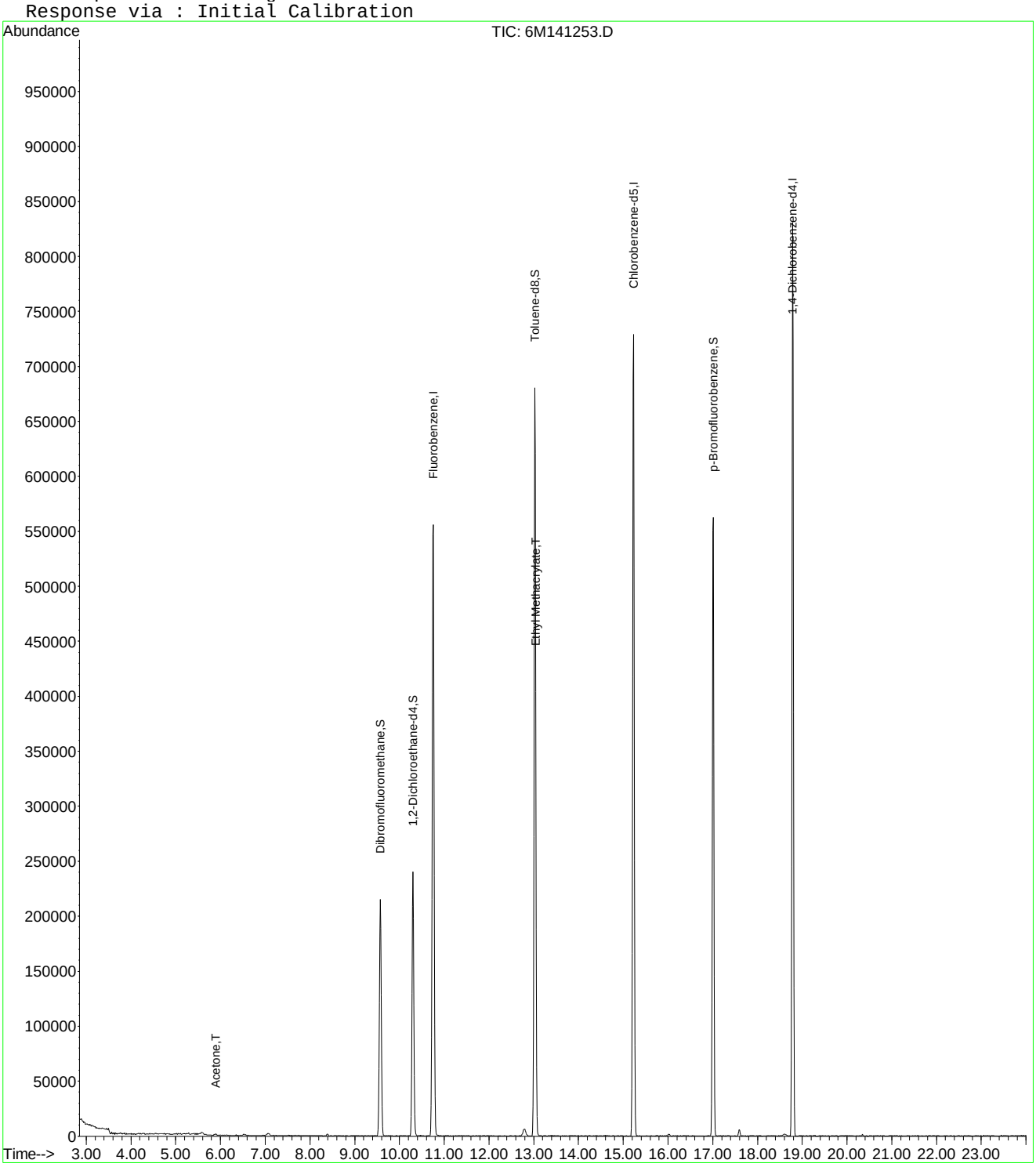

6M141253.D 8260WT.M Tue Aug 16 09:52:40 2016 Page 2

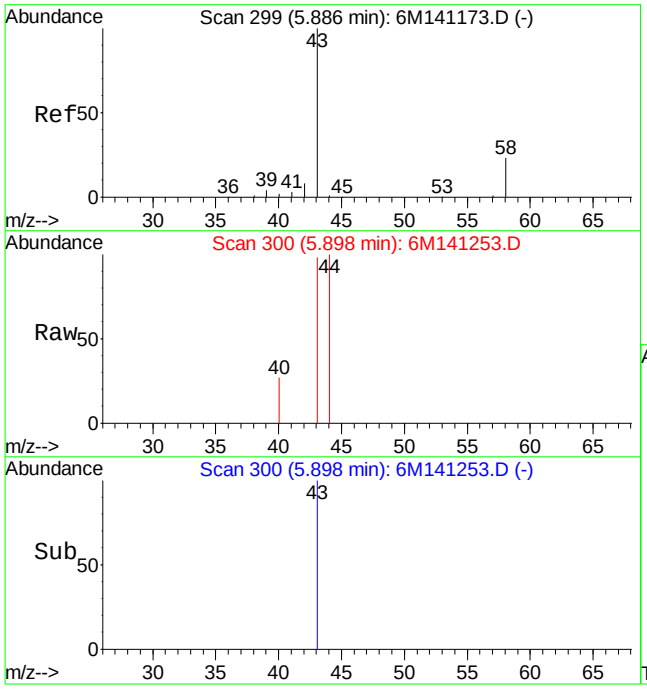

#13
Acetone
Concen: 1.34 ug/L
RT: 5.90 min Scan# 300
Delta R.T. 0.00 min
Lab File: 6M141253.D
Acq: 15 Aug 2016 16:24

Tgt Ion: 43 Resp: 2868

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

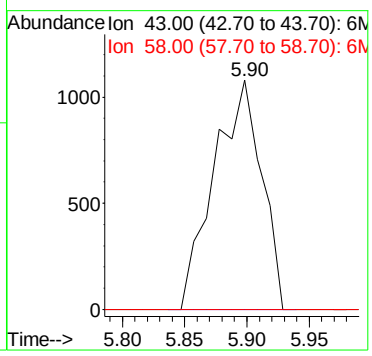

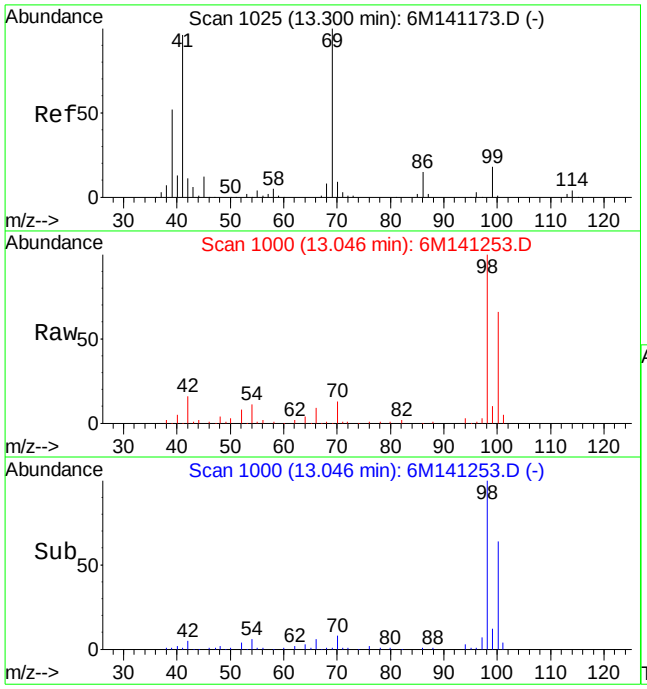

#60
Ethyl Methacrylate
Concen: 0.52 ug/L
RT: 13.05 min Scan# 1000
Delta R.T. -0.26 min
Lab File: 6M141253.D
Acq: 15 Aug 2016 16:24

Tgt Ion: 69 Resp: 597

Ion	Ratio	Lower	Upper
69	100		
41	0.0	51.4	120.0#

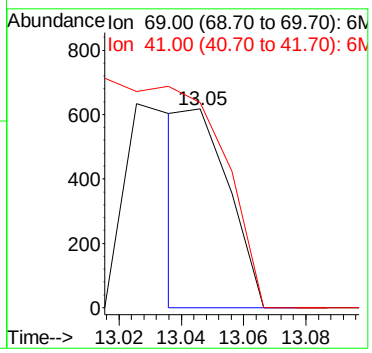

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141254.D Vial: 14
Acq On : 15 Aug 2016 16:56 Operator: TMB
Sample : L16080330-03 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 09:52:41 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	659755	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	513765	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	270532	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.58	111	190547	26.4721 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.88%		
43) 1,2-Dichloroethane-d4	10.30	65	243422	25.2683 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.08%		
58) Toluene-d8	13.03	98	598550	24.4847 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.92%		
80) p-Bromofluorobenzene	17.00	95	252574	26.1306 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.52%		

Target Compounds					Qvalue
5) 1,3-Butadiene	3.74	54	289	Below Cal #	46
13) Acetone	5.90	43	4123	1.9726 ug/L	84

(#) = qualifier out of range (m) = manual integration
6M141254.D 8260WT.M Tue Aug 16 09:52:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141254.D Vial: 14
Acq On : 15 Aug 2016 16:56 Operator: TMB
Sample : L16080330-03 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 9:52 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

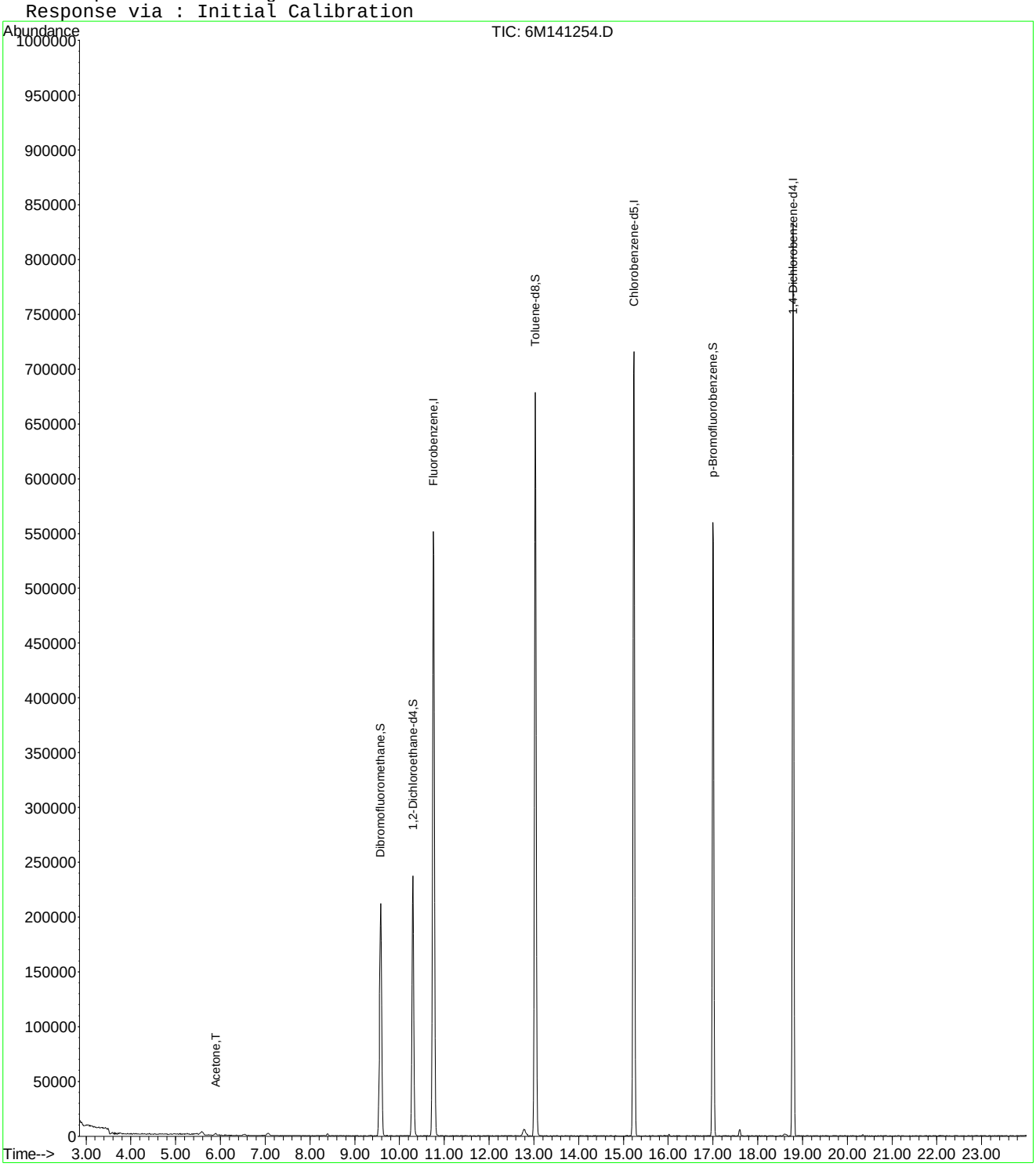

6M141254.D 8260WT.M Tue Aug 16 09:52:45 2016 Page 2

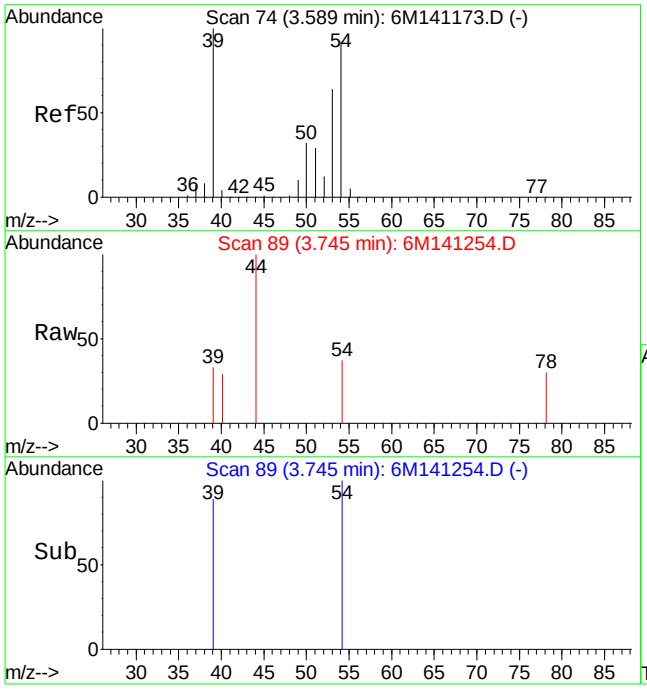

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.74 min Scan# 89
Delta R.T. 0.17 min
Lab File: 6M141254.D
Acq: 15 Aug 2016 16:56

Tgt Ion: 54 Resp: 289

Ion	Ratio	Lower	Upper
54	100		
39	70.6	62.6	146.2
53	0.0	42.5	99.1#

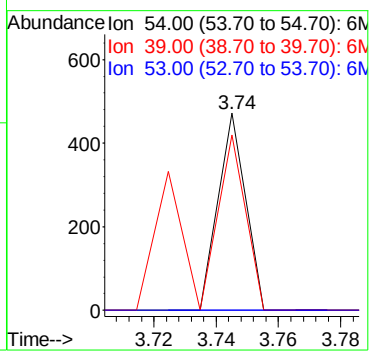

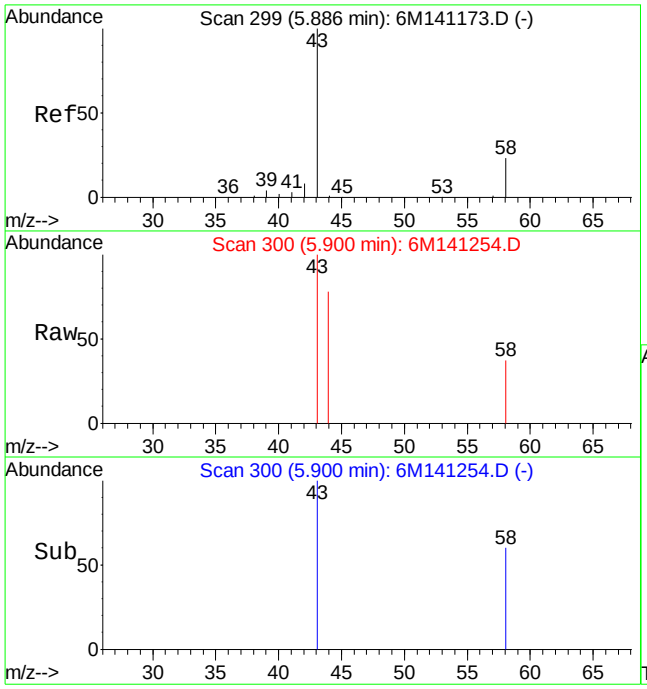

#13
Acetone
Concen: 1.97 ug/L
RT: 5.90 min Scan# 300
Delta R.T. 0.00 min
Lab File: 6M141254.D
Acq: 15 Aug 2016 16:56

Tgt Ion: 43 Resp: 4123

Ion	Ratio	Lower	Upper
43	100		
58	19.2	16.4	38.2

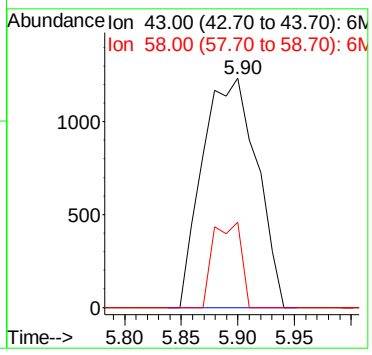

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141255.D Vial: 15
Acq On : 15 Aug 2016 17:28 Operator: TMB
Sample : L16080330-04 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 09:52:47 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	650965	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	502986	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	262823	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	188580	26.5526 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.20%		
43) 1,2-Dichloroethane-d4	10.30	65	243130	25.5788 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.32%		
58) Toluene-d8	13.02	98	590504	24.6732 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.68%		
80) p-Bromofluorobenzene	17.01	95	247488	26.3555 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.44%		

Target Compounds					Qvalue
3) Chloromethane	3.36	50	1810	0.1279 ug/L #	60
13) Acetone	5.90	43	6815	3.3047 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M141255.D 8260WT.M Tue Aug 16 09:52:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141255.D Vial: 15
Acq On : 15 Aug 2016 17:28 Operator: TMB
Sample : L16080330-04 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 9:52 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

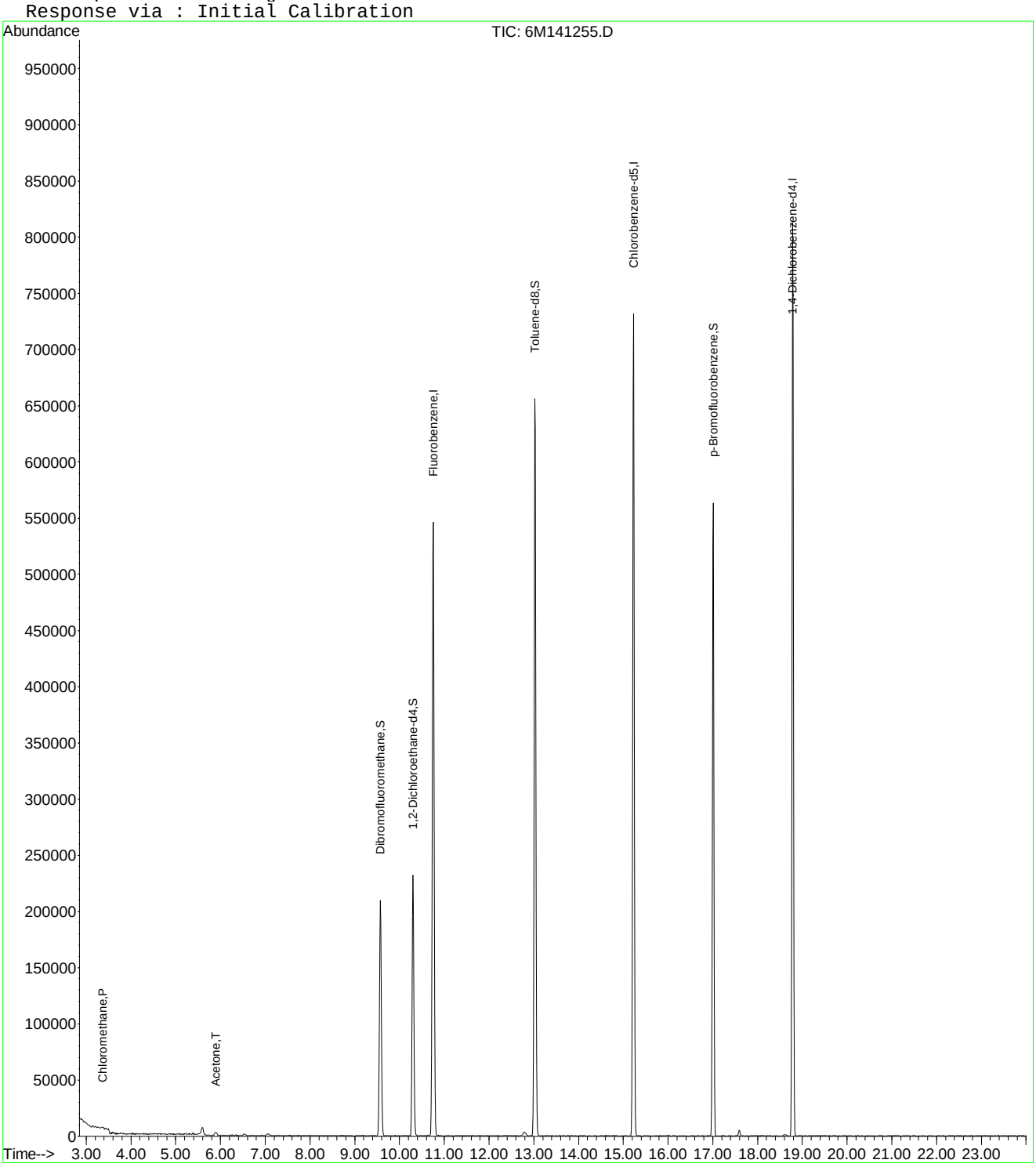

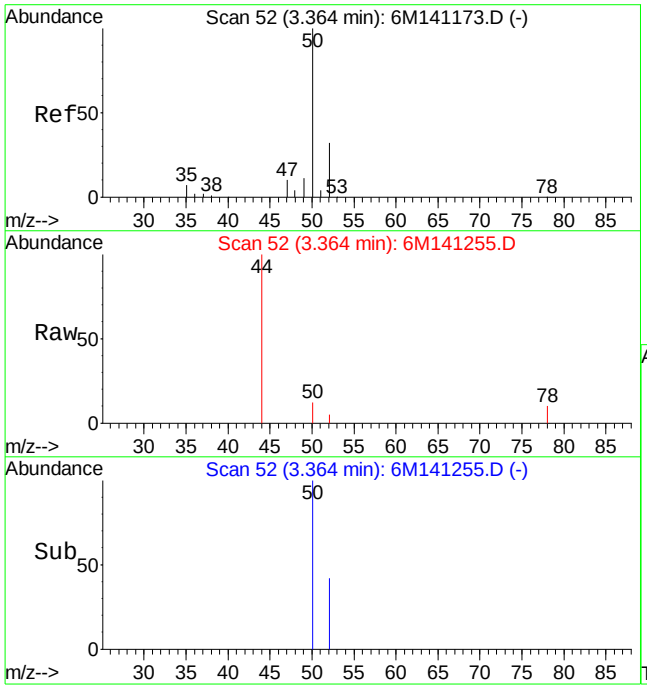

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.36 min Scan# 52
Delta R.T. 0.01 min
Lab File: 6M141255.D
Acq: 15 Aug 2016 17:28

Tgt Ion: 50 Resp: 1810

Ion	Ratio	Lower	Upper
50	100		
52	10.5	19.8	46.2#

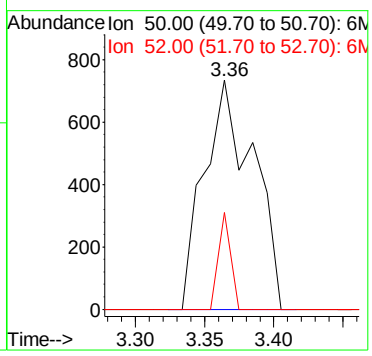

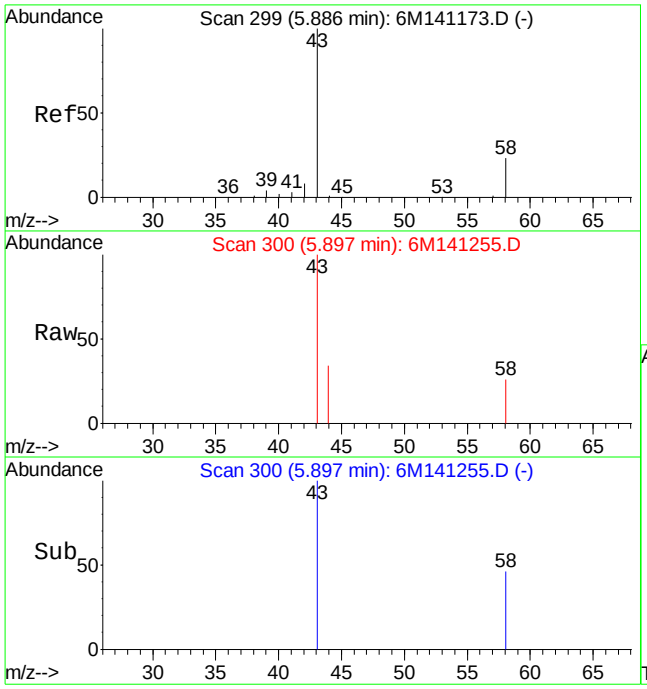

#13
Acetone
Concen: 3.30 ug/L
RT: 5.90 min Scan# 300
Delta R.T. -0.00 min
Lab File: 6M141255.D
Acq: 15 Aug 2016 17:28

Tgt Ion: 43 Resp: 6815

Ion	Ratio	Lower	Upper
43	100		
58	25.7	16.4	38.2

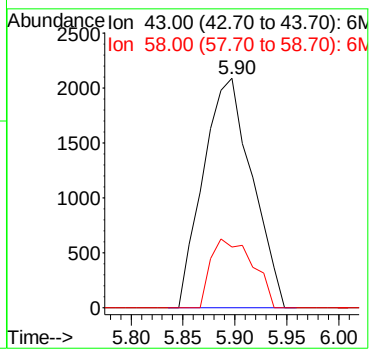

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141258.D Vial: 18
Acq On : 15 Aug 2016 19:05 Operator: TMB
Sample : L16080330-05 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 09:53:05 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	642132	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	496491	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	259391	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	187795	26.8058 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.24%		
43) 1,2-Dichloroethane-d4	10.30	65	240712	25.6728 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.68%		
58) Toluene-d8	13.03	98	584477	24.7409 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.96%		
80) p-Bromofluorobenzene	17.01	95	242026	26.1148 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.44%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.56	62	4805	0.5219 ug/L #	16
13) Acetone	5.89	43	5441	2.6747 ug/L #	78
14) 1,1-Dichloroethene	6.09	61	25216	1.8418 ug/L	88
27) 1,1-Dichloroethane	8.08	63	12686	0.8435 ug/L	96
32) cis-1,2-Dichloroethene	9.02	96	13811	1.8587 ug/L	92
47) Trichloroethene	11.33	130	168281	23.5785 ug/L	83
48) Methylcyclohexane	11.34	83	2069	0.2144 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M141258.D 8260WT.M Tue Aug 16 09:53:08 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141258.D Vial: 18
Acq On : 15 Aug 2016 19:05 Operator: TMB
Sample : L16080330-05 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 9:53 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

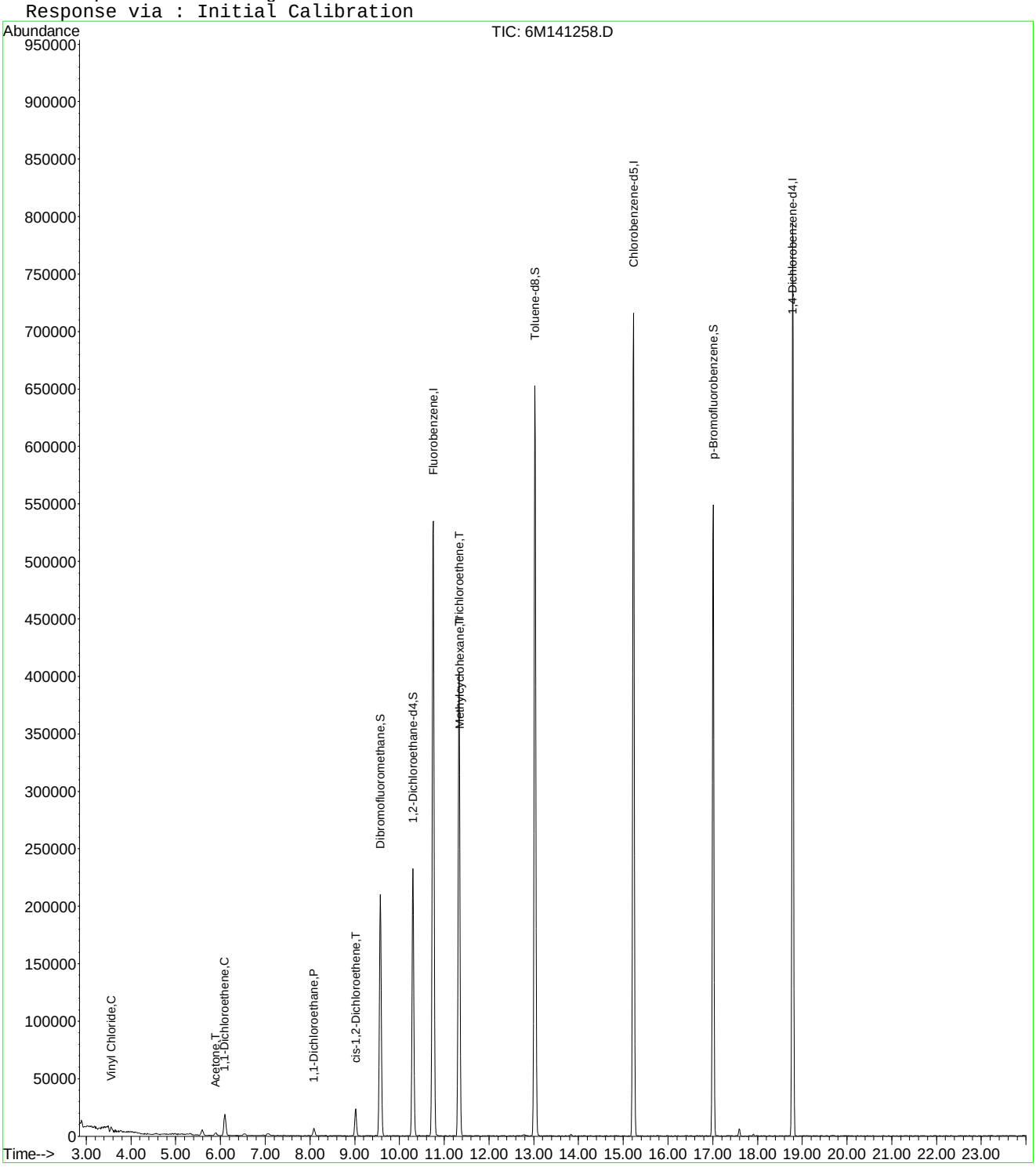

6M141258.D 8260WT.M Tue Aug 16 09:53:09 2016 Page 2

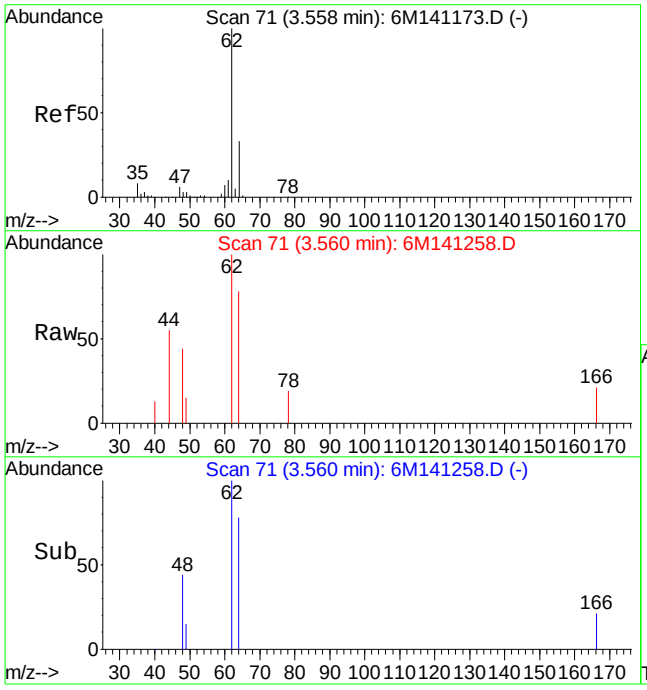

#4
Vinyl Chloride
Concen: 0.52 ug/L
RT: 3.56 min Scan# 71
Delta R.T. 0.01 min
Lab File: 6M141258.D
Acq: 15 Aug 2016 19:05

Tgt Ion: 62 Resp: 4805

Ion	Ratio	Lower	Upper
62	100		
64	79.2	19.3	45.1#

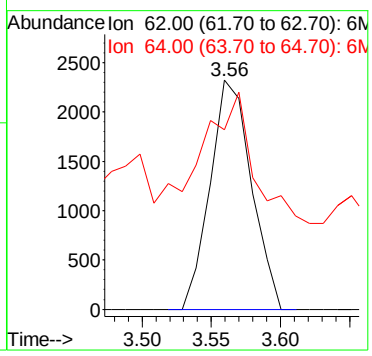

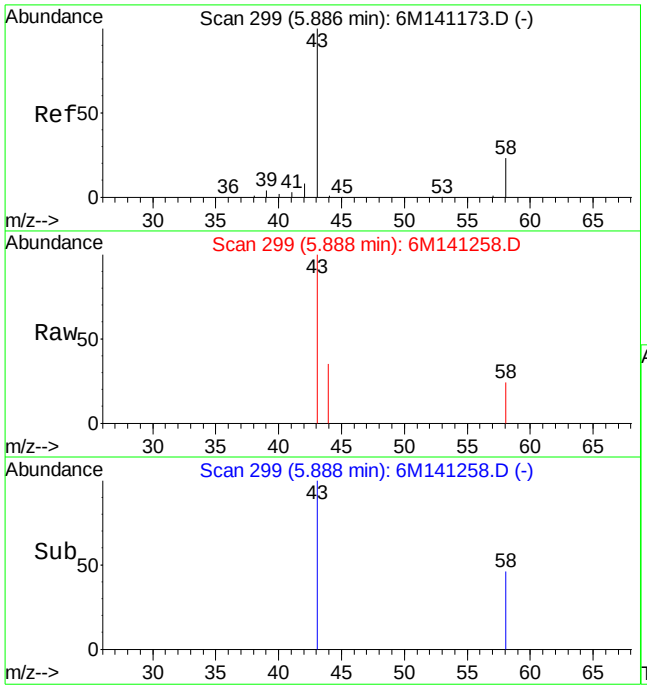

#13
Acetone
Concen: 2.67 ug/L
RT: 5.89 min Scan# 299
Delta R.T. -0.01 min
Lab File: 6M141258.D
Acq: 15 Aug 2016 19:05

Tgt Ion: 43 Resp: 5441

Ion	Ratio	Lower	Upper
43	100		
58	15.7	16.4	38.2#

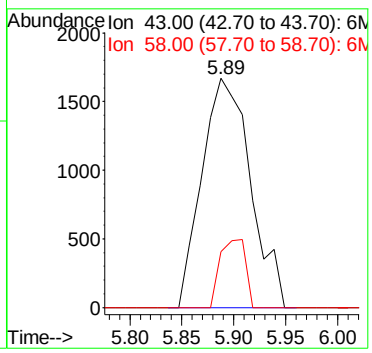

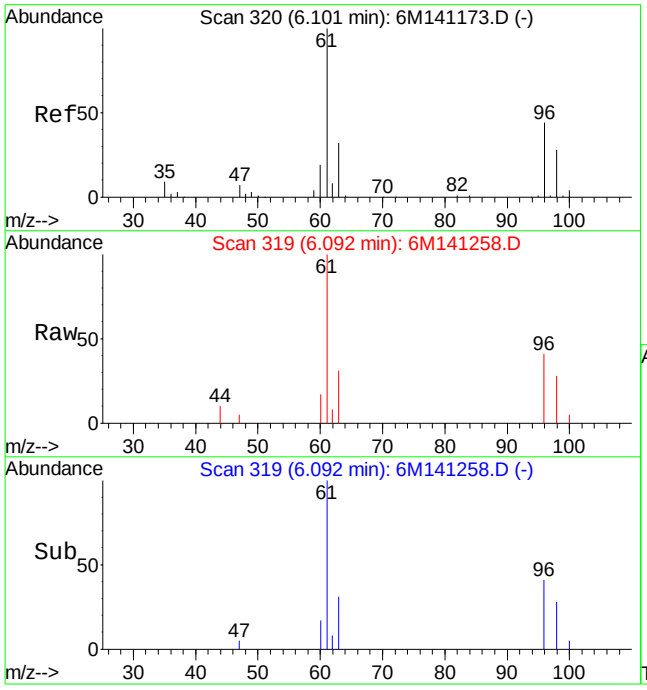

#14
1,1-Dichloroethene
Concen: 1.84 ug/L
RT: 6.09 min Scan# 319
Delta R.T. 0.00 min
Lab File: 6M141258.D
Acq: 15 Aug 2016 19:05

Tgt Ion: 61 Resp: 25216

Ion	Ratio	Lower	Upper
61	100		
96	45.0	32.0	74.6

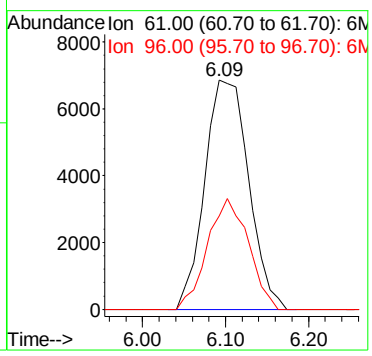

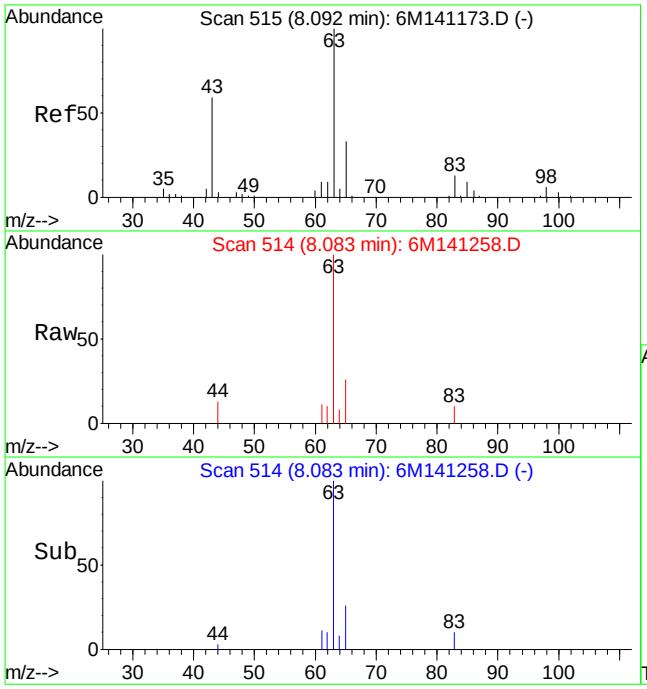

#27
1,1-Dichloroethane
Concen: 0.84 ug/L
RT: 8.08 min Scan# 514
Delta R.T. 0.00 min
Lab File: 6M141258.D
Acq: 15 Aug 2016 19:05

Tgt Ion: 63 Resp: 12686

Ion	Ratio	Lower	Upper
63	100		
65	30.0	19.3	44.9

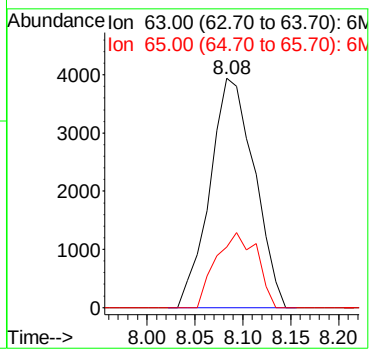

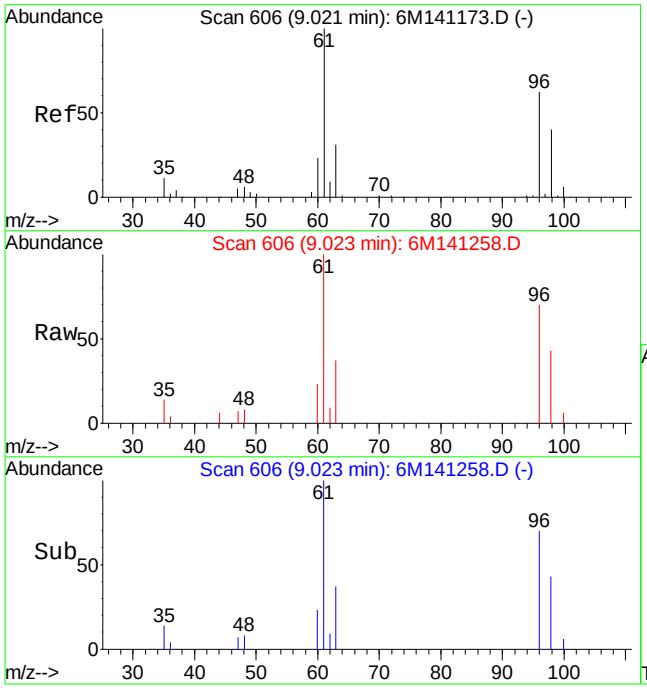

#32
cis-1,2-Dichloroethene
Concen: 1.86 ug/L
RT: 9.02 min Scan# 606
Delta R.T. 0.00 min
Lab File: 6M141258.D
Acq: 15 Aug 2016 19:05

Tgt Ion: 96 Resp: 13811

Ion	Ratio	Lower	Upper
96	100		
61	158.4	89.2	208.2

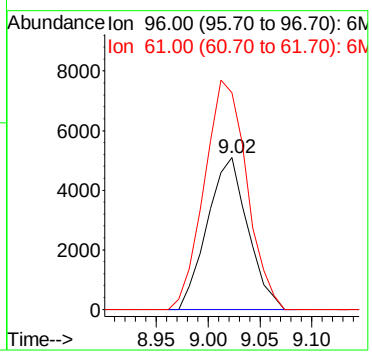

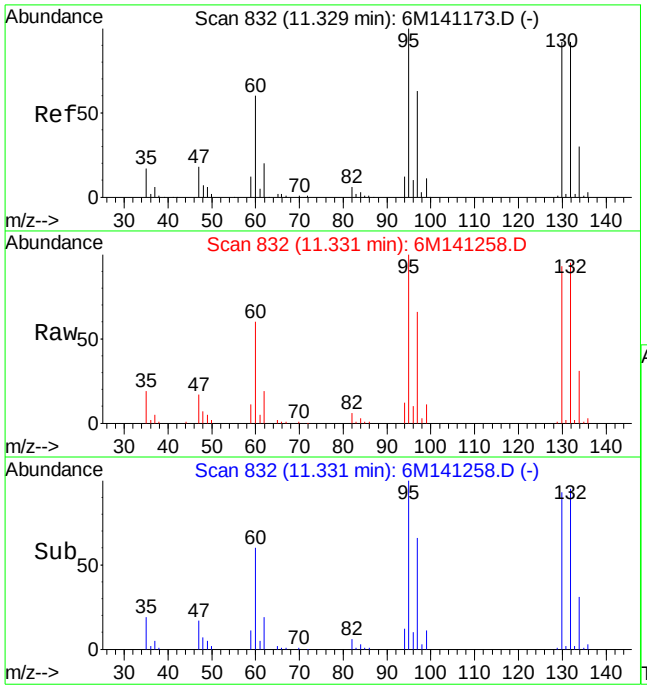

#47
Trichloroethene
Concen: 23.58 ug/L
RT: 11.33 min Scan# 832
Delta R.T. 0.00 min
Lab File: 6M141258.D
Acq: 15 Aug 2016 19:05

Tgt Ion:130 Resp: 168281

Ion	Ratio	Lower	Upper
130	100		
60	65.3	32.0	74.6

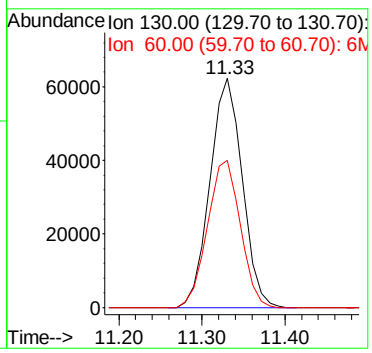

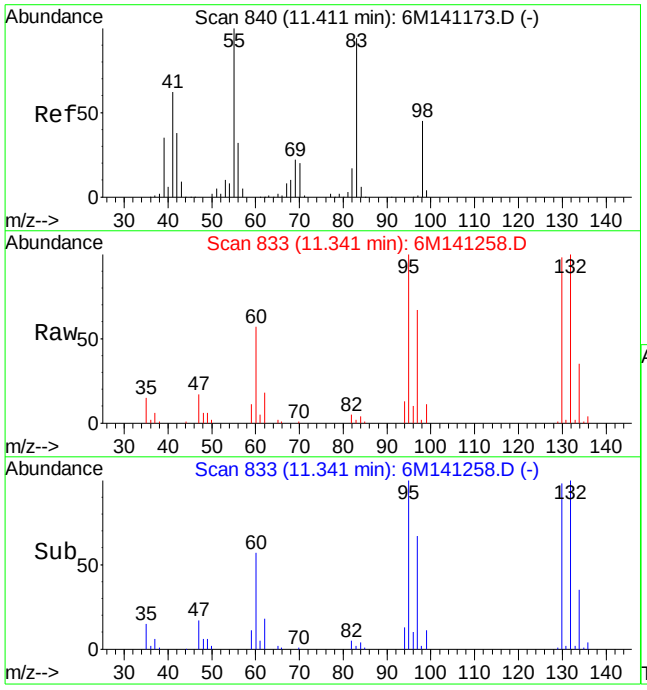

#48
Methylcyclohexane
Concen: 0.21 ug/L
RT: 11.34 min Scan# 833
Delta R.T. -0.07 min
Lab File: 6M141258.D
Acq: 15 Aug 2016 19:05

Tgt Ion: 83 Resp: 2069

Ion	Ratio	Lower	Upper
83	100		
55	0.0	56.3	131.3#
98	229.3	28.4	66.4#

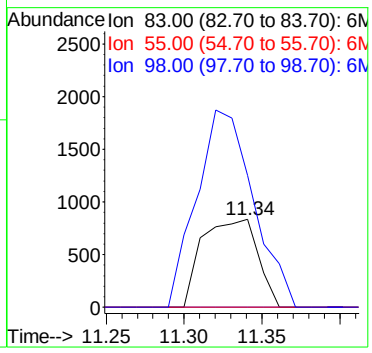

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141256.D Vial: 16
Acq On : 15 Aug 2016 18:00 Operator: TMB
Sample : L16080330-08 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 09:52:53 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	650890	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.22	117	499918	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	260355	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.58	111	189500	26.6852 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.76%		
43) 1,2-Dichloroethane-d4	10.30	65	243289	25.5985 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.40%		
58) Toluene-d8	13.03	98	585084	24.5968 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.40%		
80) p-Bromofluorobenzene	17.00	95	245713	26.4145 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.64%		

Target Compounds

					Qvalue
3) Chloromethane	3.32	50	6322	0.4466 ug/L #	42
7) Chloroethane	4.62	64	659	0.1238 ug/L #	43
13) Acetone	5.89	43	7152	3.4685 ug/L	84
20) Carbon Disulfide	6.95	76	5786	0.2505 ug/L #	74
46) Benzene	10.45	78	3414	0.1225 ug/L	82

(#) = qualifier out of range (m) = manual integration
6M141256.D 8260WT.M Tue Aug 16 09:52:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141256.D Vial: 16
Acq On : 15 Aug 2016 18:00 Operator: TMB
Sample : L16080330-08 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 9:52 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

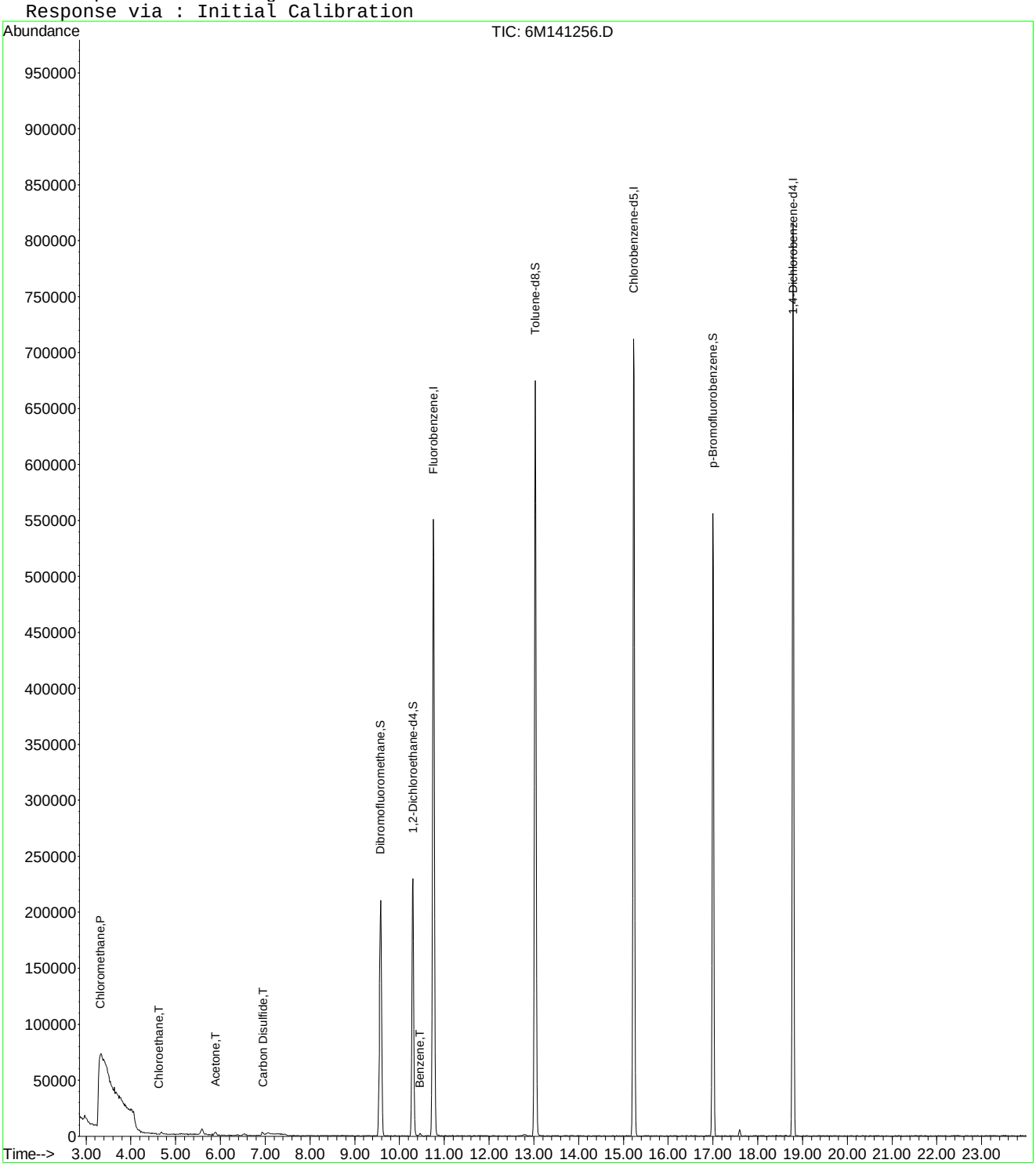

6M141256.D 8260WT.M Tue Aug 16 09:52:57 2016 Page 2

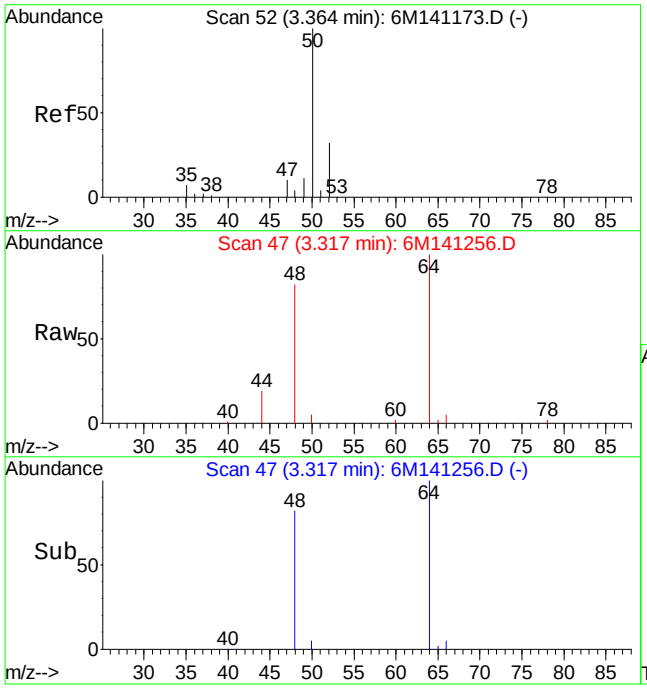

#3
Chloromethane
Concen: 0.45 ug/L
RT: 3.32 min Scan# 47
Delta R.T. -0.04 min
Lab File: 6M141256.D
Acq: 15 Aug 2016 18:00

Tgt Ion: 50 Resp: 6322

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.8	46.2#

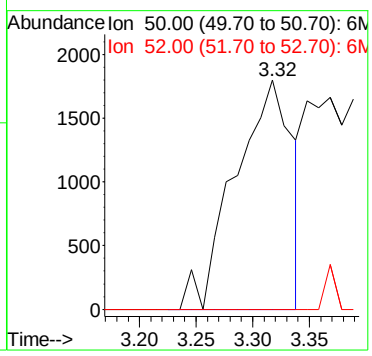

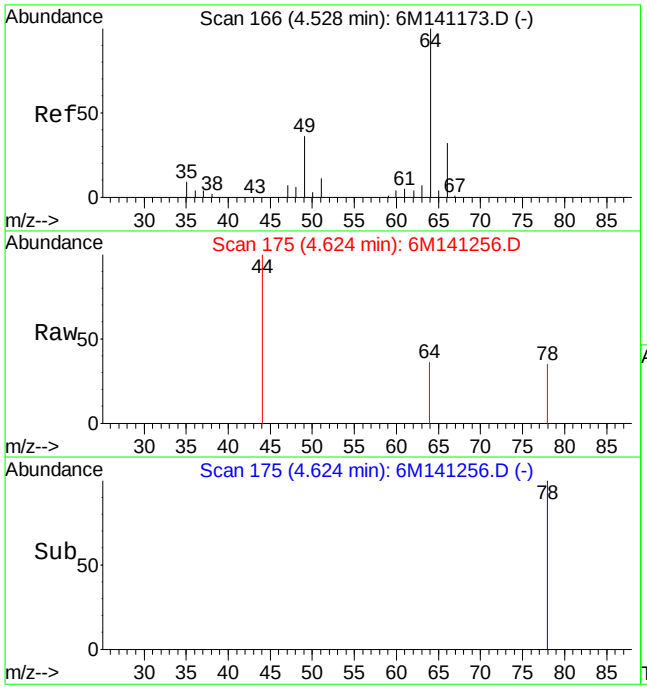

#7
Chloroethane
Concen: 0.12 ug/L
RT: 4.62 min Scan# 175
Delta R.T. 0.11 min
Lab File: 6M141256.D
Acq: 15 Aug 2016 18:00

Tgt Ion: 64 Resp: 659

Ion	Ratio	Lower	Upper
64	100		
49	0.0	19.3	44.9#

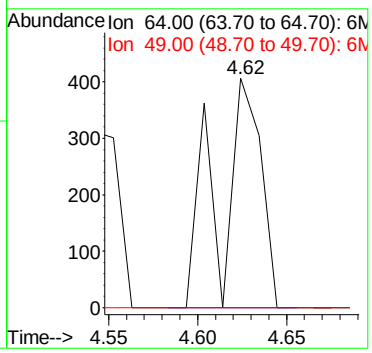

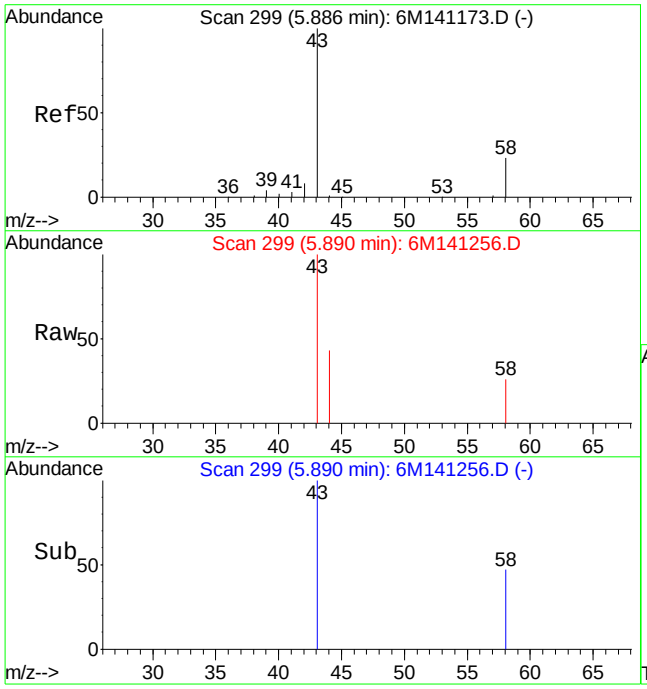

#13
Acetone
Concen: 3.47 ug/L
RT: 5.89 min Scan# 299
Delta R.T. -0.01 min
Lab File: 6M141256.D
Acq: 15 Aug 2016 18:00

Tgt Ion: 43 Resp: 7152

Ion	Ratio	Lower	Upper
43	100		
58	18.8	16.4	38.2

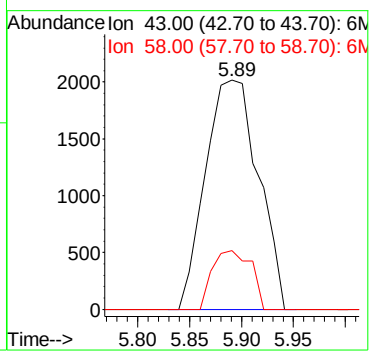

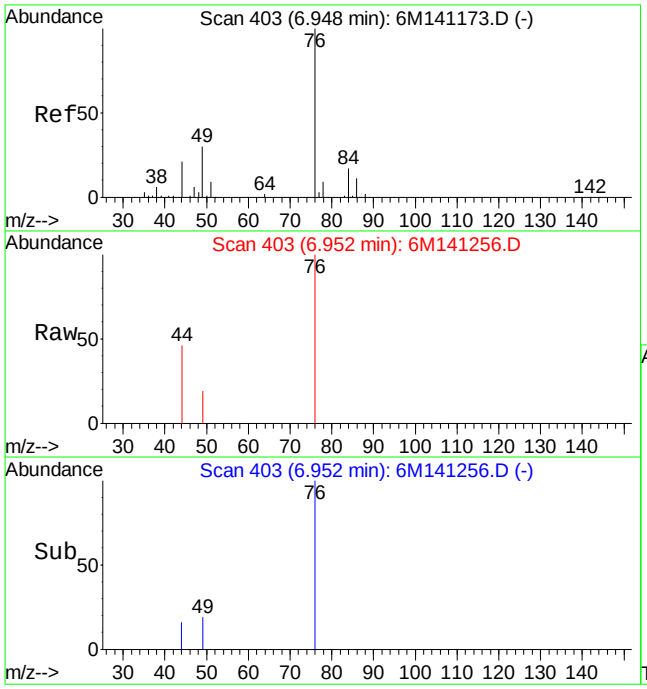

#20
Carbon Disulfide
Concen: 0.25 ug/L
RT: 6.95 min Scan# 403
Delta R.T. 0.00 min
Lab File: 6M141256.D
Acq: 15 Aug 2016 18:00

Tgt Ion: 76 Resp: 5786

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.7	13.3#

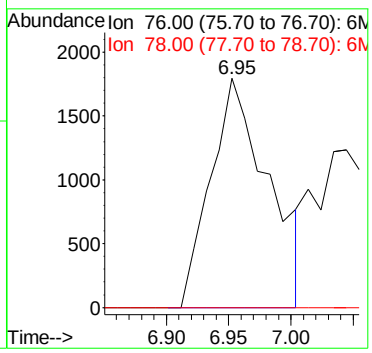

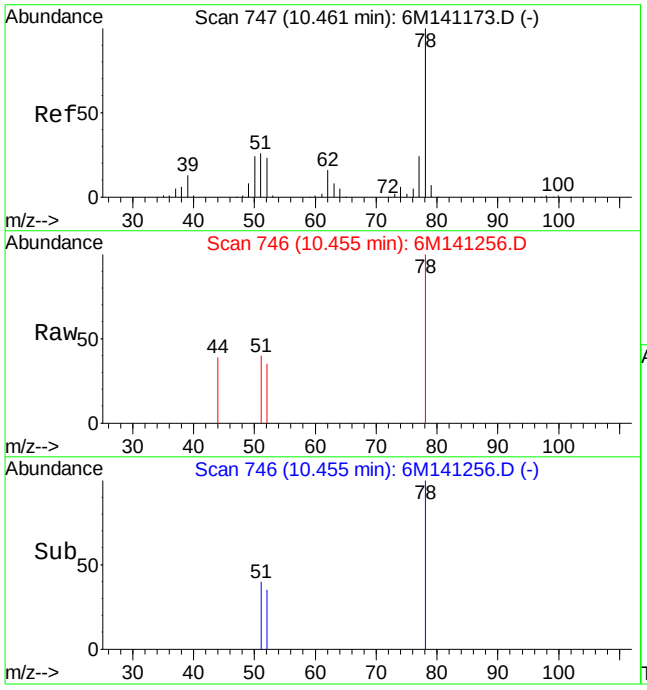

#46
Benzene
Concen: 0.12 ug/L
RT: 10.45 min Scan# 746
Delta R.T. -0.02 min
Lab File: 6M141256.D
Acq: 15 Aug 2016 18:00

Tgt Ion: 78 Resp: 3414

Ion	Ratio	Lower	Upper
78	100		
52	12.5	12.4	29.0

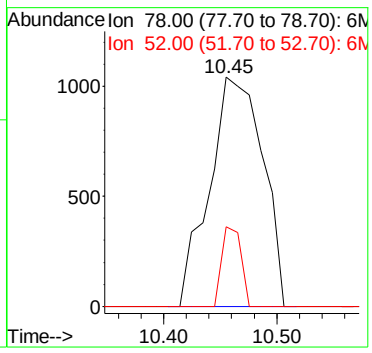

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141259.D Vial: 19
Acq On : 15 Aug 2016 19:37 Operator: TMB
Sample : L16080330-11 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 09:53:12 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	648062	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	497945	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	258872	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.57	111	190079	26.8835 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.52%		
43) 1,2-Dichloroethane-d4	10.30	65	240682	25.4347 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.72%		
58) Toluene-d8	13.02	98	584225	24.6580 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.64%		
80) p-Bromofluorobenzene	17.01	95	246200	26.6185 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.48%		
Target Compounds					Qvalue
13) Acetone	5.90	43	3266	1.5908 ug/L #	48
32) cis-1,2-Dichloroethene	9.02	96	7254	0.9673 ug/L	83
47) Trichloroethene	11.33	130	61432	8.5287 ug/L	80

(#) = qualifier out of range (m) = manual integration
6M141259.D 8260WT.M Tue Aug 16 09:53:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141259.D Vial: 19
Acq On : 15 Aug 2016 19:37 Operator: TMB
Sample : L16080330-11 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 9:53 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

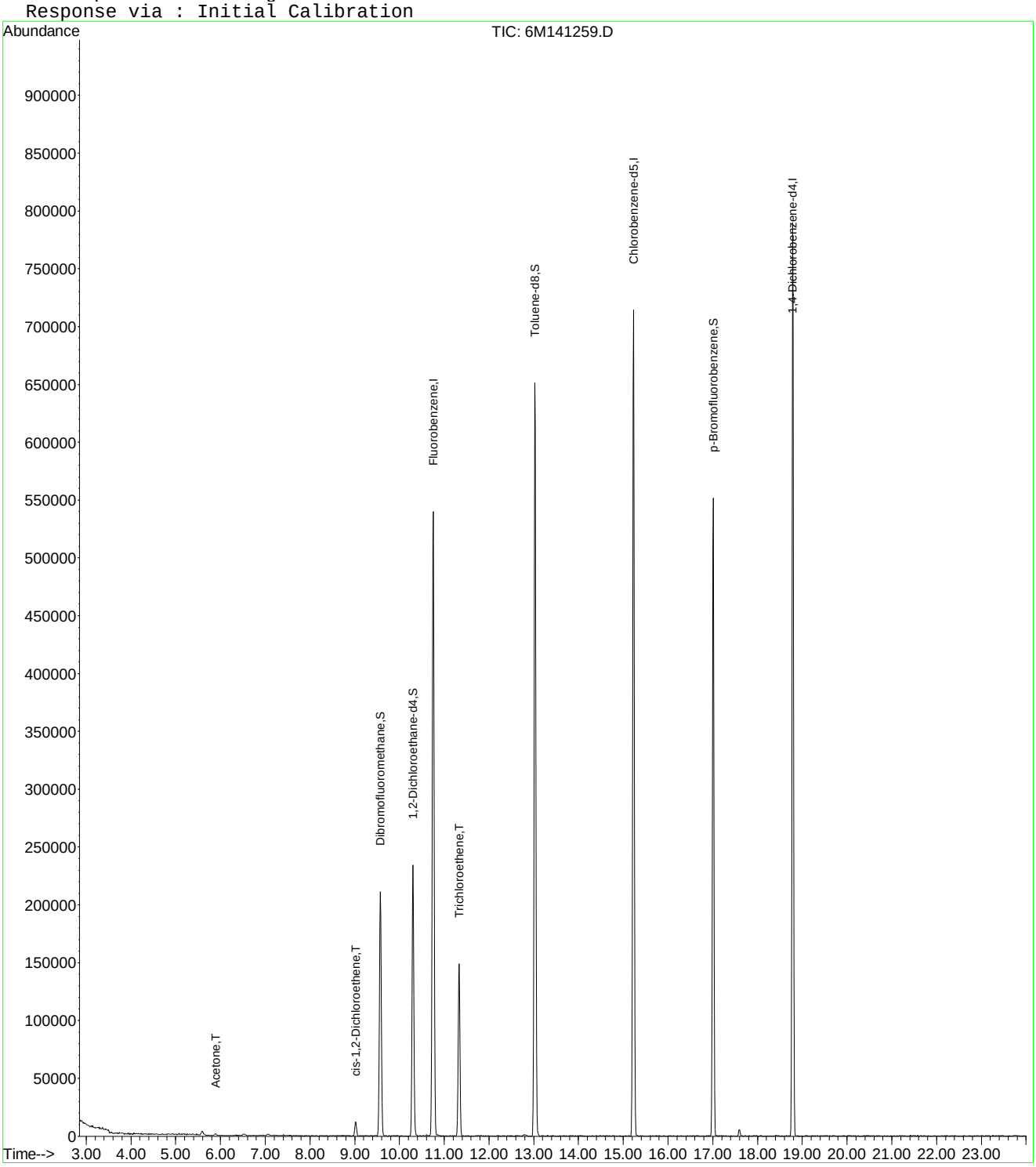

6M141259.D 8260WT.M Tue Aug 16 09:53:16 2016 Page 2

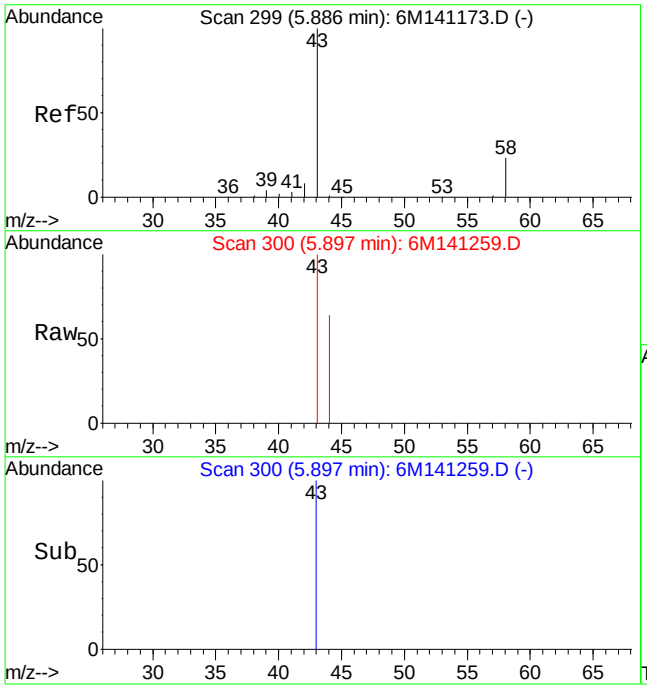

#13
Acetone
Concen: 1.59 ug/L
RT: 5.90 min Scan# 300
Delta R.T. -0.00 min
Lab File: 6M141259.D
Acq: 15 Aug 2016 19:37

Tgt Ion: 43 Resp: 3266

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

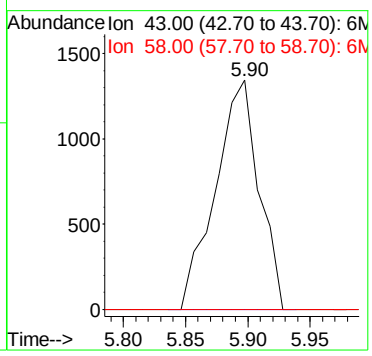

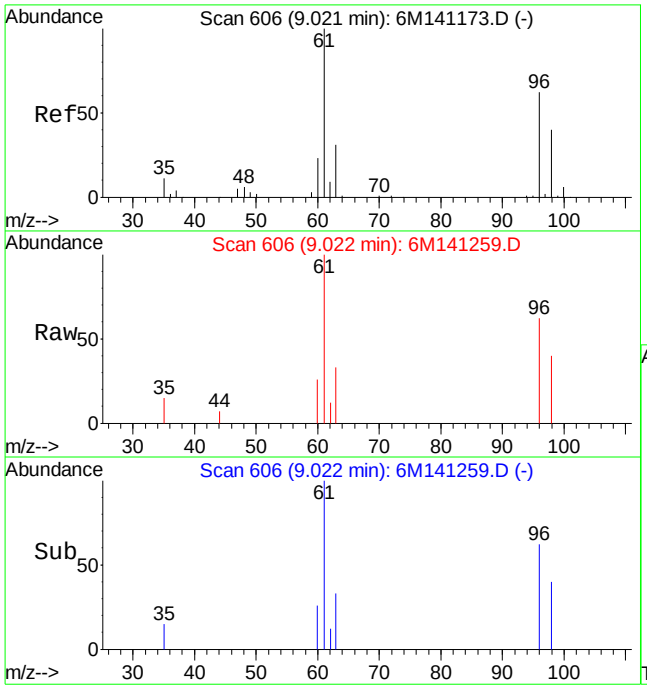

#32
cis-1,2-Dichloroethene
Concen: 0.97 ug/L
RT: 9.02 min Scan# 606
Delta R.T. -0.00 min
Lab File: 6M141259.D
Acq: 15 Aug 2016 19:37

Tgt Ion: 96 Resp: 7254

Ion	Ratio	Lower	Upper
96	100		
61	170.0	89.2	208.2

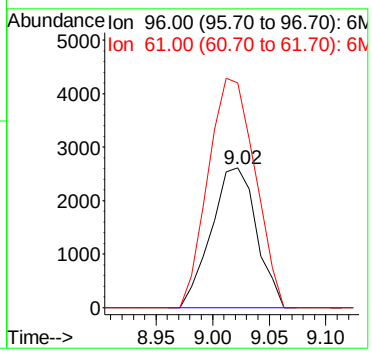

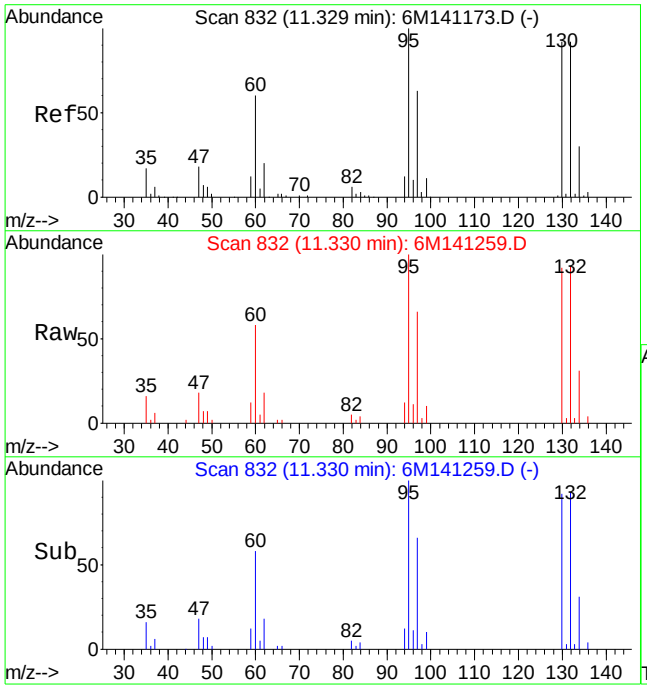

#47
Trichloroethene
Concen: 8.53 ug/L
RT: 11.33 min Scan# 832
Delta R.T. -0.00 min
Lab File: 6M141259.D
Acq: 15 Aug 2016 19:37

Tgt Ion:130 Resp: 61432

Ion	Ratio	Lower	Upper
130	100		
60	67.5	32.0	74.6

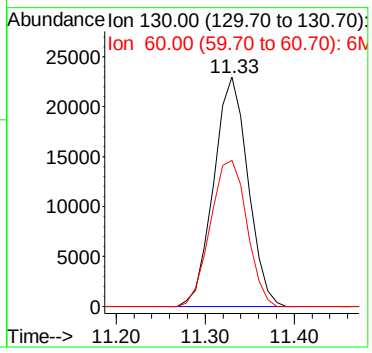

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141260.D Vial: 20
Acq On : 15 Aug 2016 20:09 Operator: TMB
Sample : L16080330-13 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 09:53:18 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	633790	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	491726	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	255855	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	185617	26.8436 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.36%		
43) 1,2-Dichloroethane-d4	10.30	65	236900	25.5988 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.40%		
58) Toluene-d8	13.03	98	578649	24.7315 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.92%		
80) p-Bromofluorobenzene	17.01	95	239541	26.2039 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.80%		

Target Compounds

					Qvalue
13) Acetone	5.90	43	3446	1.7163 ug/L #	59
32) cis-1,2-Dichloroethene	9.01	96	2384	0.3251 ug/L	82
47) Trichloroethene	11.33	130	149498	21.2225 ug/L	81
48) Methylcyclohexane	11.33	83	2126	0.2232 ug/L #	1
60) Ethyl Methacrylate	13.04	69	1400	0.6187 ug/L #	7

(#) = qualifier out of range (m) = manual integration
6M141260.D 8260WT.M Tue Aug 16 09:53:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141260.D Vial: 20
Acq On : 15 Aug 2016 20:09 Operator: TMB
Sample : L16080330-13 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 9:53 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

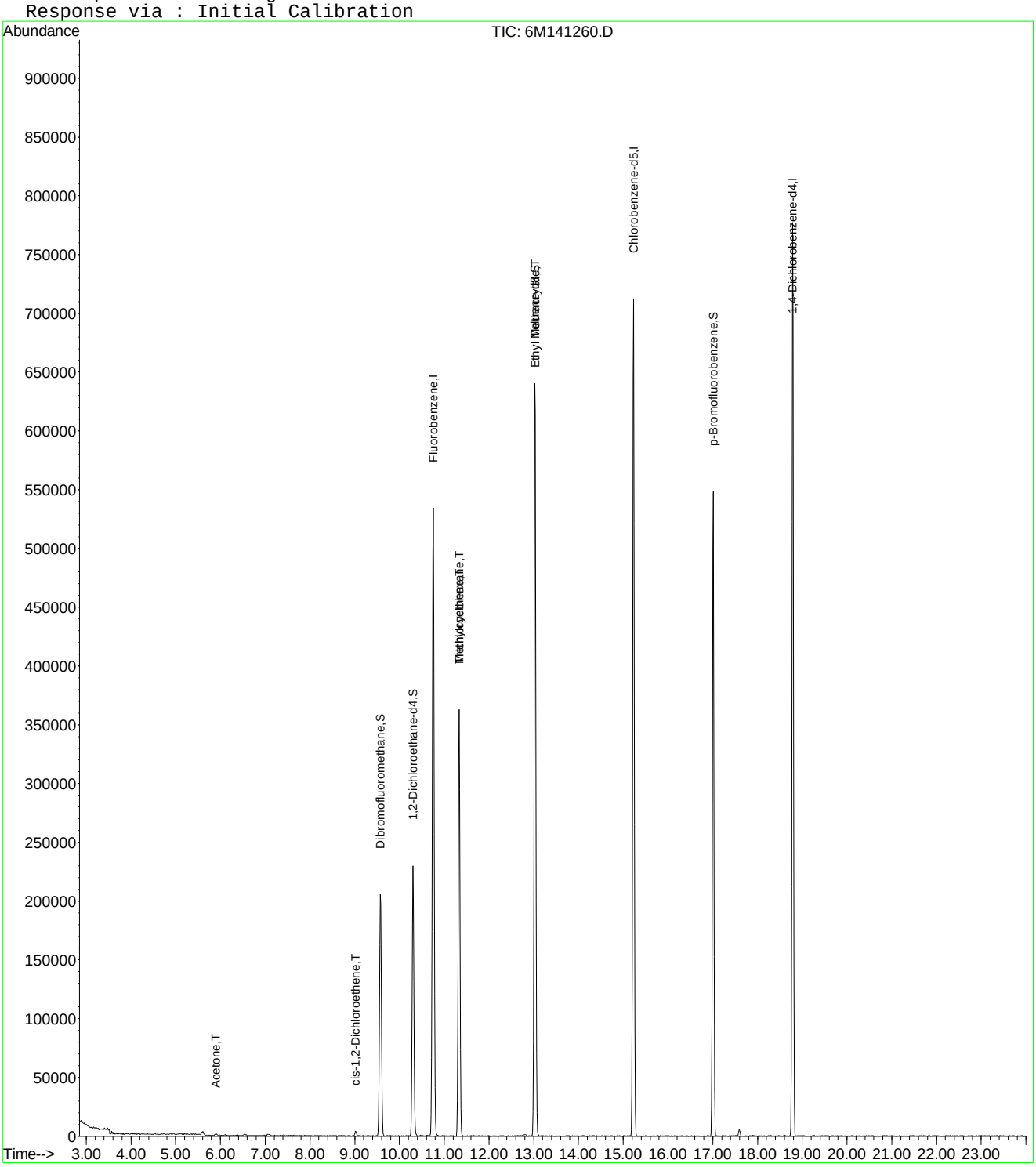

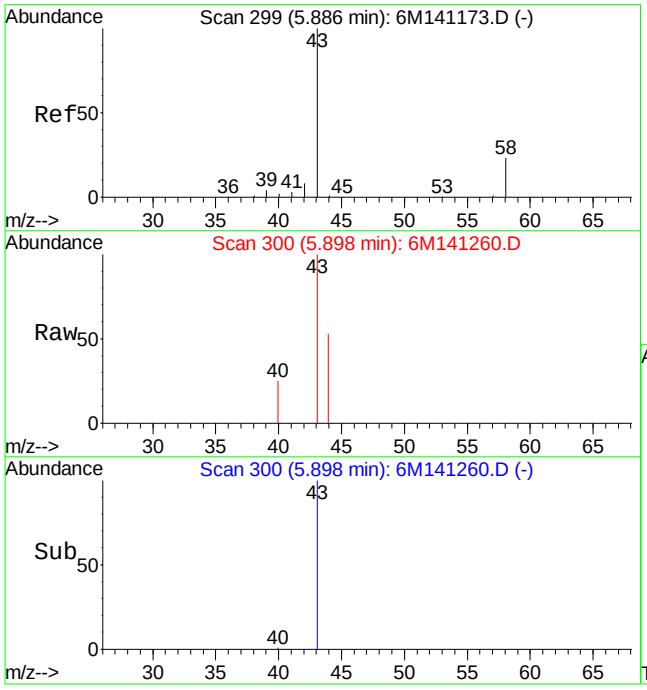

#13
Acetone
Concen: 1.72 ug/L
RT: 5.90 min Scan# 300
Delta R.T. 0.00 min
Lab File: 6M141260.D
Acq: 15 Aug 2016 20:09

Tgt Ion: 43 Resp: 3446

Ion	Ratio	Lower	Upper
43	100		
58	5.7	16.4	38.2#

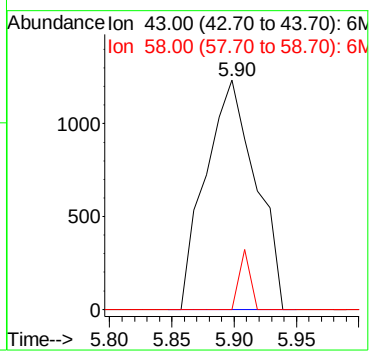

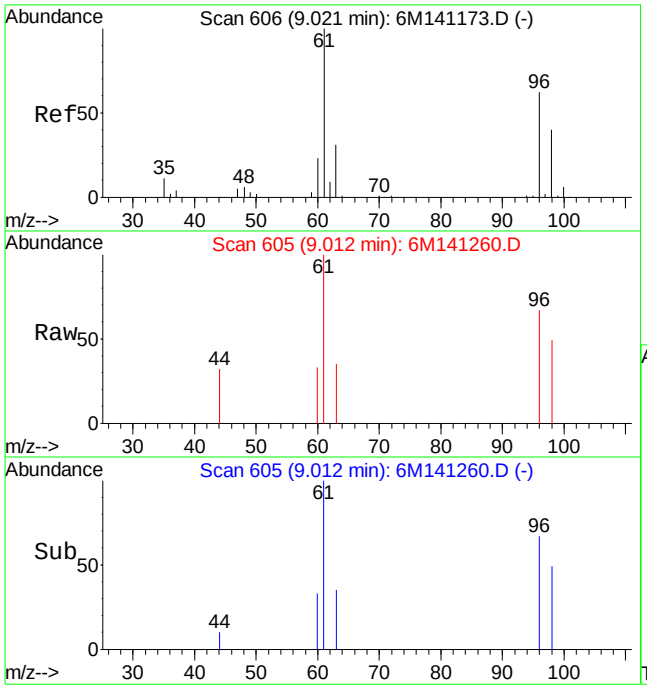

#32
cis-1,2-Dichloroethene
Concen: 0.33 ug/L
RT: 9.01 min Scan# 605
Delta R.T. -0.01 min
Lab File: 6M141260.D
Acq: 15 Aug 2016 20:09

Tgt Ion: 96 Resp: 2384

Ion	Ratio	Lower	Upper
96	100		
61	171.0	89.2	208.2

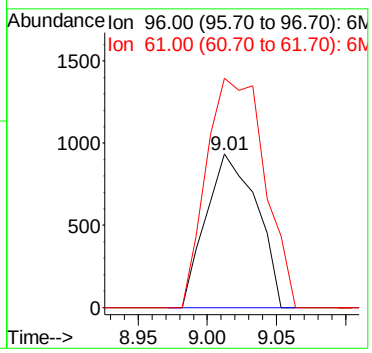

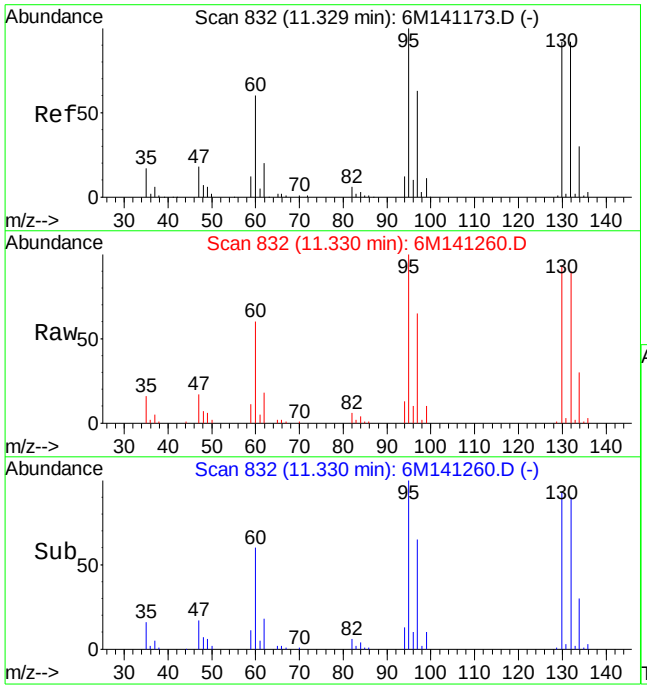

#47
Trichloroethene
Concen: 21.22 ug/L
RT: 11.33 min Scan# 832
Delta R.T. 0.00 min
Lab File: 6M141260.D
Acq: 15 Aug 2016 20:09

Tgt Ion:130 Resp: 149498

Ion	Ratio	Lower	Upper
130	100		
60	66.8	32.0	74.6

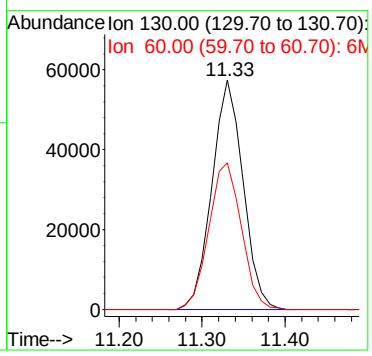

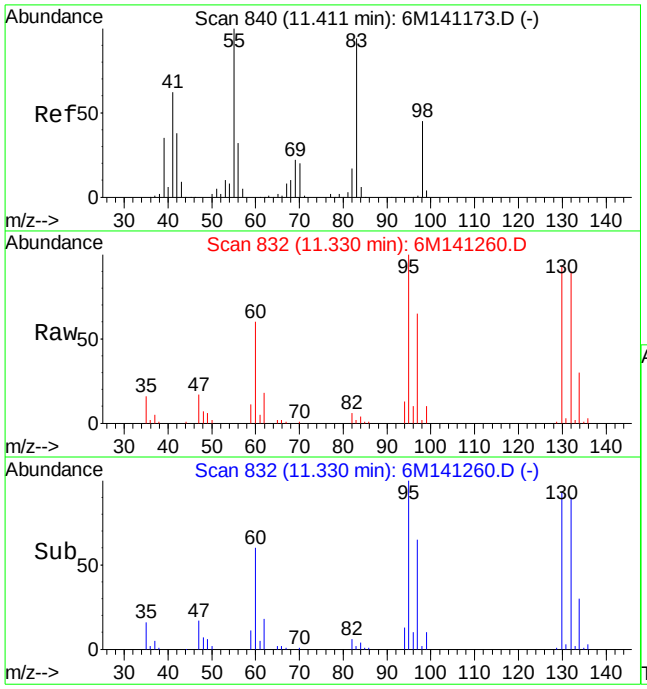

#48
Methylcyclohexane
Concen: 0.22 ug/L
RT: 11.33 min Scan# 832
Delta R.T. -0.08 min
Lab File: 6M141260.D
Acq: 15 Aug 2016 20:09

Tgt Ion: 83 Resp: 2126

Ion	Ratio	Lower	Upper
83	100		
55	0.0	56.3	131.3#
98	181.9	28.4	66.4#

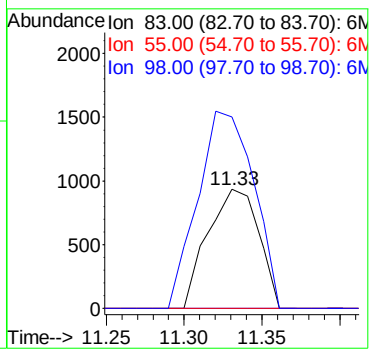

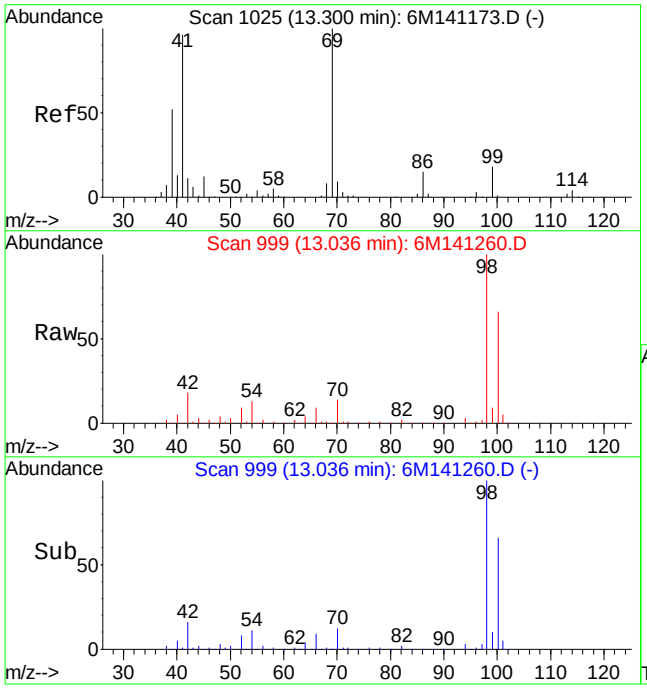

#60
Ethyl Methacrylate
Concen: 0.62 ug/L
RT: 13.04 min Scan# 999
Delta R.T. -0.27 min
Lab File: 6M141260.D
Acq: 15 Aug 2016 20:09

Tgt Ion: 69 Resp: 1400

Ion	Ratio	Lower	Upper
69	100		
41	0.0	51.4	120.0#

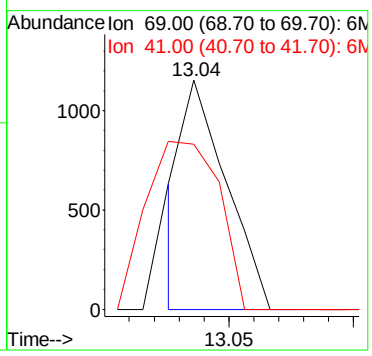

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141257.D Vial: 17
Acq On : 15 Aug 2016 18:32 Operator: TMB
Sample : L16080330-15 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 09:53:00 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	645536	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	500432	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	261787	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	186698	26.5087 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.30	65	237884	25.2374 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.96%		
58) Toluene-d8	13.03	98	576185	24.1978 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.80%		
80) p-Bromofluorobenzene	17.01	95	240621	25.7256 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.92%		

Target Compounds

					Qvalue
3) Chloromethane	3.35	50	3276	0.2334 ug/L #	52
13) Acetone	5.89	43	3232	1.5804 ug/L #	48

(#) = qualifier out of range (m) = manual integration
6M141257.D 8260WT.M Tue Aug 16 09:53:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141257.D Vial: 17
Acq On : 15 Aug 2016 18:32 Operator: TMB
Sample : L16080330-15 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 9:53 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

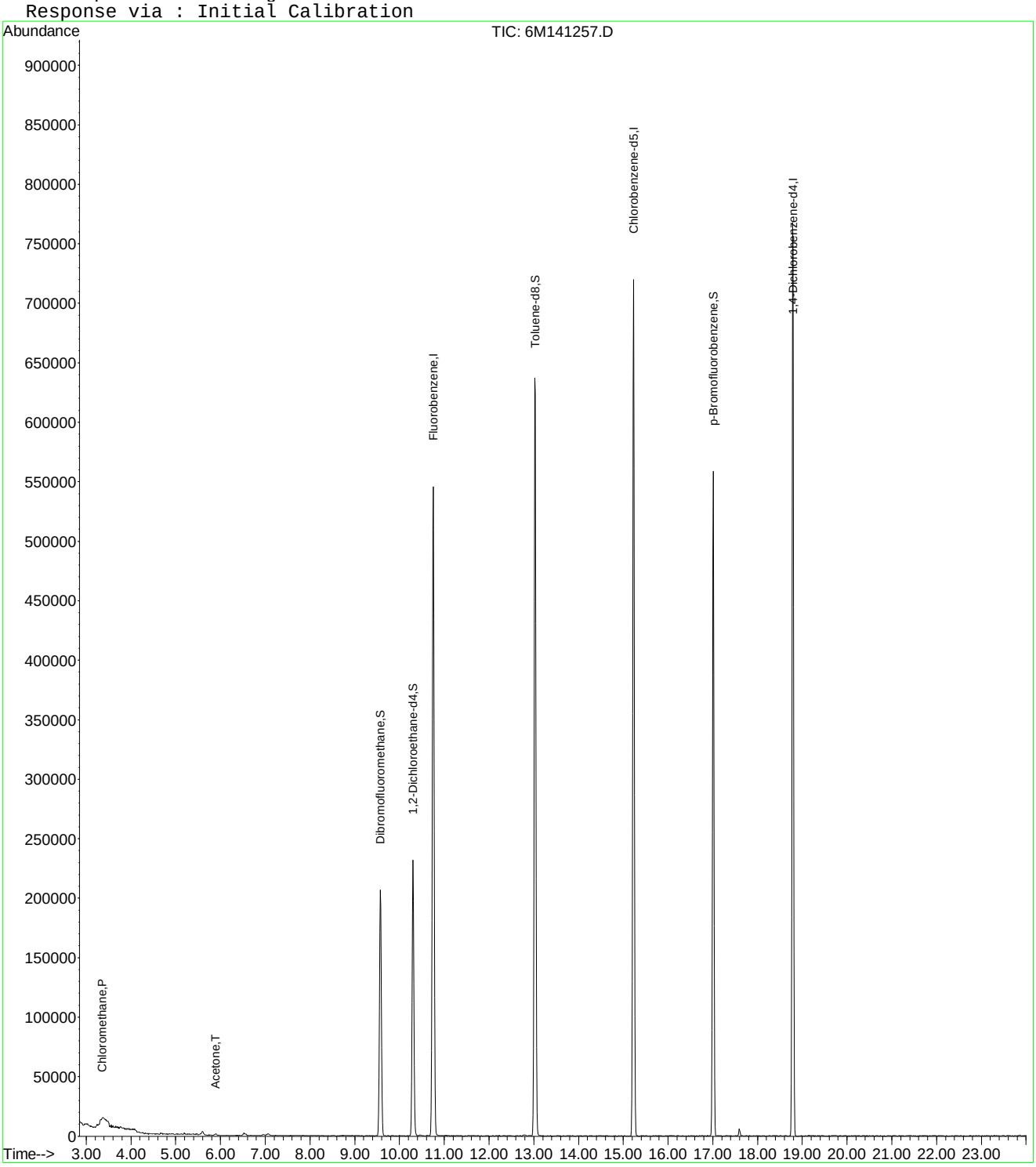

6M141257.D 8260WT.M Tue Aug 16 09:53:03 2016 Page 2

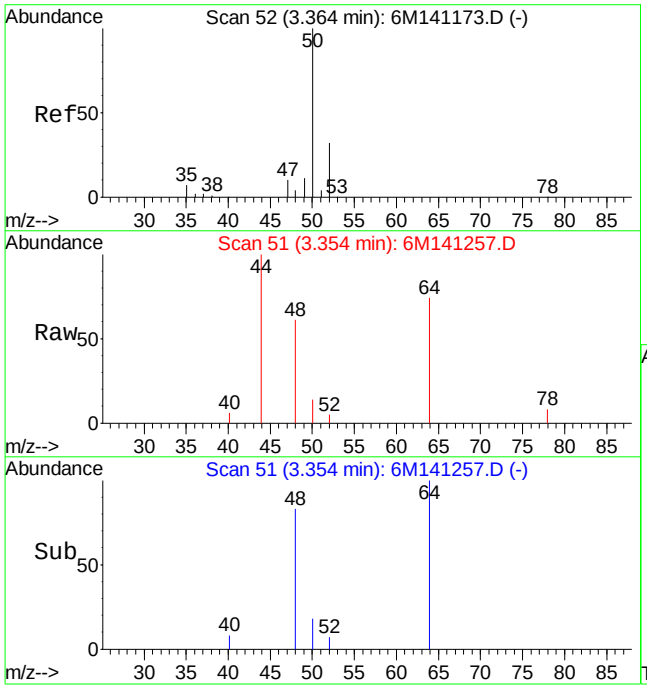

#3
Chloromethane
Concen: 0.23 ug/L
RT: 3.35 min Scan# 51
Delta R.T. -0.00 min
Lab File: 6M141257.D
Acq: 15 Aug 2016 18:32

Tgt Ion: 50 Resp: 3276

Ion	Ratio	Lower	Upper
50	100		
52	5.6	19.8	46.2#

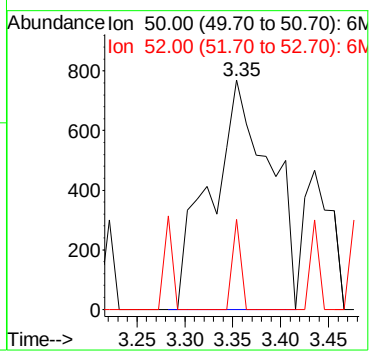

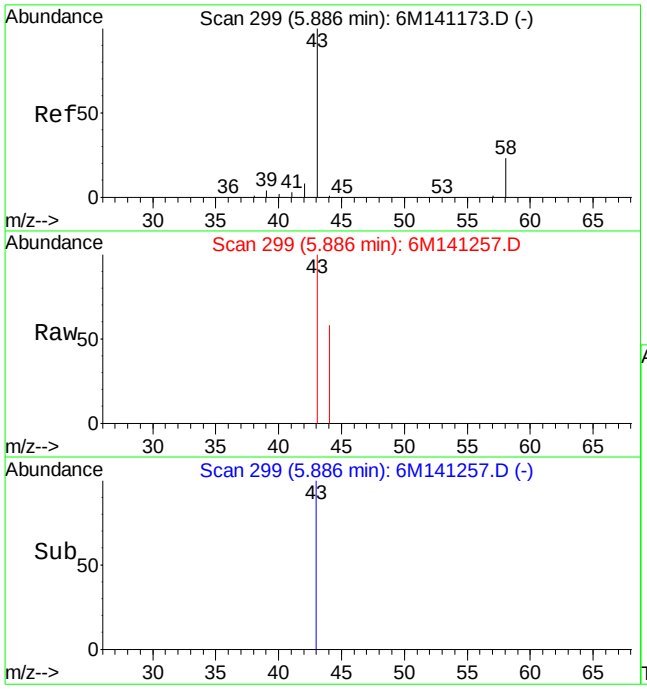

#13
Acetone
Concen: 1.58 ug/L
RT: 5.89 min Scan# 299
Delta R.T. -0.01 min
Lab File: 6M141257.D
Acq: 15 Aug 2016 18:32

Tgt Ion: 43 Resp: 3232

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

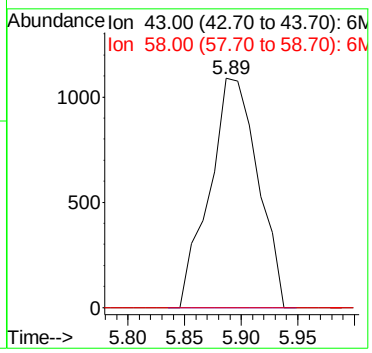

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141248.D Vial: 8
Acq On : 15 Aug 2016 13:42 Operator: TMB
Sample : L16080330-18 TB A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 09:52:24 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	700092	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	532460	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	280237	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.58	111	197889	25.9081 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.64%		
43) 1,2-Dichloroethane-d4	10.30	65	250868	24.5408 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.16%		
58) Toluene-d8	13.03	98	630864	24.9005 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.60%		
80) p-Bromofluorobenzene	17.00	95	263466	26.3135 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.24%		

Target Compounds					Qvalue
3) Chloromethane	3.36	50	2272	0.1492 ug/L #	57
13) Acetone	5.89	43	4898	2.2084 ug/L	85
36) Tetrahydrofuran	9.56	42	1706	0.8426 ug/L #	50

(#) = qualifier out of range (m) = manual integration
6M141248.D 8260WT.M Tue Aug 16 09:52:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141248.D Vial: 8
Acq On : 15 Aug 2016 13:42 Operator: TMB
Sample : L16080330-18 TB A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 16 9:52 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

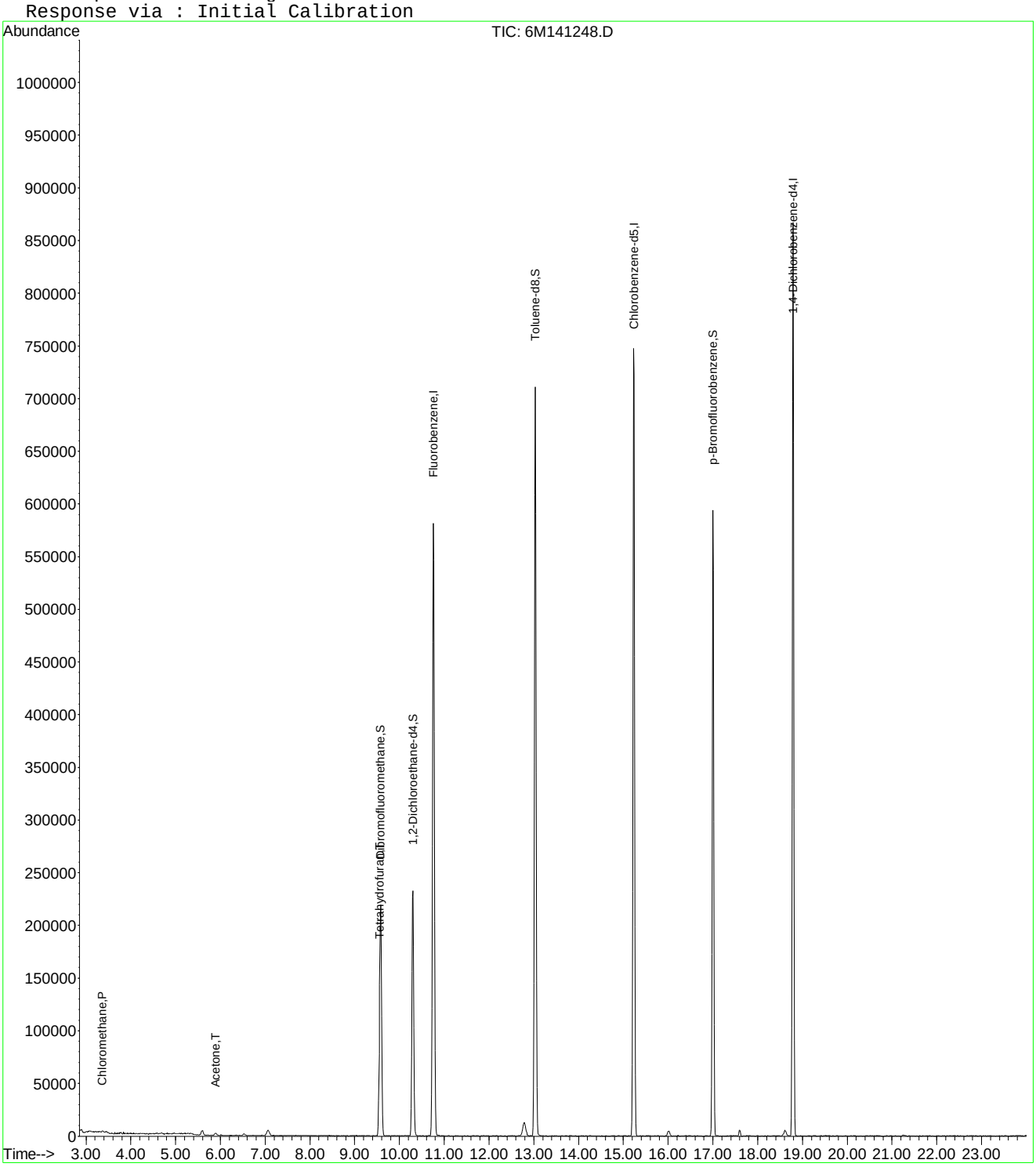

6M141248.D 8260WT.M Tue Aug 16 09:52:27 2016 Page 2

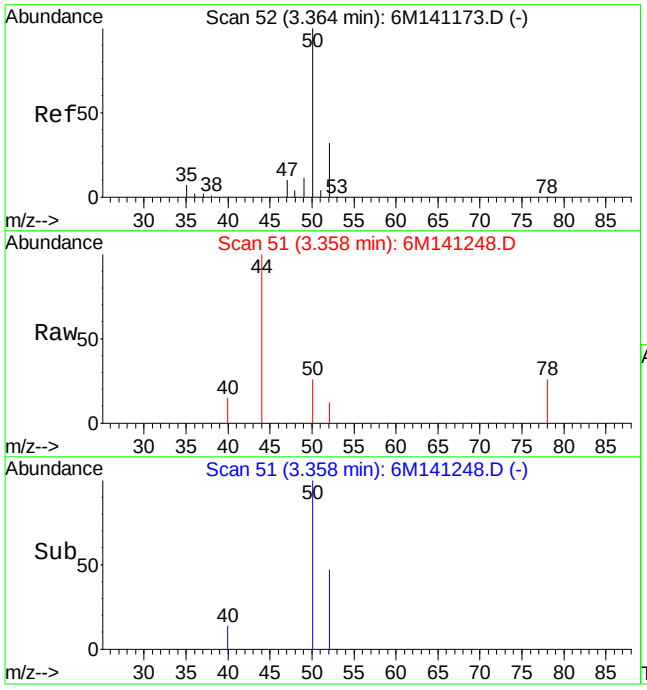

#3
Chloromethane
Concen: 0.15 ug/L
RT: 3.36 min Scan# 51
Delta R.T. 0.00 min
Lab File: 6M141248.D
Acq: 15 Aug 2016 13:42

Tgt Ion: 50 Resp: 2272

Ion	Ratio	Lower	Upper
50	100		
52	8.8	19.8	46.2#

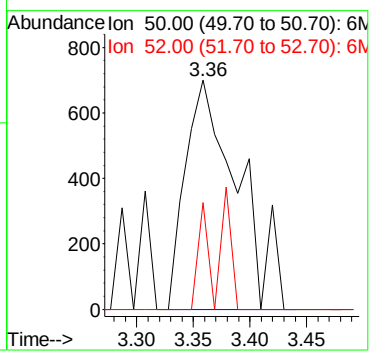

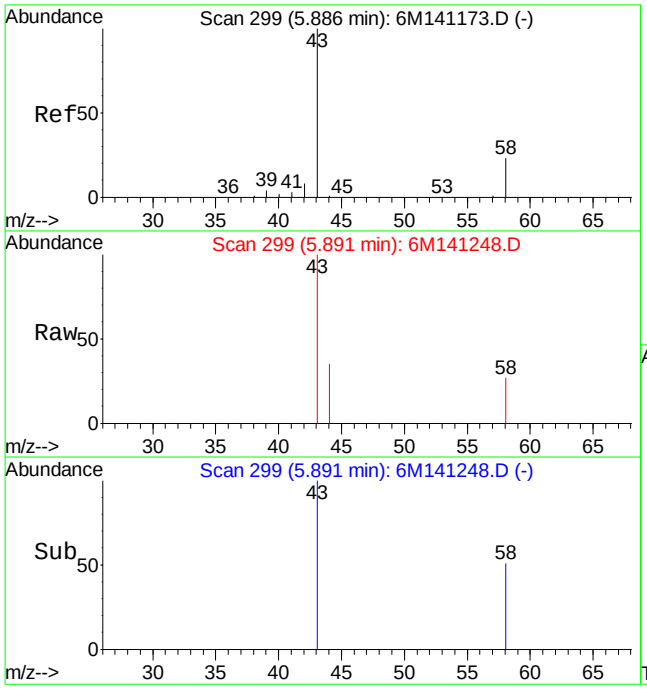

#13
Acetone
Concen: 2.21 ug/L
RT: 5.89 min Scan# 299
Delta R.T. -0.01 min
Lab File: 6M141248.D
Acq: 15 Aug 2016 13:42

Tgt Ion: 43 Resp: 4898

Ion	Ratio	Lower	Upper
43	100		
58	19.5	16.4	38.2

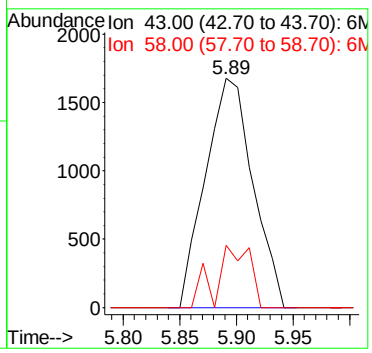

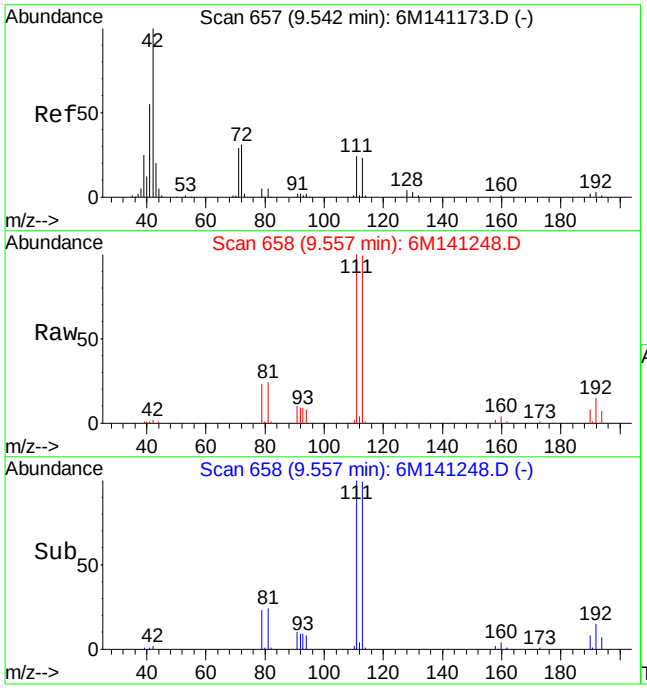

#36
Tetrahydrofuran
Concen: 0.84 ug/L
RT: 9.56 min Scan# 658
Delta R.T. 0.01 min
Lab File: 6M141248.D
Acq: 15 Aug 2016 13:42

Tgt Ion: 42 Resp: 1706

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	11.2	19.9	46.5#

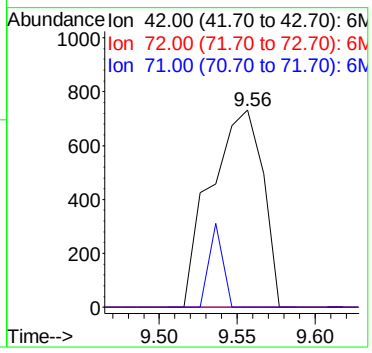

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:46 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	173671	27.7488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.00%		
43) 1,2-Dichloroethane-d4	11.12	65	203570	26.8000 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.20%		
58) Toluene-d8	13.86	98	554047	26.0139 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.04%		
80) p-Bromofluorobenzene	17.85	95	229998	27.1525 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.60%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	1325	0.6992 ug/L #	46
20) Carbon Disulfide	7.54	76	18747	0.9622 ug/L #	39
29) 2-Butanone	9.31	43	1188	0.4247 ug/L #	1
36) Tetrahydrofuran	10.36	42	2769	1.5196 ug/L #	58
60) Ethyl Methacrylate	13.87	69	899	0.1270 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

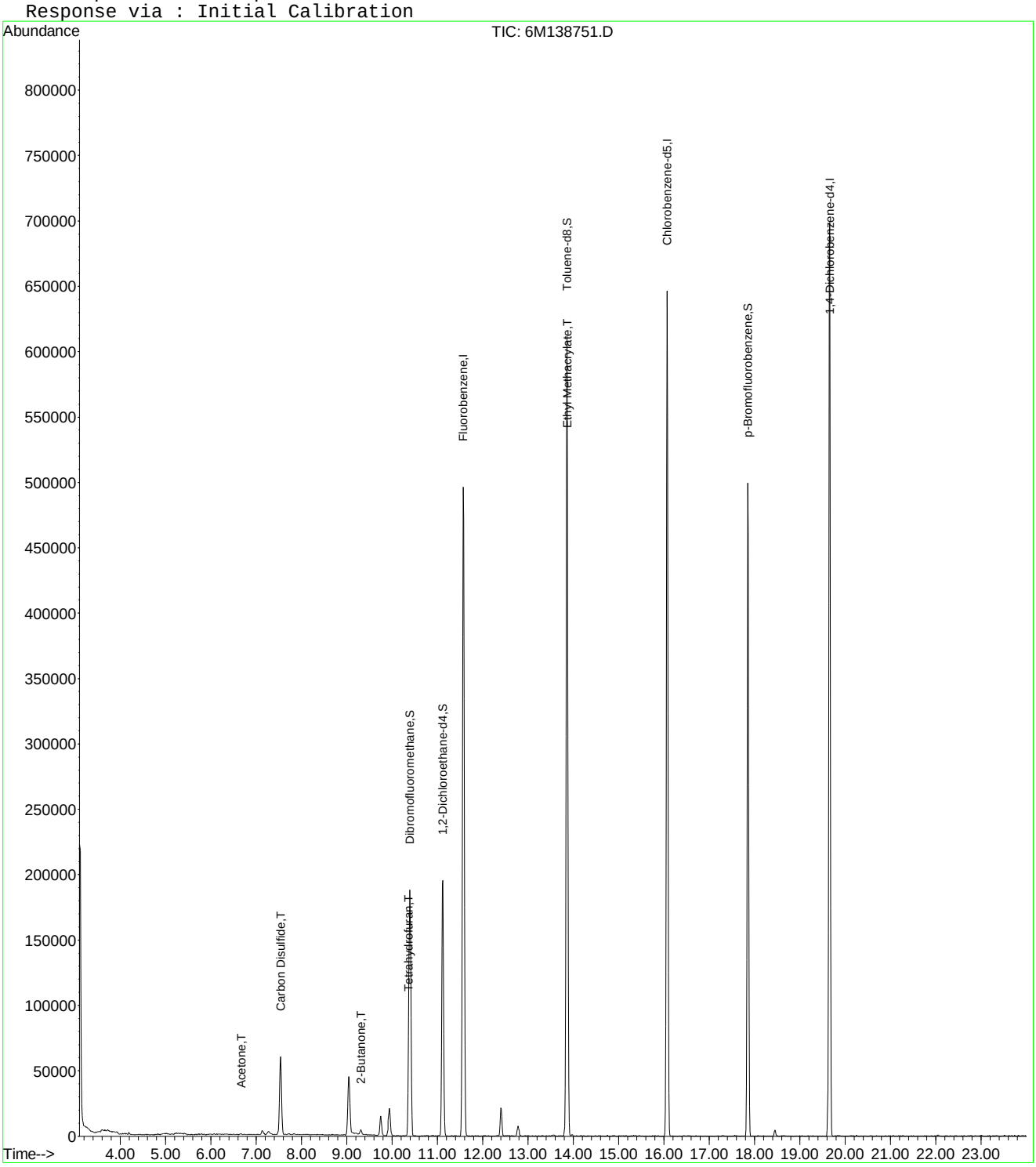

6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:52 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	3.7209 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.2301 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.6002 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.3499 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.5173 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	3.4767 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.0338 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.7392 ug/L	93
13) Cyclohexanone	17.57	55	447	0.5159 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Mon Apr 25 15:45:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

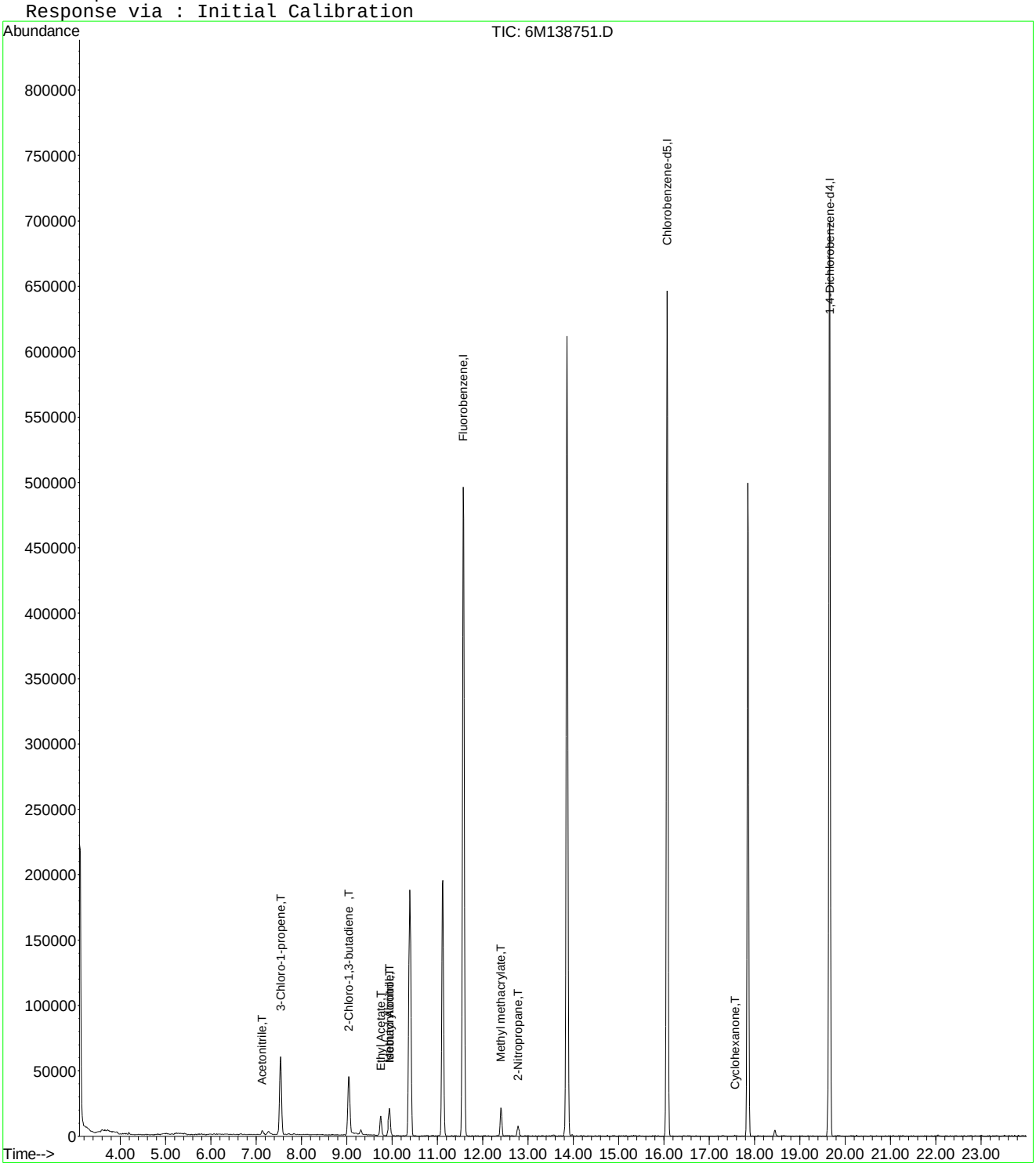

6M138751.D A9FOOWT.M Mon Apr 25 15:45:53 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:56 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	4.7698 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.5408 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.8775 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.2792 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.8601 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	5.9076 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.5356 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.4543 ug/L	93
13) Cyclohexanone	17.57	55	447	1.4133 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Wed Apr 27 16:04:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

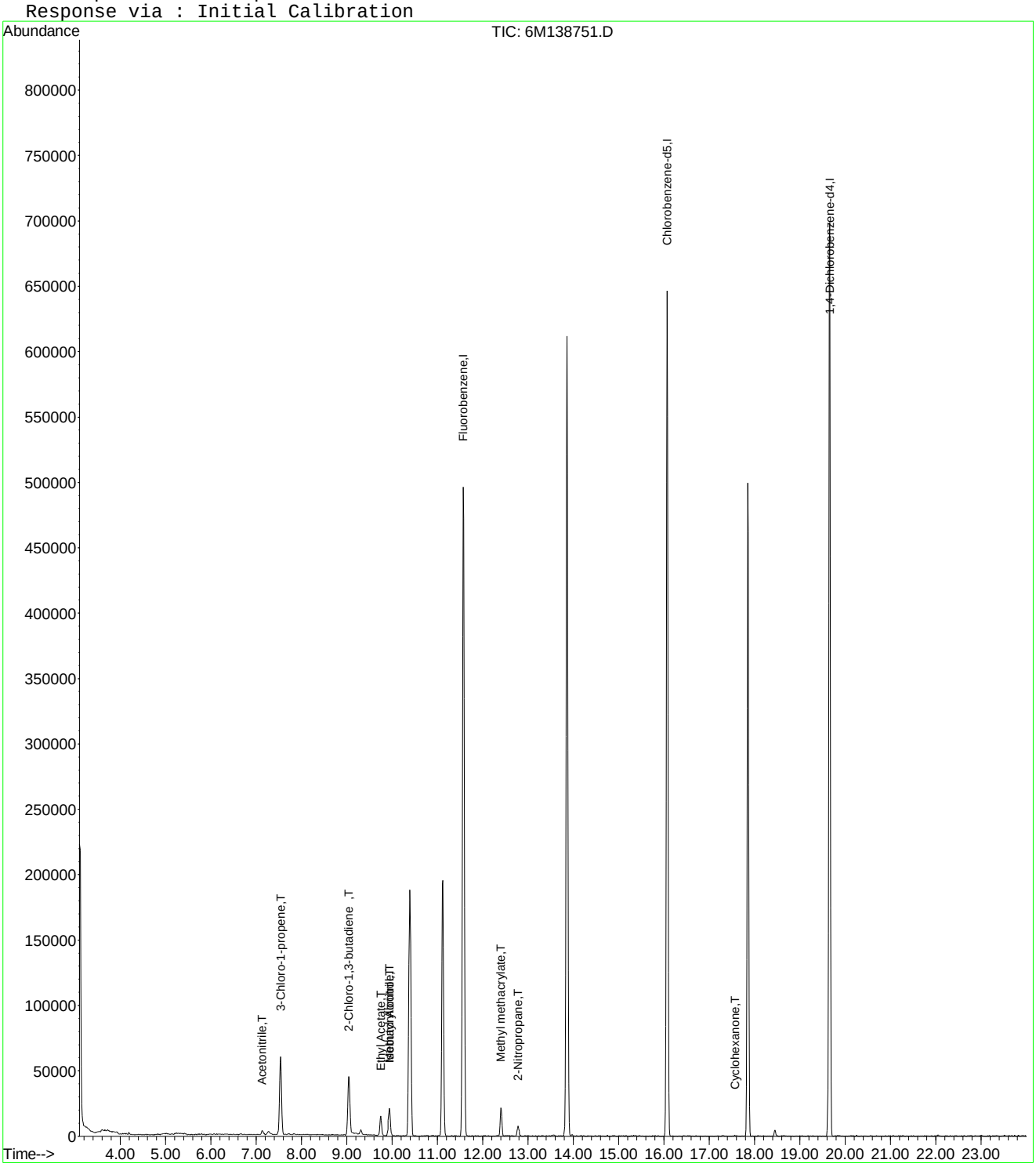

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	4.7698	4.6	100	0.00
3	T	3-Chloro-1-propene	5.0000	4.5408	9.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	3.8775	22.5	100	0.00
5	T	Ethyl Acetate	5.0000	4.2792	14.4	100	0.00
6	T	Methacrylonitrile	5.0000	3.8601	22.8	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.9076	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.99#
9	T	Methyl methacrylate	5.0000	3.5356	29.3	100	0.00
10	T	2-Nitropropane	-1.0000	3.4543	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	1.4133	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138751.D A9FOOWT.M Wed Apr 27 16:04:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	171577	27.9669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.88%		
43) 1,2-Dichloroethane-d4	11.12	65	207390	27.8532 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.40%		
58) Toluene-d8	13.86	98	547786	26.2796 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.12%		
80) p-Bromofluorobenzene	17.85	95	228171	27.5052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.04%		

Target Compounds					Qvalue
13) Acetone	6.67	43	2739	1.4745 ug/L #	59
20) Carbon Disulfide	7.54	76	81493	4.2668 ug/L #	36
27) 1,1-Dichloroethane	9.05	63	3411	0.2688 ug/L #	42
29) 2-Butanone	9.31	43	3879	1.4148 ug/L #	1
36) Tetrahydrofuran	10.37	42	3350	1.8754 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1183	0.1708 ug/L #	27

(#) = qualifier out of range (m) = manual integration
6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

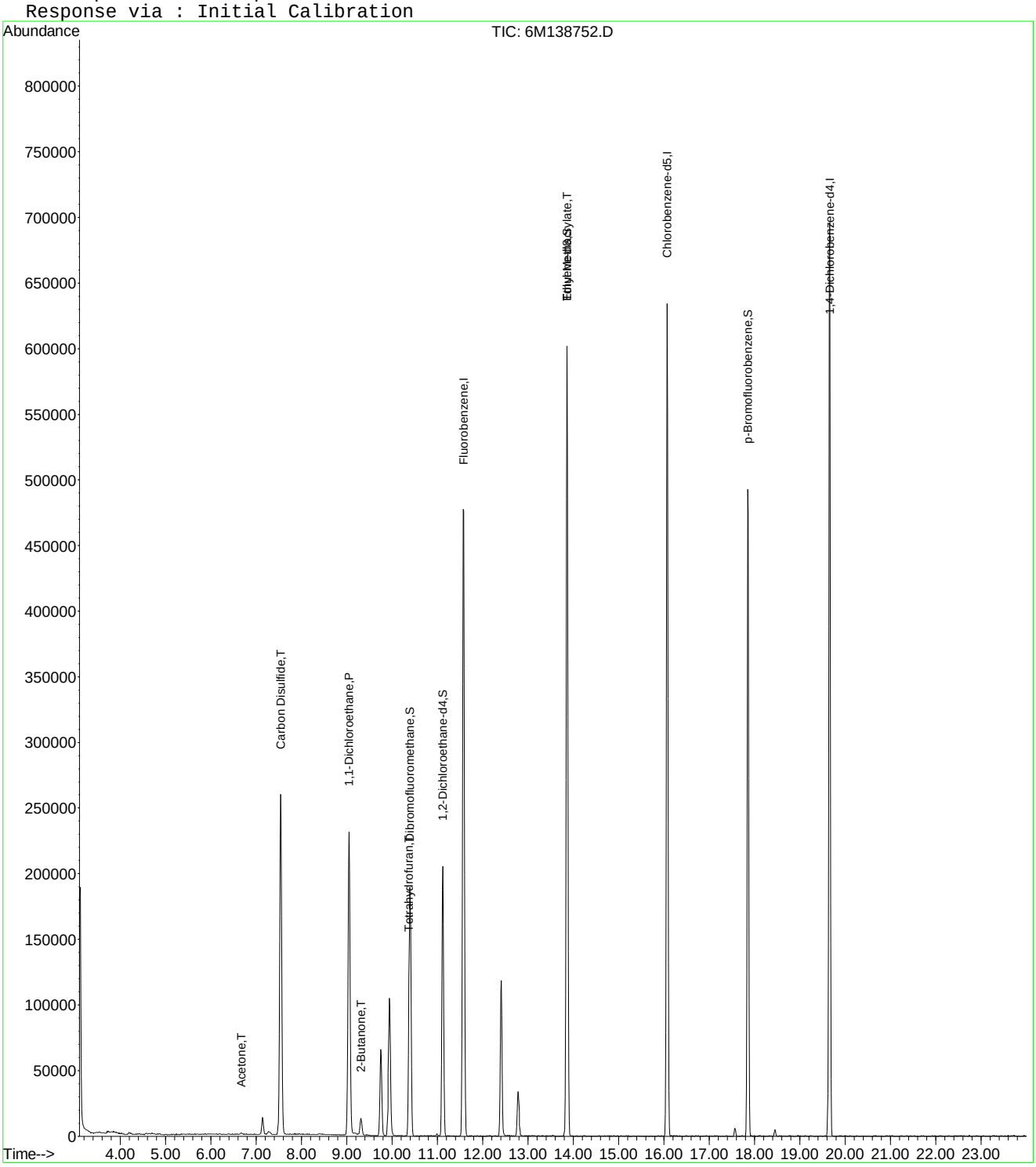

6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:54 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00	ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	463005	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	17741	15.4242	ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	18.5457	ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	17.5823	ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.6403	ug/L	93
6) Methacrylonitrile	9.93	67	42708	17.5719	ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	22.9203	ug/L #	85
8) 1-Butanol	10.98	41	982	6.5662	ug/L #	52
9) Methyl methacrylate	12.41	41	95824	15.2291	ug/L	81
10) 2-Nitropropane	12.78	43	34207	18.4403	ug/L	92
13) Cyclohexanone	17.57	55	4053	4.7763	ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Mon Apr 25 15:45:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

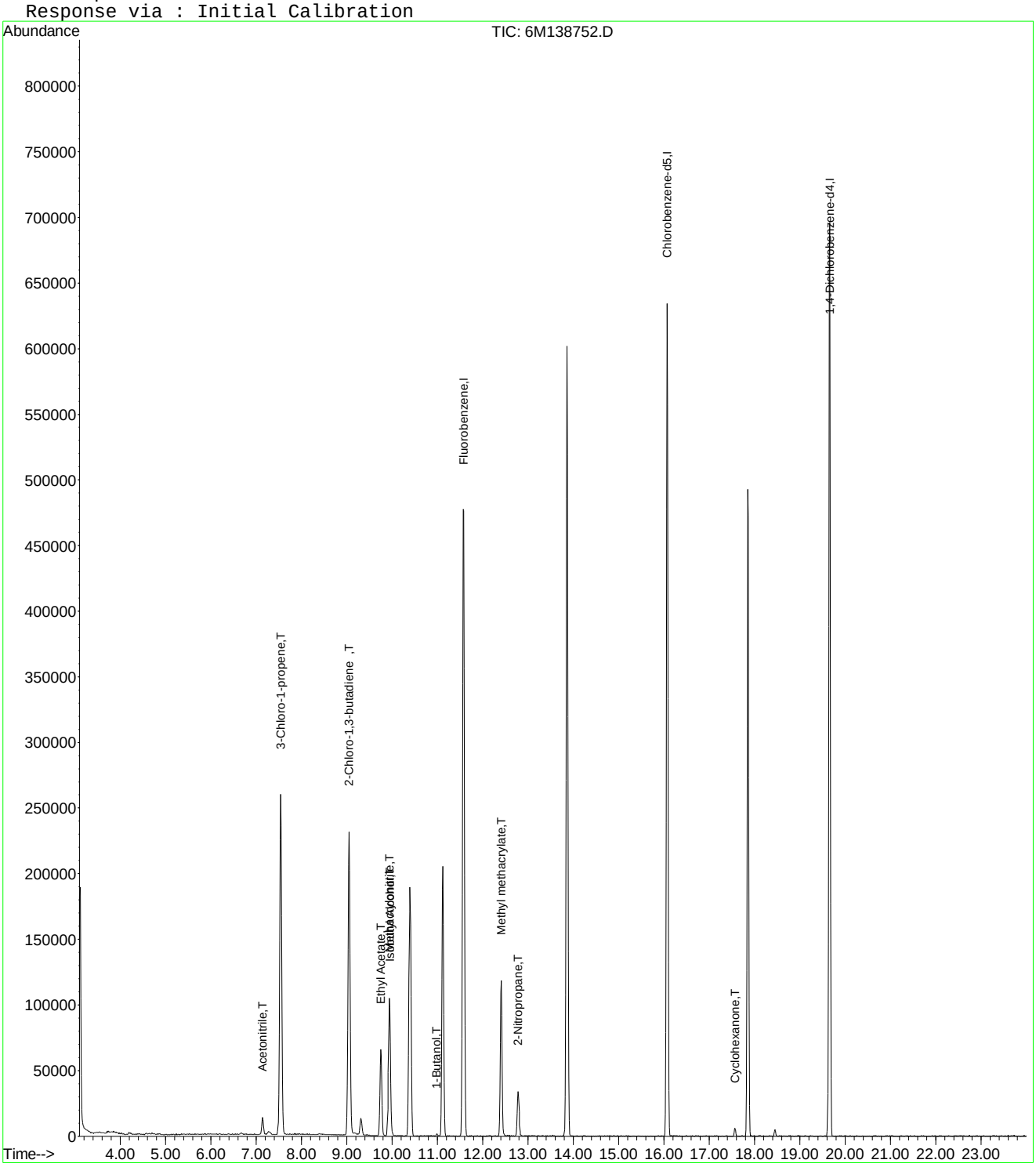

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	19.7725 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	19.9080 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	18.9362 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.3209 ug/L	93
6) Methacrylonitrile	9.93	67	42708	19.2846 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	38.9462 ug/L #	85
9) Methyl methacrylate	12.41	41	95824	17.7480 ug/L	81
10) 2-Nitropropane	12.78	43	34207	17.0355 ug/L	92
13) Cyclohexanone	17.57	55	4053	13.0852 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

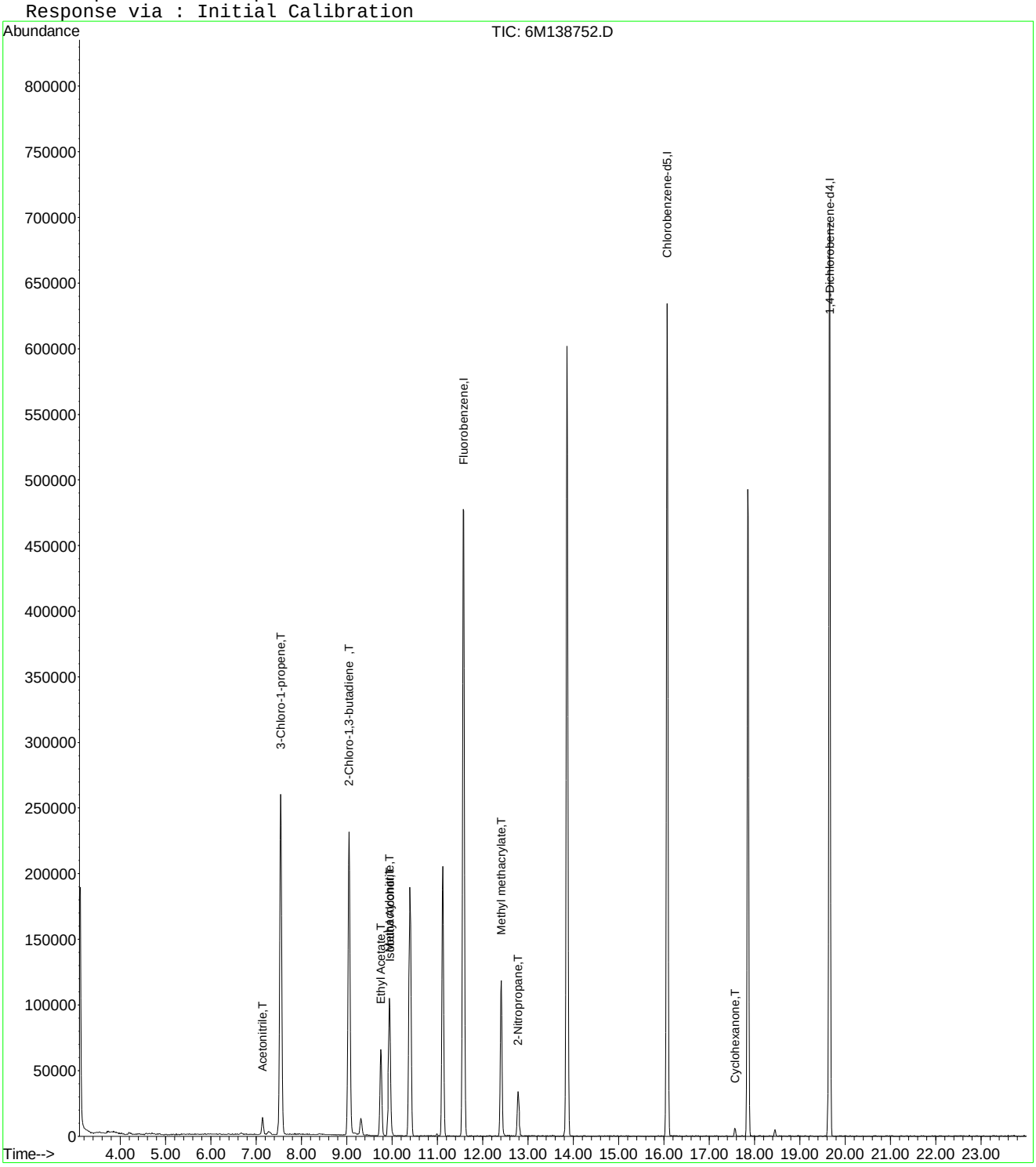

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.7724	1.1	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.9080	0.5	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.9362	5.3	100	0.00
5	T	Ethyl Acetate	20.0000	19.3209	3.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.2846	3.6	100	0.00
7	T	Isobutyl Alcohol	40.0000	38.9462	2.6	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	20.0000	17.7480	11.3	100	0.00
10	T	2-Nitropropane	-1.0000	17.0355	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	13.0852	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138752.D A9FOOWT.M Wed Apr 27 16:04:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172256	27.8132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	208744	27.7711 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.08%		
58) Toluene-d8	13.86	98	553191	26.2235 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	17.85	95	239542	28.1954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.80%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	3732	1.9901 ug/L #	57
20) Carbon Disulfide	7.54	76	220780	11.4508 ug/L #	36
26) Vinyl Acetate	9.04	43	2704	0.2791 ug/L #	8
27) 1,1-Dichloroethane	9.05	63	9803	0.7652 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	152978	7.3579 ug/L #	39
29) 2-Butanone	9.53	43	660	0.2385 ug/L #	52
36) Tetrahydrofuran	10.37	42	3746	2.0774 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1423	0.2030 ug/L #	9

(#) = qualifier out of range (m) = manual integration
6M138753.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

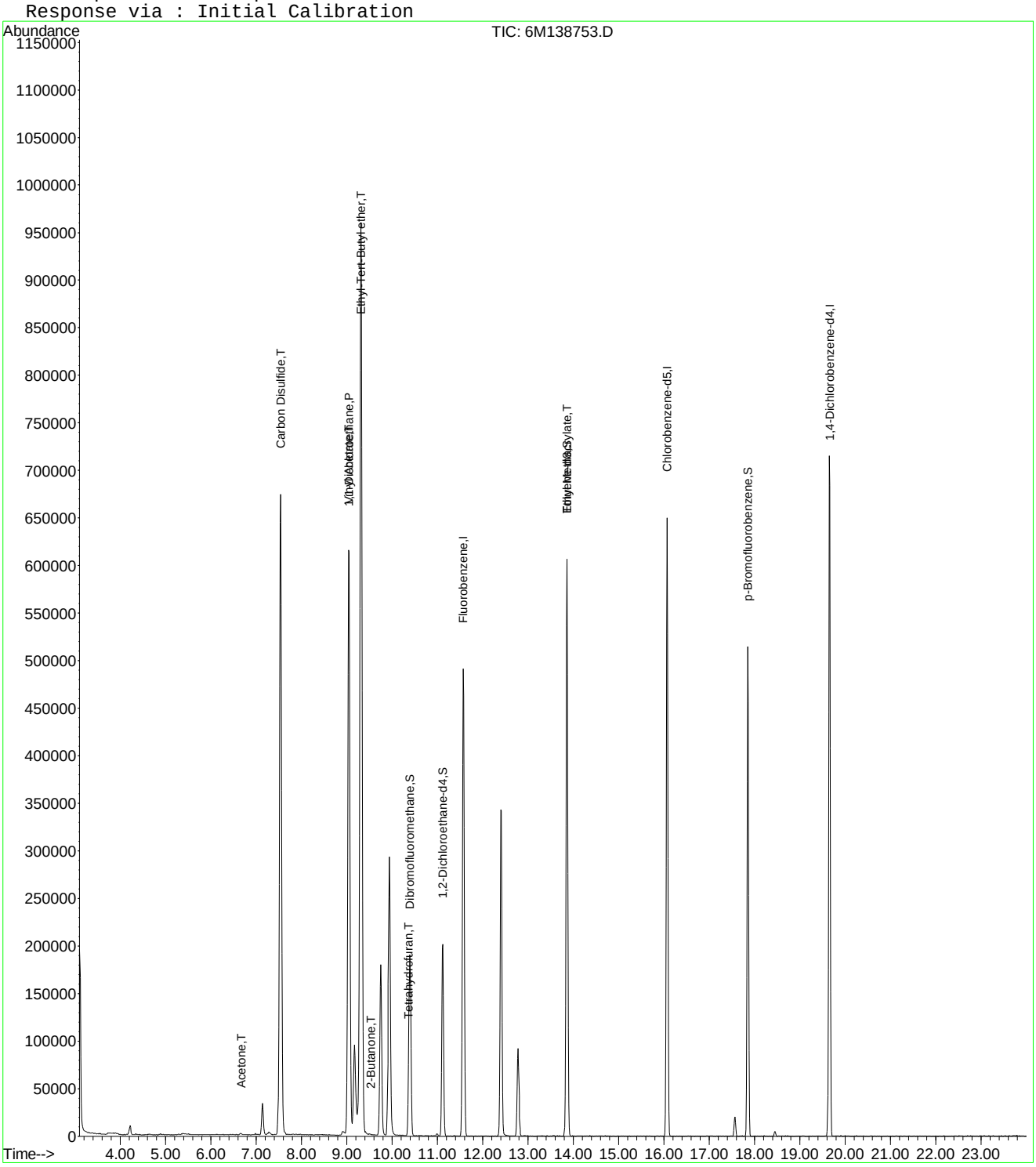

6M138753.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:55 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	40.3072 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	48.9454 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	48.3496 ug/L	83
5) Ethyl Acetate	9.75	43	336975	52.8234 ug/L	93
6) Methacrylonitrile	9.94	67	119267	48.6097 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	57.3741 ug/L #	99
8) 1-Butanol	10.98	41	1474	9.7632 ug/L	77
9) Methyl methacrylate	12.40	41	279157	43.9482 ug/L	81
10) 2-Nitropropane	12.79	43	95327	50.9052 ug/L	94
13) Cyclohexanone	17.56	55	13241	15.2363 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Mon Apr 25 15:45:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

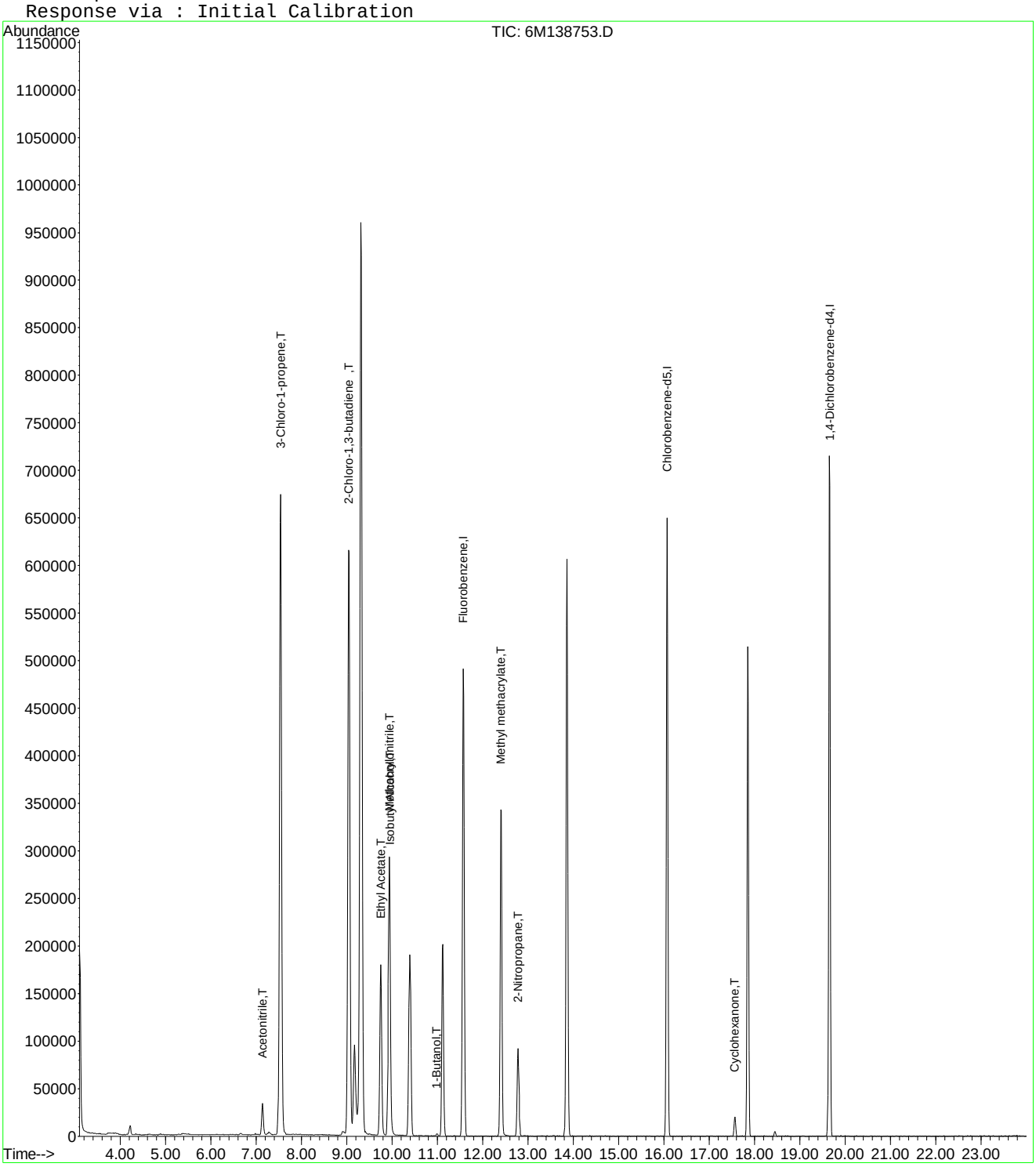

6M138753.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	51.6701 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	52.5409 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	52.0726 ug/L	83
5) Ethyl Acetate	9.75	43	336975	51.9646 ug/L	93
6) Methacrylonitrile	9.94	67	119267	53.3476 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	97.4900 ug/L #	99
9) Methyl methacrylate	12.40	41	279157	51.2171 ug/L	81
10) 2-Nitropropane	12.79	43	95327	47.0270 ug/L	94
13) Cyclohexanone	17.56	55	13241	41.7415 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

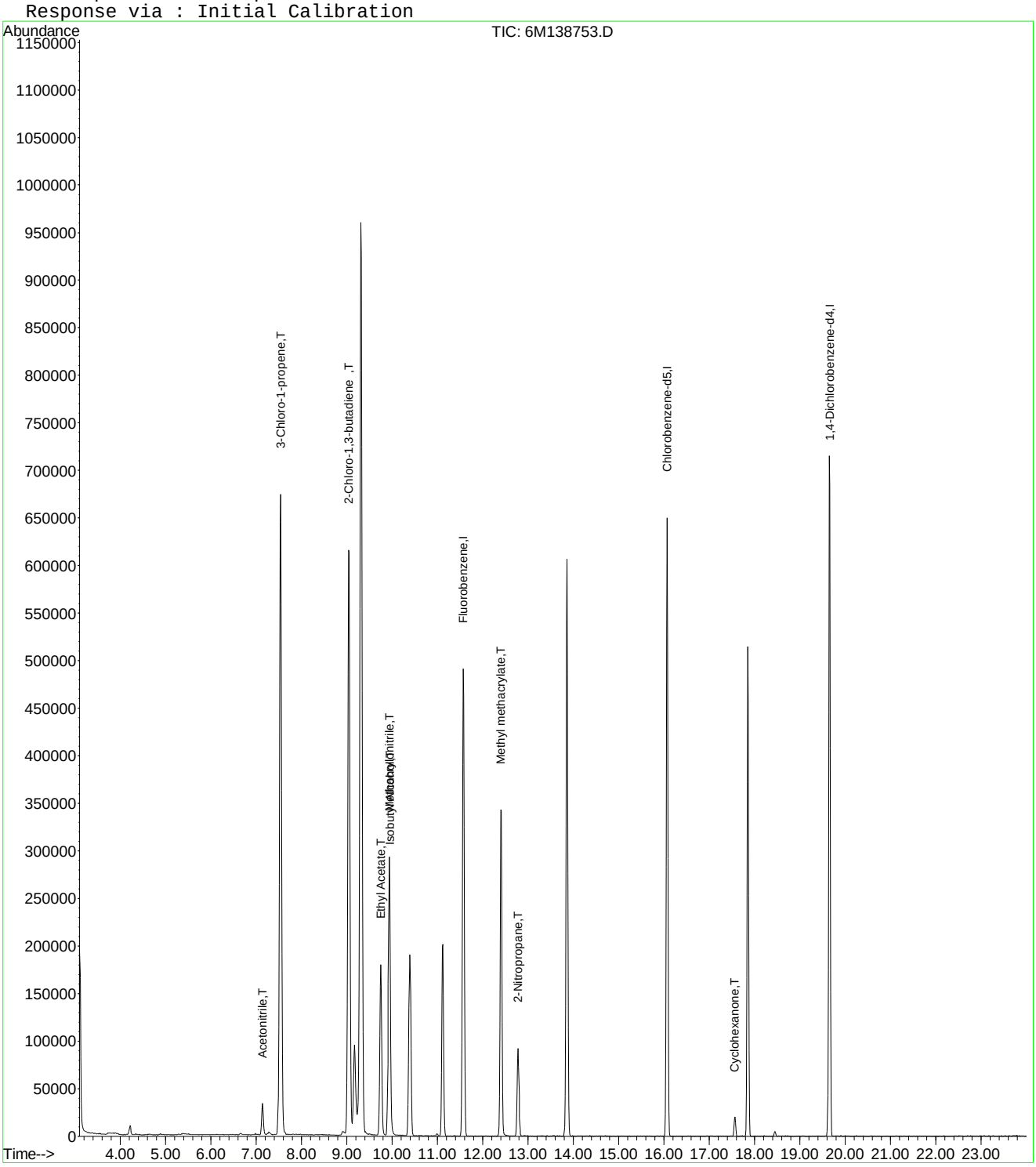

6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.6701	-3.3	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.5409	-5.1	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.0726	-4.1	100	0.00
5	T	Ethyl Acetate	50.0000	51.9646	-3.9	100	0.00
6	T	Methacrylonitrile	50.0000	53.3476	-6.7	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.4900	2.5	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	50.0000	51.2171	-2.4	100	0.00
10	T	2-Nitropropane	50.0000	47.0270	5.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	41.7415	16.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138753.D A9FOOWT.M Wed Apr 27 16:04:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:49 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169577	27.6373 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.56%		
43) 1,2-Dichloroethane-d4	11.12	65	210119	28.2161 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.88%		
58) Toluene-d8	13.86	98	550953	26.1877 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.76%		
80) p-Bromofluorobenzene	17.85	95	239480	28.0420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.16%		

Target Compounds					Qvalue
13) Acetone	6.66	43	6960	3.7463 ug/L	82
16) Dimethyl Sulfide	7.15	62	732	0.1448 ug/L #	1
18) Methyl acetate	7.53	43	1419	0.2750 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	2141	0.1320 ug/L #	72
27) 1,1-Dichloroethane	9.05	63	20725	1.6328 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	76666	3.7220 ug/L #	39
29) 2-Butanone	9.53	43	1176	0.4289 ug/L #	52
34) 1-Bromopropane	10.00	122	702	0.6817 ug/L #	1
36) Tetrahydrofuran	10.35	42	4425	2.4769 ug/L #	60
48) Methylcyclohexane	12.41	83	1461	0.1681 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1083	0.1549 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1910	0.3066 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138754.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

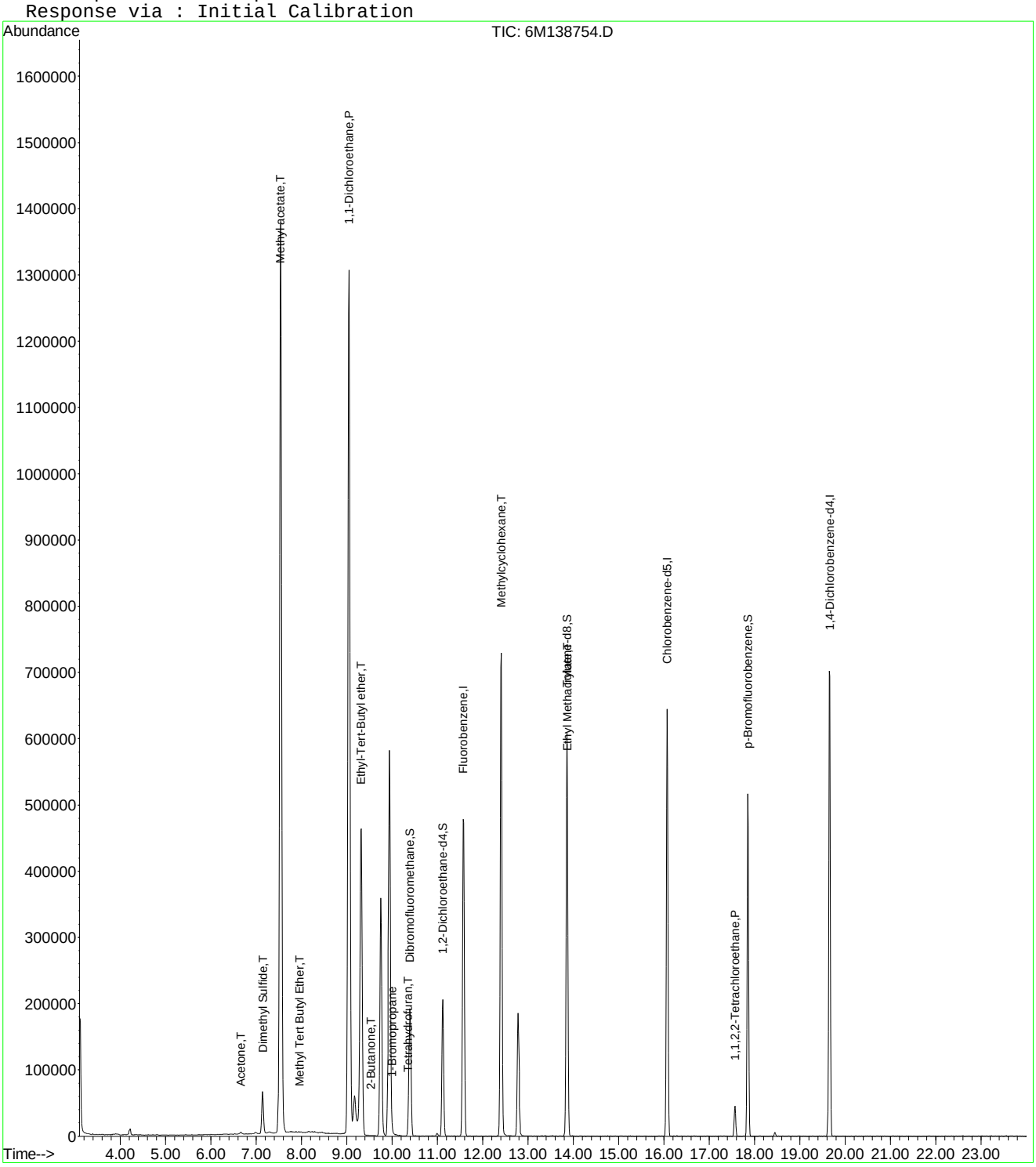

6M138754.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:57 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	79.0019 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	100.3335 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	102.2884 ug/L	83
5) Ethyl Acetate	9.75	43	673221	106.5217 ug/L	93
6) Methacrylonitrile	9.94	67	237219	97.5895 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	97.4937 ug/L #	85
8) 1-Butanol	11.00	41	2978	19.9099 ug/L #	64
9) Methyl methacrylate	12.41	41	585839	93.0942 ug/L	80
10) 2-Nitropropane	12.78	43	197598	106.5074 ug/L	97
13) Cyclohexanone	17.57	55	27547	31.5338 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

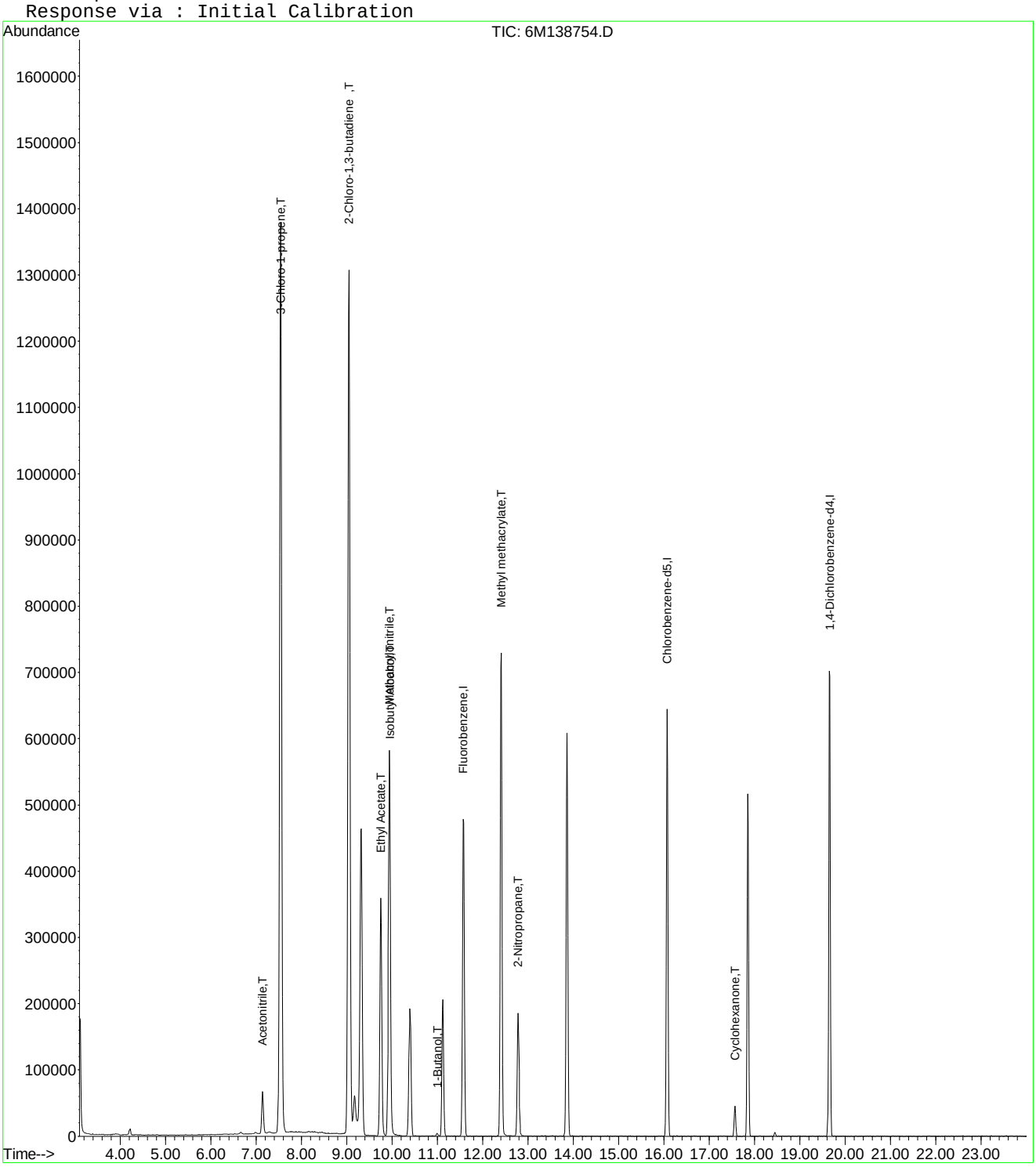

6M138754.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	101.2731 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	107.7041 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	110.1648 ug/L	83
5) Ethyl Acetate	9.75	43	673221	104.7898 ug/L	93
6) Methacrylonitrile	9.94	67	237219	107.1014 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	165.6613 ug/L #	85
9) Methyl methacrylate	12.41	41	585839	108.4917 ug/L	80
10) 2-Nitropropane	12.78	43	197598	98.3932 ug/L	97
13) Cyclohexanone	17.57	55	27547	86.3902 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

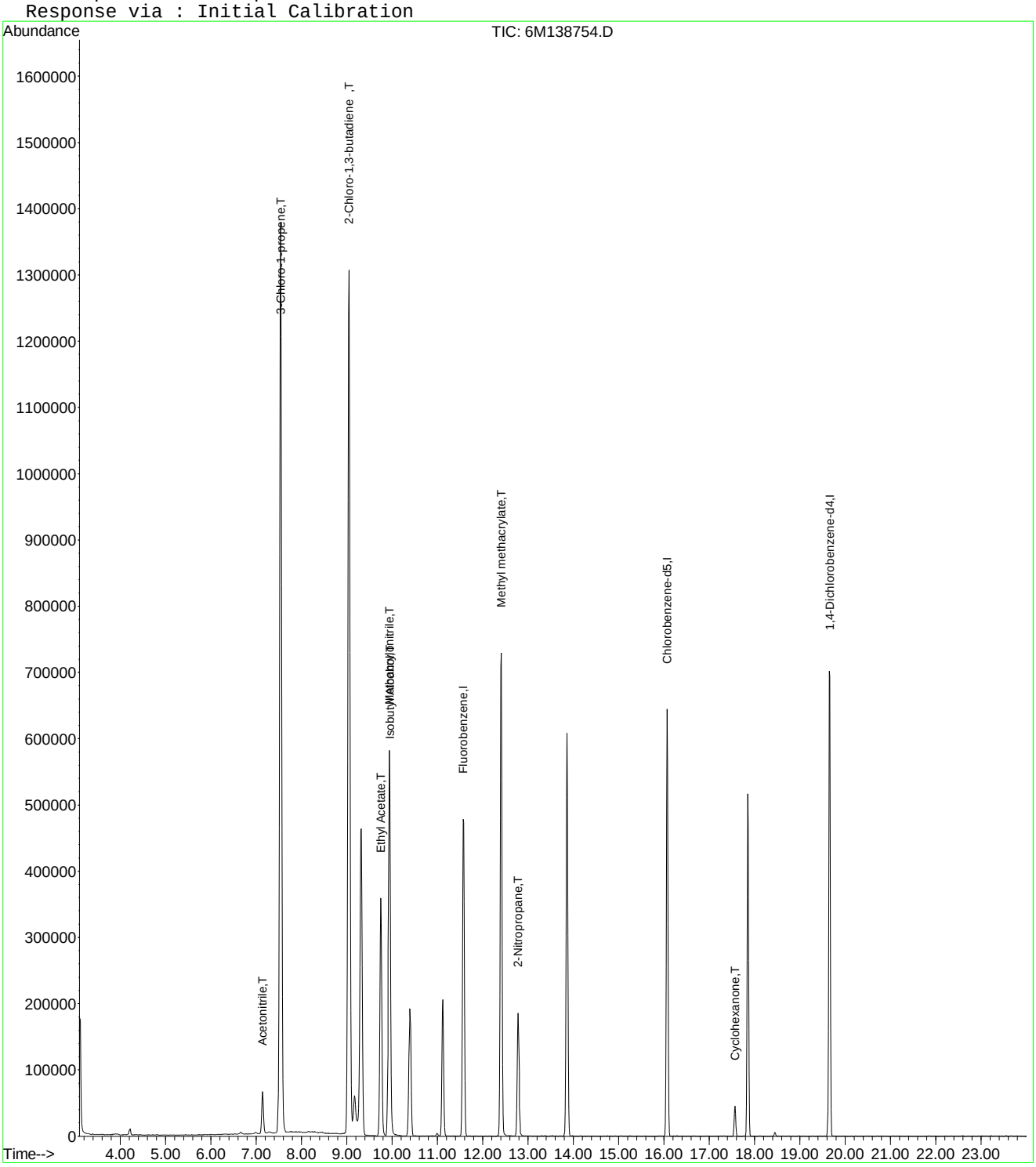

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473187	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172341	27.7160 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.88%		
43) 1,2-Dichloroethane-d4	11.12	65	211249	27.9923 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.96%		
58) Toluene-d8	13.86	98	552831	25.9510 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.80%		
80) p-Bromofluorobenzene	17.85	95	247709	28.6419 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 114.56%		

Target Compounds

					Qvalue
9) Diethyl ether	6.31	59	653	0.1225 ug/L #	12
13) Acetone	6.66	43	9406	4.9959 ug/L #	64
15) Tert-Butyl Alcohol	6.98	59	449	0.8301 ug/L #	1
16) Dimethyl Sulfide	7.16	62	680	0.1328 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	3926	0.2388 ug/L	83
24) n-Hexane	8.30	57	1777	0.2040 ug/L	87
27) 1,1-Dichloroethane	9.05	63	41640	3.2372 ug/L #	47
28) Ethyl-Tert-Butyl ether	9.31	59	272648	13.0615 ug/L #	38
29) 2-Butanone	9.51	43	2992	1.0767 ug/L #	67
30) Propionitrile	9.93	54	258	0.3232 ug/L #	57
34) 1-Bromopropane	9.99	122	1417	1.3579 ug/L #	1
36) Tetrahydrofuran	10.37	42	4839	2.6728 ug/L #	62
48) Methylcyclohexane	12.40	83	2976	0.3378 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1202	0.1698 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	5192	0.8231 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138755.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

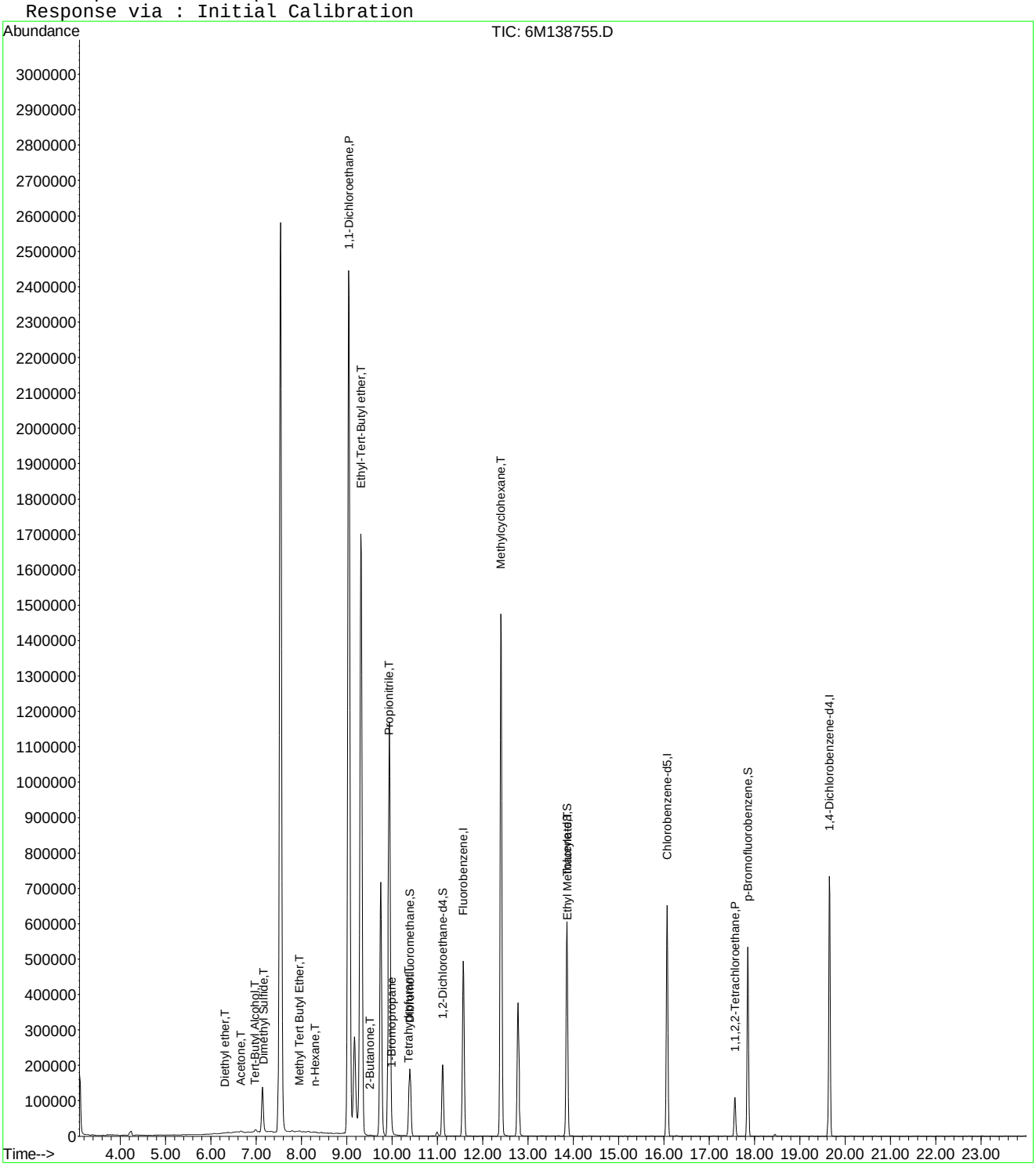

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	157.5150	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	189.6828	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	193.4336	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	210.2391	ug/L	94
6) Methacrylonitrile	9.94	67	471538	191.4186	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	206.4864	ug/L #	92
8) 1-Butanol	10.99	41	8815	58.1542	ug/L #	64
9) Methyl methacrylate	12.40	41	1186381	186.0295	ug/L	80
10) 2-Nitropropane	12.79	43	410702	218.4428	ug/L	99
13) Cyclohexanone	17.57	55	67080	75.8254	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

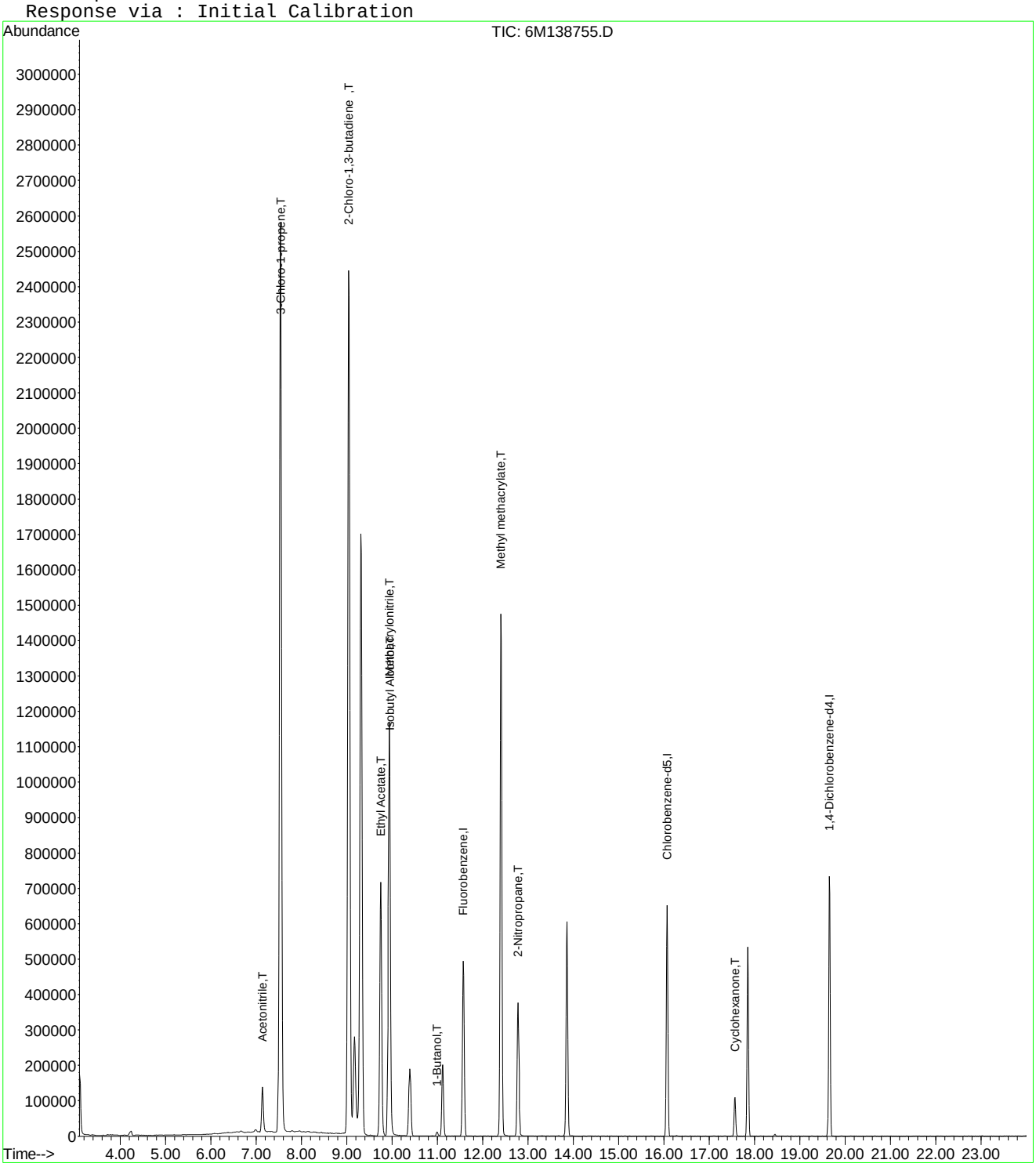

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	201.9195	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	203.6170	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	208.3284	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	206.8209	ug/L	94
6) Methacrylonitrile	9.94	67	471538	210.0757	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	350.8618	ug/L #	92
9) Methyl methacrylate	12.40	41	1186381	216.7982	ug/L	80
10) 2-Nitropropane	12.79	43	410702	201.8008	ug/L	99
13) Cyclohexanone	17.57	55	67080	207.7320	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

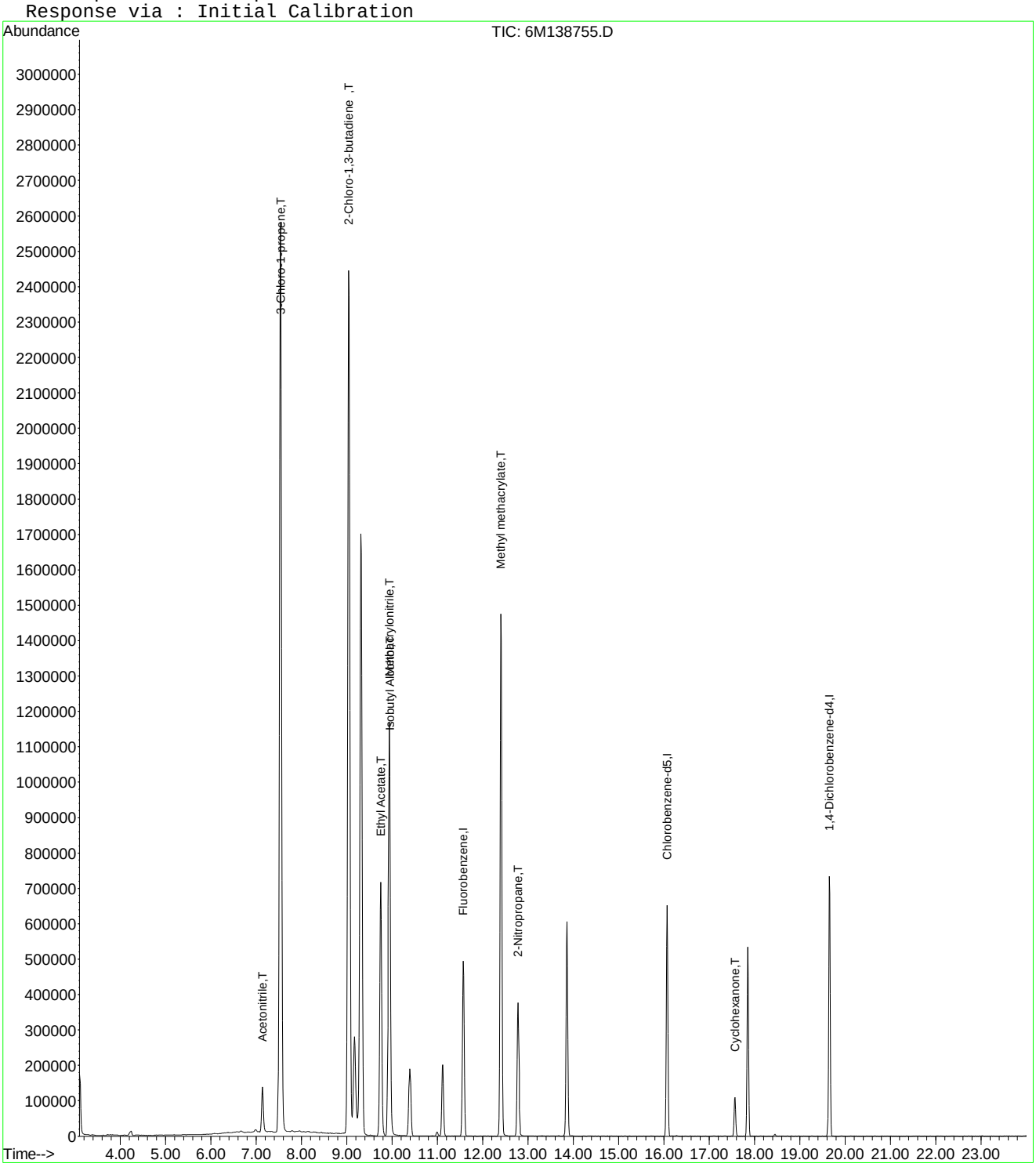

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169983	27.5546 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.20%		
43) 1,2-Dichloroethane-d4	11.12	65	207199	27.6745 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.68%		
58) Toluene-d8	13.86	98	553023	25.9875 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	17.85	95	247939	28.0615 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.24%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	13666	7.3164 ug/L #	77
15) Tert-Butyl Alcohol	7.06	59	467	0.8703 ug/L #	59
16) Dimethyl Sulfide	7.14	62	668	0.1315 ug/L #	1
18) Methyl acetate	7.54	43	3262	0.6289 ug/L #	1
22) Methyl Tert Butyl Ether	7.97	73	10591	0.6492 ug/L #	53
24) n-Hexane	8.28	57	3576	0.4138 ug/L #	56
27) 1,1-Dichloroethane	9.04	63	60743	4.7600 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	155796	7.5231 ug/L #	39
29) 2-Butanone	9.52	43	4002	1.4516 ug/L	97
30) Propionitrile	9.95	54	1113	1.4052 ug/L #	1
34) 1-Bromopropane	9.99	122	1450	1.4006 ug/L #	1
36) Tetrahydrofuran	10.36	42	4902	2.7292 ug/L #	61
48) Methylcyclohexane	12.41	83	4626	0.5293 ug/L #	1
60) Ethyl Methacrylate	13.88	69	1599	0.2261 ug/L #	1
72) Ethylbenzene	16.28	106	1349	0.1427 ug/L	56
73) m-,p-Xylene	16.28	106	1349	0.1203 ug/L	81
79) 1,1,2,2-Tetrachloroethane	17.57	83	8744	1.3569 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

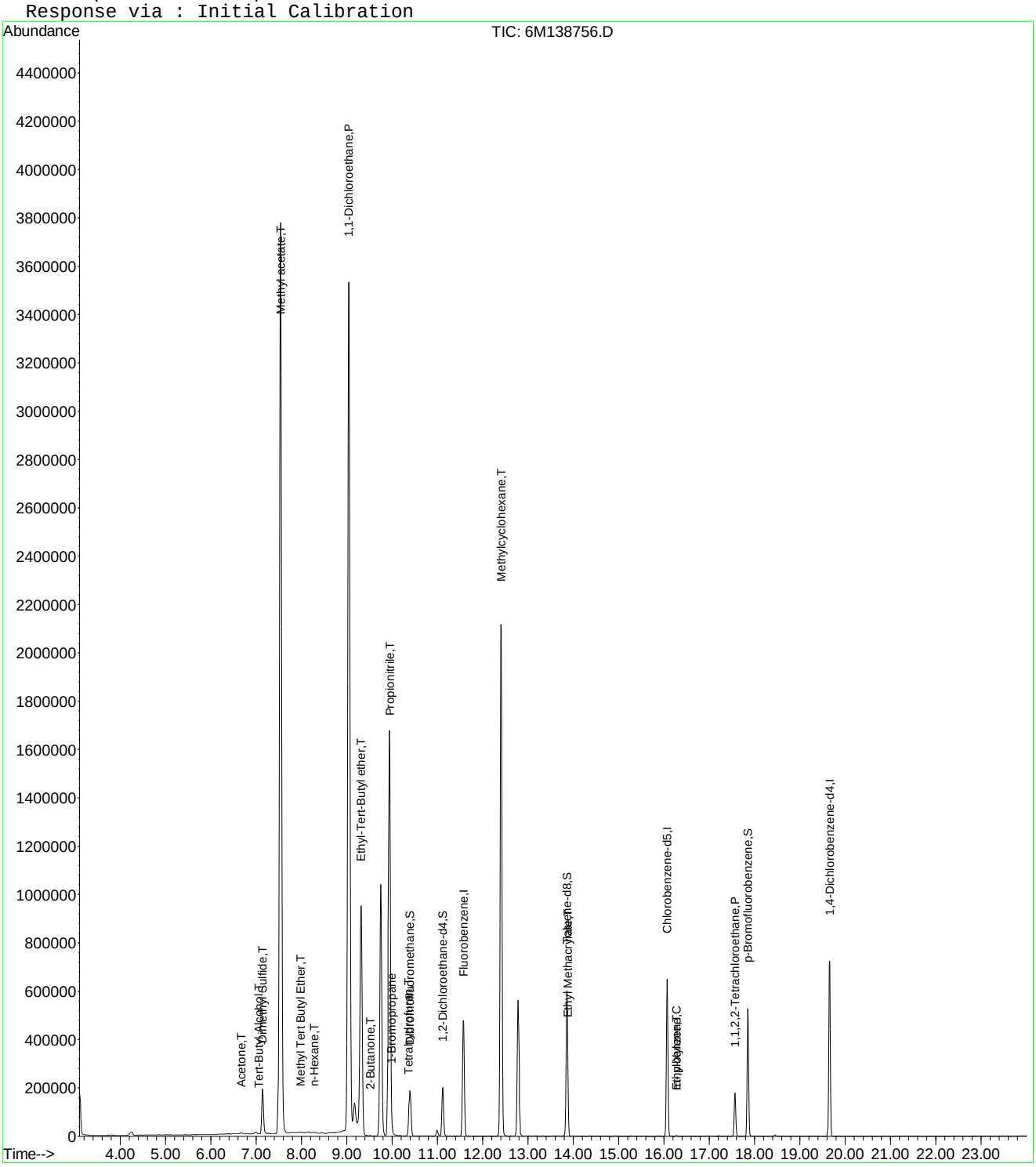

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	273003	236.0468 ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	278.3729 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	287.5093 ug/L	83
5) Ethyl Acetate	9.75	43	1967613	309.6573 ug/L	94
6) Methacrylonitrile	9.94	67	686612	280.9484 ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	347.5212 ug/L #	90
8) 1-Butanol	10.99	41	18116	120.4672 ug/L	69
9) Methyl methacrylate	12.40	41	1742413	275.3954 ug/L	81
10) 2-Nitropropane	12.78	43	613081	328.6824 ug/L	99
13) Cyclohexanone	17.57	55	106618	117.9661 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

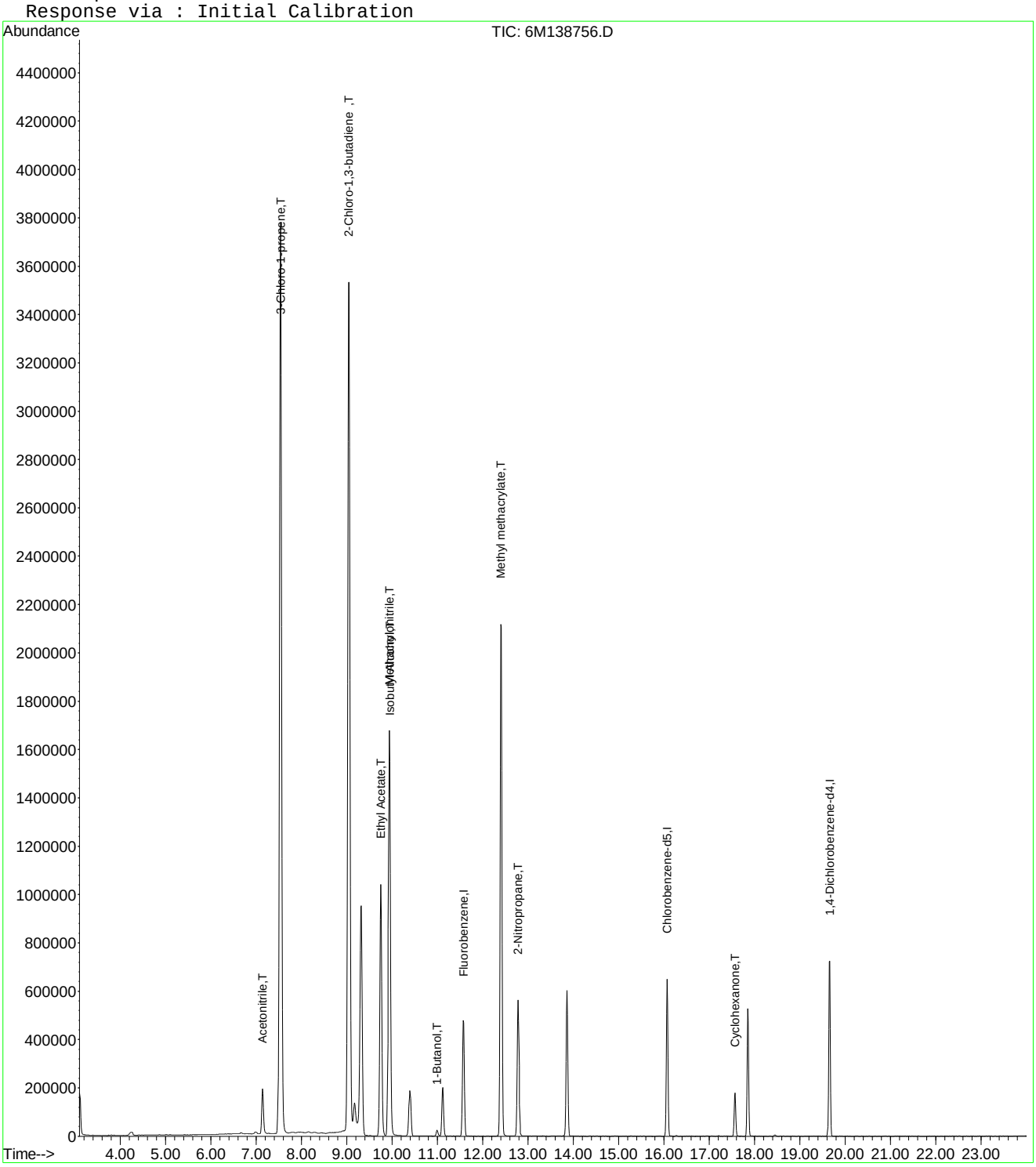

6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00	ug/L	0.01
11) Chlorobenzene-d5	16.07	117	472685	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	273003	302.5900	ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	298.8224	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	309.6481	ug/L	83
5) Ethyl Acetate	9.75	43	1967613	304.6228	ug/L	94
6) Methacrylonitrile	9.94	67	686612	308.3318	ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	590.5081	ug/L #	90
9) Methyl methacrylate	12.40	41	1742413	320.9449	ug/L	81
10) 2-Nitropropane	12.78	43	613081	303.6419	ug/L	99
13) Cyclohexanone	17.57	55	106618	323.1811	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

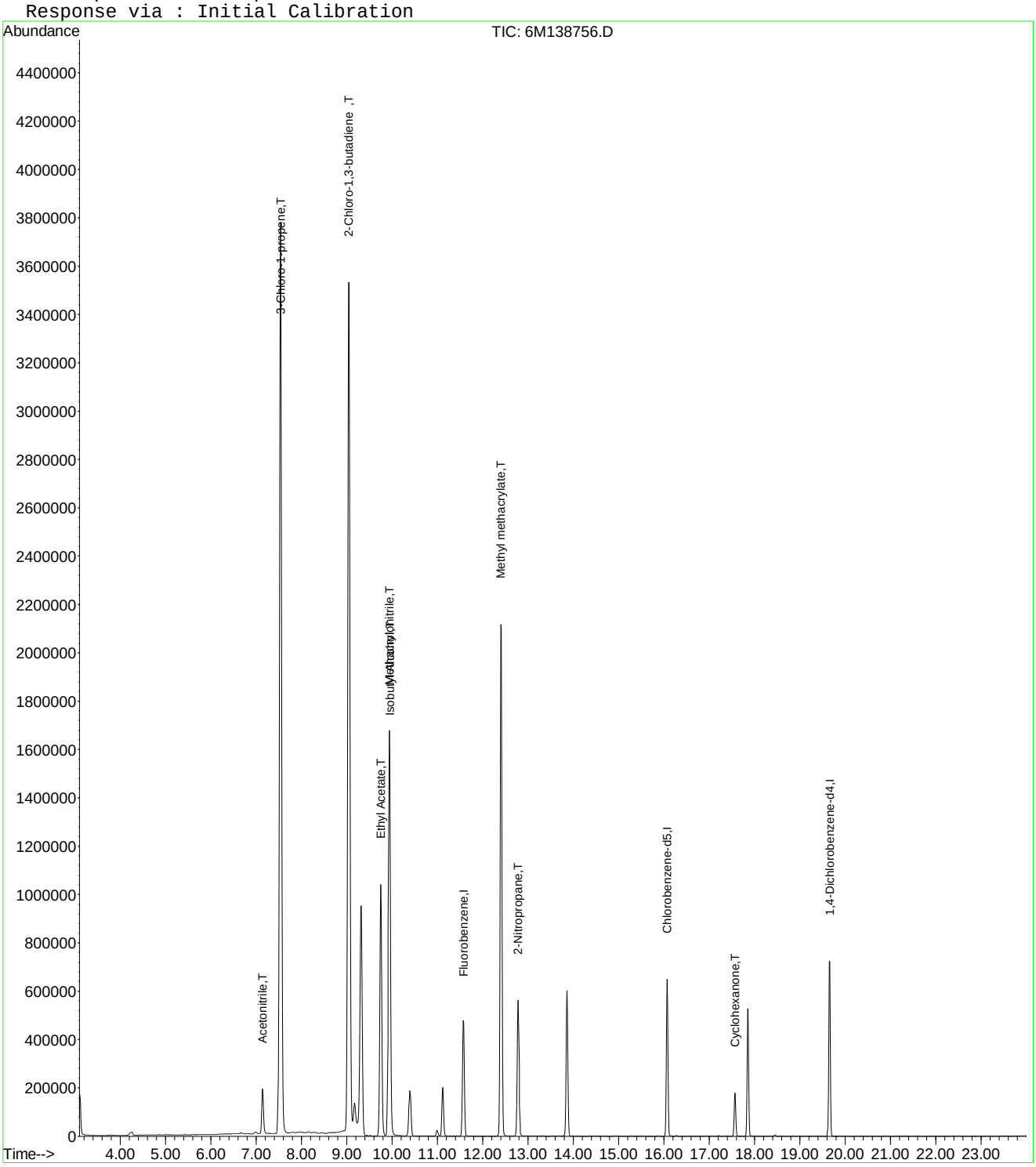

6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:51 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	170708	27.6598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.64%		
43) 1,2-Dichloroethane-d4	11.11	65	208757	27.8702 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.48%		
58) Toluene-d8	13.86	98	554316	25.9150 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	17.85	95	246698	27.9116 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.64%		

Target Compounds					Qvalue
13) Acetone	6.66	43	14063	7.5256 ug/L	99
15) Tert-Butyl Alcohol	7.05	59	807	1.5033 ug/L #	59
16) Dimethyl Sulfide	7.16	62	1034	0.2034 ug/L #	1
18) Methyl acetate	7.48	43	1103	0.2125 ug/L #	60
19) Methylene Chloride	7.73	84	1123	0.1699 ug/L #	40
22) Methyl Tert Butyl Ether	7.97	73	18318	1.1224 ug/L #	53
24) n-Hexane	8.28	57	5609	0.6488 ug/L	75
27) 1,1-Dichloroethane	9.04	63	82912	6.4943 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.32	59	139043	6.7111 ug/L #	38
29) 2-Butanone	9.53	43	4129	1.4970 ug/L	86
30) Propionitrile	9.72	54	202	0.2549 ug/L #	1
34) 1-Bromopropane	9.99	122	1978	1.9098 ug/L #	1
36) Tetrahydrofuran	10.37	42	5444	3.0296 ug/L #	63
48) Methylcyclohexane	12.40	83	6593	0.7540 ug/L #	1
60) Ethyl Methacrylate	13.85	69	1165	0.1639 ug/L #	1
73) m-,p-Xylene	16.28	106	1795	0.1593 ug/L	72
79) 1,1,2,2-Tetrachloroethane	17.57	83	12875	1.9973 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138757.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

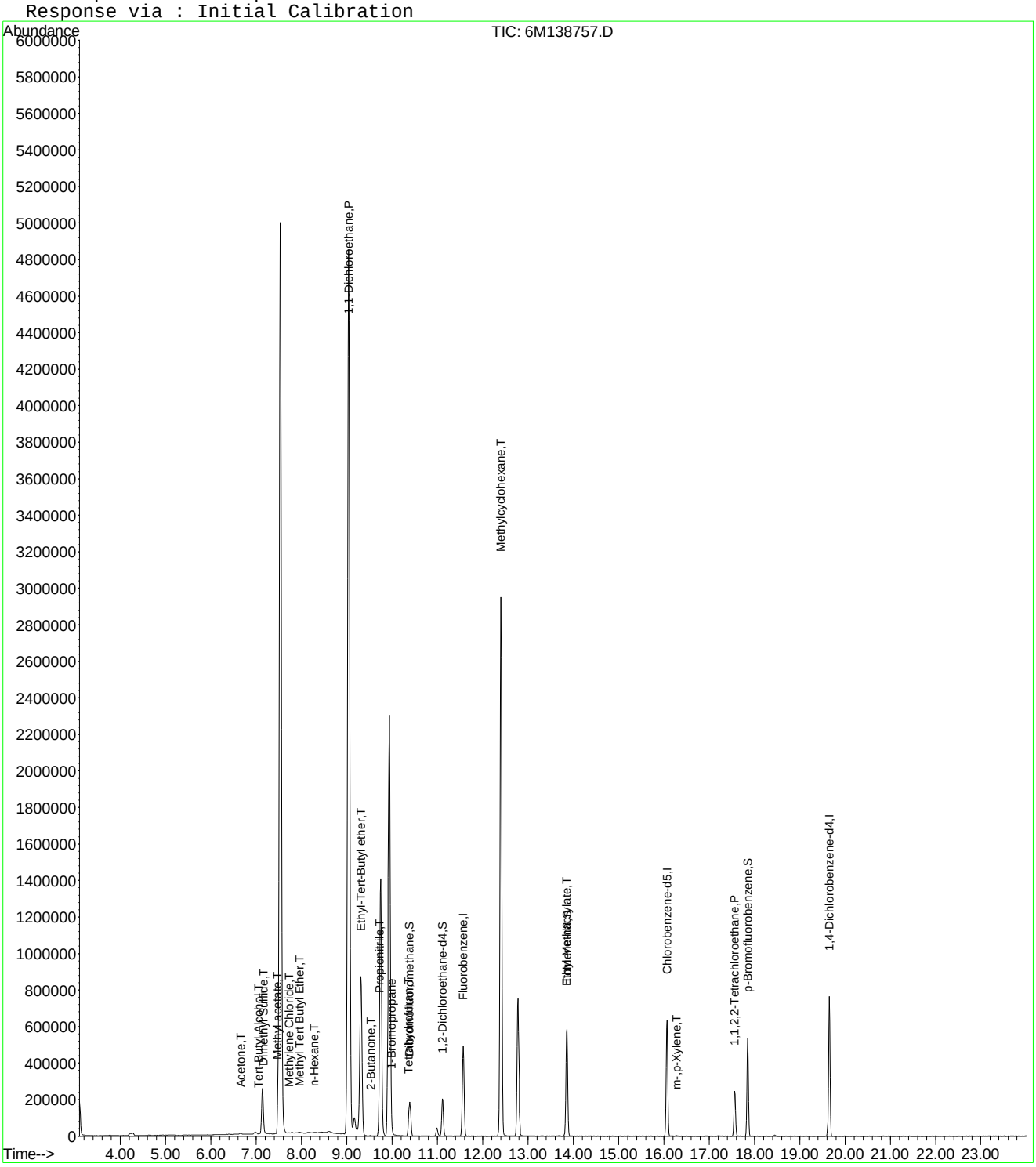

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	318.0524 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	368.4088 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	385.5211 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	423.1975 ug/L	94
6) Methacrylonitrile	9.94	67	929265	380.0675 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	550.6158 ug/L #	89
8) 1-Butanol	10.99	41	29815	198.1744 ug/L	75
9) Methyl methacrylate	12.40	41	2375132	375.2316 ug/L	81
10) 2-Nitropropane	12.79	43	849210	455.0717 ug/L	98
13) Cyclohexanone	17.57	55	149420	165.2683 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Mon Apr 25 15:46:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

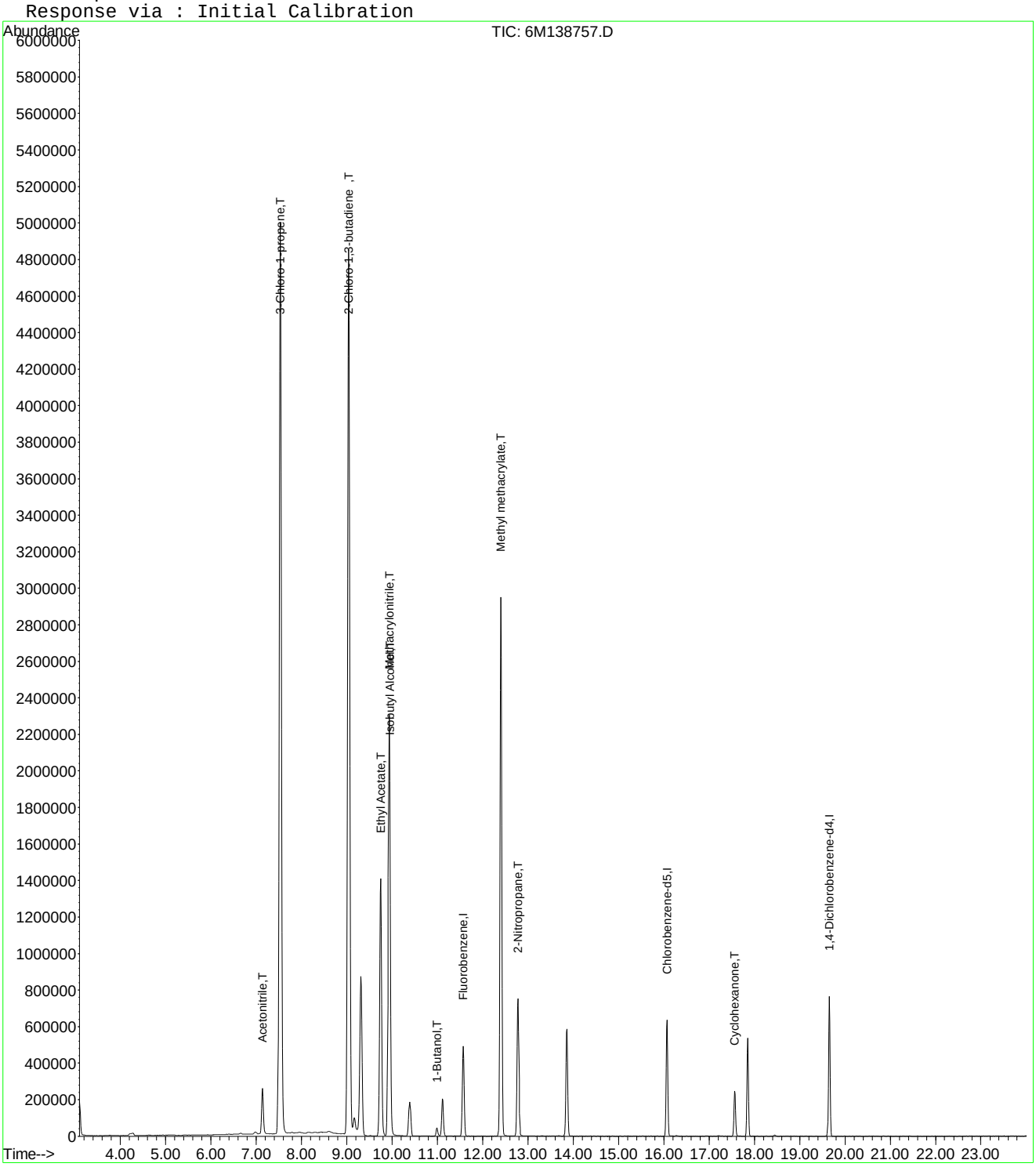

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.08	117	475117	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	368012	407.7137	ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	395.4723	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	415.2070	ug/L	83
5) Ethyl Acetate	9.76	43	2690267	416.3170	ug/L	94
6) Methacrylonitrile	9.94	67	929265	417.1119	ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	935.6065	ug/L #	89
9) Methyl methacrylate	12.40	41	2375132	437.2937	ug/L	81
10) 2-Nitropropane	12.79	43	849210	420.4022	ug/L	98
13) Cyclohexanone	17.57	55	149420	452.7705	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

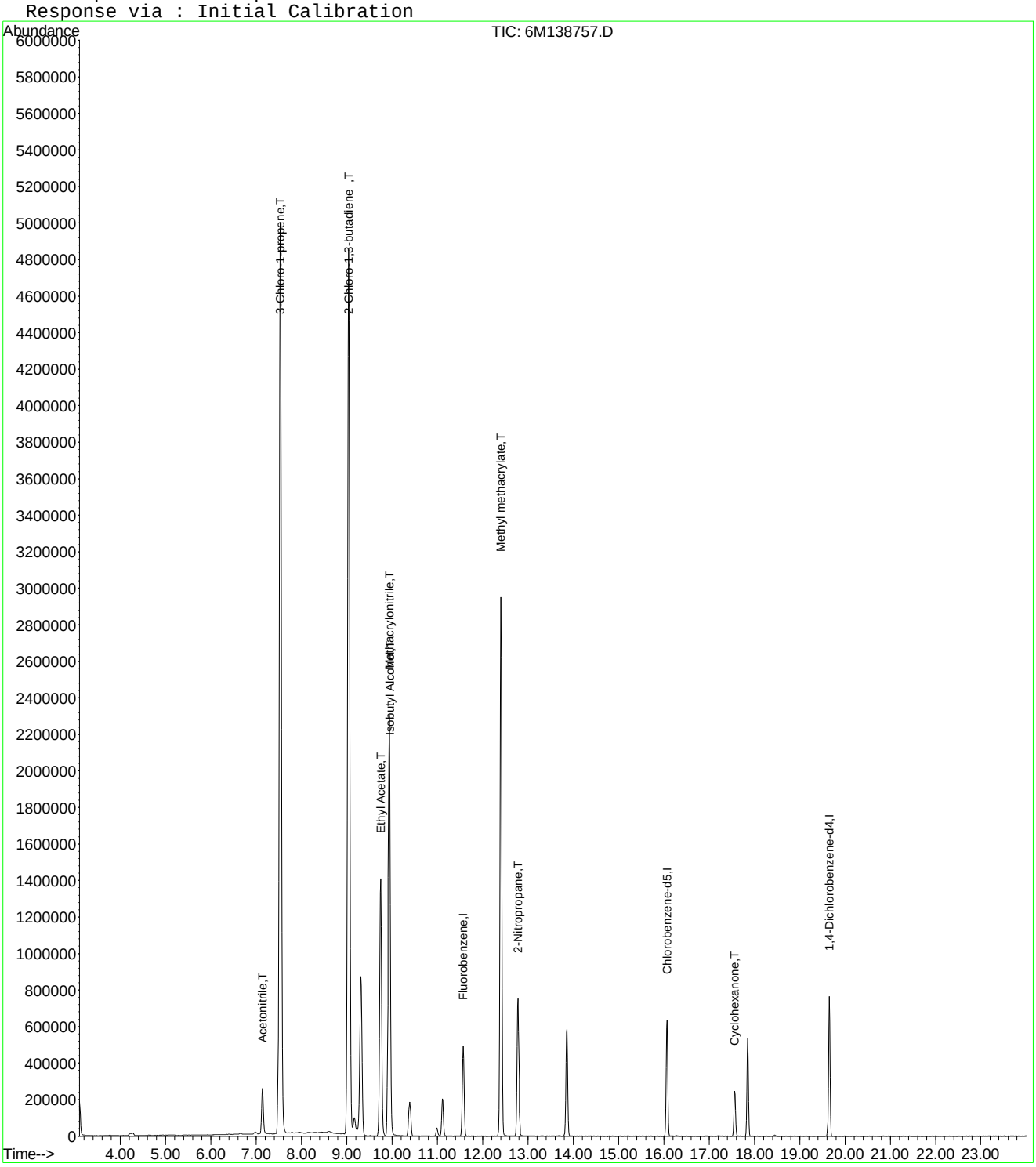

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:52 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	485048	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	175239	27.7556 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.04%		
43) 1,2-Dichloroethane-d4	11.12	65	210644	27.4898 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.96%		
58) Toluene-d8	13.86	98	563297	25.7957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	17.85	95	249406	27.7824 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.12%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	15233	7.9684 ug/L	89
15) Tert-Butyl Alcohol	7.06	59	370	0.6737 ug/L #	59
18) Methyl acetate	7.46	43	1079	0.2032 ug/L #	34
19) Methylene Chloride	7.73	84	1471	0.2176 ug/L	66
20) Carbon Disulfide	7.78	76	2765	0.1407 ug/L #	74
22) Methyl Tert Butyl Ether	7.96	73	25284	1.5144 ug/L #	53
24) n-Hexane	8.28	57	5266	0.5954 ug/L	97
27) 1,1-Dichloroethane	9.05	63	105121	8.0488 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	124099	5.8551 ug/L #	39
29) 2-Butanone	9.52	43	4475	1.5860 ug/L #	72
30) Propionitrile	9.71	54	473	0.5835 ug/L #	1
34) 1-Bromopropane	10.00	122	2117	1.9980 ug/L #	1
36) Tetrahydrofuran	10.36	42	5652	3.0747 ug/L #	54
48) Methylcyclohexane	12.40	83	8011	0.8956 ug/L #	1
59) Toluene	13.98	91	3373	0.1249 ug/L	84
60) Ethyl Methacrylate	13.87	69	1585	0.2184 ug/L #	1
73) m-,p-Xylene	16.28	106	2521	0.2191 ug/L	79
79) 1,1,2,2-Tetrachloroethane	17.57	83	14350	2.1917 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

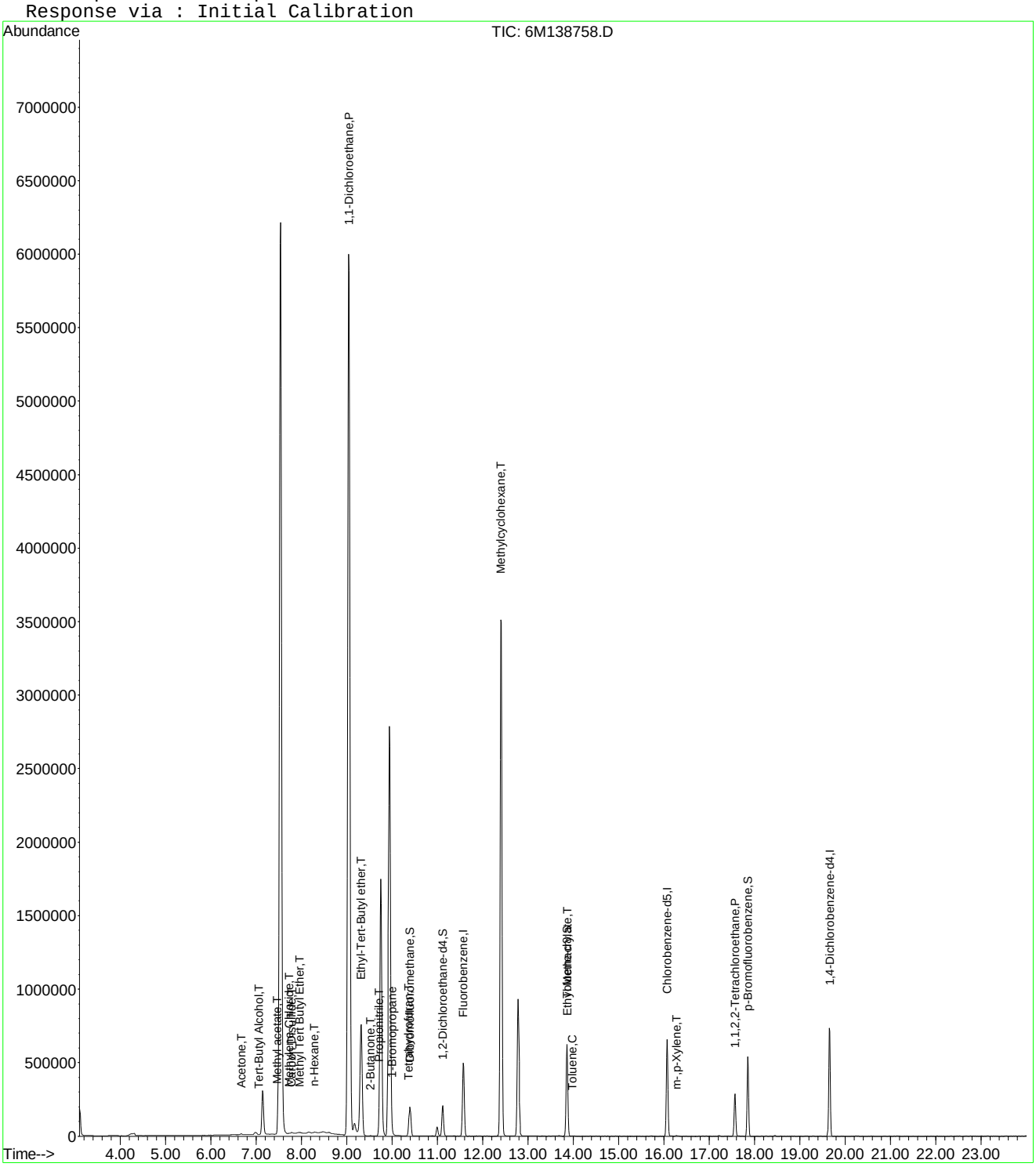

6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	379.8136	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	449.8223	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	474.8265	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	508.5794	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	457.8027	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	701.6799	ug/L #	90
8) 1-Butanol	10.99	41	42236	274.4224	ug/L	75
9) Methyl methacrylate	12.40	41	2914815	450.1389	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	543.0629	ug/L	99
13) Cyclohexanone	17.57	55	176545	192.2558	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

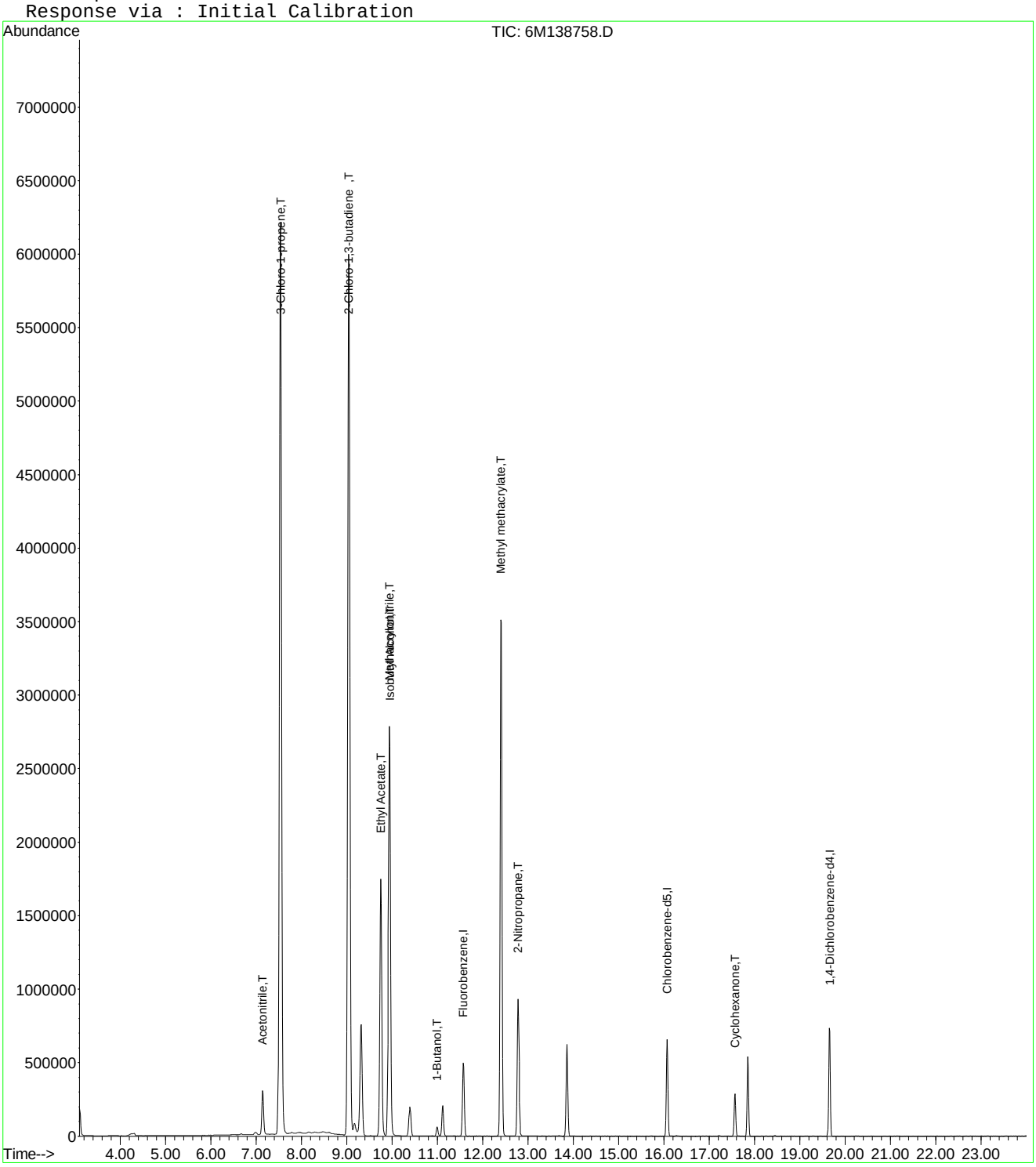

6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	485048	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	449583	486.8858 ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	482.8665 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	511.3891 ug/L	84
5) Ethyl Acetate	9.75	43	3307403	500.3107 ug/L	94
6) Methacrylonitrile	9.94	67	1145073	502.4237 ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	1192.2947 ug/L #	90
9) Methyl methacrylate	12.40	41	2914815	524.5904 ug/L	81
10) 2-Nitropropane	12.78	43	1036720	501.6898 ug/L	99
13) Cyclohexanone	17.57	55	176545	526.7057 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

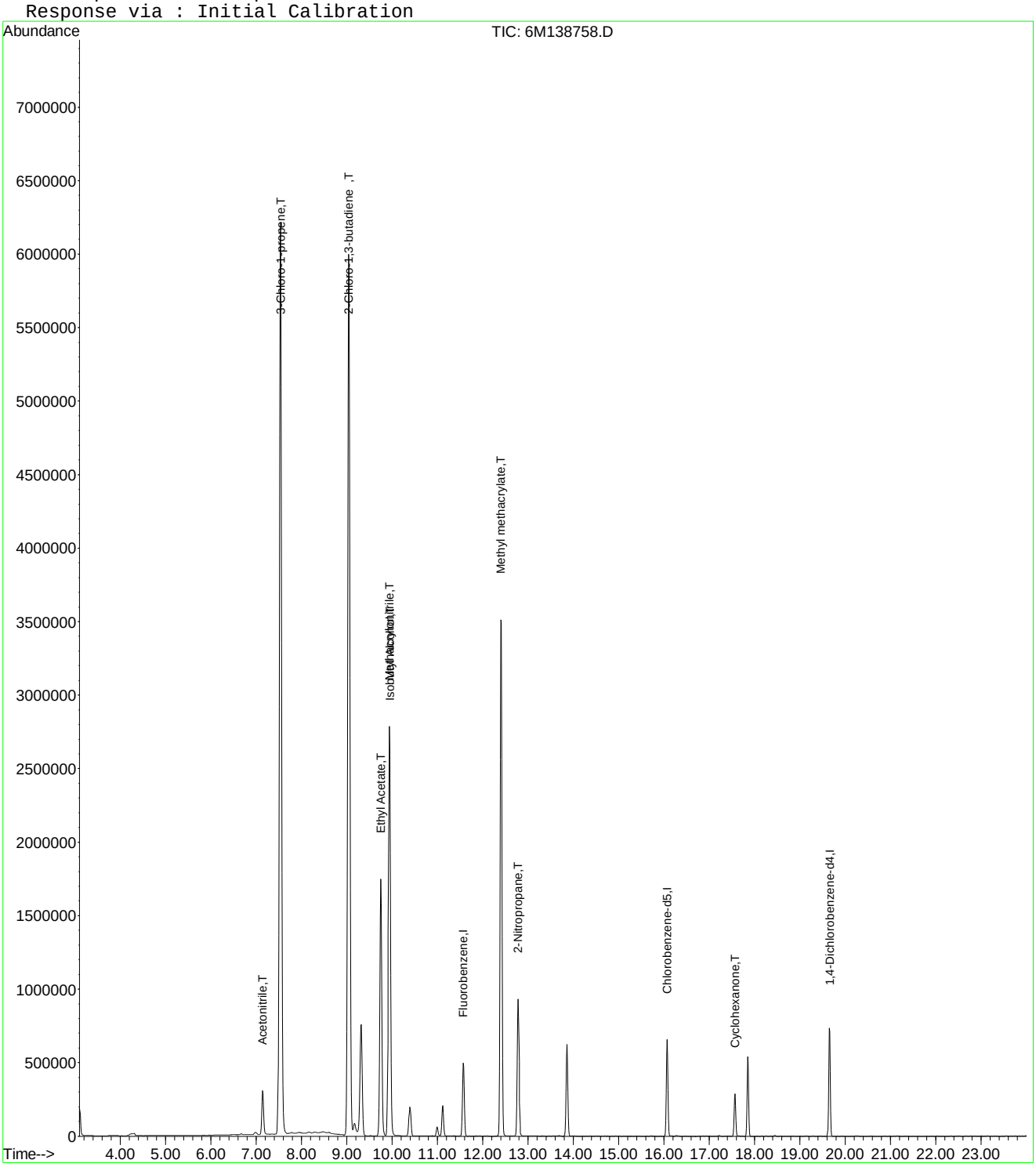

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:54 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.40	111	171708	27.8099 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	210067	28.0330 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.12%		
58) Toluene-d8	13.86	98	553825	26.0829 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.32%		
80) p-Bromofluorobenzene	17.85	95	243088	28.3441 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 113.36%		
Target Compounds					Qvalue
5) 1,3-Butadiene	4.21	54	367749	92.2302 ug/L	88
9) Diethyl ether	6.30	59	700386	132.3612 ug/L	92
13) Acetone	6.67	43	6570	3.5143 ug/L	81
16) Dimethyl Sulfide	7.14	62	2726	0.5361 ug/L #	1
20) Carbon Disulfide	7.54	76	432674	22.5096 ug/L #	36
22) Methyl Tert Butyl Ether	7.97	73	2916	0.1786 ug/L #	53
26) Vinyl Acetate	9.05	43	5230	0.5414 ug/L #	1
27) 1,1-Dichloroethane	9.04	63	22472	1.7594 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.32	59	4063	0.1960 ug/L #	35
29) 2-Butanone	9.52	43	6076	2.2019 ug/L #	66
30) Propionitrile	9.64	54	91341	115.2239 ug/L	96
36) Tetrahydrofuran	10.36	42	4030	2.2418 ug/L #	52
39) Cyclohexane	10.69	56	2387	0.2138 ug/L	79
48) Methylcyclohexane	12.40	83	1353	0.1547 ug/L #	1
50) 1,4-Dioxane	12.73	88	9231	177.0935 ug/L	71
60) Ethyl Methacrylate	13.86	69	1222	0.1732 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1146	0.1832 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

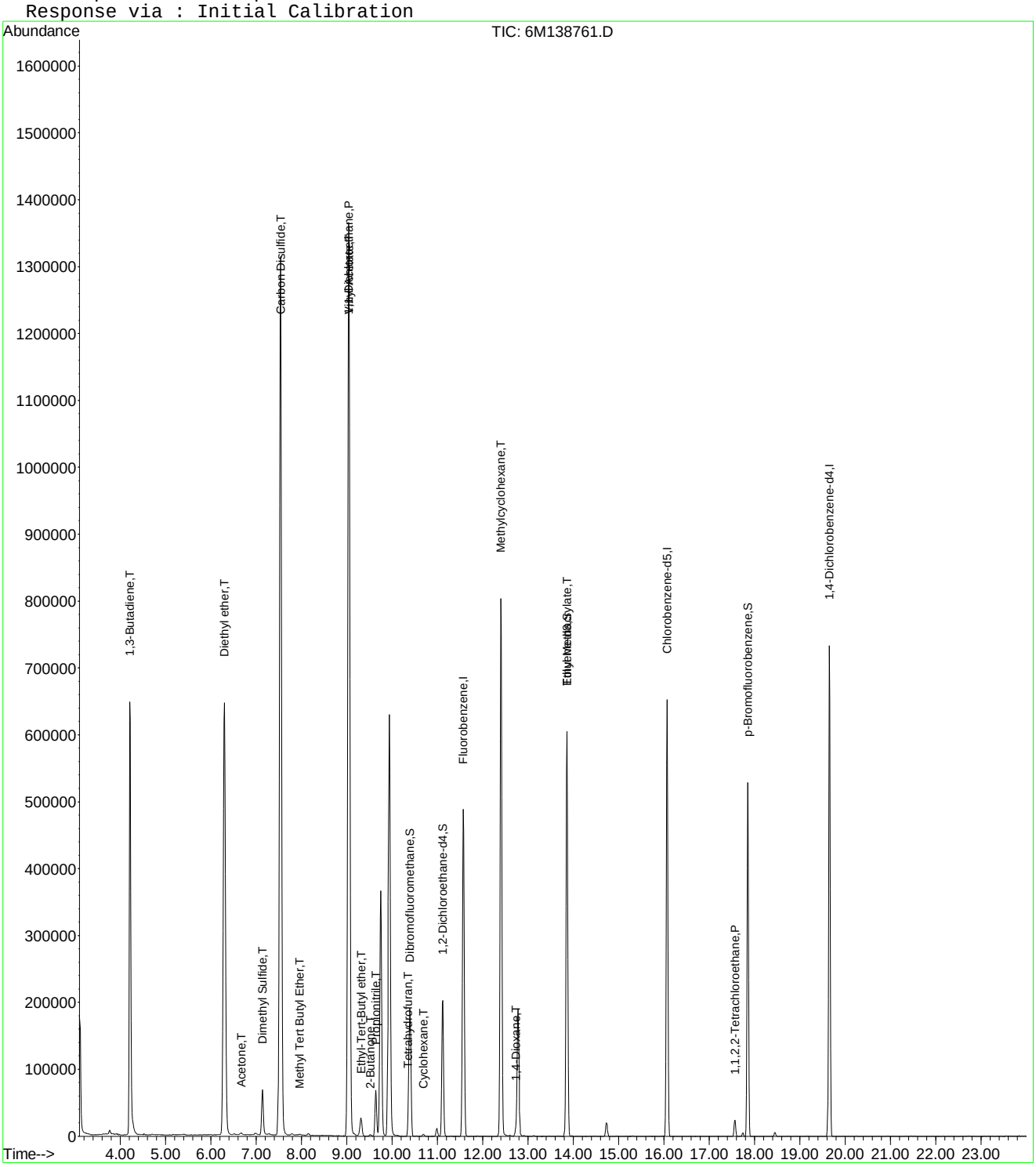

6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	96564	83.4191 ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	96.0797 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	108.7756 ug/L	83
5) Ethyl Acetate	9.75	43	691566	108.7414 ug/L	93
6) Methacrylonitrile	9.94	67	252030	103.0355 ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	146.2409 ug/L #	93
8) 1-Butanol	10.99	41	7584	50.3877 ug/L	72
9) Methyl methacrylate	12.40	41	635574	100.3670 ug/L	81
10) 2-Nitropropane	12.79	43	211020	113.0321 ug/L	98
13) Cyclohexanone	17.57	55	15491	17.6579 ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Mon Apr 25 15:46:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

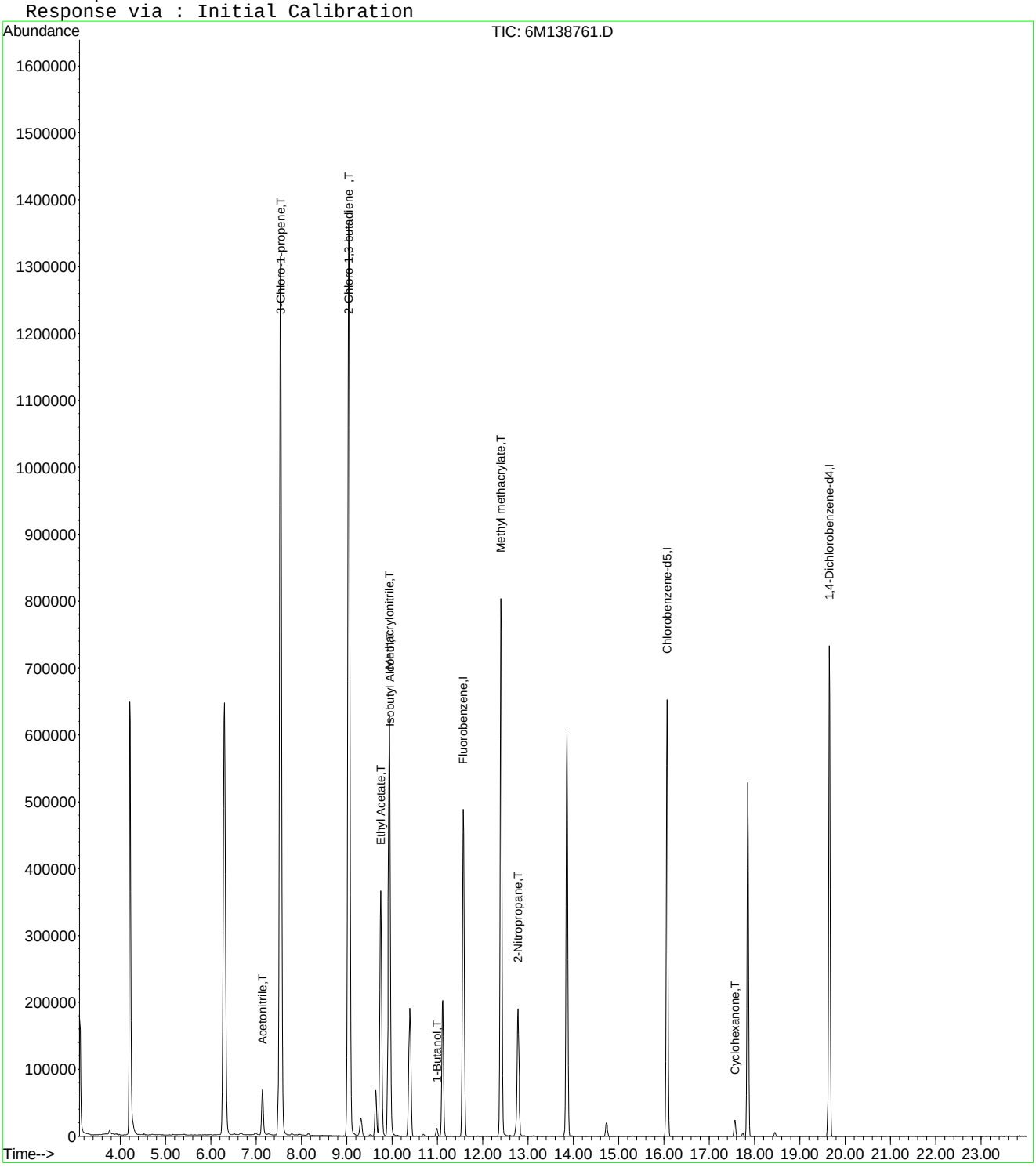

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:02 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	106.9355	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	103.1378	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	117.1516	ug/L	83
5) Ethyl Acetate	9.75	43	691566	106.9734	ug/L	93
6) Methacrylonitrile	9.94	67	252030	113.0781	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	248.4926	ug/L #	93
9) Methyl methacrylate	12.40	41	635574	116.9674	ug/L	81
10) 2-Nitropropane	12.79	43	211020	104.4208	ug/L	98
13) Cyclohexanone	17.57	55	15491	48.3758	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

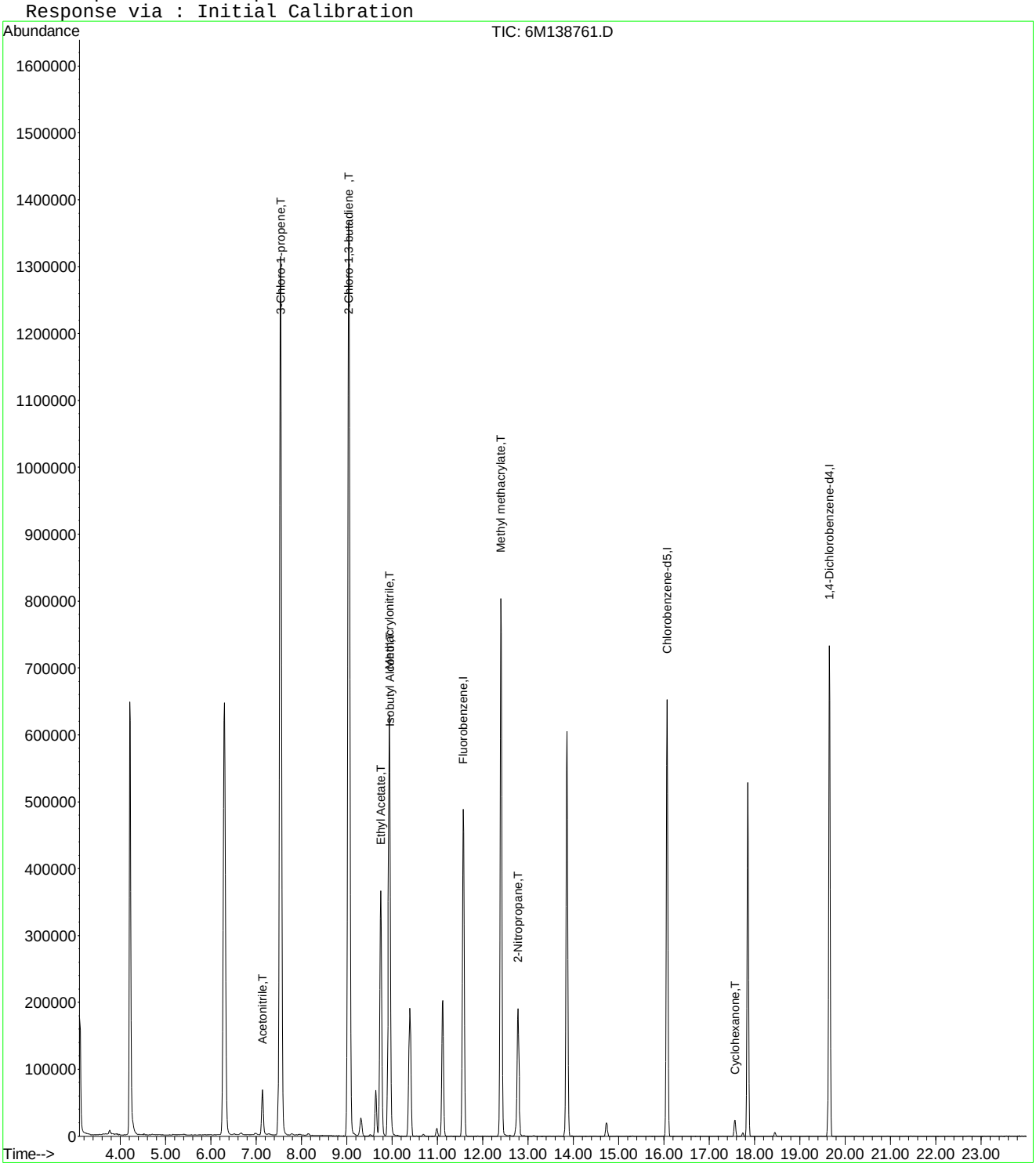

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	101	0.00
2	T	Acetonitrile	100.0000	106.9355	-6.9	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.1378	-3.1	96	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	117.1516	-17.2	107	0.00
5	T	Ethyl Acetate	100.0000	106.9734	-7.0	103	0.00
6	T	Methacrylonitrile	100.0000	113.0781	-13.1	106	0.00
7	T	Isobutyl Alcohol	200.0000	248.4926	-24.2	151	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	116.9674	-17.0	108	0.00
10	T	2-Nitropropane	100.0000	104.4208	-4.4	107	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	48.3758	51.6	56	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138761.D A9FOOWT.M Wed Apr 27 16:05:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141167.D Vial: 2
Acq On : 10 Aug 2016 14:25 Operator: TMB
Sample : WG579700-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:31:51 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	833291	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	588328	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	294258	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	10.30	65	1282	0.1054 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.44%#	
58) Toluene-d8	13.04	98	2472	0.0883 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.36%#	
80) p-Bromofluorobenzene	17.01	95	829	0.0789 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.32%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	5418	0.3052 ug/L	92
3) Chloromethane	3.36	50	8660	0.4779 ug/L	80
4) Vinyl Chloride	3.57	62	3544	0.2966 ug/L	100
5) 1,3-Butadiene	3.61	54	3738	Below Cal #	73
6) Bromomethane	4.39	94	2378	0.4061 ug/L	84
7) Chloroethane	4.53	64	1643	0.2411 ug/L #	43
8) Trichlorofluoromethane	5.00	101	5123	0.2709 ug/L #	95
10) Isoprene	5.57	67	3442	0.2731 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	1853	0.2176 ug/L	82
13) Acetone	5.89	43	10506	3.9798 ug/L	84
14) 1,1-Dichloroethene	6.10	61	5473	0.3081 ug/L	84
16) Dimethyl Sulfide	6.38	62	2936	0.2761 ug/L	87
17) Iodomethane	6.63	142	195	1.0961 ug/L #	32
18) Methyl acetate	6.67	43	1487	0.2052 ug/L #	66
19) Methylene Chloride	6.93	84	6225	0.6531 ug/L	79
20) Carbon Disulfide	6.95	76	12084	0.4086 ug/L #	85
22) Methyl Tert Butyl Ether	7.17	73	5520	0.2344 ug/L #	57
23) trans-1,2-Dichloroethene	7.41	96	2566	0.2958 ug/L	72
24) n-Hexane	7.49	57	4233	0.3278 ug/L	85
27) 1,1-Dichloroethane	8.08	63	5689	0.2915 ug/L	86
29) 2-Butanone	8.73	43	1356	0.3543 ug/L #	57
31) 2,2-Dichloropropane	8.95	77	4461	0.2697 ug/L	100
32) cis-1,2-Dichloroethene	9.01	96	4533	0.4701 ug/L	89
33) Chloroform	9.25	83	5825	0.3125 ug/L	97
35) Bromochloromethane	9.51	130	1452	0.2651 ug/L	79
36) Tetrahydrofuran	9.54	42	2603	1.0801 ug/L #	41
38) 1,1,1-Trichloroethane	9.84	97	4441	0.2526 ug/L	95
39) Cyclohexane	9.86	56	4511	0.2655 ug/L	90
40) 1,1-Dichloropropene	10.06	75	3294	0.2503 ug/L	91
42) Carbon Tetrachloride	10.21	117	4136	0.2638 ug/L #	91
45) 1,2-Dichloroethane	10.43	62	4513	0.2858 ug/L #	74
46) Benzene	10.47	78	10386	0.2910 ug/L	96
47) Trichloroethene	11.33	130	4233	0.4570 ug/L	84
48) Methylcyclohexane	11.40	83	3351	0.2676 ug/L #	79
49) 1,2-Dichloropropane	11.58	63	2522	0.2508 ug/L	87
51) Bromodichloromethane	11.92	83	3827	0.2728 ug/L	99
52) Dibromomethane	12.01	93	1427	0.2631 ug/L	87
53) 2-Chloroethyl Vinyl Ether	12.29	63	423	1.1165 ug/L #	41
55) cis-1,3-Dichloropropene	12.67	75	3550	0.2593 ug/L #	79
56) Dimethyl Disulfide	12.95	79	1297	0.1584 ug/L #	47

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141167.D Vial: 2
Acq On : 10 Aug 2016 14:25 Operator: TMB
Sample : WG579700-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:31:51 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
59)	Toluene	13.15	91	10005	0.2959 ug/L		92
60)	Ethyl Methacrylate	13.30	69	1520	0.6027 ug/L		91
62)	trans-1,3-Dichloropropene	13.37	75	2547	0.1999 ug/L	#	51
63)	1,1,2-Trichloroethane	13.62	97	1477	0.2180 ug/L		91
65)	1,3-Dichloropropane	13.96	76	3614	0.3081 ug/L		99
66)	Tetrachloroethene	14.10	166	3022	0.3337 ug/L		89
67)	Dibromochloromethane	14.39	129	2422	0.2681 ug/L		97
68)	1,2-Dibromoethane	14.69	107	1383	0.2191 ug/L		76
69)	1-Chlorohexane	14.83	91	2281	0.4425 ug/L		75
70)	Chlorobenzene	15.29	112	8642	0.3684 ug/L		91
71)	1,1,1,2-Tetrachloroethane	15.32	131	2642	0.2857 ug/L		98
72)	Ethylbenzene	15.33	106	3656	0.3063 ug/L		91
73)	m-,p-Xylene	15.44	106	8487	0.5951 ug/L		99
74)	o-Xylene	16.09	106	3212	0.2343 ug/L		76
75)	Styrene	16.14	104	5273	0.2876 ug/L		84
76)	Bromoform	16.69	173	1119	0.1952 ug/L	#	84
77)	Isopropylbenzene	16.60	105	8743	0.2508 ug/L		97
79)	1,1,2,2-Tetrachloroethane	16.87	83	1771	0.2414 ug/L		83
83)	n-Propylbenzene	17.20	91	10331	0.2735 ug/L	#	93
84)	Bromobenzene	17.32	156	2901	0.3141 ug/L		92
85)	1,3,5-Trimethylbenzene	17.44	105	6541	0.2438 ug/L		97
86)	2-Chlorotoluene	17.50	91	7649	0.2812 ug/L		98
87)	4-Chlorotoluene	17.56	91	7890	0.2969 ug/L		91
88)	a-Methylstyrene	17.90	118	3345	0.2144 ug/L		95
89)	tert-Butylbenzene	17.97	134	1062	0.1854 ug/L	#	30
90)	1,2,4-Trimethylbenzene	18.03	105	7199	0.2399 ug/L		100
91)	sec-Butylbenzene	18.28	105	8718	0.2689 ug/L		86
92)	p-Isopropyltoluene	18.48	119	7532	0.2710 ug/L		89
93)	1,3-Dichlorobenzene	18.68	146	5697	0.3255 ug/L		97
94)	1,4-Dichlorobenzene	18.84	146	6360	0.3539 ug/L	#	39
95)	n-Butylbenzene	19.10	91	7139	0.2785 ug/L		93
96)	1,2-Dichlorobenzene	19.41	146	5544	0.3269 ug/L		99
98)	1,2,4-Trichlorobenzene	21.94	180	3023	0.4165 ug/L		96
99)	Hexachlorobutadiene	22.13	225	1741	0.4097 ug/L		76
100)	Naphthalene	22.36	128	4354	0.5802 ug/L	#	67
101)	1,2,3-Trichlorobenzene	22.74	180	2379	0.2602 ug/L		91

(#) = qualifier out of range (m) = manual integration
6M141167.D 8260WT.M Thu Aug 11 14:31:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141167.D Vial: 2
Acq On : 10 Aug 2016 14:25 Operator: TMB
Sample : WG579700-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:31 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

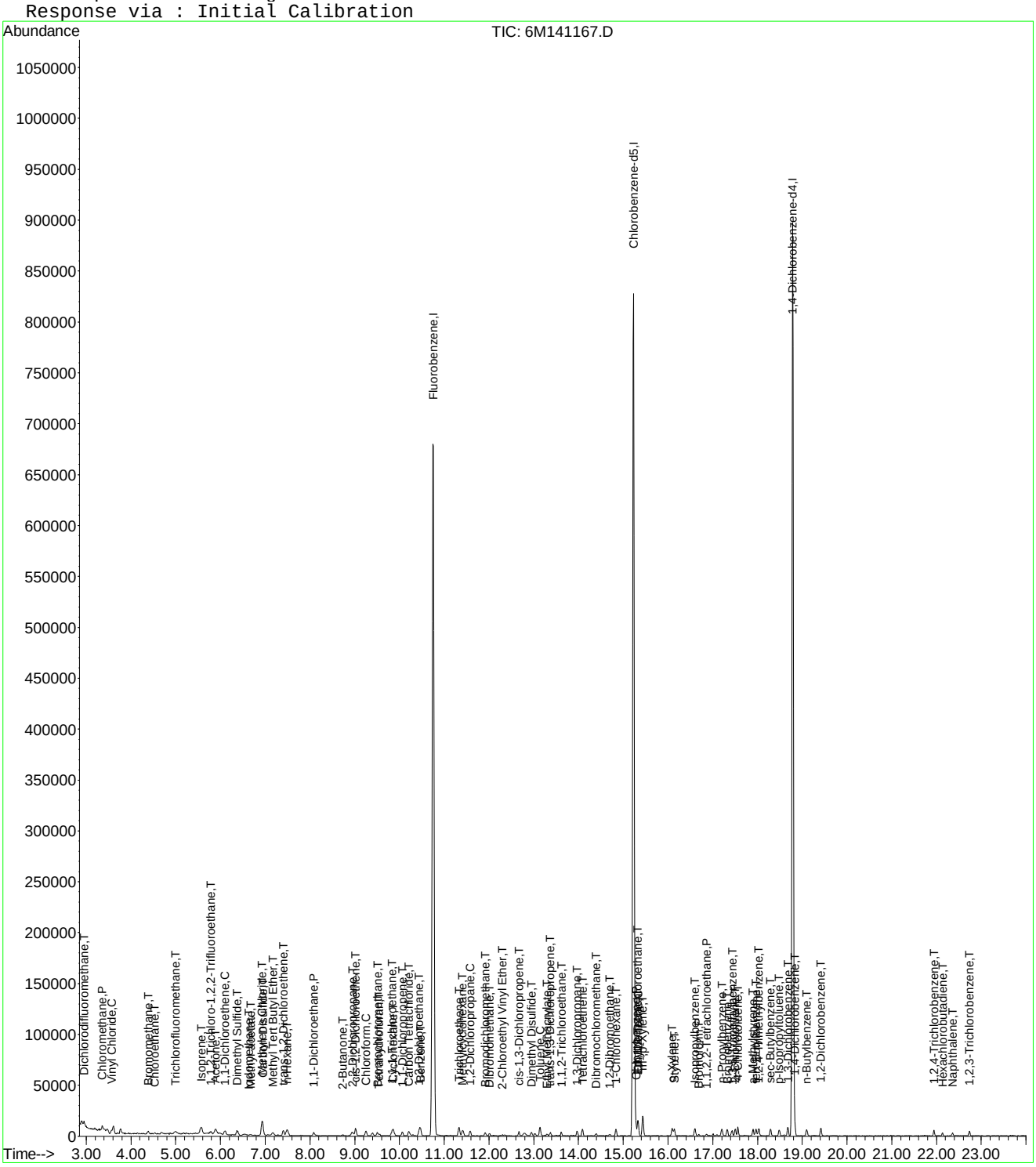

6M141167.D 8260WT.M Thu Aug 11 14:31:59 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141167.D Vial: 2
Acq On : 10 Aug 2016 14:25 Operator: TMB
Sample : WG579700-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3052	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4779	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2966	0.0	100	0.02
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.4061	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.2411	0.0	100	0.01
8	T	Trichlorofluoromethane	-1.0000	0.2709	0.0	100	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.54#
10	T	Isoprene	-1.0000	0.2731	0.0	100	0.02
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2176	0.0	100	0.01
13	T	Acetone	-1.0000	3.9798	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3081	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.2761	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.0961	0.0	0	0.00
18	T	Methyl acetate	-1.0000	0.2052	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.6531	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4086	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.14#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2344	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.2958	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3278	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.89#
26	T	Vinyl Acetate	-1.0000	0.0152	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.2915	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.52#
29	T	2-Butanone	-1.0000	0.3543	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.85#
31	T	2,2-Dichloropropane	-1.0000	0.2697	0.0	100	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.4701	0.0	100	0.00
33	C	Chloroform	0.3000	0.3125	-4.2	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.40#
35	T	Bromochloromethane	-1.0000	0.2651	0.0	100	0.01
36	T	Tetrahydrofuran	-1.0000	1.0801	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.57#
38	T	1,1,1-Trichloroethane	-1.0000	0.2526	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2655	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2503	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.2638	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.1054	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	-1.0000	0.2858	0.0	100	0.00
46	T	Benzene	-1.0000	0.2910	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.4570	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.2676	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2508	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.93#
51	T	Bromodichloromethane	-1.0000	0.2728	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.2631	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.1165	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.34#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141167.D Vial: 2
Acq On : 10 Aug 2016 14:25 Operator: TMB
Sample : WG579700-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.2593	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.1584	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0883	0.0	0	0.00
59	C	Toluene	-1.0000	0.2959	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6027	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.15#
62	T	trans-1,3-Dichloropropene	-1.0000	0.1999	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2180	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.1104	0.0	100	0.00
65	T	1,3-Dichloropropane	-1.0000	0.3081	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3337	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2681	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.2191	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.4425	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	0.3684	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2857	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.3063	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.5951	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.2343	0.0	100	0.00
75	T	Styrene	-1.0000	0.2876	0.0	0	0.00
76	P	Bromoform	-1.0000	0.1952	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.2508	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2414	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0789	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-17.09#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-17.17#
83	T	n-Propylbenzene	-1.0000	0.2735	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.3141	-4.7	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.2438	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.2812	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.2969	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2144	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.1854	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.2399	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.2689	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.2710	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3255	0.0	100	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.3539	0.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.2785	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3269	-9.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-20.59#
98	T	1,2,4-Trichlorobenzene	0.3000	0.4165	-38.8#	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.4097	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.5802	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.2602	13.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141168.D Vial: 3
Acq On : 10 Aug 2016 14:57 Operator: TMB
Sample : WG579700-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:01 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	769456	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	550129	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	273867	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	13.02	98	955	0.0365 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.16%#	
80) p-Bromofluorobenzene	16.87	95	197	0.0201 ug/L	-0.13
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.96	85	6332	0.3863 ug/L #	84
3) Chloromethane	3.36	50	9125	0.5453 ug/L	95
4) Vinyl Chloride	3.56	62	4754	0.4309 ug/L	96
5) 1,3-Butadiene	3.61	54	4530	Below Cal #	56
6) Bromomethane	4.40	94	2521	0.4662 ug/L	75
7) Chloroethane	4.53	64	2494	0.3964 ug/L	89
8) Trichlorofluoromethane	5.01	101	7144	0.4091 ug/L #	90
10) Isoprene	5.57	67	4423	0.3801 ug/L	71
12) 1,1,2-Trichloro-1,2,2-Trif	5.76	101	2356	0.2996 ug/L #	50
13) Acetone	5.88	43	3159	1.2959 ug/L #	48
14) 1,1-Dichloroethene	6.10	61	6893	0.4202 ug/L	82
16) Dimethyl Sulfide	6.39	62	3423	0.3486 ug/L	89
17) Iodomethane	6.63	142	495	1.1306 ug/L #	32
18) Methyl acetate	6.68	43	1619	0.2420 ug/L #	66
19) Methylene Chloride	6.93	84	4160	0.4727 ug/L	75
20) Carbon Disulfide	6.95	76	11563	0.4234 ug/L	92
22) Methyl Tert Butyl Ether	7.16	73	7475	0.3437 ug/L	90
23) trans-1,2-Dichloroethene	7.42	96	2784	0.3476 ug/L	75
24) n-Hexane	7.50	57	4181	0.3507 ug/L	99
27) 1,1-Dichloroethane	8.08	63	7046	0.3910 ug/L	98
29) 2-Butanone	8.72	43	1040	0.2942 ug/L #	57
31) 2,2-Dichloropropane	8.94	77	6272	0.4106 ug/L	96
32) cis-1,2-Dichloroethene	9.01	96	3361	0.3775 ug/L	68
33) Chloroform	9.26	83	6995	0.4064 ug/L	88
35) Bromochloromethane	9.50	130	1592	0.3148 ug/L	91
36) Tetrahydrofuran	9.55	42	2976	1.3374 ug/L #	53
38) 1,1,1-Trichloroethane	9.83	97	6124	0.3772 ug/L	97
39) Cyclohexane	9.86	56	5164	0.3292 ug/L	88
40) 1,1-Dichloropropene	10.06	75	3815	0.3140 ug/L	84
42) Carbon Tetrachloride	10.22	117	5219	0.3605 ug/L #	91
45) 1,2-Dichloroethane	10.43	62	5622	0.3856 ug/L #	84
46) Benzene	10.46	78	13129	0.3984 ug/L	95
47) Trichloroethene	11.33	130	4005	0.4683 ug/L	89
48) Methylcyclohexane	11.41	83	3537	0.3059 ug/L	82
49) 1,2-Dichloropropane	11.57	63	3518	0.3789 ug/L	87
51) Bromodichloromethane	11.91	83	4612	0.3560 ug/L	98
52) Dibromomethane	12.01	93	1761	0.3517 ug/L	90
53) 2-Chloroethyl Vinyl Ether	12.30	63	636	1.1699 ug/L #	41
55) cis-1,3-Dichloropropene	12.67	75	4117	0.3257 ug/L	94
56) Dimethyl Disulfide	12.95	79	1739	0.2299 ug/L	89

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141168.D Vial: 3
Acq On : 10 Aug 2016 14:57 Operator: TMB
Sample : WG579700-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:01 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
59)	Toluene	13.15	91	11256	0.3560 ug/L		98
60)	Ethyl Methacrylate	13.30	69	1950	0.6610 ug/L		80
62)	trans-1,3-Dichloropropene	13.37	75	3583	0.3007 ug/L	#	64
63)	1,1,2-Trichloroethane	13.61	97	2164	0.3416 ug/L		92
64)	2-Hexanone	13.57	43	1134	0.2183 ug/L	#	54
65)	1,3-Dichloropropane	13.96	76	3786	0.3452 ug/L		80
66)	Tetrachloroethene	14.10	166	3134	0.3700 ug/L	#	84
67)	Dibromochloromethane	14.39	129	2852	0.3377 ug/L		98
68)	1,2-Dibromoethane	14.69	107	1998	0.3385 ug/L		95
69)	1-Chlorohexane	14.83	91	2690	0.4973 ug/L	#	63
70)	Chlorobenzene	15.28	112	9245	0.4215 ug/L		90
71)	1,1,1,2-Tetrachloroethane	15.33	131	3277	0.3789 ug/L		80
72)	Ethylbenzene	15.33	106	3818	0.3421 ug/L		59
73)	m-,p-Xylene	15.45	106	9965	0.7473 ug/L		97
74)	o-Xylene	16.10	106	4039	0.3151 ug/L		88
75)	Styrene	16.15	104	6216	0.3456 ug/L		92
76)	Bromoform	16.68	173	1715	0.3199 ug/L	#	66
77)	Isopropylbenzene	16.61	105	10649	0.3267 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.86	83	2579	0.3776 ug/L		99
82)	trans-1,4-Dichloro-2-Buten	17.17	53	235	0.7646 ug/L	#	1
83)	n-Propylbenzene	17.20	91	12281	0.3493 ug/L	#	92
84)	Bromobenzene	17.32	156	3447	0.4009 ug/L		92
85)	1,3,5-Trimethylbenzene	17.43	105	7856	0.3146 ug/L		94
86)	2-Chlorotoluene	17.50	91	9504	0.3754 ug/L		97
87)	4-Chlorotoluene	17.56	91	9506	0.3843 ug/L		84
88)	a-Methylstyrene	17.90	118	4011	0.2762 ug/L		87
89)	tert-Butylbenzene	17.97	134	1612	0.3024 ug/L		78
90)	1,2,4-Trimethylbenzene	18.03	105	8330	0.2982 ug/L		94
91)	sec-Butylbenzene	18.28	105	9469	0.3138 ug/L		96
92)	p-Isopropyltoluene	18.49	119	8007	0.3096 ug/L		93
93)	1,3-Dichlorobenzene	18.68	146	6407	0.3934 ug/L		99
94)	1,4-Dichlorobenzene	18.84	146	7271	0.4348 ug/L		84
95)	n-Butylbenzene	19.10	91	7988	0.3349 ug/L		89
96)	1,2-Dichlorobenzene	19.41	146	6652	0.4215 ug/L		99
98)	1,2,4-Trichlorobenzene	21.94	180	2394	0.3731 ug/L		93
99)	Hexachlorobutadiene	22.12	225	1392	0.3519 ug/L	#	74
100)	Naphthalene	22.36	128	3477	0.5504 ug/L	#	67
101)	1,2,3-Trichlorobenzene	22.74	180	3094	0.3637 ug/L	#	83

(#) = qualifier out of range (m) = manual integration
6M141168.D 8260WT.M Thu Aug 11 14:32:05 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141168.D Vial: 3
Acq On : 10 Aug 2016 14:57 Operator: TMB
Sample : WG579700-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

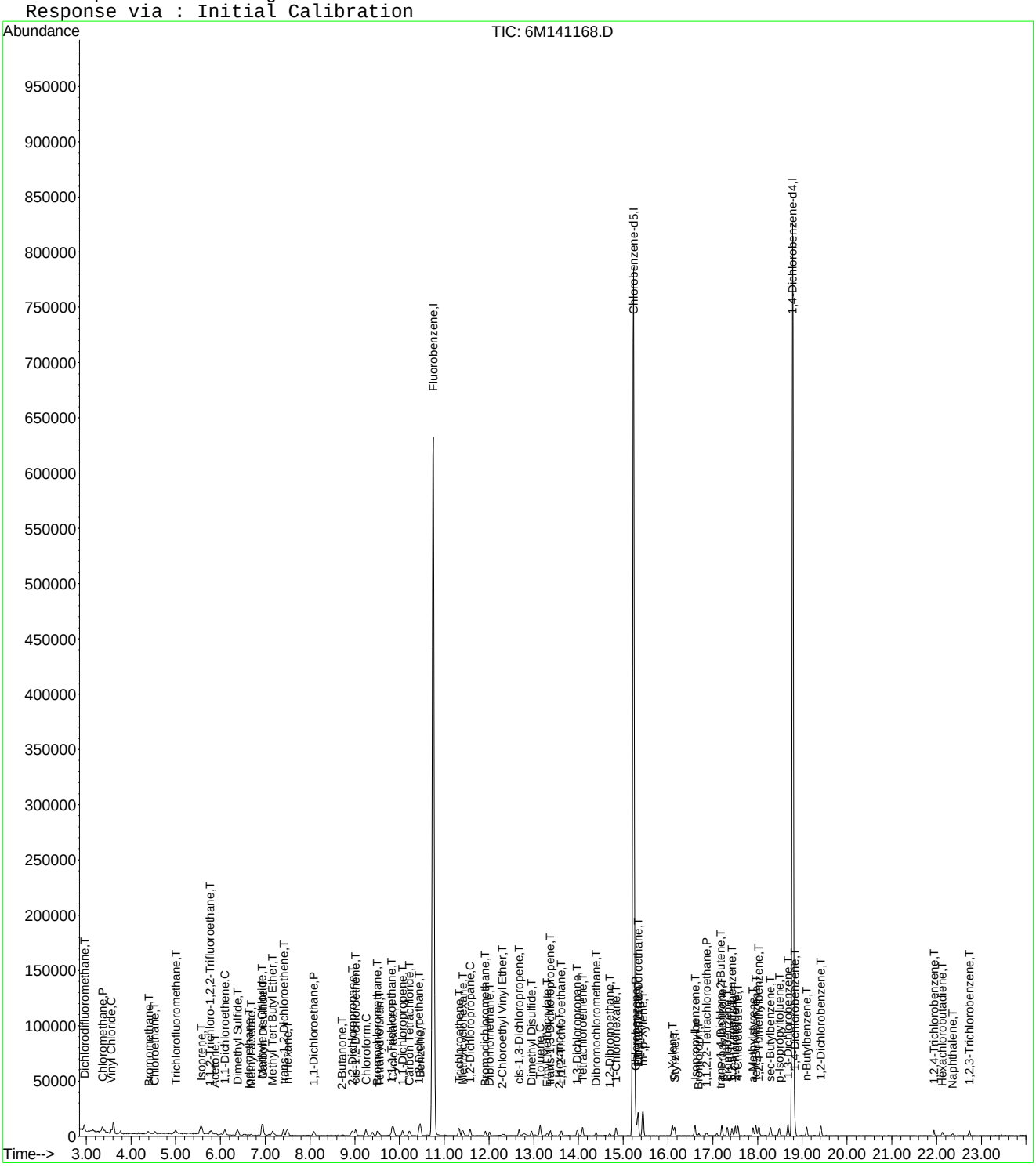

6M141168.D 8260WT.M Thu Aug 11 14:32:07 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141168.D Vial: 3
Acq On : 10 Aug 2016 14:57 Operator: TMB
Sample : WG579700-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3863	0.0	100	0.01
3	P	Chloromethane	-1.0000	0.5453	0.0	100	0.01
4	C	Vinyl Chloride	0.4000	0.4309	-7.7	100	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.4662	0.0	100	0.03
7	T	Chloroethane	-1.0000	0.3964	0.0	100	0.01
8	T	Trichlorofluoromethane	0.4000	0.4091	-2.3	100	0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.54#
10	T	Isoprene	-1.0000	0.3801	0.0	100	0.02
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2996	0.0	100	-0.01
13	T	Acetone	-1.0000	1.2959	0.0	100	-0.02
14	C	1,1-Dichloroethene	0.4000	0.4202	-5.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.3486	0.0	100	0.01
17	T	Iodomethane	-1.0000	1.1306	0.0	0	0.00
18	T	Methyl acetate	-1.0000	0.2420	0.0	100	0.01
19	T	Methylene Chloride	-1.0000	0.4727	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4234	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.14#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3437	0.0	100	-0.01
23	T	trans-1,2-Dichloroethene	0.4000	0.3476	13.1	100	0.01
24	T	n-Hexane	-1.0000	0.3507	0.0	100	0.01
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.89#
26	T	Vinyl Acetate	-1.0000	0.0708	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.3910	2.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.52#
29	T	2-Butanone	-1.0000	0.2942	0.0	100	-0.01
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.85#
31	T	2,2-Dichloropropane	0.4000	0.4106	-2.7	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3775	5.6	100	-0.01
33	C	Chloroform	0.4000	0.4064	-1.6	100	0.01
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.40#
35	T	Bromochloromethane	0.4000	0.3148	21.3#	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.3374	0.0	100	0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.57#
38	T	1,1,1-Trichloroethane	0.4000	0.3772	5.7	100	-0.01
39	T	Cyclohexane	-1.0000	0.3292	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3140	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0104	0.0	100	-0.14
42	T	Carbon Tetrachloride	0.4000	0.3605	9.9	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.30#
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	0.4000	0.3856	3.6	100	0.00
46	T	Benzene	0.4000	0.3984	0.4	100	-0.01
47	T	Trichloroethene	0.4000	0.4683	-17.1	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3059	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.3789	5.3	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.93#
51	T	Bromodichloromethane	0.4000	0.3560	11.0	100	-0.01
52	T	Dibromomethane	0.4000	0.3517	12.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.1699	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.34#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141168.D Vial: 3
Acq On : 10 Aug 2016 14:57 Operator: TMB
Sample : WG579700-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3257	18.6	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2299	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0365	0.0	0	-0.01
59	C	Toluene	0.4000	0.3560	11.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6610	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.15#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3007	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3416	14.6	100	-0.01
64	T	2-Hexanone	-1.0000	0.2183	0.0	100	-0.01
65	T	1,3-Dichloropropane	0.4000	0.3452	13.7	100	-0.01
66	T	Tetrachloroethene	0.4000	0.3700	7.5	100	0.00
67	T	Dibromochloromethane	0.4000	0.3377	15.6	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3385	15.4	100	-0.01
69	T	1-Chlorohexane	0.4000	0.4973	-24.3#	100	0.00
70	P	Chlorobenzene	0.4000	0.4215	-5.4	100	-0.01
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3789	5.3	100	0.00
72	C	Ethylbenzene	0.4000	0.3421	14.5	100	0.00
73	T	m-,p-Xylene	0.8000	0.7473	6.6	100	0.00
74	T	o-Xylene	-1.0000	0.3151	0.0	100	0.00
75	T	Styrene	0.4000	0.3456	13.6	100	0.00
76	P	Bromoform	-1.0000	0.3199	0.0	100	-0.02
77	T	Isopropylbenzene	0.4000	0.3267	18.3	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3776	5.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0201	0.0	0	-0.13
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-17.09#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.7646	0.0	100	0.00
83	T	n-Propylbenzene	0.4000	0.3493	12.7	100	0.00
84	T	Bromobenzene	0.4000	0.4009	-0.2	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.3146	21.3#	100	-0.01
86	T	2-Chlorotoluene	0.4000	0.3754	6.2	100	-0.01
87	T	4-Chlorotoluene	0.4000	0.3843	3.9	100	-0.01
88	T	a-Methylstyrene	-1.0000	0.2762	0.0	100	-0.01
89	T	tert-Butylbenzene	-1.0000	0.3024	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.2982	0.0	100	-0.01
91	T	sec-Butylbenzene	-1.0000	0.3138	0.0	100	-0.01
92	T	p-Isopropyltoluene	-1.0000	0.3096	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3934	1.7	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4348	-8.7	100	-0.01
95	T	n-Butylbenzene	-1.0000	0.3349	0.0	100	-0.01
96	T	1,2-Dichlorobenzene	0.4000	0.4214	-5.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-20.59#
98	T	1,2,4-Trichlorobenzene	0.4000	0.3731	6.7	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.3519	12.0	100	-0.01
100	T	Naphthalene	0.4000	0.5504	-37.6#	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.3637	9.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M141168.D 8260WT.M Thu Aug 11 14:34:18 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141169.D Vial: 4
Acq On : 10 Aug 2016 15:30 Operator: TMB
Sample : WG579700-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:08 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	778326	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	552824	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	281886	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.58	111	3981	0.4688 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.88%#	
43) 1,2-Dichloroethane-d4	10.29	65	6613	0.5819 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.32%#	
58) Toluene-d8	13.03	98	12986	0.4937 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.96%#	
80) p-Bromofluorobenzene	17.00	95	5054	0.5018 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	15993	0.9645 ug/L	97
3) Chloromethane	3.37	50	18770	1.1090 ug/L	95
4) Vinyl Chloride	3.56	62	11543	1.0343 ug/L	98
5) 1,3-Butadiene	3.61	54	11473	0.1328 ug/L	74
6) Bromomethane	4.39	94	5762	1.0535 ug/L	98
7) Chloroethane	4.54	64	6646	1.0443 ug/L	91
8) Trichlorofluoromethane	5.00	101	17932	1.0151 ug/L	99
9) Diethyl ether	5.54	59	30589	4.9232 ug/L	86
10) Isoprene	5.56	67	11829	1.0049 ug/L	80
11) Acrolein	5.78	56	2381	2.5224 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	8094	1.0177 ug/L	96
13) Acetone	5.89	43	4297	1.7427 ug/L #	64
14) 1,1-Dichloroethene	6.10	61	16845	1.0151 ug/L	87
15) Tert-Butyl Alcohol	6.25	59	6101	9.0641 ug/L #	85
16) Dimethyl Sulfide	6.38	62	8523	0.8581 ug/L	91
17) Iodomethane	6.64	142	1930	1.2854 ug/L	76
18) Methyl acetate	6.68	43	5237	0.7738 ug/L #	72
19) Methylene Chloride	6.93	84	10113	1.1360 ug/L	83
20) Carbon Disulfide	6.95	76	29246	1.0587 ug/L	95
21) Acrylonitrile	7.14	53	6634	2.2997 ug/L	94
22) Methyl Tert Butyl Ether	7.18	73	19588	0.8905 ug/L	95
23) trans-1,2-Dichloroethene	7.42	96	8402	1.0371 ug/L	89
24) n-Hexane	7.49	57	10716	0.8886 ug/L	89
25) Diisopropyl ether	7.89	45	158004	4.6459 ug/L	91
26) Vinyl Acetate	8.08	43	6567	0.5031 ug/L #	78
27) 1,1-Dichloroethane	8.09	63	18672	1.0243 ug/L	98
28) Ethyl-Tert-Butyl ether	8.52	59	126161	4.5466 ug/L	98
29) 2-Butanone	8.72	43	3775	1.0559 ug/L #	57
30) Propionitrile	8.83	54	4335	4.5805 ug/L	93
31) 2,2-Dichloropropane	8.94	77	16782	1.0862 ug/L	94
32) cis-1,2-Dichloroethene	9.02	96	8731	0.9694 ug/L	76
33) Chloroform	9.25	83	18019	1.0349 ug/L	99
34) 1-Bromopropane	9.41	122	1056	0.7394 ug/L	91
35) Bromochloromethane	9.50	130	5252	1.0268 ug/L	95
36) Tetrahydrofuran	9.55	42	12134	5.3906 ug/L	92
38) 1,1,1-Trichloroethane	9.84	97	17899	1.0900 ug/L	99
39) Cyclohexane	9.86	56	14057	0.8858 ug/L	90
40) 1,1-Dichloropropene	10.07	75	11672	0.9496 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	89682	4.4061 ug/L #	86
42) Carbon Tetrachloride	10.21	117	14304	0.9768 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141169.D Vial: 4
Acq On : 10 Aug 2016 15:30 Operator: TMB
Sample : WG579700-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:08 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	15214	1.0317 ug/L #	93
46)	Benzene	10.46	78	35357	1.0607 ug/L	99
47)	Trichloroethene	11.33	130	8571	0.9908 ug/L	84
48)	Methylcyclohexane	11.41	83	9977	0.8529 ug/L	89
49)	1,2-Dichloropropane	11.57	63	9303	0.9904 ug/L	85
51)	Bromodichloromethane	11.91	83	13641	1.0410 ug/L	98
52)	Dibromomethane	12.02	93	4836	0.9547 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.30	63	2139	1.4923 ug/L #	76
54)	4-Methyl-2-Pentanone	12.33	58	1510	0.5799 ug/L #	38
55)	cis-1,3-Dichloropropene	12.67	75	10896	0.8522 ug/L	98
56)	Dimethyl Disulfide	12.96	79	4238	0.5540 ug/L	86
59)	Toluene	13.14	91	30667	0.9652 ug/L	96
60)	Ethyl Methacrylate	13.30	69	5919	1.0959 ug/L	91
62)	trans-1,3-Dichloropropene	13.37	75	10293	0.8598 ug/L	87
63)	1,1,2-Trichloroethane	13.61	97	7153	1.1238 ug/L	94
64)	2-Hexanone	13.58	43	3730	0.7147 ug/L	81
65)	1,3-Dichloropropane	13.98	76	11038	1.0015 ug/L	88
66)	Tetrachloroethene	14.08	166	9027	1.0607 ug/L	91
67)	Dibromochloromethane	14.40	129	8369	0.9861 ug/L	96
68)	1,2-Dibromoethane	14.69	107	6419	1.0822 ug/L	83
69)	1-Chlorohexane	14.84	91	7093	0.9266 ug/L	69
70)	Chlorobenzene	15.28	112	23908	1.0848 ug/L	94
71)	1,1,1,2-Tetrachloroethane	15.33	131	8798	1.0123 ug/L	97
72)	Ethylbenzene	15.34	106	11548	1.0297 ug/L	97
73)	m-,p-Xylene	15.44	106	26742	1.9956 ug/L	93
74)	o-Xylene	16.10	106	10415	0.8086 ug/L	77
75)	Styrene	16.14	104	17458	0.8486 ug/L	90
76)	Bromoform	16.69	173	4705	0.8734 ug/L	90
77)	Isopropylbenzene	16.60	105	28909	0.8826 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.86	83	7555	1.0748 ug/L	95
81)	1,2,3-Trichloropropane	17.09	110	2140	0.9886 ug/L	81
82)	trans-1,4-Dichloro-2-Buten	17.16	53	1549	1.2464 ug/L	62
83)	n-Propylbenzene	17.20	91	35474	0.9802 ug/L	94
84)	Bromobenzene	17.33	156	9480	1.0713 ug/L	92
85)	1,3,5-Trimethylbenzene	17.43	105	23237	0.9041 ug/L	97
86)	2-Chlorotoluene	17.50	91	26008	0.9980 ug/L	95
87)	4-Chlorotoluene	17.56	91	26330	1.0343 ug/L	92
88)	a-Methylstyrene	17.91	118	11117	0.7438 ug/L	96
89)	tert-Butylbenzene	17.97	134	5266	0.9597 ug/L	72
90)	1,2,4-Trimethylbenzene	18.03	105	27159	0.9447 ug/L	97
91)	sec-Butylbenzene	18.29	105	30381	0.9781 ug/L	97
92)	p-Isopropyltoluene	18.48	119	24312	0.9132 ug/L	93
93)	1,3-Dichlorobenzene	18.67	146	17384	1.0370 ug/L	93
94)	1,4-Dichlorobenzene	18.84	146	18225	1.0588 ug/L	95
95)	n-Butylbenzene	19.10	91	21341	0.8692 ug/L	96
96)	1,2-Dichlorobenzene	19.41	146	16898	1.0402 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	20.60	75	1349	0.9009 ug/L	60
98)	1,2,4-Trichlorobenzene	21.94	180	7369	0.8666 ug/L	92
99)	Hexachlorobutadiene	22.14	225	4748	1.1662 ug/L	98
100)	Naphthalene	22.36	128	10428	0.8954 ug/L	91
101)	1,2,3-Trichlorobenzene	22.74	180	7860	0.8976 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M141169.D 8260WT.M Thu Aug 11 14:32:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141169.D Vial: 4
Acq On : 10 Aug 2016 15:30 Operator: TMB
Sample : WG579700-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

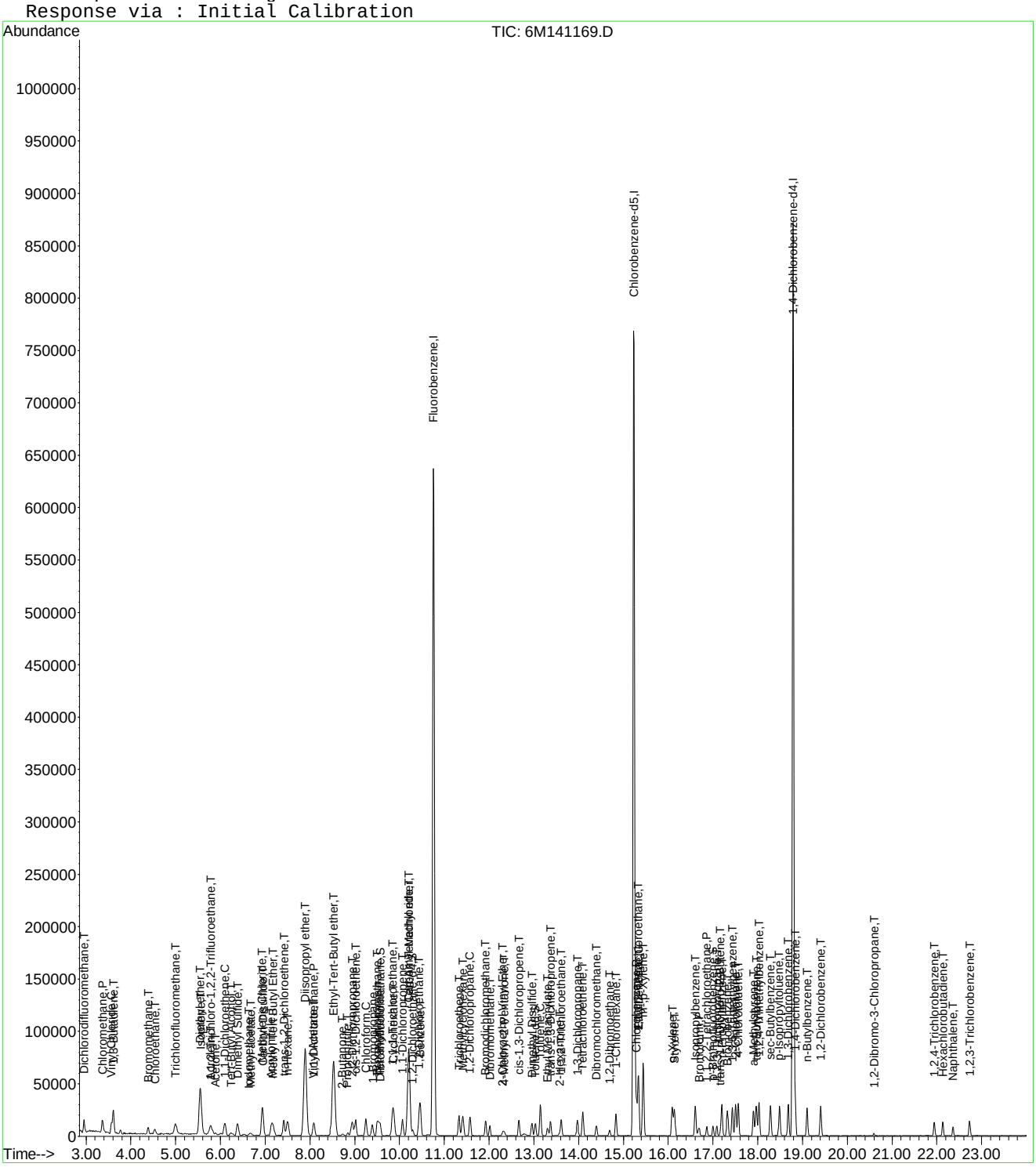

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141169.D Vial: 4
Acq On : 10 Aug 2016 15:30 Operator: TMB
Sample : WG579700-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9645	3.5	100	0.00
3	P	Chloromethane	1.0000	1.1090	-10.9	100	0.01
4	C	Vinyl Chloride	1.0000	1.0343	-3.4	100	0.01
5	T	1,3-Butadiene	-1.0000	0.1328	0.0	0	0.03
6	T	Bromomethane	1.0000	1.0535	-5.3	100	0.02
7	T	Chloroethane	1.0000	1.0443	-4.4	100	0.02
8	T	Trichlorofluoromethane	1.0000	1.0151	-1.5	100	0.01
9	T	Diethyl ether	5.0000	4.9232	1.5	100	0.00
10	T	Isoprene	-1.0000	1.0049	0.0	100	0.01
11	T	Acrolein	-1.0000	2.5224	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0176	-1.8	100	0.01
13	T	Acetone	-1.0000	1.7427	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0151	-1.5	100	0.01
15	T	Tert-Butyl Alcohol	10.0000	9.0641	9.4	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	0.8581	0.0	100	0.00
17	T	Iodomethane	1.0000	1.2854	-28.5#	100	0.00
18	T	Methyl acetate	-1.0000	0.7738	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.1360	-13.6	100	0.00
20	T	Carbon Disulfide	1.0000	1.0587	-5.9	100	0.00
21	T	Acrylonitrile	2.5000	2.2998	8.0	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.8905	11.0	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0371	-3.7	100	0.01
24	T	n-Hexane	-1.0000	0.8886	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.6459	7.1	100	0.00
26	T	Vinyl Acetate	-1.0000	0.5031	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0243	-2.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.5466	9.1	100	0.00
29	T	2-Butanone	-1.0000	1.0559	0.0	100	0.00
30	T	Propionitrile	5.0000	4.5805	8.4	100	-0.02
31	T	2,2-Dichloropropane	1.0000	1.0862	-8.6	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9694	3.1	100	0.00
33	C	Chloroform	1.0000	1.0349	-3.5	100	0.00
34		1-Bromopropane	1.0000	0.7394	26.1#	100	0.01
35	T	Bromochloromethane	1.0000	1.0268	-2.7	100	0.00
36	T	Tetrahydrofuran	5.0000	5.3906	-7.8	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4688	6.2	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	1.0900	-9.0	100	0.00
39	T	Cyclohexane	1.0000	0.8858	11.4	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9496	5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.4061	11.9	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9768	2.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.5819	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	1.0000	1.0317	-3.2	100	0.00
46	T	Benzene	1.0000	1.0608	-6.1	100	0.00
47	T	Trichloroethene	1.0000	0.9908	0.9	100	0.00
48	T	Methylcyclohexane	-1.0000	0.8529	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9904	1.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.93#
51	T	Bromodichloromethane	1.0000	1.0410	-4.1	100	0.00
52	T	Dibromomethane	1.0000	0.9547	4.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.4923	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.5799	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141169.D Vial: 4
Acq On : 10 Aug 2016 15:30 Operator: TMB
Sample : WG579700-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.8522	14.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.5540	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.4937	0.0	0	0.00
59	C	Toluene	1.0000	0.9652	3.5	100	0.00
60	T	Ethyl Methacrylate	1.0000	1.0959	-9.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	1.0000	0.8598	14.0	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	1.1238	-12.4	100	0.00
64	T	2-Hexanone	-1.0000	0.7147	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	1.0015	-0.2	100	0.00
66	T	Tetrachloroethene	1.0000	1.0607	-6.1	100	-0.02
67	T	Dibromochloromethane	1.0000	0.9860	1.4	100	0.00
68	T	1,2-Dibromoethane	1.0000	1.0822	-8.2	100	0.00
69	T	1-Chlorohexane	1.0000	0.9266	7.3	100	0.00
70	P	Chlorobenzene	1.0000	1.0848	-8.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	1.0123	-1.2	100	0.00
72	C	Ethylbenzene	1.0000	1.0297	-3.0	100	0.00
73	T	m-,p-Xylene	2.0000	1.9956	0.2	100	0.00
74	T	o-Xylene	1.0000	0.8086	19.1	100	0.00
75	T	Styrene	1.0000	0.8487	15.1	100	0.00
76	P	Bromoform	1.0000	0.8734	12.7	100	0.00
77	T	Isopropylbenzene	1.0000	0.8826	11.7	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	1.0748	-7.5	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5018	0.0	0	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.9886	1.1	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2464	-24.6#	100	0.00
83	T	n-Propylbenzene	1.0000	0.9802	2.0	100	0.00
84	T	Bromobenzene	1.0000	1.0713	-7.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	0.9041	9.6	100	0.00
86	T	2-Chlorotoluene	1.0000	0.9980	0.2	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0343	-3.4	100	0.00
88	T	a-Methylstyrene	-1.0000	0.7438	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	0.9597	4.0	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	0.9447	5.5	100	0.00
91	T	sec-Butylbenzene	1.0000	0.9781	2.2	100	0.00
92	T	p-Isopropyltoluene	1.0000	0.9132	8.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0370	-3.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0588	-5.9	100	0.00
95	T	n-Butylbenzene	1.0000	0.8692	13.1	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0401	-4.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.9009	0.0	100	0.01
98	T	1,2,4-Trichlorobenzene	1.0000	0.8666	13.3	100	0.00
99	T	Hexachlorobutadiene	1.0000	1.1663	-16.6	100	0.00
100	T	Naphthalene	1.0000	0.8954	10.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	0.8976	10.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M141169.D 8260WT.M Thu Aug 11 14:34:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141170.D Vial: 5
Acq On : 10 Aug 2016 16:01 Operator: TMB
Sample : WG579700-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:17 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	787046	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	559593	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	293009	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.57	111	8845	1.0301 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.12%#	
43) 1,2-Dichloroethane-d4	10.30	65	12324	1.0724 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.28%#	
58) Toluene-d8	13.03	98	26425	0.9924 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.96%#	
80) p-Bromofluorobenzene	17.00	95	10149	0.9694 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.88%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	31572	1.8829 ug/L	96
3) Chloromethane	3.37	50	36153	2.1123 ug/L	99
4) Vinyl Chloride	3.56	62	23214	2.0571 ug/L	97
5) 1,3-Butadiene	3.60	54	22700	1.3056 ug/L	77
6) Bromomethane	4.39	94	11843	2.1413 ug/L	93
7) Chloroethane	4.53	64	13228	2.0556 ug/L	92
8) Trichlorofluoromethane	5.00	101	37050	2.0742 ug/L	99
9) Diethyl ether	5.54	59	163349	25.9992 ug/L	93
10) Isoprene	5.56	67	24077	2.0227 ug/L	87
11) Acrolein	5.78	56	11921	12.4890 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	15820	1.9670 ug/L	98
13) Acetone	5.88	43	8176	3.2791 ug/L #	67
14) 1,1-Dichloroethene	6.10	61	33483	1.9954 ug/L	83
15) Tert-Butyl Alcohol	6.24	59	33996	49.9475 ug/L	94
16) Dimethyl Sulfide	6.38	62	18305	1.8225 ug/L	85
17) Iodomethane	6.64	142	5665	1.6830 ug/L	80
18) Methyl acetate	6.67	43	11446	1.6726 ug/L #	88
19) Methylene Chloride	6.93	84	19877	2.2081 ug/L	85
20) Carbon Disulfide	6.95	76	60751	2.1748 ug/L	98
21) Acrylonitrile	7.13	53	32290	11.0696 ug/L	90
22) Methyl Tert Butyl Ether	7.18	73	42515	1.9113 ug/L	96
23) trans-1,2-Dichloroethene	7.41	96	16168	1.9736 ug/L	77
24) n-Hexane	7.49	57	22645	1.8569 ug/L	94
25) Diisopropyl ether	7.89	45	885460	25.7472 ug/L	95
26) Vinyl Acetate	8.07	43	18115	1.3724 ug/L #	82
27) 1,1-Dichloroethane	8.08	63	39048	2.1182 ug/L	98
28) Ethyl-Tert-Butyl ether	8.52	59	713555	25.4303 ug/L	98
29) 2-Butanone	8.72	43	7005	1.9376 ug/L #	82
30) Propionitrile	8.84	54	24002	25.0801 ug/L	96
31) 2,2-Dichloropropane	8.94	77	31960	2.0456 ug/L	92
32) cis-1,2-Dichloroethene	9.02	96	18628	2.0454 ug/L	81
33) Chloroform	9.25	83	36863	2.0938 ug/L	99
34) 1-Bromopropane	9.39	122	2528	1.7504 ug/L	97
35) Bromochloromethane	9.50	130	10969	2.1207 ug/L	99
36) Tetrahydrofuran	9.54	42	53383	23.4531 ug/L	93
38) 1,1,1-Trichloroethane	9.84	97	33820	2.0368 ug/L	97
39) Cyclohexane	9.86	56	30175	1.8805 ug/L	92
40) 1,1-Dichloropropene	10.06	75	24470	1.9688 ug/L	94
41) Tert-Amyl-Methyl ether	10.21	73	519000	25.2160 ug/L	91
42) Carbon Tetrachloride	10.22	117	30023	2.0276 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M141170.D 8260WT.M Thu Aug 11 14:32:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141170.D Vial: 5
Acq On : 10 Aug 2016 16:01 Operator: TMB
Sample : WG579700-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:17 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	31913	2.1401 ug/L #	90
46)	Benzene	10.46	78	72621	2.1546 ug/L	97
47)	Trichloroethene	11.33	130	17316	1.9795 ug/L	85
48)	Methylcyclohexane	11.41	83	20205	1.7081 ug/L	87
49)	1,2-Dichloropropane	11.58	63	19197	2.0211 ug/L	87
50)	1,4-Dioxane	11.91	88	2172	39.2265 ug/L	87
51)	Bromodichloromethane	11.92	83	26515	2.0010 ug/L	98
52)	Dibromomethane	12.02	93	10680	2.0850 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.30	63	5617	2.2284 ug/L	85
54)	4-Methyl-2-Pentanone	12.34	58	4052	1.5390 ug/L	81
55)	cis-1,3-Dichloropropene	12.67	75	24118	1.8655 ug/L	97
56)	Dimethyl Disulfide	12.95	79	10201	1.3187 ug/L	97
59)	Toluene	13.15	91	67558	2.1005 ug/L	98
60)	Ethyl Methacrylate	13.31	69	13811	1.9442 ug/L	92
62)	trans-1,3-Dichloropropene	13.37	75	22242	1.8354 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	13864	2.1517 ug/L	97
64)	2-Hexanone	13.57	43	8612	1.6301 ug/L	87
65)	1,3-Dichloropropane	13.98	76	22643	2.0297 ug/L	89
66)	Tetrachloroethene	14.09	166	17479	2.0289 ug/L	90
67)	Dibromochloromethane	14.39	129	17765	2.0678 ug/L	97
68)	1,2-Dibromoethane	14.70	107	11576	1.9281 ug/L	100
69)	1-Chlorohexane	14.84	91	15742	1.7538 ug/L	71
70)	Chlorobenzene	15.28	112	47635	2.1352 ug/L	78
71)	1,1,1,2-Tetrachloroethane	15.33	131	18915	2.1501 ug/L	93
72)	Ethylbenzene	15.33	106	22598	1.9906 ug/L	85
73)	m-,p-Xylene	15.45	106	56241	4.1461 ug/L	91
74)	o-Xylene	16.09	106	23464	1.7998 ug/L	86
75)	Styrene	16.14	104	41587	1.9087 ug/L	91
76)	Bromoform	16.70	173	10598	1.9435 ug/L	97
77)	Isopropylbenzene	16.60	105	63110	1.9034 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.87	83	15596	2.1345 ug/L	94
81)	1,2,3-Trichloropropane	17.09	110	4749	2.1106 ug/L	83
82)	trans-1,4-Dichloro-2-Buten	17.16	53	3820	2.0301 ug/L	84
83)	n-Propylbenzene	17.20	91	78762	2.0937 ug/L	95
84)	Bromobenzene	17.33	156	19705	2.1423 ug/L	94
85)	1,3,5-Trimethylbenzene	17.43	105	52543	1.9667 ug/L	98
86)	2-Chlorotoluene	17.50	91	58107	2.1451 ug/L	99
87)	4-Chlorotoluene	17.56	91	59224	2.2381 ug/L	92
88)	a-Methylstyrene	17.91	118	26048	1.6767 ug/L	85
89)	tert-Butylbenzene	17.97	134	11233	1.9694 ug/L	60
90)	1,2,4-Trimethylbenzene	18.03	105	62466	2.0904 ug/L	97
91)	sec-Butylbenzene	18.29	105	66258	2.0521 ug/L	95
92)	p-Isopropyltoluene	18.49	119	53831	1.9453 ug/L	96
93)	1,3-Dichlorobenzene	18.68	146	36696	2.1059 ug/L	91
94)	1,4-Dichlorobenzene	18.84	146	39404	2.2022 ug/L	80
95)	n-Butylbenzene	19.10	91	48284	1.8919 ug/L	96
96)	1,2-Dichlorobenzene	19.41	146	35902	2.1260 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	20.59	75	2827	1.8163 ug/L	81
98)	1,2,4-Trichlorobenzene	21.94	180	15898	1.6640 ug/L	99
99)	Hexachlorobutadiene	22.13	225	9303	2.1983 ug/L	95
100)	Naphthalene	22.36	128	23546	1.5111 ug/L	96
101)	1,2,3-Trichlorobenzene	22.74	180	16068	1.7652 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141170.D Vial: 5
Acq On : 10 Aug 2016 16:01 Operator: TMB
Sample : WG579700-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

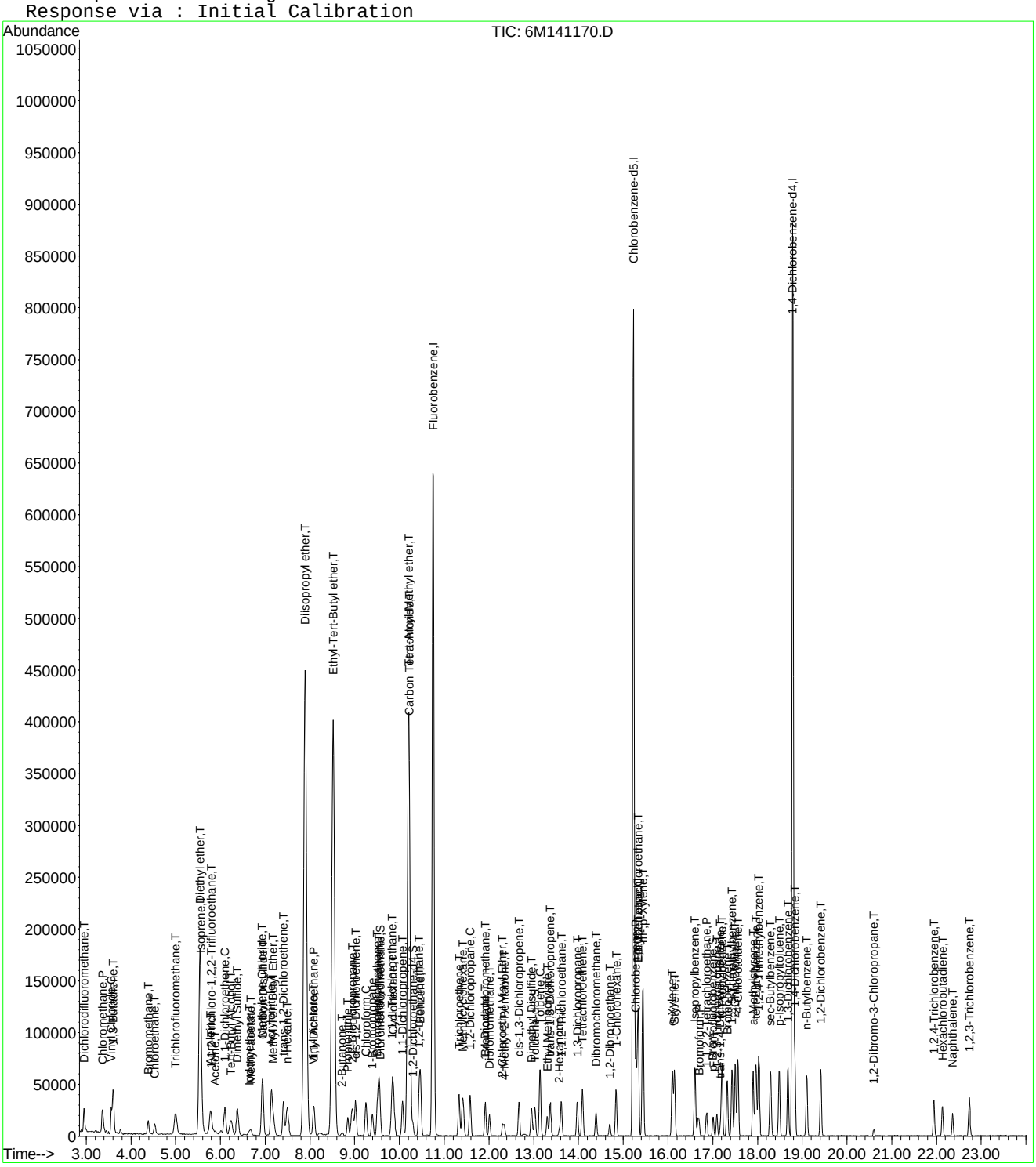

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141170.D Vial: 5
Acq On : 10 Aug 2016 16:01 Operator: TMB
Sample : WG579700-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8829	5.9	100	0.00
3	P	Chloromethane	2.0000	2.1123	-5.6	100	0.01
4	C	Vinyl Chloride	2.0000	2.0571	-2.9	100	0.01
5	T	1,3-Butadiene	-1.0000	1.3056	0.0	0	0.02
6	T	Bromomethane	2.0000	2.1413	-7.1	100	0.02
7	T	Chloroethane	2.0000	2.0556	-2.8	100	0.01
8	T	Trichlorofluoromethane	2.0000	2.0742	-3.7	100	0.01
9	T	Diethyl ether	25.0000	25.9992	-4.0	100	0.00
10	T	Isoprene	-1.0000	2.0227	0.0	100	0.01
11	T	Acrolein	12.5000	12.4890	0.1	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9670	1.6	100	0.02
13	T	Acetone	-1.0000	3.2791	0.0	100	-0.02
14	C	1,1-Dichloroethene	2.0000	1.9954	0.2	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	49.9475	0.1	100	-0.05
16	T	Dimethyl Sulfide	-1.0000	1.8225	0.0	100	0.00
17	T	Iodomethane	2.0000	1.6830	15.8	100	0.01
18	T	Methyl acetate	-1.0000	1.6726	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.2081	-10.4	100	0.00
20	T	Carbon Disulfide	2.0000	2.1748	-8.7	100	0.00
21	T	Acrylonitrile	12.5000	11.0696	11.4	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9113	4.4	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9736	1.3	100	0.00
24	T	n-Hexane	-1.0000	1.8569	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	25.7472	-3.0	100	0.00
26	T	Vinyl Acetate	-1.0000	1.3724	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1182	-5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.4303	-1.7	100	0.00
29	T	2-Butanone	-1.0000	1.9376	0.0	100	0.00
30	T	Propionitrile	25.0000	25.0801	-0.3	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.0456	-2.3	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0454	-2.3	100	0.00
33	C	Chloroform	2.0000	2.0938	-4.7	100	0.00
34		1-Bromopropane	2.0000	1.7504	12.5	100	0.00
35	T	Bromochloromethane	2.0000	2.1207	-6.0	100	0.00
36	T	Tetrahydrofuran	25.0000	23.4532	6.2	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0301	-3.0	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0368	-1.8	100	0.00
39	T	Cyclohexane	2.0000	1.8805	6.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9688	1.6	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	25.2160	-0.9	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0276	-1.4	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0724	-7.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	2.0000	2.1401	-7.0	100	0.00
46	T	Benzene	2.0000	2.1546	-7.7	100	0.00
47	T	Trichloroethene	2.0000	1.9795	1.0	100	0.00
48	T	Methylcyclohexane	-1.0000	1.7081	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0211	-1.1	100	0.00
50	T	1,4-Dioxane	-1.0000	39.2265	0.0	100	-0.02
51	T	Bromodichloromethane	2.0000	2.0010	-0.0	100	0.00
52	T	Dibromomethane	2.0000	2.0850	-4.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.2284	-11.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.5390	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141170.D Vial: 5
Acq On : 10 Aug 2016 16:01 Operator: TMB
Sample : WG579700-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8655	6.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.3187	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9924	0.8	100	0.00
59	C	Toluene	2.0000	2.1005	-5.0	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9442	2.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	2.0000	1.8354	8.2	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	2.1517	-7.6	100	0.00
64	T	2-Hexanone	-1.0000	1.6301	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0297	-1.5	100	0.00
66	T	Tetrachloroethene	2.0000	2.0289	-1.4	100	0.00
67	T	Dibromochloromethane	2.0000	2.0678	-3.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9281	3.6	100	0.00
69	T	1-Chlorohexane	2.0000	1.7538	12.3	100	0.00
70	P	Chlorobenzene	2.0000	2.1352	-6.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	2.1501	-7.5	100	0.00
72	C	Ethylbenzene	2.0000	1.9907	0.5	100	0.00
73	T	m-,p-Xylene	4.0000	4.1461	-3.7	100	0.00
74	T	o-Xylene	2.0000	1.7998	10.0	100	0.00
75	T	Styrene	2.0000	1.9087	4.6	100	0.00
76	P	Bromoform	2.0000	1.9434	2.8	100	0.00
77	T	Isopropylbenzene	2.0000	1.9034	4.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.1345	-6.7	100	0.00
80	S	p-Bromofluorobenzene	1.0000	0.9694	3.1	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.1105	-5.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0301	-1.5	100	0.00
83	T	n-Propylbenzene	2.0000	2.0937	-4.7	100	0.00
84	T	Bromobenzene	2.0000	2.1423	-7.1	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	1.9667	1.7	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1451	-7.3	100	0.00
87	T	4-Chlorotoluene	2.0000	2.2381	-11.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.6767	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9694	1.5	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.0904	-4.5	100	0.00
91	T	sec-Butylbenzene	2.0000	2.0521	-2.6	100	0.00
92	T	p-Isopropyltoluene	2.0000	1.9453	2.7	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1059	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.2022	-10.1	100	0.00
95	T	n-Butylbenzene	2.0000	1.8919	5.4	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.1260	-6.3	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.8163	9.2	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.6640	16.8	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.1983	-9.9	100	0.00
100	T	Naphthalene	2.0000	1.5111	24.4#	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.7652	11.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M141170.D 8260WT.M Thu Aug 11 14:35:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141171.D Vial: 6
Acq On : 10 Aug 2016 16:34 Operator: TMB
Sample : WG579700-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:25 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	782399	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	565676	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	309669	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	21471	2.5153 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.08%#		
43) 1,2-Dichloroethane-d4	10.30	65	29165	2.5529 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.20%#		
58) Toluene-d8	13.02	98	68251	2.5357 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.16%#		
80) p-Bromofluorobenzene	17.01	95	25726	2.3252 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 9.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	78049	4.6824 ug/L	99
3) Chloromethane	3.36	50	84567	4.9703 ug/L	98
4) Vinyl Chloride	3.56	62	55512	4.9484 ug/L	100
5) 1,3-Butadiene	3.60	54	53546	4.6123 ug/L	87
6) Bromomethane	4.39	94	26635	4.8444 ug/L	97
7) Chloroethane	4.53	64	30987	4.8438 ug/L	92
8) Trichlorofluoromethane	5.01	101	91002	5.1249 ug/L	97
9) Diethyl ether	5.54	59	316116	50.6130 ug/L	94
10) Isoprene	5.56	67	58002	4.9016 ug/L	81
11) Acrolein	5.77	56	23042	24.2833 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	40419	5.0554 ug/L	94
13) Acetone	5.89	43	14396	5.8081 ug/L	84
14) 1,1-Dichloroethene	6.10	61	84292	5.0530 ug/L	89
15) Tert-Butyl Alcohol	6.24	59	65675	97.0639 ug/L	95
16) Dimethyl Sulfide	6.38	62	46531	4.6602 ug/L	87
17) Iodomethane	6.63	142	23187	3.5741 ug/L	82
18) Methyl acetate	6.67	43	33800	4.9684 ug/L	93
19) Methylene Chloride	6.93	84	45636	5.0996 ug/L	90
20) Carbon Disulfide	6.95	76	137896	4.9657 ug/L	99
21) Acrylonitrile	7.14	53	68353	23.5719 ug/L	93
22) Methyl Tert Butyl Ether	7.17	73	107118	4.8442 ug/L	97
23) trans-1,2-Dichloroethene	7.41	96	39727	4.8782 ug/L	81
24) n-Hexane	7.50	57	58216	4.8021 ug/L	94
25) Diisopropyl ether	7.89	45	1767752	51.7076 ug/L	96
26) Vinyl Acetate	8.07	43	52815	4.0252 ug/L	96
27) 1,1-Dichloroethane	8.08	63	94063	5.1330 ug/L	96
28) Ethyl-Tert-Butyl ether	8.52	59	1437665	51.5411 ug/L	98
29) 2-Butanone	8.72	43	18137	5.0465 ug/L	94
30) Propionitrile	8.85	54	48682	51.1709 ug/L	97
31) 2,2-Dichloropropane	8.94	77	80934	5.2110 ug/L	96
32) cis-1,2-Dichloroethene	9.02	96	44521	4.9175 ug/L	78
33) Chloroform	9.25	83	87576	5.0038 ug/L	98
34) 1-Bromopropane	9.40	122	7383	5.1424 ug/L	97
35) Bromochloromethane	9.51	130	26308	5.1165 ug/L	98
36) Tetrahydrofuran	9.54	42	109090	48.2120 ug/L	93
38) 1,1,1-Trichloroethane	9.84	97	83269	5.0446 ug/L	100
39) Cyclohexane	9.87	56	76948	4.8238 ug/L	94
40) 1,1-Dichloropropene	10.06	75	59822	4.8417 ug/L	92
41) Tert-Amyl-Methyl ether	10.21	73	1050172	51.3264 ug/L	93
42) Carbon Tetrachloride	10.22	117	74767	5.0793 ug/L	98

(#) = qualifier out of range (m) = manual integration

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141171.D Vial: 6
Acq On : 10 Aug 2016 16:34 Operator: TMB
Sample : WG579700-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:25 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	75756	5.1103 ug/L	94
46)	Benzene	10.47	78	172987	5.1628 ug/L	98
47)	Trichloroethene	11.33	130	42111	4.8425 ug/L	84
48)	Methylcyclohexane	11.41	83	53787	4.5741 ug/L	90
49)	1,2-Dichloropropane	11.57	63	46286	4.9021 ug/L	84
50)	1,4-Dioxane	11.93	88	4366	79.3187 ug/L	78
51)	Bromodichloromethane	11.92	83	65445	4.9682 ug/L	99
52)	Dibromomethane	12.01	93	26759	5.2551 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.30	63	16368	4.5404 ug/L	95
54)	4-Methyl-2-Pentanone	12.33	58	11382	4.3486 ug/L	96
55)	cis-1,3-Dichloropropene	12.67	75	62620	4.8722 ug/L	96
56)	Dimethyl Disulfide	12.95	79	28297	3.6798 ug/L	100
59)	Toluene	13.15	91	174400	5.3642 ug/L	98
60)	Ethyl Methacrylate	13.30	69	38666	4.5957 ug/L	92
62)	trans-1,3-Dichloropropene	13.37	75	60695	4.9546 ug/L	92
63)	1,1,2-Trichloroethane	13.62	97	33303	5.1131 ug/L	100
64)	2-Hexanone	13.57	43	23007	4.3080 ug/L	89
65)	1,3-Dichloropropane	13.97	76	57487	5.0976 ug/L	91
66)	Tetrachloroethene	14.10	166	44972	5.1642 ug/L	94
67)	Dibromochloromethane	14.39	129	41813	4.8146 ug/L	97
68)	1,2-Dibromoethane	14.70	107	28848	4.7532 ug/L	99
69)	1-Chlorohexane	14.84	91	43737	4.4131 ug/L	72
70)	Chlorobenzene	15.28	112	115283	5.1118 ug/L	87
71)	1,1,1,2-Tetrachloroethane	15.33	131	44448	4.9982 ug/L	94
72)	Ethylbenzene	15.33	106	59026	5.1437 ug/L	92
73)	m-,p-Xylene	15.44	106	142570	10.3973 ug/L	89
74)	o-Xylene	16.10	106	64157	4.8681 ug/L	91
75)	Styrene	16.14	104	115837	5.1447 ug/L	91
76)	Bromoform	16.69	173	26353	4.7806 ug/L	97
77)	Isopropylbenzene	16.61	105	171466	5.1158 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.86	83	40364	5.2272 ug/L	100
81)	1,2,3-Trichloropropane	17.09	110	12304	5.1740 ug/L	96
82)	trans-1,4-Dichloro-2-Buten	17.16	53	10774	4.2906 ug/L	93
83)	n-Propylbenzene	17.20	91	215499	5.4203 ug/L	95
84)	Bromobenzene	17.32	156	50379	5.1825 ug/L	96
85)	1,3,5-Trimethylbenzene	17.43	105	148789	5.2697 ug/L	96
86)	2-Chlorotoluene	17.50	91	147959	5.1682 ug/L	98
87)	4-Chlorotoluene	17.56	91	153220	5.4787 ug/L	92
88)	a-Methylstyrene	17.91	118	74984	4.5670 ug/L	92
89)	tert-Butylbenzene	17.98	134	30752	5.1014 ug/L	65
90)	1,2,4-Trimethylbenzene	18.03	105	169086	5.3539 ug/L	96
91)	sec-Butylbenzene	18.28	105	178857	5.2414 ug/L	97
92)	p-Isopropyltoluene	18.49	119	151956	5.1959 ug/L	97
93)	1,3-Dichlorobenzene	18.68	146	97039	5.2692 ug/L	99
94)	1,4-Dichlorobenzene	18.83	146	96365	5.0959 ug/L	90
95)	n-Butylbenzene	19.10	91	136143	5.0474 ug/L	93
96)	1,2-Dichlorobenzene	19.41	146	91162	5.1080 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.59	75	7874	4.7868 ug/L	80
98)	1,2,4-Trichlorobenzene	21.94	180	45182	4.2632 ug/L	99
99)	Hexachlorobutadiene	22.13	225	22212	4.9664 ug/L	95
100)	Naphthalene	22.36	128	76959	3.8987 ug/L	99
101)	1,2,3-Trichlorobenzene	22.74	180	47152	4.9014 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141171.D Vial: 6
Acq On : 10 Aug 2016 16:34 Operator: TMB
Sample : WG579700-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

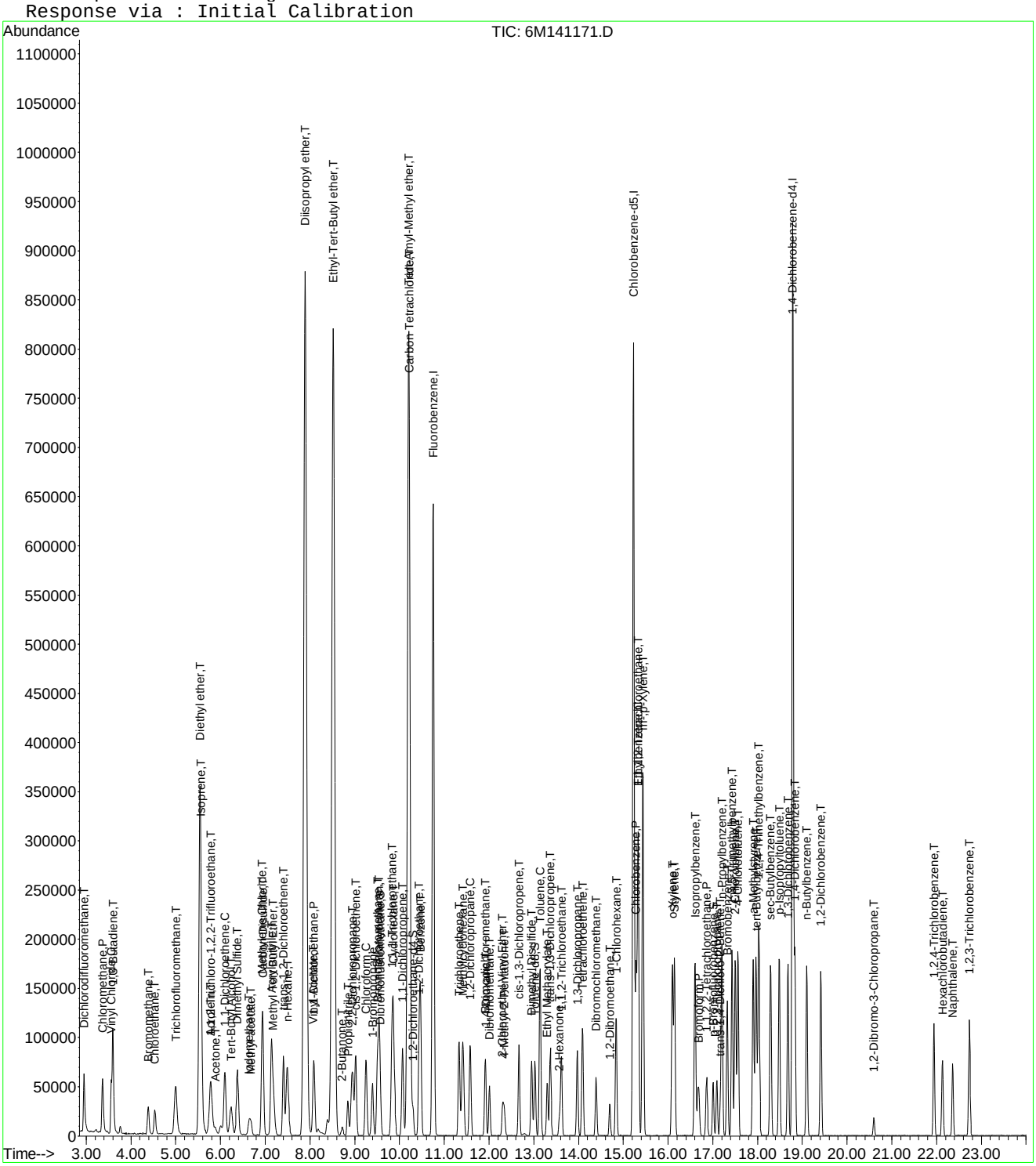

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141171.D Vial: 6
Acq On : 10 Aug 2016 16:34 Operator: TMB
Sample : WG579700-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.6824	6.4	100	0.00
3	P	Chloromethane	5.0000	4.9703	0.6	100	0.00
4	C	Vinyl Chloride	5.0000	4.9484	1.0	100	0.00
5	T	1,3-Butadiene	5.0000	4.6123	7.8	100	0.02
6	T	Bromomethane	5.0000	4.8444	3.1	100	0.02
7	T	Chloroethane	5.0000	4.8438	3.1	100	0.00
8	T	Trichlorofluoromethane	5.0000	5.1249	-2.5	100	0.02
9	T	Diethyl ether	50.0000	50.6130	-1.2	100	0.00
10	T	Isoprene	5.0000	4.9016	2.0	100	0.00
11	T	Acrolein	25.0000	24.2833	2.9	100	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.0554	-1.1	100	0.00
13	T	Acetone	5.0000	5.8081	-16.2	100	-0.01
14	C	1,1-Dichloroethene	5.0000	5.0530	-1.1	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	97.0639	2.9	100	-0.04
16	T	Dimethyl Sulfide	5.0000	4.6601	6.8	100	0.00
17	T	Iodomethane	5.0000	3.5741	28.5#	100	0.00
18	T	Methyl acetate	5.0000	4.9684	0.6	100	0.00
19	T	Methylene Chloride	5.0000	5.0996	-2.0	100	0.00
20	T	Carbon Disulfide	5.0000	4.9657	0.7	100	0.00
21	T	Acrylonitrile	25.0000	23.5719	5.7	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.8442	3.1	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.8782	2.4	100	0.00
24	T	n-Hexane	5.0000	4.8021	4.0	100	0.00
25	T	Diisopropyl ether	50.0000	51.7076	-3.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.0252	19.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.1330	-2.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.5411	-3.1	100	0.00
29	T	2-Butanone	5.0000	5.0465	-0.9	100	-0.01
30	T	Propionitrile	50.0000	51.1709	-2.3	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.2110	-4.2	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.9175	1.6	100	0.00
33	C	Chloroform	5.0000	5.0038	-0.1	100	0.00
34		1-Bromopropane	5.0000	5.1424	-2.8	100	0.00
35	T	Bromochloromethane	5.0000	5.1165	-2.3	100	0.00
36	T	Tetrahydrofuran	50.0000	48.2120	3.6	100	0.00
37	S	Dibromofluoromethane	2.5000	2.5153	-0.6	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	5.0446	-0.9	100	0.00
39	T	Cyclohexane	5.0000	4.8238	3.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.8417	3.2	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	51.3264	-2.7	100	0.00
42	T	Carbon Tetrachloride	5.0000	5.0793	-1.6	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5529	-2.1	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	-0.01
45	T	1,2-Dichloroethane	5.0000	5.1103	-2.2	100	0.00
46	T	Benzene	5.0000	5.1628	-3.3	100	0.00
47	T	Trichloroethene	5.0000	4.8425	3.1	100	0.00
48	T	Methylcyclohexane	5.0000	4.5741	8.5	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9021	2.0	100	0.00
50	T	1,4-Dioxane	100.0000	79.3187	20.7#	100	0.00
51	T	Bromodichloromethane	5.0000	4.9682	0.6	100	0.00
52	T	Dibromomethane	5.0000	5.2552	-5.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.5404	9.2	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.3486	13.0	100	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141171.D Vial: 6
Acq On : 10 Aug 2016 16:34 Operator: TMB
Sample : WG579700-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8723	2.6	100	0.00
56	T	Dimethyl Disulfide	5.0000	3.6798	26.4#	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.5357	-1.4	100	-0.01
59	C	Toluene	5.0000	5.3642	-7.3	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.5957	8.1	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	5.0000	4.9546	0.9	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	5.1131	-2.3	100	0.00
64	T	2-Hexanone	5.0000	4.3080	13.8	100	-0.01
65	T	1,3-Dichloropropane	5.0000	5.0976	-2.0	100	0.00
66	T	Tetrachloroethene	5.0000	5.1642	-3.3	100	0.00
67	T	Dibromochloromethane	5.0000	4.8146	3.7	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.7532	4.9	100	0.00
69	T	1-Chlorohexane	5.0000	4.4131	11.7	100	0.00
70	P	Chlorobenzene	5.0000	5.1118	-2.2	100	-0.01
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.9982	0.0	100	0.00
72	C	Ethylbenzene	5.0000	5.1437	-2.9	100	0.00
73	T	m-,p-Xylene	10.0000	10.3973	-4.0	100	0.00
74	T	o-Xylene	5.0000	4.8681	2.6	100	0.00
75	T	Styrene	5.0000	5.1447	-2.9	100	-0.01
76	P	Bromoform	5.0000	4.7806	4.4	100	-0.01
77	T	Isopropylbenzene	5.0000	5.1158	-2.3	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.2272	-4.5	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3252	7.0	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.1740	-3.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.2906	14.2	100	0.00
83	T	n-Propylbenzene	5.0000	5.4204	-8.4	100	0.00
84	T	Bromobenzene	5.0000	5.1825	-3.6	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.2697	-5.4	100	-0.01
86	T	2-Chlorotoluene	5.0000	5.1682	-3.4	100	-0.01
87	T	4-Chlorotoluene	5.0000	5.4787	-9.6	100	-0.01
88	T	a-Methylstyrene	5.0000	4.5670	8.7	100	0.00
89	T	tert-Butylbenzene	5.0000	5.1014	-2.0	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.3539	-7.1	100	-0.01
91	T	sec-Butylbenzene	5.0000	5.2414	-4.8	100	-0.01
92	T	p-Isopropyltoluene	5.0000	5.1959	-3.9	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.2692	-5.4	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.0959	-1.9	100	-0.01
95	T	n-Butylbenzene	5.0000	5.0474	-0.9	100	-0.01
96	T	1,2-Dichlorobenzene	5.0000	5.1080	-2.2	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.7868	4.3	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.2632	14.7	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.9664	0.7	100	0.00
100	T	Naphthalene	5.0000	3.8987	22.0#	100	-0.01
101	T	1,2,3-Trichlorobenzene	5.0000	4.9014	2.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M141171.D 8260WT.M Thu Aug 11 14:35:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141172.D Vial: 7
Acq On : 10 Aug 2016 17:05 Operator: TMB
Sample : WG579700-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:34 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	806519	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	597844	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	342298	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.58	111	93206	10.5925 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 42.36%#		
43) 1,2-Dichloroethane-d4	10.30	65	125176	10.6293 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 42.52%#		
58) Toluene-d8	13.03	98	298314	10.4868 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.96%#		
80) p-Bromofluorobenzene	17.00	95	127444	10.4207 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	387554	22.5554 ug/L	99
3) Chloromethane	3.37	50	373332	21.2860 ug/L	99
4) Vinyl Chloride	3.56	62	247982	21.4443 ug/L	99
5) 1,3-Butadiene	3.59	54	224742	22.5131 ug/L	92
6) Bromomethane	4.39	94	106341	18.7629 ug/L	99
7) Chloroethane	4.53	64	138181	20.9543 ug/L	90
8) Trichlorofluoromethane	5.00	101	398474	21.7693 ug/L	99
9) Diethyl ether	5.54	59	515242	80.0278 ug/L	94
10) Isoprene	5.56	67	253983	20.8215 ug/L	84
11) Acrolein	5.78	56	37170	38.0009 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	172759	20.9616 ug/L	98
13) Acetone	5.89	43	52563	20.5723 ug/L	87
14) 1,1-Dichloroethene	6.10	61	372223	21.6463 ug/L	91
15) Tert-Butyl Alcohol	6.25	59	111754	160.2265 ug/L	95
16) Dimethyl Sulfide	6.38	62	213974	20.7889 ug/L	87
17) Iodomethane	6.63	142	179865	19.8717 ug/L	79
18) Methyl acetate	6.68	43	143394	20.4478 ug/L	97
19) Methylene Chloride	6.93	84	191055	20.7111 ug/L	84
20) Carbon Disulfide	6.95	76	606028	21.1709 ug/L	100
21) Acrylonitrile	7.13	53	120162	40.1993 ug/L	96
22) Methyl Tert Butyl Ether	7.17	73	494536	21.6955 ug/L	99
23) trans-1,2-Dichloroethene	7.41	96	183386	21.8453 ug/L	85
24) n-Hexane	7.49	57	258355	20.6739 ug/L	94
25) Diisopropyl ether	7.89	45	2876242	81.6154 ug/L	97
26) Vinyl Acetate	8.07	43	254821	18.8397 ug/L	97
27) 1,1-Dichloroethane	8.08	63	399713	21.1598 ug/L	99
28) Ethyl-Tert-Butyl ether	8.51	59	2362564	82.1663 ug/L	97
29) 2-Butanone	8.72	43	73671	19.8854 ug/L	95
30) Propionitrile	8.84	54	78641	80.1894 ug/L	96
31) 2,2-Dichloropropane	8.94	77	334179	20.8728 ug/L	97
32) cis-1,2-Dichloroethene	9.01	96	202783	21.7282 ug/L	86
33) Chloroform	9.25	83	383656	21.2652 ug/L	99
34) 1-Bromopropane	9.40	122	32027	21.6402 ug/L	99
35) Bromochloromethane	9.50	130	117693	22.2051 ug/L	99
36) Tetrahydrofuran	9.54	42	184610	79.1478 ug/L	94
38) 1,1,1-Trichloroethane	9.84	97	362110	21.2811 ug/L	98
39) Cyclohexane	9.86	56	348104	21.1695 ug/L	94
40) 1,1-Dichloropropene	10.07	75	274708	21.5686 ug/L	94
41) Tert-Amyl-Methyl ether	10.20	73	1726477	81.8568 ug/L	94
42) Carbon Tetrachloride	10.22	117	332175	21.8914 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M141172.D 8260WT.M Thu Aug 11 14:32:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141172.D Vial: 7
Acq On : 10 Aug 2016 17:05 Operator: TMB
Sample : WG579700-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:34 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	325056	21.2718 ug/L	93
46)	Benzene	10.46	78	745728	21.5905 ug/L	95
47)	Trichloroethene	11.33	130	187284	20.8926 ug/L	83
48)	Methylcyclohexane	11.41	83	252272	20.8120 ug/L	93
49)	1,2-Dichloropropane	11.58	63	210493	21.6262 ug/L	88
50)	1,4-Dioxane	11.92	88	8724	153.7521 ug/L	93
51)	Bromodichloromethane	11.92	83	292137	21.5142 ug/L	100
52)	Dibromomethane	12.02	93	112756	21.4817 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.30	63	85926	18.9020 ug/L	99
54)	4-Methyl-2-Pentanone	12.33	58	55181	20.4519 ug/L	99
55)	cis-1,3-Dichloropropene	12.67	75	298662	22.5429 ug/L	98
56)	Dimethyl Disulfide	12.96	79	159634	20.1384 ug/L	99
59)	Toluene	13.14	91	774244	22.5328 ug/L	99
60)	Ethyl Methacrylate	13.30	69	191533	19.8962 ug/L	91
62)	trans-1,3-Dichloropropene	13.37	75	286205	22.1060 ug/L	93
63)	1,1,2-Trichloroethane	13.61	97	145264	21.1029 ug/L	98
64)	2-Hexanone	13.57	43	108188	19.1678 ug/L	90
65)	1,3-Dichloropropane	13.98	76	258490	21.6881 ug/L	90
66)	Tetrachloroethene	14.09	166	197880	21.5000 ug/L	92
67)	Dibromochloromethane	14.40	129	201585	21.9626 ug/L	99
68)	1,2-Dibromoethane	14.69	107	136397	21.2643 ug/L	99
69)	1-Chlorohexane	14.83	91	223781	20.4702 ug/L	85
70)	Chlorobenzene	15.28	112	508156	21.3199 ug/L	91
71)	1,1,1,2-Tetrachloroethane	15.33	131	201142	21.4015 ug/L	94
72)	Ethylbenzene	15.33	106	267524	22.0583 ug/L	92
73)	m-,p-Xylene	15.44	106	648748	44.7661 ug/L	90
74)	o-Xylene	16.09	106	317368	22.7857 ug/L	89
75)	Styrene	16.14	104	558194	23.2248 ug/L	91
76)	Bromoform	16.69	173	123224	21.1509 ug/L	97
77)	Isopropylbenzene	16.60	105	838736	23.6776 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.87	83	177405	20.7841 ug/L	98
81)	1,2,3-Trichloropropane	17.09	110	56094	21.3396 ug/L	97
82)	trans-1,4-Dichloro-2-Buten	17.16	53	58528	18.4422 ug/L	90
83)	n-Propylbenzene	17.20	91	1035915	23.5722 ug/L	98
84)	Bromobenzene	17.33	156	224195	20.8645 ug/L	92
85)	1,3,5-Trimethylbenzene	17.43	105	739935	23.7083 ug/L	96
86)	2-Chlorotoluene	17.50	91	679726	21.4797 ug/L	95
87)	4-Chlorotoluene	17.56	91	700763	22.6685 ug/L	95
88)	a-Methylstyrene	17.91	118	386108	21.2748 ug/L	96
89)	tert-Butylbenzene	17.97	134	148851	22.3390 ug/L	70
90)	1,2,4-Trimethylbenzene	18.03	105	788147	22.5768 ug/L	96
91)	sec-Butylbenzene	18.29	105	851986	22.5876 ug/L	98
92)	p-Isopropyltoluene	18.48	119	742400	22.9652 ug/L	97
93)	1,3-Dichlorobenzene	18.68	146	436097	21.4226 ug/L	95
94)	1,4-Dichlorobenzene	18.84	146	437284	20.9199 ug/L	93
95)	n-Butylbenzene	19.10	91	678804	22.7674 ug/L	96
96)	1,2-Dichlorobenzene	19.41	146	413116	20.9412 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.59	75	38740	21.3062 ug/L	78
98)	1,2,4-Trichlorobenzene	21.94	180	255921	21.3295 ug/L	98
99)	Hexachlorobutadiene	22.14	225	107229	21.6901 ug/L	99
100)	Naphthalene	22.36	128	504791	21.3084 ug/L	100
101)	1,2,3-Trichlorobenzene	22.74	180	251824	23.6816 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M141172.D 8260WT.M Thu Aug 11 14:32:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141172.D Vial: 7
Acq On : 10 Aug 2016 17:05 Operator: TMB
Sample : WG579700-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

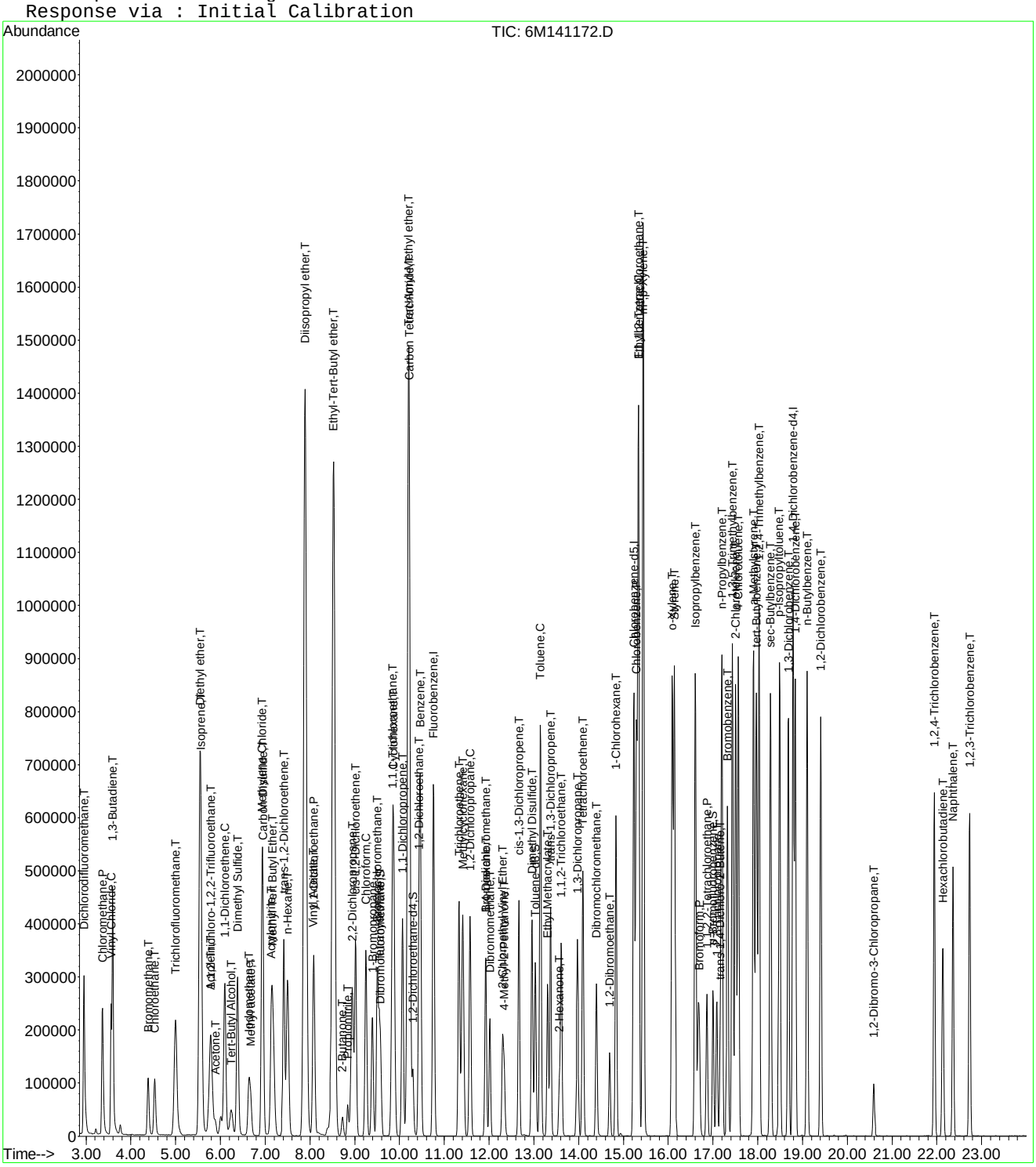

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141173.D Vial: 8
Acq On : 10 Aug 2016 17:37 Operator: TMB
Sample : WG579700-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:42 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	821017	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	614077	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	367321	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.57	111	233645	26.0839 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.32%		
43) 1,2-Dichloroethane-d4	10.30	65	301985	25.1903 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.76%		
58) Toluene-d8	13.02	98	738556	25.2767 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.12%		
80) p-Bromofluorobenzene	17.01	95	338510	25.7932 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.16%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	934147	53.4067 ug/L	99
3) Chloromethane	3.36	50	904708	50.6721 ug/L	99
4) Vinyl Chloride	3.56	62	582234	49.4597 ug/L	99
5) 1,3-Butadiene	3.59	54	466972	48.2600 ug/L	97
6) Bromomethane	4.39	94	261545	45.3324 ug/L	100
7) Chloroethane	4.53	64	333048	49.6127 ug/L	91
8) Trichlorofluoromethane	5.00	101	925140	49.6495 ug/L	99
9) Diethyl ether	5.54	59	671226	102.4144 ug/L	95
10) Isoprene	5.57	67	630350	50.7636 ug/L	84
11) Acrolein	5.78	56	49557	49.7701 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	406510	48.4526 ug/L	97
13) Acetone	5.89	43	128423	49.3751 ug/L	89
14) 1,1-Dichloroethene	6.10	61	827161	47.2534 ug/L	86
15) Tert-Butyl Alcohol	6.24	59	153519	216.2200 ug/L	94
16) Dimethyl Sulfide	6.38	62	536801	51.2327 ug/L	87
17) Iodomethane	6.63	142	521987	54.6591 ug/L	80
18) Methyl acetate	6.67	43	357347	50.0575 ug/L	98
19) Methylene Chloride	6.93	84	448515	47.7623 ug/L	86
20) Carbon Disulfide	6.95	76	1466380	50.3217 ug/L	100
21) Acrylonitrile	7.14	53	164084	53.9237 ug/L	99
22) Methyl Tert Butyl Ether	7.17	73	1190832	51.3197 ug/L	99
23) trans-1,2-Dichloroethene	7.41	96	436815	51.1154 ug/L	87
24) n-Hexane	7.50	57	645781	50.7637 ug/L	95
25) Diisopropyl ether	7.89	45	3725644	103.8510 ug/L	97
26) Vinyl Acetate	8.07	43	695604	50.5200 ug/L	97
27) 1,1-Dichloroethane	8.09	63	942556	49.0153 ug/L	99
28) Ethyl-Tert-Butyl ether	8.52	59	3066924	104.7793 ug/L	98
29) 2-Butanone	8.73	43	192138	50.9464 ug/L	94
30) Propionitrile	8.84	54	105466	105.6435 ug/L	95
31) 2,2-Dichloropropane	8.94	77	785808	48.2149 ug/L	98
32) cis-1,2-Dichloroethene	9.02	96	484380	50.9849 ug/L	86
33) Chloroform	9.25	83	894228	48.6898 ug/L	99
34) 1-Bromopropane	9.40	122	81135	53.8537 ug/L	99
35) Bromochloromethane	9.50	130	275674	51.0929 ug/L	100
36) Tetrahydrofuran	9.54	42	243449	102.5308 ug/L	94
38) 1,1,1-Trichloroethane	9.84	97	854347	49.3230 ug/L	99
39) Cyclohexane	9.87	56	877521	52.4230 ug/L	94
40) 1,1-Dichloropropene	10.06	75	649739	50.1132 ug/L	94
41) Tert-Amyl-Methyl ether	10.21	73	2245775	104.5978 ug/L	94
42) Carbon Tetrachloride	10.22	117	783957	50.7530 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M141173.D 8260WT.M Thu Aug 11 14:32:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141173.D Vial: 8
Acq On : 10 Aug 2016 17:37 Operator: TMB
Sample : WG579700-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:42 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	766821	49.2949 ug/L	94
46)	Benzene	10.46	78	1749263	49.7509 ug/L	95
47)	Trichloroethene	11.33	130	447299	49.0176 ug/L	82
48)	Methylcyclohexane	11.41	83	636707	51.5997 ug/L	93
49)	1,2-Dichloropropane	11.57	63	495154	49.9742 ug/L	86
50)	1,4-Dioxane	11.92	88	11840	204.9838 ug/L	77
51)	Bromodichloromethane	11.92	83	705156	51.0138 ug/L	100
52)	Dibromomethane	12.01	93	270323	50.5911 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.30	63	239199	49.9010 ug/L	100
54)	4-Methyl-2-Pentanone	12.33	58	141440	51.4966 ug/L	99
55)	cis-1,3-Dichloropropene	12.67	75	733434	54.3818 ug/L	98
56)	Dimethyl Disulfide	12.95	79	424830	52.6474 ug/L	99
59)	Toluene	13.15	91	1823221	51.6586 ug/L	99
60)	Ethyl Methacrylate	13.30	69	503788	50.2535 ug/L	90
62)	trans-1,3-Dichloropropene	13.37	75	691109	51.9691 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	349634	49.4496 ug/L	99
64)	2-Hexanone	13.57	43	293834	50.6827 ug/L	93
65)	1,3-Dichloropropane	13.97	76	624189	50.9869 ug/L	90
66)	Tetrachloroethene	14.10	166	469539	49.6677 ug/L	91
67)	Dibromochloromethane	14.39	129	486507	51.6035 ug/L	99
68)	1,2-Dibromoethane	14.69	107	337202	51.1801 ug/L	99
69)	1-Chlorohexane	14.84	91	581085	51.3933 ug/L	85
70)	Chlorobenzene	15.29	112	1200482	49.0354 ug/L	91
71)	1,1,1,2-Tetrachloroethane	15.33	131	486955	50.4423 ug/L	94
72)	Ethylbenzene	15.33	106	641354	51.4839 ug/L	91
73)	m-,p-Xylene	15.44	106	1555871	104.5230 ug/L	92
74)	o-Xylene	16.10	106	777107	54.3181 ug/L	90
75)	Styrene	16.14	104	1347600	54.4993 ug/L	89
76)	Bromoform	16.70	173	308867	51.6144 ug/L	98
77)	Isopropylbenzene	16.61	105	2056204	56.5124 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.86	83	438044	47.8235 ug/L	99
81)	1,2,3-Trichloropropane	17.09	110	135315	47.9706 ug/L	95
82)	trans-1,4-Dichloro-2-Buten	17.16	53	165727	47.5565 ug/L	93
83)	n-Propylbenzene	17.20	91	2533750	53.7276 ug/L	98
84)	Bromobenzene	17.32	156	551524	47.8305 ug/L	93
85)	1,3,5-Trimethylbenzene	17.43	105	1836919	54.8473 ug/L	96
86)	2-Chlorotoluene	17.51	91	1759987	51.8279 ug/L	96
87)	4-Chlorotoluene	17.57	91	1604405	48.3643 ug/L	96
88)	a-Methylstyrene	17.91	118	1020853	52.4178 ug/L	95
89)	tert-Butylbenzene	17.97	134	363200	50.7946 ug/L	69
90)	1,2,4-Trimethylbenzene	18.03	105	1938349	51.7422 ug/L	97
91)	sec-Butylbenzene	18.28	105	2097688	51.8247 ug/L	98
92)	p-Isopropyltoluene	18.49	119	1844745	53.1774 ug/L	97
93)	1,3-Dichlorobenzene	18.68	146	1091128	49.9486 ug/L	95
94)	1,4-Dichlorobenzene	18.83	146	1084948	48.3685 ug/L	95
95)	n-Butylbenzene	19.10	91	1721939	53.8203 ug/L	96
96)	1,2-Dichlorobenzene	19.42	146	1021875	48.2710 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.59	75	98552	50.5092 ug/L	81
98)	1,2,4-Trichlorobenzene	21.94	180	664978	51.4687 ug/L	99
99)	Hexachlorobutadiene	22.13	225	256180	48.2895 ug/L	100
100)	Naphthalene	22.36	128	1367427	53.2257 ug/L	100
101)	1,2,3-Trichlorobenzene	22.74	180	626416	54.8954 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141173.D Vial: 8
Acq On : 10 Aug 2016 17:37 Operator: TMB
Sample : WG579700-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

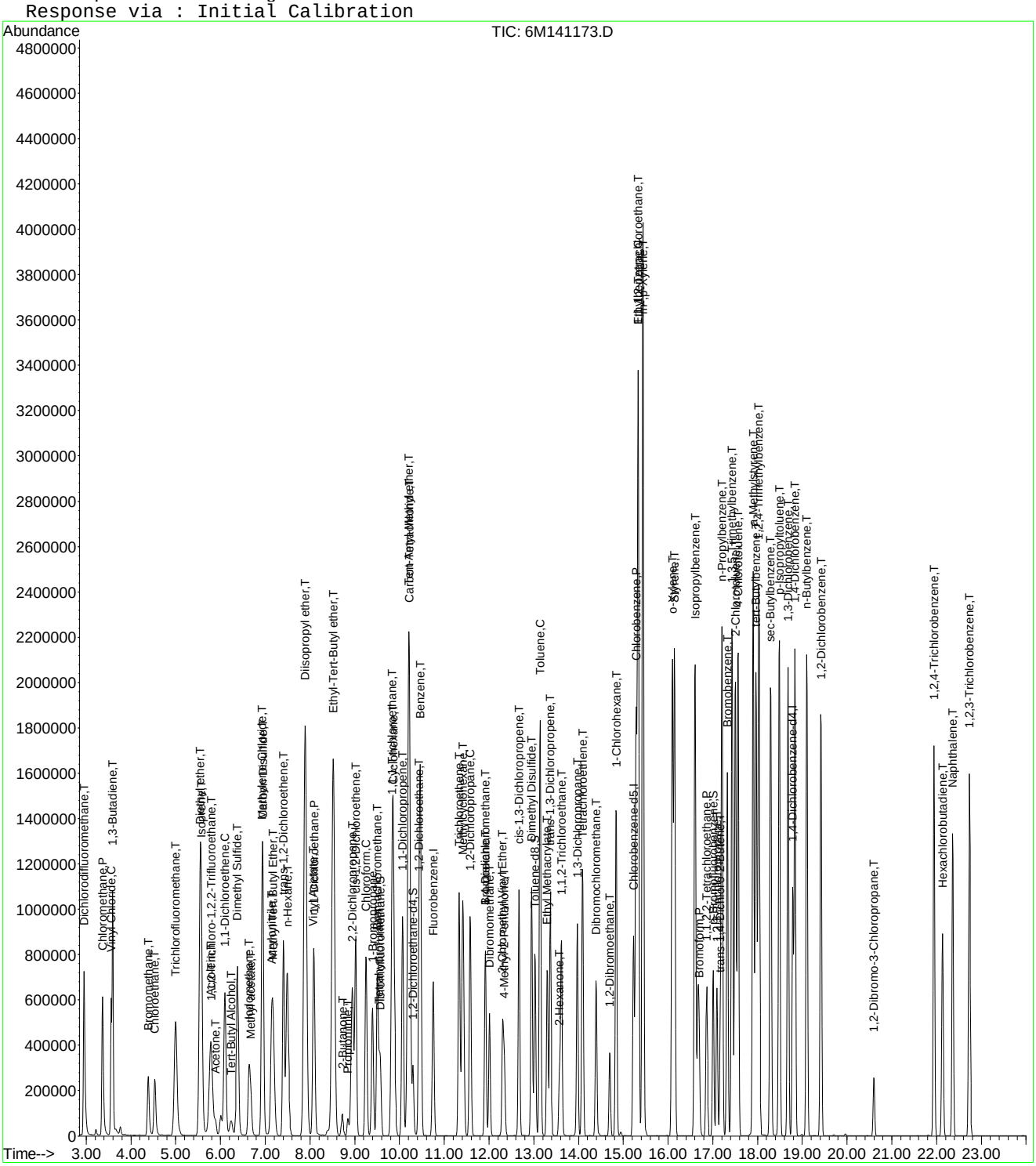

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141174.D Vial: 9
Acq On : 10 Aug 2016 18:09 Operator: TMB
Sample : WG579700-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:50 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	831658	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	628373	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	385705	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	224082	24.6962 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.80%		
43) 1,2-Dichloroethane-d4	10.30	65	293634	24.1803 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.72%		
58) Toluene-d8	13.02	98	734242	24.5573 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.24%		
80) p-Bromofluorobenzene	17.01	95	340304	24.6940 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	1899774	107.2235 ug/L	99
3) Chloromethane	3.36	50	1855921	102.6189 ug/L	99
4) Vinyl Chloride	3.56	62	1206306	101.1624 ug/L	99
5) 1,3-Butadiene	3.59	54	897585	97.0852 ug/L	98
6) Bromomethane	4.39	94	601876	102.9857 ug/L	100
7) Chloroethane	4.53	64	698575	102.7322 ug/L	91
8) Trichlorofluoromethane	5.00	101	1870623	99.1062 ug/L	99
9) Diethyl ether	5.54	59	1337072	201.3976 ug/L	95
10) Isoprene	5.56	67	1272988	101.2050 ug/L	84
11) Acrolein	5.77	56	96148	95.3259 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	822271	96.7537 ug/L	97
13) Acetone	5.89	43	254408	96.5614 ug/L	90
14) 1,1-Dichloroethene	6.10	61	1678839	94.6802 ug/L	86
15) Tert-Butyl Alcohol	6.24	59	312589	434.6252 ug/L	97
16) Dimethyl Sulfide	6.38	62	1079769	101.7354 ug/L	87
17) Iodomethane	6.63	142	1073954	109.9088 ug/L	80
18) Methyl acetate	6.67	43	729548	100.8881 ug/L	97
19) Methylene Chloride	6.93	84	904906	95.1303 ug/L	86
20) Carbon Disulfide	6.95	76	2900875	98.2756 ug/L	100
21) Acrylonitrile	7.14	53	326678	105.9841 ug/L	98
22) Methyl Tert Butyl Ether	7.16	73	2476721	105.3703 ug/L	99
23) trans-1,2-Dichloroethene	7.41	96	887547	102.5304 ug/L	86
24) n-Hexane	7.49	57	1297698	100.7046 ug/L	96
25) Diisopropyl ether	7.89	45	7251512	199.5470 ug/L	97
26) Vinyl Acetate	8.07	43	1500671	107.5956 ug/L	98
27) 1,1-Dichloroethane	8.08	63	1922600	98.7009 ug/L	99
28) Ethyl-Tert-Butyl ether	8.52	59	5974790	201.5127 ug/L	98
29) 2-Butanone	8.73	43	391126	102.3823 ug/L	95
30) Propionitrile	8.84	54	210730	208.3839 ug/L	95
31) 2,2-Dichloropropane	8.94	77	1595376	96.6351 ug/L	98
32) cis-1,2-Dichloroethene	9.02	96	983603	102.2075 ug/L	85
33) Chloroform	9.25	83	1820164	97.8381 ug/L	99
34) 1-Bromopropane	9.40	122	164011	107.4702 ug/L	99
35) Bromochloromethane	9.51	130	562767	102.9677 ug/L	100
36) Tetrahydrofuran	9.54	42	491537	204.3665 ug/L	94
38) 1,1,1-Trichloroethane	9.84	97	1744806	99.4421 ug/L	98
39) Cyclohexane	9.87	56	1777289	104.8165 ug/L	94
40) 1,1-Dichloropropene	10.06	75	1344873	102.4004 ug/L	94
41) Tert-Amyl-Methyl ether	10.21	73	4485765	206.2531 ug/L	95
42) Carbon Tetrachloride	10.22	117	1611492	102.9924 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141174.D Vial: 9
Acq On : 10 Aug 2016 18:09 Operator: TMB
Sample : WG579700-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:50 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	1575766	100.0016	ug/L	95
46)	Benzene	10.46	78	3536587	99.2973	ug/L	94
47)	Trichloroethene	11.33	130	913341	98.8085	ug/L	81
48)	Methylcyclohexane	11.41	83	1278645	102.2975	ug/L	93
49)	1,2-Dichloropropane	11.57	63	1026479	102.2736	ug/L	88
50)	1,4-Dioxane	11.92	88	26758	457.3291	ug/L	88
51)	Bromodichloromethane	11.92	83	1443962	103.1253	ug/L	99
52)	Dibromomethane	12.01	93	560050	103.4726	ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.30	63	506484	103.1849	ug/L	100
54)	4-Methyl-2-Pentanone	12.33	58	293866	105.6242	ug/L	100
55)	cis-1,3-Dichloropropene	12.67	75	1517503	111.0783	ug/L	97
56)	Dimethyl Disulfide	12.95	79	884042	108.1539	ug/L	99
59)	Toluene	13.15	91	3702931	102.5307	ug/L	100
60)	Ethyl Methacrylate	13.31	69	1048138	101.7138	ug/L	90
62)	trans-1,3-Dichloropropene	13.37	75	1435160	105.4641	ug/L	94
63)	1,1,2-Trichloroethane	13.62	97	715822	98.9372	ug/L	99
64)	2-Hexanone	13.57	43	637597	107.4754	ug/L	93
65)	1,3-Dichloropropane	13.97	76	1291686	103.1109	ug/L	89
66)	Tetrachloroethene	14.10	166	954798	98.7005	ug/L	90
67)	Dibromochloromethane	14.39	129	1012709	104.9736	ug/L	99
68)	1,2-Dibromoethane	14.69	107	707850	104.9924	ug/L	100
69)	1-Chlorohexane	14.84	91	1193560	102.9267	ug/L	85
70)	Chlorobenzene	15.29	112	2437637	97.3035	ug/L	89
71)	1,1,1,2-Tetrachloroethane	15.33	131	1001300	101.3621	ug/L	94
72)	Ethylbenzene	15.33	106	1316382	103.2669	ug/L	93
73)	m-,p-Xylene	15.44	106	3152476	206.9642	ug/L	95
74)	o-Xylene	16.10	106	1599923	109.2869	ug/L	90
75)	Styrene	16.14	104	2779459	109.7824	ug/L	87
76)	Bromoform	16.70	173	659411	107.6864	ug/L	98
77)	Isopropylbenzene	16.61	105	4181811	112.3175	ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.86	83	929697	96.6620	ug/L	99
81)	1,2,3-Trichloropropane	17.09	110	292980	98.9140	ug/L	95
82)	trans-1,4-Dichloro-2-Buten	17.16	53	364552	98.8852	ug/L	93
83)	n-Propylbenzene	17.20	91	5179464	104.5946	ug/L	98
84)	Bromobenzene	17.32	156	1143714	94.4601	ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	3803975	108.1667	ug/L	96
86)	2-Chlorotoluene	17.51	91	3623183	101.6096	ug/L	95
87)	4-Chlorotoluene	17.57	91	3374075	96.8625	ug/L	96
88)	a-Methylstyrene	17.91	118	2101596	102.7673	ug/L	95
89)	tert-Butylbenzene	17.97	134	749273	99.7934	ug/L	68
90)	1,2,4-Trimethylbenzene	18.03	105	4008243	101.8960	ug/L	97
91)	sec-Butylbenzene	18.29	105	4329418	101.8628	ug/L	98
92)	p-Isopropyltoluene	18.49	119	3799724	104.3118	ug/L	98
93)	1,3-Dichlorobenzene	18.68	146	2264933	98.7400	ug/L	93
94)	1,4-Dichlorobenzene	18.83	146	2265095	96.1680	ug/L	93
95)	n-Butylbenzene	19.10	91	3606696	107.3564	ug/L	97
96)	1,2-Dichlorobenzene	19.42	146	2141075	96.3188	ug/L	93
97)	1,2-Dibromo-3-Chloropropan	20.59	75	214129	104.5132	ug/L	83
98)	1,2,4-Trichlorobenzene	21.94	180	1426753	105.0354	ug/L	98
99)	Hexachlorobutadiene	22.13	225	534950	96.0309	ug/L	99
100)	Naphthalene	22.36	128	2965050	109.5165	ug/L	99
101)	1,2,3-Trichlorobenzene	22.74	180	1327307	110.7734	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141174.D Vial: 9
Acq On : 10 Aug 2016 18:09 Operator: TMB
Sample : WG579700-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

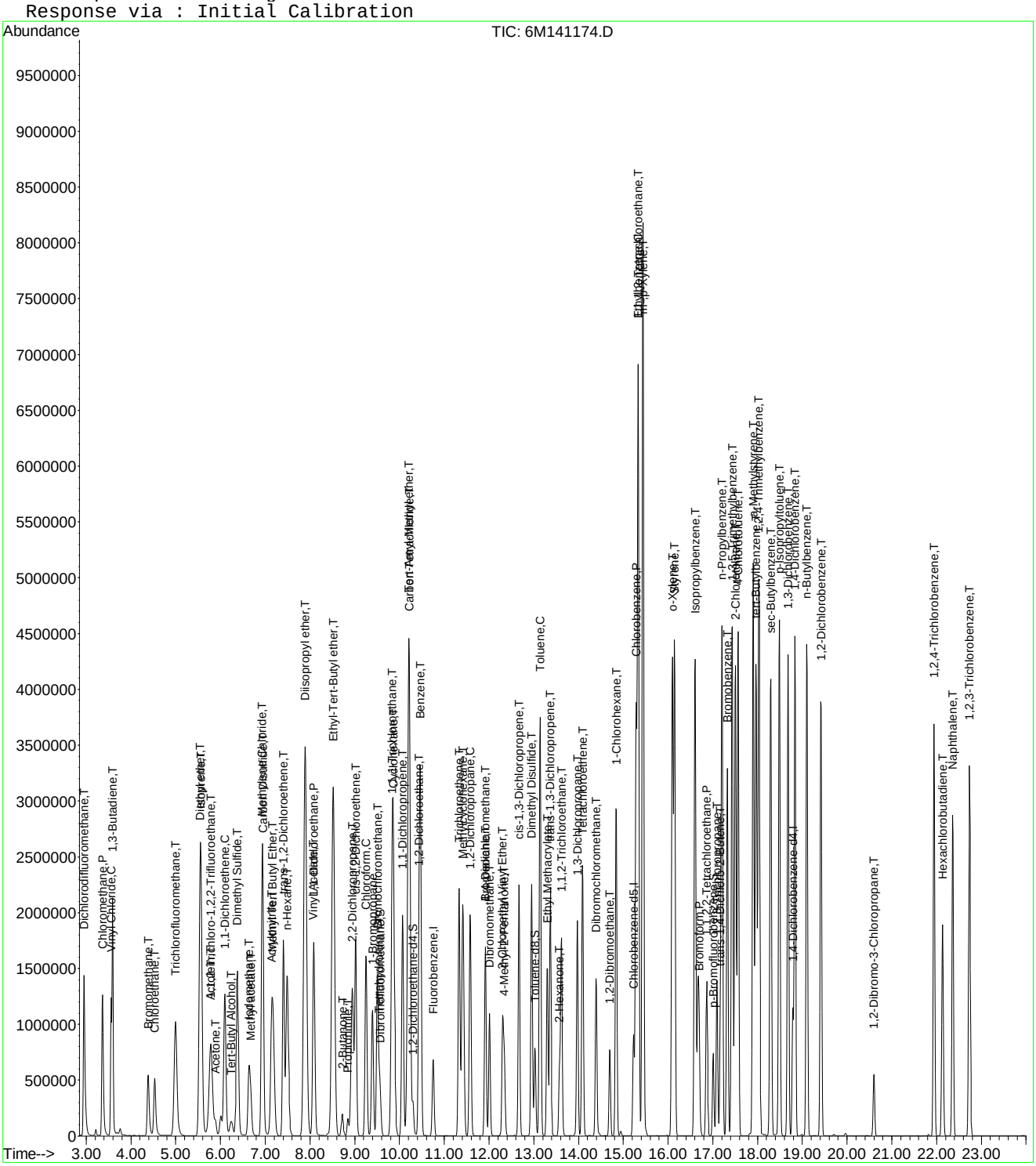

6M141174.D 8260WT.M Thu Aug 11 14:32:56 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141175.D Vial: 10
Acq On : 10 Aug 2016 18:42 Operator: TMB
Sample : WG579700-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:58 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	871554	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	658117	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	400153	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.58	111	940820	98.9421 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 395.76%#		
43) 1,2-Dichloroethane-d4	10.30	65	1222268	96.0443 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 384.16%#		
58) Toluene-d8	13.03	98	3051433	97.4450 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 389.80%#		
80) p-Bromofluorobenzene	17.00	95	1451164	101.5010 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 406.00%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	3822508	205.8671 ug/L	98
3) Chloromethane	3.36	50	3679464	194.1346 ug/L	99
4) Vinyl Chloride	3.55	62	2429711	194.4315 ug/L	99
5) 1,3-Butadiene	3.59	54	1762948	204.9259 ug/L	97
6) Bromomethane	4.38	94	1319295	215.4082 ug/L	100
7) Chloroethane	4.53	64	1444486	202.7018 ug/L	92
8) Trichlorofluoromethane	4.99	101	3830117	193.6320 ug/L	99
9) Diethyl ether	5.53	59	1096	0.1575 ug/L #	33
10) Isoprene	5.56	67	2646332	200.7579 ug/L	85
11) Acrolein	5.78	56	1709	1.6168 ug/L	66
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	1712004	192.2242 ug/L	97
13) Acetone	5.89	43	523219	189.4990 ug/L	91
14) 1,1-Dichloroethene	6.09	61	3744075	201.4861 ug/L	91
15) Tert-Butyl Alcohol	6.28	59	4848	6.4321 ug/L #	69
16) Dimethyl Sulfide	6.38	62	2237265	201.1450 ug/L	88
17) Iodomethane	6.63	142	2154475	209.4124 ug/L	82
18) Methyl acetate	6.68	43	1490081	196.6285 ug/L	98
19) Methylene Chloride	6.93	84	1844534	185.0344 ug/L	85
20) Carbon Disulfide	6.95	76	5879905	190.0804 ug/L	99
21) Acrylonitrile	7.17	53	69226	21.4309 ug/L #	35
22) Methyl Tert Butyl Ether	7.17	73	5077147	206.1158 ug/L	100
23) trans-1,2-Dichloroethene	7.41	96	1845976	203.4875 ug/L	86
24) n-Hexane	7.49	57	2698241	199.8053 ug/L	95
26) Vinyl Acetate	8.07	43	3027628	207.1390 ug/L	97
27) 1,1-Dichloroethane	8.08	63	3950955	193.5463 ug/L	99
28) Ethyl-Tert-Butyl ether	8.54	59	14789	0.4760 ug/L #	45
29) 2-Butanone	8.72	43	805268	201.1402 ug/L	95
30) Propionitrile	8.84	54	1712	1.6154 ug/L #	56
31) 2,2-Dichloropropane	8.94	77	3293004	190.3333 ug/L	99
32) cis-1,2-Dichloroethene	9.01	96	2016154	199.9111 ug/L	85
33) Chloroform	9.25	83	3715850	190.5926 ug/L	98
34) 1-Bromopropane	9.40	122	345796	216.2148 ug/L	98
35) Bromochloromethane	9.50	130	1142468	199.4651 ug/L	100
36) Tetrahydrofuran	9.56	42	7957	3.1568 ug/L	87
38) 1,1,1-Trichloroethane	9.84	97	3600447	195.8077 ug/L	98
39) Cyclohexane	9.86	56	3703858	208.4377 ug/L	94
40) 1,1-Dichloropropene	10.07	75	2805036	203.8023 ug/L	93
42) Carbon Tetrachloride	10.22	117	3324683	202.7579 ug/L	99
45) 1,2-Dichloroethane	10.43	62	3183469	192.7819 ug/L	95
46) Benzene	10.46	78	6975262	186.8805 ug/L	92

(#) = qualifier out of range (m) = manual integration
6M141175.D 8260WT.M Thu Aug 11 14:33:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141175.D Vial: 10
Acq On : 10 Aug 2016 18:42 Operator: TMB
Sample : WG579700-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32:58 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
47)	Trichloroethene	11.33	130	1882145	194.2965 ug/L	79
48)	Methylcyclohexane	11.41	83	2651412	202.4150 ug/L	93
49)	1,2-Dichloropropane	11.58	63	2111708	200.7695 ug/L	88
50)	1,4-Dioxane	11.92	88	4375	71.3516 ug/L #	14
51)	Bromodichloromethane	11.92	83	2959387	201.6795 ug/L	99
52)	Dibromomethane	12.02	93	1146162	202.0668 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.30	63	1060597	205.1527 ug/L	100
54)	4-Methyl-2-Pentanone	12.33	58	616773	211.5387 ug/L	99
55)	cis-1,3-Dichloropropene	12.67	75	3123671	218.1803 ug/L	97
56)	Dimethyl Disulfide	12.96	79	1865473	217.7753 ug/L	99
59)	Toluene	13.14	91	7296890	192.9125 ug/L	97
60)	Ethyl Methacrylate	13.30	69	2168984	200.5354 ug/L	90
62)	trans-1,3-Dichloropropene	13.37	75	2927586	205.4132 ug/L	94
63)	1,1,2-Trichloroethane	13.62	97	1454042	191.8871 ug/L	99
64)	2-Hexanone	13.57	43	1324039	213.0972 ug/L	94
65)	1,3-Dichloropropane	13.98	76	2619466	199.6524 ug/L	89
66)	Tetrachloroethene	14.09	166	1955407	193.0009 ug/L	89
67)	Dibromochloromethane	14.40	129	2059946	203.8758 ug/L	99
68)	1,2-Dibromoethane	14.69	107	1447044	204.9334 ug/L	100
69)	1-Chlorohexane	14.83	91	2455854	201.9844 ug/L	85
70)	Chlorobenzene	15.28	112	4802567	183.0405 ug/L	85
71)	1,1,1,2-Tetrachloroethane	15.34	131	2010124	194.2892 ug/L	93
72)	Ethylbenzene	15.34	106	2650684	198.5416 ug/L	98
73)	m-,p-Xylene	15.45	106	6086967	381.5564 ug/L	90
74)	o-Xylene	16.10	106	3206453	209.1261 ug/L	95
75)	Styrene	16.14	104	5509341	207.7135 ug/L	83
76)	Bromoform	16.69	173	1350413	210.5647 ug/L	97
77)	Isopropylbenzene	16.60	105	8050265	206.4466 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.87	83	1877859	188.1943 ug/L	100
81)	1,2,3-Trichloropropane	17.09	110	587072	191.0471 ug/L	95
82)	trans-1,4-Dichloro-2-Buten	17.16	53	767212	199.8985 ug/L	95
83)	n-Propylbenzene	17.20	91	9535315	185.6046 ug/L	98
84)	Bromobenzene	17.33	156	2313658	184.1872 ug/L	92
85)	1,3,5-Trimethylbenzene	17.43	105	7365398	201.8744 ug/L	98
86)	2-Chlorotoluene	17.50	91	7184084	194.1981 ug/L	97
87)	4-Chlorotoluene	17.57	91	6447987	178.4244 ug/L	95
88)	a-Methylstyrene	17.91	118	4210852	198.4746 ug/L	94
89)	tert-Butylbenzene	17.97	134	1505106	193.2227 ug/L	71
90)	1,2,4-Trimethylbenzene	18.03	105	7624818	186.8366 ug/L	100
91)	sec-Butylbenzene	18.29	105	8272756	187.6142 ug/L	99
92)	p-Isopropyltoluene	18.49	119	7293159	192.9862 ug/L	100
93)	1,3-Dichlorobenzene	18.68	146	4458092	187.3337 ug/L	91
94)	1,4-Dichlorobenzene	18.84	146	4448565	182.0511 ug/L	92
95)	n-Butylbenzene	19.10	91	6941234	199.1519 ug/L	98
96)	1,2-Dichlorobenzene	19.41	146	4169832	180.8118 ug/L	91
97)	1,2-Dibromo-3-Chloropropan	20.59	75	431252	202.8878 ug/L	82
98)	1,2,4-Trichlorobenzene	21.94	180	2854309	202.4267 ug/L	98
99)	Hexachlorobutadiene	22.14	225	1086476	187.9954 ug/L	99
100)	Naphthalene	22.36	128	5793991	205.9518 ug/L	98
101)	1,2,3-Trichlorobenzene	22.74	180	2630506	211.6082 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141175.D Vial: 10
Acq On : 10 Aug 2016 18:42 Operator: TMB
Sample : WG579700-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:32 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

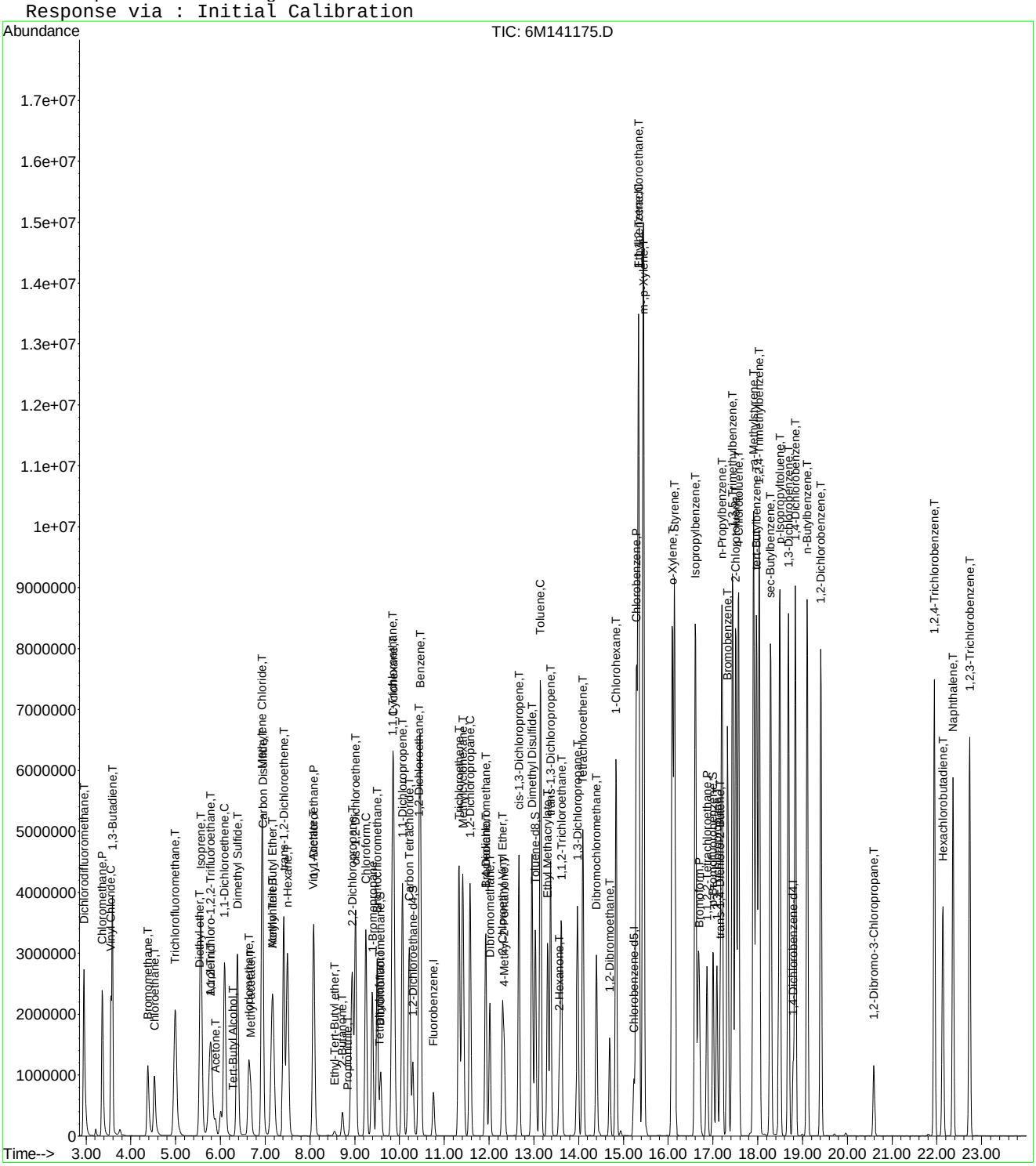

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141176.D Vial: 11
Acq On : 10 Aug 2016 19:14 Operator: TMB
Sample : WG579700-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:33:07 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	1050342	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	732738	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	414386	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	1626608	141.9453 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 567.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	2089457	136.2392 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 544.96%#		
58) Toluene-d8	13.04	98	5108360	146.5182 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 586.08%#		
80) p-Bromofluorobenzene	17.01	95	2273972	153.5889 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 614.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	5773700	258.0218 ug/L	97
3) Chloromethane	3.35	50	5250390	229.8654 ug/L	99
4) Vinyl Chloride	3.55	62	3727219	247.4917 ug/L	97
5) 1,3-Butadiene	3.58	54	2762692	297.4470 ug/L	97
6) Bromomethane	4.37	94	2109171	285.7562 ug/L	100
7) Chloroethane	4.52	64	2262864	263.4913 ug/L	92
8) Trichlorofluoromethane	4.99	101	6146131	257.8282 ug/L	99
9) Diethyl ether	5.54	59	2343476	279.4950 ug/L	96
10) Isoprene	5.55	67	4515499	284.2481 ug/L	87
11) Acrolein	5.79	56	216081	169.6295 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	5.77	101	3355173	312.5948 ug/L	97
13) Acetone	5.90	43	907559	272.7481 ug/L	96
14) 1,1-Dichloroethene	6.09	61	6346077	283.3802 ug/L	92
15) Tert-Butyl Alcohol	6.29	59	518598	570.9342 ug/L	96
16) Dimethyl Sulfide	6.38	62	3944045	294.2369 ug/L	89
17) Iodomethane	6.63	142	3446310	277.6055 ug/L	82
18) Methyl acetate	6.67	43	2714468	297.2247 ug/L	98
19) Methylene Chloride	6.93	84	3145489	261.8289 ug/L	86
20) Carbon Disulfide	6.95	76	9647621	258.7920 ug/L	97
21) Acrylonitrile	7.14	53	647195	166.2533 ug/L	96
22) Methyl Tert Butyl Ether	7.17	73	8813100	296.8820 ug/L	99
23) trans-1,2-Dichloroethene	7.41	96	3194818	292.2277 ug/L	86
24) n-Hexane	7.49	57	4806845	295.3588 ug/L	95
25) Diisopropyl ether	7.89	45	13084968	285.1040 ug/L	96
26) Vinyl Acetate	8.07	43	5976338	339.2798 ug/L	98
27) 1,1-Dichloroethane	8.08	63	6786792	275.8740 ug/L	98
28) Ethyl-Tert-Butyl ether	8.52	59	10786800	288.0623 ug/L	99
29) 2-Butanone	8.73	43	1372136	284.3932 ug/L	96
30) Propionitrile	8.85	54	366507	286.9684 ug/L	96
31) 2,2-Dichloropropane	8.94	77	5606582	268.8959 ug/L	99
32) cis-1,2-Dichloroethene	9.02	96	3474714	285.8879 ug/L	85
33) Chloroform	9.25	83	6283140	267.4165 ug/L	97
34) 1-Bromopropane	9.40	122	602558	312.6280 ug/L	100
35) Bromochloromethane	9.50	130	1953476	283.0052 ug/L	99
36) Tetrahydrofuran	9.54	42	895808	294.9053 ug/L	94
38) 1,1,1-Trichloroethane	9.84	97	6086868	274.6824 ug/L	96
39) Cyclohexane	9.86	56	6500962	303.5730 ug/L	93
40) 1,1-Dichloropropene	10.06	75	4846403	292.1822 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	8101561	294.9488 ug/L	95
42) Carbon Tetrachloride	10.22	117	5566027	281.6673 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M141176.D 8260WT.M Thu Aug 11 14:33:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141176.D Vial: 11
Acq On : 10 Aug 2016 19:14 Operator: TMB
Sample : WG579700-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:33:07 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	5365749	269.6247 ug/L	96
46)	Benzene	10.47	78	11219751	249.4309 ug/L	87
47)	Trichloroethene	11.33	130	3136845	268.7005 ug/L	78
48)	Methylcyclohexane	11.41	83	4629360	293.2582 ug/L	92
49)	1,2-Dichloropropane	11.57	63	3666181	289.2286 ug/L	89
50)	1,4-Dioxane	11.93	88	47778	646.5725 ug/L	91
51)	Bromodichloromethane	11.92	83	4982735	281.7678 ug/L	98
52)	Dibromomethane	12.01	93	1931049	282.4918 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.30	63	1828812	293.0905 ug/L	100
54)	4-Methyl-2-Pentanone	12.34	58	1015987	289.1453 ug/L	99
55)	cis-1,3-Dichloropropene	12.67	75	5227101	302.9527 ug/L	96
56)	Dimethyl Disulfide	12.95	79	3201513	310.1262 ug/L	97
59)	Toluene	13.15	91	11017385	261.6108 ug/L	92
60)	Ethyl Methacrylate	13.31	69	3590815	297.9654 ug/L	91
62)	trans-1,3-Dichloropropene	13.37	75	4785440	301.5747 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	2355661	279.2133 ug/L	98
64)	2-Hexanone	13.58	43	2129562	307.8377 ug/L	95
65)	1,3-Dichloropropane	13.97	76	4240198	290.2702 ug/L	89
66)	Tetrachloroethene	14.10	166	3203172	283.9598 ug/L	88
67)	Dibromochloromethane	14.39	129	3285924	292.0934 ug/L	99
68)	1,2-Dibromoethane	14.70	107	2347767	298.6348 ug/L	99
69)	1-Chlorohexane	14.84	91	3981855	294.0345 ug/L	84
70)	Chlorobenzene	15.29	112	7331383	250.9656 ug/L	81
71)	1,1,1,2-Tetrachloroethane	15.33	131	3116002	270.5066 ug/L	93
72)	Ethylbenzene	15.33	106	4160504	279.8942 ug/L	81
73)	m-,p-Xylene	15.45	106	8938952	503.2674 ug/L	74
74)	o-Xylene	16.10	106	4884208	286.1093 ug/L	96
75)	Styrene	16.15	104	8119692	274.9323 ug/L	78
76)	Bromoform	16.70	173	2097726	293.7799 ug/L	96
77)	Isopropylbenzene	16.61	105	11153188	256.8923 ug/L	94
79)	1,1,2,2-Tetrachloroethane	16.86	83	2991843	289.5365 ug/L	100
81)	1,2,3-Trichloropropane	17.09	110	907478	285.1715 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	17.17	53	1216239	305.6504 ug/L	97
83)	n-Propylbenzene	17.20	91	12585573	236.5634 ug/L	91
84)	Bromobenzene	17.32	156	3537331	271.9299 ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	10186282	269.6011 ug/L	97
86)	2-Chlorotoluene	17.51	91	9880793	257.9208 ug/L	96
87)	4-Chlorotoluene	17.57	91	9303511	248.5982 ug/L	94
88)	a-Methylstyrene	17.91	118	6291019	286.3367 ug/L	93
89)	tert-Butylbenzene	17.98	134	2271016	281.5349 ug/L	78
90)	1,2,4-Trimethylbenzene	18.04	105	10436415	246.9476 ug/L	96
91)	sec-Butylbenzene	18.29	105	11301875	247.5067 ug/L	95
92)	p-Isopropyltoluene	18.49	119	10039167	256.5247 ug/L	95
93)	1,3-Dichlorobenzene	18.68	146	6496041	263.5947 ug/L	88
94)	1,4-Dichlorobenzene	18.85	146	6443300	254.6260 ug/L	88
95)	n-Butylbenzene	19.11	91	9649656	267.3503 ug/L	98
96)	1,2-Dichlorobenzene	19.42	146	6105476	255.6517 ug/L	89
97)	1,2-Dibromo-3-Chloropropan	20.59	75	659955	299.8197 ug/L	83
98)	1,2,4-Trichlorobenzene	21.94	180	4247884	290.8565 ug/L	97
99)	Hexachlorobutadiene	22.13	225	1635479	273.2707 ug/L	99
100)	Naphthalene	22.37	128	8206244	281.5420 ug/L	95
101)	1,2,3-Trichlorobenzene	22.74	180	3920350	304.5362 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M141176.D 8260WT.M Thu Aug 11 14:33:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081016\6M141176.D Vial: 11
Acq On : 10 Aug 2016 19:14 Operator: TMB
Sample : WG579700-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 14:33 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

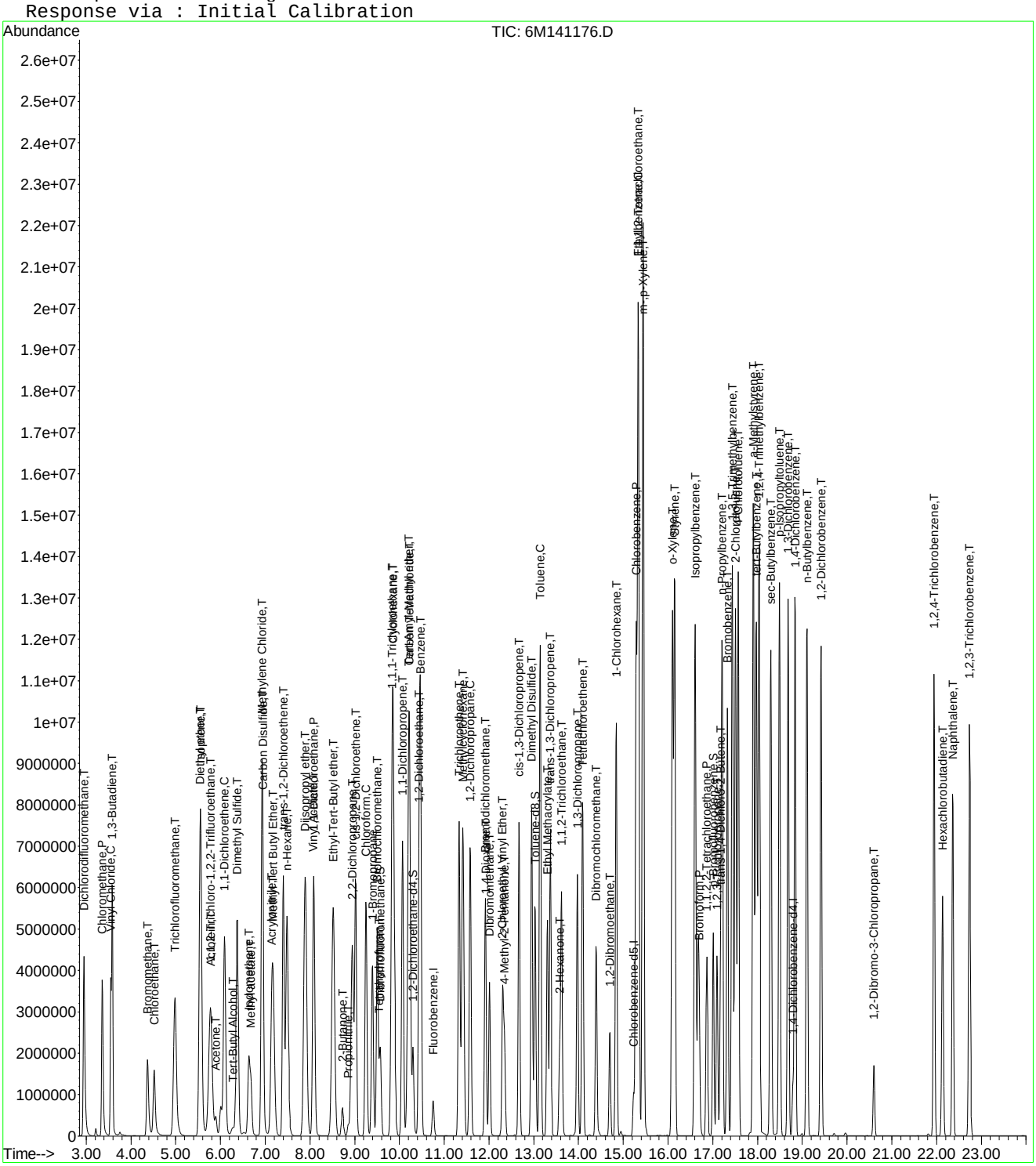

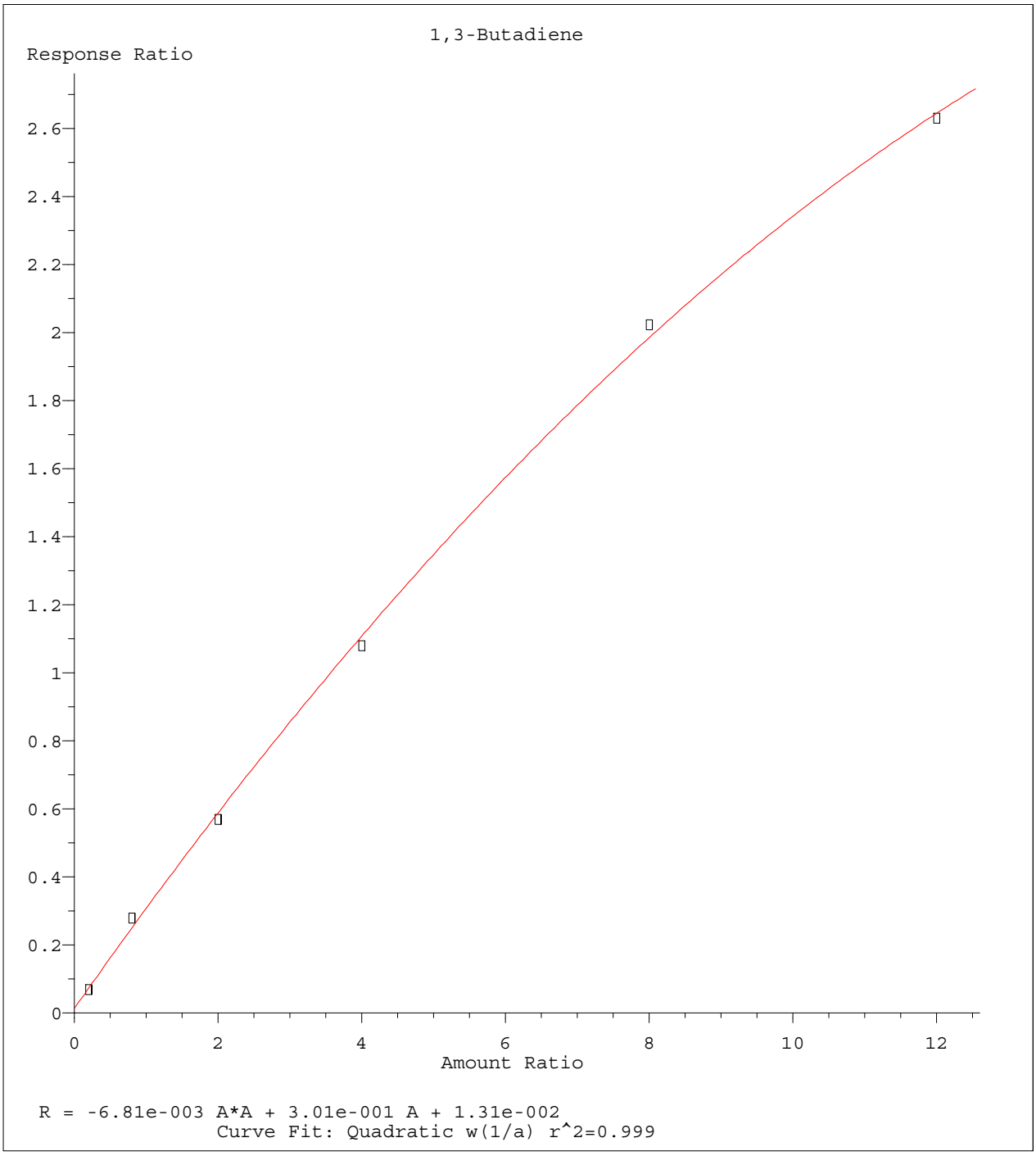

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M
Calibration Table Last Updated: Thu Aug 11 09:53:58 2016

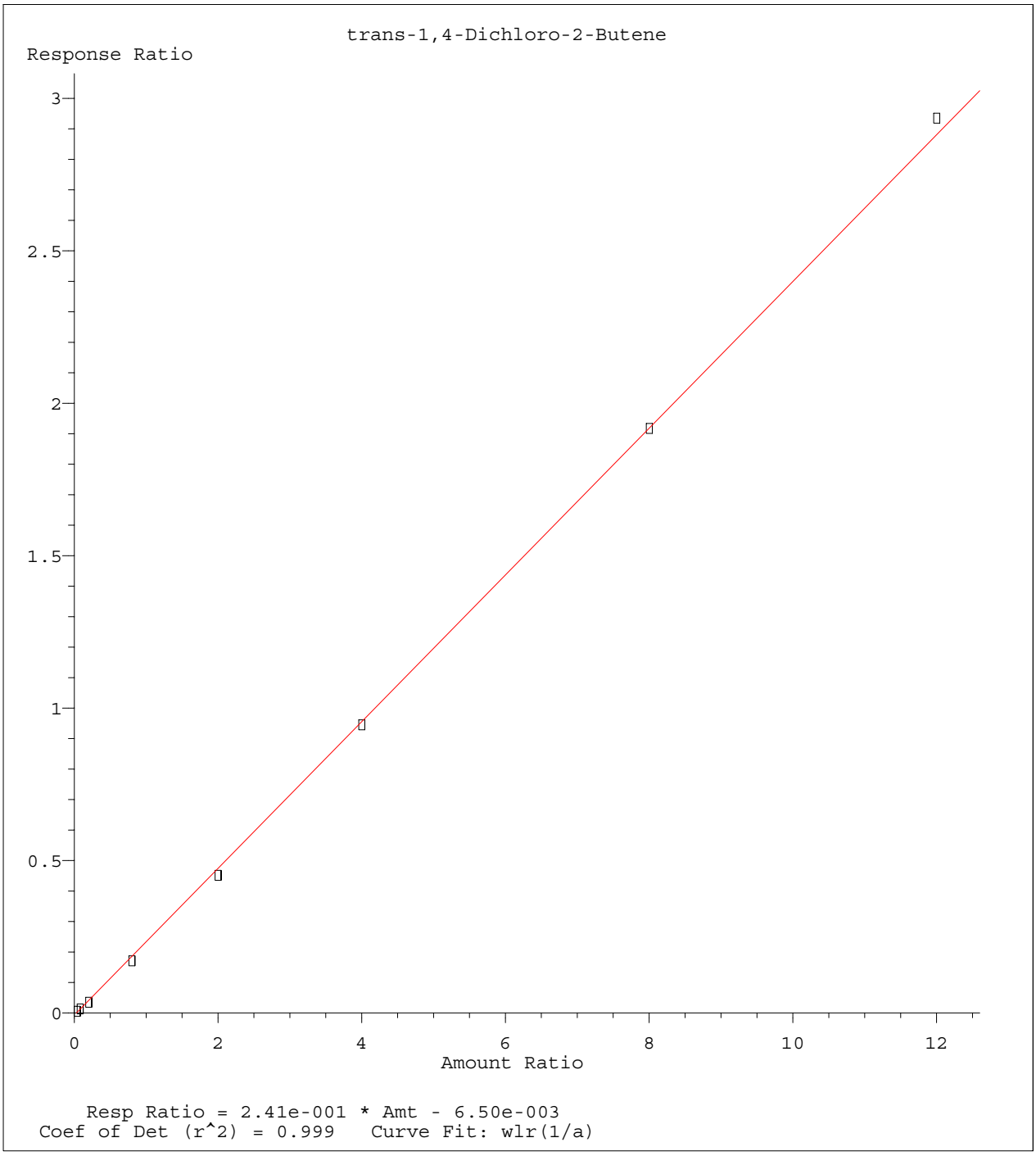

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M
Calibration Table Last Updated: Thu Aug 11 09:53:58 2016

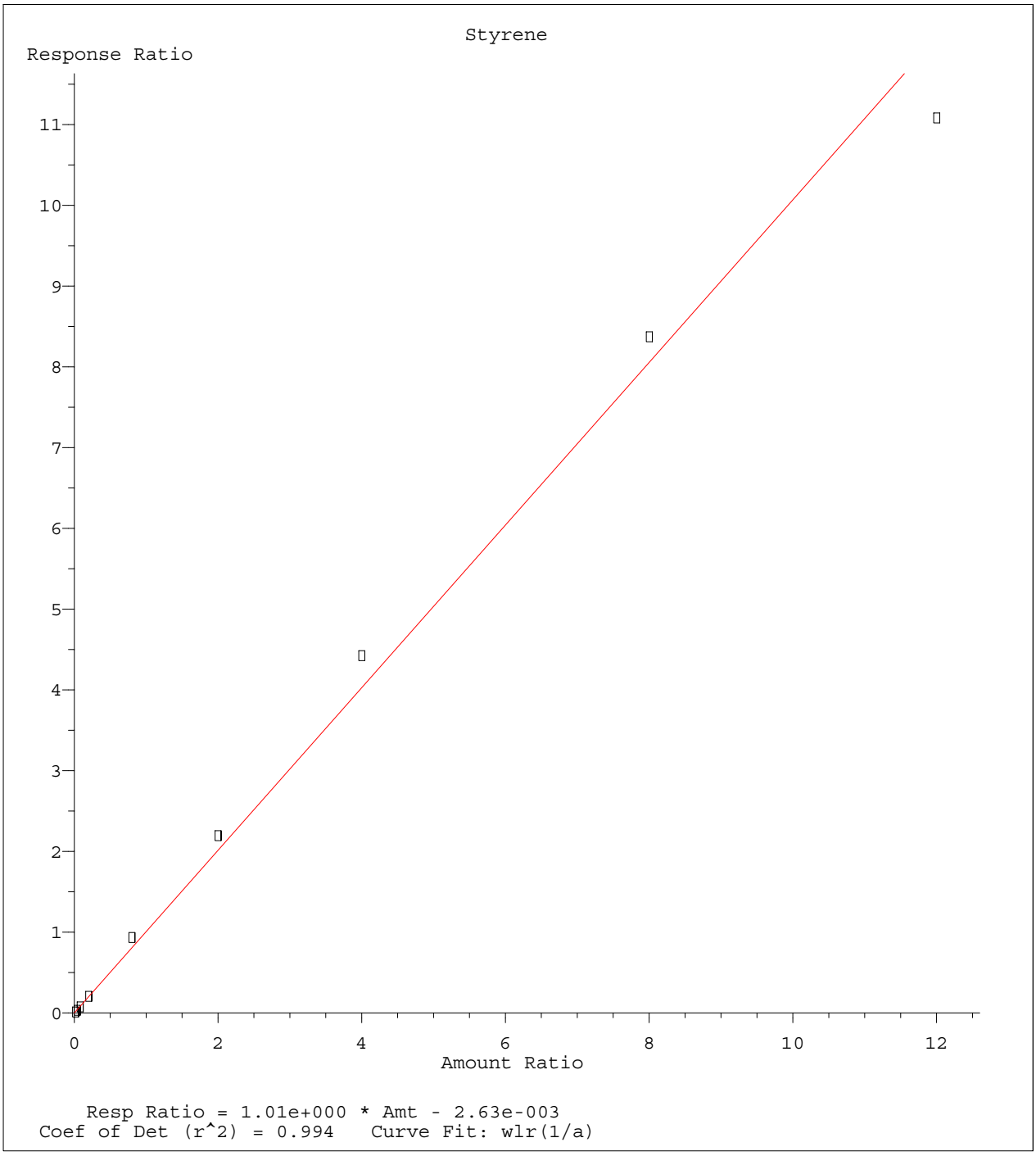

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M
Calibration Table Last Updated: Thu Aug 11 09:53:58 2016

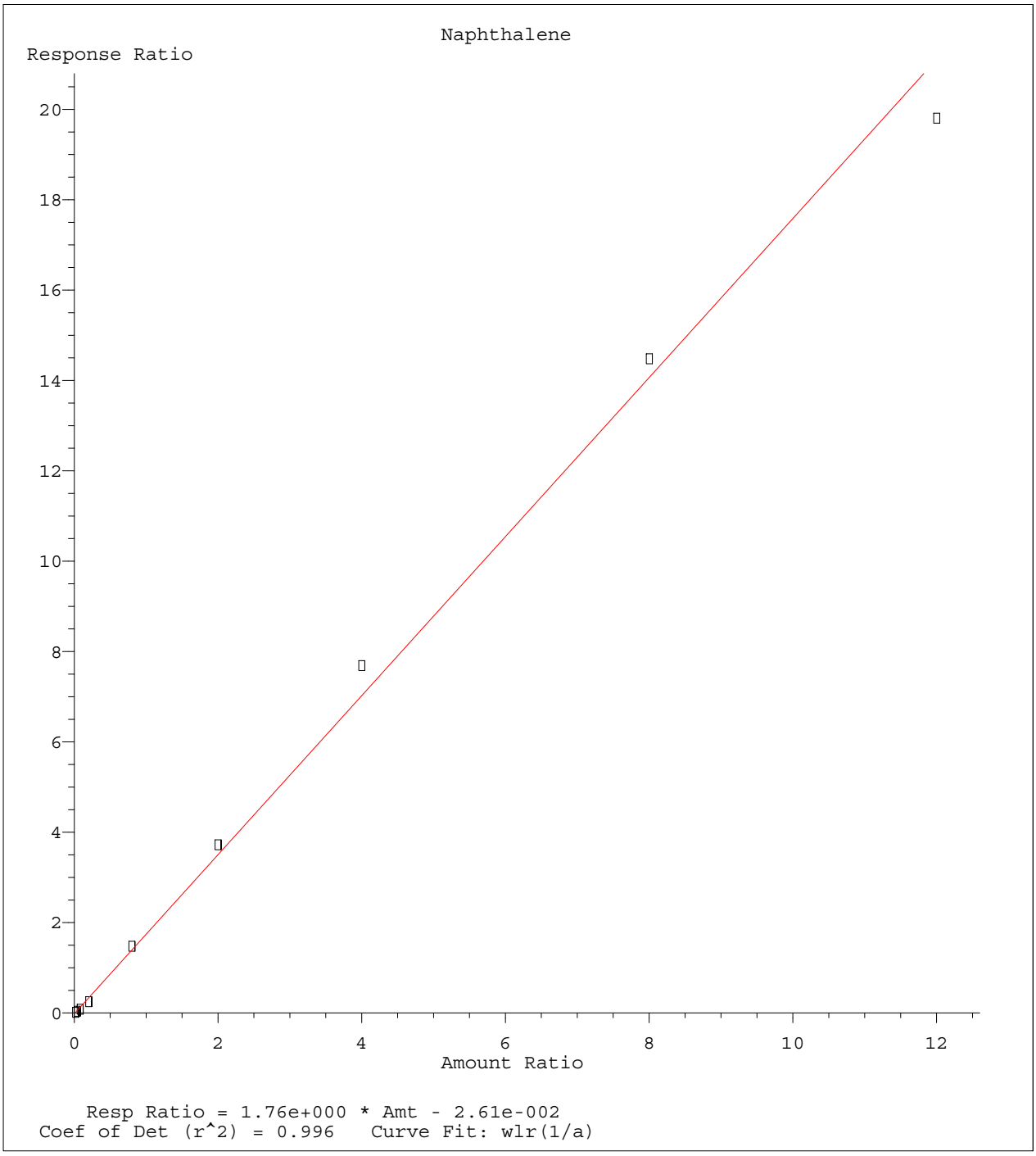

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M
Calibration Table Last Updated: Thu Aug 11 09:53:58 2016

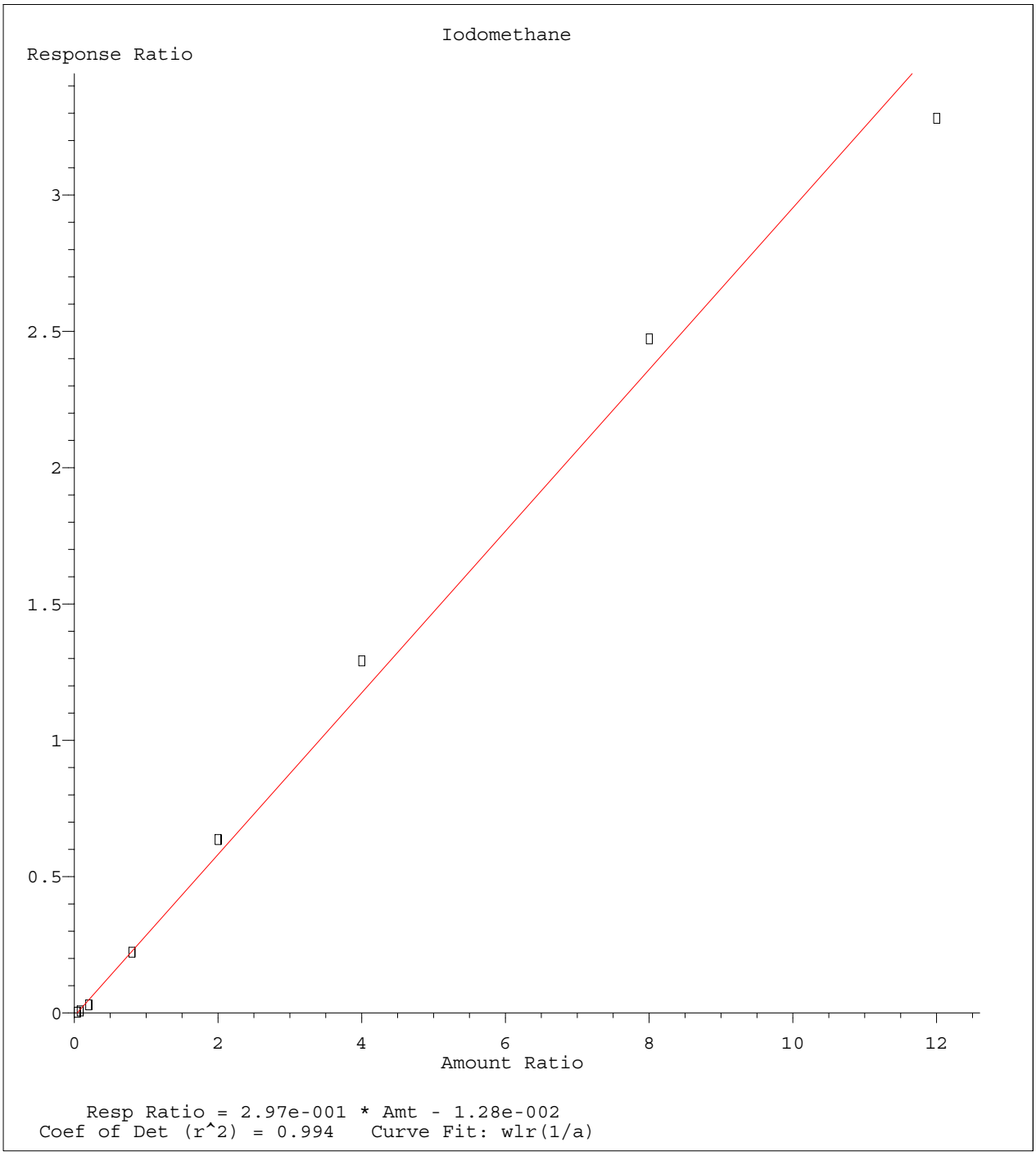

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M
Calibration Table Last Updated: Thu Aug 11 09:53:58 2016

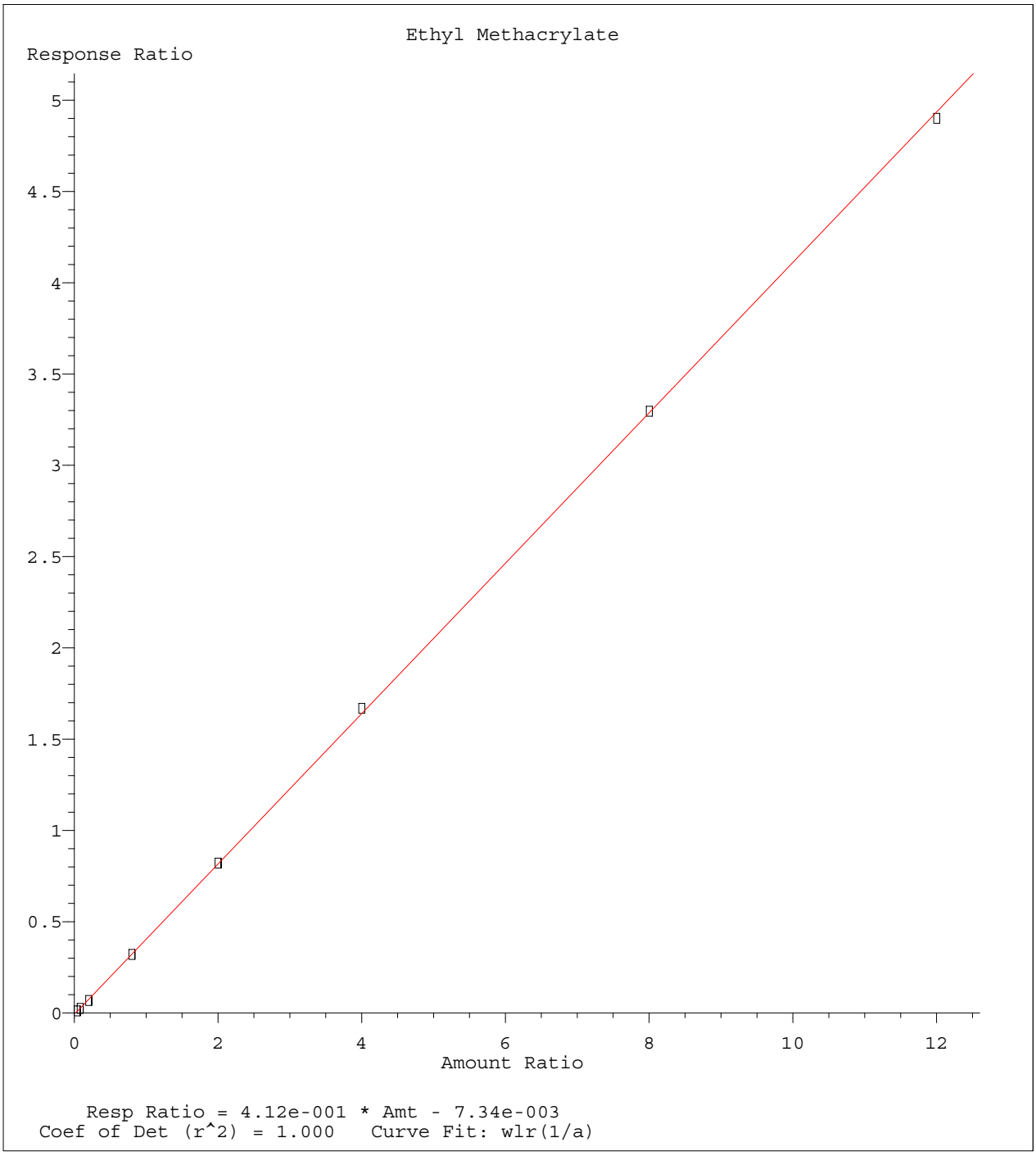

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M
Calibration Table Last Updated: Thu Aug 11 09:53:58 2016

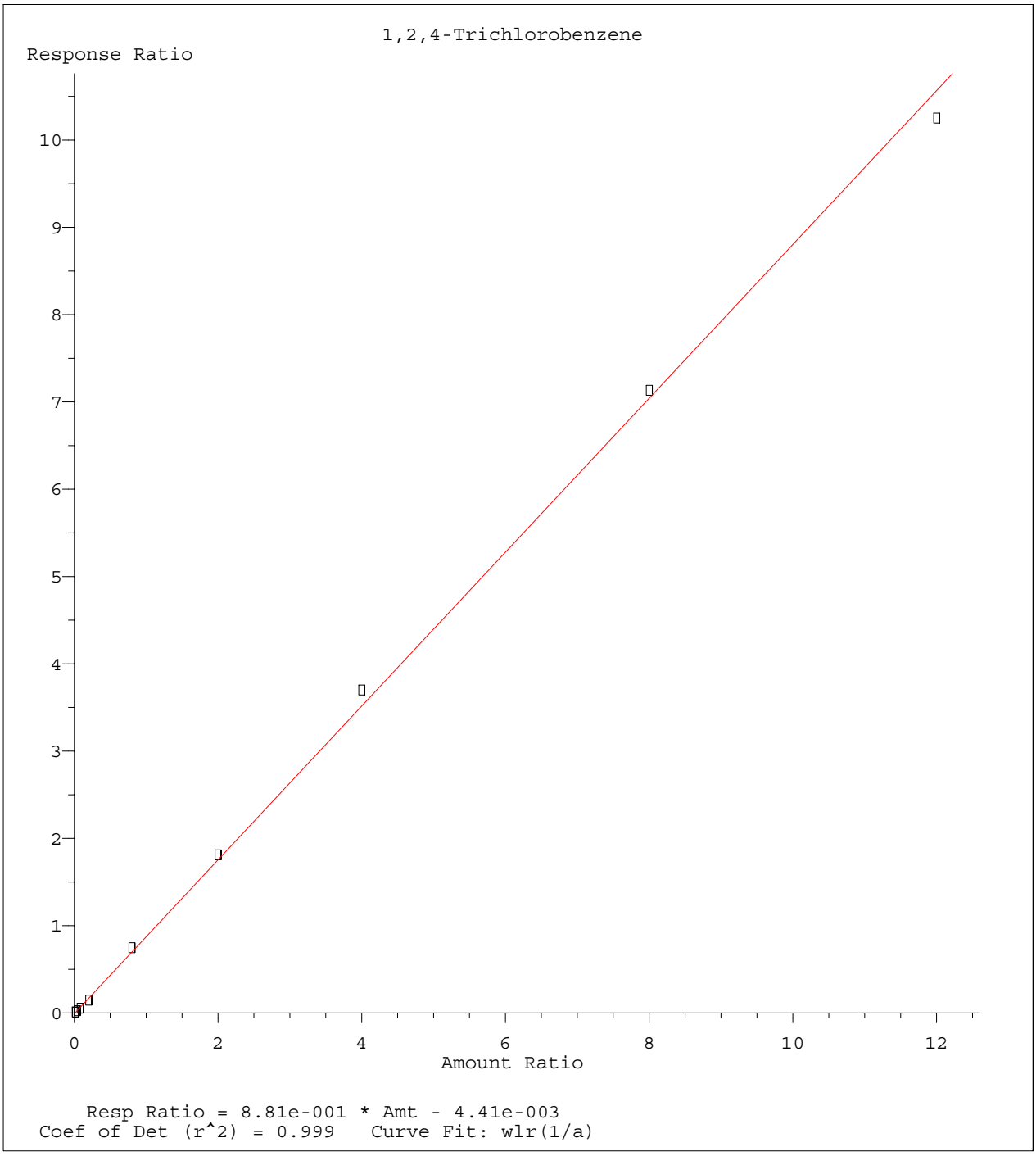

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M
Calibration Table Last Updated: Thu Aug 11 09:53:58 2016

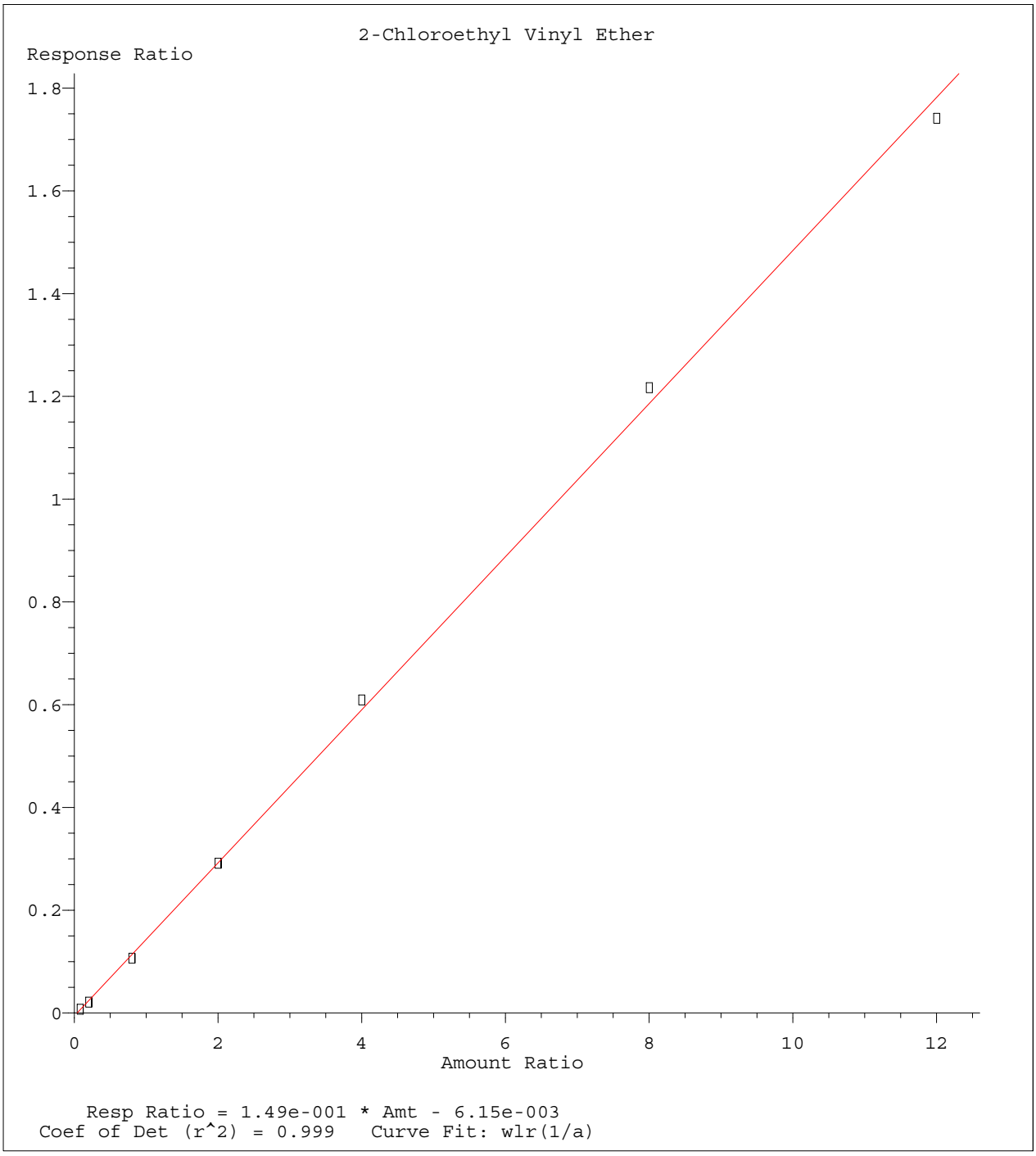

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M
Calibration Table Last Updated: Thu Aug 11 09:53:58 2016

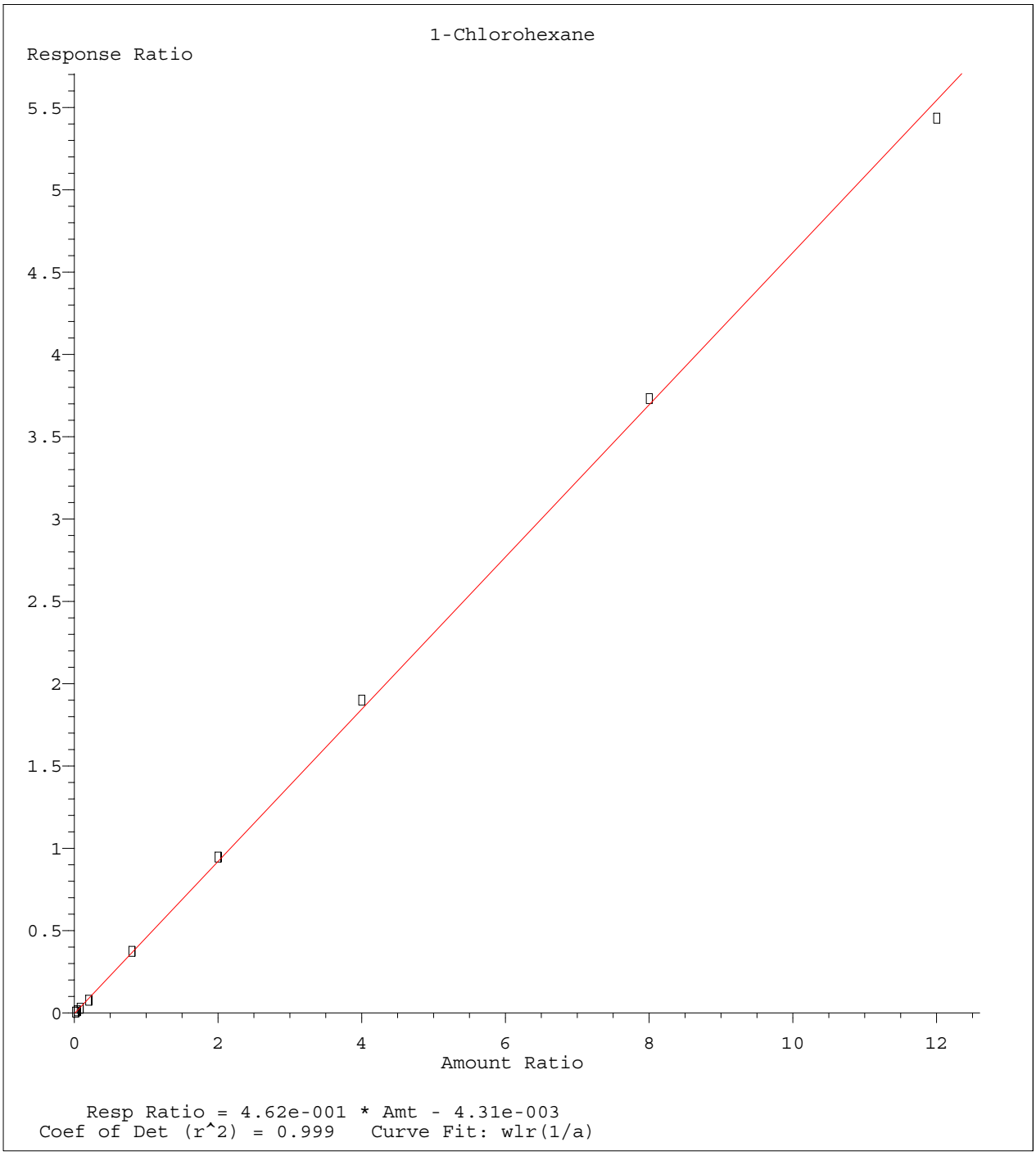

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M
Calibration Table Last Updated: Thu Aug 11 09:53:58 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081116\6M141186.D Vial: 6
Acq On : 11 Aug 2016 14:02 Operator: TMB
Sample : WG579700-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 15:56:56 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	745767	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	571096	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	326798	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.58	111	206480	25.3772 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.52%		
43) 1,2-Dichloroethane-d4	10.30	65	259346	23.8164 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.28%		
58) Toluene-d8	13.03	98	682469	25.1150 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.44%		
80) p-Bromofluorobenzene	17.00	95	297814	25.5062 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.04%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	2.94	85	756437	47.6105 ug/L	100
3) Chloromethane	3.36	50	635444	39.1820 ug/L	98
4) Vinyl Chloride	3.55	62	488485	45.6830 ug/L	99
5) 1,3-Butadiene	3.58	54	308263	34.3076 ug/L	97
6) Bromomethane	4.37	94	223060	42.5631 ug/L	100
7) Chloroethane	4.52	64	295992	48.5417 ug/L	91
8) Trichlorofluoromethane	4.99	101	779843	46.0748 ug/L	99
9) Diethyl ether	5.54	59	660052	110.8713 ug/L	95
10) Isoprene	5.55	67	567088	50.2771 ug/L	84
11) Acrolein	5.78	56	88347	97.6797 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	388086	50.9240 ug/L	97
13) Acetone	5.89	43	122815	51.9835 ug/L	94
14) 1,1-Dichloroethene	6.09	61	707502	44.4958 ug/L	92
15) Tert-Butyl Alcohol	6.27	59	139245	215.9049 ug/L	94
16) Dimethyl Sulfide	6.37	62	540811	56.8236 ug/L	90
17) Iodomethane	6.64	142	333427	38.7567 ug/L	83
18) Methyl acetate	6.68	43	339873	52.4137 ug/L	97
19) Methylene Chloride	6.92	84	394559	46.2561 ug/L	87
20) Carbon Disulfide	6.94	76	1288470	48.6780 ug/L	100
21) Acrylonitrile	7.14	53	151787	54.9158 ug/L	99
22) Methyl Tert Butyl Ether	7.17	73	1128071	53.5204 ug/L	99
23) trans-1,2-Dichloroethene	7.41	96	381956	49.2058 ug/L	86
24) n-Hexane	7.49	57	637151	55.1391 ug/L	97
25) Diisopropyl ether	7.89	45	3711475	113.8950 ug/L	98
26) Vinyl Acetate	8.08	43	800117	63.9741 ug/L	97
27) 1,1-Dichloroethane	8.09	63	796077	45.5752 ug/L	99
28) Ethyl-Tert-Butyl ether	8.52	59	2849311	107.1670 ug/L	98
29) 2-Butanone	8.72	43	182573	53.2950 ug/L	95
30) Propionitrile	8.84	54	99299	109.5026 ug/L	98
31) 2,2-Dichloropropane	8.94	77	726423	49.0685 ug/L	98
32) cis-1,2-Dichloroethene	9.01	96	434572	50.3577 ug/L	69
33) Chloroform	9.25	83	766509	45.9469 ug/L	98
34) 1-Bromopropane	9.39	122	90561	66.1756 ug/L	99
35) Bromochloromethane	9.50	130	235330	48.0166 ug/L	100
36) Tetrahydrofuran	9.55	42	225582	104.5923 ug/L	94
38) 1,1,1-Trichloroethane	9.84	97	730708	46.4417 ug/L	99
39) Cyclohexane	9.86	56	816747	53.7156 ug/L	95
40) 1,1-Dichloropropene	10.07	75	558014	47.3813 ug/L	95
41) Tert-Amyl-Methyl ether	10.20	73	2219473	113.8034 ug/L	95
42) Carbon Tetrachloride	10.22	117	657230	46.8421 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081116\6M141186.D Vial: 6
Acq On : 11 Aug 2016 14:02 Operator: TMB
Sample : WG579700-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 15:56:56 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	672165	47.5700 ug/L	94
46)	Benzene	10.46	78	1535012	48.0625 ug/L	95
47)	Trichloroethene	11.32	130	397090	47.9062 ug/L	83
48)	Methylcyclohexane	11.41	83	587938	52.4552 ug/L	93
49)	1,2-Dichloropropane	11.58	63	454892	50.5433 ug/L	88
50)	1,4-Dioxane	11.92	88	11862	226.0866 ug/L	86
51)	Bromodichloromethane	11.91	83	609729	48.5610 ug/L	99
52)	Dibromomethane	12.01	93	227830	46.9409 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.30	63	230947	52.9761 ug/L	99
54)	4-Methyl-2-Pentanone	12.33	58	132741	53.2060 ug/L	99
55)	cis-1,3-Dichloropropene	12.67	75	703434	57.4202 ug/L	98
56)	Dimethyl Disulfide	12.96	79	386207	52.6903 ug/L	99
59)	Toluene	13.14	91	1610568	49.0677 ug/L	99
60)	Ethyl Methacrylate	13.30	69	461117	49.4658 ug/L	91
62)	trans-1,3-Dichloropropene	13.37	75	611204	49.4196 ug/L	94
63)	1,1,2-Trichloroethane	13.61	97	310318	47.1922 ug/L	99
64)	2-Hexanone	13.57	43	270408	50.1523 ug/L	94
65)	1,3-Dichloropropane	13.97	76	582150	51.1318 ug/L	90
66)	Tetrachloroethene	14.09	166	400225	45.5219 ug/L	91
67)	Dibromochloromethane	14.40	129	415234	47.3584 ug/L	99
68)	1,2-Dibromoethane	14.69	107	297105	48.4881 ug/L	99
69)	1-Chlorohexane	14.84	91	535359	50.9149 ug/L	87
70)	Chlorobenzene	15.28	112	1067267	46.8750 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.34	131	423267	47.1448 ug/L	94
72)	Ethylbenzene	15.34	106	557635	48.1324 ug/L	91
73)	m-,p-Xylene	15.44	106	1363059	98.4615 ug/L	91
74)	o-Xylene	16.09	106	689784	51.8430 ug/L	90
75)	Styrene	16.14	104	1163080	50.5817 ug/L	89
76)	Bromoform	16.69	173	248212	44.6001 ug/L	98
77)	Isopropylbenzene	16.60	105	1787843	52.8349 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.87	83	387168	47.5105 ug/L	99
81)	1,2,3-Trichloropropane	17.09	110	117147	46.6796 ug/L	89
82)	trans-1,4-Dichloro-2-Buten	17.16	53	126877	41.0171 ug/L	93
83)	n-Propylbenzene	17.20	91	2204289	52.5374 ug/L	98
84)	Bromobenzene	17.33	156	460609	44.8993 ug/L	93
85)	1,3,5-Trimethylbenzene	17.43	105	1545201	51.8581 ug/L	96
86)	2-Chlorotoluene	17.50	91	1412211	46.7433 ug/L	96
87)	4-Chlorotoluene	17.56	91	1478765	50.1044 ug/L	96
88)	a-Methylstyrene	17.91	118	881814	50.8931 ug/L	95
89)	tert-Butylbenzene	17.97	134	311671	48.9930 ug/L	68
90)	1,2,4-Trimethylbenzene	18.03	105	1590498	47.7213 ug/L	97
91)	sec-Butylbenzene	18.29	105	1780829	49.4520 ug/L	98
92)	p-Isopropyltoluene	18.48	119	1536803	49.7938 ug/L	97
93)	1,3-Dichlorobenzene	18.68	146	921376	47.4079 ug/L	95
94)	1,4-Dichlorobenzene	18.84	146	945394	47.3732 ug/L	95
95)	n-Butylbenzene	19.10	91	1445113	50.7687 ug/L	96
96)	1,2-Dichlorobenzene	19.41	146	895498	47.5466 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.59	75	84517	48.6873 ug/L	82
98)	1,2,4-Trichlorobenzene	21.94	180	584092	50.8156 ug/L	98
99)	Hexachlorobutadiene	22.14	225	233118	49.3912 ug/L	99
100)	Naphthalene	22.36	128	1053888	46.1577 ug/L	100
101)	1,2,3-Trichlorobenzene	22.74	180	536086	52.8049 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M141186.D 8260WT.M Thu Aug 11 15:57:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081116\6M141186.D Vial: 6
Acq On : 11 Aug 2016 14:02 Operator: TMB
Sample : WG579700-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 11 15:56 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

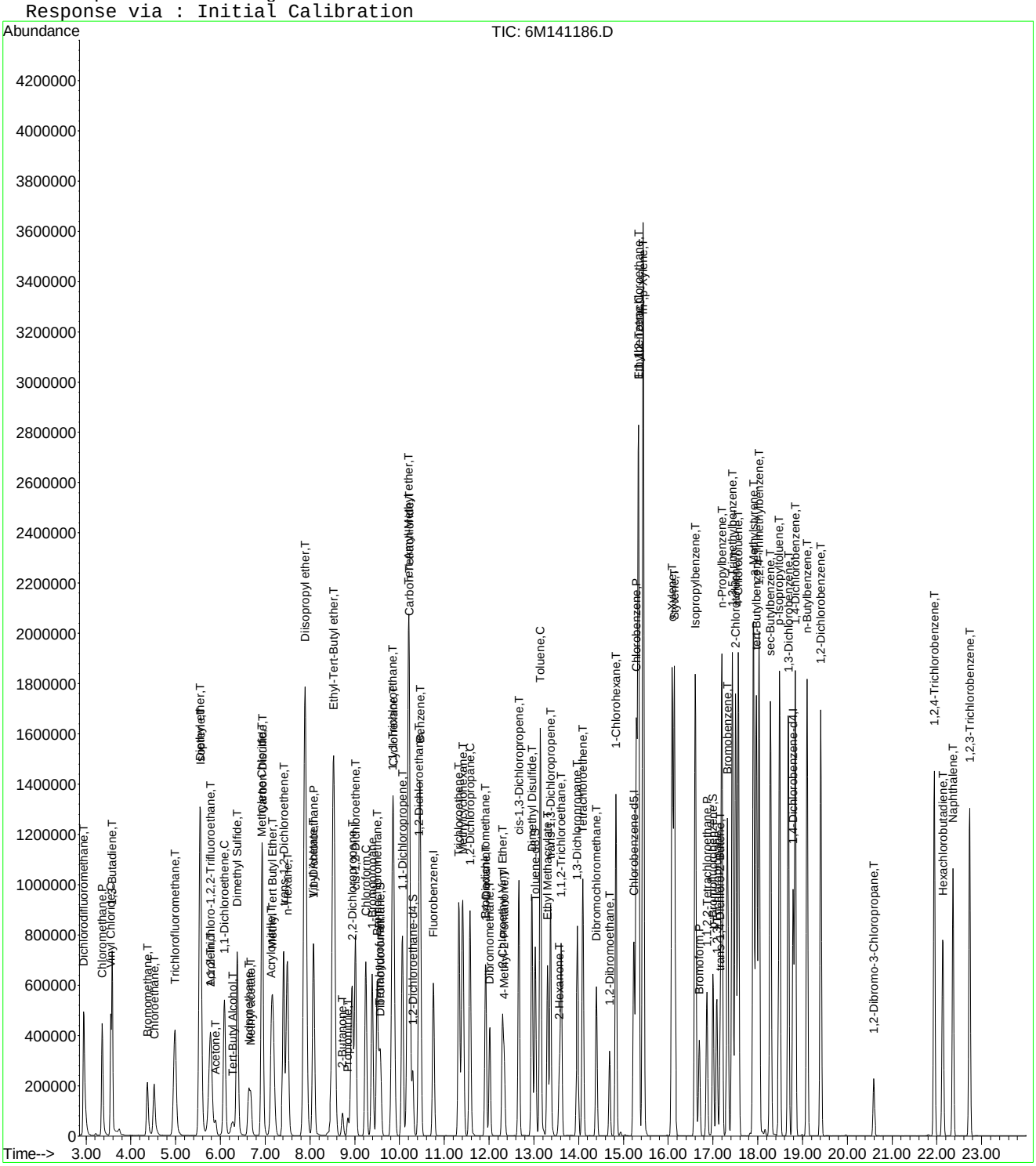

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081116\6M141186.D Vial: 6
Acq On : 11 Aug 2016 14:02 Operator: TMB
Sample : WG579700-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	91	0.00
2	T	Dichlorodifluoromethane	50.0000	47.6105	4.8	81	0.00
3	P	Chloromethane	50.0000	39.1820	21.6#	70	0.00
4	C	Vinyl Chloride	50.0000	45.6830	8.6	84	0.00
5	T	1,3-Butadiene	50.0000	34.3076	31.4#	66	0.00
6	T	Bromomethane	50.0000	42.5631	14.9	85	0.00
7	T	Chloroethane	50.0000	48.5417	2.9	89	0.00
8	T	Trichlorofluoromethane	50.0000	46.0748	7.9	84	0.00
9	T	Diethyl ether	100.0000	110.8713	-10.9	98	0.00
10	T	Isoprene	50.0000	50.2771	-0.6	90	0.00
11	T	Acrolein	50.0000	97.6797	-95.4#	178	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.9240	-1.8	95	0.00
13	T	Acetone	50.0000	51.9835	-4.0	96	0.00
14	C	1,1-Dichloroethene	50.0000	44.4958	11.0	86	0.00
15	T	Tert-Butyl Alcohol	200.0000	215.9049	-8.0	91	-0.02
16	T	Dimethyl Sulfide	50.0000	56.8235	-13.6	101	0.00
17	T	Iodomethane	50.0000	38.7567	22.5#	64	0.00
18	T	Methyl acetate	50.0000	52.4136	-4.8	95	0.00
19	T	Methylene Chloride	50.0000	46.2561	7.5	88	0.00
20	T	Carbon Disulfide	50.0000	48.6780	2.6	88	0.00
21	T	Acrylonitrile	50.0000	54.9158	-9.8	93	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.5204	-7.0	95	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.2058	1.6	87	0.00
24	T	n-Hexane	50.0000	55.1391	-10.3	99	0.00
25	T	Diisopropyl ether	100.0000	113.8950	-13.9	100	0.00
26	T	Vinyl Acetate	50.0000	63.9741	-27.9#	115	0.00
27	P	1,1-Dichloroethane	50.0000	45.5752	8.8	84	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	107.1670	-7.2	93	0.00
29	T	2-Butanone	50.0000	53.2950	-6.6	95	0.00
30	T	Propionitrile	100.0000	109.5026	-9.5	94	0.00
31	T	2,2-Dichloropropane	50.0000	49.0686	1.9	92	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.3577	-0.7	90	0.00
33	C	Chloroform	50.0000	45.9469	8.1	86	0.00
34		1-Bromopropane	50.0000	66.1756	-32.4#	112	0.00
35	T	Bromochloromethane	50.0000	48.0166	4.0	85	0.00
36	T	Tetrahydrofuran	100.0000	104.5923	-4.6	93	0.00
37	S	Dibromofluoromethane	25.0000	25.3772	-1.5	88	0.00
38	T	1,1,1-Trichloroethane	50.0000	46.4417	7.1	86	0.00
39	T	Cyclohexane	50.0000	53.7156	-7.4	93	0.00
40	T	1,1-Dichloropropene	50.0000	47.3813	5.2	86	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	113.8034	-13.8	99	0.00
42	T	Carbon Tetrachloride	50.0000	46.8421	6.3	84	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.8164	4.7	86	0.00
44		Heptane	-1.0000	0.0000	0.0	97	0.00
45	T	1,2-Dichloroethane	50.0000	47.5700	4.9	88	0.00
46	T	Benzene	50.0000	48.0625	3.9	88	0.00
47	T	Trichloroethene	50.0000	47.9062	4.2	89	0.00
48	T	Methylcyclohexane	50.0000	52.4552	-4.9	92	0.00
49	C	1,2-Dichloropropane	50.0000	50.5433	-1.1	92	0.00
50	T	1,4-Dioxane	200.0000	226.0866	-13.0	100	0.00
51	T	Bromodichloromethane	50.0000	48.5610	2.9	86	0.00
52	T	Dibromomethane	50.0000	46.9409	6.1	84	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.9761	-6.0	97	0.00
54	T	4-Methyl-2-Pentanone	50.0000	53.2060	-6.4	94	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081116\6M141186.D Vial: 6
Acq On : 11 Aug 2016 14:02 Operator: TMB
Sample : WG579700-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	57.4202	-14.8	96	0.00
56	T	Dimethyl Disulfide	50.0000	52.6903	-5.4	91	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	93	0.00
58	S	Toluene-d8	25.0000	25.1150	-0.5	92	0.00
59	C	Toluene	50.0000	49.0677	1.9	88	0.00
60	T	Ethyl Methacrylate	50.0000	49.4658	1.1	92	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	86	0.00
62	T	trans-1,3-Dichloropropene	50.0000	49.4196	1.2	88	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.1921	5.6	89	0.00
64	T	2-Hexanone	50.0000	50.1523	-0.3	92	0.00
65	T	1,3-Dichloropropane	50.0000	51.1318	-2.3	93	0.00
66	T	Tetrachloroethene	50.0000	45.5219	9.0	85	0.00
67	T	Dibromochloromethane	50.0000	47.3584	5.3	85	0.00
68	T	1,2-Dibromoethane	50.0000	48.4881	3.0	88	0.00
69	T	1-Chlorohexane	50.0000	50.9149	-1.8	92	0.00
70	P	Chlorobenzene	50.0000	46.8750	6.3	89	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	47.1448	5.7	87	0.00
72	C	Ethylbenzene	50.0000	48.1324	3.7	87	0.00
73	T	m-,p-Xylene	100.0000	98.4615	1.5	88	0.00
74	T	o-Xylene	50.0000	51.8430	-3.7	89	0.00
75	T	Styrene	50.0000	50.5817	-1.2	86	0.00
76	P	Bromoform	50.0000	44.6001	10.8	80	0.00
77	T	Isopropylbenzene	50.0000	52.8349	-5.7	87	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	89	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.5105	5.0	88	0.00
80	S	p-Bromofluorobenzene	25.0000	25.5062	-2.0	88	0.00
81	T	1,2,3-Trichloropropane	50.0000	46.6796	6.6	87	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	41.0171	18.0	77	0.00
83	T	n-Propylbenzene	50.0000	52.5374	-5.1	87	0.00
84	T	Bromobenzene	50.0000	44.8993	10.2	84	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.8581	-3.7	84	0.00
86	T	2-Chlorotoluene	50.0000	46.7434	6.5	80	0.00
87	T	4-Chlorotoluene	50.0000	50.1044	-0.2	92	0.00
88	T	a-Methylstyrene	50.0000	50.8931	-1.8	86	0.00
89	T	tert-Butylbenzene	50.0000	48.9930	2.0	86	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	47.7213	4.6	82	0.00
91	T	sec-Butylbenzene	50.0000	49.4521	1.1	85	0.00
92	T	p-Isopropyltoluene	50.0000	49.7938	0.4	83	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.4079	5.2	84	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.3732	5.3	87	0.00
95	T	n-Butylbenzene	50.0000	50.7687	-1.5	84	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.5466	4.9	88	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.6873	2.6	86	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.8156	-1.6	88	0.00
99	T	Hexachlorobutadiene	50.0000	49.3912	1.2	91	0.00
100	T	Naphthalene	50.0000	46.1577	7.7	77	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	52.8049	-5.6	86	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M141186.D 8260WT.M Thu Aug 11 15:58:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141242.D Vial: 2
Acq On : 15 Aug 2016 10:29 Operator: TMB
Sample : WG580238-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 15 11:37:01 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	928147	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	712558	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	399054	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.57	111	248203	24.5109 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.04%		
43) 1,2-Dichloroethane-d4	10.30	65	297501	21.9518 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.80%		
58) Toluene-d8	13.02	98	859999	25.3651 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.48%		
80) p-Bromofluorobenzene	17.01	95	376689	26.4199 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.68%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	1010686	51.1131 ug/L	100
3) Chloromethane	3.35	50	974714	48.2918 ug/L	99
4) Vinyl Chloride	3.56	62	643685	48.3685 ug/L	100
5) 1,3-Butadiene	3.59	54	481378	43.7181 ug/L	95
6) Bromomethane	4.39	94	297156	45.5599 ug/L	100
7) Chloroethane	4.53	64	368861	48.6054 ug/L	93
8) Trichlorofluoromethane	5.00	101	969294	46.0149 ug/L	99
9) Diethyl ether	5.54	59	807858	109.0341 ug/L	96
10) Isoprene	5.56	67	832827	59.3281 ug/L	93
11) Acrolein	5.78	56	56794	50.4547 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	544171	57.3741 ug/L	98
13) Acetone	5.90	43	119210	40.5428 ug/L	98
14) 1,1-Dichloroethene	6.10	61	1017023	51.3936 ug/L	93
15) Tert-Butyl Alcohol	6.23	59	130656	162.7791 ug/L	93
16) Dimethyl Sulfide	6.38	62	608302	51.3557 ug/L	91
17) Iodomethane	6.63	142	566965	52.5586 ug/L	85
18) Methyl acetate	6.67	43	357635	44.3153 ug/L	98
19) Methylene Chloride	6.93	84	525140	49.4673 ug/L	89
20) Carbon Disulfide	6.95	76	1682046	51.0602 ug/L	100
21) Acrylonitrile	7.14	53	165988	48.2532 ug/L	98
22) Methyl Tert Butyl Ether	7.16	73	1268602	48.3609 ug/L	100
23) trans-1,2-Dichloroethene	7.41	96	515959	53.4078 ug/L	87
24) n-Hexane	7.49	57	782228	54.3923 ug/L	97
25) Diisopropyl ether	7.89	45	4179338	103.0510 ug/L	98
26) Vinyl Acetate	8.07	43	832101	53.4580 ug/L	98
27) 1,1-Dichloroethane	8.09	63	1115518	51.3141 ug/L	99
28) Ethyl-Tert-Butyl ether	8.52	59	3228488	97.5679 ug/L	98
29) 2-Butanone	8.73	43	175873	41.2511 ug/L	95
30) Propionitrile	8.84	54	104773	92.8357 ug/L	97
31) 2,2-Dichloropropane	8.94	77	962966	52.2650 ug/L	99
32) cis-1,2-Dichloroethene	9.02	96	566376	52.7346 ug/L	87
33) Chloroform	9.25	83	1019690	49.1127 ug/L	99
34) 1-Bromopropane	9.40	122	93171	54.7046 ug/L	98
35) Bromochloromethane	9.51	130	311959	51.1444 ug/L	100
36) Tetrahydrofuran	9.54	42	236476	88.0985 ug/L	94
38) 1,1,1-Trichloroethane	9.84	97	964663	49.2636 ug/L	99
39) Cyclohexane	9.87	56	1001617	52.9299 ug/L	95
40) 1,1-Dichloropropene	10.06	75	766373	52.2864 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	2358737	97.1788 ug/L	95
42) Carbon Tetrachloride	10.22	117	890687	51.0070 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M141242.D 8260WT.M Mon Aug 15 11:37:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141242.D Vial: 2
Acq On : 15 Aug 2016 10:29 Operator: TMB
Sample : WG580238-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 15 11:37:01 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	818242	46.5291	ug/L	96
46)	Benzene	10.46	78	2069879	52.0746	ug/L	96
47)	Trichloroethene	11.33	130	512845	49.7136	ug/L	85
48)	Methylcyclohexane	11.41	83	733474	52.5809	ug/L	95
49)	1,2-Dichloropropane	11.57	63	582986	52.0475	ug/L	91
50)	1,4-Dioxane	11.92	88	12126	185.7038	ug/L	87
51)	Bromodichloromethane	11.92	83	778112	49.7943	ug/L	99
52)	Dibromomethane	12.01	93	293640	48.6118	ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.30	63	253569	46.8573	ug/L	99
54)	4-Methyl-2-Pentanone	12.33	58	136023	43.8081	ug/L	100
55)	cis-1,3-Dichloropropene	12.67	75	839523	55.0631	ug/L	98
56)	Dimethyl Disulfide	12.95	79	452092	49.5592	ug/L	99
59)	Toluene	13.15	91	2140448	52.2649	ug/L	99
60)	Ethyl Methacrylate	13.31	69	514044	44.2435	ug/L	92
62)	trans-1,3-Dichloropropene	13.37	75	760775	49.3012	ug/L	94
63)	1,1,2-Trichloroethane	13.62	97	379068	46.2029	ug/L	99
64)	2-Hexanone	13.57	43	266228	39.5743	ug/L	94
65)	1,3-Dichloropropane	13.97	76	679175	47.8108	ug/L	92
66)	Tetrachloroethene	14.10	166	537203	48.9715	ug/L	92
67)	Dibromochloromethane	14.39	129	518523	47.3981	ug/L	99
68)	1,2-Dibromoethane	14.70	107	359297	46.9967	ug/L	99
69)	1-Chlorohexane	14.84	91	657138	50.0931	ug/L	87
70)	Chlorobenzene	15.29	112	1380106	48.5813	ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.33	131	536843	47.9243	ug/L	95
72)	Ethylbenzene	15.33	106	744425	51.4988	ug/L	94
73)	m-,p-Xylene	15.44	106	1773312	102.6658	ug/L	92
74)	o-Xylene	16.10	106	880308	53.0275	ug/L	91
75)	Styrene	16.14	104	1524965	53.1503	ug/L	90
76)	Bromoform	16.70	173	309223	44.5321	ug/L	98
77)	Isopropylbenzene	16.61	105	2302385	54.5329	ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.86	83	447413	44.9621	ug/L	99
81)	1,2,3-Trichloropropane	17.09	110	133393	43.5288	ug/L	95
82)	trans-1,4-Dichloro-2-Buten	17.16	53	161003	42.5985	ug/L	97
83)	n-Propylbenzene	17.20	91	2829850	55.2346	ug/L	98
84)	Bromobenzene	17.32	156	598839	47.8041	ug/L	93
85)	1,3,5-Trimethylbenzene	17.43	105	2032260	55.8546	ug/L	97
86)	2-Chlorotoluene	17.51	91	1957197	53.0521	ug/L	97
87)	4-Chlorotoluene	17.57	91	1765334	48.9837	ug/L	95
88)	a-Methylstyrene	17.91	118	1088408	51.4424	ug/L	100
89)	tert-Butylbenzene	17.97	134	398155	51.2552	ug/L	70
90)	1,2,4-Trimethylbenzene	18.03	105	2128243	52.2935	ug/L	97
91)	sec-Butylbenzene	18.29	105	2316477	52.6790	ug/L	98
92)	p-Isopropyltoluene	18.49	119	2024586	53.7206	ug/L	98
93)	1,3-Dichlorobenzene	18.68	146	1198516	50.5016	ug/L	95
94)	1,4-Dichlorobenzene	18.84	146	1184343	48.6010	ug/L	95
95)	n-Butylbenzene	19.10	91	1938658	55.7755	ug/L	97
96)	1,2-Dichlorobenzene	19.42	146	1089839	47.3876	ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.59	75	92412	43.5961	ug/L	80
98)	1,2,4-Trichlorobenzene	21.94	180	740183	52.7307	ug/L	99
99)	Hexachlorobutadiene	22.13	225	290293	50.3684	ug/L	99
100)	Naphthalene	22.36	128	1420021	50.8939	ug/L	100
101)	1,2,3-Trichlorobenzene	22.74	180	658163	53.0910	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141242.D Vial: 2
Acq On : 15 Aug 2016 10:29 Operator: TMB
Sample : WG580238-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 15 11:37 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

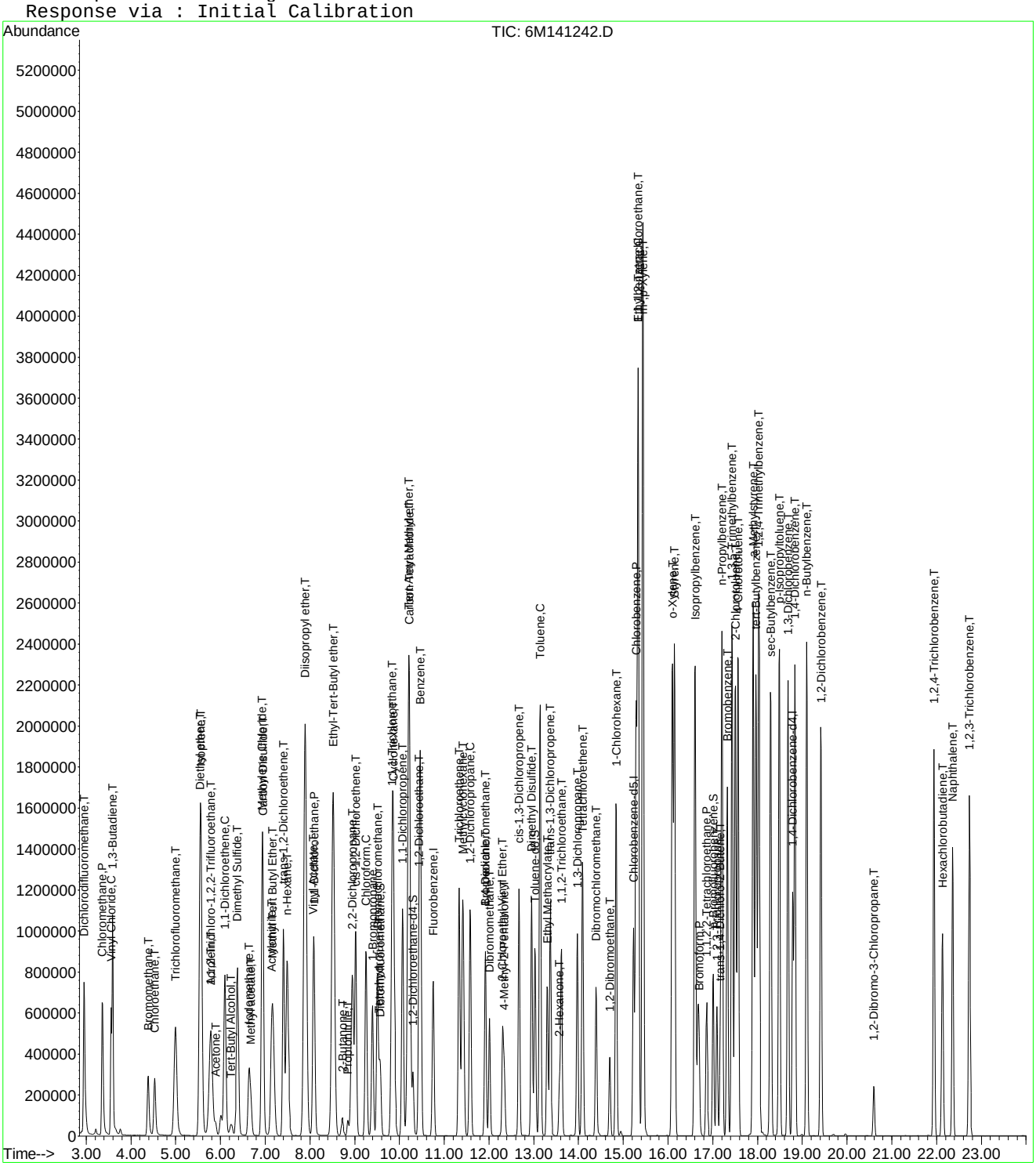

6M141242.D 8260WT.M Mon Aug 15 11:37:08 2016 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS6
Initial cal date: 10 Aug 2016 17:37
CCV date: 15 Aug 2016 10:29
CCV Filename: 6M141242.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	821017	10.76	614077	15.23	367321	18.78
CCV	928147	10.76	712558	15.23	399054	18.78

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141242.D Vial: 2
Acq On : 15 Aug 2016 10:29 Operator: TMB
Sample : WG580238-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	113	0.00
2	T	Dichlorodifluoromethane	0.5326	0.5445	-2.2	108	0.00
3	P	Chloromethane	0.5437	0.5251	3.4	108	0.00
4	C	Vinyl Chloride	0.3584	0.3468	3.3	111	0.00
5	T	1,3-Butadiene	0.2861	0.2593	9.4	103	0.01
6	T	Bromomethane	0.1757	0.1601	8.9	114	0.02
7	T	Chloroethane	0.2044	0.1987	2.8	111	0.00
8	T	Trichlorofluoromethane	0.5674	0.5222	8.0	105	0.00
9	T	Diethyl ether	0.1996	0.2176	-9.0	120	0.00
10	T	Isoprene	0.3781	0.4486	-18.7	132	0.00
11	T	Acrolein	0.0303	0.0306	-0.9	115	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2555	0.2932	-14.7	134	0.00
13	T	Acetone	0.0792	0.0642	18.9	93	0.00
14	C	1,1-Dichloroethene	0.5330	0.5479	-2.8	123	0.00
15	T	Tert-Butyl Alcohol	0.0216	0.0176	18.6	85	-0.05
16	T	Dimethyl Sulfide	0.3191	0.3277	-2.7	113	0.00
17	T	Iodomethane	0.2253	0.3054	-35.6#	109	0.00
18	T	Methyl acetate	0.2174	0.1927	11.4	100	0.00
19	T	Methylene Chloride	0.2859	0.2829	1.1	117	0.00
20	T	Carbon Disulfide	0.8873	0.9061	-2.1	115	0.00
21	T	Acrylonitrile	0.0927	0.0894	3.5	101	0.00
22	T	Methyl Tert Butyl Ether	0.7066	0.6834	3.3	107	-0.01
23	T	trans-1,2-Dichloroethene	0.2602	0.2779	-6.8	118	0.00
24	T	n-Hexane	0.3874	0.4214	-8.8	121	0.00
25	T	Diisopropyl ether	1.0924	1.1257	-3.1	112	0.00
26	T	Vinyl Acetate	0.4193	0.4483	-6.9	120	0.00
27	P	1,1-Dichloroethane	0.5856	0.6009	-2.6	118	0.00
28	T	Ethyl-Tert-Butyl ether	0.8913	0.8696	2.4	105	0.00
29	T	2-Butanone	0.1148	0.0947	17.5	92	0.00
30	T	Propionitrile	0.0304	0.0282	7.2	99	-0.01
31	T	2,2-Dichloropropane	0.4963	0.5188	-4.5	123	0.00
32	T	cis-1,2-Dichloroethene	0.2893	0.3051	-5.5	117	0.00
33	C	Chloroform	0.5592	0.5493	1.8	114	0.00
34		1-Bromopropane	0.0459	0.0502	-9.4	115	0.00
35	T	Bromochloromethane	0.1643	0.1681	-2.3	113	0.00
36	T	Tetrahydrofuran	0.0723	0.0637	11.9	97	0.00
37	S	Dibromofluoromethane	0.2727	0.2674	2.0	106	0.00
38	T	1,1,1-Trichloroethane	0.5274	0.5197	1.5	113	0.00
39	T	Cyclohexane	0.5097	0.5396	-5.9	114	0.00
40	T	1,1-Dichloropropene	0.3948	0.4128	-4.6	118	0.00
41	T	Tert-Amyl-Methyl ether	0.6538	0.6353	2.8	105	0.00
42	T	Carbon Tetrachloride	0.4703	0.4798	-2.0	114	0.00
43	S	1,2-Dichloroethane-d4	0.3650	0.3205	12.2	99	0.00
44		Heptane	0.0000	0.0000	0.0	101	0.00
45	T	1,2-Dichloroethane	0.4737	0.4408	6.9	107	0.00
46	T	Benzene	1.0706	1.1151	-4.1	118	-0.01
47	T	Trichloroethene	0.2779	0.2763	0.6	115	0.00
48	T	Methylcyclohexane	0.3757	0.3951	-5.2	115	0.00
49	C	1,2-Dichloropropane	0.3017	0.3141	-4.1	118	0.00
50	T	1,4-Dioxane	0.0018	0.0016	7.4	102	-0.01
51	T	Bromodichloromethane	0.4209	0.4192	0.4	110	0.00
52	T	Dibromomethane	0.1627	0.1582	2.8	109	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1317	0.1366	-3.7	106	0.00
54	T	4-Methyl-2-Pentanone	0.0836	0.0733	12.4	96	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141242.D Vial: 2
Acq On : 15 Aug 2016 10:29 Operator: TMB
Sample : WG580238-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4107	0.4523	-10.1	114	0.00
56	T	Dimethyl Disulfide	0.2457	0.2435	0.9	106	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	116	0.00
58	S	Toluene-d8	1.1896	1.2069	-1.5	116	-0.01
59	C	Toluene	1.4369	1.5019	-4.5	117	0.00
60	T	Ethyl Methacrylate	0.3708	0.3607	2.7	102	0.00
61		Paraldehyde	0.0000	0.0000	0.0	117	0.00
62	T	trans-1,3-Dichloropropene	0.5414	0.5338	1.4	110	0.00
63	T	1,1,2-Trichloroethane	0.2878	0.2660	7.6	108	0.00
64	T	2-Hexanone	0.2360	0.1868	20.9#	91	-0.01
65	T	1,3-Dichloropropane	0.4984	0.4766	4.4	109	0.00
66	T	Tetrachloroethene	0.3849	0.3770	2.1	114	0.00
67	T	Dibromochloromethane	0.3838	0.3639	5.2	107	0.00
68	T	1,2-Dibromoethane	0.2682	0.2521	6.0	107	0.00
69	T	1-Chlorohexane	0.4111	0.4611	-12.2	113	0.00
70	P	Chlorobenzene	0.9967	0.9684	2.8	115	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3930	0.3767	4.2	110	0.00
72	C	Ethylbenzene	0.5072	0.5224	-3.0	116	0.00
73	T	m-,p-Xylene	0.6060	0.6222	-2.7	114	0.00
74	T	o-Xylene	0.5824	0.6177	-6.1	113	0.00
75	T	Styrene	0.9765	1.0701	-9.6	113	0.00
76	P	Bromoform	0.2436	0.2170	10.9	100	0.00
77	T	Isopropylbenzene	1.4813	1.6156	-9.1	112	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	109	-0.01
79	P	1,1,2,2-Tetrachloroethane	0.6234	0.5606	10.1	102	0.00
80	S	p-Bromofluorobenzene	0.8932	0.9439	-5.7	111	0.00
81	T	1,2,3-Trichloropropane	0.1920	0.1671	12.9	99	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2043	0.2017	1.2	97	0.00
83	T	n-Propylbenzene	3.2097	3.5457	-10.5	112	0.00
84	T	Bromobenzene	0.7848	0.7503	4.4	109	0.00
85	T	1,3,5-Trimethylbenzene	2.2794	2.5463	-11.7	111	-0.01
86	T	2-Chlorotoluene	2.3112	2.4523	-6.1	111	0.00
87	T	4-Chlorotoluene	2.2578	2.2119	2.0	110	0.00
88	T	a-Methylstyrene	1.3255	1.3637	-2.9	107	0.00
89	T	tert-Butylbenzene	0.4867	0.4989	-2.5	110	-0.01
90	T	1,2,4-Trimethylbenzene	2.5497	2.6666	-4.6	110	-0.01
91	T	sec-Butylbenzene	2.7548	2.9025	-5.4	110	0.00
92	T	p-Isopropyltoluene	2.3610	2.5367	-7.4	110	0.00
93	T	1,3-Dichlorobenzene	1.4868	1.5017	-1.0	110	0.00
94	T	1,4-Dichlorobenzene	1.5267	1.4839	2.8	109	-0.01
95	T	n-Butylbenzene	2.1775	2.4291	-11.6	113	-0.01
96	T	1,2-Dichlorobenzene	1.4408	1.3655	5.2	107	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1328	0.1158	12.8	94	0.00
98	T	1,2,4-Trichlorobenzene	0.7974	0.9274	-16.3	111	0.00
99	T	Hexachlorobutadiene	0.3611	0.3637	-0.7	113	0.00
100	T	Naphthalene	1.4503	1.7792	-22.7#	104	-0.01
101	T	1,2,3-Trichlorobenzene	0.7766	0.8246	-6.2	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M141242.D 8260WT.M Mon Aug 15 11:37:16 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141242.D Vial: 2
Acq On : 15 Aug 2016 10:29 Operator: TMB
Sample : WG580238-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	113	0.00
2	T	Dichlorodifluoromethane	50.0000	51.1131	-2.2	108	0.00
3	P	Chloromethane	50.0000	48.2918	3.4	108	0.00
4	C	Vinyl Chloride	50.0000	48.3685	3.3	111	0.00
5	T	1,3-Butadiene	50.0000	43.7181	12.6	103	0.01
6	T	Bromomethane	50.0000	45.5599	8.9	114	0.02
7	T	Chloroethane	50.0000	48.6054	2.8	111	0.00
8	T	Trichlorofluoromethane	50.0000	46.0149	8.0	105	0.00
9	T	Diethyl ether	100.0000	109.0341	-9.0	120	0.00
10	T	Isoprene	50.0000	59.3281	-18.7	132	0.00
11	T	Acrolein	50.0000	50.4547	-0.9	115	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	57.3741	-14.7	134	0.00
13	T	Acetone	50.0000	40.5428	18.9	93	0.00
14	C	1,1-Dichloroethene	50.0000	51.3936	-2.8	123	0.00
15	T	Tert-Butyl Alcohol	200.0000	162.7791	18.6	85	-0.05
16	T	Dimethyl Sulfide	50.0000	51.3557	-2.7	113	0.00
17	T	Iodomethane	50.0000	52.5586	-5.1	109	0.00
18	T	Methyl acetate	50.0000	44.3154	11.4	100	0.00
19	T	Methylene Chloride	50.0000	49.4673	1.1	117	0.00
20	T	Carbon Disulfide	50.0000	51.0602	-2.1	115	0.00
21	T	Acrylonitrile	50.0000	48.2531	3.5	101	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.3609	3.3	107	-0.01
23	T	trans-1,2-Dichloroethene	50.0000	53.4078	-6.8	118	0.00
24	T	n-Hexane	50.0000	54.3923	-8.8	121	0.00
25	T	Diisopropyl ether	100.0000	103.0510	-3.1	112	0.00
26	T	Vinyl Acetate	50.0000	53.4580	-6.9	120	0.00
27	P	1,1-Dichloroethane	50.0000	51.3141	-2.6	118	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	97.5679	2.4	105	0.00
29	T	2-Butanone	50.0000	41.2511	17.5	92	0.00
30	T	Propionitrile	100.0000	92.8357	7.2	99	-0.01
31	T	2,2-Dichloropropane	50.0000	52.2650	-4.5	123	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.7346	-5.5	117	0.00
33	C	Chloroform	50.0000	49.1127	1.8	114	0.00
34		1-Bromopropane	50.0000	54.7046	-9.4	115	0.00
35	T	Bromochloromethane	50.0000	51.1444	-2.3	113	0.00
36	T	Tetrahydrofuran	100.0000	88.0985	11.9	97	0.00
37	S	Dibromofluoromethane	25.0000	24.5109	2.0	106	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.2636	1.5	113	0.00
39	T	Cyclohexane	50.0000	52.9299	-5.9	114	0.00
40	T	1,1-Dichloropropene	50.0000	52.2864	-4.6	118	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	97.1788	2.8	105	0.00
42	T	Carbon Tetrachloride	50.0000	51.0071	-2.0	114	0.00
43	S	1,2-Dichloroethane-d4	25.0000	21.9518	12.2	99	0.00
44		Heptane	-1.0000	0.0000	0.0	101	0.00
45	T	1,2-Dichloroethane	50.0000	46.5291	6.9	107	0.00
46	T	Benzene	50.0000	52.0746	-4.1	118	-0.01
47	T	Trichloroethene	50.0000	49.7136	0.6	115	0.00
48	T	Methylcyclohexane	50.0000	52.5809	-5.2	115	0.00
49	C	1,2-Dichloropropane	50.0000	52.0474	-4.1	118	0.00
50	T	1,4-Dioxane	200.0000	185.7038	7.1	102	-0.01
51	T	Bromodichloromethane	50.0000	49.7943	0.4	110	0.00
52	T	Dibromomethane	50.0000	48.6118	2.8	109	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	46.8573	6.3	106	0.00
54	T	4-Methyl-2-Pentanone	50.0000	43.8081	12.4	96	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141242.D Vial: 2
Acq On : 15 Aug 2016 10:29 Operator: TMB
Sample : WG580238-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD77545 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	55.0631	-10.1	114	0.00
56	T	Dimethyl Disulfide	50.0000	49.5592	0.9	106	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	116	0.00
58	S	Toluene-d8	25.0000	25.3651	-1.5	116	-0.01
59	C	Toluene	50.0000	52.2649	-4.5	117	0.00
60	T	Ethyl Methacrylate	50.0000	44.2435	11.5	102	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	117	0.00
62	T	trans-1,3-Dichloropropene	50.0000	49.3012	1.4	110	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.2029	7.6	108	0.00
64	T	2-Hexanone	50.0000	39.5743	20.9#	91	-0.01
65	T	1,3-Dichloropropane	50.0000	47.8109	4.4	109	0.00
66	T	Tetrachloroethene	50.0000	48.9715	2.1	114	0.00
67	T	Dibromochloromethane	50.0000	47.3981	5.2	107	0.00
68	T	1,2-Dibromoethane	50.0000	46.9967	6.0	107	0.00
69	T	1-Chlorohexane	50.0000	50.0931	-0.2	113	0.00
70	P	Chlorobenzene	50.0000	48.5813	2.8	115	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	47.9243	4.2	110	0.00
72	C	Ethylbenzene	50.0000	51.4988	-3.0	116	0.00
73	T	m-,p-Xylene	100.0000	102.6658	-2.7	114	0.00
74	T	o-Xylene	50.0000	53.0275	-6.1	113	0.00
75	T	Styrene	50.0000	53.1503	-6.3	113	0.00
76	P	Bromoform	50.0000	44.5321	10.9	100	0.00
77	T	Isopropylbenzene	50.0000	54.5329	-9.1	112	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	109	-0.01
79	P	1,1,2,2-Tetrachloroethane	50.0000	44.9621	10.1	102	0.00
80	S	p-Bromofluorobenzene	25.0000	26.4199	-5.7	111	0.00
81	T	1,2,3-Trichloropropane	50.0000	43.5288	12.9	99	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	42.5985	14.8	97	0.00
83	T	n-Propylbenzene	50.0000	55.2346	-10.5	112	0.00
84	T	Bromobenzene	50.0000	47.8040	4.4	109	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	55.8546	-11.7	111	-0.01
86	T	2-Chlorotoluene	50.0000	53.0521	-6.1	111	0.00
87	T	4-Chlorotoluene	50.0000	48.9837	2.0	110	0.00
88	T	a-Methylstyrene	50.0000	51.4424	-2.9	107	0.00
89	T	tert-Butylbenzene	50.0000	51.2552	-2.5	110	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	52.2936	-4.6	110	-0.01
91	T	sec-Butylbenzene	50.0000	52.6790	-5.4	110	0.00
92	T	p-Isopropyltoluene	50.0000	53.7206	-7.4	110	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.5016	-1.0	110	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.6010	2.8	109	-0.01
95	T	n-Butylbenzene	50.0000	55.7755	-11.6	113	-0.01
96	T	1,2-Dichlorobenzene	50.0000	47.3876	5.2	107	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	43.5961	12.8	94	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	52.7307	-5.5	111	0.00
99	T	Hexachlorobutadiene	50.0000	50.3684	-0.7	113	0.00
100	T	Naphthalene	50.0000	50.8939	-1.8	104	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	53.0910	-6.2	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M141242.D 8260WT.M Mon Aug 15 11:37:20 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\042416\6M138750.D          Vial: 1
Acq On    : 24 Apr 2016  16:33                       Operator: JDS
Sample    : WG566155-01 50ng BFB 826-A9              Inst    : HPMS6
Misc      : 1,1 STD75485                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

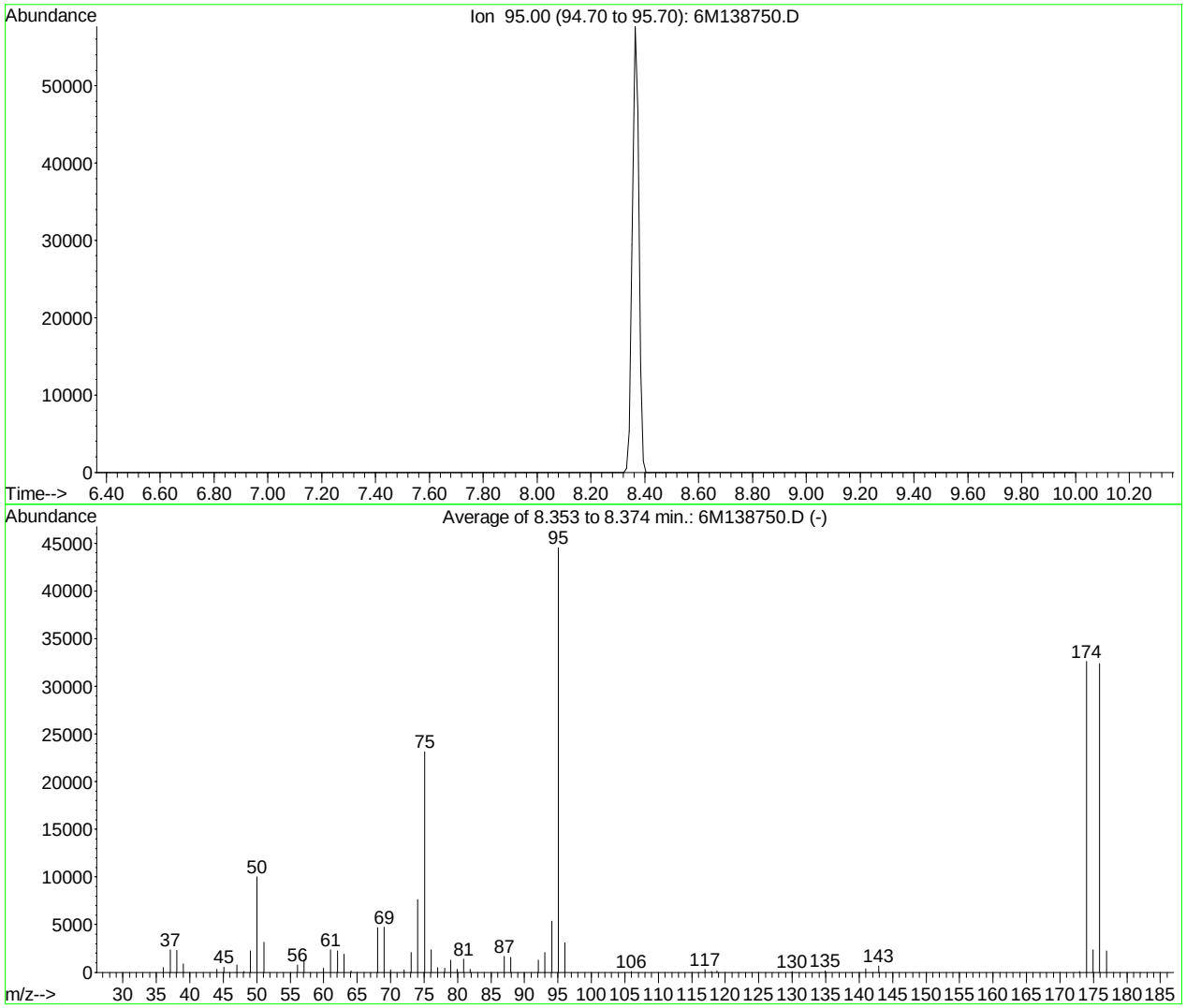

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	10010	PASS
75	95	30	60	52.0	23152	PASS
95	95	100	100	100.0	44552	PASS
96	95	5	9	6.9	3085	PASS
173	174	0.00	2	0.3	113	PASS
174	95	50	100	73.2	32632	PASS
175	174	5	9	7.2	2336	PASS
176	174	95	101	99.2	32384	PASS
177	176	5	9	7.0	2251	PASS

6M138750.D BFB.M Mon Apr 25 09:21:54 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141241.D Vial: 1
Acq On    : 15 Aug 2016  10:04                        Operator: TMB
Sample    : WG580238-01 50ng BFB STD 8260             Inst    : HPMS6
Misc      : 1,1 STD77509                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:MSV01  08-10-16 - HPMS6
```

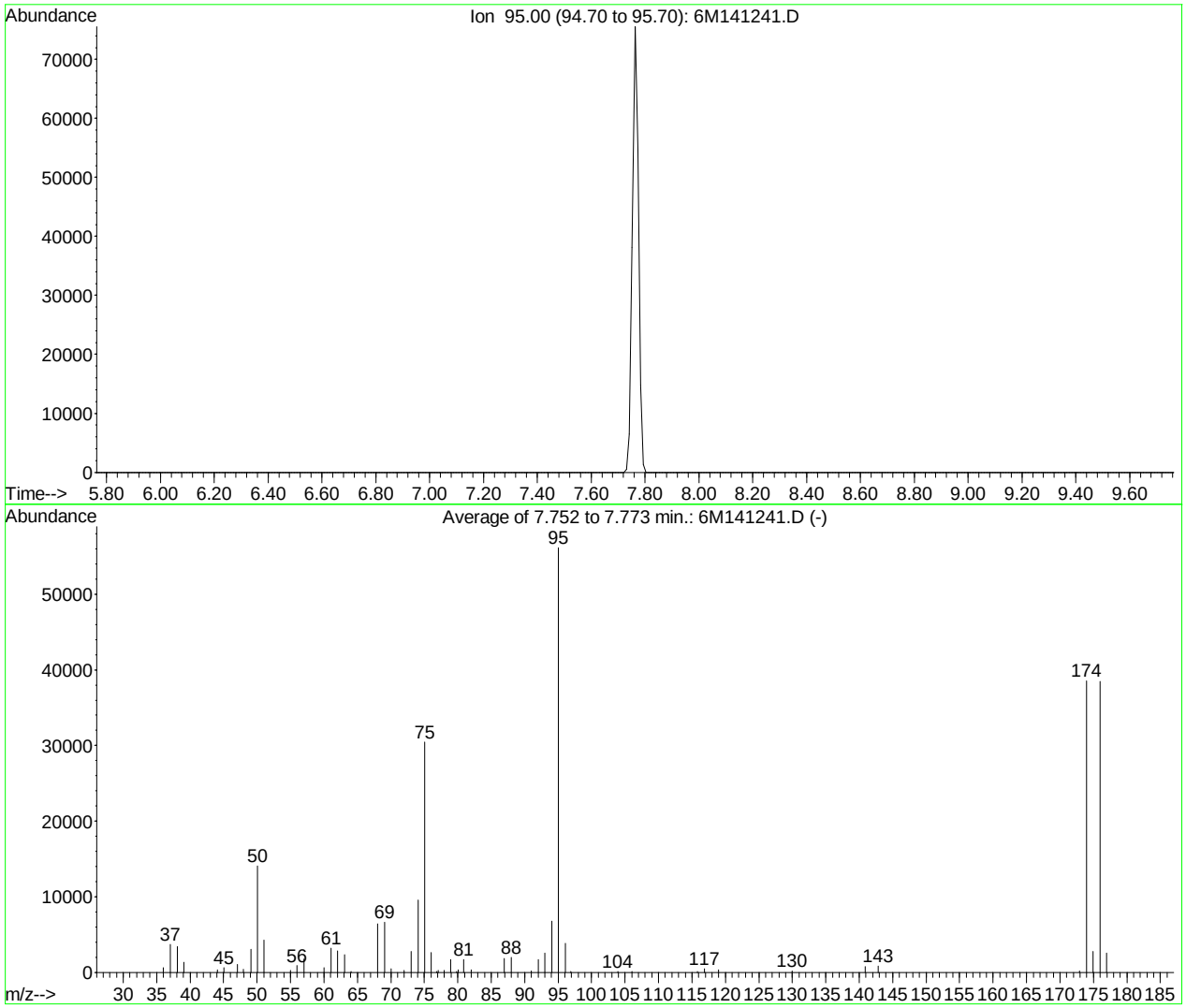

AutoFind: Scans 261, 262, 263; Background Corrected with Scan 256

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.1	14095	PASS
75	95	30	60	54.2	30424	PASS
95	95	100	100	100.0	56168	PASS
96	95	5	9	6.8	3796	PASS
173	174	0.00	2	0.5	185	PASS
174	95	50	100	68.6	38525	PASS
175	174	5	9	7.1	2730	PASS
176	174	95	101	99.9	38487	PASS
177	176	5	9	6.5	2513	PASS

6M141241.D 8260WT.M Mon Aug 15 11:36:46 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141244.D Vial: 4
Acq On : 15 Aug 2016 11:34 Operator: TMB
Sample : WG580241-01 VBLK0815 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 15 13:33:24 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	813289	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	611427	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	312537	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.58	111	222186	25.0404 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.16%		
43) 1,2-Dichloroethane-d4	10.30	65	277489	23.3668 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.48%		
58) Toluene-d8	13.03	98	725611	24.9412 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.76%		
80) p-Bromofluorobenzene	17.00	95	305076	27.3204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.28%		

Target Compounds

					Qvalue
13) Acetone	5.90	43	1453	0.5639 ug/L #	48
29) 2-Butanone	8.96	43	5220	1.3973 ug/L #	57
36) Tetrahydrofuran	9.54	42	2617	1.1126 ug/L #	61
98) 1,2,4-Trichlorobenzene	21.93	180	191	0.1425 ug/L #	83
100) Naphthalene	22.37	128	650	0.3997 ug/L #	67

(#) = qualifier out of range (m) = manual integration
6M141244.D 8260WT.M Mon Aug 15 13:33:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141244.D Vial: 4
Acq On : 15 Aug 2016 11:34 Operator: TMB
Sample : WG580241-01 VBLK0815 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 15 13:33 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

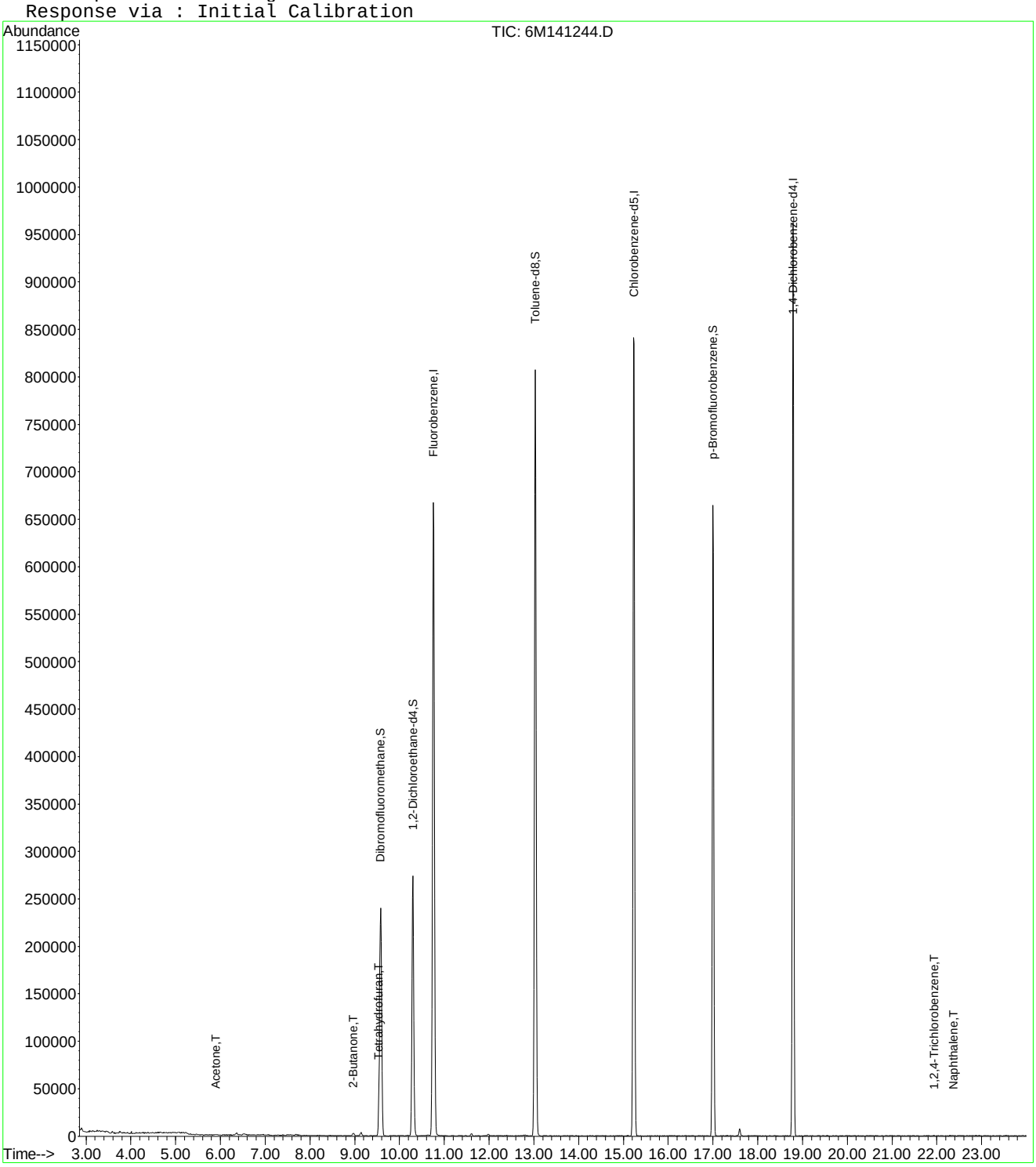

6M141244.D 8260WT.M Mon Aug 15 13:33:28 2016 Page 2

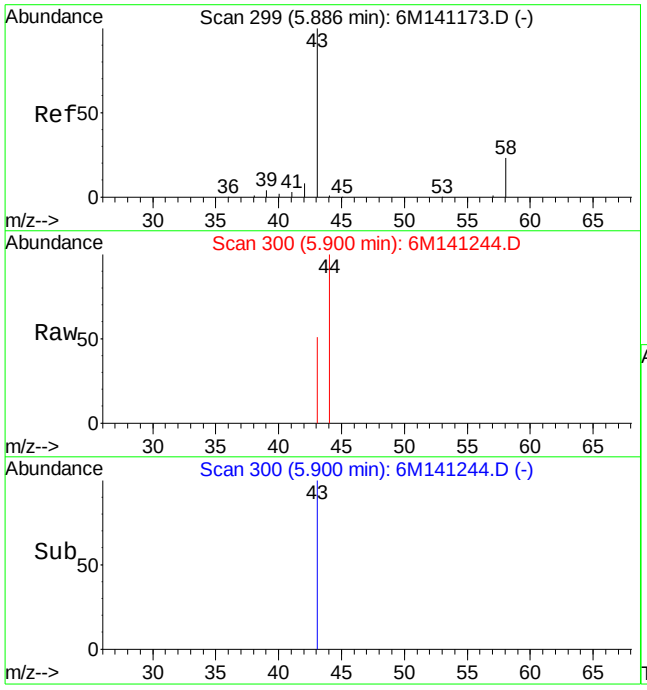

#13
Acetone
Concen: 0.56 ug/L
RT: 5.90 min Scan# 300
Delta R.T. 0.00 min
Lab File: 6M141244.D
Acq: 15 Aug 2016 11:34

Tgt Ion: 43 Resp: 1453

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

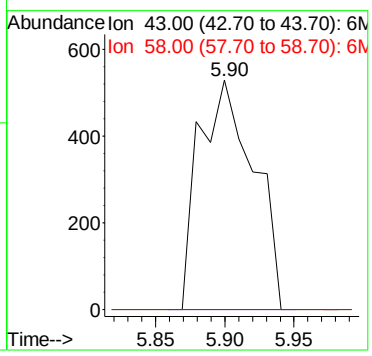

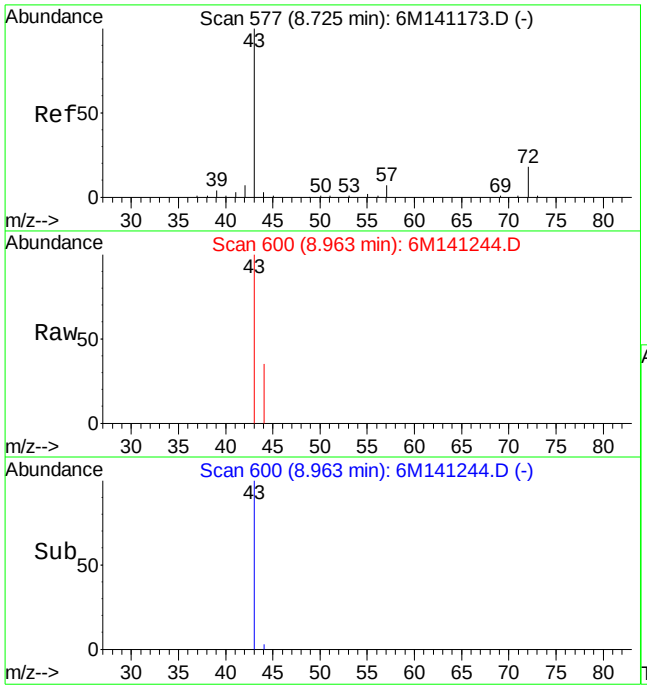

#29
2-Butanone
Concen: 1.40 ug/L
RT: 8.96 min Scan# 600
Delta R.T. 0.24 min
Lab File: 6M141244.D
Acq: 15 Aug 2016 11:34

Tgt Ion: 43 Resp: 5220

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.9	27.9#

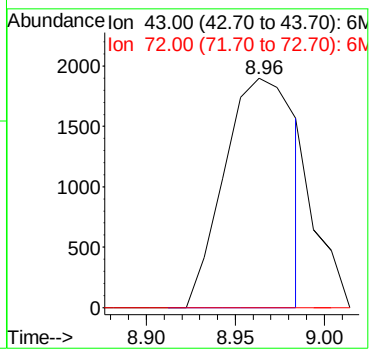

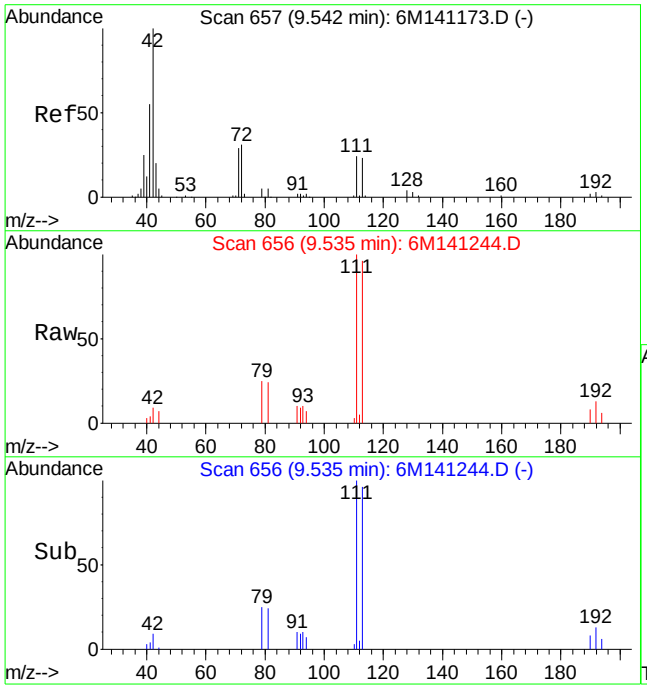

#36
Tetrahydrofuran
Concen: 1.11 ug/L
RT: 9.54 min Scan# 656
Delta R.T. -0.01 min
Lab File: 6M141244.D
Acq: 15 Aug 2016 11:34

Tgt Ion: 42 Resp: 2617

Ion	Ratio	Lower	Upper
42	100		
72	14.9	20.8	48.4#
71	7.7	19.9	46.5#

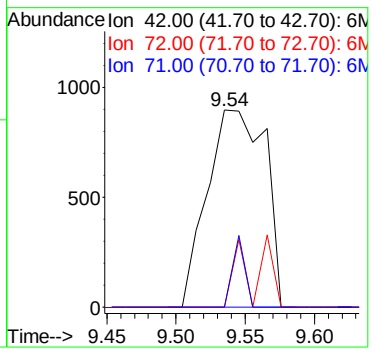

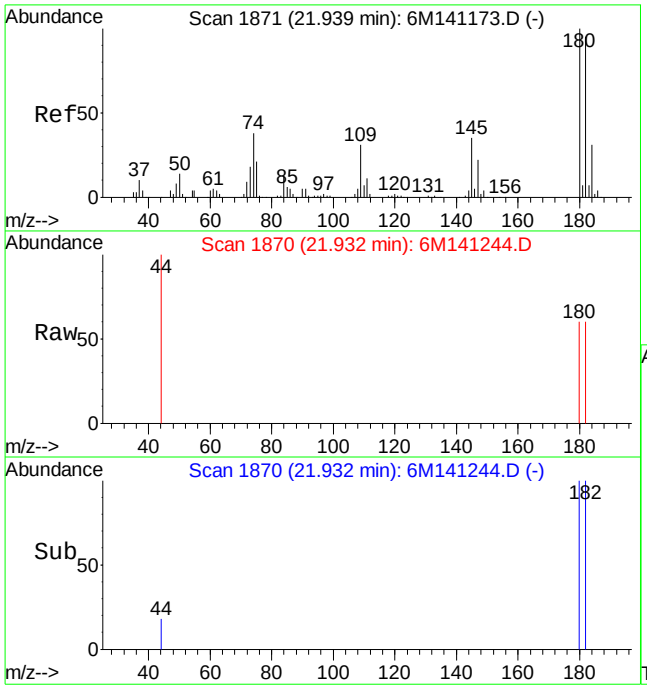

#98
1,2,4-Trichlorobenzene
Concen: 0.14 ug/L
RT: 21.93 min Scan# 1870
Delta R.T. -0.01 min
Lab File: 6M141244.D
Acq: 15 Aug 2016 11:34

Tgt Ion:180 Resp: 191

Ion	Ratio	Lower	Upper
180	100		
182	100.0	57.7	134.5
145	0.0	19.0	44.4#

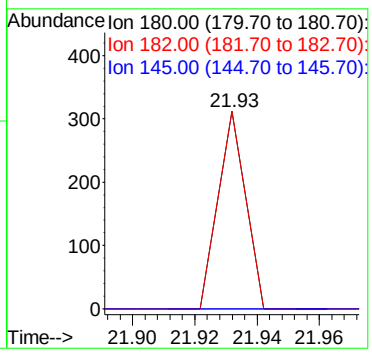

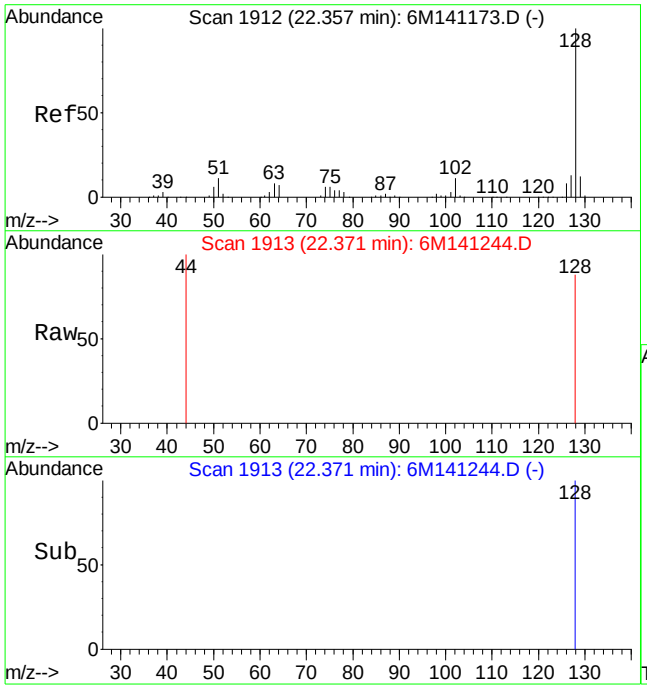

#100
Naphthalene
Concen: 0.40 ug/L
RT: 22.37 min Scan# 1913
Delta R.T. 0.00 min
Lab File: 6M141244.D
Acq: 15 Aug 2016 11:34

Tgt Ion:128 Resp: 650

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.8	18.2#

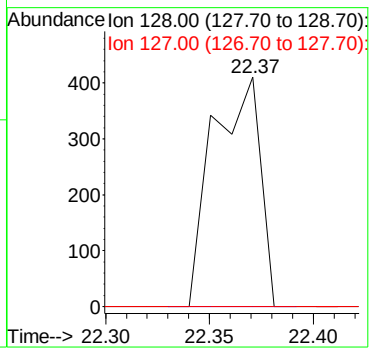

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141249.D Vial: 9
Acq On : 15 Aug 2016 14:15 Operator: TMB
Sample : WG580241-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 15 16:11:36 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	719888	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	566564	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.78	152	334033	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.57	111	203943	25.9665 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.88%		
43) 1,2-Dichloroethane-d4	10.30	65	259747	24.7107 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.84%		
58) Toluene-d8	13.02	98	667043	24.7437 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.96%		
80) p-Bromofluorobenzene	17.00	95	297656	24.9405 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.76%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	309548	20.1835 ug/L	100
3) Chloromethane	3.35	50	282573	18.0501 ug/L	98
4) Vinyl Chloride	3.56	62	215179	20.8469 ug/L	100
5) 1,3-Butadiene	3.59	54	137312	14.9543 ug/L	97
6) Bromomethane	4.38	94	94759	18.7314 ug/L	98
7) Chloroethane	4.53	64	124568	21.1631 ug/L	90
8) Trichlorofluoromethane	5.00	101	327004	20.0146 ug/L	99
9) Diethyl ether	5.54	59	736277	128.1211 ug/L	96
10) Isoprene	5.56	67	265392	24.3750 ug/L	89
11) Acrolein	5.78	56	81980	93.8985 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	169744	23.0742 ug/L	98
13) Acetone	5.90	43	46913	20.5705 ug/L	95
14) 1,1-Dichloroethene	6.10	61	276753	18.0311 ug/L	92
15) Tert-Butyl Alcohol	6.24	59	101963	163.7810 ug/L	92
16) Dimethyl Sulfide	6.38	62	214466	23.3442 ug/L	87
17) Iodomethane	6.63	142	157976	19.5709 ug/L	81
18) Methyl acetate	6.68	43	130729	20.8852 ug/L	98
19) Methylene Chloride	6.93	84	161489	19.6127 ug/L	88
20) Carbon Disulfide	6.95	76	538238	21.0655 ug/L	100
21) Acrylonitrile	7.14	53	59049	22.1316 ug/L	97
22) Methyl Tert Butyl Ether	7.16	73	438913	21.5724 ug/L	98
23) trans-1,2-Dichloroethene	7.41	96	153376	20.4691 ug/L	87
24) n-Hexane	7.49	57	227658	20.4098 ug/L	96
25) Diisopropyl ether	7.89	45	3662625	116.4364 ug/L	97
26) Vinyl Acetate	8.07	43	236678	19.6041 ug/L	97
27) 1,1-Dichloroethane	8.09	63	322693	19.1382 ug/L	100
28) Ethyl-Tert-Butyl ether	8.52	59	2794782	108.8949 ug/L	98
29) 2-Butanone	8.73	43	68562	20.7334 ug/L	96
30) Propionitrile	8.84	54	91044	104.0085 ug/L	96
31) 2,2-Dichloropropane	8.94	77	273799	19.1595 ug/L	96
32) cis-1,2-Dichloroethene	9.02	96	173076	20.7768 ug/L	85
33) Chloroform	9.25	83	318623	19.7858 ug/L	99
34) 1-Bromopropane	9.40	122	36403	27.5570 ug/L	98
35) Bromochloromethane	9.50	130	97816	20.6758 ug/L	99
36) Tetrahydrofuran	9.54	42	203941	97.9576 ug/L	94
38) 1,1,1-Trichloroethane	9.84	97	304260	20.0331 ug/L	99
39) Cyclohexane	9.86	56	316100	21.5365 ug/L	95
40) 1,1-Dichloropropene	10.06	75	221653	19.4973 ug/L	94
41) Tert-Amyl-Methyl ether	10.21	73	2164444	114.9715 ug/L	94
42) Carbon Tetrachloride	10.22	117	276347	20.4038 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141249.D Vial: 9
Acq On : 15 Aug 2016 14:15 Operator: TMB
Sample : WG580241-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 15 16:11:36 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	275870	20.2255 ug/L	93
46)	Benzene	10.46	78	636192	20.6358 ug/L	97
47)	Trichloroethene	11.33	130	160935	20.1137 ug/L	85
48)	Methylcyclohexane	11.41	83	221730	20.4937 ug/L	92
49)	1,2-Dichloropropane	11.57	63	183920	21.1701 ug/L	86
50)	1,4-Dioxane	11.93	88	5472	108.0441 ug/L	83
51)	Bromodichloromethane	11.92	83	250454	20.6641 ug/L	99
52)	Dibromomethane	12.01	93	92919	19.8327 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.30	63	80876	19.8759 ug/L	99
54)	4-Methyl-2-Pentanone	12.33	58	50130	20.8157 ug/L	99
55)	cis-1,3-Dichloropropene	12.67	75	271125	22.9271 ug/L	97
56)	Dimethyl Disulfide	12.95	79	143016	20.2131 ug/L	100
59)	Toluene	13.15	91	665061	20.4239 ug/L	99
60)	Ethyl Methacrylate	13.30	69	175382	19.2393 ug/L	91
62)	trans-1,3-Dichloropropene	13.37	75	241566	19.6883 ug/L	93
63)	1,1,2-Trichloroethane	13.62	97	127599	19.5601 ug/L	98
64)	2-Hexanone	13.57	43	96584	18.0566 ug/L	93
65)	1,3-Dichloropropane	13.97	76	233553	20.6777 ug/L	89
66)	Tetrachloroethene	14.09	166	167132	19.1618 ug/L	93
67)	Dibromochloromethane	14.39	129	170187	19.5655 ug/L	99
68)	1,2-Dibromoethane	14.69	107	118652	19.5191 ug/L	99
69)	1-Chlorohexane	14.84	91	204557	19.7530 ug/L	83
70)	Chlorobenzene	15.28	112	450154	19.9292 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.33	131	178408	20.0306 ug/L	94
72)	Ethylbenzene	15.33	106	229037	19.9275 ug/L	89
73)	m-,p-Xylene	15.43	106	574051	41.7987 ug/L	91
74)	o-Xylene	16.10	106	283567	21.4829 ug/L	90
75)	Styrene	16.14	104	488476	21.4511 ug/L	90
76)	Bromoform	16.69	173	101178	18.3256 ug/L	99
77)	Isopropylbenzene	16.61	105	733940	21.8631 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.86	83	155134	18.6246 ug/L	97
81)	1,2,3-Trichloropropane	17.09	110	48072	18.7404 ug/L	93
82)	trans-1,4-Dichloro-2-Buten	17.16	53	47050	15.3114 ug/L	91
83)	n-Propylbenzene	17.20	91	928653	21.6543 ug/L	97
84)	Bromobenzene	17.32	156	196779	18.7662 ug/L	94
85)	1,3,5-Trimethylbenzene	17.43	105	654786	21.4991 ug/L	97
86)	2-Chlorotoluene	17.50	91	599421	19.4107 ug/L	99
87)	4-Chlorotoluene	17.56	91	637567	21.1345 ug/L	92
88)	a-Methylstyrene	17.91	118	364372	20.5739 ug/L	99
89)	tert-Butylbenzene	17.97	134	133277	20.4967 ug/L	70
90)	1,2,4-Trimethylbenzene	18.03	105	686257	20.1445 ug/L	97
91)	sec-Butylbenzene	18.28	105	742910	20.1831 ug/L	98
92)	p-Isopropyltoluene	18.49	119	636630	20.1806 ug/L	98
93)	1,3-Dichlorobenzene	18.68	146	396885	19.9787 ug/L	95
94)	1,4-Dichlorobenzene	18.84	146	403396	19.7762 ug/L	95
95)	n-Butylbenzene	19.10	91	592044	20.3488 ug/L	95
96)	1,2-Dichlorobenzene	19.41	146	378453	19.6588 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.59	75	33215	18.7196 ug/L	77
98)	1,2,4-Trichlorobenzene	21.94	180	231112	19.7478 ug/L	98
99)	Hexachlorobutadiene	22.13	225	94384	19.5642 ug/L	99
100)	Naphthalene	22.36	128	424989	18.4344 ug/L	100
101)	1,2,3-Trichlorobenzene	22.74	180	220240	21.2239 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M141249.D 8260WT.M Mon Aug 15 16:11:40 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141249.D Vial: 9
Acq On : 15 Aug 2016 14:15 Operator: TMB
Sample : WG580241-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 15 16:11 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

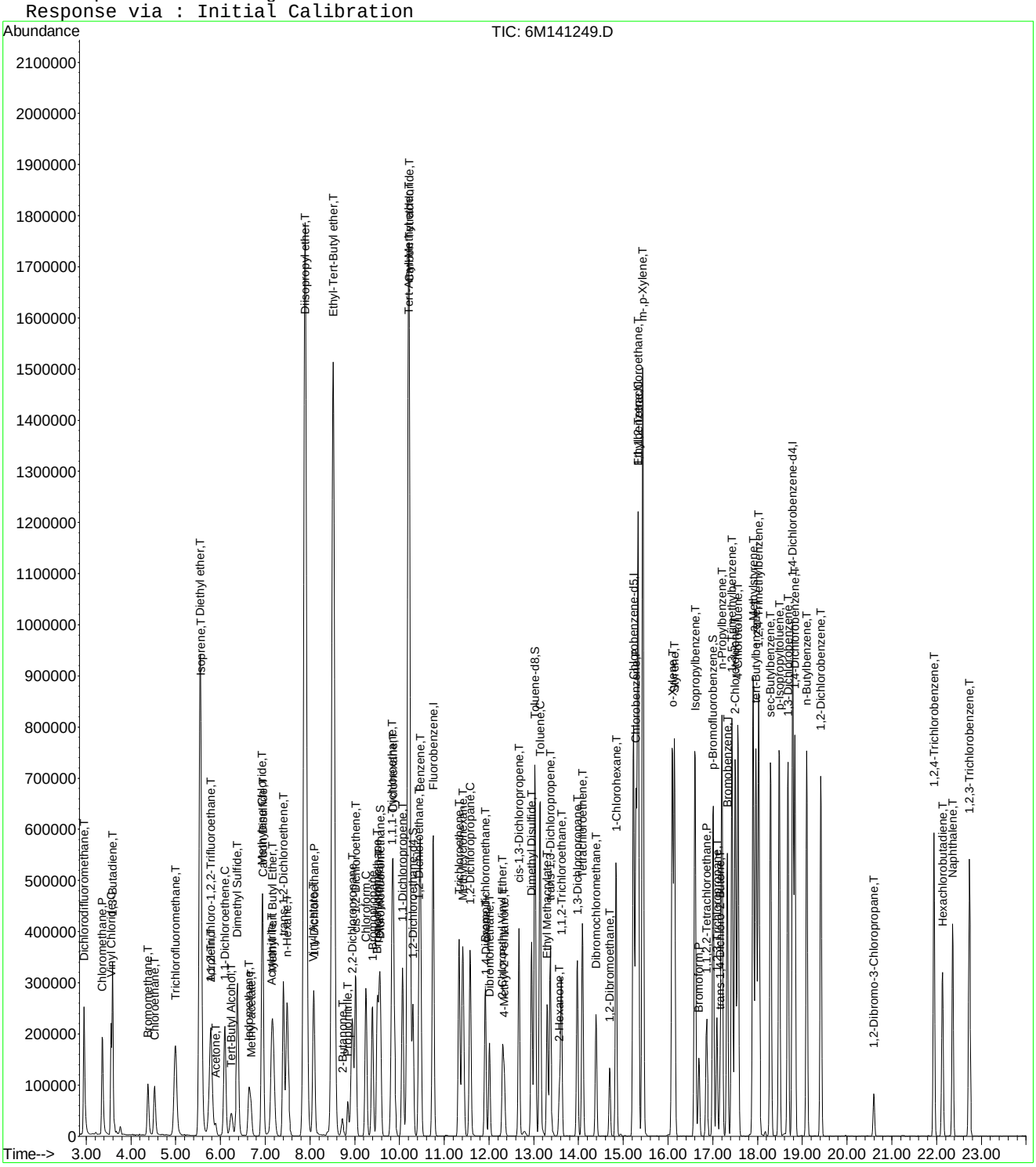

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141250.D Vial: 10
Acq On : 15 Aug 2016 14:47 Operator: TMB
Sample : WG580241-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 15 16:11:44 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	717970	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.23	117	565669	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.79	152	339560	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.58	111	203267	25.9495 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.80%		
43) 1,2-Dichloroethane-d4	10.30	65	259704	24.7726 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.08%		
58) Toluene-d8	13.03	98	662092	24.5989 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.40%		
80) p-Bromofluorobenzene	17.00	95	298608	24.6130 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	324527	21.2167 ug/L	100
3) Chloromethane	3.36	50	307295	19.6817 ug/L	98
4) Vinyl Chloride	3.55	62	222875	21.6502 ug/L	99
5) 1,3-Butadiene	3.59	54	135381	14.7682 ug/L	96
6) Bromomethane	4.38	94	98720	19.5665 ug/L	99
7) Chloroethane	4.53	64	129280	22.0223 ug/L	93
8) Trichlorofluoromethane	4.99	101	325547	19.9787 ug/L	100
9) Diethyl ether	5.54	59	663513	115.7677 ug/L	95
10) Isoprene	5.56	67	233228	21.4782 ug/L	83
11) Acrolein	5.78	56	85102	97.7348 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	171865	23.4250 ug/L	99
13) Acetone	5.89	43	49290	21.6706 ug/L	96
14) 1,1-Dichloroethene	6.09	61	285478	18.6492 ug/L	91
15) Tert-Butyl Alcohol	6.26	59	128006	206.1627 ug/L	94
16) Dimethyl Sulfide	6.37	62	220347	24.0484 ug/L	89
17) Iodomethane	6.64	142	163483	20.2668 ug/L	80
18) Methyl acetate	6.68	43	137458	22.0188 ug/L	97
19) Methylene Chloride	6.92	84	164877	20.0777 ug/L	88
20) Carbon Disulfide	6.95	76	548104	21.5089 ug/L	100
21) Acrylonitrile	7.14	53	60979	22.9161 ug/L	97
22) Methyl Tert Butyl Ether	7.17	73	453103	22.3294 ug/L	99
23) trans-1,2-Dichloroethene	7.41	96	155024	20.7443 ug/L	85
24) n-Hexane	7.49	57	233188	20.9614 ug/L	95
25) Diisopropyl ether	7.89	45	3708264	118.2022 ug/L	97
26) Vinyl Acetate	8.07	43	241708	20.0742 ug/L	96
27) 1,1-Dichloroethane	8.09	63	329918	19.6190 ug/L	100
28) Ethyl-Tert-Butyl ether	8.51	59	2841139	110.9969 ug/L	98
29) 2-Butanone	8.72	43	71768	21.7609 ug/L	91
30) Propionitrile	8.84	54	93526	107.1294 ug/L	95
31) 2,2-Dichloropropane	8.94	77	285370	20.0225 ug/L	97
32) cis-1,2-Dichloroethene	9.01	96	176402	21.2327 ug/L	71
33) Chloroform	9.25	83	323049	20.1143 ug/L	99
34) 1-Bromopropane	9.39	122	36562	27.7513 ug/L	98
35) Bromochloromethane	9.50	130	98958	20.9731 ug/L	99
36) Tetrahydrofuran	9.55	42	210365	101.3131 ug/L	94
38) 1,1,1-Trichloroethane	9.84	97	304798	20.1221 ug/L	98
39) Cyclohexane	9.86	56	320815	21.9162 ug/L	95
40) 1,1-Dichloropropene	10.07	75	223302	19.6948 ug/L	94
41) Tert-Amyl-Methyl ether	10.20	73	2208569	117.6287 ug/L	94
42) Carbon Tetrachloride	10.22	117	275616	20.4042 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141250.D Vial: 10
Acq On : 15 Aug 2016 14:47 Operator: TMB
Sample : WG580241-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 15 16:11:44 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	281611	20.7016 ug/L	93
46)	Benzene	10.46	78	641885	20.8761 ug/L	96
47)	Trichloroethene	11.33	130	162446	20.3568 ug/L	84
48)	Methylcyclohexane	11.41	83	224696	20.8233 ug/L	94
49)	1,2-Dichloropropane	11.58	63	182402	21.0514 ug/L	85
50)	1,4-Dioxane	11.92	88	9779	193.6012 ug/L	81
51)	Bromodichloromethane	11.91	83	252324	20.8740 ug/L	100
52)	Dibromomethane	12.01	93	95026	20.3367 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.30	63	86020	21.1280 ug/L	98
54)	4-Methyl-2-Pentanone	12.33	58	51253	21.3389 ug/L	99
55)	cis-1,3-Dichloropropene	12.67	75	279066	23.6617 ug/L	98
56)	Dimethyl Disulfide	12.96	79	142638	20.2136 ug/L	98
59)	Toluene	13.14	91	668077	20.5490 ug/L	99
60)	Ethyl Methacrylate	13.30	69	181725	19.9498 ug/L	90
62)	trans-1,3-Dichloropropene	13.37	75	247582	20.2106 ug/L	94
63)	1,1,2-Trichloroethane	13.61	97	129698	19.9133 ug/L	99
64)	2-Hexanone	13.57	43	104632	19.5922 ug/L	91
65)	1,3-Dichloropropane	13.98	76	237834	21.0900 ug/L	90
66)	Tetrachloroethene	14.09	166	166708	19.1434 ug/L	92
67)	Dibromochloromethane	14.40	129	173784	20.0106 ug/L	100
68)	1,2-Dibromoethane	14.69	107	118739	19.5643 ug/L	100
69)	1-Chlorohexane	14.83	91	205750	19.8980 ug/L	83
70)	Chlorobenzene	15.28	112	450918	19.9946 ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.34	131	175563	19.7424 ug/L	94
72)	Ethylbenzene	15.34	106	232313	20.2445 ug/L	91
73)	m-,p-Xylene	15.44	106	577790	42.1375 ug/L	91
74)	o-Xylene	16.09	106	285989	21.7007 ug/L	89
75)	Styrene	16.14	104	491735	21.6279 ug/L	91
76)	Bromoform	16.69	173	102108	18.5233 ug/L	98
77)	Isopropylbenzene	16.60	105	737710	22.0102 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.87	83	157446	18.5945 ug/L	100
81)	1,2,3-Trichloropropane	17.09	110	50067	19.2004 ug/L	92
82)	trans-1,4-Dichloro-2-Buten	17.16	53	51083	16.3073 ug/L	85
83)	n-Propylbenzene	17.20	91	929765	21.3273 ug/L	98
84)	Bromobenzene	17.33	156	196939	18.4757 ug/L	93
85)	1,3,5-Trimethylbenzene	17.43	105	665760	21.5037 ug/L	96
86)	2-Chlorotoluene	17.50	91	610832	19.4583 ug/L	96
87)	4-Chlorotoluene	17.56	91	636494	20.7555 ug/L	96
88)	a-Methylstyrene	17.91	118	370023	20.5529 ug/L	96
89)	tert-Butylbenzene	17.97	134	133651	20.2196 ug/L	67
90)	1,2,4-Trimethylbenzene	18.03	105	698491	20.1699 ug/L	96
91)	sec-Butylbenzene	18.29	105	759035	20.2855 ug/L	98
92)	p-Isopropyltoluene	18.48	119	654000	20.3938 ug/L	97
93)	1,3-Dichlorobenzene	18.68	146	401477	19.8809 ug/L	95
94)	1,4-Dichlorobenzene	18.84	146	413101	19.9223 ug/L	94
95)	n-Butylbenzene	19.10	91	608301	20.5672 ug/L	96
96)	1,2-Dichlorobenzene	19.41	146	393610	20.1133 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.59	75	34711	19.2443 ug/L	81
98)	1,2,4-Trichlorobenzene	21.94	180	245499	20.6300 ug/L	97
99)	Hexachlorobutadiene	22.14	225	100148	20.4211 ug/L	99
100)	Naphthalene	22.36	128	450826	19.2207 ug/L	100
101)	1,2,3-Trichlorobenzene	22.74	180	232560	22.0464 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M141250.D 8260WT.M Mon Aug 15 16:11:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\081516\6M141250.D Vial: 10
Acq On : 15 Aug 2016 14:47 Operator: TMB
Sample : WG580241-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD77551 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 15 16:11 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 08-10-16 - HPMS6
Last Update : Thu Aug 11 09:53:58 2016
Response via : Initial Calibration

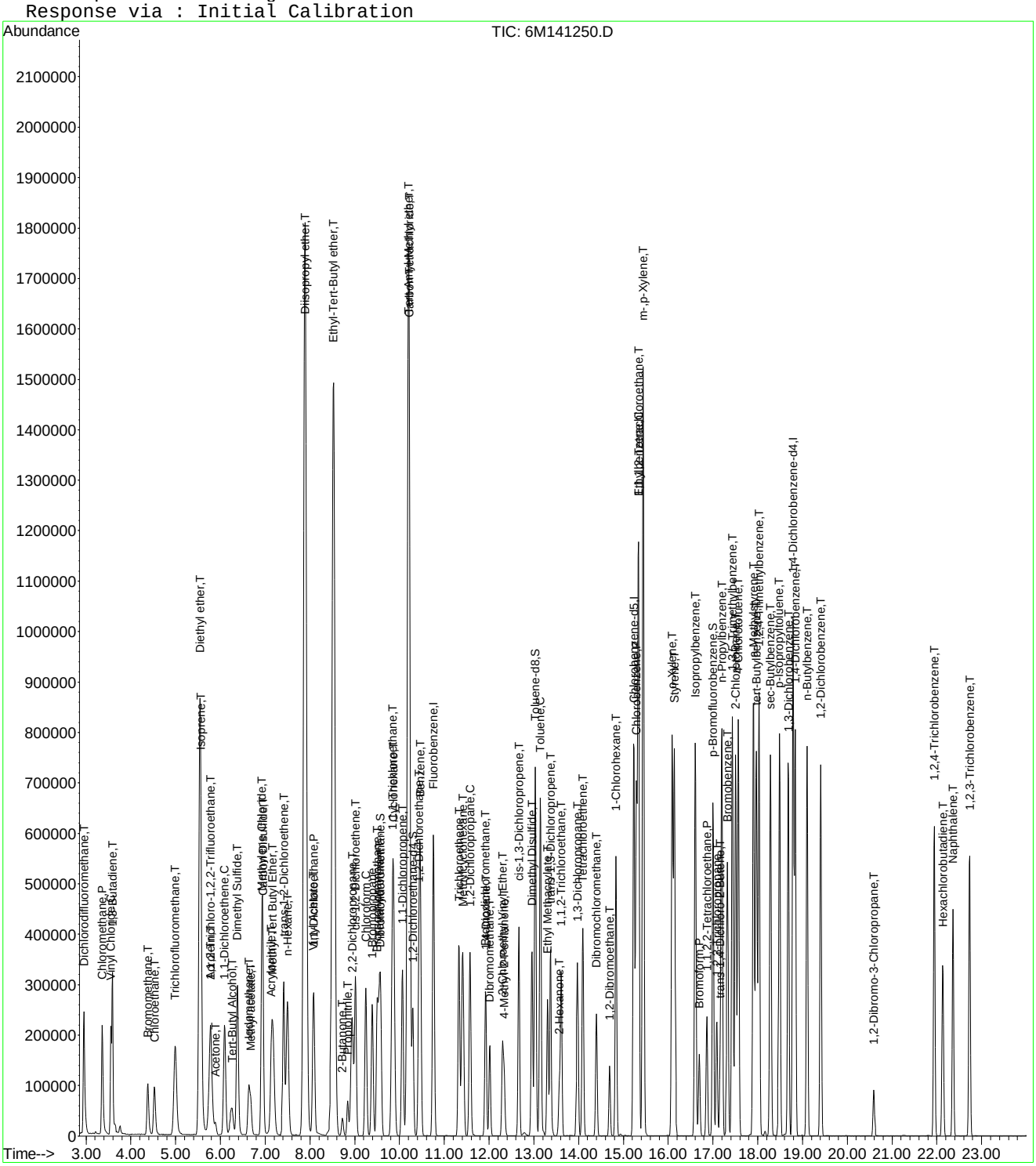

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW05-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579430	**Analyst:**	JDS	**Run Date:**	08/08/2016 15:26
Collect Date:	08/03/2016 07:55	**Dilution:**	1	**File ID:**	16G50450
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	15.0		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW05-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579716	**Analyst:**	JDS	**Run Date:**	08/10/2016 14:49
Collect Date:	08/03/2016 07:55	**Dilution:**	10	**File ID:**	16G50508
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	668000	H1	100000	50000	25000
Methane	74-82-8	20.0	U,H1	50.0	20.0	10.0
ethene	74-85-1	20.0	U,H1	50.0	20.0	10.0
ethane	74-84-0	20.0	U,H1	50.0	20.0	10.0

H1	Sample analysis performed past holding time.
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-08	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW16-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579430	**Analyst:**	JDS	**Run Date:**	08/08/2016 15:38
Collect Date:	08/03/2016 09:10	**Dilution:**	1	**File ID:**	16G50451
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-08	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW16-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579716	**Analyst:**	JDS	**Run Date:**	08/10/2016 15:01
Collect Date:	08/03/2016 09:10	**Dilution:**	10	**File ID:**	16G50509
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	739000	H1	100000	50000	25000
Methane	74-82-8	20.0	U,H1	50.0	20.0	10.0
ethene	74-85-1	20.0	U,H1	50.0	20.0	10.0
ethane	74-84-0	20.0	U,H1	50.0	20.0	10.0

H1	Sample analysis performed past holding time.
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	LHSMW19-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579430	**Analyst:**	JDS	**Run Date:**	08/08/2016 15:49
Collect Date:	08/03/2016 10:20	**Dilution:**	1	**File ID:**	16G50452
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	LHSMW19-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579716	**Analyst:**	JDS	**Run Date:**	08/10/2016 15:12
Collect Date:	08/03/2016 10:20	**Dilution:**	10	**File ID:**	16G50510
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	854000	H1	100000	50000	25000
Methane	74-82-8	20.0	U,H1	50.0	20.0	10.0
ethene	74-85-1	20.0	U,H1	50.0	20.0	10.0
ethane	74-84-0	20.0	U,H1	50.0	20.0	10.0

H1	Sample analysis performed past holding time.
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-13	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW11-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579430	**Analyst:**	JDS	**Run Date:**	08/08/2016 16:01
Collect Date:	08/03/2016 11:25	**Dilution:**	1	**File ID:**	16G50453
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	45.9		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-13	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW11-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579716	**Analyst:**	JDS	**Run Date:**	08/10/2016 15:23
Collect Date:	08/03/2016 11:25	**Dilution:**	10	**File ID:**	16G50511
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	682000	H1	100000	50000	25000
Methane	74-82-8	22.1	J,H1	50.0	20.0	10.0
ethene	74-85-1	20.0	U,H1	50.0	20.0	10.0
ethane	74-84-0	20.0	U,H1	50.0	20.0	10.0

H1	Sample analysis performed past holding time.
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-15	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW09-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579430	**Analyst:**	JDS	**Run Date:**	08/08/2016 16:12
Collect Date:	08/03/2016 13:45	**Dilution:**	1	**File ID:**	16G50454
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-15	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	46WW09-080316	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/25/2016 12:34
Workgroup #:	WG579716	**Analyst:**	JDS	**Run Date:**	08/10/2016 15:35
Collect Date:	08/03/2016 13:45	**Dilution:**	10	**File ID:**	16G50512
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	603000	H1	100000	50000	25000
Methane	74-82-8	20.0	U,H1	50.0	20.0	10.0
ethene	74-85-1	20.0	U,H1	50.0	20.0	10.0
ethane	74-84-0	20.0	U,H1	50.0	20.0	10.0

H1	Sample analysis performed past holding time.
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:

y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 032516
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 19
Method: 5021 SOP: RSK01 Rev: 19

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD75351 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG562401 WG562514

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G49625	RINSE	NA	1	1		03/25/16 11:11
16G49626	WG562401-01 0.67umol/moL STD RSK175	NA	1	1	STD67276	03/25/16 11:22
16G49627	WG562401-02 1.67umol/moL STD RSK175	NA	1	1	STD67276	03/25/16 11:34
16G49628	WG562401-03 33.3umol/moL STD RSK175	NA	1	1	STD67276	03/25/16 11:46
16G49629	WG562401-04 66.7umol/moL STD RSK175	NA	1	1	STD67276	03/25/16 11:58
16G49630	WG562401-05 133umol/moL STD RSK175	NA	1	1	STD75351	03/25/16 12:10
16G49631	WG562401-06 333umol/moL STD RSK175	NA	1	1	STD75351	03/25/16 12:22
16G49632	WG562401-07 533umol/moL STD RSK175	NA	1	1	STD75351	03/25/16 12:34
16G49633	RINSE	NA	1	1		03/25/16 12:46
16G49634	WG562401-08 133umol/moL ALT SRC STD	NA	1	1	STD68250	03/25/16 13:47
16G49635	WG562401-08 133umol/moL ALT SRC STD	NA	1	1	STD68250	03/25/16 18:26
16G49636	WG562514-01 BLANK STD RSK175	NA	1	1		03/25/16 18:38
16G49637	WG562514-02 67umol/moL LCS STD RSK1	NA	1	1	STD68250	03/25/16 18:50
16G49638	WG562514-03 67umol/moL LCS2 STD RSK	NA	1	1	STD68250	03/25/16 19:02
16G49639	L16031272-14 B A1 RSK175	<2	1	1		03/25/16 19:14
16G49640	L16031272-15 B A1 RSK175	<2	1	1		03/25/16 19:26
16G49641	L16031272-22 B A1 RSK175	<2	1	1		03/25/16 19:38
16G49642	L16031272-03 B D1 10X RSK175	<2	1	10		03/25/16 19:50
16G49643	L16031272-04 B D1 5X RSK175	<2	1	5		03/25/16 20:01
16G49644	L16031272-08 B D1 50X RSK175	<2	1	50		03/25/16 20:13
16G49645	L16031272-19 B D1 10X RSK175	<2	1	10		03/25/16 20:25
16G49646	WG562401-09 133umol/moL CCV STD RSK	NA	1	1	STD75351	03/25/16 20:37
16G49647	L16031363-04 A RSK175	<2	1	1		03/25/16 20:49
16G49648	L16031363-05 A RSK175	<2	1	1		03/25/16 21:01
16G49649	L16031363-11 A RSK175	<2	1	1		03/25/16 21:12
16G49650	L16031363-12 A RSK175	<2	1	1		03/25/16 21:24
16G49651	L16031363-17 A RSK175	<2	1	1		03/25/16 21:36
16G49652	L16031388-01 A RSK175	<2	1	1		03/25/16 21:48
16G49653	WG562401-10 133umol/moL CCV STD RSK	NA	1	1	STD75351	03/25/16 21:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X			CO2

Approved: April 01, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 032516
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 19
Method: 5021 SOP: RSK01 Rev: 19

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD75351 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG562401 WG562514

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 16G49634				
	Alt. Src. failed low for CO2			
23	X	50	Over Calibration Range	m
File ID: 16G49647				
	L16031363-04			
24	X	20	Over Calibration Range	m
File ID: 16G49648				
	L16031363-05			
25	X	5	Over Calibration Range	m
File ID: 16G49649				
	L16031363-11			
26	X	5	Over Calibration Range	m
File ID: 16G49650				
	L16031363-12			
27	X	10	Over Calibration Range	m
File ID: 16G49651				
	L16031363-17			
28	X	5	Over Calibration Range	m, p
File ID: 16G49652				
	L16031388-01 took prop. hit with high failing prop result in CCV.			
33			Check Standard Failure	p
File ID: 16G49653				
	WG562401-10 failed high for prop.			

Approved: April 01, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 080816
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 19
Method: 5021 SOP: RSK01 Rev: 19

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD75351 LCS: STD68250 MS/MSD: STD68250

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG579430 WG579432

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G50447	WG579429-01 133umol/moL CCV STD RSK	NA	1	1	STD75351	08/08/16 14:37
16G50448	WG579430-01 BLANK STD RSK175	NA	1	1		08/08/16 15:03
16G50449	WG579430-02 67umol/mol LCS STD RSK17	NA	1	1	STD68250	08/08/16 15:15
16G50450	L16080330-05 A RSK175	5	1	1		08/08/16 15:26
16G50451	L16080330-08 A RSK175	7	1	1		08/08/16 15:38
16G50452	L16080330-11 A RSK175	7	1	1		08/08/16 15:49
16G50453	L16080330-13 A RSK175	5	1	1		08/08/16 16:01
16G50454	L16080330-15 A RSK175	7	1	1		08/08/16 16:12
16G50455	L16080317-04 A RSK175	5	1	1		08/08/16 16:24
16G50456	L16080321-15 A RSK175	<2	1	1		08/08/16 16:36
16G50457	L16080321-17 A RSK175	<2	1	1		08/08/16 16:47
16G50458	WG579429-02 133umol/moL CCV STD RSK	NA	1	1	STD75351	08/08/16 16:59
16G50459	L16080321-19 A RSK175	<2	1	1		08/08/16 17:10
16G50460	L16080321-21 A RSK175	<2	1	1		08/08/16 17:21
16G50461	WG579430-03 L16080321-23 A REF RSK17	<2	1	1		08/08/16 17:33
16G50462	WG579430-04 L16080321-25 A MS RSK17	<2	1	1	STD68250	08/08/16 17:44
16G50463	WG579430-05 L16080321-27 A MSD RSK1	<2	1	1	STD68250	08/08/16 17:56
16G50464	L16080321-29 A RSK175	<2	1	1		08/08/16 18:07
16G50465	L16080321-31 A RSK175	<2	1	1		08/08/16 18:19
16G50466	L16080321-32 A RSK175	<2	1	1		08/08/16 18:30
16G50467	L16080321-33 A RSK175	<2	1	1		08/08/16 18:41
16G50468	L16080375-01 A RSK175	7	1	1		08/08/16 18:53
16G50469	WG579429-03 133umol/moL CCV STD RSK	NA	1	1	STD75351	08/08/16 19:04
16G50470	L16080353-01 A RSK175	<2	1	1		08/08/16 19:16
16G50471	L16080353-03 A RSK175	<2	1	1		08/08/16 19:27
16G50472	WG579429-04 133umol/moL CCV STD RSK	NA	1	1	STD75351	08/08/16 19:39
16G50473	WG579432-01 BLANK STD RSK175	NA	1	1		08/08/16 19:50
16G50474	WG579432-02 67umol/mol LCS STD RSK17	NA	1	1	STD68250	08/08/16 20:01
16G50475	WG579432-03 67umol/mol LCS2 STD RSK1	NA	1	1	STD68250	08/08/16 20:13
16G50476	L16080353-05 A RSK175	<2	1	1		08/08/16 20:24
16G50477	L16080353-06 A RSK175	<2	1	1		08/08/16 20:35
16G50478	L16080353-07 A RSK175	<2	1	1		08/08/16 20:46
16G50479	WG579429-05 133umol/moL CCV STD RSK	NA	1	1	STD75351	08/08/16 20:58

Approved: August 16, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 080816
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 19
Method: 5021 SOP: RSK01 Rev: 19

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD75351 LCS: STD68250 MS/MSD: STD68250

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG579430 WG579432

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
4	X	10	Over Calibration Range	CO2
File ID:	16G50450			
	L16080330-05			
5	X	10	Over Calibration Range	CO2
File ID:	16G50451			
	L16080330-08			
6	X	10	Over Calibration Range	CO2
File ID:	16G50452			
	L16080330-11			
7	X	10	Over Calibration Range	CO2
File ID:	16G50453			
	L16080330-13			
8	X	10	Over Calibration Range	CO2
File ID:	16G50454			
	L16080330-15			
9	X	10	Over Calibration Range	CO2
File ID:	16G50455			
	L16080317-04			
10	X	20	Over Calibration Range	M
File ID:	16G50456			
	L16080321-15			
11	X	5	Over Calibration Range	M
File ID:	16G50457			
	L16080321-17			
13	X	10	Over Calibration Range	M
File ID:	16G50459			
	L16080321-19			
14	X	10	Over Calibration Range	M
File ID:	16G50460			
	L16080321-21			
15	X	10	Over Calibration Range	M
File ID:	16G50461			
	L16080321-23			
18	X	5	Over Calibration Range	M
File ID:	16G50464			
	L16080321-29			

Approved: August 16, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 080816
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 19
Method: 5021 SOP: RSK01 Rev: 19

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD75351 LCS: STD68250 MS/MSD: STD68250

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG579430 WG579432

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
19	X	1	Carry-over contamination	M
File ID:	16G50465			
	L16080321-31			
21	X	5	Over Calibration Range	M
File ID:	16G50467			
	L16080321-33			
22	X	50	Over Calibration Range	M
File ID:	16G50468			
	L16080375-01 sample received out of hold and with headspace			
24	X	5	Over Calibration Range	M
File ID:	16G50470			
	L16080353-01			
32	X	5	Over Calibration Range	M
File ID:	16G50478			
	L16080353-07			

Approved: August 16, 2016

Page: 3

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 081016
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 19
Method: 5021 SOP: RSK01 Rev: 19

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD75351 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG579716

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G50503	WG579713-01 133umol/moL CCV STD RSK	NA	1	1	STD75351	08/10/16 12:10
16G50504	WG579716-01 BLANK STD RSK175	NA	1	1		08/10/16 14:05
16G50505	WG579716-02 67umol/mol LCS STD RSK17	NA	1	1	STD68250	08/10/16 14:16
16G50506	WG579716-03 67umol/mol LCS2 STD RSK1	NA	1	1	STD68250	08/10/16 14:27
16G50507	L16080321-31 C A1 RSK175	<2	1	1		08/10/16 14:38
16G50508	L16080330-05 C A1 10X RSK175	5	1	10		08/10/16 14:49
16G50509	L16080330-08 C A1 10X RSK175	7	1	10		08/10/16 15:01
16G50510	L16080330-11 C A1 10X RSK175	7	1	10		08/10/16 15:12
16G50511	L16080330-13 C A1 10X RSK175	5	1	10		08/10/16 15:23
16G50512	L16080330-15 C A1 10X RSK175	7	1	10		08/10/16 15:35
16G50513	L16080317-04 C A1 10X RSK175	5	1	10		08/10/16 15:46
16G50514	WG579713-02 133umol/moL CCV STD RSK	NA	1	1	STD75351	08/10/16 15:58
16G50515	L16080321-15 C A1 20X RSK175	<2	1	20		08/10/16 16:09
16G50516	L16080321-17 C A1 5X RSK175	<2	1	5		08/10/16 16:20
16G50517	L16080321-19 C A1 10X RSK175	<2	1	10		08/10/16 16:31
16G50518	L16080430-01 A RSK175	<2	1	1		08/10/16 16:43
16G50519	L16080479-01 A RSK175	<2	1	1		08/10/16 16:55
16G50520	WG579713-03 133umol/moL CCV STD RSK	NA	1	1	STD75351	08/10/16 17:06

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7				
File ID: 16G50509				
	L16080330-08 sample ran out of hold			
8				
File ID: 16G50510				
	L16080330-11 sample ran out of hold			
9				
File ID: 16G50511				
	L16080330-13 sample ran out of hold			
10				
File ID: 16G50512				
	L16080330-15 sample ran out of hold			
13			Check Standard Failure	

Approved: August 16, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 081016
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 19
Method: 5021 SOP: RSK01 Rev: 19

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD75351 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG579716

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 16G50515				
	L16080321-15 CCV failure. no vials left for RR			
14			Check Standard Failure	
File ID: 16G50516				
	L16080321-17 CCV failure. no vials left for RR			
15			Check Standard Failure	
File ID: 16G50517				
	L16080321-19 CCV failure. no vials left for RR			
16	X	1	Check Standard Failure	
File ID: 16G50518				
	L16080430-01			
17	X	1	Check Standard Failure	
File ID: 16G50519				
	L16080479-01			
18			Check Standard Failure	
File ID: 16G50520				
	WG579713-03 CCV failed low			

Approved: August 16, 2016

Page: 2

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B220401

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG562401-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG562401-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG562401-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG562401-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG562401-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG562401-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG562401-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG562401-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B226899

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG579429-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579429-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579429-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579429-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579429-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-27	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16080353-06	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-31	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-32	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579432-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16080375-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080353-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579430-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080330-11	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080317-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-17	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-23	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-25	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16080321-33	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579432-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16080330-13	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-15	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579430-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579430-04	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16080353-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080353-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579430-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16080321-21	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-29	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080353-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-19	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080330-15	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579430-05	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16080330-08	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579432-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080330-05	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B227082

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG579713-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579713-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579713-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579716-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L16080321-19	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080330-11	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-31	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080330-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080330-15	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080330-08	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080317-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-15	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080330-13	15	mL	15	mL					5.47	mL	5.47	mL	40
L16080321-17	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579716-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG579716-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 25-MAR-2016
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 74110
Analytical Workgroups: WG562401 WG562514

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
31-MAR-2016

Secondary Reviewer:
01-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-01-2016 11:20:23

Microbac Laboratories Inc.

Data Checklist

Date: 08-AUG-2016
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 76810
Analytical Workgroups: WG579430 WG579432

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	X
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
10-AUG-2016

Secondary Reviewer:
16-AUG-2016

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-16-2016 11:24:45

Microbac Laboratories Inc.

Data Checklist

Date: 10-AUG-2016
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 76907
Analytical Workgroups: WG579716

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
15-AUG-2016

Secondary Reviewer:
16-AUG-2016

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-16-2016 14:53:21

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG579430

Login Number: L16080330

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW05-080316	05	08/03/16					08/08/2016	5.3	7		08/08/16	5.3	7	
46WW16-080316	08	08/03/16					08/08/2016	5.3	7		08/08/16	5.3	7	
LHSMW19-080316	11	08/03/16					08/08/2016	5.2	7		08/08/16	5.2	7	
46WW11-080316	13	08/03/16					08/08/2016	5.2	7		08/08/16	5.2	7	
46WW09-080316	15	08/03/16					08/08/2016	5.1	7		08/08/16	5.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4891865
Report generated 08/16/2016 14:57

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG579716

Login Number: L16080330

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW05-080316	05	08/03/16					08/10/2016	7.3	7	*	08/10/16	7.3	7	*
46WW16-080316	08	08/03/16					08/10/2016	7.2	7	*	08/10/16	7.2	7	*
LHSMW19-080316	11	08/03/16					08/10/2016	7.2	7	*	08/10/16	7.2	7	*
46WW11-080316	13	08/03/16					08/10/2016	7.2	7	*	08/10/16	7.2	7	*
46WW09-080316	15	08/03/16					08/10/2016	7.1	7	*	08/10/16	7.1	7	*

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4891865
Report generated 08/16/2016 14:57

METHOD BLANK SUMMARY

Login Number: L16080330
Blank File ID: 16G50448
Prep Date: 08/08/16 15:03
Analyzed Date: 08/08/16 15:03
Analyst: JDS

Work Group: WG579430
Blank Sample ID: WG579430-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG579430-02	16G50449	08/08/16 15:15	01
46WW05-080316	L16080330-05	16G50450	08/08/16 15:26	01
46WW16-080316	L16080330-08	16G50451	08/08/16 15:38	01
LHSMW19-080316	L16080330-11	16G50452	08/08/16 15:49	01
46WW11-080316	L16080330-13	16G50453	08/08/16 16:01	01
46WW09-080316	L16080330-15	16G50454	08/08/16 16:12	01

Report Name: BLANK_SUMMARY
PDF File ID: 4891866
Report generated 08/16/2016 14:57

METHOD BLANK SUMMARY

Login Number: L16080330
Blank File ID: 16G50504
Prep Date: 08/10/16 14:05
Analyzed Date: 08/10/16 14:05
Analyst: JDS

Work Group: WG579716
Blank Sample ID: WG579716-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG579716-02	16G50505	08/10/16 14:16	01
LCS2	WG579716-03	16G50506	08/10/16 14:27	01
46WW05-080316	L16080330-05	16G50508	08/10/16 14:49	DL02
46WW16-080316	L16080330-08	16G50509	08/10/16 15:01	DL02
LHSMW19-080316	L16080330-11	16G50510	08/10/16 15:12	DL02
46WW11-080316	L16080330-13	16G50511	08/10/16 15:23	DL02
46WW09-080316	L16080330-15	16G50512	08/10/16 15:35	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4891866
Report generated 08/16/2016 14:57

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080330 Prep Date: 08/08/16 15:03 Sample ID: WG579430-01
Instrument ID: HP16 Run Date: 08/08/16 15:03 Prep Method: 5021
File ID: 16G50448 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG579430 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16-25-MAR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4891867
16-AUG-2016 14:57

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080330 Prep Date: 08/10/16 14:05 Sample ID: WG579716-01
Instrument ID: HP16 Run Date: 08/10/16 14:05 Prep Method: 5021
File ID: 16G50504 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG579716 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16-25-MAR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4891867
16-AUG-2016 14:57

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080330 Run Date: 08/08/2016 Sample ID: WG579430-02
Instrument ID: HP16 Run Time: 15:15 Prep Method: 5021
File ID: 16G50449 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG579430 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD68250 Cal ID: HP16 - 25-MAR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Methane	114	115	101	85 - 115	
ethene	200	195	97.9	85 - 115	
ethane	214	212	99.2	85 - 115	

LCS - Modified 03/06/2008
PDF File ID: 4891869
Report generated: 08/10/2016 14:50

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080330 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG579716 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG579716-02 LCS File ID: 16G50505 Run Date: 08/10/2016 14:16
Sample ID: WG579716-03 LCS2 File ID: 16G50506 Run Date: 08/10/2016 14:27

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	113	99.0	114	111	97.6	1.39	85 - 115	20	
ethene	200	190	95.0	200	186	93.1	2.07	85 - 115	20	
ethane	214	205	96.0	214	202	94.5	1.51	85 - 115	20	
Carbon Dioxide	31300	28900	92.4	31300	26500	84.6	8.81	53.1 - 130	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4896418
Report generated: 08/16/2016 14:57

Calibration Table Report
Method: RSKEXT1.M
Title: RSK175 HP16 (SOP: OVL RSK01) 032516
Last Calibration: Fri Mar 25 13:38:01 2016
Curve: WG562401
Calibration Files

		0.67	1.67	33.3	66.7	133	333	533			
		16G49626.	16G49627.	16G49628.	16G49629.	16G49630.	16G49631.	16G49632.D			
	Compound								Avg	%RSD	Linear
T	methane		357678.3	191763.4	178440.8	176333.2	180289.8	181011.4	210919.0	34.2	1.00
T	ethene		326426.9	323789.7	303078.0	300924.8	311353.3	306803.0	312063.0	3.4	
T	acetylene		320308.2	339363.3	305153.5	300205.1	309436.5	299142.0	312268.0	4.9	
T	ethane	315183.9	335780.5	332335.5	309080.0	306732.7	318673.0	314718.5	318929.0	3.5	
T	propane	455610.0	490813.9	490102.0	464477.8	457676.8	478108.3	465536.1	471761.0	3.1	
T	n-butane	583900.4	644607.5	634321.2	604644.0	590464.7	622084.9	599806.6	611404.0	3.7	
	Signal #2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T	carbon dioxide		4817.9	5324.5	5339.4	5356.8	5546.3	5286.4	5278.5	4.6	

Mon Mar 28 10:00:37 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16080330 Run Date: 03/25/2016 Sample ID: WG562401-08
Instrument ID: HP16 Run Time: 18:26 Method: RSK175
File ID: 16G49635 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG562401 Cal ID: HP16 - 25-MAR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
carbon dioxide		62500	68700	ug/L	5800	9.90	15	
methane		228	235	ug/L	187000	3.20	15	
ethene		398	400	ug/L	314000	0.500	15	
ethane		427	434	ug/L	324000	1.70	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4891870
Report generated 08/16/2016 14:57

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330 Run Date: 08/08/2016 Sample ID: WG579429-01
Instrument ID: HP16 Run Time: 14:37 Method: RSK175
File ID: 16G50447 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG579430 Cal ID: HP16 - 25-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	218	ug/L	174000	4.25	15	
ethene		398	378	ug/L	296000	5.18	15	
ethane		427	402	ug/L	301000	5.75	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4891871
Report generated 08/16/2016 14:57

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/08/2016
Sample ID: WG579429-02
Instrument ID: HP16
Run Time: 16:59
Method: RSK175
File ID: 16G50458
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG579430
Cal ID: HP16 - 25-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	221	ug/L	176000	3.18	15	
ethene		398	376	ug/L	294000	5.68	15	
ethane		427	404	ug/L	302000	5.39	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4891871
Report generated 08/16/2016 14:57

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/10/2016
Sample ID: WG579713-01
Instrument ID: HP16
Run Time: 12:10
Method: RSK175
File ID: 16G50503
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG579716
Cal ID: HP16 - 25-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	68200	ug/L	5760	9.15	15	
methane		228	230	ug/L	183000	0.781	15	
ethene		398	394	ug/L	309000	1.04	15	
ethane		427	421	ug/L	315000	1.33	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4891871
Report generated 08/16/2016 14:57

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330 Run Date: 08/10/2016 Sample ID: WG579713-02
Instrument ID: HP16 Run Time: 15:58 Method: RSK175
File ID: 16G50514 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG579716 Cal ID: HP16 - 25-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	62000	ug/L	5240	0.778	15	
methane		228	215	ug/L	171000	5.83	15	
ethene		398	365	ug/L	286000	8.28	15	
ethane		427	389	ug/L	291000	8.85	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4891871
Report generated 08/16/2016 14:57

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\080816\16G50450.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\080816\16G50450.D\TCD2B.CH
Acq On : 08 Aug 2016 15:26 Operator: JDS
Sample : L16080330-05 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 08 15:32:57 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	1861233	8.768	umol/
2) T	ethene	1.06	14996	0.048	umol/
3) T	acetylene	1.14	27745	0.089	umol/
4) T	ethane	1.40	25788	0.081	umol/
5) T	propane	3.84	16819	0.036	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.19	841065094	159337.151	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G50450.D RSKEXT1.M Mon Aug 08 15:32:57 2016 Page 1

Signal #1 : C:\MSDchem\1\DATA\080816\16G50450.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\080816\16G50450.D\TCD2B.CH
Acq On : 08 Aug 2016 15:26 Operator: JDS
Sample : L16080330-05 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 8 15:32 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

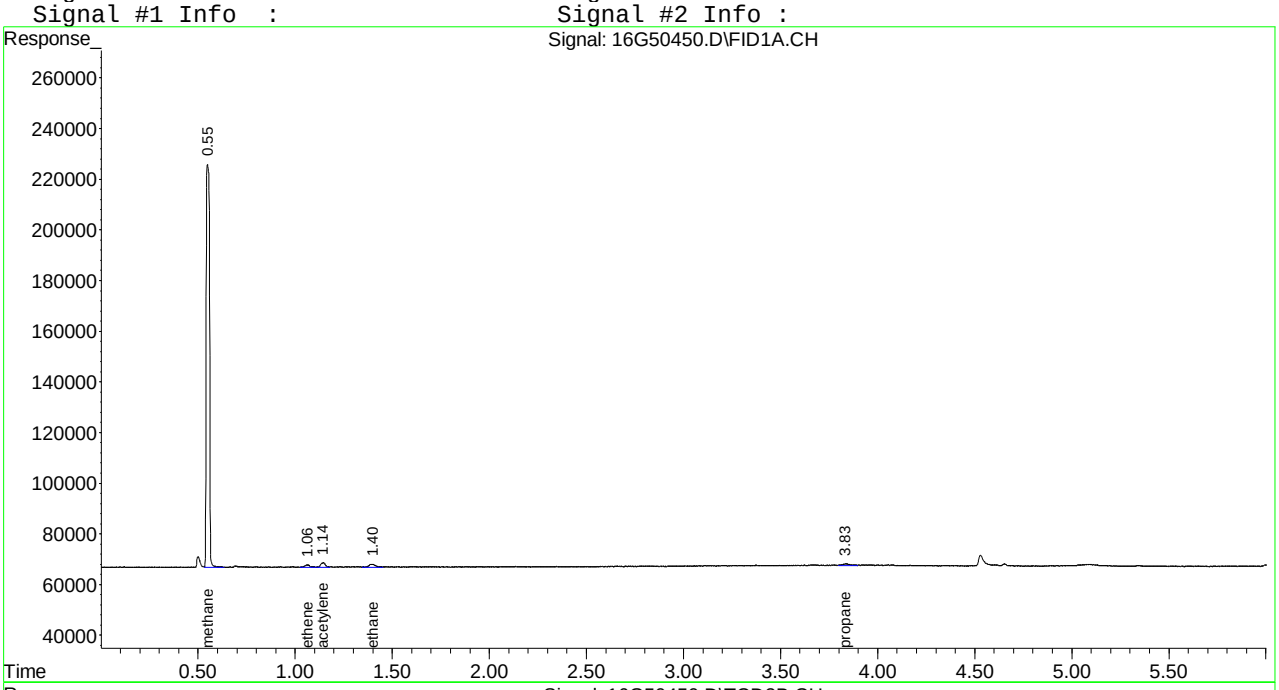

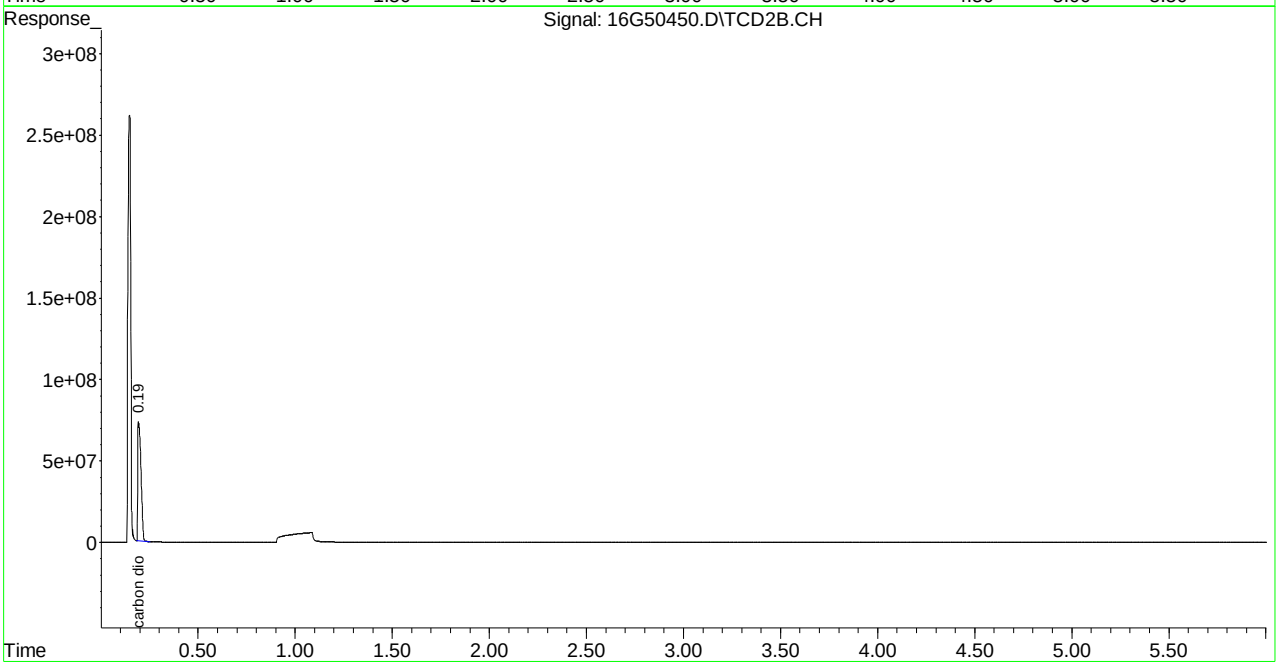

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50508.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50508.D\TCD2B.CH
Acq On    : 10 Aug 2016  14:49                        Operator: JDS
Sample    : L16080330-05 C A1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 14:55:44 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	365038	0.413	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	75003276	14209.136	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

```
Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50508.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50508.D\TCD2B.CH
Acq On    : 10 Aug 2016  14:49                        Operator: JDS
Sample    : L16080330-05 C A1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 14:55 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

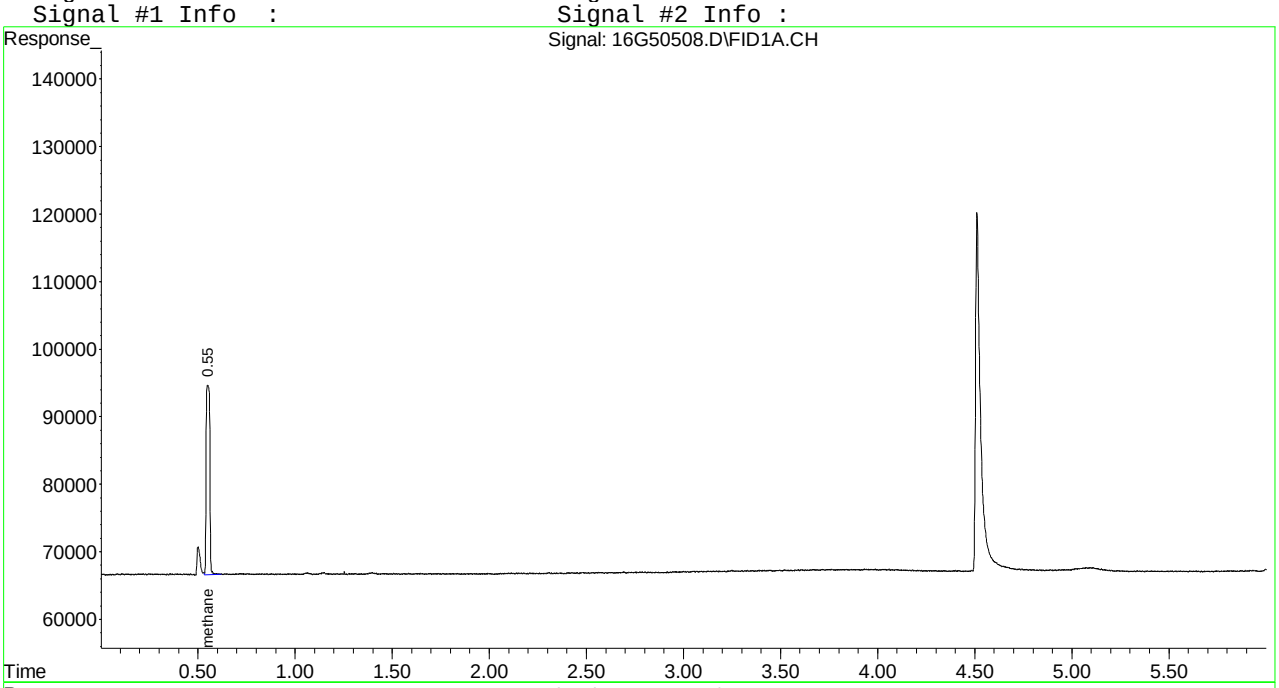

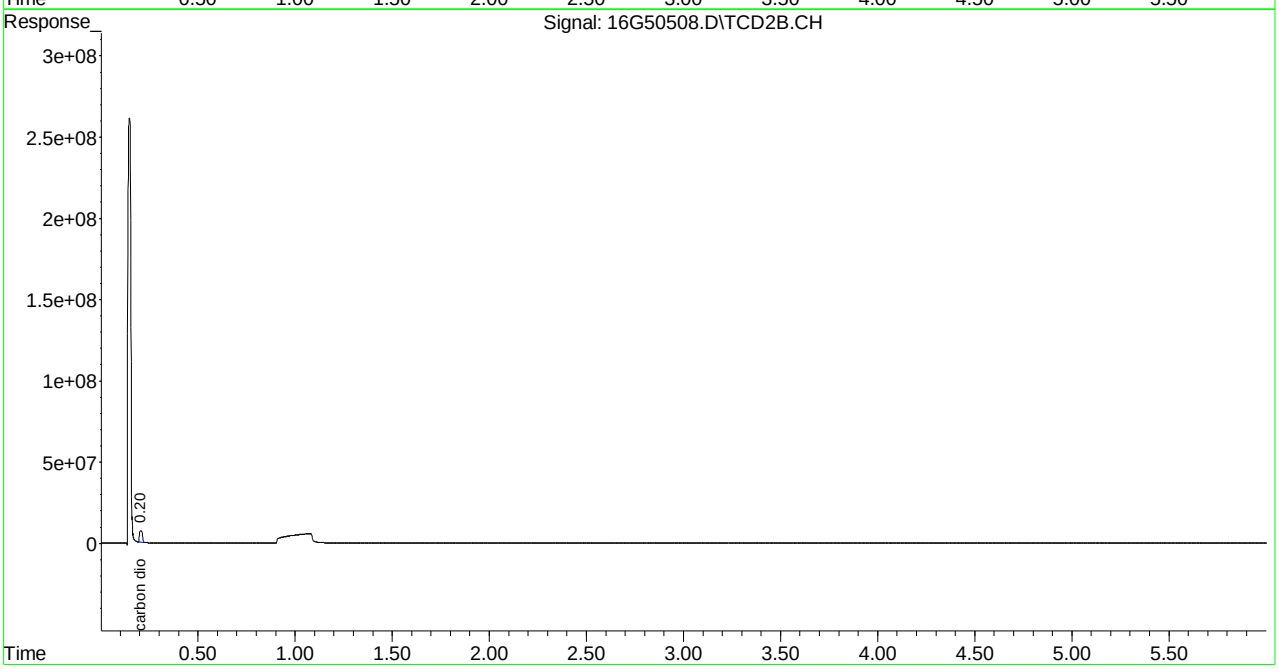

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\080816\16G50451.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDchem\1\DATA\080816\16G50451.D\TCD2B.CH
Acq On    : 08 Aug 2016  15:38                      Operator: JDS
Sample    : L16080330-08 A RSK175                   Inst    : HP16
Misc      : 1,1                                     Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 08 15:44:41 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	379404	0.493	umol/
2) T	ethene	1.06	7488	0.024	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	36556	0.115	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.19	848465677	160739.169	umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\080816\16G50451.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDchem\1\DATA\080816\16G50451.D\TCD2B.CH
Acq On : 08 Aug 2016 15:38 Operator: JDS
Sample : L16080330-08 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 8 15:44 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

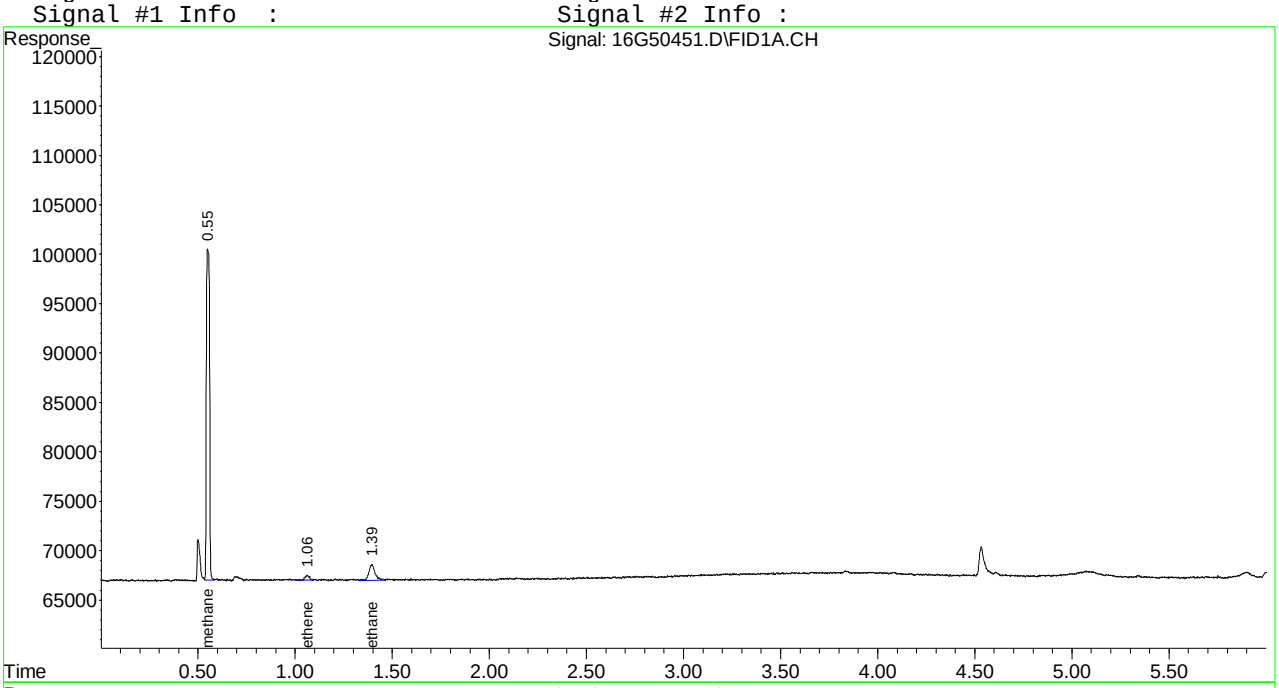

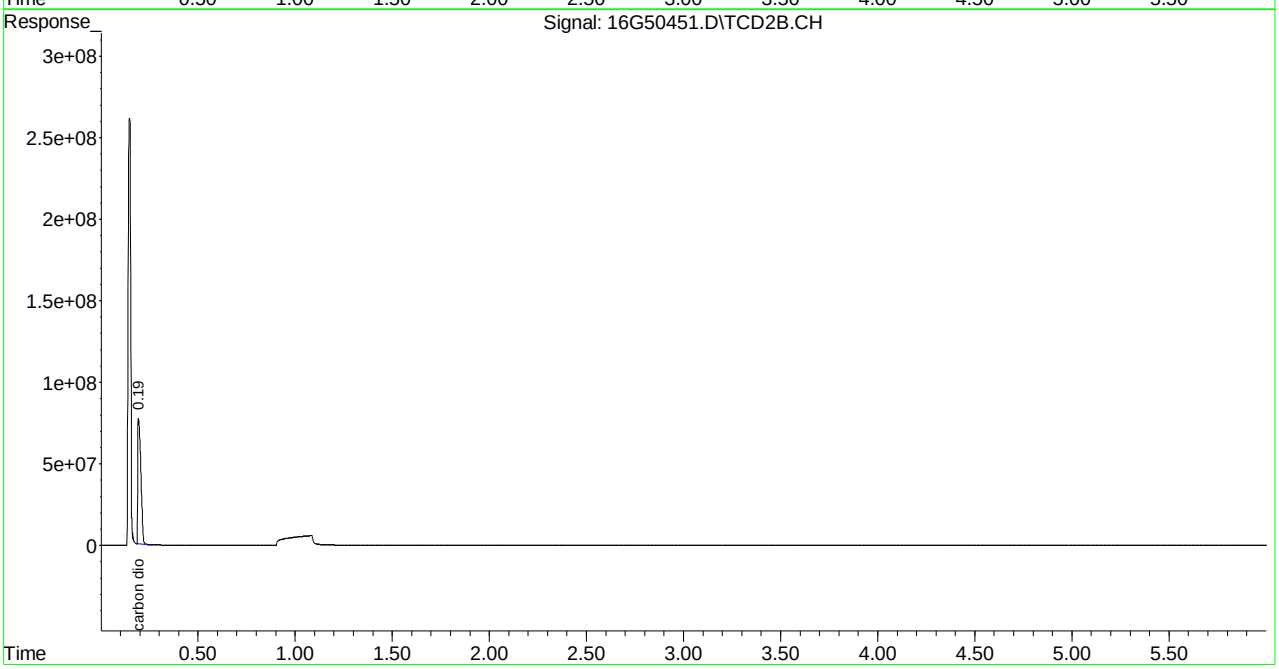

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50509.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50509.D\TCD2B.CH
Acq On : 10 Aug 2016 15:01 Operator: JDS
Sample : L16080330-08 C A1 10X RSK175 Inst : HP16
Misc : 1,10 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 15:07:11 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	277281	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.21	83011923	15726.349	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G50509.D RSKEXT1.M Mon Aug 15 10:09:04 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50509.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50509.D\TCD2B.CH
Acq On    : 10 Aug 2016  15:01                        Operator: JDS
Sample    : L16080330-08 C A1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 15:07 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

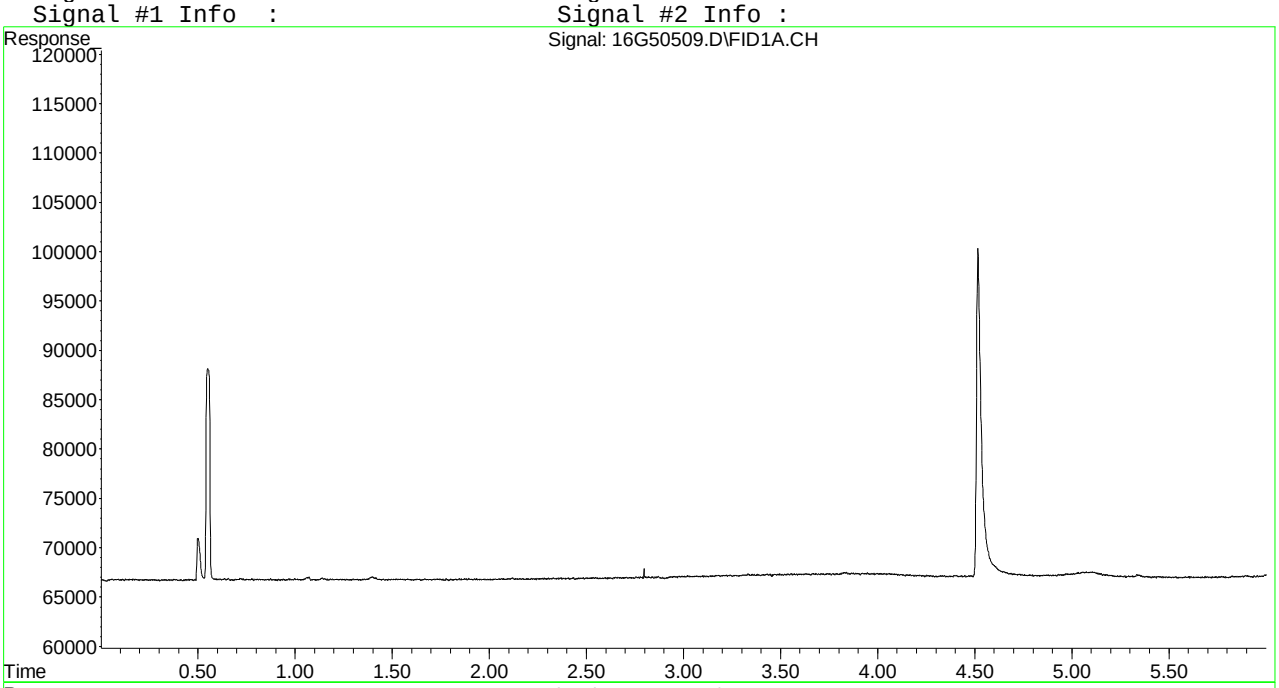

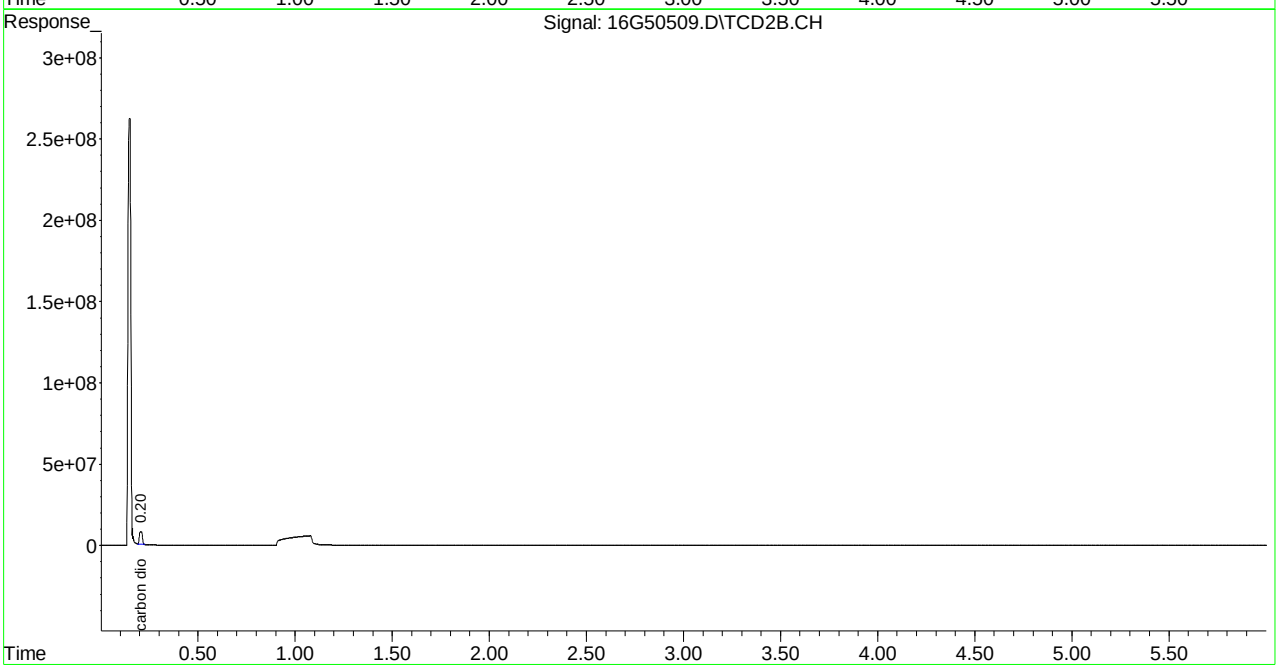

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\080816\16G50452.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDchem\1\DATA\080816\16G50452.D\TCD2B.CH
Acq On : 08 Aug 2016 15:49 Operator: JDS
Sample : L16080330-11 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 08 15:56:00 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	277354	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	26376	0.083	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.19	1215854249	230339.785	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G50452.D RSKEXT1.M Mon Aug 08 15:56:01 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\080816\16G50452.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDchem\1\DATA\080816\16G50452.D\TCD2B.CH
Acq On : 08 Aug 2016 15:49 Operator: JDS
Sample : L16080330-11 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 8 15:56 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

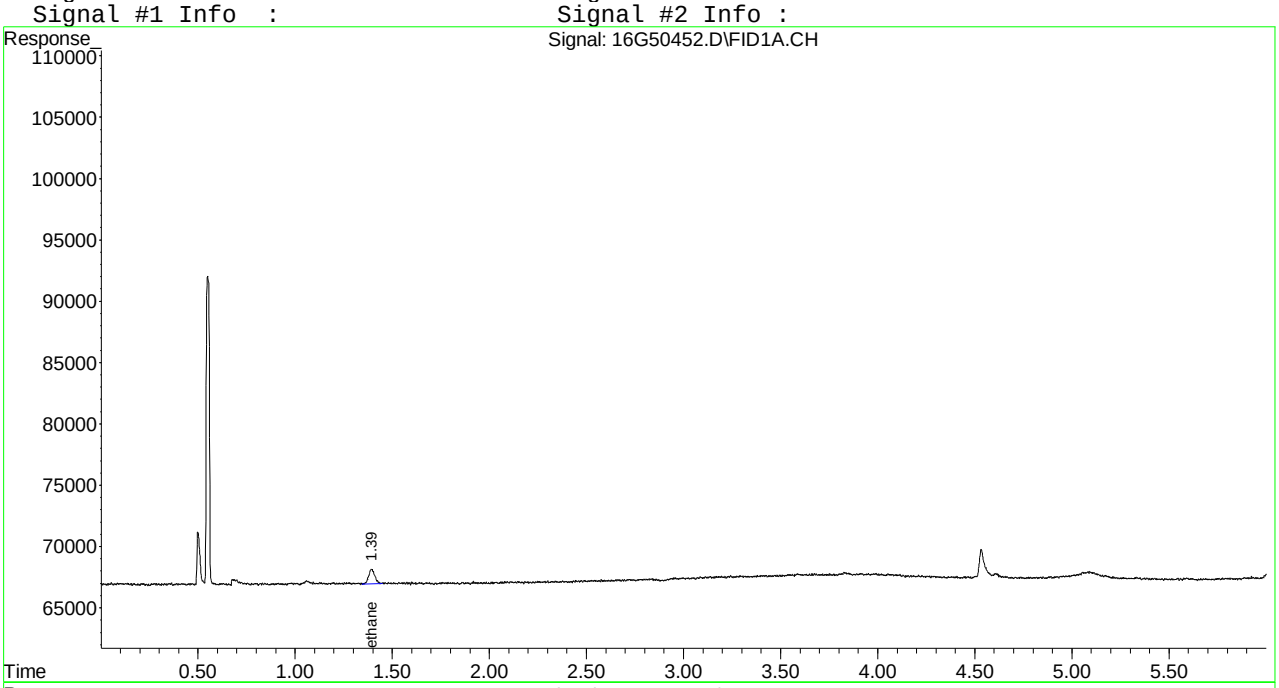

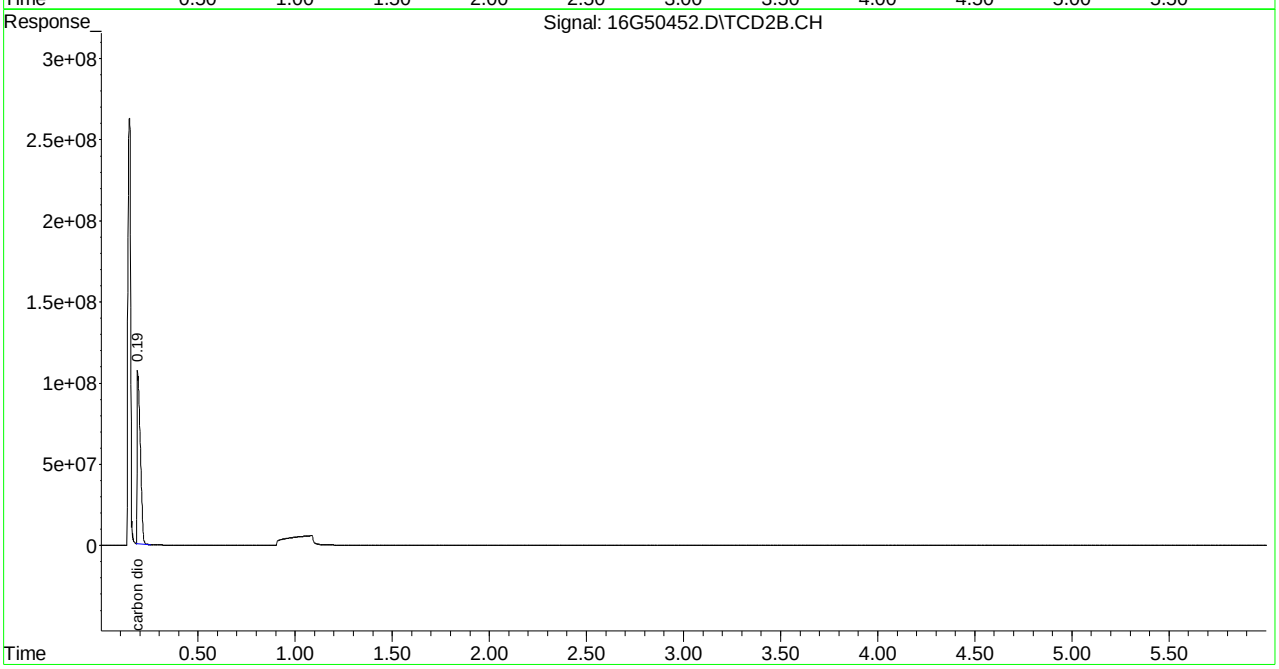

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50510.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50510.D\TCD2B.CH
Acq On    : 10 Aug 2016  15:12                        Operator: JDS
Sample    : L16080330-11 C A1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 15:18:33 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	264659	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	95957175	18178.787	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G50510.D RSKEXT1.M Mon Aug 15 10:09:14 2016 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50510.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50510.D\TCD2B.CH
Acq On : 10 Aug 2016 15:12 Operator: JDS
Sample : L16080330-11 C A1 10X RSK175 Inst : HP16
Misc : 1,10 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 15:18 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

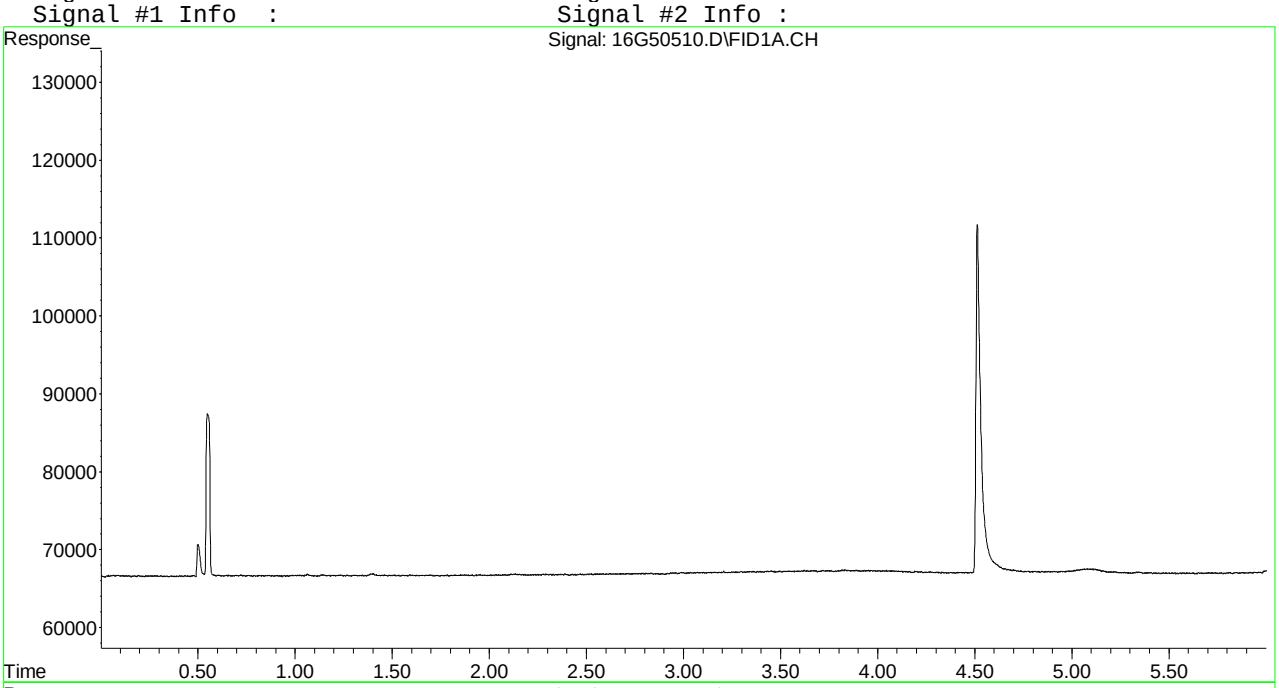

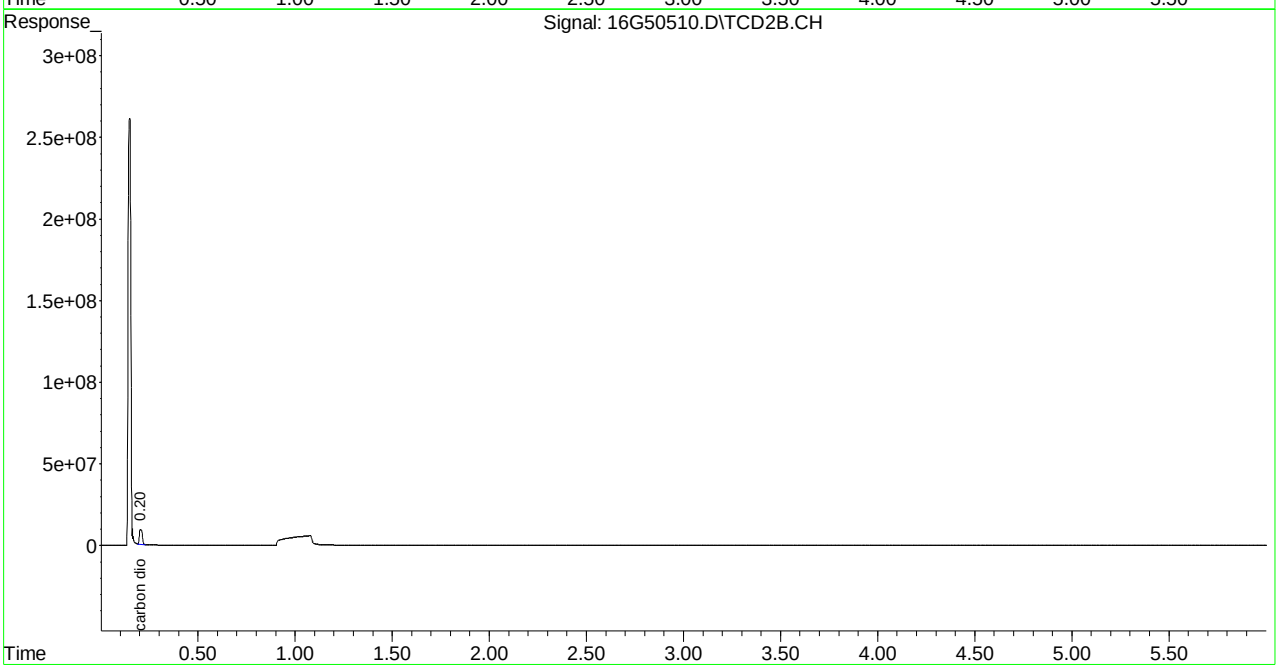

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\080816\16G50453.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDchem\1\DATA\080816\16G50453.D\TCD2B.CH
Acq On    : 08 Aug 2016  16:01                        Operator: JDS
Sample    : L16080330-13 A RSK175                     Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 08 16:07:28 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	5093163	26.815	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	20945	0.066	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.19	1051519663	199207.111	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G50453.D RSKEXT1.M Mon Aug 08 16:07:28 2016 Page 1

Signal #1 : C:\MSDchem\1\DATA\080816\16G50453.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDchem\1\DATA\080816\16G50453.D\TCD2B.CH
Acq On : 08 Aug 2016 16:01 Operator: JDS
Sample : L16080330-13 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 8 16:07 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

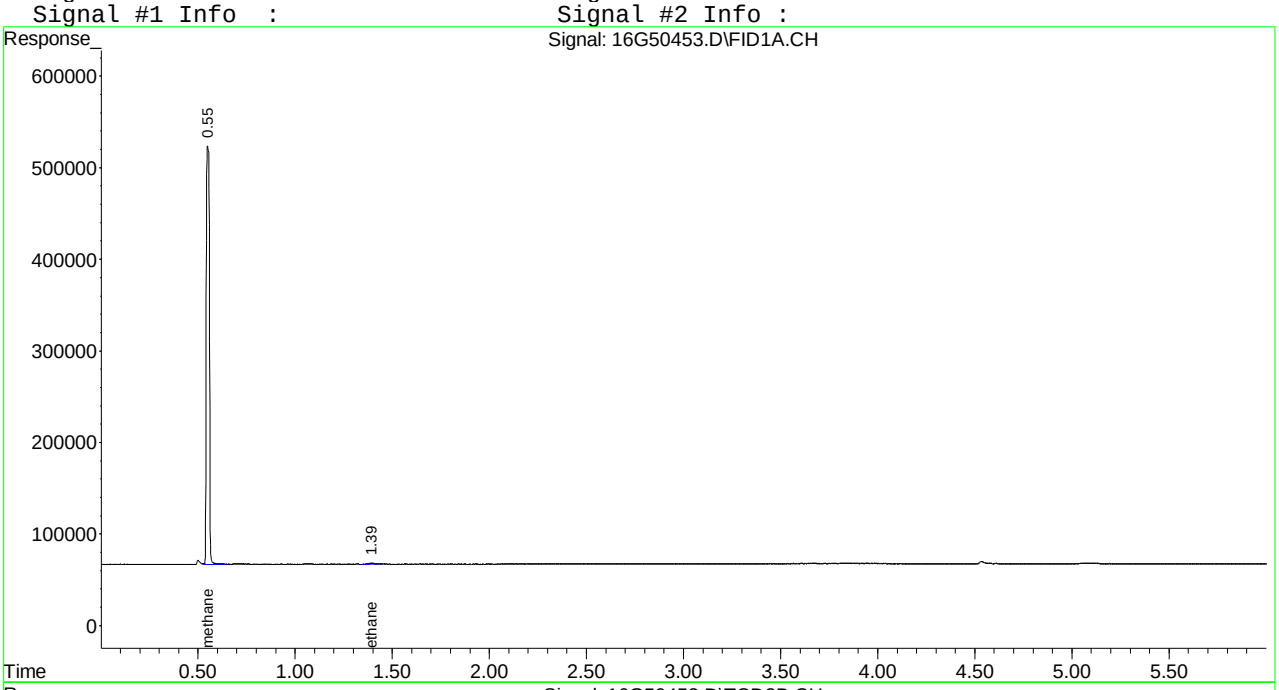

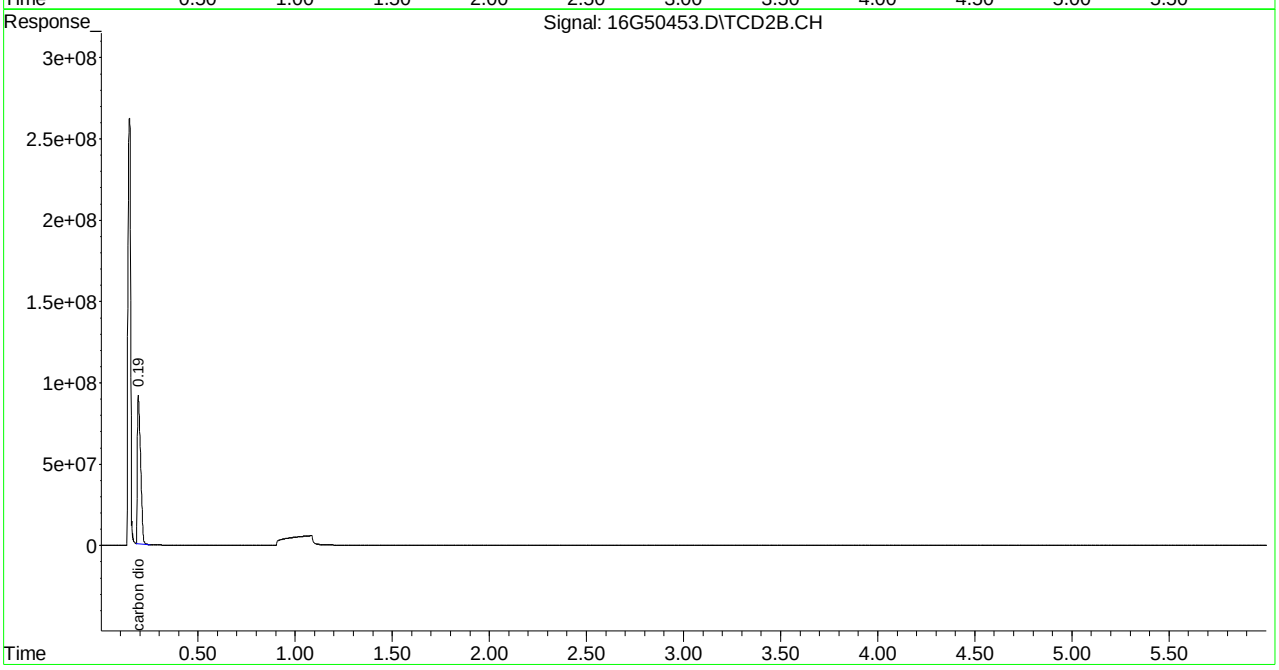

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\081016\16G50511.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDchem\1\DATA\081016\16G50511.D\TCD2B.CH
Acq On    : 10 Aug 2016  15:23                        Operator: JDS
Sample    : L16080330-13 C A1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 15:30:03 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	522677	1.293	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	76603556	14512.304	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

```
Signal #1 : C:\MSDchem\1\DATA\081016\16G50511.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDchem\1\DATA\081016\16G50511.D\TCD2B.CH
Acq On    : 10 Aug 2016  15:23                        Operator: JDS
Sample    : L16080330-13 C A1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 15:30 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

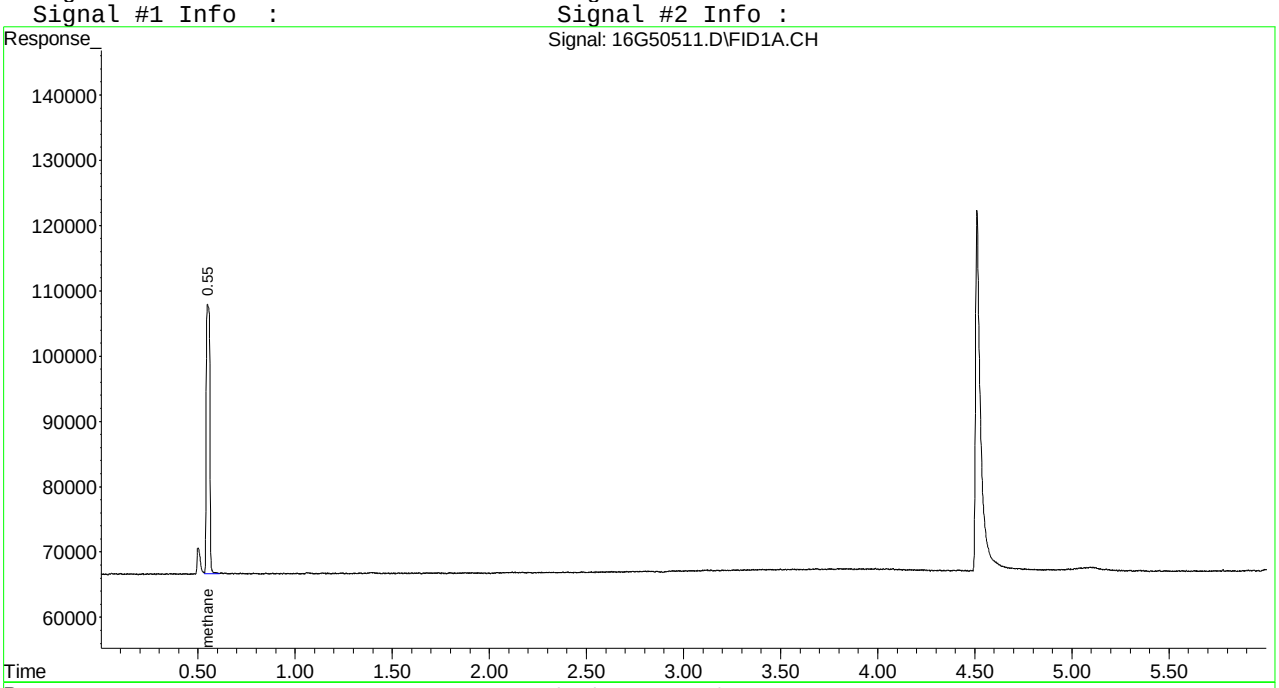

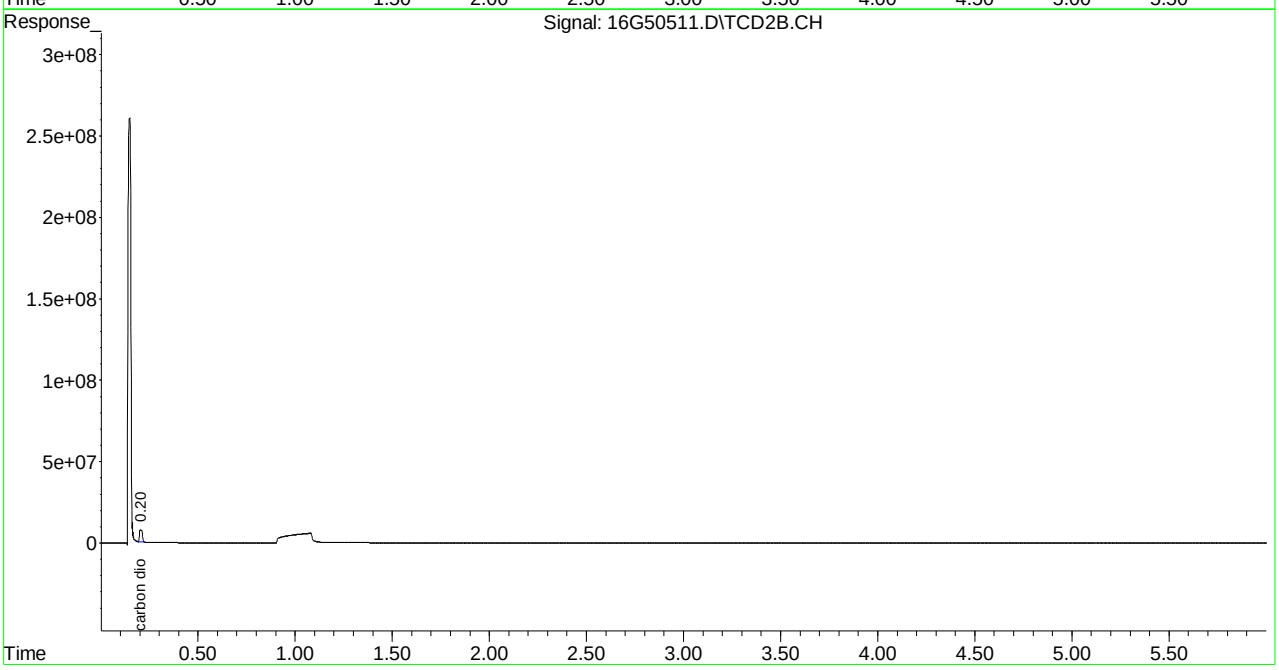

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\080816\16G50454.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDchem\1\DATA\080816\16G50454.D\TCD2B.CH
Acq On : 08 Aug 2016 16:12 Operator: JDS
Sample : L16080330-15 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 08 16:18:53 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	284081	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	14992	0.047	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	5.37	7377	0.012	umol/
8) T	carbon dioxide	0.19	828435430	156944.501	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G50454.D RSKEXT1.M Mon Aug 08 16:18:54 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\080816\16G50454.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDchem\1\DATA\080816\16G50454.D\TCD2B.CH
Acq On : 08 Aug 2016 16:12 Operator: JDS
Sample : L16080330-15 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 8 16:18 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

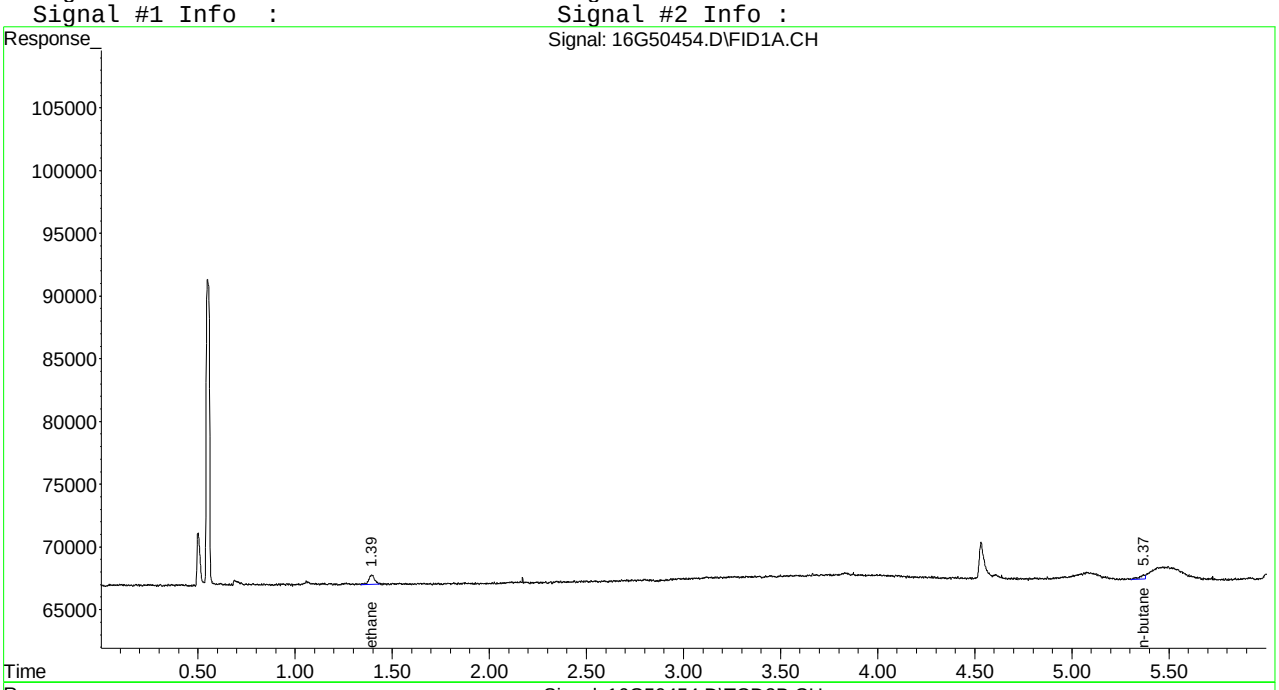

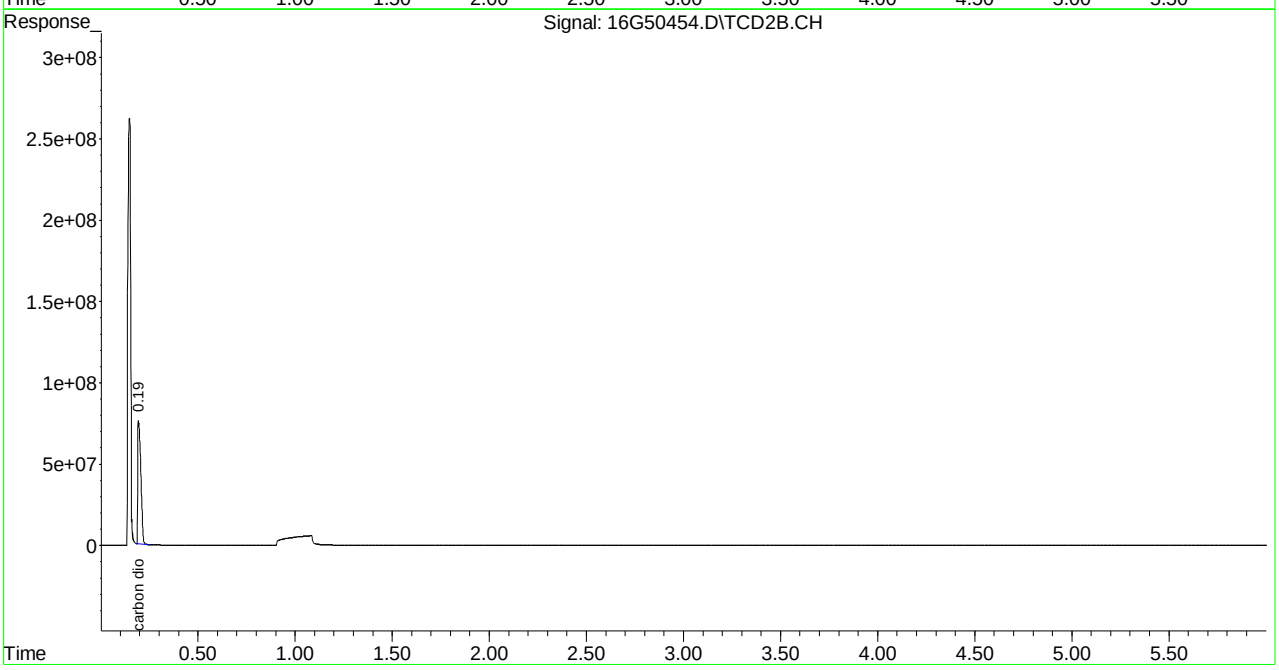

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50512.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50512.D\TCD2B.CH
Acq On    : 10 Aug 2016  15:35                        Operator: JDS
Sample    : L16080330-15 C A1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 15:41:34 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	258498	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	67684620	12822.640	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G50512.D RSKEXT1.M Mon Aug 15 10:09:22 2016 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50512.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50512.D\TCD2B.CH
Acq On    : 10 Aug 2016  15:35                        Operator: JDS
Sample    : L16080330-15 C A1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 15:41 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

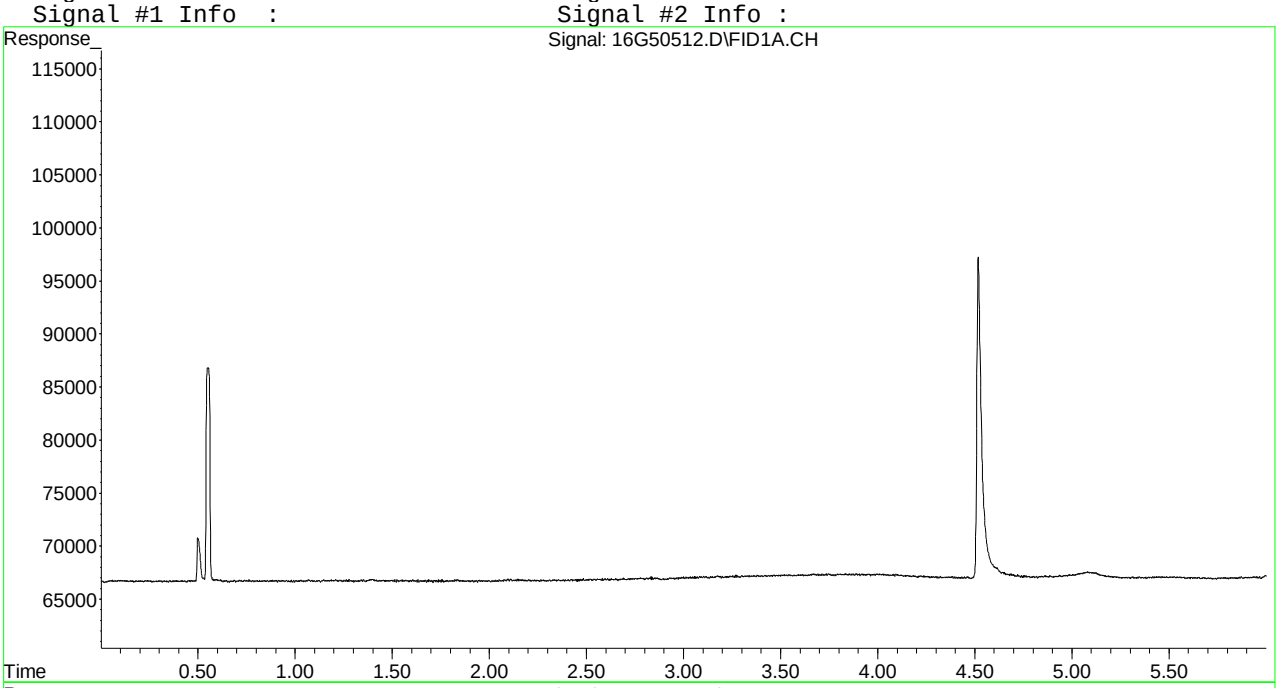

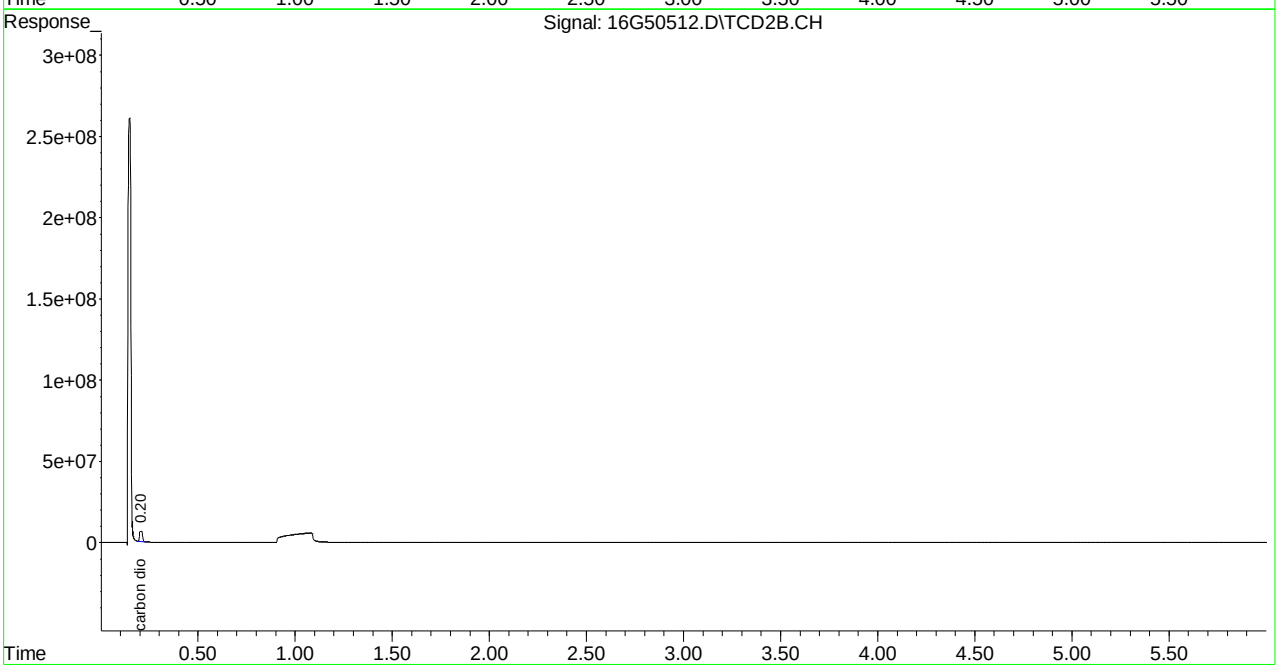

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49626.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49626.D\TCD2B.CH
Acq On : 25 Mar 2016 11:22 Operator: JDS
Sample : WG562401-01 0.67umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:32:57 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:31:58 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	386491	0.533	umol/
2) T	ethene	1.06	205756	0.659	umol/
3) T	acetylene	1.14	186400	0.597	umol/
4) T	ethane	1.39	210228	0.659	umol/
5) T	propane	3.83	303892	0.644	umol/
6) T	n-butane	5.34	389462	0.637	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49626.D RSKEXT1.M Fri Mar 25 13:33:07 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49626.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49626.D\TCD2B.CH
Acq On : 25 Mar 2016 11:22 Operator: JDS
Sample : WG562401-01 0.67umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:32 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:31:58 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

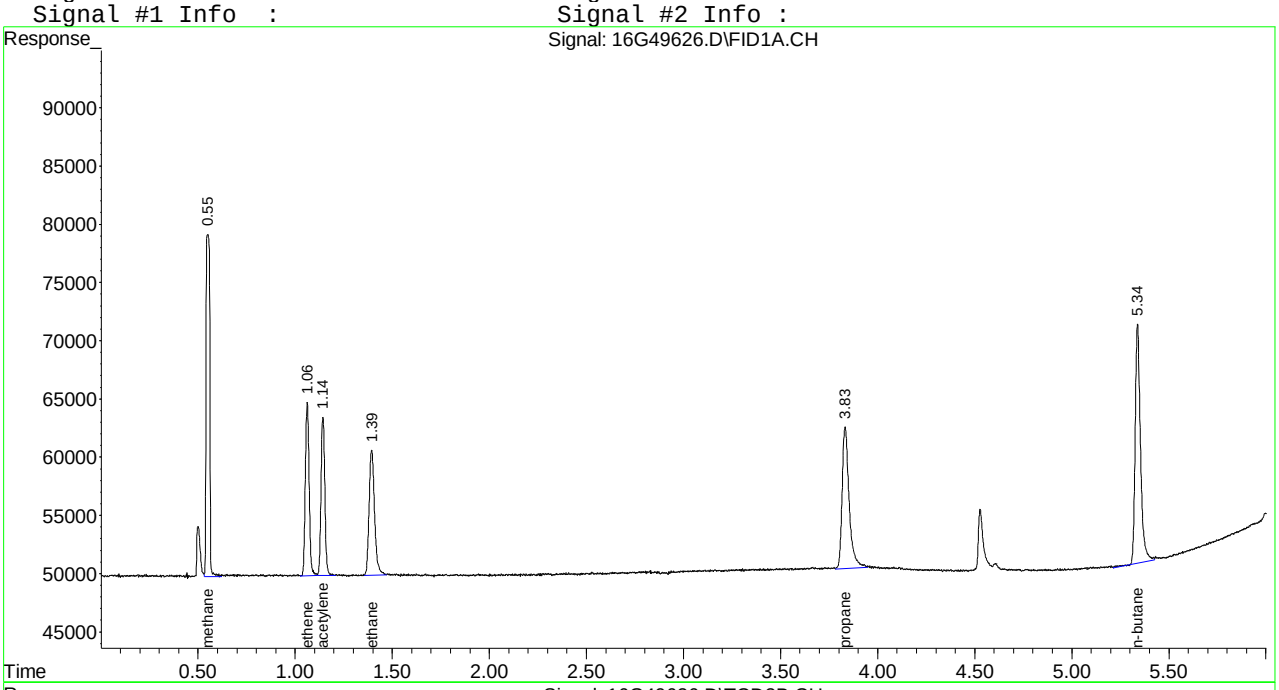

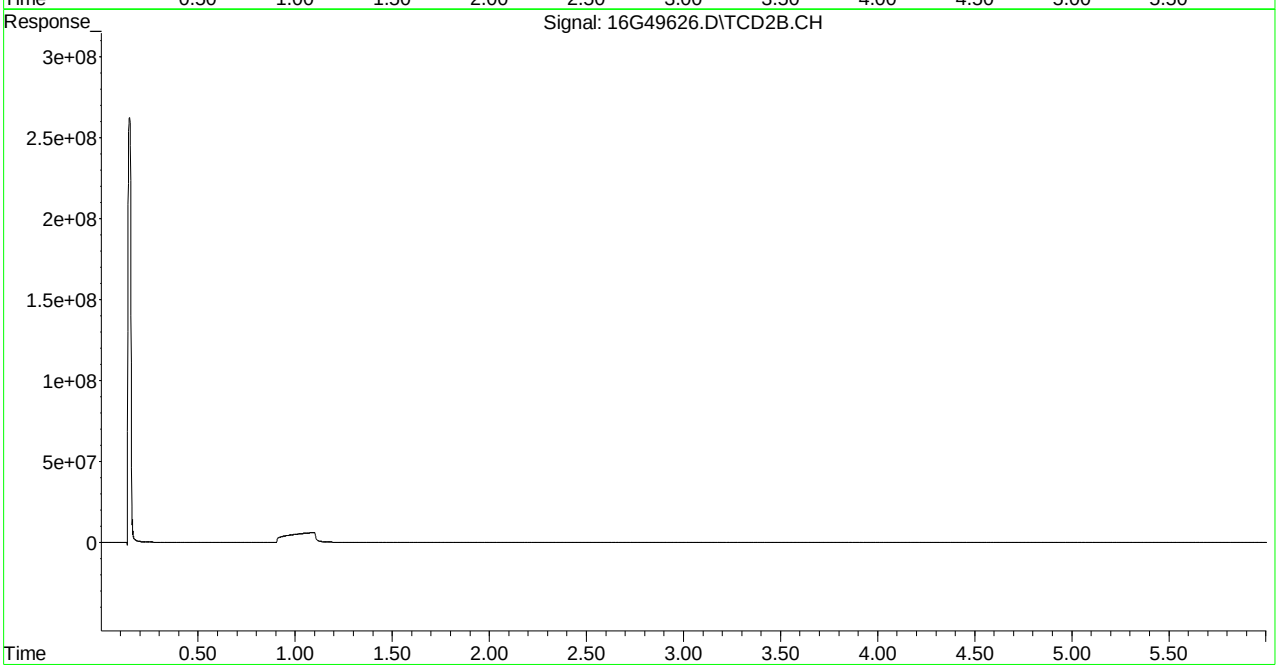

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49627.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49627.D\TCD2B.CH
Acq On : 25 Mar 2016 11:34 Operator: JDS
Sample : WG562401-02 1.67umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:38:12 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	597323	1.710	umol/
2) T	ethene	1.06	545133	1.747	umol/
3) T	acetylene	1.14	534915	1.713	umol/
4) T	ethane	1.39	560754	1.758	umol/
5) T	propane	3.83	819659	1.737	umol/
6) T	n-butane	5.34	1076495	1.761	umol/
8) T	carbon dioxide	0.20	9635725	1825.458	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49627.D RSKEXT1.M Fri Mar 25 13:38:12 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49627.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49627.D\TCD2B.CH
Acq On : 25 Mar 2016 11:34 Operator: JDS
Sample : WG562401-02 1.67umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:38 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

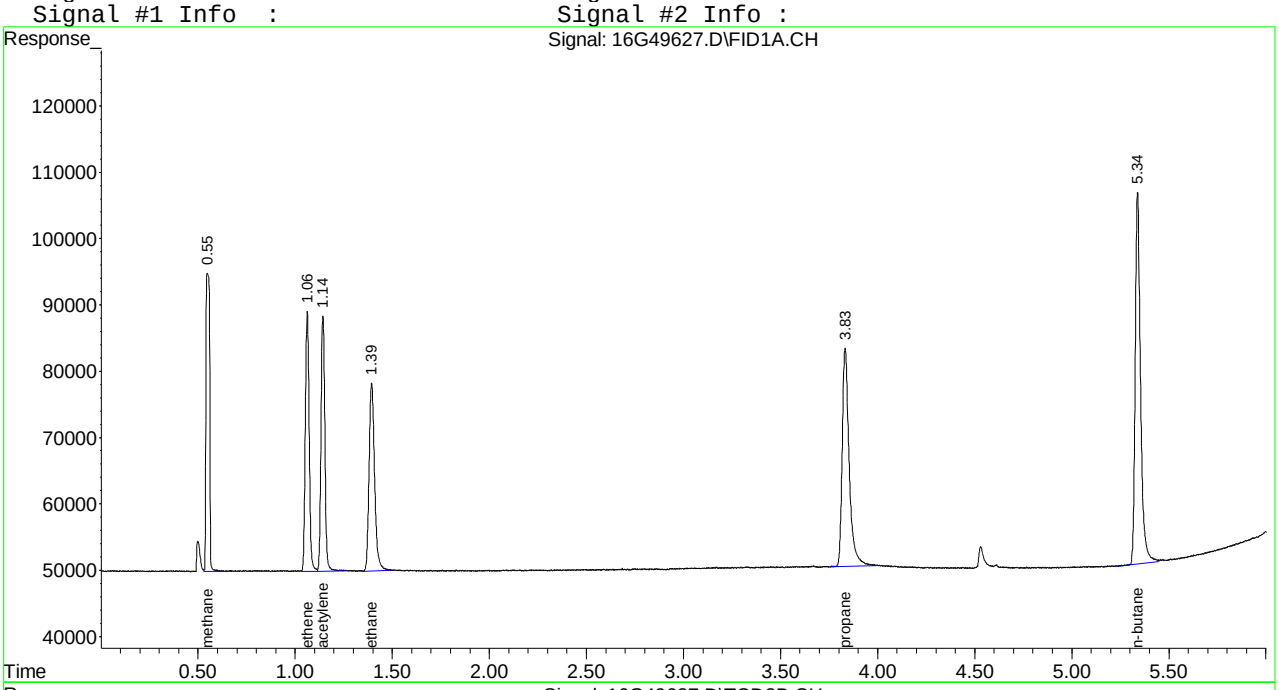

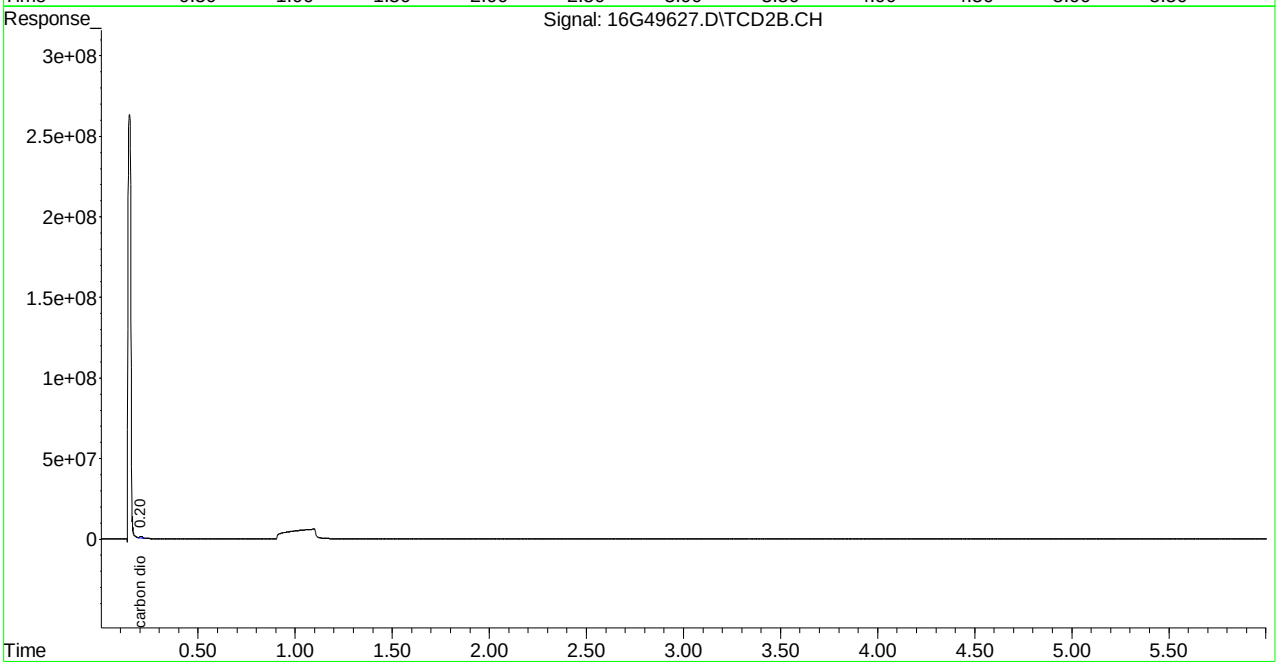

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49627.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49627.D\TCD2B.CH
Acq On : 25 Mar 2016 11:34 Operator: JDS
Sample : WG562401-02 1.67umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	1.670	1.710	-2.4	100	0.00
2	T	ethene	1.670	1.747	-4.6	100	0.00
3	T	acetylene	1.670	1.713	-2.6	100	0.00
4	T	ethane	1.670	1.758	-5.3	100	0.00
5	T	propane	1.670	1.737	-4.0	100	0.00
6	T	n-butane	1.670	1.761	-5.4	100	0.00

Signal #2

8	T	carbon dioxide	2000.000	1825.458	8.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G49627.D RSKEXT1.M Fri Mar 25 13:38:22 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49627.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49627.D\TCD2B.CH
Acq On    : 25 Mar 2016  11:34                        Operator: JDS
Sample    : WG562401-02 1.67umol/moL STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49628.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49628.D\TCD2B.CH
Acq On : 25 Mar 2016 11:46 Operator: JDS
Sample : WG562401-03 33.3umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33:25 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:32:42 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	6385721	34.033	umol/
2) T	ethene	1.06	10782198	34.551	umol/
3) T	acetylene	1.14	11300799	36.189	umol/
4) T	ethane	1.39	11066771	34.700	umol/
5) T	propane	3.83	16320395	34.595	umol/
6) T	n-butane	5.34	21122896	34.548	umol/
8) T	carbon dioxide	0.20	17730539	3358.995	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49628.D RSKEXT1.M Fri Mar 25 13:33:26 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49628.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49628.D\TCD2B.CH
Acq On : 25 Mar 2016 11:46 Operator: JDS
Sample : WG562401-03 33.3umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:32:42 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

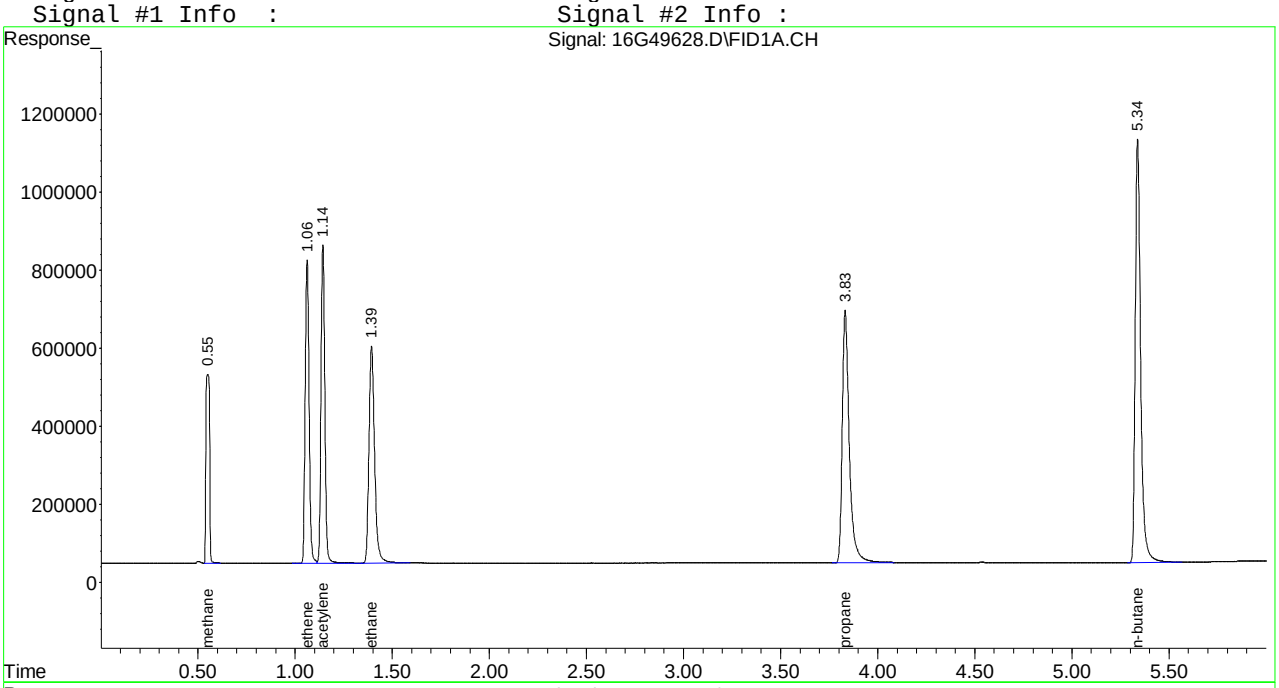

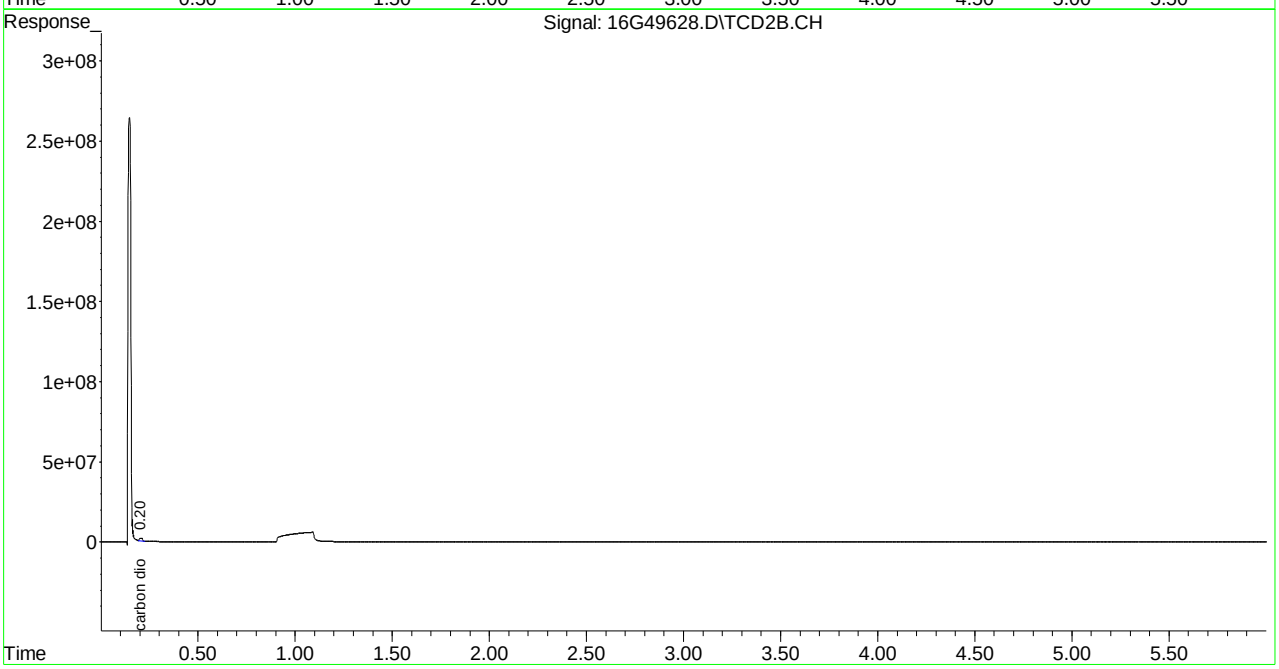

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49629.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49629.D\TCD2B.CH
Acq On : 25 Mar 2016 11:58 Operator: JDS
Sample : WG562401-04 66.7umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33:26 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:32:42 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11901999	64.837	umol/
2) T	ethene	1.06	20215300	64.780	umol/
3) T	acetylene	1.14	20353735	65.180	umol/
4) T	ethane	1.39	20615639	64.640	umol/
5) T	propane	3.83	30980672	65.670	umol/
6) T	n-butane	5.34	40329758	65.963	umol/
8) T	carbon dioxide	0.20	35613763	6746.916	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49629.D RSKEXT1.M Fri Mar 25 13:33:27 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49629.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49629.D\TCD2B.CH
Acq On : 25 Mar 2016 11:58 Operator: JDS
Sample : WG562401-04 66.7umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:32:42 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

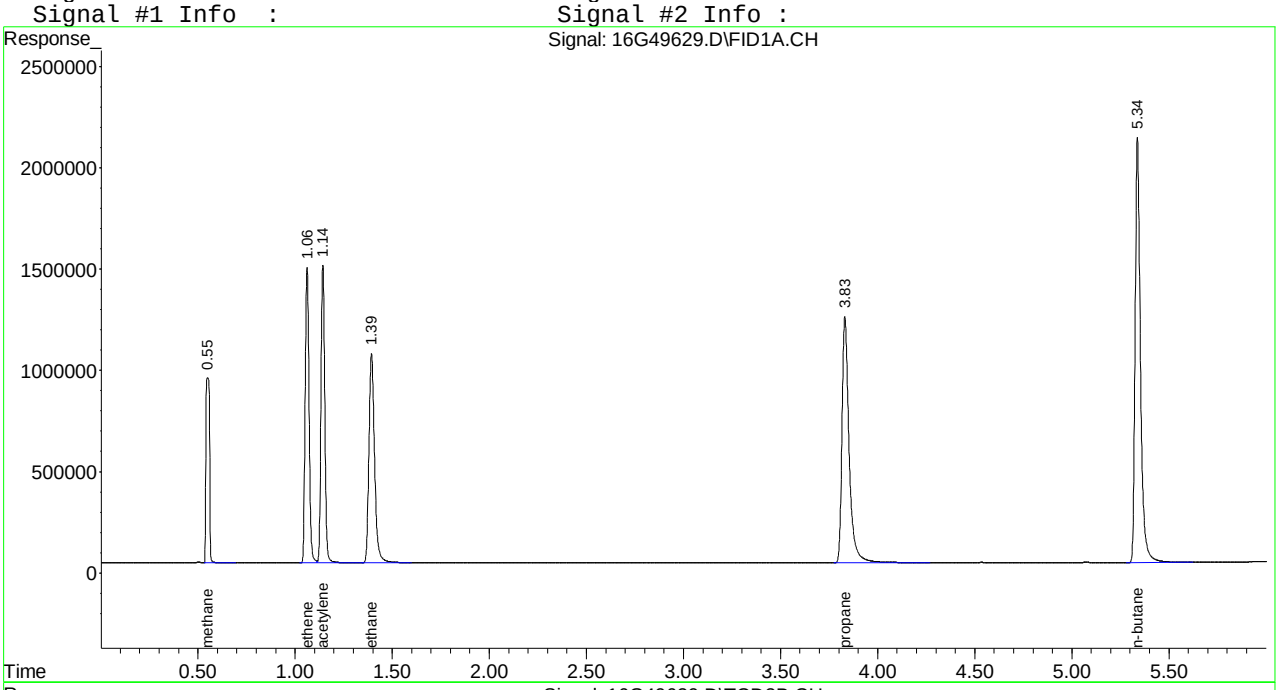

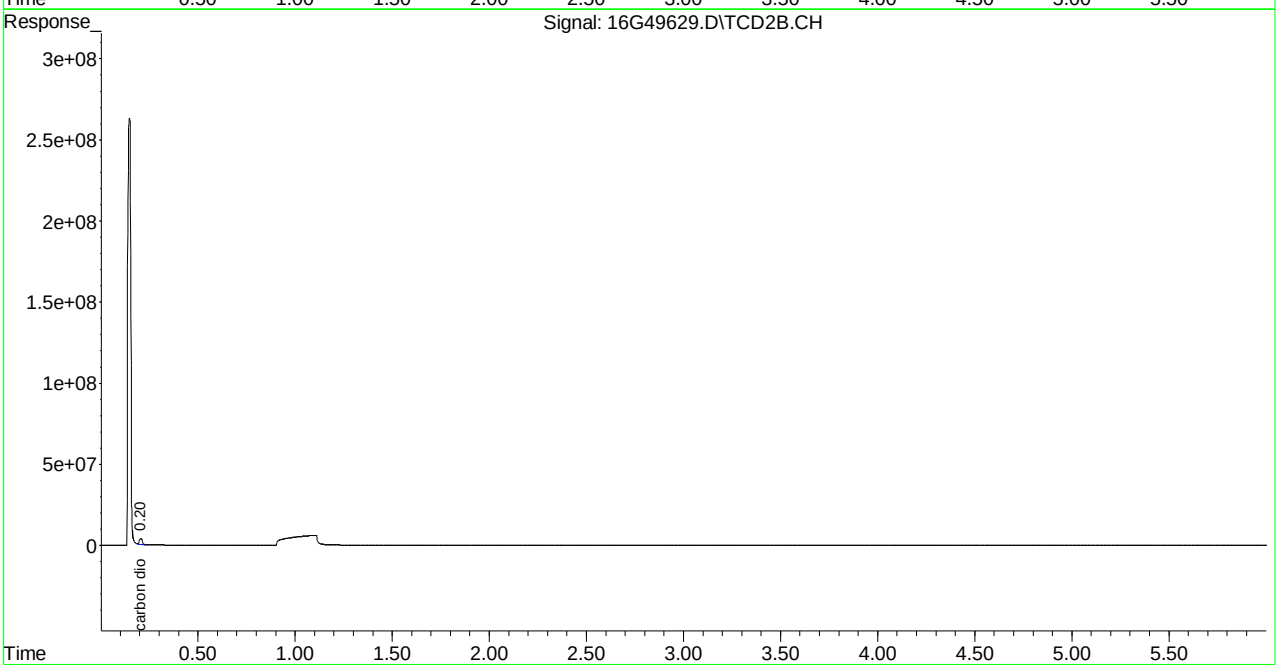

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49630.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49630.D\TCD2B.CH
Acq On    : 25 Mar 2016  12:10                        Operator: JDS
Sample    : WG562401-05 133umol/moL STD RSK175        Inst    : HP16
Misc      : 1,1 STD75351                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33:27 2016  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:32:42 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	23452315	129.335 umol/
2) T	ethene	1.06	40022999	128.253 umol/
3) T	acetylene	1.14	39927283	127.862 umol/
4) T	ethane	1.39	40795450	127.914 umol/
5) T	propane	3.83	60871012	129.029 umol/
6) T	n-butane	5.34	78531804	128.445 umol/
8) T	carbon dioxide	0.20	71244989	13497.140 umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49630.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49630.D\TCD2B.CH
Acq On : 25 Mar 2016 12:10 Operator: JDS
Sample : WG562401-05 133umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:32:42 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

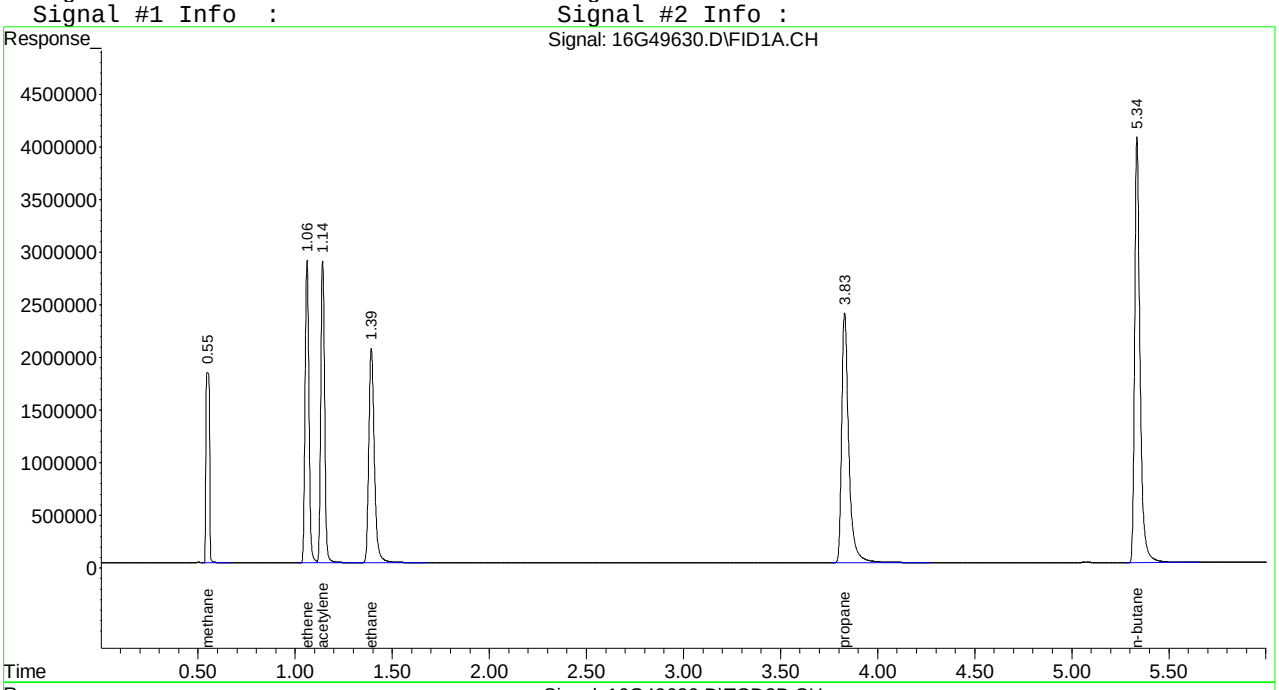

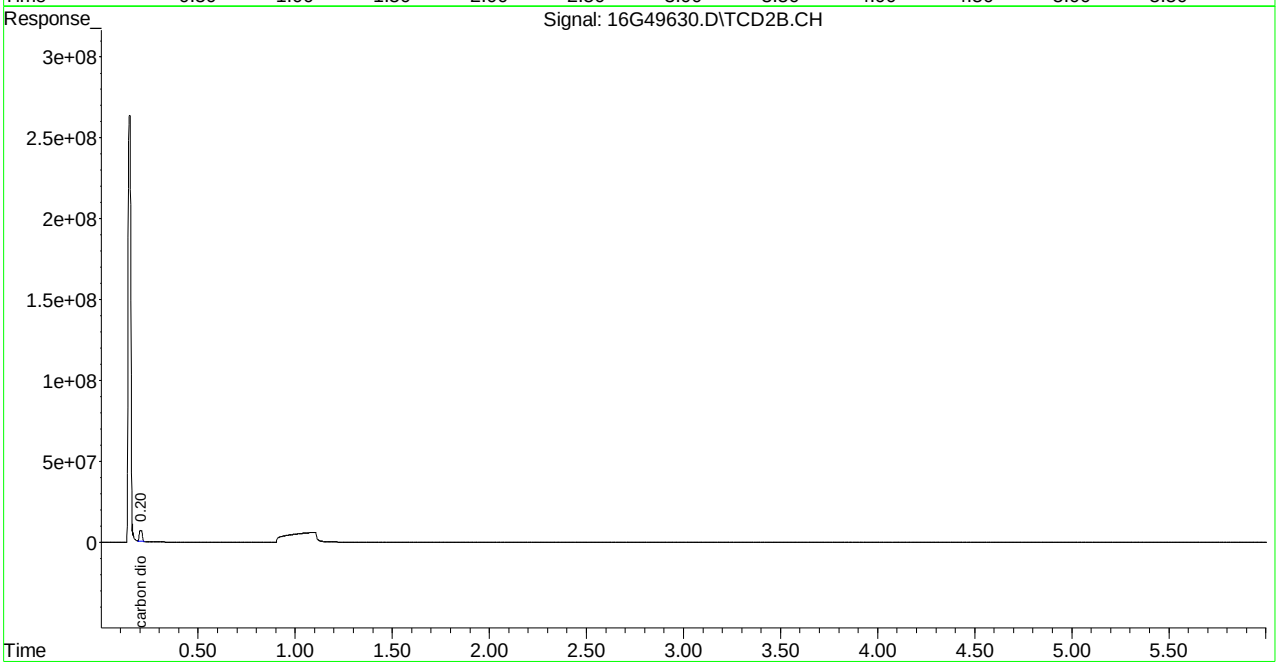

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49631.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49631.D\TCD2B.CH
Acq On : 25 Mar 2016 12:22 Operator: JDS
Sample : WG562401-06 333umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33:28 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:32:42 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	60036501	333.627	umol/
2) T	ethene	1.06	103680653	332.243	umol/
3) T	acetylene	1.14	103042347	329.980	umol/
4) T	ethane	1.39	106118124	332.733	umol/
5) T	propane	3.83	159210076	337.481	umol/
6) T	n-butane	5.33	207154261	338.817	umol/
8) T	carbon dioxide	0.20	184690679	34989.072	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49631.D RSKEXT1.M Fri Mar 25 13:33:28 2016 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49631.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49631.D\TCD2B.CH
Acq On : 25 Mar 2016 12:22 Operator: JDS
Sample : WG562401-06 333umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:32:42 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

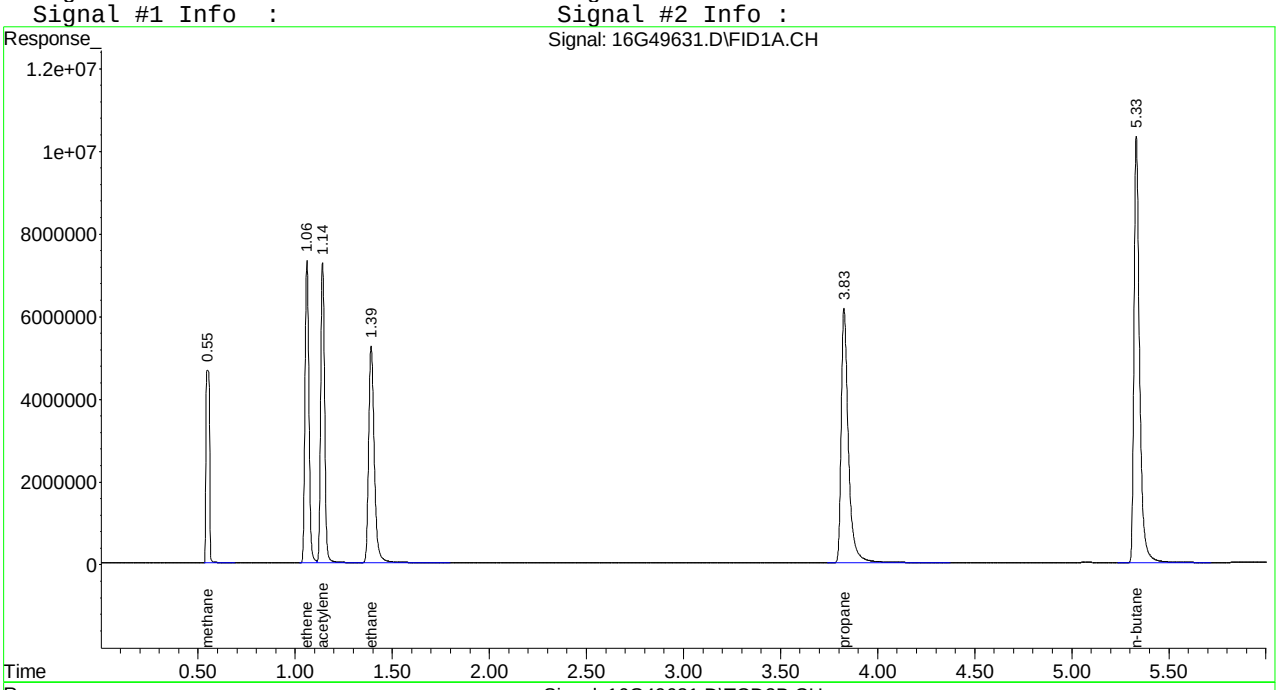

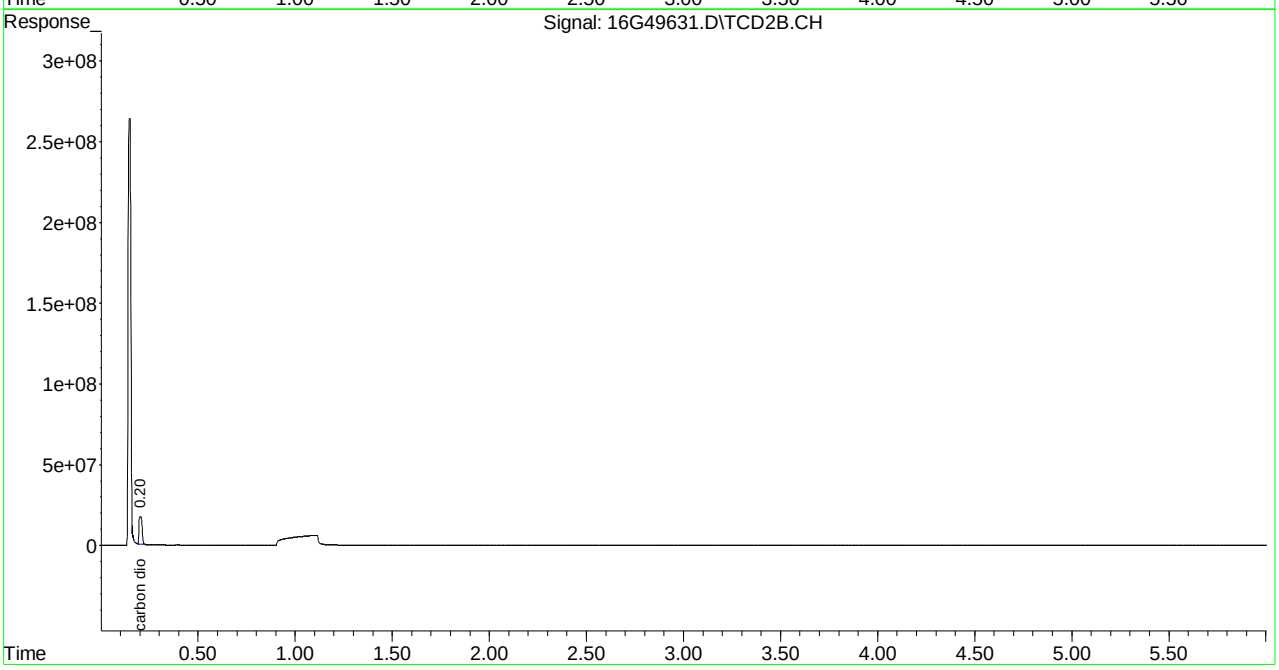

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49632.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49632.D\TCD2B.CH
Acq On : 25 Mar 2016 12:34 Operator: JDS
Sample : WG562401-07 533umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33:29 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:32:42 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	96479096	537.128	umol/
2) T	ethene	1.06	163526008	524.017	umol/
3) T	acetylene	1.14	159442689	510.596	umol/
4) T	ethane	1.39	167744947	525.963	umol/
5) T	propane	3.83	248130764	525.967	umol/
6) T	n-butane	5.33	319696896	522.890	umol/
8) T	carbon dioxide	0.20	281763639	53379.240	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49632.D RSKEXT1.M Fri Mar 25 13:33:29 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49632.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49632.D\TCD2B.CH
Acq On : 25 Mar 2016 12:34 Operator: JDS
Sample : WG562401-07 533umol/moL STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 13:33 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:32:42 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

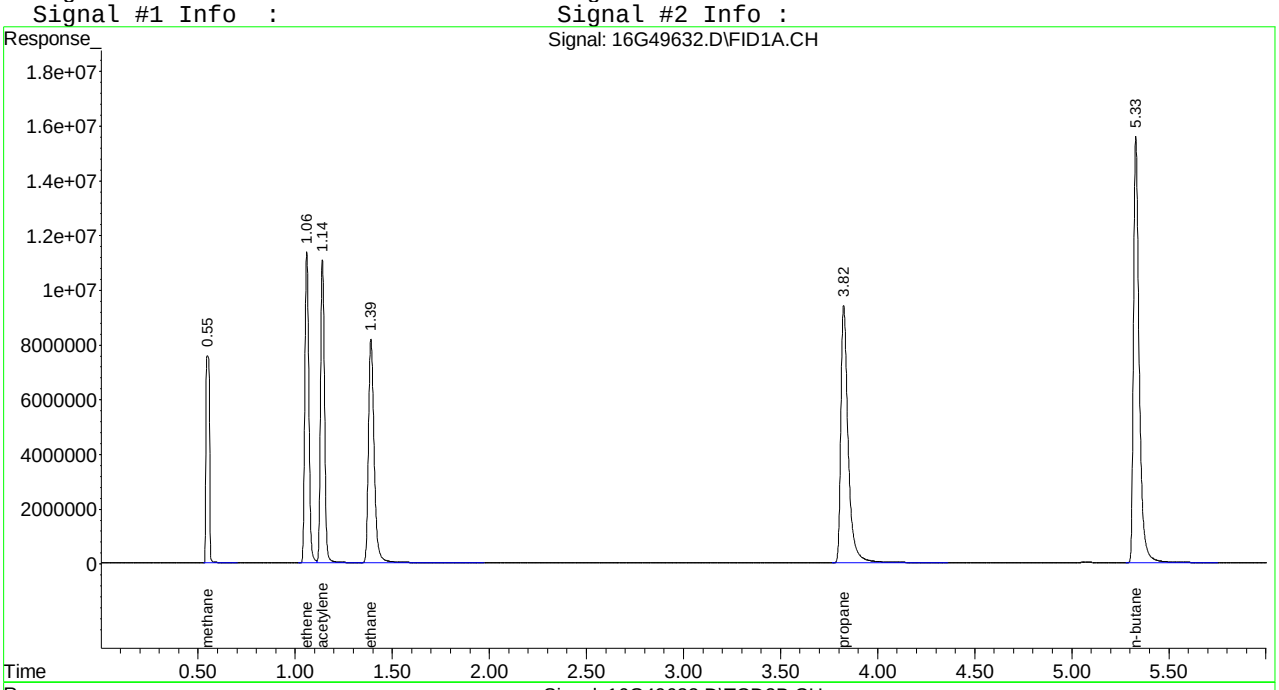

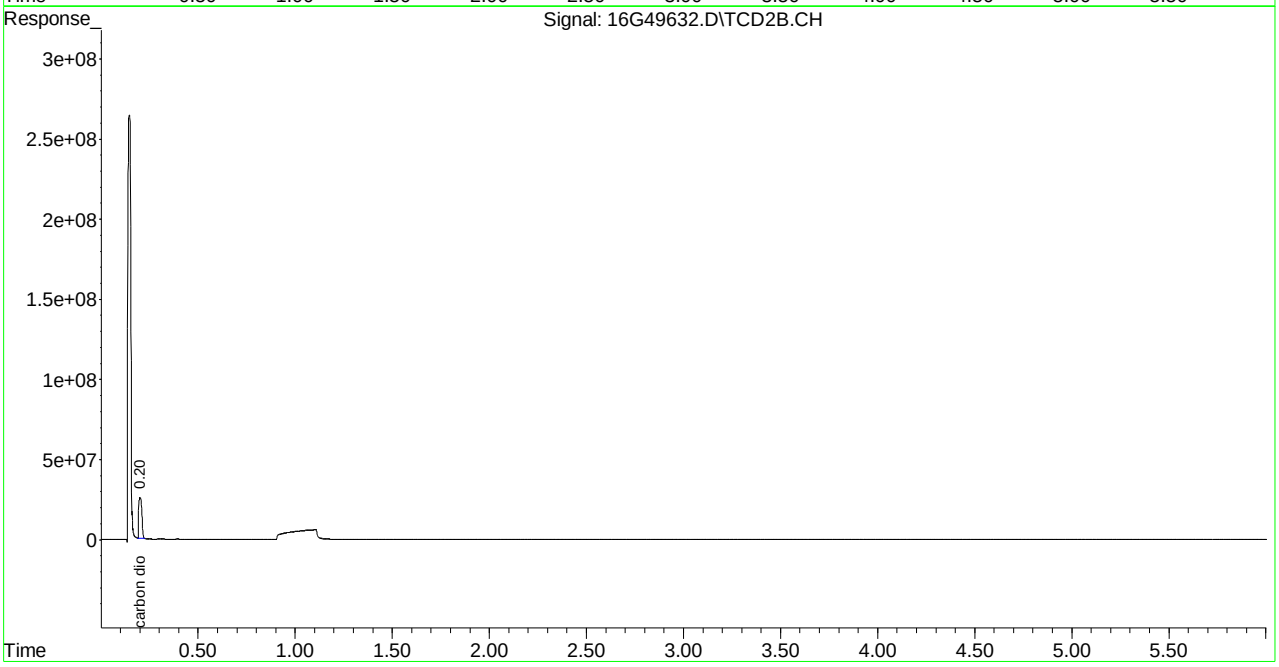

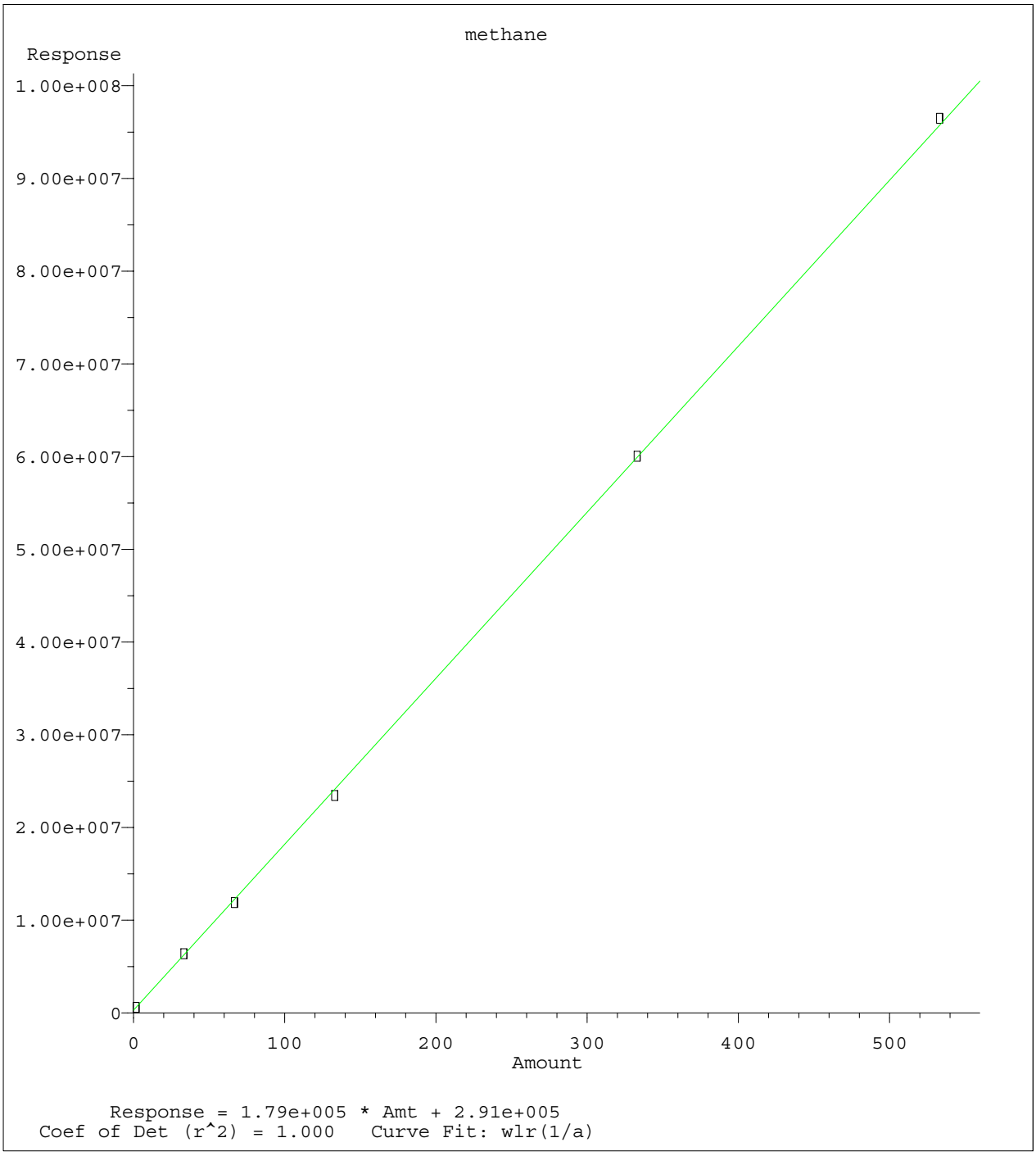

Method Name: C:\MSDCHEM\1\METHODS\RSKEXT1.M
Calibration Table Last Updated: Fri Mar 25 13:38:01 2016

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\032516\16G49635.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDchem\1\DATA\032516\16G49635.D\TCD2B.CH
Acq On : 25 Mar 2016 18:26 Operator: JDS
Sample : WG562401-08 133umol/moL ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 18:32:35 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24881813	137.318	umol/
2) T	ethene	1.06	41706426	133.648	umol/
3) T	acetylene	1.14	45236671	144.865	umol/
4) T	ethane	1.39	43137584	135.258	umol/
5) T	propane	3.83	62226584	131.903	umol/
6) T	n-butane	5.34	79421956	129.901	umol/
8) T	carbon dioxide	0.20	77169864	14619.589	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49635.D RSKEXT1.M Fri Mar 25 18:32:35 2016 Page 1

Signal #1 : C:\MSDchem\1\DATA\032516\16G49635.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDchem\1\DATA\032516\16G49635.D\TCD2B.CH
Acq On : 25 Mar 2016 18:26 Operator: JDS
Sample : WG562401-08 133umol/moL ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 25 18:32 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

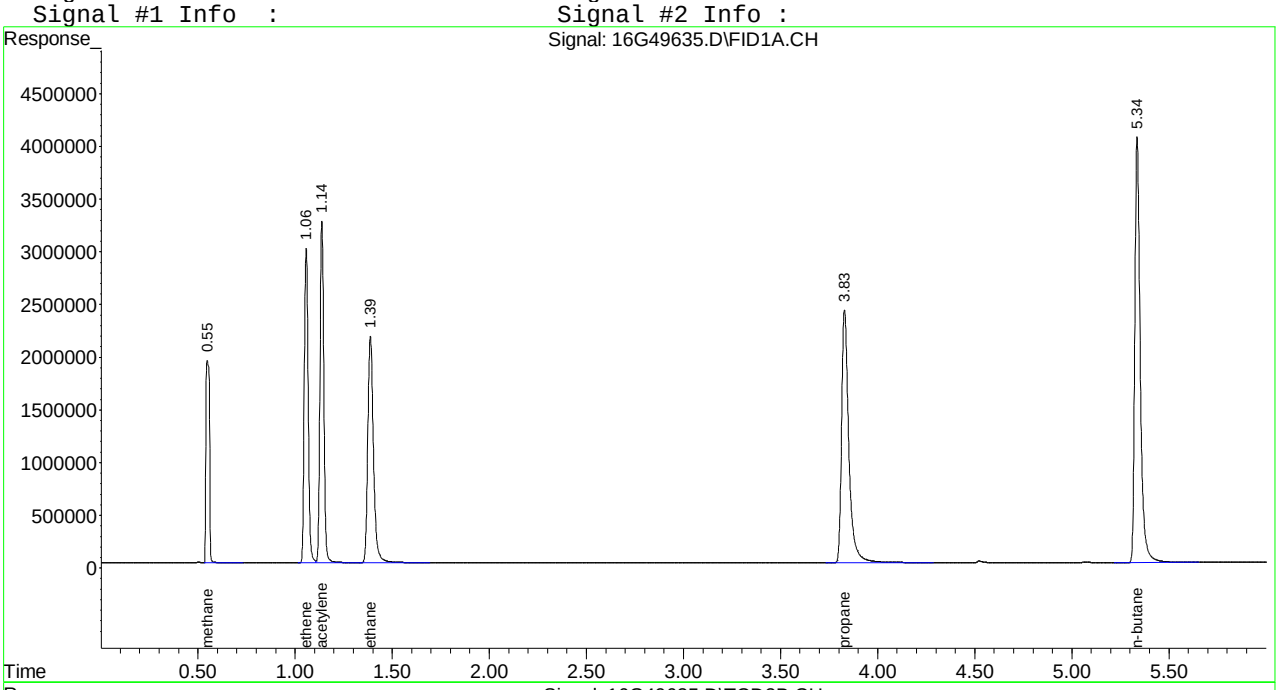

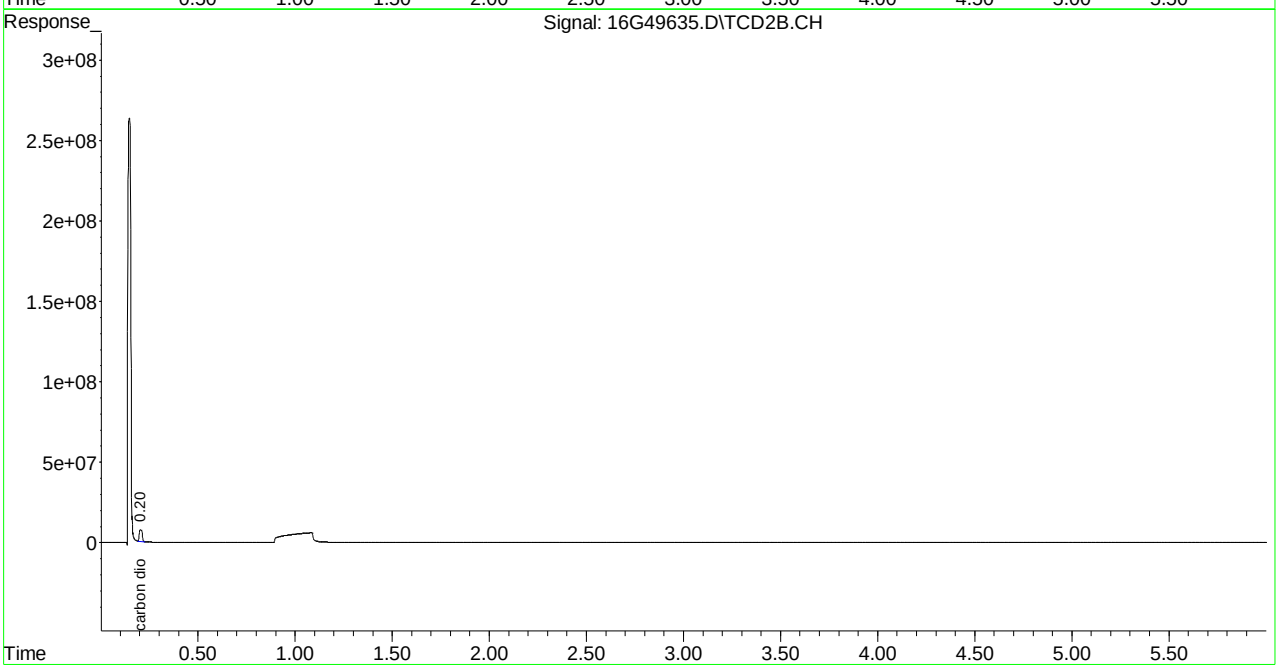

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49635.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49635.D\TCD2B.CH
Acq On : 25 Mar 2016 18:26 Operator: JDS
Sample : WG562401-08 133umol/moL ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	137.318	-3.2	106	0.00
2	T	ethene	133.000	133.648	-0.5	104	0.00
3	T	acetylene	133.000	144.865	-8.9	113	0.00
4	T	ethane	133.000	135.258	-1.7	106	0.00
5	T	propane	133.000	131.903	0.8	102	0.00
6	T	n-butane	133.000	129.901	2.3	101	0.00

Signal #2

8	T	carbon dioxide	13300.000	14619.589	-9.9	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G49635.D RSKEXT1.M Mon Mar 28 09:35:32 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\032516\16G49635.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\032516\16G49635.D\TCD2B.CH
Acq On    : 25 Mar 2016  18:26                        Operator: JDS
Sample    : WG562401-08 133umol/moL ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\080816\16G50447.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\080816\16G50447.D\TCD2B.CH
Acq On : 08 Aug 2016 14:37 Operator: JDS
Sample : WG579429-01 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 08 14:44:44 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	23095995	127.346 umol/
2) T	ethene	1.06	39355711	126.115 umol/
3) T	acetylene	1.14	41907855	134.205 umol/
4) T	ethane	1.40	39979561	125.356 umol/
5) T	propane	3.83	59546050	126.221 umol/
6) T	n-butane	5.34	77004496	125.947 umol/
8) T	carbon dioxide	0.20	75137454	14234.556 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G50447.D RSKEXT1.M Mon Aug 08 14:44:44 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\080816\16G50447.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\080816\16G50447.D\TCD2B.CH
Acq On : 08 Aug 2016 14:37 Operator: JDS
Sample : WG579429-01 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 8 14:44 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

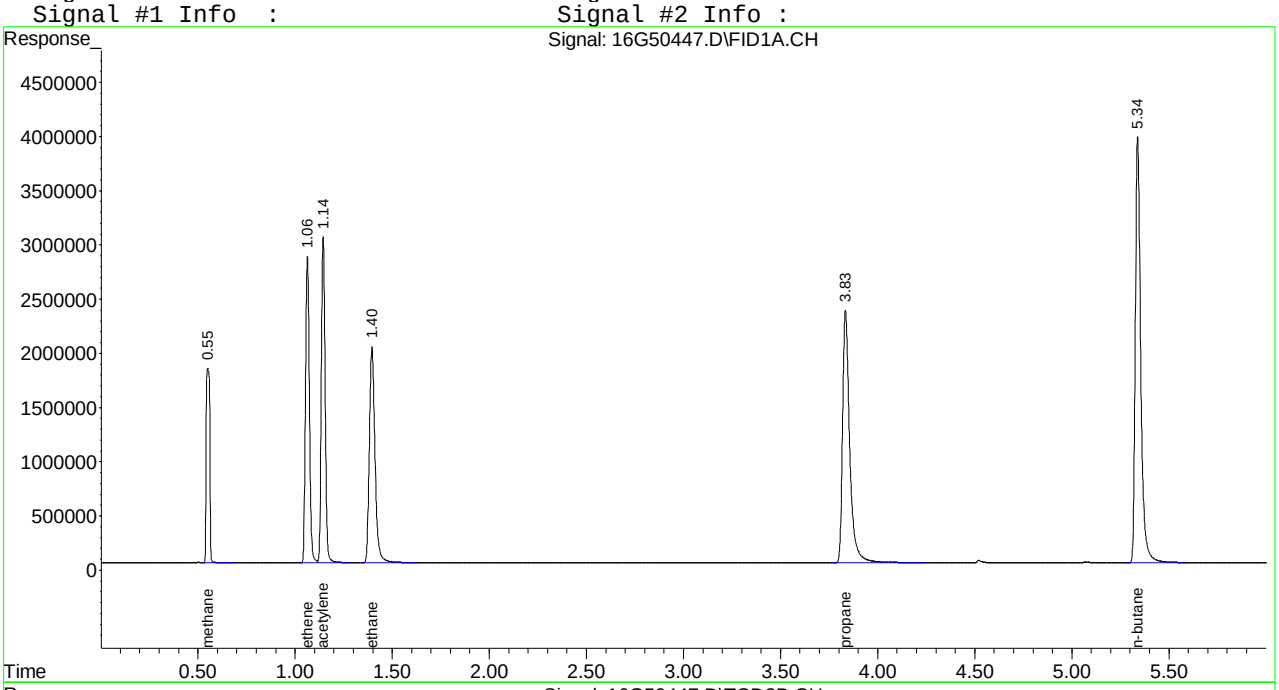

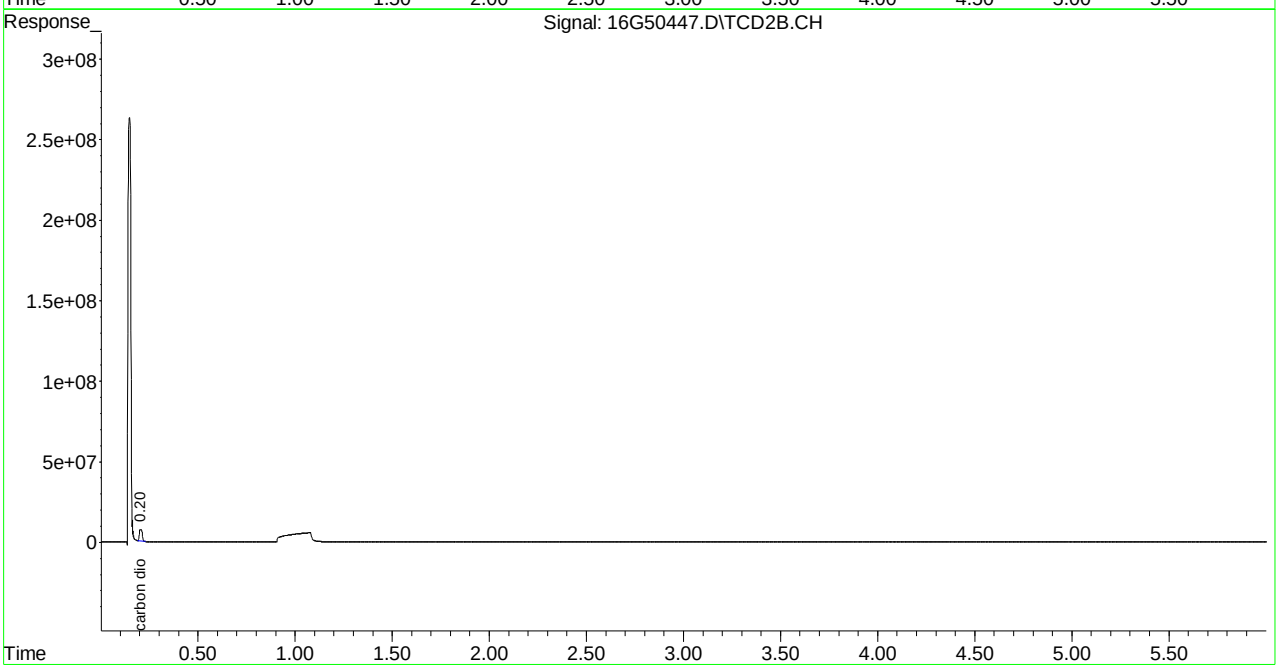

Evaluate Continuing Calibration Report

```
Signal #1 : C:\MSDCHEM\1\DATA\080816\16G50447.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\080816\16G50447.D\TCD2B.CH
Acq On    : 08 Aug 2016  14:37                        Operator: JDS
Sample    : WG579429-01 133umol/moL CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD75351                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	127.346	4.3	98	0.00
2	T	ethene	133.000	126.115	5.2	98	0.00
3	T	acetylene	133.000	134.205	-0.9	105	0.00
4	T	ethane	133.000	125.356	5.7	98	0.00
5	T	propane	133.000	126.221	5.1	98	0.00
6	T	n-butane	133.000	125.947	5.3	98	0.00
		Signal #2					
8	T	carbon dioxide	13300.000	14234.556	-7.0	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G50447.D RSKEXT1.M Mon Aug 08 14:45:09 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\080816\16G50447.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\080816\16G50447.D\TCD2B.CH
Acq On    : 08 Aug 2016  14:37                        Operator: JDS
Sample    : WG579429-01 133umol/moL CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD75351                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\080816\16G50458.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\080816\16G50458.D\TCD2B.CH
Acq On : 08 Aug 2016 16:59 Operator: JDS
Sample : WG579429-02 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 08 17:05:06 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
Target Compounds				
1) T	methane	0.55	23350417	128.766 umol/
2) T	ethene	1.06	39146285	125.444 umol/
3) T	acetylene	1.14	37809910	121.082 umol/
4) T	ethane	1.39	40131749	125.833 umol/
5) T	propane	3.83	59733863	126.619 umol/
6) T	n-butane	5.34	77446482	126.670 umol/
8) T	carbon dioxide	0.20	69579573	13181.632 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G50458.D RSKEXT1.M Mon Aug 08 17:05:06 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\080816\16G50458.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\080816\16G50458.D\TCD2B.CH
Acq On : 08 Aug 2016 16:59 Operator: JDS
Sample : WG579429-02 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 8 17:05 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

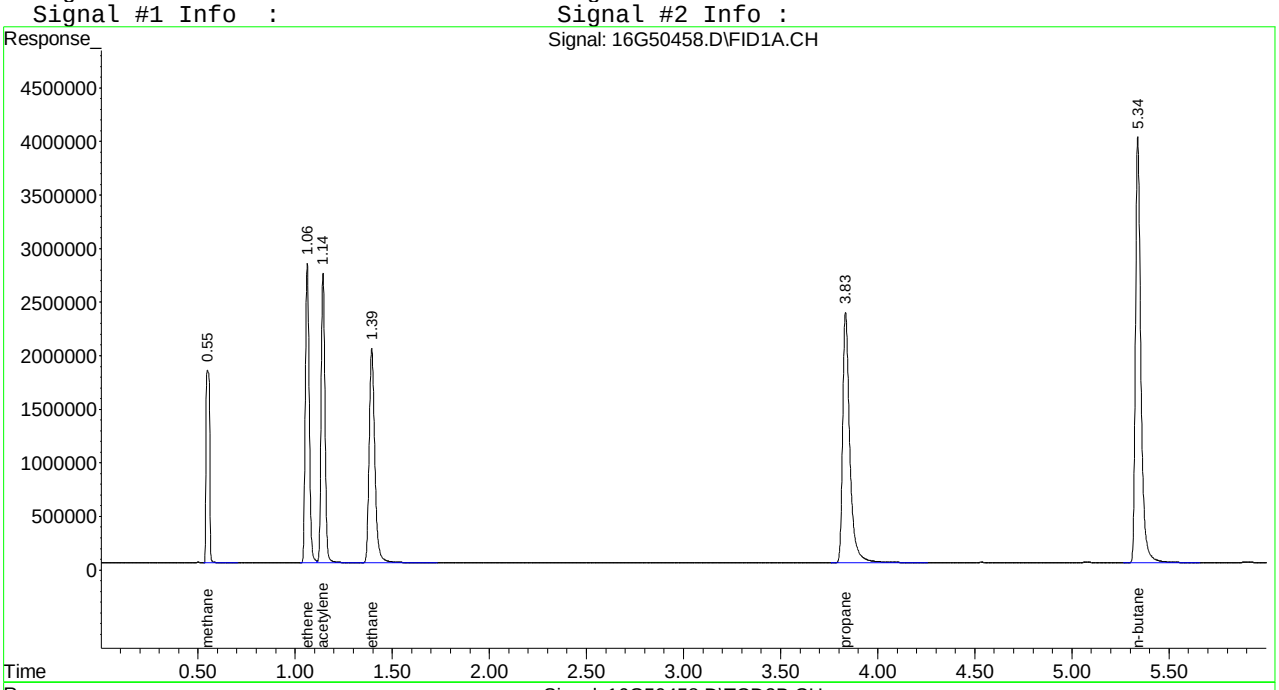

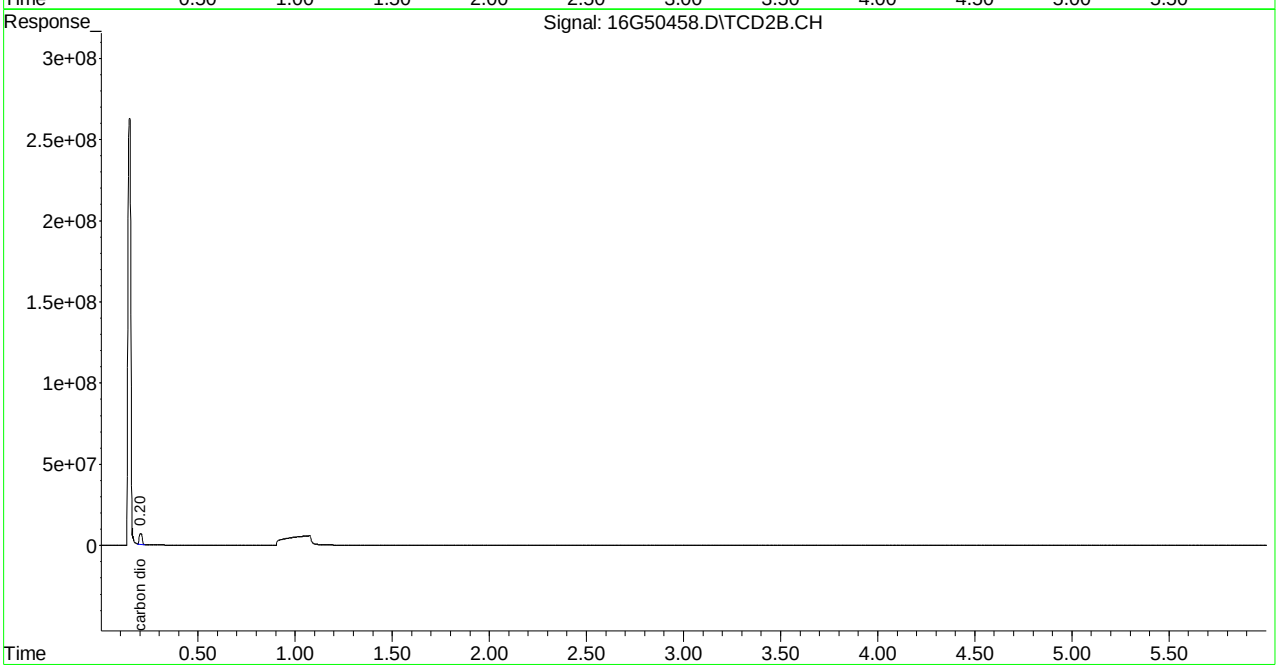

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\080816\16G50458.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\080816\16G50458.D\TCD2B.CH
Acq On : 08 Aug 2016 16:59 Operator: JDS
Sample : WG579429-02 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	128.766	3.2	100	0.00
2	T	ethene	133.000	125.444	5.7	98	0.00
3	T	acetylene	133.000	121.082	9.0	95	0.00
4	T	ethane	133.000	125.833	5.4	98	0.00
5	T	propane	133.000	126.619	4.8	98	0.00
6	T	n-butane	133.000	126.670	4.8	99	0.00

Signal #2

8	T	carbon dioxide	13300.000	13181.632	0.9	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G50458.D RSKEXT1.M Tue Aug 09 08:45:48 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\080816\16G50458.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\080816\16G50458.D\TCD2B.CH
Acq On    : 08 Aug 2016  16:59                        Operator: JDS
Sample    : WG579429-02 133umol/moL CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD75351                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081016\16G50503.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\081016\16G50503.D\TCD2B.CH
Acq On : 10 Aug 2016 12:10 Operator: JDS
Sample : WG579713-01 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 12:17:01 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	24294581	134.039 umol/
2) T	ethene	1.06	41070623	131.610 umol/
3) T	acetylene	1.14	42143021	134.958 umol/
4) T	ethane	1.39	41852955	131.230 umol/
5) T	propane	3.83	61955094	131.327 umol/
6) T	n-butane	5.34	80840456	132.221 umol/
8) T	carbon dioxide	0.20	76631262	14517.553 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G50503.D RSKEXT1.M Wed Aug 10 12:17:01 2016 Page 1

Signal #1 : C:\MSDchem\1\DATA\081016\16G50503.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\081016\16G50503.D\TCD2B.CH
Acq On : 10 Aug 2016 12:10 Operator: JDS
Sample : WG579713-01 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 12:17 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

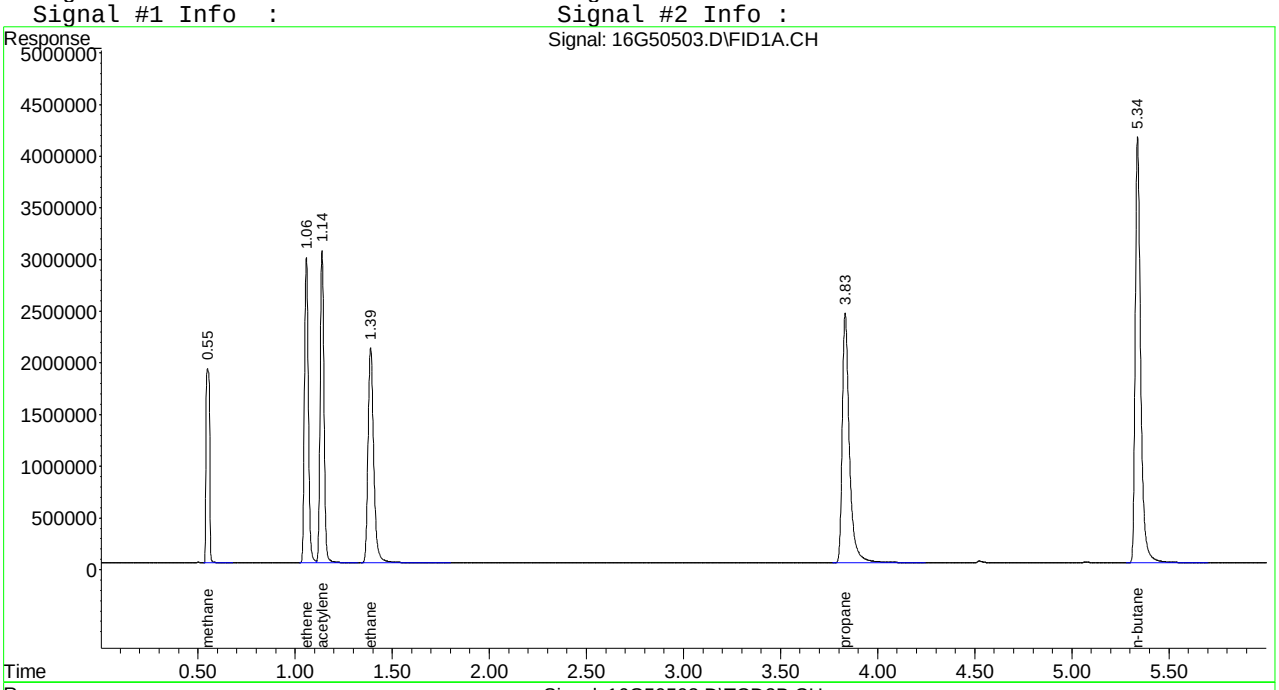

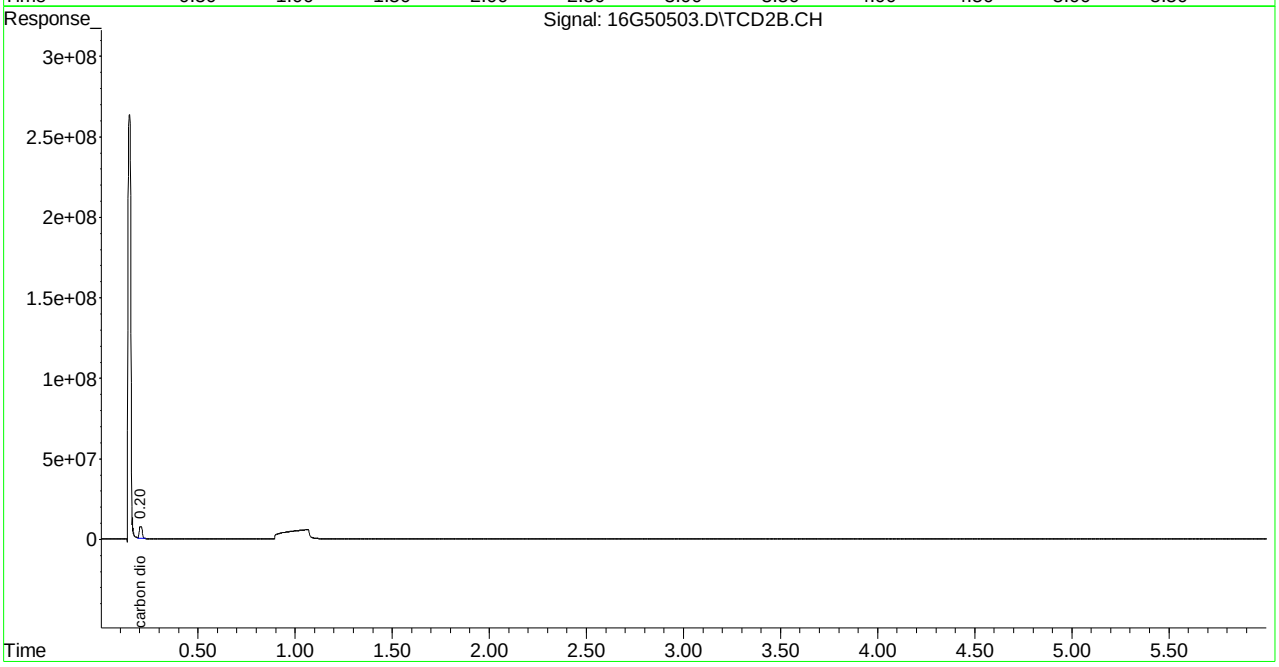

Evaluate Continuing Calibration Report

```
Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50503.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50503.D\TCD2B.CH
Acq On    : 10 Aug 2016  12:10                        Operator: JDS
Sample    : WG579713-01 133umol/moL CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD75351                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	134.039	-0.8	104	0.00
2	T	ethene	133.000	131.610	1.0	103	0.00
3	T	acetylene	133.000	134.958	-1.5	106	0.00
4	T	ethane	133.000	131.230	1.3	103	0.00
5	T	propane	133.000	131.327	1.3	102	0.00
6	T	n-butane	133.000	132.221	0.6	103	0.00
		Signal #2					
8	T	carbon dioxide	13300.000	14517.553	-9.2	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G50503.D RSKEXT1.M Thu Aug 11 08:54:05 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50503.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50503.D\TCD2B.CH
Acq On    : 10 Aug 2016  12:10                        Operator: JDS
Sample    : WG579713-01 133umol/moL CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD75351                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081016\16G50514.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\081016\16G50514.D\TCD2B.CH
Acq On : 10 Aug 2016 15:58 Operator: JDS
Sample : WG579713-02 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 16:04:29 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	22719765	125.245 umol/
2) T	ethene	1.06	38069119	121.992 umol/
3) T	acetylene	1.14	39225954	125.616 umol/
4) T	ethane	1.39	38663094	121.228 umol/
5) T	propane	3.83	57262696	121.381 umol/
6) T	n-butane	5.34	74837194	122.402 umol/
8) T	carbon dioxide	0.20	69658341	13196.555 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G50514.D RSKEXT1.M Wed Aug 10 16:04:29 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081016\16G50514.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\081016\16G50514.D\TCD2B.CH
Acq On : 10 Aug 2016 15:58 Operator: JDS
Sample : WG579713-02 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 16:04 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

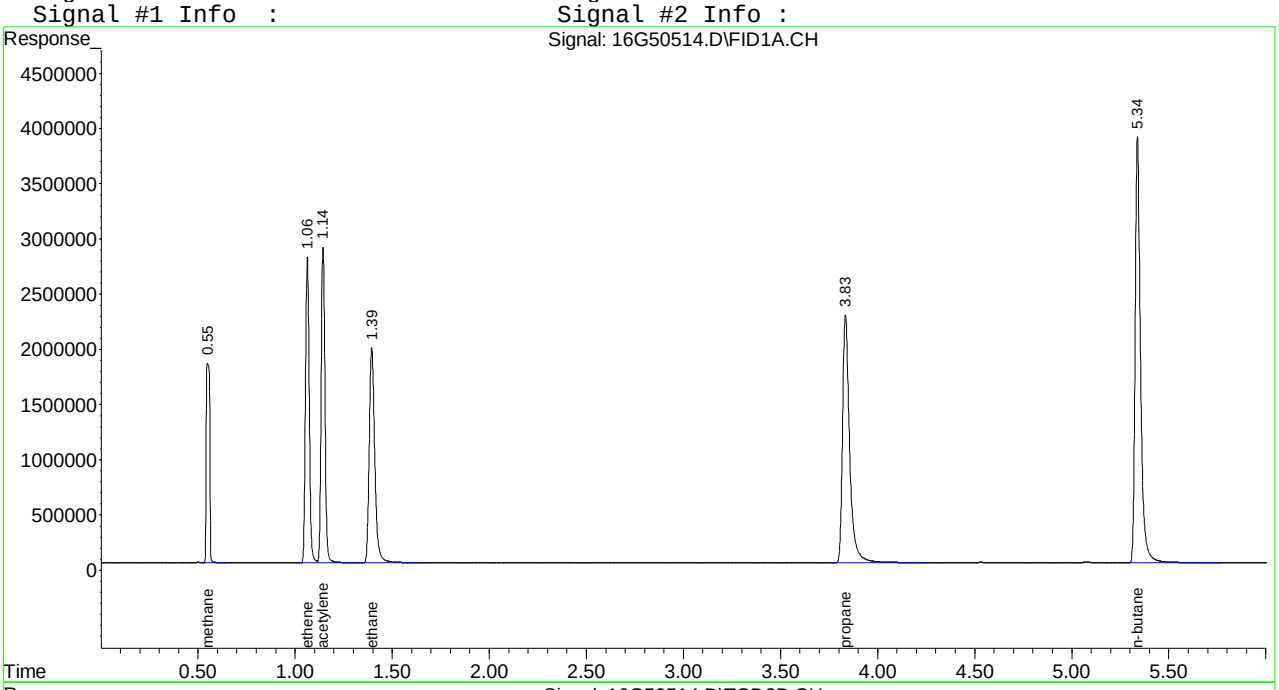

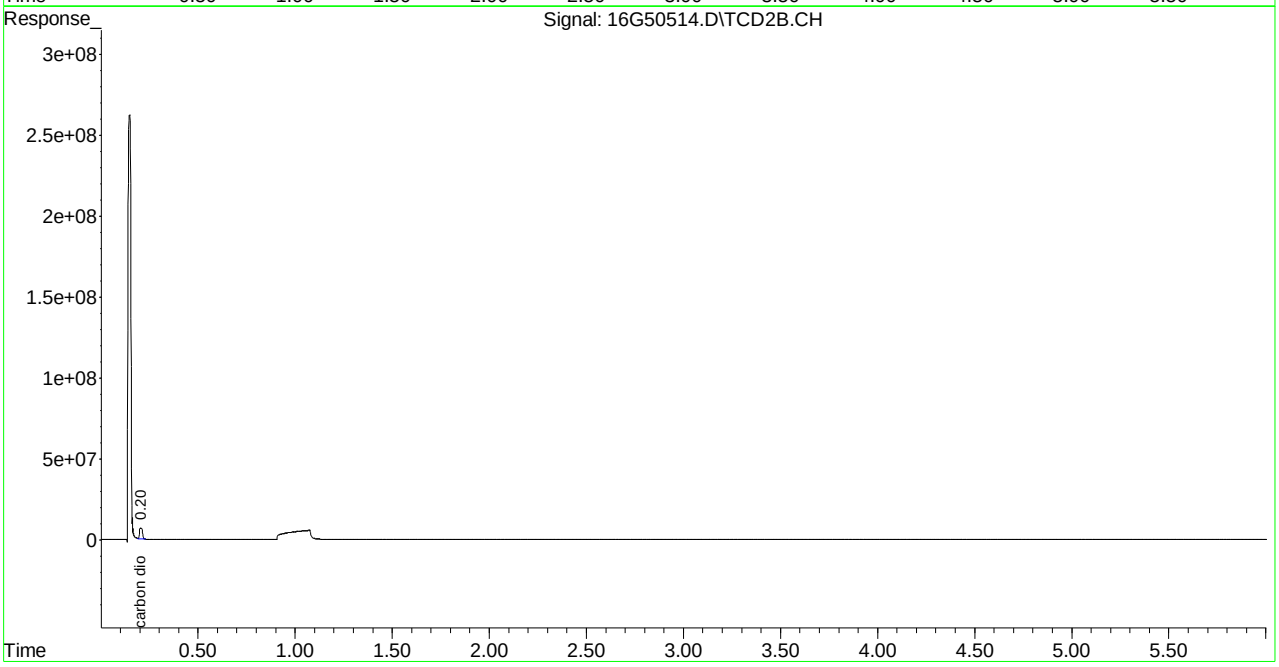

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50514.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50514.D\TCD2B.CH
Acq On : 10 Aug 2016 15:58 Operator: JDS
Sample : WG579713-02 133umol/moL CCV STD RSK175 Inst : HP16
Misc : 1,1 STD75351 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	125.245	5.8	97	0.00
2	T	ethene	133.000	121.992	8.3	95	0.00
3	T	acetylene	133.000	125.616	5.6	98	0.00
4	T	ethane	133.000	121.228	8.9	95	0.00
5	T	propane	133.000	121.381	8.7	94	0.00
6	T	n-butane	133.000	122.402	8.0	95	0.00

Signal #2

8	T	carbon dioxide	13300.000	13196.555	0.8	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G50514.D RSKEXT1.M Thu Aug 11 08:54:14 2016 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50514.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50514.D\TCD2B.CH
Acq On    : 10 Aug 2016  15:58                        Operator: JDS
Sample    : WG579713-02 133umol/moL CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD75351                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update  : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L16080330 **Run Date:** 08/08/2016 **Sample ID:** WG579429-01
Instrument: HP16 **Run Time:** 14:37 **Method:** RSK175
Workgroup (AAB#): WG579430 **File ID:** 16G50447

RT Standard	Analysis Date	File ID	Analyst
WG579713-01	08/10/2016	16G50503	JDS
WG579606-01	08/09/2016	16G50480	JDS
WG579429-01	08/08/2016	16G50447	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.55	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.4	1.39	1.39	1.4	1.370	1.430
PROPANE	3.83	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.34	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4896545
Report generated 08/16/2016 14:57

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L16080330 **Run Date:** 08/10/2016 **Sample ID:** WG579713-02
Instrument: HP16 **Run Time:** 15:58 **Method:** RSK175
Workgroup (AAB#): WG579716 **File ID:** 16G50514

RT Standard	Analysis Date	File ID	Analyst
WG579713-01	08/10/2016	16G50503	JDS
WG579606-01	08/09/2016	16G50480	JDS
WG579429-01	08/08/2016	16G50447	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.55	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.4	1.39	1.39	1.39	1.360	1.420
PROPANE	3.83	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.34	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4896545
Report generated 08/16/2016 14:57

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\080816\16G50448.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\080816\16G50448.D\TCD2B.CH
Acq On : 08 Aug 2016 15:03 Operator: JDS
Sample : WG579430-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 09 08:41:29 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	351303	0.336	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	6759	0.021	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G50448.D RSKEXT1.M Tue Aug 09 08:41:32 2016 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\080816\16G50448.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\080816\16G50448.D\TCD2B.CH
Acq On : 08 Aug 2016 15:03 Operator: JDS
Sample : WG579430-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 9 8:41 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

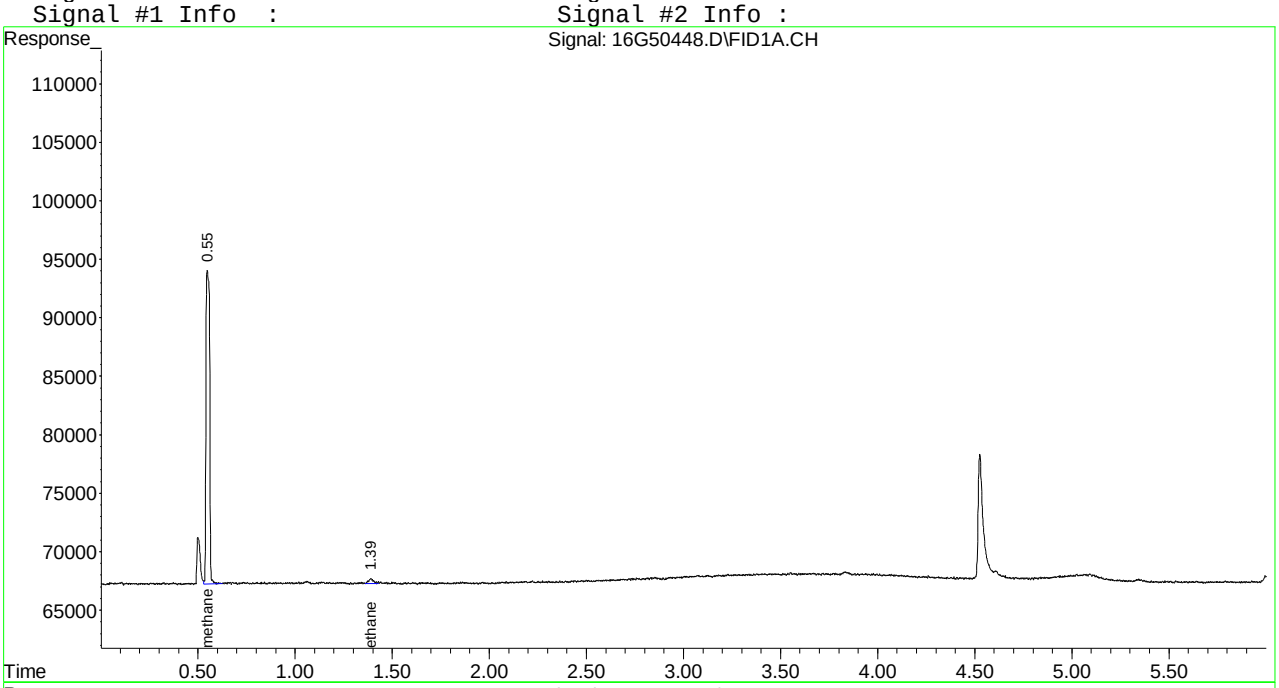

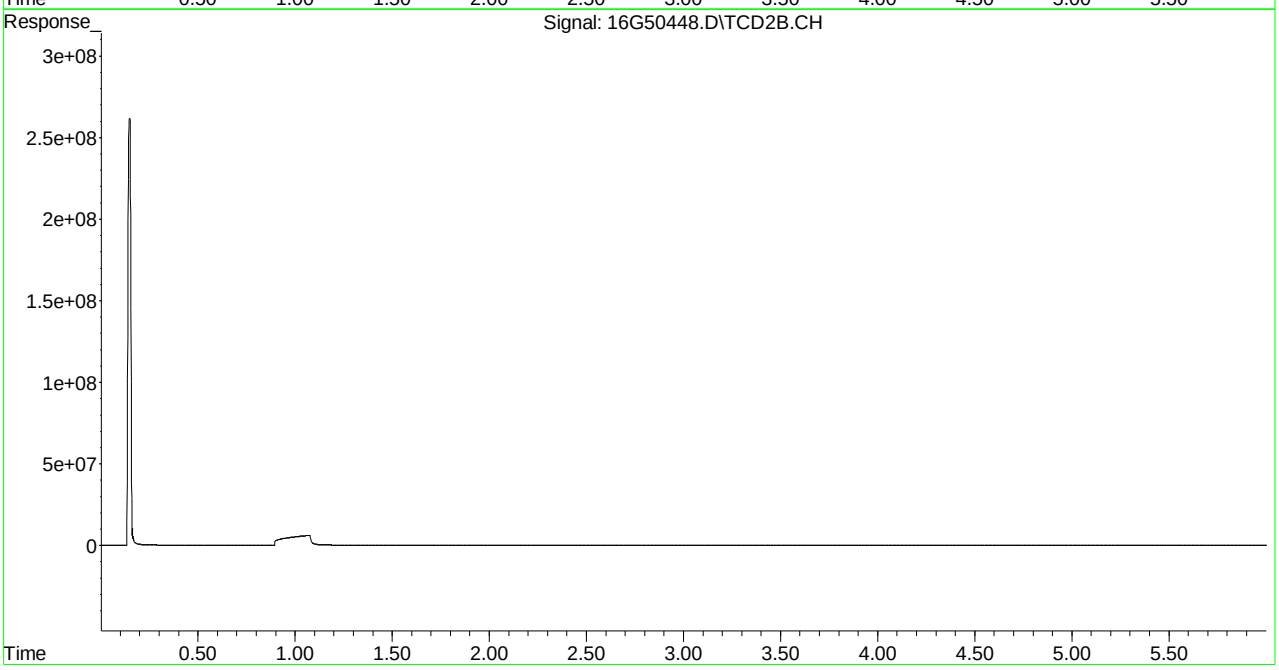

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50504.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50504.D\TCD2B.CH
Acq On : 10 Aug 2016 14:05 Operator: JDS
Sample : WG579716-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 14:11:05 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	284837	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G50504.D RSKEXT1.M Wed Aug 10 15:49:05 2016 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\081016\16G50504.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\081016\16G50504.D\TCD2B.CH
Acq On : 10 Aug 2016 14:05 Operator: JDS
Sample : WG579716-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 14:11 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

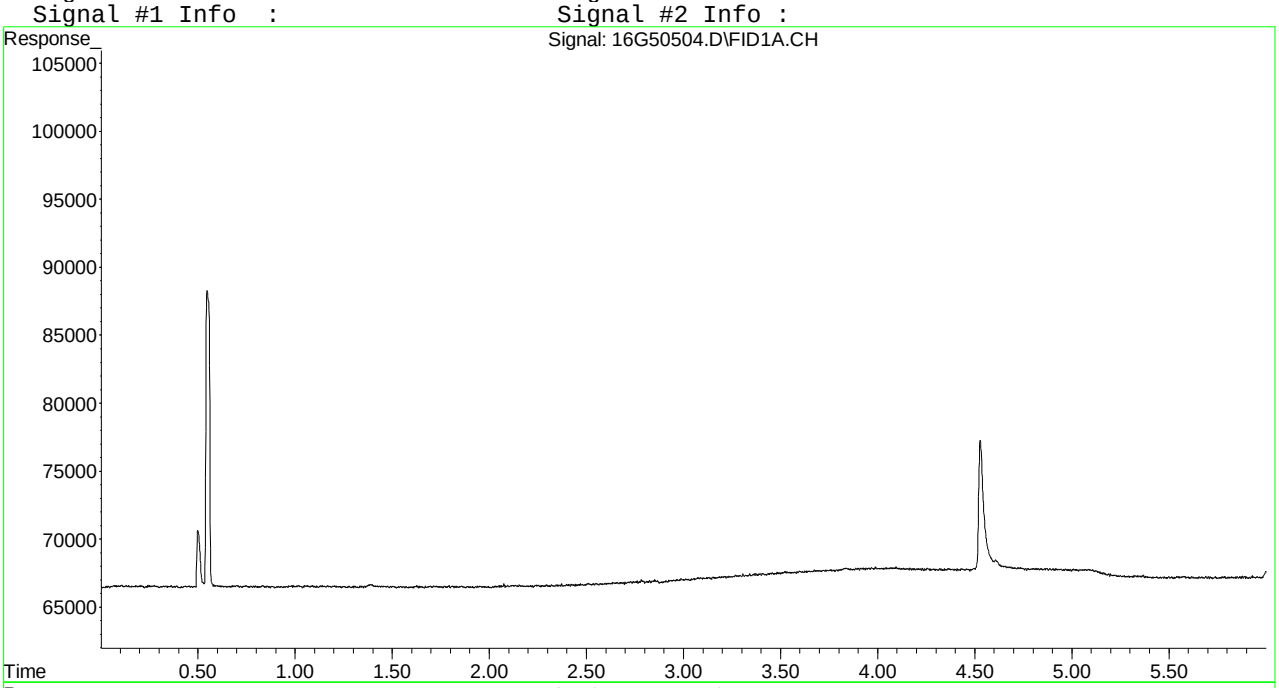

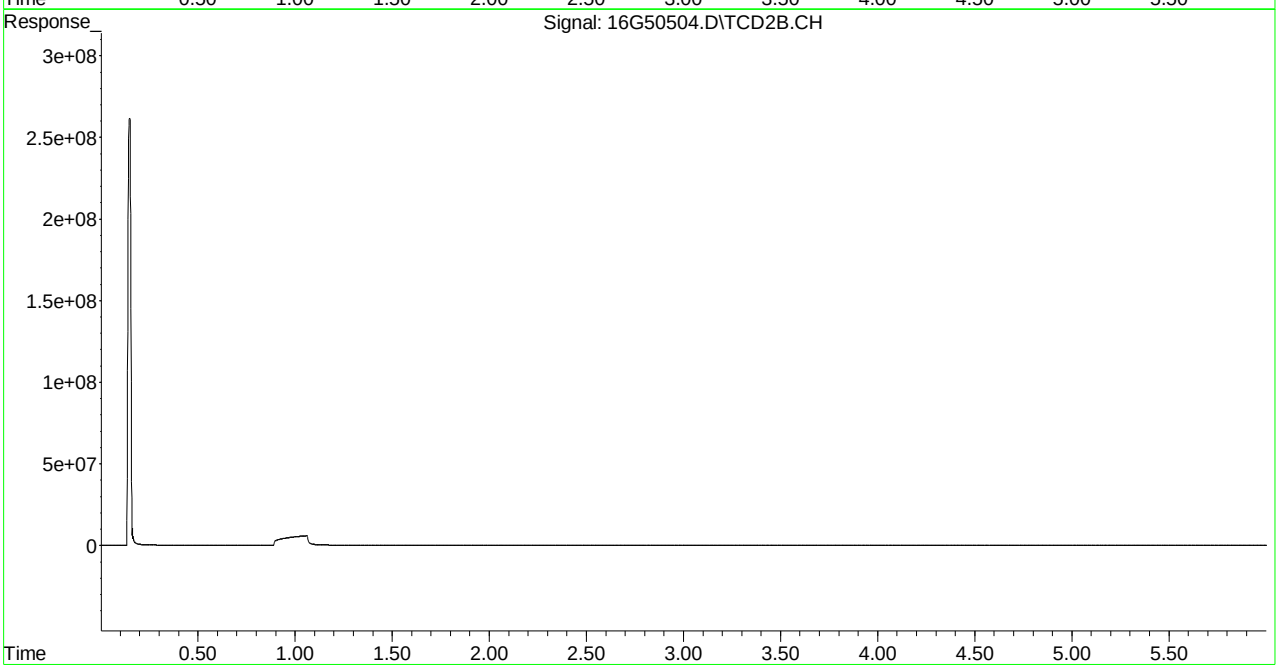

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\080816\16G50449.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\080816\16G50449.D\TCD2B.CH
Acq On : 08 Aug 2016 15:15 Operator: JDS
Sample : WG579430-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 08 15:21:32 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12346528	67.319	umol/
2) T	ethene	1.06	20358315	65.238	umol/
3) T	acetylene	1.14	21517823	68.908	umol/
4) T	ethane	1.40	21096792	66.149	umol/
5) T	propane	3.84	30321215	64.272	umol/
6) T	n-butane	5.34	38043578	62.223	umol/
8) T	carbon dioxide	0.20	33322026	6312.754	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G50449.D RSKEXT1.M Mon Aug 08 15:21:32 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\080816\16G50449.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\080816\16G50449.D\TCD2B.CH
Acq On : 08 Aug 2016 15:15 Operator: JDS
Sample : WG579430-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 8 15:21 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

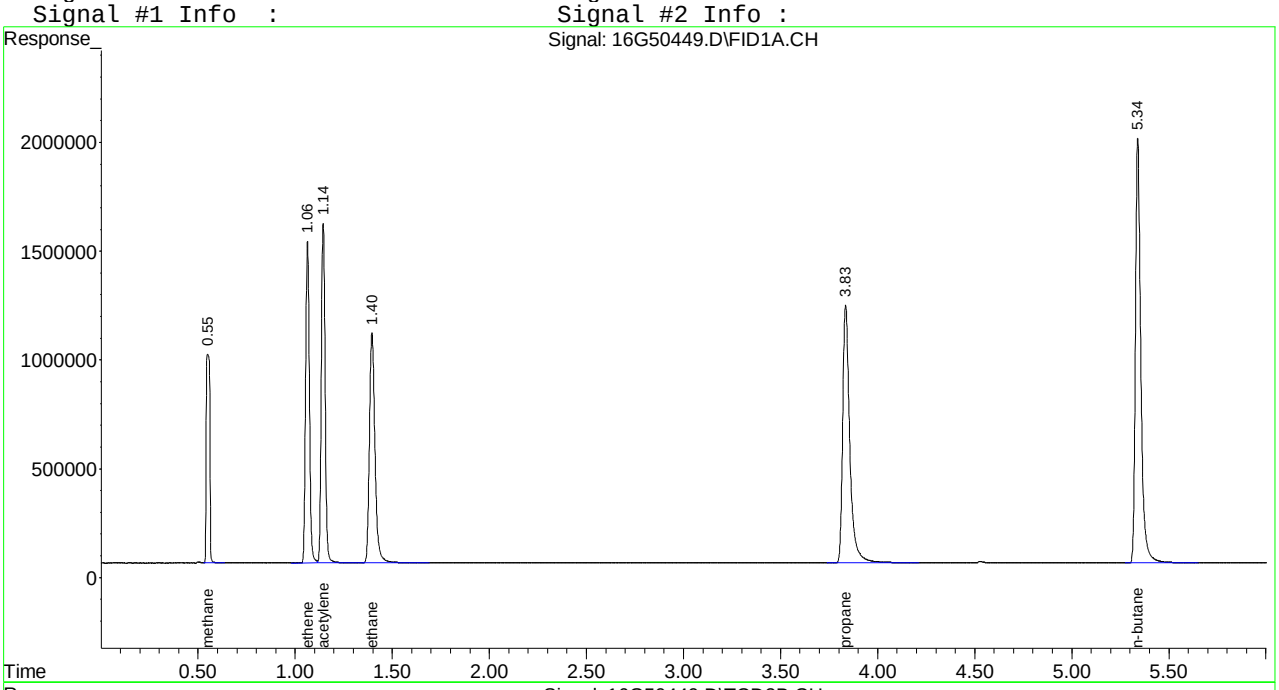

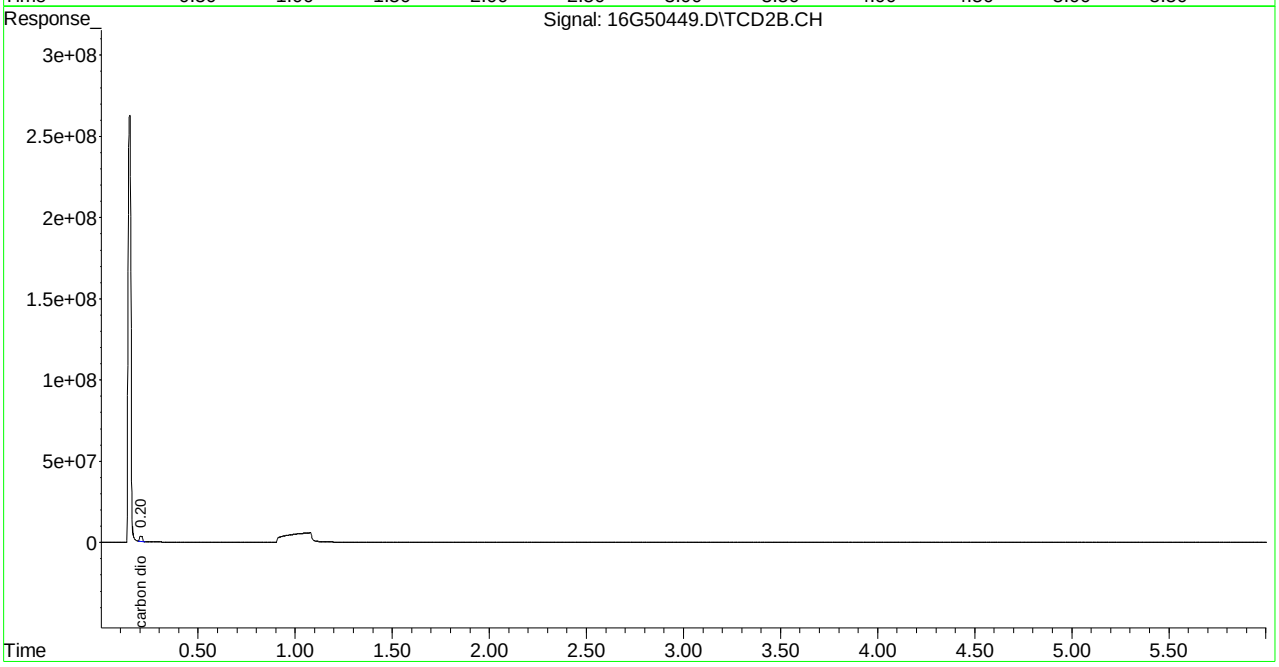

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081016\16G50505.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\081016\16G50505.D\TCD2B.CH
Acq On : 10 Aug 2016 14:16 Operator: JDS
Sample : WG579716-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 14:22:11 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12104475	65.967	umol/
2) T	ethene	1.06	19767371	63.344	umol/
3) T	acetylene	1.14	20988600	67.213	umol/
4) T	ethane	1.39	20406472	63.984	umol/
5) T	propane	3.84	28899050	61.258	umol/
6) T	n-butane	5.34	35670672	58.342	umol/
8) T	carbon dioxide	0.21	32510371	6158.988	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G50505.D RSKEXT1.M Wed Aug 10 14:22:11 2016 Page 1

Signal #1 : C:\MSDchem\1\DATA\081016\16G50505.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\081016\16G50505.D\TCD2B.CH
Acq On : 10 Aug 2016 14:16 Operator: JDS
Sample : WG579716-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 14:22 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

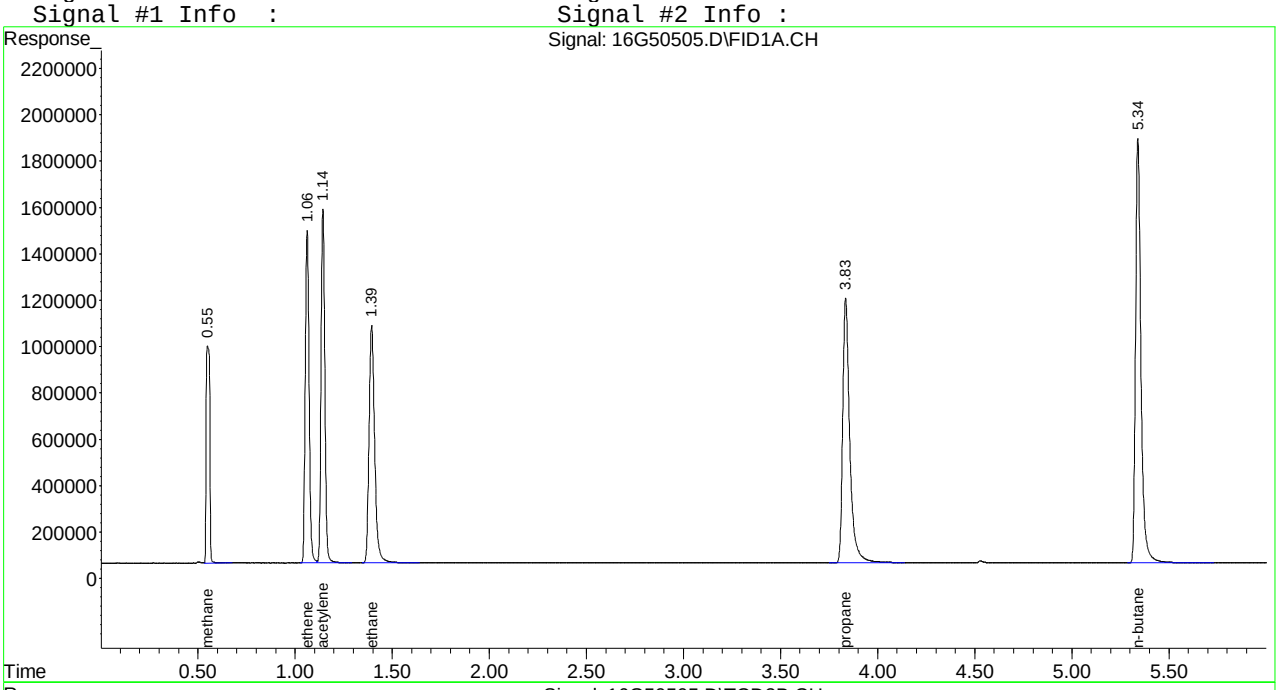

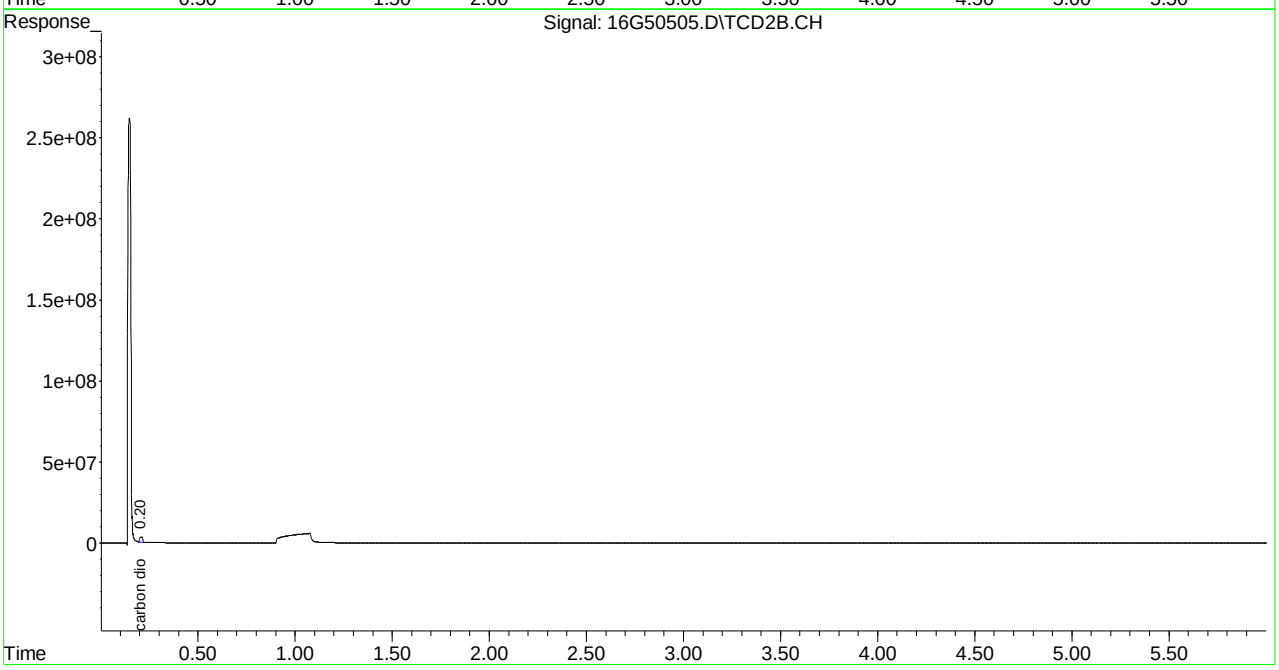

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081016\16G50506.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\081016\16G50506.D\TCD2B.CH
Acq On : 10 Aug 2016 14:27 Operator: JDS
Sample : WG579716-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 14:33:20 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11942837	65.065	umol/
2) T	ethene	1.06	19361225	62.043	umol/
3) T	acetylene	1.14	19427505	62.214	umol/
4) T	ethane	1.40	20099469	63.022	umol/
5) T	propane	3.84	28826608	61.104	umol/
6) T	n-butane	5.34	36482829	59.671	umol/
8) T	carbon dioxide	0.20	29766092	5639.093	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G50506.D RSKEXT1.M Wed Aug 10 14:33:20 2016 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081016\16G50506.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\081016\16G50506.D\TCD2B.CH
Acq On : 10 Aug 2016 14:27 Operator: JDS
Sample : WG579716-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 10 14:33 2016 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 032516
Last Update : Fri Mar 25 13:38:01 2016
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

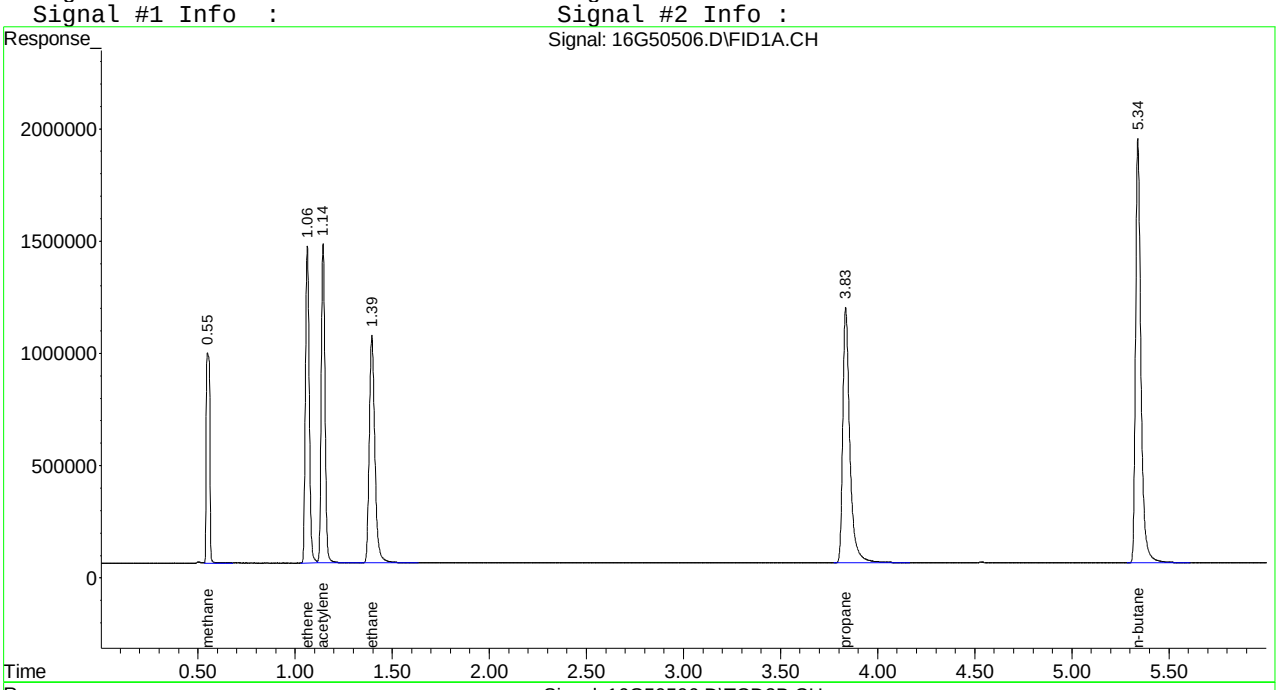

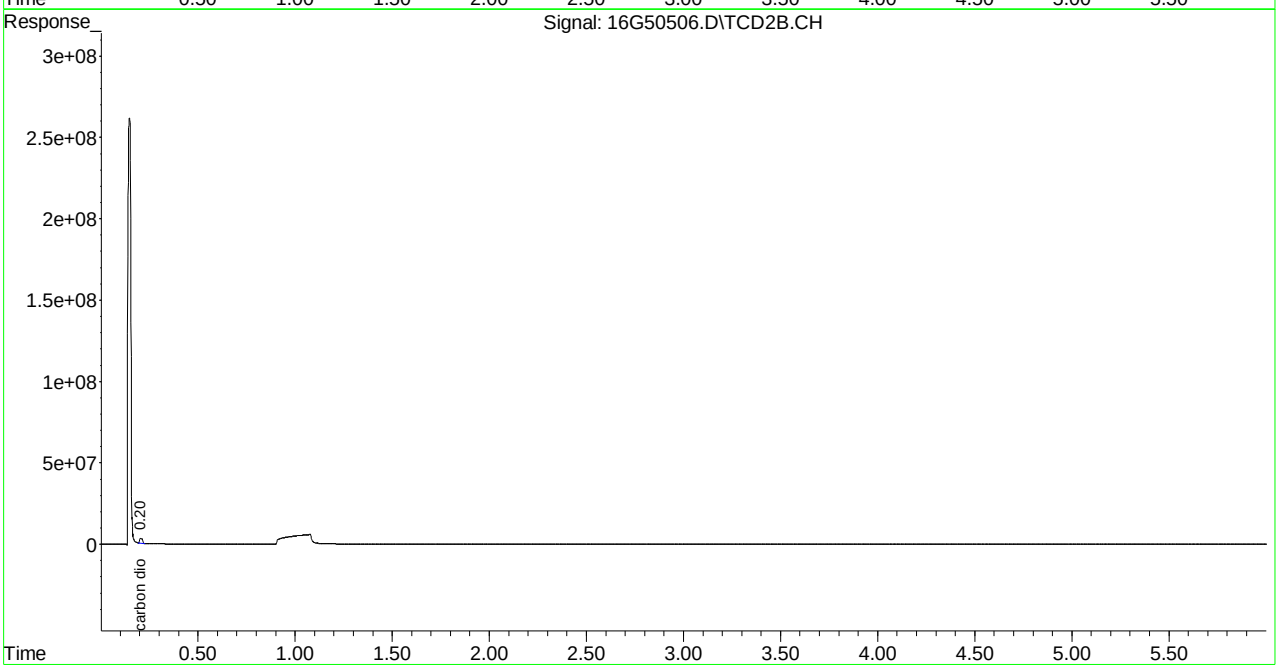

2.2 Metals Data

2.2.1 Metals I C P Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW05F-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579662	**Analyst:**	JYH	**Run Date:**	08/10/2016 14:03
Collect Date:	08/03/2016 07:55	**Dilution:**	1	**File ID:**	T3.081016.140310
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	6.04		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L16080330-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW05FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579662	**Analyst:**	JYH	**Run Date:**	08/10/2016 13:13
Collect Date:	08/03/2016 07:55	**Dilution:**	1	**File ID:**	T3.081016.131311
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	6.19		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L16080330-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW16F-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/12/2016 13:24
Workgroup #:	WG579662	**Analyst:**	KKB	**Run Date:**	08/12/2016 18:10
Collect Date:	08/03/2016 09:10	**Dilution:**	10	**File ID:**	T3.081216.181002
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	21.0		2.00	1.00	0.500

Certificate of Analysis

Microbac

Lab Report #:	L16080330
Lab Project #:	2551.096
Project Name:	Longhorn Army Ammunition
Lab Contact:	Michelle Taylor

Sample #:	L16080330-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW16FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/12/2016 13:24
Workgroup #:	WG579662	**Analyst:**	KKB	**Run Date:**	08/12/2016 18:13
Collect Date:	08/03/2016 09:10	**Dilution:**	10	**File ID:**	T3.081216.181357
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	20.9		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	LHSMW19-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579662	**Analyst:**	JYH	**Run Date:**	08/10/2016 14:14
Collect Date:	08/03/2016 10:20	**Dilution:**	1	**File ID:**	T3.081016.141439
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	0.125	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	LHSMW19FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579662	**Analyst:**	JYH	**Run Date:**	08/10/2016 14:18
Collect Date:	08/03/2016 10:20	**Dilution:**	1	**File ID:**	T3.081016.141832
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW11-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579662	**Analyst:**	JYH	**Run Date:**	08/10/2016 14:22
Collect Date:	08/03/2016 11:25	**Dilution:**	1	**File ID:**	T3.081016.142225
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	0.188	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-14	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW11FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579662	**Analyst:**	JYH	**Run Date:**	08/10/2016 14:26
Collect Date:	08/03/2016 11:25	**Dilution:**	1	**File ID:**	T3.081016.142619
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0675	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-16	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW09F-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579662	**Analyst:**	JYH	**Run Date:**	08/10/2016 14:30
Collect Date:	08/03/2016 13:45	**Dilution:**	1	**File ID:**	T3.081016.143013
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	46WW09FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 07:01
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/10/2016 10:08
Workgroup #:	WG579662	**Analyst:**	JYH	**Run Date:**	08/10/2016 14:34
Collect Date:	08/03/2016 13:45	**Dilution:**	1	**File ID:**	T3.081016.143405
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific IRIS Advantage

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG579303
Analyst: REK
Spike Analyst: REK
Run Date: 08/08/2016 07:01
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 08/08/2016 07:13

SOP: ME407 Revison 19
Spike Solution: STD77188
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18987
HCL Lot #: COA19029
HNO3 Lot #: COA19069
ICP FILTERS LOT#R6BA1587 RGT37256

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG579303-02	BLANK	1	40 mL	50 mL	204.759 g	204.747 g		
2	WG579303-03	LCS	1	40 mL	50 mL	210.462 g	210.455 g	5 mL	
3	L16080002-05	ML05	1	40 mL	50 mL	212.501 g	212.49 g	5 mL	08/15/16
4	L16080002-06	ML06	1	40 mL	50 mL	210.925 g	210.913 g	5 mL	08/15/16
5	L16080002-07	ML07	1	40 mL	50 mL	207.282 g	207.266 g	5 mL	08/15/16
6	L16080002-08	ML08	1	40 mL	50 mL	210.103 g	210.087 g	5 mL	08/15/16
7	L16080208-01	SAMP	1	40 mL	50 mL	204.138 g	204.124 g		08/11/16
8	L16080282-01	SAMP	1	40 mL	50 mL	205.995 g	205.978 g		08/12/16
9	L16080282-02	SAMP	1	40 mL	50 mL	205.664 g	205.647 g		08/12/16
10	L16080282-03	SAMP	1	40 mL	50 mL	205.869 g	205.853 g		08/12/16
11	L16080282-04	SAMP	1	40 mL	50 mL	208.452 g	208.434 g		08/12/16
12	L16080330-06	SAMP	1	40 mL	50 mL	205.228 g	205.208 g		08/16/16
13	WG579303-01	REF	1	40 mL	50 mL	207.439 g	207.429 g		
14	L16080330-07	SAMP	1	40 mL	50 mL	207.439 g	207.429 g		08/16/16
15	L16080330-09	SAMP	1	40 mL	50 mL	203.906 g	203.89 g		08/16/16
16	L16080330-10	SAMP	1	40 mL	50 mL	206.12 g	206.096 g		08/16/16
17	L16080330-11	SAMP	1	40 mL	50 mL	208.978 g	208.942 g		08/16/16
18	L16080330-12	SAMP	1	40 mL	50 mL	206.161 g	206.138 g		08/16/16
19	L16080330-13	SAMP	1	40 mL	50 mL	208.588 g	208.571 g		08/16/16
20	L16080330-14	SAMP	1	40 mL	50 mL	203.066 g	203.053 g		08/16/16
21	L16080330-16	SAMP	1	40 mL	50 mL	207.089 g	207.075 g		08/16/16
22	L16080330-17	SAMP	1	40 mL	50 mL	205.754 g	205.732 g		08/16/16
23	WG579303-04	MS	1	40 mL	50 mL	211.655 g	211.646 g	5 mL	
24	WG579303-05	MSD	1	40 mL	50 mL	209.494 g	209.471 g	5 mL	

L16080002-05	JI/BOB DOC
L16080002-06	JI/BOB DOC
L16080002-07	JI/BOB DOC
L16080002-08	JI/BOB DOC
L16080282-03	FILTERED DIGESTATE

Analyst: [signature]

Reviewer: [signature]

MW_DIG - Modified 09/30/2009
PDF ID: 4887080
Report generated: 08/08/2016 08:03

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 081016T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD77063 ICSAB: STD77064 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 579045,579239,579747,579664,579662,579778

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.081016.095235	WG579759-01	Calibration Point		1		08/10/16 09:52
2	T3.081016.095632	WG579759-02	Calibration Point		1		08/10/16 09:56
3	T3.081016.100030	WG579759-03	Calibration Point		1		08/10/16 10:00
4	T3.081016.100428	WG579759-04	Calibration Point		1		08/10/16 10:04
5	T3.081016.100804	WG579759-05	Calibration Point		1		08/10/16 10:08
6	T3.081016.101142	WG579759-06	Initial Calibration Verification		1		08/10/16 10:11
7	T3.081016.101519	WG579759-07	Initial Calib Blank		1		08/10/16 10:15
8	T3.081016.101919	WG579759-08	Low Level Initial Calibration V		1		08/10/16 10:19
9	T3.081016.102312	WG579759-09	Low Level Initial Calibration V		1		08/10/16 10:23
10	T3.081016.102702	WG579759-10	Interference Check		1		08/10/16 10:27
11	T3.081016.103052	WG579759-11	Interference Check		1		08/10/16 10:30
12	T3.081016.103434	WG579759-12	CCV		1		08/10/16 10:34
13	T3.081016.103810	WG579759-13	CCB		1		08/10/16 10:38
14	T3.081016.104515	WG578864-02	Method/Prep Blank	40/50	1		08/10/16 10:45
15	T3.081016.104913	L16080002-09	DOC-1	40/50	1		08/10/16 10:49
16	T3.081016.105250	L16080002-10	DOC-1	40/50	1		08/10/16 10:52
17	T3.081016.105627	L16080002-11	DOC-1	40/50	1		08/10/16 10:56
18	T3.081016.110005	L16080002-12	DOC-1	40/50	1		08/10/16 11:00
19	T3.081016.110345	WG579759-14	CCV		1		08/10/16 11:03
20	T3.081016.110721	WG579759-15	CCB		1		08/10/16 11:07
21	T3.081016.111121	WG578986-02	Method/Prep Blank	40/50	1		08/10/16 11:11
22	T3.081016.111518	WG578986-03	Laboratory Control S	40/50	1		08/10/16 11:15
23	T3.081016.111855	WG578986-01	Reference Sample		1	L16080151-01	08/10/16 11:18
24	T3.081016.112249	WG578986-04	Matrix Spike	5/50	1	L16080151-01	08/10/16 11:22
25	T3.081016.112627	WG578986-05	Matrix Spike Duplica	5/50	1	L16080151-01	08/10/16 11:26
26	T3.081016.113006	L16080164-02	PERMEATE(T-3100)	1/50	1		08/10/16 11:30
27	T3.081016.113401	L16080164-04	BLEED(T-3100)	1/50	1		08/10/16 11:34
28	T3.081016.113754	L16080164-06	N. DOCK FLUME(BLD. 72)	1/50	1		08/10/16 11:37
29	T3.081016.114152	WG579239-05	Post Digestion Spike		1	L16080164-06	08/10/16 11:41
30	T3.081016.114547	WG579239-06	Serial Dilution		5	L16080164-06	08/10/16 11:45
31	T3.081016.114946	WG579759-16	CCV		1		08/10/16 11:49
32	T3.081016.115322	WG579759-17	CCB		1		08/10/16 11:53
33	T3.081016.115721	L16080214-01	45-15-2.3 P1	40/50	1		08/10/16 11:57
34	T3.081016.120116	L16080133-01	T1360		10		08/10/16 12:01

Page: 1 Approved: August 11, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 081016T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD77063 ICSAB: STD77064 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 579045,579239,579747,579664,579662,579778

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.081016.120508	L16080133-02	T1363		10		08/10/16 12:05
36	T3.081016.120854	L16080133-03	T1365		10		08/10/16 12:08
37	T3.081016.121241	L16080205-01	45-10-5.02 W1	40/50	1		08/10/16 12:12
38	T3.081016.121635	L16080210-01	45-15-3.1 W1	40/50	1		08/10/16 12:16
39	T3.081016.122028	L16080211-01	45-15-3.1 S1	40/50	1		08/10/16 12:20
40	T3.081016.122411	L16080213-01	45-13-3 S1	40/50	1		08/10/16 12:24
41	T3.081016.122805	L16080213-02	45-13-3 W1	40/50	1		08/10/16 12:28
42	T3.081016.123158	L16080213-02	45-13-3 W1		1		08/10/16 12:31
43	T3.081016.123557	WG579759-18	CCV		1		08/10/16 12:35
44	T3.081016.123933	WG579759-19	CCB		1		08/10/16 12:39
45	T3.081016.124332	WG579303-02	Method/Prep Blank	40/50	1		08/10/16 12:43
46	T3.081016.124729	WG579303-03	Laboratory Control S	40/50	1		08/10/16 12:47
47	T3.081016.125107	L16080002-05	DOC-1	40/50	1		08/10/16 12:51
48	T3.081016.125443	L16080002-06	DOC-1	40/50	1		08/10/16 12:54
49	T3.081016.125820	L16080002-07	DOC-1	40/50	1		08/10/16 12:58
50	T3.081016.130158	L16080002-08	DOC-1	40/50	1		08/10/16 13:01
51	T3.081016.130536	WG579759-20	CCV		1		08/10/16 13:05
52	T3.081016.130912	WG579759-21	CCB		1		08/10/16 13:09
53	T3.081016.131311	WG579303-01	Reference Sample		1	L16080330-07	08/10/16 13:13
54	T3.081016.131705	WG579303-04	Matrix Spike	40/50	1	L16080330-07	08/10/16 13:17
55	T3.081016.132050	WG579303-05	Matrix Spike Duplica	40/50	1	L16080330-07	08/10/16 13:20
56	T3.081016.132433	L16080208-01	1804-110 S1	40/50	1		08/10/16 13:24
57	T3.081016.132826	L16080282-01	1808-110 S1	40/50	1		08/10/16 13:28
58	T3.081016.133221	L16080282-02	1808-110 S2	40/50	1		08/10/16 13:32
59	T3.081016.133615	L16080282-03	1808-110 P1	40/50	1		08/10/16 13:36
60	T3.081016.134009	WG579662-01	Post Digestion Spike		1	L16080282-03	08/10/16 13:40
61	T3.081016.134346	WG579662-02	Serial Dilution		5	L16080282-03	08/10/16 13:43
62	T3.081016.134742	WG579662-02	Serial Dilution		25	L16080282-03	08/10/16 13:47
63	T3.081016.135140	WG579759-22	CCV		1		08/10/16 13:51
64	T3.081016.135516	WG579759-23	CCB		1		08/10/16 13:55
65	T3.081016.135916	L16080282-04	1808-110 P2	40/50	1		08/10/16 13:59
66	T3.081016.140310	L16080330-06	46WW05F-080316	40/50	1		08/10/16 14:03
67	T3.081016.140705	L16080330-09	46WW16F-080316	40/50	1		08/10/16 14:07
68	T3.081016.141047	L16080330-10	46WW16FF-080316	40/50	1		08/10/16 14:10

Page: 2 Approved: August 11, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 081016T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD77063 ICSAB: STD77064 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 579045,579239,579747,579664,579662,579778

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.081016.141439	L16080330-11	LHSMW19-080316	40/50	1		08/10/16 14:14
70	T3.081016.141832	L16080330-12	LHSMW19FF-080316	40/50	1		08/10/16 14:18
71	T3.081016.142225	L16080330-13	46WW11-080316	40/50	1		08/10/16 14:22
72	T3.081016.142619	L16080330-14	46WW11FF-080316	40/50	1		08/10/16 14:26
73	T3.081016.143013	L16080330-16	46WW09F-080316	40/50	1		08/10/16 14:30
74	T3.081016.143405	L16080330-17	46WW09FF-080316	40/50	1		08/10/16 14:34
75	T3.081016.143758	WG579759-24	CCV		1		08/10/16 14:37
76	T3.081016.144134	WG579759-25	CCB		1		08/10/16 14:41
77	T3.081016.144531	WG579570-02	Method/Prep Blank	40/50	1		08/10/16 14:45
78	T3.081016.144928	WG579570-03	Laboratory Control S	40/50	1		08/10/16 14:49
79	T3.081016.145306	WG579321-01	Fluid Blank 1		1		08/10/16 14:53
80	T3.081016.145702	WG579321-02	Fluid Blank 2		1		08/10/16 14:57
81	T3.081016.150101	WG579570-01	Reference Sample		1	L16080378-02	08/10/16 15:01
82	T3.081016.150458	WG579570-04	Matrix Spike	5/50	1	L16080378-02	08/10/16 15:04
83	T3.081016.150835	WG579570-05	Matrix Spike Duplica	5/50	1	L16080378-02	08/10/16 15:08
84	T3.081016.151211	L16080377-01	60500-SSP0039-SPLP025	5/50	1		08/10/16 15:12
85	T3.081016.151602	WG579664-01	Post Digestion Spike		1	L16080377-01	08/10/16 15:16
86	T3.081016.151939	WG579664-02	Serial Dilution		5	L16080377-01	08/10/16 15:19
87	T3.081016.152335	WG579759-26	CCV		1		08/10/16 15:23
88	T3.081016.152712	WG579759-27	CCB		1		08/10/16 15:27
89	T3.081016.153111	WG579239-05	Post Digestion Spike		1	L16080164-06	08/10/16 15:31
90	T3.081016.153450	WG579759-28	CCV		1		08/10/16 15:34
91	T3.081016.153826	WG579759-29	CCB		1		08/10/16 15:38
92	T3.081016.154224	L16080276-01	8-4-16/AWV 28 BAGS	5/50	1		08/10/16 15:42
93	T3.081016.154618	L16080317-04	46WW02-080416	40/50	1		08/10/16 15:46
94	T3.081016.155010	L16080317-05	46WW02FF-080416	40/50	1		08/10/16 15:50
95	T3.081016.155402	L16080334-04	H6G0696-04	5/50	1		08/10/16 15:54
96	T3.081016.155756	L16080334-05	H6G0696-05	5/50	1		08/10/16 15:57
97	T3.081016.160148	L16080415-01	LH18/24-SP650-6383-GRAB	40/50	1		08/10/16 16:01
98	T3.081016.160548	L16080415-02	LH18/24-SP650-6383-COMP	40/50	1		08/10/16 16:05
99	T3.081016.160941	WG579664-02	Serial Dilution		25	L16080377-01	08/10/16 16:09
100	T3.081016.161338	WG579759-30	CCV		1		08/10/16 16:13
101	T3.081016.161715	WG579759-31	CCB		1		08/10/16 16:17
102	T3.081016.162113	WG579759-32	Low Level Continuing Calibra		1		08/10/16 16:21

Page: 3 Approved: August 11, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 081016T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD77063 ICSAB: STD77064 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 579045,579239,579747,579664,579662,579778

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.081016.162507	WG579759-33	Low Level Continuing Calibra		1		08/10/16 16:25
104	T3.081016.162856	WG579502-01	Method/Prep Blank	1/50	1		08/10/16 16:28
105	T3.081016.163252	WG579502-02	Laboratory Control S	1/50	1		08/10/16 16:32
106	T3.081016.163643	WG579502-03	Laboratory Control S	1/50	1		08/10/16 16:36
107	T3.081016.164034	L16080245-41	17030-WP01-WP006	1/50	1		08/10/16 16:40
108	T3.081016.164428	L16080245-42	17030-WP01-WP007	1/50	1		08/10/16 16:44
109	T3.081016.164822	L16080245-43	17030-WP01-WP008	1/50	1		08/10/16 16:48
110	T3.081016.165216	L16080245-44	17030-WP01-WP009	1/50	1		08/10/16 16:52
111	T3.081016.165605	L16080245-45	17030-WP01-WP010	1/50	1		08/10/16 16:56
112	T3.081016.165959	L16080245-46	17030-WP01-WP011	1/50	1		08/10/16 16:59
113	T3.081016.170351	L16080245-47	17030-WP01-WP012	1/50	1		08/10/16 17:03
114	T3.081016.170745	WG579747-01	Post Digestion Spike		1	L16080245-47	08/10/16 17:07
115	T3.081016.171124	WG579747-02	Serial Dilution		5	L16080245-47	08/10/16 17:11
116	T3.081016.171518	WG579759-34	CCV		1		08/10/16 17:15
117	T3.081016.171854	WG579759-35	CCB		1		08/10/16 17:18
118	T3.081016.172252	WG579759-36	Low Level Continuing Calibra		1		08/10/16 17:22
119	T3.081016.172646	WG579759-37	Low Level Continuing Calibra		1		08/10/16 17:26
120	T3.081016.173038	WG579648-02	Method/Prep Blank	40/50	1		08/10/16 17:30
121	T3.081016.173436	WG579648-03	Laboratory Control S	40/50	1		08/10/16 17:34
122	T3.081016.173813	L16080440-03	FT02PTS-INFLUENT-8AUG2		1	WG579648-01	08/10/16 17:38
123	T3.081016.174208	WG579648-04	Matrix Spike	40/50	1	L16080440-03	08/10/16 17:42
124	T3.081016.174545	WG579648-05	Matrix Spike Duplica	40/50	1	L16080440-03	08/10/16 17:45
125	T3.081016.174921	L16080425-01	18215-G17-WQ-W0049	40/50	1		08/10/16 17:49
126	T3.081016.175319	L16080425-02	18215-G18-WQ-W0054	40/50	1		08/10/16 17:53
127	T3.081016.175716	WG579778-01	Post Digestion Spike		1	L16080425-02	08/10/16 17:57
128	T3.081016.180054	WG579778-02	Serial Dilution		5	L16080425-02	08/10/16 18:00
129	T3.081016.180451	WG579778-02	Serial Dilution		25	L16080425-02	08/10/16 18:04
130	T3.081016.180848	WG579759-38	CCV		1		08/10/16 18:08
131	T3.081016.181224	WG579759-39	CCB		1		08/10/16 18:12
132	T3.081016.181621	L16080334-01	H6G0696-01	1/50	1		08/10/16 18:16
133	T3.081016.182015	L16080334-02	H6G0696-02	1/50	1		08/10/16 18:20
134	T3.081016.182411	L16080334-03	H6G0696-03	1/50	1		08/10/16 18:24
135	T3.081016.182808	L16080425-03	19006-B02-WQ-W0008	40/50	1		08/10/16 18:28
136	T3.081016.183205	L16080425-04	19206-G02-WQ-W0020	40/50	1		08/10/16 18:32

Page: 4 Approved: August 11, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 081016T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD77063 ICSAB: STD77064 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 579045,579239,579747,579664,579662,579778

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.081016.183604	L16080425-05	19206-G07-WQ-W0044	40/50	1		08/10/16 18:36
138	T3.081016.184002	L16080438-01	S6H0268-01	1/50	1		08/10/16 18:40
139	T3.081016.184354	L16080439-01	LF30/31-EWTS-EFFLUENT-8	40/50	1		08/10/16 18:43
140	T3.081016.184749	L16080439-02	LF30/31-EWTS-MH3-8AUG2	40/50	1		08/10/16 18:47
141	T3.081016.185144	L16080439-03	LF30/31-EWTS-MH2-8AUG2	40/50	1		08/10/16 18:51
142	T3.081016.185542	WG579759-40	CCV		1		08/10/16 18:55
143	T3.081016.185918	WG579759-41	CCB		1		08/10/16 18:59
144	T3.081016.190316	L16080439-04	LF30/31-EWTS-MH1-8AUG2		1		08/10/16 19:03
145	T3.081016.190711	L16080439-05	LF30/31-EWTS-INFLUENT-8		1		08/10/16 19:07
146	T3.081016.191105	L16080440-01	FT02PTS-EFFLUENT-8AUG		1		08/10/16 19:11
147	T3.081016.191500	L16080440-02	FT02PTS-INTERMEDIATE-8		1		08/10/16 19:15
148	T3.081016.191855	L16080457-01	27-5-2.03 RW1(U)		1		08/10/16 19:18
149	T3.081016.192247	L16080457-02	27-5-2.03 RW1(U)		1		08/10/16 19:22
150	T3.081016.192640	L16080457-03	27-5-2.03 RW1(T)		1		08/10/16 19:26
151	T3.081016.193036	WG579759-42	CCV		1		08/10/16 19:30
152	T3.081016.193412	WG579759-43	CCB		1		08/10/16 19:34
153	T3.081016.193810	WG579759-44	Low Level Continuing Calibra		1		08/10/16 19:38
154	T3.081016.194203	WG579759-45	Low Level Continuing Calibra		1		08/10/16 19:42
155	T3.081016.194555	L16080133-01	T1360		1		08/10/16 19:45
156	T3.081016.194946	L16080133-02	T1363		1		08/10/16 19:49
157	T3.081016.195338	L16080133-03	T1365		1		08/10/16 19:53
158	T3.081016.195729	WG579759-46	CCV		1		08/10/16 19:57
159	T3.081016.200106	WG579759-47	CCB		1		08/10/16 20:01

Page: 5 Approved: August 11, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 081216T3.1R.TXT
Analyst1: KKB Analyst2: N/A
Method: 6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77062 ICV Std: STD77061 Post Spike: STD76921
ICSA: STD77063 ICSAB: STD77064 Int. Std: RGT36717
CCV: STD77538 LLCCV: COA18880 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 579664,579926,579239,580121,579662,580129,579778

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.081216.130838	WG580175-01	Calibration Point		1		08/12/16 13:08
2	T3.081216.131236	WG580175-02	Calibration Point		1		08/12/16 13:12
3	T3.081216.131635	WG580175-03	Calibration Point		1		08/12/16 13:16
4	T3.081216.132033	WG580175-04	Calibration Point		1		08/12/16 13:20
5	T3.081216.132409	WG580175-05	Calibration Point		1		08/12/16 13:24
6	T3.081216.132745	WG580175-06	Initial Calibration Verification		1		08/12/16 13:27
7	T3.081216.133124	WG580175-07	Initial Calib Blank		1		08/12/16 13:31
8	T3.081216.133522	WG580175-08	Low Level Initial Calibration V		1		08/12/16 13:35
9	T3.081216.134003	WG580175-09	Low Level Initial Calibration V		1		08/12/16 13:40
10	T3.081216.134354	WG580175-10	Interference Check		1		08/12/16 13:43
11	T3.081216.134745	WG580175-11	Interference Check		1		08/12/16 13:47
12	T3.081216.135127	WG580175-12	CCV		1		08/12/16 13:51
13	T3.081216.135504	WG580175-13	CCB		1		08/12/16 13:55
14	T3.081216.140108	WG579570-02	Method/Prep Blank	40/50	1		08/12/16 14:01
15	T3.081216.140454	WG579570-03	Laboratory Control S	40/50	1		08/12/16 14:04
16	T3.081216.140833	WG579321-01	Fluid Blank 1		1		08/12/16 14:08
17	T3.081216.141230	WG579321-02	Fluid Blank 2		1		08/12/16 14:12
18	T3.081216.141626	WG579570-01	Reference Sample		1	L16080378-02	08/12/16 14:16
19	T3.081216.142012	WG579570-04	Matrix Spike	5/50	1	L16080378-02	08/12/16 14:20
20	T3.081216.142349	WG579570-05	Matrix Spike Duplica	5/50	1	L16080378-02	08/12/16 14:23
21	T3.081216.142726	L16080415-01	LH18/24-SP650-6383-GRAB	40/50	1		08/12/16 14:27
22	T3.081216.143119	WG579664-03	Post Digestion Spike		1	L16080415-01	08/12/16 14:31
23	T3.081216.143459	WG579664-04	Serial Dilution		5	L16080415-01	08/12/16 14:34
24	T3.081216.143858	WG580175-14	CCV		1		08/12/16 14:38
25	T3.081216.144234	WG580175-15	CCB		1		08/12/16 14:42
26	T3.081216.144635	WG580175-16	Low Level Continuing Calibra		1		08/12/16 14:46
27	T3.081216.145031	WG580175-17	Low Level Continuing Calibra		1		08/12/16 14:50
28	T3.081216.145424	WG579904-01	Method/Prep Blank	1/50	1		08/12/16 14:54
29	T3.081216.145818	WG579904-02	Laboratory Control S	1/50	1		08/12/16 14:58
30	T3.081216.150156	WG579904-03	Laboratory Control S	1/50	1		08/12/16 15:01
31	T3.081216.150536	L16080559-01	500662-WP-005	1/50	1		08/12/16 15:05
32	T3.081216.150926	L16080559-02	500662-WP-006	1/50	1		08/12/16 15:09
33	T3.081216.151316	L16080559-03	500662-WP-007	1/50	1		08/12/16 15:13
34	T3.081216.151704	WG579926-01	Post Digestion Spike		1	L16080559-03	08/12/16 15:17

Page: 1 Approved: August 15, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 081216T3.1R.TXT
Analyst1: KKB Analyst2: N/A
Method: 6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77062 ICV Std: STD77061 Post Spike: STD76921
ICSA: STD77063 ICSAB: STD77064 Int. Std: RGT36717
CCV: STD77538 LLCCV: COA18880 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 579664,579926,579239,580121,579662,580129,579778

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.081216.152040	WG579926-02	Serial Dilution		5	L16080559-03	08/12/16 15:20
36	T3.081216.152429	L16080559-04	500662-WP-008	1/50	1		08/12/16 15:24
37	T3.081216.152823	WG580175-18	CCV		1		08/12/16 15:28
38	T3.081216.153159	WG580175-19	CCB		1		08/12/16 15:31
39	T3.081216.153557	L16080133-01	T1360	40/50	1		08/12/16 15:35
40	T3.081216.153942	L16080133-02	T1363	40/50	1		08/12/16 15:39
41	T3.081216.154328	L16080133-03	T1365		1		08/12/16 15:43
42	T3.081216.154727	WG580175-20	CCV		1		08/12/16 15:47
43	T3.081216.155103	WG580175-21	CCB		1		08/12/16 15:51
44	T3.081216.155503	WG580175-22	Low Level Continuing Calibra		1		08/12/16 15:55
45	T3.081216.155858	WG580175-23	Low Level Continuing Calibra		1		08/12/16 15:58
46	T3.081216.160254	WG579818-02	Method/Prep Blank	40/50	1		08/12/16 16:02
47	T3.081216.160701	WG579818-03	Laboratory Control S	40/50	1		08/12/16 16:07
48	T3.081216.161039	WG579642-01	Fluid Blank 1		1		08/12/16 16:10
49	T3.081216.161438	L16080404-01	K6H0140-01	5/50	1		08/12/16 16:14
50	T3.081216.161832	L16080455-01	45-11-10.01 W1	40/50	1		08/12/16 16:18
51	T3.081216.162224	L16080455-02	45-11-10.01 S1	40/50	1		08/12/16 16:22
52	T3.081216.162620	L16080458-01	27-12-9 RPW3	40/50	1		08/12/16 16:26
53	T3.081216.163014	L16080458-02	27-12-9 RPW3 HT	40/50	1		08/12/16 16:30
54	T3.081216.163415	WG580121-01	Post Digestion Spike		1	L16080458-02	08/12/16 16:34
55	T3.081216.163800	WG580121-02	Serial Dilution		5	L16080458-02	08/12/16 16:38
56	T3.081216.164155	WG580175-24	CCV		1		08/12/16 16:41
57	T3.081216.164520	WG580175-25	CCB		1		08/12/16 16:45
58	T3.081216.164908	L16080133-03	T1365	40/50	5		08/12/16 16:49
59	T3.081216.165253	WG580175-26	CCV		1		08/12/16 16:52
60	T3.081216.165630	WG580175-27	CCB		1		08/12/16 16:56
61	T3.081216.170029	L16080462-01	2012-F02-WQ-W0017	40/50	1		08/12/16 17:00
62	T3.081216.170426	L16080470-02	PERMEATE	1/50	1		08/12/16 17:04
63	T3.081216.170822	L16080470-04	BLEED	1/50	1		08/12/16 17:08
64	T3.081216.171216	L16080470-06	N. DOCK FLUME	1/50	1		08/12/16 17:12
65	T3.081216.171613	L16080473-12	SB74S2.5	5/50	1		08/12/16 17:16
66	T3.081216.172009	L16080477-01	1804-104 W1	40/50	1		08/12/16 17:20
67	T3.081216.172403	L16080477-02	1804-104 S2	40/50	1		08/12/16 17:24
68	T3.081216.172757	L16080477-03	1804-108 S4	40/50	1		08/12/16 17:27

Page: 2 Approved: August 15, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 081216T3.1R.TXT
Analyst1: KKB Analyst2: N/A
Method: 6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77062 ICV Std: STD77061 Post Spike: STD76921
ICSA: STD77063 ICSAB: STD77064 Int. Std: RGT36717
CCV: STD77538 LLCCV: COA18880 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 579664,579926,579239,580121,579662,580129,579778

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.081216.173151	L16080479-01	56-13-61 S1	40/50	1		08/12/16 17:31
70	T3.081216.173546	L16080480-01	15-13-19 W2	40/50	1		08/12/16 17:35
71	T3.081216.173942	WG580175-28	CCV		1		08/12/16 17:39
72	T3.081216.174318	WG580175-29	CCB		1		08/12/16 17:43
73	T3.081216.174718	L16080480-02	15-13-19 W1	40/50	1		08/12/16 17:47
74	T3.081216.175111	L16080480-03	15-12-10 S1	40/50	1		08/12/16 17:51
75	T3.081216.175507	L16080480-04	15-12-10 S2	40/50	1		08/12/16 17:55
76	T3.081216.175851	WG579818-01	Reference Sample		1	L16080481-01	08/12/16 17:58
77	T3.081216.180247	WG579818-04	Matrix Spike	5/50	1	L16080481-01	08/12/16 18:02
78	T3.081216.180623	WG579818-05	Matrix Spike Duplica	5/50	1	L16080481-01	08/12/16 18:06
79	T3.081216.181002	L16080330-09	46WW16F-080316	40/50	10		08/12/16 18:10
80	T3.081216.181357	L16080330-10	46WW16FF-080316	40/50	10		08/12/16 18:13
81	T3.081216.181754	WG580175-30	CCV		1		08/12/16 18:17
82	T3.081216.182130	WG580175-31	CCB		1		08/12/16 18:21
83	T3.081216.182529	WG580175-32	Low Level Continuing Calibra		1		08/12/16 18:25
84	T3.081216.182924	WG580175-33	Low Level Continuing Calibra		1		08/12/16 18:29
85	T3.081216.183319	WG580051-02	Method/Prep Blank	40/50	1		08/12/16 18:33
86	T3.081216.183716	WG580051-04	Filter Blank		1		08/12/16 18:37
87	T3.081216.184042	WG579881-01	Fluid Blank 1		1		08/12/16 18:40
88	T3.081216.184440	WG579881-02	Fluid Blank 2		1		08/12/16 18:44
89	T3.081216.184841	WG580051-04	Filter Blank		1		08/12/16 18:48
90	T3.081216.185228	L16080460-01	INS-WL01-080816	40/50	1		08/12/16 18:52
91	T3.081216.185621	L16080514-01	1804-113B S1	40/50	1		08/12/16 18:56
92	T3.081216.190016	L16080516-01	27-3-10 W1	40/50	1		08/12/16 19:00
93	T3.081216.190407	WG580129-01	Post Digestion Spike		1	L16080516-01	08/12/16 19:04
94	T3.081216.190802	WG580129-02	Serial Dilution		5	L16080516-01	08/12/16 19:08
95	T3.081216.191159	WG580175-34	CCV		1		08/12/16 19:11
96	T3.081216.191535	WG580175-35	CCB		1		08/12/16 19:15
97	T3.081216.191933	L16080517-01	ALAN 11 BAGS	5/50	1		08/12/16 19:19
98	T3.081216.192328	L16080518-01	SAPA 9 BAGS	5/50	1		08/12/16 19:23
99	T3.081216.192722	L16080527-01	59-10-1.14 W1	40/50	1		08/12/16 19:27
100	T3.081216.193116	WG580051-01	Reference Sample		1	L16080560-01	08/12/16 19:31
101	T3.081216.193507	WG580051-05	Matrix Spike	5/50	1	L16080560-01	08/12/16 19:35
102	T3.081216.193844	WG580051-06	Matrix Spike Duplica	5/50	1	L16080560-01	08/12/16 19:38

Page: 3 Approved: August 15, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 081216T3.1R.TXT
Analyst1: KKB Analyst2: N/A
Method: 6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77062 ICV Std: STD77061 Post Spike: STD76921
ICSA: STD77063 ICSAB: STD77064 Int. Std: RGT36717
CCV: STD77538 LLCCV: COA18880 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 579664,579926,579239,580121,579662,580129,579778

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.081216.194222	L16080560-02	13837-SSP0555	5/50	1		08/12/16 19:42
104	T3.081216.194614	L16080617-01	2204-129A RW2 (TB)	40/50	1		08/12/16 19:46
105	T3.081216.195010	L16080617-02	2204-129A RW2 (TK)	40/50	1		08/12/16 19:50
106	T3.081216.195406	L16080618-01	27-11-7.08 W1	40/50	1		08/12/16 19:54
107	T3.081216.195801	WG580175-36	CCV		1		08/12/16 19:58
108	T3.081216.200138	WG580175-37	CCB		1		08/12/16 20:01
109	T3.081216.200544	L16080618-02	27-11-7.08 W1	40/50	1		08/12/16 20:05
110	T3.081216.200938	L16080619-01	1801-143 S2	40/50	1		08/12/16 20:09
111	T3.081216.201332	L16080619-02	1801-143 S3/S2	40/50	1		08/12/16 20:13
112	T3.081216.201727	L16080619-03	1801-143 S1	40/50	1		08/12/16 20:17
113	T3.081216.202122	L16080619-04	1801-143 S4	40/50	1		08/12/16 20:21
114	T3.081216.202516	L16080623-01	1803-101 S1	40/50	1		08/12/16 20:25
115	T3.081216.202911	WG580175-38	CCV		1		08/12/16 20:29
116	T3.081216.203248	WG580175-39	CCB		1		08/12/16 20:32
117	T3.081216.203645	L16080439-04	LF30/31-EWTS-MH1-8AUG2	40/50	1		08/12/16 20:36
118	T3.081216.204041	L16080439-05	LF30/31-EWTS-INFLUENT-8	40/50	1		08/12/16 20:40
119	T3.081216.204435	L16080440-01	FT02PTS-EFFLUENT-8AUG	40/50	1		08/12/16 20:44
120	T3.081216.204830	L16080440-02	FT02PTS-INTERMEDIATE-8	40/50	1		08/12/16 20:48
121	T3.081216.205225	L16080457-01	27-5-2.03 RW1(U)	40/50	1		08/12/16 20:52
122	T3.081216.205619	L16080457-02	27-5-2.03 RW1(U)	40/50	1		08/12/16 20:56
123	T3.081216.210012	L16080457-03	27-5-2.03 RW1(T)	40/50	1		08/12/16 21:00
124	T3.081216.210407	WG580175-40	CCV		1		08/12/16 21:04
125	T3.081216.210745	WG580175-41	CCB		1		08/12/16 21:07
126	T3.081216.211142	WG580175-42	Interference Check		1		08/12/16 21:11
127	T3.081216.211519	WG580175-43	Interference Check		1		08/12/16 21:15
128	T3.081216.211901	WG580175-44	CCV		1		08/12/16 21:19
129	T3.081216.212238	WG580175-45	CCB		1		08/12/16 21:22

Page: 4 Approved: August 15, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 10-AUG-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C
Instrument: ICP-THERMO3
Curve Workgroup: 579759
Runlog ID: 76833
Analytical Workgroups: 579045,579239,579747,579664,579662,579778

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	245,317,377,415,002,330,425,439
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
11-AUG-2016

Secondary Reviewer:
11-AUG-2016

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-11-2016 14:59:04

Microbac Laboratories Inc.

Data Checklist

Date: 12-AUG-2016
Analyst: KKB
Analyst: NA
Method: 6010B/6010C
Instrument: ICP-THERMO3
Curve Workgroup: 580175
Runlog ID: 76892
Analytical Workgroups: 579664,579926,579239,580121,579662,580129,579778

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	473,460
Level 4	462,481,560,439,440
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	KKB
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
15-AUG-2016

Secondary Reviewer:
15-AUG-2016

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-15-2016 12:08:31

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG579662

Login Number: L16080330

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW05F-080316	06	08/03/16					08/08/2016	5	180		08/10/16	7.3	180	
46WW05FF-080316	07	08/03/16					08/08/2016	5	180		08/10/16	7.2	180	
46WW16F-080316	09	08/03/16					08/08/2016	4.9	180		08/12/16	9.4	180	
46WW16FF-080316	10	08/03/16					08/08/2016	4.9	180		08/12/16	9.4	180	
LHSMW19-080316	11	08/03/16					08/08/2016	4.9	180		08/10/16	7.2	180	
LHSMW19FF-080316	12	08/03/16					08/08/2016	4.9	180		08/10/16	7.2	180	
46WW11-080316	13	08/03/16					08/08/2016	4.8	180		08/10/16	7.1	180	
46WW11FF-080316	14	08/03/16					08/08/2016	4.8	180		08/10/16	7.1	180	
46WW09F-080316	16	08/03/16					08/08/2016	4.7	180		08/10/16	7	180	
46WW09FF-080316	17	08/03/16					08/08/2016	4.7	180		08/10/16	7	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4893463
Report generated 08/15/2016 10:37

METHOD BLANK SUMMARY

Login Number: L16080330
Blank File ID: T3.081016.124332
Prep Date: 08/08/16 07:01
Analyzed Date: 08/10/16 12:43
Analyst: JYH

Work Group: WG579662
Blank Sample ID: WG579303-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG579303-03	T3.081016.124729	08/10/16 12:47	01
46WW05FF-080316	L16080330-07	T3.081016.131311	08/10/16 13:13	01
46WW05F-080316	L16080330-06	T3.081016.140310	08/10/16 14:03	01
LHSMW19-080316	L16080330-11	T3.081016.141439	08/10/16 14:14	01
LHSMW19FF-080316	L16080330-12	T3.081016.141832	08/10/16 14:18	01
46WW11-080316	L16080330-13	T3.081016.142225	08/10/16 14:22	01
46WW11FF-080316	L16080330-14	T3.081016.142619	08/10/16 14:26	01
46WW09F-080316	L16080330-16	T3.081016.143013	08/10/16 14:30	01
46WW09FF-080316	L16080330-17	T3.081016.143405	08/10/16 14:34	01
46WW16F-080316	L16080330-09	T3.081216.181002	08/12/16 18:10	DL01
46WW16FF-080316	L16080330-10	T3.081216.181357	08/12/16 18:13	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4893464
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080330 Prep Date: 08/08/16 07:01 Sample ID: WG579303-02
Instrument ID: ICP-THERMO3 Run Date: 08/10/16 12:43 Prep Method: 3015
File ID: T3.081016.124332 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG579662 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-10-AUG-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Total	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4893465
15-AUG-2016 10:37

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080330 Run Date: 08/10/2016 Sample ID: WG579303-03
Instrument ID: ICP-THERMO3 Run Time: 12:47 Prep Method: 3015
File ID: T3.081016.124729 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG579662 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD77188 Cal ID: ICP-TH-10-AUG-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Total	2.50	2.60	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4893466
Report generated: 08/15/2016 10:37

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16080330 Cal ID: ICP-THERMO3 - Worknum: WG579662
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG579303-01 File ID: T3.081016.131311 Dil: 1 Matrix: WATER
Sample ID: WG579303-04 MS File ID: T3.081016.131705 Dil: 1 Units: mg/L
Sample ID: WG579303-05 MSD File ID: T3.081016.132050 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron, Dissolved	6.19	2.50	8.46	90.9	2.50	8.70	100	2.76	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4893467
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16080330 **Worknum:** WG579662
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG579662-02 **File ID:** T3.081016.134346 **Dil:** 5 **Units:** ug/L
Sample: L16080282-03 **File ID:** T3.081016.133615 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Iron	1180		1060		9.86	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4893461
08/15/2016 10:37

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16080330 **Worknum:** WG579662
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG579662-01 **File ID:** T3.081016.134009 **Dil:** 1 **Units:** ug/L
Sample ID: L16080282-03 **File ID:** T3.081016.133615 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
IRON	3140		1180		2000	104.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4893462
Report generated: 08/15/2016 10:37

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16080330	Workgroup (AAB#):	WG579662
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG579759	Initial Calibration Date:	10-AUG-2016 10:08

	WG579759-01		WG579759-02		WG579759-03		WG579759-04		WG579759-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
IRON	0	-0.0000700	.04	0.000220	.08	0.00108	4	0.0687	8	0.138	.99968	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4893470
Report generated: 15-AUG-2016 10:37

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16080330	Workgroup (AAB#):	WG579662
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG580175	Initial Calibration Date:	12-AUG-2016 13:24

	WG580175-01		WG580175-02		WG580175-03		WG580175-04		WG580175-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
IRON	0	-0.000210	.04	0.0000300	.08	0.000700	4	0.0685	8	0.142	.99936	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4893470
Report generated: 15-AUG-2016 10:37

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16080330
Instrument ID: ICP-THERMO3
File ID: T3.081016.101519
Workgroup (AAB#): WG579662
Matrix: WATER

Run Date: 08/10/2016
Run Time: 10:15
Analyst: JYH
Cal ID: ICP-THERI - 10-AUG-16

Sample ID: WG579759-07
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
IRON	.04	.16	.04	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4893472
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16080330
Instrument ID: ICP-THERMO3
File ID: T3.081216.133124
Workgroup (AAB#): WG579662
Matrix: WATER

Run Date: 08/12/2016
Run Time: 13:31
Analyst: KKB
Cal ID: ICP-THERI - 12-AUG-16

Sample ID: WG580175-07
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
IRON	.04	.16	.04	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4893472
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/10/2016
Sample ID: WG579759-13
Instrument ID: ICP-THERMO3
Run Time: 10:38
Method: 6010C
File ID: T3.081016.103810
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4893475
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/10/2016
Sample ID: WG579759-19
Instrument ID: ICP-THERMO3
Run Time: 12:39
Method: 6010C
File ID: T3.081016.123933
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4893475
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/10/2016
Sample ID: WG579759-21
Instrument ID: ICP-THERMO3
Run Time: 13:09
Method: 6010C
File ID: T3.081016.130912
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4893475
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/10/2016
Sample ID: WG579759-23
Instrument ID: ICP-THERMO3
Run Time: 13:55
Method: 6010C
File ID: T3.081016.135516
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4893475
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/10/2016
Sample ID: WG579759-25
Instrument ID: ICP-THERMO3
Run Time: 14:41
Method: 6010C
File ID: T3.081016.144134
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4893475
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/12/2016
Sample ID: WG580175-13
Instrument ID: ICP-THERMO3
Run Time: 13:55
Method: 6010C
File ID: T3.081216.135504
Analyst: KKB
Units: mg/L
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 12-AUG-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4893475
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/12/2016
Sample ID: WG580175-29
Instrument ID: ICP-THERMO3
Run Time: 17:43
Method: 6010C
File ID: T3.081216.174318
Analyst: KKB
Units: mg/L
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 12-AUG-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4893475
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/12/2016
Sample ID: WG580175-31
Instrument ID: ICP-THERMO3
Run Time: 18:21
Method: 6010C
File ID: T3.081216.182130
Analyst: KKB
Units: mg/L
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 12-AUG-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4893475
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16080330 Run Date: 08/10/2016 Sample ID: WG579759-06
Instrument ID: ICP-THERMO3 Run Time: 10:11 Method: 6010C
File ID: T3.081016.101142 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG579662 Cal ID: ICP-TH - 10-AUG-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Iron		4	3.94	98.6	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4893471
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16080330 Run Date: 08/12/2016 Sample ID: WG580175-06
Instrument ID: ICP-THERMO3 Run Time: 13:27 Method: 6010C
File ID: T3.081216.132745 Analyst: KKB Units: mg/L
Workgroup (AAB#): WG579662 Cal ID: ICP-TH - 12-AUG-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Iron		4	4.13	103	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4893471
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/10/2016
Sample ID: WG579759-12
Instrument ID: ICP-THERMO3
Run Time: 10:34
Method: 6010C
File ID: T3.081016.103434
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	3.85	mg/L	96.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4893474
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/10/2016
Sample ID: WG579759-18
Instrument ID: ICP-THERMO3
Run Time: 12:35
Method: 6010C
File ID: T3.081016.123557
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	3.94	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4893474
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/10/2016
Sample ID: WG579759-20
Instrument ID: ICP-THERMO3
Run Time: 13:05
Method: 6010C
File ID: T3.081016.130536
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.04	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4893474
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/10/2016
Sample ID: WG579759-22
Instrument ID: ICP-THERMO3
Run Time: 13:51
Method: 6010C
File ID: T3.081016.135140
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.06	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4893474
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/10/2016
Sample ID: WG579759-24
Instrument ID: ICP-THERMO3
Run Time: 14:37
Method: 6010C
File ID: T3.081016.143758
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.05	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4893474
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/12/2016
Sample ID: WG580175-12
Instrument ID: ICP-THERMO3
Run Time: 13:51
Method: 6010C
File ID: T3.081216.135127
Analyst: KKB
QC Key: DOD4
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 12-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.18	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4893474
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/12/2016
Sample ID: WG580175-28
Instrument ID: ICP-THERMO3
Run Time: 17:39
Method: 6010C
File ID: T3.081216.173942
Analyst: KKB
QC Key: DOD4
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 12-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.03	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4893474
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/12/2016
Sample ID: WG580175-30
Instrument ID: ICP-THERMO3
Run Time: 18:17
Method: 6010C
File ID: T3.081216.181754
Analyst: KKB
QC Key: DOD4
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 12-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.26	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4893474
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16080330
Run Date: 08/10/2016
Sample ID: WG579759-08
Instrument ID: ICP-THERMO3
Run Time: 10:19
Method: 6010C
File ID: T3.081016.101919
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.0697	mg/L	87.1	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4893491
Report generated 08/15/2016 12:28

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16080330
Run Date: 08/10/2016
Sample ID: WG579759-32
Instrument ID: ICP-THERMO3
Run Time: 16:21
Method: 6010C
File ID: T3.081016.162113
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 10-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.0876	mg/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4893491
Report generated 08/15/2016 12:28

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16080330
Run Date: 08/12/2016
Sample ID: WG580175-23
Instrument ID: ICP-THERMO3
Run Time: 15:58
Method: 6010C
File ID: T3.081216.155858
Analyst: KKB
QC Key: DOD4
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 12-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.0759	mg/L	94.9	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4893491
Report generated 08/15/2016 12:28

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16080330
Run Date: 08/12/2016
Sample ID: WG580175-32
Instrument ID: ICP-THERMO3
Run Time: 18:25
Method: 6010C
File ID: T3.081216.182529
Analyst: KKB
QC Key: DOD4
Workgroup (AAB#): WG579662
Cal ID: ICP-TH - 12-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.0747	mg/L	93.3	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4893491
Report generated 08/15/2016 12:28

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16080330
Instrument ID: ICP-THERMO3
Sol. A : WG579759-10 **File ID:** T3.081016.102702
Sol. AB : WG579759-11 **File ID:** T3.081016.103052

Workgroup (AAB#): WG579662
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	98.7	98.7	100	95.9	95.9	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4893473
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16080330
Instrument ID: ICP-THERMO3
Sol. A : WG580175-10 **File ID:** T3.081216.134354
Sol. AB : WG580175-11 **File ID:** T3.081216.134745

Workgroup (AAB#): WG579662
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	101	101	100	99.1	99.1	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4893473
Report generated 08/15/2016 10:37

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16080330 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4893469
Report generated: 08/15/2016 10:37

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16080330 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4893469
Report generated: 08/15/2016 10:37

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16080330 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4893469
Report generated: 08/15/2016 10:37

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16080330 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4893469
Report generated: 08/15/2016 10:37

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16080330 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4893469
Report generated: 08/15/2016 10:37

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16080330 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4893469
Report generated: 08/15/2016 10:37

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16080330 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4893469
Report generated: 08/15/2016 10:37

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16080330 **Date:** 07/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	90.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	360.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4893468
Report generated: 08/15/2016 10:37

2.2.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000134	0.042209	0.000000	1.000000
Al 308.215 {109}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.000668	0.006471	0.000000	1.000000
As 189.042 {478}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.000007	0.019257	0.000000	1.000000
B 249.678 {135}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000003	0.019579	0.000000	1.000000
Ba 455.403 { 74}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.042045	1.679783	0.000000	1.000000
Be 313.107 {108}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.000414	0.775341	0.000000	1.000000
Ca 422.673 { 80}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.001383	0.034309	0.000000	1.000000
Cd 228.802 {447}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000075	0.462943	0.000000	1.000000
Co 228.616 {447}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000080	0.285222	0.000000	1.000000
Cr 267.716 {126}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.000242	0.047974	0.000000	1.000000
Cu 224.700 {450}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000001	0.102579	0.000000	1.000000
Fe 261.187 {129}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000066	0.017179	0.000000	1.000000
K 766.490 { 44}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.018202	0.050042	0.000000	1.000000
Li 670.784 { 50}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.008344	1.402955	0.000000	1.000000
Mg 279.079 {121}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000204	0.006604	0.000000	1.000000
Mn 257.610 {131}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.000167	0.216144	0.000000	1.000000
Mo 202.030 {467}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000009	0.144403	0.000000	1.000000
Na 589.592 { 57}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.002836	0.137138	0.000000	1.000000
Ni 231.604 {446}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000606	0.107885	0.000000	1.000000
P 214.914 {457}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000076	0.011155	0.000000	1.000000
Pb 220.353 {453}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000758	0.050399	0.000000	1.000000
Sb 206.833 {463}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.000196	0.024644	0.000000	1.000000
Se 196.090 {472}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000385	0.014085	0.000000	1.000000
Si 212.412 {459}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.000779	0.031056	0.000000	1.000000
Sn 189.989 {477}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.000036	0.055323	0.000000	1.000000
Sr 407.771 { 83}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.002161	2.777224	0.000000	1.000000
Ti 337.280 {100}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.001382	0.079961	0.000000	1.000000
Tl 190.856 {477}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000249	0.022594	0.000000	1.000000
V 292.402 {115}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.000043	0.056664	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	0.000245	0.335930	0.000000	1.000000
Zr 339.198 { 99}	8/10/2016 10:11:36	8/10/2016 10:11:36	Linear	1/Conc	-0.003807	3.361613	0.000000	1.000000

Approved: August 11, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999606	0.000003	0.002194	0.007313	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999831	0.000008	0.009860	0.032866	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999375	0.000003	0.003198	0.010660	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999802	0.000002	0.002813	0.009375	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999769	0.000229	0.001224	0.004078	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999838	0.000005	0.000097	0.000325	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999941	0.000024	0.049495	0.164983	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999914	0.000002	0.000268	0.000893	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999802	0.000007	0.000418	0.001392	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999724	0.000004	0.001234	0.004112	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999959	0.000003	0.001364	0.004546	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999680	0.000011	0.032623	0.108744	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999926	0.000193	0.126017	0.420058	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999921	0.000173	0.004160	0.013865	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999888	0.000010	0.095220	0.317400	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999863	0.000011	0.003035	0.010116	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999886	0.000014	0.000437	0.001458	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999956	0.000410	0.037093	0.123643	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999951	0.000003	0.001171	0.003902	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999869	0.000012	0.007051	0.023504	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999889	0.000002	0.003652	0.012172	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999835	0.000003	0.004388	0.014626	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999148	0.000002	0.006358	0.021193	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999725	0.000023	0.002389	0.007963	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999905	0.000005	0.000912	0.003041	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999979	0.000113	0.000509	0.001698	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.998968	0.000023	0.009014	0.030047	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999943	0.000001	0.003197	0.010657	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999982	0.000002	0.001011	0.003370	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999884	0.000032	0.000203	0.000677	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999942	0.000230	0.000545	0.001818	OK.	1.000000	0.000000	1	0

Approved: August 11, 2016

Sample Name: S0 Acquired: 8/10/2016 9:52:35 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00013**	**.00067**	**.00001**	**-.00000**	**.04205**	**.00041**	**.00138**
Stddev	.00009	.00003	.00003	.00002	.00182	.00005	.00157
%RSD	65.709	4.3400	402.65	680.41	4.3314	12.538	113.26
#1	-.00006	.00067	.00004	-.00002	.04126	.00040	.00166
#2	-.00023	.00064	-.00001	.00002	.04076	.00047	-.00030
#3	-.00011	.00070	-.00000	-.00001	.04413	.00037	.00279

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00008**	**-.00008**	**.00024**	**-.00000**	**-.00007**	**-.01821**	**-.00834**
Stddev	.00004	.00005	.00005	.00007	.00021	.00113	.00634
%RSD	49.475	62.993	20.907	5902.4	319.19	6.2083	76.063
#1	-.00008	-.00012	.00026	-.00008	.00011	-.01711	-.00326
#2	-.00011	-.00002	.00028	.00002	-.00030	-.01814	-.00631
#3	-.00004	-.00009	.00019	.00005	-.00001	-.01937	-.01545

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00020**	**.00017**	**-.00001**	**.00284**	**-.00061**	**-.00008**	**-.00076**
Stddev	.00048	.00046	.00005	.00229	.00009	.00005	.00008
%RSD	237.48	275.35	500.61	80.687	14.260	61.897	10.751
#1	-.00051	-.00034	-.00004	.00439	-.00051	-.00005	-.00084
#2	-.00045	.00056	-.00003	.00021	-.00066	-.00005	-.00067
#3	.00035	.00027	.00004	.00392	-.00065	-.00013	-.00076

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00020**	**-.00039**	**.00078**	**.00004**	**.00216**	**-.00138**	**-.00025**
Stddev	.00001	.00009	.00003	.00004	.00135	.00054	.00002
%RSD	3.5659	23.967	4.1450	125.71	62.339	38.917	10.009
#1	.00020	-.00049	.00082	.00008	.00061	-.00172	-.00022
#2	.00019	-.00030	.00076	.00004	.00293	-.00166	-.00025
#3	.00019	-.00037	.00077	-.00001	.00295	-.00076	-.00027

Approved: August 11, 2016

Sample Name: S0 Acquired: 8/10/2016 9:52:35 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	-.00004	.00025	-.00380
Stddev	.00005	.00002	.00204
%RSD	123.03	9.4630	53.768
#1	-.00007	.00027	-.00157
#2	-.00008	.00024	-.00424
#3	.00002	.00023	-.00559
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12436.	73499.	3150.3
Stddev	166.	108.	18.4
%RSD	1.3351	.14630	.58554
#1	12295.	73469.	3162.3
#2	12395.	73409.	3129.0
#3	12619.	73618.	3159.4

Approved: August 11, 2016

Sample Name: S1 Acquired: 8/10/2016 9:56:32 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00007	.00106	.05143	.00065	.00443	.00012	.00027
Stddev	.00004	.00002	.00128	.00003	.00173	.00007	.00005
%RSD	54.456	1.4782	2.4946	4.4911	39.044	56.325	19.157
#1	.00010	.00107	.05139	.00063	.00257	.00009	.00032
#2	.00003	.00107	.05017	.00064	.00474	.00020	.00022
#3	.00009	.00104	.05274	.00069	.00598	.00008	.00026

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00038	.00040	.00022	.00446	.00098	.00098	.05600
Stddev	.00003	.00007	.00025	.00569	.00051	.00009	.00097
%RSD	9.1071	17.213	114.33	127.66	52.651	9.1219	1.7306
#1	.00042	.00042	-.00005	-.00182	.00127	.00102	.05502
#2	.00036	.00045	.00025	.00591	.00038	.00104	.05695
#3	.00036	.00032	.00044	.00929	.00128	.00087	.05604

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00014	.00068	-.00054	.00045	.00172	.00042	.02329
Stddev	.00007	.00004	.00004	.00008	.00012	.00008	.00237
%RSD	51.861	6.4335	7.7007	17.805	6.6771	18.448	10.162
#1	-.00010	.00063	-.00058	.00050	.00180	.00044	.02593
#2	-.00010	.00072	-.00050	.00050	.00178	.00048	.02256
#3	-.00023	.00068	-.00054	.00036	.00159	.00033	.02137

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00054	.00042	.00259	.01936
Stddev	.00088	.00004	.00024	.00051
%RSD	162.60	9.4958	9.4404	2.6391
#1	-.00088	.00037	.00269	.01953
#2	.00046	.00044	.00277	.01878
#3	-.00120	.00045	.00231	.01976

Approved: August 11, 2016

Sample Name: S1 Acquired: 8/10/2016 9:56:32 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13895.**	**83633.**	**3564.0**
Stddev	52.	133.	20.5
%RSD	.37465	.15876	.57424
#1	13862.	83760.	3541.0
#2	13867.	83495.	3570.4
#3	13955.	83643.	3580.4

Approved: August 11, 2016

Sample Name: S2 Acquired: 8/10/2016 10:00:30 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00016	.00154	.00007	.00011	.06395	.00093	.00682
Stddev	.00006	.00003	.00003	.00003	.00052	.00003	.00127
%RSD	34.905	1.8518	39.930	26.186	.81753	3.3175	18.633
#1	.00011	.00157	.00009	.00008	.06334	.00096	.00536
#2	.00016	.00152	.00009	.00014	.06423	.00095	.00740
#3	.00022	.00153	.00004	.00011	.06427	.00090	.00770

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00038	.00067	.00053	.00076	.00108	.02660	.01038
Stddev	.00002	.00008	.00005	.00004	.00039	.00208	.00528
%RSD	5.7198	12.356	9.5406	5.3947	36.033	7.8206	50.849
#1	.00040	.00065	.00048	.00075	.00086	.02628	.00768
#2	.00036	.00076	.00054	.00080	.00085	.02470	.00701
#3	.00038	.00060	.00058	.00072	.00153	.02882	.01647

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00064	.00152	.00196	.10626	.00021	.00143	-.00043
Stddev	.00048	.00054	.00030	.00518	.00006	.00017	.00016
%RSD	75.843	35.750	15.526	4.8761	29.882	12.195	35.875
#1	.00008	.00089	.00215	.10501	.00027	.00151	-.00051
#2	.00087	.00187	.00212	.10182	.00021	.00154	-.00025
#3	.00096	.00180	.00161	.11195	.00015	.00123	-.00053

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00061	-.00024	.00281	.00080	.04401	.00064	-.00011
Stddev	.00014	.00003	.00023	.00009	.00151	.00017	.00005
%RSD	23.368	10.813	8.2170	11.632	3.4404	26.673	45.142
#1	.00066	-.00025	.00298	.00087	.04245	.00079	-.00014
#2	.00073	-.00026	.00289	.00083	.04412	.00045	-.00005
#3	.00045	-.00021	.00255	.00069	.04547	.00066	-.00013

Approved: August 11, 2016

Sample Name: S2 Acquired: 8/10/2016 10:00:30 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00082	.00488	.04545
Stddev	.00003	.00069	.00079
%RSD	4.1141	14.057	1.7362
#1	.00081	.00537	.04632
#2	.00086	.00518	.04477
#3	.00079	.00410	.04528
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	13891.	83145.	3589.7
Stddev	99.	246.	6.2
%RSD	.70997	.29597	.17223
#1	13833.	83155.	3582.6
#2	13835.	83387.	3592.4
#3	14005.	82895.	3594.1

Approved: August 11, 2016

Sample Name: S3 Acquired: 8/10/2016 10:04:28 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01662	.06562	.00758	.00969	1.7103	.03998	.33988	.02493
Stddev	.00008	.00008	.00018	.00003	.0046	.00006	.00216	.00071
%RSD	.48310	.12175	2.4071	.34936	.27201	.15252	.63495	2.8354
#1	.01652	.06570	.00765	.00967	1.7151	.04001	.34049	.02547
#2	.01666	.06554	.00771	.00968	1.7098	.04002	.33748	.02518
#3	.01666	.06562	.00737	.00973	1.7058	.03991	.34166	.02413

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.05628	.02420	.05121	.06866	2.4637	1.3890	.06547	.10791
Stddev	.00178	.00002	.00157	.00103	.0091	.0173	.00010	.00063
%RSD	3.1643	.09761	3.0650	1.4934	.36858	1.2452	.15242	.57996
#1	.05750	.02420	.05221	.06818	2.4622	1.4020	.06537	.10761
#2	.05709	.02422	.05203	.06983	2.4734	1.3956	.06556	.10749
#3	.05423	.02418	.04940	.06795	2.4554	1.3694	.06549	.10863

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14306	6.7817	.05271	.11066	.02452	.02860	.00522	.15369
Stddev	.00476	.0205	.00177	.00264	.00055	.00069	.00010	.00326
%RSD	3.3294	.30305	3.3574	2.3892	2.2470	2.4040	1.8586	2.1233
#1	.14593	6.7839	.05378	.11235	.02488	.02902	.00515	.15575
#2	.14568	6.8011	.05368	.11203	.02480	.02898	.00533	.15540
#3	.13756	6.7602	.05067	.10762	.02389	.02781	.00518	.14993

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.05477	2.7646	.07844	.01014	.05611	.33190	3.3850
Stddev	.00209	.0044	.00052	.00007	.00007	.00987	.0341
%RSD	3.8070	.15811	.65784	.69597	.12082	2.9741	1.0087
#1	.05615	2.7613	.07868	.01016	.05612	.33746	3.4018
#2	.05580	2.7696	.07880	.01020	.05617	.33774	3.4075
#3	.05238	2.7629	.07785	.01007	.05603	.32050	3.3457

Approved: August 11, 2016

Sample Name: S3 Acquired: 8/10/2016 10:04:28 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13252.**	**78380.**	**3420.2**
Stddev	6.	117.	38.1
%RSD	.04352	.14916	1.1146
#1	13251.	78291.	3398.4
#2	13246.	78512.	3397.9
#3	13258.	78337.	3464.2

Approved: August 11, 2016

Sample Name: S4 Acquired: 8/10/2016 10:08:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03335	.13186	.01546	.01962	3.4222	.07963	.69191	.05075
Stddev	.00004	.00014	.00009	.00007	.0273	.00011	.00252	.00020
%RSD	.11294	.10588	.56733	.37811	.79924	.14393	.36444	.39738
#1	.03338	.13179	.01536	.01954	3.4034	.07955	.69029	.05064
#2	.03337	.13202	.01553	.01969	3.4096	.07976	.69062	.05098
#3	.03331	.13177	.01550	.01962	3.4536	.07958	.69482	.05063

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.11469	.04845	.10385	.13755	4.9988	2.8069	.13192	.21711
Stddev	.00017	.00010	.00003	.00141	.0368	.0094	.00128	.00185
%RSD	.14594	.20150	.03286	1.0274	.73699	.33519	.96884	.85265
#1	.11459	.04839	.10387	.13610	4.9779	2.8044	.13085	.21525
#2	.11459	.04840	.10382	.13764	4.9771	2.7990	.13158	.21712
#3	.11488	.04856	.10387	.13892	5.0413	2.8173	.13333	.21895

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.29060	13.803	.10792	.22515	.05003	.05893	.01086	.31621
Stddev	.00039	.061	.00009	.00038	.00012	.00011	.00001	.00021
%RSD	.13390	.44496	.08466	.16847	.23685	.18336	.13752	.06722
#1	.29034	13.756	.10784	.22491	.05011	.05894	.01084	.31597
#2	.29105	13.779	.10802	.22558	.05008	.05904	.01087	.31633
#3	.29041	13.872	.10790	.22495	.04989	.05882	.01086	.31634

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.11113	5.5754	.15741	.02043	.11339	.67691	6.6992
Stddev	.00012	.0362	.00054	.00011	.00019	.00025	.0533
%RSD	.10382	.64860	.34000	.54271	.17132	.03672	.79617
#1	.11103	5.5480	.15708	.02034	.11326	.67683	6.6469
#2	.11110	5.5619	.15712	.02055	.11361	.67719	6.6973
#3	.11125	5.6164	.15803	.02038	.11330	.67671	6.7535

Approved: August 11, 2016

Sample Name: S4 Acquired: 8/10/2016 10:08:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13035.**	**77060.**	**3394.5**
Stddev	16.	213.	17.3
%RSD	.12552	.27603	.51074
#1	13048.	76850.	3409.1
#2	13041.	77054.	3399.2
#3	13017.	77275.	3375.3

Approved: August 11, 2016

Sample Name: ICV Acquired: 8/10/2016 10:11:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39581	9.8531	.39547	.49185	.98157	.04953	9.7387	.04946
Stddev	.00256	.0229	.00347	.00034	.00205	.00011	.1102	.00062
%RSD	.64752	.23206	.87638	.06863	.20846	.21976	1.1317	1.2523
#1	.39307	9.8288	.39492	.49217	.98233	.04941	9.6328	.04964
#2	.39814	9.8742	.39232	.49186	.98313	.04962	9.7304	.04996
#3	.39623	9.8563	.39918	.49150	.97925	.04955	9.8528	.04876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19969	.49371	.50007	3.9435	48.823	.98108	9.8904	.49338
Stddev	.00144	.00091	.00229	.0461	.158	.00905	.0499	.00491
%RSD	.71978	.18465	.45729	1.1702	.32383	.92263	.50446	.99465
#1	.20074	.49298	.50119	3.9096	48.734	.98465	9.9413	.48886
#2	.20028	.49341	.50159	3.9961	49.006	.98780	9.8415	.49269
#3	.19805	.49473	.49744	3.9248	48.730	.97079	9.8883	.49860
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99651	48.681	.49947	9.9455	.50177	1.1780	.39780	4.9198
Stddev	.00998	.051	.00326	.0417	.00137	.0120	.00528	.0217
%RSD	1.0020	.10526	.65307	.41878	.27227	1.0160	1.3281	.44168
#1	1.0028	48.692	.49909	9.9586	.50311	1.1820	.39800	4.9345
#2	1.0017	48.726	.50291	9.9790	.50183	1.1875	.40297	4.9301
#3	.98499	48.625	.49642	9.8989	.50038	1.1646	.39241	4.8948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: ICV Acquired: 8/10/2016 10:11:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0044**	**.98072**	**.98482**	**.49876**	**.98195**	**.99426**	**.99235**
Stddev	.0074	.00278	.01512	.00360	.00113	.00551	.00836
%RSD	.73286	.28341	1.5349	.72148	.11491	.55437	.84279
#1	1.0083	.98258	.96737	.50278	.98077	.99709	.99652
#2	1.0090	.98206	.99380	.49766	.98301	.99777	.99782
#3	.99593	.97753	.99330	.49584	.98209	.98790	.98273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13283.**	**78797.**	**3455.1**
Stddev	23.	40.	31.6
%RSD	.16990	.05137	.91454
#1	13261.	78824.	3439.1
#2	13306.	78750.	3434.7
#3	13284.	78816.	3491.5

Approved: August 11, 2016

Sample Name: ICB Acquired: 8/10/2016 10:15:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.01178	-.00047	.00347	-.00227	-.00004	-.01044	.00004
Stddev	.00099	.00876	.00127	.00071	.00036	.00009	.02035	.00017
%RSD	350.33	74.325	272.21	20.386	16.052	244.87	195.01	451.17
#1	-.00081	-.02190	-.00192	.00380	-.00252	.00006	-.03363	-.00015
#2	.00054	-.00658	.00010	.00395	-.00244	-.00012	.00444	.00007
#3	.00112	-.00688	.00042	.00266	-.00185	-.00006	-.00212	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	-.00006	.00013	-.01819	.29829	-.00130	.00088	-.00271
Stddev	.00021	.00071	.00080	.01098	.12149	.00106	.16358	.00281
%RSD	4922.8	1127.4	621.42	60.338	40.728	81.636	18524.	103.80
#1	-.00008	.00052	-.00066	-.01251	.39526	-.00057	-.05913	.00051
#2	.00023	.00015	.00093	-.03084	.33759	-.00252	.18600	-.00470
#3	-.00017	-.00086	.00011	-.01122	.16201	-.00081	-.12422	-.00392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.00580	.00028	.00007	-.00071	.00260	.00510	-.00070
Stddev	.00048	.03451	.00070	.00653	.00080	.00232	.00091	.00104
%RSD	406.64	595.58	252.04	9973.5	112.41	89.013	17.909	148.52
#1	.00066	.03016	.00060	-.00408	-.00120	.00456	.00553	-.00040
#2	-.00026	-.00889	-.00052	.00759	-.00114	.00005	.00405	-.00185
#3	-.00004	-.03866	.00075	-.00331	.00021	.00319	.00572	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: ICB Acquired: 8/10/2016 10:15:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00001**	**.01145**	**-.00233**	**.00038**	**.00017**	**-.00021**
Stddev	.00022	.00019	.00253	.00211	.00069	.00008	.00027
%RSD	135.20	2583.6	22.116	90.498	183.28	46.595	125.48
#1	-.00029	-.00023	.00986	-.00461	-.00016	.00016	.00009
#2	-.00030	.00014	.01012	-.00194	.00014	.00024	-.00033
#3	.00009	.00007	.01437	-.00045	.00116	.00009	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13541.**	**80600.**	**3474.6**
Stddev	57.	170.	22.4
%RSD	.42003	.21124	.64379
#1	13499.	80760.	3497.3
#2	13519.	80421.	3452.6
#3	13606.	80618.	3473.9

Approved: August 11, 2016

Sample Name: LLICV Acquired: 8/10/2016 10:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00858	.14521	.00802	.07656	.00586	.00141	.37942	.00082
Stddev	.00149	.00109	.00067	.00201	.00077	.00009	.02891	.00009
%RSD	17.319	.74815	8.3537	2.6254	13.150	6.1830	7.6194	11.413
#1	.01023	.14645	.00751	.07425	.00666	.00149	.35257	.00091
#2	.00817	.14467	.00878	.07787	.00512	.00132	.41002	.00084
#3	.00734	.14449	.00776	.07758	.00580	.00143	.37565	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00382	.00305	.00384	.06971	.91336	.07341	.37761	.00777
Stddev	.00051	.00108	.00111	.00943	.08900	.00190	.01336	.00085
%RSD	13.246	35.505	29.008	13.533	9.7443	2.5866	3.5381	10.905
#1	.00406	.00422	.00489	.07827	.91314	.07161	.38470	.00847
#2	.00416	.00208	.00396	.05960	1.0025	.07323	.38592	.00800
#3	.00324	.00286	.00267	.07126	.82447	.07539	.36220	.00683
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00691	.39018	.01583	.73008	.00773	.07381	.02303	.71659
Stddev	.00107	.00905	.00205	.07887	.00264	.01099	.00215	.06970
%RSD	15.496	2.3205	12.921	10.802	34.110	14.884	9.3453	9.7269
#1	.00699	.38732	.01686	.77863	.00486	.08000	.02388	.75770
#2	.00793	.40032	.01716	.77252	.00826	.08030	.02059	.75595
#3	.00580	.38290	.01348	.63908	.01005	.06112	.02463	.63611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LLICV Acquired: 8/10/2016 10:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.36645	.03888	.02680	.14081	.00799	.01509	.03901
Stddev	.04601	.00044	.00502	.01354	.00133	.00172	.00046
%RSD	12.556	1.1208	18.738	9.6160	16.651	11.390	1.1753
#1	.39665	.03844	.02574	.14825	.00854	.01615	.03849
#2	.38921	.03931	.02239	.14900	.00647	.01601	.03929
#3	.31350	.03890	.03226	.12518	.00896	.01311	.03927
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	13566.	80837.	3491.6
Stddev	43.	163.	28.2
%RSD	.31853	.20220	.80853
#1	13543.	80918.	3520.3
#2	13538.	80649.	3463.8
#3	13616.	80945.	3490.8

Approved: August 11, 2016

Sample Name: LLICV Acquired: 8/10/2016 10:23:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02071	.38031	.01822	.19080	.01731	.00369	.96321	.00208
Stddev	.00086	.00128	.00070	.00296	.00083	.00002	.03030	.00015
%RSD	4.1604	.33537	3.8660	1.5499	4.7775	.54868	3.1460	7.0327
#1	.01973	.37926	.01864	.18800	.01685	.00371	.92838	.00222
#2	.02110	.37993	.01862	.19052	.01682	.00367	.98352	.00193
#3	.02132	.38173	.01741	.19389	.01827	.00369	.97774	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00982	.00817	.01075	.19686	2.2164	.18971	.90723	.01952
Stddev	.00034	.00066	.00103	.02264	.0727	.00269	.01704	.00139
%RSD	3.4450	8.0541	9.5571	11.503	3.2785	1.4178	1.8786	7.1234
#1	.00945	.00888	.00994	.17081	2.2056	.18699	.88878	.01867
#2	.00990	.00758	.01191	.21181	2.1497	.18979	.92239	.01876
#3	.01011	.00805	.01041	.20796	2.2939	.19237	.91052	.02112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01877	.96374	.04031	1.9103	.02005	.19568	.05068	1.8663
Stddev	.00015	.01796	.00029	.0061	.00349	.00661	.00364	.0049
%RSD	.81924	1.8638	.72769	.31756	17.395	3.3764	7.1743	.26065
#1	.01871	.96368	.04061	1.9098	.02359	.19345	.04649	1.8607
#2	.01866	.98173	.04029	1.9045	.01994	.20312	.05294	1.8690
#3	.01895	.94580	.04003	1.9166	.01662	.19048	.05261	1.8693
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LLICV Acquired: 8/10/2016 10:23:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97634	.09662	.05792	.36657	.01956	.04047	.09686
Stddev	.00199	.00211	.00584	.00208	.00050	.00015	.00055
%RSD	.20433	2.1799	10.080	.56738	2.5440	.38195	.56715
#1	.97861	.09471	.06255	.36892	.01918	.04030	.09690
#2	.97488	.09628	.05985	.36494	.02012	.04052	.09629
#3	.97552	.09888	.05136	.36586	.01938	.04060	.09738
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	13542.	80762.	3525.8
Stddev	25.	55.	33.9
%RSD	.18466	.06858	.96120
#1	13522.	80796.	3545.0
#2	13535.	80698.	3545.8
#3	13570.	80791.	3486.7

Approved: August 11, 2016

Sample Name: ICSA Acquired: 8/10/2016 10:27:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	264.05	-.00213	-.01451	-.00078	-.00009	247.96	-.00015
Stddev	.00185	.30	.00293	.00193	.00016	.00004	1.76	.00021
%RSD	171.78	.11382	137.53	13.307	19.977	45.198	.71149	136.23
#1	.00252	264.25	-.00499	-.01257	-.00063	-.00009	249.77	-.00038
#2	.00172	264.19	-.00226	-.01643	-.00076	-.00005	247.86	-.00010
#3	-.00101	263.70	.00086	-.01454	-.00094	-.00013	246.25	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00134	-.00346	.00163	98.655	.13696	.00517	255.56	.00100
Stddev	.00046	.00084	.01807	.466	.16477	.00099	1.02	.00106
%RSD	34.251	24.312	1108.6	.47211	120.31	19.191	.39802	105.97
#1	-.00146	-.00298	.01346	99.191	-.04834	.00581	256.67	-.00022
#2	-.00172	-.00297	.01060	98.426	.26699	.00403	254.67	.00158
#3	-.00083	-.00443	-.01917	98.348	.19223	.00569	255.34	.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00091	.02261	.00130	.00569	.00122	-.00227	.00625	.00512
Stddev	.00026	.02511	.00037	.00610	.00806	.00370	.00414	.00227
%RSD	28.688	111.07	28.437	107.37	659.56	163.26	66.204	44.232
#1	-.00064	.03662	.00169	-.00059	.00518	-.00336	.01088	.00595
#2	-.00116	-.00638	.00125	.00603	.00654	.00186	.00292	.00256
#3	-.00092	.03758	.00096	.01161	-.00805	-.00530	.00496	.00685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: ICSA Acquired: 8/10/2016 10:27:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.00013**	**-.01079**	**.00068**	**-.00216**	**-.00325**	**-.00346**
Stddev	.00039	.00024	.00745	.00221	.00111	.00061	.00027
%RSD	38.741	180.83	69.048	322.66	51.413	18.881	7.6982
#1	.00138	-.00011	-.00296	.00320	-.00133	-.00290	-.00367
#2	.00106	.00013	-.01779	-.00094	-.00174	-.00289	-.00356
#3	.00060	.00038	-.01162	-.00020	-.00343	-.00396	-.00316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12489.**	**73411.**	**3291.2**
Stddev	207.	103.	33.2
%RSD	1.6547	.14062	1.0084
#1	12342.	73369.	3252.9
#2	12400.	73529.	3309.3
#3	12725.	73335.	3311.5

Approved: August 11, 2016

Sample Name: ICSAB Acquired: 8/10/2016 10:30:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51428**	**262.87**	**.25234**	**-.01563**	**.24938**	**.24036**	**244.94**	**.47783**
Stddev	.00074	.20	.01099	.00244	.00057	.00027	.62	.01861
%RSD	.14481	.07710	4.3542	15.590	.22764	.11113	.25303	3.8943
#1	.51469	262.94	.25821	-.01784	.24925	.24057	244.27	.48887
#2	.51472	263.02	.25914	-.01302	.25000	.24046	245.49	.48827
#3	.51342	262.64	.23966	-.01604	.24888	.24006	245.07	.45634
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.23440**	**.24697**	**.25277**	**95.920**	**5.3740**	**.00663**	**248.87**	**.24841**
Stddev	.01105	.00112	.01924	.303	.0790	.00420	1.12	.00257
%RSD	4.7140	.45399	7.6129	.31592	1.4699	63.379	.45005	1.0355
#1	.24042	.24761	.26474	95.644	5.2862	.00285	248.00	.24893
#2	.24114	.24763	.26301	96.245	5.4392	.01115	250.13	.24562
#3	.22165	.24568	.23057	95.872	5.3967	.00589	248.47	.25068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**5.2133**	**.46961**	**-.01491**	**.48647**	**.49612**	**.24345**	**.00627**
Stddev	.00043	.0491	.02233	.00729	.02198	.02128	.01254	.00131
%RSD	37.963	.94163	4.7551	48.851	4.5187	4.2897	5.1496	20.914
#1	-.00144	5.1856	.48278	-.01563	.49894	.50871	.25072	.00742
#2	-.00064	5.1844	.48222	-.02181	.49939	.50811	.25065	.00655
#3	-.00131	5.2700	.44383	-.00729	.46109	.47155	.22897	.00484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: ICSAB Acquired: 8/10/2016 10:30:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00040**	**.00038**	**-.00609**	**.45119**	**.24849**	**.46249**	**-.00328**
Stddev	.00086	.00049	.00189	.01330	.00112	.01878	.00025
%RSD	213.83	128.01	31.036	2.9471	.45075	4.0604	7.5873
#1	.00059	.00089	-.00666	.45575	.24782	.47522	-.00313
#2	-.00085	-.00009	-.00763	.46162	.24979	.47133	-.00357
#3	-.00094	.00035	-.00398	.43622	.24788	.44092	-.00315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12562.**	**74521.**	**3354.2**
Stddev	62.	83.	17.5
%RSD	.49149	.11134	.52145
#1	12537.	74445.	3364.4
#2	12517.	74508.	3334.0
#3	12633.	74609.	3364.2

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 10:34:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39295	9.7087	.39110	.48777	.95952	.04854	9.5369	.04857
Stddev	.00097	.0031	.00656	.00156	.01506	.00009	.1130	.00093
%RSD	.24704	.03234	1.6770	.31897	1.5691	.17619	1.1851	1.9153
#1	.39395	9.7119	.39085	.48775	.94606	.04855	9.4542	.04929
#2	.39201	9.7088	.39778	.48623	.95671	.04862	9.4907	.04891
#3	.39289	9.7056	.38467	.48934	.97578	.04845	9.6656	.04752
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19567	.48363	.48723	3.8499	47.643	.96584	9.7179	.48286
Stddev	.00593	.00072	.01202	.0781	.704	.01677	.1935	.00974
%RSD	3.0311	.14831	2.4680	2.0282	1.4787	1.7362	1.9912	2.0173
#1	.19889	.48380	.49381	3.8006	47.039	.94978	9.5492	.47433
#2	.19929	.48425	.49452	3.8092	47.473	.96449	9.6754	.48076
#3	.18882	.48285	.47335	3.9400	48.417	.98324	9.9291	.49347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97374	47.263	.48424	9.7433	.48860	1.1544	.39006	4.8141
Stddev	.02678	.726	.01331	.1841	.00856	.0189	.00240	.0796
%RSD	2.7504	1.5359	2.7482	1.8898	1.7512	1.6340	.61622	1.6537
#1	.98873	46.579	.49282	9.8483	.49260	1.1681	.39263	4.8571
#2	.98967	47.186	.49099	9.8510	.49441	1.1621	.38787	4.8629
#3	.94282	48.025	.46891	9.5307	.47877	1.1329	.38968	4.7222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 10:34:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.97536**	**.96180**	**.95556**	**.49395**	**.96484**	**.96824**	**.97733**
Stddev	.03245	.01478	.01835	.00307	.00113	.02688	.00939
%RSD	3.3270	1.5369	1.9201	.62150	.11761	2.7766	.96067
#1	.99328	.94895	.94055	.49625	.96392	.98485	.97665
#2	.99489	.95850	.95011	.49513	.96611	.98264	.96830
#3	.93790	.97795	.97601	.49046	.96450	.93722	.98705
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13373.**	**79946.**	**3506.0**
Stddev	18.	190.	26.1
%RSD	.13445	.23774	.74554
#1	13355.	79948.	3515.0
#2	13391.	79755.	3526.5
#3	13372.	80135.	3476.6

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 10:38:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	-.00821	-.00146	.00324	-.00261	.00002	-.00709	.00016
Stddev	.00098	.00829	.00052	.00187	.00058	.00007	.02563	.00013
%RSD	2288.7	101.03	35.688	57.685	22.142	302.06	361.65	82.426
#1	.00076	-.00821	-.00086	.00299	-.00196	.00010	-.02306	.00010
#2	.00045	-.01650	-.00178	.00522	-.00278	-.00003	-.02068	.00032
#3	-.00107	.00008	-.00175	.00151	-.00307	-.00000	.02248	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00058	.00115	-.00683	.18547	-.00449	.03277	.00038
Stddev	.00029	.00098	.00022	.01350	.09459	.00132	.05903	.00243
%RSD	366.72	168.61	19.064	197.64	51.001	29.315	180.11	643.66
#1	-.00008	-.00077	.00093	.00345	.22484	-.00430	.08153	-.00239
#2	-.00010	.00048	.00137	-.02212	.25403	-.00589	.04965	.00139
#3	.00041	-.00146	.00115	-.00182	.07755	-.00328	-.03285	.00213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00003	.00097	.00003	.00161	.00276	.00711	-.00165
Stddev	.00010	.03218	.00137	.00381	.00153	.00324	.00182	.00104
%RSD	56.734	104240.	142.16	14210.	95.389	117.52	25.639	62.770
#1	-.00006	.03715	.00248	.00370	.00279	.00363	.00726	-.00047
#2	-.00024	-.02002	.00063	.00028	-.00012	-.00083	.00885	-.00206
#3	-.00023	-.01704	-.00021	-.00390	.00216	.00547	.00521	-.00242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 10:38:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1038) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00013**	**.00244**	**-.00076**	**.00061**	**-.00014**	**-.00052**
Stddev	.00036	.00015	.00216	.00317	.00070	.00018	.00048
%RSD	239.10	115.21	88.586	418.20	114.99	130.90	92.298
#1	-.00033	-.00002	.00012	-.00277	.00047	.00001	-.00108
#2	-.00038	.00028	.00280	-.00240	-.00001	-.00009	-.00022
#3	.00026	.00013	.00441	.00290	.00137	-.00033	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13567.**	**81307.**	**3506.3**
Stddev	49.	65.	15.6
%RSD	.36059	.08046	.44515
#1	13571.	81246.	3522.4
#2	13516.	81297.	3491.2
#3	13614.	81376.	3505.4

Approved: August 11, 2016

Sample Name: PBW BK Acquired: 8/10/2016 10:45:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578864-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.02386	-.00265	.00577	-.00030	-.00005	.04928
Stddev	.00154	.00423	.00325	.00307	.00069	.00010	.02659
%RSD	554.65	17.744	122.82	53.196	229.73	204.64	53.962
#1	.00154	.02843	-.00639	.00242	-.00107	.00006	.07849
#2	.00072	.02007	-.00046	.00644	.00024	-.00009	.04285
#3	-.00143	.02307	-.00110	.00846	-.00006	-.00012	.02649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	-.00001	-.00197	.00076	F -.02348	.19454	-.00436
Stddev	.00019	.00024	.00053	.00079	.00568	.06048	.00348
%RSD	63.293	2571.7	26.807	104.23	24.193	31.090	79.937
#1	.00053	.00004	-.00169	.00166	-.01693	.23987	-.00550
#2	.00021	.00019	-.00164	.00045	-.02640	.12586	-.00045
#3	.00018	-.00027	-.00257	.00017	-.02711	.21789	-.00712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00686	.00016	.00025	.00787	.00065	-.00438	-.00148
Stddev	.06641	.00201	.00007	.00632	.00017	.00213	.00122
%RSD	968.12	1282.6	26.384	80.201	25.922	48.490	82.574
#1	.02831	-.00201	.00027	.00533	.00065	-.00666	-.00241
#2	-.06763	.00051	.00018	.01506	.00048	-.00403	-.00195
#3	.05990	.00197	.00031	.00323	.00082	-.00246	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: PBW BK Acquired: 8/10/2016 10:45:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578864-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00585	-.00019	.00037	.00132	.00036	-.00477
Stddev	.00252	.00540	.00153	.00051	.00071	.00385	.00418
%RSD	559.15	92.239	792.65	139.62	53.680	1063.2	87.658
#1	.00114	.00068	.00115	-.00019	.00168	-.00268	-.00554
#2	-.00234	.00543	-.00185	.00081	.00051	.00469	-.00026
#3	.00255	.01145	.00012	.00047	.00179	-.00092	-.00851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00076	.00093	-.00047
Stddev	.00052	.00020	.00013
%RSD	68.205	21.772	28.562
#1	.00025	.00090	-.00062
#2	.00129	.00115	-.00036
#3	.00074	.00075	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12727.	77001.	3251.8
Stddev	44.	405.	8.1
%RSD	.34790	.52592	.24891
#1	12776.	76563.	3242.9
#2	12717.	77080.	3254.0
#3	12689.	77361.	3258.7

Approved: August 11, 2016

Sample Name: L1608000209 Acquired: 8/10/2016 10:49:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21187**	**5.2528**	**.21233**	**1.0247**	**.54400**	**.02578**	**5.6166**	**.02632**
Stddev	.00057	.0125	.00328	.0040	.00269	.00009	.0436	.00021
%RSD	.26701	.23800	1.5471	.39198	.49495	.33632	.77623	.79071
#1	.21176	5.2615	.21111	1.0265	.54699	.02570	5.6645	.02656
#2	.21249	5.2585	.21605	1.0275	.54325	.02587	5.6061	.02617
#3	.21137	5.2385	.20983	1.0201	.54176	.02576	5.5792	.02623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10761**	**.26469**	**.27004**	**2.1925**	**26.306**	**.53876**	**5.5031**	**.27122**
Stddev	.00065	.00149	.00051	.0328	.153	.00458	.0722	.00210
%RSD	.60768	.56242	.19051	1.4973	.57997	.85068	1.3117	.77611
#1	.10831	.26561	.26967	2.1610	26.482	.54403	5.4257	.27052
#2	.10752	.26297	.26983	2.2265	26.231	.53566	5.5686	.27358
#3	.10701	.26549	.27063	2.1900	26.205	.53659	5.5150	.26955
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54233**	**26.312**	**.27109**	**5.1705**	**.26920**	**.63790**	**.20081**	**2.6317**
Stddev	.00162	.110	.00120	.0145	.00332	.00175	.00476	.0099
%RSD	.29800	.41664	.44220	.27995	1.2322	.27438	2.3697	.37490
#1	.54319	26.436	.27220	5.1608	.26627	.63589	.19888	2.6430
#2	.54333	26.273	.27127	5.1871	.26853	.63877	.20623	2.6271
#3	.54046	26.228	.26982	5.1635	.27280	.63905	.19733	2.6249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608000209 Acquired: 8/10/2016 10:49:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53553**	**.55182**	**.53781**	**.26358**	**.52677**	**.52992**	**.55115**
Stddev	.00167	.00202	.00946	.00134	.00219	.00149	.00241
%RSD	.31167	.36534	1.7587	.50943	.41607	.28115	.43746
#1	.53619	.55296	.54558	.26481	.52436	.52999	.55365
#2	.53676	.55302	.54057	.26378	.52733	.53138	.55098
#3	.53363	.54950	.52728	.26215	.52863	.52840	.54883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12654.**	**76009.**	**3281.8**
Stddev	12.	210.	18.3
%RSD	.09092	.27603	.55795
#1	12641.	75908.	3261.3
#2	12658.	75868.	3287.3
#3	12662.	76250.	3296.6

Approved: August 11, 2016

Sample Name: L1608000210 Acquired: 8/10/2016 10:52:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20928	5.1809	.20938	1.0098	.53489	.02543	5.4457	.02584
Stddev	.00154	.0110	.00476	.0016	.00663	.00004	.0494	.00084
%RSD	.73641	.21188	2.2739	.15467	1.2400	.16593	.90697	3.2611
#1	.21011	5.1712	.21194	1.0106	.54032	.02545	5.4882	.02642
#2	.20751	5.1928	.21231	1.0080	.53685	.02546	5.4574	.02622
#3	.21023	5.1786	.20389	1.0107	.52750	.02539	5.3915	.02487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10483	.26132	.26208	2.1200	25.993	.52935	5.3881	.27068
Stddev	.00281	.00133	.00512	.0154	.449	.00208	.0820	.00212
%RSD	2.6779	.50882	1.9522	.72546	1.7258	.39383	1.5227	.78350
#1	.10664	.26226	.26535	2.1283	26.138	.53176	5.4763	.26887
#2	.10625	.25980	.26470	2.1294	26.352	.52804	5.3737	.27302
#3	.10160	.26190	.25618	2.1022	25.490	.52827	5.3141	.27015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52657	25.981	.26300	5.0538	.26298	.62400	.20246	2.5746
Stddev	.01434	.312	.00729	.0967	.00536	.01382	.00303	.0373
%RSD	2.7239	1.2010	2.7715	1.9127	2.0370	2.2140	1.4942	1.4472
#1	.53559	26.110	.26674	5.1031	.26604	.63207	.20037	2.5929
#2	.53409	26.208	.26766	5.1158	.26611	.63188	.20593	2.5992
#3	.51003	25.625	.25460	4.9424	.25680	.60805	.20109	2.5317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608000210 Acquired: 8/10/2016 10:52:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52039	.54204	.53012	.26052	.51803	.51525	.55109
Stddev	.01616	.00422	.00088	.00323	.00229	.01304	.00405
%RSD	3.1055	.77798	.16607	1.2408	.44233	2.5316	.73424
#1	.53012	.54493	.53107	.26165	.51920	.52374	.55428
#2	.52931	.54398	.52995	.26304	.51951	.52178	.55244
#3	.50173	.53720	.52934	.25688	.51539	.50023	.54654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12652.	76201.	3258.7
Stddev	32.	145.	19.1
%RSD	.25030	.19024	.58700
#1	12629.	76076.	3242.8
#2	12688.	76167.	3253.5
#3	12638.	76360.	3279.9

Approved: August 11, 2016

Sample Name: L1608000211 Acquired: 8/10/2016 10:56:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20672**	**5.1206**	**.20502**	**.99744**	**.52984**	**.02513**	**5.3846**	**.02545**
Stddev	.00029	.0073	.00293	.00311	.00739	.00007	.0572	.00040
%RSD	.13806	.14184	1.4286	.31137	1.3954	.27247	1.0630	1.5650
#1	.20677	5.1280	.20436	.99798	.53751	.02514	5.4396	.02586
#2	.20698	5.1134	.20822	1.0002	.52925	.02518	5.3887	.02542
#3	.20641	5.1205	.20248	.99410	.52276	.02505	5.3254	.02507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10416**	**.25805**	**.26121**	**2.1333**	**25.772**	**.52482**	**5.3538**	**.26648**
Stddev	.00171	.00090	.00376	.0347	.262	.00264	.1415	.00204
%RSD	1.6419	.34699	1.4405	1.6264	1.0170	.50330	2.6422	.76370
#1	.10555	.25749	.26310	2.1539	26.074	.52787	5.3728	.26786
#2	.10469	.25759	.26365	2.1528	25.609	.52347	5.4849	.26415
#3	.10225	.25909	.25687	2.0932	25.632	.52314	5.2039	.26744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52537**	**25.717**	**.26186**	**5.0203**	**.25782**	**.61404**	**.20121**	**2.5479**
Stddev	.00822	.344	.00363	.0532	.00427	.01029	.00546	.0153
%RSD	1.5653	1.3383	1.3847	1.0587	1.6579	1.6763	2.7137	.59964
#1	.52966	26.102	.26459	5.0472	.26252	.62153	.19904	2.5536
#2	.53056	25.612	.26325	5.0547	.25674	.61828	.20742	2.5594
#3	.51589	25.437	.25775	4.9591	.25418	.60230	.19716	2.5305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608000211 Acquired: 8/10/2016 10:56:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51845**	**.53683**	**.52331**	**.25716**	**.51306**	**.51305**	**.53755**
Stddev	.00905	.00626	.00387	.00133	.00191	.00670	.00649
%RSD	1.7460	1.1666	.73985	.51642	.37161	1.3053	1.2072
#1	.52462	.54395	.52619	.25718	.51106	.51657	.54484
#2	.52267	.53436	.52482	.25848	.51327	.51726	.53544
#3	.50806	.53217	.51891	.25582	.51485	.50533	.53238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12771.**	**76642.**	**3295.0**
Stddev	10.	39.	37.8
%RSD	.08172	.05154	1.1471
#1	12759.	76623.	3252.7
#2	12778.	76615.	3307.0
#3	12777.	76687.	3325.4

Approved: August 11, 2016

Sample Name: L1608000212 Acquired: 8/10/2016 11:00:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20538**	**5.0475**	**.20251**	**.98932**	**.52603**	**.02486**	**5.3521**	**.02551**
Stddev	.00150	.0165	.00208	.00356	.00553	.00003	.0668	.00056
%RSD	.72807	.32741	1.0249	.35949	1.0521	.12239	1.2481	2.1899
#1	.20390	5.0390	.20307	.98662	.53115	.02484	5.4221	.02537
#2	.20535	5.0369	.20424	.98798	.52677	.02484	5.3453	.02613
#3	.20689	5.0665	.20021	.99335	.52016	.02489	5.2890	.02504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10319**	**.25525**	**.25710**	**2.1148**	**25.548**	**.52290**	**5.3194**	**.26289**
Stddev	.00273	.00162	.00721	.0481	.404	.00643	.0709	.00122
%RSD	2.6462	.63636	2.8043	2.2765	1.5832	1.2301	1.3327	.46297
#1	.10503	.25465	.26058	2.1703	26.014	.53033	5.3636	.26424
#2	.10449	.25401	.26192	2.0841	25.282	.51913	5.3570	.26256
#3	.10005	.25709	.24881	2.0901	25.349	.51925	5.2376	.26188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51721**	**25.525**	**.25602**	**4.9618**	**.25715**	**.61226**	**.20018**	**2.5239**
Stddev	.01416	.269	.00853	.1042	.00622	.01384	.00541	.0456
%RSD	2.7383	1.0522	3.3332	2.1001	2.4201	2.2607	2.7019	1.8046
#1	.52485	25.828	.26102	5.0284	.26105	.61631	.20630	2.5528
#2	.52592	25.429	.26087	5.0152	.26043	.62362	.19817	2.5476
#3	.50087	25.318	.24616	4.8417	.24998	.59684	.19606	2.4714
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608000212 Acquired: 8/10/2016 11:00:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51020**	**.53085**	**.51091**	**.25629**	**.50735**	**.50513**	**.54028**
Stddev	.01626	.00571	.01543	.00271	.00168	.01394	.00619
%RSD	3.1867	1.0750	3.0194	1.0562	.33144	2.7599	1.1463
#1	.51807	.53733	.52872	.25805	.50884	.51258	.54735
#2	.52103	.52865	.50166	.25764	.50553	.51377	.53763
#3	.49151	.52658	.50235	.25317	.50768	.48905	.53585
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12784.**	**76761.**	**3293.8**
Stddev	36.	295.	37.0
%RSD	.28254	.38412	1.1221
#1	12816.	76644.	3251.9
#2	12791.	77096.	3307.8
#3	12744.	76542.	3321.7

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 11:03:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37625	9.3058	.37631	.47211	.94097	.04642	9.4159	.04671
Stddev	.00239	.0131	.00902	.00136	.00162	.00020	.0176	.00114
%RSD	.63604	.14052	2.3982	.28718	.17223	.42492	.18688	2.4376
#1	.37458	9.3011	.38378	.47268	.94089	.04639	9.4256	.04744
#2	.37518	9.2956	.37886	.47056	.93940	.04663	9.4265	.04730
#3	.37899	9.3205	.36628	.47308	.94264	.04624	9.3956	.04540
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18757	.46598	.46872	3.7862	46.543	.94234	9.5562	.47200
Stddev	.00625	.00056	.01492	.0322	.094	.00999	.0327	.00411
%RSD	3.3324	.11956	3.1840	.85132	.20147	1.0601	.34186	.87079
#1	.19127	.46577	.47770	3.7894	46.439	.94717	9.5261	.46865
#2	.19109	.46661	.47697	3.7525	46.570	.93085	9.5909	.47076
#3	.18036	.46556	.45149	3.8168	46.620	.94900	9.5516	.47659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93343	46.395	.46820	9.4174	.47449	1.1206	.37786	4.6634
Stddev	.02633	.087	.01455	.2233	.00904	.0248	.00937	.0805
%RSD	2.8210	.18649	3.1085	2.3707	1.9051	2.2084	2.4794	1.7270
#1	.95380	46.298	.47566	9.5453	.47856	1.1333	.37955	4.7109
#2	.94280	46.465	.47752	9.5473	.48078	1.1365	.38627	4.7088
#3	.90370	46.421	.45143	9.1596	.46414	1.0921	.36776	4.5704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 11:03:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93934	.94374	.92393	.47706	.92685	.93403	.94597
Stddev	.03312	.00169	.00730	.00272	.00078	.02655	.00823
%RSD	3.5256	.17884	.79029	.56928	.08443	2.8428	.87036
#1	.95789	.94269	.92136	.47781	.92647	.94838	.93671
#2	.95902	.94285	.93217	.47932	.92633	.95033	.94874
#3	.90110	.94569	.91826	.47405	.92775	.90339	.95247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	13820.	82296.	3579.6
Stddev	19.	121.	27.6
%RSD	.14041	.14699	.77019
#1	13803.	82175.	3610.1
#2	13815.	82417.	3572.5
#3	13841.	82294.	3556.3

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 11:07:21 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	-.01884	-.00069	.00379	-.00286	-.00004	-.01852	.00009
Stddev	.00110	.00101	.00102	.00041	.00015	.00006	.00338	.00027
%RSD	86.301	5.3766	147.68	10.792	5.0706	144.83	18.267	295.52
#1	.00081	-.01883	-.00070	.00418	-.00293	-.00010	-.01490	.00040
#2	.00048	-.01986	-.00171	.00337	-.00296	.00003	-.02160	.00002
#3	.00252	-.01784	.00033	.00383	-.00270	-.00006	-.01906	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	-.00089	-.00003	-.01194	.27731	-.00441	-.03071	.00075
Stddev	.00030	.00055	.00018	.03301	.10609	.00269	.05258	.00108
%RSD	300.81	61.726	542.91	276.47	38.256	60.915	171.22	142.80
#1	.00023	-.00035	-.00021	.02513	.39248	-.00537	-.02073	.00118
#2	-.00019	-.00144	-.00003	-.02279	.25589	-.00138	-.08756	.00155
#3	-.00034	-.00087	.00014	-.03815	.18357	-.00648	.01617	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00861	.00132	-.00040	.00021	.00263	.01362	-.00393
Stddev	.00040	.02204	.00115	.00100	.00389	.00082	.00145	.00131
%RSD	10512.	255.83	87.550	252.64	1815.6	31.272	10.613	33.359
#1	-.00030	.01868	.00002	-.00119	.00354	.00170	.01222	-.00244
#2	.00046	.02383	.00221	-.00073	-.00405	.00326	.01355	-.00489
#3	-.00014	-.01666	.00172	.00073	.00115	.00294	.01511	-.00445
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 11:07:21 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00077**	**-.00035**	**.00324**	**-.00009**	**.00012**	**-.00017**	**-.00002**
Stddev	.00081	.00029	.00695	.00105	.00045	.00009	.00026
%RSD	104.78	82.568	214.88	1171.9	371.13	50.722	1367.4
#1	-.00060	-.00023	.01114	.00069	.00035	-.00008	.00000
#2	-.00165	-.00069	-.00194	-.00128	-.00040	-.00019	.00023
#3	-.00006	-.00015	.00050	.00033	.00042	-.00025	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13981.**	**83765.**	**3570.3**
Stddev	47.	153.	14.2
%RSD	.33710	.18253	.39693
#1	13937.	83925.	3557.5
#2	13974.	83752.	3585.5
#3	14031.	83620.	3567.8

Approved: August 11, 2016

Sample Name: PBW 9R Acquired: 8/10/2016 11:11:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00132**	**.00045**	**.00055**	**.00340**	**-.00069**	**-.00002**	**-.00032**
Stddev	.00155	.00515	.00314	.00081	.00024	.00007	.02147
%RSD	117.82	1153.1	572.65	23.715	35.573	316.06	6613.3
#1	-.00036	-.00531	-.00150	.00332	-.00057	.00006	.01645
#2	.00271	.00204	.00416	.00425	-.00052	-.00005	.00710
#3	.00160	.00461	-.00101	.00264	-.00097	-.00008	-.02452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00014**	**-.00028**	**.00070**	F **-.02150**	**.13434**	**-.00253**
Stddev	.00012	.00026	.00155	.00014	.02008	.10260	.00248
%RSD	40.553	181.01	560.57	19.702	93.409	76.373	98.086
#1	.00042	-.00027	-.00068	.00061	-.00792	.25056	-.00103
#2	.00018	.00015	-.00158	.00086	-.01202	.09612	-.00540
#3	.00028	-.00032	.00143	.00064	-.04457	.05633	-.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.05638**	**.00185**	**-.00002**	**.02605**	**.00099**	**-.00557**	**.00207**
Stddev	.03476	.00092	.00046	.02247	.00078	.00389	.00038
%RSD	61.651	49.864	2417.4	86.260	78.422	69.824	18.298
#1	-.05604	.00185	-.00039	.03954	.00107	-.00980	.00164
#2	-.09130	.00093	.00050	.00011	.00018	-.00478	.00233
#3	-.02179	.00277	-.00018	.03850	.00173	-.00214	.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: PBW 9R Acquired: 8/10/2016 11:11:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	-.00096	.00134	-.00028	.00030	.00533	-.00384
Stddev	.00169	.00328	.00068	.00055	.00017	.00208	.00057
%RSD	263.34	341.96	50.937	195.30	58.465	39.019	14.898
#1	-.00008	.00263	.00140	-.00088	.00012	.00583	-.00439
#2	.00257	-.00172	.00063	.00019	.00046	.00711	-.00325
#3	-.00057	-.00378	.00199	-.00015	.00031	.00304	-.00388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00070	.00035	-.00013
Stddev	.00090	.00008	.00031
%RSD	129.30	22.759	240.94
#1	.00131	.00044	-.00048
#2	.00112	.00033	.00006
#3	-.00034	.00028	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12929.	78338.	3337.6
Stddev	9.	209.	36.3
%RSD	.06756	.26688	1.0866
#1	12927.	78105.	3295.9
#2	12921.	78507.	3361.6
#3	12939.	78403.	3355.4

Approved: August 11, 2016

Sample Name: LCSW 9R Acquired: 8/10/2016 11:15:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20599	5.1587	.20992	1.0162	.53601	.02531	5.4484	.02588
Stddev	.00317	.0113	.00519	.0008	.00670	.00008	.0746	.00072
%RSD	1.5393	.21982	2.4705	.07827	1.2500	.30321	1.3689	2.7707
#1	.20725	5.1657	.21259	1.0155	.54374	.02531	5.5345	.02595
#2	.20239	5.1456	.21323	1.0160	.53255	.02523	5.4051	.02656
#3	.20834	5.1647	.20394	1.0171	.53175	.02538	5.4056	.02513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10548	.25968	.26421	2.1472	25.871	.52944	5.3555	.26733
Stddev	.00319	.00011	.00752	.0174	.480	.00685	.1318	.00214
%RSD	3.0240	.04065	2.8465	.81039	1.8564	1.2931	2.4614	.80030
#1	.10689	.25979	.26865	2.1601	26.423	.53392	5.4968	.26980
#2	.10773	.25959	.26845	2.1540	25.555	.53283	5.3337	.26625
#3	.10183	.25965	.25553	2.1274	25.634	.52156	5.2359	.26596
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52992	26.005	.26434	5.0852	.26415	.62535	.20052	2.6170
Stddev	.01429	.356	.00659	.1047	.00479	.01586	.00170	.0471
%RSD	2.6961	1.3695	2.4913	2.0587	1.8139	2.5363	.84700	1.8010
#1	.53907	26.416	.26863	5.1474	.26809	.63626	.20177	2.6452
#2	.53722	25.820	.26764	5.1439	.26555	.63264	.19858	2.6432
#3	.51345	25.780	.25676	4.9644	.25882	.60716	.20120	2.5625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LCSW 9R Acquired: 8/10/2016 11:15:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52205	.54119	.52081	.26114	.51606	.51812	.00044
Stddev	.01652	.00565	.01839	.00254	.00070	.01376	.00050
%RSD	3.1641	1.0437	3.5315	.97361	.13593	2.6566	111.87
#1	.53347	.54771	.52993	.26188	.51528	.52649	.00086
#2	.52957	.53821	.53286	.26323	.51627	.52564	-.00010
#3	.50311	.53766	.49964	.25831	.51664	.50224	.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12732.	76909.	3296.0
Stddev	20.	193.	28.9
%RSD	.15831	.25065	.87726
#1	12711.	77017.	3263.5
#2	12733.	76686.	3318.8
#3	12751.	77022.	3305.6

Approved: August 11, 2016

Sample Name: L1608015101 Acquired: 8/10/2016 11:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00917	.00221	.03938	.02005	.00011	9.1986	.00035
Stddev	.00227	.00315	.00241	.00293	.00052	.00003	.0839	.00021
%RSD	2482.0	34.357	109.07	7.4318	2.6002	25.018	.91262	58.905
#1	-.00218	.01273	.00465	.04225	.01991	.00013	9.2786	.00042
#2	.00236	.00800	.00216	.03950	.02063	.00013	9.2059	.00052
#3	.00009	.00677	-.00017	.03640	.01962	.00008	9.1112	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.00497	.00221	.27161	.20834	-.00587	.02304	.65142
Stddev	.00026	.00035	.00034	.03132	.03876	.00254	.07180	.00608
%RSD	32.949	6.9772	15.365	11.533	18.603	43.199	311.58	.93270
#1	.00077	.00458	.00236	.25507	.22951	-.00591	.05666	.65844
#2	.00108	.00512	.00244	.25201	.16361	-.00332	.07186	.64775
#3	.00056	.00523	.00182	.30773	.23191	-.00839	-.05940	.64808
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01536	140.87	.11415	-.00374	.00029	-.00009	.00438	.03416
Stddev	.00192	1.19	.01298	.00619	.00315	.00149	.00586	.00497
%RSD	12.509	.84786	11.369	165.58	1069.0	1599.5	133.82	14.533
#1	.01646	142.22	.12228	-.00826	-.00229	-.00105	.00681	.03644
#2	.01647	140.44	.12100	-.00626	.00381	-.00085	.00864	.03759
#3	.01314	139.96	.09919	.00331	-.00064	.00162	-.00231	.02847
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608015101 Acquired: 8/10/2016 11:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.04462	.00438	.00189	.07769	.01768	-.00028
Stddev	.00011	.00035	.00478	.00511	.00106	.00214	.00020
%RSD	141.32	.78840	109.14	270.81	1.3660	12.129	71.342
#1	.00007	.04495	.00088	-.00382	.07647	.01905	-.00021
#2	.00019	.04465	.00242	.00605	.07839	.01879	-.00050
#3	-.00003	.04425	.00982	.00344	.07821	.01521	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12896.	76941.	3355.1
Stddev	87.	61.	13.5
%RSD	.67213	.07903	.40233
#1	12824.	76946.	3340.2
#2	12871.	76999.	3358.6
#3	12992.	76877.	3366.4

Approved: August 11, 2016

Sample Name: L1608015101S Acquired: 8/10/2016 11:22:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19920**	**5.0377**	**.20685**	**1.0325**	**.54634**	**.02490**	**14.443**	**.02554**
Stddev	.00118	.0106	.00208	.0019	.00660	.00008	.115	.00020
%RSD	.59234	.21008	1.0039	.18906	1.2079	.32911	.79579	.78278
#1	.19886	5.0495	.20924	1.0338	.55270	.02480	14.570	.02532
#2	.19823	5.0348	.20587	1.0335	.54680	.02493	14.412	.02564
#3	.20052	5.0289	.20545	1.0302	.53952	.02496	14.347	.02568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10379**	**.25696**	**.25808**	**2.3726**	**25.733**	**.52075**	**5.2879**	**.91571**
Stddev	.00118	.00079	.00165	.0177	.184	.00757	.0380	.01133
%RSD	1.1365	.30819	.63954	.74792	.71590	1.4541	.71858	1.2374
#1	.10301	.25699	.25910	2.3928	25.894	.52807	5.3253	.92743
#2	.10320	.25774	.25617	2.3658	25.774	.52123	5.2493	.91490
#3	.10515	.25615	.25896	2.3593	25.532	.51295	5.2890	.90481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54032**	**167.83**	**.38060**	**5.1013**	**.25761**	**.61590**	**.19807**	**2.6306**
Stddev	.00393	1.46	.00276	.0334	.00270	.00676	.00343	.0178
%RSD	.72689	.86699	.72543	.65436	1.0475	1.0971	1.7320	.67603
#1	.53919	169.21	.37856	5.0855	.25796	.61066	.20135	2.6247
#2	.53707	167.97	.37949	5.0787	.25476	.61350	.19836	2.6164
#3	.54468	166.31	.38374	5.1396	.26012	.62353	.19450	2.6505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608015101S Acquired: 8/10/2016 11:22:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51307**	**.57413**	**.51039**	**.25416**	**.58178**	**.52932**	**.00081**
Stddev	.00403	.00525	.00531	.00253	.00185	.00356	.00032
%RSD	.78617	.91434	1.0397	.99627	.31720	.67296	39.381
#1	.51023	.58006	.51146	.25536	.58356	.52758	.00092
#2	.51130	.57224	.51508	.25125	.57988	.52696	.00106
#3	.51769	.57008	.50463	.25587	.58192	.53342	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12743.**	**76431.**	**3329.6**
Stddev	82.	255.	26.1
%RSD	.64255	.33377	.78427
#1	12775.	76189.	3300.0
#2	12804.	76407.	3339.5
#3	12650.	76698.	3349.3

Approved: August 11, 2016

Sample Name: L1608015101SD Acquired: 8/10/2016 11:26:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19941	5.0263	.20500	1.0328	.52556	.02466	13.899	.02502
Stddev	.00076	.0122	.00111	.0036	.00174	.00010	.050	.00007
%RSD	.38000	.24238	.54159	.34406	.33108	.42249	.36188	.26668
#1	.19853	5.0331	.20521	1.0317	.52511	.02473	13.849	.02495
#2	.19982	5.0334	.20380	1.0368	.52748	.02454	13.897	.02508
#3	.19987	5.0122	.20600	1.0299	.52408	.02471	13.950	.02504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10155	.25538	.25426	2.2736	24.980	.50518	5.0106	.88638
Stddev	.00016	.00034	.00112	.0376	.094	.00346	.0532	.00464
%RSD	.15718	.13323	.44040	1.6533	.37717	.68484	1.0625	.52384
#1	.10161	.25572	.25315	2.3121	24.977	.50710	5.0408	.88218
#2	.10167	.25504	.25539	2.2369	24.887	.50727	4.9492	.88559
#3	.10137	.25538	.25425	2.2717	25.075	.50119	5.0419	.89136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53120	161.94	.37326	5.0220	.25471	.60987	.19173	2.5755
Stddev	.00096	.38	.00116	.0184	.00071	.00358	.00305	.0078
%RSD	.17985	.23488	.31096	.36597	.27798	.58631	1.5901	.30363
#1	.53141	161.73	.37211	5.0169	.25553	.60669	.19492	2.5686
#2	.53202	161.70	.37323	5.0424	.25431	.61374	.19143	2.5840
#3	.53015	162.37	.37443	5.0068	.25429	.60919	.18885	2.5739
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608015101SD Acquired: 8/10/2016 11:26:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG578986-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50421	.55518	.50079	.24947	.57774	.52300	.00044
Stddev	.00183	.00175	.01116	.00239	.00143	.00058	.00035
%RSD	.36378	.31596	2.2278	.95777	.24809	.11062	80.955
#1	.50335	.55355	.49551	.24713	.57818	.52275	.00084
#2	.50632	.55703	.49325	.24937	.57890	.52366	.00019
#3	.50297	.55496	.51361	.25190	.57614	.52258	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12866.	76696.	3421.9
Stddev	12.	82.	2.0
%RSD	.08994	.10733	.05711
#1	12878.	76648.	3419.7
#2	12855.	76649.	3422.7
#3	12866.	76791.	3423.3

Approved: August 11, 2016

Sample Name: L1608016402 Acquired: 8/10/2016 11:30:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.01152	-.00212	.01352	-.00225	-.00006	2.6205	.00021
Stddev	.00066	.00693	.00182	.00191	.00100	.00001	.0213	.00010
%RSD	232.03	60.196	85.821	14.153	44.538	25.436	.81169	47.029
#1	.00055	-.00375	-.00169	.01475	-.00120	-.00005	2.6253	.00010
#2	-.00047	-.01372	-.00056	.01132	-.00320	-.00005	2.6389	.00029
#3	.00078	-.01709	-.00412	.01450	-.00237	-.00007	2.5972	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.00021	.00258	-.00341	14.602	-.00389	.47019	.00944
Stddev	.00010	.00113	.00122	.00740	.037	.00205	.07661	.00165
%RSD	18.720	545.81	47.487	216.94	.25253	52.638	16.293	17.439
#1	.00066	.00043	.00254	.00414	14.559	-.00370	.54812	.01069
#2	.00054	.00121	.00382	-.00372	14.618	-.00194	.39498	.00757
#3	.00046	-.00102	.00137	-.01066	14.628	-.00602	.46748	.01005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	29.966	.00236	1.6329	.00024	-.00182	.00537	.19055
Stddev	.00020	.241	.00103	.1782	.00079	.00106	.00371	.01701
%RSD	20.808	.80519	43.436	10.914	332.60	57.859	69.098	8.9269
#1	.00105	29.702	.00272	1.7297	.00024	-.00263	.00180	.19766
#2	.00073	30.174	.00316	1.7418	-.00055	-.00221	.00921	.20285
#3	.00109	30.022	.00120	1.4273	.00102	-.00063	.00511	.17114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608016402 Acquired: 8/10/2016 11:30:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00186	.00277	-.00064	.00033	.01428	-.00037
Stddev	.00051	.00018	.00161	.00215	.00027	.00167	.00011
%RSD	212.10	9.5870	58.242	336.84	83.976	11.707	28.495
#1	.00030	.00175	.00372	.00176	.00029	.01495	-.00033
#2	.00072	.00206	.00368	-.00126	.00062	.01552	-.00049
#3	-.00030	.00177	.00091	-.00241	.00007	.01238	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12951.	79840.	3451.2
Stddev	155.	186.	11.4
%RSD	1.1962	.23315	.33151
#1	13122.	79652.	3445.8
#2	12914.	80025.	3443.6
#3	12819.	79842.	3464.4

Approved: August 11, 2016

Sample Name: L1608016404 Acquired: 8/10/2016 11:34:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	.11463	.00026	.01549	.01491	.00001	103.77	.00051
Stddev	.00074	.00774	.00142	.00139	.00129	.00010	.16	.00017
%RSD	105.55	6.7504	552.28	8.9926	8.6228	1922.6	.15064	33.137
#1	-.00093	.12166	.00188	.01634	.01629	.00008	103.67	.00064
#2	-.00131	.10634	-.00040	.01624	.01374	-.00011	103.69	.00058
#3	.00012	.11589	-.00071	.01388	.01470	.00005	103.95	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00359	.00443	.01947	.47018	15.837	.00052	5.0207	.23167
Stddev	.00043	.00016	.00192	.02973	.026	.00155	.1635	.00086
%RSD	12.073	3.5192	9.8815	6.3222	.16368	299.89	3.2565	.36938
#1	.00405	.00426	.02006	.50331	15.813	.00032	4.8468	.23220
#2	.00351	.00450	.02104	.46142	15.833	-.00093	5.0440	.23212
#3	.00320	.00454	.01732	.44583	15.865	.00215	5.1712	.23068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00220	33.252	.00471	56.562	-.00054	.00192	.00069	.38525
Stddev	.00024	.063	.00122	5.242	.00212	.00106	.00803	.02975
%RSD	11.133	.18888	25.967	9.2679	390.22	55.489	1163.8	7.7212
#1	.00202	33.185	.00607	59.840	-.00062	.00080	.00808	.40519
#2	.00247	33.260	.00432	59.330	-.00263	.00203	.00184	.39951
#3	.00210	33.310	.00372	50.516	.00161	.00292	-.00785	.35106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608016404 Acquired: 8/10/2016 11:34:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.07057	-.00514	-.00468	.00177	.11447	-.00029
Stddev	.00119	.00019	.00757	.00088	.00035	.01212	.00046
%RSD	630.87	.27420	147.35	18.861	19.820	10.591	159.03
#1	.00022	.07050	.00085	-.00563	.00178	.12220	-.00073
#2	-.00152	.07042	-.01364	-.00388	.00212	.12070	-.00032
#3	.00074	.07079	-.00261	-.00454	.00142	.10050	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12538.	75732.	3323.3
Stddev	66.	171.	9.1
%RSD	.52447	.22611	.27294
#1	12463.	75913.	3332.9
#2	12562.	75572.	3314.8
#3	12588.	75711.	3322.2

Approved: August 11, 2016

Sample Name: L1608016406 Acquired: 8/10/2016 11:37:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	-.00340	-.00170	.00410	-.00068	-.00014	4.3267	.00010
Stddev	.00202	.00576	.00414	.00063	.00052	.00010	.0342	.00004
%RSD	1016.7	169.28	244.03	15.288	77.040	73.786	.79002	38.963
#1	.00136	-.00979	-.00187	.00434	-.00127	-.00009	4.3393	.00006
#2	.00137	-.00182	-.00574	.00458	-.00047	-.00007	4.2880	.00014
#3	-.00213	.00140	.00253	.00339	-.00029	-.00025	4.3528	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	-.00016	.00120	.01418	1.6352	-.00284	.30579	.02751
Stddev	.00017	.00119	.00148	.02122	.0688	.00259	.06881	.00170
%RSD	174.20	752.07	122.98	149.65	4.2045	91.188	22.504	6.1917
#1	-.00009	-.00149	.00279	.00400	1.6295	-.00011	.24708	.02948
#2	.00007	.00081	.00095	-.00004	1.5695	-.00315	.28877	.02652
#3	-.00027	.00020	-.00013	.03856	1.7067	-.00526	.38152	.02654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.71368	.00101	.05997	.00004	-.00307	.00613	.08787
Stddev	.00019	.03566	.00071	.00331	.00245	.00199	.00562	.01282
%RSD	114.62	4.9970	70.097	5.5273	6913.5	64.766	91.652	14.594
#1	.00036	.74770	.00161	.06298	.00281	-.00440	.00153	.09351
#2	.00015	.67658	.00118	.06051	-.00184	-.00404	.01240	.09691
#3	-.00002	.71677	.00023	.05642	-.00087	-.00078	.00447	.07320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608016406 Acquired: 8/10/2016 11:37:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00072**	**.00847**	**.00394**	**-.00326**	**.00020**	**.00251**	**-.00025**
Stddev	.00023	.00048	.00435	.00087	.00036	.00045	.00029
%RSD	32.427	5.6093	110.46	26.537	183.51	18.007	116.94
#1	-.00089	.00882	-.00055	-.00420	-.00006	.00267	-.00053
#2	-.00045	.00866	.00423	-.00249	.00004	.00287	-.00025
#3	-.00083	.00793	.00813	-.00310	.00061	.00200	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13061.**	**78537.**	**3345.1**
Stddev	130.	36.	23.1
%RSD	.99734	.04538	.69100
#1	13211.	78502.	3318.8
#2	12979.	78574.	3362.1
#3	12992.	78535.	3354.5

Approved: August 11, 2016

Sample Name: L1608016406PS Acquired: 8/10/2016 11:41:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579239-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	-.02583	-.00197	.00203	-.00403	-.00000	-.03156	.00006
Stddev	.00062	.00873	.00071	.00092	.00948	.00006	.01541	.00017
%RSD	45.723	33.793	36.137	45.138	235.27	3534.2	48.837	292.79
#1	.00081	-.01728	-.00147	.00265	.00181	-.00002	-.04902	.00021
#2	.00123	-.02547	-.00278	.00098	.00106	.00006	-.01983	-.00012
#3	.00204	-.03472	-.00165	.00246	-.01496	-.00004	-.02584	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	-.00036	.00159	.00098	.19266	-.00092	.02651	-.00094
Stddev	.00025	.00033	.00075	.02041	.05957	.00405	.03455	.00181
%RSD	319.82	91.150	47.190	2073.6	30.921	440.14	130.34	192.35
#1	-.00036	-.00051	.00110	.02447	.14688	.00078	.01859	.00089
#2	.00011	.00002	.00246	-.00904	.17109	-.00555	-.00339	-.00274
#3	.00002	-.00059	.00122	-.01248	.26001	.00201	.06434	-.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.01497	.00117	.00067	.00102	-.00062	.00387	-.00174
Stddev	.00028	.03433	.00061	.00378	.00082	.00207	.00407	.00299
%RSD	169.72	229.38	52.115	564.58	79.855	331.12	105.38	171.84
#1	.00048	-.00882	.00186	-.00251	.00073	-.00268	.00836	-.00221
#2	.00007	.05433	.00091	-.00033	.00195	.00145	.00043	-.00448
#3	-.00006	-.00060	.00073	.00485	.00040	-.00064	.00281	.00146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608016406PS Acquired: 8/10/2016 11:41:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579239-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00058	-.00028	.00761	.00137	.00120	-.00011	-.00024
Stddev	.00028	.00019	.00803	.00150	.00059	.00005	.00044
%RSD	48.244	69.941	105.63	109.51	48.705	47.267	181.53
#1	-.00082	-.00010	-.00142	-.00033	.00076	-.00016	-.00045
#2	-.00065	-.00024	.01026	.00250	.00187	-.00010	-.00053
#3	-.00027	-.00048	.01397	.00195	.00099	-.00006	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14548.	87407.	5014.3
Stddev	1128.	7822.	2730.8
%RSD	7.7543	8.9488	54.459
#1	15678.	86818.	3342.0
#2	14543.	79897.	3535.5
#3	13422.	95507.	8165.6

Approved: August 11, 2016

Sample Name: L1608016406SDL Acquired: 8/10/2016 11:45:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579239-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	-.00273	-.00145	.00180	-.00223	.00001	.81991	.00011
Stddev	.00091	.00672	.00215	.00332	.00193	.00002	.01792	.00002
%RSD	143.29	245.78	148.67	184.77	86.640	177.92	2.1852	18.069
#1	.00155	-.00123	-.00391	-.00150	-.00057	.00003	.82909	.00011
#2	-.00027	-.01008	.00006	.00175	-.00434	.00002	.79926	.00009
#3	.00062	.00311	-.00049	.00514	-.00176	-.00001	.83138	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	-.00049	.00065	-.00789	.53302	-.00325	.02247	.00417
Stddev	.00030	.00012	.00096	.01440	.11350	.00096	.04120	.00210
%RSD	226.25	24.842	148.14	182.55	21.293	29.349	183.38	50.461
#1	-.00021	-.00062	.00014	-.00767	.65463	-.00216	.04491	.00230
#2	.00029	-.00039	.00005	.00640	.42991	-.00394	.04757	.00376
#3	.00032	-.00045	.00176	-.02239	.51452	-.00366	-.02508	.00645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.13929	.00064	.00945	-.00035	-.00015	.00321	.01398
Stddev	.00006	.03411	.00105	.00209	.00181	.00436	.00359	.00257
%RSD	213.42	24.488	165.38	22.140	518.41	2896.0	111.60	18.355
#1	-.00002	.10005	.00136	.00713	-.00086	-.00214	-.00090	.01681
#2	-.00010	.16186	-.00057	.01002	-.00184	.00485	.00487	.01332
#3	.00003	.15595	.00112	.01119	.00166	-.00315	.00567	.01180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608016406SDL Acquired: 8/10/2016 11:45:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579239-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00090	.00151	.00593	.00189	.00084	.00054	.00042
Stddev	.00054	.00008	.00757	.00088	.00034	.00012	.00003
%RSD	60.165	5.3581	127.60	46.242	40.472	22.067	6.7576
#1	-.00040	.00147	-.00106	.00251	.00046	.00067	.00041
#2	-.00147	.00147	.00488	.00228	.00096	.00053	.00046
#3	-.00083	.00161	.01397	.00089	.00111	.00043	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	13382.	80700.	3428.0
Stddev	43.	88.	15.9
%RSD	.32258	.10952	.46510
#1	13395.	80725.	3409.6
#2	13418.	80774.	3437.5
#3	13334.	80602.	3436.8

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 11:49:46 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41687**	**10.369**	**.41579**	**.52978**	**1.0523**	**.05121**	**10.429**	**.05208**
Stddev	.00200	.009	.01420	.00115	.0029	.00006	.048	.00098
%RSD	.47885	.09043	3.4142	.21670	.27068	.11176	.45868	1.8837
#1	.41912	10.369	.42315	.53111	1.0537	.05125	10.470	.05283
#2	.41532	10.360	.42479	.52911	1.0490	.05115	10.377	.05245
#3	.41616	10.379	.39942	.52913	1.0542	.05124	10.441	.05097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20697**	**.51326**	**.52360**	**4.1491**	**50.724**	**1.0421**	**10.463**	**.52891**
Stddev	.00694	.00061	.01407	.0328	.073	.0118	.047	.00441
%RSD	3.3527	.11958	2.6872	.79174	.14442	1.1329	.45350	.83411
#1	.21082	.51271	.53181	4.1566	50.644	1.0552	10.468	.53122
#2	.21113	.51315	.53164	4.1131	50.739	1.0321	10.508	.52382
#3	.19896	.51392	.50735	4.1775	50.788	1.0391	10.414	.53169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0345**	**51.377**	**.52343**	**10.551**	**.52886**	**1.2564**	**.42605**	**5.2460**
Stddev	.0336	.083	.01659	.245	.01174	.0247	.01101	.1142
%RSD	3.2505	.16110	3.1697	2.3255	2.2192	1.9641	2.5852	2.1776
#1	1.0537	51.422	.53380	10.698	.53649	1.2728	.43480	5.3112
#2	1.0542	51.282	.53219	10.687	.53475	1.2684	.42966	5.3127
#3	.99567	51.429	.50429	10.268	.51535	1.2281	.41368	5.1141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 11:49:46 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0377**	**1.0528**	**1.0210**	**.52468**	**1.0189**	**1.0449**	**1.0445**
Stddev	.0376	.0032	.0067	.00384	.0022	.0306	.0040
%RSD	3.6213	.30307	.65784	.73282	.21466	2.9273	.38623
#1	1.0624	1.0551	1.0284	.52597	1.0214	1.0614	1.0477
#2	1.0563	1.0491	1.0191	.52771	1.0181	1.0637	1.0399
#3	.99445	1.0541	1.0154	.52035	1.0173	1.0096	1.0458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12716.**	**76271.**	**3343.9**
Stddev	14.	29.	15.2
%RSD	.10988	.03791	.45361
#1	12721.	76240.	3331.9
#2	12700.	76275.	3361.0
#3	12727.	76297.	3339.0

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 11:53:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	-.00921	-.00066	.00476	-.00220	.00002	.00274	.00010
Stddev	.00126	.00656	.00082	.00236	.00054	.00004	.02401	.00011
%RSD	120.41	71.292	124.98	49.598	24.372	187.95	876.76	105.99
#1	.00155	-.00881	-.00004	.00209	-.00211	.00000	.03045	.00006
#2	.00196	-.01596	-.00160	.00656	-.00277	-.00001	-.01159	.00023
#3	-.00039	-.00285	-.00034	.00564	-.00171	.00006	-.01065	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	-.00004	-.00052	-.01441	.21693	-.00092	-.01163	.00002
Stddev	.00015	.00030	.00074	.04010	.03957	.00134	.04141	.00261
%RSD	752.86	676.98	142.44	278.24	18.241	145.40	355.96	14692.
#1	.00010	.00003	.00032	.00814	.17362	.00012	-.01887	.00118
#2	.00011	.00021	-.00107	.00933	.25119	-.00243	-.04894	-.00297
#3	-.00015	-.00037	-.00081	-.06071	.22598	-.00045	.03292	.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.03934	.00035	-.00125	.00059	.00395	.00737	-.00020
Stddev	.00013	.01110	.00172	.00276	.00323	.00215	.00228	.00045
%RSD	69.951	28.226	490.24	220.15	544.98	54.419	30.913	224.45
#1	.00006	.02846	-.00136	-.00392	.00132	.00639	.00818	-.00058
#2	.00031	.03890	.00207	.00159	-.00294	.00309	.00480	-.00033
#3	.00017	.05065	.00033	-.00144	.00339	.00236	.00914	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 11:53:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**-.00018**	**.00459**	**-.00130**	**.00017**	**-.00014**	**-.00014**
Stddev	.00050	.00031	.00511	.00317	.00066	.00005	.00039
%RSD	149.07	173.74	111.31	243.65	382.87	32.439	285.55
#1	.00024	-.00032	.00858	-.00186	-.00052	-.00020	-.00025
#2	-.00065	-.00039	.00636	-.00416	.00023	-.00011	-.00046
#3	-.00058	.00018	-.00117	.00211	.00081	-.00012	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12933.**	**78122.**	**3374.8**
Stddev	62.	121.	21.1
%RSD	.48035	.15432	.62453
#1	12878.	78107.	3398.6
#2	12921.	78250.	3367.6
#3	13001.	78010.	3358.3

Approved: August 11, 2016

Sample Name: L1608021401 Acquired: 8/10/2016 11:57:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.03566	.00018	.06969	.05690	-.00009	28.138	.00002
Stddev	.00139	.00321	.00168	.00236	.00109	.00001	.101	.00012
%RSD	18977.	8.9953	919.15	3.3804	1.9205	12.928	.35792	572.33
#1	.00161	.03534	-.00165	.06838	.05794	-.00008	28.255	.00016
#2	-.00080	.03901	.00054	.06828	.05698	-.00009	28.077	-.00003
#3	-.00079	.03262	.00166	.07241	.05576	-.00010	28.083	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00041	.00127	.60255	1.4554	.00024	7.2716	.13690
Stddev	.00014	.00019	.00059	.00813	.0331	.00361	.0458	.00191
%RSD	68.893	46.851	46.440	1.3498	2.2721	1500.5	.62968	1.3948
#1	.00007	.00043	.00127	.60947	1.4177	-.00126	7.2943	.13769
#2	.00035	.00058	.00187	.60459	1.4794	.00436	7.2189	.13828
#3	.00019	.00021	.00068	.59359	1.4691	-.00238	7.3016	.13472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00111	81.307	.00119	.09029	-.00103	.00251	.00740	5.1140
Stddev	.00006	.066	.00069	.00805	.00154	.00453	.00795	.4874
%RSD	5.1621	.08079	57.947	8.9183	150.17	180.42	107.39	9.5303
#1	.00110	81.231	.00198	.09244	-.00211	.00391	.00467	5.3736
#2	.00106	81.343	.00074	.09704	.00074	-.00255	.00118	5.4166
#3	.00117	81.346	.00084	.08137	-.00170	.00618	.01635	4.5518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608021401 Acquired: 8/10/2016 11:57:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.43428**	**-.00294**	**-.00190**	**.00096**	**.00276**	**-.00006**
Stddev	.00036	.00011	.00460	.00229	.00024	.00030	.00065
%RSD	523.37	.02531	156.67	120.61	25.404	11.046	1074.4
#1	-.00048	.43422	-.00696	.00073	.00083	.00289	.00017
#2	.00004	.43441	-.00392	-.00345	.00080	.00297	.00044
#3	.00023	.43421	.00208	-.00297	.00124	.00241	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12608.**	**76006.**	**3343.6**
Stddev	24.	286.	11.7
%RSD	.19382	.37663	.34923
#1	12636.	75821.	3332.9
#2	12600.	76336.	3342.0
#3	12589.	75861.	3356.0

Approved: August 11, 2016

Sample Name: L1608013301 Acquired: 8/10/2016 12:01:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	10.684	.00174	.05944	.08302	-.00005	13.831	.00470
Stddev	.00050	.003	.00202	.00185	.00100	.00005	.026	.00004
%RSD	802.43	.03189	116.17	3.1091	1.1998	87.276	.18871	.91132
#1	-.00051	10.681	.00406	.06143	.08330	-.00009	13.809	.00466
#2	.00025	10.687	.00071	.05778	.08384	-.00006	13.825	.00471
#3	.00045	10.686	.00043	.05911	.08191	-.00000	13.860	.00474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.4239	.02969	.07925	1.4922	1.5655	.72364	3.0453	.04687
Stddev	.0757	.00070	.00452	.0388	.0477	.00113	.0772	.00204
%RSD	5.3193	2.3476	5.7027	2.6009	3.0492	.15572	2.5346	4.3455
#1	1.4677	.03047	.08259	1.5003	1.5104	.72252	3.0000	.04557
#2	1.4676	.02946	.08106	1.4500	1.5932	.72365	3.0016	.04582
#3	1.3365	.02914	.07411	1.5264	1.5930	.72477	3.1345	.04922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00373	91.264	3.8673	13.443	.00614	-.00060	.00471	.53083
Stddev	.00094	.475	.2068	.903	.00338	.00031	.00720	.03353
%RSD	25.125	.52023	5.3474	6.7206	54.986	51.148	152.85	6.3173
#1	.00389	91.644	3.9854	13.999	.00600	-.00033	.00873	.55263
#2	.00457	90.732	3.9879	13.930	.00958	-.00093	.00900	.54765
#3	.00272	91.417	3.6285	12.401	.00284	-.00054	-.00360	.49222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608013301 Acquired: 8/10/2016 12:01:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.11284	.00930	.00295	.00146	.24310	-.00026
Stddev	.00082	.00038	.01104	.00111	.00044	.01213	.00029
%RSD	246.13	.33512	118.66	37.649	29.973	4.9906	113.87
#1	.00059	.11259	.01341	.00423	.00156	.25099	-.00027
#2	-.00059	.11327	.01769	.00244	.00184	.24918	.00004
#3	.00100	.11265	-.00320	.00219	.00098	.22913	-.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	13446.	80936.	3554.6
Stddev	14.	61.	13.5
%RSD	.10552	.07526	.37839
#1	13460.	80896.	3541.6
#2	13447.	80905.	3568.5
#3	13431.	81006.	3553.8

Approved: August 11, 2016

Sample Name: L1608013302 Acquired: 8/10/2016 12:05:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	18.806	-.00036	.08971	.14689	-.00000	21.466	.00816
Stddev	.00026	.174	.00116	.00222	.00322	.00007	.312	.00032
%RSD	30.360	.92471	320.92	2.4754	2.1930	1695.1	1.4540	3.8676
#1	.00102	18.614	.00058	.08843	.14365	-.00006	21.198	.00852
#2	.00099	18.850	-.00166	.08843	.14694	.00007	21.390	.00802
#3	.00056	18.953	-.00001	.09227	.15009	-.00003	21.809	.00794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.5817	.05332	.14641	2.5549	2.3025	.72509	4.6080	.07768
Stddev	.0971	.00136	.00609	.0135	.1293	.01386	.1519	.00154
%RSD	3.7620	2.5475	4.1625	.52933	5.6143	1.9110	3.2963	1.9850
#1	2.6248	.05180	.14840	2.5416	2.4492	.71420	4.4615	.07714
#2	2.6499	.05374	.15126	2.5686	2.2053	.72038	4.5977	.07649
#3	2.4705	.05441	.13957	2.5546	2.2530	.74069	4.7648	.07942
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00627	88.842	7.0667	23.693	.01133	.00076	.01165	.82234
Stddev	.00010	1.060	.2741	1.154	.00428	.00071	.00211	.03398
%RSD	1.6192	1.1926	3.8780	4.8693	37.758	93.209	18.076	4.1327
#1	.00638	87.799	7.1921	24.260	.01076	.00155	.01319	.84005
#2	.00618	88.809	7.2556	24.454	.00736	.00054	.01251	.84380
#3	.00625	89.917	6.7524	22.366	.01586	.00019	.00925	.78315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608013302 Acquired: 8/10/2016 12:05:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.18106	.00534	.00185	.00134	.45380	-.00026
Stddev	.00055	.00353	.00525	.00060	.00040	.01594	.00039
%RSD	130.76	1.9486	98.175	32.530	30.024	3.5133	146.62
#1	.00058	.17743	.00383	.00241	.00095	.45873	-.00017
#2	.00088	.18128	.00102	.00121	.00132	.46670	.00007
#3	-.00019	.18448	.01118	.00193	.00176	.43598	-.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	13184.	79689.	3524.1
Stddev	38.	349.	4.3
%RSD	.29175	.43777	.12177
#1	13224.	80056.	3523.3
#2	13181.	79650.	3528.8
#3	13147.	79362.	3520.3

Approved: August 11, 2016

Sample Name: L1608013303 Acquired: 8/10/2016 12:08:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00214**	**24.215**	**.00231**	**.11470**	**.19166**	**-.00005**	**27.792**	**.01045**
Stddev	.00119	.128	.00243	.00275	.00138	.00010	.327	.00081
%RSD	55.559	.52822	105.28	2.3960	.71861	178.55	1.1776	7.7504
#1	.00082	24.087	.00030	.11174	.19011	-.00015	27.514	.01084
#2	.00312	24.216	.00162	.11518	.19214	-.00006	27.708	.01100
#3	.00248	24.342	.00501	.11718	.19274	.00005	28.153	.00952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2487**	**.06836**	**.18344**	**3.3107**	**2.7898**	**.83910**	**5.9342**	**.10252**
Stddev	.1870	.00077	.01012	.0408	.1307	.01168	.0649	.00304
%RSD	5.7557	1.1241	5.5178	1.2314	4.6865	1.3920	1.0940	2.9688
#1	3.3517	.06757	.18929	3.2679	2.6443	.83043	5.9055	.09912
#2	3.3615	.06841	.18927	3.3150	2.8974	.83450	6.0085	.10345
#3	3.0328	.06911	.17175	3.3491	2.8278	.85239	5.8886	.10498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00734**	**98.067**	**8.8837**	**29.747**	**.01281**	**.00004**	**.00603**	**1.0564**
Stddev	.00062	1.019	.5140	2.024	.00218	.00375	.00672	.0645
%RSD	8.3992	1.0392	5.7853	6.8049	16.984	8796.6	111.37	6.1079
#1	.00802	96.983	9.1684	30.847	.01236	.00330	-.00108	1.0903
#2	.00720	98.213	9.1924	30.984	.01517	-.00405	.01227	1.0970
#3	.00681	99.005	8.2904	27.411	.01089	.00088	.00691	.98200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608013303 Acquired: 8/10/2016 12:08:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00136**	**.23605**	**.00304**	**.00451**	**.00146**	**.55633**	**-.00040**
Stddev	.00072	.00265	.00504	.00303	.00019	.03143	.00019
%RSD	53.034	1.1215	165.73	67.314	12.992	5.6500	47.619
#1	.00213	.23392	.00549	.00308	.00168	.57359	-.00044
#2	.00126	.23521	-.00275	.00245	.00132	.57536	-.00057
#3	.00070	.23901	.00638	.00799	.00138	.52005	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13164.**	**79207.**	**3519.3**
Stddev	17.	139.	6.7
%RSD	.12653	.17587	.19031
#1	13177.	79047.	3512.0
#2	13171.	79300.	3525.2
#3	13146.	79275.	3520.6

Approved: August 11, 2016

Sample Name: L1608020501 Acquired: 8/10/2016 12:12:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.03087	.00075	.01280	.05999	-.00004	49.698	.00039
Stddev	.00119	.01085	.00191	.00137	.00059	.00002	.075	.00017
%RSD	117.54	35.139	254.75	10.689	.98724	60.101	.15043	44.245
#1	.00225	.02103	.00100	.01184	.05937	-.00004	49.731	.00044
#2	.00091	.02908	.00253	.01218	.06055	-.00005	49.751	.00020
#3	-.00012	.04251	-.00127	.01436	.06005	-.00001	49.612	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00151	.00150	.21343	1.2066	.00234	4.5386	.06667
Stddev	.00025	.00060	.00081	.02917	.1030	.00348	.0981	.00301
%RSD	48.535	39.780	53.901	13.669	8.5354	149.08	2.1609	4.5083
#1	.00023	.00220	.00223	.19055	1.1089	.00619	4.6215	.06507
#2	.00067	.00113	.00063	.20346	1.3141	-.00058	4.5640	.06481
#3	.00067	.00120	.00166	.24628	1.1967	.00140	4.4304	.07014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	4.2236	.00202	.01727	.00130	.00142	.00241	3.6379
Stddev	.00004	.0138	.00081	.00503	.00067	.00350	.00376	.3931
%RSD	10.350	.32720	39.937	29.133	51.740	246.47	156.17	10.805
#1	.00039	4.2375	.00245	.02289	.00202	.00547	.00674	3.8801
#2	.00033	4.2098	.00252	.01575	.00068	-.00064	.00019	3.8493
#3	.00040	4.2234	.00109	.01318	.00121	-.00057	.00029	3.1844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608020501 Acquired: 8/10/2016 12:12:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.18705	-.00931	.00018	.00022	.02986	-.00036
Stddev	.00045	.00044	.00691	.00363	.00061	.00385	.00024
%RSD	162.54	.23681	74.280	1975.8	274.00	12.878	67.294
#1	-.00006	.18705	-.01702	.00425	.00062	.03232	-.00019
#2	.00010	.18749	-.00726	-.00096	-.00048	.03182	-.00063
#3	.00079	.18660	-.00365	-.00274	.00053	.02543	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12613.	76516.	3350.6
Stddev	13.	292.	3.8
%RSD	.10633	.38099	.11246
#1	12599.	76558.	3351.9
#2	12626.	76205.	3346.4
#3	12614.	76784.	3353.6

Approved: August 11, 2016

Sample Name: L1608021001 Acquired: 8/10/2016 12:16:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00121	.02276	-.00069	.10757	.54668	-.00007	20.595	.00020
Stddev	.00108	.00218	.00139	.00149	.00159	.00006	.011	.00013
%RSD	89.334	9.5615	200.56	1.3869	.29078	87.642	.05410	64.878
#1	.00238	.02040	.00011	.10901	.54852	-.00009	20.582	.00013
#2	.00026	.02319	-.00230	.10603	.54580	-.00013	20.599	.00035
#3	.00099	.02468	.00011	.10768	.54573	-.00000	20.604	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00045	.03912	.32455	1.4789	.00598	3.3307	.01509
Stddev	.00016	.00049	.00442	.02387	.0421	.00337	.0591	.00239
%RSD	183.71	109.01	11.300	7.3559	2.8489	56.293	1.7746	15.852
#1	-.00007	.00011	.04134	.30314	1.4365	.00380	3.3714	.01476
#2	.00009	-.00064	.04199	.35030	1.4794	.00986	3.2629	.01762
#3	.00024	-.00082	.03403	.32021	1.5207	.00428	3.3579	.01287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00366	134.70	.00101	.03127	.01129	.00325	.00350	4.2712
Stddev	.00034	.22	.00046	.00209	.00306	.00297	.00232	.3929
%RSD	9.3484	.16335	45.841	6.6728	27.110	91.393	66.208	9.1996
#1	.00390	134.95	.00099	.02907	.01310	.00217	.00190	4.5058
#2	.00380	134.60	.00056	.03150	.01301	.00098	.00244	4.4902
#3	.00327	134.55	.00149	.03323	.00776	.00661	.00615	3.8176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608021001 Acquired: 8/10/2016 12:16:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00208	.47276	-.00179	.00066	.00023	.01057	.00014
Stddev	.00038	.00078	.00051	.00186	.00050	.00123	.00025
%RSD	18.239	.16462	28.671	280.62	213.17	11.644	178.90
#1	.00183	.47288	-.00129	.00076	.00024	.01135	-.00015
#2	.00189	.47193	-.00176	-.00124	.00073	.01121	.00026
#3	.00251	.47347	-.00232	.00248	-.00027	.00915	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12503.	75627.	3325.5
Stddev	22.	127.	15.1
%RSD	.17909	.16821	.45455
#1	12490.	75481.	3314.8
#2	12529.	75712.	3342.8
#3	12490.	75689.	3318.8

Approved: August 11, 2016

Sample Name: L1608021101 Acquired: 8/10/2016 12:20:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	.06644	-.00263	.05903	.05556	-.00004	50.951	.00025
Stddev	.00045	.00919	.00159	.00163	.00115	.00006	.166	.00014
%RSD	44.056	13.831	60.342	2.7689	2.0722	169.29	.32535	55.597
#1	.00149	.07693	-.00297	.05993	.05639	-.00008	51.044	.00037
#2	.00059	.06261	-.00401	.06001	.05424	.00003	50.759	.00027
#3	.00098	.05979	-.00090	.05714	.05604	-.00007	51.048	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	-.00025	.00140	.09632	4.4199	.00680	12.915	.00700
Stddev	.00031	.00157	.00027	.01573	.0875	.00285	.122	.00281
%RSD	147.36	618.37	19.194	16.336	1.9806	41.945	.94784	40.073
#1	-.00010	.00134	.00153	.08381	4.3224	.00683	12.883	.01024
#2	.00003	-.00030	.00157	.09116	4.4918	.00393	12.811	.00558
#3	-.00057	-.00180	.00109	.11399	4.4455	.00964	13.050	.00520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	25.918	.00077	.13900	-.00255	.00105	.00102	4.5943
Stddev	.00042	.086	.00047	.01520	.00017	.00203	.00266	.4481
%RSD	67.372	.33075	61.211	10.932	6.6928	194.09	260.83	9.7541
#1	.00080	26.017	.00023	.14551	-.00251	-.00075	-.00195	4.8651
#2	.00015	25.872	.00106	.14986	-.00273	.00064	.00316	4.8407
#3	.00093	25.865	.00103	.12164	-.00240	.00325	.00185	4.0770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608021101 Acquired: 8/10/2016 12:20:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.49940**	**-.00221**	**-.00135**	**.00019**	**.02090**	**-.00062**
Stddev	.00073	.00244	.00664	.00100	.00027	.00241	.00041
%RSD	197.14	.48869	300.87	74.309	144.54	11.536	66.196
#1	.00034	.50127	-.00598	-.00140	.00024	.02237	-.00062
#2	-.00113	.49664	.00546	-.00233	-.00011	.02222	-.00021
#3	-.00033	.50028	-.00609	-.00032	.00042	.01812	-.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12506.**	**75934.**	**3298.1**
Stddev	25.	14.	4.0
%RSD	.19860	.01862	.12275
#1	12482.	75919.	3293.5
#2	12505.	75936.	3299.3
#3	12531.	75947.	3301.3

Approved: August 11, 2016

Sample Name: L1608021301 Acquired: 8/10/2016 12:24:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.05599	-.00050	.05614	.05054	-.00004	38.547	.00020
Stddev	.00087	.00426	.00171	.00180	.00094	.00004	.148	.00002
%RSD	765.56	7.6003	344.48	3.2137	1.8617	89.186	.38484	12.171
#1	-.00088	.05846	.00060	.05454	.05114	-.00008	38.473	.00017
#2	.00048	.05844	-.00247	.05578	.04945	-.00005	38.450	.00022
#3	.00075	.05108	.00037	.05809	.05102	-.00000	38.718	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	-.00050	.00163	.06168	1.4199	.00150	9.2957	.00168
Stddev	.00042	.00075	.00147	.01640	.0688	.00366	.1045	.00272
%RSD	253.66	151.40	90.109	26.594	4.8429	244.56	1.1236	161.87
#1	.00031	-.00133	.00160	.06354	1.3662	.00288	9.3537	.00345
#2	-.00032	.00014	.00311	.07707	1.3962	-.00266	9.1751	-.00145
#3	-.00049	-.00030	.00017	.04442	1.4974	.00427	9.3583	.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	28.466	.00019	.01585	.00094	-.00241	.00188	4.0213
Stddev	.00021	.202	.00023	.00619	.00327	.00160	.00163	.3940
%RSD	35.137	.71067	122.52	39.042	348.56	66.392	86.949	9.7970
#1	.00046	28.654	.00001	.01357	-.00182	-.00371	.00310	4.2668
#2	.00083	28.252	.00045	.02286	.00008	-.00062	.00250	4.2302
#3	.00048	28.491	.00011	.01113	.00455	-.00290	.00002	3.5669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608021301 Acquired: 8/10/2016 12:24:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.42602**	**.00369**	**-.00099**	**.00034**	**.00204**	**-.00021**
Stddev	.00115	.00027	.00472	.00076	.00015	.00029	.00031
%RSD	502.66	.06256	127.77	76.815	44.153	14.365	148.66
#1	-.00060	.42633	.00079	-.00080	.00017	.00227	-.00046
#2	-.00025	.42584	.00115	-.00183	.00045	.00215	-.00031
#3	.00154	.42589	.00913	-.00034	.00041	.00171	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12848.**	**77906.**	**3377.8**
Stddev	37.	217.	17.3
%RSD	.28904	.27870	.51329
#1	12874.	78000.	3357.9
#2	12865.	77658.	3385.9
#3	12805.	78061.	3389.6

Approved: August 11, 2016

Sample Name: L1608021302 Acquired: 8/10/2016 12:28:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00149	.01808	.00062	.06130	.09474	-.00008	49.069	.00029
Stddev	.00068	.01039	.00116	.00105	.00116	.00004	.491	.00019
%RSD	45.690	57.431	186.47	1.7057	1.2295	54.862	1.0009	67.464
#1	.00125	.01767	-.00048	.06010	.09459	-.00009	49.280	.00029
#2	.00097	.02867	.00051	.06188	.09597	-.00003	49.419	.00048
#3	.00227	.00791	.00184	.06193	.09365	-.00012	48.508	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	-.00052	.00170	.17330	1.4848	.00227	8.3364	.06865
Stddev	.00008	.00090	.00182	.03390	.1211	.00219	.1409	.00542
%RSD	32.379	171.79	106.82	19.560	8.1583	96.244	1.6904	7.8989
#1	-.00029	-.00038	.00096	.13430	1.6097	-.00020	8.4951	.07221
#2	-.00016	-.00148	.00377	.19564	1.4771	.00308	8.2259	.07133
#3	-.00030	.00029	.00037	.18997	1.3678	.00394	8.2882	.06241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	50.636	.00127	.00973	.00066	-.00126	.00410	4.7446
Stddev	.00030	.231	.00093	.00578	.00183	.00383	.00201	.4114
%RSD	33.430	.45713	73.026	59.350	275.19	302.88	48.991	8.6721
#1	.00124	50.899	.00230	.01493	.00032	.00176	.00187	4.9894
#2	.00068	50.461	.00052	.01075	.00264	-.00557	.00468	4.9747
#3	.00078	50.549	.00098	.00352	-.00097	.00001	.00576	4.2695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608021302 Acquired: 8/10/2016 12:28:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.67990	-.00606	-.00119	-.00037	.00480	.00025
Stddev	.00038	.00365	.00311	.00256	.00015	.00059	.00057
%RSD	267.53	.53748	51.372	215.88	39.724	12.279	232.96
#1	.00003	.68364	-.00909	-.00148	-.00021	.00514	.00029
#2	-.00017	.67972	-.00622	-.00359	-.00049	.00513	-.00035
#3	.00057	.67634	-.00287	.00151	-.00041	.00412	.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12574.	76650.	3314.1
Stddev	32.	234.	27.3
%RSD	.25628	.30473	.82343
#1	12566.	76799.	3287.5
#2	12609.	76381.	3312.8
#3	12546.	76771.	3342.0

Approved: August 11, 2016

Sample Name: L1608021302 Acquired: 8/10/2016 12:31:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00241**	s **-.06349**	k **-.00290**	s **-.00017**	**4.3097**	s **-.00016**
Stddev	.00814	.00475	.00082	.00244	7.4817	.00018
%RSD	338.36	7.4773	28.232	1477.1	173.60	115.45
#1	-.01176	-.06892	-.00284	-.00290	12.949	-.00037
#2	.00312	-.06009	-.00375	.00180	-.00738	-.00005
#3	s .00141	s -.06147	k -.00211	s .00060	-.01242	s -.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.4428**	k **.00045**	k **.00570**	s **-.00097**	k **.01116**	kF **-6.6263**
Stddev	7.6854	.00053	.01008	.00038	.01950	11.485
%RSD	172.98	119.30	176.80	38.917	174.72	173.32
#1	13.317	.00106	.01735	-.00122	.03368	-19.888
#2	.03284	.00018	-.00012	-.00116	-.00018	-.0014
#3	-.02142	k .00010	k -.00012	s -.00054	k -.00002	k .0100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit						720.00
Low Limit						-.02000

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-67.892**	F **-2.2488**	kF **-16.811**	kF **-.48245**	k **.00016**	**8.6342**
Stddev	117.98	3.8980	29.039	.83530	.00013	14.971
%RSD	173.78	173.33	172.74	173.14	78.147	173.39
#1	-204.13	-6.7499	-50.342	-1.4470	.00031	25.921
#2	.183	.00240	-.0598	.00120	.00006	-.00277
#3	.269	.00097	k -.0309	k -.00158	k .00012	-.01585
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass
High Limit	450.00	36.000	900.00	36.000		
Low Limit	-.50000	-.10000	-.10000	-.00300		

Approved: August 11, 2016

Sample Name: L1608021302 Acquired: 8/10/2016 12:31:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00277	k .00666	k .00552	k .00038	k .00877	k -.00829
Stddev	.00074	.00978	.00111	.00460	.00625	.00208
%RSD	26.894	146.82	20.108	1196.6	71.254	25.149
#1	.00301	.01796	.00589	.00552	.01459	-.00868
#2	.00193	.00100	.00428	-.00100	.00216	-.00604
#3	k .00336	k .00103	k .00640	k -.00336	k .00957	k -.01015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00711	.17432	kF -3.4578	k -.00031	s .00368	k -.00046
Stddev	.01123	.30263	6.0044	.00510	.00491	.00007
%RSD	157.97	173.61	173.65	1671.1	133.41	14.529
#1	-.02006	.52377	-10.391	-.00594	.00932	-.00050
#2	-.00032	-.00040	.0036	.00399	.00039	-.00050
#3	k -.00093	-.00042	k .0141	k .00103	s .00133	k -.00038
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000			
Low Limit			-.03000			

Elem	Zr3391
Units	ppm
Avg	kF -.26098
Stddev	.45237
%RSD	173.34
#1	-.78333
#2	.00004
#3	k .00035
Check ?	Chk Fail
High Limit	36.000
Low Limit	-.04000

Approved: August 11, 2016

Sample Name: L1608021302 Acquired: 8/10/2016 12:31:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	19960.	^ *****	3895.7
Stddev	1654.	-----	3472.9
%RSD	8.2851	-----	89.147
#1	20506.	168340.	6.292
#2	18102.	118440.	4994.6
#3	21271.	^ -----	6686.2

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 12:35:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39691**	**9.7893**	**.39114**	**.50578**	**1.0151**	**.04816**	**10.148**	**.04906**
Stddev	.00142	.0296	.01103	.00259	.0044	.00037	.089	.00142
%RSD	.35686	.30288	2.8208	.51276	.43231	.76190	.87582	2.9000
#1	.39788	9.8228	.39729	.50491	1.0102	.04852	10.137	.04997
#2	.39756	9.7791	.39772	.50870	1.0187	.04817	10.066	.04979
#3	.39528	9.7662	.37840	.50373	1.0165	.04779	10.242	.04742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19443**	**.48152**	**.49303**	**3.9435**	**48.356**	**1.0009**	**9.7422**	**.50894**
Stddev	.00592	.00153	.01368	.0296	.187	.0037	.0492	.00384
%RSD	3.0462	.31864	2.7751	.75180	.38627	.37412	.50498	.75474
#1	.19868	.48312	.50232	3.9259	48.152	1.0027	9.7788	.51002
#2	.19693	.48138	.49945	3.9268	48.518	.99660	9.6863	.50468
#3	.18766	.48006	.47732	3.9777	48.397	1.0034	9.7615	.51213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98326**	**49.354**	**.49563**	**9.9980**	**.49785**	**1.1898**	**.40477**	**4.9863**
Stddev	.02945	.239	.01590	.2321	.00697	.0294	.01435	.0984
%RSD	2.9954	.48342	3.2076	2.3218	1.3994	2.4720	3.5454	1.9730
#1	1.0013	49.091	.50726	10.141	.50451	1.2153	.41548	5.0447
#2	.99916	49.557	.50212	10.122	.49843	1.1965	.41036	5.0415
#3	.94927	49.414	.47751	9.7301	.49061	1.1576	.38847	4.8727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 12:35:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97262	1.0152	.96605	.49313	.95230	.99069	.99685
Stddev	.03489	.0058	.00425	.00257	.00322	.02827	.00587
%RSD	3.5875	.56948	.43994	.52143	.33788	2.8537	.58837
#1	.99407	1.0096	.97088	.49401	.95597	1.0058	1.0032
#2	.99144	1.0148	.96288	.49514	.95097	1.0082	.99169
#3	.93236	1.0212	.96438	.49023	.94995	.95807	.99563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	13219.	79042.	3427.6
Stddev	8.	157.	7.3
%RSD	.06286	.19856	.21152
#1	13223.	79128.	3421.9
#2	13225.	78861.	3435.8
#3	13210.	79137.	3425.2

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 12:39:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00207	-.00685	-.00183	.00136	-.00268	-.00009	-.01063	.00026
Stddev	.00081	.00502	.00125	.00176	.00032	.00008	.02507	.00006
%RSD	39.219	73.344	68.446	129.65	11.806	82.793	235.89	23.642
#1	.00177	-.00123	-.00068	-.00067	-.00236	-.00001	-.00979	.00030
#2	.00145	-.00842	-.00316	.00251	-.00299	-.00010	-.03610	.00019
#3	.00300	-.01090	-.00164	.00222	-.00269	-.00016	.01401	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	-.00057	.00094	-.01494	.24022	-.00183	-.08137	.00193
Stddev	.00017	.00063	.00142	.03094	.00425	.00061	.08272	.00268
%RSD	67.068	110.47	150.88	207.12	1.7680	33.223	101.67	139.15
#1	-.00010	.00015	.00060	.02036	.23735	-.00251	-.12598	.00501
#2	-.00043	-.00101	.00251	-.03737	.23822	-.00163	-.13222	.00061
#3	-.00022	-.00084	-.00027	-.02781	.24510	-.00134	.01408	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.05469	.00115	-.00058	-.00041	.00175	.00250	-.00158
Stddev	.00053	.02612	.00008	.00438	.00289	.00462	.00486	.00238
%RSD	1026.2	47.751	6.5685	758.41	697.44	263.45	194.90	150.64
#1	.00052	.08096	.00110	-.00533	-.00269	.00629	.00715	.00049
#2	-.00053	.02873	.00111	.00329	.00283	-.00295	-.00255	-.00419
#3	-.00015	.05438	.00123	.00031	-.00139	.00193	.00289	-.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 12:39:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**-.00000**	**.00158**	**.00021**	**.00074**	**-.00020**	**.00018**
Stddev	.00043	.00016	.00119	.00097	.00048	.00012	.00003
%RSD	63.735	15533.	75.445	471.62	64.418	60.637	18.148
#1	-.00062	.00013	.00123	-.00091	.00045	-.00007	.00018
#2	-.00028	-.00018	.00061	.00067	.00129	-.00022	.00021
#3	-.00113	.00005	.00291	.00085	.00048	-.00031	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13310.**	**80812.**	**3457.1**
Stddev	100.	264.	16.3
%RSD	.75024	.32685	.47234
#1	13201.	80570.	3439.0
#2	13397.	81094.	3470.7
#3	13332.	80773.	3461.6

Approved: August 11, 2016

Sample Name: PBW 8A Acquired: 8/10/2016 12:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.01496	-.00228	.00518	-.00275	-.00005	.08159	.00034
Stddev	.00150	.00429	.00116	.00418	.00052	.00009	.05831	.00008
%RSD	970.18	28.652	50.702	80.781	18.994	195.41	71.467	22.658
#1	-.00188	.01830	-.00347	.00071	-.00243	-.00012	.11147	.00041
#2	.00058	.01013	-.00116	.00582	-.00246	-.00009	.11889	.00026
#3	.00083	.01646	-.00222	.00901	-.00335	.00006	.01440	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	-.00019	.00067	.01504	.21106	-.00270	.02327	.00054
Stddev	.00019	.00024	.00015	.01378	.08258	.00097	.01942	.00194
%RSD	100.74	124.85	22.345	91.620	39.128	35.920	83.466	359.66
#1	-.00032	-.00046	.00050	.00755	.12158	-.00285	.04429	-.00115
#2	.00003	.00001	.00076	.00663	.28436	-.00359	.00598	.00011
#3	-.00027	-.00013	.00075	.03095	.22724	-.00166	.01954	.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.02012	.00096	.00170	.00058	-.00124	.00002	.00099
Stddev	.00039	.02581	.00106	.00451	.00116	.00280	.00469	.00030
%RSD	212.48	128.33	110.23	265.43	200.26	224.68	30717.	30.604
#1	-.00011	.04875	.00073	.00050	.00057	-.00081	.00039	.00128
#2	.00003	-.00137	.00211	.00668	-.00057	-.00423	.00450	.00067
#3	.00063	.01296	.00003	-.00209	.00174	.00131	-.00485	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: PBW 8A Acquired: 8/10/2016 12:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**.00014**	**.00650**	**-.00411**	**.00025**	**.00063**	**-.00012**
Stddev	.00037	.00024	.00574	.00169	.00044	.00041	.00025
%RSD	44.139	171.91	88.385	41.075	179.19	64.113	203.77
#1	-.00042	-.00014	.00464	-.00296	-.00026	.00089	.00001
#2	-.00099	.00029	.00192	-.00605	.00043	.00085	.00003
#3	-.00111	.00026	.01294	-.00332	.00057	.00017	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12474.**	**77455.**	**3313.7**
Stddev	283.	390.	23.2
%RSD	2.2672	.50401	.69999
#1	12631.	77527.	3287.2
#2	12147.	77805.	3323.1
#3	12643.	77034.	3330.6

Approved: August 11, 2016

Sample Name: LCSW 8A Acquired: 8/10/2016 12:47:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20828**	**5.1690**	**.20718**	**1.0949**	**.53342**	**.02468**	**5.4543**	**.02632**
Stddev	.00024	.0111	.00183	.0032	.00230	.00012	.0137	.00022
%RSD	.11737	.21552	.88448	.29313	.43186	.48507	.25058	.85358
#1	.20804	5.1571	.20535	1.0912	.53540	.02454	5.4578	.02608
#2	.20853	5.1710	.20902	1.0965	.53395	.02475	5.4392	.02636
#3	.20826	5.1791	.20717	1.0970	.53089	.02475	5.4659	.02653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10545**	**.25444**	**.26695**	**2.0775**	**25.219**	**.52774**	**5.2841**	**.26081**
Stddev	.00010	.00171	.00143	.0253	.064	.00250	.0374	.00111
%RSD	.09861	.67060	.53558	1.2192	.25500	.47456	.70720	.42637
#1	.10546	.25251	.26798	2.0562	25.261	.52833	5.2978	.26209
#2	.10534	.25574	.26532	2.0707	25.251	.52499	5.3127	.26004
#3	.10555	.25506	.26757	2.1055	25.145	.52989	5.2418	.26030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53463**	**25.593**	**.26944**	**5.1724**	**.26771**	**.64047**	**.20074**	**2.6686**
Stddev	.00087	.083	.00043	.0048	.00384	.00141	.00816	.0038
%RSD	.16310	.32618	.15860	.09251	1.4326	.22087	4.0650	.14167
#1	.53480	25.498	.26915	5.1779	.26564	.64129	.20707	2.6675
#2	.53368	25.653	.26993	5.1696	.27214	.64129	.19153	2.6655
#3	.53540	25.629	.26923	5.1697	.26536	.63884	.20361	2.6728
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LCSW 8A Acquired: 8/10/2016 12:47:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52230	.54051	.51215	.25942	.50306	.52808	.51778
Stddev	.00095	.00169	.00243	.00335	.00023	.00047	.00158
%RSD	.18120	.31294	.47454	1.2897	.04556	.08839	.30496
#1	.52286	.53883	.51488	.25866	.50316	.52766	.51635
#2	.52121	.54048	.51021	.26308	.50280	.52799	.51947
#3	.52284	.54222	.51137	.25652	.50322	.52858	.51751
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12562.	76398.	3346.7
Stddev	7.	121.	8.8
%RSD	.05237	.15876	.26203
#1	12568.	76478.	3354.8
#2	12555.	76258.	3337.4
#3	12564.	76457.	3348.0

Approved: August 11, 2016

Sample Name: L1608000205 Acquired: 8/10/2016 12:51:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20899**	**5.1650**	**.20927**	**1.0400**	**.54348**	**.02494**	**5.5130**	**.02627**
Stddev	.00131	.0240	.00697	.0020	.00171	.00008	.0411	.00082
%RSD	.62455	.46442	3.3324	.19534	.31390	.31170	.74633	3.1327
#1	.21021	5.1378	.21088	1.0400	.54154	.02485	5.4702	.02687
#2	.20913	5.1740	.21530	1.0380	.54477	.02498	5.5522	.02660
#3	.20761	5.1833	.20163	1.0421	.54411	.02499	5.5165	.02533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10546**	**.25732**	**.26776**	**2.1453**	**25.438**	**.53565**	**5.2730**	**.26792**
Stddev	.00326	.00048	.00688	.0258	.091	.00186	.0215	.00024
%RSD	3.0922	.18644	2.5682	1.2031	.35824	.34768	.40725	.09064
#1	.10734	.25686	.27075	2.1205	25.417	.53358	5.2686	.26811
#2	.10734	.25727	.27264	2.1720	25.538	.53617	5.2963	.26765
#3	.10169	.25782	.25989	2.1434	25.359	.53720	5.2541	.26799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53587**	**25.940**	**.26969**	**5.2112**	**.26785**	**.64313**	**.20147**	**2.6773**
Stddev	.01545	.062	.00794	.1121	.00525	.01901	.00110	.0463
%RSD	2.8837	.23764	2.9445	2.1508	1.9617	2.9565	.54548	1.7282
#1	.54534	25.896	.27491	5.2781	.27219	.65198	.20254	2.7089
#2	.54424	26.010	.27362	5.2736	.26935	.65611	.20034	2.6987
#3	.51804	25.914	.26055	5.0818	.26201	.62131	.20153	2.6242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608000205 Acquired: 8/10/2016 12:51:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52106**	**.55049**	**.51196**	**.26364**	**.50877**	**.52990**	**.55333**
Stddev	.01595	.00325	.00378	.00576	.00092	.01448	.00201
%RSD	3.0617	.59085	.73846	2.1835	.18073	2.7332	.36379
#1	.53094	.54678	.50765	.26932	.50795	.53928	.55100
#2	.52958	.55188	.51351	.26381	.50977	.53719	.55440
#3	.50266	.55283	.51473	.25781	.50859	.51322	.55458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12544.**	**76331.**	**3324.1**
Stddev	18.	206.	9.3
%RSD	.14301	.27026	.28097
#1	12528.	76106.	3332.8
#2	12542.	76376.	3314.2
#3	12563.	76511.	3325.2

Approved: August 11, 2016

Sample Name: L1608000206 Acquired: 8/10/2016 12:54:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21253	5.2329	.21058	1.0459	.54768	.02523	5.5576	.02658
Stddev	.00189	.0138	.00228	.0040	.00271	.00001	.0556	.00075
%RSD	.88921	.26473	1.0849	.38633	.49429	.05462	1.0011	2.8136
#1	.21179	5.2444	.21273	1.0413	.54793	.02525	5.4944	.02694
#2	.21112	5.2175	.21084	1.0477	.54486	.02523	5.5790	.02709
#3	.21467	5.2367	.20818	1.0488	.55026	.02522	5.5993	.02572
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10710	.26140	.27062	2.1269	25.805	.54187	5.2117	.27323
Stddev	.00342	.00022	.00842	.0075	.087	.00248	.0542	.00595
%RSD	3.1923	.08255	3.1101	.35151	.33705	.45759	1.0398	2.1774
#1	.10948	.26145	.27517	2.1230	25.812	.53967	5.1663	.27043
#2	.10864	.26116	.27577	2.1355	25.714	.54138	5.2717	.26919
#3	.10318	.26158	.26090	2.1222	25.888	.54456	5.1972	.28006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54190	26.149	.27308	5.2615	.26980	.64692	.20582	2.7050
Stddev	.01463	.226	.00804	.1038	.00455	.01857	.00319	.0493
%RSD	2.7003	.86520	2.9440	1.9733	1.6876	2.8706	1.5512	1.8225
#1	.55052	26.176	.27775	5.3286	.27385	.66049	.20910	2.7396
#2	.55018	25.911	.27769	5.3140	.27067	.65453	.20272	2.7268
#3	.52500	26.361	.26380	5.1419	.26487	.62576	.20563	2.6485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608000206 Acquired: 8/10/2016 12:54:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52753**	**.55465**	**.52116**	**.26274**	**.51511**	**.53518**	**.54686**
Stddev	.01729	.00343	.00382	.00211	.00100	.01532	.00254
%RSD	3.2776	.61856	.73323	.80252	.19425	2.8628	.46517
#1	.53898	.55389	.52017	.26499	.51622	.54395	.54606
#2	.53596	.55167	.51793	.26244	.51428	.54411	.54480
#3	.50764	.55840	.52537	.26080	.51481	.51749	.54970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12543.**	**76390.**	**3335.1**
Stddev	65.	45.	6.4
%RSD	.51571	.05887	.19334
#1	12508.	76370.	3328.9
#2	12504.	76359.	3341.8
#3	12618.	76442.	3334.6

Approved: August 11, 2016

Sample Name: L1608000207 Acquired: 8/10/2016 12:58:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21475	5.2250	.21314	1.0538	.55280	.02532	5.6331	.02679
Stddev	.00056	.0160	.00400	.0011	.00284	.00003	.0335	.00044
%RSD	.26161	.30601	1.8749	.10234	.51361	.12326	.59420	1.6481
#1	.21415	5.2124	.21696	1.0531	.55343	.02535	5.6625	.02700
#2	.21525	5.2430	.21348	1.0532	.55526	.02533	5.5966	.02709
#3	.21486	5.2196	.20899	1.0550	.54969	.02529	5.6400	.02628
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10719	.26267	.27046	2.1550	26.019	.54643	5.3187	.27485
Stddev	.00269	.00218	.00777	.0251	.043	.00098	.1202	.00105
%RSD	2.5140	.83162	2.8721	1.1631	.16684	.17912	2.2591	.38203
#1	.10884	.26039	.27569	2.1368	25.993	.54532	5.2743	.27524
#2	.10864	.26474	.27415	2.1836	26.069	.54680	5.4547	.27566
#3	.10408	.26289	.26153	2.1446	25.994	.54716	5.2270	.27367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54421	26.356	.27347	5.2802	.27332	.65003	.20993	2.7155
Stddev	.01525	.014	.00602	.1120	.00707	.01607	.00632	.0468
%RSD	2.8014	.05241	2.2011	2.1211	2.5883	2.4716	3.0089	1.7228
#1	.55363	26.340	.27727	5.3562	.27725	.65960	.20596	2.7384
#2	.55237	26.367	.27660	5.3329	.27756	.65900	.21721	2.7464
#3	.52662	26.361	.26653	5.1516	.26515	.63148	.20661	2.6617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608000207 Acquired: 8/10/2016 12:58:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52827	.55850	.52703	.26624	.51770	.53744	.55133
Stddev	.01716	.00099	.00843	.00249	.00089	.01420	.00243
%RSD	3.2475	.17732	1.5998	.93615	.17195	2.6422	.44030
#1	.53877	.55926	.51747	.26749	.51677	.54607	.54992
#2	.53758	.55886	.53021	.26786	.51854	.54519	.55414
#3	.50848	.55738	.53341	.26337	.51781	.52105	.54995
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12545.	76323.	3300.4
Stddev	6.	108.	13.1
%RSD	.04719	.14115	.39654
#1	12552.	76222.	3305.9
#2	12542.	76310.	3285.5
#3	12541.	76436.	3309.9

Approved: August 11, 2016

Sample Name: L1608000208 Acquired: 8/10/2016 13:01:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20750	5.1103	.21001	1.0272	.53640	.02465	5.4435	.02637
Stddev	.00077	.0096	.00032	.0005	.00154	.00009	.0222	.00027
%RSD	.36935	.18847	.15143	.04729	.28626	.34899	.40867	1.0232
#1	.20837	5.1169	.20970	1.0267	.53816	.02461	5.4294	.02656
#2	.20717	5.0993	.21001	1.0276	.53572	.02460	5.4692	.02648
#3	.20695	5.1148	.21033	1.0272	.53532	.02475	5.4320	.02606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10589	.25384	.26731	2.0733	25.218	.52822	5.1067	.26727
Stddev	.00038	.00092	.00111	.0224	.085	.00222	.0580	.00279
%RSD	.35555	.36244	.41392	1.0825	.33696	.41974	1.1348	1.0433
#1	.10628	.25348	.26845	2.0541	25.233	.52705	5.1406	.26406
#2	.10587	.25316	.26623	2.0678	25.126	.52684	5.1398	.26866
#3	.10553	.25489	.26725	2.0980	25.293	.53078	5.0398	.26909
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53766	25.561	.27090	5.2082	.26674	.64211	.20440	2.6680
Stddev	.00070	.111	.00060	.0047	.00307	.00340	.00727	.0076
%RSD	.13048	.43468	.22235	.08956	1.1505	.53008	3.5561	.28339
#1	.53757	25.635	.27150	5.2109	.26344	.63902	.21276	2.6738
#2	.53840	25.434	.27091	5.2108	.26728	.64576	.20083	2.6709
#3	.53701	25.615	.27029	5.2028	.26950	.64154	.19960	2.6595
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608000208 Acquired: 8/10/2016 13:01:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52475**	**.54206**	**.50930**	**.25878**	**.50253**	**.53128**	**.55311**
Stddev	.00145	.00178	.01370	.00256	.00138	.00061	.00438
%RSD	.27646	.32927	2.6891	.98746	.27471	.11534	.79195
#1	.52619	.54396	.50783	.26118	.50377	.53199	.55812
#2	.52477	.54042	.49640	.25908	.50104	.53101	.54998
#3	.52329	.54180	.52368	.25609	.50278	.53086	.55124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12561.**	**76707.**	**3344.1**
Stddev	10.	195.	20.6
%RSD	.08345	.25458	.61522
#1	12557.	76794.	3321.4
#2	12554.	76844.	3361.5
#3	12574.	76484.	3349.5

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 13:05:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40100**	**9.9212**	**.40513**	**.51587**	**1.0378**	**.04845**	**10.309**	**.05060**
Stddev	.00142	.0098	.00617	.00103	.0048	.00015	.027	.00144
%RSD	.35343	.09871	1.5240	.19993	.46608	.30679	.26021	2.8430
#1	.40261	9.9173	.40829	.51701	1.0406	.04848	10.299	.05164
#2	.40046	9.9323	.40907	.51500	1.0407	.04858	10.340	.05120
#3	.39994	9.9139	.39801	.51562	1.0322	.04829	10.289	.04896
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20052**	**.48851**	**.50889**	**4.0352**	**48.926**	**1.0195**	**10.010**	**.51181**
Stddev	.00654	.00112	.01647	.0242	.250	.0084	.051	.00121
%RSD	3.2613	.22841	3.2360	.59925	.51067	.82301	.51207	.23580
#1	.20463	.48936	.51951	4.0382	49.069	1.0291	9.9679	.51047
#2	.20394	.48725	.51725	4.0578	49.071	1.0134	10.067	.51282
#3	.19298	.48894	.48992	4.0097	48.637	1.0161	9.9941	.51214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0054**	**49.707**	**.51039**	**10.293**	**.51159**	**1.2301**	**.41290**	**5.1458**
Stddev	.0368	.148	.01757	.252	.01133	.0314	.00772	.1011
%RSD	3.6570	.29790	3.4421	2.4485	2.2146	2.5489	1.8697	1.9647
#1	1.0335	49.772	.52062	10.463	.52045	1.2541	.41908	5.2118
#2	1.0189	49.812	.52045	10.412	.51549	1.2417	.41537	5.1963
#3	.96382	49.538	.49011	10.003	.49882	1.1946	.40424	5.0294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 13:05:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99935**	**1.0387**	**.97451**	**.50211**	**.96145**	**1.0202**	**1.0094**
Stddev	.03576	.0040	.00455	.00182	.00192	.0314	.0083
%RSD	3.5778	.38479	.46730	.36299	.19922	3.0792	.81745
#1	1.0200	1.0388	.97454	.50421	.96365	1.0396	1.0141
#2	1.0200	1.0427	.96994	.50105	.96011	1.0370	1.0142
#3	.95807	1.0347	.97905	.50107	.96060	.98394	.99985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12974.**	**78568.**	**3407.3**
Stddev	16.	43.	21.4
%RSD	.12629	.05486	.62774
#1	12990.	78556.	3391.2
#2	12957.	78615.	3399.1
#3	12976.	78531.	3431.6

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 13:09:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	-.00788	-.00179	.00278	-.00303	-.00005	.01357	.00006
Stddev	.00121	.01129	.00263	.00075	.00079	.00005	.02422	.00010
%RSD	90.467	143.22	146.70	27.024	26.213	108.25	178.56	152.09
#1	.00158	-.00414	-.00003	.00244	-.00387	-.00010	.01219	-.00003
#2	.00003	.00106	-.00482	.00226	-.00229	-.00002	-.00994	.00007
#3	.00241	-.02057	-.00053	.00364	-.00293	-.00001	.03845	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	-.00080	.00061	-.01186	.20992	-.00021	-.05332	-.00115
Stddev	.00022	.00050	.00031	.02408	.04839	.00135	.01373	.00060
%RSD	920.04	62.934	50.776	203.09	23.052	645.57	25.755	52.187
#1	.00021	-.00060	.00097	.00640	.26557	-.00146	-.03748	-.00145
#2	-.00006	-.00137	.00051	-.03915	.17767	-.00039	-.06049	-.00046
#3	-.00022	-.00043	.00037	-.00282	.18653	.00122	-.06198	-.00154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.04566	.00098	-.00201	.00109	.00246	.00013	-.00119
Stddev	.00037	.01754	.00026	.00387	.00165	.00129	.00038	.00297
%RSD	326.37	38.410	26.311	192.52	150.55	52.622	297.80	250.38
#1	-.00045	.06537	.00071	-.00155	-.00068	.00098	.00050	.00214
#2	-.00016	.03980	.00100	.00161	.00257	.00340	-.00025	-.00212
#3	.00028	.03180	.00122	-.00608	.00140	.00298	.00013	-.00358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 13:09:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**-.00024**	**.00536**	**.00094**	**.00073**	**-.00035**	**-.00042**
Stddev	.00028	.00012	.00781	.00261	.00075	.00018	.00046
%RSD	81.501	51.081	145.86	277.75	101.58	51.390	108.80
#1	-.00016	-.00025	.01364	-.00117	-.00007	-.00035	-.00039
#2	-.00021	-.00012	-.00187	.00386	.00139	-.00017	-.00089
#3	-.00067	-.00037	.00430	.00012	.00088	-.00053	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13132.**	**79818.**	**3428.4**
Stddev	9.	432.	15.2
%RSD	.06961	.54149	.44218
#1	13122.	80147.	3433.4
#2	13139.	79978.	3440.4
#3	13136.	79328.	3411.3

Approved: August 11, 2016

Sample Name: L1608033007 Acquired: 8/10/2016 13:13:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00172	3.2710	.00247	.23741	.00671	.00238	F 368.73
Stddev	.00210	.0126	.00126	.00069	.00068	.00007	.08
%RSD	121.68	.38514	50.942	.29003	10.188	2.8935	.02101
#1	.00013	3.2832	.00279	.23662	.00633	.00233	368.65
#2	.00410	3.2580	.00353	.23776	.00750	.00235	368.73
#3	.00094	3.2719	.00108	.23786	.00630	.00246	368.81
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02663	.31100	.00258	.01966	4.9525	11.868	.64404
Stddev	.00328	.03886	.00108	.00286	.0292	.050	.00224
%RSD	12.313	12.496	41.874	14.533	.59049	.41841	.34805
#1	.02864	.33538	.00249	.02113	4.9451	11.855	.64553
#2	.02841	.33143	.00370	.02148	4.9847	11.922	.64513
#3	.02285	.26618	.00155	.01637	4.9276	11.826	.64146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	347.30	12.019	-.00058	F 613.41	.89497	.02539	.00349
Stddev	.39	.021	.00042	7.96	.11122	.01009	.00188
%RSD	.11118	.17214	71.284	1.2983	12.427	39.738	53.749
#1	347.49	12.034	-.00011	609.10	.96505	.03694	.00480
#2	347.56	11.995	-.00078	622.60	.95312	.02099	.00432
#3	346.86	12.027	-.00086	608.53	.76673	.01825	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 11, 2016

Sample Name: L1608033007 Acquired: 8/10/2016 13:13:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**-.00406**	**20.974**	**.00006**	**4.1762**	F **-.05460**	**-.00678**
Stddev	.00538	.00294	2.293	.00017	.0043	.00581	.00149
%RSD	2047.9	72.559	10.931	315.41	.10218	10.634	21.964
#1	.00155	-.00737	22.358	.00014	4.1801	-.05234	-.00771
#2	-.00564	-.00307	22.238	-.00015	4.1716	-.05026	-.00506
#3	.00488	-.00173	18.328	.00017	4.1769	-.06120	-.00757
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00062**	**1.0794**	**.00048**
Stddev	.00066	.1301	.00034
%RSD	105.84	12.051	71.116
#1	-.00006	1.1584	.00071
#2	-.00046	1.1504	.00063
#3	-.00135	.92923	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11641.**	**71003.**	**3297.2**
Stddev	90.	41.	13.6
%RSD	.76916	.05842	.41177
#1	11621.	70969.	3310.9
#2	11564.	70992.	3283.7
#3	11740.	71049.	3296.9

Approved: August 11, 2016

Sample Name: L1608033007S Acquired: 8/10/2016 13:17:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21009**	**8.3766**	**.21087**	**1.2526**	**.52053**	**.02624**	F **363.71**
Stddev	.00304	.0635	.01040	.0112	.00175	.00024	.71
%RSD	1.4492	.75828	4.9318	.89306	.33581	.93131	.19463
#1	.20717	8.3034	.21448	1.2398	.52123	.02597	364.52
#2	.21324	8.4165	.21897	1.2572	.52182	.02646	363.37
#3	.20985	8.4099	.19914	1.2607	.51854	.02628	363.23
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05307**	**.41890**	**.24119**	**.25977**	**6.7706**	**36.463**	**1.1437**
Stddev	.00226	.02430	.00318	.01491	.0877	.148	.0062
%RSD	4.2668	5.8012	1.3188	5.7382	1.2948	.40677	.54118
#1	.05480	.43347	.23752	.26864	6.8694	36.321	1.1506
#2	.05390	.43238	.24314	.26812	6.7023	36.451	1.1389
#3	.05050	.39085	.24291	.24256	6.7401	36.617	1.1414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**343.35**	**11.887**	**.50889**	F **615.50**	**1.1706**	**5.3674**	**.24865**
Stddev	.32	.042	.02912	.93	.0681	.2529	.01110
%RSD	.09377	.35558	5.7227	.15082	5.8172	4.7109	4.4660
#1	343.66	11.933	.52624	614.92	1.2087	5.5211	.25774
#2	343.02	11.880	.52516	616.58	1.2111	5.5056	.25194
#3	343.36	11.850	.47526	615.02	1.0920	5.0756	.23627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 11, 2016

Sample Name: L1608033007S Acquired: 8/10/2016 13:17:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.63037	.21035	24.292	.48059	4.5592	.42803	.22568
Stddev	.03634	.00393	1.017	.02950	.0117	.01230	.00705
%RSD	5.7641	1.8685	4.1864	6.1388	.25644	2.8738	3.1247
#1	.65139	.21440	24.890	.49739	4.5718	.42082	.22680
#2	.65131	.21011	24.869	.49786	4.5572	.42103	.23210
#3	.58842	.20655	23.118	.44653	4.5486	.44223	.21813
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.48825	1.5863	.48207
Stddev	.00377	.0864	.00121
%RSD	.77218	5.4498	.25147
#1	.48393	1.6363	.48067
#2	.49087	1.6362	.48273
#3	.48995	1.4865	.48281
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11461.	69793.	3259.6
Stddev	113.	395.	8.1
%RSD	.98902	.56657	.24812
#1	11400.	70245.	3250.6
#2	11391.	69511.	3261.6
#3	11592.	69622.	3266.4

Approved: August 11, 2016

Sample Name: L1608033007SD Acquired: 8/10/2016 13:20:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21545**	**8.5120**	**.21333**	**1.2801**	**.54003**	**.02667**	F **373.47**
Stddev	.00127	.0216	.00938	.0024	.00433	.00010	2.62
%RSD	.58813	.25376	4.3950	.18670	.80274	.38248	.70160
#1	.21557	8.4871	.22076	1.2828	.53576	.02665	371.09
#2	.21665	8.5234	.21644	1.2786	.54443	.02659	376.28
#3	.21412	8.5255	.20280	1.2788	.53990	.02679	373.04
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05340**	**.41981**	**.24682**	**.26261**	**6.9604**	**37.770**	**1.1793**
Stddev	.00250	.02014	.00182	.01465	.0595	.351	.0083
%RSD	4.6794	4.7983	.73561	5.5792	.85487	.93029	.70208
#1	.05471	.43193	.24848	.27220	6.9139	37.379	1.1732
#2	.05497	.43095	.24488	.26989	7.0274	38.059	1.1887
#3	.05052	.39656	.24708	.24575	6.9398	37.873	1.1760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**351.03**	**12.218**	**.51650**	F **642.88**	**1.1744**	**5.4492**	**.24933**
Stddev	2.16	.083	.02623	13.72	.0566	.2120	.00809
%RSD	.61553	.68292	5.0782	2.1345	4.8188	3.8905	3.2464
#1	349.40	12.148	.53268	646.34	1.2086	5.5763	.25332
#2	353.48	12.310	.53058	654.54	1.2055	5.5668	.25466
#3	350.22	12.195	.48624	627.76	1.1091	5.2044	.24002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 11, 2016

Sample Name: L1608033007SD Acquired: 8/10/2016 13:20:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579303-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.63757	.21168	24.369	.48621	4.6900	.45102	.22784
Stddev	.02971	.00747	.871	.02528	.0273	.00694	.00394
%RSD	4.6605	3.5290	3.5729	5.1995	.58288	1.5379	1.7285
#1	.65602	.21859	24.897	.50303	4.6657	.44477	.22980
#2	.65339	.21269	24.847	.49847	4.7196	.44982	.23041
#3	.60329	.20375	23.364	.45714	4.6848	.45848	.22331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.49622	1.5906	.51491
Stddev	.00210	.0719	.00433
%RSD	.42327	4.5205	.84142
#1	.49545	1.6357	.51308
#2	.49461	1.6284	.51985
#3	.49859	1.5077	.51178
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11486.	69710.	3216.5
Stddev	35.	116.	29.8
%RSD	.30835	.16651	.92633
#1	11447.	69617.	3229.8
#2	11497.	69840.	3182.4
#3	11515.	69673.	3237.4

Approved: August 11, 2016

Sample Name: L1608020801 Acquired: 8/10/2016 13:24:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.07843**	**-.00072**	**.02541**	**.04653**	**-.00007**	**36.598**	**.00051**
Stddev	.00245	.01150	.00134	.00228	.00070	.00011	.227	.00017
%RSD	16285.	14.669	186.12	8.9644	1.5090	154.47	.62038	32.318
#1	-.00253	.07204	.00070	.02615	.04658	.00005	36.336	.00033
#2	.00013	.09171	-.00091	.02285	.04720	-.00018	36.741	.00066
#3	.00235	.07154	-.00196	.02722	.04580	-.00009	36.717	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**.00090**	**.48476**	**.03956**	**.97787**	**.00227**	**4.4642**	**.04570**
Stddev	.00048	.00019	.04008	.01931	.04065	.00208	.0330	.00177
%RSD	123.23	20.984	8.2674	48.823	4.1567	91.612	.73985	3.8658
#1	.00051	.00068	.50806	.04493	.98274	-.00008	4.4261	.04419
#2	.00081	.00102	.50775	.01813	1.0159	.00300	4.4839	.04764
#3	-.00014	.00100	.43849	.05562	.93501	.00388	4.4827	.04526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**2.8866**	**.00263**	**-.04239**	**.00101**	**.00044**	**.00350**	**3.7609**
Stddev	.00027	.0367	.00087	.00916	.00201	.00164	.00425	.2637
%RSD	786.44	1.2722	32.871	21.607	199.00	376.27	121.29	7.0111
#1	.00019	2.8442	.00173	-.04961	.00274	.00217	.00799	3.9161
#2	.00019	2.9074	.00271	-.04547	-.00120	-.00109	-.00046	3.9101
#3	-.00028	2.9082	.00346	-.03209	.00149	.00023	.00298	3.4564
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608020801 Acquired: 8/10/2016 13:24:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.13149**	**.00230**	**-.00081**	**.00009**	**.02642**	**-.00041**
Stddev	.00059	.00045	.01183	.00072	.00076	.00226	.00015
%RSD	415.35	.34229	514.32	89.259	862.48	8.5612	38.226
#1	-.00046	.13100	-.00451	-.00162	-.00033	.02764	-.00027
#2	-.00051	.13157	-.00454	-.00055	.00097	.02780	-.00037
#3	.00054	.13189	.01596	-.00025	-.00037	.02381	-.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12461.**	**76611.**	**3333.0**
Stddev	16.	326.	3.1
%RSD	.12765	.42576	.09431
#1	12447.	76603.	3330.5
#2	12478.	76288.	3332.0
#3	12459.	76941.	3336.6

Approved: August 11, 2016

Sample Name: L1608028201 Acquired: 8/10/2016 13:28:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.05576	-.00188	.01514	.07953	-.00005	56.731	.00029
Stddev	.00180	.00513	.00231	.00048	.00175	.00007	.402	.00010
%RSD	591.61	9.2087	122.64	3.1592	2.1940	137.65	.70884	35.641
#1	.00057	.05274	-.00422	.01564	.08059	-.00000	56.873	.00034
#2	.00196	.05285	.00040	.01508	.08049	-.00013	57.043	.00035
#3	-.00161	.06169	-.00184	.01469	.07752	-.00002	56.278	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00016	.00204	.03143	.84274	.00177	8.1104	.00304
Stddev	.00035	.00147	.00066	.01956	.08245	.00401	.0558	.00156
%RSD	146.13	913.40	32.503	62.215	9.7830	226.46	.68784	51.108
#1	-.00006	-.00097	.00273	.04741	.88967	-.00134	8.1518	.00217
#2	-.00064	.00183	.00197	.03727	.89101	.00630	8.0470	.00484
#3	-.00001	-.00038	.00141	.00962	.74754	.00035	8.1325	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	3.6050	.00165	.01099	.00097	.00305	.00259	4.1321
Stddev	.00007	.0270	.00059	.00436	.00256	.00361	.00579	.3943
%RSD	94.751	.74931	35.978	39.681	263.72	118.30	224.05	9.5424
#1	-.00015	3.6015	.00098	.01513	.00237	.00518	-.00310	4.3666
#2	-.00005	3.6335	.00189	.00644	-.00198	-.00112	.00849	4.3528
#3	-.00002	3.5799	.00209	.01141	.00252	.00509	.00237	3.6769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608028201 Acquired: 8/10/2016 13:28:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.18070**	**-.00088**	**-.00216**	**.00023**	**.00155**	**.00008**
Stddev	.00022	.00134	.00109	.00342	.00108	.00046	.00017
%RSD	58.915	.74351	124.22	158.48	464.30	29.768	211.67
#1	-.00014	.18100	-.00213	.00174	.00102	.00200	-.00008
#2	-.00041	.18187	-.00014	-.00469	-.00100	.00157	.00007
#3	-.00057	.17924	-.00037	-.00353	.00069	.00108	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12579.**	**76978.**	**3357.3**
Stddev	18.	291.	6.9
%RSD	.13970	.37757	.20583
#1	12567.	77313.	3352.5
#2	12600.	76793.	3354.1
#3	12571.	76829.	3365.2

Approved: August 11, 2016

Sample Name: L1608028202 Acquired: 8/10/2016 13:32:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.01442	-.00054	.02048	.05282	-.00009	58.027	.00004
Stddev	.00145	.00514	.00275	.00314	.00085	.00002	.195	.00009
%RSD	140.09	35.643	505.78	15.319	1.6023	18.119	.33629	227.60
#1	.00186	.00850	-.00340	.02024	.05232	-.00009	58.233	-.00005
#2	-.00064	.01773	-.00031	.01746	.05235	-.00011	57.845	.00013
#3	.00189	.01702	.00208	.02372	.05380	-.00007	58.002	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	-.00013	.00128	.01395	1.3873	.00036	13.753	.00218
Stddev	.00022	.00094	.00090	.00905	.0435	.00141	.114	.00184
%RSD	713.22	727.10	69.949	64.889	3.1383	394.15	.83026	84.348
#1	.00012	-.00121	.00121	.02357	1.3389	-.00125	13.784	.00007
#2	.00007	.00049	.00043	.00560	1.4231	.00092	13.626	.00342
#3	-.00028	.00034	.00221	.01269	1.4001	.00140	13.848	.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	6.2595	.00035	-.00303	-.00206	.00098	.00688	4.1348
Stddev	.00019	.0423	.00103	.00968	.00335	.00251	.00556	.3876
%RSD	39.320	.67622	291.11	319.16	163.00	256.33	80.833	9.3731
#1	.00050	6.3037	.00154	.00814	.00121	.00205	.00727	4.3787
#2	.00029	6.2194	-.00028	-.00892	-.00549	.00276	.01223	4.3379
#3	.00068	6.2552	-.00021	-.00832	-.00190	-.00189	.00113	3.6879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608028202 Acquired: 8/10/2016 13:32:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.37233**	**-.00158**	**-.00077**	**.00027**	**.00108**	**-.00063**
Stddev	.00045	.00118	.00663	.00261	.00043	.00018	.00048
%RSD	4349.5	.31593	418.85	340.65	160.50	16.544	76.103
#1	.00051	.37358	.00317	-.00375	.00054	.00121	-.00009
#2	-.00025	.37124	-.00916	.00035	-.00023	.00116	-.00099
#3	-.00029	.37216	.00124	.00110	.00048	.00088	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12458.**	**76393.**	**3340.8**
Stddev	28.	133.	16.6
%RSD	.22251	.17475	.49805
#1	12435.	76544.	3321.6
#2	12452.	76345.	3350.2
#3	12489.	76290.	3350.7

Approved: August 11, 2016

Sample Name: L1608028203 Acquired: 8/10/2016 13:36:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	1.0054	-.00085	.02036	.05941	.00002	37.463	.00014
Stddev	.00077	.0115	.00158	.00204	.00068	.00003	.079	.00008
%RSD	55.711	1.1434	185.59	10.000	1.1396	143.74	.21066	56.906
#1	.00200	1.0093	-.00095	.01945	.05866	.00001	37.466	.00022
#2	.00161	.99251	-.00239	.02269	.05998	.00006	37.382	.00013
#3	.00052	1.0145	.00078	.01894	.05960	.00000	37.540	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00124	.00353	1.1795	1.4282	.00056	5.8954	.07578
Stddev	.00036	.00032	.00088	.0242	.0371	.00363	.1684	.00123
%RSD	175.90	25.848	25.070	2.0498	2.5940	648.85	2.8563	1.6277
#1	-.00005	.00148	.00303	1.2070	1.3871	-.00343	5.7146	.07720
#2	.00061	.00087	.00455	1.1695	1.4591	.00366	6.0478	.07500
#3	.00004	.00135	.00301	1.1618	1.4382	.00144	5.9237	.07513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	3.2710	.00369	.04275	-.00027	.00387	.00272	4.1107
Stddev	.00036	.0039	.00095	.00741	.00181	.00331	.00081	.3681
%RSD	295.18	.11919	25.711	17.340	673.99	85.317	29.937	8.9538
#1	.00046	3.2741	.00438	.04769	.00180	.00029	.00358	4.3243
#2	-.00025	3.2722	.00410	.04633	-.00103	.00681	.00196	4.3221
#3	.00015	3.2666	.00261	.03422	-.00158	.00452	.00263	3.6857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608028203 Acquired: 8/10/2016 13:36:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.13886	.01211	-.00324	.00166	.04151	-.00024
Stddev	.00025	.00063	.00157	.00306	.00045	.00457	.00027
%RSD	136.48	.45430	12.986	94.455	26.906	11.000	111.25
#1	.00035	.13888	.01094	-.00033	.00165	.04439	-.00054
#2	-.00011	.13822	.01149	-.00643	.00211	.04389	-.00001
#3	.00032	.13948	.01390	-.00295	.00122	.03625	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12495.	76788.	3339.6
Stddev	5.	275.	12.6
%RSD	.04034	.35841	.37754
#1	12491.	76978.	3342.7
#2	12501.	76472.	3325.7
#3	12492.	76912.	3350.4

Approved: August 11, 2016

Sample Name: L1608028203PS Acquired: 8/10/2016 13:40:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579662-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20222**	**5.9746**	**.21364**	**1.0426**	**.58395**	**.02447**	**38.555**	**.02626**
Stddev	.00305	.0123	.00218	.0003	.00326	.00011	.156	.00016
%RSD	1.5079	.20548	1.0186	.03308	.55844	.46899	.40525	.61374
#1	.19877	5.9674	.21171	1.0423	.58765	.02439	38.712	.02643
#2	.20458	5.9676	.21320	1.0429	.58150	.02441	38.399	.02625
#3	.20330	5.9888	.21600	1.0428	.58269	.02460	38.552	.02611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10494**	**.25013**	**.26605**	**3.1413**	**25.845**	**.52542**	**10.115**	**.33044**
Stddev	.00092	.00100	.00110	.0293	.119	.00355	.060	.00076
%RSD	.87780	.39950	.41324	.93328	.46048	.67517	.59025	.22980
#1	.10572	.24971	.26732	3.1118	25.774	.52854	10.168	.33038
#2	.10519	.25127	.26547	3.1705	25.778	.52616	10.127	.33123
#3	.10392	.24941	.26537	3.1417	25.982	.52156	10.050	.32972
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53621**	**27.995**	**.26857**	**5.3262**	**.26378**	**.64408**	**.20398**	**6.5565**
Stddev	.00203	.103	.00093	.0216	.00132	.00069	.00200	.0049
%RSD	.37848	.36797	.34524	.40632	.50081	.10767	.98095	.07499
#1	.53777	28.102	.26955	5.3495	.26376	.64439	.20558	6.5570
#2	.53693	27.897	.26847	5.3224	.26248	.64456	.20461	6.5514
#3	.53391	27.984	.26770	5.3067	.26512	.64328	.20174	6.5612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608028203PS Acquired: 8/10/2016 13:40:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579662-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52050**	**.66248**	**.50092**	**.25850**	**.49614**	**.56589**	**.00113**
Stddev	.00136	.00169	.00541	.00253	.00085	.00112	.00026
%RSD	.26140	.25522	1.0797	.97840	.17063	.19859	22.845
#1	.52158	.66398	.50612	.26138	.49525	.56582	.00136
#2	.52095	.66065	.50131	.25665	.49624	.56704	.00085
#3	.51897	.66281	.49532	.25746	.49694	.56480	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12318.**	**75412.**	**3305.1**
Stddev	16.	53.	9.3
%RSD	.12697	.07028	.28126
#1	12300.	75371.	3295.9
#2	12325.	75392.	3304.9
#3	12329.	75472.	3314.5

Approved: August 11, 2016

Sample Name: L1608028203SDL Acquired: 8/10/2016 13:43:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579662-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.19422	-.00106	.00539	.00885	-.00002	7.2659	.00009
Stddev	.00089	.00514	.00200	.00108	.00046	.00006	.0190	.00007
%RSD	232.35	2.6457	188.26	20.050	5.2229	308.50	.26190	84.185
#1	-.00012	.18838	.00078	.00587	.00905	.00005	7.2575	.00014
#2	-.00014	.19621	-.00077	.00614	.00832	-.00005	7.2525	.00000
#3	.00141	.19806	-.00319	.00415	.00918	-.00006	7.2876	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00018	.00168	.21264	.43658	-.00072	1.1683	.01526
Stddev	.00007	.00073	.00080	.00693	.06840	.00115	.0537	.00215
%RSD	74.121	415.33	47.618	3.2605	15.666	160.57	4.5924	14.108
#1	.00009	-.00091	.00106	.22001	.51349	-.00170	1.2040	.01321
#2	.00003	.00054	.00258	.21167	.38261	-.00100	1.1066	.01751
#3	.00017	-.00016	.00139	.20624	.41363	.00055	1.1942	.01507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.65335	.00083	.00582	.00028	.00234	.00307	.78808
Stddev	.00025	.03642	.00021	.00812	.00270	.00243	.00145	.09708
%RSD	107.10	5.5743	25.674	139.61	981.09	103.78	47.251	12.319
#1	-.00004	.61882	.00088	.00223	.00324	.00013	.00220	.84338
#2	.00030	.69141	.00060	.01512	-.00205	.00494	.00474	.84488
#3	.00044	.64984	.00102	.00011	-.00036	.00194	.00226	.67598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608028203SDL Acquired: 8/10/2016 13:43:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579662-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00077**	**.02703**	**.00413**	**-.00086**	**.00037**	**.00842**	**-.00014**
Stddev	.00110	.00009	.00803	.00107	.00131	.00114	.00054
%RSD	142.86	.33578	194.59	124.10	351.62	13.497	387.04
#1	-.00173	.02696	-.00370	-.00019	-.00091	.00902	.00043
#2	-.00101	.02713	.00373	-.00030	.00033	.00913	-.00064
#3	.00043	.02698	.01234	-.00210	.00170	.00711	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13115.**	**80481.**	**3442.9**
Stddev	46.	204.	22.0
%RSD	.35138	.25304	.64025
#1	13123.	80705.	3451.6
#2	13156.	80428.	3459.3
#3	13065.	80309.	3417.9

Approved: August 11, 2016

Sample Name: L1608028203SDL Acquired: 8/10/2016 13:47:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG579662-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	.03078	-.00138	.00342	-.00045	.00002	1.4768	.00005
Stddev	.00114	.00800	.00141	.00108	.00113	.00005	.0391	.00002
%RSD	96.492	25.993	102.58	31.465	254.27	279.58	2.6464	42.554
#1	.00225	.02195	.00006	.00248	-.00153	.00008	1.4386	.00002
#2	.00133	.03756	-.00277	.00319	.00073	-.00001	1.4751	.00006
#3	-.00002	.03282	-.00142	.00460	-.00055	-.00001	1.5167	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	-.00058	.00025	.02260	.13837	-.00337	.20525	.00221
Stddev	.00027	.00051	.00047	.03035	.05728	.00111	.03447	.00176
%RSD	294.22	88.999	192.19	134.29	41.397	32.976	16.796	79.845
#1	-.00040	-.00002	-.00017	-.01241	.14297	-.00440	.18137	.00089
#2	.00003	-.00102	.00076	.03873	.07893	-.00350	.24477	.00421
#3	.00010	-.00069	.00015	.04148	.19321	-.00220	.18961	.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.16224	.00115	.00282	-.00040	.00121	.00379	.16541
Stddev	.00016	.02714	.00121	.00226	.00494	.00125	.00360	.02069
%RSD	92.743	16.726	104.94	79.965	1235.0	102.54	94.908	12.508
#1	.00005	.15007	.00210	.00045	-.00602	.00065	-.00006	.17429
#2	.00035	.19333	-.00021	.00495	.00154	.00264	.00706	.18017
#3	.00012	.14331	.00156	.00307	.00328	.00035	.00436	.14176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608028203SDL Acquired: 8/10/2016 13:47:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG579662-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00508	.00222	.00001	.00071	.00208	-.00035
Stddev	.00036	.00027	.00835	.00323	.00068	.00033	.00012
%RSD	186.33	5.2661	376.07	56033.	95.101	15.985	35.542
#1	.00048	.00478	.00995	.00212	.00104	.00234	-.00049
#2	.00031	.00526	-.00664	.00161	.00115	.00220	-.00027
#3	-.00021	.00521	.00335	-.00371	-.00007	.00171	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	13153.	80411.	3431.6
Stddev	95.	269.	3.6
%RSD	.72585	.33434	.10562
#1	13168.	80697.	3429.2
#2	13239.	80372.	3435.7
#3	13050.	80164.	3429.7

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 13:51:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40374	9.9798	.40759	.51467	1.0408	.04837	10.320	.05123
Stddev	.00190	.0165	.00884	.00271	.0030	.00016	.008	.00145
%RSD	.47159	.16515	2.1687	.52746	.29086	.32653	.08072	2.8214
#1	.40505	9.9883	.41249	.51374	1.0443	.04854	10.325	.05205
#2	.40462	9.9903	.41289	.51772	1.0386	.04824	10.310	.05208
#3	.40156	9.9608	.39738	.51254	1.0397	.04832	10.324	.04956
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20127	.48801	.51188	4.0555	48.328	1.0278	9.9474	.52030
Stddev	.00715	.00275	.01570	.0559	.102	.0076	.1669	.00492
%RSD	3.5539	.56402	3.0678	1.3788	.21154	.73959	1.6775	.94528
#1	.20523	.49060	.52095	4.1134	48.331	1.0191	10.104	.52533
#2	.20557	.48831	.52094	4.0018	48.428	1.0319	9.9667	.51550
#3	.19301	.48512	.49375	4.0514	48.224	1.0325	9.7718	.52007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0168	49.467	.51351	10.422	.51371	1.2392	.41486	5.2061
Stddev	.0313	.314	.01720	.266	.01407	.0321	.00484	.1173
%RSD	3.0778	.63457	3.3490	2.5484	2.7389	2.5881	1.1660	2.2536
#1	1.0383	49.829	.52373	10.558	.52264	1.2544	.41486	5.2653
#2	1.0313	49.304	.52315	10.592	.52099	1.2607	.41970	5.2820
#3	.98094	49.268	.49366	10.116	.49749	1.2023	.41002	5.0710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 13:51:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0022**	**1.0423**	**.96839**	**.50582**	**.96239**	**1.0284**	**1.0013**
Stddev	.0371	.0051	.00643	.00476	.00183	.0307	.0064
%RSD	3.7005	.49133	.66426	.94171	.18989	2.9814	.64047
#1	1.0241	1.0481	.96862	.50822	.96336	1.0444	.99931
#2	1.0232	1.0401	.96184	.50891	.96352	1.0478	1.0085
#3	.95942	1.0386	.97470	.50034	.96028	.99309	.99610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12664.**	**76928.**	**3375.7**
Stddev	24.	222.	21.5
%RSD	.18779	.28873	.63545
#1	12664.	76672.	3373.2
#2	12641.	77043.	3355.6
#3	12688.	77070.	3398.3

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 13:55:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	-.00432	-.00132	.00339	-.00220	-.00009	.00012	.00020
Stddev	.00056	.00429	.00142	.00106	.00030	.00003	.03446	.00003
%RSD	69.940	99.344	107.39	31.343	13.571	37.622	27827.	14.793
#1	.00119	.00058	-.00127	.00291	-.00249	-.00012	.03028	.00016
#2	.00016	-.00611	.00007	.00460	-.00222	-.00007	-.03743	.00022
#3	.00106	-.00744	-.00276	.00265	-.00189	-.00006	.00752	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	-.00011	.00050	.00682	.15677	-.00203	-.01812	-.00033
Stddev	.00024	.00020	.00196	.01353	.04562	.00226	.03074	.00094
%RSD	544.65	171.84	393.27	198.23	29.098	111.30	169.68	285.14
#1	-.00011	.00007	.00037	.02087	.20401	-.00197	-.00217	.00060
#2	-.00008	-.00009	.00251	.00572	.11297	.00020	-.05356	-.00032
#3	.00032	-.00032	-.00139	-.00612	.15333	-.00432	.00137	-.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.02970	.00116	-.00016	-.00178	.00087	.00172	-.00035
Stddev	.00022	.02845	.00036	.01119	.00100	.00649	.00680	.00096
%RSD	188.68	95.784	30.792	6898.9	56.166	742.52	395.53	271.86
#1	.00035	.01688	.00080	.01271	-.00212	.00069	-.00433	.00062
#2	-.00007	.06231	.00151	-.00557	-.00065	.00746	.00909	-.00038
#3	.00006	.00993	.00116	-.00762	-.00256	-.00552	.00040	-.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 13:55:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00019**	**.00214**	**-.00047**	**.00004**	**-.00018**	**-.00011**
Stddev	.00046	.00036	.01362	.00323	.00009	.00002	.00013
%RSD	337.84	188.11	637.69	687.14	243.71	12.762	118.04
#1	.00017	.00022	-.01015	.00080	.00013	-.00020	-.00021
#2	-.00067	-.00046	.01679	.00193	-.00005	-.00016	-.00017
#3	.00009	-.00034	-.00024	-.00414	.00003	-.00019	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12806.**	**78345.**	**3384.3**
Stddev	23.	156.	18.9
%RSD	.18261	.19883	.55773
#1	12793.	78226.	3365.5
#2	12792.	78521.	3384.2
#3	12833.	78286.	3403.3

Approved: August 11, 2016

Sample Name: L1608028204 Acquired: 8/10/2016 13:59:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.15528	.00111	.01189	.06246	-.00008	60.837	.00033
Stddev	.00050	.00843	.00080	.00186	.00130	.00005	1.318	.00027
%RSD	172.59	5.4306	71.691	15.618	2.0856	62.323	2.1664	79.693
#1	.00028	.14583	.00129	.01082	.06386	-.00003	61.671	.00061
#2	-.00049	.16204	.00024	.01082	.06128	-.00013	59.317	.00008
#3	-.00065	.15798	.00181	.01404	.06226	-.00008	61.521	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	-.00005	.00839	.40748	2.3972	.00446	10.027	.19517
Stddev	.00038	.00181	.00188	.00889	.1314	.00155	.296	.00682
%RSD	261.47	3740.8	22.393	2.1824	5.4833	34.742	2.9480	3.4963
#1	.00027	.00055	.00892	.41359	2.4436	.00361	10.325	.20045
#2	-.00022	.00138	.00994	.41156	2.2488	.00625	9.7337	.18746
#3	-.00048	-.00208	.00630	.39728	2.4991	.00353	10.023	.19759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	3.6584	.00107	.05299	.00026	.00225	.00386	4.4584
Stddev	.00048	.0859	.00055	.00358	.00192	.00303	.00207	.3011
%RSD	61.892	2.3482	52.001	6.7512	743.62	134.72	53.645	6.7546
#1	.00095	3.7281	.00043	.05639	-.00131	.00145	.00228	4.6301
#2	.00115	3.5624	.00147	.05332	-.00032	.00559	.00309	4.6344
#3	.00024	3.6847	.00129	.04926	.00240	-.00030	.00620	4.1107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608028204 Acquired: 8/10/2016 13:59:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.23831**	**-.00150**	**-.00123**	**.00101**	**.00279**	**.00005**
Stddev	.00064	.00436	.00428	.00262	.00108	.00021	.00062
%RSD	244.61	1.8312	285.48	212.68	106.90	7.6529	1184.7
#1	-.00078	.24132	-.00401	-.00386	.00133	.00291	.00004
#2	.00045	.23331	.00344	.00138	.00189	.00292	.00068
#3	-.00044	.24031	-.00392	-.00122	-.00019	.00254	-.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12362.**	**76111.**	**3349.0**
Stddev	29.	257.	56.1
%RSD	.23752	.33756	1.6750
#1	12383.	75856.	3299.5
#2	12375.	76106.	3410.0
#3	12329.	76370.	3337.7

Approved: August 11, 2016

Sample Name: L1608033006 Acquired: 8/10/2016 14:03:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00190	3.2628	.00169	.23573	.00588	.00232	F 365.80
Stddev	.00165	.0167	.00024	.00331	.00113	.00006	.62
%RSD	86.642	.51118	14.169	1.4027	19.170	2.6083	.17072
#1	.00035	3.2756	.00144	.23926	.00616	.00234	365.08
#2	.00171	3.2439	.00192	.23270	.00464	.00225	366.11
#3	.00363	3.2689	.00170	.23523	.00685	.00236	366.22
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02626	.30650	.00269	.01698	4.8286	11.661	.63784
Stddev	.00304	.03882	.00007	.00362	.0363	.135	.00372
%RSD	11.579	12.666	2.5750	21.346	.75150	1.1543	.58282
#1	.02834	.33087	.00264	.01805	4.8647	11.513	.63704
#2	.02766	.32690	.00267	.01995	4.7922	11.775	.64190
#3	.02277	.26173	.00277	.01294	4.8289	11.697	.63460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	341.36	11.867	-.00072	F 610.30	.88860	.01860	.00400
Stddev	.66	.035	.00008	6.91	.11160	.00585	.00212
%RSD	.19463	.29345	10.945	1.1316	12.559	31.451	53.095
#1	340.60	11.831	-.00081	617.90	.96018	.02519	.00162
#2	341.66	11.872	-.00069	608.60	.94561	.01401	.00467
#3	341.82	11.900	-.00066	604.41	.76001	.01661	.00571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 11, 2016

Sample Name: L1608033006 Acquired: 8/10/2016 14:03:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00129**	**-.00129**	**20.896**	**-.00143**	**4.1365**	F **-.04704**	**-.00324**
Stddev	.00279	.00393	2.307	.00084	.0111	.00207	.00195
%RSD	216.08	304.09	11.039	58.674	.26895	4.4004	60.254
#1	.00451	.00325	22.292	-.00183	4.1246	-.04762	-.00099
#2	-.00039	-.00352	22.163	-.00200	4.1466	-.04474	-.00431
#3	-.00024	-.00361	18.233	-.00047	4.1384	-.04876	-.00443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00139**	**1.0627**	**.00046**
Stddev	.00135	.1289	.00013
%RSD	97.430	12.128	28.822
#1	-.00150	1.1433	.00031
#2	.00002	1.1306	.00057
#3	-.00268	.91402	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11512.**	**70174.**	**3259.1**
Stddev	22.	209.	11.6
%RSD	.19215	.29756	.35521
#1	11502.	69936.	3245.7
#2	11496.	70327.	3266.0
#3	11537.	70259.	3265.5

Approved: August 11, 2016

Sample Name: L1608033009 Acquired: 8/10/2016 14:07:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00242	.01131	.00013	.08002	.03922	-.00008	119.16	.00019
Stddev	.00207	.00123	.00150	.00033	.00059	.00004	.40	.00007
%RSD	85.484	10.894	1144.6	.41444	1.5117	47.000	.33529	36.354
#1	.00009	.01046	.00047	.08030	.03870	-.00004	118.78	.00025
#2	.00403	.01074	-.00151	.07965	.03911	-.00007	119.13	.00021
#3	.00315	.01272	.00143	.08010	.03987	-.00011	119.58	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.02611	.00320	16.679	195.77	.38221	98.392	1.3975
Stddev	.00013	.00071	.00138	.186	.58	.00251	.652	.0050
%RSD	134.28	2.7079	43.098	1.1172	.29624	.65559	.66286	.35502
#1	-.00019	.02542	.00429	16.533	195.43	.38068	97.818	1.3918
#2	-.00015	.02683	.00367	16.615	195.44	.38085	98.257	1.4001
#3	.00005	.02608	.00165	16.889	196.44	.38510	99.102	1.4006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	175.69	.00193	.05503	.00154	.00127	-.00125	12.488
Stddev	.00026	.56	.00165	.00146	.00147	.00137	.00119	.004
%RSD	221.59	.32030	85.530	2.6453	95.560	107.81	95.350	.03145
#1	.00027	175.28	.00069	.05606	.00014	.00277	-.00249	12.489
#2	.00026	175.47	.00381	.05566	.00307	.00095	-.00116	12.491
#3	-.00018	176.33	.00131	.05336	.00141	.00009	-.00011	12.484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033009 Acquired: 8/10/2016 14:07:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**2.3921**	**-.00678**	**-.00249**	**-.00089**	**.00233**	**-.00085**
Stddev	.00061	.0055	.01128	.00099	.00013	.00014	.00020
%RSD	108.26	.22771	166.38	39.710	14.952	5.9036	24.214
#1	-.00022	2.3863	-.00379	-.00136	-.00087	.00219	-.00084
#2	-.00021	2.3929	.00271	-.00317	-.00102	.00246	-.00064
#3	-.00127	2.3971	-.01925	-.00295	-.00076	.00234	-.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11883.**	**71854.**	**3247.5**
Stddev	23.	148.	25.9
%RSD	.19140	.20534	.79605
#1	11861.	71839.	3272.1
#2	11906.	72008.	3249.9
#3	11882.	71714.	3220.5

Approved: August 11, 2016

Sample Name: L1608033010 Acquired: 8/10/2016 14:10:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.01420	.00056	.08256	.04101	-.00007	122.35	.00015
Stddev	.00084	.00684	.00153	.00191	.00012	.00006	.17	.00013
%RSD	90.494	48.189	275.60	2.3139	.29779	89.101	.13903	85.589
#1	.00161	.02005	-.00056	.08083	.04097	-.00014	122.21	.00016
#2	.00120	.01588	-.00007	.08224	.04092	-.00006	122.54	.00027
#3	-.00001	.00667	.00230	.08461	.04115	-.00001	122.31	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.02699	-.00027	17.174	196.43	.38830	100.83	1.4316
Stddev	.00031	.00021	.00191	.028	.29	.00370	.54	.0055
%RSD	1131.5	.78064	709.80	.16272	.14807	.95176	.53316	.38105
#1	-.00012	.02692	.00020	17.142	196.74	.38888	100.24	1.4257
#2	.00032	.02682	.00136	17.192	196.38	.38435	101.30	1.4324
#3	-.00028	.02723	-.00237	17.188	196.17	.39168	100.94	1.4366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	178.33	.00093	.05349	.00017	.00241	-.00439	12.283
Stddev	.00020	.02	.00086	.00964	.00185	.00279	.00196	1.019
%RSD	717.57	.01395	92.477	18.018	1063.3	115.97	44.520	8.2938
#1	-.00025	178.34	.00061	.06461	.00221	.00555	-.00259	12.885
#2	.00012	178.35	.00191	.04832	-.00029	.00144	-.00647	12.856
#3	.00005	178.30	.00028	.04754	-.00140	.00022	-.00412	11.106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033010 Acquired: 8/10/2016 14:10:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	2.4519	-.01535	-.00238	-.00107	.00178	-.00115
Stddev	.00057	.0037	.00192	.00167	.00077	.00030	.00036
%RSD	241.09	.15311	12.533	70.022	71.929	16.615	30.974
#1	.00090	2.4548	-.01440	-.00400	-.00091	.00195	-.00104
#2	-.00012	2.4531	-.01408	-.00248	-.00191	.00196	-.00087
#3	-.00007	2.4476	-.01756	-.00067	-.00039	.00144	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11864.	72282.	3259.1
Stddev	24.	64.	23.3
%RSD	.20408	.08810	.71500
#1	11876.	72349.	3266.7
#2	11880.	72223.	3232.9
#3	11836.	72273.	3277.6

Approved: August 11, 2016

Sample Name: L1608033011 Acquired: 8/10/2016 14:14:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00181	.05164	.00128	.02898	.02810	-.00000	167.11	.00061
Stddev	.00159	.00426	.00320	.00191	.00079	.00002	1.17	.00003
%RSD	87.772	8.2571	250.90	6.6069	2.8258	3079.4	.69995	4.4802
#1	.00325	.04744	.00484	.02692	.02845	.00003	166.06	.00058
#2	.00011	.05596	.00035	.02931	.02719	-.00001	166.88	.00063
#3	.00205	.05151	-.00136	.03071	.02866	-.00002	168.37	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00625	.00273	.09977	3.8723	.13752	108.32	.05432
Stddev	.00014	.00097	.00084	.03281	.0143	.00299	1.51	.00277
%RSD	25.137	15.516	30.747	32.890	.36854	2.1712	1.3917	5.1050
#1	.00066	.00694	.00197	.12741	3.8829	.13505	106.83	.05499
#2	.00063	.00668	.00363	.06351	3.8561	.13668	108.30	.05127
#3	.00040	.00514	.00258	.10840	3.8780	.14084	109.84	.05670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00407	227.35	.05850	.04288	.00142	.00211	.00323	18.456
Stddev	.00022	1.49	.00587	.00621	.00320	.00318	.00258	1.761
%RSD	5.3430	.65410	10.026	14.472	225.58	150.88	79.920	9.5414
#1	.00424	226.15	.06187	.04214	.00355	-.00151	.00616	19.475
#2	.00416	226.88	.06192	.04942	.00297	.00447	.00129	19.469
#3	.00383	229.01	.05173	.03707	-.00226	.00337	.00224	16.422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033011 Acquired: 8/10/2016 14:14:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**2.7657**	**-.02680**	**-.00431**	**-.00014**	**.00623**	**.00013**
Stddev	.00021	.0193	.00091	.00236	.00067	.00068	.00055
%RSD	195.38	.69861	3.4092	54.771	487.64	10.949	439.81
#1	-.00014	2.7463	-.02773	-.00591	.00064	.00663	.00054
#2	.00021	2.7660	-.02590	-.00160	-.00053	.00662	.00034
#3	.00025	2.7850	-.02678	-.00543	-.00052	.00544	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12027.**	**73554.**	**3324.2**
Stddev	59.	146.	16.7
%RSD	.48931	.19882	.50345
#1	11989.	73705.	3341.9
#2	11996.	73545.	3321.9
#3	12094.	73413.	3308.7

Approved: August 11, 2016

Sample Name: L1608033012 Acquired: 8/10/2016 14:18:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00078	.00851	-.00145	.03171	.02977	-.00007	172.03	.00065
Stddev	.00200	.00179	.00504	.00133	.00052	.00008	1.14	.00011
%RSD	255.61	21.037	346.22	4.1947	1.7414	101.01	.66073	17.002
#1	.00097	.01030	-.00414	.03018	.02930	-.00015	173.29	.00077
#2	-.00035	.00850	.00435	.03239	.02969	.00000	171.09	.00065
#3	-.00297	.00672	-.00458	.03257	.03033	-.00007	171.70	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00063	.00327	-.01545	3.7359	.14219	111.53	.05014
Stddev	.00049	.00031	.00081	.01807	.1068	.00214	.59	.00295
%RSD	493.14	49.433	24.670	116.95	2.8599	1.5051	.52484	5.8920
#1	-.00035	.00061	.00290	-.00807	3.8422	.13988	111.88	.04673
#2	.00061	.00094	.00420	-.03605	3.7370	.14410	110.86	.05186
#3	.00003	.00032	.00272	-.00224	3.6285	.14260	111.86	.05184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00437	235.34	.05746	.03610	-.00065	.00373	.00560	18.781
Stddev	.00064	1.35	.00572	.00851	.00266	.00253	.00183	1.695
%RSD	14.706	.57209	9.9492	23.567	406.83	68.000	32.644	9.0238
#1	.00437	236.89	.06027	.03480	-.00017	.00296	.00478	19.799
#2	.00502	234.47	.06123	.04519	-.00352	.00656	.00432	19.719
#3	.00373	234.66	.05088	.02832	.00173	.00167	.00769	16.825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033012 Acquired: 8/10/2016 14:18:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**2.8455**	**-.02008**	**-.00147**	**-.00015**	**.00565**	**-.00064**
Stddev	.00106	.0199	.00381	.00150	.00065	.00062	.00020
%RSD	492.10	.69948	18.985	101.70	437.29	10.953	31.524
#1	.00081	2.8684	-.01868	-.00253	-.00072	.00609	-.00081
#2	-.00015	2.8326	-.02439	.00024	.00055	.00591	-.00042
#3	-.00130	2.8354	-.01716	-.00213	-.00027	.00494	-.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11967.**	**72849.**	**3254.7**
Stddev	74.	218.	5.2
%RSD	.61651	.29990	.15916
#1	11911.	72599.	3248.7
#2	11940.	72947.	3258.3
#3	12051.	73001.	3256.9

Approved: August 11, 2016

Sample Name: L1608033013 Acquired: 8/10/2016 14:22:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00162	.06453	.00155	.01650	.02121	.00008	43.009	.00050
Stddev	.00052	.00632	.00185	.00388	.00084	.00008	.172	.00032
%RSD	32.271	9.7972	119.27	23.537	3.9456	93.986	.39960	64.081
#1	.00154	.06118	.00220	.01244	.02031	-.00000	42.941	.00081
#2	.00218	.06059	.00299	.02018	.02196	.00010	43.205	.00054
#3	.00114	.07183	-.00054	.01690	.02137	.00014	42.882	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00007	.00201	.15036	2.3656	.10408	30.634	.05980
Stddev	.00037	.00042	.00083	.02435	.0515	.00151	.215	.00160
%RSD	129.71	577.09	41.401	16.191	2.1794	1.4543	.70342	2.6835
#1	.00051	.00033	.00151	.13742	2.4226	.10235	30.531	.06034
#2	.00048	-.00051	.00297	.13522	2.3223	.10472	30.882	.05799
#3	-.00014	-.00004	.00154	.17845	2.3519	.10517	30.490	.06106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	117.68	.02573	.07578	.00039	.00186	.00533	22.871
Stddev	.00009	.52	.00295	.00700	.00076	.00288	.00215	2.211
%RSD	109.71	.44310	11.450	9.2402	195.04	154.86	40.319	9.6671
#1	.00008	117.50	.02766	.07849	.00001	.00152	.00775	24.217
#2	-.00000	118.26	.02719	.08103	-.00010	-.00084	.00367	24.076
#3	.00018	117.27	.02234	.06783	.00126	.00489	.00455	20.319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033013 Acquired: 8/10/2016 14:22:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.71264**	**-.00470**	**-.00128**	**.00009**	**.02745**	**-.00043**
Stddev	.00053	.00308	.00540	.00185	.00030	.00320	.00016
%RSD	238.03	.43268	114.83	144.37	350.32	11.673	38.126
#1	.00083	.71117	-.00992	-.00182	-.00011	.02943	-.00049
#2	-.00018	.71618	.00087	-.00279	-.00006	.02917	-.00056
#3	.00002	.71057	-.00506	.00078	.00043	.02375	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12253.**	**74940.**	**3303.1**
Stddev	16.	112.	7.6
%RSD	.12884	.14990	.22891
#1	12246.	74812.	3294.7
#2	12243.	74988.	3305.0
#3	12271.	75021.	3309.5

Approved: August 11, 2016

Sample Name: L1608033014 Acquired: 8/10/2016 14:26:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	.03381	-.00095	.01641	.01982	.00009	40.820	.00089
Stddev	.00224	.00397	.00073	.00152	.00130	.00004	.014	.00005
%RSD	133.22	11.740	76.348	9.2427	6.5454	41.430	.03320	5.1636
#1	.00046	.03781	-.00143	.01526	.02130	.00013	40.820	.00091
#2	.00427	.03375	-.00131	.01813	.01934	.00006	40.833	.00084
#3	.00032	.02988	-.00012	.01585	.01884	.00008	40.806	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	-.00003	.00207	.05401	2.0023	.10215	29.236	.04895
Stddev	.00010	.00015	.00121	.01752	.0714	.00290	.057	.00318
%RSD	17.572	541.39	58.568	32.434	3.5673	2.8374	.19612	6.4921
#1	.00065	.00001	.00314	.04527	2.0590	.09887	29.288	.05129
#2	.00045	-.00019	.00075	.04258	2.0259	.10324	29.246	.04533
#3	.00057	.00010	.00231	.07418	1.9221	.10435	29.175	.05024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	111.83	.02475	.06680	.00212	.00028	.00128	21.863
Stddev	.00031	.45	.00316	.00739	.00251	.00346	.00278	2.154
%RSD	107.92	.40007	12.778	11.058	118.17	1247.2	217.21	9.8500
#1	.00005	112.32	.02662	.06860	.00422	.00385	-.00048	23.139
#2	.00064	111.73	.02654	.07313	.00282	-.00306	.00449	23.073
#3	.00018	111.44	.02110	.05868	-.00066	.00004	-.00017	19.376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033014 Acquired: 8/10/2016 14:26:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.67633**	**.00202**	**-.00093**	**-.00089**	**.01387**	**-.00049**
Stddev	.00045	.00132	.00237	.00096	.00022	.00181	.00030
%RSD	71.706	.19474	116.96	103.79	25.155	13.062	60.564
#1	-.00068	.67782	-.00056	.00011	-.00088	.01500	-.00015
#2	-.00015	.67532	.00409	-.00111	-.00112	.01483	-.00064
#3	-.00103	.67585	.00254	-.00178	-.00067	.01178	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12242.**	**74867.**	**3288.4**
Stddev	61.	118.	19.8
%RSD	.49512	.15786	.60200
#1	12216.	74731.	3278.6
#2	12198.	74927.	3275.5
#3	12311.	74944.	3311.2

Approved: August 11, 2016

Sample Name: L1608033016 Acquired: 8/10/2016 14:30:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.02207	-.00020	.15345	.02200	-.00005	F 282.42
Stddev	.00097	.00510	.00462	.00317	.00092	.00001	.37
%RSD	2390.5	23.127	2318.4	2.0647	4.1972	25.555	.13224
#1	-.00056	.02437	-.00028	.15304	.02248	-.00004	282.84
#2	-.00048	.02561	.00446	.15051	.02258	-.00006	282.15
#3	.00116	.01622	-.00478	.15680	.02093	-.00005	282.26
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00268	.00780	.00237	.00362	.00212	7.8782	.45536
Stddev	.00024	.00098	.00080	.00044	.02102	.0853	.00116
%RSD	8.9071	12.539	33.645	12.053	989.84	1.0828	.25422
#1	.00254	.00811	.00174	.00394	.00235	7.9228	.45500
#2	.00296	.00858	.00210	.00313	-.01901	7.9320	.45443
#3	.00256	.00670	.00326	.00380	.02304	7.7799	.45666
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	290.93	1.5265	.00021	F 311.02	.03910	.00253	.00009
Stddev	1.38	.0047	.00041	.49	.00397	.01016	.00136
%RSD	.47281	.30585	195.29	.15734	10.147	401.95	1544.9
#1	292.47	1.5299	.00004	311.58	.04172	.00833	.00166
#2	289.82	1.5212	.00068	310.76	.04103	.00845	-.00071
#3	290.51	1.5286	-.00009	310.71	.03453	-.00920	-.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 11, 2016

Sample Name: L1608033016 Acquired: 8/10/2016 14:30:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00309	-.00039	12.686	-.00078	4.9771	F -.04257	-.00516
Stddev	.00263	.00553	1.121	.00055	.0080	.00150	.00238
%RSD	85.141	1435.4	8.8390	70.409	.16082	3.5238	46.097
#1	.00514	.00253	13.351	-.00118	4.9841	-.04127	-.00790
#2	.00402	.00308	13.315	-.00015	4.9684	-.04224	-.00397
#3	.00012	-.00676	11.391	-.00102	4.9788	-.04421	-.00362
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00179	.04395	-.00004
Stddev	.00067	.00449	.00027
%RSD	37.590	10.216	646.92
#1	-.00183	.04681	.00000
#2	-.00244	.04627	-.00033
#3	-.00110	.03878	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11554.	70867.	3223.7
Stddev	64.	166.	16.9
%RSD	.55204	.23445	.52338
#1	11485.	70678.	3205.6
#2	11566.	70989.	3239.0
#3	11611.	70935.	3226.6

Approved: August 11, 2016

Sample Name: L1608033017 Acquired: 8/10/2016 14:34:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.02333**	**-.00006**	**.14241**	**.01923**	**-.00002**	**268.87**
Stddev	.00104	.00160	.00207	.00080	.00031	.00005	.31
%RSD	327.55	6.8752	3410.4	.55870	1.6151	259.28	.11567
#1	-.00115	.02395	.00220	.14327	.01888	.00003	269.21
#2	.00085	.02453	-.00050	.14226	.01948	-.00007	268.59
#3	-.00065	.02151	-.00188	.14170	.01934	-.00002	268.81
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00282**	**.00701**	**.00328**	**.00338**	F **-.02500**	**7.4948**	**.43439**
Stddev	.00035	.00083	.00031	.00203	.02128	.0624	.00389
%RSD	12.303	11.867	9.4300	60.148	85.127	.83221	.89625
#1	.00305	.00712	.00313	.00121	-.02489	7.4936	.43815
#2	.00300	.00778	.00308	.00524	-.00377	7.4331	.43038
#3	.00242	.00613	.00364	.00368	-.04633	7.5578	.43463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**276.22**	**1.4573**	**.00028**	F **295.22**	**.03650**	**-.00221**	**-.00126**
Stddev	.91	.0087	.00076	.46	.00273	.00324	.00134
%RSD	.32795	.59959	268.97	.15479	7.4863	146.33	106.52
#1	275.38	1.4517	-.00059	295.43	.03804	-.00585	-.00281
#2	276.12	1.4528	.00081	295.54	.03812	.00036	-.00053
#3	277.18	1.4674	.00064	294.70	.03335	-.00115	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 11, 2016

Sample Name: L1608033017 Acquired: 8/10/2016 14:34:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00268**	**.00037**	**12.037**	**-.00096**	**4.7300**	F **-.03874**	**-.00298**
Stddev	.00125	.00085	.989	.00001	.0062	.00118	.00136
%RSD	46.692	232.57	8.2185	1.5068	.13109	3.0450	45.667
#1	.00126	.00002	12.629	-.00096	4.7371	-.03874	-.00385
#2	.00362	.00134	12.587	-.00098	4.7263	-.03992	-.00368
#3	.00316	-.00026	10.895	-.00095	4.7265	-.03756	-.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00156**	**.03973**	**-.00017**
Stddev	.00040	.00409	.00022
%RSD	25.797	10.295	133.71
#1	-.00110	.04211	-.00001
#2	-.00185	.04207	-.00007
#3	-.00172	.03501	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11905.**	**72610.**	**3300.4**
Stddev	117.	553.	2.1
%RSD	.98291	.76216	.06359
#1	11829.	71971.	3299.0
#2	11846.	72930.	3299.5
#3	12040.	72929.	3302.8

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 14:37:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40301**	**9.9498**	**.40717**	**.51514**	**1.0434**	**.04813**	**10.339**	**.05093**
Stddev	.00069	.0271	.01127	.00029	.0035	.00007	.046	.00133
%RSD	.17130	.27228	2.7680	.05667	.33119	.13965	.44500	2.6125
#1	.40222	9.9426	.41545	.51488	1.0473	.04819	10.369	.05168
#2	.40336	9.9271	.41173	.51509	1.0420	.04814	10.362	.05171
#3	.40346	9.9798	.39434	.51546	1.0408	.04806	10.286	.04939
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20096**	**.48553**	**.50798**	**4.0466**	**48.229**	**1.0208**	**10.096**	**.52437**
Stddev	.00630	.00130	.01652	.0439	.294	.0186	.175	.00611
%RSD	3.1333	.26769	3.2526	1.0850	.60896	1.8168	1.7297	1.1649
#1	.20475	.48442	.51771	4.0852	48.127	1.0405	10.226	.52107
#2	.20444	.48696	.51732	4.0556	48.561	1.0183	10.166	.53141
#3	.19369	.48521	.48890	3.9988	48.001	1.0037	9.8979	.52062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0145**	**49.410**	**.51338**	**10.389**	**.51427**	**1.2371**	**.41561**	**5.1869**
Stddev	.0300	.257	.01708	.255	.01158	.0286	.01118	.1033
%RSD	2.9613	.52092	3.3266	2.4562	2.2508	2.3116	2.6901	1.9908
#1	1.0280	49.491	.52296	10.541	.51806	1.2513	.42318	5.2530
#2	1.0353	49.618	.52352	10.533	.52348	1.2558	.42088	5.2399
#3	.98002	49.122	.49367	10.095	.50128	1.2042	.40276	5.0680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 14:37:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0004**	**1.0494**	**.96743**	**.50871**	**.95386**	**1.0238**	**1.0070**
Stddev	.0378	.0031	.00528	.00054	.00102	.0315	.0034
%RSD	3.7802	.29330	.54538	.10697	.10705	3.0787	.33325
#1	1.0221	1.0521	.96963	.50933	.95296	1.0426	1.0091
#2	1.0223	1.0500	.97124	.50833	.95497	1.0414	1.0087
#3	.95672	1.0460	.96141	.50848	.95364	.98744	1.0031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12708.**	**77798.**	**3385.9**
Stddev	15.	142.	14.9
%RSD	.11533	.18265	.44080
#1	12698.	77767.	3371.6
#2	12702.	77953.	3384.7
#3	12725.	77674.	3401.3

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 14:41:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	-.00408	-.00063	.00286	-.00322	-.00005	-.00269	.00010
Stddev	.00062	.00300	.00141	.00135	.00121	.00004	.02339	.00011
%RSD	1053.6	73.400	223.75	47.224	37.660	78.104	868.78	115.54
#1	-.00047	-.00464	-.00201	.00150	-.00408	-.00006	.02155	.00023
#2	-.00036	-.00676	-.00067	.00421	-.00375	-.00000	-.02513	.00001
#3	.00065	-.00085	.00080	.00288	-.00183	-.00007	-.00450	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	-.00037	.00131	.00698	.21877	-.00115	.01855	.00057
Stddev	.00022	.00069	.00045	.04398	.17908	.00225	.05406	.00148
%RSD	159.51	188.00	33.907	630.54	81.859	194.82	291.49	257.65
#1	.00009	.00022	.00088	.05665	.26681	-.00013	.07897	.00212
#2	-.00034	-.00114	.00129	-.00872	.36893	.00040	-.02525	-.00082
#3	-.00016	-.00019	.00177	-.02701	.02057	-.00373	.00192	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.07707	.00078	-.00046	-.00253	.00554	.00751	-.00240
Stddev	.00012	.00844	.00007	.00344	.00121	.00560	.00380	.00148
%RSD	143.55	10.944	8.9931	747.84	47.812	101.22	50.654	61.607
#1	-.00002	.06960	.00085	.00064	-.00116	.00845	.01100	-.00129
#2	.00022	.08622	.00071	.00230	-.00346	-.00092	.00346	-.00408
#3	.00006	.07540	.00078	-.00432	-.00297	.00908	.00806	-.00184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 14:41:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**-.00014**	**.00419**	**-.00199**	**-.00012**	**-.00047**	**-.00006**
Stddev	.00019	.00030	.00500	.00047	.00044	.00001	.00005
%RSD	43.972	210.56	119.32	23.743	353.14	2.9817	80.966
#1	-.00057	.00019	-.00147	-.00147	-.00060	-.00048	-.00007
#2	-.00050	-.00023	.00801	-.00238	.00026	-.00047	-.00011
#3	-.00021	-.00039	.00605	-.00211	-.00003	-.00046	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12906.**	**78602.**	**3394.0**
Stddev	52.	141.	15.2
%RSD	.40651	.17963	.44648
#1	12862.	78621.	3408.7
#2	12891.	78452.	3394.9
#3	12964.	78733.	3378.5

Approved: August 11, 2016

Sample Name: PBW B5 Acquired: 8/10/2016 14:45:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.00897**	**-.00205**	**.00076**	**-.00322**	**-.00011**	**-.03143**	**.00038**
Stddev	.00082	.00502	.00296	.00153	.00092	.00002	.04249	.00004
%RSD	313.19	55.950	144.52	202.81	28.466	23.275	135.18	11.542
#1	-.00003	.01286	-.00180	.00001	-.00312	-.00008	-.02442	.00036
#2	.00042	.00330	.00078	.00252	-.00418	-.00012	-.07698	.00044
#3	-.00117	.01075	-.00512	-.00027	-.00236	-.00012	.00712	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**-.00073**	**.00029**	**.03384**	**.15558**	**-.00215**	**-.01522**	**.00006**
Stddev	.00018	.00008	.00067	.03751	.13467	.00319	.00729	.00133
%RSD	67.781	10.256	230.00	110.84	86.559	148.09	47.893	2202.8
#1	-.00017	-.00082	.00103	.06470	.11504	-.00324	-.02340	-.00145
#2	-.00015	-.00067	-.00029	.04473	.30586	.00144	-.00941	.00103
#3	-.00046	-.00072	.00014	-.00791	.04584	-.00466	-.01285	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.03327**	**.00060**	**-.00355**	**.00160**	**.00152**	**.00121**	**.00667**
Stddev	.00037	.01986	.00088	.00564	.00429	.00164	.00322	.00254
%RSD	1612.9	59.696	145.91	158.88	267.90	107.99	265.41	38.142
#1	-.00040	.01160	-.00037	-.00028	.00620	.00302	-.00121	.00961
#2	.00028	.03761	.00083	-.00031	.00089	-.00023	.00486	.00526
#3	.00019	.05061	.00134	-.01006	-.00229	.00176	-.00001	.00514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: PBW B5 Acquired: 8/10/2016 14:45:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**-.00029**	**.00499**	**-.00123**	**.00086**	**.00063**	**-.00038**
Stddev	.00121	.00035	.00338	.00198	.00035	.00023	.00033
%RSD	179.39	120.95	67.591	161.34	40.936	35.619	86.949
#1	-.00042	.00010	.00193	.00091	.00072	.00066	-.00013
#2	.00039	-.00041	.00444	-.00299	.00126	.00085	-.00076
#3	-.00199	-.00056	.00861	-.00160	.00060	.00040	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12868.**	**79033.**	**3429.6**
Stddev	30.	185.	33.2
%RSD	.23211	.23443	.96863
#1	12899.	79188.	3396.2
#2	12840.	78828.	3429.9
#3	12866.	79084.	3462.6

Approved: August 11, 2016

Sample Name: LCSW B5 Acquired: 8/10/2016 14:49:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20374**	**5.1101**	**.20179**	**1.0288**	**.54218**	**.02447**	**5.4414**	**.02555**
Stddev	.00366	.0791	.00753	.0120	.00365	.00030	.0065	.00064
%RSD	1.7971	1.5476	3.7338	1.1682	.67335	1.2315	.11959	2.4968
#1	.20278	5.1898	.20520	1.0414	.54222	.02468	5.4375	.02567
#2	.20779	5.1087	.20702	1.0275	.54580	.02460	5.4489	.02612
#3	.20066	5.0317	.19315	1.0175	.53850	.02412	5.4377	.02486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10153**	**.25168**	**.25881**	**2.0894**	**24.906**	**.53190**	**5.1006**	**.26860**
Stddev	.00339	.00295	.00725	.0311	.144	.00100	.0102	.00096
%RSD	3.3434	1.1704	2.7994	1.4870	.57709	.18795	.20008	.35567
#1	.10266	.25365	.26182	2.0984	24.791	.53257	5.1099	.26752
#2	.10422	.25310	.26405	2.1151	25.067	.53238	5.0897	.26892
#3	.09772	.24829	.25054	2.0549	24.859	.53075	5.1024	.26935
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51992**	**25.523**	**.26136**	**5.0673**	**.26255**	**.62723**	**.19855**	**2.6286**
Stddev	.01557	.120	.00827	.1064	.00617	.01930	.00725	.0542
%RSD	2.9943	.47175	3.1658	2.0999	2.3508	3.0770	3.6501	2.0620
#1	.52643	25.481	.26488	5.1070	.26524	.63056	.20379	2.6433
#2	.53117	25.659	.26730	5.1482	.26692	.64465	.20159	2.6740
#3	.50215	25.429	.25191	4.9468	.25549	.60648	.19028	2.5686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LCSW B5 Acquired: 8/10/2016 14:49:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50227	.55147	.50520	.25238	.49809	.51295	.00150
Stddev	.01723	.00059	.00553	.00669	.00650	.01492	.00030
%RSD	3.4306	.10629	1.0940	2.6496	1.3054	2.9082	20.179
#1	.51131	.55151	.50896	.25327	.50411	.51897	.00180
#2	.51309	.55204	.49886	.25857	.49897	.52391	.00151
#3	.48240	.55087	.50779	.24528	.49119	.49596	.00119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12627.	75813.	3306.0
Stddev	59.	614.	15.7
%RSD	.46991	.81046	.47382
#1	12693.	75307.	3324.1
#2	12578.	75635.	3296.6
#3	12609.	76497.	3297.3

Approved: August 11, 2016

Sample Name: F BLANK Acquired: 8/10/2016 14:53:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579321-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00164	.00753	-.00022	.00493	-.00183	-.00004	.00570	.00024
Stddev	.00066	.00440	.00050	.00047	.00067	.00009	.03930	.00018
%RSD	39.999	58.412	226.41	9.6067	36.637	243.25	689.06	76.326
#1	.00207	.00659	-.00080	.00439	-.00186	.00006	.04623	.00013
#2	.00197	.01233	.00008	.00512	-.00115	-.00006	.00312	.00045
#3	.00088	.00368	.00006	.00527	-.00249	-.00011	-.03224	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00090	.00079	-.00782	.22848	-.00086	-.02083	.00122
Stddev	.00012	.00013	.00038	.02068	.02414	.00281	.07595	.00058
%RSD	120.28	13.947	48.434	264.67	10.565	327.56	364.62	47.264
#1	-.00003	-.00075	.00121	-.02985	.20061	-.00368	.05534	.00138
#2	.00020	-.00097	.00071	.01118	.24276	-.00084	-.09657	.00058
#3	.00013	-.00097	.00045	-.00478	.24206	.00194	-.02126	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	134.94	.00127	-.00185	.00120	.00158	.00513	.00296
Stddev	.00047	.68	.00040	.00289	.00144	.00506	.00304	.00080
%RSD	471.11	.50049	31.674	156.37	119.48	320.70	59.274	26.956
#1	-.00045	135.41	.00151	.00092	-.00021	.00689	.00216	.00207
#2	.00041	134.17	.00150	-.00162	.00116	.00102	.00823	.00360
#3	.00034	135.25	.00081	-.00486	.00266	-.00318	.00500	.00322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: F BLANK Acquired: 8/10/2016 14:53:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579321-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	-.00001	.00359	-.00292	.00056	.00318	-.00015
Stddev	.00092	.00017	.00599	.00348	.00054	.00053	.00039
%RSD	569.08	2224.2	166.63	119.13	96.767	16.711	260.11
#1	-.00038	-.00003	-.00316	.00108	.00034	.00363	-.00026
#2	-.00036	.00017	.00567	-.00520	.00016	.00331	.00028
#3	.00123	-.00016	.00826	-.00464	.00117	.00259	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12567.	75642.	3298.6
Stddev	103.	344.	7.6
%RSD	.81737	.45527	.22932
#1	12449.	75298.	3290.0
#2	12629.	75641.	3301.4
#3	12625.	75987.	3304.4

Approved: August 11, 2016

Sample Name: F BLANK Acquired: 8/10/2016 14:57:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579321-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00086**	**.00704**	**-.00111**	**.00210**	**-.00264**	**-.00007**	**-.00715**
Stddev	.00048	.00259	.00058	.00112	.00063	.00007	.01466
%RSD	56.158	36.771	52.071	53.413	23.962	99.859	205.05
#1	.00134	.00516	-.00108	.00338	-.00194	-.00014	.00561
#2	.00085	.00596	-.00055	.00164	-.00279	-.00004	-.00390
#3	.00038	.00999	-.00171	.00128	-.00318	-.00002	-.02316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00043**	**-.00095**	**.00034**	**.00383**	**.21469**	**-.00149**
Stddev	.00003	.00024	.00044	.00010	.01284	.07285	.00392
%RSD	2809.0	56.358	45.648	30.430	335.28	33.935	262.95
#1	-.00003	-.00032	-.00108	.00027	.01489	.26664	-.00494
#2	-.00001	-.00026	-.00131	.00030	-.01025	.24601	-.00229
#3	.00003	-.00070	-.00047	.00046	.00685	.13141	.00277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.10169**	**-.00038**	**.00023**	**.42960**	**.00127**	**-.00419**	**.00240**
Stddev	.07372	.00183	.00015	.01151	.00092	.00405	.00532
%RSD	72.500	485.92	65.651	2.6791	72.358	96.549	222.01
#1	-.13275	.00064	.00040	.43100	.00111	-.00289	.00418
#2	-.01752	.00072	.00016	.44034	.00226	-.00873	-.00359
#3	-.15480	-.00250	.00013	.41745	.00044	-.00096	.00659
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: August 11, 2016

Sample Name: F BLANK Acquired: 8/10/2016 14:57:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579321-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.00497	.01039	.00042	.00007	.00184	-.00412
Stddev	.00410	.00718	.00266	.00047	.00026	.00344	.00067
%RSD	425.36	144.47	25.626	111.83	358.58	186.65	16.361
#1	.00353	.00534	.01340	.00014	.00018	.00230	-.00404
#2	.00314	-.00239	.00833	.00097	.00026	.00503	-.00349
#3	-.00377	.01196	.00944	.00016	-.00022	-.00180	-.00483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00042	.00333	-.00034
Stddev	.00028	.00043	.00041
%RSD	66.346	12.779	121.04
#1	.00040	.00357	-.00078
#2	.00071	.00359	.00000
#3	.00015	.00284	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12792.	79037.	3396.9
Stddev	23.	147.	9.8
%RSD	.18365	.18632	.28853
#1	12784.	79125.	3385.7
#2	12818.	79118.	3403.3
#3	12774.	78867.	3401.9

Approved: August 11, 2016

Sample Name: L1608037802 Acquired: 8/10/2016 15:01:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	.05754	-.00072	.08832	.04945	-.00007	25.845	.00010
Stddev	.00154	.00202	.00087	.00334	.00086	.00001	.138	.00014
%RSD	126.25	3.5083	119.65	3.7843	1.7408	15.885	.53229	142.83
#1	-.00017	.05987	-.00142	.09174	.04866	-.00009	25.687	.00017
#2	.00287	.05647	.00025	.08814	.04931	-.00006	25.909	-.00006
#3	.00095	.05628	-.00100	.08507	.05037	-.00007	25.939	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	-.00033	.00113	1.2929	.98461	-.00038	3.3788	.04056
Stddev	.00051	.00036	.00172	.0285	.06000	.00316	.0166	.00337
%RSD	67.833	110.15	152.79	2.2053	6.0933	824.25	.49041	8.3089
#1	.00094	-.00070	.00065	1.2768	1.0366	.00117	3.3630	.04317
#2	.00116	.00002	.00304	1.2761	.99829	.00170	3.3774	.04177
#3	.00018	-.00030	-.00030	1.3259	.91896	-.00402	3.3961	.03676
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	120.51	.00452	.42905	.00403	-.00239	.00376	.22982
Stddev	.00041	.23	.00078	.06371	.00211	.00260	.00544	.02963
%RSD	200.33	.18783	17.248	14.849	52.193	108.75	144.65	12.895
#1	-.00025	120.25	.00363	.46800	.00223	-.00240	.00447	.24883
#2	.00033	120.67	.00508	.46362	.00353	.00022	.00881	.24495
#3	.00053	120.60	.00486	.35553	.00635	-.00498	-.00200	.19567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608037802 Acquired: 8/10/2016 15:01:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.04359	-.00330	-.00186	-.00015	.03977	-.00064
Stddev	.00082	.00034	.01019	.00248	.00057	.00596	.00067
%RSD	1092.5	.76999	308.88	133.26	383.73	14.989	105.35
#1	.00047	.04321	.00265	.00024	-.00072	.04359	-.00023
#2	.00063	.04386	-.01507	-.00459	-.00016	.04280	-.00141
#3	-.00087	.04369	.00252	-.00123	.00043	.03290	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12619.	76630.	3375.5
Stddev	90.	229.	12.9
%RSD	.71074	.29869	.38158
#1	12535.	76718.	3386.0
#2	12607.	76801.	3361.1
#3	12713.	76370.	3379.3

Approved: August 11, 2016

Sample Name: L1608037802S Acquired: 8/10/2016 15:04:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20434**	**5.2502**	**.21543**	**1.1319**	**.59032**	**.02480**	**32.387**	**.02605**
Stddev	.00235	.0138	.00313	.0045	.00307	.00008	.112	.00061
%RSD	1.1524	.26240	1.4527	.39383	.51930	.33384	.34649	2.3357
#1	.20647	5.2597	.21434	1.1328	.59208	.02484	32.507	.02662
#2	.20181	5.2565	.21896	1.1270	.58678	.02470	32.284	.02613
#3	.20473	5.2344	.21299	1.1358	.59210	.02485	32.369	.02541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10491**	**.25278**	**.26560**	**3.4689**	**26.164**	**.53806**	**8.6083**	**.30763**
Stddev	.00311	.00321	.00774	.0679	.225	.00081	.1054	.00385
%RSD	2.9665	1.2685	2.9136	1.9561	.85914	.15027	1.2238	1.2530
#1	.10633	.25328	.26824	3.5298	26.423	.53713	8.5824	.30905
#2	.10705	.24936	.27168	3.3957	26.030	.53848	8.7242	.30327
#3	.10134	.25571	.25689	3.4812	26.038	.53857	8.5183	.31058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53940**	**152.39**	**.26855**	**5.8594**	**.26712**	**.65054**	**.20529**	**3.0888**
Stddev	.01422	.67	.00714	.1083	.00808	.01283	.00467	.0488
%RSD	2.6355	.44253	2.6600	1.8490	3.0241	1.9725	2.2763	1.5810
#1	.54625	153.06	.27202	5.9240	.27434	.65873	.20442	3.1098
#2	.54888	151.71	.27329	5.9198	.26862	.65714	.21033	3.1236
#3	.52305	152.38	.26033	5.7343	.25839	.63575	.20110	3.0330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608037802S Acquired: 8/10/2016 15:04:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51534**	**.59552**	**.51116**	**.25657**	**.50287**	**.57353**	**.00141**
Stddev	.01409	.00194	.01181	.00168	.00043	.01234	.00004
%RSD	2.7333	.32592	2.3095	.65365	.08527	2.1518	3.1668
#1	.52221	.59713	.52146	.25827	.50262	.57963	.00141
#2	.52467	.59606	.51373	.25652	.50261	.58163	.00136
#3	.49914	.59336	.49827	.25492	.50336	.55932	.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12163.**	**74474.**	**3310.7**
Stddev	3.	67.	18.1
%RSD	.02175	.08935	.54533
#1	12160.	74481.	3304.9
#2	12164.	74537.	3331.0
#3	12166.	74404.	3296.3

Approved: August 11, 2016

Sample Name: L1608037802SD Acquired: 8/10/2016 15:08:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20524**	**5.2591**	**.21619**	**1.1453**	**.60788**	**.02493**	**32.327**	**.02672**
Stddev	.00139	.0071	.00493	.0024	.00261	.00002	.265	.00048
%RSD	.67503	.13538	2.2797	.20906	.42962	.09774	.81901	1.7936
#1	.20581	5.2512	.21807	1.1428	.60661	.02495	32.126	.02697
#2	.20366	5.2611	.21990	1.1457	.60614	.02491	32.228	.02703
#3	.20626	5.2650	.21060	1.1475	.61088	.02492	32.627	.02617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10541**	**.25343**	**.26662**	**3.5184**	**26.179**	**.54060**	**8.5987**	**.31094**
Stddev	.00340	.00181	.00648	.0092	.239	.00447	.1015	.00485
%RSD	3.2275	.71240	2.4311	.25998	.91281	.82769	1.1807	1.5596
#1	.10740	.25177	.27111	3.5165	26.093	.53674	8.5123	.30537
#2	.10735	.25535	.26955	3.5284	25.994	.53955	8.7105	.31319
#3	.10149	.25316	.25919	3.5104	26.449	.54550	8.5732	.31425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54264**	**153.19**	**.27083**	**5.9090**	**.26589**	**.65459**	**.20659**	**3.0652**
Stddev	.01530	1.13	.00939	.1236	.00237	.01691	.00586	.0543
%RSD	2.8188	.73623	3.4673	2.0913	.89043	2.5829	2.8374	1.7722
#1	.55180	152.57	.27588	5.9833	.26696	.66221	.21253	3.0970
#2	.55114	152.51	.27661	5.9773	.26752	.66635	.20642	3.0960
#3	.52498	154.50	.25999	5.7663	.26317	.63522	.20081	3.0024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608037802SD Acquired: 8/10/2016 15:08:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51922	.59703	.51050	.25741	.50714	.57687	.00082
Stddev	.01518	.00640	.00759	.00498	.00097	.01363	.00038
%RSD	2.9231	1.0720	1.4859	1.9336	.19061	2.3622	46.666
#1	.52762	.59243	.50292	.26167	.50813	.58408	.00051
#2	.52835	.59432	.51048	.25862	.50619	.58537	.00125
#3	.50170	.60434	.51809	.25194	.50710	.56115	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12015.	73949.	3293.9
Stddev	17.	45.	20.8
%RSD	.13895	.06093	.63181
#1	12032.	73977.	3310.4
#2	12015.	73897.	3300.6
#3	11998.	73973.	3270.5

Approved: August 11, 2016

Sample Name: L1608037701 Acquired: 8/10/2016 15:12:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.03632	.00245	.09845	.06645	-.00005	178.87	.01111
Stddev	.00094	.00632	.00110	.00087	.00037	.00004	.42	.00125
%RSD	89.425	17.411	44.817	.88088	.55291	85.947	.23237	11.221
#1	.00212	.02951	.00159	.09885	.06608	-.00008	178.74	.01211
#2	.00032	.04200	.00369	.09745	.06682	-.00007	178.53	.01151
#3	.00072	.03746	.00208	.09904	.06646	-.00000	179.33	.00971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00121	.00053	1.1262	-.00150	2.0454	.00618	2.8561	.41832
Stddev	.00032	.00040	.1113	.02698	.1695	.00638	.0541	.00092
%RSD	26.303	74.521	9.8859	1803.9	8.2847	103.25	1.8952	.22094
#1	.00121	.00020	1.1949	-.01804	1.8500	.01342	2.7948	.41930
#2	.00152	.00043	1.1858	-.01608	2.1336	.00377	2.8975	.41817
#3	.00089	.00097	.99771	.02963	2.1526	.00135	2.8760	.41747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	4.4433	.00313	-.09425	.01149	.00152	.00370	2.5386
Stddev	.00029	.0354	.00020	.01297	.00192	.00286	.00605	.2087
%RSD	49.694	.79577	6.4016	13.758	16.708	187.96	163.61	8.2201
#1	.00063	4.4032	.00324	-.10779	.01344	.00393	.00110	2.6619
#2	.00086	4.4700	.00290	-.09300	.00961	.00227	.01061	2.6563
#3	.00028	4.4566	.00325	-.08195	.01143	-.00164	-.00062	2.2977
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608037701 Acquired: 8/10/2016 15:12:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00085**	**.44423**	**-.02644**	**-.00263**	**.00072**	**.20396**	**-.00073**
Stddev	.00057	.00223	.00519	.00157	.00051	.02024	.00045
%RSD	67.797	.50224	19.637	59.468	70.811	9.9220	61.231
#1	.00044	.44237	-.02189	-.00222	.00047	.21686	-.00027
#2	.00060	.44362	-.03210	-.00437	.00038	.21438	-.00117
#3	.00150	.44671	-.02533	-.00131	.00131	.18064	-.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12013.**	**73794.**	**3242.1**
Stddev	73.	205.	33.4
%RSD	.60896	.27716	1.0297
#1	11949.	73686.	3211.6
#2	11998.	74030.	3277.7
#3	12093.	73667.	3237.1

Approved: August 11, 2016

Sample Name: L1608037701PS Acquired: 8/10/2016 15:16:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579664-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20992	5.2711	.22093	1.1379	.60702	.02493	165.23	.03731
Stddev	.00167	.0185	.00486	.0036	.00151	.00008	.17	.00083
%RSD	.79568	.35077	2.2017	.31511	.24896	.33366	.10118	2.2247
#1	.21179	5.2507	.22455	1.1346	.60835	.02491	165.19	.03801
#2	.20858	5.2756	.22284	1.1375	.60538	.02502	165.09	.03751
#3	.20939	5.2869	.21540	1.1417	.60733	.02486	165.41	.03639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10605	.25614	1.2957	2.1077	27.008	.55000	7.7196	.64270
Stddev	.00311	.00108	.0308	.0413	.041	.00066	.0689	.00391
%RSD	2.9358	.42356	2.3813	1.9595	.15352	.12055	.89315	.60824
#1	.10817	.25573	1.3104	2.1027	27.041	.55076	7.6925	.64198
#2	.10751	.25533	1.3165	2.0692	26.961	.54951	7.7979	.63920
#3	.10248	.25738	1.2603	2.1514	27.020	.54974	7.6682	.64692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54631	29.776	.26783	5.3932	.28153	.66290	.20913	5.1690
Stddev	.01476	.103	.00672	.1152	.00395	.01401	.00194	.0874
%RSD	2.7024	.34609	2.5094	2.1366	1.4040	2.1128	.92663	1.6901
#1	.55482	29.789	.27303	5.4613	.28440	.67562	.20933	5.2224
#2	.55484	29.667	.27020	5.4582	.28317	.66520	.21096	5.2163
#3	.52926	29.871	.26024	5.2602	.27702	.64789	.20710	5.0682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608037701PS Acquired: 8/10/2016 15:16:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579664-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52408**	**.93504**	**.48902**	**.26102**	**.50700**	**.71446**	**.00029**
Stddev	.01547	.00259	.00648	.00437	.00116	.01790	.00045
%RSD	2.9513	.27681	1.3259	1.6752	.22840	2.5051	158.24
#1	.53364	.93610	.48179	.26385	.50657	.72548	.00078
#2	.53237	.93209	.49430	.26323	.50611	.72409	.00021
#3	.50624	.93693	.49098	.25599	.50831	.69381	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11957.**	**73323.**	**3250.1**
Stddev	12.	86.	6.6
%RSD	.09667	.11710	.20228
#1	11969.	73377.	3245.0
#2	11946.	73367.	3257.5
#3	11956.	73224.	3247.8

Approved: August 11, 2016

Sample Name: L1608037701SDL Acquired: 8/10/2016 15:19:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579664-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**-.00676**	**-.00149**	**.02021**	**.01090**	**-.00003**	**35.603**
Stddev	.00203	.00622	.00287	.00076	.00031	.00004	.207
%RSD	803.24	91.971	192.77	3.7466	2.8217	139.17	.58275
#1	.00237	-.00843	-.00186	.02068	.01076	.00001	35.381
#2	.00007	-.01198	-.00416	.02062	.01125	-.00007	35.635
#3	-.00168	.00012	.00155	.01934	.01069	-.00002	35.793
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00220**	**-.00005**	**.00032**	**.22336**	F **-.02178**	**.51094**	**-.00415**
Stddev	.00029	.00029	.00096	.02187	.04537	.07681	.00329
%RSD	13.037	622.58	304.37	9.7917	208.30	15.033	79.292
#1	.00232	-.00014	-.00037	.23633	.01868	.52193	-.00087
#2	.00242	-.00028	.00141	.23565	-.01319	.58166	-.00413
#3	.00188	.00028	-.00009	.19811	-.07083	.42923	-.00744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53602**	**.08105**	**.00002**	**.88349**	**.00135**	**-.01646**	**.00094**
Stddev	.09258	.00071	.00026	.02507	.00057	.00486	.00389
%RSD	17.272	.87657	1109.2	2.8373	42.163	29.502	415.19
#1	.45203	.08181	-.00027	.86427	.00195	-.01934	-.00054
#2	.63529	.08093	.00023	.91185	.00082	-.01918	-.00200
#3	.52073	.08041	.00012	.87436	.00127	-.01085	.00535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: L1608037701SDL Acquired: 8/10/2016 15:19:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579664-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00225	.48238	-.00025	.08565	-.00014	.00094
Stddev	.00150	.00435	.04699	.00049	.00050	.00966	.00176
%RSD	185.43	193.42	9.7409	194.93	.58036	6681.9	187.83
#1	.00251	.00721	.51154	.00001	.08510	.00084	.00183
#2	.00024	-.00088	.50742	.00005	.08576	.00899	.00206
#3	-.00033	.00041	.42817	-.00081	.08608	-.01026	-.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00091	.04040	-.00059
Stddev	.00067	.00392	.00033
%RSD	73.647	9.7096	56.448
#1	.00166	.04269	-.00039
#2	.00040	.04264	-.00040
#3	.00066	.03587	-.00098
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12765.	78111.	3359.3
Stddev	12.	108.	10.1
%RSD	.09319	.13804	.30199
#1	12753.	78236.	3370.7
#2	12777.	78048.	3356.1
#3	12765.	78050.	3351.1

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 15:23:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40106**	**9.8664**	**.40385**	**.50934**	**1.0395**	**.04783**	**10.313**	**.05086**
Stddev	.00098	.0200	.01208	.00278	.0032	.00009	.053	.00143
%RSD	.24488	.20302	2.9906	.54667	.30735	.17986	.50926	2.8078
#1	.40062	9.8875	.40870	.50757	1.0414	.04785	10.367	.05162
#2	.40038	9.8476	.41276	.50789	1.0413	.04774	10.310	.05175
#3	.40219	9.8642	.39011	.51255	1.0358	.04791	10.262	.04921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20017**	**.47965**	**.50864**	**4.0703**	**48.593**	**1.0235**	**9.9176**	**.51483**
Stddev	.00657	.00330	.01680	.0272	.265	.0097	.1154	.00185
%RSD	3.2841	.68772	3.3032	.66865	.54572	.95038	1.1635	.36030
#1	.20413	.47641	.51956	4.0803	48.829	1.0186	9.8659	.51341
#2	.20380	.47954	.51706	4.0395	48.306	1.0172	10.050	.51693
#3	.19258	.48300	.48929	4.0911	48.645	1.0347	9.8371	.51415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0134**	**49.414**	**.51038**	**10.353**	**.51293**	**1.2304**	**.41773**	**5.1656**
Stddev	.0366	.161	.01831	.271	.01259	.0326	.00680	.1258
%RSD	3.6138	.32585	3.5872	2.6196	2.4543	2.6467	1.6286	2.4363
#1	1.0359	49.545	.52157	10.527	.51695	1.2511	.42251	5.2440
#2	1.0331	49.463	.52032	10.493	.52302	1.2471	.42073	5.2324
#3	.97110	49.234	.48925	10.041	.49883	1.1928	.40994	5.0205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 15:23:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99443**	**1.0418**	**.97131**	**.50592**	**.95125**	**1.0193**	**.99697**
Stddev	.04057	.0028	.00517	.00517	.00104	.0320	.00688
%RSD	4.0797	.26701	.53259	1.0210	.10888	3.1375	.69024
#1	1.0204	1.0449	.97532	.50833	.95038	1.0380	1.0014
#2	1.0152	1.0395	.96547	.50944	.95240	1.0376	.98904
#3	.94768	1.0410	.97314	.49999	.95098	.98241	1.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12707.**	**77398.**	**3370.9**
Stddev	39.	71.	23.0
%RSD	.30381	.09186	.68358
#1	12677.	77405.	3351.5
#2	12694.	77466.	3396.4
#3	12751.	77324.	3364.9

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 15:27:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00128	-.00480	-.00106	.00211	-.00215	-.00009	.00652	.00007
Stddev	.00093	.00222	.00352	.00184	.00017	.00004	.02893	.00019
%RSD	73.139	46.141	332.91	87.000	7.7300	51.624	443.58	283.47
#1	.00108	-.00720	-.00029	.00396	-.00205	-.00009	.01819	-.00001
#2	.00229	-.00437	.00202	.00029	-.00207	-.00004	.02780	-.00007
#3	.00045	-.00284	-.00490	.00209	-.00235	-.00013	-.02642	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	-.00070	.00010	.00333	.30608	-.00181	-.05207	.00285
Stddev	.00014	.00133	.00130	.02357	.13013	.00146	.07446	.00056
%RSD	98.451	189.27	1290.9	708.23	42.516	80.397	142.98	19.761
#1	.00029	-.00024	.00109	-.01395	.24372	-.00277	-.04544	.00262
#2	.00002	-.00221	-.00137	.03018	.45565	-.00014	.01884	.00244
#3	.00011	.00034	.00059	-.00624	.21886	-.00253	-.12963	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.01750	.00054	.00036	.00011	.00292	.00173	-.00093
Stddev	.00048	.01730	.00023	.00377	.00281	.00127	.00396	.00097
%RSD	567.88	98.864	41.783	1044.6	2445.9	43.455	228.17	104.12
#1	-.00036	.02586	.00035	.00390	.00116	.00241	.00490	-.00181
#2	.00002	-.00239	.00079	-.00361	-.00307	.00436	-.00270	.00010
#3	.00059	.02904	.00048	.00079	.00225	.00198	.00300	-.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 15:27:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00014**	**.00734**	**.00057**	**.00059**	**-.00026**	**-.00014**
Stddev	.00028	.00041	.01010	.00150	.00028	.00008	.00003
%RSD	625.33	299.90	137.60	265.22	47.538	30.718	23.470
#1	.00024	-.00051	.01835	.00228	.00027	-.00029	-.00018
#2	-.00031	-.00020	.00519	-.00008	.00075	-.00017	-.00012
#3	-.00006	.00030	-.00151	-.00050	.00075	-.00032	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12884.**	**78994.**	**3391.9**
Stddev	62.	114.	26.9
%RSD	.48170	.14435	.79227
#1	12846.	78882.	3405.0
#2	12851.	79110.	3409.8
#3	12956.	78991.	3361.0

Approved: August 11, 2016

Sample Name: L1608016406PS Acquired: 8/10/2016 15:31:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579239-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20548**	**5.1864**	**.21015**	**1.0444**	**.54998**	**.02467**	**9.4946**	**.02640**
Stddev	.00241	.0145	.00716	.0057	.00144	.00019	.0644	.00075
%RSD	1.1711	.28020	3.4049	.54764	.26272	.75843	.67789	2.8402
#1	.20617	5.1926	.21649	1.0421	.55155	.02481	9.4994	.02696
#2	.20747	5.1698	.21157	1.0510	.54967	.02474	9.5564	.02670
#3	.20281	5.1968	.20239	1.0403	.54871	.02446	9.4279	.02555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10537**	**.25442**	**.26800**	**2.1155**	**26.648**	**.54318**	**5.5383**	**.29720**
Stddev	.00385	.00179	.00809	.0239	.044	.00571	.0303	.00166
%RSD	3.6494	.70201	3.0186	1.1314	.16346	1.0507	.54771	.55733
#1	.10852	.25630	.27352	2.1337	26.614	.53797	5.5036	.29890
#2	.10651	.25274	.27176	2.1244	26.697	.54928	5.5515	.29711
#3	.10109	.25421	.25871	2.0884	26.633	.54230	5.5598	.29559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53578**	**26.398**	**.26907**	**5.3213**	**.26701**	**.64709**	**.20729**	**2.7876**
Stddev	.01775	.069	.00637	.1275	.00962	.01516	.00962	.0618
%RSD	3.3124	.26111	2.3677	2.3960	3.6037	2.3431	4.6412	2.2174
#1	.54708	26.347	.27210	5.4049	.27479	.65480	.21002	2.8313
#2	.54493	26.477	.27335	5.3844	.26999	.65685	.21525	2.8146
#3	.51532	26.370	.26174	5.1745	.25625	.62962	.19660	2.7169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608016406PS Acquired: 8/10/2016 15:31:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579239-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51661**	**.56858**	**.51630**	**.25762**	**.50226**	**.53253**	**.00112**
Stddev	.01833	.00027	.00510	.00415	.00099	.01668	.00030
%RSD	3.5477	.04680	.98836	1.6120	.19693	3.1319	26.779
#1	.52727	.56829	.51243	.25817	.50219	.54337	.00078
#2	.52710	.56864	.51439	.26146	.50329	.54089	.00124
#3	.49544	.56881	.52209	.25321	.50132	.51332	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12131.**	**74373.**	**3235.3**
Stddev	28.	76.	.9
%RSD	.22890	.10245	.02642
#1	12106.	74298.	3235.7
#2	12126.	74451.	3234.4
#3	12161.	74370.	3236.0

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 15:34:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39901**	**9.7863**	**.40441**	**.51218**	**1.0308**	**.04747**	**10.224**	**.05054**
Stddev	.00040	.0303	.01041	.00114	.0065	.00009	.098	.00127
%RSD	.10055	.30921	2.5730	.22265	.62641	.18053	.95712	2.5163
#1	.39933	9.7514	.40856	.51248	1.0269	.04746	10.126	.05125
#2	.39913	9.8055	.41209	.51315	1.0274	.04738	10.224	.05130
#3	.39856	9.8020	.39257	.51092	1.0383	.04755	10.321	.04908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19894**	**.47837**	**.50499**	**4.0398**	**47.845**	**1.0186**	**9.8750**	**.51156**
Stddev	.00644	.00113	.01480	.0129	.262	.0024	.0386	.00113
%RSD	3.2368	.23716	2.9316	.31863	.54827	.23554	.39094	.22075
#1	.20287	.47718	.51479	4.0256	47.657	1.0212	9.8735	.51054
#2	.20245	.47944	.51221	4.0506	47.734	1.0182	9.9143	.51137
#3	.19151	.47849	.48796	4.0433	48.145	1.0165	9.8371	.51277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0043**	**48.775**	**.50668**	**10.296**	**.51129**	**1.2262**	**.41044**	**5.1408**
Stddev	.0295	.228	.01579	.241	.00991	.0262	.00530	.1019
%RSD	2.9383	.46840	3.1164	2.3450	1.9386	2.1336	1.2913	1.9825
#1	1.0158	48.595	.51637	10.427	.51749	1.2397	.41295	5.1916
#2	1.0263	48.699	.51521	10.444	.51653	1.2429	.41401	5.2073
#3	.97077	49.032	.48846	10.018	.49986	1.1961	.40435	5.0235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 15:34:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99012**	**1.0349**	**.96451**	**.50037**	**.94066**	**1.0131**	**.98847**
Stddev	.03372	.0057	.01269	.00418	.00101	.0287	.00563
%RSD	3.4052	.55033	1.3152	.83558	.10784	2.8322	.56990
#1	1.0108	1.0297	.97915	.50515	.94004	1.0297	.98429
#2	1.0084	1.0341	.95751	.49744	.94183	1.0296	.98623
#3	.95121	1.0410	.95686	.49850	.94010	.97999	.99487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12808.**	**78047.**	**3404.6**
Stddev	12.	73.	19.8
%RSD	.09194	.09343	.58195
#1	12819.	78126.	3417.3
#2	12809.	77982.	3414.9
#3	12796.	78034.	3381.8

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 15:38:26 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	-.00897	-.00231	.00380	-.00262	-.00004	-.02162	.00019
Stddev	.00066	.00778	.00145	.00157	.00062	.00006	.00676	.00012
%RSD	86.885	86.692	62.553	41.295	23.687	133.67	31.251	62.311
#1	.00019	-.00216	-.00274	.00215	-.00201	-.00010	-.01769	.00011
#2	.00148	-.01745	-.00349	.00527	-.00259	.00001	-.02942	.00013
#3	.00060	-.00732	-.00070	.00399	-.00325	-.00004	-.01774	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	-.00047	.00138	.00421	.27896	-.00254	-.05015	.00041
Stddev	.00006	.00032	.00012	.04327	.19438	.00154	.08501	.00154
%RSD	50.038	66.999	8.4128	1027.1	69.683	60.520	169.51	371.64
#1	-.00019	-.00015	.00131	.05213	.42027	-.00430	-.04595	.00189
#2	-.00006	-.00049	.00133	-.03202	.35932	-.00142	-.13718	-.00118
#3	-.00012	-.00078	.00152	-.00747	.05728	-.00192	.03268	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.02288	.00162	.00328	-.00083	.00055	.00518	-.00197
Stddev	.00020	.02027	.00039	.00333	.00261	.00061	.00380	.00125
%RSD	64.304	88.581	24.139	101.56	314.66	110.93	73.368	63.212
#1	.00035	.04299	.00201	.00318	-.00322	.00110	.00742	-.00068
#2	.00049	.02319	.00162	.00666	.00195	-.00010	.00079	-.00317
#3	.00009	.00246	.00123	.00000	-.00121	.00064	.00732	-.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 15:38:26 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**-.00021**	**.00096**	**-.00004**	**.00094**	**-.00022**	**-.00004**
Stddev	.00042	.00053	.00501	.00378	.00069	.00008	.00015
%RSD	276.25	248.19	518.93	10413.	73.475	35.440	367.01
#1	-.00063	-.00015	.00263	.00104	.00172	-.00023	.00013
#2	.00003	-.00077	.00493	-.00424	.00072	-.00029	-.00016
#3	.00014	.00028	-.00466	.00309	.00039	-.00013	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12971.**	**79426.**	**3411.7**
Stddev	61.	318.	15.9
%RSD	.46937	.39994	.46601
#1	12946.	79302.	3416.8
#2	12928.	79786.	3393.9
#3	13041.	79188.	3424.5

Approved: August 11, 2016

Sample Name: L1608027601 Acquired: 8/10/2016 15:42:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**.07530**	**-.00056**	**.30812**	**.16183**	**-.00004**	F **583.63**
Stddev	.00239	.00365	.00088	.00126	.00161	.00002	2.91
%RSD	750.87	4.8467	156.83	.40756	.99283	56.007	.49823
#1	.00074	.07820	-.00079	.30688	.16352	-.00006	586.12
#2	.00247	.07120	.00041	.30810	.16032	-.00004	584.33
#3	-.00225	.07649	-.00131	.30939	.16164	-.00002	580.43
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00349**	**-.00013**	**.00142**	**.02031**	**-.01972**	**180.94**	**.04843**
Stddev	.00039	.00048	.00113	.00378	.04334	.83	.00045
%RSD	11.047	358.98	79.612	18.627	219.75	.45648	.92358
#1	.00384	-.00061	.00019	.02128	.02983	181.74	.04839
#2	.00356	-.00014	.00164	.02351	-.03842	180.97	.04889
#3	.00308	.00035	.00242	.01613	-.05058	180.09	.04800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.037**	**.08016**	**.00716**	**212.22**	**.00079**	**.05833**	**-.00119**
Stddev	.090	.00394	.00128	1.10	.00082	.00365	.00043
%RSD	.52722	4.9125	17.891	.52019	103.62	6.2624	35.842
#1	16.993	.07745	.00784	213.03	.00138	.05675	-.00078
#2	17.140	.07836	.00796	212.67	-.00014	.06251	-.00163
#3	16.978	.08468	.00568	210.96	.00113	.05574	-.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: L1608027601 Acquired: 8/10/2016 15:42:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01206**	**.05951**	**.11707**	**-.00170**	**.48963**	F **-.07646**	**-.00452**
Stddev	.00451	.00522	.01261	.00075	.00153	.00334	.00316
%RSD	37.364	8.7661	10.770	43.827	.31245	4.3656	70.026
#1	.01397	.06087	.12620	-.00129	.49070	-.07583	-.00289
#2	.01530	.06392	.12232	-.00126	.49031	-.08007	-.00250
#3	.00691	.05375	.10268	-.00257	.48788	-.07348	-.00816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00074**	**.00342**	**-.00045**
Stddev	.00084	.00044	.00038
%RSD	113.37	12.780	86.244
#1	.00022	.00383	-.00047
#2	-.00135	.00348	-.00082
#3	-.00109	.00296	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11580.**	**70525.**	**3216.6**
Stddev	115.	338.	26.3
%RSD	.99470	.47898	.81694
#1	11502.	70796.	3193.3
#2	11526.	70147.	3211.5
#3	11712.	70633.	3245.1

Approved: August 11, 2016

Sample Name: L1608031704 Acquired: 8/10/2016 15:46:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.23806	.00074	.04139	.02056	.00021	11.522	.00092
Stddev	.00069	.00373	.00334	.00103	.00060	.00005	.012	.00035
%RSD	148.90	1.5664	449.11	2.4802	2.9248	24.855	.10531	37.961
#1	-.00002	.24228	-.00100	.04218	.02056	.00017	11.518	.00131
#2	.00016	.23668	-.00137	.04023	.02117	.00027	11.512	.00080
#3	.00125	.23521	.00460	.04176	.01997	.00019	11.535	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01123	.00029	.00312	1.6305	1.9503	.06818	9.2402	.11558
Stddev	.00156	.00060	.00093	.0373	.0445	.00112	.0437	.00011
%RSD	13.854	210.02	29.903	2.2889	2.2843	1.6362	.47322	.09293
#1	.01220	.00080	.00205	1.6736	1.9829	.06699	9.2370	.11571
#2	.01205	.00043	.00375	1.6092	1.9685	.06921	9.1982	.11554
#3	.00943	-.00037	.00355	1.6088	1.8995	.06834	9.2854	.11551
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	33.470	.03759	.20567	.00133	.00217	.00269	21.686
Stddev	.00027	.095	.00394	.02064	.00100	.00235	.00448	1.997
%RSD	95.501	.28245	10.470	10.035	75.057	108.39	166.45	9.2091
#1	.00060	33.570	.03944	.21948	.00050	.00111	.00566	22.911
#2	.00017	33.457	.04026	.21557	.00106	.00053	.00487	22.765
#3	.00009	33.382	.03307	.18194	.00245	.00486	-.00246	19.381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608031704 Acquired: 8/10/2016 15:46:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.12681**	**.00246**	**-.00166**	**.00008**	**.06154**	**.00008**
Stddev	.00053	.00021	.00095	.00256	.00040	.00686	.00037
%RSD	219.77	.16278	38.634	154.07	475.18	11.141	468.30
#1	.00029	.12671	.00298	-.00036	.00053	.06596	-.00031
#2	-.00077	.12668	.00136	-.00462	-.00005	.06503	.00012
#3	-.00024	.12705	.00305	-.00002	-.00023	.05364	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12350.**	**76123.**	**3291.4**
Stddev	52.	105.	34.5
%RSD	.42136	.13819	1.0480
#1	12303.	76026.	3275.1
#2	12341.	76235.	3267.9
#3	12406.	76107.	3331.0

Approved: August 11, 2016

Sample Name: L1608031705 Acquired: 8/10/2016 15:50:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	.18190	-.00002	.03926	.01850	.00022	11.709	.00096
Stddev	.00207	.00532	.00288	.00267	.00016	.00007	.062	.00016
%RSD	141.14	2.9224	18592.	6.7967	.87339	31.900	.52713	16.756
#1	-.00092	.18348	-.00324	.03675	.01838	.00031	11.723	.00103
#2	.00259	.17598	.00089	.03897	.01868	.00018	11.642	.00108
#3	.00274	.18625	.00230	.04206	.01844	.00019	11.763	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01184	.00011	.00344	1.3290	1.7962	.06630	9.4988	.12110
Stddev	.00122	.00101	.00066	.0237	.0780	.00372	.1032	.00198
%RSD	10.289	911.47	19.246	1.7793	4.3408	5.6183	1.0865	1.6320
#1	.01268	.00036	.00338	1.3514	1.7186	.06868	9.5246	.12274
#2	.01240	-.00100	.00281	1.3043	1.8746	.06821	9.5867	.11891
#3	.01044	.00097	.00413	1.3313	1.7953	.06201	9.3851	.12167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	33.840	.03947	.15680	.00301	-.00049	.00069	21.610
Stddev	.00014	.082	.00362	.01292	.00300	.00431	.00346	1.713
%RSD	310.96	.24142	9.1740	8.2395	99.548	872.08	499.74	7.9250
#1	-.00004	33.911	.04188	.16267	.00556	-.00094	.00313	22.659
#2	-.00003	33.858	.04123	.16575	.00376	.00403	.00221	22.537
#3	.00021	33.751	.03531	.14199	-.00029	-.00457	-.00327	19.634
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608031705 Acquired: 8/10/2016 15:50:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.13045**	**.00441**	**-.00252**	**.00076**	**.05849**	**.00020**
Stddev	.00036	.00046	.00351	.00136	.00025	.00577	.00054
%RSD	509.48	.35365	79.483	54.098	33.449	9.8712	276.39
#1	-.00018	.13066	.00582	-.00285	.00082	.06198	-.00018
#2	.00033	.13076	.00042	-.00369	.00048	.06165	-.00005
#3	-.00036	.12992	.00700	-.00102	.00098	.05182	.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12395.**	**76237.**	**3308.1**
Stddev	45.	102.	15.3
%RSD	.35940	.13406	.46245
#1	12346.	76137.	3291.6
#2	12407.	76233.	3310.8
#3	12432.	76342.	3321.8

Approved: August 11, 2016

Sample Name: L1608033404 Acquired: 8/10/2016 15:54:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.10290	-.00122	.09095	.01551	-.00004	33.759	.00136
Stddev	.00081	.00138	.00136	.00106	.00044	.00004	.105	.00014
%RSD	2314.6	1.3415	111.57	1.1706	2.8157	107.34	.31135	10.159
#1	-.00003	.10449	-.00012	.09216	.01602	-.00004	33.715	.00146
#2	-.00085	.10214	-.00274	.09015	.01524	-.00008	33.683	.00142
#3	.00078	.10206	-.00080	.09053	.01529	.00000	33.879	.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00435	.00214	.21064	.42870	.95666	-.00109	.53392	.27997
Stddev	.00058	.00005	.02445	.00561	.08381	.00334	.07857	.00190
%RSD	13.254	2.3229	11.605	1.3094	8.7610	306.94	14.716	.67895
#1	.00494	.00214	.22615	.43517	.95420	-.00217	.55071	.28062
#2	.00433	.00209	.22331	.42508	.87410	.00266	.44831	.27783
#3	.00379	.00219	.18246	.42585	1.0417	-.00376	.60274	.28146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	131.81	.01704	.03570	.00213	.00307	.00199	.11946
Stddev	.00039	.40	.00237	.00207	.00182	.00142	.00236	.01357
%RSD	167.96	.30294	13.882	5.7916	85.557	46.279	118.21	11.362
#1	.00067	131.62	.01780	.03459	.00245	.00458	-.00062	.12911
#2	.00010	131.53	.01893	.03809	.00377	.00176	.00265	.12533
#3	-.00007	132.26	.01439	.03444	.00017	.00287	.00395	.10394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033404 Acquired: 8/10/2016 15:54:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.14731	.08269	.00101	-.00205	.00006	.15804	-.00039
Stddev	.02121	.00010	.00995	.00415	.00032	.01896	.00041
%RSD	14.399	.12139	986.65	201.93	518.85	11.997	105.86
#1	.16037	.08274	.00982	.00205	-.00011	.16977	-.00086
#2	.15873	.08276	.00298	-.00625	.00044	.16818	-.00014
#3	.12284	.08258	-.00978	-.00196	-.00014	.13616	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12264.	75018.	3318.7
Stddev	57.	121.	14.5
%RSD	.46780	.16138	.43626
#1	12228.	74886.	3320.8
#2	12234.	75044.	3332.0
#3	12331.	75124.	3303.3

Approved: August 11, 2016

Sample Name: L1608033405 Acquired: 8/10/2016 15:57:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.01271**	**.00009**	**.03751**	**.19059**	**-.00007**	**181.78**
Stddev	.00214	.00554	.00303	.00113	.00088	.00004	.85
%RSD	602.66	43.601	3534.4	3.0217	.46424	50.577	.46831
#1	-.00279	.00631	.00356	.03848	.19158	-.00007	182.67
#2	.00123	.01584	-.00129	.03778	.18986	-.00011	181.70
#3	.00050	.01597	-.00202	.03626	.19034	-.00004	180.97
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**.00302**	**.00106**	**.00277**	**.06500**	**.86566**	**.00648**
Stddev	.00003	.00050	.00081	.00075	.01741	.08615	.00222
%RSD	4.0406	16.455	76.048	27.059	26.786	9.9522	34.323
#1	.00078	.00332	.00041	.00355	.08287	.96162	.00686
#2	.00075	.00330	.00082	.00206	.04810	.79496	.00849
#3	.00081	.00245	.00197	.00269	.06401	.84041	.00409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.7944**	**.18389**	**.00080**	**5.5661**	**.00383**	**.00194**	**.00155**
Stddev	.0755	.00313	.00027	.0137	.00042	.00247	.00157
%RSD	2.7008	1.7046	34.088	.24602	10.926	127.41	101.55
#1	2.7892	.18031	.00111	5.5761	.00392	.00434	.00074
#2	2.7216	.18521	.00065	5.5505	.00419	-.00060	.00055
#3	2.8723	.18615	.00064	5.5718	.00337	.00208	.00336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: L1608033405 Acquired: 8/10/2016 15:57:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.00104	.59484	-.00039	.39523	F -.03099	-.00216
Stddev	.00276	.00395	.04983	.00061	.00072	.00890	.00328
%RSD	283.33	377.99	8.3768	158.03	.18257	28.710	151.90
#1	.00292	.00557	.62904	-.00012	.39603	-.02714	-.00405
#2	-.00219	-.00076	.61781	.00005	.39502	-.04117	-.00405
#3	.00219	-.00168	.53767	-.00108	.39464	-.02467	.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00054	.92521	-.00047
Stddev	.00100	.09460	.00012
%RSD	183.75	10.225	26.354
#1	.00001	.98603	-.00060
#2	.00170	.97338	-.00035
#3	-.00007	.81621	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12257.	75708.	3309.8
Stddev	62.	207.	19.1
%RSD	.50259	.27405	.57733
#1	12194.	75928.	3288.8
#2	12261.	75680.	3326.1
#3	12317.	75516.	3314.4

Approved: August 11, 2016

Sample Name: L1608041501 Acquired: 8/10/2016 16:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.01197	.00004	.03261	.21622	-.00001	25.149
Stddev	.00055	.00286	.00059	.00270	.00043	.00002	.117
%RSD	812.79	23.859	1434.3	8.2909	.19704	125.15	.46537
#1	-.00045	.01481	-.00059	.03158	.21572	.00000	25.061
#2	.00056	.01201	.00012	.03568	.21647	-.00003	25.103
#3	-.00031	.00909	.00059	.03058	.21646	-.00001	25.282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00160	.00199	.00134	.13687	1.5706	.01821
Stddev	.00014	.00032	.00063	.00105	.01690	.0791	.00319
%RSD	75.525	20.202	31.647	78.455	12.348	5.0386	17.531
#1	.00034	.00196	.00200	.00027	.14338	1.5839	.02186
#2	.00010	.00150	.00260	.00237	.11769	1.4857	.01593
#3	.00011	.00134	.00135	.00136	.14955	1.6423	.01684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.218	.04292	.00052	F 345.36	.00286	1.4109	-.00108
Stddev	.076	.00101	.00024	.57	.00065	.1288	.00262
%RSD	.20865	2.3611	46.969	.16512	22.889	9.1267	242.98
#1	36.168	.04208	.00045	345.95	.00325	1.4841	.00192
#2	36.305	.04263	.00031	344.81	.00323	1.4864	-.00293
#3	36.182	.04404	.00079	345.32	.00211	1.2622	-.00223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 11, 2016

Sample Name: L1608041501 Acquired: 8/10/2016 16:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00191**	**15.178**	**-.00033**	**.45342**	**.00122**	**-.00049**
Stddev	.00321	.00600	1.321	.00052	.00081	.00276	.00154
%RSD	1890.5	313.65	8.7061	158.45	.17868	225.92	317.14
#1	.00243	-.00286	15.958	-.00050	.45435	-.00137	-.00197
#2	-.00376	.00866	15.924	.00026	.45289	.00091	-.00059
#3	.00082	-.00006	13.653	-.00075	.45302	.00412	.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00019**	**.00958**	**-.00014**
Stddev	.00070	.00113	.00068
%RSD	377.90	11.757	479.69
#1	-.00060	.01044	-.00058
#2	-.00059	.01001	.00064
#3	.00063	.00831	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12010.**	**73085.**	**3258.8**
Stddev	77.	107.	9.3
%RSD	.64214	.14586	.28549
#1	11971.	73120.	3255.4
#2	11961.	73170.	3269.4
#3	12099.	72966.	3251.7

Approved: August 11, 2016

Sample Name: L1608041502 Acquired: 8/10/2016 16:05:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.01524**	**-.00149**	**.03406**	**.19215**	**-.00000**	**22.296**
Stddev	.00181	.00084	.00270	.00137	.00041	.00010	.028
%RSD	3923.5	5.4995	180.75	4.0310	.21105	2496.1	.12656
#1	.00119	.01563	-.00374	.03375	.19261	.00011	22.265
#2	.00080	.01427	-.00223	.03556	.19199	-.00005	22.305
#3	-.00212	.01581	.00150	.03287	.19185	-.00008	22.319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**.00125**	**.00140**	**.00131**	**.08739**	**1.5473**	**.02070**
Stddev	.00009	.00008	.00079	.00018	.02186	.0958	.00049
%RSD	23.709	6.7294	56.235	13.966	25.010	6.1887	2.3609
#1	.00048	.00130	.00053	.00146	.06916	1.6081	.02124
#2	.00038	.00116	.00206	.00137	.08141	1.4369	.02029
#3	.00030	.00131	.00160	.00111	.11162	1.5968	.02057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**33.057**	**.03715**	**.00013**	F **343.08**	**.00269**	**1.4170**	**.00060**
Stddev	.236	.00123	.00004	1.06	.00145	.1474	.00240
%RSD	.71416	3.3155	34.185	.30918	53.997	10.403	399.10
#1	33.323	.03826	.00017	343.69	.00191	1.5074	.00278
#2	32.875	.03582	.00008	341.85	.00436	1.4968	-.00197
#3	32.972	.03738	.00013	343.70	.00179	1.2469	.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 11, 2016

Sample Name: L1608041502 Acquired: 8/10/2016 16:05:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00156**	**.00166**	**14.104**	**-.00090**	**.39949**	**-.00054**	**-.00190**
Stddev	.00242	.00627	1.340	.00076	.00102	.00452	.00268
%RSD	154.69	376.83	9.5012	83.530	.25627	841.52	141.23
#1	-.00434	-.00540	14.874	-.00037	.39861	-.00450	-.00412
#2	.00003	.00657	14.881	-.00057	.39924	.00438	-.00264
#3	-.00038	.00383	12.556	-.00177	.40061	-.00149	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00023**	**.00995**	**-.00074**
Stddev	.00041	.00106	.00033
%RSD	178.50	10.605	44.097
#1	-.00024	.01076	-.00066
#2	.00044	.01035	-.00110
#3	.00049	.00876	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12060.**	**73248.**	**3273.1**
Stddev	103.	274.	31.4
%RSD	.85750	.37360	.95938
#1	12025.	72954.	3259.0
#2	11980.	73495.	3309.1
#3	12177.	73294.	3251.2

Approved: August 11, 2016

Sample Name: L1608037701SDL Acquired: 8/10/2016 16:09:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG579664-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00104**	**-.00833**	**.00171**	**.00321**	**-.00066**	**-.00002**	**6.9674**	**.00060**
Stddev	.00083	.00613	.00035	.00297	.00135	.00004	.0086	.00008
%RSD	79.452	73.649	20.507	92.555	205.06	269.71	.12395	13.740
#1	.00013	-.00629	.00186	.00442	-.00217	.00001	6.9753	.00059
#2	.00126	-.01522	.00197	-.00018	.00041	.00001	6.9687	.00052
#3	.00174	-.00347	.00131	.00539	-.00021	-.00006	6.9582	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00114**	**.04412**	**-.00577**	**.30756**	**-.00150**	**.14112**	**.01646**
Stddev	.00018	.00048	.00488	.02733	.06729	.00454	.03552	.00112
%RSD	274.04	41.857	11.052	473.52	21.878	303.70	25.171	6.7928
#1	-.00003	-.00141	.04729	-.01087	.37279	-.00127	.10479	.01720
#2	-.00005	-.00059	.04658	.02375	.23839	.00293	.17577	.01517
#3	.00028	-.00141	.03851	-.03019	.31149	-.00615	.14280	.01700
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.25630**	**.00126**	**-.00764**	**.00132**	**-.00011**	**.00624**	**.08887**
Stddev	.00003	.02484	.00040	.00630	.00210	.00169	.00608	.01291
%RSD	13.398	9.6916	31.556	82.508	158.93	1518.4	97.562	14.527
#1	-.00024	.27571	.00160	-.00055	.00030	.00159	.00509	.09665
#2	-.00019	.22831	.00136	-.01260	.00374	-.00179	.00081	.09599
#3	-.00019	.26488	.00082	-.00977	-.00008	-.00013	.01281	.07397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608037701SDL Acquired: 8/10/2016 16:09:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG579664-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**.01650**	**.00496**	**.00187**	**.00023**	**.00826**	**-.00033**
Stddev	.00044	.00013	.00118	.00126	.00013	.00098	.00024
%RSD	149.72	.81244	23.710	67.345	56.679	11.828	71.271
#1	.00021	.01660	.00450	.00091	.00008	.00878	-.00048
#2	-.00059	.01655	.00630	.00140	.00029	.00888	-.00006
#3	-.00050	.01635	.00409	.00329	.00031	.00714	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13135.**	**80695.**	**3444.8**
Stddev	36.	169.	26.4
%RSD	.27060	.20963	.76772
#1	13171.	80871.	3458.3
#2	13133.	80534.	3414.3
#3	13100.	80680.	3461.7

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 16:13:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40052**	**9.8543**	**.40779**	**.51141**	**1.0414**	**.04786**	**10.325**	**.05091**
Stddev	.00089	.0149	.00863	.00179	.0075	.00009	.042	.00146
%RSD	.22147	.15134	2.1163	.35029	.71555	.19808	.40563	2.8672
#1	.40135	9.8637	.41232	.50970	1.0488	.04775	10.373	.05161
#2	.39958	9.8371	.41322	.51328	1.0416	.04788	10.296	.05188
#3	.40063	9.8621	.39784	.51127	1.0339	.04794	10.305	.04923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20131**	**.47998**	**.51069**	**4.0450**	**48.293**	**1.0197**	**9.9155**	**.51812**
Stddev	.00699	.00052	.01694	.0310	.248	.0192	.0401	.00548
%RSD	3.4726	.10810	3.3178	.76620	.51401	1.8807	.40409	1.0572
#1	.20534	.48032	.51985	4.0543	48.577	1.0416	9.9559	.52314
#2	.20535	.48024	.52109	4.0703	48.178	1.0118	9.8757	.51895
#3	.19324	.47938	.49114	4.0104	48.122	1.0058	9.9148	.51228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0140**	**49.191**	**.51308**	**10.412**	**.51633**	**1.2406**	**.42123**	**5.2055**
Stddev	.0308	.408	.01752	.266	.01028	.0239	.00806	.1062
%RSD	3.0357	.83045	3.4149	2.5566	1.9906	1.9264	1.9135	2.0395
#1	1.0242	49.653	.52378	10.551	.52472	1.2516	.42565	5.2601
#2	1.0384	49.041	.52261	10.580	.51940	1.2570	.42610	5.2732
#3	.97944	48.878	.49286	10.105	.50486	1.2131	.41192	5.0831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 16:13:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99898**	**1.0444**	**.96349**	**.50748**	**.94922**	**1.0222**	**.99007**
Stddev	.03871	.0078	.00221	.00201	.00201	.0316	.00355
%RSD	3.8752	.74334	.22959	.39690	.21123	3.0930	.35856
#1	1.0218	1.0531	.96210	.50628	.95052	1.0397	.99417
#2	1.0208	1.0422	.96604	.50980	.94692	1.0411	.98795
#3	.95428	1.0380	.96232	.50635	.95023	.98565	.98810
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12648.**	**77054.**	**3381.4**
Stddev	12.	12.	12.1
%RSD	.09760	.01579	.35749
#1	12634.	77058.	3368.8
#2	12654.	77040.	3382.5
#3	12657.	77064.	3392.9

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 16:17:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00612	-.00029	.00176	-.00240	-.00004	.00243	-.00009
Stddev	.00110	.00551	.00123	.00159	.00126	.00002	.03353	.00028
%RSD	441.26	90.026	418.26	90.332	52.413	38.483	1378.1	321.75
#1	.00124	-.00379	.00076	.00025	-.00120	-.00004	-.03304	.00022
#2	-.00093	-.00216	-.00164	.00342	-.00371	-.00006	.00674	-.00033
#3	.00043	-.01240	.00001	.00161	-.00229	-.00003	.03360	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	-.00039	.00010	-.00781	.22997	-.00348	-.05240	.00218
Stddev	.00032	.00008	.00108	.01359	.10875	.00274	.07110	.00095
%RSD	182.44	20.566	1069.9	173.96	47.288	78.770	135.70	43.673
#1	-.00017	-.00042	.00113	.00777	.35109	-.00570	-.11903	.00195
#2	.00014	-.00046	.00019	-.01719	.19807	-.00432	.02246	.00137
#3	-.00050	-.00030	-.00102	-.01402	.14074	-.00042	-.06062	.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.03713	-.00014	-.00166	.00052	.00306	-.00035	-.00192
Stddev	.00019	.03942	.00106	.00165	.00047	.00105	.00411	.00068
%RSD	5160.9	106.17	739.32	99.511	89.146	34.300	1172.9	35.307
#1	.00022	.07754	-.00112	-.00114	.00026	.00427	.00249	-.00164
#2	-.00015	.03507	.00098	-.00033	.00106	.00242	-.00507	-.00269
#3	-.00006	-.00122	-.00029	-.00350	.00024	.00248	.00153	-.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 16:17:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**-.00055**	**.00611**	**-.00129**	**.00071**	**-.00029**	**-.00042**
Stddev	.00025	.00034	.00720	.00185	.00010	.00019	.00014
%RSD	68.631	60.952	117.77	143.04	13.329	66.747	32.659
#1	-.00043	-.00078	.00732	-.00107	.00080	-.00009	-.00031
#2	-.00059	-.00071	-.00161	.00044	.00074	-.00031	-.00057
#3	-.00009	-.00017	.01264	-.00325	.00061	-.00048	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12795.**	**78448.**	**3375.1**
Stddev	22.	162.	25.4
%RSD	.17034	.20620	.75195
#1	12770.	78498.	3345.9
#2	12811.	78579.	3387.5
#3	12804.	78267.	3391.8

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 16:21:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00735**	**.14868**	**.00566**	**.08266**	**.00525**	**.00146**	**.42669**	**.00105**
Stddev	.00095	.00340	.00151	.00231	.00098	.00003	.04669	.00014
%RSD	12.873	2.2844	26.675	2.7923	18.734	2.2482	10.943	13.336
#1	.00686	.14501	.00650	.08461	.00533	.00150	.38196	.00096
#2	.00676	.14931	.00392	.08011	.00619	.00146	.42300	.00121
#3	.00845	.15172	.00656	.08325	.00423	.00143	.47512	.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00395**	**.00327**	**.00433**	**.08761**	**.91257**	**.08009**	**.39541**	**.00941**
Stddev	.00031	.00093	.00062	.01864	.04010	.00591	.02652	.00039
%RSD	7.9626	28.497	14.217	21.276	4.3940	7.3788	6.7076	4.1010
#1	.00409	.00230	.00492	.09500	.92235	.07677	.37173	.00982
#2	.00417	.00415	.00437	.06640	.94687	.07658	.42407	.00935
#3	.00359	.00337	.00369	.10142	.86848	.08691	.39044	.00905
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00762**	**.40934**	**.01637**	**.80390**	**.00790**	**.08022**	**.01846**	**.80229**
Stddev	.00093	.01517	.00164	.09750	.00433	.01232	.00350	.09392
%RSD	12.168	3.7057	10.031	12.129	54.770	15.359	18.962	11.706
#1	.00829	.42627	.01696	.86270	.01075	.08835	.01455	.85940
#2	.00801	.39698	.01764	.85764	.01003	.08626	.02130	.85358
#3	.00656	.40477	.01452	.69135	.00292	.06604	.01951	.69390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 16:21:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38779**	**.04223**	**.02389**	**.14669**	**.00817**	**.01689**	**.03961**
Stddev	.05590	.00071	.00600	.01666	.00068	.00226	.00061
%RSD	14.416	1.6699	25.131	11.357	8.3648	13.358	1.5300
#1	.42412	.04295	.02441	.15732	.00852	.01841	.03999
#2	.41584	.04154	.01764	.15525	.00738	.01795	.03993
#3	.32342	.04221	.02961	.12749	.00860	.01430	.03891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12398.**	**78438.**	**3389.1**
Stddev	15.	153.	22.3
%RSD	.11877	.19563	.65764
#1	12399.	78506.	3363.9
#2	12413.	78262.	3397.2
#3	12383.	78546.	3406.2

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 16:25:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02158**	**.38354**	**.01500**	**.19939**	**.01774**	**.00354**	**1.0062**	**.00201**
Stddev	.00275	.00505	.00236	.00134	.00039	.00004	.0320	.00025
%RSD	12.737	1.3166	15.702	.66965	2.2080	1.0927	3.1837	12.574
#1	.02221	.38531	.01624	.20045	.01810	.00353	1.0329	.00200
#2	.02396	.38746	.01649	.19983	.01778	.00351	1.0151	.00227
#3	.01857	.37784	.01229	.19789	.01732	.00358	.97068	.00176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00959**	**.00934**	**.00992**	**.19911**	**2.1075**	**.19611**	**.98806**	**.02084**
Stddev	.00079	.00071	.00070	.02835	.0477	.00105	.07997	.00209
%RSD	8.2076	7.6048	7.0854	14.237	2.2636	.53296	8.0936	10.008
#1	.00985	.01005	.01061	.22031	2.0827	.19493	.91608	.02252
#2	.01021	.00863	.00994	.16691	2.0773	.19694	1.0741	.01851
#3	.00870	.00935	.00920	.21010	2.1625	.19645	.97396	.02149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01853**	**.97456**	**.03976**	**1.9347**	**.02051**	**.19957**	**.04142**	**1.9143**
Stddev	.00179	.02125	.00377	.1622	.00210	.01404	.00195	.1500
%RSD	9.6421	2.1801	9.4932	8.3818	10.222	7.0327	4.7162	7.8354
#1	.01951	.95997	.04183	2.0345	.02290	.20650	.03936	1.9998
#2	.01962	.99893	.04205	2.0220	.01962	.20879	.04325	2.0021
#3	.01647	.96477	.03541	1.7476	.01901	.18342	.04164	1.7411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 16:25:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.92972**	**.10276**	**.06357**	**.35719**	**.01806**	**.03999**	**.09726**
Stddev	.09943	.00018	.00240	.02660	.00092	.00392	.00070
%RSD	10.694	.17120	3.7728	7.4467	5.1086	9.8012	.72129
#1	.99097	.10291	.06097	.37233	.01900	.04244	.09753
#2	.98319	.10256	.06404	.37277	.01802	.04206	.09778
#3	.81500	.10280	.06570	.32648	.01715	.03547	.09646
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12869.**	**78816.**	**3418.9**
Stddev	34.	114.	23.8
%RSD	.26202	.14446	.69619
#1	12847.	78947.	3435.7
#2	12852.	78757.	3391.7
#3	12908.	78743.	3429.4

Approved: August 11, 2016

Sample Name: PBS R6 Acquired: 8/10/2016 16:28:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579502-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.02732**	**.04517**	**-.01569**	**-.00175**	**-.00011**	**1.1183**
Stddev	.00060	.00677	.00284	.00209	.00070	.00008	.0182
%RSD	113.24	24.760	6.2979	13.298	40.000	70.488	1.6307
#1	-.00025	.03336	.04748	-.01797	-.00229	-.00005	1.1034
#2	-.00122	.02860	.04604	-.01388	-.00200	-.00009	1.1128
#3	-.00012	.02001	.04199	-.01522	-.00096	-.00020	1.1386
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00061**	**-.00013**	**.00049**	**.03172**	**.06953**	**1.0902**	**-.00354**
Stddev	.00013	.00036	.00094	.00399	.01711	.1013	.00090
%RSD	20.976	277.52	191.64	12.577	24.609	9.2927	25.407
#1	.00066	.00017	-.00054	.03454	.06900	.97346	-.00456
#2	.00046	-.00003	.00130	.03347	.05269	1.1426	-.00287
#3	.00070	-.00052	.00070	.02716	.08690	1.1546	-.00318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.4814**	**.00291**	**.00067**	**1.1652**	**.00258**	**.48143**	**-.00037**
Stddev	.0905	.00274	.00025	.0226	.00096	.06066	.00106
%RSD	3.6478	94.289	37.970	1.9379	37.261	12.600	288.80
#1	2.5858	.00130	.00055	1.1467	.00223	.52664	.00016
#2	2.4330	.00608	.00050	1.1584	.00367	.50515	-.00159
#3	2.4253	.00135	.00096	1.1903	.00185	.41250	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: PBS R6 Acquired: 8/10/2016 16:28:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579502-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00621	.03737	.58461	.01371	.00536	.00722	F -.05093
Stddev	.00131	.01038	.05074	.00085	.00039	.00229	.00428
%RSD	21.061	27.788	8.6799	6.1900	7.3096	31.770	8.4001
#1	.00708	.04745	.61683	.01391	.00491	.00459	-.05091
#2	.00471	.03794	.61089	.01444	.00557	.00824	-.05521
#3	.00684	.02671	.52612	.01278	.00561	.00883	-.04666
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							18.000
Low Limit							-.04000

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00000	1.5366	.00044
Stddev	.00009	.1510	.00013
%RSD	2691.6	9.8259	28.900
#1	-.00007	1.6362	.00030
#2	-.00003	1.6108	.00054
#3	.00011	1.3629	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11825.	75056.	3562.3
Stddev	100.	148.	5.4
%RSD	.84602	.19759	.15053
#1	11722.	74894.	3567.0
#2	11832.	75185.	3556.4
#3	11922.	75088.	3563.4

Approved: August 11, 2016

Sample Name: LCSS R6 Acquired: 8/10/2016 16:32:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579502-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18004	.04131	.24289	-.01028	-.00227	-.00009	.93544	.02374
Stddev	.00179	.00495	.01651	.00109	.00026	.00008	.01496	.00143
%RSD	.99696	11.975	6.7964	10.630	11.492	85.435	1.5997	6.0443
#1	.17857	.03809	.25182	-.01003	-.00257	-.00016	.93125	.02467
#2	.17950	.03884	.25301	-.01147	-.00209	-.00012	.92301	.02446
#3	.18204	.04701	.22384	-.00933	-.00215	-.00000	.95205	.02209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	-.00033	.26591	.04118	.94572	-.00281	2.4291	.26035
Stddev	.00008	.00085	.01764	.01538	.12838	.00327	.0083	.00391
%RSD	52.921	256.20	6.6333	37.341	13.575	116.66	.34206	1.5003
#1	-.00006	.00054	.27712	.04761	.95564	.00006	2.4285	.26111
#2	-.00016	-.00117	.27504	.05229	1.0688	-.00211	2.4377	.26382
#3	-.00021	-.00038	.24558	.02363	.81266	-.00637	2.4212	.25612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	1.0807	.00242	.39099	.24322	.00863	.03260	.54677
Stddev	.00034	.0329	.00063	.03615	.01023	.00064	.00174	.03125
%RSD	51.258	3.0437	25.900	9.2459	4.2067	7.4126	5.3351	5.7157
#1	.00040	1.1123	.00178	.42170	.24956	.00855	.03125	.56881
#2	.00105	1.0467	.00245	.40014	.24868	.00931	.03198	.56049
#3	.00056	1.0830	.00303	.35115	.23142	.00804	.03456	.51100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LCSS R6 Acquired: 8/10/2016 16:32:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579502-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01063	.00447	.01296	-.03962	-.00002	1.3415	.00018
Stddev	.00204	.00028	.00770	.00452	.00062	.0882	.00022
%RSD	19.184	6.3568	59.400	11.411	3300.2	6.5762	126.13
#1	.01177	.00433	.01095	-.04080	-.00072	1.3935	-.00008
#2	.01185	.00429	.02146	-.04342	.00023	1.3915	.00034
#3	.00828	.00480	.00646	-.03462	.00044	1.2397	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11958.	75905.	3517.6
Stddev	55.	825.	14.1
%RSD	.45600	1.0875	.40001
#1	11925.	76525.	3514.5
#2	11929.	76222.	3505.3
#3	12021.	74968.	3532.9

Approved: August 11, 2016

Sample Name: LCSS DP Acquired: 8/10/2016 16:36:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579502-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18303**	**.01808**	**.26158**	**-.01361**	**-.00162**	**-.00010**	**1.0009**
Stddev	.00168	.00457	.01909	.00107	.00054	.00002	.0508
%RSD	.91605	25.287	7.2995	7.8405	33.148	19.028	5.0750
#1	.18263	.01998	.27421	-.01450	-.00181	-.00011	1.0149
#2	.18487	.02139	.27091	-.01243	-.00101	-.00008	1.0432
#3	.18159	.01286	.23961	-.01391	-.00202	-.00010	.94459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02412**	**.00012**	**.00125**	**.27276**	**.07091**	**.98843**	**-.00069**
Stddev	.00129	.00021	.00062	.01944	.00752	.01793	.00049
%RSD	5.3353	175.82	50.156	7.1257	10.612	1.8141	71.687
#1	.02494	-.00006	.00172	.28424	.07952	.96835	-.00030
#2	.02478	.00007	.00054	.28372	.06562	1.0028	-.00051
#3	.02264	.00035	.00147	.25032	.06758	.99411	-.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.6013**	**.26805**	**.00074**	**1.1714**	**.00277**	**.44322**	**.24624**
Stddev	.0917	.00208	.00028	.0210	.00090	.03404	.01537
%RSD	3.5235	.77497	37.964	1.7945	32.311	7.6806	6.2414
#1	2.5643	.26786	.00088	1.1840	.00175	.47045	.25338
#2	2.5340	.27021	.00093	1.1472	.00317	.45415	.25675
#3	2.7057	.26607	.00042	1.1831	.00340	.40505	.22860
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: LCSS DP Acquired: 8/10/2016 16:36:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579502-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00637**	**.03779**	**.56341**	**.01355**	**.00469**	**.01232**	F **-.04988**
Stddev	.00154	.00323	.03421	.00151	.00017	.00257	.00327
%RSD	24.236	8.5593	6.0722	11.163	3.6676	20.841	6.5490
#1	.00811	.03873	.58647	.01447	.00457	.01114	-.05122
#2	.00585	.04046	.57965	.01438	.00489	.01056	-.05226
#3	.00516	.03420	.52410	.01181	.00461	.01527	-.04615
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							18.000
Low Limit							-.04000

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00011**	**1.4849**	**.00015**
Stddev	.00037	.1072	.00010
%RSD	331.12	7.2157	63.093
#1	-.00009	1.5495	.00007
#2	-.00011	1.5440	.00026
#3	.00054	1.3612	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11868.**	**75891.**	**3521.4**
Stddev	36.	176.	16.1
%RSD	.30439	.23212	.45750
#1	11849.	75731.	3513.4
#2	11846.	76080.	3510.9
#3	11910.	75863.	3539.9

Approved: August 11, 2016

Sample Name: L1608024541 Acquired: 8/10/2016 16:40:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.40049	.03459	-.00770	.00414	-.00010	2.1794	.00062
Stddev	.00117	.00537	.00204	.00096	.00045	.00006	.0171	.00019
%RSD	271.06	1.3398	5.8913	12.517	10.805	65.218	.78362	30.243
#1	.00166	.39702	.03558	-.00719	.00461	-.00003	2.1622	.00081
#2	.00032	.40667	.03594	-.00710	.00411	-.00016	2.1963	.00044
#3	-.00068	.39779	.03224	-.00881	.00371	-.00009	2.1796	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00141	.03439	1.3599	1.1616	-.00289	2.3315	.02781
Stddev	.00005	.00019	.00321	.0273	.0217	.00177	.0816	.00053
%RSD	190.88	13.760	9.3428	2.0114	1.8695	61.333	3.4990	1.9235
#1	.00002	.00131	.03688	1.3764	1.1659	-.00119	2.3659	.02822
#2	.00009	.00163	.03553	1.3749	1.1380	-.00472	2.3902	.02720
#3	-.00002	.00128	.03077	1.3283	1.1807	-.00275	2.2383	.02800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	1.8584	.00376	.41995	.00443	.00673	.03129	.73364
Stddev	.00019	.0125	.00108	.04151	.00188	.00260	.00338	.05159
%RSD	29.784	.67035	28.631	9.8846	42.490	38.669	10.798	7.0327
#1	.00060	1.8448	.00425	.44196	.00402	.00568	.02973	.76307
#2	.00085	1.8610	.00451	.44581	.00648	.00969	.03517	.76378
#3	.00047	1.8693	.00253	.37207	.00278	.00481	.02897	.67406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608024541 Acquired: 8/10/2016 16:40:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01054	.00694	.01345	-.03848	.00106	1.4402	.00327
Stddev	.00054	.00033	.00711	.00495	.00062	.1296	.00058
%RSD	5.1447	4.7271	52.881	12.855	58.527	8.9958	17.866
#1	.01115	.00659	.01749	-.04304	.00145	1.5194	.00274
#2	.01011	.00724	.00524	-.03918	.00035	1.5105	.00317
#3	.01036	.00698	.01762	-.03322	.00138	1.2907	.00390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12153.	77546.	3570.6
Stddev	16.	410.	20.9
%RSD	.12898	.52898	.58546
#1	12147.	77345.	3575.1
#2	12171.	77275.	3588.9
#3	12142.	78018.	3547.8

Approved: August 11, 2016

Sample Name: L1608024542 Acquired: 8/10/2016 16:44:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00176	.40718	.03792	.01235	.01503	-.00011	4.1263	.00139
Stddev	.00092	.00355	.00532	.00125	.00094	.00004	.0414	.00003
%RSD	51.885	.87183	14.024	10.130	6.2455	38.749	1.0040	2.0810
#1	.00179	.40917	.04198	.01294	.01606	-.00007	4.1165	.00139
#2	.00267	.40930	.03988	.01091	.01482	-.00016	4.0907	.00136
#3	.00084	.40308	.03190	.01320	.01421	-.00012	4.1718	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.00238	.10985	.68464	4.3047	.00017	2.3644	.03420
Stddev	.00012	.00041	.01056	.01575	.0586	.00328	.0875	.00232
%RSD	47.432	17.110	9.6116	2.3009	1.3623	1876.9	3.7023	6.7766
#1	.00016	.00255	.11768	.67348	4.2392	-.00065	2.4251	.03540
#2	.00038	.00192	.11403	.70266	4.3524	-.00261	2.4041	.03153
#3	.00021	.00268	.09784	.67779	4.3226	.00378	2.2641	.03567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	8.9692	.01840	.94164	.02259	.00555	.03231	1.4939
Stddev	.00034	.0238	.00155	.09314	.00208	.00310	.00062	.1170
%RSD	35.506	.26497	8.4382	9.8912	9.2172	55.778	1.9249	7.8310
#1	.00119	8.9502	.01947	1.0030	.02451	.00450	.03232	1.5658
#2	.00112	8.9615	.01911	.98742	.02288	.00312	.03169	1.5569
#3	.00057	8.9958	.01662	.83447	.02038	.00904	.03293	1.3589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608024542 Acquired: 8/10/2016 16:44:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01441	.01669	.01741	-.03967	.00171	2.0769	.00406
Stddev	.00156	.00032	.00282	.00366	.00054	.2049	.00027
%RSD	10.828	1.9153	16.180	9.2373	31.283	9.8643	6.7077
#1	.01615	.01689	.01417	-.04390	.00223	2.2072	.00381
#2	.01396	.01632	.01879	-.03777	.00116	2.1828	.00402
#3	.01313	.01686	.01926	-.03736	.00175	1.8408	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12054.	76715.	3512.6
Stddev	38.	429.	9.8
%RSD	.31468	.55958	.27931
#1	12015.	77182.	3504.4
#2	12057.	76625.	3523.5
#3	12091.	76338.	3509.9

Approved: August 11, 2016

Sample Name: L1608024543 Acquired: 8/10/2016 16:48:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.29585	.02450	.02115	.00745	-.00011	3.2045	.00072
Stddev	.00196	.01022	.00314	.00089	.00057	.00005	.0218	.00025
%RSD	390.01	3.4541	12.811	4.2283	7.6218	47.396	.67956	34.755
#1	-.00176	.29180	.02578	.02012	.00785	-.00016	3.1794	.00081
#2	.00150	.28827	.02679	.02160	.00680	-.00010	3.2181	.00092
#3	.00178	.30747	.02092	.02172	.00770	-.00006	3.2161	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00150	.05032	.40206	2.9775	-.00054	2.2322	.02951
Stddev	.00012	.00011	.00448	.01311	.0406	.00265	.0490	.00277
%RSD	112.52	7.1388	8.9072	3.2615	1.3635	492.95	2.1938	9.4000
#1	-.00009	.00151	.05245	.38739	2.9578	.00048	2.1788	.02916
#2	.00001	.00139	.05335	.40615	2.9505	-.00354	2.2751	.02692
#3	-.00023	.00160	.04517	.41264	3.0242	.00145	2.2427	.03244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	8.5108	.00375	.73649	.01098	.00632	.01812	1.2350
Stddev	.00012	.0977	.00005	.07354	.00414	.00191	.00418	.1075
%RSD	11.526	1.1481	1.2256	9.9849	37.753	30.191	23.093	8.7023
#1	.00091	8.4340	.00380	.78079	.01415	.00653	.01926	1.3009
#2	.00104	8.6208	.00374	.77709	.01249	.00812	.01348	1.2932
#3	.00114	8.4777	.00371	.65161	.00629	.00432	.02161	1.1110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608024543 Acquired: 8/10/2016 16:48:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00761	.01198	.01409	-.02180	.00082	1.8293	.00336
Stddev	.00041	.00002	.00348	.00109	.00050	.2023	.00019
%RSD	5.4495	.13141	24.712	4.9861	60.795	11.060	5.6453
#1	.00805	.01196	.01049	-.02263	.00131	1.9566	.00351
#2	.00755	.01199	.01433	-.02057	.00083	1.9354	.00315
#3	.00722	.01200	.01744	-.02219	.00032	1.5960	.00341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12386.	78238.	3503.4
Stddev	49.	120.	23.7
%RSD	.39760	.15274	.67596
#1	12434.	78122.	3492.8
#2	12388.	78360.	3530.5
#3	12335.	78231.	3486.9

Approved: August 11, 2016

Sample Name: L1608024544 Acquired: 8/10/2016 16:52:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00260	3.8714	.01738	.06118	.12342	.00010	11.616	.11463
Stddev	.00114	.0051	.00332	.00072	.00059	.00013	.103	.00783
%RSD	43.889	.13150	19.099	1.1816	.48107	131.80	.88474	6.8328
#1	.00304	3.8772	.01990	.06155	.12328	-.00005	11.704	.11942
#2	.00130	3.8691	.01862	.06035	.12408	.00019	11.642	.11889
#3	.00345	3.8678	.01362	.06165	.12291	.00016	11.503	.10559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	.01168	.08596	3.4354	10.165	.00214	4.3963	.08302
Stddev	.00028	.00022	.00757	.0118	.080	.00101	.0437	.00057
%RSD	19.764	1.9107	8.8039	.34189	.79157	46.956	.99308	.68773
#1	.00144	.01148	.09182	3.4264	10.221	.00186	4.3485	.08341
#2	.00169	.01192	.08865	3.4487	10.202	.00326	4.4341	.08329
#3	.00113	.01163	.07742	3.4310	10.073	.00130	4.4063	.08237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	20.688	.01715	5.1602	.10050	.00179	.01082	8.3166
Stddev	.00031	.065	.00192	.3506	.00421	.00425	.00307	.4893
%RSD	20.174	.31342	11.222	6.7941	4.1902	237.39	28.398	5.8831
#1	.00153	20.739	.01911	5.3811	.10123	.00540	.01325	8.6037
#2	.00185	20.711	.01706	5.3437	.10429	-.00289	.01184	8.5945
#3	.00123	20.615	.01527	4.7560	.09597	.00286	.00737	7.7517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608024544 Acquired: 8/10/2016 16:52:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01651	.05370	.06625	-.01366	.00473	1.9669	.02590
Stddev	.00149	.00052	.00605	.00171	.00063	.1531	.00050
%RSD	9.0296	.97671	9.1276	12.536	13.328	7.7838	1.9449
#1	.01811	.05427	.06190	-.01168	.00427	2.0612	.02622
#2	.01623	.05360	.06369	-.01467	.00448	2.0492	.02532
#3	.01517	.05323	.07315	-.01463	.00545	1.7903	.02617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12579.	78792.	3471.5
Stddev	13.	269.	15.0
%RSD	.10108	.34162	.43149
#1	12582.	78804.	3454.6
#2	12590.	78517.	3476.8
#3	12565.	79055.	3483.2

Approved: August 11, 2016

Sample Name: L1608024545 Acquired: 8/10/2016 16:56:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00058**	**.15364**	**.03643**	**-.00501**	**.00324**	**-.00009**	**2.6779**
Stddev	.00146	.00123	.00519	.00127	.00039	.00007	.0481
%RSD	249.65	.79837	14.256	25.305	12.133	74.416	1.7971
#1	.00225	.15429	.03552	-.00501	.00338	-.00017	2.7287
#2	-.00045	.15441	.04202	-.00629	.00279	-.00007	2.6720
#3	-.00005	.15223	.03175	-.00375	.00353	-.00004	2.6331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**-.00008**	**.00064**	**.03201**	**.21749**	**2.2001**	**-.00338**
Stddev	.00024	.00010	.00080	.00315	.00824	.0318	.00191
%RSD	45.696	122.36	124.18	9.8493	3.7885	1.4466	56.543
#1	.00073	-.00010	-.00021	.03478	.21085	2.1665	-.00184
#2	.00026	.00003	.00137	.03266	.21492	2.2298	-.00278
#3	.00059	-.00018	.00077	.02858	.22671	2.2039	-.00552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.1650**	**.00897**	**.00094**	**6.0833**	**.00201**	**.63993**	**.00378**
Stddev	.0442	.00179	.00031	.0149	.00100	.06584	.00164
%RSD	2.0412	19.943	33.319	.24554	49.563	10.288	43.481
#1	2.2157	.00696	.00078	6.0964	.00092	.68786	.00469
#2	2.1347	.01040	.00130	6.0671	.00287	.66708	.00188
#3	2.1446	.00954	.00074	6.0865	.00225	.56486	.00477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: L1608024545 Acquired: 8/10/2016 16:56:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00573	.03226	.71478	.01153	.01325	.01215	F -.04096
Stddev	.00104	.00310	.05654	.00166	.00061	.00962	.00545
%RSD	18.128	9.6112	7.9099	14.404	4.6270	79.154	13.302
#1	.00692	.03173	.74937	.01229	.01323	.01997	-.04481
#2	.00530	.03559	.74545	.01268	.01265	.01508	-.04333
#3	.00498	.02946	.64954	.00963	.01388	.00141	-.03472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							18.000
Low Limit							-.04000

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00008	1.4274	.00117
Stddev	.00050	.1342	.00011
%RSD	606.17	9.4022	9.1614
#1	-.00038	1.5120	.00125
#2	.00061	1.4975	.00105
#3	.00001	1.2726	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11949.	75769.	3507.4
Stddev	48.	132.	24.1
%RSD	.39787	.17407	.68646
#1	11901.	75874.	3489.5
#2	11948.	75621.	3534.8
#3	11997.	75811.	3498.0

Approved: August 11, 2016

Sample Name: L1608024546 Acquired: 8/10/2016 16:59:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	2.3812	.01188	.03193	.04973	.00002	6.4149	.00126
Stddev	.00057	.0087	.00390	.00170	.00071	.00004	.0395	.00002
%RSD	350.33	.36532	32.792	5.3197	1.4252	184.49	.61641	1.9506
#1	-.00011	2.3912	.00868	.02997	.05055	.00007	6.4093	.00128
#2	-.00076	2.3767	.01622	.03286	.04939	.00001	6.4570	.00123
#3	.00038	2.3757	.01074	.03296	.04926	-.00001	6.3785	.00125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00423	.04771	1.7342	15.779	.00371	4.3013	.04242
Stddev	.00035	.00031	.00573	.0110	.094	.00191	.0216	.00075
%RSD	97.960	7.3496	12.007	.63651	.59866	51.487	.50199	1.7686
#1	.00072	.00388	.05159	1.7296	15.678	.00179	4.3030	.04295
#2	.00034	.00432	.05041	1.7468	15.864	.00373	4.2789	.04276
#3	.00002	.00448	.04113	1.7263	15.796	.00561	4.3219	.04156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00146	23.942	.00626	3.2946	.07892	.00523	.01226	6.2007
Stddev	.00052	.073	.00077	.2852	.00709	.00271	.00400	.4873
%RSD	35.293	.30620	12.263	8.6575	8.9794	51.789	32.665	7.8594
#1	.00167	24.014	.00690	3.4623	.08265	.00469	.00764	6.4871
#2	.00185	23.946	.00646	3.4561	.08336	.00284	.01433	6.4770
#3	.00088	23.867	.00541	2.9652	.07074	.00817	.01481	5.6380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608024546 Acquired: 8/10/2016 16:59:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00648**	**.03700**	**.04485**	**-.01217**	**.00161**	**2.0478**	**.01509**
Stddev	.00075	.00012	.00180	.00038	.00056	.2031	.00026
%RSD	11.616	.32864	4.0206	3.1157	34.590	9.9191	1.7318
#1	.00699	.03688	.04662	-.01237	.00101	2.1731	.01538
#2	.00684	.03698	.04490	-.01240	.00171	2.1569	.01488
#3	.00562	.03712	.04302	-.01173	.00211	1.8135	.01502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12582.**	**78893.**	**3484.2**
Stddev	31.	191.	38.9
%RSD	.24762	.24193	1.1168
#1	12597.	78713.	3444.5
#2	12602.	78874.	3485.7
#3	12546.	79093.	3522.2

Approved: August 11, 2016

Sample Name: L1608024547 Acquired: 8/10/2016 17:03:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.05296	.02011	.00248	.00148	-.00004	2.0538	.00067
Stddev	.00193	.00286	.00362	.00086	.00054	.00003	.0379	.00013
%RSD	2812.9	5.3991	18.020	34.811	36.464	64.325	1.8446	19.845
#1	-.00205	.05130	.01664	.00175	.00176	-.00005	2.0763	.00076
#2	.00175	.05626	.01983	.00343	.00086	-.00007	2.0751	.00072
#3	.00050	.05132	.02387	.00225	.00183	-.00001	2.0101	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.00047	.03116	.07910	1.1787	-.00462	2.6574	.00501
Stddev	.00014	.00088	.00348	.01463	.0313	.00220	.0612	.00080
%RSD	46.908	186.41	11.178	18.493	2.6578	47.543	2.3041	16.033
#1	-.00017	-.00050	.03316	.08854	1.1522	-.00571	2.7005	.00446
#2	-.00045	.00123	.03319	.08652	1.2133	-.00209	2.5873	.00593
#3	-.00027	.00069	.02714	.06225	1.1706	-.00607	2.6844	.00464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	1.6122	.00243	.52273	.00026	.00122	.01158	.79829
Stddev	.00019	.0265	.00112	.05802	.00220	.00339	.00502	.07083
%RSD	26.853	1.6404	46.238	11.099	851.55	279.04	43.298	8.8727
#1	.00083	1.5820	.00337	.55585	-.00199	-.00090	.01420	.83961
#2	.00078	1.6315	.00274	.55660	.00035	.00513	.00580	.83876
#3	.00048	1.6229	.00118	.45574	.00241	-.00058	.01475	.71650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608024547 Acquired: 8/10/2016 17:03:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00473	.00637	.00719	-.01644	.00030	1.6981	.00013
Stddev	.00143	.00056	.00660	.00045	.00079	.1851	.00034
%RSD	30.174	8.8413	91.840	2.7523	260.42	10.902	257.49
#1	.00611	.00687	.01478	-.01628	-.00048	1.8140	.00043
#2	.00484	.00647	.00396	-.01695	.00110	1.7956	.00019
#3	.00326	.00576	.00282	-.01608	.00029	1.4846	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12215.	76957.	3431.5
Stddev	40.	319.	14.4
%RSD	.32581	.41497	.41841
#1	12239.	76589.	3419.7
#2	12237.	77129.	3427.2
#3	12169.	77154.	3447.5

Approved: August 11, 2016

Sample Name: L1608024547PS Acquired: 8/10/2016 17:07:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579747-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18910**	**4.6860**	**.22760**	**.94494**	**.54176**	**.02398**	**7.1449**	**.02531**
Stddev	.00238	.0326	.00488	.00366	.00312	.00010	.0522	.00061
%RSD	1.2570	.69460	2.1431	.38777	.57638	.42108	.72997	2.3928
#1	.19164	4.7226	.22666	.94735	.54309	.02406	7.1161	.02585
#2	.18693	4.6601	.23288	.94072	.53819	.02387	7.1136	.02542
#3	.18873	4.6754	.22327	.94674	.54400	.02402	7.2051	.02466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10327**	**.24945**	**.28465**	**2.1769**	**24.906**	**.52658**	**7.3863**	**.26688**
Stddev	.00297	.00115	.00823	.0065	.077	.00327	.1390	.00088
%RSD	2.8729	.45969	2.8896	.29836	.30974	.62058	1.8820	.32888
#1	.10496	.25013	.28971	2.1843	24.827	.53011	7.5371	.26790
#2	.10500	.24812	.28908	2.1745	24.911	.52598	7.2632	.26635
#3	.09984	.25009	.27516	2.1720	24.981	.52365	7.3585	.26640
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53715**	**25.893**	**.26204**	**5.6248**	**.25424**	**.61421**	**.24127**	**3.3540**
Stddev	.01257	.164	.00646	.1244	.00262	.01712	.00136	.0575
%RSD	2.3404	.63379	2.4659	2.2124	1.0302	2.7874	.56522	1.7128
#1	.54484	25.969	.26429	5.7001	.25578	.62220	.24256	3.3824
#2	.54396	25.704	.26707	5.6932	.25572	.62587	.24142	3.3916
#3	.52264	26.005	.25475	5.4812	.25122	.59455	.23985	3.2878
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608024547PS Acquired: 8/10/2016 17:07:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579747-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50124**	**.55674**	**.50667**	**.23163**	**.49240**	**2.1243**	**.00117**
Stddev	.01241	.00328	.00655	.00681	.00169	.0573	.00067
%RSD	2.4763	.58906	1.2925	2.9383	.34423	2.6971	56.869
#1	.50941	.56034	.50497	.23292	.49423	2.1571	.00186
#2	.50735	.55393	.50114	.23770	.49209	2.1577	.00052
#3	.48695	.55595	.51390	.22427	.49088	2.0581	.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12079.**	**75533.**	**3385.0**
Stddev	15.	160.	30.2
%RSD	.12331	.21145	.89285
#1	12062.	75348.	3365.4
#2	12091.	75625.	3419.8
#3	12082.	75625.	3369.8

Approved: August 11, 2016

Sample Name: L1608024547SDL Acquired: 8/10/2016 17:11:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579747-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00104**	**.00031**	**.00367**	**.00175**	**-.00252**	**-.00006**	**.37516**	**.00003**
Stddev	.00070	.00394	.00058	.00014	.00051	.00006	.05117	.00014
%RSD	67.656	1272.0	15.744	8.1615	20.110	113.43	13.639	537.39
#1	-.00029	-.00123	.00313	.00166	-.00221	-.00011	.37934	-.00005
#2	-.00115	-.00263	.00428	.00167	-.00225	.00002	.42411	.00018
#3	-.00168	.00479	.00361	.00191	-.00311	-.00008	.32203	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00150**	**.00590**	**.00447**	**.35299**	**-.00609**	**.46178**	**.00163**
Stddev	.00020	.00007	.00104	.00582	.14730	.00104	.07198	.00100
%RSD	80.886	4.3960	17.612	130.16	41.731	17.083	15.588	61.113
#1	-.00026	-.00143	.00665	.00095	.47967	-.00522	.39039	.00270
#2	-.00045	-.00155	.00634	.00127	.19135	-.00581	.53434	.00148
#3	-.00004	-.00152	.00471	.01118	.38794	-.00724	.46061	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.33326**	**.00085**	**.09255**	**.00179**	**-.00120**	**.00705**	**.14943**
Stddev	.00036	.01219	.00092	.00600	.00072	.00377	.00352	.01548
%RSD	1818.8	3.6563	107.56	6.4773	39.916	314.67	49.881	10.357
#1	-.00030	.34268	.00050	.09127	.00106	.00195	.01092	.15825
#2	.00042	.33760	.00016	.09909	.00183	-.00017	.00619	.15849
#3	-.00006	.31950	.00189	.08731	.00249	-.00538	.00405	.13156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608024547SDL Acquired: 8/10/2016 17:11:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579747-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00082	.00440	-.00147	.00041	.32417	-.00012
Stddev	.00051	.00010	.00897	.00211	.00033	.03869	.00024
%RSD	63.384	12.231	203.65	143.20	80.430	11.937	193.47
#1	.00134	.00071	-.00488	.00046	.00075	.34767	-.00036
#2	.00032	.00091	.01301	-.00373	.00009	.34533	-.00011
#3	.00076	.00082	.00508	-.00115	.00039	.27951	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	13305.	82357.	3526.3
Stddev	63.	261.	31.5
%RSD	.47055	.31726	.89459
#1	13365.	82655.	3507.6
#2	13311.	82251.	3562.8
#3	13240.	82165.	3508.7

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 17:15:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41647**	**10.304**	**.42667**	**.53117**	**1.0843**	**.04971**	**10.808**	**.05331**
Stddev	.00094	.011	.00699	.00123	.0060	.00017	.090	.00145
%RSD	.22671	.10895	1.6374	.23199	.55621	.34754	.83375	2.7286
#1	.41542	10.301	.43206	.53087	1.0776	.04954	10.713	.05407
#2	.41675	10.294	.42917	.53012	1.0892	.04969	10.893	.05423
#3	.41724	10.316	.41878	.53253	1.0862	.04988	10.819	.05163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21045**	**.50028**	**.53130**	**4.1741**	**49.703**	**1.0630**	**10.396**	**.53635**
Stddev	.00644	.00133	.01464	.0178	.196	.0113	.090	.00629
%RSD	3.0598	.26597	2.7548	.42581	.39390	1.0581	.86350	1.1734
#1	.21439	.49985	.54002	4.1920	49.596	1.0756	10.383	.53563
#2	.21393	.49922	.53948	4.1738	49.929	1.0597	10.492	.54297
#3	.20301	.50177	.51441	4.1565	49.584	1.0538	10.314	.53044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0559**	**50.870**	**.53293**	**10.810**	**.53518**	**1.2853**	**.42800**	**5.4110**
Stddev	.0351	.176	.01680	.235	.01212	.0293	.00659	.1047
%RSD	3.3264	.34596	3.1529	2.1720	2.2645	2.2830	1.5405	1.9349
#1	1.0709	50.706	.54426	10.941	.53960	1.2987	.43144	5.4680
#2	1.0810	51.056	.54091	10.949	.54447	1.3055	.43217	5.4749
#3	1.0157	50.847	.51362	10.538	.52147	1.2516	.42040	5.2902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 17:15:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0435**	**1.0883**	**1.0003**	**.52664**	**.98922**	**1.0655**	**1.0435**
Stddev	.0372	.0008	.0129	.00601	.00180	.0289	.0027
%RSD	3.5607	.06987	1.2876	1.1406	.18216	2.7155	.25369
#1	1.0665	1.0881	.98895	.52782	.98991	1.0835	1.0447
#2	1.0634	1.0891	1.0143	.53197	.98718	1.0809	1.0455
#3	1.0006	1.0876	.99760	.52013	.99058	1.0321	1.0405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12212.**	**74950.**	**3254.6**
Stddev	15.	25.	10.0
%RSD	.12211	.03320	.30625
#1	12228.	74925.	3250.3
#2	12199.	74974.	3247.5
#3	12208.	74950.	3266.0

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 17:18:54 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00254	-.00129	-.00151	.00125	-.00242	-.00003	-.01813	.00018
Stddev	.00214	.00826	.00073	.00097	.00119	.00008	.01888	.00011
%RSD	83.981	641.51	48.294	77.964	49.086	250.88	104.14	58.773
#1	.00056	.00114	-.00108	.00025	-.00262	-.00008	-.03231	.00027
#2	.00480	-.01048	-.00236	.00130	-.00115	-.00007	-.02538	.00007
#3	.00226	.00549	-.00110	.00219	-.00350	.00006	.00330	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	-.00126	.00040	-.01605	.33866	-.00246	-.05364	.00086
Stddev	.00028	.00083	.00019	.00640	.11613	.00200	.07910	.00134
%RSD	132.94	65.541	48.558	39.858	34.292	81.139	147.46	156.66
#1	.00010	-.00172	.00032	-.01490	.46121	-.00026	-.12248	.00078
#2	-.00027	-.00031	.00026	-.01031	.32453	-.00297	.03277	-.00044
#3	-.00045	-.00177	.00062	-.02295	.23023	-.00415	-.07121	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.03261	.00085	-.00302	-.00104	.00419	.00292	.00258
Stddev	.00025	.01765	.00043	.00354	.00138	.00304	.00281	.00257
%RSD	141.20	54.108	50.541	117.16	132.45	72.425	96.262	99.727
#1	-.00006	.04738	.00057	-.00375	-.00243	.00125	-.00031	.00527
#2	-.00000	.01307	.00064	.00082	.00033	.00402	.00484	.00233
#3	-.00047	.03739	.00135	-.00614	-.00103	.00731	.00424	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 17:18:54 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00004	.00249	-.00180	-.00015	-.00018	-.00046
Stddev	.00057	.00009	.00588	.00074	.00085	.00004	.00039
%RSD	745.44	242.97	236.20	41.346	550.26	20.015	84.129
#1	.00052	-.00003	-.00262	-.00218	-.00108	-.00017	-.00052
#2	.00027	-.00014	.00118	-.00228	.00059	-.00015	-.00082
#3	-.00056	.00005	.00891	-.00094	.00003	-.00022	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12471.	76585.	3282.3
Stddev	18.	172.	6.1
%RSD	.14144	.22421	.18569
#1	12469.	76779.	3283.7
#2	12455.	76452.	3287.6
#3	12490.	76524.	3275.6

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 17:22:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00755**	**.16518**	**.00617**	**.08478**	**.00713**	**.00155**	**.44586**	**.00109**
Stddev	.00144	.00787	.00365	.00106	.00048	.00005	.01249	.00008
%RSD	19.035	4.7657	59.085	1.2554	6.6665	3.0692	2.8018	7.8020
#1	.00619	.15619	.01025	.08574	.00756	.00159	.43818	.00110
#2	.00742	.17083	.00505	.08363	.00720	.00157	.46027	.00116
#3	.00906	.16851	.00322	.08495	.00662	.00150	.43912	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00365**	**.00390**	**.00539**	**.07456**	**1.0016**	**.08366**	**.37872**	**.00841**
Stddev	.00060	.00159	.00064	.02714	.0628	.00359	.05253	.00154
%RSD	16.348	40.658	11.806	36.400	6.2652	4.2889	13.870	18.287
#1	.00424	.00454	.00591	.04538	.96089	.08774	.41433	.00680
#2	.00366	.00210	.00468	.07925	.96997	.08228	.31839	.00986
#3	.00305	.00507	.00558	.09905	1.0738	.08097	.40344	.00857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00757**	**.43628**	**.01669**	**.79138**	**.01008**	**.08507**	**.01978**	**.79230**
Stddev	.00120	.01555	.00183	.09949	.00338	.01157	.00387	.09034
%RSD	15.921	3.5637	10.966	12.572	33.559	13.599	19.543	11.402
#1	.00854	.42903	.01805	.85234	.01396	.09043	.01569	.84666
#2	.00794	.45413	.01743	.84524	.00851	.09298	.02337	.84223
#3	.00622	.42568	.01461	.67657	.00777	.07179	.02030	.68801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 17:22:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38546	.04368	.02438	.14492	.00792	.01671	.04117
Stddev	.05465	.00021	.00538	.01759	.00036	.00228	.00042
%RSD	14.178	.47853	22.065	12.138	4.5154	13.669	1.0240
#1	.42104	.04392	.02676	.15741	.00824	.01790	.04143
#2	.41281	.04359	.01822	.15255	.00753	.01816	.04069
#3	.32253	.04353	.02816	.12481	.00798	.01408	.04140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12433.	76754.	3278.0
Stddev	17.	186.	25.6
%RSD	.13345	.24256	.78041
#1	12438.	76771.	3260.0
#2	12414.	76931.	3307.3
#3	12446.	76560.	3266.8

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 17:26:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02057**	**.37871**	**.01668**	**.19458**	**.01754**	**.00358**	**1.0006**	**.00207**
Stddev	.00077	.00778	.00344	.00275	.00123	.00007	.0209	.00036
%RSD	3.7447	2.0544	20.600	1.4120	7.0338	1.9200	2.0886	17.177
#1	.02138	.38703	.01884	.19191	.01840	.00350	.98611	.00243
#2	.01985	.37162	.01849	.19740	.01809	.00362	.99110	.00206
#3	.02048	.37747	.01272	.19442	.01613	.00361	1.0245	.00172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00936**	**.00955**	**.01027**	**.18667**	**2.0681**	**.19726**	**.97393**	**.01907**
Stddev	.00090	.00029	.00074	.01570	.1776	.00189	.09308	.00077
%RSD	9.5856	3.0454	7.2146	8.4129	8.5891	.96005	9.5568	4.0124
#1	.01010	.00941	.01037	.18673	1.9185	.19903	1.0618	.01984
#2	.00962	.00989	.01096	.20234	2.0215	.19749	.98355	.01831
#3	.00836	.00936	.00949	.17093	2.2644	.19526	.87642	.01905
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01784**	**.97931**	**.03838**	**1.8906**	**.01817**	**.19763**	**.04178**	**1.8800**
Stddev	.00181	.01189	.00446	.1663	.00231	.01737	.00284	.1524
%RSD	10.141	1.2141	11.623	8.7957	12.705	8.7888	6.8052	8.1085
#1	.01878	.97904	.04129	1.9772	.01871	.20652	.04264	1.9643
#2	.01900	.96755	.04061	1.9958	.02017	.20877	.04409	1.9716
#3	.01576	.99132	.03324	1.6989	.01565	.17762	.03860	1.7040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 17:26:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.91817**	**.10153**	**.05984**	**.35071**	**.01748**	**.03926**	**.09681**
Stddev	.10041	.00023	.00201	.02604	.00104	.00395	.00029
%RSD	10.936	.22939	3.3513	7.4234	5.9337	10.062	.29821
#1	.98018	.10133	.06168	.36670	.01858	.04138	.09674
#2	.97201	.10147	.06014	.36477	.01652	.04170	.09713
#3	.80231	.10178	.05770	.32067	.01734	.03471	.09656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12909.**	**79486.**	**3412.0**
Stddev	32.	167.	10.2
%RSD	.24816	.20969	.29952
#1	12902.	79529.	3403.4
#2	12881.	79628.	3409.5
#3	12944.	79303.	3423.3

Approved: August 11, 2016

Sample Name: PBW 5R Acquired: 8/10/2016 17:30:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.00264	-.00145	.00031	-.00133	-.00004	.00864	-.00000
Stddev	.00166	.01045	.00031	.00180	.00135	.00002	.02039	.00022
%RSD	672.38	396.29	21.629	575.91	101.98	49.101	236.10	8105.3
#1	.00156	-.00582	-.00181	-.00167	-.00289	-.00002	.03186	.00019
#2	.00079	-.00059	-.00123	.00074	-.00056	-.00005	-.00634	-.00024
#3	-.00161	.01432	-.00132	.00186	-.00053	-.00005	.00039	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00050	-.00020	.00092	.01657	.18595	-.00488	.00377	.00088
Stddev	.00020	.00095	.00020	.01975	.10367	.00433	.13521	.00276
%RSD	40.166	479.04	22.012	119.19	55.752	88.685	3584.6	312.83
#1	-.00036	-.00105	.00073	.00946	.07042	-.00302	.01668	.00162
#2	-.00073	-.00038	.00091	.00136	.21657	-.00983	.13206	-.00217
#3	-.00041	.00083	.00113	.03889	.27085	-.00180	-.13743	.00321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00699	.00129	-.00774	-.00074	.00320	.00451	.01877
Stddev	.00012	.01641	.00107	.00692	.00046	.00015	.00142	.00360
%RSD	470.74	234.88	83.432	89.383	62.347	4.7752	31.400	19.171
#1	.00011	.00361	.00246	-.00982	-.00076	.00333	.00518	.02269
#2	-.00011	.02482	.00105	-.01339	-.00118	.00303	.00547	.01802
#3	-.00008	-.00748	.00035	-.00002	-.00027	.00323	.00288	.01561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: PBW 5R Acquired: 8/10/2016 17:30:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00054**	**-.00054**	**.00440**	**-.00099**	**.00055**	**.00049**	**-.00024**
Stddev	.00034	.00037	.00427	.00306	.00053	.00025	.00013
%RSD	62.800	68.995	97.011	308.91	96.480	51.344	53.522
#1	.00077	-.00013	.00468	-.00044	-.00001	.00033	-.00011
#2	.00070	-.00062	.00851	.00176	.00062	.00078	-.00026
#3	.00015	-.00087	-.00000	-.00429	.00103	.00036	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12383.**	**76811.**	**3297.1**
Stddev	47.	66.	6.4
%RSD	.37845	.08605	.19346
#1	12418.	76737.	3291.8
#2	12402.	76833.	3304.2
#3	12330.	76863.	3295.4

Approved: August 11, 2016

Sample Name: LCSW 5R Acquired: 8/10/2016 17:34:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20453**	**5.0842**	**.20907**	**1.0456**	**.53128**	**.02410**	**5.4033**	**.02580**
Stddev	.00247	.0139	.00361	.0034	.00797	.00010	.0733	.00051
%RSD	1.2073	.27318	1.7271	.32208	1.5003	.42713	1.3563	1.9912
#1	.20176	5.0924	.20883	1.0495	.52208	.02407	5.3249	.02593
#2	.20650	5.0921	.21279	1.0442	.53605	.02422	5.4701	.02625
#3	.20533	5.0682	.20558	1.0432	.53572	.02402	5.4149	.02524
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10395**	**.24868**	**.26279**	**2.0571**	**24.532**	**.52510**	**5.1123**	**.26167**
Stddev	.00250	.00097	.00665	.0801	.417	.00797	.1307	.00455
%RSD	2.4056	.38999	2.5304	3.8946	1.7000	1.5182	2.5559	1.7403
#1	.10560	.24851	.26708	1.9824	24.058	.51599	4.9616	.25645
#2	.10519	.24781	.26615	2.0472	24.842	.52853	5.1803	.26375
#3	.10108	.24973	.25513	2.1417	24.696	.53079	5.1948	.26481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52705**	**24.897**	**.26365**	**5.1286**	**.26645**	**.63302**	**.20332**	**2.6556**
Stddev	.01401	.447	.00791	.1009	.00617	.01306	.00213	.0455
%RSD	2.6573	1.7963	2.9986	1.9666	2.3173	2.0637	1.0468	1.7132
#1	.53501	24.389	.26738	5.1940	.26801	.63964	.20569	2.6837
#2	.53526	25.234	.26900	5.1794	.27169	.64145	.20158	2.6800
#3	.51088	25.067	.25457	5.0125	.25964	.61798	.20269	2.6031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LCSW 5R Acquired: 8/10/2016 17:34:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51118	.54171	.49278	.25536	.49158	.51877	.00130
Stddev	.01556	.00920	.01261	.00372	.00146	.01382	.00034
%RSD	3.0440	1.6982	2.5595	1.4585	.29717	2.6646	25.788
#1	.51942	.53109	.47911	.25750	.49312	.52638	.00168
#2	.52089	.54679	.49528	.25751	.49141	.52712	.00107
#3	.49323	.54726	.50396	.25106	.49021	.50282	.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12237.	75237.	3287.8
Stddev	34.	175.	28.0
%RSD	.27462	.23224	.85215
#1	12207.	75144.	3320.0
#2	12230.	75128.	3274.1
#3	12273.	75438.	3269.2

Approved: August 11, 2016

Sample Name: L1608044003 Acquired: 8/10/2016 17:38:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	-.00235	.00030	.01329	.00451	-.00003	36.870	.00039
Stddev	.00191	.00561	.00231	.00164	.00006	.00006	.077	.00009
%RSD	320.38	238.94	770.00	12.325	1.3868	200.68	.20922	22.469
#1	-.00152	-.00780	-.00134	.01517	.00458	-.00008	36.884	.00029
#2	.00220	.00341	-.00071	.01253	.00447	.00004	36.788	.00041
#3	.00110	-.00266	.00295	.01217	.00447	-.00005	36.940	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	-.00005	.00212	.09534	.59982	-.00128	5.6318	.02655
Stddev	.00027	.00121	.00152	.01166	.03077	.00088	.1093	.00452
%RSD	215.35	2545.5	71.611	12.227	5.1306	69.215	1.9415	17.009
#1	-.00014	-.00104	.00312	.10001	.56439	-.00164	5.6152	.02701
#2	-.00040	-.00041	.00287	.08207	.61508	-.00027	5.5317	.02182
#3	.00015	.00131	.00037	.10394	.61998	-.00191	5.7485	.03081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	1.8186	.00114	-.00067	.00039	.00292	.00268	2.4274
Stddev	.00006	.0466	.00101	.00101	.00293	.00214	.00175	.2451
%RSD	16.273	2.5640	88.196	151.61	750.43	73.230	65.552	10.097
#1	.00033	1.8613	.00202	-.00177	.00040	.00535	.00135	2.5615
#2	.00043	1.7688	.00136	-.00046	-.00254	.00133	.00466	2.5763
#3	.00033	1.8255	.00004	.00022	.00331	.00208	.00202	2.1445
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608044003 Acquired: 8/10/2016 17:38:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.03849**	**-.00261**	**-.00176**	**.00066**	**.00210**	**.00006**
Stddev	.00093	.00039	.00885	.00135	.00058	.00037	.00020
%RSD	206.89	1.0139	339.25	76.884	87.419	17.626	346.48
#1	-.00148	.03822	-.00165	-.00214	.00058	.00229	-.00017
#2	-.00020	.03894	-.01190	-.00288	.00013	.00233	.00022
#3	.00033	.03832	.00572	-.00026	.00127	.00167	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12292.**	**76329.**	**3309.6**
Stddev	44.	112.	16.1
%RSD	.35482	.14629	.48552
#1	12342.	76433.	3319.6
#2	12261.	76211.	3318.1
#3	12274.	76342.	3291.0

Approved: August 11, 2016

Sample Name: L1608044003S Acquired: 8/10/2016 17:42:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20263**	**5.0471**	**.20739**	**1.0207**	**.54152**	**.02406**	**41.126**	**.02584**
Stddev	.00049	.0097	.00515	.0013	.00547	.00006	.318	.00055
%RSD	.23959	.19278	2.4822	.12952	1.0092	.26769	.77424	2.1125
#1	.20210	5.0493	.20808	1.0202	.54651	.02412	41.352	.02610
#2	.20307	5.0364	.21216	1.0222	.54238	.02407	41.265	.02621
#3	.20271	5.0555	.20193	1.0197	.53568	.02399	40.762	.02521
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10231**	**.24767**	**.25829**	**2.2136**	**25.239**	**.52633**	**10.700**	**.28746**
Stddev	.00288	.00140	.00542	.0380	.064	.00633	.081	.00235
%RSD	2.8184	.56652	2.0990	1.7151	.25475	1.2024	.75583	.81822
#1	.10404	.24926	.26086	2.1717	25.237	.53061	10.697	.28901
#2	.10391	.24660	.26195	2.2457	25.176	.52931	10.782	.28475
#3	.09898	.24715	.25206	2.2236	25.304	.51906	10.620	.28861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52604**	**26.866**	**.25949**	**5.1590**	**.25922**	**.63152**	**.19519**	**5.1814**
Stddev	.01267	.194	.00571	.0904	.00551	.01217	.00429	.0812
%RSD	2.4084	.72266	2.2024	1.7521	2.1246	1.9279	2.1997	1.5672
#1	.53324	27.066	.26219	5.2184	.26236	.63941	.19963	5.2257
#2	.53347	26.852	.26336	5.2037	.26244	.63765	.19490	5.2307
#3	.51141	26.679	.25292	5.0550	.25286	.61750	.19105	5.0876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608044003S Acquired: 8/10/2016 17:42:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50819	.58236	.49227	.25426	.49033	.51251	.00099
Stddev	.01374	.00291	.01002	.00558	.00170	.01273	.00048
%RSD	2.7045	.50006	2.0357	2.1926	.34688	2.4844	47.865
#1	.51689	.58540	.48156	.25657	.49144	.52007	.00150
#2	.51534	.58208	.49384	.25832	.49117	.51965	.00093
#3	.49235	.57960	.50142	.24791	.48837	.49781	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12215.	74642.	3270.7
Stddev	7.	203.	33.8
%RSD	.05812	.27223	1.0343
#1	12209.	74512.	3234.8
#2	12213.	74538.	3275.5
#3	12223.	74876.	3301.9

Approved: August 11, 2016

Sample Name: L1608044003SD Acquired: 8/10/2016 17:45:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20073	4.9714	.20708	1.0094	.53496	.02379	39.837	.02547
Stddev	.00188	.0259	.00305	.0038	.00267	.00021	.168	.00053
%RSD	.93803	.52063	1.4719	.37372	.49904	.89843	.42185	2.0978
#1	.19991	5.0011	.20904	1.0135	.53390	.02402	39.756	.02596
#2	.19940	4.9595	.20864	1.0062	.53298	.02375	39.724	.02557
#3	.20288	4.9536	.20357	1.0084	.53800	.02360	40.030	.02490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10133	.24472	.25425	2.1457	24.897	.52139	10.389	.28549
Stddev	.00303	.00176	.00726	.0342	.101	.00164	.086	.00240
%RSD	2.9854	.72034	2.8563	1.5931	.40557	.31466	.83081	.84079
#1	.10213	.24675	.25840	2.1185	24.938	.52076	10.338	.28330
#2	.10388	.24372	.25849	2.1346	24.782	.52326	10.340	.28806
#3	.09799	.24368	.24587	2.1841	24.971	.52016	10.489	.28510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52116	26.403	.25741	5.1148	.25748	.62232	.20037	5.0896
Stddev	.01414	.080	.00530	.0969	.00835	.01595	.00778	.0859
%RSD	2.7136	.30427	2.0572	1.8940	3.2440	2.5624	3.8810	1.6888
#1	.52926	26.356	.25971	5.1624	.26509	.63136	.20176	5.1308
#2	.52939	26.357	.26116	5.1786	.25881	.63169	.20736	5.1471
#3	.50483	26.496	.25135	5.0033	.24854	.60391	.19200	4.9908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608044003SD Acquired: 8/10/2016 17:45:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579648-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50201	.57566	.48835	.25012	.48624	.50760	.00091
Stddev	.01399	.00128	.00395	.00411	.00188	.01377	.00040
%RSD	2.7864	.22184	.80948	1.6444	.38601	2.7132	44.108
#1	.50998	.57426	.48394	.25227	.48796	.51767	.00091
#2	.51019	.57595	.49158	.25272	.48650	.51321	.00130
#3	.48586	.57676	.48952	.24538	.48424	.49190	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12219.	74858.	3271.4
Stddev	11.	294.	4.3
%RSD	.08959	.39337	.13180
#1	12231.	74739.	3275.9
#2	12217.	74641.	3267.3
#3	12210.	75193.	3270.9

Approved: August 11, 2016

Sample Name: L1608042501 Acquired: 8/10/2016 17:49:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	.00354	-.00294	.01446	-.00188	-.00000	.20676	.00008
Stddev	.00045	.00589	.00149	.00142	.00055	.00004	.03892	.00022
%RSD	41.052	166.18	50.668	9.8365	29.162	12887.	18.824	264.71
#1	.00094	-.00034	-.00466	.01394	-.00239	.00003	.25149	.00025
#2	.00159	.01031	-.00209	.01607	-.00130	.00002	.18063	.00016
#3	.00074	.00065	-.00207	.01338	-.00196	-.00005	.18817	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	-.00023	.00176	-.01377	.18563	.00019	-.07231	-.00014
Stddev	.00057	.00141	.00077	.02524	.02720	.00080	.05916	.00112
%RSD	143.00	617.04	43.540	183.27	14.651	420.71	81.808	814.07
#1	-.00043	-.00142	.00264	.01458	.21651	.00095	-.07934	.00053
#2	-.00096	-.00059	.00143	-.03381	.17513	-.00064	-.00995	-.00142
#3	.00019	.00133	.00121	-.02209	.16525	.00026	-.12765	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.04412	.00087	-.00001	.00068	.00336	-.00033	.00244
Stddev	.00041	.01968	.00097	.00310	.00275	.00099	.00113	.00193
%RSD	330.87	44.596	110.71	29021.	405.29	29.566	343.07	79.041
#1	.00031	.03562	.00199	.00242	.00127	.00430	.00020	.00082
#2	.00041	.06662	.00023	-.00351	.00308	.00345	.00044	.00192
#3	-.00035	.03013	.00040	.00106	-.00232	.00232	-.00163	.00457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608042501 Acquired: 8/10/2016 17:49:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00001**	**.00263**	**.00033**	**-.00042**	**.00130**	**-.00037**
Stddev	.00036	.00026	.00491	.00095	.00010	.00024	.00047
%RSD	130.76	3242.1	187.01	289.34	24.724	18.211	125.02
#1	-.00002	.00005	.00435	-.00061	-.00048	.00138	.00016
#2	-.00012	-.00027	-.00291	.00128	-.00030	.00149	-.00072
#3	-.00069	.00024	.00644	.00030	-.00047	.00103	-.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12482.**	**76919.**	**3313.3**
Stddev	98.	265.	12.8
%RSD	.78903	.34464	.38533
#1	12434.	77072.	3303.0
#2	12416.	76613.	3309.3
#3	12595.	77073.	3327.5

Approved: August 11, 2016

Sample Name: L1608042502 Acquired: 8/10/2016 17:53:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.00201	-.00032	.01283	-.00187	-.00011	.15936	.00008
Stddev	.00062	.00676	.00035	.00054	.00140	.00000	.01814	.00005
%RSD	53.543	336.16	107.69	4.2384	74.993	4.6660	11.382	65.475
#1	.00072	-.00509	-.00050	.01228	-.00025	-.00011	.15828	.00011
#2	.00089	.00838	-.00054	.01336	-.00272	-.00010	.17801	.00002
#3	.00186	.00274	.00008	.01283	-.00263	-.00011	.14178	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00039	-.00009	-.01244	.11429	-.00127	-.06486	.00224
Stddev	.00014	.00164	.00094	.01256	.05342	.00461	.02001	.00423
%RSD	90.522	414.90	1087.8	100.92	46.739	361.89	30.860	188.94
#1	-.00000	-.00228	-.00117	-.01710	.05527	-.00571	-.04216	-.00025
#2	-.00028	.00062	.00039	-.02201	.12829	-.00160	-.07995	.00712
#3	-.00019	.00048	.00052	.00178	.15931	.00349	-.07246	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.02852	.00045	-.00133	-.00035	.00216	-.00195	.00173
Stddev	.00027	.01561	.00024	.00384	.00067	.00403	.00295	.00275
%RSD	118.41	54.732	53.289	288.96	189.36	186.73	150.92	158.71
#1	-.00007	.01775	.00023	-.00264	-.00103	.00443	-.00374	.00426
#2	.00031	.02138	.00071	-.00434	.00031	-.00250	-.00357	-.00119
#3	.00045	.04642	.00042	.00299	-.00035	.00454	.00145	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608042502 Acquired: 8/10/2016 17:53:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**-.00040**	**-.00008**	**-.00211**	**.00026**	**.00128**	**-.00060**
Stddev	.00042	.00008	.00497	.00156	.00031	.00026	.00023
%RSD	109.98	20.623	6086.1	73.721	121.21	20.098	38.971
#1	-.00041	-.00049	-.00275	-.00215	.00020	.00153	-.00075
#2	-.00079	-.00033	-.00314	-.00054	.00059	.00130	-.00033
#3	.00005	-.00038	.00565	-.00365	-.00002	.00102	-.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12369.**	**75912.**	**3254.5**
Stddev	84.	121.	11.5
%RSD	.67781	.15905	.35312
#1	12330.	75940.	3241.3
#2	12311.	76016.	3262.1
#3	12465.	75779.	3260.2

Approved: August 11, 2016

Sample Name: L1608042502PS Acquired: 8/10/2016 17:57:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579778-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20294**	**5.1115**	**.20920**	**1.0251**	**.53680**	**.02441**	**5.6084**	**.02627**
Stddev	.00088	.0005	.00455	.0018	.00300	.00008	.0696	.00068
%RSD	.43207	.00935	2.1763	.17257	.55913	.33407	1.2415	2.5804
#1	.20273	5.1111	.21093	1.0271	.53342	.02433	5.5490	.02684
#2	.20220	5.1114	.21264	1.0242	.53917	.02442	5.6850	.02645
#3	.20391	5.1120	.20404	1.0239	.53780	.02449	5.5912	.02552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10519**	**.25276**	**.26627**	**2.1082**	**24.749**	**.53311**	**5.2399**	**.26424**
Stddev	.00268	.00091	.00784	.0231	.167	.00347	.0520	.00205
%RSD	2.5504	.36051	2.9452	1.0977	.67558	.65026	.99332	.77437
#1	.10709	.25222	.27106	2.1343	24.647	.52912	5.2823	.26647
#2	.10637	.25381	.27054	2.0900	24.942	.53480	5.1818	.26379
#3	.10212	.25224	.25722	2.1004	24.657	.53541	5.2556	.26246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53137**	**25.166**	**.26630**	**5.1650**	**.26329**	**.64149**	**.20131**	**2.6488**
Stddev	.01512	.026	.00694	.1019	.00899	.01514	.00355	.0506
%RSD	2.8452	.10363	2.6072	1.9729	3.4144	2.3606	1.7631	1.9118
#1	.53976	25.147	.27102	5.2211	.26883	.65071	.20116	2.6780
#2	.54043	25.196	.26956	5.2266	.26812	.64974	.20494	2.6780
#3	.51391	25.157	.25833	5.0474	.25292	.62401	.19785	2.5903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608042502PS Acquired: 8/10/2016 17:57:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG579778-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51703**	**.54727**	**.50551**	**.25835**	**.49642**	**.52373**	**.00080**
Stddev	.01721	.00150	.01064	.00423	.00110	.01261	.00023
%RSD	3.3280	.27384	2.1043	1.6363	.22097	2.4083	29.048
#1	.52694	.54602	.49910	.25609	.49640	.53081	.00077
#2	.52700	.54893	.51779	.26322	.49534	.53121	.00058
#3	.49717	.54685	.49964	.25573	.49753	.50917	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12185.**	**74725.**	**3255.6**
Stddev	7.	243.	12.7
%RSD	.05930	.32502	.38996
#1	12193.	74952.	3244.4
#2	12179.	74755.	3252.9
#3	12183.	74469.	3269.4

Approved: August 11, 2016

Sample Name: L1608042502SDL Acquired: 8/10/2016 18:00:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579778-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**-.00827**	**-.00098**	**.00477**	**-.00069**	**.00003**	**.07862**	**.00004**
Stddev	.00039	.00433	.00074	.00178	.00066	.00006	.04860	.00037
%RSD	92.646	52.433	75.557	37.246	95.628	247.06	61.811	931.88
#1	-.00085	-.00870	-.00161	.00635	.00007	.00010	.10770	.00046
#2	-.00010	-.00373	-.00016	.00512	-.00101	-.00003	.02252	-.00025
#3	-.00030	-.01237	-.00117	.00285	-.00113	.00001	.10565	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.00018**	**.00087**	**-.01135**	**.17179**	**-.00107**	**-.02913**	**.00069**
Stddev	.00017	.00068	.00037	.03912	.11842	.00096	.05128	.00275
%RSD	85.586	378.73	42.034	344.58	68.930	89.418	176.06	400.54
#1	-.00000	-.00039	.00129	.02634	.25611	-.00004	.02684	.00250
#2	-.00031	-.00000	.00062	-.05175	.22286	-.00193	-.04037	-.00248
#3	-.00027	.00094	.00069	-.00864	.03641	-.00125	-.07385	.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.00965**	**.00222**	**-.00259**	**.00126**	**-.00306**	**.00356**	**-.00285**
Stddev	.00013	.02092	.00068	.00204	.00240	.00137	.00617	.00081
%RSD	61.605	216.83	30.432	78.827	190.40	44.807	173.27	28.519
#1	-.00033	.01318	.00163	-.00365	.00337	-.00151	-.00038	-.00296
#2	-.00007	.02858	.00296	-.00024	-.00135	-.00410	.01067	-.00361
#3	-.00024	-.01282	.00208	-.00388	.00176	-.00358	.00039	-.00199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608042502SDL Acquired: 8/10/2016 18:00:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579778-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00072**	**-.00022**	**-.00091**	**-.00006**	**.00049**	**.00155**	**-.00064**
Stddev	.00057	.00006	.00325	.00239	.00040	.00028	.00036
%RSD	80.176	27.266	358.81	3702.7	82.457	18.012	56.606
#1	-.00116	-.00024	.00284	-.00093	.00021	.00171	-.00106
#2	-.00007	-.00027	-.00304	.00264	.00030	.00171	-.00039
#3	-.00092	-.00015	-.00251	-.00190	.00095	.00123	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12723.**	**77977.**	**3327.0**
Stddev	51.	55.	21.7
%RSD	.40214	.07099	.65272
#1	12732.	77992.	3302.0
#2	12770.	77915.	3340.6
#3	12669.	78023.	3338.5

Approved: August 11, 2016

Sample Name: L1608042502SDL Acquired: 8/10/2016 18:04:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG579778-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**-.00922**	**.00059**	**.00242**	**-.00224**	**.00000**	**-.00309**
Stddev	.00174	.00505	.00222	.00135	.00070	.00003	.04266
%RSD	207.83	54.777	373.54	55.845	31.015	1964.7	1380.1
#1	.00116	-.00565	-.00195	.00146	-.00171	-.00001	.00542
#2	-.00196	-.01499	.00213	.00396	-.00303	.00003	-.04936
#3	-.00171	-.00701	.00160	.00183	-.00199	-.00002	.03467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.00027**	**-.00070**	**.00165**	F **-.03278**	**.12025**	**-.00172**
Stddev	.00016	.00010	.00019	.00076	.02937	.08915	.00074
%RSD	117.68	36.725	27.377	46.086	89.586	74.134	43.144
#1	.00030	-.00023	-.00092	.00248	-.00221	.10456	-.00257
#2	.00012	-.00019	-.00064	.00098	-.06078	.21620	-.00119
#3	-.00002	-.00038	-.00055	.00150	-.03536	.03999	-.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03000**	**-.00101**	**-.00023**	**.02635**	**.00066**	**-.00329**	**.00052**
Stddev	.04177	.00382	.00015	.01861	.00032	.00382	.00139
%RSD	139.21	380.42	66.505	70.632	48.086	115.99	268.05
#1	.02450	.00341	-.00014	.00498	.00036	-.00020	.00007
#2	-.00874	-.00338	-.00041	.03902	.00063	-.00212	-.00059
#3	.07425	-.00305	-.00014	.03505	.00100	-.00756	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: L1608042502SDL Acquired: 8/10/2016 18:04:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG579778-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00241	.00068	-.00395	-.00011	-.00027	.01186	-.00182
Stddev	.00066	.00207	.00124	.00078	.00030	.00091	.00089
%RSD	27.239	304.08	31.486	699.40	110.63	7.6907	48.798
#1	.00257	.00285	-.00495	-.00096	.00007	.01114	-.00231
#2	.00297	-.00127	-.00256	.00007	-.00048	.01288	-.00079
#3	.00169	.00046	-.00433	.00056	-.00041	.01155	-.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00000	.00030	-.00038
Stddev	.00097	.00018	.00027
%RSD	19505.	60.099	70.287
#1	-.00036	.00009	-.00060
#2	-.00075	.00038	-.00046
#3	.00109	.00042	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12954.	79277.	3374.6
Stddev	82.	85.	15.6
%RSD	.63558	.10740	.46138
#1	12988.	79220.	3357.9
#2	13014.	79375.	3377.1
#3	12860.	79236.	3388.7

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 18:08:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41542**	**10.283**	**.42751**	**.53198**	**1.0835**	**.04983**	**10.697**	**.05297**
Stddev	.00197	.060	.00850	.00675	.0055	.00039	.074	.00147
%RSD	.47414	.58633	1.9877	1.2689	.51170	.78283	.69541	2.7817
#1	.41575	10.286	.43312	.53298	1.0867	.04963	10.729	.05352
#2	.41331	10.222	.43167	.52479	1.0866	.04957	10.750	.05409
#3	.41721	10.342	.41773	.53817	1.0771	.05028	10.612	.05130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21027**	**.50080**	**.53008**	**4.1994**	**50.045**	**1.0576**	**10.272**	**.53532**
Stddev	.00599	.00281	.01574	.0215	.353	.0132	.018	.00130
%RSD	2.8468	.56198	2.9696	.51087	.70461	1.2447	.17721	.24305
#1	.21380	.50060	.53917	4.2235	50.348	1.0715	10.286	.53464
#2	.21366	.49809	.53916	4.1825	50.130	1.0560	10.277	.53682
#3	.20336	.50371	.51190	4.1922	49.658	1.0454	10.251	.53450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0483**	**50.829**	**.52744**	**10.698**	**.53285**	**1.2726**	**.42930**	**5.3428**
Stddev	.0231	.347	.01669	.225	.00972	.0248	.01060	.0920
%RSD	2.1987	.68184	3.1638	2.1000	1.8246	1.9481	2.4698	1.7209
#1	1.0592	51.121	.53521	10.833	.53740	1.2860	.44032	5.4029
#2	1.0639	50.921	.53882	10.822	.53946	1.2879	.42843	5.3885
#3	1.0218	50.446	.50828	10.439	.52169	1.2440	.41917	5.2369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 18:08:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0441**	**1.0850**	**1.0095**	**.52406**	**.99211**	**1.0556**	**1.0361**
Stddev	.0367	.0038	.0035	.00385	.00398	.0276	.0091
%RSD	3.5102	.35188	.34735	.73472	.40149	2.6168	.87953
#1	1.0654	1.0883	1.0069	.52318	.98955	1.0699	1.0417
#2	1.0651	1.0860	1.0135	.52828	.99009	1.0732	1.0409
#3	1.0018	1.0808	1.0081	.52073	.99670	1.0238	1.0256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12206.**	**74425.**	**3249.5**
Stddev	11.	259.	30.4
%RSD	.09270	.34787	.93640
#1	12214.	74536.	3234.9
#2	12210.	74609.	3229.2
#3	12193.	74129.	3284.5

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 18:12:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00266	-.00123	.00193	-.00134	-.00001	.00379	.00015
Stddev	.00152	.00435	.00010	.00190	.00138	.00002	.03562	.00026
%RSD	9878.5	163.47	8.4635	98.564	103.06	156.89	938.57	171.13
#1	.00140	.00734	-.00113	.00098	-.00262	-.00003	.03462	.00038
#2	.00025	-.00125	-.00134	.00413	-.00152	.00001	-.03520	.00022
#3	-.00161	.00188	-.00121	.00069	.00012	-.00002	.01196	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	-.00095	.00123	-.00809	.25504	-.00013	-.02652	.00045
Stddev	.00024	.00049	.00050	.01342	.07221	.00449	.06363	.00248
%RSD	82.445	51.984	40.953	165.93	28.315	3533.4	239.93	554.55
#1	-.00016	-.00084	.00154	-.01781	.21229	-.00528	.01310	-.00106
#2	-.00014	-.00051	.00065	-.01368	.21441	.00293	.00726	-.00092
#3	-.00056	-.00148	.00151	.00722	.33841	.00197	-.09992	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.00420	.00116	-.00354	.00169	.00004	.00316	.00083
Stddev	.00020	.03716	.00010	.00437	.00124	.00304	.00176	.00092
%RSD	55.567	885.29	8.4948	123.37	73.739	8347.9	55.672	110.29
#1	-.00040	.02477	.00107	-.00003	.00228	-.00217	.00243	.00169
#2	-.00055	.02652	.00116	-.00843	.00026	.00350	.00188	.00093
#3	-.00015	-.03870	.00126	-.00215	.00252	-.00122	.00516	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 18:12:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00120**	**-.00008**	**.00356**	**.00011**	**.00066**	**-.00028**	**-.00035**
Stddev	.00048	.00034	.00646	.00106	.00017	.00014	.00034
%RSD	39.966	415.35	181.18	952.07	26.612	50.681	96.448
#1	-.00174	.00015	.00924	-.00111	.00081	-.00021	-.00003
#2	-.00084	.00008	.00491	.00082	.00070	-.00018	-.00032
#3	-.00101	-.00048	-.00346	.00063	.00047	-.00044	-.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12017.**	**73252.**	**3224.7**
Stddev	31.	278.	50.1
%RSD	.25438	.37907	1.5541
#1	11992.	73069.	3267.9
#2	12007.	73115.	3236.4
#3	12051.	73571.	3169.8

Approved: August 11, 2016

Sample Name: L1608033401 Acquired: 8/10/2016 18:16:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	.25570	.01480	.15528	-.00223	-.00005	1.9053	.00098
Stddev	.00146	.01265	.00179	.00090	.00012	.00004	.0283	.00010
%RSD	202.71	4.9488	12.108	.57679	5.3418	85.828	1.4826	10.304
#1	.00148	.24427	.01681	.15480	-.00220	-.00009	1.8731	.00086
#2	.00164	.25354	.01338	.15631	-.00236	-.00000	1.9169	.00105
#3	-.00096	.26930	.01420	.15472	-.00213	-.00006	1.9259	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00511	.00093	.00162	9.2004	10.761	-.00277	1.1438	.79317
Stddev	.00062	.00071	.00213	.0195	.104	.00168	.0432	.00586
%RSD	12.177	76.409	131.52	.21222	.96466	60.492	3.7736	.73919
#1	.00580	.00168	.00311	9.2145	10.723	-.00139	1.1934	.79078
#2	.00494	.00086	.00255	9.1782	10.681	-.00464	1.1147	.78888
#3	.00459	.00026	-.00082	9.2086	10.878	-.00228	1.1234	.79985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	9.9674	.04224	.02172	.00144	.00437	.00324	.64101
Stddev	.00014	.0404	.00477	.00635	.00273	.00517	.00439	.06328
%RSD	10.395	.40547	11.290	29.214	189.86	118.28	135.28	9.8720
#1	.00148	10.014	.04467	.01850	.00130	.00361	.00654	.68009
#2	.00143	9.9458	.04530	.02903	.00423	-.00038	-.00173	.67493
#3	.00121	9.9424	.03674	.01763	-.00122	.00987	.00492	.56800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033401 Acquired: 8/10/2016 18:16:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.00495	.00969	-.00486	-.00004	.07690	-.00047
Stddev	.00109	.00062	.00353	.00199	.00055	.00870	.00063
%RSD	109.19	12.534	36.395	41.026	1419.3	11.320	133.93
#1	.00195	.00554	.01333	-.00321	-.00039	.08258	-.00119
#2	-.00019	.00430	.00628	-.00707	-.00031	.08123	-.00020
#3	.00124	.00500	.00947	-.00429	.00059	.06687	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12423.	76852.	3362.6
Stddev	33.	203.	3.4
%RSD	.26699	.26444	.10174
#1	12442.	77060.	3360.1
#2	12442.	76841.	3361.1
#3	12385.	76654.	3366.5

Approved: August 11, 2016

Sample Name: L1608033402 Acquired: 8/10/2016 18:20:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00178	.00652	.00257	.01652	.00130	.00002	1.0588	.00224
Stddev	.00131	.00268	.00292	.00137	.00109	.00010	.0389	.00017
%RSD	73.888	41.082	113.30	8.3136	83.694	399.68	3.6702	7.5663
#1	.00184	.00886	.00286	.01660	.00172	-.00009	1.0283	.00240
#2	.00043	.00711	.00533	.01786	.00212	.00008	1.1026	.00226
#3	.00306	.00360	-.00048	.01511	.00007	.00008	1.0456	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00286	.00057	.00078	4.6269	15.118	-.00206	.21669	.54478
Stddev	.00065	.00082	.00117	.0128	.041	.00209	.06972	.00362
%RSD	22.840	143.84	149.57	.27702	.27094	101.39	32.177	.66509
#1	.00329	.00049	.00195	4.6270	15.073	-.00007	.23439	.54467
#2	.00318	-.00021	.00076	4.6140	15.154	-.00424	.13982	.54846
#3	.00211	.00142	-.00038	4.6396	15.127	-.00187	.27585	.54121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	23.940	.00429	.00436	.00263	.00301	.00211	.09425
Stddev	.00020	.085	.00120	.00487	.00199	.00039	.00385	.00906
%RSD	72.087	.35606	27.905	111.87	75.749	13.028	182.31	9.6159
#1	.00030	23.894	.00567	.00995	.00288	.00257	.00398	.09780
#2	.00006	24.039	.00344	.00207	.00448	.00334	.00468	.10099
#3	.00045	23.888	.00378	.00105	.00052	.00311	-.00232	.08394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033402 Acquired: 8/10/2016 18:20:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00328	.00423	-.00142	.00037	.00325	-.00056
Stddev	.00061	.00043	.00549	.00144	.00050	.00036	.00012
%RSD	192.06	13.235	129.75	101.43	134.58	11.056	21.318
#1	.00026	.00320	.00674	-.00261	.00046	.00353	-.00043
#2	-.00026	.00289	-.00206	-.00182	-.00017	.00336	-.00065
#3	.00095	.00374	.00802	.00018	.00081	.00284	-.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12376.	76130.	3317.9
Stddev	67.	272.	18.4
%RSD	.53745	.35684	.55336
#1	12432.	76283.	3324.6
#2	12393.	75816.	3297.1
#3	12303.	76290.	3332.0

Approved: August 11, 2016

Sample Name: L1608033403 Acquired: 8/10/2016 18:24:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00265	.00213	.00145	.01322	-.00104	-.00009	.48456	.00008
Stddev	.00120	.00582	.00192	.00046	.00012	.00002	.00394	.00009
%RSD	45.418	273.41	132.30	3.4870	11.516	17.485	.81296	113.72
#1	.00197	.00310	.00203	.01374	-.00092	-.00010	.48791	.00014
#2	.00404	.00740	.00301	.01289	-.00105	-.00007	.48555	-.00002
#3	.00195	-.00411	-.00069	.01302	-.00116	-.00010	.48022	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00052	-.00033	.69821	1.1244	-.00050	.21798	.01267
Stddev	.00022	.00051	.00071	.04169	.1814	.00368	.04843	.00207
%RSD	226.21	97.654	216.87	5.9713	16.137	742.36	22.218	16.344
#1	.00029	-.00104	.00049	.74459	1.0988	-.00111	.25326	.01494
#2	-.00014	-.00052	-.00080	.68623	1.3173	.00345	.16276	.01088
#3	.00014	-.00001	-.00068	.66382	.95709	-.00383	.23793	.01218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	12.782	.00367	-.00264	-.00051	.00166	-.00201	.03232
Stddev	.00028	.306	.00015	.00059	.00051	.00173	.00276	.00320
%RSD	643.29	2.3921	4.1089	22.362	99.217	104.79	137.62	9.8883
#1	.00025	13.062	.00382	-.00288	-.00047	.00366	.00118	.03437
#2	-.00007	12.828	.00367	-.00308	-.00003	.00065	-.00359	.03395
#3	-.00031	12.455	.00352	-.00197	-.00105	.00066	-.00361	.02864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608033403 Acquired: 8/10/2016 18:24:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.00335**	**.00167**	**-.00269**	**-.00009**	**.00138**	**-.00036**
Stddev	.00005	.00052	.00654	.00134	.00041	.00026	.00063
%RSD	8.5834	15.459	391.74	49.768	464.73	18.743	175.72
#1	-.00052	.00363	.00920	-.00286	-.00040	.00151	-.00004
#2	-.00062	.00275	-.00255	-.00393	-.00025	.00154	.00005
#3	-.00058	.00367	-.00165	-.00127	.00038	.00108	-.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12464.**	**76461.**	**3334.3**
Stddev	54.	350.	53.5
%RSD	.43133	.45752	1.6053
#1	12418.	76196.	3283.5
#2	12449.	76857.	3329.3
#3	12523.	76330.	3390.2

Approved: August 11, 2016

Sample Name: L1608042503 Acquired: 8/10/2016 18:28:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00449	-.00098	.00950	-.00192	.00001	.04669	.00024
Stddev	.00077	.01174	.00184	.00024	.00115	.00000	.00804	.00011
%RSD	176.56	261.76	187.36	2.5251	59.814	32.925	17.210	44.757
#1	.00016	.01796	-.00092	.00931	-.00230	.00001	.03750	.00012
#2	.00130	-.00094	-.00286	.00977	-.00063	.00001	.05016	.00032
#3	-.00016	-.00356	.00083	.00940	-.00282	.00002	.05241	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.00006	-.00015	.00697	.15256	-.00119	-.02239	-.00059
Stddev	.00029	.00039	.00069	.00356	.03906	.00083	.04944	.00153
%RSD	67.535	694.02	453.43	51.035	25.605	69.462	220.81	259.99
#1	-.00077	.00047	.00014	.00296	.16052	-.00212	-.04241	-.00234
#2	-.00028	-.00032	.00035	.00818	.11013	-.00055	-.05867	.00046
#3	-.00025	.00002	-.00094	.00976	.18702	-.00089	.03392	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.06492	.00074	-.00089	.00108	-.00004	-.00033	.00070
Stddev	.00028	.02711	.00074	.00549	.00014	.00134	.00285	.00204
%RSD	92.128	41.763	100.09	620.11	12.984	3630.7	869.81	289.97
#1	.00008	.08248	.00137	.00543	.00104	.00140	.00248	.00298
#2	.00021	.03370	-.00007	-.00452	.00097	-.00024	-.00322	.00011
#3	.00061	.07859	.00091	-.00357	.00124	-.00127	-.00025	-.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608042503 Acquired: 8/10/2016 18:28:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.00011**	**.00405**	**-.00164**	**.00072**	**.00119**	**-.00028**
Stddev	.00018	.00022	.00949	.00343	.00066	.00014	.00026
%RSD	31.514	194.05	234.45	208.42	91.707	11.522	92.399
#1	-.00063	.00037	.00072	-.00418	.00144	.00132	-.00026
#2	-.00070	-.00001	.01476	.00225	.00061	.00122	-.00055
#3	-.00036	-.00002	-.00333	-.00301	.00013	.00104	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12405.**	**76410.**	**3263.9**
Stddev	19.	366.	23.5
%RSD	.15196	.47961	.72050
#1	12425.	76105.	3246.8
#2	12387.	76310.	3254.3
#3	12404.	76817.	3290.7

Approved: August 11, 2016

Sample Name: L1608042504 Acquired: 8/10/2016 18:32:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	-.00063	-.00173	.01180	-.00154	.00001	.00216	.00025
Stddev	.00173	.00298	.00157	.00165	.00027	.00003	.02080	.00016
%RSD	215.04	472.05	90.788	13.995	17.214	425.28	964.84	64.090
#1	.00241	-.00193	-.00216	.01367	-.00137	-.00000	.02549	.00029
#2	.00101	-.00274	.00001	.01120	-.00185	.00005	-.00461	.00007
#3	-.00102	.00278	-.00303	.01054	-.00141	-.00002	-.01442	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	-.00047	.00072	-.00855	.16541	-.00105	-.02701	.00224
Stddev	.00019	.00071	.00067	.01359	.05898	.00386	.03180	.00091
%RSD	42.717	149.52	92.134	158.96	35.656	367.98	117.73	40.642
#1	-.00035	-.00111	-.00001	-.01903	.23044	.00236	-.06033	.00200
#2	-.00067	-.00060	.00130	.00680	.11539	-.00523	-.02373	.00325
#3	-.00033	.00029	.00087	-.01342	.15039	-.00027	.00302	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.04556	.00130	-.01027	.00058	.00365	.00305	.00247
Stddev	.00012	.03106	.00085	.00568	.00194	.00031	.00320	.00028
%RSD	50.438	68.169	65.628	55.331	335.19	8.4141	104.78	11.299
#1	.00022	.03499	.00032	-.00811	.00171	.00343	.00593	.00260
#2	.00013	.02116	.00187	-.01671	-.00166	.00351	-.00039	.00265
#3	.00038	.08052	.00170	-.00598	.00168	.00400	.00361	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608042504 Acquired: 8/10/2016 18:32:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	-.00000	.00397	-.00226	.00018	.00099	-.00038
Stddev	.00024	.00025	.00324	.00146	.00072	.00008	.00022
%RSD	517.67	14379.	81.588	64.767	394.72	8.6083	58.688
#1	-.00017	.00026	.00703	-.00070	.00033	.00096	-.00063
#2	.00031	-.00003	.00058	-.00359	.00082	.00108	-.00027
#3	.00000	-.00024	.00430	-.00248	-.00060	.00092	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12339.	76041.	3288.0
Stddev	64.	217.	5.0
%RSD	.52040	.28588	.15076
#1	12265.	75864.	3285.7
#2	12377.	76283.	3293.7
#3	12375.	75974.	3284.7

Approved: August 11, 2016

Sample Name: L1608042505 Acquired: 8/10/2016 18:36:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00129	-.00362	-.00026	.01098	-.00109	.00004	.00185	.00026
Stddev	.00122	.00817	.00295	.00364	.00057	.00003	.03744	.00005
%RSD	94.750	225.99	1138.4	33.118	52.508	79.266	2020.1	19.777
#1	.00155	-.00539	.00281	.01390	-.00147	.00002	.04442	.00020
#2	.00236	.00530	-.00307	.00691	-.00136	.00007	-.02597	.00027
#3	-.00004	-.01075	-.00051	.01214	-.00043	.00002	-.01289	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00009	.00063	-.01116	.16982	.00125	.01155	-.00046
Stddev	.00017	.00033	.00108	.00271	.11170	.00364	.03832	.00149
%RSD	58.493	382.25	170.94	24.256	65.773	292.10	331.86	327.06
#1	-.00012	-.00012	.00184	-.01234	.12357	.00483	.04840	-.00211
#2	-.00046	-.00009	.00031	-.00806	.29722	.00136	-.02809	.00079
#3	-.00030	.00046	-.00025	-.01308	.08868	-.00245	.01433	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.03484	.00114	-.00334	-.00088	.00126	.00280	.00212
Stddev	.00018	.02796	.00130	.00609	.00155	.00123	.00095	.00074
%RSD	120.34	80.264	113.57	182.39	177.42	97.886	33.844	35.187
#1	-.00030	.06591	-.00007	-.00590	.00085	-.00016	.00293	.00161
#2	.00005	.01169	.00252	-.00772	-.00216	.00184	.00368	.00297
#3	-.00021	.02691	.00098	.00361	-.00132	.00208	.00180	.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608042505 Acquired: 8/10/2016 18:36:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.00006**	**.00070**	**-.00452**	**.00002**	**.00107**	**-.00021**
Stddev	.00026	.00009	.00431	.00243	.00090	.00029	.00047
%RSD	136.97	149.82	616.04	53.750	5658.3	27.319	219.43
#1	.00008	-.00004	.00400	-.00378	.00100	.00125	-.00017
#2	-.00022	.00013	-.00417	-.00724	-.00077	.00124	.00023
#3	-.00044	.00008	.00227	-.00255	-.00018	.00073	-.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12363.**	**75849.**	**3232.1**
Stddev	46.	100.	23.6
%RSD	.36891	.13217	.73124
#1	12328.	75787.	3234.0
#2	12347.	75965.	3254.8
#3	12415.	75796.	3207.6

Approved: August 11, 2016

Sample Name: L1608043801 Acquired: 8/10/2016 18:40:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00337	.04776	.00241	.33126	8.7142	-.00006	44.370
Stddev	.00191	.00245	.00097	.00305	.0610	.00002	.301
%RSD	56.696	5.1250	40.111	.91934	.69966	25.125	.67889
#1	.00236	.04787	.00212	.33321	8.6509	-.00005	44.076
#2	.00218	.05016	.00162	.33282	8.7726	-.00005	44.678
#3	.00558	.04526	.00349	.32775	8.7191	-.00008	44.357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.00076	.01187	.00446	24.540	3.6236	.85981
Stddev	.00021	.00031	.00051	.00477	.232	.1990	.01003
%RSD	38.542	41.123	4.3011	106.90	.94471	5.4908	1.1663
#1	.00031	.00070	.01129	.00841	24.546	3.4778	.85772
#2	.00070	.00109	.01205	.00581	24.768	3.8503	.87072
#3	.00065	.00048	.01226	-.00084	24.305	3.5426	.85099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.7153	5.5048	.00045	187.04	.02278	.20407	.00181
Stddev	.0770	.0487	.00034	1.54	.00294	.02418	.00382
%RSD	1.3465	.88476	77.352	.82580	12.887	11.850	211.56
#1	5.6362	5.4492	.00006	185.57	.02520	.22545	-.00218
#2	5.7900	5.5399	.00072	188.65	.02361	.20892	.00543
#3	5.7196	5.5252	.00056	186.91	.01951	.17783	.00217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 11, 2016

Sample Name: L1608043801 Acquired: 8/10/2016 18:40:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.00368	.19010	.00328	F 13.573	.00457	-.00870
Stddev	.00318	.00382	.02307	.00083	.091	.00376	.00507
%RSD	531.16	103.88	12.137	25.354	.67098	82.256	58.268
#1	.00411	.00729	.21125	.00417	13.475	.00885	-.01334
#2	-.00208	.00408	.19354	.00313	13.656	.00177	-.00329
#3	-.00023	-.00033	.16550	.00253	13.589	.00309	-.00946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00055	.08583	-.00062
Stddev	.00070	.00985	.00043
%RSD	127.61	11.473	69.405
#1	-.00003	.09397	-.00104
#2	.00035	.08864	-.00018
#3	.00133	.07489	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12141.	75001.	3396.1
Stddev	287.	80.	24.4
%RSD	2.3611	.10694	.71802
#1	11814.	74960.	3421.9
#2	12263.	74950.	3392.8
#3	12346.	75094.	3373.5

Approved: August 11, 2016

Sample Name: L1608043901 Acquired: 8/10/2016 18:43:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.00904	-.00087	.00985	.00944	.00003	48.677	.00026
Stddev	.00196	.00895	.00134	.00066	.00135	.00009	.178	.00013
%RSD	493.91	99.020	153.71	6.6636	14.295	292.17	.36625	50.207
#1	-.00186	.01535	-.00084	.01055	.01096	.00012	48.853	.00013
#2	.00136	-.00120	-.00222	.00976	.00898	.00003	48.497	.00025
#3	.00169	.01298	.00045	.00924	.00838	-.00006	48.682	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	-.00011	.00117	.04730	.53240	-.00200	6.7105	.00294
Stddev	.00034	.00063	.00025	.02768	.01580	.00243	.0339	.00066
%RSD	380.73	592.18	21.571	58.525	2.9675	121.36	.50465	22.477
#1	.00020	-.00043	.00091	.07441	.52141	-.00007	6.7180	.00221
#2	-.00046	-.00051	.00141	.01908	.52529	-.00473	6.6735	.00312
#3	-.00000	.00062	.00119	.04841	.55051	-.00121	6.7399	.00350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	2.3304	.00139	.00417	-.00070	.00389	.00207	2.6739
Stddev	.00022	.0200	.00067	.00731	.00227	.00162	.00487	.2597
%RSD	181.73	.85808	48.437	175.30	325.64	41.564	235.54	9.7138
#1	-.00013	2.3080	.00217	.01259	-.00066	.00575	.00111	2.8320
#2	.00029	2.3367	.00105	.00035	-.00298	.00303	-.00225	2.8155
#3	.00020	2.3465	.00095	-.00044	.00156	.00289	.00734	2.3741
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608043901 Acquired: 8/10/2016 18:43:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.05376**	**-.00158**	**-.00302**	**.00031**	**.00137**	**-.00046**
Stddev	.00084	.00046	.00354	.00222	.00051	.00027	.00040
%RSD	296.32	.86446	224.02	73.498	165.63	19.883	88.541
#1	.00022	.05418	-.00025	-.00114	.00069	.00166	-.00028
#2	.00018	.05384	.00110	-.00548	-.00027	.00133	-.00017
#3	-.00125	.05326	-.00559	-.00245	.00051	.00112	-.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12303.**	**75537.**	**3266.2**
Stddev	13.	152.	19.5
%RSD	.10641	.20080	.59735
#1	12317.	75461.	3259.2
#2	12300.	75439.	3251.2
#3	12292.	75712.	3288.3

Approved: August 11, 2016

Sample Name: L1608043902 Acquired: 8/10/2016 18:47:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	.00610	-.00165	.01087	.01308	-.00007	47.697	.00025
Stddev	.00100	.00950	.00251	.00143	.00095	.00009	.185	.00017
%RSD	98.296	155.75	151.96	13.158	7.2952	132.81	.38774	67.140
#1	.00171	-.00480	-.00174	.00952	.01414	-.00008	47.862	.00011
#2	.00148	.01047	.00090	.01072	.01281	-.00015	47.497	.00021
#3	-.00013	.01264	-.00411	.01236	.01229	.00003	47.731	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00064	.00121	.25964	.44446	.00062	6.7068	.04123
Stddev	.00004	.00082	.00094	.00426	.05836	.00203	.0299	.00179
%RSD	19.432	127.48	77.226	1.6398	13.131	329.29	.44500	4.3468
#1	-.00017	.00105	.00229	.25614	.41657	-.00086	6.6724	.03962
#2	-.00024	-.00030	.00062	.25839	.51153	-.00022	6.7222	.04316
#3	-.00025	.00117	.00073	.26438	.40528	.00293	6.7259	.04092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	2.3817	.00103	-.00125	-.00155	.00169	.00119	2.6769
Stddev	.00038	.0347	.00140	.00253	.00309	.00162	.00282	.2601
%RSD	85.027	1.4580	136.56	202.99	198.78	95.773	236.74	9.7164
#1	.00062	2.4181	.00223	-.00209	-.00375	.00181	.00095	2.8308
#2	.00072	2.3781	.00138	-.00324	-.00289	.00325	-.00150	2.8234
#3	.00001	2.3489	-.00052	.00160	.00198	.00002	.00413	2.3766
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608043902 Acquired: 8/10/2016 18:47:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.05300**	**-.00570**	**-.00332**	**.00024**	**.00156**	**.00012**
Stddev	.00032	.00048	.00544	.00201	.00023	.00019	.00030
%RSD	632.57	.90133	95.374	60.482	95.159	11.970	246.37
#1	-.00029	.05286	-.00204	-.00258	.00021	.00149	-.00020
#2	-.00017	.05260	-.01195	-.00560	.00047	.00176	.00016
#3	.00031	.05353	-.00311	-.00179	.00002	.00141	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12288.**	**75474.**	**3274.3**
Stddev	19.	57.	35.9
%RSD	.15568	.07518	1.0967
#1	12309.	75477.	3234.1
#2	12286.	75415.	3285.6
#3	12270.	75529.	3303.1

Approved: August 11, 2016

Sample Name: L1608043903 Acquired: 8/10/2016 18:51:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00237	-.00267	.00992	.00992	-.00002	45.614	.00015
Stddev	.00161	.00619	.00098	.00134	.00114	.00005	.093	.00008
%RSD	887.52	261.13	36.539	13.471	11.503	246.68	.20348	53.575
#1	.00052	.00922	-.00280	.00897	.00934	-.00008	45.596	.00006
#2	.00159	-.00283	-.00357	.00935	.01124	-.00002	45.531	.00019
#3	-.00157	.00072	-.00163	.01145	.00919	.00003	45.714	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	.00007	.00064	.26871	.53672	.00144	6.6188	.06385
Stddev	.00040	.00060	.00135	.02991	.01595	.00102	.0787	.00323
%RSD	80.827	822.77	211.76	11.133	2.9724	70.849	1.1893	5.0632
#1	-.00007	-.00061	-.00081	.29834	.55305	.00045	6.6296	.06668
#2	-.00086	.00051	.00087	.26926	.53595	.00248	6.5352	.06032
#3	-.00054	.00031	.00185	.23852	.52117	.00139	6.6915	.06454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	2.3103	.00127	-.00604	.00127	-.00262	.00300	2.5380
Stddev	.00072	.0302	.00037	.00103	.00163	.00390	.00690	.2409
%RSD	308.11	1.3065	28.908	16.999	127.62	148.69	229.90	9.4917
#1	.00106	2.3292	.00169	-.00497	.00191	.00181	.00857	2.6833
#2	-.00023	2.3262	.00110	-.00612	.00249	-.00417	-.00471	2.6708
#3	-.00014	2.2755	.00102	-.00702	-.00057	-.00552	.00514	2.2599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608043903 Acquired: 8/10/2016 18:51:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.05086	.00371	-.00183	.00023	.00163	-.00030
Stddev	.00027	.00059	.00399	.00104	.00001	.00039	.00036
%RSD	143.79	1.1618	107.46	56.848	5.3720	24.044	120.17
#1	-.00009	.05142	.00695	-.00225	.00022	.00171	-.00053
#2	.00045	.05024	.00492	-.00259	.00024	.00198	-.00047
#3	.00020	.05093	-.00074	-.00064	.00022	.00121	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12276.	75672.	3256.9
Stddev	18.	138.	2.8
%RSD	.14350	.18251	.08530
#1	12265.	75707.	3258.2
#2	12296.	75520.	3258.8
#3	12267.	75789.	3253.7

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 18:55:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41141	10.211	.41970	.51782	1.0611	.04953	10.559	.05218
Stddev	.00142	.008	.00454	.00612	.0066	.00007	.094	.00138
%RSD	.34559	.08017	1.0821	1.1812	.62478	.15120	.89177	2.6459
#1	.40990	10.208	.42271	.51618	1.0664	.04961	10.667	.05295
#2	.41272	10.220	.42192	.51269	1.0632	.04946	10.493	.05300
#3	.41162	10.204	.41448	.52459	1.0537	.04951	10.516	.05058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20825	.50152	.52235	4.1676	49.894	1.0380	10.362	.52821
Stddev	.00652	.00114	.01482	.0344	.243	.0048	.042	.00570
%RSD	3.1285	.22714	2.8364	.82486	.48762	.46339	.40226	1.0785
#1	.21251	.50231	.53117	4.1974	49.844	1.0436	10.410	.52960
#2	.21150	.50021	.53065	4.1755	50.159	1.0348	10.344	.53309
#3	.20075	.50203	.50525	4.1300	49.680	1.0358	10.333	.52195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0429	50.325	.52155	10.497	.52318	1.2592	.41185	5.2413
Stddev	.0313	.197	.01552	.216	.00946	.0278	.01094	.0977
%RSD	3.0036	.39053	2.9761	2.0565	1.8076	2.2102	2.6558	1.8639
#1	1.0622	50.505	.53114	10.643	.52696	1.2789	.42267	5.3008
#2	1.0598	50.355	.52988	10.600	.53016	1.2713	.41207	5.2944
#3	1.0068	50.115	.50365	10.249	.51242	1.2274	.40080	5.1285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 18:55:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0343**	**1.0627**	**1.0008**	**.51751**	**.98974**	**1.0379**	**1.0374**
Stddev	.0349	.0083	.0125	.00362	.00274	.0278	.0057
%RSD	3.3763	.77708	1.2523	.70037	.27686	2.6798	.54638
#1	1.0532	1.0701	1.0151	.51935	.98915	1.0544	1.0437
#2	1.0557	1.0644	.99544	.51986	.99273	1.0535	1.0355
#3	.99401	1.0538	.99188	.51334	.98734	1.0058	1.0329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12420.**	**75402.**	**3263.9**
Stddev	7.	107.	17.1
%RSD	.05419	.14222	.52488
#1	12427.	75499.	3246.8
#2	12415.	75287.	3263.9
#3	12417.	75420.	3281.0

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 18:59:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00088**	**-.00563**	**-.00166**	**.00149**	**-.00088**	**-.00006**	**-.00185**	**-.00001**
Stddev	.00056	.00210	.00229	.00153	.00077	.00004	.04170	.00008
%RSD	63.594	37.288	137.88	102.60	87.639	67.612	2258.6	623.15
#1	-.00065	-.00713	-.00265	.00289	.00001	-.00002	.04501	.00001
#2	-.00151	-.00654	.00096	.00172	-.00130	-.00009	-.03489	.00005
#3	-.00047	-.00323	-.00328	-.00014	-.00134	-.00007	-.01566	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**-.00107**	**.00046**	**.00369**	**.16165**	**-.00073**	**-.07003**	**.00268**
Stddev	.00038	.00028	.00076	.01141	.07318	.00445	.13846	.00192
%RSD	115.59	26.019	166.08	309.67	45.269	611.64	197.73	71.500
#1	-.00067	-.00132	.00121	.01139	.24148	-.00586	-.22991	.00209
#2	-.00037	-.00113	-.00032	-.00943	.14571	.00199	.00996	.00113
#3	.00007	-.00077	.00049	.00910	.09776	.00169	.00987	.00483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01832**	**.00104**	**-.00380**	**.00020**	**.00282**	**.00762**	**-.00169**
Stddev	.00020	.01606	.00046	.00065	.00479	.00228	.00257	.00051
%RSD	212.38	87.706	44.379	17.062	2425.2	80.788	33.702	29.960
#1	-.00031	.03566	.00156	-.00323	-.00506	.00544	.00788	-.00193
#2	-.00006	.01535	.00066	-.00450	.00134	.00170	.00493	-.00111
#3	.00009	.00394	.00091	-.00366	.00432	.00132	.01005	-.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 18:59:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.00027	.00311	-.00386	.00022	-.00037	-.00034
Stddev	.00086	.00063	.00590	.00025	.00069	.00006	.00033
%RSD	239.41	234.03	189.78	6.4273	320.69	17.053	95.992
#1	.00134	.00028	.00187	-.00407	.00038	-.00039	-.00007
#2	-.00025	-.00013	-.00207	-.00391	.00082	-.00043	-.00026
#3	-.00001	-.00096	.00953	-.00359	-.00054	-.00030	-.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12675.	77023.	3313.4
Stddev	42.	239.	24.6
%RSD	.33528	.30966	.74148
#1	12643.	76812.	3285.6
#2	12659.	76976.	3322.5
#3	12723.	77282.	3332.1

Approved: August 11, 2016

Sample Name: L1608043904 Acquired: 8/10/2016 19:03:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.00085	.00063	.01037	.00955	-.00004	48.086	.00021
Stddev	.00096	.01003	.00142	.00283	.00069	.00002	.191	.00024
%RSD	106.48	1174.8	225.65	27.279	7.2202	63.338	.39672	113.69
#1	.00185	.00956	.00155	.01275	.00915	-.00007	47.938	.00048
#2	-.00006	-.01012	.00135	.00724	.00917	-.00003	48.301	.00014
#3	.00090	.00312	-.00101	.01111	.01035	-.00002	48.019	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00042	.00002	.00140	.46341	.57802	-.00350	6.9734	.04365
Stddev	.00028	.00066	.00046	.01712	.04770	.00198	.0718	.00451
%RSD	67.569	3314.0	33.193	3.6942	8.2517	56.616	1.0299	10.325
#1	-.00014	-.00004	.00192	.47824	.60835	-.00567	6.8911	.03933
#2	-.00071	-.00061	.00125	.44467	.60267	-.00308	7.0060	.04330
#3	-.00041	.00071	.00103	.46731	.52304	-.00177	7.0232	.04833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	2.4912	.00081	-.00071	.00210	.00191	.00250	2.6702
Stddev	.00035	.0237	.00145	.00597	.00282	.00036	.00131	.2320
%RSD	81.580	.95094	180.08	844.68	134.54	19.141	52.330	8.6897
#1	.00023	2.4953	.00234	-.00489	.00486	.00155	.00172	2.8161
#2	.00084	2.4657	.00064	.00612	.00222	.00228	.00401	2.7919
#3	.00023	2.5125	-.00055	-.00335	-.00078	.00189	.00177	2.4026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608043904 Acquired: 8/10/2016 19:03:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.05268	-.00166	-.00271	.00044	.00084	-.00001
Stddev	.00010	.00034	.00455	.00171	.00057	.00017	.00035
%RSD	24.054	.64486	274.83	63.034	127.92	19.649	3019.9
#1	.00039	.05229	.00356	-.00108	.00038	.00083	-.00037
#2	.00050	.05284	-.00483	-.00449	-.00009	.00102	-.00001
#3	.00031	.05290	-.00369	-.00255	.00104	.00068	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12291.	75458.	3250.0
Stddev	35.	307.	11.3
%RSD	.28397	.40648	.34709
#1	12330.	75132.	3260.9
#2	12282.	75741.	3250.6
#3	12261.	75501.	3238.4

Approved: August 11, 2016

Sample Name: L1608043905 Acquired: 8/10/2016 19:07:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.10858	-.00293	.01027	.01158	.00003	50.547	.00028
Stddev	.00095	.00505	.00238	.00090	.00132	.00003	1.513	.00001
%RSD	138.82	4.6502	81.338	8.7562	11.368	107.82	2.9934	3.2998
#1	.00163	.11278	-.00287	.00970	.01010	-.00000	49.340	.00027
#2	.00071	.10998	-.00058	.00980	.01203	.00003	50.056	.00029
#3	-.00028	.10298	-.00534	.01131	.01262	.00005	52.244	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00060	.00306	1.9038	.72874	-.00253	6.9559	.09554
Stddev	.00017	.00020	.00154	.0449	.10131	.00082	.2617	.00358
%RSD	82.699	32.401	50.278	2.3589	13.901	32.295	3.7618	3.7507
#1	-.00013	.00065	.00376	1.8765	.84476	-.00345	6.7590	.09434
#2	-.00008	.00077	.00413	1.8793	.65777	-.00188	6.8559	.09271
#3	-.00039	.00039	.00130	1.9557	.68370	-.00227	7.2528	.09957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	2.3999	.00218	.00527	.00078	.00274	.00153	2.9156
Stddev	.00024	.0861	.00054	.00364	.00316	.00598	.00604	.2696
%RSD	44.496	3.5878	24.963	69.110	404.65	218.19	395.76	9.2471
#1	.00056	2.3533	.00186	.00544	.00433	.00862	-.00532	3.0758
#2	.00078	2.3471	.00186	.00883	-.00026	-.00334	.00380	3.0666
#3	.00030	2.4993	.00280	.00155	-.00172	.00295	.00610	2.6043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608043905 Acquired: 8/10/2016 19:07:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.05349	-.00575	.00031	.00117	.02348	.00047
Stddev	.00039	.00200	.00961	.00304	.00078	.00264	.00058
%RSD	617.60	3.7310	167.05	993.44	66.134	11.243	122.54
#1	.00051	.05192	.00330	-.00318	.00150	.02512	.00114
#2	-.00019	.05282	-.00472	.00246	.00029	.02488	.00018
#3	-.00013	.05574	-.01583	.00164	.00173	.02043	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12364.	75463.	3220.9
Stddev	15.	132.	68.7
%RSD	.12379	.17453	2.1333
#1	12372.	75366.	3288.2
#2	12375.	75410.	3223.7
#3	12347.	75613.	3150.9

Approved: August 11, 2016

Sample Name: L1608044001 Acquired: 8/10/2016 19:11:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.01701	-.00158	.00404	.00567	.00001	36.441	.00039
Stddev	.00124	.00270	.00084	.00059	.00045	.00005	.036	.00007
%RSD	122.20	15.867	53.111	14.556	7.8872	592.46	.09794	18.217
#1	-.00033	.01397	-.00214	.00471	.00575	.00007	36.430	.00033
#2	.00210	.01914	-.00199	.00363	.00607	-.00003	36.481	.00047
#3	.00127	.01791	-.00062	.00378	.00519	-.00001	36.412	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00057	.00125	.01758	.47611	-.00226	5.7425	.00046
Stddev	.00019	.00055	.00065	.02186	.03275	.00038	.0737	.00360
%RSD	121.25	96.764	51.454	124.34	6.8796	16.818	1.2836	779.09
#1	-.00025	-.00036	.00059	.01855	.51392	-.00188	5.7494	.00187
#2	-.00027	-.00120	.00129	-.00475	.45674	-.00264	5.6655	.00314
#3	.00006	-.00016	.00188	.03894	.45766	-.00227	5.8124	-.00363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	1.8461	.00101	-.00182	.00017	.00693	.00206	2.4214
Stddev	.00040	.0261	.00051	.00786	.00188	.00383	.00264	.2158
%RSD	268.71	1.4119	50.970	432.46	1076.9	55.283	128.53	8.9104
#1	.00060	1.8248	.00051	.00176	.00183	.00772	.00200	2.5497
#2	-.00007	1.8751	.00154	.00362	-.00187	.01030	.00473	2.5423
#3	-.00009	1.8383	.00098	-.01084	.00057	.00276	-.00056	2.1723
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608044001 Acquired: 8/10/2016 19:11:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.03819	.00049	-.00360	-.00011	.00215	-.00023
Stddev	.00015	.00035	.00114	.00344	.00055	.00027	.00063
%RSD	30.298	.91784	232.26	95.477	514.93	12.786	279.87
#1	.00035	.03792	-.00079	-.00007	.00015	.00228	-.00067
#2	.00066	.03859	.00087	-.00379	-.00074	.00233	.00050
#3	.00050	.03806	.00140	-.00694	.00027	.00183	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12376.	75909.	3276.3
Stddev	15.	109.	12.5
%RSD	.12247	.14333	.38166
#1	12393.	75834.	3268.7
#2	12363.	75859.	3269.6
#3	12371.	76034.	3290.8

Approved: August 11, 2016

Sample Name: L1608044002 Acquired: 8/10/2016 19:15:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.02421	-.00046	.01028	.00591	-.00003	36.254	.00024
Stddev	.00232	.00498	.00083	.00158	.00079	.00002	.055	.00015
%RSD	831.94	20.578	180.26	15.394	13.409	54.772	.15119	64.158
#1	-.00290	.02676	-.00113	.00901	.00615	-.00004	36.307	.00006
#2	.00053	.01847	-.00072	.01206	.00655	-.00001	36.256	.00030
#3	.00153	.02740	.00047	.00978	.00502	-.00004	36.197	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	-.00025	.00277	.01551	.54586	-.00261	5.7501	.00026
Stddev	.00038	.00069	.00143	.00629	.09399	.00127	.0339	.00340
%RSD	148.77	275.86	51.661	40.567	17.218	48.908	.58965	1304.3
#1	.00009	-.00039	.00346	.02113	.49395	-.00217	5.7771	.00268
#2	-.00065	.00050	.00373	.00871	.65436	-.00404	5.7610	-.00362
#3	-.00020	-.00086	.00113	.01671	.48928	-.00161	5.7120	.00172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	1.8391	.00112	-.00148	.00138	.00352	.00360	2.4032
Stddev	.00008	.0174	.00017	.00338	.00228	.00196	.00487	.2174
%RSD	12.614	.94452	15.411	228.40	166.05	55.606	135.58	9.0475
#1	.00060	1.8413	.00124	.00238	.00330	.00560	.00298	2.5316
#2	.00053	1.8207	.00093	-.00295	.00197	.00326	-.00094	2.5259
#3	.00068	1.8552	.00120	-.00386	-.00115	.00171	.00875	2.1522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608044002 Acquired: 8/10/2016 19:15:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**.03803**	**-.00493**	**-.00186**	**.00086**	**.02232**	**-.00018**
Stddev	.00031	.00039	.00500	.00198	.00080	.00254	.00027
%RSD	74.779	1.0308	101.37	106.47	93.326	11.380	153.75
#1	-.00072	.03778	.00047	.00026	-.00007	.02386	.00011
#2	-.00042	.03784	-.00586	-.00368	.00128	.02370	-.00021
#3	-.00010	.03848	-.00940	-.00217	.00135	.01938	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12402.**	**76057.**	**3281.1**
Stddev	22.	281.	21.1
%RSD	.17708	.36998	.64311
#1	12420.	76224.	3258.6
#2	12408.	76215.	3300.5
#3	12378.	75732.	3284.2

Approved: August 11, 2016

Sample Name: L1608045701 Acquired: 8/10/2016 19:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00092	.19176	.00123	.15796	.36942	.00007	24.239	.00031
Stddev	.00104	.00934	.00060	.00256	.00304	.00007	.130	.00023
%RSD	113.65	4.8699	48.935	1.6207	.82255	92.672	.53823	74.496
#1	-.00011	.18543	.00171	.15827	.37292	.00008	24.344	.00048
#2	-.00210	.18736	.00055	.15525	.36790	.00013	24.093	.00041
#3	-.00055	.20248	.00142	.16035	.36745	.00000	24.279	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.00026	.00315	.23973	2.3717	.00847	8.3352	.01279
Stddev	.00037	.00038	.00019	.02347	.0530	.00351	.1132	.00204
%RSD	46.735	143.37	5.9735	9.7902	2.2329	41.437	1.3582	15.991
#1	.00053	.00043	.00332	.21326	2.3160	.00615	8.3803	.01082
#2	.00064	-.00017	.00317	.24795	2.3779	.01251	8.2064	.01264
#3	.00122	.00053	.00295	.25799	2.4214	.00675	8.4189	.01490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00465	153.12	.00219	.01541	-.00109	.00580	.00824	4.2983
Stddev	.00034	.47	.00136	.00760	.00228	.00264	.00287	.3123
%RSD	7.2860	.30385	62.275	49.327	208.66	45.589	34.823	7.2658
#1	.00476	153.55	.00279	.01204	-.00149	.00295	.01135	4.4893
#2	.00492	153.17	.00316	.02411	-.00316	.00817	.00767	4.4677
#3	.00427	152.63	.00063	.01007	.00136	.00628	.00570	3.9379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608045701 Acquired: 8/10/2016 19:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.81788	.00321	-.00272	.00037	.00614	.00028
Stddev	.00060	.00286	.00343	.00430	.00083	.00065	.00010
%RSD	185.06	.35017	107.00	157.93	226.57	10.624	36.246
#1	.00011	.82102	.00691	-.00739	.00103	.00654	.00025
#2	.00100	.81720	.00013	-.00185	.00064	.00649	.00040
#3	-.00014	.81542	.00257	.00107	-.00057	.00539	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12176.	73443.	3250.0
Stddev	4.	88.	22.3
%RSD	.03562	.12003	.68558
#1	12173.	73362.	3233.9
#2	12173.	73537.	3240.7
#3	12181.	73429.	3275.5

Approved: August 11, 2016

Sample Name: L1608045702 Acquired: 8/10/2016 19:22:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.05639	.00113	.15355	.37362	.00002	22.005	.00016
Stddev	.00121	.00067	.00160	.00148	.00190	.00002	.117	.00037
%RSD	4821.9	1.1819	140.90	.96699	.50766	107.28	.53030	238.21
#1	-.00142	.05669	.00216	.15263	.37462	.00002	22.035	.00003
#2	.00065	.05562	-.00071	.15526	.37481	.00004	22.103	.00057
#3	.00069	.05685	.00195	.15276	.37143	-.00000	21.876	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.00090	.00379	.03992	2.3333	.00819	7.5597	.00766
Stddev	.00015	.00115	.00083	.01925	.0555	.00233	.0746	.00151
%RSD	25.836	128.19	21.985	48.225	2.3776	28.438	.98693	19.782
#1	.00042	-.00041	.00469	.01813	2.3837	.00725	7.5347	.00769
#2	.00063	.00177	.00363	.05464	2.2739	.00648	7.6436	.00613
#3	.00071	.00134	.00305	.04698	2.3424	.01085	7.5008	.00916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00447	153.67	.00208	-.00184	.00214	.00054	.00357	3.9036
Stddev	.00035	.48	.00031	.00448	.00131	.00035	.00554	.2987
%RSD	7.8296	.31114	14.645	243.99	61.239	63.715	155.31	7.6523
#1	.00483	154.17	.00207	.00105	.00066	.00092	-.00054	4.0854
#2	.00413	153.64	.00239	-.00700	.00259	.00024	.00986	4.0666
#3	.00446	153.21	.00178	.00044	.00317	.00047	.00137	3.5588
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608045702 Acquired: 8/10/2016 19:22:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.76683	.00033	-.00164	.00083	.00659	-.00003
Stddev	.00020	.01154	.00655	.00134	.00066	.00073	.00038
%RSD	39.894	1.5047	2010.0	81.881	78.751	11.060	1512.7
#1	.00044	.77967	-.00676	-.00190	.00097	.00696	-.00035
#2	.00071	.76350	.00616	-.00018	.00012	.00707	.00039
#3	.00033	.75733	.00158	-.00282	.00141	.00575	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12200.	73871.	3232.5
Stddev	7.	92.	23.5
%RSD	.06062	.12388	.72801
#1	12207.	73952.	3221.5
#2	12192.	73772.	3216.5
#3	12202.	73888.	3259.6

Approved: August 11, 2016

Sample Name: L1608045703 Acquired: 8/10/2016 19:26:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00131	.10887	.00058	.09884	.15632	-.00004	6.9168	.00010
Stddev	.00110	.00456	.00151	.00045	.00082	.00005	.0250	.00002
%RSD	83.965	4.1879	262.37	.45931	.52274	126.72	.36174	24.780
#1	.00259	.10959	-.00116	.09937	.15685	-.00004	6.8937	.00008
#2	.00071	.10399	.00162	.09860	.15672	.00001	6.9135	.00012
#3	.00065	.11302	.00126	.09856	.15538	-.00008	6.9434	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00120	.01296	.03662	13.657	.00624	5.0720	.00021
Stddev	.00011	.00048	.00092	.02309	.132	.00203	.1691	.00019
%RSD	2477.2	40.178	7.0739	63.050	.96801	32.589	3.3329	91.421
#1	-.00011	.00092	.01206	.05029	13.700	.00405	5.2384	-.00001
#2	.00002	.00092	.01389	.04961	13.508	.00807	4.9004	.00032
#3	.00011	.00175	.01293	.00996	13.762	.00660	5.0772	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00265	102.43	.00125	.00502	.00109	.00361	.00195	3.2565
Stddev	.00053	.08	.00059	.00132	.00097	.00346	.00155	.2719
%RSD	19.851	.07822	47.155	26.285	88.548	96.014	79.692	8.3483
#1	.00319	102.45	.00162	.00351	.00179	-.00038	.00374	3.4247
#2	.00262	102.49	.00156	.00598	-.00001	.00586	.00108	3.4019
#3	.00214	102.34	.00057	.00556	.00150	.00535	.00102	2.9428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: L1608045703 Acquired: 8/10/2016 19:26:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.37480**	**.00437**	**-.00138**	**.00116**	**.00482**	**-.00025**
Stddev	.00054	.00037	.00366	.00314	.00077	.00049	.00033
%RSD	129.03	.09781	83.718	228.34	66.247	10.181	129.60
#1	.00033	.37441	.00225	.00050	.00027	.00504	-.00033
#2	-.00007	.37486	.00859	.00038	.00163	.00516	.00011
#3	.00099	.37513	.00226	-.00500	.00158	.00426	-.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12280.**	**74331.**	**3249.6**
Stddev	22.	231.	1.5
%RSD	.17658	.31143	.04512
#1	12294.	74066.	3248.4
#2	12292.	74497.	3251.2
#3	12255.	74429.	3249.0

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 19:30:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .44872	F 11.200	F .45806	F .56137	F 1.1488	F .05508	F 11.393
Stddev	.00020	.007	.00964	.00102	.0056	.00011	.105
%RSD	.04438	.06325	2.1049	.18099	.49049	.19957	.92002
#1	.44849	11.208	.46684	.56194	1.1433	.05506	11.290
#2	.44883	11.194	.45961	.56197	1.1546	.05499	11.500
#3	.44884	11.197	.44774	.56019	1.1484	.05520	11.390
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.40000	10.000	.40000	.50000	1.0000	.05000	10.000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .05660	F .22725	F .55856	F .56706	F 4.5423	54.648	F 1.1316
Stddev	.00130	.00685	.00397	.01432	.0879	.408	.0064
%RSD	2.3031	3.0126	.71044	2.5249	1.9352	.74621	.56290
#1	.05725	.23186	.55520	.57679	4.4490	54.177	1.1389
#2	.05746	.23051	.55755	.57377	4.6235	54.876	1.1286
#3	.05510	.21939	.56294	.55062	4.5544	54.890	1.1272
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000		1.0000
Range	10.000%	10.000%	10.000%	10.000%	10.000%		10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 11.385	F .57384	F 1.1245	F 55.017	F .56431	F 11.339	F .56465
Stddev	.192	.00355	.0334	.326	.01497	.210	.00875
%RSD	1.6839	.61946	2.9669	.59273	2.6533	1.8521	1.5489
#1	11.167	.57088	1.1389	54.642	.57258	11.470	.57107
#2	11.460	.57778	1.1482	55.233	.57333	11.451	.56818
#3	11.528	.57284	1.0863	55.177	.54703	11.097	.55469
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 19:30:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.3512	F .44901	F 5.6080	F 1.1296	F 1.1513	F 1.1004	F .56570
Stddev	.0303	.00576	.0818	.0353	.0052	.0180	.00250
%RSD	2.2459	1.2822	1.4578	3.1266	.44768	1.6398	.44200
#1	1.3706	.44729	5.6339	1.1523	1.1455	1.0798	.56488
#2	1.3668	.45543	5.6737	1.1476	1.1552	1.1079	.56851
#3	1.3163	.44430	5.5164	1.0889	1.1532	1.1134	.56372
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0990	F 1.1256	F 1.1370
Stddev	.0010	.0288	.0080
%RSD	.09243	2.5590	.70722
#1	1.0979	1.1426	1.1280
#2	1.0999	1.1418	1.1396
#3	1.0992	1.0923	1.1435
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11705.	70487.	3055.7
Stddev	16.	145.	24.4
%RSD	.13495	.20580	.79784
#1	11712.	70632.	3083.7
#2	11717.	70342.	3044.3
#3	11687.	70487.	3039.1

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 19:34:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	-.00803	-.00063	.00155	.00050	.00008	-.02470	.00014
Stddev	.00024	.00354	.00064	.00221	.00043	.00005	.02473	.00019
%RSD	39.739	44.107	101.97	142.88	87.065	58.142	100.15	132.94
#1	.00083	-.01211	-.00012	.00133	.00094	.00014	-.04306	.00013
#2	.00035	-.00628	-.00135	.00386	.00008	.00006	-.03446	.00034
#3	.00063	-.00570	-.00043	-.00055	.00047	.00005	.00343	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	-.00008	.00046	.00490	.12481	-.00510	-.00744	.00017
Stddev	.00004	.00117	.00061	.01827	.06554	.00104	.09691	.00171
%RSD	185.95	1387.0	133.27	373.20	52.517	20.428	1302.1	989.92
#1	.00003	.00018	-.00020	-.01087	.20005	-.00391	-.05894	-.00175
#2	.00005	-.00136	.00100	.00063	.08013	-.00582	.10434	.00074
#3	-.00002	.00093	.00057	.02492	.09424	-.00559	-.06773	.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.01758	.00118	.00115	.00047	.00009	.00398	.00042
Stddev	.00028	.00866	.00036	.00179	.00049	.00480	.00345	.00283
%RSD	80.893	49.251	30.228	156.21	103.88	5301.4	86.569	676.28
#1	.00031	.01134	.00149	.00123	.00014	.00449	.00769	.00255
#2	.00008	.01394	.00079	.00290	.00103	.00081	.00087	.00150
#3	.00063	.02747	.00126	-.00068	.00024	-.00502	.00340	-.00279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 19:34:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**-.00015**	**-.00223**	**-.00226**	**.00088**	**-.00034**	**-.00066**
Stddev	.00071	.00032	.00319	.00115	.00042	.00009	.00024
%RSD	123.53	217.96	143.17	51.116	47.613	25.920	36.913
#1	.00025	-.00006	-.00012	-.00353	.00093	-.00038	-.00093
#2	-.00101	.00012	-.00066	-.00127	.00127	-.00040	-.00045
#3	-.00097	-.00050	-.00590	-.00197	.00044	-.00024	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12267.**	**73398.**	**3158.8**
Stddev	72.	213.	3.5
%RSD	.58473	.28954	.11069
#1	12185.	73432.	3162.1
#2	12294.	73170.	3159.1
#3	12321.	73591.	3155.1

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 19:38:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00865	.16987	.00824	.08510	.00925	.00164	.41548	.00109
Stddev	.00226	.00726	.00278	.00117	.00040	.00007	.01084	.00018
%RSD	26.125	4.2732	33.778	1.3778	4.3090	4.0120	2.6094	16.528
#1	.00735	.17288	.00555	.08532	.00949	.00156	.42770	.00113
#2	.00735	.17514	.01111	.08615	.00948	.00166	.41170	.00124
#3	.01126	.16159	.00806	.08384	.00879	.00169	.40703	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00401	.00328	.00487	.07021	1.0550	.08580	.42177	.01009
Stddev	.00010	.00038	.00075	.03238	.1268	.00138	.04300	.00152
%RSD	2.5407	11.707	15.418	46.118	12.020	1.6040	10.194	15.034
#1	.00404	.00372	.00400	.03476	1.1441	.08467	.39786	.00886
#2	.00410	.00303	.00529	.07762	.90980	.08734	.47141	.00963
#3	.00390	.00308	.00531	.09823	1.1111	.08540	.39605	.01178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00850	.43180	.01736	.82207	.00977	.08271	.02077	.81412
Stddev	.00024	.01806	.00163	.04852	.00071	.00257	.00649	.04139
%RSD	2.8290	4.1835	9.3931	5.9023	7.2342	3.1063	31.239	5.0836
#1	.00853	.43256	.01696	.84908	.01028	.08426	.02446	.84001
#2	.00873	.44948	.01916	.85107	.01007	.08413	.02458	.83597
#3	.00825	.41337	.01598	.76605	.00897	.07975	.01328	.76639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 19:38:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41574**	**.04364**	**.03185**	**.15506**	**.00845**	**.01789**	**.04263**
Stddev	.02957	.00078	.01030	.00820	.00073	.00108	.00022
%RSD	7.1137	1.7924	32.349	5.2885	8.6347	6.0397	.51305
#1	.43455	.04414	.04280	.15980	.00877	.01838	.04288
#2	.43102	.04274	.02235	.15978	.00762	.01863	.04250
#3	.38165	.04405	.03040	.14559	.00897	.01665	.04251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12392.**	**74834.**	**3202.3**
Stddev	36.	168.	15.5
%RSD	.29130	.22489	.48517
#1	12373.	75029.	3186.6
#2	12369.	74735.	3202.7
#3	12433.	74739.	3217.7

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 19:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02182	.42215	.01861	.20627	.02082	.00414	1.1027	.00225
Stddev	.00004	.00552	.00286	.00126	.00049	.00008	.0425	.00032
%RSD	.18911	1.3071	15.364	.61180	2.3510	2.0242	3.8589	14.015
#1	.02186	.41579	.02136	.20769	.02031	.00405	1.0535	.00249
#2	.02182	.42501	.01883	.20529	.02129	.00417	1.1285	.00238
#3	.02178	.42565	.01565	.20582	.02085	.00421	1.1260	.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01020	.00999	.01130	.21716	2.2739	.20898	1.0650	.02080
Stddev	.00110	.00044	.00148	.03971	.0233	.00445	.0199	.00274
%RSD	10.819	4.4447	13.049	18.288	1.0245	2.1307	1.8680	13.154
#1	.01013	.00955	.01294	.21248	2.2938	.20746	1.0745	.02145
#2	.01133	.01044	.01090	.17999	2.2798	.21399	1.0422	.02315
#3	.00913	.00998	.01007	.25900	2.2483	.20548	1.0785	.01779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01996	1.0597	.04185	2.0216	.02002	.20586	.04332	1.9947
Stddev	.00166	.0331	.00353	.1366	.00404	.01208	.00435	.1248
%RSD	8.3188	3.1250	8.4353	6.7554	20.194	5.8684	10.039	6.2556
#1	.02097	1.0282	.04346	2.1085	.01599	.21174	.04312	2.0713
#2	.02087	1.0942	.04430	2.0922	.02407	.21387	.04777	2.0622
#3	.01804	1.0568	.03781	1.8642	.01998	.19196	.03908	1.8507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: LLCCV Acquired: 8/10/2016 19:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0180**	**.10810**	**.06734**	**.38690**	**.02130**	**.04236**	**.10591**
Stddev	.0911	.00040	.00458	.02223	.00056	.00326	.00037
%RSD	8.9532	.36571	6.8022	5.7457	2.6336	7.7069	.35011
#1	1.0727	.10833	.06408	.40365	.02131	.04434	.10596
#2	1.0686	.10832	.07257	.39538	.02073	.04415	.10626
#3	.91281	.10764	.06535	.36168	.02185	.03859	.10552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12448.**	**74850.**	**3217.8**
Stddev	3.	197.	4.6
%RSD	.02507	.26256	.14383
#1	12451.	74677.	3213.5
#2	12449.	75064.	3217.0
#3	12445.	74810.	3222.7

Approved: August 11, 2016

Sample Name: L1608013301 Acquired: 8/10/2016 19:45:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	115.84	.01180	.60107	.93605	.00021	148.48
Stddev	.00124	.18	.00191	.00443	.00141	.00002	.22
%RSD	3362.3	.15149	16.165	.73772	.15103	9.0561	.14627
#1	.00132	116.04	.01273	.60007	.93731	.00020	148.43
#2	-.00116	115.80	.01307	.59721	.93452	.00023	148.30
#3	-.00005	115.70	.00961	.60591	.93633	.00020	148.72
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04587	14.408	.32949	.77356	16.302	16.007	7.9322
Stddev	.00328	1.065	.00109	.05854	.105	.116	.0200
%RSD	7.1559	7.3899	.32999	7.5672	.64153	.72720	.25230
#1	.04928	15.465	.33073	.83192	16.344	16.093	7.9511
#2	.04559	14.423	.32869	.77392	16.183	15.874	7.9112
#3	.04273	13.335	.32906	.71484	16.379	16.052	7.9341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	33.125	.48554	.04028	F 946.22	37.715	136.62	.04905
Stddev	.157	.00394	.00269	3.28	2.773	8.89	.00404
%RSD	.47403	.81134	6.6867	.34614	7.3535	6.5035	8.2402
#1	33.277	.48449	.04319	944.55	40.480	145.76	.05340
#2	32.963	.48223	.03977	950.00	37.733	136.09	.04835
#3	33.135	.48990	.03788	944.12	34.933	128.02	.04541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 11, 2016

Sample Name: L1608013301 Acquired: 8/10/2016 19:45:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00773	.01152	5.5690	.00702	1.2059	.01006	.01433
Stddev	.00115	.00236	.3029	.00128	.0015	.00524	.00141
%RSD	14.886	20.513	5.4390	18.223	.12341	52.107	9.8190
#1	.00795	.01412	5.8943	.00759	1.2062	.01589	.01596
#2	.00875	.00949	5.5175	.00793	1.2043	.00853	.01346
#3	.00648	.01095	5.2951	.00556	1.2072	.00575	.01358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00805	2.3376	.00057
Stddev	.00060	.1698	.00039
%RSD	7.4072	7.2634	68.419
#1	.00741	2.5064	.00019
#2	.00817	2.3395	.00055
#3	.00858	2.1668	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11591.	67479.	3089.6
Stddev	291.	109.	11.1
%RSD	2.5118	.16174	.36056
#1	11397.	67375.	3091.2
#2	11926.	67469.	3099.9
#3	11451.	67593.	3077.8

Approved: August 11, 2016

Sample Name: L1608013302 Acquired: 8/10/2016 19:49:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00243	183.37	.02060	.84962	1.4924	.00032	210.97
Stddev	.00291	.32	.00316	.00543	.0038	.00007	.80
%RSD	119.81	.17179	15.360	.63944	.25393	21.262	.37697
#1	.00408	183.07	.02177	.84337	1.4892	.00039	210.11
#2	.00414	183.36	.02301	.85226	1.4966	.00026	211.69
#3	-.00093	183.70	.01701	.85323	1.4914	.00030	211.10
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07219	23.086	.51969	1.2585	25.368	22.696	7.3883
Stddev	.00523	1.875	.00108	.1061	.206	.135	.0228
%RSD	7.2397	8.1210	.20872	8.4344	.81101	.59454	.30911
#1	.07526	24.270	.51974	1.3262	25.408	22.541	7.3683
#2	.07516	24.064	.52075	1.3131	25.550	22.787	7.4132
#3	.06616	20.925	.51858	1.1361	25.145	22.760	7.3833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	46.621	.76057	.05760	F 851.18	60.494	F 215.20	.08474
Stddev	.172	.00360	.00433	8.68	4.873	15.63	.01079
%RSD	.36810	.47291	7.5088	1.0198	8.0562	7.2632	12.729
#1	46.469	.75974	.06000	842.75	63.598	225.06	.09206
#2	46.807	.75746	.06021	850.70	63.007	223.36	.08982
#3	46.587	.76451	.05261	860.09	54.877	197.18	.07235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Pass
High Limit				270.00		180.00	
Low Limit				-.50000		-.10000	

Approved: August 11, 2016

Sample Name: L1608013302 Acquired: 8/10/2016 19:49:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00655	.01425	7.5799	.00978	1.7852	.01604	.02439
Stddev	.00811	.00532	.4861	.00094	.0047	.00396	.00073
%RSD	123.84	37.319	6.4126	9.5738	.26496	24.675	2.9953
#1	.00275	.01784	7.8858	.01064	1.7808	.01530	.02389
#2	.01586	.01677	7.8344	.00992	1.7902	.01250	.02523
#3	.00104	.00814	7.0194	.00878	1.7847	.02031	.02406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01305	3.8433	.00045
Stddev	.00105	.3084	.00016
%RSD	8.0303	8.0234	36.881
#1	.01196	4.0415	.00043
#2	.01314	4.0004	.00062
#3	.01405	3.4880	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11538.	68865.	3159.3
Stddev	38.	102.	31.6
%RSD	.33117	.14799	.99960
#1	11499.	68767.	3193.8
#2	11542.	68857.	3152.2
#3	11575.	68970.	3131.9

Approved: August 11, 2016

Sample Name: L1608013303 Acquired: 8/10/2016 19:53:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00145	228.04	.02598	1.0321	1.8783	.00037	260.15
Stddev	.00184	.45	.00284	.0109	.0037	.00006	.66
%RSD	126.90	.19668	10.932	1.0540	.19949	15.706	.25240
#1	-.00012	227.59	.02895	1.0265	1.8821	.00034	260.43
#2	.00100	228.05	.02572	1.0252	1.8780	.00043	260.62
#3	.00348	228.48	.02328	1.0447	1.8747	.00033	259.40
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08818	28.392	.64828	1.5345	31.523	27.042	8.1829
Stddev	.00736	2.548	.00324	.1381	.182	.114	.0173
%RSD	8.3514	8.9749	.49934	8.9986	.57815	.42167	.21078
#1	.09329	30.083	.64629	1.6234	31.676	27.114	8.1908
#2	.09151	29.633	.64653	1.6046	31.571	27.101	8.1947
#3	.07974	25.461	.65201	1.3754	31.321	26.910	8.1631
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	56.778	.95317	.06692	F 895.81	73.782	F 263.94	.10017
Stddev	.156	.00382	.00569	11.67	6.485	21.27	.01941
%RSD	.27443	.40042	8.5038	1.3023	8.7898	8.0571	19.378
#1	56.701	.95084	.07067	909.26	78.081	277.54	.11306
#2	56.958	.95757	.06973	889.80	76.943	274.84	.10960
#3	56.677	.95109	.06037	888.38	66.322	239.43	.07784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Pass
High Limit				270.00		180.00	
Low Limit				-.50000		-.10000	

Approved: August 11, 2016

Sample Name: L1608013303 Acquired: 8/10/2016 19:53:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00895	.01885	9.4731	.01240	2.2306	.02039	.02746
Stddev	.00517	.00519	.7074	.00064	.0036	.00531	.00333
%RSD	57.778	27.504	7.4676	5.1886	.16052	26.056	12.107
#1	.00974	.01300	9.9223	.01302	2.2338	.02263	.02594
#2	.01369	.02286	9.8393	.01245	2.2313	.02423	.03128
#3	.00343	.02070	8.6576	.01174	2.2267	.01433	.02517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01580	4.6312	-.00011
Stddev	.00015	.4106	.00055
%RSD	.95345	8.8654	475.31
#1	.01563	4.9059	.00020
#2	.01592	4.8285	.00020
#3	.01584	4.1592	-.00074
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11561.	69241.	3153.5
Stddev	18.	58.	5.2
%RSD	.15249	.08340	.16474
#1	11541.	69178.	3148.5
#2	11565.	69291.	3158.9
#3	11576.	69254.	3153.1

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 19:57:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42516**	**10.732**	**.43942**	**.53015**	**1.0864**	**.05250**	**10.905**
Stddev	.00250	.020	.00922	.00346	.0128	.00023	.133
%RSD	.58727	.19094	2.0978	.65269	1.1776	.43169	1.2176
#1	.42258	10.754	.44342	.52702	1.0999	.05224	11.052
#2	.42533	10.715	.44596	.52956	1.0848	.05267	10.870
#3	.42757	10.726	.42888	.53386	1.0745	.05259	10.793
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05410**	F **.22112**	**.52662**	**.54207**	**4.3792**	**52.729**	**1.0952**
Stddev	.00156	.00984	.00209	.01668	.0727	.511	.0090
%RSD	2.8896	4.4509	.39694	3.0764	1.6592	.96994	.81874
#1	.05495	.22803	.52673	.55101	4.3745	53.192	1.1050
#2	.05506	.22548	.52448	.55236	4.4541	52.814	1.0931
#3	.05230	.20985	.52866	.52283	4.3090	52.180	1.0875
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.20000					
Range		10.000%					

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **11.134**	**.54800**	**1.0734**	**53.049**	**.54648**	**10.822**	**.54209**
Stddev	.088	.01043	.0297	.631	.02286	.301	.01175
%RSD	.79149	1.9038	2.7706	1.1898	4.1829	2.7818	2.1679
#1	11.113	.55829	1.0881	53.627	.56289	10.997	.54536
#2	11.058	.54828	1.0929	53.146	.55617	10.994	.55186
#3	11.230	.53743	1.0392	52.375	.52037	10.474	.52905
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	10.000						
Range	10.000%						

Approved: August 11, 2016

Sample Name: CCV Acquired: 8/10/2016 19:57:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2898**	**.43321**	**5.3497**	**1.0842**	**1.0864**	**1.0490**	**.54421**
Stddev	.0336	.00923	.1151	.0433	.0122	.0081	.00611
%RSD	2.6077	2.1302	2.1509	3.9948	1.1189	.77578	1.1224
#1	1.2990	.44117	5.3946	1.1051	1.0997	1.0546	.54709
#2	1.3179	.43536	5.4355	1.1130	1.0836	1.0528	.54835
#3	1.2525	.42309	5.2189	1.0344	1.0759	1.0397	.53720
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0438**	**1.0748**	**1.0989**
Stddev	.0042	.0331	.0187
%RSD	.39742	3.0747	1.7023
#1	1.0417	1.0906	1.1190
#2	1.0411	1.0971	1.0956
#3	1.0486	1.0369	1.0820
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12045.**	**73303.**	**3095.8**
Stddev	97.	173.	61.9
%RSD	.80874	.23607	1.9980
#1	12156.	73484.	3038.7
#2	11976.	73139.	3087.2
#3	12002.	73286.	3161.5

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 20:01:06 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00071	.00537	-.00144	.00464	.00156	.00002	.00173	.00017
Stddev	.00325	.00474	.00240	.00095	.00063	.00006	.00427	.00012
%RSD	456.73	88.316	167.04	20.503	40.220	331.03	246.54	71.262
#1	-.00041	.00155	-.00047	.00370	.00224	.00002	.00467	.00018
#2	.00238	.01068	.00033	.00560	.00101	.00008	.00370	.00028
#3	-.00411	.00388	-.00417	.00463	.00143	-.00004	-.00317	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	-.00047	-.00067	.02902	.31106	-.00212	-.07643	-.00025
Stddev	.00027	.00109	.00085	.01139	.06422	.00341	.04858	.00117
%RSD	539.87	232.32	126.72	39.272	20.645	160.98	63.559	470.53
#1	-.00007	.00043	.00027	.04177	.34165	-.00018	-.04935	.00066
#2	.00036	-.00167	-.00140	.02544	.23726	-.00606	-.13251	.00016
#3	-.00014	-.00016	-.00089	.01984	.35425	-.00012	-.04743	-.00156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.09012	.00172	.00558	.00204	.00027	.00194	-.00110
Stddev	.00044	.03200	.00138	.00432	.00304	.00099	.00317	.00347
%RSD	378.87	35.502	79.931	77.291	149.07	367.36	163.82	314.18
#1	-.00017	.11058	.00283	.01039	.00268	-.00084	.00556	.00169
#2	.00062	.10653	.00215	.00204	-.00127	.00105	.00058	-.00001
#3	-.00011	.05325	.00018	.00432	.00470	.00059	-.00034	-.00499
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 11, 2016

Sample Name: CCB Acquired: 8/10/2016 20:01:06 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1039) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**-.00002**	**.00962**	**-.00055**	**.00064**	**-.00014**	**-.00055**
Stddev	.00069	.00035	.00097	.00246	.00010	.00022	.00029
%RSD	443.23	1466.0	10.036	447.87	15.780	163.37	52.973
#1	.00052	-.00018	.01072	-.00299	.00074	.00006	-.00043
#2	-.00013	-.00027	.00921	-.00059	.00065	-.00038	-.00089
#3	-.00086	.00038	.00892	.00194	.00054	-.00009	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12196.**	**73384.**	**3131.9**
Stddev	29.	181.	13.2
%RSD	.24058	.24611	.42152
#1	12185.	73590.	3122.1
#2	12174.	73308.	3146.9
#3	12229.	73253.	3126.7

Approved: August 11, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	-0.000071	0.042342	0.000000	1.000000
Al 308.215 {109}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	0.000669	0.006530	0.000000	1.000000
As 189.042 {478}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	-0.000021	0.020671	0.000000	1.000000
B 249.678 {135}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	0.000004	0.020323	0.000000	1.000000
Ba 455.403 { 74}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	0.038103	1.753623	0.000000	1.000000
Be 313.107 {108}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	0.000389	0.766370	0.000000	1.000000
Ca 422.673 { 80}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	0.001405	0.035587	0.000000	1.000000
Cd 228.802 {447}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	0.000025	0.489595	0.000000	1.000000
Co 228.616 {447}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	-0.000128	0.300161	0.000000	1.000000
Cr 267.716 {126}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	0.000191	0.047424	0.000000	1.000000
Cu 224.700 {450}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	0.000062	0.107035	0.000000	1.000000
Fe 261.187 {129}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	-0.000215	0.017534	0.000000	1.000000
K 766.490 { 44}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	-0.008914	0.049446	0.000000	1.000000
Li 670.784 { 50}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	-0.007158	1.442756	0.000000	1.000000
Mg 279.079 {121}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	-0.000270	0.006616	0.000000	1.000000
Mn 257.610 {131}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	0.000088	0.224807	0.000000	1.000000
Mo 202.030 {467}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	-0.000020	0.151022	0.000000	1.000000
Na 589.592 { 57}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	0.006105	0.137913	0.000000	1.000000
Ni 231.604 {446}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	-0.000513	0.112431	0.000000	1.000000
P 214.914 {457}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	-0.000095	0.011870	0.000000	1.000000
Pb 220.353 {453}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	-0.000713	0.052187	0.000000	1.000000
Sb 206.833 {463}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	0.000218	0.026413	0.000000	1.000000
Se 196.090 {472}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	-0.000343	0.014877	0.000000	1.000000
Si 212.412 {459}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	0.001061	0.032702	0.000000	1.000000
Sn 189.989 {477}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	0.000169	0.056851	0.000000	1.000000
Sr 407.771 { 83}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	0.001183	2.920448	0.000000	1.000000
Ti 337.280 {100}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	-0.000915	0.079433	0.000000	1.000000
Tl 190.856 {477}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	-0.000190	0.022898	0.000000	1.000000
V 292.402 {115}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	-0.000004	0.055316	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	0.000311	0.348439	0.000000	1.000000
Zr 339.198 { 99}	8/12/2016 13:27:40	8/12/2016 13:27:40	Linear	1/Conc	-0.005160	0.007854	0.000000	1.000000

Approved: August 15, 2016

Kim K Buck

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999361	0.000004	0.002035	0.006782	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999892	0.000006	0.009093	0.030312	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999765	0.000002	0.002904	0.009681	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999830	0.000002	0.002533	0.008442	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999899	0.000158	0.001085	0.003616	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999884	0.000004	0.000090	0.000300	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999772	0.000048	0.044424	0.148081	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999603	0.000005	0.000245	0.000816	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999938	0.000004	0.000383	0.001278	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999915	0.000002	0.001151	0.003837	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999963	0.000003	0.001257	0.004189	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999360	0.000016	0.030297	0.100989	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999743	0.000356	0.118993	0.396645	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999695	0.000350	0.003771	0.012570	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999875	0.000010	0.089123	0.297076	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999706	0.000017	0.002776	0.009253	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999934	0.000011	0.000405	0.001348	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999826	0.000817	0.034106	0.113686	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999918	0.000005	0.001084	0.003613	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999906	0.000010	0.006406	0.021352	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999116	0.000007	0.003405	0.011349	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999884	0.000003	0.003957	0.013189	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.998858	0.000003	0.005813	0.019377	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999972	0.000008	0.002200	0.007332	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999892	0.000005	0.000860	0.002865	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999898	0.000264	0.000452	0.001508	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999873	0.000008	0.008356	0.027854	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999658	0.000003	0.003042	0.010138	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999824	0.000007	0.000950	0.003168	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999960	0.000020	0.000190	0.000632	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.777416	0.000040	0.220136	0.733787	OK.	1.000000	0.000000	1	0

Approved: August 15, 2016

Kim K Buck

Sample Name: S0 Acquired: 8/12/2016 13:08:38 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00007	.00067	-.00002	.00000	.03810	.00039	.00140
Stddev	.00004	.00002	.00000	.00003	.00047	.00004	.00049
%RSD	55.869	2.2848	7.7197	921.30	1.2370	10.331	34.627
#1	-.00003	.00068	-.00002	.00003	.03760	.00036	.00087
#2	-.00011	.00065	-.00002	-.00003	.03854	.00037	.00181
#3	-.00007	.00067	-.00002	.00001	.03817	.00044	.00154

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00002	-.00013	.00019	.00006	-.00021	-.00891	-.00715
Stddev	.00006	.00009	.00006	.00005	.00044	.00389	.00376
%RSD	245.48	71.990	31.175	84.096	205.21	43.668	52.515
#1	-.00003	-.00023	.00022	.00001	-.00072	-.01325	-.01032
#2	.00009	-.00011	.00023	.00011	-.00003	-.00774	-.00813
#3	.00001	-.00005	.00012	.00006	.00010	-.00574	-.00300

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00027	.00009	-.00002	.00611	-.00051	-.00009	-.00071
Stddev	.00027	.00040	.00002	.00116	.00009	.00004	.00015
%RSD	98.660	453.49	88.419	19.009	18.049	40.009	21.235
#1	-.00013	-.00037	-.00003	.00705	-.00056	-.00011	-.00088
#2	-.00058	.00030	-.00003	.00481	-.00058	-.00012	-.00059
#3	-.00010	.00033	-.00000	.00647	-.00041	-.00005	-.00067

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00022	-.00034	.00106	.00017	.00118	-.00091	-.00019
Stddev	.00008	.00000	.00001	.00002	.00070	.00047	.00004
%RSD	35.000	1.4245	1.1642	10.615	59.411	51.743	21.909
#1	.00015	-.00034	.00106	.00015	.00131	-.00052	-.00015
#2	.00021	-.00034	.00107	.00019	.00042	-.00144	-.00023
#3	.00030	-.00035	.00105	.00016	.00181	-.00078	-.00018

Approved: August 15, 2016

Kim K Buck

Sample Name: S0 Acquired: 8/12/2016 13:08:38 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	-.00000	.00031	-.00516
Stddev	.00003	.00003	.00160
%RSD	806.38	10.997	31.072
#1	-.00002	.00034	-.00555
#2	.00003	.00033	-.00340
#3	-.00003	.00027	-.00653
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12591.	77305.	3304.7
Stddev	9.	221.	7.9
%RSD	.06762	.28568	.23934
#1	12581.	77107.	3312.4
#2	12594.	77543.	3305.0
#3	12597.	77264.	3296.6

Approved: August 15, 2016

Kim K Buck

Sample Name: S1 Acquired: 8/12/2016 13:12:36 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00000	.00119	.05215	.00072	.00512	.00030	.00032
Stddev	.00004	.00005	.00080	.00002	.00042	.00006	.00004
%RSD	1872.4	4.0554	1.5292	2.3444	8.2790	19.853	13.232
#1	.00001	.00114	.05182	.00073	.00523	.00023	.00037
#2	-.00004	.00123	.05306	.00071	.00466	.00034	.00029
#3	.00003	.00121	.05157	.00074	.00549	.00032	.00030

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00038	.00049	.00003	.00448	.00093	.00108	.05845
Stddev	.00002	.00016	.00068	.00515	.00019	.00014	.00263
%RSD	5.6644	33.343	2235.9	114.98	20.501	12.706	4.4989
#1	.00038	.00041	-.00046	-.00035	.00083	.00112	.05559
#2	.00041	.00067	-.00025	.00389	.00115	.00119	.05902
#3	.00037	.00037	.00080	.00990	.00081	.00092	.06075

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00013	.00079	-.00063	.00050	.00229	.00059	.02499
Stddev	.00009	.00008	.00008	.00003	.00013	.00005	.00054
%RSD	67.794	10.479	12.045	6.8967	5.8826	9.0584	2.1540
#1	-.00018	.00088	-.00062	.00047	.00241	.00060	.02553
#2	-.00019	.00074	-.00071	.00053	.00232	.00063	.02446
#3	-.00003	.00074	-.00056	.00049	.00215	.00053	.02497

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00040	.00042	.00300	-.00458
Stddev	.00052	.00005	.00022	.00150
%RSD	129.75	13.195	7.4161	32.825
#1	-.00017	.00038	.00314	-.00401
#2	-.00100	.00048	.00312	-.00345
#3	-.00004	.00039	.00275	-.00629

Approved: August 15, 2016

Kim K Buck

Sample Name: S1 Acquired: 8/12/2016 13:12:36 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12630.**	**77267.**	**3310.8**
Stddev	25.	110.	17.1
%RSD	.20074	.14284	.51650
#1	12602.	77301.	3314.1
#2	12634.	77357.	3292.3
#3	12653.	77144.	3326.0

Approved: August 15, 2016

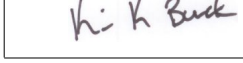

Sample Name: S2 Acquired: 8/12/2016 13:16:35 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00012**	**.00171**	**.00014**	**.00015**	**.06788**	**.00107**	**.00728**
Stddev	.00009	.00001	.00008	.00002	.00064	.00003	.00151
%RSD	69.888	.75385	57.226	14.724	.93930	3.0039	20.718
#1	.00017	.00172	.00021	.00018	.06808	.00109	.00743
#2	.00002	.00172	.00014	.00014	.06717	.00104	.00570
#3	.00017	.00170	.00006	.00014	.06839	.00110	.00870

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00036**	**.00078**	**.00057**	**.00096**	**.00070**	**.03117**	**.00871**
Stddev	.00019	.00007	.00003	.00014	.00014	.00395	.00350
%RSD	54.482	8.8238	4.5384	15.081	19.982	12.664	40.259
#1	.00016	.00084	.00058	.00112	.00084	.03537	.00468
#2	.00055	.00080	.00054	.00092	.00057	.03062	.01034
#3	.00036	.00071	.00059	.00084	.00068	.02753	.01109

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00060**	**.00237**	**.00224**	**.11575**	**.00031**	**.00165**	**-.00044**
Stddev	.00023	.00056	.00022	.00338	.00011	.00020	.00010
%RSD	38.925	23.799	9.9895	2.9194	34.276	12.151	23.413
#1	.00086	.00277	.00232	.11396	.00042	.00182	-.00049
#2	.00047	.00173	.00241	.11365	.00032	.00170	-.00032
#3	.00046	.00262	.00199	.11965	.00020	.00143	-.00050

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00070**	**-.00019**	**.00353**	**.00098**	**.04956**	**.00044**	**-.00008**
Stddev	.00011	.00007	.00030	.00011	.00113	.00052	.00004
%RSD	15.376	35.731	8.3595	10.868	2.2814	118.45	50.528
#1	.00058	-.00011	.00366	.00107	.04841	.00092	-.00008
#2	.00077	-.00024	.00374	.00100	.05067	.00052	-.00004
#3	.00077	-.00021	.00320	.00086	.04960	-.00012	-.00012

Approved: August 15, 2016

Kim K Buck

Sample Name: S2 Acquired: 8/12/2016 13:16:35 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00078	.00559	-.00601
Stddev	.00001	.00054	.00220
%RSD	1.1009	9.6017	36.550
#1	.00078	.00597	-.00851
#2	.00078	.00582	-.00512
#3	.00079	.00498	-.00439
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12482.	76573.	3292.0
Stddev	11.	197.	13.2
%RSD	.08820	.25661	.40042
#1	12492.	76676.	3307.1
#2	12483.	76697.	3283.0
#3	12470.	76347.	3285.9

Approved: August 15, 2016

Kim K Buck

Sample Name: S3 Acquired: 8/12/2016 13:20:33 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.01645**	**.06518**	**.00800**	**.00989**	**1.7576**	**.03871**	**.34975**
Stddev	.00010	.00025	.00003	.00005	.0090	.00017	.00147
%RSD	.60843	.39053	.42545	.49578	.51376	.44565	.41944
#1	.01635	.06530	.00800	.00986	1.7607	.03885	.34879
#2	.01646	.06488	.00796	.00986	1.7647	.03852	.35144
#3	.01655	.06535	.00803	.00995	1.7475	.03877	.34902

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02630**	**.05899**	**.02348**	**.05335**	**.06850**	**2.4113**	**1.4188**
Stddev	.00007	.00005	.00009	.00017	.00068	.0123	.0021
%RSD	.27939	.09038	.40285	.31030	.98616	.50967	.14669
#1	.02636	.05892	.02352	.05326	.06927	2.4145	1.4184
#2	.02622	.05901	.02337	.05325	.06825	2.4217	1.4211
#3	.02633	.05902	.02355	.05354	.06799	2.3978	1.4170

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06494**	**.11014**	**.14907**	**6.7220**	**.05508**	**.11703**	**.02516**
Stddev	.00058	.00013	.00025	.0473	.00014	.00032	.00001
%RSD	.89055	.11672	.16765	.70423	.25856	.27511	.03680
#1	.06503	.11029	.14879	6.7283	.05494	.11665	.02516
#2	.06547	.11005	.14917	6.7659	.05508	.11723	.02517
#3	.06432	.11009	.14926	6.6718	.05523	.11720	.02516

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03072**	**.00547**	**.16404**	**.05602**	**2.8630**	**.07712**	**.01022**
Stddev	.00014	.00003	.00047	.00018	.0091	.00084	.00003
%RSD	.44595	.47585	.28755	.32737	.31635	1.0930	.30853
#1	.03057	.00545	.16350	.05581	2.8635	.07631	.01022
#2	.03084	.00547	.16440	.05608	2.8718	.07800	.01025
#3	.03075	.00550	.16421	.05616	2.8537	.07705	.01019

Approved: August 15, 2016

Kim K Buck

Sample Name: S3 Acquired: 8/12/2016 13:20:33 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.05388	.34479	-.00161
Stddev	.00012	.00086	.00136
%RSD	.22240	.24854	84.225
#1	.05377	.34380	-.00228
#2	.05387	.34517	-.00005
#3	.05401	.34538	-.00250
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12295.	75337.	3299.4
Stddev	24.	433.	16.7
%RSD	.19563	.57487	.50564
#1	12320.	75412.	3293.8
#2	12292.	75728.	3286.2
#3	12272.	74872.	3318.2

Approved: August 15, 2016

Kim K Buck

Sample Name: S4 Acquired: 8/12/2016 13:24:09 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03406	.13381	.01659	.02052	3.5777	.07920	.71961	.05404
Stddev	.00007	.00015	.00004	.00013	.0275	.00014	.00771	.00029
%RSD	.19968	.11409	.23066	.61061	.76877	.17440	1.0718	.52824
#1	.03399	.13371	.01658	.02038	3.5690	.07904	.71670	.05372
#2	.03406	.13374	.01656	.02061	3.6085	.07924	.72835	.05412
#3	.03413	.13399	.01663	.02057	3.5556	.07931	.71378	.05427

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.12064	.04809	.10846	.14198	4.9936	2.9023	.13265	.22685
Stddev	.00054	.00018	.00025	.00119	.0473	.0190	.00036	.00177
%RSD	.44451	.36507	.23236	.83618	.94775	.65335	.27153	.78058
#1	.12003	.04792	.10817	.14270	4.9738	2.8917	.13238	.22520
#2	.12083	.04808	.10860	.14262	5.0476	2.9242	.13306	.22872
#3	.12105	.04827	.10861	.14061	4.9594	2.8911	.13250	.22662

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.30417	13.981	.11268	.24006	.05235	.06307	.01164	.33068
Stddev	.00112	.106	.00044	.00065	.00025	.00025	.00012	.00071
%RSD	.36851	.76140	.39454	.26973	.47155	.38891	1.0121	.21340
#1	.30292	13.935	.11237	.23932	.05212	.06281	.01150	.32994
#2	.30448	14.102	.11247	.24033	.05231	.06330	.01168	.33075
#3	.30510	13.905	.11319	.24052	.05261	.06311	.01172	.33135

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.11468	5.8990	.15906	.02092	.11174	.70096	.01531
Stddev	.00042	.0409	.00167	.00007	.00028	.00145	.00072
%RSD	.36371	.69354	1.0487	.34792	.24912	.20672	4.6775
#1	.11421	5.8904	.15828	.02083	.11143	.69929	.01514
#2	.11499	5.9435	.16098	.02097	.11181	.70193	.01609
#3	.11485	5.8630	.15793	.02095	.11198	.70166	.01469

Approved: August 15, 2016

Kim K Buck

Sample Name: S4 Acquired: 8/12/2016 13:24:09 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12123.**	**73890.**	**3254.8**
Stddev	42.	5.	12.5
%RSD	.34866	.00691	.38370
#1	12170.	73884.	3256.1
#2	12088.	73894.	3241.7
#3	12112.	73891.	3266.6

Approved: August 15, 2016

Kim K Buck

Sample Name: ICV Acquired: 8/12/2016 13:27:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40806**	**10.406**	**.40987**	**.51461**	**1.0467**	**.05109**	**10.204**
Stddev	.00096	.004	.00330	.00610	.0053	.00022	.039
%RSD	.23454	.03659	.80443	1.1860	.50625	.42734	.37815
#1	.40766	10.409	.40783	.51672	1.0409	.05127	10.180
#2	.40737	10.402	.41367	.50773	1.0514	.05085	10.248
#3	.40915	10.407	.40810	.51938	1.0478	.05114	10.183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05113**	**.20328**	**.51120**	**.51153**	**4.1295**	**50.592**	**1.0355**
Stddev	.00048	.00271	.00225	.00770	.0059	.204	.0072
%RSD	.93278	1.3330	.44076	1.5057	.14257	.40311	.69673
#1	.05101	.20463	.50874	.51477	4.1249	50.383	1.0310
#2	.05166	.20504	.51168	.51708	4.1274	50.790	1.0438
#3	.05073	.20016	.51316	.50274	4.1361	50.604	1.0316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **10.546**	**.51423**	**.96567**	**50.326**	**.50847**	**10.201**	**.51549**
Stddev	.147	.00285	.01450	.241	.00666	.093	.00349
%RSD	1.3972	.55471	1.5018	.47870	1.3095	.91245	.67692
#1	10.391	.51298	.97344	50.072	.51115	10.211	.51939
#2	10.560	.51749	.97464	50.551	.51337	10.288	.51441
#3	10.685	.51221	.94894	50.355	.50089	10.103	.51267
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	10.000						
Range	5.0000%						

Approved: August 15, 2016

Kim K Buck

Sample Name: ICV Acquired: 8/12/2016 13:27:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2269	.40494	5.0610	1.0463	1.0173	1.0067	.51843
Stddev	.0107	.00321	.0401	.0198	.0045	.0070	.00260
%RSD	.87139	.79273	.79279	1.8915	.43827	.69766	.50058
#1	1.2255	.40154	5.0821	1.0578	1.0127	1.0122	.52099
#2	1.2383	.40536	5.0861	1.0576	1.0215	1.0092	.51851
#3	1.2170	.40792	5.0147	1.0234	1.0177	.99881	.51580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0145	1.0258	F .20595
Stddev	.0011	.0138	.14293
%RSD	.11012	1.3452	69.399
#1	1.0154	1.0331	.21183
#2	1.0133	1.0343	.06017
#3	1.0149	1.0098	.34584
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12194.	74540.	3264.9
Stddev	16.	152.	14.8
%RSD	.13293	.20342	.45437
#1	12203.	74508.	3255.0
#2	12204.	74704.	3282.0
#3	12175.	74406.	3257.8

Approved: August 15, 2016

Kim K Buck

Sample Name: ICB Acquired: 8/12/2016 13:31:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00109**	**-.00308**	**-.00051**	**.00221**	**.00023**	**.00008**	**.00153**	**-.00023**
Stddev	.00107	.00749	.00356	.00118	.00062	.00010	.02500	.00012
%RSD	97.956	242.89	702.62	53.330	273.99	127.22	1630.1	51.430
#1	-.00052	-.00181	.00094	.00356	.00047	-.00004	-.01010	-.00031
#2	-.00233	-.01113	.00210	.00154	-.00048	.00013	.03024	-.00009
#3	-.00043	.00369	-.00456	.00151	.00068	.00014	-.01553	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00066**	**.00024**	**.01374**	**.06172**	**-.00206**	**.00615**	**-.00106**
Stddev	.00020	.00035	.00066	.02840	.14881	.00189	.06102	.00095
%RSD	127.11	53.161	278.85	206.71	241.12	91.442	991.64	89.296
#1	-.00030	.00104	.00008	.02045	.22278	-.00002	-.04359	.00002
#2	-.00024	.00058	-.00033	-.01741	.03305	-.00374	-.01220	-.00176
#3	.00007	.00036	.00095	.03819	-.07068	-.00242	.07425	-.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**.00151**	**-.00042**	**-.00393**	**-.00328**	**.00065**	**.00442**	**.00333**
Stddev	.00026	.01663	.00057	.00129	.00203	.00142	.00425	.00269
%RSD	84.693	1103.1	135.52	32.796	61.817	217.99	96.212	80.743
#1	.00050	.01138	-.00105	-.00445	-.00409	.00221	.00790	.00448
#2	.00039	-.01769	-.00029	-.00487	-.00097	.00034	.00569	.00525
#3	.00001	.01083	.00007	-.00246	-.00476	-.00059	-.00032	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Sample Name: ICB Acquired: 8/12/2016 13:31:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00017**	**-.00051**	**-.00392**	**-.00052**	**.00005**	**-.01093**
Stddev	.00060	.00033	.00253	.00055	.00052	.00026	.23252
%RSD	1345.9	191.26	496.28	14.069	99.940	542.70	2127.2
#1	.00039	.00054	-.00339	-.00357	-.00007	-.00006	-.22923
#2	.00021	.00008	.00051	-.00364	-.00040	.00034	.23358
#3	-.00072	-.00010	.00135	-.00456	-.00109	-.00014	-.03715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12243.**	**75330.**	**3242.9**
Stddev	8.	85.	14.4
%RSD	.06854	.11294	.44305
#1	12233.	75419.	3251.2
#2	12250.	75249.	3251.2
#3	12246.	75322.	3226.3

Approved: August 15, 2016

Kim K Buck

Sample Name: LLICV Acquired: 8/12/2016 13:35:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00679	F .14309	F .00650	F .07684	F .00737	F .00147	F .37041
Stddev	.00057	.01308	.00279	.00212	.00055	.00003	.03786
%RSD	8.4320	9.1439	43.017	2.7581	7.4780	2.3082	10.220
#1	.00737	.14178	.00689	.07458	.00780	.00151	.32670
#2	.00679	.13071	.00907	.07879	.00675	.00144	.39264
#3	.00622	.15678	.00353	.07714	.00756	.00147	.39188
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.40000	10.000	.40000	.50000	1.0000	.05000	10.000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00049	F .00366	F .00453	F .00360	F .07039	F .79279	F .07470
Stddev	.00019	.00076	.00077	.00152	.03054	.01047	.00437
%RSD	39.120	20.804	17.022	42.317	43.384	1.3204	5.8446
#1	.00039	.00446	.00396	.00218	.08223	.78071	.07094
#2	.00072	.00358	.00422	.00521	.09324	.79887	.07367
#3	.00037	.00295	.00541	.00342	.03571	.79880	.07949
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .40475	F .00868	F .00695	F .35098	F .01339	F .70139	F .00785
Stddev	.11818	.00276	.00055	.03960	.00158	.05396	.00206
%RSD	29.199	31.845	7.8961	11.282	11.790	7.6933	26.248
#1	.46015	.01123	.00725	.39359	.01430	.73533	.00979
#2	.26905	.00574	.00729	.34401	.01431	.72967	.00809
#3	.48506	.00907	.00632	.31533	.01157	.63917	.00568
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Approved: August 15, 2016

Kim K Buck

Sample Name: LLICV Acquired: 8/12/2016 13:35:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .07060	F .01320	F .71659	F .35259	F .03859	F .01909	F .13449
Stddev	.00295	.00256	.05476	.03638	.00029	.00778	.00891
%RSD	4.1834	19.408	7.6421	10.317	.73976	40.738	6.6281
#1	.07171	.01614	.75112	.37501	.03829	.01286	.14123
#2	.07283	.01143	.74520	.37215	.03886	.02781	.13786
#3	.06725	.01203	.65345	.31062	.03861	.01661	.12438
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F .00619	F .02156	F 16.175
Stddev	.00031	.00210	.439
%RSD	4.9396	9.7568	2.7119
#1	.00617	.02279	16.610
#2	.00590	.02275	16.181
#3	.00651	.01913	15.733
Check ?	Chk Fail	Chk Fail	Chk Fail
Value	1.0000	1.0000	1.0000
Range	-5.0000%	-5.0000%	5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12322.	75469.	3253.7
Stddev	38.	326.	9.6
%RSD	.30896	.43146	.29594
#1	12279.	75370.	3253.7
#2	12335.	75832.	3263.4
#3	12352.	75204.	3244.1

Approved: August 15, 2016

Kim K Buck

Sample Name: LLICV Acquired: 8/12/2016 13:40:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00820	F .20951	F .00816	F .10070	F .01122	F .00198	F .51588
Stddev	.00130	.00301	.00111	.00137	.00054	.00007	.04184
%RSD	15.879	1.4348	13.640	1.3559	4.8042	3.3956	8.1109
#1	.00670	.20790	.00907	.10079	.01183	.00200	.47680
#2	.00885	.20766	.00692	.10202	.01099	.00203	.56003
#3	.00906	.21298	.00850	.09930	.01083	.00191	.51082
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.40000	10.000	.40000	.50000	1.0000	.05000	10.000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00098	F .00454	F .00614	F .05683	F .09956	F .99700	F .10158
Stddev	.00020	.00057	.00069	.00484	.01759	.09990	.00224
%RSD	20.832	12.558	11.244	8.5242	17.666	10.020	2.2034
#1	.00088	.00520	.00629	.05984	.10236	1.1039	.09922
#2	.00121	.00422	.00675	.05940	.11558	.90607	.10185
#3	.00084	.00420	.00539	.05124	.08074	.98099	.10367
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .56008	F .00823	F .00977	F .48763	F .04743	F .94982	F .01099
Stddev	.04217	.00088	.00095	.04518	.00403	.05855	.00228
%RSD	7.5299	10.745	9.7014	9.2650	8.4889	6.1647	20.778
#1	.52992	.00907	.01046	.53339	.05032	.98374	.01047
#2	.60828	.00832	.01015	.48642	.04915	.98352	.01348
#3	.54206	.00731	.00869	.44306	.04283	.88221	.00901
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Approved: August 15, 2016

Kim K Buck

Sample Name: LLICV Acquired: 8/12/2016 13:40:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .09607	F .01918	F .98292	F .48626	F .05228	F .02740	F .18397
Stddev	.00459	.00335	.06105	.04307	.00037	.00403	.00988
%RSD	4.7755	17.450	6.2113	8.8580	.71692	14.723	5.3727
#1	.09713	.01714	1.0200	.51254	.05197	.02339	.18856
#2	.10004	.02304	1.0164	.50968	.05269	.02736	.19073
#3	.09105	.01736	.91246	.43655	.05216	.03146	.17263
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F .00983	F .15818	F 22.209
Stddev	.00092	.01181	.050
%RSD	9.3677	7.4679	.22360
#1	.01057	.16545	22.200
#2	.00880	.16455	22.263
#3	.01012	.14455	22.165
Check ?	Chk Fail	Chk Fail	Chk Fail
Value	1.0000	1.0000	1.0000
Range	-5.0000%	-5.0000%	5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12355.	75926.	3260.6
Stddev	9.	77.	5.5
%RSD	.07406	.10133	.16796
#1	12345.	76014.	3260.2
#2	12363.	75890.	3266.2
#3	12356.	75874.	3255.3

Approved: August 15, 2016

Kim K Buck

Sample Name: ICSA Acquired: 8/12/2016 13:43:54 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00310	273.58	.00095	.00098	.00136	.00010	253.94
Stddev	.00115	.14	.00400	.00267	.00060	.00006	2.14
%RSD	37.150	.05058	419.83	270.75	44.271	53.364	.84420
#1	.00434	273.74	.00109	.00011	.00199	.00007	256.30
#2	.00288	273.47	-.00312	.00398	.00128	.00008	253.40
#3	.00207	273.54	.00489	-.00113	.00080	.00017	252.11
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	-.00110	.00026	-.00025	101.45	.06291	.00506
Stddev	.00009	.00058	.00066	.00963	.49	.10020	.00328
%RSD	24.997	52.638	257.81	3831.8	.47827	159.28	64.762
#1	-.00037	-.00102	-.00041	.00658	101.98	.15744	.00806
#2	-.00047	-.00172	.00026	.00393	101.36	-.04214	.00555
#3	-.00029	-.00057	.00091	-.01127	101.03	.07342	.00156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	262.81	.00283	-.00042	.08240	.00005	.01112	.00282
Stddev	1.30	.00137	.00027	.02531	.00108	.00908	.00441
%RSD	.49478	48.288	64.287	30.709	2400.2	81.650	156.51
#1	264.30	.00426	-.00034	.08867	.00127	.01340	.00408
#2	262.23	.00269	-.00072	.10399	-.00080	.01885	.00647
#3	261.90	.00154	-.00020	.05455	-.00033	.00112	-.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Sample Name: ICSA Acquired: 8/12/2016 13:43:54 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00210**	**.00248**	F **.96091**	**-.00220**	**.00088**	**-.01366**	**-.00382**
Stddev	.00361	.00226	.04614	.00138	.00047	.00269	.00267
%RSD	172.11	90.940	4.8017	62.511	53.117	19.680	69.921
#1	.00100	.00372	.98850	-.00340	.00133	-.01060	-.00553
#2	-.00122	.00385	.98658	-.00070	.00092	-.01470	-.00521
#3	-.00607	-.00012	.90764	-.00250	.00040	-.01566	-.00074
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			.80000				
Low Limit			-.80000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00293**	**-.00695**	F **-2.1461**
Stddev	.00078	.00009	.1860
%RSD	26.692	1.2589	8.6653
#1	-.00223	-.00686	-2.3383
#2	-.00279	-.00696	-1.9671
#3	-.00377	-.00704	-2.1329
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11612.**	**70546.**	**3176.4**
Stddev	30.	68.	16.3
%RSD	.26028	.09603	.51383
#1	11590.	70535.	3170.6
#2	11601.	70485.	3163.8
#3	11647.	70619.	3194.9

Approved: August 15, 2016

Kim K Buck

Sample Name: ICSAB Acquired: 8/12/2016 13:47:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53413	269.68	.25316	F -.12722	.25818	.24174	250.93
Stddev	.00436	.15	.00666	.00254	.00263	.00015	1.68
%RSD	.81543	.05551	2.6292	1.9949	1.0202	.06168	.67043
#1	.53169	269.54	.25698	-.12613	.26119	.24190	252.55
#2	.53155	269.67	.25702	-.12542	.25634	.24160	249.19
#3	.53916	269.84	.24547	-.13012	.25699	.24171	251.04
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.10000			
Low Limit				-.10000			

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48439	.23680	.25235	.25317	99.071	5.3549	.00320
Stddev	.01089	.00672	.00214	.01286	.703	.1169	.00353
%RSD	2.2487	2.8399	.84612	5.0811	.70951	2.1833	110.01
#1	.49035	.24083	.25008	.25987	99.804	5.4896	-.00080
#2	.49100	.24054	.25432	.26131	98.402	5.2789	.00583
#3	.47182	.22904	.25264	.23834	99.008	5.2963	.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	256.63	.25140	-.00055	5.2275	.47927	-.01316	.49270
Stddev	2.05	.00321	.00031	.0187	.01377	.00792	.01232
%RSD	.79738	1.2765	56.140	.35708	2.8735	60.138	2.5007
#1	258.68	.24886	-.00024	5.2349	.48681	-.02020	.49992
#2	254.58	.25501	-.00056	5.2062	.48764	-.00459	.49971
#3	256.63	.25032	-.00086	5.2413	.46338	-.01469	.47848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Sample Name: ICSAB Acquired: 8/12/2016 13:47:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49599**	**.24698**	**.00060**	**-.00260**	**.00047**	**-.01842**	**.46497**
Stddev	.02075	.00454	.00116	.00063	.00034	.00433	.00781
%RSD	4.1826	1.8369	195.62	24.206	72.418	23.516	1.6797
#1	.50985	.24541	.00136	-.00274	.00082	-.02107	.47160
#2	.50599	.24344	.00117	-.00314	.00048	-.01342	.46694
#3	.47214	.25209	-.00075	-.00191	.00013	-.02076	.45636
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.25476**	**.47265**	F **-2.7833**
Stddev	.00077	.01542	.1447
%RSD	.30392	3.2628	5.1998
#1	.25406	.48157	-2.6348
#2	.25559	.48153	-2.7913
#3	.25463	.45484	-2.9239
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11573.**	**70865.**	**3180.0**
Stddev	12.	297.	20.1
%RSD	.10654	.41887	.63127
#1	11574.	71098.	3158.0
#2	11560.	70531.	3197.4
#3	11585.	70965.	3184.7

Approved: August 15, 2016

Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 13:51:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41480	10.255	.40001	.50576	1.0360	.05079	10.321
Stddev	.00240	.014	.00703	.00253	.0055	.00017	.089
%RSD	.57958	.13866	1.7564	.49939	.52960	.34313	.86299
#1	.41612	10.264	.40519	.50290	1.0422	.05077	10.421
#2	.41625	10.238	.40283	.50672	1.0339	.05063	10.252
#3	.41203	10.262	.39201	.50768	1.0319	.05097	10.288
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05040	.20159	.51253	.50729	4.1760	50.692	1.0335
Stddev	.00079	.00461	.00142	.00972	.0384	.343	.0037
%RSD	1.5620	2.2857	.27620	1.9168	.91881	.67594	.35753
#1	.05090	.20468	.51193	.51408	4.2123	50.979	1.0378
#2	.05080	.20381	.51414	.51163	4.1798	50.313	1.0312
#3	.04949	.19630	.51151	.49615	4.1359	50.785	1.0316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.501	.51785	1.0093	50.107	.50481	10.006	.50689
Stddev	.048	.00102	.0198	.249	.01108	.136	.00510
%RSD	.45435	.19741	1.9611	.49701	2.1956	1.3574	1.0063
#1	10.534	.51685	1.0227	50.394	.51237	10.094	.51131
#2	10.523	.51889	1.0185	49.986	.50997	10.074	.50804
#3	10.447	.51781	.98655	49.942	.49209	9.8493	.50131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 15, 2016

Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 13:51:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1845**	**.40016**	**5.0501**	**1.0187**	**1.0371**	**1.0106**	**.51349**
Stddev	.0190	.00423	.0592	.0247	.0036	.0074	.00216
%RSD	1.6061	1.0576	1.1729	2.4237	.34444	.73439	.41988
#1	1.1996	.40250	5.0953	1.0346	1.0393	1.0187	.51589
#2	1.1908	.39528	5.0720	1.0313	1.0390	1.0088	.51286
#3	1.1631	.40271	4.9831	.99029	1.0330	1.0042	.51172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0251**	**1.0108**	F **447.26**
Stddev	.0030	.0196	2.22
%RSD	.28904	1.9433	.49739
#1	1.0233	1.0229	449.45
#2	1.0234	1.0215	447.32
#3	1.0285	.98816	445.00
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12201.**	**74462.**	**3239.9**
Stddev	28.	256.	17.6
%RSD	.23220	.34326	.54244
#1	12174.	74344.	3219.6
#2	12197.	74755.	3250.9
#3	12231.	74287.	3249.1

Approved: August 15, 2016

Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 13:55:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00182	-.00319	.00113	.00223	.00097	.00006	-.00379
Stddev	.00111	.00537	.00095	.00140	.00020	.00002	.04695
%RSD	60.644	168.08	83.849	62.898	21.016	36.429	1238.7
#1	-.00055	-.00139	.00093	.00102	.00081	.00006	-.01002
#2	-.00258	.00104	.00216	.00191	.00090	.00007	.04596
#3	-.00234	-.00923	.00030	.00377	.00120	.00003	-.04731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	-.00015	.00074	-.00038	-.00080	.02219	-.00252
Stddev	.00037	.00045	.00049	.00079	.02257	.08952	.00045
%RSD	266.92	302.64	65.824	208.69	2813.4	403.36	17.778
#1	-.00001	.00034	.00116	-.00116	.02247	-.07518	-.00201
#2	-.00056	-.00024	.00086	.00042	-.00229	.10093	-.00281
#3	.00015	-.00054	.00020	-.00039	-.02259	.04083	-.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.05841	-.00109	.00012	-.01812	-.00009	.00275	-.00042
Stddev	.07626	.00176	.00023	.01089	.00076	.00407	.00052
%RSD	130.55	161.81	189.03	60.110	804.77	147.84	122.15
#1	-.00419	-.00290	.00003	-.01774	.00074	-.00194	-.00094
#2	-.02544	-.00098	-.00005	-.00742	-.00073	.00531	-.00043
#3	-.14561	.00062	.00038	-.02920	-.00029	.00488	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 13:55:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00183	-.00309	-.00969	-.00319	.00035	-.00065	-.00288
Stddev	.00259	.00783	.00372	.00004	.00049	.00406	.00085
%RSD	141.37	253.73	38.342	1.2066	138.51	623.35	29.626
#1	-.00297	-.00490	-.01127	-.00324	.00004	-.00426	-.00225
#2	.00113	.00549	-.00545	-.00317	.00010	.00374	-.00385
#3	-.00366	-.00985	-.01237	-.00317	.00092	-.00144	-.00253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00058	-.00006	F .11688
Stddev	.00035	.00016	.17973
%RSD	59.530	248.24	153.77
#1	-.00086	-.00003	.04331
#2	-.00019	.00007	.32173
#3	-.00070	-.00024	-.01439
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12369.	76077.	3252.2
Stddev	37.	209.	18.1
%RSD	.29674	.27458	.55752
#1	12352.	76048.	3257.9
#2	12343.	75883.	3266.8
#3	12411.	76298.	3231.9

Approved: August 15, 2016

Kim K Buck

Sample Name: PBW B5 Acquired: 8/12/2016 14:01:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00093	.00151	.00038	.00152	.00096	.00002	.00261	-.00004
Stddev	.00169	.00679	.00133	.00145	.00069	.00002	.04156	.00011
%RSD	182.29	448.49	352.23	95.854	71.881	104.08	1593.0	269.48
#1	-.00047	.00286	-.00116	-.00014	.00057	.00003	.04597	-.00007
#2	.00049	.00753	.00116	.00258	.00055	.00004	-.00126	-.00013
#3	-.00281	-.00585	.00113	.00210	.00175	-.00000	-.03689	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00136	.00009	.00466	.02789	-.00552	-.04757	-.00104
Stddev	.00014	.00092	.00009	.02342	.10057	.00196	.04688	.00212
%RSD	46.991	67.762	105.64	502.72	360.64	35.521	98.541	203.22
#1	-.00044	.00131	.00002	-.00007	-.01750	-.00556	-.08965	-.00338
#2	-.00025	.00231	.00019	.03008	-.04199	-.00354	-.05603	.00077
#3	-.00018	.00047	.00004	-.01604	.14315	-.00746	.00296	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00307	.00033	.00046	.00038	.00024	-.00368	-.00455
Stddev	.00017	.04265	.00137	.00202	.00082	.00074	.00409	.00118
%RSD	70.401	1389.2	416.68	439.44	215.63	303.90	111.22	25.928
#1	.00014	-.00879	-.00105	-.00126	.00046	.00109	-.00164	-.00433
#2	.00044	-.03239	.00170	-.00005	.00116	-.00031	-.00839	-.00583
#3	.00015	.05040	.00035	.00269	-.00048	-.00005	-.00101	-.00350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Sample Name: PBW B5 Acquired: 8/12/2016 14:01:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00224**	**-.00006**	**-.00706**	**-.00425**	**-.00012**	**.00135**	**.06233**
Stddev	.00027	.00025	.00623	.00053	.00045	.00018	.12032
%RSD	12.069	449.00	88.175	12.386	370.89	12.923	193.05
#1	-.00194	.00023	-.01268	-.00377	-.00042	.00148	.20023
#2	-.00230	-.00015	-.00037	-.00416	.00040	.00143	-.02121
#3	-.00247	-.00025	-.00813	-.00482	-.00035	.00116	.00795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12341.**	**76223.**	**3275.4**
Stddev	67.	95.	33.2
%RSD	.54003	.12434	1.0134
#1	12284.	76114.	3277.4
#2	12326.	76276.	3307.6
#3	12414.	76280.	3241.3

Approved: August 15, 2016

Kim K Buck

Sample Name: LCSW B5 Acquired: 8/12/2016 14:04:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19904**	**4.9855**	**.19624**	**.96698**	**.50910**	**.02423**	**5.1562**	**.02441**
Stddev	.00153	.0086	.00266	.00428	.00122	.00008	.0143	.00013
%RSD	.77010	.17232	1.3575	.44292	.23915	.32142	.27761	.51431
#1	.19747	4.9756	.19803	.96212	.51051	.02429	5.1397	.02435
#2	.19912	4.9907	.19752	.97020	.50835	.02414	5.1629	.02455
#3	.20054	4.9901	.19318	.96862	.50845	.02426	5.1659	.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09971**	**.25314**	**.25230**	**2.0777**	**24.786**	**.50475**	**5.1510**	**.25633**
Stddev	.00261	.00033	.00468	.0147	.085	.00056	.1307	.00312
%RSD	2.6135	.13130	1.8545	.70692	.34414	.11095	2.5380	1.2153
#1	.10151	.25299	.25502	2.0946	24.858	.50428	5.2013	.25647
#2	.10090	.25352	.25499	2.0704	24.692	.50460	5.0026	.25937
#3	.09672	.25290	.24690	2.0680	24.807	.50537	5.2491	.25314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50239**	**24.524**	**.25050**	**4.7581**	**.25082**	**.58541**	**.18456**	**2.4869**
Stddev	.00877	.047	.00621	.0612	.00243	.01332	.00540	.0289
%RSD	1.7464	.19078	2.4794	1.2857	.96737	2.2757	2.9235	1.1603
#1	.50768	24.566	.25367	4.7877	.25361	.59308	.18944	2.5066
#2	.50723	24.531	.25448	4.7989	.24928	.59312	.18547	2.5002
#3	.49226	24.474	.24334	4.6878	.24956	.57003	.17876	2.4537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: LCSW B5 Acquired: 8/12/2016 14:04:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49726	.51582	.50370	.25034	.50445	.49448	.64584
Stddev	.01123	.00278	.00304	.00298	.00192	.00754	.05474
%RSD	2.2588	.53950	.60262	1.1919	.38039	1.5254	8.4751
#1	.50415	.51389	.50442	.24787	.50356	.49878	.65410
#2	.50334	.51456	.50037	.25365	.50313	.49889	.58745
#3	.48430	.51901	.50632	.24949	.50665	.48577	.69598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12272.	75628.	3291.7
Stddev	14.	30.	11.6
%RSD	.11236	.03937	.35191
#1	12256.	75615.	3286.2
#2	12276.	75608.	3283.9
#3	12283.	75663.	3305.0

Approved: August 15, 2016

Kim K Buck

Sample Name: FBLK1 Acquired: 8/12/2016 14:08:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579321-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00159**	**.00457**	**-.00016**	**.00407**	**.00084**	**.00006**	**.04142**	**-.00002**
Stddev	.00121	.00265	.00105	.00178	.00049	.00004	.02130	.00014
%RSD	76.083	58.046	670.85	43.666	58.399	63.865	51.423	576.63
#1	-.00202	.00373	.00021	.00358	.00108	.00008	.05160	-.00014
#2	-.00251	.00755	.00065	.00259	.00117	.00008	.01694	-.00005
#3	-.00022	.00244	-.00134	.00604	.00028	.00002	.05571	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00055**	**-.00008**	**.01009**	**.05371**	**-.00293**	**-.00616**	**.00135**
Stddev	.00036	.00082	.00145	.01396	.06139	.00336	.05027	.00189
%RSD	463.54	148.47	1829.1	138.39	114.29	114.44	815.89	139.71
#1	-.00015	.00065	.00151	.02048	-.01424	.00051	.01680	.00064
#2	.00050	-.00031	-.00132	-.00578	.07022	-.00311	.02852	-.00008
#3	-.00011	.00132	-.00043	.01555	.10516	-.00620	-.06381	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**130.82**	**-.00034**	**-.00099**	**-.00160**	**.00112**	**-.00037**	**-.00637**
Stddev	.00026	.39	.00091	.00390	.00154	.00260	.00161	.00076
%RSD	454.58	.29817	269.48	395.22	96.417	232.03	433.91	11.934
#1	.00021	130.96	-.00081	-.00411	-.00325	.00312	-.00223	-.00558
#2	.00020	130.38	-.00091	.00338	-.00136	-.00182	.00059	-.00710
#3	-.00024	131.12	.00071	-.00223	-.00019	.00205	.00053	-.00643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: FBLK1 Acquired: 8/12/2016 14:08:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579321-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00261**	**-.00008**	**-.00209**	**-.00293**	**-.00060**	**.00283**	**.08862**
Stddev	.00059	.00041	.00425	.00088	.00045	.00032	.15760
%RSD	22.447	511.07	203.27	30.002	75.617	11.311	177.84
#1	-.00209	.00017	.00102	-.00196	-.00087	.00303	.21768
#2	-.00251	-.00055	-.00694	-.00367	-.00085	.00300	.13520
#3	-.00325	.00014	-.00036	-.00315	-.00008	.00246	-.08702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12302.**	**75407.**	**3307.7**
Stddev	74.	43.	12.0
%RSD	.60474	.05720	.36212
#1	12270.	75456.	3294.6
#2	12249.	75390.	3318.1
#3	12387.	75375.	3310.3

Approved: August 15, 2016

Kim K Buck

Sample Name: FBLK2 Acquired: 8/12/2016 14:12:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579321-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	-.03307	-.00149	.00196	-.00220	.00002	-.03266	.00006
Stddev	.00211	.02110	.00106	.00108	.00807	.00011	.02173	.00017
%RSD	481.88	63.798	71.182	55.081	366.54	501.70	66.538	285.45
#1	.00077	-.04914	-.00063	.00095	.00355	-.00009	-.05611	.00002
#2	-.00182	-.00918	-.00116	.00309	.00128	.00014	-.01319	-.00009
#3	.00236	-.04088	-.00268	.00182	-.01143	.00002	-.02869	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00001	-.00078	.00720	.09129	-.00091	-.02020	.00007
Stddev	.00034	.00112	.00095	.02957	.03954	.00208	.04643	.00211
%RSD	403.64	10830.	120.95	410.77	43.315	227.69	229.86	3216.9
#1	.00001	-.00060	.00019	-.02690	.06357	-.00300	-.05980	-.00190
#2	-.00022	.00130	-.00083	.02586	.07373	-.00089	-.03169	.00229
#3	.00046	-.00066	-.00171	.02264	.13657	.00115	.03090	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.03550	.00141	-.00282	-.00219	-.00109	-.00028	-.00788
Stddev	.00025	.02955	.00039	.00343	.00104	.00379	.00363	.00344
%RSD	292.80	83.260	28.014	121.32	47.502	346.83	1309.0	43.617
#1	-.00014	-.06955	.00185	-.00429	-.00112	.00159	-.00098	-.01183
#2	.00004	-.01654	.00111	.00109	-.00225	.00057	-.00350	-.00627
#3	.00036	-.02040	.00126	-.00528	-.00320	-.00544	.00365	-.00555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: FBLK2 Acquired: 8/12/2016 14:12:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579321-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00258**	**.00002**	**.00533**	**-.00634**	**-.00026**	**-.00043**	**.01463**
Stddev	.00024	.00030	.00277	.00095	.00086	.00014	.24916
%RSD	9.2494	1510.7	52.008	14.953	329.96	33.454	1702.5
#1	-.00266	.00034	.00322	-.00582	.00049	-.00059	-.22706
#2	-.00231	-.00024	.00847	-.00577	-.00120	-.00035	.00032
#3	-.00277	-.00005	.00430	-.00743	-.00007	-.00034	.27064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13720.**	**90658.**	**4769.3**
Stddev	1781.	21645.	2257.9
%RSD	12.977	23.876	47.343
#1	15745.	111810.	3240.6
#2	13019.	68552.	3704.5
#3	12398.	91611.	7362.7

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608037802 Acquired: 8/12/2016 14:16:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.05765	.00012	.08298	.05253	.00007	25.350
Stddev	.00178	.00831	.00152	.00043	.00097	.00007	.116
%RSD	288.63	14.419	1301.6	.51267	1.8448	101.27	.45930
#1	.00004	.04997	-.00157	.08328	.05212	.00016	25.453
#2	-.00081	.06648	.00137	.08318	.05364	.00005	25.374
#3	.00262	.05650	.00055	.08250	.05183	.00001	25.224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00073	.00215	-.00061	1.3542	.96718	-.00466
Stddev	.00015	.00012	.00037	.00093	.0060	.13687	.00419
%RSD	150.07	16.952	17.300	152.05	.44478	14.152	89.856
#1	.00007	.00060	.00177	.00022	1.3566	.83506	-.00005
#2	-.00019	.00077	.00251	-.00043	1.3473	.95812	-.00572
#3	-.00018	.00084	.00217	-.00162	1.3586	1.1084	-.00822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.4314	.03844	.00042	120.68	.00233	.41876	-.00134
Stddev	.1082	.00187	.00018	.69	.00051	.03365	.00328
%RSD	3.1521	4.8673	41.938	.57294	21.893	8.0365	245.66
#1	3.5409	.03720	.00042	121.14	.00273	.43918	-.00494
#2	3.4285	.03753	.00024	121.01	.00175	.43718	.00148
#3	3.3247	.04059	.00060	119.88	.00251	.37991	-.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608037802 Acquired: 8/12/2016 14:16:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00189	.00048	.22057	-.00188	.04294	.00149	-.00444
Stddev	.00183	.00208	.01929	.00078	.00032	.00596	.00031
%RSD	96.751	436.26	8.7461	41.119	.74209	398.50	6.9385
#1	.00001	.00287	.23429	-.00222	.04313	.00332	-.00479
#2	-.00364	-.00078	.22890	-.00100	.04310	-.00516	-.00423
#3	-.00204	-.00066	.19851	-.00243	.04257	.00633	-.00430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00048	.04056	F -.09708
Stddev	.00067	.00377	.18183
%RSD	139.46	9.2893	187.29
#1	-.00067	.04314	.09229
#2	-.00102	.04229	-.11327
#3	.00026	.03623	-.27028
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12045.	74298.	3267.1
Stddev	18.	330.	26.6
%RSD	.14896	.44397	.81419
#1	12029.	73922.	3258.4
#2	12065.	74434.	3245.9
#3	12042.	74539.	3296.9

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608037802MS Acquired: 8/12/2016 14:20:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20334**	**5.2085**	**.20421**	**1.0889**	**.56989**	**.02520**	**31.192**	**.02502**
Stddev	.00242	.0061	.00273	.0047	.00341	.00009	.123	.00023
%RSD	1.1891	.11793	1.3390	.43287	.59881	.35857	.39282	.92602
#1	.20575	5.2028	.20478	1.0846	.57316	.02512	31.233	.02525
#2	.20092	5.2150	.20662	1.0880	.57017	.02530	31.289	.02503
#3	.20336	5.2076	.20124	1.0939	.56635	.02518	31.054	.02479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10185**	**.26005**	**.25587**	**3.5067**	**26.373**	**.51765**	**8.8142**	**.30015**
Stddev	.00197	.00218	.00234	.0333	.198	.00158	.1022	.00445
%RSD	1.9311	.83825	.91275	.94831	.75130	.30574	1.1596	1.4833
#1	.10291	.26256	.25722	3.5209	26.434	.51932	8.8880	.30504
#2	.10307	.25892	.25721	3.5304	26.534	.51745	8.6976	.29907
#3	.09958	.25866	.25317	3.4687	26.152	.51617	8.8572	.29634
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51775**	**149.16**	**.25535**	**5.4617**	**.25318**	**.60049**	**.18806**	**2.8980**
Stddev	.00876	.54	.00458	.0755	.00268	.01306	.00450	.0263
%RSD	1.6918	.36505	1.7938	1.3830	1.0598	2.1741	2.3926	.90682
#1	.52231	149.53	.25826	5.5060	.25524	.60876	.18516	2.9124
#2	.52328	149.41	.25772	5.5047	.25415	.60726	.19325	2.9140
#3	.50765	148.53	.25007	5.3745	.25014	.58544	.18578	2.8677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608037802MS Acquired: 8/12/2016 14:20:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50547	.57144	.50603	.25119	.51801	.55540	.65809
Stddev	.01051	.00231	.00551	.00296	.00116	.00879	.08787
%RSD	2.0789	.40467	1.0885	1.1797	.22394	1.5827	13.352
#1	.51133	.57411	.51083	.25206	.51909	.56078	.70659
#2	.51174	.57025	.50725	.25363	.51678	.56016	.71103
#3	.49334	.56997	.50002	.24789	.51816	.54526	.55666
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11986.	73568.	3247.4
Stddev	23.	176.	29.7
%RSD	.19001	.23987	.91574
#1	11971.	73735.	3236.7
#2	11976.	73383.	3224.4
#3	12013.	73585.	3281.0

Approved: August 15, 2016

Sample Name: L1608037802MSD Acquired: 8/12/2016 14:23:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19951**	**5.1251**	**.20131**	**1.0781**	**.58280**	**.02465**	**30.797**	**.02450**
Stddev	.00207	.0047	.00439	.0022	.00350	.00002	.069	.00046
%RSD	1.0379	.09237	2.1802	.19978	.60131	.08605	.22355	1.8745
#1	.19720	5.1198	.20306	1.0793	.58670	.02468	30.863	.02483
#2	.20013	5.1288	.20456	1.0756	.58178	.02465	30.802	.02469
#3	.20120	5.1267	.19632	1.0794	.57992	.02464	30.725	.02398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10091**	**.25595**	**.25340**	**3.4956**	**26.117**	**.51460**	**8.7001**	**.30002**
Stddev	.00147	.00113	.00396	.0355	.046	.00051	.1059	.00175
%RSD	1.4587	.44154	1.5613	1.0148	.17466	.09890	1.2167	.58421
#1	.10181	.25695	.25456	3.4586	26.071	.51493	8.5781	.30148
#2	.10170	.25472	.25664	3.4988	26.162	.51401	8.7544	.29808
#3	.09921	.25618	.24899	3.5293	26.117	.51485	8.7678	.30051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51156**	**148.29**	**.25281**	**5.4028**	**.25293**	**.59538**	**.18689**	**2.8316**
Stddev	.00824	.18	.00426	.0675	.00339	.00966	.00715	.0294
%RSD	1.6103	.12407	1.6867	1.2489	1.3422	1.6221	3.8265	1.0390
#1	.51531	148.37	.25379	5.4311	.25589	.59944	.18485	2.8444
#2	.51726	148.42	.25650	5.4515	.24922	.60234	.19483	2.8524
#3	.50212	148.08	.24814	5.3258	.25366	.58435	.18098	2.7979
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608037802MSD Acquired: 8/12/2016 14:23:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579570-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49998	.56722	.50199	.25007	.51214	.54118	.41263
Stddev	.01015	.00201	.00728	.00101	.00218	.00838	.18024
%RSD	2.0296	.35485	1.4496	.40327	.42608	1.5485	43.681
#1	.50488	.56737	.49675	.25098	.51289	.54640	.59790
#2	.50674	.56916	.51030	.25024	.50968	.54561	.23788
#3	.48831	.56514	.49892	.24899	.51384	.53151	.40211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12016.	73934.	3237.1
Stddev	21.	145.	10.6
%RSD	.17122	.19548	.32618
#1	11992.	73775.	3228.5
#2	12031.	74057.	3233.9
#3	12024.	73970.	3248.9

Approved: August 15, 2016

Sample Name: L1608041501 Acquired: 8/12/2016 14:27:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**.01306**	**.00134**	**.03737**	**.20972**	**.00005**	**24.084**
Stddev	.00057	.00963	.00245	.00136	.00172	.00006	.108
%RSD	50.548	73.757	182.85	3.6276	.81963	118.84	.45018
#1	-.00124	.00717	.00112	.03814	.20862	-.00002	24.035
#2	-.00051	.00783	-.00099	.03581	.20884	.00007	24.009
#3	-.00164	.02418	.00389	.03818	.21170	.00009	24.208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00130**	**.00174**	**.00045**	**.14332**	**1.4617**	**.01973**
Stddev	.00023	.00021	.00054	.00106	.03137	.0887	.00325
%RSD	342.70	16.381	31.121	233.81	21.892	6.0678	16.494
#1	-.00003	.00111	.00166	.00060	.16065	1.3596	.01992
#2	.00014	.00126	.00231	-.00067	.10710	1.5057	.01639
#3	-.00031	.00153	.00124	.00143	.16220	1.5197	.02289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**37.031**	**.04009**	**.00000**	F **341.27**	**.00182**	**1.3429**	**-.00182**
Stddev	.024	.00411	.00020	.91	.00063	.0773	.00092
%RSD	.06489	10.261	10059.	.26597	34.622	5.7579	50.611
#1	37.058	.03677	.00012	341.15	.00177	1.3898	-.00076
#2	37.024	.03881	-.00022	340.42	.00122	1.3853	-.00234
#3	37.011	.04469	.00011	342.22	.00247	1.2537	-.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608041501 Acquired: 8/12/2016 14:27:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	-.00091	14.610	-.00220	.43192	.00095	-.00304
Stddev	.00291	.00302	.699	.00114	.00103	.00422	.00382
%RSD	622.48	333.05	4.7842	51.738	.23868	444.29	125.82
#1	-.00019	-.00436	15.034	-.00307	.43112	.00577	-.00701
#2	.00365	.00041	14.992	-.00091	.43156	-.00207	.00061
#3	-.00206	.00123	13.803	-.00263	.43308	-.00085	-.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00108	.00877	.09213
Stddev	.00040	.00073	.09134
%RSD	37.436	8.3141	99.144
#1	-.00070	.00906	.19534
#2	-.00150	.00932	.05937
#3	-.00103	.00794	.02169
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11848.	72399.	3219.1
Stddev	29.	256.	13.5
%RSD	.24846	.35354	.42002
#1	11816.	72132.	3213.0
#2	11874.	72642.	3234.6
#3	11854.	72423.	3209.6

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608041501PS Acquired: 8/12/2016 14:31:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579664-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20348	5.1591	.20722	1.0333	.70371	.02504	26.767
Stddev	.00136	.0051	.00473	.0034	.00341	.00010	.027
%RSD	.66875	.09952	2.2818	.32647	.48441	.39093	.10255
#1	.20194	5.1575	.21075	1.0360	.70094	.02495	26.758
#2	.20452	5.1648	.20905	1.0344	.70267	.02503	26.744
#3	.20399	5.1549	.20184	1.0295	.70752	.02515	26.797
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02510	.10173	.25678	.25163	2.1858	26.870	.53601
Stddev	.00029	.00189	.00118	.00417	.0137	.145	.00112
%RSD	1.1678	1.8597	.45805	1.6553	.62565	.54024	.20957
#1	.02544	.10286	.25544	.25351	2.1832	26.776	.53472
#2	.02493	.10279	.25764	.25453	2.1736	26.796	.53651
#3	.02493	.09955	.25726	.24686	2.2006	27.037	.53679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.398	.29268	.51383	F 330.70	.25144	6.2675	.25178
Stddev	.232	.00209	.00837	.54	.00477	.0774	.00237
%RSD	.60298	.71462	1.6286	.16466	1.8953	1.2355	.94206
#1	38.535	.29130	.51837	330.67	.25422	6.2890	.25373
#2	38.131	.29166	.51894	330.17	.25415	6.3319	.25247
#3	38.529	.29509	.50417	331.26	.24593	6.1816	.24914
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608041501PS Acquired: 8/12/2016 14:31:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579664-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.60046**	**.18985**	**16.014**	**.50454**	**.89290**	**.50163**	**.24417**
Stddev	.01368	.00572	.142	.01011	.00223	.00489	.00276
%RSD	2.2777	3.0104	.88849	2.0029	.25022	.97505	1.1308
#1	.60874	.19377	16.094	.50920	.89364	.49743	.24696
#2	.60796	.19250	16.098	.51147	.89039	.50700	.24412
#3	.58467	.18329	15.850	.49294	.89468	.50046	.24144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51694**	**.51240**	**.12647**
Stddev	.00132	.00731	.26054
%RSD	.25470	1.4266	206.02
#1	.51834	.51324	.08294
#2	.51675	.51925	-.10957
#3	.51573	.50470	.40603
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11788.**	**72399.**	**3221.4**
Stddev	16.	50.	13.0
%RSD	.13285	.06967	.40453
#1	11778.	72347.	3220.6
#2	11780.	72401.	3234.8
#3	11806.	72448.	3208.8

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608041501SDL Acquired: 8/12/2016 14:34:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579664-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00197	.00093	.00053	.00947	.04194	.00006	4.7392	-.00008
Stddev	.00099	.00895	.00282	.00062	.00056	.00010	.0351	.00008
%RSD	50.060	966.89	527.89	6.5888	1.3236	179.06	.74096	100.42
#1	-.00274	-.00651	.00229	.00932	.04201	.00004	4.7358	.00001
#2	-.00086	.01086	-.00272	.01016	.04245	.00016	4.7059	-.00013
#3	-.00233	-.00157	.00203	.00894	.04135	-.00004	4.7758	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00077	-.00001	.02880	.50682	-.00112	7.3773	.01035
Stddev	.00034	.00069	.00067	.01883	.13170	.00396	.0503	.00166
%RSD	72.217	89.374	7400.3	65.394	25.987	353.70	.68230	16.049
#1	.00037	.00010	.00071	.00938	.51960	.00324	7.3496	.00845
#2	.00019	.00147	-.00060	.03002	.63166	-.00450	7.3469	.01150
#3	.00086	.00073	-.00014	.04699	.36919	-.00210	7.4354	.01111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	66.653	.00122	.25826	-.00153	.00007	.00156	2.7956
Stddev	.00006	.136	.00087	.02440	.00058	.00233	.00431	.2359
%RSD	118.04	.20400	71.577	9.4464	38.170	3552.9	276.54	8.4372
#1	-.00003	66.528	.00069	.27724	-.00092	-.00183	.00532	2.9321
#2	-.00000	66.798	.00223	.26680	-.00158	-.00065	.00250	2.9313
#3	-.00011	66.632	.00074	.23074	-.00209	.00267	-.00314	2.5232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608041501SDL Acquired: 8/12/2016 14:34:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579664-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00265**	**.08405**	**-.00347**	**-.00236**	**-.00031**	**.00185**	**.09690**
Stddev	.00032	.00075	.00898	.00330	.00078	.00022	.02773
%RSD	12.219	.89479	258.93	139.79	249.22	11.931	28.614
#1	-.00302	.08427	-.00219	.00141	-.00109	.00203	.09323
#2	-.00252	.08321	-.01301	-.00470	-.00031	.00192	.12629
#3	-.00240	.08467	.00480	-.00379	.00047	.00161	.07119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12639.**	**77477.**	**3316.5**
Stddev	26.	125.	22.2
%RSD	.20345	.16102	.66934
#1	12659.	77362.	3300.6
#2	12610.	77610.	3307.2
#3	12649.	77459.	3341.9

Approved: August 15, 2016

Sample Name: CCV Acquired: 8/12/2016 14:38:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41928**	**10.399**	**.41306**	**.51803**	**1.0503**	**.05133**	**10.418**
Stddev	.00101	.034	.00334	.00263	.0029	.00027	.037
%RSD	.24048	.32243	.80822	.50758	.27791	.52779	.35303
#1	.41864	10.430	.41381	.52087	1.0488	.05163	10.406
#2	.42044	10.403	.41596	.51567	1.0484	.05126	10.388
#3	.41875	10.363	.40941	.51756	1.0536	.05110	10.459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05139**	**.20603**	**.52131**	**.51934**	**4.2140**	**51.258**	**1.0512**
Stddev	.00047	.00372	.00214	.00939	.0419	.180	.0041
%RSD	.91581	1.8075	.41135	1.8073	.99350	.35068	.39403
#1	.05179	.20874	.52277	.52496	4.1657	51.227	1.0505
#2	.05151	.20756	.52230	.52456	4.2410	51.096	1.0475
#3	.05088	.20178	.51884	.50850	4.2352	51.452	1.0557
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.553**	**.52877**	**1.0296**	**50.741**	**.51687**	**10.258**	**.52051**
Stddev	.093	.00407	.0156	.162	.00885	.134	.00802
%RSD	.87908	.76947	1.5101	.31873	1.7130	1.3048	1.5405
#1	10.447	.52549	1.0353	50.565	.52262	10.331	.52529
#2	10.593	.53332	1.0415	50.774	.52132	10.339	.52499
#3	10.620	.52749	1.0120	50.883	.50668	10.103	.51125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 14:38:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2157**	**.40663**	**5.1695**	**1.0400**	**1.0499**	**1.0250**	**.52663**
Stddev	.0204	.00357	.0526	.0232	.0042	.0080	.00309
%RSD	1.6792	.87773	1.0176	2.2264	.39784	.78031	.58592
#1	1.2280	.41074	5.1958	1.0527	1.0475	1.0165	.52328
#2	1.2270	.40482	5.2037	1.0541	1.0474	1.0259	.52934
#3	1.1921	.40434	5.1089	1.0133	1.0547	1.0324	.52728
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0376**	**1.0354**	F **452.61**
Stddev	.0023	.0171	2.12
%RSD	.22440	1.6494	.46920
#1	1.0394	1.0454	454.80
#2	1.0385	1.0451	452.47
#3	1.0350	1.0156	450.56
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12035.**	**73594.**	**3207.5**
Stddev	12.	78.	14.1
%RSD	.09600	.10637	.43842
#1	12023.	73580.	3198.4
#2	12036.	73524.	3200.4
#3	12046.	73678.	3223.7

Approved: August 15, 2016

Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 14:42:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00100**	**-.00649**	**.00001**	**.00353**	**.00127**	**.00009**	**.03010**
Stddev	.00249	.00575	.00113	.00271	.00101	.00005	.04036
%RSD	249.03	88.627	7750.7	76.752	79.083	50.719	134.06
#1	-.00151	-.00033	-.00103	.00661	.00232	.00007	-.01418
#2	.00171	-.00742	.00121	.00151	.00119	.00014	.06482
#3	-.00320	-.01171	-.00013	.00247	.00031	.00006	.03967
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00002**	**.00006**	**.00041**	**.01373**	**.02946**	**-.00620**
Stddev	.00025	.00017	.00014	.00060	.01915	.13123	.00146
%RSD	172.78	756.70	237.35	144.78	139.46	445.43	23.541
#1	.00007	.00017	-.00010	-.00025	-.00303	.11541	-.00567
#2	-.00041	.00006	.00016	.00058	.03461	.09457	-.00785
#3	-.00009	-.00016	.00011	.00092	.00963	-.12159	-.00508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01550**	**.00083**	**.00015**	**-.02129**	**.00003**	**-.00383**	**-.00097**
Stddev	.03687	.00295	.00015	.00987	.00063	.00101	.00153
%RSD	237.90	355.67	96.641	46.386	2360.5	26.365	157.27
#1	.01097	-.00081	.00007	-.02045	.00071	-.00464	.00076
#2	.00015	.00424	.00006	-.03156	-.00054	-.00413	-.00215
#3	-.05760	-.00094	.00032	-.01186	-.00009	-.00270	-.00153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 14:42:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00127**	**.00185**	**-.00797**	**-.00195**	**.00051**	**-.00039**	**-.00060**
Stddev	.00310	.00552	.00120	.00035	.00056	.00666	.00268
%RSD	243.96	297.91	15.091	17.874	108.90	1706.2	446.34
#1	.00370	.00706	-.00678	-.00158	.00019	.00136	-.00361
#2	.00234	-.00393	-.00795	-.00198	.00116	-.00775	.00028
#3	-.00222	.00242	-.00919	-.00228	.00020	.00522	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00111**	**-.00006**	F **.19229**
Stddev	.00084	.00006	.21751
%RSD	75.253	107.79	113.12
#1	-.00045	-.00005	.41952
#2	-.00205	-.00000	.17133
#3	-.00083	-.00013	-.01398
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12258.**	**75540.**	**3227.4**
Stddev	24.	158.	23.9
%RSD	.19617	.20961	.74204
#1	12244.	75358.	3201.3
#2	12244.	75648.	3232.9
#3	12286.	75614.	3248.2

Approved: August 15, 2016

Sample Name: LLCCV Acquired: 8/12/2016 14:46:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00730	.16090	.00752	.08493	.00894	.00163	.41979	.00084
Stddev	.00028	.00242	.00246	.00048	.00138	.00004	.04655	.00024
%RSD	3.8834	1.5054	32.690	.56190	15.392	2.2857	11.089	28.228
#1	.00699	.16251	.00676	.08547	.01005	.00162	.46386	.00110
#2	.00754	.15812	.01027	.08456	.00740	.00167	.42440	.00077
#3	.00737	.16208	.00553	.08477	.00938	.00160	.37110	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00423	.00400	.00481	.07760	.89846	.08281	.41620	.00841
Stddev	.00039	.00165	.00129	.01943	.04904	.00590	.02067	.00178
%RSD	9.2663	41.391	26.749	25.036	5.4584	7.1290	4.9655	21.230
#1	.00461	.00231	.00534	.05626	.87548	.08792	.42172	.01046
#2	.00424	.00407	.00575	.08228	.86512	.08417	.43354	.00723
#3	.00383	.00561	.00334	.09427	.95477	.07635	.39333	.00753
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00829	.40863	.01637	.81148	.00709	.08483	.01578	.82652
Stddev	.00012	.02857	.00102	.00538	.00556	.00186	.00053	.00293
%RSD	1.3913	6.9909	6.2298	.66262	78.453	2.1937	3.3432	.35394
#1	.00841	.44101	.01665	.80528	.00158	.08619	.01637	.82455
#2	.00819	.38698	.01721	.81433	.00699	.08560	.01536	.82512
#3	.00825	.39791	.01524	.81485	.01269	.08271	.01561	.82988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: LLCCV Acquired: 8/12/2016 14:46:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41539**	**.04236**	**.01718**	**.15398**	**.00795**	**.01792**	**18.078**
Stddev	.00122	.00120	.00066	.00184	.00046	.00003	.416
%RSD	.29303	2.8412	3.8682	1.1973	5.8347	.17102	2.3027
#1	.41542	.04356	.01721	.15278	.00795	.01793	18.374
#2	.41415	.04115	.01650	.15305	.00841	.01794	17.602
#3	.41659	.04237	.01782	.15610	.00748	.01788	18.258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12434.**	**76681.**	**3285.3**
Stddev	22.	129.	85.2
%RSD	.17605	.16816	2.5922
#1	12456.	76723.	3197.1
#2	12412.	76536.	3367.0
#3	12435.	76784.	3291.9

Approved: August 15, 2016

Kim K Buck

Sample Name: LLCCV Acquired: 8/12/2016 14:50:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01032**	**.20212**	**.00894**	**.10296**	**.01083**	**.00199**	**.51163**	**.00089**
Stddev	.00120	.01350	.00257	.00084	.00067	.00003	.03287	.00034
%RSD	11.667	6.6779	28.720	.81691	6.2034	1.7352	6.4236	38.254
#1	.01112	.19267	.01188	.10373	.01046	.00197	.50489	.00119
#2	.01090	.21758	.00715	.10309	.01042	.00203	.54735	.00052
#3	.00893	.19612	.00779	.10206	.01160	.00197	.48266	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00490**	**.00567**	**.00519**	**.11878**	**1.0989**	**.09991**	**.53893**	**.01019**
Stddev	.00074	.00081	.00041	.01307	.1387	.00070	.05992	.00143
%RSD	15.116	14.363	7.9832	11.006	12.624	.70438	11.118	14.001
#1	.00535	.00658	.00559	.12005	1.1016	.10016	.60346	.01047
#2	.00530	.00500	.00521	.13116	.95884	.10046	.48504	.00865
#3	.00404	.00543	.00476	.10511	1.2362	.09912	.52830	.01146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00945**	**.49846**	**.01983**	**.96953**	**.01182**	**.10005**	**.01634**	**.99566**
Stddev	.00084	.02364	.00103	.06635	.00093	.00394	.00410	.06219
%RSD	8.8656	4.7420	5.2038	6.8434	7.9045	3.9347	25.068	6.2460
#1	.01006	.49554	.02014	1.0137	.01287	.10064	.01928	1.0312
#2	.00980	.52343	.02066	1.0017	.01108	.10366	.01809	1.0319
#3	.00849	.47642	.01867	.89323	.01152	.09585	.01166	.92385
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: LLCCV Acquired: 8/12/2016 14:50:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49162	.05310	.02828	.18684	.00950	.02122	22.450
Stddev	.04335	.00033	.00741	.01205	.00061	.00168	.121
%RSD	8.8184	.62040	26.194	6.4499	6.4111	7.9082	.53898
#1	.51753	.05345	.01985	.19252	.01020	.02229	22.570
#2	.51576	.05304	.03373	.19501	.00924	.02208	22.328
#3	.44157	.05280	.03127	.17300	.00907	.01928	22.452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12386.	76454.	3279.9
Stddev	29.	152.	16.3
%RSD	.23270	.19854	.49595
#1	12418.	76403.	3276.2
#2	12373.	76334.	3297.7
#3	12365.	76625.	3265.8

Approved: August 15, 2016

Sample Name: PBS 1T Acquired: 8/12/2016 14:54:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579904-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00139**	**.03814**	**.01352**	**.00787**	**.00339**	**.00001**	**1.2823**	**.00034**
Stddev	.00086	.00836	.00195	.00098	.00075	.00006	.0084	.00031
%RSD	61.614	21.920	14.408	12.432	22.186	685.82	.65861	90.600
#1	-.00234	.03435	.01259	.00898	.00418	.00002	1.2797	.00001
#2	-.00068	.03235	.01575	.00715	.00269	.00007	1.2755	.00041
#3	-.00116	.04773	.01221	.00747	.00330	-.00006	1.2918	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00355**	**.03469**	**.12975**	**1.1184**	**-.00351**	**2.7132**	**.00446**
Stddev	.00034	.00051	.00261	.02059	.0651	.00098	.0790	.00045
%RSD	1402.8	14.274	7.5349	15.871	5.8229	28.019	2.9131	10.134
#1	-.00036	.00307	.03617	.12727	1.0463	-.00238	2.6379	.00472
#2	-.00003	.00408	.03623	.11050	1.1358	-.00415	2.7061	.00394
#3	.00032	.00350	.03167	.15146	1.1730	-.00399	2.7955	.00473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00131**	**1.3642**	**.00263**	**.60801**	**.00220**	**.00073**	**.01038**	**.76311**
Stddev	.00030	.0228	.00063	.04365	.00035	.00316	.00278	.04491
%RSD	23.050	1.6734	24.122	7.1784	15.826	430.55	26.737	5.8853
#1	.00102	1.3891	.00320	.63776	.00260	.00317	.00733	.79013
#2	.00162	1.3443	.00273	.62836	.00198	-.00284	.01275	.78793
#3	.00130	1.3593	.00195	.55791	.00200	.00187	.01107	.71126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: PBS 1T Acquired: 8/12/2016 14:54:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579904-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00153**	**.00652**	**.00349**	**-.01324**	**-.00047**	**1.7672**	**.36588**
Stddev	.00036	.00013	.00823	.00320	.00035	.1367	.09158
%RSD	23.282	2.0633	235.76	24.127	74.597	7.7346	25.029
#1	.00155	.00646	-.00378	-.01046	-.00021	1.8521	.39134
#2	.00116	.00642	.01243	-.01673	-.00087	1.8398	.44203
#3	.00187	.00667	.00183	-.01253	-.00033	1.6095	.26427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12568.**	**79000.**	**3454.0**
Stddev	12.	266.	5.3
%RSD	.09231	.33727	.15484
#1	12559.	78711.	3454.6
#2	12581.	79054.	3459.0
#3	12564.	79236.	3448.4

Approved: August 15, 2016

Kim K Buck

Sample Name: LCSS 1T Acquired: 8/12/2016 14:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579904-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18617**	**4.6103**	**.20224**	**.90811**	**.50019**	**.02343**	**6.1268**	**.02350**
Stddev	.00185	.0133	.00321	.00237	.00034	.00012	.0669	.00011
%RSD	.99430	.28883	1.5853	.26149	.06730	.51236	1.0920	.47154
#1	.18717	4.6242	.20345	.90777	.50007	.02338	6.1597	.02352
#2	.18730	4.6090	.20467	.91064	.49994	.02335	6.1709	.02359
#3	.18403	4.5977	.19861	.90593	.50058	.02357	6.0498	.02338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09628**	**.24491**	**.27073**	**2.0950**	**24.502**	**.48382**	**7.4251**	**.24931**
Stddev	.00197	.00198	.00517	.0232	.038	.00433	.0784	.00156
%RSD	2.0447	.80949	1.9101	1.1063	.15370	.89573	1.0553	.62465
#1	.09699	.24306	.27373	2.0969	24.539	.47914	7.5005	.24782
#2	.09779	.24468	.27370	2.0709	24.464	.48770	7.3441	.24920
#3	.09405	.24700	.26476	2.1171	24.502	.48461	7.4307	.25093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49229**	**24.611**	**.24125**	**5.1876**	**.23985**	**.55366**	**.19641**	**3.0597**
Stddev	.00693	.065	.00379	.0488	.00271	.00846	.00368	.0237
%RSD	1.4079	.26472	1.5725	.94083	1.1284	1.5271	1.8719	.77584
#1	.49590	24.686	.24385	5.2120	.24103	.55714	.19255	3.0683
#2	.49668	24.567	.24300	5.2193	.24176	.55982	.19680	3.0780
#3	.48430	24.579	.23690	5.1314	.23675	.54402	.19987	3.0329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: LCSS 1T Acquired: 8/12/2016 14:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579904-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47009**	**.50743**	**.48337**	**.08177**	**.48669**	**2.1115**	**.30298**
Stddev	.00782	.00171	.00718	.00192	.00153	.0337	.13282
%RSD	1.6644	.33758	1.4856	2.3450	.31478	1.5945	43.837
#1	.47384	.50707	.49157	.08059	.48572	2.1315	.15657
#2	.47533	.50930	.48028	.08398	.48588	2.1303	.33663
#3	.46109	.50593	.47825	.08074	.48845	2.0726	.41574
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12444.**	**77719.**	**3424.3**
Stddev	8.	92.	3.9
%RSD	.06227	.11802	.11431
#1	12443.	77644.	3420.1
#2	12452.	77821.	3427.8
#3	12436.	77690.	3424.9

Approved: August 15, 2016

Sample Name: LCS2 Acquired: 8/12/2016 15:01:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579904-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18893**	**4.7133**	**.20811**	**.92653**	**.50877**	**.02395**	**6.1480**	**.02422**
Stddev	.00163	.0167	.00320	.00498	.00253	.00004	.0658	.00033
%RSD	.86046	.35461	1.5399	.53717	.49802	.16956	1.0697	1.3498
#1	.18707	4.7106	.20602	.92399	.51167	.02395	6.2223	.02459
#2	.18964	4.6980	.21180	.92333	.50699	.02390	6.0971	.02410
#3	.19007	4.7312	.20652	.93226	.50765	.02398	6.1247	.02397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09946**	**.25355**	**.27614**	**2.1299**	**24.814**	**.49732**	**7.5665**	**.25550**
Stddev	.00148	.00150	.00442	.0178	.053	.00433	.1103	.00288
%RSD	1.4897	.59201	1.6010	.83409	.21397	.87002	1.4573	1.1267
#1	.10022	.25246	.27818	2.1175	24.856	.50068	7.6019	.25844
#2	.10042	.25292	.27918	2.1219	24.755	.49244	7.4428	.25536
#3	.09776	.25526	.27107	2.1502	24.833	.49885	7.6547	.25269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51195**	**24.887**	**.24883**	**5.2567**	**.24807**	**.57315**	**.19675**	**3.0882**
Stddev	.00592	.058	.00311	.0488	.00463	.01028	.00136	.0250
%RSD	1.1557	.23106	1.2494	.92755	1.8669	1.7942	.69157	.80943
#1	.51494	24.943	.24966	5.2771	.25260	.57795	.19611	3.1002
#2	.51577	24.889	.25144	5.2920	.24825	.58016	.19582	3.1050
#3	.50513	24.828	.24539	5.2011	.24335	.56135	.19831	3.0595
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: LCS2 Acquired: 8/12/2016 15:01:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579904-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48616	.51912	.50230	.11144	.50187	1.9581	.40905
Stddev	.00852	.00148	.01199	.00106	.00155	.0293	.02216
%RSD	1.7529	.28602	2.3864	.95521	.30928	1.4946	5.4185
#1	.49099	.52083	.51508	.11023	.50108	1.9686	.43345
#2	.49118	.51840	.50051	.11224	.50087	1.9807	.40356
#3	.47632	.51813	.49130	.11185	.50365	1.9251	.39015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12280.	77255.	3431.6
Stddev	33.	217.	4.1
%RSD	.27236	.28144	.12035
#1	12313.	77316.	3428.4
#2	12281.	77436.	3430.3
#3	12246.	77014.	3436.3

Approved: August 15, 2016

Sample Name: L1608055901 Acquired: 8/12/2016 15:05:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	1.6913	.00923	.04367	.06921	.00006	6.2723	.00981
Stddev	.00226	.0078	.00265	.00314	.00084	.00004	.0231	.00040
%RSD	1023.1	.45939	28.757	7.1860	1.2070	65.051	.36780	4.0826
#1	-.00260	1.7002	.00673	.04649	.06918	.00003	6.2964	.01001
#2	.00189	1.6875	.01201	.04422	.06839	.00004	6.2701	.01007
#3	.00006	1.6862	.00893	.04029	.07006	.00010	6.2504	.00935
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.04345	.14376	3.4648	2.0080	.00143	2.0899	.11533
Stddev	.00033	.00064	.00601	.0401	.1154	.00428	.1856	.00249
%RSD	19.486	1.4699	4.1796	1.1582	5.7465	298.00	8.8808	2.1604
#1	.00175	.04393	.14525	3.4664	1.9057	.00551	2.2283	.11415
#2	.00202	.04370	.14888	3.4239	2.1331	-.00302	1.8790	.11819
#3	.00136	.04273	.13715	3.5041	1.9854	.00181	2.1625	.11365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00226	11.612	.02917	.65795	.22656	.04898	.00207	2.2464
Stddev	.00046	.044	.00079	.02492	.00523	.00133	.00538	.0694
%RSD	20.469	.37622	2.7163	3.7874	2.3069	2.7118	259.69	3.0879
#1	.00173	11.654	.02961	.67206	.22845	.05020	-.00014	2.2648
#2	.00254	11.567	.02964	.67261	.23059	.04917	.00821	2.3047
#3	.00252	11.614	.02825	.62918	.22066	.04757	-.00185	2.1697
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608055901 Acquired: 8/12/2016 15:05:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02127	.02683	.10536	-.01162	.00364	1.1559	3.9568
Stddev	.00076	.00032	.00317	.00085	.00046	.0519	.1650
%RSD	3.5909	1.1887	3.0124	7.2867	12.655	4.4875	4.1687
#1	.02149	.02678	.10214	-.01113	.00417	1.1730	4.1106
#2	.02190	.02717	.10848	-.01260	.00337	1.1971	3.9772
#3	.02042	.02653	.10545	-.01113	.00338	1.0977	3.7826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12443.	76778.	3369.2
Stddev	87.	230.	12.2
%RSD	.69771	.29912	.36170
#1	12542.	76546.	3355.7
#2	12378.	76784.	3379.5
#3	12409.	77005.	3372.3

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608055902 Acquired: 8/12/2016 15:09:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	1.2363	.00824	.05956	.05122	.00000	6.6353	.02180
Stddev	.00151	.0014	.00052	.00205	.00428	.00001	.4399	.00088
%RSD	192.23	.11083	6.3030	3.4403	8.3583	406.97	6.6293	4.0566
#1	.00183	1.2374	.00765	.06104	.05386	-.00001	6.9263	.02243
#2	-.00095	1.2348	.00847	.05722	.05352	.00001	6.8503	.02218
#3	.00148	1.2366	.00861	.06041	.04628	.00001	6.1293	.02079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	.02447	.16013	2.7053	1.5036	.00008	1.7679	.14356
Stddev	.00023	.00052	.00644	.1737	.1151	.00210	.0627	.00920
%RSD	11.239	2.1057	4.0201	6.4215	7.6529	2786.9	3.5470	6.4115
#1	.00201	.02425	.16492	2.7537	1.5474	-.00231	1.7817	.14924
#2	.00232	.02410	.16266	2.8497	1.5903	.00167	1.8225	.14850
#3	.00186	.02506	.15281	2.5125	1.3731	.00086	1.6994	.13294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00151	4.5739	.02461	.49041	.40543	.14090	.00707	1.4206
Stddev	.00023	.2759	.00135	.02326	.01559	.00511	.00310	.0442
%RSD	15.070	6.0315	5.4665	4.7428	3.8453	3.6282	43.783	3.1143
#1	.00165	4.7352	.02522	.50853	.41138	.14405	.00970	1.4505
#2	.00162	4.7311	.02554	.49853	.41717	.14365	.00366	1.4415
#3	.00125	4.2553	.02307	.46418	.38775	.13500	.00786	1.3698
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608055902 Acquired: 8/12/2016 15:09:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07894	.02246	.05607	-.01119	.00263	1.0518	6.1418
Stddev	.00398	.00114	.00653	.00189	.00070	.0433	.1292
%RSD	5.0462	5.0707	11.647	16.938	26.738	4.1137	2.1037
#1	.08038	.02326	.05028	-.01135	.00342	1.0772	6.2171
#2	.08201	.02295	.06315	-.00921	.00209	1.0764	6.2158
#3	.07444	.02115	.05479	-.01299	.00237	1.0019	5.9927
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12470.	78428.	3506.6
Stddev	49.	702.	151.9
%RSD	.39530	.89486	4.3313
#1	12444.	77619.	3459.3
#2	12438.	78788.	3384.0
#3	12526.	78876.	3676.5

Approved: August 15, 2016

Sample Name: L1608055903 Acquired: 8/12/2016 15:13:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00488	6.1709	.01629	.12526	.30516	.00009	51.852	.08231
Stddev	.00101	.0098	.00268	.00129	.00009	.00007	.042	.00279
%RSD	20.760	.15941	16.425	1.0308	.02791	72.601	.08037	3.3912
#1	.00600	6.1606	.01338	.12593	.30525	.00015	51.880	.08382
#2	.00404	6.1721	.01686	.12609	.30515	.00010	51.872	.08403
#3	.00458	6.1801	.01864	.12378	.30508	.00002	51.804	.07909
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00991	.38291	.63230	15.962	8.8344	.00435	3.1730	.70214
Stddev	.00068	.00101	.02342	.003	.0523	.00180	.0061	.00151
%RSD	6.9035	.26265	3.7034	.01785	.59224	41.466	.19121	.21521
#1	.01031	.38406	.64409	15.960	8.7773	.00640	3.1771	.70156
#2	.01030	.38219	.64747	15.962	8.8801	.00301	3.1661	.70385
#3	.00912	.38248	.60533	15.965	8.8457	.00363	3.1759	.70100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00330	31.488	.08726	3.9781	1.7143	.49362	.00850	6.5581
Stddev	.00029	.054	.00331	.1261	.0510	.01780	.00311	.1753
%RSD	8.9008	.17274	3.7939	3.1703	2.9731	3.6066	36.619	2.6731
#1	.00360	31.506	.08970	4.0549	1.7451	.50413	.01139	6.6541
#2	.00331	31.531	.08859	4.0467	1.7424	.50366	.00520	6.6645
#3	.00301	31.427	.08349	3.8325	1.6555	.47306	.00891	6.3557
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608055903 Acquired: 8/12/2016 15:13:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11970**	**.09177**	**.26255**	**-.01260**	**.01292**	**6.7146**	**15.031**
Stddev	.00513	.00124	.00407	.00231	.00009	.2496	.256
%RSD	4.2859	1.3484	1.5519	18.297	.71017	3.7172	1.7024
#1	.12206	.09103	.26521	-.01328	.01298	6.8555	15.283
#2	.12323	.09109	.25786	-.01450	.01297	6.8620	14.771
#3	.11382	.09320	.26458	-.01004	.01282	6.4265	15.039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12267.**	**77172.**	**3447.5**
Stddev	16.	204.	24.4
%RSD	.13305	.26397	.70843
#1	12263.	77404.	3419.5
#2	12254.	77089.	3464.0
#3	12286.	77023.	3459.1

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608055903PS Acquired: 8/12/2016 15:17:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579926-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19614	10.334	.21298	1.0437	.78789	.02438	52.214	.09957
Stddev	.00038	.025	.00291	.0021	.00150	.00003	.154	.00128
%RSD	.19293	.24098	1.3677	.19672	.19063	.13839	.29503	1.2854
#1	.19575	10.305	.21350	1.0432	.78954	.02436	52.310	.09992
#2	.19650	10.350	.21560	1.0420	.78659	.02442	52.037	.10064
#3	.19615	10.346	.20984	1.0460	.78754	.02436	52.297	.09815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10854	.59240	.82309	16.511	32.408	.51490	7.8932	.88329
Stddev	.00141	.00159	.01314	.040	.067	.00232	.0928	.00110
%RSD	1.2988	.26869	1.5967	.24000	.20549	.45026	1.1755	.12488
#1	.10895	.59329	.82874	16.533	32.456	.51468	7.7870	.88203
#2	.10970	.59336	.83246	16.466	32.332	.51269	7.9338	.88373
#3	.10697	.59057	.80807	16.535	32.437	.51731	7.9588	.88410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51812	53.131	.32713	8.4373	1.8001	1.0264	.20053	8.6825
Stddev	.00716	.037	.00460	.0992	.0153	.0145	.00310	.0585
%RSD	1.3814	.06964	1.4047	1.1760	.85000	1.4138	1.5466	.67316
#1	.52044	53.167	.33013	8.4613	1.8040	1.0366	.20314	8.6932
#2	.52383	53.132	.32942	8.5223	1.8131	1.0328	.20135	8.7349
#3	.51009	53.093	.32184	8.3283	1.7832	1.0098	.19710	8.6195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608055903PS Acquired: 8/12/2016 15:17:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579926-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.60002	.60265	.74675	.23670	.51906	6.6320	13.392
Stddev	.01046	.00284	.00856	.00230	.00038	.0919	.155
%RSD	1.7436	.47081	1.1458	.97128	.07347	1.3857	1.1543
#1	.60552	.60108	.74828	.23449	.51867	6.6693	13.567
#2	.60658	.60094	.75445	.23908	.51943	6.6994	13.275
#3	.58796	.60592	.73754	.23654	.51907	6.5273	13.333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12167.	76212.	3425.4
Stddev	29.	341.	3.8
%RSD	.23747	.44725	.11164
#1	12181.	76385.	3424.1
#2	12134.	75819.	3422.4
#3	12186.	76431.	3429.7

Approved: August 15, 2016

Sample Name: L1608055903SDL Acquired: 8/12/2016 15:20:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579926-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	1.2744	.00418	.02905	.05917	.00002	10.441	.01604
Stddev	.00168	.0108	.00095	.00246	.00189	.00011	.057	.00153
%RSD	37832.	.84751	22.622	8.4562	3.1884	513.98	.54348	9.5615
#1	.00092	1.2627	.00346	.02780	.05935	.00015	10.480	.01692
#2	.00102	1.2840	.00383	.03188	.06096	-.00001	10.468	.01692
#3	-.00193	1.2766	.00525	.02747	.05720	-.00007	10.376	.01427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00192	.07638	.12512	3.1870	1.8784	.00007	.61754	.13887
Stddev	.00046	.00014	.01223	.0256	.0585	.00341	.03799	.00257
%RSD	24.018	.18915	9.7770	.80405	3.1133	4687.4	6.1511	1.8499
#1	.00189	.07647	.13322	3.1736	1.9367	.00195	.65994	.13940
#2	.00239	.07646	.13110	3.1709	1.8788	-.00386	.60607	.14113
#3	.00147	.07621	.11105	3.2166	1.8197	.00214	.58661	.13608
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	6.4139	.01686	.76609	.33648	.09609	.00292	1.2671
Stddev	.00012	.0178	.00192	.06012	.02520	.00738	.00127	.0990
%RSD	17.740	.27786	11.361	7.8473	7.4898	7.6812	43.607	7.8101
#1	.00056	6.4320	.01802	.79860	.35212	.09811	.00234	1.3287
#2	.00078	6.3963	.01792	.80296	.34992	.10224	.00204	1.3196
#3	.00078	6.4135	.01465	.69672	.30741	.08790	.00437	1.1529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608055903SDL Acquired: 8/12/2016 15:20:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG579926-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02110	.01811	.05479	-.00541	.00262	1.3388	2.9542
Stddev	.00196	.00033	.01167	.00218	.00025	.1116	.2761
%RSD	9.2788	1.8388	21.292	40.181	9.5839	8.3376	9.3472
#1	.02258	.01783	.06262	-.00320	.00286	1.4090	2.6665
#2	.02185	.01848	.06037	-.00550	.00263	1.3972	3.2171
#3	.01888	.01803	.04138	-.00754	.00236	1.2100	2.9789
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12896.	79795.	3434.9
Stddev	26.	150.	20.0
%RSD	.19943	.18793	.58280
#1	12922.	79788.	3416.3
#2	12893.	79949.	3432.2
#3	12871.	79649.	3456.1

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608055904 Acquired: 8/12/2016 15:24:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00182	.96794	.00977	.04923	.03258	-.00006	25.196	.00492
Stddev	.00045	.00992	.00171	.00064	.00080	.00005	.089	.00038
%RSD	24.556	1.0246	17.518	1.3086	2.4704	83.730	.35139	7.7936
#1	-.00205	.95719	.00880	.04941	.03211	-.00009	25.112	.00510
#2	-.00210	.97674	.00876	.04976	.03351	-.00008	25.186	.00519
#3	-.00130	.96989	.01175	.04851	.03213	-.00000	25.289	.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00130	.01625	.06464	1.1384	1.6045	-.00431	2.8575	.04337
Stddev	.00011	.00033	.00419	.0233	.1083	.00198	.0524	.00332
%RSD	8.2582	2.0417	6.4774	2.0496	6.7507	45.854	1.8325	7.6459
#1	.00134	.01608	.06739	1.1577	1.5080	-.00464	2.8033	.04574
#2	.00118	.01663	.06671	1.1125	1.7217	-.00219	2.8614	.03958
#3	.00138	.01604	.05982	1.1450	1.5839	-.00610	2.9078	.04480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	10.462	.01405	.44121	.10041	.03354	.01036	1.2876
Stddev	.00029	.051	.00095	.02915	.00799	.00381	.00249	.0657
%RSD	31.379	.48566	6.7874	6.6062	7.9557	11.350	24.043	5.1019
#1	.00099	10.456	.01515	.45642	.10653	.03202	.00796	1.3258
#2	.00116	10.415	.01350	.45961	.10332	.03788	.01293	1.3253
#3	.00060	10.516	.01350	.40761	.09137	.03074	.01019	1.2118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608055904 Acquired: 8/12/2016 15:24:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01304	.03300	.05156	-.00876	.00116	1.5977	3.4926
Stddev	.00166	.00026	.00714	.00383	.00043	.1087	.2241
%RSD	12.751	.79169	13.855	43.644	37.273	6.8025	6.4150
#1	.01341	.03293	.04359	-.01014	.00127	1.6649	3.6953
#2	.01448	.03328	.05371	-.00444	.00152	1.6558	3.5306
#3	.01122	.03277	.05738	-.01171	.00068	1.4723	3.2520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12318.	77452.	3426.5
Stddev	15.	124.	6.0
%RSD	.11823	.15961	.17594
#1	12301.	77318.	3431.0
#2	12324.	77562.	3428.9
#3	12328.	77475.	3419.7

Approved: August 15, 2016

Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 15:28:23 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41115**	**10.181**	**.39924**	**.50495**	**1.0318**	**.05026**	**10.182**
Stddev	.00036	.016	.00614	.00306	.0057	.00008	.037
%RSD	.08738	.15884	1.5373	.60692	.54844	.15385	.36126
#1	.41156	10.190	.40142	.50816	1.0383	.05020	10.173
#2	.41102	10.191	.40399	.50462	1.0283	.05035	10.223
#3	.41088	10.163	.39231	.50206	1.0286	.05023	10.151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05047**	**.20139**	**.50894**	**.50869**	**4.1370**	**50.267**	**1.0350**
Stddev	.00087	.00449	.00119	.01170	.0025	.305	.0037
%RSD	1.7197	2.2318	.23432	2.2996	.06133	.60662	.36144
#1	.05120	.20358	.51006	.51488	4.1380	50.616	1.0367
#2	.05069	.20436	.50908	.51599	4.1388	50.051	1.0376
#3	.04951	.19622	.50769	.49520	4.1341	50.135	1.0307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.464**	**.51731**	**1.0125**	**49.880**	**.50749**	**10.051**	**.50959**
Stddev	.112	.00112	.0234	.276	.01097	.180	.00508
%RSD	1.0694	.21560	2.3092	.55383	2.1615	1.7878	.99722
#1	10.581	.51860	1.0241	50.185	.51297	10.128	.51211
#2	10.455	.51657	1.0279	49.647	.51464	10.179	.51291
#3	10.357	.51677	.98561	49.806	.49486	9.8454	.50374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 15:28:23 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1923**	**.40053**	**5.0890**	**1.0152**	**1.0326**	**1.0039**	**.51495**
Stddev	.0195	.00535	.0709	.0287	.0059	.0061	.00239
%RSD	1.6330	1.3361	1.3941	2.8288	.57477	.60797	.46478
#1	1.2014	.40654	5.1155	1.0301	1.0395	1.0090	.51566
#2	1.2056	.39629	5.1428	1.0334	1.0291	.99716	.51691
#3	1.1700	.39875	5.0086	.98212	1.0293	1.0056	.51228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0155**	**1.0145**	F **446.48**
Stddev	.0030	.0216	3.83
%RSD	.29628	2.1249	.85857
#1	1.0188	1.0277	444.38
#2	1.0129	1.0261	444.15
#3	1.0148	.98959	450.90
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12209.**	**75082.**	**3252.5**
Stddev	7.	222.	24.9
%RSD	.05701	.29602	.76486
#1	12205.	74857.	3260.1
#2	12217.	75088.	3272.7
#3	12205.	75301.	3224.7

Approved: August 15, 2016

Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 15:31:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00114**	**-.00330**	**.00128**	**.00486**	**.00021**	**.00003**	**-.05777**
Stddev	.00119	.00339	.00185	.00138	.00073	.00005	.03256
%RSD	104.04	102.63	144.72	28.440	346.81	167.76	56.371
#1	.00014	.00005	-.00082	.00335	.00083	-.00003	-.07853
#2	-.00220	-.00322	.00199	.00516	.00039	.00007	-.07453
#3	-.00138	-.00672	.00267	.00606	-.00059	.00006	-.02024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**.00010**	**.00072**	**.00009**	**-.00444**	**.07138**	**-.00509**
Stddev	.00010	.00025	.00062	.00102	.01184	.12225	.00564
%RSD	24.047	244.60	85.573	1182.8	266.49	171.27	110.69
#1	-.00034	.00010	.00023	.00120	-.01082	.21146	-.01111
#2	-.00054	-.00015	.00141	-.00015	-.01174	-.01371	.00007
#3	-.00040	.00035	.00052	-.00079	.00922	.01638	-.00424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02993**	**-.00038**	**-.00006**	**-.01164**	**.00109**	**-.00691**	**-.00306**
Stddev	.00994	.00020	.00044	.05389	.00082	.00192	.00214
%RSD	33.200	53.977	675.31	463.10	75.525	27.719	69.706
#1	-.02297	-.00057	-.00001	.00822	.00198	-.00477	-.00358
#2	-.04130	-.00017	.00034	.02951	.00090	-.00751	-.00489
#3	-.02551	-.00039	-.00053	-.07263	.00038	-.00846	-.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 15:31:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00378**	**.00463**	**-.00244**	**-.00202**	**.00009**	**-.00013**	**-.00332**
Stddev	.00157	.00229	.00088	.00041	.00032	.00753	.00224
%RSD	41.447	49.396	36.076	20.258	355.56	5658.0	67.483
#1	-.00261	.00718	-.00148	-.00225	.00014	.00741	-.00530
#2	-.00316	.00392	-.00321	-.00155	.00038	-.00017	-.00088
#3	-.00556	.00278	-.00261	-.00226	-.00025	-.00765	-.00379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00039**	**-.00014**	F **.06634**
Stddev	.00086	.00011	.04734
%RSD	217.14	77.390	71.362
#1	.00012	-.00003	.11530
#2	-.00138	-.00014	.06294
#3	.00008	-.00025	.02080
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12350.**	**76369.**	**3282.2**
Stddev	8.	116.	6.9
%RSD	.06626	.15206	.21005
#1	12358.	76463.	3274.4
#2	12351.	76239.	3287.6
#3	12342.	76405.	3284.5

Approved: August 15, 2016

Sample Name: L1608013301 Acquired: 8/12/2016 15:35:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**22.170**	**.00312**	**.11605**	**.17593**	**.00000**	**28.385**	**.00915**
Stddev	.00073	.031	.00188	.00179	.00088	.00004	.115	.00046
%RSD	881.82	.13994	60.165	1.5402	.50035	5046.9	.40572	5.0361
#1	-.00002	22.198	.00228	.11413	.17695	-.00003	28.496	.00956
#2	.00061	22.175	.00181	.11635	.17543	.00005	28.391	.00925
#3	-.00085	22.136	.00527	.11767	.17542	-.00001	28.266	.00865
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.8986**	**.06397**	**.16035**	**3.1456**	**3.0587**	**1.4699**	**6.4093**	**.09457**
Stddev	.0974	.00035	.00644	.0447	.0695	.0044	.0702	.00407
%RSD	3.3599	.54564	4.0152	1.4223	2.2731	.30172	1.0956	4.3025
#1	2.9571	.06425	.16454	3.1944	3.1337	1.4749	6.4414	.09091
#2	2.9525	.06358	.16356	3.1357	3.0461	1.4683	6.3288	.09385
#3	2.7862	.06408	.15293	3.1066	2.9964	1.4665	6.4578	.09895
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00799**	**187.14**	**7.8200**	**26.967**	**.00851**	**-.00076**	**.00018**	**1.1157**
Stddev	.00057	.44	.2681	.993	.00217	.00128	.00315	.0331
%RSD	7.1698	.23583	3.4284	3.6821	25.433	167.71	1716.5	2.9624
#1	.00844	187.57	7.9877	27.567	.00973	-.00028	.00228	1.1346
#2	.00819	187.17	7.9616	27.513	.00980	-.00221	-.00344	1.1350
#3	.00735	186.69	7.5108	25.821	.00601	.00020	.00171	1.0776
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608013301 Acquired: 8/12/2016 15:35:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00154**	**.23182**	**-.00123**	**.00225**	**.00106**	**.49040**	**.13322**
Stddev	.00049	.00081	.00421	.00267	.00067	.01615	.01420
%RSD	31.702	.35033	342.99	118.57	62.641	3.2928	10.663
#1	-.00196	.23144	-.00400	.00128	.00053	.50005	.14202
#2	-.00101	.23275	.00362	.00527	.00086	.49939	.14080
#3	-.00165	.23127	-.00329	.00021	.00181	.47175	.11683
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12627.**	**77261.**	**3420.3**
Stddev	11.	422.	26.4
%RSD	.08497	.54569	.77175
#1	12617.	77657.	3393.4
#2	12626.	76818.	3421.6
#3	12638.	77309.	3446.1

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608013302 Acquired: 8/12/2016 15:39:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00260**	**36.081**	**.00558**	**.16583**	**.29766**	**.00007**	**42.840**	**.01500**
Stddev	.00144	.042	.00139	.00052	.00170	.00002	.123	.00053
%RSD	55.461	.11654	24.939	.31199	.57066	34.955	.28648	3.5107
#1	-.00226	36.039	.00545	.16536	.29714	.00004	42.765	.01515
#2	-.00418	36.081	.00702	.16638	.29628	.00008	42.774	.01543
#3	-.00136	36.123	.00425	.16575	.29956	.00009	42.982	.01441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.6895**	**.10403**	**.26334**	**5.1737**	**4.4370**	**1.4392**	**9.5679**	**.15480**
Stddev	.1490	.00084	.00850	.0304	.1271	.0059	.1671	.00536
%RSD	3.1778	.80494	3.2280	.58809	2.8637	.40984	1.7466	3.4639
#1	4.7773	.10499	.26712	5.1891	4.4016	1.4344	9.5667	.14867
#2	4.7737	.10349	.26930	5.1934	4.3314	1.4375	9.4014	.15710
#3	4.5174	.10360	.25361	5.1387	4.5781	1.4458	9.7356	.15863
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01150**	**177.47**	**12.736**	**42.498**	**.01691**	**-.00071**	**.00221**	**1.5255**
Stddev	.00046	.45	.413	1.579	.00147	.00146	.00118	.0469
%RSD	4.0040	.25187	3.2413	3.7160	8.7182	204.19	53.610	3.0732
#1	.01160	177.19	12.990	43.470	.01552	.00072	.00267	1.5554
#2	.01191	177.23	12.958	43.349	.01676	-.00067	.00086	1.5496
#3	.01100	177.98	12.260	40.676	.01846	-.00219	.00310	1.4715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608013302 Acquired: 8/12/2016 15:39:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00156**	**.36202**	**-.00370**	**.00268**	**.00285**	**.81563**	**.13774**
Stddev	.00039	.00096	.00416	.00139	.00100	.02544	.23065
%RSD	25.125	.26433	112.61	51.705	35.087	3.1189	167.45
#1	-.00116	.36251	-.00794	.00262	.00400	.82990	.17328
#2	-.00157	.36092	.00038	.00410	.00226	.83073	-.10862
#3	-.00194	.36264	-.00352	.00133	.00228	.78626	.34855
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12284.**	**75119.**	**3307.9**
Stddev	32.	315.	12.0
%RSD	.25915	.41965	.36424
#1	12305.	75471.	3316.3
#2	12300.	74863.	3294.1
#3	12247.	75023.	3313.3

Approved: August 15, 2016

Sample Name: L1608013303 Acquired: 8/12/2016 15:43:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00397**	s **7.3271**	k **.00056**	s **.03171**	**.29237**	s **.00158**	**41.697**
Stddev	.00928	12.586	.00105	.05853	.08956	.00293	12.257
%RSD	233.73	171.78	188.13	184.57	30.632	185.15	29.396
#1	s -.01444	s 21.860	k .00170	s .09923	.18919	s .00496	27.562
#2	.00324	.16008	.00033	-.00462	.34996	-.00009	49.379
#3	s -.00071	s -.03882	k -.00036	s .00052	.33795	s -.00013	48.152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **-.00013**	k **.00224**	s **.03023**	k **-.00317**	k **5.1163**	**4.3204**	**1.2566**
Stddev	.00040	.00186	.05457	.00473	1.4677	1.2847	.3597
%RSD	322.80	83.124	180.55	149.37	28.687	29.734	28.625
#1	k -.00054	k .00052	s .09324	k -.00153	k 3.4228	2.8384	.84197
#2	-.00010	.00198	-.00130	-.00850	6.0195	5.1153	1.4850
#3	k .00027	k .00421	s -.00126	k .00053	k 5.9066	5.0077	1.4429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.2816**	k **.15149**	k **-.00013**	^ *****	k **.00617**	k **.02020**	k **-.00257**
Stddev	2.5949	.04515	.00014	-----	.00481	.01540	.00093
%RSD	27.957	29.803	110.25	-----	77.916	76.233	36.287
#1	6.2884	k .09970	k -.00000	^ -----	k .00238	k .00880	k -.00151
#2	10.897	.18252	-.00029	175.79	.00456	.01408	-.00297
#3	10.660	k .17226	k -.00010	170.01	k .01159	k .03771	k -.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608013303 Acquired: 8/12/2016 15:43:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **-.00406**	k **-.00270**	k **-.00027**	k **-.00219**	**.35690**	k **.00469**	k **-.00291**
Stddev	.00389	.00355	.00244	.00043	.10431	.00515	.00270
%RSD	95.868	131.64	920.56	19.749	29.228	109.73	92.851
#1	k -.00232	k -.00590	k .00083	k -.00248	.23667	k .00445	k -.00102
#2	-.00852	-.00332	-.00306	-.00169	.42330	-.00033	-.00171
#3	k -.00134	k .00113	k .00144	k -.00239	.41073	k .00996	k -.00600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	s **.00119**	k **-.00000**	k **.04401**
Stddev	.00221	.00023	.12822
%RSD	186.79	8855.6	291.34
#1	s .00373	k -.00018	k .17225
#2	-.00026	-.00009	-.08419
#3	s .00009	k .00026	k .04397
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12671.**	^ *****	**3710.8**
Stddev	294.	-----	559.8
%RSD	2.3216	-----	15.086
#1	12409.	^ -----	4356.5
#2	12989.	145710.	3413.2
#3	12614.	^ -----	3362.7

Approved: August 15, 2016

Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 15:47:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39852	9.7819	.38669	.48768	.98823	.04817	9.8382
Stddev	.00205	.0251	.00681	.00099	.00773	.00013	.0655
%RSD	.51379	.25614	1.7609	.20226	.78231	.26923	.66624
#1	.39680	9.7532	.39092	.48676	.98408	.04802	9.7708
#2	.40078	9.7994	.39031	.48757	.98345	.04827	9.8421
#3	.39796	9.7931	.37883	.48872	.99715	.04822	9.9017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04863	.19435	.48755	.49083	3.9889	48.358	.98819
Stddev	.00094	.00384	.00337	.00845	.0597	.266	.01026
%RSD	1.9344	1.9773	.69193	1.7224	1.4958	.55081	1.0379
#1	.04927	.19687	.48468	.49566	3.9262	48.124	.97770
#2	.04906	.19626	.49127	.49576	4.0449	48.303	.98866
#3	.04755	.18993	.48671	.48107	3.9955	48.648	.99820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.001	.49550	.97527	47.719	.48825	9.7050	.49176
Stddev	.090	.00337	.02138	.379	.01168	.1435	.00583
%RSD	.89770	.67938	2.1927	.79401	2.3914	1.4790	1.1847
#1	9.9169	.49336	.98886	47.459	.49429	9.8053	.49824
#2	9.9912	.49376	.98633	47.545	.49567	9.7690	.49008
#3	10.096	.49938	.95062	48.154	.47479	9.5406	.48695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 15:47:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1568**	**.38471**	**4.8969**	**.97680**	**.98711**	**.96762**	**.49728**
Stddev	.0195	.00219	.0660	.02530	.00933	.01764	.00287
%RSD	1.6886	.56949	1.3479	2.5900	.94566	1.8225	.57812
#1	1.1755	.38697	4.9406	.99064	.98144	.94769	.50019
#2	1.1582	.38260	4.9291	.99217	.98200	.97399	.49722
#3	1.1365	.38456	4.8209	.94760	.99788	.98119	.49444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.97284**	**.97846**	F **426.75**
Stddev	.00339	.01843	3.76
%RSD	.34813	1.8839	.88217
#1	.97258	.98947	423.03
#2	.96960	.98872	426.67
#3	.97636	.95718	430.56
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12422.**	**76558.**	**3328.1**
Stddev	5.	212.	17.4
%RSD	.04067	.27670	.52228
#1	12428.	76315.	3339.5
#2	12418.	76700.	3336.6
#3	12421.	76659.	3308.1

Approved: August 15, 2016

Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 15:51:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00109	-.00414	-.00162	.00380	.00076	.00005	.00241	-.00006
Stddev	.00114	.00514	.00167	.00108	.00127	.00000	.01084	.00017
%RSD	105.23	124.18	103.31	28.401	166.56	7.3533	449.46	294.88
#1	-.00109	-.00310	-.00329	.00501	.00032	.00005	-.00999	-.00016
#2	.00006	-.00971	-.00160	.00295	-.00022	.00004	.00719	.00013
#3	-.00223	.00040	.00005	.00343	.00220	.00005	.01004	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00123	-.00043	.00105	.18837	-.00151	.00719	.00068
Stddev	.00023	.00061	.00059	.03547	.02562	.00262	.03249	.00137
%RSD	561.27	49.509	136.74	3386.0	13.601	172.84	451.60	200.04
#1	.00001	.00193	-.00036	.02780	.15885	.00006	-.01388	.00165
#2	-.00030	.00093	-.00105	-.03919	.20157	-.00454	.04460	.00128
#3	.00016	.00082	.00012	.01454	.20471	-.00007	-.00914	-.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00225	-.00065	-.00216	-.00063	.00224	.00267	-.00733
Stddev	.00036	.00963	.00057	.00272	.00159	.00408	.00567	.00351
%RSD	165.98	428.20	87.897	125.82	251.52	182.02	212.54	47.802
#1	-.00010	.00839	-.00001	-.00386	.00109	.00521	.00436	-.00907
#2	.00061	-.00885	-.00082	.00097	-.00203	.00394	.00730	-.00963
#3	.00014	.00722	-.00111	-.00359	-.00095	-.00242	-.00366	-.00330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 15:51:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00179**	**.00013**	**-.00252**	**-.00323**	**-.00022**	**-.00006**	**.01738**
Stddev	.00067	.00029	.00573	.00143	.00079	.00015	.25887
%RSD	37.654	223.00	227.70	44.237	360.09	263.42	1489.5
#1	-.00110	-.00006	.00407	-.00466	-.00015	-.00016	.29893
#2	-.00245	-.00001	-.00636	-.00323	-.00105	.00011	-.21035
#3	-.00181	.00046	-.00526	-.00180	.00053	-.00013	-.03644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12575.**	**77710.**	**3348.1**
Stddev	14.	81.	20.3
%RSD	.11114	.10361	.60669
#1	12576.	77629.	3334.9
#2	12589.	77712.	3371.5
#3	12561.	77790.	3338.0

Approved: August 15, 2016

Kim K Buck

Sample Name: LLCCV Acquired: 8/12/2016 15:55:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00752**	**.15623**	**.00838**	**.08079**	**.00847**	**.00147**	**.42229**	**.00065**
Stddev	.00181	.00419	.00065	.00310	.00010	.00008	.04158	.00020
%RSD	24.070	2.6845	7.7528	3.8354	1.2227	5.4280	9.8452	30.197
#1	.00958	.15503	.00764	.08434	.00858	.00156	.46690	.00051
#2	.00675	.15278	.00886	.07937	.00838	.00140	.38462	.00087
#3	.00622	.16090	.00864	.07865	.00844	.00147	.41535	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00383**	**.00445**	**.00407**	**.08834**	**.79402**	**.07855**	**.40478**	**.00717**
Stddev	.00057	.00132	.00062	.00849	.04198	.00175	.07992	.00019
%RSD	14.994	29.658	15.256	9.6100	5.2876	2.2310	19.745	2.6775
#1	.00400	.00484	.00476	.08009	.80923	.07662	.47692	.00702
#2	.00431	.00552	.00392	.08789	.74655	.08004	.31886	.00712
#3	.00319	.00298	.00355	.09705	.82627	.07901	.41857	.00739
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00742**	**.39241**	**.01453**	**.74679**	**.00567**	**.07422**	**.01810**	**.76905**
Stddev	.00040	.00752	.00111	.06110	.00299	.00766	.00100	.06328
%RSD	5.4056	1.9159	7.6425	8.1821	52.673	10.319	5.5456	8.2280
#1	.00752	.39661	.01526	.78238	.00777	.07508	.01702	.80602
#2	.00777	.39689	.01508	.78175	.00699	.08142	.01900	.80515
#3	.00698	.38373	.01325	.67623	.00225	.06617	.01828	.69598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: LLCCV Acquired: 8/12/2016 15:55:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37648**	**.04111**	**.01975**	**.14129**	**.00750**	**.01692**	**17.602**
Stddev	.03981	.00029	.00182	.01343	.00024	.00163	.019
%RSD	10.574	.70441	9.1971	9.5072	3.2485	9.6287	.10566
#1	.40204	.04086	.01773	.14764	.00722	.01811	17.599
#2	.39680	.04143	.02124	.15036	.00763	.01758	17.585
#3	.33061	.04103	.02029	.12586	.00766	.01506	17.622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12550.**	**77903.**	**3344.6**
Stddev	17.	327.	10.5
%RSD	.13232	.41986	.31487
#1	12569.	77975.	3342.5
#2	12546.	78188.	3356.0
#3	12537.	77546.	3335.2

Approved: August 15, 2016

Kim K Buck

Sample Name: LLCCV Acquired: 8/12/2016 15:58:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01030	.19680	.01079	.10155	.00959	.00196	.47129	.00102
Stddev	.00203	.01102	.00179	.00111	.00098	.00009	.01159	.00008
%RSD	19.744	5.5978	16.580	1.0922	10.187	4.7135	2.4589	7.7174
#1	.01261	.18422	.00962	.10180	.00887	.00206	.48077	.00094
#2	.00881	.20145	.01285	.10250	.01071	.00196	.45837	.00101
#3	.00947	.20474	.00991	.10033	.00920	.00187	.47472	.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00484	.00485	.00461	.07593	1.0414	.09711	.50845	.01169
Stddev	.00048	.00022	.00136	.02989	.0724	.00312	.12905	.00096
%RSD	9.9732	4.5272	29.470	39.366	6.9522	3.2150	25.381	8.1738
#1	.00538	.00465	.00606	.04268	1.0210	.09420	.36198	.01164
#2	.00469	.00482	.00337	.08452	.98146	.09672	.55792	.01077
#3	.00445	.00509	.00439	.10058	1.1219	.10041	.60544	.01268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00941	.51149	.01928	.93594	.00795	.09460	.01821	.96300
Stddev	.00144	.01686	.00239	.08553	.00447	.01073	.00466	.07814
%RSD	15.294	3.2965	12.381	9.1381	56.168	11.339	25.603	8.1143
#1	.01042	.52939	.02084	.98508	.01272	.10244	.02122	1.0123
#2	.01006	.49591	.02046	.98555	.00726	.09898	.02059	1.0038
#3	.00776	.50917	.01653	.83718	.00387	.08237	.01284	.87290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: LLCCV Acquired: 8/12/2016 15:58:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47156**	**.05121**	**.02509**	**.17736**	**.00930**	**.02053**	**21.966**
Stddev	.05206	.00019	.00656	.01677	.00075	.00201	.276
%RSD	11.039	.37662	26.142	9.4574	8.0789	9.8092	1.2579
#1	.50365	.05113	.03265	.18761	.00909	.02185	22.277
#2	.49952	.05143	.02166	.18648	.00867	.02153	21.869
#3	.41149	.05107	.02095	.15801	.01013	.01821	21.751
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12560.**	**77881.**	**3344.8**
Stddev	14.	96.	15.3
%RSD	.11344	.12364	.45751
#1	12551.	77983.	3328.1
#2	12577.	77869.	3348.0
#3	12553.	77791.	3358.2

Approved: August 15, 2016

Kim K Buck

Sample Name: PBW 13 Acquired: 8/12/2016 16:02:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579818-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00127**	**.06238**	**.00007**	**.00231**	**.00089**	**.00006**	**.06678**
Stddev	.00091	.00887	.00306	.00031	.00099	.00008	.01536
%RSD	71.746	14.221	4648.9	13.616	111.12	144.51	22.995
#1	-.00051	.05464	-.00027	.00262	-.00025	.00001	.04906
#2	-.00102	.07206	-.00281	.00199	.00147	.00001	.07632
#3	-.00228	.06044	.00328	.00234	.00144	.00015	.07495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00007**	**.00188**	**-.00080**	**.03114**	**.09087**	**-.00536**
Stddev	.00023	.00031	.00017	.00061	.02431	.15008	.00333
%RSD	154.38	468.62	9.0027	76.311	78.069	165.15	62.094
#1	-.00039	-.00012	.00169	-.00010	.03406	-.04783	-.00871
#2	-.00010	.00042	.00198	-.00124	.00550	.07026	-.00205
#3	.00006	-.00011	.00198	-.00107	.05387	.25019	-.00532
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00871**	**.00458**	**.00013**	**.00582**	**.00016**	**-.00389**	**.00055**
Stddev	.06970	.00296	.00022	.03527	.00050	.00232	.00202
%RSD	799.90	64.642	168.80	605.47	320.30	59.707	366.88
#1	-.04657	.00127	.00021	.03925	.00073	-.00139	-.00167
#2	.08701	.00699	-.00012	.00926	-.00005	-.00431	.00104
#3	-.01429	.00549	.00030	-.03103	-.00021	-.00597	.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: PBW 13 Acquired: 8/12/2016 16:02:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579818-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**-.00521**	**.00832**	**-.00314**	**.00046**	**-.00850**	**-.00339**
Stddev	.00255	.00895	.00167	.00045	.00053	.00743	.00324
%RSD	669.95	171.68	20.046	14.480	114.64	87.328	95.585
#1	-.00156	-.00123	.00849	-.00262	.00104	-.00540	-.00143
#2	.00255	-.01546	.00990	-.00335	.00001	-.00314	-.00161
#3	-.00213	.00105	.00657	-.00344	.00033	-.01698	-.00712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00003**	**.00099**	F **-.09353**
Stddev	.00074	.00005	.06395
%RSD	2417.5	5.4541	68.376
#1	-.00023	.00100	-.14951
#2	-.00065	.00103	-.10725
#3	.00079	.00093	-.02383
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12102.**	**75737.**	**3239.6**
Stddev	33.	36.	36.7
%RSD	.27286	.04819	1.1325
#1	12098.	75772.	3205.2
#2	12137.	75739.	3235.5
#3	12071.	75699.	3278.2

Approved: August 15, 2016

Kim K Buck

Sample Name: LCSW 13 Acquired: 8/12/2016 16:07:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579818-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20163**	**5.0577**	**.20029**	**.99098**	**.53264**	**.02466**	**5.4268**	**.02518**
Stddev	.00222	.0081	.00440	.00166	.02268	.00011	.2223	.00040
%RSD	1.1008	.16109	2.1979	.16704	4.2574	.45069	4.0962	1.5710
#1	.19988	5.0546	.20160	.98938	.51946	.02454	5.2781	.02561
#2	.20089	5.0515	.20389	.99268	.55883	.02476	5.6824	.02511
#3	.20413	5.0669	.19538	.99088	.51964	.02467	5.3200	.02482
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10131**	**.25470**	**.25568**	**2.1611**	**25.520**	**.52684**	**5.3323**	**.26543**
Stddev	.00211	.00335	.00510	.0998	1.008	.01812	.2707	.00910
%RSD	2.0837	1.3160	1.9959	4.6186	3.9515	3.4388	5.0766	3.4282
#1	.10220	.25117	.25923	2.1046	24.927	.51451	5.1372	.25928
#2	.10283	.25783	.25798	2.2763	26.684	.54764	5.6414	.27588
#3	.09890	.25511	.24983	2.1023	24.948	.51837	5.2185	.26112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51355**	**25.440**	**.25580**	**4.8947**	**.25645**	**.60273**	**.19050**	**2.5822**
Stddev	.01079	1.071	.00383	.0876	.00363	.01733	.00285	.0334
%RSD	2.1016	4.2087	1.4965	1.7901	1.4139	2.8748	1.4973	1.2950
#1	.52089	24.834	.25823	4.9462	.25805	.60968	.19208	2.6041
#2	.51861	26.676	.25778	4.9443	.25899	.61549	.19221	2.5988
#3	.50116	24.809	.25139	4.7935	.25229	.58300	.18721	2.5437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: LCSW 13 Acquired: 8/12/2016 16:07:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579818-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50494	.54003	.51488	.25407	.50751	.50423	.38818
Stddev	.01400	.02216	.02672	.00266	.00285	.00991	.17427
%RSD	2.7719	4.1035	5.1886	1.0472	.56063	1.9646	44.893
#1	.51261	.52717	.50216	.25714	.50508	.51154	.58735
#2	.51342	.56562	.54557	.25263	.50680	.50820	.31349
#3	.48878	.52730	.49690	.25243	.51064	.49296	.26371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12121.	75126.	3243.8
Stddev	12.	115.	90.0
%RSD	.09633	.15334	2.7731
#1	12111.	75144.	3287.9
#2	12118.	75003.	3140.3
#3	12134.	75232.	3303.3

Approved: August 15, 2016

Kim K Buck

Sample Name: FBLK Acquired: 8/12/2016 16:10:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579642-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00183**	**.00668**	**.00082**	**.00270**	**.00008**	**.00006**	**.01984**	**-.00006**
Stddev	.00142	.00228	.00309	.00119	.00077	.00003	.03800	.00026
%RSD	77.361	34.104	376.08	44.178	923.57	48.428	191.50	406.90
#1	-.00269	.00855	.00417	.00405	-.00076	.00009	.03495	-.00020
#2	-.00262	.00736	-.00191	.00182	.00028	.00006	.04798	.00024
#3	-.00020	.00414	.00020	.00221	.00073	.00003	-.02339	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.00129**	**-.00031**	**-.00703**	**.09656**	**-.00157**	**.03396**	**-.00069**
Stddev	.00028	.00107	.00178	.00530	.01673	.00405	.04995	.00302
%RSD	75.429	83.040	576.08	75.459	17.327	257.41	147.08	441.22
#1	.00021	.00059	.00150	-.00125	.11372	.00309	.02968	-.00048
#2	.00069	.00252	-.00206	-.01167	.08030	-.00420	-.01371	.00223
#3	.00020	.00076	-.00037	-.00816	.09565	-.00360	.08591	-.00381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**133.66**	**.00049**	**.00049**	**-.00269**	**-.00040**	**-.00305**	**.00022**
Stddev	.00022	.35	.00059	.00101	.00391	.00159	.00469	.00045
%RSD	101.82	.26500	120.66	207.05	145.42	399.26	153.65	207.02
#1	-.00002	133.32	.00111	.00012	-.00719	.00064	.00057	.00059
#2	.00042	133.64	.00044	.00164	-.00085	.00039	-.00138	.00035
#3	.00026	134.02	-.00007	-.00029	-.00004	-.00223	-.00836	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Approved: August 15, 2016
Kim K Buck

Sample Name: FBLK Acquired: 8/12/2016 16:10:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579642-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00248**	**.00012**	**-.00273**	**-.00283**	**-.00072**	**.00364**	**.06452**
Stddev	.00038	.00005	.00735	.00129	.00049	.00052	.19316
%RSD	15.523	42.486	269.02	45.617	68.301	14.175	299.38
#1	-.00205	.00013	-.00804	-.00425	-.00046	.00398	.06334
#2	-.00280	.00017	-.00581	-.00173	-.00130	.00390	.25827
#3	-.00259	.00007	.00565	-.00251	-.00042	.00305	-.12804
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11961.**	**74114.**	**3260.4**
Stddev	13.	84.	6.1
%RSD	.10635	.11323	.18776
#1	11973.	74048.	3260.2
#2	11963.	74209.	3266.7
#3	11948.	74086.	3254.5

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608040401 Acquired: 8/12/2016 16:14:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00336	.12821	.00262	.04071	.05208	.00011	22.248	.00091
Stddev	.00107	.00275	.00112	.00235	.00086	.00002	.129	.00021
%RSD	31.902	2.1461	42.690	5.7817	1.6544	22.999	.57984	23.172
#1	-.00238	.13015	.00348	.04145	.05307	.00011	22.099	.00114
#2	-.00450	.12506	.00302	.04261	.05155	.00013	22.320	.00074
#3	-.00320	.12942	.00135	.03808	.05160	.00008	22.326	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	.00833	.00213	.20640	.40249	-.00292	.37833	.07693
Stddev	.00035	.00074	.00030	.01184	.09245	.00253	.08577	.00131
%RSD	28.334	8.8233	14.090	5.7355	22.970	86.565	22.669	1.6974
#1	.00124	.00813	.00236	.19955	.30817	-.00240	.32244	.07660
#2	.00090	.00772	.00225	.19958	.49296	-.00070	.33548	.07583
#3	.00161	.00915	.00179	.22007	.40633	-.00567	.47708	.07837
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	128.41	.00119	.00366	-.00197	.00210	-.00274	1.4886
Stddev	.00025	.65	.00074	.00235	.00314	.00220	.00356	.1121
%RSD	863.52	.50822	61.976	64.174	159.34	104.74	129.95	7.5307
#1	.00024	127.67	.00201	.00634	-.00190	-.00012	-.00519	1.5519
#2	-.00026	128.69	.00059	.00191	.00113	.00428	-.00437	1.5547
#3	-.00006	128.88	.00096	.00274	-.00515	.00213	.00134	1.3592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608040401 Acquired: 8/12/2016 16:14:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00221**	**.04197**	**-.00509**	**-.00559**	**-.00082**	**.08571**	**.03404**
Stddev	.00056	.00046	.00251	.00274	.00084	.00814	.13210
%RSD	25.338	1.0910	49.309	48.919	101.54	9.4987	388.03
#1	-.00267	.04144	-.00261	-.00875	-.00138	.09056	.09733
#2	-.00236	.04221	-.00503	-.00399	.00014	.09026	.12260
#3	-.00159	.04225	-.00762	-.00403	-.00123	.07631	-.11779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11964.**	**73745.**	**3275.5**
Stddev	13.	196.	7.1
%RSD	.10993	.26578	.21672
#1	11979.	73946.	3282.4
#2	11960.	73555.	3275.9
#3	11953.	73734.	3268.2

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608045501 Acquired: 8/12/2016 16:18:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00078	.02049	.00088	.05979	.05369	.00002	42.425	.00003
Stddev	.00106	.00646	.00091	.00216	.00107	.00008	.348	.00015
%RSD	136.02	31.507	102.90	3.6101	1.9885	380.09	.82084	436.58
#1	-.00001	.01680	.00054	.05740	.05325	-.00002	42.539	-.00010
#2	-.00034	.01673	.00191	.06037	.05291	-.00004	42.034	.00000
#3	-.00198	.02795	.00020	.06160	.05491	.00011	42.702	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00138	.09920	.05812	.85166	.00480	9.5155	.01795
Stddev	.00018	.00041	.00791	.00434	.11291	.00172	.0379	.00034
%RSD	171.34	29.500	7.9726	7.4749	13.258	35.889	.39780	1.8775
#1	.00013	.00143	.10490	.06215	.74737	.00292	9.4837	.01793
#2	-.00009	.00094	.10253	.05352	.83603	.00519	9.5055	.01829
#3	.00028	.00175	.09017	.05869	.97157	.00629	9.5574	.01762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	69.258	.00113	-.01001	.00173	.00000	-.00377	4.6929
Stddev	.00004	.486	.00016	.00139	.00160	.00091	.00512	.2778
%RSD	4.9152	.70173	14.444	13.876	92.897	88611.	135.81	5.9192
#1	.00088	69.461	.00094	-.01159	.00325	-.00033	-.00968	4.8584
#2	.00092	68.703	.00123	-.00943	.00189	.00103	-.00072	4.8481
#3	.00084	69.610	.00122	-.00900	.00005	-.00069	-.00090	4.3722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608045501 Acquired: 8/12/2016 16:18:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00166**	**.32920**	**-.00361**	**-.00420**	**-.00047**	**.08593**	**.17172**
Stddev	.00064	.00228	.00664	.00206	.00032	.00654	.07215
%RSD	38.643	.69411	184.22	49.130	67.725	7.6050	42.015
#1	-.00225	.32991	-.00747	-.00613	-.00034	.09001	.12482
#2	-.00174	.32664	-.00742	-.00203	-.00024	.08940	.25479
#3	-.00098	.33104	.00407	-.00443	-.00084	.07840	.13554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11962.**	**73944.**	**3250.6**
Stddev	13.	86.	33.6
%RSD	.10635	.11566	1.0339
#1	11961.	74038.	3224.1
#2	11974.	73923.	3288.4
#3	11949.	73871.	3239.4

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608045502 Acquired: 8/12/2016 16:22:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**.05285**	**.00180**	**.02094**	**.05695**	**.00000**	**61.610**
Stddev	.00020	.00686	.00088	.00064	.00109	.00009	.033
%RSD	79.715	12.987	48.492	3.0659	1.9091	2711.7	.05379
#1	-.00035	.04595	.00089	.02160	.05644	-.00009	61.599
#2	-.00037	.05292	.00263	.02089	.05820	.00010	61.583
#3	-.00002	.05967	.00189	.02032	.05621	.00000	61.647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.00010**	**.00171**	**.00059**	**.01344**	**1.2638**	**.00110**
Stddev	.00009	.00030	.00078	.00036	.02647	.1597	.00109
%RSD	276.66	309.27	45.771	60.189	196.89	12.639	98.930
#1	.00013	-.00035	.00256	.00044	-.01645	1.1306	.00232
#2	-.00004	-.00018	.00104	.00100	.03390	1.4409	.00021
#3	.00000	.00024	.00151	.00033	.02288	1.2199	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.1469**	**.00195**	**.00008**	**4.5144**	**.00018**	**.04046**	**-.00228**
Stddev	.1795	.00110	.00023	.0362	.00060	.00728	.00306
%RSD	2.9202	56.381	289.43	.80222	326.97	17.980	134.09
#1	6.3336	.00276	-.00005	4.4943	.00053	.04421	-.00466
#2	5.9756	.00239	.00035	4.5562	.00053	.04510	.00117
#3	6.1316	.00070	-.00006	4.4926	-.00051	.03208	-.00334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608045502 Acquired: 8/12/2016 16:22:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00203**	**.00009**	**4.1942**	**-.00319**	**.15617**	**-.00844**	**-.00832**
Stddev	.00263	.00181	.3234	.00053	.00047	.00305	.00247
%RSD	129.30	1977.9	7.7109	16.768	.29837	36.108	29.683
#1	-.00299	-.00047	4.4010	-.00269	.15563	-.00556	-.01107
#2	.00094	-.00136	4.3600	-.00375	.15639	-.00813	-.00629
#3	-.00405	.00211	3.8215	-.00313	.15647	-.01164	-.00760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00019**	**.00180**	F **-.04706**
Stddev	.00097	.00018	.10955
%RSD	503.86	10.013	232.79
#1	-.00129	.00189	-.15706
#2	.00016	.00191	.06203
#3	.00055	.00159	-.04615
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12066.**	**75101.**	**3253.4**
Stddev	21.	30.	11.3
%RSD	.17166	.04061	.34708
#1	12043.	75115.	3244.1
#2	12082.	75066.	3250.2
#3	12073.	75122.	3266.0

Approved: August 15, 2016

Sample Name: L1608045801 Acquired: 8/12/2016 16:26:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00061	.04760	.00038	.01905	.31979	.00004	50.873
Stddev	.00171	.00694	.00252	.00113	.00098	.00002	.094
%RSD	281.13	14.586	662.72	5.9237	.30685	41.960	.18571
#1	.00088	.04748	.00322	.02033	.31941	.00002	50.773
#2	-.00023	.05461	-.00159	.01862	.31906	.00005	50.961
#3	-.00248	.04072	-.00048	.01820	.32091	.00003	50.885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00023	.00133	.00118	.05531	1.1255	.00417
Stddev	.00014	.00030	.00081	.00062	.00558	.0478	.00156
%RSD	314.96	130.23	61.066	52.878	10.090	4.2425	37.512
#1	.00015	-.00010	.00105	.00137	.06165	1.1750	.00423
#2	.00008	.00050	.00069	.00048	.05314	1.1218	.00571
#3	-.00011	.00029	.00224	.00169	.05114	1.0797	.00258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.9701	.02408	.00075	38.874	-.00003	.00443	-.00125
Stddev	.0280	.00283	.00018	.109	.00040	.00114	.00367
%RSD	.56343	11.765	24.095	.28034	1302.8	25.660	294.00
#1	4.9378	.02198	.00054	38.755	-.00045	.00527	.00097
#2	4.9865	.02731	.00083	38.969	.00002	.00488	.00077
#3	4.9861	.02297	.00087	38.899	.00034	.00314	-.00549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608045801 Acquired: 8/12/2016 16:26:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00173	-.00418	4.3812	-.00202	.28236	-.00701	-.00601
Stddev	.00333	.00229	.2741	.00043	.00180	.00489	.00136
%RSD	192.93	54.796	6.2559	21.141	.63716	69.808	22.665
#1	-.00557	-.00672	4.5360	-.00155	.28042	-.01213	-.00697
#2	.00020	-.00357	4.5429	-.00239	.28269	-.00652	-.00445
#3	.00019	-.00226	4.0647	-.00212	.28397	-.00238	-.00661
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00028	.00245	F -.04632
Stddev	.00023	.00019	.05559
%RSD	81.011	7.8136	119.99
#1	.00051	.00260	-.09146
#2	.00005	.00251	-.06328
#3	.00028	.00223	.01576
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12027.	74751.	3265.3
Stddev	22.	171.	16.8
%RSD	.18183	.22882	.51338
#1	12002.	74555.	3268.6
#2	12044.	74869.	3247.1
#3	12035.	74830.	3280.1

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608045802 Acquired: 8/12/2016 16:30:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00096**	**.01549**	**.00032**	**.05465**	**1.3753**	**-.00006**	**55.446**
Stddev	.00072	.01548	.00200	.00078	.0123	.00003	.385
%RSD	74.491	99.945	629.48	1.4343	.89398	55.741	.69407
#1	-.00179	-.00039	-.00026	.05531	1.3878	-.00008	55.856
#2	-.00054	.03055	.00254	.05378	1.3632	-.00007	55.093
#3	-.00056	.01631	-.00133	.05485	1.3747	-.00002	55.387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00071**	**.00136**	**.00489**	**-.00198**	**2.2902**	**.02135**
Stddev	.00012	.00039	.00108	.00071	.01748	.0499	.00136
%RSD	72.343	54.307	79.766	14.610	881.33	2.1780	6.3626
#1	-.00011	.00107	.00173	.00465	.01820	2.2949	.02291
#2	-.00008	.00077	.00221	.00569	-.01209	2.2382	.02062
#3	-.00029	.00030	.00014	.00432	-.01206	2.3376	.02051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.4013**	**.04778**	**.00266**	F **485.13**	**.00077**	**.00815**	**-.00121**
Stddev	.1046	.00115	.00013	7.22	.00100	.00186	.00213
%RSD	1.2450	2.4033	4.8773	1.4885	128.69	22.884	175.37
#1	8.2805	.04864	.00265	492.39	.00022	.00994	-.00300
#2	8.4635	.04647	.00280	477.95	.00192	.00827	-.00178
#3	8.4599	.04822	.00254	485.04	.00018	.00622	.00114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608045802 Acquired: 8/12/2016 16:30:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00019	3.1883	-.00226	1.4000	-.00734	-.00455
Stddev	.00230	.00076	.4560	.00113	.0090	.00525	.00221
%RSD	245.90	398.74	14.301	50.173	.64309	71.465	48.667
#1	-.00050	-.00053	3.4695	-.00329	1.4079	-.01336	-.00543
#2	.00359	.00098	3.4332	-.00104	1.3902	-.00375	-.00618
#3	-.00028	.00012	2.6622	-.00245	1.4020	-.00492	-.00203
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00049	.01814	F -.07896
Stddev	.00071	.00306	.17451
%RSD	144.95	16.869	221.01
#1	-.00057	.02015	.04934
#2	.00026	.01965	-.00855
#3	-.00116	.01462	-.27768
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11658.	71214.	3227.1
Stddev	94.	239.	29.7
%RSD	.81004	.33492	.92161
#1	11601.	71259.	3199.2
#2	11607.	71426.	3258.4
#3	11767.	70956.	3223.6

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608045802PS Acquired: 8/12/2016 16:34:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG580121-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20227	5.1696	.20402	1.0655	1.7772	.02481	56.069
Stddev	.00325	.0074	.00989	.0043	.0058	.00008	.191
%RSD	1.6091	.14252	4.8465	.40775	.32432	.33746	.33987
#1	.19995	5.1779	.20914	1.0613	1.7825	.02473	56.025
#2	.20086	5.1670	.21030	1.0653	1.7711	.02480	55.905
#3	.20599	5.1639	.19263	1.0700	1.7781	.02489	56.278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02481	.09879	.25091	.24991	2.0652	27.690	.54509
Stddev	.00091	.00414	.00166	.01166	.0225	.154	.00371
%RSD	3.6624	4.1908	.66069	4.6671	1.0902	.55465	.68031
#1	.02532	.10165	.25248	.25656	2.0591	27.740	.54372
#2	.02536	.10067	.25108	.25673	2.0463	27.518	.54227
#3	.02376	.09404	.24918	.23644	2.0901	27.813	.54929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.828	.29986	.50905	F 469.65	.24482	5.0703	.24617
Stddev	.158	.00305	.02361	5.29	.01020	.1865	.00917
%RSD	1.2354	1.0173	4.6384	1.1271	4.1656	3.6781	3.7233
#1	12.806	.29882	.52365	471.64	.25116	5.1929	.25228
#2	12.682	.30330	.52169	473.67	.25024	5.1624	.25061
#3	12.996	.29747	.48181	463.65	.23306	4.8557	.23563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608045802PS Acquired: 8/12/2016 16:34:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG580121-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.59712	.19380	5.7136	.49161	1.8004	.49689	.24038
Stddev	.02334	.00668	.1756	.02480	.0029	.00705	.00758
%RSD	3.9090	3.4465	3.0741	5.0438	.16211	1.4185	3.1514
#1	.61488	.19729	5.7911	.50737	1.8005	.48967	.24293
#2	.60580	.19802	5.8372	.50442	1.7974	.49727	.24635
#3	.57068	.18610	5.5126	.46303	1.8032	.50375	.23186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50911	.51234	.25077
Stddev	.00040	.02259	.12872
%RSD	.07906	4.4086	51.329
#1	.50937	.52631	.23053
#2	.50865	.52443	.38842
#3	.50932	.48628	.13338
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11569.	71013.	3197.5
Stddev	39.	82.	3.2
%RSD	.33375	.11563	.10020
#1	11525.	70997.	3193.8
#2	11595.	70941.	3199.8
#3	11587.	71102.	3198.8

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608045802SDL Acquired: 8/12/2016 16:38:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG580121-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00086**	**-.00192**	**.00030**	**.01477**	**.27339**	**.00008**	**11.081**
Stddev	.00129	.00155	.00215	.00063	.00093	.00013	.068
%RSD	149.18	80.962	708.12	4.2881	.34011	153.77	.61698
#1	-.00101	-.00310	.00278	.01471	.27246	-.00002	11.069
#2	.00049	-.00250	-.00106	.01543	.27338	.00004	11.019
#3	-.00207	-.00016	-.00080	.01416	.27432	.00023	11.154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.00026**	**.00154**	**.00049**	**.00992**	**.42854**	**.00432**
Stddev	.00018	.00006	.00094	.00115	.01765	.03309	.00167
%RSD	767.23	23.027	61.227	234.72	177.91	7.7215	38.711
#1	-.00005	.00031	.00251	.00173	.01198	.40377	.00418
#2	-.00011	.00028	.00148	.00029	-.00867	.41573	.00272
#3	.00023	.00019	.00063	-.00055	.02645	.46611	.00605
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.7219**	**.00951**	**.00043**	**99.612**	**.00029**	**.00369**	**.00070**
Stddev	.0797	.00032	.00021	.409	.00086	.00492	.00143
%RSD	4.6283	3.3500	48.996	.41011	295.56	133.29	205.61
#1	1.8092	.00987	.00046	99.515	-.00068	.00308	.00212
#2	1.6530	.00927	.00063	99.260	.00096	-.00090	-.00075
#3	1.7036	.00939	.00021	100.06	.00059	.00888	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608045802SDL Acquired: 8/12/2016 16:38:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG580121-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00326**	**-.00121**	**.65003**	**-.00274**	**.28459**	**-.00419**	**-.00221**
Stddev	.00306	.00312	.04740	.00042	.00212	.00301	.00205
%RSD	93.768	257.40	7.2915	15.423	.74587	71.810	92.479
#1	-.00502	-.00424	.67835	-.00228	.28411	-.00766	-.00426
#2	.00027	.00199	.67644	-.00310	.28275	-.00238	-.00016
#3	-.00504	-.00138	.59532	-.00283	.28692	-.00253	-.00222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00043**	**.00415**	F **-.15280**
Stddev	.00004	.00036	.13936
%RSD	9.2046	8.6568	91.204
#1	-.00038	.00437	-.12626
#2	-.00046	.00435	-.30351
#3	-.00045	.00374	-.02862
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12670.**	**77551.**	**3403.1**
Stddev	50.	183.	19.9
%RSD	.39152	.23624	.58494
#1	12636.	77761.	3421.5
#2	12647.	77468.	3405.7
#3	12727.	77424.	3382.0

Approved: August 15, 2016

Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 16:41:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41395	10.163	.40794	.50765	1.0259	.05011	10.219
Stddev	.00081	.029	.00470	.00007	.0036	.00013	.018
%RSD	.19631	.28789	1.1519	.01290	.34775	.26486	.17598
#1	.41368	10.135	.40760	.50770	1.0234	.05026	10.240
#2	.41486	10.161	.41280	.50758	1.0299	.05000	10.212
#3	.41330	10.193	.40342	.50767	1.0243	.05008	10.206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05121	.20343	.50368	.51628	4.0972	49.813	1.0254
Stddev	.00070	.00382	.00095	.00817	.0728	.079	.0034
%RSD	1.3683	1.8786	.18802	1.5822	1.7773	.15863	.33434
#1	.05172	.20495	.50302	.52056	4.0289	49.748	1.0234
#2	.05149	.20626	.50477	.52141	4.1738	49.901	1.0235
#3	.05041	.19909	.50326	.50686	4.0889	49.791	1.0294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.247	.51324	1.0272	49.514	.51537	10.276	.51933
Stddev	.035	.00162	.0186	.102	.00828	.114	.00359
%RSD	.34106	.31549	1.8061	.20666	1.6072	1.1086	.69112
#1	10.241	.51183	1.0354	49.440	.51871	10.322	.51701
#2	10.284	.51501	1.0403	49.630	.52146	10.359	.52347
#3	10.215	.51287	1.0060	49.470	.50594	10.146	.51752
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 16:41:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2190**	**.41076**	**5.1882**	**1.0266**	**1.0277**	**1.0001**	**.52229**
Stddev	.0161	.00471	.0511	.0218	.0050	.0060	.00220
%RSD	1.3175	1.1466	.98517	2.1209	.49005	.60118	.42134
#1	1.2293	.41278	5.2107	1.0379	1.0236	.99420	.52085
#2	1.2272	.41412	5.2242	1.0404	1.0333	1.0062	.52120
#3	1.2005	.40538	5.1297	1.0015	1.0261	.99994	.52482
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0077**	**1.0276**	F **436.47**
Stddev	.0017	.0166	.96
%RSD	.17123	1.6173	.22051
#1	1.0061	1.0345	436.76
#2	1.0095	1.0397	435.40
#3	1.0075	1.0087	437.26
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12053.**	**74790.**	**3308.6**
Stddev	10.	95.	1.5
%RSD	.08223	.12674	.04682
#1	12054.	74882.	3309.8
#2	12062.	74693.	3309.3
#3	12042.	74794.	3306.9

Approved: August 15, 2016

Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 16:45:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00160**	**-.00687**	**.00106**	**.00307**	**.00032**	**.00008**	**-.01305**	**-.00010**
Stddev	.00084	.00718	.00220	.00096	.00115	.00009	.02848	.00022
%RSD	52.762	104.49	206.68	31.189	356.66	119.01	218.33	219.45
#1	-.00236	-.01435	-.00044	.00376	-.00043	.00015	-.00577	.00014
#2	-.00069	-.00003	.00358	.00198	.00165	-.00003	-.04446	-.00015
#3	-.00175	-.00623	.00005	.00348	-.00025	.00011	.01109	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**-.00006**	**-.00019**	**-.01246**	**.06321**	**-.00374**	**-.03804**	**-.00165**
Stddev	.00012	.00041	.00101	.05103	.02873	.00293	.06017	.00083
%RSD	191.18	642.74	538.71	409.56	45.449	78.205	158.19	49.910
#1	.00019	-.00047	-.00134	-.06007	.09498	-.00711	-.00217	-.00224
#2	.00005	-.00007	.00020	.04141	.03905	-.00184	-.10750	-.00201
#3	-.00005	.00035	.00057	-.01871	.05560	-.00228	-.00444	-.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.01288**	**-.00088**	**-.00498**	**-.00167**	**.00022**	**.00008**	**-.00595**
Stddev	.00026	.00535	.00129	.00496	.00265	.00304	.00414	.00081
%RSD	202.80	41.573	146.38	99.704	158.12	1362.3	5113.3	13.579
#1	.00040	.01686	.00045	-.00635	-.00323	.00174	-.00443	-.00656
#2	.00011	.01499	-.00096	.00053	-.00318	.00220	.00371	-.00625
#3	-.00012	.00679	-.00214	-.00911	.00138	-.00327	.00096	-.00503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 16:45:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00200**	**.00019**	**-.00191**	**-.00191**	**-.00064**	**-.00006**	**.03813**
Stddev	.00035	.00017	.00730	.00134	.00062	.00010	.08359
%RSD	17.492	91.280	382.13	69.992	97.069	178.06	219.22
#1	-.00173	.00013	.00289	-.00067	-.00058	-.00018	.09311
#2	-.00188	.00038	.00169	-.00333	-.00128	-.00001	-.05807
#3	-.00240	.00005	-.01031	-.00173	-.00005	.00001	.07936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12193.**	**75531.**	**3284.8**
Stddev	22.	80.	14.0
%RSD	.18096	.10536	.42614
#1	12188.	75459.	3291.9
#2	12173.	75616.	3293.9
#3	12217.	75519.	3268.7

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608013303 Acquired: 8/12/2016 16:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**45.613**	**.00574**	**.20372**	**.37282**	**.00007**	**52.801**	**.01892**
Stddev	.00131	.080	.00313	.00297	.00067	.00009	.181	.00088
%RSD	131.41	.17479	54.450	1.4581	.17979	135.53	.34311	4.6478
#1	-.00222	45.554	.00699	.20376	.37352	.00010	52.823	.01956
#2	-.00113	45.581	.00805	.20073	.37219	-.00004	52.971	.01928
#3	.00038	45.703	.00218	.20667	.37276	.00014	52.610	.01792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.9267**	**.13182**	**.33249**	**6.4748**	**5.3828**	**1.5920**	**11.579**	**.19247**
Stddev	.1788	.00052	.01027	.0527	.1035	.0058	.120	.00593
%RSD	3.0168	.39437	3.0875	.81373	1.9222	.36292	1.0404	3.0784
#1	6.0299	.13127	.33835	6.5356	5.5023	1.5961	11.633	.19555
#2	6.0300	.13230	.33848	6.4457	5.3235	1.5944	11.662	.19622
#3	5.7203	.13189	.32063	6.4431	5.3227	1.5854	11.441	.18564
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01371**	**186.27**	**16.143**	**54.024**	**.02160**	**.00100**	**-.00061**	**1.9764**
Stddev	.00069	.57	.487	1.889	.00067	.00235	.00380	.0519
%RSD	5.0346	.30402	3.0182	3.4967	3.1058	235.93	621.49	2.6234
#1	.01414	186.28	16.418	55.114	.02234	.00306	.00361	2.0053
#2	.01407	186.83	16.430	55.115	.02103	-.00156	-.00169	2.0073
#3	.01291	185.70	15.580	51.843	.02143	.00149	-.00375	1.9165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608013303 Acquired: 8/12/2016 16:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.45396	.00133	.00248	.00309	1.0082	.10735
Stddev	.00033	.00158	.00386	.00469	.00043	.0293	.08357
%RSD	547.15	.34888	290.58	189.21	13.766	2.9016	77.845
#1	.00026	.45280	.00377	.00566	.00288	1.0249	.20086
#2	-.00040	.45577	.00333	.00470	.00281	1.0252	.03995
#3	-.00003	.45333	-.00312	-.00291	.00358	.97439	.08126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12264.	75517.	3366.8
Stddev	18.	248.	9.3
%RSD	.15055	.32854	.27714
#1	12285.	75786.	3368.3
#2	12249.	75468.	3375.3
#3	12258.	75297.	3356.8

Approved: August 15, 2016

Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 16:52:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41860	10.310	.40938	.51577	1.0502	.05060	10.436
Stddev	.00198	.030	.00840	.00264	.0028	.00016	.037
%RSD	.47181	.28891	2.0521	.51241	.26943	.31579	.35533
#1	.41840	10.278	.41445	.51557	1.0471	.05043	10.439
#2	.41673	10.337	.41400	.51851	1.0527	.05075	10.471
#3	.42067	10.315	.39968	.51324	1.0507	.05062	10.397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05134	.20488	.51196	.51919	4.2148	50.475	1.0468
Stddev	.00097	.00479	.00293	.01320	.0279	.127	.0044
%RSD	1.8913	2.3385	.57210	2.5421	.66135	.25130	.41709
#1	.05156	.20760	.50859	.52676	4.1878	50.358	1.0420
#2	.05218	.20769	.51332	.52686	4.2435	50.610	1.0505
#3	.05028	.19935	.51395	.50395	4.2131	50.457	1.0480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.507	.52296	1.0232	50.490	.51810	10.335	.52114
Stddev	.073	.00859	.0170	.166	.01376	.188	.00879
%RSD	.69887	1.6417	1.6664	.32857	2.6565	1.8195	1.6865
#1	10.566	.51975	1.0320	50.313	.52523	10.427	.52524
#2	10.529	.53268	1.0340	50.642	.52684	10.459	.52713
#3	10.425	.51644	1.0035	50.517	.50224	10.119	.51105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 16:52:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2353**	**.41115**	**5.2223**	**1.0324**	**1.0522**	**1.0140**	**.52396**
Stddev	.0247	.00785	.0793	.0294	.0034	.0073	.00254
%RSD	2.0029	1.9083	1.5187	2.8434	.31920	.71588	.48459
#1	1.2525	.41434	5.2541	1.0503	1.0485	1.0218	.52654
#2	1.2465	.41691	5.2809	1.0484	1.0550	1.0127	.52146
#3	1.2070	.40222	5.1321	.99856	1.0532	1.0074	.52387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0202**	**1.0324**	F **447.01**
Stddev	.0050	.0209	2.54
%RSD	.48717	2.0269	.56716
#1	1.0148	1.0441	445.95
#2	1.0246	1.0449	449.90
#3	1.0212	1.0082	445.18
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11980.**	**73897.**	**3235.3**
Stddev	9.	267.	12.7
%RSD	.07799	.36167	.39398
#1	11985.	74132.	3246.0
#2	11969.	73954.	3221.2
#3	11986.	73606.	3238.6

Approved: August 15, 2016

Sample Name: CCB Acquired: 8/12/2016 16:56:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00149**	**.00261**	**.00101**	**.00293**	**-.00006**	**.00013**	**-.00830**
Stddev	.00026	.00546	.00201	.00123	.00110	.00004	.02570
%RSD	17.554	208.93	200.23	42.089	1878.6	29.519	309.86
#1	-.00162	-.00068	.00329	.00435	.00024	.00017	-.03791
#2	-.00119	-.00040	.00026	.00224	.00086	.00011	.00484
#3	-.00166	.00891	-.00052	.00220	-.00128	.00010	.00819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00011**	**.00039**	**-.00074**	**.01547**	**.13317**	**-.00113**
Stddev	.00000	.00026	.00076	.00119	.00462	.09454	.00223
%RSD	9.2561	237.73	195.42	161.43	29.890	70.992	197.27
#1	-.00005	-.00017	.00078	.00022	.01589	.21594	.00123
#2	-.00005	.00016	.00088	-.00037	.01064	.03014	-.00320
#3	-.00006	.00033	-.00049	-.00207	.01986	.15343	-.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01580**	**.00238**	**.00008**	**.01520**	**.00020**	**.00003**	**.00119**
Stddev	.06254	.00211	.00015	.00974	.00048	.00318	.00276
%RSD	395.80	88.464	173.23	64.097	241.30	9510.1	232.70
#1	.05510	.00002	.00024	.02162	-.00010	-.00363	.00357
#2	-.05632	.00406	-.00005	.00399	.00076	.00198	-.00184
#3	.04862	.00307	.00007	.01999	-.00005	.00175	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 16:56:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00505	-.00308	-.00649	-.00252	.00033	-.00301	-.00458
Stddev	.00136	.00378	.00180	.00061	.00015	.00456	.00124
%RSD	26.854	122.95	27.748	24.383	46.274	151.34	27.083
#1	.00529	-.00532	-.00848	-.00192	.00048	-.00776	-.00549
#2	.00628	.00129	-.00602	-.00249	.00017	.00133	-.00509
#3	.00359	-.00521	-.00498	-.00315	.00034	-.00261	-.00317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00024	-.00006	F .12505
Stddev	.00095	.00006	.17046
%RSD	398.82	105.22	136.31
#1	-.00113	.00001	.24209
#2	-.00033	-.00008	-.07052
#3	.00075	-.00011	.20357
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12119.	75090.	3251.7
Stddev	3.	235.	18.6
%RSD	.02756	.31255	.57163
#1	12121.	74953.	3270.2
#2	12115.	74957.	3233.1
#3	12121.	75361.	3251.9

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608046201 Acquired: 8/12/2016 17:00:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00089	.00695	-.00282	.00162	-.00006	.00001	.04298	.00007
Stddev	.00106	.00548	.00107	.00077	.00129	.00006	.03323	.00009
%RSD	119.05	78.860	37.809	47.615	2249.3	555.20	77.317	123.23
#1	-.00173	.00341	-.00397	.00247	-.00031	.00008	.08037	-.00001
#2	-.00124	.00418	-.00187	.00145	-.00120	-.00001	.03173	.00007
#3	.00030	.01326	-.00261	.00095	.00134	-.00004	.01683	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00081	-.00037	.01385	-.02379	-.00470	.00478	.00078
Stddev	.00014	.00109	.00079	.00511	.02125	.00476	.06618	.00287
%RSD	107.36	133.30	211.46	36.925	89.333	101.20	1385.0	367.77
#1	-.00002	.00130	-.00060	.00806	-.04556	-.01011	-.02111	-.00215
#2	.00026	.00157	.00050	.01573	-.02271	-.00286	-.04454	.00358
#3	.00015	-.00043	-.00102	.01776	-.00310	-.00114	.07998	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.03591	-.00048	-.00330	.00001	.00116	-.00457	-.00265
Stddev	.00017	.02261	.00060	.00252	.00183	.00201	.00103	.00099
%RSD	68.383	62.962	126.32	76.298	28171.	173.50	22.541	37.221
#1	.00018	.06199	.00021	-.00161	-.00091	-.00108	-.00543	-.00289
#2	.00013	.02208	-.00073	-.00209	-.00118	.00282	-.00484	-.00349
#3	.00045	.02365	-.00091	-.00619	.00211	.00174	-.00343	-.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608046201 Acquired: 8/12/2016 17:00:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00213**	**.00002**	**-.00059**	**-.00513**	**-.00079**	**.00130**	**.10341**
Stddev	.00073	.00044	.00211	.00214	.00018	.00028	.09039
%RSD	34.258	1990.6	354.91	41.684	23.048	21.634	87.403
#1	-.00140	-.00047	.00017	-.00537	-.00079	.00140	.10371
#2	-.00213	.00040	.00102	-.00714	-.00097	.00152	.19366
#3	-.00286	.00013	-.00298	-.00288	-.00060	.00098	.01288
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12148.**	**75800.**	**3285.0**
Stddev	14.	215.	2.9
%RSD	.11826	.28298	.08786
#1	12131.	75828.	3282.2
#2	12153.	75573.	3288.0
#3	12158.	75999.	3284.9

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608047002 Acquired: 8/12/2016 17:04:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00111	.00235	.00081	.01046	-.00063	.00007	2.3959	.00006
Stddev	.00294	.00357	.00250	.00102	.00059	.00009	.0093	.00040
%RSD	266.23	151.87	310.62	9.7603	93.235	127.32	.38787	719.04
#1	-.00443	.00627	-.00162	.01163	-.00036	.00000	2.3863	.00045
#2	.00118	.00150	.00067	.00981	-.00023	.00017	2.4049	-.00035
#3	-.00007	-.00072	.00338	.00992	-.00131	.00004	2.3966	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00049	.00230	.00117	14.918	-.00308	.46419	.00547
Stddev	.00024	.00087	.00134	.04052	.127	.00387	.02107	.00236
%RSD	36.575	175.72	58.132	3465.6	.85113	125.52	4.5390	43.140
#1	.00079	-.00044	.00367	.04092	15.037	-.00751	.45370	.00756
#2	.00080	.00064	.00224	.00267	14.933	-.00035	.48845	.00291
#3	.00038	.00128	.00099	-.04008	14.784	-.00139	.45043	.00593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	30.674	.00267	1.5087	-.00118	.00173	-.00373	.19206
Stddev	.00018	.056	.00074	.1303	.00285	.00164	.00792	.01435
%RSD	16.783	.18370	27.871	8.6373	241.65	95.112	212.46	7.4736
#1	.00096	30.739	.00214	1.5852	-.00090	.00191	-.00821	.20160
#2	.00130	30.643	.00352	1.5827	-.00415	.00000	-.00839	.19903
#3	.00101	30.639	.00235	1.3583	.00152	.00327	.00541	.17555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608047002 Acquired: 8/12/2016 17:04:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00233**	**.00213**	**-.00394**	**-.00469**	**-.00012**	**.01048**	**.18797**
Stddev	.00058	.00031	.00683	.00151	.00090	.00117	.07888
%RSD	25.026	14.608	173.25	32.074	760.02	11.170	41.962
#1	-.00219	.00226	.00368	-.00382	-.00093	.01114	.24475
#2	-.00183	.00236	-.00598	-.00382	.00084	.01117	.09791
#3	-.00297	.00178	-.00953	-.00643	-.00026	.00913	.22125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12147.**	**75360.**	**3308.9**
Stddev	37.	289.	20.1
%RSD	.30641	.38402	.60601
#1	12127.	75630.	3288.2
#2	12125.	75055.	3310.2
#3	12190.	75395.	3328.3

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608047004 Acquired: 8/12/2016 17:08:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00239	.12464	.00038	.01473	.01766	.00008	100.76	.00011
Stddev	.00046	.00547	.00056	.00127	.00091	.00003	.47	.00015
%RSD	19.114	4.3868	145.46	8.6203	5.1715	35.073	.46627	137.16
#1	-.00248	.12544	-.00019	.01411	.01794	.00011	100.80	.00028
#2	-.00189	.12966	.00092	.01619	.01664	.00007	100.28	-.00000
#3	-.00279	.11882	.00042	.01389	.01841	.00006	101.21	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00277	.00677	.01914	.42762	15.348	-.00073	5.0045	.21767
Stddev	.00042	.00089	.00297	.00297	.120	.00164	.0747	.00420
%RSD	15.279	13.129	15.499	.69417	.78378	225.88	1.4920	1.9283
#1	.00314	.00770	.02222	.42995	15.237	-.00219	4.9206	.21297
#2	.00286	.00592	.01891	.42428	15.476	.00105	5.0635	.22105
#3	.00231	.00669	.01630	.42864	15.331	-.00105	5.0294	.21899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00187	31.919	.00333	54.692	-.00351	-.00176	-.00023	.29829
Stddev	.00031	.089	.00104	4.398	.00140	.00182	.00610	.02023
%RSD	16.517	.27750	31.179	8.0411	39.807	103.41	2685.6	6.7808
#1	.00222	31.936	.00227	57.298	-.00190	-.00041	.00458	.30906
#2	.00164	31.824	.00435	57.163	-.00445	-.00104	.00183	.31085
#3	.00176	31.998	.00336	49.614	-.00417	-.00384	-.00708	.27496
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608047004 Acquired: 8/12/2016 17:08:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00223**	**.06935**	**-.01616**	**-.00418**	**.00145**	**.20531**	**.11589**
Stddev	.00017	.00015	.00524	.00366	.00037	.01874	.14870
%RSD	7.4942	.21631	32.418	87.520	25.302	9.1277	128.31
#1	-.00242	.06918	-.01012	-.00312	.00103	.21663	.08933
#2	-.00218	.06946	-.01884	-.00117	.00173	.21563	.27609
#3	-.00210	.06942	-.01951	-.00826	.00158	.18368	-.01774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11836.**	**73271.**	**3250.7**
Stddev	30.	160.	13.1
%RSD	.25371	.21870	.40286
#1	11817.	73183.	3262.7
#2	11820.	73174.	3252.6
#3	11870.	73456.	3236.7

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608047006 Acquired: 8/12/2016 17:12:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00182	-.00253	.00077	.00531	.00111	.00002	6.6419
Stddev	.00184	.00840	.00136	.00123	.00065	.00006	.0214
%RSD	101.42	331.48	175.25	23.149	58.259	223.77	.32199
#1	-.00367	-.00856	.00233	.00416	.00175	-.00001	6.6652
#2	.00001	-.00609	.00011	.00661	.00045	.00009	6.6232
#3	-.00179	.00706	-.00013	.00517	.00113	-.00000	6.6374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00004	.00112	.00117	-.00311	2.7328	-.00462
Stddev	.00017	.00034	.00016	.00201	.02024	.0727	.00199
%RSD	668.62	782.02	14.365	171.49	651.42	2.6615	43.163
#1	.00002	.00023	.00101	-.00067	-.00445	2.8146	-.00256
#2	-.00021	.00025	.00105	.00331	-.02264	2.6755	-.00654
#3	.00011	-.00035	.00131	.00087	.01777	2.7083	-.00475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.28904	.01529	.00021	.70913	.00093	.15625	-.00046
Stddev	.02562	.00152	.00022	.03097	.00040	.02347	.00123
%RSD	8.8633	9.9532	105.89	4.3668	43.207	15.021	266.56
#1	.31531	.01697	.00038	.70535	.00064	.17237	-.00073
#2	.26412	.01401	.00030	.68023	.00139	.16706	.00088
#3	.28768	.01489	-.00004	.74181	.00076	.12932	-.00153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608047006 Acquired: 8/12/2016 17:12:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00365	.00094	.07115	-.00196	.01204	.00662	-.00559
Stddev	.00163	.00138	.00817	.00047	.00016	.00436	.00113
%RSD	44.546	146.53	11.483	23.724	1.3505	65.802	20.138
#1	.00471	.00164	.07400	-.00148	.01192	.00850	-.00677
#2	.00446	.00185	.07751	-.00240	.01198	.00164	-.00453
#3	.00178	-.00065	.06194	-.00201	.01223	.00973	-.00548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00086	.00283	F -.12507
Stddev	.00047	.00020	.14780
%RSD	54.538	6.9628	118.18
#1	-.00079	.00282	-.06310
#2	-.00137	.00303	-.01833
#3	-.00044	.00263	-.29377
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12178.	75831.	3282.1
Stddev	14.	72.	12.4
%RSD	.11636	.09437	.37826
#1	12162.	75751.	3271.1
#2	12182.	75890.	3295.6
#3	12189.	75852.	3279.8

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608047312 Acquired: 8/12/2016 17:16:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00143	.01094	-.00036	.02118	.09138	.00004	63.537	.00005
Stddev	.00201	.00604	.00167	.00089	.00102	.00006	.166	.00017
%RSD	140.66	55.248	457.14	4.1999	1.1132	151.48	.26100	350.71
#1	-.00305	.00685	.00127	.02020	.09156	-.00001	63.521	-.00000
#2	-.00206	.00808	-.00206	.02193	.09029	.00011	63.380	.00023
#3	.00082	.01788	-.00031	.02142	.09230	.00002	63.711	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.00166	-.00034	.01588	.28695	-.00078	2.1109	.12980
Stddev	.00050	.00071	.00122	.02137	.09952	.00136	.0609	.00259
%RSD	127.04	42.988	355.99	134.60	34.681	175.00	2.8834	1.9987
#1	.00005	.00163	-.00111	.03893	.30036	-.00214	2.1808	.12873
#2	.00097	.00238	-.00098	-.00327	.37908	-.00077	2.0825	.13276
#3	.00017	.00096	.00107	.01197	.18140	.00058	2.0694	.12791
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	125.96	.00329	.00372	-.00340	.00006	-.00175	.19363
Stddev	.00023	.28	.00019	.00340	.00159	.00377	.00384	.01421
%RSD	203.50	.22083	5.7825	91.334	46.817	6514.8	219.71	7.3374
#1	-.00011	126.02	.00351	.00234	-.00350	-.00426	.00258	.20267
#2	.00036	125.66	.00323	.00123	-.00176	.00272	-.00474	.20097
#3	.00009	126.20	.00314	.00760	-.00493	.00172	-.00308	.17726
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608047312 Acquired: 8/12/2016 17:16:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00236**	**.19409**	**-.00970**	**-.00419**	**-.00080**	**.00384**	**-.01603**
Stddev	.00048	.00110	.00863	.00250	.00035	.00053	.26813
%RSD	20.292	.56891	89.000	59.563	43.763	13.730	1672.2
#1	-.00242	.19382	-.00028	-.00677	-.00085	.00408	.21566
#2	-.00186	.19314	-.01723	-.00403	-.00113	.00420	.04597
#3	-.00281	.19530	-.01158	-.00178	-.00043	.00323	-.30973
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11947.**	**73881.**	**3270.9**
Stddev	58.	161.	3.4
%RSD	.48135	.21828	.10490
#1	11892.	74065.	3268.0
#2	11942.	73765.	3270.1
#3	12006.	73813.	3274.7

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608047701 Acquired: 8/12/2016 17:20:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00180**	**.00206**	**.00071**	**.02217**	**.26390**	**.00002**	**51.676**
Stddev	.00118	.01113	.00245	.00067	.00311	.00005	.407
%RSD	65.650	540.54	346.13	3.0181	1.1767	240.09	.78748
#1	-.00117	.00390	.00240	.02180	.26574	-.00002	51.762
#2	-.00317	.01215	.00183	.02295	.26032	.00007	51.233
#3	-.00107	-.00988	-.00210	.02178	.26566	.00001	52.033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**-.00026**	**.00118**	**.00090**	**.00051**	**1.1100**	**.00255**
Stddev	.00024	.00009	.00082	.00048	.02396	.0326	.00404
%RSD	1197.8	36.010	69.881	53.159	4712.1	2.9356	158.63
#1	.00023	-.00016	.00024	.00059	-.01136	1.1416	.00417
#2	-.00024	-.00034	.00175	.00066	-.01519	1.0765	.00553
#3	.00007	-.00029	.00155	.00145	.02808	1.1120	-.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.4766**	**.00749**	**.00374**	**18.091**	**-.00004**	**.00850**	**-.00079**
Stddev	.0471	.00092	.00030	.158	.00013	.00589	.00129
%RSD	.63033	12.342	7.9540	.87298	343.35	69.262	163.10
#1	7.4789	.00689	.00408	18.211	.00005	.01117	-.00059
#2	7.4284	.00704	.00365	17.912	-.00019	.00175	.00039
#3	7.5226	.00856	.00350	18.150	.00002	.01258	-.00217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608047701 Acquired: 8/12/2016 17:20:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00117	-.00181	4.8697	-.00248	.28382	-.00822	-.00462
Stddev	.00303	.00399	.3291	.00033	.00197	.00229	.00110
%RSD	257.79	220.55	6.7577	13.417	.69410	27.864	23.807
#1	-.00388	.00210	5.0681	-.00215	.28441	-.01055	-.00510
#2	.00210	-.00165	5.0511	-.00247	.28162	-.00815	-.00539
#3	-.00175	-.00588	4.4898	-.00281	.28543	-.00597	-.00336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00126	.00158	F -.05602
Stddev	.00019	.00024	.04712
%RSD	14.867	15.144	84.110
#1	-.00133	.00171	-.03664
#2	-.00105	.00173	-.02168
#3	-.00140	.00131	-.10973
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11880.	73847.	3222.2
Stddev	37.	204.	26.7
%RSD	.31392	.27611	.82805
#1	11896.	73666.	3206.9
#2	11907.	73808.	3253.0
#3	11838.	74068.	3206.6

Approved: August 15, 2016

Sample Name: L1608047702 Acquired: 8/12/2016 17:24:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00139**	**.02754**	**-.00017**	**.01598**	**.07133**	**.00005**	**57.453**
Stddev	.00110	.00123	.00109	.00118	.00058	.00003	.056
%RSD	79.116	4.4649	634.11	7.4061	.80862	73.191	.09726
#1	-.00012	.02675	.00029	.01463	.07196	.00001	57.400
#2	-.00196	.02691	.00061	.01681	.07120	.00008	57.447
#3	-.00208	.02895	-.00142	.01651	.07083	.00004	57.511
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**-.00008**	**.00079**	**.00283**	**.02892**	**.93424**	**.00112**
Stddev	.00016	.00022	.00121	.00084	.01935	.01808	.00515
%RSD	395.39	264.02	154.17	29.608	66.898	1.9356	459.90
#1	-.00006	-.00022	.00143	.00365	.04727	.94285	-.00386
#2	-.00005	-.00021	-.00061	.00197	.03079	.94641	.00643
#3	.00023	.00017	.00154	.00288	.00871	.91346	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.545**	**.02472**	**.00085**	**9.5207**	**-.00068**	**.00706**	**-.00223**
Stddev	.034	.00052	.00020	.0117	.00100	.00640	.00181
%RSD	.32662	2.1056	23.168	.12272	146.69	90.641	81.057
#1	10.574	.02470	.00106	9.5079	-.00097	.01445	-.00428
#2	10.507	.02421	.00083	9.5234	-.00151	.00307	-.00083
#3	10.553	.02525	.00067	9.5308	.00043	.00368	-.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608047702 Acquired: 8/12/2016 17:24:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00111**	**-.00391**	**4.1808**	**-.00296**	**.30171**	**-.01504**	**-.00287**
Stddev	.00620	.00241	.2983	.00030	.00101	.00525	.00268
%RSD	560.33	61.590	7.1343	10.198	.33515	34.912	93.341
#1	-.00744	-.00535	4.3616	-.00320	.30076	-.02099	.00022
#2	-.00084	-.00524	4.3442	-.00262	.30160	-.01305	-.00441
#3	.00496	-.00113	3.8365	-.00306	.30277	-.01107	-.00444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00002**	**.00113**	F **-.05534**
Stddev	.00012	.00021	.13671
%RSD	504.62	18.929	247.04
#1	-.00000	.00122	-.07135
#2	.00008	.00129	-.18334
#3	-.00015	.00089	.08867
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11887.**	**74073.**	**3208.5**
Stddev	35.	65.	17.6
%RSD	.29573	.08800	.54922
#1	11902.	74143.	3192.2
#2	11912.	74060.	3227.2
#3	11847.	74014.	3206.0

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608047703 Acquired: 8/12/2016 17:27:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00222	1.0483	.00174	.00901	.05747	.00006	54.413	-.00009
Stddev	.00217	.0034	.00065	.00055	.00075	.00007	.121	.00025
%RSD	97.732	.32138	37.376	6.0526	1.3095	121.71	.22199	267.16
#1	.00013	1.0517	.00157	.00960	.05660	.00001	54.280	-.00038
#2	-.00414	1.0450	.00246	.00891	.05791	.00003	54.516	-.00000
#3	-.00264	1.0482	.00120	.00853	.05790	.00014	54.441	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00191	.00091	1.2378	1.1303	.00098	5.2777	.10728
Stddev	.00042	.00167	.00083	.0179	.1522	.00349	.0626	.00265
%RSD	137.68	87.706	90.798	1.4430	13.469	357.12	1.1854	2.4701
#1	.00028	.00192	.00066	1.2224	1.2125	-.00269	5.2174	.10442
#2	.00074	.00357	.00024	1.2574	1.2238	.00426	5.2734	.10776
#3	-.00010	.00023	.00184	1.2337	.95463	.00137	5.3423	.10965
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	2.0457	.00061	.03592	.00027	.00129	.00147	4.8354
Stddev	.00041	.0112	.00086	.00699	.00184	.00365	.00360	.3642
%RSD	62.994	.54742	139.53	19.457	683.06	283.45	245.44	7.5325
#1	.00081	2.0333	.00004	.03021	-.00118	-.00206	.00308	5.0780
#2	.00096	2.0552	.00160	.04371	.00234	.00075	.00398	5.0116
#3	.00019	2.0485	.00020	.03384	-.00035	.00517	-.00266	4.4166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608047703 Acquired: 8/12/2016 17:27:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00249**	**.12786**	**.00718**	**-.00369**	**.00142**	**.00410**	**.12174**
Stddev	.00026	.00032	.00216	.00162	.00060	.00053	.02071
%RSD	10.506	.25103	30.044	43.811	42.455	13.013	17.013
#1	-.00241	.12753	.00783	-.00296	.00179	.00433	.10581
#2	-.00278	.12817	.00477	-.00257	.00073	.00448	.11426
#3	-.00227	.12789	.00893	-.00555	.00175	.00349	.14516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11941.**	**74531.**	**3240.9**
Stddev	43.	172.	12.3
%RSD	.36042	.23102	.37869
#1	11978.	74523.	3236.8
#2	11951.	74363.	3254.7
#3	11894.	74707.	3231.1

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608047901 Acquired: 8/12/2016 17:31:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00263	.01950	-.00029	.03318	.06998	.00006	124.91	.00030
Stddev	.00178	.00733	.00368	.00222	.00124	.00006	.36	.00030
%RSD	67.624	37.613	1282.6	6.6911	1.7745	96.771	.28892	101.09
#1	-.00357	.02796	.00124	.03256	.07099	.00011	124.61	.00056
#2	-.00374	.01527	-.00449	.03565	.06859	-.00000	125.31	.00038
#3	-.00058	.01525	.00239	.03134	.07036	.00007	124.81	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00232	.00100	.02185	4.0905	.01579	21.420	.00049
Stddev	.00023	.00089	.00125	.02264	.2210	.00326	.151	.00143
%RSD	218.31	38.499	124.76	103.61	5.4021	20.643	.70638	294.33
#1	-.00022	.00311	-.00027	.02729	3.8422	.01263	21.295	-.00029
#2	-.00026	.00135	.00105	-.00301	4.2654	.01559	21.588	.00214
#3	.00016	.00248	.00222	.04127	4.1639	.01914	21.376	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	17.608	.00007	.02313	-.00191	.00108	-.00139	5.0443
Stddev	.00022	.058	.00075	.00386	.00083	.00624	.00519	.3684
%RSD	67.536	.33100	1012.8	16.705	43.515	579.96	372.97	7.3025
#1	.00012	17.568	.00051	.02290	-.00104	.00828	.00436	5.2693
#2	.00055	17.675	-.00079	.02710	-.00199	-.00270	-.00282	5.2444
#3	.00029	17.581	.00051	.01938	-.00270	-.00235	-.00572	4.6192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608047901 Acquired: 8/12/2016 17:31:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00274**	**.54245**	**-.02367**	**-.00523**	**-.00008**	**.00171**	**.00268**
Stddev	.00075	.00082	.00197	.00163	.00019	.00028	.06526
%RSD	27.303	.15207	8.3262	31.164	223.61	16.119	2435.8
#1	-.00295	.54150	-.02273	-.00664	-.00007	.00200	.01098
#2	-.00191	.54296	-.02593	-.00344	.00010	.00168	.06339
#3	-.00336	.54289	-.02235	-.00560	-.00028	.00145	-.06633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11643.**	**72396.**	**3171.6**
Stddev	8.	195.	14.3
%RSD	.06577	.26972	.44952
#1	11641.	72373.	3187.8
#2	11638.	72601.	3166.4
#3	11652.	72213.	3160.7

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608048001 Acquired: 8/12/2016 17:35:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00156	.06491	-.00044	.02459	.08566	.00002	33.742	-.00002
Stddev	.00083	.00284	.00236	.00199	.00066	.00001	.281	.00027
%RSD	53.382	4.3753	530.74	8.1086	.76691	23.212	.83133	1264.6
#1	-.00209	.06387	.00213	.02686	.08627	.00003	33.554	-.00026
#2	-.00060	.06813	-.00249	.02312	.08573	.00002	34.064	-.00007
#3	-.00199	.06275	-.00098	.02380	.08497	.00002	33.607	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00140	.00340	.12823	1.5483	-.00256	7.3474	.01087
Stddev	.00031	.00056	.00094	.02599	.0960	.00475	.1135	.00206
%RSD	121.77	39.721	27.640	20.267	6.2013	185.73	1.5451	18.947
#1	-.00029	.00127	.00418	.11241	1.4860	-.00485	7.3115	.01314
#2	.00007	.00201	.00236	.15822	1.6589	.00291	7.4746	.01037
#3	-.00055	.00092	.00367	.11405	1.5000	-.00573	7.2563	.00911
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	2.5110	.00032	.05514	-.00056	-.00242	.00148	3.6922
Stddev	.00014	.0084	.00096	.00086	.00181	.00124	.00320	.2436
%RSD	36.517	.33660	300.56	1.5527	321.13	51.434	215.38	6.5974
#1	.00025	2.5207	-.00079	.05613	-.00256	-.00375	.00516	3.8401
#2	.00054	2.5059	.00081	.05459	-.00010	-.00221	-.00008	3.8253
#3	.00040	2.5064	.00094	.05471	.00097	-.00129	-.00063	3.4110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608048001 Acquired: 8/12/2016 17:35:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00210	.14128	-.00763	-.00548	-.00040	.00787	.30107
Stddev	.00038	.00047	.00333	.00211	.00041	.00068	.18622
%RSD	18.329	.33369	43.623	38.556	102.75	8.6671	61.851
#1	-.00254	.14116	-.00967	-.00390	.00005	.00826	.11740
#2	-.00190	.14088	-.00379	-.00788	-.00076	.00828	.48973
#3	-.00185	.14180	-.00944	-.00465	-.00050	.00709	.29608
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11844.	73821.	3194.9
Stddev	32.	166.	5.2
%RSD	.27060	.22469	.16192
#1	11854.	73631.	3188.9
#2	11869.	73896.	3197.5
#3	11808.	73936.	3198.2

Approved: August 15, 2016

Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 17:39:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40144	9.9019	.39135	.49147	.99717	.04861	9.8946
Stddev	.00056	.0069	.00603	.00248	.00607	.00015	.0646
%RSD	.14036	.06949	1.5401	.50549	.60840	.31470	.65290
#1	.40135	9.8940	.39502	.48863	.99016	.04866	9.8200
#2	.40204	9.9056	.39463	.49324	1.0005	.04844	9.9321
#3	.40093	9.9062	.38439	.49254	1.0009	.04873	9.9317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04900	.19621	.49137	.49515	4.0333	48.229	.99861
Stddev	.00093	.00347	.00145	.00956	.0046	.159	.00207
%RSD	1.8992	1.7669	.29533	1.9298	.11525	.33050	.20719
#1	.04959	.19827	.49252	.50030	4.0379	48.091	.99774
#2	.04947	.19815	.48974	.50102	4.0286	48.193	1.0010
#3	.04792	.19221	.49184	.48412	4.0335	48.404	.99711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.015	.49757	.98427	47.878	.49215	9.8004	.49624
Stddev	.076	.00240	.01941	.131	.00973	.1266	.00365
%RSD	.76330	.48134	1.9718	.27407	1.9765	1.2922	.73488
#1	9.9385	.49563	.99469	47.729	.49866	9.8821	.49943
#2	10.016	.50025	.99625	47.975	.49683	9.8647	.49702
#3	10.091	.49684	.96188	47.931	.48097	9.6545	.49226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 17:39:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1644**	**.39015**	**4.9483**	**.98733**	**1.0001**	**.97611**	**.50237**
Stddev	.0173	.00354	.0495	.02455	.0033	.00405	.00289
%RSD	1.4887	.90661	1.0000	2.4865	.32781	.41503	.57456
#1	1.1760	.39270	4.9759	1.0018	.99647	.98063	.50494
#2	1.1727	.39163	4.9778	1.0012	1.0028	.97491	.50292
#3	1.1444	.38611	4.8912	.95898	1.0011	.97280	.49925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.98256**	**.98416**	F **425.47**
Stddev	.00169	.01672	1.49
%RSD	.17175	1.6992	.34989
#1	.98079	.99409	423.89
#2	.98274	.99354	426.85
#3	.98415	.96486	425.66
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12421.**	**76250.**	**3357.6**
Stddev	20.	106.	9.6
%RSD	.16273	.13846	.28503
#1	12442.	76128.	3364.9
#2	12420.	76304.	3346.8
#3	12402.	76318.	3361.1

Approved: August 15, 2016

Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 17:43:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00223	-.00216	-.00114	.00143	-.00035	.00002	.01591
Stddev	.00151	.00345	.00155	.00058	.00069	.00001	.05290
%RSD	67.866	159.51	135.61	40.988	195.26	67.601	332.47
#1	-.00332	.00106	-.00224	.00210	-.00016	.00004	.07616
#2	-.00286	-.00174	.00063	.00111	.00022	.00001	-.02296
#3	-.00050	-.00579	-.00182	.00107	-.00112	.00001	-.00547
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00003	.00025	.00018	.00967	.03286	-.00057
Stddev	.00010	.00064	.00101	.00043	.03144	.06590	.00070
%RSD	865.33	2528.9	405.87	240.34	325.11	200.52	124.43
#1	.00007	-.00063	-.00049	-.00031	-.02304	.05478	-.00083
#2	-.00012	.00065	-.00016	.00040	.01240	-.04120	.00023
#3	.00002	-.00010	.00140	.00044	.03966	.08501	-.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.05113	-.00106	.00043	.00360	-.00007	.00303	.00070
Stddev	.02414	.00212	.00015	.05367	.00034	.00140	.00164
%RSD	47.216	199.64	36.197	1492.5	482.20	45.989	233.68
#1	-.04730	.00061	.00060	.02311	.00026	.00432	.00260
#2	-.02913	-.00035	.00038	.04477	-.00042	.00324	-.00013
#3	-.07695	-.00344	.00030	-.05710	-.00006	.00155	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 17:43:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00198**	**.00229**	**-.00752**	**-.00204**	**-.00015**	**.00089**	**-.00192**
Stddev	.00261	.00209	.00091	.00073	.00025	.00647	.00234
%RSD	131.77	91.157	12.038	35.996	167.17	727.77	122.06
#1	.00487	.00057	-.00765	-.00263	-.00039	.00516	-.00352
#2	-.00021	.00461	-.00835	-.00122	-.00019	.00405	.00077
#3	.00129	.00168	-.00656	-.00226	.00012	-.00655	-.00301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00012**	**-.00016**	F **.18947**
Stddev	.00075	.00009	.07378
%RSD	644.76	56.030	38.939
#1	-.00010	-.00006	.15969
#2	.00062	-.00024	.13524
#3	-.00087	-.00018	.27349
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12667.**	**78534.**	**3402.0**
Stddev	27.	187.	3.3
%RSD	.21438	.23871	.09831
#1	12671.	78728.	3405.9
#2	12693.	78520.	3400.0
#3	12639.	78354.	3400.2

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608048002 Acquired: 8/12/2016 17:47:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00135	.00925	.00071	.06078	.76970	.00004	15.225	.00001
Stddev	.00093	.00268	.00249	.00294	.00238	.00003	.100	.00019
%RSD	69.129	28.923	351.28	4.8365	.30966	82.844	.65419	2347.9
#1	-.00236	.00621	.00034	.05802	.76927	.00007	15.194	-.00014
#2	-.00052	.01031	-.00157	.06045	.77227	.00001	15.336	.00022
#3	-.00118	.01124	.00337	.06387	.76756	.00003	15.144	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00119	.00134	.97639	.98182	.00768	3.6606	.02740
Stddev	.00018	.00065	.00088	.02887	.07790	.00106	.0319	.00292
%RSD	194.65	54.376	65.897	2.9570	7.9347	13.755	.87155	10.675
#1	-.00003	.00056	.00123	1.0093	.90837	.00803	3.6240	.02410
#2	.00001	.00185	.00228	.95537	.97357	.00649	3.6755	.02967
#3	.00029	.00115	.00052	.96448	1.0635	.00851	3.6823	.02843
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	46.705	.00119	.06821	-.00055	-.00066	-.00446	5.4453
Stddev	.00006	.124	.00051	.00647	.00012	.00068	.00394	.3290
%RSD	7.2606	.26509	42.838	9.4889	22.230	102.13	88.433	6.0415
#1	.00093	46.680	.00081	.07486	-.00048	-.00143	-.00004	5.6124
#2	.00081	46.839	.00099	.06782	-.00069	-.00041	-.00761	5.6572
#3	.00084	46.595	.00177	.06194	-.00048	-.00015	-.00573	5.0663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608048002 Acquired: 8/12/2016 17:47:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00221**	**.73112**	**.00224**	**-.00541**	**-.00092**	**.00164**	**.06158**
Stddev	.00057	.00328	.00200	.00088	.00039	.00032	.22512
%RSD	25.932	.44845	89.087	16.344	41.917	19.527	365.59
#1	-.00184	.73154	.00089	-.00636	-.00134	.00188	-.08813
#2	-.00287	.73417	.00454	-.00462	-.00083	.00177	.32047
#3	-.00192	.72765	.00130	-.00525	-.00059	.00128	-.04761
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11824.**	**73582.**	**3204.5**
Stddev	14.	97.	16.1
%RSD	.12063	.13197	.50356
#1	11822.	73532.	3203.6
#2	11840.	73694.	3188.9
#3	11811.	73520.	3221.1

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608048003 Acquired: 8/12/2016 17:51:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00180	.04209	-.00169	.01089	.03151	.00002	46.970	-.00009
Stddev	.00212	.00580	.00154	.00144	.00164	.00005	.222	.00006
%RSD	117.94	13.787	91.393	13.183	5.1982	276.90	.47327	67.089
#1	-.00254	.04524	-.00003	.00993	.03147	.00002	47.061	-.00007
#2	.00059	.04563	-.00309	.01019	.03317	-.00003	47.132	-.00004
#3	-.00345	.03539	-.00194	.01254	.02989	.00007	46.716	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00078	.00081	.04156	.88089	.00412	10.257	.00268
Stddev	.00010	.00118	.00146	.00799	.05990	.00177	.166	.00184
%RSD	30.580	151.76	179.99	19.235	6.8004	43.005	1.6208	68.569
#1	-.00036	-.00042	.00043	.04917	.93227	.00313	10.441	.00234
#2	-.00038	.00193	.00242	.03323	.89529	.00307	10.118	.00466
#3	-.00020	.00082	-.00042	.04227	.81509	.00617	10.212	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	2.5592	-.00072	.00427	-.00360	.00021	-.00468	3.2749
Stddev	.00025	.0158	.00109	.00222	.00097	.00046	.00126	.2151
%RSD	91.464	.61912	151.19	52.036	26.909	215.85	26.898	6.5678
#1	.00039	2.5478	-.00017	.00208	-.00332	-.00010	-.00367	3.4027
#2	-.00001	2.5773	-.00001	.00421	-.00280	.00000	-.00609	3.3953
#3	.00043	2.5525	-.00197	.00652	-.00468	.00074	-.00429	3.0265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608048003 Acquired: 8/12/2016 17:51:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00282**	**.16235**	**-.00455**	**-.00650**	**-.00086**	**.00145**	**-.03048**
Stddev	.00021	.00049	.00958	.00100	.00026	.00016	.00486
%RSD	7.5850	.29982	210.53	15.391	30.061	10.851	15.961
#1	-.00262	.16283	.00616	-.00757	-.00079	.00142	-.03034
#2	-.00305	.16237	-.01228	-.00559	-.00114	.00162	-.02568
#3	-.00279	.16186	-.00753	-.00632	-.00064	.00131	-.03541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11850.**	**73801.**	**3203.1**
Stddev	11.	136.	29.3
%RSD	.08988	.18434	.91345
#1	11849.	73771.	3205.7
#2	11861.	73950.	3172.6
#3	11840.	73683.	3230.9

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608048004 Acquired: 8/12/2016 17:55:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.26175	.00228	.01533	.03546	.00006	43.426	.00003
Stddev	.00289	.00858	.00133	.00123	.00116	.00004	.055	.00010
%RSD	732.16	3.2765	58.213	8.0473	3.2614	73.128	.12598	414.79
#1	-.00069	.26697	.00379	.01610	.03629	.00010	43.426	.00015
#2	.00263	.25185	.00127	.01599	.03595	.00006	43.372	-.00003
#3	-.00313	.26643	.00179	.01391	.03414	.00002	43.481	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.00092	.00044	2.9420	1.2775	.00621	11.791	.40776
Stddev	.00035	.00029	.00115	.0105	.1650	.00039	.085	.00221
%RSD	55.191	30.927	260.41	.35697	12.914	6.2053	.71674	.54289
#1	.00071	.00065	.00176	2.9456	1.4627	.00614	11.703	.40888
#2	.00093	.00090	-.00041	2.9302	1.1464	.00587	11.798	.40920
#3	.00025	.00122	-.00002	2.9503	1.2233	.00663	11.872	.40521
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	2.9438	.00146	.17920	.00067	-.00006	-.00269	4.5857
Stddev	.00027	.0464	.00080	.01922	.00261	.00278	.00354	.4243
%RSD	69.188	1.5754	55.113	10.726	391.72	4725.1	131.73	9.2517
#1	.00066	2.9973	.00213	.19453	.00367	.00314	.00022	4.9419
#2	.00038	2.9182	.00057	.18542	-.00093	-.00183	-.00663	4.6988
#3	.00012	2.9159	.00168	.15764	-.00075	-.00149	-.00166	4.1163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608048004 Acquired: 8/12/2016 17:55:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00251**	**.23394**	**-.01099**	**-.00358**	**.00024**	**.00699**	**.13885**
Stddev	.00021	.00085	.00701	.00247	.00037	.00084	.31376
%RSD	8.3497	.36203	63.795	69.112	158.01	11.995	225.97
#1	-.00270	.23445	-.01239	-.00603	.00045	.00783	.16741
#2	-.00253	.23296	-.01720	-.00362	-.00019	.00700	.43736
#3	-.00229	.23441	-.00339	-.00108	.00045	.00615	-.18822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11869.**	**73839.**	**3199.5**
Stddev	217.	22.	29.6
%RSD	1.8320	.02982	.92657
#1	11619.	73830.	3166.1
#2	12011.	73823.	3222.7
#3	11977.	73864.	3209.7

Approved: August 15, 2016

Sample Name: L1608048101 Acquired: 8/12/2016 17:58:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579818-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00410	.00038	.01738	.02619	.00007	62.738	.00061
Stddev	.00036	.00782	.00100	.00274	.00129	.00004	.053	.00014
%RSD	116.96	190.96	262.40	15.748	4.9441	56.809	.08468	23.562
#1	-.00051	-.00489	-.00060	.01959	.02476	.00010	62.689	.00045
#2	.00011	.00936	.00034	.01432	.02651	.00003	62.795	.00071
#3	-.00052	.00782	.00141	.01825	.02729	.00009	62.729	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00086	.00403	-.00006	.40791	.00049	.50167	.04844
Stddev	.00049	.00020	.00043	.00842	.08568	.00144	.03064	.00278
%RSD	436.21	22.725	10.569	13976.	21.004	295.85	6.1084	5.7291
#1	.00047	.00069	.00422	.00905	.31104	.00174	.48610	.04530
#2	.00032	.00108	.00432	-.00168	.43895	-.00108	.48194	.05055
#3	-.00045	.00083	.00354	-.00755	.47374	.00080	.53697	.04947
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	128.75	-.00035	.04977	-.00026	.00004	.00120	.19201
Stddev	.00024	.37	.00059	.00472	.00256	.00368	.00636	.01377
%RSD	116.66	.28815	167.26	9.4914	988.72	8725.8	530.26	7.1693
#1	.00022	129.17	-.00097	.05455	-.00291	-.00280	.00053	.20116
#2	-.00004	128.60	-.00029	.04967	-.00005	.00420	-.00480	.19870
#3	.00043	128.48	.00020	.04510	.00219	-.00127	.00788	.17618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608048101 Acquired: 8/12/2016 17:58:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579818-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00198**	**.01955**	**-.01332**	**-.00391**	**-.00078**	**.01098**	**.03158**
Stddev	.00102	.00019	.00796	.00305	.00105	.00093	.14670
%RSD	51.616	.97398	59.730	77.820	135.27	8.4722	464.58
#1	-.00308	.01940	-.02007	-.00301	.00010	.01156	-.11645
#2	-.00105	.01977	-.00455	-.00142	-.00049	.01146	.17691
#3	-.00182	.01949	-.01534	-.00731	-.00194	.00990	.03427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11817.**	**73245.**	**3244.5**
Stddev	26.	353.	9.0
%RSD	.21854	.48230	.27644
#1	11796.	73274.	3249.1
#2	11846.	73583.	3234.1
#3	11809.	72878.	3250.2

Approved: August 15, 2016

Sample Name: L1608048101MS Acquired: 8/12/2016 18:02:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579818-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19862**	**5.0360**	**.20302**	**1.0090**	**.52636**	**.02437**	**66.261**	**.02540**
Stddev	.00066	.0139	.00465	.0016	.00146	.00004	.195	.00049
%RSD	.33278	.27661	2.2926	.15753	.27686	.17256	.29479	1.9318
#1	.19822	5.0418	.20557	1.0106	.52643	.02439	66.175	.02567
#2	.19826	5.0461	.20585	1.0091	.52778	.02441	66.485	.02570
#3	.19938	5.0201	.19765	1.0074	.52487	.02433	66.124	.02484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09889**	**.24901**	**.25234**	**2.0291**	**25.019**	**.50640**	**5.3292**	**.29920**
Stddev	.00195	.00101	.00443	.0179	.183	.00065	.1176	.00095
%RSD	1.9700	.40585	1.7565	.88365	.73107	.12849	2.2059	.31633
#1	.10040	.24891	.25560	2.0138	24.807	.50649	5.3898	.29964
#2	.09959	.24805	.25412	2.0488	25.127	.50701	5.4041	.29984
#3	.09669	.25007	.24729	2.0245	25.122	.50571	5.1937	.29811
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50853**	**151.91**	**.24757**	**5.0351**	**.24959**	**.59514**	**.19029**	**2.7860**
Stddev	.00938	.40	.00483	.0692	.00090	.01484	.00186	.0343
%RSD	1.8443	.26469	1.9502	1.3747	.36221	2.4929	.97610	1.2303
#1	.51332	151.66	.25073	5.0752	.24911	.60050	.19166	2.8045
#2	.51455	152.37	.24996	5.0749	.25064	.60655	.18817	2.8070
#3	.49772	151.70	.24201	4.9552	.24903	.57837	.19103	2.7464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608048101MS Acquired: 8/12/2016 18:02:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579818-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49548**	**.53401**	**.48445**	**.24454**	**.50288**	**.50079**	**.30476**
Stddev	.01149	.00195	.01024	.00403	.00089	.00894	.05081
%RSD	2.3192	.36573	2.1135	1.6478	.17685	1.7859	16.671
#1	.50117	.53309	.47513	.24918	.50390	.50651	.36106
#2	.50301	.53625	.48281	.24194	.50235	.50538	.26233
#3	.48225	.53268	.49541	.24249	.50238	.49049	.29088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11836.**	**73247.**	**3313.3**
Stddev	8.	221.	12.6
%RSD	.06922	.30165	.38058
#1	11830.	73352.	3317.6
#2	11832.	73397.	3299.1
#3	11845.	72994.	3323.2

Approved: August 15, 2016

Sample Name: L1608048101MSD Acquired: 8/12/2016 18:06:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579818-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20519**	**5.1919**	**.21189**	**1.0418**	**.54248**	**.02515**	**68.442**	**.02606**
Stddev	.00146	.0243	.00144	.0010	.00127	.00013	.101	.00028
%RSD	.70917	.46726	.67861	.09916	.23472	.50039	.14804	1.0827
#1	.20397	5.2183	.21355	1.0408	.54391	.02528	68.559	.02605
#2	.20680	5.1868	.21107	1.0417	.54146	.02513	68.382	.02579
#3	.20479	5.1706	.21106	1.0429	.54208	.02503	68.386	.02635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10282**	**.25558**	**.26165**	**2.1329**	**25.890**	**.52536**	**5.6300**	**.30469**
Stddev	.00031	.00129	.00058	.0138	.151	.00122	.0560	.00283
%RSD	.30091	.50372	.22289	.64514	.58434	.23145	.99391	.92824
#1	.10262	.25446	.26230	2.1484	25.978	.52572	5.6863	.30769
#2	.10268	.25529	.26149	2.1223	25.977	.52400	5.6294	.30207
#3	.10318	.25698	.26117	2.1278	25.716	.52636	5.5744	.30431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52899**	**156.74**	**.25616**	**5.2167**	**.26081**	**.61977**	**.19434**	**2.8776**
Stddev	.00070	.45	.00009	.0077	.00464	.00610	.00547	.0024
%RSD	.13312	.28962	.03388	.14786	1.7796	.98497	2.8125	.08491
#1	.52818	157.26	.25606	5.2217	.25750	.61905	.19157	2.8802
#2	.52943	156.44	.25619	5.2206	.25882	.62620	.20064	2.8772
#3	.52937	156.52	.25623	5.2078	.26612	.61406	.19081	2.8754
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608048101MSD Acquired: 8/12/2016 18:06:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579818-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51654	.55281	.50341	.25240	.51875	.52272	.41694
Stddev	.00068	.00121	.01424	.00394	.00119	.00255	.12016
%RSD	.13247	.21955	2.8295	1.5620	.22884	.48721	28.820
#1	.51673	.55374	.49590	.25400	.51928	.52552	.44337
#2	.51711	.55143	.49448	.25530	.51957	.52211	.52168
#3	.51578	.55324	.51983	.24791	.51738	.52054	.28576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11842.	73191.	3273.6
Stddev	10.	320.	10.7
%RSD	.08539	.43682	.32826
#1	11848.	73061.	3262.3
#2	11830.	72956.	3274.9
#3	11847.	73555.	3283.7

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608033009 Acquired: 8/12/2016 18:10:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00236**	**.00118**	**.00203**	**.00921**	**.00439**	**.00010**	**11.572**
Stddev	.00233	.00102	.00188	.00125	.00027	.00005	.074
%RSD	98.628	86.184	92.707	13.581	6.0749	46.705	.64201
#1	-.00395	.00182	.00263	.01063	.00460	.00005	11.523
#2	.00031	.00001	.00355	.00873	.00448	.00014	11.536
#3	-.00345	.00172	-.00008	.00827	.00409	.00011	11.658
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**-.00007**	**.00307**	**.00059**	**1.6760**	**19.139**	**.03328**
Stddev	.00008	.00023	.00036	.00012	.0281	.105	.00280
%RSD	57.519	322.87	11.615	20.868	1.6761	.54960	8.4117
#1	-.00022	.00014	.00299	.00073	1.7081	19.022	.03630
#2	-.00011	-.00004	.00276	.00052	1.6638	19.226	.03078
#3	-.00007	-.00032	.00345	.00052	1.6560	19.168	.03276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.239**	**.13784**	**.00005**	**16.636**	**.00004**	**.01030**	**.00051**
Stddev	.196	.00104	.00033	.086	.00070	.00748	.00223
%RSD	1.9097	.75462	624.73	.51981	1711.5	72.608	436.28
#1	10.257	.13898	.00010	16.565	.00071	.01603	-.00110
#2	10.035	.13694	-.00030	16.612	.00009	.01302	-.00042
#3	10.425	.13761	.00036	16.732	-.00068	.00184	.00306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608033009 Acquired: 8/12/2016 18:10:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00140**	**-.00035**	**1.1409**	**-.00354**	**.23275**	**.00028**	**-.00288**
Stddev	.00320	.00354	.0847	.00020	.00049	.00550	.00068
%RSD	228.77	1001.7	7.4243	5.7510	.20907	1982.4	23.601
#1	.00199	.00054	1.1841	-.00378	.23269	-.00237	-.00210
#2	-.00180	.00265	1.1952	-.00345	.23327	-.00340	-.00331
#3	-.00438	-.00425	1.0433	-.00341	.23230	.00660	-.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00042**	**.00020**	F **-.11736**
Stddev	.00040	.00001	.21455
%RSD	93.511	6.3869	182.81
#1	-.00008	.00021	-.31530
#2	-.00085	.00020	.11063
#3	-.00034	.00019	-.14741
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12507.**	**77159.**	**3357.5**
Stddev	56.	144.	34.3
%RSD	.44835	.18629	1.0223
#1	12567.	77321.	3394.6
#2	12497.	77047.	3350.8
#3	12456.	77109.	3326.9

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608033010 Acquired: 8/12/2016 18:13:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00199	-.00299	-.00078	.00811	.00385	-.00005	11.725
Stddev	.00122	.00262	.00108	.00104	.00126	.00006	.046
%RSD	61.262	87.858	138.37	12.845	32.649	119.17	.39590
#1	-.00078	-.00001	-.00013	.00764	.00521	-.00000	11.778
#2	-.00322	-.00496	-.00019	.00930	.00273	-.00003	11.700
#3	-.00197	-.00399	-.00203	.00738	.00362	-.00011	11.696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00025	.00348	.00006	1.6701	18.991	.03128
Stddev	.00011	.00034	.00113	.00081	.0298	.228	.00458
%RSD	132.98	137.87	32.514	1283.7	1.7859	1.1983	14.628
#1	-.00020	-.00014	.00442	-.00033	1.6510	19.253	.02810
#2	-.00006	.00052	.00381	.00099	1.7045	18.845	.03653
#3	.00002	.00036	.00222	-.00047	1.6548	18.874	.02923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.280	.13706	-.00023	16.595	-.00009	.00678	-.00248
Stddev	.112	.00277	.00049	.187	.00076	.00408	.00394
%RSD	1.0936	2.0180	216.42	1.1240	852.95	60.092	159.33
#1	10.358	.14025	-.00013	16.802	.00023	.00538	-.00277
#2	10.152	.13534	-.00075	16.543	.00046	.01137	.00161
#3	10.332	.13559	.00021	16.440	-.00096	.00359	-.00626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608033010 Acquired: 8/12/2016 18:13:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00211	1.1498	-.00279	.23545	-.00807	-.00232
Stddev	.00223	.00255	.0472	.00040	.00070	.00660	.00213
%RSD	6071.1	121.17	4.1072	14.402	.29578	81.830	92.113
#1	.00239	.00348	1.1712	-.00284	.23611	-.00530	-.00178
#2	-.00198	-.00084	1.1826	-.00317	.23472	-.00330	-.00467
#3	-.00053	.00368	1.0957	-.00237	.23552	-.01560	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00073	.00004	F -.28863
Stddev	.00086	.00006	.20512
%RSD	117.34	131.89	71.068
#1	-.00013	.00009	-.50365
#2	-.00172	.00005	-.26712
#3	-.00035	-.00002	-.09510
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12507.	77523.	3361.1
Stddev	33.	262.	36.5
%RSD	.26406	.33760	1.0853
#1	12543.	77382.	3319.0
#2	12499.	77825.	3382.9
#3	12478.	77363.	3381.4

Approved: August 15, 2016

Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 18:17:54 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42625	10.482	.41465	.52350	1.0602	.05142	10.507
Stddev	.00100	.006	.00633	.00106	.0012	.00013	.042
%RSD	.23353	.05398	1.5256	.20244	.11642	.25012	.40365
#1	.42668	10.476	.41530	.52307	1.0605	.05139	10.490
#2	.42696	10.487	.42063	.52271	1.0588	.05156	10.555
#3	.42512	10.485	.40802	.52470	1.0612	.05130	10.475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05203	.20829	.51889	.52474	4.2572	51.270	1.0631
Stddev	.00100	.00386	.00148	.00933	.0372	.178	.0051
%RSD	1.9145	1.8555	.28464	1.7783	.87375	.34716	.48148
#1	.05289	.21050	.51936	.52986	4.2587	51.082	1.0607
#2	.05226	.21053	.52008	.53039	4.2193	51.436	1.0690
#3	.05094	.20383	.51724	.51397	4.2936	51.293	1.0597
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.581	.52685	1.0372	50.880	.52391	10.429	.52550
Stddev	.223	.00239	.0156	.031	.01123	.149	.00601
%RSD	2.1052	.45409	1.5002	.06122	2.1437	1.4246	1.1437
#1	10.522	.52444	1.0459	50.852	.53092	10.516	.52941
#2	10.394	.52688	1.0465	50.914	.52986	10.513	.52852
#3	10.828	.52923	1.0192	50.875	.51096	10.257	.51858
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 18:17:54 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2367	.41868	5.2637	1.0490	1.0622	1.0311	.52792
Stddev	.0216	.00727	.0659	.0263	.0008	.0048	.00473
%RSD	1.7421	1.7366	1.2510	2.5067	.07462	.46651	.89527
#1	1.2483	.42111	5.2943	1.0649	1.0623	1.0326	.53214
#2	1.2501	.42441	5.3087	1.0634	1.0629	1.0350	.52879
#3	1.2119	.41050	5.1881	1.0186	1.0613	1.0258	.52281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0386	1.0435	F 449.75
Stddev	.0017	.0190	1.30
%RSD	.15894	1.8212	.28870
#1	1.0375	1.0551	448.40
#2	1.0378	1.0539	449.88
#3	1.0405	1.0216	450.99
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11859.	72904.	3220.3
Stddev	47.	70.	5.7
%RSD	.39872	.09599	.17739
#1	11805.	72829.	3226.0
#2	11877.	72914.	3220.4
#3	11895.	72968.	3214.6

Approved: August 15, 2016

Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 18:21:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00215	.00845	.00010	.00441	.00056	.00007	-.03158	-.00005
Stddev	.00135	.00778	.00210	.00124	.00086	.00003	.03829	.00012
%RSD	62.971	92.074	2040.6	28.119	152.91	39.659	121.26	255.98
#1	-.00276	.01413	-.00170	.00548	.00036	.00007	-.06360	-.00017
#2	-.00309	-.00042	-.00040	.00470	.00150	.00010	.01083	.00007
#3	-.00060	.01164	.00241	.00305	-.00018	.00005	-.04196	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00081	-.00141	-.01443	.03315	-.00328	-.00005	-.00027
Stddev	.00021	.00097	.00105	.00467	.07601	.00363	.03561	.00214
%RSD	106.17	120.51	74.579	32.398	229.30	110.72	66254.	794.31
#1	.00038	.00192	-.00232	-.01870	.11931	.00057	.03891	-.00274
#2	.00025	.00016	-.00165	-.00943	.00454	-.00376	-.03092	.00094
#3	-.00003	.00034	-.00026	-.01515	-.02440	-.00664	-.00814	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.01883	-.00094	.00049	-.00402	.00058	.00163	-.00512
Stddev	.00030	.01133	.00092	.00069	.00210	.00334	.00448	.00262
%RSD	95.174	60.153	97.998	139.95	52.117	571.27	275.40	51.133
#1	.00066	.01894	-.00048	-.00029	-.00580	-.00264	-.00339	-.00247
#2	.00006	.03011	-.00034	.00077	-.00455	.00403	.00307	-.00771
#3	.00024	.00745	-.00200	.00099	-.00171	.00036	.00520	-.00520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 18:21:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00193**	**.00014**	**-.00478**	**-.00145**	**-.00004**	**-.00010**	**-.02319**
Stddev	.00041	.00017	.00490	.00155	.00097	.00009	.20051
%RSD	21.050	123.30	102.68	106.89	2515.7	87.162	864.77
#1	-.00159	.00030	-.00597	-.00302	-.00007	-.00006	-.11997
#2	-.00184	.00014	-.00898	-.00140	-.00099	-.00021	-.15694
#3	-.00238	-.00003	.00061	.00008	.00095	-.00005	.20736
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12033.**	**74550.**	**3222.8**
Stddev	21.	221.	2.2
%RSD	.17754	.29665	.06803
#1	12031.	74332.	3223.6
#2	12012.	74774.	3220.4
#3	12055.	74543.	3224.6

Approved: August 15, 2016

Kim K Buck

Sample Name: LLCCV Acquired: 8/12/2016 18:25:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00721	.16991	.00837	.08520	.00955	.00162	.41647	.00072
Stddev	.00194	.00289	.00219	.00186	.00035	.00002	.04631	.00004
%RSD	26.879	1.7037	26.189	2.1859	3.7008	.98777	11.118	5.9769
#1	.00501	.17251	.00621	.08689	.00951	.00162	.37177	.00075
#2	.00867	.17044	.01059	.08320	.00922	.00163	.41342	.00067
#3	.00795	.16679	.00832	.08552	.00992	.00160	.46423	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00395	.00594	.00355	.07465	.89349	.08331	.47975	.01052
Stddev	.00018	.00042	.00024	.02625	.06143	.00219	.03410	.00236
%RSD	4.5141	7.0968	6.8011	35.158	6.8756	2.6300	7.1090	22.466
#1	.00392	.00562	.00381	.05195	.84046	.08545	.51602	.01318
#2	.00414	.00577	.00333	.10339	.87920	.08107	.47488	.00869
#3	.00378	.00642	.00351	.06862	.96081	.08339	.44833	.00968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00808	.41609	.01594	.79162	.00693	.08183	.01679	.82059
Stddev	.00085	.00138	.00183	.06837	.00275	.01039	.00838	.06466
%RSD	10.474	.33187	11.471	8.6363	39.627	12.694	49.874	7.8791
#1	.00857	.41536	.01645	.83138	.00784	.08875	.01964	.85769
#2	.00856	.41524	.01745	.83080	.00384	.08684	.02337	.85814
#3	.00710	.41769	.01390	.71268	.00910	.06988	.00737	.74593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: LLCCV Acquired: 8/12/2016 18:25:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40031	.04332	.02357	.14575	.00815	.01701	18.344
Stddev	.04384	.00054	.00817	.01251	.00070	.00165	.171
%RSD	10.953	1.2497	34.660	8.5808	8.5813	9.7096	.93214
#1	.42753	.04389	.03286	.15518	.00895	.01805	18.302
#2	.42367	.04324	.02031	.15050	.00781	.01788	18.197
#3	.34973	.04282	.01753	.13156	.00768	.01511	18.532
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12022.	74528.	3231.2
Stddev	15.	150.	8.6
%RSD	.12063	.20094	.26634
#1	12012.	74414.	3221.7
#2	12015.	74698.	3233.6
#3	12038.	74473.	3238.4

Approved: August 15, 2016

Kim K Buck

Sample Name: LLCCV Acquired: 8/12/2016 18:29:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00900	.21079	.01094	.10692	.01115	.00206	.54518	.00079
Stddev	.00200	.00714	.00022	.00052	.00058	.00008	.03432	.00005
%RSD	22.173	3.3854	1.9992	.48265	5.1682	3.8484	6.2953	6.8090
#1	.01116	.20508	.01091	.10708	.01120	.00214	.53862	.00074
#2	.00722	.21879	.01074	.10634	.01054	.00198	.51460	.00079
#3	.00862	.20849	.01117	.10734	.01169	.00207	.58230	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00500	.00594	.00573	.09763	.98857	.10362	.54299	.01165
Stddev	.00018	.00109	.00096	.02284	.15988	.00097	.03981	.00142
%RSD	3.6919	18.333	16.815	23.399	16.173	.93254	7.3320	12.218
#1	.00512	.00671	.00672	.12395	1.0602	.10281	.58449	.01029
#2	.00509	.00641	.00569	.08596	.80541	.10335	.50511	.01154
#3	.00479	.00469	.00479	.08297	1.1001	.10469	.53938	.01313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00999	.50589	.01955	.99677	.00804	.10418	.01774	1.0273
Stddev	.00045	.01583	.00170	.08225	.00111	.00687	.00321	.0728
%RSD	4.5325	3.1294	8.6804	8.2515	13.774	6.5917	18.123	7.0899
#1	.01019	.48767	.02075	1.0472	.00924	.11115	.01971	1.0716
#2	.01030	.51628	.02029	1.0412	.00705	.10398	.01947	1.0671
#3	.00947	.51371	.01761	.90186	.00785	.09742	.01403	.94324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: LLCCV Acquired: 8/12/2016 18:29:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50346	.05456	.02730	.19157	.00966	.02145	22.838
Stddev	.04965	.00025	.00749	.01456	.00014	.00212	.137
%RSD	9.8627	.46703	27.431	7.6008	1.4425	9.9020	.60111
#1	.53500	.05462	.02703	.20507	.00963	.02291	22.870
#2	.52915	.05477	.01995	.19352	.00954	.02244	22.956
#3	.44622	.05427	.03492	.17614	.00982	.01902	22.687
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12068.	74528.	3256.8
Stddev	27.	143.	9.9
%RSD	.22114	.19201	.30303
#1	12037.	74384.	3247.0
#2	12087.	74670.	3256.7
#3	12080.	74528.	3266.7

Approved: August 15, 2016

Kim K Buck

Sample Name: PBW B6 Acquired: 8/12/2016 18:33:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG580051-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00191**	**.03000**	**.00156**	**.00748**	**.00006**	**.00005**	**.07102**
Stddev	.00184	.00110	.00299	.00222	.00059	.00010	.03780
%RSD	96.227	3.6596	191.11	29.698	1025.4	201.40	53.223
#1	-.00394	.02882	.00461	.00834	.00065	-.00005	.02913
#2	-.00036	.03100	-.00136	.00915	.00007	.00004	.10259
#3	-.00143	.03017	.00144	.00496	-.00054	.00016	.08133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00020**	**.00079**	**.00026**	**-.00921**	**.01967**	**-.00350**
Stddev	.00029	.00011	.00141	.00030	.01613	.12253	.00015
%RSD	969.28	54.022	178.80	115.64	175.11	622.98	4.2478
#1	-.00029	.00032	-.00017	.00012	-.02132	.02087	-.00367
#2	.00029	.00011	.00013	.00006	.00909	.14160	-.00343
#3	-.00010	.00018	.00241	.00060	-.01540	-.10346	-.00340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.05855**	**-.00011**	**-.00003**	**-.00801**	**.00063**	**-.00386**	**-.00240**
Stddev	.11338	.00073	.00029	.01524	.00045	.00218	.00218
%RSD	193.63	673.79	1034.0	190.19	70.703	56.447	91.058
#1	.07229	-.00075	.00015	.00309	.00109	-.00322	-.00177
#2	-.12790	-.00026	-.00036	-.02539	.00060	-.00629	-.00059
#3	-.12005	.00069	.00013	-.00174	.00020	-.00207	-.00483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: PBW B6 Acquired: 8/12/2016 18:33:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG580051-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	-.00391	.00578	-.00211	.00161	.00027	-.00373
Stddev	.00222	.00242	.00181	.00028	.00067	.00678	.00281
%RSD	213.68	61.901	31.306	13.351	41.839	2519.9	75.393
#1	.00072	-.00196	.00727	-.00180	.00083	.00612	-.00302
#2	-.00100	-.00316	.00631	-.00218	.00196	-.00716	-.00682
#3	.00340	-.00662	.00376	-.00234	.00204	.00184	-.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00023	.00122	F -.04235
Stddev	.00051	.00019	.29493
%RSD	226.80	15.254	696.40
#1	.00034	.00143	.24996
#2	-.00066	.00108	-.03718
#3	-.00036	.00115	-.33983
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12152.	76031.	3290.4
Stddev	16.	140.	18.5
%RSD	.13247	.18358	.56095
#1	12156.	76120.	3269.2
#2	12166.	75870.	3303.0
#3	12134.	76104.	3299.0

Approved: August 15, 2016

Kim K Buck

Sample Name: LCSW B6 Acquired: 8/12/2016 18:37:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG580051-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19896**	**4.9758**	**.19636**	**.97541**	**.50861**	**.02393**	**5.1747**	**.02450**
Stddev	.00237	.0125	.00334	.00446	.00212	.00008	.0519	.00038
%RSD	1.1896	.25064	1.6985	.45685	.41780	.31982	1.0037	1.5642
#1	.19632	4.9628	.19789	.97082	.51099	.02385	5.2147	.02490
#2	.20089	4.9770	.19865	.97971	.50692	.02401	5.1160	.02448
#3	.19967	4.9876	.19253	.97571	.50792	.02392	5.1935	.02413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09885**	**.24836**	**.24990**	**1.9914**	**24.197**	**.50471**	**5.1264**	**.25265**
Stddev	.00189	.00185	.00565	.0221	.062	.00209	.0331	.00110
%RSD	1.9123	.74504	2.2595	1.1097	.25702	.41396	.64664	.43509
#1	.09998	.24676	.25254	2.0041	24.227	.50683	5.1638	.25160
#2	.09991	.24794	.25374	2.0041	24.126	.50265	5.1149	.25254
#3	.09667	.25039	.24342	1.9658	24.239	.50465	5.1006	.25379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50083**	**24.163**	**.25102**	**4.7788**	**.25009**	**.58927**	**.18809**	**2.5388**
Stddev	.01025	.108	.00475	.0715	.00381	.01315	.00103	.0287
%RSD	2.0476	.44499	1.8939	1.4965	1.5223	2.2321	.54519	1.1298
#1	.50570	24.270	.25321	4.8179	.24986	.59546	.18926	2.5522
#2	.50775	24.055	.25429	4.8223	.25401	.59817	.18767	2.5584
#3	.48905	24.163	.24557	4.6963	.24640	.57416	.18734	2.5059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: LCSW B6 Acquired: 8/12/2016 18:37:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG580051-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49288	.51735	.49047	.24782	.49473	.49403	.23140
Stddev	.01186	.00318	.01507	.00395	.00019	.00587	.15848
%RSD	2.4057	.61434	3.0715	1.5935	.03927	1.1888	68.488
#1	.49956	.52090	.50490	.24835	.49490	.49664	.04946
#2	.49989	.51476	.49169	.25148	.49452	.49814	.30532
#3	.47919	.51640	.47484	.24363	.49477	.48730	.33941
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12046.	74693.	3283.8
Stddev	22.	244.	25.4
%RSD	.18082	.32609	.77329
#1	12070.	74972.	3260.0
#2	12030.	74523.	3310.6
#3	12037.	74585.	3280.7

Approved: August 15, 2016

Sample Name: FBLK1 Acquired: 8/12/2016 18:40:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579881-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00137**	**.02063**	**.00072**	**.00723**	**-.00121**	**.00010**	**.05276**
Stddev	.00108	.00863	.00167	.00238	.00093	.00006	.02628
%RSD	78.758	41.821	231.73	32.868	76.793	58.129	49.805
#1	-.00200	.02913	-.00049	.00978	-.00135	.00004	.05419
#2	-.00199	.01188	.00263	.00682	-.00022	.00011	.07830
#3	-.00012	.02089	.00003	.00508	-.00206	.00016	.02580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00033**	**.00087**	**.00034**	**.00749**	**-.01837**	**-.00410**
Stddev	.00016	.00038	.00039	.00168	.02261	.05895	.00498
%RSD	73.007	115.65	44.883	487.67	301.85	320.94	121.47
#1	.00011	.00049	.00052	-.00024	.03251	-.00935	-.00578
#2	.00015	-.00011	.00129	-.00096	.00146	-.08130	-.00802
#3	.00041	.00059	.00080	.00224	-.01149	.03555	.00150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.06945**	**.00171**	**.00014**	**128.11**	**-.00054**	**-.00034**	**.00079**
Stddev	.08362	.00139	.00008	.61	.00062	.00189	.00345
%RSD	120.40	81.197	58.967	.47881	114.07	552.45	435.65
#1	-.14996	.00306	.00014	128.63	-.00063	-.00076	-.00310
#2	-.07535	.00028	.00006	128.27	.00011	.00173	.00203
#3	.01696	.00180	.00022	127.44	-.00111	-.00199	.00344
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: FBLK1 Acquired: 8/12/2016 18:40:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579881-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	-.00421	.00494	-.00211	.00090	-.00396	-.00262
Stddev	.00242	.00663	.00200	.00029	.00028	.00467	.00071
%RSD	342.96	157.42	40.389	13.655	31.159	117.84	27.081
#1	.00336	-.01057	.00438	-.00183	.00078	.00005	-.00182
#2	-.00137	-.00473	.00716	-.00210	.00071	-.00285	-.00319
#3	.00012	.00266	.00328	-.00241	.00123	-.00908	-.00285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00048	.00434	F -.08328
Stddev	.00094	.00048	.11704
%RSD	198.09	10.953	140.53
#1	-.00031	.00456	-.20311
#2	-.00149	.00466	.03075
#3	.00037	.00379	-.07748
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12107.	74692.	3301.6
Stddev	15.	58.	7.9
%RSD	.12048	.07743	.23920
#1	12121.	74684.	3298.0
#2	12108.	74754.	3296.2
#3	12092.	74639.	3310.7

Approved: August 15, 2016

Kim K Buck

Sample Name: FBLK2 Acquired: 8/12/2016 18:44:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579881-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00111**	**.00093**	**.00133**	**.00285**	**-.00019**	**.00009**	**.02988**	**-.00010**
Stddev	.00113	.00686	.00149	.00146	.00052	.00003	.00995	.00015
%RSD	101.61	738.38	112.05	51.352	271.90	34.389	33.287	152.61
#1	.00014	-.00671	.00294	.00344	.00030	.00012	.03954	-.00023
#2	-.00142	.00657	.00109	.00393	-.00074	.00006	.03042	-.00011
#3	-.00205	.00293	-.00002	.00119	-.00014	.00009	.01967	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.00093**	**-.00056**	**-.00646**	**-.08824**	**-.00561**	**.00948**	**-.00140**
Stddev	.00004	.00050	.00161	.01381	.08724	.00200	.04077	.00183
%RSD	18.825	54.210	285.84	213.70	98.864	35.683	430.00	130.80
#1	.00025	.00036	-.00121	.00290	-.10973	-.00369	-.02015	-.00080
#2	.00026	.00111	.00127	.00003	-.16273	-.00545	-.00739	-.00345
#3	.00018	.00132	-.00174	-.02233	.00773	-.00768	.05598	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.35009**	**.00043**	**.00197**	**-.00052**	**.00105**	**-.00121**	**.00515**
Stddev	.00002	.01727	.00141	.00452	.00270	.00313	.00544	.00068
%RSD	8.0583	4.9340	323.42	228.90	519.89	297.46	447.90	13.277
#1	.00021	.34000	.00195	-.00130	-.00081	-.00056	-.00749	.00593
#2	.00020	.37003	.00018	.00009	.00231	.00465	.00170	.00464
#3	.00024	.34023	-.00083	.00713	-.00306	-.00094	.00215	.00488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: FBLK2 Acquired: 8/12/2016 18:44:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG579881-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00212**	**.00039**	**-.00448**	**-.00336**	**.00036**	**.00407**	**.02112**
Stddev	.00024	.00023	.01408	.00144	.00079	.00014	.18273
%RSD	11.099	59.777	314.49	42.903	219.92	3.3550	864.98
#1	-.00212	.00058	.01139	-.00278	-.00052	.00394	.11639
#2	-.00235	.00046	-.00935	-.00500	.00101	.00421	-.18955
#3	-.00188	.00013	-.01547	-.00230	.00058	.00406	.13654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12261.**	**76531.**	**3323.0**
Stddev	39.	203.	21.2
%RSD	.31462	.26508	.63655
#1	12278.	76393.	3300.9
#2	12289.	76437.	3343.1
#3	12217.	76764.	3325.0

Approved: August 15, 2016

Kim K Buck

Sample Name: FLTBLK Acquired: 8/12/2016 18:48:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG580051-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00150**	**.00704**	**.00025**	**.00257**	**-.00009**	**.00003**	**.00574**	**.00000**
Stddev	.00062	.00607	.00099	.00078	.00068	.00003	.02630	.00016
%RSD	41.252	86.245	394.86	30.336	736.93	100.45	458.42	14971.
#1	-.00155	.00670	.00043	.00183	.00013	-.00000	.03577	-.00003
#2	-.00210	.01328	.00113	.00250	.00045	.00004	-.00540	-.00013
#3	-.00086	.00115	-.00082	.00338	-.00085	.00005	-.01316	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.00120**	**.00076**	**.02268**	**-.03107**	**-.00278**	**.00768**	**.00138**
Stddev	.00011	.00048	.00060	.04012	.00501	.00333	.08099	.00209
%RSD	94.758	40.147	78.471	176.86	16.113	119.66	1055.2	152.16
#1	-.00001	.00104	.00126	.04534	-.02531	-.00042	.07874	.00352
#2	.00021	.00175	.00093	-.02364	-.03345	-.00133	.02479	-.00067
#3	.00015	.00082	.00010	.04635	-.03443	-.00658	-.08050	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00028**	**.01447**	**-.00013**	**.00018**	**-.00030**	**.00323**	**-.00559**	**-.00187**
Stddev	.00010	.03406	.00056	.00615	.00209	.00205	.00233	.00049
%RSD	35.418	235.33	439.27	3370.7	699.07	63.652	41.792	26.159
#1	.00037	.04556	.00007	-.00686	-.00212	.00242	-.00826	-.00218
#2	.00030	-.02193	-.00076	.00452	.00199	.00170	-.00395	-.00130
#3	.00017	.01978	.00031	.00289	-.00077	.00556	-.00455	-.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: FLTBLK Acquired: 8/12/2016 18:48:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG580051-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00185	.00027	-.00866	-.00616	.00022	.00243	.02887
Stddev	.00043	.00058	.00702	.00084	.00046	.00039	.09160
%RSD	23.212	211.31	81.161	13.687	208.62	16.037	317.26
#1	-.00136	.00022	-.00073	-.00661	-.00021	.00260	.11300
#2	-.00219	.00087	-.01114	-.00668	.00016	.00270	-.06872
#3	-.00198	-.00028	-.01410	-.00519	.00072	.00198	.04234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12174.	76053.	3269.5
Stddev	4.	52.	18.4
%RSD	.02936	.06840	.56397
#1	12173.	76083.	3261.1
#2	12171.	75993.	3256.7
#3	12178.	76083.	3290.6

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608046001 Acquired: 8/12/2016 18:52:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00299	1.5871	.00615	.07651	.10089	.00018	3.8682	.00038
Stddev	.00180	.0139	.00284	.00168	.00059	.00006	.0265	.00012
%RSD	60.085	.87818	46.241	2.2010	.58181	32.297	.68476	31.871
#1	-.00219	1.5727	.00505	.07559	.10035	.00011	3.8691	.00043
#2	-.00173	1.6005	.00402	.07846	.10081	.00022	3.8412	.00024
#3	-.00505	1.5882	.00937	.07549	.10152	.00021	3.8942	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00317	.00352	.00897	1.1512	8.5054	.00346	.67505	.13104
Stddev	.00073	.00052	.00172	.0155	.0227	.00277	.04810	.00387
%RSD	23.147	14.868	19.168	1.3449	.26753	80.061	7.1258	2.9500
#1	.00330	.00361	.01047	1.1658	8.4897	.00604	.61951	.12677
#2	.00384	.00296	.00935	1.1528	8.5315	.00053	.70356	.13205
#3	.00238	.00399	.00710	1.1350	8.4950	.00382	.70208	.13430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03436	115.07	.00532	.26374	.00082	.00350	.00075	5.2957
Stddev	.00291	.45	.00123	.01507	.00201	.00302	.00374	.6048
%RSD	8.4781	.39330	23.152	5.7125	244.09	86.357	496.22	11.420
#1	.03606	115.46	.00623	.27213	.00073	.00350	-.00028	5.8448
#2	.03604	114.57	.00581	.27274	.00287	.00651	.00491	5.3948
#3	.03100	115.19	.00392	.24634	-.00114	.00047	-.00236	4.6475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608046001 Acquired: 8/12/2016 18:52:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00220**	**.05544**	**.02186**	**-.00339**	**.00298**	**.05375**	**.73917**
Stddev	.00095	.00084	.00733	.00281	.00073	.00433	.17827
%RSD	43.300	1.5124	33.547	82.846	24.344	8.0609	24.118
#1	-.00122	.05525	.02062	-.00484	.00382	.05629	.90993
#2	-.00313	.05471	.01522	-.00015	.00264	.05622	.75336
#3	-.00226	.05635	.02973	-.00518	.00249	.04875	.55423
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11764.**	**72202.**	**3283.9**
Stddev	8.	818.	49.2
%RSD	.07115	1.1332	1.4967
#1	11758.	73114.	3308.4
#2	11761.	71533.	3315.9
#3	11774.	71959.	3227.3

Approved: August 15, 2016

Sample Name: L1608051401 Acquired: 8/12/2016 18:56:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.07759	-.00211	.01031	.03283	.00004	43.578	.00016
Stddev	.00230	.01449	.00098	.00060	.00101	.00007	.108	.00024
%RSD	856.48	18.677	46.440	5.7798	3.0866	165.16	.24747	145.95
#1	.00163	.06208	-.00099	.01077	.03381	.00001	43.696	.00012
#2	-.00283	.07991	-.00280	.00964	.03179	-.00001	43.484	-.00005
#3	.00039	.09078	-.00254	.01052	.03287	.00013	43.554	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00089	.00055	.03855	.36676	.00273	4.6259	.00630
Stddev	.00023	.00076	.00080	.02108	.11639	.00244	.1153	.00035
%RSD	484.00	84.761	145.00	54.692	31.735	89.303	2.4935	5.6026
#1	.00030	.00147	.00017	.02998	.26341	.00553	4.4983	.00591
#2	-.00014	.00117	.00001	.02310	.34403	.00155	4.6565	.00659
#3	-.00002	.00004	.00148	.06257	.49284	.00111	4.7227	.00639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	3.2105	.00012	.00219	-.00186	-.00151	-.00367	3.9987
Stddev	.00014	.0355	.00068	.00225	.00192	.00349	.00245	.2817
%RSD	242.89	1.1063	558.42	102.86	103.35	231.53	66.790	7.0439
#1	-.00002	3.2304	.00076	.00112	.00017	-.00150	-.00425	4.1757
#2	.00006	3.2316	-.00059	.00067	-.00209	.00198	-.00578	4.1466
#3	-.00022	3.1695	.00019	.00477	-.00365	-.00500	-.00098	3.6739
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608051401 Acquired: 8/12/2016 18:56:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00258**	**.10478**	**-.00826**	**-.00707**	**-.00072**	**.00223**	**-.02784**
Stddev	.00057	.00031	.00650	.00179	.00053	.00021	.18559
%RSD	22.215	.29914	78.740	25.296	74.162	9.3634	666.55
#1	-.00233	.10513	-.00152	-.00611	-.00106	.00247	-.06236
#2	-.00323	.10451	-.00875	-.00913	-.00010	.00215	-.19375
#3	-.00217	.10471	-.01450	-.00596	-.00099	.00208	.17258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11928.**	**76121.**	**3316.2**
Stddev	44.	1119.	38.7
%RSD	.37285	1.4706	1.1683
#1	11939.	77191.	3272.0
#2	11879.	76213.	3332.5
#3	11966.	74958.	3344.1

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608051601 Acquired: 8/12/2016 19:00:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00097	2.5081	.00143	.00940	.10992	.00018	80.711	-.00007
Stddev	.00138	.0096	.00270	.00233	.00043	.00007	.360	.00011
%RSD	142.44	.38455	188.33	24.768	.38947	39.310	.44587	166.53
#1	-.00249	2.5167	.00279	.01141	.11018	.00017	80.463	-.00006
#2	-.00064	2.4977	-.00168	.00685	.10942	.00026	80.547	.00004
#3	.00022	2.5099	.00318	.00993	.11015	.00012	81.124	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00184	.01209	.01787	3.7713	1.3226	.00489	3.9494	.19576
Stddev	.00012	.00128	.00255	.0360	.0443	.00112	.1391	.00157
%RSD	6.7153	10.553	14.247	.95350	3.3509	23.001	3.5221	.80260
#1	.00182	.01351	.01976	3.7301	1.3538	.00399	3.8178	.19487
#2	.00197	.01172	.01888	3.7965	1.2718	.00615	3.9355	.19485
#3	.00173	.01105	.01498	3.7872	1.3420	.00452	4.0949	.19758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	3.1231	.00629	.07218	.00456	.00097	-.00271	6.7763
Stddev	.00011	.0182	.00046	.00299	.00332	.00279	.00106	.3472
%RSD	21.283	.58211	7.3780	4.1369	72.919	288.91	39.000	5.1235
#1	.00043	3.1206	.00621	.07409	.00839	.00419	-.00335	6.9953
#2	.00050	3.1064	.00678	.07370	.00286	-.00063	-.00330	6.9575
#3	.00065	3.1425	.00587	.06874	.00242	-.00066	-.00149	6.3760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608051601 Acquired: 8/12/2016 19:00:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00238**	**.14848**	**.01744**	**-.00441**	**.00376**	**.08064**	**.15494**
Stddev	.00014	.00081	.00344	.00300	.00070	.00533	.19547
%RSD	5.9397	.54653	19.734	68.126	18.628	6.6140	126.16
#1	-.00245	.14791	.02096	-.00423	.00420	.08376	.35814
#2	-.00247	.14813	.01727	-.00149	.00412	.08366	.13841
#3	-.00222	.14941	.01408	-.00749	.00295	.07448	-.03174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11961.**	**74275.**	**3243.8**
Stddev	20.	80.	25.2
%RSD	.16704	.10731	.77583
#1	11962.	74248.	3239.6
#2	11941.	74365.	3270.8
#3	11981.	74212.	3221.0

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608051601PS Acquired: 8/12/2016 19:04:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG580129-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s .02435	s .90365	k -.00019	s .11569	.01256	s .00328
Stddev	.02413	1.0787	.00175	.11967	.03320	.00369
%RSD	99.125	119.38	899.36	103.44	264.37	112.40
#1	s .04879	s 2.0711	k .00164	s .24184	.05086	s .00725
#2	.02372	.69601	-.00037	.10144	-.00532	.00265
#3	.00053	-.05617	-.00185	.00378	-.00787	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.03824	k .00009	k -.00008	s .03405	k .00005	k -.01582
Stddev	.02432	.00008	.00006	.03837	.00062	.04044
%RSD	63.583	87.341	73.566	112.67	1173.8	255.66
#1	-.03581	k .00000	k -.00008	s .07513	k -.00029	k -.06197
#2	-.01524	.00015	-.00015	.02790	.00077	.01341
#3	-.06368	.00012	-.00002	-.00086	-.00032	.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02369	-.01253	k -.03110	k -.00269	k .00018	-.01306
Stddev	.11662	.02325	.01477	.00591	.00033	.03923
%RSD	492.32	185.56	47.492	219.41	190.02	300.35
#1	-.11000	-.03937	k -.03386	k -.00945	k -.00005	.03176
#2	.10448	.00137	-.04429	.00153	.00001	-.02978
#3	.07658	.00041	-.01514	-.00017	.00056	-.04117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608051601PS Acquired: 8/12/2016 19:04:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG580129-01

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00079	k .00532	k .00414	k -.00084	k .00577	k -.00807
Stddev	.00016	.00502	.00209	.00105	.00070	.01038
%RSD	19.622	94.474	50.513	124.18	12.185	128.55
#1	k .00064	k .00335	k .00510	k -.00086	k .00496	k -.01213
#2	.00078	.00157	.00558	-.00188	.00615	-.01581
#3	.00095	.01102	.00174	.00021	.00619	.00372
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00227	.00038	k -.00511	k .00039	s .06106	k -.00036
Stddev	.00037	.00107	.01790	.00280	.06621	.00024
%RSD	16.455	281.71	350.34	724.97	108.43	66.332
#1	k -.00213	.00159	k -.02574	k .00186	s .13141	k -.00051
#2	-.00270	-.00003	.00632	.00215	.05182	-.00050
#3	-.00199	-.00043	.00410	-.00285	-.00004	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Zr3391
Units	ppm
Avg	kF -.24438
Stddev	.91597
%RSD	374.81
#1	k -1.2993
#2	.21693
#3	.34922
Check ?	Chk Fail
High Limit	36.000
Low Limit	-.04000

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608051601PS Acquired: 8/12/2016 19:04:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG580129-01

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**18538.**	^ *****	**4046.2**
Stddev	3288.	-----	2545.9
%RSD	17.734	-----	62.922
#1	20387.	^ -----	1146.1
#2	20485.	84923.	5079.1
#3	14743.	125600.	5913.3

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608051601SDL Acquired: 8/12/2016 19:08:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG580129-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.52870**	**.00075**	**.00064**	**.02282**	**.00007**	**16.868**
Stddev	.00085	.00821	.00156	.00169	.00131	.00003	.033
%RSD	218.36	1.5526	210.01	265.78	5.7283	49.453	.19825
#1	.00046	.52343	.00244	.00253	.02349	.00010	16.843
#2	-.00125	.52452	-.00064	.00012	.02364	.00007	16.855
#3	-.00038	.53816	.00043	-.00074	.02131	.00003	16.906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.00024**	**.00333**	**.00354**	**.81612**	**.28148**	**-.00200**
Stddev	.00015	.00018	.00065	.00088	.02113	.12612	.00356
%RSD	48.924	72.643	19.480	24.983	2.5892	44.804	177.47
#1	-.00016	.00004	.00341	.00386	.80377	.40440	-.00188
#2	-.00047	.00035	.00265	.00422	.84052	.28765	.00149
#3	-.00030	.00034	.00394	.00254	.80407	.15239	-.00562
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.83066**	**.04255**	**.00027**	**.63666**	**.00024**	**.00978**	**.00061**
Stddev	.07711	.00280	.00017	.01713	.00069	.00592	.00287
%RSD	9.2832	6.5868	61.027	2.6908	282.36	60.496	469.49
#1	.91327	.04461	.00020	.65508	.00103	.01621	.00246
#2	.81813	.03936	.00047	.63372	-.00004	.00859	-.00269
#3	.76058	.04368	.00016	.62119	-.00025	.00455	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608051601SDL Acquired: 8/12/2016 19:08:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG580129-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00087**	**-.00037**	**1.3911**	**-.00294**	**.03007**	**.00183**	**-.00492**
Stddev	.00276	.00779	.1093	.00083	.00014	.00729	.00121
%RSD	318.53	2084.9	7.8583	28.118	.44912	398.05	24.638
#1	-.00041	-.00688	1.4565	-.00259	.03003	.00439	-.00537
#2	.00163	-.00250	1.4519	-.00388	.03022	.00751	-.00355
#3	-.00382	.00826	1.2649	-.00234	.02996	-.00640	-.00584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00052**	**.01739**	F **-.05452**
Stddev	.00017	.00142	.04704
%RSD	33.540	8.1780	86.277
#1	.00032	.01806	-.06060
#2	.00060	.01836	-.00473
#3	.00064	.01576	-.09821
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12158.**	**75039.**	**3257.0**
Stddev	27.	225.	17.1
%RSD	.22159	.30041	.52522
#1	12169.	75108.	3245.4
#2	12179.	75223.	3248.9
#3	12128.	74788.	3276.6

Approved: August 15, 2016

Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 19:11:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42217**	**10.417**	**.41222**	**.51709**	**1.0583**	**.05131**	**10.489**
Stddev	.00240	.027	.00651	.00602	.0017	.00007	.069
%RSD	.56949	.26308	1.5783	1.1646	.15894	.12933	.65661
#1	.41955	10.415	.41481	.51325	1.0595	.05134	10.558
#2	.42269	10.390	.41703	.51399	1.0591	.05124	10.487
#3	.42428	10.445	.40482	.52403	1.0564	.05137	10.420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05147**	**.20628**	**.51819**	**.51968**	**4.2570**	**51.017**	**1.0543**
Stddev	.00127	.00433	.00318	.01028	.0357	.131	.0022
%RSD	2.4620	2.1015	.61335	1.9784	.83759	.25635	.21231
#1	.05232	.20916	.52103	.52683	4.2162	51.078	1.0525
#2	.05209	.20838	.51878	.52431	4.2730	50.866	1.0536
#3	.05002	.20129	.51476	.50790	4.2819	51.106	1.0568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.673**	**.52851**	**1.0271**	**50.727**	**.51702**	**10.268**	**.52248**
Stddev	.141	.00325	.0275	.081	.01161	.176	.00494
%RSD	1.3178	.61418	2.6744	.15921	2.2463	1.7190	.94575
#1	10.817	.52929	1.0377	50.639	.52392	10.377	.52518
#2	10.667	.52494	1.0478	50.798	.52352	10.362	.52547
#3	10.536	.53129	.99596	50.743	.50361	10.064	.51677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 19:11:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2205**	**.40614**	**5.1880**	**1.0392**	**1.0577**	**1.0245**	**.52775**
Stddev	.0261	.00463	.0793	.0294	.0006	.0148	.00431
%RSD	2.1410	1.1403	1.5279	2.8323	.06149	1.4471	.81719
#1	1.2370	.41121	5.2387	1.0590	1.0583	1.0207	.53191
#2	1.2340	.40212	5.2286	1.0533	1.0578	1.0119	.52803
#3	1.1903	.40510	5.0966	1.0054	1.0570	1.0409	.52330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0340**	**1.0338**	F **448.99**
Stddev	.0022	.0207	1.82
%RSD	.21192	2.0055	.40592
#1	1.0352	1.0464	447.47
#2	1.0315	1.0451	448.48
#3	1.0354	1.0098	451.01
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11867.**	**72795.**	**3191.4**
Stddev	18.	94.	12.8
%RSD	.15132	.12916	.40208
#1	11847.	72797.	3202.9
#2	11871.	72888.	3193.7
#3	11883.	72700.	3177.6

Approved: August 15, 2016

Sample Name: CCB Acquired: 8/12/2016 19:15:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00119	.00157	-.00192	.00147	.00100	.00010	-.02996
Stddev	.00185	.00745	.00136	.00253	.00074	.00001	.06126
%RSD	155.24	473.77	70.592	172.13	73.635	13.714	204.50
#1	-.00289	.00634	-.00036	.00433	.00185	.00012	-.09997
#2	.00077	.00538	-.00272	.00051	.00057	.00010	-.00369
#3	-.00145	-.00701	-.00269	-.00044	.00058	.00009	.01379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00009	.00038	-.00022	-.00006	.07658	-.00494
Stddev	.00005	.00053	.00055	.00041	.05567	.16255	.00271
%RSD	134.51	599.11	142.79	184.84	95250.	212.28	54.847
#1	-.00000	.00068	-.00023	.00007	-.05755	-.10044	-.00695
#2	-.00010	-.00034	.00055	-.00005	.05358	.11102	-.00186
#3	-.00001	-.00007	.00083	-.00068	.00379	.21915	-.00602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	.00133	-.00013	.00350	-.00046	.00070	-.00084
Stddev	.03904	.00146	.00054	.03302	.00058	.00083	.00272
%RSD	1075.5	109.86	429.01	944.33	126.25	118.74	323.89
#1	-.01125	.00058	.00027	-.02614	-.00061	-.00000	-.00138
#2	-.02579	.00300	.00009	.03908	-.00095	.00161	-.00324
#3	.04793	.00040	-.00074	-.00246	.00018	.00048	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 19:15:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	.00089	.00497	.00012	.00036	-.00296	-.00501
Stddev	.00143	.00189	.00171	.00036	.00002	.00479	.00318
%RSD	269.04	213.29	34.422	305.33	6.7784	162.02	63.337
#1	-.00211	-.00127	.00301	-.00028	.00039	.00236	-.00790
#2	.00070	.00169	.00575	.00023	.00034	-.00694	-.00554
#3	-.00020	.00224	.00615	.00041	.00036	-.00429	-.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00054	-.00007	F .04918
Stddev	.00064	.00012	.19447
%RSD	118.14	164.52	395.40
#1	-.00073	-.00020	.04987
#2	-.00107	-.00006	.24331
#3	.00017	.00004	-.14563
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12058.	74453.	3214.9
Stddev	9.	224.	16.2
%RSD	.07182	.30060	.50237
#1	12057.	74643.	3213.3
#2	12051.	74206.	3231.8
#3	12068.	74509.	3199.6

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608051701 Acquired: 8/12/2016 19:19:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00118**	**.01036**	**.00346**	**.02483**	**.14002**	**-.00001**	F **277.15**
Stddev	.00219	.00613	.00158	.00313	.00035	.00004	.45
%RSD	185.71	59.124	45.588	12.614	.25078	814.65	.16248
#1	-.00006	.00907	.00312	.02781	.14041	.00001	276.85
#2	-.00371	.00498	.00209	.02156	.13973	.00002	277.66
#3	.00022	.01703	.00519	.02511	.13992	-.00006	276.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.00027**	**.00173**	**.00196**	**-.00328**	**200.61**	**.04318**
Stddev	.00043	.00027	.00044	.00073	.01236	.25	.00288
%RSD	214.03	98.267	25.613	37.406	376.40	.12329	6.6754
#1	.00063	.00051	.00137	.00278	.01025	200.41	.04097
#2	.00022	.00032	.00222	.00177	-.00612	200.88	.04644
#3	-.00024	-.00002	.00159	.00135	-.01398	200.53	.04215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01416**	**.00021**	**.00319**	**216.43**	**.00073**	**.03116**	**.00546**
Stddev	.02176	.00278	.00013	.46	.00057	.00633	.00171
%RSD	153.66	1320.7	3.9453	.21306	77.523	20.312	31.360
#1	-.00261	.00068	.00316	216.06	.00139	.03748	.00417
#2	-.00062	.00272	.00332	216.95	.00049	.02482	.00481
#3	-.03927	-.00278	.00307	216.29	.00033	.03118	.00740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608051701 Acquired: 8/12/2016 19:19:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00165	.13514	.15771	-.00199	.37432	F -.04682	-.00543
Stddev	.00168	.00752	.01115	.00032	.00047	.00589	.00261
%RSD	101.56	5.5624	7.0679	16.176	.12463	12.592	48.116
#1	.00274	.14327	.16573	-.00214	.37379	-.04043	-.00496
#2	.00251	.13371	.16241	-.00221	.37448	-.04798	-.00308
#3	-.00028	.12844	.14498	-.00162	.37468	-.05204	-.00825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00015	.00731	.19343
Stddev	.00105	.00077	.18417
%RSD	709.31	10.590	95.215
#1	-.00048	.00789	-.01923
#2	.00103	.00761	.30087
#3	-.00099	.00643	.29865
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11671.	72234.	3290.7
Stddev	41.	187.	7.0
%RSD	.34862	.25943	.21323
#1	11694.	72218.	3293.6
#2	11624.	72429.	3282.7
#3	11695.	72055.	3295.8

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608051801 Acquired: 8/12/2016 19:23:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**.02283**	**-.00083**	**.02603**	**.43781**	**-.00000**	F **317.19**
Stddev	.00149	.00735	.00217	.00095	.00278	.00007	2.94
%RSD	203.63	32.196	261.14	3.6589	.63401	1966.1	.92679
#1	-.00003	.01833	-.00017	.02612	.44061	.00003	320.55
#2	.00028	.01885	.00093	.02504	.43506	.00005	315.88
#3	-.00245	.03131	-.00325	.02694	.43775	-.00009	315.13
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00051**	**.00098**	**.00178**	**.00314**	**.00213**	**216.15**	**.08356**
Stddev	.00010	.00038	.00045	.00122	.00798	1.81	.00246
%RSD	19.210	39.198	25.080	38.738	375.46	.83748	2.9454
#1	.00040	.00091	.00225	.00175	-.00358	218.05	.08312
#2	.00053	.00140	.00172	.00365	-.00129	215.96	.08621
#3	.00059	.00064	.00136	.00402	.01124	214.44	.08135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01863**	**-.00113**	**.00481**	**234.75**	**.00037**	**.06549**	**.01704**
Stddev	.06625	.00277	.00049	2.13	.00041	.00616	.00282
%RSD	355.59	245.96	10.161	.90798	108.73	9.3990	16.526
#1	-.07832	.00144	.00534	237.10	.00083	.06550	.01494
#2	.05265	-.00075	.00469	234.22	.00022	.07164	.02024
#3	-.03022	-.00406	.00439	232.94	.00007	.05933	.01594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608051801 Acquired: 8/12/2016 19:23:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00240	.03307	.16702	-.00211	.32843	F -.05741	-.00278
Stddev	.00111	.00303	.01164	.00032	.00258	.00978	.00135
%RSD	46.248	9.1528	6.9694	15.352	.78707	17.040	48.692
#1	.00364	.03559	.17286	-.00175	.33138	-.06540	-.00347
#2	.00149	.03390	.17458	-.00218	.32730	-.06032	-.00365
#3	.00208	.02971	.15362	-.00239	.32660	-.04650	-.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00030	.01489	.21660
Stddev	.00030	.00138	.04487
%RSD	98.079	9.2509	20.716
#1	-.00042	.01567	.26235
#2	.00004	.01570	.21479
#3	-.00053	.01330	.17266
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11614.	71354.	3263.3
Stddev	54.	74.	29.0
%RSD	.46284	.10404	.88958
#1	11631.	71422.	3231.8
#2	11554.	71275.	3288.9
#3	11658.	71365.	3269.2

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608052701 Acquired: 8/12/2016 19:27:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.03066	-.00078	.03050	.21477	.00003	150.94	.00021
Stddev	.00131	.00252	.00335	.00203	.00136	.00015	1.50	.00017
%RSD	959.32	8.2303	431.07	6.6441	.63463	507.23	.99155	78.897
#1	.00083	.03011	-.00459	.03259	.21634	-.00003	152.26	.00027
#2	-.00162	.03341	.00170	.03036	.21403	-.00008	151.23	.00034
#3	.00038	.02845	.00057	.02855	.21394	.00020	149.31	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00279	.00502	.08136	1.5196	.00902	17.688	.01234
Stddev	.00033	.00115	.00157	.01693	.0393	.00202	.294	.00056
%RSD	254.77	41.009	31.195	20.814	2.5829	22.390	1.6626	4.5133
#1	.00024	.00206	.00567	.09298	1.5536	.00752	17.866	.01298
#2	-.00024	.00411	.00615	.06193	1.5284	.00822	17.850	.01205
#3	.00038	.00221	.00323	.08917	1.4766	.01132	17.349	.01199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	69.138	.00301	.00446	.00127	-.00148	-.00380	4.8604
Stddev	.00026	.701	.00117	.00311	.00082	.00262	.00343	.3180
%RSD	37.521	1.0141	38.953	69.800	64.514	177.33	90.357	6.5418
#1	.00050	69.685	.00206	.00683	.00193	-.00022	-.00269	5.0747
#2	.00098	69.382	.00432	.00093	.00035	-.00448	-.00764	5.0113
#3	.00057	68.348	.00265	.00562	.00154	.00028	-.00105	4.4950
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608052701 Acquired: 8/12/2016 19:27:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00205**	**.58055**	**-.02693**	**-.00424**	**-.00035**	**.03676**	**.22612**
Stddev	.00023	.00425	.00938	.00121	.00063	.00302	.15062
%RSD	11.457	.73181	34.838	28.442	181.90	8.2204	66.614
#1	-.00200	.58493	-.03598	-.00358	-.00090	.03882	.22190
#2	-.00230	.58026	-.01725	-.00351	.00034	.03816	.37880
#3	-.00184	.57645	-.02757	-.00564	-.00048	.03329	.07764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11909.**	**73315.**	**3248.6**
Stddev	59.	142.	29.5
%RSD	.49763	.19338	.90834
#1	11855.	73234.	3230.1
#2	11972.	73233.	3233.1
#3	11900.	73479.	3282.6

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608056001 Acquired: 8/12/2016 19:31:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG580051-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00112	.01377	.00011	.02320	.07773	.00001	36.215	.01440
Stddev	.00118	.00167	.00260	.00145	.00223	.00008	.606	.00068
%RSD	105.53	12.100	2284.6	6.2478	2.8711	991.52	1.6725	4.7085
#1	-.00053	.01432	.00214	.02240	.07941	-.00007	36.796	.01478
#2	-.00248	.01510	.00102	.02487	.07857	.00008	36.261	.01480
#3	-.00035	.01190	-.00282	.02232	.07520	.00001	35.587	.01362
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00117	.00290	.01849	.87841	-.00261	1.3536	.07994
Stddev	.00044	.00052	.00135	.01160	.05199	.00309	.0930	.00185
%RSD	326.72	44.160	46.645	62.713	5.9181	118.70	6.8697	2.3150
#1	.00062	.00097	.00246	.01686	.87608	-.00564	1.3373	.08201
#2	.00001	.00079	.00442	.00780	.93152	-.00273	1.4536	.07938
#3	-.00023	.00176	.00182	.03082	.82763	.00055	1.2698	.07845
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	125.52	.00043	.07136	.00685	-.00047	-.00097	.45715
Stddev	.00032	1.12	.00063	.00418	.00046	.00064	.00714	.02454
%RSD	132.50	.88908	146.44	5.8609	6.6450	135.69	739.80	5.3690
#1	.00051	125.98	.00085	.06948	.00652	-.00101	-.00727	.47391
#2	-.00012	126.34	.00075	.07616	.00667	-.00066	-.00242	.46855
#3	.00034	124.25	-.00030	.06846	.00737	.00024	.00679	.42897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608056001 Acquired: 8/12/2016 19:31:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG580051-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00315	.09543	-.00389	-.00542	-.00105	1.5713	.04957
Stddev	.00026	.00121	.00759	.00113	.00106	.0994	.14875
%RSD	8.1261	1.2706	195.12	20.805	100.77	6.3237	300.09
#1	-.00290	.09606	-.00456	-.00415	-.00089	1.6273	-.11660
#2	-.00314	.09620	-.01113	-.00579	-.00008	1.6300	.17030
#3	-.00341	.09404	.00401	-.00631	-.00218	1.4566	.09500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12136.	73822.	3322.1
Stddev	26.	764.	46.5
%RSD	.21383	1.0349	1.3998
#1	12162.	74685.	3298.0
#2	12136.	73231.	3292.6
#3	12110.	73549.	3375.7

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608056001MS Acquired: 8/12/2016 19:35:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG580051-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20109**	**5.0975**	**.20497**	**1.0108**	**.59244**	**.02486**	**42.442**	**.03978**
Stddev	.00031	.0047	.00381	.0013	.00071	.00020	.097	.00051
%RSD	.15396	.09181	1.8590	.12702	.11988	.80797	.22738	1.2740
#1	.20096	5.1002	.20783	1.0115	.59313	.02472	42.553	.04004
#2	.20145	5.0921	.20644	1.0094	.59171	.02478	42.394	.04011
#3	.20087	5.1002	.20064	1.0117	.59248	.02509	42.379	.03920
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09964**	**.25540**	**.25274**	**2.0698**	**26.053**	**.51305**	**6.5137**	**.33380**
Stddev	.00167	.00031	.00469	.0113	.153	.00351	.1366	.00238
%RSD	1.6755	.11986	1.8561	.54491	.58592	.68349	2.0978	.71337
#1	.10051	.25524	.25455	2.0580	26.225	.51460	6.3838	.33415
#2	.10071	.25576	.25626	2.0804	25.934	.51553	6.6562	.33600
#3	.09772	.25521	.24742	2.0711	26.000	.50904	6.5012	.33127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51105**	**154.90**	**.24963**	**5.0203**	**.25735**	**.59563**	**.18877**	**3.0751**
Stddev	.00841	.55	.00368	.0574	.00487	.00573	.00237	.0257
%RSD	1.6456	.35201	1.4756	1.1440	1.8930	.96169	1.2561	.83556
#1	.51412	155.45	.25101	5.0385	.26237	.59917	.19017	3.0815
#2	.51749	154.89	.25243	5.0664	.25704	.59871	.19012	3.0969
#3	.50154	154.36	.24546	4.9559	.25264	.58903	.18604	3.0468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608056001MS Acquired: 8/12/2016 19:35:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG580051-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50346	.61764	.50704	.24907	.51456	2.1468	.38890
Stddev	.00929	.00213	.01112	.00242	.00099	.0336	.14229
%RSD	1.8459	.34545	2.1927	.97177	.19282	1.5646	36.587
#1	.50767	.61913	.50307	.25186	.51502	2.1640	.51748
#2	.50991	.61860	.51960	.24750	.51342	2.1683	.23603
#3	.49281	.61520	.49845	.24787	.51524	2.1081	.41319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11891.	73279.	3268.2
Stddev	21.	151.	14.0
%RSD	.17932	.20584	.42902
#1	11915.	73408.	3254.3
#2	11878.	73113.	3268.0
#3	11879.	73315.	3282.4

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608056001MSD Acquired: 8/12/2016 19:38:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG580051-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20545**	**5.2083**	**.20978**	**1.0307**	**.59623**	**.02542**	**42.624**	**.04024**
Stddev	.00195	.0109	.00341	.0037	.00357	.00009	.127	.00070
%RSD	.94678	.20864	1.6251	.35655	.59845	.34817	.29681	1.7343
#1	.20325	5.1980	.21228	1.0282	.59340	.02540	42.480	.04066
#2	.20694	5.2073	.21118	1.0290	.60024	.02535	42.719	.04064
#3	.20615	5.2197	.20590	1.0349	.59505	.02552	42.672	.03944
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10129**	**.25987**	**.25529**	**2.0949**	**26.329**	**.51978**	**6.6088**	**.33808**
Stddev	.00201	.00230	.00567	.0212	.166	.00392	.0752	.00082
%RSD	1.9823	.88569	2.2204	1.0104	.63114	.75323	1.1378	.24294
#1	.10255	.26056	.25824	2.0853	26.150	.51527	6.6600	.33843
#2	.10235	.25730	.25887	2.0802	26.359	.52180	6.5225	.33714
#3	.09897	.26174	.24875	2.1192	26.478	.52228	6.6440	.33867
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51793**	**155.82**	**.25294**	**5.0868**	**.26378**	**.60263**	**.19245**	**3.1042**
Stddev	.00888	.36	.00444	.0650	.00097	.01045	.00558	.0282
%RSD	1.7151	.23245	1.7560	1.2786	.36643	1.7339	2.9014	.90906
#1	.52285	155.46	.25605	5.1161	.26329	.60788	.18889	3.1188
#2	.52327	156.18	.25493	5.1321	.26490	.60941	.19888	3.1221
#3	.50768	155.81	.24786	5.0123	.26316	.59060	.18957	3.0717
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608056001MSD Acquired: 8/12/2016 19:38:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG580051-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50896	.62210	.50454	.25215	.52699	2.1611	.18567
Stddev	.01018	.00130	.00157	.00377	.00225	.0358	.15695
%RSD	2.0006	.20823	.31117	1.4956	.42629	1.6576	84.531
#1	.51523	.62061	.50617	.24853	.52560	2.1813	.05163
#2	.51443	.62283	.50304	.25605	.52579	2.1823	.14706
#3	.49721	.62287	.50442	.25189	.52958	2.1198	.35832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11950.	72961.	3270.4
Stddev	20.	224.	21.5
%RSD	.16526	.30741	.65618
#1	11930.	73091.	3294.3
#2	11950.	73089.	3264.3
#3	11970.	72702.	3252.7

Approved: August 15, 2016

Sample Name: L1608056002 Acquired: 8/12/2016 19:42:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00148	.01441	.00266	.02278	.07954	.00013	42.072	.01642
Stddev	.00073	.00267	.00163	.00077	.00098	.00006	.677	.00101
%RSD	49.300	18.545	61.328	3.3701	1.2278	45.587	1.6102	6.1502
#1	-.00066	.01705	.00449	.02241	.07879	.00018	41.557	.01702
#2	-.00175	.01446	.00135	.02367	.07918	.00007	41.820	.01698
#3	-.00204	.01171	.00215	.02227	.08064	.00014	42.839	.01525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00168	.00374	.00307	.71472	-.00170	1.2842	.06584
Stddev	.00023	.00022	.00043	.02798	.09434	.00232	.0267	.00134
%RSD	183.89	13.033	11.390	911.98	13.200	136.51	2.0828	2.0400
#1	.00026	.00144	.00357	-.01219	.71866	-.00421	1.2651	.06707
#2	.00025	.00175	.00422	-.01396	.80703	.00037	1.3148	.06603
#3	-.00014	.00186	.00342	.03536	.61848	-.00127	1.2728	.06441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	121.92	.00151	.04664	.01193	-.00267	-.00025	.48271
Stddev	.00026	.55	.00053	.00409	.00288	.00126	.00433	.03053
%RSD	82.256	.44776	35.258	8.7750	24.104	47.027	1726.0	6.3252
#1	.00049	121.32	.00131	.04790	.00867	-.00122	.00362	.50486
#2	.00002	122.03	.00111	.04995	.01410	-.00343	.00055	.49539
#3	.00046	122.40	.00211	.04206	.01304	-.00336	-.00493	.44788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608056002 Acquired: 8/12/2016 19:42:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00218**	**.13559**	**-.00079**	**-.00473**	**-.00050**	**1.7238**	**.14443**
Stddev	.00051	.00144	.00245	.00203	.00040	.1241	.22640
%RSD	23.582	1.0650	310.44	43.044	80.002	7.1987	156.75
#1	-.00274	.13398	-.00336	-.00557	-.00057	1.8032	-.07534
#2	-.00207	.13603	.00152	-.00241	-.00007	1.7873	.13171
#3	-.00174	.13677	-.00053	-.00620	-.00085	1.5808	.37693
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12003.**	**73633.**	**3298.2**
Stddev	19.	371.	23.0
%RSD	.15964	.50371	.69742
#1	11981.	73917.	3315.9
#2	12013.	73768.	3306.5
#3	12015.	73214.	3272.2

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608061701 Acquired: 8/12/2016 19:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00130	-.00070	.00007	.13910	.00259	.00004	.12976	.00010
Stddev	.00089	.00429	.00292	.00282	.00032	.00006	.04554	.00014
%RSD	68.463	611.29	4236.5	2.0272	12.489	131.57	35.097	144.64
#1	-.00039	.00389	-.00199	.13944	.00292	.00001	.16629	.00019
#2	-.00134	-.00461	-.00122	.13612	.00257	.00001	.14427	.00016
#3	-.00217	-.00139	.00342	.14173	.00227	.00011	.07873	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.00081	.00009	.00553	.15009	-.00170	.12166	.00050
Stddev	.00026	.00057	.00122	.02283	.07416	.00405	.04097	.00209
%RSD	217.99	70.163	1346.4	412.67	49.408	237.53	33.674	416.67
#1	.00002	.00037	-.00131	-.01918	.11193	.00093	.07924	.00098
#2	-.00041	.00146	.00086	.00994	.10279	-.00637	.12474	.00232
#3	.00004	.00061	.00072	.02583	.23556	.00032	.16100	-.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	27.518	.00141	.02099	-.00134	-.00017	.00348	.37113
Stddev	.00022	.081	.00048	.00080	.00296	.00244	.00201	.03032
%RSD	40.475	.29523	34.203	3.8307	221.53	1432.6	57.807	8.1686
#1	.00071	27.506	.00100	.02156	-.00127	.00164	.00181	.38887
#2	.00064	27.444	.00194	.02135	-.00433	-.00295	.00292	.38839
#3	.00029	27.605	.00128	.02007	.00159	.00080	.00572	.33613
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608061701 Acquired: 8/12/2016 19:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00244**	**.00492**	**-.00849**	**-.00410**	**-.00052**	**.00979**	**.06626**
Stddev	.00018	.00033	.00851	.00141	.00054	.00113	.10865
%RSD	7.4335	6.6600	100.13	34.496	103.64	11.549	163.99
#1	-.00249	.00485	-.00498	-.00321	-.00079	.01049	.18127
#2	-.00224	.00527	-.01819	-.00336	.00010	.01039	.05216
#3	-.00259	.00463	-.00231	-.00573	-.00087	.00849	-.03466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12150.**	**75037.**	**3269.6**
Stddev	27.	156.	22.2
%RSD	.21942	.20739	.67937
#1	12181.	75186.	3244.9
#2	12136.	75051.	3275.6
#3	12133.	74875.	3288.1

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608061702 Acquired: 8/12/2016 19:50:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00140**	**.01845**	**.00007**	**.20841**	**.00576**	**.00001**	**.46749**
Stddev	.00152	.00534	.00213	.00229	.00135	.00003	.02131
%RSD	108.91	28.946	3220.4	1.1009	23.432	173.48	4.5587
#1	-.00222	.01926	.00216	.20591	.00691	.00004	.45403
#2	.00036	.02334	.00014	.21041	.00609	-.00000	.45637
#3	-.00233	.01275	-.00211	.20891	.00427	.00000	.49206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**-.00003**	**.00049**	**.00092**	**.03420**	**.10968**	**.00006**
Stddev	.00006	.00065	.00110	.00046	.02611	.05573	.00280
%RSD	76.922	2299.4	225.96	50.513	76.326	50.815	4879.2
#1	-.00005	-.00049	-.00077	.00121	.00822	.09009	.00295
#2	-.00016	.00072	.00096	.00038	.03396	.06638	-.00263
#3	-.00004	-.00031	.00127	.00116	.06043	.17256	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03767**	**.00401**	**.00019**	**20.911**	**-.00003**	**-.00204**	**-.00135**
Stddev	.06531	.00430	.00024	.103	.00073	.00309	.00045
%RSD	173.38	107.08	128.75	.49070	2395.3	151.32	33.070
#1	-.01895	.00861	.00023	20.793	-.00024	-.00149	-.00147
#2	.02283	.00010	.00040	20.964	.00078	-.00537	-.00086
#3	.10913	.00332	-.00007	20.976	-.00064	.00074	-.00173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608061702 Acquired: 8/12/2016 19:50:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00125**	**-.00332**	**.62960**	**-.00262**	**.00134**	**-.00092**	**-.00495**
Stddev	.00426	.00357	.04750	.00021	.00051	.00667	.00299
%RSD	340.57	107.43	7.5440	8.0623	37.798	722.82	60.335
#1	-.00389	-.00038	.65421	-.00266	.00086	.00480	-.00153
#2	-.00353	-.00230	.65975	-.00281	.00129	-.00824	-.00706
#3	.00367	-.00729	.57485	-.00240	.00187	.00068	-.00627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00019**	**.00175**	F **-.07666**
Stddev	.00069	.00018	.13312
%RSD	372.78	10.413	173.66
#1	.00012	.00195	-.07953
#2	-.00098	.00162	-.20832
#3	.00030	.00166	.05788
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12151.**	**75123.**	**3273.7**
Stddev	31.	136.	7.9
%RSD	.25288	.18113	.24105
#1	12139.	75087.	3281.2
#2	12186.	75009.	3274.5
#3	12129.	75274.	3265.5

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608061801 Acquired: 8/12/2016 19:54:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00197	.15612	-.00029	.03948	.08532	.00006	49.545
Stddev	.00124	.01082	.00088	.00234	.00017	.00004	.176
%RSD	62.927	6.9312	306.32	5.9257	.19387	70.278	.35522
#1	-.00140	.15213	.00022	.04059	.08514	.00001	49.727
#2	-.00112	.14786	.00022	.04105	.08535	.00010	49.533
#3	-.00339	.16837	-.00130	.03679	.08547	.00007	49.376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.00078	.00207	.00566	.26498	1.3704	.00628
Stddev	.00017	.00022	.00033	.00071	.02818	.0587	.00048
%RSD	7609.8	28.255	16.159	12.596	10.634	4.2810	7.7030
#1	.00007	.00104	.00190	.00569	.29022	1.3342	.00605
#2	-.00019	.00067	.00246	.00636	.23458	1.3389	.00684
#3	.00012	.00064	.00185	.00494	.27015	1.4381	.00596
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.7639	.02085	.00162	39.744	.00205	.01578	-.00056
Stddev	.0877	.00102	.00033	.098	.00038	.00872	.00179
%RSD	1.1296	4.8681	20.201	.24732	18.311	55.255	316.56
#1	7.8646	.02073	.00159	39.857	.00203	.01769	.00130
#2	7.7037	.01990	.00197	39.688	.00244	.02339	-.00074
#3	7.7236	.02192	.00131	39.687	.00169	.00627	-.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608061801 Acquired: 8/12/2016 19:54:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00522	.00036	3.5709	-.00235	.41255	-.00866	-.00534
Stddev	.00135	.00144	.2294	.00043	.00164	.00261	.00238
%RSD	25.877	394.81	6.4225	18.330	.39873	30.158	44.458
#1	.00666	-.00121	3.7227	-.00244	.41444	-.01076	-.00343
#2	.00398	.00161	3.6831	-.00188	.41148	-.00948	-.00800
#3	.00501	.00068	3.3071	-.00272	.41173	-.00573	-.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00024	.06596	F -.14647
Stddev	.00034	.00490	.04978
%RSD	143.46	7.4329	33.988
#1	.00015	.06903	-.19588
#2	-.00038	.06855	-.09633
#3	-.00047	.06030	-.14720
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12045.	74287.	3236.5
Stddev	17.	190.	15.6
%RSD	.14409	.25529	.48313
#1	12031.	74438.	3218.5
#2	12065.	74074.	3246.4
#3	12040.	74348.	3244.7

Approved: August 15, 2016

Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 19:58:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41171	10.107	.40360	.49847	1.0054	.05007	10.015
Stddev	.00080	.009	.00162	.00223	.0023	.00007	.036
%RSD	.19528	.08768	.40219	.44646	.22436	.14100	.36066
#1	.41262	10.099	.40334	.49901	1.0038	.05007	9.9800
#2	.41109	10.105	.40213	.49602	1.0044	.04999	10.052
#3	.41143	10.116	.40534	.50037	1.0080	.05013	10.013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05013	.20277	.50720	.50769	4.0923	50.050	1.0142
Stddev	.00015	.00057	.00134	.00134	.0262	.233	.0054
%RSD	.29154	.28127	.26354	.26483	.63927	.46478	.53173
#1	.05005	.20283	.50820	.50776	4.0622	50.186	1.0132
#2	.05003	.20217	.50568	.50900	4.1059	49.781	1.0093
#3	.05029	.20331	.50771	.50632	4.1089	50.182	1.0200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.343	.51012	1.0053	49.035	.50178	9.9650	.50500
Stddev	.056	.00558	.0069	.233	.00137	.0130	.00148
%RSD	.53919	1.0941	.68423	.47467	.27316	.13054	.29343
#1	10.300	.51279	.99739	49.211	.50306	9.9761	.50543
#2	10.406	.51386	1.0092	48.772	.50033	9.9507	.50335
#3	10.323	.50370	1.0094	49.124	.50196	9.9681	.50622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 19:58:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1840**	**.39806**	**5.0024**	**1.0259**	**1.0074**	**.99969**	**.51366**
Stddev	.0035	.00250	.0054	.0006	.0048	.01401	.00236
%RSD	.29245	.62680	.10822	.05954	.47798	1.4010	.45863
#1	1.1805	.39957	4.9986	1.0264	1.0051	1.0138	.51588
#2	1.1874	.39518	5.0001	1.0253	1.0042	.98577	.51391
#3	1.1841	.39943	5.0086	1.0261	1.0129	.99952	.51119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0149**	**1.0011**	F **434.59**
Stddev	.0008	.0005	2.02
%RSD	.08162	.04886	.46491
#1	1.0139	1.0008	432.26
#2	1.0155	1.0016	435.81
#3	1.0153	1.0008	435.71
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12298.**	**75153.**	**3310.7**
Stddev	19.	96.	14.8
%RSD	.15606	.12819	.44613
#1	12313.	75042.	3327.8
#2	12277.	75208.	3302.0
#3	12305.	75210.	3302.4

Approved: August 15, 2016

Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 20:01:38 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00196	-.00647	-.00014	.00300	.00200	.00009	-.02336	-.00007
Stddev	.00126	.00366	.00120	.00129	.00187	.00003	.02931	.00019
%RSD	64.186	56.613	831.64	42.924	93.565	30.706	125.47	273.51
#1	-.00243	-.00848	-.00142	.00439	.00043	.00009	-.05443	.00011
#2	-.00054	-.00224	.00097	.00279	.00150	.00011	-.01941	-.00026
#3	-.00292	-.00867	.00002	.00184	.00408	.00006	.00378	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	-.00002	.00041	-.00438	.03409	-.00228	-.01074	.00076
Stddev	.00029	.00025	.00034	.00760	.05238	.00504	.08314	.00338
%RSD	566.50	1078.2	83.042	173.31	153.66	220.99	773.97	445.60
#1	-.00028	.00022	.00033	.00438	.04602	.00341	-.03566	-.00308
#2	.00017	-.00029	.00012	-.00899	-.02323	-.00618	-.07857	.00331
#3	.00026	-.00000	.00078	-.00855	.07948	-.00407	.08201	.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00731	.00012	.00140	.00012	.00148	-.00296	.00188
Stddev	.00032	.04138	.00125	.00093	.00250	.00210	.00325	.00102
%RSD	215.79	566.12	1059.7	66.075	2038.1	141.90	109.92	54.219
#1	.00018	-.02487	-.00079	.00220	-.00006	.00361	.00013	.00221
#2	-.00046	-.00719	.00154	.00163	-.00228	.00140	-.00635	.00270
#3	-.00016	.05399	-.00040	.00038	.00272	-.00058	-.00264	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 20:01:38 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00060	-.00324	-.00251	-.00014	-.00028	.03841
Stddev	.00089	.00057	.00302	.00307	.00043	.00009	.32265
%RSD	185.72	96.218	93.032	122.24	301.43	30.642	840.06
#1	-.00045	.00018	.00015	-.00418	-.00031	-.00020	.01509
#2	.00133	.00036	-.00427	.00103	.00034	-.00027	.37208
#3	.00056	.00125	-.00561	-.00440	-.00046	-.00037	-.27195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12619.	77262.	3202.9
Stddev	42.	82.	83.7
%RSD	.33015	.10602	2.6128
#1	12577.	77174.	3258.9
#2	12619.	77336.	3243.1
#3	12661.	77276.	3106.7

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608061802 Acquired: 8/12/2016 20:05:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00344	.00115	-.00135	.04055	.08060	.00005	48.328	.00002
Stddev	.00022	.00244	.00099	.00254	.00078	.00007	.125	.00005
%RSD	6.3670	211.71	73.430	6.2529	.97301	148.09	.25866	223.05
#1	-.00366	-.00058	-.00053	.04322	.08006	-.00001	48.191	.00007
#2	-.00343	.00009	-.00246	.04025	.08150	.00012	48.435	-.00003
#3	-.00323	.00394	-.00107	.03817	.08024	.00002	48.357	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00033	.00243	.01740	1.4737	.00495	7.8271	.01281
Stddev	.00031	.00098	.00052	.02735	.0960	.00210	.0825	.00116
%RSD	370.05	299.37	21.264	157.18	6.5120	42.360	1.0544	9.0809
#1	.00023	.00111	.00227	.03235	1.4628	.00498	7.7592	.01405
#2	-.00038	.00064	.00301	.03403	1.3836	.00703	7.9190	.01175
#3	-.00010	-.00077	.00202	-.01417	1.5746	.00283	7.8033	.01263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00173	39.885	.00119	-.00146	-.00106	.00176	-.00293	3.3946
Stddev	.00052	.058	.00099	.00252	.00161	.00143	.00420	.1679
%RSD	30.262	.14473	83.157	172.43	152.78	81.459	143.41	4.9450
#1	.00188	39.827	.00190	.00106	.00080	.00011	.00047	3.4871
#2	.00217	39.942	.00160	-.00399	-.00189	.00267	-.00164	3.4958
#3	.00115	39.885	.00006	-.00146	-.00208	.00250	-.00763	3.2008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608061802 Acquired: 8/12/2016 20:05:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00230**	**.41469**	**-.01287**	**-.00468**	**-.00011**	**.05493**	**.26555**
Stddev	.00133	.00131	.00692	.00117	.00024	.00347	.09380
%RSD	57.708	.31564	53.812	25.057	229.10	6.3131	35.323
#1	-.00381	.41318	-.00666	-.00594	.00004	.05705	.23068
#2	-.00131	.41542	-.01160	-.00363	-.00038	.05681	.37180
#3	-.00179	.41547	-.02033	-.00447	.00002	.05092	.19418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12074.**	**74330.**	**3267.5**
Stddev	37.	226.	10.3
%RSD	.30309	.30402	.31370
#1	12097.	74507.	3260.5
#2	12093.	74075.	3262.8
#3	12032.	74407.	3279.3

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608061901 Acquired: 8/12/2016 20:09:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00145**	**.06717**	**.00049**	**.01789**	**.05870**	**.00008**	**61.408**
Stddev	.00071	.00768	.00224	.00171	.00072	.00004	.421
%RSD	48.583	11.428	459.66	9.5579	1.2197	52.337	.68574
#1	-.00203	.07410	.00144	.01856	.05806	.00012	61.172
#2	-.00166	.06850	.00209	.01917	.05857	.00005	61.158
#3	-.00067	.05892	-.00207	.01595	.05947	.00006	61.894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.00018**	**.00156**	**.00177**	**.03987**	**1.4282**	**.00111**
Stddev	.00011	.00022	.00080	.00059	.01063	.0693	.00334
%RSD	366.68	123.92	51.024	33.543	26.664	4.8556	301.73
#1	-.00004	-.00039	.00122	.00147	.04152	1.4580	-.00261
#2	.00016	.00005	.00248	.00245	.02851	1.3490	.00387
#3	-.00003	-.00018	.00100	.00139	.04957	1.4777	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**13.719**	**.00504**	**.00040**	**43.606**	**.00062**	**.02637**	**-.00216**
Stddev	.162	.00181	.00029	.159	.00098	.00630	.00171
%RSD	1.1822	35.837	72.289	.36353	158.86	23.879	78.917
#1	13.665	.00393	.00067	43.580	.00138	.03153	-.00021
#2	13.591	.00712	.00009	43.462	.00095	.02824	-.00289
#3	13.902	.00407	.00044	43.776	-.00049	.01935	-.00338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608061901 Acquired: 8/12/2016 20:09:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00189	3.4259	-.00214	.15805	-.01477	-.00496
Stddev	.00075	.00198	.2262	.00064	.00130	.01119	.00106
%RSD	736.17	104.31	6.6020	29.668	.82500	75.757	21.382
#1	-.00044	.00028	3.5696	-.00288	.15709	-.00239	-.00595
#2	-.00022	-.00238	3.5429	-.00178	.15751	-.01777	-.00384
#3	.00096	-.00358	3.1652	-.00177	.15953	-.02415	-.00508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00082	.00193	F -.10730
Stddev	.00044	.00028	.13751
%RSD	53.981	14.301	128.16
#1	-.00085	.00222	-.25981
#2	-.00124	.00191	-.06931
#3	-.00036	.00167	.00723
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12034.	73598.	3258.8
Stddev	3.	146.	12.4
%RSD	.02275	.19838	.37999
#1	12037.	73430.	3252.9
#2	12034.	73689.	3273.1
#3	12031.	73676.	3250.6

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608061902 Acquired: 8/12/2016 20:13:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00190	.06215	.00000	.01655	.05013	.00006	54.392	-.00001
Stddev	.00099	.00676	.00174	.00342	.00161	.00008	.160	.00007
%RSD	51.988	10.869	37128.	20.656	3.2153	141.15	.29401	477.23
#1	-.00090	.05491	.00026	.01967	.05195	-.00003	54.534	.00001
#2	-.00192	.06325	.00160	.01290	.04888	.00013	54.219	-.00009
#3	-.00288	.06829	-.00184	.01709	.04957	.00007	54.425	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00123	.00144	.03204	1.1802	-.00098	13.057	.00013
Stddev	.00037	.00063	.00103	.02251	.0695	.00305	.061	.00105
%RSD	99.778	50.960	71.474	70.257	5.8886	310.96	.46519	805.32
#1	-.00022	.00173	.00054	.05654	1.1062	-.00063	13.126	.00089
#2	-.00011	.00142	.00256	.02733	1.1903	.00188	13.013	-.00107
#3	-.00080	.00053	.00122	.01226	1.2441	-.00420	13.030	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	28.196	.00018	.01952	-.00047	.00221	.00363	3.4232
Stddev	.00022	.128	.00093	.00287	.00214	.00317	.00267	.2438
%RSD	63.477	.45480	509.50	14.689	452.62	143.52	73.328	7.1216
#1	.00054	28.320	-.00077	.02280	.00143	.00351	.00084	3.5724
#2	.00042	28.064	.00110	.01824	-.00006	.00451	.00391	3.5552
#3	.00010	28.205	.00022	.01752	-.00280	-.00140	.00615	3.1418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608061902 Acquired: 8/12/2016 20:13:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00232**	**.16258**	**-.00693**	**-.00461**	**-.00093**	**.00083**	**.23395**
Stddev	.00081	.00081	.01124	.00166	.00059	.00015	.08270
%RSD	35.095	.49980	162.26	35.987	63.307	18.207	35.352
#1	-.00162	.16352	-.01582	-.00614	-.00142	.00101	.15197
#2	-.00212	.16221	-.01068	-.00486	-.00109	.00076	.23252
#3	-.00321	.16203	.00571	-.00284	-.00028	.00073	.31736
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12119.**	**74384.**	**3256.2**
Stddev	16.	11.	19.7
%RSD	.12969	.01534	.60561
#1	12104.	74397.	3236.2
#2	12119.	74377.	3275.6
#3	12135.	74378.	3256.9

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608061903 Acquired: 8/12/2016 20:17:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00109	.14288	-.00134	.01503	.11355	.00007	67.471	-.00019
Stddev	.00085	.00385	.00055	.00053	.00073	.00003	.219	.00004
%RSD	78.156	2.6974	41.332	3.5208	.63945	49.333	.32409	19.581
#1	-.00062	.14105	-.00102	.01490	.11379	.00009	67.358	-.00016
#2	-.00058	.14731	-.00101	.01457	.11413	.00008	67.723	-.00017
#3	-.00207	.14029	-.00198	.01561	.11274	.00003	67.332	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.00171	.00040	.14538	.86317	.00087	7.7244	.00815
Stddev	.00020	.00061	.00036	.00448	.13489	.00521	.1175	.00185
%RSD	125.09	35.413	90.055	3.0845	15.627	597.25	1.5212	22.676
#1	-.00012	.00109	.00013	.14039	.84739	.00542	7.5957	.00726
#2	.00002	.00176	.00027	.14667	1.0052	-.00481	7.7516	.00691
#3	-.00037	.00230	.00081	.14907	.73687	.00201	7.8259	.01027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	16.280	.00039	.01980	-.00140	.00149	-.00470	4.1923
Stddev	.00018	.047	.00053	.00439	.00023	.00269	.00316	.2569
%RSD	17.335	.28722	137.55	22.180	16.645	180.27	67.291	6.1282
#1	.00121	16.260	-.00006	.01588	-.00162	.00436	-.00281	4.3547
#2	.00086	16.333	.00097	.01897	-.00144	.00110	-.00294	4.3260
#3	.00102	16.246	.00025	.02455	-.00116	-.00098	-.00834	3.8961
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608061903 Acquired: 8/12/2016 20:17:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00254**	**.23854**	**-.01142**	**-.00426**	**-.00006**	**.00135**	**.12047**
Stddev	.00091	.00103	.00404	.00027	.00041	.00013	.11307
%RSD	35.720	.43166	35.361	6.3543	645.86	9.8468	93.858
#1	-.00167	.23858	-.00843	-.00457	.00030	.00143	.23200
#2	-.00348	.23955	-.01601	-.00408	-.00051	.00143	.12347
#3	-.00246	.23749	-.00981	-.00414	.00002	.00120	.00593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12106.**	**74569.**	**3248.3**
Stddev	14.	93.	15.5
%RSD	.11195	.12511	.47853
#1	12093.	74526.	3234.4
#2	12120.	74506.	3245.5
#3	12105.	74677.	3265.1

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608061904 Acquired: 8/12/2016 20:21:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00124	.09007	.00153	.01562	.06098	.00004	47.679	-.00011
Stddev	.00210	.01119	.00075	.00068	.00047	.00010	.269	.00027
%RSD	168.76	12.420	48.928	4.3603	.77204	254.45	.56387	250.62
#1	-.00330	.10123	.00162	.01604	.06123	.00015	47.570	.00012
#2	.00090	.07886	.00224	.01483	.06128	-.00004	47.986	-.00004
#3	-.00133	.09010	.00074	.01598	.06044	.00000	47.482	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00060	.00102	.13609	1.5043	.00077	6.6829	.03478
Stddev	.00038	.00128	.00076	.01129	.0576	.00184	.0741	.00224
%RSD	1479.2	212.22	74.659	8.2957	3.8276	239.12	1.1095	6.4323
#1	-.00024	.00183	.00164	.12316	1.5605	-.00132	6.6159	.03667
#2	.00041	-.00072	.00017	.14402	1.4455	.00147	6.6703	.03536
#3	-.00025	.00071	.00126	.14108	1.5068	.00215	6.7626	.03231
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	9.8206	.00051	.05341	-.00152	-.00005	-.00151	3.9021
Stddev	.00073	.1042	.00094	.00382	.00089	.00194	.00308	.2566
%RSD	84.513	1.0610	183.32	7.1450	58.662	3608.6	204.77	6.5771
#1	.00150	9.9283	.00127	.05707	-.00249	-.00036	-.00302	4.0605
#2	.00007	9.8131	.00081	.05372	-.00133	.00202	.00204	4.0399
#3	.00102	9.7203	-.00054	.04945	-.00074	-.00182	-.00354	3.6060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608061904 Acquired: 8/12/2016 20:21:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00216**	**.16370**	**-.00554**	**-.00570**	**-.00011**	**.00139**	**-.00582**
Stddev	.00081	.00046	.00390	.00132	.00124	.00010	.25131
%RSD	37.424	.28298	70.376	23.143	1148.6	7.4076	4317.6
#1	-.00128	.16321	-.00114	-.00719	.00116	.00151	-.28062
#2	-.00233	.16414	-.00856	-.00527	-.00016	.00134	.21234
#3	-.00286	.16374	-.00692	-.00465	-.00132	.00132	.05081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12173.**	**74745.**	**3262.8**
Stddev	9.	92.	14.2
%RSD	.07300	.12344	.43419
#1	12163.	74694.	3248.4
#2	12177.	74690.	3263.1
#3	12179.	74852.	3276.8

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608062301 Acquired: 8/12/2016 20:25:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00173	1.9692	.00226	.01692	.05942	.00014	34.933	-.00001
Stddev	.00285	.0060	.00123	.00234	.00033	.00004	.138	.00009
%RSD	164.32	.30728	54.303	13.849	.56226	31.315	.39630	777.06
#1	-.00174	1.9666	.00297	.01729	.05937	.00012	34.958	.00009
#2	.00112	1.9650	.00084	.01442	.05977	.00010	35.057	-.00010
#3	-.00458	1.9762	.00296	.01906	.05911	.00019	34.783	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00262	.00233	1.2941	.98392	.00145	2.9897	.02937
Stddev	.00015	.00049	.00044	.0175	.05413	.00188	.0819	.00116
%RSD	65.858	18.849	18.928	1.3499	5.5011	130.05	2.7411	3.9567
#1	.00008	.00281	.00192	1.2778	.97052	-.00046	3.0665	.03027
#2	.00038	.00206	.00228	1.2918	.93775	.00149	2.9034	.02978
#3	.00021	.00300	.00280	1.3125	1.0435	.00330	2.9994	.02806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	1.4577	.00086	.08405	-.00049	-.00064	-.00006	5.8870
Stddev	.00017	.0314	.00028	.00973	.00135	.00471	.00420	.7372
%RSD	41.162	2.1564	32.621	11.581	275.30	739.94	6677.2	12.522
#1	.00060	1.4827	.00109	.09202	-.00163	-.00404	-.00467	6.4862
#2	.00027	1.4680	.00095	.08692	.00100	-.00261	.00357	6.1109
#3	.00037	1.4224	.00055	.07320	-.00085	.00474	.00091	5.0638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608062301 Acquired: 8/12/2016 20:25:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00230**	**.08551**	**.03989**	**-.00776**	**.00194**	**.00523**	**.68630**
Stddev	.00036	.00017	.00286	.00156	.00047	.00061	.30103
%RSD	15.537	.19827	7.1704	20.156	24.441	11.765	43.863
#1	-.00247	.08553	.04041	-.00801	.00232	.00574	.34452
#2	-.00255	.08567	.03681	-.00608	.00141	.00539	.80228
#3	-.00189	.08533	.04246	-.00918	.00208	.00454	.91209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12226.**	**75103.**	**3261.9**
Stddev	6.	148.	17.4
%RSD	.05126	.19743	.53421
#1	12227.	74934.	3278.8
#2	12219.	75211.	3244.0
#3	12231.	75165.	3262.9

Approved: August 15, 2016

Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 20:29:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40115	9.9210	.39084	.48363	.98411	.04914	9.7051
Stddev	.00188	.0029	.00468	.00211	.00683	.00009	.0721
%RSD	.46803	.02897	1.1966	.43695	.69420	.17738	.74254
#1	.40330	9.9197	.39518	.48510	.98649	.04924	9.6512
#2	.39989	9.9189	.39147	.48458	.98943	.04911	9.7869
#3	.40025	9.9243	.38589	.48121	.97640	.04908	9.6771
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04853	.19631	.49981	.49083	4.0264	49.116	.98566
Stddev	.00058	.00273	.00154	.00739	.0447	.210	.00656
%RSD	1.1957	1.3929	.30873	1.5061	1.1093	.42806	.66596
#1	.04865	.19778	.49894	.49533	4.0455	49.009	.99264
#2	.04905	.19799	.50159	.49485	4.0583	49.359	.98473
#3	.04791	.19315	.49889	.48230	3.9753	48.981	.97961
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.222	.49181	.96784	48.067	.48648	9.6060	.49085
Stddev	.079	.00261	.00919	.140	.00761	.1177	.00153
%RSD	.76886	.53099	.94963	.29164	1.5646	1.2254	.31207
#1	10.261	.49356	.97577	48.045	.49228	9.6882	.48916
#2	10.273	.49308	.96997	48.217	.48931	9.6586	.49215
#3	10.131	.48881	.95777	47.939	.47786	9.4711	.49125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 20:29:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1430**	**.38474**	**4.8308**	**.99484**	**.98524**	**.97710**	**.50237**
Stddev	.0107	.00392	.0502	.01959	.00594	.00355	.00352
%RSD	.93878	1.0191	1.0398	1.9695	.60310	.36358	.70108
#1	1.1533	.38885	4.8725	1.0077	.98639	.97654	.50572
#2	1.1440	.38433	4.8450	1.0046	.99053	.97387	.50269
#3	1.1319	.38104	4.7751	.97228	.97881	.98090	.49870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99727**	**.96749**	F **429.85**
Stddev	.00160	.01345	5.64
%RSD	.16017	1.3903	1.3114
#1	.99907	.97643	435.53
#2	.99671	.97403	429.78
#3	.99602	.95202	424.26
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12497.**	**76011.**	**3313.9**
Stddev	10.	223.	25.6
%RSD	.07797	.29306	.77188
#1	12487.	76189.	3288.4
#2	12497.	76083.	3313.7
#3	12506.	75761.	3339.6

Approved: August 15, 2016

Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 20:32:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00204	-.00804	-.00181	.00176	.00151	.00007	-.01244
Stddev	.00109	.00457	.00252	.00128	.00055	.00009	.02408
%RSD	53.313	56.841	139.02	72.835	36.202	119.44	193.60
#1	-.00215	-.00278	-.00138	.00255	.00106	.00018	-.01357
#2	-.00090	-.01107	.00046	.00028	.00212	.00002	-.03593
#3	-.00307	-.01028	-.00452	.00245	.00136	.00002	.01219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00018	-.00033	-.00090	.00341	.06923	-.00356
Stddev	.00016	.00016	.00006	.00048	.01061	.05245	.00071
%RSD	167.43	88.966	16.942	53.539	311.53	75.755	19.870
#1	-.00000	.00026	-.00038	-.00100	-.00283	.01680	-.00392
#2	.00029	-.00000	-.00027	-.00038	-.00261	.12170	-.00275
#3	.00001	.00029	-.00033	-.00132	.01566	.06920	-.00403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04150	-.00075	.00036	-.02008	.00055	.00371	-.00396
Stddev	.00779	.00166	.00029	.02277	.00036	.00156	.00165
%RSD	18.768	221.73	80.545	113.40	66.720	42.106	41.636
#1	.05018	-.00259	.00026	.00557	.00085	.00220	-.00298
#2	.03514	.00064	.00069	-.03792	.00064	.00360	-.00587
#3	.03916	-.00030	.00013	-.02791	.00014	.00532	-.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 20:32:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00167	.00129	.00027	-.00023	-.00013	-.00424	-.00361
Stddev	.00113	.00578	.00098	.00040	.00056	.00249	.00327
%RSD	67.520	448.98	358.98	170.86	422.43	58.690	90.499
#1	-.00118	.00002	-.00011	.00013	.00035	-.00453	-.00265
#2	-.00087	-.00375	-.00046	-.00017	-.00075	-.00161	-.00725
#3	-.00296	.00759	.00139	-.00066	.00000	-.00656	-.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00043	-.00007	F .18112
Stddev	.00082	.00020	.09732
%RSD	190.03	276.61	53.730
#1	-.00133	.00016	.07336
#2	-.00024	-.00019	.26260
#3	.00028	-.00020	.20740
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12572.	76851.	3317.5
Stddev	13.	102.	32.0
%RSD	.10266	.13208	.96577
#1	12567.	76810.	3307.4
#2	12561.	76776.	3291.7
#3	12586.	76967.	3353.4

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608043904 Acquired: 8/12/2016 20:36:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00187	.00039	.00148	.01066	.01143	.00001	45.213	.00004
Stddev	.00138	.00451	.00202	.00133	.00058	.00013	.068	.00027
%RSD	73.775	1144.9	136.04	12.444	5.1139	1062.6	.15139	614.81
#1	-.00222	.00540	-.00078	.01168	.01087	-.00009	45.273	.00001
#2	-.00305	-.00333	.00214	.01113	.01138	.00016	45.227	.00033
#3	-.00035	-.00090	.00308	.00916	.01203	-.00003	45.138	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00212	.00047	.41676	.53035	-.00177	6.9973	.03930
Stddev	.00020	.00135	.00043	.02426	.07077	.00163	.1116	.00200
%RSD	100.21	63.935	92.194	5.8210	13.344	92.172	1.5946	5.0796
#1	.00020	.00206	.00018	.43100	.55398	.00009	6.9016	.04088
#2	.00000	.00080	.00096	.38875	.45079	-.00245	6.9704	.03706
#3	.00041	.00350	.00026	.43054	.58628	-.00294	7.1199	.03997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	2.4106	.00115	.00060	-.00022	.00225	.00101	2.5158
Stddev	.00032	.0172	.00047	.00757	.00201	.00038	.00514	.1587
%RSD	47.919	.71469	40.424	1267.7	905.77	16.942	506.86	6.3070
#1	.00045	2.4038	.00147	.00174	.00208	.00245	-.00409	2.6126
#2	.00050	2.4302	.00137	-.00748	-.00111	.00181	.00094	2.6021
#3	.00102	2.3979	.00062	.00753	-.00163	.00250	.00619	2.3327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608043904 Acquired: 8/12/2016 20:36:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00204**	**.04999**	**-.00989**	**-.00471**	**.00050**	**.00081**	**.12045**
Stddev	.00044	.00012	.00865	.00093	.00028	.00004	.34217
%RSD	21.625	.24411	87.435	19.797	55.228	4.7867	284.08
#1	-.00211	.04987	-.01539	-.00363	.00082	.00085	.50220
#2	-.00244	.04999	-.01435	-.00523	.00039	.00077	-.15862
#3	-.00157	.05011	.00008	-.00527	.00029	.00080	.01777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12161.**	**74468.**	**3273.8**
Stddev	23.	365.	18.3
%RSD	.18879	.49028	.55907
#1	12164.	74099.	3255.1
#2	12183.	74478.	3274.5
#3	12137.	74829.	3291.7

Approved: August 15, 2016

Sample Name: L1608043905 Acquired: 8/12/2016 20:40:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00151	.09567	.00163	.00854	.01354	.00001	46.977	.00017
Stddev	.00098	.00538	.00264	.00183	.00107	.00005	.029	.00008
%RSD	65.241	5.6246	161.64	21.429	7.9193	612.10	.06210	45.261
#1	-.00088	.09922	.00077	.01042	.01477	.00003	46.979	.00010
#2	-.00099	.09832	.00460	.00677	.01302	-.00005	47.006	.00016
#3	-.00264	.08948	-.00047	.00841	.01282	.00004	46.948	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00030	.00258	1.8508	.46254	-.00036	6.7807	.08804
Stddev	.00033	.00071	.00137	.0485	.13013	.00176	.0432	.00097
%RSD	207.56	231.94	52.999	2.6215	28.134	486.51	.63717	1.1039
#1	.00025	.00084	.00321	1.8805	.58861	.00016	6.8298	.08702
#2	.00042	.00057	.00351	1.8771	.47032	-.00232	6.7486	.08814
#3	-.00021	-.00050	.00101	1.7948	.32870	.00108	6.7637	.08896
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	2.2775	.00086	.00621	-.00017	.00021	.00227	2.7861
Stddev	.00006	.0252	.00059	.00214	.00372	.00385	.00462	.1682
%RSD	12.766	1.1060	68.581	34.472	2133.0	1850.9	203.21	6.0362
#1	.00044	2.2485	.00151	.00697	-.00302	.00050	.00173	2.8889
#2	.00057	2.2899	.00072	.00379	.00403	-.00378	.00713	2.8773
#3	.00050	2.2940	.00036	.00787	-.00153	.00390	-.00205	2.5920
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608043905 Acquired: 8/12/2016 20:40:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00230**	**.04980**	**-.00904**	**-.00492**	**.00028**	**.02263**	**.19602**
Stddev	.00034	.00020	.00209	.00401	.00027	.00168	.26385
%RSD	14.932	.40330	23.103	81.496	97.177	7.4241	134.60
#1	-.00250	.04958	-.00728	-.00944	.00034	.02373	-.10140
#2	-.00190	.04998	-.00849	-.00348	-.00002	.02346	.28754
#3	-.00250	.04983	-.01135	-.00183	.00052	.02069	.40194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12159.**	**74805.**	**3252.9**
Stddev	27.	214.	12.3
%RSD	.22461	.28631	.37868
#1	12187.	74984.	3239.9
#2	12159.	74864.	3264.4
#3	12132.	74568.	3254.4

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608044001 Acquired: 8/12/2016 20:44:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.02062	.00312	.00396	.00809	-.00001	34.678	-.00016
Stddev	.00074	.00306	.00139	.00223	.00057	.00003	.032	.00007
%RSD	227.59	14.845	44.742	56.167	7.0689	312.30	.09132	43.827
#1	-.00007	.02118	.00316	.00279	.00785	.00001	34.666	-.00011
#2	.00025	.01732	.00170	.00257	.00874	-.00004	34.654	-.00024
#3	-.00116	.02336	.00449	.00653	.00767	.00000	34.714	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00033	.00035	.01195	.50839	-.00060	5.8163	-.00092
Stddev	.00018	.00050	.00028	.00816	.01112	.00247	.0961	.00204
%RSD	120.91	154.20	81.259	68.291	2.1870	408.73	1.6523	222.34
#1	-.00006	-.00022	.00067	.01093	.50755	.00140	5.7940	-.00292
#2	.00024	.00078	.00025	.02057	.49771	-.00336	5.7334	.00116
#3	.00025	.00042	.00013	.00434	.51990	.00015	5.9216	-.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	1.8058	.00022	.00343	.00196	.00136	-.00199	2.3692
Stddev	.00018	.0206	.00085	.00223	.00282	.00266	.00363	.0490
%RSD	33.940	1.1420	389.70	64.898	143.40	196.24	181.82	2.0687
#1	.00067	1.8260	.00111	.00599	.00447	.00417	.00154	2.4013
#2	.00061	1.8069	.00014	.00194	-.00108	.00101	-.00571	2.3934
#3	.00033	1.7847	-.00059	.00236	.00250	-.00112	-.00181	2.3127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608044001 Acquired: 8/12/2016 20:44:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00295**	**.03690**	**-.01434**	**-.00361**	**-.00015**	**.00201**	**.01759**
Stddev	.00091	.00063	.00398	.00182	.00008	.00027	.21933
%RSD	31.056	1.7080	27.771	50.534	54.483	13.212	1247.0
#1	-.00321	.03638	-.01035	-.00562	-.00011	.00218	-.03017
#2	-.00370	.03760	-.01434	-.00208	-.00010	.00216	-.17393
#3	-.00193	.03673	-.01831	-.00312	-.00025	.00171	.25686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12178.**	**74825.**	**3240.6**
Stddev	7.	205.	21.2
%RSD	.05919	.27342	.65494
#1	12170.	74752.	3218.5
#2	12180.	75056.	3260.9
#3	12184.	74667.	3242.4

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608044002 Acquired: 8/12/2016 20:48:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00197	.01851	.00056	.00808	.00845	.00006	34.749	-.00007
Stddev	.00106	.00803	.00215	.00260	.00073	.00005	.024	.00010
%RSD	54.064	43.363	382.13	32.161	8.6499	87.507	.07016	146.30
#1	-.00314	.01317	-.00192	.00519	.00789	.00004	34.774	-.00017
#2	-.00107	.02774	.00184	.00882	.00928	.00002	34.726	-.00005
#3	-.00169	.01462	.00176	.01023	.00819	.00012	34.748	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00130	.00264	.02785	.40805	-.00054	5.7978	-.00052
Stddev	.00008	.00054	.00066	.02097	.02786	.00128	.0578	.00360
%RSD	229.06	41.285	24.903	75.307	6.8266	235.01	.99720	691.13
#1	-.00012	.00130	.00317	.05002	.40522	.00067	5.7336	-.00295
#2	-.00001	.00076	.00190	.00832	.38172	-.00043	5.8457	.00361
#3	.00003	.00183	.00285	.02521	.43722	-.00187	5.8142	-.00223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	1.7496	.00043	-.00089	-.00253	-.00084	-.00231	2.3019
Stddev	.00019	.0274	.00102	.00118	.00430	.00284	.00172	.1317
%RSD	23.538	1.5637	238.03	132.16	169.81	339.13	74.591	5.7203
#1	.00058	1.7800	-.00021	.00023	.00241	-.00068	-.00053	2.3762
#2	.00087	1.7419	-.00012	-.00079	-.00462	-.00376	-.00396	2.3796
#3	.00094	1.7269	.00161	-.00211	-.00538	.00192	-.00244	2.1498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608044002 Acquired: 8/12/2016 20:48:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00277**	**.03689**	**-.00585**	**-.00434**	**.00072**	**.02158**	**.19330**
Stddev	.00045	.00036	.00358	.00218	.00016	.00157	.15585
%RSD	16.278	.98868	61.265	50.071	22.317	7.2686	80.626
#1	-.00329	.03654	-.00879	-.00634	.00053	.02223	.34390
#2	-.00257	.03726	-.00689	-.00466	.00081	.02273	.03268
#3	-.00246	.03687	-.00186	-.00203	.00082	.01979	.20331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12183.**	**75056.**	**3245.4**
Stddev	30.	45.	14.9
%RSD	.24572	.05999	.45977
#1	12217.	75044.	3247.1
#2	12168.	75106.	3259.4
#3	12163.	75019.	3229.7

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608045701 Acquired: 8/12/2016 20:52:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00186	.17536	.00246	.15150	.35492	.00009	23.220	-.00007
Stddev	.00171	.00206	.00159	.00325	.00110	.00008	.042	.00005
%RSD	91.642	1.1740	64.647	2.1461	.30987	80.874	.18118	73.351
#1	-.00095	.17663	.00422	.15525	.35458	.00009	23.267	-.00007
#2	-.00383	.17645	.00113	.14946	.35403	.00002	23.206	-.00002
#3	-.00081	.17298	.00202	.14980	.35614	.00017	23.186	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00183	.00281	.27510	2.2622	.00915	8.3578	.01139
Stddev	.00012	.00073	.00042	.01117	.0962	.00142	.0862	.00043
%RSD	14.262	39.639	14.786	4.0604	4.2542	15.477	1.0316	3.7940
#1	.00075	.00103	.00254	.26389	2.2397	.00922	8.3361	.01187
#2	.00084	.00244	.00329	.28623	2.3677	.01053	8.2845	.01124
#3	.00099	.00203	.00260	.27520	2.1792	.00770	8.4528	.01104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00461	148.89	.00177	.01693	-.00019	.00105	-.00183	4.0929
Stddev	.00077	.16	.00087	.00449	.00007	.00176	.00487	.2337
%RSD	16.766	.10555	49.204	26.547	34.697	167.93	266.10	5.7109
#1	.00549	149.01	.00261	.01701	-.00018	-.00073	-.00297	4.2410
#2	.00426	148.71	.00087	.02138	-.00013	.00109	.00351	4.2143
#3	.00407	148.96	.00182	.01240	-.00026	.00279	-.00602	3.8234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608045701 Acquired: 8/12/2016 20:52:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00201**	**.78249**	**-.00206**	**-.00402**	**.00017**	**.00667**	**.11940**
Stddev	.00106	.00249	.00581	.00297	.00056	.00047	.05744
%RSD	52.678	.31767	282.15	73.836	328.69	6.9994	48.105
#1	-.00245	.78378	-.00735	-.00383	-.00044	.00690	.09410
#2	-.00080	.77962	.00415	-.00708	.00030	.00698	.18514
#3	-.00277	.78407	-.00298	-.00115	.00065	.00613	.07895
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11931.**	**72748.**	**3206.9**
Stddev	19.	38.	11.0
%RSD	.15648	.05191	.34358
#1	11930.	72791.	3210.2
#2	11950.	72730.	3215.9
#3	11913.	72721.	3194.6

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608045702 Acquired: 8/12/2016 20:56:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00168	.05516	.00175	.15239	.36195	.00010	21.225	.00012
Stddev	.00174	.00921	.00199	.00027	.00160	.00005	.173	.00010
%RSD	103.65	16.697	113.77	.17933	.44200	45.752	.81615	87.493
#1	-.00092	.05275	.00157	.15208	.36330	.00005	21.399	.00000
#2	-.00045	.06533	.00383	.15248	.36019	.00014	21.053	.00020
#3	-.00367	.04739	-.00014	.15260	.36236	.00012	21.223	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00087	.00231	.00232	.07656	2.2331	.00844	7.7179	.00907
Stddev	.00007	.00102	.00064	.03087	.1137	.00163	.0041	.00121
%RSD	8.3630	44.040	27.789	40.313	5.0928	19.255	.05270	13.351
#1	.00091	.00248	.00254	.08642	2.3098	.00835	7.7187	.00850
#2	.00078	.00324	.00283	.10130	2.1024	.01012	7.7216	.00825
#3	.00091	.00122	.00159	.04197	2.2870	.00687	7.7135	.01046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00494	151.53	.00064	.00466	-.00054	-.00015	-.00003	3.7722
Stddev	.00052	1.04	.00035	.00356	.00360	.00383	.00473	.1988
%RSD	10.628	.68780	54.993	76.447	665.70	2492.2	14138.	5.2698
#1	.00515	152.30	.00073	.00585	.00296	.00024	-.00276	3.8940
#2	.00532	150.35	.00094	.00747	-.00035	-.00417	-.00277	3.8798
#3	.00434	151.96	.00025	.00065	-.00423	.00347	.00543	3.5428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608045702 Acquired: 8/12/2016 20:56:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00189**	**.73480**	**-.00777**	**-.00384**	**.00008**	**.00679**	**.03964**
Stddev	.00052	.00217	.00359	.00201	.00058	.00054	.03835
%RSD	27.502	.29562	46.171	52.299	748.90	7.9018	96.750
#1	-.00143	.73619	-.00825	-.00170	-.00058	.00707	.06635
#2	-.00245	.73230	-.01108	-.00414	.00051	.00713	-.00431
#3	-.00179	.73592	-.00396	-.00568	.00030	.00617	.05687
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11914.**	**72317.**	**3184.0**
Stddev	17.	192.	13.3
%RSD	.14384	.26541	.41786
#1	11929.	72130.	3178.8
#2	11918.	72309.	3199.1
#3	11895.	72513.	3174.1

Approved: August 15, 2016

Kim K Buck

Sample Name: L1608045703 Acquired: 8/12/2016 21:00:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00389	.08597	.00146	.09641	.15074	.00006	6.6633	.00001
Stddev	.00169	.00754	.00249	.00282	.00252	.00006	.0665	.00021
%RSD	43.467	8.7680	170.00	2.9296	1.6692	94.390	.99863	1938.3
#1	-.00513	.09439	.00209	.09666	.15138	.00006	6.6925	.00024
#2	-.00196	.07986	.00358	.09347	.14797	.00001	6.5871	-.00015
#3	-.00457	.08366	-.00128	.09911	.15288	.00013	6.7102	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00265	.01177	.04974	13.756	.00702	5.0983	.00257
Stddev	.00026	.00030	.00149	.01480	.153	.00392	.0676	.00530
%RSD	259.82	11.176	12.648	29.760	1.1092	55.819	1.3267	206.41
#1	-.00004	.00233	.01343	.06669	13.717	.00541	5.0284	.00287
#2	-.00006	.00292	.01134	.04313	13.627	.00416	5.1032	.00770
#3	.00039	.00270	.01054	.03939	13.924	.01148	5.1634	-.00287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00291	99.628	-.00018	.00631	-.00165	-.00270	.00064	3.1357
Stddev	.00025	.741	.00057	.00694	.00502	.00672	.00086	.1488
%RSD	8.5936	.74400	323.21	109.93	303.69	248.79	134.57	4.7453
#1	.00314	99.984	.00035	.00539	-.00240	.00285	.00163	3.2271
#2	.00295	98.776	-.00010	-.00012	-.00626	-.01017	.00001	3.2159
#3	.00264	100.12	-.00078	.01367	.00370	-.00078	.00029	2.9640
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: L1608045703 Acquired: 8/12/2016 21:00:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00244**	**.36352**	**.00163**	**-.00394**	**-.00014**	**.00470**	**.15273**
Stddev	.00023	.00103	.00189	.00087	.00089	.00028	.15425
%RSD	9.4180	.28217	116.00	22.208	645.47	5.9346	101.00
#1	-.00229	.36362	.00381	-.00356	-.00113	.00496	.29649
#2	-.00270	.36245	.00068	-.00494	.00057	.00475	.17191
#3	-.00232	.36450	.00040	-.00332	.00015	.00441	-.01022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11988.**	**72991.**	**3237.3**
Stddev	16.	122.	28.5
%RSD	.13061	.16691	.87935
#1	12003.	72911.	3229.9
#2	11989.	73131.	3268.8
#3	11972.	72931.	3213.3

Approved: August 15, 2016

Sample Name: CCV Acquired: 8/12/2016 21:04:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41173	10.209	.39740	.49420	.99543	.05086	9.8615
Stddev	.00274	.026	.00478	.00109	.00430	.00030	.1094
%RSD	.66467	.25057	1.2031	.22041	.43241	.59159	1.1091
#1	.40925	10.238	.39943	.49353	.99531	.05066	9.7815
#2	.41127	10.197	.40083	.49362	.99119	.05071	9.8169
#3	.41466	10.191	.39194	.49546	.99980	.05120	9.9861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04955	.20128	.51648	.50154	4.0943	50.237	1.0088
Stddev	.00076	.00374	.00149	.00905	.0480	.327	.0060
%RSD	1.5404	1.8577	.28859	1.8039	1.1728	.65163	.59779
#1	.05033	.20410	.51586	.50998	4.1151	50.348	1.0068
#2	.04952	.20269	.51818	.50265	4.0394	49.869	1.0040
#3	.04881	.19704	.51540	.49199	4.1283	50.495	1.0156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.554	.50210	.99156	48.993	.49502	9.7420	.50003
Stddev	.171	.00264	.01309	.344	.00712	.1013	.00446
%RSD	1.6180	.52676	1.3197	.70117	1.4393	1.0398	.89224
#1	10.396	.50064	.99446	49.152	.50054	9.8236	.50161
#2	10.530	.50516	1.0030	48.599	.49755	9.7736	.50348
#3	10.735	.50051	.97727	49.230	.48698	9.6286	.49499
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 21:04:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1594**	**.38736**	**4.8909**	**1.0196**	**.99730**	**1.0141**	**.51224**
Stddev	.0122	.00546	.0380	.0185	.00514	.0106	.00130
%RSD	1.0527	1.4095	.77786	1.8128	.51530	1.0408	.25334
#1	1.1708	.39359	4.9247	1.0318	.99725	1.0066	.51111
#2	1.1610	.38504	4.8984	1.0288	.99218	1.0262	.51366
#3	1.1465	.38343	4.8497	.99837	1.0025	1.0095	.51196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0336**	**.98400**	F **441.43**
Stddev	.0022	.01434	3.07
%RSD	.20999	1.4578	.69555
#1	1.0355	.99376	438.89
#2	1.0312	.99072	440.56
#3	1.0339	.96753	444.84
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12329.**	**74664.**	**3262.0**
Stddev	16.	78.	19.4
%RSD	.13109	.10401	.59461
#1	12315.	74582.	3275.0
#2	12325.	74737.	3271.2
#3	12347.	74672.	3239.7

Approved: August 15, 2016

Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 21:07:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00330**	**-.00296**	**-.00124**	**.00153**	**.00164**	**.00011**	**-.00456**
Stddev	.00104	.00723	.00079	.00190	.00068	.00006	.02838
%RSD	31.650	244.33	63.876	123.92	41.552	55.551	622.32
#1	-.00329	-.00039	-.00057	.00047	.00094	.00008	.00438
#2	-.00225	-.01112	-.00211	.00040	.00168	.00006	-.03633
#3	-.00434	.00263	-.00103	.00373	.00230	.00018	.01827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00005**	**.00060**	**.00020**	**-.01057**	**.06511**	**-.00249**
Stddev	.00016	.00016	.00070	.00053	.00914	.02959	.00184
%RSD	264.90	304.97	116.25	257.83	86.477	45.449	73.690
#1	.00021	-.00008	.00097	.00037	-.01571	.04993	-.00440
#2	-.00011	.00001	-.00020	.00062	-.01598	.04619	-.00073
#3	.00008	.00024	.00103	-.00039	-.00002	.09921	-.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.05813**	**.00117**	**.00016**	**-.01659**	**-.00024**	**.00065**	**-.00150**
Stddev	.06040	.00238	.00027	.00118	.00124	.00177	.00144
%RSD	103.92	203.70	169.20	7.1129	526.02	272.19	96.328
#1	.01094	-.00057	.00019	-.01541	.00119	.00266	-.00176
#2	-.10106	.00388	.00041	-.01658	-.00110	-.00067	-.00279
#3	-.08427	.00020	-.00012	-.01777	-.00081	-.00004	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 21:07:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00333	-.00135	.00133	.00038	.00004	-.00751	-.00483
Stddev	.00212	.00203	.00130	.00065	.00018	.00714	.00163
%RSD	63.807	150.59	98.140	170.50	476.94	95.073	33.781
#1	.00100	.00043	.00263	.00112	.00018	-.01496	-.00471
#2	.00384	-.00091	.00132	-.00013	-.00016	-.00073	-.00653
#3	.00515	-.00357	.00003	.00016	.00009	-.00684	-.00327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00088	.00005	F .17344
Stddev	.00033	.00011	.05257
%RSD	37.273	221.33	30.312
#1	-.00126	.00006	.16301
#2	-.00072	.00015	.12686
#3	-.00067	-.00007	.23044
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12390.	75448.	3254.2
Stddev	9.	113.	10.2
%RSD	.07428	.14942	.31468
#1	12397.	75343.	3245.5
#2	12380.	75567.	3265.5
#3	12394.	75435.	3251.7

Approved: August 15, 2016

Kim K Buck

Sample Name: ICSA Acquired: 8/12/2016 21:11:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00292	281.86	.00162	.00271	.00387	.00012	252.40
Stddev	.00049	.34	.00402	.00288	.00072	.00003	1.47
%RSD	16.765	.12210	248.43	106.24	18.723	25.859	.58161
#1	-.00258	281.82	.00565	.00303	.00334	.00011	252.88
#2	-.00348	282.21	-.00239	.00542	.00470	.00015	253.56
#3	-.00269	281.53	.00160	-.00032	.00358	.00009	250.75
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	-.00109	-.00054	F .00830	103.49	-.00094	.00642
Stddev	.00016	.00034	.00067	.01108	.40	.05247	.00260
%RSD	26.248	31.524	122.76	133.54	.38402	5553.4	40.503
#1	-.00073	-.00071	-.00120	.01569	103.40	.05964	.00880
#2	-.00072	-.00138	.00013	.01364	103.93	-.03219	.00681
#3	-.00044	-.00119	-.00055	-.00444	103.15	-.03028	.00365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	272.49	.00097	-.00093	.08622	.00074	.00119	-.00099
Stddev	1.07	.00010	.00022	.02981	.00101	.00706	.00734
%RSD	.39402	9.8887	23.242	34.576	137.18	593.42	739.62
#1	272.76	.00102	-.00068	.07800	.00184	.00440	.00127
#2	273.40	.00103	-.00105	.11927	.00053	.00607	.00495
#3	271.30	.00086	-.00105	.06137	-.00015	-.00690	-.00920
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: ICSA Acquired: 8/12/2016 21:11:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00116	.00088	F 1.0008	-.00236	.00081	-.01429	-.00540
Stddev	.00176	.00906	.0408	.00150	.00038	.00633	.00125
%RSD	152.45	1025.1	4.0720	63.605	46.949	44.280	23.118
#1	-.00091	-.00871	1.0253	-.00097	.00122	-.00938	-.00647
#2	.00047	.00206	1.0233	-.00216	.00047	-.02144	-.00570
#3	-.00303	.00930	.95371	-.00395	.00073	-.01207	-.00403
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			.80000				
Low Limit			-.80000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00307	-.00642	F -2.1512
Stddev	.00010	.00020	.1460
%RSD	3.3014	3.0580	6.7847
#1	-.00309	-.00626	-2.2344
#2	-.00296	-.00636	-1.9827
#3	-.00316	-.00664	-2.2365
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11445.	68916.	3131.8
Stddev	34.	37.	38.2
%RSD	.29397	.05435	1.2194
#1	11428.	68948.	3122.2
#2	11424.	68926.	3099.4
#3	11484.	68875.	3173.9

Approved: August 15, 2016

Kim K Buck

Sample Name: ICSAB Acquired: 8/12/2016 21:15:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53845	277.72	.25858	F -.13430	.25484	.25282	247.32
Stddev	.00226	.36	.00338	.00264	.00176	.00004	1.80
%RSD	.41950	.13132	1.3089	1.9647	.69160	.01709	.72721
#1	.54086	277.33	.26072	-.13199	.25297	.25285	245.51
#2	.53638	278.04	.26035	-.13717	.25646	.25277	249.11
#3	.53810	277.80	.25468	-.13372	.25510	.25285	247.34
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.10000			
Low Limit				-.10000			

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49409	.24331	.26486	.26606	99.766	5.3810	.00194
Stddev	.00987	.00554	.00119	.01222	.811	.0143	.00154
%RSD	1.9969	2.2771	.44757	4.5937	.81304	.26517	79.469
#1	.50010	.24752	.26440	.27448	98.885	5.3654	.00016
#2	.49947	.24538	.26621	.27166	100.48	5.3933	.00288
#3	.48271	.23703	.26398	.25204	99.933	5.3843	.00278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	262.40	.25433	-.00047	5.2855	.48170	-.00447	.48989
Stddev	2.10	.00203	.00006	.0573	.01089	.00354	.01029
%RSD	.79921	.79910	12.436	1.0841	2.2609	79.200	2.1008
#1	260.05	.25487	-.00051	5.2195	.48766	-.00772	.49406
#2	264.10	.25208	-.00040	5.3223	.48832	-.00069	.49744
#3	263.05	.25604	-.00048	5.3146	.46913	-.00501	.47816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: ICSAB Acquired: 8/12/2016 21:15:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49298**	**.24163**	**.00826**	**-.00199**	**.00053**	**-.01835**	**.47464**
Stddev	.00989	.00684	.00433	.00067	.00062	.00608	.00355
%RSD	2.0065	2.8326	52.446	33.745	116.40	33.121	.74798
#1	.50256	.24304	.01174	-.00141	.00125	-.01245	.47601
#2	.49358	.23419	.00963	-.00183	.00013	-.01801	.47730
#3	.48280	.24766	.00341	-.00273	.00022	-.02459	.47061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.26630**	**.47200**	F **-2.7097**
Stddev	.00087	.00809	.1098
%RSD	.32703	1.7149	4.0523
#1	.26653	.47691	-2.6398
#2	.26534	.47645	-2.8363
#3	.26704	.46266	-2.6530
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11454.**	**68790.**	**3154.4**
Stddev	28.	81.	15.7
%RSD	.24308	.11732	.49809
#1	11426.	68800.	3172.4
#2	11454.	68865.	3144.1
#3	11482.	68705.	3146.5

Approved: August 15, 2016

Sample Name: CCV Acquired: 8/12/2016 21:19:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41138**	**10.207**	**.40024**	**.49289**	**.98719**	**.05130**	**9.7360**
Stddev	.00339	.030	.00415	.00353	.00674	.00013	.0468
%RSD	.82372	.29279	1.0364	.71708	.68257	.25951	.48111
#1	.41435	10.236	.40111	.49611	.98424	.05142	9.6995
#2	.41211	10.209	.40389	.49345	.98242	.05132	9.7197
#3	.40769	10.176	.39573	.48911	.99490	.05115	9.7888
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04943**	**.20140**	**.51813**	**.50185**	**4.0923**	**50.268**	**1.0001**
Stddev	.00062	.00346	.00133	.00658	.0200	.318	.0068
%RSD	1.2453	1.7203	.25604	1.3112	.48851	.63223	.68199
#1	.04967	.20377	.51962	.50676	4.0780	50.379	.99988
#2	.04990	.20299	.51770	.50442	4.0839	49.910	.99345
#3	.04873	.19742	.51707	.49437	4.1152	50.516	1.0071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.491**	**.50176**	**.99025**	**48.706**	**.49462**	**9.7233**	**.49712**
Stddev	.162	.00654	.01458	.228	.00837	.1024	.00387
%RSD	1.5399	1.3029	1.4725	.46721	1.6930	1.0529	.77772
#1	10.567	.50099	.99280	48.668	.49869	9.7809	.50049
#2	10.306	.49564	1.0034	48.500	.50019	9.7840	.49797
#3	10.602	.50865	.97456	48.950	.48499	9.6051	.49290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCV Acquired: 8/12/2016 21:19:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1549**	**.39309**	**4.8496**	**1.0225**	**.98714**	**1.0149**	**.51028**
Stddev	.0173	.00573	.0480	.0210	.00621	.0174	.00121
%RSD	1.4970	1.4580	.98899	2.0531	.62878	1.7096	.23628
#1	1.1659	.39944	4.9042	1.0353	.98627	1.0058	.51023
#2	1.1639	.39152	4.8303	1.0339	.98142	1.0040	.50911
#3	1.1350	.38830	4.8142	.99829	.99374	1.0349	.51152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0388**	**.98134**	F **438.07**
Stddev	.0035	.01497	2.90
%RSD	.33907	1.5259	.66200
#1	1.0405	.99104	439.07
#2	1.0412	.98888	434.80
#3	1.0348	.96409	440.33
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12321.**	**74402.**	**3279.5**
Stddev	18.	192.	17.1
%RSD	.14721	.25849	.52104
#1	12310.	74384.	3277.5
#2	12311.	74220.	3297.5
#3	12342.	74603.	3263.5

Approved: August 15, 2016

Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 21:22:38 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00188	-.00047	.00016	.00229	.00218	.00009	.04460
Stddev	.00055	.00440	.00107	.00189	.00080	.00008	.03893
%RSD	29.051	928.11	674.59	82.338	36.917	92.131	87.286
#1	-.00229	.00256	-.00062	.00066	.00263	.00000	.01411
#2	-.00126	-.00553	.00137	.00187	.00125	.00009	.08846
#3	-.00209	.00154	-.00028	.00436	.00265	.00016	.03125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	-.00006	.00016	-.00028	-.00177	.02186	-.00283
Stddev	.00008	.00018	.00109	.00068	.04004	.03028	.00137
%RSD	45.261	288.36	670.56	246.91	2264.0	138.51	48.502
#1	-.00020	-.00004	-.00032	-.00014	.03354	.05669	-.00420
#2	-.00009	.00010	-.00060	.00033	.00643	.00716	-.00282
#3	-.00026	-.00025	.00141	-.00102	-.04528	.00174	-.00146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00399	-.00257	.00017	.01314	-.00032	.00110	.00077
Stddev	.03698	.00312	.00012	.00524	.00051	.00723	.00350
%RSD	927.42	121.44	74.663	39.839	157.36	655.81	457.61
#1	.01285	.00058	.00014	.00970	.00019	-.00645	-.00124
#2	-.04638	-.00262	.00030	.01917	-.00033	.00795	-.00127
#3	.02158	-.00566	.00006	.01056	-.00082	.00180	.00481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 15, 2016

Kim K Buck

Approved: August 15, 2016
Kim K Buck

Sample Name: CCB Acquired: 8/12/2016 21:22:38 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1041) Mode: CONC Corr. Factor: 1.0000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00233	.00004	.00245	-.00019	.00033	-.00185	-.00092
Stddev	.00463	.00443	.00092	.00025	.00010	.00956	.00349
%RSD	199.07	12493.	37.468	131.08	30.605	516.92	377.31
#1	-.00677	.00111	.00258	-.00012	.00024	-.00798	-.00151
#2	-.00268	-.00483	.00330	.00001	.00044	.00917	.00282
#3	.00247	.00383	.00148	-.00047	.00030	-.00674	-.00409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00111	-.00021	F .08722
Stddev	.00027	.00014	.15378
%RSD	24.101	67.151	176.31
#1	-.00093	-.00007	.20990
#2	-.00099	-.00021	-.08530
#3	-.00142	-.00035	.13706
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	12396.	75262.	3238.3
Stddev	21.	156.	22.9
%RSD	.17277	.20727	.70625
#1	12418.	75109.	3215.7
#2	12395.	75256.	3261.5
#3	12375.	75421.	3237.8

Approved: August 15, 2016

Kim K Buck

2.2.2 Metals ICP-MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	46WW05FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 12:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/15/2016 11:30
Workgroup #:	WG579846	**Analyst:**	JYH	**Run Date:**	08/15/2016 13:44
Collect Date:	08/03/2016 07:55	**Dilution:**	100	**File ID:**	NI.081516.134449
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	15.2		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16080330-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	46WW16FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 12:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/15/2016 11:30
Workgroup #:	WG579846	**Analyst:**	JYH	**Run Date:**	08/15/2016 13:54
Collect Date:	08/03/2016 09:10	**Dilution:**	100	**File ID:**	NI.081516.135400
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	1.71		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16080330-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	LHSMW19FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 12:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/15/2016 11:30
Workgroup #:	WG579846	**Analyst:**	JYH	**Run Date:**	08/15/2016 13:57
Collect Date:	08/03/2016 10:20	**Dilution:**	1	**File ID:**	NI.081516.135702
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0574		0.00400	0.00200	0.00100

Certificate of Analysis

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16080330-14	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	46WW11FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 12:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/15/2016 11:30
Workgroup #:	WG579846	**Analyst:**	JYH	**Run Date:**	08/15/2016 14:00
Collect Date:	08/03/2016 11:25	**Dilution:**	1	**File ID:**	NI.081516.140005
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0616		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L16080330-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	46WW09FF-080316	**Prep Method:**	3015	**Prep Date:**	08/08/2016 12:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/15/2016 11:30
Workgroup #:	WG579846	**Analyst:**	JYH	**Run Date:**	08/15/2016 14:03
Collect Date:	08/03/2016 13:45	**Dilution:**	100	**File ID:**	NI.081516.140307
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	1.82		0.400	0.200	0.100

2.2.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG579385
Analyst: ERP
Spike Analyst: ERP
Run Date: 08/08/2016 12:23
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 08/08/2016 12:29

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: REK
HNO3 Lot #: COA19069
40 & 50 ML. DIGESTION TU COA18987
MS Filters- fisher-Lot#R RGT37258

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG579385-02	BLANK	1	20 mL	50 mL	183.809 g	183.801 g		
2	WG579385-03	LCS	1	20 mL	50 mL	184.154 g	184.148 g	.25 mL	
3	L16080330-07	SAMP	1	20 mL	50 mL	184.03 g	183.995 g		08/16/16
4	L16080330-10	SAMP	1	20 mL	50 mL	180.407 g	180.39 g		08/16/16
5	L16080330-12	SAMP	1	20 mL	50 mL	182.134 g	182.129 g		08/16/16
6	L16080330-14	SAMP	1	20 mL	50 mL	183.466 g	183.455 g		08/16/16
7	L16080330-17	SAMP	1	20 mL	50 mL	183.372 g	183.357 g		08/16/16
8	L16080335-02	SAMP	2	20 mL	50 mL	181.469 g	181.444 g		08/16/16
9	L16080335-04	SAMP	2	20 mL	50 mL	185.011 g	184.986 g		08/16/16
10	L16080335-06	SAMP	2	20 mL	50 mL	182.573 g	182.545 g		08/16/16
11	L16080335-09	SAMP	2	20 mL	50 mL	182.811 g	182.791 g		08/16/16
12	WG579385-01	REF	2	20 mL	50 mL	184.749 g	184.743 g		
13	L16080335-11	SAMP	2	20 mL	50 mL	184.749 g	184.743 g		08/16/16
14	L16080335-13	SAMP	2	20 mL	50 mL	181.98 g	181.958 g		08/16/16
15	L16080362-01	SAMP	2	20 mL	50 mL	182.272 g	182.253 g		08/15/16
16	L16080362-02	SAMP	2	20 mL	50 mL	185.58 g	185.564 g		08/15/16
17	L16080362-03	SAMP	2	20 mL	50 mL	187.398 g	187.378 g		08/15/16
18	L16080363-01	SAMP	2	20 mL	50 mL	182.262 g	182.257 g		08/15/16
19	L16080364-01	SAMP	2	20 mL	50 mL	185.002 g	184.993 g		08/15/16
20	L16080364-02	SAMP	2	20 mL	50 mL	183.91 g	183.865 g		08/15/16
21	L16080373-01	SAMP	2	20 mL	50 mL	185.383 g	185.365 g		08/12/16
22	WG579385-04	DUP	1	20 mL	50 mL	183.445 g	183.429 g		
23	WG579385-05	MS	1	20 mL	50 mL	185.984 g	185.968 g	.25 mL	
24	WG579385-06	MSD	1	20 mL	50 mL	185.584 g	185.566 g	.25 mL	

L16080362-02	filrtered digestate
L16080362-03	filrtered digestate

Analyst: Erin Potter

Reviewer:

MW_DIG - Modified 09/30/2009
PDF ID: 4888070
Report generated: 08/08/2016 13:21

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 081516C.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 3
Maintenance Log ID:

Calibration Std: STD77347 ICV Std: STD77287 Post Spike: STD73705
ICSA: STD77462 ICSAB: STD77463 Int. Std: RGT36607
CCV: STD77286 LLCCV: STD77464 Tuning Sol : STD77461
Stannous : Hydroxylamine :

Workgroups: 579051,579846,580259,579884

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.081516.111824	Blank	Blank		1		08/15/16 11:18
2	NI.081516.112127	WG580272-01	Calibration Point		1		08/15/16 11:21
3	NI.081516.112429	WG580272-02	Calibration Point		1		08/15/16 11:24
4	NI.081516.112732	WG580272-03	Calibration Point		1		08/15/16 11:27
5	NI.081516.113034	WG580272-04	Calibration Point		1		08/15/16 11:30
6	NI.081516.113338	WG580272-05	Initial Calibration Verification		1		08/15/16 11:33
7	NI.081516.113642	WG580272-06	Initial Calib Blank		1		08/15/16 11:36
8	NI.081516.113946	WG580272-07	Low Level Initial Calibration V		1		08/15/16 11:39
9	NI.081516.114249	WG580272-08	Interference Check		1		08/15/16 11:42
10	NI.081516.114551	WG580272-09	Interference Check		1		08/15/16 11:45
11	NI.081516.115251	WG580272-10	Interference Check		1		08/15/16 11:52
12	NI.081516.115556	WG580272-11	CCV		1		08/15/16 11:55
13	NI.081516.115858	WG580272-12	CCB		1		08/15/16 11:58
14	NI.081516.120430	WG578977-03	Method/Prep Blank	20/50	1		08/15/16 12:04
15	NI.081516.120732	WG578977-04	Laboratory Control S	20/50	1		08/15/16 12:07
16	NI.081516.121034	WG578977-01	Reference Sample		1	L16080071-06	08/15/16 12:10
17	NI.081516.121336	WG578977-05	Matrix Spike	20/50	1	L16080071-06	08/15/16 12:13
18	NI.081516.121638	WG578977-06	Matrix Spike Duplica	20/50	1	L16080071-06	08/15/16 12:16
19	NI.081516.121941	L16080071-01	1607232-01	20/50	1		08/15/16 12:19
20	NI.081516.122244	L16080071-02	1607232-02	20/50	1		08/15/16 12:22
21	NI.081516.122546	WG579051-03	Post Digestion Spike		1	L16080071-02	08/15/16 12:25
22	NI.081516.122849	WG579051-04	Serial Dilution		5	L16080071-02	08/15/16 12:28
23	NI.081516.123151	WG579051-04	Serial Dilution		25	L16080071-02	08/15/16 12:31
24	NI.081516.123455	WG580272-13	CCV		1		08/15/16 12:34
25	NI.081516.123758	WG580272-14	CCB		1		08/15/16 12:37
26	NI.081516.124102	L16080071-03	1607232-03	20/50	1		08/15/16 12:41
27	NI.081516.124404	L16080071-04	1607232-04	20/50	1		08/15/16 12:44
28	NI.081516.124707	L16080071-05	1607232-05	20/50	1		08/15/16 12:47
29	NI.081516.125011	WG580272-15	CCV		1		08/15/16 12:50
30	NI.081516.125314	WG580272-16	CCB		1		08/15/16 12:53
31	NI.081516.125618	WG580272-17	Low Level Continuing Calibra		1		08/15/16 12:56
32	NI.081516.130800	WG579385-02	Method/Prep Blank	20/50	1		08/15/16 13:08
33	NI.081516.131103	WG579385-03	Laboratory Control S	20/50	1		08/15/16 13:11
34	NI.081516.131405	L16080362-02	6080368-03	20/50	100		08/15/16 13:14

Page: 1 Approved: August 16, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 081516C.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 3
Maintenance Log ID:

Calibration Std: STD77347 ICV Std: STD77287 Post Spike: STD73705
ICSA: STD77462 ICSAB: STD77463 Int. Std: RGT36607
CCV: STD77286 LLCCV: STD77464 Tuning Sol : STD77461
Stannous : Hydroxylamine :

Workgroups: 579051,579846,580259,579884

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.081516.131707	L16080362-03	6080368-04	20/50	100		08/15/16 13:17
36	NI.081516.132010	L16080364-02	6080371-02	20/50	100		08/15/16 13:20
37	NI.081516.133025	WG578977-03	Method/Prep Blank		1		08/15/16 13:30
38	NI.081516.133542	WG579385-01	Reference Sample		1	L16080335-11	08/15/16 13:35
39	NI.081516.133844	WG579385-05	Matrix Spike	20/50	1	L16080335-11	08/15/16 13:38
40	NI.081516.134147	WG579385-06	Matrix Spike Duplica	20/50	1	L16080335-11	08/15/16 13:41
41	NI.081516.134449	L16080330-07	46WW05FF-080316	20/50	100		08/15/16 13:44
42	NI.081516.134753	WG580272-18	CCV		1		08/15/16 13:47
43	NI.081516.135056	WG580272-19	CCB		1		08/15/16 13:50
44	NI.081516.135400	L16080330-10	46WW16FF-080316	20/50	100		08/15/16 13:54
45	NI.081516.135702	L16080330-12	LHSMW19FF-080316	20/50	1		08/15/16 13:57
46	NI.081516.140005	L16080330-14	46WW11FF-080316	20/50	1		08/15/16 14:00
47	NI.081516.140307	L16080330-17	46WW09FF-080316	20/50	100		08/15/16 14:03
48	NI.081516.140610	WG579846-03	Post Digestion Spike		100	L16080330-17	08/15/16 14:06
49	NI.081516.140912	WG579846-04	Serial Dilution		500	L16080330-17	08/15/16 14:09
50	NI.081516.141215	WG579846-04	Serial Dilution		2500	L16080330-17	08/15/16 14:12
51	NI.081516.141519	WG580272-20	CCV		1		08/15/16 14:15
52	NI.081516.141821	WG580272-21	CCB		1		08/15/16 14:18
53	NI.081516.142126	WG580272-22	QC Std 8		1		08/15/16 14:21
54	NI.081516.142833	WG580272-23	Low Level Continuing Calibra		1		08/15/16 14:28
55	NI.081516.144032	WG580044-03	Method/Prep Blank	20/50	1		08/15/16 14:40
56	NI.081516.144334	WG580044-04	Laboratory Control S	20/50	1		08/15/16 14:43
57	NI.081516.144637	WG580044-05	Filter Blank		1		08/15/16 14:46
58	NI.081516.144939	WG580044-01	Reference Sample		1	L16080544-01	08/15/16 14:49
59	NI.081516.145242	WG580044-07	Matrix Spike	20/50	1	L16080636-01	08/15/16 14:52
60	NI.081516.145544	WG580044-08	Matrix Spike Duplica	20/50	1	L16080636-01	08/15/16 14:55
61	NI.081516.145847	L16080460-01	INS-WL01-080816	20/50	1		08/15/16 14:58
62	NI.081516.150150	WG580259-01	Post Digestion Spike		1	L16080460-01	08/15/16 15:01
63	NI.081516.150451	WG580259-02	Serial Dilution		5	L16080460-01	08/15/16 15:04
64	NI.081516.150754	WG580259-02	Serial Dilution		25	L16080460-01	08/15/16 15:07
65	NI.081516.151058	WG580272-24	CCV		1		08/15/16 15:10
66	NI.081516.151400	WG580272-25	CCB		1		08/15/16 15:14
67	NI.081516.151705	L16080485-01	NBD01	20/50	1		08/15/16 15:17
68	NI.081516.152007	L16080485-02	NBD01	20/50	1		08/15/16 15:20

Page: 2 Approved: August 16, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 081516C.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 3

Maintenance Log ID:

Calibration Std: STD77347 ICV Std: STD77287 Post Spike: STD73705

ICSA: STD77462 ICSAB: STD77463 Int. Std: RGT36607

CCV: STD77286 LLCCV: STD77464 Tuning Sol : STD77461

Stannous : Hydroxylamine :

Workgroups: 579051,579846,580259,579884

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.081516.152310	L16080485-05	ALD02	20/50	1		08/15/16 15:23
70	NI.081516.152612	L16080485-06	ALD02	20/50	1		08/15/16 15:26
71	NI.081516.152914	L16080485-07	ALD01	20/50	1		08/15/16 15:29
72	NI.081516.153216	L16080485-08	ALD01	20/50	1		08/15/16 15:32
73	NI.081516.153518	L16080485-09	NBD05	20/50	1		08/15/16 15:35
74	NI.081516.153821	L16080485-10	NBD05	20/50	1		08/15/16 15:38
75	NI.081516.154123	WG580044-01	Reference Sample		1	L16080544-01	08/15/16 15:41
76	NI.081516.154425	WG580044-06	Duplicate	20/50	1	L16080544-01	08/15/16 15:44
77	NI.081516.154729	WG580272-26	CCV		1		08/15/16 15:47
78	NI.081516.155032	WG580272-27	CCB		1		08/15/16 15:50
79	NI.081516.155338	WG580272-28	Interference Check		1		08/15/16 15:53
80	NI.081516.155641	WG580272-29	Interference Check		1		08/15/16 15:56
81	NI.081516.155945	WG580272-30	CCV		1		08/15/16 15:59
82	NI.081516.160249	WG580272-31	CCB		1		08/15/16 16:02
83	NI.081516.161704	WG580051-02	Method/Prep Blank		50		08/15/16 16:17
84	NI.081516.162007	WG580051-03	Laboratory Control S		50		08/15/16 16:20
85	NI.081516.162309	WG579881-01	Fluid Blank 1		50		08/15/16 16:23
86	NI.081516.162612	WG579881-02	Fluid Blank 2		50		08/15/16 16:26
87	NI.081516.162914	WG580051-01	Reference Sample		50	L16080560-01	08/15/16 16:29
88	NI.081516.163217	WG580051-05	Matrix Spike		50	L16080560-01	08/15/16 16:32
89	NI.081516.163519	WG580051-06	Matrix Spike Duplica		50	L16080560-01	08/15/16 16:35
90	NI.081516.163822	L16080517-01	ALAN 11 BAGS		50		08/15/16 16:38
91	NI.081516.164124	WG580260-01	Post Digestion Spike		50	L16080517-01	08/15/16 16:41
92	NI.081516.164427	WG580260-02	Serial Dilution		250	L16080517-01	08/15/16 16:44
93	NI.081516.164730	WG580272-32	CCV		1		08/15/16 16:47
94	NI.081516.165033	WG580272-33	CCB		1		08/15/16 16:50
95	NI.081516.165337	L16080518-01	SAPA 9 BAGS		50		08/15/16 16:53
96	NI.081516.165639	L16080494-03	1617PWT022-EFF		1	WG579790-02	08/15/16 16:56
97	NI.081516.165942	WG579790-07	Matrix Spike	20/50	1	L16080494-03	08/15/16 16:59
98	NI.081516.170246	WG580272-34	CCV		1		08/15/16 17:02
99	NI.081516.170549	WG580272-35	CCB		1		08/15/16 17:05

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 3 Approved: August 16, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 081516C.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 3

Maintenance Log ID:

Calibration Std: STD77347 ICV Std: STD77287 Post Spike: STD73705

ICSA: STD77462 ICSAB: STD77463 Int. Std: RGT36607

CCV: STD77286 LLCCV: STD77464 Tuning Sol : STD77461

Stannous : Hydroxylamine :

Workgroups: 579051,579846,580259,579884

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time

Seq.	Rerun	Dil.	Reason	Analytes
10			Wrong solution. rerun. JYH	
53			Insufficient volume LLCCV. Rerun. JYH	
75			Wrong WG number. JYH	

Page: 4 Approved: August 16, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 15-AUG-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 580272
Runlog ID: 76913
Analytical Workgroups: 579051,578846,580259,579884

Additional Work Group	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	460,494
Level 4	071,330
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer: 16-AUG-2016

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-16-2016 09:21:29

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG579846

Login Number: L16080330

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW05FF-080316	07	08/03/16					08/08/2016	5.2	180		08/15/16	12.2	180	
46WW16FF-080316	10	08/03/16					08/08/2016	5.1	180		08/15/16	12.2	180	
LHSMW19FF-080316	12	08/03/16					08/08/2016	5.1	180		08/15/16	12.2	180	
46WW11FF-080316	14	08/03/16					08/08/2016	5	180		08/15/16	12.1	180	
46WW09FF-080316	17	08/03/16					08/08/2016	4.9	180		08/15/16	12	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4895042
Report generated 08/15/2016 16:05

METHOD BLANK SUMMARY

Login Number: L16080330
Blank File ID: NI.081516.130800
Prep Date: 08/08/16 12:23
Analyzed Date: 08/15/16 13:08
Analyst: JYH

Work Group: WG579846
Blank Sample ID: WG579385-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG579385-03	NI.081116.170437	08/11/16 17:04	01
DUP	WG579385-04	NI.081116.171059	08/11/16 17:10	01
LCS	WG579385-03	NI.081516.131103	08/15/16 13:11	02
46WW05FF-080316	L16080330-07	NI.081516.134449	08/15/16 13:44	DL01
46WW16FF-080316	L16080330-10	NI.081516.135400	08/15/16 13:54	DL01
LHSMW19FF-080316	L16080330-12	NI.081516.135702	08/15/16 13:57	01
46WW11FF-080316	L16080330-14	NI.081516.140005	08/15/16 14:00	01
46WW09FF-080316	L16080330-17	NI.081516.140307	08/15/16 14:03	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4895043
Report generated 08/15/2016 16:11

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080330 Prep Date: 08/08/16 12:23 Sample ID: WG579385-02
Instrument ID: ICP-MS2 Run Date: 08/15/16 13:08 Prep Method: 3015
File ID: NI.081516.130800 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG579846 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-15-AUG-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Manganese, Dissolved	0.00100	0.00400	0.00100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4895044
15-AUG-2016 16:11

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080330 Run Date: 08/15/2016 Sample ID: WG579385-03
Instrument ID: ICP-MS2 Run Time: 13:11 Prep Method: 3015
File ID: NI.081516.131103 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG579846 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-15-AUG-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Manganese, Dissolved	0.125	0.127	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4895045
Report generated: 08/15/2016 16:11

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16080330 Cal ID: ICP-MS2 - Worknum: WG579846
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG579385-01 File ID: NI.081516.133542 Dil: 1 Matrix: WATER
Sample ID: WG579385-05 MS File ID: NI.081516.133844 Dil: 1 Units: mg/L
Sample ID: WG579385-06 MSD File ID: NI.081516.134147 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Manganese	0.00106	0.125	0.128	101	0.125	0.131	104	2.23	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4895046
Report generated 08/15/2016 16:11

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16080330 **Worknum:** WG579846
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG579846-04 **File ID:** NI.081516.140912 **Dil:** 500 **Units:** ug/L
Sample: L16080330-17 **File ID:** NI.081516.140307 **Dil:** 100

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Manganese	730	X	730	F	0.00	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4895040
08/15/2016 16:11

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16080330 **Worknum:** WG579846
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG579846-03 **File ID:** NI.081516.140610 **Dil:** 100 **Units:** ug/L
Sample ID: L16080330-17 **File ID:** NI.081516.140307 **Dil:** 100 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MANGANESE	59.5		7.30		50	104.5	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4895041
Report generated: 08/15/2016 16:11

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16080330	Workgroup (AAB#):	WG579846
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG580272	Initial Calibration Date:	15-AUG-2016 11:30

	WG580272-01		WG580272-02		WG580272-03		WG580272-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
MANGANESE	0	1080	.4	1360	50	403000	100	812000	.999978	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4895050
Report generated: 15-AUG-2016 16:11

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16080330
Instrument ID: ICP-MS2
File ID: NI.081516.113642
Workgroup (AAB#): WG579846
Matrix: WATER

Run Date: 08/15/2016
Run Time: 11:36
Analyst: JYH
Cal ID: ICP-MS2 - 15-AUG-16

Sample ID: WG580272-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MANGANESE	.4	1.6	.4	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4895052
Report generated 08/15/2016 16:11

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/15/2016
Sample ID: WG580272-12
Instrument ID: ICP-MS2
Run Time: 11:58
Method: 6020A
File ID: NI.081516.115858
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG579846
Cal ID: ICP-MS - 15-AUG-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4895055
Report generated 08/15/2016 16:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/15/2016
Sample ID: WG580272-16
Instrument ID: ICP-MS2
Run Time: 12:53
Method: 6020A
File ID: NI.081516.125314
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG579846
Cal ID: ICP-MS - 15-AUG-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4895055
Report generated 08/15/2016 16:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/15/2016
Sample ID: WG580272-19
Instrument ID: ICP-MS2
Run Time: 13:50
Method: 6020A
File ID: NI.081516.135056
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG579846
Cal ID: ICP-MS - 15-AUG-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4895055
Report generated 08/15/2016 16:11

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/15/2016
Sample ID: WG580272-21
Instrument ID: ICP-MS2
Run Time: 14:18
Method: 6020A
File ID: NI.081516.141821
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG579846
Cal ID: ICP-MS - 15-AUG-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4895055
Report generated 08/15/2016 16:11

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16080330
Run Date: 08/15/2016
Sample ID: WG580272-05
Instrument ID: ICP-MS2
Run Time: 11:33
Method: 6020A
File ID: NI.081516.113338
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG579846
Cal ID: ICP-MS - 15-AUG-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Manganese		50	50.3	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4895051
Report generated 08/15/2016 16:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/15/2016
Sample ID: WG580272-11
Instrument ID: ICP-MS2
Run Time: 11:55
Method: 6020A
File ID: NI.081516.115556
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579846
Cal ID: ICP-MS - 15-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0489	mg/L	97.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4895054
Report generated 08/15/2016 16:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/15/2016
Sample ID: WG580272-15
Instrument ID: ICP-MS2
Run Time: 12:50
Method: 6020A
File ID: NI.081516.125011
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579846
Cal ID: ICP-MS - 15-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0481	mg/L	96.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4895054
Report generated 08/15/2016 16:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/15/2016
Sample ID: WG580272-18
Instrument ID: ICP-MS2
Run Time: 13:47
Method: 6020A
File ID: NI.081516.134753
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579846
Cal ID: ICP-MS - 15-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0506	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4895054
Report generated 08/15/2016 16:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/15/2016
Sample ID: WG580272-20
Instrument ID: ICP-MS2
Run Time: 14:15
Method: 6020A
File ID: NI.081516.141519
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579846
Cal ID: ICP-MS - 15-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0505	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4895054
Report generated 08/15/2016 16:11

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16080330
Run Date: 08/15/2016
Sample ID: WG580272-07
Instrument ID: ICP-MS2
Run Time: 11:39
Method: 6020A
File ID: NI.081516.113946
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579846
Cal ID: ICP-MS - 15-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.486	ug/L	97.2	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4895071
Report generated 08/15/2016 16:12

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16080330
Run Date: 08/15/2016
Sample ID: WG580272-17
Instrument ID: ICP-MS2
Run Time: 12:56
Method: 6020A
File ID: NI.081516.125618
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579846
Cal ID: ICP-MS - 15-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.495	ug/L	99.1	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4895071
Report generated 08/15/2016 16:12

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16080330
Run Date: 08/15/2016
Sample ID: WG580272-23
Instrument ID: ICP-MS2
Run Time: 14:28
Method: 6020A
File ID: NI.081516.142833
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG579846
Cal ID: ICP-MS - 15-AUG-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.490	ug/L	98.1	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4895071
Report generated 08/15/2016 16:12

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16080330
Instrument ID: ICP-MS2
Sol. A : WG580272-08 **File ID:** NI.081516.114249
Sol. AB : WG580272-10 **File ID:** NI.081516.115251

Workgroup (AAB#): WG579846
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Manganese	NS	0.0668	NS	100	100	100	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4895053
Report generated 08/15/2016 16:11

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16080330 **Analytical Method:** 6020
Analytical Workgroup: WG579846 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 15-AUG-2016 11:21

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16080330-07	SAMP	15-AUG-2016 13:44	93.911	96.568	92.138
L16080330-10	SAMP	15-AUG-2016 13:54	93.39	93.523	90.336
L16080330-12	SAMP	15-AUG-2016 13:57	93.272	96.782	94.173
L16080330-14	SAMP	15-AUG-2016 14:00	95.642	98.105	95.818
L16080330-17	SAMP	15-AUG-2016 14:03	94.219	94.187	91.035
WG579385-02	BLANK	15-AUG-2016 13:08	97.647	100.433	97.535
WG579385-03	LCS	15-AUG-2016 13:11	97.711	101.282	97.434
WG579846-03	PSPK	15-AUG-2016 14:06	93.928	93.187	91.041
WG579846-04	SERIAL	15-AUG-2016 14:09	94.828	93.597	91.27
WG579846-04	SERIAL	15-AUG-2016 14:12	93.759	91.479	90.276
WG580272-05	ICV	15-AUG-2016 11:33	98.517	98.263	97.557
WG580272-06	ICB	15-AUG-2016 11:36	99.244	98.643	98.111
WG580272-07	LLICV	15-AUG-2016 11:39	97.611	96.175	94.844
WG580272-08	ICS	15-AUG-2016 11:42	92.057	91.067	90.383
WG580272-10	ICS	15-AUG-2016 11:52	99.273	99.088	96.94
WG580272-11	CCV	15-AUG-2016 11:55	99.315	98.497	97.997
WG580272-12	CCB	15-AUG-2016 11:58	99.201	98.061	97.298
WG580272-15	CCV	15-AUG-2016 12:50	96.957	100.325	96.579
WG580272-16	CCB	15-AUG-2016 12:53	97.428	99.239	97.635
WG580272-17	LLCCV	15-AUG-2016 12:56	95.908	97.186	95.324
WG580272-18	CCV	15-AUG-2016 13:47	97.491	102.222	100.041
WG580272-19	CCB	15-AUG-2016 13:50	98.864	100.978	98.615
WG580272-20	CCV	15-AUG-2016 14:15	97.948	98.678	97.19
WG580272-21	CCB	15-AUG-2016 14:18	98.856	97.662	97.137
WG580272-23	LLCCV	15-AUG-2016 14:28	98.149	96.585	94.943

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4895049
Report generated: 08/15/2016 16:11

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16080330 **Date:** 07/08/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4895048
Report generated: 08/15/2016 16:11

2.2.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Monday, August 15, 2016 10:15:23

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	6.975	1327	2024	0.695	
Mg	23.985	23.975	4501	2020	0.692	
Co	58.933	58.925	11688	2022	0.698	
In	114.904	114.875	22857	2028	0.686	
U	238.050	238.075	47459	2042	0.701	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	6.537
5.575	4.299
5.625	2.495
5.675	4.289
5.725	2.875
5.775	4.360
5.825	3.593
5.875	5.530
5.925	2.828
5.975	2.449
6.025	3.400
6.075	3.670
6.125	2.455
6.175	4.875
6.225	18.592
6.275	44.605
6.325	33.333
6.375	59.265
6.425	58.330
6.475	8.665
6.525	4.653
6.575	4.094
6.625	3.116
6.675	1.790
6.725	1.959
6.775	1.849
6.825	2.787

Report Date/Time: Monday, August 15, 2016 10:18:34
Page 1

Approved: August 16, 2016

6.875	1.850
6.925	1.275
6.975	1.632
7.025	1.729
7.075	2.304
7.125	3.277
7.175	2.354
7.225	3.203
7.275	5.232
7.325	17.678
7.375	22.822
7.425	74.689
7.475	113.855
7.525	138.332
7.575	50.000
7.625	74.689
7.675	108.327
7.725	104.583
7.775	69.722
7.825	55.902
7.875	60.858
7.925	104.583
7.975	60.858
8.025	24.845
8.075	46.481
8.125	70.711
8.175	43.853
8.225	34.233
8.275	60.858
8.325	162.980
8.375	91.287
8.425	149.071
8.475	46.481
22.525	223.607
22.575	19.444
22.625	24.845
22.675	42.229
22.725	32.401
22.775	19.174
22.825	22.588
22.875	32.810
22.925	45.928
22.975	31.923
23.025	35.551
23.075	45.018
23.125	29.220
23.175	28.152

Report Date/Time: Monday, August 15, 2016 10:18:34
Page 2

Approved: August 16, 2016

23.225	23.981
23.275	40.946
23.325	27.163
23.375	12.500
23.425	29.440
23.475	20.675
23.525	3.397
23.575	1.823
23.625	1.565
23.675	1.345
23.725	1.264
23.775	1.906
23.825	1.920
23.875	1.589
23.925	1.280
23.975	1.929
24.025	1.367
24.075	1.458
24.125	1.523
24.175	1.449
24.225	1.628
24.275	2.020
24.325	21.129
24.375	34.401
24.425	26.261
24.475	5.137
24.525	1.875
24.575	1.544
24.625	1.327
24.675	1.706
24.725	0.942
24.775	0.867
24.825	0.775
24.875	0.614
24.925	0.472
24.975	1.063
25.025	0.956
25.075	0.610
25.125	1.041
25.175	1.116
25.225	1.308
25.275	6.240
25.325	45.730
25.375	52.408
25.425	11.006
25.475	7.100
57.525	13.334

Report Date/Time: Monday, August 15, 2016 10:18:34
Page 3

Approved: August 16, 2016

57.575	4.116
57.625	2.706
57.675	2.902
57.725	2.826
57.775	0.833
57.825	2.684
57.875	2.477
57.925	0.756
57.975	3.350
58.025	1.845
58.075	2.421
58.125	2.380
58.175	1.627
58.225	3.775
58.275	2.814
58.325	34.922
58.375	26.352
58.425	15.111
58.475	8.094
58.525	8.065
58.575	1.142
58.625	2.299
58.675	2.276
58.725	1.258
58.775	2.360
58.825	2.397
58.875	1.483
58.925	2.593
58.975	1.838
59.025	2.530
59.075	2.471
59.125	2.953
59.175	2.799
59.225	6.057
59.275	15.429
59.325	76.697
59.375	40.825
59.425	30.842
59.475	33.497
59.525	19.415
59.575	7.143
59.625	4.504
59.675	3.915
59.725	2.405
59.775	4.070
59.825	5.200
59.875	4.760

Report Date/Time: Monday, August 15, 2016 10:18:34
Page 4

Approved: August 16, 2016

59.925	4.815
59.975	4.451
60.025	3.024
60.075	4.111
60.125	3.077
60.175	8.649
60.225	9.643
60.275	22.745
60.325	52.705
60.375	104.583
60.425	92.444
60.475	25.074
113.525	12.857
113.575	7.233
113.625	4.150
113.675	3.873
113.725	3.237
113.775	1.051
113.825	1.315
113.875	2.895
113.925	3.865
113.975	3.225
114.025	2.138
114.075	2.324
114.125	2.859
114.175	3.153
114.225	8.991
114.275	10.884
114.325	26.726
114.375	28.085
114.425	13.909
114.475	6.192
114.525	4.514
114.575	3.043
114.625	1.183
114.675	1.300
114.725	1.525
114.775	1.611
114.825	2.187
114.875	1.939
114.925	1.816
114.975	2.074
115.025	1.446
115.075	1.621
115.125	1.806
115.175	1.329
115.225	4.142

Report Date/Time: Monday, August 15, 2016 10:18:34
Page 5

Approved: August 16, 2016

115.275	6.716
115.325	45.015
115.375	42.696
115.425	13.975
115.475	38.852
115.525	25.419
115.575	19.548
115.625	4.361
115.675	4.978
115.725	1.282
115.775	2.429
115.825	5.130
115.875	2.773
115.925	5.018
115.975	4.437
116.025	5.023
116.075	4.602
116.125	6.856
116.175	4.589
116.225	8.928
116.275	22.482
116.325	32.969
116.375	20.328
116.425	39.033
116.475	38.401
236.525	
236.575	41.612
236.625	33.402
236.675	52.442
236.725	27.794
236.775	38.696
236.825	30.764
236.875	16.134
236.925	28.671
236.975	21.066
237.025	33.248
237.075	40.432
237.125	24.996
237.175	57.722
237.225	23.570
237.275	18.390
237.325	21.213
237.375	19.325
237.425	31.935
237.475	47.128
237.525	30.000
237.575	15.986

Report Date/Time: Monday, August 15, 2016 10:18:34
Page 6

Approved: August 16, 2016

237.625	5.785
237.675	7.567
237.725	3.301
237.775	2.579
237.825	1.827
237.875	1.498
237.925	0.963
237.975	1.167
238.025	0.522
238.075	2.357
238.125	0.523
238.175	0.600
238.225	1.385
238.275	1.503
238.325	0.899
238.375	1.752
238.425	4.608
238.475	5.794
238.525	11.689
238.575	13.869
238.625	12.448
238.675	14.172
238.725	18.182
238.775	32.323
238.825	36.444
238.875	32.070
238.925	16.855
238.975	28.284
239.025	33.402
239.075	28.085
239.125	25.495
239.175	32.070
239.225	26.413
239.275	15.798
239.325	16.767
239.375	17.008
239.425	34.233
239.475	42.950

Approved: August 16, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 8/15/2016 10:20:20 AM
End Time: 8/15/2016 10:22:42 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 8969.52
        Obtained Intensity (Mg 23.985): 329506.75
        Obtained Intensity (In 114.904): 75737.43
        Obtained Intensity (U 238.05): 84781.89
        Obtained Intensity (Bkgd 220): 0.53
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=4341.49 / 244730.58)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=1023.50 / 244730.58)
```

Report Date/Time: Monday, August 15, 2016 10:22:42
Page 1

Approved: August 16, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 8/15/2016 10:20:20 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 8969.52
                Obtained Intensity (Mg 23.985): 329506.75
                Obtained Intensity (In 114.904): 75737.43
                Obtained Intensity (U 238.05): 84781.89
                Obtained Intensity (Bkgd 220): 0.53
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=4341.49 / 244730.58)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=1023.50 / 244730.58)
[Passed]  Optimum value(s): N/A

End Time: 8/15/2016 10:22:42 AM
```


Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Monday, August 15, 2016 11:18:24
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61109.7	2.1				ug/L		Standard
	Be	9	16.7	75.5				ug/L		Standard
	Al	27	833.4	16.8				ug/L		Standard
	Sc	45	24972.2	1.3				ug/L		Standard
	Ti	47	60.7	13.4				ug/L		Standard
	V	51	946.8	3.0				ug/L		Standard
	Cr	52	5189.2	1.2				ug/L		Standard
	Cr	53	2221.8	4.9				ug/L		Standard
	Mn	55	987.4	4.5				ug/L		Standard
	Co	59	300.0	5.8				ug/L		Standard
	Ni	60	157.0	13.0				ug/L		Standard
	Cu	65	131.7	5.8				ug/L		Standard
	Zn	66	171.3	26.2				ug/L		Standard
>	Ge	72	432355.0	1.0				ug/L		Standard
	As	75	-35.6	28.8				ug/L		Standard
	Se	82	4.3	109.8				ug/L		Standard
	Se-1	77	163.3	10.4				ug/L		Standard
>	Ga	71	30.0	33.3				mg/L		Standard
	Rb	85	21.7	70.5				ug/L		Standard
	Y	89	382028.5	1.3				ug/L		Standard
>	Rh	103	8.3	34.6				ug/L		Standard
	Mo	98	158.0	22.8				ug/L		Standard
	Ag	107	108.0	26.0				ug/L		Standard
	Cd	111	5.7	46.4				mg/L		Standard
	Cd	114	24.8	24.8				ug/L		Standard
>	In	115	561862.1	1.2				ug/L		Standard
	Sn	118	69.0	20.1				ug/L		Standard
	Sb	123	2477.3	37.3				ug/L		Standard
	Ba	135	24.3	9.5				ug/L		Standard
	Ce	140	28.3	20.4				ug/L		Standard
>	Tb	159	906794.0	2.1				ug/L		Standard
	Ho	165	8.3	34.6				ug/L		Standard
	Tl	203	108.3	6.1				ug/L		Standard
	Tl	205	111.7	27.4				ug/L		Standard
	Pb	206	315.0	2.9				ug/L		Standard
	Pb	207	264.7	3.8				ug/L		Standard
	Pb	208	1278.0	1.9				ug/L		Standard
	U	238	113.3	3.6				ug/L		Standard
>	Bi	209	539503.4	1.2				ug/L		Standard

Sample ID: Blank
Report Date/Time: Monday, August 15, 2016 11:20:32
Page 1

Approved: August 16, 2016

Na	23	1.7	173.2	mg/L	Standard
Mg	24	40.0	12.5	mg/L	Standard
K	39	31.7	63.8	mg/L	Standard
Ca	43	40.0	50.0	mg/L	Standard
Fe	54	142.5	18.2	mg/L	Standard
Fe	57	270.0	8.5	mg/L	Standard
Sc-1	45	24972.2	1.3	mg/L	Standard
Cl	35	63561.7	1.8	ug/L	Standard
Kr	83	3.3	62.4	ug/L	Standard
Br	81	1190.0	7.2	ug/L	Standard
P	31	11274.2	2.3	ug/L	Standard
S	34	2591.9	5.8	ug/L	Standard
Sr	88	70.0	21.4	ug/L	Standard
C	12	90.0	19.2	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	0.0		mg/L	Standard
Dy	164	9.5	107.6	mg/L	Standard
Ho-1	165	8.3	34.6	mg/L	Standard
Er	166	10.0	100.0	mg/L	Standard
I	127	2345.2	1.1	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Blank
Report Date/Time: Monday, August 15, 2016 11:20:32
Page 2

Approved: August 16, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Monday, August 15, 2016 11:20:32
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Monday, August 15, 2016 11:21:27
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62652.7	3.4				ug/L	61110	Standard
	Be	9	21.7	58.1				ug/L	17	Standard
	Al	27	1741.8	57.8				ug/L	833	Standard
	Sc	45	24962.2	1.5				ug/L	24972	Standard
	Ti	47	54.7	20.1				ug/L	61	Standard
	V	51	1030.4	3.7				ug/L	947	Standard
	Cr	52	5569.0	2.3				ug/L	5189	Standard
	Cr	53	2400.2	4.5				ug/L	2222	Standard
	Mn	55	1082.4	9.1				ug/L	987	Standard
	Co	59	368.3	33.0				ug/L	300	Standard
	Ni	60	171.0	6.7				ug/L	157	Standard
	Cu	65	138.0	14.4				ug/L	132	Standard
	Zn	66	156.0	6.4				ug/L	171	Standard
>	**Ge**	72	434787.9	1.1				ug/L	432355	Standard
	As	75	-28.7	85.1				ug/L	-36	Standard
	Se	82	4.0	142.0				ug/L	4	Standard
	Se-1	77	163.7	1.5				ug/L	163	Standard
>	**Ga**	71	25.0	34.6				mg/L	30	Standard
	Rb	85	10.0	132.3				ug/L	22	Standard
	Y	89	383058.9	1.3				ug/L	382028	Standard
>	**Rh**	103	5.0	100.0				ug/L	8	Standard
	Mo	98	126.1	28.1				ug/L	158	Standard
	Ag	107	145.0	31.5				ug/L	108	Standard
	Cd	111	26.2	55.5				mg/L	6	Standard
	Cd	114	69.8	39.2				ug/L	25	Standard
>	**In**	115	561265.1	0.9				ug/L	561862	Standard
	Sn	118	71.0	18.0				ug/L	69	Standard
	Sb	123	618.1	45.3				ug/L	2477	Standard
	Ba	135	44.3	39.2				ug/L	24	Standard
	Ce	140	36.7	20.8				ug/L	28	Standard
>	**Tb**	159	915724.0	0.4				ug/L	906794	Standard
	Ho	165	10.0	100.0				ug/L	8	Standard
	Tl	203	188.3	53.5				ug/L	108	Standard
	Tl	205	138.3	76.2				ug/L	112	Standard
	Pb	206	419.3	23.9				ug/L	315	Standard
	Pb	207	357.0	31.5				ug/L	265	Standard
	Pb	208	1632.7	23.1				ug/L	1278	Standard
	U	238	351.7	80.1				ug/L	113	Standard
>	**Bi**	209	537008.6	1.1				ug/L	539503	Standard

Sample ID: Standard 1
Report Date/Time: Monday, August 15, 2016 11:23:34
Page 1

Approved: August 16, 2016

	Na	23	1.7	173.2	mg/L	2	Standard
	Mg	24	36.7	7.9	mg/L	40	Standard
	K	39	21.7	26.6	mg/L	32	Standard
	Ca	43	61.7	20.4	mg/L	40	Standard
	Fe	54	127.8	14.7	mg/L	143	Standard
	Fe	57	290.0	15.8	mg/L	270	Standard
>	**Sc-1**	45	24962.2	1.5	mg/L	24972	Standard
	Cl	35	63971.4	0.5	ug/L	63562	Standard
	Kr	83	1.7	34.6	ug/L	3	Standard
	Br	81	1146.7	13.4	ug/L	1190	Standard
	P	31	11409.3	2.5	ug/L	11274	Standard
	S	34	2450.2	4.6	ug/L	2592	Standard
	Sr	88	100.0	21.8	ug/L	70	Standard
	C	12	53.3	39.0	mg/L	90	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	9.4	99.2	mg/L	10	Standard
	Ho-1	165	10.0	100.0	mg/L	8	Standard
	Er	166	13.3	114.6	mg/L	10	Standard
	I	127	2356.9	3.6	mg/L	2345	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 1
Report Date/Time: Monday, August 15, 2016 11:23:34
Page 2

Approved: August 16, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Monday, August 15, 2016 11:23:34
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Monday, August 15, 2016 11:24:29
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62257.7	2.5				ug/L	61110	Standard
	Be	9	38.3	15.1				ug/L	17	Standard
	Al	27	6014.5	3.2				ug/L	833	Standard
	Sc	45	24922.2	2.4				ug/L	24972	Standard
	Ti	47	77.3	12.2				ug/L	61	Standard
	V	51	1424.5	7.7				ug/L	947	Standard
	Cr	52	5947.8	0.5				ug/L	5189	Standard
	Cr	53	2236.8	4.2				ug/L	2222	Standard
	Mn	55	1355.1	4.2				ug/L	987	Standard
	Co	59	600.3	4.3				ug/L	300	Standard
	Ni	60	237.0	4.2				ug/L	157	Standard
	Cu	65	184.0	14.2				ug/L	132	Standard
	Zn	66	237.3	4.8				ug/L	171	Standard
>	Ge	72	438242.7	1.4				ug/L	432355	Standard
	As	75	-23.3	164.2				ug/L	-36	Standard
	Se	82	1.6	138.9				ug/L	4	Standard
	Se-1	77	160.0	2.3				ug/L	163	Standard
>	Ga	71	18.3	31.5				mg/L	30	Standard
	Rb	85	16.7	45.8				ug/L	22	Standard
	Y	89	379988.8	2.0				ug/L	382028	Standard
>	Rh	103	13.3	21.7				ug/L	8	Standard
	Mo	98	301.5	3.6				ug/L	158	Standard
	Ag	107	326.7	3.3				ug/L	108	Standard
	Cd	111	84.6	7.4				mg/L	6	Standard
	Cd	114	222.1	3.9				ug/L	25	Standard
>	In	115	559326.3	1.4				ug/L	561862	Standard
	Sn	118	109.7	10.2				ug/L	69	Standard
	Sb	123	484.8	26.6				ug/L	2477	Standard
	Ba	135	100.3	5.5				ug/L	24	Standard
	Ce	140	18.3	41.7				ug/L	28	Standard
>	Tb	159	911942.3	0.2				ug/L	906794	Standard
	Ho	165	6.7	114.6				ug/L	8	Standard
	Tl	203	446.0	8.1				ug/L	108	Standard
	Tl	205	375.0	7.1				ug/L	112	Standard
	Pb	206	572.0	6.3				ug/L	315	Standard
	Pb	207	501.7	4.8				ug/L	265	Standard
	Pb	208	2352.4	1.8				ug/L	1278	Standard
	U	238	1151.0	2.1				ug/L	113	Standard
>	Bi	209	538478.8	0.9				ug/L	539503	Standard

Sample ID: Standard 2
Report Date/Time: Monday, August 15, 2016 11:26:37
Page 1

Approved: August 16, 2016

	Na	23	0.0		mg/L	2	Standard
	Mg	24	43.3	17.6	mg/L	40	Standard
	K	39	28.3	62.0	mg/L	32	Standard
	Ca	43	55.0	27.3	mg/L	40	Standard
	Fe	54	128.9	7.6	mg/L	143	Standard
	Fe	57	275.0	16.2	mg/L	270	Standard
>	**Sc-1**	45	24922.2	2.4	mg/L	24972	Standard
	Cl	35	64449.5	0.9	ug/L	63562	Standard
	Kr	83	0.7	86.6	ug/L	3	Standard
	Br	81	1086.7	12.0	ug/L	1190	Standard
	P	31	11272.5	2.1	ug/L	11274	Standard
	S	34	2475.2	3.4	ug/L	2592	Standard
	Sr	88	70.0	14.3	ug/L	70	Standard
	C	12	80.0	12.5	mg/L	90	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	2.9	203.0	mg/L	10	Standard
	Ho-1	165	6.7	114.6	mg/L	8	Standard
	Er	166	10.0	100.0	mg/L	10	Standard
	I	127	2240.2	3.9	mg/L	2345	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 2
Report Date/Time: Monday, August 15, 2016 11:26:37
Page 2

Approved: August 16, 2016

	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Monday, August 15, 2016 11:26:37
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Monday, August 15, 2016 11:27:32
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60979.2	2.5				ug/L	61110	Standard
	Be	9	28712.2	3.2	**50.0000**	0.359	0.7	ug/L	17	Standard
	Al	27	4686016.2	1.8	**50.0000**	0.701	1.4	ug/L	833	Standard
	Sc	45	24706.8	1.0				ug/L	24972	Standard
	Ti	47	16246.0	0.7	**100.0000**	1.957	2.0	ug/L	61	Standard
	V	51	265224.4	0.5	**50.0000**	0.829	1.7	ug/L	947	Standard
	Cr	52	249341.3	0.4	**50.0000**	0.672	1.3	ug/L	5189	Standard
	Cr	53	32067.2	2.2	**50.0000**	1.134	2.3	ug/L	2222	Standard
	Mn	55	402940.7	0.5	**50.0000**	0.865	1.7	ug/L	987	Standard
	Co	59	313408.4	0.9	**50.0000**	1.166	2.3	ug/L	300	Standard
	Ni	60	67550.3	1.2	**50.0000**	1.259	2.5	ug/L	157	Standard
	Cu	65	69354.4	0.8	**50.0000**	1.008	2.0	ug/L	132	Standard
	Zn	66	40799.2	1.0	**50.0000**	0.783	1.6	ug/L	171	Standard
>	Ge	72	422386.0	1.4				ug/L	432355	Standard
	As	75	39269.0	1.2	**50.0000**	0.092	0.2	ug/L	-36	Standard
	Se	82	2770.1	0.4	**50.0000**	0.514	1.0	ug/L	4	Standard
	Se-1	77	2799.6	1.2	**50.0000**	0.450	0.9	ug/L	163	Standard
>	Ga	71	35.0	14.3				mg/L	30	Standard
	Rb	85	621.7	2.5				ug/L	22	Standard
	Y	89	371977.5	0.6				ug/L	382028	Standard
>	Rh	103	26.7	39.0				ug/L	8	Standard
	Mo	98	231895.6	0.6	**100.0000**	0.610	0.6	ug/L	158	Standard
	Ag	107	234130.1	0.2	**50.0000**	0.370	0.7	ug/L	108	Standard
	Cd	111	83602.2	0.7	**50.0000**	0.323	0.6	mg/L	6	Standard
	Cd	114	206400.4	0.4	**50.0000**	0.381	0.8	ug/L	25	Standard
>	In	115	552723.9	0.9				ug/L	561862	Standard
	Sn	118	43995.1	1.2	**50.0000**	0.155	0.3	ug/L	69	Standard
	Sb	123	207647.1	0.9	**50.0000**	0.145	0.3	ug/L	2477	Standard
	Ba	135	82872.0	1.0	**50.0000**	0.151	0.3	ug/L	24	Standard
	Ce	140	68.3	29.6				ug/L	28	Standard
>	Tb	159	908253.9	1.1				ug/L	906794	Standard
	Ho	165	11.7	89.2				ug/L	8	Standard
	Tl	203	351540.2	0.8	**50.0000**	0.426	0.9	ug/L	108	Standard
	Tl	205	284168.6	1.0	**50.0000**	0.858	1.7	ug/L	112	Standard
	Pb	206	270063.7	1.0	**50.0000**	0.549	1.1	ug/L	315	Standard
	Pb	207	243392.4	0.6	**50.0000**	0.489	1.0	ug/L	265	Standard
	Pb	208	1098700.9	1.1	**50.0000**	0.508	1.0	ug/L	1278	Standard
	U	238	1067347.8	0.8	**50.0000**	0.494	1.0	ug/L	113	Standard
>	Bi	209	535477.3	0.8				ug/L	539503	Standard

Sample ID: Standard 3
Report Date/Time: Monday, August 15, 2016 11:29:40
Page 1

Approved: August 16, 2016

Na	23	0.0					mg/L	2	Standard
Mg	24	2748.6	1.7	**5.0000**	0.123	2.5	mg/L	40	Standard
K	39	1103.4	6.5	**5.0000**	0.363	7.3	mg/L	32	Standard
Ca	43	76.7	30.8	**5.0000**	5.256	105.1	mg/L	40	Standard
Fe	54	4921.2	5.1	**5.0000**	0.214	4.3	mg/L	143	Standard
Fe	57	1583.4	3.5	**5.0000**	0.174	3.5	mg/L	270	Standard
> **Sc-1**	45	24706.8	1.0				mg/L	24972	Standard
Cl	35	68672.6	0.8				ug/L	63562	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1066.7	9.8				ug/L	1190	Standard
P	31	12480.1	4.0				ug/L	11274	Standard
S	34	3155.3	7.9				ug/L	2592	Standard
Sr	88	66.7	34.6				ug/L	70	Standard
C	12	53.3	28.6				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	12.9	48.2				mg/L	10	Standard
Ho-1	165	11.7	89.2				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	10	Standard
I	127	19799.6	2.2				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Standard 3
Report Date/Time: Monday, August 15, 2016 11:29:40
Page 2

Approved: August 16, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
Report Date/Time: Monday, August 15, 2016 11:29:40
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Monday, August 15, 2016 11:30:34
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60726.5	3.0				ug/L	61110	Standard
	Be	9	57756.6	2.7	**100.5411**	4.198	4.2	ug/L	17	Standard
	Al	27	9503795.2	1.2	**100.9227**	1.948	1.9	ug/L	833	Standard
	Sc	45	25172.6	0.6				ug/L	24972	Standard
	Ti	47	33020.6	1.2	**202.2473**	3.821	1.9	ug/L	61	Standard
	V	51	542068.5	0.5	**101.4153**	1.166	1.2	ug/L	947	Standard
	Cr	52	498537.3	0.6	**100.7736**	1.237	1.2	ug/L	5189	Standard
	Cr	53	63941.3	0.6	**101.8227**	0.773	0.8	ug/L	2222	Standard
	Mn	55	812123.3	0.9	**100.6681**	1.591	1.6	ug/L	987	Standard
	Co	59	631382.9	0.4	**100.6044**	0.624	0.6	ug/L	300	Standard
	Ni	60	136331.3	0.4	**100.7335**	0.731	0.7	ug/L	157	Standard
	Cu	65	138545.9	1.2	**100.2033**	1.460	1.5	ug/L	132	Standard
	Zn	66	82676.0	1.1	**100.9992**	1.369	1.4	ug/L	171	Standard
>	Ge	72	420449.4	0.7				ug/L	432355	Standard
	As	75	79638.2	1.4	**100.8874**	1.897	1.9	ug/L	-36	Standard
	Se	82	5700.1	0.9	**101.6402**	1.657	1.6	ug/L	4	Standard
	Se-1	77	5636.7	1.4	**101.9918**	2.183	2.1	ug/L	163	Standard
>	Ga	71	63.3	19.9				mg/L	30	Standard
	Rb	85	1138.4	2.6				ug/L	22	Standard
	Y	89	370589.1	2.5				ug/L	382028	Standard
>	Rh	103	31.7	39.7				ug/L	8	Standard
	Mo	98	461198.8	0.7	**200.3734**	1.003	0.5	ug/L	158	Standard
	Ag	107	471398.0	0.6	**100.8023**	0.305	0.3	ug/L	108	Standard
	Cd	111	167922.5	0.9	**100.6734**	0.367	0.4	mg/L	6	Standard
	Cd	114	419025.8	0.7	**101.2099**	1.066	1.1	ug/L	25	Standard
>	In	115	547652.9	0.8				ug/L	561862	Standard
	Sn	118	87222.7	0.5	**100.0618**	0.673	0.7	ug/L	69	Standard
	Sb	123	422491.5	0.2	**101.3551**	0.922	0.9	ug/L	2477	Standard
	Ba	135	168089.2	0.4	**101.1687**	0.376	0.4	ug/L	24	Standard
	Ce	140	95.0	39.7				ug/L	28	Standard
>	Tb	159	892464.7	1.2				ug/L	906794	Standard
	Ho	165	15.0	33.3				ug/L	8	Standard
	Tl	203	706622.9	1.0	**101.6849**	0.429	0.4	ug/L	108	Standard
	Tl	205	569008.3	1.1	**101.4945**	1.610	1.6	ug/L	112	Standard
	Pb	206	542905.1	1.7	**101.7089**	0.648	0.6	ug/L	315	Standard
	Pb	207	492091.2	1.0	**101.9948**	0.195	0.2	ug/L	265	Standard
	Pb	208	2212385.5	0.9	**101.7959**	0.089	0.1	ug/L	1278	Standard
	U	238	1957415.8	0.6	**97.0976**	0.463	0.5	ug/L	113	Standard
>	Bi	209	520396.2	1.0				ug/L	539503	Standard

Sample ID: Standard 4
Report Date/Time: Monday, August 15, 2016 11:32:42
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	5389.3	1.2	**9.8429**	0.167	1.7	mg/L	40	Standard
K	39	2113.5	9.2	**9.7470**	0.897	9.2	mg/L	32	Standard
Ca	43	120.0	27.3	**11.8092**	5.980	50.6	mg/L	40	Standard
Fe	54	9998.2	4.0	**10.0494**	0.351	3.5	mg/L	143	Standard
Fe	57	2823.6	6.4	**9.7601**	0.702	7.2	mg/L	270	Standard
Sc-1	45	25172.6	0.6				mg/L	24972	Standard
Cl	35	66962.3	1.6				ug/L	63562	Standard
Kr	83	3.7	15.7				ug/L	3	Standard
Br	81	1056.7	11.1				ug/L	1190	Standard
P	31	13204.1	2.7				ug/L	11274	Standard
S	34	3103.7	1.4				ug/L	2592	Standard
Sr	88	98.3	20.5				ug/L	70	Standard
C	12	90.0	29.4				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.2	98.4				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	8	Standard
Er	166	30.0	66.7				mg/L	10	Standard
I	127	15895.0	0.7				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 4
Report Date/Time: Monday, August 15, 2016 11:32:42
Page 2

Approved: August 16, 2016

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Monday, August 15, 2016 11:32:42
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Monday, August 15, 2016 11:33:38
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59587.0	2.2				ug/L	61110	Standard
	Be	9	29204.8	1.4	**51.7834**	1.124	2.2	ug/L	17	Standard
	Al	27	4829899.1	0.9	**52.2564**	0.852	1.6	ug/L	833	Standard
	Sc	45	24194.3	1.7				ug/L	24972	Standard
	Ti	47	17155.0	1.0	**103.8109**	1.770	1.7	ug/L	61	Standard
	V	51	269670.9	0.2	**49.8250**	0.433	0.9	ug/L	947	Standard
	Cr	52	251226.7	0.6	**49.6976**	0.668	1.3	ug/L	5189	Standard
	Cr	53	33062.7	1.4	**50.4032**	0.660	1.3	ug/L	2222	Standard
	Mn	55	410803.8	0.8	**50.3365**	0.455	0.9	ug/L	987	Standard
	Co	59	313372.6	0.5	**49.3936**	0.077	0.2	ug/L	300	Standard
	Ni	60	68293.6	0.3	**49.8789**	0.217	0.4	ug/L	157	Standard
	Cu	65	70493.3	0.6	**50.4166**	0.262	0.5	ug/L	132	Standard
	Zn	66	42435.0	0.3	**51.1909**	0.493	1.0	ug/L	171	Standard
>	Ge	72	424847.2	0.7				ug/L	432355	Standard
	As	75	40071.3	1.1	**50.2730**	0.301	0.6	ug/L	-36	Standard
	Se	82	2846.4	0.1	**50.2390**	0.414	0.8	ug/L	4	Standard
	Se-1	77	2905.9	1.7	**50.6642**	1.306	2.6	ug/L	163	Standard
>	Ga	71	50.0	20.0				mg/L	30	Standard
	Rb	85	476.7	12.4				ug/L	22	Standard
	Y	89	367857.2	2.6				ug/L	382028	Standard
>	Rh	103	20.0	75.0				ug/L	8	Standard
	Mo	98	242433.3	0.2	**105.2275**	1.046	1.0	ug/L	158	Standard
	Ag	107	232275.9	0.4	**49.6177**	0.334	0.7	ug/L	108	Standard
	Cd	111	83340.7	0.5	**49.9252**	0.677	1.4	mg/L	6	Standard
	Cd	114	209904.5	1.1	**50.6565**	0.882	1.7	ug/L	25	Standard
>	In	115	548133.5	1.0				ug/L	561862	Standard
	Sn	118	46600.9	1.5	**53.3862**	1.291	2.4	ug/L	69	Standard
	Sb	123	206308.0	0.6	**49.4156**	0.204	0.4	ug/L	2477	Standard
	Ba	135	82861.6	1.1	**49.8292**	0.979	2.0	ug/L	24	Standard
	Ce	140	96.7	26.5				ug/L	28	Standard
>	Tb	159	900823.4	1.2				ug/L	906794	Standard
	Ho	165	11.7	24.7				ug/L	8	Standard
	Tl	203	357304.9	0.1	**50.3368**	0.190	0.4	ug/L	108	Standard
	Tl	205	287191.3	0.7	**50.1461**	0.507	1.0	ug/L	112	Standard
	Pb	206	280415.5	0.7	**51.4128**	0.502	1.0	ug/L	315	Standard
	Pb	207	243958.7	0.7	**49.4832**	0.489	1.0	ug/L	265	Standard
	Pb	208	1122059.6	0.6	**50.5228**	0.496	1.0	ug/L	1278	Standard
	U	238	1063074.1	0.8	**51.6279**	0.341	0.7	ug/L	113	Standard
>	Bi	209	531501.0	0.4				ug/L	539503	Standard

Sample ID: QC Std 1
Report Date/Time: Monday, August 15, 2016 11:35:46
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	2790.3	2.9	**5.2662**	0.076	1.5	mg/L	40	Standard
K	39	1120.0	4.3	**5.3195**	0.285	5.3	mg/L	32	Standard
Ca	43	66.7	18.9	**2.4944**	2.198	88.1	mg/L	40	Standard
Fe	54	5121.0	1.9	**5.2984**	0.186	3.5	mg/L	143	Standard
Fe	57	1628.4	8.1	**5.4351**	0.585	10.8	mg/L	270	Standard
> **Sc-1**	45	24194.3	1.7				mg/L	24972	Standard
Cl	35	65082.8	0.8				ug/L	63562	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1096.7	6.1				ug/L	1190	Standard
P	31	12680.3	3.3				ug/L	11274	Standard
S	34	2855.3	2.8				ug/L	2592	Standard
Sr	88	81.7	19.7				ug/L	70	Standard
C	12	96.7	62.4				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	12.7	86.6				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	8	Standard
Er	166	13.3	86.6				mg/L	10	Standard
I	127	8422.3	0.9				mg/L	2345	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	103.567		
	Al	27	104.513		
	Sc	45			
	Ti	47	103.811		
	V	51	99.650		
	Cr	52	99.395		
	Cr	53			
	Mn	55	100.673		
	Co	59	98.787		
	Ni	60	99.758		
	Cu	65	100.833		
	Zn	66	102.382		
>	Ge	72		98.263	
	As	75	100.546		
	Se	82	100.478		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 1
Report Date/Time: Monday, August 15, 2016 11:35:46
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98	105.227	
Ag	107	99.235	
Cd	111	99.850	
Cd	114		
> In	115		97.557
Sn	118	106.772	
Sb	123	98.831	
Ba	135	99.658	
Ce	140		
> Tb	159		
Ho	165		
Tl	203	100.674	
Tl	205		
Pb	206	102.826	
Pb	207	98.966	
Pb	208	101.046	
U	238	103.256	
> Bi	209		98.517
Na	23	0.190	
Mg	24	105.324	
K	39	106.390	
Ca	43	49.888	
Fe	54	105.968	
Fe	57	108.702	
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
Report Date/Time: Monday, August 15, 2016 11:35:46
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Monday, August 15, 2016 11:36:42
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61054.4	1.4				ug/L	61110	Standard
	Be	9	38.3	52.7	**0.0517**	0.036	68.8	ug/L	17	Standard
	Al	27	2363.5	25.9	**0.0126**	0.006	50.8	ug/L	833	Standard
	Sc	45	24701.8	2.3				ug/L	24972	Standard
	Ti	47	55.0	11.4	**-0.0231**	0.036	155.1	ug/L	61	Standard
	V	51	955.5	19.1	**-0.0295**	0.033	112.8	ug/L	947	Standard
	Cr	52	4882.8	3.0	**-0.1326**	0.031	23.7	ug/L	5189	Standard
	Cr	53	1908.5	5.4	**-0.3848**	0.171	44.3	ug/L	2222	Standard
	Mn	55	1097.0	6.7	**0.0229**	0.009	38.4	ug/L	987	Standard
	Co	59	367.0	13.2	**0.0158**	0.008	48.4	ug/L	300	Standard
	Ni	60	172.3	5.9	**0.0075**	0.008	107.4	ug/L	157	Standard
	Cu	65	140.7	6.6	**0.0228**	0.007	31.4	ug/L	132	Standard
	Zn	66	220.7	7.9	**0.0377**	0.022	57.5	ug/L	171	Standard
>	**Ge**	72	426486.2	0.6				ug/L	432355	Standard
	As	75	-18.2	59.1	**0.0559**	0.014	24.2	ug/L	-36	Standard
	Se	82	5.3	154.9	**0.1143**	0.143	125.0	ug/L	4	Standard
	Se-1	77	160.0	7.0	**0.1289**	0.209	162.3	ug/L	163	Standard
>	**Ga**	71	25.0	34.6				mg/L	30	Standard
	Rb	85	8.3	34.6				ug/L	22	Standard
	Y	89	371064.1	1.0				ug/L	382028	Standard
>	**Rh**	103	6.7	43.3				ug/L	8	Standard
	Mo	98	404.3	16.4	**0.1462**	0.029	19.6	ug/L	158	Standard
	Ag	107	170.3	23.2	**0.0178**	0.008	47.4	ug/L	108	Standard
	Cd	111	27.7	7.3	**0.0169**	0.001	7.2	mg/L	6	Standard
	Cd	114	93.8	39.8	**0.0200**	0.009	44.9	ug/L	25	Standard
>	**In**	115	551250.1	0.0				ug/L	561862	Standard
	Sn	118	169.7	29.3	**0.1201**	0.057	47.2	ug/L	69	Standard
	Sb	123	2033.9	33.3	**0.4208**	0.162	38.4	ug/L	2477	Standard
	Ba	135	55.7	22.2	**0.0242**	0.007	30.6	ug/L	24	Standard
	Ce	140	20.0	0.0				ug/L	28	Standard
>	**Tb**	159	908061.3	2.1				ug/L	906794	Standard
	Ho	165	8.3	34.6				ug/L	8	Standard
	Tl	203	200.3	21.9	**0.0160**	0.006	38.4	ug/L	108	Standard
	Tl	205	185.0	14.3	**0.0174**	0.004	25.7	ug/L	112	Standard
	Pb	206	419.7	14.9	**0.0228**	0.011	50.1	ug/L	315	Standard
	Pb	207	337.7	11.9	**0.0175**	0.008	46.4	ug/L	265	Standard
	Pb	208	1622.7	7.3	**0.0179**	0.005	29.5	ug/L	1278	Standard
	U	238	419.0	25.4	**0.0150**	0.005	34.0	ug/L	113	Standard
>	**Bi**	209	535427.0	0.4				ug/L	539503	Standard

Sample ID: QC Std 2
Report Date/Time: Monday, August 15, 2016 11:38:50
Page 1

Approved: August 16, 2016

Na	23	1.7	-4807369116638326607560 7526.094			173.2	mg/L	2	Standard
Mg	24	45.0	22.2	**0.0090**	0.020	225.8	mg/L	40	Standard
K	39	31.7	39.7	**0.0241**	0.063	259.3	mg/L	32	Standard
Ca	43	61.7	16.9	**1.3524**	2.185	161.5	mg/L	40	Standard
Fe	54	124.2	17.4	**0.0016**	0.024	1513.2	mg/L	143	Standard
Fe	57	246.7	17.2	**-0.1011**	0.146	144.5	mg/L	270	Standard
Sc-1	45	24701.8	2.3				mg/L	24972	Standard
Cl	35	63429.2	2.8				ug/L	63562	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	1130.0	21.5				ug/L	1190	Standard
P	31	12008.1	3.0				ug/L	11274	Standard
S	34	2798.6	1.5				ug/L	2592	Standard
Sr	88	91.7	36.3				ug/L	70	Standard
C	12	73.3	55.1				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	10	Standard
I	127	2445.2	3.5				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.643	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 2
Report Date/Time: Monday, August 15, 2016 11:38:50
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.111	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.244	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Ca	43	

Sample ID: QC Std 2
Report Date/Time: Monday, August 15, 2016 11:38:50
Page 3

Approved: August 16, 2016

QC Std 2	Fe	57

Sample ID: QC Std 2
Report Date/Time: Monday, August 15, 2016 11:38:50
Page 4

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Monday, August 15, 2016 11:39:46
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59138.6	3.1				ug/L	61110	Standard
	Be	9	166.7	14.2	**0.2829**	0.043	15.1	ug/L	17	Standard
	Al	27	2338.5	49.0	**0.0130**	0.012	89.9	ug/L	833	Standard
	Sc	45	23419.8	1.0				ug/L	24972	Standard
	Ti	47	65.0	14.7	**0.0477**	0.060	126.8	ug/L	61	Standard
	V	51	2917.5	4.3	**0.3468**	0.019	5.4	ug/L	947	Standard
	Cr	52	8802.6	0.5	**0.7027**	0.011	1.5	ug/L	5189	Standard
	Cr	53	2403.5	2.6	**0.5185**	0.060	11.6	ug/L	2222	Standard
	Mn	55	4762.7	2.2	**0.4862**	0.007	1.4	ug/L	987	Standard
	Co	59	2761.3	3.5	**0.4032**	0.011	2.8	ug/L	300	Standard
	Ni	60	2298.2	2.9	**1.6006**	0.034	2.1	ug/L	157	Standard
	Cu	65	1205.7	6.6	**0.8048**	0.059	7.3	ug/L	132	Standard
	Zn	66	5353.9	2.1	**6.4006**	0.198	3.1	ug/L	171	Standard
>	Ge	72	415815.7	1.1				ug/L	432355	Standard
	As	75	257.9	14.1	**0.4083**	0.043	10.6	ug/L	-36	Standard
	Se	82	22.9	14.6	**0.4351**	0.057	13.0	ug/L	4	Standard
	Se-1	77	173.7	2.7	**0.4617**	0.117	25.4	ug/L	163	Standard
>	Ga	71	25.0	52.9				mg/L	30	Standard
	Rb	85	10.0	50.0				ug/L	22	Standard
	Y	89	362456.3	1.3				ug/L	382028	Standard
>	Rh	103	5.0	0.0				ug/L	8	Standard
	Mo	98	196.0	15.5	**0.0592**	0.014	23.1	ug/L	158	Standard
	Ag	107	1948.8	3.5	**0.4099**	0.013	3.2	ug/L	108	Standard
	Cd	111	403.7	4.7	**0.2491**	0.011	4.4	mg/L	6	Standard
	Cd	114	952.2	1.9	**0.2338**	0.004	1.5	ug/L	25	Standard
>	In	115	532890.5	0.4				ug/L	561862	Standard
	Sn	118	105.7	14.7	**0.0512**	0.018	35.5	ug/L	69	Standard
	Sb	123	2005.4	6.5	**0.4305**	0.031	7.3	ug/L	2477	Standard
	Ba	135	1216.4	2.3	**0.7434**	0.020	2.6	ug/L	24	Standard
	Ce	140	25.0	52.9				ug/L	28	Standard
>	Tb	159	876657.1	1.2				ug/L	906794	Standard
	Ho	165	11.7	24.7				ug/L	8	Standard
	Tl	203	736.4	14.7	**0.0927**	0.015	16.0	ug/L	108	Standard
	Tl	205	578.3	7.3	**0.0873**	0.008	9.0	ug/L	112	Standard
	Pb	206	1455.4	2.8	**0.2159**	0.005	2.3	ug/L	315	Standard
	Pb	207	1261.7	5.3	**0.2080**	0.014	6.5	ug/L	265	Standard
	Pb	208	5775.4	5.3	**0.2080**	0.012	5.7	ug/L	1278	Standard
	U	238	8344.0	2.8	**0.4038**	0.009	2.3	ug/L	113	Standard
>	Bi	209	526615.7	1.5				ug/L	539503	Standard

Sample ID: QC Std 3
Report Date/Time: Monday, August 15, 2016 11:41:54
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	35.3	**0.0102**	0.031	303.3	mg/L	40	Standard
K	39	30.0	44.1	**0.0228**	0.065	283.5	mg/L	32	Standard
Ca	43	65.0	60.1	**2.5570**	7.533	294.6	mg/L	40	Standard
Fe	54	115.6	13.3	**-0.0009**	0.018	2098.7	mg/L	143	Standard
Fe	57	275.0	12.6	**0.0697**	0.135	194.3	mg/L	270	Standard
> **Sc-1**	45	23419.8	1.0				mg/L	24972	Standard
Cl	35	61226.1	0.2				ug/L	63562	Standard
Kr	83	3.3	62.4				ug/L	3	Standard
Br	81	1006.7	11.5				ug/L	1190	Standard
P	31	8752.5	4.1				ug/L	11274	Standard
S	34	2580.2	3.3				ug/L	2592	Standard
Sr	88	85.0	21.2				ug/L	70	Standard
C	12	56.7	20.4				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	121.3				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	10	Standard
I	127	778.4	6.4				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	141.469		
Al	27	1.300		
Sc	45			
Ti	47			
V	51	86.704		
Cr	52	87.839		
Cr	53			
Mn	55	97.241		
Co	59	100.788		
Ni	60	100.039		
Cu	65	100.603		
Zn	66	102.410		
> Ge	72		96.175	
As	75	102.081		
Se	82	108.767		
Se-1	77			
> Ga	71			

Sample ID: QC Std 3
Report Date/Time: Monday, August 15, 2016 11:41:54
Page 2

Approved: August 16, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	102.467		
Cd	111	103.780		
Cd	114			
> In	115			94.844
Sn	118			
Sb	123	107.622		
Ba	135	99.115		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	115.847		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.011		
U	238	100.959		
> Bi	209			97.611
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Be	9	
QC Std 3	Al	27	

Sample ID: QC Std 3
Report Date/Time: Monday, August 15, 2016 11:41:54
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Monday, August 15, 2016 11:42:49
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56433.3	3.3				ug/L	61110	Standard
	Be	9	15.0	57.7	**0.0130**	0.016	122.6	ug/L	17	Standard
	Al	27	4433659.4	0.7	**50.6740**	1.649	3.3	ug/L	833	Standard
	Sc	45	21910.8	1.7				ug/L	24972	Standard
	Ti	47	2338.2	2.3	**14.9620**	0.312	2.1	ug/L	61	Standard
	V	51	550.9	59.6	**-0.0959**	0.065	68.3	ug/L	947	Standard
	Cr	52	4408.0	3.5	**-0.1543**	0.036	23.5	ug/L	5189	Standard
	Cr	53	3508.7	1.1	**2.6872**	0.085	3.2	ug/L	2222	Standard
	Mn	55	1344.1	5.8	**0.0668**	0.011	16.3	ug/L	987	Standard
	Co	59	352.0	6.0	**0.0181**	0.004	20.3	ug/L	300	Standard
	Ni	60	412.3	1.0	**0.2076**	0.004	2.0	ug/L	157	Standard
	Cu	65	279.0	11.5	**0.1381**	0.025	18.3	ug/L	132	Standard
	Zn	66	636.3	2.0	**0.6033**	0.017	2.8	ug/L	171	Standard
>	Ge	72	393733.6	0.3				ug/L	432355	Standard
	As	75	-17.3	584.4	**0.0553**	0.136	246.4	ug/L	-36	Standard
	Se	82	1.0	263.6	**0.0414**	0.051	123.1	ug/L	4	Standard
	Se-1	77	382.3	2.4	**4.7865**	0.188	3.9	ug/L	163	Standard
>	Ga	71	48.3	23.9				mg/L	30	Standard
	Rb	85	646.7	15.5				ug/L	22	Standard
	Y	89	341954.2	0.8				ug/L	382028	Standard
>	Rh	103	13.3	57.3				ug/L	8	Standard
	Mo	98	183155.1	3.0	**85.8017**	2.789	3.3	ug/L	158	Standard
	Ag	107	141.3	18.6	**0.0141**	0.006	42.1	ug/L	108	Standard
	Cd	111	-158.3	7.2	**-0.1019**	0.007	7.0	mg/L	6	Standard
	Cd	114	254.9	13.2	**0.0639**	0.009	14.1	ug/L	25	Standard
>	In	115	507829.7	0.5				ug/L	561862	Standard
	Sn	118	66.3	16.5	**0.0087**	0.013	151.4	ug/L	69	Standard
	Sb	123	317.5	36.7	**0.0179**	0.030	167.1	ug/L	2477	Standard
	Ba	135	42.7	31.2	**0.0186**	0.009	46.7	ug/L	24	Standard
	Ce	140	66.7	26.3				ug/L	28	Standard
>	Tb	159	846107.0	0.7				ug/L	906794	Standard
	Ho	165	13.3	43.3				ug/L	8	Standard
	Tl	203	133.7	17.7	**0.0081**	0.003	42.6	ug/L	108	Standard
	Tl	205	116.7	43.1	**0.0072**	0.009	130.1	ug/L	112	Standard
	Pb	206	444.3	4.2	**0.0336**	0.003	9.7	ug/L	315	Standard
	Pb	207	371.0	9.1	**0.0300**	0.007	23.3	ug/L	265	Standard
	Pb	208	1719.4	5.0	**0.0283**	0.004	13.3	ug/L	1278	Standard
	U	238	48.3	42.5	**-0.0027**	0.001	39.4	ug/L	113	Standard
>	Bi	209	496652.8	0.5				ug/L	539503	Standard

Sample ID: QC Std 4
Report Date/Time: Monday, August 15, 2016 11:44:57
Page 1

Approved: August 16, 2016

Na	23	3.3	**-1060550740352**91860096955569.453			86.6	mg/L	2	Standard
Mg	24	6363.0	1.2	**13.3790**	0.195	1.5	mg/L	40	Standard
K	39	1041.7	5.4	**5.4677**	0.375	6.9	mg/L	32	Standard
Ca	43	138.3	18.5	**19.0270**	5.880	30.9	mg/L	40	Standard
Fe	54	4493.5	6.3	**5.1264**	0.279	5.5	mg/L	143	Standard
Fe	57	1438.4	3.8	**5.2702**	0.168	3.2	mg/L	270	Standard
Sc-1	45	21910.8	1.7				mg/L	24972	Standard
Cl	35	62113.1	1.5				ug/L	63562	Standard
Kr	83	3.7	68.6				ug/L	3	Standard
Br	81	886.7	8.8				ug/L	1190	Standard
P	31	4559.0	2.1				ug/L	11274	Standard
S	34	2485.2	5.1				ug/L	2592	Standard
Sr	88	91.7	8.3				ug/L	70	Standard
C	12	133.3	30.3				mg/L	90	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.7	235.5				mg/L	10	Standard
Ho-1	165	13.3	43.3				mg/L	8	Standard
Er	166	13.3	114.6				mg/L	10	Standard
I	127	1855.1	6.1				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	1.013		
Sc	45			
Ti	47	14.962		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.067	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 4
Report Date/Time: Monday, August 15, 2016 11:44:57
Page 2

Approved: August 16, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	85.802		
Ag	107			
Cd	111			
Cd	114			
> In	115			90.383
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			92.057
Na	2-84844059228	1802.120		
Mg	24	267.580		
K	39	109.355		
Ca	43	126.847		
Fe	54	41.011		
Fe	57	42.161		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Ti	47	
QC Std 4	Na	23	

Sample ID: QC Std 4
Report Date/Time: Monday, August 15, 2016 11:44:57
Page 3

Approved: August 16, 2016

QC Std 4	Mg	24
QC Std 4	Ca	43
QC Std 4	Fe	54
QC Std 4	Fe	57

Sample ID: QC Std 4
Report Date/Time: Monday, August 15, 2016 11:44:57
Page 4

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Monday, August 15, 2016 11:45:51
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63059.7	6.8				ug/L	61110	Standard
	Be	9	5314.4	51.8	**9.0909**	4.968	54.6	ug/L	17	Standard
	Al	27	481074.5	51.6	**5.0157**	2.732	54.5	ug/L	833	Standard
	Sc	45	23626.8	4.9				ug/L	24972	Standard
	Ti	47	1636.4	50.5	**9.4532**	5.461	57.8	ug/L	61	Standard
	V	51	51406.0	51.8	**9.2243**	5.364	58.2	ug/L	947	Standard
	Cr	52	47074.3	47.4	**8.2739**	4.990	60.3	ug/L	5189	Standard
	Cr	53	7725.5	38.1	**8.8567**	5.542	62.6	ug/L	2222	Standard
	Mn	55	71107.7	48.4	**8.4971**	4.637	54.6	ug/L	987	Standard
	Co	59	54387.0	49.5	**8.4109**	4.621	54.9	ug/L	300	Standard
	Ni	60	11768.0	49.0	**8.3635**	4.602	55.0	ug/L	157	Standard
	Cu	65	12667.5	50.3	**8.8622**	4.953	55.9	ug/L	132	Standard
	Zn	66	7654.6	49.4	**8.9126**	4.991	56.0	ug/L	171	Standard
>	Ge	72	448440.5	11.4				ug/L	432355	Standard
	As	75	7045.0	56.7	**8.8250**	5.341	60.5	ug/L	-36	Standard
	Se	82	500.6	59.4	**8.7756**	5.547	63.2	ug/L	4	Standard
	Se-1	77	648.3	46.7	**8.9400**	6.142	68.7	ug/L	163	Standard
>	Ga	71	35.0	0.0				mg/L	30	Standard
	Rb	85	78.3	35.2				ug/L	22	Standard
	Y	89	365100.9	8.3				ug/L	382028	Standard
>	Rh	103	20.0	50.0				ug/L	8	Standard
	Mo	98	24666.5	55.9	**11.1555**	6.792	60.9	ug/L	158	Standard
	Ag	107	30120.3	63.6	**6.6514**	4.509	67.8	ug/L	108	Standard
	Cd	111	15743.3	59.5	**9.8286**	6.317	64.3	mg/L	6	Standard
	Cd	114	38072.3	60.5	**9.5704**	6.245	65.3	ug/L	25	Standard
>	In	115	529056.4	14.3				ug/L	561862	Standard
	Sn	118	79.0	27.4	**0.0205**	0.024	117.5	ug/L	69	Standard
	Sb	123	32139.2	58.1	**7.9647**	5.023	63.1	ug/L	2477	Standard
	Ba	135	16980.8	59.8	**10.6337**	6.875	64.7	ug/L	24	Standard
	Ce	140	26.7	54.1				ug/L	28	Standard
>	Tb	159	862433.0	9.8				ug/L	906794	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	74420.4	58.3	**10.4193**	6.274	60.2	ug/L	108	Standard
	Tl	205	64226.9	55.4	**11.1693**	6.455	57.8	ug/L	112	Standard
	Pb	206	60834.2	57.3	**11.0547**	6.576	59.5	ug/L	315	Standard
	Pb	207	54961.9	57.3	**11.0607**	6.599	59.7	ug/L	265	Standard
	Pb	208	251908.0	57.5	**11.2492**	6.731	59.8	ug/L	1278	Standard
	U	238	244063.9	58.0	**11.8165**	7.139	60.4	ug/L	113	Standard
>	Bi	209	534621.1	6.2				ug/L	539503	Standard

Sample ID: QC Std 5
Report Date/Time: Monday, August 15, 2016 11:47:59
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	723.4	51.9	**1.3237**	0.675	51.0	mg/L	40	Standard
K	39	141.7	50.7	**0.5700**	0.337	59.1	mg/L	32	Standard
Ca	43	68.3	15.2	**3.1987**	2.445	76.4	mg/L	40	Standard
Fe	54	1393.6	47.8	**1.3696**	0.684	49.9	mg/L	143	Standard
Fe	57	665.0	32.3	**1.6341**	0.783	47.9	mg/L	270	Standard
> **Sc-1**	45	23626.8	4.9				mg/L	24972	Standard
Cl	35	30311.0	3.6				ug/L	63562	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	450.0	8.0				ug/L	1190	Standard
P	31	6443.1	24.4				ug/L	11274	Standard
S	34	1086.7	3.0				ug/L	2592	Standard
Sr	88	110.0	9.1				ug/L	70	Standard
C	12	43.3	66.6				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	105.0				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	8	Standard
Er	166	10.0					mg/L	10	Standard
I	127	1173.4	46.2				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	9.091		
Al	27	0.100		
Sc	45			
Ti	47	9.453		
V	51	9.224		
Cr	52	8.274		
Cr	53			
Mn	55	8.497		
Co	59	8.411		
Ni	60	8.364		
Cu	65	8.862		
Zn	66	8.913		
> Ge	72		103.720	
As	75	8.825		
Se	82	8.776		
Se-1	77			
> Ga	71			

Sample ID: QC Std 5
Report Date/Time: Monday, August 15, 2016 11:47:59
Page 2

Approved: August 16, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	11.156		
Ag	107	6.651		
Cd	111	9.829		
Cd	114			
> In	115		94.161	
Sn	118			
Sb	123	7.965		
Ba	135	10.634		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	10.419		
Tl	205			
Pb	206			
Pb	207			
Pb	208	11.249		
U	238	11.817		
> Bi	209		99.095	
Na	23	0.076		
Mg	24	26.474		
K	39	11.400		
Ca	43	21.325		
Fe	54	10.957		
Fe	57	13.073		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Be	9	
QC Std 5	Al	27	
QC Std 5	Ti	47	

Sample ID: QC Std 5
Report Date/Time: Monday, August 15, 2016 11:47:59
Page 3

Approved: August 16, 2016

QC Std 5	V	51
QC Std 5	Cr	52
QC Std 5	Mn	55
QC Std 5	Co	59
QC Std 5	Ni	60
QC Std 5	Cu	65
QC Std 5	Zn	66
QC Std 5	As	75
QC Std 5	Se	82
QC Std 5	Mo	98
QC Std 5	Ag	107
QC Std 5	Cd	111
QC Std 5	Sb	123
QC Std 5	Ba	135
QC Std 5	Tl	203
QC Std 5	Pb	208
QC Std 5	U	238
QC Std 5	Na	23
QC Std 5	Mg	24
QC Std 5	K	39
QC Std 5	Ca	43
QC Std 5	Fe	54
QC Std 5	Fe	57

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Monday, August 15, 2016 11:52:51
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64465.2	0.9				ug/L	61110	Standard
	Be	9	61417.6	2.4	**100.6421**	1.707	1.7	ug/L	17	Standard
	Al	27	4518568.9	0.7	**45.1780**	0.319	0.7	ug/L	833	Standard
	Sc	45	24428.0	3.9				ug/L	24972	Standard
	Ti	47	16437.9	1.1	**98.6325**	1.532	1.6	ug/L	61	Standard
	V	51	543445.2	1.1	**99.7969**	2.185	2.2	ug/L	947	Standard
	Cr	52	499430.1	1.6	**99.0884**	3.163	3.2	ug/L	5189	Standard
	Cr	53	66207.7	1.7	**103.5699**	3.727	3.6	ug/L	2222	Standard
	Mn	55	822635.0	1.6	**100.0802**	1.754	1.8	ug/L	987	Standard
	Co	59	632851.4	1.6	**98.9773**	2.084	2.1	ug/L	300	Standard
	Ni	60	137084.4	0.9	**99.4163**	1.291	1.3	ug/L	157	Standard
	Cu	65	141575.7	0.2	**100.5075**	1.681	1.7	ug/L	132	Standard
	Zn	66	86494.9	0.4	**103.7241**	1.877	1.8	ug/L	171	Standard
>	Ge	72	428413.6	1.8				ug/L	432355	Standard
	As	75	81789.6	0.7	**101.6931**	1.181	1.2	ug/L	-36	Standard
	Se	82	5819.9	0.9	**101.8532**	1.348	1.3	ug/L	4	Standard
	Se-1	77	5948.5	1.2	**105.7313**	0.862	0.8	ug/L	163	Standard
>	Ga	71	68.3	4.2				mg/L	30	Standard
	Rb	85	571.7	5.7				ug/L	22	Standard
	Y	89	378790.9	1.9				ug/L	382028	Standard
>	Rh	103	35.0	37.8				ug/L	8	Standard
	Mo	98	211443.7	1.0	**92.3502**	0.246	0.3	ug/L	158	Standard
	Ag	107	461693.3	1.8	**99.2619**	1.166	1.2	ug/L	108	Standard
	Cd	111	168233.7	1.1	**101.4112**	0.401	0.4	mg/L	6	Standard
	Cd	114	406375.7	1.4	**98.6852**	0.671	0.7	ug/L	25	Standard
>	In	115	544668.2	0.8				ug/L	561862	Standard
	Sn	118	160.0	0.6	**0.1113**	0.002	1.7	ug/L	69	Standard
	Sb	123	421556.4	1.3	**101.6775**	0.593	0.6	ug/L	2477	Standard
	Ba	135	167216.0	0.5	**101.1984**	1.161	1.1	ug/L	24	Standard
	Ce	140	46.7	22.3				ug/L	28	Standard
>	Tb	159	912215.1	1.8				ug/L	906794	Standard
	Ho	165	18.3	68.6				ug/L	8	Standard
	Tl	203	717570.6	1.2	**100.3447**	2.045	2.0	ug/L	108	Standard
	Tl	205	584688.7	2.4	**101.3469**	3.350	3.3	ug/L	112	Standard
	Pb	206	565166.6	0.7	**102.8895**	1.204	1.2	ug/L	315	Standard
	Pb	207	488704.8	0.9	**98.4266**	1.444	1.5	ug/L	265	Standard
	Pb	208	2244749.5	0.8	**100.3651**	1.567	1.6	ug/L	1278	Standard
	U	238	1983347.5	0.8	**95.6030**	1.704	1.8	ug/L	113	Standard
>	Bi	209	535579.1	1.0				ug/L	539503	Standard

Sample ID: QC Std 5
Report Date/Time: Monday, August 15, 2016 11:54:59
Page 1

Approved: August 16, 2016

Na	23	1.7	**-487349602569**84411427269953.109			173.2	mg/L	2	Standard
Mg	24	5999.5	4.5	**11.3149**	0.722	6.4	mg/L	40	Standard
K	39	1000.0	2.8	**4.6900**	0.142	3.0	mg/L	32	Standard
Ca	43	120.0	11.0	**12.4771**	2.279	18.3	mg/L	40	Standard
Fe	54	11577.3	2.3	**12.0312**	0.601	5.0	mg/L	143	Standard
Fe	57	3318.7	2.2	**12.0509**	0.226	1.9	mg/L	270	Standard
> **Sc-1**	45	24428.0	3.9				mg/L	24972	Standard
Cl	35	67964.8	2.5				ug/L	63562	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	993.4	1.2				ug/L	1190	Standard
P	31	11080.7	3.0				ug/L	11274	Standard
S	34	2581.9	4.8				ug/L	2592	Standard
Sr	88	66.7	11.5				ug/L	70	Standard
C	12	120.0	58.3				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3.0	187.1				mg/L	10	Standard
Ho-1	165	18.3	68.6				mg/L	8	Standard
Er	166	6.7	86.6				mg/L	10	Standard
I	127	1915.1	7.7				mg/L	2345	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.642		
	Al	27	0.904		
	Sc	45			
	Ti	47	98.633		
	V	51	99.797		
	Cr	52	99.088		
	Cr	53			
	Mn	55	100.080		
	Co	59	98.977		
	Ni	60	99.416		
	Cu	65	100.507		
	Zn	66	103.724		
>	Ge	72		99.088	
	As	75	101.693		
	Se	82	101.853		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 5
Report Date/Time: Monday, August 15, 2016 11:54:59
Page 2

Approved: August 16, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	92.350		
Ag	107	99.262		
Cd	111	101.411		
Cd	114			
In	115		96.940	
Sn	118			
Sb	123	101.677		
Ba	135	101.198		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.345		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.365		
U	238	95.603		
Bi	209		99.273	
Na	2-389879682055903.440			
Mg	24	226.298		
K	39	93.800		
Ca	43	83.180		
Fe	54	96.250		
Fe	57	96.407		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
Report Date/Time: Monday, August 15, 2016 11:54:59
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 15, 2016 11:55:56
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62682.8	3.2				ug/L	61110	Standard
	Be	9	29502.1	4.8	**49.6983**	0.886	1.8	ug/L	17	Standard
	Al	27	4739115.7	2.6	**48.7404**	0.815	1.7	ug/L	833	Standard
	Sc	45	24351.2	0.1				ug/L	24972	Standard
	Ti	47	16235.4	0.8	**97.9943**	1.607	1.6	ug/L	61	Standard
	V	51	262347.0	1.2	**48.3540**	0.943	1.9	ug/L	947	Standard
	Cr	52	244188.9	1.3	**48.1590**	0.983	2.0	ug/L	5189	Standard
	Cr	53	32367.9	2.0	**49.1467**	1.048	2.1	ug/L	2222	Standard
	Mn	55	400062.8	1.3	**48.9060**	1.062	2.2	ug/L	987	Standard
	Co	59	309046.8	0.8	**48.5964**	0.365	0.8	ug/L	300	Standard
	Ni	60	66678.7	0.9	**48.5837**	0.763	1.6	ug/L	157	Standard
	Cu	65	68025.4	1.6	**48.5387**	1.124	2.3	ug/L	132	Standard
	Zn	66	40706.9	0.3	**48.9794**	0.274	0.6	ug/L	171	Standard
>	Ge	72	425856.7	0.8				ug/L	432355	Standard
	As	75	38742.6	1.0	**48.4972**	0.710	1.5	ug/L	-36	Standard
	Se	82	2775.7	0.8	**48.8737**	0.333	0.7	ug/L	4	Standard
	Se-1	77	2817.3	0.6	**48.9071**	0.666	1.4	ug/L	163	Standard
>	Ga	71	28.3	27.0				mg/L	30	Standard
	Rb	85	675.0	10.8				ug/L	22	Standard
	Y	89	376220.6	1.0				ug/L	382028	Standard
>	Rh	103	16.7	17.3				ug/L	8	Standard
	Mo	98	230952.6	0.3	**99.7919**	0.905	0.9	ug/L	158	Standard
	Ag	107	232299.4	1.1	**49.4040**	0.999	2.0	ug/L	108	Standard
	Cd	111	82402.4	1.1	**49.1437**	1.002	2.0	mg/L	6	Standard
	Cd	114	202470.9	1.5	**48.6455**	1.145	2.4	ug/L	25	Standard
>	In	115	550605.4	0.9				ug/L	561862	Standard
	Sn	118	43627.7	1.3	**49.7498**	1.092	2.2	ug/L	69	Standard
	Sb	123	210083.6	0.8	**50.0963**	0.559	1.1	ug/L	2477	Standard
	Ba	135	81693.0	1.3	**48.9062**	1.064	2.2	ug/L	24	Standard
	Ce	140	73.3	7.9				ug/L	28	Standard
>	Tb	159	904045.0	1.5				ug/L	906794	Standard
	Ho	165	8.3	34.6				ug/L	8	Standard
	Tl	203	349884.1	0.3	**48.8954**	0.358	0.7	ug/L	108	Standard
	Tl	205	278088.9	0.7	**48.1642**	0.112	0.2	ug/L	112	Standard
	Pb	206	269452.9	0.2	**49.0033**	0.352	0.7	ug/L	315	Standard
	Pb	207	242217.7	0.2	**48.7338**	0.163	0.3	ug/L	265	Standard
	Pb	208	1093553.5	0.1	**48.8411**	0.228	0.5	ug/L	1278	Standard
	U	238	1081539.1	0.4	**52.1026**	0.082	0.2	ug/L	113	Standard
>	Bi	209	535809.3	0.5				ug/L	539503	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 11:58:03
Page 1

Approved: August 16, 2016

Na	23	3.3	**-962562235971**83360336231768.828			86.6	mg/L	2	Standard
Mg	24	2611.9	5.6	**4.8932**	0.283	5.8	mg/L	40	Standard
K	39	963.4	3.9	**4.5257**	0.187	4.1	mg/L	32	Standard
Ca	43	75.0	13.3	**4.0174**	1.915	47.7	mg/L	40	Standard
Fe	54	4788.0	2.4	**4.9109**	0.114	2.3	mg/L	143	Standard
Fe	57	1568.4	5.2	**5.1516**	0.324	6.3	mg/L	270	Standard
> **Sc-1**	45	24351.2	0.1				mg/L	24972	Standard
Cl	35	66736.7	1.7				ug/L	63562	Standard
Kr	83	3.3	45.8				ug/L	3	Standard
Br	81	1123.4	4.5				ug/L	1190	Standard
P	31	11953.0	1.1				ug/L	11274	Standard
S	34	2972.0	5.8				ug/L	2592	Standard
Sr	88	83.3	27.1				ug/L	70	Standard
C	12	40.0					mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	2.9	217.0				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	10	Standard
I	127	19527.6	2.7				mg/L	2345	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	99.397		
	Al	27	97.481		
	Sc	45			
	Ti	47	97.994		
	V	51	96.708		
	Cr	52	96.318		
	Cr	53			
	Mn	55	97.812		
	Co	59	97.193		
	Ni	60	97.167		
	Cu	65	97.077		
	Zn	66	97.959		
>	Ge	72		98.497	
	As	75	96.994		
	Se	82	97.747		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 11:58:03
Page 2

Approved: August 16, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	99.792		
Ag	107	98.808		
Cd	111	98.287		
Cd	114			
> In	115			97.997
Sn	118	99.500		
Sb	123	100.193		
Ba	135	97.812		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.791		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.682		
U	238	104.205		
> Bi	209			99.315
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 11:58:03
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 15, 2016 11:58:58
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62779.8	0.7				ug/L	61110	Standard
	Be	9	43.3	37.1	**0.0579**	0.027	46.1	ug/L	17	Standard
	Al	27	2551.9	22.1	**0.0139**	0.006	41.1	ug/L	833	Standard
	Sc	45	24628.3	1.9				ug/L	24972	Standard
	Ti	47	57.0	15.6	**-0.0086**	0.057	657.0	ug/L	61	Standard
	V	51	984.1	19.9	**-0.0232**	0.036	154.1	ug/L	947	Standard
	Cr	52	5122.2	1.2	**-0.0781**	0.024	30.8	ug/L	5189	Standard
	Cr	53	1803.4	5.1	**-0.5376**	0.163	30.3	ug/L	2222	Standard
	Mn	55	1132.0	5.2	**0.0280**	0.009	30.3	ug/L	987	Standard
	Co	59	390.3	7.7	**0.0199**	0.005	27.3	ug/L	300	Standard
	Ni	60	181.3	9.5	**0.0150**	0.014	94.4	ug/L	157	Standard
	Cu	65	150.0	9.8	**0.0301**	0.012	39.3	ug/L	132	Standard
	Zn	66	221.7	15.1	**0.0408**	0.044	107.3	ug/L	171	Standard
>	**Ge**	72	423973.3	1.2				ug/L	432355	Standard
	As	75	-18.2	290.3	**0.0563**	0.066	116.6	ug/L	-36	Standard
	Se	82	4.6	67.1	**0.1041**	0.056	53.5	ug/L	4	Standard
	Se-1	77	128.3	4.0	**-0.4381**	0.070	15.9	ug/L	163	Standard
>	**Ga**	71	11.7	65.5				mg/L	30	Standard
	Rb	85	16.7	45.8				ug/L	22	Standard
	Y	89	371108.5	1.0				ug/L	382028	Standard
>	**Rh**	103	15.0	66.7				ug/L	8	Standard
	Mo	98	388.2	7.1	**0.1406**	0.011	8.2	ug/L	158	Standard
	Ag	107	235.0	16.6	**0.0319**	0.008	25.8	ug/L	108	Standard
	Cd	111	40.0	27.3	**0.0244**	0.007	26.8	mg/L	6	Standard
	Cd	114	102.6	18.8	**0.0223**	0.005	20.9	ug/L	25	Standard
>	**In**	115	546681.4	0.4				ug/L	561862	Standard
	Sn	118	150.7	38.6	**0.1001**	0.068	67.6	ug/L	69	Standard
	Sb	123	1352.3	33.5	**0.2612**	0.110	42.0	ug/L	2477	Standard
	Ba	135	63.0	19.3	**0.0289**	0.007	25.3	ug/L	24	Standard
	Ce	140	15.0	0.0				ug/L	28	Standard
>	**Tb**	159	897693.3	1.5				ug/L	906794	Standard
	Ho	165	8.3	34.6				ug/L	8	Standard
	Tl	203	206.3	32.2	**0.0169**	0.009	55.2	ug/L	108	Standard
	Tl	205	183.3	30.2	**0.0172**	0.010	55.8	ug/L	112	Standard
	Pb	206	451.7	10.3	**0.0287**	0.009	29.9	ug/L	315	Standard
	Pb	207	394.0	15.5	**0.0289**	0.012	42.5	ug/L	265	Standard
	Pb	208	1796.4	13.0	**0.0257**	0.010	40.6	ug/L	1278	Standard
	U	238	585.3	25.6	**0.0230**	0.007	31.2	ug/L	113	Standard
>	**Bi**	209	535190.3	0.6				ug/L	539503	Standard

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 12:01:06
Page 1

Approved: August 16, 2016

Na	23	3.3	**-960825282312**83215474364429.312			86.6	mg/L	2	Standard
Mg	24	23.3	24.7	**-0.0317**	0.011	34.8	mg/L	40	Standard
K	39	30.0	76.4	**0.0165**	0.110	668.0	mg/L	32	Standard
Ca	43	36.7	34.3	**-3.3574**	2.249	67.0	mg/L	40	Standard
Fe	54	126.1	6.0	**0.0037**	0.006	166.3	mg/L	143	Standard
Fe	57	290.0	4.6	**0.0741**	0.068	91.8	mg/L	270	Standard
Sc-1	45	24628.3	1.9				mg/L	24972	Standard
Cl	35	65578.3	1.7				ug/L	63562	Standard
Kr	83	2.7	57.3				ug/L	3	Standard
Br	81	1126.7	17.2				ug/L	1190	Standard
P	31	11679.5	2.8				ug/L	11274	Standard
S	34	2776.9	3.5				ug/L	2592	Standard
Sr	88	70.0	43.4				ug/L	70	Standard
C	12	116.7	35.7				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.5	102.5				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	8	Standard
Er	166	10.0	173.2				mg/L	10	Standard
I	127	2585.2	4.3				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.061	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 12:01:06
Page 2

Approved: August 16, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.298
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.201
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 12:01:06
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: PBW 17 WG578977-03
Sample Date/Time: Monday, August 15, 2016 12:04:30
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63516.2	1.6				ug/L	61110	Standard
	Be	9	21.7	53.3	**0.0210**	0.019	88.9	ug/L	17	Standard
	Al	27	22578.5	1.2	**0.2169**	0.001	0.4	ug/L	833	Standard
	Sc	45	25114.1	2.1				ug/L	24972	Standard
	Ti	47	55.0	14.4	**-0.0296**	0.043	146.6	ug/L	61	Standard
	V	51	988.7	12.7	**-0.0266**	0.025	94.5	ug/L	947	Standard
	Cr	52	9856.5	2.1	**0.8322**	0.018	2.1	ug/L	5189	Standard
	Cr	53	2333.5	8.5	**0.2320**	0.271	116.8	ug/L	2222	Standard
	Mn	55	2780.9	1.2	**0.2226**	0.008	3.7	ug/L	987	Standard
	Co	59	368.0	6.7	**0.0150**	0.004	30.0	ug/L	300	Standard
	Ni	60	434.7	2.3	**0.1930**	0.010	5.1	ug/L	157	Standard
	Cu	65	245.7	7.7	**0.0945**	0.015	16.3	ug/L	132	Standard
	Zn	66	1379.4	4.9	**1.4060**	0.102	7.2	ug/L	171	Standard
>	**Ge**	72	434613.9	1.3				ug/L	432355	Standard
	As	75	-44.8	47.7	**0.0239**	0.026	107.2	ug/L	-36	Standard
	Se	82	3.8	83.2	**0.0889**	0.056	63.3	ug/L	4	Standard
	Se-1	77	130.3	14.6	**-0.4567**	0.371	81.1	ug/L	163	Standard
>	**Ga**	71	21.7	35.3				mg/L	30	Standard
	Rb	85	36.7	20.8				ug/L	22	Standard
	Y	89	376421.9	2.4				ug/L	382028	Standard
>	**Rh**	103	8.3	91.7				ug/L	8	Standard
	Mo	98	184.2	4.7	**0.0507**	0.004	8.8	ug/L	158	Standard
	Ag	107	124.3	17.3	**0.0078**	0.004	54.0	ug/L	108	Standard
	Cd	111	23.4	20.2	**0.0142**	0.003	20.0	mg/L	6	Standard
	Cd	114	80.5	37.2	**0.0168**	0.007	44.4	ug/L	25	Standard
>	**In**	115	554812.7	1.8				ug/L	561862	Standard
	Sn	118	167.0	13.5	**0.1158**	0.025	21.7	ug/L	69	Standard
	Sb	123	755.1	36.9	**0.1142**	0.063	55.5	ug/L	2477	Standard
	Ba	135	120.0	2.5	**0.0622**	0.003	4.5	ug/L	24	Standard
	Ce	140	71.7	21.3				ug/L	28	Standard
>	**Tb**	159	908173.0	2.3				ug/L	906794	Standard
	Ho	165	5.0	100.0				ug/L	8	Standard
	Tl	203	104.3	15.2	**0.0025**	0.002	84.2	ug/L	108	Standard
	Tl	205	86.7	24.0	**0.0003**	0.003	1354.9	ug/L	112	Standard
	Pb	206	409.3	5.3	**0.0203**	0.003	15.2	ug/L	315	Standard
	Pb	207	358.3	4.7	**0.0211**	0.003	16.5	ug/L	265	Standard
	Pb	208	1647.4	3.4	**0.0184**	0.002	8.9	ug/L	1278	Standard
	U	238	295.3	26.4	**0.0089**	0.004	40.1	ug/L	113	Standard
>	**Bi**	209	539667.2	1.1				ug/L	539503	Standard

Sample ID: PBW 17 WG578977-03
Report Date/Time: Monday, August 15, 2016 12:06:37
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	18.7	**0.0384**	0.023	61.2	mg/L	40	Standard
K	39	36.7	39.4	**0.0452**	0.070	155.4	mg/L	32	Standard
Ca	43	40.0	21.7	**-2.8735**	1.488	51.8	mg/L	40	Standard
Fe	54	115.8	35.1	**-0.0098**	0.040	407.3	mg/L	143	Standard
Fe	57	295.0	9.0	**0.0696**	0.078	111.3	mg/L	270	Standard
> **Sc-1**	45	25114.1	2.1				mg/L	24972	Standard
Cl	35	65824.0	1.6				ug/L	63562	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	1153.4	7.9				ug/L	1190	Standard
P	31	11766.2	2.3				ug/L	11274	Standard
S	34	2630.2	6.4				ug/L	2592	Standard
Sr	88	58.3	13.1				ug/L	70	Standard
C	12	66.7	37.7				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	5.9	187.3				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	8	Standard
Er	166	16.7	69.3				mg/L	10	Standard
I	127	1251.7	5.0				mg/L	2345	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.938	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.522	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: PBW 17 WG578977-03
Report Date/Time: Monday, August 15, 2016 12:06:37
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.745
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.030
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 17 WG578977-03
Report Date/Time: Monday, August 15, 2016 12:06:37
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: LCSW 17 WG578977-04
Sample Date/Time: Monday, August 15, 2016 12:07:32
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64224.3	3.2				ug/L	61110	Standard
	Be	9	30248.5	0.5	**49.7876**	1.821	3.7	ug/L	17	Standard
	Al	27	12677.2	25.6	**0.1157**	0.037	31.7	ug/L	833	Standard
	Sc	45	24584.9	2.0				ug/L	24972	Standard
	Ti	47	62.3	14.9	**0.0118**	0.055	463.5	ug/L	61	Standard
	V	51	271952.2	1.0	**48.7823**	0.269	0.6	ug/L	947	Standard
	Cr	52	260451.3	1.0	**50.0332**	0.531	1.1	ug/L	5189	Standard
	Cr	53	33259.8	0.9	**49.1526**	0.391	0.8	ug/L	2222	Standard
	Mn	55	419814.1	1.2	**49.9509**	0.945	1.9	ug/L	987	Standard
	Co	59	321119.4	1.0	**49.1504**	0.895	1.8	ug/L	300	Standard
	Ni	60	70420.6	1.3	**49.9439**	0.960	1.9	ug/L	157	Standard
	Cu	65	72870.2	0.9	**50.6085**	0.832	1.6	ug/L	132	Standard
	Zn	66	43234.9	0.7	**50.6400**	0.547	1.1	ug/L	171	Standard
>	**Ge**	72	437541.6	0.8				ug/L	432355	Standard
	As	75	39724.7	0.7	**48.3995**	0.718	1.5	ug/L	-36	Standard
	Se	82	2861.9	0.0	**49.0471**	0.381	0.8	ug/L	4	Standard
	Se-1	77	2896.3	0.4	**48.9363**	0.430	0.9	ug/L	163	Standard
>	**Ga**	71	30.0	28.9				mg/L	30	Standard
	Rb	85	58.3	19.8				ug/L	22	Standard
	Y	89	381129.0	2.3				ug/L	382028	Standard
>	**Rh**	103	13.3	21.7				ug/L	8	Standard
	Mo	98	258.8	69.5	**0.0816**	0.076	92.5	ug/L	158	Standard
	Ag	107	241417.1	0.1	**50.6597**	0.457	0.9	ug/L	108	Standard
	Cd	111	84681.5	1.1	**49.8322**	0.897	1.8	mg/L	6	Standard
	Cd	114	203888.1	0.9	**48.3308**	0.370	0.8	ug/L	25	Standard
>	**In**	115	557996.1	0.8				ug/L	561862	Standard
	Sn	118	176.7	22.5	**0.1254**	0.043	34.2	ug/L	69	Standard
	Sb	123	209361.0	1.0	**49.2637**	0.867	1.8	ug/L	2477	Standard
	Ba	135	85555.9	1.2	**50.5362**	0.733	1.5	ug/L	24	Standard
	Ce	140	76.7	26.4				ug/L	28	Standard
>	**Tb**	159	915657.3	0.6				ug/L	906794	Standard
	Ho	165	10.0	86.6				ug/L	8	Standard
	Tl	203	359005.5	0.6	**50.0905**	0.542	1.1	ug/L	108	Standard
	Tl	205	286512.2	1.3	**49.5433**	0.413	0.8	ug/L	112	Standard
	Pb	206	283339.2	0.8	**51.4495**	0.636	1.2	ug/L	315	Standard
	Pb	207	245145.0	0.5	**49.2443**	0.327	0.7	ug/L	265	Standard
	Pb	208	1127872.7	0.4	**50.2953**	0.419	0.8	ug/L	1278	Standard
	U	238	1061725.3	0.9	**51.0680**	0.706	1.4	ug/L	113	Standard
>	**Bi**	209	536668.8	0.5				ug/L	539503	Standard

Sample ID: LCSW 17 WG578977-04
Report Date/Time: Monday, August 15, 2016 12:09:39
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	27.2	**-0.0036**	0.019	521.3	mg/L	40	Standard
K	39	20.0	66.1	**-0.0309**	0.066	212.6	mg/L	32	Standard
Ca	43	36.7	55.1	**-3.2766**	3.970	121.2	mg/L	40	Standard
Fe	54	137.4	1.5	**0.0158**	0.004	26.4	mg/L	143	Standard
Fe	57	258.3	8.9	**-0.0495**	0.075	152.2	mg/L	270	Standard
> **Sc-1**	45	24584.9	2.0				mg/L	24972	Standard
Cl	35	63252.4	1.6				ug/L	63562	Standard
Kr	83	2.7	94.4				ug/L	3	Standard
Br	81	1230.1	9.4				ug/L	1190	Standard
P	31	11185.8	3.4				ug/L	11274	Standard
S	34	2486.9	5.6				ug/L	2592	Standard
Sr	88	88.3	25.5				ug/L	70	Standard
C	12	66.7	60.6				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.2	33.1				mg/L	10	Standard
Ho-1	165	10.0	86.6				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	10	Standard
I	127	1561.7	0.7				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.097	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.200	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 17 WG578977-04
Report Date/Time: Monday, August 15, 2016 12:09:39
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.312
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.475
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 17 WG578977-04
Report Date/Time: Monday, August 15, 2016 12:09:39
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608007106 WG578977-01
Sample Date/Time: Monday, August 15, 2016 12:10:34
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64749.8	1.7				ug/L	61110	Standard
	Be	9	20.0	25.0	**0.0177**	0.008	46.6	ug/L	17	Standard
	Al	27	4213222.9	1.1	**41.9411**	0.274	0.7	ug/L	833	Standard
	Sc	45	25683.4	3.7				ug/L	24972	Standard
	Ti	47	87.0	4.0	**0.1482**	0.020	13.5	ug/L	61	Standard
	V	51	2134.0	1.9	**0.1715**	0.009	5.1	ug/L	947	Standard
	Cr	52	10204.8	1.9	**0.8523**	0.047	5.5	ug/L	5189	Standard
	Cr	53	2025.1	4.0	**-0.3350**	0.138	41.3	ug/L	2222	Standard
	Mn	55	1018156.7	1.4	**119.1367**	1.083	0.9	ug/L	987	Standard
	Co	59	1035.0	6.3	**0.1139**	0.009	7.9	ug/L	300	Standard
	Ni	60	1227.4	3.4	**0.7389**	0.032	4.4	ug/L	157	Standard
	Cu	65	578.7	2.9	**0.3177**	0.010	3.3	ug/L	132	Standard
	Zn	66	2402.2	2.2	**2.5473**	0.048	1.9	ug/L	171	Standard
>	**Ge**	72	445434.5	0.5				ug/L	432355	Standard
	As	75	54.5	47.9	**0.1437**	0.031	21.7	ug/L	-36	Standard
	Se	82	4.0	135.0	**0.0898**	0.092	101.9	ug/L	4	Standard
	Se-1	77	130.0	15.8	**-0.5218**	0.365	69.9	ug/L	163	Standard
>	**Ga**	71	20.0	25.0				mg/L	30	Standard
	Rb	85	7555.2	2.9				ug/L	22	Standard
	Y	89	392509.1	0.4				ug/L	382028	Standard
>	**Rh**	103	10.0	132.3				ug/L	8	Standard
	Mo	98	248.1	5.9	**0.0752**	0.005	6.6	ug/L	158	Standard
	Ag	107	228.3	12.0	**0.0285**	0.006	21.8	ug/L	108	Standard
	Cd	111	43.3	10.9	**0.0253**	0.003	11.9	mg/L	6	Standard
	Cd	114	135.7	41.3	**0.0290**	0.013	45.7	ug/L	25	Standard
>	**In**	115	570459.0	1.4				ug/L	561862	Standard
	Sn	118	162.0	14.6	**0.1049**	0.023	22.3	ug/L	69	Standard
	Sb	123	2118.8	30.7	**0.4229**	0.144	34.0	ug/L	2477	Standard
	Ba	135	35918.5	0.7	**20.7496**	0.359	1.7	ug/L	24	Standard
	Ce	140	2398.5	2.9				ug/L	28	Standard
>	**Tb**	159	930266.3	1.1				ug/L	906794	Standard
	Ho	165	45.0	29.4				ug/L	8	Standard
	Tl	203	213.7	10.5	**0.0178**	0.003	18.7	ug/L	108	Standard
	Tl	205	180.0	4.8	**0.0165**	0.002	10.1	ug/L	112	Standard
	Pb	206	531.3	12.1	**0.0430**	0.012	28.3	ug/L	315	Standard
	Pb	207	446.0	11.8	**0.0391**	0.011	28.5	ug/L	265	Standard
	Pb	208	2069.7	10.0	**0.0377**	0.010	25.8	ug/L	1278	Standard
	U	238	1324.1	11.7	**0.0585**	0.008	13.3	ug/L	113	Standard
>	**Bi**	209	536798.1	0.6				ug/L	539503	Standard

Sample ID: L1608007106 WG578977-01
Report Date/Time: Monday, August 15, 2016 12:12:41
Page 1

Approved: August 16, 2016

Na	23	1.7	**-444542981118**76997102944561.281			173.2	mg/L	2	Standard
Mg	24	511.7	5.6	**0.8495**	0.088	10.4	mg/L	40	Standard
K	39	171.7	6.7	**0.6589**	0.048	7.3	mg/L	32	Standard
Ca	43	215.0	20.7	**28.7002**	9.586	33.4	mg/L	40	Standard
Fe	54	813.5	3.4	**0.6848**	0.035	5.2	mg/L	143	Standard
Fe	57	713.4	6.9	**1.6173**	0.158	9.8	mg/L	270	Standard
> **Sc-1**	45	25683.4	3.7				mg/L	24972	Standard
Cl	35	80920.3	3.4				ug/L	63562	Standard
Kr	83	2.7	57.3				ug/L	3	Standard
Br	81	1590.1	5.1				ug/L	1190	Standard
P	31	14268.4	3.4				ug/L	11274	Standard
S	34	2896.9	1.6				ug/L	2592	Standard
Sr	88	88.3	32.2				ug/L	70	Standard
C	12	150.0	17.6				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	31.3	20.2				mg/L	10	Standard
Ho-1	165	45.0	29.4				mg/L	8	Standard
Er	166	43.3	26.6				mg/L	10	Standard
I	127	2783.6	4.4				mg/L	2345	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.957	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.025	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1608007106 WG578977-01
Report Date/Time: Monday, August 15, 2016 12:12:41
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.530
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.499
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608007106S WG578977-05
Sample Date/Time: Monday, August 15, 2016 12:13:36
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62948.8	1.1				ug/L	61110	Standard
	Be	9	29528.7	1.2	**49.5540**	0.915	1.8	ug/L	17	Standard
	Al	27	4416603.0	1.9	**45.2240**	0.923	2.0	ug/L	833	Standard
	Sc	45	25798.6	1.9				ug/L	24972	Standard
	Ti	47	86.0	5.3	**0.1489**	0.025	16.5	ug/L	61	Standard
	V	51	276894.6	1.2	**49.4436**	0.525	1.1	ug/L	947	Standard
	Cr	52	263235.2	1.2	**50.3430**	0.724	1.4	ug/L	5189	Standard
	Cr	53	34106.7	1.2	**50.2442**	0.544	1.1	ug/L	2222	Standard
	Mn	55	1465715.0	0.6	**173.8583**	1.515	0.9	ug/L	987	Standard
	Co	59	322426.7	0.8	**49.1212**	0.620	1.3	ug/L	300	Standard
	Ni	60	71026.4	0.3	**50.1395**	0.350	0.7	ug/L	157	Standard
	Cu	65	71834.2	0.5	**49.6546**	0.159	0.3	ug/L	132	Standard
	Zn	66	44118.8	0.8	**51.4402**	0.426	0.8	ug/L	171	Standard
>	**Ge**	72	439557.5	0.4				ug/L	432355	Standard
	As	75	41715.8	0.4	**50.5850**	0.196	0.4	ug/L	-36	Standard
	Se	82	2956.7	1.7	**50.4390**	1.034	2.1	ug/L	4	Standard
	Se-1	77	2928.6	2.4	**49.2707**	1.133	2.3	ug/L	163	Standard
>	**Ga**	71	35.0	51.5				mg/L	30	Standard
	Rb	85	7685.3	0.7				ug/L	22	Standard
	Y	89	389397.1	0.6				ug/L	382028	Standard
>	**Rh**	103	26.7	65.8				ug/L	8	Standard
	Mo	98	200.7	7.0	**0.0575**	0.006	10.1	ug/L	158	Standard
	Ag	107	238573.6	0.3	**50.1944**	0.380	0.8	ug/L	108	Standard
	Cd	111	84668.6	0.3	**49.9527**	0.148	0.3	mg/L	6	Standard
	Cd	114	203771.3	0.7	**48.4325**	0.559	1.2	ug/L	25	Standard
>	**In**	115	556518.7	0.5				ug/L	561862	Standard
	Sn	118	121.0	6.6	**0.0633**	0.010	15.2	ug/L	69	Standard
	Sb	123	206316.6	0.6	**48.6722**	0.469	1.0	ug/L	2477	Standard
	Ba	135	121813.1	1.0	**72.1456**	0.848	1.2	ug/L	24	Standard
	Ce	140	2515.2	5.8				ug/L	28	Standard
>	**Tb**	159	917004.8	1.1				ug/L	906794	Standard
	Ho	165	40.0	12.5				ug/L	8	Standard
	Tl	203	352642.3	0.5	**49.8950**	0.329	0.7	ug/L	108	Standard
	Tl	205	283664.2	0.9	**49.7423**	0.051	0.1	ug/L	112	Standard
	Pb	206	275760.2	0.6	**50.7763**	0.163	0.3	ug/L	315	Standard
	Pb	207	238084.6	1.5	**48.4970**	0.466	1.0	ug/L	265	Standard
	Pb	208	1095876.8	0.9	**49.5549**	0.334	0.7	ug/L	1278	Standard
	U	238	1028680.9	0.5	**50.1742**	0.315	0.6	ug/L	113	Standard
>	**Bi**	209	529218.1	0.8				ug/L	539503	Standard

Sample ID: L1608007106S WG578977-05
Report Date/Time: Monday, August 15, 2016 12:15:44
Page 1

Approved: August 16, 2016

Na	23	3.3	**-91344343282879135478599616.687**			86.6	mg/L	2	Standard
Mg	24	571.7	1.8	**0.9512**	0.030	3.1	mg/L	40	Standard
K	39	186.7	6.2	**0.7244**	0.069	9.6	mg/L	32	Standard
Ca	43	193.3	14.7	**24.4866**	5.779	23.6	mg/L	40	Standard
Fe	54	857.8	5.3	**0.7251**	0.056	7.8	mg/L	143	Standard
Fe	57	620.0	3.5	**1.2556**	0.039	3.1	mg/L	270	Standard
> **Sc-1**	45	25798.6	1.9				mg/L	24972	Standard
Cl	35	86458.7	0.7				ug/L	63562	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	1303.4	3.6				ug/L	1190	Standard
P	31	13873.0	1.9				ug/L	11274	Standard
S	34	2975.3	5.1				ug/L	2592	Standard
Sr	88	118.3	6.5				ug/L	70	Standard
C	12	120.0	14.4				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	64.8	59.0				mg/L	10	Standard
Ho-1	165	40.0	12.5				mg/L	8	Standard
Er	166	40.0	43.3				mg/L	10	Standard
I	127	3422.1	6.6				mg/L	2345	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.010	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.666	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1608007106S WG578977-05
Report Date/Time: Monday, August 15, 2016 12:15:44
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.049
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.094
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608007106SD WG578977-06
Sample Date/Time: Monday, August 15, 2016 12:16:38
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64050.1	2.0				ug/L	61110	Standard
	Be	9	30089.9	1.9	**49.6448**	1.812	3.7	ug/L	17	Standard
	Al	27	4459223.3	0.3	**44.8836**	0.850	1.9	ug/L	833	Standard
	Sc	45	25805.3	3.7				ug/L	24972	Standard
	Ti	47	90.3	13.4	**0.1714**	0.073	42.5	ug/L	61	Standard
	V	51	278923.5	1.4	**49.4971**	0.732	1.5	ug/L	947	Standard
	Cr	52	263524.0	0.6	**50.0772**	0.051	0.1	ug/L	5189	Standard
	Cr	53	34044.9	1.4	**49.8120**	0.490	1.0	ug/L	2222	Standard
	Mn	55	1484635.0	0.5	**175.0075**	1.404	0.8	ug/L	987	Standard
	Co	59	327031.0	0.5	**49.5132**	0.569	1.1	ug/L	300	Standard
	Ni	60	71574.7	1.1	**50.2113**	0.524	1.0	ug/L	157	Standard
	Cu	65	72146.7	0.6	**49.5597**	0.061	0.1	ug/L	132	Standard
	Zn	66	44429.7	1.3	**51.4783**	0.298	0.6	ug/L	171	Standard
>	Ge	72	442313.8	0.7				ug/L	432355	Standard
	As	75	41457.2	1.2	**49.9610**	0.731	1.5	ug/L	-36	Standard
	Se	82	2894.4	1.8	**49.0705**	1.035	2.1	ug/L	4	Standard
	Se-1	77	2888.6	1.3	**48.2421**	0.732	1.5	ug/L	163	Standard
>	Ga	71	38.3	32.8				mg/L	30	Standard
	Rb	85	7817.0	1.4				ug/L	22	Standard
	Y	89	387571.5	1.2				ug/L	382028	Standard
>	Rh	103	23.3	53.9				ug/L	8	Standard
	Mo	98	248.4	23.9	**0.0781**	0.025	32.0	ug/L	158	Standard
	Ag	107	238186.4	1.1	**50.2377**	0.341	0.7	ug/L	108	Standard
	Cd	111	85009.4	0.5	**50.2809**	0.348	0.7	mg/L	6	Standard
	Cd	114	202897.6	1.2	**48.3443**	0.391	0.8	ug/L	25	Standard
>	In	115	555114.3	0.4				ug/L	561862	Standard
	Sn	118	140.3	23.2	**0.0854**	0.036	42.4	ug/L	69	Standard
	Sb	123	208707.5	0.9	**49.3606**	0.450	0.9	ug/L	2477	Standard
	Ba	135	122066.1	0.7	**72.4767**	0.300	0.4	ug/L	24	Standard
	Ce	140	2383.5	2.5				ug/L	28	Standard
>	Tb	159	922018.2	1.3				ug/L	906794	Standard
	Ho	165	55.0	27.3				ug/L	8	Standard
	Tl	203	350903.0	0.7	**49.6814**	0.399	0.8	ug/L	108	Standard
	Tl	205	281136.1	1.1	**49.3307**	0.170	0.3	ug/L	112	Standard
	Pb	206	273743.1	0.4	**50.4380**	0.237	0.5	ug/L	315	Standard
	Pb	207	237861.6	0.6	**48.4860**	0.440	0.9	ug/L	265	Standard
	Pb	208	1091751.9	0.1	**49.4020**	0.365	0.7	ug/L	1278	Standard
	U	238	1033917.2	1.5	**50.4675**	1.158	2.3	ug/L	113	Standard
>	Bi	209	528872.4	0.8				ug/L	539503	Standard

Sample ID: L1608007106SD WG578977-06
Report Date/Time: Monday, August 15, 2016 12:18:46
Page 1

Approved: August 16, 2016

Na	23	1.7	**-436411111658**75588621838044.516			173.2	mg/L	2	Standard
Mg	24	558.3	2.7	**0.9271**	0.024	2.6	mg/L	40	Standard
K	39	180.0	20.0	**0.6900**	0.139	20.1	mg/L	32	Standard
Ca	43	196.7	12.8	**24.9301**	3.311	13.3	mg/L	40	Standard
Fe	54	852.0	5.0	**0.7196**	0.059	8.3	mg/L	143	Standard
Fe	57	608.3	14.3	**1.2069**	0.259	21.4	mg/L	270	Standard
Sc-1	45	25805.3	3.7				mg/L	24972	Standard
Cl	35	88657.3	1.7				ug/L	63562	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	1870.1	6.0				ug/L	1190	Standard
P	31	14426.9	2.8				ug/L	11274	Standard
S	34	3160.3	5.6				ug/L	2592	Standard
Sr	88	128.3	31.5				ug/L	70	Standard
C	12	100.0	26.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	71.7	56.7				mg/L	10	Standard
Ho-1	165	55.0	27.3				mg/L	8	Standard
Er	166	33.3	75.5				mg/L	10	Standard
I	127	3478.7	8.8				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		104.812	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.303	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1608007106SD WG578977-06
Report Date/Time: Monday, August 15, 2016 12:18:46
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.799
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.029
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1608007106SD WG578977-06
Report Date/Time: Monday, August 15, 2016 12:18:46
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608007101
Sample Date/Time: Monday, August 15, 2016 12:19:41
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63943.0	1.5				ug/L	61110	Standard
	Be	9	33.3	22.9	**0.0401**	0.012	30.4	ug/L	17	Standard
	Al	27	4695323.5	0.7	**47.3383**	1.027	2.2	ug/L	833	Standard
	Sc	45	25718.5	1.7				ug/L	24972	Standard
	Ti	47	76.7	9.4	**0.0967**	0.041	42.7	ug/L	61	Standard
	V	51	3782.8	5.5	**0.4758**	0.032	6.6	ug/L	947	Standard
	Cr	52	10248.1	0.2	**0.8982**	0.017	1.9	ug/L	5189	Standard
	Cr	53	2456.9	4.5	**0.4093**	0.206	50.2	ug/L	2222	Standard
	Mn	55	3741.1	7.2	**0.3351**	0.029	8.6	ug/L	987	Standard
	Co	59	614.3	12.7	**0.0523**	0.011	22.0	ug/L	300	Standard
	Ni	60	861.7	2.1	**0.4949**	0.010	2.1	ug/L	157	Standard
	Cu	65	535.0	3.9	**0.2948**	0.011	3.8	ug/L	132	Standard
	Zn	66	1389.4	1.7	**1.4074**	0.012	0.8	ug/L	171	Standard
>	Ge	72	437134.2	1.0				ug/L	432355	Standard
	As	75	77.6	35.9	**0.1730**	0.034	19.5	ug/L	-36	Standard
	Se	82	12.7	48.7	**0.2401**	0.105	43.9	ug/L	4	Standard
	Se-1	77	146.3	4.9	**-0.1867**	0.137	73.4	ug/L	163	Standard
>	Ga	71	35.0	49.5				mg/L	30	Standard
	Rb	85	1793.4	4.6				ug/L	22	Standard
	Y	89	383825.6	2.2				ug/L	382028	Standard
>	Rh	103	3.3	173.2				ug/L	8	Standard
	Mo	98	410.4	3.6	**0.1465**	0.006	4.2	ug/L	158	Standard
	Ag	107	184.0	15.5	**0.0201**	0.006	28.0	ug/L	108	Standard
	Cd	111	46.4	30.0	**0.0276**	0.008	29.0	mg/L	6	Standard
	Cd	114	126.0	30.9	**0.0273**	0.009	33.1	ug/L	25	Standard
>	In	115	558605.4	1.1				ug/L	561862	Standard
	Sn	118	150.3	3.3	**0.0958**	0.004	4.2	ug/L	69	Standard
	Sb	123	2532.3	31.6	**0.5318**	0.187	35.1	ug/L	2477	Standard
	Ba	135	14910.7	2.0	**8.7916**	0.262	3.0	ug/L	24	Standard
	Ce	140	135.0	11.1				ug/L	28	Standard
>	Tb	159	910337.4	0.7				ug/L	906794	Standard
	Ho	165	25.0	20.0				ug/L	8	Standard
	Tl	203	200.3	21.5	**0.0164**	0.006	36.8	ug/L	108	Standard
	Tl	205	186.7	24.3	**0.0181**	0.008	42.8	ug/L	112	Standard
	Pb	206	610.3	2.8	**0.0591**	0.004	6.3	ug/L	315	Standard
	Pb	207	492.3	8.4	**0.0500**	0.008	16.1	ug/L	265	Standard
	Pb	208	2339.1	7.4	**0.0514**	0.007	14.4	ug/L	1278	Standard
	U	238	3624.4	4.6	**0.1719**	0.007	4.3	ug/L	113	Standard
>	Bi	209	528382.6	0.7				ug/L	539503	Standard

Sample ID: L1608007101
Report Date/Time: Monday, August 15, 2016 12:21:49
Page 1

Approved: August 16, 2016

Na	23	3.3	-905076078129	78402846646620.844		86.6	mg/L	2	Standard
Mg	24	508.3	9.9	**0.8411**	0.105	12.4	mg/L	40	Standard
K	39	141.7	21.3	**0.5207**	0.140	27.0	mg/L	32	Standard
Ca	43	130.0	6.7	**13.1360**	1.349	10.3	mg/L	40	Standard
Fe	54	142.3	13.6	**0.0145**	0.021	141.7	mg/L	143	Standard
Fe	57	396.7	5.8	**0.4267**	0.111	26.1	mg/L	270	Standard
> Sc-1	45	25718.5	1.7				mg/L	24972	Standard
Cl	35	92294.3	0.6				ug/L	63562	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1630.1	5.9				ug/L	1190	Standard
P	31	13923.1	1.7				ug/L	11274	Standard
S	34	3058.6	1.5				ug/L	2592	Standard
Sr	88	115.0	4.3				ug/L	70	Standard
C	12	83.3	27.7				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	25.5	96.2				mg/L	10	Standard
Ho-1	165	25.0	20.0				mg/L	8	Standard
Er	166	23.3	107.9				mg/L	10	Standard
I	127	3167.0	4.3				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.636	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.105	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608007101
Report Date/Time: Monday, August 15, 2016 12:21:49
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.420
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.939
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608007102
Sample Date/Time: Monday, August 15, 2016 12:22:44
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64006.7	3.4				ug/L	61110	Standard
	Be	9	25.0	34.6	**0.0261**	0.013	48.6	ug/L	17	Standard
	Al	27	4925701.4	2.5	**49.6407**	2.129	4.3	ug/L	833	Standard
	Sc	45	25803.6	2.1				ug/L	24972	Standard
	Ti	47	84.7	7.6	**0.1391**	0.038	27.0	ug/L	61	Standard
	V	51	3911.7	5.0	**0.4924**	0.034	7.0	ug/L	947	Standard
	Cr	52	10399.2	1.2	**0.9081**	0.028	3.1	ug/L	5189	Standard
	Cr	53	2321.8	7.1	**0.1589**	0.260	163.4	ug/L	2222	Standard
	Mn	55	2241.5	10.3	**0.1536**	0.027	17.8	ug/L	987	Standard
	Co	59	544.0	14.5	**0.0408**	0.012	29.3	ug/L	300	Standard
	Ni	60	829.7	0.9	**0.4665**	0.006	1.3	ug/L	157	Standard
	Cu	65	435.3	7.1	**0.2225**	0.021	9.5	ug/L	132	Standard
	Zn	66	1303.7	4.9	**1.2916**	0.070	5.4	ug/L	171	Standard
>	**Ge**	72	441395.8	0.2				ug/L	432355	Standard
	As	75	80.1	9.0	**0.1751**	0.008	4.8	ug/L	-36	Standard
	Se	82	7.2	37.3	**0.1436**	0.045	31.5	ug/L	4	Standard
	Se-1	77	138.3	6.8	**-0.3540**	0.165	46.7	ug/L	163	Standard
>	**Ga**	71	35.0	37.8				mg/L	30	Standard
	Rb	85	1726.8	1.9				ug/L	22	Standard
	Y	89	385860.1	0.8				ug/L	382028	Standard
>	**Rh**	103	13.3	94.4				ug/L	8	Standard
	Mo	98	468.5	24.1	**0.1716**	0.048	27.7	ug/L	158	Standard
	Ag	107	126.3	9.6	**0.0081**	0.002	30.6	ug/L	108	Standard
	Cd	111	23.0	30.6	**0.0139**	0.004	29.4	mg/L	6	Standard
	Cd	114	79.2	34.0	**0.0163**	0.006	38.9	ug/L	25	Standard
>	**In**	115	557461.3	0.5				ug/L	561862	Standard
	Sn	118	155.0	38.6	**0.1013**	0.067	66.0	ug/L	69	Standard
	Sb	123	844.3	36.6	**0.1347**	0.072	53.6	ug/L	2477	Standard
	Ba	135	15507.6	1.1	**9.1608**	0.061	0.7	ug/L	24	Standard
	Ce	140	110.0	29.8				ug/L	28	Standard
>	**Tb**	159	915321.4	1.6				ug/L	906794	Standard
	Ho	165	16.7	34.6				ug/L	8	Standard
	Tl	203	136.3	9.2	**0.0072**	0.002	22.8	ug/L	108	Standard
	Tl	205	243.3	111.3	**0.0278**	0.047	169.9	ug/L	112	Standard
	Pb	206	432.7	3.1	**0.0257**	0.003	10.5	ug/L	315	Standard
	Pb	207	427.3	20.9	**0.0361**	0.018	49.5	ug/L	265	Standard
	Pb	208	1994.1	23.2	**0.0351**	0.021	58.7	ug/L	1278	Standard
	U	238	3899.8	19.2	**0.1840**	0.036	19.5	ug/L	113	Standard
>	**Bi**	209	531940.6	0.8				ug/L	539503	Standard

Sample ID: L1608007102
Report Date/Time: Monday, August 15, 2016 12:24:51
Page 1

Approved: August 16, 2016

Na	23	1.7	**-462389389751**	80088191593065.953		173.2	mg/L	2	Standard
Mg	24	523.3	14.9	**0.8637**	0.138	15.9	mg/L	40	Standard
K	39	135.0	20.6	**0.4884**	0.131	26.9	mg/L	32	Standard
Ca	43	115.0	15.7	**10.3438**	2.854	27.6	mg/L	40	Standard
Fe	54	170.4	2.1	**0.0418**	0.007	16.2	mg/L	143	Standard
Fe	57	301.7	21.9	**0.0683**	0.263	384.7	mg/L	270	Standard
Sc-1	45	25803.6	2.1				mg/L	24972	Standard
Cl	35	93199.8	0.3				ug/L	63562	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	1666.8	3.0				ug/L	1190	Standard
P	31	14063.2	1.0				ug/L	11274	Standard
S	34	3060.3	5.0				ug/L	2592	Standard
Sr	88	63.3	31.9				ug/L	70	Standard
C	12	86.7	6.7				mg/L	90	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	24.9	83.8				mg/L	10	Standard
Ho-1	165	16.7	34.6				mg/L	8	Standard
Er	166	36.7	56.8				mg/L	10	Standard
I	127	3335.4	1.3				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.741	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.091	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608007102
Report Date/Time: Monday, August 15, 2016 12:24:51
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.217
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.598
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608007102PS WG579051-03
Sample Date/Time: Monday, August 15, 2016 12:25:46
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62828.5	4.2				ug/L	61110	Standard
	Be	9	30747.8	2.5	**51.7491**	2.396	4.6	ug/L	17	Standard
	Al	27	4879703.1	0.8	**50.1284**	2.484	5.0	ug/L	833	Standard
	Sc	45	25558.2	1.9				ug/L	24972	Standard
	Ti	47	69.0	6.6	**0.0492**	0.027	55.4	ug/L	61	Standard
	V	51	289061.8	1.8	**51.6105**	0.979	1.9	ug/L	947	Standard
	Cr	52	272778.8	1.3	**52.1916**	0.754	1.4	ug/L	5189	Standard
	Cr	53	35197.5	0.4	**51.9463**	0.295	0.6	ug/L	2222	Standard
	Mn	55	439685.5	1.0	**52.0596**	0.542	1.0	ug/L	987	Standard
	Co	59	335785.4	0.3	**51.1408**	0.158	0.3	ug/L	300	Standard
	Ni	60	73339.1	0.5	**51.7592**	0.281	0.5	ug/L	157	Standard
	Cu	65	75280.6	0.9	**52.0245**	0.447	0.9	ug/L	132	Standard
	Zn	66	45760.7	0.5	**53.3466**	0.292	0.5	ug/L	171	Standard
>	**Ge**	72	439690.2	0.1				ug/L	432355	Standard
	As	75	43362.5	0.5	**52.5626**	0.286	0.5	ug/L	-36	Standard
	Se	82	3031.5	0.9	**51.6966**	0.514	1.0	ug/L	4	Standard
	Se-1	77	3086.0	1.4	**52.0536**	0.734	1.4	ug/L	163	Standard
>	**Ga**	71	35.0	14.3				mg/L	30	Standard
	Rb	85	1735.1	2.0				ug/L	22	Standard
	Y	89	383730.4	1.0				ug/L	382028	Standard
>	**Rh**	103	25.0	40.0				ug/L	8	Standard
	Mo	98	411.1	7.3	**0.1474**	0.012	8.4	ug/L	158	Standard
	Ag	107	243329.8	0.9	**51.1742**	0.589	1.2	ug/L	108	Standard
	Cd	111	88558.1	0.7	**52.2272**	0.610	1.2	mg/L	6	Standard
	Cd	114	214165.2	0.8	**50.8824**	0.700	1.4	ug/L	25	Standard
>	**In**	115	556752.4	0.5				ug/L	561862	Standard
	Sn	118	172.3	9.5	**0.1212**	0.018	14.9	ug/L	69	Standard
	Sb	123	216143.5	1.0	**50.9710**	0.496	1.0	ug/L	2477	Standard
	Ba	135	103184.5	0.5	**61.0849**	0.280	0.5	ug/L	24	Standard
	Ce	140	131.7	25.3				ug/L	28	Standard
>	**Tb**	159	927650.3	1.9				ug/L	906794	Standard
	Ho	165	11.7	89.2				ug/L	8	Standard
	Tl	203	366720.6	0.5	**51.3971**	0.386	0.8	ug/L	108	Standard
	Tl	205	301534.7	1.5	**52.3759**	0.454	0.9	ug/L	112	Standard
	Pb	206	288641.4	0.4	**52.6488**	0.394	0.7	ug/L	315	Standard
	Pb	207	248852.0	0.7	**50.2143**	0.176	0.4	ug/L	265	Standard
	Pb	208	1147311.6	0.5	**51.3930**	0.260	0.5	ug/L	1278	Standard
	U	238	1081972.4	0.6	**52.2743**	0.233	0.4	ug/L	113	Standard
>	**Bi**	209	534273.8	1.0				ug/L	539503	Standard

Sample ID: L1608007102PS WG579051-03
Report Date/Time: Monday, August 15, 2016 12:27:54
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	533.3	9.4	**0.8923**	0.109	12.2	mg/L	40	Standard
K	39	130.0	6.7	**0.4712**	0.047	10.0	mg/L	32	Standard
Ca	43	140.0	43.9	**15.2398**	11.698	76.8	mg/L	40	Standard
Fe	54	136.9	11.7	**0.0098**	0.015	158.5	mg/L	143	Standard
Fe	57	398.3	6.3	**0.4412**	0.092	20.9	mg/L	270	Standard
> **Sc-1**	45	25558.2	1.9				mg/L	24972	Standard
Cl	35	93098.5	1.5				ug/L	63562	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	1666.8	5.7				ug/L	1190	Standard
P	31	14023.2	4.2				ug/L	11274	Standard
S	34	3090.3	4.5				ug/L	2592	Standard
Sr	88	81.7	24.7				ug/L	70	Standard
C	12	46.7	61.9				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	100.7				mg/L	10	Standard
Ho-1	165	11.7	89.2				mg/L	8	Standard
Er	166	13.3	86.6				mg/L	10	Standard
I	127	3423.7	6.9				mg/L	2345	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.813	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.697	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1608007102PS WG579051-03
Report Date/Time: Monday, August 15, 2016 12:27:54
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.091
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.031
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608007102SDL WG579051-04
Sample Date/Time: Monday, August 15, 2016 12:28:49
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58802.3	2.2				ug/L	61110	Standard
	Be	9	16.7	17.3	**0.0151**	0.006	36.9	ug/L	17	Standard
	Al	27	1008905.3	2.5	**11.0488**	0.050	0.5	ug/L	833	Standard
	Sc	45	23767.0	2.3				ug/L	24972	Standard
	Ti	47	53.7	13.2	**-0.0205**	0.042	206.8	ug/L	61	Standard
	V	51	2077.3	8.1	**0.1907**	0.034	17.7	ug/L	947	Standard
	Cr	52	7136.0	1.5	**0.3690**	0.021	5.8	ug/L	5189	Standard
	Cr	53	1775.1	4.9	**-0.5060**	0.143	28.3	ug/L	2222	Standard
	Mn	55	889.4	4.4	**0.0011**	0.006	508.8	ug/L	987	Standard
	Co	59	326.3	3.7	**0.0112**	0.002	20.5	ug/L	300	Standard
	Ni	60	269.3	9.1	**0.0847**	0.017	20.4	ug/L	157	Standard
	Cu	65	174.7	4.9	**0.0512**	0.007	13.7	ug/L	132	Standard
	Zn	66	929.7	3.6	**0.9308**	0.046	4.9	ug/L	171	Standard
>	**Ge**	72	412801.3	0.7				ug/L	432355	Standard
	As	75	-16.7	95.9	**0.0569**	0.021	36.6	ug/L	-36	Standard
	Se	82	7.0	83.0	**0.1479**	0.104	70.5	ug/L	4	Standard
	Se-1	77	121.3	15.7	**-0.5072**	0.351	69.2	ug/L	163	Standard
>	**Ga**	71	16.7	69.3				mg/L	30	Standard
	Rb	85	300.0	4.4				ug/L	22	Standard
	Y	89	353906.6	2.0				ug/L	382028	Standard
>	**Rh**	103	8.3	34.6				ug/L	8	Standard
	Mo	98	88.7	11.7	**0.0122**	0.005	39.6	ug/L	158	Standard
	Ag	107	111.3	16.9	**0.0066**	0.004	67.4	ug/L	108	Standard
	Cd	111	13.2	48.8	**0.0087**	0.004	47.4	mg/L	6	Standard
	Cd	114	56.8	30.8	**0.0119**	0.005	38.5	ug/L	25	Standard
>	**In**	115	521279.4	1.1				ug/L	561862	Standard
	Sn	118	59.0	3.4	**-0.0022**	0.003	141.7	ug/L	69	Standard
	Sb	123	954.1	33.7	**0.1759**	0.079	44.7	ug/L	2477	Standard
	Ba	135	3022.0	1.1	**1.9020**	0.026	1.4	ug/L	24	Standard
	Ce	140	35.0	14.3				ug/L	28	Standard
>	**Tb**	159	865599.4	0.5				ug/L	906794	Standard
	Ho	165	11.7	24.7				ug/L	8	Standard
	Tl	203	123.0	18.0	**0.0059**	0.003	51.5	ug/L	108	Standard
	Tl	205	86.7	49.1	**0.0010**	0.008	756.4	ug/L	112	Standard
	Pb	206	375.7	9.3	**0.0178**	0.006	36.4	ug/L	315	Standard
	Pb	207	309.0	8.2	**0.0144**	0.005	31.9	ug/L	265	Standard
	Pb	208	1430.4	5.2	**0.0121**	0.003	24.0	ug/L	1278	Standard
	U	238	820.0	7.3	**0.0361**	0.003	7.1	ug/L	113	Standard
>	**Bi**	209	513075.8	1.1				ug/L	539503	Standard

Sample ID: L1608007102SDL WG579051-04
Report Date/Time: Monday, August 15, 2016 12:30:57
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	133.3	7.8	**0.1846**	0.026	14.3	mg/L	40	Standard
K	39	51.7	24.4	**0.1283**	0.062	48.1	mg/L	32	Standard
Ca	43	65.0	7.7	**2.4271**	1.031	42.5	mg/L	40	Standard
Fe	54	72.3	16.1	**-0.0493**	0.014	27.6	mg/L	143	Standard
Fe	57	301.7	15.8	**0.1620**	0.189	116.5	mg/L	270	Standard
> **Sc-1**	45	23767.0	2.3				mg/L	24972	Standard
Cl	35	87642.8	1.0				ug/L	63562	Standard
Kr	83	2.3	99.0				ug/L	3	Standard
Br	81	1126.7	12.1				ug/L	1190	Standard
P	31	6363.0	3.6				ug/L	11274	Standard
S	34	2975.3	4.8				ug/L	2592	Standard
Sr	88	98.3	7.8				ug/L	70	Standard
C	12	40.0	25.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.8	34.6				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	8	Standard
Er	166	16.7	34.6				mg/L	10	Standard
I	127	3035.3	6.3				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.224	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.477	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608007102SDL WG579051-04
Report Date/Time: Monday, August 15, 2016 12:30:57
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.777
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.102
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608007102SDL WG579051-04
Sample Date/Time: Monday, August 15, 2016 12:31:51
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56448.3	1.9				ug/L	61110	Standard
	Be	9	13.3	78.1	**0.0101**	0.020	196.0	ug/L	17	Standard
	Al	27	201121.2	1.3	**2.2853**	0.051	2.3	ug/L	833	Standard
	Sc	45	23176.0	2.0				ug/L	24972	Standard
	Ti	47	42.3	8.3	**-0.0878**	0.023	26.3	ug/L	61	Standard
	V	51	1683.6	15.6	**0.1196**	0.053	44.4	ug/L	947	Standard
	Cr	52	6517.4	0.9	**0.2573**	0.020	7.9	ug/L	5189	Standard
	Cr	53	1658.4	9.0	**-0.6666**	0.260	39.1	ug/L	2222	Standard
	Mn	55	630.0	4.2	**-0.0307**	0.004	11.5	ug/L	987	Standard
	Co	59	267.3	4.7	**0.0021**	0.002	81.3	ug/L	300	Standard
	Ni	60	137.7	8.4	**-0.0131**	0.010	73.2	ug/L	157	Standard
	Cu	65	117.3	6.3	**0.0100**	0.006	57.3	ug/L	132	Standard
	Zn	66	921.0	4.7	**0.9344**	0.061	6.5	ug/L	171	Standard
>	**Ge**	72	407721.2	0.8				ug/L	432355	Standard
	As	75	-22.0	33.3	**0.0498**	0.010	19.1	ug/L	-36	Standard
	Se	82	1.9	35.2	**0.0577**	0.013	21.8	ug/L	4	Standard
	Se-1	77	110.3	7.0	**-0.6885**	0.145	21.1	ug/L	163	Standard
>	**Ga**	71	31.7	24.1				mg/L	30	Standard
	Rb	85	81.7	7.1				ug/L	22	Standard
	Y	89	348294.5	0.6				ug/L	382028	Standard
>	**Rh**	103	1.7	173.2				ug/L	8	Standard
	Mo	98	39.7	12.8	**-0.0097**	0.002	23.5	ug/L	158	Standard
	Ag	107	92.3	10.8	**0.0029**	0.002	83.0	ug/L	108	Standard
	Cd	111	9.6	11.9	**0.0066**	0.001	10.7	mg/L	6	Standard
	Cd	114	19.0	69.7	**0.0024**	0.003	140.7	ug/L	25	Standard
>	**In**	115	507723.4	0.6				ug/L	561862	Standard
	Sn	118	36.7	10.3	**-0.0280**	0.005	16.6	ug/L	69	Standard
	Sb	123	343.4	25.8	**0.0246**	0.022	91.0	ug/L	2477	Standard
	Ba	135	612.0	7.4	**0.3883**	0.031	8.1	ug/L	24	Standard
	Ce	140	16.7	62.4				ug/L	28	Standard
>	**Tb**	159	853002.5	1.1				ug/L	906794	Standard
	Ho	165	6.7	86.6				ug/L	8	Standard
	Tl	203	73.3	40.1	**-0.0011**	0.004	421.4	ug/L	108	Standard
	Tl	205	55.0	63.6	**-0.0044**	0.007	147.4	ug/L	112	Standard
	Pb	206	303.0	5.3	**0.0054**	0.004	71.4	ug/L	315	Standard
	Pb	207	273.3	6.0	**0.0083**	0.003	34.3	ug/L	265	Standard
	Pb	208	1229.7	0.9	**0.0041**	0.001	14.4	ug/L	1278	Standard
	U	238	198.3	14.4	**0.0050**	0.001	26.2	ug/L	113	Standard
>	**Bi**	209	501134.9	1.5				ug/L	539503	Standard

Sample ID: L1608007102SDL WG579051-04
Report Date/Time: Monday, August 15, 2016 12:33:59
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	65.0	20.4	**0.0541**	0.025	46.5	mg/L	40	Standard
K	39	46.7	16.4	**0.1092**	0.037	33.8	mg/L	32	Standard
Ca	43	45.0	48.4	**-1.2743**	4.210	330.4	mg/L	40	Standard
Fe	54	43.8	41.9	**-0.0788**	0.021	27.1	mg/L	143	Standard
Fe	57	335.0	11.7	**0.3302**	0.137	41.6	mg/L	270	Standard
> **Sc-1**	45	23176.0	2.0				mg/L	24972	Standard
Cl	35	87665.6	1.3				ug/L	63562	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1060.0	10.0				ug/L	1190	Standard
P	31	5187.6	5.1				ug/L	11274	Standard
S	34	3017.0	1.7				ug/L	2592	Standard
Sr	88	71.7	17.6				ug/L	70	Standard
C	12	83.3	81.7				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.5	41.6				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	8	Standard
Er	166	16.7	69.3				mg/L	10	Standard
I	127	3032.0	8.5				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.372	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.302	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608007102SDL WG579051-04
Report Date/Time: Monday, August 15, 2016 12:33:59
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.364
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.888
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1608007102SDL WG579051-04
Report Date/Time: Monday, August 15, 2016 12:33:59
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 15, 2016 12:34:55
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60182.7	2.8				ug/L	61110	Standard
	Be	9	28224.6	3.3	**49.5329**	0.402	0.8	ug/L	17	Standard
	Al	27	4745017.2	1.4	**50.8326**	0.797	1.6	ug/L	833	Standard
	Sc	45	24845.4	1.4				ug/L	24972	Standard
	Ti	47	17095.3	1.4	**100.6808**	1.143	1.1	ug/L	61	Standard
	V	51	272538.3	1.3	**49.0090**	0.130	0.3	ug/L	947	Standard
	Cr	52	254646.8	0.8	**49.0194**	0.605	1.2	ug/L	5189	Standard
	Cr	53	33421.8	2.3	**49.5393**	1.068	2.2	ug/L	2222	Standard
	Mn	55	413389.7	0.8	**49.3094**	0.953	1.9	ug/L	987	Standard
	Co	59	323351.3	0.3	**49.6150**	0.641	1.3	ug/L	300	Standard
	Ni	60	69506.7	0.8	**49.4148**	0.477	1.0	ug/L	157	Standard
	Cu	65	71161.1	1.5	**49.5379**	0.426	0.9	ug/L	132	Standard
	Zn	66	42469.4	1.3	**49.8608**	0.172	0.3	ug/L	171	Standard
>	Ge	72	436478.7	1.6				ug/L	432355	Standard
	As	75	39691.3	0.5	**48.4831**	0.992	2.0	ug/L	-36	Standard
	Se	82	2829.8	1.2	**48.6267**	1.304	2.7	ug/L	4	Standard
	Se-1	77	2854.9	1.2	**48.3227**	0.345	0.7	ug/L	163	Standard
>	Ga	71	41.7	48.5				mg/L	30	Standard
	Rb	85	645.0	1.6				ug/L	22	Standard
	Y	89	374430.4	1.1				ug/L	382028	Standard
>	Rh	103	10.0					ug/L	8	Standard
	Mo	98	234526.9	1.2	**100.4999**	0.223	0.2	ug/L	158	Standard
	Ag	107	235681.1	1.4	**49.7091**	0.781	1.6	ug/L	108	Standard
	Cd	111	83502.4	1.7	**49.3878**	0.889	1.8	mg/L	6	Standard
	Cd	114	210831.8	0.8	**50.2382**	0.895	1.8	ug/L	25	Standard
>	In	115	555156.8	1.1				ug/L	561862	Standard
	Sn	118	44541.0	0.8	**50.3713**	0.438	0.9	ug/L	69	Standard
	Sb	123	208526.2	0.4	**49.3183**	0.645	1.3	ug/L	2477	Standard
	Ba	135	83530.3	0.2	**49.5942**	0.623	1.3	ug/L	24	Standard
	Ce	140	35.0	0.0				ug/L	28	Standard
>	Tb	159	904808.2	2.5				ug/L	906794	Standard
	Ho	165	3.3	173.2				ug/L	8	Standard
	Tl	203	349417.2	0.6	**50.0396**	0.235	0.5	ug/L	108	Standard
	Tl	205	280586.0	1.0	**49.8062**	0.917	1.8	ug/L	112	Standard
	Pb	206	269266.0	0.8	**50.1822**	0.036	0.1	ug/L	315	Standard
	Pb	207	241512.3	0.0	**49.7982**	0.429	0.9	ug/L	265	Standard
	Pb	208	1088072.5	0.5	**49.8010**	0.158	0.3	ug/L	1278	Standard
	U	238	1051283.4	0.8	**51.8998**	0.294	0.6	ug/L	113	Standard
>	Bi	209	522859.7	0.9				ug/L	539503	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 12:37:03
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	2683.6	5.0	**4.9297**	0.288	5.9	mg/L	40	Standard
K	39	1036.7	7.5	**4.7823**	0.405	8.5	mg/L	32	Standard
Ca	43	78.3	16.1	**4.3631**	2.409	55.2	mg/L	40	Standard
Fe	54	5020.4	3.2	**5.0513**	0.184	3.6	mg/L	143	Standard
Fe	57	1591.8	7.3	**5.1181**	0.431	8.4	mg/L	270	Standard
> **Sc-1**	45	24845.4	1.4				mg/L	24972	Standard
Cl	35	86314.7	3.2				ug/L	63562	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	1136.7	10.2				ug/L	1190	Standard
P	31	14563.7	4.2				ug/L	11274	Standard
S	34	3705.5	2.0				ug/L	2592	Standard
Sr	88	88.3	11.8				ug/L	70	Standard
C	12	56.7	56.7				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	2.4	209.1				mg/L	10	Standard
Ho-1	165	3.3	173.2				mg/L	8	Standard
Er	166	20.0	100.0				mg/L	10	Standard
I	127	18130.8	3.1				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.066		
Al	27	101.665		
Sc	45			
Ti	47	100.681		
V	51	98.018		
Cr	52	98.039		
Cr	53			
Mn	55	98.619		
Co	59	99.230		
Ni	60	98.830		
Cu	65	99.076		
Zn	66	99.722		
> Ge	72		100.954	
As	75	96.966		
Se	82	97.253		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 12:37:03
Page 2

Approved: August 16, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	100.500		
Ag	107	99.418		
Cd	111	98.776		
Cd	114			
> In	115			98.807
Sn	118	100.743		
Sb	123	98.637		
Ba	135	99.188		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.079		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.602		
U	238	103.800		
> Bi	209			96.915
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 12:37:03
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 15, 2016 12:37:58
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60027.1	3.3				ug/L	61110	Standard
	Be	9	28.3	71.3	**0.0344**	0.034	98.2	ug/L	17	Standard
	Al	27	2170.2	45.4	**0.0108**	0.010	89.6	ug/L	833	Standard
	Sc	45	24721.8	1.8				ug/L	24972	Standard
	Ti	47	46.3	18.4	**-0.0778**	0.051	65.1	ug/L	61	Standard
	V	51	1182.3	10.7	**0.0106**	0.023	213.6	ug/L	947	Standard
	Cr	52	5630.0	2.7	**0.0087**	0.037	431.9	ug/L	5189	Standard
	Cr	53	1558.4	1.6	**-0.9745**	0.025	2.5	ug/L	2222	Standard
	Mn	55	1070.0	8.8	**0.0184**	0.010	56.7	ug/L	987	Standard
	Co	59	354.0	20.6	**0.0133**	0.011	82.0	ug/L	300	Standard
	Ni	60	175.3	8.7	**0.0086**	0.010	117.2	ug/L	157	Standard
	Cu	65	125.0	11.0	**0.0108**	0.009	86.7	ug/L	132	Standard
	Zn	66	236.3	5.0	**0.0541**	0.012	22.5	ug/L	171	Standard
>	**Ge**	72	430072.3	0.8				ug/L	432355	Standard
	As	75	-50.1	10.0	**0.0165**	0.007	40.5	ug/L	-36	Standard
	Se	82	3.6	63.1	**0.0852**	0.040	47.1	ug/L	4	Standard
	Se-1	77	122.0	9.9	**-0.5850**	0.238	40.6	ug/L	163	Standard
>	**Ga**	71	26.7	21.7				mg/L	30	Standard
	Rb	85	8.3	91.7				ug/L	22	Standard
	Y	89	377356.4	0.6				ug/L	382028	Standard
>	**Rh**	103	10.0					ug/L	8	Standard
	Mo	98	268.0	23.3	**0.0874**	0.027	30.4	ug/L	158	Standard
	Ag	107	143.7	26.6	**0.0121**	0.008	66.2	ug/L	108	Standard
	Cd	111	24.6	56.0	**0.0150**	0.008	54.3	mg/L	6	Standard
	Cd	114	79.7	35.6	**0.0166**	0.007	40.7	ug/L	25	Standard
>	**In**	115	550945.9	0.4				ug/L	561862	Standard
	Sn	118	135.0	24.0	**0.0807**	0.037	46.0	ug/L	69	Standard
	Sb	123	798.1	35.5	**0.1264**	0.068	53.8	ug/L	2477	Standard
	Ba	135	61.3	35.2	**0.0275**	0.013	46.5	ug/L	24	Standard
	Ce	140	10.0					ug/L	28	Standard
>	**Tb**	159	913240.9	0.5				ug/L	906794	Standard
	Ho	165	21.7	53.3				ug/L	8	Standard
	Tl	203	135.0	30.8	**0.0071**	0.006	82.7	ug/L	108	Standard
	Tl	205	106.7	28.6	**0.0040**	0.005	131.2	ug/L	112	Standard
	Pb	206	407.3	12.1	**0.0214**	0.009	41.8	ug/L	315	Standard
	Pb	207	334.0	11.2	**0.0175**	0.007	42.8	ug/L	265	Standard
	Pb	208	1584.7	13.7	**0.0170**	0.010	57.0	ug/L	1278	Standard
	U	238	354.3	38.1	**0.0121**	0.007	54.1	ug/L	113	Standard
>	**Bi**	209	529826.1	0.2				ug/L	539503	Standard

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 12:40:05
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	24.7	**-0.0102**	0.015	148.1	mg/L	40	Standard
K	39	40.0	12.5	**0.0632**	0.027	43.3	mg/L	32	Standard
Ca	43	36.7	39.4	**-3.3583**	2.715	80.9	mg/L	40	Standard
Fe	54	129.1	17.6	**0.0065**	0.026	392.6	mg/L	143	Standard
Fe	57	310.0	13.8	**0.1495**	0.189	126.2	mg/L	270	Standard
> **Sc-1**	45	24721.8	1.8				mg/L	24972	Standard
Cl	35	85195.5	0.3				ug/L	63562	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1040.0	10.4				ug/L	1190	Standard
P	31	14165.0	2.9				ug/L	11274	Standard
S	34	3725.5	4.8				ug/L	2592	Standard
Sr	88	75.0	34.6				ug/L	70	Standard
C	12	80.0	33.1				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	26.0	21.7				mg/L	10	Standard
Ho-1	165	21.7	53.3				mg/L	8	Standard
Er	166	13.3	43.3				mg/L	10	Standard
I	127	2328.5	5.9				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.472	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 12:40:05
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.057
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.206
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 12:40:05
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608007103
Sample Date/Time: Monday, August 15, 2016 12:41:02
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60144.2	3.4				ug/L	61110	Standard
	Be	9	16.7	69.3	**0.0145**	0.021	142.5	ug/L	17	Standard
	Al	27	5577110.8	1.8	**59.7944**	1.125	1.9	ug/L	833	Standard
	Sc	45	25199.3	1.8				ug/L	24972	Standard
	Ti	47	99.7	9.5	**0.2346**	0.054	22.9	ug/L	61	Standard
	V	51	2866.4	8.3	**0.3130**	0.047	15.1	ug/L	947	Standard
	Cr	52	10651.7	2.4	**0.9858**	0.068	6.9	ug/L	5189	Standard
	Cr	53	2113.5	6.2	**-0.1230**	0.204	165.4	ug/L	2222	Standard
	Mn	55	4006.5	2.8	**0.3687**	0.015	4.1	ug/L	987	Standard
	Co	59	8868.6	0.2	**1.3232**	0.012	0.9	ug/L	300	Standard
	Ni	60	1287.1	3.3	**0.8013**	0.039	4.8	ug/L	157	Standard
	Cu	65	683.0	4.6	**0.3996**	0.018	4.5	ug/L	132	Standard
	Zn	66	1277.4	0.8	**1.2815**	0.025	1.9	ug/L	171	Standard
>	**Ge**	72	435466.6	1.0				ug/L	432355	Standard
	As	75	40.0	24.7	**0.1276**	0.012	9.7	ug/L	-36	Standard
	Se	82	6.6	67.0	**0.1362**	0.077	56.5	ug/L	4	Standard
	Se-1	77	123.3	8.1	**-0.5894**	0.186	31.6	ug/L	163	Standard
>	**Ga**	71	41.7	18.3				mg/L	30	Standard
	Rb	85	2530.2	6.9				ug/L	22	Standard
	Y	89	379063.3	0.8				ug/L	382028	Standard
>	**Rh**	103	28.3	40.8				ug/L	8	Standard
	Mo	98	445.9	2.6	**0.1655**	0.006	3.8	ug/L	158	Standard
	Ag	107	129.7	15.1	**0.0093**	0.004	43.3	ug/L	108	Standard
	Cd	111	24.0	24.5	**0.0147**	0.004	24.0	mg/L	6	Standard
	Cd	114	64.6	9.0	**0.0131**	0.001	9.9	ug/L	25	Standard
>	**In**	115	547624.2	0.7				ug/L	561862	Standard
	Sn	118	138.7	12.6	**0.0858**	0.020	23.1	ug/L	69	Standard
	Sb	123	451.8	30.5	**0.0442**	0.033	74.4	ug/L	2477	Standard
	Ba	135	21676.8	1.5	**13.0401**	0.252	1.9	ug/L	24	Standard
	Ce	140	411.7	17.6				ug/L	28	Standard
>	**Tb**	159	903290.7	0.8				ug/L	906794	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	107.7	18.2	**0.0034**	0.003	79.1	ug/L	108	Standard
	Tl	205	81.7	15.4	**-0.0001**	0.002	1412.4	ug/L	112	Standard
	Pb	206	504.3	0.2	**0.0404**	0.001	2.1	ug/L	315	Standard
	Pb	207	406.0	9.1	**0.0332**	0.007	20.7	ug/L	265	Standard
	Pb	208	1925.7	4.6	**0.0335**	0.003	9.5	ug/L	1278	Standard
	U	238	2504.9	3.1	**0.1185**	0.003	2.5	ug/L	113	Standard
>	**Bi**	209	522955.7	1.0				ug/L	539503	Standard

Sample ID: L1608007103
Report Date/Time: Monday, August 15, 2016 12:43:10
Page 1

Approved: August 16, 2016

Na	23	1.7	**-455898086359**78963864864832.562			173.2	mg/L	2	Standard
Mg	24	350.0	6.5	**0.5675**	0.034	6.0	mg/L	40	Standard
K	39	141.7	7.3	**0.5335**	0.042	7.9	mg/L	32	Standard
Ca	43	193.3	13.0	**25.2100**	4.166	16.5	mg/L	40	Standard
Fe	54	122.0	27.5	**-0.0033**	0.035	1072.6	mg/L	143	Standard
Fe	57	411.7	10.3	**0.5137**	0.164	31.9	mg/L	270	Standard
> **Sc-1**	45	25199.3	1.8				mg/L	24972	Standard
Cl	35	95235.7	0.6				ug/L	63562	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	1553.4	2.9				ug/L	1190	Standard
P	31	14730.5	1.2				ug/L	11274	Standard
S	34	3402.0	2.6				ug/L	2592	Standard
Sr	88	113.3	16.7				ug/L	70	Standard
C	12	80.0	54.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	0	Standard
Dy	164	28.9	33.0				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	8	Standard
Er	166	23.3	65.5				mg/L	10	Standard
I	127	3157.0	5.2				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.420	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.720	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608007103
Report Date/Time: Monday, August 15, 2016 12:43:10
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.466
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.933
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608007104
Sample Date/Time: Monday, August 15, 2016 12:44:04
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60840.3	1.8				ug/L	61110	Standard
	Be	9	23.3	24.7	**0.0257**	0.010	40.5	ug/L	17	Standard
	Al	27	5583191.5	1.9	**59.1506**	0.292	0.5	ug/L	833	Standard
	Sc	45	25656.7	1.2				ug/L	24972	Standard
	Ti	47	94.3	13.1	**0.1987**	0.075	37.5	ug/L	61	Standard
	V	51	2949.4	1.8	**0.3233**	0.010	3.0	ug/L	947	Standard
	Cr	52	11115.7	3.5	**1.0590**	0.083	7.9	ug/L	5189	Standard
	Cr	53	2020.1	2.5	**-0.2980**	0.068	22.7	ug/L	2222	Standard
	Mn	55	2997.0	4.8	**0.2448**	0.018	7.5	ug/L	987	Standard
	Co	59	8506.1	2.3	**1.2566**	0.034	2.7	ug/L	300	Standard
	Ni	60	1222.4	4.9	**0.7478**	0.045	6.0	ug/L	157	Standard
	Cu	65	615.0	5.2	**0.3487**	0.023	6.7	ug/L	132	Standard
	Zn	66	1385.4	7.7	**1.3957**	0.131	9.4	ug/L	171	Standard
>	Ge	72	439095.4	0.4				ug/L	432355	Standard
	As	75	10.9	269.4	**0.0918**	0.036	38.7	ug/L	-36	Standard
	Se	82	10.2	17.5	**0.1957**	0.030	15.5	ug/L	4	Standard
	Se-1	77	124.7	19.0	**-0.5848**	0.419	71.7	ug/L	163	Standard
>	Ga	71	45.0	29.4				mg/L	30	Standard
	Rb	85	2555.2	9.6				ug/L	22	Standard
	Y	89	384686.0	1.1				ug/L	382028	Standard
>	Rh	103	20.0	50.0				ug/L	8	Standard
	Mo	98	427.6	6.7	**0.1560**	0.011	6.8	ug/L	158	Standard
	Ag	107	112.7	20.4	**0.0055**	0.005	88.4	ug/L	108	Standard
	Cd	111	22.0	33.5	**0.0135**	0.004	32.6	mg/L	6	Standard
	Cd	114	63.3	24.2	**0.0127**	0.004	29.9	ug/L	25	Standard
>	In	115	551815.6	0.9				ug/L	561862	Standard
	Sn	118	126.7	5.3	**0.0709**	0.008	10.8	ug/L	69	Standard
	Sb	123	367.8	22.9	**0.0233**	0.019	83.5	ug/L	2477	Standard
	Ba	135	21056.3	1.5	**12.5694**	0.145	1.2	ug/L	24	Standard
	Ce	140	391.7	3.2				ug/L	28	Standard
>	Tb	159	899786.4	1.3				ug/L	906794	Standard
	Ho	165	18.3	78.7				ug/L	8	Standard
	Tl	203	88.3	30.1	**0.0007**	0.004	584.7	ug/L	108	Standard
	Tl	205	78.3	16.1	**-0.0007**	0.002	326.7	ug/L	112	Standard
	Pb	206	404.3	5.2	**0.0218**	0.004	19.2	ug/L	315	Standard
	Pb	207	318.0	4.8	**0.0151**	0.004	25.8	ug/L	265	Standard
	Pb	208	1544.4	1.8	**0.0161**	0.002	13.1	ug/L	1278	Standard
	U	238	2372.5	5.6	**0.1121**	0.008	7.2	ug/L	113	Standard
>	Bi	209	522667.0	1.3				ug/L	539503	Standard

Sample ID: L1608007104
Report Date/Time: Monday, August 15, 2016 12:46:12
Page 1

Approved: August 16, 2016

Na	23	1.7	-4622979682118007235691777	2.844		173.2	mg/L	2	Standard
Mg	24	371.7	6.8	**0.5951**	0.038	6.3	mg/L	40	Standard
K	39	161.7	15.3	**0.6145**	0.122	19.8	mg/L	32	Standard
Ca	43	188.3	19.6	**23.6759**	6.339	26.8	mg/L	40	Standard
Fe	54	145.5	18.8	**0.0179**	0.028	154.9	mg/L	143	Standard
Fe	57	443.3	2.3	**0.6044**	0.022	3.7	mg/L	270	Standard
> Sc-1	45	25656.7	1.2				mg/L	24972	Standard
Cl	35	95359.2	0.9				ug/L	63562	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1550.1	5.7				ug/L	1190	Standard
P	31	14231.7	4.8				ug/L	11274	Standard
S	34	3298.7	1.4				ug/L	2592	Standard
Sr	88	106.7	23.1				ug/L	70	Standard
C	12	93.3	22.3				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	0	Standard
Dy	164	19.4	90.3				mg/L	10	Standard
Ho-1	165	18.3	78.7				mg/L	8	Standard
Er	166	13.3	114.6				mg/L	10	Standard
I	127	3588.8	8.8				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.559	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.559	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608007104
Report Date/Time: Monday, August 15, 2016 12:46:12
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.212
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.879
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1608007104
Report Date/Time: Monday, August 15, 2016 12:46:12
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608007105
Sample Date/Time: Monday, August 15, 2016 12:47:07
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60778.4	2.6				ug/L	61110	Standard
	Be	9	15.0	88.2	**0.0115**	0.024	208.0	ug/L	17	Standard
	Al	27	4015909.7	3.4	**42.5806**	0.388	0.9	ug/L	833	Standard
	Sc	45	25311.1	1.6				ug/L	24972	Standard
	Ti	47	77.3	9.2	**0.1027**	0.046	44.9	ug/L	61	Standard
	V	51	1879.4	12.6	**0.1339**	0.041	30.5	ug/L	947	Standard
	Cr	52	8988.7	3.3	**0.6577**	0.071	10.8	ug/L	5189	Standard
	Cr	53	2206.8	5.6	**0.0242**	0.146	604.6	ug/L	2222	Standard
	Mn	55	980825.7	0.6	**117.4263**	2.756	2.3	ug/L	987	Standard
	Co	59	873.4	9.0	**0.0927**	0.014	15.0	ug/L	300	Standard
	Ni	60	1164.4	1.8	**0.7137**	0.026	3.6	ug/L	157	Standard
	Cu	65	456.7	2.3	**0.2416**	0.010	4.3	ug/L	132	Standard
	Zn	66	1315.7	6.9	**1.3268**	0.110	8.3	ug/L	171	Standard
>	**Ge**	72	435489.0	2.0				ug/L	432355	Standard
	As	75	20.7	164.6	**0.1040**	0.042	40.3	ug/L	-36	Standard
	Se	82	5.7	23.8	**0.1207**	0.025	20.4	ug/L	4	Standard
	Se-1	77	131.0	8.0	**-0.4494**	0.232	51.7	ug/L	163	Standard
>	**Ga**	71	45.0	50.9				mg/L	30	Standard
	Rb	85	6996.6	2.0				ug/L	22	Standard
	Y	89	376618.5	0.8				ug/L	382028	Standard
>	**Rh**	103	23.3	24.7				ug/L	8	Standard
	Mo	98	234.1	12.0	**0.0740**	0.013	18.0	ug/L	158	Standard
	Ag	107	165.3	45.4	**0.0172**	0.017	96.8	ug/L	108	Standard
	Cd	111	19.0	100.5	**0.0119**	0.012	98.5	mg/L	6	Standard
	Cd	114	72.8	58.1	**0.0152**	0.011	69.1	ug/L	25	Standard
>	**In**	115	545246.7	1.3				ug/L	561862	Standard
	Sn	118	146.0	7.2	**0.0951**	0.014	15.2	ug/L	69	Standard
	Sb	123	395.6	33.3	**0.0315**	0.033	105.1	ug/L	2477	Standard
	Ba	135	33919.6	0.9	**20.4985**	0.079	0.4	ug/L	24	Standard
	Ce	140	2565.2	3.2				ug/L	28	Standard
>	**Tb**	159	904442.8	1.2				ug/L	906794	Standard
	Ho	165	46.7	43.3				ug/L	8	Standard
	Tl	203	195.0	49.7	**0.0161**	0.014	87.8	ug/L	108	Standard
	Tl	205	141.7	60.8	**0.0107**	0.016	145.1	ug/L	112	Standard
	Pb	206	552.3	11.4	**0.0500**	0.012	24.7	ug/L	315	Standard
	Pb	207	474.7	13.0	**0.0479**	0.013	27.4	ug/L	265	Standard
	Pb	208	2147.4	12.5	**0.0442**	0.013	28.9	ug/L	1278	Standard
	U	238	949.7	25.3	**0.0420**	0.012	29.0	ug/L	113	Standard
>	**Bi**	209	520312.3	0.6				ug/L	539503	Standard

Sample ID: L1608007105
Report Date/Time: Monday, August 15, 2016 12:49:14
Page 1

Approved: August 16, 2016

Na	23	1.7	**-4716225231518168741720915**4.234		173.2	mg/L	2	Standard
Mg	24	476.7	15.9	**0.7981**	0.151	18.9	mg/L	40	Standard
K	39	188.3	8.1	**0.7473**	0.061	8.1	mg/L	32	Standard
Ca	43	185.0	9.4	**23.6027**	3.755	15.9	mg/L	40	Standard
Fe	54	750.7	10.4	**0.6333**	0.088	13.9	mg/L	143	Standard
Fe	57	541.7	4.6	**1.0026**	0.105	10.5	mg/L	270	Standard
Sc-1	45	25311.1	1.6				mg/L	24972	Standard
Cl	35	90427.1	2.5				ug/L	63562	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1573.4	13.4				ug/L	1190	Standard
P	31	13836.3	5.3				ug/L	11274	Standard
S	34	3313.7	5.1				ug/L	2592	Standard
Sr	88	115.0	30.4				ug/L	70	Standard
C	12	103.3	34.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.6	36.4				mg/L	10	Standard
Ho-1	165	46.7	43.3				mg/L	8	Standard
Er	166	50.0	40.0				mg/L	10	Standard
I	127	3103.7	2.0				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.458	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.725	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608007105
Report Date/Time: Monday, August 15, 2016 12:49:14
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.043
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.443
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 15, 2016 12:50:11
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60875.4	1.0				ug/L	61110	Standard
	Be	9	26663.5	2.9	**46.2607**	1.103	2.4	ug/L	17	Standard
	Al	27	4584629.5	0.2	**48.5446**	0.510	1.0	ug/L	833	Standard
	Sc	45	25491.4	1.6				ug/L	24972	Standard
	Ti	47	16392.5	1.8	**97.1246**	0.981	1.0	ug/L	61	Standard
	V	51	264527.1	1.3	**47.8613**	0.546	1.1	ug/L	947	Standard
	Cr	52	247919.7	1.1	**47.9967**	0.490	1.0	ug/L	5189	Standard
	Cr	53	31938.6	1.3	**47.5051**	0.819	1.7	ug/L	2222	Standard
	Mn	55	400649.1	1.1	**48.0833**	0.919	1.9	ug/L	987	Standard
	Co	59	313059.1	1.3	**48.3332**	0.848	1.8	ug/L	300	Standard
	Ni	60	68050.9	2.0	**48.6847**	1.370	2.8	ug/L	157	Standard
	Cu	65	69074.1	1.3	**48.3872**	0.866	1.8	ug/L	132	Standard
	Zn	66	40976.3	1.3	**48.4036**	0.728	1.5	ug/L	171	Standard
>	**Ge**	72	433759.0	1.0				ug/L	432355	Standard
	As	75	38975.9	0.0	**47.9016**	0.489	1.0	ug/L	-36	Standard
	Se	82	2745.4	1.4	**47.4587**	0.207	0.4	ug/L	4	Standard
	Se-1	77	2728.9	1.8	**46.3766**	1.235	2.7	ug/L	163	Standard
>	**Ga**	71	36.7	15.7				mg/L	30	Standard
	Rb	85	606.7	7.0				ug/L	22	Standard
	Y	89	378600.9	1.6				ug/L	382028	Standard
>	**Rh**	103	15.0	88.2				ug/L	8	Standard
	Mo	98	227310.1	0.6	**99.6575**	0.451	0.5	ug/L	158	Standard
	Ag	107	229905.7	1.4	**49.6063**	0.406	0.8	ug/L	108	Standard
	Cd	111	81558.6	1.3	**49.3483**	0.412	0.8	mg/L	6	Standard
	Cd	114	201659.5	2.0	**49.1524**	0.545	1.1	ug/L	25	Standard
>	**In**	115	542640.3	1.1				ug/L	561862	Standard
	Sn	118	42900.7	3.1	**49.6247**	1.028	2.1	ug/L	69	Standard
	Sb	123	202721.4	1.6	**49.0447**	0.351	0.7	ug/L	2477	Standard
	Ba	135	81107.8	0.3	**49.2668**	0.667	1.4	ug/L	24	Standard
	Ce	140	46.7	22.3				ug/L	28	Standard
>	**Tb**	159	891414.4	0.9				ug/L	906794	Standard
	Ho	165	1.7	173.2				ug/L	8	Standard
	Tl	203	337388.7	0.2	**48.3078**	1.014	2.1	ug/L	108	Standard
	Tl	205	274547.3	1.8	**48.7214**	1.365	2.8	ug/L	112	Standard
	Pb	206	260325.8	1.0	**48.5085**	1.266	2.6	ug/L	315	Standard
	Pb	207	234469.7	0.7	**48.3358**	1.168	2.4	ug/L	265	Standard
	Pb	208	1058967.8	1.0	**48.4600**	1.198	2.5	ug/L	1278	Standard
	U	238	1019614.5	1.2	**50.3297**	1.355	2.7	ug/L	113	Standard
>	**Bi**	209	523087.8	2.0				ug/L	539503	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 12:52:19
Page 1

Approved: August 16, 2016

Na	23	1.7	**-4666341930488**0823413090842.094			173.2	mg/L	2	Standard
Mg	24	2655.2	5.2	**4.7502**	0.257	5.4	mg/L	40	Standard
K	39	1171.7	4.4	**5.2776**	0.174	3.3	mg/L	32	Standard
Ca	43	85.0	42.4	**5.2145**	6.580	126.2	mg/L	40	Standard
Fe	54	4877.2	2.4	**4.7749**	0.044	0.9	mg/L	143	Standard
Fe	57	1491.7	1.6	**4.5850**	0.166	3.6	mg/L	270	Standard
Sc-1	45	25491.4	1.6				mg/L	24972	Standard
Cl	35	85976.7	2.3				ug/L	63562	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1203.4	2.1				ug/L	1190	Standard
P	31	14678.8	5.6				ug/L	11274	Standard
S	34	3803.8	4.1				ug/L	2592	Standard
Sr	88	115.0	13.0				ug/L	70	Standard
C	12	76.7	7.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	106.1				mg/L	10	Standard
Ho-1	165	1.7	173.2				mg/L	8	Standard
Er	166	16.7	34.6				mg/L	10	Standard
I	127	16749.3	2.2				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	92.521		
Al	27	97.089		
Sc	45			
Ti	47	97.125		
V	51	95.723		
Cr	52	95.993		
Cr	53			
Mn	55	96.167		
Co	59	96.666		
Ni	60	97.369		
Cu	65	96.774		
Zn	66	96.807		
Ge	72		100.325	
As	75	95.803		
Se	82	94.917		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 12:52:19
Page 2

Approved: August 16, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	99.658		
Ag	107	99.213		
Cd	111	98.697		
Cd	114			
> In	115			96.579
Sn	118	99.249		
Sb	123	98.089		
Ba	135	98.534		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.616		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.920		
U	238	100.659		
> Bi	209			96.957
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 12:52:19
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 15, 2016 12:53:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58983.0	2.4				ug/L	61110	Standard
	Be	9	16.7	45.8	**0.0148**	0.013	90.3	ug/L	17	Standard
	Al	27	1728.4	14.6	**0.0066**	0.002	35.4	ug/L	833	Standard
	Sc	45	25079.1	2.2				ug/L	24972	Standard
	Ti	47	37.0	4.7	**-0.1332**	0.011	8.2	ug/L	61	Standard
	V	51	1227.4	4.8	**0.0194**	0.011	57.9	ug/L	947	Standard
	Cr	52	5557.0	2.0	**-0.0034**	0.025	729.7	ug/L	5189	Standard
	Cr	53	1413.4	0.7	**-1.2024**	0.030	2.5	ug/L	2222	Standard
	Mn	55	1096.4	1.9	**0.0220**	0.002	8.8	ug/L	987	Standard
	Co	59	313.7	9.4	**0.0071**	0.004	60.5	ug/L	300	Standard
	Ni	60	136.0	6.7	**-0.0196**	0.006	30.7	ug/L	157	Standard
	Cu	65	107.7	6.2	**-0.0013**	0.004	333.4	ug/L	132	Standard
	Zn	66	246.3	13.7	**0.0669**	0.042	62.3	ug/L	171	Standard
>	**Ge**	72	429064.2	0.6				ug/L	432355	Standard
	As	75	-65.1	42.2	**-0.0021**	0.034	1637.9	ug/L	-36	Standard
	Se	82	5.3	71.8	**0.1147**	0.067	58.3	ug/L	4	Standard
	Se-1	77	104.0	12.0	**-0.9090**	0.227	25.0	ug/L	163	Standard
>	**Ga**	71	45.0	40.1				mg/L	30	Standard
	Rb	85	10.0	86.6				ug/L	22	Standard
	Y	89	376640.8	1.0				ug/L	382028	Standard
>	**Rh**	103	8.3	34.6				ug/L	8	Standard
	Mo	98	288.4	19.7	**0.0969**	0.025	26.0	ug/L	158	Standard
	Ag	107	132.3	20.1	**0.0098**	0.006	59.2	ug/L	108	Standard
	Cd	111	18.3	44.1	**0.0113**	0.005	42.8	mg/L	6	Standard
	Cd	114	51.3	51.1	**0.0099**	0.006	64.7	ug/L	25	Standard
>	**In**	115	548572.5	0.5				ug/L	561862	Standard
	Sn	118	138.0	33.0	**0.0846**	0.051	60.7	ug/L	69	Standard
	Sb	123	538.1	31.7	**0.0646**	0.040	62.3	ug/L	2477	Standard
	Ba	135	40.0	10.9	**0.0149**	0.003	18.4	ug/L	24	Standard
	Ce	140	13.3	57.3				ug/L	28	Standard
>	**Tb**	159	898652.5	0.2				ug/L	906794	Standard
	Ho	165	11.7	107.9				ug/L	8	Standard
	Tl	203	96.7	26.4	**0.0017**	0.003	200.5	ug/L	108	Standard
	Tl	205	65.0	40.0	**-0.0032**	0.004	140.4	ug/L	112	Standard
	Pb	206	363.3	11.2	**0.0138**	0.007	50.0	ug/L	315	Standard
	Pb	207	304.3	10.5	**0.0119**	0.006	49.9	ug/L	265	Standard
	Pb	208	1414.7	6.9	**0.0098**	0.004	38.8	ug/L	1278	Standard
	U	238	224.7	25.9	**0.0058**	0.003	47.2	ug/L	113	Standard
>	**Bi**	209	525626.1	1.0				ug/L	539503	Standard

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 12:55:22
Page 1

Approved: August 16, 2016

Na	23	3.3	**-9423494876918164164865749**6.281			86.6	mg/L	2	Standard
Mg	24	26.7	10.8	**-0.0264**	0.005	19.3	mg/L	40	Standard
K	39	33.3	8.7	**0.0287**	0.010	36.1	mg/L	32	Standard
Ca	43	41.7	38.6	**-2.4969**	3.160	126.5	mg/L	40	Standard
Fe	54	125.8	18.5	**0.0012**	0.024	2081.2	mg/L	143	Standard
Fe	57	305.0	8.5	**0.1121**	0.119	105.7	mg/L	270	Standard
Sc-1	45	25079.1	2.2				mg/L	24972	Standard
Cl	35	85662.9	2.0				ug/L	63562	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1053.4	4.9				ug/L	1190	Standard
P	31	13961.4	3.8				ug/L	11274	Standard
S	34	3720.5	1.8				ug/L	2592	Standard
Sr	88	71.7	17.6				ug/L	70	Standard
C	12	63.3	39.7				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.0	110.6				mg/L	10	Standard
Ho-1	165	11.7	107.9				mg/L	8	Standard
Er	166	20.0	0.0				mg/L	10	Standard
I	127	2281.8	3.0				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.239	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 12:55:22
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.635
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.428
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 12:55:22
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Monday, August 15, 2016 12:56:18
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58516.1	1.7				ug/L	61110	Standard
	Be	9	121.7	14.4	**0.2052**	0.035	17.3	ug/L	17	Standard
	Al	27	3357.2	73.8	**0.0247**	0.027	110.3	ug/L	833	Standard
	Sc	45	24020.7	2.3				ug/L	24972	Standard
	Ti	47	40.0	10.0	**-0.1099**	0.027	24.6	ug/L	61	Standard
	V	51	3270.5	3.5	**0.4076**	0.027	6.7	ug/L	947	Standard
	Cr	52	9584.0	1.8	**0.8434**	0.015	1.7	ug/L	5189	Standard
	Cr	53	2031.8	6.0	**-0.1365**	0.167	122.3	ug/L	2222	Standard
	Mn	55	4886.8	5.4	**0.4953**	0.029	5.8	ug/L	987	Standard
	Co	59	2657.2	3.7	**0.3820**	0.015	4.0	ug/L	300	Standard
	Ni	60	2201.8	2.7	**1.5117**	0.048	3.1	ug/L	157	Standard
	Cu	65	1202.0	4.6	**0.7931**	0.042	5.3	ug/L	132	Standard
	Zn	66	5393.3	1.4	**6.3796**	0.147	2.3	ug/L	171	Standard
>	Ge	72	420188.5	1.1				ug/L	432355	Standard
	As	75	249.2	11.8	**0.3945**	0.041	10.4	ug/L	-36	Standard
	Se	82	25.8	19.0	**0.4834**	0.090	18.7	ug/L	4	Standard
	Se-1	77	139.7	8.6	**-0.2038**	0.251	123.1	ug/L	163	Standard
>	Ga	71	11.7	65.5				mg/L	30	Standard
	Rb	85	16.7	45.8				ug/L	22	Standard
	Y	89	363640.8	1.3				ug/L	382028	Standard
>	Rh	103	8.3	91.7				ug/L	8	Standard
	Mo	98	110.4	38.4	**0.0209**	0.019	92.6	ug/L	158	Standard
	Ag	107	2015.1	11.0	**0.4225**	0.052	12.3	ug/L	108	Standard
	Cd	111	439.1	14.2	**0.2698**	0.041	15.2	mg/L	6	Standard
	Cd	114	1067.5	12.2	**0.2613**	0.034	13.1	ug/L	25	Standard
>	In	115	535587.2	1.3				ug/L	561862	Standard
	Sn	118	96.3	11.1	**0.0398**	0.014	35.0	ug/L	69	Standard
	Sb	123	1764.0	7.6	**0.3691**	0.038	10.4	ug/L	2477	Standard
	Ba	135	1277.7	8.1	**0.7779**	0.073	9.4	ug/L	24	Standard
	Ce	140	25.0	20.0				ug/L	28	Standard
>	Tb	159	887329.7	1.3				ug/L	906794	Standard
	Ho	165	8.3	91.7				ug/L	8	Standard
	Tl	203	704.7	24.2	**0.0900**	0.025	27.3	ug/L	108	Standard
	Tl	205	560.0	24.0	**0.0858**	0.024	28.0	ug/L	112	Standard
	Pb	206	1502.4	8.0	**0.2296**	0.022	9.7	ug/L	315	Standard
	Pb	207	1234.4	5.1	**0.2069**	0.013	6.2	ug/L	265	Standard
	Pb	208	5818.1	6.7	**0.2147**	0.018	8.3	ug/L	1278	Standard
	U	238	8202.2	3.4	**0.4040**	0.013	3.2	ug/L	113	Standard
>	Bi	209	517425.8	0.2				ug/L	539503	Standard

Sample ID: QC Std 8
Report Date/Time: Monday, August 15, 2016 12:58:25
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	23.3	12.4	**-0.0307**	0.005	15.2	mg/L	40	Standard
K	39	46.7	16.4	**0.1008**	0.035	34.3	mg/L	32	Standard
Ca	43	58.3	9.9	**1.0250**	1.372	133.9	mg/L	40	Standard
Fe	54	83.9	36.6	**-0.0382**	0.031	81.7	mg/L	143	Standard
Fe	57	281.7	4.1	**0.0690**	0.048	70.0	mg/L	270	Standard
Sc-1	45	24020.7	2.3				mg/L	24972	Standard
Cl	35	83727.4	0.1				ug/L	63562	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	1020.0	12.2				ug/L	1190	Standard
P	31	9846.5	0.9				ug/L	11274	Standard
S	34	3400.4	3.2				ug/L	2592	Standard
Sr	88	51.7	31.1				ug/L	70	Standard
C	12	70.0	24.7				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	111.8				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	8	Standard
Er	166	16.7	124.9				mg/L	10	Standard
I	127	835.0	10.2				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.578		
Al	27			
Sc	45			
Ti	47			
V	51	101.891		
Cr	52	105.426		
Cr	53			
Mn	55	99.065		
Co	59	95.502		
Ni	60	94.484		
Cu	65	99.133		
Zn	66	102.073		
Ge	72		97.186	
As	75	98.619		
Se	82	120.842		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
Report Date/Time: Monday, August 15, 2016 12:58:25
Page 2

Approved: August 16, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	105.636		
Cd	111	112.411		
Cd	114			
> In	115			95.324
Sn	118			
Sb	123	92.275		
Ba	135	103.722		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	112.458		
Tl	205			
Pb	206			
Pb	207			
Pb	208	107.347		
U	238	101.006		
> Bi	209			95.908
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Monday, August 15, 2016 12:58:25
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: PBW 41 WG579385-02
Sample Date/Time: Monday, August 15, 2016 13:08:00
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61437.7	3.4				ug/L	61110	Standard
	Be	9	13.3	86.6	**0.0078**	0.020	252.1	ug/L	17	Standard
	Al	27	17690.5	17.0	**0.1728**	0.025	14.5	ug/L	833	Standard
	Sc	45	25548.2	1.7				ug/L	24972	Standard
	Ti	47	57.3	11.3	**-0.0154**	0.033	214.0	ug/L	61	Standard
	V	51	1736.2	17.7	**0.1087**	0.052	48.2	ug/L	947	Standard
	Cr	52	8664.8	1.9	**0.5986**	0.035	5.8	ug/L	5189	Standard
	Cr	53	1945.1	4.9	**-0.3807**	0.167	44.0	ug/L	2222	Standard
	Mn	55	2240.5	16.3	**0.1578**	0.042	26.7	ug/L	987	Standard
	Co	59	364.7	37.5	**0.0143**	0.020	142.3	ug/L	300	Standard
	Ni	60	283.3	10.0	**0.0846**	0.018	20.9	ug/L	157	Standard
	Cu	65	166.3	15.6	**0.0390**	0.018	46.8	ug/L	132	Standard
	Zn	66	1534.1	2.4	**1.5905**	0.060	3.8	ug/L	171	Standard
>	**Ge**	72	434226.6	2.2				ug/L	432355	Standard
	As	75	-0.8	3642.0	**0.0778**	0.035	45.2	ug/L	-36	Standard
	Se	82	4.6	86.3	**0.1012**	0.067	66.5	ug/L	4	Standard
	Se-1	77	107.0	9.8	**-0.8756**	0.210	24.0	ug/L	163	Standard
>	**Ga**	71	38.3	78.6				mg/L	30	Standard
	Rb	85	278.3	11.7				ug/L	22	Standard
	Y	89	383427.8	0.7				ug/L	382028	Standard
>	**Rh**	103	11.7	65.5				ug/L	8	Standard
	Mo	98	75.0	14.5	**0.0043**	0.005	117.7	ug/L	158	Standard
	Ag	107	97.3	26.9	**0.0024**	0.006	241.4	ug/L	108	Standard
	Cd	111	9.9	72.9	**0.0063**	0.004	69.5	mg/L	6	Standard
	Cd	114	44.5	26.8	**0.0082**	0.003	34.9	ug/L	25	Standard
>	**In**	115	548010.1	1.0				ug/L	561862	Standard
	Sn	118	143.7	9.5	**0.0914**	0.016	17.0	ug/L	69	Standard
	Sb	123	347.7	20.4	**0.0191**	0.016	84.1	ug/L	2477	Standard
	Ba	135	172.3	5.6	**0.0945**	0.005	5.4	ug/L	24	Standard
	Ce	140	198.3	3.9				ug/L	28	Standard
>	**Tb**	159	913263.5	0.1				ug/L	906794	Standard
	Ho	165	11.7	65.5				ug/L	8	Standard
	Tl	203	57.3	30.7	**-0.0039**	0.003	65.3	ug/L	108	Standard
	Tl	205	20.0	25.0	**-0.0111**	0.001	7.9	ug/L	112	Standard
	Pb	206	426.0	7.4	**0.0253**	0.006	24.3	ug/L	315	Standard
	Pb	207	371.0	4.8	**0.0254**	0.004	14.4	ug/L	265	Standard
	Pb	208	1706.7	3.7	**0.0230**	0.003	14.1	ug/L	1278	Standard
	U	238	86.7	36.0	**-0.0009**	0.002	164.9	ug/L	113	Standard
>	**Bi**	209	526806.4	0.6				ug/L	539503	Standard

Sample ID: PBW 41 WG579385-02
Report Date/Time: Monday, August 15, 2016 13:10:08
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	36.7	15.7	**-0.0093**	0.010	104.6	mg/L	40	Standard
K	39	35.0	42.9	**0.0345**	0.072	208.0	mg/L	32	Standard
Ca	43	31.7	39.7	**-4.4970**	2.265	50.4	mg/L	40	Standard
Fe	54	119.6	4.0	**-0.0075**	0.007	90.7	mg/L	143	Standard
Fe	57	310.0	8.5	**0.1074**	0.084	78.3	mg/L	270	Standard
Sc-1	45	25548.2	1.7				mg/L	24972	Standard
Cl	35	91157.4	1.4				ug/L	63562	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1176.7	8.7				ug/L	1190	Standard
P	31	12585.2	1.9				ug/L	11274	Standard
S	34	3295.4	1.2				ug/L	2592	Standard
Sr	88	98.3	28.9				ug/L	70	Standard
C	12	96.7	21.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	37.3				mg/L	10	Standard
Ho-1	165	11.7	65.5				mg/L	8	Standard
Er	166	16.7	34.6				mg/L	10	Standard
I	127	1515.1	6.8				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.537	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.433	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 41 WG579385-02
Report Date/Time: Monday, August 15, 2016 13:10:08
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.535
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.647
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 41 WG579385-02
Report Date/Time: Monday, August 15, 2016 13:10:08
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: LCSW 41 WG579385-03
Sample Date/Time: Monday, August 15, 2016 13:11:03
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61427.6	0.6				ug/L	61110	Standard
	Be	9	29897.8	1.6	**51.4135**	0.983	1.9	ug/L	17	Standard
	Al	27	11667.8	1.3	**0.1102**	0.002	1.6	ug/L	833	Standard
	Sc	45	24588.3	2.5				ug/L	24972	Standard
	Ti	47	48.0	11.6	**-0.0729**	0.033	44.6	ug/L	61	Standard
	V	51	280726.5	1.1	**50.3231**	0.714	1.4	ug/L	947	Standard
	Cr	52	266410.7	1.4	**51.1610**	0.853	1.7	ug/L	5189	Standard
	Cr	53	34295.4	1.2	**50.7462**	0.565	1.1	ug/L	2222	Standard
	Mn	55	428164.9	0.5	**50.9009**	0.353	0.7	ug/L	987	Standard
	Co	59	333701.8	0.4	**51.0317**	0.278	0.5	ug/L	300	Standard
	Ni	60	72202.3	1.6	**51.1655**	0.940	1.8	ug/L	157	Standard
	Cu	65	74268.9	0.2	**51.5354**	0.240	0.5	ug/L	132	Standard
	Zn	66	45089.7	0.8	**52.7779**	0.551	1.0	ug/L	171	Standard
>	**Ge**	72	437897.8	0.3				ug/L	432355	Standard
	As	75	39505.1	0.6	**48.0902**	0.428	0.9	ug/L	-36	Standard
	Se	82	2934.6	0.3	**50.2494**	0.263	0.5	ug/L	4	Standard
	Se-1	77	2890.3	1.0	**48.7851**	0.459	0.9	ug/L	163	Standard
>	**Ga**	71	38.3	15.1				mg/L	30	Standard
	Rb	85	123.3	6.2				ug/L	22	Standard
	Y	89	375179.7	2.2				ug/L	382028	Standard
>	**Rh**	103	23.3	24.7				ug/L	8	Standard
	Mo	98	58.9	17.7	**-0.0027**	0.005	177.7	ug/L	158	Standard
	Ag	107	244916.0	1.0	**52.3860**	0.752	1.4	ug/L	108	Standard
	Cd	111	86103.2	1.2	**51.6440**	0.822	1.6	mg/L	6	Standard
	Cd	114	208491.2	2.2	**50.3779**	1.276	2.5	ug/L	25	Standard
>	**In**	115	547443.2	0.9				ug/L	561862	Standard
	Sn	118	149.7	27.2	**0.0983**	0.045	46.2	ug/L	69	Standard
	Sb	123	207026.3	2.1	**49.6538**	1.274	2.6	ug/L	2477	Standard
	Ba	135	86696.0	0.7	**52.1978**	0.633	1.2	ug/L	24	Standard
	Ce	140	98.3	33.9				ug/L	28	Standard
>	**Tb**	159	906479.0	1.1				ug/L	906794	Standard
	Ho	165	13.3	57.3				ug/L	8	Standard
	Tl	203	360741.1	0.8	**51.2447**	0.858	1.7	ug/L	108	Standard
	Tl	205	289741.3	1.7	**51.0105**	0.990	1.9	ug/L	112	Standard
	Pb	206	284263.6	0.8	**52.5532**	0.861	1.6	ug/L	315	Standard
	Pb	207	244848.2	0.6	**50.0769**	0.718	1.4	ug/L	265	Standard
	Pb	208	1126072.1	0.6	**51.1254**	0.743	1.5	ug/L	1278	Standard
	U	238	1056188.0	0.5	**51.7208**	0.722	1.4	ug/L	113	Standard
>	**Bi**	209	527152.0	0.9				ug/L	539503	Standard

Sample ID: LCSW 41 WG579385-03
Report Date/Time: Monday, August 15, 2016 13:13:11
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	47.2	**0.0339**	0.050	147.9	mg/L	40	Standard
K	39	36.7	34.3	**0.0490**	0.065	132.8	mg/L	32	Standard
Ca	43	31.7	48.2	**-4.2251**	3.000	71.0	mg/L	40	Standard
Fe	54	111.6	44.4	**-0.0103**	0.055	535.0	mg/L	143	Standard
Fe	57	275.0	14.9	**0.0148**	0.140	948.5	mg/L	270	Standard
> **Sc-1**	45	24588.3	2.5				mg/L	24972	Standard
Cl	35	89892.0	2.7				ug/L	63562	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	1116.7	10.8				ug/L	1190	Standard
P	31	12615.3	2.7				ug/L	11274	Standard
S	34	3343.7	6.2				ug/L	2592	Standard
Sr	88	86.7	20.3				ug/L	70	Standard
C	12	83.3	36.7				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.7	204.0				mg/L	10	Standard
Ho-1	165	13.3	57.3				mg/L	8	Standard
Er	166	13.3	43.3				mg/L	10	Standard
I	127	1688.4	3.0				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.520	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.282	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 41 WG579385-03
Report Date/Time: Monday, August 15, 2016 13:13:11
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.434
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.711
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 41 WG579385-03
Report Date/Time: Monday, August 15, 2016 13:13:11
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608036202
Sample Date/Time: Monday, August 15, 2016 13:14:05
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57565.8	1.6				ug/L	61110	Standard
	Be	9	71.7	71.3	**0.1157**	0.091	78.6	ug/L	17	Standard
	Al	27	11948658.9	2.4	**133.7944**	1.099	0.8	ug/L	833	Standard
	Sc	45	23534.9	3.9				ug/L	24972	Standard
	Ti	47	831.7	4.3	**4.9821**	0.160	3.2	ug/L	61	Standard
	V	51	58094.4	1.8	**11.1891**	0.104	0.9	ug/L	947	Standard
	Cr	52	46939.9	1.8	**8.9211**	0.051	0.6	ug/L	5189	Standard
	Cr	53	9319.5	2.8	**12.5790**	0.525	4.2	ug/L	2222	Standard
	Mn	55	1147605.6	2.2	**148.8820**	1.143	0.8	ug/L	987	Standard
	Co	59	6416.4	6.1	**1.0279**	0.050	4.9	ug/L	300	Standard
	Ni	60	18737.6	1.5	**14.3853**	0.016	0.1	ug/L	157	Standard
	Cu	65	4024.2	3.2	**2.9697**	0.069	2.3	ug/L	132	Standard
	Zn	66	29553.1	0.8	**37.6353**	0.365	1.0	ug/L	171	Standard
>	**Ge**	72	401816.7	1.4				ug/L	432355	Standard
	As	75	815.3	2.9	**1.1584**	0.029	2.5	ug/L	-36	Standard
	Se	82	435.4	0.6	**8.1450**	0.163	2.0	ug/L	4	Standard
	Se-1	77	634.3	6.5	**9.5307**	0.658	6.9	ug/L	163	Standard
>	**Ga**	71	1178.4	3.9				mg/L	30	Standard
	Rb	85	16487.3	1.6				ug/L	22	Standard
	Y	89	372835.1	1.1				ug/L	382028	Standard
>	**Rh**	103	53.3	5.4				ug/L	8	Standard
	Mo	98	5666.2	2.4	**2.6586**	0.051	1.9	ug/L	158	Standard
	Ag	107	202.3	28.6	**0.0288**	0.014	47.4	ug/L	108	Standard
	Cd	111	1201.9	2.5	**0.7871**	0.034	4.3	mg/L	6	Standard
	Cd	114	3086.4	3.7	**0.8115**	0.045	5.6	ug/L	25	Standard
>	**In**	115	501849.4	1.8				ug/L	561862	Standard
	Sn	118	83.7	1.8	**0.0314**	0.003	9.6	ug/L	69	Standard
	Sb	123	1370.5	13.7	**0.2952**	0.053	18.0	ug/L	2477	Standard
	Ba	135	19940.4	0.3	**13.0915**	0.223	1.7	ug/L	24	Standard
	Ce	140	28986.0	2.3				ug/L	28	Standard
>	**Tb**	159	836995.1	1.8				ug/L	906794	Standard
	Ho	165	1808.4	5.7				ug/L	8	Standard
	Tl	203	873.7	9.5	**0.1193**	0.010	8.8	ug/L	108	Standard
	Tl	205	801.7	24.5	**0.1345**	0.034	25.4	ug/L	112	Standard
	Pb	206	8940.6	1.9	**1.6976**	0.007	0.4	ug/L	315	Standard
	Pb	207	4461.0	2.7	**0.9160**	0.014	1.5	ug/L	265	Standard
	Pb	208	23961.6	2.0	**1.0980**	0.011	1.0	ug/L	1278	Standard
	U	238	116165.3	1.3	**6.0170**	0.074	1.2	ug/L	113	Standard
>	**Bi**	209	497992.2	1.6				ug/L	539503	Standard

Sample ID: L1608036202
Report Date/Time: Monday, August 15, 2016 13:16:13
Page 1

Approved: August 16, 2016

Na	23	1.7	**-501458101994**	86855091052	130.266	173.2	mg/L	2	Standard
Mg	24	576.7	4.4	**1.0593**	0.006	0.6	mg/L	40	Standard
K	39	155.0	18.0	**0.6445**	0.112	17.3	mg/L	32	Standard
Ca	43	96.7	10.8	**8.7634**	1.893	21.6	mg/L	40	Standard
Fe	54	1052.8	6.0	**1.0198**	0.078	7.6	mg/L	143	Standard
Fe	57	593.3	6.1	**1.3731**	0.191	13.9	mg/L	270	Standard
> **Sc-1**	45	23534.9	3.9				mg/L	24972	Standard
Cl	35	104291.8	1.7				ug/L	63562	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	7458.5	9.4				ug/L	1190	Standard
P	31	6084.6	2.9				ug/L	11274	Standard
S	34	2901.9	0.9				ug/L	2592	Standard
Sr	88	333.3	6.1				ug/L	70	Standard
C	12	50.0	20.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	920.0	1.9				mg/L	0	Standard
Dy	164	2104.8	14.2				mg/L	10	Standard
Ho-1	165	1808.4	5.7				mg/L	8	Standard
Er	166	1643.4	11.3				mg/L	10	Standard
I	127	94214.5	6.4				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.201	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.937	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608036202
Report Date/Time: Monday, August 15, 2016 13:16:13
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.319
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.306
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608036203
Sample Date/Time: Monday, August 15, 2016 13:17:07
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59090.0	2.4				ug/L	61110	Standard
	Be	9	58.3	47.2	**0.0898**	0.050	55.6	ug/L	17	Standard
	Al	27	12931515.8	1.0	**141.1122**	2.268	1.6	ug/L	833	Standard
	Sc	45	22920.7	2.8				ug/L	24972	Standard
	Ti	47	717.0	1.1	**4.2690**	0.033	0.8	ug/L	61	Standard
	V	51	55011.3	2.2	**10.6357**	0.234	2.2	ug/L	947	Standard
	Cr	52	46971.7	0.3	**8.9759**	0.040	0.4	ug/L	5189	Standard
	Cr	53	9381.2	2.0	**12.7592**	0.303	2.4	ug/L	2222	Standard
	Mn	55	1220467.5	0.2	**159.1065**	0.956	0.6	ug/L	987	Standard
	Co	59	6401.0	1.2	**1.0309**	0.015	1.4	ug/L	300	Standard
	Ni	60	19698.8	0.3	**15.2018**	0.027	0.2	ug/L	157	Standard
	Cu	65	4353.3	1.1	**3.2349**	0.020	0.6	ug/L	132	Standard
	Zn	66	31272.2	1.7	**40.0238**	0.581	1.5	ug/L	171	Standard
>	Ge	72	399921.3	0.5				ug/L	432355	Standard
	As	75	908.0	10.3	**1.2865**	0.121	9.4	ug/L	-36	Standard
	Se	82	448.8	1.0	**8.4337**	0.099	1.2	ug/L	4	Standard
	Se-1	77	653.7	1.7	**9.9716**	0.165	1.7	ug/L	163	Standard
>	Ga	71	923.4	10.6				mg/L	30	Standard
	Rb	85	13154.0	3.9				ug/L	22	Standard
	Y	89	375273.0	1.6				ug/L	382028	Standard
>	Rh	103	70.0	18.9				ug/L	8	Standard
	Mo	98	5990.4	2.7	**2.8119**	0.093	3.3	ug/L	158	Standard
	Ag	107	130.3	11.0	**0.0120**	0.003	25.8	ug/L	108	Standard
	Cd	111	1347.5	5.6	**0.8815**	0.042	4.7	mg/L	6	Standard
	Cd	114	3263.1	0.1	**0.8574**	0.008	0.9	ug/L	25	Standard
>	In	115	501977.5	0.9				ug/L	561862	Standard
	Sn	118	84.0	19.7	**0.0319**	0.021	66.7	ug/L	69	Standard
	Sb	123	1136.8	8.5	**0.2335**	0.025	10.8	ug/L	2477	Standard
	Ba	135	20091.6	1.5	**13.1843**	0.101	0.8	ug/L	24	Standard
	Ce	140	28693.8	2.0				ug/L	28	Standard
>	Tb	159	853041.1	0.3				ug/L	906794	Standard
	Ho	165	1841.8	2.6				ug/L	8	Standard
	Tl	203	716.0	3.5	**0.0945**	0.004	3.8	ug/L	108	Standard
	Tl	205	630.0	6.9	**0.1015**	0.008	7.9	ug/L	112	Standard
	Pb	206	9257.5	1.9	**1.7393**	0.037	2.1	ug/L	315	Standard
	Pb	207	4530.3	2.9	**0.9200**	0.023	2.5	ug/L	265	Standard
	Pb	208	24891.9	1.0	**1.1293**	0.011	1.0	ug/L	1278	Standard
	U	238	125506.7	0.9	**6.4275**	0.091	1.4	ug/L	113	Standard
>	Bi	209	503687.7	0.5				ug/L	539503	Standard

Sample ID: L1608036203
Report Date/Time: Monday, August 15, 2016 13:19:15
Page 1

Approved: August 16, 2016

Na	23	3.3	**-1008697483274**	87390481271343.609		86.6	mg/L	2	Standard
Mg	24	758.4	7.6	**1.4601**	0.159	10.9	mg/L	40	Standard
K	39	115.0	4.3	**0.4632**	0.037	8.1	mg/L	32	Standard
Ca	43	70.0	37.1	**3.9927**	5.528	138.5	mg/L	40	Standard
Fe	54	1186.5	5.5	**1.2001**	0.091	7.6	mg/L	143	Standard
Fe	57	548.3	14.8	**1.2484**	0.369	29.6	mg/L	270	Standard
> **Sc-1**	45	22920.7	2.8				mg/L	24972	Standard
Cl	35	112390.1	2.0				ug/L	63562	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	9096.1	6.1				ug/L	1190	Standard
P	31	6016.2	0.9				ug/L	11274	Standard
S	34	2935.3	4.9				ug/L	2592	Standard
Sr	88	366.7	9.3				ug/L	70	Standard
C	12	40.0	86.6				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	960.0	11.7				mg/L	0	Standard
Dy	164	2159.2	4.0				mg/L	10	Standard
Ho-1	165	1841.8	2.6				mg/L	8	Standard
Er	166	1830.1	3.8				mg/L	10	Standard
I	127	170063.9	10.2				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.695	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.498	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608036203
Report Date/Time: Monday, August 15, 2016 13:19:15
Page 2

Approved: August 16, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	89.342
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.361
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608036402
Sample Date/Time: Monday, August 15, 2016 13:20:10
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60155.9	2.4				ug/L	61110	Standard
	Be	9	15.0	33.3	**0.0114**	0.009	75.1	ug/L	17	Standard
	Al	27	12100580.4	1.8	**129.7384**	4.646	3.6	ug/L	833	Standard
	Sc	45	22476.7	3.0				ug/L	24972	Standard
	Ti	47	39.7	16.8	**-0.1012**	0.042	41.6	ug/L	61	Standard
	V	51	2295.0	4.1	**0.2437**	0.013	5.5	ug/L	947	Standard
	Cr	52	9994.6	6.6	**1.0211**	0.166	16.2	ug/L	5189	Standard
	Cr	53	3853.8	2.5	**3.1546**	0.176	5.6	ug/L	2222	Standard
	Mn	55	1141154.1	1.4	**148.0003**	3.520	2.4	ug/L	987	Standard
	Co	59	4058.2	2.7	**0.6349**	0.026	4.1	ug/L	300	Standard
	Ni	60	12523.5	1.2	**9.5708**	0.124	1.3	ug/L	157	Standard
	Cu	65	243.7	5.4	**0.1069**	0.012	10.8	ug/L	132	Standard
	Zn	66	10683.8	0.5	**13.4519**	0.102	0.8	ug/L	171	Standard
>	Ge	72	402034.2	1.2				ug/L	432355	Standard
	As	75	-71.0	159.8	**-0.0142**	0.149	1044.7	ug/L	-36	Standard
	Se	82	92.7	12.1	**1.7521**	0.229	13.1	ug/L	4	Standard
	Se-1	77	319.7	4.0	**3.4137**	0.317	9.3	ug/L	163	Standard
>	Ga	71	20.0	25.0				mg/L	30	Standard
	Rb	85	1140.0	5.0				ug/L	22	Standard
	Y	89	344415.8	1.0				ug/L	382028	Standard
>	Rh	103	30.0	0.0				ug/L	8	Standard
	Mo	98	967.4	1.1	**0.4187**	0.005	1.2	ug/L	158	Standard
	Ag	107	78.3	12.9	**-0.0006**	0.002	361.3	ug/L	108	Standard
	Cd	111	632.9	0.9	**0.4038**	0.003	0.7	mg/L	6	Standard
	Cd	114	1587.1	3.5	**0.4052**	0.015	3.7	ug/L	25	Standard
>	In	115	515005.0	0.2				ug/L	561862	Standard
	Sn	118	48.0	5.5	**-0.0148**	0.003	21.1	ug/L	69	Standard
	Sb	123	277.8	29.7	**0.0067**	0.021	314.0	ug/L	2477	Standard
	Ba	135	480.0	1.0	**0.2981**	0.002	0.8	ug/L	24	Standard
	Ce	140	36.7	39.4				ug/L	28	Standard
>	Tb	159	848284.8	1.1				ug/L	906794	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	322.3	4.7	**0.0358**	0.002	4.5	ug/L	108	Standard
	Tl	205	315.0	15.1	**0.0433**	0.009	20.1	ug/L	112	Standard
	Pb	206	365.7	6.7	**0.0171**	0.005	28.3	ug/L	315	Standard
	Pb	207	289.7	3.0	**0.0114**	0.003	24.8	ug/L	265	Standard
	Pb	208	1365.0	0.5	**0.0101**	0.001	7.2	ug/L	1278	Standard
	U	238	13235.8	4.9	**0.6717**	0.027	4.1	ug/L	113	Standard
>	Bi	209	504692.9	1.6				ug/L	539503	Standard

Sample ID: L1608036402
Report Date/Time: Monday, August 15, 2016 13:22:18
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	673.3	2.6	**1.3129**	0.053	4.0	mg/L	40	Standard
K	39	50.0	40.0	**0.1361**	0.111	81.2	mg/L	32	Standard
Ca	43	58.3	9.9	**1.7948**	1.406	78.3	mg/L	40	Standard
Fe	54	75.7	29.9	**-0.0416**	0.023	56.0	mg/L	143	Standard
Fe	57	340.0	19.2	**0.3922**	0.233	59.5	mg/L	270	Standard
> **Sc-1**	45	22476.7	3.0				mg/L	24972	Standard
Cl	35	128302.1	3.6				ug/L	63562	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	8482.4	4.6				ug/L	1190	Standard
P	31	4907.5	2.5				ug/L	11274	Standard
S	34	3160.3	2.1				ug/L	2592	Standard
Sr	88	111.7	49.1				ug/L	70	Standard
C	12	36.7	41.7				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	10.2				mg/L	0	Standard
Dy	164	19.5	51.4				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	8	Standard
Er	166	10.0	173.2				mg/L	10	Standard
I	127	121149.2	1.9				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.439	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.987	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608036402
Report Date/Time: Monday, August 15, 2016 13:22:18
Page 2

Approved: August 16, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	91.660
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.548
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1608036402
Report Date/Time: Monday, August 15, 2016 13:22:18
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: PBW 17 WG578977-03
Sample Date/Time: Monday, August 15, 2016 13:30:25
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65114.7	2.5				ug/L	61110	Standard
	Be	9	8.3	91.7	**-0.0016**	0.012	784.4	ug/L	17	Standard
	Al	27	22496.7	1.4	**0.2105**	0.005	2.6	ug/L	833	Standard
	Sc	45	25942.2	1.9				ug/L	24972	Standard
	Ti	47	45.0	21.9	**-0.0907**	0.062	68.5	ug/L	61	Standard
	V	51	2505.9	6.4	**0.2440**	0.033	13.4	ug/L	947	Standard
	Cr	52	14288.7	0.7	**1.6806**	0.049	2.9	ug/L	5189	Standard
	Cr	53	2180.2	9.1	**-0.0461**	0.287	621.4	ug/L	2222	Standard
	Mn	55	2827.6	1.5	**0.2247**	0.006	2.5	ug/L	987	Standard
	Co	59	337.3	4.9	**0.0097**	0.003	32.5	ug/L	300	Standard
	Ni	60	456.7	4.3	**0.2054**	0.015	7.4	ug/L	157	Standard
	Cu	65	242.0	7.3	**0.0901**	0.012	13.7	ug/L	132	Standard
	Zn	66	766.7	1.9	**0.6703**	0.015	2.2	ug/L	171	Standard
>	**Ge**	72	439037.9	1.5				ug/L	432355	Standard
	As	75	-63.0	17.5	**0.0022**	0.013	605.1	ug/L	-36	Standard
	Se	82	3.8	137.7	**0.0875**	0.090	102.4	ug/L	4	Standard
	Se-1	77	111.0	17.7	**-0.8303**	0.323	38.9	ug/L	163	Standard
>	**Ga**	71	33.3	43.3				mg/L	30	Standard
	Rb	85	33.3	22.9				ug/L	22	Standard
	Y	89	387530.5	1.2				ug/L	382028	Standard
>	**Rh**	103	8.3	69.3				ug/L	8	Standard
	Mo	98	94.4	23.6	**0.0124**	0.009	75.2	ug/L	158	Standard
	Ag	107	87.3	12.6	**0.0001**	0.003	2057.3	ug/L	108	Standard
	Cd	111	9.9	40.9	**0.0062**	0.002	38.5	mg/L	6	Standard
	Cd	114	62.3	13.2	**0.0124**	0.002	16.9	ug/L	25	Standard
>	**In**	115	551605.7	0.9				ug/L	561862	Standard
	Sn	118	161.0	14.5	**0.1100**	0.025	22.9	ug/L	69	Standard
	Sb	123	604.9	36.2	**0.0797**	0.051	64.0	ug/L	2477	Standard
	Ba	135	97.0	7.4	**0.0488**	0.004	8.8	ug/L	24	Standard
	Ce	140	63.3	4.6				ug/L	28	Standard
>	**Tb**	159	914238.7	1.2				ug/L	906794	Standard
	Ho	165	6.7	114.6				ug/L	8	Standard
	Tl	203	48.3	6.3	**-0.0052**	0.001	9.8	ug/L	108	Standard
	Tl	205	23.3	32.7	**-0.0106**	0.001	12.5	ug/L	112	Standard
	Pb	206	366.0	6.2	**0.0136**	0.005	35.3	ug/L	315	Standard
	Pb	207	325.3	4.5	**0.0155**	0.004	25.1	ug/L	265	Standard
	Pb	208	1487.4	2.1	**0.0124**	0.002	18.7	ug/L	1278	Standard
	U	238	177.0	13.3	**0.0034**	0.001	35.6	ug/L	113	Standard
>	**Bi**	209	531477.0	1.5				ug/L	539503	Standard

Sample ID: PBW 17 WG578977-03
Report Date/Time: Monday, August 15, 2016 13:32:33
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	25.0	52.9	**-0.0310**	0.024	76.2	mg/L	40	Standard
K	39	31.7	45.6	**0.0167**	0.067	400.2	mg/L	32	Standard
Ca	43	28.3	40.8	**-5.1520**	2.109	40.9	mg/L	40	Standard
Fe	54	141.6	11.7	**0.0123**	0.014	113.8	mg/L	143	Standard
Fe	57	296.7	22.4	**0.0438**	0.270	615.0	mg/L	270	Standard
> **Sc-1**	45	25942.2	1.9				mg/L	24972	Standard
Cl	35	111226.8	1.2				ug/L	63562	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	1240.1	7.3				ug/L	1190	Standard
P	31	12712.0	1.0				ug/L	11274	Standard
S	34	3163.7	3.4				ug/L	2592	Standard
Sr	88	48.3	21.5				ug/L	70	Standard
C	12	100.0	10.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.7	105.8				mg/L	10	Standard
Ho-1	165	6.7	114.6				mg/L	8	Standard
Er	166	6.7	86.6				mg/L	10	Standard
I	127	2241.8	0.9				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.554	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.546	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 17 WG578977-03
Report Date/Time: Monday, August 15, 2016 13:32:33
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.175
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.512
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 17 WG578977-03
Report Date/Time: Monday, August 15, 2016 13:32:33
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608033511 WG579385-01
Sample Date/Time: Monday, August 15, 2016 13:35:42
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67784.6	1.3				ug/L	61110	Standard
	Be	9	18.3	68.6	**0.0135**	0.020	144.1	ug/L	17	Standard
	Al	27	5156686.1	0.3	**49.0377**	0.542	1.1	ug/L	833	Standard
	Sc	45	23214.5	3.5				ug/L	24972	Standard
	Ti	47	173.7	19.8	**0.8416**	0.230	27.3	ug/L	61	Standard
	V	51	-3065.5	35.0	**-0.8528**	0.229	26.8	ug/L	947	Standard
	Cr	52	11440.7	5.2	**1.5133**	0.149	9.8	ug/L	5189	Standard
	Cr	53	42356.3	11.2	**74.9927**	9.220	12.3	ug/L	2222	Standard
	Mn	55	3841.8	1.0	**0.4247**	0.002	0.5	ug/L	987	Standard
	Co	59	615.0	1.8	**0.0684**	0.002	2.5	ug/L	300	Standard
	Ni	60	1522.1	13.5	**1.1473**	0.164	14.3	ug/L	157	Standard
	Cu	65	5137.2	6.4	**4.1025**	0.245	6.0	ug/L	132	Standard
	Zn	66	3929.2	0.3	**5.1809**	0.018	0.4	ug/L	171	Standard
>	**Ge**	72	373904.4	0.6				ug/L	432355	Standard
	As	75	-1278.5	124.9	**-1.7330**	2.265	130.7	ug/L	-36	Standard
	Se	82	-299.5	203.4	**-5.9386**	12.194	205.3	ug/L	4	Standard
	Se-1	77	4496.7	4.0	**91.1998**	3.938	4.3	ug/L	163	Standard
>	**Ga**	71	140.0	3.6				mg/L	30	Standard
	Rb	85	16363.8	1.7				ug/L	22	Standard
	Y	89	333967.5	1.3				ug/L	382028	Standard
>	**Rh**	103	1345.1	40.4				ug/L	8	Standard
	Mo	98	10575.6	1.2	**5.3145**	0.113	2.1	ug/L	158	Standard
	Ag	107	163.7	3.9	**0.0222**	0.001	5.3	ug/L	108	Standard
	Cd	111	17.2	30.9	**0.0124**	0.004	31.0	mg/L	6	Standard
	Cd	114	94.8	24.8	**0.0241**	0.006	26.1	ug/L	25	Standard
>	**In**	115	471096.4	1.1				ug/L	561862	Standard
	Sn	118	130.3	5.9	**0.1005**	0.010	9.6	ug/L	69	Standard
	Sb	123	870.5	9.5	**0.1786**	0.021	11.9	ug/L	2477	Standard
	Ba	135	768547.9	1.5	**537.7600**	3.685	0.7	ug/L	24	Standard
	Ce	140	70.0	42.9				ug/L	28	Standard
>	**Tb**	159	845946.8	1.7				ug/L	906794	Standard
	Ho	165	11.7	49.5				ug/L	8	Standard
	Tl	203	176.3	14.2	**0.0180**	0.005	26.5	ug/L	108	Standard
	Tl	205	108.3	2.7	**0.0082**	0.001	11.1	ug/L	112	Standard
	Pb	206	503.7	3.1	**0.0577**	0.004	6.2	ug/L	315	Standard
	Pb	207	400.3	8.1	**0.0474**	0.009	18.6	ug/L	265	Standard
	Pb	208	1919.7	2.5	**0.0495**	0.003	6.1	ug/L	1278	Standard
	U	238	101755.9	0.5	**5.9467**	0.141	2.4	ug/L	113	Standard
>	**Bi**	209	441470.3	1.8				ug/L	539503	Standard

Sample ID: L1608033511 WG579385-01
Report Date/Time: Monday, August 15, 2016 13:37:49
Page 1

Approved: August 16, 2016

Na	23	1.7	**-4871465484278**4376257260789.703		173.2	mg/L	2	Standard
Mg	24	421492.3	0.5	**841.7686**	32.040	3.8	mg/L	40	Standard
K	39	598.3	5.4	**2.9027**	0.060	2.1	mg/L	32	Standard
Ca	43	106.7	9.8	**11.0811**	2.776	25.1	mg/L	40	Standard
Fe	54	168.5	3.0	**0.0587**	0.010	17.6	mg/L	143	Standard
Fe	57	425.0	18.5	**0.7061**	0.343	48.5	mg/L	270	Standard
Sc-1	45	23214.5	3.5				mg/L	24972	Standard
Cl	35	84243.1	3.8				ug/L	63562	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	395468.3	1.1				ug/L	1190	Standard
P	31	13390.9	0.2				ug/L	11274	Standard
S	34	3577.1	3.8				ug/L	2592	Standard
Sr	88	1448.4	5.8				ug/L	70	Standard
C	12	106.7	37.9				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	100.7				mg/L	10	Standard
Ho-1	165	11.7	49.5				mg/L	8	Standard
Er	166	13.3	86.6				mg/L	10	Standard
I	127	305521.3	8.2				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		110.923	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		86.481	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1608033511 WG579385-01
Report Date/Time: Monday, August 15, 2016 13:37:49
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		83.846
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		81.829
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
As 75 Lower	As	75	
Se 82 Lower	Se	82	

Sample ID: L1608033511 WG579385-01
Report Date/Time: Monday, August 15, 2016 13:37:49
Page 3

Approved: August 16, 2016

Ba 135 Upper, S, EEE	Ba	135

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608033511S WG579385-05
Sample Date/Time: Monday, August 15, 2016 13:38:44
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68278.5	1.8				ug/L	61110	Standard
	Be	9	29463.6	3.2	**45.5914**	1.763	3.9	ug/L	17	Standard
	Al	27	5576614.4	3.0	**52.6401**	1.000	1.9	ug/L	833	Standard
	Sc	45	23286.2	1.5				ug/L	24972	Standard
	Ti	47	226.3	17.0	**1.2028**	0.251	20.9	ug/L	61	Standard
	V	51	250406.2	1.9	**52.5288**	0.452	0.9	ug/L	947	Standard
	Cr	52	235887.8	0.7	**53.0464**	0.344	0.6	ug/L	5189	Standard
	Cr	53	66363.4	0.6	**119.3220**	2.182	1.8	ug/L	2222	Standard
	Mn	55	367790.5	1.3	**51.1607**	0.168	0.3	ug/L	987	Standard
	Co	59	280614.6	1.0	**50.2150**	0.604	1.2	ug/L	300	Standard
	Ni	60	61746.2	1.0	**51.2015**	0.679	1.3	ug/L	157	Standard
	Cu	65	66067.1	0.9	**53.6469**	0.358	0.7	ug/L	132	Standard
	Zn	66	40537.2	1.0	**55.5321**	0.095	0.2	ug/L	171	Standard
>	**Ge**	72	374237.5	1.2				ug/L	432355	Standard
	As	75	33809.4	3.2	**48.1692**	1.974	4.1	ug/L	-36	Standard
	Se	82	1404.6	26.5	**28.2005**	7.770	27.6	ug/L	4	Standard
	Se-1	77	6809.9	0.2	**139.4338**	1.463	1.0	ug/L	163	Standard
>	**Ga**	71	181.7	22.4				mg/L	30	Standard
	Rb	85	17767.1	1.2				ug/L	22	Standard
	Y	89	335611.9	3.1				ug/L	382028	Standard
>	**Rh**	103	2301.8	15.7				ug/L	8	Standard
	Mo	98	10956.6	1.2	**5.4850**	0.116	2.1	ug/L	158	Standard
	Ag	107	199379.6	0.5	**49.3602**	0.534	1.1	ug/L	108	Standard
	Cd	111	73954.2	1.0	**51.3389**	0.094	0.2	mg/L	6	Standard
	Cd	114	177739.9	1.7	**49.7040**	0.353	0.7	ug/L	25	Standard
>	**In**	115	472968.4	1.0				ug/L	561862	Standard
	Sn	118	128.7	12.5	**0.0975**	0.020	20.1	ug/L	69	Standard
	Sb	123	191060.1	1.0	**53.0409**	0.421	0.8	ug/L	2477	Standard
	Ba	135	885613.3	0.5	**617.2741**	6.900	1.1	ug/L	24	Standard
	Ce	140	76.7	16.4				ug/L	28	Standard
>	**Tb**	159	838273.1	2.4				ug/L	906794	Standard
	Ho	165	18.3	31.5				ug/L	8	Standard
	Tl	203	309460.0	1.3	**52.2796**	0.260	0.5	ug/L	108	Standard
	Tl	205	240596.9	0.6	**50.3792**	0.347	0.7	ug/L	112	Standard
	Pb	206	244986.0	0.1	**53.8687**	0.473	0.9	ug/L	315	Standard
	Pb	207	209812.1	0.8	**51.0359**	0.303	0.6	ug/L	265	Standard
	Pb	208	969616.4	0.6	**52.3572**	0.206	0.4	ug/L	1278	Standard
	U	238	1080249.2	0.9	**62.9138**	0.064	0.1	ug/L	113	Standard
>	**Bi**	209	443212.7	0.9				ug/L	539503	Standard

Sample ID: L1608033511S WG579385-05
Report Date/Time: Monday, August 15, 2016 13:40:52
Page 1

Approved: August 16, 2016

Na	23	3.3	**-101665060572**176089050266230.660			173.2	mg/L	2	Standard
Mg	24	457029.9	1.6	**909.2442**	18.115	2.0	mg/L	40	Standard
K	39	598.3	10.1	**2.8953**	0.312	10.8	mg/L	32	Standard
Ca	43	85.0	21.2	**6.6410**	3.524	53.1	mg/L	40	Standard
Fe	54	125.4	23.5	**0.0103**	0.030	296.4	mg/L	143	Standard
Fe	57	500.0	9.5	**1.0074**	0.165	16.3	mg/L	270	Standard
> **Sc-1**	45	23286.2	1.5				mg/L	24972	Standard
Cl	35	82329.2	2.4				ug/L	63562	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	409962.9	1.3				ug/L	1190	Standard
P	31	13993.1	0.4				ug/L	11274	Standard
S	34	3603.8	4.8				ug/L	2592	Standard
Sr	88	1546.7	4.6				ug/L	70	Standard
C	12	86.7	26.6				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	9.7	108.3				mg/L	10	Standard
Ho-1	165	18.3	31.5				mg/L	8	Standard
Er	166	6.7	173.2				mg/L	10	Standard
I	127	321094.8	8.7				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.731	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608033511S WG579385-05
Report Date/Time: Monday, August 15, 2016 13:40:52
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	84.179	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	82.152	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1608033511S WG579385-05
Report Date/Time: Monday, August 15, 2016 13:40:52
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608033511SD WG579385-06
Sample Date/Time: Monday, August 15, 2016 13:41:47
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68975.0	1.3				ug/L	61110	Standard
	Be	9	30589.2	2.8	**46.8387**	0.857	1.8	ug/L	17	Standard
	Al	27	5583039.8	1.6	**52.1726**	0.608	1.2	ug/L	833	Standard
	Sc	45	23570.0	2.0				ug/L	24972	Standard
	Ti	47	255.3	12.3	**1.3789**	0.209	15.1	ug/L	61	Standard
	V	51	259389.7	1.1	**53.6464**	0.567	1.1	ug/L	947	Standard
	Cr	52	244577.1	1.5	**54.2395**	0.721	1.3	ug/L	5189	Standard
	Cr	53	68603.3	1.7	**121.6522**	2.678	2.2	ug/L	2222	Standard
	Mn	55	381509.3	1.3	**52.3167**	0.602	1.2	ug/L	987	Standard
	Co	59	290526.1	0.9	**51.2472**	0.469	0.9	ug/L	300	Standard
	Ni	60	63628.7	0.5	**52.0111**	0.448	0.9	ug/L	157	Standard
	Cu	65	68109.1	1.3	**54.5165**	0.521	1.0	ug/L	132	Standard
	Zn	66	41726.0	1.4	**56.3489**	0.561	1.0	ug/L	171	Standard
>	Ge	72	379639.0	0.5				ug/L	432355	Standard
	As	75	34396.3	3.5	**48.3016**	1.922	4.0	ug/L	-36	Standard
	Se	82	1354.9	22.2	**26.7886**	6.061	22.6	ug/L	4	Standard
	Se-1	77	6849.5	0.2	**138.2183**	0.826	0.6	ug/L	163	Standard
>	Ga	71	155.0	25.2				mg/L	30	Standard
	Rb	85	17136.4	3.2				ug/L	22	Standard
	Y	89	339436.9	0.8				ug/L	382028	Standard
>	Rh	103	2513.5	12.4				ug/L	8	Standard
	Mo	98	10654.4	0.5	**5.3111**	0.042	0.8	ug/L	158	Standard
	Ag	107	202203.3	0.3	**49.8605**	0.654	1.3	ug/L	108	Standard
	Cd	111	74714.6	0.3	**51.6637**	0.685	1.3	mg/L	6	Standard
	Cd	114	181503.7	1.3	**50.5574**	0.598	1.2	ug/L	25	Standard
>	In	115	474873.3	1.2				ug/L	561862	Standard
	Sn	118	140.3	7.1	**0.1123**	0.011	10.1	ug/L	69	Standard
	Sb	123	194507.3	0.9	**53.7828**	0.351	0.7	ug/L	2477	Standard
	Ba	135	871859.7	0.6	**605.2412**	4.747	0.8	ug/L	24	Standard
	Ce	140	78.3	7.4				ug/L	28	Standard
>	Tb	159	843788.9	0.2				ug/L	906794	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	315634.9	0.8	**53.0878**	0.676	1.3	ug/L	108	Standard
	Tl	205	245034.1	1.6	**51.0830**	1.203	2.4	ug/L	112	Standard
	Pb	206	249207.4	0.5	**54.5530**	0.738	1.4	ug/L	315	Standard
	Pb	207	214809.7	0.8	**52.0203**	0.714	1.4	ug/L	265	Standard
	Pb	208	992289.7	0.8	**53.3434**	0.592	1.1	ug/L	1278	Standard
	U	238	1089292.7	0.8	**63.1616**	1.064	1.7	ug/L	113	Standard
>	Bi	209	445220.8	1.2				ug/L	539503	Standard

Sample ID: L1608033511SD WG579385-06
Report Date/Time: Monday, August 15, 2016 13:43:55
Page 1

Approved: August 16, 2016

Na	23	3.3	**-100486888662**7	8702593970	9547.547	86.6	mg/L	2	Standard
Mg	24	451057.1	1.9	**886.8382**	32.104	3.6	mg/L	40	Standard
K	39	588.3	3.4	**2.8104**	0.156	5.6	mg/L	32	Standard
Ca	43	136.7	7.6	**16.6127**	2.543	15.3	mg/L	40	Standard
Fe	54	143.8	24.8	**0.0284**	0.035	124.9	mg/L	143	Standard
Fe	57	466.7	12.2	**0.8483**	0.240	28.3	mg/L	270	Standard
> **Sc-1**	45	23570.0	2.0				mg/L	24972	Standard
Cl	35	83557.1	1.0				ug/L	63562	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	355943.2	1.7				ug/L	1190	Standard
P	31	13702.9	2.7				ug/L	11274	Standard
S	34	3527.1	6.1				ug/L	2592	Standard
Sr	88	1450.1	6.6				ug/L	70	Standard
C	12	130.0	20.4				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	12.1	53.7				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	8	Standard
Er	166	26.7	57.3				mg/L	10	Standard
I	127	339933.0	7.5				mg/L	2345	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		112.871	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		87.807	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1608033511SD WG579385-06
Report Date/Time: Monday, August 15, 2016 13:43:55
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	84.518	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	82.524	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1608033511SD WG579385-06
Report Date/Time: Monday, August 15, 2016 13:43:55
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608033007
Sample Date/Time: Monday, August 15, 2016 13:44:49
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60090.7	2.9				ug/L	61110	Standard
	Be	9	31.7	9.1	**0.0407**	0.005	11.1	ug/L	17	Standard
	Al	27	1769163.5	2.1	**18.9716**	0.150	0.8	ug/L	833	Standard
	Sc	45	24097.5	1.9				ug/L	24972	Standard
	Ti	47	63.3	19.7	**0.0350**	0.072	206.8	ug/L	61	Standard
	V	51	1400.0	12.7	**0.0585**	0.037	62.7	ug/L	947	Standard
	Cr	52	6293.0	6.7	**0.1796**	0.103	57.3	ug/L	5189	Standard
	Cr	53	4527.4	12.6	**4.0181**	0.856	21.3	ug/L	2222	Standard
	Mn	55	486716.4	0.5	**60.7153**	1.056	1.7	ug/L	987	Standard
	Co	59	11075.0	0.8	**1.7361**	0.028	1.6	ug/L	300	Standard
	Ni	60	7021.0	2.2	**5.1115**	0.056	1.1	ug/L	157	Standard
	Cu	65	383.3	22.5	**0.2013**	0.059	29.5	ug/L	132	Standard
	Zn	66	6640.5	1.1	**7.9599**	0.178	2.2	ug/L	171	Standard
>	**Ge**	72	417517.3	1.2				ug/L	432355	Standard
	As	75	-60.9	8.3	**0.0009**	0.006	606.2	ug/L	-36	Standard
	Se	82	1.5	202.1	**0.0499**	0.055	110.6	ug/L	4	Standard
	Se-1	77	364.3	17.4	**4.0098**	1.129	28.2	ug/L	163	Standard
>	**Ga**	71	38.3	30.1				mg/L	30	Standard
	Rb	85	671.7	15.1				ug/L	22	Standard
	Y	89	355255.6	1.7				ug/L	382028	Standard
>	**Rh**	103	175.0	37.8				ug/L	8	Standard
	Mo	98	40.0	4.2	**-0.0099**	0.001	5.5	ug/L	158	Standard
	Ag	107	133.7	26.6	**0.0118**	0.008	67.9	ug/L	108	Standard
	Cd	111	254.3	7.6	**0.1617**	0.013	8.0	mg/L	6	Standard
	Cd	114	664.1	13.8	**0.1674**	0.025	15.1	ug/L	25	Standard
>	**In**	115	517688.9	1.2				ug/L	561862	Standard
	Sn	118	35.0	12.5	**-0.0309**	0.005	16.1	ug/L	69	Standard
	Sb	123	220.1	12.5	**-0.0083**	0.008	91.8	ug/L	2477	Standard
	Ba	135	351.3	40.4	**0.2147**	0.091	42.3	ug/L	24	Standard
	Ce	140	9069.4	4.4				ug/L	28	Standard
>	**Tb**	159	855636.4	1.5				ug/L	906794	Standard
	Ho	165	203.3	24.6				ug/L	8	Standard
	Tl	203	296.7	20.6	**0.0318**	0.009	27.4	ug/L	108	Standard
	Tl	205	201.7	34.2	**0.0223**	0.012	55.9	ug/L	112	Standard
	Pb	206	412.3	9.1	**0.0258**	0.007	28.9	ug/L	315	Standard
	Pb	207	371.3	13.2	**0.0285**	0.010	34.7	ug/L	265	Standard
	Pb	208	1643.0	11.6	**0.0230**	0.009	37.2	ug/L	1278	Standard
	U	238	283.0	45.6	**0.0092**	0.006	70.3	ug/L	113	Standard
>	**Bi**	209	506653.1	1.4				ug/L	539503	Standard

Sample ID: L1608033007
Report Date/Time: Monday, August 15, 2016 13:46:57
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	1863.4	4.6	**3.5054**	0.096	2.7	mg/L	40	Standard
K	39	56.7	18.4	**0.1492**	0.052	34.7	mg/L	32	Standard
Ca	43	56.7	56.7	**0.7297**	6.318	865.9	mg/L	40	Standard
Fe	54	58.9	23.3	**-0.0647**	0.016	24.0	mg/L	143	Standard
Fe	57	298.3	6.3	**0.1328**	0.093	70.3	mg/L	270	Standard
> **Sc-1**	45	24097.5	1.9				mg/L	24972	Standard
Cl	35	96462.2	2.7				ug/L	63562	Standard
Kr	83	3.3	34.6				ug/L	3	Standard
Br	81	5677.8	20.3				ug/L	1190	Standard
P	31	5229.2	2.5				ug/L	11274	Standard
S	34	3308.7	4.0				ug/L	2592	Standard
Sr	88	98.3	22.9				ug/L	70	Standard
C	12	73.3	43.8				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	249.6	17.9				mg/L	10	Standard
Ho-1	165	203.3	24.6				mg/L	8	Standard
Er	166	216.7	11.6				mg/L	10	Standard
I	127	21147.0	24.9				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.332	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.568	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608033007
Report Date/Time: Monday, August 15, 2016 13:46:57
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.138
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.911
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1608033007
Report Date/Time: Monday, August 15, 2016 13:46:57
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 15, 2016 13:47:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64041.7	1.2				ug/L	61110	Standard
	Be	9	30893.2	3.3	**50.9553**	1.611	3.2	ug/L	17	Standard
	Al	27	4912423.1	1.1	**49.4426**	0.495	1.0	ug/L	833	Standard
	Sc	45	26014.0	0.6				ug/L	24972	Standard
	Ti	47	17741.0	1.0	**103.2032**	1.771	1.7	ug/L	61	Standard
	V	51	283398.3	0.7	**50.3402**	0.760	1.5	ug/L	947	Standard
	Cr	52	265307.6	1.4	**50.4719**	1.065	2.1	ug/L	5189	Standard
	Cr	53	35289.4	4.1	**51.8034**	2.092	4.0	ug/L	2222	Standard
	Mn	55	429645.1	0.9	**50.6127**	0.817	1.6	ug/L	987	Standard
	Co	59	336073.0	1.6	**50.9308**	1.270	2.5	ug/L	300	Standard
	Ni	60	72758.6	0.8	**51.0899**	0.726	1.4	ug/L	157	Standard
	Cu	65	74040.8	0.4	**50.9100**	0.736	1.4	ug/L	132	Standard
	Zn	66	44270.9	0.5	**51.3448**	0.945	1.8	ug/L	171	Standard
>	Ge	72	441961.4	1.4				ug/L	432355	Standard
	As	75	41866.7	0.9	**50.4952**	0.445	0.9	ug/L	-36	Standard
	Se	82	2993.4	1.4	**50.7864**	0.282	0.6	ug/L	4	Standard
	Se-1	77	2997.3	1.6	**50.2028**	0.284	0.6	ug/L	163	Standard
>	Ga	71	36.7	41.7				mg/L	30	Standard
	Rb	85	660.0	4.7				ug/L	22	Standard
	Y	89	375227.1	1.8				ug/L	382028	Standard
>	Rh	103	43.3	26.6				ug/L	8	Standard
	Mo	98	243985.0	1.3	**103.2829**	1.761	1.7	ug/L	158	Standard
	Ag	107	244698.8	0.4	**50.9840**	0.926	1.8	ug/L	108	Standard
	Cd	111	87587.3	0.5	**51.1738**	0.905	1.8	mg/L	6	Standard
	Cd	114	218624.8	0.4	**51.4577**	0.868	1.7	ug/L	25	Standard
>	In	115	562095.0	2.1				ug/L	561862	Standard
	Sn	118	45868.0	0.8	**51.2397**	0.665	1.3	ug/L	69	Standard
	Sb	123	215212.3	1.1	**50.2789**	0.955	1.9	ug/L	2477	Standard
	Ba	135	86167.7	0.5	**50.5400**	1.184	2.3	ug/L	24	Standard
	Ce	140	68.3	29.6				ug/L	28	Standard
>	Tb	159	909980.8	0.9				ug/L	906794	Standard
	Ho	165	6.7	86.6				ug/L	8	Standard
	Tl	203	358595.0	0.7	**51.0527**	0.647	1.3	ug/L	108	Standard
	Tl	205	286167.5	1.4	**50.4952**	0.895	1.8	ug/L	112	Standard
	Pb	206	276524.6	0.1	**51.2338**	0.417	0.8	ug/L	315	Standard
	Pb	207	249395.5	0.2	**51.1207**	0.373	0.7	ug/L	265	Standard
	Pb	208	1121826.6	0.5	**51.0446**	0.349	0.7	ug/L	1278	Standard
	U	238	1085640.0	0.5	**53.2806**	0.447	0.8	ug/L	113	Standard
>	Bi	209	525969.3	0.9				ug/L	539503	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 13:50:01
Page 1

Approved: August 16, 2016

Na	23	1.7	**-4470932071167743881504439**9.656			173.2	mg/L	2	Standard
Mg	24	2838.6	6.7	**4.9805**	0.367	7.4	mg/L	40	Standard
K	39	1106.7	6.5	**4.8762**	0.323	6.6	mg/L	32	Standard
Ca	43	40.0	50.0	**-3.1081**	3.577	115.1	mg/L	40	Standard
Fe	54	5031.5	4.0	**4.8289**	0.195	4.0	mg/L	143	Standard
Fe	57	1660.1	8.0	**5.0964**	0.529	10.4	mg/L	270	Standard
Sc-1	45	26014.0	0.6				mg/L	24972	Standard
Cl	35	89047.8	3.4				ug/L	63562	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	3067.0	13.4				ug/L	1190	Standard
P	31	14690.5	2.0				ug/L	11274	Standard
S	34	3825.5	0.3				ug/L	2592	Standard
Sr	88	95.0	22.9				ug/L	70	Standard
C	12	90.0	38.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	19.0	2.5				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	8	Standard
Er	166	20.0	50.0				mg/L	10	Standard
I	127	23464.8	1.5				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.911		
Al	27	98.885		
Sc	45			
Ti	47	103.203		
V	51	100.680		
Cr	52	100.944		
Cr	53			
Mn	55	101.225		
Co	59	101.862		
Ni	60	102.180		
Cu	65	101.820		
Zn	66	102.690		
Ge	72		102.222	
As	75	100.990		
Se	82	101.573		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 13:50:01
Page 2

Approved: August 16, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	103.283		
Ag	107	101.968		
Cd	111	102.348		
Cd	114			
> In	115		100.041	
Sn	118	102.479		
Sb	123	100.558		
Ba	135	101.080		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.105		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.089		
U	238	106.561		
> Bi	209		97.491	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 13:50:01
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 15, 2016 13:50:56
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64925.5	2.2				ug/L	61110	Standard
	Be	9	26.7	60.3	**0.0283**	0.026	90.2	ug/L	17	Standard
	Al	27	1321.7	27.3	**0.0008**	0.003	428.4	ug/L	833	Standard
	Sc	45	25005.6	1.5				ug/L	24972	Standard
	Ti	47	46.3	16.5	**-0.0821**	0.043	52.7	ug/L	61	Standard
	V	51	1009.7	10.0	**-0.0238**	0.019	77.9	ug/L	947	Standard
	Cr	52	5531.7	0.9	**-0.0276**	0.016	57.6	ug/L	5189	Standard
	Cr	53	2248.5	2.3	**0.0825**	0.058	70.3	ug/L	2222	Standard
	Mn	55	1082.0	5.9	**0.0180**	0.007	40.0	ug/L	987	Standard
	Co	59	305.3	9.5	**0.0050**	0.004	82.8	ug/L	300	Standard
	Ni	60	144.7	12.9	**-0.0152**	0.013	82.7	ug/L	157	Standard
	Cu	65	163.7	12.2	**0.0364**	0.013	36.2	ug/L	132	Standard
	Zn	66	241.0	4.8	**0.0554**	0.013	23.6	ug/L	171	Standard
>	**Ge**	72	436582.1	0.7				ug/L	432355	Standard
	As	75	-55.5	73.2	**0.0107**	0.050	466.4	ug/L	-36	Standard
	Se	82	5.9	8.9	**0.1241**	0.009	7.1	ug/L	4	Standard
	Se-1	77	163.0	17.7	**0.1133**	0.501	442.4	ug/L	163	Standard
>	**Ga**	71	25.0	34.6				mg/L	30	Standard
	Rb	85	18.3	41.7				ug/L	22	Standard
	Y	89	375347.4	0.5				ug/L	382028	Standard
>	**Rh**	103	26.7	47.2				ug/L	8	Standard
	Mo	98	248.9	16.4	**0.0788**	0.019	24.3	ug/L	158	Standard
	Ag	107	118.0	2.2	**0.0065**	0.001	9.9	ug/L	108	Standard
	Cd	111	9.6	47.2	**0.0061**	0.003	45.6	mg/L	6	Standard
	Cd	114	26.4	53.7	**0.0038**	0.003	91.6	ug/L	25	Standard
>	**In**	115	554080.7	1.6				ug/L	561862	Standard
	Sn	118	135.7	25.4	**0.0802**	0.038	46.8	ug/L	69	Standard
	Sb	123	489.4	32.9	**0.0517**	0.037	72.3	ug/L	2477	Standard
	Ba	135	54.3	11.1	**0.0232**	0.003	14.8	ug/L	24	Standard
	Ce	140	6.7	43.3				ug/L	28	Standard
>	**Tb**	159	907782.5	2.6				ug/L	906794	Standard
	Ho	165	8.3	91.7				ug/L	8	Standard
	Tl	203	140.3	10.0	**0.0077**	0.002	24.3	ug/L	108	Standard
	Tl	205	115.0	23.0	**0.0054**	0.005	84.6	ug/L	112	Standard
	Pb	206	341.3	8.4	**0.0088**	0.005	54.9	ug/L	315	Standard
	Pb	207	308.7	8.1	**0.0119**	0.005	38.8	ug/L	265	Standard
	Pb	208	1380.0	4.6	**0.0073**	0.002	33.4	ug/L	1278	Standard
	U	238	199.0	19.4	**0.0044**	0.002	40.4	ug/L	113	Standard
>	**Bi**	209	533376.8	0.7				ug/L	539503	Standard

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 13:53:04
Page 1

Approved: August 16, 2016

Na	23	3.3	-9236829559715998658098396	0.840	173.2	mg/L	2	Standard
Mg	24	66.7	18.9	**0.0477**	0.022	47.1	mg/L	40	Standard
K	39	21.7	53.3	**-0.0260**	0.053	203.0	mg/L	32	Standard
Ca	43	43.3	46.6	**-2.1996**	3.738	169.9	mg/L	40	Standard
Fe	54	127.7	21.9	**0.0031**	0.027	856.7	mg/L	143	Standard
Fe	57	233.3	34.2	**-0.1630**	0.305	186.9	mg/L	270	Standard
> Sc-1	45	25005.6	1.5				mg/L	24972	Standard
Cl	35	86202.5	0.5				ug/L	63562	Standard
Kr	83	3.3	17.3				ug/L	3	Standard
Br	81	2133.5	4.5				ug/L	1190	Standard
P	31	14176.6	2.0				ug/L	11274	Standard
S	34	3650.4	7.4				ug/L	2592	Standard
Sr	88	81.7	9.4				ug/L	70	Standard
C	12	100.0	40.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.5	196.1				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	8	Standard
Er	166	23.3	89.2				mg/L	10	Standard
I	127	6213.0	11.3				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.978	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 13:53:04
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.615
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.864
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 13:53:04
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608033010
Sample Date/Time: Monday, August 15, 2016 13:54:00
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59478.3	3.7				ug/L	61110	Standard
	Be	9	30.0	60.1	**0.0382**	0.032	83.5	ug/L	17	Standard
	Al	27	499015.7	1.6	**5.4010**	0.197	3.7	ug/L	833	Standard
	Sc	45	22747.1	3.0				ug/L	24972	Standard
	Ti	47	40.0	23.8	**-0.1005**	0.061	60.3	ug/L	61	Standard
	V	51	910.2	10.2	**-0.0287**	0.018	62.8	ug/L	947	Standard
	Cr	52	5054.5	3.5	**-0.0423**	0.036	85.4	ug/L	5189	Standard
	Cr	53	2033.5	3.4	**-0.0014**	0.115	8205.2	ug/L	2222	Standard
	Mn	55	53952.2	1.5	**6.8497**	0.099	1.4	ug/L	987	Standard
	Co	59	279.0	8.4	**0.0044**	0.004	89.8	ug/L	300	Standard
	Ni	60	166.3	3.3	**0.0098**	0.004	41.0	ug/L	157	Standard
	Cu	65	139.7	1.8	**0.0275**	0.002	6.9	ug/L	132	Standard
	Zn	66	1287.7	1.8	**1.4106**	0.027	1.9	ug/L	171	Standard
>	**Ge**	72	404353.2	0.2				ug/L	432355	Standard
	As	75	-106.6	36.2	**-0.0617**	0.051	82.1	ug/L	-36	Standard
	Se	82	5.3	130.5	**0.1197**	0.127	106.4	ug/L	4	Standard
	Se-1	77	162.3	8.4	**0.3347**	0.269	80.4	ug/L	163	Standard
>	**Ga**	71	26.7	60.3				mg/L	30	Standard
	Rb	85	30066.5	1.6				ug/L	22	Standard
	Y	89	343703.7	1.7				ug/L	382028	Standard
>	**Rh**	103	18.3	31.5				ug/L	8	Standard
	Mo	98	59.3	28.5	**-0.0005**	0.008	1489.9	ug/L	158	Standard
	Ag	107	110.0	17.3	**0.0069**	0.004	61.7	ug/L	108	Standard
	Cd	111	12.5	58.7	**0.0085**	0.005	56.0	mg/L	6	Standard
	Cd	114	45.3	64.7	**0.0093**	0.008	81.9	ug/L	25	Standard
>	**In**	115	507564.4	0.7				ug/L	561862	Standard
	Sn	118	49.7	4.2	**-0.0119**	0.002	19.9	ug/L	69	Standard
	Sb	123	203.4	30.4	**-0.0116**	0.016	136.3	ug/L	2477	Standard
	Ba	135	404.0	13.1	**0.2532**	0.034	13.3	ug/L	24	Standard
	Ce	140	38.3	37.7				ug/L	28	Standard
>	**Tb**	159	833613.2	0.3				ug/L	906794	Standard
	Ho	165	11.7	49.5				ug/L	8	Standard
	Tl	203	147.3	17.0	**0.0099**	0.004	37.9	ug/L	108	Standard
	Tl	205	101.7	28.8	**0.0041**	0.005	132.1	ug/L	112	Standard
	Pb	206	346.3	6.9	**0.0134**	0.005	35.8	ug/L	315	Standard
	Pb	207	291.0	5.8	**0.0118**	0.004	33.0	ug/L	265	Standard
	Pb	208	1306.0	6.0	**0.0074**	0.004	51.6	ug/L	1278	Standard
	U	238	129.3	60.3	**0.0015**	0.004	275.7	ug/L	113	Standard
>	**Bi**	209	503842.8	1.0				ug/L	539503	Standard

Sample ID: L1608033010
Report Date/Time: Monday, August 15, 2016 13:56:07
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	531.7	3.6	**1.0085**	0.069	6.9	mg/L	40	Standard
K	39	196.7	14.9	**0.8925**	0.178	20.0	mg/L	32	Standard
Ca	43	50.0	45.8	**-0.1465**	4.306	2939.7	mg/L	40	Standard
Fe	54	86.0	35.3	**-0.0308**	0.034	110.3	mg/L	143	Standard
Fe	57	296.7	2.6	**0.1964**	0.048	24.6	mg/L	270	Standard
> **Sc-1**	45	22747.1	3.0				mg/L	24972	Standard
Cl	35	80175.6	1.6				ug/L	63562	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	2163.5	11.3				ug/L	1190	Standard
P	31	5115.9	2.6				ug/L	11274	Standard
S	34	3495.4	2.3				ug/L	2592	Standard
Sr	88	76.7	38.2				ug/L	70	Standard
C	12	46.7	61.9				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	93.2				mg/L	10	Standard
Ho-1	165	11.7	49.5				mg/L	8	Standard
Er	166	6.7	86.6				mg/L	10	Standard
I	127	6109.6	3.1				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.330	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.523	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608033010
Report Date/Time: Monday, August 15, 2016 13:56:07
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.336
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.390
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1608033010
Report Date/Time: Monday, August 15, 2016 13:56:07
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608033012
Sample Date/Time: Monday, August 15, 2016 13:57:02
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77358.7	0.6				ug/L	61110	Standard
	Be	9	30.0	72.6	**0.0259**	0.029	113.4	ug/L	17	Standard
	Al	27	52497128.9	2.1	**437.5445**	11.747	2.7	ug/L	833	Standard
	Sc	45	24528.2	2.8				ug/L	24972	Standard
	Ti	47	173.7	3.0	**0.7150**	0.033	4.6	ug/L	61	Standard
	V	51	1724.2	13.9	**0.1183**	0.041	34.3	ug/L	947	Standard
	Cr	52	11024.7	0.5	**1.1479**	0.038	3.3	ug/L	5189	Standard
	Cr	53	11227.5	6.8	**15.0852**	0.965	6.4	ug/L	2222	Standard
	Mn	55	185018.8	0.5	**22.9621**	0.492	2.1	ug/L	987	Standard
	Co	59	1260.1	12.3	**0.1598**	0.022	13.5	ug/L	300	Standard
	Ni	60	40508.1	0.7	**29.9979**	0.671	2.2	ug/L	157	Standard
	Cu	65	1326.7	2.6	**0.8877**	0.040	4.5	ug/L	132	Standard
	Zn	66	3678.4	1.4	**4.2969**	0.060	1.4	ug/L	171	Standard
>	**Ge**	72	418442.0	1.6				ug/L	432355	Standard
	As	75	431.0	24.0	**0.6260**	0.128	20.4	ug/L	-36	Standard
	Se	82	187.8	10.6	**3.3856**	0.359	10.6	ug/L	4	Standard
	Se-1	77	828.0	13.8	**12.6442**	1.923	15.2	ug/L	163	Standard
>	**Ga**	71	51.7	24.4				mg/L	30	Standard
	Rb	85	6644.8	2.1				ug/L	22	Standard
	Y	89	368469.4	2.0				ug/L	382028	Standard
>	**Rh**	103	325.0	9.6				ug/L	8	Standard
	Mo	98	5135.6	1.3	**2.2814**	0.037	1.6	ug/L	158	Standard
	Ag	107	136.3	28.3	**0.0117**	0.008	71.7	ug/L	108	Standard
	Cd	111	224.8	2.1	**0.1398**	0.002	1.7	mg/L	6	Standard
	Cd	114	648.0	1.9	**0.1595**	0.002	1.5	ug/L	25	Standard
>	**In**	115	529123.4	0.4				ug/L	561862	Standard
	Sn	118	138.7	6.5	**0.0913**	0.010	11.0	ug/L	69	Standard
	Sb	123	327.1	23.9	**0.0170**	0.019	112.6	ug/L	2477	Standard
	Ba	135	23537.9	0.8	**14.6552**	0.146	1.0	ug/L	24	Standard
	Ce	140	1233.4	1.0				ug/L	28	Standard
>	**Tb**	159	888936.1	0.7				ug/L	906794	Standard
	Ho	165	176.7	8.6				ug/L	8	Standard
	Tl	203	320.7	53.0	**0.0355**	0.025	69.5	ug/L	108	Standard
	Tl	205	241.7	61.0	**0.0298**	0.027	89.5	ug/L	112	Standard
	Pb	206	492.7	34.0	**0.0417**	0.031	75.2	ug/L	315	Standard
	Pb	207	439.7	37.4	**0.0435**	0.034	78.4	ug/L	265	Standard
	Pb	208	1995.4	35.1	**0.0401**	0.032	80.3	ug/L	1278	Standard
	U	238	17358.6	4.5	**0.8851**	0.030	3.4	ug/L	113	Standard
>	**Bi**	209	503206.6	1.3				ug/L	539503	Standard

Sample ID: L1608033012
Report Date/Time: Monday, August 15, 2016 13:59:10
Page 1

Approved: August 16, 2016

Na	23	11.7	**-332961253320272976738471406.750**			21.9	mg/L	2	Standard
Mg	24	61827.6	2.1	**116.7947**	5.420	4.6	mg/L	40	Standard
K	39	308.3	30.0	**1.3440**	0.399	29.7	mg/L	32	Standard
Ca	43	430.0	2.3	**70.8269**	1.945	2.7	mg/L	40	Standard
Fe	54	165.4	9.0	**0.0457**	0.020	44.6	mg/L	143	Standard
Fe	57	650.0	17.6	**1.4873**	0.375	25.2	mg/L	270	Standard
Sc-1	45	24528.2	2.8				mg/L	24972	Standard
Cl	35	230343.7	0.3				ug/L	63562	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	80795.2	4.7				ug/L	1190	Standard
P	31	21330.0	0.7				ug/L	11274	Standard
S	34	2957.0	4.4				ug/L	2592	Standard
Sr	88	1548.4	6.1				ug/L	70	Standard
C	12	230.0	28.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	169.6	41.9				mg/L	10	Standard
Ho-1	165	176.7	8.6				mg/L	8	Standard
Er	166	146.7	20.8				mg/L	10	Standard
I	127	134123.6	4.9				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		126.590	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.782	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1608033012
Report Date/Time: Monday, August 15, 2016 13:59:10
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.173
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.272
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608033014
Sample Date/Time: Monday, August 15, 2016 14:00:05
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77388.8	1.4				ug/L	61110	Standard
	Be	9	86.7	32.8	**0.1036**	0.040	38.4	ug/L	17	Standard
	Al	27	14780041.3	1.2	**123.1430**	3.105	2.5	ug/L	833	Standard
	Sc	45	25017.3	2.7				ug/L	24972	Standard
	Ti	47	188.3	12.2	**0.7906**	0.152	19.2	ug/L	61	Standard
	V	51	1241.2	26.1	**0.0241**	0.058	240.4	ug/L	947	Standard
	Cr	52	10158.4	0.7	**0.9417**	0.030	3.2	ug/L	5189	Standard
	Cr	53	11472.7	0.7	**15.2473**	0.295	1.9	ug/L	2222	Standard
	Mn	55	201081.9	0.4	**24.6228**	0.181	0.7	ug/L	987	Standard
	Co	59	2030.1	1.6	**0.2790**	0.009	3.1	ug/L	300	Standard
	Ni	60	17770.1	0.4	**12.9127**	0.105	0.8	ug/L	157	Standard
	Cu	65	955.0	6.2	**0.6075**	0.039	6.5	ug/L	132	Standard
	Zn	66	7342.4	1.8	**8.6818**	0.067	0.8	ug/L	171	Standard
>	**Ge**	72	424162.3	1.1				ug/L	432355	Standard
	As	75	673.9	7.8	**0.9245**	0.073	7.9	ug/L	-36	Standard
	Se	82	154.5	2.7	**2.7525**	0.099	3.6	ug/L	4	Standard
	Se-1	77	648.0	5.0	**9.1379**	0.587	6.4	ug/L	163	Standard
>	**Ga**	71	35.0	24.7				mg/L	30	Standard
	Rb	85	6031.2	4.8				ug/L	22	Standard
	Y	89	373206.5	1.9				ug/L	382028	Standard
>	**Rh**	103	86.7	31.8				ug/L	8	Standard
	Mo	98	107.2	11.7	**0.0191**	0.006	29.5	ug/L	158	Standard
	Ag	107	94.3	11.2	**0.0021**	0.002	111.8	ug/L	108	Standard
	Cd	111	388.2	2.8	**0.2371**	0.007	3.0	mg/L	6	Standard
	Cd	114	838.0	10.0	**0.2034**	0.021	10.3	ug/L	25	Standard
>	**In**	115	538363.8	0.2				ug/L	561862	Standard
	Sn	118	137.3	12.8	**0.0870**	0.021	24.0	ug/L	69	Standard
	Sb	123	232.7	32.4	**-0.0074**	0.019	252.2	ug/L	2477	Standard
	Ba	135	18307.1	1.1	**11.2003**	0.124	1.1	ug/L	24	Standard
	Ce	140	2081.8	5.7				ug/L	28	Standard
>	**Tb**	159	877961.0	0.5				ug/L	906794	Standard
	Ho	165	145.0	9.1				ug/L	8	Standard
	Tl	203	251.3	10.4	**0.0245**	0.004	14.5	ug/L	108	Standard
	Tl	205	230.0	7.8	**0.0268**	0.004	13.2	ug/L	112	Standard
	Pb	206	485.7	1.6	**0.0382**	0.002	5.0	ug/L	315	Standard
	Pb	207	397.7	7.4	**0.0326**	0.005	16.6	ug/L	265	Standard
	Pb	208	1895.4	0.8	**0.0333**	0.000	1.4	ug/L	1278	Standard
	U	238	765.7	7.7	**0.0331**	0.003	8.0	ug/L	113	Standard
>	**Bi**	209	515989.8	0.9				ug/L	539503	Standard

Sample ID: L1608033014
Report Date/Time: Monday, August 15, 2016 14:02:12
Page 1

Approved: August 16, 2016

Na	23	1.7	**-4808357658578**3283197656087.453			173.2	mg/L	2	Standard
Mg	24	32306.1	2.0	**59.7554**	0.725	1.2	mg/L	40	Standard
K	39	193.3	11.7	**0.7830**	0.120	15.3	mg/L	32	Standard
Ca	43	160.0	10.8	**19.3044**	2.594	13.4	mg/L	40	Standard
Fe	54	155.8	13.2	**0.0324**	0.025	75.9	mg/L	143	Standard
Fe	57	378.3	4.0	**0.3982**	0.098	24.6	mg/L	270	Standard
Sc-1	45	25017.3	2.7				mg/L	24972	Standard
Cl	35	140470.9	1.2				ug/L	63562	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	66104.2	5.3				ug/L	1190	Standard
P	31	24409.7	1.9				ug/L	11274	Standard
S	34	2678.6	1.0				ug/L	2592	Standard
Sr	88	436.7	25.4				ug/L	70	Standard
C	12	123.3	55.2				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	180.9	24.9				mg/L	10	Standard
Ho-1	165	145.0	9.1				mg/L	8	Standard
Er	166	120.0	14.4				mg/L	10	Standard
I	127	61936.4	1.6				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		126.639	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.105	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1608033014
Report Date/Time: Monday, August 15, 2016 14:02:12
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.818
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.642
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608033017
Sample Date/Time: Monday, August 15, 2016 14:03:07
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64371.5	1.6				ug/L	61110	Standard
	Be	9	10.0	100.0	**0.0015**	0.017	1087.2	ug/L	17	Standard
	Al	27	1454908.4	2.3	**14.5585**	0.159	1.1	ug/L	833	Standard
	Sc	45	22717.0	0.1				ug/L	24972	Standard
	Ti	47	40.0	6.6	**-0.1021**	0.021	20.3	ug/L	61	Standard
	V	51	2003.2	4.5	**0.1817**	0.017	9.6	ug/L	947	Standard
	Cr	52	7580.9	4.0	**0.4837**	0.077	15.9	ug/L	5189	Standard
	Cr	53	2193.5	1.3	**0.2469**	0.078	31.4	ug/L	2222	Standard
	Mn	55	57818.4	0.6	**7.2977**	0.159	2.2	ug/L	987	Standard
	Co	59	506.0	3.2	**0.0414**	0.002	5.3	ug/L	300	Standard
	Ni	60	459.3	2.2	**0.2328**	0.012	5.0	ug/L	157	Standard
	Cu	65	355.7	6.5	**0.1880**	0.014	7.2	ug/L	132	Standard
	Zn	66	1242.4	1.8	**1.3420**	0.033	2.5	ug/L	171	Standard
>	**Ge**	72	407224.0	1.5				ug/L	432355	Standard
	As	75	-38.9	62.1	**0.0280**	0.031	111.6	ug/L	-36	Standard
	Se	82	7.9	21.4	**0.1677**	0.030	17.7	ug/L	4	Standard
	Se-1	77	158.3	11.1	**0.2370**	0.350	147.6	ug/L	163	Standard
>	**Ga**	71	16.7	17.3				mg/L	30	Standard
	Rb	85	211.7	10.7				ug/L	22	Standard
	Y	89	345101.5	1.5				ug/L	382028	Standard
>	**Rh**	103	21.7	48.0				ug/L	8	Standard
	Mo	98	31.6	22.3	**-0.0136**	0.003	24.5	ug/L	158	Standard
	Ag	107	80.3	6.3	**-0.0000**	0.001	2321.7	ug/L	108	Standard
	Cd	111	26.3	5.8	**0.0172**	0.001	5.7	mg/L	6	Standard
	Cd	114	65.7	4.0	**0.0145**	0.001	6.0	ug/L	25	Standard
>	**In**	115	511489.7	1.3				ug/L	561862	Standard
	Sn	118	34.7	27.7	**-0.0307**	0.012	40.2	ug/L	69	Standard
	Sb	123	120.9	30.1	**-0.0332**	0.009	26.8	ug/L	2477	Standard
	Ba	135	212.7	2.4	**0.1280**	0.005	4.0	ug/L	24	Standard
	Ce	140	90.0	11.1				ug/L	28	Standard
>	**Tb**	159	844062.4	0.6				ug/L	906794	Standard
	Ho	165	18.3	68.6				ug/L	8	Standard
	Tl	203	111.0	7.9	**0.0043**	0.001	27.7	ug/L	108	Standard
	Tl	205	75.0	40.6	**-0.0009**	0.006	584.6	ug/L	112	Standard
	Pb	206	506.3	4.5	**0.0435**	0.004	9.7	ug/L	315	Standard
	Pb	207	440.7	4.6	**0.0430**	0.005	10.9	ug/L	265	Standard
	Pb	208	2036.7	0.7	**0.0413**	0.001	1.9	ug/L	1278	Standard
	U	238	71.7	28.7	**-0.0015**	0.001	67.5	ug/L	113	Standard
>	**Bi**	209	508316.2	0.5				ug/L	539503	Standard

Sample ID: L1608033017
Report Date/Time: Monday, August 15, 2016 14:05:15
Page 1

Approved: August 16, 2016

Na	23	1.7	**-5159514079988**9365405289088.859			173.2	mg/L	2	Standard
Mg	24	878.4	4.8	**1.7155**	0.086	5.0	mg/L	40	Standard
K	39	31.7	24.1	**0.0365**	0.040	108.7	mg/L	32	Standard
Ca	43	45.0	61.9	**-1.0598**	5.669	534.9	mg/L	40	Standard
Fe	54	71.0	29.1	**-0.0475**	0.023	48.9	mg/L	143	Standard
Fe	57	276.7	20.8	**0.1124**	0.245	217.7	mg/L	270	Standard
> **Sc-1**	45	22717.0	0.1				mg/L	24972	Standard
Cl	35	108541.1	3.8				ug/L	63562	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	4183.9	18.5				ug/L	1190	Standard
P	31	5200.9	2.0				ug/L	11274	Standard
S	34	2923.6	5.2				ug/L	2592	Standard
Sr	88	113.3	39.5				ug/L	70	Standard
C	12	96.7	21.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	108.8				mg/L	10	Standard
Ho-1	165	18.3	68.6				mg/L	8	Standard
Er	166	16.7	69.3				mg/L	10	Standard
I	127	6524.7	6.2				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.338	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.187	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608033017
Report Date/Time: Monday, August 15, 2016 14:05:15
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.035
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.219
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608033017PS WG579846-03
Sample Date/Time: Monday, August 15, 2016 14:06:10
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63698.7	2.9				ug/L	61110	Standard
	Be	9	32665.2	3.9	**54.1581**	0.622	1.1	ug/L	17	Standard
	Al	27	1393811.4	2.4	**14.0962**	0.097	0.7	ug/L	833	Standard
	Sc	45	22279.7	1.9				ug/L	24972	Standard
	Ti	47	45.3	28.7	**-0.0643**	0.088	137.5	ug/L	61	Standard
	V	51	261964.8	1.7	**51.0462**	0.828	1.6	ug/L	947	Standard
	Cr	52	251950.6	0.7	**52.6246**	0.647	1.2	ug/L	5189	Standard
	Cr	53	33071.1	0.2	**53.3669**	1.125	2.1	ug/L	2222	Standard
	Mn	55	460552.7	0.7	**59.5339**	0.695	1.2	ug/L	987	Standard
	Co	59	313798.7	1.5	**52.1594**	0.221	0.4	ug/L	300	Standard
	Ni	60	69853.4	2.1	**53.8047**	0.398	0.7	ug/L	157	Standard
	Cu	65	71977.6	1.1	**54.2927**	0.419	0.8	ug/L	132	Standard
	Zn	66	47959.1	1.7	**61.0486**	0.147	0.2	ug/L	171	Standard
>	Ge	72	402900.4	1.9				ug/L	432355	Standard
	As	75	42366.8	1.1	**56.0464**	0.631	1.1	ug/L	-36	Standard
	Se	82	3235.7	1.6	**60.2288**	1.498	2.5	ug/L	4	Standard
	Se-1	77	3262.4	2.4	**60.5169**	2.652	4.4	ug/L	163	Standard
>	Ga	71	18.3	41.7				mg/L	30	Standard
	Rb	85	211.7	8.9				ug/L	22	Standard
	Y	89	346112.3	1.2				ug/L	382028	Standard
>	Rh	103	31.7	24.1				ug/L	8	Standard
	Mo	98	58.2	28.4	**-0.0012**	0.008	637.2	ug/L	158	Standard
	Ag	107	234009.3	0.8	**53.5672**	0.690	1.3	ug/L	108	Standard
	Cd	111	87811.6	0.3	**56.3646**	0.290	0.5	mg/L	6	Standard
	Cd	114	210281.1	1.1	**54.3768**	0.807	1.5	ug/L	25	Standard
>	In	115	511522.7	0.5				ug/L	561862	Standard
	Sn	118	56.7	6.2	**-0.0038**	0.004	106.0	ug/L	69	Standard
	Sb	123	180555.1	5.0	**46.3454**	2.536	5.5	ug/L	2477	Standard
	Ba	135	82510.7	0.2	**53.1645**	0.322	0.6	ug/L	24	Standard
	Ce	140	100.0	10.0				ug/L	28	Standard
>	Tb	159	837446.1	1.1				ug/L	906794	Standard
	Ho	165	13.3	57.3				ug/L	8	Standard
	Tl	203	357624.0	0.5	**52.8442**	0.381	0.7	ug/L	108	Standard
	Tl	205	285455.6	0.0	**52.2782**	0.233	0.4	ug/L	112	Standard
	Pb	206	281660.7	0.9	**54.1674**	0.648	1.2	ug/L	315	Standard
	Pb	207	244149.9	1.1	**51.9425**	0.467	0.9	ug/L	265	Standard
	Pb	208	1119906.7	0.6	**52.8912**	0.322	0.6	ug/L	1278	Standard
	U	238	996466.7	2.8	**50.7603**	1.534	3.0	ug/L	113	Standard
>	Bi	209	506743.1	0.5				ug/L	539503	Standard

Sample ID: L1608033017PS WG579846-03
Report Date/Time: Monday, August 15, 2016 14:08:18
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	893.4	4.7	**1.7813**	0.057	3.2	mg/L	40	Standard
K	39	41.7	25.0	**0.0920**	0.052	56.7	mg/L	32	Standard
Ca	43	48.3	48.9	**-0.2128**	4.849	2278.7	mg/L	40	Standard
Fe	54	42.5	14.9	**-0.0786**	0.007	8.9	mg/L	143	Standard
Fe	57	293.3	6.9	**0.2069**	0.064	30.9	mg/L	270	Standard
> **Sc-1**	45	22279.7	1.9				mg/L	24972	Standard
Cl	35	111794.3	0.8				ug/L	63562	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	2760.3	9.2				ug/L	1190	Standard
P	31	5130.9	1.9				ug/L	11274	Standard
S	34	3182.0	2.6				ug/L	2592	Standard
Sr	88	91.7	15.7				ug/L	70	Standard
C	12	56.7	27.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	122.2				mg/L	10	Standard
Ho-1	165	13.3	57.3				mg/L	8	Standard
Er	166	20.0	50.0				mg/L	10	Standard
I	127	5134.2	1.8				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.237	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.187	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608033017PS WG579846-03
Report Date/Time: Monday, August 15, 2016 14:08:18
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.041
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.928
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608033017SDL WG579846-04
Sample Date/Time: Monday, August 15, 2016 14:09:12
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62102.2	4.6				ug/L	61110	Standard
	Be	9	16.7	17.3	**0.0133**	0.004	26.3	ug/L	17	Standard
	Al	27	283456.9	0.3	**2.9346**	0.138	4.7	ug/L	833	Standard
	Sc	45	22656.9	2.0				ug/L	24972	Standard
	Ti	47	37.0	16.9	**-0.1199**	0.039	32.6	ug/L	61	Standard
	V	51	2278.7	5.0	**0.2377**	0.022	9.2	ug/L	947	Standard
	Cr	52	7921.1	0.9	**0.5656**	0.018	3.2	ug/L	5189	Standard
	Cr	53	1836.8	2.3	**-0.3404**	0.084	24.6	ug/L	2222	Standard
	Mn	55	12185.2	1.3	**1.4596**	0.013	0.9	ug/L	987	Standard
	Co	59	349.7	12.0	**0.0161**	0.007	41.4	ug/L	300	Standard
	Ni	60	209.7	4.4	**0.0430**	0.006	15.0	ug/L	157	Standard
	Cu	65	172.3	18.8	**0.0519**	0.024	45.7	ug/L	132	Standard
	Zn	66	955.7	1.1	**0.9870**	0.010	1.0	ug/L	171	Standard
>	**Ge**	72	404670.6	0.5				ug/L	432355	Standard
	As	75	-34.7	53.8	**0.0329**	0.025	74.9	ug/L	-36	Standard
	Se	82	5.1	39.9	**0.1160**	0.037	31.9	ug/L	4	Standard
	Se-1	77	122.3	4.1	**-0.4408**	0.091	20.7	ug/L	163	Standard
>	**Ga**	71	25.0	72.1				mg/L	30	Standard
	Rb	85	55.0	18.2				ug/L	22	Standard
	Y	89	343254.0	2.1				ug/L	382028	Standard
>	**Rh**	103	11.7	89.2				ug/L	8	Standard
	Mo	98	33.0	29.9	**-0.0130**	0.005	35.9	ug/L	158	Standard
	Ag	107	155.3	3.0	**0.0170**	0.001	5.6	ug/L	108	Standard
	Cd	111	25.6	48.8	**0.0168**	0.008	47.9	mg/L	6	Standard
	Cd	114	57.4	50.5	**0.0123**	0.007	60.6	ug/L	25	Standard
>	**In**	115	512809.7	0.5				ug/L	561862	Standard
	Sn	118	35.3	37.7	**-0.0301**	0.016	53.4	ug/L	69	Standard
	Sb	123	1471.8	32.0	**0.3131**	0.121	38.7	ug/L	2477	Standard
	Ba	135	96.0	18.0	**0.0526**	0.011	21.3	ug/L	24	Standard
	Ce	140	20.0	50.0				ug/L	28	Standard
>	**Tb**	159	846884.2	1.4				ug/L	906794	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	232.0	2.3	**0.0219**	0.001	2.7	ug/L	108	Standard
	Tl	205	166.7	18.3	**0.0156**	0.005	34.6	ug/L	112	Standard
	Pb	206	387.7	5.5	**0.0203**	0.004	18.3	ug/L	315	Standard
	Pb	207	340.0	5.9	**0.0211**	0.004	18.1	ug/L	265	Standard
	Pb	208	1542.0	4.7	**0.0175**	0.003	18.3	ug/L	1278	Standard
	U	238	261.7	19.5	**0.0080**	0.003	32.0	ug/L	113	Standard
>	**Bi**	209	511602.8	0.6				ug/L	539503	Standard

Sample ID: L1608033017SDL WG579846-04
Report Date/Time: Monday, August 15, 2016 14:11:20
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	190.0	5.3	**0.3130**	0.024	7.8	mg/L	40	Standard
K	39	45.0	22.2	**0.1069**	0.057	53.1	mg/L	32	Standard
Ca	43	35.0	28.6	**-3.0946**	1.970	63.7	mg/L	40	Standard
Fe	54	49.1	37.4	**-0.0720**	0.020	28.5	mg/L	143	Standard
Fe	57	286.7	21.1	**0.1572**	0.250	159.3	mg/L	270	Standard
> **Sc-1**	45	22656.9	2.0				mg/L	24972	Standard
Cl	35	110678.1	0.4				ug/L	63562	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	1743.4	4.6				ug/L	1190	Standard
P	31	4975.8	2.2				ug/L	11274	Standard
S	34	3278.7	4.2				ug/L	2592	Standard
Sr	88	96.7	6.0				ug/L	70	Standard
C	12	83.3	25.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	194.2				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	8	Standard
Er	166	13.3	114.6				mg/L	10	Standard
I	127	4619.0	5.0				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.624	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.597	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608033017SDL WG579846-04
Report Date/Time: Monday, August 15, 2016 14:11:20
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.270
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.828
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608033017SDL WG579846-04
Sample Date/Time: Monday, August 15, 2016 14:12:15
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 2500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60835.3	2.7				ug/L	61110	Standard
	Be	9	21.7	48.0	**0.0226**	0.018	78.2	ug/L	17	Standard
	Al	27	59491.6	1.4	**0.6185**	0.021	3.5	ug/L	833	Standard
	Sc	45	22084.4	2.4				ug/L	24972	Standard
	Ti	47	28.3	19.4	**-0.1708**	0.036	21.2	ug/L	61	Standard
	V	51	2232.3	1.1	**0.2388**	0.007	3.0	ug/L	947	Standard
	Cr	52	7712.6	1.9	**0.5593**	0.037	6.7	ug/L	5189	Standard
	Cr	53	1658.4	1.1	**-0.5799**	0.047	8.1	ug/L	2222	Standard
	Mn	55	2829.9	1.1	**0.2620**	0.007	2.6	ug/L	987	Standard
	Co	59	280.3	5.4	**0.0057**	0.003	49.6	ug/L	300	Standard
	Ni	60	152.0	6.7	**0.0013**	0.008	569.2	ug/L	157	Standard
	Cu	65	93.3	8.2	**-0.0058**	0.006	107.6	ug/L	132	Standard
	Zn	66	771.4	7.2	**0.7753**	0.072	9.3	ug/L	171	Standard
>	**Ge**	72	395514.6	0.8				ug/L	432355	Standard
	As	75	-62.1	26.3	**-0.0049**	0.022	442.8	ug/L	-36	Standard
	Se	82	1.4	232.2	**0.0486**	0.061	126.1	ug/L	4	Standard
	Se-1	77	119.3	13.3	**-0.4451**	0.315	70.8	ug/L	163	Standard
>	**Ga**	71	18.3	15.7				mg/L	30	Standard
	Rb	85	13.3	43.3				ug/L	22	Standard
	Y	89	338293.9	1.7				ug/L	382028	Standard
>	**Rh**	103	10.0	50.0				ug/L	8	Standard
	Mo	98	34.6	43.1	**-0.0121**	0.007	59.3	ug/L	158	Standard
	Ag	107	103.3	8.1	**0.0054**	0.002	37.9	ug/L	108	Standard
	Cd	111	11.3	59.0	**0.0077**	0.004	57.0	mg/L	6	Standard
	Cd	114	42.5	13.8	**0.0086**	0.001	17.3	ug/L	25	Standard
>	**In**	115	507224.2	0.8				ug/L	561862	Standard
	Sn	118	32.3	15.9	**-0.0333**	0.007	20.1	ug/L	69	Standard
	Sb	123	653.7	37.5	**0.1055**	0.065	61.3	ug/L	2477	Standard
	Ba	135	44.7	48.2	**0.0200**	0.014	71.5	ug/L	24	Standard
	Ce	140	13.3	94.4				ug/L	28	Standard
>	**Tb**	159	832379.8	1.9				ug/L	906794	Standard
	Ho	165	13.3	21.7				ug/L	8	Standard
	Tl	203	84.3	30.9	**0.0005**	0.004	791.7	ug/L	108	Standard
	Tl	205	91.7	16.7	**0.0022**	0.003	126.7	ug/L	112	Standard
	Pb	206	305.7	1.5	**0.0053**	0.000	4.2	ug/L	315	Standard
	Pb	207	280.7	8.2	**0.0093**	0.005	54.2	ug/L	265	Standard
	Pb	208	1230.0	5.1	**0.0036**	0.003	87.1	ug/L	1278	Standard
	U	238	114.0	55.1	**0.0006**	0.003	507.9	ug/L	113	Standard
>	**Bi**	209	505830.6	1.2				ug/L	539503	Standard

Sample ID: L1608033017SDL WG579846-04
Report Date/Time: Monday, August 15, 2016 14:14:23
Page 1

Approved: August 16, 2016

Na	23	1.7	-521357484904	90301765276033.375		173.2	mg/L	2	Standard
Mg	24	75.0	17.6	**0.0818**	0.028	34.8	mg/L	40	Standard
K	39	46.7	34.4	**0.1225**	0.093	75.6	mg/L	32	Standard
Ca	43	51.7	36.6	**0.6136**	4.005	652.7	mg/L	40	Standard
Fe	54	42.1	47.8	**-0.0789**	0.023	28.7	mg/L	143	Standard
Fe	57	300.0	9.3	**0.2502**	0.150	59.9	mg/L	270	Standard
Sc-1	45	22084.4	2.4				mg/L	24972	Standard
Cl	35	110299.4	0.5				ug/L	63562	Standard
Kr	83	3.3	75.5				ug/L	3	Standard
Br	81	1493.4	2.2				ug/L	1190	Standard
P	31	5112.5	2.0				ug/L	11274	Standard
S	34	3305.4	2.0				ug/L	2592	Standard
Sr	88	86.7	24.0				ug/L	70	Standard
C	12	76.7	45.8				mg/L	90	Standard
N	14	6.7	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	107.3				mg/L	10	Standard
Ho-1	165	13.3	21.7				mg/L	8	Standard
Er	166	13.3	114.6				mg/L	10	Standard
I	127	4404.0	4.4				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		99.551	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.479	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1608033017SDL WG579846-04
Report Date/Time: Monday, August 15, 2016 14:14:23
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.276
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.759
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 15, 2016 14:15:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63881.1	1.0				ug/L	61110	Standard
	Be	9	31061.8	2.4	**51.3654**	1.367	2.7	ug/L	17	Standard
	Al	27	4873263.8	1.1	**49.1728**	0.682	1.4	ug/L	833	Standard
	Sc	45	24486.4	1.2				ug/L	24972	Standard
	Ti	47	17282.5	1.0	**104.1916**	3.496	3.4	ug/L	61	Standard
	V	51	273711.2	0.6	**50.3758**	1.053	2.1	ug/L	947	Standard
	Cr	52	257818.4	0.3	**50.8270**	1.133	2.2	ug/L	5189	Standard
	Cr	53	33627.3	2.4	**51.1322**	2.532	5.0	ug/L	2222	Standard
	Mn	55	413603.6	1.0	**50.4892**	1.525	3.0	ug/L	987	Standard
	Co	59	325470.9	1.1	**51.1076**	1.451	2.8	ug/L	300	Standard
	Ni	60	69993.7	2.4	**50.9251**	1.647	3.2	ug/L	157	Standard
	Cu	65	71206.6	2.2	**50.7292**	1.481	2.9	ug/L	132	Standard
	Zn	66	42933.8	1.4	**51.5988**	1.659	3.2	ug/L	171	Standard
>	Ge	72	426639.9	2.4				ug/L	432355	Standard
	As	75	40419.7	0.1	**50.5168**	1.206	2.4	ug/L	-36	Standard
	Se	82	2910.4	1.0	**51.1783**	1.740	3.4	ug/L	4	Standard
	Se-1	77	2972.3	4.0	**51.6350**	0.873	1.7	ug/L	163	Standard
>	Ga	71	35.0	37.8				mg/L	30	Standard
	Rb	85	598.3	17.9				ug/L	22	Standard
	Y	89	374112.8	1.2				ug/L	382028	Standard
>	Rh	103	16.7	45.8				ug/L	8	Standard
	Mo	98	241535.9	0.7	**105.2318**	0.576	0.5	ug/L	158	Standard
	Ag	107	239397.6	1.2	**51.3309**	0.030	0.1	ug/L	108	Standard
	Cd	111	85753.0	1.7	**51.5581**	0.268	0.5	mg/L	6	Standard
	Cd	114	212760.1	2.0	**51.5330**	0.591	1.1	ug/L	25	Standard
>	In	115	546071.4	1.2				ug/L	561862	Standard
	Sn	118	44496.6	1.9	**51.1544**	0.343	0.7	ug/L	69	Standard
	Sb	123	212504.9	1.4	**51.0924**	0.155	0.3	ug/L	2477	Standard
	Ba	135	83427.4	0.9	**50.3556**	0.538	1.1	ug/L	24	Standard
	Ce	140	71.7	24.5				ug/L	28	Standard
>	Tb	159	891616.3	1.8				ug/L	906794	Standard
	Ho	165	6.7	114.6				ug/L	8	Standard
	Tl	203	356366.1	1.0	**50.4985**	0.802	1.6	ug/L	108	Standard
	Tl	205	290762.1	1.5	**51.0627**	0.658	1.3	ug/L	112	Standard
	Pb	206	275684.2	0.9	**50.8397**	0.736	1.4	ug/L	315	Standard
	Pb	207	249839.5	0.9	**50.9735**	0.775	1.5	ug/L	265	Standard
	Pb	208	1122801.1	1.0	**50.8517**	0.799	1.6	ug/L	1278	Standard
	U	238	1102845.2	0.7	**53.8730**	0.684	1.3	ug/L	113	Standard
>	Bi	209	528435.3	0.6				ug/L	539503	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 14:17:27
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	2856.9	5.5	**5.3296**	0.300	5.6	mg/L	40	Standard
K	39	1018.4	4.5	**4.7656**	0.262	5.5	mg/L	32	Standard
Ca	43	61.7	18.7	**1.4237**	2.201	154.6	mg/L	40	Standard
Fe	54	5046.2	0.7	**5.1536**	0.030	0.6	mg/L	143	Standard
Fe	57	1605.1	3.9	**5.2640**	0.316	6.0	mg/L	270	Standard
> **Sc-1**	45	24486.4	1.2				mg/L	24972	Standard
Cl	35	100398.7	4.6				ug/L	63562	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	1593.4	7.3				ug/L	1190	Standard
P	31	15227.6	1.6				ug/L	11274	Standard
S	34	4065.5	4.4				ug/L	2592	Standard
Sr	88	88.3	13.1				ug/L	70	Standard
C	12	76.7	37.7				mg/L	90	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.2	100.9				mg/L	10	Standard
Ho-1	165	6.7	114.6				mg/L	8	Standard
Er	166	16.7	91.7				mg/L	10	Standard
I	127	15973.4	2.1				mg/L	2345	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.731		
	Al	27	98.346		
	Sc	45			
	Ti	47	104.192		
	V	51	100.752		
	Cr	52	101.654		
	Cr	53			
	Mn	55	100.978		
	Co	59	102.215		
	Ni	60	101.850		
	Cu	65	101.458		
	Zn	66	103.198		
>	Ge	72		98.678	
	As	75	101.034		
	Se	82	102.357		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 14:17:27
Page 2

Approved: August 16, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	105.232		
Ag	107	102.662		
Cd	111	103.116		
Cd	114			
In	115			97.190
Sn	118	102.309		
Sb	123	102.185		
Ba	135	100.711		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.997		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.703		
U	238	107.746		
Bi	209			97.948
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 15, 2016 14:18:21
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63256.8	2.1				ug/L	61110	Standard
	Be	9	20.0	43.3	**0.0183**	0.014	75.2	ug/L	17	Standard
	Al	27	2521.9	36.5	**0.0133**	0.009	66.7	ug/L	833	Standard
	Sc	45	23955.6	2.6				ug/L	24972	Standard
	Ti	47	37.3	12.1	**-0.1275**	0.029	22.9	ug/L	61	Standard
	V	51	1348.5	9.4	**0.0459**	0.027	59.1	ug/L	947	Standard
	Cr	52	5931.2	0.8	**0.0908**	0.024	26.9	ug/L	5189	Standard
	Cr	53	1658.4	4.2	**-0.7626**	0.149	19.5	ug/L	2222	Standard
	Mn	55	1058.7	5.8	**0.0195**	0.008	42.8	ug/L	987	Standard
	Co	59	297.3	4.5	**0.0054**	0.002	38.1	ug/L	300	Standard
	Ni	60	174.7	6.7	**0.0104**	0.007	67.0	ug/L	157	Standard
	Cu	65	143.7	4.6	**0.0259**	0.004	15.2	ug/L	132	Standard
	Zn	66	241.0	1.4	**0.0651**	0.006	9.7	ug/L	171	Standard
>	**Ge**	72	422247.2	1.4				ug/L	432355	Standard
	As	75	-56.5	81.2	**0.0079**	0.057	719.9	ug/L	-36	Standard
	Se	82	4.4	102.2	**0.1001**	0.080	79.6	ug/L	4	Standard
	Se-1	77	110.7	7.9	**-0.7535**	0.184	24.4	ug/L	163	Standard
>	**Ga**	71	25.0	40.0				mg/L	30	Standard
	Rb	85	8.3	124.9				ug/L	22	Standard
	Y	89	368348.7	0.3				ug/L	382028	Standard
>	**Rh**	103	20.0	25.0				ug/L	8	Standard
	Mo	98	246.0	22.8	**0.0788**	0.024	29.9	ug/L	158	Standard
	Ag	107	132.7	19.3	**0.0100**	0.005	53.5	ug/L	108	Standard
	Cd	111	15.6	31.5	**0.0097**	0.003	29.5	mg/L	6	Standard
	Cd	114	57.8	26.5	**0.0115**	0.004	31.4	ug/L	25	Standard
>	**In**	115	545775.8	0.9				ug/L	561862	Standard
	Sn	118	142.7	31.4	**0.0912**	0.053	58.0	ug/L	69	Standard
	Sb	123	829.2	34.1	**0.1359**	0.070	51.5	ug/L	2477	Standard
	Ba	135	53.7	39.8	**0.0232**	0.013	54.4	ug/L	24	Standard
	Ce	140	20.0	0.0				ug/L	28	Standard
>	**Tb**	159	882249.1	1.0				ug/L	906794	Standard
	Ho	165	11.7	49.5				ug/L	8	Standard
	Tl	203	121.7	24.9	**0.0051**	0.004	86.4	ug/L	108	Standard
	Tl	205	90.0	38.9	**0.0011**	0.006	581.1	ug/L	112	Standard
	Pb	206	357.7	2.0	**0.0118**	0.001	8.0	ug/L	315	Standard
	Pb	207	338.0	6.4	**0.0178**	0.005	25.9	ug/L	265	Standard
	Pb	208	1484.0	4.5	**0.0120**	0.003	27.4	ug/L	1278	Standard
	U	238	324.7	13.5	**0.0105**	0.002	21.5	ug/L	113	Standard
>	**Bi**	209	533330.8	1.0				ug/L	539503	Standard

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 14:20:29
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	38.5	**0.0109**	0.032	293.9	mg/L	40	Standard
K	39	23.3	12.4	**-0.0129**	0.014	111.8	mg/L	32	Standard
Ca	43	36.7	31.5	**-3.1098**	2.409	77.5	mg/L	40	Standard
Fe	54	124.6	18.4	**0.0057**	0.024	418.8	mg/L	143	Standard
Fe	57	203.3	13.5	**-0.2443**	0.104	42.4	mg/L	270	Standard
> **Sc-1**	45	23955.6	2.6				mg/L	24972	Standard
Cl	35	97516.8	1.3				ug/L	63562	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	1513.4	4.8				ug/L	1190	Standard
P	31	13599.4	3.8				ug/L	11274	Standard
S	34	3672.1	3.0				ug/L	2592	Standard
Sr	88	78.3	13.3				ug/L	70	Standard
C	12	46.7	65.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	8.9	118.0				mg/L	10	Standard
Ho-1	165	11.7	49.5				mg/L	8	Standard
Er	166	23.3	49.5				mg/L	10	Standard
I	127	2985.3	3.3				mg/L	2345	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.662	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 14:20:29
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.856
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 14:20:29
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Monday, August 15, 2016 14:21:26
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55202.6	33.0				ug/L	61110	Standard
	Be	9	16.7	91.7	**0.0120**	0.024	195.9	ug/L	17	Standard
	Al	27	921.7	27.8	**-0.0007**	0.005	800.0	ug/L	833	Standard
	Sc	45	21642.3	42.0				ug/L	24972	Standard
	Ti	47	32.3	6.4	**-0.1332**	0.076	57.3	ug/L	61	Standard
	V	51	666.4	40.3	**-0.0720**	0.043	59.8	ug/L	947	Standard
	Cr	52	3274.0	27.7	**-0.4035**	0.123	30.6	ug/L	5189	Standard
	Cr	53	1325.1	12.1	**-1.0671**	0.707	66.2	ug/L	2222	Standard
	Mn	55	1170.7	52.4	**0.0365**	0.049	135.3	ug/L	987	Standard
	Co	59	488.0	46.1	**0.0379**	0.021	55.4	ug/L	300	Standard
	Ni	60	299.0	65.8	**0.1005**	0.106	105.1	ug/L	157	Standard
	Cu	65	189.7	69.9	**0.0563**	0.072	127.2	ug/L	132	Standard
	Zn	66	589.7	82.9	**0.4761**	0.478	100.4	ug/L	171	Standard
>	**Ge**	72	406298.4	33.8				ug/L	432355	Standard
	As	75	18.0	133.6	**0.1113**	0.046	41.8	ug/L	-36	Standard
	Se	82	2.2	164.3	**0.0556**	0.053	95.8	ug/L	4	Standard
	Se-1	77	101.3	18.5	**-0.7542**	0.458	60.8	ug/L	163	Standard
>	**Ga**	71	21.7	58.1				mg/L	30	Standard
	Rb	85	16.7	75.5				ug/L	22	Standard
	Y	89	358110.2	52.8				ug/L	382028	Standard
>	**Rh**	103	8.3	34.6				ug/L	8	Standard
	Mo	98	82.3	48.4	**0.0104**	0.002	14.7	ug/L	158	Standard
	Ag	107	264.7	65.4	**0.0396**	0.028	70.0	ug/L	108	Standard
	Cd	111	45.9	67.9	**0.0288**	0.015	51.7	mg/L	6	Standard
	Cd	114	103.6	67.0	**0.0241**	0.014	56.7	ug/L	25	Standard
>	**In**	115	506961.0	49.8				ug/L	561862	Standard
	Sn	118	54.0	43.8	**-0.0024**	0.020	839.6	ug/L	69	Standard
	Sb	123	292.4	71.6	**0.0073**	0.042	571.6	ug/L	2477	Standard
	Ba	135	150.3	90.5	**0.0874**	0.077	87.5	ug/L	24	Standard
	Ce	140	6.7	43.3				ug/L	28	Standard
>	**Tb**	159	769562.8	43.5				ug/L	906794	Standard
	Ho	165	8.3	69.3				ug/L	8	Standard
	Tl	203	190.3	19.7	**0.0278**	0.027	96.5	ug/L	108	Standard
	Tl	205	121.7	19.4	**0.0158**	0.020	124.3	ug/L	112	Standard
	Pb	206	409.0	48.9	**0.0350**	0.024	68.7	ug/L	315	Standard
	Pb	207	350.0	39.2	**0.0357**	0.015	41.4	ug/L	265	Standard
	Pb	208	1625.0	43.7	**0.0331**	0.019	57.5	ug/L	1278	Standard
	U	238	921.0	103.0	**0.0458**	0.049	106.0	ug/L	113	Standard
>	**Bi**	209	453901.4	47.2				ug/L	539503	Standard

Sample ID: QC Std 8
Report Date/Time: Monday, August 15, 2016 14:23:33
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	23.3	81.1	**-0.0299**	0.020	65.9	mg/L	40	Standard
K	39	26.7	28.6	**0.0512**	0.134	261.0	mg/L	32	Standard
Ca	43	33.3	8.7	**-2.2666**	3.005	132.6	mg/L	40	Standard
Fe	54	72.6	31.4	**-0.0356**	0.029	80.0	mg/L	143	Standard
Fe	57	278.3	22.7	**0.4021**	0.800	198.9	mg/L	270	Standard
> **Sc-1**	45	21642.3	42.0				mg/L	24972	Standard
Cl	35	43252.7	16.1				ug/L	63562	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	653.3	35.1				ug/L	1190	Standard
P	31	7123.6	52.5				ug/L	11274	Standard
S	34	1321.7	17.8				ug/L	2592	Standard
Sr	88	75.0	23.1				ug/L	70	Standard
C	12	36.7	41.7				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.2	229.6				mg/L	10	Standard
Ho-1	165	8.3	69.3				mg/L	8	Standard
Er	166	23.3	65.5				mg/L	10	Standard
I	127	1916.8	39.9				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	6.016		
Al	27			
Sc	45			
Ti	47			
V	51	-18.002		
Cr	52	-50.441		
Cr	53			
Mn	55	7.297		
Co	59	9.483		
Ni	60	6.280		
Cu	65	7.034		
Zn	66	7.618		
> Ge	72		93.973	
As	75	27.819		
Se	82	13.897		
Se-1	77			
> Ga	71			

Sample ID: QC Std 8
Report Date/Time: Monday, August 15, 2016 14:23:33
Page 2

Approved: August 16, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	9.903		
Cd	111	11.996		
Cd	114			
> In	115			90.229
Sn	118			
Sb	123	1.826		
Ba	135	11.659		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	34.724		
Tl	205			
Pb	206			
Pb	207			
Pb	208	16.574		
U	238	11.447		
> Bi	209			84.133
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Be	9	
QC Std 8	V	51	
QC Std 8	Cr	52	

Sample ID: QC Std 8
Report Date/Time: Monday, August 15, 2016 14:23:33
Page 3

Approved: August 16, 2016

QC Std 8	Mn	55
QC Std 8	Co	59
QC Std 8	Ni	60
QC Std 8	Cu	65
QC Std 8	Zn	66
QC Std 8	As	75
QC Std 8	Se	82
QC Std 8	Ag	107
QC Std 8	Cd	111
QC Std 8	Sb	123
QC Std 8	Ba	135
QC Std 8	Tl	203
QC Std 8	Pb	208
QC Std 8	U	238

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Monday, August 15, 2016 14:28:33
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61782.4	2.5				ug/L	61110	Standard
	Be	9	126.7	8.2	**0.2021**	0.023	11.3	ug/L	17	Standard
	Al	27	2191.9	74.7	**0.0104**	0.016	158.6	ug/L	833	Standard
	Sc	45	24242.7	2.4				ug/L	24972	Standard
	Ti	47	27.7	14.6	**-0.1847**	0.026	13.9	ug/L	61	Standard
	V	51	3590.7	9.6	**0.4714**	0.062	13.1	ug/L	947	Standard
	Cr	52	10594.4	1.3	**1.0635**	0.019	1.8	ug/L	5189	Standard
	Cr	53	2115.1	3.8	**0.0241**	0.143	594.4	ug/L	2222	Standard
	Mn	55	4815.4	1.9	**0.4903**	0.008	1.6	ug/L	987	Standard
	Co	59	2707.2	0.3	**0.3927**	0.003	0.7	ug/L	300	Standard
	Ni	60	2326.8	2.8	**1.6147**	0.040	2.5	ug/L	157	Standard
	Cu	65	1201.7	3.4	**0.7981**	0.027	3.4	ug/L	132	Standard
	Zn	66	5314.3	1.5	**6.3222**	0.085	1.3	ug/L	171	Standard
>	**Ge**	72	417591.5	0.5				ug/L	432355	Standard
	As	75	254.8	13.7	**0.4032**	0.043	10.7	ug/L	-36	Standard
	Se	82	24.8	20.8	**0.4675**	0.091	19.5	ug/L	4	Standard
	Se-1	77	135.3	1.1	**-0.2705**	0.025	9.1	ug/L	163	Standard
>	**Ga**	71	20.0	86.6				mg/L	30	Standard
	Rb	85	5.0	0.0				ug/L	22	Standard
	Y	89	361681.2	0.9				ug/L	382028	Standard
>	**Rh**	103	10.0	132.3				ug/L	8	Standard
	Mo	98	52.1	29.4	**-0.0050**	0.007	140.2	ug/L	158	Standard
	Ag	107	1943.5	0.4	**0.4083**	0.005	1.3	ug/L	108	Standard
	Cd	111	428.6	2.0	**0.2642**	0.006	2.2	mg/L	6	Standard
	Cd	114	1081.0	17.0	**0.2658**	0.048	18.0	ug/L	25	Standard
>	**In**	115	533449.9	0.8				ug/L	561862	Standard
	Sn	118	88.7	4.3	**0.0311**	0.004	13.3	ug/L	69	Standard
	Sb	123	1915.6	1.0	**0.4079**	0.008	2.0	ug/L	2477	Standard
	Ba	135	1325.7	13.1	**0.8107**	0.115	14.2	ug/L	24	Standard
	Ce	140	6.7	114.6				ug/L	28	Standard
>	**Tb**	159	879411.7	1.2				ug/L	906794	Standard
	Ho	165	11.7	65.5				ug/L	8	Standard
	Tl	203	676.7	14.9	**0.0837**	0.014	17.1	ug/L	108	Standard
	Tl	205	480.0	9.9	**0.0695**	0.009	12.5	ug/L	112	Standard
	Pb	206	1466.7	5.6	**0.2166**	0.015	7.0	ug/L	315	Standard
	Pb	207	1222.7	4.7	**0.1986**	0.011	5.8	ug/L	265	Standard
	Pb	208	5722.8	5.6	**0.2042**	0.014	6.8	ug/L	1278	Standard
	U	238	8675.2	3.0	**0.4177**	0.012	2.9	ug/L	113	Standard
>	**Bi**	209	529518.8	0.5				ug/L	539503	Standard

Sample ID: QC Std 8
Report Date/Time: Monday, August 15, 2016 14:30:41
Page 1

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: PBW 3A WG580044-03
Sample Date/Time: Monday, August 15, 2016 14:40:32
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61261.9	1.3				ug/L	61110	Standard
	Be	9	10.0	86.6	**0.0023**	0.015	642.3	ug/L	17	Standard
	Al	27	2375.2	7.5	**0.0127**	0.002	16.2	ug/L	833	Standard
	Sc	45	23710.2	2.2				ug/L	24972	Standard
	Ti	47	34.3	20.7	**-0.1431**	0.049	34.6	ug/L	61	Standard
	V	51	1703.6	10.9	**0.1156**	0.043	37.0	ug/L	947	Standard
	Cr	52	7242.1	1.6	**0.3723**	0.053	14.1	ug/L	5189	Standard
	Cr	53	1476.7	6.5	**-1.0349**	0.225	21.7	ug/L	2222	Standard
	Mn	55	1002.0	3.2	**0.0137**	0.005	34.8	ug/L	987	Standard
	Co	59	246.7	3.4	**-0.0023**	0.002	93.0	ug/L	300	Standard
	Ni	60	161.7	1.4	**0.0021**	0.001	67.3	ug/L	157	Standard
	Cu	65	113.0	8.5	**0.0048**	0.009	194.5	ug/L	132	Standard
	Zn	66	483.7	26.4	**0.3695**	0.174	47.1	ug/L	171	Standard
>	**Ge**	72	418257.2	2.6				ug/L	432355	Standard
	As	75	-54.0	81.8	**0.0093**	0.057	615.3	ug/L	-36	Standard
	Se	82	-1.3	451.1	**-0.0031**	0.108	3500.0	ug/L	4	Standard
	Se-1	77	101.0	13.6	**-0.9118**	0.298	32.7	ug/L	163	Standard
>	**Ga**	71	20.0	25.0				mg/L	30	Standard
	Rb	85	33.3	37.7				ug/L	22	Standard
	Y	89	360108.1	3.8				ug/L	382028	Standard
>	**Rh**	103	10.0	86.6				ug/L	8	Standard
	Mo	98	25.3	12.3	**-0.0170**	0.001	7.4	ug/L	158	Standard
	Ag	107	79.0	9.9	**-0.0011**	0.002	198.7	ug/L	108	Standard
	Cd	111	4.6	33.1	**0.0032**	0.001	31.0	mg/L	6	Standard
	Cd	114	21.5	13.9	**0.0028**	0.001	29.2	ug/L	25	Standard
>	**In**	115	533389.5	2.2				ug/L	561862	Standard
	Sn	118	69.0	7.7	**0.0079**	0.006	80.9	ug/L	69	Standard
	Sb	123	126.7	33.8	**-0.0331**	0.010	30.0	ug/L	2477	Standard
	Ba	135	27.7	18.5	**0.0080**	0.003	41.9	ug/L	24	Standard
	Ce	140	26.7	60.3				ug/L	28	Standard
>	**Tb**	159	872336.3	1.1				ug/L	906794	Standard
	Ho	165	8.3	91.7				ug/L	8	Standard
	Tl	203	18.7	30.9	**-0.0093**	0.001	8.6	ug/L	108	Standard
	Tl	205	30.0	60.1	**-0.0093**	0.003	32.9	ug/L	112	Standard
	Pb	206	317.7	4.6	**0.0058**	0.004	67.3	ug/L	315	Standard
	Pb	207	265.0	6.8	**0.0043**	0.004	96.3	ug/L	265	Standard
	Pb	208	1208.0	3.6	**0.0008**	0.002	213.3	ug/L	1278	Standard
	U	238	31.0	19.4	**-0.0036**	0.000	8.3	ug/L	113	Standard
>	**Bi**	209	521776.6	2.1				ug/L	539503	Standard

Sample ID: PBW 3A WG580044-03
Report Date/Time: Monday, August 15, 2016 14:42:39
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	28.3	27.0	**-0.0203**	0.015	73.3	mg/L	40	Standard
K	39	20.0	25.0	**-0.0279**	0.027	97.0	mg/L	32	Standard
Ca	43	31.7	32.9	**-4.0309**	2.069	51.3	mg/L	40	Standard
Fe	54	112.3	13.4	**-0.0061**	0.015	252.8	mg/L	143	Standard
Fe	57	298.3	10.1	**0.1513**	0.117	77.4	mg/L	270	Standard
> **Sc-1**	45	23710.2	2.2				mg/L	24972	Standard
Cl	35	103719.8	1.0				ug/L	63562	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1243.4	15.2				ug/L	1190	Standard
P	31	11827.9	1.4				ug/L	11274	Standard
S	34	3532.1	5.1				ug/L	2592	Standard
Sr	88	63.3	40.5				ug/L	70	Standard
C	12	80.0	33.1				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	105.8				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	8	Standard
Er	166	6.7	86.6				mg/L	10	Standard
I	127	2903.6	2.3				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.249	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.739	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 3A WG580044-03
Report Date/Time: Monday, August 15, 2016 14:42:39
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.932
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.714
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 3A WG580044-03
Report Date/Time: Monday, August 15, 2016 14:42:39
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: LCSW 3A WG580044-04
Sample Date/Time: Monday, August 15, 2016 14:43:34
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63718.9	4.7				ug/L	61110	Standard
	Be	9	33151.2	2.9	**54.9869**	0.967	1.8	ug/L	17	Standard
	Al	27	11612.8	6.9	**0.1051**	0.003	2.5	ug/L	833	Standard
	Sc	45	24391.3	1.2				ug/L	24972	Standard
	Ti	47	36.0	7.3	**-0.1405**	0.015	10.9	ug/L	61	Standard
	V	51	287700.8	1.8	**52.3404**	0.999	1.9	ug/L	947	Standard
	Cr	52	273957.4	1.2	**53.4320**	0.622	1.2	ug/L	5189	Standard
	Cr	53	34307.1	2.5	**51.5660**	1.485	2.9	ug/L	2222	Standard
	Mn	55	442856.2	1.4	**53.4281**	0.786	1.5	ug/L	987	Standard
	Co	59	341261.5	0.6	**52.9579**	0.433	0.8	ug/L	300	Standard
	Ni	60	74854.1	0.6	**53.8300**	0.185	0.3	ug/L	157	Standard
	Cu	65	76798.5	0.4	**54.0791**	0.367	0.7	ug/L	132	Standard
	Zn	66	45815.5	1.3	**54.4237**	0.742	1.4	ug/L	171	Standard
>	Ge	72	431544.7	0.2				ug/L	432355	Standard
	As	75	41105.6	0.8	**50.7699**	0.372	0.7	ug/L	-36	Standard
	Se	82	3081.5	0.5	**53.5404**	0.358	0.7	ug/L	4	Standard
	Se-1	77	3062.0	0.8	**52.6552**	0.556	1.1	ug/L	163	Standard
>	Ga	71	36.7	34.3				mg/L	30	Standard
	Rb	85	38.3	27.2				ug/L	22	Standard
	Y	89	367553.6	1.4				ug/L	382028	Standard
>	Rh	103	30.0	60.1				ug/L	8	Standard
	Mo	98	48.1	8.3	**-0.0071**	0.002	25.9	ug/L	158	Standard
	Ag	107	254590.3	1.1	**55.1995**	0.385	0.7	ug/L	108	Standard
	Cd	111	90226.1	0.8	**54.8581**	0.619	1.1	mg/L	6	Standard
	Cd	114	214945.8	2.0	**52.6441**	0.780	1.5	ug/L	25	Standard
>	In	115	540030.1	0.5				ug/L	561862	Standard
	Sn	118	134.0	2.7	**0.0826**	0.004	5.1	ug/L	69	Standard
	Sb	123	218067.2	0.6	**53.0207**	0.491	0.9	ug/L	2477	Standard
	Ba	135	88410.9	0.9	**53.9595**	0.601	1.1	ug/L	24	Standard
	Ce	140	53.3	51.6				ug/L	28	Standard
>	Tb	159	886638.7	0.6				ug/L	906794	Standard
	Ho	165	3.3	173.2				ug/L	8	Standard
	Tl	203	379715.0	0.8	**53.4308**	0.513	1.0	ug/L	108	Standard
	Tl	205	306513.0	1.3	**53.4592**	1.028	1.9	ug/L	112	Standard
	Pb	206	301177.6	1.4	**55.1542**	0.484	0.9	ug/L	315	Standard
	Pb	207	259860.2	1.6	**52.6474**	0.827	1.6	ug/L	265	Standard
	Pb	208	1196982.9	1.4	**53.8328**	0.579	1.1	ug/L	1278	Standard
	U	238	1129356.4	1.1	**54.7807**	0.415	0.8	ug/L	113	Standard
>	Bi	209	532145.3	0.8				ug/L	539503	Standard

Sample ID: LCSW 3A WG580044-04
Report Date/Time: Monday, August 15, 2016 14:45:42
Page 1

Approved: August 16, 2016

Na	23	1.7	**-486639651986**84288460221902.828			173.2	mg/L	2	Standard
Mg	24	45.0	40.1	**0.0101**	0.035	351.8	mg/L	40	Standard
K	39	33.3	31.2	**0.0331**	0.049	147.9	mg/L	32	Standard
Ca	43	40.0	37.5	**-2.6337**	2.845	108.0	mg/L	40	Standard
Fe	54	133.7	24.6	**0.0128**	0.033	260.3	mg/L	143	Standard
Fe	57	283.3	10.3	**0.0573**	0.103	180.1	mg/L	270	Standard
> **Sc-1**	45	24391.3	1.2				mg/L	24972	Standard
Cl	35	103050.0	1.6				ug/L	63562	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1260.1	10.4				ug/L	1190	Standard
P	31	13611.1	2.9				ug/L	11274	Standard
S	34	3613.8	4.4				ug/L	2592	Standard
Sr	88	66.7	26.3				ug/L	70	Standard
C	12	70.0	37.8				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.3	114.6				mg/L	10	Standard
Ho-1	165	3.3	173.2				mg/L	8	Standard
Er	166	0.0					mg/L	10	Standard
I	127	2693.6	4.8				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.270	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.813	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 3A WG580044-04
Report Date/Time: Monday, August 15, 2016 14:45:42
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.114
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.636
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 3A WG580044-04
Report Date/Time: Monday, August 15, 2016 14:45:42
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: F BLANK WG580044-05
Sample Date/Time: Monday, August 15, 2016 14:46:37
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61918.0	2.1				ug/L	61110	Standard
	Be	9	20.0	25.0	**0.0193**	0.009	47.9	ug/L	17	Standard
	Al	27	9386.3	10.5	**0.0855**	0.010	12.1	ug/L	833	Standard
	Sc	45	24705.1	1.3				ug/L	24972	Standard
	Ti	47	39.7	8.9	**-0.1167**	0.022	18.8	ug/L	61	Standard
	V	51	1642.6	8.4	**0.0964**	0.028	28.8	ug/L	947	Standard
	Cr	52	9206.8	1.9	**0.7317**	0.071	9.8	ug/L	5189	Standard
	Cr	53	1806.8	7.1	**-0.5608**	0.236	42.0	ug/L	2222	Standard
	Mn	55	3379.7	1.3	**0.3004**	0.004	1.5	ug/L	987	Standard
	Co	59	299.0	15.4	**0.0049**	0.006	130.2	ug/L	300	Standard
	Ni	60	315.3	5.4	**0.1110**	0.017	14.9	ug/L	157	Standard
	Cu	65	155.3	6.8	**0.0329**	0.009	28.2	ug/L	132	Standard
	Zn	66	1335.7	1.1	**1.3773**	0.047	3.4	ug/L	171	Standard
>	**Ge**	72	428300.8	2.0				ug/L	432355	Standard
	As	75	-36.9	116.0	**0.0321**	0.054	167.3	ug/L	-36	Standard
	Se	82	5.0	49.9	**0.1103**	0.044	40.2	ug/L	4	Standard
	Se-1	77	107.0	7.4	**-0.8522**	0.105	12.3	ug/L	163	Standard
>	**Ga**	71	11.7	65.5				mg/L	30	Standard
	Rb	85	46.7	64.6				ug/L	22	Standard
	Y	89	370271.6	0.9				ug/L	382028	Standard
>	**Rh**	103	10.0	50.0				ug/L	8	Standard
	Mo	98	54.1	11.4	**-0.0044**	0.003	60.9	ug/L	158	Standard
	Ag	107	126.3	34.6	**0.0090**	0.010	105.9	ug/L	108	Standard
	Cd	111	24.6	79.9	**0.0153**	0.012	78.1	mg/L	6	Standard
	Cd	114	48.1	61.6	**0.0093**	0.007	78.4	ug/L	25	Standard
>	**In**	115	539780.9	0.1				ug/L	561862	Standard
	Sn	118	133.0	11.6	**0.0815**	0.018	21.8	ug/L	69	Standard
	Sb	123	2164.9	34.0	**0.4629**	0.179	38.6	ug/L	2477	Standard
	Ba	135	100.7	21.6	**0.0524**	0.013	25.5	ug/L	24	Standard
	Ce	140	53.3	65.8				ug/L	28	Standard
>	**Tb**	159	884252.6	0.9				ug/L	906794	Standard
	Ho	165	8.3	124.9				ug/L	8	Standard
	Tl	203	149.0	26.2	**0.0091**	0.006	62.6	ug/L	108	Standard
	Tl	205	151.7	29.7	**0.0120**	0.008	67.3	ug/L	112	Standard
	Pb	206	402.3	8.3	**0.0206**	0.006	31.1	ug/L	315	Standard
	Pb	207	321.7	15.2	**0.0151**	0.011	70.2	ug/L	265	Standard
	Pb	208	1555.4	10.9	**0.0158**	0.008	52.4	ug/L	1278	Standard
	U	238	264.0	50.3	**0.0077**	0.007	85.9	ug/L	113	Standard
>	**Bi**	209	528965.2	1.4				ug/L	539503	Standard

Sample ID: F BLANK WG580044-05
Report Date/Time: Monday, August 15, 2016 14:48:45
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	25.0	**-0.0005**	0.019	3729.8	mg/L	40	Standard
K	39	33.3	8.7	**0.0312**	0.013	42.3	mg/L	32	Standard
Ca	43	20.0	43.3	**-6.4630**	1.656	25.6	mg/L	40	Standard
Fe	54	132.2	5.6	**0.0097**	0.009	96.5	mg/L	143	Standard
Fe	57	273.3	16.5	**0.0037**	0.164	4433.8	mg/L	270	Standard
> **Sc-1**	45	24705.1	1.3				mg/L	24972	Standard
Cl	35	103428.5	0.8				ug/L	63562	Standard
Kr	83	3.7	56.8				ug/L	3	Standard
Br	81	1260.1	2.1				ug/L	1190	Standard
P	31	13746.2	2.2				ug/L	11274	Standard
S	34	3568.8	2.6				ug/L	2592	Standard
Sr	88	65.0	7.7				ug/L	70	Standard
C	12	66.7	60.6				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	19.0	51.3				mg/L	10	Standard
Ho-1	165	8.3	124.9				mg/L	8	Standard
Er	166	20.0	50.0				mg/L	10	Standard
I	127	4047.2	9.9				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.323	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.062	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: F BLANK WG580044-05
Report Date/Time: Monday, August 15, 2016 14:48:45
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.070
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.047
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608054401 WG580044-01
Sample Date/Time: Monday, August 15, 2016 14:49:39
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68312.1	2.9				ug/L	61110	Standard
	Be	9	15.0	57.7	**0.0085**	0.014	162.1	ug/L	17	Standard
	Al	27	8694962.8	0.8	**82.0940**	2.488	3.0	ug/L	833	Standard
	Sc	45	23528.3	4.6				ug/L	24972	Standard
	Ti	47	104.3	22.8	**0.3288**	0.161	49.1	ug/L	61	Standard
	V	51	-1795.8	48.5	**-0.5666**	0.177	31.3	ug/L	947	Standard
	Cr	52	18610.1	0.2	**2.9453**	0.051	1.7	ug/L	5189	Standard
	Cr	53	34544.6	9.2	**57.2965**	6.018	10.5	ug/L	2222	Standard
	Mn	55	32777.4	1.3	**4.2318**	0.032	0.7	ug/L	987	Standard
	Co	59	5323.9	2.7	**0.8646**	0.031	3.6	ug/L	300	Standard
	Ni	60	14669.4	1.0	**11.4696**	0.052	0.5	ug/L	157	Standard
	Cu	65	346820.7	0.8	**267.9827**	1.748	0.7	ug/L	132	Standard
	Zn	66	2021.1	7.3	**2.4130**	0.177	7.3	ug/L	171	Standard
>	**Ge**	72	393739.1	1.1				ug/L	432355	Standard
	As	75	1266.6	11.9	**1.7897**	0.193	10.8	ug/L	-36	Standard
	Se	82	405.6	5.4	**7.7459**	0.492	6.3	ug/L	4	Standard
	Se-1	77	2459.2	8.7	**46.0350**	4.598	10.0	ug/L	163	Standard
>	**Ga**	71	421.7	11.9				mg/L	30	Standard
	Rb	85	282344.8	0.4				ug/L	22	Standard
	Y	89	347620.3	2.1				ug/L	382028	Standard
>	**Rh**	103	176.7	18.2				ug/L	8	Standard
	Mo	98	3060.9	0.3	**1.4370**	0.022	1.5	ug/L	158	Standard
	Ag	107	253.0	12.1	**0.0411**	0.006	15.5	ug/L	108	Standard
	Cd	111	15.6	13.4	**0.0107**	0.001	14.0	mg/L	6	Standard
	Cd	114	58.2	28.1	**0.0129**	0.004	32.1	ug/L	25	Standard
>	**In**	115	497175.3	1.5				ug/L	561862	Standard
	Sn	118	190.0	11.6	**0.1670**	0.029	17.5	ug/L	69	Standard
	Sb	123	3174.9	8.4	**0.7748**	0.061	7.9	ug/L	2477	Standard
	Ba	135	88339.8	1.6	**58.5648**	0.640	1.1	ug/L	24	Standard
	Ce	140	95.0	21.1				ug/L	28	Standard
>	**Tb**	159	849528.8	0.6				ug/L	906794	Standard
	Ho	165	11.7	24.7				ug/L	8	Standard
	Tl	203	140.0	8.1	**0.0105**	0.002	17.1	ug/L	108	Standard
	Tl	205	116.7	24.4	**0.0086**	0.006	65.5	ug/L	112	Standard
	Pb	206	488.0	2.0	**0.0487**	0.002	3.4	ug/L	315	Standard
	Pb	207	403.0	3.3	**0.0429**	0.002	5.4	ug/L	265	Standard
	Pb	208	1918.0	4.4	**0.0441**	0.003	7.7	ug/L	1278	Standard
	U	238	159.3	22.7	**0.0037**	0.002	57.1	ug/L	113	Standard
>	**Bi**	209	465327.6	1.0				ug/L	539503	Standard

Sample ID: L1608054401 WG580044-01
Report Date/Time: Monday, August 15, 2016 14:51:47
Page 1

Approved: August 16, 2016

Na	23	13.3	**-412804535899**481110371188105.940			116.5	mg/L	2	Standard
Mg	24	231944.1	2.3	**457.5366**	31.030	6.8	mg/L	40	Standard
K	39	12952.2	2.5	**64.7283**	3.915	6.0	mg/L	32	Standard
Ca	43	731.7	6.3	**133.6661**	10.435	7.8	mg/L	40	Standard
Fe	54	159.8	7.1	**0.0465**	0.007	15.5	mg/L	143	Standard
Fe	57	985.0	13.1	**2.9750**	0.480	16.1	mg/L	270	Standard
> **Sc-1**	45	23528.3	4.6				mg/L	24972	Standard
Cl	35	255084.1	0.8				ug/L	63562	Standard
Kr	83	2.7	57.3				ug/L	3	Standard
Br	81	193954.0	2.6				ug/L	1190	Standard
P	31	14331.8	1.9				ug/L	11274	Standard
S	34	3993.9	4.5				ug/L	2592	Standard
Sr	88	415.0	3.2				ug/L	70	Standard
C	12	230.0	28.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	0	Standard
Dy	164	15.9	132.2				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	8	Standard
Er	166	16.7	69.3				mg/L	10	Standard
I	127	1413493.7	7.2				mg/L	2345	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		111.786	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		91.068	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1608054401 WG580044-01
Report Date/Time: Monday, August 15, 2016 14:51:47
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	88.487	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	86.251	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Cu 65 Upper, S, EEE	Cu	65	

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608054401S WG580044-07
Sample Date/Time: Monday, August 15, 2016 14:52:42
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68961.6	2.0				ug/L	61110	Standard
	Be	9	33426.8	1.8	**51.2037**	0.630	1.2	ug/L	17	Standard
	Al	27	8923065.6	1.6	**83.4213**	1.593	1.9	ug/L	833	Standard
	Sc	45	24488.1	0.4				ug/L	24972	Standard
	Ti	47	109.3	22.0	**0.3509**	0.156	44.4	ug/L	61	Standard
	V	51	279533.6	0.5	**54.9919**	0.376	0.7	ug/L	947	Standard
	Cr	52	269678.9	0.8	**56.9387**	0.544	1.0	ug/L	5189	Standard
	Cr	53	64175.7	1.8	**107.8490**	2.160	2.0	ug/L	2222	Standard
	Mn	55	445196.3	1.3	**58.0783**	0.711	1.2	ug/L	987	Standard
	Co	59	322303.9	1.1	**54.0755**	0.543	1.0	ug/L	300	Standard
	Ni	60	82592.2	0.9	**64.2380**	0.519	0.8	ug/L	157	Standard
	Cu	65	421875.7	0.5	**321.5642**	1.789	0.6	ug/L	132	Standard
	Zn	66	43739.0	1.2	**56.1802**	0.619	1.1	ug/L	171	Standard
>	**Ge**	72	399149.2	0.2				ug/L	432355	Standard
	As	75	44460.4	0.5	**59.3572**	0.274	0.5	ug/L	-36	Standard
	Se	82	3409.6	0.9	**64.0445**	0.532	0.8	ug/L	4	Standard
	Se-1	77	5135.2	1.6	**97.7513**	1.463	1.5	ug/L	163	Standard
>	**Ga**	71	415.0	18.8				mg/L	30	Standard
	Rb	85	288740.6	1.3				ug/L	22	Standard
	Y	89	357807.2	0.3				ug/L	382028	Standard
>	**Rh**	103	183.3	16.0				ug/L	8	Standard
	Mo	98	3084.9	2.1	**1.4258**	0.031	2.2	ug/L	158	Standard
	Ag	107	224182.8	1.1	**51.9974**	0.865	1.7	ug/L	108	Standard
	Cd	111	82676.4	0.9	**53.7729**	0.795	1.5	mg/L	6	Standard
	Cd	114	200313.4	0.8	**52.4844**	0.635	1.2	ug/L	25	Standard
>	**In**	115	504842.8	0.6				ug/L	561862	Standard
	Sn	118	207.0	1.3	**0.1844**	0.005	2.4	ug/L	69	Standard
	Sb	123	221273.1	0.2	**57.5550**	0.261	0.5	ug/L	2477	Standard
	Ba	135	174068.5	0.2	**113.6532**	0.732	0.6	ug/L	24	Standard
	Ce	140	113.3	15.5				ug/L	28	Standard
>	**Tb**	159	849631.5	1.7				ug/L	906794	Standard
	Ho	165	8.3	91.7				ug/L	8	Standard
	Tl	203	345973.2	0.6	**55.2173**	0.455	0.8	ug/L	108	Standard
	Tl	205	281200.6	1.1	**55.6303**	1.223	2.2	ug/L	112	Standard
	Pb	206	275566.7	0.3	**57.2431**	0.613	1.1	ug/L	315	Standard
	Pb	207	237143.4	0.4	**54.5003**	0.935	1.7	ug/L	265	Standard
	Pb	208	1094915.2	0.3	**55.8572**	0.631	1.1	ug/L	1278	Standard
	U	238	1099705.2	0.8	**60.5029**	0.381	0.6	ug/L	113	Standard
>	**Bi**	209	469197.6	1.4				ug/L	539503	Standard

Sample ID: L1608054401S WG580044-07
Report Date/Time: Monday, August 15, 2016 14:54:50
Page 1

Approved: August 16, 2016

Na	23	10.0	**-2877131889742**87969005209612.940			100.1	mg/L	2	Standard
Mg	24	231589.9	0.5	**438.0406**	3.567	0.8	mg/L	40	Standard
K	39	13229.1	2.6	**63.4139**	1.781	2.8	mg/L	32	Standard
Ca	43	713.4	8.1	**124.3858**	10.342	8.3	mg/L	40	Standard
Fe	54	179.6	33.9	**0.0603**	0.063	104.7	mg/L	143	Standard
Fe	57	991.7	4.5	**2.8451**	0.191	6.7	mg/L	270	Standard
> **Sc-1**	45	24488.1	0.4				mg/L	24972	Standard
Cl	35	253783.9	1.0				ug/L	63562	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	176943.9	0.2				ug/L	1190	Standard
P	31	14954.0	2.3				ug/L	11274	Standard
S	34	3697.1	3.6				ug/L	2592	Standard
Sr	88	363.3	10.5				ug/L	70	Standard
C	12	213.3	2.7				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	22.7	53.9				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	8	Standard
Er	166	13.3	114.6				mg/L	10	Standard
I	127	1170375.4	4.9				mg/L	2345	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		112.849	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		92.320	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1608054401S WG580044-07
Report Date/Time: Monday, August 15, 2016 14:54:50
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.852
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.968
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 53 Upper, S, EEE	Cr	53	
Cu 65 Upper, S, EEE	Cu	65	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1608054401S WG580044-07
Report Date/Time: Monday, August 15, 2016 14:54:50
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608054401SD WG580044-08
Sample Date/Time: Monday, August 15, 2016 14:55:44
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71824.9	3.0				ug/L	61110	Standard
	Be	9	33991.4	1.2	**50.0191**	1.643	3.3	ug/L	17	Standard
	Al	27	8865719.3	1.6	**79.6213**	2.999	3.8	ug/L	833	Standard
	Sc	45	24019.0	2.6				ug/L	24972	Standard
	Ti	47	95.3	14.0	**0.2624**	0.090	34.2	ug/L	61	Standard
	V	51	277980.3	0.9	**54.8358**	0.874	1.6	ug/L	947	Standard
	Cr	52	266174.9	1.3	**56.3416**	1.068	1.9	ug/L	5189	Standard
	Cr	53	60815.2	2.7	**102.3112**	3.425	3.3	ug/L	2222	Standard
	Mn	55	441709.4	0.1	**57.7790**	0.325	0.6	ug/L	987	Standard
	Co	59	317384.4	0.3	**53.3940**	0.380	0.7	ug/L	300	Standard
	Ni	60	81603.8	0.3	**63.6400**	0.325	0.5	ug/L	157	Standard
	Cu	65	419948.6	1.1	**320.9524**	2.811	0.9	ug/L	132	Standard
	Zn	66	44602.3	3.2	**57.4418**	1.454	2.5	ug/L	171	Standard
>	Ge	72	398082.5	0.7				ug/L	432355	Standard
	As	75	44654.7	0.8	**59.7757**	0.148	0.2	ug/L	-36	Standard
	Se	82	3605.5	0.3	**67.9078**	0.556	0.8	ug/L	4	Standard
	Se-1	77	5056.2	0.4	**96.4722**	0.324	0.3	ug/L	163	Standard
>	Ga	71	390.0	5.6				mg/L	30	Standard
	Rb	85	284620.2	0.8				ug/L	22	Standard
	Y	89	352819.0	0.6				ug/L	382028	Standard
>	Rh	103	180.0	9.6				ug/L	8	Standard
	Mo	98	3069.2	3.0	**1.4259**	0.034	2.3	ug/L	158	Standard
	Ag	107	221206.7	0.1	**51.5752**	0.380	0.7	ug/L	108	Standard
	Cd	111	81287.4	0.5	**53.1454**	0.315	0.6	mg/L	6	Standard
	Cd	114	194702.6	1.2	**51.2796**	0.312	0.6	ug/L	25	Standard
>	In	115	502202.3	0.7				ug/L	561862	Standard
	Sn	118	207.0	5.9	**0.1858**	0.016	8.4	ug/L	69	Standard
	Sb	123	217999.9	1.1	**56.9998**	0.430	0.8	ug/L	2477	Standard
	Ba	135	171725.7	0.5	**112.7133**	0.888	0.8	ug/L	24	Standard
	Ce	140	125.0	32.7				ug/L	28	Standard
>	Tb	159	849867.5	0.8				ug/L	906794	Standard
	Ho	165	11.7	65.5				ug/L	8	Standard
	Tl	203	344768.9	0.7	**55.0972**	0.547	1.0	ug/L	108	Standard
	Tl	205	276793.9	0.9	**54.8243**	0.659	1.2	ug/L	112	Standard
	Pb	206	273764.2	0.6	**56.9417**	0.525	0.9	ug/L	315	Standard
	Pb	207	235369.1	0.5	**54.1587**	0.429	0.8	ug/L	265	Standard
	Pb	208	1086525.5	0.2	**55.4999**	0.394	0.7	ug/L	1278	Standard
	U	238	1083877.5	0.3	**59.7113**	0.443	0.7	ug/L	113	Standard
>	Bi	209	468559.6	0.5				ug/L	539503	Standard

Sample ID: L1608054401SD WG580044-08
Report Date/Time: Monday, August 15, 2016 14:57:52
Page 1

Approved: August 16, 2016

Na	23	11.7	**-344470149060**	230264407791662.720		66.8	mg/L	2	Standard
Mg	24	230608.4	0.1	**444.8923**	11.521	2.6	mg/L	40	Standard
K	39	12651.9	0.7	**61.8586**	1.935	3.1	mg/L	32	Standard
Ca	43	788.4	6.4	**141.5619**	10.977	7.8	mg/L	40	Standard
Fe	54	156.5	25.0	**0.0402**	0.045	112.7	mg/L	143	Standard
Fe	57	1010.0	3.0	**2.9984**	0.223	7.4	mg/L	270	Standard
> **Sc-1**	45	24019.0	2.6				mg/L	24972	Standard
Cl	35	246258.5	0.6				ug/L	63562	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	272747.5	2.7				ug/L	1190	Standard
P	31	14326.8	1.4				ug/L	11274	Standard
S	34	3600.4	7.6				ug/L	2592	Standard
Sr	88	418.3	9.3				ug/L	70	Standard
C	12	300.0	20.8				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	0	Standard
Dy	164	19.7	102.8				mg/L	10	Standard
Ho-1	165	11.7	65.5				mg/L	8	Standard
Er	166	6.7	86.6				mg/L	10	Standard
I	127	1862466.1	3.1				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.534	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.073	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608054401SD WG580044-08
Report Date/Time: Monday, August 15, 2016 14:57:52
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	89.382	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	86.850	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 53 Upper, S, EEE	Cr	53	
Cu 65 Upper, S, EEE	Cu	65	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1608054401SD WG580044-08
Report Date/Time: Monday, August 15, 2016 14:57:52
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608046001
Sample Date/Time: Monday, August 15, 2016 14:58:47
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69541.1	4.2				ug/L	61110	Standard
	Be	9	55.0	24.1	**0.0682**	0.017	25.5	ug/L	17	Standard
	Al	27	394523.4	4.4	**3.6459**	0.099	2.7	ug/L	833	Standard
	Sc	45	24892.1	6.1				ug/L	24972	Standard
	Ti	47	652.3	7.7	**3.5430**	0.232	6.6	ug/L	61	Standard
	V	51	6861.1	6.7	**1.0471**	0.068	6.5	ug/L	947	Standard
	Cr	52	15249.7	5.1	**1.9199**	0.085	4.4	ug/L	5189	Standard
	Cr	53	5924.5	2.7	**6.0258**	0.040	0.7	ug/L	2222	Standard
	Mn	55	526999.1	2.6	**63.6219**	0.219	0.3	ug/L	987	Standard
	Co	59	10835.9	4.8	**1.6411**	0.042	2.6	ug/L	300	Standard
	Ni	60	4344.3	3.8	**3.0136**	0.065	2.2	ug/L	157	Standard
	Cu	65	7471.2	1.5	**5.1936**	0.048	0.9	ug/L	132	Standard
	Zn	66	37885.7	3.6	**44.9731**	0.562	1.2	ug/L	171	Standard
>	**Ge**	72	431379.3	2.4				ug/L	432355	Standard
	As	75	2309.3	4.6	**2.9267**	0.071	2.4	ug/L	-36	Standard
	Se	82	73.7	8.1	**1.3010**	0.075	5.8	ug/L	4	Standard
	Se-1	77	336.0	7.4	**3.2796**	0.308	9.4	ug/L	163	Standard
>	**Ga**	71	270.0	13.0				mg/L	30	Standard
	Rb	85	8509.1	4.5				ug/L	22	Standard
	Y	89	389407.6	4.1				ug/L	382028	Standard
>	**Rh**	103	35.0	28.6				ug/L	8	Standard
	Mo	98	42877.0	2.7	**18.7138**	0.112	0.6	ug/L	158	Standard
	Ag	107	231.0	17.9	**0.0311**	0.008	24.3	ug/L	108	Standard
	Cd	111	302.4	8.8	**0.1826**	0.012	6.4	mg/L	6	Standard
	Cd	114	932.3	1.7	**0.2242**	0.010	4.3	ug/L	25	Standard
>	**In**	115	544397.2	2.6				ug/L	561862	Standard
	Sn	118	165.7	5.5	**0.1181**	0.015	12.3	ug/L	69	Standard
	Sb	123	7048.8	1.4	**1.6384**	0.035	2.2	ug/L	2477	Standard
	Ba	135	55047.9	3.1	**33.3215**	0.355	1.1	ug/L	24	Standard
	Ce	140	25287.8	3.4				ug/L	28	Standard
>	**Tb**	159	891364.8	2.6				ug/L	906794	Standard
	Ho	165	1481.7	1.4				ug/L	8	Standard
	Tl	203	277.7	26.6	**0.0276**	0.010	35.5	ug/L	108	Standard
	Tl	205	221.7	20.5	**0.0247**	0.008	31.7	ug/L	112	Standard
	Pb	206	6333.0	2.4	**1.1288**	0.034	3.0	ug/L	315	Standard
	Pb	207	5220.2	3.6	**1.0273**	0.021	2.1	ug/L	265	Standard
	Pb	208	24645.5	2.4	**1.0752**	0.011	1.1	ug/L	1278	Standard
	U	238	50633.2	2.4	**2.4960**	0.019	0.8	ug/L	113	Standard
>	**Bi**	209	522589.5	2.3				ug/L	539503	Standard

Sample ID: L1608046001
Report Date/Time: Monday, August 15, 2016 15:00:55
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	34140.1	3.4	**63.5370**	2.174	3.4	mg/L	40	Standard
K	39	833.4	1.5	**3.8175**	0.183	4.8	mg/L	32	Standard
Ca	43	65.0	40.7	**2.0723**	5.495	265.2	mg/L	40	Standard
Fe	54	413.3	14.7	**0.3015**	0.086	28.4	mg/L	143	Standard
Fe	57	316.7	22.1	**0.1570**	0.193	122.9	mg/L	270	Standard
> **Sc-1**	45	24892.1	6.1				mg/L	24972	Standard
Cl	35	122195.2	3.7				ug/L	63562	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	15644.8	7.8				ug/L	1190	Standard
P	31	15574.7	5.3				ug/L	11274	Standard
S	34	3510.4	6.0				ug/L	2592	Standard
Sr	88	133.3	15.6				ug/L	70	Standard
C	12	423.3	21.4				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	0	Standard
Dy	164	1532.3	7.9				mg/L	10	Standard
Ho-1	165	1481.7	1.4				mg/L	8	Standard
Er	166	1693.4	12.7				mg/L	10	Standard
I	127	69527.1	35.0				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.797	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.774	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608046001
Report Date/Time: Monday, August 15, 2016 15:00:55
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.892
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.865
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608046001PS WG580259-01
Sample Date/Time: Monday, August 15, 2016 15:01:50
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67768.0	3.9				ug/L	61110	Standard
	Be	9	35317.8	0.7	**55.1030**	2.068	3.8	ug/L	17	Standard
	Al	27	374011.6	0.3	**3.5493**	0.136	3.8	ug/L	833	Standard
	Sc	45	23555.0	3.9				ug/L	24972	Standard
	Ti	47	604.0	2.8	**3.4377**	0.054	1.6	ug/L	61	Standard
	V	51	284580.4	1.3	**54.4124**	0.464	0.9	ug/L	947	Standard
	Cr	52	267628.2	1.4	**54.8851**	0.968	1.8	ug/L	5189	Standard
	Cr	53	37332.6	1.2	**59.4727**	1.327	2.2	ug/L	2222	Standard
	Mn	55	918168.1	0.3	**116.5474**	1.859	1.6	ug/L	987	Standard
	Co	59	335747.9	0.4	**54.7593**	0.948	1.7	ug/L	300	Standard
	Ni	60	73716.6	0.9	**55.7139**	0.570	1.0	ug/L	157	Standard
	Cu	65	79423.0	0.5	**58.7814**	0.728	1.2	ug/L	132	Standard
	Zn	66	80265.7	0.4	**100.3991**	1.767	1.8	ug/L	171	Standard
>	Ge	72	410687.5	1.6				ug/L	432355	Standard
	As	75	40442.4	0.4	**52.4956**	0.975	1.9	ug/L	-36	Standard
	Se	82	3033.0	0.7	**55.3871**	1.264	2.3	ug/L	4	Standard
	Se-1	77	3087.3	0.8	**55.9607**	0.777	1.4	ug/L	163	Standard
>	Ga	71	293.3	18.1				mg/L	30	Standard
	Rb	85	8047.1	0.5				ug/L	22	Standard
	Y	89	368507.1	2.1				ug/L	382028	Standard
>	Rh	103	41.7	18.3				ug/L	8	Standard
	Mo	98	41158.3	2.2	**18.8323**	0.438	2.3	ug/L	158	Standard
	Ag	107	249533.4	16.5	**56.1858**	8.468	15.1	ug/L	108	Standard
	Cd	111	87405.5	0.9	**55.2648**	0.800	1.4	mg/L	6	Standard
	Cd	114	209972.5	0.6	**53.4851**	0.836	1.6	ug/L	25	Standard
>	In	115	519357.7	1.8				ug/L	561862	Standard
	Sn	118	220.0	4.2	**0.1930**	0.014	7.3	ug/L	69	Standard
	Sb	123	222789.9	0.6	**56.3375**	0.871	1.5	ug/L	2477	Standard
	Ba	135	138270.4	1.0	**87.7804**	2.371	2.7	ug/L	24	Standard
	Ce	140	24403.0	2.4				ug/L	28	Standard
>	Tb	159	880041.0	0.9				ug/L	906794	Standard
	Ho	165	1420.1	11.0				ug/L	8	Standard
	Tl	203	372016.7	0.4	**54.6405**	0.999	1.8	ug/L	108	Standard
	Tl	205	300794.9	0.8	**54.7597**	1.275	2.3	ug/L	112	Standard
	Pb	206	298567.0	1.3	**57.0818**	1.651	2.9	ug/L	315	Standard
	Pb	207	258371.3	0.2	**54.6408**	0.963	1.8	ug/L	265	Standard
	Pb	208	1191170.8	0.5	**55.9233**	1.144	2.0	ug/L	1278	Standard
	U	238	1191292.2	0.4	**60.3191**	1.194	2.0	ug/L	113	Standard
>	Bi	209	509899.6	1.6				ug/L	539503	Standard

Sample ID: L1608046001PS WG580259-01
Report Date/Time: Monday, August 15, 2016 15:03:57
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	33172.9	0.3	**65.2341**	2.679	4.1	mg/L	40	Standard
K	39	745.0	7.0	**3.5895**	0.119	3.3	mg/L	32	Standard
Ca	43	45.0	48.4	**-1.3043**	4.492	344.4	mg/L	40	Standard
Fe	54	350.4	8.4	**0.2533**	0.019	7.3	mg/L	143	Standard
Fe	57	318.3	8.1	**0.2444**	0.146	59.6	mg/L	270	Standard
> **Sc-1**	45	23555.0	3.9				mg/L	24972	Standard
Cl	35	116862.3	0.9				ug/L	63562	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	12211.6	2.5				ug/L	1190	Standard
P	31	15069.2	0.7				ug/L	11274	Standard
S	34	3425.4	2.5				ug/L	2592	Standard
Sr	88	93.3	25.3				ug/L	70	Standard
C	12	376.7	6.7				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	0	Standard
Dy	164	1507.5	10.3				mg/L	10	Standard
Ho-1	165	1420.1	11.0				mg/L	8	Standard
Er	166	1723.4	3.4				mg/L	10	Standard
I	127	39399.5	3.2				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.896	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.988	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608046001PS WG580259-01
Report Date/Time: Monday, August 15, 2016 15:03:57
Page 2

Approved: August 16, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.435
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.513
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608046001SDL WG580259-02
Sample Date/Time: Monday, August 15, 2016 15:04:51
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63779.1	3.3				ug/L	61110	Standard
	Be	9	21.7	13.3	**0.0209**	0.004	17.1	ug/L	17	Standard
	Al	27	70409.9	2.2	**0.6997**	0.016	2.3	ug/L	833	Standard
	Sc	45	21540.3	2.6				ug/L	24972	Standard
	Ti	47	137.3	21.1	**0.5539**	0.194	35.0	ug/L	61	Standard
	V	51	2586.8	9.6	**0.3172**	0.048	15.0	ug/L	947	Standard
	Cr	52	7555.9	0.8	**0.5507**	0.034	6.1	ug/L	5189	Standard
	Cr	53	2521.9	3.7	**0.9996**	0.161	16.1	ug/L	2222	Standard
	Mn	55	96266.9	0.1	**12.7839**	0.191	1.5	ug/L	987	Standard
	Co	59	2181.8	2.6	**0.3336**	0.013	3.8	ug/L	300	Standard
	Ni	60	909.7	3.6	**0.6083**	0.029	4.7	ug/L	157	Standard
	Cu	65	1513.7	3.5	**1.1054**	0.053	4.8	ug/L	132	Standard
	Zn	66	7968.8	1.5	**10.3023**	0.070	0.7	ug/L	171	Standard
>	**Ge**	72	389529.0	1.4				ug/L	432355	Standard
	As	75	391.2	8.5	**0.6133**	0.051	8.3	ug/L	-36	Standard
	Se	82	17.5	29.9	**0.3598**	0.104	28.8	ug/L	4	Standard
	Se-1	77	161.7	4.2	**0.4422**	0.182	41.1	ug/L	163	Standard
>	**Ga**	71	88.3	21.4				mg/L	30	Standard
	Rb	85	1506.7	7.0				ug/L	22	Standard
	Y	89	334889.0	0.8				ug/L	382028	Standard
>	**Rh**	103	15.0	57.7				ug/L	8	Standard
	Mo	98	7601.7	1.0	**3.6345**	0.038	1.1	ug/L	158	Standard
	Ag	107	193.7	19.7	**0.0275**	0.009	31.8	ug/L	108	Standard
	Cd	111	80.9	13.0	**0.0541**	0.007	12.3	mg/L	6	Standard
	Cd	114	221.7	26.1	**0.0569**	0.015	27.2	ug/L	25	Standard
>	**In**	115	493883.1	0.7				ug/L	561862	Standard
	Sn	118	61.7	14.7	**0.0052**	0.012	234.8	ug/L	69	Standard
	Sb	123	2332.6	17.2	**0.5566**	0.105	18.9	ug/L	2477	Standard
	Ba	135	10275.8	1.7	**6.8503**	0.167	2.4	ug/L	24	Standard
	Ce	140	4785.8	3.9				ug/L	28	Standard
>	**Tb**	159	820641.5	2.0				ug/L	906794	Standard
	Ho	165	281.7	18.8				ug/L	8	Standard
	Tl	203	109.3	13.3	**0.0045**	0.002	41.3	ug/L	108	Standard
	Tl	205	78.3	22.4	**0.0000**	0.003	25392.5	ug/L	112	Standard
	Pb	206	2402.9	2.9	**0.4185**	0.005	1.3	ug/L	315	Standard
	Pb	207	2085.1	1.3	**0.4028**	0.006	1.4	ug/L	265	Standard
	Pb	208	9693.2	2.3	**0.4131**	0.003	0.8	ug/L	1278	Standard
	U	238	9314.2	2.2	**0.4793**	0.014	2.8	ug/L	113	Standard
>	**Bi**	209	496388.7	2.0				ug/L	539503	Standard

Sample ID: L1608046001SDL WG580259-02
Report Date/Time: Monday, August 15, 2016 15:06:59
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	6071.2	2.3	**12.9822**	0.090	0.7	mg/L	40	Standard
K	39	180.0	28.9	**0.8602**	0.303	35.2	mg/L	32	Standard
Ca	43	46.7	37.6	**-0.2264**	3.720	1642.9	mg/L	40	Standard
Fe	54	134.2	13.5	**0.0319**	0.019	60.7	mg/L	143	Standard
Fe	57	233.3	9.7	**-0.0160**	0.118	736.0	mg/L	270	Standard
> **Sc-1**	45	21540.3	2.6				mg/L	24972	Standard
Cl	35	101551.9	1.5				ug/L	63562	Standard
Kr	83	0.7	173.2				ug/L	3	Standard
Br	81	3787.1	2.7				ug/L	1190	Standard
P	31	6838.2	1.6				ug/L	11274	Standard
S	34	3267.0	3.9				ug/L	2592	Standard
Sr	88	90.0	16.7				ug/L	70	Standard
C	12	110.0	24.1				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	217.7	14.7				mg/L	10	Standard
Ho-1	165	281.7	18.8				mg/L	8	Standard
Er	166	326.7	12.4				mg/L	10	Standard
I	127	13582.8	6.8				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.368	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.095	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608046001SDL WG580259-02
Report Date/Time: Monday, August 15, 2016 15:06:59
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.008
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608046001SDL WG580259-02
Sample Date/Time: Monday, August 15, 2016 15:07:54
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60254.6	2.4				ug/L	61110	Standard
	Be	9	15.0	33.3	**0.0113**	0.008	74.6	ug/L	17	Standard
	Al	27	14919.0	2.4	**0.1474**	0.007	4.8	ug/L	833	Standard
	Sc	45	21298.3	2.4				ug/L	24972	Standard
	Ti	47	51.3	4.1	**-0.0074**	0.015	198.2	ug/L	61	Standard
	V	51	1693.1	5.8	**0.1449**	0.020	13.9	ug/L	947	Standard
	Cr	52	6209.9	1.2	**0.2872**	0.018	6.2	ug/L	5189	Standard
	Cr	53	1811.8	4.2	**-0.1836**	0.139	75.6	ug/L	2222	Standard
	Mn	55	19846.7	1.4	**2.6122**	0.035	1.3	ug/L	987	Standard
	Co	59	642.3	3.0	**0.0714**	0.003	4.6	ug/L	300	Standard
	Ni	60	303.3	2.3	**0.1300**	0.006	4.5	ug/L	157	Standard
	Cu	65	392.7	3.7	**0.2367**	0.011	4.7	ug/L	132	Standard
	Zn	66	2067.1	1.3	**2.5702**	0.032	1.2	ug/L	171	Standard
>	**Ge**	72	380177.6	0.1				ug/L	432355	Standard
	As	75	67.3	5.3	**0.1728**	0.005	2.8	ug/L	-36	Standard
	Se	82	8.2	96.9	**0.1830**	0.156	85.2	ug/L	4	Standard
	Se-1	77	125.0	6.5	**-0.2337**	0.166	71.0	ug/L	163	Standard
>	**Ga**	71	25.0	69.3				mg/L	30	Standard
	Rb	85	340.0	21.4				ug/L	22	Standard
	Y	89	319451.6	1.9				ug/L	382028	Standard
>	**Rh**	103	13.3	78.1				ug/L	8	Standard
	Mo	98	1491.6	2.1	**0.7052**	0.027	3.8	ug/L	158	Standard
	Ag	107	163.0	9.9	**0.0210**	0.003	15.4	ug/L	108	Standard
	Cd	111	20.6	25.3	**0.0144**	0.004	24.7	mg/L	6	Standard
	Cd	114	55.7	37.3	**0.0128**	0.006	46.8	ug/L	25	Standard
>	**In**	115	484058.7	1.7				ug/L	561862	Standard
	Sn	118	37.0	8.1	**-0.0253**	0.005	18.0	ug/L	69	Standard
	Sb	123	524.5	20.1	**0.0780**	0.027	34.4	ug/L	2477	Standard
	Ba	135	2047.5	1.9	**1.3855**	0.035	2.6	ug/L	24	Standard
	Ce	140	996.7	7.1				ug/L	28	Standard
>	**Tb**	159	807149.1	0.9				ug/L	906794	Standard
	Ho	165	78.3	25.8				ug/L	8	Standard
	Tl	203	71.3	21.5	**-0.0011**	0.002	225.9	ug/L	108	Standard
	Tl	205	48.3	57.0	**-0.0054**	0.005	97.1	ug/L	112	Standard
	Pb	206	581.0	2.9	**0.0625**	0.004	6.0	ug/L	315	Standard
	Pb	207	507.0	3.5	**0.0615**	0.004	5.8	ug/L	265	Standard
	Pb	208	2355.4	2.6	**0.0610**	0.003	4.8	ug/L	1278	Standard
	U	238	1837.4	5.1	**0.0920**	0.005	5.8	ug/L	113	Standard
>	**Bi**	209	488032.3	0.4				ug/L	539503	Standard

Sample ID: L1608046001SDL WG580259-02
Report Date/Time: Monday, August 15, 2016 15:10:02
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	1366.7	10.0	**2.8953**	0.259	8.9	mg/L	40	Standard
K	39	51.7	5.6	**0.1577**	0.009	5.9	mg/L	32	Standard
Ca	43	45.0	19.2	**-0.4416**	1.963	444.7	mg/L	40	Standard
Fe	54	57.5	22.0	**-0.0582**	0.016	27.0	mg/L	143	Standard
Fe	57	305.0	8.5	**0.3208**	0.143	44.6	mg/L	270	Standard
> **Sc-1**	45	21298.3	2.4				mg/L	24972	Standard
Cl	35	101283.5	2.4				ug/L	63562	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	1683.4	3.6				ug/L	1190	Standard
P	31	5372.6	1.2				ug/L	11274	Standard
S	34	3345.4	4.3				ug/L	2592	Standard
Sr	88	88.3	17.3				ug/L	70	Standard
C	12	86.7	35.3				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	52.5	27.4				mg/L	10	Standard
Ho-1	165	78.3	25.8				mg/L	8	Standard
Er	166	86.7	24.0				mg/L	10	Standard
I	127	7790.3	6.2				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.601	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		87.932	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608046001SDL WG580259-02
Report Date/Time: Monday, August 15, 2016 15:10:02
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.460
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 15, 2016 15:10:58
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63912.9	1.9				ug/L	61110	Standard
	Be	9	32246.0	5.6	**53.2714**	2.033	3.8	ug/L	17	Standard
	Al	27	4895215.1	1.2	**49.3740**	0.742	1.5	ug/L	833	Standard
	Sc	45	24139.2	3.0				ug/L	24972	Standard
	Ti	47	17234.1	1.8	**105.2171**	2.546	2.4	ug/L	61	Standard
	V	51	271812.4	0.5	**50.6738**	1.102	2.2	ug/L	947	Standard
	Cr	52	254625.4	1.6	**50.8334**	0.311	0.6	ug/L	5189	Standard
	Cr	53	32899.0	3.2	**50.5970**	0.878	1.7	ug/L	2222	Standard
	Mn	55	413023.9	1.1	**51.0558**	0.484	0.9	ug/L	987	Standard
	Co	59	321950.3	1.8	**51.1936**	0.735	1.4	ug/L	300	Standard
	Ni	60	69702.6	1.2	**51.3624**	0.821	1.6	ug/L	157	Standard
	Cu	65	71268.6	1.8	**51.4245**	1.058	2.1	ug/L	132	Standard
	Zn	66	43156.4	1.8	**52.5198**	0.345	0.7	ug/L	171	Standard
>	Ge	72	421182.0	2.0				ug/L	432355	Standard
	As	75	41141.8	1.1	**52.0704**	0.564	1.1	ug/L	-36	Standard
	Se	82	2956.6	1.0	**52.6423**	0.625	1.2	ug/L	4	Standard
	Se-1	77	2987.0	2.6	**52.6243**	0.586	1.1	ug/L	163	Standard
>	Ga	71	26.7	10.8				mg/L	30	Standard
	Rb	85	710.0	6.5				ug/L	22	Standard
	Y	89	365096.5	0.7				ug/L	382028	Standard
>	Rh	103	23.3	12.4				ug/L	8	Standard
	Mo	98	240787.8	0.8	**105.3227**	0.478	0.5	ug/L	158	Standard
	Ag	107	241009.4	0.5	**51.8871**	0.654	1.3	ug/L	108	Standard
	Cd	111	86013.6	0.2	**51.9267**	0.482	0.9	mg/L	6	Standard
	Cd	114	213054.2	0.7	**51.8136**	0.208	0.4	ug/L	25	Standard
>	In	115	543899.8	1.1				ug/L	561862	Standard
	Sn	118	44986.4	0.8	**51.9303**	0.501	1.0	ug/L	69	Standard
	Sb	123	214537.0	0.6	**51.7904**	0.320	0.6	ug/L	2477	Standard
	Ba	135	83803.8	1.3	**50.7813**	0.129	0.3	ug/L	24	Standard
	Ce	140	65.0	15.4				ug/L	28	Standard
>	Tb	159	882076.8	1.5				ug/L	906794	Standard
	Ho	165	11.7	24.7				ug/L	8	Standard
	Tl	203	363279.7	0.8	**51.7779**	0.273	0.5	ug/L	108	Standard
	Tl	205	291633.3	0.5	**51.5197**	0.558	1.1	ug/L	112	Standard
	Pb	206	279376.3	0.8	**51.8215**	0.246	0.5	ug/L	315	Standard
	Pb	207	252015.2	1.3	**51.7149**	0.077	0.1	ug/L	265	Standard
	Pb	208	1134542.5	0.9	**51.6837**	0.385	0.7	ug/L	1278	Standard
	U	238	1115614.8	0.9	**54.8144**	0.262	0.5	ug/L	113	Standard
>	Bi	209	525369.2	1.3				ug/L	539503	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 15:13:06
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	2875.3	2.7	**5.4443**	0.173	3.2	mg/L	40	Standard
K	39	1001.7	1.6	**4.7560**	0.163	3.4	mg/L	32	Standard
Ca	43	75.0	20.0	**4.0929**	2.460	60.1	mg/L	40	Standard
Fe	54	5069.8	5.8	**5.2628**	0.463	8.8	mg/L	143	Standard
Fe	57	1536.7	2.5	**5.0801**	0.030	0.6	mg/L	270	Standard
> **Sc-1**	45	24139.2	3.0				mg/L	24972	Standard
Cl	35	100449.7	4.7				ug/L	63562	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1636.8	1.5				ug/L	1190	Standard
P	31	15242.7	1.7				ug/L	11274	Standard
S	34	4148.9	5.9				ug/L	2592	Standard
Sr	88	78.3	19.5				ug/L	70	Standard
C	12	96.7	46.6				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	3.0	201.4				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	8	Standard
Er	166	6.7	173.2				mg/L	10	Standard
I	127	15871.6	2.6				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.543		
Al	27	98.748		
Sc	45			
Ti	47	105.217		
V	51	101.348		
Cr	52	101.667		
Cr	53			
Mn	55	102.112		
Co	59	102.387		
Ni	60	102.725		
Cu	65	102.849		
Zn	66	105.040		
> Ge	72		97.416	
As	75	104.141		
Se	82	105.285		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 15:13:06
Page 2

Approved: August 16, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	105.323		
Ag	107	103.774		
Cd	111	103.853		
Cd	114			
> In	115			96.803
Sn	118	103.861		
Sb	123	103.581		
Ba	135	101.563		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.556		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.367		
U	238	109.629		
> Bi	209			97.380
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 15:13:06
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 15, 2016 15:14:00
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66139.2	3.6				ug/L	61110	Standard
	Be	9	41.7	42.1	**0.0522**	0.030	58.3	ug/L	17	Standard
	Al	27	1470.1	18.1	**0.0021**	0.003	142.1	ug/L	833	Standard
	Sc	45	24459.7	1.9				ug/L	24972	Standard
	Ti	47	41.7	20.0	**-0.1035**	0.049	47.8	ug/L	61	Standard
	V	51	1174.7	4.6	**0.0112**	0.009	81.5	ug/L	947	Standard
	Cr	52	5666.1	1.0	**0.0265**	0.008	30.6	ug/L	5189	Standard
	Cr	53	1503.4	6.9	**-1.0395**	0.172	16.6	ug/L	2222	Standard
	Mn	55	1089.0	4.4	**0.0221**	0.006	28.8	ug/L	987	Standard
	Co	59	280.3	6.9	**0.0023**	0.003	142.9	ug/L	300	Standard
	Ni	60	161.7	4.6	**-0.0001**	0.005	3435.2	ug/L	157	Standard
	Cu	65	170.7	9.0	**0.0443**	0.011	25.5	ug/L	132	Standard
	Zn	66	260.7	12.3	**0.0862**	0.037	43.4	ug/L	171	Standard
>	**Ge**	72	425981.3	0.5				ug/L	432355	Standard
	As	75	-66.3	11.8	**-0.0043**	0.010	239.8	ug/L	-36	Standard
	Se	82	3.7	52.4	**0.0879**	0.034	39.2	ug/L	4	Standard
	Se-1	77	100.0	5.6	**-0.9686**	0.103	10.6	ug/L	163	Standard
>	**Ga**	71	15.0	57.7				mg/L	30	Standard
	Rb	85	31.7	55.5				ug/L	22	Standard
	Y	89	367125.6	1.9				ug/L	382028	Standard
>	**Rh**	103	6.7	43.3				ug/L	8	Standard
	Mo	98	255.5	23.3	**0.0826**	0.025	30.8	ug/L	158	Standard
	Ag	107	143.3	19.0	**0.0122**	0.006	47.3	ug/L	108	Standard
	Cd	111	20.2	48.1	**0.0125**	0.006	46.2	mg/L	6	Standard
	Cd	114	72.9	25.3	**0.0151**	0.004	29.2	ug/L	25	Standard
>	**In**	115	548104.9	0.5				ug/L	561862	Standard
	Sn	118	140.7	24.7	**0.0880**	0.040	45.7	ug/L	69	Standard
	Sb	123	856.4	36.2	**0.1413**	0.075	53.0	ug/L	2477	Standard
	Ba	135	34.0	24.1	**0.0113**	0.005	43.1	ug/L	24	Standard
	Ce	140	10.0	86.6				ug/L	28	Standard
>	**Tb**	159	906767.4	1.5				ug/L	906794	Standard
	Ho	165	10.0	100.0				ug/L	8	Standard
	Tl	203	102.0	10.4	**0.0021**	0.002	76.1	ug/L	108	Standard
	Tl	205	83.3	34.6	**-0.0003**	0.005	1774.8	ug/L	112	Standard
	Pb	206	374.0	2.8	**0.0138**	0.001	7.7	ug/L	315	Standard
	Pb	207	313.7	4.6	**0.0120**	0.004	30.7	ug/L	265	Standard
	Pb	208	1435.0	1.2	**0.0089**	0.002	18.3	ug/L	1278	Standard
	U	238	275.7	10.8	**0.0080**	0.002	19.1	ug/L	113	Standard
>	**Bi**	209	540963.9	1.5				ug/L	539503	Standard

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 15:16:08
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	42.1	**0.0029**	0.032	1098.9	mg/L	40	Standard
K	39	33.3	22.9	**0.0327**	0.036	111.4	mg/L	32	Standard
Ca	43	20.0	43.3	**-6.4272**	1.687	26.3	mg/L	40	Standard
Fe	54	122.6	14.5	**0.0008**	0.017	2007.2	mg/L	143	Standard
Fe	57	231.7	7.6	**-0.1486**	0.072	48.7	mg/L	270	Standard
Sc-1	45	24459.7	1.9				mg/L	24972	Standard
Cl	35	98756.1	0.3				ug/L	63562	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1500.1	10.1				ug/L	1190	Standard
P	31	14500.3	3.0				ug/L	11274	Standard
S	34	4012.2	3.2				ug/L	2592	Standard
Sr	88	81.7	7.1				ug/L	70	Standard
C	12	96.7	33.3				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	105.8				mg/L	10	Standard
Ho-1	165	10.0	100.0				mg/L	8	Standard
Er	166	6.7	86.6				mg/L	10	Standard
I	127	3665.4	3.0				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.526	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 15:16:08
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.552
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.271
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 15:16:08
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608048501
Sample Date/Time: Monday, August 15, 2016 15:17:05
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68158.0	1.3				ug/L	61110	Standard
	Be	9	4512.3	3.5	**6.9788**	0.158	2.3	ug/L	17	Standard
	Al	27	30267597.3	0.3	**286.3110**	2.845	1.0	ug/L	833	Standard
	Sc	45	29640.6	2.4				ug/L	24972	Standard
	Ti	47	13392.3	1.5	**86.2898**	2.060	2.4	ug/L	61	Standard
	V	51	16227.0	3.1	**3.0010**	0.079	2.6	ug/L	947	Standard
	Cr	52	109213.2	0.3	**22.4188**	0.206	0.9	ug/L	5189	Standard
	Cr	53	14079.9	3.0	**20.9636**	0.546	2.6	ug/L	2222	Standard
	Mn	55	35601302.8	1.2	**4657.8759**	44.585	1.0	ug/L	987	Standard
	Co	59	807751.3	0.6	**135.7268**	1.129	0.8	ug/L	300	Standard
	Ni	60	275887.9	0.8	**215.0907**	3.545	1.6	ug/L	157	Standard
	Cu	65	132274.9	0.7	**100.8756**	1.209	1.2	ug/L	132	Standard
	Zn	66	404639.3	0.9	**522.1568**	3.971	0.8	ug/L	171	Standard
>	Ge	72	398750.8	0.8				ug/L	432355	Standard
	As	75	1765.0	3.1	**2.4341**	0.066	2.7	ug/L	-36	Standard
	Se	82	39.8	27.4	**0.7684**	0.200	26.0	ug/L	4	Standard
	Se-1	77	150.3	3.0	**0.1434**	0.092	64.2	ug/L	163	Standard
>	Ga	71	3650.4	3.4				mg/L	30	Standard
	Rb	85	39356.1	1.7				ug/L	22	Standard
	Y	89	839432.4	1.7				ug/L	382028	Standard
>	Rh	103	276.7	21.2				ug/L	8	Standard
	Mo	98	2871.6	3.6	**1.3289**	0.050	3.8	ug/L	158	Standard
	Ag	107	316.3	77.1	**0.0553**	0.057	103.5	ug/L	108	Standard
	Cd	111	1620.7	3.6	**1.0575**	0.049	4.7	mg/L	6	Standard
	Cd	114	3910.0	9.7	**1.0248**	0.102	10.0	ug/L	25	Standard
>	In	115	503534.5	1.1				ug/L	561862	Standard
	Sn	118	205.7	3.5	**0.1834**	0.010	5.7	ug/L	69	Standard
	Sb	123	677.0	48.9	**0.1127**	0.087	77.5	ug/L	2477	Standard
	Ba	135	67176.3	0.3	**43.9722**	0.543	1.2	ug/L	24	Standard
	Ce	140	386651.3	0.3				ug/L	28	Standard
>	Tb	159	889510.5	0.9				ug/L	906794	Standard
	Ho	165	45496.5	0.7				ug/L	8	Standard
	Tl	203	910.4	22.1	**0.1292**	0.031	24.2	ug/L	108	Standard
	Tl	205	678.3	14.3	**0.1158**	0.019	16.2	ug/L	112	Standard
	Pb	206	3801.1	4.9	**0.7141**	0.038	5.3	ug/L	315	Standard
	Pb	207	2954.0	5.5	**0.6094**	0.037	6.0	ug/L	265	Standard
	Pb	208	14139.2	4.9	**0.6467**	0.035	5.4	ug/L	1278	Standard
	U	238	52088.4	1.4	**2.7788**	0.041	1.5	ug/L	113	Standard
>	Bi	209	483001.5	0.1				ug/L	539503	Standard

Sample ID: L1608048501
Report Date/Time: Monday, August 15, 2016 15:19:12
Page 1

Approved: August 16, 2016

Na	23	36.7	**-8717127935971**97021760105410.090			22.6	mg/L	2	Standard
Mg	24	3763.8	3.8	**5.8115**	0.339	5.8	mg/L	40	Standard
K	39	660.0	5.3	**2.4905**	0.089	3.6	mg/L	32	Standard
Ca	43	2800.3	2.5	**426.3997**	1.260	0.3	mg/L	40	Standard
Fe	54	63710.4	1.5	**54.9630**	0.892	1.6	mg/L	143	Standard
Fe	57	20016.5	1.0	**64.1098**	1.215	1.9	mg/L	270	Standard
Sc-1	45	29640.6	2.4				mg/L	24972	Standard
Cl	35	211614.5	1.8				ug/L	63562	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	2396.9	15.5				ug/L	1190	Standard
P	31	28214.6	1.6				ug/L	11274	Standard
S	34	3743.8	2.5				ug/L	2592	Standard
Sr	88	1623.4	1.6				ug/L	70	Standard
C	12	916.7	15.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	69833.4	1.3				mg/L	10	Standard
Ho-1	165	45496.5	0.7				mg/L	8	Standard
Er	166	40210.0	1.6				mg/L	10	Standard
I	127	8370.7	7.4				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.534	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.228	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608048501
Report Date/Time: Monday, August 15, 2016 15:19:12
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.619
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.527
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Co 59 Upper, S, EEE	Co	59	

Sample ID: L1608048501
Report Date/Time: Monday, August 15, 2016 15:19:12
Page 3

Approved: August 16, 2016

Ni 60 Upper, S, EEE	Ni	60
Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608048502
Sample Date/Time: Monday, August 15, 2016 15:20:07
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73647.0	3.0				ug/L	61110	Standard
	Be	9	26.7	47.2	**0.0230**	0.017	73.3	ug/L	17	Standard
	Al	27	22339839.5	1.9	**195.6637**	6.959	3.6	ug/L	833	Standard
	Sc	45	25137.5	1.5				ug/L	24972	Standard
	Ti	47	64.7	5.4	**0.0302**	0.020	65.1	ug/L	61	Standard
	V	51	1983.5	3.3	**0.1556**	0.011	7.0	ug/L	947	Standard
	Cr	52	10464.3	1.2	**0.9641**	0.032	3.3	ug/L	5189	Standard
	Cr	53	1568.4	2.2	**-0.9707**	0.059	6.1	ug/L	2222	Standard
	Mn	55	1832704.0	0.6	**221.1111**	0.897	0.4	ug/L	987	Standard
	Co	59	21109.7	1.0	**3.2315**	0.021	0.6	ug/L	300	Standard
	Ni	60	17428.0	2.3	**12.4226**	0.244	2.0	ug/L	157	Standard
	Cu	65	1003.0	3.4	**0.6286**	0.021	3.4	ug/L	132	Standard
	Zn	66	2023.8	1.4	**2.1816**	0.025	1.2	ug/L	171	Standard
>	**Ge**	72	432209.3	0.3				ug/L	432355	Standard
	As	75	-41.3	66.1	**0.0277**	0.034	121.0	ug/L	-36	Standard
	Se	82	20.8	23.2	**0.3832**	0.083	21.7	ug/L	4	Standard
	Se-1	77	113.3	20.4	**-0.7548**	0.413	54.7	ug/L	163	Standard
>	**Ga**	71	58.3	13.1				mg/L	30	Standard
	Rb	85	35887.5	1.7				ug/L	22	Standard
	Y	89	369741.0	1.6				ug/L	382028	Standard
>	**Rh**	103	133.3	14.2				ug/L	8	Standard
	Mo	98	301.9	3.0	**0.1029**	0.004	3.5	ug/L	158	Standard
	Ag	107	98.0	8.7	**0.0025**	0.002	70.8	ug/L	108	Standard
	Cd	111	22.2	21.3	**0.0137**	0.003	20.9	mg/L	6	Standard
	Cd	114	61.3	42.1	**0.0123**	0.006	50.6	ug/L	25	Standard
>	**In**	115	547473.3	0.2				ug/L	561862	Standard
	Sn	118	139.0	10.0	**0.0862**	0.016	18.3	ug/L	69	Standard
	Sb	123	297.1	39.2	**0.0071**	0.028	392.2	ug/L	2477	Standard
	Ba	135	6127.6	0.7	**3.6804**	0.025	0.7	ug/L	24	Standard
	Ce	140	180.0	15.5				ug/L	28	Standard
>	**Tb**	159	897647.7	0.6				ug/L	906794	Standard
	Ho	165	40.0	45.1				ug/L	8	Standard
	Tl	203	293.3	6.7	**0.0296**	0.003	9.5	ug/L	108	Standard
	Tl	205	203.3	20.5	**0.0211**	0.007	35.0	ug/L	112	Standard
	Pb	206	313.3	10.9	**0.0042**	0.006	143.8	ug/L	315	Standard
	Pb	207	284.0	3.7	**0.0075**	0.002	25.9	ug/L	265	Standard
	Pb	208	1351.7	5.6	**0.0067**	0.003	48.6	ug/L	1278	Standard
	U	238	3277.0	3.7	**0.1550**	0.005	3.2	ug/L	113	Standard
>	**Bi**	209	527989.2	0.6				ug/L	539503	Standard

Sample ID: L1608048502
Report Date/Time: Monday, August 15, 2016 15:22:15
Page 1

Approved: August 16, 2016

Na	23	6.7	**-185917369710178753236841922.687**			42.4	mg/L	2	Standard
Mg	24	4975.8	1.4	**9.0951**	0.158	1.7	mg/L	40	Standard
K	39	678.3	7.3	**3.0457**	0.209	6.9	mg/L	32	Standard
Ca	43	465.0	12.2	**75.2187**	9.597	12.8	mg/L	40	Standard
Fe	54	175.6	4.3	**0.0516**	0.008	15.2	mg/L	143	Standard
Fe	57	708.4	12.7	**1.6531**	0.306	18.5	mg/L	270	Standard
Sc-1	45	25137.5	1.5				mg/L	24972	Standard
Cl	35	228962.6	1.4				ug/L	63562	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	2776.9	5.1				ug/L	1190	Standard
P	31	14912.3	1.2				ug/L	11274	Standard
S	34	3640.4	2.8				ug/L	2592	Standard
Sr	88	495.0	3.5				ug/L	70	Standard
C	12	220.0	16.4				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	45.4	71.0				mg/L	10	Standard
Ho-1	165	40.0	45.1				mg/L	8	Standard
Er	166	26.7	21.7				mg/L	10	Standard
I	127	10498.6	5.9				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		120.516	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.966	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1608048502
Report Date/Time: Monday, August 15, 2016 15:22:15
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.439
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.866
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1608048502
Report Date/Time: Monday, August 15, 2016 15:22:15
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608048505
Sample Date/Time: Monday, August 15, 2016 15:23:10
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83435.8	1.2				ug/L	61110	Standard
	Be	9	8103.8	1.9	**10.2500**	0.318	3.1	ug/L	17	Standard
	Al	27	28324165.6	2.2	**218.8376**	3.183	1.5	ug/L	833	Standard
	Sc	45	28830.8	2.9				ug/L	24972	Standard
	Ti	47	232.0	11.7	**1.0887**	0.158	14.6	ug/L	61	Standard
	V	51	26409.1	2.2	**4.8196**	0.072	1.5	ug/L	947	Standard
	Cr	52	103414.8	1.6	**20.3389**	0.176	0.9	ug/L	5189	Standard
	Cr	53	13833.0	0.6	**19.6461**	0.322	1.6	ug/L	2222	Standard
	Mn	55	15326418.0	1.4	**1930.5860**	20.753	1.1	ug/L	987	Standard
	Co	59	585369.8	1.2	**94.6852**	0.546	0.6	ug/L	300	Standard
	Ni	60	289577.8	1.6	**217.3438**	2.225	1.0	ug/L	157	Standard
	Cu	65	27532.3	1.3	**20.1530**	0.215	1.1	ug/L	132	Standard
	Zn	66	608844.0	0.4	**756.5644**	3.338	0.4	ug/L	171	Standard
>	**Ge**	72	414148.4	0.8				ug/L	432355	Standard
	As	75	15.7	125.5	**0.0988**	0.025	25.6	ug/L	-36	Standard
	Se	82	44.4	28.3	**0.8259**	0.232	28.1	ug/L	4	Standard
	Se-1	77	149.3	15.1	**0.0140**	0.418	2991.1	ug/L	163	Standard
>	**Ga**	71	3533.7	5.5				mg/L	30	Standard
	Rb	85	58899.3	0.5				ug/L	22	Standard
	Y	89	924234.2	0.9				ug/L	382028	Standard
>	**Rh**	103	70.0	18.9				ug/L	8	Standard
	Mo	98	82.0	9.9	**0.0090**	0.004	42.6	ug/L	158	Standard
	Ag	107	108.3	8.6	**0.0058**	0.002	37.6	ug/L	108	Standard
	Cd	111	1364.3	2.1	**0.8563**	0.022	2.5	mg/L	6	Standard
	Cd	114	3103.7	5.3	**0.7821**	0.045	5.7	ug/L	25	Standard
>	**In**	115	523353.0	0.5				ug/L	561862	Standard
	Sn	118	124.3	17.4	**0.0760**	0.026	34.4	ug/L	69	Standard
	Sb	123	255.0	38.6	**-0.0001**	0.025	29870.4	ug/L	2477	Standard
	Ba	135	3367.0	2.0	**2.1118**	0.051	2.4	ug/L	24	Standard
	Ce	140	527236.3	1.6				ug/L	28	Standard
>	**Tb**	159	925262.9	1.0				ug/L	906794	Standard
	Ho	165	58829.0	1.1				ug/L	8	Standard
	Tl	203	2305.5	1.9	**0.3221**	0.007	2.2	ug/L	108	Standard
	Tl	205	1871.8	8.0	**0.3216**	0.028	8.7	ug/L	112	Standard
	Pb	206	2467.2	1.9	**0.4120**	0.010	2.4	ug/L	315	Standard
	Pb	207	2076.5	2.3	**0.3830**	0.011	2.9	ug/L	265	Standard
	Pb	208	9719.9	1.0	**0.3959**	0.006	1.4	ug/L	1278	Standard
	U	238	38169.4	0.7	**1.9013**	0.018	0.9	ug/L	113	Standard
>	**Bi**	209	516839.6	0.3				ug/L	539503	Standard

Sample ID: L1608048505
Report Date/Time: Monday, August 15, 2016 15:25:17
Page 1

Approved: August 16, 2016

Na	23	6.7	**-1630450469026**72553826116255.625			44.5	mg/L	2	Standard
Mg	24	823.4	4.6	**1.2490**	0.093	7.4	mg/L	40	Standard
K	39	96.7	7.9	**0.2671**	0.034	12.7	mg/L	32	Standard
Ca	43	540.0	9.6	**76.3374**	7.878	10.3	mg/L	40	Standard
Fe	54	86255.4	1.1	**76.5873**	2.671	3.5	mg/L	143	Standard
Fe	57	23341.3	1.0	**77.0937**	2.463	3.2	mg/L	270	Standard
Sc-1	45	28830.8	2.9				mg/L	24972	Standard
Cl	35	447220.0	1.7				ug/L	63562	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	1953.5	6.0				ug/L	1190	Standard
P	31	27523.3	1.0				ug/L	11274	Standard
S	34	2795.3	8.6				ug/L	2592	Standard
Sr	88	515.0	9.3				ug/L	70	Standard
C	12	116.7	9.9				mg/L	90	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	90790.8	0.7				mg/L	10	Standard
Ho-1	165	58829.0	1.1				mg/L	8	Standard
Er	166	50136.2	2.5				mg/L	10	Standard
I	127	9022.7	7.1				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.534	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.789	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608048505
Report Date/Time: Monday, August 15, 2016 15:25:17
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.146
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.799
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1608048505
Report Date/Time: Monday, August 15, 2016 15:25:17
Page 3

Approved: August 16, 2016

Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608048506
Sample Date/Time: Monday, August 15, 2016 15:26:12
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86635.4	2.0				ug/L	61110	Standard
	Be	9	8507.4	3.2	**10.3634**	0.385	3.7	ug/L	17	Standard
	Al	27	29457330.8	0.4	**219.2647**	5.078	2.3	ug/L	833	Standard
	Sc	45	29084.6	2.5				ug/L	24972	Standard
	Ti	47	227.0	10.3	**1.0629**	0.152	14.3	ug/L	61	Standard
	V	51	26684.0	1.5	**4.8873**	0.054	1.1	ug/L	947	Standard
	Cr	52	103071.4	0.3	**20.3329**	0.070	0.3	ug/L	5189	Standard
	Cr	53	13971.4	2.1	**19.9466**	0.517	2.6	ug/L	2222	Standard
	Mn	55	15717179.4	0.6	**1985.7656**	8.038	0.4	ug/L	987	Standard
	Co	59	597153.9	1.2	**96.8815**	0.700	0.7	ug/L	300	Standard
	Ni	60	293558.6	0.4	**221.0031**	0.348	0.2	ug/L	157	Standard
	Cu	65	29083.9	0.5	**21.3572**	0.073	0.3	ug/L	132	Standard
	Zn	66	624847.2	0.8	**778.7723**	5.507	0.7	ug/L	171	Standard
>	**Ge**	72	412909.8	0.5				ug/L	432355	Standard
	As	75	57.4	72.2	**0.1526**	0.053	35.0	ug/L	-36	Standard
	Se	82	39.1	21.3	**0.7328**	0.153	20.8	ug/L	4	Standard
	Se-1	77	145.0	6.7	**-0.0583**	0.193	330.8	ug/L	163	Standard
>	**Ga**	71	3420.4	2.4				mg/L	30	Standard
	Rb	85	62359.7	0.2				ug/L	22	Standard
	Y	89	911211.6	0.9				ug/L	382028	Standard
>	**Rh**	103	85.0	17.6				ug/L	8	Standard
	Mo	98	86.0	15.3	**0.0105**	0.006	57.3	ug/L	158	Standard
	Ag	107	102.3	12.6	**0.0043**	0.003	70.0	ug/L	108	Standard
	Cd	111	1439.3	3.2	**0.8973**	0.036	4.0	mg/L	6	Standard
	Cd	114	3415.6	3.3	**0.8549**	0.027	3.2	ug/L	25	Standard
>	**In**	115	526935.3	0.7				ug/L	561862	Standard
	Sn	118	117.7	9.4	**0.0670**	0.013	19.1	ug/L	69	Standard
	Sb	123	224.9	31.5	**-0.0081**	0.018	223.0	ug/L	2477	Standard
	Ba	135	6180.3	2.6	**3.8575**	0.114	3.0	ug/L	24	Standard
	Ce	140	528656.6	0.7				ug/L	28	Standard
>	**Tb**	159	930798.0	1.6				ug/L	906794	Standard
	Ho	165	59391.2	1.0				ug/L	8	Standard
	Tl	203	2344.2	1.1	**0.3263**	0.004	1.3	ug/L	108	Standard
	Tl	205	1908.5	7.8	**0.3268**	0.026	8.0	ug/L	112	Standard
	Pb	206	2788.9	2.0	**0.4707**	0.009	1.9	ug/L	315	Standard
	Pb	207	2295.8	1.0	**0.4269**	0.004	0.9	ug/L	265	Standard
	Pb	208	10692.5	0.8	**0.4390**	0.006	1.4	ug/L	1278	Standard
	U	238	39664.5	0.6	**1.9682**	0.015	0.8	ug/L	113	Standard
>	**Bi**	209	518887.6	0.4				ug/L	539503	Standard

Sample ID: L1608048506
Report Date/Time: Monday, August 15, 2016 15:28:20
Page 1

Approved: August 16, 2016

Na	23	5.0	**-119405399860**	117545554819832.690		98.4	mg/L	2	Standard
Mg	24	1063.4	13.5	**1.6153**	0.192	11.9	mg/L	40	Standard
K	39	106.7	23.1	**0.3053**	0.109	35.6	mg/L	32	Standard
Ca	43	525.0	11.2	**73.1073**	7.677	10.5	mg/L	40	Standard
Fe	54	89270.1	1.6	**78.5724**	2.974	3.8	mg/L	143	Standard
Fe	57	23798.7	3.1	**77.9465**	4.137	5.3	mg/L	270	Standard
> **Sc-1**	45	29084.6	2.5				mg/L	24972	Standard
Cl	35	460379.3	0.8				ug/L	63562	Standard
Kr	83	2.3	107.9				ug/L	3	Standard
Br	81	1756.8	7.9				ug/L	1190	Standard
P	31	28047.6	3.4				ug/L	11274	Standard
S	34	2758.6	0.8				ug/L	2592	Standard
Sr	88	548.3	2.3				ug/L	70	Standard
C	12	140.0	18.9				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	90066.3	0.9				mg/L	10	Standard
Ho-1	165	59391.2	1.0				mg/L	8	Standard
Er	166	50768.3	1.1				mg/L	10	Standard
I	127	9137.8	5.4				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		141.770	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.502	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608048506
Report Date/Time: Monday, August 15, 2016 15:28:20
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.784
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.179
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1608048506
Report Date/Time: Monday, August 15, 2016 15:28:20
Page 3

Approved: August 16, 2016

Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608048507
Sample Date/Time: Monday, August 15, 2016 15:29:14
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81485.5	4.3				ug/L	61110	Standard
	Be	9	751.7	10.2	**0.9586**	0.067	7.0	ug/L	17	Standard
	Al	27	8090213.6	1.5	**64.0719**	2.795	4.4	ug/L	833	Standard
	Sc	45	24044.1	1.4				ug/L	24972	Standard
	Ti	47	80.0	9.8	**0.1349**	0.049	36.4	ug/L	61	Standard
	V	51	1589.4	8.5	**0.0917**	0.026	28.3	ug/L	947	Standard
	Cr	52	11284.5	2.0	**1.1883**	0.054	4.6	ug/L	5189	Standard
	Cr	53	1950.1	6.5	**-0.2748**	0.192	70.0	ug/L	2222	Standard
	Mn	55	5381485.8	1.1	**667.1567**	5.075	0.8	ug/L	987	Standard
	Co	59	92564.6	1.6	**14.7021**	0.186	1.3	ug/L	300	Standard
	Ni	60	39257.1	1.6	**28.9002**	0.385	1.3	ug/L	157	Standard
	Cu	65	1879.8	3.4	**1.2819**	0.042	3.3	ug/L	132	Standard
	Zn	66	42485.5	1.7	**51.7486**	0.666	1.3	ug/L	171	Standard
>	**Ge**	72	420753.5	0.5				ug/L	432355	Standard
	As	75	92.6	65.0	**0.1959**	0.076	39.0	ug/L	-36	Standard
	Se	82	23.1	18.7	**0.4347**	0.079	18.1	ug/L	4	Standard
	Se-1	77	97.0	8.4	**-1.0020**	0.144	14.4	ug/L	163	Standard
>	**Ga**	71	106.7	10.8				mg/L	30	Standard
	Rb	85	32217.6	4.4				ug/L	22	Standard
	Y	89	420920.7	1.4				ug/L	382028	Standard
>	**Rh**	103	91.7	31.0				ug/L	8	Standard
	Mo	98	30.9	33.3	**-0.0149**	0.004	28.1	ug/L	158	Standard
	Ag	107	79.7	12.6	**-0.0013**	0.002	136.0	ug/L	108	Standard
	Cd	111	251.6	4.0	**0.1522**	0.008	5.1	mg/L	6	Standard
	Cd	114	656.7	5.9	**0.1572**	0.013	8.0	ug/L	25	Standard
>	**In**	115	544451.0	2.1				ug/L	561862	Standard
	Sn	118	124.0	6.5	**0.0698**	0.010	14.2	ug/L	69	Standard
	Sb	123	142.7	41.2	**-0.0296**	0.015	49.8	ug/L	2477	Standard
	Ba	135	20187.8	0.5	**12.2168**	0.235	1.9	ug/L	24	Standard
	Ce	140	90697.3	0.3				ug/L	28	Standard
>	**Tb**	159	894617.0	2.0				ug/L	906794	Standard
	Ho	165	6236.3	3.3				ug/L	8	Standard
	Tl	203	857.7	2.4	**0.1087**	0.004	3.5	ug/L	108	Standard
	Tl	205	735.0	6.1	**0.1135**	0.007	5.8	ug/L	112	Standard
	Pb	206	8030.1	2.2	**1.4181**	0.043	3.0	ug/L	315	Standard
	Pb	207	6724.8	0.4	**1.3128**	0.018	1.4	ug/L	265	Standard
	Pb	208	31437.1	0.5	**1.3602**	0.013	1.0	ug/L	1278	Standard
	U	238	4565.4	0.9	**0.2162**	0.000	0.2	ug/L	113	Standard
>	**Bi**	209	532318.2	1.0				ug/L	539503	Standard

Sample ID: L1608048507
Report Date/Time: Monday, August 15, 2016 15:31:21
Page 1

Approved: August 16, 2016

Na	23	5.0	**-146132397335122037017321018.598**			1.4	mg/L	2	Standard
Mg	24	345.0	23.3	**0.5882**	0.150	25.5	mg/L	40	Standard
K	39	290.0	14.9	**1.2915**	0.215	16.6	mg/L	32	Standard
Ca	43	408.3	2.5	**68.2638**	1.053	1.5	mg/L	40	Standard
Fe	54	1505.0	3.0	**1.4770**	0.067	4.5	mg/L	143	Standard
Fe	57	995.0	7.0	**2.9309**	0.289	9.9	mg/L	270	Standard
Sc-1	45	24044.1	1.4				mg/L	24972	Standard
Cl	35	219272.1	1.2				ug/L	63562	Standard
Kr	83	2.3	107.9				ug/L	3	Standard
Br	81	2420.2	4.5				ug/L	1190	Standard
P	31	14557.0	3.0				ug/L	11274	Standard
S	34	2883.6	4.7				ug/L	2592	Standard
Sr	88	506.7	8.4				ug/L	70	Standard
C	12	140.0	25.8				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	9583.6	5.8				mg/L	10	Standard
Ho-1	165	6236.3	3.3				mg/L	8	Standard
Er	166	5210.9	1.6				mg/L	10	Standard
I	127	10778.8	8.2				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		133.343	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.317	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1608048507
Report Date/Time: Monday, August 15, 2016 15:31:21
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.668
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608048508
Sample Date/Time: Monday, August 15, 2016 15:32:16
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81379.7	2.0				ug/L	61110	Standard
	Be	9	718.4	8.5	**0.9170**	0.063	6.8	ug/L	17	Standard
	Al	27	8062622.9	0.8	**63.8706**	0.736	1.2	ug/L	833	Standard
	Sc	45	23895.5	1.2				ug/L	24972	Standard
	Ti	47	75.7	12.0	**0.1166**	0.060	51.5	ug/L	61	Standard
	V	51	1601.5	1.1	**0.0991**	0.002	2.0	ug/L	947	Standard
	Cr	52	12276.6	1.3	**1.4344**	0.020	1.4	ug/L	5189	Standard
	Cr	53	2120.1	4.7	**0.0657**	0.138	210.7	ug/L	2222	Standard
	Mn	55	5269827.1	0.8	**664.7124**	3.180	0.5	ug/L	987	Standard
	Co	59	94932.5	1.5	**15.3426**	0.110	0.7	ug/L	300	Standard
	Ni	60	40511.1	1.1	**30.3489**	0.112	0.4	ug/L	157	Standard
	Cu	65	2666.6	2.0	**1.8846**	0.035	1.8	ug/L	132	Standard
	Zn	66	48175.5	0.6	**59.7401**	0.177	0.3	ug/L	171	Standard
>	**Ge**	72	413546.6	0.8				ug/L	432355	Standard
	As	75	41.9	63.1	**0.1326**	0.034	25.8	ug/L	-36	Standard
	Se	82	18.6	27.6	**0.3586**	0.093	25.8	ug/L	4	Standard
	Se-1	77	94.7	9.6	**-1.0138**	0.179	17.6	ug/L	163	Standard
>	**Ga**	71	140.0	18.6				mg/L	30	Standard
	Rb	85	32095.6	3.0				ug/L	22	Standard
	Y	89	422360.0	2.6				ug/L	382028	Standard
>	**Rh**	103	90.0	5.6				ug/L	8	Standard
	Mo	98	30.9	11.4	**-0.0145**	0.002	11.3	ug/L	158	Standard
	Ag	107	87.7	11.9	**0.0008**	0.002	293.1	ug/L	108	Standard
	Cd	111	286.6	1.4	**0.1767**	0.004	2.2	mg/L	6	Standard
	Cd	114	663.6	2.4	**0.1619**	0.002	1.2	ug/L	25	Standard
>	**In**	115	533736.0	1.3				ug/L	561862	Standard
	Sn	118	113.3	12.4	**0.0600**	0.015	24.6	ug/L	69	Standard
	Sb	123	115.8	45.4	**-0.0355**	0.013	37.5	ug/L	2477	Standard
	Ba	135	19873.7	1.9	**12.2662**	0.259	2.1	ug/L	24	Standard
	Ce	140	95538.6	0.9				ug/L	28	Standard
>	**Tb**	159	898324.2	2.1				ug/L	906794	Standard
	Ho	165	6604.8	1.7				ug/L	8	Standard
	Tl	203	854.7	3.9	**0.1087**	0.004	3.4	ug/L	108	Standard
	Tl	205	721.7	12.3	**0.1118**	0.016	14.5	ug/L	112	Standard
	Pb	206	7584.9	1.3	**1.3421**	0.007	0.5	ug/L	315	Standard
	Pb	207	6279.6	1.0	**1.2278**	0.004	0.3	ug/L	265	Standard
	Pb	208	29671.8	0.6	**1.2863**	0.004	0.3	ug/L	1278	Standard
	U	238	5132.2	0.8	**0.2448**	0.002	0.8	ug/L	113	Standard
>	**Bi**	209	530111.7	0.9				ug/L	539503	Standard

Sample ID: L1608048508
Report Date/Time: Monday, August 15, 2016 15:34:24
Page 1

Approved: August 16, 2016

Na	23	3.3	**-9920668246**3171831014476972.720			173.2	mg/L	2	Standard
Mg	24	318.3	17.4	**0.5407**	0.100	18.5	mg/L	40	Standard
K	39	271.7	6.5	**1.2102**	0.097	8.0	mg/L	32	Standard
Ca	43	370.0	10.6	**61.2972**	6.835	11.1	mg/L	40	Standard
Fe	54	2208.5	8.6	**2.2414**	0.209	9.3	mg/L	143	Standard
Fe	57	1218.4	10.8	**3.8610**	0.586	15.2	mg/L	270	Standard
Sc-1	45	23895.5	1.2				mg/L	24972	Standard
Cl	35	225137.0	0.5				ug/L	63562	Standard
Kr	83	3.0	66.7				ug/L	3	Standard
Br	81	2380.2	2.2				ug/L	1190	Standard
P	31	14713.8	4.8				ug/L	11274	Standard
S	34	3027.0	3.6				ug/L	2592	Standard
Sr	88	448.3	20.1				ug/L	70	Standard
C	12	143.3	17.6				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	10470.9	3.5				mg/L	10	Standard
Ho-1	165	6604.8	1.7				mg/L	8	Standard
Er	166	5767.8	7.5				mg/L	10	Standard
I	127	9251.2	6.3				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		133.170	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.650	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1608048508
Report Date/Time: Monday, August 15, 2016 15:34:24
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.994
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.259
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608048509
Sample Date/Time: Monday, August 15, 2016 15:35:18
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	114427.5	3.4				ug/L	61110	Standard
	Be	9	7316.8	3.5	**6.7422**	0.158	2.3	ug/L	17	Standard
	Al	27	38313480.9	1.6	**215.9527**	4.921	2.3	ug/L	833	Standard
	Sc	45	28730.6	3.3				ug/L	24972	Standard
	Ti	47	5542.7	0.8	**36.1147**	0.528	1.5	ug/L	61	Standard
	V	51	9532.1	4.7	**1.7103**	0.091	5.3	ug/L	947	Standard
	Cr	52	53375.5	0.8	**10.5821**	0.093	0.9	ug/L	5189	Standard
	Cr	53	7328.4	1.6	**9.4609**	0.277	2.9	ug/L	2222	Standard
	Mn	55	49109522.6	1.7	**6534.9581**	97.809	1.5	ug/L	987	Standard
	Co	59	1431916.5	1.7	**244.7307**	2.437	1.0	ug/L	300	Standard
	Ni	60	482329.7	1.5	**382.5064**	3.416	0.9	ug/L	157	Standard
	Cu	65	27680.6	1.7	**21.4073**	0.234	1.1	ug/L	132	Standard
	Zn	66	708985.6	1.4	**930.6661**	8.211	0.9	ug/L	171	Standard
>	Ge	72	392051.6	0.7				ug/L	432355	Standard
	As	75	1163.4	3.7	**1.6576**	0.050	3.0	ug/L	-36	Standard
	Se	82	137.3	9.6	**2.6470**	0.243	9.2	ug/L	4	Standard
	Se-1	77	182.0	8.8	**0.8245**	0.311	37.7	ug/L	163	Standard
>	Ga	71	2393.5	3.8				mg/L	30	Standard
	Rb	85	49298.4	2.1				ug/L	22	Standard
	Y	89	1341735.0	1.7				ug/L	382028	Standard
>	Rh	103	158.3	27.2				ug/L	8	Standard
	Mo	98	30187.5	1.4	**14.2728**	0.154	1.1	ug/L	158	Standard
	Ag	107	118.0	11.1	**0.0091**	0.003	33.1	ug/L	108	Standard
	Cd	111	2560.1	1.2	**1.6738**	0.019	1.1	mg/L	6	Standard
	Cd	114	6444.1	2.3	**1.6944**	0.035	2.1	ug/L	25	Standard
>	In	115	502293.5	0.4				ug/L	561862	Standard
	Sn	118	148.0	7.7	**0.1118**	0.014	12.1	ug/L	69	Standard
	Sb	123	364.0	20.4	**0.0311**	0.020	63.0	ug/L	2477	Standard
	Ba	135	62947.5	0.1	**41.3019**	0.126	0.3	ug/L	24	Standard
	Ce	140	885001.8	0.5				ug/L	28	Standard
>	Tb	159	940720.1	0.7				ug/L	906794	Standard
	Ho	165	92291.9	0.6				ug/L	8	Standard
	Tl	203	850.4	6.6	**0.1176**	0.009	7.5	ug/L	108	Standard
	Tl	205	700.0	7.2	**0.1176**	0.009	7.7	ug/L	112	Standard
	Pb	206	8425.3	1.7	**1.6187**	0.021	1.3	ug/L	315	Standard
	Pb	207	6913.9	2.3	**1.4676**	0.028	1.9	ug/L	265	Standard
	Pb	208	32444.2	0.9	**1.5270**	0.009	0.6	ug/L	1278	Standard
	U	238	53291.6	1.0	**2.7943**	0.038	1.4	ug/L	113	Standard
>	Bi	209	491427.8	0.4				ug/L	539503	Standard

Sample ID: L1608048509
Report Date/Time: Monday, August 15, 2016 15:37:26
Page 1

Approved: August 16, 2016

Na	23	30.0	**-7288430874632**21089345367410.660			30.3	mg/L	2	Standard
Mg	24	2105.1	3.9	**3.3240**	0.245	7.4	mg/L	40	Standard
K	39	783.4	6.8	**3.0845**	0.289	9.4	mg/L	32	Standard
Ca	43	1883.5	9.6	**292.7444**	27.193	9.3	mg/L	40	Standard
Fe	54	36935.3	1.3	**32.8378**	1.079	3.3	mg/L	143	Standard
Fe	57	12041.5	1.3	**39.4134**	1.810	4.6	mg/L	270	Standard
Sc-1	45	28730.6	3.3				mg/L	24972	Standard
Cl	35	247319.0	1.3				ug/L	63562	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	26489.8	5.2				ug/L	1190	Standard
P	31	31567.9	2.2				ug/L	11274	Standard
S	34	3503.7	3.4				ug/L	2592	Standard
Sr	88	1171.7	4.3				ug/L	70	Standard
C	12	390.0	24.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	141222.4	1.7				mg/L	10	Standard
Ho-1	165	92291.9	0.6				mg/L	8	Standard
Er	166	78804.4	1.7				mg/L	10	Standard
I	127	20201.8	6.9				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		187.249	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608048509
Report Date/Time: Monday, August 15, 2016 15:37:26
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	89.398	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	91.089	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1608048509
Report Date/Time: Monday, August 15, 2016 15:37:26
Page 3

Approved: August 16, 2016

Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608048510
Sample Date/Time: Monday, August 15, 2016 15:38:21
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	119602.0	1.8				ug/L	61110	Standard
	Be	9	66.7	11.5	**0.0440**	0.007	15.7	ug/L	17	Standard
	Al	27	17253336.8	1.1	**92.9997**	0.958	1.0	ug/L	833	Standard
	Sc	45	24388.0	2.1				ug/L	24972	Standard
	Ti	47	118.7	11.4	**0.3804**	0.077	20.2	ug/L	61	Standard
	V	51	1726.2	9.5	**0.1216**	0.035	28.8	ug/L	947	Standard
	Cr	52	9973.6	1.4	**0.9463**	0.054	5.7	ug/L	5189	Standard
	Cr	53	1783.4	3.5	**-0.5117**	0.106	20.7	ug/L	2222	Standard
	Mn	55	2128615.7	0.5	**267.1340**	2.325	0.9	ug/L	987	Standard
	Co	59	15746.5	1.7	**2.4977**	0.031	1.2	ug/L	300	Standard
	Ni	60	14810.2	1.0	**10.9679**	0.242	2.2	ug/L	157	Standard
	Cu	65	1088.0	4.6	**0.7194**	0.043	6.0	ug/L	132	Standard
	Zn	66	5743.4	0.8	**6.8865**	0.112	1.6	ug/L	171	Standard
>	Ge	72	415573.9	1.2				ug/L	432355	Standard
	As	75	100.7	21.5	**0.2078**	0.029	14.2	ug/L	-36	Standard
	Se	82	91.7	3.7	**1.6765**	0.080	4.8	ug/L	4	Standard
	Se-1	77	126.7	12.0	**-0.4227**	0.262	61.9	ug/L	163	Standard
>	Ga	71	63.3	16.4				mg/L	30	Standard
	Rb	85	54446.0	1.9				ug/L	22	Standard
	Y	89	367731.3	1.5				ug/L	382028	Standard
>	Rh	103	110.0	15.7				ug/L	8	Standard
	Mo	98	3807.8	2.3	**1.6605**	0.038	2.3	ug/L	158	Standard
	Ag	107	69.0	7.5	**-0.0034**	0.001	42.9	ug/L	108	Standard
	Cd	111	30.5	10.3	**0.0191**	0.002	11.8	mg/L	6	Standard
	Cd	114	86.4	26.9	**0.0187**	0.005	28.2	ug/L	25	Standard
>	In	115	536619.0	2.2				ug/L	561862	Standard
	Sn	118	135.7	9.4	**0.0858**	0.018	21.0	ug/L	69	Standard
	Sb	123	156.9	19.1	**-0.0258**	0.007	28.3	ug/L	2477	Standard
	Ba	135	7549.5	1.1	**4.6306**	0.147	3.2	ug/L	24	Standard
	Ce	140	7698.6	4.8				ug/L	28	Standard
>	Tb	159	882665.2	1.3				ug/L	906794	Standard
	Ho	165	520.0	3.5				ug/L	8	Standard
	Tl	203	465.7	1.5	**0.0550**	0.000	0.2	ug/L	108	Standard
	Tl	205	390.0	4.6	**0.0550**	0.004	7.1	ug/L	112	Standard
	Pb	206	480.3	4.9	**0.0364**	0.004	10.0	ug/L	315	Standard
	Pb	207	406.0	1.7	**0.0337**	0.003	8.3	ug/L	265	Standard
	Pb	208	1872.4	1.2	**0.0315**	0.001	2.0	ug/L	1278	Standard
	U	238	6382.3	2.8	**0.3115**	0.005	1.6	ug/L	113	Standard
>	Bi	209	520301.8	1.7				ug/L	539503	Standard

Sample ID: L1608048510
Report Date/Time: Monday, August 15, 2016 15:40:29
Page 1

Approved: August 16, 2016

Na	23	8.3	**-2412843746878**87103081489903.875			36.1	mg/L	2	Standard
Mg	24	2498.5	9.2	**4.6720**	0.453	9.7	mg/L	40	Standard
K	39	873.4	10.5	**4.0827**	0.408	10.0	mg/L	32	Standard
Ca	43	581.7	13.0	**100.2093**	16.164	16.1	mg/L	40	Standard
Fe	54	745.7	4.4	**0.6564**	0.041	6.3	mg/L	143	Standard
Fe	57	1043.4	5.3	**3.0652**	0.205	6.7	mg/L	270	Standard
Sc-1	45	24388.0	2.1				mg/L	24972	Standard
Cl	35	275643.4	0.3				ug/L	63562	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	20697.5	4.9				ug/L	1190	Standard
P	31	14538.6	3.2				ug/L	11274	Standard
S	34	3517.1	5.6				ug/L	2592	Standard
Sr	88	493.3	4.1				ug/L	70	Standard
C	12	170.0	5.9				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	776.5	18.2				mg/L	10	Standard
Ho-1	165	520.0	3.5				mg/L	8	Standard
Er	166	490.0	12.7				mg/L	10	Standard
I	127	18242.7	6.2				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		195.717	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.119	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608048510
Report Date/Time: Monday, August 15, 2016 15:40:29
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.507
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.441
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: August 16, 2016

Method 6020 - Summary Report

WG580044-02

Sample ID: L1608054401 ~~WG580044-01~~
Sample Date/Time: Monday, August 15, 2016 15:41:23
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72596.9	2.0				ug/L	61110	Standard
	Be	9	16.7	69.3	**0.0093**	0.017	179.0	ug/L	17	Standard
	Al	27	17739118.9	2.3	**157.5180**	1.299	0.8	ug/L	833	Standard
	Sc	45	22840.5	2.1				ug/L	24972	Standard
	Ti	47	54.7	15.3	**-0.0116**	0.050	427.5	ug/L	61	Standard
	V	51	1941.2	15.1	**0.1680**	0.060	35.8	ug/L	947	Standard
	Cr	52	10001.6	1.5	**0.9826**	0.023	2.4	ug/L	5189	Standard
	Cr	53	2185.2	3.8	**0.2114**	0.111	52.6	ug/L	2222	Standard
	Mn	55	112268.1	1.7	**14.1951**	0.284	2.0	ug/L	987	Standard
	Co	59	1808.8	7.2	**0.2542**	0.020	7.7	ug/L	300	Standard
	Ni	60	3631.8	0.6	**2.6409**	0.045	1.7	ug/L	157	Standard
	Cu	65	1423.4	5.2	**0.9807**	0.065	6.7	ug/L	132	Standard
	Zn	66	2297.8	0.3	**2.6605**	0.038	1.4	ug/L	171	Standard
>	Ge	72	409440.1	1.0				ug/L	432355	Standard
	As	75	182.9	5.6	**0.3164**	0.013	4.1	ug/L	-36	Standard
	Se	82	62.1	9.8	**1.1597**	0.117	10.1	ug/L	4	Standard
	Se-1	77	121.3	7.6	**-0.4875**	0.170	34.8	ug/L	163	Standard
>	Ga	71	36.7	41.7				mg/L	30	Standard
	Rb	85	12763.7	0.5				ug/L	22	Standard
	Y	89	352215.9	1.6				ug/L	382028	Standard
>	Rh	103	68.3	18.4				ug/L	8	Standard
	Mo	98	136.3	2.7	**0.0342**	0.002	4.5	ug/L	158	Standard
	Ag	107	71.0	16.2	**-0.0024**	0.003	111.0	ug/L	108	Standard
	Cd	111	12.5	12.3	**0.0083**	0.001	12.4	mg/L	6	Standard
	Cd	114	35.0	42.5	**0.0064**	0.004	59.5	ug/L	25	Standard
>	In	115	518792.9	0.7				ug/L	561862	Standard
	Sn	118	124.0	18.8	**0.0769**	0.029	37.5	ug/L	69	Standard
	Sb	123	275.5	12.2	**0.0056**	0.008	148.7	ug/L	2477	Standard
	Ba	135	19468.2	1.0	**12.3612**	0.127	1.0	ug/L	24	Standard
	Ce	140	621.7	9.4				ug/L	28	Standard
>	Tb	159	865617.5	2.7				ug/L	906794	Standard
	Ho	165	115.0	28.5				ug/L	8	Standard
	Tl	203	199.0	4.3	**0.0181**	0.001	7.3	ug/L	108	Standard
	Tl	205	145.0	22.6	**0.0125**	0.006	49.0	ug/L	112	Standard
	Pb	206	364.7	7.3	**0.0182**	0.005	29.2	ug/L	315	Standard
	Pb	207	318.3	4.0	**0.0188**	0.003	15.1	ug/L	265	Standard
	Pb	208	1478.7	2.8	**0.0168**	0.002	12.4	ug/L	1278	Standard
	U	238	1603.8	0.3	**0.0784**	0.000	0.4	ug/L	113	Standard
>	Bi	209	495454.4	0.1				ug/L	539503	Standard

Sample ID: L1608054401 ~~WG580044-01~~
Report Date/Time: Monday, August 15, 2016 15:43:31
Page 1

Approved: August 16, 2016

Na	23	6.7	**-2029775947381**75812948267939.120			86.6	mg/L	2	Standard
Mg	24	72879.9	1.5	**147.7835**	3.842	2.6	mg/L	40	Standard
K	39	325.0	18.9	**1.5459**	0.313	20.3	mg/L	32	Standard
Ca	43	430.0	8.4	**76.7172**	5.582	7.3	mg/L	40	Standard
Fe	54	195.5	8.4	**0.0918**	0.015	16.3	mg/L	143	Standard
Fe	57	640.0	14.1	**1.6365**	0.324	19.8	mg/L	270	Standard
> **Sc-1**	45	22840.5	2.1				mg/L	24972	Standard
Cl	35	350400.9	0.7				ug/L	63562	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	16422.2	5.9				ug/L	1190	Standard
P	31	13522.7	2.1				ug/L	11274	Standard
S	34	3645.4	1.5				ug/L	2592	Standard
Sr	88	495.0	8.8				ug/L	70	Standard
C	12	173.3	52.3				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	102.5	22.7				mg/L	10	Standard
Ho-1	165	115.0	28.5				mg/L	8	Standard
Er	166	86.7	6.7				mg/L	10	Standard
I	127	6848.2	4.3				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.798	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.700	
As	75			
Se	82			
Se-1	77			
> Ga	71			

WG580044-02

Sample ID: L1608054401 ~~**WG580044-01**~~
Report Date/Time: Monday, August 15, 2016 15:43:31
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.335
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.835
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

WG580044-02

Sample ID: L1608054401 ~~WG580044-01~~
Report Date/Time: Monday, August 15, 2016 15:43:31
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608054401DP WG580044-06
Sample Date/Time: Monday, August 15, 2016 15:44:25
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72544.9	1.5				ug/L	61110	Standard
	Be	9	13.3	21.7	**0.0045**	0.004	90.0	ug/L	17	Standard
	Al	27	17824345.5	1.0	**158.4125**	2.675	1.7	ug/L	833	Standard
	Sc	45	23227.8	2.4				ug/L	24972	Standard
	Ti	47	73.0	43.9	**0.1086**	0.208	191.8	ug/L	61	Standard
	V	51	2151.7	4.3	**0.2110**	0.021	9.8	ug/L	947	Standard
	Cr	52	10163.7	2.6	**1.0307**	0.058	5.6	ug/L	5189	Standard
	Cr	53	2098.5	3.0	**0.0895**	0.137	152.6	ug/L	2222	Standard
	Mn	55	107200.0	2.3	**13.6381**	0.287	2.1	ug/L	987	Standard
	Co	59	1702.8	2.6	**0.2387**	0.005	1.9	ug/L	300	Standard
	Ni	60	3681.1	3.1	**2.6962**	0.065	2.4	ug/L	157	Standard
	Cu	65	1476.1	2.9	**1.0268**	0.037	3.6	ug/L	132	Standard
	Zn	66	2405.2	1.5	**2.8154**	0.064	2.3	ug/L	171	Standard
>	**Ge**	72	406765.8	1.0				ug/L	432355	Standard
	As	75	177.2	28.6	**0.3104**	0.066	21.4	ug/L	-36	Standard
	Se	82	61.7	19.0	**1.1578**	0.209	18.1	ug/L	4	Standard
	Se-1	77	125.0	0.8	**-0.4015**	0.022	5.5	ug/L	163	Standard
>	**Ga**	71	45.0	29.4				mg/L	30	Standard
	Rb	85	13120.7	1.3				ug/L	22	Standard
	Y	89	355183.8	1.5				ug/L	382028	Standard
>	**Rh**	103	91.7	8.3				ug/L	8	Standard
	Mo	98	134.0	6.3	**0.0332**	0.004	12.4	ug/L	158	Standard
	Ag	107	75.3	12.0	**-0.0014**	0.002	147.3	ug/L	108	Standard
	Cd	111	9.8	46.9	**0.0066**	0.003	44.5	mg/L	6	Standard
	Cd	114	50.2	38.3	**0.0103**	0.005	47.1	ug/L	25	Standard
>	**In**	115	518468.3	0.4				ug/L	561862	Standard
	Sn	118	118.7	8.8	**0.0705**	0.013	18.6	ug/L	69	Standard
	Sb	123	287.9	12.8	**0.0088**	0.010	108.2	ug/L	2477	Standard
	Ba	135	19458.2	1.4	**12.3621**	0.122	1.0	ug/L	24	Standard
	Ce	140	565.0	8.8				ug/L	28	Standard
>	**Tb**	159	867179.4	1.9				ug/L	906794	Standard
	Ho	165	66.7	17.3				ug/L	8	Standard
	Tl	203	198.0	3.1	**0.0179**	0.001	5.8	ug/L	108	Standard
	Tl	205	185.0	16.9	**0.0200**	0.006	27.6	ug/L	112	Standard
	Pb	206	394.3	3.2	**0.0240**	0.002	7.5	ug/L	315	Standard
	Pb	207	334.3	5.7	**0.0223**	0.004	19.7	ug/L	265	Standard
	Pb	208	1559.4	2.2	**0.0207**	0.002	7.7	ug/L	1278	Standard
	U	238	1539.4	2.4	**0.0750**	0.003	3.5	ug/L	113	Standard
>	**Bi**	209	495451.0	0.9				ug/L	539503	Standard

Sample ID: L1608054401DP WG580044-06
Report Date/Time: Monday, August 15, 2016 15:46:33
Page 1

Approved: August 16, 2016

Na	23	6.7	**-2010145277777**84268150688300.984			41.9	mg/L	2	Standard
Mg	24	72605.2	0.7	**144.7669**	2.524	1.7	mg/L	40	Standard
K	39	375.0	10.6	**1.7700**	0.173	9.8	mg/L	32	Standard
Ca	43	401.7	10.0	**69.6192**	6.391	9.2	mg/L	40	Standard
Fe	54	148.7	20.3	**0.0371**	0.037	100.1	mg/L	143	Standard
Fe	57	688.3	13.4	**1.7923**	0.329	18.4	mg/L	270	Standard
Sc-1	45	23227.8	2.4				mg/L	24972	Standard
Cl	35	346004.4	2.5				ug/L	63562	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	15384.5	6.0				ug/L	1190	Standard
P	31	13387.6	0.8				ug/L	11274	Standard
S	34	3363.7	5.0				ug/L	2592	Standard
Sr	88	458.3	18.6				ug/L	70	Standard
C	12	86.7	76.8				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	115.5	17.3				mg/L	10	Standard
Ho-1	165	66.7	17.3				mg/L	8	Standard
Er	166	93.3	24.7				mg/L	10	Standard
I	127	6458.0	5.1				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.713	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.081	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608054401DP WG580044-06
Report Date/Time: Monday, August 15, 2016 15:46:33
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	92.277	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	91.835	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1608054401DP WG580044-06
Report Date/Time: Monday, August 15, 2016 15:46:33
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 15, 2016 15:47:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69957.8	1.6				ug/L	61110	Standard
	Be	9	35752.2	3.3	**53.9755**	1.143	2.1	ug/L	17	Standard
	Al	27	5169867.9	2.8	**47.6334**	1.239	2.6	ug/L	833	Standard
	Sc	45	23606.7	1.8				ug/L	24972	Standard
	Ti	47	17403.0	1.3	**108.1393**	1.294	1.2	ug/L	61	Standard
	V	51	275942.8	1.6	**52.3551**	0.366	0.7	ug/L	947	Standard
	Cr	52	258280.2	1.8	**52.5168**	0.485	0.9	ug/L	5189	Standard
	Cr	53	32842.2	0.7	**51.4779**	0.177	0.3	ug/L	2222	Standard
	Mn	55	419989.8	1.1	**52.8438**	0.125	0.2	ug/L	987	Standard
	Co	59	326608.5	0.9	**52.8607**	0.061	0.1	ug/L	300	Standard
	Ni	60	70042.5	0.6	**52.5321**	0.193	0.4	ug/L	157	Standard
	Cu	65	72187.9	0.7	**53.0147**	0.134	0.3	ug/L	132	Standard
	Zn	66	43820.3	1.5	**54.2868**	0.381	0.7	ug/L	171	Standard
>	Ge	72	413769.6	0.9				ug/L	432355	Standard
	As	75	41063.5	1.3	**52.8926**	0.286	0.5	ug/L	-36	Standard
	Se	82	3029.6	1.6	**54.8973**	0.574	1.0	ug/L	4	Standard
	Se-1	77	2966.0	2.2	**53.2243**	1.239	2.3	ug/L	163	Standard
>	Ga	71	13.3	57.3				mg/L	30	Standard
	Rb	85	641.7	5.5				ug/L	22	Standard
	Y	89	358252.1	2.1				ug/L	382028	Standard
>	Rh	103	20.0	0.0				ug/L	8	Standard
	Mo	98	247627.6	1.4	**109.6126**	1.035	0.9	ug/L	158	Standard
	Ag	107	249164.4	0.6	**54.2849**	0.409	0.8	ug/L	108	Standard
	Cd	111	87350.0	0.5	**53.3691**	0.895	1.7	mg/L	6	Standard
	Cd	114	217153.2	2.0	**53.4461**	1.180	2.2	ug/L	25	Standard
>	In	115	537460.1	1.2				ug/L	561862	Standard
	Sn	118	47040.3	1.3	**54.9593**	1.015	1.8	ug/L	69	Standard
	Sb	123	220991.5	0.8	**53.9923**	0.629	1.2	ug/L	2477	Standard
	Ba	135	84969.3	1.1	**52.1063**	0.263	0.5	ug/L	24	Standard
	Ce	140	85.0	40.8				ug/L	28	Standard
>	Tb	159	893457.0	1.1				ug/L	906794	Standard
	Ho	165	11.7	24.7				ug/L	8	Standard
	Tl	203	376068.7	0.8	**53.2727**	0.637	1.2	ug/L	108	Standard
	Tl	205	306194.8	0.9	**53.7582**	0.578	1.1	ug/L	112	Standard
	Pb	206	290066.3	0.4	**53.4749**	0.074	0.1	ug/L	315	Standard
	Pb	207	259695.0	0.1	**52.9671**	0.306	0.6	ug/L	265	Standard
	Pb	208	1174769.3	0.7	**53.1884**	0.448	0.8	ug/L	1278	Standard
	U	238	1170082.9	1.2	**57.1380**	0.773	1.4	ug/L	113	Standard
>	Bi	209	528602.9	0.4				ug/L	539503	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 15:49:37
Page 1

Approved: August 16, 2016

Na	23	1.7	**-492170547758**85246439470688.047			173.2	mg/L	2	Standard
Mg	24	2856.9	4.0	**5.5312**	0.215	3.9	mg/L	40	Standard
K	39	961.7	5.0	**4.6671**	0.309	6.6	mg/L	32	Standard
Ca	43	78.3	31.5	**5.0629**	4.606	91.0	mg/L	40	Standard
Fe	54	4917.6	3.5	**5.2095**	0.091	1.7	mg/L	143	Standard
Fe	57	1661.8	4.4	**5.7299**	0.302	5.3	mg/L	270	Standard
Sc-1	45	23606.7	1.8				mg/L	24972	Standard
Cl	35	102883.2	6.9				ug/L	63562	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	1646.8	12.8				ug/L	1190	Standard
P	31	14855.6	2.9				ug/L	11274	Standard
S	34	3807.1	3.2				ug/L	2592	Standard
Sr	88	70.0	43.4				ug/L	70	Standard
C	12	96.7	11.9				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	22.4	29.8				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	8	Standard
Er	166	20.0	132.3				mg/L	10	Standard
I	127	10320.2	1.8				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.951		
Al	27	95.267		
Sc	45			
Ti	47	108.139		
V	51	104.710		
Cr	52	105.034		
Cr	53			
Mn	55	105.688		
Co	59	105.721		
Ni	60	105.064		
Cu	65	106.029		
Zn	66	108.574		
Ge	72		95.701	
As	75	105.785		
Se	82	109.795		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 15:49:37
Page 2

Approved: August 16, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	109.613		
Ag	107	108.570		
Cd	111	106.738		
Cd	114			
In	115			95.657
Sn	118	109.919		
Sb	123	107.985		
Ba	135	104.213		
Ce	140			
Tb	159			
Ho	165			
Tl	203	106.545		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.377		
U	238	114.276		
Bi	209			97.980
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	U	238	

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 15:49:37
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 15, 2016 15:50:32
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69382.1	4.8				ug/L	61110	Standard
	Be	9	28.3	20.4	**0.0280**	0.007	24.6	ug/L	17	Standard
	Al	27	6303.1	35.2	**0.0460**	0.019	40.4	ug/L	833	Standard
	Sc	45	23364.7	2.7				ug/L	24972	Standard
	Ti	47	24.0	11.0	**-0.2063**	0.016	7.6	ug/L	61	Standard
	V	51	1308.2	9.6	**0.0430**	0.026	60.2	ug/L	947	Standard
	Cr	52	5780.1	0.2	**0.0827**	0.008	9.8	ug/L	5189	Standard
	Cr	53	1130.0	4.5	**-1.5941**	0.097	6.1	ug/L	2222	Standard
	Mn	55	2747.3	34.6	**0.2342**	0.118	50.2	ug/L	987	Standard
	Co	59	313.7	14.3	**0.0089**	0.007	79.0	ug/L	300	Standard
	Ni	60	157.7	3.0	**0.0002**	0.004	1899.3	ug/L	157	Standard
	Cu	65	182.0	12.1	**0.0562**	0.017	30.1	ug/L	132	Standard
	Zn	66	291.7	11.3	**0.1336**	0.039	29.4	ug/L	171	Standard
>	**Ge**	72	414226.8	0.8				ug/L	432355	Standard
	As	75	-61.0	55.5	**0.0002**	0.043	21986.9	ug/L	-36	Standard
	Se	82	1.1	690.4	**0.0435**	0.144	330.0	ug/L	4	Standard
	Se-1	77	78.3	2.0	**-1.3255**	0.021	1.6	ug/L	163	Standard
>	**Ga**	71	18.3	15.7				mg/L	30	Standard
	Rb	85	33.3	22.9				ug/L	22	Standard
	Y	89	362822.9	0.8				ug/L	382028	Standard
>	**Rh**	103	13.3	114.6				ug/L	8	Standard
	Mo	98	264.1	16.5	**0.0882**	0.019	22.0	ug/L	158	Standard
	Ag	107	129.0	8.8	**0.0096**	0.003	28.0	ug/L	108	Standard
	Cd	111	19.3	15.8	**0.0121**	0.002	16.6	mg/L	6	Standard
	Cd	114	52.9	5.4	**0.0105**	0.001	8.3	ug/L	25	Standard
>	**In**	115	539505.2	1.3				ug/L	561862	Standard
	Sn	118	142.0	23.3	**0.0921**	0.038	41.5	ug/L	69	Standard
	Sb	123	559.1	28.6	**0.0720**	0.038	53.4	ug/L	2477	Standard
	Ba	135	49.3	18.7	**0.0210**	0.006	26.4	ug/L	24	Standard
	Ce	140	40.0	75.0				ug/L	28	Standard
>	**Tb**	159	874562.7	0.5				ug/L	906794	Standard
	Ho	165	21.7	35.3				ug/L	8	Standard
	Tl	203	96.7	22.3	**0.0015**	0.003	198.6	ug/L	108	Standard
	Tl	205	86.7	18.5	**0.0004**	0.003	725.1	ug/L	112	Standard
	Pb	206	351.0	3.0	**0.0103**	0.002	17.1	ug/L	315	Standard
	Pb	207	308.7	1.7	**0.0116**	0.001	6.6	ug/L	265	Standard
	Pb	208	1437.4	4.1	**0.0096**	0.002	24.1	ug/L	1278	Standard
	U	238	318.3	12.4	**0.0102**	0.002	18.1	ug/L	113	Standard
>	**Bi**	209	535827.5	0.5				ug/L	539503	Standard

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 15:52:40
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	51.7	43.6	**0.0264**	0.044	166.3	mg/L	40	Standard
K	39	35.0	49.5	**0.0475**	0.082	172.9	mg/L	32	Standard
Ca	43	40.0	21.7	**-2.3286**	1.514	65.0	mg/L	40	Standard
Fe	54	135.8	22.3	**0.0212**	0.030	143.7	mg/L	143	Standard
Fe	57	255.0	2.0	**-0.0093**	0.026	282.5	mg/L	270	Standard
> **Sc-1**	45	23364.7	2.7				mg/L	24972	Standard
Cl	35	98280.4	0.9				ug/L	63562	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	1410.1	14.7				ug/L	1190	Standard
P	31	13596.1	2.4				ug/L	11274	Standard
S	34	3427.1	3.4				ug/L	2592	Standard
Sr	88	76.7	33.5				ug/L	70	Standard
C	12	53.3	10.8				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	23.0	52.6				mg/L	10	Standard
Ho-1	165	21.7	35.3				mg/L	8	Standard
Er	166	6.7	173.2				mg/L	10	Standard
I	127	2170.2	8.5				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.807	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 15:52:40
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.021
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.319
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 15:52:40
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Monday, August 15, 2016 15:53:38
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63400.8	4.0				ug/L	61110	Standard
	Be	9	13.3	78.1	**0.0075**	0.018	241.1	ug/L	17	Standard
	Al	27	4908383.1	1.5	**49.9460**	1.883	3.8	ug/L	833	Standard
	Sc	45	21161.4	1.4				ug/L	24972	Standard
	Ti	47	2559.9	1.8	**16.9763**	0.313	1.8	ug/L	61	Standard
	V	51	151.1	229.1	**-0.1748**	0.072	41.0	ug/L	947	Standard
	Cr	52	4948.1	2.2	**-0.0004**	0.023	5703.9	ug/L	5189	Standard
	Cr	53	7478.5	2.2	**10.1083**	0.291	2.9	ug/L	2222	Standard
	Mn	55	1548.4	2.0	**0.1007**	0.004	4.0	ug/L	987	Standard
	Co	59	366.3	2.0	**0.0226**	0.001	5.6	ug/L	300	Standard
	Ni	60	448.3	1.5	**0.2478**	0.006	2.3	ug/L	157	Standard
	Cu	65	286.7	0.5	**0.1514**	0.001	0.7	ug/L	132	Standard
	Zn	66	684.0	7.3	**0.6954**	0.067	9.6	ug/L	171	Standard
>	Ge	72	380986.5	0.1				ug/L	432355	Standard
	As	75	-60.6	45.7	**-0.0061**	0.039	635.5	ug/L	-36	Standard
	Se	82	3.5	41.9	**0.0909**	0.029	31.8	ug/L	4	Standard
	Se-1	77	501.7	6.0	**7.4885**	0.617	8.2	ug/L	163	Standard
>	Ga	71	53.3	21.7				mg/L	30	Standard
	Rb	85	621.7	9.6				ug/L	22	Standard
	Y	89	329585.2	1.8				ug/L	382028	Standard
>	Rh	103	8.3	69.3				ug/L	8	Standard
	Mo	98	199381.2	1.1	**96.2736**	0.491	0.5	ug/L	158	Standard
	Ag	107	124.7	14.9	**0.0112**	0.004	40.0	ug/L	108	Standard
	Cd	111	-133.6	9.2	**-0.0886**	0.008	8.5	mg/L	6	Standard
	Cd	114	330.2	18.5	**0.0861**	0.016	19.1	ug/L	25	Standard
>	In	115	492672.0	0.8				ug/L	561862	Standard
	Sn	118	55.7	20.2	**-0.0023**	0.015	646.0	ug/L	69	Standard
	Sb	123	260.8	43.9	**0.0056**	0.031	558.5	ug/L	2477	Standard
	Ba	135	45.3	17.8	**0.0212**	0.005	25.3	ug/L	24	Standard
	Ce	140	71.7	28.2				ug/L	28	Standard
>	Tb	159	812173.8	1.4				ug/L	906794	Standard
	Ho	165	13.3	78.1				ug/L	8	Standard
	Tl	203	123.3	10.6	**0.0067**	0.002	30.3	ug/L	108	Standard
	Tl	205	93.3	11.2	**0.0029**	0.002	61.8	ug/L	112	Standard
	Pb	206	445.0	3.0	**0.0342**	0.003	7.3	ug/L	315	Standard
	Pb	207	356.7	1.9	**0.0273**	0.001	4.7	ug/L	265	Standard
	Pb	208	1673.7	0.7	**0.0265**	0.001	3.5	ug/L	1278	Standard
	U	238	93.0	31.8	**-0.0003**	0.001	454.6	ug/L	113	Standard
>	Bi	209	494016.3	0.9				ug/L	539503	Standard

Sample ID: QC Std 4
Report Date/Time: Monday, August 15, 2016 15:55:46
Page 1

Approved: August 16, 2016

Na	23	1.7	**-5447970982729436162540247**7.703			173.2	mg/L	2	Standard
Mg	24	6861.6	4.1	**14.9526**	0.815	5.4	mg/L	40	Standard
K	39	893.4	6.0	**4.8395**	0.331	6.8	mg/L	32	Standard
Ca	43	98.3	7.8	**11.2473**	1.428	12.7	mg/L	40	Standard
Fe	54	4366.6	1.9	**5.1609**	0.124	2.4	mg/L	143	Standard
Fe	57	1460.1	11.9	**5.5969**	0.826	14.7	mg/L	270	Standard
Sc-1	45	21161.4	1.4				mg/L	24972	Standard
Cl	35	92498.8	0.7				ug/L	63562	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	1253.4	3.6				ug/L	1190	Standard
P	31	5015.8	5.7				ug/L	11274	Standard
S	34	3273.7	3.2				ug/L	2592	Standard
Sr	88	93.3	13.5				ug/L	70	Standard
C	12	153.3	42.4				mg/L	90	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.7	34.6				mg/L	10	Standard
Ho-1	165	13.3	78.1				mg/L	8	Standard
Er	166	0.0					mg/L	10	Standard
I	127	1940.1	4.1				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.999		
Sc	45			
Ti	47	16.976		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		88.119	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 4
Report Date/Time: Monday, August 15, 2016 15:55:46
Page 2

Approved: August 16, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	96.274		
Ag	107			
Cd	111			
Cd	114			
> In	115			87.686
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			91.569
Na	2-435837678618328.940			
Mg	24	299.053		
K	39	96.791		
Ca	43	74.982		
Fe	54	41.288		
Fe	57	44.775		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Ti	47	
QC Std 4	Na	23	

Sample ID: QC Std 4
Report Date/Time: Monday, August 15, 2016 15:55:46
Page 3

Approved: August 16, 2016

QC Std 4	Mg	24
QC Std 4	Ca	43
QC Std 4	Fe	54
QC Std 4	Fe	57

Sample ID: QC Std 4
Report Date/Time: Monday, August 15, 2016 15:55:46
Page 4

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Monday, August 15, 2016 15:56:41
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72573.5	2.7				ug/L	61110	Standard
	Be	9	75499.3	1.3	**109.9339**	1.692	1.5	ug/L	17	Standard
	Al	27	4879592.8	0.5	**43.3602**	1.376	3.2	ug/L	833	Standard
	Sc	45	24680.1	1.6				ug/L	24972	Standard
	Ti	47	17277.5	1.0	**104.7831**	1.793	1.7	ug/L	61	Standard
	V	51	578091.2	0.7	**107.2822**	1.625	1.5	ug/L	947	Standard
	Cr	52	538349.1	1.8	**107.9974**	1.283	1.2	ug/L	5189	Standard
	Cr	53	82629.8	2.0	**131.4781**	2.141	1.6	ug/L	2222	Standard
	Mn	55	886578.2	2.1	**108.9856**	0.967	0.9	ug/L	987	Standard
	Co	59	688582.0	1.5	**108.8153**	0.828	0.8	ug/L	300	Standard
	Ni	60	147067.4	1.6	**107.7741**	0.584	0.5	ug/L	157	Standard
	Cu	65	151654.0	1.4	**108.7828**	0.695	0.6	ug/L	132	Standard
	Zn	66	92079.6	0.6	**111.5907**	1.417	1.3	ug/L	171	Standard
>	Ge	72	423965.0	1.8				ug/L	432355	Standard
	As	75	87774.3	0.6	**110.2739**	1.378	1.2	ug/L	-36	Standard
	Se	82	6252.1	0.2	**110.5700**	1.835	1.7	ug/L	4	Standard
	Se-1	77	6717.2	2.2	**121.0350**	1.955	1.6	ug/L	163	Standard
>	Ga	71	195.0	5.1				mg/L	30	Standard
	Rb	85	680.0	3.4				ug/L	22	Standard
	Y	89	377241.2	1.8				ug/L	382028	Standard
>	Rh	103	30.0	0.0				ug/L	8	Standard
	Mo	98	220928.3	1.0	**96.3849**	0.680	0.7	ug/L	158	Standard
	Ag	107	201421.0	0.6	**43.2472**	0.162	0.4	ug/L	108	Standard
	Cd	111	184323.2	0.2	**110.9886**	0.806	0.7	mg/L	6	Standard
	Cd	114	438844.9	1.8	**106.4682**	2.835	2.7	ug/L	25	Standard
>	In	115	545297.2	1.0				ug/L	561862	Standard
	Sn	118	545.7	9.0	**0.5557**	0.056	10.0	ug/L	69	Standard
	Sb	123	475511.1	0.6	**114.5785**	1.474	1.3	ug/L	2477	Standard
	Ba	135	180706.6	1.0	**109.2319**	0.466	0.4	ug/L	24	Standard
	Ce	140	946.7	6.9				ug/L	28	Standard
>	Tb	159	896784.9	2.3				ug/L	906794	Standard
	Ho	165	33.3	31.2				ug/L	8	Standard
	Tl	203	777912.0	1.1	**108.7397**	0.399	0.4	ug/L	108	Standard
	Tl	205	636815.7	0.4	**110.3478**	2.081	1.9	ug/L	112	Standard
	Pb	206	604433.3	0.8	**110.0078**	0.765	0.7	ug/L	315	Standard
	Pb	207	542075.1	1.4	**109.1410**	0.764	0.7	ug/L	265	Standard
	Pb	208	2452254.7	1.1	**109.6077**	0.587	0.5	ug/L	1278	Standard
	U	238	2202630.2	0.9	**106.1342**	0.730	0.7	ug/L	113	Standard
>	Bi	209	535747.0	1.5				ug/L	539503	Standard

Sample ID: QC Std 5
Report Date/Time: Monday, August 15, 2016 15:58:49
Page 1

Approved: August 16, 2016

Na	23	1.7	**-465983228395**80710662705573.281			173.2	mg/L	2	Standard
Mg	24	6989.9	1.8	**13.0455**	0.215	1.6	mg/L	40	Standard
K	39	841.7	3.3	**3.8841**	0.135	3.5	mg/L	32	Standard
Ca	43	121.7	14.4	**12.5930**	3.529	28.0	mg/L	40	Standard
Fe	54	11346.3	1.9	**11.6567**	0.363	3.1	mg/L	143	Standard
Fe	57	3365.4	4.3	**12.1015**	0.760	6.3	mg/L	270	Standard
Sc-1	45	24680.1	1.6				mg/L	24972	Standard
Cl	35	93754.6	2.3				ug/L	63562	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	1423.4	9.7				ug/L	1190	Standard
P	31	22855.6	4.8				ug/L	11274	Standard
S	34	3208.7	2.8				ug/L	2592	Standard
Sr	88	58.3	26.2				ug/L	70	Standard
C	12	123.3	36.6				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	37.7				mg/L	0	Standard
Dy	164	44.1	50.2				mg/L	10	Standard
Ho-1	165	33.3	31.2				mg/L	8	Standard
Er	166	53.3	39.0				mg/L	10	Standard
I	127	1273.4	14.7				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.934		
Al	27	0.867		
Sc	45			
Ti	47	104.783		
V	51	107.282		
Cr	52	107.997		
Cr	53			
Mn	55	108.986		
Co	59	108.815		
Ni	60	107.774		
Cu	65	108.783		
Zn	66	111.591		
Ge	72		98.059	
As	75	110.274		
Se	82	110.570		
Se-1	77			
Ga	71			

Sample ID: QC Std 5
Report Date/Time: Monday, August 15, 2016 15:58:49
Page 2

Approved: August 16, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	96.385		
Ag	107	43.247		
Cd	111	110.989		
Cd	114			
In	115		97.052	
Sn	118			
Sb	123	114.579		
Ba	135	109.232		
Ce	140			
Tb	159			
Ho	165			
Tl	203	108.740		
Tl	205			
Pb	206			
Pb	207			
Pb	208	109.608		
U	238	106.134		
Bi	209		99.304	
Na	2-372786582716286.370			
Mg	24	260.910		
K	39	77.682		
Ca	43	83.953		
Fe	54	93.254		
Fe	57	96.812		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Ag	107	
QC Std 5	Na	23	

Sample ID: QC Std 5
Report Date/Time: Monday, August 15, 2016 15:58:49
Page 3

Approved: August 16, 2016

QC Std 5	Mg	24
QC Std 5	K	39
QC Std 5	Ca	43

Sample ID: QC Std 5
Report Date/Time: Monday, August 15, 2016 15:58:49
Page 4

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 15, 2016 15:59:45
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70111.9	1.0				ug/L	61110	Standard
	Be	9	35585.1	2.0	**53.6180**	1.362	2.5	ug/L	17	Standard
	Al	27	5176555.3	1.4	**47.5878**	0.445	0.9	ug/L	833	Standard
	Sc	45	23570.0	1.1				ug/L	24972	Standard
	Ti	47	17477.4	1.0	**106.4936**	1.101	1.0	ug/L	61	Standard
	V	51	280105.8	0.3	**52.1192**	0.482	0.9	ug/L	947	Standard
	Cr	52	260817.4	0.3	**51.9998**	0.438	0.8	ug/L	5189	Standard
	Cr	53	33917.9	1.9	**52.1743**	0.575	1.1	ug/L	2222	Standard
	Mn	55	427760.2	1.3	**52.7782**	0.289	0.5	ug/L	987	Standard
	Co	59	331590.2	0.6	**52.6285**	0.291	0.6	ug/L	300	Standard
	Ni	60	70735.1	0.7	**52.0226**	0.265	0.5	ug/L	157	Standard
	Cu	65	73079.8	0.5	**52.6306**	0.341	0.6	ug/L	132	Standard
	Zn	66	44138.2	1.2	**53.6212**	0.594	1.1	ug/L	171	Standard
>	Ge	72	421949.1	1.1				ug/L	432355	Standard
	As	75	42093.6	1.3	**53.1687**	0.257	0.5	ug/L	-36	Standard
	Se	82	3027.7	1.9	**53.7997**	0.610	1.1	ug/L	4	Standard
	Se-1	77	3044.0	3.3	**53.5824**	1.737	3.2	ug/L	163	Standard
>	Ga	71	36.7	15.7				mg/L	30	Standard
	Rb	85	705.0	1.4				ug/L	22	Standard
	Y	89	361536.3	1.3				ug/L	382028	Standard
>	Rh	103	21.7	48.0				ug/L	8	Standard
	Mo	98	253218.9	0.8	**110.6872**	1.542	1.4	ug/L	158	Standard
	Ag	107	250616.3	1.4	**53.9137**	0.729	1.4	ug/L	108	Standard
	Cd	111	88004.5	0.1	**53.0904**	0.593	1.1	mg/L	6	Standard
	Cd	114	218421.2	2.0	**53.0868**	1.448	2.7	ug/L	25	Standard
>	In	115	544295.7	1.0				ug/L	561862	Standard
	Sn	118	47360.6	1.3	**54.6366**	0.924	1.7	ug/L	69	Standard
	Sb	123	223551.1	0.2	**53.9307**	0.441	0.8	ug/L	2477	Standard
	Ba	135	86410.7	1.0	**52.3306**	1.022	2.0	ug/L	24	Standard
	Ce	140	85.0	35.8				ug/L	28	Standard
>	Tb	159	888351.4	1.2				ug/L	906794	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	373640.6	0.1	**52.5318**	0.798	1.5	ug/L	108	Standard
	Tl	205	308617.2	2.0	**53.7882**	1.878	3.5	ug/L	112	Standard
	Pb	206	289165.6	0.3	**52.9095**	0.737	1.4	ug/L	315	Standard
	Pb	207	260885.2	0.3	**52.8131**	0.947	1.8	ug/L	265	Standard
	Pb	208	1177100.7	0.4	**52.8937**	0.680	1.3	ug/L	1278	Standard
	U	238	1169021.7	1.4	**56.6517**	0.319	0.6	ug/L	113	Standard
>	Bi	209	532657.8	1.5				ug/L	539503	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 16:01:53
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	2911.9	3.2	**5.6488**	0.225	4.0	mg/L	40	Standard
K	39	966.7	7.5	**4.6991**	0.411	8.7	mg/L	32	Standard
Ca	43	48.3	46.6	**-0.7402**	4.395	593.8	mg/L	40	Standard
Fe	54	5109.7	1.2	**5.4284**	0.100	1.8	mg/L	143	Standard
Fe	57	1563.4	3.4	**5.3364**	0.169	3.2	mg/L	270	Standard
> **Sc-1**	45	23570.0	1.1				mg/L	24972	Standard
Cl	35	92900.6	0.8				ug/L	63562	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	1313.4	8.4				ug/L	1190	Standard
P	31	14210.0	1.1				ug/L	11274	Standard
S	34	3857.2	10.1				ug/L	2592	Standard
Sr	88	76.7	24.7				ug/L	70	Standard
C	12	90.0	11.1				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.5	102.5				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	8	Standard
Er	166	10.0					mg/L	10	Standard
I	127	15518.0	5.6				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	107.236		
Al	27	95.176		
Sc	45			
Ti	47	106.494		
V	51	104.238		
Cr	52	104.000		
Cr	53			
Mn	55	105.556		
Co	59	105.257		
Ni	60	104.045		
Cu	65	105.261		
Zn	66	107.242		
> Ge	72		97.593	
As	75	106.337		
Se	82	107.599		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 16:01:53
Page 2

Approved: August 16, 2016

Rb	85			
Y	89			
Rh	103			
Mo	98	110.687		
Ag	107	107.827		
Cd	111	106.181		
Cd	114			
In	115		96.874	
Sn	118	109.273		
Sb	123	107.861		
Ba	135	104.661		
Ce	140			
Tb	159			
Ho	165			
Tl	203	105.064		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.787		
U	238	113.303		
Bi	209		98.731	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mo	98	
QC Std 6	U	238	

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 16:01:53
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 15, 2016 16:02:49
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68611.7	1.9				ug/L	61110	Standard
	Be	9	18.3	31.5	**0.0134**	0.009	70.2	ug/L	17	Standard
	Al	27	1880.1	20.9	**0.0053**	0.003	64.9	ug/L	833	Standard
	Sc	45	24035.7	1.0				ug/L	24972	Standard
	Ti	47	34.7	8.8	**-0.1409**	0.018	12.5	ug/L	61	Standard
	V	51	1087.2	13.7	**-0.0002**	0.029	14255.3	ug/L	947	Standard
	Cr	52	5344.3	1.3	**-0.0131**	0.021	157.9	ug/L	5189	Standard
	Cr	53	1185.0	5.5	**-1.5118**	0.120	7.9	ug/L	2222	Standard
	Mn	55	1081.4	4.1	**0.0242**	0.005	18.7	ug/L	987	Standard
	Co	59	275.3	15.3	**0.0025**	0.006	262.6	ug/L	300	Standard
	Ni	60	144.3	12.6	**-0.0103**	0.014	139.2	ug/L	157	Standard
	Cu	65	145.0	7.8	**0.0284**	0.008	27.3	ug/L	132	Standard
	Zn	66	213.3	3.3	**0.0351**	0.010	29.1	ug/L	171	Standard
>	**Ge**	72	416277.5	0.7				ug/L	432355	Standard
	As	75	-39.5	61.6	**0.0281**	0.031	109.7	ug/L	-36	Standard
	Se	82	3.9	48.0	**0.0932**	0.034	36.7	ug/L	4	Standard
	Se-1	77	92.3	28.3	**-1.0721**	0.478	44.6	ug/L	163	Standard
>	**Ga**	71	25.0	34.6				mg/L	30	Standard
	Rb	85	10.0	50.0				ug/L	22	Standard
	Y	89	359874.0	1.1				ug/L	382028	Standard
>	**Rh**	103	3.3	86.6				ug/L	8	Standard
	Mo	98	384.3	10.5	**0.1410**	0.018	12.5	ug/L	158	Standard
	Ag	107	110.7	22.0	**0.0056**	0.005	96.6	ug/L	108	Standard
	Cd	111	18.8	18.7	**0.0118**	0.002	17.7	mg/L	6	Standard
	Cd	114	69.3	12.2	**0.0145**	0.002	14.4	ug/L	25	Standard
>	**In**	115	540058.9	0.6				ug/L	561862	Standard
	Sn	118	149.3	22.2	**0.1005**	0.039	38.5	ug/L	69	Standard
	Sb	123	685.6	32.8	**0.1027**	0.055	53.2	ug/L	2477	Standard
	Ba	135	36.3	15.2	**0.0131**	0.003	26.2	ug/L	24	Standard
	Ce	140	20.0	0.0				ug/L	28	Standard
>	**Tb**	159	873156.9	0.6				ug/L	906794	Standard
	Ho	165	8.3	173.2				ug/L	8	Standard
	Tl	203	142.0	6.7	**0.0078**	0.001	16.8	ug/L	108	Standard
	Tl	205	115.0	26.4	**0.0053**	0.005	98.9	ug/L	112	Standard
	Pb	206	348.3	4.2	**0.0098**	0.003	25.8	ug/L	315	Standard
	Pb	207	326.3	6.4	**0.0151**	0.004	28.3	ug/L	265	Standard
	Pb	208	1462.0	4.5	**0.0107**	0.003	28.2	ug/L	1278	Standard
	U	238	244.3	4.5	**0.0066**	0.001	7.9	ug/L	113	Standard
>	**Bi**	209	535960.3	0.3				ug/L	539503	Standard

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 16:04:57
Page 1

Approved: August 16, 2016

Na	23	3.3	**-9797214834908484895087086**3.578			86.6	mg/L	2	Standard
Mg	24	45.0	58.8	**0.0114**	0.052	456.1	mg/L	40	Standard
K	39	18.3	68.6	**-0.0382**	0.061	159.2	mg/L	32	Standard
Ca	43	26.7	47.2	**-5.1074**	2.363	46.3	mg/L	40	Standard
Fe	54	160.4	12.4	**0.0436**	0.022	50.2	mg/L	143	Standard
Fe	57	251.7	9.4	**-0.0518**	0.103	198.1	mg/L	270	Standard
> **Sc-1**	45	24035.7	1.0				mg/L	24972	Standard
Cl	35	94120.8	1.2				ug/L	63562	Standard
Kr	83	2.0	132.3				ug/L	3	Standard
Br	81	1203.4	8.8				ug/L	1190	Standard
P	31	14368.5	1.3				ug/L	11274	Standard
S	34	3687.1	1.6				ug/L	2592	Standard
Sr	88	60.0	30.0				ug/L	70	Standard
C	12	103.3	22.3				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	15.9	98.6				mg/L	10	Standard
Ho-1	165	8.3	173.2				mg/L	8	Standard
Er	166	16.7	91.7				mg/L	10	Standard
I	127	2250.2	6.2				mg/L	2345	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.281	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 16:04:57
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.119
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.343
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 16:04:57
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: PBW B6 WG580051-02
Sample Date/Time: Monday, August 15, 2016 16:17:04
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71895.2	2.3				ug/L	61110	Standard
	Be	9	13.3	78.1	**0.0048**	0.016	326.8	ug/L	17	Standard
	Al	27	1060.0	1.4	**-0.0028**	0.000	6.8	ug/L	833	Standard
	Sc	45	24781.9	2.0				ug/L	24972	Standard
	Ti	47	28.7	20.4	**-0.1821**	0.034	18.6	ug/L	61	Standard
	V	51	-2861.5	24.3	**-0.7356**	0.126	17.1	ug/L	947	Standard
	Cr	52	7409.5	1.8	**0.3798**	0.034	8.8	ug/L	5189	Standard
	Cr	53	31110.3	3.3	**47.1407**	1.925	4.1	ug/L	2222	Standard
	Mn	55	1142.0	4.7	**0.0287**	0.007	25.3	ug/L	987	Standard
	Co	59	247.3	6.8	**-0.0029**	0.003	104.9	ug/L	300	Standard
	Ni	60	144.0	10.9	**-0.0129**	0.012	96.8	ug/L	157	Standard
	Cu	65	145.7	7.3	**0.0266**	0.009	32.8	ug/L	132	Standard
	Zn	66	1045.0	0.8	**1.0353**	0.003	0.3	ug/L	171	Standard
>	**Ge**	72	425588.1	1.0				ug/L	432355	Standard
	As	75	-100.0	160.8	**-0.0451**	0.201	445.2	ug/L	-36	Standard
	Se	82	3.9	39.8	**0.0912**	0.027	29.6	ug/L	4	Standard
	Se-1	77	1121.4	1.0	**17.7923**	0.289	1.6	ug/L	163	Standard
>	**Ga**	71	30.0	28.9				mg/L	30	Standard
	Rb	85	23.3	12.4				ug/L	22	Standard
	Y	89	370229.1	1.2				ug/L	382028	Standard
>	**Rh**	103	13.3	57.3				ug/L	8	Standard
	Mo	98	106.3	19.3	**0.0183**	0.009	47.5	ug/L	158	Standard
	Ag	107	70.7	10.6	**-0.0032**	0.002	52.1	ug/L	108	Standard
	Cd	111	4.5	33.1	**0.0031**	0.001	28.6	mg/L	6	Standard
	Cd	114	18.9	29.4	**0.0021**	0.001	63.5	ug/L	25	Standard
>	**In**	115	541931.9	0.8				ug/L	561862	Standard
	Sn	118	104.0	30.5	**0.0472**	0.036	76.7	ug/L	69	Standard
	Sb	123	338.3	31.2	**0.0177**	0.025	140.9	ug/L	2477	Standard
	Ba	135	36.0	17.3	**0.0128**	0.004	28.6	ug/L	24	Standard
	Ce	140	45.0	48.4				ug/L	28	Standard
>	**Tb**	159	897375.2	0.4				ug/L	906794	Standard
	Ho	165	5.0	100.0				ug/L	8	Standard
	Tl	203	190.3	10.1	**0.0147**	0.002	16.9	ug/L	108	Standard
	Tl	205	185.0	18.9	**0.0175**	0.006	33.3	ug/L	112	Standard
	Pb	206	374.3	7.3	**0.0147**	0.005	34.3	ug/L	315	Standard
	Pb	207	297.3	4.4	**0.0095**	0.002	24.4	ug/L	265	Standard
	Pb	208	1434.0	1.2	**0.0096**	0.000	4.5	ug/L	1278	Standard
	U	238	36.3	29.4	**-0.0034**	0.001	15.2	ug/L	113	Standard
>	**Bi**	209	534142.1	0.8				ug/L	539503	Standard

Sample ID: PBW B6 WG580051-02
Report Date/Time: Monday, August 15, 2016 16:19:12
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	26.7	39.0	**-0.0259**	0.019	74.8	mg/L	40	Standard
K	39	35.0	28.6	**0.0392**	0.050	127.3	mg/L	32	Standard
Ca	43	26.7	78.1	**-5.2940**	3.750	70.8	mg/L	40	Standard
Fe	54	125.3	8.1	**0.0020**	0.009	464.9	mg/L	143	Standard
Fe	57	228.3	16.1	**-0.1723**	0.155	89.8	mg/L	270	Standard
> **Sc-1**	45	24781.9	2.0				mg/L	24972	Standard
Cl	35	98615.3	1.4				ug/L	63562	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1336.7	7.7				ug/L	1190	Standard
P	31	14171.6	4.5				ug/L	11274	Standard
S	34	3423.7	1.2				ug/L	2592	Standard
Sr	88	85.0	27.0				ug/L	70	Standard
C	12	120.0	22.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	22.5	65.5				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	8	Standard
Er	166	16.7	69.3				mg/L	10	Standard
I	127	2481.9	2.4				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.649	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.435	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW B6 WG580051-02
Report Date/Time: Monday, August 15, 2016 16:19:12
Page 2

Approved: August 16, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.453
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.006
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	

Sample ID: PBW B6 WG580051-02
Report Date/Time: Monday, August 15, 2016 16:19:12
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: LCSW B6 WG580051-03
Sample Date/Time: Monday, August 15, 2016 16:20:07
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74136.0	3.0				ug/L	61110	Standard
	Be	9	373.3	7.8	**0.5174**	0.044	8.5	ug/L	17	Standard
	Al	27	117173.1	1.9	**1.0072**	0.033	3.2	ug/L	833	Standard
	Sc	45	24144.2	3.0				ug/L	24972	Standard
	Ti	47	1738.8	2.7	**10.1432**	0.277	2.7	ug/L	61	Standard
	V	51	47900.0	4.1	**8.6321**	0.390	4.5	ug/L	947	Standard
	Cr	52	33678.1	0.9	**5.6573**	0.005	0.1	ug/L	5189	Standard
	Cr	53	65357.4	2.0	**102.4420**	1.302	1.3	ug/L	2222	Standard
	Mn	55	43013.7	2.1	**5.1413**	0.079	1.5	ug/L	987	Standard
	Co	59	13385.2	1.6	**2.0580**	0.026	1.3	ug/L	300	Standard
	Ni	60	7268.4	1.3	**5.1735**	0.058	1.1	ug/L	157	Standard
	Cu	65	7395.5	3.3	**5.1903**	0.162	3.1	ug/L	132	Standard
	Zn	66	9415.6	1.5	**11.1169**	0.160	1.4	ug/L	171	Standard
>	**Ge**	72	427212.0	0.8				ug/L	432355	Standard
	As	75	3114.9	2.3	**3.9586**	0.062	1.6	ug/L	-36	Standard
	Se	82	240.3	0.9	**4.2375**	0.072	1.7	ug/L	4	Standard
	Se-1	77	2444.5	2.0	**41.9176**	0.528	1.3	ug/L	163	Standard
>	**Ga**	71	50.0	10.0				mg/L	30	Standard
	Rb	85	71.7	24.5				ug/L	22	Standard
	Y	89	372246.2	2.8				ug/L	382028	Standard
>	**Rh**	103	46.7	81.1				ug/L	8	Standard
	Mo	98	24320.1	0.7	**10.5436**	0.237	2.2	ug/L	158	Standard
	Ag	107	20259.2	0.7	**4.3157**	0.047	1.1	ug/L	108	Standard
	Cd	111	849.5	2.7	**0.5098**	0.015	2.9	mg/L	6	Standard
	Cd	114	3232.0	2.7	**0.7784**	0.024	3.1	ug/L	25	Standard
>	**In**	115	547546.2	1.5				ug/L	561862	Standard
	Sn	118	9321.9	1.4	**10.6306**	0.078	0.7	ug/L	69	Standard
	Sb	123	52965.3	1.1	**12.6534**	0.188	1.5	ug/L	2477	Standard
	Ba	135	17134.7	0.6	**10.3081**	0.160	1.6	ug/L	24	Standard
	Ce	140	15.0	66.7				ug/L	28	Standard
>	**Tb**	159	913106.7	0.6				ug/L	906794	Standard
	Ho	165	10.0	86.6				ug/L	8	Standard
	Tl	203	36871.8	0.7	**5.1359**	0.076	1.5	ug/L	108	Standard
	Tl	205	29819.3	1.3	**5.1458**	0.110	2.1	ug/L	112	Standard
	Pb	206	28953.6	1.5	**5.2116**	0.112	2.1	ug/L	315	Standard
	Pb	207	26101.5	1.2	**5.2002**	0.086	1.7	ug/L	265	Standard
	Pb	208	117930.6	1.0	**5.2121**	0.083	1.6	ug/L	1278	Standard
	U	238	37.7	24.1	**-0.0034**	0.000	12.7	ug/L	113	Standard
>	**Bi**	209	536473.4	0.8				ug/L	539503	Standard

Sample ID: LCSW B6 WG580051-03
Report Date/Time: Monday, August 15, 2016 16:22:15
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	345.0	33.3	**0.5871**	0.219	37.4	mg/L	40	Standard
K	39	120.0	15.0	**0.4589**	0.103	22.4	mg/L	32	Standard
Ca	43	30.0	33.3	**-4.5049**	1.790	39.7	mg/L	40	Standard
Fe	54	171.8	26.1	**0.0558**	0.052	94.0	mg/L	143	Standard
Fe	57	306.7	19.1	**0.1588**	0.201	126.3	mg/L	270	Standard
> **Sc-1**	45	24144.2	3.0				mg/L	24972	Standard
Cl	35	97481.3	1.7				ug/L	63562	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	1380.1	6.6				ug/L	1190	Standard
P	31	14051.5	2.0				ug/L	11274	Standard
S	34	3527.1	3.7				ug/L	2592	Standard
Sr	88	81.7	12.7				ug/L	70	Standard
C	12	76.7	32.8				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	93.6				mg/L	10	Standard
Ho-1	165	10.0	86.6				mg/L	8	Standard
Er	166	13.3	43.3				mg/L	10	Standard
I	127	2338.5	4.0				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.316	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.810	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW B6 WG580051-03
Report Date/Time: Monday, August 15, 2016 16:22:15
Page 2

Approved: August 16, 2016

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.452
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.438
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	

Sample ID: LCSW B6 WG580051-03
Report Date/Time: Monday, August 15, 2016 16:22:15
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: F BLANK WG579881-01
Sample Date/Time: Monday, August 15, 2016 16:23:09
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70096.9	2.9				ug/L	61110	Standard
	Be	9	10.0	50.0	**0.0001**	0.008	5153.6	ug/L	17	Standard
	Al	27	1021.7	9.5	**-0.0029**	0.001	39.6	ug/L	833	Standard
	Sc	45	24291.1	1.8				ug/L	24972	Standard
	Ti	47	34.7	20.3	**-0.1483**	0.042	28.5	ug/L	61	Standard
	V	51	-3313.9	25.4	**-0.8118**	0.155	19.1	ug/L	947	Standard
	Cr	52	7745.0	1.2	**0.4267**	0.019	4.5	ug/L	5189	Standard
	Cr	53	33806.0	0.9	**50.7921**	0.499	1.0	ug/L	2222	Standard
	Mn	55	1203.7	5.1	**0.0343**	0.008	22.5	ug/L	987	Standard
	Co	59	264.3	1.8	**-0.0008**	0.001	98.0	ug/L	300	Standard
	Ni	60	145.7	9.3	**-0.0131**	0.010	75.2	ug/L	157	Standard
	Cu	65	159.3	1.9	**0.0348**	0.002	5.8	ug/L	132	Standard
	Zn	66	920.0	1.9	**0.8694**	0.021	2.4	ug/L	171	Standard
>	Ge	72	431287.5	0.2				ug/L	432355	Standard
	As	75	-175.9	84.7	**-0.1386**	0.184	132.7	ug/L	-36	Standard
	Se	82	-0.2	1509.2	**0.0187**	0.052	278.9	ug/L	4	Standard
	Se-1	77	1207.4	2.6	**19.0781**	0.611	3.2	ug/L	163	Standard
>	Ga	71	41.7	38.6				mg/L	30	Standard
	Rb	85	25.0	52.9				ug/L	22	Standard
	Y	89	368442.7	0.6				ug/L	382028	Standard
>	Rh	103	6.7	43.3				ug/L	8	Standard
	Mo	98	67.7	4.1	**0.0013**	0.001	83.1	ug/L	158	Standard
	Ag	107	94.7	27.8	**0.0019**	0.006	289.1	ug/L	108	Standard
	Cd	111	4.2	54.8	**0.0029**	0.001	47.5	mg/L	6	Standard
	Cd	114	24.1	92.6	**0.0033**	0.005	162.1	ug/L	25	Standard
>	In	115	544300.3	0.5				ug/L	561862	Standard
	Sn	118	97.0	12.5	**0.0386**	0.014	36.0	ug/L	69	Standard
	Sb	123	140.7	46.4	**-0.0302**	0.016	51.7	ug/L	2477	Standard
	Ba	135	30.0	37.1	**0.0090**	0.007	73.9	ug/L	24	Standard
	Ce	140	26.7	10.8				ug/L	28	Standard
>	Tb	159	897514.1	0.9				ug/L	906794	Standard
	Ho	165	15.0	33.3				ug/L	8	Standard
	Tl	203	190.0	7.3	**0.0148**	0.002	11.7	ug/L	108	Standard
	Tl	205	163.3	16.9	**0.0139**	0.005	32.7	ug/L	112	Standard
	Pb	206	364.0	2.2	**0.0132**	0.002	14.0	ug/L	315	Standard
	Pb	207	317.7	4.6	**0.0140**	0.002	16.6	ug/L	265	Standard
	Pb	208	1444.7	0.9	**0.0105**	0.001	5.6	ug/L	1278	Standard
	U	238	36.7	46.1	**-0.0034**	0.001	24.5	ug/L	113	Standard
>	Bi	209	531225.8	1.0				ug/L	539503	Standard

Sample ID: F BLANK WG579881-01
Report Date/Time: Monday, August 15, 2016 16:25:17
Page 1

Approved: August 16, 2016

Na	23	1.7	**-492066982368**	85228501418919.484		173.2	mg/L	2	Standard
Mg	24	1656.8	4.6	**3.0849**	0.164	5.3	mg/L	40	Standard
K	39	33.3	8.7	**0.0341**	0.016	46.7	mg/L	32	Standard
Ca	43	36.7	43.8	**-3.2686**	2.952	90.3	mg/L	40	Standard
Fe	54	150.8	4.7	**0.0316**	0.007	22.7	mg/L	143	Standard
Fe	57	253.3	8.2	**-0.0558**	0.091	163.9	mg/L	270	Standard
> **Sc-1**	45	24291.1	1.8				mg/L	24972	Standard
Cl	35	97926.8	0.9				ug/L	63562	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1463.4	12.6				ug/L	1190	Standard
P	31	13924.7	2.4				ug/L	11274	Standard
S	34	3425.4	3.7				ug/L	2592	Standard
Sr	88	70.0	21.4				ug/L	70	Standard
C	12	160.0	22.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	193.7				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	8	Standard
Er	166	10.0	173.2				mg/L	10	Standard
I	127	2308.5	10.5				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.707	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.753	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: F BLANK WG579881-01
Report Date/Time: Monday, August 15, 2016 16:25:17
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.874
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	

Sample ID: F BLANK WG579881-01
Report Date/Time: Monday, August 15, 2016 16:25:17
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: F BLANK WG579881-02
Sample Date/Time: Monday, August 15, 2016 16:26:12
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71973.9	2.2				ug/L	61110	Standard
	Be	9	23.3	44.6	**0.0194**	0.016	80.0	ug/L	17	Standard
	Al	27	8811.7	156.4	**0.0670**	0.124	185.3	ug/L	833	Standard
	Sc	45	24110.8	1.6				ug/L	24972	Standard
	Ti	47	39.0	14.3	**-0.1200**	0.035	29.4	ug/L	61	Standard
	V	51	-3195.4	21.4	**-0.7952**	0.122	15.4	ug/L	947	Standard
	Cr	52	8045.1	2.7	**0.5023**	0.054	10.7	ug/L	5189	Standard
	Cr	53	34597.8	2.0	**52.6099**	1.496	2.8	ug/L	2222	Standard
	Mn	55	5727.4	135.6	**0.5925**	0.957	161.5	ug/L	987	Standard
	Co	59	482.3	84.2	**0.0341**	0.064	188.8	ug/L	300	Standard
	Ni	60	214.3	57.7	**0.0383**	0.091	238.6	ug/L	157	Standard
	Cu	65	190.0	30.1	**0.0579**	0.042	72.2	ug/L	132	Standard
	Zn	66	1350.7	45.0	**1.4025**	0.746	53.2	ug/L	171	Standard
>	Ge	72	427135.2	0.7				ug/L	432355	Standard
	As	75	-197.6	56.0	**-0.1671**	0.137	81.7	ug/L	-36	Standard
	Se	82	3.1	124.9	**0.0776**	0.069	89.3	ug/L	4	Standard
	Se-1	77	1265.1	1.8	**20.3472**	0.518	2.5	ug/L	163	Standard
>	Ga	71	40.0	37.5				mg/L	30	Standard
	Rb	85	11.7	65.5				ug/L	22	Standard
	Y	89	376829.3	1.7				ug/L	382028	Standard
>	Rh	103	5.0	0.0				ug/L	8	Standard
	Mo	98	81.9	70.8	**0.0075**	0.025	341.4	ug/L	158	Standard
	Ag	107	113.3	63.0	**0.0059**	0.015	260.2	ug/L	108	Standard
	Cd	111	20.2	118.0	**0.0125**	0.014	114.8	mg/L	6	Standard
	Cd	114	74.5	94.7	**0.0156**	0.017	110.3	ug/L	25	Standard
>	In	115	545499.0	0.3				ug/L	561862	Standard
	Sn	118	141.3	4.7	**0.0895**	0.008	9.2	ug/L	69	Standard
	Sb	123	145.8	66.8	**-0.0290**	0.024	81.4	ug/L	2477	Standard
	Ba	135	55.3	64.3	**0.0244**	0.022	88.8	ug/L	24	Standard
	Ce	140	70.0	118.9				ug/L	28	Standard
>	Tb	159	896008.0	1.5				ug/L	906794	Standard
	Ho	165	6.7	86.6				ug/L	8	Standard
	Tl	203	255.0	51.7	**0.0241**	0.019	77.9	ug/L	108	Standard
	Tl	205	171.7	17.1	**0.0155**	0.005	33.7	ug/L	112	Standard
	Pb	206	414.0	15.1	**0.0226**	0.012	51.6	ug/L	315	Standard
	Pb	207	357.3	18.8	**0.0222**	0.014	62.5	ug/L	265	Standard
	Pb	208	1684.4	16.8	**0.0215**	0.013	60.2	ug/L	1278	Standard
	U	238	196.7	146.4	**0.0044**	0.014	317.8	ug/L	113	Standard
>	Bi	209	529754.7	0.2				ug/L	539503	Standard

Sample ID: F BLANK WG579881-02
Report Date/Time: Monday, August 15, 2016 16:28:20
Page 1

Approved: August 16, 2016

Na	23	1.7	-4775948815608272186002974	2.609	173.2	mg/L	2	Standard
Mg	24	45.0	40.1	**0.0108**	0.035	322.1	mg/L	40	Standard
K	39	30.0	28.9	**0.0188**	0.042	223.2	mg/L	32	Standard
Ca	43	20.0	50.0	**-6.3719**	1.941	30.5	mg/L	40	Standard
Fe	54	120.9	20.1	**0.0010**	0.026	2574.4	mg/L	143	Standard
Fe	57	245.0	7.4	**-0.0825**	0.065	78.8	mg/L	270	Standard
> Sc-1	45	24110.8	1.6				mg/L	24972	Standard
Cl	35	99501.7	0.8				ug/L	63562	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1453.4	6.8				ug/L	1190	Standard
P	31	14118.2	2.0				ug/L	11274	Standard
S	34	3497.1	3.3				ug/L	2592	Standard
Sr	88	70.0	7.1				ug/L	70	Standard
C	12	80.0	0.0				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.9	89.8				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	8	Standard
Er	166	10.0					mg/L	10	Standard
I	127	2660.2	6.4				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.778	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.793	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: F BLANK WG579881-02
Report Date/Time: Monday, August 15, 2016 16:28:20
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.088
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.193
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	

Sample ID: F BLANK WG579881-02
Report Date/Time: Monday, August 15, 2016 16:28:20
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608056001 WG580051-01
Sample Date/Time: Monday, August 15, 2016 16:29:14
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69954.5	1.5				ug/L	61110	Standard
	Be	9	20.0	0.0	**0.0153**	0.000	2.9	ug/L	17	Standard
	Al	27	34016.5	1.2	**0.3012**	0.005	1.5	ug/L	833	Standard
	Sc	45	24125.9	3.4				ug/L	24972	Standard
	Ti	47	29.0	11.9	**-0.1810**	0.021	11.6	ug/L	61	Standard
	V	51	-4000.9	15.2	**-0.9423**	0.112	11.9	ug/L	947	Standard
	Cr	52	7681.9	2.5	**0.4247**	0.037	8.8	ug/L	5189	Standard
	Cr	53	34427.4	1.7	**52.1706**	0.929	1.8	ug/L	2222	Standard
	Mn	55	15796.6	0.6	**1.8127**	0.013	0.7	ug/L	987	Standard
	Co	59	295.3	4.7	**0.0044**	0.002	51.4	ug/L	300	Standard
	Ni	60	217.3	8.3	**0.0396**	0.013	32.7	ug/L	157	Standard
	Cu	65	245.3	8.1	**0.0967**	0.014	14.4	ug/L	132	Standard
	Zn	66	31145.6	1.3	**37.2030**	0.546	1.5	ug/L	171	Standard
>	**Ge**	72	428334.1	0.2				ug/L	432355	Standard
	As	75	-277.3	38.6	**-0.2661**	0.134	50.2	ug/L	-36	Standard
	Se	82	-2.8	184.1	**-0.0264**	0.090	338.9	ug/L	4	Standard
	Se-1	77	1208.4	2.4	**19.2471**	0.555	2.9	ug/L	163	Standard
>	**Ga**	71	31.7	45.6				mg/L	30	Standard
	Rb	85	93.3	17.2				ug/L	22	Standard
	Y	89	368411.5	2.1				ug/L	382028	Standard
>	**Rh**	103	10.0					ug/L	8	Standard
	Mo	98	47.3	19.8	**-0.0078**	0.004	51.7	ug/L	158	Standard
	Ag	107	85.0	10.6	**-0.0003**	0.002	589.3	ug/L	108	Standard
	Cd	111	589.0	2.4	**0.3525**	0.008	2.3	mg/L	6	Standard
	Cd	114	1407.9	5.5	**0.3366**	0.019	5.6	ug/L	25	Standard
>	**In**	115	549171.3	0.4				ug/L	561862	Standard
	Sn	118	81.0	16.6	**0.0193**	0.015	79.4	ug/L	69	Standard
	Sb	123	97.5	31.8	**-0.0408**	0.007	18.3	ug/L	2477	Standard
	Ba	135	2802.9	2.8	**1.6733**	0.044	2.6	ug/L	24	Standard
	Ce	140	66.7	18.9				ug/L	28	Standard
>	**Tb**	159	890968.4	0.5				ug/L	906794	Standard
	Ho	165	13.3	57.3				ug/L	8	Standard
	Tl	203	187.7	3.9	**0.0144**	0.001	6.8	ug/L	108	Standard
	Tl	205	180.0	25.5	**0.0167**	0.008	48.0	ug/L	112	Standard
	Pb	206	1381.4	2.4	**0.1993**	0.006	3.2	ug/L	315	Standard
	Pb	207	1178.7	2.8	**0.1882**	0.007	3.7	ug/L	265	Standard
	Pb	208	5423.4	2.6	**0.1892**	0.006	3.4	ug/L	1278	Standard
	U	238	56.3	26.3	**-0.0024**	0.001	29.5	ug/L	113	Standard
>	**Bi**	209	532731.7	0.2				ug/L	539503	Standard

Sample ID: L1608056001 WG580051-01
Report Date/Time: Monday, August 15, 2016 16:31:22
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	1533.4	3.5	**2.8734**	0.206	7.2	mg/L	40	Standard
K	39	41.7	18.3	**0.0753**	0.033	44.3	mg/L	32	Standard
Ca	43	45.0	11.1	**-1.6084**	0.761	47.3	mg/L	40	Standard
Fe	54	119.0	4.2	**-0.0009**	0.010	1133.5	mg/L	143	Standard
Fe	57	253.3	24.8	**-0.0430**	0.289	673.2	mg/L	270	Standard
> **Sc-1**	45	24125.9	3.4				mg/L	24972	Standard
Cl	35	100795.5	1.0				ug/L	63562	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	1290.1	6.7				ug/L	1190	Standard
P	31	14176.6	1.3				ug/L	11274	Standard
S	34	3622.1	1.5				ug/L	2592	Standard
Sr	88	75.0	13.3				ug/L	70	Standard
C	12	116.7	30.1				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.0	108.0				mg/L	10	Standard
Ho-1	165	13.3	57.3				mg/L	8	Standard
Er	166	20.0	50.0				mg/L	10	Standard
I	127	2345.2	3.6				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.474	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.070	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608056001 WG580051-01
Report Date/Time: Monday, August 15, 2016 16:31:22
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.741
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.745
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	

Sample ID: L1608056001 WG580051-01
Report Date/Time: Monday, August 15, 2016 16:31:22
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608056001S WG580051-05
Sample Date/Time: Monday, August 15, 2016 16:32:17
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76216.3	3.0				ug/L	61110	Standard
	Be	9	363.3	15.8	**0.4881**	0.070	14.4	ug/L	17	Standard
	Al	27	157474.2	1.1	**1.3207**	0.047	3.6	ug/L	833	Standard
	Sc	45	24882.1	1.0				ug/L	24972	Standard
	Ti	47	1863.4	2.8	**10.8550**	0.471	4.3	ug/L	61	Standard
	V	51	50275.5	4.9	**9.0383**	0.600	6.6	ug/L	947	Standard
	Cr	52	34963.6	0.1	**5.8889**	0.127	2.2	ug/L	5189	Standard
	Cr	53	65489.6	1.3	**102.2430**	1.373	1.3	ug/L	2222	Standard
	Mn	55	60237.2	0.5	**7.2161**	0.094	1.3	ug/L	987	Standard
	Co	59	14190.6	1.4	**2.1754**	0.007	0.3	ug/L	300	Standard
	Ni	60	7703.3	1.4	**5.4690**	0.161	2.9	ug/L	157	Standard
	Cu	65	8022.5	0.8	**5.6144**	0.058	1.0	ug/L	132	Standard
	Zn	66	40776.1	1.0	**48.7152**	0.934	1.9	ug/L	171	Standard
>	**Ge**	72	428950.0	1.7				ug/L	432355	Standard
	As	75	3226.5	2.8	**4.0815**	0.083	2.0	ug/L	-36	Standard
	Se	82	250.3	2.1	**4.3963**	0.142	3.2	ug/L	4	Standard
	Se-1	77	2482.5	0.4	**42.4426**	0.955	2.2	ug/L	163	Standard
>	**Ga**	71	45.0	11.1				mg/L	30	Standard
	Rb	85	168.3	18.1				ug/L	22	Standard
	Y	89	370116.1	0.5				ug/L	382028	Standard
>	**Rh**	103	18.3	126.0				ug/L	8	Standard
	Mo	98	25560.1	1.1	**11.0337**	0.085	0.8	ug/L	158	Standard
	Ag	107	21002.5	0.3	**4.4556**	0.026	0.6	ug/L	108	Standard
	Cd	111	1485.5	0.6	**0.8874**	0.009	1.0	mg/L	6	Standard
	Cd	114	4744.7	3.9	**1.1390**	0.046	4.0	ug/L	25	Standard
>	**In**	115	549848.5	0.8				ug/L	561862	Standard
	Sn	118	9487.3	1.5	**10.7758**	0.237	2.2	ug/L	69	Standard
	Sb	123	55458.1	0.8	**13.1948**	0.035	0.3	ug/L	2477	Standard
	Ba	135	20557.3	1.4	**12.3149**	0.088	0.7	ug/L	24	Standard
	Ce	140	146.7	8.6				ug/L	28	Standard
>	**Tb**	159	911428.9	1.6				ug/L	906794	Standard
	Ho	165	15.0	33.3				ug/L	8	Standard
	Tl	203	38555.0	0.6	**5.3350**	0.096	1.8	ug/L	108	Standard
	Tl	205	31861.8	1.1	**5.4619**	0.069	1.3	ug/L	112	Standard
	Pb	206	31237.5	0.3	**5.5888**	0.087	1.6	ug/L	315	Standard
	Pb	207	28093.7	0.3	**5.5630**	0.060	1.1	ug/L	265	Standard
	Pb	208	127077.3	0.6	**5.5823**	0.041	0.7	ug/L	1278	Standard
	U	238	21.3	5.4	**-0.0042**	0.000	1.4	ug/L	113	Standard
>	**Bi**	209	540112.6	1.3				ug/L	539503	Standard

Sample ID: L1608056001S WG580051-05
Report Date/Time: Monday, August 15, 2016 16:34:25
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	2053.5	7.7	**3.7460**	0.264	7.1	mg/L	40	Standard
K	39	128.3	31.5	**0.4780**	0.186	38.9	mg/L	32	Standard
Ca	43	31.7	36.5	**-4.3409**	2.123	48.9	mg/L	40	Standard
Fe	54	179.3	14.1	**0.0574**	0.028	48.3	mg/L	143	Standard
Fe	57	263.3	4.8	**-0.0417**	0.041	98.8	mg/L	270	Standard
> **Sc-1**	45	24882.1	1.0				mg/L	24972	Standard
Cl	35	101919.7	1.2				ug/L	63562	Standard
Kr	83	3.0	66.7				ug/L	3	Standard
Br	81	1480.1	9.1				ug/L	1190	Standard
P	31	14361.8	1.3				ug/L	11274	Standard
S	34	3743.8	5.8				ug/L	2592	Standard
Sr	88	91.7	39.5				ug/L	70	Standard
C	12	133.3	18.9				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.4	47.9				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	8	Standard
Er	166	13.3	114.6				mg/L	10	Standard
I	127	2261.8	2.6				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.721	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.212	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608056001S WG580051-05
Report Date/Time: Monday, August 15, 2016 16:34:25
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.862	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.113	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	

Sample ID: L1608056001S WG580051-05
Report Date/Time: Monday, August 15, 2016 16:34:25
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608056001SD WG580051-06
Sample Date/Time: Monday, August 15, 2016 16:35:19
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75313.4	1.8				ug/L	61110	Standard
	Be	9	443.3	11.6	**0.6080**	0.083	13.7	ug/L	17	Standard
	Al	27	159640.0	0.9	**1.3546**	0.028	2.1	ug/L	833	Standard
	Sc	45	25022.3	0.4				ug/L	24972	Standard
	Ti	47	1950.8	1.1	**11.3845**	0.201	1.8	ug/L	61	Standard
	V	51	50660.9	4.1	**9.1105**	0.425	4.7	ug/L	947	Standard
	Cr	52	35164.1	1.3	**5.9329**	0.122	2.1	ug/L	5189	Standard
	Cr	53	66398.5	1.2	**103.7799**	1.607	1.5	ug/L	2222	Standard
	Mn	55	60938.0	1.1	**7.3054**	0.056	0.8	ug/L	987	Standard
	Co	59	14406.5	1.4	**2.2106**	0.020	0.9	ug/L	300	Standard
	Ni	60	7785.3	0.6	**5.5308**	0.041	0.7	ug/L	157	Standard
	Cu	65	8063.8	1.1	**5.6472**	0.058	1.0	ug/L	132	Standard
	Zn	66	41657.9	0.7	**49.7990**	0.094	0.2	ug/L	171	Standard
>	Ge	72	428649.0	0.6				ug/L	432355	Standard
	As	75	3443.3	4.0	**4.3530**	0.149	3.4	ug/L	-36	Standard
	Se	82	268.5	3.5	**4.7165**	0.140	3.0	ug/L	4	Standard
	Se-1	77	2515.2	2.6	**43.0597**	1.189	2.8	ug/L	163	Standard
>	Ga	71	68.3	36.8				mg/L	30	Standard
	Rb	85	170.0	17.6				ug/L	22	Standard
	Y	89	374281.5	0.2				ug/L	382028	Standard
>	Rh	103	31.7	9.1				ug/L	8	Standard
	Mo	98	25643.7	0.5	**11.1027**	0.026	0.2	ug/L	158	Standard
	Ag	107	20970.5	0.6	**4.4621**	0.047	1.0	ug/L	108	Standard
	Cd	111	1547.7	2.5	**0.9273**	0.022	2.3	mg/L	6	Standard
	Cd	114	4905.2	1.2	**1.1810**	0.016	1.3	ug/L	25	Standard
>	In	115	548224.4	0.5				ug/L	561862	Standard
	Sn	118	9842.2	1.8	**11.2133**	0.157	1.4	ug/L	69	Standard
	Sb	123	56580.3	0.2	**13.5034**	0.093	0.7	ug/L	2477	Standard
	Ba	135	21115.7	1.2	**12.6877**	0.166	1.3	ug/L	24	Standard
	Ce	140	76.7	33.5				ug/L	28	Standard
>	Tb	159	899973.4	0.7				ug/L	906794	Standard
	Ho	165	15.0	57.7				ug/L	8	Standard
	Tl	203	39275.8	1.4	**5.4561**	0.064	1.2	ug/L	108	Standard
	Tl	205	31551.2	0.6	**5.4301**	0.025	0.5	ug/L	112	Standard
	Pb	206	31646.0	1.0	**5.6850**	0.052	0.9	ug/L	315	Standard
	Pb	207	28479.1	1.3	**5.6626**	0.071	1.3	ug/L	265	Standard
	Pb	208	128697.2	0.5	**5.6769**	0.024	0.4	ug/L	1278	Standard
	U	238	58.3	86.0	**-0.0024**	0.002	100.8	ug/L	113	Standard
>	Bi	209	537931.0	0.2				ug/L	539503	Standard

Sample ID: L1608056001SD WG580051-06
Report Date/Time: Monday, August 15, 2016 16:37:27
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	2025.1	6.5	**3.6739**	0.250	6.8	mg/L	40	Standard
K	39	125.0	10.6	**0.4600**	0.060	13.1	mg/L	32	Standard
Ca	43	40.0	45.1	**-2.8277**	3.332	117.8	mg/L	40	Standard
Fe	54	195.7	16.2	**0.0728**	0.032	43.8	mg/L	143	Standard
Fe	57	290.0	16.6	**0.0550**	0.182	329.9	mg/L	270	Standard
> **Sc-1**	45	25022.3	0.4				mg/L	24972	Standard
Cl	35	98870.2	0.1				ug/L	63562	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1293.4	17.8				ug/L	1190	Standard
P	31	14587.0	0.5				ug/L	11274	Standard
S	34	3658.8	4.4				ug/L	2592	Standard
Sr	88	73.3	33.6				ug/L	70	Standard
C	12	70.0	51.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	19.4	52.9				mg/L	10	Standard
Ho-1	165	15.0	57.7				mg/L	8	Standard
Er	166	13.3	43.3				mg/L	10	Standard
I	127	2321.8	2.7				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.243	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.143	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608056001SD WG580051-06
Report Date/Time: Monday, August 15, 2016 16:37:27
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.573	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.709	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608051701
Sample Date/Time: Monday, August 15, 2016 16:38:22
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70852.0	2.5				ug/L	61110	Standard
	Be	9	20.0	25.0	**0.0148**	0.007	47.4	ug/L	17	Standard
	Al	27	1293.4	5.7	**-0.0005**	0.000	70.5	ug/L	833	Standard
	Sc	45	24932.2	2.1				ug/L	24972	Standard
	Ti	47	28.0	6.2	**-0.1882**	0.010	5.2	ug/L	61	Standard
	V	51	-910.2	37.8	**-0.3726**	0.063	17.0	ug/L	947	Standard
	Cr	52	7131.4	8.9	**0.3051**	0.127	41.7	ug/L	5189	Standard
	Cr	53	18067.5	10.8	**25.5283**	3.041	11.9	ug/L	2222	Standard
	Mn	55	1474.7	0.4	**0.0672**	0.001	1.6	ug/L	987	Standard
	Co	59	287.3	8.4	**0.0028**	0.004	136.6	ug/L	300	Standard
	Ni	60	335.3	11.8	**0.1238**	0.028	23.0	ug/L	157	Standard
	Cu	65	190.7	5.0	**0.0570**	0.007	12.8	ug/L	132	Standard
	Zn	66	982.0	5.2	**0.9440**	0.064	6.8	ug/L	171	Standard
>	**Ge**	72	431109.6	0.4				ug/L	432355	Standard
	As	75	-223.1	37.8	**-0.1971**	0.105	53.3	ug/L	-36	Standard
	Se	82	191.3	2.5	**3.3470**	0.071	2.1	ug/L	4	Standard
	Se-1	77	1252.7	2.2	**19.9077**	0.453	2.3	ug/L	163	Standard
>	**Ga**	71	60.0	22.0				mg/L	30	Standard
	Rb	85	11062.4	0.6				ug/L	22	Standard
	Y	89	370796.6	1.8				ug/L	382028	Standard
>	**Rh**	103	6.7	43.3				ug/L	8	Standard
	Mo	98	226.4	3.2	**0.0702**	0.003	4.2	ug/L	158	Standard
	Ag	107	103.7	12.3	**0.0038**	0.003	69.9	ug/L	108	Standard
	Cd	111	5.3	28.7	**0.0036**	0.001	25.8	mg/L	6	Standard
	Cd	114	32.5	62.1	**0.0053**	0.005	91.1	ug/L	25	Standard
>	**In**	115	546912.9	0.5				ug/L	561862	Standard
	Sn	118	94.7	14.8	**0.0354**	0.016	44.4	ug/L	69	Standard
	Sb	123	133.0	46.6	**-0.0323**	0.015	45.9	ug/L	2477	Standard
	Ba	135	5046.5	0.6	**3.0326**	0.006	0.2	ug/L	24	Standard
	Ce	140	20.0	50.0				ug/L	28	Standard
>	**Tb**	159	897775.0	0.6				ug/L	906794	Standard
	Ho	165	6.7	86.6				ug/L	8	Standard
	Tl	203	213.7	2.1	**0.0177**	0.001	3.6	ug/L	108	Standard
	Tl	205	155.0	14.1	**0.0121**	0.004	32.6	ug/L	112	Standard
	Pb	206	2080.5	2.9	**0.3228**	0.013	4.1	ug/L	315	Standard
	Pb	207	1840.8	1.4	**0.3179**	0.007	2.1	ug/L	265	Standard
	Pb	208	8384.6	2.1	**0.3179**	0.009	2.9	ug/L	1278	Standard
	U	238	24.0	30.0	**-0.0040**	0.000	8.4	ug/L	113	Standard
>	**Bi**	209	539222.2	0.6				ug/L	539503	Standard

Sample ID: L1608051701
Report Date/Time: Monday, August 15, 2016 16:40:30
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	2856.9	2.3	**5.2349**	0.197	3.8	mg/L	40	Standard
K	39	901.7	7.8	**4.1284**	0.357	8.6	mg/L	32	Standard
Ca	43	75.0	23.1	**3.7029**	3.310	89.4	mg/L	40	Standard
Fe	54	125.9	18.7	**0.0016**	0.022	1368.2	mg/L	143	Standard
Fe	57	263.3	11.1	**-0.0430**	0.118	274.5	mg/L	270	Standard
> **Sc-1**	45	24932.2	2.1				mg/L	24972	Standard
Cl	35	107041.0	3.3				ug/L	63562	Standard
Kr	83	3.7	41.7				ug/L	3	Standard
Br	81	1930.1	4.7				ug/L	1190	Standard
P	31	14660.4	1.8				ug/L	11274	Standard
S	34	3818.8	0.2				ug/L	2592	Standard
Sr	88	76.7	10.0				ug/L	70	Standard
C	12	93.3	50.6				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.5	96.5				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	8	Standard
Er	166	16.7	69.3				mg/L	10	Standard
I	127	5689.4	7.7				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.942	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.712	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608051701
Report Date/Time: Monday, August 15, 2016 16:40:30
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.339
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.948
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608051701PS WG580260-01
Sample Date/Time: Monday, August 15, 2016 16:41:24
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71682.5	0.6				ug/L	61110	Standard
	Be	9	36739.5	1.3	**54.1428**	1.041	1.9	ug/L	17	Standard
	Al	27	1968.5	20.4	**0.0054**	0.004	68.7	ug/L	833	Standard
	Sc	45	24843.7	1.5				ug/L	24972	Standard
	Ti	47	34.0	11.8	**-0.1513**	0.026	16.9	ug/L	61	Standard
	V	51	295321.8	1.6	**54.0103**	1.067	2.0	ug/L	947	Standard
	Cr	52	280344.6	0.7	**54.9927**	0.823	1.5	ug/L	5189	Standard
	Cr	53	61272.0	1.9	**95.3440**	2.550	2.7	ug/L	2222	Standard
	Mn	55	453173.4	0.7	**54.9580**	0.759	1.4	ug/L	987	Standard
	Co	59	348908.5	1.0	**54.4262**	0.960	1.8	ug/L	300	Standard
	Ni	60	76167.6	1.0	**55.0614**	0.900	1.6	ug/L	157	Standard
	Cu	65	78944.1	0.4	**55.8780**	0.495	0.9	ug/L	132	Standard
	Zn	66	48345.0	1.1	**57.7362**	0.687	1.2	ug/L	171	Standard
>	Ge	72	429352.6	0.7				ug/L	432355	Standard
	As	75	43721.1	0.2	**54.2730**	0.458	0.8	ug/L	-36	Standard
	Se	82	3402.0	1.1	**59.4088**	0.590	1.0	ug/L	4	Standard
	Se-1	77	4564.7	2.0	**80.3015**	2.118	2.6	ug/L	163	Standard
>	Ga	71	58.3	32.5				mg/L	30	Standard
	Rb	85	10745.5	2.2				ug/L	22	Standard
	Y	89	372981.9	2.5				ug/L	382028	Standard
>	Rh	103	25.0	20.0				ug/L	8	Standard
	Mo	98	213.3	3.9	**0.0649**	0.003	4.3	ug/L	158	Standard
	Ag	107	242557.5	1.8	**52.1919**	1.210	2.3	ug/L	108	Standard
	Cd	111	92982.1	0.5	**56.1015**	0.621	1.1	mg/L	6	Standard
	Cd	114	223843.5	0.8	**54.4061**	0.289	0.5	ug/L	25	Standard
>	In	115	544206.1	0.8				ug/L	561862	Standard
	Sn	118	112.7	5.6	**0.0568**	0.008	14.5	ug/L	69	Standard
	Sb	123	223605.5	0.9	**53.9519**	0.614	1.1	ug/L	2477	Standard
	Ba	135	94718.8	0.6	**57.3693**	0.793	1.4	ug/L	24	Standard
	Ce	140	33.3	22.9				ug/L	28	Standard
>	Tb	159	900619.7	0.5				ug/L	906794	Standard
	Ho	165	5.0	100.0				ug/L	8	Standard
	Tl	203	394152.3	1.1	**54.8960**	0.451	0.8	ug/L	108	Standard
	Tl	205	321786.4	1.0	**55.5496**	0.780	1.4	ug/L	112	Standard
	Pb	206	311128.8	0.8	**56.3984**	0.268	0.5	ug/L	315	Standard
	Pb	207	269631.1	0.8	**54.0710**	0.214	0.4	ug/L	265	Standard
	Pb	208	1241915.9	0.7	**55.2866**	0.180	0.3	ug/L	1278	Standard
	U	238	1182630.4	0.1	**56.7817**	0.234	0.4	ug/L	113	Standard
>	Bi	209	537618.6	0.4				ug/L	539503	Standard

Sample ID: L1608051701PS WG580260-01
Report Date/Time: Monday, August 15, 2016 16:43:32
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	2865.3	3.2	**5.2687**	0.219	4.1	mg/L	40	Standard
K	39	886.7	6.8	**4.0685**	0.234	5.7	mg/L	32	Standard
Ca	43	76.7	10.0	**4.0442**	1.400	34.6	mg/L	40	Standard
Fe	54	125.9	25.1	**0.0027**	0.035	1291.8	mg/L	143	Standard
Fe	57	268.3	28.3	**-0.0176**	0.312	1775.5	mg/L	270	Standard
> **Sc-1**	45	24843.7	1.5				mg/L	24972	Standard
Cl	35	119230.0	0.8				ug/L	63562	Standard
Kr	83	2.0	132.3				ug/L	3	Standard
Br	81	1686.8	1.5				ug/L	1190	Standard
P	31	15150.9	1.6				ug/L	11274	Standard
S	34	4202.2	3.8				ug/L	2592	Standard
Sr	88	65.0	7.7				ug/L	70	Standard
C	12	123.3	16.9				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	122.5				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	10	Standard
I	127	5719.4	4.6				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.301	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.306	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608051701PS WG580260-01
Report Date/Time: Monday, August 15, 2016 16:43:32
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.858
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.651
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1608051701PS WG580260-01
Report Date/Time: Monday, August 15, 2016 16:43:32
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608051701SDL WG580260-02
Sample Date/Time: Monday, August 15, 2016 16:44:27
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66894.0	1.6				ug/L	61110	Standard
	Be	9	28.3	79.6	**0.0294**	0.035	118.8	ug/L	17	Standard
	Al	27	4756.4	115.0	**0.0331**	0.052	156.3	ug/L	833	Standard
	Sc	45	24012.4	2.9				ug/L	24972	Standard
	Ti	47	27.0	3.7	**-0.1922**	0.005	2.5	ug/L	61	Standard
	V	51	1124.6	18.6	**0.0018**	0.037	2103.6	ug/L	947	Standard
	Cr	52	8425.0	2.1	**0.5827**	0.022	3.7	ug/L	5189	Standard
	Cr	53	9219.5	2.7	**11.5030**	0.515	4.5	ug/L	2222	Standard
	Mn	55	2793.7	81.0	**0.2295**	0.274	119.2	ug/L	987	Standard
	Co	59	437.0	54.3	**0.0267**	0.037	137.3	ug/L	300	Standard
	Ni	60	227.7	19.3	**0.0479**	0.031	64.1	ug/L	157	Standard
	Cu	65	180.3	26.9	**0.0510**	0.034	65.9	ug/L	132	Standard
	Zn	66	1495.1	3.9	**1.5774**	0.055	3.5	ug/L	171	Standard
>	**Ge**	72	426048.3	0.8				ug/L	432355	Standard
	As	75	-50.6	155.1	**0.0149**	0.098	660.0	ug/L	-36	Standard
	Se	82	45.3	11.3	**0.8182**	0.089	10.9	ug/L	4	Standard
	Se-1	77	378.7	4.8	**4.1429**	0.313	7.6	ug/L	163	Standard
>	**Ga**	71	30.0	44.1				mg/L	30	Standard
	Rb	85	2228.5	1.8				ug/L	22	Standard
	Y	89	368720.9	0.2				ug/L	382028	Standard
>	**Rh**	103	6.7	114.6				ug/L	8	Standard
	Mo	98	77.3	28.2	**0.0055**	0.010	177.5	ug/L	158	Standard
	Ag	107	190.3	37.7	**0.0225**	0.016	69.7	ug/L	108	Standard
	Cd	111	36.5	100.4	**0.0225**	0.022	99.3	mg/L	6	Standard
	Cd	114	119.8	97.7	**0.0267**	0.029	107.4	ug/L	25	Standard
>	**In**	115	544870.8	0.7				ug/L	561862	Standard
	Sn	118	70.7	9.1	**0.0082**	0.008	96.5	ug/L	69	Standard
	Sb	123	2470.3	27.5	**0.5315**	0.163	30.6	ug/L	2477	Standard
	Ba	135	1020.7	4.4	**0.6085**	0.031	5.0	ug/L	24	Standard
	Ce	140	36.7	90.8				ug/L	28	Standard
>	**Tb**	159	885536.5	1.5				ug/L	906794	Standard
	Ho	165	15.0	66.7				ug/L	8	Standard
	Tl	203	449.0	28.9	**0.0512**	0.018	35.5	ug/L	108	Standard
	Tl	205	410.0	41.6	**0.0569**	0.030	52.1	ug/L	112	Standard
	Pb	206	623.3	14.2	**0.0607**	0.016	26.4	ug/L	315	Standard
	Pb	207	537.7	17.2	**0.0586**	0.019	31.9	ug/L	265	Standard
	Pb	208	2503.1	16.8	**0.0581**	0.019	32.3	ug/L	1278	Standard
	U	238	448.7	67.9	**0.0166**	0.015	88.9	ug/L	113	Standard
>	**Bi**	209	531622.1	0.2				ug/L	539503	Standard

Sample ID: L1608051701SDL WG580260-02
Report Date/Time: Monday, August 15, 2016 16:46:35
Page 1

Approved: August 16, 2016

Na	23	1.7	**-488980145153**84693845529913.062			173.2	mg/L	2	Standard
Mg	24	630.0	9.2	**1.1397**	0.104	9.2	mg/L	40	Standard
K	39	193.3	6.0	**0.8200**	0.062	7.6	mg/L	32	Standard
Ca	43	43.3	26.6	**-1.9097**	2.057	107.7	mg/L	40	Standard
Fe	54	131.0	14.4	**0.0124**	0.021	171.1	mg/L	143	Standard
Fe	57	276.7	19.5	**0.0500**	0.224	447.2	mg/L	270	Standard
> **Sc-1**	45	24012.4	2.9				mg/L	24972	Standard
Cl	35	123305.1	1.1				ug/L	63562	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1246.7	3.0				ug/L	1190	Standard
P	31	14677.1	3.0				ug/L	11274	Standard
S	34	4130.6	4.2				ug/L	2592	Standard
Sr	88	66.7	18.9				ug/L	70	Standard
C	12	90.0	33.3				mg/L	90	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.0	47.5				mg/L	10	Standard
Ho-1	165	15.0	66.7				mg/L	8	Standard
Er	166	20.0	100.0				mg/L	10	Standard
I	127	2786.9	5.1				mg/L	2345	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.466	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.541	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1608051701SDL WG580260-02
Report Date/Time: Monday, August 15, 2016 16:46:35
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.976
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.539
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 15, 2016 16:47:30
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66281.3	0.9				ug/L	61110	Standard
	Be	9	34434.1	3.6	**54.8761**	1.912	3.5	ug/L	17	Standard
	Al	27	5178113.4	1.9	**50.3509**	0.507	1.0	ug/L	833	Standard
	Sc	45	24025.7	1.9				ug/L	24972	Standard
	Ti	47	17978.7	1.7	**109.9930**	1.861	1.7	ug/L	61	Standard
	V	51	285692.5	1.5	**53.3711**	0.631	1.2	ug/L	947	Standard
	Cr	52	268374.0	1.6	**53.7550**	0.945	1.8	ug/L	5189	Standard
	Cr	53	34275.4	1.5	**52.9884**	0.861	1.6	ug/L	2222	Standard
	Mn	55	438424.0	1.0	**54.3146**	0.645	1.2	ug/L	987	Standard
	Co	59	340327.0	1.0	**54.2309**	0.629	1.2	ug/L	300	Standard
	Ni	60	73640.5	0.3	**54.3801**	0.319	0.6	ug/L	157	Standard
	Cu	65	74278.0	1.2	**53.7069**	0.682	1.3	ug/L	132	Standard
	Zn	66	45256.8	1.6	**55.2016**	0.423	0.8	ug/L	171	Standard
>	Ge	72	420277.7	0.8				ug/L	432355	Standard
	As	75	42795.8	1.6	**54.2670**	0.420	0.8	ug/L	-36	Standard
	Se	82	3128.5	1.2	**55.8122**	0.235	0.4	ug/L	4	Standard
	Se-1	77	3143.7	0.8	**55.6635**	0.730	1.3	ug/L	163	Standard
>	Ga	71	18.3	15.7				mg/L	30	Standard
	Rb	85	650.0	0.0				ug/L	22	Standard
	Y	89	361556.0	2.2				ug/L	382028	Standard
>	Rh	103	15.0	33.3				ug/L	8	Standard
	Mo	98	254224.5	1.6	**112.4344**	1.777	1.6	ug/L	158	Standard
	Ag	107	253513.9	1.5	**55.1816**	0.808	1.5	ug/L	108	Standard
	Cd	111	90076.0	0.2	**54.9795**	0.108	0.2	mg/L	6	Standard
	Cd	114	225603.7	1.4	**55.4731**	0.711	1.3	ug/L	25	Standard
>	In	115	537924.9	0.1				ug/L	561862	Standard
	Sn	118	47876.9	1.3	**55.8834**	0.691	1.2	ug/L	69	Standard
	Sb	123	226177.9	0.6	**55.2091**	0.299	0.5	ug/L	2477	Standard
	Ba	135	87413.1	0.2	**53.5580**	0.135	0.3	ug/L	24	Standard
	Ce	140	51.7	31.1				ug/L	28	Standard
>	Tb	159	873822.5	0.8				ug/L	906794	Standard
	Ho	165	10.0					ug/L	8	Standard
	Tl	203	378794.6	0.3	**53.9177**	0.526	1.0	ug/L	108	Standard
	Tl	205	312732.7	2.7	**55.1786**	1.877	3.4	ug/L	112	Standard
	Pb	206	293379.9	0.7	**54.3513**	0.875	1.6	ug/L	315	Standard
	Pb	207	264057.5	0.5	**54.1203**	0.770	1.4	ug/L	265	Standard
	Pb	208	1189535.1	0.4	**54.1210**	0.830	1.5	ug/L	1278	Standard
	U	238	1187006.2	1.7	**58.2458**	1.203	2.1	ug/L	113	Standard
>	Bi	209	526091.2	1.3				ug/L	539503	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 16:49:38
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	2968.6	1.7	**5.6506**	0.195	3.4	mg/L	40	Standard
K	39	985.0	3.6	**4.6973**	0.244	5.2	mg/L	32	Standard
Ca	43	70.0	14.3	**3.2522**	1.942	59.7	mg/L	40	Standard
Fe	54	5205.1	2.6	**5.4249**	0.149	2.8	mg/L	143	Standard
Fe	57	1490.1	3.5	**4.9240**	0.287	5.8	mg/L	270	Standard
Sc-1	45	24025.7	1.9				mg/L	24972	Standard
Cl	35	109145.3	3.0				ug/L	63562	Standard
Kr	83	4.0	43.3				ug/L	3	Standard
Br	81	1203.4	14.6				ug/L	1190	Standard
P	31	17546.8	0.9				ug/L	11274	Standard
S	34	4794.1	1.7				ug/L	2592	Standard
Sr	88	63.3	57.1				ug/L	70	Standard
C	12	43.3	58.1				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.2	180.0				mg/L	10	Standard
Ho-1	165	10.0					mg/L	8	Standard
Er	166	10.0	100.0				mg/L	10	Standard
I	127	14647.1	1.1				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.752		
Al	27	100.702		
Sc	45			
Ti	47	109.993		
V	51	106.742		
Cr	52	107.510		
Cr	53			
Mn	55	108.629		
Co	59	108.462		
Ni	60	108.760		
Cu	65	107.414		
Zn	66	110.403		
Ge	72		97.207	
As	75	108.534		
Se	82	111.624		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 16:49:38
Page 2

Approved: August 16, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	112.434		
Ag	107	110.363		
Cd	111	109.959		
Cd	114			
> In	115			95.740
Sn	118	111.767		
Sb	123	110.418		
Ba	135	107.116		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	107.835		
Tl	205			
Pb	206			
Pb	207			
Pb	208	108.242		
U	238	116.492		
> Bi	209			97.514
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Zn	66	
QC Std 6	Se	82	
QC Std 6	Mo	98	

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 16:49:38
Page 3

Approved: August 16, 2016

QC Std 6	Ag	107
QC Std 6	Sb	123
QC Std 6	U	238

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 16:49:38
Page 4

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 15, 2016 16:50:33
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64672.7	1.3				ug/L	61110	Standard
	Be	9	21.7	70.5	**0.0206**	0.025	122.8	ug/L	17	Standard
	Al	27	1386.7	21.2	**0.0015**	0.003	184.0	ug/L	833	Standard
	Sc	45	23897.2	3.6				ug/L	24972	Standard
	Ti	47	30.3	18.7	**-0.1685**	0.035	20.7	ug/L	61	Standard
	V	51	1279.9	8.4	**0.0352**	0.019	54.5	ug/L	947	Standard
	Cr	52	5621.7	1.3	**0.0393**	0.018	47.0	ug/L	5189	Standard
	Cr	53	1208.4	10.3	**-1.4812**	0.214	14.5	ug/L	2222	Standard
	Mn	55	978.7	2.8	**0.0108**	0.003	26.5	ug/L	987	Standard
	Co	59	258.7	4.2	**-0.0004**	0.002	450.9	ug/L	300	Standard
	Ni	60	172.7	5.6	**0.0103**	0.008	76.1	ug/L	157	Standard
	Cu	65	132.7	13.3	**0.0190**	0.013	69.5	ug/L	132	Standard
	Zn	66	227.3	11.8	**0.0511**	0.031	60.6	ug/L	171	Standard
>	**Ge**	72	418017.4	0.7				ug/L	432355	Standard
	As	75	-55.7	11.5	**0.0077**	0.008	104.9	ug/L	-36	Standard
	Se	82	8.5	6.8	**0.1748**	0.010	5.7	ug/L	4	Standard
	Se-1	77	90.3	12.8	**-1.1135**	0.227	20.4	ug/L	163	Standard
>	**Ga**	71	16.7	62.4				mg/L	30	Standard
	Rb	85	16.7	91.7				ug/L	22	Standard
	Y	89	360338.3	1.3				ug/L	382028	Standard
>	**Rh**	103	3.3	86.6				ug/L	8	Standard
	Mo	98	262.7	15.0	**0.0881**	0.018	20.0	ug/L	158	Standard
	Ag	107	128.7	10.5	**0.0096**	0.003	30.7	ug/L	108	Standard
	Cd	111	12.6	20.3	**0.0081**	0.002	20.1	mg/L	6	Standard
	Cd	114	53.0	40.5	**0.0106**	0.005	50.8	ug/L	25	Standard
>	**In**	115	537210.9	1.3				ug/L	561862	Standard
	Sn	118	135.7	31.1	**0.0853**	0.049	57.7	ug/L	69	Standard
	Sb	123	752.4	33.8	**0.1200**	0.063	52.4	ug/L	2477	Standard
	Ba	135	39.0	15.4	**0.0148**	0.003	23.0	ug/L	24	Standard
	Ce	140	13.3	94.4				ug/L	28	Standard
>	**Tb**	159	882857.9	2.0				ug/L	906794	Standard
	Ho	165	0.0					ug/L	8	Standard
	Tl	203	106.7	19.8	**0.0031**	0.003	107.1	ug/L	108	Standard
	Tl	205	106.7	35.8	**0.0041**	0.007	170.7	ug/L	112	Standard
	Pb	206	348.7	6.5	**0.0105**	0.005	50.4	ug/L	315	Standard
	Pb	207	307.0	5.2	**0.0119**	0.004	35.3	ug/L	265	Standard
	Pb	208	1381.4	5.2	**0.0077**	0.004	52.7	ug/L	1278	Standard
	U	238	250.0	10.7	**0.0070**	0.001	20.9	ug/L	113	Standard
>	**Bi**	209	530936.1	1.9				ug/L	539503	Standard

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 16:52:41
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	26.7	54.1	**-0.0237**	0.029	120.7	mg/L	40	Standard
K	39	40.0	54.5	**0.0710**	0.110	154.5	mg/L	32	Standard
Ca	43	16.7	17.3	**-7.0010**	0.485	6.9	mg/L	40	Standard
Fe	54	119.5	8.5	**0.0010**	0.015	1470.1	mg/L	143	Standard
Fe	57	243.3	23.8	**-0.0844**	0.204	241.5	mg/L	270	Standard
Sc-1	45	23897.2	3.6				mg/L	24972	Standard
Cl	35	107816.3	1.5				ug/L	63562	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1363.4	11.2				ug/L	1190	Standard
P	31	16472.3	5.1				ug/L	11274	Standard
S	34	4517.3	3.0				ug/L	2592	Standard
Sr	88	73.3	19.7				ug/L	70	Standard
C	12	86.7	69.6				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.7	101.1				mg/L	10	Standard
Ho-1	165	0.0					mg/L	8	Standard
Er	166	20.0	0.0				mg/L	10	Standard
I	127	2020.1	5.2				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.684	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 16:52:41
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.613
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.412
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 16:52:41
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608051801
Sample Date/Time: Monday, August 15, 2016 16:53:37
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67970.6	3.3				ug/L	61110	Standard
	Be	9	16.7	148.0	**0.0117**	0.040	340.0	ug/L	17	Standard
	Al	27	1625.1	23.3	**0.0032**	0.004	128.2	ug/L	833	Standard
	Sc	45	24047.4	3.9				ug/L	24972	Standard
	Ti	47	33.0	16.9	**-0.1515**	0.034	22.7	ug/L	61	Standard
	V	51	712.7	26.6	**-0.0715**	0.035	49.0	ug/L	947	Standard
	Cr	52	6714.2	7.4	**0.2669**	0.094	35.1	ug/L	5189	Standard
	Cr	53	9386.2	5.3	**12.1051**	0.848	7.0	ug/L	2222	Standard
	Mn	55	1595.8	4.6	**0.0883**	0.008	9.2	ug/L	987	Standard
	Co	59	292.0	9.5	**0.0051**	0.004	86.1	ug/L	300	Standard
	Ni	60	333.3	5.0	**0.1304**	0.011	8.2	ug/L	157	Standard
	Cu	65	180.0	7.8	**0.0538**	0.010	18.6	ug/L	132	Standard
	Zn	66	1125.7	2.7	**1.1610**	0.029	2.5	ug/L	171	Standard
>	Ge	72	416954.8	0.8				ug/L	432355	Standard
	As	75	-101.9	45.4	**-0.0513**	0.058	114.0	ug/L	-36	Standard
	Se	82	53.7	8.3	**0.9880**	0.085	8.6	ug/L	4	Standard
	Se-1	77	873.0	7.8	**13.5561**	1.165	8.6	ug/L	163	Standard
>	Ga	71	61.7	26.1				mg/L	30	Standard
	Rb	85	11147.4	3.5				ug/L	22	Standard
	Y	89	362356.9	0.6				ug/L	382028	Standard
>	Rh	103	5.0	100.0				ug/L	8	Standard
	Mo	98	315.6	10.0	**0.1124**	0.014	12.8	ug/L	158	Standard
	Ag	107	119.0	30.7	**0.0077**	0.008	106.7	ug/L	108	Standard
	Cd	111	11.5	75.9	**0.0074**	0.005	72.8	mg/L	6	Standard
	Cd	114	40.6	92.9	**0.0076**	0.009	124.7	ug/L	25	Standard
>	In	115	534015.8	1.2				ug/L	561862	Standard
	Sn	118	103.7	21.4	**0.0488**	0.027	55.5	ug/L	69	Standard
	Sb	123	322.4	42.7	**0.0154**	0.035	224.9	ug/L	2477	Standard
	Ba	135	15478.6	1.0	**9.5472**	0.202	2.1	ug/L	24	Standard
	Ce	140	21.7	48.0				ug/L	28	Standard
>	Tb	159	876770.2	1.2				ug/L	906794	Standard
	Ho	165	13.3	43.3				ug/L	8	Standard
	Tl	203	212.7	8.3	**0.0166**	0.003	15.1	ug/L	108	Standard
	Tl	205	173.3	4.4	**0.0142**	0.001	9.3	ug/L	112	Standard
	Pb	206	2855.6	4.2	**0.4461**	0.023	5.2	ug/L	315	Standard
	Pb	207	2400.5	1.6	**0.4141**	0.008	1.9	ug/L	265	Standard
	Pb	208	11211.6	1.7	**0.4271**	0.011	2.5	ug/L	1278	Standard
	U	238	119.7	106.1	**0.0004**	0.006	1557.7	ug/L	113	Standard
>	Bi	209	557523.3	0.5				ug/L	539503	Standard

Sample ID: L1608051801
Report Date/Time: Monday, August 15, 2016 16:55:45
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	2901.9	4.1	**5.5212**	0.342	6.2	mg/L	40	Standard
K	39	961.7	8.5	**4.5795**	0.421	9.2	mg/L	32	Standard
Ca	43	56.7	36.7	**0.7420**	4.242	571.7	mg/L	40	Standard
Fe	54	125.8	16.1	**0.0073**	0.026	363.2	mg/L	143	Standard
Fe	57	275.0	8.3	**0.0398**	0.061	152.8	mg/L	270	Standard
> **Sc-1**	45	24047.4	3.9				mg/L	24972	Standard
Cl	35	112083.8	1.7				ug/L	63562	Standard
Kr	83	3.3	17.3				ug/L	3	Standard
Br	81	1910.1	9.7				ug/L	1190	Standard
P	31	15536.3	1.6				ug/L	11274	Standard
S	34	4587.4	5.5				ug/L	2592	Standard
Sr	88	66.7	21.7				ug/L	70	Standard
C	12	110.0	27.3				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.5	41.6				mg/L	10	Standard
Ho-1	165	13.3	43.3				mg/L	8	Standard
Er	166	23.3	65.5				mg/L	10	Standard
I	127	7038.3	2.2				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.227	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.438	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1608051801
Report Date/Time: Monday, August 15, 2016 16:55:45
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.044
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.340
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1608051801
Report Date/Time: Monday, August 15, 2016 16:55:45
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608049403 WG579790-02
Sample Date/Time: Monday, August 15, 2016 16:56:39
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75829.3	0.7				ug/L	61110	Standard
	Be	9	20.0	86.6	**0.0129**	0.024	186.1	ug/L	17	Standard
	Al	27	14839952.3	1.0	**126.1552**	0.448	0.4	ug/L	833	Standard
	Sc	45	22626.9	1.5				ug/L	24972	Standard
	Ti	47	60.3	14.5	**0.0355**	0.060	168.8	ug/L	61	Standard
	V	51	2308.8	4.1	**0.2508**	0.016	6.3	ug/L	947	Standard
	Cr	52	12116.2	1.4	**1.4979**	0.028	1.8	ug/L	5189	Standard
	Cr	53	1811.8	4.7	**-0.3333**	0.143	43.0	ug/L	2222	Standard
	Mn	55	1972086.0	0.7	**258.2489**	0.251	0.1	ug/L	987	Standard
	Co	59	27942.1	1.3	**4.6606**	0.037	0.8	ug/L	300	Standard
	Ni	60	29996.3	2.0	**23.3078**	0.297	1.3	ug/L	157	Standard
	Cu	65	3743.1	3.0	**2.7827**	0.082	3.0	ug/L	132	Standard
	Zn	66	2884.3	4.0	**3.5006**	0.180	5.1	ug/L	171	Standard
>	**Ge**	72	398229.7	0.8				ug/L	432355	Standard
	As	75	2087.5	2.4	**2.8682**	0.063	2.2	ug/L	-36	Standard
	Se	82	113.3	5.5	**2.1547**	0.102	4.7	ug/L	4	Standard
	Se-1	77	174.3	13.7	**0.6175**	0.457	74.0	ug/L	163	Standard
>	**Ga**	71	375.0	4.8				mg/L	30	Standard
	Rb	85	33874.5	2.2				ug/L	22	Standard
	Y	89	343867.7	2.1				ug/L	382028	Standard
>	**Rh**	103	146.7	12.9				ug/L	8	Standard
	Mo	98	727.7	8.3	**0.3157**	0.029	9.3	ug/L	158	Standard
	Ag	107	102.7	5.4	**0.0054**	0.001	22.4	ug/L	108	Standard
	Cd	111	200.2	11.9	**0.1309**	0.015	11.7	mg/L	6	Standard
	Cd	114	464.7	15.2	**0.1196**	0.019	15.8	ug/L	25	Standard
>	**In**	115	503503.1	0.3				ug/L	561862	Standard
	Sn	118	135.7	13.4	**0.0960**	0.022	23.1	ug/L	69	Standard
	Sb	123	307.8	23.7	**0.0162**	0.019	117.6	ug/L	2477	Standard
	Ba	135	6818.5	1.2	**4.4550**	0.064	1.4	ug/L	24	Standard
	Ce	140	538.3	15.5				ug/L	28	Standard
>	**Tb**	159	839704.9	0.6				ug/L	906794	Standard
	Ho	165	26.7	92.5				ug/L	8	Standard
	Tl	203	137984.5	0.1	**21.4439**	0.031	0.1	ug/L	108	Standard
	Tl	205	113602.6	0.2	**21.8802**	0.040	0.2	ug/L	112	Standard
	Pb	206	462.0	2.4	**0.0399**	0.002	5.6	ug/L	315	Standard
	Pb	207	401.3	8.3	**0.0394**	0.008	19.1	ug/L	265	Standard
	Pb	208	1880.0	4.1	**0.0388**	0.004	10.0	ug/L	1278	Standard
	U	238	454.7	8.0	**0.0192**	0.002	10.2	ug/L	113	Standard
>	**Bi**	209	481652.2	0.1				ug/L	539503	Standard

Sample ID: L1608049403 WG579790-02
Report Date/Time: Monday, August 15, 2016 16:58:47
Page 1

Approved: August 16, 2016

Na	23	26.7	**-830478057329**476401056899424.560			57.4	mg/L	2	Standard
Mg	24	5452.6	5.7	**11.0846**	0.529	4.8	mg/L	40	Standard
K	39	160.0	8.3	**0.7049**	0.079	11.3	mg/L	32	Standard
Ca	43	1956.8	8.3	**389.8528**	39.168	10.0	mg/L	40	Standard
Fe	54	149.3	29.3	**0.0421**	0.052	124.2	mg/L	143	Standard
Fe	57	2425.2	2.2	**9.2808**	0.316	3.4	mg/L	270	Standard
> **Sc-1**	45	22626.9	1.5				mg/L	24972	Standard
Cl	35	628367.8	0.9				ug/L	63562	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	3353.7	6.9				ug/L	1190	Standard
P	31	13632.8	2.1				ug/L	11274	Standard
S	34	4230.6	6.0				ug/L	2592	Standard
Sr	88	681.7	7.5				ug/L	70	Standard
C	12	100.0	26.5				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	42.5	12.3				mg/L	10	Standard
Ho-1	165	26.7	92.5				mg/L	8	Standard
Er	166	16.7	69.3				mg/L	10	Standard
I	127	5844.5	4.3				mg/L	2345	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		124.087	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		92.107	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1608049403 WG579790-02
Report Date/Time: Monday, August 15, 2016 16:58:47
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.613
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.277
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: L1608049403S WG579790-07
Sample Date/Time: Monday, August 15, 2016 16:59:42
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77765.7	1.0				ug/L	61110	Standard
	Be	9	37247.4	1.2	**50.5926**	0.430	0.8	ug/L	17	Standard
	Al	27	14297182.4	1.2	**118.5225**	1.813	1.5	ug/L	833	Standard
	Sc	45	22017.7	0.9				ug/L	24972	Standard
	Ti	47	50.0	20.0	**-0.0259**	0.070	270.1	ug/L	61	Standard
	V	51	266855.4	1.3	**53.4986**	1.310	2.4	ug/L	947	Standard
	Cr	52	250980.6	1.4	**53.9500**	1.432	2.7	ug/L	5189	Standard
	Cr	53	32165.8	1.3	**53.3854**	1.281	2.4	ug/L	2222	Standard
	Mn	55	2267207.0	0.9	**301.8827**	4.545	1.5	ug/L	987	Standard
	Co	59	336762.4	0.5	**57.5836**	0.859	1.5	ug/L	300	Standard
	Ni	60	94329.4	0.4	**74.7876**	1.031	1.4	ug/L	157	Standard
	Cu	65	69480.6	0.4	**53.9068**	0.793	1.5	ug/L	132	Standard
	Zn	66	43495.0	0.5	**56.9389**	0.987	1.7	ug/L	171	Standard
>	**Ge**	72	391711.6	1.2				ug/L	432355	Standard
	As	75	44687.3	0.7	**60.8001**	1.150	1.9	ug/L	-36	Standard
	Se	82	3377.4	2.2	**64.6617**	2.221	3.4	ug/L	4	Standard
	Se-1	77	3331.7	4.3	**63.7006**	3.498	5.5	ug/L	163	Standard
>	**Ga**	71	415.0	18.8				mg/L	30	Standard
	Rb	85	32626.8	3.3				ug/L	22	Standard
	Y	89	338235.4	0.7				ug/L	382028	Standard
>	**Rh**	103	136.7	31.1				ug/L	8	Standard
	Mo	98	728.8	4.0	**0.3208**	0.013	4.1	ug/L	158	Standard
	Ag	107	232658.0	1.6	**54.8357**	0.568	1.0	ug/L	108	Standard
	Cd	111	84819.3	0.4	**56.0608**	0.181	0.3	mg/L	6	Standard
	Cd	114	202978.9	0.8	**54.0483**	0.745	1.4	ug/L	25	Standard
>	**In**	115	496768.9	0.7				ug/L	561862	Standard
	Sn	118	129.7	3.5	**0.0907**	0.005	5.1	ug/L	69	Standard
	Sb	123	213990.2	1.9	**56.5600**	0.696	1.2	ug/L	2477	Standard
	Ba	135	89647.8	0.5	**59.4796**	0.303	0.5	ug/L	24	Standard
	Ce	140	511.7	14.2				ug/L	28	Standard
>	**Tb**	159	836095.0	1.7				ug/L	906794	Standard
	Ho	165	28.3	27.0				ug/L	8	Standard
	Tl	203	499053.2	0.7	**77.3076**	0.822	1.1	ug/L	108	Standard
	Tl	205	412673.5	1.5	**79.2351**	1.548	2.0	ug/L	112	Standard
	Pb	206	285974.7	0.8	**57.6538**	0.578	1.0	ug/L	315	Standard
	Pb	207	246311.0	0.5	**54.9358**	0.531	1.0	ug/L	265	Standard
	Pb	208	1135281.6	0.5	**56.2092**	0.520	0.9	ug/L	1278	Standard
	U	238	1145042.4	0.2	**61.1422**	0.381	0.6	ug/L	113	Standard
>	**Bi**	209	483415.5	0.5				ug/L	539503	Standard

Sample ID: L1608049403S WG579790-07
Report Date/Time: Monday, August 15, 2016 17:01:50
Page 1

Approved: August 16, 2016

Na	23	13.3	**-4253016477222**42305525768130.310		57.0	mg/L	2	Standard
Mg	24	5285.9	5.6	**11.0469**	0.632	5.7	mg/L	40	Standard
K	39	201.7	12.2	**0.9506**	0.141	14.9	mg/L	32	Standard
Ca	43	1923.5	1.4	**393.5467**	6.467	1.6	mg/L	40	Standard
Fe	54	148.4	15.8	**0.0453**	0.028	62.5	mg/L	143	Standard
Fe	57	2313.5	6.1	**9.0740**	0.581	6.4	mg/L	270	Standard
Sc-1	45	22017.7	0.9				mg/L	24972	Standard
Cl	35	616329.5	2.4				ug/L	63562	Standard
Kr	83	2.0	132.3				ug/L	3	Standard
Br	81	1920.1	6.3				ug/L	1190	Standard
P	31	13737.9	1.0				ug/L	11274	Standard
S	34	4285.6	4.6				ug/L	2592	Standard
Sr	88	665.0	2.6				ug/L	70	Standard
C	12	110.0	36.4				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	19.0	105.1				mg/L	10	Standard
Ho-1	165	28.3	27.0				mg/L	8	Standard
Er	166	20.0	86.6				mg/L	10	Standard
I	127	12703.7	4.5				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		127.256	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		90.600	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1608049403S WG579790-07
Report Date/Time: Monday, August 15, 2016 17:01:50
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.415
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.604
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1608049403S WG579790-07
Report Date/Time: Monday, August 15, 2016 17:01:50
Page 3

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 15, 2016 17:02:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68929.9	2.8				ug/L	61110	Standard
	Be	9	36016.1	2.9	**55.2001**	1.198	2.2	ug/L	17	Standard
	Al	27	5128723.1	1.2	**47.9918**	1.908	4.0	ug/L	833	Standard
	Sc	45	22294.7	2.4				ug/L	24972	Standard
	Ti	47	17023.9	2.1	**109.6410**	2.366	2.2	ug/L	61	Standard
	V	51	272869.0	1.5	**53.6660**	0.850	1.6	ug/L	947	Standard
	Cr	52	256905.9	1.8	**54.1805**	1.197	2.2	ug/L	5189	Standard
	Cr	53	32164.1	3.8	**52.2937**	1.682	3.2	ug/L	2222	Standard
	Mn	55	415327.0	1.3	**54.1677**	1.000	1.8	ug/L	987	Standard
	Co	59	324714.3	0.4	**54.4727**	0.669	1.2	ug/L	300	Standard
	Ni	60	69811.1	0.7	**54.2713**	0.708	1.3	ug/L	157	Standard
	Cu	65	71429.3	1.6	**54.3705**	0.864	1.6	ug/L	132	Standard
	Zn	66	43073.8	0.2	**55.3132**	0.359	0.6	ug/L	171	Standard
>	Ge	72	399232.3	0.8				ug/L	432355	Standard
	As	75	40926.0	0.7	**54.6358**	0.587	1.1	ug/L	-36	Standard
	Se	82	3043.3	2.3	**57.1560**	1.360	2.4	ug/L	4	Standard
	Se-1	77	3028.0	2.2	**56.4864**	1.749	3.1	ug/L	163	Standard
>	Ga	71	33.3	31.2				mg/L	30	Standard
	Rb	85	576.7	8.4				ug/L	22	Standard
	Y	89	347986.7	1.9				ug/L	382028	Standard
>	Rh	103	15.0	57.7				ug/L	8	Standard
	Mo	98	247181.1	0.6	**112.4372**	1.874	1.7	ug/L	158	Standard
	Ag	107	247998.2	0.9	**55.5154**	0.196	0.4	ug/L	108	Standard
	Cd	111	87146.5	0.1	**54.7065**	0.649	1.2	mg/L	6	Standard
	Cd	114	216977.0	1.5	**54.8660**	0.360	0.7	ug/L	25	Standard
>	In	115	523077.0	1.2				ug/L	561862	Standard
	Sn	118	46543.7	1.0	**55.8713**	0.381	0.7	ug/L	69	Standard
	Sb	123	221771.7	0.5	**55.6783**	0.934	1.7	ug/L	2477	Standard
	Ba	135	84378.3	0.1	**53.1710**	0.625	1.2	ug/L	24	Standard
	Ce	140	46.7	22.3				ug/L	28	Standard
>	Tb	159	857616.6	0.9				ug/L	906794	Standard
	Ho	165	10.0					ug/L	8	Standard
	Tl	203	378103.3	0.4	**54.7146**	0.579	1.1	ug/L	108	Standard
	Tl	205	308483.8	0.8	**55.3279**	0.740	1.3	ug/L	112	Standard
	Pb	206	290690.7	0.3	**54.7464**	0.439	0.8	ug/L	315	Standard
	Pb	207	262671.7	0.2	**54.7295**	0.347	0.6	ug/L	265	Standard
	Pb	208	1181130.0	0.3	**54.6303**	0.515	0.9	ug/L	1278	Standard
	U	238	1183163.3	0.1	**59.0206**	0.327	0.6	ug/L	113	Standard
>	Bi	209	517465.3	0.6				ug/L	539503	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 17:04:54
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	2915.3	2.1	**5.9832**	0.144	2.4	mg/L	40	Standard
K	39	906.7	11.1	**4.6514**	0.453	9.7	mg/L	32	Standard
Ca	43	86.7	17.6	**7.8015**	3.543	45.4	mg/L	40	Standard
Fe	54	4896.1	3.0	**5.5032**	0.251	4.6	mg/L	143	Standard
Fe	57	1511.7	9.6	**5.4902**	0.758	13.8	mg/L	270	Standard
> **Sc-1**	45	22294.7	2.4				mg/L	24972	Standard
Cl	35	107654.9	6.8				ug/L	63562	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1283.4	13.4				ug/L	1190	Standard
P	31	15930.1	5.6				ug/L	11274	Standard
S	34	3997.2	4.0				ug/L	2592	Standard
Sr	88	78.3	24.2				ug/L	70	Standard
C	12	70.0	28.6				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	2.7	219.6				mg/L	10	Standard
Ho-1	165	10.0					mg/L	8	Standard
Er	166	13.3	43.3				mg/L	10	Standard
I	127	13781.3	3.3				mg/L	2345	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	110.400		
	Al	27	95.984		
	Sc	45			
	Ti	47	109.641		
	V	51	107.332		
	Cr	52	108.361		
	Cr	53			
	Mn	55	108.335		
	Co	59	108.945		
	Ni	60	108.543		
	Cu	65	108.741		
	Zn	66	110.626		
>	Ge	72		92.339	
	As	75	109.272		
	Se	82	114.312		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 17:04:54
Page 2

Approved: August 16, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98	112.437		
Ag	107	111.031		
Cd	111	109.413		
Cd	114			
> In	115			93.097
Sn	118	111.743		
Sb	123	111.357		
Ba	135	106.342		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	109.429		
Tl	205			
Pb	206			
Pb	207			
Pb	208	109.261		
U	238	118.041		
> Bi	209			95.915
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Zn	66	
QC Std 6	Se	82	

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 17:04:54
Page 3

Approved: August 16, 2016

QC Std 6	Mo	98
QC Std 6	Ag	107
QC Std 6	Sb	123
QC Std 6	U	238

Sample ID: QC Std 6
Report Date/Time: Monday, August 15, 2016 17:04:54
Page 4

Approved: August 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 15, 2016 17:05:49
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67180.3	1.4				ug/L	61110	Standard
	Be	9	38.3	39.8	**0.0456**	0.025	54.4	ug/L	17	Standard
	Al	27	9941.6	124.6	**0.0839**	0.120	143.6	ug/L	833	Standard
	Sc	45	22717.0	2.6				ug/L	24972	Standard
	Ti	47	33.3	39.0	**-0.1436**	0.082	56.8	ug/L	61	Standard
	V	51	1280.6	17.8	**0.0428**	0.042	97.3	ug/L	947	Standard
	Cr	52	5690.4	3.5	**0.0905**	0.039	42.6	ug/L	5189	Standard
	Cr	53	966.7	4.1	**-1.8307**	0.087	4.7	ug/L	2222	Standard
	Mn	55	2560.0	87.6	**0.2168**	0.284	131.2	ug/L	987	Standard
	Co	59	445.0	51.0	**0.0316**	0.037	116.2	ug/L	300	Standard
	Ni	60	190.3	27.9	**0.0278**	0.040	143.4	ug/L	157	Standard
	Cu	65	211.3	23.2	**0.0810**	0.036	43.9	ug/L	132	Standard
	Zn	66	284.0	21.0	**0.1318**	0.073	55.1	ug/L	171	Standard
>	**Ge**	72	405142.9	1.1				ug/L	432355	Standard
	As	75	-30.8	120.6	**0.0382**	0.049	127.6	ug/L	-36	Standard
	Se	82	5.5	18.3	**0.1239**	0.018	14.6	ug/L	4	Standard
	Se-1	77	76.0	14.9	**-1.3387**	0.205	15.3	ug/L	163	Standard
>	**Ga**	71	13.3	57.3				mg/L	30	Standard
	Rb	85	26.7	47.2				ug/L	22	Standard
	Y	89	345756.2	1.5				ug/L	382028	Standard
>	**Rh**	103	6.7	114.6				ug/L	8	Standard
	Mo	98	373.9	53.6	**0.1404**	0.090	64.1	ug/L	158	Standard
	Ag	107	338.3	99.8	**0.0566**	0.075	132.1	ug/L	108	Standard
	Cd	111	100.2	142.8	**0.0626**	0.089	141.8	mg/L	6	Standard
	Cd	114	230.7	126.3	**0.0552**	0.073	132.0	ug/L	25	Standard
>	**In**	115	527100.3	0.8				ug/L	561862	Standard
	Sn	118	161.0	31.7	**0.1184**	0.060	50.6	ug/L	69	Standard
	Sb	123	1189.5	46.4	**0.2318**	0.136	58.7	ug/L	2477	Standard
	Ba	135	147.0	122.0	**0.0826**	0.112	135.2	ug/L	24	Standard
	Ce	140	88.3	148.7				ug/L	28	Standard
>	**Tb**	159	851336.1	0.6				ug/L	906794	Standard
	Ho	165	5.0	173.2				ug/L	8	Standard
	Tl	203	537.7	127.4	**0.0647**	0.097	150.6	ug/L	108	Standard
	Tl	205	370.0	119.4	**0.0509**	0.078	153.1	ug/L	112	Standard
	Pb	206	645.0	72.6	**0.0665**	0.087	130.1	ug/L	315	Standard
	Pb	207	573.7	71.2	**0.0676**	0.083	123.4	ug/L	265	Standard
	Pb	208	2571.1	72.0	**0.0629**	0.084	133.4	ug/L	1278	Standard
	U	238	1233.1	126.2	**0.0555**	0.076	137.5	ug/L	113	Standard
>	**Bi**	209	522435.4	0.8				ug/L	539503	Standard

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 17:07:57
Page 1

Approved: August 16, 2016

Na	23	0.0		**0.0095**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	32.8	**0.0369**	0.038	103.8	mg/L	40	Standard
K	39	38.3	19.9	**0.0705**	0.035	50.1	mg/L	32	Standard
Ca	43	33.3	22.9	**-3.4081**	1.711	50.2	mg/L	40	Standard
Fe	54	125.8	18.4	**0.0143**	0.025	174.4	mg/L	143	Standard
Fe	57	261.7	4.0	**0.0499**	0.072	144.1	mg/L	270	Standard
> **Sc-1**	45	22717.0	2.6				mg/L	24972	Standard
Cl	35	105438.9	0.7				ug/L	63562	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	1180.0	6.6				ug/L	1190	Standard
P	31	14587.0	3.2				ug/L	11274	Standard
S	34	3840.5	4.1				ug/L	2592	Standard
Sr	88	61.7	12.4				ug/L	70	Standard
C	12	66.7	22.9				mg/L	90	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	23.2	64.8				mg/L	10	Standard
Ho-1	165	5.0	173.2				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	10	Standard
I	127	1973.5	8.5				mg/L	2345	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.706	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 17:07:57
Page 2

Approved: August 16, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.813
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.836
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

Sample ID: QC Std 7
Report Date/Time: Monday, August 15, 2016 17:07:57
Page 3

Approved: August 16, 2016

2.3 General Chemistry Data

2.3.1 Method 9056

2.3.1.1 Summary Data

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-05	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW05-080316	**Prep Method:**	9056	**Prep Date:**	08/05/2016 07:41
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/07/2016 12:08
Workgroup #:	WG579272	**Analyst:**	AED	**Run Date:**	08/05/2016 13:06
Collect Date:	08/03/2016 07:55	**Dilution:**	10	**File ID:**	I3_080516-19
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	236		2.00	2.00	1.00
Nitrate	14797-55-8	2.00	U,H1	6.00	2.00	1.00
Nitrite	14797-65-0	2.00	U,H1	4.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-05	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW05-080316	**Prep Method:**	9056	**Prep Date:**	08/09/2016 10:02
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/07/2016 12:08
Workgroup #:	WG579536	**Analyst:**	AED	**Run Date:**	08/09/2016 14:07
Collect Date:	08/03/2016 07:55	**Dilution:**	100	**File ID:**	I3_080916-14
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfate	14808-79-8	4060		100	100	50.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-08	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW16-080316	**Prep Method:**	9056	**Prep Date:**	08/05/2016 07:41
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/07/2016 12:08
Workgroup #:	WG579272	**Analyst:**	AED	**Run Date:**	08/05/2016 12:46
Collect Date:	08/03/2016 09:10	**Dilution:**	10	**File ID:**	I3_080516-18
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U,H1	6.00	2.00	1.00
Nitrite	14797-65-0	2.00	U,H1	4.00	2.00	1.00
Sulfate	14808-79-8	723		10.0	10.0	5.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-08	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW16-080316	**Prep Method:**	9056	**Prep Date:**	08/09/2016 10:02
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/07/2016 12:08
Workgroup #:	WG579536	**Analyst:**	AED	**Run Date:**	08/09/2016 15:08
Collect Date:	08/03/2016 09:10	**Dilution:**	30	**File ID:**	I3_080916-17
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	302		6.00	6.00	3.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	LHSMW19-080316	**Prep Method:**	9056	**Prep Date:**	08/05/2016 07:41
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/07/2016 12:08
Workgroup #:	WG579272	**Analyst:**	AED	**Run Date:**	08/05/2016 13:26
Collect Date:	08/03/2016 10:20	**Dilution:**	10	**File ID:**	I3_080516-20
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U,H1	6.00	2.00	1.00
Nitrite	14797-65-0	2.00	U,H1	4.00	2.00	1.00
Sulfate	14808-79-8	733		10.0	10.0	5.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	LHSMW19-080316	**Prep Method:**	9056	**Prep Date:**	08/09/2016 10:02
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/07/2016 12:08
Workgroup #:	WG579536	**Analyst:**	AED	**Run Date:**	08/09/2016 15:28
Collect Date:	08/03/2016 10:20	**Dilution:**	30	**File ID:**	I3_080916-18
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	365		6.00	6.00	3.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-13	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW11-080316	**Prep Method:**	9056	**Prep Date:**	08/05/2016 07:41
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/07/2016 12:08
Workgroup #:	WG579272	**Analyst:**	AED	**Run Date:**	08/05/2016 12:25
Collect Date:	08/03/2016 11:25	**Dilution:**	10	**File ID:**	I3_080516-17
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	229		2.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	6.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00
Sulfate	14808-79-8	253		10.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-15	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW09-080316	**Prep Method:**	9056	**Prep Date:**	08/05/2016 07:41
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/07/2016 12:08
Workgroup #:	WG579272	**Analyst:**	AED	**Run Date:**	08/05/2016 12:05
Collect Date:	08/03/2016 13:45	**Dilution:**	10	**File ID:**	I3_080516-16
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U	6.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-15	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	46WW09-080316	**Prep Method:**	9056	**Prep Date:**	08/09/2016 10:02
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	06/07/2016 12:08
Workgroup #:	WG579536	**Analyst:**	AED	**Run Date:**	08/09/2016 15:48
Collect Date:	08/03/2016 13:45	**Dilution:**	50	**File ID:**	I3_080916-19
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	466		10.0	10.0	5.00
Sulfate	14808-79-8	2040		50.0	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(-c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 060716 IC3 ICAL.SEQ

Analyst1: AED Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: NA

Eluent ID#: RGT37034

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups:

Internal STD: NA Surrogate STD: NA Calibration STD WG571482 07-JUN-2016

CCV STD: STD74524 LCS STD: STD74525 MS/MSD STD: STD74525

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I3_060716-01	ELUENT	1	1		06/07/16 09:46
2	I3_060716-02	DI WATER	1	1		06/07/16 10:06
3	I3_060716-03	WG571482-01 STD \#1	1	1		06/07/16 10:26
4	I3_060716-04	WG571482-02 STD \#2	1	1		06/07/16 10:47
5	I3_060716-05	WG571482-03 STD \#3	1	1		06/07/16 11:07
6	I3_060716-06	WG571482-04 STD \#4	1	1		06/07/16 11:27
7	I3_060716-07	WG571482-05 STD \#5	1	1		06/07/16 11:48
8	I3_060716-08	WG571482-06 STD \#6	1	1		06/07/16 12:08
9	I3_060716-09	WG571482-07 SSCV	1	1		06/07/16 12:29
10	I3_060716-10	LCR LVL 6	1	1		06/07/16 12:49
11	I3_060716-11	LCR LVL 2	1	1		06/07/16 13:09
12	I3_060716-12	LCR LVL 0	1	1		06/07/16 13:30

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 17-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 080516 IC3.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 160319254
Eluent ID#: RGT37502
Workgroups: Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Internal STD: NA Surrogate STD: NA Calibration STD STD74524 07-JUN-2016
CCV STD: STD74524 LCS STD: STD74525 MS/MSD STD: STD74525

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I3_080516-03	WG579273-01 ANION CCV	1	1		08/05/16 07:41
2	I3_080516-04	WG579273-02 ANION CCB	1	1		08/05/16 08:01
3	I3_080516-05	WG579272-01 ANION BLANK	1	1		08/05/16 08:21
4	I3_080516-06	WG579272-02 ANION LCS	1	1		08/05/16 08:42
5	I3_080516-07	L16080277-01	1	1		08/05/16 09:02
6	I3_080516-08	L16080277-02	1	1		08/05/16 09:22
7	I3_080516-09	L16080277-02 10X	1	10		08/05/16 09:43
8	I3_080516-10	L16080277-03	1	1		08/05/16 10:03
9	I3_080516-11	L16080277-04	1	1		08/05/16 10:23
10	I3_080516-12	L16080277-05 300X	1	300		08/05/16 10:44
11	I3_080516-13	L16080277-05 5000X	1	5000		08/05/16 11:04
12	I3_080516-14	WG579273-03 ANION CCV	1	1		08/05/16 11:25
13	I3_080516-15	WG579273-04 ANION CCB	1	1		08/05/16 11:45
14	I3_080516-16	L16080330-15 10X	1	10		08/05/16 12:05
15	I3_080516-17	L16080330-13 10X	1	10		08/05/16 12:25
16	I3_080516-18	L16080330-08 10X	1	10		08/05/16 12:46
17	I3_080516-19	L16080330-05 10X	1	10		08/05/16 13:06
18	I3_080516-20	L16080330-11 10X	1	10		08/05/16 13:26
19	I3_080516-21	WG579273-05 ANION CCV	1	1		08/05/16 13:47
20	I3_080516-22	WG579273-06 ANION CCB	1	1		08/05/16 14:07
21	I3_080516-23	WG579272-03 ANION LCS2	1	1		08/05/16 14:27
22	I3_080516-24	WG579273-07 ANION CCV	1	1		08/05/16 14:48
23	I3_080516-25	WG579273-08 ANION CCB	1	1		08/05/16 15:08
24	I3_080516-26	END	1	1		08/05/16 15:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1				
	WG579273-01 ANION CCV: Failed high for nitrite.			
4				
	WG579272-02 ANION LCS: Bracketing CCV failed high for nitrite, samples are ND. Report with narrative per WTD.			
6	X	10	Over Calibration Range	CL
	L16080277-02			

Page: 1 Approved: 08-AUG-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 080516 IC3.SEQ

Analyst1: AED Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 160319254

Eluent ID#: RGT37502

Workgroups: Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Internal STD: NA Surrogate STD: NA STD74524 07-JUN-2016

CCV STD: STD74524 LCS STD: STD74525 STD74525

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X	5000	Over Calibration Range	CL
	L16080277-05 300X: Diluted due to a high screen result for chloride, which exceeded the anion load limit recommended by the instrument's manufacturer.			
14	X	50	Over Calibration Range	CL,SO4
	L16080330-15 10X: Diluted due to a high screen result for chloride, which exceeded the anion load limit recommended by the instrument's manufacturer.			
15				
	L16080330-13 10X: Diluted due to high screen results for sulfate and chloride, which exceeded the upper limit of the calibration range and due to significant precipitation during treatment.			
16	X	30	Over Calibration Range	CL
	L16080330-08 10X: Diluted due to a high screen result for sulfate, which exceeded the anion load limit recommended by the instrument's manufacturer. H1 for being analyzed out of hold.			
17	X	100	Over Calibration Range	SO4
	L16080330-05 10X: Diluted due to a high screen result for sulfate, which exceeded the anion load limit recommended by the instrument's manufacturer. H1 for being analyzed out of hold.			
18	X	30	Over Calibration Range	CL
	L16080330-11 10X: Diluted due to a high screen result for sulfate, which exceeded the anion load limit recommended by the instrument's manufacturer. H1 for being analyzed out of hold.			

Page: 2 Approved: 08-AUG-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 080916 IC3.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 160319254
Eluent ID#: RGT37558
Workgroups: Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Internal STD: NA Surrogate STD: NA Calibration STD STD74524 07-JUN-2016
CCV STD: STD77046 LCS STD: STD77045 MS/MSD STD: STD77045

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I3_080916-01	ELUENT	1	1		08/09/16 09:42
2	I3_080916-02	DI WATER	1	1		08/09/16 10:02
3	I3_080916-03	WG579537-01 ANION CCV	1	1		08/09/16 10:23
4	I3_080916-04	WG579537-02 ANION CCB	1	1		08/09/16 10:43
5	I3_080916-05	WG579506-01 ANION BLANK	7	1		08/09/16 11:03
6	I3_080916-06	L16070002-01 LOD F,B,C,S STD1/2	7	1		08/09/16 11:24
7	I3_080916-07	L16080159-09 NO3 (SO4) CL 5X	1	5		08/09/16 11:44
8	I3_080916-08	L16080159-09 NO3 (SO4) CL 20X	1	20		08/09/16 12:04
9	I3_080916-09	L16080321-17 NO3 SO4 (CL) 2X	1	2		08/09/16 12:25
10	I3_080916-10	L16080321-23 SO4 2X REF	1	2		08/09/16 12:45
11	I3_080916-11	WG579536-04 DUP 2X	1	2		08/09/16 13:05
12	I3_080916-12	L16080321-25 MS 2X	1	2		08/09/16 13:26
13	I3_080916-13	L16080321-27 MSD 2X	1	2		08/09/16 13:46
14	I3_080916-14	L16080330-05 NO2 (SO4) CL 100X	1	100		08/09/16 14:07
15	I3_080916-15	WG579537-03 ANION CCV	1	1		08/09/16 14:27
16	I3_080916-16	WG579537-04 ANION CCB	1	1		08/09/16 14:47
17	I3_080916-17	L16080330-08 NO2 SO4 (CL) 30X	1	30		08/09/16 15:08
18	I3_080916-18	L16080330-11 NO2 SO4 (CL) 30X	1	30		08/09/16 15:28
19	I3_080916-19	L16080330-15 NO2 (SO4 CL) 50X	1	50		08/09/16 15:48
20	I3_080916-20	L16080353-03 NO3 SO4 (CL) 50X	1	50		08/09/16 16:09
21	I3_080916-21	L16080351-01 CL 500X	2	500		08/09/16 16:29
22	I3_080916-22	L16080357-01 CL SO4	1	1		08/09/16 16:50
23	I3_080916-23	L16080358-01 CL SO4	1	1		08/09/16 17:10
24	I3_080916-24	L16080358-02 CL SO4	1	1		08/09/16 17:30
25	I3_080916-25	L16080359-01 CL SO4	1	1		08/09/16 17:51
26	I3_080916-26	L16080359-02 CL SO4	1	1		08/09/16 18:11
27	I3_080916-27	WG579537-05 ANION CCV	1	1		08/09/16 18:31
28	I3_080916-28	WG579537-06 ANION CCB	1	1		08/09/16 18:52
29	I3_080916-29	WG579536-01 ANION BLANK	1	1		08/09/16 19:12
30	I3_080916-30	WG579536-02 ANION LCS	1	1		08/09/16 19:33
31	I3_080916-31	WG579322-01 FBLK	18	1		08/09/16 19:53
32	I3_080916-32	L16080344-01	18	1		08/09/16 20:13
33	I3_080916-33	L16080344-02	18	1		08/09/16 20:34

Page: 1 Approved: 10-AUG-16

Wadei D

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 080916 IC3.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 160319254
Eluent ID#: RGT37558
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups:

Internal STD: NA Surrogate STD: NA STD74524 07-JUN-2016
CCV STD: STD77046 LCS STD: STD77045 STD77045

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I3_080916-34	L16080344-03	18	1		08/09/16 20:54
35	I3_080916-35	WG579537-07 ANION CCV	1	1		08/09/16 21:14
36	I3_080916-36	WG579537-08 ANION CCB	1	1		08/09/16 21:35
37	I3_080916-37	END	1	1		08/09/16 21:55

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7				
	L16080159-09 NO3 (SO4) CL 5X: Diluted due to initial analysis of sulfate, which exceeded the upper limit of the calibration range. This is NR.			
8				
	L16080159-09 NO3 (SO4) CL 20X: Diluted as a precaution for sulfate exceeding the upper limit of the calibration range in the initial analysis.			
9				
	L16080321-17 NO3 SO4 (CL) 2X: Diluted due to initial analysis of chloride, which exceeded the upper limit of the calibration range.			
10				
	L16080321-23 SO4 2X REF: Diluted due to initial analysis of sulfate in client specified MS/MSD exceeding the upper limit of the calibration range.			
12				
	L16080321-25 MS 2X: Failed low for sulfate.			
13				
	L16080321-27 MSD 2X: Failed low for sulfate.			
14				
	L16080330-05 NO2 (SO4) CL 100X: Diluted due to initial analysis of sulfate, which exceeded the upper limit of the calibration range.			
17				
	L16080330-08 NO3 SO4 (CL) 30X: Diluted due to initial analysis of chloride, which exceeded the upper limit of the calibration range.			
18				
	L16080330-11 NO3 SO4 (CL) 30X: Diluted due to initial analysis of chloride, which exceeded the upper limit of the calibration range.			
19				
	L16080330-15 NO3 (SO4 CL) 50X: Diluted due to initial analysis of chloride and sulfate, which exceeded the upper limit of the calibration range.			
20				
	L16080353-03 NO3 SO4 (CL) 50X: Diluted due to initial analysis of chloride, which exceeded the upper limit of the calibration range.			
21				
	L16080351-01 CL 500X: Diluted due to a high screen result for chloride, which exceeded the upper limit of the calibration range.			
22				
	L16080357-01 CL SO4: CT1 qualifier due to cooler being received out of temperature.			
23				
	L16080358-01 CL SO4: CT1 qualifier due to cooler being received out of temperature.			

Page: 2 Approved: 10-AUG-16

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 080916 IC3.SEQ

Analyst1: AED Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 160319254

Eluent ID#: RGT37558

Workgroups: Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Internal STD: NA Surrogate STD: NA STD74524 07-JUN-2016

CCV STD: STD77046 LCS STD: STD77045 STD77045

Comments

Seq.	Rerun	Dil.	Reason	Analytes
24	X	2	Over Calibration Range	CL
	L16080358-02 CL SO4: CT1 qualifier due to cooler being received out of temperature.			
25	X	2	Over Calibration Range	CL
	L16080359-01 CL SO4: CT1 qualifier due to cooler being received out of temperature.			
26	X	3	Over Calibration Range	CL
	L16080359-02 CL SO4: CT1 qualifier due to cooler being received out of temperature.			

Page: 3 Approved: 10-AUG-16

Microbac Laboratories Inc.

Data Checklist

Date: 07-JUN-2016
Analyst: AED
Analyst: NA
Method: 300/9056
Instrument: IC3
Curve Workgroup: NA
Runlog ID: 75715
Analytical Workgroups: WG571482 ICAL

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	NA
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	NA
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
16-JUN-2016

Secondary Reviewer:
17-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-17-2016 15:58:03

Microbac Laboratories Inc.

Data Checklist

Date: 05-AUG-2016
Analyst: AED
Analyst: NA
Method: 9056
Instrument: IC3
Curve Workgroup: NA
Runlog ID: 76758
Analytical Workgroups: L16080277, 0330

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer:
08-AUG-2016

Secondary Reviewer:
08-AUG-2016

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-08-2016 16:25:07

Microbac Laboratories Inc.

Data Checklist

Date: 09-AUG-2016
Analyst: AED
Analyst: NA
Method: 300/9056
Instrument: IC3
Curve Workgroup: NA
Runlog ID: 76819
Analytical Workgroups: L16070002, L16080159, 0321, 0330, 0344, 0351, 0353, 0357, 0358,

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
10-AUG-2016

Secondary Reviewer:
10-AUG-2016

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-10-2016 16:40:48

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG579272

Login Number: L16080330

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW05-080316	05	08/03/16					08/05/2016	2	2		08/05/16	2.2	2	*
46WW16-080316	08	08/03/16					08/05/2016	1.9	2		08/05/16	2.2	2	*
LHSMW19-080316	11	08/03/16					08/05/2016	1.9	2		08/05/16	2.1	2	*
46WW11-080316	13	08/03/16					08/05/2016	1.8	2		08/05/16	2	2	
46WW09-080316	15	08/03/16					08/05/2016	1.7	2		08/05/16	1.9	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4887153
Report generated 08/11/2016 08:36

Microbac Laboratories Inc.

00746544

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG579536

Login Number: L16080330

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW05-080316	05	08/03/16					08/09/2016	6.1	2	*	08/09/16	6.3	2	*
46WW16-080316	08	08/03/16					08/09/2016	6	2	*	08/09/16	6.2	2	*
LHSMW19-080316	11	08/03/16					08/09/2016	6	2	*	08/09/16	6.2	2	*
46WW09-080316	15	08/03/16					08/09/2016	5.8	2	*	08/09/16	6.1	2	*

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4887153
Report generated 08/11/2016 08:36

METHOD BLANK SUMMARY

Login Number: L16080330
Blank File ID: I3_080516-05
Prep Date: 08/05/16 07:41
Analyzed Date: 08/05/16 08:21
Analyst: AED

Work Group: WG579272
Blank Sample ID: WG579272-01
Instrument ID: IC3
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG579272-02	I3_080516-06	08/05/16 08:42	01
46WW09-080316	L16080330-15	I3_080516-16	08/05/16 12:05	DL01
46WW11-080316	L16080330-13	I3_080516-17	08/05/16 12:25	DL01
46WW16-080316	L16080330-08	I3_080516-18	08/05/16 12:46	DL01
46WW05-080316	L16080330-05	I3_080516-19	08/05/16 13:06	DL01
LHSMW19-080316	L16080330-11	I3_080516-20	08/05/16 13:26	DL01
LCS2	WG579272-03	I3_080516-23	08/05/16 14:27	01

Report Name: BLANK_SUMMARY
PDF File ID: 4887154
Report generated 08/11/2016 08:36

METHOD BLANK SUMMARY

Login Number: L16080330
Blank File ID: I3_080916-29
Prep Date: 08/09/16 10:02
Analyzed Date: 08/09/16 19:12
Analyst: AED

Work Group: WG579536
Blank Sample ID: WG579536-01
Instrument ID: IC3
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
DUP	WG579536-04	I3_080916-11	08/09/16 13:05	DL01
46WW05-080316	L16080330-05	I3_080916-14	08/09/16 14:07	DL02
46WW16-080316	L16080330-08	I3_080916-17	08/09/16 15:08	DL02
LHSMW19-080316	L16080330-11	I3_080916-18	08/09/16 15:28	DL02
46WW09-080316	L16080330-15	I3_080916-19	08/09/16 15:48	DL02
LCS	WG579536-02	I3_080916-30	08/09/16 19:33	01

Report Name: BLANK_SUMMARY
PDF File ID: 4887154
Report generated 08/11/2016 08:36

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080330 Prep Date: 08/05/16 07:41 Sample ID: WG579272-01
Instrument ID: IC3 Run Date: 08/05/16 08:21 Prep Method: 9056
File ID: I3 080516-05 Analyst: AED Method: 9056
Workgroup (AAB#): WG579272 Matrix: Water Units: mg/L
Contract #: Cal ID: IC3-07-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.200	0.100	1	U
Nitrate	0.100	0.600	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	1.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4887155
11-AUG-2016 08:38

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080330 Prep Date: 08/09/16 10:02 Sample ID: WG579536-01
Instrument ID: IC3 Run Date: 08/09/16 19:12 Prep Method: 9056
File ID: I3 080916-29 Analyst: AED Method: 9056
Workgroup (AAB#): WG579536 Matrix: Water Units: mg/L
Contract #: Cal ID: IC3 - 07-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.200	0.100	1	U
Sulfate	0.500	1.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4887155
11-AUG-2016 08:38

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080330 Run Date: 08/09/2016 Sample ID: WG579536-02
Instrument ID: IC3 Run Time: 19:33 Prep Method: 9056
File ID: I3 080916-30 Analyst: AED Method: 9056
Workgroup (AAB#): WG579536 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD77045 Cal ID: IC3-07-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	8.27	103	90 - 110	
Sulfate	40.0	39.5	98.7	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4891110
Report generated: 08/11/2016 08:36

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080330 Analyst: AED Prep Method: 9056
Instrument ID: IC3 Matrix: Water Method: 9056
Workgroup (AAB#): WG579272 Units: mg/L
QC Key: DOD4 Lot #: STD77045

Sample ID: WG579272-02 LCS File ID: I3_080516-06 Run Date: 08/05/2016 08:42
Sample ID: WG579272-03 LCS2 File ID: I3_080516-23 Run Date: 08/05/2016 14:27

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Chloride	8.00	8.13	102	8.00	8.20	103	0.833	90 - 110	20	
Nitrate	5.42	5.30	97.8	5.42	5.32	98.2	0.377	90 - 110	20	
Nitrite	4.87	4.98	102	4.87	5.09	104	2.19	90 - 110	20	
Sulfate	40.0	39.3	98.2	40.0	39.3	98.2	0.0356	90 - 110	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4887156
Report generated: 08/11/2016 08:36

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16080330
Analytical Method: 9056
ICAL Workgroup: WG571482

Instrument ID: IC3
Initial Calibration Date: 07-JUN-16 12:08
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		6.421	8.26	0.99500	
Nitrate		2.371	6.52	0.99700	
Nitrite		3.504	14.7	0.99700	
Sulfate		8.158	16.4	0.99500	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4887157
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L16080330
Analytical Method: 9056

Instrument ID: IC3
Initial Calibration Date: 07-JUN-16 12:08
Column ID: F

Analyte	WG571482-01			WG571482-02			WG571482-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	0.200	0.0300000000	6.667	1.00	0.143500000	6.969	4.00	0.590600000	6.773
Nitrate	0.134	0.0534000000	2.501	0.678	0.271500000	2.495	2.71	1.11020000	2.442
Nitrite	0.122	0.0266000000	4.579	0.609	0.165600000	3.677	2.44	0.707100000	3.444
Sulfate	1.00	0.103100000	9.699	5.00	0.498800000	10.02	20.0	2.51880000	7.940

INT_CAL - Modified 03/06/2008
PDF File ID: 4887157
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L16080330
Analytical Method: 9056
Instrument ID: IC3
Initial Calibration Date: 07-JUN-16 12:08
Column ID: F

Analyte	WG571482-04			WG571482-05			WG571482-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	8.00	1.24980000	6.401	12.0	1.95820000	6.128	24.0	4.29370000	5.590
Nitrate	5.42	2.28040000	2.377	8.13	3.55270000	2.289	16.3	7.67570000	2.119
Nitrite	4.87	1.49590000	3.257	7.31	2.32780000	3.139	14.6	4.98860000	2.929
Sulfate	40.0	5.30920000	7.534	60.0	8.36240000	7.175	120	18.2426000	6.578

INT_CAL - Modified 03/06/2008
PDF File ID: 4887157
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16080330 Run Date: 06/07/2016 Sample ID: WG571482-07
Instrument ID: IC3 Run Time: 12:29 Method: 9056
File ID: I3 060716-09 Analyst: AED QC Key: DOD4
ICal Workgroup: WG571482 Cal ID: IC3 - 07-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.50	mg/L	6.36	6.30	10	
Nitrate		5.42	5.15	mg/L	2.35	5.10	10	
Nitrite		4.87	4.77	mg/L	3.15	2.00	10	
Sulfate		40.0	37.5	mg/L	7.50	6.30	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4887158
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/05/2016
Sample ID: WG579273-02
Instrument ID: IC3
Run Time: 08:01
Method: 9056
File ID: I3_080516-04
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG579272
Cal ID: IC3 - 07-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Nitrate	0.100	0.600	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4887161
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/05/2016
Sample ID: WG579273-04
Instrument ID: IC3
Run Time: 11:45
Method: 9056
File ID: I3 080516-15
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG579272
Cal ID: IC3 - 07-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Nitrate	0.100	0.600	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4887161
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/05/2016
Sample ID: WG579273-06
Instrument ID: IC3
Run Time: 14:07
Method: 9056
File ID: I3_080516-22
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG579272
Cal ID: IC3 - 07-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Nitrate	0.100	0.600	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4887161
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/05/2016
Sample ID: WG579273-08
Instrument ID: IC3
Run Time: 15:08
Method: 9056
File ID: I3_080516-25
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG579272
Cal ID: IC3 - 07-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Nitrate	0.100	0.600	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4887161
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/09/2016
Sample ID: WG579537-02
Instrument ID: IC3
Run Time: 10:43
Method: 9056
File ID: I3 080916-04
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG579536
Cal ID: IC3 - 07-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4887161
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/09/2016
Sample ID: WG579537-04
Instrument ID: IC3
Run Time: 14:47
Method: 9056
File ID: I3_080916-16
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG579536
Cal ID: IC3 - 07-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4887161
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/09/2016
Sample ID: WG579537-06
Instrument ID: IC3
Run Time: 18:52
Method: 9056
File ID: I3 080916-28
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG579536
Cal ID: IC3 - 07-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4887161
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16080330
Run Date: 08/09/2016
Sample ID: WG579537-08
Instrument ID: IC3
Run Time: 21:35
Method: 9056
File ID: I3 080916-36
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG579536
Cal ID: IC3 - 07-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4887161
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/05/2016
Sample ID: WG579273-01
Instrument ID: IC3
Run Time: 07:41
Method: 9056
File ID: I3_080516-03
Analyst: AED
QC Key: DOD4
Workgroup (AAB#): WG579272
Cal ID: IC3 - 07-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.15	mg/L	5.85	1.81	10	
Nitrate		5.42	5.26	mg/L	2.30	3.07	10	
Nitrite		4.87	5.38	mg/L	2.79	10.5	10	*
Sulfate		40.0	39.3	mg/L	7.16	1.82	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4887160
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/05/2016
Sample ID: WG579273-03
Instrument ID: IC3
Run Time: 11:25
Method: 9056
File ID: I3_080516-14
Analyst: AED
QC Key: DOD4
Workgroup (AAB#): WG579272
Cal ID: IC3 - 07-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.13	mg/L	5.86	1.60	10	
Nitrate		5.42	5.29	mg/L	2.29	2.45	10	
Nitrite		4.87	4.97	mg/L	3.02	2.07	10	
Sulfate		40.0	39.2	mg/L	7.16	1.91	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4887160
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/05/2016
Sample ID: WG579273-05
Instrument ID: IC3
Run Time: 13:47
Method: 9056
File ID: I3_080516-21
Analyst: AED
QC Key: DOD4
Workgroup (AAB#): WG579272
Cal ID: IC3 - 07-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.15	mg/L	5.84	1.91	10	
Nitrate		5.42	5.30	mg/L	2.28	2.32	10	
Nitrite		4.87	4.99	mg/L	3.01	2.43	10	
Sulfate		40.0	39.2	mg/L	7.17	1.98	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4887160
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/05/2016
Sample ID: WG579273-07
Instrument ID: IC3
Run Time: 14:48
Method: 9056
File ID: I3_080516-24
Analyst: AED
QC Key: DOD4
Workgroup (AAB#): WG579272
Cal ID: IC3 - 07-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.20	mg/L	5.81	2.49	10	
Nitrate		5.42	5.30	mg/L	2.28	2.21	10	
Nitrite		4.87	5.14	mg/L	2.92	5.43	10	
Sulfate		40.0	39.3	mg/L	7.16	1.82	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4887160
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/09/2016
Sample ID: WG579537-01
Instrument ID: IC3
Run Time: 10:23
Method: 9056
File ID: I3 080916-03
Analyst: AED
QC Key: DOD4
Workgroup (AAB#): WG579536
Cal ID: IC3 - 07-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.12	mg/L	5.87	1.48	10	
Sulfate		40.0	39.3	mg/L	7.15	1.70	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4887160
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/09/2016
Sample ID: WG579537-03
Instrument ID: IC3
Run Time: 14:27
Method: 9056
File ID: I3 080916-15
Analyst: AED
QC Key: DOD4
Workgroup (AAB#): WG579536
Cal ID: IC3 - 07-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.20	mg/L	5.81	2.50	10	
Sulfate		40.0	39.4	mg/L	7.12	1.39	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4887160
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/09/2016
Sample ID: WG579537-05
Instrument ID: IC3
Run Time: 18:31
Method: 9056
File ID: I3_080916-27
Analyst: AED
QC Key: DOD4
Workgroup (AAB#): WG579536
Cal ID: IC3 - 07-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.25	mg/L	5.77	3.14	10	
Sulfate		40.0	39.5	mg/L	7.11	1.16	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4887160
Report generated 08/11/2016 08:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16080330
Run Date: 08/09/2016
Sample ID: WG579537-07
Instrument ID: IC3
Run Time: 21:14
Method: 9056
File ID: I3 080916-35
Analyst: AED
QC Key: DOD4
Workgroup (AAB#): WG579536
Cal ID: IC3 - 07-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.25	mg/L	5.77	3.16	10	
Sulfate		40.0	39.4	mg/L	7.13	1.48	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4887160
Report generated 08/11/2016 08:38

2.3.1.3 Sample Data

19 L16080330-05 10X
1,10 AED

Sample Name:	**L16080330-05 10X**	*Injection Volume:*	**5000.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/05/2016 13:06**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

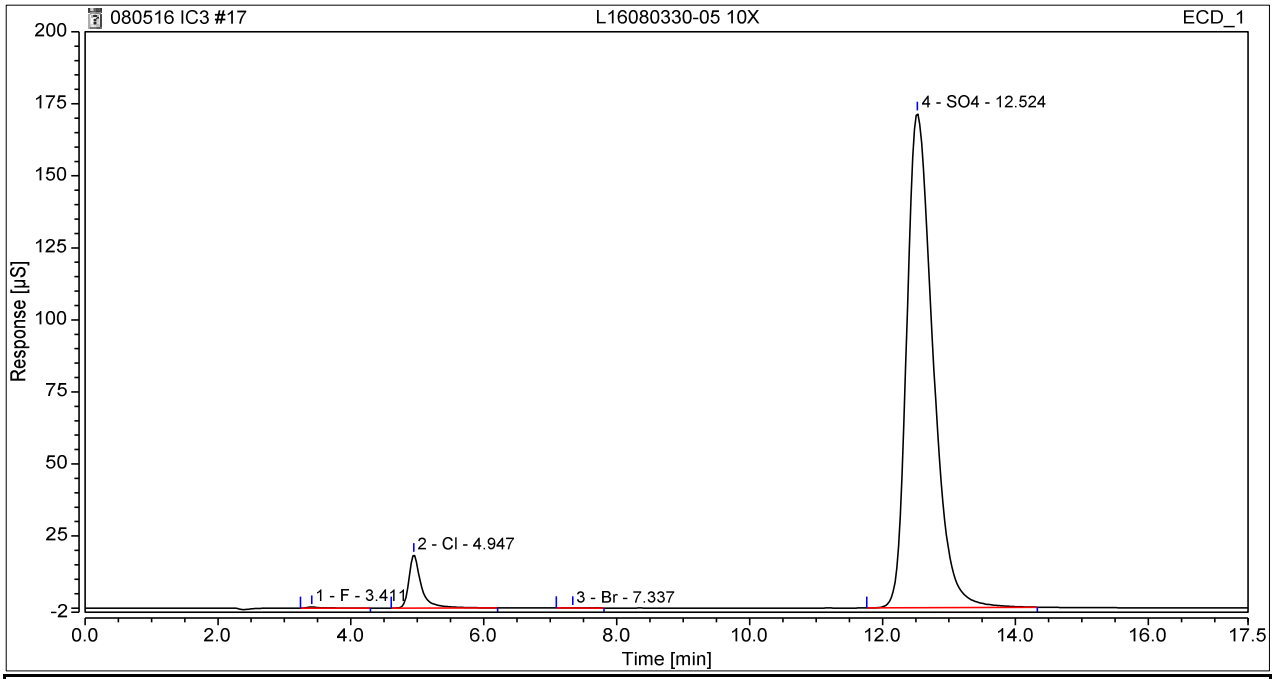

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.41	F	0.3933	0.0715	0.1	0.357	M
2	4.95	Cl	18.5014	3.9954	4.8	23.648	M
3	7.34	Br	0.0334	0.0104	0.0	0.191	M
4	12.52	SO4	171.6266	78.3654	95.1	542.682	M
Total:			**190.55**	**82.44**	**100**	**566.88**	

14 L16080330-05 NO2 (SO4) CL 100X 1,100 AED

Sample Name:	**L16080330-05 NO2 (SO4) CL 100X**	*Injection Volume:*	**5000.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/09/2016 14:07**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

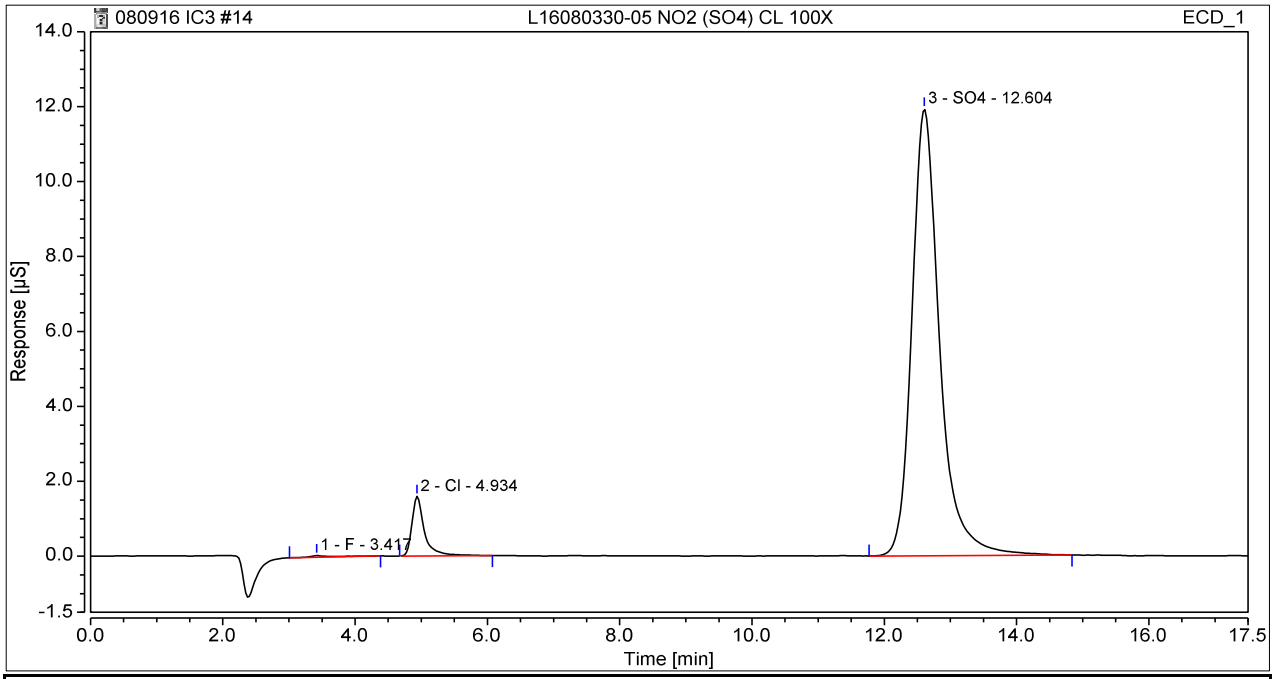

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.42	F	0.0465	0.0162	0.3	0.141	M
2	4.93	Cl	1.5911	0.3481	5.7	2.125	M
3	12.60	SO4	11.9246	5.7867	94.1	40.637	M
Total:			**13.56**	**6.15**	**100**	**42.90**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

18 L16080330-08 10X
1,10 AED

Sample Name:	**L16080330-08 10X**	*Injection Volume:*	**5000.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/05/2016 12:46**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

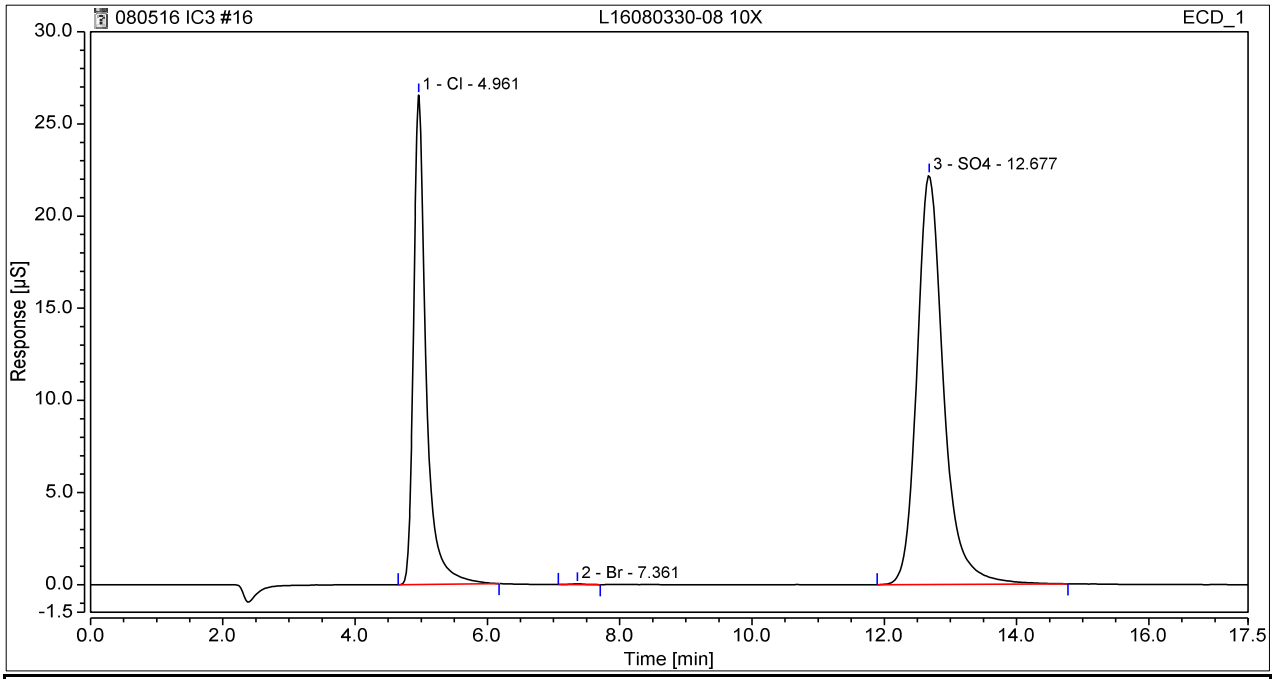

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	4.96	Cl	26.5593	5.8756	36.2	34.743	M
2	7.36	Br	0.0431	0.0113	0.1	0.205	M
3	12.68	SO4	22.2058	10.3638	63.8	72.298	M
Total:			**48.81**	**16.25**	**100**	**107.25**	

17 L16080330-08 NO2 SO4 (CL) 30X 1,30 AED

Sample Name:	**L16080330-08 NO2 SO4 (CL) 30X**	*Injection Volume:*	**5000.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/09/2016 15:08**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

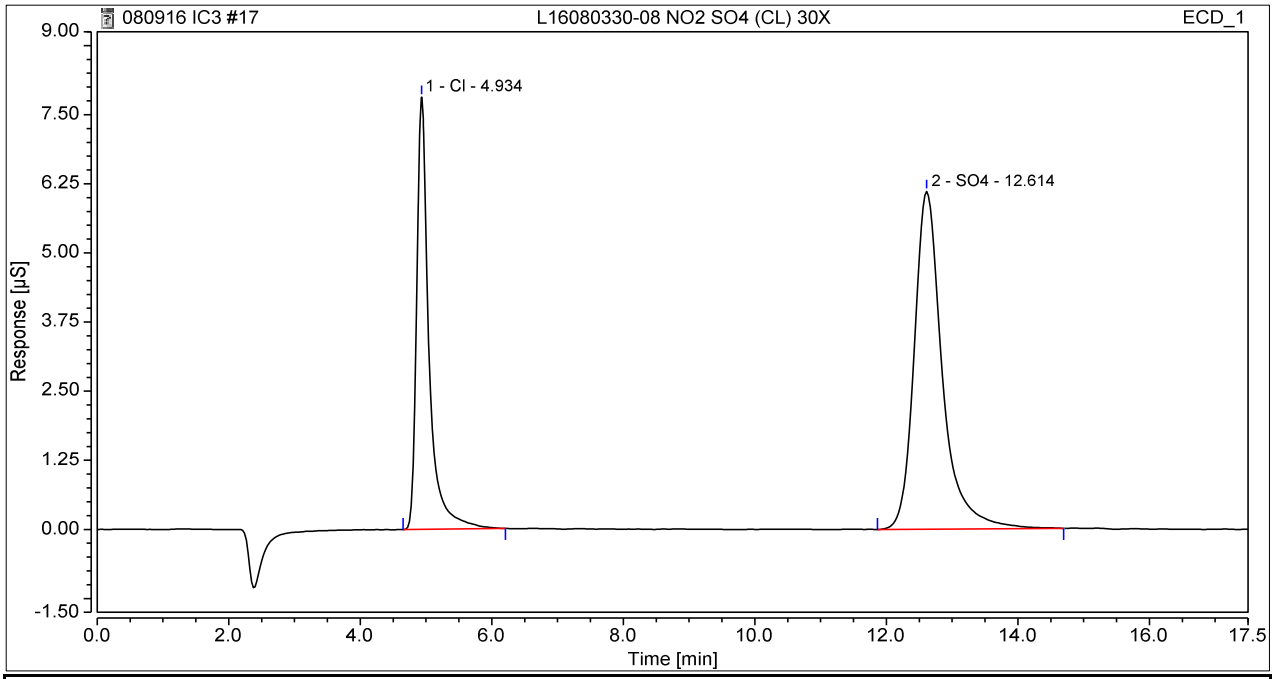

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	4.93	Cl	7.8195	1.6959	35.9	10.078	M
2	12.61	SO4	6.1080	3.0249	64.1	21.533	M
Total:			**13.93**	**4.72**	**100**	**31.61**	

20 L16080330-11 10X
1,10 AED

Sample Name:	**L16080330-11 10X**	*Injection Volume:*	**5000.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/05/2016 13:26**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

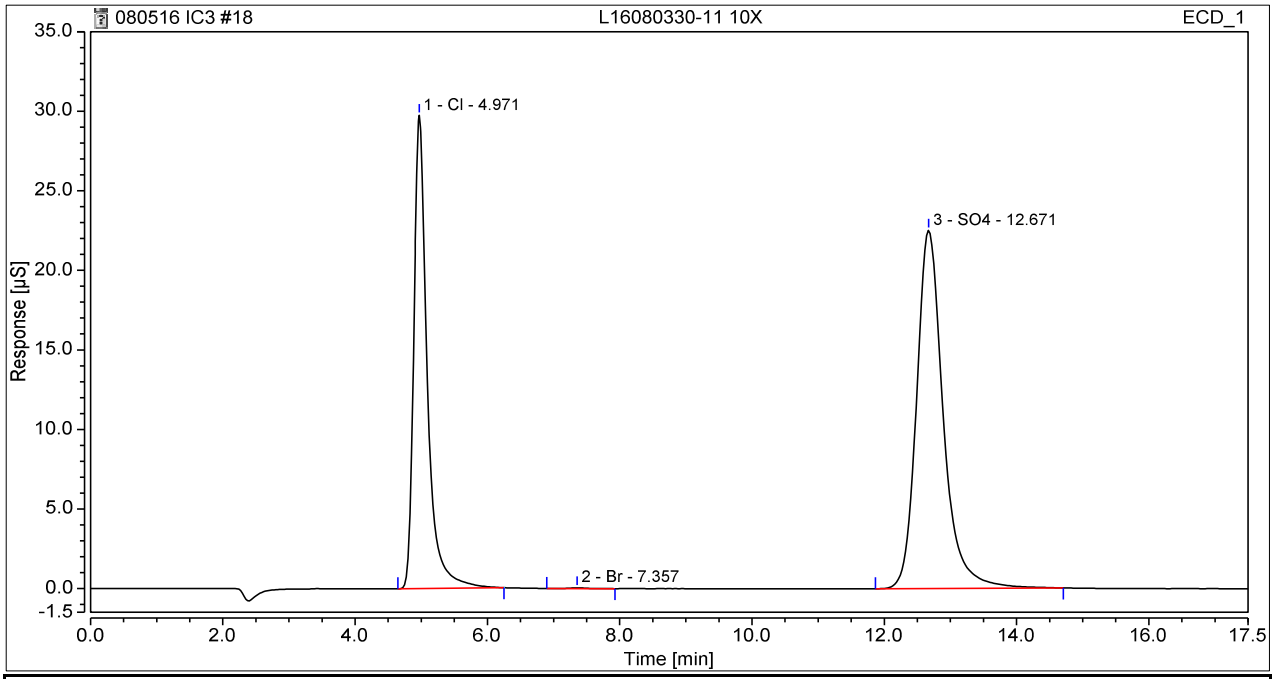

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	4.97	Cl	29.7401	6.9889	39.9	41.313	M
2	7.36	Br	0.0427	0.0141	0.1	0.251	M
3	12.67	SO4	22.5275	10.5096	60.0	73.306	M
Total:			**52.31**	**17.51**	**100**	**114.87**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

18 L16080330-11 NO2 SO4 (CL) 30X 1,30 AED

Sample Name:	**L16080330-11 NO2 SO4 (CL) 30X**	*Injection Volume:*	**5000.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/09/2016 15:28**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

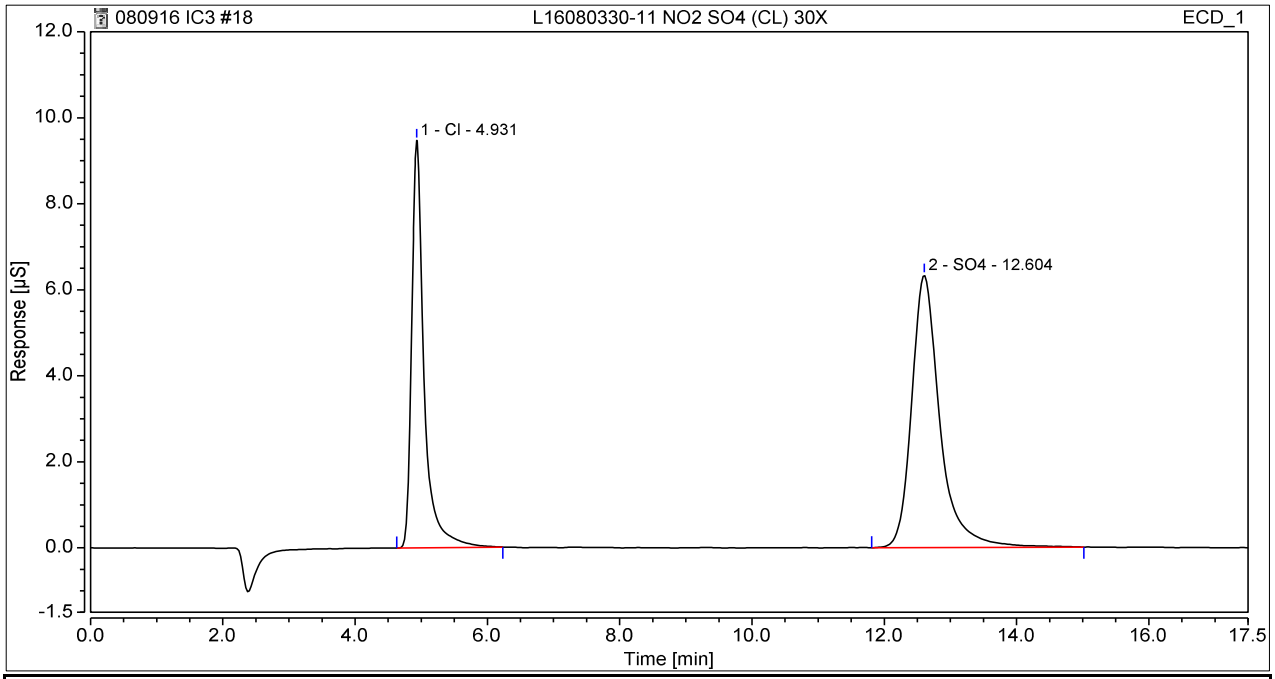

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	4.93	Cl	9.4781	2.0501	39.6	12.168	M
2	12.60	SO4	6.3311	3.1326	60.4	22.278	M
Total:			**15.81**	**5.18**	**100**	**34.45**	

17 L16080330-13 10X
1,10 AED

Sample Name:	**L16080330-13 10X**	*Injection Volume:*	**5000.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/05/2016 12:25**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

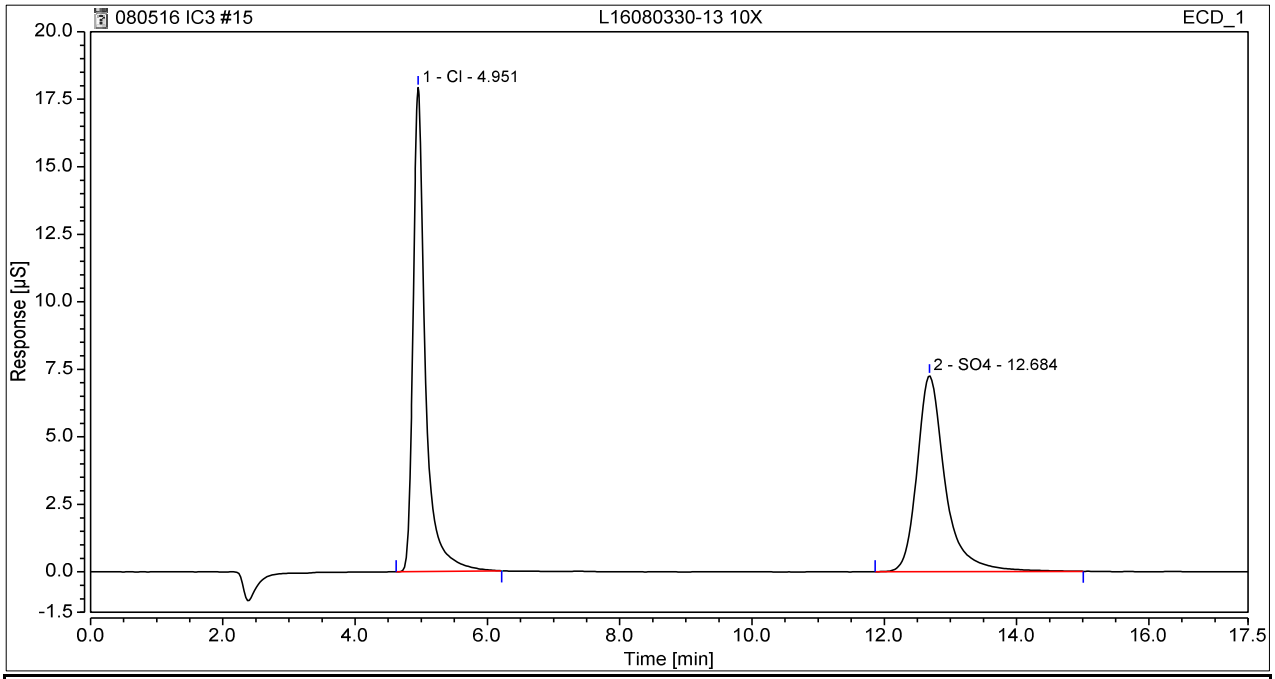

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	4.95	Cl	17.9256	3.8625	52.0	22.864	M
2	12.68	SO4	7.2528	3.5661	48.0	25.277	M
Total:			**25.18**	**7.43**	**100**	**48.14**	

16 L16080330-15 10X
1,10 AED

Sample Name:	**L16080330-15 10X**	*Injection Volume:*	**5000.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/05/2016 12:05**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

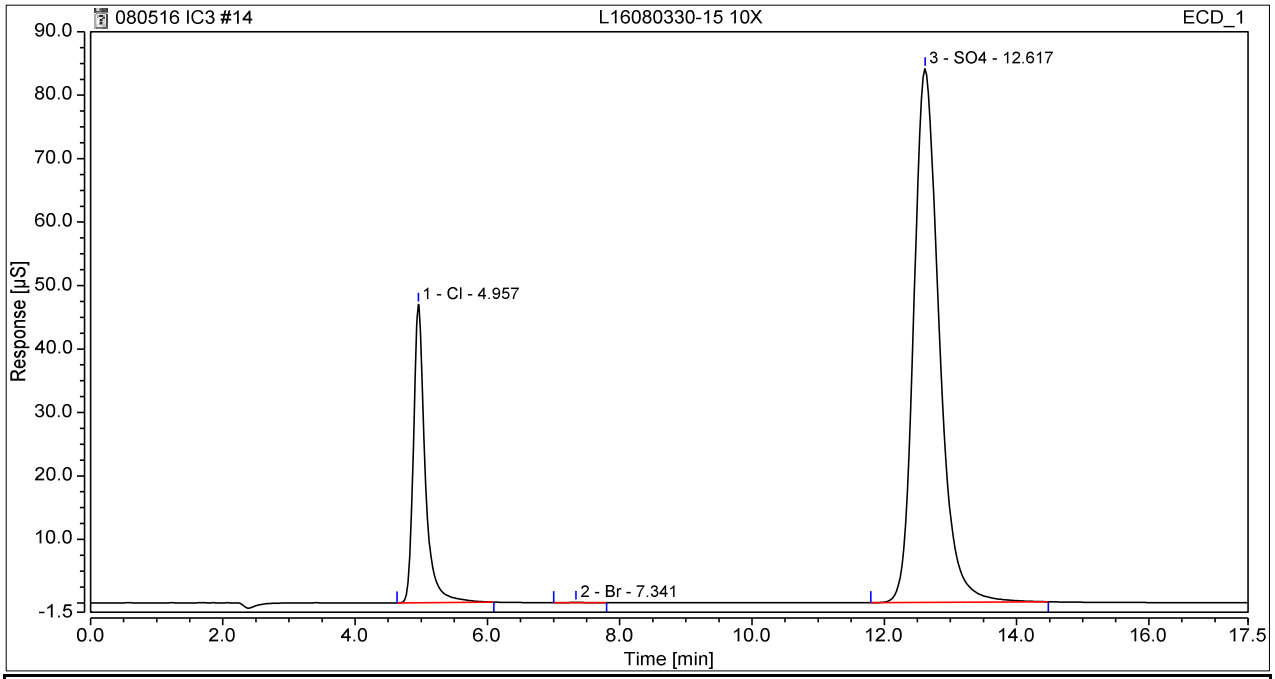

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	4.96	Cl	47.0040	9.6778	20.5	57.181	M
2	7.34	Br	0.0563	0.0159	0.0	0.280	M
3	12.62	SO4	84.0997	37.4807	79.5	259.872	M
Total:			**131.16**	**47.17**	**100**	**317.33**	

19 L16080330-15 NO2 (SO4 CL) 50X 1,50 AED

Sample Name:	**L16080330-15 NO2 (SO4 CL) 50X**	*Injection Volume:*	**5000.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/09/2016 15:48**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

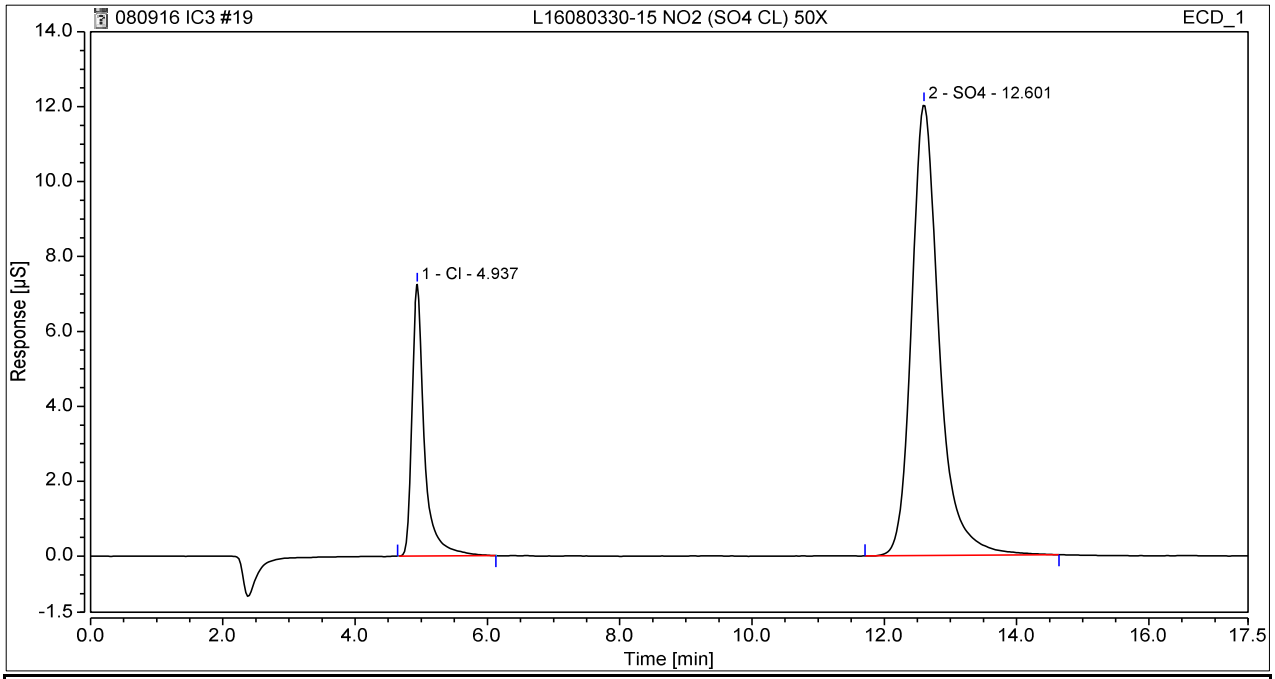

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	4.94	Cl	7.2525	1.5661	21.2	9.312	M
2	12.60	SO4	12.0508	5.8083	78.8	40.786	M
Total:			**19.30**	**7.37**	**100**	**50.10**	

2.3.1.4 Standards Data

3 WG571482-01 STD #1
1,1 AED STD74524

Sample Name:	**WG571482-01 STD #1**	*Injection Volume:*	**5000.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**06/07/2016 10:26**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

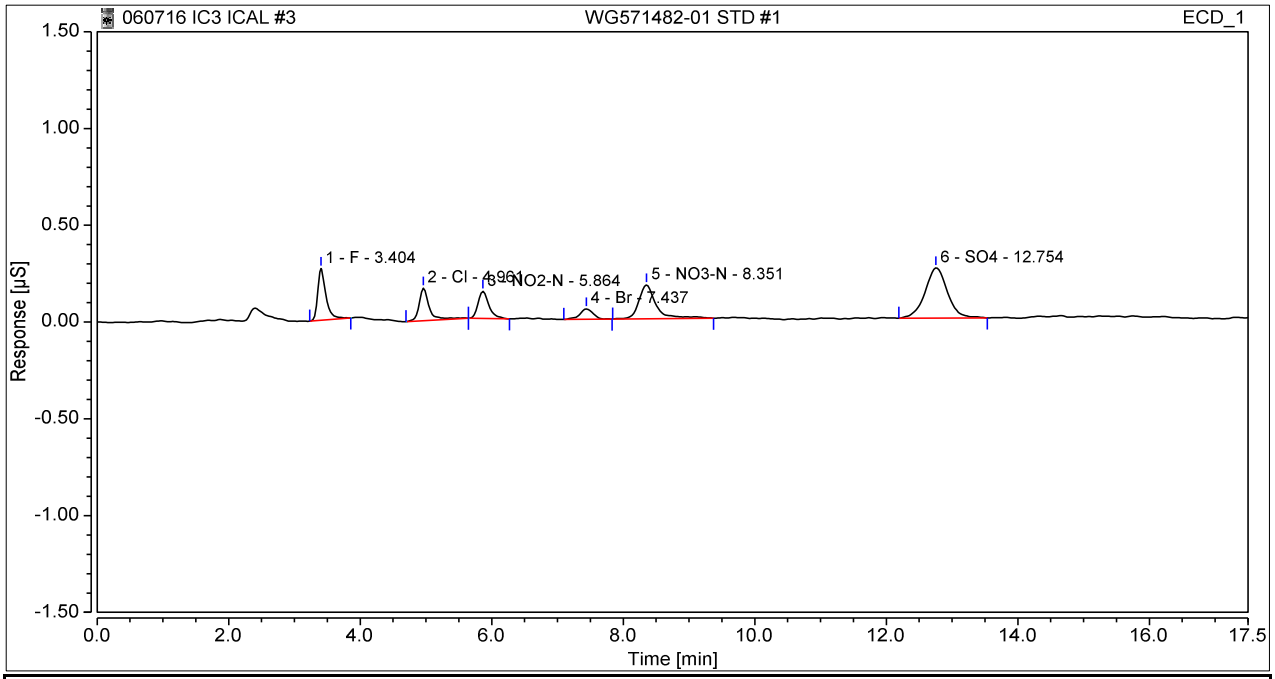

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.40	F	0.2677	0.0384	14.6	0.228	M
2	4.96	Cl	0.1686	0.0300	11.4	0.247	M
3	5.86	NO2-N	0.1402	0.0266	10.1	0.144	M
4	7.44	Br	0.0531	0.0124	4.7	0.222	M
5	8.35	NO3-N	0.1744	0.0534	20.2	0.157	M
6	12.75	SO4	0.2592	0.1031	39.1	1.322	M
Total:			**1.06**	**0.26**	**100**	**2.32**	

4 WG571482-02 STD #2
1,1 AED STD74524

Sample Name:	**WG571482-02 STD #2**	*Injection Volume:*	**5000.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**06/07/2016 10:47**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

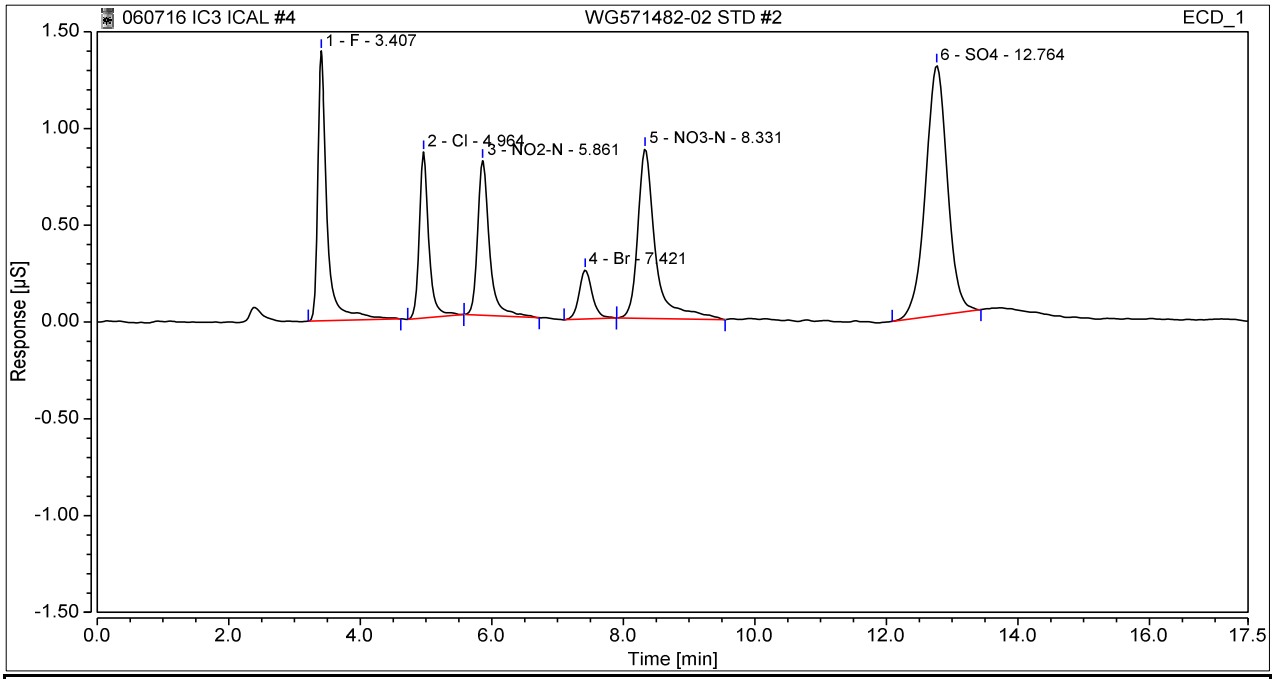

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.41	F	1.3960	0.2252	16.5	0.959	M
2	4.96	Cl	0.8578	0.1435	10.5	0.917	M
3	5.86	NO2-N	0.7988	0.1656	12.1	0.568	M
4	7.42	Br	0.2540	0.0587	4.3	0.970	M
5	8.33	NO3-N	0.8768	0.2715	19.9	0.640	M
6	12.76	SO4	1.2928	0.4988	36.6	4.060	M
Total:			**5.48**	**1.36**	**100**	**8.11**	

5 WG571482-03 STD #3
1,1 AED STD74524

Sample Name:	**WG571482-03 STD #3**	*Injection Volume:*	**5000.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**06/07/2016 11:07**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

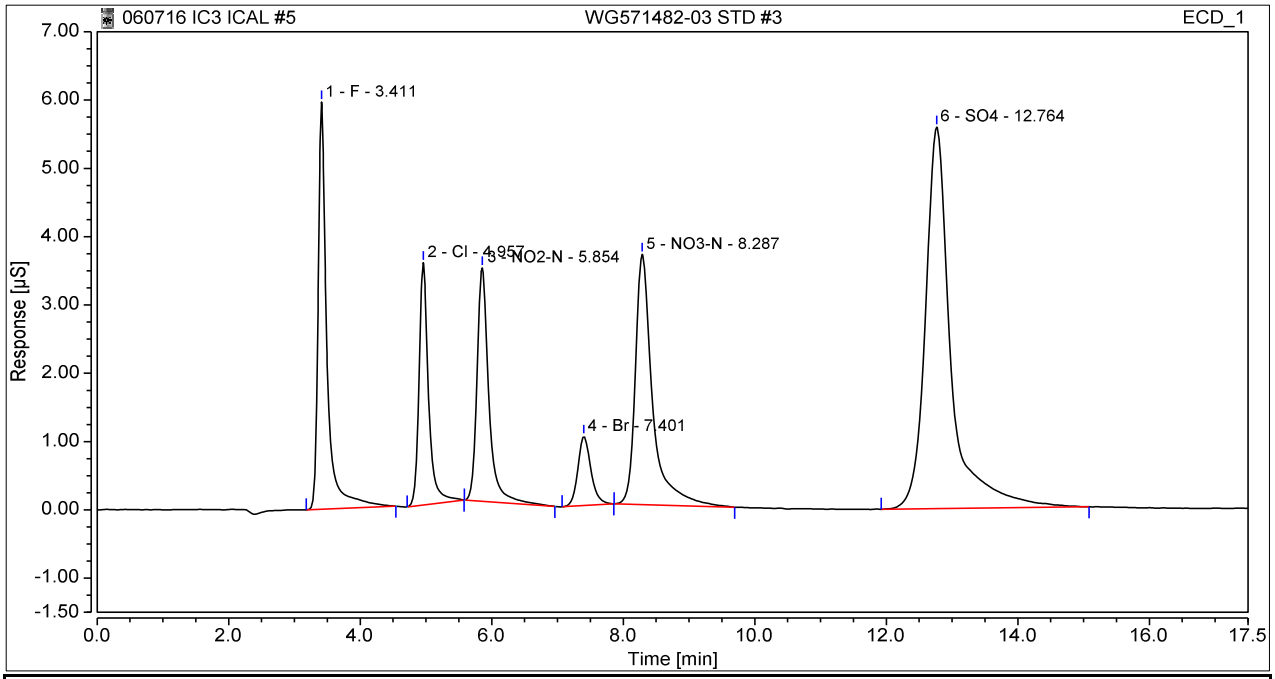

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.41	F	5.9603	0.9262	15.2	3.704	M
2	4.96	Cl	3.5479	0.5906	9.7	3.556	M
3	5.85	NO2-N	3.4156	0.7071	11.6	2.217	M
4	7.40	Br	1.0134	0.2320	3.8	3.769	M
5	8.29	NO3-N	3.6651	1.1102	18.2	2.498	M
6	12.76	SO4	5.5866	2.5188	41.4	18.032	M
Total:			**23.19**	**6.08**	**100**	**33.78**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

6 WG571482-04 STD #4
1,1 AED STD74524

Sample Name:	**WG571482-04 STD #4**	*Injection Volume:*	**5000.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**06/07/2016 11:27**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

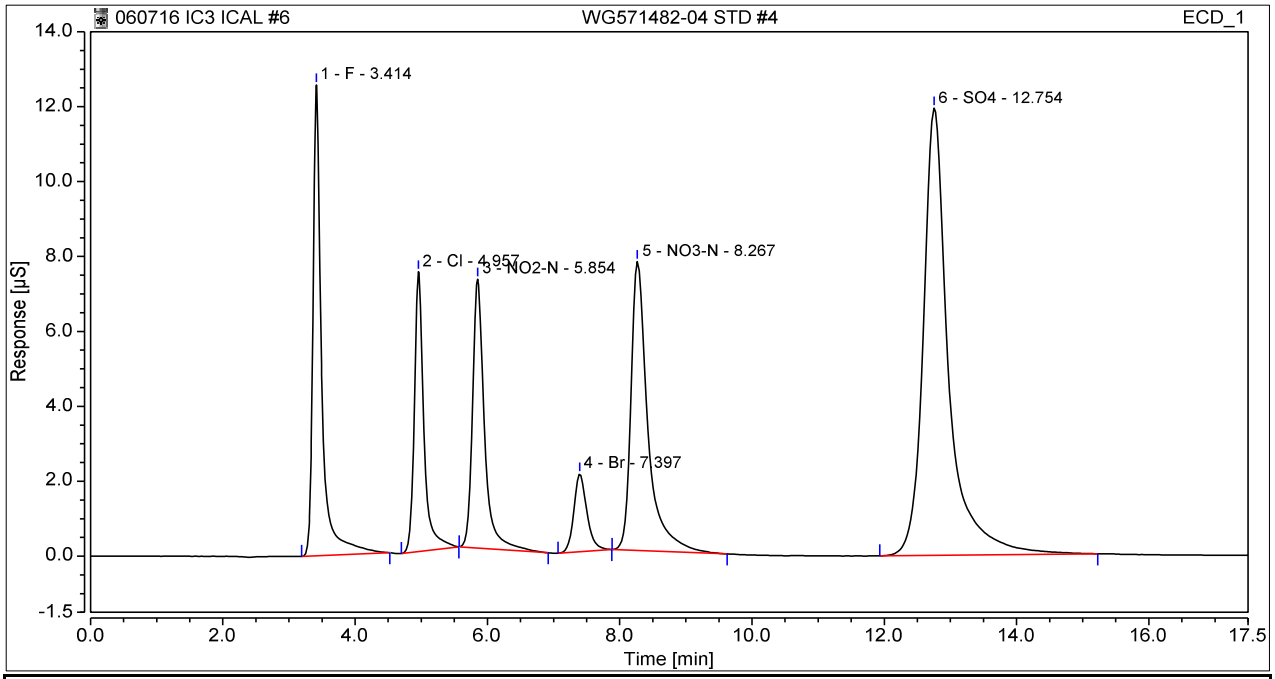

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.41	F	12.5724	1.9262	15.1	7.620	M
2	4.96	Cl	7.4690	1.2498	9.8	7.446	M
3	5.85	NO2-N	7.1806	1.4959	11.7	4.619	M
4	7.40	Br	2.0757	0.4755	3.7	7.699	M
5	8.27	NO3-N	7.7092	2.2804	17.9	5.090	M
6	12.75	SO4	11.9380	5.3092	41.7	37.334	M
Total:			**48.94**	**12.74**	**100**	**69.81**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

7 WG571482-05 STD #5
1,1 AED STD74524

Sample Name:	**WG571482-05 STD #5**	*Injection Volume:*	**5000.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**06/07/2016 11:48**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

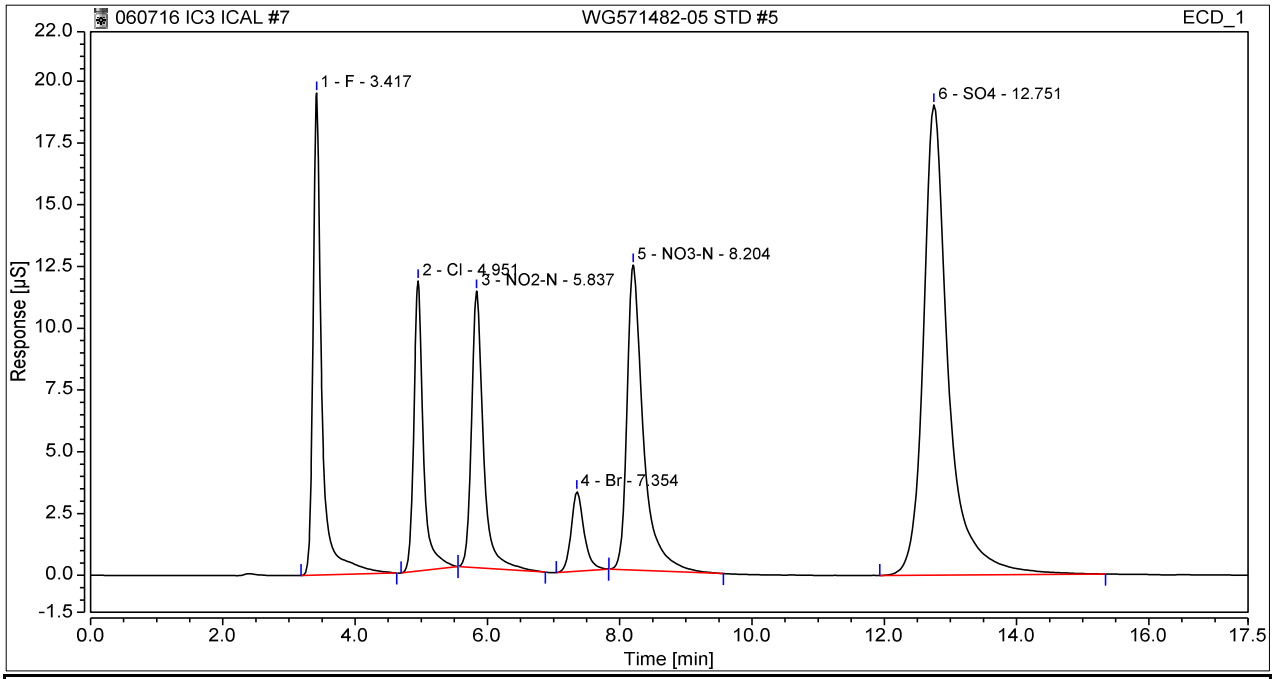

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.42	F	19.5135	3.0208	15.1	11.907	M
2	4.95	Cl	11.7474	1.9582	9.8	11.626	M
3	5.84	NO2-N	11.1994	2.3278	11.7	7.153	M
4	7.35	Br	3.2161	0.7278	3.6	11.772	M
5	8.20	NO3-N	12.3493	3.5527	17.8	7.908	M
6	12.75	SO4	19.0357	8.3624	41.9	58.454	M
Total:			**77.06**	**19.95**	**100**	**108.82**	

8 WG571482-06 STD #6
1,1 AED STD74524

Sample Name:	**WG571482-06 STD #6**	*Injection Volume:*	**5000.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**06/07/2016 12:08**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

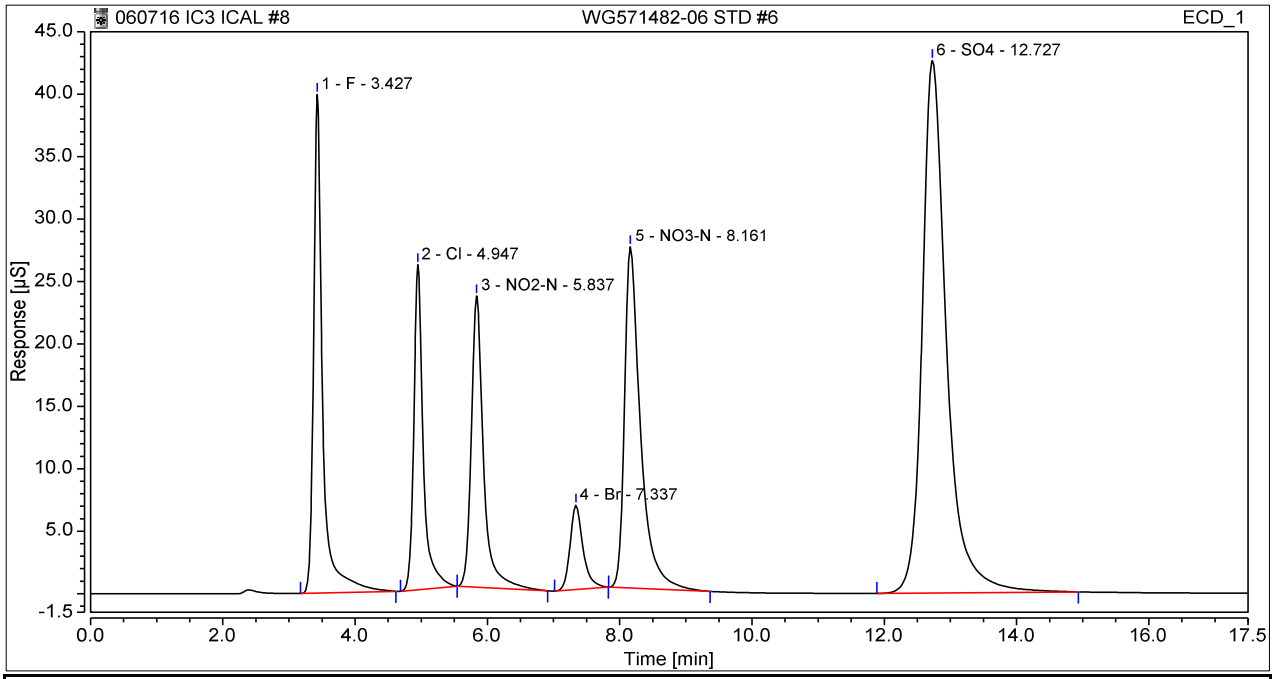

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.43	F	39.9262	6.3085	14.7	24.782	M
2	4.95	Cl	26.0195	4.2937	10.0	25.409	M
3	5.84	NO2-N	23.3109	4.9886	11.6	15.257	M
4	7.34	Br	6.7554	1.5328	3.6	24.767	M
5	8.16	NO3-N	27.3238	7.6757	17.8	17.039	M
6	12.73	SO4	42.6271	18.2426	42.4	126.798	M
Total:			**165.96**	**43.04**	**100**	**234.05**	

Calibration

Calibration Details	F		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0197
Evaluation Type	Area	*Slope (C1)*	0.2554
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9984

Calibration Plot F

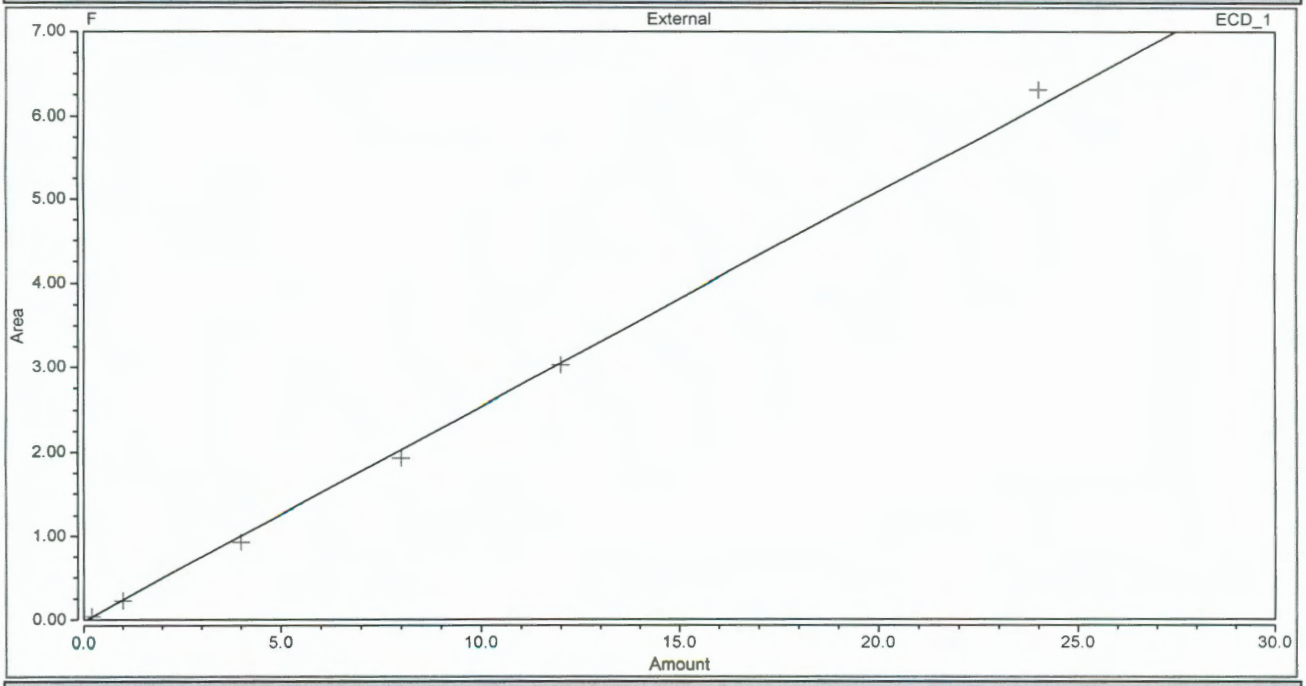

Calibration Results F

No.	Injection Name	Calibration Level	X Value ECD_1 F	Y Value ECD_1 F	Y Value ECD_1 F	Area µS*min ECD_1 F	Height µS ECD_1 F
1	WG571482-01 STD #1	01	0.2000	0.0384	0.0384	0.038	0.268
2	WG571482-02 STD #2	02	1.0000	0.2252	0.2252	0.225	1.396
3	WG571482-03 STD #3	03	4.0000	0.9262	0.9262	0.926	5.960
4	WG571482-04 STD #4	04	8.0000	1.9262	1.9262	1.926	12.572
5	WG571482-05 STD #5	05	12.0000	3.0208	3.0208	3.021	19.513
6	WG571482-06 STD #6	06	24.0000	6.3085	6.3085	6.308	39.926

Calibration

Calibration Details	Cl		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0119
Evaluation Type	Area	*Slope (C1)*	0.1695
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9954

Calibration Plot Cl

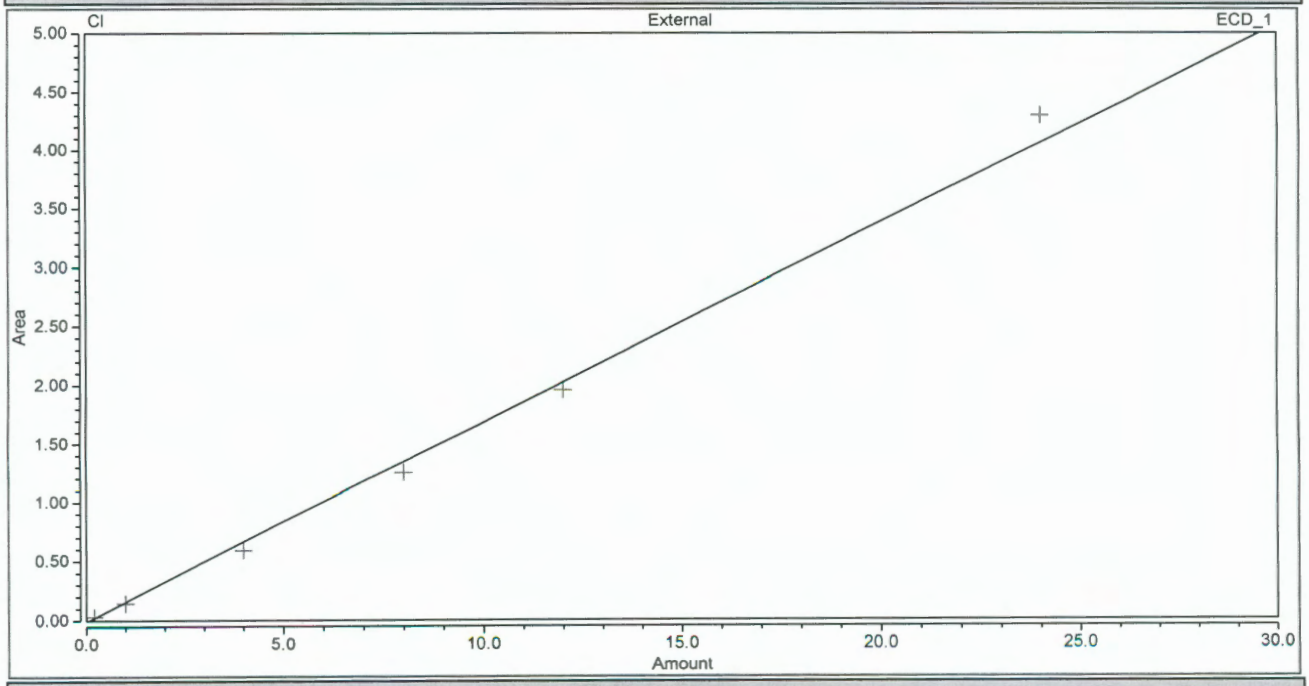

Calibration Results Cl

No.	Injection Name	Calibration Level	X Value ECD_1 Cl	Y Value ECD_1 Cl	Y Value ECD_1 Cl	Area µS*min ECD_1 Cl	Height µS ECD_1 Cl
1	WG571482-01 STD #1	01	0.2000	0.0300	0.0300	0.030	0.169
2	WG571482-02 STD #2	02	1.0000	0.1435	0.1435	0.144	0.858
3	WG571482-03 STD #3	03	4.0000	0.5906	0.5906	0.591	3.548
4	WG571482-04 STD #4	04	8.0000	1.2498	1.2498	1.250	7.469
5	WG571482-05 STD #5	05	12.0000	1.9582	1.9582	1.958	11.747
6	WG571482-06 STD #6	06	24.0000	4.2937	4.2937	4.294	26.019

9056Rept/Calibration

Chromeleon (c) Dionex
Version 7.2.0.3765

Calibration

Calibration Details	NO2-N		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0208
Evaluation Type	Area	*Slope (C1)*	0.3283
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9973

Calibration Plot NO2-N

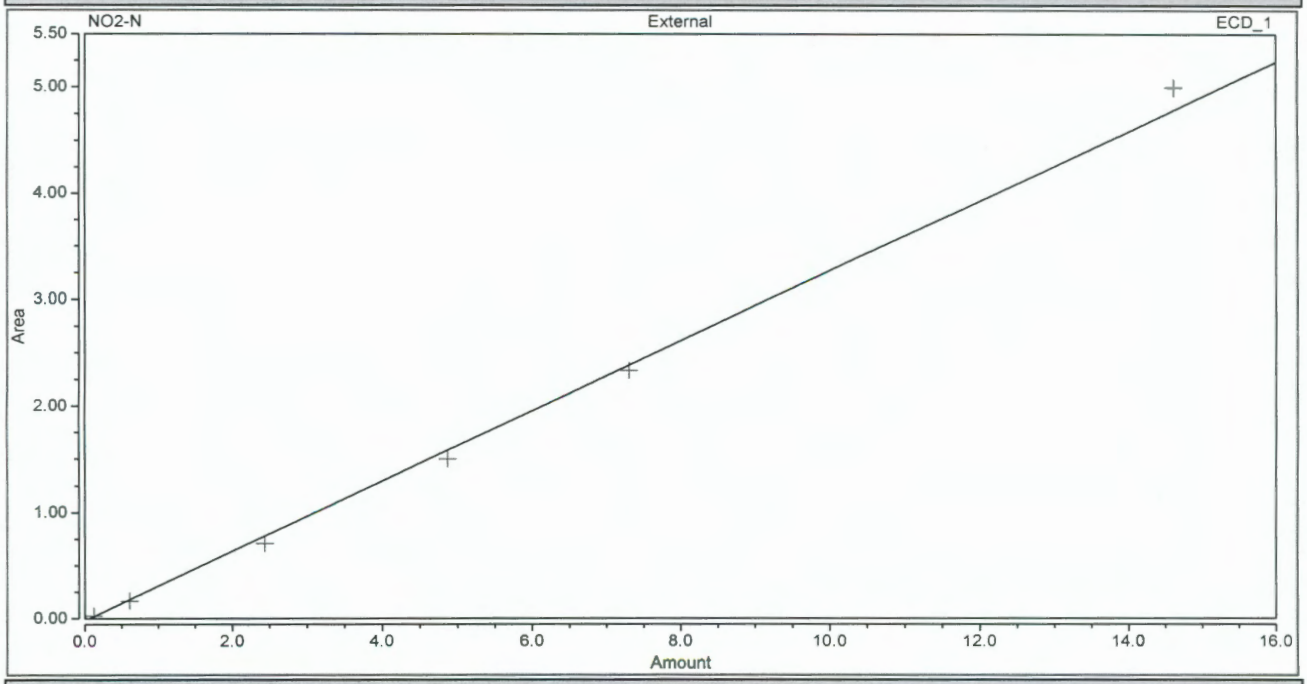

Calibration Results NO2-N

No.	Injection Name	Calibration Level	X Value ECD_1 NO2-N	Y Value ECD_1 NO2-N	Y Value ECD_1 NO2-N	Area µS*min ECD_1 NO2-N	Height µS ECD_1 NO2-N
1	WG571482-01 STD #1	01	0.1218	0.0266	0.0266	0.027	0.140
2	WG571482-02 STD #2	02	0.6089	0.1656	0.1656	0.166	0.799
3	WG571482-03 STD #3	03	2.4356	0.7071	0.7071	0.707	3.416
4	WG571482-04 STD #4	04	4.8714	1.4959	1.4959	1.496	7.181
5	WG571482-05 STD #5	05	7.3070	2.3278	2.3278	2.328	11.199
6	WG571482-06 STD #6	06	14.6140	4.9886	4.9886	4.989	23.311

Calibration

Calibration Details	Br		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0014
Evaluation Type	Area	*Slope (C1)*	0.0619
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9987

Calibration Plot Br

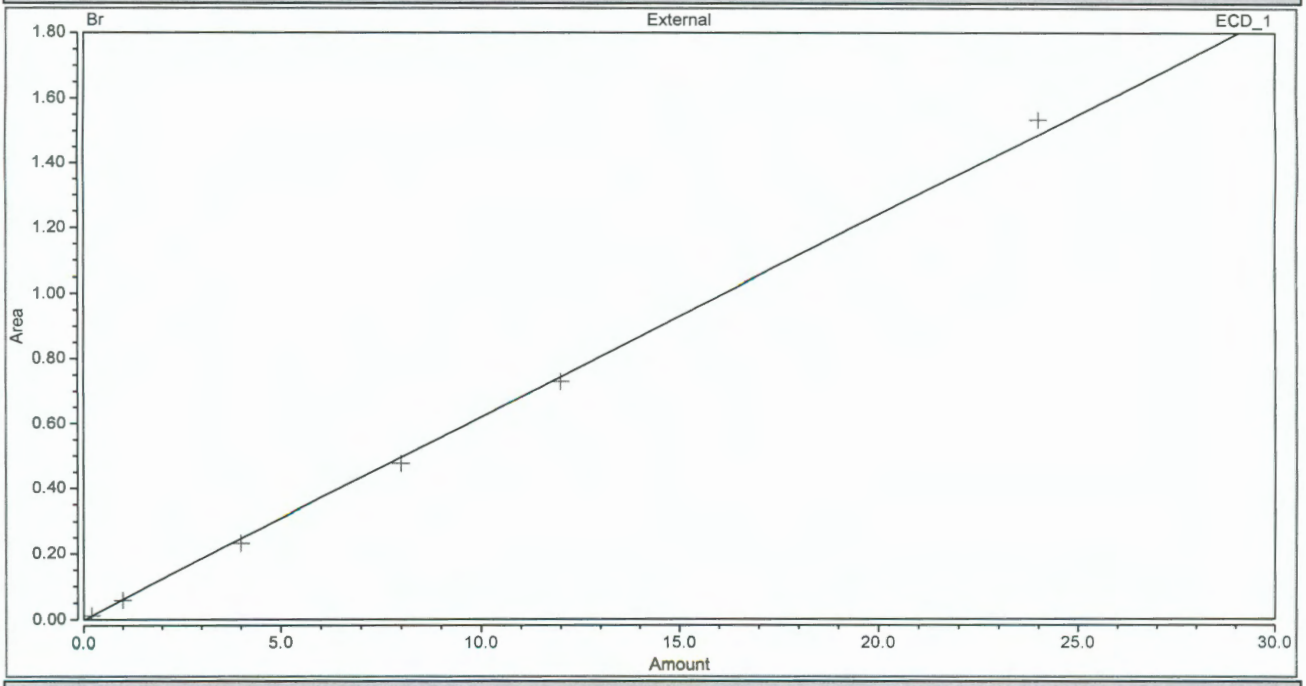

Calibration Results Br

No.	Injection Name	Calibration Level	X Value ECD_1 Br	Y Value ECD_1 Br	Y Value ECD_1 Br	Area µS*min ECD_1 Br	Height µS ECD_1 Br
1	WG571482-01 STD #1	01	0.2000	0.0124	0.0124	0.012	0.053
2	WG571482-02 STD #2	02	1.0000	0.0587	0.0587	0.059	0.254
3	WG571482-03 STD #3	03	4.0000	0.2320	0.2320	0.232	1.013
4	WG571482-04 STD #4	04	8.0000	0.4755	0.4755	0.475	2.076
5	WG571482-05 STD #5	05	12.0000	0.7278	0.7278	0.728	3.216
6	WG571482-06 STD #6	06	24.0000	1.5328	1.5328	1.533	6.755

Calibration

Calibration Details	NO3-N		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0176
Evaluation Type	Area	*Slope (C1)*	0.4515
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9971

Calibration Plot NO3-N

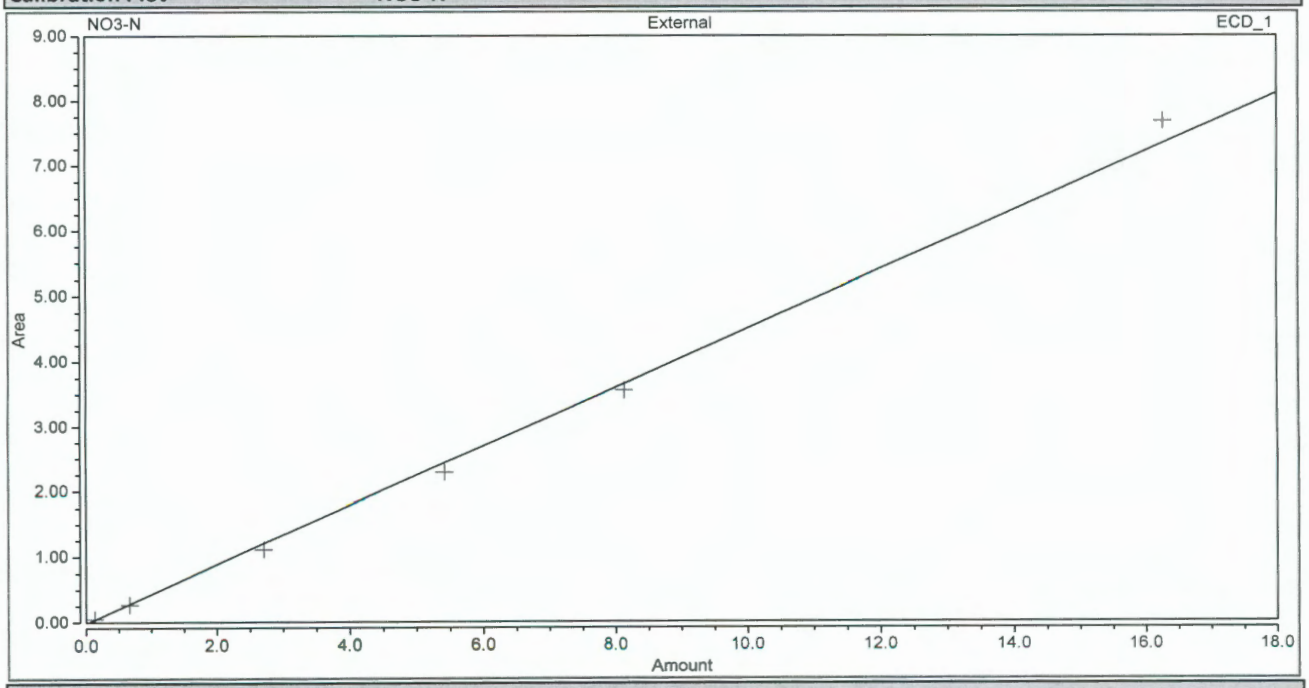

Calibration Results NO3-N

No.	Injection Name	Calibration Level	X Value ECD_1 NO3-N	Y Value ECD_1 NO3-N	Y Value ECD_1 NO3-N	Area µS*min ECD_1 NO3-N	Height µS ECD_1 NO3-N
1	WG571482-01 STD #1	01	0.1355	0.0534	0.0534	0.053	0.174
2	WG571482-02 STD #2	02	0.6675	0.2715	0.2715	0.271	0.877
3	WG571482-03 STD #3	03	2.7108	1.1102	1.1102	1.110	3.665
4	WG571482-04 STD #4	04	5.4216	2.2804	2.2804	2.280	7.709
5	WG571482-05 STD #5	05	8.1322	3.5527	3.5527	3.553	12.349
6	WG571482-06 STD #6	06	16.2644	7.6757	7.6757	7.676	27.324

Calibration

Calibration Details	SO4		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0881
Evaluation Type	Area	*Slope (C1)*	0.1446
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9951

Calibration Plot SO4

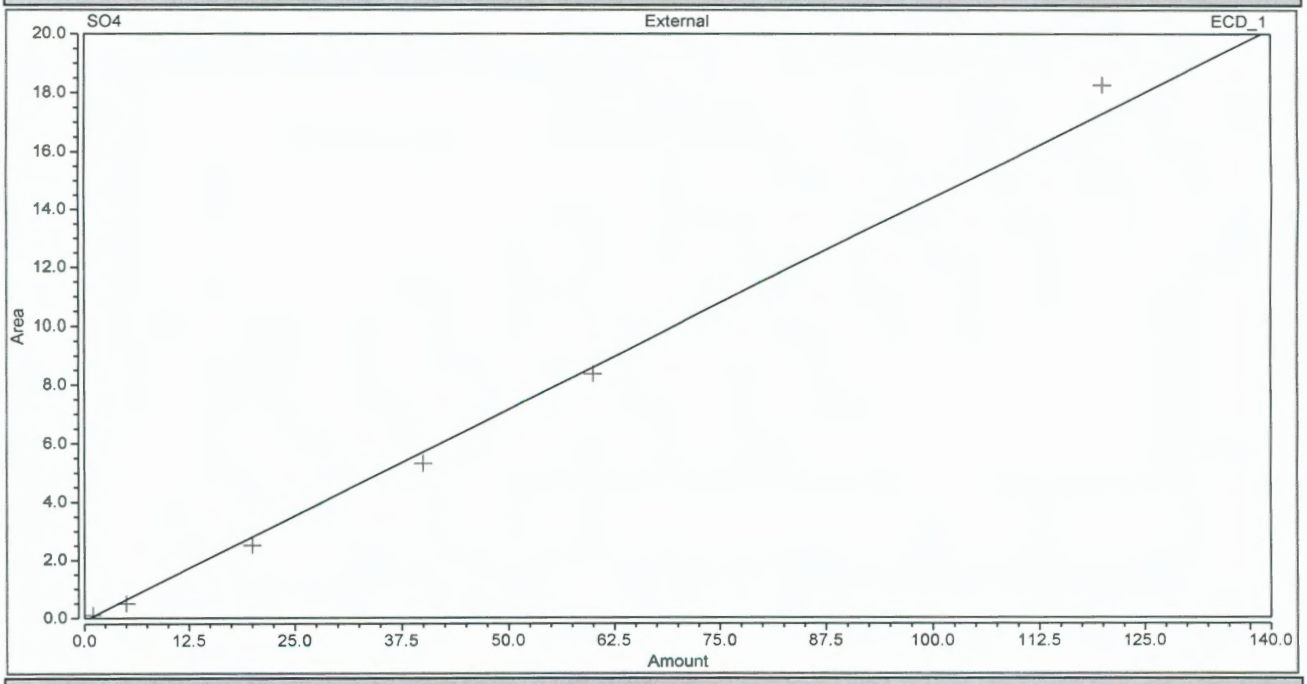

Calibration Results SO4

No.	Injection Name	Calibration Level	X Value ECD_1 SO4	Y Value ECD_1 SO4	Y Value ECD_1 SO4	Area µS*min ECD_1 SO4	Height µS ECD_1 SO4
1	WG571482-01 STD #1	01	1.0000	0.1031	0.1031	0.103	0.259
2	WG571482-02 STD #2	02	5.0000	0.4988	0.4988	0.499	1.293
3	WG571482-03 STD #3	03	20.0000	2.5188	2.5188	2.519	5.587
4	WG571482-04 STD #4	04	40.0000	5.3092	5.3092	5.309	11.938
5	WG571482-05 STD #5	05	60.0000	8.3624	8.3624	8.362	19.036
6	WG571482-06 STD #6	06	120.0000	18.2426	18.2426	18.243	42.627

9 WG571482-07 SSCV
1,1 AED STD74525

Sample Name:	**WG571482-07 SSCV**	*Injection Volume:*	**5000.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**06/07/2016 12:29**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

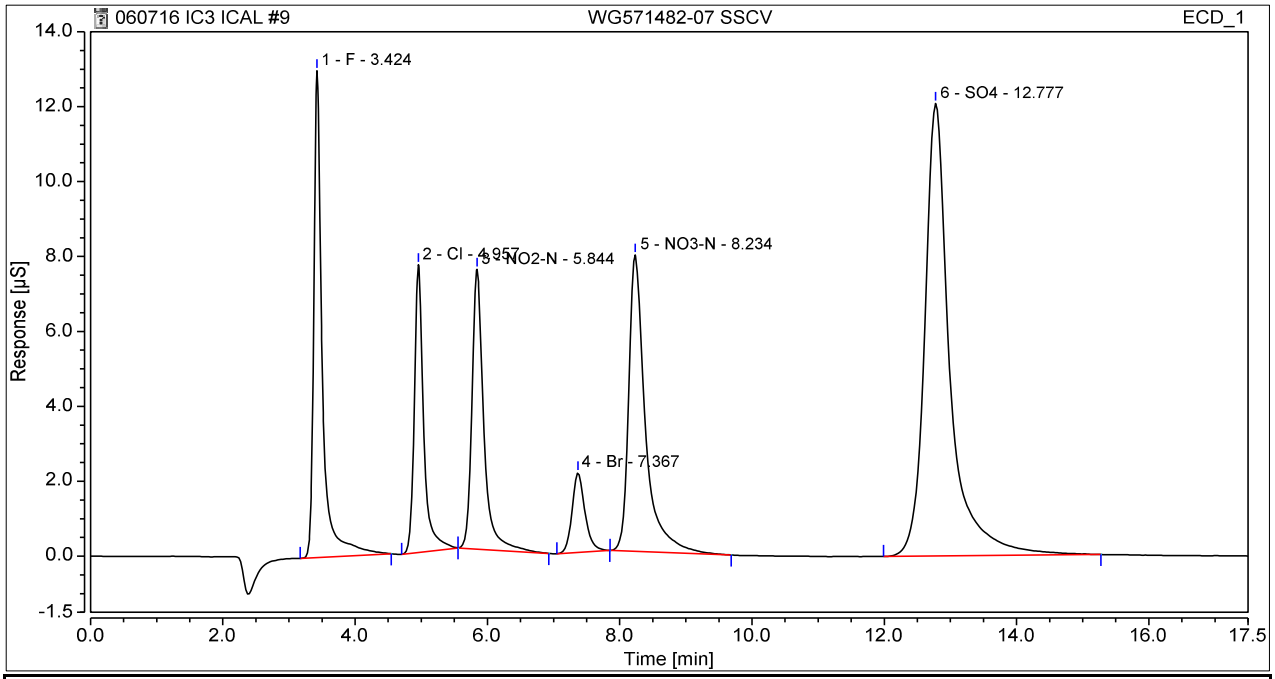

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.42	F	12.9962	1.9538	15.2	7.728	M
2	4.96	Cl	7.6797	1.2582	9.8	7.495	M
3	5.84	NO2-N	7.4668	1.5468	12.0	4.774	M
4	7.37	Br	2.1232	0.4802	3.7	7.775	M
5	8.23	NO3-N	7.9099	2.3060	17.9	5.146	M
6	12.78	SO4	12.0859	5.3310	41.4	37.485	M
Total:			**50.26**	**12.88**	**100**	**70.40**	

9 WG571482-07 SSCV
1,1 AED STD74525

Sequence Details

Name:	**WG571482-07 SSCV**	*Run Time:*	**17.50**
Vial Number:	**9**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**6/7/2016 12:29**	*Sample Weight:*	**1.0000**

WG571482-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.728249624**	**-3.396879698**	**PASS**
CL	8.00	**7.495170838**	**-6.31036452**	**PASS**
NO2	4.87	**4.774475719**	**-1.961484202**	**PASS**
BR	8.00	**7.775402471**	**-2.807469116**	**PASS**
NO3	5.42	**5.146443313**	**-5.06562154**	**PASS**
SO4	40.00	**37.48486036**	**-6.287849099**	**PASS**

3 WG579273-01 ANION CCV
1,1 AED STD77046

Sample Name:	**WG579273-01 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/05/2016 7:41**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

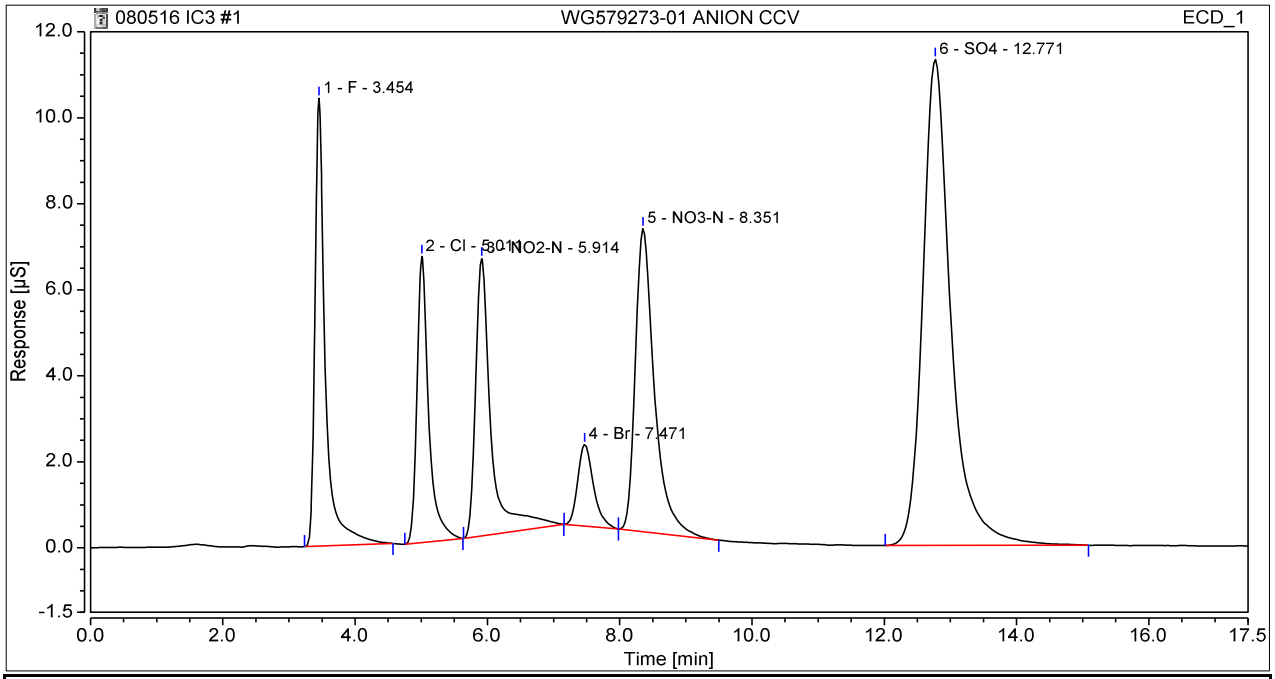

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.45	F	10.4141	1.8984	14.1	7.512	M
2	5.01	Cl	6.6535	1.3684	10.2	8.145	M
3	5.91	NO2-N	6.4458	1.7464	13.0	5.382	M
4	7.47	Br	1.8966	0.5226	3.9	8.459	M
5	8.35	NO3-N	7.0477	2.3550	17.5	5.255	M
6	12.77	SO4	11.3030	5.5893	41.5	39.272	M
Total:			**43.76**	**13.48**	**100**	**74.03**	

3 WG579273-01 ANION CCV
1,1 AED STD77046

Sequence Details

Name:	**WG579273-01 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**3**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**8/5/2016 7:41**	*Sample Weight:*	**1.0000**

WG579273-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.511581**	**-6.105237503**	**PASS**
CL	8.00	**8.145196046**	**1.814950569**	**PASS**
NO2	4.87	**5.382494285**	**10.5234966**	**FAIL**
BR	8.00	**8.459312549**	**5.741406866**	**PASS**
NO3	5.42	**5.254916588**	**-3.064269588**	**PASS**
SO4	40.00	**39.27175577**	**-1.820610564**	**PASS**

14 WG579273-03 ANION CCV
1,1 AED STD77046

Sample Name:	**WG579273-03 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/05/2016 11:25**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

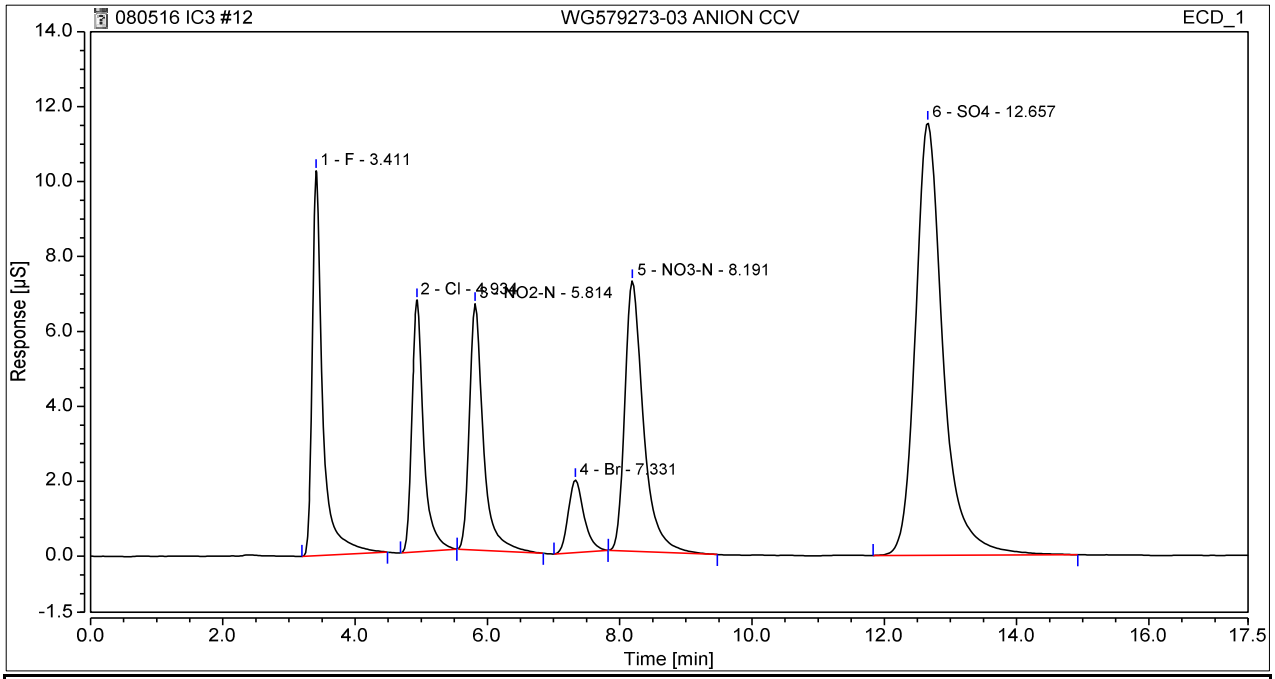

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.41	F	10.2763	1.8918	14.2	7.486	M
2	4.93	Cl	6.7266	1.3655	10.2	8.128	M
3	5.81	NO2-N	6.5752	1.6115	12.1	4.972	M
4	7.33	Br	1.9375	0.5326	4.0	8.621	M
5	8.19	NO3-N	7.2173	2.3706	17.7	5.289	M
6	12.66	SO4	11.5534	5.5840	41.8	39.235	M
Total:			**44.29**	**13.36**	**100**	**73.73**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

14 WG579273-03 ANION CCV
1,1 AED STD77046

Sequence Details

Name:	**WG579273-03 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**14**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**8/5/2016 11:25**	*Sample Weight:*	**1.0000**

WG579273-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.485711949**	**-6.428600637**	**PASS**
CL	8.00	**8.128250436**	**1.603130447**	**PASS**
NO2	4.87	**4.971538445**	**2.084978329**	**PASS**
BR	8.00	**8.621022528**	**7.7627816**	**PASS**
NO3	5.42	**5.289344077**	**-2.42907607**	**PASS**
SO4	40.00	**39.23487445**	**-1.912813873**	**PASS**

21 WG579273-05 ANION CCV
1,1 AED STD77046

Sample Name:	**WG579273-05 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**21**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/05/2016 13:47**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

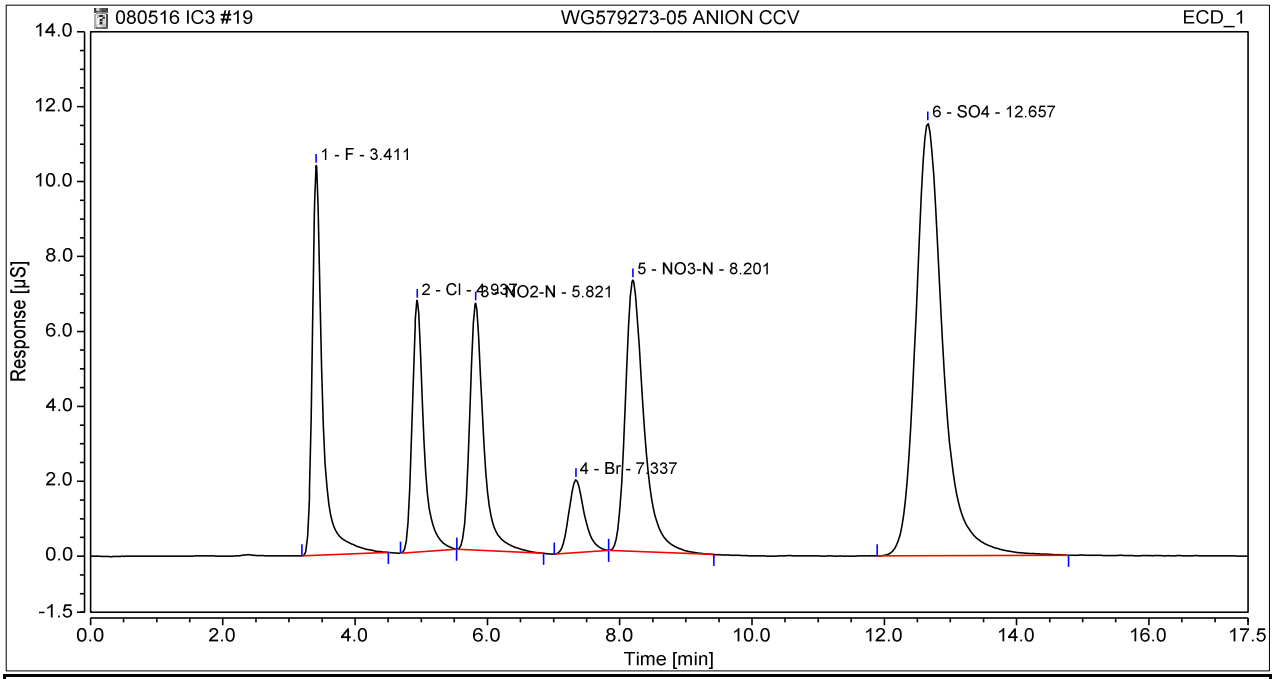

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.41	F	10.4075	1.9070	14.2	7.545	M
2	4.94	Cl	6.7155	1.3698	10.2	8.153	M
3	5.82	NO2-N	6.5922	1.6175	12.1	4.990	M
4	7.34	Br	1.9434	0.5348	4.0	8.657	M
5	8.20	NO3-N	7.2457	2.3737	17.7	5.296	M
6	12.66	SO4	11.5485	5.5802	41.7	39.209	M
Total:			**44.45**	**13.38**	**100**	**73.85**	

21 WG579273-05 ANION CCV
1,1 AED STD77046

Sequence Details

Name:	**WG579273-05 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**21**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**8/5/2016 13:47**	*Sample Weight:*	**1.0000**

WG579273-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.545233403**	**-5.684582463**	**PASS**
CL	8.00	**8.15341819**	**1.917727376**	**PASS**
NO2	4.87	**4.989778294**	**2.459513234**	**PASS**
BR	8.00	**8.656592155**	**8.207401942**	**PASS**
NO3	5.42	**5.296237621**	**-2.301888906**	**PASS**
SO4	40.00	**39.20871068**	**-1.978223308**	**PASS**

24 WG579273-07 ANION CCV
1,1 AED STD77046

Sample Name:	**WG579273-07 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**24**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/05/2016 14:48**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

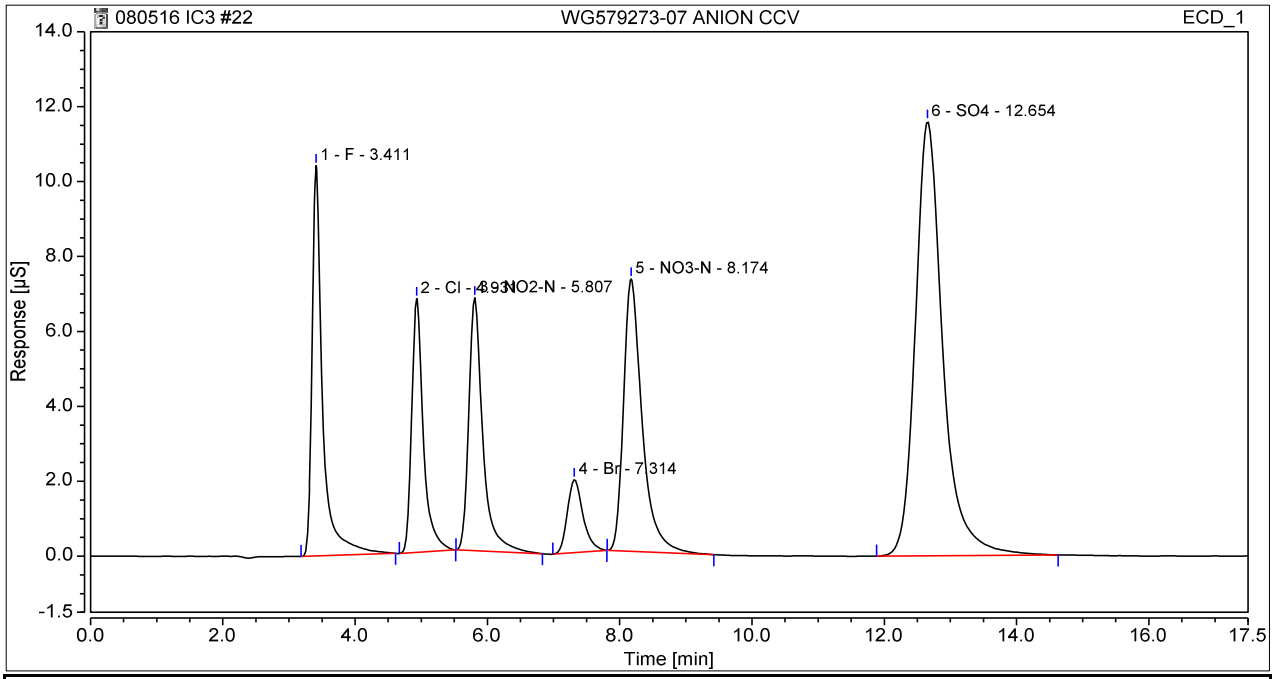

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.41	F	10.4207	1.9341	14.3	7.651	M
2	4.93	Cl	6.7749	1.3774	10.2	8.199	M
3	5.81	NO2-N	6.7505	1.6656	12.4	5.136	M
4	7.31	Br	1.9527	0.5357	4.0	8.671	M
5	8.17	NO3-N	7.2773	2.3761	17.6	5.302	M
6	12.65	SO4	11.6021	5.5894	41.5	39.273	M
Total:			**44.78**	**13.48**	**100**	**74.23**	

24 WG579273-07 ANION CCV
1,1 AED STD77046

Sequence Details

Name:	**WG579273-07 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**24**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**8/5/2016 14:48**	*Sample Weight:*	**1.0000**

WG579273-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.651285684**	**-4.358928953**	**PASS**
CL	8.00	**8.198633292**	**2.482916151**	**PASS**
NO2	4.87	**5.136332599**	**5.468841874**	**PASS**
BR	8.00	**8.670539395**	**8.38174244**	**PASS**
NO3	5.42	**5.301719886**	**-2.200740117**	**PASS**
SO4	40.00	**39.27255633**	**-1.818609182**	**PASS**

3 WG579537-01 ANION CCV
1,1 AED STD77046

Sample Name:	**WG579537-01 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/09/2016 10:23**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

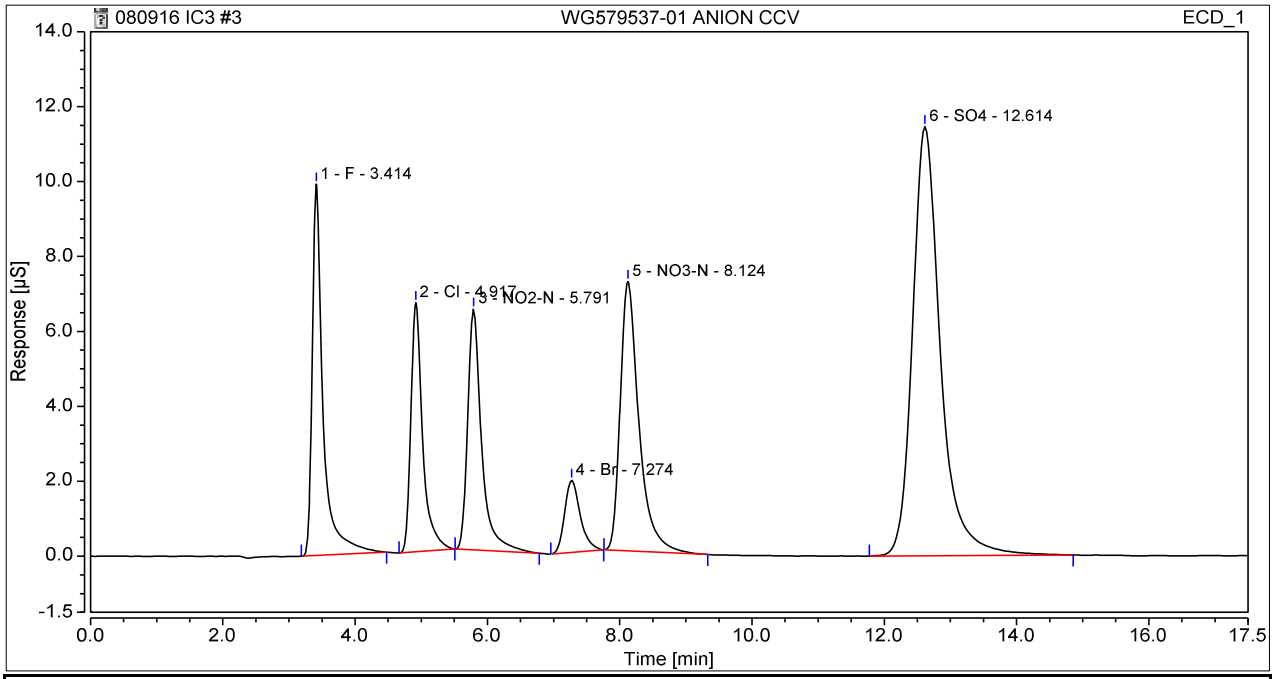

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.41	F	9.9127	1.8769	14.1	7.427	M
2	4.92	Cl	6.6527	1.3638	10.3	8.118	M
3	5.79	NO2-N	6.4287	1.5733	11.8	4.855	M
4	7.27	Br	1.9245	0.5267	4.0	8.525	M
5	8.12	NO3-N	7.1943	2.3563	17.7	5.258	M
6	12.61	SO4	11.4576	5.5966	42.1	39.322	M
Total:			**43.57**	**13.29**	**100**	**73.51**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

3 WG579537-01 ANION CCV
1,1 AED STD77046

Sequence Details

Name:	**WG579537-01 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**3**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**8/9/2016 10:23**	*Sample Weight:*	**1.0000**

WG579537-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.427320326**	**-7.158495925**	**PASS**
CL	8.00	**8.118455635**	**1.480695431**	**PASS**
NO2	4.87	**4.855147054**	**-0.3049886249**	**PASS**
BR	8.00	**8.525420948**	**6.567761854**	**PASS**
NO3	5.42	**5.257671431**	**-3.013442225**	**PASS**
SO4	40.00	**39.32190412**	**-1.695239712**	**PASS**

15 WG579537-03 ANION CCV
1,1 AED STD77046

Sample Name:	**WG579537-03 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/09/2016 14:27**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

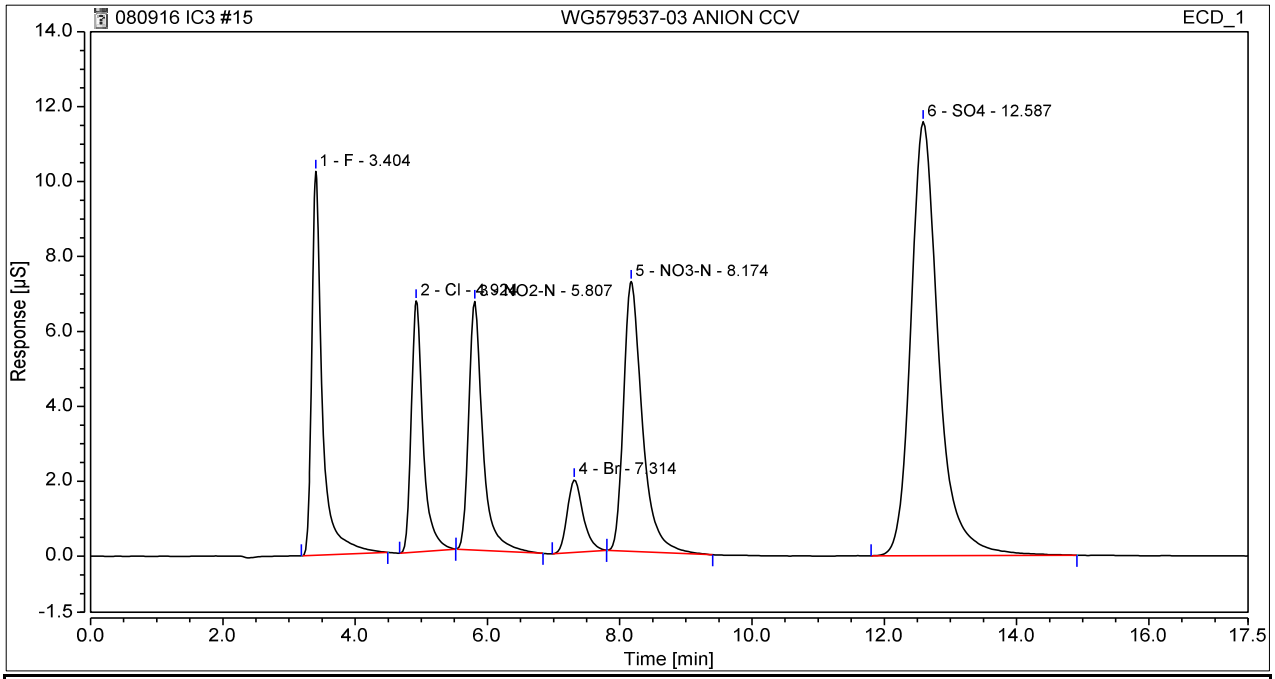

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.40	F	10.2504	1.9089	14.2	7.553	M
2	4.92	Cl	6.7023	1.3776	10.2	8.200	M
3	5.81	NO2-N	6.6340	1.6413	12.2	5.062	M
4	7.31	Br	1.9371	0.5380	4.0	8.708	M
5	8.17	NO3-N	7.2037	2.3799	17.7	5.310	M
6	12.59	SO4	11.5825	5.6144	41.7	39.445	M
Total:			**44.31**	**13.46**	**100**	**74.28**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

15 WG579537-03 ANION CCV
1,1 AED STD77046

Sequence Details

Name:	**WG579537-03 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**15**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**8/9/2016 14:27**	*Sample Weight:*	**1.0000**

WG579537-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.552743153**	**-5.590710583**	**PASS**
CL	8.00	**8.199735349**	**2.496691867**	**PASS**
NO2	4.87	**5.062110054**	**3.94476496**	**PASS**
BR	8.00	**8.708111653**	**8.851395664**	**PASS**
NO3	5.42	**5.31003878**	**-2.047254988**	**PASS**
SO4	40.00	**39.44542533**	**-1.386436664**	**PASS**

27 WG579537-05 ANION CCV
1,1 AED STD77046

Sample Name:	**WG579537-05 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/09/2016 18:31**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

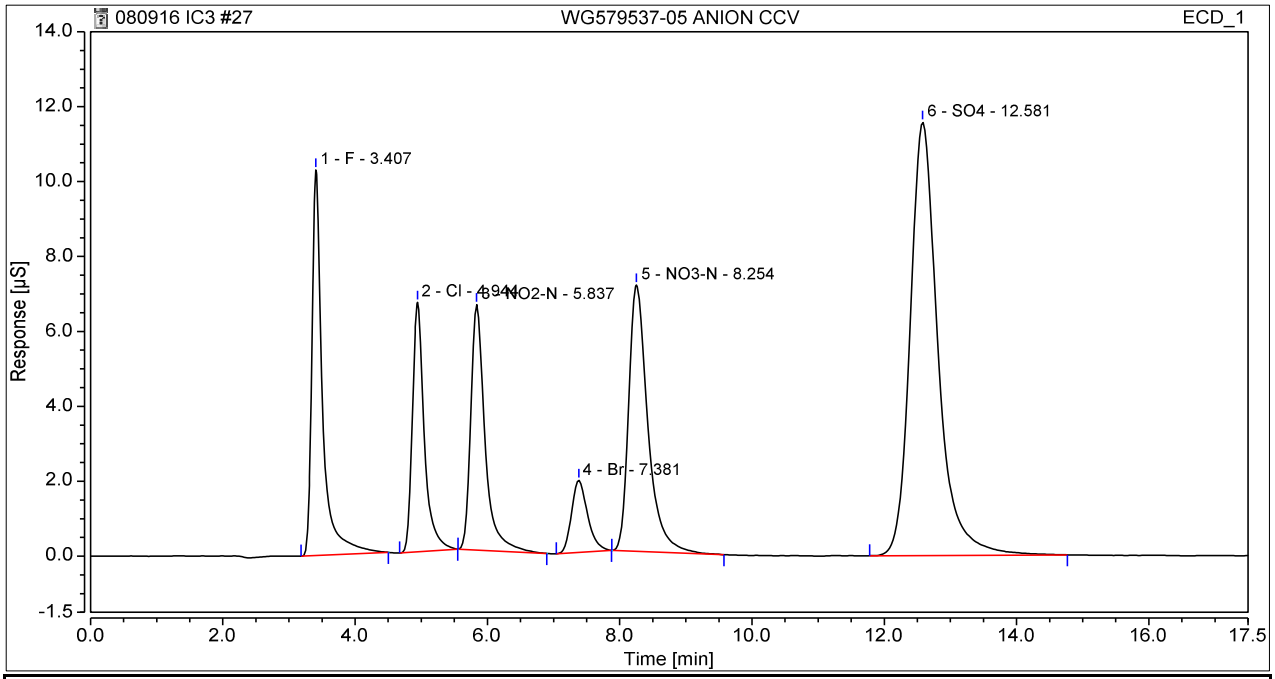

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.41	F	10.2955	1.9199	14.2	7.596	M
2	4.94	Cl	6.6627	1.3863	10.3	8.251	M
3	5.84	NO2-N	6.5509	1.6369	12.1	5.049	M
4	7.38	Br	1.9242	0.5426	4.0	8.783	M
5	8.25	NO3-N	7.1106	2.3875	17.7	5.327	M
6	12.58	SO4	11.5669	5.6275	41.7	39.536	M
Total:			**44.11**	**13.50**	**100**	**74.54**	

27 WG579537-05 ANION CCV
1,1 AED STD77046

Sequence Details

Name:	**WG579537-05 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**27**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**8/9/2016 18:31**	*Sample Weight:*	**1.0000**

WG579537-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.595539222**	**-5.055759721**	**PASS**
CL	8.00	**8.250838182**	**3.135477276**	**PASS**
NO2	4.87	**5.048835927**	**3.672195627**	**PASS**
BR	8.00	**8.782868803**	**9.785860037**	**PASS**
NO3	5.42	**5.32689367**	**-1.736279153**	**PASS**
SO4	40.00	**39.53559465**	**-1.161013371**	**PASS**

35 WG579537-07 ANION CCV
1,1 AED STD77046

Sample Name:	**WG579537-07 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**35**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/09/2016 21:14**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

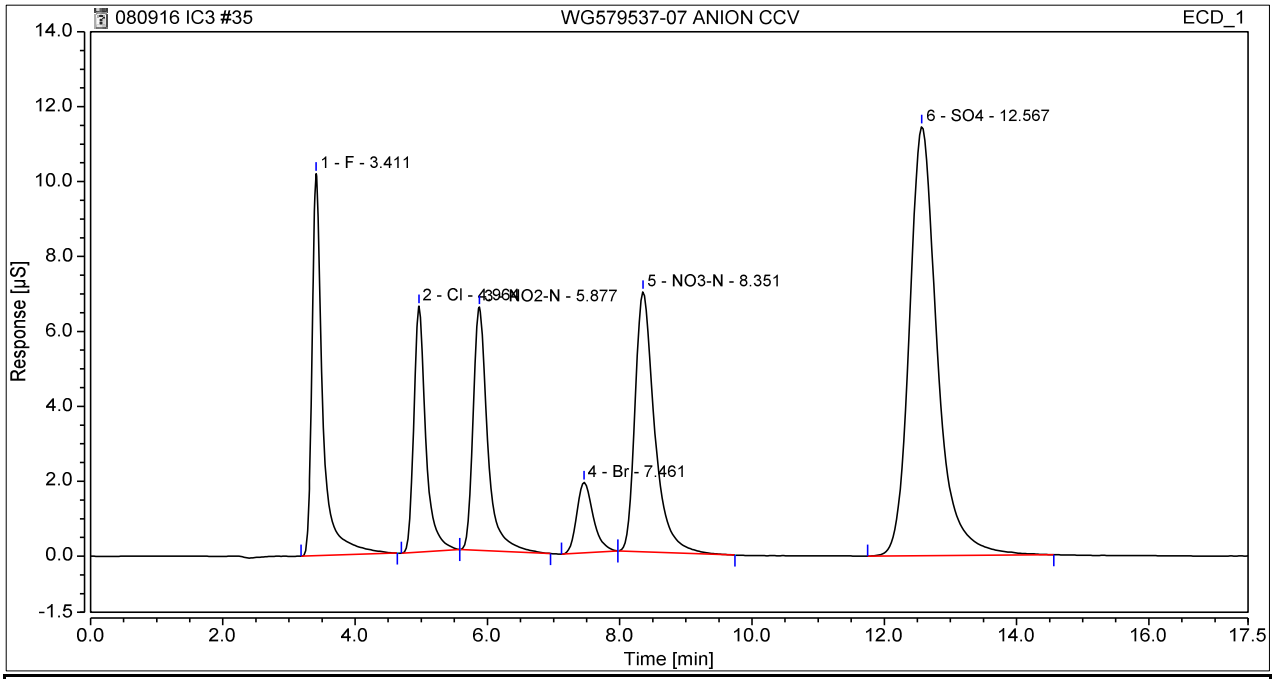

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.41	F	10.1988	1.9349	14.3	7.654	M
2	4.96	Cl	6.5678	1.3866	10.3	8.253	M
3	5.88	NO2-N	6.4951	1.6547	12.2	5.103	M
4	7.46	Br	1.8816	0.5424	4.0	8.780	M
5	8.35	NO3-N	6.9414	2.3853	17.7	5.322	M
6	12.57	SO4	11.4604	5.6088	41.5	39.407	M
Total:			**43.55**	**13.51**	**100**	**74.52**	

35 WG579537-07 ANION CCV
1,1 AED STD77046

Sequence Details

Name:	**WG579537-07 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**35**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**8/9/2016 21:14**	*Sample Weight:*	**1.0000**

WG579537-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.654492484**	**-4.31884395**	**PASS**
CL	8.00	**8.252667773**	**3.158347163**	**PASS**
NO2	4.87	**5.1031983**	**4.788466127**	**PASS**
BR	8.00	**8.780046877**	**9.750585965**	**PASS**
NO3	5.42	**5.322036469**	**-1.825895414**	**PASS**
SO4	40.00	**39.40655475**	**-1.483613133**	**PASS**

4 WG579273-02 ANION CCB
1,1 AED

Sample Name:	**WG579273-02 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/05/2016 8:01**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

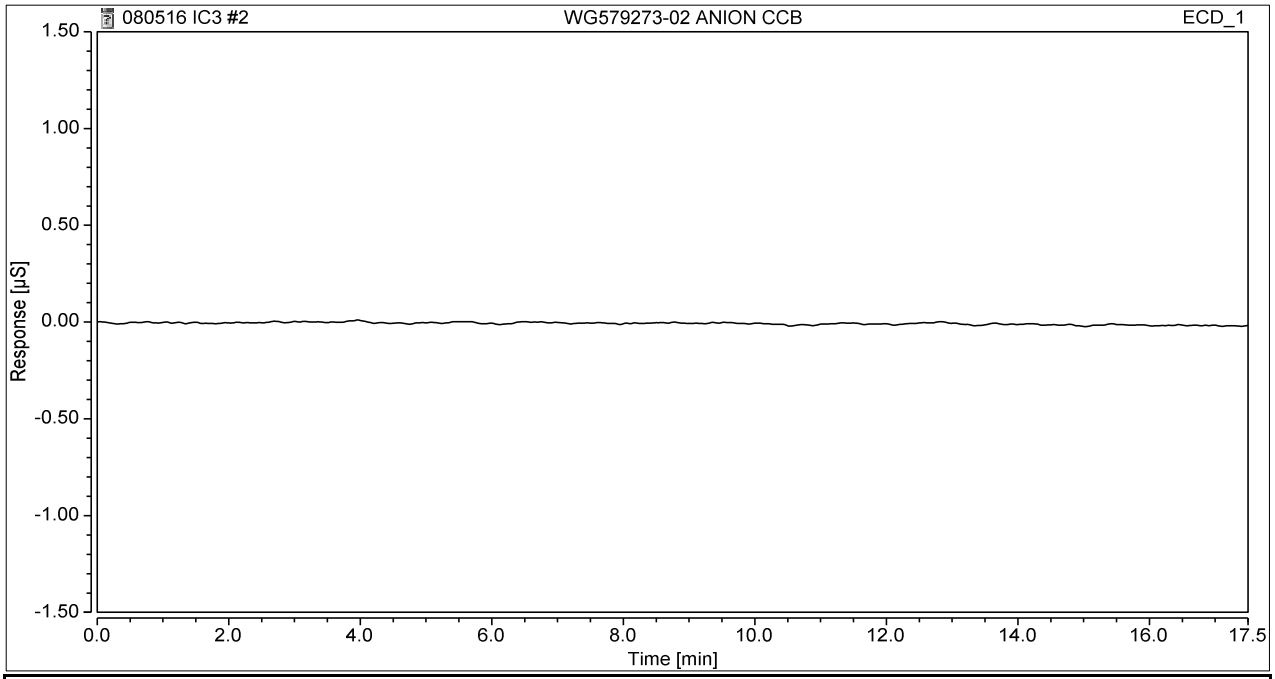

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

15 WG579273-04 ANION CCB
1,1 AED

Sample Name:	**WG579273-04 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/05/2016 11:45**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

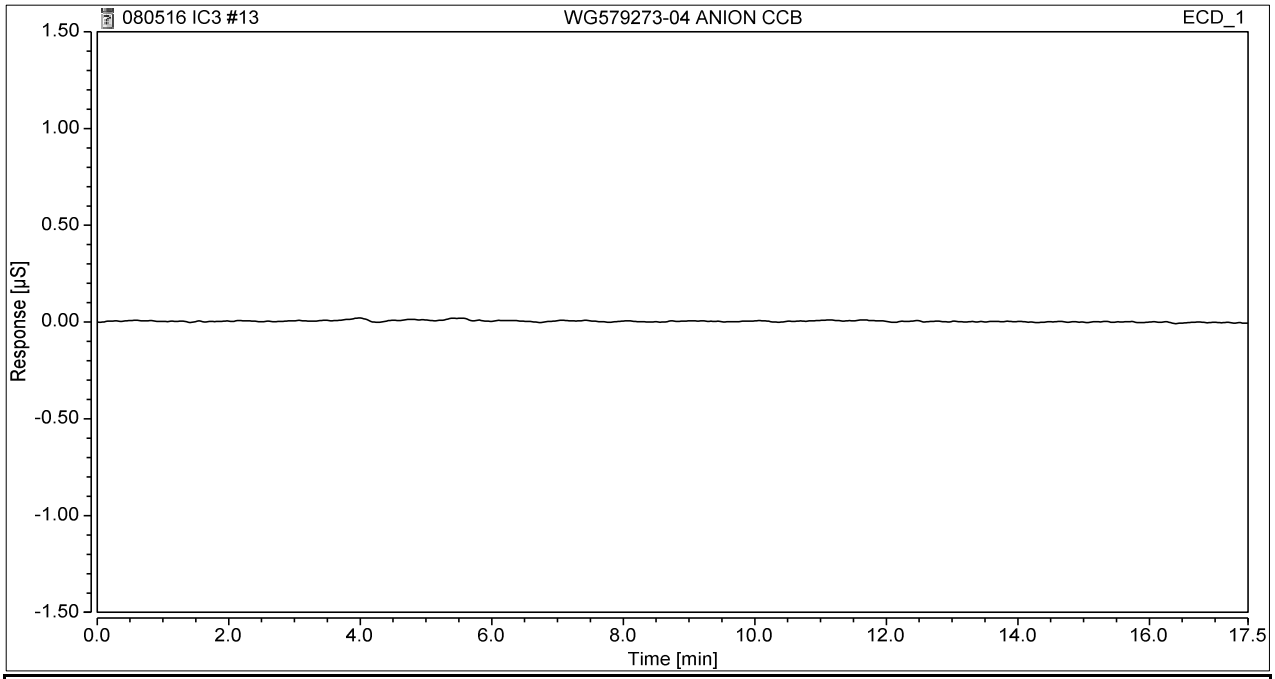

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

22 WG579273-06 ANION CCB
1,1 AED

Sample Name:	**WG579273-06 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**22**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/05/2016 14:07**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

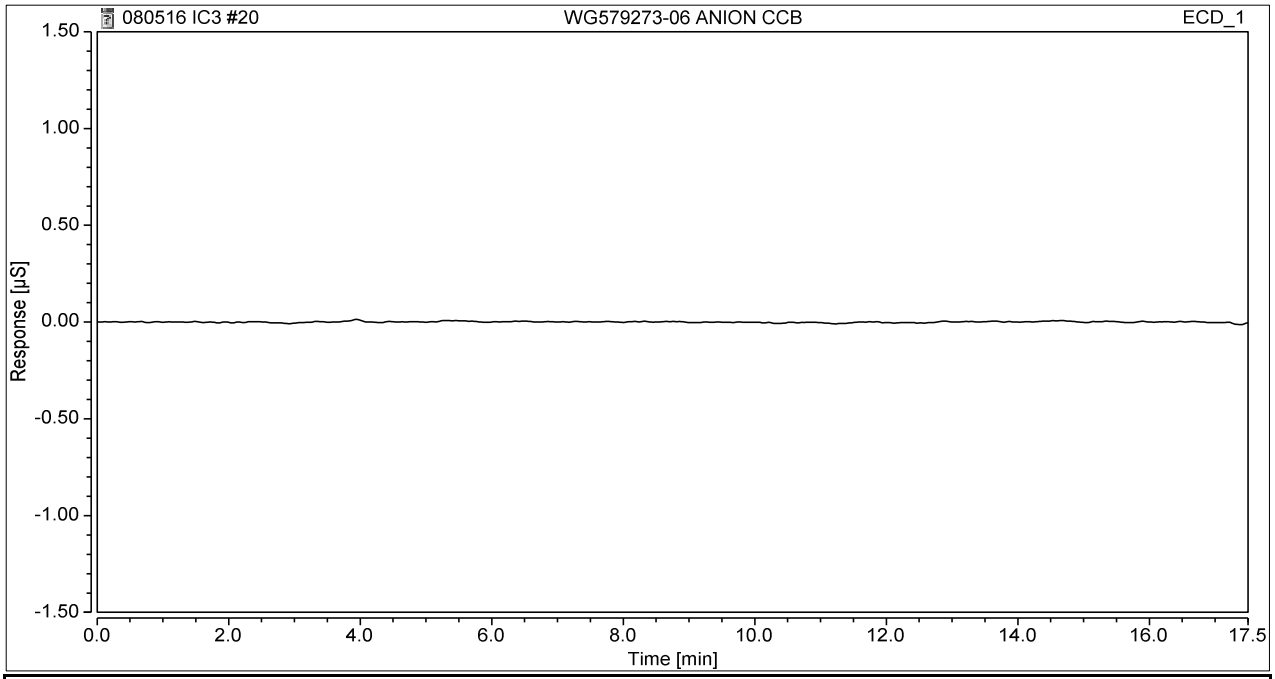

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

25 WG579273-08 ANION CCB
1,1 AED

Sample Name:	**WG579273-08 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**25**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/05/2016 15:08**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

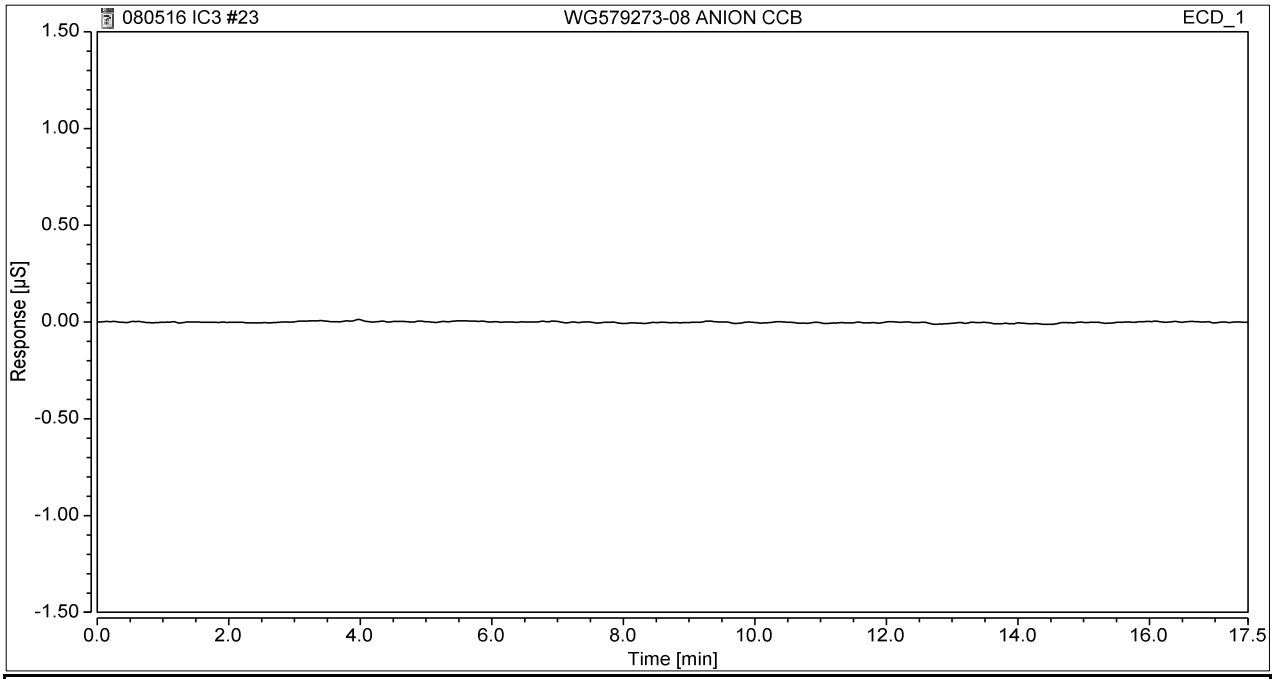

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

4 WG579537-02 ANION CCB
1,1 AED

Sample Name:	**WG579537-02 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/09/2016 10:43**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

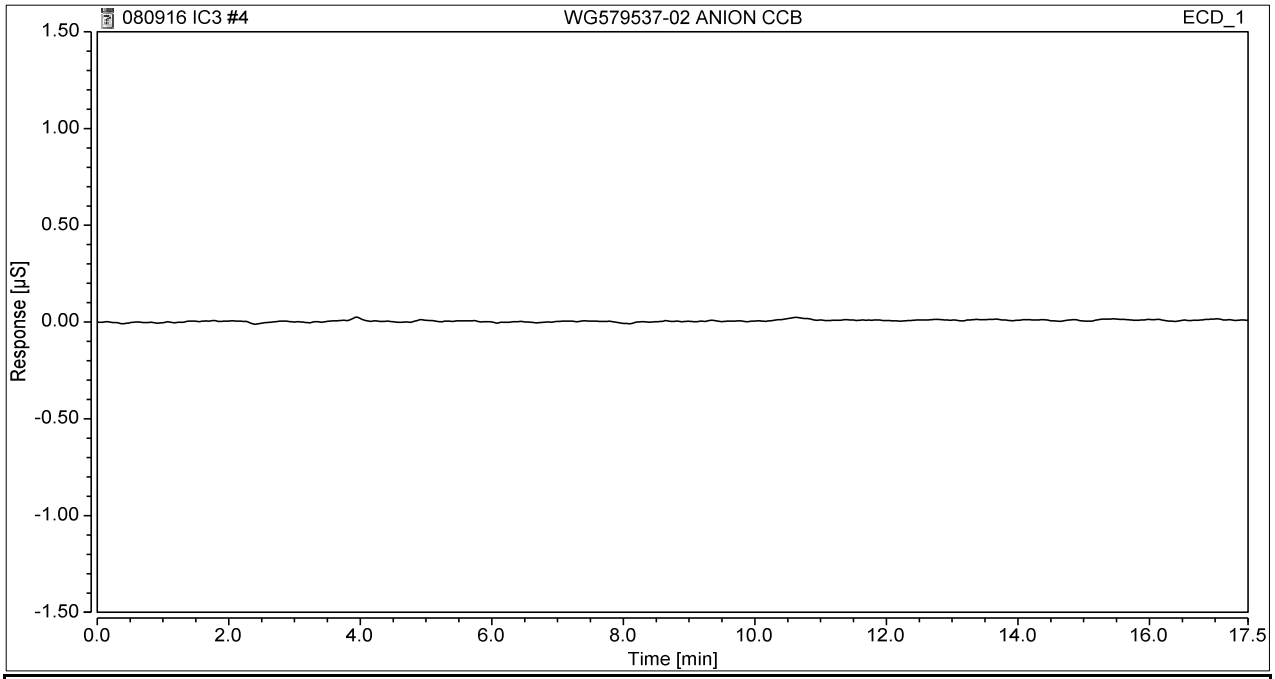

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

16 WG579537-04 ANION CCB
1,1 AED

Sample Name:	**WG579537-04 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/09/2016 14:47**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

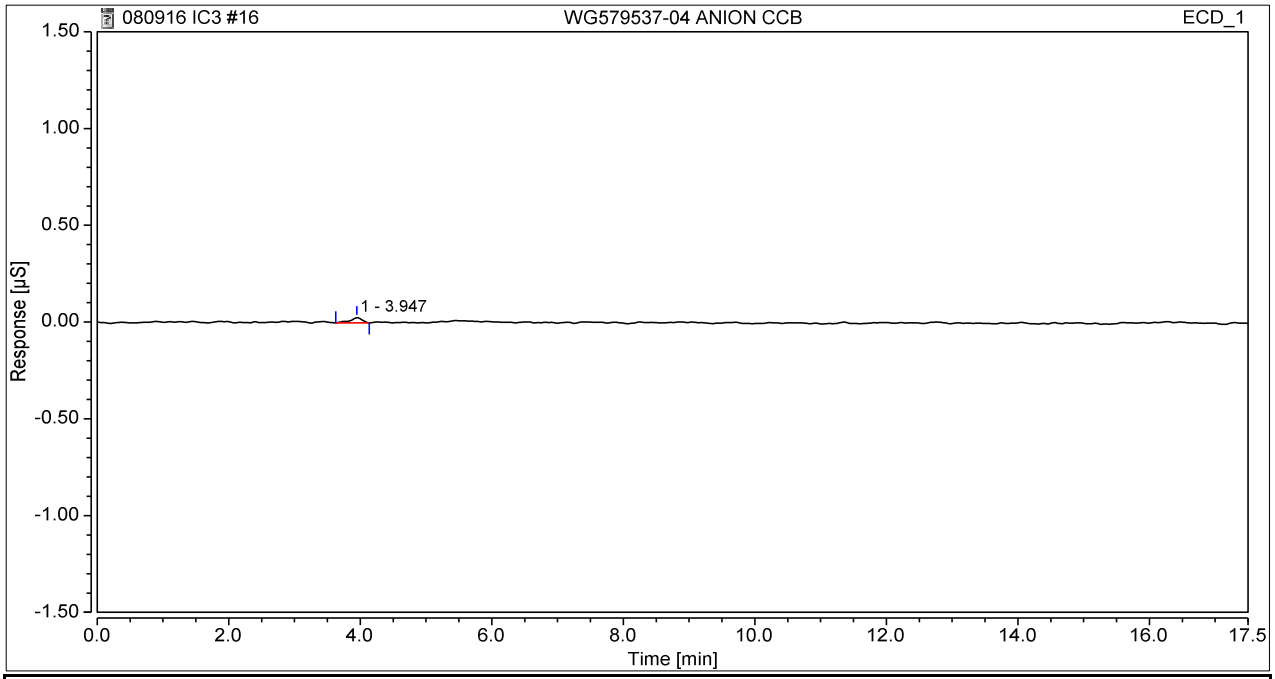

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

28 WG579537-06 ANION CCB
1,1 AED

Sample Name:	**WG579537-06 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**28**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/09/2016 18:52**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

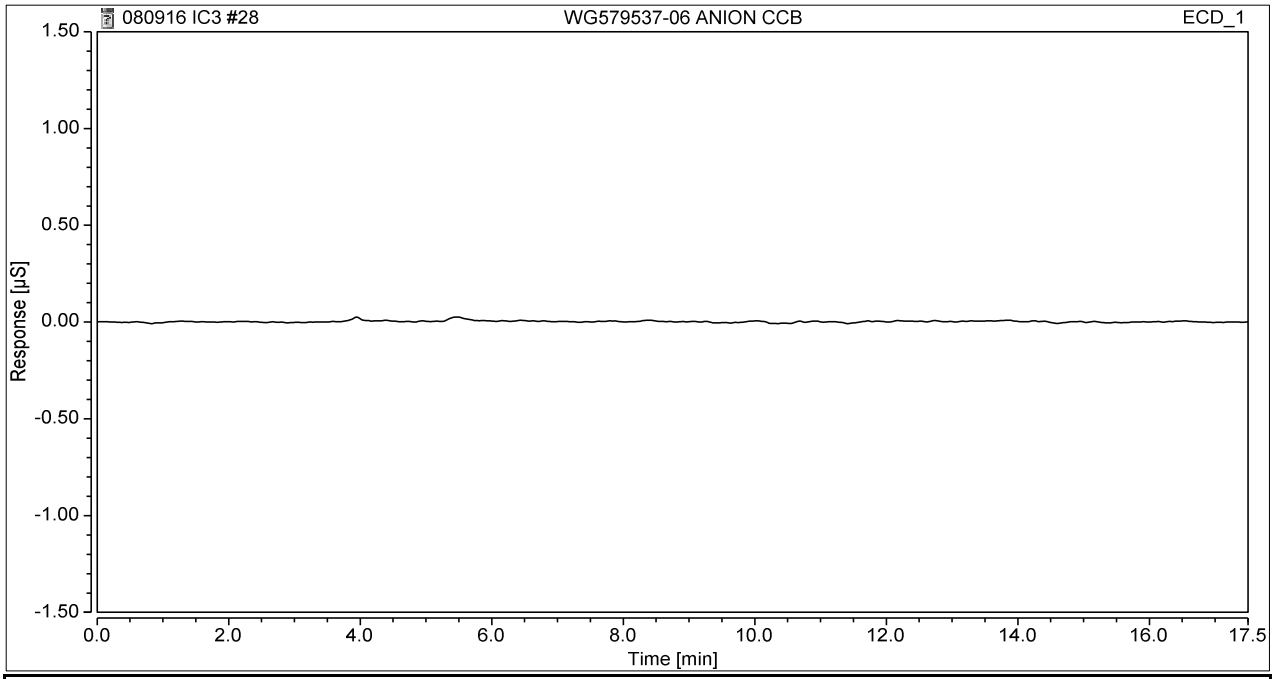

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

36 WG579537-08 ANION CCB
1,1 AED

Sample Name:	**WG579537-08 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**36**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/09/2016 21:35**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

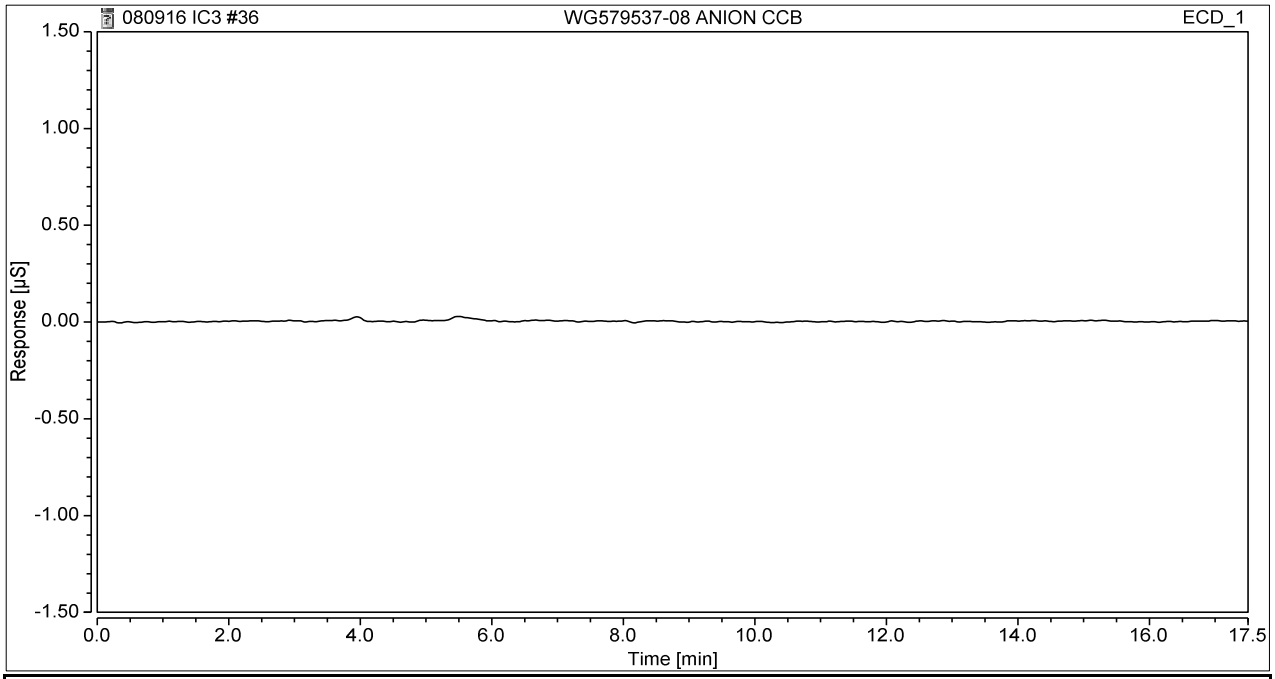

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AS14A-4mm

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	3/2/2015	3/4/2015	3/5/2015
File #	WG514023-02	WG514341-02	WG514431-02
Time	23:15	18:47	17:41

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.33	3.33	3.32	0.017
Cl	4.75	4.78	4.76	0.043
NO2-N	5.54	5.59	5.56	0.082
Br	6.86	6.98	6.93	0.180
NO3-N	7.59	7.73	7.67	0.222
SO4	12.42	12.38	12.34	0.116

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.3.1.5 Raw QC Data

5 WG579272-01 ANION BLANK
1,1 AED

Sample Name:	**WG579272-01 ANION BLANK**	*Injection Volume:*	**5000.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/05/2016 8:21**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

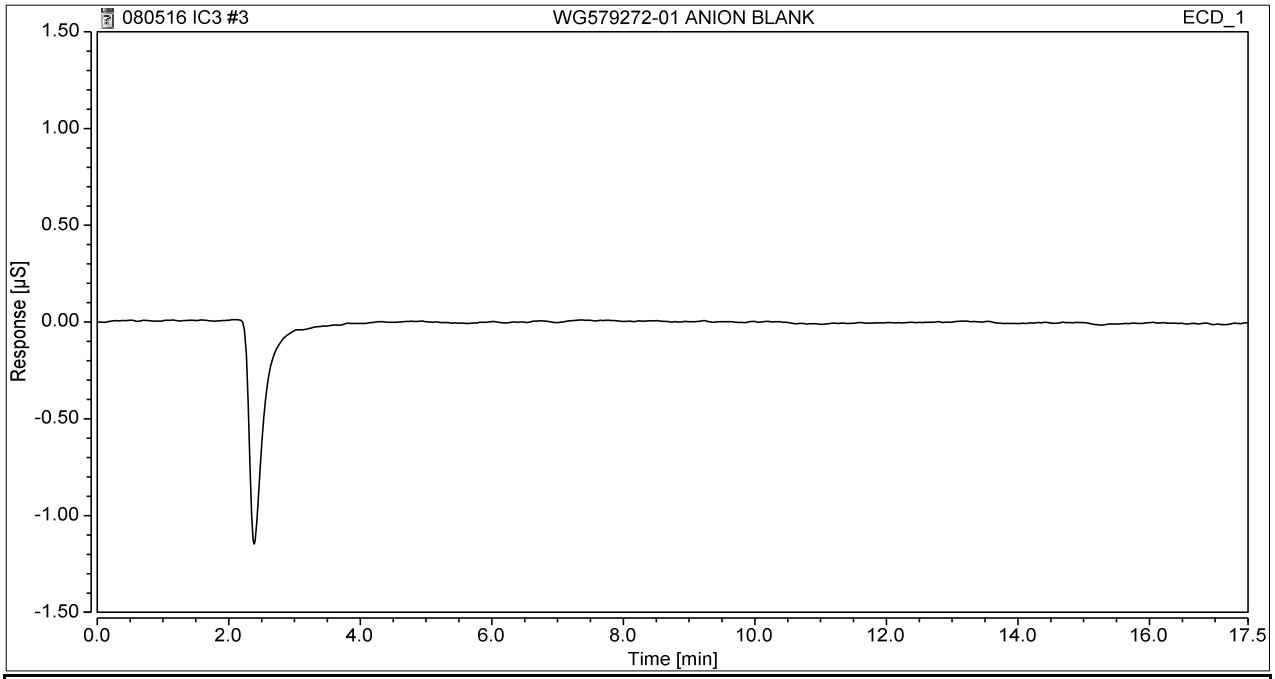

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

29 WG579536-01 ANION BLANK
1,1 AED

Sample Name:	**WG579536-01 ANION BLANK**	*Injection Volume:*	**5000.0**
Vial Number:	**29**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/09/2016 19:12**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

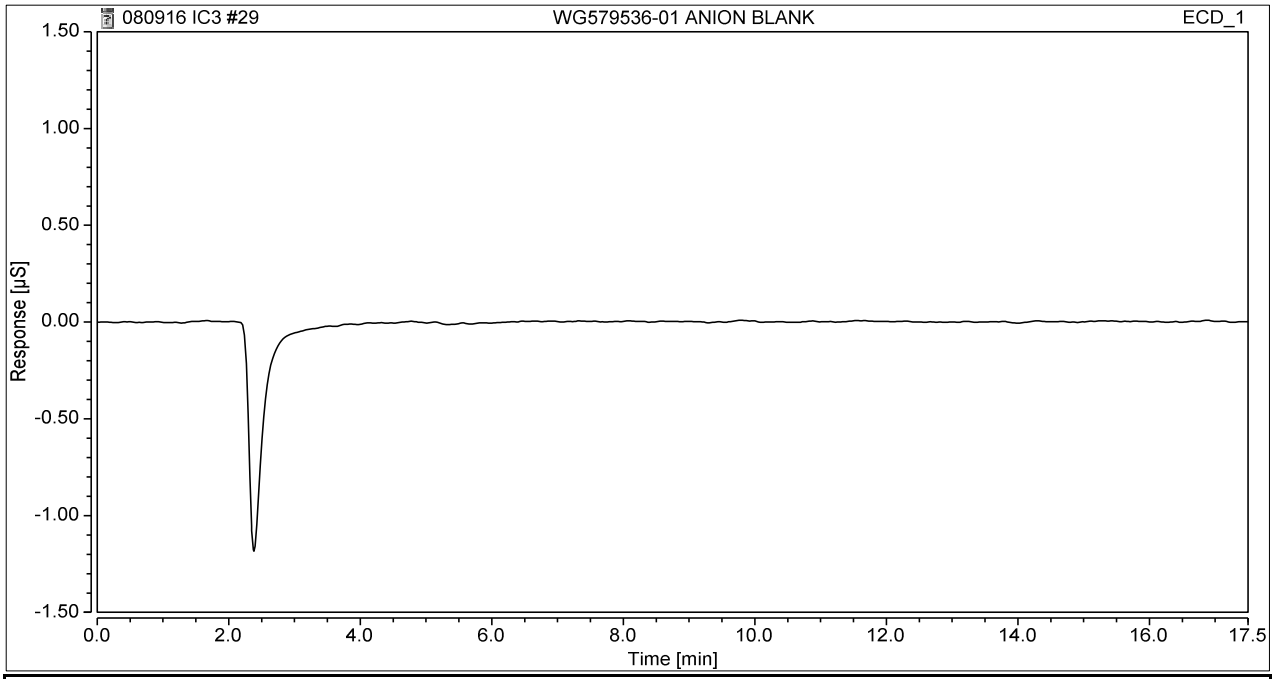

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

6 WG579272-02 ANION LCS
1,1 AED

Sample Name:	**WG579272-02 ANION LCS**	*Injection Volume:*	**5000.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/05/2016 8:42**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

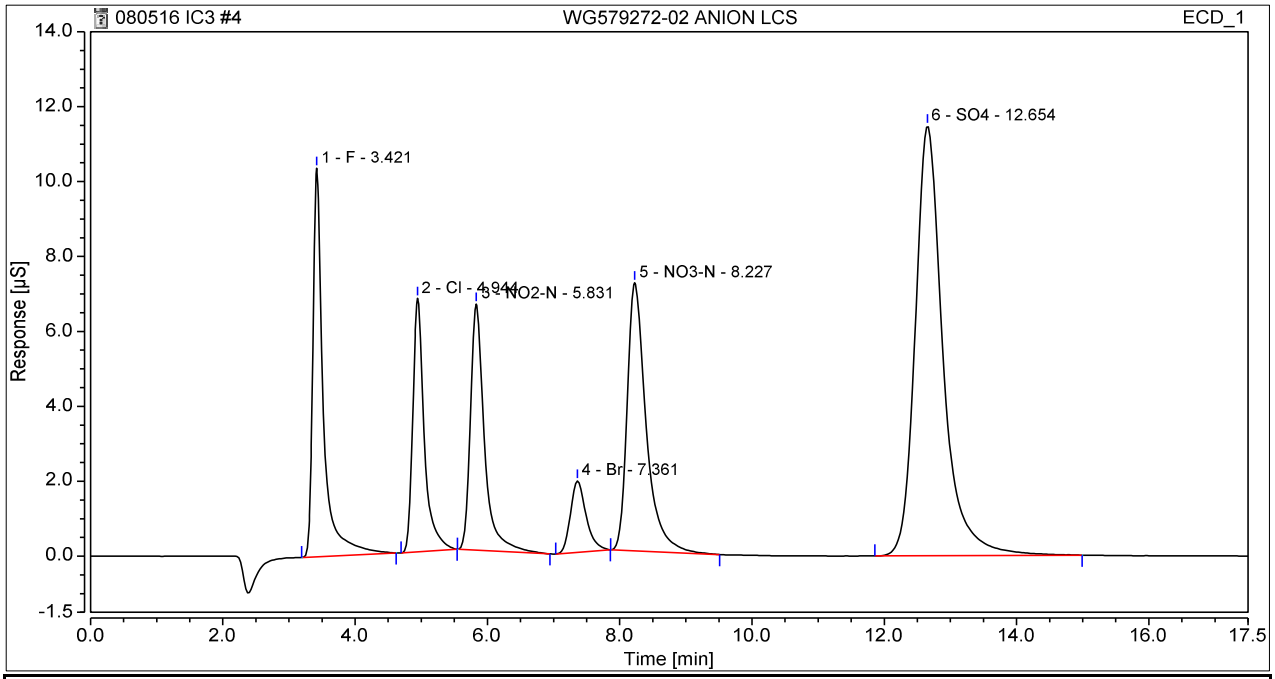

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.42	F	10.3738	1.9105	14.3	7.559	M
2	4.94	Cl	6.7710	1.3661	10.2	8.132	M
3	5.83	NO2-N	6.5705	1.6130	12.1	4.976	M
4	7.36	Br	1.9088	0.5228	3.9	8.462	M
5	8.23	NO3-N	7.1563	2.3748	17.8	5.299	M
6	12.65	SO4	11.4789	5.5913	41.8	39.286	M
Total:			**44.26**	**13.38**	**100**	**73.71**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

30 WG579536-02 ANION LCS
1,1 AED

Sample Name:	**WG579536-02 ANION LCS**	*Injection Volume:*	**5000.0**
Vial Number:	**30**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/09/2016 19:33**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

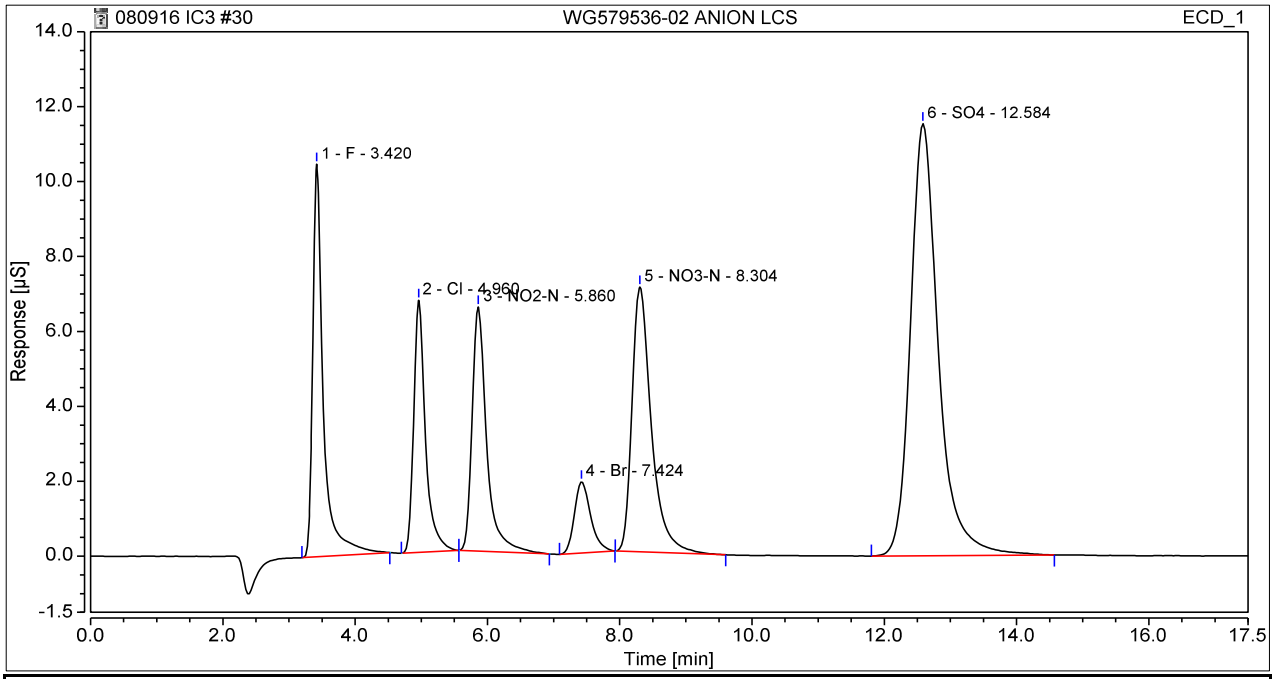

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.42	F	10.4825	1.9408	14.3	7.678	M
2	4.96	Cl	6.7291	1.3901	10.3	8.274	M
3	5.86	NO2-N	6.5228	1.6595	12.2	5.118	M
4	7.42	Br	1.9045	0.5426	4.0	8.783	M
5	8.30	NO3-N	7.0714	2.3946	17.7	5.343	M
6	12.58	SO4	11.5358	5.6212	41.5	39.493	M
Total:			**44.25**	**13.55**	**100**	**74.69**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

23 WG579272-03 ANION LCS2
1,1 AED

Sample Name:	**WG579272-03 ANION LCS2**	*Injection Volume:*	**5000.0**
Vial Number:	**23**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_060716_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/05/2016 14:27**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

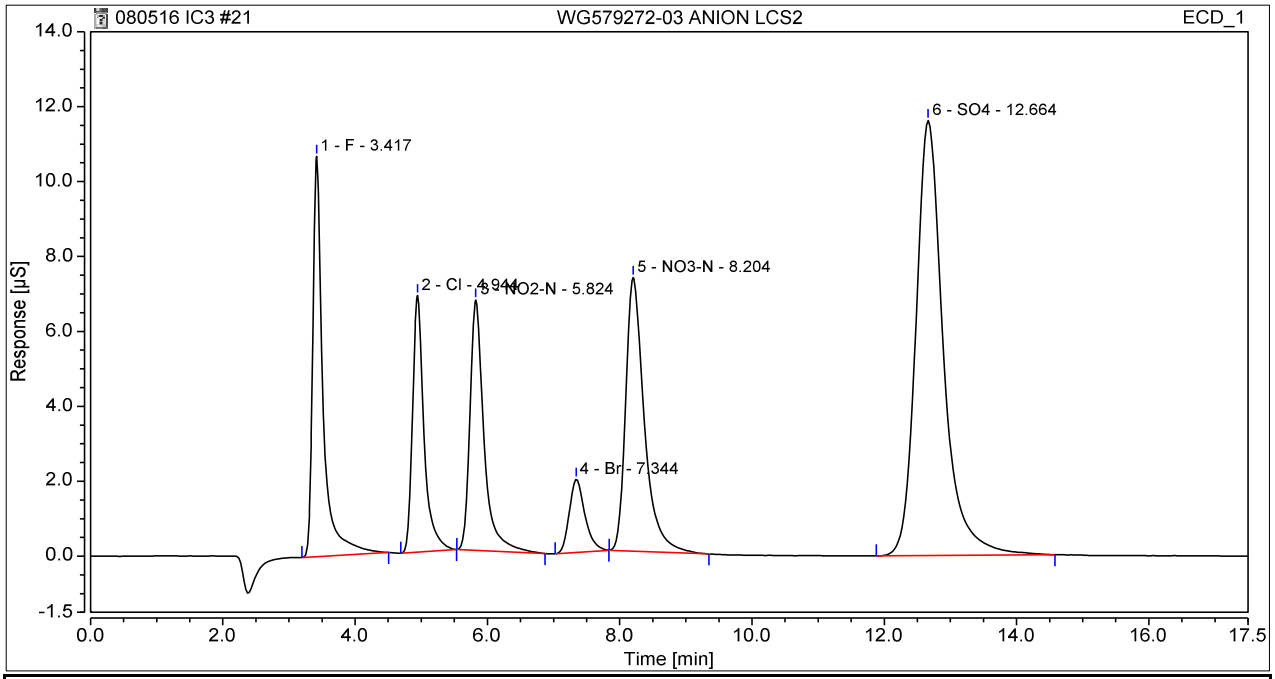

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.42	F	10.6875	1.9320	14.3	7.643	M
2	4.94	Cl	6.8506	1.3777	10.2	8.200	M
3	5.82	NO2-N	6.6824	1.6490	12.2	5.086	M
4	7.34	Br	1.9526	0.5345	4.0	8.652	M
5	8.20	NO3-N	7.3037	2.3838	17.7	5.319	M
6	12.66	SO4	11.6138	5.5893	41.5	39.272	M
Total:			**45.09**	**13.47**	**100**	**74.17**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

2.3.2 Alkalinity Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW05-080316	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/08/2016 15:23
Workgroup #:	WG579433	**Analyst:**	DCM	**Run Date:**	08/08/2016 15:35
Collect Date:	08/03/2016 07:55	**Dilution:**	1	**File ID:**	SC160808005.028
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	58.6		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16080330-08	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW16-080316	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/08/2016 15:23
Workgroup #:	WG579433	**Analyst:**	DCM	**Run Date:**	08/08/2016 15:35
Collect Date:	08/03/2016 09:10	**Dilution:**	4	**File ID:**	SC160808005.029
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	580		160	80.0	40.0

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	LHSMW19-080316	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/08/2016 15:23
Workgroup #:	WG579433	**Analyst:**	DCM	**Run Date:**	08/08/2016 15:36
Collect Date:	08/03/2016 10:20	**Dilution:**	2	**File ID:**	SC160808005.030
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	438		80.0	40.0	20.0

Certificate of Analysis

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16080330-13	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW11-080316	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/08/2016 15:23
Workgroup #:	WG579433	**Analyst:**	DCM	**Run Date:**	08/08/2016 15:37
Collect Date:	08/03/2016 11:25	**Dilution:**	1	**File ID:**	SC160808005.031
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	45.1		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16080330-15	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW09-080316	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/08/2016 15:23
Workgroup #:	WG579433	**Analyst:**	DCM	**Run Date:**	08/08/2016 15:37
Collect Date:	08/03/2016 13:45	**Dilution:**	1	**File ID:**	SC160808005.032
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	177		40.0	20.0	10.0

2.3.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 08-AUG-2016
Analyst: DCM
Analyst: NA
Method: ALK
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG579433

Calibration/Linearity	08-08-2016
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
09-AUG-2016

Secondary Reviewer:
09-AUG-2016

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-09-2016 09:17:39

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG579433

Login Number: L16080330

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW05-080316	05	08/03/16					08/08/2016	5.3	14		08/08/16	5.3	14	
46WW16-080316	08	08/03/16					08/08/2016	5.3	14		08/08/16	5.3	14	
LHSMW19-080316	11	08/03/16					08/08/2016	5.2	14		08/08/16	5.2	14	
46WW11-080316	13	08/03/16					08/08/2016	5.2	14		08/08/16	5.2	14	
46WW09-080316	15	08/03/16					08/08/2016	5.1	14		08/08/16	5.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4889091
Report generated 08/09/2016 09:09

METHOD BLANK SUMMARY

Login Number: L16080330
Blank File ID: SC160808005.012
Prep Date: 08/08/16 15:25
Analyzed Date: 08/08/16 15:25
Analyst: DCM

Work Group: WG579433
Blank Sample ID: WG579433-01
Instrument ID: SMARTCHEM
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG579433-02	SC160808005.013	08/08/16 15:26	01
LCS2	WG579433-03	SC160808005.014	08/08/16 15:27	01
46WW05-080316	L16080330-05	SC160808005.028	08/08/16 15:35	01
46WW16-080316	L16080330-08	SC160808005.029	08/08/16 15:35	DL01
LHSMW19-080316	L16080330-11	SC160808005.030	08/08/16 15:36	DL01
46WW11-080316	L16080330-13	SC160808005.031	08/08/16 15:37	01
46WW09-080316	L16080330-15	SC160808005.032	08/08/16 15:37	01
DUP	WG579433-05	SC160808005.035	08/08/16 15:39	01

Report Name: BLANK_SUMMARY
PDF File ID: 4889092
Report generated 08/09/2016 09:09

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080330 Prep Date: 08/08/16 15:25 Sample ID: WG579433-01
Instrument ID: SMARTCHEM Run Date: 08/08/16 15:25 Prep Method: 310.2
File ID: SC160808005.012 Analyst: DCM Method: 310.2
Workgroup (AAB#): WG579433 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-08-AUG-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	-11.6	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4889093
09-AUG-2016 09:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080330 Analyst: DCM Prep Method: 310.2
Instrument ID: SMARTCHEM Matrix: Water Method: 310.2
Workgroup (AAB#): WG579433 Units: mg/L
QC Key: DOD4 Lot #: STD77181

Sample ID: WG579433-02 LCS File ID: SC160808005.013 Run Date: 08/08/2016 15:26
Sample ID: WG579433-03 LCS2 File ID: SC160808005.014 Run Date: 08/08/2016 15:27

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	198	99.1	200	200	100	1.10	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4889094
Report generated: 08/09/2016 09:09

2.3.2.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG579433

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20160808005
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [x] SC2 [ ]

	Analyte	1	2	3
		Alk		
		Dilution		
SC Prepared Curve				
Position				
1-1	IW			
1-2	Blk			
1-3	LCS			
1-4	LCSDup			
08-387-01 1-5	~~07-547-14~~	1/2		
1-6	08-387-02 ~~15~~	1/2		
1-7	08-387-03 ~~16~~	1/2		
dcm 8/8/16 1-8	08-387-04 T7	1/2		
1-9	08-324-02	1/4		
1-10	03	1/4		
1-11	05	1/4		
1-12	06	1/4		
1-13	08	1/4		
1-14	09	1/4		
1-15	08-517-04			
1-16	08-330-05			
1-17	08	1/4		
1-18	11	1/2		
1-19	13			
1-20	15			
1-21	Dup 08-330-15			
1-22				
2-1				
2-2				
2-3				

Position	Analyte	1	2	3
2-4				
2-5				
2-6				
2-7				
2-8				
2-9				
2-10				
2-11				
2-12				
2-13				
2-14				
2-15				
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#120163

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG579433

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-Cl E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
✓	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	Alk		Reagents
SOP & Revision	ISSUE R17		REG 37560
Curve Stock (SC made)	Std 76180		
NO2 STD			
ICV	Std 77257		
CCV	Std 77256		
LCS	Std 77151		
MS	NA Dilution		

Comments: _____

Analyst: David Morehale Date: 8/8/16

DCN#120163

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.6562	0.00		3:17:31 PM
DIL-1	RBL	0.0	0.6574	0.00		3:17:49 PM
DIL-1	RBL	0.0	0.6510	0.00		3:18:43 PM
DIL-1	Std-1	0.0	-0.0021	0.00		3:19:01 PM
SR5-1	Std-2	10.0	-0.0194	0.00		3:19:55 PM
SR5-2	Std-3	20.0	-0.0267	0.00		3:20:13 PM
SR5-3	Std-4	50.0	-0.0752	0.00		3:21:07 PM
SR5-4	Std-5	100.0	-0.1421	0.00		3:21:25 PM
SR5-5	Std-6	200.0	-0.3089	0.00	EPL	3:22:19 PM
SR5-6	Std-7	250.0	-0.3909	0.00		3:22:37 PM
SR5-7	Std-8	300.0	-0.4544	0.00		3:23:31 PM
ST-3	1CCV (150 mg/L)	146.3	-0.2217	97.52		3:23:49 PM
ST-2	2CCB (0 mg/L)	-9.5	0.0143	0.00	INV,><,LL	3:24:43 PM
1	ICV	256.2	-0.3925	0.00		3:25:01 PM
2	WG579433-01 BLK	-11.6	0.0174	0.00	INV,><,LL	3:25:55 PM
3	WG579433-02 LCS	198.3	-0.3020	0.00		3:26:13 PM
4	WG579433-03 LCSDUP	200.5	-0.3054	0.00		3:27:07 PM
5	L16080387-01 (2)	158.7	-0.2408	0.00		3:27:25 PM
6	L16080387-02 (2)	209.5	-0.3195	0.00		3:28:19 PM
7	L16080387-03 (2)	170.4	-0.2588	0.00		3:28:37 PM
8	L16080387-04 (2)	142.8	-0.2164	0.00		3:29:32 PM
9	L16080324-02 (4)	152.8	-0.2317	0.00		3:29:49 PM
10	L16080324-03 (4)	75.3	-0.1133	0.00		3:30:44 PM
ST-3	1CCV (150 mg/L)	146.0	-0.2213	97.35		3:31:02 PM
ST-2	2CCB (0 mg/L)	-5.0	0.0076	0.00	INV,><,LL	3:31:56 PM
11	L16080324-05 (4)	143.4	-0.2172	0.00		3:32:14 PM
12	L16080324-06 (4)	94.0	-0.1417	0.00		3:33:08 PM
13	L16080324-08 (4)	162.5	-0.2467	0.00		3:33:26 PM
14	L16080324-09 (4)	95.0	-0.1432	0.00		3:34:20 PM
15	L16080317-04	26.3	-0.0393	0.00		3:34:38 PM
16	L16080330-05	58.6	-0.0881	0.00	EPL	3:35:32 PM
17	L16080330-08 (4)	145.1	-0.2199	0.00		3:35:50 PM

Report Date :08/08/2016 **Run Date :8/8/2016** **Operator : SMARTCHEM1** **Plan # :20160808005**

Plan Description : ALK-A1-DCM/08/08/2016

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L16080330-11 (2)	219.0	-0.3343	0.00		3:36:44 PM
19	L16080330-13	45.1	-0.0677	0.00		3:37:02 PM
20	L16080330-15	177.1	-0.2692	0.00		3:37:56 PM
ST-3	1CCV (150 mg/L)	157.2	-0.2385	104.80		3:38:14 PM
ST-2	2CCB (0 mg/L)	2.6	-0.0038	0.00		3:39:08 PM
21	WG579433-05 DUP	178.9	-0.2720	0.00		3:39:26 PM
22	ID 22	24.3	-0.0364	0.00		3:40:20 PM
ST-3	1CCV (150 mg/L)	163.0	-0.2474	108.65		3:40:38 PM
ST-2	2CCB (0 mg/L)	10.6	-0.0158	0.00		3:41:32 PM

Report Date :08/08/2016 **Run Date :8/8/2016** **Operator : SMARTCHEM1** **Plan # :20160808005**

Plan Description : ALK-A1-DCM/08/08/2016

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20160808005 Description : [ALK-A1-DCM/08/08/2016] Unit

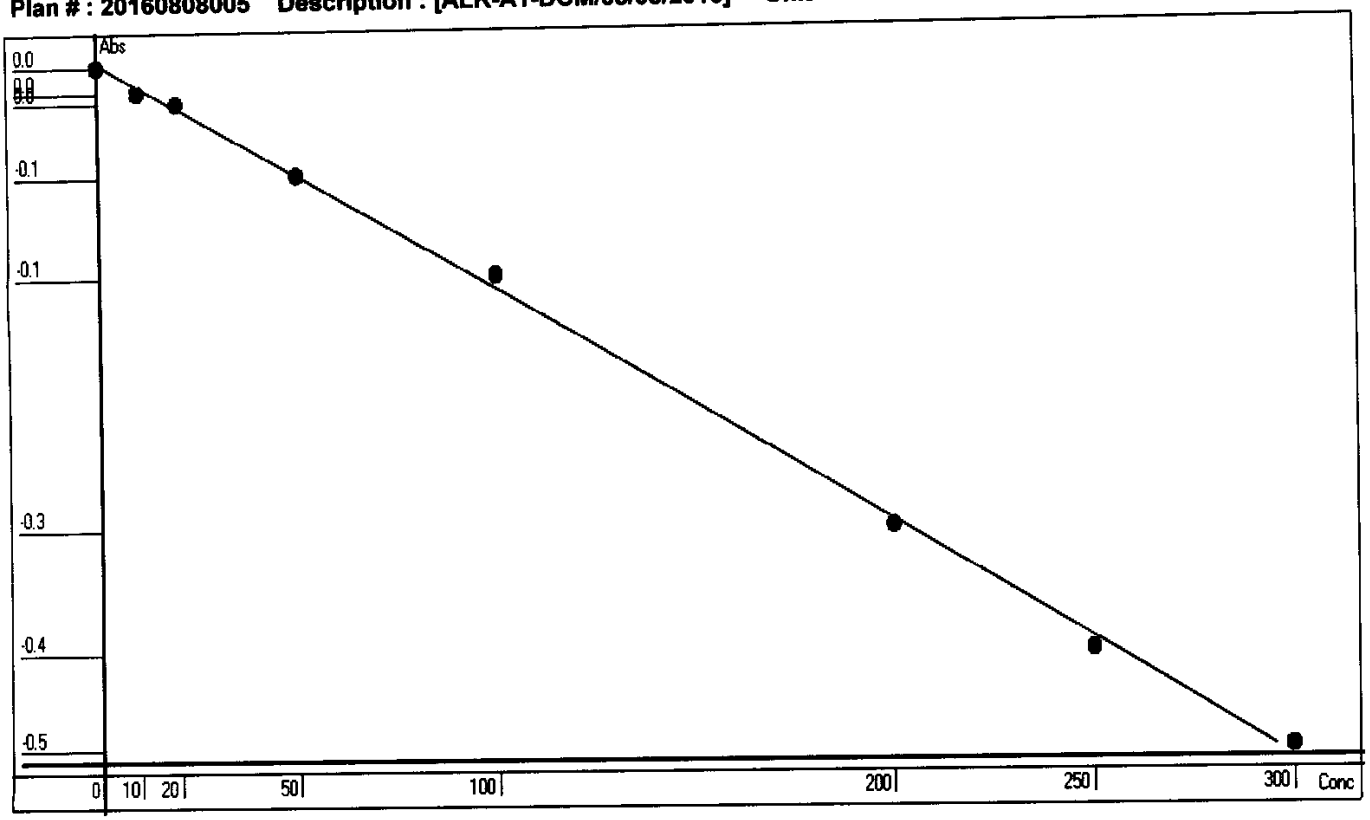

Point	OD	Conc	Recalc Conc	% Error
1	-0.0021	0	1.4396	143.96
2	-0.0194	10	12.9940	29.94
3	-0.0267	20	17.8621	-10.69
4	-0.0752	50	50.0947	0.19
5	-0.1421	100	94.2395	-5.76
6	-0.3089	200	202.7084	1.35
7	-0.3909	250	255.1969	2.08
8	-0.4544	300	295.4652	-1.51

Conc= -40.9502*Abso^2 -668.7614*Abso +0.0354 R^2=0.9989

RBL
0.6568
0

Report Date 8/8/2016 Run Date 8/8/2016

2.3.3 Phosphorus Data

2.3.3.1 Summary Data

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW05-080316	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/10/2016 12:44
Workgroup #:	WG579706	**Analyst:**	TB	**Run Date:**	08/10/2016 12:49
Collect Date:	08/03/2016 07:55	**Dilution:**	1	**File ID:**	SC160810004.014
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.204	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-08	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW16-080316	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/10/2016 12:44
Workgroup #:	WG579706	**Analyst:**	TB	**Run Date:**	08/10/2016 12:49
Collect Date:	08/03/2016 09:10	**Dilution:**	1	**File ID:**	SC160810004.015
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	LHSMW19-080316	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/10/2016 12:44
Workgroup #:	WG579706	**Analyst:**	TB	**Run Date:**	08/10/2016 12:50
Collect Date:	08/03/2016 10:20	**Dilution:**	1	**File ID:**	SC160810004.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.110	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-13	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW11-080316	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/10/2016 12:44
Workgroup #:	WG579706	**Analyst:**	TB	**Run Date:**	08/10/2016 12:50
Collect Date:	08/03/2016 11:25	**Dilution:**	1	**File ID:**	SC160810004.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-15	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	46WW09-080316	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/10/2016 12:44
Workgroup #:	WG579706	**Analyst:**	TB	**Run Date:**	08/10/2016 12:51
Collect Date:	08/03/2016 13:45	**Dilution:**	1	**File ID:**	SC160810004.018
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 10-AUG-2016
Analyst: TB
Analyst: NA
Method: PHOS
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG579706

Calibration/Linearity	08/10/2016
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TB
Secondary Reviewer	DIH
Comments	

Primary Reviewer: 10-AUG-2016
Todd Boyle

Secondary Reviewer: 15-AUG-2016
Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-15-2016 09:06:08

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4 AAB#: WG579706

Login Number: L16080330

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW05-080316	05	08/03/16					08/10/2016	7.2	28		08/10/16	7.2	28	
46WW16-080316	08	08/03/16					08/10/2016	7.2	28		08/10/16	7.2	28	
LHSMW19-080316	11	08/03/16					08/10/2016	7.1	28		08/10/16	7.1	28	
46WW11-080316	13	08/03/16					08/10/2016	7.1	28		08/10/16	7.1	28	
46WW09-080316	15	08/03/16					08/10/2016	7	28		08/10/16	7	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4899764
Report generated 08/16/2016 14:54

METHOD BLANK SUMMARY

Login Number: L16080330
Blank File ID: SC160810004.010
Prep Date: 08/10/16 12:46
Analyzed Date: 08/10/16 12:46
Analyst: TB

Work Group: WG579706
Blank Sample ID: WG579706-01
Instrument ID: SMARTCHEM
Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG579706-02	SC160810004.011	08/10/16 12:47	01
46WW05-080316	L16080330-05	SC160810004.014	08/10/16 12:49	01
46WW16-080316	L16080330-08	SC160810004.015	08/10/16 12:49	01
LHSMW19-080316	L16080330-11	SC160810004.016	08/10/16 12:50	01
46WW11-080316	L16080330-13	SC160810004.017	08/10/16 12:50	01
46WW09-080316	L16080330-15	SC160810004.018	08/10/16 12:51	01
DUP	WG579706-04	SC160810004.022	08/10/16 12:53	01

Report Name: BLANK_SUMMARY
PDF File ID: 4899765
Report generated 08/16/2016 14:54

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080330 Prep Date: 08/10/16 12:46 Sample ID: WG579706-01
Instrument ID: SMARTCHEM Run Date: 08/10/16 12:46 Prep Method: 365.4
File ID: SC160810004.010 Analyst: TB Method: 365.4
Workgroup (AAB#): WG579706 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-10-AUG-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4899766
16-AUG-2016 14:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080330 Run Date: 08/10/2016 Sample ID: WG579706-02
Instrument ID: SMARTCHEM Run Time: 12:47 Prep Method: 365.4
File ID: SC160810004.011 Analyst: TB Method: 365.4
Workgroup (AAB#): WG579706 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD77385 Cal ID: SMARTC-10-AUG-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Phosphorus, Total	1.00	0.844	84.4	70 - 130	

LCS - Modified 03/06/2008
PDF File ID: 4899767
Report generated: 08/16/2016 14:54

2.3.3.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG579706

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20160810004
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [x] SC2 [ ]

Analyte		1	2	3
		Phos		
		Dilution		
SC Prepared Curve				
Position				
1-1	IW			
1-2	Blk			TB 8/12/16
1-3	LCS			
1-4	8.303-01	~~1/25~~	1/5 x	1/5
1-5	317-04			
1-6	330-05			
1-7	08			
1-8	11			
1-9	13			
1-10	15			
1-11	Ref 400-01			
1-12	Dup 400-01			
1-13	MS 400-01			
1-14				
1-15				
1-16				
1-17				
1-18				
1-19				
1-20				
1-21				
1-22				
2-1				
2-2				
2-3				

Analyte		1	2	3
Position				
2-4				
2-5				
2-6				
2-7				
2-8				
2-9				
2-10				
2-11				
2-12				
2-13				
2-14				
2-15				
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#120219

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG579706

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
✓	Phos	EPA 365.4

Analyte	Phos		Reagents
SOP & Revision	k 3654 R19		
Curve Stock (SC made)			37528
NO2 STD	See		37402
ICV	Digest		37552
CCV			
LCS	Log		
MS	Dilution		

Comments:

Analyst: Tom Boyle

Date: 8/19/16

DCN#120219

TKN/Phosphorus Digestion Log

TKN WG:
TKN Std: std 77474
TKN CCV: 1/2 (std 77474)
TKN ICV: std 77333
TKN LCS: std 77334

Phos WG:
Phos Std: std 77474
Phos CCV: 1/2 (std 77474)
Phos ICV: ~~TB~~ std ~~77385~~ 77437
Phos LCS: 8/10/16 std ~~77437~~ 77385

MS/MSD: std 76885
Daily Dilution: 1mL/25

Block Digester Temperature: 380 °C
Digest Reagent: 3H78

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	std T/P				26				
2	std T/P				27				
3	ICV T				28				
4	LCS T				29				
5	ICV P				30				
6	LCS P				31				
7	8-303-01	5mL/25		—	32				
8	317-04			—	33				
9	324-02	1/50	—		34				
10	05	1/50	—		35				
11	08	1/50	—		36				
12	330-05			—	37				
13	08			—	38				
14	11			—	39				
15	13			—	40				
16	15			—	41				
* 17	379-03	5/25	—		42				
18	380-03		—		43				
19	400-01		—		44				
20	DUP 400-01				45				
21	MS 400-01				46				
22					47				
23					48				
24					49				
25					50				

* ~~Run~~ Digested @ 1/5 due to sample reacting with Digest Acid foamed out of tube

Analyst: Tom Brown Date: 8/9/16

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0889	0.00	R	12:39:30 PM
DIL-1	RBL	0.000	0.0905	0.00	R	12:39:48 PM
DIL-1	RBL	0.000	0.0890	0.00	R	12:40:43 PM
SR5-1	Std-1	0.010	-0.0005	0.00	INV	12:41:00 PM
SR5-2	Std-2	0.200	0.0291	0.00		12:41:55 PM
SR5-3	Std-3	0.500	0.0659	0.00		12:42:12 PM
SR5-4	Std-4	1.000	0.1356	0.00		12:43:07 PM
SR5-5	Std-5	1.500	0.1994	0.00		12:43:24 PM
ST-1	Std-6	2.000	0.2771	0.00	EPL	12:44:19 PM
ST-3	1CCV (1 mg/L)	0.964	0.1310	96.43		12:44:37 PM
ST-2	2CCB (0 mg/L)	-0.005	-0.0022	0.00	INV,><,LL	12:45:31 PM
1	ICV	1.395	0.1901	0.00		12:45:48 PM
2	WG579706-01 BLK	0.041	0.0040	0.00		12:46:43 PM
3	WG579706-02 LCS	0.844	0.1145	0.00		12:47:00 PM
4	L16080303-01 (25)	1.931	0.2638	0.00		12:47:55 PM
5	L16080317-04	0.140	0.0177	0.00		12:48:12 PM
6	L16080330-05	0.204	0.0264	0.00		12:49:07 PM
7	L16080330-08	0.071	0.0082	0.00		12:49:25 PM
8	L16080330-11	0.110	0.0135	0.00		12:50:18 PM
9	L16080330-13	0.017	0.0007	0.00		12:50:36 PM
10	L16080330-15	-0.032	-0.0060	0.00	INV,><,LL	12:51:30 PM
ST-3	1CCV (1 mg/L)	0.950	0.1290	94.97		12:51:48 PM
ST-2	2CCB (0 mg/L)	-0.010	-0.0029	0.00	INV,><,LL	12:52:43 PM
11	WG579706-03	0.231	0.0302	0.00		12:53:00 PM
12	WG579706-04 DUP	0.301	0.0399	0.00		12:53:54 PM
13	WG579706-05 MS	1.261	0.1718	0.00		12:54:13 PM
ST-3	1CCV (1 mg/L)	0.957	0.1300	95.70		12:55:07 PM
ST-2	2CCB (0 mg/L)	-0.020	-0.0043	0.00	INV,><,LL	12:55:25 PM

Report Date :08/10/2016 Run Date :8/10/2016 Operator : SMARTCHEM1 Plan # :20160810004

Plan Description : PHOS-B1-TB/08/10/2016

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20160810004 Description : [PHOS-B1-TB/08/10/2016] Unit

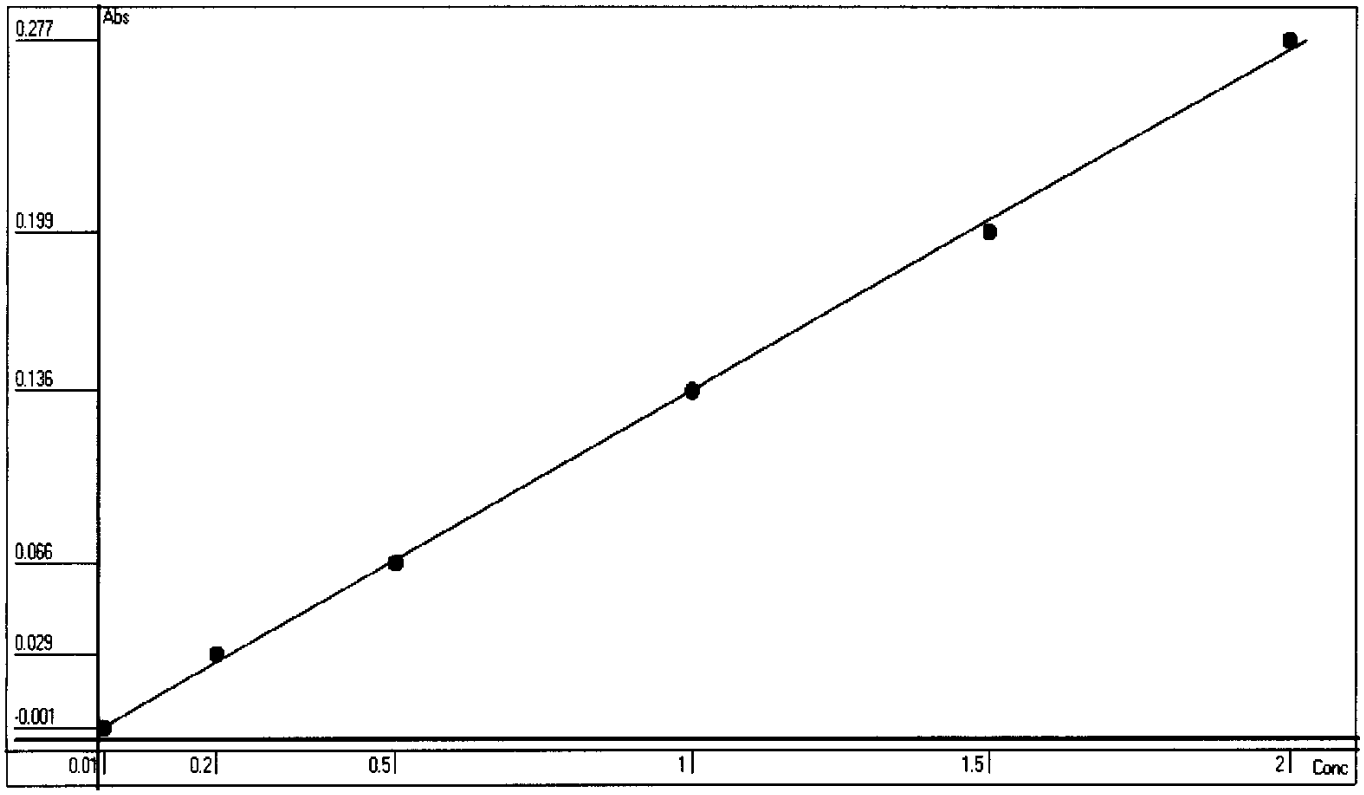

Point	OD	Conc	Recalc Conc	% Error
1	-0.0005	0.01	0.0074	-26.00
2	0.0291	0.2	0.2228	11.40
3	0.0659	0.5	0.4907	-1.86
4	0.1356	1	0.9982	-0.18
5	0.1993	1.5	1.4619	-2.54
6	0.2770	2	2.0275	1.38

Conc= +7.2799*Abso +0.011 R^2=0.9991

RBL
0.089
0

Report Date 8/10/2016 Run Date 8/10/2016

2.3.4 Sulfide Data

2.3.4.1 Summary Data

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-05	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW05-080316	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG579275	**Analyst:**	EPT	**Run Date:**	08/05/2016 16:05
Collect Date:	08/03/2016 07:55	**Dilution:**	1	**File ID:**	ET.1608051605-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.39	J	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-08	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW16-080316	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG579275	**Analyst:**	EPT	**Run Date:**	08/05/2016 16:05
Collect Date:	08/03/2016 09:10	**Dilution:**	1	**File ID:**	ET.1608051605-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	LHSMW19-080316	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG579275	**Analyst:**	EPT	**Run Date:**	08/05/2016 16:05
Collect Date:	08/03/2016 10:20	**Dilution:**	1	**File ID:**	ET.1608051605-08
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	0.519	J	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-13	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW11-080316	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG579275	**Analyst:**	EPT	**Run Date:**	08/05/2016 16:05
Collect Date:	08/03/2016 11:25	**Dilution:**	1	**File ID:**	ET.1608051605-09
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-15	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	46WW09-080316	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG579275	**Analyst:**	EPT	**Run Date:**	08/05/2016 16:05
Collect Date:	08/03/2016 13:45	**Dilution:**	1	**File ID:**	ET.1608051605-10
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.4.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 05-AUG-2016
Analyst: EPT
Analyst: NA
Method: SULFIDE
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG579275

Calibration/Linearity	8/5/16
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
10-AUG-2016

Ethan Tido

Secondary Reviewer:
11-AUG-2016

Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-11-2016 14:14:42

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F-

AAB#: WG579275

Login Number: L16080330

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW05-080316	05	08/03/16					08/05/2016	2.3	7		08/05/16	2.3	7	
46WW16-080316	08	08/03/16					08/05/2016	2.3	7		08/05/16	2.3	7	
LHSMW19-080316	11	08/03/16					08/05/2016	2.2	7		08/05/16	2.2	7	
46WW11-080316	13	08/03/16					08/05/2016	2.2	7		08/05/16	2.2	7	
46WW09-080316	15	08/03/16					08/05/2016	2.1	7		08/05/16	2.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4893609
Report generated 08/11/2016 13:32

METHOD BLANK SUMMARY

Login Number: L16080330
Blank File ID: ET.1608051605-01
Prep Date: 08/05/16 16:05
Analyzed Date: 08/05/16 16:05
Analyst: EPT

Work Group: WG579275
Blank Sample ID: WG579275-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG579275-02	ET.1608051605-02	08/05/16 16:05	
LCS2	WG579275-03	ET.1608051605-03	08/05/16 16:05	
46WW05-080316	L16080330-05	ET.1608051605-06	08/05/16 16:05	
46WW16-080316	L16080330-08	ET.1608051605-07	08/05/16 16:05	
LHSMW19-080316	L16080330-11	ET.1608051605-08	08/05/16 16:05	
46WW11-080316	L16080330-13	ET.1608051605-09	08/05/16 16:05	
46WW09-080316	L16080330-15	ET.1608051605-10	08/05/16 16:05	

Report Name: BLANK_SUMMARY
PDF File ID: 4893610
Report generated 08/11/2016 13:32

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080330 Prep Date: 08/05/16 16:05 Sample ID: WG579275-01
Instrument ID: BURET Run Date: 08/05/16 16:05 Prep Method: SM4500-S-(-2)-F
File ID: ET.1608051605-01 Analyst: EPT Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG579275 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4893611
11-AUG-2016 13:32

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080330 Analyst: EPT Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG579275 Units: mg/L
QC Key: DOD4 Lot #: STD77485

Sample ID: WG579275-02 LCS File ID: ET.1608051605-02 Run Date: 08/05/2016 16:05
Sample ID: WG579275-03 LCS2 File ID: ET.1608051605-03 Run Date: 08/05/2016 16:05

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	20.9	21.3	102	20.9	21.3	102	0.00	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4893612
Report generated: 08/11/2016 13:32

2.3.4.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG579275

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: _____

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: Std 77485

Iodine standardization (0.025N) COA: 18575
mL 0.025N titrant: 9.9
Volume I: 10.0 mL
Normality I: 0.0248

(0.1 N I) COA: 18745
mL 0.025 N titrant: 8.0
Volume I: 2.0 mL
Normality I: 0.100

Stock standardization (in duplicate) 5.0 mL stock
mL I 1) 10.0 2) 10.0
N I 1) 0.100 2) 0.100
mL 0.025 titrant 1) 22.5 2) 22.5
LCS daily dilution: $\frac{(3)(1392.8)}{200}$ = 20.892 mg/L

1392.8 = stock conc (mg/L)

Titrant: T- 1775-04-02

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	0.025N Sodium Thiosulfate (mL)
BLANK	200	15.0	0.0248	14.8
LCS (mL)	200	15.0	0.0248	4.2
LCSDUP (mL)	200	15.0	0.0248	4.2
08-0127-02	540	15.0	0.0248	9.3
08-0317-04	500	15.0	0.0248	14.6
08-0330-05	410	15.0	0.0248	13.4
-08	510	15.0	0.0248	15.0
-11	480	15.0	0.0248	14.2
-13	570	15.0	0.0248	14.4
-15	500	15.0	0.0248	14.4

Analyst: Esther Tiller Date/Time: 8/5/16 1605

DCN#120139

Microbac Laboratories Inc.
TITRAMETRIC REPORT

Workgroup (AAB#): WG579275
Product: EPA 376.1\9034
Analyte: Sulfide

Analyst: EPT
Run Date: 08/05/2016 16:05

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG579275-01	200.0	15	.0248	14.8	.0251	1	0.0416	0.04160	mg/L
WG579275-02	200.0	15	.0248	4.2	.0251	1	21.3	21.33	mg/L
WG579275-03	200.0	15	.0248	4.2	.0251	1	21.3	21.33	mg/L
L16080127-02	540.0	15	.0248	9.3	.0251	1	4.11	4.106	mg/L
L16080317-04	500.0	15	.0248	14.6	.0251	1	0.177	ND	mg/L
L16080330-05	410.0	15	.0248	13.4	.0251	1	1.39	1.392 F	mg/L
L16080330-08	510.0	15	.0248	15	.0251	1	-0.141	ND	mg/L
L16080330-11	480.0	15	.0248	14.2	.0251	1	0.519	0.5193 F	mg/L
L16080330-13	570.0	15	.0248	14.4	.0251	1	0.296	ND	mg/L
L16080330-15	500.0	15	.0248	14.4	.0251	1	0.338	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 08/10/2016 10:54

[redacted]

2.3.5 Total Organic Carbon Data

2.3.5.1 Summary Data

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16080330-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW05-080316	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG579467	**Analyst:**	EPT	**Run Date:**	08/09/2016 13:04
Collect Date:	08/03/2016 07:55	**Dilution:**	10	**File ID:**	TC08082016.047
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	33.9		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16080330-08	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW16-080316	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG579467	**Analyst:**	EPT	**Run Date:**	08/09/2016 11:39
Collect Date:	08/03/2016 09:10	**Dilution:**	10	**File ID:**	TC08082016.046
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	47.2		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16080330-11	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	LHSMW19-080316	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG579534	**Analyst:**	DCM	**Run Date:**	08/09/2016 16:10
Collect Date:	08/03/2016 10:20	**Dilution:**	20	**File ID:**	TC08092016.009
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	90.0		40.0	20.0	10.0

Certificate of Analysis

Microbac

Lab Report #: L16080330
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16080330-13	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW11-080316	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG579534	**Analyst:**	DCM	**Run Date:**	08/10/2016 07:50
Collect Date:	08/03/2016 11:25	**Dilution:**	10	**File ID:**	TC08092016.034
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	39.3		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16080330-15	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	46WW09-080316	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG579534	**Analyst:**	DCM	**Run Date:**	08/10/2016 08:03
Collect Date:	08/03/2016 13:45	**Dilution:**	10	**File ID:**	TC08092016.035
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	31.2		20.0	10.0	5.00

2.3.5.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 08-AUG-2016
Analyst: EPT
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG579467

Calibration/Linearity	10/31/15
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
10-AUG-2016
Ethan Tido

Secondary Reviewer:
10-AUG-2016
Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-10-2016 10:33:45

Microbac Laboratories Inc.

Data Checklist

Date: 09-AUG-2016
Analyst: DCM
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG579534

Calibration/Linearity	10-31-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
10-AUG-2016

Secondary Reviewer:
10-AUG-2016

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-10-2016 10:14:55

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG579467

Login Number: L16080330

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
46WW05-080316	05	08/03/16					08/09/2016	6.2	28		08/09/16	6.2	28	
46WW16-080316	08	08/03/16					08/09/2016	6.1	28		08/09/16	6.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4891111
Report generated 08/10/2016 10:33

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG579534

Login Number: L16080330

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
LHSMW19-080316	11	08/03/16					08/09/2016	6.2	28		08/09/16	6.2	28	
46WW11-080316	13	08/03/16					08/10/2016	6.9	28		08/10/16	6.9	28	
46WW09-080316	15	08/03/16					08/10/2016	6.8	28		08/10/16	6.8	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4891111
Report generated 08/10/2016 10:33

METHOD BLANK SUMMARY

Login Number: L16080330
Blank File ID: TC08082016.004
Prep Date: 08/08/16 18:03
Analyzed Date: 08/08/16 18:03
Analyst: EPT

Work Group: WG579467
Blank Sample ID: WG579467-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG579467-02	TC08082016.005	08/08/16 18:15	01
LCS2	WG579467-03	TC08082016.006	08/08/16 18:27	01
DUP	WG579467-11	TC08082016.043	08/09/16 10:41	DL01
46WW16-080316	L16080330-08	TC08082016.046	08/09/16 11:39	DL01
46WW05-080316	L16080330-05	TC08082016.047	08/09/16 13:04	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4891112
Report generated 08/10/2016 10:33

METHOD BLANK SUMMARY

Login Number: L16080330
Blank File ID: TC08092016.004
Prep Date: 08/09/16 14:45
Analyzed Date: 08/09/16 14:45
Analyst: DCM

Work Group: WG579534
Blank Sample ID: WG579534-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG579534-02	TC08092016.005	08/09/16 14:56	01
LCS2	WG579534-03	TC08092016.006	08/09/16 15:08	01
LHSMW19-080316	L16080330-11	TC08092016.009	08/09/16 16:10	DL01
DUP	WG579534-05	TC08092016.022	08/09/16 18:50	01
46WW11-080316	L16080330-13	TC08092016.034	08/10/16 07:50	DL01
46WW09-080316	L16080330-15	TC08092016.035	08/10/16 08:03	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4891112
Report generated 08/10/2016 10:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080330 Prep Date: 08/08/16 18:03 Sample ID: WG579467-01
Instrument ID: TOC-VWP Run Date: 08/08/16 18:03 Prep Method: 415.1
File ID: TC08082016.004 Analyst: EPT Method: 415.1
Workgroup (AAB#): WG579467 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-30-OCT-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4891113
10-AUG-2016 10:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16080330 Prep Date: 08/09/16 14:45 Sample ID: WG579534-01
Instrument ID: TOC-VWP Run Date: 08/09/16 14:45 Prep Method: 415.1
File ID: TC08092016.004 Analyst: DCM Method: 415.1
Workgroup (AAB#): WG579534 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-30-OCT-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4891113
10-AUG-2016 10:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080330 Analyst: EPT Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG579467 Units: mg/L
QC Key: DOD4 Lot #: STD74954

Sample ID: WG579467-02 LCS File ID: TC08082016.005 Run Date: 08/08/2016 18:15
Sample ID: WG579467-03 LCS2 File ID: TC08082016.006 Run Date: 08/08/2016 18:27

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	27.5	110	25.0	27.6	110	0.617	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4891114
Report generated: 08/10/2016 10:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16080330 Analyst: DCM Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG579534 Units: mg/L
QC Key: DOD4 Lot #: STD74954

Sample ID: WG579534-02 LCS File ID: TC08092016.005 Run Date: 08/09/2016 14:56
Sample ID: WG579534-03 LCS2 File ID: TC08092016.006 Run Date: 08/09/2016 15:08

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	26.7	107	25.0	27.2	109	1.60	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4891114
Report generated: 08/10/2016 10:33

2.3.5.3 Raw Data

Curve

wg545145

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L

See Below

MS (TOC): _____

Calibration Curve Date: _____

Reagent: RGT 34567 / RGT 34459

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 18

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

- ☑ drain reservoir filled
- ☑ ASI water bottle full
- ☑ dilution water bottle full
- ☑ 3rd bottle full
- ☑ sufficient gas
- ☑ sufficient persulfate
- ☑ sufficient acid
- ☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC Curve		27	Std 72153		52	See SOP	
3	TC ICV		28			53	for point	
4	TIC ICV		29	TIC Curve		54	preparation	
5			30	Std 72165		55		
6			31			56		
7			32			57		
8			33	TOC (TC)		58		
9			34	ICV		59		
10			35	Std 72270		60	5/200 (1000) = 25	
11			36			61		
12			37	TIC ICV		62		
13	All points		38	Std 72654		63		
14	analyzed		39			64		
15	in duplicate		40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: David Merkle Date/Time: 10/31/15

DCN#114406

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID:
Cal. Curve: TCCURVE-10-30-2015.2015_10_30_16_06_37.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	4.764	500uL	1	*******		10/30/2015 4:10:07 PM
2	3.607	500uL	1	*******		10/30/2015 4:13:33 PM

Acid Add. 0.000%
Mean Area 4.186

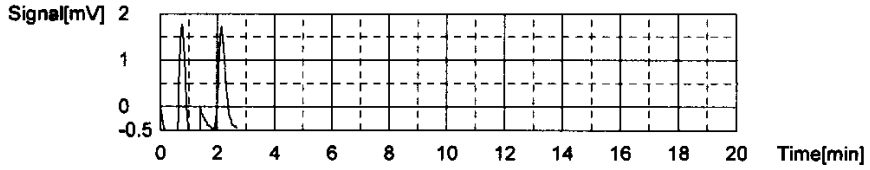

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	46.19	500uL	1	*******		10/30/2015 4:19:03 PM
2	46.28	500uL	1	*******		10/30/2015 4:22:56 PM

Acid Add. 0.000%
Mean Area 46.23

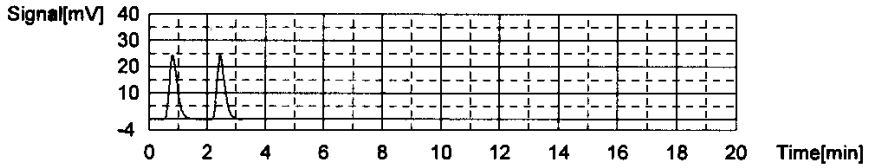

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	194.3	500uL	1	*******		10/30/2015 4:28:42 PM
2	193.1	500uL	1	*******		10/30/2015 4:32:47 PM

Acid Add. 0.000%
Mean Area 193.7

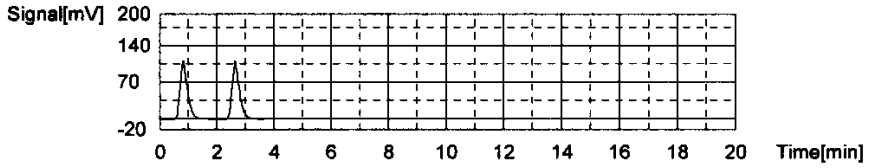

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	390.8	500uL	1	*******		10/30/2015 4:38:42 PM
2	391.3	500uL	1	*******		10/30/2015 4:42:54 PM

Acid Add. 0.000%
Mean Area 391.1

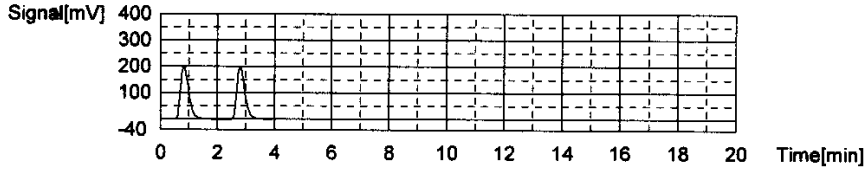

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	989.0	500uL	1	*******		10/30/2015 4:49:06 PM
2	994.6	500uL	1	*******		10/30/2015 4:53:33 PM

Acid Add. 0.000%
Mean Area 991.8

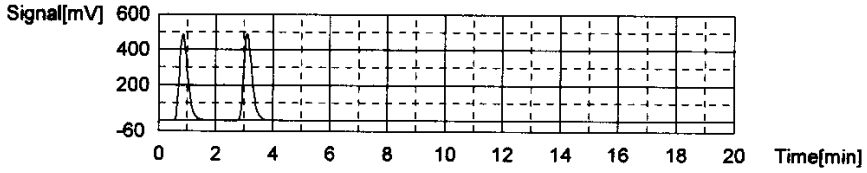

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1946	500uL	1	*******		10/30/2015 5:00:24 PM
2	1948	500uL	1	*******		10/30/2015 5:05:23 PM

Acid Add. 0.000%
Mean Area 1947

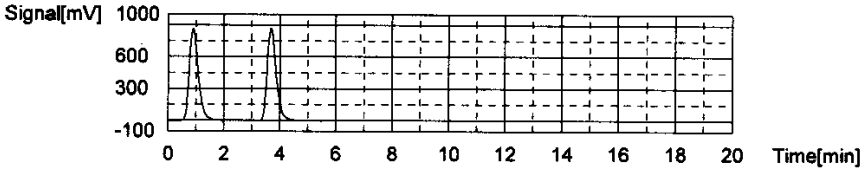

Slope: 38.95
Intercept 4.952
r^2 0.999910 ✓
Zero Shift No

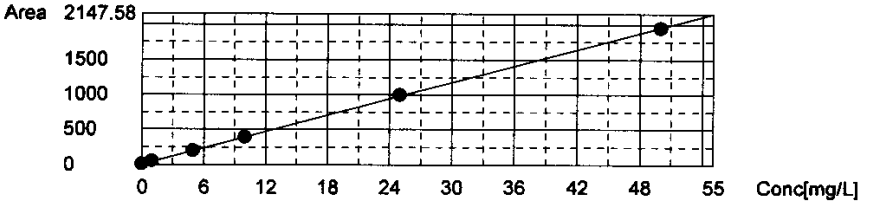

Sample

Sample Name: TC ICV
Sample ID:
Origin: TCCURVE-10-30-2015.2015_10_30_16_06_37.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:25.93mg/L

= 103.7%

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1020	26.06mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	10/31/2015 9:56:57 AM
2	1010	25.80mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	10/31/2015 10:02:17 AM

Mean Area 1015
Mean Conc. 25.93mg/L

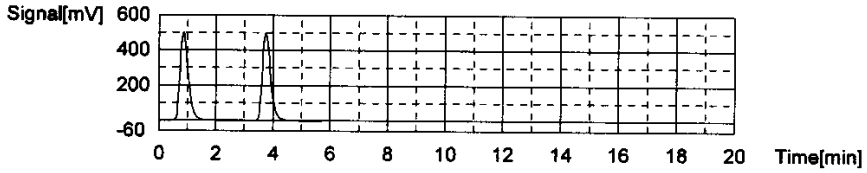

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-10-30-2015.2015_10_31_11_55_05.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	2.732	500uL	1	*******		10/31/2015 12:00:21 PM
2	5.011	500uL	1	*******		10/31/2015 12:04:52 PM

Acid Add. 10.00%
Mean Area 3.872

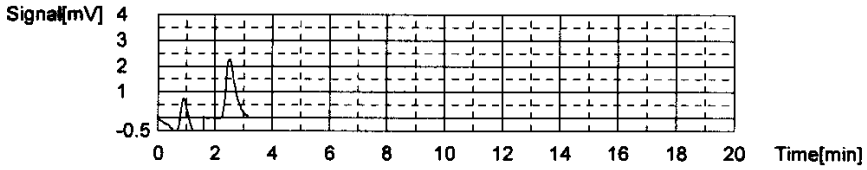

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	35.96	500uL	1	*******		10/31/2015 12:12:47 PM
2	37.13	500uL	1	*******		10/31/2015 12:17:43 PM

Acid Add. 10.00%
Mean Area 36.55

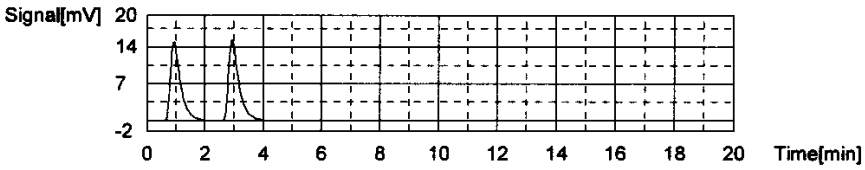

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	173.6	500uL	1	*******		10/31/2015 12:26:14 PM
2	175.6	500uL	1	*******		10/31/2015 12:31:38 PM

Acid Add. 10.00%
Mean Area 174.6

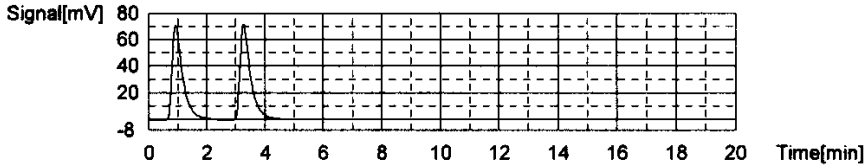

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	344.8	500uL	1	*******		10/31/2015 12:40:18 PM
2	345.1	500uL	1	*******		10/31/2015 12:45:49 PM

Acid Add. 10.00%
Mean Area 345.0

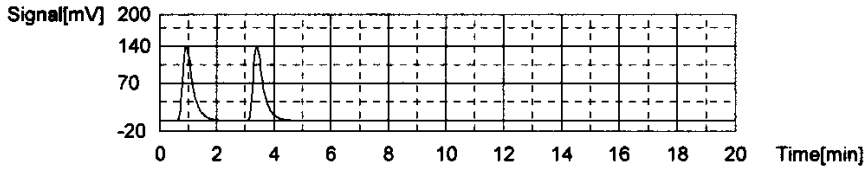

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	835.5	500uL	1	*******		10/31/2015 12:54:43 PM
2	845.9	500uL	1	*******		10/31/2015 1:00:42 PM

Acid Add. 10.00%
Mean Area 840.7

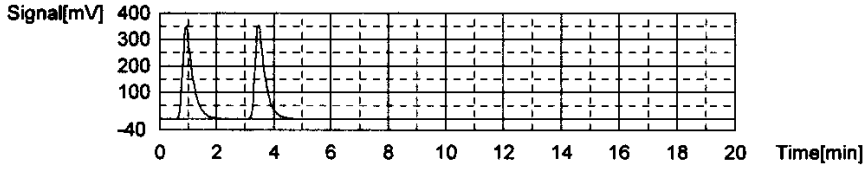

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1676	500uL	1	*******		10/31/2015 1:09:51 PM
2	1677	500uL	1	*******		10/31/2015 1:15:54 PM

Acid Add. 10.00%
Mean Area 1677

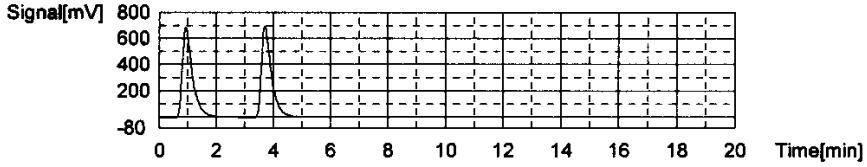

Slope: 33.42
Intercept 5.927
r^2 0.999982
Zero Shift No

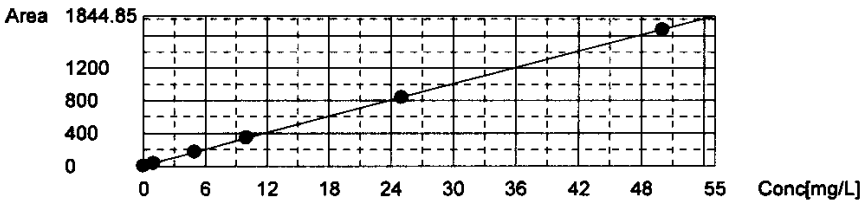

Sample

Sample Name: TIC ICV
Sample ID: Untitled
Origin: TICCURVE-10-30-2015.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:25.37mg/L

= 101.5%

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	854.5	25.39mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	10/31/2015 1:25:27 PM
2	853.1	25.35mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	10/31/2015 1:31:33 PM

Mean Area 853.8
Mean Conc. 25.37mg/L

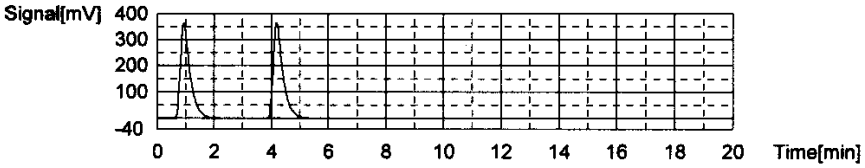

WORKGROUP: WG579534

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 75879 (5/200)(1000) = 25mg/L

LCS (TOC): Std 74954 (5/200)(1000) = 25mg/L

CCV (TIC): Std 75410 (5/200)(1000) = 25mg/L

MS (TOC): Std 74954 0.4(1000)/40 = 10

Calibration Curve Date: 10/31/15

Reagent: RGT 37358, RGT 36105

☐ SM5310-C : Matrix 2 WG_____

☑ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 19

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full
☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate
☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TIC		26	CCV		51		
2	TOC/TIC		27	CCB		52		
3	CCV		28	08-437-01		53		
4	Blk diss		29	02		54		
5	LCS		30	CCV		55		
6	LCSDUP		31	CCB		56		
7	08-001-05		32	CCV		57		
8	06	dm 8/9/16	33	CCB		58		
9	08-330-11	~~1/5~~ 1/20	34	08-330-13	1/10	59		
10	13	1/3	35	15	1/10	60		
11	15	1/2	36	08-353-07	1/3	61		
12	08-353-01	1/2	37	08	1/3	62		
13	02	1/2	38	CCV		63		
14	CCV		39	CCB		64		
15	CCB		40			65		
16	08-353-03	1/2	41			66		
17	04		42			67		
18	05		43			68		
19	06		44			69		
20	07		45			70		
21	08		46			71		
22	DUP 08-437-01		47			72		
23	MS 08-437-01		48			73		
24	08-414-01		49			74		
25	02		50			75		

Analyst: David Merchle Date/Time: 8/9/16 1408

DCN#120184

C:\TOC3201\Data\08-09-2016-DCM-TOC.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	TOC:4.178mg/L TC:28.81mg/L IC:24.63mg/L	Complete	8/9/2016 2:08:14 PM	1
2	TOC	TOC/TIC	TOC:27.82mg/L TC:35.64mg/L IC:7.823mg/L	Complete	8/9/2016 2:20:42 PM	2
3	TOC	CCV	!!Error!! TOC:26.25mg/L TC:26.24mg/L IC:-0.00738mg/	Complete	8/9/2016 2:40:04 PM	3
4	TOC	WG579534-01 BLK	TOC:0.04046mg/L TC:0.1212mg/L IC:0.08070mg/L	Complete	8/9/2016 2:48:56 PM	0
5	TOC	WG579534-02 LCS	!!Error!! TOC:26.73mg/L TC:26.70mg/L IC:-0.02420mg/	Complete	8/9/2016 3:00:58 PM	5
6	TOC	WG579534-03 LCSDUP	!!Error!! TOC:27.16mg/L TC:27.14mg/L IC:-0.02162mg/	Complete	8/9/2016 3:13:02 PM	6
7	TOC	L16080001-05	TOC:1.033mg/L TC:1.045mg/L IC:0.01215mg/L	Complete	8/9/2016 3:24:22 PM	7
8	TOC	L16080001-06	TOC:0.9461mg/L TC:0.9610mg/L IC:0.01488mg/L	Complete	8/9/2016 3:35:44 PM	8
9	TOC	L16080330-11 (20)	TOC:4.499mg/L TC:16.42mg/L IC:11.92mg/L	Complete	8/9/2016 4:15:06 PM	9
10	TOC		!!Error!! TOC:-2.259mg/L TC:62.73mg/L IC:64.98mg/L	Complete	8/9/2016 4:28:38 PM	10
11	TOC		!!Error!! TOC:-7.879mg/L TC:73.92mg/L IC:81.80mg/L	Complete	8/9/2016 4:42:23 PM	11
12	TOC	L16080353-01 (2)	TOC:6.452mg/L TC:38.26mg/L IC:31.81mg/L	Complete	8/9/2016 4:55:11 PM	12
13	TOC	L16080353-02 (2)	TOC:5.808mg/L TC:34.84mg/L IC:29.04mg/L	Complete	8/9/2016 5:08:02 PM	13
14	TOC	CCV	TOC:26.51mg/L TC:26.60mg/L IC:0.09264mg/L	Complete	8/9/2016 5:20:50 PM	14
15	TOC	CCB	TOC:0.02580mg/L TC:0.1204mg/L IC:0.09464mg/L	Complete	8/9/2016 5:29:44 PM	0
16	TOC	L16080353-03 (2)	TOC:7.542mg/L TC:20.92mg/L IC:13.38mg/L	Complete	8/9/2016 5:42:10 PM	16
17	TOC	L16080353-04	TOC:4.820mg/L TC:17.05mg/L IC:12.23mg/L	Complete	8/9/2016 5:54:49 PM	17
18	TOC	L16080353-05	TOC:0.9243mg/L TC:1.075mg/L IC:0.1512mg/L	Complete	8/9/2016 6:06:16 PM	18
19	TOC	L16080353-06	TOC:0.8983mg/L TC:1.002mg/L IC:0.1035mg/L	Complete	8/9/2016 6:17:38 PM	19
20	TOC		TOC:6.907mg/L TC:57.77mg/L IC:50.86mg/L	Complete	8/9/2016 6:30:31 PM	20
21	TOC		TOC:9.628mg/L TC:53.07mg/L IC:43.44mg/L	Complete	8/9/2016 6:43:43 PM	21
22	TOC	WG579534-05 DUP	TOC:0.6532mg/L TC:2.908mg/L IC:2.254mg/L	Complete	8/9/2016 6:55:21 PM	22
23	TOC	WG579534-06 MS	TOC:16.85mg/L TC:18.19mg/L IC:1.338mg/L	Complete	8/9/2016 7:07:22 PM	23
24	TOC	L16080414-01	TOC:12.01mg/L TC:20.17mg/L IC:8.164mg/L	Complete	8/9/2016 7:20:36 PM	24
25	TOC	L16080414-02	TOC:13.25mg/L TC:22.53mg/L IC:9.274mg/L	Complete	8/9/2016 7:33:28 PM	25
26	TOC	CCV	TOC:26.98mg/L TC:27.04mg/L IC:0.05251mg/L	Complete	8/9/2016 7:45:36 PM	26
27	TOC	CCB	TOC:0.03579mg/L TC:0.1252mg/L IC:0.08940mg/L	Complete	8/9/2016 7:54:29 PM	0
28	TOC	L16080437-01	TOC:0.5760mg/L TC:2.001mg/L IC:1.425mg/L	Complete	8/9/2016 8:06:01 PM	28
29	TOC	L16080437-02	TOC:0.4437mg/L TC:0.9800mg/L IC:0.5362mg/L	Complete	8/9/2016 8:17:26 PM	29
30	TOC	CCV	TOC:26.88mg/L TC:26.91mg/L IC:0.02756mg/L	Complete	8/9/2016 8:29:31 PM	30
31	TOC	CCB	TOC:0.03744mg/L TC:0.1242mg/L IC:0.08680mg/L	Complete	8/9/2016 8:38:27 PM	0
32	TOC	CCV	TOC:27.70mg/L TC:27.78mg/L IC:0.08674mg/L	Complete	8/10/2016 7:34:27 AM	32
33	TOC	CCB	TOC:0.03393mg/L TC:0.1381mg/L IC:0.1042mg/L	Complete	8/10/2016 7:43:32 AM	0
34	TOC	L16080330-13 (10)	TOC:3.931mg/L TC:18.55mg/L IC:14.62mg/L	Complete	8/10/2016 7:55:53 AM	34
35	TOC	L16080330-15 (10)	TOC:3.115mg/L TC:19.18mg/L IC:16.07mg/L	Complete	8/10/2016 8:08:32 AM	35
36	TOC	L16080353-07 (3)	TOC:4.724mg/L TC:28.04mg/L IC:23.31mg/L	Complete	8/10/2016 8:21:03 AM	36
37	TOC	L16080353-08 (3)	TOC:3.816mg/L TC:25.08mg/L IC:21.27mg/L	Complete	8/10/2016 8:33:29 AM	37
38	TOC	CCV	TOC:26.88mg/L TC:27.04mg/L IC:0.1557mg/L	Complete	8/10/2016 8:45:41 AM	38
39	TOC	CCB	TOC:0.02238mg/L TC:0.1350mg/L IC:0.1126mg/L	Complete	8/10/2016 8:54:40 AM	0

8/10/2016 9:07:19 AM

1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.178mg/L TC:28.81mg/L IC:24.63mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1127	28.81mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 2:03:09 PM

Mean Area 1127
Mean Conc. 28.81mg/L

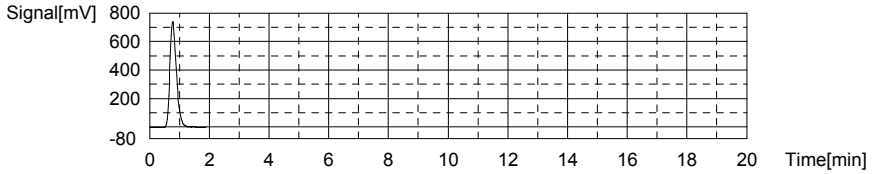

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	829.2	24.63mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 2:08:14 PM

Mean Area 829.2
Mean Conc. 24.63mg/L

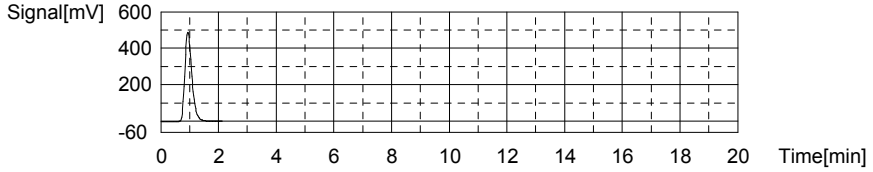

Sample

Sample Name: TOC/TIC
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.82mg/L TC:35.64mg/L IC:7.823mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1393	35.64mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 2:15:59 PM

Mean Area 1393
Mean Conc. 35.64mg/L

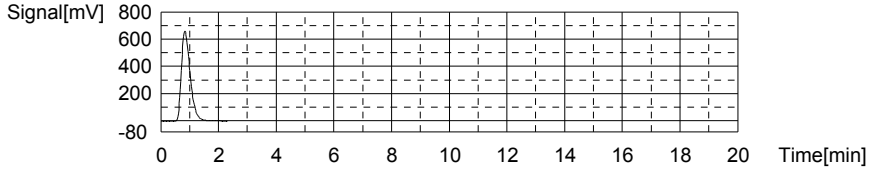

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	267.4	7.823mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 2:20:42 PM

Mean Area 267.4
Mean Conc. 7.823mg/L

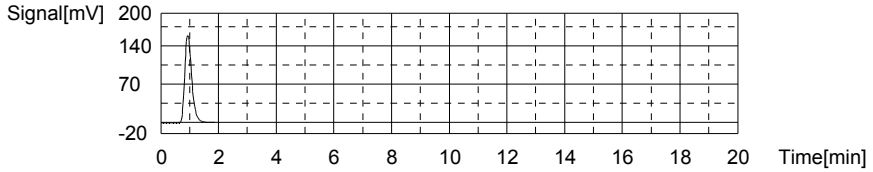

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:26.25mg/L TC:26.24mg/L IC:-0.00738mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1027	26.24mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 2:35:51 PM

Mean Area 1027
Mean Conc. 26.24mg/L

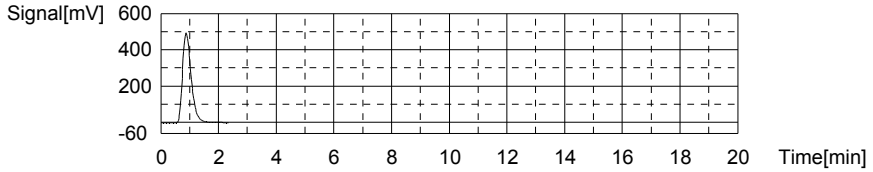

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.680	-0.00738mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 2:40:04 PM

Mean Area 5.680
Mean Conc. -0.00738mg/L

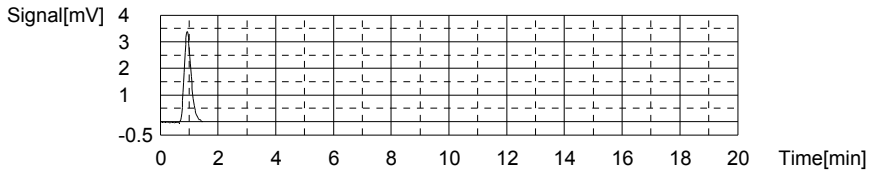

Sample

Sample Name: WG579534-01 BLK
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.04046mg/L TC:0.1212mg/L IC:0.08070mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.671	0.1212mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 2:45:03 PM

Mean Area 9.671
Mean Conc. 0.1212mg/L

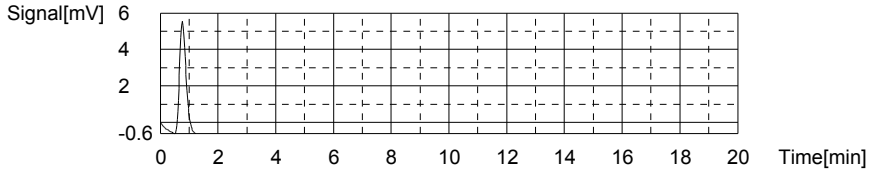

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.624	0.08070mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 2:48:56 PM

Mean Area 8.624
Mean Conc. 0.08070mg/L

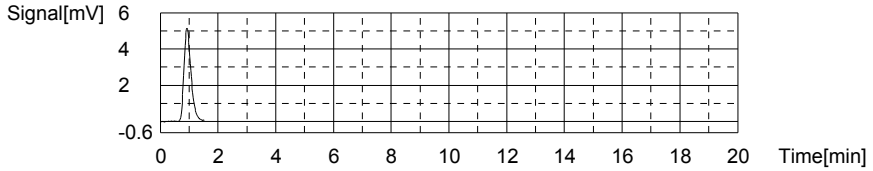

Sample

Sample Name: WG579534-02 LCS
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:26.73mg/L TC:26.70mg/L IC:-0.02420mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1045	26.70mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 2:56:42 PM

Mean Area 1045
Mean Conc. 26.70mg/L

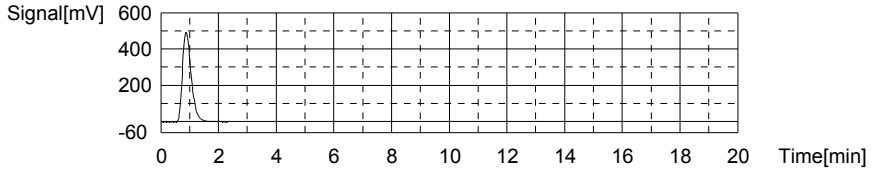

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.118	-0.02420mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 3:00:58 PM

Mean Area 5.118
Mean Conc. -0.02420mg/L

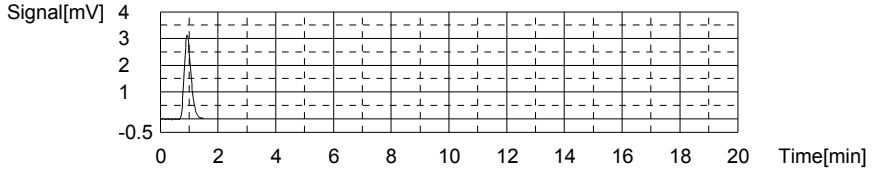

Sample

Sample Name: WG579534-03 LCSDUP
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:27.16mg/L TC:27.14mg/L IC:-0.02162mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1062	27.14mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 3:08:47 PM

Mean Area 1062
Mean Conc. 27.14mg/L

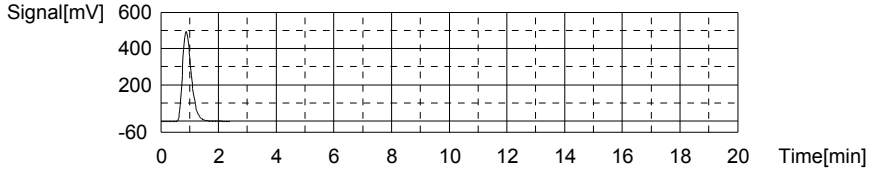

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.204	-0.02162mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 3:13:02 PM

Mean Area 5.204
Mean Conc. -0.02162mg/L

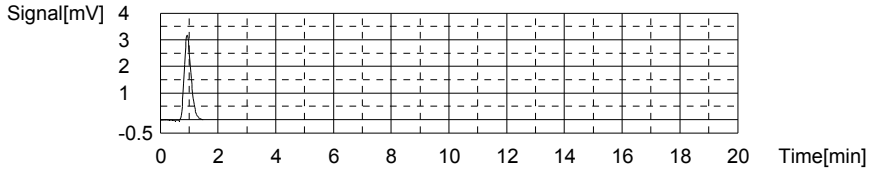

Sample

Sample Name: L16080001-05
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.033mg/L TC:1.045mg/L IC:0.01215mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	45.67	1.045mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 3:20:07 PM

Mean Area 45.67
Mean Conc. 1.045mg/L

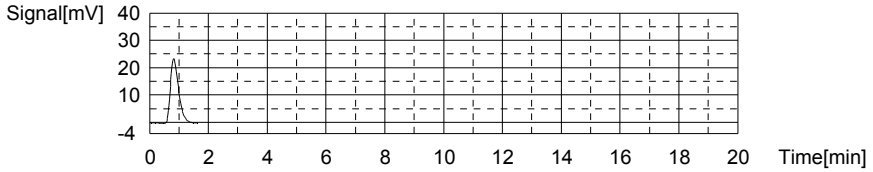

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.333	0.01215mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 3:24:22 PM

Mean Area 6.333
Mean Conc. 0.01215mg/L

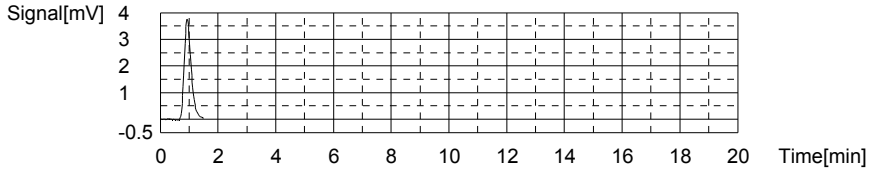

Sample

Sample Name: L16080001-06
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9461mg/L TC:0.9610mg/L IC:0.01488mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	42.38	0.9610mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 3:31:27 PM

Mean Area 42.38
Mean Conc. 0.9610mg/L

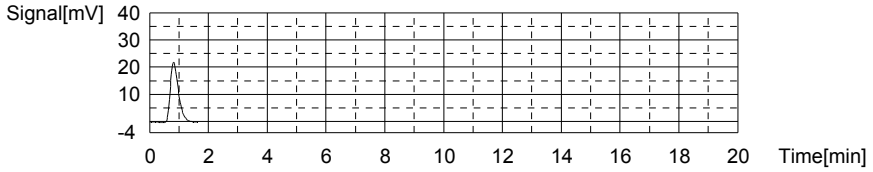

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.424	0.01488mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 3:35:44 PM

Mean Area 6.424
Mean Conc. 0.01488mg/L

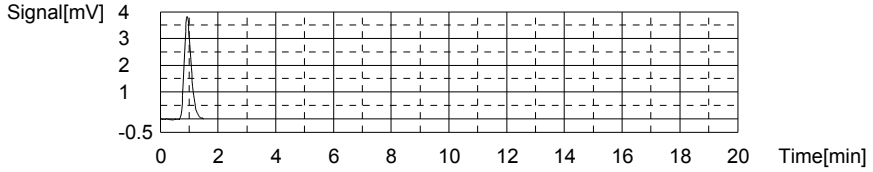

Sample

Sample Name: L16080330-11 (20)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.499mg/L TC:16.42mg/L IC:11.92mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	644.4	16.42mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 4:10:14 PM

Mean Area 644.4
Mean Conc. 16.42mg/L

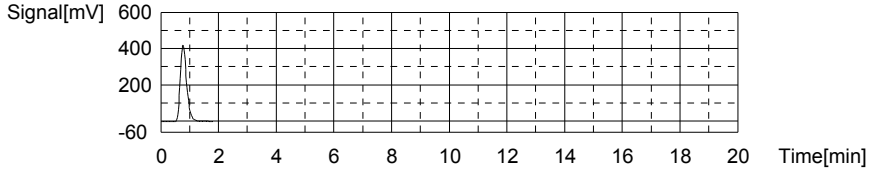

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	404.3	11.92mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 4:15:06 PM

Mean Area 404.3
Mean Conc. 11.92mg/L

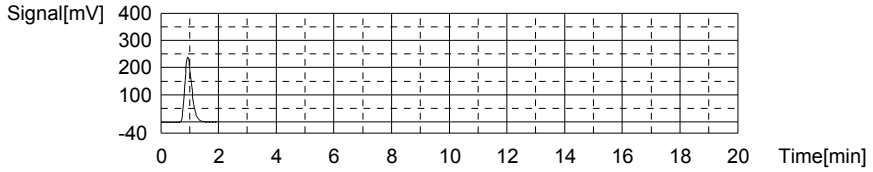

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-2.259mg/L TC:62.73mg/L IC:64.98mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2448	62.73mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 4:23:09 PM

Mean Area 2448
Mean Conc. 62.73mg/L

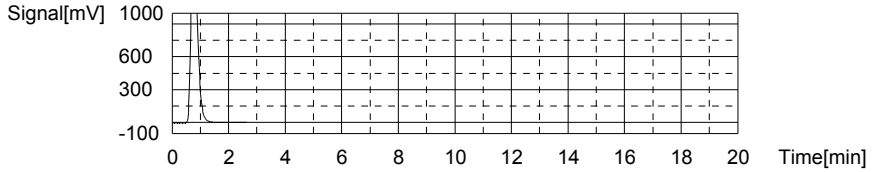

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2178	64.98mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 4:28:38 PM

Mean Area 2178
Mean Conc. 64.98mg/L

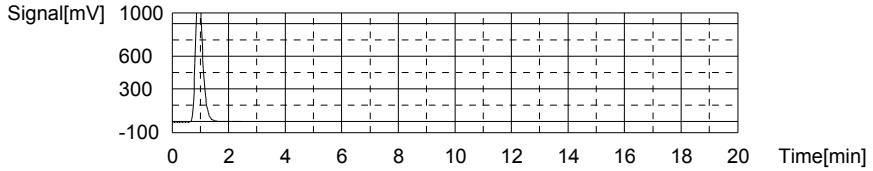

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-7.879mg/L TC:73.92mg/L IC:81.80mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2884	73.92mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 4:36:48 PM

Mean Area 2884
Mean Conc. 73.92mg/L

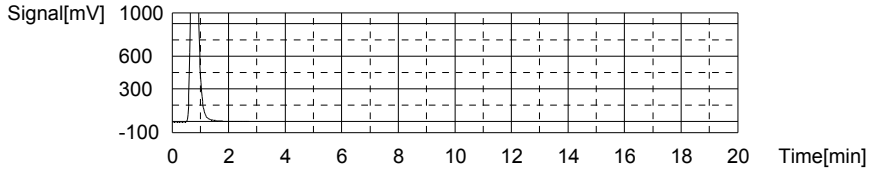

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2740	81.80mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 4:42:23 PM

Mean Area 2740
Mean Conc. 81.80mg/L

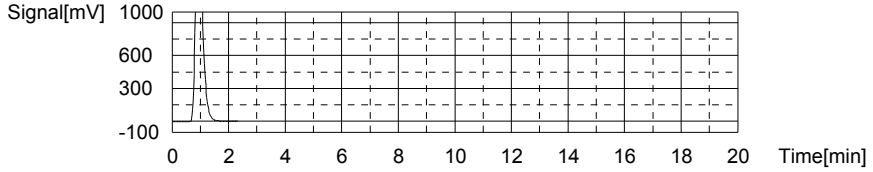

Sample

Sample Name: L16080353-01 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.452mg/L TC:38.26mg/L IC:31.81mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1495	38.26mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 4:49:48 PM

Mean Area 1495
Mean Conc. 38.26mg/L

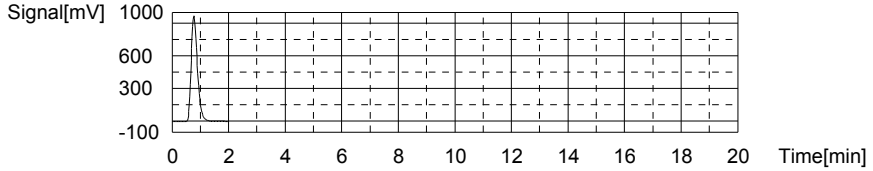

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1069	31.81mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 4:55:11 PM

Mean Area 1069
Mean Conc. 31.81mg/L

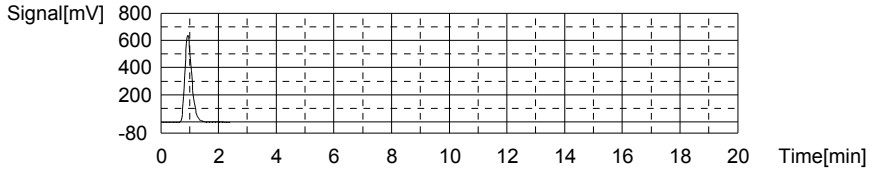

Sample

Sample Name: L16080353-02 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.808mg/L TC:34.84mg/L IC:29.04mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1362	34.84mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 5:02:48 PM

Mean Area 1362
Mean Conc. 34.84mg/L

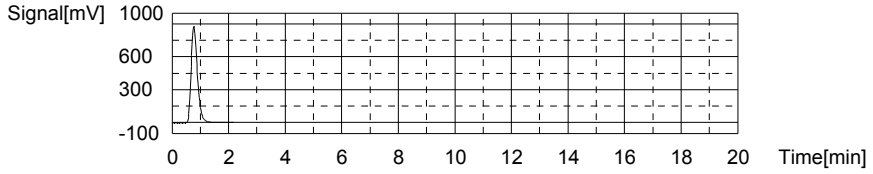

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	976.4	29.04mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 5:08:02 PM

Mean Area 976.4
Mean Conc. 29.04mg/L

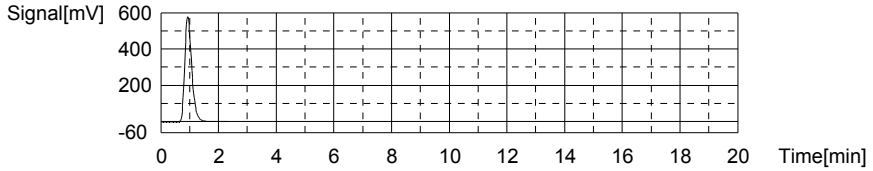

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.51mg/L TC:26.60mg/L IC:0.09264mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1041	26.60mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 5:16:14 PM

Mean Area 1041
Mean Conc. 26.60mg/L

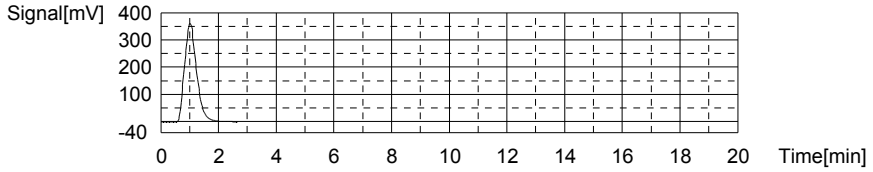

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.023	0.09264mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 5:20:50 PM

Mean Area 9.023
Mean Conc. 0.09264mg/L

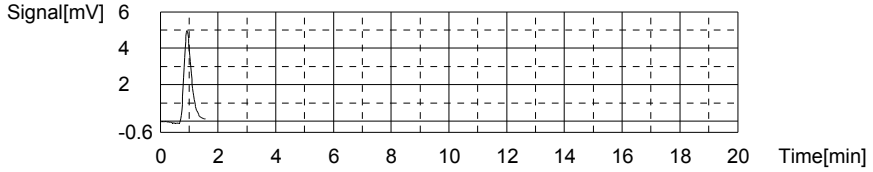

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.02580mg/L TC:0.1204mg/L IC:0.09464mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.643	0.1204mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 5:25:50 PM

Mean Area 9.643
Mean Conc. 0.1204mg/L

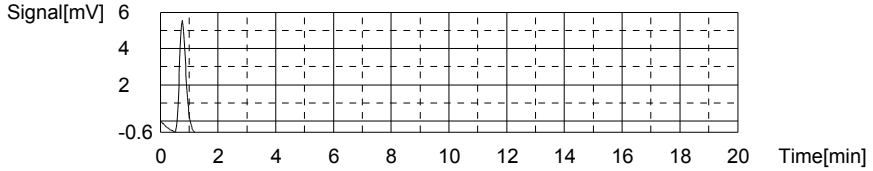

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.090	0.09464mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 5:29:44 PM

Mean Area 9.090
Mean Conc. 0.09464mg/L

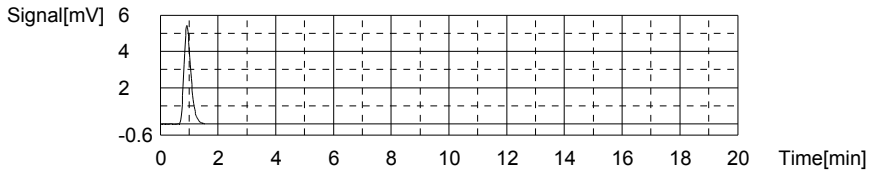

Sample

Sample Name: L16080353-03 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.542mg/L TC:20.92mg/L IC:13.38mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	819.9	20.92mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 5:37:23 PM

Mean Area 819.9
Mean Conc. 20.92mg/L

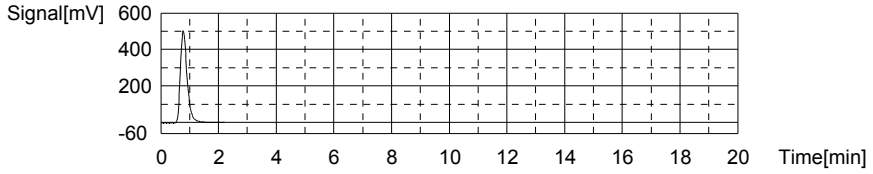

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	453.2	13.38mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 5:42:10 PM

Mean Area 453.2
Mean Conc. 13.38mg/L

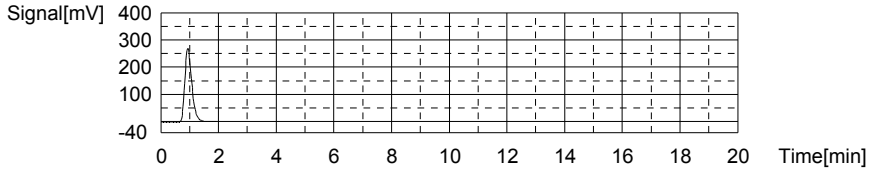

Sample

Sample Name: L16080353-04
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.820mg/L TC:17.05mg/L IC:12.23mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	669.0	17.05mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 5:50:00 PM

Mean Area 669.0
Mean Conc. 17.05mg/L

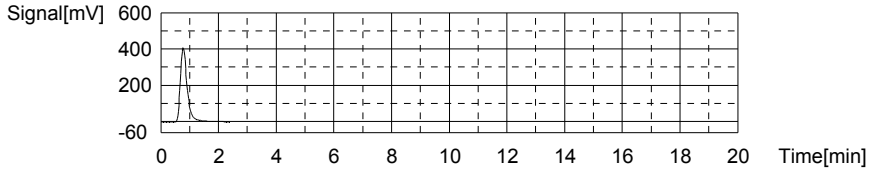

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	414.7	12.23mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 5:54:49 PM

Mean Area 414.7
Mean Conc. 12.23mg/L

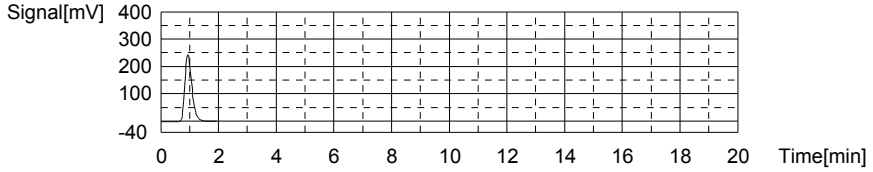

Sample

Sample Name: L16080353-05
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9243mg/L TC:1.075mg/L IC:0.1512mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	46.84	1.075mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 6:01:55 PM

Mean Area 46.84
Mean Conc. 1.075mg/L

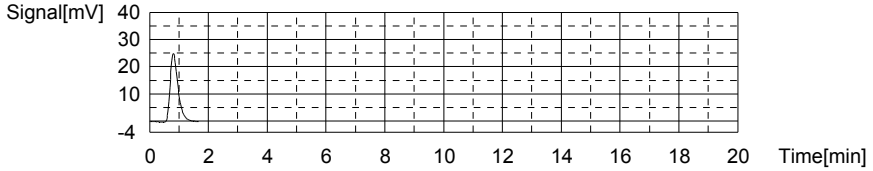

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.98	0.1512mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 6:06:16 PM

Mean Area 10.98
Mean Conc. 0.1512mg/L

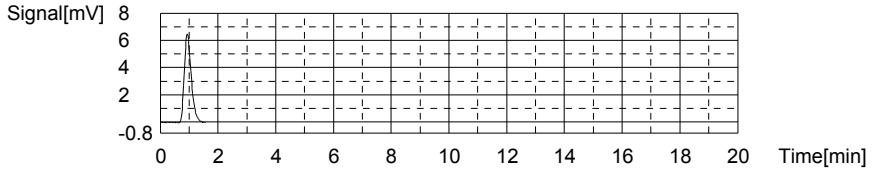

Sample

Sample Name: L16080353-06
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.8983mg/L TC:1.002mg/L IC:0.1035mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	43.97	1.002mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 6:13:21 PM

Mean Area 43.97
Mean Conc. 1.002mg/L

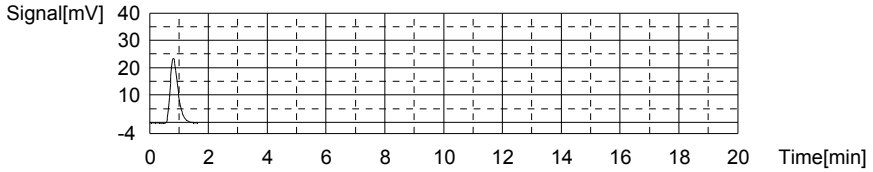

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.386	0.1035mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 6:17:38 PM

Mean Area 9.386
Mean Conc. 0.1035mg/L

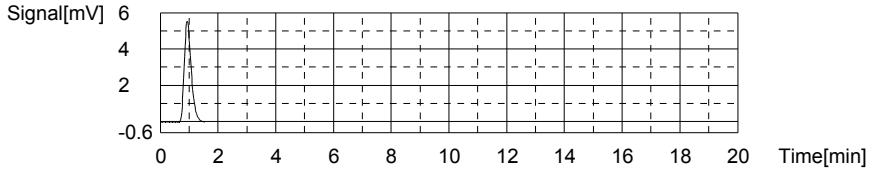

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.907mg/L TC:57.77mg/L IC:50.86mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2255	57.77mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 6:25:16 PM

Mean Area 2255
Mean Conc. 57.77mg/L

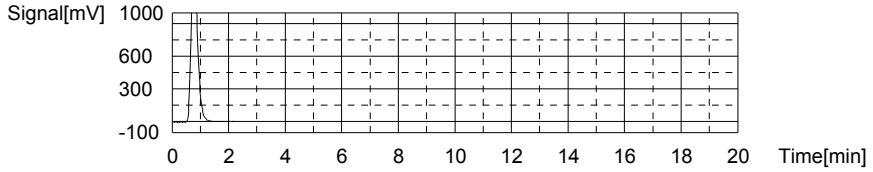

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1706	50.86mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 6:30:31 PM

Mean Area 1706
Mean Conc. 50.86mg/L

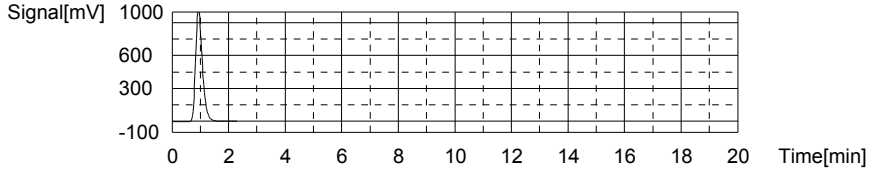

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.628mg/L TC:53.07mg/L IC:43.44mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2072	53.07mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 6:38:22 PM

Mean Area 2072
Mean Conc. 53.07mg/L

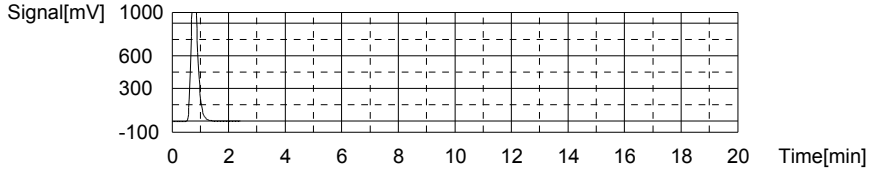

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1458	43.44mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 6:43:43 PM

Mean Area 1458
Mean Conc. 43.44mg/L

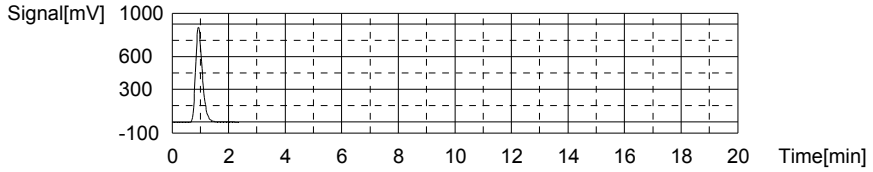

Sample

Sample Name: WG579534-05 DUP
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.6532mg/L TC:2.908mg/L IC:2.254mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	118.2	2.908mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 6:50:45 PM

Mean Area 118.2
Mean Conc. 2.908mg/L

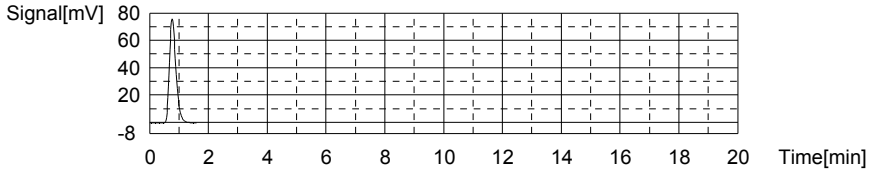

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	81.28	2.254mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 6:55:21 PM

Mean Area 81.28
Mean Conc. 2.254mg/L

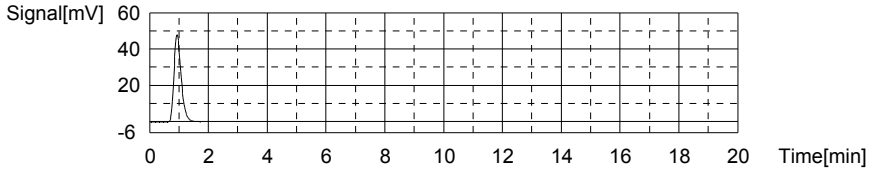

Sample

Sample Name: WG579534-06 MS
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.85mg/L TC:18.19mg/L IC:1.338mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	713.5	18.19mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 7:02:53 PM

Mean Area 713.5
Mean Conc. 18.19mg/L

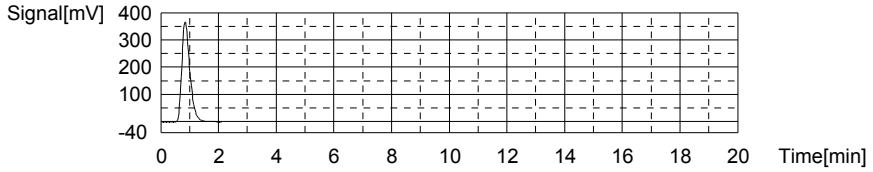

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	50.64	1.338mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 7:07:22 PM

Mean Area 50.64
Mean Conc. 1.338mg/L

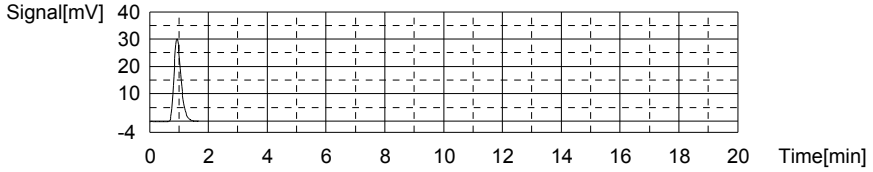

Sample

Sample Name: L16080414-01
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.01mg/L TC:20.17mg/L IC:8.164mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	790.5	20.17mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 7:15:52 PM

Mean Area 790.5
Mean Conc. 20.17mg/L

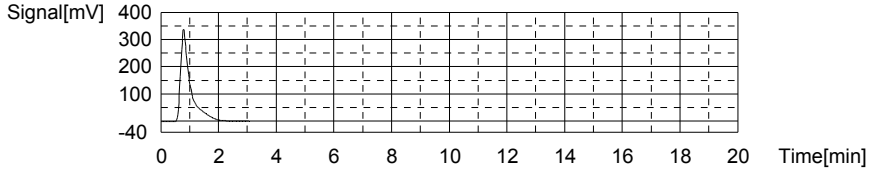

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	278.8	8.164mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 7:20:36 PM

Mean Area 278.8
Mean Conc. 8.164mg/L

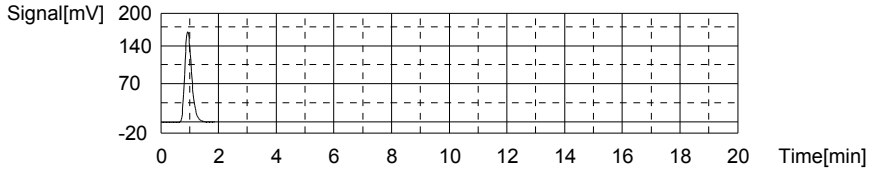

Sample

Sample Name: L16080414-02
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.25mg/L TC:22.53mg/L IC:9.274mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	882.4	22.53mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 7:28:43 PM

Mean Area 882.4
Mean Conc. 22.53mg/L

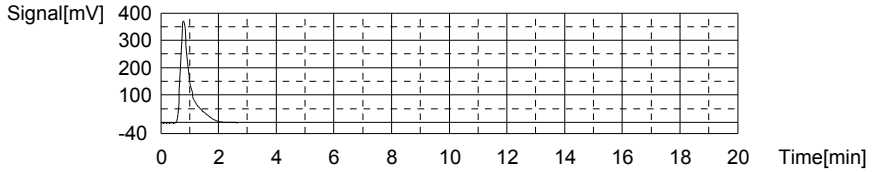

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	315.9	9.274mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 7:33:28 PM

Mean Area 315.9
Mean Conc. 9.274mg/L

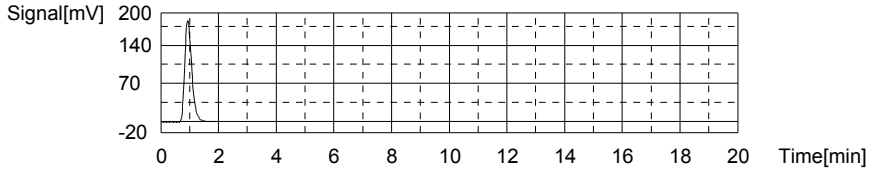

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.98mg/L TC:27.04mg/L IC:0.05251mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1058	27.04mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 7:41:17 PM

Mean Area 1058
Mean Conc. 27.04mg/L

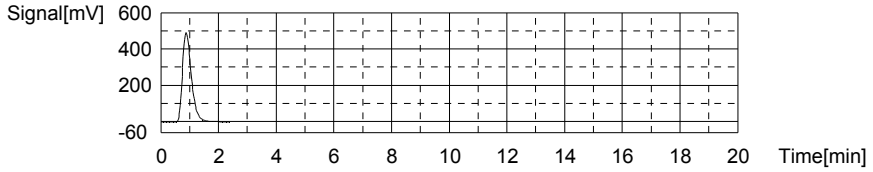

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.682	0.05251mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 7:45:36 PM

Mean Area 7.682
Mean Conc. 0.05251mg/L

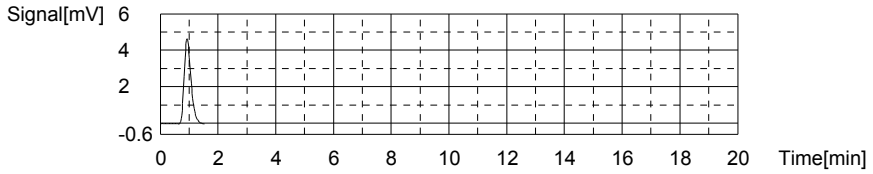

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.03579mg/L TC:0.1252mg/L IC:0.08940mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.828	0.1252mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 7:50:36 PM

Mean Area 9.828
Mean Conc. 0.1252mg/L

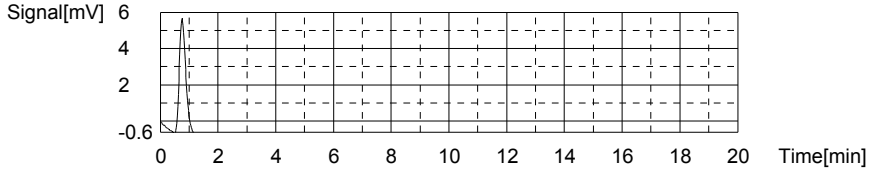

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.915	0.08940mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 7:54:29 PM

Mean Area 8.915
Mean Conc. 0.08940mg/L

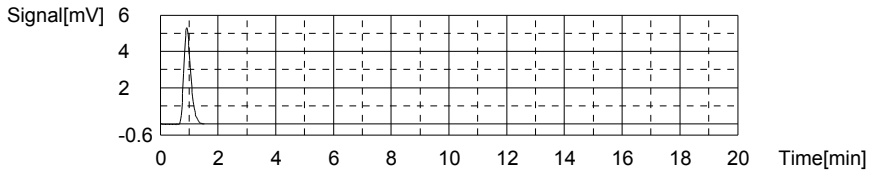

Sample

Sample Name: L16080437-01
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.5760mg/L TC:2.001mg/L IC:1.425mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	82.88	2.001mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 8:01:31 PM

Mean Area 82.88
Mean Conc. 2.001mg/L

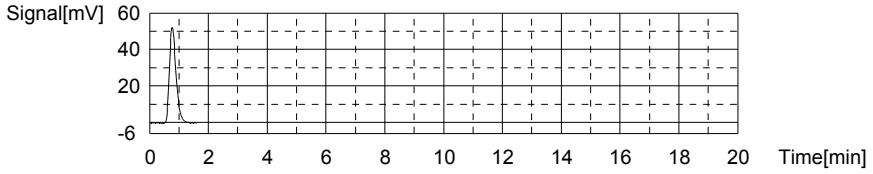

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	53.55	1.425mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 8:06:01 PM

Mean Area 53.55
Mean Conc. 1.425mg/L

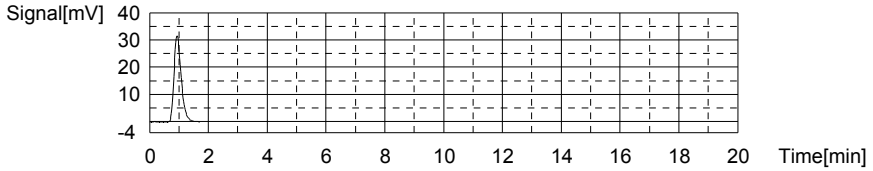

Sample

Sample Name: L16080437-02
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.4437mg/L TC:0.9800mg/L IC:0.5362mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	43.12	0.9800mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 8:13:02 PM

Mean Area 43.12
Mean Conc. 0.9800mg/L

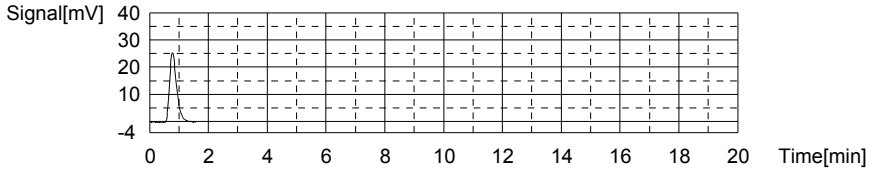

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	23.85	0.5362mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 8:17:26 PM

Mean Area 23.85
Mean Conc. 0.5362mg/L

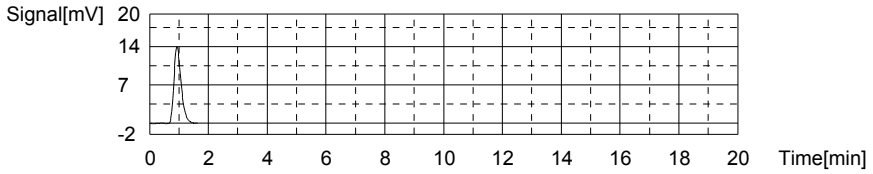

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.88mg/L TC:26.91mg/L IC:0.02756mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1053	26.91mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 8:25:11 PM

Mean Area 1053
Mean Conc. 26.91mg/L

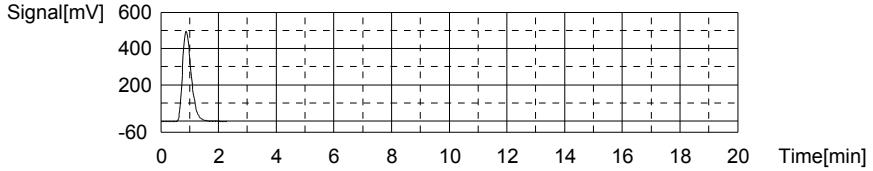

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.848	0.02756mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 8:29:31 PM

Mean Area 6.848
Mean Conc. 0.02756mg/L

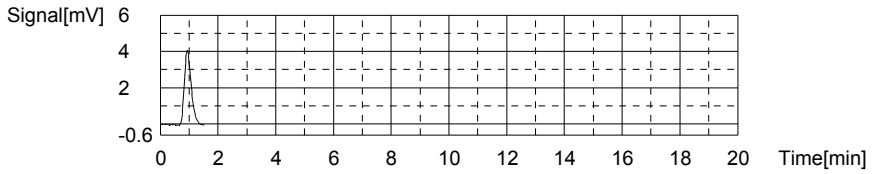

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.03744mg/L TC:0.1242mg/L IC:0.08680mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.791	0.1242mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 8:34:32 PM

Mean Area 9.791
Mean Conc. 0.1242mg/L

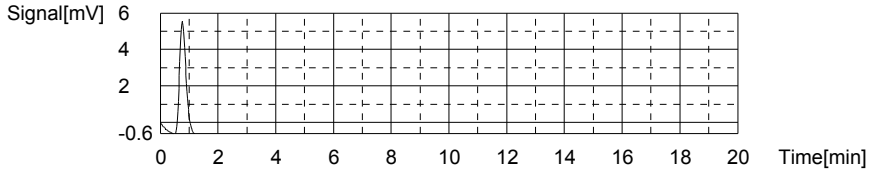

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.828	0.08680mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 8:38:27 PM

Mean Area 8.828
Mean Conc. 0.08680mg/L

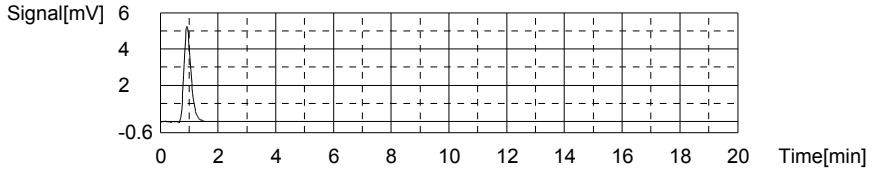

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.70mg/L TC:27.78mg/L IC:0.08674mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1087	27.78mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/10/2016 7:29:59 AM

Mean Area 1087
Mean Conc. 27.78mg/L

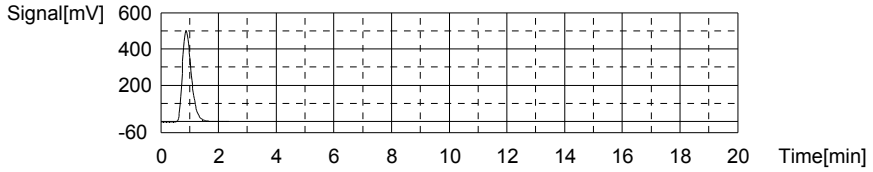

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.826	0.08674mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/10/2016 7:34:27 AM

Mean Area 8.826
Mean Conc. 0.08674mg/L

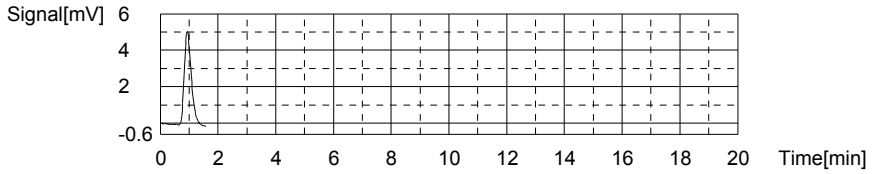

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.03393mg/L TC:0.1381mg/L IC:0.1042mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.33	0.1381mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/10/2016 7:39:37 AM

Mean Area 10.33
Mean Conc. 0.1381mg/L

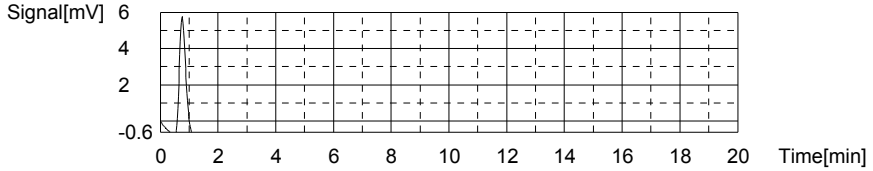

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.408	0.1042mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/10/2016 7:43:32 AM

Mean Area 9.408
Mean Conc. 0.1042mg/L

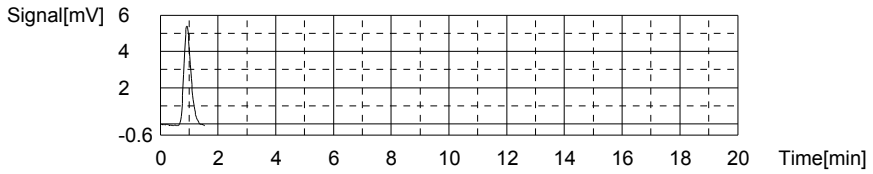

Sample

Sample Name: L16080330-13 (10)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.931mg/L TC:18.55mg/L IC:14.62mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	727.6	18.55mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/10/2016 7:50:50 AM

Mean Area 727.6
Mean Conc. 18.55mg/L

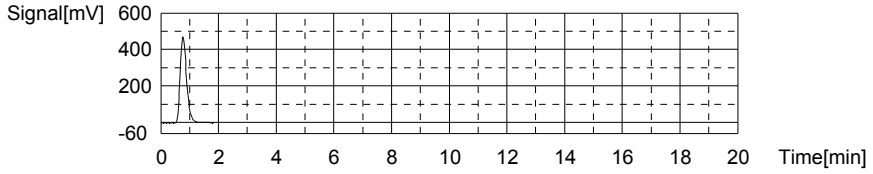

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	494.7	14.62mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/10/2016 7:55:53 AM

Mean Area 494.7
Mean Conc. 14.62mg/L

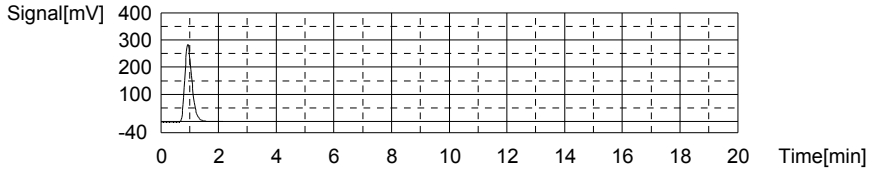

Sample

Sample Name: L16080330-15 (10)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.115mg/L TC:19.18mg/L IC:16.07mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	752.1	19.18mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/10/2016 8:03:22 AM

Mean Area 752.1
Mean Conc. 19.18mg/L

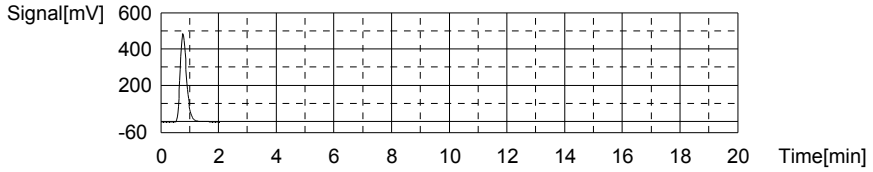

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	543.0	16.07mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/10/2016 8:08:32 AM

Mean Area 543.0
Mean Conc. 16.07mg/L

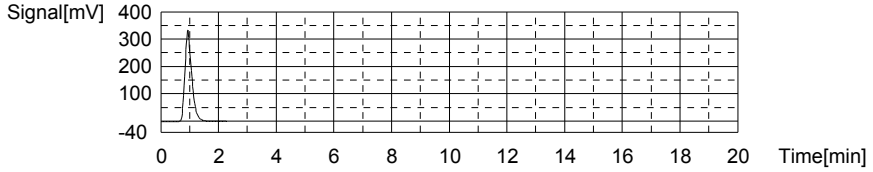

Sample

Sample Name: L16080353-07 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.724mg/L TC:28.04mg/L IC:23.31mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1097	28.04mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/10/2016 8:16:01 AM

Mean Area 1097
Mean Conc. 28.04mg/L

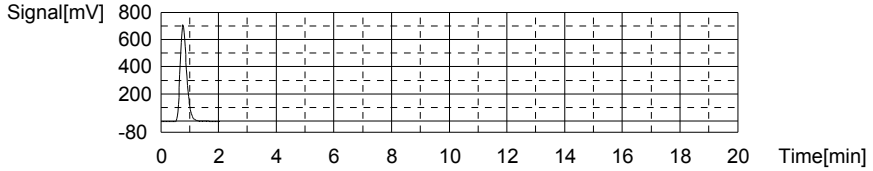

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	785.2	23.31mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/10/2016 8:21:03 AM

Mean Area 785.2
Mean Conc. 23.31mg/L

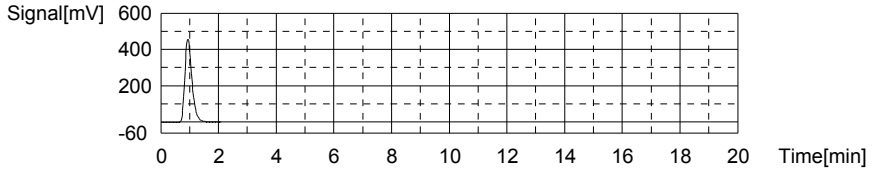

Sample

Sample Name: L16080353-08 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.816mg/L TC:25.08mg/L IC:21.27mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	981.8	25.08mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/10/2016 8:28:31 AM

Mean Area 981.8
Mean Conc. 25.08mg/L

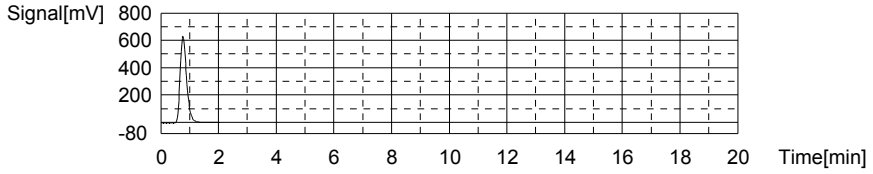

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	716.7	21.27mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/10/2016 8:33:29 AM

Mean Area 716.7
Mean Conc. 21.27mg/L

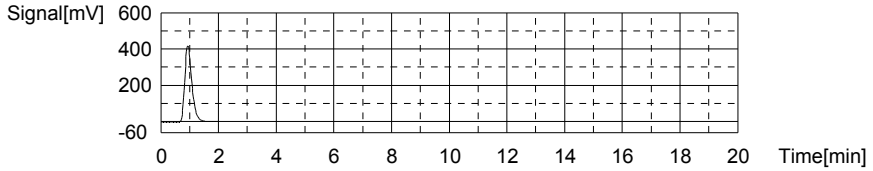

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.88mg/L TC:27.04mg/L IC:0.1557mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1058	27.04mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/10/2016 8:41:18 AM

Mean Area 1058
Mean Conc. 27.04mg/L

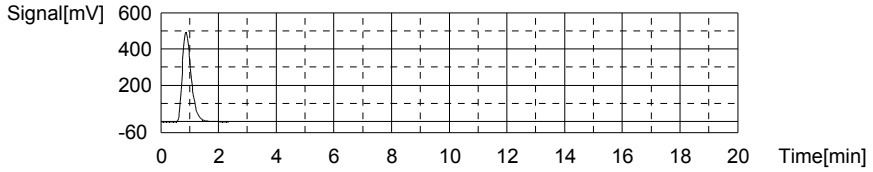

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.13	0.1557mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/10/2016 8:45:41 AM

Mean Area 11.13
Mean Conc. 0.1557mg/L

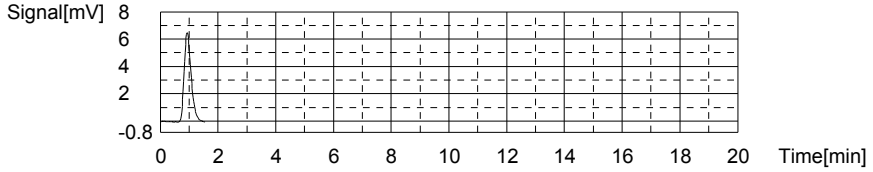

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.02238mg/L TC:0.1350mg/L IC:0.1126mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.21	0.1350mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/10/2016 8:50:43 AM

Mean Area 10.21
Mean Conc. 0.1350mg/L

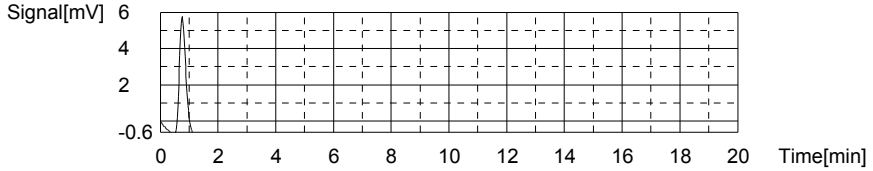

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.691	0.1126mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/10/2016 8:54:40 AM

Mean Area	9.691
Mean Conc.	0.1126mg/L

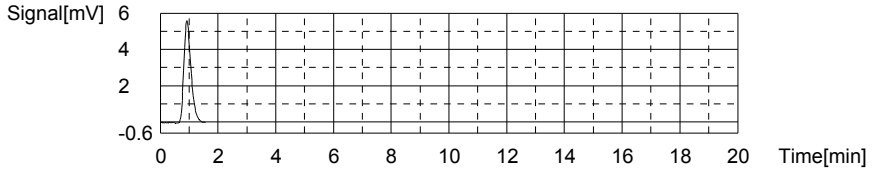

WORKGROUP: WG579467

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 75879
(5/200)(1000) = 25mg/L

LCS (TOC): Std 74954
(5/200)(1000) = 25mg/L

CCV (TIC): Std 75410
(5/200)(1000) = 25mg/L

MS (TOC): Std 74954
(.4)(1000)/40 = 10

Calibration Curve Date: 10/31/15

Reagent: 37358
36105

☐ SM5310-C : Matrix 2 WG_____

☒ EPA 415.1/9060A(mod): Matrix 1 WG 579467 SOP: K 4151 Rev. 19

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☒ drain reservoir filled
☒ ASI water bottle full
☒ dilution water bottle full
☒ 3rd bottle full
☒ sufficient gas
☒ sufficient persulfate
☒ sufficient acid
☒ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TIC		26	CCV		51		
2	TOC/TIC		27	CCB		52		
3	CCV		28	08-0321-31		53		
4	BLK		29	-32		54		
5	LCS		30	-33		55		
6	LCSDUP		31	-34	1/5	56		
7	08-0317-04	1/10	32	08-0330-05		57		
8	08-0321-15	1/3	33	-08		58		
9	-16	1/3	C/1 34	08-0332-01	1/10000	59		
10	-17	1/2	35	DUP 321-29		60		
11	-18	1/3	36	CCV		61		
12	-19	1/2	37	CCB		62		
13	-20	1/3	38	CCV		63		
14	CCV		39	CCB		64		
15	CCB		40	TOC/TIC		65		
16	08-0321-21	1/2	41	08-0321-21	1/3	66		
17	-22	1/2	42	08-0321-29	1/3	67		
18	R2 -23	1/3	43	DUP 0321-29	1/3	68		
19	R3 -24		44	08-0321-33	1/2	69		
20	MS2 -25	1/3	45	08-0330-05	1/3	70		
21	~~MS3~~ MS3 -26		46	-08	1/810	71		
22	MSD2 -27	1/3	47	~~CCV 330-05~~	~~1/2~~ 1/10	72		
23	MSD3 -28		48	~~CCB~~ CCV		73		
24	-29		49	CCB		74		
25	-30	1/3	50			75		

qpt 8/9/16

qpt 8/9/16

Analyst: [illegible] Date/Time: 8/8/16 1730

DCN#120167

C:\TOC3201\Data\08-08-2016-EPT-TOC.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	TOC:4.170mg/L TC:29.22mg/L IC:25.05mg/L	Complete	8/8/2016 5:34:15 PM	1
2	TOC		TOC:29.29mg/L TC:36.90mg/L IC:7.607mg/L	Complete	8/8/2016 5:46:49 PM	2
3	TOC	CCV	TOC:27.62mg/L TC:27.63mg/L IC:0.01159mg/L	Complete	8/8/2016 5:58:53 PM	3
4	TOC	WG579467-01 BLK	TOC:0.04576mg/L TC:0.1268mg/L IC:0.08103mg/L	Complete	8/8/2016 6:07:52 PM	0
5	TOC	WG579467-02 LCS	!!Error!! TOC:27.45mg/L TC:27.45mg/L IC:-0.00313mg	Complete	8/8/2016 6:19:52 PM	5
6	TOC	WG579467-03 LCSDUP	!!Error!! TOC:27.62mg/L TC:27.60mg/L IC:-0.01304mg	Complete	8/8/2016 6:31:57 PM	6
7	TOC	L16080317-04 (10)	TOC:4.125mg/L TC:18.90mg/L IC:14.78mg/L	Complete	8/8/2016 6:44:09 PM	7
8	TOC	L16080321-15 (3)	TOC:6.579mg/L TC:34.74mg/L IC:28.16mg/L	Complete	8/8/2016 6:56:56 PM	8
9	TOC	L16080321-16 (3)	TOC:5.897mg/L TC:30.12mg/L IC:24.22mg/L	Complete	8/8/2016 7:09:45 PM	9
10	TOC	L16080321-17 (2)	TOC:4.013mg/L TC:21.30mg/L IC:17.29mg/L	Complete	8/8/2016 7:22:07 PM	10
11	TOC	L16080321-18 (3)	TOC:4.395mg/L TC:21.76mg/L IC:17.36mg/L	Complete	8/8/2016 7:34:39 PM	11
12	TOC	L16080321-19 (2)	TOC:7.990mg/L TC:33.15mg/L IC:25.16mg/L	Complete	8/8/2016 7:47:18 PM	12
13	TOC	L16080321-20 (3)	TOC:4.911mg/L TC:19.23mg/L IC:14.32mg/L	Complete	8/8/2016 7:59:25 PM	13
14	TOC	CCV	TOC:27.48mg/L TC:27.53mg/L IC:0.04103mg/L	Complete	8/8/2016 8:11:29 PM	14
15	TOC	CCB	TOC:0.04363mg/L TC:0.1360mg/L IC:0.09240mg/L	Complete	8/8/2016 8:20:25 PM	0
16	TOC		TOC:11.21mg/L TC:52.71mg/L IC:41.50mg/L	Complete	8/8/2016 8:33:46 PM	16
17	TOC	L16080321-22 (2)	TOC:12.04mg/L TC:46.42mg/L IC:34.38mg/L	Complete	8/8/2016 8:47:09 PM	17
18	TOC	L16080321-23 (3)	TOC:3.640mg/L TC:14.49mg/L IC:10.85mg/L	Complete	8/8/2016 8:59:21 PM	18
19	TOC	L16080321-24	TOC:9.566mg/L TC:43.50mg/L IC:33.93mg/L	Complete	8/8/2016 9:12:11 PM	19
20	TOC	L16080321-25 (3) MS	TOC:6.248mg/L TC:13.04mg/L IC:6.797mg/L	Complete	8/8/2016 9:24:25 PM	20
21	TOC	L16080321-26 MS	TOC:20.26mg/L TC:49.91mg/L IC:29.65mg/L	Complete	8/8/2016 9:37:11 PM	21
22	TOC	L16080321-27 (3) MSD	TOC:6.178mg/L TC:12.36mg/L IC:6.180mg/L	Complete	8/8/2016 9:49:17 PM	22
23	TOC	L16080321-28 MSD	TOC:19.42mg/L TC:46.58mg/L IC:27.15mg/L	Complete	8/8/2016 10:01:56 PM	23
24	TOC		TOC:5.107mg/L TC:60.52mg/L IC:55.41mg/L	Complete	8/8/2016 10:15:16 PM	24
25	TOC	L16080321-30 (3)	TOC:3.974mg/L TC:18.83mg/L IC:14.86mg/L	Complete	8/8/2016 10:27:38 PM	25
26	TOC	CCV	TOC:27.90mg/L TC:27.99mg/L IC:0.08291mg/L	Complete	8/8/2016 10:39:54 PM	26
27	TOC	CCB	TOC:0.03659mg/L TC:0.1363mg/L IC:0.09970mg/L	Complete	8/8/2016 10:48:47 PM	0
28	TOC	L16080321-31	TOC:1.099mg/L TC:1.172mg/L IC:0.07259mg/L	Complete	8/8/2016 11:00:21 PM	28
29	TOC	L16080321-32	TOC:0.9893mg/L TC:1.062mg/L IC:0.07310mg/L	Complete	8/8/2016 11:11:52 PM	29
30	TOC		TOC:7.999mg/L TC:55.51mg/L IC:47.51mg/L	Complete	8/8/2016 11:24:50 PM	30
31	TOC	L16080321-34 (3)	TOC:4.163mg/L TC:17.71mg/L IC:13.55mg/L	Complete	8/8/2016 11:37:17 PM	31
32	TOC		TOC:0.2936mg/L TC:81.14mg/L IC:80.84mg/L	Complete	8/8/2016 11:52:22 PM	32
33	TOC		!!Error!! TOC:-15.13mg/L TC:90.84mg/L IC:106.0mg/L	Complete	8/9/2016 12:07:26 AM	33
34	TOC	L16080332-01 (10000)	TOC:19.12mg/L TC:20.73mg/L IC:1.612mg/L	Complete	8/9/2016 12:19:35 AM	34
35	TOC		TOC:9.482mg/L TC:48.89mg/L IC:39.40mg/L	Complete	8/9/2016 12:33:18 AM	35
36	TOC	CCV	TOC:27.22mg/L TC:27.40mg/L IC:0.1817mg/L	Complete	8/9/2016 12:45:36 AM	36
37	TOC	CCB	TOC:0.01972mg/L TC:0.1412mg/L IC:0.1214mg/L	Complete	8/9/2016 12:54:32 AM	0
38	TOC	CCV	TOC:28.17mg/L TC:28.19mg/L IC:0.02511mg/L	Complete	8/9/2016 8:55:14 AM	38
39	TOC	CCB	TOC:0.06206mg/L TC:0.1484mg/L IC:0.08629mg/L	Complete	8/9/2016 9:04:11 AM	0
40	TOC	TOC/TIC	TOC:28.60mg/L TC:35.92mg/L IC:7.320mg/L	Complete	8/9/2016 10:08:28 AM	40
41	TOC	L16080321-21 (3)	TOC:7.738mg/L TC:41.70mg/L IC:33.96mg/L	Complete	8/9/2016 10:21:25 AM	41
42	TOC	L16080321-29 (3)	TOC:5.084mg/L TC:31.27mg/L IC:26.19mg/L	Complete	8/9/2016 10:34:09 AM	42
43	TOC	WG579467-11 (3) DUP	TOC:4.263mg/L TC:28.96mg/L IC:24.70mg/L	Complete	8/9/2016 10:46:46 AM	43
44	TOC	L16080321-33 (2)	TOC:6.442mg/L TC:47.73mg/L IC:41.29mg/L	Complete	8/9/2016 10:59:37 AM	44
45	TOC		TOC:3.389mg/L TC:60.77mg/L IC:57.39mg/L	Complete	8/9/2016 11:12:40 AM	45
46	TOC	L16080330-08 (10)	TOC:4.718mg/L TC:27.73mg/L IC:23.01mg/L	Complete	8/9/2016 11:44:12 AM	46
47	TOC	L16080330-05 (10)	TOC:3.386mg/L TC:17.11mg/L IC:13.73mg/L	Complete	8/9/2016 1:09:03 PM	47
48	TOC	CCV	TOC:27.73mg/L TC:27.83mg/L IC:0.1062mg/L	Complete	8/9/2016 1:21:12 PM	48
49	TOC	CCB	TOC:0.1096mg/L TC:0.1956mg/L IC:0.08596mg/L	Complete	8/9/2016 1:30:08 PM	0

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.170mg/L TC:29.22mg/L IC:25.05mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1143	29.22mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 5:29:08 PM

Mean Area 1143
Mean Conc. 29.22mg/L

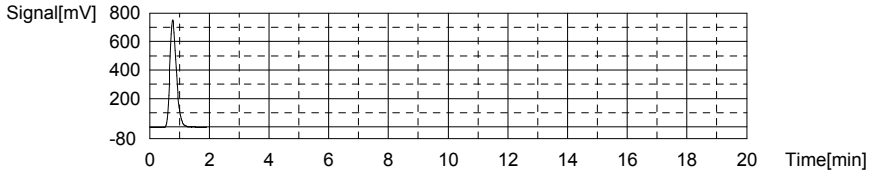

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	843.2	25.05mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 5:34:15 PM

Mean Area 843.2
Mean Conc. 25.05mg/L

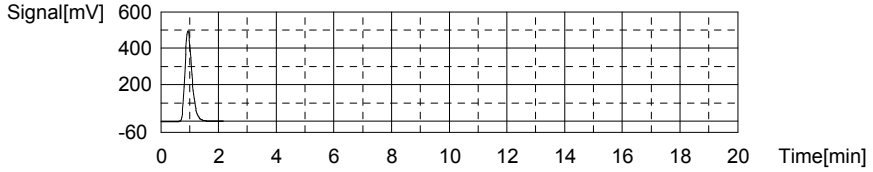

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:29.29mg/L TC:36.90mg/L IC:7.607mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1442	36.90mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 5:42:04 PM

Mean Area 1442
Mean Conc. 36.90mg/L

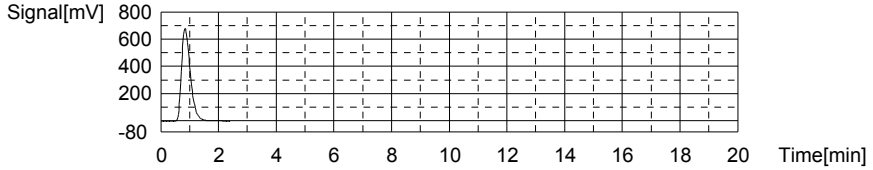

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	260.2	7.607mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 5:46:49 PM

Mean Area 260.2
Mean Conc. 7.607mg/L

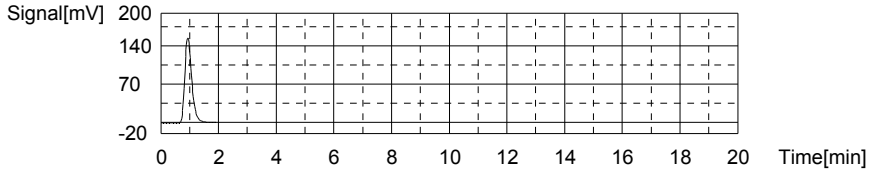

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.62mg/L TC:27.63mg/L IC:0.01159mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1081	27.63mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 5:54:35 PM

Mean Area 1081
Mean Conc. 27.63mg/L

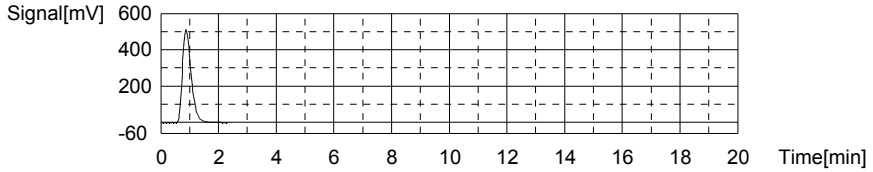

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.314	0.01159mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 5:58:53 PM

Mean Area 6.314
Mean Conc. 0.01159mg/L

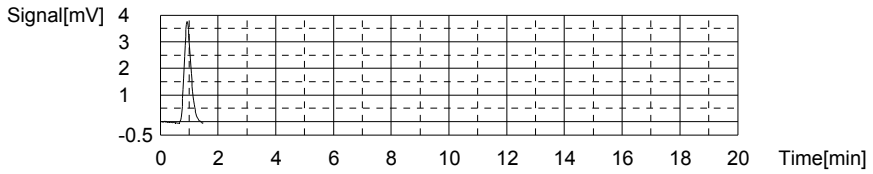

Sample

Sample Name: WG579467-01 BLK
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.04576mg/L TC:0.1268mg/L IC:0.08103mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.890	0.1268mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 6:03:58 PM

Mean Area 9.890
Mean Conc. 0.1268mg/L

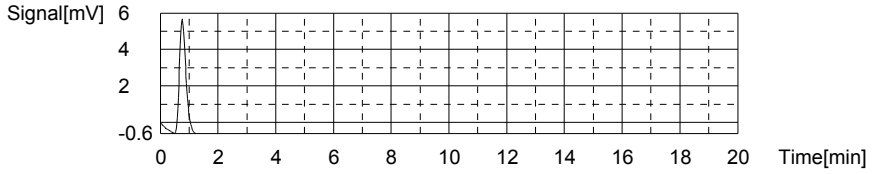

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.635	0.08103mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 6:07:52 PM

Mean Area 8.635
Mean Conc. 0.08103mg/L

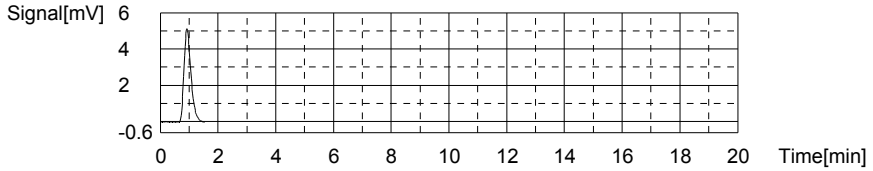

Sample

Sample Name: WG579467-02 LCS
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:27.45mg/L TC:27.45mg/L IC:-0.00313mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1074	27.45mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 6:15:35 PM

Mean Area 1074
Mean Conc. 27.45mg/L

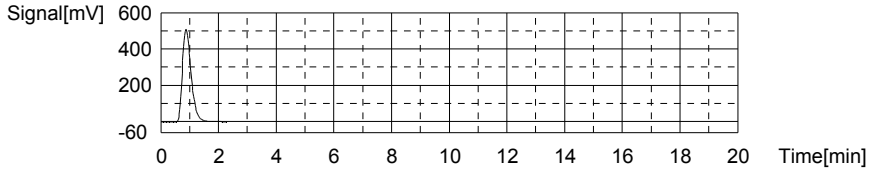

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.822	-0.00313mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 6:19:52 PM

Mean Area 5.822
Mean Conc. -0.00313mg/L

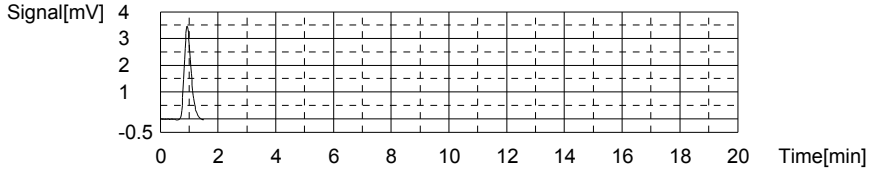

Sample

Sample Name: WG579467-03 LCSDUP
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:27.62mg/L TC:27.60mg/L IC:-0.01304mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1080	27.60mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 6:27:40 PM

Mean Area 1080
Mean Conc. 27.60mg/L

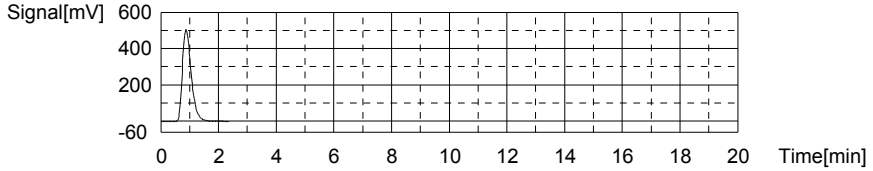

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.491	-0.01304mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 6:31:57 PM

Mean Area 5.491
Mean Conc. -0.01304mg/L

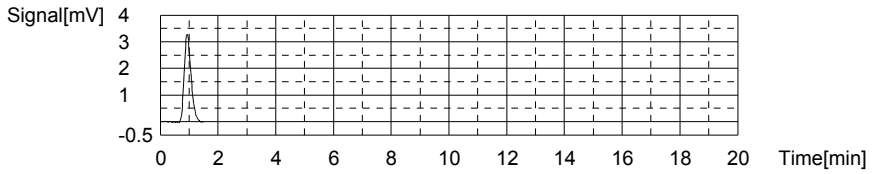

Sample

Sample Name: L16080317-04 (10)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.125mg/L TC:18.90mg/L IC:14.78mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	741.1	18.90mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 6:39:19 PM

Mean Area 741.1
Mean Conc. 18.90mg/L

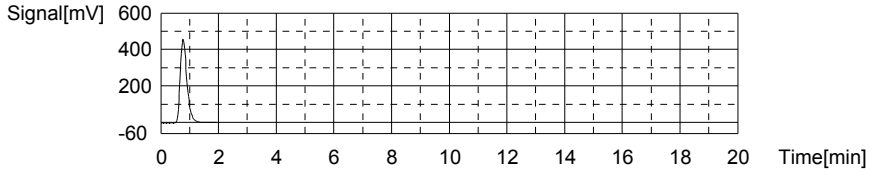

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	499.8	14.78mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 6:44:09 PM

Mean Area 499.8
Mean Conc. 14.78mg/L

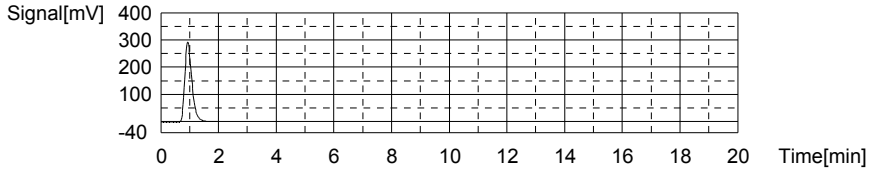

Sample

Sample Name: L16080321-15 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.579mg/L TC:34.74mg/L IC:28.16mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1358	34.74mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 6:51:39 PM

Mean Area 1358
Mean Conc. 34.74mg/L

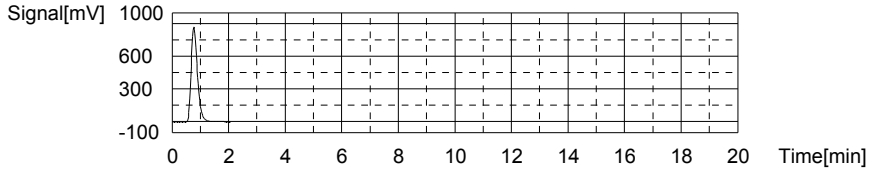

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	947.2	28.16mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 6:56:56 PM

Mean Area 947.2
Mean Conc. 28.16mg/L

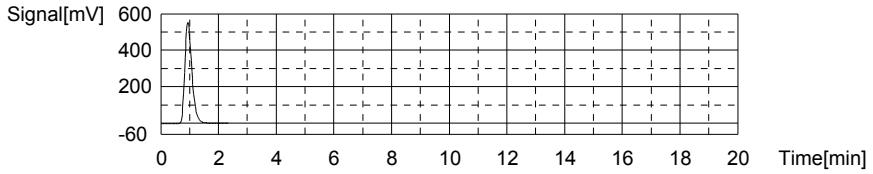

Sample

Sample Name: L16080321-16 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.897mg/L TC:30.12mg/L IC:24.22mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1178	30.12mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 7:04:35 PM

Mean Area 1178
Mean Conc. 30.12mg/L

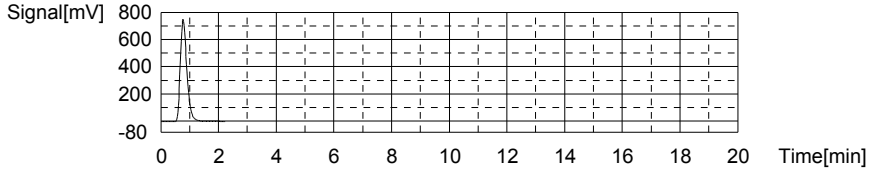

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	815.5	24.22mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 7:09:45 PM

Mean Area 815.5
Mean Conc. 24.22mg/L

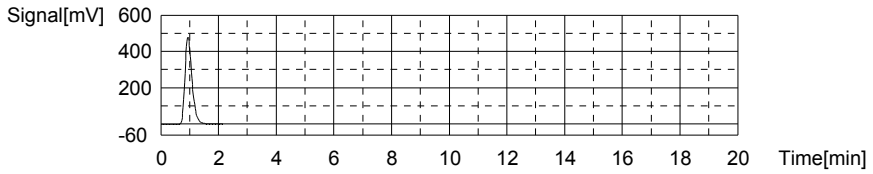

Sample

Sample Name: L16080321-17 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.013mg/L TC:21.30mg/L IC:17.29mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	834.5	21.30mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 7:17:03 PM

Mean Area 834.5
Mean Conc. 21.30mg/L

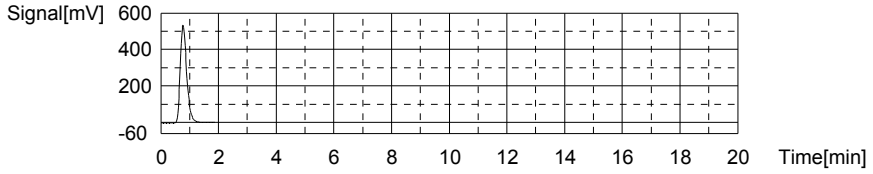

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	583.7	17.29mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 7:22:07 PM

Mean Area 583.7
Mean Conc. 17.29mg/L

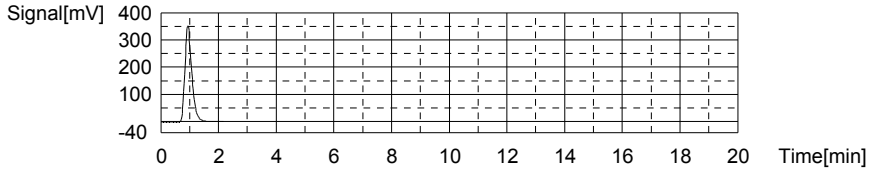

Sample

Sample Name: L16080321-18 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.395mg/L TC:21.76mg/L IC:17.36mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	852.4	21.76mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 7:29:45 PM

Mean Area 852.4
Mean Conc. 21.76mg/L

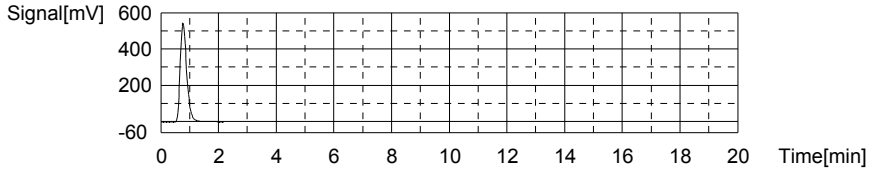

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	586.3	17.36mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 7:34:39 PM

Mean Area 586.3
Mean Conc. 17.36mg/L

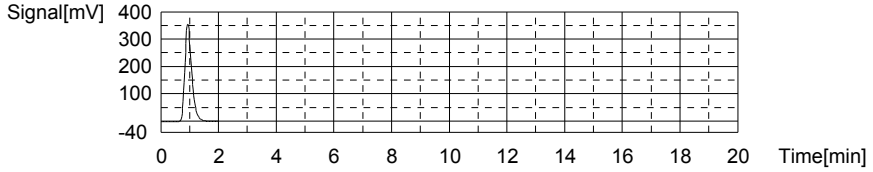

Sample

Sample Name: L16080321-19 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.990mg/L TC:33.15mg/L IC:25.16mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1296	33.15mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 7:42:19 PM

Mean Area 1296
Mean Conc. 33.15mg/L

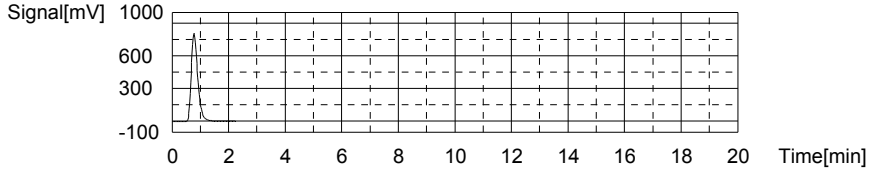

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	846.8	25.16mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 7:47:18 PM

Mean Area 846.8
Mean Conc. 25.16mg/L

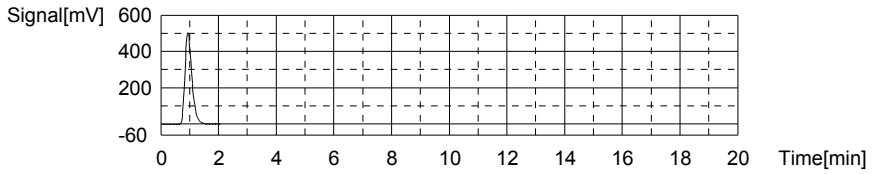

Sample

Sample Name: L16080321-20 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.911mg/L TC:19.23mg/L IC:14.32mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	753.9	19.23mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 7:54:31 PM

Mean Area 753.9
Mean Conc. 19.23mg/L

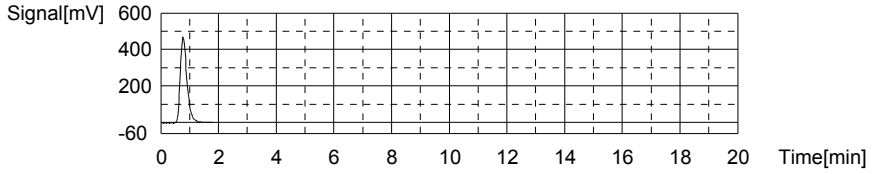

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	484.5	14.32mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 7:59:25 PM

Mean Area 484.5
Mean Conc. 14.32mg/L

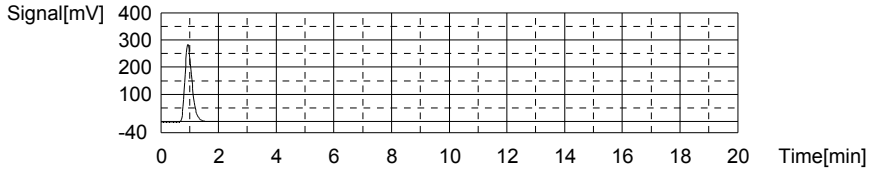

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.48mg/L TC:27.53mg/L IC:0.04103mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1077	27.53mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 8:07:10 PM

Mean Area 1077
Mean Conc. 27.53mg/L

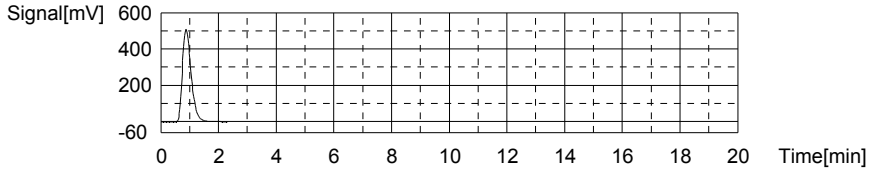

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.298	0.04103mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 8:11:29 PM

Mean Area 7.298
Mean Conc. 0.04103mg/L

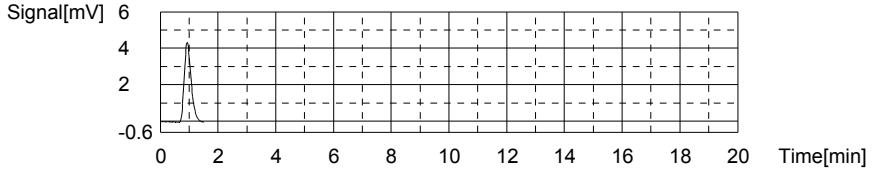

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.04363mg/L TC:0.1360mg/L IC:0.09240mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.25	0.1360mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 8:16:30 PM

Mean Area 10.25
Mean Conc. 0.1360mg/L

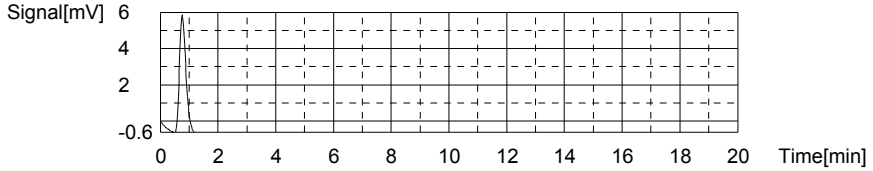

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.015	0.09240mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 8:20:25 PM

Mean Area 9.015
Mean Conc. 0.09240mg/L

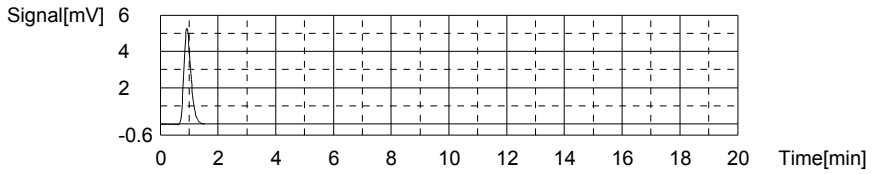

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:11.21mg/L TC:52.71mg/L IC:41.50mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2058	52.71mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 8:28:19 PM

Mean Area 2058
Mean Conc. 52.71mg/L

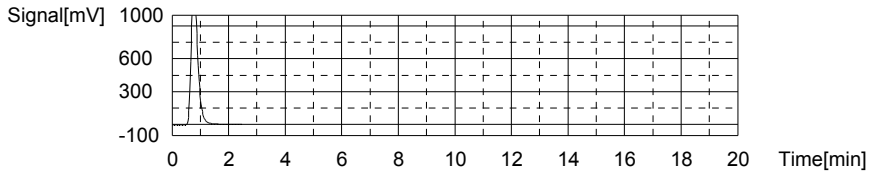

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1393	41.50mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 8:33:46 PM

Mean Area 1393
Mean Conc. 41.50mg/L

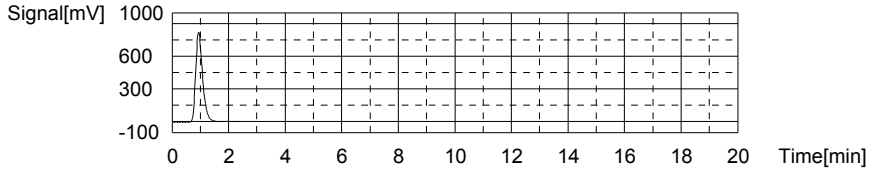

Sample

Sample Name: L16080321-22 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.04mg/L TC:46.42mg/L IC:34.38mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1813	46.42mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 8:41:52 PM

Mean Area 1813
Mean Conc. 46.42mg/L

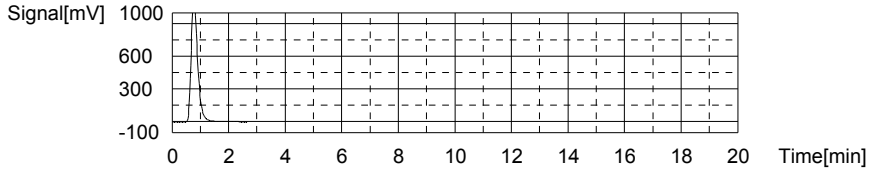

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1155	34.38mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 8:47:09 PM

Mean Area 1155
Mean Conc. 34.38mg/L

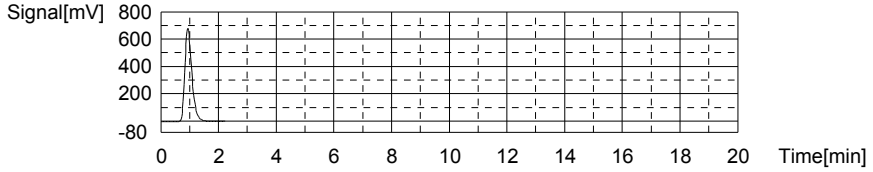

Sample

Sample Name: L16080321-23 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.640mg/L TC:14.49mg/L IC:10.85mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	569.2	14.49mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 8:54:29 PM

Mean Area 569.2
Mean Conc. 14.49mg/L

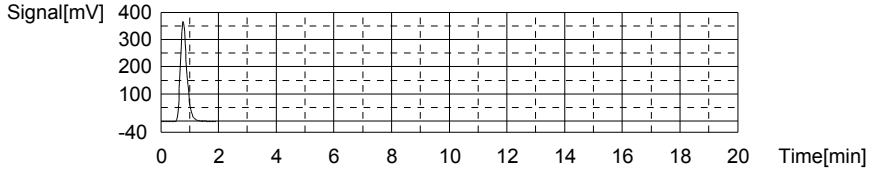

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	368.5	10.85mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 8:59:21 PM

Mean Area 368.5
Mean Conc. 10.85mg/L

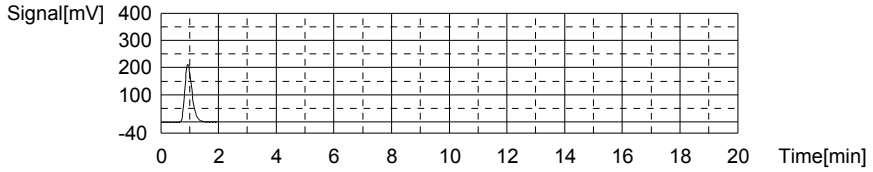

Sample

Sample Name: L16080321-24
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.566mg/L TC:43.50mg/L IC:33.93mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1699	43.50mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 9:07:04 PM

Mean Area 1699
Mean Conc. 43.50mg/L

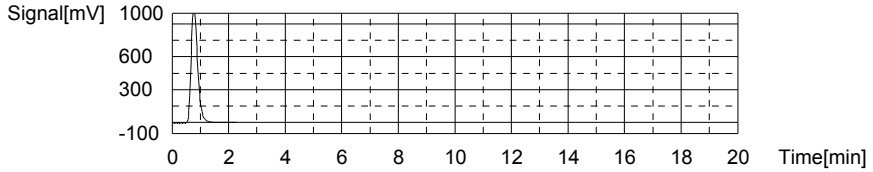

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1140	33.93mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 9:12:11 PM

Mean Area 1140
Mean Conc. 33.93mg/L

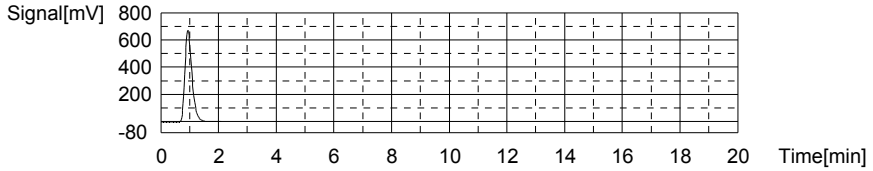

Sample

Sample Name: L16080321-25 (3) MS
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.248mg/L TC:13.04mg/L IC:6.797mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	513.0	13.04mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 9:19:34 PM

Mean Area 513.0
Mean Conc. 13.04mg/L

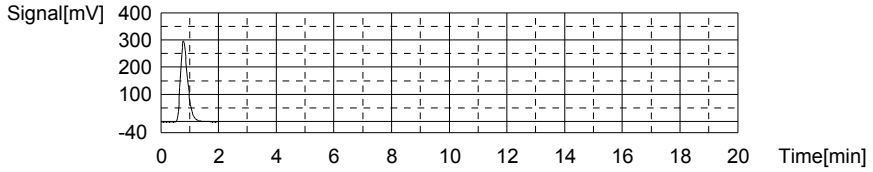

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	233.1	6.797mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 9:24:25 PM

Mean Area 233.1
Mean Conc. 6.797mg/L

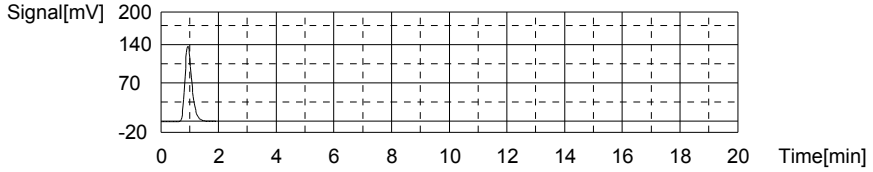

Sample

Sample Name: L16080321-26 MS
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:20.26mg/L TC:49.91mg/L IC:29.65mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1949	49.91mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 9:32:00 PM

Mean Area 1949
Mean Conc. 49.91mg/L

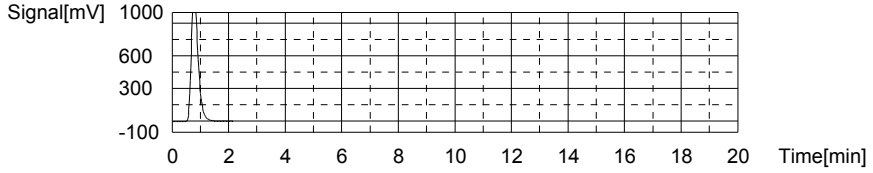

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	997.1	29.65mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 9:37:11 PM

Mean Area 997.1
Mean Conc. 29.65mg/L

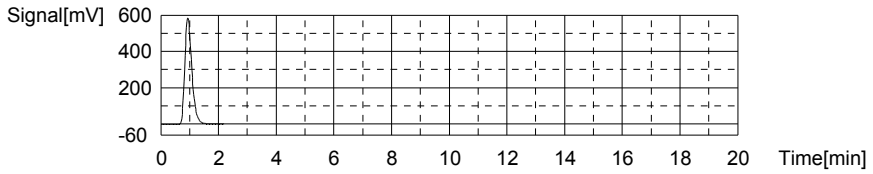

Sample

Sample Name: L16080321-27 (3) MSD
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.178mg/L TC:12.36mg/L IC:6.180mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	486.3	12.36mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 9:44:31 PM

Mean Area 486.3
Mean Conc. 12.36mg/L

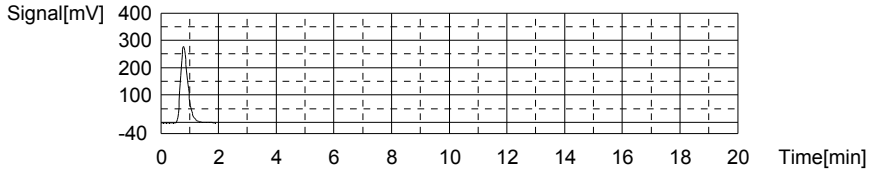

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	212.5	6.180mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 9:49:17 PM

Mean Area 212.5
Mean Conc. 6.180mg/L

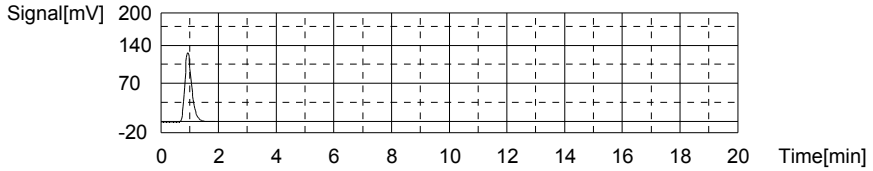

Sample

Sample Name: L16080321-28 MSD
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:19.42mg/L TC:46.58mg/L IC:27.15mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1819	46.58mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 9:56:51 PM

Mean Area 1819
Mean Conc. 46.58mg/L

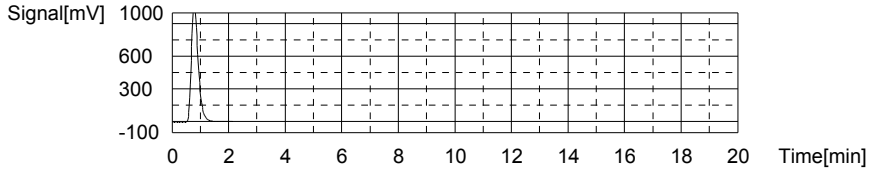

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	913.5	27.15mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 10:01:56 PM

Mean Area 913.5
Mean Conc. 27.15mg/L

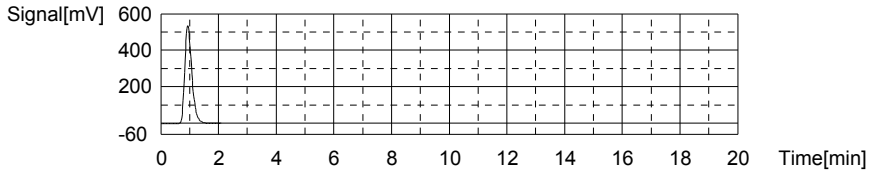

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.107mg/L TC:60.52mg/L IC:55.41mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2362	60.52mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 10:09:39 PM

Mean Area 2362
Mean Conc. 60.52mg/L

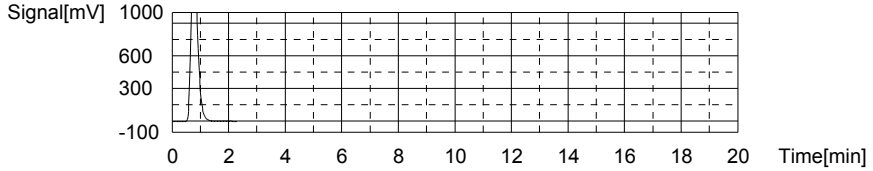

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1858	55.41mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 10:15:16 PM

Mean Area 1858
Mean Conc. 55.41mg/L

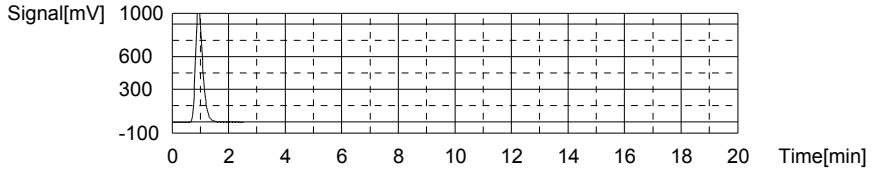

Sample

Sample Name: L16080321-30 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.974mg/L TC:18.83mg/L IC:14.86mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	738.5	18.83mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 10:22:42 PM

Mean Area 738.5
Mean Conc. 18.83mg/L

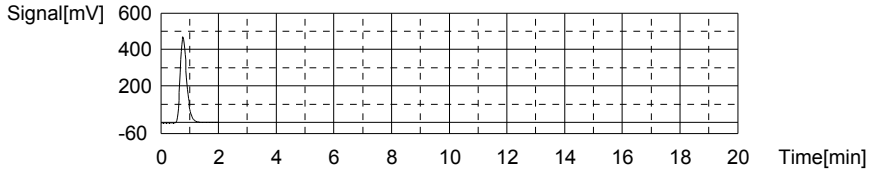

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	502.6	14.86mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 10:27:38 PM

Mean Area 502.6
Mean Conc. 14.86mg/L

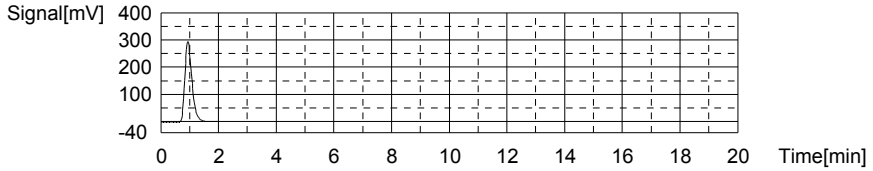

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.90mg/L TC:27.99mg/L IC:0.08291mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1095	27.99mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 10:35:28 PM

Mean Area 1095
Mean Conc. 27.99mg/L

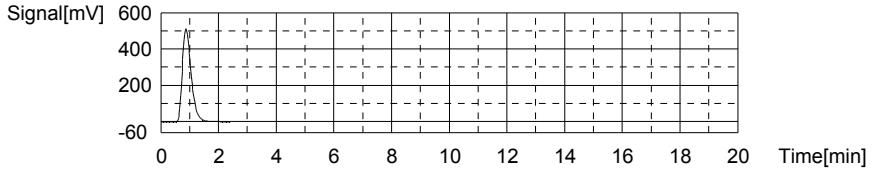

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.698	0.08291mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 10:39:54 PM

Mean Area 8.698
Mean Conc. 0.08291mg/L

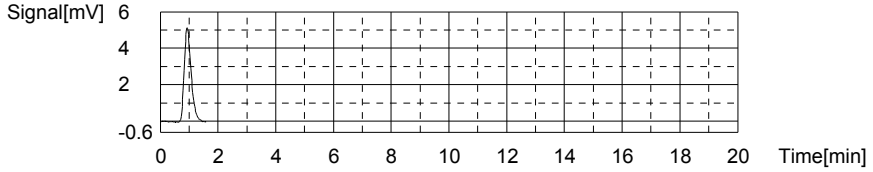

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.03659mg/L TC:0.1363mg/L IC:0.09970mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.26	0.1363mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 10:44:54 PM

Mean Area 10.26
Mean Conc. 0.1363mg/L

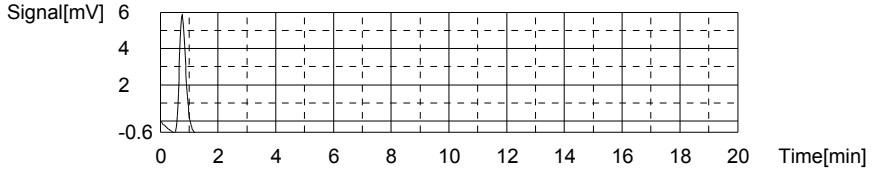

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.259	0.09970mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 10:48:47 PM

Mean Area 9.259
Mean Conc. 0.09970mg/L

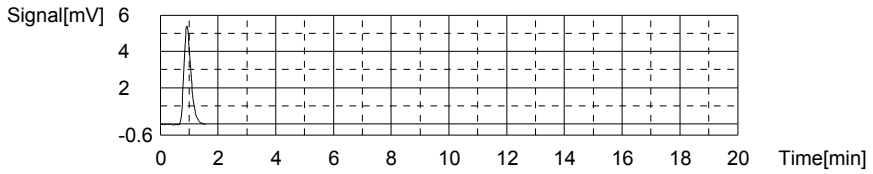

Sample

Sample Name: L16080321-31
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.099mg/L TC:1.172mg/L IC:0.07259mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	50.59	1.172mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 10:55:57 PM

Mean Area 50.59
Mean Conc. 1.172mg/L

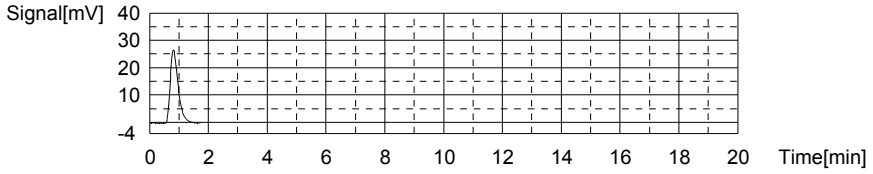

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.353	0.07259mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 11:00:21 PM

Mean Area 8.353
Mean Conc. 0.07259mg/L

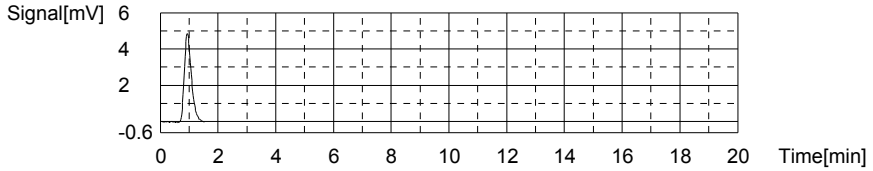

Sample

Sample Name: L16080321-32
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9893mg/L TC:1.062mg/L IC:0.07310mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	46.33	1.062mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 11:07:29 PM

Mean Area 46.33
Mean Conc. 1.062mg/L

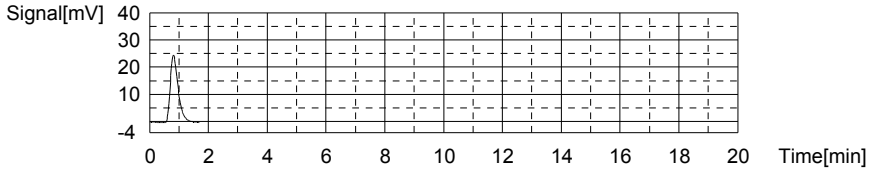

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.370	0.07310mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 11:11:52 PM

Mean Area 8.370
Mean Conc. 0.07310mg/L

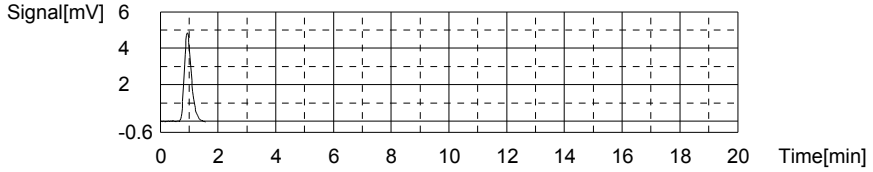

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.999mg/L TC:55.51mg/L IC:47.51mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2167	55.51mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 11:19:34 PM

Mean Area 2167
Mean Conc. 55.51mg/L

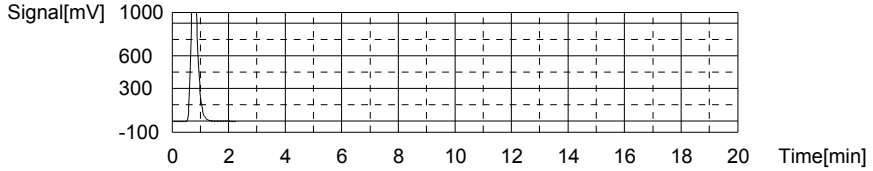

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1594	47.51mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 11:24:50 PM

Mean Area 1594
Mean Conc. 47.51mg/L

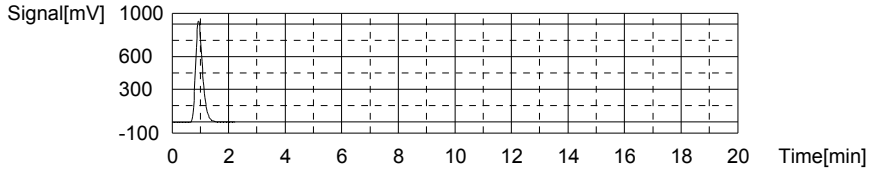

Sample

Sample Name: L16080321-34 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.163mg/L TC:17.71mg/L IC:13.55mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	694.7	17.71mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 11:32:20 PM

Mean Area 694.7
Mean Conc. 17.71mg/L

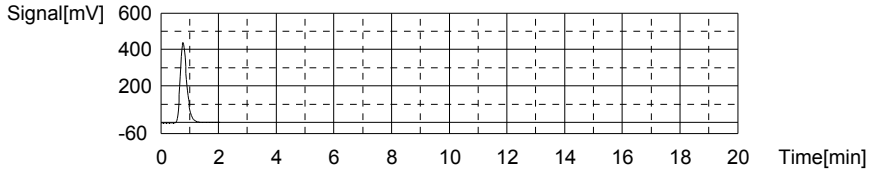

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	458.7	13.55mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 11:37:17 PM

Mean Area 458.7
Mean Conc. 13.55mg/L

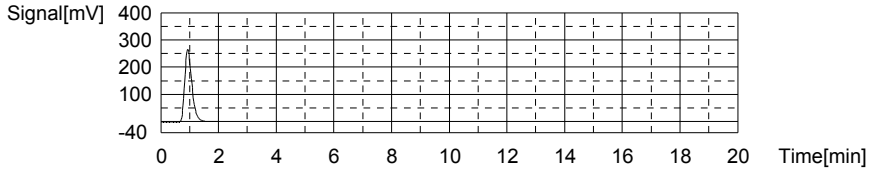

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.2936mg/L TC:81.14mg/L IC:80.84mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3165	81.14mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/8/2016 11:46:26 PM

Mean Area 3165
Mean Conc. 81.14mg/L

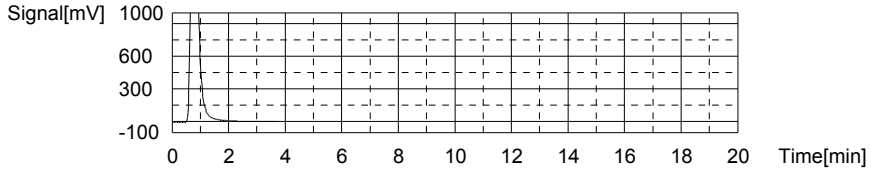

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2708	80.84mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/8/2016 11:52:22 PM

Mean Area 2708
Mean Conc. 80.84mg/L

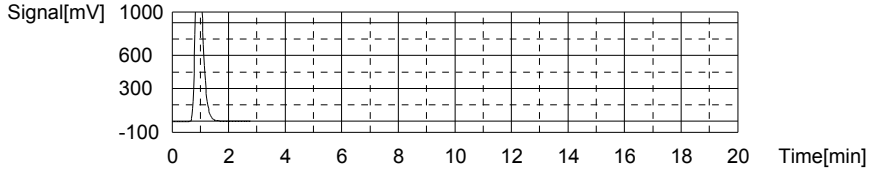

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-15.13mg/L TC:90.84mg/L IC:106.0mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3543	90.84mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 12:00:58 AM

Mean Area 3543
Mean Conc. 90.84mg/L

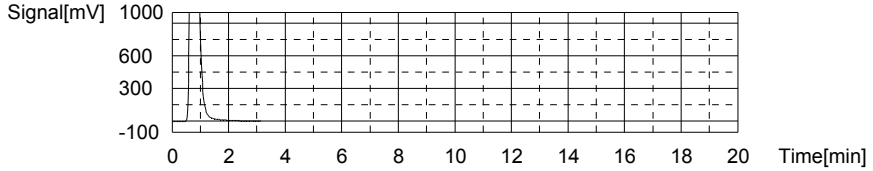

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3548	106.0mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 12:07:26 AM

Mean Area 3548
Mean Conc. 106.0mg/L

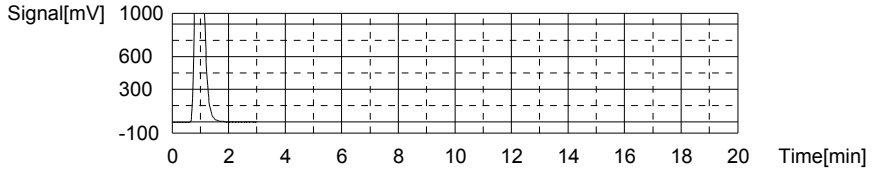

Sample

Sample Name: L16080332-01 (10000)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:19.12mg/L TC:20.73mg/L IC:1.612mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	812.5	20.73mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 12:14:49 AM

Mean Area 812.5
Mean Conc. 20.73mg/L

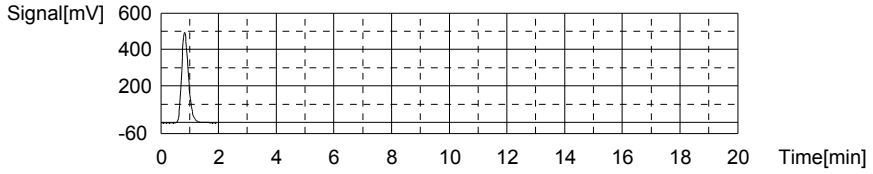

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	59.82	1.612mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 12:19:35 AM

Mean Area 59.82
Mean Conc. 1.612mg/L

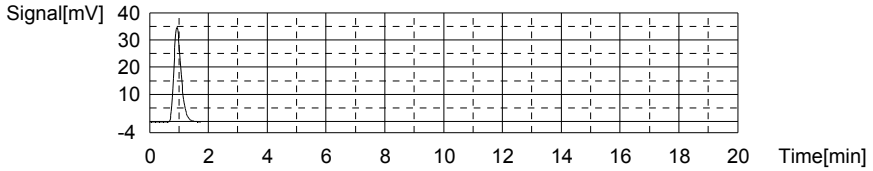

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.482mg/L TC:48.89mg/L IC:39.40mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1909	48.89mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 12:27:53 AM

Mean Area 1909
Mean Conc. 48.89mg/L

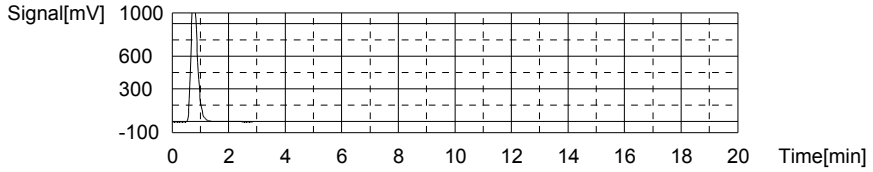

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1323	39.40mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 12:33:18 AM

Mean Area 1323
Mean Conc. 39.40mg/L

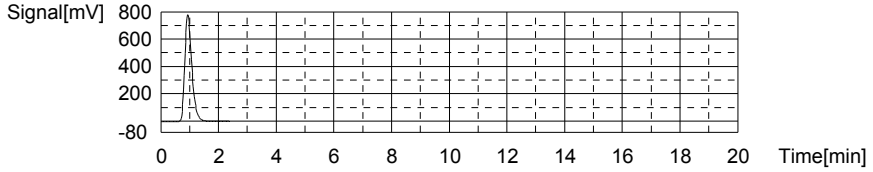

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.22mg/L TC:27.40mg/L IC:0.1817mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1072	27.40mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 12:41:07 AM

Mean Area 1072
Mean Conc. 27.40mg/L

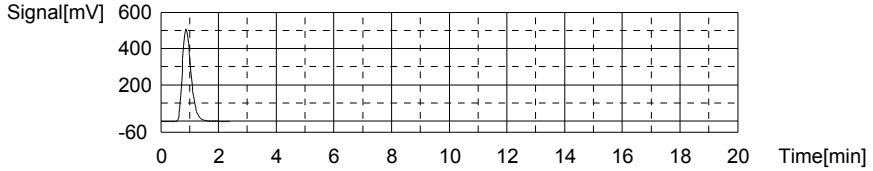

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.00	0.1817mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 12:45:36 AM

Mean Area 12.00
Mean Conc. 0.1817mg/L

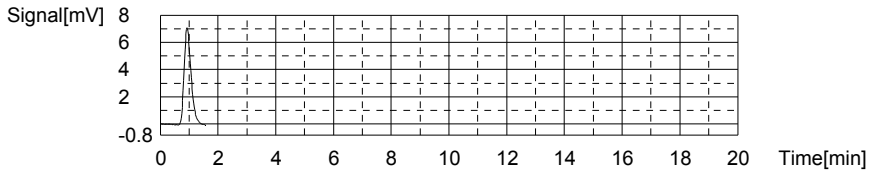

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.01972mg/L TC:0.1412mg/L IC:0.1214mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.45	0.1412mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 12:50:36 AM

Mean Area 10.45
Mean Conc. 0.1412mg/L

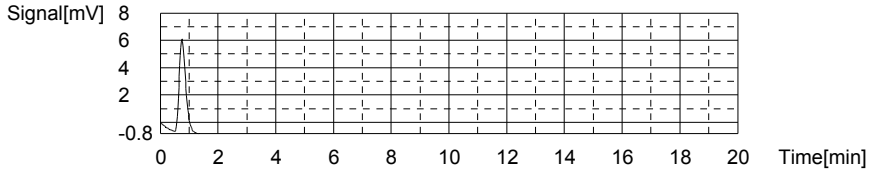

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.986	0.1214mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 12:54:32 AM

Mean Area 9.986
Mean Conc. 0.1214mg/L

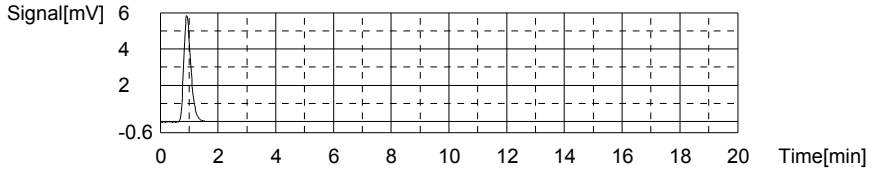

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.17mg/L TC:28.19mg/L IC:0.02511mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1103	28.19mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 8:50:58 AM

Mean Area 1103
Mean Conc. 28.19mg/L

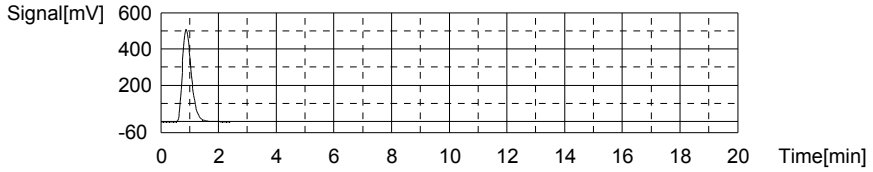

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.766	0.02511mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 8:55:14 AM

Mean Area 6.766
Mean Conc. 0.02511mg/L

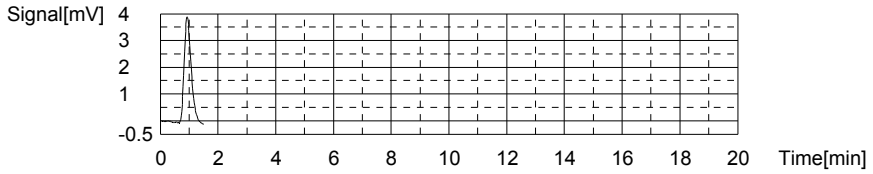

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.06206mg/L TC:0.1484mg/L IC:0.08629mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.73	0.1484mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 9:00:18 AM

Mean Area 10.73
Mean Conc. 0.1484mg/L

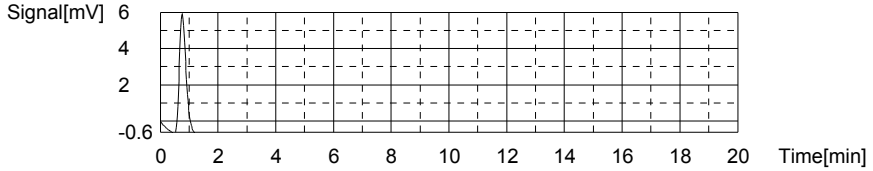

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.811	0.08629mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 9:04:11 AM

Mean Area 8.811
Mean Conc. 0.08629mg/L

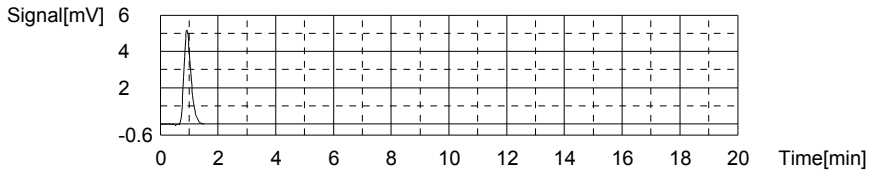

Sample

Sample Name: TOC/TIC
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.60mg/L TC:35.92mg/L IC:7.320mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1404	35.92mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 10:03:42 AM

Mean Area 1404
Mean Conc. 35.92mg/L

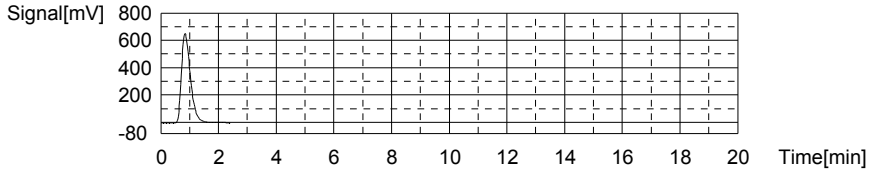

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	250.6	7.320mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 10:08:28 AM

Mean Area 250.6
Mean Conc. 7.320mg/L

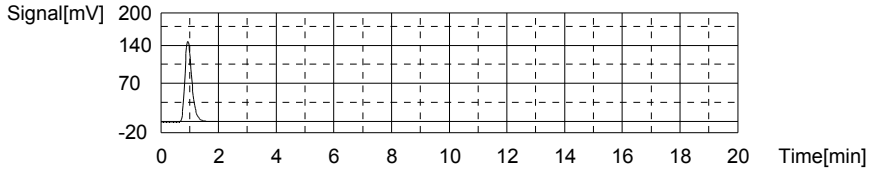

Sample

Sample Name: L16080321-21 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.738mg/L TC:41.70mg/L IC:33.96mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1629	41.70mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 10:16:08 AM

Mean Area 1629
Mean Conc. 41.70mg/L

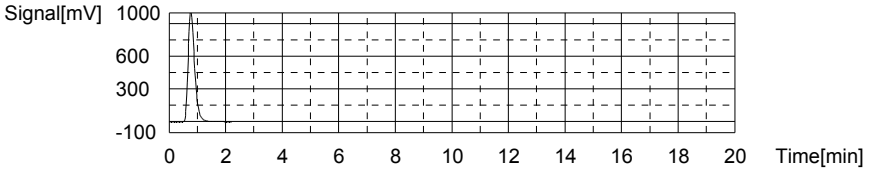

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1141	33.96mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 10:21:25 AM

Mean Area 1141
Mean Conc. 33.96mg/L

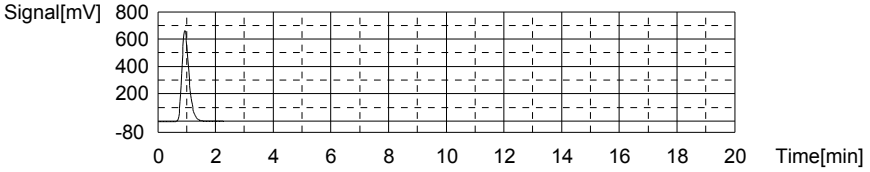

Sample

Sample Name: L16080321-29 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.084mg/L TC:31.27mg/L IC:26.19mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1223	31.27mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 10:29:03 AM

Mean Area 1223
Mean Conc. 31.27mg/L

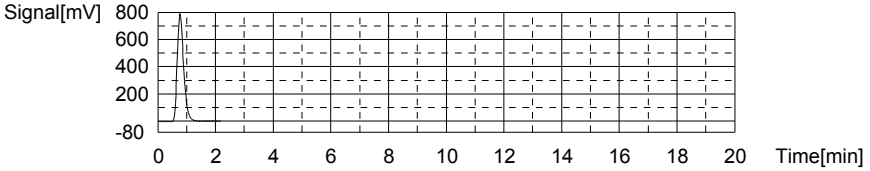

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	881.3	26.19mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 10:34:09 AM

Mean Area 881.3
Mean Conc. 26.19mg/L

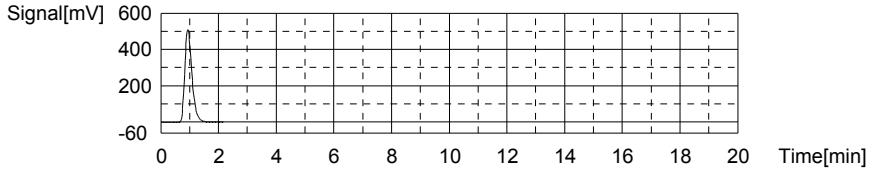

Sample

Sample Name: WG579467-11 (3) DUP
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.263mg/L TC:28.96mg/L IC:24.70mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1133	28.96mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 10:41:40 AM

Mean Area 1133
Mean Conc. 28.96mg/L

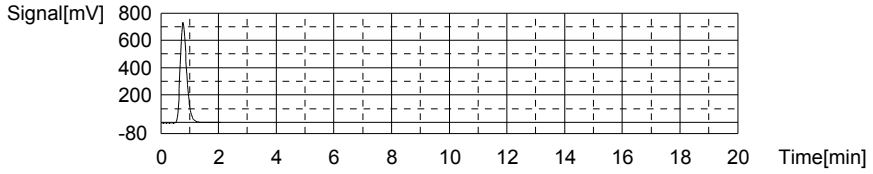

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	831.5	24.70mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 10:46:46 AM

Mean Area 831.5
Mean Conc. 24.70mg/L

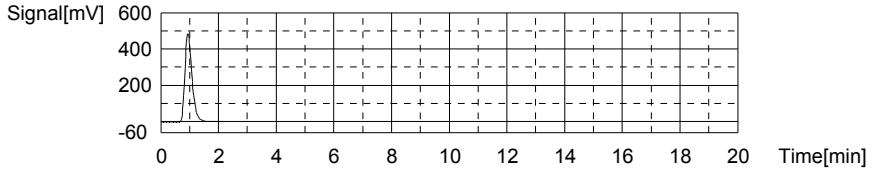

Sample

Sample Name: L16080321-33 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.442mg/L TC:47.73mg/L IC:41.29mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1864	47.73mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 10:54:17 AM

Mean Area 1864
Mean Conc. 47.73mg/L

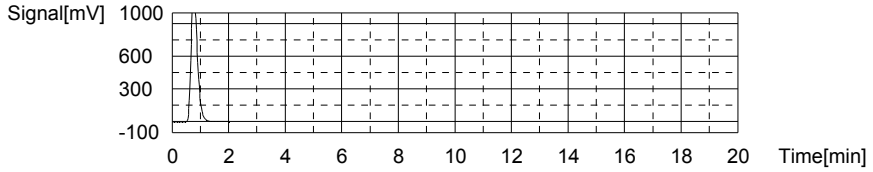

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1386	41.29mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 10:59:37 AM

Mean Area 1386
Mean Conc. 41.29mg/L

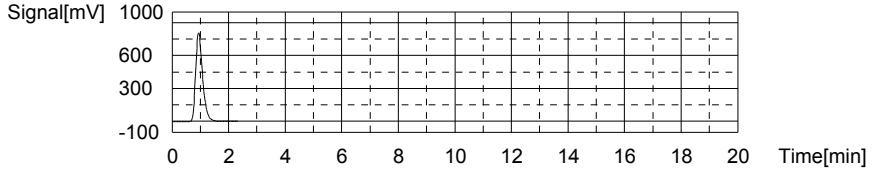

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.389mg/L TC:60.77mg/L IC:57.39mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2372	60.77mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 11:07:21 AM

Mean Area 2372
Mean Conc. 60.77mg/L

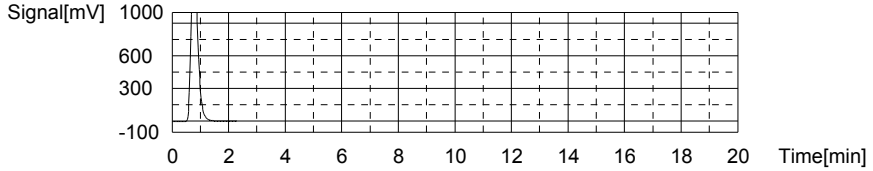

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1924	57.39mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 11:12:40 AM

Mean Area 1924
Mean Conc. 57.39mg/L

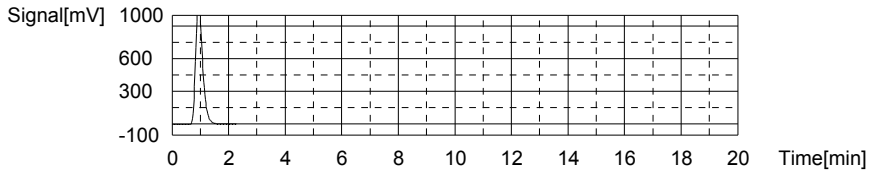

Sample

Sample Name: L16080330-08 (10)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.718mg/L TC:27.73mg/L IC:23.01mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1085	27.73mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 11:39:07 AM

Mean Area 1085
Mean Conc. 27.73mg/L

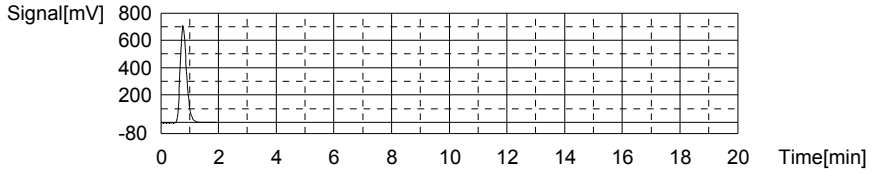

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	775.1	23.01mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 11:44:12 AM

Mean Area 775.1
Mean Conc. 23.01mg/L

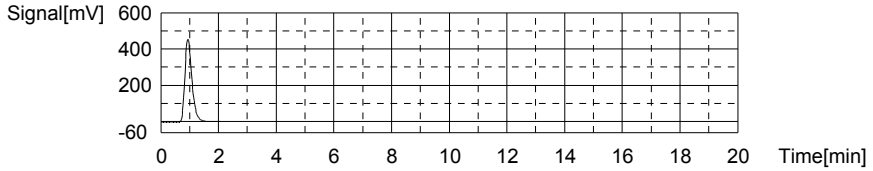

Sample

Sample Name: L16080330-05 (10)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.386mg/L TC:17.11mg/L IC:13.73mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	671.4	17.11mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 1:04:13 PM

Mean Area 671.4
Mean Conc. 17.11mg/L

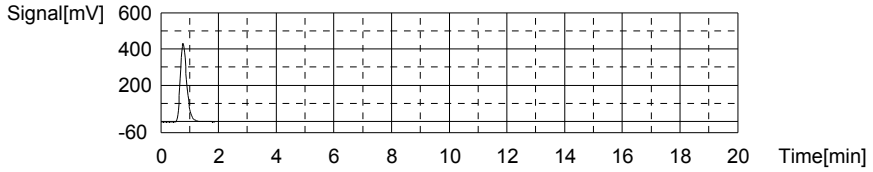

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	464.7	13.73mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 1:09:03 PM

Mean Area 464.7
Mean Conc. 13.73mg/L

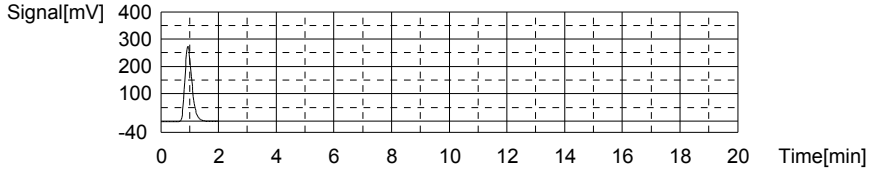

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.73mg/L TC:27.83mg/L IC:0.1062mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1089	27.83mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 1:16:51 PM

Mean Area 1089
Mean Conc. 27.83mg/L

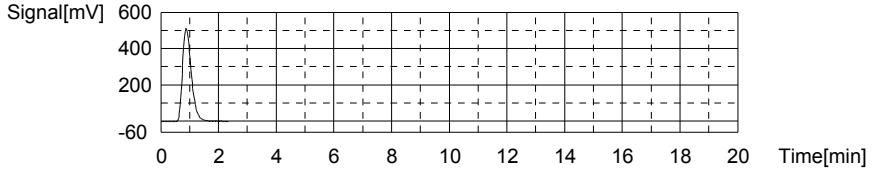

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.475	0.1062mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 1:21:12 PM

Mean Area 9.475
Mean Conc. 0.1062mg/L

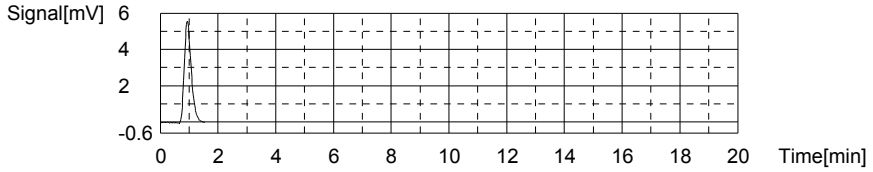

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1096mg/L TC:0.1956mg/L IC:0.08596mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.57	0.1956mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	8/9/2016 1:26:18 PM

Mean Area 12.57
Mean Conc. 0.1956mg/L

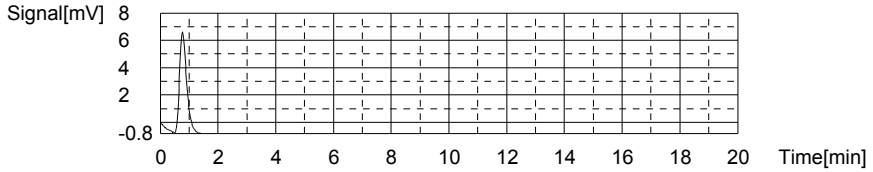

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.800	0.08596mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	8/9/2016 1:30:08 PM

Mean Area 8.800
Mean Conc. 0.08596mg/L

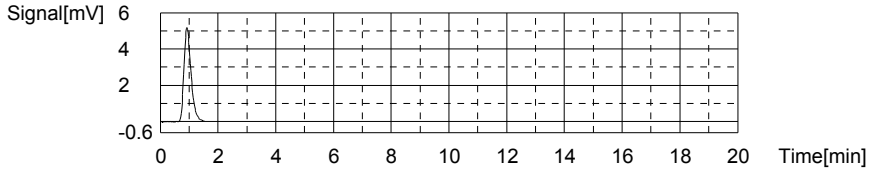

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
August 17, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED	AWE - ANDREW W. ESSIG
AZH - AFTER HOURS	BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE	BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CJQ - Cameron J. Quick
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	CV - Carl Volkman
DAK - DEAN A. KETELSEN	DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG	DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER	DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN	ENY - EMILY N. YOAK
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
HDC - HANAH D. COE	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JDS - JARED D. SMITH
JKP - JACQUELINE K. PARSONS	JLD - JESSICA L. DELONG
JLL - JOHN L. LENT	JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU
KAT - KATHY A. TUCKER	KDD - Katelyn D. Daley
KDW - KATHRYN D. WELCH	KEB - KATIE E. BARNES
KHR - KIM H. RHODES	KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS	LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF	LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA	MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MMB - MAREN M. BEERY	MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON	NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS	PIT - MICROBAC WARRENDALE
QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN
RNP - RICK N. PETTY	SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN	SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE	TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS
VC - VICKI COLLIER	WJB - WILL J. BEASLEY
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
August 17, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
August 17, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071	Signature:	Scott Beesinger
Client:	AECOM		
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002FA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Dissolved Gases / Carbon Dioxide	Sulfide	Alkalinity	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Total Iron	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 46	46WW08-080216			8/2/16	0855		✓	W	3	✓												
	46WW14-080216			8/2/16	1000		✓	W	3	✓												
	46WW14FD-080216			8/2/16	1000		✓	W	3	✓												
	46WW07-080216			8/2/16	1105		✓	W	3	✓												
	46WW05-080316			8/3/16	0755		✓	W	10	✓	✓	✓	✓	✓	✓							
	46WW05F-080316			8/3/16	0755		✓	W	1							✓						
	46WW05FF-080316			8/3/16	0755		✓	W	1								✓					
	46WW16-080316			8/3/16	0910		✓	W	10	✓	✓	✓	✓	✓	✓							
	46WW16F-080316			8/3/16	0910		✓	W	1							✓						
	46WW16FF-080316			8/3/16	0910		✓	W	1								✓					
	LHSmw19-080316			8/3/16	1020		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	LHSmw19FF-080316			8/3/16	1020		✓	W	1								✓					
	46WW11-080316			8/3/16	1125		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	46WW11FF-080316			8/3/16	1125		✓	W	1								✓					

Comments: STANDARD TAT

Microbac OVD
Received: 08/05/2016 09:37
By: CARA STRICKLER 221000089318
Cara Strickler

	Date	Time	Received	Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	8/3/16	1545			
Relinquished by: (Signature)	Date	Time	Received (Signature)	Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00746774

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD		
Project Name/Location:	Longhorn		
Project Number:	60256135.0002FA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Dissolved Gases / Carbon Dioxide	Sulfide	Alkalinity	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Total Iron	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 46	46WW09-080316			8/3/16	1345		✓	W	10	✓	✓	✓	✓	✓	✓							
	46WW09F-080316			8/3/16	1345		✓	W	1							✓						
	46WW09FF-080316			8/3/16	1345		✓	W	1								✓					
	TRIP BLANK			8/3/16			✓	W	2	✓												

pH:

Comments: STANDARD TAT

	Date	Time		Date	Time	
Relinquished by: (Signature) Scott Beesinger	8/3/16	1545	Rec			Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Rec (Sig		Time	Remarks:

Microbac OVD
Received: 08/05/2016 09:37
By: CARA STRICKLER
221000089318
Cara Strickler

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080330
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080330-01	784512	826-LOW 8260 G-40-T2

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Samplenum	Container ID	Products
L16080330-02	784513	826-LOW ENCORE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080330
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080330-03	784514	826-LOW DRO 8270 8081

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Samplenum	Container ID	Products
L16080330-04	784515	826-LOW PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080330
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080330-05	784516	826-LOW 8260 G-40-T2

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		05-AUG-2016 14:08	BRG		

Samplenum	Container ID	Products
L16080330-05	784517	RSK175EXT ENCORE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG1	05-AUG-2016 15:36	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG1	05-AUG-2016 15:36	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG1	05-AUG-2016 15:36	AWE	CLS	

Samplenum	Container ID	Products
L16080330-05	784518	9056 DRO 8270 8081

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	05-AUG-2016 14:08	BRG		
2	PREP	L1	SEM	05-AUG-2016 14:15	AED	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080330
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080330-05	784519	ALK PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	05-AUG-2016 14:08	BRG		
2	ANALYZ	F1	WET	08-AUG-2016 14:33	DCM	CLS	
3	STORE	WET	A1	12-AUG-2016 11:08	CLS	BLR	

Samplenum	Container ID	Products
L16080330-05	784520	TOC 8260 G-40-T2

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		<2
2	ANALYZ	W1	WET	08-AUG-2016 15:49	EPT	CLS	
3	STORE	WET	A1	12-AUG-2016 11:08	CLS	BLR	

Samplenum	Container ID	Products
L16080330-05	784521	S ENCORE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		
2	PREP	W1	WET	05-AUG-2016 14:14	EPT	CLS	
3	STORE	WET	A1	11-AUG-2016 08:15	EPT	CLS	

Samplenum	Container ID	Products
L16080330-06	784522	FE DRO 8270 8081

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		
2	PREP	W1	DIG	05-AUG-2016 15:17	ERP	BRG	
3	STORE	DIG	A1	08-AUG-2016 13:00	BRG	ERP	
4	ANALYZ*	DIG	METALS	10-AUG-2016 08:55	JYH	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080330
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080330-07	784523	FE-D MN-MSD PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		
2	PREP	W1	DIG	05-AUG-2016 15:17	ERP	BRG	
3	STORE	DIG	A1	08-AUG-2016 13:00	BRG	ERP	
4	ANALYZ*	DIG	METALS	10-AUG-2016 08:55	JYH	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16080330-08	784524	826-LOW OG-HEM

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Samplenum	Container ID	Products
L16080330-08	784525	RSK175EXT OG-HEM

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG1	05-AUG-2016 15:36	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG1	05-AUG-2016 15:36	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG1	05-AUG-2016 15:36	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080330
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080330-08	784526	9056 OG-HEM

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	05-AUG-2016 14:08	BRG		
2	PREP	L1	SEM	05-AUG-2016 14:15	AED	BRG	

Samplenum	Container ID	Products
L16080330-08	784527	ALK TDS TSS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	05-AUG-2016 14:08	BRG		
2	ANALYZ	F1	WET	08-AUG-2016 14:33	DCM	CLS	
3	STORE	WET	A1	12-AUG-2016 11:09	CLS	BLR	

Samplenum	Container ID	Products
L16080330-08	784528	TOC CU

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		<2
2	ANALYZ	W1	WET	08-AUG-2016 15:49	EPT	CLS	
3	STORE	WET	A1	12-AUG-2016 11:08	CLS	BLR	

Samplenum	Container ID	Products
L16080330-08	784529	S OG-HEM

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		
2	PREP	W1	WET	05-AUG-2016 14:14	EPT	CLS	
3	STORE	WET	A1	11-AUG-2016 08:15	EPT	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080330
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080330-09	784530	FE TSS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		
2	PREP	W1	DIG	05-AUG-2016 15:17	ERP	BRG	
3	STORE	DIG	A1	08-AUG-2016 13:00	BRG	ERP	
4	ANALYZ*	DIG	METALS	10-AUG-2016 08:55	JYH	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16080330-10	784531	FE-D MN-MSD OG-HEM

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		
2	PREP	W1	DIG	05-AUG-2016 15:17	ERP	BRG	
3	STORE	DIG	A1	08-AUG-2016 13:00	BRG	ERP	
4	ANALYZ*	DIG	METALS	10-AUG-2016 08:55	JYH	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16080330-11	784532	826-LOW TSS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080330
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080330-11	784533	RSK175EXT OG-HEM

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG1	05-AUG-2016 15:36	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG1	05-AUG-2016 15:36	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG1	05-AUG-2016 15:36	AWE	CLS	

Samplenum	Container ID	Products
L16080330-11	784534	9056 PB-MS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	05-AUG-2016 14:08	BRG		
2	PREP	L1	SEM	05-AUG-2016 14:15	AED	BRG	

Samplenum	Container ID	Products
L16080330-11	784535	ALK PB-MS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	05-AUG-2016 14:08	BRG		
2	ANALYZ	F1	WET	08-AUG-2016 14:33	DCM	CLS	
3	STORE	WET	A1	12-AUG-2016 11:09	CLS	BLR	

Samplenum	Container ID	Products
L16080330-11	784536	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		<2
2	ANALYZ	W1	WET	08-AUG-2016 15:49	EPT	CLS	
3	STORE	WET	A1	12-AUG-2016 11:08	CLS	BLR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080330
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080330-11	784537	FE GRO DRO 826-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		
2	PREP	W1	DIG	05-AUG-2016 15:17	ERP	BRG	
3	STORE	DIG	A1	08-AUG-2016 13:00	BRG	ERP	
4	ANALYZ*	DIG	METALS	10-AUG-2016 08:55	JYH	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16080330-11	784538	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		
2	PREP	W1	WET	05-AUG-2016 14:14	EPT	CLS	
3	STORE	WET	A1	11-AUG-2016 08:15	EPT	CLS	

Samplenum	Container ID	Products
L16080330-12	784539	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		
2	PREP	W1	DIG	05-AUG-2016 15:17	ERP	BRG	
3	STORE	DIG	A1	08-AUG-2016 13:00	BRG	ERP	
4	ANALYZ*	DIG	METALS	10-AUG-2016 08:55	JYH	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080330
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080330-13	784540	826-LOW GRO DRO 826-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Samplenum	Container ID	Products
L16080330-13	784541	RSK175EXT 8081

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG1	05-AUG-2016 15:36	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG1	05-AUG-2016 15:36	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG1	05-AUG-2016 15:36	AWE	CLS	

Samplenum	Container ID	Products
L16080330-13	784542	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	05-AUG-2016 14:08	BRG		
2	PREP	L1	SEM	05-AUG-2016 14:15	AED	BRG	
3	STORE	SEM	A1	10-AUG-2016 11:42	CLS	AED	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080330
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080330-13	784543	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	05-AUG-2016 14:08	BRG		
2	ANALYZ	F1	WET	08-AUG-2016 14:33	DCM	CLS	
3	STORE	WET	A1	12-AUG-2016 11:09	CLS	BLR	

Samplenum	Container ID	Products
L16080330-13	784544	TOC GRO DRO 826-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		<2
2	ANALYZ	W1	WET	08-AUG-2016 15:49	EPT	CLS	

Samplenum	Container ID	Products
L16080330-13	784545	FE 8081

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		
2	PREP	W1	DIG	05-AUG-2016 15:17	ERP	BRG	
3	STORE	DIG	A1	08-AUG-2016 13:00	BRG	ERP	
4	ANALYZ*	DIG	METALS	10-AUG-2016 08:55	JYH	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16080330-13	784546	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		
2	PREP	W1	WET	05-AUG-2016 14:14	EPT	CLS	
3	STORE	WET	A1	11-AUG-2016 08:15	EPT	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080330
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080330-14	784547	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		
2	PREP	W1	DIG	05-AUG-2016 15:17	ERP	BRG	
3	STORE	DIG	A1	08-AUG-2016 13:00	BRG	ERP	
4	ANALYZ*	DIG	METALS	10-AUG-2016 08:55	JYH	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16080330-15	784548	826-LOW GRO DRO 826-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Samplenum	Container ID	Products
L16080330-15	784549	RSK175EXT 8081

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG1	05-AUG-2016 15:36	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG1	05-AUG-2016 15:36	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG1	05-AUG-2016 15:36	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080330
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080330-15	784550	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	05-AUG-2016 14:08	BRG		
2	PREP	L1	SEM	05-AUG-2016 14:15	AED	BRG	

Samplenum	Container ID	Products
L16080330-15	784551	ALK 8081

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	05-AUG-2016 14:08	BRG		
2	ANALYZ	F1	WET	08-AUG-2016 14:33	DCM	CLS	
3	STORE	WET	A1	12-AUG-2016 11:09	CLS	BLR	

Samplenum	Container ID	Products
L16080330-15	784552	TOC 8081

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		<2
2	ANALYZ	W1	WET	08-AUG-2016 15:49	EPT	CLS	
3	STORE	WET	A1	12-AUG-2016 11:08	CLS	BLR	

Samplenum	Container ID	Products
L16080330-15	784553	S 8081

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		
2	PREP	W1	WET	05-AUG-2016 14:14	EPT	CLS	
3	STORE	WET	A1	11-AUG-2016 08:15	EPT	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16080330
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 16-AUG-2016

Samplenum	Container ID	Products
L16080330-16	784554	FE 8081

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		
2	PREP	W1	DIG	05-AUG-2016 15:17	ERP	BRG	
3	STORE	DIG	A1	08-AUG-2016 13:00	BRG	ERP	
4	ANALYZ*	DIG	METALS	10-AUG-2016 08:55	JYH	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16080330-17	784555	FE-D MN-MSD 8081

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	05-AUG-2016 14:08	BRG		
2	PREP	W1	DIG	05-AUG-2016 15:17	ERP	BRG	
3	STORE	DIG	A1	08-AUG-2016 13:00	BRG	ERP	
4	ANALYZ*	DIG	METALS	10-AUG-2016 08:55	JYH	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16080330-18	784556	826-LOW 8081

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	05-AUG-2016 14:08	BRG		
2	ANALYZ	V1	ORG4	05-AUG-2016 15:39	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

APPENDIX E: MANN-KENDALL TREND TEST RESULTS

Mann-Kendall analysis for the data collected during the 3-year RA(O) period was completed for 1,1-DCE, cis-1,2-DCE, TCE, and VC. The U.S. EPA's ProUCL version 5.0 was used for this analysis. The dates are displayed in numerical format rather than in a date format as required by the program. The concentration of COCs are presented on the data points on the graph in μg/L. Half of the detection limit was used for non-detects, where applicable. The level of significance was 5%. A summary table of the Mann-Kendall results is presented below, followed by the trend analysis for each well and analyte.

Mann-Kendall Trend Summary – Update for Year 3

Monitoring Well	1,1-DCE*	Cis-1,2-DCE*	TCE	VC*
Shallow Zone Wells				
46WW11	--	**Significant Decrease**	**Significant Decrease**	--
LHSMW19	--	No significant trend	**Significant Decrease**	--
Intermediate Zone Wells				
46WW02	--	**Significant Decrease**	No significant trend	--
46WW05	**Significant Decrease**	**Significant Decrease**	**Significant Decrease**	**Significant Decrease**

* Most recent concentrations already achieve MCLs

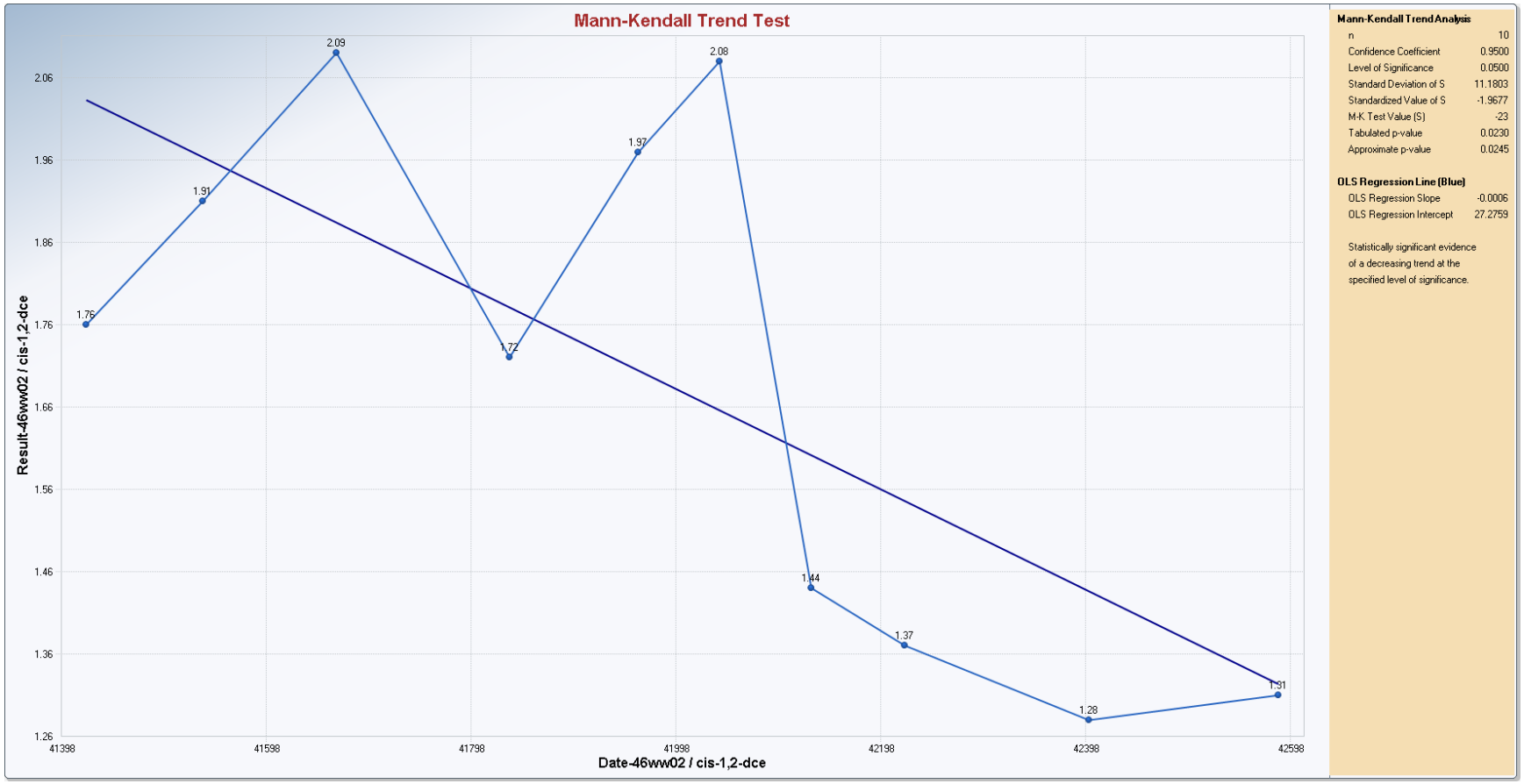
Mann-Kendall Trend Test
Result-46ww02 / cis-1,2-dce
Date-46ww02 / cis-1,2-dce
2.06
1.96
1.86
1.76
1.66
1.56
1.46
1.36
1.26
41398
41598
41798
41998
42198
42398
42598
1.76
1.91
2.09
1.72
1.97
2.08
1.44
1.37
1.28
1.31
Mann-Kendall Trend Analysis
n 10
Confidence Coefficient 0.9500
Level of Significance 0.0500
Standard Deviation of S 11.1803
Standardized Value of S -1.9677
M-K Test Value (S) -23
Tabulated p-value 0.0230
Approximate p-value 0.0245
OLS Regression Line (Blue)
OLS Regression Slope -0.0006
OLS Regression Intercept 27.2759
Statistically significant evidence of a decreasing trend at the specified level of significance.

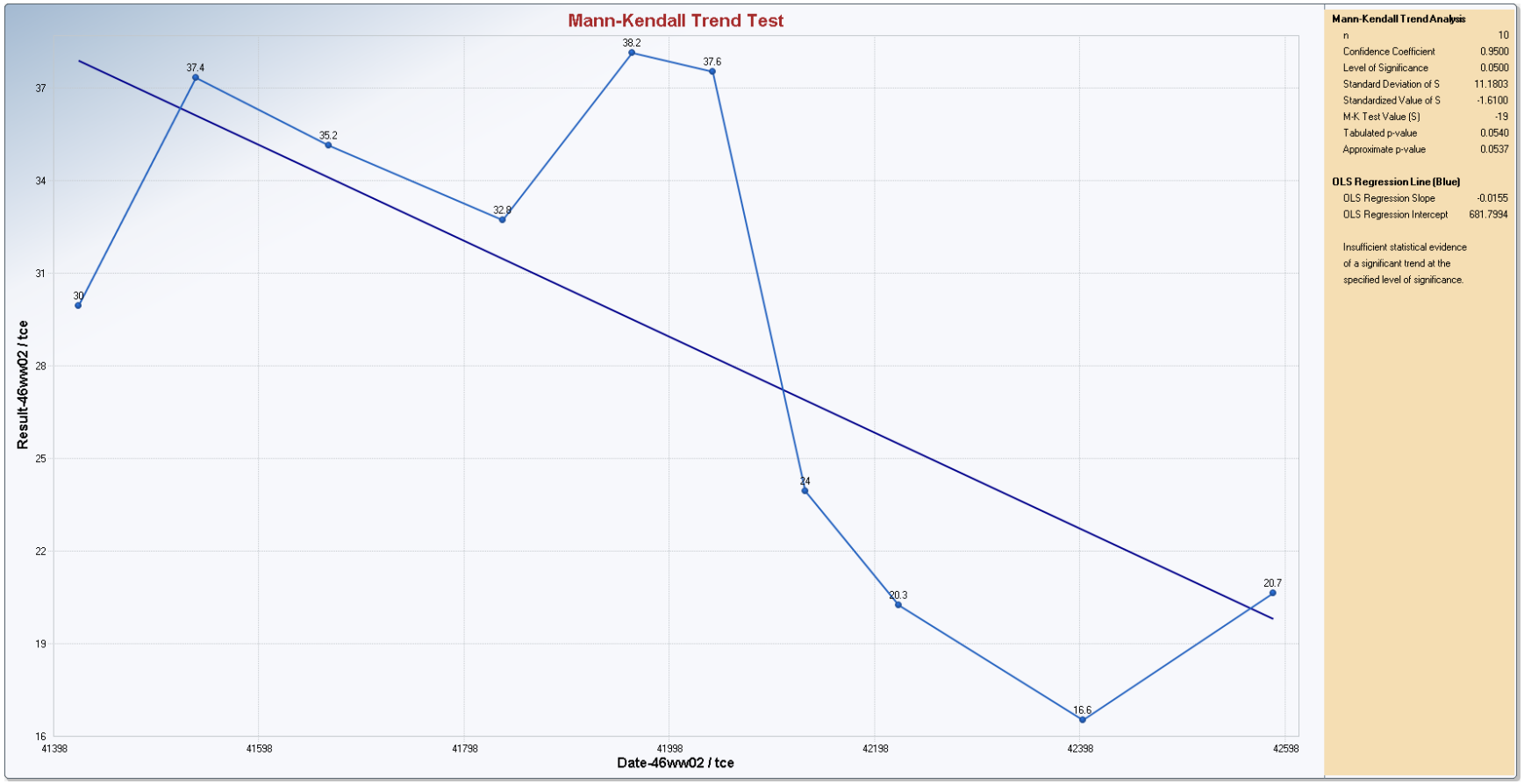
Mann-Kendall Trend Test
Result-46ww02 / tce
Date-46ww02 / tce
37
34
31
28
25
22
19
16
41398
41598
41798
41998
42198
42398
42598
30
37.4
35.2
32.9
38.2
37.6
24
20.3
16.6
20.7
Mann-Kendall Trend Analysis
n 10
Confidence Coefficient 0.9500
Level of Significance 0.0500
Standard Deviation of S 11.1803
Standardized Value of S -1.6100
M-K Test Value (S) -19
Tabulated p-value 0.0540
Approximate p-value 0.0537
OLS Regression Line (Blue)
OLS Regression Slope -0.0155
OLS Regression Intercept 681.7994
Insufficient statistical evidence of a significant trend at the specified level of significance.

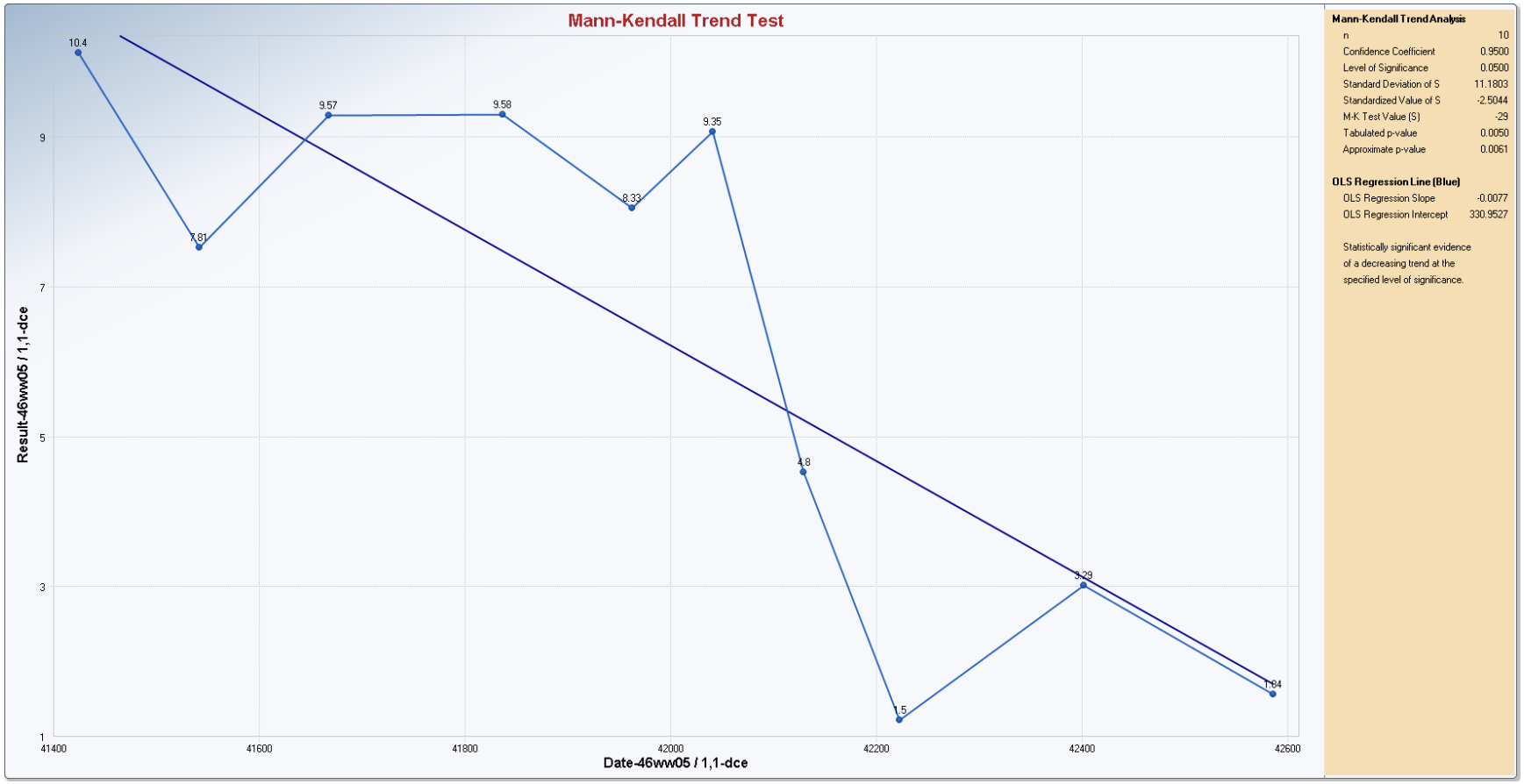
Mann-Kendall Trend Test
Result-46ww05 / 1,1-dce
Date-46ww05 / 1,1-dce
10.4
7.81
9.57
9.58
8.33
9.35
4.8
1.5
3.29
1.84
1
3
5
7
9
41400
41600
41800
42000
42200
42400
42600
Mann-Kendall Trend Analysis
n 10
Confidence Coefficient 0.9500
Level of Significance 0.0500
Standard Deviation of S 11.1803
Standardized Value of S -2.5044
M-K Test Value (S) -29
Tabulated p-value 0.0050
Approximate p-value 0.0061
OLS Regression Line (Blue)
OLS Regression Slope -0.0077
OLS Regression Intercept 330.9527
Statistically significant evidence of a decreasing trend at the specified level of significance.

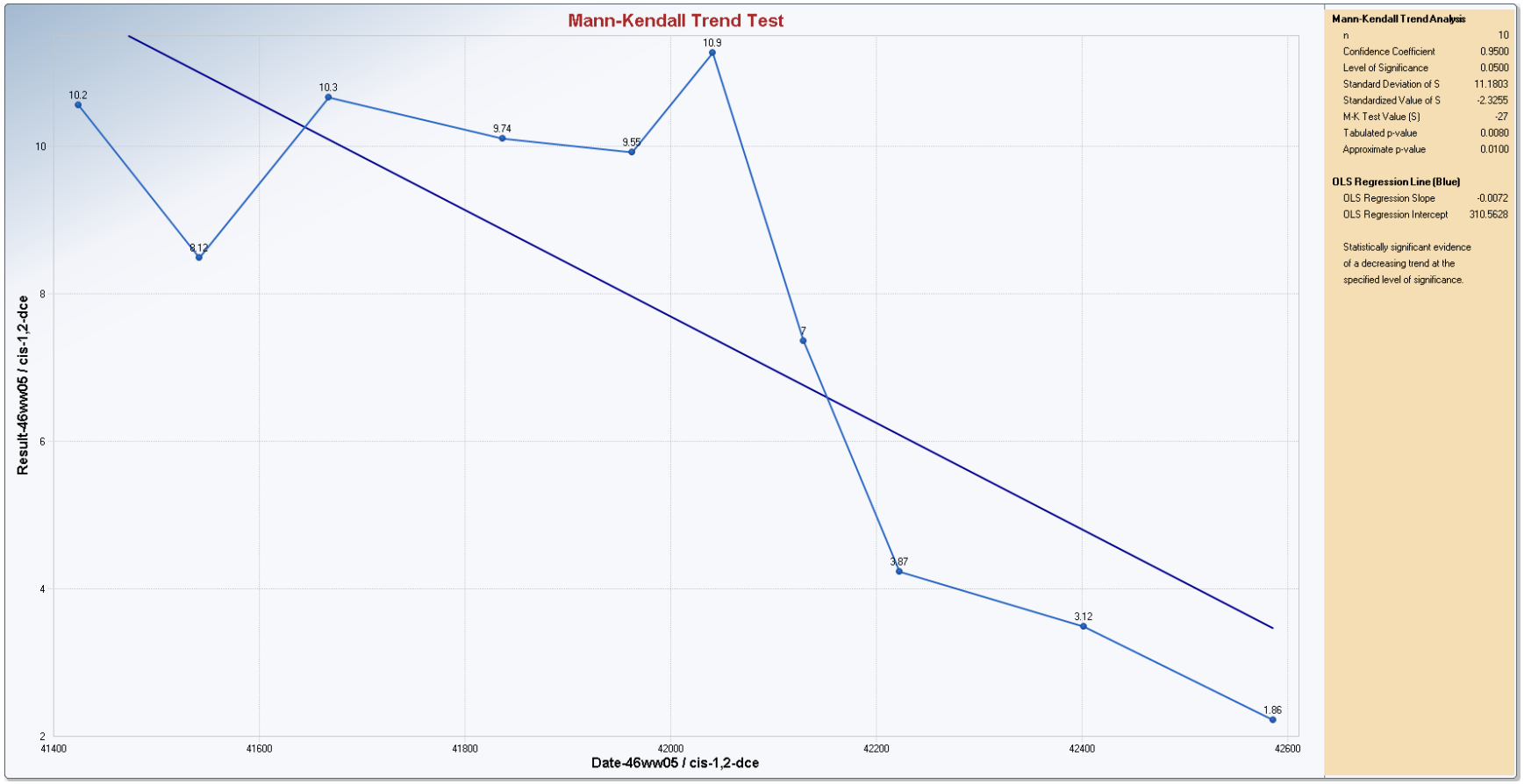
Mann-Kendall Trend Test
Result-46ww05 / cis-1,2-dce
Date-46ww05 / cis-1,2-dce
10.2
8.12
10.3
9.74
9.55
10.9
7
3.87
3.12
1.86
2
4
6
8
10
41400
41600
41800
42000
42200
42400
42600
Mann-Kendall Trend Analysis
n 10
Confidence Coefficient 0.9500
Level of Significance 0.0500
Standard Deviation of S 11.1803
Standardized Value of S -2.3255
M-K Test Value (S) -27
Tabulated p-value 0.0080
Approximate p-value 0.0100
OLS Regression Line (Blue)
OLS Regression Slope -0.0072
OLS Regression Intercept 310.5628
Statistically significant evidence of a decreasing trend at the specified level of significance.

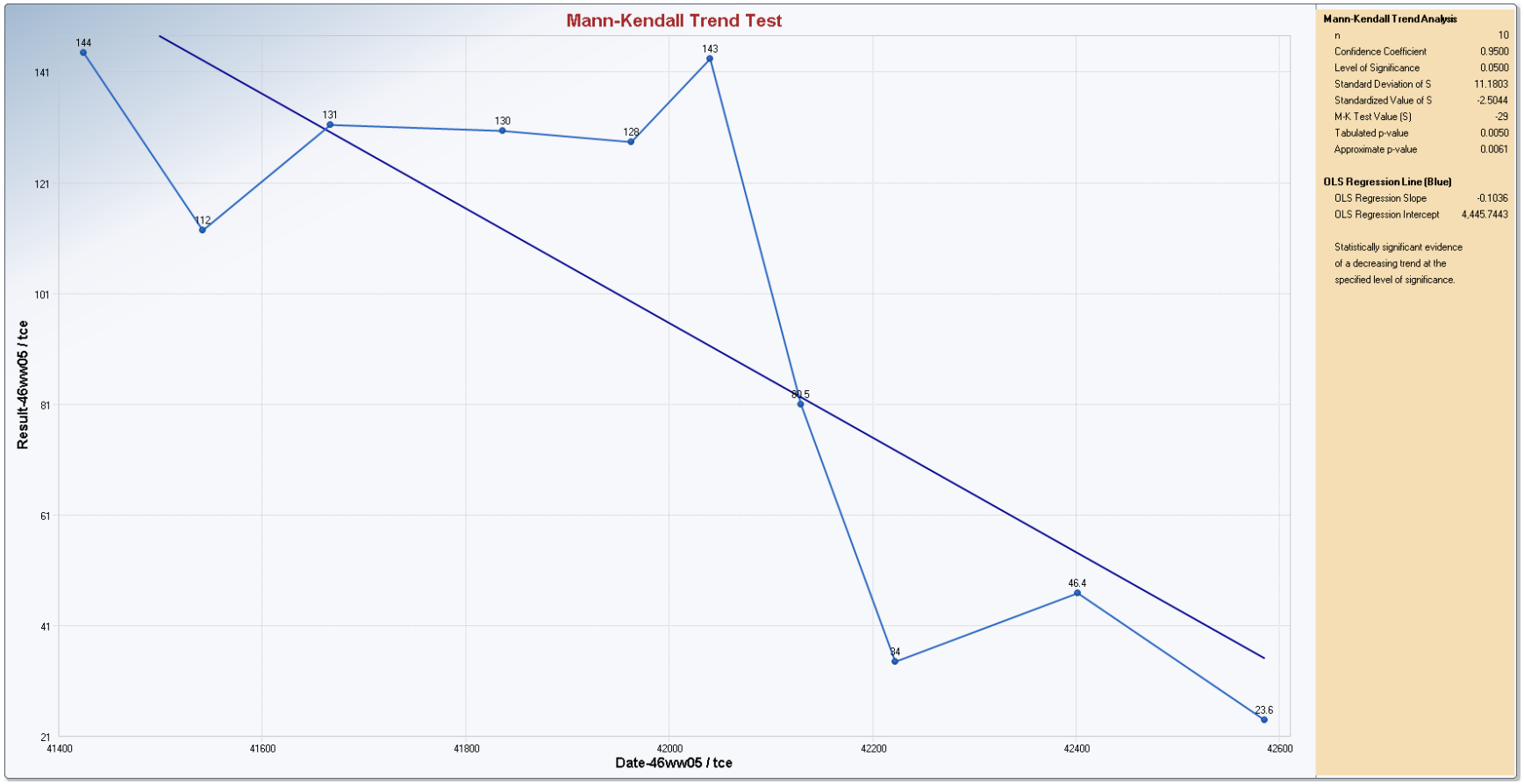
Mann-Kendall Trend Test
Result-46ww05 / tce
Date-46ww05 / tce
144
112
131
130
128
143
80.5
34
46.4
23.6
141
121
101
81
61
41
21
41400
41600
41800
42000
42200
42400
42600
Mann-Kendall Trend Analysis
n 10
Confidence Coefficient 0.9500
Level of Significance 0.0500
Standard Deviation of S 11.1803
Standardized Value of S -2.5044
M-K Test Value (S) -29
Tabulated p-value 0.0050
Approximate p-value 0.0061
OLS Regression Line (Blue)
OLS Regression Slope -0.1036
OLS Regression Intercept 4,445.7443
Statistically significant evidence of a decreasing trend at the specified level of significance.

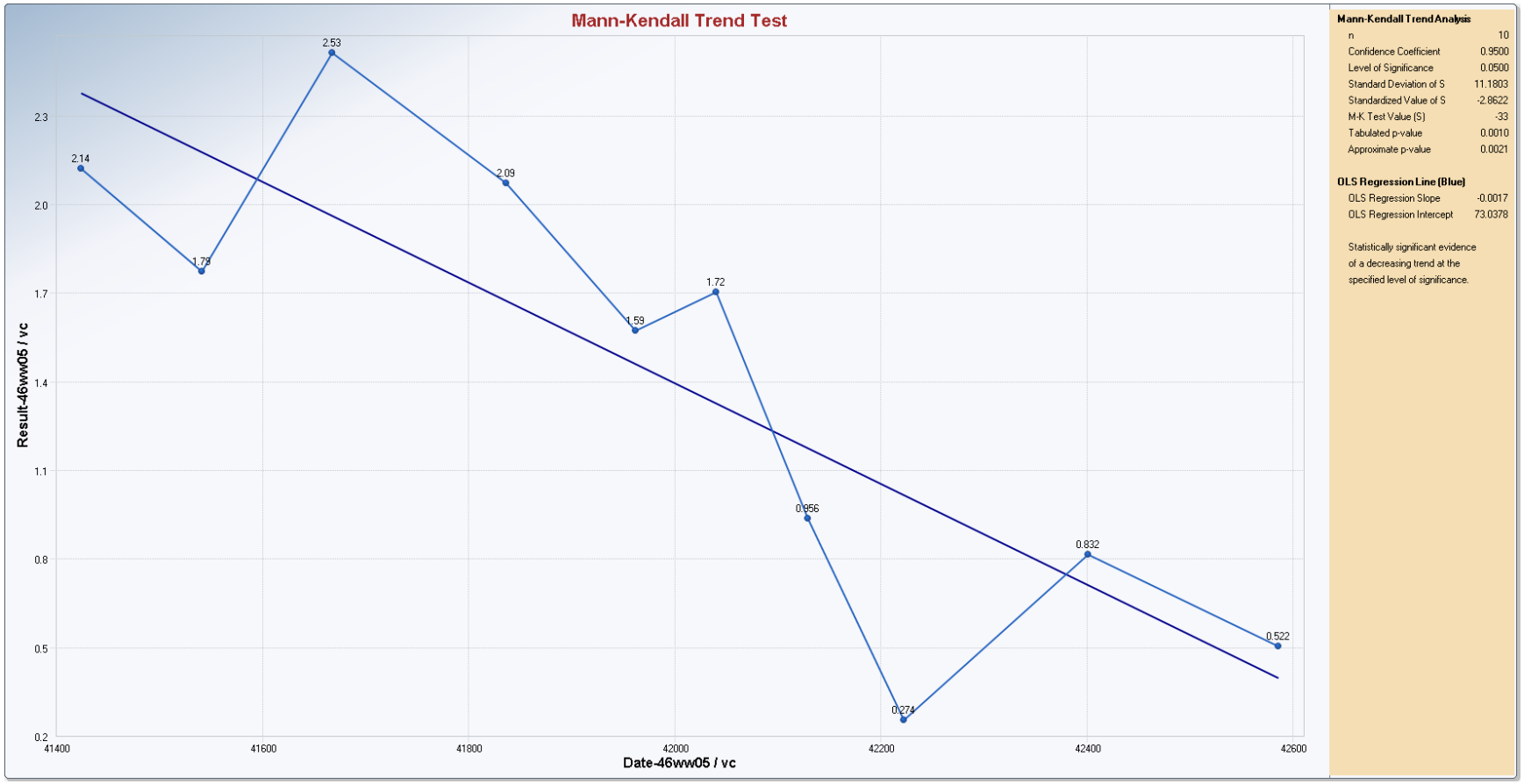
Mann-Kendall Trend Test
Result-46ww05 / vc
Date-46ww05 / vc
2.14
1.75
2.53
2.09
1.59
1.72
0.956
0.274
0.832
0.522
Mann-Kendall Trend Analysis
n 10
Confidence Coefficient 0.9500
Level of Significance 0.0500
Standard Deviation of S 11.1803
Standardized Value of S -2.8622
M-K Test Value (S) -33
Tabulated p-value 0.0010
Approximate p-value 0.0021
OLS Regression Line (Blue)
OLS Regression Slope -0.0017
OLS Regression Intercept 73.0378
Statistically significant evidence of a decreasing trend at the specified level of significance.

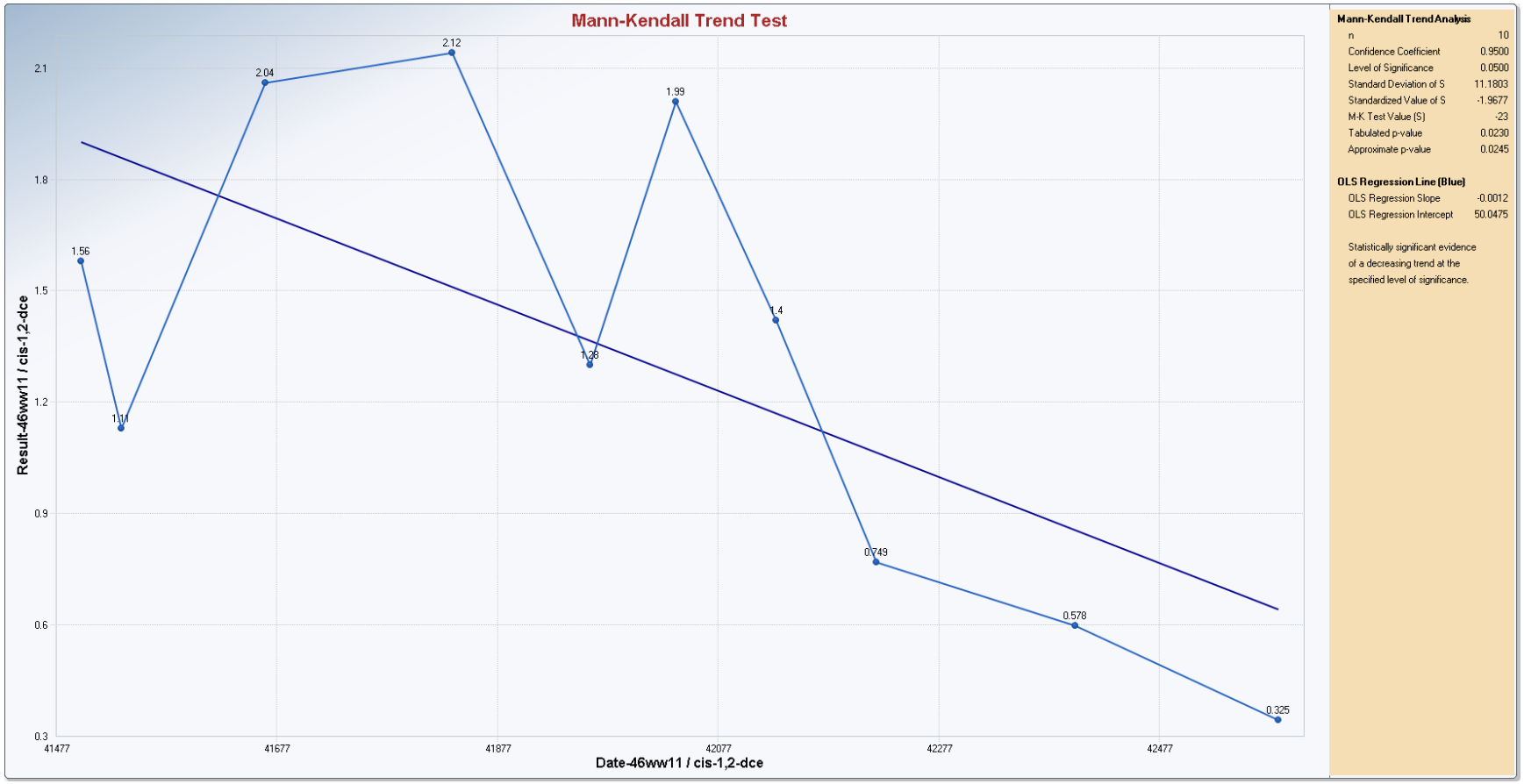
Mann-Kendall Trend Test
Result-46ww11 / cis-1,2-dce
Date-46ww11 / cis-1,2-dce
2.1
1.8
1.5
1.2
0.9
0.6
0.3
41477
41677
41877
42077
42277
42477
1.56
1.11
2.04
2.12
1.28
1.99
1.4
0.749
0.578
0.325
Mann-Kendall Trend Analysis
n 10
Confidence Coefficient 0.9500
Level of Significance 0.0500
Standard Deviation of S 11.1803
Standardized Value of S -1.9677
M-K Test Value (S) -23
Tabulated p-value 0.0230
Approximate p-value 0.0245
OLS Regression Line (Blue)
OLS Regression Slope -0.0012
OLS Regression Intercept 50.0475
Statistically significant evidence of a decreasing trend at the specified level of significance.

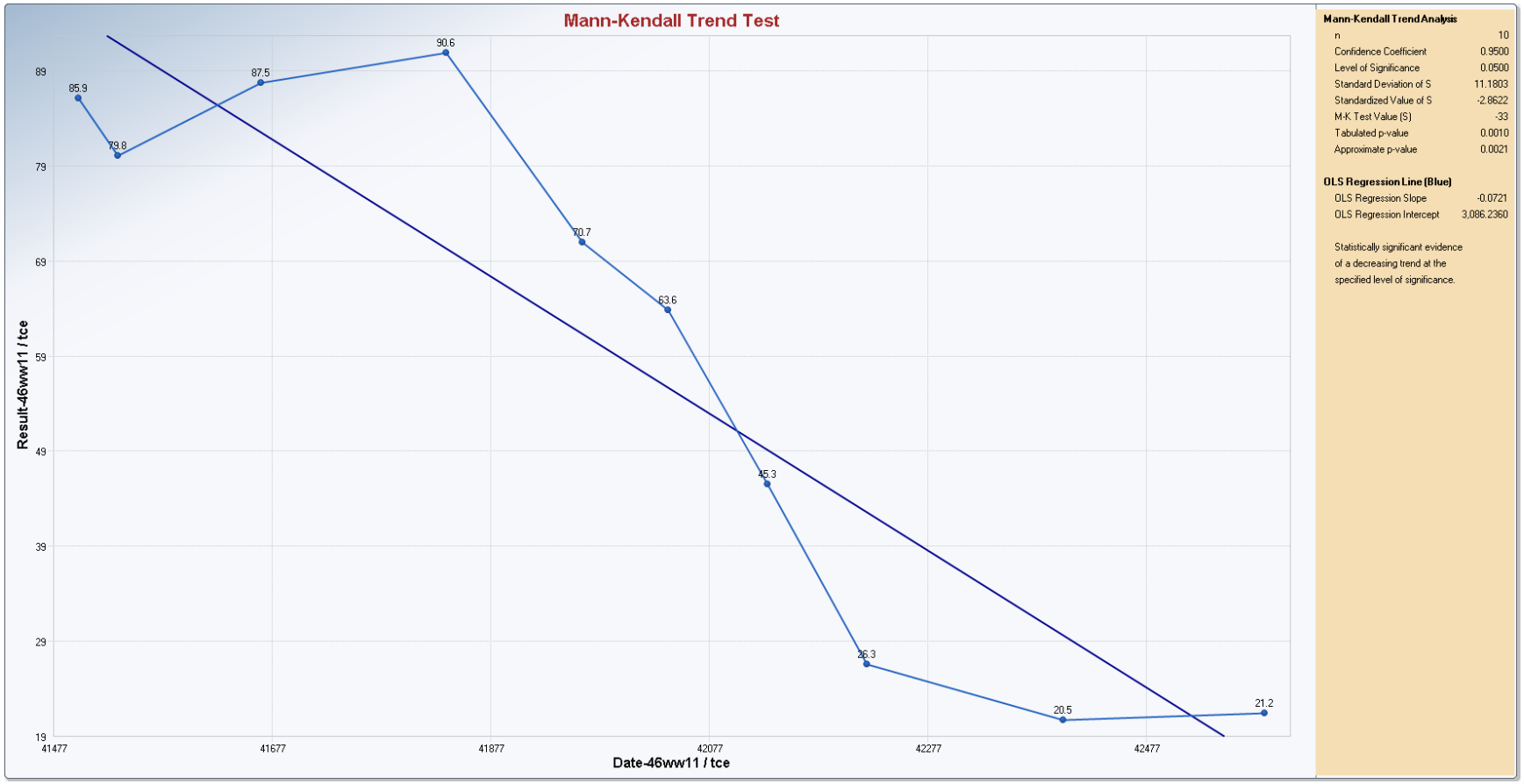
Mann-Kendall Trend Test
Result-46ww11 / tce
Date-46ww11 / tce
89
79
69
59
49
39
29
19
41477
41677
41877
42077
42277
42477
85.9
79.8
87.5
90.6
70.7
63.6
45.3
26.3
20.5
21.2
Mann-Kendall Trend Analysis
n 10
Confidence Coefficient 0.9500
Level of Significance 0.0500
Standard Deviation of S 11.1803
Standardized Value of S -2.8622
M-K Test Value (S) -33
Tabulated p-value 0.0010
Approximate p-value 0.0021
OLS Regression Line (Blue)
OLS Regression Slope -0.0721
OLS Regression Intercept 3,086.2360
Statistically significant evidence of a decreasing trend at the specified level of significance.

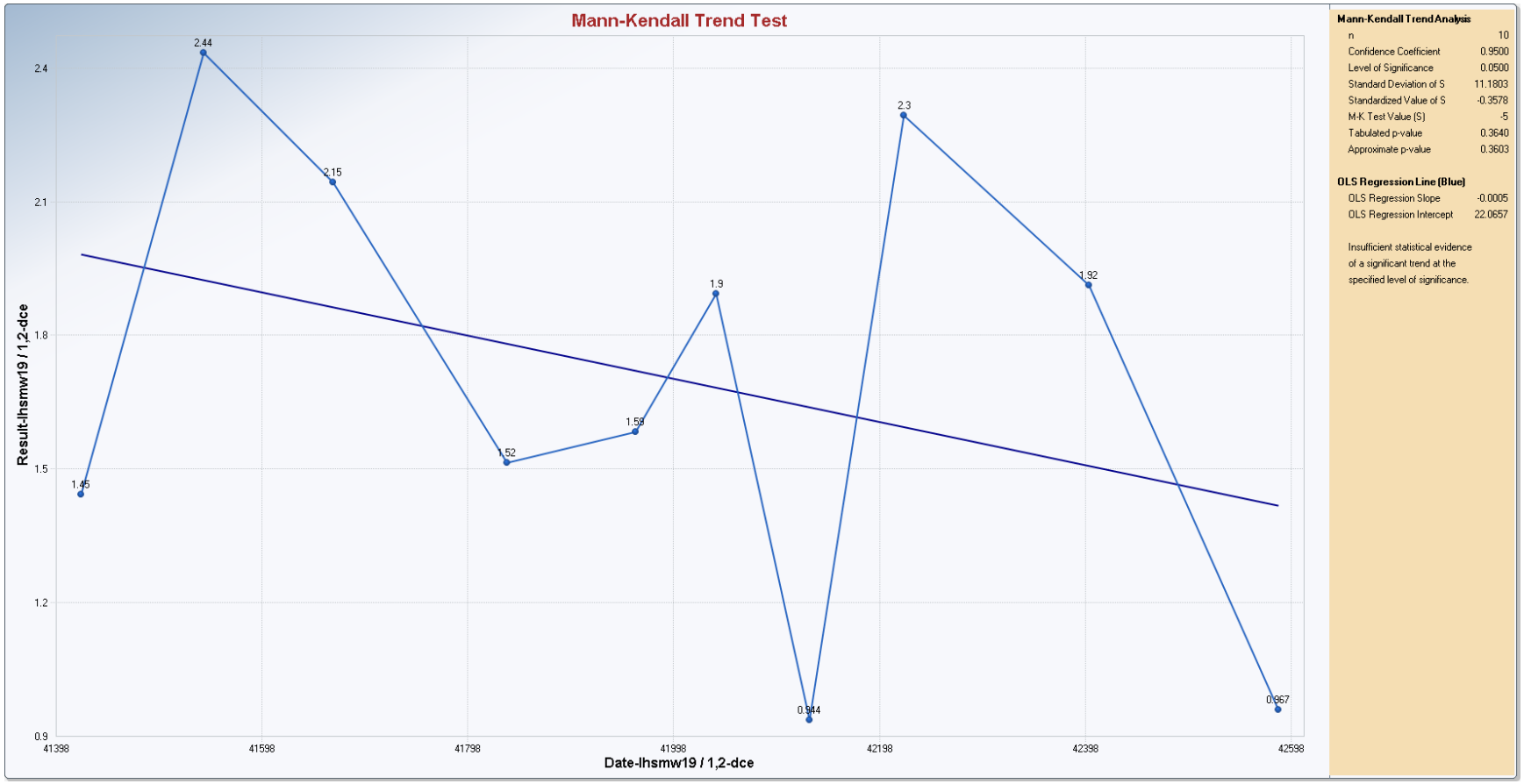
Mann-Kendall Trend Test
Result-lhsmw19 / 1,2-dce
Date-lhsmw19 / 1,2-dce
2.4
2.1
1.8
1.5
1.2
0.9
41398
41598
41798
41998
42198
42398
42598
1.45
2.44
2.15
1.52
1.59
1.9
0.944
2.3
1.92
0.967
Mann-Kendall Trend Analysis
n 10
Confidence Coefficient 0.9500
Level of Significance 0.0500
Standard Deviation of S 11.1803
Standardized Value of S -0.3578
M-K Test Value (S) -5
Tabulated p-value 0.3640
Approximate p-value 0.3603
OLS Regression Line (Blue)
OLS Regression Slope -0.0005
OLS Regression Intercept 22.0657
Insufficient statistical evidence of a significant trend at the specified level of significance.

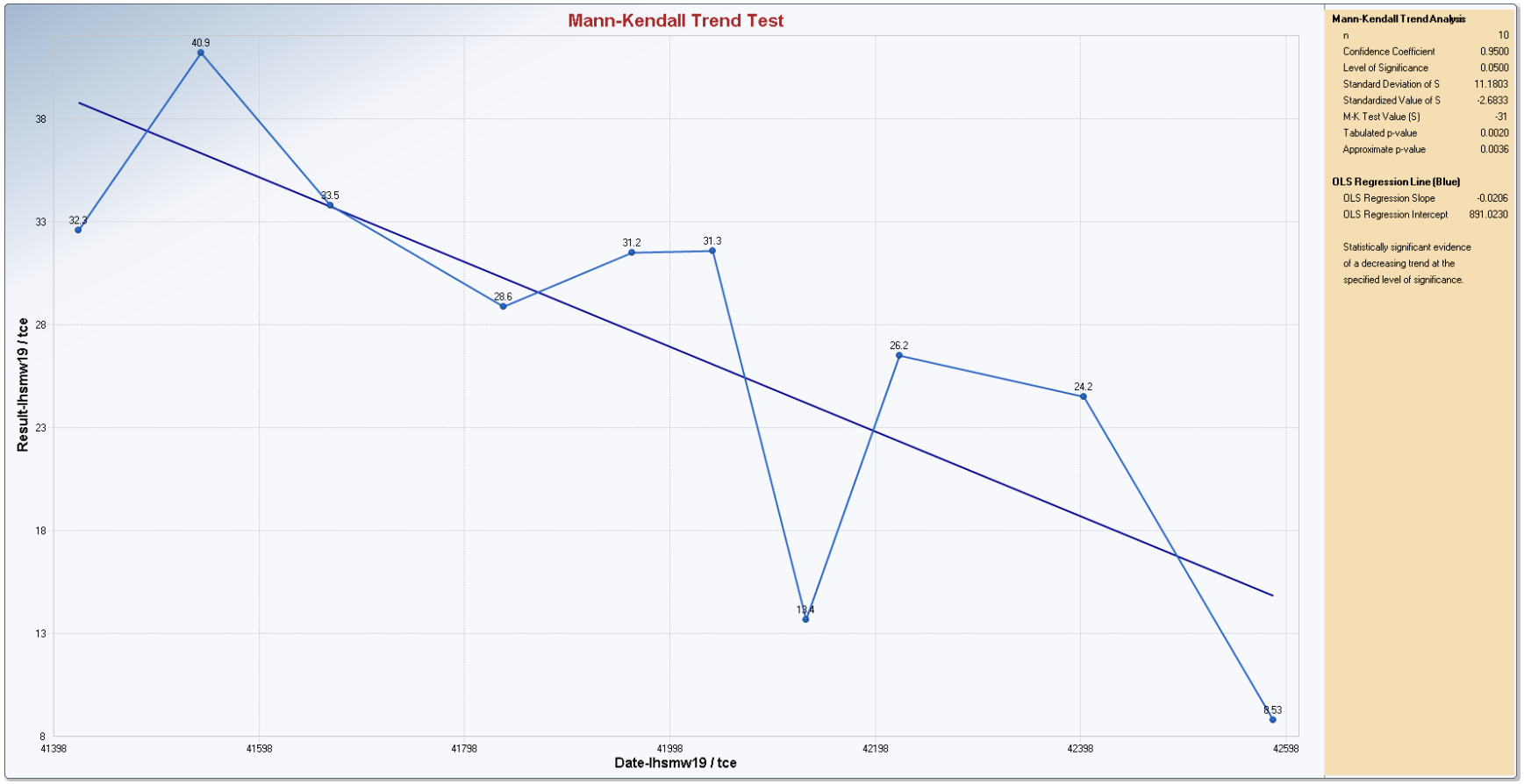
Mann-Kendall Trend Test
Result-lhsmw19 / tce
Date-lhsmw19 / tce
38
33
28
23
18
13
8
41398
41598
41798
41998
42198
42398
42598
32.3
40.9
33.5
28.6
31.2
31.3
13.4
26.2
24.2
8.53
Mann-Kendall Trend Analysis
n 10
Confidence Coefficient 0.9500
Level of Significance 0.0500
Standard Deviation of S 11.1803
Standardized Value of S -2.6833
M-K Test Value (S) -31
Tabulated p-value 0.0020
Approximate p-value 0.0036
OLS Regression Line (Blue)
OLS Regression Slope -0.0206
OLS Regression Intercept 891.0230
Statistically significant evidence of a decreasing trend at the specified level of significance.

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

April 10, 2017

DAIM-ODB-LO

Mr. Rich Mayer
US Environmental Protection Agency
Federal Facilities Section R6
1445 Ross Avenue
Dallas, TX 75202-2733

Re: LHAAP-04 Final Record of Decision, October 2016
Longhorn Army Ammunition Plant, Karnack, Texas

Dear Mr. Mayer,

The above-referenced document is being transmitted to you for your records.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
A. Palmie, TCEQ, Austin, TX
P. Bruckwicki, Caddo Lake NWR, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USAEC, San Antonio, TX
E. Sharp, AECOM – Austin, TX (for project files)

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

April 10, 2017

DAIM-ODB-LO

Ms. April Palmie
Texas Commission on Environmental Quality Superfund Section, MC-136
12100 Park 35 Circle, Bldg D
Austin, TX 78753

Re: LHAAP-04 Final Record of Decision, October 2016
Longhorn Army Ammunition Plant, Karnack, Texas

Dear Ms. Palmie,

The above-referenced document is being transmitted to you for your records.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
R. Mayer, USEPA Region 6, Dallas, TX
P. Bruckwicki, Caddo Lake NWR, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USAEC, San Antonio, TX
E. Sharp, AECOM, Austin, TX (for project files)

FINAL
RECORD OF DECISION
LHAAP-04
FOR
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers

Prepared By:

AECOM Technical Services

October 2016

FINAL
RECORD OF DECISION
LHAAP-04

LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:

U.S. Army Corp of Engineers

Tulsa District

Prepared By:

AECOM Technical Services

Contract No. W912DY-09-D-0059

Task Order No. DS01

October 2016

Table of Contents

1 THE DECLARATION 1-1

1.1 Site Name and Location 1-1

1.2 Statement of Basis and Purpose 1-1

1.3 Assessment of the Site 1-1

1.4 Description of the Selected Remedy 1-1

1.5 Statutory Determinations 1-4

1.6 ROD Data Certification Checklist 1-4

1.7 Authorizing Signatures 1-6

2 DECISION SUMMARY 2-1

2.1 Site Name, Location, and Description 2-1

2.2 Site History and Enforcement Activities 2-2

2.2.1 History of Site Activities 2-2
2.2.2 History of Investigative Activities 2-3
2.2.3 History of CERCLA Enforcement Activities 2-5

2.3 Community Participation 2-5

2.4 Scope and Role of Response Action 2-6

2.5 Site Characteristics 2-6

2.5.1 Conceptual Site Model 2-7
2.5.2 Overview of the Site 2-7
2.5.3 Geology and Hydrogeology 2-7
2.5.4 Sampling Strategy and History 2-8
2.5.5 Nature and Extent of Contamination 2-9

2.6 Current and Potential Future Land and Resource Uses 2-9

2.6.1 Current and Future Land Uses 2-9
2.6.2 Current and Future Surface Water Uses 2-10
2.6.3 Current and Future Groundwater Uses 2-10

2.7 Summary of Site Risks 2-11

2.7.1 Summary of Human Health Risk Assessment 2-11
2.7.2 Post Risk Assessment Data Evaluation 2-12
2.7.2.1 Groundwater 2-13
2.7.3 Summary of Ecological Risk Assessment 2-13
2.7.4 Basis of Action 2-14

2.8 Remedial Action Objectives 2-14

2.9 Description of Alternatives 2-14

2.9.1 Description of Remedy Components 2-14
2.9.2 Common Elements and Distinguishing Features of Each Alternative 2-18

2.9.3 Expected Outcomes of Each Alternative 2-21

2.10 Summary of Comparative Analysis of Alternatives 2-22
2.10.1 Overall Protection of Human Health and the Environment 2-22
2.10.2 Compliance with ARARs 2-22
2.10.3 Long-Term Effectiveness and Permanence 2-23
2.10.4 Reduction of Toxicity, Mobility, or Volume through Treatment 2-23
2.10.5 Short-Term Effectiveness 2-24
2.10.6 Implementability 2-24
2.10.7 Cost 2-24
2.10.8 State/Support Agency Acceptance 2-24
2.10.9 Community Acceptance 2-25

2.11 Principal Threat Waste 2-25

2.12 The Selected Remedy 2-25
2.12.1 Summary of Rationale for the Selected Remedy 2-25
2.12.2 Description of the Selected Remedy 2-26
2.12.3 Cost Estimate for the Selected Remedy 2-29
2.12.4 Expected Outcomes of Selected Remedy 2-29

2.13 Statutory Determinations 2-29
2.13.1 Protection of Human Health and the Environment 2-30
2.13.2 Compliance with ARARs 2-30
2.13.3 Cost-Effectiveness 2-32
2.13.4 Utilization of Permanent Solutions and Alternative Treatment (or Resource Recovery) Technologies to the Maximum Extent Practicable 2-32
2.13.5 Preference for Treatment as a Principal Element 2-32
2.13.6 Five-Year Review Requirements 2-32

2.14 Significant Changes from the Proposed Plan 2-32

3 RESPONSIVENESS SUMMARY 3-1

3.1 Stakeholder Issues and Lead Agency Responses 3-1
3.1.1 Question/Recommendation No. 1 3-1
3.1.2 Question/Recommendation No. 2 3-1
3.1.3 Question/Recommendation No. 3 3-2
3.1.4 Question/Recommendation No. 4 3-2
3.1.5 Question/Recommendation No. 5 3-3
3.1.6 Question/Recommendation No. 6 3-3
3.1.7 Question No. 7 3-3
3.1.8 Question No. 8 3-3
3.1.9 Question No. 9 3-4
3.1.10 Question No. 10 3-4

3.2 Technical and Legal Issues 3-4

4 REFERENCES 4-1

List of Figures

Figure 2-1: Site Location Map

Figure 2-2: LHAAP-04 Location Map

Figure 2-2A: LHAAP-04 Surface Water Monitoring Points

Figure 2-3: Conceptual Site Model

Figure 2-4: Groundwater Elevations 2007

Figure 2-5: Groundwater Elevations 2010

Figure 2-6: Perchlorate Concentrations in Shallow Groundwater

List of Tables

Table 2-1: Perchlorate Results from Goose Prairie Creek Sampling

Table 2-2: Chemicals Contributing to Carcinogenic Risk in Groundwater

Table 2-3: Chemicals Contributing to Hazard Index in Groundwater

Table 2-4: Summary of Carcinogenic Risks and Non-Carcinogenic Hazard at LHAAP-04

Table 2-5: Comparative Analysis of Alternatives

Table 2-6: Present Worth Analysis

Table 2-7: Potential Action-Specific ARARs

List of Appendixes

APPENDIX A: Public Notice

Acronyms and Abbreviations

µg/L	micrograms per liter
ACE	Anderson Columbia Environmental
ARARs	Applicable or Relevant and Appropriate Requirements
AST	aboveground storage tank
BERA	Baseline Ecological Risk Assessment
bgs	below ground surface
BHHRA	Baseline Human Health Risk Assessment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	contaminant of concern
CSM	Conceptual Site Model
cy	cubic yards
ECP	Environmental Condition of Property
EE/CA	Engineering Evaluation/Cost Analysis
EPC	exposure point concentration
ESD	Explanation of Significant Differences
FFA	Federal Facility Agreement
FS	Feasibility Study
GWP-Ind	soil medium specific concentration for protection of groundwater for industrial use
HHRA	Human health risk assessment
HI	hazard index
HQ	hazard quotient
ISB	in-situ bioremediation
LHAAP	Longhorn Army Ammunition Plant
LTM	Long-Term Monitoring
LUC	Land Use Control
MCL	maximum contaminant level
MNA	Monitored Natural Attenuation
MOA	Memorandum of Agreement
MSC	medium specific concentration
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	operation and maintenance

PCB	polychlorinated biphenyl
PCL	Protective Concentration Level
PW	present worth
RAB	Restoration Advisory Board
RAO	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RFA	RCRA Facility Assessment
RfD	Reference Dose
RI	Remedial Investigation
ROD	Record of Decision
SAI-Ind	soil medium specific concentration for industrial use based on inhalation, ingestion, and dermal contact
SDWA	Safe Drinking Water Act
STEP	Solutions To Environmental Problems
SVOC	semi-volatile organic compound
TAC	Texas Administrative Code
TCDD	tetrachlorodiobenzodioxin
TCEQ	Texas Commission on Environmental Quality
TNRCC	Texas Natural Resource Conservation Commission
TNT	Trinitrotoluene
TRRP	Texas Risk Reduction Program
U.S. Army	U.S Department of the Army
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound

1 THE DECLARATION

1.1 Site Name and Location

Longhorn Army Ammunition Plant (LHAAP) -04, Former Pilot Wastewater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

Comprehensive Environmental Response, Compensation, and Liability Information System
U.S. Environmental Protection Agency (USEPA) Identification Number: TX6213820529.

1.2 Statement of Basis and Purpose

This decision document presents the selected remedy for LHAAP-04, Former Pilot Wastewater Treatment Plant, located at LHAAP in Karnack, Texas. The remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Code of Federal Regulations (CFR) Title 40 §300.

The remedy selection was based on work completed and documented in the Administrative Record for the site, including a Remedial Investigation (RI) (Jacobs Engineering Group, Inc. [Jacobs], 2002), baseline Human Health Risk and Screening Ecological Risk Assessment Report (Jacobs, 2003), Removal Action Completion Report for Soil (Shaw, 2011), Final Engineering Evaluation/Cost Analysis (EE/CA) (Shaw, 2009a), Final Action Memorandum (Shaw, 2009b), Feasibility Study (FS) (Shaw, 2012), and Proposed Plan (AECOM, 2012) for LHAAP-04.

This document is issued by the U.S. Department of the Army (U.S. Army), the lead agency for this installation. The U.S. Army, USEPA, and the Texas Water Commission (currently known as the TCEQ) entered into the FFA for remedial activities at LHAAP which became effective on December 30, 1991. The USEPA (Region 6) and the Texas Commission on Environmental Quality (TCEQ) are the regulatory agencies providing technical support, project review and comment, and oversight of the LHAAP cleanup program. Under 40 CFR § 300.430(f)(4)(iii), the U.S. Army, as the lead agency, and the USEPA have selected the remedy. TCEQ concurs with the selected remedy.

1.3 Assessment of the Site

The response action selected in this Record of Decision (ROD) is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances, pollutants, or contaminants into the environment.

1.4 Description of the Selected Remedy

The selected remedy for LHAAP-04 includes in-situ bioremediation (ISB), long-term monitoring of the groundwater and land use controls (LUCs). The LUCs consist of land use restrictions and prohibition of potable use of groundwater above cleanup levels until the contaminant of concern (COC), perchlorate, is at levels that allow for unlimited use and unrestricted exposure.

The selected remedy for LHAAP-04 protects human health and the environment by preventing exposure of a hypothetical future maintenance worker to unacceptable concentrations of

perchlorate in groundwater via ingestion of groundwater contaminated with perchlorate, by returning the groundwater to its potential beneficial use, wherever practicable, and by preventing perchlorate-contaminated groundwater from migrating into surface water (Goose Prairie Creek, located approximately 700 feet to the south of LHAAP-04 site). The human health risk scenarios evaluated were based on the hypothetical future maintenance worker. Perchlorate is the only COC in the groundwater. The soil does not pose unacceptable risk or hazard to human health based on exposure pathway for an industrial worker and the migration pathway of constituents from soil to groundwater. The components of the selected remedy are summarized below.

- ISB of groundwater in an area in the vicinity of monitoring well 04WW04. Multiple injections of substrate may be needed based on effectiveness of the ISB. Bioaugmentation using appropriate microbial culture to facilitate ISB may be performed, if necessary. Prior to ISB, additional shallow zone and intermediate zone monitoring wells are planned to refine the perchlorate plume configuration.
- Long-term Monitoring (LTM) to confirm the protection of human health and the environment by documenting the return of groundwater to the cleanup level (maximum contaminant level [MCL] or Protective Concentration Level (PCL)) through reduction of the contaminant mass, and by preventing the perchlorate-contaminated groundwater plume from migrating into surface water.
- The LUC objectives include maintaining the integrity of any current or future remedial or monitoring systems, and preventing the use of groundwater contaminated above cleanup levels as a potable water source. The groundwater treatment and LTM remedial components include a groundwater monitoring system that will be used to characterize the condition of the groundwater during the period the groundwater remedy is in place until the groundwater remediation goals are achieved, and to demonstrate achievement of the groundwater remediation goals when the groundwater remedy is complete. As a part of this groundwater remedy, the Army will maintain the remedial and monitoring systems associated with the groundwater remedies until these components of the remedy are no longer needed to achieve cleanup levels, and cleanup levels have been achieved. During the period of operation of the groundwater remedy, if any of the elements of the remedial and groundwater monitoring systems are damaged, destroyed, or become ineffective, they will be repaired or replaced with suitable components to assure that the remedial and groundwater monitoring systems are able to provide data of the quality necessary to determine the progress of and eventual completion of this component of the remedy. The actions to be taken to implement these LUC objectives and requirements will be provided through modifying the "Comprehensive Land Use Control (LUC) Management Plan, Former Longhorn Army Ammunition Plant, Karnack, Texas" and detailed in the LUC RD.
- The LUC for prohibition of groundwater use (except for monitoring and testing) shall be implemented and shall remain in place at the Site until the levels of COCs (i.e. including all hazardous substances, pollutants and contaminants found at the Site at cleanup levels as listed in Table 2-3) in surface and subsurface soil and groundwater are reduced below levels that would support unlimited use and unrestricted exposure. A LUC RD will be finalized as the land use component of the Remedial Design. Within 21 days of the issuance of the ROD, the Army will propose deadlines for completion of the RD Work Plan, RD and Remedial Action Work Plan. The documents will be prepared and submitted to the EPA

and the TCEQ pursuant to the FFA. The LUC RD will contain implementation and maintenance actions, including periodic inspections. The long-term monitoring groundwater plan will also be presented in the RD. The recordation notification for the Site which will be filed with Harrison County, will include a description of the LUCs. The preliminary boundary for the groundwater LUC is shown on Figure 2-7.

- CERCLA five-year reviews until the levels of COCs (i.e., including all hazardous substances, pollutants and contaminants found at the Site at cleanup levels as listed in Table 2-3) in groundwater allow for unlimited use and unrestricted exposure.

A LUC Remedial Design (RD) will be finalized as the land use component of the RD. Within 21 days of the issuance of the ROD, the U.S. Army will propose deadlines for completion of the RD Work Plan, RD, and Remedial Action Work Plan. The documents will be prepared and submitted to EPA and TCEQ pursuant to the Federal Facility Agreement (FFA). The LUC RD will contain implementation and maintenance actions, including periodic inspections. The ISB performance monitoring plan and the LTM plan will also be presented in the RD.

The Army will implement, maintain, monitor, report on and enforce land use controls at Army-owned property. The Army shall perform those actions related to land use control activities described in this ROD and in the Remedial Design for the ROD. For portions of the Site subject to land use controls that are not owned by the Army, the Army will monitor and report on the implementation, maintenance, and enforcement of land use controls, and coordinate with federal, state, and local governments and owners and occupants of properties subject to land use controls. The Army will provide notice of the groundwater and soil (surface and subsurface) contamination and any land use restrictions referenced in the ROD. The Army will send these notices to the federal, state and local governments involved at this site and the owners and occupants of the properties subject to those use restrictions and land use controls. The Army shall provide the initial notice within 90 days of ROD signature. The frequency of subsequent notifications will be described in the Remedial Design for the ROD. The Army remains responsible for ensuring that the remedy remains protective of human health and the environment. The Army will fulfill its responsibility and obligations under CERCLA and the NCP as it implements, maintains, and reviews the selected remedy.

Upon transfer of Army-owned property, the Army will provide written notice of the LUCs to the transferee of the groundwater and soil (surface and subsurface) contamination and any land use restrictions referenced in the ROD. Within 15 days of transfer, the Army shall provide EPA and the TCEQ with written notice of the division of implementation, maintenance, and enforcement responsibilities unless such information has already been provided in the LUC RD. The LUC RD will address the procedures to be used by the Army and the transferee to document compliance with the LUCs described in this ROD. In the event property is transferred out of Federal control, the land use controls relating to property and groundwater restrictions shall be recorded in the deed and shall be enforceable by the United States and the state of Texas.

The Army and regulators will consult to determine appropriate enforcement actions should there be a failure of a LUC objective at these sites after they have been transferred.

The management strategy at LHAAP is to approach each site separately to address human health issues and to approach the sites by sub-area to address ecological risk. Thus, the implementation of this remedy at LHAAP-04 is independent of any other remedial action at LHAAP to address

human health issues. To address ecological risk, LHAAP-04 was grouped with several other sites as part of the Industrial Sub-Area. The Baseline Ecological Risk Assessment (BERA) concluded that no unacceptable risk was present in the Industrial Sub-Area (Shaw, 2007b) and therefore, no further action is needed at LHAAP-04 for the protection of ecological receptors. The proposed remedy at LHAAP-04 is identified in the proposed plan (AECOM, 2012) that has been reviewed and approved by the regulatory agencies. The proposed plan is in the Administrative Record file for LHAAP.

1.5 Statutory Determinations

The final selected remedy is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to the remedial action, and is cost-effective. In addition, the remedy offers long-term effectiveness through the implementation of ISB and LUCs which will minimize the potential risk to the hypothetical future maintenance worker posed by the contaminated groundwater. Furthermore, LTM will document the progress and effectiveness of the final selected remedy. The final selected remedy is easily and immediately implementable. The ISB component of the selected remedy does satisfy the statutory preference for treatment as a principal element of the remedy.

Because hazardous substances, pollutants, or contaminants may remain at the site above levels that allow for unlimited use and unrestricted exposure, reviews will be conducted every 5 years to ensure protection of human health and the environment under CERCLA §121(c), U.S. Code (USC) Title 42 §9621(c). In accordance with 30 Texas Administrative Code (TAC) §335.566, a notification will be recorded in Harrison County records stating that the site is restricted to nonresidential use until it is demonstrated that surface and subsurface soil and groundwater COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) are at levels that allow for unlimited use and unrestricted exposure; that a prohibition of groundwater use (except for environmental monitoring and testing) as a potable source will remain in place until the levels of COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) in soil and groundwater allow for unlimited use and unrestricted exposure; and, that the integrity of any current or future remedial or monitoring systems will remain in place until the levels of COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table-2-3) in groundwater are met. Although the Army may later pass these procedural responsibilities to the transferee by property transfer agreement, the Army shall retain ultimate responsibility for remedy integrity, per the FFA and CERCLA §121.

1.6 ROD Data Certification Checklist

The following information is included in the Decision Summary section of this ROD. Additional information can be found in the Administrative Record for this site.

- Current and reasonably anticipated future land use assumptions and current and potential future beneficial uses of groundwater as identified in the baseline risk assessment and ROD (**Section 2.6**).
- Potential land and groundwater use that will be available at the site as a result of the selected remedy (**Section 2.6**).

- COC and its concentration (**Section 2.7**).
- Baseline risk represented by the COC (**Section 2.7**).
- Cleanup level established for the COC and the basis for the levels (**Sections 2.7.4** and **2.8**).
- How perchlorate- and mercury-contaminated soil constituting the principal threat waste was removed from the site prior to the ROD (**Section 2.11**).
- Key factor(s) that led to selecting the remedy (**Section 2.12**).
- Estimated capital, annual operation and maintenance (O&M), and total present worth costs, discount rate, and the number of years over which the remedy cost estimates are projected (**Section 2.12**).

1.7 Authorizing Signatures

As the lead agency, the U.S. Army issues this ROD for LHAAP-04 which documents the final selected remedy. The undersigned is the appropriate approval authority for this decision.

Thomas E. Lederle 15 DECEMBER 2016

(Name) (Date)
Thomas E. Lederle
Division Chief
Base Realignment and Closure Division
Assistant Chief of Staff for Installation Management
U.S. Army

The U.S. Environmental Protection Agency approves the final selected remedy as provided in the ROD for LHAAP-04.

Pam Phillips, Actingfor 3/30/17

(Name) (Date)
Carl E. Edlund, P.E.
Director
Superfund Division
U.S. Environmental Protection Agency
Region 6

2 DECISION SUMMARY

2.1 Site Name, Location, and Description

LHAAP-04, Former Pilot Wastewater Treatment Plant Longhorn Army Ammunition Plant, Karnack, Texas

Comprehensive Environmental Response, Compensation, and Liability Information System USEPA Identification Number: TX6213820529

Lead Agency: U.S. Army, Department of Defense

Support Agencies: USEPA Region 6, TCEQ

Source of Cleanup Money: U.S. Army, Department of Defense

Site Type: Industrial Facility

The former LHAAP is an inactive, government-owned, formerly contractor operated and maintained, Department of Defense facility located in central east Texas (see **Figure 2-1**) in the northeast corner of Harrison County. LHAAP is approximately 14 miles northeast of Marshall, Texas, and approximately 40 miles west of Shreveport, Louisiana. The installation occupies approximately 1,400 of its former 8,416 acres between State Highway 43 at Karnack, Texas, and the western shore of Caddo Lake. The facility can be accessed via State Highways 43 and 134.

LHAAP was placed on the Superfund National Priorities List (NPL) on August 9, 1990. Activities to remediate contamination associated with the listing of LHAAP as a NPL site began in 1990. The U.S. Army, the USEPA, and the Texas Water Commission (now known as the TCEQ) entered into a CERCLA Section 120 FFA for remedial activities at LHAAP. The FFA became effective December 30, 1991. LHAAP operated until 1997 when it was placed on inactive status and classified by the U.S. Army Armament, Munitions, and Chemical Command as excess property. The majority of LHAAP has been transferred by the U.S. Army to the U.S. Fish and Wildlife Service (USFWS) for management as the Caddo Lake National Wildlife Refuge.

LHAAP-04, known as Site 04 or the former pilot wastewater treatment plant, is approximately 0.5 acres and is located in the central portion of LHAAP at the northwest corner of 6th and 60th Streets near the former fire station (**Figure 2-2**). LHAAP-04 is surrounded by light duty roads. Wastewater treatment operations began at LHAAP-04 in 1984.

The demolition of the former pilot wastewater treatment facility structures, tanks, and piping, and the disposal of the associated wastes were completed in the summer of 1997 as part of the Resource Conservation and Recovery Act (RCRA) closure of the plant. Under the CERCLA program, excavation of soil impacted with mercury and perchlorate at the LHAAP-04 site was completed in 2009 along the southern edge of the slab, which formerly housed storage tanks for the former pilot wastewater treatment facility.

2.2 Site History and Enforcement Activities

2.2.1 History of Site Activities

LHAAP was established in December 1941 with the primary mission of manufacturing trinitrotoluene (TNT). Production of TNT began at Plant 1 in October 1942 and continued through World War II until August 1945, when the facility was placed on standby status until February 1952. The LHAAP facility was reactivated with the opening of Plant 2, where pyrotechnic ammunition, such as photoflash bombs, simulators, hand signals, and tracers for 40 millimeter ammunition, were produced until 1956.

In December 1954, a third facility, Plant 3, began production of solid-fuel rocket motors for tactical missiles. Rocket motor production at Plant 3 continued to be the primary operation at LHAAP until 1965 when Plant 2 was reactivated for the production of pyrotechnic and illuminating ammunition. In the years following the Vietnam conflict, LHAAP continued to produce flares and other basic pyrotechnic or illuminating items for the U.S. Department of Defense inventory. From September 1988 to May 1991, LHAAP was also used for the static firing and elimination of Pershing I and II rocket motors in compliance with the Intermediate- Range Nuclear Force Treaty in effect between the United States and the former Union of Soviet Socialist Republics. LHAAP operated until 1997 when it was placed on inactive status and classified by the U.S. Army Armament, Munitions, and Chemical Command as excess property.

In 1984, the former pilot wastewater treatment plant began operation. Wastewater from sumps throughout LHAAP was trucked to the plant for treatment. After the wastewater settled, it was transferred to one of two storage tanks, and then pumped through a heat exchanger to an evaporation tower. Solids were shipped off site for disposal. Sludge from the settling tanks was blown down and drummed weekly, then burned at Burning Ground No. 3 (LHAAP-18/24) (Plexus Scientific Corporation [Plexus], 2005).

The RCRA closure activities at the LHAAP-04 site completed in the summer of 1997 were limited to the demolition and disposal of the former pilot wastewater treatment facility and its associated hazardous waste. Under these RCRA closure activities, four aboveground storage tanks (ASTs) were emptied, cleaned, and removed in September 1997 (Plexus, 2005). The concrete slab on the north side of LHAAP-04 was left in place. According to the LHAAP installation plan, the former pilot wastewater treatment facility was removed and closed under a conditional approval letter from Texas Natural Resource Conservation Commission (TNRCC), now TCEQ. The TCEQ's conditional approval letter was limited to closure of the former wastewater treatment facility, RCRA-regulated structures, equipment, and waste contained therein, and deferred remediation of contaminated soil to the CERCLA program. The perchlorate and mercury contaminated soils were addressed in the EE/CA (Shaw, 2009a) and Action Memorandum (Shaw, 2009b), and the perchlorate and mercury contaminated soil removal action is documented in the Completion Report (Shaw, 2011). A monitoring well (04WW04) was installed after the soil removal to sample the groundwater beneath the backfilled excavation area. The results indicated perchlorate was present in groundwater at a concentration exceeding the Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential PCL of 17 micrograms per liter (µg/L). Perchlorate was not detected at concentrations exceeding the TRRP Tier 1 Groundwater Residential PCL at another monitoring well (04WW05) installed downgradient of 04WW04.

2.2.2 History of Investigative Activities

As part of the Installation Restoration Program, the U.S. Army began an environmental investigation in 1976 at LHAAP followed by installation wide assessments/investigations that included the following:

- Record Search - In 1980, U.S. Army Toxic and Hazardous Materials Agency conducted a record search to assess the impact of the LHAAP installation activities including usage, storage, treatment, and disposal of toxic and hazardous materials on the environment, and defined conditions that may have adversely affected human health and the environment.
- Contamination Survey – In 1982 as part of the LHAAP contamination survey, Environmental Protection Systems, Inc. (EPS) collected six groundwater samples for laboratory analyses (EPS, 1984). This document can be found in Volume 1 of 16 in year 2011 of the Administrative Record.
- RCRA Facility Assessment (RFA) – In 1988, a preliminary RFA was conducted by the Texas Water Commission (Texas Water Commission, 1988). Waste areas and pollutant dispersal pathways were visually identified, but no samples were collected during the RFA. This document can be found in Volume 2 of 2 in year 1988 of the Administrative Record. This RFA captured and referenced U.S. Army Environmental Hygiene Agency (USAEHA) information developed in 1987 as part of the RCRA permit application process, and as a continuation of the 1982 EPS contamination survey, where all solid waste management unites at LHAAP were identified, described and evaluated (USAEHA, 1988).
- Installation-Wide Perchlorate Investigation. A plant-wide perchlorate investigation was conducted in 2001 by Solutions to Environmental Problems (STEP) to collect supplemental information for sites suspected of or identified as having perchlorate contamination (STEP, 2005). This document can be found in Volume 4 of 5 in year 2005 of the Administrative Record.

In addition to installation-wide investigations, several sampling events specific to LHAAP-04 were conducted 1993 through 2008 to assess contamination from past operations and its impact to the soil and/or groundwater (U.S. Army, 1993; Shaw, 2012).

- RCRA Closure. RCRA closure of the former pilot wastewater treatment facility at the LHAAP-04 site was conducted in 1997. Subsequent to the closure of the facility, soil samples were collected around the concrete pad, below the pipe leading from the former facility to the 40,000 gallon AST, and around the AST. Samples were analyzed for semi-volatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), metals, polychlorinated biphenyls (PCBs), pesticides and herbicides. Mercury concentrations in three soil borings (SB-11, SB-12, and SB-13) adjacent to the concrete slab near the two tanks, exceeded the TCEQ soil medium specific concentration (MSC) for industrial use based on inhalation, ingestion, and dermal contact (SAI-Ind). Samples collected from borings associated with the sumps had no mercury detections. Therefore, the area of mercury contaminated soil was localized to a small area adjacent to the concrete slab. The LHAAP-04 site was approved for closure according to 30 TAC 335 Subchapter S, Risk Reduction Rule Standard 2 in 1998 with the stipulation that the remaining soil contamination be addressed under CERCLA (Shaw, 2009a).

- Site Investigation and RI. Soil and groundwater samples were collected from LHAAP-04 as part of the site investigation and RI conducted by Jacobs between 1995 and 2000 (Jacobs, 2002). During Phase I of the RI, soil samples up to five feet below ground surface (bgs) from the sump areas were analyzed for volatile organic compounds (VOCs), SVOCs, metals, and explosive compounds. During the subsequent investigations (Phase III), additional soil samples from sump areas were analyzed for selected metals (beryllium, nickel, and vanadium), dioxins/furans, and pesticides/PCBs. During investigation of perchlorate impacts, soil samples were collected and analyzed for perchlorate. During additional Phase III work, soil samples were analyzed for VOCs, SVOCs, metals, explosive compounds, dioxins/furans, perchlorate, and pesticides/PCBs. Groundwater samples were also analyzed for the same suite of parameters (Jacobs, 2003).

- Data Gaps Investigation. Additional investigation was performed in 2004 as part of a Data Gaps Investigation (Shaw, 2007a). Additional soil sampling was proposed to better delineate the vertical extent of the perchlorate contaminated soil to be used to develop a remediation plan (Shaw, 2006). Soil samples were collected in 2006 and 2007 to better define the vertical extent of perchlorate. Additionally, groundwater samples were collected from two wells in 2007 and 2008 and analyzed for perchlorate. Perchlorate was detected at a low concentration at one well in 2008.

- Soil Removal Action. An area of soil contaminated with mercury above the SAI-Ind level was located within the perchlorate contaminated soil area at LHAAP-04 site (TCEQ, 2006). An EE/CA was prepared for the LHAAP-04 site (Shaw, 2009a) and an Action Memorandum was signed by the U.S. Army (Shaw, 2009b) to address the soil with perchlorate exceeding the GWP-Ind value and mercury exceeding the SAI-Ind value. The removal of soil in the vadose zone, contaminated with perchlorate and mercury was conducted in 2009 under CERCLA removal authority, eliminating the principal threat waste at the site.

  The concrete slab, which formerly housed storage tanks for the former pilot wastewater treatment facility, was penetrated in six locations near the tank pad/foundation (see Figure 2-2 of the Final Removal Action Work Plan) (Shaw, 2009c). Based on perchlorate results from soil samples taken from under the slab, a section of the concrete was removed and soil was excavated to a depth of five feet below top of concrete in section FL08 and to a depth of 12 feet below top of concrete in section FL07. See Figure 2-1 and Figure 2-8 of the Final Completion Report (Shaw, 2011). Perchlorate concentrations in final floor confirmation samples from FL07 and FL08 were less than the GWP-Ind MSC.

  Additional contaminated soil was excavated from along the southern edge of the slab. A total of approximately 3,406 cubic yards (cy) of contaminated soil was removed and disposed off-site (Shaw, 2011). The depths of excavation ranged from 4 feet to 14 feet bgs with an average excavation depth of approximately 10 feet (Shaw, 2011). All contaminated soil exceeding cleanup levels in the vadose zone was removed during the soil removal action.

  As part of the removal action, a well (04WW04) was installed to sample groundwater beneath the backfilled excavation area. The results indicated that perchlorate was present in groundwater at a concentration exceeding the TRRP Tier 1 Groundwater Residential

PCL for perchlorate. A second well (04WW05) was installed downgradient of 04WW04 and did not detect perchlorate exceeding the TRRP Tier 1 Groundwater Residential PCL.

A Feasibility Study Report (Shaw 2012) was prepared to evaluate remedial alternatives using CERCLA criteria to provide a basis for selecting a preferred alternative for addressing perchlorate impacts in groundwater.

2.2.3 History of CERCLA Enforcement Activities

Due to the releases of chemicals from facility operations, the USEPA placed LHAAP on the NPL on August 9, 1990. Activities to remediate contamination associated with the listing of LHAAP as a NPL site began in 1990. After the listing on the NPL, the U.S. Army, the USEPA, and the Texas Water Commission (currently known as the TCEQ) entered into a CERCLA §120 FFA for remedial activities at LHAAP. The FFA became effective December 30, 1991.

In accordance with the EE/CA (Shaw, 2009a), approximately 3,406 cy of soil was excavated from LHAAP-04 and disposed off-site under CERCLA removal authority. The FS (Shaw, 2012), presenting an analysis of remedial alternatives for LHAAP-04, was issued in August 2012. The Proposed Plan (AECOM, 2012) was issued in December 2012. This ROD follows that Proposed Plan and precedes the more detailed RD document.

2.3 Community Participation

The U.S. Army, the USEPA, the TCEQ and the LHAAP Restoration Advisory Board (RAB) have provided public outreach to the surrounding community concerning LHAAP-04 and other environmental sites at LHAAP. The outreach program has included fact sheets, site visits, invitations to attend quarterly RAB meetings, and public meetings consistent with its public participation responsibilities under Sections 113(k)(2)(B), 117(a), and 121(f)(1)(G) of CERCLA.

The Proposed Plan (AECOM, 2012) for the selection of the remedy for LHAAP-04 was made available to the public for review and comment on December 1, 2012. The notice of availability of the Proposed Plan and other related documents in the Administrative Record file was published in the *Marshall News Messenger* on December 6, 2012. The newspaper notice for the public meeting is provided in **Appendix A**. The public comment period for the Proposed Plan began on January 1, 2013, and ended January 31, 2013. A public meeting was held on January 9, 2013 in a formal format and with a court reporter. The transcript for the meeting is part of the Administrative Record. The significant comments (oral or written) are addressed in the Responsiveness Summary, which is included in this ROD as **Section 3.0**. The Administrative Record may be found locally at the information repository maintained at the following location:

Location:	Marshall Public Library 300 S. Alamo Marshall, Texas, 75670
Business Hours:	Monday – Thursday 10:00 a.m. – 8:00 p.m. Friday – Saturday 10:00 a.m. – 5:00 p.m.

2.4 Scope and Role of Response Action

This is the second and final Response Action for the LHAAP-04 site. Contaminated soil was removed in 2009 under CERCLA removal authority, eliminating the principal threat waste at the site. This decision document addresses groundwater contamination and is the final remedy for contamination at the LHAAP-04 site. The recommended action at LHAAP-04 will prevent potential risks associated with exposure of the hypothetical future maintenance worker to contaminated groundwater. The groundwater COC is perchlorate. The remedial action will include ISB to reduce COC concentrations in groundwater to meet the cleanup level, bioaugmentation, if necessary, and LUCs.

The recommended action at LHAAP-04 will prevent potential risks associated with exposure to contaminated groundwater. Although groundwater at LHAAP is not currently being used as drinking water, nor may it be used in the future based on its reasonably anticipated use as a national wildlife refuge, when establishing the Remedial Action Objectives (RAOs) for this response action, the U.S. Army has considered the NCP's expectation to return usable groundwaters to their potential beneficial uses wherever practicable and has also considered the State of Texas designation of all groundwater as potential drinking water, unless otherwise classified, and consistent with 30 TAC 335.563(h)(1) [background total dissolved solids content less than or equal to 10,000 milligrams per liter and that occurs within a geologic zone that is sufficiently permeable to transmit water to a pumping well in usable quantities]. To the extent practicable, the U.S. Army intends to return the contaminated groundwater at LHAAP-04 to its potential beneficial uses, which for the purposes of this ROD is considered to be attainment of the Safe Drinking Water Act (SDWA) MCLs, and consistent with 40 CFR § 300.430(e)(2)(i)(B&C). In the absence of federal drinking water standards, cleanup levels will be based on the TRRP Tier 1 Groundwater Residential PCL. If a return to potential beneficial uses is not practicable, the NCP expectation is to prevent further migration of the plume, prevent exposure to the contaminated groundwater, and evaluate further risk reduction.

The perchlorate plume in groundwater at the LHAAP-04 site is small and it is approximately 700 feet from Goose Prairie Creek.

The selected remedy will protect human health and the environment. The human receptor evaluated was the hypothetical future maintenance worker. ISB will treat/remediate and reduce contaminant mass and lower contaminant concentrations in groundwater. The selected remedy will also ensure that the perchlorate-contaminated groundwater does not migrate into nearby surface water, which could ultimately affect Caddo Lake.

2.5 Site Characteristics

This section of the ROD presents a brief comprehensive overview of LHAAP-04 site characteristics with respect to the conceptual site model (CSM), physical site features, known or suspected sources of contamination, types of contamination, and affected media. Known or potential routes of contaminant migration are also discussed. Detailed information about the site characteristics can be found in the RI (Jacobs, 2002).

2.5.1 Conceptual Site Model

Figure 2-3 illustrates the conceptual site model for LHAAP-04. The model presents those pathways that are being selected for remediation and pathways that are incomplete and therefore are not selected for remediation.

The former pilot wastewater treatment plant was the source for the perchlorate released into the environment. Prior to the plant's removal, the conceptual model assumes perchlorate was released via overflows, spills, and leaks to the soil. After the pilot wastewater treatment plant was removed, there was no longer a release mechanism for overflows, spills, and leaks. Perchlorate had been released to the soil, however, and prior to the soil removal action in 2009, sufficient perchlorate levels existed in the soil to act as a source of groundwater contamination or to be potentially released into surface water during storm events. (Shaw, 2011).

Because all perchlorate-contaminated vadose zone soil above cleanup levels was removed in 2009, it is not expected that LHAAP-04 will contribute to surface water contamination (Shaw, 2011). Soil pathways have therefore been eliminated from consideration.

Surface water samples collected in 2010 and 2011 were below the perchlorate TRRP Tier 1 Groundwater Residential PCL of 17 micrograms per liter. Table 2-1 lists the results of surface water sampling events in 2010 and 2011. Based on these data, the conceptual model does not include any current impact to surface water from groundwater. The groundwater to surface water migration pathway is not complete under current conditions. Protection of surface water will be confirmed with groundwater monitoring and evaluation of plume behavior with implementation of the groundwater remedy.

Groundwater at monitoring well 04WW04 currently exceeds the perchlorate TRRP Tier 1 Groundwater Residential PCL of 17 µg/L. Thus, the only pathway considered for remediation is the hypothetical future industrial groundwater use and the TRRP Tier 1 Groundwater Residential PCL is the cleanup level.

2.5.2 Overview of the Site

LHAAP-04 encompasses an area of approximately 0.5 acre and is located in the central portion of LHAAP. The demolition of the former pilot wastewater treatment facility structures, tanks, and piping, and the disposal of the associated wastes were completed in the summer of 1997 as part of the RCRA closure of the plant. Soil excavation at LHAAP-04 was completed in 2009 along the southern edge of the remaining slab, which formerly housed storage tanks for the former pilot wastewater treatment facility.

2.5.3 Geology and Hydrogeology

LHAAP-04 is situated on the outcrop of the Wilcox Group which generally consists of a few feet of residually derived soils overlying interbedded silts and clays. Based on the site lithology, the shallow zone water bearing sand at monitoring well 04WW04 appears to be only one to two feet thick, and surrounding monitoring wells mostly show clay or silt layers at the same depth. It has not been confirmed through borings if the intermediate zone water bearing sand (60 to 83 feet bgs) and the deep zone water bearing sand (121 to 128 feet bgs) in the firehouse well exist beneath the LHAAP-04 site; however, the intermediate and deep zone wells across LHAAP have reliably encountered sands at similar depths; so they likely exist under LHAAP-04 site (Shaw, 2012).

The depth to groundwater across the facility varies with typical depths being 12 to 16 feet in the shallow zone. The regional groundwater flow direction beneath the facility is generally east-northeast towards Caddo Lake but varies by site location (Jacobs, 2002).

Shallow groundwater at LHAAP-04 has been assessed via seven monitoring wells installed near LHAAP-04 to depths of approximately 20 feet bgs. There are no monitoring wells completed in the intermediate or deep saturated zones. Based on the 2007 potentiometric surface map for LHAAP production area, the groundwater flow direction in the shallow saturated zone below LHAAP-04 is radially away from 04WW02 as shown on **Figure 2-4** within an overall movement to the east-northeast as shown on **Figure 2-2**. Based on the 2010 potentiometric surface map as shown on **Figure 2-5**, the groundwater flow direction in the shallow saturated zone below LHAAP-04 is radially away from 04WW02 and 04WW04 within an overall gradient to the northeast as shown on **Figure 2-2**.

Rising head slug tests were performed on one well near LHAAP-04 to calculate hydraulic conductivity values using the Bouwer-Rice method. The hydraulic conductivity value for the shallow saturated zone was 3.5×10^{-5} centimeters per second at well LHSMW01 (Shaw, 2012).

Goose Prairie Creek runs approximately 700 feet to the south of LHAAP-04 site as shown on **Figure 2-2A**. Based on the network of monitoring wells located at the site, perchlorate-impacted groundwater in the shallow zone does not appear to have migrated more than 200 feet from the source area, indicating no threat to Goose Prairie Creek. Groundwater modeling also concluded there should be no impact to surface water from shallow zone groundwater (Shaw, 2007b). The modeling was conservative, utilizing a perchlorate concentration in groundwater at the source (78,200 ug/L) that was more than ten times the highest actual groundwater concentration measured at LHAAP 04 (5,410 ug/L). Finally, perchlorate concentrations in recent surface water samples collected were less than the TRRP Tier 1 Groundwater Residential PCL.

2.5.4 Sampling Strategy and History

Various sampling events were conducted at LHAAP-04 since 1993 to assess contamination from the operations at LHAAP-04 (testing for perchlorate began in 2000). The sampling included installation and sampling of groundwater monitoring wells and sampling of the soil at various depths and locations. The sampling events provided data for the Final Feasibility Study Report (Shaw, 2012):

- Phase I. U.S. Army Corps of Engineers (USACE) completed two borings at one sump location and collected five soil samples in 1993;
- RCRA Closure of Former Pilot Wastewater Treatment Plant. Anderson Columbia Environmental (ACE) collected soil samples for RCRA closure in 1997;
- Phase III. Jacobs completed one boring at one sump location and collected two soil samples in 1998;
- Perchlorate Investigation. Jacobs completed two borings and collected four soil samples in 2000;
- Phase III Additional Work. In 2000, Jacobs collected 12 soil samples from four locations; installed three monitoring wells and collected groundwater samples from each well;

- Plant-wide Perchlorate Investigation. In 2000 and 2001, STEP collected 48 soil samples from 21 locations; collected 6 groundwater samples from 3 monitoring wells; and collected 4 groundwater samples from 4 direct push technology (DPT) points;
- Final Data Gaps Investigation. Shaw collected 4 groundwater samples from 4 monitoring wells in 2004;
- Soil Excavation (Shaw, 2011): In 2011, Shaw removed 3,406 cy of soil with perchlorate (and mercury in a limited area) from the vadose zone; Collected confirmation soil samples from side walls and bottom of excavation, collected sediment samples and water samples from drain line crossing excavation area, collected three soil samples for perchlorate beyond excavation area to verify horizontal extent;
- Groundwater Investigation for Perchlorate. Shaw installed two monitoring wells and collected groundwater samples from seven wells in 2011

2.5.5 Nature and Extent of Contamination

The former pilot wastewater treatment plant was the most likely source of contaminants being released into the environment (**Figure 2-4**). Since the plant has been removed, there is no longer a potential release mechanism for leaks or spills. Perchlorate was probably released via overflows, spills, and discharges to the soil (AECOM, 2012).

The only groundwater COC for LHAAP-04 identified in the FS (Shaw 2012) is perchlorate. The approximate extent of perchlorate contamination in shallow zone is shown on **Figure 2-6**. The figure shows the current estimated extent of perchlorate as a solid line, and an estimated possible past extent of perchlorate as a dashed line. The February 2001 concentration (81 µg/L) in monitoring well LHSMW01 merits inclusion of that well within the dashed line. The remainder of the dashed contour maintains a similar distance from the currently interpreted 17 µg/L contour with reference to the generally radial groundwater contours of **Figure 2-5**.

The **Figure 2-6** data tables for monitoring wells 04WW01, 04WW05, and LHSMW02 show perchlorate concentrations observed in these wells to be less than the TRRP Tier 1 Groundwater Residential PCL. Data from monitoring wells 04WW04 and LHSMW01 suggests perchlorate concentrations are declining over time. This data lends support to the idea that the current estimated extent of perchlorate in groundwater is smaller than the possible past extent. An intermediate zone monitoring well will be installed near monitoring well 04WW04 to confirm that the groundwater in the intermediate zone is not impacted by perchlorate.

2.6 Current and Potential Future Land and Resource Uses

2.6.1 Current and Future Land Uses

LHAAP is located near the unincorporated community of Karnack, Texas. Karnack is a rural community with a population of approximately 775 people. The incorporated community of Uncertain, Texas, approximate population 205, is located to the northeast of LHAAP on the edge of Caddo Lake and is a resort area and an access point to Caddo Lake. The industries in the surrounding area consist of agriculture, timber, oil and natural gas production, and recreation.

LHAAP has been an industrial facility since 1942. Production activities and associated waste management activities continued until the facility was determined to be in excess of the U.S. Army's needs in 1997. The plant area has been relatively dormant since that time. LHAAP is surrounded by a fence (except on the border with Caddo Lake) with an access gate that is locked after daylight hours, which restricts public access. The fence now represents the National Wildlife Refuge boundary. The public can access most of the facility during the day with additional fencing and signage restricting access from environmental sites.

The reasonably anticipated future use of LHAAP-04 is as part of a national wildlife refuge. This anticipated future use is based on a Memorandum of Agreement (MOA) (U.S. Army, 2004) between the USFWS and the U.S. Army. That MOA documents the transfer process of the LHAAP acreage to USFWS to become the Caddo Lake National Wildlife Refuge and will be used to facilitate a future transfer of LHAAP-04. Presently the Caddo Lake National Wildlife Refuge occupies approximately 7,000 acres of the 8,416-acre former installation. In accordance with the National Wildlife Refuge System Administration Act of 1966 and its amendments (16 USC 668dd), the land will remain as a national wildlife refuge unless there is a change brought about by an act of Congress, or the land is part of an exchange authorized by the Secretary of the Interior.

2.6.2 Current and Future Surface Water Uses

There are no surface water bodies present within LHAAP-04. Surface water runoff from LHAAP-04 drains toward the southern branch of Goose Prairie Creek, located approximately 700 feet south of LHAAP-04, and which flows into Caddo Lake, a large recreational lake covering 51 square miles with a mean depth of 6 feet. The watershed of the lake encompasses approximately 2,700 square miles. Caddo Lake is used extensively for fishing and boating and provides drinking water supply to multiple cities/towns. The anticipated future uses of surface water are the same as the current uses.

2.6.3 Current and Future Groundwater Uses

Groundwater in the drinking water aquifer (250-430 feet bgs) under and near LHAAP is currently used as a drinking water source. The drinking water aquifer should not be confused with LHAAP "deep zone" groundwater, which extends only to a depth of approximately 151 feet bgs. The aquifer containing contaminated groundwater and the aquifer utilized for drinking water are likely distinct from each other with no connectivity. TCEQ identifies six active public water supply wells completed in the drinking water aquifer (see **Figure 2-2**). Karnack Water Supply Corporation operates two source wells servicing the town of Karnack. These wells were completed in 1905 to depths of 287 and 285 feet bgs and are located hydraulically upgradient approximately one-quarter mile northwest and one-half mile southwest of the town center, respectively. Caddo Lake Water Supply Corporation operates three source wells located north and northwest of LHAAP that have been in use since 1905. These wells are hydraulically upgradient of LHAAP (Jacobs, 2002) with completion depths of 244, 185 and 310 feet below ground surface. Caddo Lake State Park operates one source well located approximately 1.6 miles northwest upgradient of LHAAP. This well was installed in 1905 with a total depth of 292 feet. Due to the large distance between these wells and LHAAP, water removal from these wells is not expected to affect groundwater flow at the site. In addition, there are several livestock and domestic wells located in the vicinity of LHAAP with depths averaging approximately 250 feet bgs. Because the extent of perchlorate contaminated groundwater is limited, it is not relevant to any of the drinking water wells.

Three water supply wells are located within the boundary of LHAAP itself (**Figure 2-2**). One well is located at the Fire Station with a total depth of 128 feet and a screened interval from 58 to 128 feet bgs; the second well is located upgradient of LHAAP-04 approximately 0.35 miles southwest of the Fire Station. The third well is located north of the USFWS administration building for Caddo Lake National Wildlife Refuge, near the main entrance to LHAAP. Two additional wells previously supplied water to the installation, but these have been plugged and abandoned. None of these three wells are currently used for drinking water at LHAAP, although they may supply water for non-potable uses.

The Fire Station well was installed for the purposes of supplying industrial process water for the groundwater treatment system and is not a public supply well. The taps in or around the firehouse are not used for drinking water and are marked non-potable. Although the anticipated future use of the facility as a national wildlife refuge does not include the use of the groundwater at LHAAP-04 as a drinking water source, the State of Texas designates all groundwater as potential drinking water, unless otherwise classified, and consistent with 30 TAC 335.563(h)(1). To be conservative, a hypothetical industrial use scenario was evaluated for risk. The future industrial scenario for LHAAP assumes limited use of groundwater as a drinking water source.

2.7 Summary of Site Risks

This section summarizes the results of the baseline human health and screening ecological risk assessments conducted for LHAAP-04 (Jacobs, 2003) and the baseline ecological risk assessment (Shaw, 2007c). The assessments provide the basis for taking action and identify the contaminants and exposure pathways that need to be addressed by the remedial action. The driver for remedial action was identified as the presence of perchlorate in soil at concentrations exceeding TCEQ MSC GWP-Ind value of 7.2 mg/kg and in groundwater at concentrations exceeding TRRP Tier 1 Groundwater Residential PCL of 17 ug/L thereby posing hazards to groundwater via groundwater use and soil leaching to groundwater pathways.

2.7.1 Summary of Human Health Risk Assessment

The 2003 Jacobs risk assessment was based on data collected from investigations prior to 2001. Since that time, additional soil and groundwater has been collected and is discussed in section 2.7.2 below.

The Jacobs human health risk assessment presented the human health risks and hazards to a hypothetical future maintenance worker under an industrial scenario for soil and/or groundwater.

For the hypothetical future maintenance worker, reasonable soil exposure routes evaluated were: incidental ingestion of the surface soil, dermal contact with the surface soil, and inhalation of particulates. For groundwater, reasonable exposure pathways for the hypothetical future maintenance worker were ingestion/inhalation of groundwater, and dermal contact while showering with contaminated groundwater.

The calculated risk was compared to the USEPA target risk range of 1×10^{-4} to 1×10^{-6} for the excess lifetime cancer risk (ELCR) and a hazard index (HI) of 1 for non-carcinogenic hazards. For soil, the carcinogenic risk was within the acceptable range with a risk value of 1.2×10^{-6}. For groundwater, the total carcinogenic risk was 4.5×10^{-5} (due to exposure to 2,3,7,8-tetrachlorodiobenzodioxin [2,3,7,8-TCDD] toxicity equivalents), and within the acceptable risk

range (see **Table 2-2**). 2,3,7,8-TCDD was eliminated as a COC because its exposure point concentration (EPC) was below its MCL (see **Table 2-2**) (Jacobs, 2003).

The potential COCs identified for the LHAAP-04 groundwater were perchlorate and manganese due to their contributions to HI (exceeding 0.1) as calculated by Jacobs or due to exceedances of their respective TRRP Tier 1 Groundwater Residential PCLs (see **Table 2-3**). Manganese has hazard quotient (HQ) of 0.1 (see **Table 2-3**), but was eliminated as a COC since its concentration was below the LHAAP background concentration for manganese, the HQ is less than or equal to 0.1, and it does not contribute significantly to the HI.

The non-carcinogenic hazard was below 1 (0.28 from soil and 0.18 from groundwater) (see **Table 2-4**). Thus, the HHRA concluded that potential cancer risk and non-cancer hazards estimated for potential exposure of a future maintenance worker to on-site soil and groundwater are within the acceptable limits (Jacobs, 2003).

Perchlorate was identified as chemical of potential concern in soil in the Jacobs risk assessment (Jacobs, 2003). Perchlorate was below detection limit in the groundwater data from the three monitoring wells used in the Jacobs risk assessment (Jacobs, 2003). However, the three monitoring wells (04WW01, 04WW02, and 04WW03) are not located in the close proximity to the former source area. Additionally, soil and groundwater data as summarized in section 2.7.2 below was collected subsequent to the Jacobs risk assessment and was evaluated against the applicable TCEQ risk standards.

2.7.2 Post Risk Assessment Data Evaluation

The Jacobs risk assessment was completed using data from the samples through February 2001 for groundwater and through December 2000 for soil samples. Since that time, additional groundwater and soil samples have been analyzed as discussed below.

As identified in the EE/CA, the Jacobs human health risk assessment was based on soil data collected prior to 2001. Additional data was collected as part of the plant-wide perchlorate investigation by STEP and Shaw investigations (STEP, 2005; Shaw, 2007a). The additional investigations confirmed that perchlorate in on-site surface soil exceeded the soil MSC for industrial use based on groundwater protection (GWP-Ind) of 7.2 mg/kg. Perchlorate exceedance of this standard does not present a risk to human health for industrial use; however, it presents a risk of perchlorate leaching from soil into groundwater. The maximum concentration of perchlorate in soil used in the Jacobs risk assessment (144 mg/kg) is only slightly less than the maximum perchlorate concentration in subsequent investigations (163 mg/kg). The perchlorate concentrations indicate that they exceed the GWP-Ind MSC and thus soil containing perchlorate had the potential to impact groundwater. However, the perchlorate in soil did not pose human health or ecological risks.

In addition, the risk assessment data did not include the data collected during the RCRA closure of the former pilot wastewater treatment facility (ACE, 1997). The review of the data collected during the RCRA closure indicates that mercury in on-site soil exceeded its soil MSC for industrial use (SAI-Ind) (0.15 mg/kg) based on inhalation, ingestion, and dermal contact pathways. The highest detected mercury concentration was 89 mg/kg.

A removal action under CERCLA removal authority was conducted in 2009 (Shaw, 2009b) and soil with perchlorate and mercury concentrations exceeding the GWP-Ind MSC and SAI-Ind MSC,

respectively, were removed and sent to an offsite landfill. The Final Non-Time Critical Removal Action Completion Report documents the excavation, transport and disposal of soil contaminated with perchlorate and mercury, along with additional activities conducted during the contaminated soil removal work (Shaw, 2011). The average depth of excavation was approximately 10 ft bgs and an estimated volume of 3,406 in-place cubic yards (cy) was excavated (Shaw, 2011). The concentrations of mercury in the side walls of the excavation were less than the SAI-Ind MSC (excavation floor confirmation samples were not required for mercury). Perchlorate concentrations in confirmation samples from the side walls and floor of the excavation were less than the GWP-Ind MSC. Inflow of groundwater into the excavation prevented collection of soil samples from the floor of two confirmation grids (FL09 and FL11) (Shaw, 2011). However, the presence of groundwater indicated the excavation had been advanced into the saturated zone in these two areas, resulting in complete removal of all contaminated vadose zone soils.

Perchlorate impacts within saturated zone soils will be addressed under the groundwater remedy.

Thus, the removal of mercury and perchlorate contaminated soil from the LHAAP-04 site during the first response action eliminated risks associated with the soil exposure and soil to groundwater leaching pathways for industrial groundwater use.

2.7.2.1 Groundwater

Since perchlorate concentrations in soil exceeded the GWP-Ind MSC prior to the removal action, additional groundwater samples were collected after the Jacobs' risk assessment and analyzed for perchlorate to determine if it exceeded the TRRP Tier 1 Groundwater Residential PCL. Data from 04WW04 indicated that perchlorate concentrations exceeded the TRRP Tier 1 Groundwater Residential PCL of (17 µg/L). In the area with highest perchlorate concentrations in soil, perchlorate was detected in 04WW04 at concentrations ranging between 2,920 and 5,410 µg/L in 2010, and 1,580 µg/L in 2011. The perchlorate concentrations in the groundwater exceeded the TRRP Tier 1 Groundwater Residential PCL value, so were presumed to pose an unacceptable hazard to human health and perchlorate was retained as a COC in groundwater. To address perchlorate in groundwater, the TRRP Tier 1 Groundwater Residential PCL of 17 µg/L is the cleanup level.

2.7.3 Summary of Ecological Risk Assessment

The ecological risk for LHAAP-04 was addressed in the installation-wide BERA (Shaw, 2007c). For the BERA, the entire Installation was divided into three large sub-areas (i.e., the Industrial Sub-Area, Waste Sub-Area, and Low Impact Sub-Area) for the terrestrial evaluation. The individual sites at LHAAP were grouped into one of these sub-areas, which were delineated based on commonalities of historical use, habitat type, and spatial proximity to each other. The conclusions regarding the potential for chemicals detected at individual sites to adversely affect the environment must be made in the context of the overall conclusions of the sub-area in which the site falls. LHAAP-04 lies within the Industrial Sub-Area. The BERA concluded that no unacceptable risk was present in the Industrial Sub-Area (Shaw, 2007c) and therefore, No Further Action is needed at LHAAP-04 for the protection of ecological receptors. The BERA Addendum included soil sampling at two LHAAP-04 locations to replace data identified as compromised. The results for the soil sampling at the two locations were non-detect and there was no change in the BERA conclusions for LHAAP-04 (AGEISS, 2014).

2.7.4 Basis of Action

The remedial action selected in this ROD is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances, pollutants, or contaminants into the environment. Actions for the groundwater are necessary to address the potential for human health risks in the unlikely event there is an attempt to use groundwater as a potable water source. Perchlorate is the only COC identified for groundwater at LHAAP-04. In the absence of federal drinking water standards, cleanup levels will be based on the TRRP Tier 1 Groundwater Residential PCL. There are no COCs in soil based on exposure pathway for an industrial worker (Shaw, 2012).

2.8 Remedial Action Objectives

The RAOs for LHAAP-04, which addresses contamination associated with perchlorate contaminated groundwater and take into account the future uses of LHAAP land and groundwater are:

- Protect human health by preventing ingestion of groundwater contaminated with perchlorate;
- Return groundwater to its potential beneficial use, wherever practicable, within a reasonable time period given the particular site circumstances; and
- Prevent groundwater contaminated with perchlorate from migrating into nearby surface water.

The above RAOs recognize the USEPA's policy to return all groundwater to beneficial uses, based on the non-binding programmatic expectation in the NCP and is consistent with the NCP regulations requiring the lead agency, the U.S. Army in this case, to establish RAOs specifying contaminants and media of concern, potential exposure pathways, and remediation goals.

Per the ROD's RAOs, and consistent with the NCP, groundwater will be returned to its beneficial uses as drinking water. The groundwater cleanup level for perchlorate at the Site is the TRRP PCL residential groundwater cleanup level, 17 ug/L, and is protective of human health and the environment.

2.9 Description of Alternatives

Five alternatives (including No Further Action) have been evaluated. This section introduces the remedy components, identifies the common elements and distinguishing features of each alternative, and describes the expected outcomes of each.

2.9.1 Description of Remedy Components

Except for the No Action alternative, LUCs, LTM and five-year reviews are common components for all the remedial alternatives. The unique elements of each remedial alternative are identified below.

Alternative 1- No Further Action

As required by the NCP, the no action alternative provides a comparative baseline against which the action alternatives can be evaluated. Under this alternative groundwater would be left "as is,"

without implementing any containment, removal, treatment, or other mitigating actions. No other actions would be implemented to reduce existing or potential future exposure to human receptors.

There are no costs associated with the No Action alternative.

Estimated Total Direct Capital Cost: $0

Estimated Total O&M Cost: $0

Cost Estimate Duration: - NA

Estimated Total PW Cost: $0

Alternative 2 – Monitored Natural Attenuation (MNA), LUCs

This alternative relies on the natural attenuation of contaminant concentrations in groundwater under an MNA program, combined with maintenance of LUCs as described in the common elements in section 2.9.2. In addition, two shallow monitoring wells and one intermediate monitoring well will be installed for horizontal and vertical delineation of the perchlorate plume. Groundwater monitoring would be performed to determine whether the perchlorate concentrations in groundwater remain stable or continue to degrade via naturally occurring processes. Monitoring well 04WW04 currently provides groundwater data to represent the groundwater contamination. The other existing and proposed new wells will also be used in the monitoring program. The analytical program will consist of perchlorate and chloride speciation. Initially, the following geochemical parameters will also be included in the analytical program, dissolved oxygen (field), redox potential (field), sulfate, nitrate, nitrites, alkalinity, total organic carbon (TOC), and ferrous iron (field). The specific number of wells to be monitored will be determined in the RD. The estimated cleanup time is 12 years and is based on a half life of 1.9 years using limited data from other LHAAP monitoring wells with similar perchlorate concentrations. Actual cleanup time could be higher than this estimate. The water well located at the Fire Station will also be included in the initial monitoring for perchlorate. If perchlorate is not detected in the Fire Station well in the initial sampling, future sampling of the Fire Station well would occur only if the perchlorate data from the expanded LHAAP-04 well field indicates the potential for impact (i.e. wells between LHAAP-04 site and Fire Station show perchlorate exceeding its cleanup level).

The LUCs' performance objectives are to prohibit groundwater use (except for environmental testing and monitoring) as a potable source until the levels of COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) in groundwater are met; to restrict land use to nonresidential until it is demonstrated that the surface and subsurface soil and groundwater COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) are at levels that allow for unlimited use and unrestricted exposure; and to maintain the integrity of any current or future remedial or monitoring systems until the levels of COCs (i.e., including all hazardous substances, pollutants and contaminants found at the Site at cleanup levels as listed in Table 2-3) in groundwater are met.

The estimated present worth (PW) costs for this Alternative were based on LTM of five wells for 15 years and use a 30-year evaluation period.

Estimated Total Direct Capital Cost: $126,000

Estimated Total O&M Cost: $463,000

Cost Estimate Duration: 30 years

Estimated Total PW Cost: $589,000

Alternative 3 – ISB, LTM, LUCs

This is the preferred alternative. It involves addition of a carbon source into the aquifer to promote naturally occurring biological processes in the subsurface environment. This would reduce perchlorate concentrations to below its cleanup level in a shorter time than MNA. LUCs would be maintained as described in the common elements in section 2.9.2.

ISB is a technology that encourages growth and reproduction of indigenous microorganisms to enhance biodegradation of organic constituents such as perchlorate in the saturated groundwater zone. A substrate will be injected into the target treatment area via injection points/wells. Bioaugmentation will be performed if necessary to introduce the appropriate kind of microbial culture into the subsurface environment.

Prior to implementation of ISB, two shallow monitoring wells and one intermediate monitoring well will be installed for horizontal and vertical delineation of the perchlorate plume. A groundwater monitoring program which will include existing and new proposed wells will be implemented as necessary to monitor the effectiveness and progress of ISB in reducing perchlorate concentrations in groundwater. The specific number of wells to be monitored will be determined in the RD. Assuming the first-order degradation rates and reasonable half-lives, perchlorate in groundwater could be reduced to below its cleanup level in approximately six years. For the purposes of cost estimating, duration of eight years is used for LTM. The water well located at the Fire Station will also be included in the initial monitoring for perchlorate. If perchlorate is not detected in the Fire Station well in the initial sampling, future sampling of the Fire Station well would occur only if the perchlorate data from the expanded LHAAP-04 well field indicates the potential for impact (i.e. wells between LHAAP-04 site and Fire Station show perchlorate exceeding its cleanup level).

The LUCs' performance objectives are to prohibit groundwater use (except for environmental testing and monitoring) as a potable source until the levels of COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) in groundwater are met; to restrict land use to nonresidential until it is demonstrated that the surface and subsurface soil and groundwater COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) are at levels that allow for unlimited use and unrestricted exposure; and to maintain the integrity of any current or future remedial or monitoring systems until the levels of COCs (i.e., including all hazardous substances, pollutants and contaminants found at the Site at cleanup levels as listed in Table 2-3) in groundwater are met.

The estimated PW costs for this Alternative were based on LTM for 8 years and use a 30-year evaluation period.

Estimated Total Direct Capital Cost: $243,000

Estimated Total O&M Cost: $422,000

Cost Estimate Duration: 30 years

Estimated Total PW Cost: $665,000

Alternative 4 – Extraction and Treatment, LUCs

This alternative is designed to reduce perchlorate contamination in the area of highest concentrations in the groundwater plume via extraction (using extraction wells) and treatment of groundwater for perchlorate to achieve its cleanup level. Plume areas outside the extraction system are also expected to attain the perchlorate cleanup level in a shorter duration after the highest perchlorate concentrations in groundwater are removed.

Prior to implementation of the extraction and treatment system, two shallow monitoring wells and one intermediate monitoring well will be installed for horizontal and vertical delineation of the perchlorate plume. A groundwater monitoring program which will include existing and new proposed wells will be implemented as necessary to monitor the effectiveness and progress of the extraction and treatment system in reducing perchlorate concentrations in groundwater. The specific number of wells to be monitored will be determined in the RD.

It is estimated that the perchlorate cleanup level in the groundwater would be achieved in approximately 15 months of treatment, provided extraction and treatment results are favorable. A trailer mounted treatment system will be used to remove perchlorate from the extracted groundwater using ion exchange resin technology. The treated effluent would be re-injected via four temporary wells back into the shallow zone at the site.

LUCs would be maintained as described in the common elements in section 2.9.2.

It is estimated that the extraction and treatment of perchlorate contaminated groundwater will be performed for a period of 15 months. For the purposes of cost estimating, five years is used for LTM and it includes costs associated with maintenance of LUCs for that period. The water well located at the Fire Station will also be included in the initial monitoring for perchlorate. If perchlorate is not detected in the Fire Station well in the initial sampling, future sampling of the Fire Station well would occur only if the perchlorate data from the expanded LHAAP-04 well field indicates the potential for impact (i.e. wells between LHAAP-04 site and Fire Station show perchlorate exceeding its cleanup level).

The LUCs' performance objectives are to prohibit groundwater use (except for environmental testing and monitoring) as a potable source until the levels of COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) in groundwater are met; to restrict land use to nonresidential until it is demonstrated that the surface and subsurface soil and groundwater COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) are at levels that allow for unlimited use and unrestricted exposure; and to maintain the integrity of any current or future remedial or monitoring systems until the levels of COCs (i.e., including all hazardous substances, pollutants and contaminants found at the Site at cleanup levels as listed in Table 2-3) in groundwater are met.

Estimated Total Direct Capital Cost: $325,000

Estimated Total O&M Cost: $436,000

Cost Estimate Duration: 30 years

Estimated Total PW Cost: $761,000

Alternative 5 – Interceptor Collection Trenches, Extraction and Treatment, MNA, LUCs

This alternative is designed to reduce perchlorate contamination in the area of highest concentrations in the groundwater plume via extraction using interceptor collection trenches followed by treatment of the extracted groundwater to achieve the perchlorate cleanup level. The extracted water will be treated using an ion exchange resin technology and the treated groundwater will be re-injected into the shallow zone at the site. Because the groundwater in the area with highest perchlorate concentration is removed and treated, perchlorate in portion of the plume located outside the influence of the extraction system is also expected to naturally attain the cleanup level in a shorter duration (Shaw, 2012).

LUCs will be maintained as described in the common elements in section 2.9.2.

Prior to implementation of this alternative, two shallow monitoring wells and one intermediate monitoring well will be installed for horizontal and vertical delineation of the perchlorate plume. A groundwater monitoring program which will include existing and new proposed wells will be implemented as necessary to monitor the effectiveness and progress of this alternative in reducing perchlorate concentrations in groundwater. The specific number of wells to be monitored will be determined in the RD.

The extraction and treatment portion of this alternative is estimated to take approximately six months. For the purpose of cost estimating, five years is used for the LTM and it includes costs associated with maintenance of LUCs for that period. The water well located at the Fire Station will also be included in the initial monitoring for perchlorate. If perchlorate is not detected in the Fire Station well in the initial sampling, future sampling of the Fire Station well would occur only if the perchlorate data from the expanded LHAAP-04 well field indicates the potential for impact (i.e. wells between LHAAP-04 site and Fire Station show perchlorate exceeding its cleanup level).

The LUCs' performance objectives are to prohibit groundwater use (except for environmental testing and monitoring) as a potable source until the levels of COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) in groundwater are met; to restrict land use to nonresidential until it is demonstrated that the surface and subsurface soil and groundwater COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) are at levels that allow for unlimited use and unrestricted exposure; and to maintain the integrity of any current or future remedial or monitoring systems until the levels of COCs (i.e., including all hazardous substances, pollutants and contaminants found at the Site at cleanup levels as listed in Table 2-3) in groundwater are met.

Estimated Total Direct Capital Cost: $405,000

Estimated Total O&M Cost: $411,000

Cost Estimate Duration: 30 years

Estimated Total PW Cost: $816,000

2.9.2 Common Elements and Distinguishing Features of Each Alternative

<u>Common Elements of Alternatives 2 through 5</u>

LUCs, LTM and five-year review are common to all alternatives except the No Action alternative. These common elements are described below.

Land Use Controls

LUCs are any restriction or control, arising from the need to protect human health and the environment, that limits the use of and/or exposure to any portion of that property, including water resources. The LUCs would be implemented to support the RAO to protect human health.

The LUC for groundwater would prevent human exposure to residual groundwater contamination presenting an unacceptable risk to human health and ensure that there is no withdrawal or use of groundwater beneath the sites for anything other than environmental monitoring and testing. The LUC to prohibit groundwater use (except for environmental testing and monitoring) as a potable source would remain until the levels of COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) in groundwater are met; to restrict land use to nonresidential until it is demonstrated that the surface and subsurface soil and groundwater COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) are at levels that allow for unlimited use and unrestricted exposure; and to maintain the integrity of any current or future remedial or monitoring systems until the levels of COCs (i.e., including all hazardous substances, pollutants and contaminants found at the Site at cleanup levels as listed in Table 2-3) in groundwater are met.

In addition, within 90 days of signature of this ROD, the U.S. Army shall request the Texas Department of Licensing and Regulation to notify well drillers of groundwater use prohibitions based on a preliminary LUC boundary. A LUC Remedial Design (RD) will be finalized as the land use component of the Remedial Design. Within 21 days of the issuance of the ROD, the U.S. Army will propose deadlines for completion of the RD Work Plan, RD, and Remedial Action Work Plan. The documents will be prepared and submitted to the USEPA and the TCEQ pursuant to the FFA. The LUC RD will contain implementation and maintenance actions, including periodic inspections. Consistent with the dates presented for these documents, the U.S. Army shall: 1) request the Texas Department of Licensing and Regulation to notify well drillers of the final boundary of groundwater use prohibitions; and 2) notify the Harrison County Courthouse of the LUCs to include a map showing the areas of groundwater and non-residential use restrictions, and the monitoring system at the site, in accordance with 30 TAC 335.565.

The U.S. Army will implement, maintain, monitor, report on and enforce land use controls at U.S. Army-owned property. The U.S. Army shall perform those actions related to land use control activities described in this ROD and in the RD for the ROD. For portions of the Site subject to LUCs that are not owned by the U.S. Army, the U.S. Army will monitor and report on the implementation, maintenance, and enforcement of land use controls, and coordinate with federal, state, and local governments and owners and occupants of properties subject to LUCs. The U.S. Army will provide notice of the groundwater and soil contamination and any land use restrictions referenced in the ROD. The U.S. Army will send these notices to the federal, state and local governments involved at this site and the owners and occupants of the properties subject to those use restrictions and land use controls. The U.S. Army shall provide the initial notice within 90 days of ROD signature. The frequency of subsequent notifications will be described in the RD for the ROD. The Army remains responsible for ensuring that the remedy remains protective of human

health and the environment. The U.S. Army will fulfill its responsibility and obligations under CERCLA and the NCP as it implements, maintains, and reviews the selected remedy.

Upon transfer of U.S. Army-owned property, the U.S. Army will provide written notice of the land use controls to the transferee of the groundwater and soil contamination and any land use restrictions referenced in the ROD. Within 15 days of transfer, the U.S. Army shall provide the USEPA and the TCEQ with written notice of the division of implementation, maintenance, and enforcement responsibilities unless such information has already been provided in the LUCs' RD. The LUC RD will address the procedures to be used by the U.S. Army and the transferee to document compliance with the LUCs described in this ROD. In the event property is transferred out of Federal control, the LUCs relating to property and groundwater restrictions shall be recorded in the deed and shall be enforceable by the United States and the state of Texas.

To transfer LHAAP-04, an Environmental Condition of Property (ECP) document would be prepared and the Environmental Protection Provision from the ECP would be attached to the letter of transfer. The ECP would include the LUCs as part of the Environmental Protection Provisions. The property would be transferred subject to the LUCs identified in the ECP. These restrictions would prohibit or restrict property uses that might result in exposure to the contaminated groundwater (e.g., potable use of groundwater above the cleanup level) or soil (e.g. residential land use prohibition).

The U.S. Army and regulators will consult to determine appropriate enforcement actions should there be a failure of a LUC objective at the site after it has been transferred.

Long Term Monitoring

LTM is the monitoring conducted after a remedy is selected and implemented, and is used to evaluate the degree to which the remedial measure achieves its objectives. Alternatives 2 through 5 at the LHAAP-04 site include long-term groundwater monitoring activities. LTM would include monitoring of a select number of groundwater wells to evaluate contaminant migration and ensure that the groundwater COC plume continues to degrade in a manner to achieve attainment of the groundwater cleanup level.

The LTM would be continued as required to demonstrate effectiveness of the remedy, to demonstrate compliance with applicable or relevant and appropriate requirements (ARARs), and to support five-year reviews.

Five-Year Reviews

Five-Year Reviews are intended to evaluate whether the response action remains protective of human health and the environment, is functioning as designed, and necessary O&M is being performed. For the LHAAP-04 site, the Five-Year Review would focus on effectiveness of the remedial action and achievement of specific performance levels established in the ROD. Five-Year Reviews would include document reviews, review of cleanup standards, inspections, technology reviews, and preparation of a report summarizing the findings and recommendations. Five-Year Reviews would be performed until site conditions allow for unlimited use and unrestricted exposure.

Distinguishing Features of Action Alternatives

Alternative 2 utilizes MNA which is a passive remedial technology for groundwater remediation. This alternative is the least intrusive and relies solely on naturally occurring processes in the subsurface environment to degrade the COCs. The anticipated remediation time is 12 years.

The distinguishing feature of Alternative 3 is the inclusion of ISB technology to promote naturally occurring biological processes in the aquifer. This technology uses a carbon source and a bioaugmentation culture, if needed, to create conditions favorable for reductive dechlorination of perchlorate. Treatment under anaerobic conditions is often applied to perchlorate, and microorganisms capable of degrading perchlorate are common in the environment. Anticipated remediation times may be short in the target area with appropriate contact. Assuming first order anaerobic degradation rates and reasonable half-lives, the perchlorate in groundwater could be reduced to below its cleanup level in approximately six years, based on the hot spot treatment.

The distinguishing features of Alternative 4 are the inclusion of ex-situ technologies including an extraction system and an ion exchange resin treatment. It differs from Alternatives 2 and 3 in that contaminated groundwater is physically removed (using a network of extraction wells) from the subsurface environment and treated aboveground. The anticipated remediation time is 15 months which is significantly shorter than that of Alternatives 2 and 3.

Alternative 5 is similar to Alternative 4 except for inclusion of an interceptor trench instead of an extraction to collect groundwater. An interceptor trench can be expected to allow a higher rate of groundwater extraction from the subsurface. At LHAAP-04 with the apparently discontinuous sand layers, this may be necessary to entirely capture the contaminated plume. This alternative has the shortest anticipated remediation time of six months.

2.9.3 Expected Outcomes of Each Alternative

Alternative 1 would allow the site to remain a hazard to human receptors due to the potential ingestion of contaminated groundwater; and to the environment, because no remedial activities would be conducted and there would be no LUCs or LTM. Alternatives 2 through 5 all provide treatment (Alternative 2 provides passive treatment), or removal of the contaminated groundwater to meet perchlorate cleanup level that would be protective of human receptors and the environment. The four action alternatives have very similar outcomes of preventing exposure to contaminated groundwater utilizing either in-situ or ex-situ technology and LUCs. Alternatives 2 and 3 take advantage of naturally occurring processes in the subsurface environment at LHAAP-04, although the progress of COC degradation is expedited through addition of a carbon source and microbial culture under Alternative 3. Alternatives 4 and 5 achieve groundwater cleanup level in less time through utilization of active treatment. The similar outcomes of all action alternatives include restoration of the contaminated groundwater by attainment of the TRRP Tier 1 Groundwater Residential PCL for perchlorate, in the absence of federal drinking water standards. In addition, the LTM associated with Alternatives 2 through 5 would confirm the protection of human health and the environment by documenting the return of groundwater to its beneficial use, if practicable, through reduction of the contaminant mass and shrinking of the plume. The LUC to prohibit groundwater use (except for environmental testing and monitoring) as a potable source until the levels of COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) in groundwater are met; to restrict land use to nonresidential until it is demonstrated that the surface and subsurface soil and groundwater COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at

cleanup levels as listed in Table 2-3) are at levels that allow for unlimited use and unrestricted exposure; and to maintain the integrity of any current or future remedial or monitoring systems until the levels of COCs (i.e., including all hazardous substances, pollutants and contaminants found at the Site at cleanup levels as listed in Table 2-3) in groundwater are met.

2.10 Summary of Comparative Analysis of Alternatives

Nine criteria identified in the NCP §300.430(e)(9)(iii) are used to evaluate the different remediation alternatives individually and against each other in order to select a remedy. This section profiles the relative performance of each alternative against the nine criteria, noting how it compares to the other options under consideration. The nine evaluation criteria are discussed below. **Table 2-5** summarizes the comparative analysis of the alternatives.

2.10.1 Overall Protection of Human Health and the Environment

Overall protection of human health and the environment addresses whether each alternative provides adequate protection of human health and the environment and describes how risks posed through exposure to contaminated groundwater are eliminated, reduced, or controlled, through treatment, and/or institutional controls.

Alternative 1, the No Further Action alternative, does not protect human health or the environment because no remedial activities would be conducted and no LUCs would be maintained. Therefore, LHAAP-04 contamination would present unacceptable risks to human health and the environment through ingestion of groundwater. The other four alternatives, collectively referred to as the action alternatives, would provide treatment, or removal to levels protective of human health and the environment.

The four action alternatives would provide access and use restrictions, and long-term groundwater monitoring. LUC would prevent exposure to contaminated groundwater at LHAAP-04. Alternative 2 relies solely on LUCs combined with MNA and does not provide contaminant removal or treatment in groundwater other those occurring under natural conditions. Alternatives 3, 4, and 5 include either in situ or ex situ treatment technologies and also provide overall protection of human health and the environment. Alternative 5 is the most aggressive and would be able to attain ARARs in the shortest time frame.

All action alternatives satisfy the RAOs for LHAAP-04. Action alternatives provide confirmation that human health and the environment will be protected because LTM will be conducted to confirm that active remedies or MNA is returning the contaminated groundwater at LHAAP-04 to its potential beneficial uses, wherever practicable, and ultimately to document reduction in contaminant concentrations to the cleanup level. Furthermore, the LUC for groundwater would protect human health by preventing access to the contaminated groundwater until the levels of the COC (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) in soils and groundwater allow for unlimited use and unrestricted exposure.

2.10.2 Compliance with ARARs

Section 121(d) of CERCLA and 40 CFR §300.430(f)(1)(ii)(B) require that remedial actions at CERCLA sites attain legally applicable or relevant and appropriate Federal and State requirements,

standards, criteria, and limitations, which are collectively referred to as "ARARs" unless such ARARs are waived under CERCLA Section 121(d)(4). The ARARs that pertain to this ROD are discussed in **Section 2.13.2**.

Alternative 1 does not comply with chemical-specific ARARs as no remedial action would be implemented. The action-specific ARAR does not apply to Alternative 1 since no remedial activities would be conducted. Alternatives 2, 3, 4, and 5 are expected to comply with chemical-specific ARARs and action-specific ARARs. There are no location-specific ARARs.

2.10.3 Long-Term Effectiveness and Permanence

Long-term effectiveness and permanence refers to expected residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time, once clean-up levels have been met. This criterion includes the consideration of residual risk that will remain onsite following remediation and the adequacy and reliability of controls.

Alternative 1 would not be effective in the long term, because the recent data indicates that the current groundwater conditions are not protective of human health and the environment, and no remedial activities would be conducted to address groundwater under this alternative. Alternative 2 offers a moderate degree of long-term effectiveness through implementation of MNA with LUCs, which would minimize the hazard posed by contaminated groundwater, albeit in a longer time than Alternatives 3, 4 and 5. Alternatives 3, 4, and 5 will provide long-term effectiveness and permanence and in addition, they are designed to reduce groundwater contaminant concentrations and achieve clean up levels in a shorter duration. LUCs associated with Alternatives 2, 3, 4, and 5 will be in place until levels that allow for unlimited use and unrestricted exposure are achieved. With the in-situ approach using ISB, Alternative 3 can address potential perchlorate-impacted soil under the sampling grids FL09 and FL11 and therefore, reduce the uncertainty in estimated times to achieve cleanup levels compared to other alternatives.

Monitoring activities associated with all action alternatives would confirm the protection of human health and the environment by documenting the return of the groundwater to its beneficial use as a drinking water supply, by documenting reduction of the contaminant mass and by preventing the perchlorate-contaminated groundwater plume from migrating into surface water.

2.10.4 Reduction of Toxicity, Mobility, or Volume through Treatment

Reduction of toxicity, mobility, or volume through treatment refers to the anticipated performance of the treatment technologies that may be included as part of a remedy.

Alternative 1 does not include treatment and would not result in a reduction of toxicity, mobility, or volume of contaminants except through natural attenuation processes, although the progress would be unmonitored and undocumented. Alternative 2 does not employ active treatment and will rely on naturally occurring processes to achieve reduction in toxicity, mobility, and volume as contaminants are reduced to concentrations below risk criteria. Alternative 3 provides a reduction in toxicity, mobility, and volume via bioremediation of perchlorate. Alternatives 4 and 5 will reduce the volume of contamination via extraction of impacted groundwater and will provide reduction in toxicity and mobility via treatment of impacted groundwater. The degree of reduction in toxicity and mobility will depend upon the treatment processes.

2.10.5 Short-Term Effectiveness

Short-term effectiveness addresses the period of time needed to implement the remedy and any adverse impacts that may be posed to workers, the community, and the environment during construction and operation of the remedy until cleanup levels are achieved.

Alternative 1 would not involve any remedial measures; therefore, no short-term risk to workers, the community, or the environment would exist. Through LUCs and engineered controls (e.g., administrative controls, and dust suppression), the four action alternatives would be protective of the community during implementation. Alternative 3 would be the most protective in the short term because no construction is required. Alternatives 4 and 5 are O&M intensive, with greater potential for short-term physical safety risks to on-site workers, and refuge visitors.

2.10.6 Implementability

Implementability addresses the technical and administrative feasibility of a remedy from design through construction and operation. Factors such as availability of services and materials, administrative feasibility, and coordination with other governmental entities are also considered.

Under Alternative 1, no new remedial action would be taken. Therefore, there would be no difficulties or uncertainties with implementation. Alternatives 2, 3, 4, and 5 can be easily implemented from a technical standpoint as all equipment, materials, and services required are readily available. Alternative 3 would be slightly more difficult to implement than Alternative 2 from a technical standpoint due to the specialized expertise required to design and construct the ISB treatment elements. Overall, all action alternatives are technically and administratively implementable.

2.10.7 Cost

Cost estimates are used in the CERCLA process to eliminate those remedial alternatives that are significantly more expensive than competing alternatives without offering commensurate increases in performance or overall protection of human health or the environment. The cost estimates developed are preliminary estimates with an intended accuracy range of –30 to +50 percent. Final costs will depend on actual labor and material costs, actual site conditions, productivity, competitive market conditions, final scope, final schedule, final engineering design, and other variables.

The cost estimates include capital costs (including fixed-price remedial construction) and long term O&M costs (post-remediation). PW costs were developed for each alternative assuming a discount rate of 2.7 percent. The progression of PW costs from the least expensive alternative to the most expensive alternative is as follows: Alternative 1 ($0), Alternative 2 ($589,000), Alternative 3 ($665,000), Alternative 4 ($761,000), and Alternative 5 ($816,000). No costs are associated with Alternative 1 because no remedial activities would be conducted. Alternatives 2 and 5 have the lowest and the highest PW cost, respectively.

2.10.8 State/Support Agency Acceptance

The USEPA and the TCEQ have reviewed the Proposed Plan, which presented Alternative 3 as the preferred alternative. Comments received from the USEPA and TCEQ during the Proposed Plan development have been incorporated. Both agencies concur with the selected remedial action.

2.10.9 Community Acceptance

Community acceptance is an important consideration in the final evaluation of the selected remedy. Public comments were received during the 30-day public comment period and during the January 9, 2013 public meeting. The topics of the comments included: defining the extent of groundwater contamination, residual soil contamination and perchlorate cleanup level. The written comments received and their responses are presented in the Responsiveness Summary (**Section 3.0**).

2.11 Principal Threat Waste

Under the RCRA closure, LHAAP-04, the former pilot water treatment plant was demolished in 1997 and the facility structures, tanks, piping and associated wastes were disposed off-site. Subsequently, under the CERCLA removal authority, approximately, 3,406 cy of soil contaminated with mercury and perchlorate constituting the principal threat waste was removed, eliminating the exposure pathway for mercury contaminated soil and the soil leaching to groundwater pathway for perchlorate contaminated soil. Currently, soil at LHAAP-04 does not pose threat to human health or the environment under an industrial land use setting.

2.12 The Selected Remedy

2.12.1 Summary of Rationale for the Selected Remedy

Alternative 3, which includes ISB in the target area, LTM and LUCs, is the selected alternative for LHAAP-04 and is consistent with the intended future use of the site as a national wildlife refuge. This alternative would satisfy the RAOs for the site through the following:

- Treatment of groundwater by ISB in the hot spot area in the vicinity of monitoring well 04WW04. The above selected remedial action employing treatment, will ultimately restore the groundwater to attain groundwater cleanup level for perchlorate.
- The LUC to prohibit groundwater use (except for environmental testing and monitoring) as a potable source will be implemented to ensure protection of human health by preventing exposure to groundwater until the levels of COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) in groundwater are met. The LUC restricting land use to nonresidential will be implemented until it is demonstrated that the surface and subsurface soil and groundwater COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) are at levels that allow for unlimited use and unrestricted exposure. The LUC to maintain the integrity of any current or future remedial or monitoring systems will be implemented until the levels of COCs (i.e., including all hazardous substances, pollutants and contaminants found at the Site at cleanup levels as listed in Table 2-3) in groundwater are met.
- LTM will be conducted to confirm that perchlorate concentrations in the groundwater plume are declining through treatment to attain groundwater cleanup level.

The selected remedy employing treatment will significantly reduce contaminant concentrations. Monitoring will be continued until it is demonstrated that groundwater has achieved the cleanup level for perchlorate.

Five-year reviews will be performed to document that the remedy remains protective of human health and the environment.

Alternative 3 is readily implementable and has no significant short-term risks to worker health and safety or to the community would be expected. The PW cost of Alternative 3 is lower than the other remedial alternatives (Alternatives 4 and 5) consisting of ex-situ treatment component. The PW of Alternative 3 marginally exceeds that of Alternative 2 but provides a balancing trade-off between cost and other criteria used in the detailed evaluation.

Based on the information currently available, the U.S. Army believes that the selected alternative meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the CERCLA §121(b) criteria used to evaluate remedial alternatives. The selected alternative will 1) be protective of human health and the environment; 2) comply with ARARs; 3) be cost-effective; 4) utilize permanent solution; and 5) utilizes treatment as a principal element.

The U.S Army will present details of the ISB, LUC implementation plan, and the LTM plan in the RD for LHAAP-04.

2.12.2 Description of the Selected Remedy

The selected remedy, Alternative 3, was outlined in **Section 2.9**; that description is expanded in the following discussion. The remedy may undergo modifications as a result of the RD and construction processes. Modifications of the remedy described in the ROD will be documented using a technical memorandum in the Administrative Record, an Explanation of Significant Differences (ESD), or a ROD amendment.

The major components of the selected remedy include:

- ISB of groundwater in an area in the vicinity of monitoring well 04WW04. Additional applications of substrate may be needed based on effectiveness of the ISB Substrates may include a wide variety of nutrients: sugars (molasses), alcohols (methanol, ethanol), volatile acids (acetate, lactate), and/or wastes (food processing, manure) Bioaugmentation will be performed if necessary to introduce the appropriate kind of microbial culture into the subsurface environment. It is estimated that perchlorate could be reduced to below its cleanup level in approximately 6 years.
- The LUC objectives include maintaining the integrity of any current or future remedial or monitoring systems, and preventing the use of groundwater contaminated above cleanup levels as a potable water source. The groundwater treatment and LTM remedial components include a groundwater monitoring system that will be used to characterize the condition of the groundwater during the period the groundwater remedy is in place until the groundwater remediation goals are achieved, and to demonstrate achievement of the groundwater remediation goals when the groundwater remedy is complete. As a part of this groundwater remedy, the Army will maintain the remedial and monitoring systems associated with the groundwater remedies until these components of the remedy are no longer needed to achieve cleanup levels, and cleanup levels have been achieved. During the period of operation of the groundwater remedy, if any of the elements of the remedial and groundwater monitoring systems are damaged, destroyed, or become ineffective, they will be repaired or replaced with suitable components to assure that the remedial and groundwater monitoring systems are able to provide data of the quality necessary to

determine the progress of and eventual completion of this component of the remedy. The actions to be taken to implement these LUC objectives and requirements will be provided through modifying the "Comprehensive Land Use Control (LUC) Management Plan, Former Longhorn Army Ammunition Plant, Karnack, Texas" and detailed in the LUC RD. The preliminary boundary for the groundwater LUC is presented on Figure 2-7.

- The LUC for prohibition of groundwater use (except for monitoring and testing) shall be implemented and shall remain in place at the Site until the levels of COCs (i.e. including all hazardous substances, pollutants and contaminants found at the Site at cleanup levels as listed in Table 2-3) in soil and groundwater allow for unlimited use and unrestricted exposure. A LUC RD will be finalized as the land use component of the Remedial Design. Within 21 days of the issuance of the ROD, the Army will propose deadlines for completion of the RD Work Plan, RD and Remedial Action Work Plan. The documents will be prepared and submitted to the EPA and the TCEQ pursuant to the FFA. The LUC RD will contain implementation and maintenance actions, including periodic inspections. The long-term monitoring groundwater plan will also be presented in the RD. The recordation notification for the Site which will be filed with Harrison County, will include a description of the LUCs.
- The LUC restricting land use to nonresidential shall be implemented until it is demonstrated that surface and subsurface soil and groundwater COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) are at levels that allow for unlimited use and unrestricted exposure.
- The LUC to maintain the integrity of any current or future remedial or monitoring systems will remain in place until the levels of COCs (i.e., including all hazardous substances, pollutants and contaminants found at the Site at cleanup levels as listed in Table 2-3) in groundwater are met. The LUC to prohibit groundwater use (except for environmental monitoring and testing) as a potable source will remain in place until the levels of COCs (i.e., all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) in soil and groundwater allow for unlimited use and unrestricted exposure.

The Army will implement, maintain, monitor, report on and enforce land use controls at Army-owned property. The Army shall perform those actions related to land use control activities described in this ROD and in the Remedial Design for the ROD. For portions of the Site subject to land use controls that are not owned by the Army, the Army will monitor and report on the implementation, maintenance, and enforcement of land use controls, and coordinate with federal, state, and local governments and owners and occupants of properties subject to land use controls. The Army will provide notice of the groundwater and soil (surface and subsurface) contamination and any land use restrictions referenced in the ROD. The Army will send these notices to the federal, state and local governments involved at this site and the owners and occupants of the properties subject to those use restrictions and land use controls. The Army shall provide the initial notice within 90 days of ROD signature. The frequency of subsequent notifications will be described in the Remedial Design for the ROD. The Army remains responsible for ensuring that the remedy remains protective of human health and the environment. The Army will fulfill its responsibility and obligations under CERCLA and the NCP as it implements, maintains, and reviews the selected remedy.

Upon transfer of Army-owned property, the Army will provide written notice of the land use controls to the transferee of the groundwater and soil (surface and subsurface) contamination and any land use restrictions referenced in the ROD. Within 15 days of transfer, the Army shall provide EPA and TCEQ with written notice of the division of implementation, maintenance, and enforcement responsibilities unless such information has already been provided in the LUC RD. The LUC RD will address the procedures to be used by the Army and the transferee to document compliance with the LUCs described in this ROD. In the event property is transferred out of Federal control, the land use controls relating to property and groundwater restrictions shall be recorded in the deed and shall be enforceable by the United States and the state of Texas.

- LUC implementation and maintenance actions would be described in the RD for LHAAP-04. The LUCs would be included in the property transfer documents and a recordation of the area of groundwater prohibition would be filed in the Harrison County Courthouse. The LUC for groundwater will prevent human exposure to groundwater contaminated with perchlorate through the prohibition of groundwater use. In addition, within 90 days of signature of this ROD, the Army shall request the Texas Department of Licensing and Regulation to notify well drillers of groundwater use prohibitions based on a preliminary LUC boundary. A LUC Remedial Design (RD) will be finalized as the land use component of the Remedial Design. Within 21 days of the issuance of the ROD, the Army will propose deadlines for completion of the RD Work Plan, RD, and Remedial Action Work Plan. The documents will be prepared and submitted to EPA and TCEQ pursuant to the FFA. The LUC RD will contain implementation and maintenance actions, including periodic inspections. The long-term groundwater and surface water monitoring and LTM performance monitoring plan will also be presented in the remedial design (RD). Consistent with the dates presented for these documents, the U.S. Army shall: 1) request the Texas Department of Licensing and Regulation to notify well drillers of groundwater use prohibitions; and 2) notify the Harrison County Courthouse of the LUC to include a map showing the areas of groundwater use prohibition at the site, in accordance with 30 TAC 335.565. Following implementation of the remedy, LTM will be conducted on a select number of wells. The number and location of the wells will be reviewed on an annual basis. LTM will be conducted to evaluate contaminant migration, ensure that the COC plume continues to degrade, and to demonstrate compliance with ARARs until groundwater cleanup levels are achieved. Performance monitoring would be performed on a quarterly basis for a period of two years and will include analysis of perchlorate and geochemical parameters (sulfate, nitrate, nitrites, alkalinity). Field parameters will include dissolved oxygen, redox potential and ferrous ion. LTM would begin in year 3 after treatment and would be conducted semiannually for 3 years (through Year 5), and annually thereafter. Annual reports will be prepared to document the effectiveness of the treatment. The first year annual report will include a review of the four quarters of data and provide an evaluation of the effectiveness of the selected remedy.
- CERCLA five-year reviews to evaluate whether the remedy remains protective of human health and the environment. The need for continued groundwater monitoring will be evaluated every 5 years during the reviews.

2.12.3 Cost Estimate for the Selected Remedy

Table 2-6 presents the present worth analysis of the cost for the selected remedy, Alternative 3. The information in the table is based on the best available information regarding the anticipated scope of the remedial alternative. The quantities used in the estimate are for estimating purposes only. Changes in the cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. Modifications may be documented in the form of a memorandum in the Administrative Record, an ESD, or a ROD amendment. This is an order-of-magnitude engineering cost estimate that is expected to be within -30 to +50 percent of the actual project cost.

The total project present worth cost of this alternative is approximately $665,000, using a discount rate of 2.7%. The capital cost is estimated at $243,000. The total O&M present value cost is estimated at approximately $422,000. The O&M cost includes long term monitoring associated with the LUCs, and the assessment of in situ bioremediation performance. The LTM will support the required CERCLA five-year reviews.

2.12.4 Expected Outcomes of Selected Remedy

The purpose of this response action is to attain the RAOs stated in Section 2.8 of this ROD. The groundwater will be restored to attain groundwater cleanup level for perchlorate, to the extent practicable. In the absence of federal drinking water standards, clean-up levels will be based on TRRP Tier 1 Groundwater Residential PCL.

The expected outcome of the selected remedy is that perchlorate in the groundwater will be reduced to clean-up levels. Achievement of the groundwater cleanup level is anticipated to be completed in approximately 6 years. This approximate timeframe to achieve cleanup levels is considered reasonable for the anticipated future land use as a national wildlife refuge. The actual time frame depends on the success of the active remediation, but, for cost estimating purposes, it is assumed that five-year reviews will continue until Year 30. The LUC for the maintenance of the monitoring system will be maintained until the groundwater cleanup levels are achieved. The LUCs for soil and groundwater will be maintained until the levels of COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) allow for unlimited use and unrestricted exposure. The site will be made part of a national wildlife refuge operated by USFWS, and will continue in such use for the foreseeable future.

In addition, the monitoring activities will confirm the protection of human health and the environment by documenting the return of the groundwater to the cleanup level (MCL or PCL) through reduction of the contaminant mass and by preventing the perchlorate-contaminated groundwater plume from migrating into surface water. The LUC for groundwater will prohibit the use of the site's groundwater except for environmental monitoring and testing.

2.13 Statutory Determinations

Under CERCLA §121 and the NCP, the U.S. Army must select remedies that are protective of human health and the environment, comply with ARARs (unless a statutory waiver is justified), are cost effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In addition, CERCLA includes

a preference for remedies that employ treatment that permanently and significantly reduces the volume, toxicity, or mobility of hazardous wastes as a principal element and a bias against off-site disposal of untreated wastes. The following sections discuss how the selected remedy meets the statutory requirements

2.13.1 Protection of Human Health and the Environment

Existing groundwater perchlorate concentrations pose a hazard to the hypothetical future maintenance worker since the clean-up level is exceeded. The selected remedy, Alternative 3, will achieve the RAOs for LHAAP-04. For the protection of human health, the remedial action would eventually achieve the reduction of the perchlorate present in groundwater above the cleanup level established for LHAAP-04. LUCs would ascertain that receptors are not exposed to unacceptable levels of contaminated groundwater. Continued maintenance of the LUC for groundwater would prevent human access and exposure to groundwater that poses an unacceptable risk to human health, until COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) in soils and groundwater have sufficiently degraded to levels that allow for unlimited use and unrestricted exposure. The LUCs for soil and groundwater will be maintained until the levels of COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in Table 2-3) in soil and groundwater allow for unlimited use and unrestricted exposure.

The installation-wide ecological risk assessment concluded that risks to ecological receptors at the Group 4 sites (inclusive of LHAAP-04) were within the acceptable risk range.

There are no short-term threats associated with the selected remedy that cannot be readily controlled. In addition, no adverse cross-media impacts are expected from the selected remedy.

2.13.2 Compliance with ARARs

The selected remedy complies with all ARARs. The ARARs are presented below and in **Table 2-7**.

Chemical-Specific ARARs

There are no potential chemical-specific ARARs associated with this site. The only identified COC is perchlorate for groundwater. In the absence of a federal drinking water standard, the clean-up levels will be based on TRRP Tier 1 Groundwater Residential PCL.

The selected remedial action employs ISB to return the contaminated groundwater at LHAAP-04 to its potential beneficial use as drinking water, wherever practicable. For the purposes of this ROD, attainment of the TRRP Tier 1 Groundwater Residential PCL constitutes a return of the contaminated groundwater to it potential beneficial use as a drinking water. If a return to potential beneficial uses is not practicable based upon 40 CFR§300.430(f)(1)(ii)(C), this alternative would still meet the NCP remedy selection requirements by reducing or controlling exposure to the contaminated groundwater consistent with 40 CFR§300.430(e)(9).

Location-Specific ARARs

There are no potential location-specific ARARs associated with this site.

Action-Specific ARARs

The selected remedy has potential action-specific ARARs related to the following activities: waste and disposal activities, well construction, and water treatment.

- **Waste and Disposal Activities -** The processes of treating and monitoring contaminated groundwater may generate a variety of primary and secondary waste streams (e.g., soil, personal protective equipment, and dewatering and decontamination fluids). These waste streams are expected to be non-hazardous waste. All solid waste (defined as any solid, liquid, semisolid, or contained gaseous material intended for discard [40 CFR 261.2]) generated during remedial activities must be appropriately characterized to determine whether it contains RCRA hazardous waste (40 CFR 262.11; 30 TAC 335.62; 30 TAC 335.503[a][4]; 30 TAC 335.504). All wastes must be managed, stored, treated (if necessary), and disposed in accordance with the ARARs for waste management listed in **Table 2-7** for the particular type of waste stream or contaminants in the waste.
- **Well Construction -** The remedial action may involve the placement, use, or eventual plugging and abandonment of some type of groundwater monitoring, substrate injection or for LTM of the groundwater. Available standards for well construction and plugging/abandonment would provide ARARs for such actions and include 30 TAC 331, Subchapters A, C, and H. Texas has promulgated technical requirements in Chapter 76 of Title 16 of the TAC applicable to construction, operation, and plugging/abandonment of water wells. In particular, 16 TAC 76.1000 (*Locations and Standards of Completion for Wells*), 16 TAC 76.1002 (*Standards for Wells Producing Undesirable Water or Constituents*) (LHAAP-04 contaminated groundwater could be considered "undesirable water" defined pursuant to Section 76.10[36] as "water that is injurious to human health and the environment or water that can cause pollution to land or other waters"), 16 TAC 76.1004 (*Standards for Capping and Plugging of Wells and Plugging Wells that Penetrate Undesirable Water or Constituent Zones*), and 16 TAC 76.1008 (*Pump Installation*) may provide ARARs for the placement, construction, and eventual plugging/abandonment of groundwater injection or extraction wells or the placement and long-term operation of groundwater monitoring wells for proposed groundwater remedial strategies.
- **Water Treatment -** Contaminated groundwater and wastewaters collected during well drilling or decontamination activities will be transported to the groundwater treatment plant at LHAAP-18/24 for processing, and would subsequently be discharged in compliance with the effluent limits for that plant. Such waters would be characterized, as required, before transport and managed accordingly in compliance with requirements for the type of waste contaminating the water. To assure compliance with the groundwater treatment plant's discharge limits, the incoming water must meet the waste acceptance criteria for the facility. On-site wastewater treatment units (as defined in 40 CFR 260.10) that are part of a wastewater treatment facility that is subject to regulation under Section 402 or Section 307(b) of the CWA are not subject to RCRA Subtitle C hazardous waste management standards (40 CFR 270.1[c][2][v]; 40 CFR 264.1[g][6]; 30 TAC 335.42[d][1]). The USEPA has clarified that this exemption applies to all tanks, conveyance systems, and

ancillary equipment, including piping and transfer trucks, associated with the wastewater treatment unit (Federal Register [FR] Title 53, 34079, September 2, 1988).

2.13.3 Cost-Effectiveness

Alternative 3 has the second lowest PW and capital costs of the action alternatives that were evaluated in the FS (Shaw, 2012). The PW for Alternative 3 exceeds that of Alternative 2 which consists of a passive treatment process such as MNA. Alternative 3 utilizes active technology (ISB) which is less intrusive than Alternatives 4 and 5, thus giving Alternative 3 a relatively low PW compared to these alternatives. **Table 2-6** is the cost estimate summary table for the selected remedy.

2.13.4 Utilization of Permanent Solutions and Alternative Treatment (or Resource Recovery) Technologies to the Maximum Extent Practicable

The U.S. Army has determined that the selected final remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a practicable manner at the site. In-situ bioremediation will lower groundwater COC concentrations in the groundwater plume. Alternative 3 would provide almost immediate protection because the LUCs would be implemented relatively quickly. Maintenance of this control would be required until COC concentrations in groundwater allow for unlimited use and unrestricted exposure.

2.13.5 Preference for Treatment as a Principal Element

The selected remedy satisfies the statutory preference for treatment as a principal element of the remedy. The selected final remedy will reduce the toxicity, mobility, or volume of the COC in groundwater through the implementation of ISB. ISB will lower COC concentrations in the groundwater plume to meet cleanup level. The biological activity in the ISB treatment area will significantly reduce the overall mass of COC in the groundwater.

2.13.6 Five-Year Review Requirements

Section 121(c) of CERCLA and NCP §300.430(f)(5)(iii)(C) provide the statutory and legal bases for conducting five-year reviews. Because this remedy will result in contaminants that remain onsite above levels that allow unlimited use and unrestricted exposure, a review will be conducted at least every 5 years to ascertain that the remedy continues to provide adequate protection of human health and the environment.

2.14 Significant Changes from the Proposed Plan

The proposed plan public comment period for LHAAP-04 was January 1 through January 31, 2013. The proposed plan identified Alternative 3 as the Preferred Alternative for groundwater remediation. The U.S. Army reviewed all written comments during the public comment period and verbal comments during the January 9, 2013 public meeting. After careful consideration of the comments, it was determined that no significant changes to the remedy, as originally identified in the proposed plan, were necessary or appropriate.

Figure 2-1: Site Location Map

Figure 2-2: LHAAP-04 Location Map

Figure 2-2A: LHAAP-04 Surface Water Monitoring Points

Figure 2-3: Conceptual Site Model

Figure 2-4: Groundwater Elevations 2007

Figure 2-5: Groundwater Elevations 2010

Figure 2-6: Perchlorate Concentrations in Shallow Groundwater

Figure 2-7: Preliminary Land Use Control Boundary at LHAAP-04

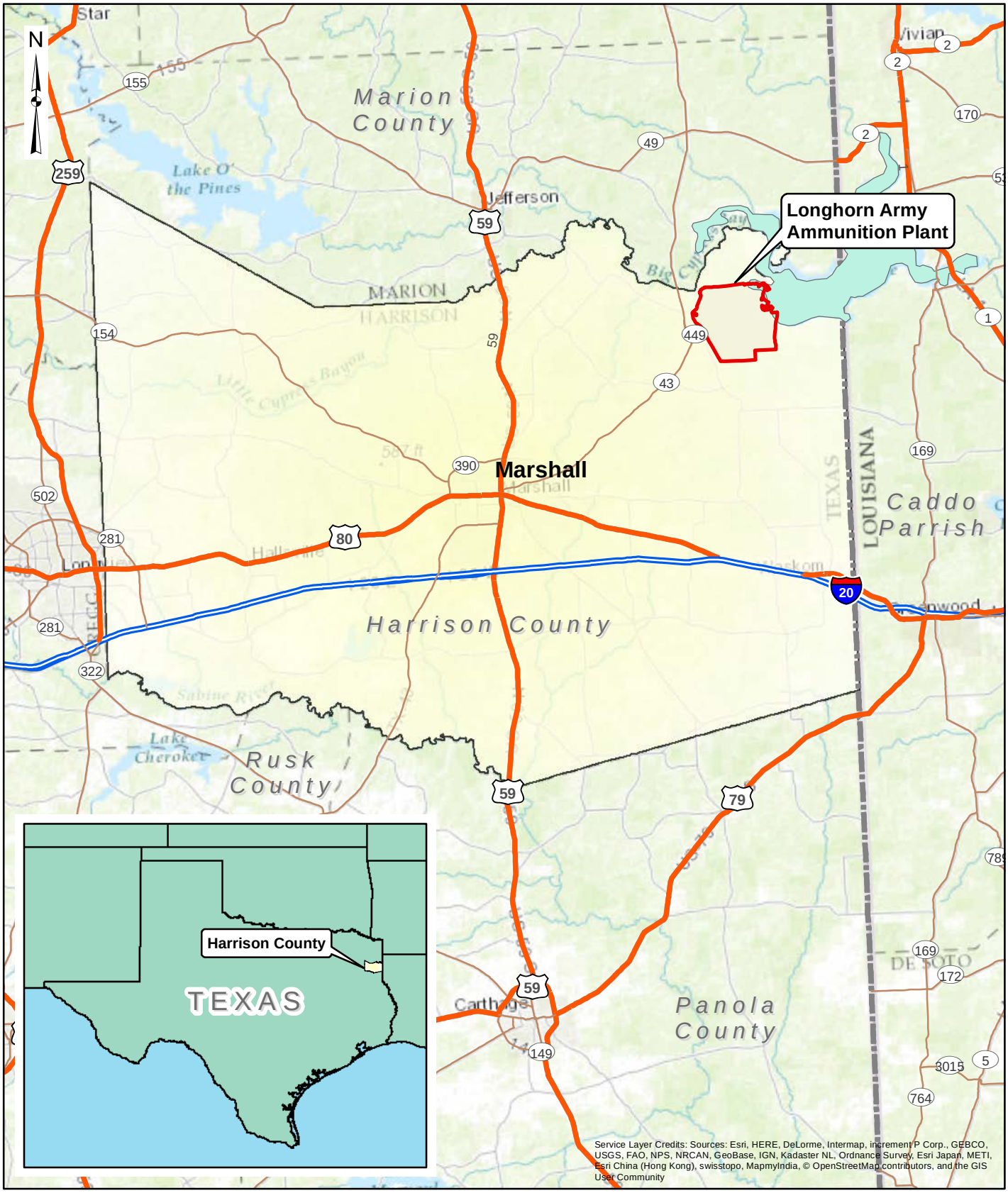

0 3.5 7 14 Miles

AECOM

Figure 2-1
Site Location Map
LHAAP-04

Longhorn Army Ammunition Plant
Karnack, Texas

60256135

October 2016

L:\AGEIGIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-04\Record of Decision\Figure 2-1 LHAAP-04 Site Location Map.mxd

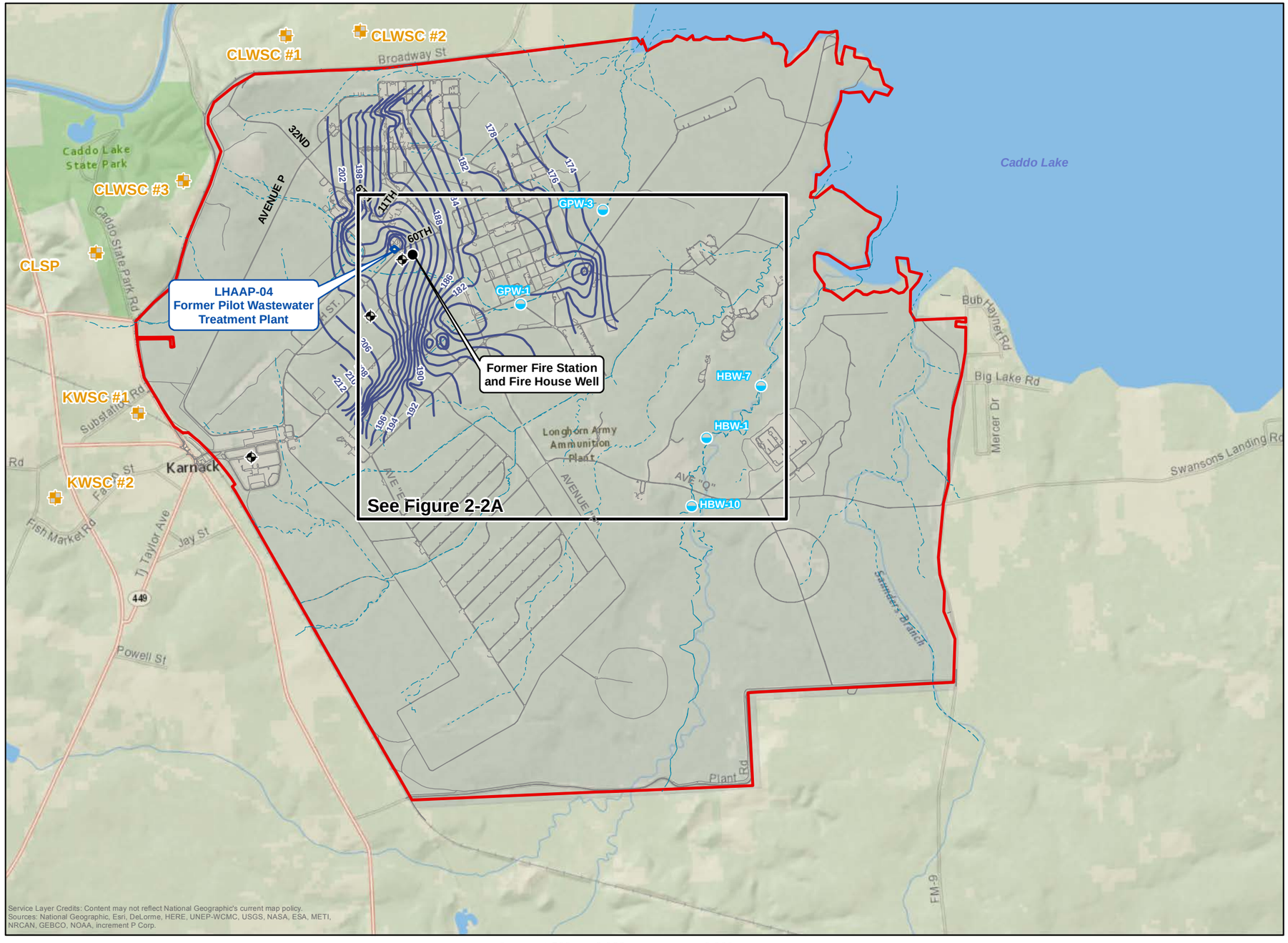

N

0 1,500 3,000 6,000 Feet

Legend

- Water Supply Well Locations
- Surface Water Sampling Locations
- Public Water Supply Well Locations
- Fire House Well
- Shallow Groundwater Contour (ca. 2007)
- Streams
- Road
- LHAAP Boundary
- LHAAP-04 Site Boundary

KWSC – Karnack Water Supply Corporation
CLWSC – Caddo Lake Water Supply Corporation
CLSP - Caddo Lake State Park

Source: Shaw 2012, LHAAP-04 Feasibility Study Report

AECOM

Figure 2-2
LHAAP-04 Location Map
Record of Decision
Longhorn Army Ammunition Plant
Karnack, Texas

60274185

October 2016

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-04\Record of Decision\Figure 2-2 LHAAP-04 Location Map.mxd

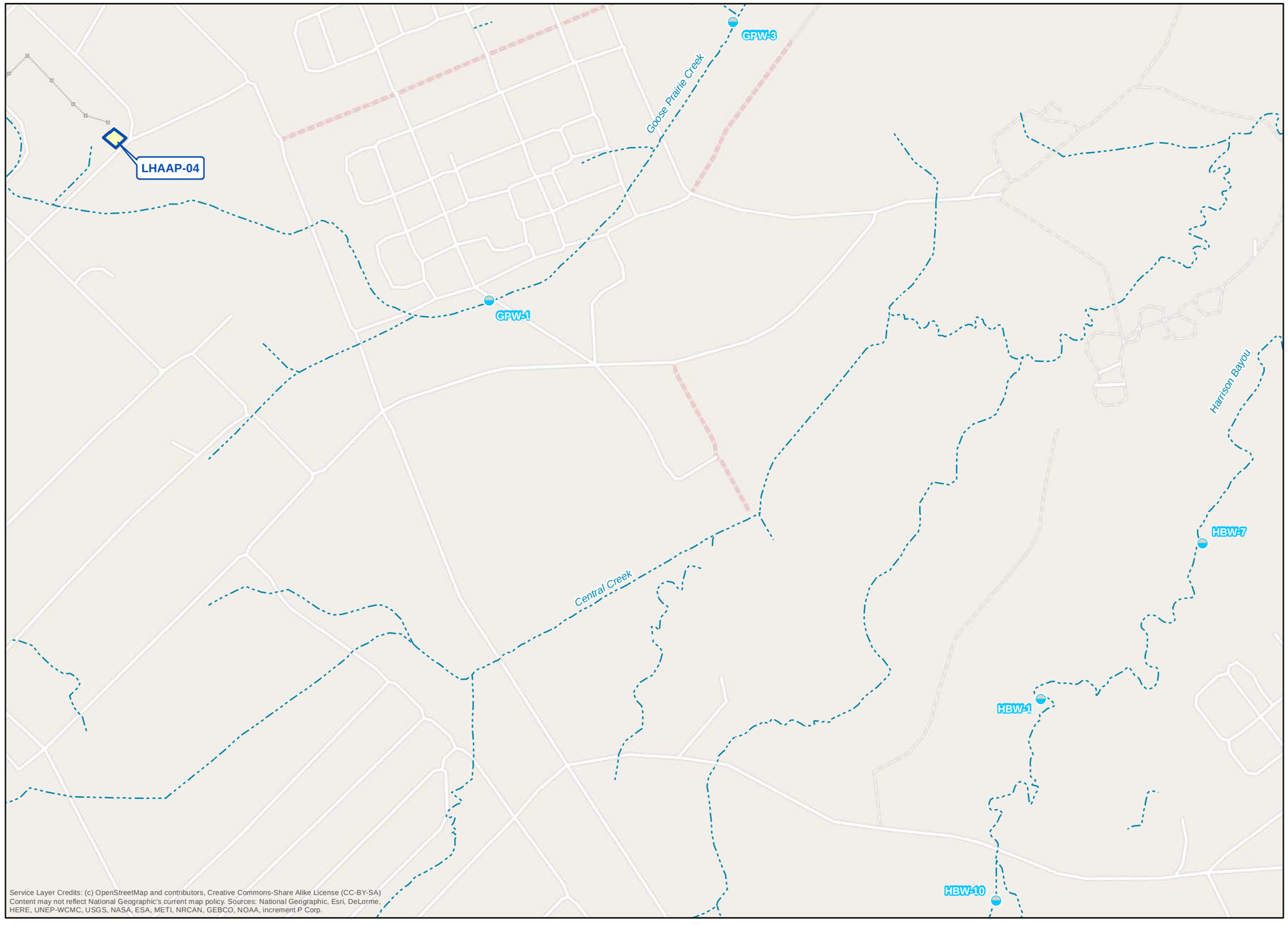

N

0 500 1,000 2,000 Feet

Legend

- Surface Water Sampling Location
- Streams
- LHAAP-04 Site Boundary

Source: Shaw 2012, LHAAP-04 Feasibility Study Report

AECOM

Figure 2-2A
LHAAP-04 Surface Water Monitoring Points
Record of Decision
Longhorn Army Ammunition Plant
Karnack, Texas

60274185

October 2016

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-04\Record of Decision\Figure 2-2a LHAAP-04 Location Map.mxd

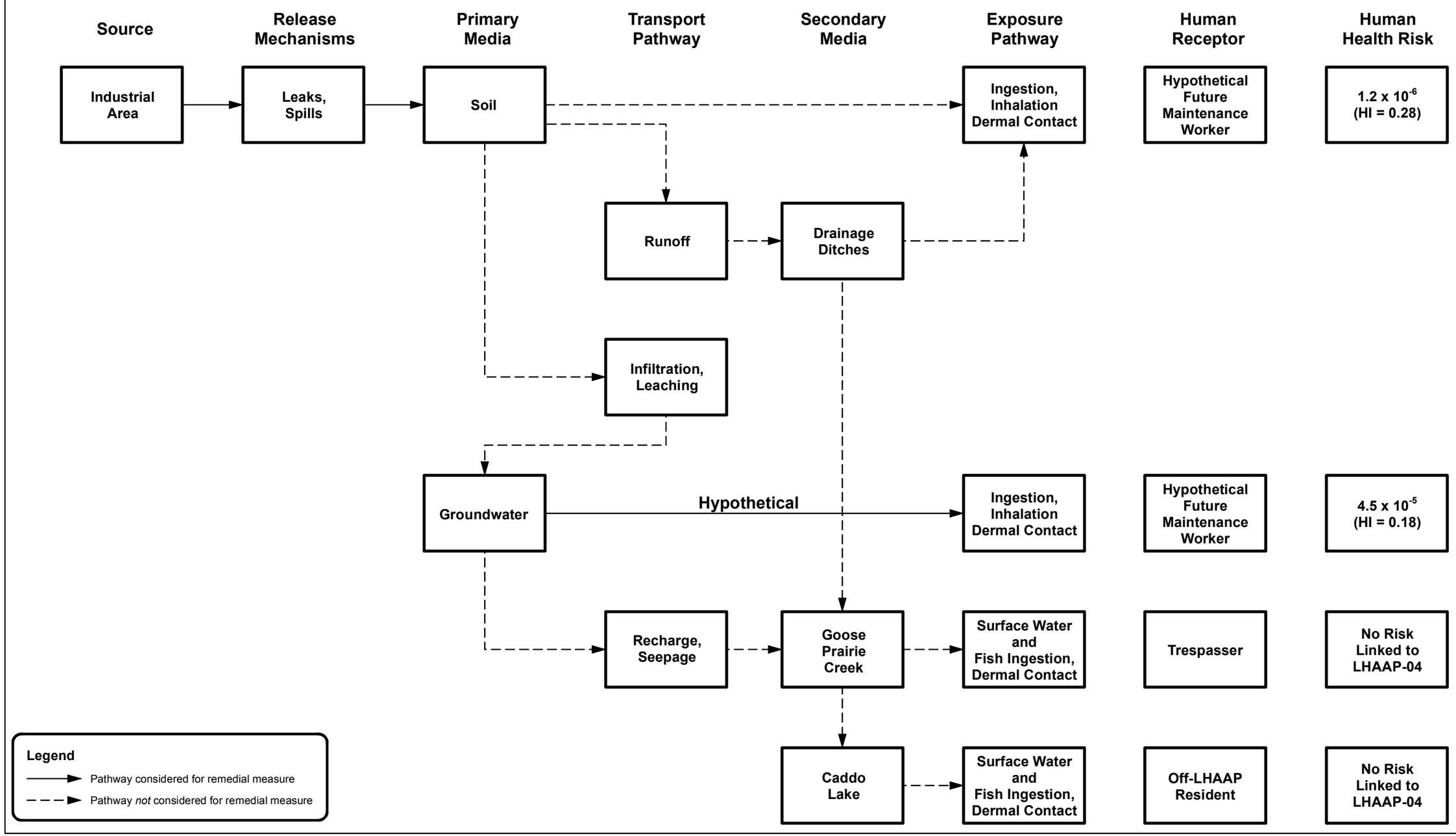

Notes:
1.Human Health Risk from "Final Baseline Human Health and Screening Ecological Risk Assessment for the Group 4 Sites" (Jacobs, 2003).
2. Perchlorate concentrations detected in groundwater at LHAAP-04 exceeded the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program (TRRP) Protective Concentration Level (PCL) for residentual groundwater of 17 micrograms per liter (µg/L) (cleanup level).
3. Groundwater migration to surface water pathway is not currently a complete pathway.
4. Soil to groundwater pathway is no longer a complete pathway because impacted soils have been removed.

AECOM

Figure 2-3
Conceptual Site Model
LHAAP-04 Record of Decision
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

October 2016

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-04\Record of Decision\Figure 2-3 LHAAP-04 Conceptual Site Model.mxd

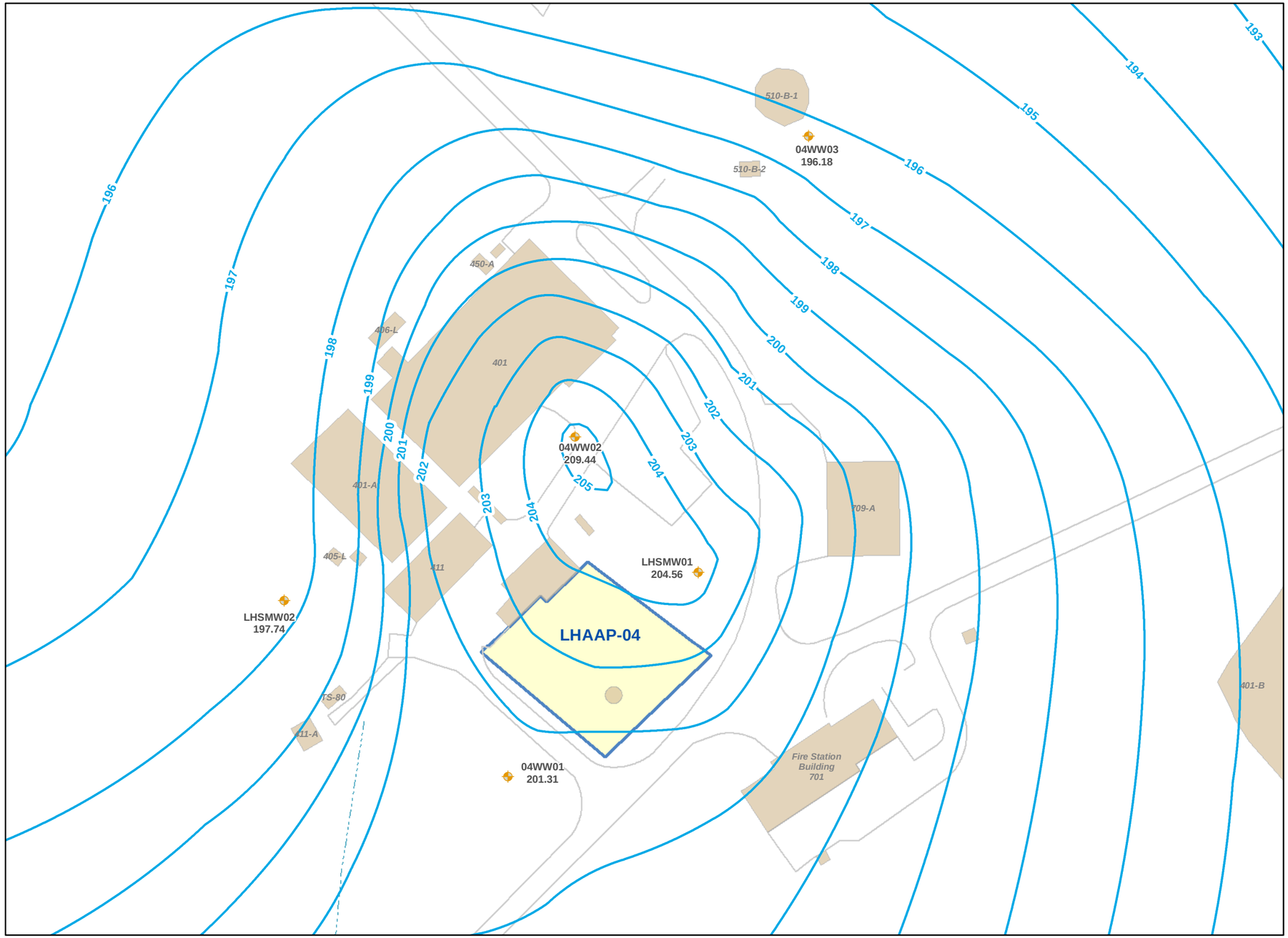

Legend

- Shallow Monitoring Well
- Groundwater Contour Interval 2007
- Stream
- Road
- Building
- LHAAP-04 Site Boundary

Source: Shaw 2012, LHAAP-04 Feasibility Study Report

Notes:
1. Groundwater contour elevations reported in feet.
2. Groundwater contour elevations are based on data collected from shallow monitoring wells at LHAAP-04 in December 2007.

AECOM

Figure 2-4
Groundwater Elevations 2007
LHAAP-04 Record of Decision
Longhorn Army Ammunition Plant
Karnack, Texas

60274185

October 2016

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-04\Record of Decision\Figure 2-4 LHAAP-04 GW Elevations 2007.mxd

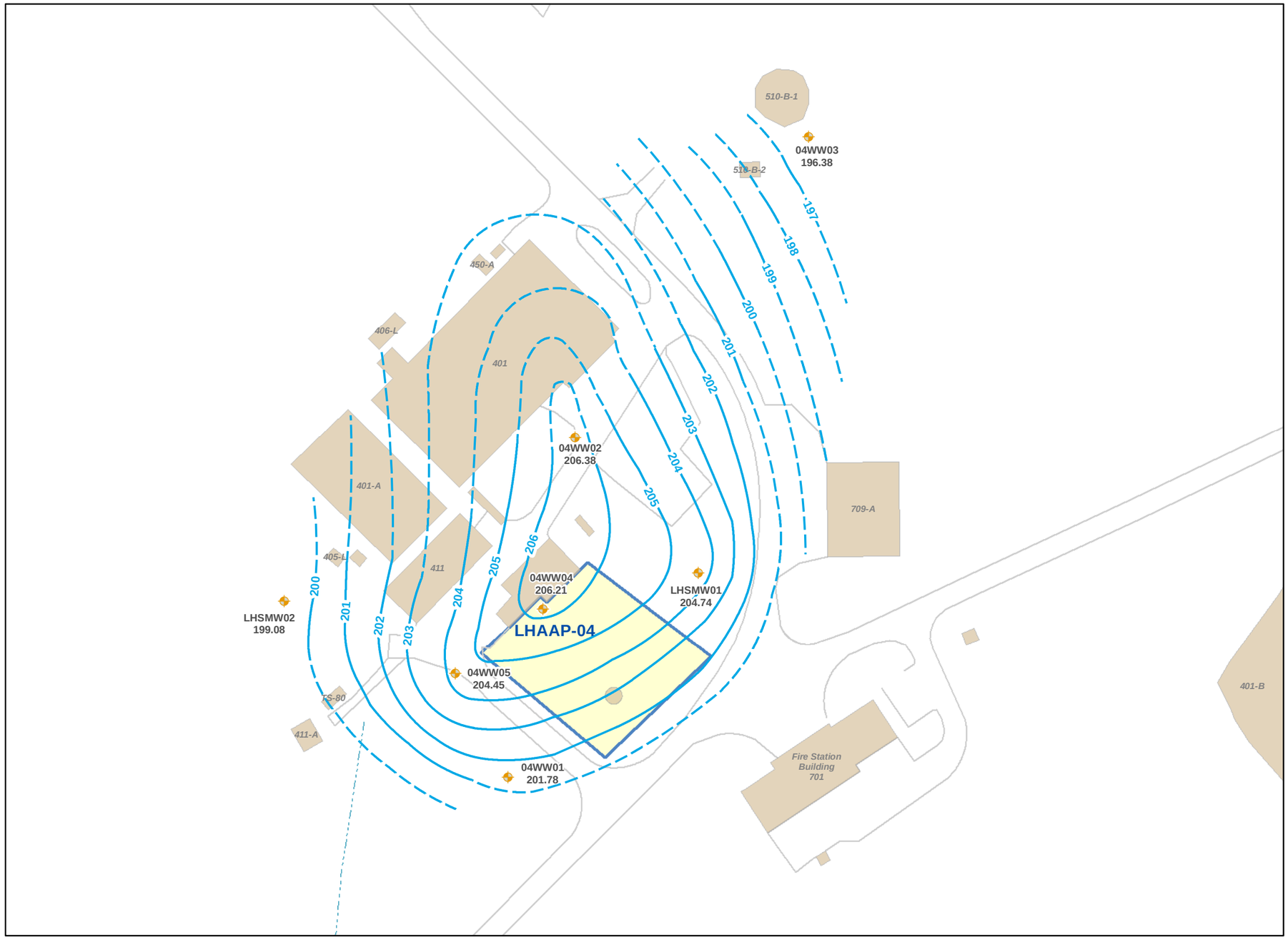

Legend

- Shallow Monitoring Well
- Groundwater Contour Interval 2010 (Dashed Where Inferred)
- Stream
- Road
- Building
- LHAAP-04 Site Boundary

Source: Shaw 2012, LHAAP-04 Feasibility Study Report

0 50 100 200 Feet

Notes:
1. Groundwater contour elevations reported in feet.
2. Groundwater contour elevations are based on data collected from shallow monitoring wells at LHAAP-04 in October 2010.

AECOM

Figure 2-5
Groundwater Elevations 2010
LHAAP-04 Record of Decision
Longhorn Army Ammunition Plant
Karnack, Texas

60274185

October 2016

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-04\Record of Decision\Figure 2-5 LHAAP-04 GW Elevations 2010.mxd

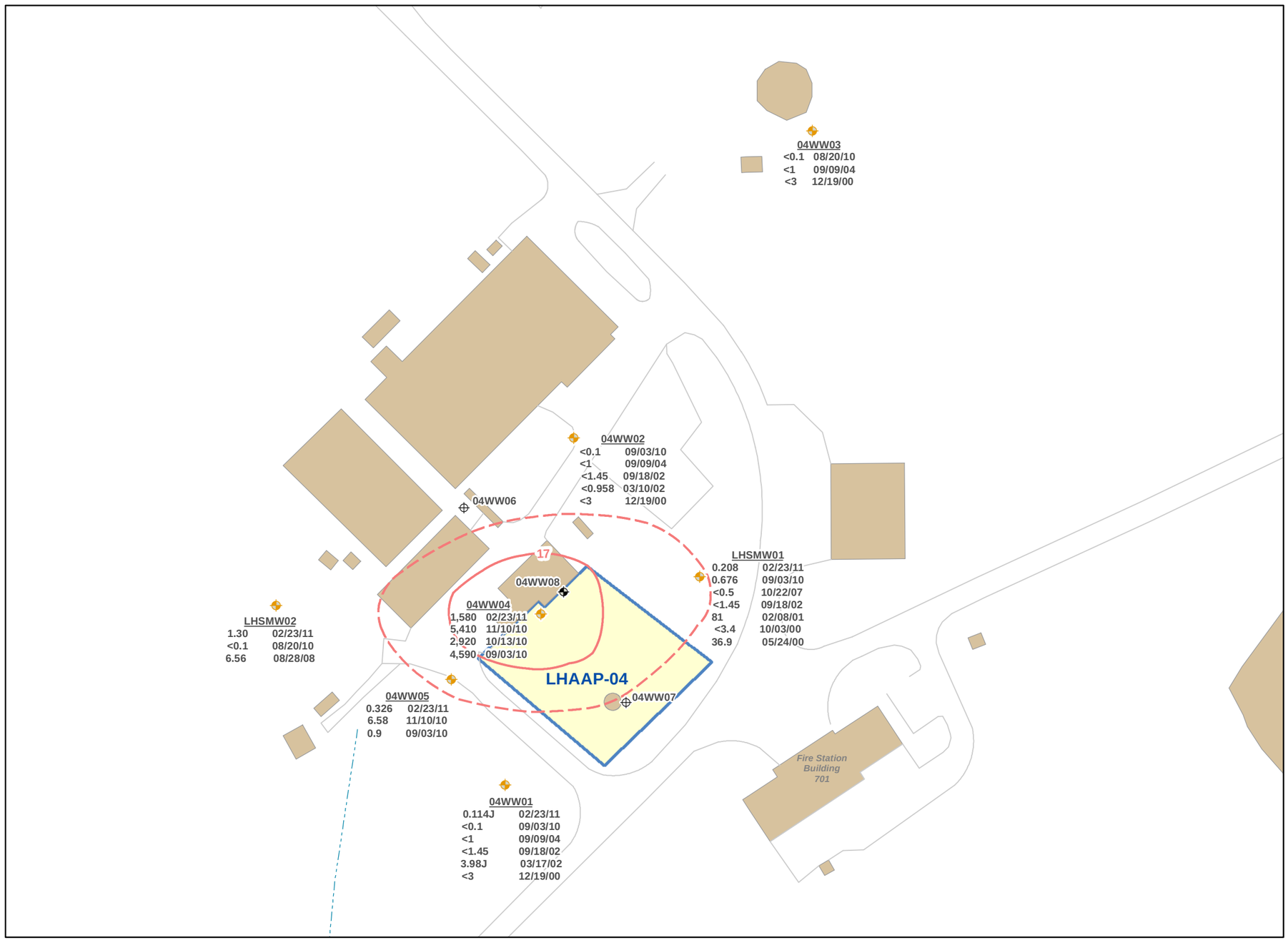

Legend

- Proposed Shallow Monitoring Well
- Proposed Intermediate Monitoring Well
- Shallow Monitoring Well
- Perchlorate Plume Extent (PCL - 17 µg/L)
- Possible Past Extent of Perchlorate
- Stream
- Road
- Building
- LHAAP-04 Site Boundary

Source: Modified from Shaw 2012, LHAAP-04 Feasibility Study Report

0 50 100 200 Feet

Notes:
1. Perchlorate concentrations reported in micrograms per liter (µg/L).
2. Plume boundaries based on most recent results available at each well (2011).
3. The wells 04WW06, 04WW07, and 04WW08 are proposed and will be installed as part of the Remedial Design activities. Locations shown are approximate and will be adjusted in the field based on site conditions and any additional data that may be available at that time.
4. PCL - Texas Risk Reduction Program Protective Concentration Level for Residential Groundwater.

AECOM

Figure 2-6
Perchlorate Concentrations in Groundwater
LHAAP-04 Record of Decision
Longhorn Army Ammunition Plant
Karnack, Texas

60274185 October 2016

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-04\Record of Decision\Figure 2-6 LHAAP-04 Perchlorate Concentrations in GW.mxd

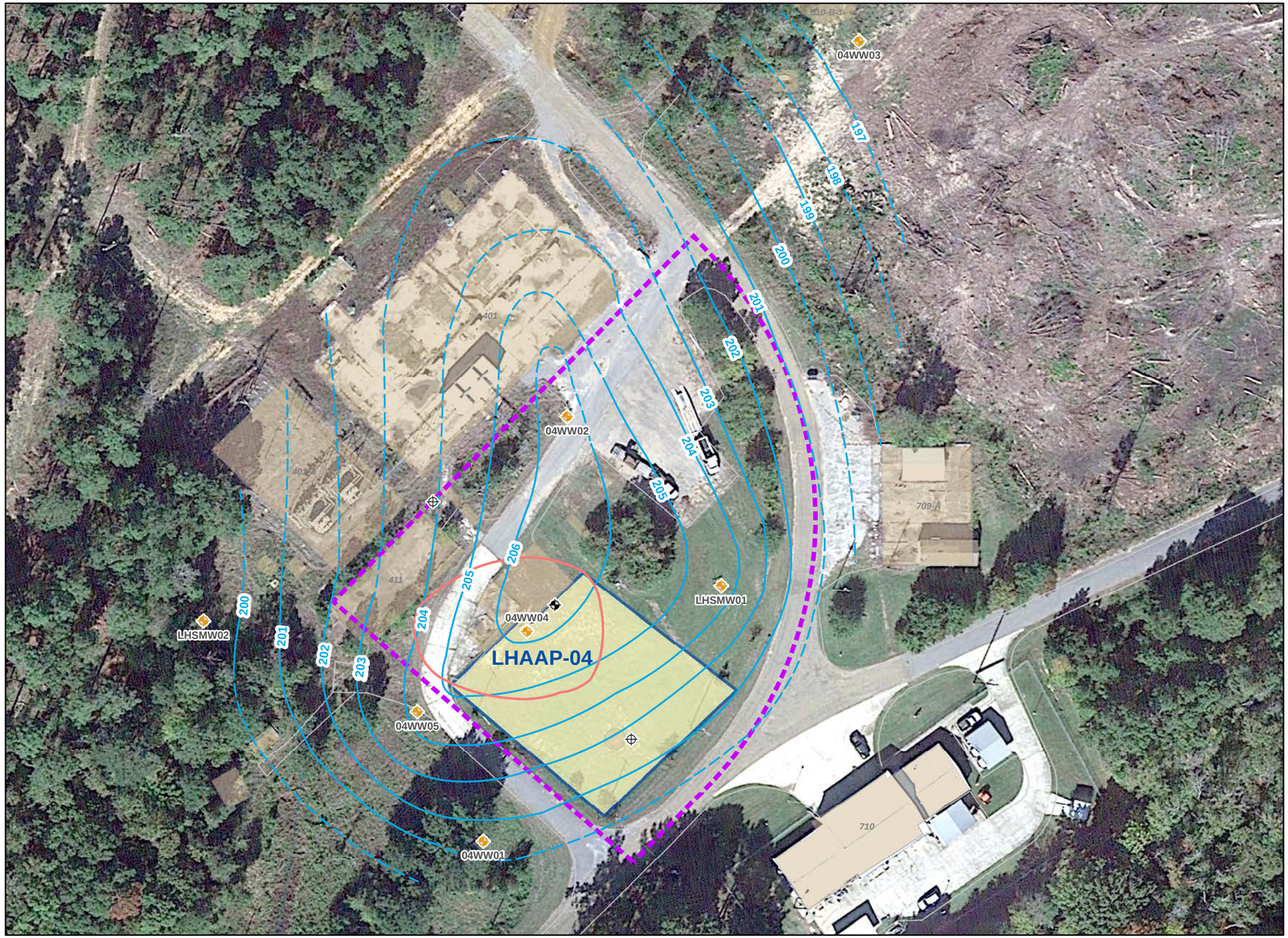

Legend

- Shallow Monitoring Well
- Proposed Shallow Monitoring Well
- Proposed Intermediate Monitoring Well
- Groundwater Contour Interval 2010 (Dashed Where Inferred)
- Perchlorate Plume Extent (PCL - 17 µg/L)
- Stream
- Road
- Building
- LHAAP-04 Site Boundary
- Preliminary Land Use Control Boundary

Source:
May 2012 Final Feasibility Study Report for LHAAP-04, Former Pilot Wastewater Treatment Plant, Karnak, Harrison County, Texas (Shaw, 2012).

Notes:
1. Groundwater contour elevations reported in feet.
2. Groundwater contour elevations are based on data collected from shallow monitoring wells at LHAAP-04 in October 2010.

AECOM

Figure 2-7
Preliminary Land Use Control Boundary
LHAAP-04
Longhorn Army Ammunition Plant
Karnack, Texas

60274185

October 2016

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-04\Fig 2-7 LHAAP04 LU Control Boundary.mxd

Table 2-1: Perchlorate Results from Goose Prairie Creek Sampling

Table 2-2: Chemicals Contributing to Carcinogenic Risk in Groundwater

Table 2-3: Chemicals Contributing to Hazard Index in Groundwater

Table 2-4: Summary of Carcinogenic Risks and Non-Carcinogenic Hazard at LHAAP-04

Table 2-5: Comparative Analysis of Alternatives

Table 2-6: Present Worth Analysis

Table 2-7: Potential Action-Specific ARARs

Table 2-1: Perchlorate Results from Goose Prairie Creek Sampling

Creek Sample ID	TRRP PCL	Sep 2010	Dec 2010	Mar 2011	Jun 2011	Sep 2011	Dec 2011
GPW-1	17	dry	0.1 U	8.7	dry	dry	1.76
GPW-3	17	dry	0.199 J	0.673	dry	dry	1.31
HBW-1	17	dry	0.1 U	0.2 U	dry	dry	0.1 U
HBW-7	17	dry	0.1 U	0.2 U	dry	dry	0.171 J
HBW-10	17	dry	0.1 U	0.2 U	dry	dry	0.1 U

Notes and Abbreviations:

All units in micrograms/liter (µg/L)

dry	no surface water was available to sample
J	estimated value present below normal reporting limit
U	concentration below laboratory reporting limit
GPW	Goose Prairie Creek Surface Water
HBW	Harrison Bayou Surface Water
TRRP PCL	Texas Risk Reduction Program Protective Concentration Level (Tier 1 Groundwater Residential)

Creek Conditions for last five sampling events:

September 2010 conditions: All creek sampling locations were dry in September.

December 2010 conditions: GPW locations some water but no visible flow; HBW locations plenty of water volume but very little flow. March 2011 conditions: GPW locations slow flow; HBW locations fairly good flow.

June 2011 conditions: All creek sampling locations were dry in June.

September 2011 conditions: All creek sampling locations were dry in September.

December 2011 conditions: Small amount of flow at HBW locations and no visible flow at GPW locations.

Source: Shaw 2012, Final Feasibility Study for Groundwater, LHAAP-04, Former Pilot Wastewater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas.

Table 2-2: Chemicals Contributing to Carcinogenic Risk in Groundwater

Chemical	Cancer Risk Groundwater[a]	Exposure Point Concentration[b] (µg/L)	Well	Date	MCL (µg/L)	Retained as Chemical of Concern?
2,3,7,8-TCDD	4.5×10^{-5}	9.3×10^{-6}	04WW02	12-19-00	3×10^{-5}	No, 1

Notes and Abbreviations:

1 Excluded since Exposure Point Concentration is below the Safe Drinking Water Act MCL.

[a] All chemicals with cancer risks exceeding 1.0×10^{-6} are listed from Baseline Risk Assessment Table 3-73 (Jacobs, 2003).

[b] From Baseline Risk Assessment Table 3-49 (Jacobs, 2003).

MCL maximum contaminant level

µg/L micrograms per liter

Source: Shaw 2012, Final Feasibility Study for Groundwater, LHAAP-04, Former Pilot Wastewater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas.

Table 2-3: Chemicals Contributing to Hazard Index in Groundwater

Chemical	Hazard Quotient [a]	Exposure Point Concentration [b] (µg/L)	Well	Concentration (µg/L)	Well	Sampling Date	TRRP PCL (µg/L)	Retained as Chemical of Concern?
Perchlorate	—	ND	04WW04	5410	04WW04	11-10-10	17	Yes, 1
Manganese	0.10	493	04WW04	—	04WW04	12-19-00	1,100	No, 2

Notes and Abbreviations:

All chemicals with hazard indexes exceeding 0.1 or concentrations exceeding the TRRP PCL are listed.

1 Identified as chemical of concern (COC) since recent concentration is above value indicated in TRRP PCL column.

2 Excluded as COC since Exposure Point Concentration is less than LHAAP perimeter well background of 7,820 µg/L and HQ is less than or equal to 0.1.

[a] From Baseline Risk Assessment Table C-8 (Jacobs, 2003).

[b] From Baseline Risk Assessment Table 3-49 (Jacobs, 2003).ND not detected

TRRP PCL Texas Risk Reduction Program Protective Concentration Level (Tier 1 Groundwater Residential)

µg/L micrograms per liter

Source: Shaw 2012, Final Feasibility Study for Groundwater, LHAAP-04, Former Pilot Wastewater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas.

Table 2-4: Summary of Carcinogenic Risks[1] and Non-Carcinogenic Hazard[1] at LHAAP-04

Scenario	Total Hazard Index	Total Cancer Risk
Risks from Soil		
Current Trespasser (0 to 0.5 feet bgs)	0.028	9.69E-08
Future Maintenance Worker (0 to 0.5 feet bgs)	0.16	1.15E-06
Future Maintenance Worker (0 to 2 feet bgs)	0.28	1.15E-06
Risks from Groundwater		
Future Maintenance Worker	0.18	4.54E-05
Combined Risks- Soil and Groundwater		
Future Maintenance Worker (0 to 0.5 feet bgs)	0.35	4.65E-05
Future Maintenance Worker (0 to 2 feet bgs)	0.46	4.65E-05

Note: [1] The carcinogenic risks and non-carcinogenic hazards are based on the Baseline Human Health Risk Assessment (Jacobs, 2003). These risks have not been adjusted to account for current higher perchlorate concentrations in groundwater or lower perchlorate and mercury contaminated soils that have been removed.

Table 2-5: Comparative Analysis of Alternatives

Comparative Analysis of Alternatives Criteria	Alternative 1 No Action	Alternative 2 Monitored Natural Attenuation, Land Use Controls	Alternative 3 In-Situ Bioremediation, Land Use Controls	Alternative 4 Extraction and Treatment, Land Use Controls	Alternative 5 ICTs, Extraction and Treatment, Land Use Controls
Overall protection of human health and the environment	No protection. Does not achieve RAOs.	Achieves RAOs. Protection of human health and environment provided by maintenance of land use controls. MNA activities would demonstrate that degradation of plume is occurring. Land use controls in place until cleanup level is met.	Achieves RAOs. Protection of human health and environment provided by remediation of perchlorate in groundwater in a target area. Land use controls in place until cleanup level is met.	Achieves RAOs. Protection of human health and environment provided by extraction and treatment of perchlorate in groundwater in a target area. Land use controls in place until cleanup level is met.	Achieves RAOs. Protection of human health and environment provided by extraction and treatment of perchlorate in groundwater in a target area. Land use controls in place until cleanup level is met.
Compliance with ARARs	Does not comply with chemical-specific ARARs guidance for perchlorate.	Complies with ARARs.	Complies with ARARs.	Complies with ARARs.	Complies with ARARs.
Long-term effectiveness and permanence	Not effective.	Contaminants may be degrading naturally. To be confirmed by MNA sampling following remedy selection. Land use controls would be effective and reliable so long as they are maintained.	Should be effective and permanent; however, uncertainty exists concerning the degree to which the alternative will be effective in enhancing the natural biological processing occurring at the site. Pilot testing may be required prior to implementation. May require a second treatment. Land use controls would be effective and reliable so long as they are maintained.	Should be effective and permanent; use of resin filters for perchlorate treatment has been successful at other military sites, which indicates treatment is practical and effective for perchlorate at LHAAP. Land use controls would be effective and reliable so long as they are maintained.	Should be effective and permanent; use of resin filters for perchlorate treatment has been successful at other military sites, which indicates treatment is practical and effective for perchlorate at LHAAP. Land use controls would be effective and reliable so long as they are maintained.

Comparative Analysis of Alternatives Criteria	Alternative 1 No Action	Alternative 2 Monitored Natural Attenuation, Land Use Controls	Alternative 3 In-Situ Bioremediation, Land Use Controls	Alternative 4 Extraction and Treatment, Land Use Controls	Alternative 5 ICTs, Extraction and Treatment, Land Use Controls
Reduction of TMV through treatment	No reduction.	No active remediation would be performed for groundwater. However, a reduction in TMV would be provided through natural biodegradation processes that are occurring in the aquifer.	Provides permanent reduction in TMV in the target area provided conditions are favorable.	Provides permanent reduction in TMV in the target area through removal and ex-situ treatment. Treated groundwater is expected to be reinjected to LHAAP-04.	Provides permanent reduction in TMV in the target area through removal and ex-situ treatment. Treated groundwater is expected to be reinjected to LHAAP-04.
Short-term effectiveness	No short-term impacts.	Minimal impacts to the community, workers, or the environment from short- term activities. Provides almost immediate protection.	Minimal impacts to the community, workers, or the environment from short-term activities. Provides almost immediate protection.	Minimal impacts to the community, workers, or the environment from short-term activities. Provides almost immediate protection.	Minimal impacts to the community, workers, or the environment from short-term activities. Provides almost immediate protection.
Implementability	Inherently implementable.	Readily implemented.	Readily implemented. Specialized knowledge required for implementation.	Readily implemented. Specialized knowledge required for implementation of treatment system.	Readily implemented. Specialized knowledge required for installation of ICTs and implementation of treatment system.
Duration	None	12 years to cleanup level 30 years LUC	6 years to cleanup level 30 years LUC	15 months to cleanup level 30 years LUC	6 months to cleanup level 30 years LUC
• Capital	$0	$126,000	$243,000	$325,000	$405,000
• O&M	$0	$463,000	$422,000	$436,000	$411,000
• Present worth	$0	$589,000	$665,000	$761,000	$816,000

Notes and Acronyms:

Costs rounded to nearest thousand dollars

Costs have been escalated to bring FY13 dollars to FY16 dollars using escalation rate of 1.0421

ARARs	applicable or relevant and appropriate requirements	LUC	Land Use Control
ICT	interceptor collection trench	MNA	monitored natural attenuation
LHAAP	Longhorn Army Ammunition Plant	RAO	remedial action objective
		TMV	toxicity, mobility, or volume

Source: Shaw 2012, Final Feasibility Study for Groundwater, LHAAP-04, Former Pilot Wastewater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas.

Table 2-6: Present Worth Analysis
(Alternative 3 – In-Situ Bioremediation, LUC)

PROJECT LOCATION: KARNACK, TEXAS **DATE: October 2016**

Year	FY	Capital Costs		O & M Costs				Present Value (NPV)		
		Bioremediation	Plans and Wells	Monitoring	LTM	Five-Year Review	Total	Discount Rate	Capital	O & M
1	2012	142,593	88,956	60,463			60,463	2.7%		
2	2013			60,463			60,463	**NPV**	**243,000**	**422,000**
3	2014	12,075			29,080		29,080			
4	2015				29,080		29,080			
5	2016				29,080	44,315	73,395	**Total Capital and O&M**		**$665,000**
6	2017				17,947		17,947			
7	2018				17,947		17,947			
8	2019				17,947		17,947			
9	2020						0			
10	2021					44,315	44,315			
11	2022						0			
12	2023						0			
13	2024						0			
14	2025						0			
15	2026					44,315	44,315			
16	2027						0			
17	2028						0			
18	2029						0			
19	2030						0			
20	2031					44,315	44,315			
21	2032						0			
22	2033						0			
23	2034						0			
24	2035						0			
25	2036					44,315	44,315			
26	2037						0			
27	2038						0			
28	2039						0			
29	2040						0			
30	2041					44,315	44,315			
		154,668	88,956	120,926	141,081	265,890	527,897			

Note:

Discount rate of 2.7% is based on the Office of Management and Budget Circular No. A-94, December 2009.

Costs have been escalated to bring FY13 dollars to FY16 dollars using escalation rate of 1.0421

Table 2-6: Present Worth Analysis
(Alternative 3 – In-Situ Bioremediation, LUC)

PROJECT LOCATION: KARNACK, TEXAS **DATE: May 2013**

Item NO	DESCRIPTION	QTY	UNIT	LABOR UNIT MH	LABOR TOTAL MH	LABOR CRAFT	LABOR $/MH	LABOR $ VALUE	MATERIAL $/UNIT	MATERIAL $ VALUE	EQUIPMENT $/UNIT	EQUIPMENT $ VALUE	SUBCONTRACT $/UNIT	SUBCONTRACT $ VALUE	TOTAL ($)
	Perform Direct Injection Bioremediation in Year 1 - near 04WW04														
	Treatability Study														
1	Work plans, safety plans	1	ea	240	240	eng	81.60	19,584	200	200					19,784
2	UIC Permit and Design	1	ea	160	160	geol	71.20	11,392	200	200					11,592
3	Additional Characterization for RD	1	ea	40	40	geol	71.20	2,848	200	200			5000	5,000	8,048
	Additional Characterization Samples	8	ea	10	80	tech	34.30	2,744					275	2,200	4,944
	Per Diem and Travel Costs	4	days						159	636	80.00	320			956
	Mob / Demob	1	ea	40	40	eng	81.60	3,264	1,200	1,200	1,000	1,000			5,464
4	Treatability/Pilot Study	1	ea	120	120	eng	81.60	9,792	200	200			1650	1,650	11,642
5	Treatability/Pilot Sample Collection	1	hr	50	50	geol	71.20	3,560							3,560
6	Driller for Treatability/Pilot Sampling	3	borings										3150	9,450	9,450
7	Per Diem and Travel Costs	4	days						159	636	80.00	320			956
8	Mob / Demob	1	ea	40	40	eng	81.60	3,264	1,200	1,200	1,000	1,000			5,464
	Site Clearing for Injection Access														
9	Superintendent	2	dy	10	20	super	72.30	1,446							1,446
10	Geologist	2	dy	10	20	geol	71.20	1,424							1,424
11	Technician	2	dy	10	20	tech	34.30	686							686
12	Equipment Rental	1	wk								1000	1,000			1,000
	Injection Activities														
13	Superintendent	3	dy	10	30	super	72.30	2,169							2,169
14	Geologist	3	dy	10	30	geol	71.20	2,136							2,136
15	Technician	3	dy	10	30	tech	34.30	1,029							1,029
16	Bioaugmentation Materials, Lactate and	4	pts	60% Sodium Lactate					36.00	144					144
	Bacterial Culture specific for perchlorate	1	ea	Shipping Lactate, Trailer, Mob/Demob					1,000	1,000	5,000	5,000	3,000	3,000	9,000
		4	pts	Bacterial Culture (perchlorate specific)					150	600	cost	150	shipping		750
17	Injection System - Equipment, materials	3	days						400	1,200	400	1,200			2,400
	and flush water	4	pts	Injection Chase Water					4	16					16
18	DPT Injections	4	ea										500	2,000	2,000
19	Airfare	2	ea										500	1,000	1,000
20	Per Diem and PPE, Crew Truck, Lodging	15	m-day						175	2,625	75	1,125	77	1,155	4,905
	Subtotal							**65,338**		**10,057**		**11,115**		**25,455**	**111,965**
	Taxes @ 6.5 %									654					654
	Subtotal														**112,619**
	Indirects @ 21.5%														24,213
	Year 1 Total Capital Costs														**$ 136,832**

Source: Shaw 2012, Feasibility Study for Groundwater, LHAAP-04

Table 2-6: Present Worth Analysis
(Alternative 3 – Groundwater Monitoring, LUC)

PROJECT LOCATION: KARNACK, TEXAS **DATE: May 2013**

Item NO	DESCRIPTION	QTY	UNIT	LABOR UNIT MH	TOTAL MH	CRAFT	$/MH	$ VALUE	MATERIAL $/UNIT	$ VALUE	EQUIPMENT $/UNIT	$ VALUE	SUBCONTRACT $/UNIT	$ VALUE	TOTAL ($)
	Year 1									0					
	Capital costs														
1	Allowance for Legal Fees, Administration Controls, and Documentation	1	lot										15,000	15,000	15,000
2	Install 2 new Shallow Monitoring wells	2	ea	8	16	tech	34.30	549	400	800			5,000	10,000	11,349
3	Install 1 new Intermediate Monitoring well	1	ea	16	16	eng	81.60	1,306	700	700			7,000	7,000	9,006
4	Establish initial database, licenses, work plans	1	ea	300	300	eng	81.60	24,480	5,000	5,000			5000	5,000	34,480
	Capital Costs Subtotal							**26,334**		**6,500**		**0**		**37,000**	**69,834**
	Taxes @ 6.5 %									423					423
	Subtotal														**70,257**
	Indirects @ 21.5%														15,105
	Year 1 total Capital costs														**$ 85,362**
	Year 1 - Quarterly Monitoring (O&M) - 8 wells to be monitored + 1 QC sample set														
1	Collect and prepare samples quarterly (GW)	36	ea	16	576	tech	34.30	19,760	110	3,960	36	1,296			25,016
2	Sample analysis (perchlorate)	36	ea										475	17,100	17,100
3	Annual report	1	ea	64	64	eng	81.60	5,220	150	150					5,370
	Subtotal							**24,980**		**4,110**		**1,296**		**17,100**	**47,486**
	Taxes @ 6.5 %									267					267
	Subtotal														**47,753**
	Indirects @ 21.5%														10,267
	Year 1 Annual Cost (O&M), Year 2 the same														**$ 58,020**
	Year 3														
	Capital costs for ISB Evaluation														
1	Prepare ISB Evaluation	1	ea	60	60	eng	81.60	4,900							4,900
2	Produce ISB Evaluation Report	1	ea	60	60	geol	71.20	4,270	250	250	100	100			4,620
	Capital Costs Subtotal							**9,170**		**250**		**100**		**0**	**9,520**
	Taxes @ 6.5 %									16					16
	Subtotal														**9,536**
	Indirects @ 21.5%														2,050
	Year 3 total Capital costs														**$ 11,587**

Table 2-6: Present Worth Analysis
(Alternative 3 – Groundwater Monitoring, LUC)

PROJECT LOCATION: KARNACK, TEXAS **DATE: May 2013**

Item NO	DESCRIPTION	QTY	UNIT	LABOR UNIT MH	TOTAL MH	CRAFT	$/MH	$ VALUE	MATERIAL $/UNIT	$ VALUE	EQUIPMENT $/UNIT	$ VALUE	SUBCONTRACT $/UNIT	$ VALUE	TOTAL ($)
	Year 3 LTM - Semiannual Monitoring - 8 wells to be monitored + 1 QC set														
1	Collect and prepare samples semiannually	18	ea	16	288	tech	34.30	9,878	110	1,980	36	648			12,506
2	Sample analysis (perchlorate)	18	ea										275	4,950	4,950
3	Annual report	1	ea	64	64	eng	81.60	5,222	150	150					5,372
	Subtotal							**15,101**		**2,130**		**648**		**4,950**	**22,829**
	Taxes @ 6.5 %									138					138
	Subtotal														**22,967**
	Indirects @ 21.5%														4,938
	Year 3 Annual Cost (O&M), Years 4 and 5 the same													**$**	**27,905**
	Five-Year Review Report/Inspection														
1	Five-Year Inspection and Review	1	ea										35,000	35,000	35,000
	Subtotal							**0**		**0**		**0**		**35,000**	**35,000**
	Taxes @ 6.5 %									0					0
	Subtotal														**35,000**
	Indirects @ 21.5%														7,525
	Year 5 Total Cost (O&M)													**$**	**42,525**
	Total Cost for Years 10, 15, 20, 25, 30 (Same as Year 5)														
	Year 6 LTM - Annual Monitoring														
1	Collect and prepare samples Annually	9	ea	16	144	tech	34.30	4,939	110	990	36	324			6,253
2	Sample analysis (perchlorate)	9	ea										275	2,475	2,475
3	Annual report	1	ea	64	64	eng	81.60	5,222	150	150					5,372
	Subtotal							**10,162**		**1,140**		**324**		**2,475**	**14,101**
	Taxes @ 6.5 %									74					74
	Subtotal														**14,175**
	Indirects @ 21.5%														3,048
	Year 6 Annual Cost (O&M)													**$**	**17,222**
	Total Cost for Years 7 and 8 (Same as Year 6)														
	Expected Duration is 6 years, no further sampling after Year 8.														

Source: Shaw 2012, Feasibility Study for Groundwater, LHAAP-04

Table 2-7: Potential Action-Specific ARARs

Citation	Activity or Prerequisite/Status	Requirement
Waste Generation, Management, and Storage		
Characterization of Solid Waste 40 CFR 262.11 30 TAC 335.62 30 TAC 335.504 30 TAC 335.503(a)(4)	Generation of solid waste, as defined in 30 TAC 335.1**—applicable**. (The material removed during excavation was tested for reactivity, corrosivity, and ignitability and did not display those RCRA hazard characteristics).	Must determine whether the generated solid waste is RCRA hazardous waste by using prescribed testing methods or applying generator knowledge based on information regarding material or process used. If the waste is determined to be hazardous, it must be managed in accordance with 40 CFR 262–268. After making the hazardous waste determination as required, if the waste is determined to be nonhazardous, the generator shall then classify the waste as Class 1, Class 2, or Class 3 (as defined in Section 335.505 through Section 335.507) using one or more of the methods listed in Section 335.503(a)(4) and Section 335.508 and manage the waste in accordance with the requirements of Chapter 335 of the TAC for industrial solid waste.
Characterization of Hazardous Waste 40 CFR 264.13(a)(1); 40 CFR 268.7 30 TAC 335.504(3) 30 TAC 335.509 30 TAC 335.511	Generation of a RCRA hazardous waste for treatment, storage, or disposal**—applicable** if hazardous waste is generated (e.g., PPE).	Must obtain a detailed chemical and physical analysis of a representative sample of the waste(s) that at a minimum contains all the information that must be known to treat, store, or dispose of the waste in accordance with 40 CFR 264 and 268. Must also determine whether the waste is restricted from land disposal under 40 CFR 268 et seq. by testing in accordance with prescribed methods or use of generator knowledge of waste.
Requirements for Temporary Storage of Hazardous Waste in Accumulation Areas 40 CFR 262.34(a) and (c)(1) 30 TAC 335.69(a) and (d)	On-site accumulation of 55 gallons or less of RCRA hazardous waste for 90 days or less at or near the point of generation**—applicable** if hazardous waste is generated (e.g., PPE) and stored in an accumulation area.	A generator may accumulate hazardous waste at the facility provided that • Waste is placed in containers that comply with 40 CFR 264.171 to 264.173 (Subpart I); and • Container is marked with the words “hazardous waste”; or • Container may be marked with other words that identify the contents.
Wells		
Well Construction Standards—Monitoring or Injection Wells 16 TAC 76.1000	Construction of water wells—**applicable** to construction of new monitoring or injection wells, if needed.	Wells shall be completed in accordance with the technical requirements of Section 76.1000, as appropriate.
Class V Injection Wells 30 TAC 331, Subchapter A, C and H	Installation, operation, and closure of injection wells for in situ bioremediation fall in the category of Class V Injection Wells—**relevant and appropriate**	Injection wells shall be constructed to the required specifications for isolation casing, surface completion, prevention of commingling, and confinement of undesirable groundwater to its zone of origin. Closure shall be accomplished by removing all of the removable casing and the entire well shall be pressure filled via a tremie pipe with cement from bottom to the land surface, or closure shall be performed by the alternative method for Class V Wells completed in zones of undesirable groundwater. Groundwater concentrations at time of well closure will determine the appropriate method of abandonment.

Table 2-7: Potential Action-Specific ARARs

Citation	Activity or Prerequisite/Status	Requirement
Well Construction Standards—Extraction Wells 16 TAC 76.1000(a) and (c) through (h) 16 TAC 76.1002(a) through (c) 16 TAC 76.1008(a) through (c)	Construction of water wells—applicable to construction of extraction (recovery) wells.	Wells shall be completed in accordance with the technical requirements of Section 76.1000, as appropriate. Water wells completed to produce undesirable water shall be cased to prevent the mixing of water or constituent zones. The annular space between the casing and the wall of the borehole shall be pressure grouted with cement or bentonite grout to the land surface. Bentonite grout may not be used if a water zone contains chloride water above 1500 ppm or if hydrocarbons are present. Wells producing undesirable water or constituents shall be completed in such a manner that will not allow undesirable fluids to flow onto the land surface. During installation of a water well pump, installer shall make a reasonable effort to maintain integrity of groundwater and to prevent contamination by elevating the pump column and fittings, or by other means suitable under the circumstances. Pump shall be constructed so that no unprotected openings into the interior of the pump or well casing exist.
Treatment/Disposal		
Disposal of Wastewater (e.g., contaminated groundwater, dewatering fluids, decontamination liquids) 40 CFR 268.1(c)(4)(i) 30 TAC 335.431(c)	RCRA-restricted characteristically hazardous waste intended for disposal—**applicable** if extracted groundwater is determined to be RCRA characteristically hazardous.	Disposal is not prohibited if such wastes are managed in a treatment system subject to regulation under Section 402 of the CWA that subsequently discharges to waters of the United States.
Closure		
Standards for Plugging Wells that Penetrate Undesirable Water or Constituent Zones 16 TAC 76.1004(a) through (c)	Plugging and abandonment of wells—**applicable** to plugging and closure of monitoring and/or extraction wells.	If a well is abandoned, all removable casing shall be removed and the entire well pressure filled via a tremie pipe with cement from bottom up to the land surface. In lieu of this procedure, the well shall be pressure-filled via a tremie tube with bentonite grout of a minimum 9.1 lb/gal weight followed by a cement plug extending from land surface to a depth of not less than 2 feet. Undesirable water or constituents or the freshwater zone(s) shall be isolated with cement plugs.

Abbreviations:

ARAR	applicable or relevant and appropriate requirement	PPE	personal protective equipment
CFR	Code of Federal Regulations	ppm	part per million
CWA	Clean Water Act of 1972	RCRA	Resource Conservation and Recovery Act of 1976
lb/gal	pound per gallon	TAC	Texas Administrative Code

Source: Shaw 2012, Final Feasibility Study for Groundwater, LHAAP-04, Former Pilot Wastewater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas.

3 RESPONSIVENESS SUMMARY

The Responsiveness Summary serves three purposes. First, it provides the U. S. Army, USEPA, and the TCEQ with information about community concerns with the Preferred Alternative at LHAAP-04 as presented in the Proposed Plan. Second, it shows how the public's comments were considered in the decision-making process for selection of the remedy. Third, it provides a formal mechanism for the U.S. Army to respond to public comments

The U.S. Army, the USEPA, and the TCEQ provide information regarding LHAAP-04 through public meetings, the Administrative Record for the facility, and announcements published in the Marshall News Messenger newspapers. **Section 2.3** discusses community participation on LHAAP-04, including the dates for the public comment period, the date, location, and time of the public meetings, and the location of the Administrative Record. The following documents related to community involvement were added to the Administrative Record:

- Transcript of the public meeting on January 9, 2013
- Presentation slides from the January 9, 2013 public meeting
- Written questions and comments from the public during the public comment period, and the U.S. Army response to those comments.

3.1 Stakeholder Issues and Lead Agency Responses

This section responds to significant issues raised by stakeholders including the public and community groups that were received in written or verbal form.

3.1.1 Question/Recommendation No. 1

Extent of groundwater contamination: The only monitor well at the site, well 04WW04, contains high concentrations of perchlorate. This well is only 18 feet deep. A single well is insufficient. Both the lateral and vertical extent of groundwater contamination are unknown.

Recommendation: The three additional monitor wells the U.S. Army plans to install will better define the extent of contamination.

Response – The LHAAP-04 site is currently monitored by a total of seven wells, although only one well is technically within the very small area of the site (approximately 150 feet by 150 feet). The site is well-monitored as the remainder of the wells are within 250 feet of the impacted well, Three additional wells planned for installation as part of the RD will help further refine the perchlorate plume footprint and depth of contamination..

3.1.2 Question/Recommendation No. 2

Groundwater Contaminants: Samples from well 04WW04 do not appear to have been analyzed for contaminants other than perchlorate. Other groundwater contaminants may be present.

Recommendation: The U.S. Army should sample all monitor wells and the fire station well for all contaminants that might reasonably be expected to occur at the site. In addition to perchlorate, this would include volatile organic compounds (VOCs) (e.g., methylene chloride, trichloroethylene, explosives (e.g., TNT, DNT), and metals (e.g., arsenic, thallium). If

contaminants are found that are not amenable to restoration under the Proposed Plan (e.g., metals), the U.S. Army should modify the plan to ensure that all the contaminants will be cleaned up.

Response – Groundwater samples from three shallow monitoring wells (04WW01, 04WW02, and 04WW03) were analyzed for VOCs, SVOCs, metals, pesticides, PCBs, explosives, perchlorate, and dioxins/furans during the RI (Jacobs, 2003). No VOCs, SVOCs, perchlorate, pesticides, explosives, and PCBs were detected in the samples. Inorganic constituent concentrations were detected at or lower than the protective concentration level (PCL) or background comparison levels. Eight dioxin/furan compounds (with no established MCL or PCL) were detected in groundwater samples (Jacobs, 2003). Subsequently, perchlorate was identified as the only groundwater COC at the site with its source being historical perchlorate impacts in soil. Parameters, other than those discussed in the Proposed Plan and the ROD, will not be added to the monitoring program.

3.1.3 Question/Recommendation No. 3

Residual soil contamination: The U.S. Army has stated that contaminated soil probably remains beneath some portions of the site.

Recommendation: The U.S. Army should either perform an assessment to determine whether the contaminated soil is likely to be a source of groundwater contamination, or explain why such an assessment is not necessary.

Response – Residual contaminated soil, if any, is likely to be restricted to the two grid areas FL09 and FL11 (where confirmation samples could not be collected due to groundwater infiltration). Contaminated soil was removed from these two areas up to depths of 14 ft bgs. However, samples collected from the remaining north side wall just above the groundwater interface indicated perchlorate concentrations less than cleanup levels. Residual soil contamination, if any, is likely to be in the saturated zone and will be addressed as part of groundwater remedy.

3.1.4 Question/Recommendation No. 4

Concrete slab: The U.S. Army does not appear to have investigated the soil or groundwater beneath the concrete slab.

Recommendation: The U.S. Army should either perform an investigation, or explain why it is not necessary.

Response –The concrete slab was penetrated in six locations near the tank pad/foundations. See **Figure 2-2** of the Final Removal Action Work Plan (Shaw, 2009c). Based on perchlorate results from soil samples taken from under the slab, a section of the concrete was removed. See **Figure 2-1** and **Figure 2-8** of the Final Completion Report (Shaw, 2011). Soil was excavated to a depth of five feet below top of concrete in section FL08 and to a depth of twelve feet below top of concrete in section FL07. Perchlorate concentrations in final floor confirmation samples from FL07 and FL08 were less than the GWP-Ind MSC. Monitoring well 04WW04 is located adjacent to the concrete slab and soil removal at section FL07. Therefore, further investigation beneath the concrete slab is not warranted.

3.1.5 Question/Recommendation No. 5

Perchlorate cleanup standard: The U.S. Army's cleanup standard for perchlorate in groundwater is the same as the State of Texas' standard for industrial use (GWP-Ind): 72 µg/L. However, the USEPA has decided to regulate perchlorate under the SDWA and has established an Interim Drinking Water Health Advisory of 15 µg/L. The USEPA and the Army are currently discussing this issue.

Recommendation: Pending the outcome of discussions with the USEPA, the Army should assume that the perchlorate cleanup will be 15 µg/L, and plan accordingly.

Note – The purpose of excavating the perchlorate contaminated soils was to protect the underlying groundwater. A more stringent perchlorate groundwater standard may mean that the cleanup standards for soils will also have to be more stringent.

Response – The cleanup level for perchlorate is 17 µg/L, which is the TRRP Tier 1 Groundwater Residential PCL. The cleanup level for perchlorate was revised as a result of dispute resolution between the Army and the EPA.

3.1.6 Question/Recommendation No. 6

Surface water modeling: The U.S. Army has concluded that contaminated groundwater will not adversely affect surface water in Goose Prairie Creek. This conclusion is based on modeling performed in 2007. However, in its Proposed Plan for LHAAP-47, the U.S. Army stated that the uncertainties associated with the model were unacceptable, and it would not be used to assess the effect of groundwater contaminants on Goose Prairie Creek.

Recommendation: The U.S. Army should explain why it is using the model at LHAAP-04 but not at LHAAP-47.

Response – References to use of surface water modeling for LHAAP-04 will be removed from this and the future documents. Surface water directly overlies the LHAAP-47 plume and surface water monitoring is planned in conjunction with the final remedy for that site. At LHAAP-04 surface water is not located on the site directly on top of the groundwater plume. It is located ~700 feet from the site and based upon the localized, small nature of the plume, no impact to surface water is anticipated. Surface water data from 2010 and 2011 indicates perchlorate concentrations below TRRP Tier 1 Groundwater Residential PCL.

3.1.7 Question No. 7

Public Comment Period: What is the duration of the public comment period? When does the public comment period end?

Response – The duration of the public comment period is 30 days. The period began on January 1, 2013, and was extended through January 31, 2013.

3.1.8 Question No. 8

Cleanup Level for Perchlorate in Groundwater: The U.S. Army proposes that the cleanup level for perchlorate in groundwater be 72 µg/L whereas the USEPA states that the cleanup level for perchlorate shall be 15 µg/L. The U.S. Army may have to switch over and use 15 µg/L as the cleanup level.

Response – The cleanup level for perchlorate is 17 µg/L, which is the TRRP Tier 1 Groundwater Residential PCL. The cleanup level for perchlorate was revised as a result of dispute resolution between the Army and the EPA.

3.1.9 Question No. 9

Growth of Microorganisms during ISB: How do you encourage the growth of microorganisms? What is the relationship between microorganisms' growth and reduction in contaminants?

Response – The material (substrate) that is injected into the aquifer during ISB provides the food source for the growth of native microorganisms in the aquifer. These microorganisms increase in population (via reproduction) and during the corresponding metabolism, they break down the contaminants in groundwater.

Perchlorate, the COC in groundwater at LHAAP-04 site is more amenable to ISB than some other contaminants found at the LHAAP. Evaluation of data collected quarterly in the first two years of the ISB implementation will help determine need for additional injections (additional substrate into the aquifer), or bioaugmentation culture (to add/enhance the right type of microbes into the aquifer). Providing the substrate (food source) to the microbes helps sustain and grow their population with corresponding decrease in the COC levels until the cleanup level is attained.

3.1.10 Question No. 10

Submittal of Questions and Appropriate Response: If someone sends in written comments to the U.S. Army, who does it go to, who actually reads them, who responds, do they respond to all comments?

Response – Dr. Rose Zeiler, with the U.S. Army is the point of contact for correspondence associated with comments/responses. Dr. Zeiler's official contact information (mail, email, and telephone no.) is provided in the Proposed Plan. Formal comments are accepted verbally at the public meeting or via email or mail sent to the attention of Dr. Zeiler. All written comments on the Proposed Plan should be submitted to her. Verbal comments asked during the public meeting are captured by the court reporter. A concerted response from the team is provided to the comments and included in the Responsiveness Summary of the ROD. Similar questions are grouped together and a comprehensive answer is provided to that group of questions.

3.2 Technical and Legal Issues

This section is used to expand on technical and legal issues. However, there are no issues of that nature beyond the technical issues already discussed in **Section 3.1**.

4 REFERENCES

AECOM, 2012, *Final Proposed Plan for LHAAP-04, Former Pilot Wastewater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas*, December.

AGEISS, Inc., 2014, *Final Baseline Ecological Risk Assessment Addendum, Longhorn Army Ammunition Plant, Karnack, Texas*, July.

Anderson Columbia Environmental, 1997, *Closure Report, Pilot Wastewater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas, EPA Identification No. TX6213820583, Solid Waste Registration No. 30990*, September.

Jacobs Engineering Group, Inc. (Jacobs), 2002, *Remedial Investigation Report Addendum for the Group 4 Sites, Remedial Investigation Report, Sites 04, 08, 67, and Hydrocarbon Study, Longhorn Army Ammunition Plant, Karnack, Texas,* Oak Ridge, Tennessee, February.

Jacobs, 2003, *Final Baseline Human Health and Screening Ecological Risk Assessment for the Group 4 Sites (Sites 04, 08, 35A, 35B, 35C, 46, 47, 48, 50, 60, 67, Goose Prairie Creek, Saunders Branch, Central Creek, and Caddo Lake), Longhorn Army Ammunition Plant, Karnack, Texas*, Final, Oak Ridge, Tennessee, June.

Plexus Scientific Corporation, 2005, *Environmental Site Assessment, Phase I and II Report, Final, Production Areas, Longhorn Army Ammunition Plant, Karnack, Texas*, February.

Shaw Environmental, Inc. (Shaw), 2006. *Final Addendum 1, Soil Sampling at LHAAP-04, Former Pilot Wastewater Treatment Plant, Installation-Wide Work Plan, Longhorn Army Ammunition Plant, Karnack, Texas,* June.

Shaw, 2007a. *Data Gaps Investigation, Longhorn Army Ammunition Plant, Karnack, Texas,* Final, Houston, Texas, April.

Shaw, 2007b. *Final Modeling Report, Derivation of Soil and Groundwater Concentrations Protective of Surface Water and Sediment, Revision 1, Longhorn Army Ammunition Plant, Karnack, Texas*, February.

Shaw, 2007c. *Final Installation-Wide Baseline Ecological Risk Assessment, Longhorn Army Ammunition Plant, Karnack, Texas*, Houston, Texas, November.

Shaw, 2009a. *Final Engineering Evaluation/Cost Analysis for LHAAP-04 Former Pilot Wastewater Treatment Plant, Group 4, LHAAP, Karnack, TX, March*.

Shaw, 2009b. *Final Action Memorandum for Former Pistol Range and LHAAP-04, Former Pilot Wastewater Treatment Plant, Karnack, Harrison County, Texas*, July.

Shaw, 2009c. *Final Removal Action Work Plan for the Former Pistol Range and LHAAP-04, Former Pilot Wastewater Treatment Plant, Group 4, Longhorn Army Ammunition Plant, Karnack, Texas*, August.

Shaw, 2011, *Final Completion Report Non-Time-Critical Removal Action, Longhorn Army Ammunition Plant, Karnack, Texas*, Houston, Texas, August.

Shaw, 2012, *Final Feasibility Study Report for LHAAP-04, Former Pilot Wastewater Treatment Plant, Karnack, Harrison County, Texas*, May. Solutions to Environmental Problems

(STEP), 2005, *Plant-Wide Perchlorate Investigation, Longhorn Army Ammunition Plant, Karnack, Texas*, Final, Oak Ridge, Tennessee, April.

Texas Commission on Environmental Quality (TCEQ), 2006. Updated Examples of Standard No. 2, Appendix II, Medium-Specific Concentrations, March 31.

Texas Natural Resource Conservation Commission, 1998. Conditional Approval Letter for Closure of Former Pilot Wastewater Treatment Plant.

Texas Water Commission, 1988. *RCRA Facility Assessment, Longhorn Army Ammunition Plant*, April.

U.S. Department of the Army (U.S. Army), 1993. *Phase I Investigations of 125 Waste Process Sumps and 20 Waste Rack Sumps for Remedial Investigation*, 1993.

U.S. Army, 2004. *Memorandum of Agreement Between the Department of the Army and the Department of the Interior for the Interagency Transfer of Lands at the Longhorn Army Ammunition Plant for the Caddo Lake National Wildlife Refuge, Harrison County, Texas*, Signed by the Department of the Interior on April 27, 2004 and the U.S. Army on April 29, 2004.

APPENDIX A: Public Notice

PUBLIC NOTICE

The United States Army invites public comment on the Proposed Plan for environmental site LHAAP-04 (Former Pilot Wastewater Treatment Plant) Longhorn Army Ammunition Plant, Texas

The U.S. Army is the lead agency for environmental response actions at the former Longhorn Army Ammunition Plant (LHAAP). In partnership with Texas Commission on Environmental Quality and the U.S. Environmental Protection Agency Region 6, the U.S. Army has developed a Proposed Plan for site LHAAP-04. Although the Proposed Plan identifies the preferred remedy for the site, the U.S. Army welcomes the public's review and comments. **The public comment period begins January 1, 2013 and ends January 31, 2013. On Wednesday, January 9, 2013, from 6:00 to 7:00 p.m., the U.S. Army is inviting all interested parties to attend an open house forum to review the Proposed Plan and ask questions. The open house forum will be held at the Karnack Community Center, Highway 134 and Spur 449, Karnack, Texas.** Copies of the Proposed Plan and supporting documentation are available for public review at the Marshall Public Library, 300 S. Alamo Blvd, Marshall, Texas 75670. A summary of LHAAP-04, including a short discussion of the planned Remedial Action, is provided below.

LHAAP-04, known as Site 04 or the former pilot wastewater treatment plant, is approximately 0.5 acres and is located at the northwest corner of 6th and 60th Streets near the former Fire Station. Industrial wastewater treatment operations began at LHAAP-04 in 1984 continuing until the demolition of the former pilot wastewater treatment facility structures, tanks, piping, and the disposal of associated wastes completed in the summer of 1997. This is the second and final planned Remedial Action for the LHAAP-04 site to clean-up underlying groundwater. An action to complete soil remediation was completed historically. The groundwater contaminant of concern (COC) is perchlorate. The Preferred Alternative to clean-up the groundwater is to perform In-situ Bioremediation with land use controls (LUCs) to reduce the level of perchlorate to the Remedial Action Objectives, prevent migration of the plume, and reduce or eliminate exposure to contaminated groundwater. LUCs may be terminated when the groundwater COC concentrations are reduced to levels to that allow for unlimited use and unrestricted exposure.

For further information contact:

Rose Zeiler, Ph.D.
P.O. Box 220 Ratcliff, Arkansas 72951
479-635-0110
rose.zeiler@us.army.mil

US Army Corps of Engineers ®
Tulsa District